Dictionary of Alkaloids

SECOND EDITION

with CD-ROM



EDITED BY

John Buckingham
Keith H. Baggaley
Andrew D. Roberts
László F. Szabó

CRC Press
Taylor & Francis Group

Dictionary of Alkaloids

SECOND EDITION

with CD-ROM

Dictionary of Alkaloids

SECOND EDITION

with CD-ROM



EDITED BY

John Buckingham

Keith H. Baggaley

Andrew D. Roberts

László F. Szabó



CRC Press

Taylor & Francis Group

Boca Raton London New York

CRC Press is an imprint of the
Taylor & Francis Group, an **informa** business

CRC Press
Taylor & Francis Group
6000 Broken Sound Parkway NW, Suite 300
Boca Raton, FL 33487-2742

© 2010 by Taylor and Francis Group, LLC
CRC Press is an imprint of Taylor & Francis Group, an Informa business

No claim to original U.S. Government works

Printed in the United States of America on acid-free paper
10 9 8 7 6 5 4 3 2 1

International Standard Book Number: 978-1-4200-7769-8 (Hardback)

This book contains information obtained from authentic and highly regarded sources. Reasonable efforts have been made to publish reliable data and information, but the author and publisher cannot assume responsibility for the validity of all materials or the consequences of their use. The authors and publishers have attempted to trace the copyright holders of all material reproduced in this publication and apologize to copyright holders if permission to publish in this form has not been obtained. If any copyright material has not been acknowledged please write and let us know so we may rectify in any future reprint.

Except as permitted under U.S. Copyright Law, no part of this book may be reprinted, reproduced, transmitted, or utilized in any form by any electronic, mechanical, or other means, now known or hereafter invented, including photocopying, microfilming, and recording, or in any information storage or retrieval system, without written permission from the publishers.

For permission to photocopy or use material electronically from this work, please access www.copyright.com (http://www.copyright.com/) or contact the Copyright Clearance Center, Inc. (CCC), 222 Rosewood Drive, Danvers, MA 01923, 978-750-8400. CCC is a not-for-profit organization that provides licenses and registration for a variety of users. For organizations that have been granted a photocopy license by the CCC, a separate system of payment has been arranged.

Trademark Notice: Product or corporate names may be trademarks or registered trademarks, and are used only for identification and explanation without intent to infringe.

Library of Congress Cataloging-in-Publication Data

Dictionary of alkaloids / editors, John Buckingham ... [et al.]. -- 2nd ed. with CD-ROM
p. cm.
Includes index.
ISBN 978-1-4200-7769-8 (hardcover : alk. paper)
1. Alkaloids--Dictionaries. I. Buckingham, J. II. Title.

RS431.A53D53 2010
615'.32103--dc22 2009031445

Visit the Taylor & Francis Web site at
http://www.taylorandfrancis.com

and the CRC Press Web site at
http://www.crcpress.com

Table of Contents

Foreword vii
The Editors ix
Introduction xi
Classification of Structural Types xxi
Dictionary Entries
A 1
B 261
C 341
D 523
E 699
F 761
G 805
H 849
I 1007
J 1073
K 1085
L 1107
M 1177
N 1343
O 1401
P 1445
Q 1631
R 1647
S 1687
T 1815
U 1965
V 1977
W 2015
X 2021
Y 2029
Z 2035
Name Index 2043
Compound Index Contents 2243
Type of Compound Index 2245

Foreword

Plants containing alkaloids have served humankind since ancient times. Indeed, some of the oldest surviving written records of commercial transactions involving medicinal plants are of alkaloid-containing plants. For thousands of years, indigenous groups around the world discovered, through self-experimentation with locally available plant extracts, that they could provide materials for hunting prey, culinary enhancement, amelioration from disease, relief of pain, and healing. These plants contributed significantly to the survival of indigenous groups throughout history. This same process of low-throughput clinical screening also identified many plants which were to be avoided because of their toxicity, again due to alkaloids. It is the oral and written records of these investigations which survive today and form the basis of both clinical care in much of the world and aspects of contemporary drug discovery.

A transition occurred at the beginning of the 19th century when investigations on the most significant medicinal and toxic plants of Europe commenced, these included studies on opium, colchicum, nux vomica, ipecac, belladonna, and pepper. As it transpired, all of the isolated, biologically active compounds were alkaloids, and it was these investigations which initiated the diverse studies of alkaloids as a class of natural products which continue today.

Since those early times, there have been six important phases to the study of alkaloids. The first was the tremendous increase in the number of structurally unique and complex alkaloids isolated from plants, structures which defined the new field of heterocyclic chemistry. The second was the dramatic reduction in time and the amount of material required to determine the precise stereochemical and conformational structure of an individual alkaloid as a result of the advances in spectroscopic and chromatographic techniques which permitted ever smaller samples to be structurally characterized. Third, there evolved the understanding that groups of structurally similar alkaloids could, sometimes, be related to each other based on one or two biosynthetic precursors from which chemically rational metabolic schemes could be used to generate the plethora of alkaloid skeleta and structures. Fourth, there was the recognition that this structural diversity, skeletal complexity, and stereo-uniqueness were at the same time a benefit and a bane. While the activity could be exquisite, alkaloids may also have significantly modulated biological activity based on a transformation at a single functional group or stereochemical center. Fifth, as more complex alkaloids were structurally elucidated they became challenging targets for synthetic organic chemists, and continue to be the basis for the stimulation of numerous brilliant synthetic strategies and innovations in organic chemistry. Finally, as knowledge of the biology associated with alkaloids grew in both breadth and depth, initially at the *in vivo* level and eventually at the molecular level, some alkaloids were established to be archetypal entity for a particular biological response.

Consequently, in this 200-year period, many alkaloids became critical components of the global pharmaceutical armamentarium, and tremendous healing has resulted from their clinical application. As our food and beverage practices have evolved, alkaloids have become a core component of every day life for almost everyone on the planet on a moment to moment basis, and caffeine, capsaicin, nicotine, theobromine, adrenaline, dopamine, serotonin, etc. are representative examples. Many of the colors of flowers and vegetables are due to alkaloids, and at the same time, alkaloids represent enormous and potent biological power. Sometimes this power can be ameliorated by dose reduction to produce health beneficent agents (for example, the ergot alkaloids and aconitine); in other instances they must simply be avoided by both animals and humans, such as those in many toxic plants, animals, and fungi. Alkaloids also have led medicinal chemists down productive pathways for drug development, although it is seldom appreciated that the molecular phylogeny of many synthetic drugs can be traced to classical alkaloids such as morphine and atropine. At the same time, there is a "dark side" to alkaloids, because at least three - morphine, cocaine, and nicotine - have powerful social implications causing tremendous human suffering through addiction, disease development, and wars which continue unabated today. It is this good, bad, and downright ugly aspect to alkaloids which has fascinated so many scientists for so long. As a global society we do indeed have this love-hate relationship with alkaloids unlike that of any other group of natural products.

As mentioned, with the rise of spectroscopy beginning in the 1950s, interest developed in examining alkaloids from wider sources than higher plants. Indeed, it appears now that almost every class of organism, insects, reptiles, birds, fungi, bacteria, the diversity of marine organisms, and mammals, including humans, all produce alkaloids. The last twenty years have witnessed an explosion in the numbers and the structural diversity of alkaloids from these sources, and these developments are dramatically reflected in this updated compilation.

From a chemical perspective, it transpires that there is almost no overlap in the structural diversity of plant, fungal, and marine alkaloids. Each is a chemically brilliant world unto itself. Thus, one would not expect to find a monoterpenoid indole alkaloid in a marine sponge, nor a manzamine alkaloid in a tropical liana. This unimaginable structural diversity places the alkaloid sciences on the cusp of a deeper understanding of their biosynthetic formation. While significant and successful efforts are underway to elucidate pathways and isolate genes which are related to both plant and fungal alkaloids, for marine organisms this aspect is completely unexplored, although the most spectacular new skeleta and potent biological activities are derived from these marine sources.

The past twenty years have witnessed the evolution of three new areas of alkaloid chemistry and biology. The first is that of the integrity of alkaloid biosynthesis. Alkaloids such the ansa macrolides from *Maytenus* and from *Colubrina*, as well as the ergot alkaloids of the Convolvulaceae are now established to be derived biosynthetically from parasitic or symbiotic fungal organisms, not through the metabolic pathways of the host plant. Second, structural conclusions regarding individual alkaloids can change; an α-hydroxy group of yesterday can become a β-hydroxy today based on refined chemical, spectroscopic, and crystallographic conclusions. As one looks through the *Dictionary of Alkaloids*, it is important to be aware that there are many examples where the synthesis of a proposed structure has failed to support that structure, or where new spectroscopic evidence does not support a proposed structure. While in some cases this has led to refinement of the structure, in others a dangling question remains as to the true identity of the natural alkaloid. Third, there is the connection of alkaloids to the biotechnology revolution, and the marvelous progress that has been made for certain alkaloid pathways in elucidating the enzymes and genes of alkaloid biosynthesis.

What, then, is the "fit" for the *Dictionary of Alkaloids,* and why is it such an important resource for researchers? Burgeoning efforts at structure elucidation and biological experimentation make it extremely difficult to quickly find key literature citations to original sources of information on individual compounds. It was recognized some years ago that there was a core global need for information systems on the isolation, spectral properties, and biological properties of alkaloids. The *Dictionary of Alkaloids* is a critical, absolutely essential component in filling that need. It is the only accumulation in the world of the taxonomy, chemistry, and biology of alkaloids derived from all sources. It provides extensive information to references for the isolation, spectroscopy, and biology of an individual alkaloid, and to its other attributes and uses. Importantly, the alkaloids are frequently collected as a group based on a parent structure. This simplifies the presentation, and accumulates alkaloids having quite different trivial names. The volume is easy to use, and the diverse indexes place the most significant information at one's fingertips. It is a unique resource, and one which is indispensable to any alkaloid chemist and biologist. The inclusion of a fully substructure searchable CD-ROM in this second edition makes the resource even more valuable.

In spite of the vast range of studies of alkaloids over the years, much remains to be done. There are many plant families which are known to contain alkaloids where the alkaloids remain to be identified; there are untold marine organisms and tens of thousands of microorganisms with unknown alkaloids. There is the genetics of alkaloid biosynthesis in more diverse organisms, and the tremendous potential for being able to produce alkaloids through isolated and stabilized systems in a sustainable manner. The key justification for alkaloid research, though, must be relevance to the enhancement of public health. For many years, justification for alkaloid research was based on their novelty; there was no relationship to biology. Indeed, it was shown several years ago that about 75% of all plant alkaloids had never been evaluated in a single bioassay. There remains a critical need for the wider biological study of known and new alkaloids in high throughput screening systems. Alkaloids will continue to have a critical role to play in the health of the Earth and of its inhabitants for the foreseeable future. They represent a significant aspect in the evolving concept of sustainable drugs and biological agents. However, only through the extensive collaboration of taxonomists, chemists, biologists, pharmacologists, formulation chemists, and clinicians can this potential be realized.

In the 12th century, according to Matthew Fox in "*Original Blessing,*" it was Saint Hildegard of Bingen who, in discussing the relationship of humankind and Nature in philosophical and practical terms, suggested that "*All nature is at the disposal of humankind. We are to work with it. For without it, we cannot survive.*" Rather like humankind, alkaloids, in all of their stunningly beautiful complexity and diversity, are an integral and essential aspect of nature with which we must work to survive.

Geoffrey A. Cordell, Ph.D.
Professor Emeritus
Evanston, IL USA

The Editors

John Buckingham is a former lecturer in organic chemistry at the University of London. He has been involved with the Chapman & Hall (now CRC) chemical database since its inception in 1980, initially as a Chapman & Hall employee, more recently as Editorial consultant. From the database has been produced various editions of the *Dictionary of Organic Compounds* and the *Dictionary of Natural Products* (both of which have been for some years solely electronic). In addition, he compiled (with I.W. Southon) the first edition of the *Dictionary of Alkaloids* (print only) in 1989. He is also the author of the popular science books *Chasing the Molecule* and *Bitter Nemesis; The Intimate History of Strychnine*

Keith H. Baggaley obtained his BSc (Hons) and PhD degrees from the University College of Wales, Aberystwyth followed by a post-doctoral fellowship in chemistry at the Royal Institute of Technology, Stockholm, Sweden, with Professor Holger Erdtman and Professor Torbjorn Norin. He then took up a Junior Research Fellowship with Professor David Ollis at the University of Sheffield before joining Beecham Research Laboratories in Surrey as a research chemist. At Beecham he worked on discovery projects concerned with cholesterol lowering drugs, platelet aggregation inhibitors and semisynthetic antibiotics as well as research on clavulanic acid biosynthesis. He has been an editor of the Chapman & Hall dictionaries since 1996.

Andrew D. Roberts took his BSc (Hons) degree at Trent Polytechnic, Nottingham (now Nottingham Trent University), UK 1973–1977 and completed studies in drug discovery projects at Pfizer (Sandwich) UK. He contributed to the *Dictionary of Organic Compounds* (Chapman & Hall) published in 1982 and has since been a Contributing Editor for other projects including the *Dictionary of Antibiotic Substances* (1988), *Dictionary of Drugs* (1990) and has since been an Editor on the *Dictionary of Natural Products* which was first published in 1993.

Lászloó Ferenc Szabó was born in Szentgotthárd (Hungary) on April 15, 1931 and studied in Pharmacy at University of Medicine, Budapest, 1949–54. Member of the Department of Medicinal Chemistry, later of the Department of Organic Chemistry of the Semmelweis University Budapest (scientific assistant, associate professor, ordinary professor), director of the same department 1977–1996, Ph.D. in organic chemistry, Doctor habilitatus. Research visitor at Université Libre de Bruxelles, 1972/73, several times in Merseburg (Germany). Presently professor emeritus of the Semmelweis University. Fields of activity: chemistry of natural products, mainly indole alkaloids (strychnine, strictosidine) and terpenoids (iridoids, secologanin), biogenetic formation of natural products, heterocyclic chemistry, mainly quinolizine compounds, polymer supported synthesis of small molecules, theoretical problems of organic chemistry (PMO theory, graph analysis).

IN HOUSE EDITORIAL TEAM

Prof. R.A. Hill, University of Glasgow

Dr A.M. Hodgson, Consultant

Dr F.M. Macdonald, CRC Press, Boca Raton

Dr S.P. Walford, CRC Press, London

Additional data collected by contributors to the *CRC Chemical Database*

Introduction

1. COVERAGE

The *Dictionary of Alkaloids* is a comprehensive database containing over 40,000 compounds. It is a subset of the *Dictionary of Natural Products* (DNP) database. DNP is an ongoing project based on a 25-year review of the natural product literature. For the present project, the subset of DNP entries referring to alkaloids were carefully checked and reviewed and enhanced with a considerable amount of additional information relating to their natural occurrence. The intention is that the Dictionary should contain data on every known alkaloid, and various checks carried out during the compilation process indicate that it comes very close to achieving this aim. The Editors would be grateful to learn of any accidental omissions.

The compounds present in the Dictionary have been classified under the **Structural Types** section below. This section also includes biosynthetic information on these compound classes.

In compiling the printed version and the CD-ROM, the primary literature has been reviewed up to mid-2008.

2. ORGANISATION OF ENTRIES

The Dictionary is arranged alphabetically by entry name. Every entry is numbered to assist ready location. Many compounds are included as derivatives of main entry compounds but important derivatives have their own individual cross-referenced entries. Use of the CD-ROM indexes enables the rapid location of all compounds in the Dictionary by name or compound type, regardless of their location.

A representative dictionary entry is shown in **Figure 1.**

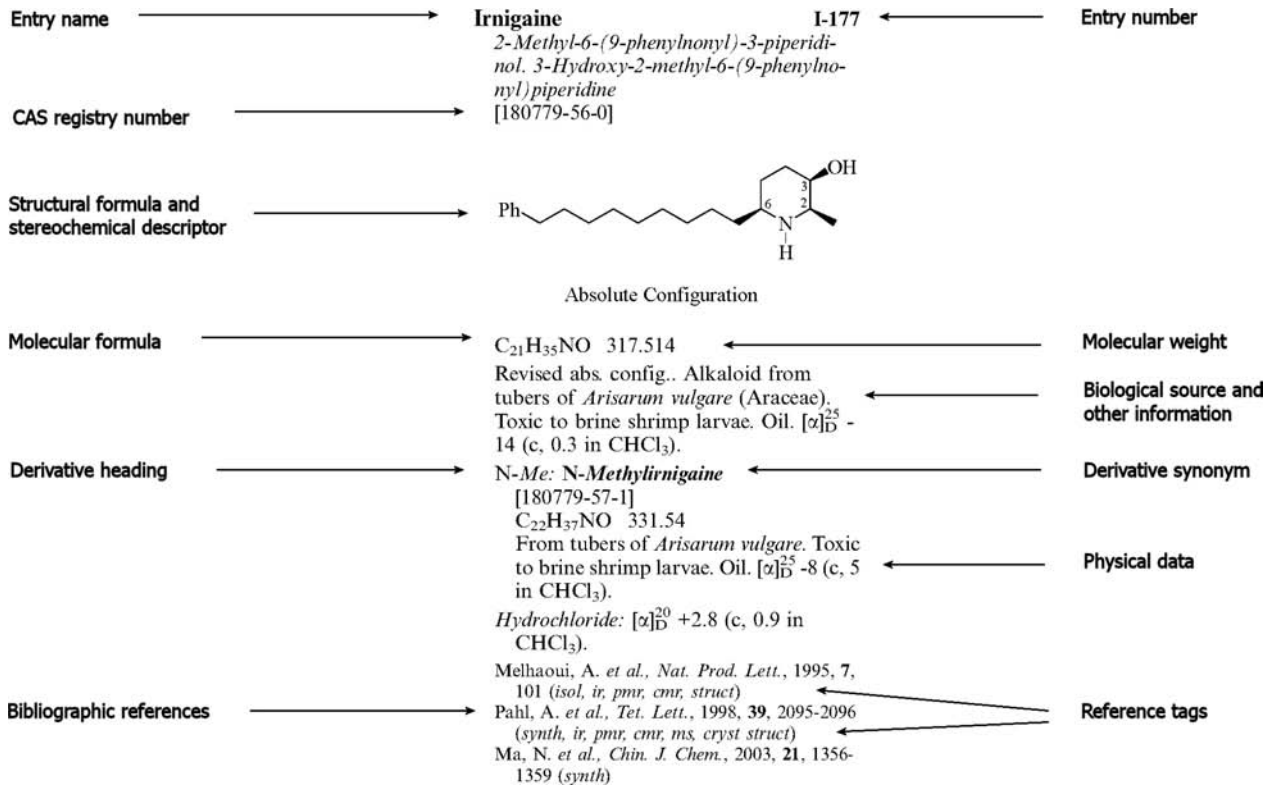


FIGURE 1

2.1 Chemical names and synonyms

The Dictionary contains a wide range of synonyms which may be (a) those found in the primary literature, (b) *Chemical Abstracts* names, or (c) names added editorially to achieve as much consistency as possible with other closely related substances. Names corresponding to those used by CAS during the 9th and subsequent

Collective Index periods (1973-) are labelled 9CI Names. All important derivatives embedded within entries are named (but see comment on CAS nomenclature below). If a compound cannot be located immediately in the main body of the entries, it is important to use the indexes. The CD-ROM version of the Dictionary is much more highly indexed than the printed version.

The most authoritative current statement of good practice on natural product nomenclature is the document *IUPAC Recommendations 1999* (*Pure Appl. Chem.*, 1999, **71**, 587–643) the full text of which can be read on the *Dictionary of Alkaloids on CD-ROM* (access from the Windows® Start menu item or via the Help menu in the main program).

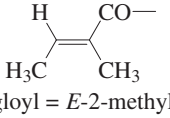
Some alkaloids have been given trivial names which duplicate those already in the literature, or which are simultaneously published for two or more non-identical substances. Where such a duplication is noticed this is indicated by the dagger symbol (‡) immediately following the name. Borderline cases, especially as between presence or absence of terminal e or suffix A or 1 are considered to constitute duplicates for this purpose.

2.1.1 Nomenclature

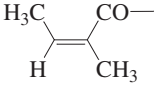
It is expected that this Dictionary will be used by a wide variety of scientists, not all of whom will be specialist organic chemists. Therefore compounds have been named so as to facilitate access to their factual data by keeping the nomenclature as simple as possible, whilst still adhering to good practice as determined by IUPAC (the International Union of Pure and Applied Chemistry). A great deal of care has been taken to achieve this aim as nearly as possible.

A much fuller description of the detailed nomenclature of individual classes of alkaloids is given in the **Structural Types** section. The following notes are of general applicability throughout the Dictionary.

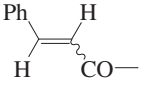
1. There are many examples in the primary literature of compounds being named in ways which are violations of good IUPAC practice, e.g. where the substituents are ordered non-alphabetically. These are not reported in their incorrect form but have been corrected.
2. The number of trivial names used for acylating substituents has been kept to a minimum but the following are used throughout the Dictionary.



Tigloyl = *E*-2-methyl-2-butenoyl



Angeloyl = *Z*-2-methyl-2-butenoyl



Cinnamoyl = 3-phenyl-2-propenoyl

3. Many other trivial appellations have from time to time appeared in the literature for other acyl groups (e.g. Senecioyl = 3-methyl-2-butenoyl, Feruloyl = 3-(4-hydroxy-3-methoxypheny1)-2-propenoyl or 4-hydroxy-3-methoxycinnamoyl).

The term **prenyl** for the common 3-methyl-2-butenyl substituent, $(H_3C)_2C{=}CHCH_2$-, is used throughout the Dictionary. Several other names for this substituent have from time to time been used and appear in the primary literature including the following:

3-Methyl-2-butenyl (systematic)
γ,γ-Dimethylallyl
3,3-Dimethylallyl
3,3-Dimethylpropenyl
Dimethallyl
Isoprenyl
Isopentenyl
β,β-Dimethylacrylyl

2.2 Cas registry numbers

CAS numbers are identifying numbers allocated to each distinctly definable chemical substance indexed by CAS since 1965 (plus some retrospective allocation of numbers by CAS to compounds from earlier index periods). The numbers have no chemical significance but they provide a label for each substance independent of any system of nomenclature. They are extensively used for exchanging information between individuals and databases. The numbers take the form NNNNNN-NN-R, where the total number of digits is five or more and R is a check digit.

For practical purposes, CAS numbers have certain shortcomings arising from their free allocation, resulting in one substance having more than one potential number. Duplication may arise for one of several reasons to do with the detailed chemistry of the substance, for example tautomerism, solvent formation, partially unspecified stereochemistry. There are also replaced numbers. For this reason, Dictionary entries will often contain one or more *Additional CAS numbers* which may help the user to obtain further information about the substance, especially by online searching.

Clearly, the additional CAS numbers given in this Dictionary have to be used with care. Their inclusion in the entry is the result of an editorial decision by the Dictionary contributor that they refer to what is essentially the same substance, but this decision may be a subjective one. Care has been taken to ensure that the main CAS number given in this Dictionary for each substance is the correct one.

Further information on CAS number allocation policy can be obtained from CAS indexes or *The Organic Chemist's Desk Reference.*

2.3 Structural formulae

Every attempt has been made to present the structures of chemical substances as accurately as possible according to best current practice and recommendations of IUPAC. As much consistency as possible has been aimed at between closely-related structures, for example, all sugars are shown as Haworth formulae, and whenever possible in complex structures the rings are oriented in the standard Haworth convention so that structural comparisons can be quickly made.

2.4 Molecular formula and molecular weight

The elements in the molecular formula are given according to the Hill convention (C, H, then other elements in alphabetical order). The molecular weights given are formula weights (or more strictly, molar masses in daltons) and are rounded to three places in decimals. In the case of some high molecular mass substances, such as proteins, the value quoted may be that taken from an original literature source and may be an aggregate molar mass.

2.5 Physical data

The Dictionary gives the following physical characteristics of substances, when available; appearance, melting point, boiling point, optical rotation, density, refractive index, solubility, p*K*a. All of these fields are searchable by numerical value (including range searching) in the CD-ROM version of the Dictionary.

2.5.1 Appearance

Organic compounds are considered to be colourless unless otherwise stated. Where the compound contains a chromophore which would be expected to lead to visible colour, but no colour is mentioned in the literature, the Dictionary entry will mention this fact if it has been noticed by the contributor. An indication of crystal form and recrystallisation solvent is often given but these are imprecise items of data; most compounds can be crystallised from several solvent systems and the crystal form often varies. In the case of the small number of compounds where crystal behaviour has been intensively studied (e.g. pharmaceuticals), it is found that polymorphism is a very common phenomenon and there is no reason to believe that it is not widespread among organic compounds generally.

2.5.2 Melting points and boiling points

The policy followed in the case of conflicting data is as follows:

a. Where the literature melting points are closely similar, only one figure (the highest or most probable) is quoted
b. Where two or more melting points are recorded and differ by several degrees (the most likely explanation being that one sample was impure) the lower figure is given in parentheses, thus Mp 139° (134–135°)

c. Where quoted figures differ widely and some other explanation such as polymorphism or incorrect identity seems the most likely explanation, both figures are quoted without parentheses, thus Mp 142°, Mp 205–206°
d. Known cases of polymorphism or double melting points are noted

Boiling point determination is less precise than that of melting points and conflicting boiling point data is not usually reported except when there appears to be a serious discrepancy between the different authors.

2.5.3 Optical rotations

These are given wherever possible, and normally refer to what the Dictionary contributor believes to be the best characterised sample of highest chemical and optical purity. Where available an indication of the optical purity (op) or enantiomeric excess (ee) of the sample measured follows the specific rotation value.*

Specific rotations are dimensionless numbers and the degree sign which was formerly universal in the literature has been discontinued.

2.6 Spectroscopic data

Many Dictionary entries include ultraviolet spectra which are presented in the format:

[neutral] λ_{max} 198 (log ε 1.55); 224 (sh) (log ε 0.61); 241 (sh) (log ε 0.55) (H_2O) (Berdy)

where ε is the absorption coefficient for a given UV maxima value (λ_{max}). A description of the solvent conditions used, if reported in the literature, is listed at the beginning and end of the UV data in parentheses. All peak absorptions cited are maxima unless otherwise described, e.g. shoulder/inflection (sh) and end absorption (end). In addition, UV data may be followed by the term 'Berdy' or 'DEREP' indicating from which database the data originated. The absence of these terms implies that the data was abstracted from the primary literature.

On the CD-ROM, all the λ_{max} values are indexed in the UV Maxima field and can be searched for numerically including range searching. Similarly, the solvent data associated with the UV data are indexed in the UV Solvent field.

2.7 Hazard and toxicity information

2.7.1 General

Toxicity and hazard information is highlighted by the symbol ▶ and has been selected to assist in risk assessments for experimental, manufacturing and manipulative procedures with chemicals.

The Publishers cannot be held responsible for any inaccuracies in the reported information, neither does the omission of hazard data in the Dictionary imply an absence of this data from the literature. Widely recognised hazards are included, however, and where possible key toxicity reviews are identified in the references. Further advice on the storage, handling and disposal of chemicals is given in *The Organic Chemist's Desk Reference.*

2.7.2 RTECS® Accession Numbers

Many entries in this Dictionary contain one or more RTECS® Accession Numbers.† Possession of these numbers allows users to locate toxicity information on relevant substances from the NIOSH *Registry of Toxic Effects of Chemical Substances*, which is a compendium of toxicity data extracted from the scientific literature.

2.8 Bibliographic references

The selection of references is made with the aim of facilitating entry into the literature for the user who wishes to locate more detailed information about a particular compound. The contents of most references are indicated by reference tags (suffixes) indicating their content and in particular the stereoisomers and derivatives of the parent

*For a recent discussion of the validity and applicability of these terms, see Gawley, R.E., *J. Org. Chem.*, 2006, **71**, 2411–2416.

† RTECS® Accession Numbers are compiled and distributed by the National Institute for Occupational Safety and Health Service of the U.S. Department of Health and Human Services of The United States of America. All rights reserved (1996).

compound which they document. The number of references cited does not indicate the relative importance of a compound; one key recent citation may supersede a number of older ones.

Journal abbreviations generally follow the practice of the Chemical Abstracts Service Source Index (CASSI), except for a short list of very well known journals where the Dictionary gives shorter abbreviations to save space (e.g. *J.A.C.S.* instead of *J. Am. Chem. Soc.*)

2.8.1 Further References

Further useful information on a variety of topics concerned with the structure, description, stereochemistry and nomenclature of organic compounds can be found in the *Organic Chemist's Desk Reference* (Chapman & Hall, 1995; new edition forthcoming).

3. INDEXES

There are two printed indexes:

1. A **Name Index** which lists every compound name and synonym in the Dictionary, and
2. A **Type of Compound** index listing all compounds given in the Dictionary.

The indexes refer to the entry number.

Searches on all text and numerical indexes, as well as structure and substructure searching can be carried out on the CD-ROM version of the Dictionary. For information on the Type of Compound codes used in the Type of Compound Index, please see the **Structural Types** section.

4. ABBREVIATIONS

The following is a selection of the most common Database abbreviations used:

Abbreviation	**Name**
[α]	specific rotation
abs config	absolute configuration
Ac	acetyl
acc	according
AcOH	acetic acid
Ac_2O	acetic anhydride
alk	alkaline
amorph	amorphous
amt	amount
anal	analytical applications, analysis of detection
anhyd	anhydrous
aq	aqueous
BAN	British Approved Name
bibl	bibliography
biosynth	biosynthesis
Bp	boiling point
c	concentration
ca	(*circa*) about
cd	circular dichroism
CAS	Chemical Abstracts Service
chromatog	chromatography
cmr	carbon (^{13}C) nuclear magnetic resonance
CNS	central nervous system
col	colour, coloration
coml	commercial(ly)
compd	compound
conc	concentrated
config	configuration

conformn	conformation
constit	constituent
cryst struct	X-ray crystal structure determination
d	density
dec	decomposes, decomposition
degradn	degradation
deg	degree
deriv(s)	derivative(s)
detn	detection, determination
dil	dilute, dilution
dimorph	dimorphic
diss	dissolves, dissolved
dist(n)	distil, distillation
DMF	dimethylformamide
DMSO	dimethyl sulfoxide
ee	enantiomeric excess
epr	electron paramagnetic (spin) resonance
equilib	equilibrium
esp	especially
Et	ethyl
EtOAc	ethyl acetate
EtOH	ethanol
EtOH aq	aqueous ethanol
exp	experimental
FEMA	Flavor and Extract Manufacturers' Association
fl p	flash point
fluor	fluoresces, fluorescence
formn	formation
Fp	freezing point
g	gram
glc	gas liquid chromatography
Glc	β-D-glucopyranosyl
GRAS	Generally Recognised As Safe
ham	hamster
haz	hazard
hplc	high performance liquid chromatography
hydrol	hydrolyses, hydrolysed, hydrolysis
ihl	inhalation
ims	intramuscular
INN	International Nonproprietary Name
intermed	intermediate
ipr	intraperitoneal
ir	infra-red spectrum
isol(n)	isolation, isolated
isom	isomerism, isomers, isomerises
ivn	intravenous
JAN	Japanese Accepted Name
JMAF	Japanese Ministry for Agriculture, Forestry and Fisheries
LC	lethal concentration
LD	lethal dose: LD_{50}, a dose which is lethal to 50% of the animals tested
M	molecular weight (formula weight)
manuf	manufacturer, manufactured
max	maximum
Me	methyl
MeOH	methanol

Me_2CO	acetone
MEL	maximum exposure limit
metab	metabolite, metabolism
misc	miscible
mixt	mixture
mod	moderately
Mp	melting point
ms	mass spectrum
mus	mouse
n	index of refraction, e.g. n_D^{20} for 20° and sodium light
nmr	nuclear magnetic resonance spectrum (general)
obt	obtained
oc	open cup
occup	occupational
OES	Occupational Exposure Standard
op	optical purity
ord	optical rotatory dispersion
orl	oral
Ph	phenyl (C_6H_5)
pharmacol	pharmacology
pmr	proton (^1H) nuclear magnetic resonance
polarog	polarography
polym	polymerises, polymer
ppd	precipitated
ppm	parts per million
props	properties
purifn	purification
Py	pyridine
rbt	rabbit
ref	reference
resoln	resolution
rev	review
rt	room temperature
scu	subcutaneous
sepn	separation
skn	skin
sl	slightly
sol	soluble
soln	solution
solv	solvent
sp	species (singular)
spar	sparingly
spp	species (plural)
ssp	subspecies
subl	sublimation, sublimes
synth	synthesis
tautom	tautomerism
THF	tetrahydrofuran
tlc	thin layer chromatography
TLV	Threshold Limit Value
tox	toxicity
unsatd	unsaturated
USAN	United States Adopted Name
uv	ultraviolet spectrum
v	very

var	variety
vis	visible
vol	volume

4.1 Reference tags

The following is a selection of the most common Reference Tag abbreviations used:

Abbreviation	**Name**
abs config	absolute configuration
anal	analysis
bibl	bibliography
biosynth	biosynthesis
cd	circular dichroism
chromatog	chromatography
cmr	^{13}C nuclear magnetic resonance spectrum
config	configuration
conformn	conformation
cryst struct	X-ray crystal structure determination
deriv(s)	derivative(s)
detn	determination, detection
dta	differential thermal analysis
glc	gas-liquid chromatography
hplc	high performance liquid chromatography
ir	infrared spectrum
isol	isolation
isom	isomerism
manuf	manufacture
metab	metabolism
ms	mass spectrum
nmr	nuclear magnetic resonance spectrum
occur	occurrence
ord	optical rotatory dispersion
pharmacol	pharmacology
pmr	proton (^{1}H) nuclear magnetic resonance spectrum
props	properties (chemical or physical)
Raman	Raman spectrum
resoln	resolution
rev	review
sepn	separation
struct	structure
synth	synthesis
tautom	tautomerism
tlc	thin layer chromatography
tox	toxicity
trans	transition(s)
uv	ultraviolet spectrum
uv-vis	ultraviolet visible spectrum

5. THE DICTIONARY OF ALKALOIDS ON CD-ROM

The *Dictionary of Alkaloids* is published together with a fully searchable CD-ROM. Space considerations have precluded the inclusion of indexes other than the Name Index and the Type of Compound index in the hard-copy version. By contrast, the CD-ROM contains searchable indexes on the following 35 fields:

Accurate Mass	Chemical Name	Molecular Weight	Supplier
All Entries	Density	Optical Rotation	Type of Compound
All Text	Development Status	Partition Coefficient (Calc.)	Type of Compound Words
Biological Source	Dissociation Constant	Percent Composition	Type of Organism
Biological Use/Importance	Hazard & Toxicity	References	Type of Organism Words
Boiling Point	Hazard Flag	Refractive Index	Use/Importance
Boiling Point Pressure	Ion Charge	Rotation Conditions	UV Maxima
CAS Registry Number	Melting Point	RTECS Accession No.	UV Solvent
CRC Number	Molecular Formula	Source/Synthesis	

In addition to searching the above text fields, it is possible to search on structure and substructure.

Once installed, a Help file providing additional information on data content and guide to searching is available from the CRC Press folder in the Start Menu and from the Help menu on the CD-ROM.

When accessing the *Dictionary of Alkaloids on CD-ROM* the first screen that is obtained is the Search Form window (**Figure 2**).

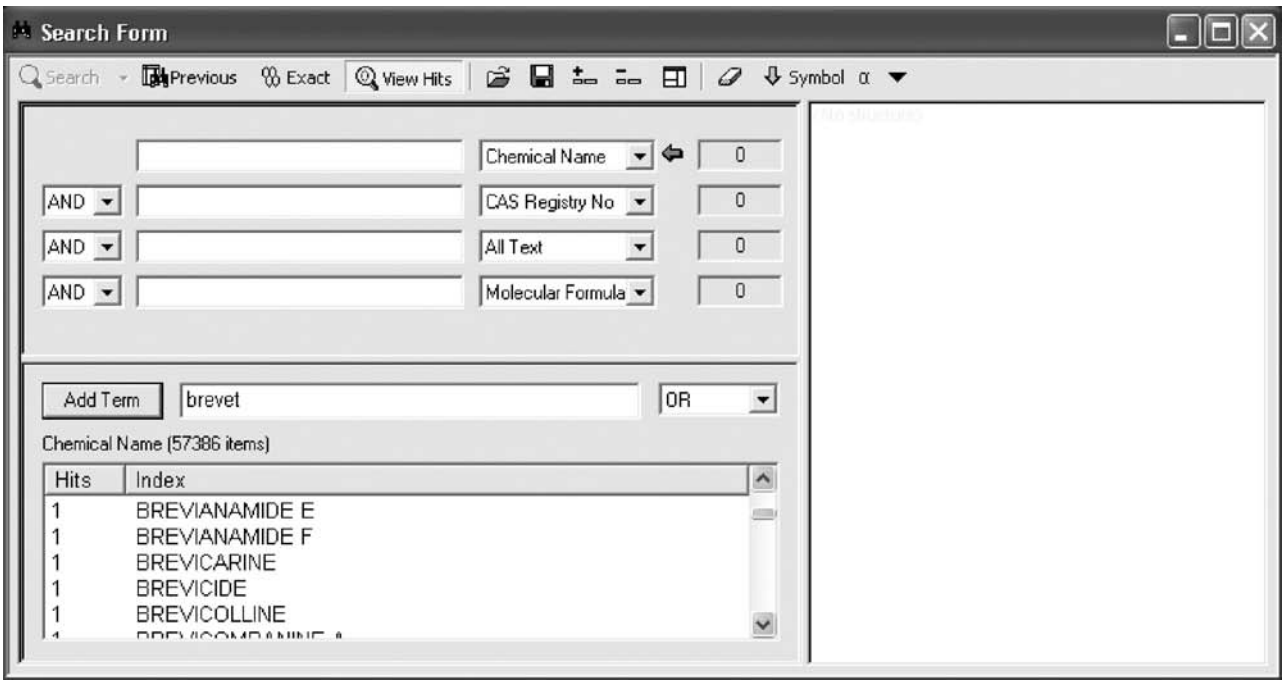


FIGURE 2

The Search Form window is split in to three panes:

1. Structure Search pane - allowing structure and substructure searching
2. Search Terms pane - search from one or more of the 35 available data/text fields
3. Index pane - displays the indexed terms within a selected field

From the Search Form window design your search profile using text, structure or text/structure searching. Once your search has been performed the resultant hits are listed alphabetically by chemical name in the Hit List screen. Clicking on any one of the hits in the Hit List screen will result in that entry being displayed in the Entry Display screen (**Figure 3**).

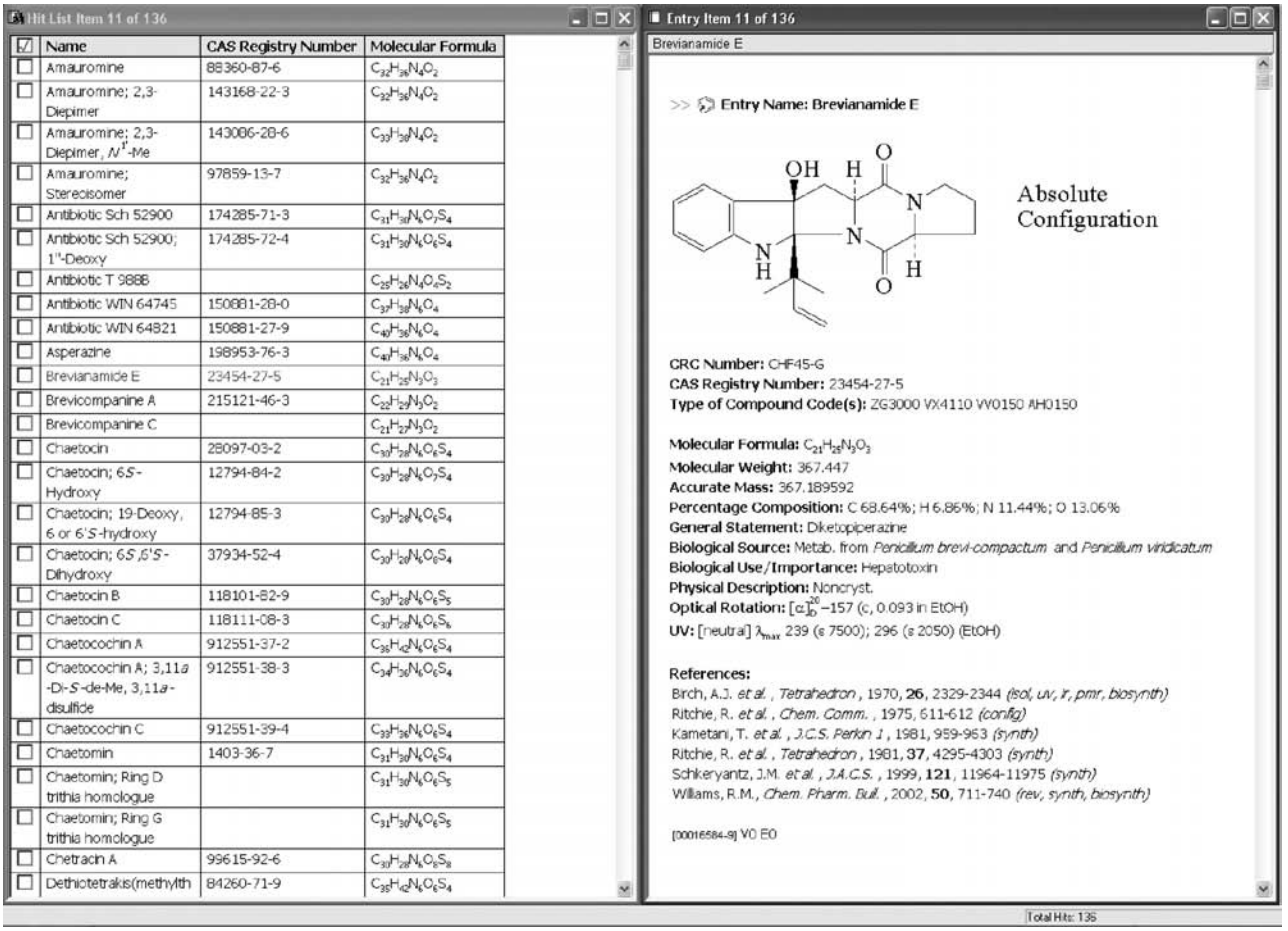


FIGURE 3

Any comments and suggestions for inclusion may be sent to:

The Editors, Dictionary of Alkaloids
CRC Press/Taylor & Francis Group
Albert House, 4th Floor
1-4 Singer Street
London EC2A 4BQ

Fax: +44 (0)20 7017 6747
Email: steve.walford@informa.com

Classification of Structural Types

1. DEFINITION OF AN ALKALOID

Alkaloids are a large group of nitrogen-containing secondary metabolites produced by almost every variety of organisms including humans.

The term was originally ascribed to pharmacologically active bases of plant origin, but the definition has subsequently been broadened so that it is now generally considered to include the majority of nitrogen-containing natural products with the exception of the simple amino acids and proteins, and nitrogen-containing glycosidic substances such as the aminoglycoside antibiotics. Alkaloids may be of plant, animal, insect or microbial origin. Basic properties may be weak or absent as in the various types of amide alkaloids. Not all higher plants produce alkaloids, but they are fairly widely distributed. An estimated 40% of plant families contain at least one species that is known to produce alkaloids. Traditional screening methods, e.g. using Dragendorff's reagent, may fail to detect weakly basic alkaloids.

A narrower definition has also been used, according to which the nitrogen atom(s) must be in a negative oxidation state, which excludes for example nitro and nitroso compounds. Other terms which have been used to narrow the definition include 'Imperfect alkaloids' (*Alkaloida imperfecta*), 'Pseudoalkaloid' (compounds in which the skeleton is not amino acid-derived) and 'Protoalkaloid' (bases that are amino acid-derived but acyclic, or contain rings not incorporating the amino acid-derived nitrogen). However, these terms are no longer in common use. Compounds of all of these types are in general included in the Dictionary, as well as most types of depsipeptide in which one or more amino acid residues are modified to a nitrogen heterocycle.

At the other extreme, many scientists in the life sciences/nutrition area tend to define an alkaloid as any nitrogenous toxin, including proteinaceous substances such as ptomaines. These are not included in this Dictionary.

In addition to the exclusions mentioned above, other types of nitrogenous natural product which are not covered by this Dictionary include the Sphingamines (aminolipids which are components of cerebrosides and other important biolipids) and the numerically limited but important polypyrroles, including haem, chlorophyll, etc., which can be considered as pyrrole alkaloids according to some definitions. Full entries for these are given in the parent work, *Dictionary of Natural Products*.

2. BIOSYNTHETIC CONSIDERATIONS

A great deal is now known about the biochemistry and enzymology involved in the synthesis of alkaloids by higher plants and microorganisms; because of experimental difficulties and the complexity of the ecosystems, much less is known about marine alkaloids. Purely chemical biosynthetic studies involving tracer elements are currently somewhat out of fashion, but important work in the 1970s and 1980s by several research groups delineated the framework of the biosynthetic pathways for most of the major groups of alkaloids.

In recent years, biosynthetic studies have extended into genomics, and for some important alkaloids, the whole process from nucleic acids to final assembly is now known in significant detail. The details of these pathways lie outside the scope of this Dictionary. An indication of the amount of information that is potentially available is given by the fact that, for example, eight different enzymes are involved in the construction of the relatively straightforward alkaloid Berberine, including one (berberine bridge enzyme) which is solely responsible for catalysing the insertion of the final methylene bridge into a C_{19} precursor. However, this section gives a general account of the biosynthetic and biogenetic routes to the different classes based on experimental evidence and theoretical ideas of structural interrelationships. Much more information can be obtained by consulting the biosynthesis references given in many of the individual dictionary entries.

3. NOMENCLATURE

As with all types of natural product, at least four different types of name can be distinguished. They are not given equal prominence in this Dictionary. Changes occur with time, notably associated with migrations in *Chemical Abstracts* nomenclature policy.

1. *Trivial names.* Example; Corynoxine. These convey no structural information, and if the structure of the alkaloid has not been determined, this will be the only name available. The oldest date from the first alkaloid isolations in the early nineteenth century and they are very frequently, though not always, derived from the Latin binomial or other name for the originating species, e.g. Strychnine from *Strychnos nux-vomica*. They are given prominence in this Dictionary, and every effort has been made to include every trivial name that has been used in the past. The names have the advantage that since they convey no structural information, they are unchanged if there is a structure revision of the alkaloid, a common event.

   There are a number of duplications of trivial names in the literature, and these are indicated by the sign ‡.

   Trivial names for at least plant-based alkaloids have traditionally ended in *–ine*.
2. *Systematic names.* Example: Methyl 6′-ethyl 1,2,2′,3,6′,7′,8′,8′*a*-octahydro-α-(methoxymethylene)-2-oxospiro[3*H*-indole-3,1′(5′*H*-indolizine]-7′-acetate, (α*E*,1′*S*,6′*S*,7′*S*,8′a*S*)- is the current CAS name for Corynoxine. The names are unambiguous and put natural products on the same footing as other organic compounds, but are of course cumbersome and typically not interpretable in terms of a recognizable structure. They are also subject to change if CAS nomenclature policy changes. These names are given in the Dictionary for relatively small molecules, and the name used to head the entry may be a systematic one if it is short and convenient. For larger molecules, such as Corynoxine, where this Dictionary does not give the systematic (CAS) name, it can be readily accessed using the CAS registry numbers that are given throughout the Dictionary. Systematic names, where they are shown in an entry, are usually presented without their stereodescriptors. These can be seen by examining the structure diagram or by consulting CAS.

   There are many cases in which CAS numbering does not correspond with the biogenetic schemes used by most natural products scientists, and which are given prominence in this Dictionary. Workers in the field are aware of such discrepancies which are inevitable. Another common complication is that structural changes which to the alkaloid specialist are minor (e.g. introduction of a methylenedioxy group) cause profound changes to the CAS name, in this case because the methylenedioxy being is recognised as an additional heterocyclic ring fusion. For further details, see the compound type descriptions given below and the individual dictionary entries.
3. *Semisystematic names.* Examples are the skeletons represented by Corynoxan and Ergoline. IUPAC gives lists of these and directions for introducing new ones. These semisystematic parents can be modified by operators such as nor-, abeo-, and seco-, etc. CAS still uses this type of name for some types of alkaloid such as ergolines (e.g. Ergometrinine =9,10-Didehydro-*N*-(2-hydroxy-1-methylethyl)-6-methylergoline-8-carboxamide), but has abandoned it for many other alkaloid classes, e.g. Corynoxans, in favour of systematic nomenclature. In general, the construction of semisystematic names of this type has not found universal support in view of the discovery of ever more structurally complex types of natural product, and also of the potential complexities caused by different authors deriving new parent skeletons in different ways. These names are not in general given in this Dictionary.
4. *'Semitrivial' names.* These are names which are derived by appending a systematically-derived operator to a trivial parent. Examples are 8-(1,1-Dimethylallyl)confusameline and *N*-Cyano-*sec*-pseudostrychnine. Such names are widespread, but are best avoided because of the possibilities for confusion, especially when there is a structure revision, or where there is more than one numbering scheme in use for the parent skeleton. Trivial names should be preferred. These semitrivial names are however, reported throughout the Dictionary where they are found in the literature. Where a semitrivial name is no longer accurate because there has been a structure revision, a note is given in the dictionary entry, and reference is often given to the possibility of confusion caused by the use of different numbering schemes.

4. PRINCIPAL LITERATURE SOURCES

4.1 Review series

Progress in the Chemistry of Organic Natural Products, formerly *Fortschritte der Chemie Organischer Naturstoffe*, (various editors), Springer Verlag, 1938- (***'Prog. Chem. Org. Nat. Prod.'***).

The leading annual review series for all types of natural product, although recent volumes contain fewer contributions on alkaloids.

Alkaloids, Chemistry and Biology (ed. Manske, R.H.F., then Rodrigo, R., then Brossi, A. then Cordell, G.A.), Academic Press, then Wiley, then Elsevier, 1949- (***'Alkaloids'***).
The leading review series devoted to alkaloids. Referred to in CAS as *'Alkaloids, N.Y.*', or *'Alkaloids (Academic Press)*', (but no longer abstracted)

Alkaloids, Chemical and Biological Perspectives (ed. Pelletier, S.W.), Pergamon/Elsevier, 1983–2000 (‘***Alkaloids Chem. Biol. Perspect***.’).
Another good review series, although no longer published.

Natural Product Reports, Royal Society of Chemistry, 1984-.
Timely, succinct and authoritative reviews; coverage depends on the availability of authors for particular topics.

Boit, H.-G., *Ergebnisse der Alkaloid-Chemie bis 1960*, Akademie Verlag, 1961.
Comprehensive compilation of all alkaloid isolations to 1960.

4.2 Recent books

Raffauf, R.F., *Plant Alkaloids: A Guide to their Discovery and Distribution*, Food Products Press, 1996
Alkaloids: Biochemistry, Ecology and Medical Applications (eds. Roberts, M.A. *et al.*), Plenum Press, 1998
Compr. Nat. Prod. Chem. (ed. Kelly, J.W.), Elsevier, 1999, **4**
Hesse, M., *Alkaloids: Nature’s Curse or Blessing?,* Wiley-VCH, 2002
Aniszewski, T., *Alkaloids – Secrets of Life*, Elsevier, 2007
Modern Alkaloids: Structure, Isolation, Synthesis and Biology (eds. Fattorusso, E. *et al.*), Wiley-VCH, 2007

5. TYPE OF COMPOUND CLASSIFICATION SCHEME

All alkaloids in the Dictionary carry one or more Type of Compound codes in the format VX1234, where VX is an invariable code denoting alkaloids (other codes starting with V refer to other types of natural product that can be found in the *Dictionary of Natural Products*. Some alkaloids carry additional non-alkaloid codes).

These codes are shown against the headings below and can be searched in the CD-ROM version of the Dictionary or in the parent *Dictionary of Natural Products* (DVD or web version). The VX code numbers assigned to an alkaloid type have no intrinsic significance. They are allocated so as to make the groups and subgroups appear in a reasonable biochemical sequence, and to provide gaps in the numerical order so that newly discovered types of alkaloid can be inserted.

Use of these codes in searching is complementary to searching by substructure. In some classes of alkaloid (such as the various types of steroidal alkaloid), the structures are fairly homogeneous, but in other classes (for example, the *Daphniphyllum* alkaloids), a wide variety of carbon skeleton may be produced by variation of an underlying biogenetic scheme. In such cases, substructure searching cannot locate all of the possibilities and the Type of Compound coding is of great value. Some alkaloids carry more than one code where they are of an intermediate type, or contain structural fragments that can be assigned to two different categories.

Biogenetically and structurally the alkaloids are diverse, and it is usual to discuss them in terms of biogenetic origin rather than purely on the basis of structural features. The classical plant alkaloids were from an early date recognised at being mostly derived from amino acids, notably ornithine (→ pyrrolidines, tropanes, etc.), lysine (→ piperidines), phenylalanine, and tryptophan (→ many alkaloids including the numerous and structurally diverse indole alkaloids). The order of Type of Compound codes in the first edition of this Dictionary followed this general scheme, which was also followed in most treatises on alkaloids. However, the subsequent discovery of many more diverse types of alkaloid, especially those of microbial and marine origin, has blurred these traditional biogenetic categories. New categories have now been inserted where it seemed appropriate on structural grounds, but these may not necessarily be biogenetically related to the established alkaloid types. To take one example, the Ericamycins (VX3900) have been placed at the end of the isoquinoline alkaloids because they contain a condensed isoquinoline nucleus, but they are of polyketide origin and have little in common biogenetically with the ‘traditional’ isoquinoline alkaloids. Even some well-established plant alkaloids were found on investigation to be polyketide in origin. The best-known example is Coniine, a long-known piperidine alkaloid which, however, is not lysine-derived. Other examples include Pinidine and (probably) Carpaine.

Much less is known about the biogenesis of marine alkaloids than their terrestrial counterparts because of experimental difficulties and the complexity of the ecosystems. Where structural similarities exist between certain marine alkaloids and their terrestrial counterparts, this is frequently indicated in the following sections, but this should not be taken to imply that their biosynthesis takes place by identical routes. There may be cases of biochemical parallelism arising from convergent evolution. In most instances the relevant information is simply not yet available for the marine alkaloids.

Details are now being uncovered about formerly unsuspected enzyme systems, which superimpose new biosynthetic possibilities on top of the traditional routes, thus blurring the traditional alkaloid subtypes.

Foremost among these are the 'Diels-Alderases' (not confined to alkaloids) which are capable of catalysing the formation of new carbon skeletons from known types. The Type of Compound categories in the database are therefore subject to future revision in the light of new research results.

Brief descriptions of the alkaloid types follow. These are not meant to be definitive, as the amount of information available for most groups of alkaloid is too great to summarise in such a brief introduction. However, the Dictionary as a whole will point the user to the key literature sources for every group; either via the general reviews given below under each category, or by going to the individual dictionary entries for the alkaloids in each group and from there to the references cited in the entry.

Herbert, R.B., *Nat. Prod. Rep.*, 2003, **20**, 494–508 (*rev*, *biosynth*)
Oikawa, H. *et al.*, *Nat. Prod. Rep.*, 2004, **21**, 321–352 (*rev*, *Diels-Alder enzymes*)
Moore, B.S., *Nat. Prod. Rep.*, 2005, **22**, 580–593; 2006, **23**, 615–629 (*rev*, *biosynth*)

Simple acyclic amine alkaloids with one N (VX0100)

These include simple amines of mostly widespread biological occurrence such as **Choline** and **Ethylamine**. Various miscellaneous polyamines are categorised under VX9000, miscellaneous acyclic alkaloids.

Simple guanidines (VX0150)

This heading covers low molecular weight guanidinoid bases, many of marine origin. Their high polarity demands special isolation techniques. The guanidine or modified guanidine group is common as a structural component of higher molecular weight alkaloids, including hybrid polyketide alkaloids and peptide-alkaloids which are classified elsewhere below.

Berlinck, R.G.S., *Prog. Chem. Org. Nat. Prod.*, 1995, **66**, 119–26 (*rev*)
Nagasawa, K. *et al.*, *Chem. Rec.*, 2003, **3**, 201–211 (*rev*, *synth*)
Berlinck, R.G.S. *et al.*, *Nat. Prod. Rep.*, 2005, **22**, 516–520; 2008, **25**, 919–954 (*revs*)

Nitriles, isonitriles and related compounds (VX0200)

Compounds containing the -NC, -NCS and -NHCHO groups frequently occur together and are biogenetically related. Compounds having the same carbon skeleton are usually included in the same entry. It now appears that the thiocyanates are central in their biosynthesis.

Edenborough, M.S. *et al.*, *Nat. Prod. Rep.*, 1988, **5**, 229–246 (*rev*, *isonitriles*)
Fleming, F.F., *Nat. Prod. Rep.*, 1999, **16**, 597–606 (*rev*, *nitriles*)
Garson, M.J. *et al.*, *Nat. Prod. Rep.*, 2004, **21**, 164–179 (*rev*)

Simple isobutylamide alkaloids (VX0220); other simple amide alkaloids (VX0250)

Simple isobutylamide amides are common plant constituents, VX0250 includes a variety of other simple amides such as the marine **Variceramides** and a wide range of other miscellaneous amides. The most intensively studied are the capsaicinoids, such as **Capsaicin**, which are responsible for the pungent flavours of capsicum peppers (Solanaceae) and related plants.

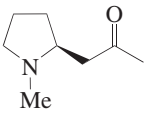
Suzuki, T. *et al., Alkaloids*, 1984, **23**, 228–300 (*rev, capsicum alkaloids*)
Cordell, G.A. et al., *Ann. Pharmacother.*, 1993, **27**, 330–336 (*rev*)

Azo and azoxy alkaloids (VX0280)

These are not very numerous and their classification as alkaloids is borderline. They include toxic (carcinogenic) metabolites such as **Cycasin**.

Simple pyrrolidine alkaloids (VX0300, VX0380)

Several simple pyrrolidine alkaloids are known from plants. These include **Hygrine** and **Stachydrine**. In *Nicandra physaloides*, Hygrine is biosynthesised from ornithine. Condensation of two ornithine units with acetoacetate gives **Cuscohygrine**. Other alkaloids containing a pyrrolidine ring include **Ficine** (in which the pyrrolidine ring is attached to a flavone nucleus), and **Brevicolline** (in which it is attached to a β-carboline unit). Clearly the biogenesis of these molecules requires other precursors.



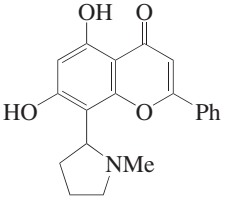
Hygrine

Other simple pyrrolidine alkaloids may arise by different biosynthetic pathways. The kainoids, e.g. **α-Kainic acid**; **Domoic acid,** are a group of non-proteinogenic pyrrolidinedicarboxylic acids. α-Kainic acid was first isolated from a rhodophyte alga but has since been found in terrestrial organisms. The kainoids are biosynthesised from glutamate and geranyl pyrophosphate, while many others are presumably proline-derived. Simple pyrrolidines based on a longer-chain skeleton such as the **Broussonetines** are biosynthesised analogously to sphingosines. Many other compounds indexed under miscellaneous pyrrolidine alkaloids (VX0380) contain a pyrrolidine function as part of a larger structure.

Massiot, G. *et al., Alkaloids,* 1986, **27**, 270–332 (*rev*)
Parsons, A.F., *Tetrahedron*, 1996, **52**, 4149–4174 (*kainoids*, *rev*)

Chromone and flavonoid alkaloids (VX0340, VX0350)

A structure consisting of a pyrrolidine, piperidine or pyridine ring linked to the A ring of chromone is referred to as a chromone alkaloid. This group of compounds can be sub-divided into two types, namely those in which the chromone nucleus exists as Noreugenin (5,7-Dihydroxy-2-methylchromone) — indexed as chromone alkaloids VX0340 — and those which bear a phenyl substituent at *C*-2 (indexed as flavonoid alkaloids, VX0350). The former group is typified by **Rohitukine** and **Schumannificine**. Typical flavonoid alkaloids include **Ficine** and **Vochysine**. Compared with the noreugenin-related alkaloids, which have only been isolated from the plant families Meliaceae and Rubiaceae, the flavonoid alkaloids are more widely distributed throughout the higher plants.

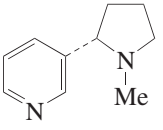


Ficine

Houghton, P.J. *et al., Alkaloids,* 1987, **31**, 67–100 (*chromone alkaloids*; *rev*)

Nicotine-like alkaloids (VX0360)

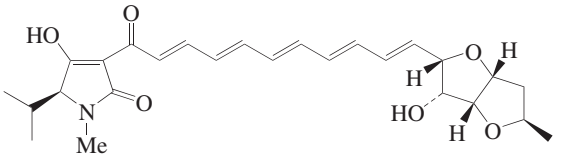
This is a small group of well-known pharmacological and toxicological importance, **Nicotine** being the major alkaloid of tobacco. The pyridine ring in nicotine is derived from nicotinic acid and the pyrrolidine ring from *N*-methylpyrrolinium derived from arginine or ornithine via putrescine. The genomics and enzymology of nicotine biosynthesis are well studied. **Nornicotine** is a deleterious tobacco constituent which is a major cause of carcinogenesis through *N*-nitrosation.



Nicotine

Tetramic acids (VX0390)

These are longer-chain pyrrolidines exemplified by the halogenated **Aurantosides** and **Rubrosides** from sponges (microbial products). A range of nonhalogenated tetramic acids has been isolated from terrestrial microorganisms, such as **Erythroskyrin** and the **Lipomycins**. They are polyketide in origin.

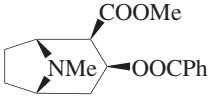


Erythroskyrin

Schobert, R. *et al., Bioorg. Med. Chem.*, 2008, **16**, 4203–4221 (*rev*)

Tropane alkaloids (VX0400)

These are characteristic constituents of the Solanaceae. Almost all of them are esters of mono-, di-, and trihydroxytropanes, with a wide variety of hydroxylation patterns (see for example **Calystegines**). In view of their pharmacological importance (**Cocaine**, **Atropine** and relatives) their synthesis and biosynthesis has been much studied since the nineteenth century. They are derived from ornithine and acetoacetate. One or two condensed structures occur, e.g. **Bellendine**, **Darlingine**.



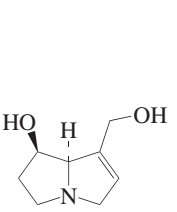
Cocaine

Hemschiedt, T., *Top. Curr. Chem.*, 2001, **209**, 175–206 (*rev*, *biosynth*)
Gossauer, A., *Prog. Chem. Org. Nat. Prod.*, 2003, **86**, 1–188 (*rev*)
Biastoff, S., *et al., Alkaloids,* 2007, **64**, 49–102 (*Calystegines*)

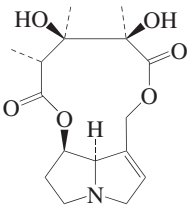
Pyrrolizidine alkaloids (VX0440, VX0500, VX0520)

These occur in species of the *Senecio* genus, and elsewhere in the Asteraceae and Fabaceae. They have been shown to be responsible for the toxic effects, particularly liver damage, in livestock grazing on pastures infested by these species, and are of public health interest in human liver disease. In view of this they have been extensively reviewed. Many, and perhaps the majority, of pyrrolizidine alkaloids occur in the plant as *N*-oxides, the *N*-oxide function being lost during isolation. Toxicity appears to be the result of oxidation *in vivo* to pyrrole derivatives. Pyrrolizidine alkaloids enter the food chain and become antifeedants in animal species such as butterflies.

The majority of pyrrolizidine alkaloids are either relatively simple esters formed from a pyrrolizidine base, the necine, exemplified by **Retronecine**, and a necic acid, such as senecioic (VX0440), or more complex cyclic esters formed between a necine and a necic acid (VX0500), an example being **Monocrotaline**. The necic acids are probably derived from an amino acid (e.g. isoleucine), rather than acetate or mevalonate. **Callosine** represents an unusual variation.



Retronecine



Monocrotaline

The category of miscellaneous pyrrolizine alkaloids includes some unusual pyrrolizidines from totally different sources, e.g. **Antibiotic PF 1018** from a fungus, **Nitropolyzonamine** from a millipede, and the cyclic polysulfide **Cassipourine** from a higher plant.

Robins, D.J., *Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 115–204 (*rev*)
Wróbel, J.T., *Alkaloids*, 1985, **26**, 327–384 (*rev*)
Powell, R.G. *al*, *Alkaloids Chem.Biol. Perspect.,* 1990, **8**, 320–338 (*rev*, *Loline group*)
Naturally Occurring Pyrrolizidine Alkaloids, (ed. Rizk, A.-M.), CRC Press, 1991
Hartmann, Y. *et al., Alkaloids Chem. Biol. Perspect.,* 1994, **9**, 155–233 (*rev*)
Robins, D.J., *Alkaloids*, 1995, **46**, 1–61 (*rev*, *biosynth*)

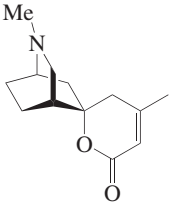
Hartmann, T. *et al., Top. Curr. Chem*., 2001, 209, 207–244 (*biosynth and metabolism in plants and insects*)
Liddell, J.R., *Nat. Prod. Rep.*, 2002, **19**, 773–781 (*rev*)
Jiang, Y. *et al.*, *Asian J. Pharmacodyn. Pharmacokinet.*, 2006, **6**, 187–192 (*tox*)

Simple piperidine alkaloids; miscellaneous piperidine alkaloids (VX0680, VX0700)

Like the pyrrolidines, these alkaloids may arise by different biosynthetic routes, so the class is structural rather than biosynthetic. Some may be derived from lysine, acetate, acetoacetate, etc., in analogous fashion to the simple pyrrolidine alkaloids. The majority of the alkaloids in this group are plant-derived. **Piperidine** itself is a lysine-derived alkaloid.

All these structural types have their analogues among the pyrrolidine alkaloids, and while it is tempting to assume biosynthesis from lysine it may not in all cases be true; **Coniine**, for example, is acetate-derived. The longer-chain **Batzellasides**, present in sponges, are iminoglycosides structurally related to the intensively-studied terrestrial iminosugars such as **Nojirimycin**, evidently with the incorporation of a fatty-acid derived fragment.

Dioscorine, from *Dioscorea hispida*, provides a fascinating example of the unexpected in alkaloid biosynthesis. At first sight it seems plausible to postulate that it may be formed from lysine and a polyketide fragment. However, lysine is not a precursor, and it would appear that Dioscorine is formed from nicotinic acid and, probably, a polyacetate unit.

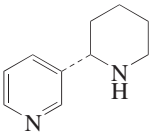


Dioscorine

Strunz, G.M. *et al., Alkaloids*, 1985, **26**, 89–184 (*rev*)
Fodor, G.B. *et al.*, *Alkaloids Chem. Biol. Perspect.,* 1985, **3**, 1–90 (*rev*)
Schneider, M.J., *Alkaloids Chem.Biol. Perspect.*,1993, **10**, 155–300 (*rev*)
Andersen, R.J. *et al.*, *Alkaloids Chem. Biol. Perspect.,* 1996, **10**, 301 (*rev*, *3-alkylpiperidines*)

Anabasine alkaloids (VX0620)

These are piperidine homologues of the nicotine group (VX0360 above). They also occur in *Nicotiana* spp., in *Anabasis* spp. and others. The biosynthesis is, at least in its major features, analogous to that of the nicotine group, with lysine → cadaverine → *N*-methyl-Δ^1-piperideine replacing ornithine → putrescine → *N*-methyl-Δ^1-pyrrolideine. **Anabasine** has been isolated from marine animals and insects, as well as plants.



Anabasine

However, the piperidine ring in **Anatabine**, from *Nicotiana glutinosa*, appears not to be derived from lysine or from a polyacetate precursor; instead, both rings are derived from nicotinic acid.

Lobelia-type alkaloids (VX0660)

These have no analogy among the pyrrolidine alkaloids. An example is **Lobelanine**.

Felpin, F.X. *et al., Tetrahedron*, 2004, **60,** 10127–10153 (*rev*)

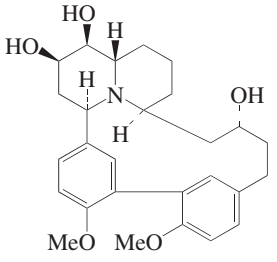
Xestospongins (VX0690)

These are a group of exclusively marine-elaborated piperidines. Their biosynthesis would appear to imply the involvement of a C_{10} dialdehyde equivalent as hypothesised for the Manzamine group (VX2250) below, and they appear closely related to intermediates postulated in the Baldwin scheme.

Baldwin, J.E. *et al.*, *Tet. Lett*., 1992, **33**, 2059–2062 (*biosynth*)

Lythraceae alkaloids (VX0760)

These are characterised by several unusual structural features. **Lythrancine** contains a quinolizidine ring system attached to a diphenyl residue, one of the benzene rings in which is derived from cinnamic acid. Other alkaloids in this group contain a diphenyl ether grouping, e.g. **Decaline**, and others a piperidine ring instead of a quinolizidine ring, e.g. **Lythranidine**. These alkaloids have not been studied recently, and their biosynthesis has not been fully worked out. It involves lysine as source of the quinolizidine or piperidine ring, and phenylalanine as precursor of one of the aromatic rings.



Lythrancine

The numbering system adopted here for the lactonic Lythraceae alkaloids (e.g. Decaline) is the one generally accepted, and corresponds closely to that for piperidine and quinolizidine metacyclophane alkaloids (e.g. Lythranidine, Lythrancine). The carbon atoms that correspond in biogenetic origin to the three alkaloid types thus maintain corresponding numbers. CAS originally employed stereoparent names for these alkaloids, but now uses systematic nomenclature; in each case the numbering is different.

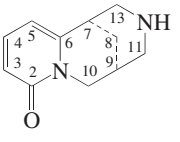
Golebiewski, W.M. *et al., Alkaloids*, 1981, **18**, 263–273 (*rev*)
Fuji, K., *Alkaloids*, 1989, **35**, 155–176 (*rev*)

Quinolizidine alkaloids (VX0900, VX0920, VX0940, VX0960, VX0980)

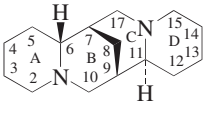
Quinolizidine alkaloids are sometimes reviewed alongside pyrrolizidine and indolizidine alkaloids under the joint heading 'Izidines'. The well-known alkaloids which have been long known were isolated from higher plants, particularly the Fabaceae, but the quinolizidine nucleus also occurs in some marine alkaloids and amphibian toxins.

Two-ring quinolizidine alkaloids (VX0900) come from various sources and range from simple bases such as **Epiquinamide**, from a frog toxin, to more elaborated examples such as the marine **Pictamine** and the Fabaceae alkaloid **Epilupinine**, to others which are clearly seco-derivatives of larger alkaloids, e.g. **Cadiamine**. A few relatively simple marine quinolizidine alkaloids are known such as **Pictamine** and the **Clavepictines**. The **Saraines** are more complex sponge products classified under miscellaneous quinolizidines (VX0980), together with **Halichlorine**, a popular synthetic target, and the **Petrosines**, further examples of dimeric alkaloids in which the units are linked in a medium-sized aliphatic ring.

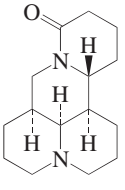
Of the three-ring alkaloids (VX0920) the most characteristic is **Cytisine**; other alkaloids such as **Angustifoline** having a carbon substituent are clearly intermediate between Cytisine and the four-ring alkaloids. The **Tsukushinamines** (which actually have four rings) represent an unusual variation.



(-)-Cytisine



(-)-Sparteine



Matrine

The four-ring alkaloids (VX0940) are the most studied group. Fusion of an additional ring onto the cytisine skeleton produces the **Sparteine** type with potentially increased (C_2) symmetry. Both enantiomers of Sparteine and many of its relatives occur naturally, the enantiomers (and sometimes the racemate) often being characterised in the older literature under different names. The symmetry properties mean that the nomenclature and numbering of Sparteine derivatives is confusing, especially since in the past many alkaloids have sometimes been poorly named. Every effort has been made to regularise the nomenclature and numbering, and to show the absolute configurations correctly.

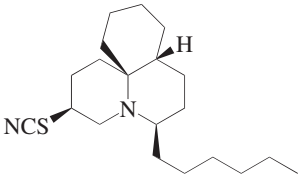
Another type of four-ring alkaloid is represented by **Matrine** and its stereoisomers (**Isomatrine**, **Allomatrine**, **Sophoridine**, **Darvasamine**). These groups contain some dimers, e.g. **Dithermamine**.

The miscellaneous group (VX0980) includes some alkaloids with larger structures, for example **Jamine** and **Panamine** (each six rings).

Howard, A.S., *Alkaloids*, 1986, **28**, 183–308 (*rev*)
Aslanov, Kh.A., *Alkaloids*, 1987, **31**, 118–193 (*rev*)
Robins, D.J. *et al., Alkaloids*, 1995, **46**, 1–61 (*rev*, *synth*)
Ohmiya, S. *et al.*, *Alkaloids*, 1995, **47**, 2–115 (*rev*, *lupine alkaloids*)
Michael, J.P., *Alkaloids*, 2001, **55**, 91–258 (*rev*)
Michael, J.P., *Nat. Prod. Rep.*, 2008, **25**, 139–165 (*rev*)

Cylindricine alkaloids (VX0960)

The Cylindricine/Fasicularine/Lepadiformine alkaloids (VX0960) are a small cluster of marine alkaloids containing the perhydrobenzo[*i*]quinolizine nucleus and ring-contracted homologues, plus some terrestrial alkaloids which are loosely related structurally.



Fasicularine

Biosynthetic studies do not yet appear to have been carried out. Benzologous structures have been proposed for a small group of terrestrial alkaloids (Menispermaceae) related to **Cohirsine**.

Weinreb, S.M., *Chem. Rev.*, 2006, **106**, 2531–2549 (*rev*, *synth*)

Azepine alkaloids (VX1000)

These are mostly microbial (or marine, presumably microbial) products; the exceptions are fungal pigments such as **Chalciporone** and its congeners. Marine alkaloids include the **Bengamides**, which are thought to be symbiotic products deriving from bacterial fatty acids, cyclised lysine and a 4-carbon diketide.

Nicotinic acid derived alkaloids (VX1020); Other pyridine alkaloids (VX1040)

The number of small alkaloids derived by the transformation of nicotinic acid is limited. There are, however, a large number of terpenoid ester alkaloids in which nicotinic acid itself esterifies a variety of terpenoid alcohols, for example dihydro-β-agarofurans (e.g. the **Cangorins** and many others).

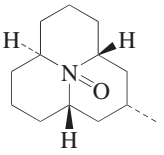
Arecoline, from betel nuts, and **Ricinine**, from the castor oil plant, are clearly derivable from nicotinic acid; in the case of Ricinine this has been established.

Strunz, G.M. *et al., Alkaloids*, 1985, **26**, 89–184 (*rev*)
Fodor, G. *et al., Alkaloids Chem. Biol. Perspect.,* 1985, **3**, 1–90 (*rev*)
Schneider, M.J., *Alkaloids Chem. Biol. Perspect.,* 1993, **10**, 155–300 (*rev*)
Almeida, A.M.P. *et al.*, *Quim. Nova*, 1997, **20**, 170–185 (*rev*, *alkylpyridines from sponges*)
Sepcić, K., *J. Toxicol., Toxin Rev.*, 2000, **19**, 139–160 (*rev*, *alkylpyridinium compounds from sponges*)
Liao, L.M., *Alkaloids*, 2003, **60**, 287–343 (*rev*, *sesquiterpene pyridine alkaloids*)

9*B*-Azaphenalene alkaloids (VX1120)

(Systematically pyrido[2,1,6-*de*]quinolizines). This small piperidine-based group is exemplified by **Coccinelline**, the defensive agent of the common ladybird, *Coccinella septempunctata*, and **Porantherine**, from the shrub

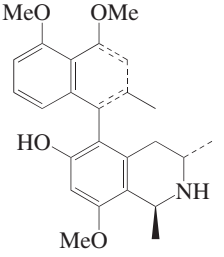
Poranthera corymbosa. The insect alkaloids appear to be genuine insect metabolites which are biosynthesised from a lipid chain forming the outer perimeter, plus glutamine as the preferred nitrogen source.



Coccinelline

Naphthalene-isoquinoline alkaloids (VX1140)

This group is isolated mainly from the plant family Ancistrocladaceae, with some isolations from the Dioncophyllaceae. Several skeletal types are known and are based on the point of linkage between the two ring systems, e.g. 5,1′-coupled alkaloids (**Ancistrocladine**, **Dioncophylline C**), 5,8′-coupled (**Korupensamine A**), 7,1′-coupled (**Ancistrocladisine**, **Dioncophylline A**), 7,3′-coupled (**Ancistrocladidine**), 7,6′-coupled (**Dioncophylline B**), etc. These alkaloids are chiral due to diastereoisomerism at the methyl groups and in the biaryl linkage due to restricted rotation. They are biosynthesised via construction of a naphthalenoid portion onto monomeric dihydroisoquinolines.

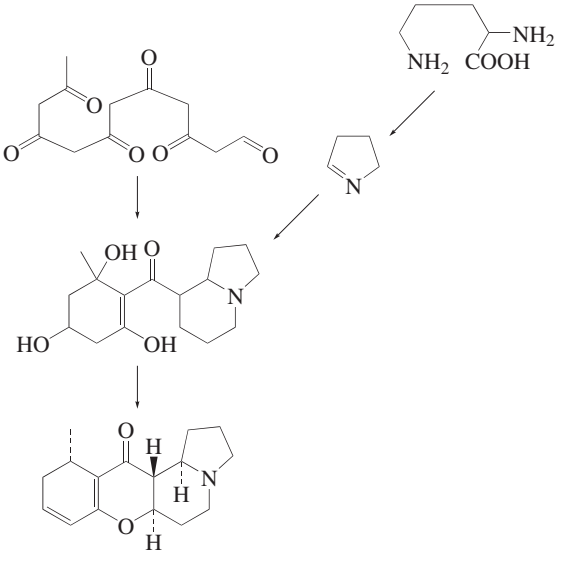


Ancistrocladine

Bringmann, G. *et al., Alkaloids*, 1986, **29**, 141–184; 1995, **46**, 128–272 (*revs*)
Bringmann, G. *et al.*, *Tetrahedron*, 2007, **63**, 1755–1761 (*biosynth*)

Elaeocarpus alkaloids (VX1160)

These are a series of mostly indolizidine-based alkaloids from Far-eastern *Elaeocarpus* spp. A proposed biosynthetic scheme which was suggested in 1969, and which apparently lacks experimental evidence, is through the condensation of a twelve-carbon polyketide chain with a 1-pyrroline derived from ornithine. Alternatively, the whole skeleton may be polyacetate derived.

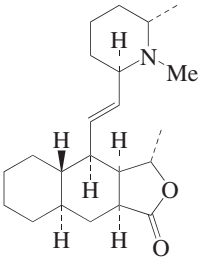


Elaeocarpiline

Johns, S.R. *et al.*, *Aust. J. Chem*., 1969, **22**, 793–800 (*biosynth*)
Johns, S.R. *et al., Alkaloids*, 1973, **14**, 325–346 (*rev*)

Galbulimima alkaloids (VX1240)

These are a numerically limited class of alkaloids e.g. **Himbacine,** based on the elaboration of a piperidine theme, and which are found in *Galbulimima* (*Himantandra*) spp. (Himantandraceae). A biosynthetic scheme for these alkaloids was suggested in 1967 which proposed their construction from a common polyacetate precursor. Synthetic studies have been carried out to provide a biomimetic route along these lines, however, direct experimental proof is still lacking.

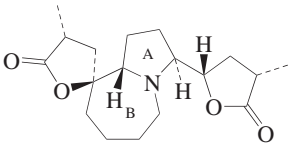


Himbacine

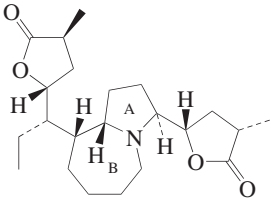
Shah, U. *et al., Total Synthesis of Galbulimima Alkaloids*, VDM Verlag Dr. Muller, Aktiengesellschaft, 2008 (*rev*, *synth*)

Stemona alkaloids (VX1260)

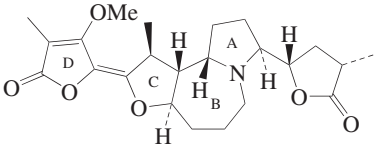
These represent a unique type of alkaloid isolated only from the family Stemonaceae (monocots). Three main types are recognised, the **Croomine**, **Stichoneurine** and **Protostemonine** types, although a further subdivision into 11 subtypes can be made. Biosynthetic studies of Stemona alkaloids have not been reported, but a scheme based on a terpenoid origin of the C and D rings and a spermidine origin of the A ring has been proposed by Seger, and an alternative scheme involving a polyketide-geranate condensation by Pyne and co-workers.



Croomine



Stichoneurine A



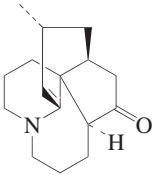
Protostemonine

Pilli, R.A. *et al.*, *Nat. Prod. Rep.*, 2000, **17**, 117–128 (*rev*)
Seger, C. *et al.*, *Chem. Biodiversity*, 2004, **1**, 265–279 (*biosynth*)
Pilli, R.A. *et al., Alkaloids,* 2005, **62**, 77–173 (*rev*)
Greger, H., *Planta Med.*, 2006, **72**, 99–113 (*rev*)
Pyne, S.G. *et al.*, *Maejo Int. J. Sci. Technol*., 2007, **1**, 157–165 (*rev, biosynth*)

Lycopodium alkaloids (VX1280)

These are constituents of the club mosses (Lycopodiaceae). Whereas the earliest proposal concerning their biosynthesis implicated two C_8 units derived from acetate, it was later established that two lysine units are involved. Numerous skeletal variants are known, all of which can be related to the Lycopodine skeleton; older

examples are **Fawcettidine** and **Serratinine**. More recently some intriguing new skeletons such as those in the **Lyconadines**, **Lyconesidine A**, the **Lycopladines** and **Neohuperzinine** have been found.

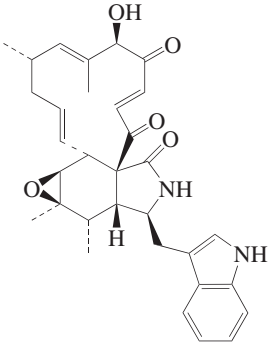


Fawcettidine

Maclean, D.B., *Alkaloids*, 1985, **26**, 241–298 (*rev*)
Blumenkopf, T.A. *et al., Alkaloids Chem. Biol. Perspect.,* 1985, **3**, 185–240 (*rev*)
Ayer, W.A., *Nat. Prod. Rep.*, 1991, **8**, 455–464 (*rev*)
Ayer, W.A., *Alkaloids*, 1994, **45**, 233–274 (*rev*)
Ma, X. *et al.*, *Nat. Prod. Rep.*, 2004, **21**, 752–772 (*rev*)
Peng, J. *et al., Alkaloids*, 2005, **61**, 1–57 (*rev*)

Cytochalasan alkaloids (VX1300)

Cytochalasins are metabolites of several different and unrelated fungi, including some marine actinomycetes. They are characterised structurally by the presence of a perhydroisoindolone system fused to a macrocyclic ring of 11, 13 or 14 atoms. The macrocycle may be a carbocycle, a lactone or a carbonate. In addition, the isoindole ring carries either a phenyl or an indolyl substituent at position 10; the latter group includes the **Chaetoglobosins**. Cytochalasins possess a range of distinctive biological properties; these include inhibition of cytoplasmic cleavage leading to polynucleate cells, nuclear extrusion and the inhibition of cell mobility. Biosynthetically, cytochalasins arise from phenylalanine or tryptophan and a polyketide derived from acetate and methionine. They have not been reviewed recently.

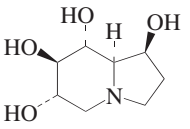


Chaetoglobosin A

Pendse, G.S., *Recent Advances in Cytochalasans*, Chapman & Hall, 1987

Indolizidine alkaloids (VX1360)

These are a significant class of plant alkaloids, e.g. **Castanospermine**, an important biologically active enzyme inhibitor and a major synthetic target, and **Swainsonine**, biosynthesised from lysine.



Castanospermine

A large number of indolizidine alkaloids known are amphibian skin toxins, of which the greatest number are 5,8-disubstituted, e.g. **Indolizidine 203A**. These are now all known to be of dietary origin, possibly entering the frogs through arachnid and insect prey. Many of these are available only in traces and have currently been characterised only by mass spectroscopic methods, with a number of structures uncertain or incomplete. They are

homologous with the ring-expanded quinolizidine series (see VX0900 above), and other related skeletons by ring enlargement. There are no conclusive studies on the biosynthesis of these related series of amphibian and related toxins, but a polyketide origin is plausible.

A few simple indolizidines (e.g. the **Stellettamides**) have been isolated from sponges.

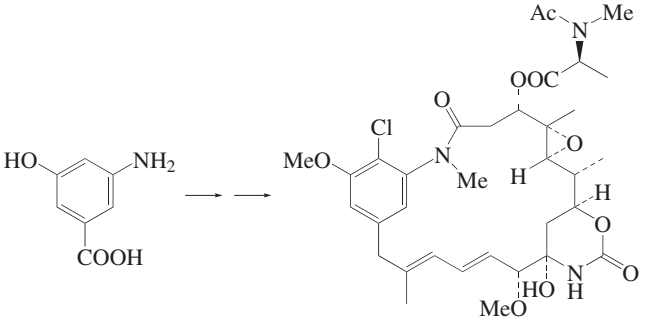
Howard, A.S., *Alkaloids*, 1986, **28**, 183–308 (*rev*)
Elbein, A.E. *et al., Alkaloids Chem. Biol. Perspect.,* 1987, **5**, 1–54 (*rev*)
Takahata, H. *et al., Alkaloids*, 1993, **44**, 189–256 (*rev*)
Michael, J.P., *Nat. Prod. Rep.*, 2004, **21**, 625–649; 2005, **22**, 603–626; 2008, **25**, 139–165 (*revs*)
Daly, J.W. *et al., J. Nat. Prod.*, 2005, **68**, 1556–1575 (*amphibian toxins*)
Amat, M. *et al.*, *Angew. Chem. Internat. Ed. Engl.*, 2008, 47, 3348–3351 (*amphibian toxins*)

Simple anthranilic acid alkaloids (VX1460)

A number of diverse structural groups of alkaloid are derived biogenetically from anthranilic acid, the major ones being the quinolone, acridine and quinazoline groups categorised under their respective headings. The number of unelaborated anthranilic acid alkaloids is small and includes **Damascenine** from *Nigella damascena*. Biosynthetically, the alkaloid is derived from anthranilic acid (chorismate derived), which is then hydroxylated and methylated.

Maytansinoids (VX1470)

The maytansinoids are a group of ansa macrocyclic lactams originally isolated from three plant families (Euphorbiaceae, Celastraceae, Rhamnaceae), and subsequently isolated from a soil bacterium *Actinosynnema pretiosum*, other microorganisms and mosses. They are homologous with the **Ansamitocins** from microorganisms, and may be derived from plant-associated fungi. They show strong antitumour activity and are biosynthesised from the simple aromatic precursor 3-amino-5-hydroxybenoic acid, arising from the chorismate pathway, which is substituted by a polyketide chain and then amide ring formation.



Maytansine

Cassady, J.M. et al., *Chem. Pharm. Bull.*, 2004, **52**, 1–26 (*rev*)

Simple quinolines (VX1480); Furanoquinolines (VX1520); Pyranoquinolines (VX1540); Miscellaneous quinoline alkaloids (VX1580)

The majority of simple quinoline alkaloids are from higher plants, but a variety of simple heteroaromatic quinolines (VX1480) have been isolated from various marine sources, including **2-Heptyl-4-hydroxyquinoline** from a marine pseudomonad, and **4,8-Quinolinediol** from cephalopod ink. Plant alkaloids include **Echinopsine** and the phenethyl-quinoline, **Cusparine**. The plant-derived furanoquinoline (VX1520) (e.g. **Platydesmine**), and pyranoquinoline (VX1540) alkaloids (e.g. **Flindersine**) are straightforwardly derived from simple alkylquinolines (especially prenyl-substituted) by cyclisation. There are also more elaborated hydrogenated quinolines, especially the **Lepadins** from tunicates and flatworms.

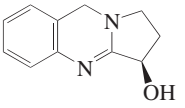
Bryozoans contain a number of simple quinoline-quinone pigments and there are also the **Tridemnic acids** from ascidians. Simple hydrogenated quinolines also occur in amphibian toxin mixtures, for example the numerous ***Dendrobates* Alkaloids**. This extensive series of alkaloids occurs in amphibian skin extracts and in tunicates, flatworms and insects (myrmicine ants), in a mixture which includes hydrogenated quinolines, and structural variants such as indolizidines (VX1360, see for further information).

Macrorine, from *Macrorungia longistrobus*, is obviously derived from anthranilic acid and histidine.

Grundon, M.F., *Alkaloids Chem. Biol. Perspect.,* 1988, **6**, 339–522 (*rev*)
Fernandes da Silva, M.F. *et al., Alkaloids*, 2007, **64**, 139–214 (*rev*)
Michael, J.P., *Nat. Prod. Rep.*, 2008, **25**, 166–189 (*rev*)

Quinazoline alkaloids (VX1600)

These include **Vasicine**, first isolated in 1888 from *Adhatoda vasica*, and **Rutaecarpine**, from *Euodia rutaecarpa*; this latter base is clearly derived from tryptophan and anthranilic acid. Quinazoline alkaloids have been isolated from several plant families as well as from microorganisms, fungi and animal spp. **Febrifugine** is a pharmacologically important (antimalarial) member of the group. A number of simple quinazolines also occur, as well as **Bouchardatine**, which is a quinazoline-indole dimer. They have been well reviewed; see also Tryptoquivalines (VX6030) below.

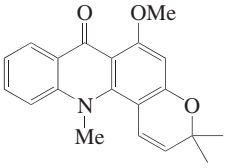


Vasicine

Johne, S., *Prog. Chem. Org. Nat. Prod.*, 1984, **46**, 159–218 (*rev*)
Johne, S., *Alkaloids*, 1986, **29**, 99–140 (*rev*)
Mhaske, S.B., *Tetrahedron*, 2006, **62**, 9787–9826 (*rev*)
Michael, J. *et al.*, *Nat. Prod. Rep.*, 2008, **25**, 166–187 (*rev*)

Acridone alkaloids (VX1620-VX1690)

These are higher plant alkaloids characteristic of the Rutaceae, and are biosynthesised from anthranilic acid by elaboration of an additional malonate-derived aromatic ring. The simple acridones (VX1620) may be exemplified by **Xanthevodine** and by a large number of alkaloids in which the nucleus is prenylated followed frequently by formation of a furano- or pyranoacridine ring system, e.g. **Acronycine**. Biosynthesis of the nucleus is from anthranilic acid and a malonate fragment. The **Acrimarines** are acridone-coumarin dimers (VX1690).

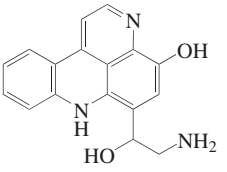


Acronycine

Gerzon, K. *et al., Alkaloids*, 1983, **21**, 1–28 (*rev*)
Grundon, M.F., *Alkaloids Chem.Biol. Perspect.*, 1988, **6**, 339–522 (*rev*)
Tillequin, F. *et al., Alkaloids Chem. Biol. Perspect.,* 1998, **12**, 1–102 (*Acronycines*, *rev*)
Skaltsounis, A. *et al., Alkaloids*, 2000, **54**, 259–377 (*rev*)
Michael, J.P., *Nat. Prod. Rep.*, 2008, **25**, 166–187 (*rev*)

Pyrido[2,3,4-*kl*]acridines (VX1700)

This is a group of exclusively marine alkaloids which includes the **Kuanoniamines**, the **Ascididemins**, the **Cystodytins**, the **Styelsamines**, the **Varamines** and others. The isolation of some of them from a variety of organisms argues for a microbial origin, but it could alternatively be a case of convergent evolution. They are biosynthesised from common amino acids.

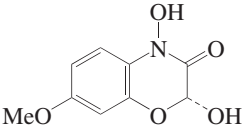


Styelsamine A

Molinski, T.F., *Chem. Rev.*, 1993, **93**, 1825–1838 (*rev*)
Ding, Q. *et al.*, *Curr. Med. Chem.*, 1999, **6**, 1–27 (*rev*)
Salomon, C.E. *et al.*, *Mar. Biol. (Berlin)*, 2001, **139**, 313–319 (*biosynth*)
Moore, B.S., *Nat. Prod. Rep.*, 2006, **23**, 615–629 (*rev*)

1,4-Benzoxazin-3-one alkaloids (VX1720)

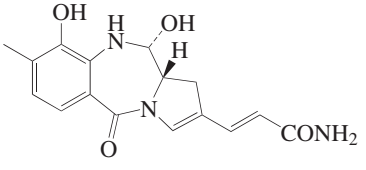
2,4-Dihydroxy-7-methoxy-2*H*-1,4-benzoxazin-3(4*H*)-one (known as DIMBOA) is the main representative of this group of alkaloids which have plant hormone significance. DIMBOA itself protects the maize plant against corn borer attack. They usually occur in the plant as glucosides, but cell injury releases a glucosidase which catalyses hydrolysis to the 2-hydroxy derivatives. All four oxygen atoms in DIMBOA arise by incorporation of molecular O_2.



DIMBOA

Benzodiazepine alkaloids (VX1760)

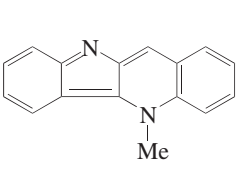
This is a growing class of microbial metabolites typified by **Anthramycin** and others. One or two, e.g. **Aplysepine**, are of marine origin; apparently no plant alkaloids with this skeleton are known to date. They are biosynthesised from amino acids via kynurenine and its derivatives.



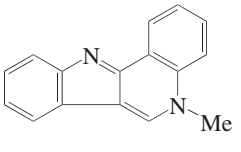
Anthramycin

Cryptolepine alkaloids (VX1800)

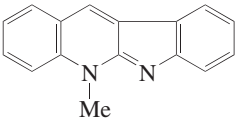
Cryptolepine (5-Methyl-5*H*-quindoline) is the most prominent representative of this small group isolated from *Cryptolepis* spp. The parent alkaloid, 10*H*-Indolo[3,2-*b*]quinoline (**Quindoline**), has been isolated from *Cryptolepis sanguinolenta*. Two isomeric skeletons (**Isocryptolepine**, **Neocryptolepine**) were also obtained. A further variant represented by **Cryptoheptine** is doubtful. The marine **Communesins** (currently classified under miscellaneous alkaloids VX9400) contain the Neocryptolepine skeleton embedded in a polycyclic ring system. No biosynthetic studies of these skeletons have been carried out, but a derivation from indole and anthranilic acid can be envisaged.



Cryptolepine



Isocryptolepine

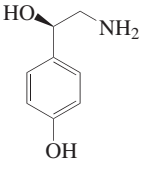


Neocryptolepine

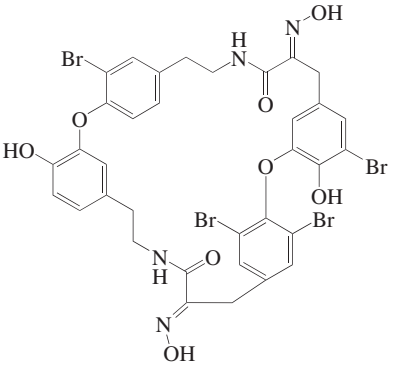
Simple phenethylamine alkaloids (VX2000, VX2005, VX2008, VX2015)

Alkaloids derived from phenylalanine or tyrosine represent an extremely large and varied major subdivision of the alkaloids, ranging from simple β-phenylethylamine derivatives to the much more complex structures exemplified by the alkaloids of the Amaryllidaceae and the very numerous isoquinoline alkaloids.

The simplest derivatives of phenylalanine or tyrosine are the β-phenylethylamines, which are presumably obtained by decarboxylation and obvious oxidative/alkylation stages, and which are widespread among plant alkaloids (e.g. **Mescaline**) and elsewhere. Compounds showing side-chain oxygenation (VX2005) include alkaloids from higher plants, such as **Macromerine**, as well as animal hormones such as **Adrenaline** and **Octopamine**, which is an endometabolic neurotransmitter of molluscs. Brominated compounds (VX2008) such as the **Purpuramines** and the **Bastadins** are common in marine organisms. These are biosynthesised from the simple brominated tyrosines.



Octopamine



Bastadin 9

Lundström, J., *Alkaloids*, 1989, **35**, 77–154 (*rev*)
Peng, J. *et al., Alkaloids*, 2005, **61**, 59–262 (*rev, marine bromotyrosine alkaloids*)
Bentley, K.W., *Nat. Prod. Rep.*, 2006, **23**, 444–463 (*rev*)

Ephedra alkaloids (VX2010)

This is a small, and important, group of low molecular weight alkaloids centred on **Ephedrine** and its relatives, isolated from *Ephedra* spp. (Ma Huang) and showing strong physiological activity. They carry a side-chain amino or substituted amino substituent. This structural feature is common in higher molecular weight alkaloids.

Ma Huang and the Ephedra Alkaloids, (ed. Karch, S.B.), Springer/Humana Press, 2007 (*book*)

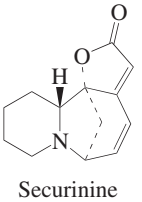
Cinnamic acid amides (VX2020)

***cis*-** and ***trans*-Fagaramide**, **Herclavine** and **Subaphylline** are simple members of this series, which are mostly isolated from terrestrial plants. These amides are typically derived from a *trans*-cinnamic acid; **Astrophylline** is an example of an *N-cis*-cinnamoyl derivative. Simple cinnamate residues are scarcer among marine alkaloids. Examples are found in the **Tunichromes**, for which phenylalanine can function as a biosynthetic precursor.

Taylor, S.W. *et al.*, *Chem. Rev.*, 1997, **97**, 333–346 (*rev*, *tunichromes*)

Securinega alkaloids (VX2100)

This small group of polycyclic alkaloids occurs in the Euphorbiaceae. The biosynthesis of these alkaloids, which is not readily apparent, has been shown to involve tyrosine and lysine in the case of **Securinine**. Alkaloids of both enantiomeric series occur naturally, sometimes in closely related plants.

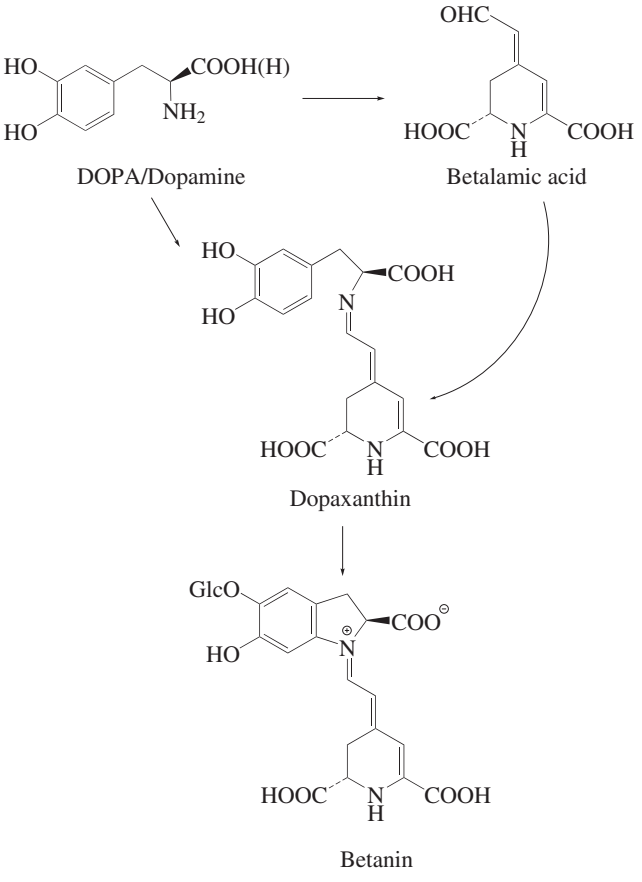


Securinine

Snieckus, V., *Alkaloids*, 1973, **14**, 425–506 (*rev*)

Betalain alkaloids (VX2140)

This is a group of zwitterionic water-soluble alkaloidal pigments whose distribution is limited to the order Caryophyllales of the dicots, (more or less coterminous with the older term Centrospermae), for which they have been used as a taxonomic marker, plus some basidiomycete fungi. **Betanin** (the red pigment of beetroot) is the best-known example, other examples include various flower pigments instead of anthocyanins. Both halves of the molecule are biosynthesised from DOPA/Dopamine via Dopaxanthin; the formation of the upper unit, Betalamic acid, involves an enzymatic aromatic ring fission process.



Stintzing, F. *et al.*, *Trends Food Sci. Technol.*, 2007, **18**, 514–525 (*rev*)

ISOQUINOLINE ALKALOIDS (VX2200-VX2400)

This is an extremely large group of mainly higher plant alkaloids, although one or two groups of isoquinolinoid marine alkaloids, notably the Manzamine group (VX2250) are also interpolated into the listing.

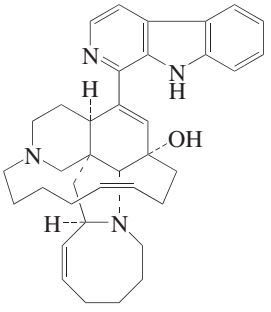
Shamma, M., *The Isoquinoline Alkaloids*, Academic Press, New York, 1972
Shamma, M. *et al.*, *Isoquinoline Alkaloid Research, 1972–1978*, Plenum Press, New York, 1978
Krane, B.D., *J. Nat. Prod.*, 1982, **45**, 377–384 (*rev*)
Lundström, J., *Alkaloids*, 1983, **21**, 255–328 (*rev*)
Phillipson, J.D. *et al.*, *The Chemistry and Biology of Isoquinoline Alkaloids*, (eds. Phillipson, J.D. *et al.*), Springer, 1985
Menachery, M.D., *J. Nat. Prod.*, 1986, **49**, 745–778 (*rev*)
Baker, B.J. *et al., Alkaloids Chem. Biol. Perspect.,* 1996, **10**, 357–407 (*rev*, *marine isoquinolines*)
Bentley, K.W., *Nat. Prod. Rep.*, 2006, **23**, 444–463 (*rev*, *revs cited therein*)

Simple isoquinoline alkaloids (VX2200)

This group includes simple isoquinolines with (e.g. **Salsoline**) or without (e.g. **Anhalamine**) a *C*-1 substituent, and various quinones (**Mimosamycin**, **Renierone)**. Marine examples are restricted to some bases related to **Renierol** and the **Cribrostatins**.

Manzamine alkaloids (VX2250)

This fairly extensive group (a typical representative is **Manzamine A**) is exclusively of marine origin and represents the most structurally complex and characteristic type of marine alkaloid for which a biosynthetic scheme has been proposed. Their biosynthesis has been postulated to involve the condensation of tryptamine with one or more C_3 units and one or more straight-chain C_{10} dialdehyde equivalents, followed by an enzyme-assisted Diels-Alder cyclisation. The origin of the C_{10} and C_3 units is uncertain, but it has been suggested that they could arise by oxidative fission of a hydroxylated fatty acid. The full biosynthetic scheme is shown in the reviews below and more elaborately in the companion *Dictionary of Marine Natural Products*.



Manzamine A

Baldwin, J.E. *et al.*, *Tet. Lett*., 1992, **33**, 2059–2062 (*biosynth*)
Tsuda, M. *et al.*, *Heterocycles*, 1997, **46**, 765–794 (*rev*)
Baldwin, J.E. *et al.*, *Chem. Eur. J.*, 1999, **5**, 3154–3161 (*biosynth*)
Hu, J.F. *et al., Alkaloids*, 2003, **60**, 207–285 (*rev*)
Thomas, R., *Nat. Prod. Rep.*, 2004, **21**, 224–248 (*rev*, *biosynth*)

Benzylisoquinoline alkaloids (VX2320)

The simple benzylisoquinoline skeleton is derived from two molecules of tyrosine, via DOPA, and is the precursor of a wide variety of alkaloids in categories listed below, belonging to numerous different ring systems. The alkaloids with the unmodified benzylisoquinoline skeleton consist mainly of 1,2,3,4-tetrahydrobenzylisoquinolines, e.g. **Reticuline**, of central importance in the elaboration of other alkaloids, and their fully aromatic analogues, e.g. **Papaverine**. Alkaloids with a carbon substituent at *C*-2′, such as **Canadaline**, may be regarded as ring-opened berberines. There are also some benzylisoquinolines in which a pyrrolidine ring is attached to *C*-4, e.g. **Macrostomine**. The isolation of one or two marine benzylisoquinoline alkaloids (**Imbricatine**; **Theoneberine**) is noteworthy.

Deulofeu, V. *et al., Alkaloids*, 1968, **10**, 401–461 (*rev*)

Pseudobenzylisoquinoline alkaloids (VX2330)

The term pseudobenzylisoquinoline alkaloid is used to describe a benzylisoquinoline skeleton in which the pendant aromatic ring is oxygenated at *C*-2′, *C*-3′ and *C*-4′. These alkaloids are derived biogenetically from protoberberinium salts by *C*8-*C*8*a* bond scission. **Polycarpine**, **Taxilamine** and **Ledecorine** are typical examples.

Bisbenzylisoquinoline alkaloids (VX2340–VX2400)

This large group of alkaloids is composed of two benzylisoquinoline units attached to each other by one, two, or three bonds. In most cases the units are joined via ether linkages, but carbon-carbon bonds between the benzyl groups are also known. The monomeric units involved are mainly hydroxylated or methoxylated benzylisoquinolines, although aporphine units occur in many alkaloids, and a few contain a proaporphine component. The alkaloids may be subdivided into the five following major groups (the classification, proposed by Shamma, contains at least 28 subgroups). All alkaloids classified here are composed of unmodified benzylisoquinoline units. Dimeric alkaloids containing aporphine, proaporphine, or otherwise modified benzylisoquinoline components are discussed under separate headings).

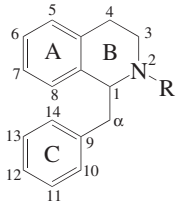
CAS used to employ a number of stereoparent skeletons, such as Berbaman, Thalicberan, Tubocuraran, in naming the cyclic bisbenzylisoquinoline alkaloids, but these have now been replaced by systematic nomenclature. Trivial nomenclature is given prominence in this Dictionary, but the main semisystematic parent skeletons are

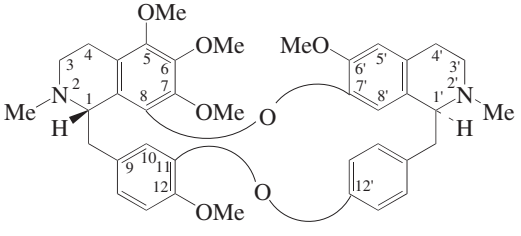
shown below. Care is needed in numbering the two benzylisoquinoline residues. In a few cases, CAS has in the past applied the primes to the opposite residue to that proposed in the Shamma-Moniot convention. The latter is used in this Dictionary.

The Shamma-Moniot convention is as follows;

1. The numbering system for a bisbenzylisoquinoline half of the dimer is as shown below. The lower aromatic ring, namely ring C, is always numbered so as to assign the smallest numbers to the substituents on that ring
2. Each bisbenzylisoquinoline half of the dimer is described in terms of its oxygenation pattern. The more highly oxygenated bisbenzylisoquinoline half constitutes the left hand side of the dimer. The right hand side of the dimer is given prime numbering.

For an example see the structure of Hernandezine below.





Hernandezine with Shamma-Moniot convention numbering

Shamma, M. *et al., Heterocycles*, 1976, **4**, 1817–1824 (*Shamma-Moniot numbering convention*)
Buck, K.T., *et al., Alkaloids*, 1987, **30**, 1–222 (*rev*)
Schiff, P.L., *J. Nat. Prod.*, 1997, **60**, 934–953 (*rev, revs cited therein*)

Bisbenzylisoquinoline alkaloids containing aryl links only (VX2340)

The bark of *Popowia pisocarpa* has yielded a group of alkaloids which contain a single aromatic linkage between *C*-11 and *C*-11′. See the entry for **Pisopowetine**. **Isopythaldine** and **Isopyruthaldine** represent another type in which the two benzylisoquinoline groups are joined by methylene bridges.

Bisbenzylisoquinoline alkaloids containing one ether link (VX2360)

The ether linkage is in most cases between *C*-11 and *C*-12′, as in **Dauricine**. However, other attachments are known, e.g. between *C*-10 and *C*-11′, as in **Vanuatine**, between *C*-10 and *C*-7′, as in **Malekulatine** and **Ambrimine**, and between *C*-11 and *C*-7′, as in **Neferine**.

Bisbenzylisoquinoline alkaloids containing one aromatic link and one or two ether links (VX2370, VX2390)

These alkaloids are mainly based on the **Rodiasine** and **Tiliacorine** skeletons.

Bisbenzylisoquinoline alkaloids containing two ether links (VX2380)

These are the most numerous. The largest subgroup containing two ether linkages possesses the berbaman skeleton, exemplified by **Berbamine**, which contains ether linkages between *C*-8 and *C*-7′, and between *C*-11 and *C*-12′. Almost as large as the berbaman group is the oxyacanthan group, e.g. **Oxyacanthine**, which contains ether linkages between *C*-7 and *C*-8′, and between *C*-11 and *C*-12′. Smaller groups include the **Thalicberine** (*C*-8 to *C*-6′

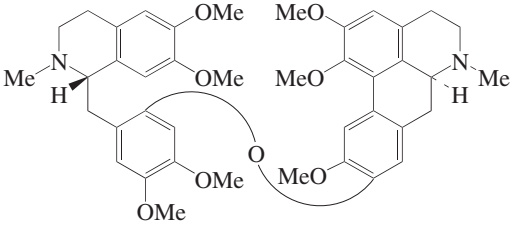
and *C*-11 to *C*-12′), **Thalidasine** (*C*-8 to *C*-5′ and *C*-11 to *C*-12′), and **Thalmine** (*C*-7 to *C*-5′ and *C*-11 to *C*-12′) types. All of these types contain ether linkages between the benzyl rings and between the aromatic rings of the tetrahydroisoquinoline component. The **Tubocurarine** sub-group contains ether linkages between the benzyl ring of one unit and the aromatic ring of the isoquinoline component of the other. Other linkages between benzyl and isoquinoline rings are also known.

Bisbenzylisoquinoline alkaloids with three ether links (VX2400)

These include alkaloids with 6′,7-epoxyoxyacanthan (e.g. **Trilobine**), 7,8′-epoxyoxyacanthan, and 8,12′-epoxytubocuraran skeletons.

Benzylisoquinoline-aporphine dimers (VX2700)

Some alkaloids consist of a benzylisoquinoline unit attached to an aporphine unit, through a single ether linkage. Of these, **Thalicarpine** is typical.



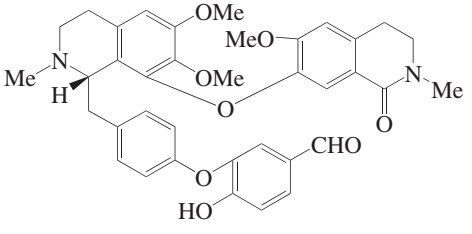
Thalicarpine

Miscellaneous bisbenzylisoquinoline-related alkaloids (listed under their component monomeric units) include those containing a dienone ring in one of the isoquinoline moieties (e.g. **Repanduline**), some with an aporphine unit attached to a pavine component (e.g. **Pennsylpavine)**, those with degraded benzylisoquinoline units (e.g. **Baluchistanamine**) or with a proaporphine unit (e.g. **Epiberbivaldine**), and **Cancentrine**, which is really a combination of cularine and morphinan components.

Buck, K.T. *et al., Alkaloids*, 1987, **30**, 1–222 (*rev*)
Schiff, P.L., *Alkaloids Chem.Biol. Perspect.,*1987, **5**, 271–638; 2000, **14**, 1–234 (*revs*)

Secobisbenzylisoquinoline alkaloids (VX2430)

The secobisbenzylisoquinolines are degraded alkaloids in which one of the benzylisoquinoline units is cleaved between the *C*-1 and the α-carbon atom. A typical example is **Baluchistanamine**, the apparent biogenetic precursor of which is Oxyacanthine. Different oxidation states are found; aldehyde lactams (e.g. **Baluchistanamine**, **Punjabine**), lactam esters (e.g. **Punjabine**, **Curacautine**) or aldehyde amines (**Jhelumine**, **Chenabine**).



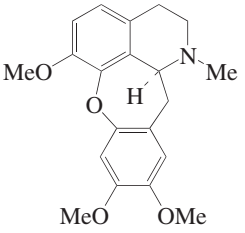
Baluchistanamine

Like the bisbenzylisoquinoline precursors, these alkaloids differ in the number and position of the diphenyl ether linkages. Karakoramine has only one such bond, Baluchistanamine has two, and Punjabine has three. **Secantioquine** and **Secolucidine** are examples of a biphenyl system.

Cularine alkaloids (VX2440)

The cularines are tetracyclic isoquinoline alkaloids which contain a dihydrooxepine or oxepine ring between *C*-8 and *C*-2′. They are formed by intramolecular oxidative coupling of 7,8,3′,4- or 7,8,4′,5′-tetraoxygenated

tetrahydrobenzylisoquinolines (classical cularines and isocularines, respectively), although the biogenesis of **Gouregine** probably proceeds via oxidation of an aporphine precursor. Note the parallelism between the cularine and aporphine alkaloids.



Cularine

A small number of **Cancentrine**-type alkaloids are known which are cularine-morphinan dimers.

Castedo, L. *et al., Alkaloids*, 1986, **29**, 287–324 (*rev*)

Secocularine alkaloids (VX2450)

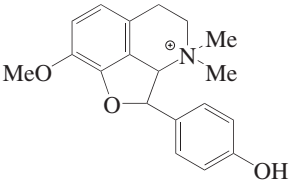
The secocularines can be divided into two sub-groups, namely B- and C-ring seco compounds. B-Ring secocularines, exemplified by **Secocularidine**, are structurally related to phenanthrene alkaloids derived from aporphines and are probably formed *in vivo* by Hofmann degradation of cularines. C-Ring cularines, represented by **Noyaine**, constitute a type of alkaloid without counterpart among aporphinoids.

Indenobenzazepine alkaloids (VX2500)

This is a small group, e.g. **Lahorine,** which may be derived from the spirobenzylisoquinolines (VX3220 below).

Quettamine alkaloids (VX2470)

Whereas the classical-type cularine alkaloids of the Fumariaceae are biogenetically derived from intramolecular oxidative coupling of tetraoxygenated tetrahydroisoquinoline precursors, the quettamines are obtained from *in vivo* intramolecular oxidation of a trioxygenated tetrahydroisoquinoline. So far, few naturally occurring quettamines are known. These alkaloids, all found in *Berberis baluchistanica*, incorporate either a benzofuran or a dihydrobenzofuran ring within the molecular framework, and the seco bases possess an *N*,*N*-dimethylaminoethyl substituent.



Quettamine

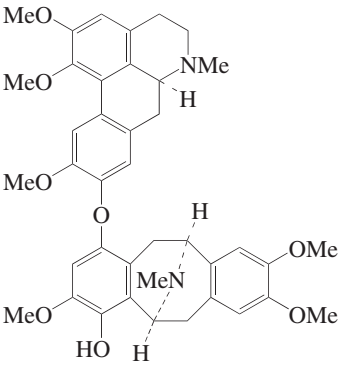
Dibenzopyrrocoline alkaloids (VX2480)

These alkaloids, only a few of which are known, are clearly derived by oxidation of a benzylisoquinoline precursor; indeed, the ring system was prepared *in vitro* by this route before it was encountered in nature. **Oubatchensine** is a 7,13-seco alkaloid presumably derived through 13-hydroxylation and tautomerism to the open-chain form.

Elliot, I.W., *Alkaloids*, 1987, **31**, 101–117 (*rev*)

Pavine and isopavine alkaloids (VX2520, VX2540)

These alkaloids are formed by alternative modes of oxidative cyclisation of benzylisoquinoline precursors. In addition there are bisbenzylisoquinoline alkaloids composed of pavine and aporphine units, e.g. **Pennsylpavine**.



Pennsylpavine

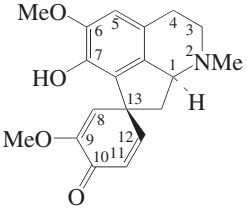
Because of the two-fold rotational symmetry of the pavane skeleton, there are numerous variations in numbering schemes in the literature. Numbering in this Dictionary has been regularised according to IUPAC principles.

Some mixed pavinoid-benzylisoquinoline and pavinoid-aporphine dimers (**Hervelines**, **Fauripavine**) have been isolated relatively recently.

Gözler, B. *et al., Alkaloids*, 1987, **31**, 317–390 (*rev*)

Proaporphine alkaloids (VX2600)

This group of alkaloids, e.g. **Orientalinone**, represents an intermediate stage in the conversion of the benzylisoquinoline alkaloids by phenol oxidative coupling into the aporphines. The spirocyclohexenone ring may occur in various oxidation levels from cyclohexadienone to cyclohexanol. There are various numbering schemes in the literature. That shown has been adopted here as standard.



Orientalinone

There are also proaporphine-tryptamine dimers centred on **Roehybridine**. These heptacyclic alkaloids, found in *Roemeria hybrid* (Papaveraceae) and *Phoebe grandis* (Lauraceae), are probably derived biogenetically by a Mannich-type condensation of a ketonic tetrahydroproaporphine with a tryptamine analogue.

Proaporphine-benzylisoquinoline alkaloid dimers (VX2620)

This group is self-explanatory, e.g. **Pakistanamine**.

Aporphine alkaloids (VX2640, VX2700)

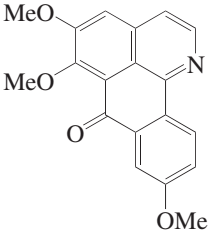
This large group of alkaloids contains the tetracyclic ring system formed by the phenol oxidative coupling of a benzylisoquinoline precursor. The structural variations among the numerous simple aporphines (VX2640) are mostly 6*a*,7-dehydrogenation and 7-oxidation, accompanied by isoquinoline-ring aromatisation in the so-called oxoaporphines, e.g. **Liriodenine** (VX2640). To this listing must be added a small group of bisaporphines. The majority of these alkaloids possess a carbon-to-carbon linkage between *C*-7 and *C*-7′ (e.g. **Urabaine**), although examples of C-C coupled bisaporphines and oxygen-bonded dimers (e.g. **Dehatriphine**) are also known. There is a considerable number of aporphine-benzylisoquinoline dimers listed separately (VX2700).

Various alkaloid groups which follow (VX2750-VX2840) may be considered as closely related to the true aporphines and are often reviewed alongside them.

Guinaudeau, H. *et al.*, *Lloydia*, 1975, **38**, 275–338; *J. Nat. Prod.*, 1979, **42**, 133–149, 325–360; 1983, **46**, 761–835; 1984, **47**, 565–580; 1988, **51**, 389–474, 1025–1053; 1994, **57**, 1033–1135 (*tabulations*)
Shamma, M., *Nat. Prod. Rep.*, 1986, **3**, 345–352 (*rev*)
Gözler, B. *et al.*, *J. Nat. Prod.*, 1990, **53**, 675–685 (*aporphine dimers*)

Oxoisoaporphines (VX2750)

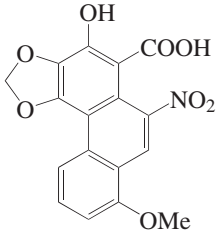
This is a small group of alkaloids, mostly from *Menispermum* spp. It has been suggested that they arise from aporphines via a spirodienone rearrangement, however, biosynthetic studies have not been reported. One of its representatives is **Menisporphine**. **Lakshminine**, from *Sciadoteria* sp., in the Menispermaceae, contains an additional nitrogen substituent.



Menisporphine

Aristolochic acids and aristolactams (VX2780, VX2800)

The aristolochic acids represent a class of phenanthrenoid alkaloid derived from an aporphinoid precursor with ring-B fission and the loss of *C*-5 (aporphine numbering). **Aristolochic acid VIa** is a typical alkaloid. Some of the alkaloids are esters of these acids with, for example, terpenoids, e.g. **Aristolin**. They are higher plant products characteristic of the Aristolochiaceae. Since they have a seco-aporphinoid skeleton, they have been numbered in the literature in different ways, either as aporphines or as phenanthrenes, and for many of them (such as those with a methylenedioxy function), the CAS systematic numbering is different again. In this Dictionary, the simpler members are named and numbered as substituted phenanthrenes, and different alkaloid groups are collected into entries under the parent phenanthrene.



Aristolochic acid VIa

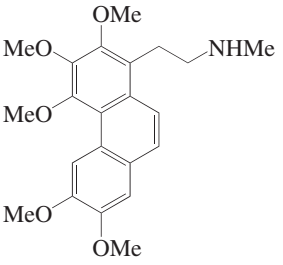
The biosynthetically-related Aristolactams, mostly nonbasic, have a five-membered lactam ring e.g. **Cepharanone A**.

These classes of alkaloid also include some members in which nitrogen has been oxidised to a nitro group, e.g. **Aristolochic acid A**.

Bick, I.R.C. *et al., Alkaloids*, 1985, **24**, 113–152 (*rev*)
Chen, Z., *Alkaloids*, 1987, **31**, 29–66 (*rev*)
Kumar, V. *et al.*, *Nat. Prod. Rep.*, 2003, **20**, 565–583 (*rev*)

Phenanthrene alkaloids (VX2820)

These alkaloids, e.g. **Thalicpureine**, are related to aporphines by fission of the *N*-6*a* bond. The group includes a few alkaloids showing oxidative changes elsewhere in the molecule (**Andesine**; **Chiloenine**; **Santiagonamine**). **Eupolauramine** is related by a further ring-contraction to a lactam.

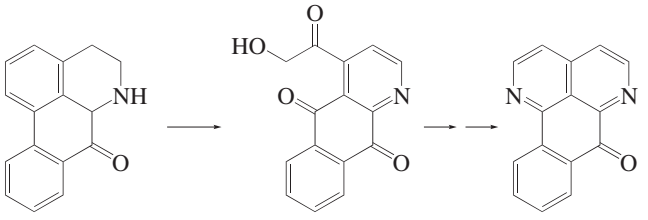


Thalicpureine

Taylor, W.C., *Aust. J. Chem.,* 1984, 37, 1095–1104 (*biosynth*)
Castedo, L. *et al., Alkaloids*, 1990, **39**, 99–138 (*rev*)

Azaaporphine alkaloids (VX2830)

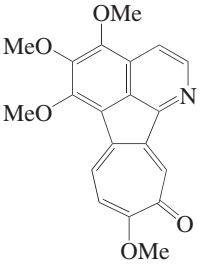
This fairly small group, e.g. **Sampangine**, is thought to arise by A-ring fission of an aporphinoid precursor to an azaanthraquinone intermediate, followed by ring closure.



Sampangine

Azafluoranthene alkaloids (VX2840)

This is another small group of alkaloids found in the Menispermaceae. Two biosynthetic mechanisms have been proposed; cyclisation of a 1-arylisoquinoline (which is considered unlikely since 1-arylisoquinolines are rare) or a more persuasive route involving the decarbonylation of an oxoaporphine. **Imerubrine** and its relatives are then related by an aryl →tropolone expansion. **Eupolauridine** could arise by a combination of this route and the aza-replacement shown above under VX2830.

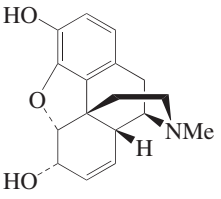


Imerubrine

Buck, K.T., *Alkaloids*, 1984, **23**, 301–327 (*rev*)
Taylor, W.C., *Aust. J. Chem.,* 1984, 37, 1095–1104 (*biosynth*)

Morphine alkaloids (VX2900)

This extremely important group is formed by phenol oxidative coupling of a hydroxylated benzylisoquinoline precursor such as Norlaudanosoline, itself originating from two molecules of tyrosine. The group may be subdivided into bases of the **Salutaridine** type, those related to **Morphine**, which have a 4,5-oxide bridge, and those related to **Sinoacutine**, which are enantiomeric with the salutaridine group. **Acutumine** and its congeners represent an *abeo* shift to a spiro skeleton.

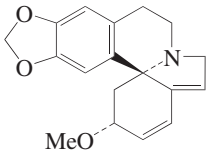


Morphine

Szantay, C. *et al., Alkaloids*, 1994, **45**, 128–232 (*rev*)

Erythrina alkaloids (VX2940)

This group of alkaloids is derived from two tyrosine units by oxidative coupling and intramolecular rearrangement. Alkaloids which contain the erythrinan skeleton (e.g. **Erythraline**) constitute the majority.



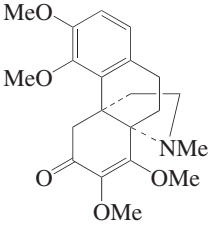
Erythraline

Major structural variations consist of oxidative modification of the aromatic ring to a lactone, e.g. **β-Erythroidine**, and a small group containing an additional nitrogen atom in ring D. These 16-azaerythrinanes, e.g. **Erymelanthine**, are possibly derived biogenetically by *in vivo* oxidation of the aromatic ring, followed by nitrogen uptake and recyclisation. There are also a few so-called dimeric alkaloids that incorporate a tryptophan moiety, e.g. **Erysopinophorine**.

Dyke, S.F. *et al., Alkaloids*, 1981, **18**, 1
Chawla, A.S. *et al., Alkaloids Chem. Biol. Perspect.,* 1991, **9**, 85–154 (*rev*)
Amer, M.E. *et al.*, *J. Nat. Prod.*, 1991, **54**, 329–363 (*rev*)
Tsuda, Y. *et al., Alkaloids*, 1996, **48**, 249–337 (*rev*)

Dibenzazecine and hasubanan alkaloids (VX2980, VX3000)

These two groups may appear at first sight to belong to quite different structural groups, but there is little doubt that biosynthetically they are related. Both groups are derived from two tyrosine units, but their biosynthesis is not simple. A pivotal intermediate appears to be a hydroxylated benzylisoquinoline which can cyclise, by alternative phenol oxidative coupling processes, to a hydroxysalutaridine, or its isomer. This biosynthetic route is exceptional since it would appear that two hydroxy-groups need to be present in one of the aromatic rings. In all other known cases of oxidative coupling, only one hydroxy-group seems to be essential. The biosynthesis has affinities with that of the morphine alkaloids, although there is clearly an important divergence in the later stages.

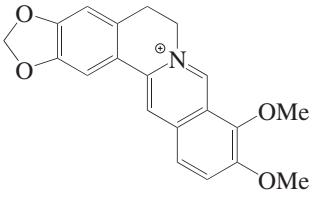


Hasubanonine

Inubushi, Y. *et al., Alkaloids*, 1977, **16**, 393–340 (*Hasubanans, rev*)
Matsui, M., *Alkaloids*, 1988, **33**, 307–347 (*Hasubanans, rev*)

Protoberberine alkaloids (VX3100, VX3240)

These tetracyclic alkaloids are derived from benzylisoquinolines by condensation with a one-carbon unit (the berberine bridge), the additional carbon atom coming from the methionine-derived C_1 pool. The alkaloids most closely related to benzylisoquinolines are the simple tetrahydroprotoberberines, e.g. **Tetrahydropalmatine**, which are dehydrogenated to Protoberberines, such as **Berberine**. There are also alkaloids carrying extra carbon substituents at *C*-12 and *C*-13 such as **Orientalidine** and **Corydaline**, respectively, and ring-opened protoberberines (secoberberines) which can be regarded as benzylisoquinolines with a carbon substituent at *C*-2′. The latter may occur in different oxidation states: as an aldehyde (e.g. **Aobamine**), an alcohol (e.g. **Macrantaline**) or as a carboxylic acid (e.g. **Macrantoridine**).



Berberine

Structure determination in this series, i.e. the assignment of correct regiochemistry to the substituents on the protoberberine ring system, has been a matter of some difficulty in the past and it is possible that some of the current assignments will prove to be incorrect.

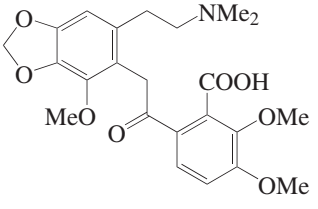
Jeffs, P.W., *Alkaloids*, 1967, **9,** 41–115 (*rev*)
Santavy, F., *Alkaloids*, 1979, **17**, 439–461 (*rev*)
Bhakuni, D.S. *et al., Alkaloids*, 1986, **28**, 95–181 (*rev*)
Beecher, C.W.W. *et al., Alkaloids Chem. Biol. Perspect.,* 1988, **6**, 297–337 (*rev*)
Leitao da Cunha, E.V. *et al., Alkaloids*, 2005, **62**, 1–75 (*rev*)
Grycova, L. *et al., Phytochemistry*, 2007, **68**, 150–175 (*rev*)

Isoindolobenzazepine alkaloids (VX3130)

This is a small group, one example is **Lennoxamine**, which is a popular synthetic target.

Narceine alkaloids (VX3140)

These alkaloids constitute further examples of oxidation products of protoberberines, in which the nitrogen to *C*-8 bond has been cleaved. The narceine group contain an ethanamine chain and, as well as relatives of **Narceine**, include bases which contain an enol lactone function, and those with a higher (**Bicucullinine**) or lower (**Peshawarine**) oxidation level than **Narceine**.

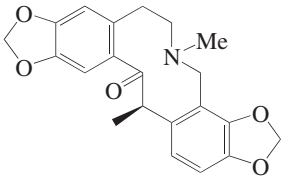


Narceine

Blaskó, G. *et al.*, *J. Nat. Prod.*, 1982, **45**, 105–122 (*rev*)

Protopine alkaloids (VX3160)

These tricyclic bases are simply formed by oxidative ring fission of protoberberine *N*-metho salts. Two of these bases (**Corycavamine**, **Corycavidine**) have an additional methyl group at *C*-13.

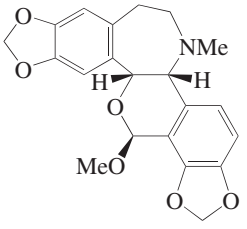


Corycavamine

Guinaudeau, H. *et al.*, *J. Nat. Prod.*, 1982, **45**, 237–246 (*rev*)
Onda, M. *et al., Alkaloids*, 1988, **34**, 181–209 (*rev*)

Rhoeadine alkaloids (VX3180)

This group of alkaloids has been encountered only in *Papaver* and related genera. Their biogenesis appears to be from two tyrosine units, via tetrahydroberberine and protopine intermediates. Oxidative fission of the nitrogen to *C*-8 bond followed by oxidative cyclisation of nitrogen on to *C*-15 and lactol formation results in a ring system in which *C*-8 becomes the lactol carbon atom.



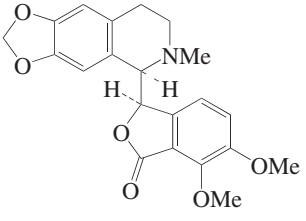
Rhoeadine

CAS formerly employed the semisystematic skeleton Rheadan for naming these alkaloids, but this has been abandoned in favour of systematic nomenclature (Rheadan = [2]Benzopyrano[3,4-*a*][3]benzazepine).

Rönsch, H., *Alkaloids*, 1986, **28**, 1–94 (*rev*)

Phthalideisoquinoline alkaloids (VX3200)

These are closely related to the rhoeadine group, and like them are formed in nature by oxidation of tetrahydroprotoberberines; **Hydrastine** and **Narcotine** are specifically derived from Reticuline via Scoulerine.

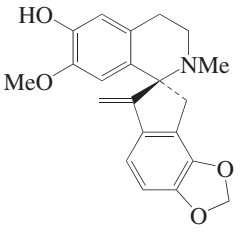


Hydrastine

MacLean, D.B., *Alkaloids*, 1985, **24**, 253–286 (*rev*)

Spirobenzylisoquinoline alkaloids (VX3220)

These alkaloids are derived from protoberberines by a 1,2-shift of *C*-8 from nitrogen to *C*-14. Several mechanisms are possible, but since several of the alkaloids contain oxygen at *C*-13 a route through an enolate ylid is attractive. **Ochotensine** and its relatives contain an additional carbon atom, again derived from methionine. Closely related to this group is **Lahorine**, an indenobenzazepine derivative, which may be derived biogenetically from the spirobenzylisoquinolines. **Hyperectine** represents a unique type of alkaloid substituted with an imidazole group.



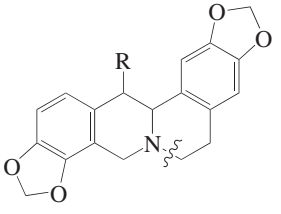
Ochotensine

Presiner, R.M. *et al.*, *J. Nat. Prod.*, 1980, **43**, 305–318 (*rev*)

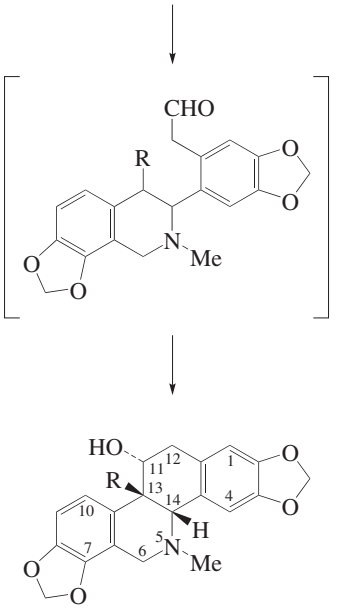
Benzo[*c*]phenanthridine alkaloids (VX3300)

These alkaloids are derived from tetrahydroprotoberberine precursors by oxidative cleavage of the *C*-6 to nitrogen bond, followed by cyclisation of *C*-6 on to position 13. Various oxidation stages exist, e.g. partially reduced benzophenanthridines, as in **Chelidonine**, and fully aromatic systems, as in **Sanguinarine**. There are also secoalkaloids (**Arnottianamide**), dimers, e.g. **Sanguidimerine**, and a group formed by the addition of a carbon substituent to *C*-8 e.g. **Corynolamine**, which in some alkaloids has undergone further elaboration (**Buesgeniine**, **Chelelactam**, **Nitrotyrasanguinarine**).

Several numbering systems have been used for the benzophenanthridine alkaloids, but the one shown below, based on biogenetic considerations, has been adopted in this Dictionary (this is not the numbering scheme for Benzo[*c*]phenanthridine itself).



Tetrahydrocoptisine, R = H
Tetrahydrocorysamine, R = Me



Chelidonine, R = H
Corynoline, R = Me

Simanek, V., *Alkaloids*, 1985, **26**, 185–240 (*rev*)
Iwasa, K. *et al., J.A.C.S.*, 1989, **111**, 7925–7931 (*biosynth*)

Phenethylisoquinoline alkaloids (VX3360)

This group (e.g. **Autumnaline**) arises from a phenethylisoquinoline precursor, which is itself generated by condensation of tyrosine with a C_6-C_3 unit derived from phenylalanine, probably via cinnamic acid.

In addition to the small group of simple phenethylisoquinolines (including dimers; **Jolantinine**; **Melanthioidine**), several other members of the following groups are related to them by further elaboration.

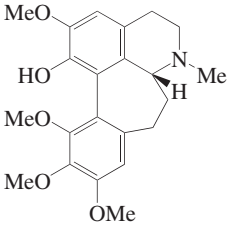
Kametani, T. *et al., Alkaloids*, 1973, **14**, 265–323; 1989, **36**, 172–223 (*revs*)

Homomorphinandieone alkaloids (VX3370)

This is a small group, e.g. **Androcymbine**, which are biosynthetic intermediates between the phenethylisoquinolines and the colchicines (VX3400). Androcymbine arises by phenol oxidative coupling, probably of Autumnaline, by a process analogous to that involved in the biosynthesis of the morphine alkaloids.

Homoaporphine and homoproaporphine alkaloids (VX3380, VX3390)

The sequence from tyrosine and phenylalanine through a phenethylisoquinoline to the homoproaporphines and homoaporphines appears superficially to be exactly analogous to the course of biosynthesis of the aporphine alkaloids. However, although Autumnaline (VX3360 above) is an efficient precursor for both **Kreysiginone** and **Kreysigine** in *Kreysigia multiflora*, dienone intermediates such as Kreysiginone are not involved in the biosynthesis of the homoaporphines, such as Kreysigine. **Bitlisine** represents an anomalous type.

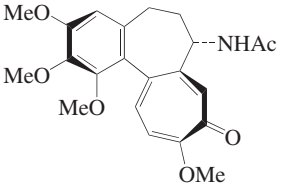


(-)-Kreysigine

Tojo, E., *J. Nat. Prod.*, 1989, **52**, 909–921 (*listing*)

Colchicine alkaloids (VX3400)

Autumnaline (VX3360) and *O*-Methylandrocymbine (VX3370) (but not Androcymbine itself) are efficient precursors for **Colchicine**, an important pharmaceutical and research tool, and the details of the biosynthesis have been studied in detail**.**



Colchicine

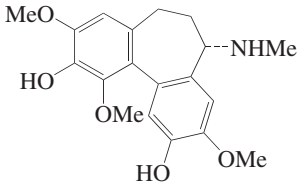
Lumicolchicines are the product of u.v. irradiation of Colchicine, and while they have been reported to occur naturally, they could be regarded as artifacts. The rearrangement product **Demecolcinone** has also been isolated more recently.

Capraro, H.-G. *et al., Alkaloids*, 1984, **23**, 1–72 (*rev*)
Boyè, O. *et al., Alkaloids*, 1992, **41**, 125–176 *(rev)*
Battersby, A.R. *et al., J. Chem. Soc., Perkin Trans. 1*, 1998, 2989–2994; 2995–3001; 3002–3009 (*biosynth*)
Le Hello, C., *Alkaloids*, 2000, **53**, 287–352 (*pharmacol*)

Dibenzocycloheptylamine alkaloids (VX3410)

Dibenzocycloheptylamine alkaloids are found in plants of the genera *Colchicum* and *Androcymbium*. To date only a few are known; these include **Jerusalemine** and **Salimine**. Jerusalemine may be formed through decarbonylation

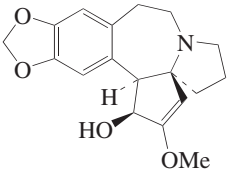
of the tropolone ring of 2-Demethyldemecolcine by a peroxidase system present in the plant, with accompanying oxidation. Salimine, on the other hand, may arise from Colchicine by enzymatic peroxidation of ring C followed by hydroxylation and methylation.



Jerusalemine

Cephalotaxus alkaloids (VX3420)

A group of alkaloids from *Cephalotaxus* spp. (Cephalotaxaceae) in which the hydroaromatic component of the Erythrina group (VX2940 above) has undergone skeletal rearrangement. A typical alkaloid of this group is **Cephalotaxine**. Alkaloids occur in both enantiomeric series and some are potent antitumour agents.

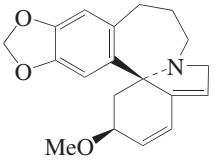


Cephalotaxine

Huang, L., *Alkaloids*, 1984, **23**, 157–227 (*rev*)
Miah, M.A.J., *Alkaloids*, 1998, **51**, 199–269 (*rev*)

Homoerythrina alkaloids (VX3440)

E.g. **Schelhammeridine**. These would appear to be formed by a route analogous to that adopted in the Erythrina group (VX2940). **Selaginoidine** and **Phellibiline** represent unusual types involving oxidative degradation of the aryl ring.



Schelhammeridine

Bick, I.R.C. al, Alkaloids Chem. Biol. Perspect., 1989, **7**, 1–42 (rev)

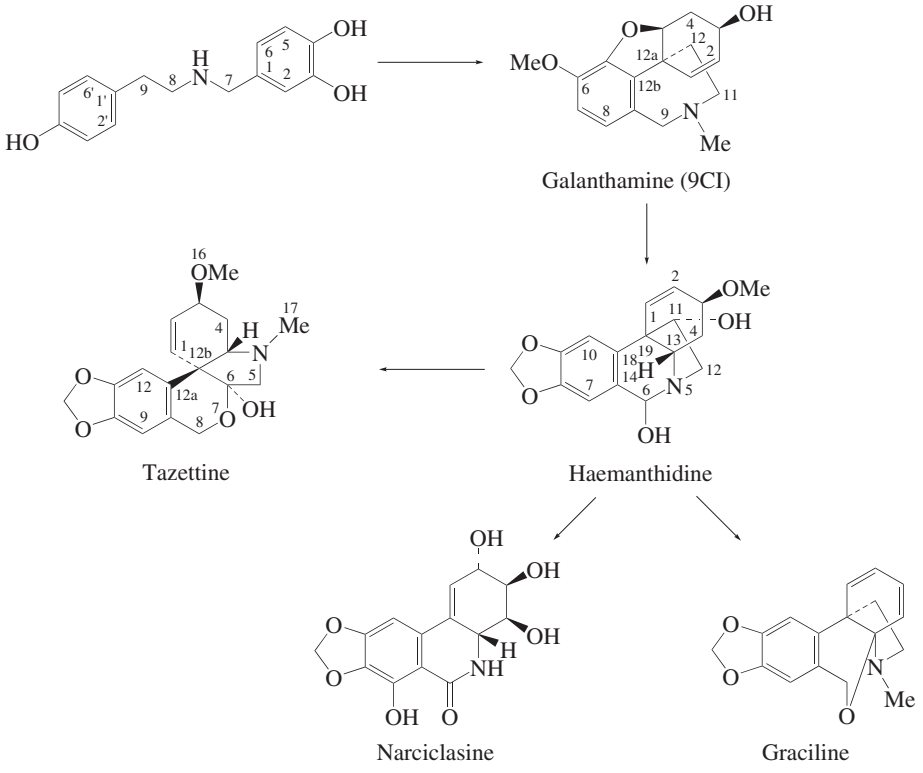
Amaryllidaceae (narcissus) alkaloids (VX3510-VX3599)

This large group of alkaloids is also derived from two tyrosine units which combine, with loss of one carbon atom, to give a benzylphenylethylamine precursor unit, e.g. **Norbelladine**. Various oxidative cyclisation processes, prominent among which are phenol oxidative coupling reactions, can give rise to the major skeletal groups. The unprimed aromatic ring derives from a simple aromatic precursor such as vanillin.

Oxidation of a norbelladine-type precursor at *C*-7, followed by cyclisation at *C*-2′, gives the simple 1-aryltetrahydroisoquinolines (VX3510) exemplified by **Cryptostylines I** and **II**. Some representatives are also found in the Orchidaceae; and both enantiomers of Cryptostyline and of some other Amaryllidaceae alkaloids have been isolated from different plants. Oxidation at the alternative benzylic position (*C*-9) and cyclisation at *C*-6 gives the 4-aryltetrahydroisoquinolines related to **Cherylline** (VX3520). Some 4- aryltetrahydroquinolines (e.g. **Viridicatin**) have been isolated from microorganisms. Oxidative coupling of positions 2 and 2′ gives the apogalanthamine skeleton of **Nivalidine** (VX3530), although this may be an artifact derived from Galanthamine.

Oxidative coupling of *C*-2 with *C*-1′ in Norbelladine gives the **Galanthamine** (VX3540) skeleton which, by a straightforward cyclisation process (nitrogen to position 1), can give rise to the **Haemanthidine** (VX3550) ring system. The more recently discovered **Graciline** subgroup (VX3555) is related to Haemanthidine by *N*(5)-*C*(6) fission and pyran ring formation.

Opening of the carbinolamine function in Haemanthidine, followed by a redox reaction and cyclisation of the oxygen at *C*-6 on to position 11 (Haemanthidine numbering), then affords the **Tazettine** (VX3560) skeleton.



A further possibility is the migration of *C*-18 in the haemanthidine skeleton to position 11, which gives rise to the ring systems present in **Pancracine** (VX3570) type alkaloids.

A double cyclisation of *C*-2 to *C*-3′ and nitrogen to *C*-2′ provides the tetracyclic skeleton characteristic of **Lycorine** and its analogues (VX3580). Further modification of this ring system by oxidative fission of the nitrogen to *C*-7 bond followed by attachment of oxygen at *C*-7 to position 1 (galanthan numbering) then gives rise to the **Lycorenine** group (VX3585). A small number of Lycorenine alkaloids exemplified by **Galanthindole** show aromatisation of the indole portion, leading to a type of non-tryptophan-derived, biogenetically distinct type of indole alkaloid.

The small **Narciclasine** group (VX3590) also stems from Norbelladine, and appears to be formed via Crinine (but not 3-Epicrinine) by loss of the two-carbon bridge and appropriate oxidations.

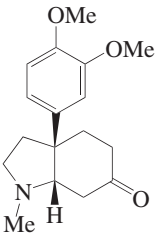
Category VX3599, Miscellaneous Amaryllidaceae alkaloids, includes **Ismine**, an aromatised biaryl derived from a Haemanthidine precursor, and some novel two-nitrogen alkaloids such as **Plicamine**, and **Augustamine**, which cannot be assigned to known subtypes. There also remain a considerable number of alkaloids from earlier work to which structures were not assigned. **Varadine**, isolated in 1979, deserves reinvestigation.

Martin, S.F., *Alkaloids*, 1987, **30**, 252–369 (*rev*)
Hoshino, O., *Alkaloids*, 1998, **51**, 323–424 (*rev*)
Prabhakar, S. *et al., Alkaloids Chem. Biol. Perspect.,* 2001, **15**, 433–572 (*rev*, *synth*)
Bastida, J. *et al., Alkaloids*, 2006, **63**, 87–179 (*rev*)
Jin, Z., *Nat. Prod. Rep.*, 2007, **24**, 886–905 (*rev*)
Unver, N., *Phytochem. Rev.*, 2007, **6**, 125–135 (*rev*, *new types of Amaryllidaceae alkaloid*)

Mesembrenoid alkaloids (VX3600)

Derived from two phenylalanine units with loss of one of the ethanamine sidechains, this smallish group of alkaloids is typified by **Mesembrine**; a second sub-group contains alkaloids in which the pyrrolidine ring has not

been formed, as in **Joubertiamine**. A third variant contains bases in which a pyridine ring has been fused on, as in **Sceletium alkaloid A4** and **Tortuosamine.** Mesembrenoid alkaloids occur in *Sceletium* spp. (Aïzoaceae).

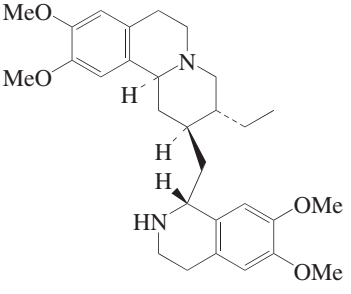


Mesembrine

Jeffs, P.W. *et al., Alkaloids,* 1981, **19**, 1–80 (*rev*)
Jin, Z., *Nat. Prod. Rep.*, 2007, **24**, 886–905 (*rev*)

Emetine (Ipecac) alkaloids (VX3690)

The emetine alkaloids are unique among the isoquinoline group in that they are derived from a monoterpenoid unit via Secologanin in an analogous manner to the monoterpenoid indole alkaloids. They occur in the Alangiaceae, Rubiaceae and Icacinaceae. Incorporation of one phenylalanine/tyrosine unit gives the alkaloids exemplified by **Ipecoside** and **Protoemetine**; the latter, by combination with a second amino acid unit, gives rise to the **Emetine** subgroup. Alternatively, combination with a tryptamine unit gives the typical alkaloids of *Alangium lamarckii,* e.g. **Tubulosine**.

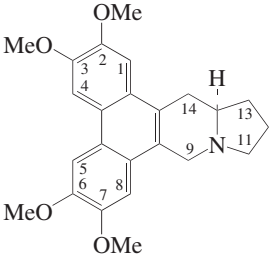


Emetine

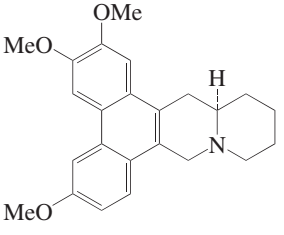
Fujii, T.M. *et al., Alkaloids*, 1983, **22**, 1–50; 1998, **51**, 271–321 (*revs*)
Wiegrebe, W. *et al.*, *J. Nat. Prod.*, 1984, **47**, 397–408 (*rev*)

Phenanthroindolizidine and phenanthroquinolizidine alkaloids (VX3700, VX3760)

These alkaloids are derived from two molecules of phenylalanine or tyrosine, together with, presumably, ornithine (phenanthroindolizidines. e.g. **Tylophorine**) or lysine (phenanthroquinolizidines, e.g. **Cryptopleurine**).



Tylophorine

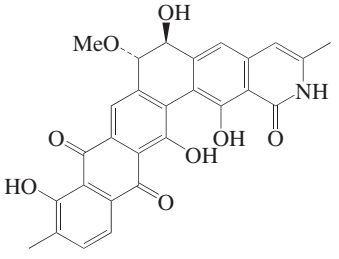


Cryptopleurine

Bick, I.R.C. *et al., Alkaloids*, 1981, **19**, 193–220 (*rev*)
Gellert, E. *et al., Alkaloids Chem. Biol. Perspect.,* 1987, **5**, 55–132 (*rev*)
Michael, J.P., *Nat. Prod. Rep.*, 2004, **21**, 625–649; 2005, **22**, 603–626; 2008, **25**, 139–165 (*revs*)

Ericamycins (VX3900)

This is a relatively small group of polycyclic substances containing a fused isoquinoline system which has been little reviewed. The name Ericamycins is used here; although they are also referred to as the Albofungin group. They are of polyketide origin, with some unusual features to their biosynthesis. Various numbering systems have been used, and the numbering in CAS changes for trivial reasons (presence or absence of additional alicyclic rings, etc.)



Ericamycin

Bockholt, H. *et al., J. Org. Chem.*, 1994, **59**, 2064–2069 (*biosynth*)

INDOLE ALKALOIDS

The group of alkaloids derived from tryptophan constitutes the largest, most varied and most fascinating of all alkaloid groups. The alkaloids include simple tryptamine derivatives, carbazoles (in which the ethanamine chain has been lost), a variety of alkaloids in which tryptamine has combined with one or more prenyl residues, and others in which regular monoterpenoid or diterpenoid units have been incorporated. However, the largest group, and the most extensively studied, is the thousands of alkaloids derived from tryptophan and a monoterpenoid unit based on Secologanin. The classical researches on indole alkaloids were carried out on terrestrial plant alkaloids, and then moved to studies of fungal-derived alkaloids. Indole alkaloids are also numerous in marine organisms, and the range of structural types differs from those found in terrestrial organisms. Many of the 'traditional' indole alkaloid types produced by terrestrial plants have not been found; polyhalogenation is a common feature of these alkaloids.

Simple indole alkaloids (VX4000)

Under this heading appear various unhalogenated (plant) and halogenated (marine) indoles, together with higher molecular weight alkaloids containing unsubstituted indole ring systems, such as **Aplysinopsin** and its relatives (which are also imidazoles). Also included are a variety of simple indoles carrying prenyl, etc. substituents. The simplest plant indole alkaloid is **Gramine**.

Husson, H.-P., *Alkaloids*, 1985, **26**, 1–51 (*rev*)
Higuchi, K. *et al.*, *Nat. Prod. Rep.*, 2007, **24**, 843–865 (*rev*)

Bisindoles (VX4020)

This category includes **Indirubin**, **6,6′-Dibromoindigotin** and other bisindoles; many from marine sources are polybrominated.

Yang, C.G. *et al., Curr. Org. Chem.*, 2004, **8**, 1691–1720 (*rev, bisindole alkaloids from sponges*)
Kam, T.-S. *et al., Alkaloids,* 2006, **63**, 181–337 (*rev*)

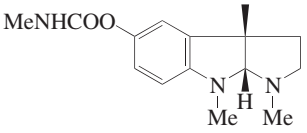
Simple tryptamine alkaloids (VX4040)

Tryptamine itself and some simple relatives have been isolated from marine tissues, and **Bufotenine**, long known as an amphibian product, has more recently been detected in a gorgonian. More highly elaborated marine alkaloids containing a (dehydro)tryptamine residue include the **Kottamides**. There are also some simple tryptamine dimers and oligomers such as the **Gelliusines**.

Somei, M. *et al.*, *Nat. Prod. Rep.*, 2004, **21**, 278–311 (*rev*)
Kawasaki, T. *et al.*, *Nat. Prod. Rep.*, 2005, **22**, 761–793 (*rev*)
Kam, T.-S. *et al., Alkaloids,* 2006, **63**, 181–337 (*rev*)

Cyclotryptamine alkaloids (VX4100)

This group is formally derived from tryptophan by cyclisation and decarboxylation. (The presence of the cyclised form, cyclotryptophan, can be demonstrated in tryptophan solutions). **Physostigmine**, the prototype of this group of alkaloids, was first isolated from *Physostigma venenosum* and has also been produced by *Streptomyces* spp. The alkaloid is characterised by a urethane group which is readily hydrolysed with aqueous base to afford Eseroline. In addition to plant alkaloids with this skeleton, other representatives of this class have been isolated from marine organisms (e.g. the **Flustramines**) and from skin extracts of the Australian frog *Pseudophryne coriacea* (e.g. **Pseudophrynamine A**, where there is evidence for *de novo* biosynthesis by the amphibian rather than a dietary source). A number of interesting oligomers of this class occur in plants, e.g. **Chimonanthine**, a dimer, **Hodgkinsine** (a trimeric species), the **Quadrigemines** (tetramers) and higher.

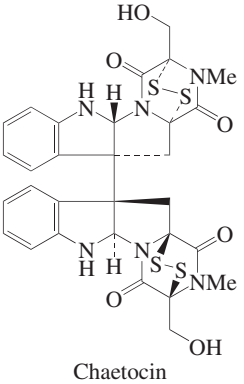


Physostigmine

Anthoni, U. *et al., Alkaloids Chem. Biol. Perspect.*, 1999, **13**, 163–236 (*rev*)
Kam, T.-S. *et al., Alkaloids,* 2006, **63**, 181–337 (*rev*)

Chaetocin alkaloids (VX4110)

Also called Epipolythiodioxopiperazines, although some members of the series lack the polysulfur bridge. These are microbial products, but a considerable number, including the extensive series of **Leptosins**, have been isolated from marine sources. The prototype is **Echinulin**, from *Aspergillus echinulatus*. They are biosynthesised from diketopiperazines, which are cyclic amino acid anhydrides.

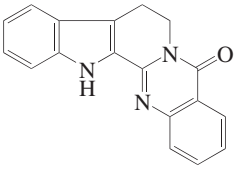


Chaetocin

Williams, R.M. *et al., Top. Curr. Chem.*, 2000, **209**, 97–173 (*prenylated tryptophans, biosynth*)
Somei, M. *et al., Nat. Prod. Rep.*, 2004, **21**, 278–311(*rev*)
Gardiner, D.M. *et al., Microbiology (Reading, U.K.)*, 2005, **151**, 1021–1032 (*biosynth*)
Kawasaki, T. *et al., Nat. Prod. Rep.*, 2005, **22**, 761–793 (*rev*)

Euodia (quinazolinocarbazole) alkaloids (VX4120)

These alkaloids are characteristic of the Rutaceae. The most studied is **Rutaecarpine**, which has useful hypotensive activity. They arise by incorporation of a C_1 unit into a β-carboline precursor.

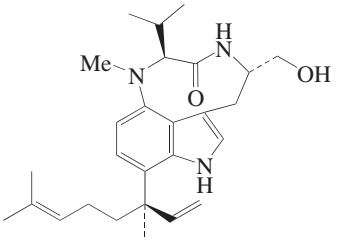


Rutaecarpine

Bergmann, J., *Alkaloids*, 1983, **21**, 29–55 (*rev*)

Indolactam alkaloids (VX4200)

The indolactam group contains an unusual nine-membered lactam ring derived from tryptophan and valine, via *N*-Methyl-L-isoleucyl-L-tryptophanol. The grouping occurs in the tumour-promoting **Teleocidins** and **Lyngbyatoxins**, which are microbial products. These contain a monoterpenoid portion which is derived from glucose, not mevalonate.

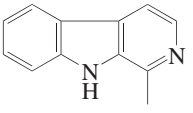


Lyngbyatoxin A

Irie, K *et al., Tet. Lett*., 1990, **31**, 7337–7340; 1998, **39**, 7929–7930 (*biosynth*)

β-Carboline alkaloids (VX4240)

A large number of relatively simple β-carboline (pyrido[3,4-*b*]indole) derivatives occur naturally. These include β-carbolines unsubstituted at *C*-1, e.g. **1,2,3,4-Tetrahydro-6-methoxy-2-methyl-β-carboline**, those containing a methyl group at *C*-1, i.e. the **Harman** group, and several which contain a substituent at *C*-1 and/or *C*-3. The substituents at position 1 may be acyl, carboxyl, or they may be more complex, as in **Perlolyrine**



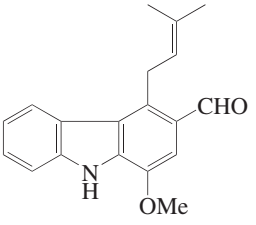
Harman

Long known as terrestrial alkaloids, these are also widespread in marine organisms. β-Carboline (**Norharman**) itself has been found in an ascidian and in dinoflagellates, and examples of simple brominated analogues include the **Eudistomins** and some of the **Arborescidines**. Another group of β-carboline derivatives, presumably derived from tryptophan and cysteine, have been isolated from *Eudistoma olivaceum*, a Caribbean tunicate. The β-Carboline nucleus is also found in some of the **Manzamines** and other more complex alkaloids.

Husson, H.-P., *Alkaloids*, 1985, **26**, 1–51 (*rev*)
Baker, B.J. *et al., Alkaloids Chem. Biol. Perspect.,* 1997, **10**, 357–407 (*rev*, *marine β-carbolines*)
Somei, M. *et al.*, *Nat. Prod. Rep.*, 2004, **21**, 278–311 (*rev*)
Fresneda, P.M. *et al.*, *Synlett*, 2004, 1–17 (*rev*, *synth*)
Kawasaki, T. *et al.*, *Nat. Prod. Rep.*, 2005, **22**, 761–793 (*rev*)

Carbazole alkaloids (VX4300)

Nearly all carbazole alkaloids have a substituent at *C*-3, although **Carbazole** itself and one or two simple marine halogenated derivatives have also been characterised. The main source of carbazole alkaloids are the plants of the Rutaceae subfamily Aurantioideae, especially the genera *Clausenia*, *Murraya* and *Glycosmis*. They are also found in some other higher plants, as well as streptomycetes and cyanobacteria. **3-Methylcarbazole** appears to be the key biosynthetic intermediate, although there is little direct experimental evidence. Elaboration into prenylcarbazoles (e.g. **Ekeberginine**) and dimerisation occurs. They have been well-reviewed.

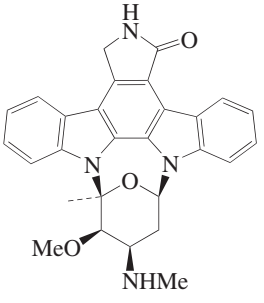


Ekeberginine

Husson, H.-P., *Alkaloids*, 1985, **26**, 1–51 (*rev*)
Chakraborty, D.P., *Alkaloids*, 1993, **44**, 257–364 (*rev*)
Knölker, H.-J. *et al.*, *Chem. Rev.*, 2002, **102**, 4303–4428 (*rev*)
Knölker, H.-J., *Curr. Org. Synth.*, 2004, **1**, 309–331 (*rev*, *synth*)
Somei, M. *et al.*, *Nat. Prod. Rep.*, 2004, **21**, 278–311 (*rev*)
Kawasaki, T. *et al.*, *Nat. Prod. Rep.*, 2005, **22**, 761–793 (*rev*)
Knölker, H.-J. *et al.,*, *Alkaloids*, 2008, **65**, 3–158; 159–180; 189–194; 195–384 (*occurrence*, *biosynth*, *biochem*, *chemistry*)

Indolo[2,3-*a*]carbazole alkaloids (VX4350)

These are a class of alkaloids exemplified by **Staurosporine**, which was first isolated in 1977 from a terrestrial microorganism, and which has since been found to be widely distributed. They are essentially microbial metabolites from a variety of organisms (field-collected or cultured), and show a wide range of biological activities. Others are the **Tjipanazoles** (from the blue-green alga *Tolypothrix tjipanasensis*) and several metabolites from slime moulds of the genus *Arcyria* (e.g. the **Arcyriarubins** and **Arcyriaflavins**). The isolation of **4′-*N*,*O*-Didemethylstaurosporine** from a flatworm *Pseudoceros* sp. is noteworthy. Their biosynthesis has been intensively studied; they are produced from bisindolyl precursors resembling **Violacein**; the indolyl residues are derived from tryptophan via 7-chlorotryptophan followed by an oxidative ring closure.

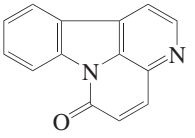


Staurosporine

Gribble, G.W. *et al.*, *Studies in Natural Product Chemistry*, (ed. Atta-ur-Rahman), Elsevier, 1993, **12**, 365 (*rev*)
Walsh, C.T. *et al.*, *Nat. Prod. Rep.*, 2006, **23**, 517–531 (*rev*, *biosynth*)
Sanchez, C. *et al.*, *Nat. Prod. Rep.*, 2006, **23**, 1007–1045 (*rev*, *biosynth*)

Indolonaphthyridine alkaloids (VX4400)

These are the canthinones, a numerous and relatively straightforward subgroup of the β-carbolines, e.g. **Canthin-6-one**, in which an additional C_3 unit is attached between C-1 and the indole nitrogen to form an additional ring. The C-3 unit appears to be derived from ketoglutarate. The group includes a few dimeric examples, e.g. **Haplophytine**. They occur especially in the Simaroubaceae and Rutaceae, and some representatives have been isolated from basidiomycete fungi.



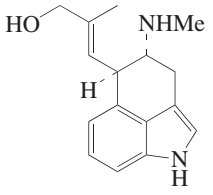
Canthin-6-one

Aragozzini, F. *et al., Plant Cell Rep.*, 1988**, 7**, 213–215 *(biosynth)*
Ohmoto, T. *et al., Alkaloids* 1989, **36**, 135–170 *(rev)*

Ergot alkaloids (VX4460)

These alkaloids, which classically occur in the fungus *Claviceps purpurea* which in the past was responsible for ergotism, are derived from 4-prenyltryptophan by cyclisation to give a tricyclic base related to **Chanoclavine I**, a representative of the simplest subgroup. Further elaboration gives the tetracyclic ergoline skeleton, as in

Elymoclavine, which is present in the majority of alkaloids in this group. The most important alkaloids, many of which have useful medical applications, are more complex peptide alkaloids formed from lysergic acid, in which *C*-17 in the elymoclavine-type precursor has been oxidised to a carboxyl group, by attachment to one or more amino acids. **Ergocristine**, which is based on the ergotaman nucleus, is typical.



Chanoclavine I

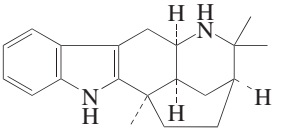
They have been considered exclusively the metabolites of terrestrial fungi and microorganisms, but the recent isolation of the **Pibocines**, simple brominated analogues of Festuclavine, from *Eudistoma ascidians*, have provided a first marine occurrence. The presence of the bromine substituent in the Pibocines argues for their being genuine ascidian products and this is presumably a case of biochemical parallelism.

A few other metabolites, which may also be included in this group, are the result of skeletal rearrangement. **Clavicipitic acid** is one such compound; another is **α-Cyclopiazonic acid**. However, whereas the former is definitely a product of prenyl-tryptophan metabolism the latter, from *Penicillium cyclopium* is not, since it appears to arise from reaction of a tryptophan-acetoacetate unit with prenyl pyrophosphate.

Floss, H.G., *Tetrahedron*, 1976, **32**, 873–912 (*rev*, *biosynth*)
Horwell, D.C., *Tetrahedron*, 1980, **36**, 3123–3149 (*rev*, *synth*)
Ergot Alkaloids: Chemistry, Biological Effects, Biotechnology, (eds. Řehaček, Z. *et al.*), Elsevier, 1990 (*rev*)
Groger, D. *et al., Alkaloids*, 1997, **50**, 171–218 (*rev*, *biochem*)
Somei, M. *et al., Alkaloids*, 2000, **54**, 191–257 (*rev*, *synth*)
Mukherjee, J. *et al., Biochem. Eng. Biotechnol*., 2000, **68**, 1–20 (*rev*)
Schardl, C.L. *et al., Alkaloids*, 2006, **63**, 45–86 (*rev*, *biochem*)

Indoloterpenoid alkaloids (VX4620)

This group consists of a variety of alkaloids in which a tryptamine unit is attached to a terpenoid unit. It includes the *Aristotelia* alkaloids, of which **Aristoteline** is typical, and some other terrestrial alkaloids isolated from *Borreria* spp. There are numerous variations in the structure of the terpenoid part of the skeleton. Also included here are the **Hapalindoles** and related alkaloids mostly from freshwater cyanophytes, which are mostly isocyano/isothiocyanato substituted.



Aristoteline

Alkaloids included in this classification code are not 'monoterpenoid indole alkaloids' in the strict sense as defined below for subsequent categories derived from secologanin. They are also distinguished in the classification code from the Penitrem group, VX6470.

Bick, I.R.C., *Alkaloids*, 1985, **24**, 113–151 (*rev*)
Borschberg, H.J., *Chimia*, 1991, **45**, 325–341 (*rev*)
Borschberg, H.J., *Alkaloids*, 1996, **48**, 190 (*rev*)

MONOTERPENOID-DERIVED INDOLE ALKALOIDS (VX4640-VX5980)

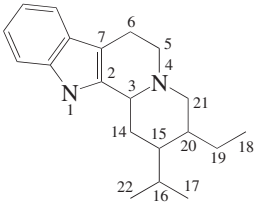
The extremely important and varied group of monoterpenoid indole alkaloids originate from the condensation of tryptophan with secologanin to give **Strictosidine**, which is further elaborated to give the corynanthe alkaloids, together with an impressive array of structural variants which are divided here into the numerous sub-groups

tabulated in Table 1, and which are also described in the category descriptions which follow. Not all of the smaller groups of indole alkaloids are described in detail in the paragraphs which follow. If there is no description, their generic structure can be seen in Table 1, and any important references and reviews concerning them can be accessed from the individual dictionary entries.

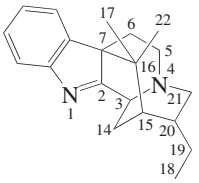
Various schemes have been used to divide the indole alkaloids into major groups based on the major biogenetic branch points. The most widely used recognises classes 1-5, where class 1 contains those skeletons most closely related to secologanin. These schemes are not further referred to in the discussion which follows. Certain biogenetic generalisations can be made, e.g. class 3 alkaloids are found only in the Apocynaceae.

Biogenetic numbering is used throughout this introduction and the individual entries. (Le Men, J.*, et al., Experientia*, 1965, **21**, 508–510; Anon., *Alkaloids*, 2001, **56**, xxiii–xxiv). This almost invariably differs from systematic (e.g. CAS) numbering. However, it allows the biogenetic origin of the individual carbons in the different types of indole alkaloid to be traced in the numerous skeletons. It does have the slight disadvantage that the numbering becomes discontinuous whenever there are new bond-making and bond-breaking processes, as illustrated in the chart. CAS numbering may be encountered for some groups, such as the Iboga alkaloids, but the Le Men biogenetic scheme is preferred by the majority of specialists in the field.

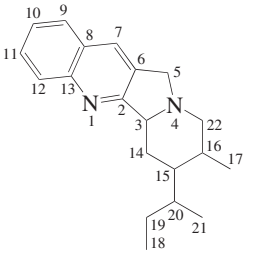
Table 1. Monoterpenoid indole alkaloid skeletons



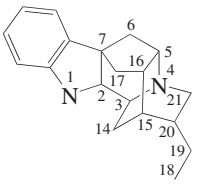
Ajmalicine skeleton
VX4860



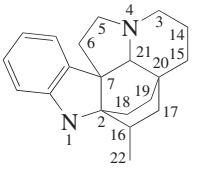
Akuammiline skeleton
VX5200



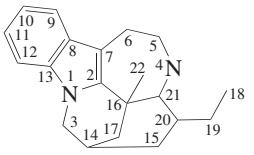
Camptothecin skeleton
VX4700



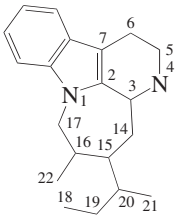
Ajmaline skeleton
VX5120



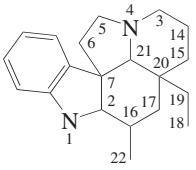
Aspidofractine skeleton
VX5540



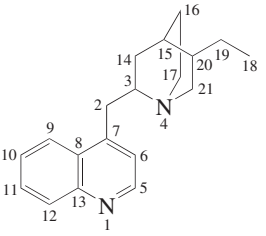
Chippiine skeleton
VX5940



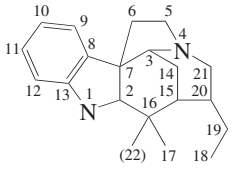
Akageran skeleton
VX4840



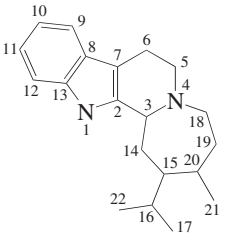
Aspidosperma skeleton
VX5400



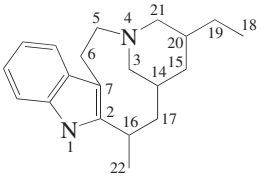
Cinchona skeleton
VX5240



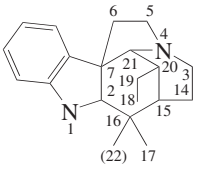
Akuammicine skeleton
VX5260



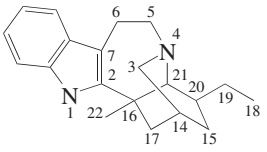
Cadamban skeleton
VX4940



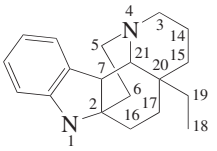
Cleavamine skeleton
VX5820



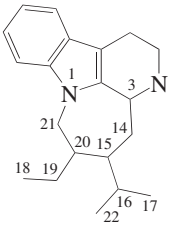
Condylocarpan skeleton
VX5320



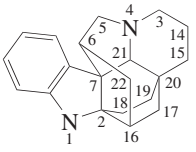
Iboga skeleton
VX5700



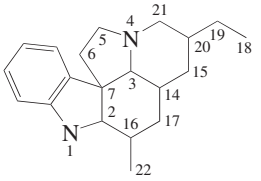
Melonine skeleton
VX5460



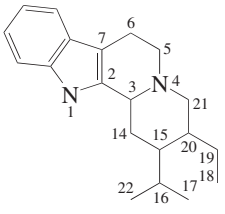
Correantan skeleton
VX4840



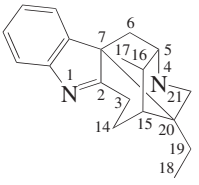
Kopsane skeleton
VX5560



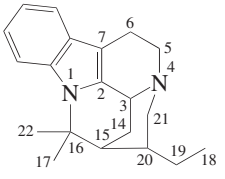
Pandoline skeleton
VX5800



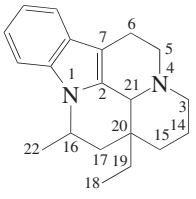
Corynanthean skeleton
VX4800



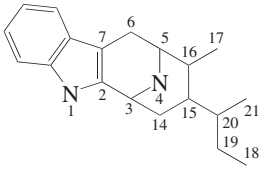
Koumine skeleton
VX5150



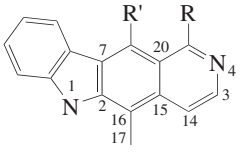
Pleiocarpaman skeleton
VX5220



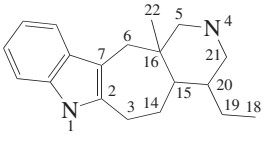
Eburna skeleton
VX5900



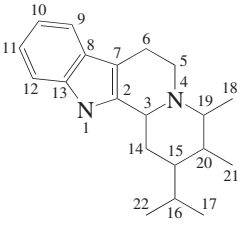
Macroline skeleton
VX4900



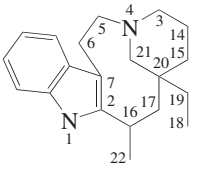
Pyridocarbazole skeleton
VX5840



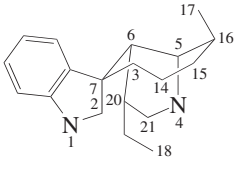
Ervatamia skeleton
VX5180



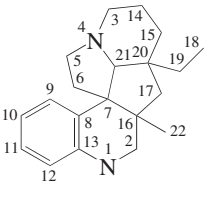
Malindan skeleton
VX4920



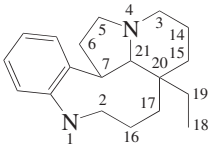
Quebrachamine skeleton
VX5500



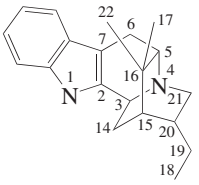
Gelsemium skeleton
VX5000



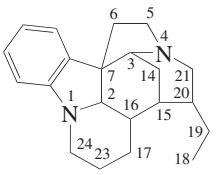
Melodinus skeleton
VX5580



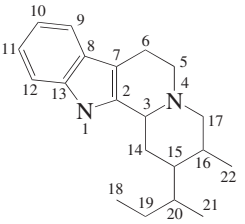
Rhazinilam skeleton
VX5450



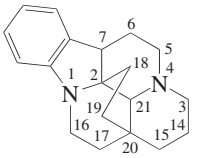
Sarpagine skeleton
VX5100



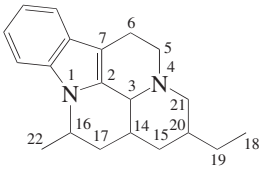
Strychnidine skeleton
VX5280



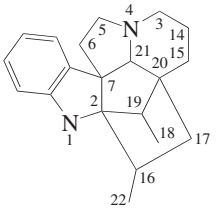
Vallesiachotaman skeleton
VX4960



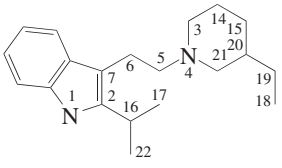
Schizozygine skeleton
VX5930



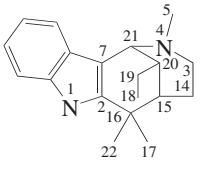
Tacaman skeleton
VX5920



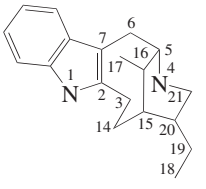
Vindolinine skeleton
VX5550



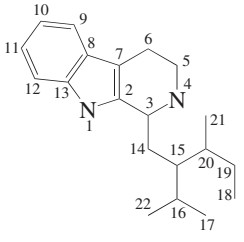
Secodine skeleton
VX5360



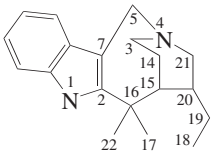
Ulean skeleton
VX5860



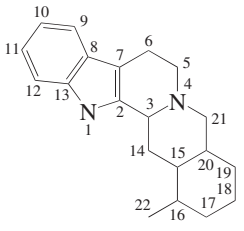
Vobasine skeleton
VX5140



Strictosidine skeleton
VX4640



Vallesaman skeleton
VX5880



Yohimbinoid skeleton
VX5040

In the main types of indole alkaloids having the secologanin subunit in unrearranged form, stereoisomerism at positions 3, 19, and 20 is common, but *C*-15 is invariant based on the corresponding carbon in secologanin. *C*-22 is frequently absent (for example, in all known actual alkaloids of the Pleiocarpamine group VX5220), but is shown in the skeletons.

Some indole alkaloids in various groups are found as variants resulting from indole to indoxole or pseudoindoxyl rearrangement. These are often treated as a separate category, oxindole alkaloids, but here they have been listed under the corresponding parent indole structure type (change from the first edition), as new types continue to be found. For example, **Rhynchophylline**, based on the corynoxan skeleton, is here categorised as a corynanthe alkaloid, VX4800. Another type of rearrangement found in some of the groups (Camptothecins, Cinchona alkaloids) is conversion of the indole to a quinoline nucleus. This means that the resulting structures do not strictly speaking contain an indole nucleus. However, they are considered to be indole alkaloids on biogenetic grounds.

Indole alkaloids are most common in the Apocynaceae, Loganiaceae and Rubiaceae, and are also found in the Alangiaceae, Icacinaceae, Nyssaceae, and possibly other families.

The Chemistry of Heterocyclic Compounds: Indoles-The Monoterpenoid Indole Alkaloids, (ed, Saxton, J.E.), Wiley, 1983, **25**, part 4; supplement, 1994 (*rev, bibl*)
Saxton, J.E., *Nat. Prod. Rep.*, 1997, **14**, 559–590 and earlier (*revs*)
Verpoorte, R. *et al., Alkaloids*, 1997, **49**, 221–299 (*rev*)
Leonard, J., *Nat. Prod. Rep.*, 1999, **16**, 301–318 (*rev*)
O'Connor, S.E. *et al., Nat. Prod. Rep.*, 2006, **23**, 532–537 (*rev, biosynth*)
Szabó, L.F., *J. Phys. Org. Chem.*, 2006, 19, 579–591 (*rev, classification*)
Szabó, L.F., *Molecules*, 2008, 13, 1875–1896 (*rev, classification*)

Strictosidine alkaloids (VX4640)

This category covers alkaloids related to the biogenetic parent alkaloid **Strictosidine** without further carbon-skeleton modification.

Camptothecin alkaloids (VX4700)

These alkaloids, which contain the quinoline ring system, are probably derived from Strictosidine via an intermediate related, possibly, to **Rubescine**. In this case, conversion of the indole group into the quinoline ring involves ring enlargement of ring B at the expense of ring C; otherwise the changes in the formation of **Camptothecin** from Strictosidine are straightforward.

Soepenberg, O. *et al., Alkaloids*, 2003, **60**, 1–50 (*rev*, *biochem*)

Corynanthean alkaloids (VX4800)

This large group, formed by simple cyclisation of the precursor, is exemplified by **Geissoschizine** and **Sitsirikine**.

In corynanthe alkaloids and other groups closely related to them (e.g. yohimbanes, below), stereoisomeric variation is common except at *C*-15, which is invariably 15α*H*-.

Szántay, C. *et al., Alkaloids,* 1986, **27**, 131–269 (*rev*)

Secologanin-derived sesquimer alkaloids (VX4820)

These are derived from two biogenic amine subunits and one monoterpenoid subunit (normal sesquimers), or one biogenic amine subunit and two secologanin units (reversed sesquimers). The greatest number are formed by condensation of a (usually) Corynanthe portion with an additional tryptamine or canthine subunit, as in the **Ochrolifuanines** and **Usambarensines.** The dictionary entries carry the code numbers for the constituent fragments also.

Brown, R.T., *The Chemistry of Heterocyclic Compounds: Indoles-The Monoterpenoid Indole Alkaloids*, (ed. Saxton, J.E.), Wiley, 1983, **25**, part 4, 63–146 (*rev*)
Kam, T.-S. *et al., Alkaloids,* 2006, **63**, 181–337 (*rev*)

Akageran and related alkaloids (VX4840)

This relatively small group of alkaloids typified by **Akagerine** appears to be formed by bond-breaking of a corynanthe precursor followed by formation of a 7-membered ring. Included here are a small number related to **Adifoline**.

Ajmalicine-like alkaloids (VX4860)

These are based on a 17,19-secoyohimban skeleton which is invariably present as an ether (oxayohimban). **Ajmalicine** was formerly considered a key intermediate in indole alkaloid biosynthesis, but this has been disproved.

Lewis, S.E., *Tetrahedron*, 2006, **62**, 8655–8681 (*rev*)

Macroline alkaloids (VX4900)

This group is related to the Akuammilines (VX5200 below) by scission of the *C*-21 to *N*-4 bond. The macroline skeleton mostly occurs in bisindole alkaloids; Macroline itself has not yet been found as a free alkaloid and only a small number of monomeric analogues are known.

Malindan alkaloids; Cadamban alkaloids; Vallesiachotaman alkaloids (VX4920, VX4940, VX4960)

See chart. These are small groups, e.g. **Malindine; Cadambine, Vallesiachotamine**, some alkaloids having an elaborate additional pyridine ring.

Gelsemium alkaloids (VX5000)

These alkaloids contain an oxindole function and a cage-like, hydroaromatic residue which can be imagined, in a formal sense, to arise from an intermediate related to anhydrovobasinediol by formation of a 6,20 bond and rearrangement to an oxindole. The major alkaloids in this group are related to **Gelsemine**; however, a smaller group, characterised by **Gelsedine**, lack the 6,20 bond, and have also lost *C*-21.

Takayama, H. *et al., Alkaloids,* 1997, **49**, 1–78 (*rev*)

Yohimbinoid alkaloids (VX5040)

The Yohimbinoid alkaloids contain a carbocyclic ring E arising through *C*-17 to *C*-18 bond formation in a corynantheine precursor. As in the corynantheine and ajmalicine groups, stereoisomerism at all chiral centres, except *C*-15, is known. Structural variations include the presence of methoxy-groups in the aromatic ring, hydroxy- or acyloxy- groups at *C*-18, as in **Reserpine**, and various degrees of unsaturation in rings C-E, as in **Alstoniline**.

Brown, R.T., *The Chemistry of Heterocyclic Compounds: Indoles-The Monoterpenoid Indole Alkaloids*, (ed. Saxton, J.E.), Wiley, 1983, **25**, part4, 147–199 (*rev*)
Szántay, C. *et al., Alkaloids*, 1986, 27, 131–269 (*rev*)
Baxter, E.W. *et al., Alkaloids Chem. Biol. Perspect.*, 1990, **8**, 197–319 (*rev, synth*)

Sarpagine alkaloids (VX5100)

The Sarpagine (Akuammidine) group, based on the sarpagan nucleus, arises from bond formation between *C*-16 and *C*-5 of the corynantheine precursor and consists of simple **Akuammidine** derivatives and oxindoles obtained following the migration of *C*-3 from *C*-2 to *C*-7, e.g. **Gardneramine.** The closely related Vobasine (VX5140) and Ervatamia (VX5180) groups are now listed separately.

Joule, J.A., *The Chemistry of Heterocyclic Compounds: Indoles-The Monoterpenoid Indole Alkaloids*, (ed. Saxton, J.E.), Wiley, 1983, **25**, part 4, 201–264 (*rev*)
Hamaker, L.K. *et al, Alkaloids Chem. Biol. Perspect.*, 1994, **9**, 23–84 (*rev, synth*)
Lounasmaa, M. *et al., Alkaloids*, 1999, **52**, 103–195 (*rev*)
Lewis, S.E., *Tetrahedron*, 2006, **62**, 8655–8681 (*rev*)

Ajmaline alkaloids (VX5120)

The ajmaline group contains both 5,16 and 7,17 bonds. **Ajmaline** itself is the best known example. Almost all the bases in this group contain the same skeleton, but **Perakine** and its congeners afford a rare structural variation in which the 21,*N* bond has been replaced by a 19,*N* bond.

Lewis, S.E., *Tetrahedron*, 2006, **62**, 8655–8681 (*rev*)
Lounasmaa, M. *et al., Alkaloids*, 2001, **55**, 1–87 (*rev*)

Vobasine alkaloids (VX5140)

These are related to the sarpagine group by C-3 to *N*-4 bond scission.

Koumine alkaloids (VX5150)

These are 7,20-cyclovobasine alkaloids.

Ervatamia alkaloids (VX5180)

These alkaloids (e.g. **Ervatamine**, **Methuenine**) can be successfully produced *in vitro* from vobasine-type alkaloids (VX5140) and this has also been achieved by enzymic preparations. The process involves 5,6- bond cleavage and 6,16- bond formation.

Thai, C. *et al.*, *J.A.C.S.*, 1981, **103**, 4956–4957 (*biosynth*)

Akuammiline alkaloids (VX5200)

The ring system in this group is formed from a precursor of the corynantheine type by bond formation between *C*-16 and *C*-7. In addition to close relatives of **Akuammiline**, variations in this subgroup include alkaloids derived by *C*-3 to *N*-4 bond fission and *C*-2 to *N*-4 bonding, e.g. **Echitamine,** and alkaloids in which the *N*-4 to *C*-5 bond in the Akuammiline skeleton has been severed, e.g. **Aspidodasycarpine**. **Nareline** is a unique alkaloid with an additional bond between *C*-21 and *C*-6.

Lewis, S.E., *Tetrahedron*, 2006, **62**, 8655–8681 (*rev*)

Pleiocarpaman alkaloids (VX5220)

In this group, a corynantheine precursor has cyclised via *C*-16 on to *N*-1, as in **Pleiocarpamine**.

Gilbert, B., *Alkaloids*, 1968, **11**, 205–306 (*rev*)

Cinchona alkaloids (VX5240)

This important and well-known group, which includes the valuable antimalarial quinine, consists of two subgroups: the **Cinchonamine** group, derived from a corynantheine-type precursor by fission of the *N*-4 to *C*-5 bond plus attachment of *N*-4 to *C*-17, and the **Quinine** group, which contain a quinoline ring system generated from a precursor of the cinchonamine type by 2,7-bond fission followed by bonding of *N*-1 to *C*-5. **Corialstonine** represents an abeo-variant.

Grethe, G. *et al., The Chemistry of Heterocyclic Compounds: Indoles-The Monoterpenoid Indole Alkaloids*, (ed. Saxton, J.E.), Wiley, 1983, **25**, part 4, 729–752 (*rev*)
Hoffmann, H.M.R. *et al., Eur. J. Org. Chem.*, 2004, 4293–4312 (*rev*)

Akuammicine (curan) alkaloids (VX5260)

The biogenesis of these alkaloids presumably involves migration of *C*-3 in a corynanthe precursor from *C*-2 to *C*-7, followed by formation of the 2,16-bond. An early alkaloid in the group is therefore **Preakuammicine,** which loses formaldehyde to give **Akuammicine**. Included in this group is **Stemmadenine**, a 3,7-secoalkaloid which appears to be the intermediate on the pathway to the Ulean group below (VX5860).

Strychnidine alkaloids (VX5280)

Formation of the skeleton of these typical *Strychnos* alkaloids involves the addition of two carbon atoms to a curan precursor, presumably, from an acetate unit

Husson, H,-P., *The Chemistry of Heterocyclic Compounds: Indoles-The Monoterpenoid Indole Alkaloids*, (ed. Saxton J.E.), Wiley, 1983, **25**, part 4, 293–330 (*rev*)
Bosch, J. *et al., Alkaloids*, 1996, **48**, 75–189 (*rev*)
Ohshima, T., *Chem. Pharm. Bull.*, 2004, **52**, 1031–1052 (*rev, synth*)
Shibasaki, M. *et al., Alkaloids*, 2007, **64**, 103–138 (*rev, synth*)

Condylocarpan alkaloids (VX5320)

These alkaloids contain a ring system similar to that of the curan group, but are formed by cyclisation of *C*-21 on to *C*-7 in a Corynanthe precursor, rather than the formation of a 3,7 bond; **Condylocarpine** is representative. Note that loss of the ethanamine carbons 5 and 6 gives the ring system of uleans (VX5860 below), which thus suggests an alternative biogenetic route to the one given below. Extensive modification of this skeleton appears to have occurred in the formation of **Goniomine**, which can be postulated to be formed by ring-opening and epoxidation of an indolenine related to Condylocarpine followed by *N*-1 to *C*-19 bonding.

Lounasmaa, M., *Prog. Chem. Org. Nat. Prod.*, 1986, **50**, 27–56 (*rev*)

Secodine alkaloids (VX5360, VX4740)

This group of tricyclic alkaloids is formed by ring-opening of a precursor of the Preakuammicine type. The alkaloids occur in various stages of reduction, and in monomeric and dimeric forms. **Andranginine**, the product of an unusual cyclisation of a dehydrosecodine, may also be included here.

Hájiček, J., *Collect. Czech Chem. Commun.*, 2004, **69**, 1681–1767 (*rev*, *synth*)

Aspidosperma alkaloids (VX5400)

The skeleton of the aspidospermidine alkaloids is formed by cyclisation of a dehydrosecodine, itself obtained from a precursor related to Preakuammicine. The alkaloids in this group are based on several structural variants. A methoxycarbonyl group at *C*-16 may be present (**Tabersonine**) or absent (**Aspidospermine)**; in each case, *C*-18/*C*-19 may be an ethyl group, or may be functionalised, e.g. into a lactone system. **Obscurinervidine** contains a dihydro-1,4-oxazine ring between *N*-1 and *C*-12.

Saxton, J.E., *The Chemistry of Heterocyclic Compounds: Indoles-The Monoterpenoid Indole Alkaloids*, (ed. Saxton, J.E.), Wiley, 1983, **25**, part 4, 331–437 (*rev*)
Overman, L.E. *et al., Alkaloids Chem. Biol. Perspect.*, 1985, **3**, 275–307 (*rev*)
Cordell, G.A., *Alkaloids*, 1997, **50**, 327–384 (*rev*)
Saxton, J.E., *Alkaloids*, 1998, **51**, 1–197 (*rev*)
Hájiček, J., *Collect. Czech Chem. Commun.*, 2004, **69**, 1681–1767 (*rev, synth*)

Rhazinilam alkaloids (VX5450)

These are alkaloidal artifacts related to the aspidosperma group by *C*2-*C*7 fission, the indole functionality thus being lost.

Hájiček, J., *Collect. Czech Chem. Commun.*, 2007, **72**, 821–898 (*rev*, *synth*)

Melonine alkaloids (VX5460)

This small group has undergone a (6 →2) abeo shift from an Aspidosperma-like precursor.

Quebrachamine alkaloids (VX5500)

Quebrachamine alkaloids are derived from the Aspidosperma group (type III skeleton) by fission of the 7,21-bond. They may have lost the *C*-16 methoxycarbonyl group (e.g. **Quebrachamine**) or it may have been retained, as in **Vincadine**.

Hájiček, J., *Collect. Czech Chem. Commun.*, 2004, **69**, 1681–1767; 2007, **72**, 821–898 (*rev*, *synth*)

Aspidofractine alkaloids (VX5540)

These are related to the Aspidosperma group by formation of a *C*-2 to *C*-18 bond.

Hájiček, J., *Collect. Czech Chem. Commun.*, 2007, **72**, 821–898 (*rev*, *synth*)

Vindolinine alkaloids (VX5550)

These are related to the Aspidosperma group by formation of a *C*-2 to *C*-19 bond.

Kopsane alkaloids (VX5560)

The skeleton of the kopsane group of alkaloids is simply formed by attachment of *C*-22 (the methoxycarbonyl carbon) of Venalstonine to *C*-6, as in **Kopsine**. Skeletal variations include the alternative acyloin structure, as in **Fruticosine**, in which *C*-22 is attached to *C*-17.

Hájiček, J., *Collect. Czech Chem. Commun.*, 2007, **72**, 821–898 (*rev*, *synth*)
Kam, T. S. *et al., Alkaloids,* 2008, **66**, 1–111 *(rev)*

Melodinus alkaloids (VX5580)

These have been isolated only from *Melodinus* and *Kopsia* spp. (e.g. **Meloscine**, **Scandine**). They are plausibly biosynthesised from alkaloids of the Tabersonine type (VX5400). There are two known dimer alkaloids.

Hugel, G. *et al., J.O.C.*, 1986, **51**, 1594–1595 (*biosynth*)

Iboga alkaloids (VX5700)

A further mode of cyclisation of a secodine-type precursor involves formation of a 16,21 bond, which gives rise to the bridged ring system (type II indole alkaloid) found in **Ibogamine**, **Catharanthine**, and numerous related alkaloids. They are often components of heterodimer indole alkaloids.

This group of alkaloids exists in both enantiomeric series which may be defined by the chirality of *C*-14. The best-known example of the 14*S* series is Catharanthine. Most other alkaloids of this group belong to the 14*R* series. Many alkaloids retain the methoxycarbonyl group, whereas others (e.g. Ibogamine) have lost it. Other variations include oxidation at *C*-7 to give the related hydroxyindolenines, e.g. **Iboxygaine hydroxyindolenine**; oxidation followed by rearrangement to the related indoxyl, e.g. **Desmethoxyiboluteine**, oxidative rearrangement to the corresponding oxindole, as in **Tabernoxidine**; and oxidation at *C*-19, *C*-3, *C* -5, or *C*-6 with, occasionally, ether formation between oxidised positions.

Also **16-Hydroxyalloibogamine**, the only alkaloid having the analogous but isomeric bridged ring system (type III skeleton) is also ranked into this class of alkaloids.

Cordell, G.A., *The Chemistry of Heterocyclic Compounds: Indoles-The Monoterpenoid Indole Alkaloids*, (ed. Saxton, J.E.), Wiley, 1983, **25**, part 4, 467–537 (*rev*)
Popik, P. *et al., Alkaloids*, 1998, **52**, 197–231 (*rev, pharmacol*)
Sundberg, R.J. *et al., Alkaloids*, 2002, **59**, 281–366 (*rev*)
Hájiček, J., *Collect. Czech Chem. Commun.*, 2004, **69**, 1681–1767 (*rev, synth*)

Pandoline alkaloids (VX5800)

The Pandoline (pseudoaspidospermidine) (type II indole alkaloid) nucleus can be imagined to be formed by cyclisation of a secodine derivative isomeric with that postulated as a precursor for Aspidospermidine. **Ibophyllidine** represents an obvious ring contraction, **Iboxyphylline** a ring extension.

Cleavamine alkaloids (VX5820)

The small **Cleavamine** group is more often encountered as degradation products of other alkaloids; these may arise by fission of the 3,7-bond. Alternatively, and perhaps more likely, this ring system can be generated by fission of the 16,21-bond in an Iboga skeleton (see below).

Hájiček, J., *Collect. Czech Chem. Commun.*, 2004, **69**, 1681–1767; 2007, **72**, 821–898 (*rev*, *synth*)

Pyridocarbazole alkaloids (VX5840)

This small and pharmacologically important group is based on the 6*H*-pyrido[4,3-*b*]carbazole ring system, and is exemplified by **Ellipticine** and **Olivacine**. Although these aromatic bases may superficially seem to be unrelated to the mainstream indole monoterpenoid alkaloids a possible biogenesis from Stemmadenine can be postulated. However, the details of the biosynthesis do not appear to have been investigated experimentally since the 1970s, when only low incorporation of tryptophan was found.

There are two subtypes in that Ellipticine is derived biogenetically from the Ajmalicine type (VX4860) and Olivacine from the Malindan type (VX4920). Because of this biogenetic diversity and their separation structurally from the mainstream indole alkaloids, systematic (CAS) numbering is now usually employed in the literature for the ellipticine nucleus.

Gribble, G.W. *et al.*, *Heterocycles*, 1985, **23**, 1277–1315 (*rev*, *synth*)
Kansai, V.K. *et al.*, *Tetrahedron*, 1986, **42**, 2389–2408 (*rev*)
Alvarez, M. *et al., Alkaloids*, 2001, **57**, 235–272 (*rev*)

Ulean and Vallesaman alkaloids (VX5860, VX5880)

These alkaloids may well arise, like the Ellipticine group, from an oxidative fission of a Stemmadenine-like intermediate. The genesis of the three types, e.g. **Vallesamine**, **Uleine**, and **Appariceine** can thus readily be explained.

Joule, J.A., *The Chemistry of Heterocyclic Compounds: Indoles-The Monoterpenoid Indole Alkaloids*, (ed. Saxton, J.E.), Wiley, 1983, **25**, part 4, 265–292 (*rev*)
Alvarez, M. *et al., Alkaloids*, 2001, **57**, 235–271 (*rev*)

Eburna and Schizozygine alkaloids (VX5900; VX5930)

The skeleton of the Eburna alkaloids is generated by rearrangement of the aspidospermidine ring system, involving migration of *C*-21 from *C*-7 to *C*-2, fission of the 2,16-bond, and attachment of *C*-16 to *N*-1. This rearrangement has been very successfully imitated *in vitro*. **Vincamine** and its derivatives retain the methoxycarbonyl group; **Eburnamine** and **Eburnamenine** have lost it. There are some alkaloids in which *C*-18 or *C*-19 is oxidised, e.g. **Cuanzine**.

The **Schizozygine** group (VX5930) contain an additional bond between *C*-2 and *C*-18. Included are **Andrangine** and **Vallesamidine**, which can be considered as secoschizozygines or as Eburna alkaloids in which *C*-21 has simply migrated to *C*-2.

Saxton, J.E., *The Chemistry of Heterocyclic Compounds: Indoles-The Monoterpenoid Indole Alkaloids*, (ed. Saxton, J.E.), Wiley, 1983, **25**, part 4, 439–465 (*rev*)
Lounasmaa, M. *et al., Alkaloids*, 1992, **42**, 1–116 (*rev*)

Tacaman alkaloids (VX5920)

A small group is apparently obtained by processes analogous to the formation of the Eburna group, but from a precursor to a pseudoaspidospermidine (type II skeleton) derivative, by the formation of new bonds at *C*-2 → *C*-3 and *C*-14 → *C*-17. Again, *C*-22 may be present (**Tacamine**) or absent (**Tacamonine**).

Danieli, B. *et al., Alkaloids*, 1986, 27, 95–103 (*rev*)

Chippiine alkaloids (VX5940)

These represent a numerically limited group. Their structures can be derived from an Iboga-type precursor by cleavage of the *C*-3 to *N*-4 bond and formation of an *N*-1 to *C*-3 bond.

Bisindole alkaloids (VX5980)

This large group of complex alkaloids consists of a wide variety of structures, depending on the identity of the monomeric alkaloid components. The individual alkaloids are normally coded in addition with the Type of Compound codes relevant to the component halves of the molecule. (e.g. **Conodurine** = a Vobasine (VX5140)-Iboga (VX5700) dimer). The most practically important indole alkaloid dimers are those of the Cleavamine-Aspidosperma group. **Vinblastine** and **Vincristine** are the best known examples.

Whilst in these dimers and many others the monomeric units are linked by single covalent bonds, in others the assembly is more complex. The **Vobtusine** group, for example, is composed of two aspidospermidine-type units linked by a spirocyclic system involving *C*-14 (two bonds) of one unit with *C*-22′ of another unit, together with an additional carbon atom attached to *N*-1′. A small group contains three inter-unit bonds as in **Ervafoline**.

Other types of dimeric alkaloids from *Strychnos* Spp. form the major constituents of calabash curare. These are composed of two units linked via *N*-1 and *C*-17′, and *N* -1′ and *C*-17; ***C*-Toxiferine** is representative. In some alkaloids additional bonds are present; for example, ***C*-Curarine** has an ether bridge between *C*-16 and *C*-16′, and ***C*-Calebassine** has an additional carbon-carbon bond between *C*-17 and *C*-17′.

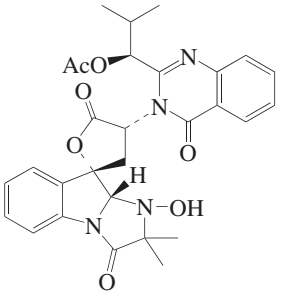
Cordell, G.A, *Alkaloids,* 1981, **20**, 3-295; 1983, **25,** 539–728 (*revs*)
Hájiček, J., *Collect. Czech Chem. Commun.*, 2004, **69**, 1681–1767; 2007, **72**, 821–898 (*rev*, *synth*)
Kam, T.-S. *et al., Alkaloids*, 2006, **63**, 181–337 (*rev*)

Isoindoles (VX6000)

This is a heterogeneous group including terpenoids which are also coded as such. Small isoindoles include microbial products, e.g. **Cichorine.**

Tryptoquivalines (VX6030)

The **Tryptoquivalines**, which are toxic metabolites from *Aspergillus clavatus*, are derived from anthranilic acid and tryptophan precursors, and half of the molecule is related to the Quinazoline alkaloids above (VX1600). The reviews of quinazoline alkaloids cited there normally cover the tryptoquivalines.



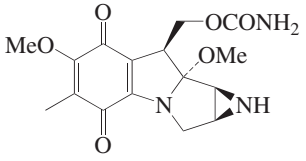
Tryptoquivaline A

There has been some uncertainty concerning their absolute configurations. It seems now established that they all have the (2*S*,3*S*,12*R*)- stereochemistry, but in the case of a few of the tryptoquivalines corrected stereochemistries have not been published.

The group also includes some more recently isolated analogues such as the **Fumiquinazolines.**

Mitomycins (VX6050)

This is a small group of purple microbial pigments (their typical representative is **Mitomycin A**) showing antitumour properties. They are usually quinones containing an aziridinyl function. They are biosynthesised from 3-amino-5-hydroxybenzoic acid, the aziridine nitrogen coming from glucosamine. The **Albomitomycins**, rearrangement products of mitomycins, contain a diazatricyclic ring system unique among natural products.

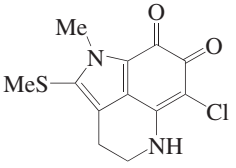


Mitomycin A

Remers, W.A. *et Alkaloids Chem. Biol. Perspect.*, 1987, **5**, 1–74 (*rev*)

Pyrrolo[4,3,2-*de*]quinoline alkaloids (VX6070)

This skeleton is characteristic of and almost exclusive to marine (sponge) alkaloids. Major subgroups include the simple **Batzellines**, **Makaluvamines** and **Damirones**, and those in which the pyrroloquinoline nucleus forms part of a larger skeleton such as in the **Discorhabdins** and the closely related **Epinardines**. They are thought to be biosynthesised from tyrosine via **3,5-Dibromoverongiaquinol**.



Batzelline A

Ding, Q. *et al.*, *Curr. Med. Chem.*, 1999, **6**, 1–27 (*rev*)

Miscellaneous indole alkaloids (VX6100)

Under this heading are listed indole alkaloids for which a classification remains premature, either because they currently belong to a very limited subtype, and/or because there has been no work on their biosynthesis. Many of them probably represent minor branches on the biosynthetic pathways to the larger groups; for example the **Rhopaladins** are probably biosynthetically close to the indolo[2,3-α]carbazole alkaloids (VX4350), but this is not yet established experimentally. **Granulatimide** may represent a lower benzologue of these alkaloids incorporating a histamine residue in place of one tryptamine. Plant alkaloids representing variations in skeleton of which only one or two examples are known include **Pandine**, **Iboxyphylline** and **Ibophyllidine** (all skeletal variations apparently related to the Pandoline type). Others are degraded indole alkaloids of unknown parental type.

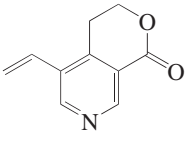
Somei, M. *et al.*, *Nat. Prod. Rep.*, 2004, **21**, 278–311 (*rev*)
Kawasaki, T. *et al.*, *Nat. Prod. Rep.*, 2005, **22**, 761–793 (*rev*)

TERPENOID ALKALOIDS (VX6240–VX6500)

Further information on terpenoid structures and biosynthesis generally can be found in the *Dictionary of Natural Products.*

Monoterpenoid alkaloids (VX6240)

This is a diverse group. The carbon skeleton is mostly $C_{10,}$ but in many alkaloids it is C_9 and in some it is C_{11}. There are two major groups; those derived from iridodial-like precursors, e.g. **α-Skytanthine**, and those derived from Secologanin, typified by **Gentianine**, **Bakankoside**, and **Gentioflavine**. However, this heading also covers a variety of miscellaneous amines and amides based on small terpenoid skeletons, e.g. **Alfileramine** (menthane-type) and **Fontaineine** (simple acyclic monoterpenoid).



Gentianine

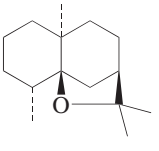
Cordell, G.A., *Alkaloids*, 1998, **52**, 260–327 (*rev*)

Sesquiterpene alkaloids (VX6300)

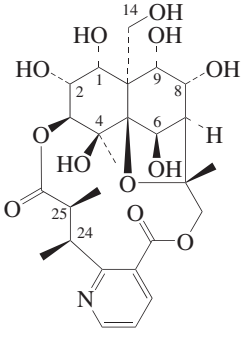
A variety of sesquiterpene alkaloids have been isolated from plant (e.g. **Guaipyridine**; **Muscicapines**) and marine sources and are nearly all relatively simple amine or amide derivatives of well-known sesquiterpenoid (or meroterpenoid) skeletons. They may be acyclic (e.g. **Axinyssimides**), monocyclic (**Smenospongine**) or bicyclic (**Nakijiquinones**).

Macrocyclic sesquiterpene alkaloids (VX6320)

This group of plant alkaloids contains the ring system of dihydroagarofuran, a sesquiterpene of the eudesmane group, esterified with nicotinic acid, or with any of several dicarboxylic acids. Most of the alkaloids, which occur in *Euonymus* and *Maytenus* species among others, contain a medium ring dilactone involving one of the dicarboxylic acids; **Evonine** is typical. Some alkaloids with two dilactone medium rings have also been isolated.



Dihydroagarofuran



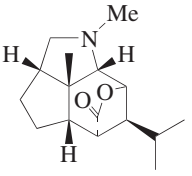
Per(deacyl)euojaponin

In the dictionary entries, series of these alkaloids which are esters of the same basic skeleton are usually shown as derivatives of the parent polyol, such as **Per(deacyl)euojaponin** (parent alkaloidal polyol of the **Euojaponins** and of various other alkaloids, e.g. **Cathedulins**). The names chosen for these parent structures (often uncharacterised as such) in the Dictionary are chemically reasonable, but may not be found elsewhere in the literature.

Dendrobium alkaloids (VX6340)

These alkaloids fall biogenetically into two quite distinct groups; a group of sesquiterpene alkaloids typified by **Dendrobine**, from *Dendrobium nobile*, with variants involving oxygenation at *C*-2 or *C*-6, and fission of the

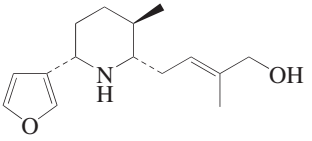
nitrogen to *C*-2 bond, and a group of indolizidine bases exemplified by **Crepidamine** from *Dendrobium crepidatum*. These are probably not terpenoid in origin, and may be derived from shikimic acid, acetate, and ornithine.



Dendrobine

Nuphar alkaloids (VX6360)

The *Nuphar* (water-lily) alkaloids contain a normal sesquiterpene carbon skeleton, and can be divided into two main sub-groups: furylpiperidines, e.g. **Nuphamine**; and furylquinolizidines, e.g. **Deoxynupharidine**. The latter group includes a number of sulfur-containing dimers such as **Neothiobinupharidine**, plus a few miscellaneous bases. A number of these alkaloids have also been isolated from the scent glands of beavers, *Castor* spp., acquired presumably by a dietary route.

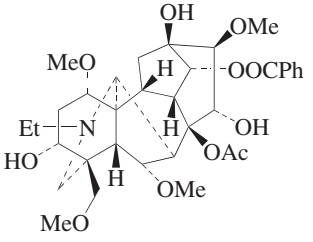


Nuphamine

Wróbel, J.T., *Alkaloids*, 1977, **16**, 181–214 (*rev*)
Cybulski, J. *et al., Alkaloids*, 1989, **35**, 215–257 (*rev*)
Michael, J.P., *Nat. Prod. Rep.*, 2004, **21**, 625–649; 2005, **22**, 603–626; 2008, **25**, 139–165 (*revs*)

C_{19} and C_{20} Diterpenoid alkaloids and 4-nor analogues (VX6400, VX6420)

These alkaloids are very numerous and include some highly toxic bases with strong physiological properties, such as **Aconitine**. Although they are obviously diterpenoid in origin, few biogenetic studies have been reported, apart from relatively early reports of the incorporation of acetate and mevalonate into **Browniine** and **Lycoctonine**, and of mevalonate and glycine into **Delcosine**. A recent hypothesis suggests their formation directly from the complete diterpenoids by a process involving Mannich reactions.



Aconitine

The first group (VX6400) is based on the C_{19} aconitane ring system, characteristic of the Ranunculaceae. Alkaloids of this group are fairly homogeneous structurally and differ only in the pattern of substitution by hydroxy, methoxy, acetyloxy, benzoyloxy and, frequently, anthranilate-based groups (e.g. **Delsemines**), although recently other structural variations such as unsaturation and epoxidation have been found.

The simpler alkaloids are collected in the Dictionary under the parent aconitane skeleton. Note that in the CAS parent aconitane, *C*-18 is missing, and following CAS nomenclature, the parent skeleton is 4-methylaconitane. The extra carbon atom is numbered *C*-18.

A few alkaloids belong to the heteratisane group, formed from the aconitane framework by oxidative fission of the 13,14-bond.

The second major group are the C_{20} alkaloids (VX6420), based on atidane and more widely distributed among dicot families. Few alkaloids, as it happens, are based on the parent ring system, since many skeletal variations

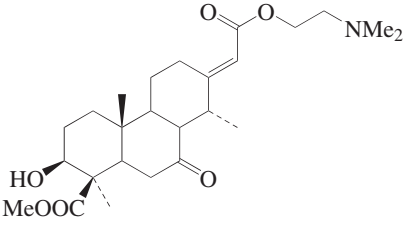
are known. These include the hetisans (e.g. **Davisine**), in which additional rings are introduced into the atidane ring system by formation of 14,20 and *N*,6 bonds. The unmodified hetisans are presented in the Dictionary under the systematic hetisan name. There is a small group of atidane 7,20 cyclic ethers (**Ajaconine**) and various other modifications involving ring fission, contraction, migration etc. of the hetisan skeleton (**Denudatine**, **Delnudine**, **Cardionidine**, etc.)

Another major modification leads to the veatchine skeleton, as in **Cuauchichicine**. There are also 7,20-Cycloveatchine bases, e.g. **Lucidusculine**, 14,20-Cycloveatchine bases, e.g. **Anopterine** and miscellaneous bases.

Pelletier, S.W. *et al., Alkaloids*, 1979, **17**, 2–104; 1981, **18**, 100–216 (*revs*)
Benn, M.H. *et al., Alkaloids Chem. Biol. Perspect.,* 1983, **1**, 153–210 (*toxicity*, *pharmacology*)
Amiya, T. *et al.*, *Alkaloids*, 1988, **34**, 95–179 *(rev)*
Joshi, B.S. *et al.*, *Alkaloids Chem. Biol. Perspect.,* 1999, **13**, 289–370; 2001, **15**, 1–414 (*revs*, *pmr*, *cmr*)
Wang, F. P. *et al.*, *Alkaloids*, 2002, **59**, 1–280 *(rev)*

Erythrophleum alkaloids (VX6460)

The alkaloids of *Erythrophleum* spp. (Fabaceae) are based on the diterpene skeleton related to Cassaic acid. The oxidation pattern is relatively simple, involving only *C*-3, *C*-6, *C*-7 and *C*-19. In most alkaloids, *C*-19 is at the carboxylic acid oxidation level. All the alkaloids are esters or amides of a *C*-16 carboxylic acid with *N*,*N*-dimethylethanolamine or *N*-methylethanolamine. **Erythrophlamine** is a typical example. There have been some confusing structure revisions in this series; they have been little studied recently.

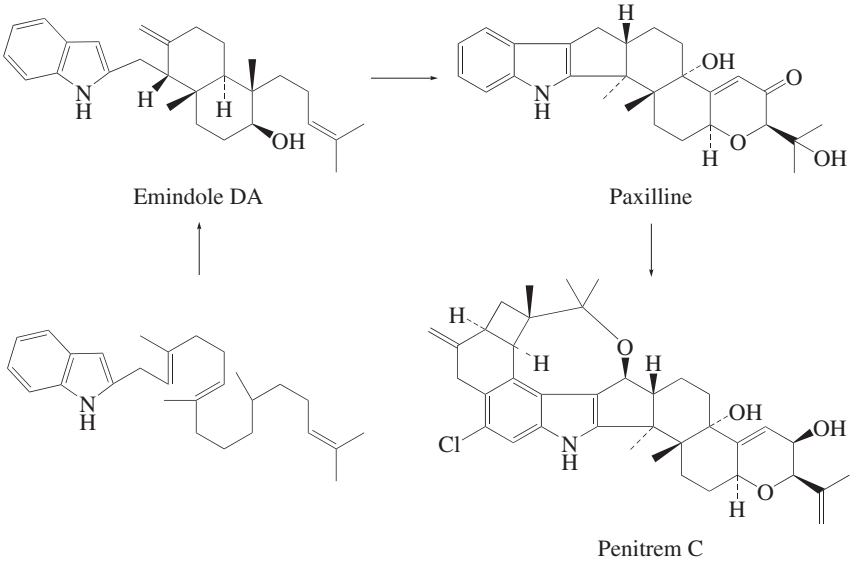


Erythrophlamine

Morin, R.B., *Alkaloids*, 1967, **10**, 287–303 (*rev*)

Penitrems (VX6470)

This heading covers indoloterpenoid metabolites from microorganisms including the **Penitrems**, **Emindoles**, **Nodulisporic acids** and others. They are mostly toxic, many with tremorigenic activity. The intermediary of **Emindole DA** and **Paxilline** in their biosynthesis from geranylindole has been recently demonstrated. **Shearinine I** is an interesting ring-cleaved compound which has lost the indolo functionality.



Emindole DA

Paxilline

Penitrem C

Steyn, P.S., *Prog. Chem. Org. Nat. Prod.*,1985, **48**,1–80 (*rev*)
Sings, H. *et al.*, *Alkaloids,* 2003, **60**, 51–163 (*rev*)
Fueki, S. *et al.*, *Org. Lett.*, 2004, **6**, 2697–2700 (*biosynth*)

Miscellaneous diterpenoid alkaloids (VX6480)

This category includes diterpenes linked by an ester function to a non-terpenoid nitrogen-containing unit. Examples are **Ryanodine**, **Concavine** and the **Decaturins**. The **Agelasines**, **Agelasimines** and related alkaloids are a series of guanidinoid- or purinoid- substituted simple acyclic, mono- or bi-cyclic terpenoids, and there are one or two simple amino-substituted cembranoids.

Appendino, G. *et al., Alkaloids Chem. Biol. Perspect.*, 1996, **11**, 237–268 (*rev, Taxus alkaloids*)

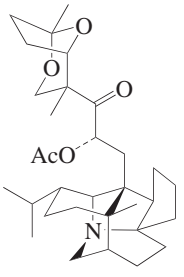
Sesterterpene alkaloids (VX6490)

A few nitrogen-containing sesterterpenoids are present in marine organisms, however, the number so far characterised is relatively low in comparison with the number of nitrogen-free tetracyclic sesterterpenes, which are common in marine organisms. The **Spongidines** and the **Molliorins**, in which a ring-E pyridine or pyrrole ring, respectively, is fused to one of the common tetracyclic skeletons, are the main types. There are also linear pyrrolic compounds including the **Sarcotrines** and **Sarcotragins** which are considered to have a common biosynthetic origin, the latter being degraded norsesterterpenoids.

Liu, Y. *et al.*, *Nat. Prod. Rep.*, 2006, **23**, 630–651 (*rev*)

Daphniphylline alkaloids (VX6500)

The alkaloids of *Daphniphyllum* species constitute a unique group of complex bases derived from squalene. They are structurally diverse and a number of different numbering schemes have been used in the literature. The structures given in this Dictionary and their numbering have been revised to follow the scheme given by Kobayashi and Morita (2003), which is based on current knowledge about their biosynthesis. This system is based on various cyclisations of squalene-like intermediates, which have been modelled with success *in vitro*. The origin of the nitrogen atom is not certain; it may come from pyridoxamine or from an amino acid.



Daphniphylline

The first Edition of this Dictionary distinguished six structural subtypes of Daphniphyllum alkaloid. However, since new structural variations continue to be discovered regularly (e.g. **Bukittinggine**, **Calydaphninone**, containing a unique 4-membered ring), it is best to browse the individual entries or to consult the reviews listed below.

Yamamura, S., *Alkaloids*, 1986, **29**, 265–286 (*rev*)
Kobayashi, J. *et al.*, *Alkaloids*, 2003, **60**, 165–205 (*rev*, *biosynth*)
Jin, Z., *Nat. Prod. Rep.*, 2003, **20**, 608–614 (*rev*)

STEROIDAL ALKALOIDS (VX6640-VX6790)

The large number of steroidal alkaloids may be divided into several subgroups, of which the simplest are various types of aminopregnanes. Steroidal alkaloids are typically from higher plants, and are most numerous in the Apocynaceae, Liliaceae, Buxaceae and Solanaceae, however, some are from other sources, including amphibians.

A few naturally occurring steroidal aminoglycosides have been found (e.g. Holacurtinol), but these are not included in the Dictionary.

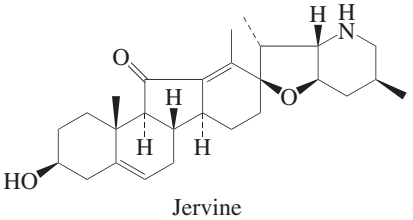
Steroidal alkaloids (salamandra type) (VX6640)

The small class of Salamandra-type alkaloids were isolated from amphibians, and are ring-A modified, mostly into aza-homosteroids, except for **Cycloneosamandione**.

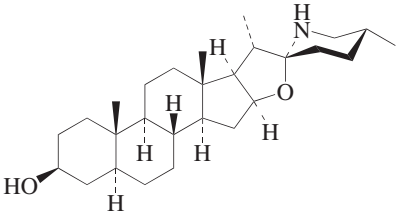
Habermehl, G., *Alkaloids*, 1967, **9**, 427–440 (*rev*)

Steroidal alkaloids (jerveratrum, spirosolane and solanidine types) (VX6660, VX6720, VX6740)

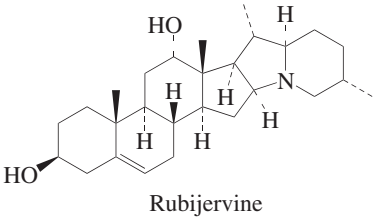
These are alkaloids in which the side-chain of a C_{27} steroid has been converted into a piperidine ring. In the jerveratrum (VX6660) (e.g. **Jervine**) and spirosolane (VX6720) (e.g. **Soladulcidine**) types, the piperidine ring is part of a spiro system, in the latter type forming an aza-analogue of the numerous and well- known spirostane steroids. Like the spirostanes, they show variation in the stereochemistry of the two new centres of chirality formed in the side-chain. In the solanidine type (VX6740), e.g. **Rubijervine**, an additional ring is formed by *C*-16 to *N* bond formation. They are present in the Solanaceae, and are of significance as potential trace toxins present in potatoes, tomatoes and other food crops.



Jervine



Soladulcidine

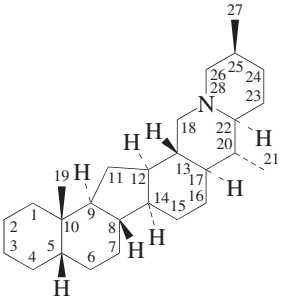


Rubijervine

Tomko, J. *et al.*, *Alkaloids*, 1973, **14**, 1–82 (*rev*)
Ripperger, H., *Alkaloids*, 1981, **19**, 81–192 (*rev*, *Solanum alkaloids*)
Ripperger, H. *et al.*, *Alkaloids Chem. Biol. Perspect.,* 1982, **12**, 103–186 (*rev*, *Solanum alkaloids*)
Keeler, R.F. *et al.*, *Alkaloids Chem. Biol. Perspect.,* 1986, **4**, 389–425 (*rev*, *teratogenic steroidal alkaloids*)

Steroidal alkaloids (cerveratrum (cevane) type) (VX6680)

In this group of alkaloids, from Monocot families such as the Orchidaceae, there has been an abeo shift from a Procevine-type precursor, in which ring D has been enlarged at the expense of ring C. They show extensive stereochemical variation within the basic cevane skeleton, and the stereochemistry of the various alkaloids is still being studied. See for example the numerous stereoisomers of **3,6-Cevanediol**.



Cevane (IUPAC)

The semisystematic nomenclature of cevanes, especially unsaturated ones, has shown some annoying minor variations over the years, e.g. Cev-5-enine, Cev-5-enene, Δ^5-Cevenine, 4,5-Didehydrocevane, etc. In this Dictionary the shortest form Cev-5-ene is used.

Ussuriedine represents an interesting tricyclic variation.

Tomko, J. *et al.*, *Alkaloids*, 1973, **14**, 1–82 (*rev*)

Steroidal alkaloids (conanine type) (VX6700)

Alkaloids containing the conanine skeleton occur in the Apocynaceae. Nearly all of these bases contain an amino or an oxygen function at *C*-3. There are some skeletal variations, such as *C*-4 methylation (**Kurcholessine**) and 9,10-seco-A ring aromatisation (**Didymeline)**.

Atta-ur-Rahman *et al., Alkaloids*, 1988, **32**, 79–237 (*rev*)

Steroidal alkaloids (buxus type) (VX6760)

The *Buxus* alkaloids are a large group of bases, the majority of which are pentacyclic 4,4,14-trimethyl-9,19-cyclopregnanes. A smaller number contain a tetracyclic system in which 9,10 bond fission has occurred to give a seven-membered ring B. In some, one or both of the carbon atoms attached to *C*-4 have been lost. All the alkaloids have a nitrogen function at *C*-3 and/or *C*-20, which may be unmethylated, partially methylated, or fully methylated. Further minor structural variations continue to be isolated from various *Buxus* spp. The suffix letters used in the nomenclature of this group indicate the degree of methylation of the nitrogen atom(s):

In this Dictionary, the entries for these alkaloids are organised under the (usually unknown) unsubstituted parents of the I, O, or P type.

The recent characterisation of the **Cortistatin** alkaloids from a *Corticium* sponge, represent a new development. Structurally their 9(10→19)-abeosteroid moiety resembles that of one subgroup of the terrestrial *Buxus* alkaloids, but the presence of an isoquinoline ring system at the other end of the molecule is without precedent. They are coded as Buxus alkaloids on structural grounds, although presumably this is a case of evolutionary parallelism.

Černy, V. *et al., Alkaloids*, 1967, **9**, 305–426 (*rev*)
Tomko, J. *et al., Alkaloids*, 1973, **14**, 1–82 (*rev*)
Atta-ur-Rahman *et al., Alkaloids*, 1988, **32**, 79–237 (*rev*)
Ata, A. *et al., Alkaloids,* 2008, **66**, 191–213 (*rev*)

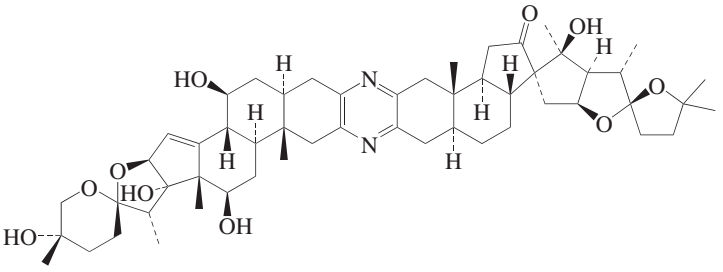
Steroidal alkaloids (pregnane type) (VX6780)

These are fairly numerous and occur in the Apocynaceae, Buxaceae and Didymelaceae. The majority contain amino or related functions at C-3 and/or C-20, and often at other positions.

Steroidal alkaloids (cephalostatins/ritterazines) (VX6785)

An important new group of marine steroidal metabolites isolated since the 1980s are the **Cephalostatins/ Ritterazines**, which are dimeric steroidal pyrazines (also coded as pyrazine alkaloids). One of their representatives is **Ritterazine A**. They show significant biological activities, but are isolable only in small amounts and are the subject of intense synthetic efforts.

Flessner, T. *et al., Prog. Chem. Org. Nat. Prod.*, 2004, **87**, 1–80 (*rev*)



Ritterazine A

Miscellaneous steroidal alkaloids (VX6790)

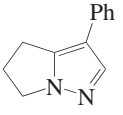
This includes non-nitrogenous steroids linked by an ester or acetal bond to a nitrogen containing unit, as in **Bufotoxin**, the **Batrachotoxins** (elaboration of a basic pregnane theme), and a small number of marine steroidal alkaloids of novel type such as the **Plakinamines**, as well as biologically active D-ring azahomosteroids based on **15-Azasterol**. **Petisidine**, **Tomatillidine** and their congeners are the only group of steroidal alkaloids containing a pyrrolidinyl side-chain. A 7-membered azepinyl ring structure was proposed for certain alkaloids such as **Edpetilidinine**, but most of these have now been reassigned as piperidines.

Azaanthracene and Azafluorene alkaloids (VX6820, VX6840)

There have been a number of structural reassignments in these groups, and some structures are still uncertain. It now appears that they are related to each other, and to the azaaporphine alkaloids (VX2830) above, via the azaanthraquinone intermediate as shown in the biosynthesis of Sampangine. They are therefore currently misplaced in the Type of Compound classification scheme.

Pyrazole alkaloids (VX6900)

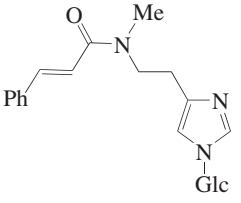
This is a small scattered group containing a few miscellaneous azapurine bases and simple hydrogenated pyrazoles. The most interesting alkaloid is **Withasomnine**. Little is known of its biosynthesis. Some early tracer studies showed incorporation of phenylalanine and ornithine, but at very low levels, and the significance of this is unclear. There is one marine example, **1-Methyl-1*H*-pyrazole-5-carboxylic acid**, from a gorgonian.



Withasomnine

Imidazole alkaloids (VX6920)

This group contains many structurally diverse examples, especially among marine and microbial alkaloids. There are various bases obviously containing a histamine moiety, e.g. **Casimiroedine**, and some more complex plant alkaloids. The bases isolated from marine sources include **Aplysinopsin** and related alkaloids and the **Rhopaladins**. They show a range of biological activities and considerable pharmaceutical potential. The most pharmacologically significant is **Pilocarpine**, obtainable only from *Pilocarpus* spp. (Rutaceae). Two possible biosynthetic pathways were suggested; the most probable involves condensation of a polyketide precursor of the lactone ring with a late intermediate in histidine biosynthesis as the source of the imidazole. This work of the 1970s does not appear to have been followed up more recently. **Anosmine** is biosynthesised from lysine.

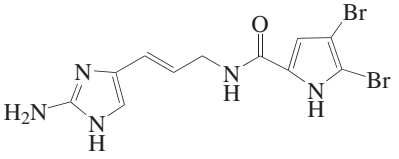


Casimiroedine

Hill, R.K., *Alkaloids Chem.Biol. Perspect.*,*Pelletier*, 1982, **2**, 49–104 (*rev*)
Maat, L. *et al., Alkaloids*, 1983, **22**, 282–334 (*rev*, *biosynth*)
Jin, Z. *et al.*, *Nat. Prod. Rep.*, 2006, **23**, 464–496 (*rev*)

Pyrrole-imidazole alkaloids (VX6922)

These form a varied class of marine alkaloid exemplified by **Oroidin** which with various relatives (e.g. the dimeric **Sceptrine**) appears to be a genuine sponge product. Their significance appears to be as key intermediates in the biogenesis of many of the more complex marine alkaloids. A recent biogenetically-based classification (see Hofmann) recognises a class of nearly 100 pyrrole-imidazole alkaloids arising in various ways from this key intermediate and containing 0-4 further rings, additional to the pyrrole and imidazole rings already present. Future organisation of this database may recognise this category; at present, many of these are placed in the miscellaneous categories VX9000–VX9400.

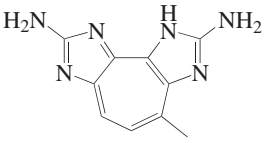


Oroidin

Hofmann, H. *et al.*, *Synthesis*, 2003, 1753–1783 (*rev*)
Walsh, C.T. *et al.*, *Nat. Prod. Rep.*, 2006, **23**, 577–531 (*rev*, *biosynth*)

Cycloheptadiimidazoles (Zoanthoxanthins) (VX6925)

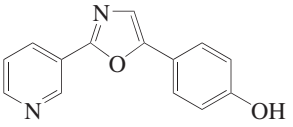
These are a group of marine alkaloids which are condensed imidazoles closely related in structure, and which in this Dictionary are grouped under just two entries; those for **Pseudozoanthoxanthin A** and **Parazoanthoxanthin A**. Their biosynthesis does not appear to have been studied in detail, however, they are presumably derived from histidine.



Pseudozoanthoxanthin A

Oxazole and benzoxazole alkaloids (VX6930)

Numerous naturally occurring oxazoles are known. Structurally they are diverse and may be open-chain (e.g. **Bengazoles**) or macrocyclic (e.g. **Patellamides**). Like the imidazoles, they show considerable drug potential. They have been isolated from various sources-plants of the Poaceae (e.g. **Annuloline**) and Rutaceae (e.g. **Halfordinol**), nudibranch egg masses (**Ulapualides**), algae and microorganisms. The latter have furnished the majority of the alkaloids, ranging from the simple indolyl alkaloids (**Pimprinine**) to complex peptide antibiotics such as the **Virginiamycin** family. The marine and bacterial oxazoles appear to have been formed from peptides of aliphatic amino acids, while the oxazoles of the Poaceae and Rutaceae arise from the chorismic acid-phenylalanine pathway.



Halfordinol

Jacobs, H.M. *et al., Alkaloids*, 1989, **35**, 259–310 (*rev*)
Pattenden, G., *J. Het. Chem.*, 1992, **29**, 607–618 (*rev*, *synth*)
Yeh, V.S.C., *Tetrahedron*, 2004, **60**, 11995–12042 (*rev*, *synth*)
Jin, Z. *et al.*, *Nat. Prod. Rep.*, 2006, **23**, 464–496 (*rev*)

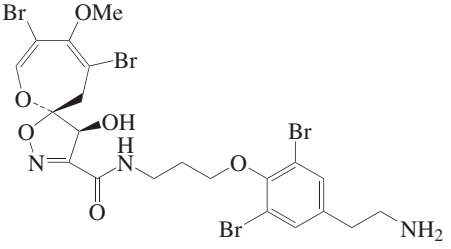
Isoxazole alkaloids (VX6932)

This is a fairly small group, most of which are modified amino acids (e.g. **Ibotenic acid**).

Rahboek, L. *et al., Alkaloids*, 2001, **57**, 185–233 (*rev*)

Spirobenzoxazoline alkaloids (VX6934)

These exclusively marine alkaloids, such as the **Psammaplysins,** are derived by cyclisation of open-chain halogenated tyrosinoid oxime precursors (see VX2008 above). This is probably through the intermediacy of an arene oxide, although attempts to replicate this chemically have given only low yields.



Psammaplysin A

Okamoto, K.T. *et al.*, *Tet. Lett.*, 1987, **28**, 4969–4972 (*biosynth*)

Thiazole alkaloids (VX6935, VX6936, VX6937)

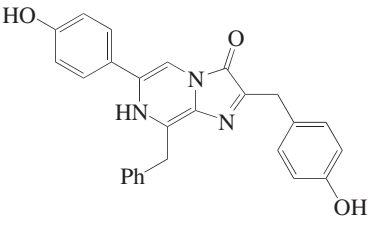
A large number of naturally occurring alkaloids that incorporate the thiazole nucleus have now been isolated. Some simple thiazoles (e.g. **2,4-Dialkylthiazoles**; **Benzothiazole**) have been obtained from plant and animal sources, but typically they are microbial products, including from marine sources. These alkaloids are a heterogeneous group ranging in complexity from **Aeruginoic acid** and the simple peptide **Herbamide A** to antineoplastic cyclopeptides such as **Ulicyclamide**, **Ulithiacyclamide**, **Patellamides** and **Dolastatins**. The **Latrunculins** (VX6936) are a subclass of mostly macrocyclic tetrahydrothiazoles isolated from sponges. Thiazoles show a range of interesting drug activities.

The biosynthesis of the thiazole ring in the highly bioactive **Curacin A** has been shown to be from cysteine, with the remainder of the carbon chain, including the cyclopropane functionality, being acetate-derived.

Pattenden, G., *J. Het. Chem.*, 1992, **29**, 607–618 (*rev*, *synth*)
Jin, Z. *et al.*, *Nat. Prod. Rep.*, 2005, **22**, 196–229; 2006, **23**, 464–496 (*revs*)
Mulzer, J., *Prog. Chem. Org. Nat. Prod.*, 2009, **90**, 1–237 (*Epothilones, rev, synth, biosynth, pharmacol*)

Pyrazine and quinoxaline alkaloids (VX6940)

Pyrazines have been isolated from widely differing sources: from microorganisms, plants, mushrooms, animals, insects (especially ants, where they are considered to function as alarm pheromones) and various marine organisms, where they are the actual light emitters in bioluminescence processes. Bioluminescence emitters are found scattered throughout different types of organism, which implies multiple independent origins during the course of evolution. The imidazopyrazine, **Coelenterazine**, and closely related alkaloids though account for the great majority of observed bioluminescence. There is evidence for Coelenterazine *de novo* biosynthesis in shrimps. ***Cypridina* Luciferin** is biosynthesised from arginine and tryptophan. A series of tetrahydroquinoxalines has been isolated from the scent gland of the Canadian beaver, *Castor fiber*.



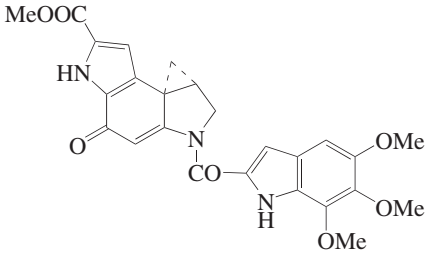
Coelenterazine

Pyrazines also contribute to the aroma of various foodstuffs, including coffee, cocoa, tea and cooked meats. However, from these sources they are generated by pyrolytic processes and are not true alkaloids. The cephalostatin group of alkaloids described under VX6785 are steroidal dimers linked by pyrazine formation.

Rees, J.-F. *et al.*, *J. Exp. Biol.*, 1998, **201**, 1211–1221 (*rev*, *bioluminescence*)

Benzo[1,2-*b*:3,4-*b*']dipyrroles (VX6945)

This is a numerically limited group of alkaloid antibiotics all isolated from Streptomycetes. **Duocarmycin SA** appears to be a key biosynthetic intermediate, however, detailed biosynthetic studies have not been reported. They are DNA alkylating agents. Some members, e.g. **Rachelmycin**, are cyclopropa-compounds, however, this feature does not appear to be necessary for activity.



Duocarmycin SA

Pyrrolo[1,2-*a*]pyrazines (VX6950)

These are mostly cyclic anhydrides of proline plus another amino acid residue. Their inclusion in this Dictionary is a marginal decision. Other cyclodipeptides not based on proline are not included; they are classified under the amino acid code VV0150 (diketopiperazine) and are found in the *Dictionary of Natural Products*.

Morpholine alkaloids (VX6955)

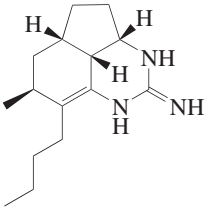
These are relatively few in number, e.g. **Agropine**, **Chelonins A** and **C** and the **Oxazinines**.

Pyrimidine alkaloids (VX6960)

Simple thymine-derived bases such as **Thyminol** are found in various organisms, together with some more highly elaborated substances such as the **Meridianins**. The category also includes miscellaneous hydrogenated pyrimidines, e.g. **Aberiamine**.

Ptilocaulins (VX6970)

This group is based on the (partially hydrogenated) cyclopenta[*de*]quinazoline skeleton, which contains a pyrimidine nucleus. It comprises **Ptilocaulin** and relatives, the **Mirabilins** and a few other related alkaloids, mostly isolated from sponges, but which may be symbiont metabolites. It has been suggested that these compounds arise by a late-stage addition of guanidine to a polyketide precursor.



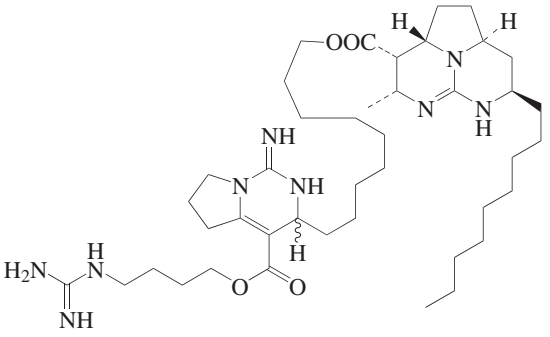
Ptilocaulin

Snider, B.B. et al., *J.Org.Chem*, 1993, **58**, 3828–3839 (*biosynth*)

Triazaacenaphthylene alkaloids (VX6980)

This is another group based on a tricyclic pyrimidine-related nucleus, and includes the **Batzelladines** and the **Crambescidins**. They are isolated from sponges and echinoderms. Their biosynthesis does not appear to have been

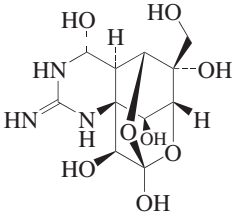
studied in detail. However, they are formally composed of a guanidine unit, with which the biological activity is associated, embedded in a linear unbranched perimeter, presumably derived from a lipid precursor.



Batzelladine A

Tetrodotoxins (VX6990)

Tetrodotoxin and its homologues are well-known and important causes of human poisoning and are known principally from certain tissues of the Japanese puffer fish, and also found in other organisms; they are now thought to be *Pseudomonas* products. They have been extensively reviewed. The carbocycle ring in tetrodotoxins may be of isoprenoid origin.



Tetrodotoxin

Miyazawa, K. *et al.*, *J. Toxicol., Toxin Rev.*, 2001, **20**, 11–25 (*rev*)
Yotsu-Yamashita, M., *J. Toxicol., Toxin Rev.*, 2001, **20**, 51–66 (*rev*)
Daly, J.W., *J. Nat. Prod.*, 2004, **67**, 1211–1215 (*rev*, *occur*)

Phenazine and phenoxazine alkaloids (VX7000, VX7005)

An increasing number of simple phenazines (e.g. the **Pelagiomicins**) and phenoxazines have been reported from microorganisms, including marine bacteria from sponges. There are also some more complex diphenazines such as **Saphenamycin** and the **Esmeraldines**. These, as well as the simpler phenazines, are biosynthesised by the shikimic acid pathway.

Van't Land, C.W. *et al., J. Org. Chem*., 1993, **58**, 6576–6582 (*biosynth*)

Simple pyrrole alkaloids; miscellaneous pyrrole alkaloids (VX7010, VX7014)

The category VX7010 includes very simple brominated pyrroles (e.g. **2,3-Dibromo-1*H*-pyrrole**, which come from a variety of sources. Marine examples include the dimeric **Tambjamines**. Pyrrole-imidazole alkaloids are now listed above under VX6922, while the metabolically important tetrapyrroles, (chlorophyll, haem and their relatives) are not included in this Dictionary; consult the parent *Dictionary of Natural Products*. The pyrrole nucleus is a component of the indole alkaloids, but whereas these are tryptophan-derived, the polypyrroles are biosynthesised from 5-Amino-4-oxopentanoic acid (5-aminolaevulinic acid, ALA). Lower molecular weight alkaloids may arise from either route, or from proline/ornithine pathways via pyrrolidines (see above under VX0300); in the **Prodigiosins**, each of the three pyrrole residues is biosynthesised differently. The process of biohalogenation differs between Cl and Br. Chlorination takes place oxidatively by a combination of chloride ion, dioxygen and reduced FAD producing a Cl^+ equivalent, whilst bromination is mediated by vanadium bromoperoxidases.

LeQuesne, P.W. *et al., Alkaloids Chem. Biol. Perspect.,* 1999, **13**, 210–258, 237–288 (*revs*)
Gossauer, A., *Prog. Chem. Org. Nat. Prod.,* 2003, **86**, 1–188 (*rev*)
Berlinck, R.G.S., *Prog. Chem. Org. Nat. Prod.*., 2004, **87**, 2–188 (*rev*)
Walsh, C.T. *et al.*, *Nat. Prod. Rep.*, 2006, **23**, 517–531 (*rev*, *biosynth*)

Polyamine alkaloids (VX7018, VX7020, VX7025, VX7050, VX7060, VX7080, VX7085, VX7090)

These categories cover the various types of alkaloid containing one or more -$N(CH_2)_nN$- groups, with *n* usually 3 or 4, less often 2 or 5. A useful subclassification scheme uses PA numbers defining the constituent diamine units, e.g. **Spermine** $H_2N(CH_2)_3NH(CH_2)_4NH(CH_2)_3NH_2$ is the parent substance of the PA343 subclass. They show markedly different properties (reactivity, basicity, complexing ability, mass spectrometry) from monobasic amines. Alkaloids based on the ornithine-derived **Putrescine** (PA4 alkaloids) (VX7020) are common in terrestrial plants where they are mostly simple cinnamoylputrescines, e.g. **Subaphylline**. Some have been characterised from marine organisms, such as the **Monodontamides** from gastropods. Numerous other alkaloids, again, many terrestrial and some marine, are derived from **Spermine** (PA343) (VX7080) or **Spermidine**, (PA34) (VX7050) themselves derived (in plants, certainly) from ornithine via putrescine. See for example the **Penaramides** and the unusual medium-ring azaaliphatic **Motuporamines**. Classes PA33, PA35, PA44 and PA33433 have also been found in nature, but less frequently. The largest number are the arachnid toxins, such as the extensive series of **Agel toxins** from the spider *Agelenopsis*. PA structures also occur in more complex alkaloids such as **Crambescidin 816** (PA34 substructure) and as steroidal conjugates, in **Squalamine** and related compounds from fish livers (PA34 and PA343 substructures). In terrestrial plants it is well established that these alkaloids derive from the decarboxylation and coupling of amino acids.

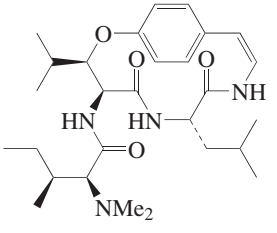
The spermidine group includes a variety of medium ring cyclic examples, e.g. **Codonocarpine**, **Lunaridine**, **Cannabisativine**. The PA44 class, the so-called homospermidine alkaloids, includes derivatives of the PA44 amine **Solamine** isolated from the Solanaceae.

Guggisberg, A. *et al., Alkaloids*, 1983, **22**, 85-188; 1997, **50**, 219–256 (*revs*)
Schafer, A. *et al., Alkaloids*, 1994, **45**, 1–125 (*arthropod toxins*)
Mueller, A.L. *et al., Alkaloids*, 1995, **46**, 63–94(*toxins*, *pharmacol*)
Bienz, S. *et al., Alkaloids*, 2002, **58**, 83–338 (*rev*)
Bienz, S., *Nat. Prod. Rep.*, 2005, **22**, 647–658 (*rev*)
Estrada, G., *Nat. Prod. Rep.*, 2007, **24**, 145–161 (*rev*, *spider toxins*)

Ansa-peptide alkaloids (VX7100)

Peptides consisting only of unmodified proteinaceous amino acid chains, whether linear or cyclic, lie outside the scope of this Dictionary. Among the marine natural products there are a considerable number of peptide-like alkaloids containing highly modified residues, e.g. the Lissoclinamides. These are classified elsewhere (in the case of the Lissoclinamides, under VX6737, macrocyclic thiazole alkaloids).

A large class of peptide derivatives occurring exclusively in higher plants, particularly in the Rhamnaceae, are the ansa-peptide alkaloids, in which a medium-sized ring is formed by meta- or para-substitution of an aromatic peptide residue, as in **Frangulanine**. Many of these alkaloids incorporate D-amino acid residues, but the stereochemical information concerning them is sometimes incomplete. They have however been fully reviewed, with extensive tabulations.



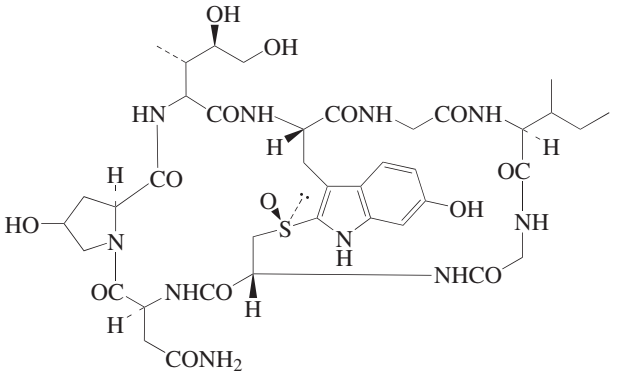
Frangulanine

Schmidt, U. *et al., Alkaloids*, 1985, **26**, 299–326 (*rev*)
Itokawa, H. *et al., Alkaloids*, 1997, **49**, 301–387 (*rev*)
Gournelis, D. *et al., Prog. Chem. Org. Nat. Prod.*, 1998, **75**, 1–180 (*rev*)

Tan, N.H. *et al., Chem. Rev*, 2006, **106**, 840–895 (*rev*)
El-Seedi, H., *et al., Phytochem. Rev.,* 2007, **6**, 143–165 (*rev*)

Amanita alkaloids (VX7120)

The toxins of the European death cap mushroom *Amanita phalloides* and other *Amanita* spp. constitute a complex group of macrocyclic peptides, mostly containing sulfur. These include the amatoxins (e.g. **α-Amanitin**, **β-Amanitin**), the phallotoxins (e.g. **Phalloidin**) and the virotoxins (e.g. **Viroidin**). They have been little studied recently apart from a new synthesis of Phalloidin.



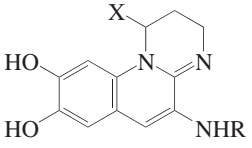
α-Amanitin

Other cyclopeptide alkaloids (VX7150)

This is a heterogeneous group.

Pyoverdins (VX7170)

These are a fairly extensive and increasing series of peptide-alkaloidal siderophore pigments secreted by plant-growth promoting rhizobacteria *Pseudomonas* spp. under conditions of restricted iron availability. Their chelating properties protect the plant against attack by fungi and other pathogens by depriving them of iron. Although they were described in the nineteenth century, the first structure was not elucidated until 1981; by 1999 about 50 were known, some still with only partially determined structures.



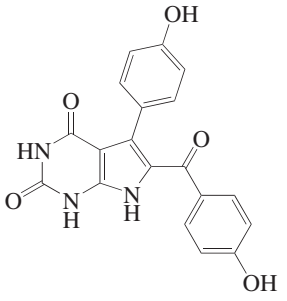
The chromophore is a pyrimido[1,2-α]quinoline system, sometimes modified as in the **Azotobactins**. The chromophoric properties of this heterocycle are associated with the predominance of a zwitterionic form having a positively charged quaternary nitrogen with delocalisation of charge over the two *N*s, but for clarity they are all shown in the Dictionary in the uncharged form. The chromophore is linked to a short nitrogenous substituent –NHR (R = usually a dioic acid, sometimes glycine) and an oligopeptide chain X, giving a typical total molecular weight of about 1000-1500. The peptide chain may be cyclic or acyclic, and may contain one or more unusual modified amino acid residues, such as 3-Amino-1-hydroxy-2-piperidinone (*N*-hydroxycycloornithine).
Caution; Compilation of Dictionary entries for this group has been complicated by inconsistencies in the literature concerning their structures and comparison with the molecular formulae, which are often not reported. Some inconsistencies remain in the Dictionary entries; checking continues.

Budzikiewicz, H., *Prog. Chem. Org. Nat. Prod.*, 2004, **87**, 81–237 (*rev*)

Pyrrolo[2,3-*d*]pyrimidine alkaloids (VX7200)

This is a numerically limited group consisting of the nucleosides **Tubercidin**, the **Mycalisines** and related bases and some simple halogenated pyrrolopyrimidines, as well as the **Rigidins**. They have been isolated from marine

organisms, and appear to be microbial products. It has been shown that the pyrimidine ring is derived intact from a purine base precursor which undergoes ring opening and reformation with the incorporation of a C_2 fragment to form the pyrrole ring.



Rigidin A

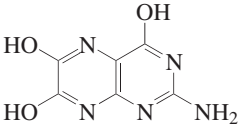
Purine alkaloids (VX7300)

Purines are involved along with pyrimidines as bases in DNA and RNA. The ubiquitous, well-known oxypurines, exemplified by **Caffeine**, are usually considered alkaloidal, alongside adenine derivatives such as the plant hormone, **Zeatin**; and various miscellaneous bases. The well-known purines, **Xanthine**, **Inosine**, **Theobromine** and **Theophylline**, long known as plant alkaloids, have now been found in marine organisms along with substituted purines (e.g. **Phidolopin**) and a range of terpenoid-purine alkaloids, such as the **Agelines** and others.

Rosemeyer, H., *Chem. Biodiversity*, 2004, **1**, 361–401 (*rev*)

Pteridine alkaloids (VX7350)

Pteridines are a widely distributed class of naturally occurring alkaloids. They owe their exceptional position in the field of heterocyclic chemistry mainly to their unusual chemical properties, their conspicuous fluorescence and their importance in metabolism, and partly to their discovery as pigments in butterfly wings. Three of the most common butterfly pigments are **Leucopterin**, **Xanthopterin** and **Isoxanthopterin**. The red pigments in the eye of the fruitfly *Drosophila melanogaster*, e.g. **Drosopterin**, **Isodrosopterin** and **Neodrosopterin** are more complex pteridines. **Folic acid**, a water-soluble growth factor in bacteria and an anti-pernicious anaemia factor in animals is also a pterin derivative with a *p*-aminobenzoylglutamic acid sidechain at the 6-position. It occurs naturally as the dihydro derivative. Marine pteridines are represented by **Leucettidine**, the **Urochordamines** and **Isoxanthopterin**.



Leucopterin

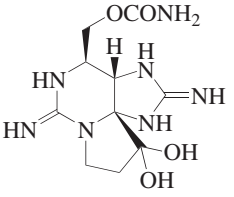
The biosynthesis of pteridine pigments has been well studied in terrestrial organisms. As in the case of the pyrrolopyrimidines above, the imidazole ring is derived unchanged from a purine precursor, in this case guanosine triphosphate, and the pyrazine ring is built by ring fission and incorporation of two carbons derived from a ribose fragment.

Pfleiderer, W., *J. Het. Chem.*, 1992, **29**, 583–605 (*rev*)
Chemistry and Biology of Pteridines and Folates, (eds. Milstien, S. *et al.*), Kluwer, 2002

Saxitoxins (VX7400)

The saxitoxins are a group of highly important modified purinoid toxins known as Paralytic Shellfish Toxins or PSTs. Originally characterised as a cause of dangerous shellfish poisoning, they are now known to be biosynthesised only by dinoflagellates (and some freshwater cyanobacteria), although it is possible that the red

alga *Jania* also produces them. Their presence in shellfish tissues probably results by diffusion according to a yet unknown mechanism. Their exact biosynthesis is not yet known, but it appears from radiolabelling experiments that the two guanidine groups derive from arginine and the carbamoyl side-chain from methionine.



Saxitoxin

Shimizu, Y., *Prog. Chem. Org. Nat. Prod.*, 1984, **45**, 235–264 (*rev*)
Garson, M.J., *Chem. Rev.*, 1993, **93**, 1699–1733 (*rev*, *biosynth*)
Llewellyn, L.E., *Nat. Prod. Rep.*, 2006, **23**, 200–222 (*rev*)

Alkaloidal metal complexes (VX7450)

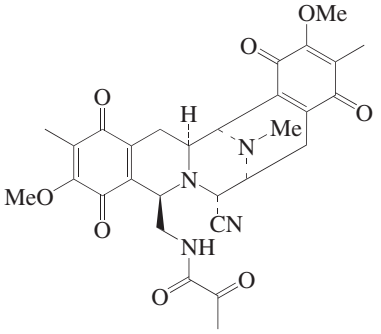
Alkaloidal chelates are additionally indexed here for ease of reference. The metals which have been identified so far in alkaloidal complexes are iron, copper, molybdenum and nickel.

Naphthyridinomycins (VX7700)

This is a small group of microbial products, and labelling experiments have demonstrated the incorporation of tyrosine, ornithine and methionine.

Saframycins (VX7800)

These are representative of the group known as the tetrahydroisoquinoline antitumour antibiotics, including some having slightly different skeletons, such as **Lemonomycin**. They are microbial products produced by *Streptomyces* spp. Close analogues such as the **Renieramycins** and the **Ecteinascidins** were isolated from marine organisms (sponges or tunicates) and are all presumably microbial products. The skeleton (studied for **Saframycin A**) is derived from two tyrosine molecules and the methyl groups from methionine.



Saframycin A

Arai, T. *et al., Alkaloids*, 1983, **21**, 56–100 (*rev*)
Murkami, Y. *et al.*, *J. Biol. Chem.*, 1985, **260**, 344–348 (*biosynth*)

Miscellaneous alkaloids with 0-4+ rings (VX9000, VX9100, VX9200, VX9300, VX9400)

These categories are self-explanatory. They include alkaloids whose relationships with the main groups has not been established, and individual alkaloids or small groups of alkaloids which are clearly related to one of the main groups, but which contain a modified carbon skeleton and are not numerous enough to merit special treatment.

Alkaloids of unknown structure (VX9999)

The Dictionary documents over 1000 alkaloids from the older literature where the structure has remained completely or partially undetermined. In cases where the Authors were able to propose a structural class for the

unknown isolate, the dictionary entry also carries the classification code relevant to that category, e.g. Buxus alkaloid.

Many of these isolates will remain forever unidentified, because the original sample is no longer available and the properties reported in the literature are not precise enough for a definite identification. Others, especially from the early literature, were doubtless ill-defined mixtures. However, the number of reinvestigations of these old isolations on a year-by-year basis is now surprisingly small, and renewed investigation of certain groups, for example the Amaryllidaceae alkaloids, using modern methods would probably yield interesting results.

6. DATABASE UPDATES

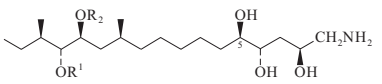
The database from which this Dictionary is produced, and which is represented by the CD-ROM version, is a specially enhanced subset of the *Dictionary of Natural Products*. Updates to the alkaloid information are being continuously incorporated into the DNP database and released to DNP subscribers. New editions of the *Dictionary of Alkaloids* (probably electronic only) will be published at future intervals.

Subscription information for DNP is available from **e-reference@taylorandfrancis.com** and www.chemnetbase.com.

Any comments and suggestions for inclusion to DNP may be sent to:

The Editors, DNP
CRC Press
4th Floor, Albert House
1–4 Singer Street
London
EC2A 4BQ

AAL Toxin A-1



TA_1 R^1 = H, R^2 = $COCH_2CH(COOH)CH_2COOH$
TA_2 R^1 = $COCH_2CH(COOH)CH_2COOH$, R^2 = H

Prod. by *Alternaria alternata* f. sp. *lycopersici*. Host-specific phytotoxin complex. Similar to Fumonisin A_1.

AAL Toxin TA_1 [79367-52-5]
$C_{25}H_{47}NO_{10}$ 521.647
Sol. H_2O.

5-Deoxy: ***AAL Toxin TB_1***
[149849-90-1]
$C_{25}H_{47}NO_9$ 505.648
From *Alternaria alternata* f. sp. *lycopersici*. Phytotoxin.

5-Deoxy, N-*Ac:* ***AAL Toxin TD_1***
[176590-35-5]
$C_{27}H_{49}NO_{10}$ 547.685

4,5-Dideoxy: ***AAL Toxin TC_1***
[176590-33-3]
$C_{25}H_{47}NO_8$ 489.648

4,5-Dideoxy, N-*Ac:* ***AAL Toxin TE_1***
[176590-37-7]
$C_{27}H_{49}NO_9$ 531.685

AAL Toxin TA_2 [79367-51-4]
$C_{25}H_{47}NO_{10}$ 521.647
Sol. H_2O.

5-Deoxy: ***AAL Toxin TB_2***
[149849-91-2]
$C_{25}H_{47}NO_9$ 505.648
From *Alternaria alternata* f. sp. *lycopersici*. Phytotoxin.

5-Deoxy, N-*Ac:* ***AAL Toxin TD_2***
[176590-36-6]
$C_{27}H_{49}NO_{10}$ 547.685

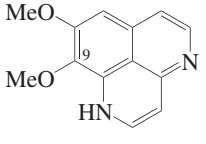
4,5-Dideoxy: ***AAL Toxin TC_2***
[176590-34-4]
$C_{25}H_{47}NO_8$ 489.648

4,5-Dideoxy, N-*Ac:* ***AAL Toxin TE_2***
[176590-38-8]
$C_{27}H_{49}NO_9$ 531.685

Bottini, A.T. *et al., Tet. Lett.*, 1981, **22**, 2723 (*isol*)
Caldas, E.D. *et al., J. Agric. Food Chem.*, 1994, **42**, 327 (*struct*)
Boyle, C.D. *et al., J.A.C.S.*, 1994, **116**, 4995 (*struct*)
Oikawa, H. *et al., Tet. Lett.*, 1994, **35**, 1223 (*synth*)
Oikawa, H. *et al., Tetrahedron*, 1994, **50**, 13347 (*abs config*)
Shier, W.T. *et al., Tet. Lett.*, 1995, **36**, 1571 (*abs config*)
Oikawa, H. *et al., Tet. Lett.*, 1999, **40**, 6621-6625 (*synth, TA_1*)

Aaptamine A-2

*8,9-Dimethoxy-1*H-*benzo[*de*][1,6]-naphthyridine, 9CI*
[85547-22-4]



$C_{13}H_{12}N_2O_2$ 228.25
Alkaloid from the marine sponge *Aaptos aaptos*. α-Adrenoreceptor blocker. Antineoplastic agent. Brilliant green cryst; bright yellow cryst. (MeOH/Me_2CO) (as hydrochloride). Sol. MeOH, $CHCl_3$. Mp 110-113° (107°) (hydrochloride). λ_{max} 215 (ϵ 13700); 236 (ϵ 14700); 255 (ϵ 17900); 309 (ϵ 3640); 350 (ϵ 3750); 380 (ϵ 5000); 394 (ϵ 4570) (H_2O) (Derep). λ_{max} 220 (ϵ 8900); 239 (ϵ 11750); 257 (ϵ 13200); 274 (ϵ 9700); 312 (ϵ 3160); 354 (ϵ 3300); 384 (ϵ 5620) (MeOH) (Berdy).

▶ DI2410500

N^4*-Me:* ***N^4-Methylaaptamine***
$C_{14}H_{14}N_2O_2$ 242.277
Alkaloid from *Aaptos aaptos*. Antiviral agent. Pale yellow oil. λ_{max} 216 (ϵ 1318); 239 (ϵ 13356); 258 (ϵ 11025); 269 (sh) (ϵ 9522); 277 (sh) (ϵ 8654); 314 (ϵ 2420); 360 (ϵ 2939); 394 (sh) (ϵ 2780) (MeOH).

O^9*-De-Me:* ***9-De-*O*-methylaaptamine***
[88839-98-9]
$C_{12}H_{10}N_2O_2$ 214.223
Alkaloid from *Aaptos aaptos*. Cytotoxic and antimicrobial agent. Greenish-yellow powder + $1.5H_2O$ (as hydrochloride). Mp 248-251° (dec., sealed tube) (hydrochloride). λ_{max} 241 (ϵ 18300); 313 (ϵ 3890); 370 (ϵ 4470); 400 (ϵ 4130) (H_2O) (Derep).

O^9*-De-Me,* N^1*-Me: 9-De-*O*-methyl-*N^1*-methylaaptamine.* ***Isoaaptamine***
[117173-75-8]
$C_{13}H_{12}N_2O_2$ 228.25
Alkaloid from the sponges *Aaptos aaptos*, *Hymeniacidon* sp. and *Suberites* sp. Antineoplastic agent and β-glucanase inhibitor. Amorph. yellow powder. Mp 200-205° dec.

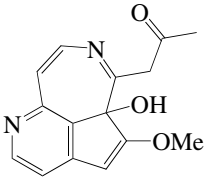
*Di-*O*-de-Me:* ***Dide-*O*-methylaaptamine***
$C_{11}H_8N_2O_2$ 200.196
Isol. from *Aaptos* sp. Yellow solid (as TFA salt). λ_{max} 241 (log ϵ 4.43); 267 (log ϵ 4.19); 313 (log ϵ 3.63); 363 (log ϵ 3.67); 402 (log ϵ 3.58) (no solvent reported).

*Di-*O*-de-Me, 9-sulfate: Dide-*O*-methylaaptamine 9-sulfate*
$C_{11}H_8N_2O_5S$ 280.261
Isol. from *Aaptos* sp. Pale yellow solid (as TFA salt). λ_{max} 216 (log ϵ 4.14); 236 (log ϵ 4.12); 257 (log ϵ 4.18); 310 (log ϵ 3.49); 373 (log ϵ 3.63) (no solvent reported).

Nakamura, H. *et al., Tet. Lett.*, 1982, 5555 (*isol, uv, pmr, cmr, struct*)
Pelletier, J.C. *et al., Tet. Lett.*, 1985, **26**, 1259 (*synth, uv, pmr*)
Kelly, T.R. *et al., Tetrahedron*, 1985, **41**, 3033 (*synth*)
Sakamoto, T. *et al., Chem. Pharm. Bull.*, 1986, **34**, 2760 (*synth*)
Bassoli, A. *et al., Chem. Comm.*, 1987, 150 (*synth*)
Nakamura, H. *et al., J.C.S. Perkin 1*, 1987, 173 (*deriv*)
Pelletier, J.C. *et al., J.O.C.*, 1987, **52**, 616 (*synth, ir, pmr*)
Andrew, R.G. *et al., Tetrahedron*, 1987, **43**, 4803 (*synth, uv, ir, pmr, ms*)
Hibino, S. *et al., J.C.S. Perkin 1*, 1988, 2429 (*synth, pmr*)
Fedoreev, S.A. *et al., Khim.-Farm. Zh.*, 1988, **22**, 943-946 (*isol*)
Sova, V.V. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1990, **26**, 420-422 (*Demethyl-N-methylaaptamine*)
Balczewski, P. *et al., J.C.S. Perkin 1*, 1990, **31**, 3193 (*synth*)
Molina, P. *et al., Synthesis*, 1996, 1199 (*synth*)
Sugino, E. *et al., Heterocycles*, 1999, **50**, 543-559 (*rev, synth*)
Walz, A.J. *et al., J.O.C.*, 2000, **65**, 8001-8010 (*Isoaaptamine, synth*)
Coutinho, A.F. *et al., Heterocycles*, 2002, **57**, 1265-1272 (*N^4-Methylaaptamine*)
Calcul, L. *et al., Tetrahedron*, 2003, **59**, 6539-6544 (*isol, pmr, cmr*)
Pettit, G.R. *et al., J. Nat. Prod.*, 2004, **67**, 506-509 (*Isoaaptamine, pmr, cmr, cryst struct*)
Pettit, G.R. *et al., J.O.C.*, 2004, **69**, 2251-2256 (*Isoaaptamine, synth*)
Herlt, A. *et al., Tetrahedron*, 2004, **60**, 6101-6104 (*Didemethylaaptamines*)
Larghi, E.L. *et al., Tetrahedron*, 2008, **64**, 5236-5245 (*synth*)

Aaptosamine A-3

[219642-41-8]

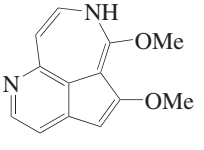


$C_{15}H_{14}N_2O_3$ 270.287
Alkaloid from the Red Sea sponge *Aaptos aaptos*. Orange gum. λ_{max} 240 (log ϵ 4.01); 336 (log ϵ 3.93) (MeOH).

Tinto, W.F. *et al., Heterocycles*, 1998, **48**, 2089-2093 (*isol, uv, ir, pmr, cmr, ms*)

Aaptosine A-4

*1,9-Dimethoxy-8*H-*5,8-diazabenz[*cd*]azulene, 9CI*
[151041-63-3]

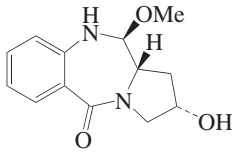


$C_{13}H_{12}N_2O_2$ 228.25
Trace alkaloid from the Red Sea sponge *Aaptos aaptos*. Cytotoxic agent. Yellow oil. λ_{max} 377 (MeOH/HCl) (Derep). λ_{max} 225 (ϵ 9700); 346 (ϵ 3800) (MeOH) (Derep).

Rudi, A. *et al., Tet. Lett.*, 1993, **34**, 4683 (*isol, uv, ir, pmr, cmr, ms, struct*)

Abbeymycin A-5

*1,2,3,10,11,11*a-*Hexahydro-2-hydroxy-11-methoxy-5*H-*pyrrolo[2,1-*c*][1,4]benzodiazepin-5-one, 9CI. Antibiotic SA4-3. SA4-3*
[108073-64-9]
[115793-07-2]

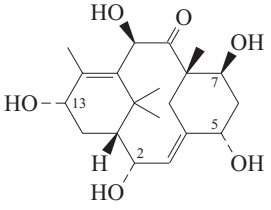


$C_{13}H_{16}N_2O_3$ 248.281
Anthramycin-type antibiotic from *Streptomyces* sp. Has weak activity against a limited number of anaerobic bacteria. Mp 142-144° dec. $[\alpha]_D^{25}$ +303 (c, 0.741 in H_2O). Stereochem. of SA4-3 not confirmed. λ_{max} 216 (ϵ 37200); 236 (ϵ 18100); 316 (ϵ 3600) (H_2O) (Derep).

► AA3000000

Hochlowski, J.E. *et al., J. Antibiot.*, 1987, **40**, 145 (*isol, uv, pmr, ms, struct*)
Japan. Pat., 1987, 87 185 087; *CA*, **109**, 92661m (*SA4-3*)

2(3→20)-Abeo-2,5,7,10,13-pentahydroxy-4(20),11-taxadien-9-one A-6



$C_{20}H_{30}O_6$ 366.453

(2α,5α,7β,10β,13α)-*form*

5-(3-Dimethylamino-3-phenylpropanoyl), 2,7,13-tri-Ac: [240805-52-1]
$C_{37}H_{49}NO_{10}$ 667.795
Constit. of *Taxus cuspidata*. Gum. $[\alpha]_D^{24}$ -31 (c, 0.01 in $CHCl_3$).

5-(3S-Dimethylamino-2S-hydroxy-3-phenylpropanoyl), 13-Ac: ***2-Deacetyltaxine A***. *Taxine C*
[160561-50-2]
$C_{33}H_{45}NO_9$ 599.72
Isol. from the leaves of *Taxus baccata* (Taxaceae). Amorph. or cryst. $[\alpha]_D^{20}$ -106 (c, 0.47 in $CHCl_3$).

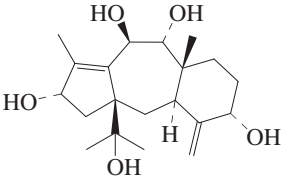
5-(3S-Dimethylamino-2S-hydroxy-3-phenylpropanoyl), 2,13-di-Ac: ***Taxine A***
[1361-49-5]
$C_{35}H_{47}NO_{10}$ 641.757
Major constit. of Taxine, the alkaloid mixt. from *Taxus baccata* (yew) (Taxaceae). Taxine is a common causal agent of cattle poisoning by *T.* spp. Cryst. (Me_2CO). Mp 204-206°. $[\alpha]_D$ -140 ($CHCl_3$).

5-(3S-Dimethylamino-2S-hydroxy-3-phenylpropanoyl), 2,7,13-tri-Ac: ***7-Acetyltaxine A***
[161956-28-1]
$C_{37}H_{49}NO_{11}$ 683.794
Constit. of *Taxus baccata*. Cryst. Mp 178-180°. $[\alpha]_D^{25}$ -96 (c, 1 in $CHCl_3$).

5-(3S-Dimethylamino-2S-hydroxy-3-phenylpropanoyl), 2,7,10,13-tetra-Ac: ***7,10-Diacetyltaxine A***
[244167-03-1]
$C_{39}H_{51}NO_{12}$ 725.831
Constit. of *Taxus yunnanensis*. Gum. $[\alpha]_D^{24}$ -75 (c, 0.01 in $CHCl_3$).

Graf, E. *et al., Annalen*, 1982, 376-381 (*Taxine A, cryst struct*)
Poupat, C. *et al., J. Nat. Prod.*, 1994, **57**, 1468-1469 (*2-Deacetyltaxine A*)
Barboni, L. *et al., Annalen*, 1995, 345-349 (*7-Acetyltaxine A, 2-Deacetyltaxine A*)
Shi, Q.-W. *et al., Tetrahedron*, 1999, **55**, 8365-8376 (*dimethylaminophenylpropanoyl tri-Ac*)

11(15→1)-Abeo-4(20),11-taxadiene-5,9,10,13,15-pentol A-7



$C_{20}H_{32}O_5$ 352.47

(5α,9α,10β,13α)-*form*

9-Ac: [153229-37-9]
$C_{22}H_{34}O_6$ 394.507
Constit. of *Taxus wallichiana*. Needles (MeOAc/hexane). Mp 160-162°. $[\alpha]_D^{20}$ -24 (c, 1.1 in MeOH). Struct. revised in 1993.

9,13-Di-Ac: [240805-50-9]
$C_{24}H_{36}O_7$ 436.544
Constit. of *Taxus yunnanensis*. Gum. $[\alpha]_D^{24}$ -17 (c, 0.01 in $CHCl_3$).

5,9,10,13-Tetra-Ac: [497879-22-8]
$C_{28}H_{40}O_9$ 520.619
Constit. of *Taxus wallichiana*. Oil. $[\alpha]_D^{20}$ +85 (MeOH).

5-Cinnamoyl, 9-Ac: [268728-61-6]
$C_{31}H_{40}O_7$ 524.653
Constit. of *Taxus yunnanensis*. Gum.

5E-Cinnamoyl, 13-Ac:
$C_{31}H_{40}O_7$ 524.653
Constit. of *Taxus yunnanensis*. Gum. $[\alpha]_D^{24}$ -17 (c, 0.01 in $CHCl_3$). λ_{max} 202 (ϵ 11700); 277 (ϵ 8400) (MeOH).

5-Cinnamoyl, 9,13-di-Ac: ***Chinentaxunine***
[260402-68-4]
[327024-58-8]
$C_{33}H_{42}O_8$ 566.69
Constit. of *Taxus chinensis*. Amorph. solid. $[\alpha]_D^{28}$ +43 (c, 0.49 in $CHCl_3$). $[\alpha]_D^{24}$ -23 (c, 0.01 in $CHCl_3$). λ_{max} 222 ; 277 (MeOH).

5-Cinnamoyl, 9,10,13-tri-Ac: ***7-Deacetoxytaxuspine J***
$C_{35}H_{44}O_9$ 608.727
Constit. of *Taxus cuspidata*. Amorph. solid. $[\alpha]_D^{20}$ -0.25 (c, 0.1 in MeOH). λ_{max} 202 (ϵ 11700); 277 (ϵ 8400) (MeOH).

5E-Cinnamoyl, 10-benzoyl, 9,13-di-Ac:
$C_{40}H_{46}O_9$ 670.798
Constit. of *Taxus yunnanensis*. Gum. $[\alpha]_D^{24}$ -11 (c, 0.01 in $CHCl_3$).

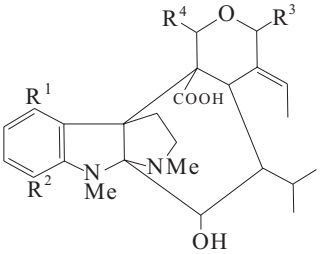
5-(3-Dimethylamino-3-phenylpropanoyl), 13-Ac: [260361-94-2]
$C_{33}H_{47}NO_7$ 569.737
Constit. of *Taxus yunnanensis*. Gum. $[\alpha]_D^{24}$ -27 (c, 0.01 in $CHCl_3$).

5-(3-Dimethylamino-3-phenylpropanoyl), 10-benzoyl, 9,13-di-Ac: [240805-51-0]
$C_{42}H_{53}NO_9$ 715.882
Constit. of *Taxus yunnanensis*. Gum. $[\alpha]_D^{24}$ -13 (c, 0.01 in $CHCl_3$).

Appendino, G. *et al., Chem. Comm.*, 1993, 1587-1589 (*struct*)
Barboni, L. *et al., Phytochemistry*, 1993, **33**, 145-150 (*9-Ac*)
Murakami, R. *et al., Biosci., Biotechnol., Biochem.*, 1999, **63**, 1660-1663
Shi, Q.-W. *et al., J. Asian Nat. Prod. Res.*, 1999, **2**, 71-79; *CA*, **132**, 205456u (*deriv*)
Shen, Y.-C. *et al., Phytochemistry*, 1999, **52**, 1565-1569 (*Chinentaxunine*)
Shi, Q.-W *et al., Tetrahedron*, 1999, **55**, 8365-8376 (*isol, pmr, cmr*)
Shi, Q.-W. *et al., Biosci., Biotechnol., Biochem.*, 2000, **64**, 869-872 (*5-cinnamoyl-10-benzoyl-9,13-di-Ac*)
Shi, Q.W. *et al., Chin. Chem. Lett.*, 2000, **11**, 235-238 (*5-cinnamoyl-5-Ac*)
Shi, Q.-W. *et al., J. Asian Nat. Prod. Res.*, 2000, **2**, 311-319; *CA*, **134**, 190713r (*5-cinnamoyl-9,13-di-Ac*)
Kiyota, H. *et al., Biosci., Biotechnol., Biochem.*, 2001, **65**, 35-40 (*5-cinnamoyl-13-Ac*)
Choudhary, M.I. *et al., Chem. Pharm. Bull.*, 2002, **50**, 1488-1490 (*5,9,10,13-tetra-Ac*)

Abereamine 1 A-8

[104386-96-1]



$R^1 = R^2 = OH$, $R^3 = R^4 = H$

$C_{25}H_{34}N_2O_6$ 458.553
Related to the Corymine/Isocorymine groups but with an additional isopropyl group the origin of which is not yet clear. Alkaloid from the seeds of *Hunteria umbellata* (Apocynaceae). Yellow solid. Sol. H_2O. Mp 199° dec.

Adegoke, E.A. *et al., Phytochemistry*, 1986, **25**, 1461-1468 (*isol, ir, pmr, ms, struct*)

Abereamine 2 A-9

[104406-77-1]
As Abereamine 1, A-8 with
$R^1 = R^3 = H$, $R^2 = R^4 = OH$
$C_{25}H_{34}N_2O_6$ 458.553
See note under Abereamine 1, A-8. Alkaloid from the seeds of *Hunteria umbellata* (Apocynaceae). Red solid. Sol. H_2O. Mp 230° dec.

Adegoke, E.A. *et al., Phytochemistry*, 1986, **25**, 1461-1468 (*isol, ir, pmr, ms, struct*)

Abereamine 3 A-10

[104386-97-2]
As Abereamine 1, A-8 with
$R^1 = R^2 = H$, $R^3 = R^4 = OH$
$C_{25}H_{34}N_2O_6$ 458.553
See note under Abereamine 1, A-8.

Alkaloid from the seeds of *Hunteria umbellata* (Apocynaceae). Brown solid. Sol. H_2O. Mp 280° dec.

Adegoke, E.A. *et al., Phytochemistry*, 1986, **25**, 1461-1468 (*isol, ir, pmr, cmr, ms, struct*)

Abereamine 4 A-11

[104386-98-3]
As Abereamine 1, A-8 with
$R^1 = R^4 = H$, $R^2 = R^3 = OH$

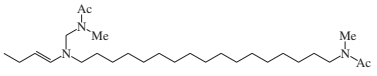
$C_{25}H_{34}N_2O_6$ 458.553

See note under Abereamine 1, A-8. Alkaloid from the seeds of *Hunteria umbellata* (Apocynaceae). Red solid. Sol. H_2O. Mp 260-262°.

Adegoke, E.A. *et al., Phytochemistry*, 1986, **25**, 1461-1468 (*isol, ir, pmr, ms, struct*)

Aberiamide A-12

[283167-82-8]

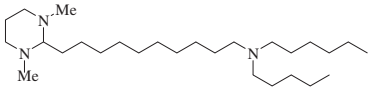


$C_{28}H_{55}N_3O_2$ 465.761
Alkaloid from the leaves of *Aberia caffra*. Pale yellow solid. $[\alpha]_D^{25}$ +20 (c, 1 in MeOH). Aberia is not a recognised genus (in the Kew system a synonym for *Dovyalis*).

Sayed, H.M. *et al., Indian J. Chem., Sect. B*, 2000, **39**, 215-219 (*isol, pmr, cmr, ms*)

Aberiamine A-13

N-*Hexylhexahydro-1,3-dimethyl*-N-*pentyl-2-pyrimidinedecanamine, 9CI*
[283167-81-7]

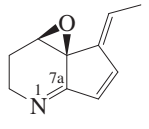


$C_{27}H_{57}N_3$ 423.767
Alkaloid from the leaves of *Aberia caffra*. Pale yellow solid. $[\alpha]_D^{25}$ +3 (c, 1 in MeOH). Aberia is not a generally recognised genus (in the Kew system a synonym for *Dovyalis*).

Sayed, H.M. *et al., Indian J. Chem., Sect. B*, 2000, **39**, 215-219 (*isol, pmr, cmr, ms*)

Abikoviromycin A-14

*7-Ethylidene-1*a*,2,3,7-tetrahydrocyclopent[*b*]oxireno[*c*]pyridine, 9CI, 8CI. 5-Ethylidene-4,4*a*-epoxy-2,3,4,4*a*-tetrahydro-1-pyrindene. Virocidin. SF 973A. Antibiotic SF 973A. Thomsomycin. Latumcidin*
[31774-33-1]



Absolute Configuration

$C_{10}H_{11}NO$ 161.203
Pyrindine numbering shown, for uniformity with other related compds. Prod. by *Streptomyces abikoensis, Streptomyces rubescens* and *Streptomyces latumcidicus*. Polyketide synthase inhibitor. Antifungal and antiviral agent. Highly unstable, polymerising on isol. from broth cultures. Can be handled in dilute soln. $[\alpha]_D^{21}$ +148.9 (c, 1 in 0.1*N* NaOH). λ_{max} 238 (ϵ 9980); 338 (ϵ 11600) (0.1*N* HCl) (Derep). λ_{max} 245 (ϵ 8690); 290 (ϵ 7730) (0.1*N* NaOH) (Derep). λ_{max} 243 (ϵ 9000); 289 (sh) (ϵ 8710); 345 (sh) (ϵ 4000) (EtOH or pH 7) (Derep). λ_{max} 244 (ϵ 13900) (MeOH) (Derep).

Sulfate: [43043-59-0]
Cryst. Mp 140-141° dec. $[\alpha]_D^{25}$ +24 (c, 1 in H_2O).

▶ GY8431000

Picrate:
Yellow needles (EtOAc/MeOH). Mp 136-137°.

*1,7*a*-Dihydro:* ***Dihydroabikoviromycin***. *Dihydrolatumcidin. Antibiotic SF 973B. SF 973B*
[20421-29-8]
$C_{10}H_{13}NO$ 163.219
Prod. by *Streptomyces olivaceus, Streptomyces viridochromogenes, Streptomyces reticuli* and *Streptomyces anulatus*. Mutagenic and genotoxic agent. Mp 60-61° (57-59°). $[\alpha]_D^{22}$ +276 (c, 1 in MeOH). pK_a 7.7 (50% EtOH aq.). pK_a 8.07. λ_{max} 244 (E1%/1cm 850) (MeOH) (Berdy).

*1,7*a*-Dihydro; hydrochloride:* Mp 130-132°.

*1,7*a*-Dihydro, 7-hydroxy:* ***Dihydro-N-hydroxyabikoviromycin***. N-*Hydroxydihydroabikoviromycin*
[109292-19-5]
$C_{10}H_{13}NO_2$ 179.218
From *Streptomyces* sp. SANK 65986. Exhibits antimicrobial activity. Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. λ_{max} 210 ; 242 (MeOH) (Berdy). λ_{max} 243 (MeOH-HCl) (Berdy). λ_{max} 210 ; 242 (MeOH-NaOH) (Berdy).

▶ LD_{50} (mus, ivn) 100 - 200 mg/kg.

Umezawa, H. *et al., Jpn. Med. J.*, 1951, **4**, 331; *CA*, **46**, 7167c (*isol*)
Sakagami, Y. *et al., J. Antibiot., Ser. A*, 1958, **11**, 6; 231; *CA*, **54**, 2483h; 2484a (*isol, uv, ir, struct*)
Gurevich, A.I. *et al., Tet. Lett.*, 1968, 2209 (*struct, pmr, ir, uv*)
Kono, Y. *et al., J. Antibiot.*, 1970, **23**, 572 (*pmr, cryst struct*)
Kono, Y. *et al., Acta Cryst. B*, 1971, **27**, 2341 (*cryst struct*)
Ogawa, Y. *et al., J. Antibiot.*, 1973, **26**, 186; 609 (*Dihydroabikoviromycin*)
Onda, M. *et al., Chem. Pharm. Bull.*, 1974, **22**, 2916 (*isol, nmr, ms*)
Takahashi, S. *et al., Sankyo Kenkyusho Nenpo*, 1986, **38**, 105; *CA*, **107**, 55392n (*N-Hydroxydihydroabikoviromycin*)
Takahashi, S. *et al., CA*, 1987, **107**, 55392 (*deriv*)
Maruyama, H. *et al., J. Antibiot.*, 2003, **56**, 801-804 (*isol, pmr, cmr*)

Abrasine A-15

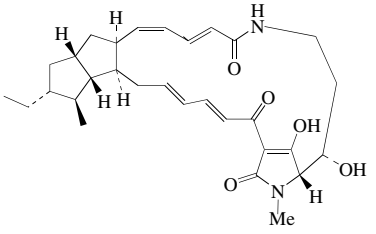
$C_{18}H_{21}N_3O_3$ 327.382
Struct. unknown. Alkaloid from roots of *Abrus precatorius* (Fabaceae). Mp 218-220° dec.

Hydrochloride: Mp 226-227°.

Khaleque, A. *et al., Sci. Res. (Dacca)*, 1966, **3**, 203-207; *CA*, **67**, 90987n (*isol, ir*)

Aburatubolactam A A-16

[170894-24-3]

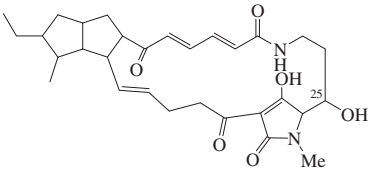


$C_{30}H_{40}N_2O_5$ 508.656
Tetramic acid deriv. Closely related to Alteramide A, A-661. Prod. by *Streptomyces* sp. SCRC-A20 from a marine mollusc. Cytotoxic agent, apoptosis inducer. Inhibitor of superoxide anion generation.

Japan. Pat., 1995, 95 228 583; *CA*, **123**, 337551v (*isol*)
Bae, M.-A *et al., Heterocycl. Commun.*, 1996, **2**, 315-318 (*isol, pmr, struct*)

Aburatubolactam B A-17

[170894-25-4]



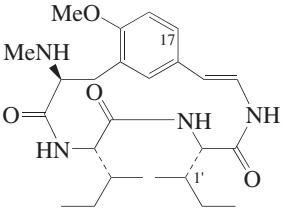
$C_{30}H_{40}N_2O_6$ 524.656
Prod. by *Streptomyces* sp. SCRC A-20. Antiinflammatory and cytotoxic agent. Cryst. $[\alpha]_D$ +197 (Py).

25-Deoxy: ***Aburatubolactam C***
[170894-26-5]
$C_{30}H_{40}N_2O_5$ 508.656
Prod. by *Streptomyces* sp. SCRC A-20. Apoptosis-inducing substance. Antiinflammatory and cytotoxic agent. Powder. $[\alpha]_D$ +136 (Py).

Japan. Pat., 1995, 95 228 583; *CA*, **123**, 337551v
Bae, M.-A. *et al., J. Microb. Biotechnol.*, 1998, **8**, 455-460

Abyssenine B A-18

Abyssinine B
[54519-15-2]



$C_{25}H_{38}N_4O_4$ 458.6

The alkaloids included in the entry need not necessarily have the same stereochem. Alkaloid from the bark of *Zizyphus abyssinica* and *Zizyphus mucronata* and from the stem bark of *Zizyphus oenoplia* (Rhamnaceae). Needles (MeOH/petrol). Mp 229-230°. $[\alpha]_D^{20}$ +151 (c, 0.16 in $CHCl_3$).

N-*De-Me:* ***Abyssenine C***. *Abyssinine C*
[55857-03-9]
$C_{24}H_{36}N_4O_4$ 444.573
Alkaloid from the bark of *Zizyphus abyssinica* and from bark and leaves of *Zizyphus mucronata* (Rhamnaceae). Shows antibacterial and antifungal activity. Amorph. $[\alpha]_D^{20}$ +144 (c, 0.12 in $CHCl_3$). $[\alpha]_D^{20}$ -15 (c, 0.13 in MeOH).

17-Methoxy, N-*de-Me:* ***Mucronine G***
[55856-94-5]
$C_{25}H_{38}N_4O_5$ 474.599
Alkaloid from the bark and leaves of *Zizyphus mucronata* (Rhamnaceae). Amorph. $[\alpha]_D^{20}$ -50 (c, 0.084 in MeOH).

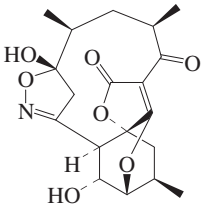
Z-*Isomer, 1′-hydroxy:* ***Zizyphine D***
[55323-68-7]
$C_{25}H_{38}N_4O_5$ 474.599
Alkaloid from the stem bark of *Zizyphus oenoplia* (Rhamnaceae). Needles (MeOH aq.). Mp 195°. $[\alpha]_D^{20}$ +236 (c, 0.10 in $CHCl_3$). $[\alpha]_D^{20}$ -121 (c, 0.10 in MeOH).

Z-*Isomer, 1′-hydroxy,* N-*de-Me:* ***Zizyphine E***
[55323-71-2]
$C_{24}H_{36}N_4O_5$ 460.572
Alkaloid from the stem bark of *Zizyphus oenoplia* (Rhamnaceae). Amorph. $[\alpha]_D^{20}$ +150 (c, 0.10 in $CHCl_3$). $[\alpha]_D^{20}$ -111 (c, 0.10 in MeOH).

Tschesche, R. *et al., Annalen*, 1974, 1915-1928 (*Abyssinines B,C, Mucronine G*)
Tschesche, R. *et al., Phytochemistry*, 1974, **13**, 2328 (*occur*)
Cassels, B.K. *et al., Tetrahedron*, 1974, **30**, 2461-2466 (*Abyssinine B, Zizyphines D,E*)
Hindenlang, D.M. *et al., Annalen*, 1980, 447 (*Zizyphine D, cmr*)
Wang, J. *et al., Tet. Lett.*, 2007, **48**, 6717-6721 (*synth, struct*)

Abyssomicin B A-19

[725254-08-0]



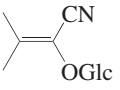
Absolute Configuration

$C_{19}H_{23}NO_7$ 377.393
Prod. by *Verrucosispora* sp. AB 18-032. Powder.

Bister, B. *et al., Angew. Chem., Int. Ed.*, 2004, **43**, 2574-2576 (*isol, struct*)
Riedlinger, J. *et al., J. Antibiot.*, 2004, **57**, 271-279 (*isol, activity*)

Acacipetalin A-20

2-(β-D-Glucopyranosyloxy)-3-methyl-2-butenenitrile, 9CI
[644-68-8]



$C_{11}H_{17}NO_6$ 259.258
Some confusion occurred in the literature around 1975. Isol. from *Acacia sieberiana* and *Acacia hebeclada*. Mp 177-179°. $[\alpha]_D^{26}$ -36.6 (H_2O).

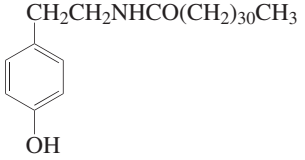
Tetra-Ac: [66890-86-6]
Mp 101-103°.

2,3-Dihydro: ***Dihydroacacipetalin***
$C_{11}H_{19}NO_6$ 261.274
Isol. from *Acacia sieberiana*.

Rimington, C. *et al., S. Afr. J. Sci.*, 1935, **32**, 154 (*isol*)
Ettlinger, M.G. *et al., Chem. Comm.*, 1977, 952 (*struct*)
Jaroszewski, J.W. *et al., Magn. Reson. Chem.*, 1987, **25**, 555 (*pmr, cmr*)

Acalyphamide A-21

N-*[2-(4-Hydroxyphenyl)ethyl]dotriacontanamide*
[81119-33-7]



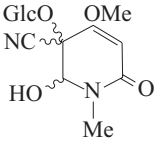
$C_{40}H_{73}NO_2$ 600.022
Isol. from *Acalypha indica*. Mp 135°.

Ac:
Amorph. solid ($CHCl_3$/MeOH). Mp 126°.

Talapatra, B. *et al., Indian J. Chem., Sect. B*, 1981, **20**, 974

Acalyphin A-22

3-(β-D-Glucopyranosyloxy)-1,2,3,6-tetrahydro-2-hydroxy-4-methoxy-1-methyl-6-oxo-3-pyridinecarbonitrile, 9CI
[81861-72-5]

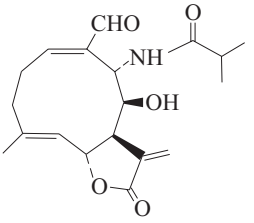


$C_{14}H_{20}N_2O_9$ 360.32
Alkaloid from the aerial parts of *Acalypha indica* (Euphorbiaceae). Also reported from Te Xian Cai (*Acalypha australis*) and *Acalypha farnesiana*. Hygroscopic powder. Mp 185-186° (182-184°). λ_{max} 223 (ε 6310); 255 (sh) (ε 2450) (EtOH) (Derep).

Nahrstedt, A. *et al., Phytochemistry*, 1982, **21**, 101 (*uv, ir, pmr, cmr, struct*)
Li, T.S.C. *et al., Chinese and Related North American Herbs*, CRC Press, 2002, 4 (*occur*)

Acanthamolide A-23

[64852-96-6]

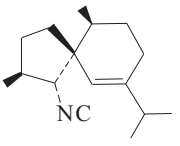


$C_{19}H_{25}NO_5$ 347.41
Constit. of *Acanthospermum glabratum*. Cryst. (C_6H_6/MeOH). Mp 249-251°. λ_{max} 225 (ε 10000) (MeOH) (Derep).

Saleh, A.A. *et al., J.C.S. Perkin 1*, 1980, 1090

Acanthisonitrile 3 A-24

[112766-99-1]



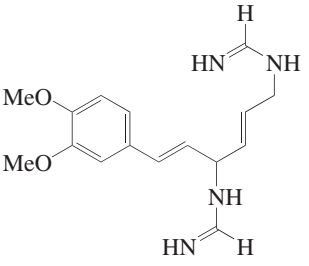
$C_{16}H_{25}N$ 231.38
Metab. of marine sponge *Acanthella acuta*. Oil. $[\alpha]_D$ -31.5 (c, 1.2 in $CHCl_3$).

Isothiocyanate: ***Acanthisothiocyanate 3***
[112767-00-7]
$C_{16}H_{25}NS$ 263.446
Metab. of *Acanthella acuta*. Oil. $[\alpha]_D$ -12.9 (c, 0.3 in $CHCl_3$). Has -NCS replacing -NC.

Mayol, L. *et al., Tetrahedron*, 1987, **43**, 5381-5388

Acanthoine A-25

N,N″-*[1-(3,4-Dimethoxystyryl)-2-butenylene]diformamidine, 8CI*
[6793-31-3]



$C_{16}H_{22}N_4O_2$ 302.375
Alkaloid from *Carduus acanthoides* (Asteraceae). Mp 221° (192-193°) (as dihydrochloride). $[\alpha]_D^{29}$ +7.1 (c, 0.4 in H_2O).

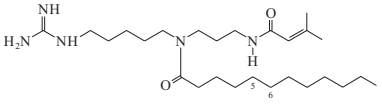
Tetrahydro: ***Acanthoidine***. *Ruscopine*
[94347-15-6]
[4192-85-2]
$C_{16}H_{26}N_4O_2$ 306.407
Alkaloid from *Carduus acanthoides* (Asteraceae). Mp 250-251° (as hydrochloride). $[\alpha]_D^{22}$ +6.8 (c, 0.4 in H_2O). Saturated at both olefinic double bonds. The duplication of

trivial names is unexpected since both clearly refer to the same isol.

Frydman, B. *et al., Tetrahedron*, 1962, **18**, 1063-1072 (*Acanthoine, Acanthoidine*)
U.S. Pat., 1964, 3 130 231; *CA*, **62**, 9188 (*synth*)
U.S. Pat., 1964, 3 130 230; *CA*, **61**, 3159 (*Ruscopine*)

3,5-Acarnidine A-26

$C_{12:0}$-Acarnidine
[67534-25-2]



$C_{26}H_{51}N_5O_2$ 465.721
Isol. from the sponge *Acarnus erithacus* as part of an inseparable mixt. Possesses broad antimicrobial activity and modest antiviral activity.

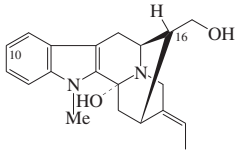
5,6Z-Didehydro: ***$C_{12:1}$-Acarnidine***
[67534-26-3]
$C_{26}H_{49}N_5O_2$ 463.705
Component of *Acarnus erithacus* acarnidine mixt. λ_{max} 218 (ϵ 17000) (no solvent reported) (Derep).

N-*Dedodecanoyl,* N-*(5Z,8Z,11Z-tetradecatrienoyl):* ***$C_{14:3}$-Acarnidine***
[67534-27-4]
$C_{28}H_{49}N_5O_2$ 487.727
Isol. from *Acarnus erithacus.*

Carter, G.T. *et al., J.A.C.S.*, 1978, **100**, 4302-4304 (*isol, ir, pmr, cmr, ms, struct*)
Yorke, S.C. *et al., Aust. J. Chem.*, 1986, **39**, 447-455 (*synth*)

Accedine A-27

1-Methylsarpagan-3,17-diol, 9CI
[58262-63-8]



Absolute Configuration

$C_{20}H_{24}N_2O_2$ 324.422
Alkaloid from *Tabernaemontana accedens* (Apocynaceae). Needles (MeOH). Mp 148-149°. $[\alpha]_D^{20}$ +72 (c, 0.096 in $CHCl_3$).

N-*De-Me:* ***Amerovolfine.*** N-*Demethylaccedine*
[121312-84-3]
$C_{19}H_{22}N_2O_2$ 310.395
Alkaloid from the stem bark of *Rauwolfia tetraphylla* and *Rauwolfia cubana* (Apocynaceae). Needles (MeOH). Mp 183-184°. $[\alpha]_D^{20}$ +67 (c, 0.95 in MeOH).

N-*De-Me; hydrochloride:* Mp 280-282°.

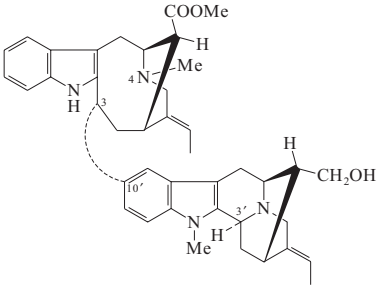
16-Epimer, N-*de-Me:* **N-*Demethyl-16-epiaccedine.* *Sarpagan-3,7-diol, 9CI***
[59190-62-4]
$C_{19}H_{22}N_2O_2$ 310.395
Alkaloid from *Tabernaemontana accedens* (Apocynaceae). Mp 170-172°. $[\alpha]_D^{20}$ +50 (c, 0.06 in $CHCl_3$).

10-Hydroxy, N-*de-Me:* ***3-Hydroxysarpagine***
$C_{19}H_{22}N_2O_3$ 326.394
Alkaloid from the roots of *Rauwolfia serpentina*. Powder. $[\alpha]_D^{21}$ +44 (c, 1 in MeOH). λ_{max} 205 (log ϵ 4.36); 224 (log ϵ 4.23); 278 (log ϵ 3.75) (MeOH).

Achenbach, H. *et al., Chem. Ber.*, 1975, **108**, 3842-3854 (*isol, uv, ir, pmr, ms, struct*)
Achenbach, H. *et al., Tet. Lett.*, 1976, 351-352 (*N-Demethyl-16-epiaccedine*)
Martinez, J.A. *et al., Phytochemistry*, 1989, **28**, 961-962 (*Amerovolfine*)
Martinez, J.A. *et al., Planta Med.*, 1989, **55**, 283-285 (*Amerovolfine*)
Itoh, A. *et al., J. Nat. Prod.*, 2005, **68**, 848-852 (*3-Hydroxysarpagine*)

Accedinisine A-28

Methyl 3-(17-hydroxy-1-methylsarpagan-10-yl)vobasan-17-oate, 9CI
[61551-76-6]



$C_{41}H_{48}N_4O_3$ 644.855
Alkaloid from *Tabernaemontana accedens* (Apocynaceae). Needles (Me_2CO). Mp 235° dec. $[\alpha]_D^{20}$ -60 (c, 0.4 in $CHCl_3$).

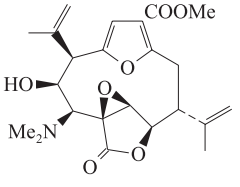
N^4-*De-Me:* ***Demethylaccedinisine***
[160427-83-8]
$C_{40}H_{46}N_4O_3$ 630.828
Alkaloid from stem bark of *Peschiera buchtieni* (Apocynaceae). Also a constit. of *Peschiera van heurkii*. $[\alpha]_D$ -30 (c, 0.3 in MeOH).

3′-Hydroxy: ***Accedinine***
[61551-77-7]
$C_{41}H_{48}N_4O_4$ 660.855
Alkaloid from *Tabernaemontana accedens* (Apocynaceae). Oil. $[\alpha]_D^{20}$ -81 (c, 0.2 in $CHCl_3$).

Achenbach, H. *et al., Chem. Ber.*, 1976, **109**, 3527 (*isol, uv, ir, pmr, ms, struct, synth*)
Azoug, M. *et al., Phytochemistry*, 1995, **39**, 1223 (*Demethylaccedinisine*)

Aceropterine A-29

[176227-10-4]



Relative configuration

$C_{23}H_{29}NO_7$ 431.485
Alkaloid from the Caribbean sea plume *Pseudopterogorgia acerosa*. $[\alpha]_D$ +0.44 (c, 2.0 in $CHCl_3$). Closely related to Tobagolide and Pseudopterolide. λ_{max} 258 (ϵ 3750) (MeOH) (Berdy).

Rodríguez, A.D. *et al., Tet. Lett.*, 1996, **37**, 2687 (*isol, pmr, cmr, ms, struct*)

Acetamide, 9CI A-30

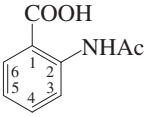
Ethanamide. Methanecarboxamide
[60-35-5]
H_3CCONH_2
C_2H_5NO 59.068
Isol. from some plants e.g. *Chimonanthus fragrans.* Produced industrially by distillation of ammonium acetate or by hydration of Acetonitrile. Solubiliser, plasticiser, stabiliser, used industrially as solv. in molten form. Dissolves virtually all classes of organic and inorganic compds. Deliquescent, hexagonal cryst. Odourless when pure but usually has characteristic "mouse" odour. V. sol. H_2O, EtOH; sol. $CHCl_3$; prac. insol. Et_2O. Mp 82-83°. Bp 222° Bp_5 92°. pK_{a1} -1.4 (25°). Triboluminescent.
▶ Fl. p. >104°. Possible human carcinogen (IARC 2B). Irritant. Exp. carcinogen (v. large dose). Exp. reprod. and teratogenic effects (large doses). AB4025000

N-*(13-Methyltetradecyl):* ***Capsiamide***
[64317-66-4]
$C_{17}H_{35}NO$ 269.47
Constit. of fruit of hot pepper varieties of *Capsicum annuum.*

Takahashi, M. *et al., Yakugaku Zasshi*, 1977, **97**, 758 (*Capsiamide*)
Speakman, J.C. *et al., J. Chem. Res., Synop.*, 1979, 277 (*cryst struct*)
ul Hassan, M. *et al., Org. Magn. Reson.*, 1980, **14**, 447 (*cmr*)
Gonzalez, G. *et al., J.C.S. Faraday 2*, 1981, 2231 (*pmr*)
Kerridge, D.H. *et al., Chem. Soc. Rev.*, 1988, **17**, 181 (***rev***)
Liu, L.K. *et al., Acta Cryst. C*, 1994, **50**, 1333 (*cryst struct, hydrochloride*)

2-Acetamidobenzoic acid A-31

2-(Acetylamino)benzoic acid, 9CI. N-*Acetylanthranilic acid. Lappaconitic acid*
[89-52-1]



$C_9H_9NO_3$ 179.175
Needles (AcOH). Mp 185°. pK_a 5.64.
▶ LD_{50} (mus, orl) 1114 mg/kg. CB2455000

Me ester: [2719-08-6]
$C_{10}H_{11}NO_3$ 193.202
Needles (EtOH). Mp 101°.

Et ester: [20628-20-0]
$C_{11}H_{13}NO_3$ 207.229
Needles (EtOH). Mp 64-65°.

Amide: 2-Acetamidobenzamide. 2-(Acetylamino)benzamide. ***Antibiotic NP 101A.*** *NP 101A*
[33809-77-7]
$C_9H_{10}N_2O_2$ 178.19
Prod. by *Streptomyces aurantiogriseus* and *Cytophaga marinoflava* sp. AM13.1. Antifungal agent. Needles

(EtOH). Sol. MeOH, EtOH, EtOAc, C_6H_6, DMSO, Py; poorly sol. H_2O. Mp 179-180° (α-form) Mp 189-190° (β-form). Exists in two cryst. forms, accounting for unreliable melting point determinations. λ_{max} 219 (log ϵ 3.56); 252 (log ϵ 3.31); 299 (log ϵ 2.72) (MeOH). λ_{max} 219 (ϵ 3630); 252 (ϵ 2042); 299 (ϵ 550) (MeOH) (Berdy).

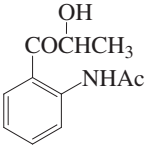
► CU8702020

N-*Ac: Diacetylanthranilic acid*
$C_{11}H_{11}NO_4$ 221.212
Prisms (EtOH). Mp 180°.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 356D (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **2**, 1362B (*nmr*)
Matsuo, M. *et al., Chem. Pharm. Bull.*, 1972, **20**, 990 (*nmr*)
Erikson, J. *et al., J. Chem. Educ.*, 1972, **49**, 688 (*synth*)
Matsuda, V. *et al., Bull. Chem. Soc. Jpn.*, 1973, **46**, 430 (*synth*)
Ger. Pat., 1976, 2 556 590; *CA*, **85**, 160115 (*synth*)
Errede, L.A. *et al., J.C.S. Perkin 2*, 1981, 233-238 (*Acetamidobenzamide*)
Phay, N. *et al., J. Antibiot.*, 1996, **49**, 703-705 (*Acetamidobenzamide*)
Shaaban, M. *et al., Dissertation*, Univ. of Göttingen, 2004, (*Cytophaga marinoflava isol*)
Kelleher, J.M. *et al., ARKIVOC*, 2007, **xvi**, 209-226 (*Acetamidobenzamide, powder struct, polymorphism*)

1-(2-Acetamidophenyl)-2-hydroxy-1-propanone A-32

N-*[2-(2-Hydroxy-1-oxopropyl)phenyl]acetamide, 9CI. 2-(2-Hydroxypropanoyl)acetanilide*
[150641-66-0]



$C_{11}H_{13}NO_3$ 207.229
Prod. by *Nocardia* sp. DSM 43130. $[\alpha]_D$ -8 ($CHCl_3$). λ_{max} 217 ; 253 ; 339 (MeOH). λ_{max} 217 ; 253 ; 339 (MeOH) (Berdy).

Abraham, W.R. *et al., Phytochemistry*, 1993, **33**, 929-930

2-[(2-Acetamidopropanoyl)amino]benzamide A-33

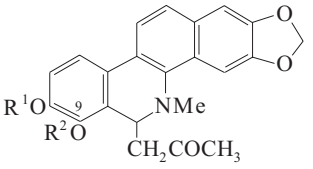
N^2-*[2-(Acetylamino)propanoyl]anthranilamide.* N^2-*Acetylalanylanthranilamide*
$C_{12}H_{15}N_3O_3$ 249.269

(S)-*form*
Antibiotic NI 15501A. *NI 15501A*
[208345-44-2]
Prod. by the marine fungus *Penicillium* sp. NI15501. Solid. Sol. MeOH, butanol; poorly sol. H_2O. $[\alpha]_D^{30}$ -62.8 (c, 0.15 in MeOH). λ_{max} 216 (ϵ 12000); 253 (ϵ 6100); 290 (ϵ 1800) (MeOH).

Onuki, H. *et al., J. Antibiot.*, 1998, **51**, 442-444 (*isol, uv, ir, pmr, cmr, ms*)

8-Acetonyldihydrochelerythrine A-34

12,13-Dihydro-1,2-dimethoxy-12-methyl-13-(2-oxopropyl)-1,3-benzodioxolo[5,6-c]phenanthridine, 9CI. 13-Acetonyl-12,13-dihydrochelerythrine, 8CI. 11-Acetonyldihydrochelerythrine. Alkaloid ZT_1. 6-Acetonyldihydrochelerythrine
[22864-92-2]



$R^1 = R^2 = Me$

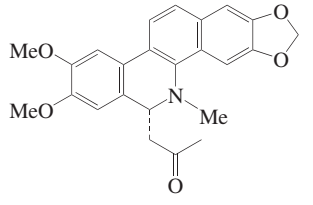
$C_{24}H_{23}NO_5$ 405.449
Probably an artifact. Numbering systems vary. Alkaloid from the root bark of *Toddalia aculeata* and *Xylocarpus granatum*, and from the bark of *Zanthoxylum conspersipunctatum* and *Zanthoxylum tsihanimposa* (Rutaceae, Meliaceae). Also obt. by the base-catalysed addn. of acetone to Chelerythrine. Plates (Me_2CO). Mp 199° (190-192°, 194-195°). λ_{max} 228 (log ϵ 4.52); 283 (log ϵ 4.61); 320 (log ϵ 4.18) (solvent not reported).

O^9-*De-Me:* O-*Desmethyldihydrochelerithrinyl-8-acetone.* O-*Desmethyldihydrochelerithrinyl-11-acetone. Alkaloid ZT_3*
[51888-34-7]
$C_{23}H_{21}NO_5$ 391.423
Isol. from the bark of *Zanthoxylum tsihanimposa* (Rutaceae). Cryst. (MeOH). Mp 201-205°. Opt. inactive, prob. an artifact. λ_{max} 229 (log ϵ 4.55); 284 (log ϵ 4.62); 320 (log ϵ 4.17) (EtOH). λ_{max} 234 (log ϵ 4.48); 297 (log ϵ 4.52); 338 (log ϵ 4.33) (EtOH + NaOH).

Desai, P.D. *et al., Indian J. Chem.*, 1967, **5**, 41-42 (*uv, ir, pmr, ms, struct*)
MacLean, D.B. *et al., Can. J. Chem.*, 1969, **47**, 1951-1956 (*synth, ir, pmr, ms*)
Corrie, J.E.T. *et al., Aust. J. Chem.*, 1970, **23**, 133-145 (*synth, uv, ir, ms*)
Krajniak, E.R. *et al., Aust. J. Chem.*, 1973, **26**, 687-689 (*isol*)
Decaudain, N. *et al., Phytochemistry*, 1974, **13**, 505-511 (*O^9-de-Me*)
Chou, F.Y. *et al., Heterocycles*, 1977, **7**, 969-975 (*occur*)
Sharma, P.N. *et al., Phytochemistry*, 1981, **20**, 2781-2783 (*isol*)

8-Acetonyldihydronitidine A-35

[80330-39-8]



Relative Configuration

$C_{24}H_{23}NO_5$ 405.449

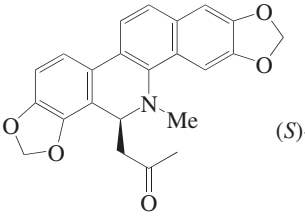
Alkaloid from the stem bark of *Zanthoxylum tetraspermum*. Antibacterial agent. Cryst. Mp 165-167°. $[\alpha]_D$ 0 ($CHCl_3$). λ_{max} 316 (log ϵ 3.87) (EtOH).

*10,11-Di-*O*-de-Me, 10,11-methylene ether:* ***8-Acetonyldihydroavicine***
[348098-59-9]
$C_{23}H_{19}NO_5$ 389.407
Alkaloid from the stem bark of *Zanthoxylum tetraspermum*. Antibacterial agent. Cryst. Mp 184-185°. $[\alpha]_D^{25}$ -6.6 ($CHCl_3$). λ_{max} 321 (log ϵ 4.2) (EtOH).

Nissanka, A.P.K. *et al., Phytochemistry*, 2001, **56**, 857-861 (*isol, pmr, cmr, 8-Acetonyldihydroavicine*)
Morel, A.F. *et al., Acta Cryst. C*, 2002, **58**, 606-607 (*Acetonyldihydroavicine, cryst struct*)
Wang, X.-L. *et al., Acta Cryst. E*, 2006, **62**, 2247-2248 (*cryst struct*)

8-Acetonyldihydrosanguinarine A-36

6-Acetonylsanguinarine. 6-Acetonyldihydrosanguinarine
[37687-34-6]



(*S*)-*form*

$C_{23}H_{19}NO_5$ 389.407

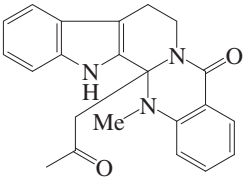
(*S*)-*form*
Alkaloid from the roots of *Corydalis flabellata*. Needles ($CHCl_3$/EtOH). Mp 209-210°. $[\alpha]_D^{20}$ +25.3 (c, 0.02 in $CHCl_3$). λ_{max} 232 (log ϵ 4.4); 282 (log ϵ 4.6); 323 (log ϵ 4.8) ($CHCl_3$).

(ξ)-*form*
Alkaloid from *Argemone mexicana*, the callus tissue of *Papaver somniferum* (opium poppy) and the roots of *Glaucium flavum* var. *vestitum* (Papaveraceae). Also obt. by the base-catalysed condensation of sanguinarine with acetone. Pale yellow needles (MeOH/$CHCl_3$). Mp 194-195.5°.

Furuya, T. *et al., Phytochemistry*, 1972, **11**, 3041-3044 (*isol, uv, ir, pmr, ms, struct, synth*)
Döpke, W. *et al., Z. Chem.*, 1976, **16**, 54-55 (*occur, uv, ir, pmr, ms, struct*)
Castedo, L. *et al., Heterocycles*, 1981, **16**, 533-536 (*occur*)
Koul, S. *et al., Planta Med.*, 2002, **68**, 262-265 (*isol, pmr, cmr, ms*)

Acetonylevodiamine A-37

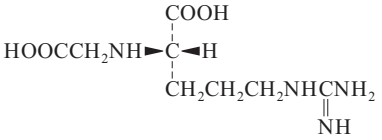
[848601-89-8]



$C_{22}H_{21}N_3O_2$ 359.427
Alkaloid from the fruit of *Evodia rutaecarpa*. Mp 163-164°.

Zuo, G.Y. *et al., Yunnan Zhiwu Yanjiu*, 2003, **25**, 103-106; *CA*, **142**, 332872h (*isol*)

Acetopine **A-38**
N^2-*(Carboxymethyl)arginine, 9CI. Demethyloctopine*

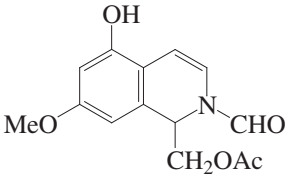


$C_8H_{16}N_4O_4$ 232.239

(*S*)-*form*
L-form
[18416-86-9]
Isol. from cotton (*Gossypium hirsutum*) and soybean (*Glycine max*) callus. Cryst. (EtOH aq.). Mp 281-282°. $[\alpha]_D^{24}$ +24 (c, 2.5 in H_2O).

Herbst, R.M. *et al., J.O.C.*, 1946, **11**, 368 (*synth*)
Christou, P. *et al., Plant Physiol.*, 1986, **82**, 218 (*isol*)

1-(Acetoxymethyl)-2-formyl-1,2-dihydro-5-hydroxy-7-methoxyisoquinoline **A-39**

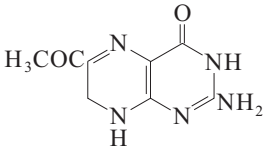


$C_{14}H_{15}NO_5$ 277.276

(+)-*form*
Alkaloid from the sponge *Petrosia similis*. Amorph. solid. $[\alpha]_D^{25}$ +208 (c, 0.72 in $CHCl_3$). λ_{max} 224 (ε 6660); 228 (ε 6680); 231 (ε 6650); 299 (ε 4790) (MeOH).

Ramesh, P. *et al., J. Nat. Prod.*, 1999, **62**, 780-781 (*isol, uv, pmr, cmr, ms*)

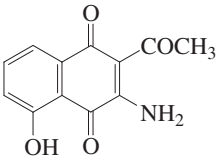
6-Acetyl-2-amino-7,8-dihydro-4(3*H*)-pteridinone, 9CI **A-40**
Sepiapterin C
[42310-08-7]



$C_8H_9N_5O_2$ 207.191
Pigment from *Drosophila melanogaster*. Yellow cryst. (H_2O).

Sugiuva, K. *et al., Bull. Chem. Soc. Jpn.*, 1973, **46**, 3312 (*isol, struct*)

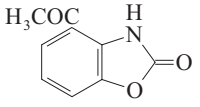
2-Acetyl-3-amino-5-hydroxy-1,4-naphthoquinone **A-41**
2-Acetyl-3-amino-5-hydroxy-1,4-naphthalenedione, 9CI



$C_{12}H_9NO_4$ 231.207
Constit. of the stem bark of *Goniothalamus marcanii*. Yellow powder. λ_{max} 260 (log ε 4.31); 296 (log ε 4.08) (MeOH).

Soonthornchareonnon, N. *et al., J. Nat. Prod.*, 1999, **62**, 1390-1394

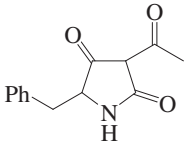
4-Acetyl-2(3*H*)-benzoxazolone, 9CI **A-42**
4-Acetylbenzoxazolin-2-one
[70735-79-4]



$C_9H_7NO_3$ 177.159
Found in kernels of *Zea mays* (sweet corn) (Poaceae). Needles (Me_2CO aq.). Mp 217-218°. λ_{max} 250 (ε 9777); 320 (ε 5128) (MeOH) (Berdy). λ_{max} 268 (ε 8912); 351 (ε 7413) (MeOH/NaOH) (Berdy).

Fielder, D.A. *et al., Tet. Lett.*, 1994, **35**, 521-524 (*isol, uv, ir, pmr, cmr, ms, cryst struct*)
Fielder, D.A. *et al., J. Nat. Prod.*, 1995, **58**, 456-458 (*synth*)
Escobar, C.A. *et al., J. Het. Chem.*, 1997, **34**, 1407-1414 (*synth*)
Kluge, M. *et al., J. Nat. Prod.*, 1998, **61**, 821-822 (*synth*)

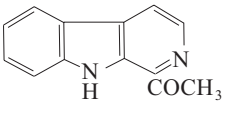
3-Acetyl-5-benzyl-2,4-pyrrolidinedione **A-43**



$C_{13}H_{13}NO_3$ 231.251
Enolised β-tricarbonyl compd. with several tautomers possible. Isol. from *Leocarpus fragilis*. No phys. props. reported.

Steglich, W. *et al., Pure Appl. Chem.*, 1989, **61**, 281-288

1-Acetyl-β-carboline **A-44**
*1-(9*H*-Pyrido[3,4-*b*]indol-1-yl)ethanone, 9CI*
[50892-83-6]

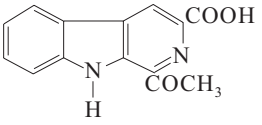


$C_{13}H_{10}N_2O$ 210.235
The compd. lycii Alkaloid I, isol. from several plant spp. and erroneously assigned the struct. N^9-Formylharman, has now been shown by Bracher *et al* to be identical with 1-Acetyl-β-carboline. Alkaloid from the bark of *Ailanthus malabarica* (Simaroubaceae). Also isol. from the sponge *Tedania ignis*. Light yellow solid. Mp 203-205°.

N^2-*Oxide:*
$C_{13}H_{10}N_2O_2$ 226.234
Mp 180°.

Joshi, B.S. *et al., Heterocycles*, 1977, **7**, 193 (*isol, uv, ir, pmr, ms, struct*)
Dillman, R.L. *et al., J. Nat. Prod.*, 1991, **54**, 1056-1061; 1141 (*isol, sponge, ir, pmr, cmr, ms*)
Bracher, F. *et al., Annalen*, 1993, 837; 1335 (*synth, pmr, cmr, lycii Alkaloid I*)
Bracher, F. *et al., Synth. Commun.*, 1995, **25**, 1557 (*synth*)
Zhou, T.-S. *et al., Phytochemistry*, 1998, **49**, 1807-1809 (*isol, uv, ir, pmr, cmr*)
Kast, O. *et al., Synth. Commun.*, 2003, **33**, 3843-3850 (N^2-*oxide*)

1-Acetyl-β-carboline-3-carboxylic acid **A-45**
*1-Acetyl-9*H*-pyrido[3,4-*b*]indole-3-carboxylic acid, 9CI. 1-Acetyl-3-carboxy-β-carboline*
[73818-29-8]



$C_{14}H_{10}N_2O_3$ 254.245
Alkaloid from aerial parts of *Vestia lycioides* (Solanaceae). Mp 347-350°.

Me ester: ***1-Acetyl-3-methoxycarbonyl-β-carboline***
[66154-37-8]
$C_{15}H_{12}N_2O_3$ 268.271
Alkaloid from *Vestia lycioides* (Solanaceae). Yellow needles ($CHCl_3$/MeOH). Mp 234-236°.

*Amide: 1-Acetyl-9*H*-pyrido[3,4-*b*]indole-3-carboxamide, 9CI.* ***Stellarine A***†
[157341-07-6]
$C_{14}H_{11}N_3O_2$ 253.26
Alkaloid from the roots of *Stellaria dichotoma* var. *lanceolata*.

[2Z-(Methoxycarbonyl)vinyl]amide: ***Stellarine B***†
[180681-40-7]
$C_{18}H_{15}N_3O_4$ 337.334
Alkaloid from the roots of *Stellaria dichotoma* var. *lanceolata*.

[2-(Methoxycarbonyl)ethyl]amide: ***Dichotomide I***
[755036-54-5]
$C_{18}H_{17}N_3O_4$ 339.35
Alkaloid from the roots of *Stellaria dichotoma* var. *lanceolata*. Yellow powder. λ_{max} 220 (log ε 3.43); 286 (log ε 3.49) (MeOH).

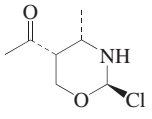
1′S-Alcohol: 1-(1-Hydroxyethyl)-β-carboline-3-carboxylic acid. ***Dichotomine A***

[755036-38-5]
$C_{14}H_{12}N_2O_3$ 256.26
Alkaloid from the roots of *Stellaria dichotoma* var. *lanceolata*. Yellow powder. $[\alpha]_D^{27}$ -9.7 (c, 0.85 in MeOH). λ_{max} 236 (log ϵ 4.14); 269 (log ϵ 4.24) (MeOH).

Faini, F. *et al., Phytochemistry*, 1978, **17**, 338 (*isol, uv, ir, pmr, ms, struct, synth, deriv*)
Razmilić, I. *et al., J. Het. Chem.*, 1980, **17**, 595 (*synth, uv, ir, pmr, ms*)
Faini, F. *et al., Planta Med.*, 1980, **38**, 128 (*isol*)
Cui, Z.-H. *et al., Nat. Prod. Lett.*, 1995, **7**, 59-64 (*Stellarines*)
Sun, B. *et al., J. Nat. Prod.*, 2004, **67**, 1464-1469 (*Dichotomide I, Dichotomine A*)
Omura, K. *et al., Chem. Pharm. Bull.*, 2008, **56**, 237-238 (*Dichotomine A*)

5-Acetyl-2-chlorotetrahydro-4-methyl-2*H*-1,3-oxazine A-46

*1-(2-Chlorotetrahydro-4-methyl-2*H*-1,3-oxazin-5-yl)ethanone*



(2*R**,4*S**,5*R**)-*form*

$C_7H_{12}ClNO_2$ 177.63

(2*R,4*S**,5*R**)-*form*** [1010693-65-8]
Prod. by *Geotrichum* sp. AL4. Amorph. solid. $[\alpha]_D^{25}$ +18 (c, 0.09 in $CHCl_3$).

(2*R,4*S**,5*S**)-*form*** [1010693-64-7]
Prod. by *Geotrichum* sp. AL4. Amorph. solid. $[\alpha]_D^{25}$ +25 (c, 0.1 in $CHCl_3$).

Li, G.-H. *et al., Chem. Biodiversity*, 2007, **4**, 1520-1524 (*isol, pmr, cmr*)

Acetylcholine(1+) A-47

*2-Acetyloxy-*N,N,N*-trimethylethanaminium, 9CI. Choline acetate*
[51-84-3]
$Me_3N^{\oplus}CH_2CH_2OAc$
$C_7H_{16}NO_2^{\oplus}$ 146.209
Occurs in blood, spleen, ergot and plants and in brain tissue in complexed form e.g. in ergot and *Capsella bursa-pastoris* (shepherd's purse) (Brassicaceae). Neurotransmitter, cholinergic and miotic agent, cardiac depressant, peripheral vasodilator. Easily hyd. by alkalis, and *in vivo* by cholinesterases.

▶ FZ9700000

Chloride: ***Acetylcholine chloride, BAN, INN, USAN****. Miochol. Ovisot*
[60-31-1]
$C_7H_{16}ClNO_2$ 181.662
V. deliquescent cryst. powder. Sol. H_2O. Mp 149-152°.

▶ LD_{50} (rat, orl) 2500 mg/kg. LD_{50} (rat, ivn) 22 mg/kg. FZ9800000

Bromide: [66-23-9]
$C_7H_{16}BrNO_2$ 226.113
Deliquescent prisms (EtOH). Mp 143°.

▶ FZ9680000

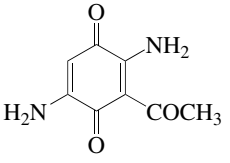
Iodide: [2260-50-6]
$C_7H_{16}INO_2$ 273.113
Mp 161°.

▶ KH3300000

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 678C; 678D; 679A (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 1078A (*nmr*)
Dudley, H.W. *et al., Biochem. J.*, 1929, **23**, 1064 (*synth, bibl*)
Marquardt, P. *et al., Arzneim.-Forsch.*, 1956, **6**, 168; 309 (*biosynth*)
Culvenor, C.C.J. *et al., Chem. Comm.*, 1966, 537 (*pmr*)
Beveridge, D.L. *et al., J.A.C.S.*, 1971, **93**, 3759 (*struct*)
Micelson, M.J. *et al., Acetylcholine; Approach of Mol. Mech. of Action*, Pergamon, 1974,
Hanin, I. *et al., Choline Acetylcholine: Handb. Chem. Assay Methods*, Raven Press, NY, 1974, (*anal*)
Svinning, T. *et al., Acta Cryst. B*, 1975, **31**, 1581 (*cryst struct*)
Sax, M. *et al., Acta Cryst. B*, 1976, **32**, 1953 (*conformn*)
Takasuka, M. *et al., J.C.S. Perkin 2*, 1982, 585 (*ir*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 1112
Al-Badr, A.A. *et al., Anal. Profiles Drug Subst.*, 2004, **31**, 3-115 (*chloride, rev*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, ABO000; CMF250

3-Acetyl-2,5-diamino-1,4-benzoquinone A-48

[16791-08-5]



$C_8H_8N_2O_3$ 180.163
Constit. of *Cynanchum wilfordii*. Amorph. red powder. Mp > 300°. λ_{max} 304 (log ϵ 4.21); 325 (log ϵ 4.34); 477 (log ϵ 2.87) (DMSO).

N^2,N^5-*Di-Me:* [16791-09-6]
$C_{10}H_{12}N_2O_3$ 208.216
Mp 197°.

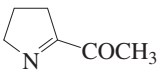
N^5,N^5-*Di-Me:* [16789-18-7]
$C_{10}H_{12}N_2O_3$ 208.216
Mp 164°.

N^2,N^2,N^5,N^5-*Tetra-Me:* [16735-85-6]
$C_{12}H_{16}N_2O_3$ 236.27
Mp 180°.

Schaefer, W. *et al., Tet. Lett.*, 1967, 4307 (*synth*)
Yeo, H. *et al., Phytochemistry*, 1997, **46**, 1103-1105 (*isol, uv, ir, pmr, cmr, ms*)

5-Acetyl-3,4-dihydro-2*H*-pyrrole A-49

*1-(3,4-Dihydro-2*H*-pyrrol-5-yl)ethanone, 9CI. 2-Acetyl-1-pyrroline*
[85213-22-5]

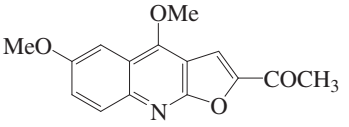


C_6H_9NO 111.143
Isol. from the flowers of *Vallaris glabra*. Key aroma component of rice. Liq. with popcorn odour. Bp_{15} 26-28°. Unstable. Odour threshold of 0.02ng/L in air.

Buttery, R.G. *et al., Chem. Ind. (London)*, 1982, 958; 1983, 478 (*isol, synth*)
Favino, T.F. *et al., J.O.C.*, 1996, **61**, 8975-8979 (*synth, pmr, bibl*)
Hofman, T. *et al., J. Agric. Food Chem.*, 1998, **46**, 616-619; 2270-2277 (***synth, ms, bibl***)
Wongpornchai, S. *et al., J. Agric. Food Chem.*, 2003, **51**, 457-462 (*isol*)
Harrison, T.J. *et al., J.O.C.*, 2005, **70**, 10872-10874 (*synth*)
Adams, A. *et al., Chem. Rev.*, 2006, **106**, 2299-2319 (*rev*)
Snowdon, E.M. *et al., J. Agric. Food Chem.*, 2006, **54**, 6465-6474 (*rev*)
Fuganti, C. *et al., Tetrahedron*, 2007, **63**, 4762-4767 (*synth*)

2-Acetyl-4,6-dimethoxyfuro[2,3-*b*]quinoline A-50

2-Acetylpteleine



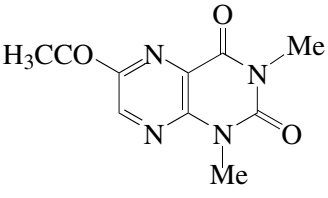
$C_{15}H_{13}NO_4$ 271.272
Alkaloid from the root bark of *Melicope semecarpifolia*. Yellow needles (MeOH). Mp 123-126°. λ_{max} 236 (log ϵ 4.01); 303 (log ϵ 3.7); 330 (log ϵ 3.76) (MeOH).

*6-Demethoxy, 7-methoxy: 2-Acetyl-4,7-dimethoxyfuro[2,3-*b*]quinoline.* ***2-Acetylevolitrine***
$C_{15}H_{13}NO_4$ 271.272
Alkaloid from the root bark of *Melicope semecarpifolia*. Yellow needles (MeOH). Mp 121-124°. λ_{max} 235 (log ϵ 4.41); 260 (log ϵ 4.4); 351 (log ϵ 4.43) (MeOH).

Chen, I.S. *et al., J. Nat. Prod.*, 2001, **64**, 1143-1147

6-Acetyl-1,3-dimethyl-2,4(1*H*,3*H*)-pteridinedione, 9CI A-51

6-Acetyl-1,3-dimethyllumazine
[94591-18-1]



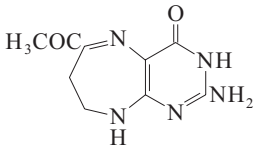
$C_{10}H_{10}N_4O_3$ 234.214
Isol. from the marine polychaete worm *Odontosyllis undecimdonta*. Needles (MeOH). Mp 177-178° (173°).

Kakoi, H. *et al., Heterocycles*, 1995, **41**, 789-797 (*isol, synth, pmr, cmr*)

6-Acetylhomopterin **A-52**

*6-Acetyl-2-amino-1,7,8,9-tetrahydro-4*H*-pyrimido[4,5-*b*][1,4]diazepin-4-one, 9CI. Quench spot*

[80003-63-0]



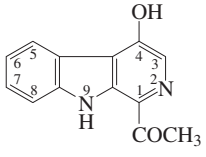
$C_9H_{11}N_5O_2$ 221.218

Naturally occurring diazepine from *Drosophila melanogaster*. Intermed. involved in the biosynth. of Drosopterin, D-941. Greenish-yellow cryst.

Wiederrecht, G.J. *et al., J. Biol. Chem.*, 1981, **256**, 10399 (*isol, struct, ms, pmr*)
Jacobson, K.B. *et al., Biochemistry*, 1982, **21**, 5700 (*isol, struct, pmr, cmr, uv*)
Boyle, P.H. *et al., Tet. Lett.*, 1987, **28**, 5331 (*synth*)

1-Acetyl-4-hydroxy-β-carboline **A-53**

*1-(4-Hydroxy-9*H*-pyrido[3,4-*b*]indol-1-yl)ethanone, 9CI*



$C_{13}H_{10}N_2O_2$ 226.234

Me ether: ***1-Acetyl-4-methoxy-β-carboline***
[65236-63-7]
$C_{14}H_{12}N_2O_2$ 240.261
Alkaloid from the bark and roots of *Ailanthus malabarica* and from the root bark of *Ailanthus altissima* (Simaroubaceae). Prisms. Mp 208° 204-205° Mp 212.5-214°. λ_{max} 238 (log ϵ 4.15); 270 (log ϵ 4.26); 288 (log ϵ 4.23); 370 (log ϵ 3.82) (EtOH).

Joshi, B.S. *et al., Heterocycles*, 1977, **7**, 193-200 (*isol, uv, ir, pmr, ms, struct*)
Ohmoto, T. *et al., Chem. Pharm. Bull.*, 1981, **29**, 390-395 (*isol, uv, ir, pmr, cmr, ms*)
Koike, K. *et al., Org. Magn. Reson.*, 1984, **22**, 471-473 (*cmr*)
Suzuki, H. *et al., Chem. Pharm. Bull.*, 1991, **39**, 2170-2172 (*synth*)
Suzuki, H. *et al., Tetrahedron*, 1997, **53**, 1593-1606 (*synth*)

1-Acetyl-6-hydroxy-β-carboline **A-54**

*1-(6-Hydroxy-9*H*-pyrido[3,4-*b*]indol-1-yl)ethanone, 9CI*

$C_{13}H_{10}N_2O_2$ 226.234

O-*(4-*O*-Methyl-β-*D*-glucopyranoside):* ***BB 4***
$C_{20}H_{22}N_2O_7$ 402.403
Isol. from the oriental crude drug bombyx batryticatus (dried larvae of *Bombyx mori*).

Kikuchi, H. *et al., Tet. Lett.*, 2004, **45**, 367-370 (*BB4*)

1-Acetyl-7-hydroxy-β-carboline **A-55**

*1-(7-Hydroxy-9*H*-pyrido[3,4-*b*]indol-1-yl)ethanone, 9CI.* ***Arenarine D***
[123520-96-7]

$C_{13}H_{10}N_2O_2$ 226.234
Alkaloid from *Arenaria kansuensis* (Caryophyllaceae). Pale yellow needles (EtOAc). Mp 176-177° dec.

O-*(4-*O*-Methyl-β-*D*-glucopyranoside):* ***BB 3***
$C_{20}H_{22}N_2O_7$ 402.403
Isol. from the oriental crude drug, bombyx batryticatus (dried silkworms, *Bombyx* spp.).

Me ether: 1-Acetyl-7-methoxy-β-carboline. ***Arenarine C***
[62230-10-8]
$C_{14}H_{12}N_2O_2$ 240.261
Alkaloid from *Banisteriopsis caapi* (Malphigiaceae) and from the whole plant of *Arenaria kansuensis* (Caryophyllaceae). Light yellow needles ($CHCl_3$ or hexane/EtOAc). Mp 224-225° dec. (190° dec.). λ_{max} 260 (log ϵ 4.18); 289 (log ϵ 4.37); 334 (log ϵ 4.02) ($CHCl_3$).

Hashimoto, Y. *et al., Phytochemistry*, 1976, **15**, 1559-1560 (*Me ether, isol, synth, pmr*)
Wu, F. *et al., Chem. Pharm. Bull.*, 1989, **37**, 1808 (*isol, uv, ir, pmr, cmr, ms*)
Kikuchi, H. *et al., Tet. Lett.*, 2004, **45**, 367-370 (*BB 3*)

1-Acetyl-8-hydroxy-β-carboline **A-56**

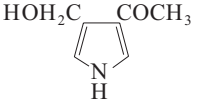
*1-(8-Hydroxy-9*H*-pyrido[3,4-*b*]indol-1-yl)ethanone, 9CI*

$C_{13}H_{10}N_2O_2$ 226.234
Alkaloid from *Hypodematium squamuloso-pilosum*. Pale yellow powder (MeOH aq.). Mp 242-243°. λ_{max} 256 ; 277 ; 310 ; 390 (MeOH).

Zhou, T.-S. *et al., Phytochemistry*, 1998, **49**, 1807-1809 (*isol, uv, ir, pmr, cmr, ms*)

3-Acetyl-4-(hydroxymethyl)-pyrrole **A-57**

*1-[4-(Hydroxymethyl)-1*H*-pyrrol-3-yl]ethanone, 9CI.* ***Verrucarin E***
[24445-13-4]



$C_7H_9NO_2$ 139.154

Pyrrole antibiotic. Metab. of *Myrothecium verrucaria*. Shows cytostatic activity. Cryst. (Et_2O/Me_2CO). Sol. EtOAc; poorly sol. H_2O, acids, bases. Mp 90.5-91°. λ_{max} 260 (ϵ 17800) (MeOH or EtOH) (Derep). λ_{max} 249 (ϵ 10000) (EtOH) (Berdy).

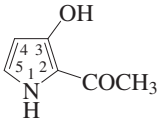
Ac:
$C_9H_{11}NO_3$ 181.191
Cryst. (Et_2O/Me_2CO). Mp 102°.

Härri, E. *et al., Helv. Chim. Acta*, 1962, **45**, 839 (*isol, props*)
Pfäffli, P. *et al., Helv. Chim. Acta*, 1969, **52**, 1911-1920; 1921-1929 (*struct, biosynth*)
Gossauer, A. *et al., Helv. Chim. Acta*, 1976, **59**, 1698-1704 (*synth*)
Sheldrick, W.S. *et al., Acta Cryst. B*, 1978, **34**, 1248-1253 (*cryst struct*)
Chexal, K.K. *et al., Helv. Chim. Acta*, 1980, **63**, 761 (*biosynth*)
Muchowski, J.M. *et al., Helv. Chim. Acta*, 1984, **67**, 1168 (*synth*)
Adinolfi, A. *et al., J. Agric. Food Chem.*, 2005, **53**, 1598-1603 (*isol, cmr, ms*)

2-Acetyl-3-hydroxy-1*H*-pyrrole **A-58**

*1-(3-Hydroxy-1*H*-pyrrol-2-yl)ethanone*

[95232-59-0]



$C_6H_7NO_2$ 125.127

O-*[β-D-Fucopyranosyl-(1→3)-β-D-fucopyranosyl-(1→4)-[6-deoxy-β-D-glucopyranosyl-(1→2)]-6-deoxy-β-D-glucopyranoside]:*
$C_{30}H_{47}NO_{18}$ 709.697
Alkaloid from the starfish *Asterina pectinifera*. Amorph. powder. Mp 240-245°. $[\alpha]_D^{18}$ +0.2 (c, 0.3 in MeOH).

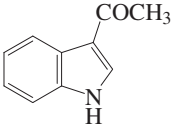
*Me ether: 2-Acetyl-3-methoxy-1*H*-pyrrole*
[70718-05-7]
$C_7H_9NO_2$ 139.154
Needles (H_2O). Mp 115-116°.

Fisher, B.E. *et al., J.O.C.*, 1964, **29**, 776-781 (*Me ether*)
Zhang, L.-X. *et al., Nat. Prod. Res.*, 2006, **20**, 229-233 (*isol, pmr, cmr, ms*)

3-Acetylindole **A-59**

*1-(1*H*-Indol-3-yl)ethanone, 9CI. 3-Indolyl methyl ketone*

[703-80-0]



$C_{10}H_9NO$ 159.187

Constit. of *Strychnos cathayensis*. Cryst. (cyclohexane/EtOH). Spar. sol. H_2O. Mp 194°. pK_a 12.99 (25°,NH).

► LD_{50} (mus, ipr) 300 mg/kg. OB4520000

Picrate:
Yellow cryst. (petrol). Mp 183°.

Oxime: [87052-79-7]
[40747-12-4 (*E*-form), 40747-13-5 (*Z*-form)]
$C_{10}H_{10}N_2O$ 174.202
Mp 144-147°. Oximation produces the *E*-form.

N-*Ac:* [17537-64-3]
$C_{12}H_{11}NO_2$ 201.224
Sol. hot H_2O. Mp 151°. Sublimes.

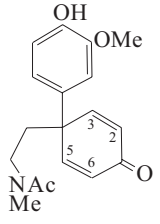
N-*Me: 3-Acetyl-1-methylindole*
[19012-02-3]
$C_{11}H_{11}NO$ 173.214
Cryst. (EtOH). Mp 104-105°. $Bp_{0.01}$ 130-140°.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 666A (*ir*)

Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 135C (*nmr*)
Baker, J.W. *et al., J.C.S.*, 1946, 461-463 (*synth, N-Ac*)
Pyang, H.-S. *et al., Chem. Comm.*, 1972, 77 (*synth*)
Rosenberg, E. *et al., Org. Magn. Reson.*, 1976, **8**, 117 (*nmr*)
Pindur, U. *et al., Annalen*, 1986, 1621 (*synth, ir, pmr*)
Kasahara, A. *et al., Bull. Chem. Soc. Jpn.*, 1986, **59**, 927 (*synth*)
Majchrzak, M.W. *et al., Synthesis*, 1986, 956-958 (*N-Me, synth, pmr*)
Shner, V.F. *et al., Chem. Heterocycl. Compd. (Engl. Transl.)*, 1989, 272-274 (*N-Ac, synth*)
Bergman, J. *et al., Tetrahedron*, 1990, **46**, 6061 (*synth*)
Pindur, U. *et al., Helv. Chim. Acta*, 1991, **74**, 727-738 (*E-form, oxime, synth, pmr, ms*)
Yang, C.X. *et al., Synth. Commun.*, 1997, **27**, 2125-2132 (*synth, pmr, cmr, ms*)
Cheng, M.-J. *et al., J. Chin. Chem. Soc. (Taipei)*, 2001, **48**, 235-239 (*isol*)
Taira, S. *et al., Tet. Lett.*, 2002, **43**, 8893-8896 (*N-Ac, synth, pmr*)
Wynne, J.H. *et al., Synthesis*, 2004, 2277-2282 (*synth, ir, pmr, cmr*)

4-[2-(Acetylmethylamino)-ethyl]-4-(4-hydroxy-3-methoxy-phenyl)-2,4-cyclohexadien-1-one A-60

N-*Methyl-4′*-O-*demethyl*-N,7a-*secome-sembradienone*
[82545-13-9]



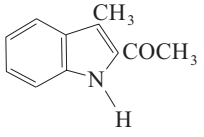
$C_{18}H_{21}NO_4$ 315.368
Achiral molecule. Alkaloid from *Sceletium namaquense* (Aïzoaceae). Mp 107.5°.

2,3,5,6-Tetrahydro, Me ether: ***4-[2-(Acetylmethylamino)ethyl]-4-(3,4-dimethoxyphenyl)cyclohexanone***. N-*Acetyl*-N-*methyl*-N,7a-*secomesembrine*
[82545-07-1]
$C_{19}H_{27}NO_4$ 333.427
Alkaloid from *Sceletium namaquense* (Aïzoaceae). Oil.

Jeffs, P.W. *et al., J.O.C.*, 1982, **47**, 3611 (*isol, ir, pmr, ms, struct, synth*)

2-Acetyl-3-methylindole A-61

*1-(3-Methyl-1*H-*indol-2-yl)ethanone, 9CI.* ***Salvadoricine***
[16244-23-8]

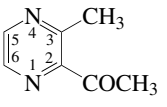


$C_{11}H_{11}NO$ 173.214
The first naturally occurring 2-acetyl-indole alkaloid. Alkaloid from the leaves of *Salvadora persica* (Salvadoraceae). Needles (hexane). Mp 146-147° (143-144°).

Ishizumi, K. *et al., Chem. Pharm. Bull.*, 1967, **15**, 863 (*synth*)
Jackson, A.H. *et al., Chem. Comm.*, 1978, 779 (*synth*)
Malik, S. *et al., Tet. Lett.*, 1987, **28**, 163 (*isol, uv, ir, pmr, cmr, ms*)
Pindur, U. *et al., J. Het. Chem.*, 1992, **29**, 145 (*synth, pmr, cmr, ms*)

2-Acetyl-3-methylpyrazine A-62

1-(3-Methylpyrazinyl)ethanone, 9CI. Methyl (3-methylpyrazinyl) ketone, 8CI
[23787-80-6]

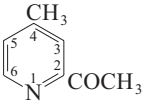


$C_7H_8N_2O$ 136.153
Present in spiny lobster *Panulirus argus.* Liq. with burnt, popcorn-like odour. d 1.11. $Bp_{0.5}$ 56°. n_D^{20} 1.5216. Odour threshold 2 x 10^{-2} ppm in H_2O.

Mookherjee, B.D. *et al., J.O.C.*, 1972, **37**, 511-513 (*synth, ir, pmr, ms*)
Wolt, J. *et al., J.O.C.*, 1975, **40**, 1178-1179 (*synth, pmr, ms*)
Mihara, S. *et al., J. Agric. Food Chem.*, 1988, **36**, 1242-1247 (*props*)
Nakamura, S. *et al., Agric. Biol. Chem.*, 1989, **53**, 1891-1899 (*glc, occur*)
Cadwallader, K.R. *et al., J. Agric. Food Chem.*, 1995, **43**, 2432-2437 (*detn, occur*)

2-Acetyl-4-methylpyridine A-63

1-(4-Methyl-2-pyridinyl)ethanone, 9CI. Methyl 4-methyl-2-pyridyl ketone, 8CI. 2-Acetyl-4-picoline
[59576-26-0]



C_8H_9NO 135.165
Component of tobacco smoke and fig leaf absolute (*Ficus carica*). Cryst. (petrol). Sol. EtOH. Mp 33-34°. Bp_{15} 95-97°.

*Oxime (*E-*):* [23089-35-2]
$C_8H_{10}N_2O$ 150.18
Used as a 0.01*M* soln. in EtOH for photometric detn. of Co (λ_{max} 325 nm, ϵ 11800, EtOH aq.), Cu(*I*) (λ_{max} 409 nm, ϵ 5300, EtOH aq.), extraction-photometric detn. of Fe(*II*) (λ_{max} 541 nm, ϵ 14000, isopentanol). Cryst. (C_6H_6/petrol). Mp 98-99° Mp 125-128°.

Semicarbazone:
Solid. Mp 195-198°.

[18103-84-9]

Case, F.H. *et al., J.A.C.S.*, 1956, **78**, 5842 (*synth*)
Nishimoto, N. *et al., Yakugaku Zasshi*, 1961, **81**, 88; *CA*, **55**, 13421b (*synth*)
Case, F.H. *et al., J. Het. Chem.*, 1968, **5**, 161 (*synth, oxime*)
Schilt, A. *et al., Talanta*, 1969, **16**, 448 (*detn, Co, Cu, Fe*)

2-Acetyl-6-methylpyridine A-64

1-(6-Methyl-2-pyridinyl)ethanone, 9CI. Methyl 6-methyl-2-pyridyl ketone, 8CI. 6-Acetyl-2-picoline
[6940-57-4]

C_8H_9NO 135.165
Minor component of rum and tobacco smoke. Flavour modifying agent for coffee. Liq. Bp_1 46°.

*Oxime (*E-*):* [23089-39-6]
$C_8H_{10}N_2O$ 150.18
Used as a 0.01*M* soln. in EtOH for photometric detn. of Cu(*I*) (λ_{max} 422 nm, ϵ 8400, EtOH aq.). Cryst. (petrol). Sol. EtOH. Mp 49-50°.

Dimethylhydrazone: [33785-80-7]
$C_{10}H_{15}N_3O$ 193.248
Liq. $Bp_{0.1}$ 53-54°. n_D^{26} 1.5370.

[18103-88-3]

Case, F.H. *et al., J. Het. Chem.*, 1968, **5**, 161 (*synth, oxime*)
Schilt, A. *et al., Talanta*, 1969, **16**, 448 (*detn, Cu*)
Newkome, G.R. *et al., J.O.C.*, 1972, **37**, 1329 (*deriv*)
Zanger, M. *et al., Anal. Chem.*, 1974, **46**, 2042 (*pmr*)
Amin, H.B. *et al., J.C.S. Perkin 2*, 1979, 624 (*synth*)

3-Acetyl-2-methylpyridine A-65

1-(2-Methyl-3-pyridinyl)ethanone, 9CI. Methyl 2-methyl-3-pyridyl ketone, 8CI. 3-Acetyl-2-picoline
[1721-12-6]

C_8H_9NO 135.165
Pheromone present in ferret (*Mustela putorius*) urine. Prisms. Mp 30-31°. Bp_{15} 99-100°.

Dipicrate:
Needles (EtOH). Mp 174-176°.

Baumgarten, P. *et al., Ber., B*, 1939, **72**, 563 (*synth*)
Sanders, E.B. *et al., J.O.C.*, 1978, **43**, 324 (*synth, pmr, ir*)

3-Acetyl-4-methylpyridine A-66

1-(4-Methyl-3-pyridinyl)ethanone, 9CI. Methyl 4-methyl-3-pyridyl ketone, 8CI. 3-Acetyl-4-picoline
[51227-30-6]

C_8H_9NO 135.165
Pheromone from ferret (*Mustela putorius*) urine. Volatile liq. $Bp_{1.5}$ 57-58° (lit. gives a pressure range).

Picrate:
Solid (EtOH). Mp 146-147°.

Webb, J.L. *et al., J.A.C.S.*, 1944, **66**, 1456 (*synth*)
Deuchert, K. *et al., Chem. Ber.*, 1979, **112**, 2045 (*synth, pmr*)
Rey, A.W. *et al., Can. J. Chem.*, 1992, **70**, 2922 (*synth, ir, pmr, cmr, ms*)

4-Acetyl-2-methylpyridine A-67

1-(2-Methyl-4-pyridinyl)ethanone, 9CI. Methyl 2-methyl-4-pyridyl ketone, 8CI. 4-Acetyl-2-picoline
[2732-28-7]

C_8H_9NO 135.165
Component of roasting coffee aroma. Pheromone present in ferret (*Mustela putorius*) urine. Liq. Bp_{10} 120-124° Bp_4 130°.

Picrate: [31931-61-0]
Solid (EtOH). Mp 174-175°.

[80882-67-3]

Suzuki, Y. *et al., Yakugaku Zasshi*, 1961, **81**, 795; *CA*, **55**, 24742d (*synth*)
Eilhauer, H.D. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1965, **298**, 131 (*synth*)
Govindachari, T.R. *et al., Indian J. Chem.*, 1966, **4**, 398 (*synth*)

4-Acetyl-3-methylpyridine **A-68**
1-(3-Methyl-4-pyridinyl)ethanone, 9CI. Methyl 3-methyl-4-pyridyl ketone, 8CI. 4-Acetyl-3-picoline
[82352-00-9]
C_8H_9NO 135.165
Pheromone from ferret (*Mustela putorius*) urine. Bp_1 93-95°.

Hibino, S. *et al., J. Het. Chem.*, 1990, **27**, 1751 (*synth, pmr, ms*)

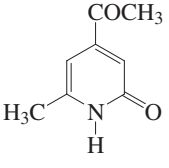
5-Acetyl-2-methylpyridine **A-69**
1-(6-Methyl-3-pyridinyl)ethanone, 9CI. Methyl 6-methyl-3-pyridyl ketone, 8CI. 5-Acetyl-2-picoline
[36357-38-7]
C_8H_9NO 135.165
Minor component of palmarosa oil and tobacco smoke. Used in perfume compositions. Liq. Bp_{15} 105-106°.

2,4-Dinitrophenylhydrazone: [40624-50-8]
Solid. Mp 224-225°.

[65305-38-6]

Muruoka, M. *et al., Nippon Kagaku Zasshi*, 1961, **82**, 1279; *CA*, **59**, 563b (*synth*)
Hawkins, E.G.E. *et al., J.C.S. Perkin 1*, 1972, 2882 (*synth*)
Kozerski, L. *et al., Org. Magn. Reson.*, 1977, **9**, 395 (*cmr*)
Markova, N.K. *et al., Zh. Org. Khim.*, 1984, **20**, 962 (*synth*)

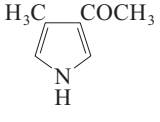
4-Acetyl-6-methyl-2(1*H*)-pyridinone **A-70**
4-Acetyl-2-hydroxy-6-methylpyridine. ***Streptokordin***



$C_8H_9NO_2$ 151.165
Prod. by a marine-derived *Streptomyces* sp. KORDI-3238. Cytotoxic. Amorph. powder. λ_{max} 217 (ϵ 10500) (MeOH).

Jeong, S.-Y. *et al., J. Antibiot.*, 2006, **59**, 234-240 (*isol, pmr, cmr*)

3-Acetyl-4-methylpyrrole **A-71**
*1-(4-Methyl-1*H*-pyrrol-3-yl)ethanone, 9CI.* ***Deoxyverrucarin E***
[18818-30-9]

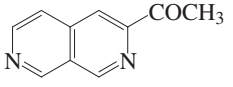


C_7H_9NO 123.154
Pyrrole antibiotic. Metab. of *Eupenicillium hirayamae*. Possesses antitumour activity. Cryst. (C_6H_6/hexane). Sol. MeOH, Et_2O; poorly sol. H_2O, hexane. Mp 115°. λ_{max} 247 (ϵ 11070); 277 (ϵ 2204) (EtOH) (Berdy).

Semicarbazone:
Pale-yellow needles (MeOH). Mp 195°.

V. Leusen, A.M. *et al., Tet. Lett.*, 1972, 5337 (*pmr*)
Arndt, R.R. *et al., Phytochemistry*, 1974, **13**, 1865-1870 (*isol, struct*)
Cheng, D.O. *et al., Tet. Lett.*, 1977, 1469 (*synth*)
Arai, K. *et al., Chem. Pharm. Bull.*, 1983, **31**, 925 (*synth, uv, ir, pmr*)

3-Acetyl-2,7-naphthyridine **A-72**
1-(2,7-Naphthyridin-3-yl)ethanone, 9CI
[73607-00-8]



$C_{10}H_8N_2O$ 172.186
Alkaloid from valerian (*Valeriana officinalis*).

Janot, M.M. *et al., Ann. Pharm. Fr.*, 1979, **37**, 413-420 (*isol, cryst struct*)
Barbu, E. *et al., Heterocycl. Commun.*, 2000, **6**, 25-28 (*synth*)

2-Acetylpyridine **A-73**
1-(2-Pyridinyl)ethanone, 9CI. Methyl 2-pyridyl ketone. 2-Acetopyridine. FEMA 3251
[1122-62-9]



C_7H_7NO 121.138
Present in various cooked and treated food. Present in coriander seed and black tea. Organoleptic, flavouring agent. Liq. with roasted odour. Bp 192°. n_D^{20} 1.5203. pK_a 2.64 (25°). Turns yellow in air.

Hydrochloride: Mp 183-185° dec.

Methiodide: Mp 161°.

Ethiodide: Mp 205°.

Picrate:
Yellow cryst. (EtOH). Mp 131°.

Oxime: Acepox
[1758-54-9]
$C_7H_8N_2O$ 136.153
Plant protectant. Used for photometric detn. of Re (λ_{max} 490 nm, ϵ 3800). Prisms (EtOH). Sol. H_2O. Mp 121°.

Hydrazone: [59742-91-5]
$C_7H_9N_3$ 135.168
Used as 0.5m*M* aq. soln. for fluorimetric detn. of Tc(*VII*) (λ_{max} 430 nm, 0.01-10μg/ml, =1.4*M* HCl). Cryst. (EtOH). Sol. H_2O, EtOH.

Phenylhydrazone: [7734-05-6]
Yellow cryst. (EtOH). Mp 155°.

Thiosemicarbazone: [6839-90-3]
$C_8H_{10}N_4S$ 194.26
Used as EtOH soln. or 1% Me_2CO aq. soln. for photometric detn. of Mo (λ_{max} 470 nm, ϵ 17000), V (λ_{max} 400 nm, ϵ 56000, pH 3.5). Cryst. (EtOH). Sol. EtOH, DMF, Me_2CO.

Ethylene ketal:
$C_9H_{11}NO_2$ 165.191
$Bp_{0.8}$ 91-95°.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 779A (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 310A (*nmr*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 1542B (*ir*)
Thompson, R.J. *et al., Anal. Chim. Acta*, 1964, **31**, 590 (*oxime, detn, Re*)
Miyajama, G. *et al., Chem. Pharm. Bull.*, 1972, **20**, 429 (*cmr*)
Lesman, T. *et al., Org. Mass Spectrom.*, 1973, **7**, 1321 (*ms*)
Seth-Paul, W.A. *et al., Spectrochim. Acta A*, 1974, **30**, 1817 (*ir*)
Reimann, E. *et al., Annalen*, 1976, 1351 (*synth*)
Klayman, D.L. *et al., J. Med. Chem.*, 1979, **22**, 855 (*synth, thiosemicarbazone*)
Grases, F. *et al., Anal. Chim. Acta*, 1984, **166**, 71 (*synth, detn, Tc*)
Thimmaiah, K.N. *et al., Microchem. J.*, 1985, **32**, 8 (*detn, Mo*)
Norman, M.H. *et al., J.O.C.*, 1987, **52**, 226 (*deriv, synth, ir, pmr, cmr*)
Cook, I.B. *et al., Aust. J. Chem.*, 1989, **42**, 1493 (*cmr*)
Encyclopedia of Food and Color Additives, (ed. Burdock, G.A.), CRC Press, 1997, 35 (*occur*)
Girardot, M. *et al., J.O.C.*, 1998, **63**, 10063-10068 (*synth*)

2-Acetylpyrrole **A-74**
*1-(1*H*-Pyrrol-2-yl)ethanone, 9CI. Methyl 2-pyrrolyl ketone. 2-Acetopyrrole. Pseudoacetylpyrrole. FEMA 3202*
[1072-83-9]



C_6H_7NO 109.127
Found in *Valeriana officinalis* (Valerianaceae), *Camellia sinensis* (Theaceae), *Paeonia moutan* (Chinese drug Botanpi) (Peoniaceae), *Lycium chinense* (Solanaceae). Prod. by *Streptomyces* sp. A-5071. Organoleptic which contributes to many aromas, including tobacco smoke. Flavouring agent. Possesses hepatoprotective props. Cryst. (petrol) with bread-like odour. Sol. H_2O. Mp 90°. Bp 220°. λ_{max} 247 ; 287 (MeOH) (Berdy).

Oxime: [63547-59-1]
$C_6H_8N_2O$ 124.142
Mp 145-146°.

Phenylhydrazone: Mp 146°.

2,4-Dinitrophenylhydrazone:
Reddish-brown cryst. Mp 297° dec.

Semicarbazone: Mp 190°.

N-*(4-Methylbenzenesulfonyl):* [129666-99-5]
$C_{13}H_{13}NO_3S$ 263.317
Solid ($CHCl_3$/hexane). Mp 110-111°.

N-*Me: 2-Acetyl-1-methylpyrrole. FEMA 3184*

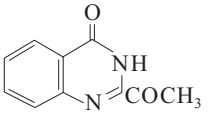
[932-16-1]
C_7H_9NO 123.154
Bp 200-202°. n_D^{20} 1.5420.

N-*Et: 2-Acetyl-1-ethylpyrrole. FEMA 3147*
[39741-41-8]
$C_8H_{11}NO$ 137.181
Bp_{12} 82°.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 567D; 568A (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 5B; 5C (*nmr*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 1447B; 1447C (*ir*)
Cionga, E. *et al., C. R. Hebd. Seances Acad. Sci.*, 1935, **200**, 780 (*isol*)
Sugisawa, H. *et al., Chem. Ind. (London)*, 1958, 887 (*synth*)
Budzikiewicz, H. *et al., J.C.S.*, 1964, 1949 (*ms*)
Abraham, R.J. *et al., J.C.S. Perkin 2*, 1974, 1004 (*cmr*)
Sannai, A. *et al., Agric. Biol. Chem.*, 1983, **47**, 2397 (*isol*)
Miyayawa, M. *et al., Agric. Biol. Chem.*, 1983, **47**, 2925; 1984, **48**, 2847 (*isol*)
Kakushima, M. *et al., J.O.C.*, 1983, **48**, 3214 (*synth*)
Garrido, D.O.A. *et al., J.O.C.*, 1984, **49**, 2619 (*synth*)
Anderson, H.J. *et al., Can. J. Chem.*, 1985, **63**, 896 (*synth*)
Eyley, S.C. *et al., Tet. Lett.*, 1985, **26**, 4649 (*synth*)
Lewis, R.J. *et al., Food Additives Handbook*, Van Nostrand Reinhold International, New York, 1989, ADA 375
Pindur, H. *et al., J. Het. Chem.*, 1989, **26**, 1563 (*ir*)
Kuroda, Y. *et al., Tet. Lett.*, 1989, **30**, 2411 (*synth*)
Ito, M. *et al., Agric. Biol. Chem.*, 1991, **55**, 2117 (*isol, props*)
Goldberg, Yu. *et al., Synth. Commun.*, 1991, **21**, 557 (*N-alkyl derivs, synth*)
Fenaroli's Handbook of Flavor Ingredients, 3rd edn., (ed. Burdock, G.A.), CRC Press, 1995, **2**, 215; 468; 560
Encyclopedia of Food and Color Additives, (ed. Burdock, G.A.), CRC Press, 1997, 944; 1709; 1853-1854 (*occur, props, use*)
Hou, S. *et al., Macromolecules*, 2003, **36**, 3826-3832 (*synth, N-tosyl*)
Camarillo, C.A. *et al., Acta Cryst. E*, 2007, **63**, o2593-o2594 (*cryst struct*)

2-Acetyl-4(3*H*)-quinazolinone A-75

[17244-28-9]

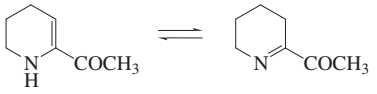


$C_{10}H_8N_2O_2$ 188.185
Fungal metab. prod. from a toxic strain of *Fusarium culmorum*. Also isol. from cultures of *Fusarium sambucinum*. Prisms (EtOAc or Me_2CO). Mp 197-200° dec Mp 205°. Has also been descr. as a transformation prod. of 2-(1-Hydroxyethyl)-4(3*H*)-quinazolinone, H-499, and of 2-Pyruvoylaminobenzamide, from *P. chrysogenum, P. notatum* and *Colletotrichum lagenarium*. Although isol. from the *P. chrysogenum* fermentation, it was considered in that instance to be an artifact. λ_{max} 302 (ε 11600) (MeOH) (Berdy). λ_{max} 232 (H_2O) (Berdy).

Suter, P.J. *et al., J.C.S.(C)*, 1967, 2240 (*synth*)
Blight, M.M. *et al., J.C.S. Perkin 1*, 1974, 1691 (*isol, uv, ir, pmr*)
Niederer, D. *et al., Tet. Lett.*, 1992, **33**, 3997 (*isol*)

6-Acetyl-1,2,3,4-tetrahydropyridine A-76

Methyl 3,4,5,6-tetrahydro-2-pyridyl ketone, 8CI. 2-Acetyl-3,4,5,6-tetrahydropyridine. 2-Acetyl-Δ^1-piperideine. 2-Acetyl-Δ^2-piperideine. 1-(1,4,5,6-Tetrahydro-2-pyridinyl)ethanone, 9CI
[27300-27-2]



1*H-form* 3*H-form*

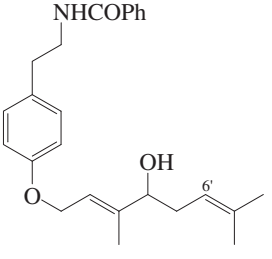
$C_7H_{11}NO$ 125.17
Tautomeric, 1*H*-form predominates *ca.* 2:1. Constit. of the leaves of *Semnostachya menglaensis* (preferred genus name *Strobilanthes*). Key aroma component of bread. Responsible for mousy taint in wines. Unstable liq. Bp_3 65-67°. Odour threshold 0.06 ng/L in air.

Hydrochloride: Mp 112-119°.

Hunter, I.R. *et al., Cereal Chem.*, 1969, **46**, 189 (*isol*)
Büchi, G. *et al., J.O.C.*, 1971, **36**, 609 (*ir, uv, pmr, ms, synth*)
Strauss, C.R. *et al., Chem. Ind. (London)*, 1984, 109 (*isol*)
De Kimpe, N. *et al., J.O.C.*, 1993, **58**, 2904 (*synth, pmr, cmr, ms*)
De Kimpe, N. *et al., Tetrahedron*, 1995, **51**, 2387 (*synth*)
Hofman, T. *et al., J. Agric. Food Chem.*, 1998, **46**, 616-619; 2270-2277 (*synth, ms, bibl*)
Naef, R. *et al., J. Agric. Food Chem.*, 2005, **53**, 9161-9164 (*isol, pmr, ms*)
Harrison, T.J. *et al., J.O.C.*, 2005, **70**, 10872-10874 (*synth*)
Adams, A. *et al., Chem. Rev.*, 2006, **106**, 2299-2319 (*rev*)
Snowdon, E.M. *et al., J. Agric. Food Chem.*, 2006, **54**, 6465-6474 (*rev*)
Fuganti, C. *et al., Tetrahedron*, 2007, **63**, 4762-4767 (*synth*)

Acidissiminol A-77

[126006-00-6]



$C_{25}H_{31}NO_3$ 393.525
Alkaloid from the fruit of *Limonia acidissima* (wood apple) (Rutaceae). Cryst. (EtOAc/hexane). Mp 85-87° .

O-*Ac:* **N-*Benzoyl-4-(4-acetoxyneryloxy)-phenethylamine***
[33055-26-4]
$C_{27}H_{33}NO_4$ 435.562
Alkaloid from fruit of *Swinglea glutinosa* (Rutaceae). Cryst. (EtOAc/hexane). V. sol. MeOH. Mp 64-65°. Opt. inactive. Related to Severine.

O-*Octadecanoyl:* ***Acidissiminin***
[126005-91-2]
$C_{43}H_{65}NO_4$ 659.991
Alkaloid from the fruits of *Limonia acidissima* (wood apple) (Rutaceae). Amorph. solid (EtOAc/hexane). Mp 65°. $[\alpha]_D$ 0 ($CHCl_3$). λ_{max} 225; 277 (sh); 286 (MeOH) (Derep).

6′,7′-Epoxide: ***Acidissiminol epoxide****. Severine*†
[139165-01-8]
[33055-25-3]
$C_{25}H_{31}NO_4$ 409.524
Alkaloid from fruits of *Limonia acidissima* (wood apple) (Rutaceae). Cryst. (MeOH). Mp 146-149° (141-143°). Severine originally considered to be a diol with formula $C_{25}H_{33}NO_4$. Identity of Acidissiminol epoxide and Severine not confirmed; stereochem. not established.

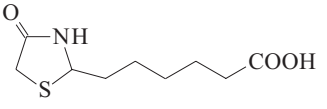
6′,7′-Epoxide, octadecanoyl: ***Acidissiminin epoxide****. Severine palmitate*
[139083-09-3]
$C_{43}H_{65}NO_5$ 675.99
Alkaloid from the fruit of *Limonia acidissima* (wood apple), leaves of *Severinia buxifolia* and from *Pamburus missionis, Atalantia monophylla* and *Hesperethusa crenulata* (preferred genus name *Naringi*) (Rutaceae). Cryst. (C_6H_6/hexane). Mp 105-106° Mp 113-114°. Identity of Acidissiminin epoxide and Severin palmitate not definitely establ. Mps are similar.

6′,7′-Dihydro, 6′,7′-dihydroxy: ***Dihydroxyacidissiminol***
[160387-10-0]
$C_{25}H_{33}NO_5$ 427.539
Alkaloid from fruits of *Limonia acidissima* (wood apple) (Rutaceae). Amorph. semi-solid.

Dreyer, D.L. *et al., Tetrahedron*, 1967, **23**, 4613; 1970, **26**, 5745; 1980, **36**, 827 (*Severine, Severine palmitate, N-Benzoyl-4-(4-acetoxyneryloxy)phenethylamine*)
Ghosh, P. *et al., J. Nat. Prod.*, 1989, **52**, 1323; 1991, **54**, 1389 (*Acidissiminol, Acidissiminin*)
Ghosh, P. *et al., Phytochemistry*, 1994, **37**, 757 (*Dihydroxyacidissiminol, Acidissiminol epoxide*)

Acidomycin A-78

4-Oxo-2-thiazolidinehexanoic acid, 9CI. 2-(5-Carboxypentyl)-4-thiazolidone, 8CI. Actithiazic acid. Cinnamonin. Mycobacidin. Thiazolidomycin. PA 95. Antibiotic 6604-4. Antibiotic PA 95
[539-35-5]



$C_9H_{15}NO_3S$ 217.288

Amino acid derived antibiotic. Abs. config. not known. Log P 0.86 (calc).

▶ LD_{50} (mus, ipr) 2500 mg/kg. XJ6000000

(-)-*form* [28223-69-0]

Prod. by *Streptomyces* spp. Active against mycobacteria *in vitro*. Needles (H_2O, MeOH or Me_2CO). Sol. MeOH, $CHCl_3$, bases; fairly sol. CH_2Cl_2; poorly sol. H_2O, acids, hexane, C_6H_6. Mp 139-140°. $[\alpha]_D^{23}$ -54 (MeOH). $[\alpha]_D^{25}$ -60 (c, 1 in EtOH). Blue fluor. in uv light. Racemised by dil. alkalis. λ_{max} 245 (MeOH) (Berdy).

▶ LD_{50} (mus, ivn) 1500 mg/kg, LD_{50} (mus, ipr) 2500 mg/kg, LD_{50} (mus, scu) 20000 mg/kg.

Me ester:

Needles. Mp 53-54°. $[\alpha]_D^{25}$ -50.9 (MeOH).

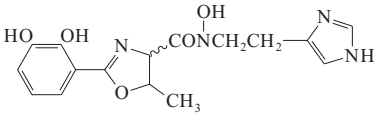
(±)-*form* [106448-99-1]

Needles (H_2O or $CHCl_3$). Mp 122-123° (116-117°).

McLamore, W.M. *et al., J.A.C.S.*, 1952, **74**, 2946-2947 (*struct*)
Sobin, B.A. *et al., J.A.C.S.*, 1952, **74**, 2947-2948 (*isol*)
Miyake, A. *et al., Pharm. Bull.*, 1953, **1**, 84-88 (*isol, struct*)
Japan. Pat., 1954, (*(Takeda)*)54 448; *CA*, **48**, 14130d (*synth*)
Caltrider, P.G. *et al., Antibiotics (N.Y.)*, 1967, **1**, 666-668 (*rev*)
Lokshin, G.B. *et al., Antibiotiki (Moscow)*, 1970, **15**, 14-18; *CA*, **72**, 109788a (*isol*)
Eisenberg, M.A. *et al., Antimicrob. Agents Chemother.*, 1982, **21**, 5-10 (*activity*)
Nadkarni, R.S. *et al., J. Antibiot.*, 1983, **36**, 1567-1568 (*activity*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, CMP885

Acinetobactin A-79

[160472-93-5]



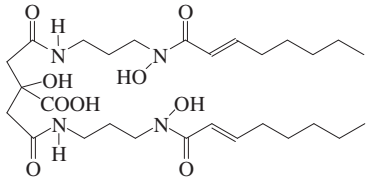
$C_{16}H_{18}N_4O_5$ 346.342

Closely related to Anguibactin, A-1009. Isol. from low-iron cultures of *Acinetobacter baumannii* ATCC 19606 and *Acinetobacter haemolyticus*. Siderophore. Sol. H_2O. λ_{max} 250 ; 317 (MeOH) (Berdy).

Yamamoto, S. *et al., Arch. Microbiol.*, 1994, **162**, 249 (*isol, pmr, cmr, ms*)

Acinetoferrin A-80

[156737-07-4]



$C_{28}H_{48}N_4O_9$ 584.709

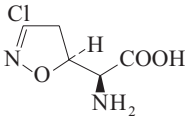
Isol. from *Acinetobacter haemolyticus*. Siderophore.

Okujo, N. *et al., BioMetals*, 1994, **7**, 170-176 (*isol, pmr, cmr, ms*)
Wang, Q.X. *et al., J.O.C.*, 1998, **63**, 1491-1495 (*synth, pmr*)
Luo, M. *et al., J.A.C.S.*, 2005, **127**, 1726-1736 (*props*)

Acivicin, INN, USAN A-81

α-Amino-3-chloro-4,5-dihydro-5-isoxazoleacetic acid, 9CI. AT 125. NSC 163501. U 42126. Antibiotic AT 125. Antibiotic U 42126

[52583-41-2]



$C_5H_7ClN_2O_3$ 178.575

Amino acid antibiotic.

(α*S*,5*S*)-*form* [42228-92-2]

Prod. by *Streptomyces sviceus*. Antineoplastic agent. Cryst. (MeOH aq.). Sol. H_2O; fairly sol. MeOH; poorly sol. butanol, hexane. Mp 228-230°. $[\alpha]_{378}^{20}$ +135 (c, 0.159 in H_2O). Related to Ibotenic acid, I-8.

▶ NY2103000

4S-Hydroxy: ***Antibiotic U 43795***. *U 43795*

[54549-02-9]

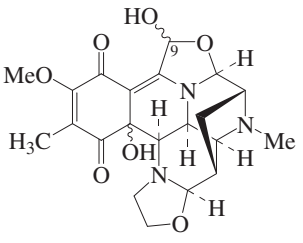
$C_5H_7ClN_2O_4$ 194.574

From *Streptomyces sviceus*. Antineoplastic, antimetabolite. Sol. H_2O; poorly sol. Me_2CO, hexane.

Hanka, L.J. *et al., Antimicrob. Agents Chemother.*, 1973, **3**, 425; 1975, **7**, 807 (*isol, props*)
Martin, D.G. *et al., Tet. Lett.*, 1973, 2549 (*isol, abs config*)
Martin, D.G. *et al., J. Antibiot.*, 1975, **28**, 91 (*deriv*)
Kelly, R.C. *et al., J.A.C.S.*, 1979, **101**, 1054 (*synth*)
Silverman, R.B. *et al., J.A.C.S.*, 1981, **103**, 7357 (*synth*)
Martindale, The Extra Pharmacopoeia, 28th/29th edn., Pharmaceutical Press, 1982, 12317
O'Dwyer, P.J. *et al., J. Clin. Oncol.*, 1984, **2**, 1064 (*rev, pharmacol*)
Earhart, W.D. *et al., Adv. Enzyme Regul.*, 1985, **24**, 179 (*rev, pharmacol*)
Baldwin, J.E. *et al., Tetrahedron*, 1985, **41**, 5241 (*synth, bibl*)
Mzengeza, S. *et al., J.O.C.*, 1988, **53**, 4074 (*synth, bibl*)
Cintas, P. *et al., Tetrahedron*, 1991, **47**, 6079 (*synth*)

Aclidinomycin B A-82

[342814-66-8]



$C_{21}H_{25}N_3O_7$ 431.444

Related to Naphthyridinomycin A, N-32. Prod. by *Streptomyces halstedi* KB012 and a marine-derived *Streptomyces* sp. $[\alpha]_D$ +188 (c, 0.16 in MeOH). λ_{max} 286 (ϵ 21500); 398 (ϵ 5000) (MeOH).

N-*De-Me:* ***Aclidinomycin D***

$C_{20}H_{23}N_3O_7$ 417.418

Prod. by a marine-derived *Streptomyces* sp.

9-Deoxy: ***Aclidinomycin A***

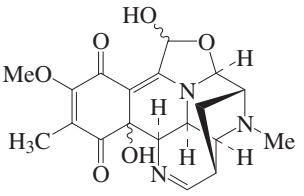
[342814-65-7]

$C_{21}H_{25}N_3O_6$ 415.445

Prod. by *Streptomyces halstedi* KB012. $[\alpha]_D$ 0 (MeOH). λ_{max} 282 (ϵ 19000); 403 (ϵ 3500) (MeOH).

Thorwest, M. *et al., Dissertation*, Univ. of Göttingen, 2001, (*marine, isol*)
Cang, S. *et al., J. Antibiot.*, 2001, **54**, 304-307 (*isol, pmr, cmr*)

Aclidinomycin C A-83



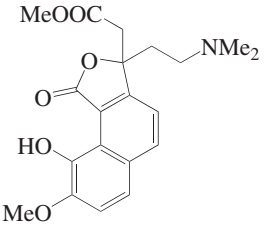
$C_{19}H_{21}N_3O_6$ 387.391

Prod. by a marine-derived *Streptomyces* sp.

Thorwest, M. *et al., Dissertation*, Univ. of Göttingen, 2001,

Aconcaguine A-84

[96624-39-4]

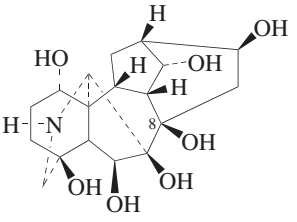


$C_{20}H_{23}NO_6$ 373.405

Alkaloid from the twigs of *Berberis actinacantha* (Berberidaceae). Yellow amorph. solid. Positive opt. rotn.

Weiss, I. *et al., Chem. Comm.*, 1985, 3-4 (*uv, ir, pmr, cmr, ms, struct*)

Aconitane-1,4,6,7,8,14,16-heptol A-85



$C_{18}H_{27}NO_7$ 369.414

(1α,5β,6β,14α,16β)-*form*

O^6,O^{16}-*Di-Me,* N-*Et:* ***Delbine***†
[1356-54-3]
$C_{22}H_{35}NO_7$ 425.521
Alkaloid from the roots of *Delphinium bonvalotii* (Ranunculaceae). Mp 116-118°. $[\alpha]_D^{27}$ +53.3 (c, 0.1 in MeOH).

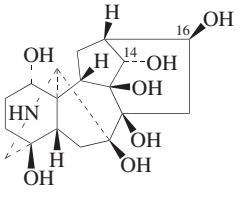
O^1,O^{14},O^{16}-*Tri-Me,* N-*Et, 4*-O-*(2-acetamidobenzoyl):* ***Sinomontanine H***
$C_{32}H_{44}N_2O_9$ 600.708
Alkaloid from *Aconitum sinomontanum*. $[\alpha]_D^{17}$ -28.8 (c, 0.5 in $CHCl_3$).

O^1,O^6,O^{14},O^{16}-*Tetra-Me,* N-*Et, 8-Ac:* ***Hispaconitine***
[128581-45-3]
$C_{26}H_{41}NO_8$ 495.612
Alkaloid from the roots of *Aconitum barbatum* var. *hispidum* (Ranunculaceae). Mp 185-187°. $[\alpha]_D$ +43.4 (c, 1.19 in $CHCl_3$).

7-Hydroperoxide, O^1,O^6,O^{14},O^{16}-*tetra-Me,* N-*Et:* ***Lineariline***
$C_{24}H_{39}NO_8$ 469.574
Alkaloid from the roots of *Delphinium linearilobum*. Amorph. solid. $[\alpha]_D^{20}$ +18.4 (c, 0.5 in $CHCl_3$). λ_{max} 201 (log ϵ 4); 226 (sh) (log ϵ 3.1); 257 (log ϵ 2.5) (MeOH).

Jiang, Q.P. *et al., Heterocycles*, 1985, **23**, 11 (*Delbine*)
Lao, A. *et al., Heterocycles*, 1990, **31**, 27 (*Hispaconitine*)
Peng, C.-S. *et al., Youji Huaxue*, 2005, **25**, 1235-1239; *CA*, **144**, 103949n (*Sinomontanine H*)
Kolak, U. *et al., Phytochemistry*, 2006, **69**, 2170-2175 (*Lineariline*)

Aconitane-1,4,7,8,9,14,16-heptol A-86



(1α,14α,16β)-*form*

$C_{18}H_{27}NO_7$ 369.414

(1α,14α,16β)-*form*

O^{14},O^{16}-*Di-Me,* N-*Et:* ***Sinomontanine E***
$C_{22}H_{35}NO_7$ 425.521
Alkaloid from the roots of *Aconitum sinomontanum*. $[\alpha]_D^{17}$ +7.8 (c, 0.5 in $CHCl_3$).

O^1,O^{14},O^{16}-*Tri-Me, 4*-O-*(2-acetamidobenzoyl):* ***Sinomontanine F***
[872977-64-5]
$C_{30}H_{40}N_2O_9$ 572.654
Alkaloid from the roots of *Aconitum sinomontanum*. $[\alpha]_D^{17}$ +44.4 (c, 0.75 in $CHCl_3$).

O^1,O^{14},O^{16}-*Tri-Me,* N-*Et:* ***Ranaconine***. *Hydroxylappaconine*
[70474-32-7]
$C_{23}H_{37}NO_7$ 439.548
Alkaloid detected by glc-ms in *Aconitum leucostomum*. Alkaline hydrol. product of Ranaconitine (Ranunculaceae). Mp 107-109°.

O^1,O^{14},O^{16}-*Tri-Me,* N-*Et, 4*-O-*(2-aminobenzoyl):* **N-*Deacetylranaconitine***
[82872-80-8]
$C_{30}H_{42}N_2O_8$ 558.67
Alkaloid from the roots of *Aconitum finetianum* (Ranunculaceae). Shows good analgesic activity. Mp 125-127°.

O^1,O^{14},O^{16}-*Tri-Me,* N-*Et, 4*-O-*(2-acetamidobenzoyl):* ***Ranaconitine***
[1360-76-5]
$C_{32}H_{44}N_2O_9$ 600.708
Alkaloid from *Aconitum ranunculaefolium, Aconitum sinomontanum, Aconitum finetianum* and *Aconitum barbatum* var. *puberulum* (Ranunculaceae). Mp 132-134°. $[\alpha]_D^{27}$ +33.2 (c, 0.5 in $CHCl_3$).

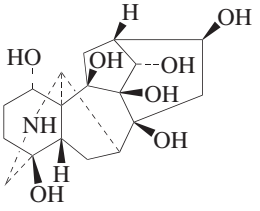
O^1,O^{14},O^{16}-*Tri-Me, 4*-O-*(2-acetamidobenzoyl),* N-*Ac:* ***Sinaconitine A***
$C_{32}H_{42}N_2O_{10}$ 614.691
Alkaloid from the roots of *Aconitum sinomontanum*. Prisms (petrol/Et_2O). Mp 150-151.5°. $[\alpha]_D^{20}$ +35 (c, 1 in $CHCl_3$).

(1β,14α,16β)-*form*

O^1,O^{14},O^{16}-*Tri-Me,* N-*Et, 4*-O-*(2-acetamidobenzoyl):* ***Puberanine***
[83685-20-5]
$C_{32}H_{44}N_2O_9$ 600.708
Alkaloid from the roots of *Aconitum barbatum* var. *puberulum* (Ranunculaceae). Amorph. $[\alpha]_D^{20}$ +16.6 (c, 0.6 in $CHCl_3$).

Mollov, N. *et al., Dokl. Bulg. Akad. Nauk*, 1964, **17**, 251; *CA*, **61**, 12324h (*Ranaconitine, isol, ir*)
Pelletier, S.W. *et al., Tet. Lett.*, 1978, 5045 (*Ranaconitine, pmr, cmr, struct*)
Pelletier, S.W. *et al., Can. J. Chem.*, 1979, **57**, 1652 (*cmr*)
Plugar, V.N. *et al., Khim. Prir. Soedin.*, 1982, **18**, 80; *Chem. Nat. Compd. (Engl. Transl.)*, 1982, **18**, 75 (*Ranaconine*)
Jiang, S. *et al., Yaoxue Xuebao*, 1982, **17**, 283; 1983, **18**, 440; *CA*, **97**, 20736a; **100**, 20505e (*Deacetylranaconitine*)
Yu, D. *et al., Planta Med.*, 1983, **49**, 85 (*Puberanine*)
Peng, C.-S. *et al., Yaoxue Xuebao*, 2000, **35**, 201-203 (*Sinomontanine E*)
Peng, C.-S. *et al., Youji Huaxue*, 2005, **25**, 1235-1239; *CA*, **144**, 103949n (*Sinomontanine F*)
Tan, J.-J. *et al., J. Asian Nat. Prod. Res.*, 2006, **8**, 535-539 (*Sinaconitine A*)

Aconitane-1,4,8,9,10,14,16-heptol A-87



$C_{18}H_{27}NO_7$ 369.414

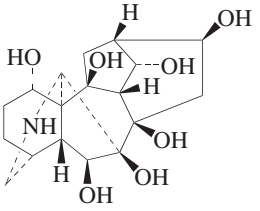
(1α,5β,14α,16β)-*form*

O^1,O^{14},O^{16}-*Tri-Me,* N-*Et, 4*-O-*(2-aminobenzoyl):* ***Sepaconitine***
[114622-05-8]
$C_{30}H_{42}N_2O_8$ 558.67
Alkaloid from the aerial parts of *Aconitum septentrionale* (Ranunculaceae). Mp 250-253°. $[\alpha]_D^{20}$ +25 (c, 0.60 in $CHCl_3$).

O^1,O^{14},O^{16}-*Tri-Me,* N-*Et, 4*-O-*(2-acetamidobenzoyl):* **N-*Acetylsepaconitine***
[118201-55-1]
$C_{32}H_{44}N_2O_9$ 600.708
Alkaloid from aerial parts of *Aconitum leucostomum* (Ranunculaceae). Amorph.

Usmanova, S.K. *et al., Khim. Prir. Soedin.*, 1987, **23**, 879; *Chem. Nat. Compd. (Engl. Transl.)*, 734 (*Sepaconitine*)
Tel'nov, V.A. *et al., Khim. Prir. Soedin.*, 1988, **24**, 556; *Chem. Nat. Compd. (Engl. Transl.)*, 472 (*N-Acetylsepaconitine*)

Aconitane-1,6,7,8,10,14,16-heptol A-88



$C_{18}H_{27}NO_7$ 369.414

(1α,5β,6β,14α,16β)-*form*

O^1,O^{14},O^{16}-*Tri-Me,* N-*Et:* ***Acoseptrine***
[146028-66-2]
$C_{23}H_{37}NO_7$ 439.548
Alkaloid from roots of *Aconitum septentrionale*. Cryst. (Me_2CO/hexane). Mp 105-107°. $[\alpha]_D$ +19.6 (c, 0.245 in $CHCl_3$).

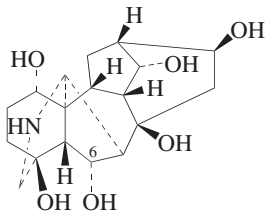
O^7,O^8-*Methylene,* O^1,O^{16}-*di-Me,* N-*Et, 6-Ac:* ***Anthriscifolcine C***
[948308-30-3]
$C_{25}H_{37}NO_8$ 479.569
Alkaloid from *Delphinium anthriscifolium* var. *savatieri*. Needles. Mp 222-224°. $[\alpha]_D^{20}$ -11.4 (c, 0.5 in $CHCl_3$).

O^7,O^8-*Methylene,* O^1,O^{14},O^{16}-*tri-Me,* N-*Et:* ***Anthriscifolcine E***
[948308-32-5]
$C_{24}H_{37}NO_7$ 451.559
Alkaloid from *Delphinium anthriscifolium* var. *savatieri*. Amorph. powder. Mp 150-152°. $[\alpha]_D^{20}$ -34.8 (c, 0.5 in $CHCl_3$).

O^7,O^8-*Methylene,* O^1,O^{14},O^{16}-*tri-Me,* N-*Et, 6-Ac:* ***Anthriscifolcine D***
[948308-31-4]
$C_{26}H_{39}NO_8$ 493.596
Alkaloid from *Delphinium anthriscifolium* var. *savatieri*. Amorph. powder. Mp 185-187°. $[\alpha]_D^{20}$ -41.3 (c, 0.5 in $CHCl_3$).

Sayed, H.M. *et al., J. Nat. Prod.*, 1992, **55**, 1595-1606 (*Acoseptrine*)
Song, L. *et al., Chem. Pharm. Bull.*, 2007, **55**, 918-921 (*Anthriscifolcines C-E*)

Aconitane-1,4,6,8,14,16-hexol A-89



(1α,5β,6α,14α,16β)-*form*

$C_{18}H_{27}NO_6$ 353.414

(1α,5β,6α,14α,16β)-*form*

$O^1,O^6,O^{14}O^{16}$-*Tetra-Me,* N-*Et, 4-Ac:* ***Kirimine***
[161068-74-2]
$C_{26}H_{41}NO_7$ 479.612
Alkaloid from *Aconitum kirinense.*

(1α,5β,6β,14α,16β)-*form*

O^6,O^{14},O^{16}*Tri-Me,* N-*Et:* ***Akiramidine***
[287724-50-9]
$C_{23}H_{37}NO_6$ 423.548
Alkaloid from the epigeal parts of *Aconitum kirinense.* Amorph. powder.

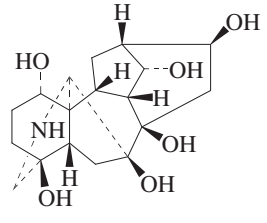
O^6,O^{14},O^{16}-*Tri-Me,* N-*Et, 4-Ac:* ***Akiramine***
[270073-83-1]
$C_{25}H_{39}NO_7$ 465.586
Alkaloid from the epigeal part of *Aconitum kirinense.* Cryst. (Me_2CO). Mp 162-164°.

O^1,O^6,O^{14},O^{16}-*Tetra-Me,* N-*Et:* ***Akiranine***
[213478-70-7]
$C_{24}H_{39}NO_6$ 437.575
Alkaloid from *Aconitum kirinense.* Amorph. Mp 102-104°.

O^1,O^6,O^{14},O^{16}-*Tetra-Me,* N-*Et, 4-Ac:* ***Akirane***
[171119-09-8]
$C_{26}H_{41}NO_7$ 479.612
Alkaloid from aerial parts of *Aconitum kirinense.* Cryst. (Me_2CO). Mp 214-217°.

Sultankhodzhaev, M.N. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1994, **30**, 603; 1997, **33**, 700-701 (*Akirane, Akiranine*)
Feng, F. *et al., CA*, 1995, **122**, 128605f (*Kirimine*)
Teshebaeva, U.T. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1999, **35**, 445-447; 659-660 (*Akiramidine, Akiramine*)

Aconitane-1,4,7,8,14,16-hexol A-90



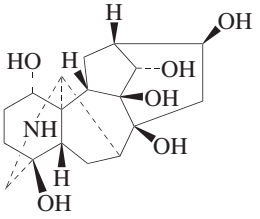
$C_{18}H_{27}NO_6$ 353.414

(1α,5β,14α,16β)-*form*

O^1,O^{14},O^{16}-*Tri-Me,* N-*Et, 4*-O-*(2-acetamidobenzoyl):* ***Isolappaconitine***
[114216-94-3]
$C_{32}H_{44}N_2O_8$ 584.708
Alkaloid from the roots of *Aconitum finetianum* (Ranunculaceae) and *Aconitum rubicundum.* Cryst (Et_2O). Mp 186-188°.

Jiang, S. *et al., Huaxue Xuebao*, 1988, **46**, 26; *CA*, **108**, 183673n (*Isolappaconitine*)
Nishanov, A.A. *et al., Khim. Prir. Soedin.*, 1991, **27**, 403-407; *Chem. Nat. Compd. (Engl. Transl.)*, 352, **1991**, 27-349 (*Isolappaconitine, isol, pmr, ms*)

Aconitane-1,4,8,9,14,16-hexol A-91



$C_{18}H_{27}NO_6$ 353.414

(1α,5β,14α,16β)-*form*

O^{14},O^{16}-*Di-Me,* N-*Et:* ***Lappaconidine.*** *Lapaconidine*
[31000-13-2]
$C_{22}H_{35}NO_6$ 409.522
Alkaloid from the roots of *Aconitum leucostomum* (*Aconitum excelsum*) (Ranunculaceae). Mp 206-207°. $[\alpha]_D$ +12.9 ($CHCl_3$). Forms benzene solvate, Mp 118-120°.

O^{14},O^{16}-*Di-Me,* N-*Et, tetra-Ac:* Mp 195-197°.

O^{14},O^{16}-*Di-Me,* N-*Et, 4*-O-*(2-aminobenzoyl):* ***4-Anthranoyllappaconidine***
[139441-64-8]
$C_{29}H_{40}N_2O_7$ 528.644
Alkaloid from roots of *Aconitum septentrionale* (Ranunculaceae). Amorph. $[\alpha]_D$ +48.8 (c, 0.16 in $CHCl_3$).

O^{14},O^{16}-*Di-Me,* N-*Et, 4*-O-*(2-acetamidobenzoyl):* ***1-De-O-methyllappaconitine.*** *Sinomontanine B*
[139085-68-0]
$C_{31}H_{42}N_2O_8$ 570.681
Alkaloid from *Aconitum orientale* and *Aconitum sinomontanum.* Powder. $[\alpha]_D$ +52 (c, 0.1 in $CHCl_3$).

O^1,O^{14},O^{16}-*Tri-Me, 4*-O-*(2-acetamidobenzoyl):* ***Sinomontanine A***
$C_{30}H_{40}N_2O_8$ 556.655
Alkaloid from the roots of *Aconitum sinomontanum.* Amorph. powder. $[\alpha]_D$ +31.2 (c, 0.5 in $CHCl_3$).

O^1,O^{14},O^{16}-*Tri-Me,* N-*Ac, 4*-O-*(2-acetamidobenzoyl):* ***Sinaconitine B***
$C_{32}H_{42}N_2O_9$ 598.692
Alkaloid from the roots of *Aconitum sinomontanum.* Amorph. powder. $[\alpha]_D^{20}$ +17 (c, 0.35 in $CHCl_3$).

O^1,O^{14},O^{16}-*Tri-Me,* N-*Et:* ***Lappaconine***
[23943-93-3]
$C_{23}H_{37}NO_6$ 423.548
Detected in *Aconitum leucostomum* (Ranunculaceae). Cryst. + 1½ H_2O (H_2O). Mp 96°. $[\alpha]_D^{25}$ +27 (c, 3.17 in $CHCl_3$).

▶AR5569540
O^1,O^{14},O^{16}-*Tri-Me,* N-*Et, 4*-O-*(2-aminobenzoyl):* ***Puberanidine.*** N-*Deacetyllappaconitine*
[11033-64-0]
$C_{30}H_{42}N_2O_7$ 542.671
Alkaloid from *Aconitum ranunculaefolium* and from the roots of *Aconitum barbatum* var. *puberulum, Aconitum septentrionale, Aconitum finetianum* and *Delphinium cashmirianum* (Ranunculaceae). Prisms (MeOH), needles (Me_2CO/hexane), or amorph. Mp 213-214.5° (120-121°, 209-214°). $[\alpha]_D^{20}$ +23.2 (c, 0.9 in $CHCl_3$) (for amorph. product). $[\alpha]_D^{27}$ +42 (c, 0.34 in EtOH).

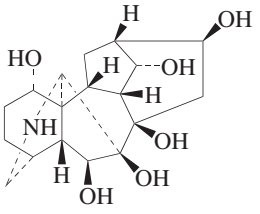
▶OE5784120
O^1,O^{14},O^{16}-*Tri-Me,* N-*Et, 4*-O-*(2-acetamidobenzoyl):* ***Lappaconitine***
[32854-75-4]
$C_{32}H_{44}N_2O_8$ 584.708
Alkaloid from *Aconitum septentrionale, Aconitum orientale, Aconitum excelsum, Aconitum sinomontanum, Aconitum finetianum, Aconitum ranunculaefolium, Aconitum barbatum* var. *puberulum* and *Delphinium cashmirianum* (Ranunculaceae). Cryst. (Et_2O). Mp 227° (219-221°). $[\alpha]_D^{25}$ +28.2 (c, 2.07 in $CHCl_3$).

▶OE5784100
O^1,O^{14},O^{16}-*Tri-Me,* N-*Et, 4*-O-*(2-methylaminobenzoyl):* ***Septefine.*** *Septephine*
$C_{31}H_{44}N_2O_7$ 556.698
Alkaloid from *Aconitum septentrionale* (Ranunculaceae). Cryst. (MeOH). Mp 194-195°.

Mollov, N. *et al., Dokl. Bulg. Akad. Nauk*, 1964, **17**, 251; *CA*, **61**, 12324h (*Puberanidine, isol, struct*)
Khamova, M. *et al., Tet. Lett.*, 1964, 2711 (*Lappaconidine, Lappaconitine, ir, pmr, struct*)
Marion, L. *et al., Can. J. Chem.*, 1967, **45**, 969 (*Lappaconidine, Lappaconitine, isol, ir, pmr, struct*)
Mollov, N. *et al., Tet. Lett.*, 1969, 2189 (*Lappaconidine, pmr, struct*)
Birnbaum, G.I. *et al., Acta Cryst. B*, 1970, **26**, 755 (*Lappaconine, cryst struct*)
Tel'nov, V.A. *et al., Khim. Prir. Soedin.*, 1970, **6**, 583; 1971, **7**, 622; *Chem. Nat. Compd. (Engl. Transl.)*, 1970, **6**, 598; 1971, **7**, 601 (*Lappaconidine, Lappaconitine*)
Pelletier, S.W. *et al., Can. J. Chem.*, 1979, **57**, 1652 (*cmr*)
Shamma, M. *et al., J. Nat. Prod.*, 1979, **42**, 615 (*Puberanidine, isol, ir, pmr, struct*)
Plugar, V.N. *et al., Khim. Prir. Soedin.*, 1982, **18**, 80; *Chem. Nat. Compd. (Engl. Transl.)*, 1982, **18**, 75 (*Lappaconidine, glc, ms*)
Yu, D. *et al., Planta Med.*, 1983, **49**, 85 (*Puberanidine, uv, ir, pmr, cmr, ms, struct*)
Sayed, H.M. *et al., J. Nat. Prod.*, 1992, **55**, 1595 (*4-Anthranoyllappaconidine*)
Usmanova, S.K. *et al., Khim. Prir. Soedin.*, 1996, **32**, 225-228; *Chem. Nat. Compd. (Engl. Transl.)*, 1996, **32**, 198-200 (*Septefine*)

Ulubelen, A. *et al., Phytochemistry*, 1996, **41**, 957 (*1-Demethyllappaconitine*)
Wang, F.-P. *et al., J. Asian Nat. Prod. Res.*, 2001, **3**, 15-22 (*Sinomontanines*)
Tan, J.J. *et al., J. Asian Nat. Prod. Res.*, 2006, **8**, 535-539 (*Sinaconitine B*)
Wang, Y.-P. *et al., Acta Cryst. E*, 2007, **63**, o1645-o1647 (*Lappaconitine, cryst struct*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, LBD000

Aconitane-1,6,7,8,14,16-hexol A-92



$C_{18}H_{27}NO_6$ 353.414

(1α,5β,6β,14α,16β)-*form*

O^1,O^{14},O^{16}-*Tri-Me,* N-*Et: Umbrophine. Umbrofine.* ***Acosepticine***
[144049-71-8]
$C_{23}H_{37}NO_6$ 423.548
Alkaloid from roots of *Aconitum septentrionale* and *Aconitum umbrosum* (Ranunculaceae). Amorph. solid. $[\alpha]_D$ +23.4 (c, 0.385 in $CHCl_3$). Identity with Umbrophine (cryst., Mp. 110-112°, no opt. rotn. reported) is tentative.

O^1,O^{14},O^{16}-*Tri-Me,* N-*Et, 6-Ac:* ***6-O-Acetylacosepticine****. 6-Acetylumbrophine*
[144074-85-1]
$C_{25}H_{39}NO_7$ 465.586
Alkaloid from roots of *Aconitum septentrionale* and *Aconitum umbrosum* (Ranunculaceae). Cryst. (Et_2O). Mp 168.5-170.5°. $[\alpha]_D$ -1.2 (c, 0.2 in $CHCl_3$).

O^1,O^6,O^{14},O^{16}-*Tetra-Me,* N-*Et:* ***Exceconidine***
$C_{24}H_{39}NO_6$ 437.575
Alkaloid from *Aconitum excelsum*. Powder.

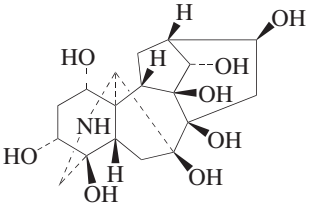
O^7,O^8-*Methylene,* O^1,O^{14},O^{16}-*tri-Me,* N-*Et:* ***Anthriscifolcine B***
[948308-29-0]
$C_{24}H_{37}NO_6$ 435.559
Alkaloid from *Delphinium anthriscifolium* var. *savatieri*. Amorph. powder. Mp 75-77°. $[\alpha]_D^{20}$ -27 (c, 0.5 in $CHCl_3$).

O^7,O^8-*Methylene,* O^1,O^{14},O^{16}-*tri-Me,* N-*Et, 6-Ac:* ***Anthriscifolcine A***
[948308-28-9]
$C_{26}H_{39}NO_7$ 477.597
Alkaloid from *Delphinium anthriscifolium* var. *savatieri*. Amorph. powder. Mp 135-137°. $[\alpha]_D^{20}$ -12.2 (c, 0.5 in $CHCl_3$).

6-Ketone, O^1,O^{14},O^{16}-*tri-Me,* N-*Et:* ***Leucostine***
[192386-08-6]
$C_{23}H_{35}NO_6$ 421.533
Alkaloid from *Aconitum leucostomum*. $[\alpha]_D^{25}$ +19.4 (c, 0.05 in EtOH). Not to be confused with Leucostine A in M-309.

Sayed, H.M. *et al., J. Nat. Prod.*, 1992, **55**, 1595 (*Acosepticine*)
Ross, S.A. *et al., Tetrahedron*, 1992, **48**, 1183 (*6-O-Acetylacosepticine*)
Tel'nov, V.A. *et al., Khim. Prir. Soedin.*, 1993, **29**, 73-77; *Chem. Nat. Compd. (Engl. Transl.)*, 1993, **29**, 60-63 (*Umbrofine, 6-Acetylumbrofine*)
Wei, X. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 1996, **38**, 995-997; *CA*, **127**, 147062w (*Leucostine*)
Zhang, S.X. *et al., Chin. Chem. Lett.*, 1999, **10**, 133-134 (*Exceconidine*)
Zinurova, E.G. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2000, **36**, 387-389 (*Leucostine*)
Song, L. *et al., Chem. Pharm. Bull.*, 2007, **55**, 918-921 (*Anthriscifolcines A,B*)

Aconitane-1,3,4,7,8,9,14,16-octol A-93



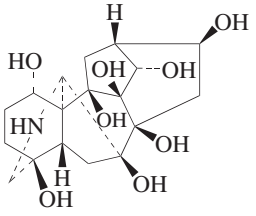
$C_{18}H_{27}NO_8$ 385.413

(1α,3α,14α,16β)-*form*

O^{14},O^{16}-*Di-Me,* N-*Et:* ***Sinomontanine D***
$C_{22}H_{35}NO_8$ 441.52
Alkaloid from the roots of *Aconitum sinomontanum*. $[\alpha]_D^{17}$ +26.6 (c, 0.5 in $CHCl_3$).

Peng, C. *et al., Yaoxue Xuebao*, 2000, **35**, 201-203

Aconitane-1,4,7,8,9,10,14,16-octol A-94



$C_{18}H_{27}NO_8$ 385.413

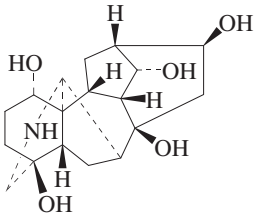
(1α,5β,14α,16β)-*form*

O^1,O^{14},O^{16}-*Tri-Me,* N-*Et, 4*-O-*(2-aminobenzoyl):* **N-*Deacetylfinaconitine***
[82872-81-9]
$C_{30}H_{42}N_2O_9$ 574.67
Alkaloid from the roots of *Aconitum finetianum* (Ranunculaceae). Mp 121-123°.

O^1,O^{14},O^{16}-*Tri-Me,* N-*Et, 4*-O-*(2-acetamidobenzoyl):* ***Finaconitine****. 10-Hydroxyranaconitine*
[81161-27-5]
$C_{32}H_{44}N_2O_{10}$ 616.707
Alkaloid from the roots of *Aconitum finetianum* (Ranunculaceae). Mp 220-221°.

Jiang, S. *et al., Yaoxue Xuebao*, 1982, **17**, 283; 1983, **18**, 440; *CA*, **97**, 20736a; **100**, 20505e (*Finaconitine, Deacetylfinaconitine*)

Aconitane-1,4,8,14,16-pentol A-95



$C_{18}H_{27}NO_5$ 337.415

(1α,5β,14α,16β)-*form*

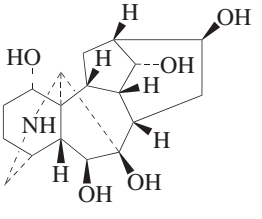
O^{14},O^{16}-*Di-Me,* N-*Et:* ***Dihydromonticamine***
[81037-23-2]
$C_{22}H_{35}NO_5$ 393.522
Alkaloid from the aerial parts of *Aconitum monticola* (Ranunculaceae). Cryst. (Et_2O/Me_2CO). Mp 156-157°.

O^1,O^{14},O^{16}-*Tri-Me,* N-*Et, 4*-O-*(2-aminobenzoyl):* ***Neofinaconitine****. Delphicrispuline*
[114244-02-9]
$C_{30}H_{42}N_2O_6$ 526.672
Alkaloid from the roots of *Aconitum finetianum* and *Delphinium crispulum* (Ranunculaceae). $[\alpha]_D^{20}$ +23.8 (c, 0.8 in $CHCl_3$) (Delphicrispuline).

O^1,O^{14},O^{16}-*Tri-Me,* N-*Et, 4*-O-*(2-acetamidobenzoyl):* ***9-Deoxylappaconitine***
[114216-95-4]
$C_{32}H_{44}N_2O_7$ 568.709
Alkaloid from roots of *Aconitum finetianum* (Ranunculaceae).

Ametova, E.F. *et al., Khim. Prir. Soedin.*, 1982, 504; *Chem. Nat. Compd. (Engl. Transl.)*, 472 (*Dihydromonticamine*)
Jiang, S. *et al., Huaxue Xuebao*, 1988, **46**, 26; *CA*, **108**, 183673n (*Neofinaconitine, 9-Deoxylappaconitine*)
Ulubelen, A. *et al., Phytochemistry*, 1999, **50**, 513-516 (*Delphicrispuline*)

Aconitane-1,6,7,14,16-pentol A-96



$C_{18}H_{27}NO_5$ 337.415

(1α,5β,14α,16β)-*form*

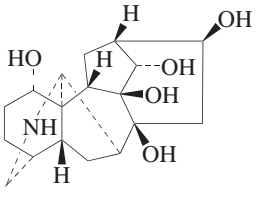
6-Ketone, O^1,O^{14},O^{16}-*tri-Me,* N-*Et:* ***Leuconine***
[192386-06-4]
$C_{23}H_{35}NO_5$ 405.533

Alkaloid from *Aconitum leucostomum*. Cryst. (Me_2CO/hexane). Mp 195-197°.

Tel'nov, V.A. *et al., Khim. Prir. Soedin.*, 1992, **28**, 538-540; *Chem. Nat. Compd. (Engl. Transl.)*, 1992, **28**, 470-471 (*isol, ms, cmr*)

Wei, X. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 1996, **38**, 995-997; *CA*, **127**, 147062w (*isol*)

Aconitane-1,8,9,14,16-pentol A-97



$C_{18}H_{27}NO_5$ 337.415

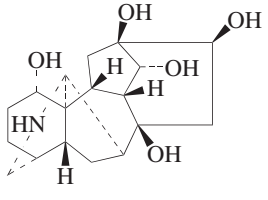
(1α,5β,14α,16β)-*form*

O^1,O^{16}-*Di-Me,* N-*Et:* ***Episcopalisinine***
[83692-39-1]
$C_{22}H_{35}NO_5$ 393.522
Alkaloid from the roots of *Aconitum episcopale* (Ranunculaceae).

O^1,O^{16}-*Di-Me,* N-*Et, 14-benzoyl:* ***Episcopalisine***. *14-Benzoylepiscopalisinine*
[83685-22-7]
$C_{29}H_{39}NO_6$ 497.63
Alkaloid from the roots of *Aconitum episcopale* (Ranunculaceae).

Wang, F. *et al., Yaoxue Xuebao*, 1983, **18**, 514-521; *CA*, **100**, 64981m (*Episcopalisinine, Episcopalisine*)

Aconitane-1,8,13,14,16-pentol A-98



$C_{18}H_{27}NO_5$ 337.415

(1α,5β,14α,16β)-*form*

O^1,O^{16}-*Di-Me,* N-*Et, 14-Ac:* ***Delavaconitine F***
[1022894-28-5]
$C_{24}H_{37}NO_6$ 435.559
Alkaloid from the roots of *Aconitum delavayi*. Amorph. powder.

O^1,O^{16}-*Di-Me,* N-*Et, 14-benzoyl:* ***Delavaconitine***
[1356-52-1]
$C_{29}H_{39}NO_6$ 497.63
Alkaloid from the roots of the Chinese drug Tzu-Tsao-Wu (*Aconitum delavayi*). Anaesthetic. Mp 241° (as perchlorate). Log P 0.24 (uncertain value) (calc).

▶ AR5566000

O^1,O^{16}-*Di-Me,* N-*Et, 14-benzoyl, 13-Ac:* ***Delavaconitine E***
[126262-74-6]
$C_{31}H_{41}NO_7$ 539.667
Alkaloid from *Aconitum delavayi* (Ranunculaceae).

O^1,O^{16}-*Di-Me,* N-*Et, 14-O-(4-methoxybenzoyl):* ***Contortumine***
[131653-96-8]
$C_{30}H_{41}NO_7$ 527.656
Alkaloid from the roots of *Aconitum contortum* (Ranunculaceae). Amorph. $[\alpha]_D$ -4.8 (c, 0.97 in EtOH).

Chu, J.-H. *et al., Huaxue Xuebao*, 1959, **25**, 321; *CA*, **54**, 17440i (*Delavaconitine*)

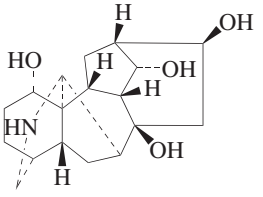
Zhu, Y. *et al., Heterocycles*, 1982, **17**, 607-644 (*Delvaconitine*)

Jiang, S. *et al., Huaxue Xuebao*, 1989, **47**, 1178; *CA*, **112**, 175625r (*Delvaconitine E*)

Niitsu, K. *et al., Heterocycles*, 1990, **31**, 1517-1524 (*Contortumine*)

Jiang, S.H. *et al., Chin. Chem. Lett.*, 2007, **18**, 409-411 (*Delavaconitines E,F*)

Aconitane-1,8,14,16-tetrol A-99



$C_{18}H_{27}NO_4$ 321.416

(1α,5β,14α,16β)-*form*

O^{16}-*Me,* N-*Et:* ***Scopaline***
[80787-49-1]
$C_{21}H_{33}NO_4$ 363.496
Alkaloid from *Aconitum episcopale* (Ranunculaceae).

O^1,O^{16}-*Di-Me,* N-*Et:* ***Aconosine***
[38839-95-1]
$C_{22}H_{35}NO_4$ 377.523
Alkaloid from *Aconitum nasutum* (all parts of the plant), the aerial parts and roots of *Aconitum fischeri*, the foliage and roots of *Aconitum arcuatum*, and from the roots of *Aconitum forrestii, Aconitum napellus* and *Aconitum stapfianum* var. *pubipes* (Ranunculaceae). Cryst. (MeOH aq.). Mp 150° (148°). $[\alpha]_D$ -25 (c, 0.57 in MeOH). $[\alpha]_D^{20}$ -21 (c, 1 in MeOH).

▶ AR5540000

O^1,O^{16}-*Di-Me,* N-*Et, 14-Ac:* ***Episcopalitine***. *Dolaconine*
[82841-75-6]
$C_{24}H_{37}NO_5$ 419.56
Alkaloid from the roots of *Aconitum episcopale* and *Aconitum stapfianum* var. *pubipes* (Ranunculaceae). Mp 44-46°.

O^1,O^{16}-*Di-Me,* N-*Et, 8,14-di-Ac:* ***8-Acetyldolaconine***. *8,14-Diacetylaconosine*
[132160-38-4]
$C_{26}H_{39}NO_6$ 461.597
Alkaloid from the roots of *Aconitum campylorrhynchum* (Ranunculaceae).

O^1,O^{16}-*Di-Me,* N-*Et, 14-benzoyl:* ***Delavaconitine C***
[126234-20-6]
$C_{29}H_{39}NO_5$ 481.631
Alkaloid from *Aconitum delavayi* (Ranunculaceae).

O^1,O^{16}-*Di-Me,* N-*Et, 14-benzoyl, 8-Ac:* ***Delavaconitine D***
[126234-21-7]
$C_{31}H_{41}NO_6$ 523.668
Alkaloid from *Aconitum delavayi* (Ranunculaceae).

Murav'eva, D.A. *et al., Khim. Prir. Soedin.*, 1972, **8**, 128-129; *Chem. Nat. Compd. (Engl. Transl.)*, 1972, **8**, 132-133 (*Aconosine, isol, ir, pmr, ms, struct*)

Yang, C. *et al., Huaxue Xuebao*, 1981, **39**, 445-452; *CA*, **96**, 82689a (*Scopaline*)

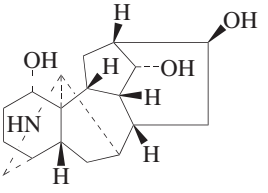
Luo, S. *et al., Huaxue Xuebao*, 1981, **39**, 808-810; *CA*, **97**, 107079n (*Aconosine, Dolaconine*)

Edwards, O.E. *et al., Can. J. Chem.*, 1983, **61**, 1194-1196 (*synth, ir, pmr, cmr, ms*)

Wang, F. *et al., Yaoxue Xuebao*, 1983, **18**, 514-521; *CA*, **100**, 64981m (*Episcopalitine*)

Ding, L.S. *et al., Yaoxue Xuebao*, 1990, **25**, 441-444; *CA*, **114**, 98113 (*8-Acetyldelaconine*)

Aconitane-1,14,16-triol A-100



$C_{18}H_{27}NO_3$ 305.416

(1α,5β,14α,16β)-*form*

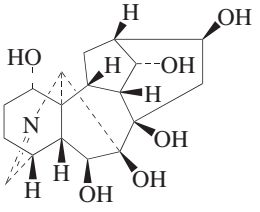
8-O-*[2-(4-Hydroxyphenyl)ethoxy],* O^1,O^{16}-*di-Me,* N-*Et:* ***Piepunendine B***
[947321-59-7]
$C_{30}H_{43}NO_5$ 497.673
Alkaloid from the roots of *Aconitum piepunense*. Mp 85-87°. $[\alpha]_D^{20}$ -10.6 (c, 0.5 in $CHCl_3$).

14-Ketone, O^1,O^{16}-*di-Me,* N-*Et:* ***8-Deoxy-14-dehydroaconosine***
$C_{22}H_{33}NO_3$ 359.508
Alkaloid from *Aconitum stapfianum* (Ranunculaceae).

Liang, X.-T. *et al., Pure Appl. Chem.*, 1986, **58**, 711-718 (*rev*)

Cai, L. *et al., Nat. Prod. Commun.*, 2006, **1**, 191-194 (*Piepunendine B*)

Aconit-19(*N*)-ene-1,6,7,8,14,16-hexol A-101



$C_{18}H_{25}NO_6$ 351.399

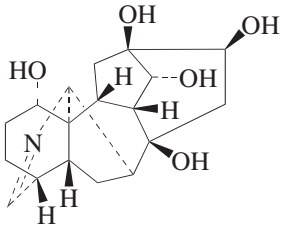
(1α,5β,14α,16β)-*form*

O^1,O^6,O^{14},O^{16}-*Tetra-Me:* ***Lamarckinine***†
[150375-24-9]
$C_{22}H_{33}NO_6$ 407.506

Alkaloid from aerial parts of *Aconitum lamarckii* (Ranunculaceae). Resin. $[\alpha]_D$ +76.6 (c, 1.1 in $CHCl_3$).

de la Fuente, G. *et al., Heterocycles*, 1993, **36**, 1455 (*isol, ir, pmr, cmr, ms, struct*)

Aconit-19(*N*)-ene-1,8,13,14,16-pentol A-102



$C_{18}H_{25}NO_5$ 335.399

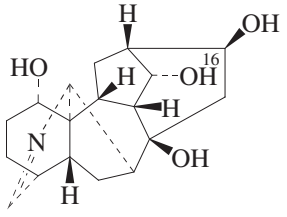
(1α,5β,14α,16β)-*form*

O^1,O^{16}-*Di-Me, 14-benzoyl, 8,13-di-Ac:* ***Delavaconitine G***
[1022894-29-6]
$C_{31}H_{37}NO_8$ 551.635
Alkaloid from the roots of *Aconitum delavayi*. Cryst. Mp 232-233°.

Jiang, S.H. *et al., Chin. Chem. Lett.*, 2007, **18**, 409-411 (*isol, pmr, cmr*)

Aconit-19(*N*)-ene-1,8,14,16-tetrol A-103

19,20-Didehydroaconitane-1,8,14,16-tetrol



$C_{18}H_{25}NO_4$ 319.4

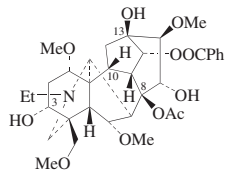
(1α,5β,14α,16β)-*form*

O^1,O^{16}-*Di-Me:* ***Liconosine A***
[126621-43-0]
$C_{20}H_{29}NO_4$ 347.453
Alkaloid from *Aconitum forrestii* (Ranunculaceae).

Chen, S. *et al., Yunnan Zhiwu Yanjiu*, 1989, **11**, 267; *CA*, **112**, 175578

Aconitine A-104

[302-27-2]



Absolute Configuration

$C_{34}H_{47}NO_{11}$ 645.745
Alkaloid from *Aconitum napellus, Aconitum fauriei, Aconitum grossedentatum, Aconitum hakusanense, Aconitum mokchangense, Aconitum zuccarini, Aconitum bullatifolium* var. *homotrichum, Aconitum carmichaeli, Aconitum karakolicum* and many others (Ranunculaceae). Toxic agent implicated in poisoning by *Aconitum* spp., esp. *Aconitum chasmanthum* in India, exp. arrhythmia effects. Gastric anaesthetic. Homeopathic remedy against neuralgia and febrile diseases. Cryst. V. spar. sol. H_2O. Mp 204°. $[\alpha]_D$ +19 ($CHCl_3$). pK_a 8.35 (15°). Hydrol. to 4-Methylaconitane-1,3,6,8,13,14,15,16,18-nonol, M-331.

▶ Very toxic if swallowed or by skin absorption. Human systemic effects by ingestion. LD_{50} (mus, orl) 1 mg/kg, LD_{50} (mus, ivn) 0.175 mg/kg, exp. lethal doses by subcutaneous route reported; LD_{50} (mus, ipr) 0.328 mg/kg.
AR5960000

Hydrochloride: Mp 170-172° dec. $[\alpha]_D$ -31 (H_2O).

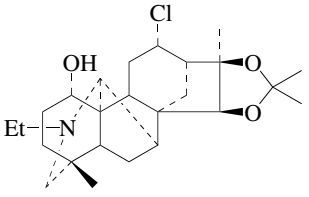
3-Ac: ***Flaconitine****. 3-Acetylaconitine*
[77181-26-1]
$C_{36}H_{49}NO_{12}$ 687.783
Alkaloid from the roots of *Aconitum flavum* and *Aconitum pendulum* (Ranunculaceae). Mp 196-197°. $[\alpha]_D^{24}$ +18.6 (c, 1 in $CHCl_3$).

▶ AR5562000

Przybylska, M. *et al., Can. J. Chem.*, 1959, **37**, 1116-1118; 1843-1845 (*struct*)
Wiesner, K. *et al., Tet. Lett.*, 1959, **2**, 15-24 (*struct*)
Bachelor, F.W. *et al., Tet. Lett.*, 1960, **31**, 1-9 (*struct*)
Birnbaum, K.B. *et al., Tet. Lett.*, 1971, 867-870 (*config, struct*)
Chang, X. *et al., Yaoxue Xuebao*, 1981, **16**, 474-476; *CA*, **97**, 3590f (*Flaconitine, isol*)
Wang, H. *et al., Heterocycles*, 1985, **23**, 803-807 (*Flaconitine, cmr*)
Seeger, R. *et al., Dtsch. Apoth. -Ztg.*, 1994, **134**, 43-50; 53-54; *CA*, **121**, 308035 (*pharmacol, rev*)
Chan, T.Y. *et al., Vet. Hum. Toxicol.*, 1994, **36**, 326-328 (*pharmacol, rev*)
Ho, K. *et al., Planta Med.*, 1997, **63**, 75-79 (*ms*)
Ohta, H. *et al., J. Chromatogr., B*, 1998, **714**, 215-221 (*hplc, ms*)
Chen, Y. *et al., J. Nat. Prod.*, 1999, **62**, 701-704 (*isol, ms*)
Wang, Z. *et al., Fenxi Huaxue*, 2001, **29**, 391-395; *CA*, **135**, 127303 (*ms*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, ADH750

Acophine A-105

Acofine
[169626-13-5]



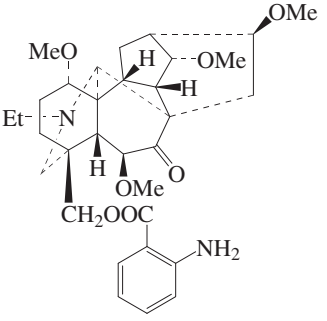
$C_{25}H_{38}ClNO_3$ 436.033

Alkaloid from roots of *Aconitum karakolicum*. Cryst. (Me_2CO). Mp 159-160°. Poss. artifact.

Tashkhodzhaev, B. *et al., Khim. Prir. Soedin.*, 1993, **29**, 267; *Chem. Nat. Compd. (Engl. Transl.)*, 1993, **29**, 222

Acoseptine A-106

[257860-39-2]



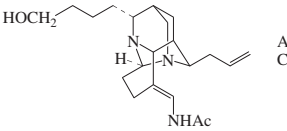
$C_{32}H_{44}N_2O_7$ 568.709
Unusual (7→8)abeoaconitane skeleton. Alkaloid from the roots of *Aconitum septentrionale*. Cryst. (MeOH). Mp 127-128°.

N-*Succinimide:* ***Anhydrolycaconitine***
[321554-91-0]
$C_{36}H_{46}N_2O_9$ 650.767
Alkaloid from the roots of *Aconitum septentrionale*. Cryst. (Me_2CO). Mp 215-216°. $[\alpha]_D^{20}$ +21 (c, 0.1 in $CHCl_3$). Misleading name.

Usmanova, S.K. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1999, **35**, 91-93 (*Acoseptine*)
Yunusov, M.S. *et al., Russ. Chem. Bull. (Engl. Transl.)*, 2000, **49**, 1629-1633 (*Anhydrolycaconitine*)
Khairitdinova, E.D. *et al., Russ. J. Org. Chem. (Engl. Transl.)*, 2008, **44**, 536-541 (*Anhydrolycaconitine*)

Acosmine A-107

[250343-47-6]



Absolute Configuration

$C_{21}H_{33}N_3O_2$ 359.511
Alkaloid from *Acosmium panamense* and *Bowdichia virgilioides*. Amorph. yellow solid. $[\alpha]_D$ -10.8 (c, 1.3 in $CHCl_3$). λ_{max} 242 ; 290 (sh) (MeOH).

O-*Ac:* ***Acosmine acetate****.* O-*Acetylacosmine*
[250279-26-6]
$C_{23}H_{35}N_3O_3$ 401.548
Alkaloid from the seeds of *Acosmium panamense*. Amorph. yellow solid. $[\alpha]_D$ -15.7 (c, 0.86 in $CHCl_3$). λ_{max} 242 ; 290 (sh) (MeOH).

O-*(3,4,5-Trimethoxybenzoyl):* ***Bowdichine***
[730992-48-0]
$C_{31}H_{43}N_3O_6$ 553.697

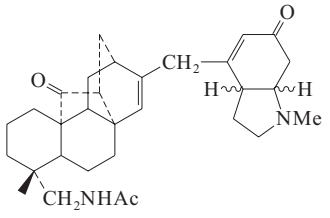
Alkaloid from the stem bark of *Bowdichia virgilioides*. Viscous oil. λ_{max} 225 ; 250 ; 298 (MeOH).

Nuzillard, J.-M. *et al., Tetrahedron*, 1999, **55**, 11511-11518 (*Acosmine*)

Barbosa-Filho, J.M. *et al., J. Asian Nat. Prod. Res.*, 2004, **6**, 11-17 (*Bowdichine, pmr, cmr*)

Acozerine A-108

[155210-48-3]



$C_{31}H_{42}N_2O_3$ 490.684

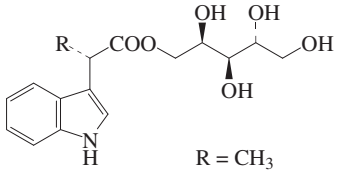
Alkaloid from *Aconitum zeravshanicum* (Ranunculaceae).

Vaisov, Z.M. *et al., Mendeleev Commun.*, 1993, 237; *CA*, **120**, 299052m (*isol, ir, pmr, ms*)

Acremoauxin A A-109

2-(3-Indolyl)propanoyl-D-arabinitol

[125537-93-1]



$C_{16}H_{21}NO_6$ 323.345

Prod. by *Acremonium roseum*. Plant growth regulator. Needles (EtOH/EtOAc). Sol. MeOH, EtOAc; poorly sol. H_2O. Mp 142-144° (135-136°). $[\alpha]_D^{19}$ +53.6 (c, 0.35 in MeOH). λ_{max} 219 (ϵ 25000); 225 (ϵ 9600); 278 (ϵ 7000); 286 (ϵ 5700); 288 (ϵ 6000) (MeOH) (Berdy).

Sassa, T. *et al., Agric. Biol. Chem.*, 1989, **53**, 3105 (*isol, struct*)

Yoshida, N. *et al., Agric. Biol. Chem.*, 1990, **54**, 2681 (*synth*)

Acremoauxin B A-110

3-Indolylacetyl-D-arabinitol, 9CI

[138111-07-6]

As Acremoauxin A, A-109 with R = H

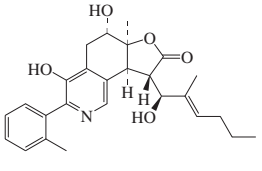
$C_{15}H_{19}NO_6$ 309.318

Prod. by *Acremonium roseum*. Plant growth regulator. Cryst.

Japan. Pat., 1991, 91 83 968; *CA*, **116**, 39794a

Acremolactone B A-111

[850723-60-3]



Absolute Configuration

$C_{26}H_{31}NO_5$ 437.535

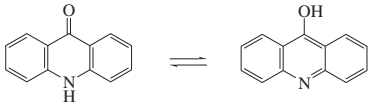
Prod. by *Acremonium roseum* I4267. Phytotoxin. Needles (Me_2CO). Mp 255-256°. $[\alpha]_D^{24}$ +37 (c, 0.08 in Me_2CO). λ_{max} 212 (ϵ 26700); 240 (sh) (ϵ 8600); 283 (ϵ 15400); 330 (ϵ 1000) (MeOH).

Sassa, T. *et al., Biosci., Biotechnol., Biochem.*, 2004, **68**, 2633-2636 (*isol, pmr, cmr*)

Acridone A-112

9(10H)-Acridinone, 9CI. 9-Hydroxyacridine. 9-Acridinol. Acridol

[578-95-0]



NH-*form* OH-*form*

$C_{13}H_9NO$ 195.22

NH-form predominates. Constit. of the roots and rhizomes of *Thamnosma montana* (Rutaceae). Antineoplastic agent. Yellow leaflets (EtOH). Insol. Et_2O, C_6H_6, $CHCl_3$. Mp 356-358° Mp 362-365° dec. pK_{a1} -0.32 (20°, H_2SO_4 aq.).

▶ AR6976000

NH-form

N-*Benzoyl: 10-Benzoyl-9(10H)-acridinone, 9CI*
[57479-66-0]
$C_{20}H_{13}NO_2$ 299.328
Yellow plates (hexane or by subl.). Mp 198-200°.

N-*Me:* see 10-Methylacridone, M-382

N-*Et: 10-Ethylacridone*
[2207-41-2]
$C_{15}H_{13}NO$ 223.274
Mp 159°.

OH-form [643-62-9]

Me ether: 9-Methoxyacridine
[10228-90-7]
$C_{14}H_{11}NO$ 209.247
Yellow needles (petrol). Mp 65°. pK_a 7 (20°). Forms monohydrate with Mp 103°.

Et ether: 9-Ethoxyacridine
$C_{15}H_{13}NO$ 223.274
Anal. reagent for 1-Hydrazinophthalazine and 4-Amino-3-isoxazolidinone, A-832. Mp *ca.* 83° Mp 92°.

Ph ether: 9-Phenoxyacridine
[2148-14-3]
$C_{19}H_{13}NO$ 271.318
Cryst. (C_6H_6). Mp 127-128°.

Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **2**, 922B (*nmr*)

Aldrich Library of Infrared Spectra, 3rd edn., 1981, 904B (*ir*)

Kliegl, A. *et al., Ber.*, 1914, **47**, 1629-1640 (*synth*)

Lehmstedt, K. *et al., Ber.*, 1935, **68**, 1455-1464 (*synth, Me ether*)

Org. Synth., Coll. Vol., 2, 1943, 15 (*synth*)

Dupré, D.J. *et al., J.C.S.*, 1945, 549-551 (*Ph ether, synth*)

Kitani, K. *et al., Nippon Kagaku Kaishi*, 1954, **75**, 396-398; *CA*, **49**, 10297 (*Me ether, Et ether, synth*)

Albert, A. *et al., The Acridines*, 2nd edn., E. Arnold, London, 1966, (*rev*)

Altiparmakian, R.H. *et al., Helv. Chim. Acta*, 1972, **55**, 85 (*pmr*)

Gagan, J.M.F. *et al., Acridines*, (Ed. Acheson, R.M.), 2nd edn., Interscience, N.Y., 1973, 141 (*rev*)

Chen, G.J. *et al., J.C.S. Perkin 1*, 1975, 1138 (*synth, N-benzoyl*)

Chang, P.T.O. *et al., J. Nat. Prod.*, 1976, **39**, 134 (*isol, uv, ir, pmr, ms*)

Beak, P. *et al., J.A.C.S.*, 1976, **98**, 171 (*uv*)

Adams, J.H. *et al., J.C.S. Perkin 1*, 1977, 2173 (*synth*)

Faure, R. *et al., Spectrosc. Lett.*, 1981, **14**, 223 (*cmr*)

Stewart, J.T. *et al., Int. J. Pharm.*, 1983, **17**, 161-166 (*Me ether, synth, use*)

Stewart, J.T. *et al., J. Pharm. Sci.*, 1988, **77**, 452-454 (*Me ether, synth, use*)

Potts, G.D. *et al., Acta Cryst. C*, 1995, **51**, 267 (*cryst struct*)

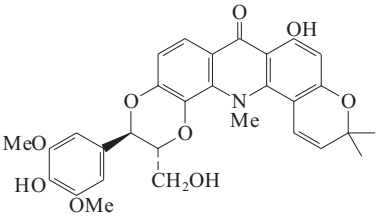
Phanstiel, O. *et al., J.O.C.*, 2000, **65**, 5590-5599 (*Ph ether, synth, pmr*)

Dadabhoy, A. *et al., J.C.S. Perkin 2*, 2002, 348-357 (*N-Et, synth, ir, uv, pmr, cmr*)

Ebead, Y. *et al., Acta Cryst. C*, 2005, **61**, o85-o87 (*Ph ether, cryst struct*)

Acrignine A A-113

[149155-25-9]



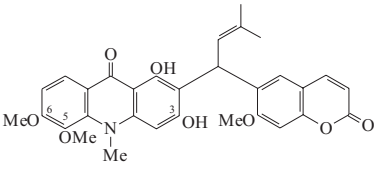
$C_{30}H_{29}NO_9$ 547.56

Acridone-lignan hybrid. Alkaloid from roots of *Citrus grandis* f. Hirado and *Citrus yuko* (Rutaceae). Yellow prisms. Mp 177-179°. Racemic.

Takemura, Y. *et al., Chem. Pharm. Bull.*, 1993, **41**, 406 (*isol, uv, ir, pmr, cmr, cryst struct*)

Acrimarine A A-114

[119152-47-5]



$C_{31}H_{29}NO_8$ 543.572

Alkaloid from the roots of *Citrus funadoko* (Rutaceae). Pale yellow oil. $[\alpha]_D$ -9.76 (c, 0.082 in $CHCl_3$).

3-Me ether: ***Acrimarine N***
$C_{32}H_{31}NO_8$ 557.599
Alkaloid from roots of Yalaha [several hybrid seedlings resulting from a cross of Duncan grapefruit (*Citrus paradisi*) x Dancy tangerine (*Citrus tangerina*)].

Yellow oil. Opt. inactive.

3-Me ether, N-*de-Me:* ***Acrimarine B***
[119152-48-6]
$C_{31}H_{29}NO_8$ 543.572
Alkaloid from the roots of *Citrus funadoko* (Rutaceae). Yellow prisms (Me_2CO). Mp 288-290°. $[\alpha]_D$ -7.14 (c, 0.056 in $CHCl_3$).

O^6*-De-Me:* ***Acrimarine K***
[147395-91-3]
$C_{30}H_{27}NO_8$ 529.545
Alkaloid from roots of *Citrus funadoko* (Rutaceae). Yellow oil. $[\alpha]_D^{25}$ 0 (c, 0.0695 in $CHCl_3$).

O^6*-De-Me, 3-Me ether:* ***Acrimarine F***
[129722-89-0]
$C_{31}H_{29}NO_8$ 543.572
Alkaloid from the roots of *Citrus funadoko* (Rutaceae). Pale yellow powder.

O^6*-De-Me, 3-Me ether,* N^6*-de-Me:* ***Acrimarine E***
[129722-88-9]
$C_{30}H_{27}NO_8$ 529.545
Alkaloid from the roots of *Citrus funadoko* (Rutaceae). Pale yellow prisms (Me_2CO). Mp 274-276°. $[\alpha]_D$ +20.1 (c, 0.05 in Me_2CO).

6-Demethoxy, O^5*-de-Me:* ***Acrimarine G***
[129722-97-0]
$C_{29}H_{25}NO_7$ 499.519
Alkaloid from the roots of *Citrus funadoko* (Rutaceae). Yellow oil. $[\alpha]_D$ +8 (c, 0.075 in $CHCl_3$).

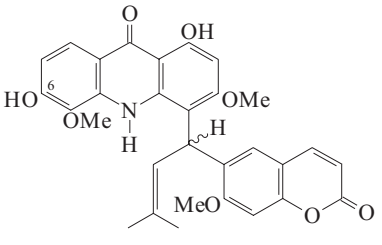
6-Demethoxy, O^5*-de-Me, 3-Me ether:* ***Acrimarine H***
[132185-44-5]
$C_{30}H_{27}NO_7$ 513.546
Alkaloid from roots of *Citrus* spp. Yellow oil. $[\alpha]_D$ 0 (Me_2CO).

Bis(demethoxy): ***Acrimarine M***
[147513-68-6]
$C_{29}H_{25}NO_6$ 483.52
Alkaloid from roots of *Citrus funadoko* (Rutaceae). Yellow oil. $[\alpha]_D^{25}$ 0 (c, 0.052 in $CHCl_3$).

Ito, C. *et al., Chem. Pharm. Bull.*, 1990, **38**, 2586 (*Acrimarine H*)
Furukawa, H. *et al., J.C.S. Perkin 1*, 1990, 1593 (*isol, pmr, cmr, struct*)
Takemura, Y. *et al., Heterocycles*, 1992, **34**, 2363 (*Acrimarine K, Acrimarine M*)
Takemura, Y. *et al., Heterocycles*, 1994, **38**, 1937 (*Acrimarine N*)

Acrimarine C A-115

[119206-24-5]



$C_{30}H_{27}NO_8$ 529.545

(-)-*form*
Alkaloid from the roots of *Citrus funadoko* (Rutaceae). Yellow oil. $[\alpha]_D$ -6.17 (c, 0.081 in $CHCl_3$).

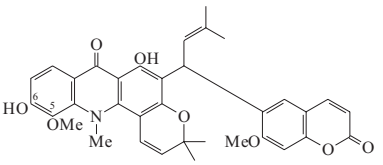
6-Me ether: ***Acrimarine D***
[129722-87-8]
$C_{31}H_{29}NO_8$ 543.572
Alkaloid from the root of *Citrus funadoko* (Rutaceae). Yellow oil. $[\alpha]_D$ -3 (c, 0.103 in $CHCl_3$).

(±)-*form*
Acrimarine L
[147512-44-5]
From roots of *Citrus funadoko* (Rutaceae). Yellow oil.

Furukawa, H. *et al., J.C.S. Perkin 1*, 1990, 1593 (*Acrimarine C, Acrimarine D*)
Takemura, Y. *et al., Heterocycles*, 1992, **34**, 2363 (*Acrimarine L*)

Acrimarine J A-116

[147395-90-2]



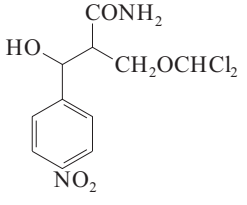
$C_{35}H_{33}NO_8$ 595.648
Alkaloid from roots of Yalaha [several hybrid seedlings resulting from a cross of Duncan grapefruit (*Citrus paradisii*) × Dancy tangerine (*Citrus tangerina*)] (Rutaceae). Yellow oil. $[\alpha]_D^{28}$ 0 (c, 0.106 in $CHCl_3$).

6-Deoxy, O^5*-de-Me:* ***Acrimarine I***
[147395-89-9]
$C_{34}H_{31}NO_7$ 565.621
Alkaloid from roots of Yalaha (Rutaceae). Yellow oil. $[\alpha]_D^{26}$ +27.8 (c, 0.036 in $CHCl_3$).

Takemura, Y. *et al., Heterocycles*, 1992, **34**, 2363 (*isol, uv, ir, pmr, cmr, ms, struct*)

Acrodontiolamide A-117

α-(Dichloromethoxymethyl)-β-hydroxy-4-nitrobenzenepropanamide
[152053-09-3]

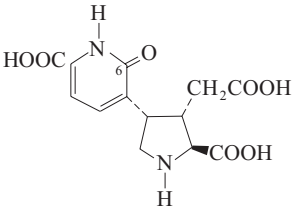


$C_{11}H_{12}Cl_2N_2O_5$ 323.132
Metab. of the fungus *Acrodontium salmoneum*. Antifungal agent. Plates (MeOH). Mp 145-147°. λ_{max} 273 (ϵ 386000) (MeOH) (Berdy).

Buarque de Gusmao, N. *et al., Spectrosc. Lett.*, 1993, **26**, 1373 (*isol, uv, ir, ms, pmr, cmr*)
Steiman, R. *et al., Pharmazie*, 1995, **50**, 693 (*isol, activity*)

Acromelic acid A A-118

5-[5-Carboxy-4-(carboxymethyl)-3-pyrrolidinyl]-1,6-dihydro-6-oxo-2-pyridinecarboxylic acid, 9CI. Acromelinic acid A
[86630-09-3]



$C_{13}H_{14}N_2O_7$ 310.263
Trace alkaloid from fruiting bodies of the poisonous mushroom *Clitocybe acromelalga*. Shows very potent neuroexcitatory action. Cryst. Sol. H_2O; poorly sol. Me_2CO, hexane. Mp 310°. $[\alpha]_D$ +27.8 (c, 0.35 in H_2O). Struct. established by synth. Phys. props. are of synthetic material. λ_{max} 240 (ϵ 4370); 315 (ϵ 8910) (pH 2) (Derep). λ_{max} 241 (ϵ 5130); 312 (ϵ 9120) (pH 12) (Derep). λ_{max} 243 (ϵ 5500); 315 (ϵ 9550) (H_2O pH 7) (Derep). λ_{max} 242 ; 317 (pH 7 buffer) (Berdy). λ_{max} 240 ; 313 (pH 2 buffer) (Berdy). λ_{max} 241 ; 312 (pH 12 buffer) (Berdy). λ_{max} 240 (ϵ 5130); 313 (ϵ 9550) (H_2O) (Berdy).

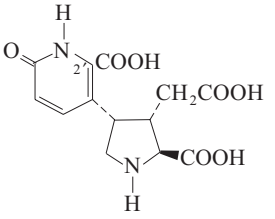
6-Deoxo, 5,6-didehydro: ***Acromelic acid D***
[102329-71-5]
$C_{13}H_{14}N_2O_6$ 294.263
Minor constit. of the toxic mushroom *Clitocybe acromelalga*. Sol. H_2O. $[\alpha]_D$ +17.6 (c, 0.07 in H_2O). λ_{max} 221 ; 269 (H_2O) (Berdy).

6-Deoxo, 5,6-didehydro, 4-decarboxy, 6-carboxy: Acromelic acid E
[145237-01-0]
$C_{13}H_{14}N_2O_6$ 294.263
Minor constit. of the toxic mushroom *Clitocybe acromelalga*. Sol. H_2O. λ_{max} 266 (H_2O) (Berdy).

Takano, S. *et al., J.A.C.S.*, 1987, **109**, 5523 (*synth*)
Konno, K. *et al., J.A.C.S.*, 1988, **110**, 4807; 6926 (*isol, synth, ir, uv, pmr*)
Takano, S. *et al., Heterocycles*, 1989, **29**, 1473 (*synth, bibl*)
Fushiya, S. *et al., Heterocycles*, 1992, **34**, 1277 (*isol, pmr, cd, struct*)
Barco, A. *et al., Gazz. Chim. Ital.*, 1993, **123**, 185 (*synth*)
Baldwin, J.E. *et al., Tetrahedron*, 1998, **54**, 7465-7484 (*synth*)

Acromelic acid B A-119

3-[5-Carboxy-4-(carboxymethyl)-3-pyrrolidinyl]-1,6-dihydro-6-oxo-2-pyridinecarboxylic acid, 9CI. Acromelinic acid B
[86630-10-6]



$C_{13}H_{14}N_2O_7$ 310.263
Trace alkaloid from the poisonous mushroom *Clitocybe acromelalga*. Shows very potent neuroexcitatory action. Amorph. powder. Sol. H_2O; poorly sol. Me_2CO, hexane. $[\alpha]_D$ +50.1 (c, 0.45 in H_2O). Struct. established by synth. Phys. props. are of synthetic material. λ_{max} 231; 308 (pH 2) (Derep). λ_{max} 241; 311 (pH 12) (Derep). λ_{max} 227; 300 (pH 7) (Derep). λ_{max} 236 (ϵ 6320); 302 (ϵ 2920) (MeOH) (Berdy).

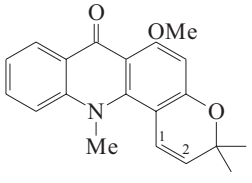
2′-Decarboxy: ***Acromelic acid C***
[133740-47-3]
$C_{12}H_{14}N_2O_5$ 266.253
From *Clitocybe acromelalga*. Powder. $[\alpha]_D$ +31.9 (c, 0.23 in H_2O). λ_{max} 230 (ϵ 11000); 302 (ϵ 6150) (MeOH) (Derep). λ_{max} 230 (ϵ 10592); 301 (ϵ 6150) (H_2O) (Berdy).

▶ LD_{50} (mus, ipr) 10 mg/kg.

Hashimoto, K. *et al., Chem. Lett.*, 1986, 1399 (*synth, uv, ir, cd, abs config*)
Konno, K. *et al., J.A.C.S.*, 1988, **110**, 4807; 6926 (*isol, uv, pmr, synth, struct*)
Takano, S. *et al., Heterocycles*, 1989, **29**, 1473 (*synth, bibl*)
Fushiya, S. *et al., Tet. Lett.*, 1990, **31**, 3901 (*Acromelic acid C*)

Acronycine A-120

*3,12-Dihydro-6-methoxy-3,3,12-trimethyl-7*H*-pyrano[2,3-*c*]acridin-7-one, 9CI, 8CI.* ***Acronine, INN, USAN****. NSC 403169. Compound 42339*
[7008-42-6]



$C_{20}H_{19}NO_3$ 321.375
Alkaloid from *Acronychia baueri* (*Bauerella baueri*), *Melicope leptococca* and *Sarcomelicope argyrophylla*. Antineoplastic agent. . Yellow needles (EtOH). Mp 175-176°. Log P 3.7 (calc). λ_{max} 280 (ϵ 39800); 291 (ϵ 34700); 304 (ϵ 19100); 392 (ϵ 6920) (EtOH) (Derep). λ_{max} 224 (ϵ 24500); 281 (ϵ 48000); 293 (ϵ 43500); 308 (ϵ 40700); 380 (ϵ 10250) (MeOH) (Berdy).

▶ LD_{50} (mus, orl) 522 mg/kg. Exp. carcinogenic data. UQ0330000

Hydrochloride: [70509-95-4]
Red needles (H_2O). Mp 125-130°. Heating above melting point causes *O*-demethylation.

N-*De-Me:* ***De*-N-*methylacronycine***. *Des*-N-*methylacronycine*
[13255-08-8]
$C_{19}H_{17}NO_3$ 307.348
Alkaloid from *Glycosmis pentaphylla* and *Murraya paniculata* (Rutaceae). Yellow needles (Me_2CO). Mp 268-270° dec. (with sintering at 260°). λ_{max} 280 (ϵ 39800); 291 (ϵ 34700); 304 (ϵ 19100); 392 (ϵ 6920) (EtOH) (Derep).

N-*De-Me, hydrochloride:*
Orange-red needles ($MeOH/Et_2O$). Mp 137-141°.

N-*De-Me, picrate:*
Orange needles (EtOH). Mp 222-224° dec.

O-*De-Me:* ***Noracronycine***. *Noracronine*
[13161-79-0]
$C_{19}H_{17}NO_3$ 307.348
Alkaloid from *Glycosmis pentaphylla*, *Murraya paniculata* and *Boenninghausenia albiflora*. Bright yellow needles (C_6H_6 or EtOAc). Mp 203-205°.

O-*De-Me, Ac:*
Yellow rods (EtOAc). Mp 201-203°.

O,N-*Di-de-Me:* ***De*-N-*methylnoracronycine***. *Des*-N-*methylnoracronycine*
[13396-93-5]
$C_{18}H_{15}NO_3$ 293.321
Alkaloid from *Glycosmis pentaphylla* (Rutaceae). Has antitumour activity. Bright yellow needles (C_6H_6/EtOAc). Mp 245-246°.

▶ Carcinogenic.

O,N-*Di-de-Me,* O-*Ac:* [36385-14-5]
Fluffy needles ($CHCl_3$/EtOAc). Mp 235-236.5°.

1,2-Epoxide: ***Acronycine epoxide***
[118964-07-1]
$C_{20}H_{19}NO_4$ 337.374
Alkaloid from the bark of *Sarcomelicope simplicifolia* ssp. *neoscotica*. Pale yellow foam. $[\alpha]_D^{20}$ +2 (c, 0.25 in CH_2Cl_2).

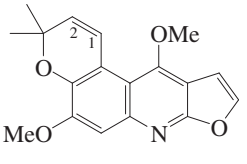
1,2-Dihydro, 1-oxo, 2ξ-hydroxy, O,N-*di-de-Me:* ***1,2-Dihydro-2-hydroxy*-N-*de-methyl-1-oxonoracronycine***
$C_{18}H_{15}NO_5$ 325.32
Alkaloid from the bark of *Medicosma subsessilis*. Amorph. yellow solid. λ_{max} 221 (log ϵ 4.98); 255 (log ϵ 4.99); 383 (log ϵ 4.04) (EtOH).

11-Methoxy, O-*de-Me:* ***5-Methoxynoracronycine***. *Baiyumine A*
[51179-68-1]
$C_{20}H_{19}NO_4$ 337.374
Alkaloid from the bark of *Citrus junos* (yuzu) and *Citrus grandis* f. *hakunikuyu* (Rutaceae). Light yellow prisms, or orange needles (Me_2CO/hexane), or orange plates (Et_2O). Mp 146-148° Mp 160-161° (155-157°).

Hughes, G.K. *et al., Nature (London)*, 1948, **162**, 223 (*isol*)
Drummond, L.J. *et al., Aust. J. Sci. Res., Ser. A*, 1949, **2**, 630 (*isol, struct*)
Brown, R.D. *et al., Aust. J. Sci. Res., Ser. A*, 1950, **3**, 593 (*struct*)
MacDonald, P.L. *et al., Aust. J. Chem.*, 1966, **19**, 275 (*struct*)
Svoboda, G.H. *et al., J. Nat. Prod.*, 1966, **29**, 206 (*rev*)
Svoboda, G.H. *et al., J. Pharm. Sci.*, 1966, **55**, 758 (*pharmacol*)
Govindachari, T.R. *et al., Tetrahedron*, 1966, **22**, 3245 (*Noracronycine, De-N-methylacronycine*)
Beck, J.R. *et al., J.A.C.S.*, 1968, **90**, 4706 (*synth*)
Gougoutas, J.Z. *et al., Acta Cryst. B*, 1970, **26**, 853 (*cryst struct*)
Hlubucek, J. *et al., Aust. J. Chem.*, 1970, **23**, 1881 (*synth*)
Sullivan, H.R. *et al., J. Med. Chem.*, 1970, **13**, 904 (*metab*)
Gout, P.W. *et al., J. Cell Physiol.*, 1972, **78**, 127 (*biochem*)
Schneider, J. *et al., J. Med. Chem.*, 1972, **15**, 266 (*synth, tox, derivs*)
Lahey, F.M. *et al., Aust. J. Chem.*, 1973, **26**, 2311 (*synth*)
Tan, P. *et al., Cancer Res.*, 1973, **33**, 2320 (*pharmacol*)
Saxton, J.E. *et al., Chem. Heterocycl. Compd.*, 1973, **9**, 379 (*rev*)
Betts, R.E. *et al., J. Med. Chem.*, 1974, **17**, 599
Brannon, D.R. *et al., J. Med. Chem.*, 1974, **17**, 653
Bandranayake, W. *et al., J.C.S. Perkin 1*, 1974, 998 (*synth*)
Bert, M. *et al., Phytochemistry*, 1974, **13**, 301 (*isol*)
Blechert, S. *et al., Chem. Ber.*, 1978, **111**, 439 (*synth*)
Rózsa, Zs. *et al., Phytochemistry*, 1978, **17**, 169 (*isol, uv, ir, derivs*)
Adams, J.H. *et al., Tetrahedron*, 1981, **37**, 209 (*synth*)
Gerzon, K. *et al., Alkaloids (Academic Press)*, 1983, **21**, 1 (*rev*)
Funayama, S. *et al., J. Nat. Prod.*, 1983, **46**, 391 (*cmr*)
Skaltsounis, A.L. *et al., J. Nat. Prod.*, 1983, **46**, 732 (*isol*)
Reisch, J. *et al., Annalen*, 1984, 31 (*synth*)
Watanabe, M. *et al., Chem. Pharm. Bull.*, 1984, **32**, 1264 (*synth, bibl*)
Funayama, S. *et al., Planta Med.*, 1984, **50**, 121 (*pmr*)
Brum-Bousquet, M. *et al., Planta Med.*, 1985, **51**, 536; 1988, **54**, 470 (*isol, uv, ir, pmr, ms, struct, epoxide*)
Ju-ichi, M. *et al., Heterocycles*, 1986, **24**, 1595 (*5-Methoxynoracronycine*)
Wu, T.S. *et al., Phytochemistry*, 1987, **26**, 871 (*Baiyumine A*)
Anand, R.C. *et al., Heterocycles*, 1990, **31**, 1733 (*synth*)
Loughhead, D.G. *et al., J.O.C.*, 1990, **55**, 2245 (*synth, Acronycine, Des-N-methylacronycine*)
Horne, S. *et al., Chem. Comm.*, 1991, 1046 (*synth*)
Reisch, J. *et al., Annalen*, 1994, 317 (*synth, Acronycine epoxide*)
Anand, R.C. *et al., Chem. Comm.*, 1996, 199 (*synth, Acronycine, Des-N-methylacronycine*)
Tillequin, F. *et al., Alkaloids: Chem. Biol. Perspect.*, 1998, **12**, 1-102 (*rev*)
Minh, N.T. *et al., Z. Naturforsch., B*, 2003, **58**, 1234-1236 (*Dihydrohydroxydemethyloxonoracronycine*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, ADR750

Acronydine A-121

*5,11-Dimethoxy-3,3-dimethyl-3*H*-furano[2,3-*b*]pyrano[3,2-*f*]quinoline, 9CI*
[518-68-3]



$C_{18}H_{17}NO_4$ 311.337
Alkaloid from *Acronychia baueri, Melicope leptococca* and *Sarcomelicope leiocarpa* (Rutaceae). Prisms (MeOH). Mp 151-153°.

Picrate:

Yellow needles (propanol or EtOH). Mp 216-218°. dec.

*1,2-Dihydro, 1*R,*2*R*-dihydroxy:* **cis-*1,2-Dihydro-1,2-dihydroxyacronydine*.** cis-*1,2-Dihydroxy-1,2-dihydroacronydine*
[126661-84-5]
$C_{18}H_{19}NO_6$ 345.351
Alkaloid from bark of *Sarcomelicope dogniensis*. Noncryst. $[\alpha]_D$ +2 (c, 0.25 in MeOH). λ_{max} 225 (sh) (log ϵ 4.17); 254 (log ϵ 4.43); 303 (sh) (log ϵ 3.88); 317 (log ϵ 4.05); 329 (log ϵ 4.04); 344 (sh) (log ϵ 3.83) (MeOH).

*1,2-Dihydro, 1*R,*2*S*-dihydroxy:* **trans-*1,2-Dihydro-1,2-dihydroxyacronydine*.** trans-*1,2-Dihydroxy-1,2-dihydroacronydine*
[126661-85-6]
$C_{18}H_{19}NO_6$ 345.351
Alkaloid from bark of *Sarcomelicope dogniensis*. Mp 178-180°. $[\alpha]_D$ -8 (c, 0.2 in MeOH). λ_{max} 225 (sh) ; 254 (log ϵ 4.43); 303 (sh) (log ϵ 3.88); 317 (log ϵ 4.05); 329 (log ϵ 4.04); 344 (sh) (log ϵ 3.83) (MeOH).

*5-Demethoxy: 11-Methoxy-3,3-dimethyl-3*H*-furano[2,3-*b*]pyrano[3,2-*f*]quinoline.* ***Medicosmine***
[35306-86-6]
$C_{17}H_{15}NO_3$ 281.31
Alkaloid from *Boronella koniambiensis* and *Medicosma cunninghamii*. Pale cream needles (EtOH or ETOAc/petrol). Mp 138.5-139.5°.

5-Demethoxy, picrate:
Fine yellow needles (EtOH). Mp 190-191°.

*5-Demethoxy, 1,2-dihydro, 1*R**,2**R*-dihydroxy:* **cis-*1,2-Dihydro-1,2-dihydroxymedicosmine*.** cis-*1,2-Dihydroxy-1,2-dihydromedicosmine*
$C_{17}H_{17}NO_5$ 315.325
Alkaloid from the aerial parts of *Boronella koniambiensis*. Amorph. solid. $[\alpha]_D$ -5 (c, 0.1 in $CHCl_3$). λ_{max} 245 ; 300 ; 312 ; 342 ; 357 (MeOH).

Lamberton, J.A. *et al., Aust. J. Chem.*, 1953, **6**, 66; 173 (*Acronydine, Medicosmine, isol*)
Johns, S.R. *et al., Aust. J. Chem.*, 1967, **20**, 1975, (*pmr, struct*)
Govaindachari, T.R. *et al., Indian J. Biochem.*, 1971, **9**, 1031 (*Medicosmine, synth, uv, pmr*)
Skaltsounis, A.L. *et al., J. Nat. Prod.*, 1983, **46**, 732
Baudouin, G. *et al., J. Nat. Prod.*, 1985, **48**, 260
Mitaku, S. *et al., Ann. Pharm. Fr.*, 1989, **47**, 149-156 (*1,2-Dihydro-1,2-dihydroxyacronydine*)
Grougnet, R. *et al., J. Nat. Prod.*, 2005, **68**, 1083-1086 (*1,2-Dihydro-1,2-dihydroxymedicosmine, Medicosmine*)

Acsine A-122

[1353-77-1]

$C_{21}H_{29}NO_5$ 375.464

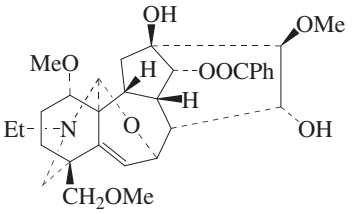
Struct. unknown. Alkaloid from the roots of *Aconitum excelsum* (Ranunculaceae). Mp 182-185° (slow heating) Mp 192-195° (rapid heating). Contains OAc and 2 OH groups, plus an ether linkage.

Sulfate: Mp 220° dec.

Platonova, T.F. *et al., J. Gen. Chem. USSR (Engl. Transl.)*, 1958, **28**, 259 (*isol, ir*)

Acsonine A-123

[367452-76-4]



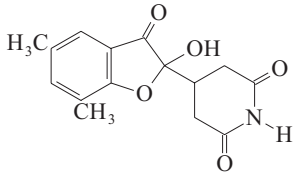
$C_{31}H_{41}NO_8$ 555.667

Unusual 7,17-epoxyaconitane struct. Alkaloid from the roots of *Aconitum kusnezoffii*. Amorph. powder.

Zinurova, E.G. *et al., Russ. Chem. Bull. (Engl. Transl.)*, 2001, **50**, 311-312 (*isol, pmr, cmr*)

Actiketal A-124

4-(2,3-Dihydro-2-hydroxy-5,7-dimethyl-3-oxo-2-benzofuranyl)-2,6-piperidinedione, 9CI. RK 4415. Antibiotic RK 4415
[133658-47-6]

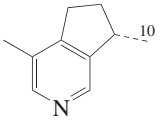


$C_{15}H_{15}NO_5$ 289.287

Glutarimide-type antibiotic. Prod. by *Streptomyces pulveraceus* ssp. *epiderstagenes*. Antitumour agent. Powder. Mp 96-100°. $[\alpha]_D$ 0. λ_{max} 222 (ϵ 9710); 264 (ϵ 7630); 350 (ϵ 2490) (MeOH) (Derep).

Sonoda, T. *et al., J. Antibiot.*, 1991, **44**, 160 (*isol, pmr, cmr*)
Japan. Pat., 1991, 91 255 082; *CA*, **116**, 126985g (*isol*)
Kiyota, H. *et al., Tet. Lett.*, 2000, **41**, 5887-5890 (*synth*)

Actinidine A-125



(*S*)-*form*

$C_{10}H_{13}N$ 147.219

(*R*)-*form* [15524-81-9]
Synthetic. Liq. Bp_{10} 92-94°. $[\alpha]_D^{20}$ +10.8 (c, 0.36 in $CHCl_3$).

Picrate: Mp 146-147°.

(*S*)-*form* [524-03-8]
Alkaloid from *Actinidia arguta* (taravine), *Actinidia polygama, Tecoma fulva, Tecoma radicans* and *Valeriana officinalis* (valerian). Constit. of defensive secretions of various insects incl. *Megacrania alpheus*, *Ontholestes murinus* and *Tapinoma erraticum*). Powerful attractant for Felidae (cats). Oil. Bp_9 100-103°. $[\alpha]_D^{11}$ -7.2 ($CHCl_3$).

Picrate: Mp 143°.

N-*[2-(4-Hydroxyphenyl)ethyl]:* **N-*(p-Hydroxyphenethyl)actinidine***
[15794-92-0]
$C_{18}H_{22}NO^{\oplus}$ 268.378
Quaternary alkaloid from the roots of *Valeriana officinalis* (valerian). Mp 201-203° dec. (as chloride). $[\alpha]_D^{22}$ +50.5 (MeOH).

10-Acetoxy: ***10-Acetoxyactinidine***
$C_{12}H_{15}NO_2$ 205.256
Alkaloid from the roots of *Argylia radiata*. Amorph. solid. Stereochem. not certain.

(±)-*form* [79254-93-6]
Synthetic. Oil. Mp 146-146.5° (as picrate). Bp_9 100-103°.

Sakan, T. *et al., Bull. Chem. Soc. Jpn.*, 1959, **32**, 315; 1155; 1960, **33**, 712 (*uv, ir, isol, struct, synth*)
Djerassi, C. *et al., Chem. Ind. (London)*, 1961, 210 (*pmr*)
Torssell, K. *et al., Acta Chem. Scand.*, 1967, **21**, 53 (*N-4-Hydroxyphenethylactinidine*)
Cavill, G.W.K. *et al., Aust. J. Chem.*, 1967, **20**, 349 (*synth, uv, pmr*)
Johnson, R.D. *et al., Phytochemistry*, 1971, **10**, 3334 (*isol, ms*)
Wuest, J.D. *et al., J.O.C.*, 1977, **42**, 2111 (*synth*)
Nitta, M. *et al., Chem. Lett.*, 1981, 933 (*synth*)
Davies, L.B. *et al., J.C.S. Perkin 1*, 1981, 1909 (*synth, uv, ir, pmr, ms*)
Tomalski, M.D. *et al., J. Chem. Ecol.*, 1987, **13**, 253-263 (*isol, ms*)
Cossy, J. *et al., Tet. Lett.*, 1988, **29**, 6113 (*synth*)
Ranarivelo, Y. *et al., Heterocycles*, 1990, **31**, 1727-1731 (*(S)-form, synth*)
Huth, A. *et al., J. Chem. Ecol.*, 1990, **16**, 2691-2711 (*isol*)
Cossy, J. *et al., J.O.C.*, 1993, **58**, 2351 (*synth*)
Shiao, M.J. *et al., J.O.C.*, 1993, **58**, 3162 (*synth*)
Stepanov, A.V. *et al., Russ. Chem. Bull. (Engl. Transl.)*, 1998, **47**, 2286-2291 (*synth*)
Jones, K. *et al., Tetrahedron*, 1998, **54**, 2275-2280 (*synth*)
Bianco, A. *et al., Nat. Prod. Lett.*, 2002, **16**, 77-80 (*10-Acetoxyactinidine*)

Actinine A-126

*3-Carboxy-*N,N,N*-trimethyl-1-propanaminium hydroxide inner salt, 9CI. Tri-*N*-methyl-γ-butyrobetaine. 4-Aminobutanoic acid betaine. γ-Butyrobetaine. Butyrobetaine. 4-Aminobutanoic acid trimethylbetaine*
[407-64-7]
$Me_3N^{\oplus}CH_2CH_2CH_2COO^{\ominus}$
$C_7H_{15}NO_2$ 145.201

Inner salt. Occurs in the sea-rose *Actinia equina*, in muscles of various snakes and in urine in cases of pernicious anaemia. Isol. from brain tissue. Also from *Polyporus sulphureus*. Biosynthetic intermed. in synth. of Carnitine. Plates + $3H_2O$ ($EtOH/Et_2O$ aq.). Sol. EtOH. Dec. at 220°.

▶ BP3930000

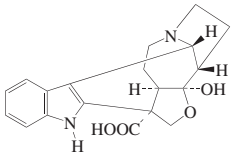
Hydrochloride: [6249-56-5]
Mp 203° Mp 214-219°.

▶ BP3850000

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 681A (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 878B (*nmr*)
Engeland, R. *et al., Ber.*, 1921, **54**, 2212 (*derivs*)
Linneweh, W. *et al., Hoppe-Seyler's Z. Physiol. Chem.*, 1928, **175**, 95; **176**, 220; 1929, **181**, 48; **182**, 9 (*isol*)
List, P.H. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1959, **292**, 260 (*isol*)
Hosein, E.A. *et al., Nature (London)*, 1960, **187**, 321 (*isol*)
Cox, R.A. *et al., Biochem. J.*, 1973, **136**, 1083 (*biosynth*)
Anderson, L. *et al., Synthesis*, 1981, 468 (*synth*)

Actinophyllic acid A-127

[845959-90-2]



Absolute Configuration

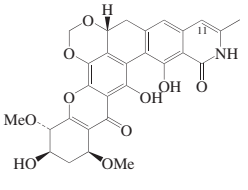
$C_{19}H_{20}N_2O_4$ 340.378

Indole alkaloid of unknown biogenetic relationships. Alkaloid from the leaves of *Alstonia actinophylla*. Inhibitor of Carboxypeptidase U/Hippuricase. Brown gum. $[\alpha]_D$ -29 (c, 0.001 in MeOH). λ_{max} 217 (ε 24410); 280 (ε 17000) (MeOH).

Carroll, A.R. *et al., J.O.C.*, 2005, **70**, 1096-1099 (*isol, biosynth, pmr, cmr*)
Martin, C.L. *et al., J.A.C.S.*, 2008, **130**, 7568-7569 (*synth*)

Actinoplanone D A-128

*3,4,8*a,*13-Tetrahydro-3,15,16-trihydroxy-1,4-dimethoxy-12-methyl-1*H*-xanthe-no[4′,3′,2′:4,5][1,3]benzodioxino[7,6-*g*]isoquinoline-14,17(2*H*,9*H*)-dione, 9CI*
[116200-81-8]



Absolute Configuration

$C_{28}H_{25}NO_{10}$ 535.506

CAS numbering shown. Isol. from *Actinoplanes* sp. R-304. Cytotoxic agent. Sol. MeOH, EtOAc; poorly sol. H_2O, hexane. Mp 222-224° dec. $[\alpha]_D^{25}$ -624.1 (c, 0.7 in $CHCl_3$). λ_{max} 221 (ε 20900); 249 (ε 24500); 298 (ε 12000); 312 (ε 11220); 328 (ε 10960); 358 (ε 16200); 372 (ε 17400) (EtOH) (Derep).

N-*Amino:* ***Actinoplanone C***
[116200-80-7]
$C_{28}H_{26}N_2O_{10}$ 550.521
Isol. from *Actinoplanes* sp. R-304. Cytotoxic agent. Sol. MeOH, EtOAc; poorly sol. H_2O, hexane. Mp 278-280° dec. $[\alpha]_D^{25}$ -646.1 (c, 0.35 in $CHCl_3$). λ_{max} 228 (ε 19100); 253 (ε 20400); 302 (ε 14100); 336 (sh) ; 360 (ε 14100); 375 (ε 15500) (EtOH) (Derep).

N-*(3-Oxo-2-butenylideneamino):* ***Actinoplanone G***
[116200-82-9]
$C_{32}H_{30}N_2O_{11}$ 618.596
Isol. from *Actinoplanes* sp. R-304. Cytotoxic agent. Yellowish solid. Sol. MeOH, EtOAc; poorly sol. H_2O, hexane. Mp 173-176°. $[\alpha]_D^{25}$ -582.3 (c, 0.44 in $CHCl_3$). λ_{max} 227 (ε 30900); 253 (ε 31600); 304 (ε 14500); 340 (ε 12600); 380 (ε 16600) (EtOH) (Derep).

11-Chloro: ***Actinoplanone B***
[115655-87-3]
$C_{28}H_{24}ClNO_{10}$ 569.951
Isol. from *Actinoplanes* sp. R-304. Cytotoxic agent. Yellow amorph. solid. Sol. MeOH, EtOAc, bases, $CHCl_3$; poorly sol. H_2O. Mp 240-243°. $[\alpha]_D^{25}$ -649.4 (c, 1.54 in $CHCl_3$). λ_{max} 228 (ε 30900); 253 (ε 33100); 305 (ε 13500); 336 (sh) ; 365 (ε 22900); 380 (ε 25100) (EtOH) (Derep). λ_{max} 226 (ε 25100); 252 (ε 28950); 303 (ε 13180); 363 (ε 17790); 377 (ε 19500) (EtOH) (Berdy).

11-Chloro, N-*amino:* ***Actinoplanone A***
[115655-86-2]
$C_{28}H_{25}ClN_2O_{10}$ 584.966
Isol. from *Actinoplanes* sp. R-304. Cytotoxic agent. Yellow needles (Me_2CO). Sol. $CHCl_3$, bases, MeOH, EtOAc; poorly sol. H_2O. Mp 276-278°. $[\alpha]_D^{25}$ -619.8 (c, 0.29 in $CHCl_3$). λ_{max} 228 (ε 30900); 253 (ε 33100); 305 (ε 13500); 336 (sh); 365 (ε 22900); 380 (ε 25100) (EtOH) (Derep).

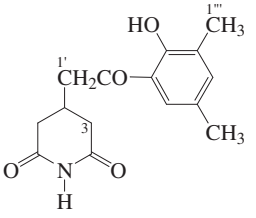
11-Chloro, N-*(isopropylideneamino):* ***Actinoplanone E***
[116229-70-0]
$C_{31}H_{29}ClN_2O_{10}$ 625.03
Isol. from *Actinoplanes* sp. R-304. Cytotoxic agent. Yellowish solid. Sol. MeOH, EtOAc; poorly sol. H_2O, hexane. Mp 190-193°. $[\alpha]_D^{25}$ -516.7 (c, 0.21 in $CHCl_3$). λ_{max} 232 (ε 20900); 253 (ε 26300); 308 (ε 10700); 344 (sh); 370 (ε 17400); 386 (ε 18200) (EtOH) (Derep).

11-Chloro, N-*(3-oxo-2-butenylideneamino):* ***Actinoplanone F***
[116200-79-4]
$C_{32}H_{29}ClN_2O_{11}$ 653.041
Isol. from *Actinoplanes* sp. R-304. Cytotoxic agent. Yellowish solid. Sol. MeOH, EtOAc; poorly sol. H_2O, hexane. Mp 281-282° dec. λ_{max} 232 (ε 20900); 253 (ε 26300); 308 (ε 10700); 344 (sh); 370 (ε 17400); 386 (ε 18200) (EtOH) (Derep). λ_{max} 231 (ε 31500); 254 (ε 33700); 308 (ε 13800); 386 (ε 18200) (EtOH) (Berdy).

Kobayashi, K. *et al., J. Antibiot.*, 1988, **41**, 502-511 (*Actinoplanones A,B*)
Kobayashi, K. *et al., J. Antibiot.*, 1988, **41**, 741-750 (*Actinoplanones C-G*)

Actiphenol A-129

4-[2-(2-Hydroxy-3,5-dimethylphenyl)-2-oxoethyl]-2,6-piperidinedione, 9CI. 3-(2-Hydroxy-3,5-dimethylphenacyl)glutarimide, 8CI. C 73. Antibiotic C 73
[526-02-3]



$C_{15}H_{17}NO_4$ 275.304
Prod. by *Streptomyces noursei, Streptomyces albulus, Streptomyces griseus* and *Streptomyces pulveraceus*. Fungicide and shows antitumour props. Needles ($MeOH/CH_2Cl_2$). Mp 201-203°.

*3-Hydroxy (3,4-*trans*-):* ***Antibiotic C 73X****. C 73X*
[20988-33-4]
$C_{15}H_{17}NO_5$ 291.303
Prod. by *Streptomyces griseus*. Cryst. λ_{max} 262 (ε 11700); 347 (ε 4300) (MeOH).

▶ LD_{50} (mus, ipr) 100 - 200 mg/kg.

1′-Hydroxy: ***Nong-kang 101G***
[75314-78-2]
$C_{15}H_{17}NO_5$ 291.303
Isol. from *Streptomyces aureus*. λ_{max} 267 (ε 11620); 356 (ε 3820) (EtOH) (Berdy).

1‴-Hydroxy: ***Antibiotic AH 135Y****. AH 135Y*
[145066-21-3]
$C_{15}H_{17}NO_5$ 291.303
Prod. by *Streptomyces albovinaceus*. Antiherpetic agent. Powder. Sol. MeOH, Me_2CO, DMSO, EtOH, EtOAc; fairly sol. $CHCl_3$, C_6H_6; poorly sol. H_2O, Et_2O, hexane. Mp 220°. λ_{max} 219 (sh) (ε 14800); 260 (ε 7070); 342 (ε 3260) (MeOH/HCl) (Derep). λ_{max} 219 (sh) (ε 18500); 260 (ε 9070); 343 (ε 4030) (MeOH) (Derep). λ_{max} 219 (ε 15472); 260 (ε 9066); 343 (ε 4026) (MeOH) (Berdy). λ_{max} 219 (ε 14921); 260 (ε 7066); 342 (ε 3257) (MeOH-HCl) (Berdy).

Highet, R.J. *et al., Helv. Chim. Acta*, 1959, **42**, 1523 (*isol, struct*)
Rao, K.V. *et al., J.O.C.*, 1960, **25**, 661 (*isol*)
Johnson, F. *et al., J.O.C.*, 1962, **27**, 3658 (*synth*)
Kharatyan, S. *et al., Chem. Ind. (London)*, 1963, 1038 (*biosynth*)
Vondracek, M. *et al., Chem. Ind. (London)*, 1964, 1686 (*isol, uv*)
Spizek, J. *et al., Folia Microbiol. (Prague)*, 1965, **10**, 263 (*synth*)
Siegel, M.R. *et al., Biochem. Pharmacol.*, 1966, **15**, 1213 (*pharmacol*)
Aszalos, A. *et al., J. Med. Chem.*, 1967, **10**, 281-284 (*C 73X*)
Hua, J.C. *et al., CA*, 1980, **93**, 219277 (*Nonkang 101G*)
Zhang, H. *et al., CA*, 1982, **96**, 118576 (*isol*)
Onan, K.D. *et al., Acta Cryst. C*, 1985, **41**, 428 (*cryst struct*)
Uyeda, M. *et al., J. Antibiot.*, 1992, **45**, 1370 (*Antibiotic AH 135Y*)

Aculeacin B A-130

[58814-87-2]

Struct. unknown. Isol. from *Aspergillus aculeatus*. Antibiotic. Amorph. powder. Sol. MeOH, EtOH; fairly sol. EtOAc, H_2O; poorly sol. Me_2CO, hexane, $CHCl_3$. Mp 148-151°. $[\alpha]_D^{24}$ -45 (c, 1 in MeOH). λ_{max} 279 (E1%/1cm 18.5) (MeOH) (Berdy). λ_{max} 247 (E1%/1cm 104); 297 (E1%/1cm 21.6) (MeOH/NaOH) (Berdy).

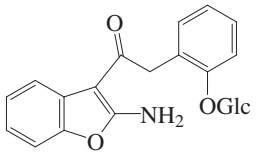
► LD_{50} (mus, ipr) 300 - 900 mg/kg. AU3030000

Japan. Pat., 1976, 76 98 387; *CA*, **86**, 15206w (*isol*)

Satoi, S. *et al., J. Antibiot.*, 1977, **30**, 303-307 (*isol, props*)

Canadian Pat., 1978, 1 041 446; *CA*, **90**, 101942x (*manuf*)

Acuminaminoside A-131



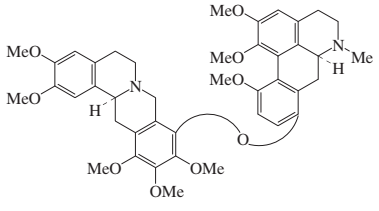
$C_{22}H_{23}NO_8$ 429.426

Constit. of the leaves of *Glochidion acuminatum*. Needles (MeOH). Mp 212-215°. $[\alpha]_D^{28}$ -33.3 (c, 0.75 in MeOH). λ_{max} 214 (log ϵ 4.26); 236 (log ϵ 4); 256 (log ϵ 4.04); 296 (log ϵ 3.99); 310 (log ϵ 4.01) (MeOH).

Otsuka, H. *et al., Chem. Pharm. Bull.*, 2004, **52**, 591-596 (*isol, pmr, cmr, cryst struct*)

Acutiaporberine A-132

[335311-66-5]

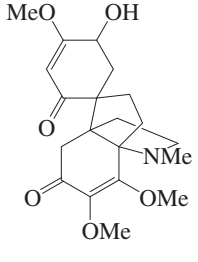


$C_{42}H_{48}N_2O_9$ 724.849

Aporphine-berberine dimer. Alkaloid from the roots of *Thalictrum acutifolium*. Apoptosis-inducing agent. Light yellow flakes. Mp 183.5-184°. $[\alpha]_D^{24}$ -14.2 (c, 3.14 in MeOH).

Chen, Q. *et al., Planta Med.*, 2002, **68**, 550-553 (*isol, activity*)

Acutudaurine A-133



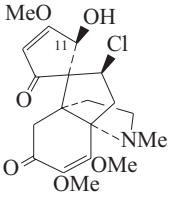
$C_{20}H_{27}NO_6$ 377.436

Stereochem. not determined; but likely to be the same as the related Acutumine, A-134. Alkaloid from the roots of *Menispermum dauricum*. Oil. $[\alpha]_D^{20}$ -102 (c, 0.01 in EtOH). λ_{max} 255 (log ϵ 4.34) (EtOH).

Furumoto, T. *et al., Planta Med.*, 2001, **67**, 194-195

Acutumine A-134

[17088-50-5]



Absolute configuration

$C_{19}H_{24}ClNO_6$ 397.854

Alkaloid from *Sinomenium acutum* and *Menispermum dauricum* (Menispermaceae). Needles. Mp 238-240° dec. $[\alpha]_D^{15}$ -206 (c, 0.69 in Py). pK_a 5.3 (50% EtOH). λ_{max} 245 (ϵ 18970); 270 (ϵ 9750) (EtOH).

Ac:

Needles (Et_2O/hexane). Mp 162-164°. $[\alpha]_D^{20}$ -94 (c, 0.38 in $CHCl_3$).

N-*De-Me:* ***Acutumidine***

[18145-26-1]

$C_{18}H_{22}ClNO_6$ 383.828

Alkaloid from *Sinomenium acutum* and *Menispermum dauricum* (Menispermaceae). Needles. Mp 239-241° dec. $[\alpha]_D^{19}$ -212.5 (c, 0.16 in Py). pK_a 6.6 (50% EtOH). λ_{max} 244 (ϵ 13100); 269 (ϵ 7370) (EtOH).

11-Deoxy: ***Acutuminine***

[23512-32-5]

$C_{19}H_{24}ClNO_5$ 381.855

Alkaloid from the leaves of *Menispermum dauricum* (Menispermaceae). Mp 175-177°. $[\alpha]_D$ -110 ($CHCl_3$). λ_{max} 243 (ϵ 18900); 270 (ϵ 9200) (EtOH).

11-Deoxy, N-*de-Me,* N-*[3-(4-hydroxyphenyl)-2ξ-nitropropyl]:* ***Nitrotyrasacutuminine***

$C_{27}H_{31}ClN_2O_8$ 547.003

Alkaloid from the roots of *Menispermum dauricum*. Powder. $[\alpha]_D^{25}$ -98 (c, 0.2 in MeOH). λ_{max} 251 (log ϵ 3.42); 275 (log ϵ 3.63) (MeOH).

Dechloro: ***Dechloroacutumine***

[219794-33-9]

$C_{19}H_{25}NO_6$ 363.41

Alkaloid from *Menispermum dauricum*. Cryst. (EtOAc/hexane). Mp 178-178.5°. $[\alpha]_D^{25}$ -54 (c, 0.1 in MeOH). λ_{max} 241 (log ϵ 4.27); 268 (log ϵ 3.99) (no solvent reported).

11-Epimer: ***Dauricumine***

[345641-00-1]

$C_{19}H_{24}ClNO_6$ 397.854

Alkaloid from *Menispermum dauricum*. Cryst. (MeOH). Mp 205° dec. $[\alpha]_D^{25}$ -42 (c, 0.1 in Py). λ_{max} 244 (log ϵ 4.16) (MeOH).

11-Epimer, N-*de-Me:* ***Dauricumidine***

[345640-99-5]

$C_{18}H_{22}ClNO_6$ 383.828

Alkaloid from *Menispermum dauricum*. Powder. Mp 180° dec. $[\alpha]_D^{23}$ +43 (c, 0.1 in Py). λ_{max} 244 (log ϵ 4.11) (MeOH).

11-Epimer, dechloro: ***Dechlorodauricumine***

$C_{19}H_{25}NO_6$ 363.41

Alkaloid from the roots of *Menispermum dauricum*. Amorph. powder. $[\alpha]_D^{25}$ +20.7 (c, 0.1 in MeOH). λ_{max} 242 (log ϵ 4.16) (MeOH).

Nishikawa, M. *et al., J.C.S.(B)*, 1968, 652-658 (*cryst struct, abs config*)

Barton, D.H.R. *et al., J.C.S.(C)*, 1968, 929-936 (*biosynth*)

Okamoto, Y. *et al., Tet. Lett.*, 1969, 1933-1935 (*Acutuminine*)

Tomita, M. *et al., Chem. Pharm. Bull.*, 1971, **19**, 770-791 (*Acutumidine, Acutuminine, Dechloroacutumine*)

Sugimoto, Y. *et al., Phytochemistry*, 1998, **49**, 1293-1297 (*Dechloroacutumine, cryst struct*)

Babiker, H.A.A. *et al., Biosci., Biotechnol., Biochem.*, 1999, **63**, 515-518 (*biosynth, cmr*)

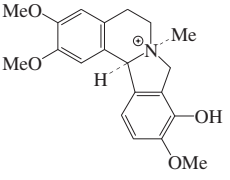
Sugimoto, Y. *et al., J.O.C.*, 2001, **66**, 3299-3302 (*Dauricumidine, Dauricumine*)

Yu, B.-W. *et al., Nat. Prod. Lett.*, 2002, **16**, 155-159 (*Nitrotyrasacutuminine*)

Sugimoto, Y. *et al., Phytochemistry*, 2005, **66**, 2627-2631 (*Dechlorodauricumine*)

Acutupyrrocoline A-135

[163047-26-5]



Absolute Configuration

$C_{20}H_{24}NO_4^{\oplus}$ 342.414

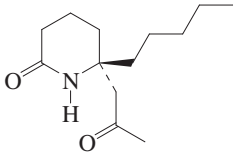
Alkaloid from the rhizomes of *Sinomenium acutum*.

Moriyasu, M. *et al., Nat. Med. (Tokyo)*, 1994, **48**, 287-290

Adalinine A-136

6-(2-Oxopropyl)-6-pentyl-2-piperidinone, 9CI

[200940-76-7]



$C_{13}H_{23}NO_2$ 225.33

(R)-form [175669-30-4]

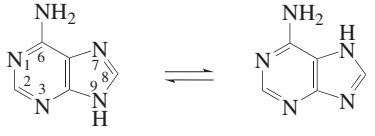
Alkaloid from the European ladybird beetles *Adalia bipunctata* and *Adalia decempunctata*. Oil. $[\alpha]_{579}^{20}$ -26 (c, 0.13 in CH_2Cl_2) (natural). $[\alpha]_D^{20}$ -28.3 (c, 1.6 in CH_2Cl_2) (synthetic).

Lognay, G. *et al., J. Nat. Prod.*, 1996, **59**, 510-511 (*isol, ir, pmr, cmr, ms, struct*)

Broeders, F. *et al., Bull. Soc. Chim. Belg.*, 1997, **106**, 377-382 (*synth*)
Yamazaki, N. *et al., Tet. Lett.*, 1999, **40**, 739-742 (*synth, abs config*)
Honda, T. *et al., Org. Lett.*, 2000, **2**, 3925-3927 (*synth*)
Laurent, P. *et al., Tetrahedron*, 2001, **57**, 3403-3412 (*biosynth*)

Adenine, JAN, USAN A-137

*1*H-*Purin-6-amine, 9CI. 6-Aminopurine. Vitamin B_4. Angustmycin B*
[73-24-5]



9H-form *7H-form*

$C_5H_5N_5$ 135.128

9*H*-form is favoured in free base. CAS refers mainly to 1*H* struct. which is not in reality a favoured tautomer. Widespread throughout animal and plant tissue, purine components of DNA, RNA, and coenzymes and biosynthetic intermediates. Antiviral agent, granulocyte antagonist.Vitamin. Pharmaceutical aid used to extend storage life of whole blood. Needles + $3H_2O$ (H_2O). Mp 360-365° (anhyd.) dec. pK_{a1} 4.12; pK_{a2} 9.83 (25°).

► Exp. reprod. and teratogenic effects. LD_{50} (rat, orl) 745 mg/kg. AU6125000

Hydrochloride: [2922-28-3]
Cryst. + $0.5H_2O$. Mp 285°.

*6*N-*Me: 6-(Methylamino)purine*
[443-72-1]
$C_6H_7N_5$ 149.155
Minor constit. of bacterial and viral DNA. Mp 312-314° dec. pK_{a1} 4.18; pK_{a2} 9.99 (H_2O).

*6*N-*Benzyl:* N-*Benzyladenine, 8CI. 6-Benzylaminopurine.* ***Cytokinin B.*** *BAP*
[1214-39-7]
$C_{12}H_{11}N_5$ 225.252
Widespread in plants. Plant growth regulator. Cryst. (C_6H_6). Mp 229°.

► AU6252200

*6*N-*(3-Hydroxybenzyl):* *6*N-*(3-Hydroxybenzyl)adenine.* **meta-*Topolin***
$C_{12}H_{11}N_5O$ 241.252
Isol. from *Populus* x *canadensis* cv. *robusta*. Cytokinin. No phys. props. reported.

1*H-form*

1-(3-Methyl-2-butenyl): 1-(3-Methyl-2-butenyl)adenine. ***1-Prenyladenine***
$C_{10}H_{13}N_5$ 203.246
Constit. of the leaves of *Bridelia balansae*. Prisms. Mp >300°. λ_{max} 209 (log ϵ 4.13); 274 (log ϵ 4.04) (MeOH).

3*H-form*

3-(3-Methyl-2-butenyl): see Triacanthine, T-451

9*H-form*

*6*N-*Me, 9*-O-*β-D-glucopyranosyl:*
[253179-56-5]
$C_{12}H_{17}N_5O_5$ 311.297
Constit. of *Maerua crassifolia*.

*6*N-*(3-Hydroxybenzyl), 9-β-D-glucopyranosyl:* **meta-*Topolin 9-glucoside***
$C_{18}H_{21}N_5O_6$ 403.394
Isol. from *Populus* x *canadensis* cv. *robusta*. Cytokinin. No phys. props. reported.

N^9*-(3-Methyl-2-butenyl): 9-(3-Methyl-2-butenyl)adenine. 9-Prenyladenine*
$C_{10}H_{13}N_5$ 203.246
Constit. of the leaves of *Bridelia balansae*. Prisms. Mp 188-189°. λ_{max} 212 (log ϵ 4.1); 274 (log ϵ 2.8) (MeOH).

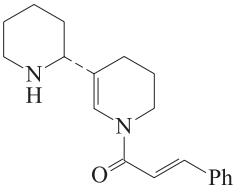
N^9*-[1-(3,4-Dihydroxyphenyl)ethyl]: 6-Amino-9-[1-(3,4-dihydroxyphenyl)ethyl]purine. 9-[1-(3,4-Dihydroxyphenyl)ethyl]adenine*
$C_{13}H_{13}N_5O_2$ 271.278
Isol. from *Artemisia capillaris*.
Amorph. powder.

[6055-72-7 , 2312-73-4]

Skinner, C.G. *et al., J.A.C.S.*, 1955, **77**, 6692-6693 (*Cytokinin B*)
Dunn, D.B. *et al., Biochem. J.*, 1958, **68**, 627-636 (*isol, 6-Methylaminopurine*)
Kistenmacher, T.J. *et al., Acta Cryst. B*, 1974, **30**, 166-168; 1528-1533; 1977, **33**, 253-256 (*cryst struct, 9-Me*)
Lawley, P.D. *et al., Biochem. J.*, 1975, **145**, 73-84 (*ms, derivs*)
Chenon, M.T. *et al., J.A.C.S.*, 1975, **97**, 4636-4642 (*cmr, tautom*)
Kos, N.J. *et al., J.O.C.*, 1979, **44**, 3140-3143 (*synth, nmr*)
Lin, J. *et al., J.A.C.S.*, 1980, **102**, 4627-4631 (*pe, tautom*)
Mathlouth, M. *et al., Carbohydr. Res.*, 1984, **131**, 1-15 (*ir, Raman*)
Remaud, G. *et al., Tetrahedron*, 1986, **42**, 5073-5080 (*N-15 nmr, derivs*)
Strnad, M. *et al., Phytochemistry*, 1997, **45**, 213-218 (*meta-Topolin*)
Ramadan, M.A. *et al., CA*, 2000, **132**, 61604r (*6-N-Me-9-glucosyl*)
Tsai, Y.H. *et al., Helv. Chim. Acta*, 2003, **86**, 2452-2457 (*Bridelia prenyladenines*)
Ma, H.-Y. *et al., Molecules*, 2008, **13**, 267-271 (*9-N-Dihydroxyphenylethyl*)

Adenocarpine A-138

1,2,3,4-Tetrahydro-1-(1-oxo-3-phenyl-2-propenyl)-5-(2-piperidinyl)pyridine, 9CI. 1′-Cinnamoyl-1,1′,2,3,4,4′,5,5′,6,6′-decahydro-2,3′-bipyridine. N-*Cinnamoyl-*Δ^2*-tetrahydroanabasine. Orensine. Teidine*
[6793-63-1]



(*R*)*–form*

$C_{19}H_{24}N_2O$ 296.411

(*R*)-*form* [28052-98-4]
Alkaloid from *Adenocarpus commutatus* and *Adenocarpus grandiflorus* (Fabaceae). $[\alpha]_D^{18}$ -30.9 (c, 2 in EtOH).

Hydrochloride: Mp 64-65°.

Picrate: Mp 206° dec.

(*S*)-*form* [28976-53-6]
Alkaloid from *Adenocarpus complicatus, Adenocarpus foliosus* and *Adenocarpus viscosus* (Fabaceae). Resin. $[\alpha]_D^{18}$ +29.3 (c, 2 in EtOH).

Hydrochloride: Mp 65° (hydrate) Mp 133-147° dec. (anhyd.).

Picrate: Mp 213°.

(±)-*form* [494-06-4]
Alkaloid of *Adenocarpus commutatus* and *Adenocarpus grandiflorus* (Fabaceae). Resin or pale-yellow oil.

Hydrochloride: Mp 208-210° Mp 82-83° (dihydrate).

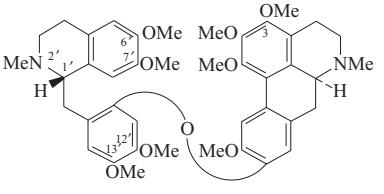
Picrate: Mp 210-211° dec.

(Z)-Cinnamoyl isomer: ***Isoorensine***
[28168-92-5]
$C_{19}H_{24}N_2O$ 296.411
Alkaloid from *Adenocarpus complicatus* leaves (Fabaceae).

Ribas, I. *et al., An. R. Soc. Esp. Fis. Quim., Ser. B*, 1950, **46**, 489; 1951, **47**, 533; 1953, **49**, 707; 1955, **51**, 55; 1958, **54**, 157; 215 (*isol, struct, resoln, Isoorensine*)
González, A.G. *et al., An. R. Soc. Esp. Fis. Quim., Ser. B*, 1951, **47**, 67; 1953, **49**, 783
Ribas, I. *et al., Ann. Pharm. Fr.*, 1952, **19**, 54 (*isol*)
Schöpf, C. *et al., Annalen*, 1964, **674**, 87 (*synth*)
Schöpf, C. *et al., Naturwissenschaften*, 1966, **53**, 274 (*Isoorensine*)
Fitch, W.L. *et al., J.A.C.S.*, 1974, **96**, 4917 (*ms*)
Nehme, M. *et al., An. Quim.*, 1977, **73**, 307 (*isol*)

Adiantifoline A-139

[20823-96-5]



$C_{42}H_{50}N_2O_9$ 726.865
Alkaloid from the roots and tops of *Thalictrum minus* var. *adiantifolium*, the underground parts of *Thalictrum minus* var. *microphyllum* and the roots of *Thalictrum minus* race B (Ranunculaceae). Pale-yellow needles (EtOH). Mp 143.5-144°. $[\alpha]_D^{28}$ +90 (c, 0.11 in MeOH).

2′-N-*De-Me:* ***2′-Noradiantifoline***
[83348-50-9]
$C_{41}H_{48}N_2O_9$ 712.838
Alkaloid from the roots and rhizomes of *Thalictrum minus* (Ranunculaceae). Amorph. $[\alpha]_D^{25}$ +39 (c, 0.082 in MeOH).

O^3*-De-Me:* ***Thalilutine***
[66408-21-7]
$C_{41}H_{48}N_2O_9$ 712.838
Minor alkaloid from *Thalictrum revolutum* roots (Ranunculaceae). Amorph. $[\alpha]_D^{20}$ +92 (c, 0.175 in MeOH).

$O^{6'}$*-De-Me:* ***O*$^{6'}$*-Demethyladiantifoline***

$C_{41}H_{48}N_2O_9$ 712.838
Alkaloid from the roots of *Thalictrum minus* (Ranunculaceae). Mp 125-126°. $[\alpha]_D^{22}$ +18 (c, 0.4 in $CHCl_3$).

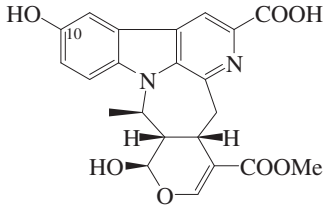
O$^{7'}$-De-Me: ***Thaliadanine***
[31199-54-9]
$C_{41}H_{48}N_2O_9$ 712.838
Alkaloid from *Thalictrum minus* roots and from *Thalictrum minus* var. *microphyllum* (Ranunculaceae). Shows antibacterial activity against *Mycobacterium smegmatis*. Amorph. $[\alpha]_D^{26}$ +81 (c, 0.41 in MeOH). λ_{max} 281 ; 302 ; 312 (MeOH) (Berdy).

O$^{7'}$,O$^{13'}$-Di-de-Me: ***Bursanine***
[82958-13-2]
$C_{40}H_{46}N_2O_9$ 698.811
Alkaloid from the roots and rhizomes of *Thalictrum minus* var. *microphyllum* (Ranunculaceae). $[\alpha]_D^{25}$ +117 (c, 0.17 in MeOH).

Doskotch, R.W. *et al., Tet. Lett.*, 1968, 4999; *J. Nat. Prod.*, 1969, **32**, 29 (*isol, uv, cd, pmr, ms, struct*)
Mollov, N.M. *et al., CA*, 1971, **74**, 61584t (*isol, ir, pmr, O-Demethyladiantifoline*)
Doskotch, R.W. *et al., J.O.C.*, 1971, **36**, 2409 (*synth*)
Geiselman, C.W. *et al., J. Nat. Prod.*, 1972, **35**, 296 (*isol*)
Shamma, M. *et al., Tet. Lett.*, 1973, 1859 (*pmr*)
Wu, W.-N. *et al., Tetrahedron*, 1977, **33**, 2919 (*uv, cd, pmr, ir, ms, struct, Thalilutine*)
Liao, W.T. *et al., J. Nat. Prod.*, 1978, **41**, 271 (*isol, uv, cd, ir, pmr, ms, struct, O-Demethyladiantifoline, Th*)
Guinaudeau, H. *et al., J. Nat. Prod.*, 1982, **45**, 505 (*uv, cd, pmr, ms struct, Noradiantifoline*)
Guinaudeau, H. *et al., Tet. Lett.*, 1982, **23**, 2523 (*uv, pmr, ms, cd, struct, Bursanine*)

Adifoline A-140

[20072-28-0]



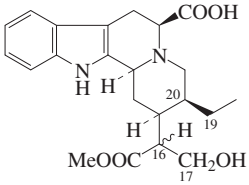
$C_{22}H_{20}N_2O_7$ 424.409
Recent work has queried the struct. It is suggested, but not proved, that the prev. isolated Adifoline is identical with Neoadifoline, N-98. Alkaloid from the heartwood of *Adina cordifolia* (Rubiaceae). Yellow needles. Mp 300°.

10-Deoxy: ***Deoxyadifoline***
[21451-49-0]
$C_{22}H_{20}N_2O_6$ 408.41
Alkaloid from *Adina cordifolia* (Rubiaceae). Mp 253-255° (as Ac, Me ester). $[\alpha]_D^{20}$ +560 (c, 0.105 in $CHCl_3$) (Ac, Me ester).

Cross, A.D. *et al., J.C.S.*, 1961, 2714 (*isol, uv, ir*)
Brown, R.T. *et al., Chem. Comm.*, 1968, 350 (*uv, ir, pmr, ms, struct*)
Merlini, L. *et al., Gazz. Chim. Ital.*, 1968, **98**, 974 (*Deoxyadifoline*)
Balázs, B. *et al., Magn. Reson. Chem.*, 1999, **37**, 751-753

Adirubine A-141

[38474-14-5]



Absolute Configuration

$C_{22}H_{28}N_2O_5$ 400.474
Alkaloid from *Adina rubescens* (Rubiaceae).

Me ester: $[\alpha]_D^{25}$ -34 ($CHCl_3$).

O-*Ac:* Mp 151-154°. $[\alpha]_D^{25}$ -19 ($CHCl_3$).

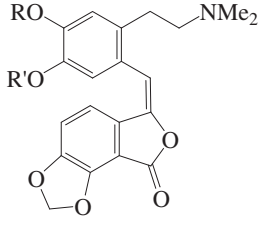
19E,20-Didehydro, O-*Ac:* ***19,20-Dehydroadirubine acetate***
[77485-21-3]
$C_{24}H_{28}N_2O_6$ 440.495
Trace alkaloid from the leaves of *Rauwolfia oreogiton* (Apocynaceae). Off-white amorph. powder. λ_{max} 227 (log ϵ 4.4); 285 (log ϵ 3.8); 291 (log ϵ 3.82) (MeOH).

17-Deoxy, 16,17-didehydro: ***Anhydroadirubine***
[58514-04-8]
$C_{22}H_{26}N_2O_4$ 382.458
Alkaloid from *Adina rubescens* (Rubiaceae). Amorph. powder (as Me ester). $[\alpha]_D^{25}$ -28 ($CHCl_3$) (Me ester). λ_{max} 225 ; 273 ; 282 ; 289 (MeOH) (Me ester).

Brown, R.T. *et al., Chem. Comm.*, 1972, 1007-1008; 1976, 530-531 (*ir, pmr, ms, struct, config*)
Brown, R.T. *et al., Phytochemistry*, 1975, **14**, 2527-2529 (*Anhydroadirubine*)
Van Tamelen, E.E. *et al., Bioorg. Chem.*, 1976, **5**, 283-308 (*ester, synth*)
Akinloye, B.A. *et al., Phytochemistry*, 1980, **19**, 2741-2745 (*19,20-Dehydroadirubine acetate*)

Adlumiceine enol lactone A-142

6-[[2-[2-(Dimethylamino)ethyl]-4,5-dimethoxyphenyl]methylene]furo[3,4-e]-1,3-benzodioxol-8(6H)-one, 9CI
[75832-77-8]



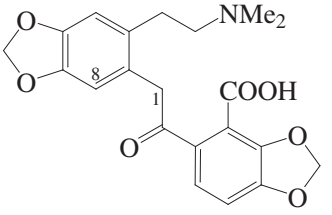
R = R' = Me

$C_{22}H_{23}NO_6$ 397.427
Alkaloid from *Fumaria schrammii*.

Popova, M. *et al., Planta Med.*, 1980, **40**, 156

Adlumidiceine A-143

5-[[6-[2-(Dimethylamino)ethyl]-1,3-benzodioxol-5-yl]acetyl]-1,3-benzodioxole-4-carboxylic acid, 9CI
[51059-65-5]



$C_{21}H_{21}NO_7$ 399.399
Alkaloid from *Corydalis sempervirens* (*Corydalis glauca*), *Corydalis cava* (*Corydalis tuberosa*), *Corydalis lutea*, *Fumaria schrammii* and *Papaver rhoeas* (corn poppy) (Papaveraceae, Papaveraceae). Cryst. (MeOH). Mp 244-246°.

1-Hydroxy: ***Narceimicine***
[116368-95-7]
$C_{21}H_{21}NO_8$ 415.399
Alkaloid from the seeds of *Fumaria indica* (Papaveraceae). Pale-yellow granules (MeOH aq.). Mp 242-246° dec. Shown in the paper as the enediol tautomer.

1-Hydroxy, Me ester: ***Paprafumine***
[169626-17-9]
$C_{22}H_{23}NO_8$ 429.426
Alkaloid from aerial parts of *Fumaria indica* (Papaveraceae). Amorph. solid. Shown in the paper as the enediol tautomer.

1-Oxo: ***Narceimine****. Bicucullinine. Alkaloid F45*
[59443-00-4]
$C_{21}H_{19}NO_8$ 413.383
Alkaloid from *Fumaria indica* and *Corydalis ochroleuca* (Papaveraceae). Mp 268° (259-260°).

1-Oxo, Me ester: Mp 188°.

1-Oxo, N-*Me:* **N-*Methylnarceimine***. N-*Methylnarceimicine (incorr.)*
[777007-71-3]
$C_{22}H_{22}NO_8^{\oplus}$ 428.418
Quaternary alkaloid from *Corydalis saxicola*. Yellow cryst. (MeOH). Mp 194-196°. Counterion not specified. λ_{max} 207 (log ϵ 4.48); 331 (log ϵ 4.02) (MeOH).

Preininger, V. *et al., Phytochemistry*, 1973, **12**, 2513 (*ir, uv, pmr, ms, struct*)
Preininger, V. *et al., Coll. Czech. Chem. Comm.*, 1975, **40**, 699 (*ir, uv, pmr, ms, struct*)
Rodrigo, R.G.A. *et al., Can. J. Chem.*, 1976, **54**, 471 (*isol, ir, pmr, cmr, ms, struct, Narceimine*)
Seth, K.K. *et al., Chem. Ind. (London)*, 1979, 744 (*ir, uv, pmr, ms, struct, Narceimine*)
Popova, M.E. *et al., Planta Med.*, 1982, **45**, 120 (*isol*)
Tripathi, Y.C. *et al., Phytochemistry*, 1988, **27**, 1918 (*Narceimicine, isol, ir, uv, pmr, ms, struct*)
Atta-ur-Rahman, *et al., Phytochemistry*, 1995, **40**, 593 (*Parafumine*)
Wu, Y.-R. *et al., Planta Med.*, 2007, **73**, 787-791 (*N-Methylnarceimine*)

Adlumidiceine enol lactone A-144

6-[[6-[2-(Dimethylamino)ethyl]-1,3-benzodioxol-5-yl]methylene]furo[3,4-e]-1,3-benzodioxol-8(6H)-one, 9CI

As Adlumiceine enol lactone, A-142 with R,R′ = $-CH_2-$

$C_{21}H_{19}NO_6$ 381.384

(*E*)-*form* [51059-67-7]

Alkaloid from *Fumaria schrammii, Corydalis sempervirens, Corydalis ochotensis* and *Corydalis lutea* (Papaveraceae). Cryst. (Et_2O). Mp 200-203°.

(*Z*)-*form*

Aobamidine

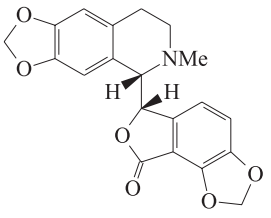
[59614-38-9]

Alkaloid from *Corydalis ochotensis* and *Corydalis lutea* (Papaveraceae). Yellowish powder (Et_2O). Mp 195-197°.

Preininger, V. *et al., Phytochemistry*, 1973, **12**, 2513 (*uv, ir, pmr, struct*)
Kametani, T. *et al., J.C.S. Perkin 1*, 1977, 390 (*isol, uv, ir, pmr, ms, struct*)
Preininger, V. *et al., Planta Med.*, 1978, **33**, 396 (*isol*)

Adlumidine A-145

6-(5,6,7,8-Tetrahydro-6-methyl-1,3-dioxolo[4,5-g]isoquinolin-5-yl)furo[3,4-e]-1,3-benzodioxol-8(6H)-one, 9CI



(+)–*form*

$C_{20}H_{17}NO_6$ 367.357

Diastereoisomer of Bicuculline, B-119.

(+)-*form* [550-49-2]

Alkaloid from *Corydalis decumbens, Corydalis gigantea, Corydalis incisa, Corydalis ochotensis, Corydalis ochroleuca, Corydalis remota, Corydalis sibirica, Corydalis thalictrifolia, Fumaria indica, Fumaria parviflora* and *Adlumia fungosa* (*Adlumia cirrhosa*)(Papaveraceae, Papaveraceae). Cryst. (Me_2CO). Mp 239-240° (237°). $[\alpha]_D^{20}$ +116.2 (c, 2 in $CHCl_3$).

► AV3085000

(-)-*form*

Capnoidine

[485-50-7]

Alkaloid from *Corydalis cava, Corydalis crystallina, Corydalis gigantea, Corydalis gortschakovii, Corydalis marshalliana, Corydalis pseudo-adunca, Corydalis sempervirens* and *Fumaria vaillantii* (Papaveraceae). Cryst. ($CHCl_3$/MeOH). Mp 239° (235°). $[\alpha]_D^{22}$ -113.2 (c, 0.8 in $CHCl_3$) (-100).

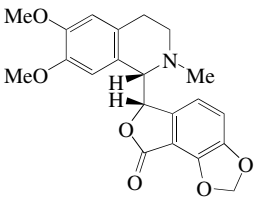
► EX8585000

(±)-*form* [64397-08-6]

Alkaloid from *Corydalis rosea*. Cryst. ($CHCl_3$/MeOH, MeOH or C_6H_6/Me_2CO). Mp 205° (184-186°, 198-199°).

Manske, R.H.F. *et al., J.A.C.S.*, 1950, **32**, 3207 (*isol, struct*)
Bláha, K. *et al., Coll. Czech. Chem. Comm.*, 1964, **29**, 2328 (*config*)
Snatzke, G. *et al., Tetrahedron*, 1969, **25**, 5059 (*ord, cd*)
Margvelashvili, N.N. *et al., Khim. Prir. Soedin.*, 1972, **8**, 127; 1978, **14**, 592; *Chem. Nat. Compd. (Engl. Transl.)*, 1972, **8**, 131; 1978, **14**, 509 (*isol, ir, uv*)
Lu, S.-T. *et al., J.C.S. Perkin 1*, 1976, 63 (*isol*)
Blaskó, G. *et al., J. Nat. Prod.*, 1982, **45**, 121 (*occur*)
Ribár, B. *et al., Acta Cryst. C*, 1991, **47**, 2191 (*cryst struct*)

Adlumine A-146



(+)-*form*

$C_{21}H_{21}NO_6$ 383.4

Diastereoisomer of Corlumine, C-653.

(+)-*form* [524-46-9]

Alkaloid from *Adlumia fungosa* (*Adlumia cirrhosa*) and *Fumaria rostellata* (Papaveraceae, Papaveraceae). Mp 180°. $[\alpha]_D$ +42 ($CHCl_3$).

(-)-*form* [21414-43-7]

Alkaloid from *Corydalis scouleri, Corydalis ophiocarpa, Corydalis rosea, Corydalis gortschakovii, Corydalis gigantea, Corydalis sempervirens, Fumaria kralikii, Fumaria parviflora* and *Fumaria vaillantii* (Papaveraceae). Cryst. ($CHCl_3$ or $CHCl_3$/MeOH). Mp 178-180°. $[\alpha]_D^{20}$ -42 (c, 0.38 in $CHCl_3$). $[\alpha]_D^{20}$ -51.

N-*Me:* **N-*Methyladlumine***

[80550-26-1]

$C_{22}H_{24}NO_6^{\oplus}$ 398.435

Quaternary alkaloid from *Fumaria vaillantii*. Cryst. (MeOH) (as iodide). Mp 198-199° (iodide). $[\alpha]_D$ -45 (c, 0.5 in MeOH) (iodide).

O^6-*De-Me:* ***Corledine***

$C_{20}H_{19}NO_6$ 369.373

Alkaloid from *Corydalis ledebouriana* (Papaveraceae). Cryst. (MeOH). Mp 210-212°. $[\alpha]_D$ -100 (c, 0.2 in MeOH). Methylation gives Adlumine.

O^7-*De-Me:* ***Severtzine***. l-*Adlumine. Severcine*

[59272-73-0]

$C_{20}H_{19}NO_6$ 369.373

Alkaloid from *Corydalis severtzovii* (Papaveraceae). Cryst. (MeOH). Mp 94-95° (foams). $[\alpha]_D$ -52 (c, 0.91 in $CHCl_3$).

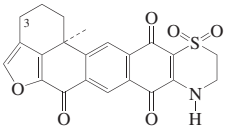
(±)-*form* [38184-69-9]

Alkaloid from *Corydalis rosea* (Papaveraceae). Mp 191° (175°, 184-186°).

Safe, S. *et al., Can. J. Chem.*, 1964, **42**, 160 (*pmr, config*)
Snatzke, G. *et al., Tetrahedron*, 1969, **25**, 5059 (*ord*)
Margvelashvili, N.N. *et al., Khim. Prir. Soedin.*, 1972, **8**, 127; 1976, **12**, 832; 1978, **14**, 592; *Chem. Nat. Compd. (Engl. Transl.)*, 1972, **8**, 131; 1976, **12**, 509; 1978, **14**, 754 (*isol, ir, uv*)
Shamma, M. *et al., Tet. Lett.*, 1974, 2339 (*synth, pmr*)
Preininger, V. *et al., Coll. Czech. Chem. Comm.*, 1975, **40**, 699 (*isol*)
Israilov, I.A. *et al., Khim. Prir. Soedin.*, 1975, **11**, 811; *Chem. Nat. Compd. (Engl. Transl.)*, 1975, **11**, 826 (*Severtzine*)
Hughes, D.W. *et al., Can. J. Chem.*, 1976, **54**, 2252 (*cmr*)
Nalliah, B.C. *et al., Can. J. Chem.*, 1977, **55**, 922; 1979, **57**, 1546 (*synth*)
Moiseeva, G.P. *et al., Khim. Prir. Soedin.*, 1978, **14**, 103; *Chem. Nat. Compd. (Engl. Transl.)*, 1978, **14**, 82 (*cd*)
Alimova, M. *et al., Khim. Prir. Soedin.*, 1981, **17**, 602-604; *Chem. Nat. Compd. (Engl. Transl.)*, 1981, **17**, 437-438 (*N-Methyladlumine*)
Blaskó, G. *et al., J. Nat. Prod.*, 1982, **45**, 105 (*occur*)
Seger, C. *et al., Magn. Reson. Chem.*, 2004, **42**, 882-886 (*pmr, cmr*)

Adociaquinone B A-147

[113831-00-8]



Absolute Configuration

$C_{22}H_{17}NO_6S$ 423.445

Isol. from the sponges *Adocia* and *Xestospongia* spp. Mildly cytotoxic. Topoisomerase inhibitor. Yellow solid. $[\alpha]_D$ +22. Slowly dec. >300°. λ_{max} 288 (ε 36000); 340 (ε 12000) (EtOH) (Derep). λ_{max} 294 (ε 14400) (MeOH) (Berdy).

3-Oxo: ***3-Oxoadociaquinone B***. *3-Ketoadociaquinone B*

[848242-73-9]

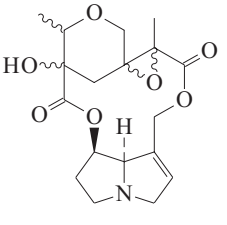
$C_{22}H_{15}NO_7S$ 437.429

Isol. from a *Xestospongia* sp. Yellowish powder. $[\alpha]_D^{23}$ +13 (c, 0.12 in MeOH). λ_{max} 273 (log ε 3.6) (MeOH).

Schmitz, F.J. *et al., J.O.C.*, 1988, **53**, 3922-3925 (*isol, pmr, cmr*)
Concepcion, G.P. *et al., J. Med. Chem.*, 1995, **38**, 4503-4507 (*isol*)
Harada, N. *et al., Tetrahedron: Asymmetry*, 1995, **6**, 375-376 (*synth, abs config*)
Cao, S. *et al., Bioorg. Med. Chem.*, 2005, **13**, 999-1003 (*3-Oxoadociaquinone B*)

Adonifoline A-148

[115712-88-4]



$C_{18}H_{23}NO_7$ 365.382

Revised struct. (1992). Two previous

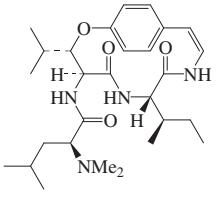
isolates shown to be identical with the alkaloid now named Adonifoline. Alkaloid from *Senecio adonidifolius* and *Senecio dolichodoryius* (Asteraceae). Cryst. (Me_2CO). Mp 200°. $[\alpha]_D$ +84.74 (c, 0.78 in MeOH).

Witte, L. *et al., Phytochemistry*, 1992, **31**, 1027-1028 (*isol, pmr, cmr, ms*)

Adouetine X A-149

Ceanothamine B

[19542-37-1]



Absolute Configuration

$C_{28}H_{44}N_4O_4$ 500.68

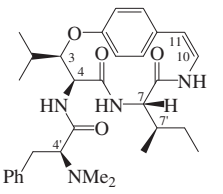
Alkaloid from *Waltheria americana*, the root bark of *Ceanothus americanus* (New Jersey tea) and *Zizyphus jujuba* var. *inermis*, and the leaves of *Alphitonia macrocarpa* (Sterculiaceae, Rhamnaceae). Needles (MeOH or CH_2Cl_2/EtOAc). Mp 279-280.5°. $[\alpha]_D^{25}$ -370 (c, 0.205 in $CHCl_3$).

N-*De-Me:* ***Discarine F***. N-*Demethyladouetine X*
[96562-84-4]
$C_{27}H_{42}N_4O_4$ 486.653
Alkaloid from the bark of *Discaria febrifuga* (Rhamnaceae). Mp 264°. $[\alpha]_D^{20}$ -191 ($CHCl_3$).

Païs, M. *et al., Ann. Pharm. Fr.*, 1963, **21**, 139-146; *CA*, **59**, 5215c (*isol, ir, pmr*)
Warnhoff, E.W. *et al., Can. J. Chem.*, 1965, **43**, 2594-2602 (*isol, uv, ms, pmr*)
Païs, M. *et al., Bull. Soc. Chim. Fr.*, 1968, 1145-1148 (*uv, ir, pmr, ms, struct*)
Servis, R.E. *et al., J.A.C.S.*, 1969, **91**, 5619-5624 (*isol, ms*)
Branch, G.B. *et al., Aust. J. Chem.*, 1972, **25**, 2209-2216 (*isol*)
Otsuka, H. *et al., Phytochemistry*, 1974, **13**, 2016 (*isol, ir, pmr, ms*)
Morel, A. *et al., Z. Naturforsch., B*, 1984, **39**, 1825 (*Discarine F*)

Adouetine Y′ A-150

[19542-39-3]



Absolute Configuration

$C_{31}H_{42}N_4O_4$ 534.697

Alkaloid from *Waltheria americana*, *Waltheria douradhina*, *Myrianthus arboreus*, *Melochia corchorifolia*, *Discaria longispina*, *Discaria febrifuga*, *Discaria americana* and *Ceanothus sanguineus*. Cryst. ($CHCl_3$/Et_2O). Mp 295-297°. $[\alpha]_D^{20}$ -390 (c, 1 in $CHCl_3$).

N-*De-Me:* **N-*Demethyladouetine Y′***
[73045-49-5]
$C_{30}H_{40}N_4O_4$ 520.67
Alkaloid from the root bark of *Ceanothus sanguineus* (Rhamnaceae). Mp 229°. Opt. rotn. not recorded.

10,11-Dihydro, 11-hydroxy: ***Discarine G***
[94901-64-1]
$C_{31}H_{44}N_4O_5$ 552.712
Alkaloid from the root bark of *Discaria febrifuga* (Rhamnaceae). Mp 257°. $[\alpha]_D^{20}$ -366 (c, 0.1 in MeOH). Stereochem. not determined.

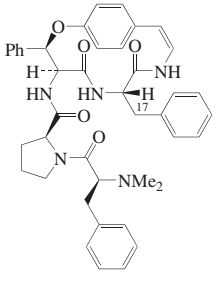
Stereoisomer (1): ***Lotusanine A***
[164455-28-1]
$C_{31}H_{42}N_4O_4$ 534.697
Alkaloid from *Zizyphus lotus*. Amorph. solid. Has (3*R*,4*R*)-config. with the other centres unassigned. Stated to be racemic. λ_{max} 208 (log ϵ 4.2) (MeOH).

Stereoisomer (2): ***Myrianthine B***. *Alkaloid AM 1*
[24532-77-2]
$C_{31}H_{42}N_4O_4$ 534.697
Alkaloid from *Myrianthus arboreus* and leaves of *Antidesma montana*. Needles (MeOH). Mp 302° dec. (292°). $[\alpha]_D$ -360 (c, 0.14 in $CHCl_3$) (-294). Has (4*S*,7*S*)-config. with the other centres undetermined.

Marchand, J. *et al., Ann. Pharm. Fr.*, 1968, **26**, 771-778; *CA*, **71**, 42203q (*Myrianthine B*)
Païs, M. *et al., Bull. Soc. Chim. Fr.*, 1968, 1145-1148 (*uv, ir, pmr, ms, struct*)
Tschesche, R. *et al., Tet. Lett.*, 1968, 3817-3818 (*isol, ms*)
Merkuza, V.M. *et al., Phytochemistry*, 1974, **13**, 1279-1282 (*ir, ms*)
Lagarias, J.C. *et al., J. Nat. Prod.*, 1979, **42**, 663-668 (*N-Demethyladouetine Y′*)
Herzog, R. *et al., Hoppe-Seyler's Z. Physiol. Chem.*, 1984, **365**, 1351-1354 (*Discarine G*)
Arbain, D. *et al., Phytochemistry*, 1993, **33**, 1263-1266 (*AM-1*)
Abu-Zarga, M. *et al., J. Nat. Prod.*, 1995, **58**, 504-511 (*Lotusanine A*)
Da Silva, U.F. *et al., Phytochem. Anal.*, 1996, **7**, 20-23 (*config*)
Tan, N.H. *et al., Chem. Rev.*, 2006, **106**, 840-895 (*bibl*)

Adouetine Z A-151

N,N-*Dimethylphenylalanyl*-N-*[5,8-dioxo-3-phenyl-7-(phenylmethyl)-2-oxa-6,9-diazabicyclo[10.2.2]hexadeca-10,12,14,15-tetraen-4-yl]prolinamide, 9CI*. N-*Methylferetine. Adouetine*
[19542-40-6]



Absolute Configuration

$C_{42}H_{45}N_5O_5$ 699.848

Alkaloid from *Waltheria americana*, and from the leaves of *Feretia apodanthera* and *Melochia pyramidata* (Sterculiaceae, Rubiaceae). Cryst. (cyclohexane). Mp 135-140° Mp 140-145°. $[\alpha]_D$ -184 (c, 1 in $CHCl_3$).

▶TW3577000

N-*De-Me:* ***Feretine***. N-*Demethyladouetine Z*
[56031-09-5]
$C_{41}H_{43}N_5O_5$ 685.821
Alkaloid from the leaves of *Feretia apodanthera* (Rubiaceae). Cryst. (cyclohexane). Mp 123°. $[\alpha]_D$ -139 (c, 1 in $CHCl_3$).

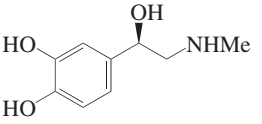
10,11-Dihydro:
Cryst. (Me_2CO/hexane). Mp 221°. $[\alpha]_D$ -87 ($CHCl_3$).

17-Hydroxy: ***Oxyphylline A***
[959855-77-7]
$C_{42}H_{45}N_5O_6$ 715.847
Alkaloid from the stem bark of *Zizyphus oxyphylla*. Cryst. Mp 204-206°. λ_{max} 233 (MeOH).

Païs, M. *et al., Ann. Pharm. Fr.*, 1963, **21**, 139-146; *CA*, **59**, 5215c (*isol, ir, pmr*)
Païs, M. *et al., Bull. Soc. Chim. Fr.*, 1968, 1145-1148 (*uv, ir, pmr, ms, struct*)
Bailleul, F. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1974, **279**, 949-951 (*Feretine*)
Medina, E. *et al., Annalen*, 1981, 538-545 (*isol, ir, cmr, ms*)
Inayat-ur-Rahman, *et al., Nat. Prod. Res.*, 2007, **21**, 243-253 (*Oxyphylline A*)

Adrenaline, BAN A-152

4-[1-Hydroxy-2-(methylamino)ethyl]-1,2-benzenediol, 9CI. 3,4-Dihydroxy-α-[(methylamino)methyl]benzyl alcohol, 8CI. 1-(3,4-Dihydroxyphenyl)-2-methylaminoethanol. ***Epinephrine, INN, USAN****. Bronkaid. Epifrin. Glaucon. Bosmin. Suprarenin. NSC 62786*
[6912-68-1]



(*R*)-*form*

$C_9H_{13}NO_3$ 183.207

Used in photometric detn. of Ti. Active constit. of the adrenal gland. α,β-Adrenoceptor agonist, vasoconstrictor, inotropic agent. Mydriatic. Used in management of anaphylaxis, and in cardiopulmonary resuscitation. Orally inactive. Used in combination with fluorouracil in the treatment of genital warts (AccuSite). Log P -0.68 (calc). First hormone to be isol. (in 1856) and synthesised (1904).

▶May cause contact dermatitis.

(R)-form

L-form (obsol.)
[51-43-4]
Powder. Sol. alkalis, acids; spar. sol. H_2O, EtOH; insol. Et_2O. Mp 216° dec. $[\alpha]_D^{20}$ -53 (c, 4 in 1*M* HCl). Pharmacol. more active isomer.

▶LD_{50} (rat, skn) 62 mg/kg. LD_{50} (rat, ivn)

0.15 mg/kg. DO2625000

Hydrochloride: [55-31-2]
Mp 157°.

►DO3150000

Tartrate: ***Epinephrine bitartrate, USAN.*** *Epitrate*
[51-42-3]
[24351-82-4] Ophthalmic adrenergic agent. Cryst. Mp 147-154°.

►DO3500000

Cyclic borate: ***Epinephryl borate, USAN.*** *Epinal†. Epinephrine borate*
[5579-16-8] Ophthalmic adrenergic agent.

N-*Me: 4-[2-(Dimethylamino)-1-hydroxyethyl]-1,2-benzenediol, 9CI.* **N-*Methyladrenaline***
[554-99-4]
$C_{10}H_{15}NO_3$ 197.233
Alkaloid from tubers of *Aconitum nasutum* (Ranunculaceae).

►DO5425000

N-*De-Me:* see Norepinephrine, N-298

O^3,O^4,N-*Tri-Me:* see Macromerine, M-18

(*S*)-*form*
D-form (obsol.)
[150-05-0]
Light brown cryst. Mp 211-212°. About 12 times less hormonally active than the (*R*)-enantiomer.

►DO2800000

(±)-*form*
Racepinefrine, INN. *Racepinephrine, USAN. Vaponephrin*
[329-65-7]
Microscopic cryst. Sl. sol. H_2O. Mp 230° dec.

►DO2975000

Hydrochloride: Racepinephrine hydrochloride, USAN
[329-63-5]
Cryst. (EtOH). Mp 157°.

►DO3330000

Di-Ac:
$C_{13}H_{17}NO_5$ 267.281
Mp 168°.

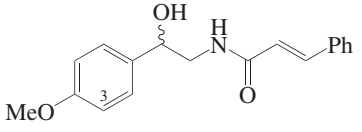
Di-Ac; hydrochloride: Mp 155-156°.

(ξ)-*form*
Isol. from callus tissue of *Portulaca grandiflora*.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 1296A (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **2**, 625B (*nmr*)
Vulpian, M. *et al., C. R. Hebd. Seances Acad. Sci.*, 1856, **43**, 663-665 (*isol*)
Stolz, F. *et al., Ber.*, 1904, **37**, 4149-4154 (*synth*)
Ciocca, B. *et al., Boll. Chim. Farm.*, 1934, **73**, 241-245; *CA*, **28**, 4398 (*synth*)
Pratesi, P. *et al., J.C.S.*, 1959, 4062-4065 (*abs config*)
Payne, K.R. *et al., Ind. Chem.*, 1961, **37**, 523-527 (*manuf, bibl*)
Thies, H. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1962, **295**, 194-196 (*uv*)
Jerman, L. *et al., Anal. Chim. Acta*, 1966, **36**, 240-241 (*use*)
Carlström, D. *et al., Acta Cryst. B*, 1973, **29**, 161-167 (*cryst struct*)
Hawkins, C.J. *et al., Aust. J. Chem.*, 1973, **26**, 2553-2554 (*resoln*)
Samokish, I.I. *et al., CA*, 1975, **84**, 102283 (*N-Me, isol*)
Nagatsu, T. *et al., Method. Chim.*, 1977, **11**, 194-199 (*rev*)
Szulczewski, D. *et al., Anal. Profiles Drug Subst.*, 1978, **7**, 193-229 (*rev*)
Weisser, U. *et al., Med. Welt*, 1980, **31**, 40-44 (*synth*)
Lai, A. *et al., J.C.S. Faraday 2*, 1981, **77**, 227-233 (*cmr*)
Endress, R. *et al., J. Plant Physiol.*, 1984, **115**, 291-295; *CA*, **101**, 127016u (*occur*)
Negwer, M. *et al., Organic-Chemical Drugs and their Synonyms, 6th edn., Akademie-Verlag*, 1987, 1288 (*synonyms*)
Kirk-Othmer Encycl. Chem. Technol., 4th edn., Wiley, 1991, **9**, 715-730 (*rev*)
Martindale, The Extra Pharmacopoeia, 32nd edn., Pharmaceutical Press, 1999, 813
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, AES000; VGP000; MJV000; AES250; AES500; EBB500; AES650

Aegeline A-153

N-*[2-Hydroxy-2-(4-methoxyphenyl)ethyl]-3-phenyl-2-propenamide, 9CI.* N-*β-Hydroxy-β-*p-*methoxyphenethylcinnamamide.* N-*Cinnamoyl-2-hydroxy-2-(4-methoxyphenyl)ethylamine. Cinnamic acid 2-hydroxy-2-(*p-*methoxyphenyl)ethylamide. Egeline*
[456-12-2]



$C_{18}H_{19}NO_3$ 297.353
Originally assigned the formula $C_{18}H_{18}O_4$.

(+)-*form* [15298-36-9]
Synthetic. Cryst. (EtOH). Mp 196-197°. $[\alpha]_D^{22}$ +36 (c, 0.4 in $CHCl_3$). $[\alpha]_D^{21}$ -48.1 (c, 0.5 in EtOH).

(-)-*form* [15298-37-0]
Synthetic. Cryst. (EtOH). Mp 196-197°. $[\alpha]_D$ -35.1 ($CHCl_3$). $[\alpha]_D$ +47.5 (c, 0.5 in EtOH).

(±)-*form* [37791-13-2]
Alkaloid from the leaves of *Aegle marmelos* (bael), *Zanthoxylum coriaceum* and *Zanthoxylum ocumarense* (Rutaceae). Antihyperglycaemic and antidyslipidaemic agent. Cryst. (EtOH/EtOAc). Mp 176° (173-175°).

Ac:
$C_{20}H_{21}NO_4$ 339.39
Plates (EtOAc). Mp 124°.

Me ether: N-*[2-Methoxy-2-(4-methoxyphenyl)ethyl]cinnamide. 7-*O-*Methylaegeline*
[70546-93-9]
$C_{19}H_{21}NO_3$ 311.38
Isol. from *Aegle marmelos* (bael). Cryst. (C_6H_6/hexane). Mp 135°. Artifact.

Et ether: N-*[2-Ethoxy-2-(4-methoxyphenyl)ethyl]cinnamide*
[70546-94-0]
$C_{20}H_{23}NO_3$ 325.407
Isol. from *Aegle marmelos* (bael). Cryst. (C_6H_6/hexane). Mp 99-100°. Artifact.

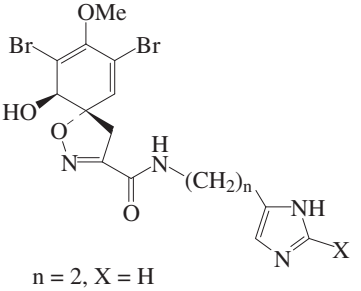
3-Methoxy: ***3-Methoxyaegeline***
$C_{19}H_{21}NO_4$ 327.379
Alkaloid from the leaves of *Zanthoxylum syncarpum*. Cryst. (EtOAc/MeOH). Mp 138-139°. λ_{max} 218 (log ϵ 4.37); 225 (log ϵ 4.57); 278 (log ϵ 4.65) (MeOH).

*3-Methoxy, Ac: 7-***O-*Acetyl-3-methoxyaegeline***
$C_{21}H_{23}NO_5$ 369.416
Alkaloid from the leaves of *Zanthoxylum syncarpum*. Pale yellow powder. λ_{max} 242 (log ϵ 4.82); 252 (log ϵ 4.67); 282 (log ϵ 4.98) (MeOH).

Chatterjee, A. *et al., J.O.C.*, 1959, **24**, 687 (*isol, uv, ir, struct, synth*)
Albónico, S.M. *et al., J.C.S.(C)*, 1967, 1327 (*synth*)
Della Casa de Marcano, D. *et al., Phytochemistry*, 1972, **11**, 1531 (*isol*)
Manandhar, M.D. *et al., Phytochemistry*, 1978, **17**, 1814 (*derivs*)
Patra, A. *et al., Indian J. Chem., Sect. B*, 1979, **17**, 385 (*isol, uv, ir*)
Swinehart, J. *et al., Phytochemistry*, 1980, **19**, 1219 (*isol*)
Patra, A. *et al., Org. Magn. Reson.*, 1981, **16**, 65 (*cmr*)
Sharma, B.R. *et al., Phytochemistry*, 1981, **20**, 2606 (*isol*)
Somanathan, R. *et al., Synth. Commun.*, 1983, **13**, 273 (*synth, ir, ms, pmr, cmr*)
Brown, R.F.C. *et al., Tetrahedron: Asymmetry*, 1993, **4**, 205 (*synth*)
Ross, S.A. *et al., J. Nat. Prod.*, 2005, **68**, 1297-1299 (*3-Methoxyaegeline, 7-Acetyl-3-methoxyaegeline*)
Narender, T. *et al., Bioorg. Med. Chem. Lett.*, 2007, **17**, 1808-1811 (*isol, activity*)

Aerophobin 1 A-154

[87075-24-9]



n = 2, X = H

$C_{15}H_{16}Br_2N_4O_4$ 476.124
Isol. from the sponges *Verongia aerophoba* and *Verongula rigida*. Also from *Tylodina perversa*. Mp 164-167° (Ac). $[\alpha]_D$ +187 (c, 2.0 in MeOH).

Cimino, G. *et al., Tet. Lett.*, 1983, **24**, 3029 (*isol, pmr, cmr, ms, struct*)
Nishiyama, S. *et al., Bull. Chem. Soc. Jpn.*, 1985, **58**, 3453 (*synth*)
Gunasekera, M. *et al., J. Nat. Prod.*, 1989, **52**, 753 (*isol, uv, ir, pmr, cmr, ms*)
Teeyapant, R. *et al., Z. Naturforsch., C*, 1993, **48**, 640-644 (*isol*)

Aerophobin 2 A-155

[87075-23-8]

As Aerophobin 1, A-154 with

n = 3, X = NH_2

$C_{16}H_{19}Br_2N_5O_4$ 505.165

Isol. from the sponges *Verongia aerophoba* and *Aiolochroia crassa*. $[\alpha]_D$ +139 (c, 1.9 in MeOH).

N-*Me (X = NHMe):* **N-*Methylaerophobin 2***

[209472-96-8]

$C_{17}H_{21}Br_2N_5O_4$ 519.192

Alkaloid from the sponge *Aiolochroia crassa*.

13,14-Dihydro, 14-oxo: ***14-Oxoaerophobin 2***

[232259-26-6]

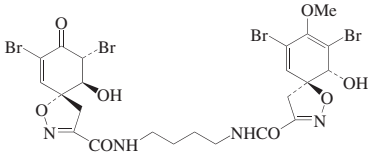
$C_{16}H_{19}Br_2N_5O_5$ 521.165

Isol. from *Aplysina insularis.*

Cimino, G. *et al., Tet. Lett.*, 1983, **24**, 3029 (*Aerophobin 2*)
Assmann, M. *et al., Z. Naturforsch., C*, 1998, **53**, 398-401 (*N-Methylaerophobin 2*)
Fendert, T. *et al., Z. Naturforsch., C*, 1999, **54**, 246-251 (*14-Oxoaerophobin 2*)

Aeroplysinillin A-156

[1056030-28-4]



Relative Configuration

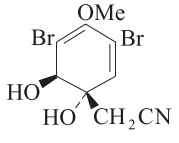
$C_{23}H_{24}Br_4N_4O_8$ 804.081

Closely related to Aerothionin, A-158. Isol. from an *Aplysinella* sp. Powder. $[\alpha]_D^{20}$ +38.2 (c, 0.2 in MeOH). λ_{max} 223 (log ϵ 5.5); 256 (log ϵ 5.48) (MeOH).

Ankudey, F.J. *et al., Planta Med.*, 2008, **74**, 555-559 (*isol, cd, pmr, cmr*)

Aeroplysinin 1 A-157

3,5-Dibromo-1,6-dihydroxy-4-methoxy-2,4-cyclohexadiene-1-acetonitrile, 9CI. 3,5-Dibromo-1-cyanomethyl-4-methoxy-3,5-cyclohexadiene-1,2-diol. Zamamistatin



(+)–*form*

$C_9H_9Br_2NO_3$ 338.983

Structure of Zamamistatin revised twice; finally shown to be the same as Aeroplysinin 1 in 2008.

(+)-*form* [28656-91-9]

Constit. of the sponges *Aplysina aerophoba (Verongia aerophoba*), *Aplysina archeri*, *Aiolochroia crassa*, *Verongula rigida*, *Psammaplysilla purpurea*, *Ianthella* sp. and others. Cytotoxic and antibacterial agent. Protein-tyrosine kinase inhibitor. Algicide, molluscicide. Sol. MeOH, Et_2O, Me_2CO; poorly sol. hexane. Mp 120-121° (112-113°). $[\alpha]_D$ +193 (c, 0.63 in Me_2CO). $[\alpha]_D^{20}$ +185 (c, 0.17 in MeOH). λ_{max} 284 (ϵ 4910) (MeOH) (Derep). λ_{max} 231 (ϵ 3220); 284 (ϵ 4910) (MeOH) (Berdy).

▶ GU4735000

Di-Ac:

Cryst. (C_6H_6/petrol). Mp 114°. $[\alpha]_D$ +218 ($CHCl_3$).

(-)-*form*

Constit. of the sponges *Ianthella ardis*, *Verongula gigantea*, *Suberea creba*, *Psammaplysilla arabica* and *Pseudoceratina crassa*. Mp 116-117°. $[\alpha]_D^{20}$ -176 (c, 0.125 in MeOH). $[\alpha]_D$ -198 (c, 0.5 in Me_2CO). λ_{max} 284 (ϵ 4910) (MeOH) (Derep).

(±)-*form*

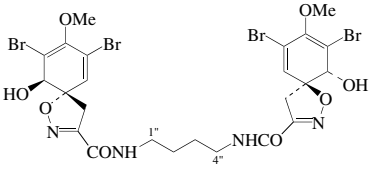
Constit. of *Verongula gigantea* and *Aiolochroia crassa*. Mp 153-154°. λ_{max} 284 (ϵ 4910) (MeOH) (Derep).

[55057-73-3 , 55057-74-4 , 66141-25-1 , 30951-40-7]

Fulmor, W. *et al., Tet. Lett.*, 1970, 4551 (*ir, pmr, cd, abs config*)
Cosulich, D.B. *et al., Chem. Comm.*, 1971, 397 (*cryst struct, abs config*)
Mazzarella, L. *et al., Gazz. Chim. Ital.*, 1972, **102**, 391 (*cryst struct, abs config*)
Fattorusso, E. *et al., J.C.S. Perkin 1*, 1972, 16 (*isol, uv, ir, pmr, ms, struct*)
Andersen, R.J. *et al., J.A.C.S.*, 1975, **97**, 936 (*synth*)
Chang, C.W.J. *et al., Tet. Lett.*, 1977, 4005 (*isol*)
Makarieva, T.N. *et al., Comp. Biochem. Physiol., B: Comp. Biochem.*, 1981, **68**, 481 (*isol, uv, ir, ms*)
Koulman, A. *et al., J. Nat. Prod.*, 1996, **59**, 591 (*activity*)
Kita, M. *et al., Tet. Lett.*, 2008, **49**, 5383-5384 (*Zamamistatin*)

Aerothionin A-158

[28714-26-3]



$C_{24}H_{26}Br_4N_4O_8$ 818.107

Numbering systems vary. Isol. from *Aplysina aerophoba* (*Verongia aerophoba*), *Aplysina fistularis* and *Aplysina thiona*. Also from *Pseudoceratina durissima*, *Psammaplysilla purpurea* and the crinoid *Himerometra magnipinna*. Plates (Me_2CO/C_6H_6). Mp 134-137° dec. $[\alpha]_D$ +252 (Me_2CO). λ_{max} 234 (ϵ 14450); 284 (ϵ 13490) (EtOH) (Derep). λ_{max} 284 (ϵ 12660) (MeOH) (Berdy).

Di-Ac:

Needles (Me_2CO). Mp 206-208°. $[\alpha]_D$ +236 ($CHCl_3$).

2″-Hydroxy: ***11-Hydroxyaerothionin***

[73622-27-2]

$C_{24}H_{26}Br_4N_4O_9$ 834.107

Constit. of *Aplysina caissara*, *Aplysina lacunosa* and *Pseudoceratina durissima*. Glass. $[\alpha]_D$ +189 (c, 0.15 in MeOH). λ_{max} 233 (ϵ 19780); 284 (ϵ 11100); 295 (ϵ 18900) (MeOH) (Berdy).

2″,3″-Dihydroxy: ***Dihydroxyaerothionin***

[122759-72-2]

$C_{24}H_{26}Br_4N_4O_{10}$ 850.106

Metab. of *Verongula rigida*. Powder. Mp 162-164°. $[\alpha]_D^{25}$ -64.2 (c, 0.1 in MeOH).

2″-Oxo: ***11-Oxoaerothionin***

[73622-23-8]

$C_{24}H_{24}Br_4N_4O_9$ 832.091

Metab. from the Caribbean sponge *Aplysina lacunosa* and from *Verongia cavernicola*. Exhibits pronounced and selective antitumour activity against human colon (HCT116) cell line. Powder. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 174.6-176.6° dec. $[\alpha]_D^{25}$ +181.15 (c, 2.17 in DMSO). λ_{max} 262 (ϵ 11600); 284 (ϵ 11500) (MeOH) (Berdy).

*2″-Oxo, 3″*R*-hydroxy:* ***12R-Hydroxy-11-oxoaerothionin***

[157544-68-8]

$C_{24}H_{24}Br_4N_4O_{10}$ 848.09

Metab. from the Caribbean sponge *Aplysina fistularis* forma *fulva*. $[\alpha]_D^{25}$ +160.7.

*2″-Oxo, 3″*S*-hydroxy:* ***12S-Hydroxy-11-oxoaerothionin***

[157497-57-9]

$C_{24}H_{24}Br_4N_4O_{10}$ 848.09

Metab. from the sponge *Aplysina fistularis* forma *fulva*. $[\alpha]_D^{25}$ +152.5.

Homologue: ***Homoaerothionin***

[34232-66-1]

[35036-48-7]

$C_{25}H_{28}Br_4N_4O_8$ 832.134

Constit. of the sponges *Aplysina aerophoba*, *Verongia thiona* and *Verongia cavernicola*. Amorph. solid. Mp 166-167° (as di-Ac). $[\alpha]_D$ +191.5 ($CHCl_3$) (di-Ac). Has a C_5 bridging chain instead of C_4. λ_{max} 289 (ϵ 13348) (MeOH) (Berdy).

Homologue, 2″ξ-hydroxy: 11-Hydroxy-homoaerothionin. ***Caissarine C***

$C_{25}H_{28}Br_4N_4O_9$ 848.134

Constit. of *Aplysina caissara*. Amorph. solid. $[\alpha]_D^{28}$ +175 (c, 0.002 in MeOH).

Homologue, 3″-hydroxy: ***12-Hydroxyhomoaerothionin***

[938464-19-8]

$C_{25}H_{28}Br_4N_4O_9$ 848.134

Isol. from the crinoid *Himerometra magnipinna*. Yellow powder. $[\alpha]_D^{20}$ +106 (c, 0.39 in MeOH). λ_{max} 231 (log ϵ 4.33); 281 (log ϵ 3.99) (MeOH).

Homologue, 2″-oxo: ***11-Oxohomoaerothionin***

[191112-17-1]

$C_{25}H_{26}Br_4N_4O_9$ 846.118

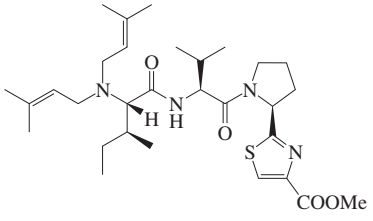
Constit. of *Aplysina cavernicola*. λ_{max} 232 (ϵ 19000); 284 (10500) (MeOH).

Fattorusso, E. *et al., Chem. Comm.*, 1970, 752-753 (*uv, ir, pmr, struct*)
Fattorusso, E. *et al., Gazz. Chim. Ital.*, 1971, **101**, 61-63 (*Homoaerothionin*)
Moody, K. *et al., J.C.S. Perkin 1*, 1972, 18-24 (*isol, uv, ir, pmr, struct, Homoaerothionin*)
Forrester, A.R. *et al., Annalen*, 1978, 66-73 (*synth*)

McMillan, J.A. *et al., Tet. Lett.*, 1981, **22**, 39-42 (*cryst struct, uv, pmr, cd, abs config*)
Nishiyama, S. *et al., Bull. Chem. Soc. Jpn.*, 1985, **58**, 3453-3456 (*synth*)
Okamoto, K.T. *et al., Tet. Lett.*, 1987, **28**, 4969-4972 (*biosynth*)
Gunasekera, M. *et al., J. Nat. Prod.*, 1989, **52**, 753-756 (*Dihydroxyaerothionin*)
Kernan, M.R. *et al., J. Nat. Prod.*, 1990, **53**, 615-622 (*11-Hydroxyaerothionin*)
Acosta, A.L. *et al., J. Nat. Prod.*, 1992, **55**, 1007-1012 (*11-Oxoaerothionin*)
Ciminiello, P. *et al., J. Nat. Prod.*, 1994, **57**, 705-712 (*12-Hydroxy-11-oxoaerothionin*)
Ciminiello, P. *et al., Tetrahedron*, 1997, **53**, 6565-6572 (*11-Oxohomoaerothionin*)
Wasserman, H.H. *et al., J.O.C.*, 1998, **63**, 5581-5586 (*synth*)
De Lira, T.O. *et al., J. Braz. Chem. Soc.*, 2006, **17**, 1233-1240 (*Caissarine C*)
Ogamino, T. *et al., Tet. Lett.*, 2006, **47**, 727-731 (*synth, abs config*)
Shao, N. *et al., J. Nat. Prod.*, 2007, **70**, 869-871 (*12-Hydroxyhomoaerothionin*)

Aeruginosamide A-159

[241483-64-7]



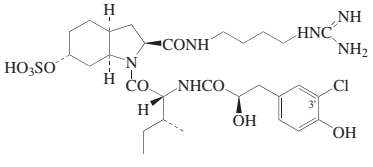
$C_{30}H_{48}N_4O_4S$ 560.8

Modified peptide antibiotic. Isol. from *Microcystis aeruginosa*. Moderate cytotoxic agent. Pale green oil. $[\alpha]_D$ -71.4 (c, 0.01 in $CHCl_3$).

Lawton, L.A. *et al., J.O.C.*, 1999, **64**, 5329-5332 (*isol, pmr, cmr, ir, ms*)
Chen, Z. *et al., New J. Chem.*, 2006, **30**, 518-520 (*synth*)

Aeruginosin 98A A-160

[167172-80-7]



Absolute Configuration

$C_{29}H_{45}ClN_6O_9S$ 689.228

Isol. from the blue-green alga *Microcystis aeruginosa* NIES98. Inhibitor of trypsin, thrombin and serine proteases. Amorph. powder. Sol. MeOH, H_2O. $[\alpha]_D$ -7.6 (c, 0.2 in H_2O). λ_{max} 279 (ϵ 1472) (H_2O) (Berdy).

5′-Chloro: ***Aeruginosin 101***
$C_{29}H_{44}Cl_2N_6O_9S$ 723.673
Isol. from *Microcystis aeruginosa*. Protease inhibitor. $[\alpha]_D$ -11 (c, 0.5 in MeOH aq.). λ_{max} 290 (ϵ 1810) (MeOH).

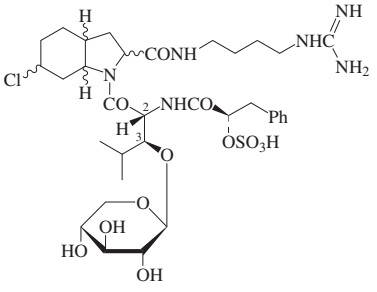
3′-Dechloro: ***Aeruginosin 98B***
[167228-01-5]
$C_{29}H_{46}N_6O_9S$ 654.783
Isol. from *Microcystis aeruginosa* NIES98. Inhibitor of trypsin, thrombin, plasmin and serine proteases. Amorph. powder. Sol. MeOH, H_2O. $[\alpha]_D$ -5.2 (c, 0.2 in H_2O). λ_{max} 276 (ϵ 1177) (H_2O) (Berdy).

3′-Dechloro, 3′-bromo: ***Aeruginosin 98C***
[167172-73-8]
$C_{29}H_{45}BrN_6O_9S$ 733.679
Isol. from *Microcystis aeruginosa* NIES98. Serine protease inhibitor. Powder. Sol. MeOH, H_2O. $[\alpha]_D$ -13 (c, 0.25 in H_2O). λ_{max} 281 (ϵ 860) (H_2O).

Murakami, M. *et al., Tet. Lett.*, 1995, **36**, 2785-2788 (*isol, pmr, cmr*)
Ishida, K. *et al., Tetrahedron*, 1999, **55**, 10971-10988 (*isol, abs config*)
Ersmark, K. *et al., Angew. Chem., Int. Ed.*, 2008, **47**, 1202-1223 (*rev*)

Aeruginosin 205A A-161

[184015-81-4]



$C_{34}H_{53}ClN_6O_{12}S$ 805.344

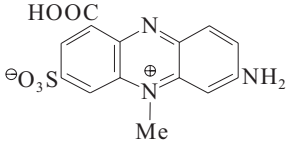
Glycopeptide antibiotic. Structure probably requires revision. Isol. from freshwater *Oscillatoria agardhii* NIES 205. Serine protease inhibitor. Microcryst. Sol. MeOH, butanol; fairly sol. H_2O; poorly sol. Et_2O, hexane. $[\alpha]_D^{20}$ +17.7 (c, 0.1 in MeOH). λ_{max} 258 (ϵ 520) (MeOH).

2,2′,3-Triepimer: ***Aeruginosin 205B***
[187521-09-1]
$C_{34}H_{53}ClN_6O_{12}S$ 805.344
Isol. from freshwater *Oscillatoria agardhii* NIES 205. Serine protease inhibitor. Sol. MeOH, butanol; fairly sol. H_2O; poorly sol. Et_2O, hexane. $[\alpha]_D^{20}$ +40.3 (c, 0.1 in MeOH). λ_{max} 258 (ϵ 570) (MeOH).

Shin, H.J. *et al., J.O.C.*, 1997, **62**, 1810-1813 (*isol, uv, pmr, cmr, ms*)
Valls, N. *et al., Tet. Lett.*, 2006, **47**, 3701-3705 (*struct*)
Ersmark, K. *et al., Angew. Chem., Int. Ed.*, 2008, **47**, 1202-1223 (*rev*)

Aeruginosin B A-162

7-Amino-1-carboxy-5-methyl-3-sulfophenazinium hydroxide inner salt, 9CI. 7-Amino-1-carboxy-5-methyl-3-sulfophenazinium betaine. Eruginosin B
[6508-65-2]



$C_{14}H_{11}N_3O_5S$ 333.324

Pigment from *Pseudomonas aeruginosa*. Red cryst. (aq. acid). Sol. H_2O. Dec. on heating without melting.

Herbert, R.B. *et al., J.C.S.(C)*, 1969, 2517 (*struct, ir, uv*)
Bentley, R.K. *et al., J.C.S.(C)*, 1970, 2447 (*synth*)

Aestivine† A-163

Estivine
[1356-93-0]
Struct. unknown
$C_{17}H_{21}NO_4$ 303.357

Amaryllidaceae alkaloid. Isol. from the bulbs of *Leucojum aestivum* (Amaryllidaceae). Cryst. + $1H_2O$ (EtOH). Mp 194-195°. $[\alpha]_D$ -151 (c, 0.1 in EtOH).

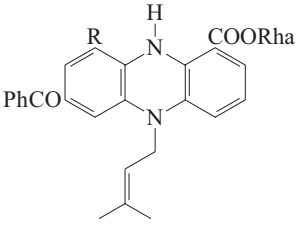
Hydrochloride:
Cryst. + ½ H_2O. Mp 205-207°.

Hydrobromide: Mp 153-154°.

Proskurnina, N.F. *et al., J. Gen. Chem. USSR (Engl. Transl.)*, 1963, **33**, 1643-1644 (*isol*)

Aestivophoenin A A-164

[171864-91-8]



R = H

$C_{31}H_{32}N_2O_7$ 544.603

Phenazine antibiotic. Prod. by *Streptomyces purpeofuscus*. Neuronal cell protecting agent, neuroprotectant, lipid peroxidation inhibitor. Orange powder. Sol. MeOH, EtOAc, Me_2CO. Mp 59-61°. $[\alpha]_D^{20}$ -106.3 (c, 0.005 in MeOH). λ_{max} 229 (ϵ 28900); 245 (ϵ 27400); 296 (ϵ 26000); 367 (ϵ 4000); 490 (ϵ 11700) (MeOH) (Berdy).

Shin-ya, K. *et al., J. Antibiot.*, 1995, **48**, 1378 (*isol, pmr, cmr, uv, ir*)

Aestivophoenin B A-165

[171864-92-9]
As Aestivophoenin A, A-164 with
R = $-CH_2CH{=}C(CH_3)_2$
$C_{36}H_{40}N_2O_7$ 612.721

Phenazine antibiotic. Prod. by *Streptomyces purpeofuscus*. Neuronal cell protecting agent, neuroprotecant, lipid peroxidation inhibitor. Orange powder. Sol. MeOH, Me_2CO, EtOAc. Mp 63-64°. $[\alpha]_D$ -139.8 (c, 0.006 in MeOH). λ_{max} 232 (ϵ 26900); 245 (ϵ 25800); 298 (ϵ 19000); 368 (ϵ 3300); 495 (ϵ 9700) (MeOH) (Berdy).

Debenzoyl: ***Aestivophoenin C***
$C_{29}H_{36}N_2O_6$ 508.613
Prod. by *Streptomyces purpeofuscus*. Neuronal cell protecting agent, antioxidant. Yellow powder. Mp 61-62°.

λ_{max} 247 (ϵ 24600); 328 (ϵ 2000); 453 (ϵ 4100) (MeOH).

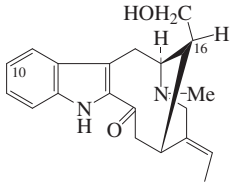
Shin-ya, K. *et al., J. Antibiot.*, 1995, **48**, 1378 (*isol, pmr, cmr, uv, ir*)

Kunigami, T. *et al., J. Antibiot.*, 1998, **51**, 880-882 (*isol, uv, pmr, cmr*)

Affinine† A-166

17-Hydroxyvobasan-3-one, 9CI

[2134-82-9]



Absolute Configuration

$C_{20}H_{24}N_2O_2$ 324.422

Alkaloid from *Peschiera affinis*, *Peschiera laeta* and *Tabernaemontana psychotrifolia* (Apocynaceae). Cryst. (MeOH/EtOAc, CH_2Cl_2/heptane, or EtOH). Mp 273-275° (264-265°) dec. $[\alpha]_D^{24}$ -180 (c, 0.78 in EtOH). λ_{max} 236 (sh) (ϵ 13200); 320 (ϵ 13400) (EtOH).

Hydrochloride:

Cryst. (MeOH/EtOAc). Mp 267-269° dec. $[\alpha]_D^{25}$ -105.4 (c, 0.5 in MeOH).

O-*Ac:*

Cryst. as solvate (Me_2CO). Mp 95-115°.

10-Methoxy: ***Pelirine***

[30435-26-8]

$C_{21}H_{26}N_2O_3$ 354.448

Alkaloid from the roots of *Rauwolfia perakensis* (Apocynaceae). Pale yellow plates (MeOH aq.). Mp 130-131°. $[\alpha]_D^{22}$ -121 (c, 1 in EtOH). The 16-config. was uncertain until 1987.

10-Methoxy, sulfate (1:2):

Cryst. + ½ H_2O. Mp 223-224° dec.

10-Methoxy, picrate:

Yellow needles (EtOH). Mp 159-159.5°.

16-Epimer: ***16-Epiaffinine***

[38990-09-9]

$C_{20}H_{24}N_2O_2$ 324.422

Alkaloid from the stem bark of *Pleiocarpa talbotii* (Apocynaceae). Cryst. (Et_2O/pentane). Mp 152-154°. $[\alpha]_D^{23}$ -190 (c, 0.95 in $CHCl_3$). pK_a 6.9 (methylcellosolve).

16-Epimer, picrate:

Cryst. (MeOH). Mp 187-189°.

16-Epimer, N-*Me:* ***16-Epi-N-methylaffinine***. N-*Methyl-16-epiaffinine*

[58262-66-1]

$C_{21}H_{26}N_2O_2$ 338.449

Alkaloid from *Tabernaemontana accedens* (Apocynaceae). Plates (MeOH). Mp 208-210° dec. $[\alpha]_D^{20}$ -243 (c, 0.05 in $CHCl_3$).

16-Epimer, Me ether: ***Hystrixnine***. *16-Epi-17-O-methylaffinine*

$C_{21}H_{26}N_2O_2$ 338.449

Alkaloid from the root bark of *Tabernaemontana hystrix*. Amorph. solid. $[\alpha]_D^{25}$ -100 (c, 0.66 in MeOH). λ_{max} 223 (ϵ 42570); 282 (ϵ 6290) (MeOH).

16-Epimer, 10-hydroxy: ***16-Epi-10-hydroxyaffinine***. *10-Hydroxy-16-epiaffinine*

[82513-70-0]

$C_{20}H_{24}N_2O_3$ 340.421

Alkaloid from *Hunteria zeylanica* (Apocynaceae). Amorph. $[\alpha]_D$ -122 (c, 0.46 in $CHCl_3$). λ_{max} 212 (log ϵ 4.46); 228 (sh) (log ϵ 4.29); 277 (sh) ; 328 (log ϵ 4.17) (MeOH).

Kiang, A.K. *et al., J.C.S.*, 1960, 1394-1398 (*Pelirine, isol, uv*)

Weisbach, J.A. *et al., J. Pharm. Sci.*, 1963, **52**, 350-353 (*isol, ir*)

Cava, M.P. *et al., Chem. Ind. (London)*, 1964, 1193-1194 (*struct, pmr*)

Burnell, R.H. *et al., Can. J. Chem.*, 1971, **49**, 307-316 (*isol, uv, ir, pmr, struct*)

Naranjo, J. *et al., Helv. Chim. Acta*, 1972, **55**, 752-771 (*16-Epiaffinine*)

Bláha, K. *et al., Coll. Czech. Chem. Comm.*, 1973, **38**, 929-933 (*Pelirine, cd*)

Achenbach, H. *et al., Chem. Ber.*, 1975, **108**, 3842-3854 (*16-Epi-N-methylaffinine*)

Voticky, Z. *et al., Coll. Czech. Chem. Comm.*, 1977, **42**, 1403-1406 (*isol, uv, ir, ms*)

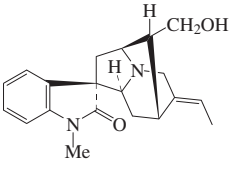
Lavaud, C. *et al., Phytochemistry*, 1982, **21**, 445-447 (*16-Epi-10-hydroxyaffinine*)

Wan, A.S.C. *et al., Heterocycles*, 1987, **26**, 1211-1214 (*Pelirine, cryst struct, abs config*)

Monnerat, C.S. *et al., J. Braz. Chem. Soc.*, 2005, **16**, 1331-1335 (*Hystrixnine*)

Affinisine oxindole A-167

[701950-31-4]



Absolute Configuration

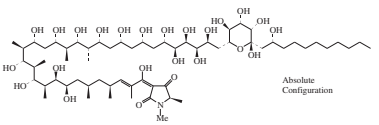
$C_{20}H_{24}N_2O_2$ 324.422

Alkaloid from the leaves of *Alstonia angustifolia* var. *latifolia*. Light yellow oil. $[\alpha]_D$ -70 (c, 0.06 in $CHCl_3$). λ_{max} 211 (log ϵ 4.31); 233 (log ϵ 3.82); 255 (log ϵ 3.87); 290 (log ϵ 3.35) (EtOH).

Kam, T.-S. *et al., Phytochemistry*, 2004, **65**, 603-608 (*isol, pmr, cmr*)

Aflastatin A A-168

[179729-59-0]



$C_{62}H_{115}NO_{24}$ 1258.583

Abs. config. revised in 2007. Prod. by *Streptomyces* sp. MRI 142. Inhibits production of Aflatoxin by aflatoxigenic fungi. Active against *Candida*, *Trichophyton* and *Staphylococcus* infections. Powder. Sol. DMSO; fairly sol. MeOH; poorly sol. H_2O, $CHCl_3$, hexane, EtOAc, Me_2CO. $[\alpha]_D^{19}$ -2.6 (c, 0.5 in DMSO). λ_{max} 247 (ϵ 11000); 299 (ϵ 6200) (MeOH aq.). λ_{max} 237 (ϵ 7900); 314 (ϵ 7300) (MeOH/HCl). λ_{max} 247 (ϵ 11000); 299 (ϵ 6200) (MeOH/NaOH).

▶ LD_{50} (mus, ipr) 6.17 mg/kg, LD_{50} (mus, orl) 2000 mg/kg.

N-*De-Me:* ***Aflastatin B***

$C_{61}H_{113}NO_{24}$ 1244.556

Prod. by *Streptomyces* MRI142. $[\alpha]_D^{23}$ -0.6 (c, 0.16 in DMSO). λ_{max} 246 (ϵ 10600); 299 (ϵ 6300) (MeOH aq.). λ_{max} 237 (ϵ 8000); 314 (ϵ 7800) (MeOH/HCl). λ_{max} 299 (ϵ 6300) (MeOH/NaOH).

Sakuda, S. *et al., J.A.C.S.*, 1996, **118**, 7855-7856 (*biosynth, struct*)

Ono, M. *et al., J. Antibiot.*, 1997, **50**, 111-118; 1998, **51**, 1019-1029 (*isol, uv, ir, pmr, cmr, props, ms*)

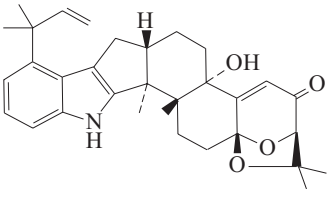
Ikeda, H. *et al., J.O.C.*, 2000, **65**, 438-444 (*abs config*)

Sakuda, S. *et al., Tet. Lett.*, 2007, **48**, 2527-2531 (*abs config*)

Aflatrem A-169

α,α-Dimethylallylpaspalinine

[70553-75-2]



$C_{32}H_{39}NO_4$ 501.664

Isol. from *Aspergillus flavus* and *Claviceps paspali*. Tremorgenic mycotoxin. Needles (Me_2CO/Et_2O). Sol. MeOH, $CHCl_3$. Mp 222-224°. λ_{max} 231 (ϵ 27700); 250 (ϵ 10000); 282 (ϵ 9000) (MeOH) (Berdy).

▶ Toxic.

Wilson, B.J. *et al., Science (Washington, D.C.)*, 1964, **144**, 177 (*isol*)

Gallagher, R.T. *et al., Tet. Lett.*, 1980, 239 (*struct, uv, ir, pmr, cmr*)

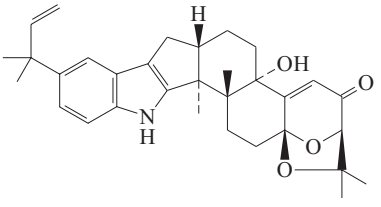
Cole, R.J. *et al., J. Agric. Food Chem.*, 1981, **29**, 293 (*isol*)

Cole, R.J. *et al., Handbook of Toxic Fungal Metabolites*, Academic Press, 1981, 410

Aflatrem B A-170

β-Aflatrem

[144446-23-1]



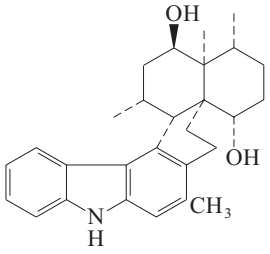
$C_{32}H_{39}NO_4$ 501.664

Prod. by *Aspergillus flavus*, *Aspergillus parasiticus* and *Aspergillus subolivaceus*. Mycotoxin, exhibits insecticidal activity. Yellow cryst. Mp 188-190°. $[\alpha]_D$ +77.9 (c, 0.011 in $CHCl_3$). λ_{max} 233 (ϵ 18500); 264 (ϵ 6300); 296 (ϵ 2700) (MeOH) (Berdy).

TePaske, M.R. *et al., J. Nat. Prod.*, 1992, **55**, 1080 (*isol, uv, pmr, cmr, ms, struct*)

Aflavazole A-171

[133401-09-9]



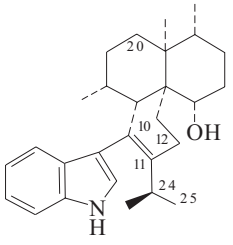
$C_{28}H_{35}NO_2$ 417.59

Closely related to Aflavinine, A-172. Metab. of *Aspergillus flavus* and *Aspergillus parasiticus*. Exhibits pronounced insect antifeedant activity. Light yellow cryst. Mp 156-160° dec. $[\alpha]_D$ +2.8 (c, 0.35 in MeOH). λ_{max} 219 (ϵ 15300); 243 (ϵ 17300); 263 (ϵ 7500); 297 (ϵ 7600); 327 (ϵ 1300); 341 (ϵ 1600) (MeOH) (Derep).

TePaske, M.R. *et al., J.O.C.*, 1990, **55**, 5299 (*isol, pmr, cmr*)

Aflavinine A-172

[74328-59-9]



$C_{28}H_{39}NO$ 405.622

Indolic diterpenoid antibiotic. Related to biosynthetic intermeds. in the penitrem series. Differnt numbering systems in use. Isol. from *Aspergillus flavus*, *Eupenicillium crustaceum* and *Eupenicillium molle*. Tremorgenic mycotoxin, shows insecticidal activity. Needles + 1EtOAc (EtOAc). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 102-104°. λ_{max} 226 (ϵ 27000); 284 (ϵ 5300); 292 (ϵ 4500) (MeOH) (Berdy).

10β,11α-Dihydro, 24,25-didehydro: 24,25-Dehydro-10,11-dihydroaflavinine
[124693-66-9]
$C_{28}H_{39}NO$ 405.622
Metab. from the sclerotia of *Aspergillus tubingensis*. Also shown by hplc to be present in the sclerotia of *Aspergillus flavus* and *Aspergillus parasiticus*. Mp 192-194°. $[\alpha]_D$ -1.2 (c, 0.5 in $CHCl_3$).

20β-Hydroxy: ***20-Hydroxyaflavinine***
[116865-08-8]
$C_{28}H_{39}NO_2$ 421.622
From *Aspergillus flavus*. Tremorgenic mycotoxin, shows antifeedant and insecticidal props. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 174-176° dec. (161-162°). $[\alpha]_D$ +64 (c, 0.08 in MeOH). $[\alpha]_D$ +23.8 (c, 0.56 in MeOH). λ_{max} 224 (ϵ 14900); 283 (ϵ 2760); 290 (ϵ 2520) (MeOH) (Derep).

20α-Hydroxy, 10β,11α-dihydro, 24,25-didehydro: ***24,25-Dehydro-10,11-dihydro-20-epi-20-hydroxyaflavinine***
$C_{28}H_{39}NO_2$ 421.622
Metab. from the sclerotia of *Aspergillus tubingensis*. Also shown by hplc to be present in the sclerotia of *Aspergillus flavus* and *Aspergillus parasiticus*. Mp 79-82°. $[\alpha]_D$ -5.6 (c, 1.06 in $CHCl_3$). λ_{max} 226 (ϵ 16400); 284 (ϵ 2290); 292 (ϵ 2100) (MeOH) (Berdy).

20β-Hydroxy, 10β,11α-dihydro, 11,12-didehydro: ***11,12-Didehydro-10,11-dihydro-20-hydroxyaflavinine***
[116865-10-2]
$C_{28}H_{39}NO_2$ 421.622
From *Aspergillus flavus*. Mycotoxin showing insecticidal and antifeedant props. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 276-278°. $[\alpha]_D$ +1.7 (c, 0.1 in MeOH). λ_{max} 224 (ϵ 20030); 281 (ϵ 3600); 285 (ϵ 3380) (MeOH) (Berdy).

20β-Hydroxy, 10β,11α-dihydro, 24,25-didehydro: ***24,25-Dehydro-10,11-dihydro-20-hydroxyaflavinine****. Monohydroxyisoaflavinine*
$C_{28}H_{39}NO_2$ 421.622
Metab. from *Aspergillus flavus*. insecticide, tremorigenic agent. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 146-148° Mp 259-262°. $[\alpha]_D$ +0.9 (c, 0.34 in MeOH). $[\alpha]_D^{24}$ +56 (c, 0.10 in MeOH). Identical structs. assigned to Dehydrodihydro-20-hydroxyaflavinine and Monohydroxyisoaflavinine (Nozawa *et al*) but very different props. reported (lower Mp and higher opt. rotn. refer to Monohydroxyisoaflavinine). λ_{max} 226 ; 227 (ϵ 26260); 284 (ϵ 6060); 291 (ϵ 5220) (MeOH) (Berdy). λ_{max} 226 (ϵ 21380); 283 (ϵ 4266); 291 (ϵ 3990) (EtOH) (Berdy).

24-Hydroxy, 10,11-dihydro: ***10,11-Dihydro-24-hydroxyaflavinine***
[171569-81-6]
$C_{28}H_{41}NO_2$ 423.637
Prod. by *Eupenicillium crustaceum*. Shows insecticidal props. Powder. $[\alpha]_D$ -22 ($CHCl_3$).

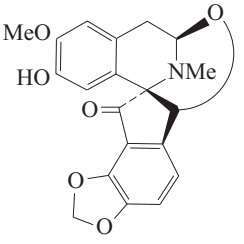
20β,25-Dihydroxy: ***20,25-Dihydroxyaflavinine***
[76410-56-5]
$C_{28}H_{39}NO_3$ 437.621
From *Aspergillus flavus*. Tremorgenic mycotoxin, shows insecticidal and antifeedant props. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 254-256°. $[\alpha]_D$ +22.9 (c, 0.5 in MeOH). λ_{max} 224 (ϵ 20190); 283 (ϵ 3850); 291 (ϵ 3670) (MeOH) (Berdy).

13-Oxo, 10β,11α-dihydro, 24,25-didehydro: ***24,25-Dehydro-10,11-dihydro-13-oxoaflavinine***
[124693-67-0]
$C_{28}H_{37}NO_2$ 419.606
From *Aspergillus tubingensis*. Shows insecticidal props. Mp 138-141°. $[\alpha]_D$ -13.5 (c, 0.72 in $CHCl_3$). λ_{max} 224 (ϵ 18200); 267 (ϵ 1200); 273 (ϵ 1400); 283 (ϵ 2100); 291 (ϵ 1750) (MeOH) (Berdy).

Gallagher, R.T. *et al., Tet. Lett.*, 1980, 243 (*isol, pmr, cmr, cryst struct*)
Cole, R.J. *et al., J. Agric. Food Chem.*, 1981, **29**, 293 (*deriv*)
Danishefsky, S. *et al., J.A.C.S.*, 1985, **107**, 2474 (*synth*)
Gloer, J.B. *et al., J.O.C.*, 1988, **53**, 5457 (*isol, derivs*)
Nozawa, K. *et al., Chem. Pharm. Bull.*, 1989, **37**, 626 (*Monohydroxyisoaflavinine, isol, uv, pmr, cmr, ms, cryst struct*)
TePaske, M.R. *et al., Tetrahedron*, 1989, **45**, 4961 (*derivs*)
Wang, H.J. *et al., Appl. Environ. Microbiol.*, 1995, **61**, 4429-4435 (*10,13-Dihydro-24-hydroxyaflavinine*)

Africanine A-173

[107019-97-6]



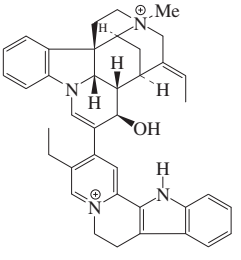
$C_{20}H_{17}NO_6$ 367.357

Alkaloid from *Rupicapnos africana* (Papaveraceae). Cryst. (MeOH). Mp 237°. $[\alpha]_D^{25}$ +22 (c, 0.322 in $CHCl_3$).

Castedo, L. *et al., Heterocycles*, 1986, **24**, 2781 (*uv, ir, pmr, ms, struct*)

Afrocurarine A-174

[55599-19-4]



Absolute Configuration

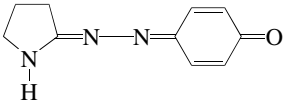
$C_{39}H_{42}N_4O^{2\oplus}$ 582.787

Alkaloid from *Strychnos usambarensis* (Loganiaceae). Weak neuromuscular blocking agent (activity *ca*. 0.05 × Tubocurarine).

Caprasse, M. *et al., Planta Med.*, 1984, **50**, 131-133 (*isol, uv, ir, pmr, ms, cd, struct*)

Agaricone A-175

[99280-73-6]



$C_{10}H_{11}N_3O$ 189.216

Isol. from the toadstool *Agaricus xanthoderma*. Red cryst. Sol. MeOH, EtOAc; poorly sol. H_2O. Mp 115° (dec.).

Formed on injury of the fungus by air or enzyme oxidn. of Leucoagaricone, L-154. λ_{max} 242 (log ϵ 3.74); 427 (log ϵ 4.19) (MeOH).

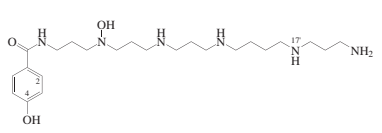
Hilbig, S. *et al., Angew. Chem., Int. Ed.*, 1985, **24**, 1063-1065 (*isol, synth, uv, pmr, ms*)

Agel 452 A-176

N-*(20-Amino-4-hydroxy-4,8,12,17-tetraazaeicos-1-yl)-4-hydroxybenzamide, 9CI. AG 452*

[128549-98-4]

[128550-23-2 (trifluoroacetate salt)]



$C_{23}H_{44}N_6O_3$ 452.639

See also *Agelenopsis aperta* Hydroxybenzoylpentamine toxins, H-413 for related toxins. Alkaloid from the venom of the spider *Agelenopsis aperta*. λ_{max} 251 (log ϵ 4.12) (H_2O) (trifluoroacetate).

4-Deoxy, 2,5-dihydroxy: ***Agel 468****. AG 468*
[128549-99-5]
$C_{23}H_{44}N_6O_4$ 468.638
Alkaloid from the venom of the spider *Agelenopsis aperta*.

N,*4-Dideoxy, 2,5-dihydroxy:* ***Agel 452a****. AG 452a. HO 452*
[133805-35-3]
$C_{23}H_{44}N_6O_3$ 452.639
Alkaloid from the venom of the spiders *Agelenopsis aperta* and *Hololena curta*.

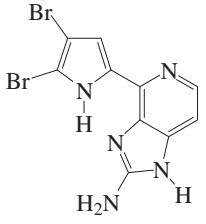
$N^{17'}$*-De(aminopropyl),* $N^{17'}$*-(aminoiminomethyl),* N*-deoxy:* ***PB 421***
[333401-98-2]
$C_{21}H_{39}N_7O_2$ 421.585
Alkaloid from the venom of the spider *Paracoelotes birulai*.

[128550-24-3]

Jasys, V.J. *et al., J.A.C.S.*, 1990, **112**, 6696-6704 (*isol, synth, ms, struct*)
Chesnov, S. *et al., Helv. Chim. Acta*, 2000, **83**, 3295-3305; 2001, **84**, 2178-2197 (*PB 421, Agel 452a*)

Ageladine A A-177

[643020-13-7]

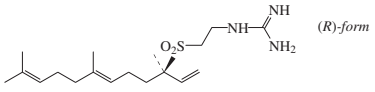


$C_{10}H_7Br_2N_5$ 357.007
Isol. from *Agelas nakamurai*. Antiangiogenic matrixmetalloproteinase inhibitor. Yellow powder (as di-TFA salt). λ_{max} 227 (ϵ 15400); 250 (ϵ 9960); 381 (ϵ 12200) (MeOH) (di-TFA salt).

Fujita, M. *et al., J.A.C.S.*, 2003, **125**, 15700-15701 (*Ageladine A*)
Shengule, S.R. *et al., Org. Lett.*, 2006, **8**, 4083-4084 (*synth*)
Meketa, M.L. *et al., J.O.C.*, 2007, **72**, 4892-4899 (*synth*)
Meketa, M.L. *et al., Tetrahedron*, 2007, **63**, 9112-9119 (*synth*)

Agelasidine A A-178

2-[[(1-Ethenyl-1,5,9-trimethyl-4,8-decadienyl)sulfonyl]ethyl]guanidine, 9CI



$C_{18}H_{33}N_3O_2S$ 355.544

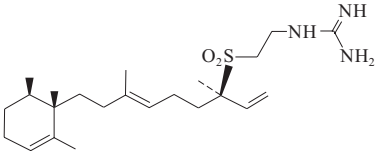
(*R*)-*form* [915159-59-0]
Isol. from *Agelas clathrodes*. Oil. $[\alpha]_D^{20}$ -14.5 (c, 1.5 in MeOH).

(*S*)-*form*
Isol. from the Okinawan sea sponge *Agelas nakamurai* and from a Pacific sponge *Agelas* sp. Shows antispasmodic and antibacterial activity. Unstable yellow oil; cryst. + ⅓ H_2O (EtOAc)(as hydrochloride). Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. Mp 108-108.5° (hydrochloride). $[\alpha]_D^{25}$ +19.1 (c, 1 in MeOH) (hydrochloride). λ_{max} 227 (ϵ 5400); 265 (ϵ 1800) (EtOH) (Berdy). λ_{max} 226 (ϵ 4000); 270 (ϵ 2000) (EtOH/HCl) (Berdy).

Capon, R.J. *et al., J.A.C.S.*, 1984, **106**, 1819-1822 (*isol, uv, ir, pmr, cmr, ms*)
Nakamura, H. *et al., J.O.C.*, 1985, **50**, 2494-2497 (*isol, uv, ir, pmr, cmr*)
Ichikawa, Y. *et al., J.C.S. Perkin 1*, 1992, 1497-1500 (*synth*)
Medeiros, M.A. *et al., Z. Naturforsch., C*, 2006, **61**, 472-476 (*R-form, isol, pmr, cmr*)

Agelasidine B A-179

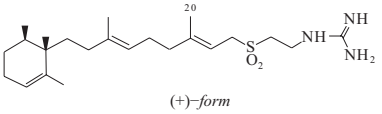
[96617-50-4]



$C_{23}H_{41}N_3O_2S$ 423.662
Isol. from the Okinawan sea sponge *Agelas nakamurai*. Shows antispasmodic and antibacterial activity. Syrup (as hydrochloride). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. $[\alpha]_D^{25}$ -2.5 (c, 0.43 in MeOH).

Nakamura, H. *et al., J.O.C.*, 1985, **50**, 2494 (*isol, uv, ir, pmr, cmr, struct*)

Agelasidine C A-180



$C_{23}H_{41}N_3O_2S$ 423.662

(+)-*form* [96617-52-6]
Isol. from the sponges *Agelas nakamurai* and *Agelas dispar*. Shows antispasmodic and antibacterial activity. Syrup (as hydrochloride). Sol. MeOH, $CHCl_3$. $[\alpha]_D^{25}$ +8.5 (c, 2.0 in MeOH) (hydrochloride).

(-)-*form* [139757-42-9]
Isol. from *Agelas clathrodes*. Oil. Sol. MeOH, $CHCl_3$. $[\alpha]_D^{29}$ -5.6 (c, 7.2 in MeOH).

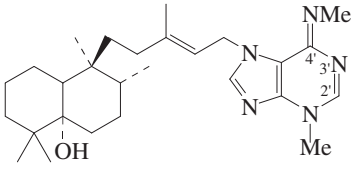
20-Hydroxy: ***Agelasidine D***
[139680-61-8]
$C_{23}H_{41}N_3O_3S$ 439.661
Isol. from *Agelas clathrodes*. Oil. Sol. MeOH, $CHCl_3$. $[\alpha]_D^{29}$ -3.6 (c, 2.75 in MeOH).

[96617-52-6]

Nakamura, H. *et al., J.O.C.*, 1985, **50**, 2494-2498 (*isol, uv, ir, pmr, cmr, struct*)
Asao, K. *et al., Chem. Lett.*, 1989, 1813-1814 (*synth*)
Morales, J.J. *et al., J. Nat. Prod.*, 1992, **55**, 389-394 (*isol*)

Agelasimine A A-181

[114216-85-2]



$C_{27}H_{43}N_5O$ 453.67
Metab. from the marine sponge *Agelas mauritiana*. Exhibits cytotoxicity, inhibition of adenosine transfer into rabbit erythrocytes, $Ca^{2\oplus}$-channel antagonistic action and α_1 adrenergic blockade. Yellowish oil. Sol. MeOH, EtOH, $CHCl_3$. $[\alpha]_D^{25}$ +2.3 (MeOH). λ_{max} 223 (ϵ 9700); 287 (ϵ 14700) (MeOH) (Berdy).

*2′,3′-Dihydro, 3′*N*-Me,* $N^{4'}$*-de-Me:* ***Agelasimine B***
[114216-87-4]
$C_{27}H_{45}N_5O$ 455.685
Metab. from the marine sponge *Agelas mauritiana*. Exhibits cytotoxicity, inhibition of adenosine transfer into rabbit erythrocytes, $Ca^{2\oplus}$-channel antagonistic action and α_1 adrenergic blockade. Viscous yellowish oil. Sol. MeOH, $CHCl_3$, EtOH. $[\alpha]_D^{25}$ +2.46 (MeOH). λ_{max} 245 (ϵ 7100); 327 (ϵ 5400) (MeOH) (Berdy).

Fathi-Afshar, R. *et al., Can. J. Chem.*, 1988, **66**, 45 (*isol, uv, ir, pmr, cmr, ms, struct*)
Ohba, M. *et al., Tetrahedron*, 1997, **53**, 16977-16986 (*synth, abs config*)

Agelasine† A-182

Struct. unknown

$C_{26}H_{40}N_5^{\oplus}$ 422.635

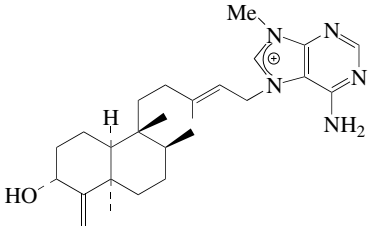
Quaternary 9-methyladenine deriv. of an unidentified bicyclic diterpene. Isol. from the sponge *Agelas dispar*. Cryst. (butanone/THF) (as chloride). Mp 197-200°

dec. (chloride). Mp of chloride does not appear to correspond with any of the Agelasines of known struct. λ_{max} 212 (ϵ 18100); 272 (ϵ 10000) (EtOH/HCl) (Derep). λ_{max} 212 (ϵ 18100); 272 (ϵ 10000) (EtOH) (Derep).

Cullen, E. *et al., Can. J. Chem.*, 1975, **53**, 1690-1691 (*isol, uv, ir, pmr, ms*)

Agelasine I A-183

[205382-10-1]



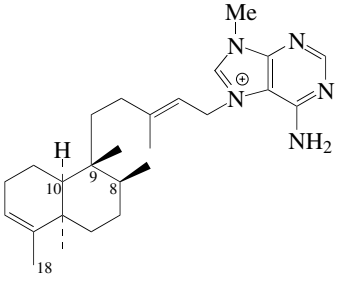
$C_{26}H_{40}N_5O^{\oplus}$ 438.635

Isol. from a sponge *Agelas* sp. Amorph. solid (as chloride). $[\alpha]_D$ -2.5 (c, 0.2 in MeOH). λ_{max} 272 (ϵ 8230) (MeOH).

Fu, X. *et al., J. Nat. Prod.*, 1998, **61**, 548-550 (*isol, uv, ir, pmr, cmr*)

Agelasine A† A-184

[56271-74-0]



$C_{26}H_{40}N_5^{\oplus}$ 422.635

Constit. of the Okinawan sponge *Agelas nakamurai*. ATPase inhibitor, spasmolytic agent, smooth muscle contractant. Cryst. (as chloride). Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. Mp 173-174° (chloride). $[\alpha]_D^{25}$ -31.3 (c, 0.59 in MeOH). λ_{max} 212 (ϵ 18100); 272 (ϵ 10000) (EtOH/HCl) (Derep). λ_{max} 212 (ϵ 18100); 272 (ϵ 10000) (EtOH) (Derep).

18-Hydroxy: ***Agelasine H***
[205382-09-8]
$C_{26}H_{40}N_5O^{\oplus}$ 438.635
Constit. of an *Agelas* sp. Amorph. solid (as chloride). $[\alpha]_D$ -63.9 (c, 0.36 in MeOH). λ_{max} 272 (ϵ 9015) (MeOH).

*18-Hydroxy, 18-*O*-(2-pyrrolecarbonyl):* ***Ageline B***
[88874-28-6]
[88855-18-9 , 88855-19-0]
$C_{31}H_{43}N_6O_2^{\oplus}$ 531.72
Constit. of sponge *Agelas* sp. Active against gram-positive bacteria. ATPase inhibitor. Smooth muscle contractor. Phytotoxin. Weak ichthyotoxin. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. λ_{max} 210 (ϵ); 274 (ϵ) (EtOH) (Derep). λ_{max} 268 (ϵ 8320) (MeOH) (Berdy). λ_{max} 212 (ϵ 18100); 272 (ϵ 10111) (EtOH) (Berdy). λ_{max} 212 (ϵ 18100); 272 (ϵ 10000) (EtOH/HCl) (Berdy).

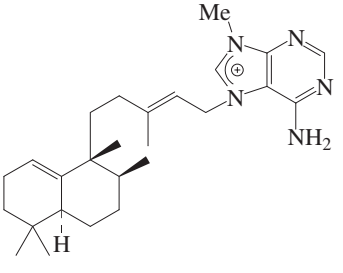
*18-Hydroxy, 18-*O*-(4-bromo-2-pyrrolecarbonyl):* ***Agelasine G***
[142808-37-5]
$C_{31}H_{42}BrN_6O_2^{\oplus}$ 610.616
Isol. from the Okinawan marine sponge *Agelas* sp. Exhibits cytotoxicity against murine lymphoma L1210 cells *in vitro*. $[\alpha]_D^{27}$ -85 (c, 0.02 in $CHCl_3$) (as chloride). λ_{max} 212 (ϵ 24000); 272 (ϵ 19000) (MeOH) (Berdy).

8,9,10-Triepimer: ***Agelasine B***
[92664-76-1]
$C_{26}H_{40}N_5^{\oplus}$ 422.635
Constit. of *Agelas nakamurai*. ATPase inhibitor, spasmolyic agent. Cryst. (as chloride). Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. Mp 167-170° (chloride). $[\alpha]_D^{25}$ -21.5 (c, 1.00 in MeOH). λ_{max} 212 (ϵ 18100); 272 (ϵ 10000) (EtOH/HCl) (Derep). λ_{max} 212 (ϵ 18100); 272 (ϵ 10000) (EtOH) (Derep).

Cullen, E. *et al., Can. J. Chem.*, 1975, **53**, 1690-1691 (*isol*)
Capon, R.J. *et al., J.A.C.S.*, 1984, **106**, 1819-1822 (*Ageline B*)
Nakamura, H. *et al., Tet. Lett.*, 1984, **25**, 2989-2992 (*uv, pmr, cmr, struct*)
Hideo, I. *et al., Chem. Comm.*, 1985, 774-775 (*Ageline B, synth*)
Wu, H. *et al., Bull. Chem. Soc. Jpn.*, 1986, **59**, 2495-2504 (*isol, pmr, cmr, uv, Agelasine B*)
Ishida, K. *et al., Chem. Pharm. Bull.*, 1992, **40**, 766-767 (*Agelasine G*)
Piers, E. *et al., J.C.S. Perkin 1*, 1995, 963-966 (*synth*)
Fu, X. *et al., J. Nat. Prod.*, 1998, **61**, 548-550 (*Agelasine H*)

Agelasine C A-185

[92664-78-3]
[92664-79-4 (chloride)]



$C_{26}H_{40}N_5^{\oplus}$ 422.635

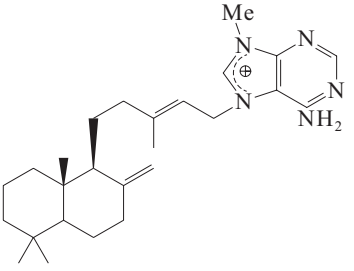
Stereochem. revised in 2005. Isol. from the sponge *Agelas nakamurai*. Shows antimicrobial activity. ATP-ase inhibitor. Spasmolytic agent. Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. Mp 176-179° (as chloride). $[\alpha]_D^{25}$ -55.1 (c, 2.04 in MeOH) (chloride). λ_{max} 212 (ϵ 18100); 272 (ϵ 10000) (EtOH/HCl) (Derep). λ_{max} 212 (ϵ 18100); 272 (ϵ 10000) (EtOH) (Derep).

5,9-Diepimer: ***Epiagelasine C***
[187825-31-6]
$C_{26}H_{40}N_5^{\oplus}$ 422.636
Constit. of sponge *Agelas mauritiana*. Antifouling substance against macroalgae. Powder (as chloride). $[\alpha]_D^{25}$ +33.9 (c, 0.056 in MeOH) (chloride). Stereochem. revised in 2005. λ_{max} 273 (ϵ 8140) (MeOH).

Nakamura, H. *et al., Tet. Lett.*, 1984, **25**, 2989-2992 (*isol, uv, pmr, cmr*)
Wu, H. *et al., Bull. Chem. Soc. Jpn.*, 1986, **59**, 2495-2504 (*isol, pmr, cmr, uv*)
Hattori, T. *et al., J. Nat. Prod.*, 1997, **60**, 411-413 (*5-epimer*)
Marcos, I. *et al., Tetrahedron*, 2005, **61**, 11672-11678 (*synth, abs config*)

Agelasine D A-186

[92664-80-7]
[92664-81-8 (chloride)]



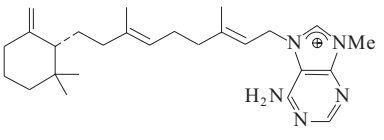
$C_{26}H_{40}N_5^{\oplus}$ 422.635

Isol. from the Okinawan sea sponge *Agelas nakamurai*. Shows antimicrobial activity. Spasmolytic agent. Na/K ATP-ase inhibitor. Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. Mp 175-176° (as chloride). $[\alpha]_D^{25}$ +10.4 (c, 1.1 in MeOH) (chloride). λ_{max} 212 (ϵ 18100); 272 (ϵ 10000) (EtOH/HCl) (Derep). λ_{max} 212 (ϵ 18100); 272 (ϵ 10000) (EtOH) (Derep).

Nakamura, H. *et al., Tet. Lett.*, 1984, **25**, 2989-2992 (*uv, pmr, cmr, struct*)
Wu, H. *et al., Bull. Chem. Soc. Jpn.*, 1986, **59**, 2495-2504 (*isol, uv, pmr, cmr*)
Utenova, B.T. *et al., Tet. Lett.*, 2004, **45**, 4233-4235 (*synth*)
Vik, A. *et al., J. Nat. Prod.*, 2006, **69**, 381-386 (*synth, activity*)

Agelasine E A-187

[92599-00-3]
[92599-01-4 (chloride)]



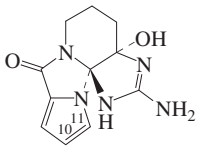
$C_{26}H_{40}N_5^{\oplus}$ 422.635

Isol. from the Okinawan sea sponge *Agelas nakamurai*. ATP-ase inhibitor, spasmolytic agent, shows antimicrobial props. Powder (as chloride). Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. Mp 180-182° (chloride). $[\alpha]_D^{23}$ -17.1 (c, 1.88 in MeOH) (chloride). λ_{max} 212 (ϵ 18100); 272 (ϵ 10000) (EtOH/HCl) (Derep). λ_{max} 212 (ϵ 18100); 272 (ϵ 10000) (EtOH) (Derep).

Wu, H. *et al., Bull. Chem. Soc. Jpn.*, 1986, **59**, 2495-2504 (*uv, pmr, cmr, ms, struct*)
Bakkestuen, A.K. *et al., Org. Biomol. Chem.*, 2005, **3**, 1025-1033 (*synth*)

Agelaspongin A-188

[122893-39-4]



Relative Configuration

$C_{11}H_{13}N_5O_2$ 247.256

CA numbering shown. Synthetic. Cryst. (MeOH). Mp 220° dec.

Hydrochloride:
Cryst. (EtOH). Mp 250° dec.

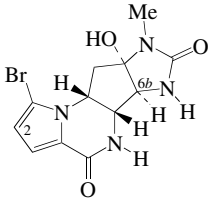
10,11-Dibromo: ***Dibromoagelaspongin***
[122893-38-3]
$C_{11}H_{11}Br_2N_5O_2$ 405.048
Isol. from an *Agelas* sp. Glucanase inhibitor. Yellow-green cryst. (MeOH/Me_2CO) (as hydrochloride). Mp 233-235° dec. (hydrochloride). λ_{max} 235 (ϵ 11250); 290 (ϵ 7420) (MeOH) (Berdy).

10,11-Dibromo, Me ether: ***Dibromoagelaspongin methyl ether***
[934842-17-8]
$C_{12}H_{13}Br_2N_5O_2$ 419.075
Isol. from *Agelas dispar*.

Fedoreyev, S.A. *et al., Tetrahedron*, 1989, **45**, 3487-3492 (*isol, pmr, cmr, ms, cryst struct*)
Pina, I.C. *et al., J. Nat. Prod.*, 2007, **70**, 613-617 (*dibromo Me ether*)
Feldman, K.S. *et al., J.A.C.S.*, 2008, **130**, 14964-14965 (*dibromo, synth*)

Agelastatin A A-189

[152406-28-5]



Absolute Configuration

$C_{12}H_{13}BrN_4O_3$ 341.164
Alkaloid from the sponge *Agelas dendromorpha* and *Cymbastela* sp. Exhibits marked cytotoxicity; insecticide. Antineoplastic agent. Prevents metastatic cancer spread. $[\alpha]_D^{20}$ -84.3 (c, 0.3 in EtOH) (as *N,N,O*-tri-Me). Not obt. completely pure. λ_{max} 203 (ϵ 12400); 232 (ϵ 8400); 279 (ϵ 11900) (EtOH) (Derep).

N-*De-Me:* ***Agelastatin D***
[201338-45-6]
$C_{11}H_{11}BrN_4O_3$ 327.137
Alkaloid from the sponge *Cymbastela* sp. Insecticide. Solid. λ_{max} 227 (ϵ 7900); 277 (ϵ 10800) (MeOH).

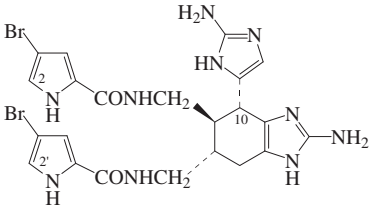
2-Bromo: ***Agelastatin B***
[159903-65-8]
$C_{12}H_{12}Br_2N_4O_3$ 420.06
Minor alkaloid from *Agelas dendromorpha*. $[\alpha]_D$ -84.4 (c, 0.49 in EtOH) (as *N,N,O*-tri-Me). Obt. as insep. mixt. with Agelastatin A but characterised as the tri-Me deriv.

*6*b-*Hydroxy:* ***Agelastatin C***
[201338-44-5]
$C_{12}H_{13}BrN_4O_4$ 357.163
Alkaloid from the sponge *Cymbastela* sp. Cytotoxic; insecticide. Solid. $[\alpha]_D$ -5 (c, 0.06 in MeOH). λ_{max} 228 (ϵ 7900); 278 (ϵ 11000) (MeOH).

D'Ambrosio, M. *et al., Helv. Chim. Acta*, 1994, **77**, 1895; 1996, **79**, 727 (*Agelastatins A,B*)
Hong, T.W. *et al., J. Nat. Prod.*, 1998, **61**, 158-161 (*Agelastatins C,D*)
Stien, D. *et al., J.A.C.S.*, 1999, **121**, 9574-9579 (*synth*)
Feldman, K.S. *et al., J.O.C.*, 2002, **67**, 7096-7109 (*synth*)
Hale, K.J. *et al., Org. Lett.*, 2003, **5**, 2927-2930 (*synth*)
Domostoj, M.M. *et al., Org. Lett.*, 2004, **6**, 2615-2618 (*synth*)
Davis, F.A. *et al., Org. Lett.*, 2005, **7**, 621-623 (*synth*)
Trost, B.M. *et al., J.A.C.S.*, 2006, **128**, 6054-6055 (*synth*)
Ichikawa, Y. *et al., Org. Lett.*, 2007, **9**, 2989-2992 (*synth*)
Mason, C.K. *et al., Mol. Cancer Ther.*, 2008, **7**, 548-558 (*agelastatin A, pharmacol*)

Ageliferin A-190

[117417-64-8]



$C_{22}H_{24}Br_2N_{10}O_2$ 620.305
Alkaloid from the marine sponges *Agelas conifera*, *Agelas novaecaledoniae*, *Agelas* cf. *mauritiana* and *Xestospongia* sp. Potent actomyosin ATPase activator. Antifouling agent. Somatostatin antagonist. Sol. MeOH, EtOAc, $CHCl_3$; poorly sol. H_2O. $[\alpha]_D^{33}$ +15.5 (c, 0.11 in MeOH). λ_{max} 204 (ϵ 25500); 220 (ϵ 27100); 267 (ϵ 25900); 393 (ϵ 300) (MeOH) (Derep).

1′-N-*Me:* ***1′-N-Methylageliferin***
[175861-97-9]
$C_{23}H_{26}Br_2N_{10}O_2$ 634.332
Alkaloid from the sponge *Astrosclera willeyana*. Pale yellow glass (as bis(trifluoroacetate)). $[\alpha]_D$ +40 (c, 0.01 in MeOH).

1,1′-Di-N-*Me:* ***N^{I},N$^{I'}$-Dimethylageliferin***
[175861-98-0]
$C_{24}H_{28}Br_2N_{10}O_2$ 648.359
Alkaloid from the sponge *Astrosclera willeyana*. Pale buff glass (as dihydrochloride). $[\alpha]_D$ +40 (c, 0.01 in MeOH).

2-Bromo: ***2-Bromoageliferin***
[117417-67-1]
$C_{22}H_{23}Br_3N_{10}O_2$ 699.201
Alkaloid from the sponges *Agelas conifera*, *Agelas* cf. *mauritiana* and *Astrosclera willeyana*. Potent actomyosin ATPase activator. Sol. MeOH, EtOAc, $CHCl_3$; poorly sol. H_2O. $[\alpha]_D^{33}$ +8.8 (c, 0.08 in MeOH). λ_{max} 203 (ϵ 30600); 220 (ϵ 26300); 270 (ϵ 24500); 396 (ϵ 700) (MeOH) (Derep). λ_{max} 204 (ϵ 15000); 222 (ϵ 12200); 274 (ϵ 12500); 396 (ϵ 700) (EtOH) (Berdy).

2-Bromo, 1′-N-*Me:* ***1′-N-Methyl-2-bromoageliferin***
[175862-01-8]
$C_{23}H_{25}Br_3N_{10}O_2$ 713.228
Alkaloid from the sponge *Astrosclera willeyana*. Off-white glass (as bis(trifluoroacetate)). $[\alpha]_D$ +50 (c, 0.01 in MeOH).

2′-Bromo, 1′-N-*Me:* ***1′-N-Methyl-2′-bromoageliferin***
[175862-02-9]
$C_{23}H_{25}Br_3N_{10}O_2$ 713.228
Alkaloid from the sponge *Astrosclera willeyana*. Off-white glass (as bis(trifluoroacetate)). $[\alpha]_D$ +40 (c, 0.01 in MeOH).

2,2′-Dibromo: ***2,2′-Dibromoageliferin***
[117417-69-3]
$C_{22}H_{22}Br_4N_{10}O_2$ 778.098
Alkaloid from the sponges *Agelas conifera*, *Agelas* cf. *mauritiana* and *Astrosclera willeyana*. Potent actomyosin ATPase activator. Sol. MeOH, EtOAc, $CHCl_3$; poorly sol. H_2O. $[\alpha]_D^{33}$ +3 (c, 0.1 in MeOH). λ_{max} 204 (ϵ 12200); 220 (ϵ 9100); 278 (ϵ 8200); 394 (ϵ 300) (no solvent reported) (Derep). λ_{max} 202 (ϵ 24300); 214 (ϵ 24500); 274 (ϵ 25000) (MeOH) (Derep). λ_{max} 204 (ϵ 12200); 220 (ϵ 9100); 278 (ϵ 8200); 394 (ϵ 300) (EtOH) (Berdy).

2,2′-Dibromo, 1′-N-*Me:* ***1′-N-Methyl-2,2′-dibromoageliferin***
[175862-03-0]
$C_{23}H_{24}Br_4N_{10}O_2$ 792.124
Alkaloid from the sponge *Astrosclera willeyana*. Off-white glass (as bis(trifluoroacetate)). $[\alpha]_D$ +30 (c, 0.01 in MeOH).

3′-Debromo, 2′-bromo, 1′-N-*Me:* ***1′-N-Methylisoageliferin***
[175861-99-1]
$C_{23}H_{26}Br_2N_{10}O_2$ 634.332
Alkaloid from the sponge *Astrosclera willeyana*. Pale yellow glass (as bis(trifluoroacetate)). $[\alpha]_D$ +40 (c, 0.01 in MeOH).

3′-Debromo, 2′-bromo, 1,1′-di-N-*Me:* ***N^{I},N$^{I'}$-Dimethylisoageliferin***
[175862-00-7]
$C_{24}H_{28}Br_2N_{10}O_2$ 648.359
Alkaloid from the sponge *Astrosclera willeyana*. Off-white glass (as dihydrochloride). $[\alpha]_D$ +40 (c, 0.01 in MeOH).

10-Epimer: ***Nagelamide E***
[690627-58-8]
$C_{22}H_{24}Br_2N_{10}O_2$ 620.305
Alkaloid from an *Agelas* sp. Amorph. solid. $[\alpha]_D^{17}$ -11.3 (c, 1 in MeOH). λ_{max} 202 (ϵ 32000); 215 (sh) (ϵ 18000); 272 (ϵ 17200) (MeOH).

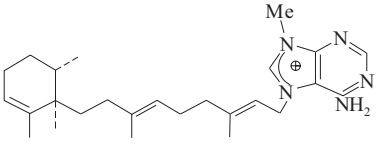
10-Epimer, 2-bromo: ***Nagelamide F***
[690627-59-9]
$C_{22}H_{23}Br_3N_{10}O_2$ 699.202
Alkaloid from an *Agelas* sp. Amorph. solid. $[\alpha]_D^{17}$ -14.1 (c, 1 in $CHCl_3$). λ_{max} 202 (ϵ 24000); 216 (sh) (ϵ 20100); 272 (ϵ 17700) (MeOH).

10-Epimer, 2,2′-dibromo: ***Nagelamide G***
[690627-60-2]
$C_{22}H_{22}Br_4N_{10}O_2$ 778.098
Alkaloid from an *Agelas* sp. Inhibitor of protein phosphatase 2A. Amorph. solid. $[\alpha]_D^{17}$ +6.7 (c, 1 in MeOH). λ_{max} 202 (ϵ 32000); 215 (sh) (ϵ 28900); 277 (ϵ 27400) (MeOH).

Kobayashi, J. *et al., Tetrahedron*, 1990, **46**, 5579-5586 (*isol, pmr, cmr, struct*)
Keifer, P.A. *et al., J.O.C.*, 1991, **56**, 2965-2975; 6728 (*isol*)
Vassas, A. *et al., Planta Med.*, 1996, **62**, 28-30 (*isol, activity*)
Williams, D.H. *et al., Tetrahedron*, 1996, **52**, 5381-5390 (*N-Methylageliferins*)
Kawasaki, I. *et al., Tet. Lett.*, 2002, **43**, 4377-4380 (*deriv, synth*)
Hoffmann, H. *et al., Synthesis*, 2003, 1753-1783 (*rev*)
Endo, T. *et al., J. Nat. Prod.*, 2004, **67**, 1262-1267 (*Nagelamides*)
O'Malley, D.P. *et al., J.A.C.S.*, 2007, **129**, 4762-4775; 7702 (*synth*)

Ageline A A-191

Agelasine F
[88929-28-6]
[8885-51-6]

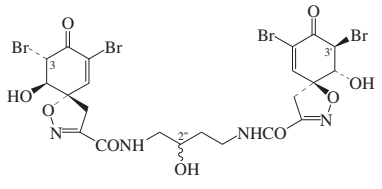


$C_{26}H_{40}N_5^{\oplus}$ 422.635
Constit. of sponge *Agelas* sp. Active against gram-positive bacteria and fungi. ATPase inhibitor, weak ichthyotoxin. Active against *Mycobacterium tuberculosis*. Plates (MeCN) or powder (as chloride). Mp 178-180° (chloride). $[\alpha]_D^{25}$ -5.5 (c, 2.5 in MeOH). $[\alpha]_D$ -8.4 (c, 3 in $CHCl_3$). λ_{max} 212 (ϵ 18100); 272 (ϵ 10000) (EtOH/HCl) (Derep). λ_{max} 212 (ϵ 18100); 272 (ϵ 10000) (EtOH) (Derep).

Capon, R.J. *et al., J.A.C.S.*, 1984, **106**, 1819-1822 (*isol, uv, pmr, cmr*)
Wu, H. *et al., Bull. Chem. Soc. Jpn.*, 1986, **59**, 2495-2504 (*isol, pmr, cmr, uv, struct*)
Mangalindan, G.C. *et al., Planta Med.*, 2000, **66**, 364-365 (*activity*)

Agelocaissarine A_1 A-192

[927409-64-1]



$C_{22}H_{22}Br_4N_4O_9$ 806.053
Related to Aerothionin, A-158. Constit. of *Aplysina caissara*. Obt. as an inseparable mixt. with Agelocaissarine A_2.

3,3′-Diepimer: ***Agelocaissarine A_2***
[927409-65-2]
$C_{22}H_{22}Br_4N_4O_9$ 806.053
Constit. of *Aplysina caissara*.

Homologue: ***Agelocaissarine B_1***
[927409-66-3]
$C_{23}H_{24}Br_4N_4O_9$ 820.08
Constit. of *Aplysina caissara*. Has a C_5 bridging chain (-$CH_2CH(OH)CH_2CH_2CH_2$-) instead of C_4. Obt. as an inseparable mixt. with Agelocaissarine B_2.

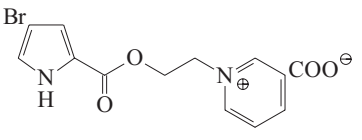
Homologue, 2″-deoxy: ***Aplysinone B***
[943837-23-8]
$C_{23}H_{24}Br_4N_4O_8$ 804.081
Constit. of *Aplysina gerardogreeni*. Amorph. solid. $[\alpha]_D^{25}$ -4 (c, 0.1 in Me_2CO). Has a C_5 bridging chain instead of C_4.

Homologue, 3,3′-diepimer: ***Agelocaissarine B_2***
[927409-67-4]
$C_{23}H_{24}Br_4N_4O_9$ 820.08
Constit. of *Aplysina caissara*. Has a C_5 bridging chain (-$CH_2CH(OH)CH_2CH_2CH_2$-) instead of C_4.

De Lira, T.O. *et al., J. Braz. Chem. Soc.*, 2006, **17**, 1233-1240 (*Agelocaissarines A_1,A_2,B_1,B_2*)
Hernández-Guerrero, C.J. *et al., Bioorg. Med. Chem.*, 2007, **15**, 5275-5282 (*Aplysinone B*)

Agelongine A-193

[163564-84-9]



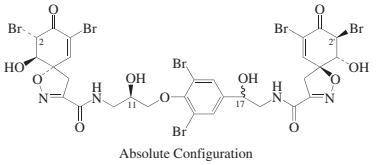
$C_{13}H_{11}BrN_2O_4$ 339.145
Alkaloid from *Agelas longissima* and *Axinella damicornis*. Exhibits antiserotonergic activity. Amorph. solid. Sol. MeOH, butanol. λ_{max} 262 (log ϵ 4.2) (MeOH).

Debromo: ***Daminine***
[862288-76-4]
$C_{13}H_{12}N_2O_4$ 260.249
Alkaloid from *Axinella damicornis*. Amorph. solid. Mp 193° dec.

Cafieri, F. *et al., Bioorg. Med. Chem. Lett.*, 1995, **5**, 799-804 (*isol, uv, pmr, cmr*)
Aiello, A. *et al., Tetrahedron*, 2005, **61**, 7266-7270 (*Daminine*)

Agelorin A A-194

[149998-47-0]



Absolute Configuration

$C_{29}H_{26}Br_6N_4O_{11}$ 1085.969
Hydrol. prod. of Fistularin 3, F-70 on standing. Metab. from the tropical marine sponge *Agelas oroides*. Shows antibacterial activity. Amorph. off-white powder. $[\alpha]_D^{25}$ -17.1 (c, 1.26 in Me_2CO). λ_{max} 220 (ϵ 12600); 250 (ϵ 7740) (EtOH) (Berdy).

11,17-Dideoxy: ***11,17-Dideoxyagelorin A***
$C_{29}H_{26}Br_6N_4O_9$ 1053.97
Isol. from the sponge *Suberea* aff. *praetensa*.

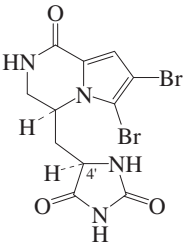
2,2′-Diepimer: ***Agelorin B***
[150133-30-5]
$C_{29}H_{26}Br_6N_4O_{11}$ 1085.969
Isol. from *Agelas oroides*. Shows antibacterial activity. Amorph. powder. $[\alpha]_D^{25}$ +50 (c, 0.27 in Me_2CO). λ_{max} 215 (ϵ 12570); 250 (ϵ 7940) (EtOH) (Berdy).

2,2′-Diepimer, 11,17-dideoxy: ***11,17-Dideoxyagelorin B***
$C_{29}H_{26}Br_6N_4O_9$ 1053.97
Isol. from the sponge *Suberea* aff. *praetensa*.

König, G.M. *et al., Heterocycles*, 1993, **36**, 1351 (*isol, uv, ir, pmr, cmr, ms*)
Kijjoa, A. *et al., Z. Naturforsch., C*, 2001, **56**, 1116-1119 (*11,17-Dideoxyagelorins*)
Rogers, E.W. *et al., J. Nat. Prod.*, 2005, **68**, 891-896 (*stereochem*)
Bardhan, S. *et al., Org. Lett.*, 2006, **8**, 927-930 (*stereochem*)

Agesamide A A-195

[911296-34-9]



Relative Configuration

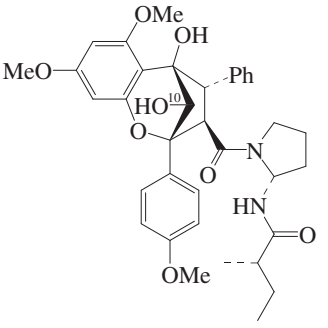
$C_{11}H_{10}Br_2N_4O_3$ 406.033
Related to Cyclooroidin, C-887. Isol. from an *Agelas* sp. Amorph. solid. $[\alpha]_D^{20}$ +3.2 (c, 0.5 in MeOH). λ_{max} 204 (ϵ 12000); 282 (ϵ 2800) (MeOH).

4′-Epimer: ***Agesamide B***
[911296-35-0]
$C_{11}H_{10}Br_2N_4O_3$ 406.033
Isol. from an *Agelas* sp. Amorph. solid. $[\alpha]_D^{20}$ +2.8 (c, 0.5 in MeOH). λ_{max} 204 (ϵ 12300); 282 (ϵ 3050) (MeOH).

Tsuda, M. *et al., Org. Lett.*, 2006, **8**, 4235-4238 (*isol, pmr, cmr*)
Trost, B.M. *et al., Org. Lett.*, 2007, **9**, 2357-2359 (*synth*)

Aglaforbesine A A-196

[177262-33-8]



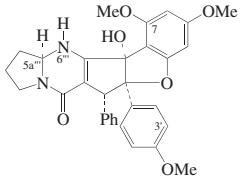
$C_{36}H_{42}N_2O_8$ 630.736
Alkaloid from *Aglaia forbesii*. Amorph. solid. $[\alpha]_D^{20}$ -18 (c, 1 in MeOH). λ_{max} 271 (log ϵ 3.25) (MeOH).

10-Epimer: ***Aglaforbesine B***
[177468-86-9]
$C_{36}H_{42}N_2O_8$ 630.736
Alkaloid from *Aglaia forbesii*. Amorph. solid. $[\alpha]_D^{20}$ +1 (c, 1 in MeOH). λ_{max} 270 (log ϵ 3.25) (MeOH).

Dumontet, V. *et al., Tetrahedron*, 1996, **52**, 6931-6942 (*isol, uv, ir, pmr, cmr*)

Aglaiastatin A-197

Aglaroxin D
[176785-78-7]



Absolute Configuration

$C_{31}H_{30}N_2O_6$ 526.588
Isol. from leaves of *Aglaia odorata* and *Aglaia roxburghiana*. Protein synthesis inhibitor. K-Ras transformed fibroblast morphology inducer. Powder + $1\frac{1}{2}H_2O$. Mp 157-160°. $[\alpha]_D^{23}$ +59.7 (c, 0.3 in MeOH). λ_{max} 281 (ϵ 4163); 304 (ϵ 4480) (MeOH).

5a‴,N$^{6‴}$-Didehydro: ***Dehydroaglaiastatin***. *Didehydroaglaiastatin*
[155595-93-0]
$C_{31}H_{28}N_2O_6$ 524.572
Isol. from roots of *Aglaia odorata* and twigs of *Aglaia duppereana* (Meliaceae). Protein synthesis inhibitor. Plates (CH_2Cl_2/MeOH). Mp 256-257°. $[\alpha]_D^{20}$ -50.1 (c, 0.41 in $CHCl_3$). λ_{max} 215 (ϵ 50000); 234 (ϵ 19000); 272 (ϵ 6000) (EtOH) (Derep).

*5a‴,N$^{6‴}$-Didehydro, 7-*O*-de-Me:* ***Marikarin***
[349642-85-9]
$C_{30}H_{26}N_2O_6$ 510.545
Alkaloid from *Aglaia gracilis*. Oil. $[\alpha]_D^{20}$ -45 (c, 0.3 in $CHCl_3$). λ_{max} 273 (MeOH).

3′-Hydroxy, 5a‴,N$^{6‴}$-didehydro: ***Didehydro-3′-hydroxyaglaiastatin***
[259143-58-3]
$C_{31}H_{28}N_2O_7$ 540.571
Isol. from *Aglaia duperreana*.

*3′-Hydroxy, 5a‴,N$^{6‴}$-didehydro, 7-*O*-de-Me:* ***3′-Hydroxymarikarin***
[349484-01-1]
$C_{30}H_{26}N_2O_7$ 526.545
Alkaloid from *Aglaia gracilis*. Oil. $[\alpha]_D^{20}$ -53 (c, 0.1 in $CHCl_3$). λ_{max} 279 (MeOH).

3′-Methoxy, 5a‴,N$^{6‴}$-didehydro: ***Aglaiformosanin***. *Didehydro-3′-methoxyaglaiastatin*
[371163-97-2]
$C_{32}H_{30}N_2O_7$ 554.598
Isol. from *Aglaia formosana*. Cytotoxic. Mp 260-262°. $[\alpha]_D^{22}$ -78.9 (c, 0.01 in $CHCl_3$). λ_{max} 213 (log ϵ 4.39); 256 (log ϵ 3.78); 274 (log ϵ 3.68) (MeOH).

Stereoisomer: [189343-27-9]
$C_{31}H_{30}N_2O_6$ 526.588
Isol. from twigs of *Aglaia duppereana*. $[\alpha]_D^{20}$ +45.7 (c, 0.19 in $CHCl_3$).

Kokpol, U. *et al., Chem. Comm.*, 1994, 773-774 (*isol, ir, pmr, cmr, cryst struct*)
Ohse, T. *et al., J. Nat. Prod.*, 1996, **59**, 650-652 (*isol, uv, ir, pmr, cmr, cryst struct*)
Pat. Coop. Treaty (WIPO), 1996, 96 04 284; *CA*, **124**, 335673h (*Aglaroxin D*)
Nugroho, B.W. *et al., Phytochemistry*, 1997, **44**, 1455-1461 (*isol, pmr, cmr, cd, ms*)
Watanabe, T. *et al., Chem. Comm.*, 1998, 1097-1098 (*synth*)
Chaidir, *et al., Phytochemistry*, 1999, **52**, 837-842 (*Didehydro-3′-hydroxyaglaiastatin*)
Watanabe, T. *et al., Heterocycles*, 2000, **53**, 1051-1064 (*synth*)
Greger, H. *et al., Phytochemistry*, 2001, **57**, 57-64 (*Marikarin, 3′-Hydroxymarikarin*)
Wang, S.-K. *et al., Planta Med.*, 2001, **67**, 555-557 (*Aglaiformosanin*)

Aglaidithioduline A-198

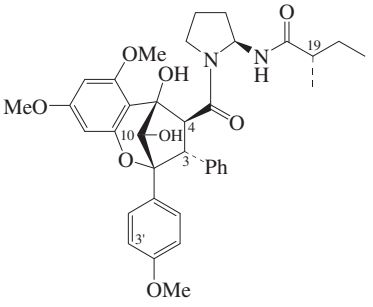
N,N′-*Bis[3-(methylthio)-2-propenoyl]putrescine. Hemileptagline*
MeSCH═CH
CONH$(CH_2)_4$NHCOCH═CHSMe
$C_{12}H_{20}N_2O_2S$ 256.368
Struct. of Hemileptagline revised in 2002.

(E,E)-form [261158-70-7]
Alkaloid from *Aglaia leptantha* and *Aglaia edulis*. Pale orange needles (MeOH). Mp 164-165°. λ_{max} 271 (log ϵ 4.6) (MeOH).

Saifah, E. *et al., Phytochemistry*, 1999, **52**, 1085-1088 (*Aglaidithioduline*)
Greger, H. *et al., J. Nat. Prod.*, 2000, **63**, 616-620 (*Hemileptagline*)
Detterback, R. *et al., Tetrahedron*, 2002, **58**, 6887-6893 (*synth*)

Aglaine B A-199

Aglaroxin K
[177262-32-7]
[251982-74-8 (Aglaroxin K)]



$C_{36}H_{42}N_2O_8$ 630.736
Alkaloid from *Aglaia argentea* and *Aglaia roxburghiana*. Amorph. powder. $[\alpha]_D^{20}$ -10 (c, 1 in MeOH). λ_{max} 272 (log ϵ 3.41) (MeOH).

5-Ac: ***5-Acetylaglaine B. Aglaroxin J***
[251982-73-7]
$C_{38}H_{44}N_2O_9$ 672.774
Alkaloid from the stem bark of *Aglaia roxburghiana*.

10-Ac: ***10-Acetylaglaine B***
[177468-88-1]
$C_{38}H_{44}N_2O_9$ 672.774
Alkaloid from the leaves of *Aglaia elliptica*. Amorph. powder. $[\alpha]_D^{20}$ +20.4 (c, 0.83 in MeOH).

3′-Hydroxy: ***3′-Hydroxyaglaine B***
[243136-41-6]
$C_{36}H_{42}N_2O_9$ 646.736
Alkaloid from *Aglaia odorata*. $[\alpha]_D^{20}$ -11.4 (c, 0.25 in $CHCl_3$).

10-Epimer: ***Deacetylaglaine A***
$C_{36}H_{42}N_2O_8$ 630.736
Alkaloid from *Aglaia gracilis*. Oil. $[\alpha]_D^{20}$ -14 (c, 0.1 in $CHCl_3$). Possible artifact. C-19 config. not determined. λ_{max} 271 ; 277 (sh) (MeOH).

10-Epimer, 10-Ac: ***Aglaine A***
[177262-31-6]
$C_{38}H_{44}N_2O_9$ 672.774
Alkaloid from *Aglaia argentea* and *Aglaia forbesii*. Amorph. powder. $[\alpha]_D^{20}$ -8 (c, 1 in MeOH). λ_{max} 272 (log ϵ 3.6) (MeOH).

*10-Epimer, 19,20-didehydro(*E*-):* ***Elliptifoline***
[319917-12-9]
$C_{36}H_{40}N_2O_8$ 628.721
Alkaloid from *Aglaia elliptifolia*. Cytotoxic agent. Powder. Mp 184-185°. $[\alpha]_D^{22}$ -88.9 (c, 0.6 in $CHCl_3$). λ_{max} 273 (log ϵ 3.36) (MeOH).

3,4-Diepimer: ***Aglaine C***
[177468-85-8]
$C_{36}H_{42}N_2O_8$ 630.736
Alkaloid from *Aglaia argentea*. Cryst. (MeOH). Mp 180°. $[\alpha]_D^{20}$ -105 (c, 1 in $CHCl_3$). λ_{max} 271 (log ϵ 3.27) (MeOH).

3,4-Diepimer, 3′-hydroxy: ***3′-Hydroxyaglaine C***
[243136-38-1]
$C_{36}H_{42}N_2O_9$ 646.736
Alkaloid from *Aglaia odorata*. $[\alpha]_D^{20}$ -103.4 (c, 0.43 in $CHCl_3$).

3,4-Diepimer, 19ξ-hydroxy: ***Aglaroxin L***
[251982-75-9]
$C_{36}H_{42}N_2O_9$ 646.736
Alkaloid from the stem bark of *Aglaia roxburghiana*. C-19 config. not determined.

3,4-Diepimer, 3′,19-dihydroxy: ***3′,19-Dihydroxyaglaine C***
[243136-39-2]
$C_{36}H_{42}N_2O_{10}$ 662.735
Alkaloid from *Aglaia odorata*. $[\alpha]_D^{20}$ -86 (c, 0.18 in $CHCl_3$). C-19 config. not determined.

3,4-Diepimer, 3′-methoxy, 19-hydroxy: ***19-Hydroxy-3′-methoxyaglaine C***
[243136-40-5]
$C_{37}H_{44}N_2O_{10}$ 676.762
Alkaloid from *Aglaia odorata*. $[\alpha]_D^{20}$ -111 (c, 0.18 in $CHCl_3$). C-19 config. not determined.

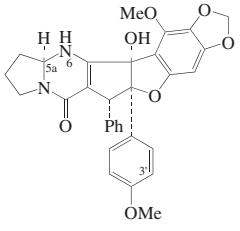
4,10-Diepimer, 10-Ac: ***4-Epiaglaine A***
[372119-00-1]
$C_{38}H_{44}N_2O_9$ 672.774

Alkaloid from the leaves of *Aglaia elliptica*. Amorph. powder. $[\alpha]_D^{20}$ -1 (c, 1 in $CHCl_3$).

Dumontet, V. *et al., Tetrahedron*, 1996, **52**, 6931-6942 (*isol, uv, ir, pmr, cmr*)
Molleyres, L.-P. *et al., Pestic. Sci.*, 1999, **55**, 486-503 (*Aglaroxins J,K,L*)
Nugroho, B.W. *et al., Phytochemistry*, 1999, **51**, 367-376 (*isol, derivs*)
Inada, A. *et al., Chem. Pharm. Bull.*, 2001, **49**, 1226-1228 (*4-Epiaglaine A, 10-Acetylaglaine B*)
Wang, S.-K. *et al., J. Nat. Prod.*, 2001, **64**, 92-94 (*Elliptifoline*)
Greger, H. *et al., Phytochemistry*, 2001, **57**, 57-64 (*Deacetylaglaine A*)

Aglaroxin I A-200

[251982-72-6]



Absolute Configuration

$C_{31}H_{28}N_2O_7$ 540.571

Alkaloid from the stem bark of *Aglaia roxburghiana*.

5a,6-Didehydro: ***Aglaroxin C***
[176785-77-6]
$C_{31}H_{26}N_2O_7$ 538.556
Alkaloid from *Aglaia roxburghiana*. Insecticide. λ_{max} 274 (ϵ 9600) (MeCN).

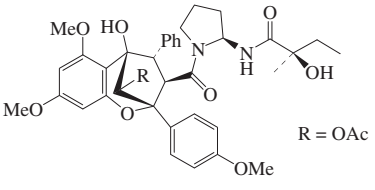
3′-Methoxy: ***Aglaroxin H***
[251982-71-5]
$C_{32}H_{30}N_2O_8$ 570.598
Alkaloid from the stem bark of *Aglaia roxburghiana*.

3′-Methoxy, 5a‴,6-didehydro: ***Aglaroxin G***
$C_{32}H_{28}N_2O_8$ 568.582
Alkaloid from *Aglaia roxburghiana*.

Pat. Coop. Treaty (WIPO), 1996, 96 04 284; *CA*, **124**, 335673h (*Aglaroxin C*)
Molleyres, L.-P. *et al., Pestic. Sci.*, 1999, **55**, 494-497 (*Aglaroxins G-I*)

Aglaxiflorin C A-201

[269739-77-7]



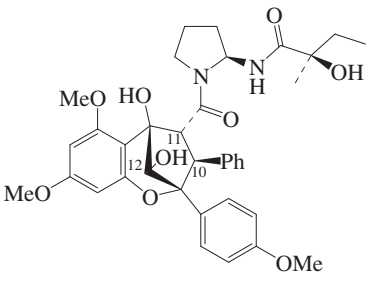
$C_{38}H_{44}N_2O_{10}$ 688.773

Flavagline compd. Alkaloid from *Aglaia laxiflora*. Cryst. ($CHCl_3$). Mp 147-149°. $[\alpha]_D^{25}$ +34.9 (c, 0.05 in $CHCl_3$). λ_{max} 222 (log ϵ 4.42); 272 (log ϵ 3.29) (MeOH).

Xu, Y.-J. *et al., J. Nat. Prod.*, 2000, **63**, 473-476

Aglaxiflorin D A-202

[269739-78-8]



$C_{36}H_{42}N_2O_9$ 646.736

Flavagline compd. Alkaloid from *Aglaia laxiflora*. Cryst. ($CHCl_3$). Mp 131-133°. $[\alpha]_D^{25}$ -102.1 (c, 0.04 in $CHCl_3$). λ_{max} 210 (log ϵ 5.62); 214 (log ϵ 5.66); 268 (log ϵ 4.66) (MeOH).

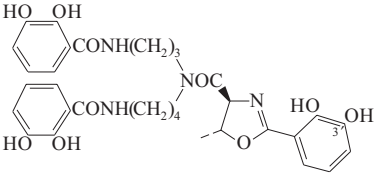
12-Epimer, 12-Ac: ***Aglaxiflorin B***
[269739-75-5]
$C_{38}H_{44}N_2O_{10}$ 688.773
Alkaloid from *Aglaia laxiflora*. Cryst. ($CHCl_3$). Mp 158-160°. $[\alpha]_D^{25}$ -105.5 (c, 0.13 in $CHCl_3$). λ_{max} 222 (log ϵ 4.47); 274 (log ϵ 3.66) (MeOH).

10,12-Diepimer, 12-Ac: ***Aglaxiflorin A***
[269739-76-6]
$C_{38}H_{44}N_2O_{10}$ 688.773
Alkaloid from *Aglaia laxiflora*. Cryst. ($CHCl_3$). Mp 217-219°. $[\alpha]_D^{25}$ +8.1 (c, 0.12 in $CHCl_3$). λ_{max} 214 (log ϵ 4.64); 268 (log ϵ 3.73) (MeOH).

Xu, Y.-J. *et al., J. Nat. Prod.*, 2000, **63**, 473-476

Agrobactin A-203

[70393-50-9]



$C_{32}H_{36}N_4O_{10}$ 636.657

Isol. from *Agrobacterium tumefaciens*. Siderophore. Cryst. (EtOAc/hexane). Sol. H_2O; fairly sol. MeOH. Dec. at 108-112°. λ_{max} 252 ; 316 (H_2O) (Berdy).

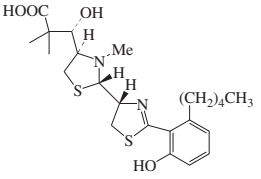
3′-Deoxy: ***Parabactin***. *Parabactin A*
[74149-70-5]
$C_{32}H_{36}N_4O_9$ 620.658
From *Paracoccus denitrificans*. Siderophore with antitumour and antiviral activity. Iron chelator. Cryst. (EtOAc/hexane). Sol. MeOH, Et_2O, bases; poorly sol. H_2O. Mp 114-117°. $[\alpha]_D^{21}$ +99.6 (c, 1.8 in MeOH). Formerly given a struct. with the oxazole ring in open-form under the name Parabactin A. λ_{max} 250 (ϵ 26600); 310 (ϵ 11000) (EtOH) (Berdy). λ_{max} 208 (ϵ 50000); 310 (ϵ 7700) (pH 7 buffer) (Berdy). λ_{max} 210 (ϵ 56800); 253 (ϵ 27300); 319 (ϵ 8200) (pH 1.5 buffer) (Berdy).

[54135-85-2]

Tait, G.H. *et al., Biochem. J.*, 1975, **146**, 191 (*Parabactin*)
Ong, S.A. *et al., J. Biol. Chem.*, 1979, **254**, 1860 (*isol, props*)
Sciortino, C.V. *et al., J. Lab. Clin. Med.*, 1980, **96**, 1081 (*props*)
Peterson, T. *et al., J.A.C.S.*, 1980, **102**, 7715 (*synth, struct*)
Eng-Wilmot, D.L. *et al., J.A.C.S.*, 1980, **102**, 7719 (*cryst struct*)
Neilands, J.B. *et al., Methods Enzymol.*, 1983, 94 (*rev*)
Bergeron, R.J. *et al., Biochem. Biophys. Res. Commun.*, 1984, **121**, 848 (*activity*)
Nagao, Y. *et al., J.C.S. Perkin 1*, 1984, 183 (*Parabactin*)
Bergeron, R.J. *et al., J.O.C.*, 1985, **50**, 2780 (*synth*)
Bergeron, R.J. *et al., Cancer Res.*, 1987, **47**, 6010 (*Parabactin, pharmacol*)
Bergeron, R. *et al., Blood*, 1993, **82**, 2552 (*Parabactin, pharmacol*)

Agrochelin A-204

[247115-74-8]



Relative Configuration

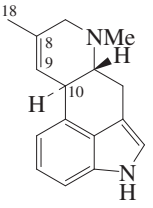
$C_{23}H_{34}N_2O_4S_2$ 466.665

Alkaloid from a marine *Agrobacterium* sp. Cytotoxic agent. Siderophore. Pale yellow oil. $[\alpha]_D^{25}$ -20.5 (c, 0.2 in $CHCl_3$). Chelates $Zn^{2\oplus}$ ion. λ_{max} 210 (log ϵ 5.18); 264 (log ϵ 4.8) (MeOH).

Acebal, C. *et al., J. Antibiot.*, 1999, **52**, 983-987 (*isol*)
Canedo, L.M. *et al., Tet. Lett.*, 1999, **40**, 6841-6844 (*isol, uv, cd, pmr, cmr*)

Agroclavine A-205

8,9-Didehydro-6,8-dimethylergoline, 9CI



(-)-*form*

$C_{16}H_{18}N_2$ 238.332

(-)-*form* [548-42-5]
Alkaloid from ergot and from several spp. in the genera *Argyreia*, *Rivea*, *Cuscuta*, *Ipomoea* (Convolvulaceae). Prod. by *Penicillium* , *Aspergillus* and *Rhizopus* spp. CNS excitator acting by stimulation of sympathetic centres. Active against gram-positive bacteria. Mycotoxin. Sol. MeOH, $CHCl_3$, Py; fairly sol. C_6H_6; poorly sol. H_2O. Mp 208-209° dec. $[\alpha]_D$ -151 ($CHCl_3$). $[\alpha]_D$ -182 (Py). λ_{max} 225 (ϵ 29512); 284 (ϵ 7586); 293 (ϵ 6456) (MeOH) (Berdy).
► LD_{50} (mus, ipr) 25 mg/kg. KE6325000

Dihydro: see Festuclavine, F-49

18-Hydroxy: ***Elymoclavine***
[548-43-6]
$C_{16}H_{18}N_2O$ 254.331
Alkaloid from ergot and several other *Claviceps* spp. and from *Stictocardia tiliaefolia*, *Stictocardia campanulata*, *Argyreia* spp. and several other spp.in the Convolvulaceae. Prod. by *Penicillium aurantiovirens.* 5HT receptor antagonist. CNS excitatory agent acting by stimulation of sympathetic centres. Mycotoxin. Sol. MeOH, $CHCl_3$; fairly sol. C_6H_6; poorly sol. H_2O. Mp 250-252° dec. $[\alpha]_D$ -152 (c, 1 in Py). λ_{max} 227 (ϵ 20417); 283 (ϵ 6918); 293 (ϵ 5754) (MeOH) (Berdy).

► KE6340000

18-Hydroxy, O-*β-D-fructofuranoside: Elymoclavine* O-*β-D-fructofuranoside*
[28986-92-7]
[121844-72-2]
$C_{22}H_{28}N_2O_6$ 416.473
Isol. from the *Claviceps* strain SD 58 grown in a culture medium containing saccharose. Amorph. Prob. artifact formed in a secondary process from Elymoclavine and fructose from saccharose in the culture medium.

18-Hydroxy, O-*[β-D-fructofuranosyl-(2→1)-β-D-fructofuranoside]: Elymoclavine* O-*β-D-fructofuranosyl-(2→1)-*O-*β-D-fructofuranoside*
[121864-94-6]
$C_{28}H_{38}N_2O_{11}$ 578.615
Isol. from saprophytic cultures of *Claviceps* strain SD 58 and *Claviceps purpurea* strain 88 EP on sucrose medium.

18-Hydroxy, O-*4-nitrobenzoyl:* Mp 176-177° dec. $[\alpha]_D^{20}$ -127 (c, 0.4 in $CHCl_3$).

*18-Hydroxy, 5,10-didehydro: 4,6,7,8-Tetrahydro-7-methylindolo[4,3-*fg*]quinoline-9-methanol.* ***Dehydroelymoclavine***
[141869-64-9]
$C_{16}H_{16}N_2O$ 252.315
Alkaloid from roots of *Securidaca longipedunculata.*

10-Epimer: ***Agroclavine I***
[82597-81-7]
$C_{16}H_{18}N_2$ 238.332
Metab. of *Penicillium kapuscinskii* strain UCM F-2156D. λ_{max} 211 (sh) (ϵ 14600); 225 (ϵ 25500); 276 (sh) (ϵ); 282 (ϵ 5470); 292 (ϵ 4560) (MeOH) (Derep).

10-Epimer, N^1*-methoxy:* ***1-Methoxyagroclavine I***
[207349-44-8]
$C_{17}H_{20}N_2O$ 268.358
Prod. by *Penicillium* sp. WC75209. Inhibitor of Lck tyrosine kinase. $[\alpha]_D$ -63 (c, 0.08 in MeOH). λ_{max} 228 ; 282 (MeOH).

10-Epimer, 8β,9β-epoxide: ***Epoxyagroclavine I***
[82564-34-9]
$C_{16}H_{18}N_2O$ 254.331
Metab. from *Penicillium kapuscinskii* and *Penicillium sizovae* VKM.F1073. Mycotoxin. λ_{max} 211 (sh) (ϵ 14600); 225 (ϵ 25500); 276 (sh) (ϵ); 282 (ϵ 5470); 292 (ϵ 4560) (MeOH) (Derep).

(±)-*form*
Synthetic. Mp 189-191° dec.

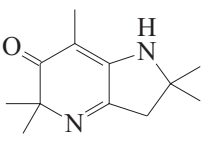
18-Hydroxy: Synthetic. Cryst. ($CHCl_3$/MeOH). Mp 207-210° dec.

10-Epimer: Synthetic. Cryst. (Et_2O). Mp 157-158° (152-154°).

Stoll, A. *et al., Helv. Chim. Acta*, 1954, **37**, 1815-1825 (*Elymoclavine, isol, uv*)
Schreier, E. *et al., Helv. Chim. Acta*, 1958, **41**, 1984-1997 (*Elymoclavine, config*)
Floss, H.G. *et al., Z. Naturforsch., B*, 1967, **22**, 399-402 (*Elymoclavin fructoside*)
Inoue, T. *et al., Chem. Pharm. Bull.*, 1972, **20**, 409-411 (*ms*)
Chao, J.-M. *et al., Phytochemistry*, 1973, **12**, 2435-2440 (*occur*)
Bach, N.J. *et al., J.O.C.*, 1974, **39**, 1272-1276 (*pmr, cmr*)
Maier, W. *et al., Biochem. Physiol. Pflanz.*, 1978, **172**, 531-536 (*biosynth*)
Wurst, M. *et al., J. Chromatogr.*, 1978, **150**, 477; 1979, **174**, 401-407 (*hplc*)
Mrtek, R.G. *et al., Phytochemistry*, 1978, **7**, 1535 (*Elymoclavine, pmr*)
Saini, M. *et al., Phytochemistry*, 1978, **17**, 799 (*biosynth*)
Kiguchi, T. *et al., Heterocycles*, 1984, **22**, 43-45; 1985, **23**, 2891-2893 (*Agroclavine I, synth*)
Sakharovsky, V.G. *et al., Tet. Lett.*, 1984, **25**, 109-112 (*Agroclavine I, Epoxyagroclavine I*)
Eich, E. *et al., Arzneim.-Forsch.*, 1985, **35**, 1760-1762 (*activity*)
Kozikowski, A.P. *et al., J.A.C.S.*, 1985, **107**, 2569-2571 (*Agroclavine I, synth*)
Somei, M. *et al., Chem. Pharm. Bull.*, 1986, **34**, 948-950 (*synth*)
Wheeler, W.J. *et al., Tet. Lett.*, 1986, **27**, 3469-3470 (*synth*)
Somei, M. *et al., Heterocycles*, 1987, **26**, 895-898; 1997, **45**, 1263-1266 (*Agroclavine I, synth*)
Flieger, M. *et al., J. Nat. Prod.*, 1989, **52**, 506-510; 1991, **54**, 390-395 (*cmr, Elymoclavine fructosides*)
Ninomiya, I. *et al., Chem. Pharm. Bull.*, 1991, **39**, 23-30 (*Agroclavine I, synth*)
Costa, C. *et al., J. Het. Chem.*, 1992, **29**, 1641-1647 (*Dehydroelymoclavine*)
Padmanabha, R. *et al., Bioorg. Med. Chem. Lett.*, 1998, **8**, 569-574 (*1-Methoxyagroclavine*)
Yamada, F. *et al., Heterocycles*, 2007, **72**, 599-620 (*Agroclavine I, synth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, AEY375; EAJ000 (*Agroclavine, Elymoclavine*)

Agrocybenine A-206

*1,2,3,5-Tetrahydro-2,2,5,5,7-pentamethyl-6*H*-pyrrolo[2,3-*b*]pyridin-6-one, 9CI*
[178764-92-6]

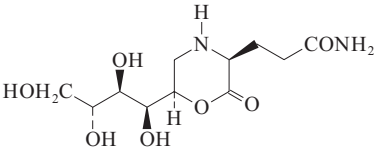


$C_{12}H_{18}N_2O$ 206.287
Alkaloid from the edible Korean mushroom yangimatusutake (*Agrocybe cylindracea*). Prolyl endopeptidase inhibitor. Mycotoxin. Yellow powder. λ_{max} 223 (ϵ 16800); 333 (ϵ 9200) (MeOH).

Koshino, H. *et al., Tet. Lett.*, 1996, **37**, 4549 (*isol, uv, ir, pmr, cmr, N-15 nmr, struct*)

Agropine A-207

2-Oxo-6-(1,2,3,4-tetrahydroxybutyl)-3-morpholinepropanamide, 9CI
[70699-77-3]

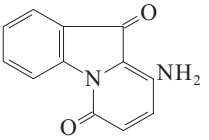


$C_{11}H_{20}N_2O_7$ 292.288
Struct. revised in 1982. Obt. from crown gall tumours.

Coxon, D.T. *et al., Tet. Lett.*, 1980, 495 (*synth, spectra*)
Tate, M.E. *et al., Carbohydr. Res.*, 1982, **104**, 105 (*ms, struct*)
Chilton, W.S. *et al., Phytochemistry*, 1995, **40**, 619 (*occur*)

Ailanindole A-208

*9-Aminopyrido[1,2-*a*]indole-6,10-dione, 9CI*
[159903-51-2]

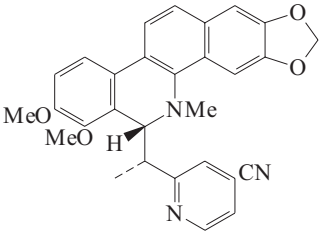


$C_{12}H_8N_2O_2$ 212.207
Alkaloid from the wood of *Ailanthus malabarica*. Orange needles (MeOH). Mp 300°. Intense green fluorescence in org. solvs. λ_{max} 238 (log ϵ 4.16); 252 (sh) (log ϵ 3.97); 296 (sh) (log ϵ 3.33); 452 (log ϵ 3.83); 474 (log ϵ 3.82) (MeOH).

Aono, H. *et al., Phytochemistry*, 1994, **37**, 579-584 (*isol, uv, ir, pmr, cmr, ms*)

Ailanthoidine A-209

[86003-22-7]

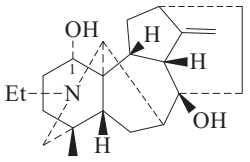


$C_{29}H_{25}N_3O_4$ 479.534
Alkaloid from the bark of *Zanthoxylum ailanthoides* (Rutaceae). Mp 260-263°. $[\alpha]_D$ 0.

Ishii, H. *et al., Chem. Pharm. Bull.*, 1991, **39**, 1340 (*isol, pmr, cmr, cryst struct*)

Ajabicine A-210

[148225-24-5]



$C_{22}H_{33}NO_2$ 343.508

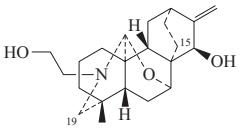
Unique methyleneaconitane struct. Alkaloid from leaves of *Delphinium ajacis* (Ranunculaceae). Amorph.

1-Ketone: ***Actaline***
[122279-81-6]
$C_{22}H_{31}NO_2$ 341.492
Alkaloid from the epigeal part of *Aconitum talassicum* (Ranunculaceae). Cryst. (hexane). Mp 125-127°.

Nishanov, A.A. *et al., Khim. Prir. Soedin.*, 1989, **25**, 39; *Chem. Nat. Compd. (Engl. Transl.)*, 1989, **25**, 32 (*isol, ir, pmr, ms, cryst struct*)
Joshi, B.S. *et al., Tet. Lett.*, 1993, **34**, 1441 (*isol, pmr, cmr, struct*)

Ajaconine, 9CI A-211

[545-61-9]



Absolute configuration

$C_{22}H_{33}NO_3$ 359.508
Alkaloid from *Delphinium virescens* and *Delphinium carolinianum* (whole plants), the roots of *Delphinium tatsienense*, and the seeds of *Delphinium consolida, Delphinium ajacis* and *Consolida ambigua* (Ranunculaceae). Also isol. from *Consolida oliveriana*. Mp 167°. $[\alpha]_D$ -122 (c, 1.75 in EtOH). pK_{a1} 11.8 (50% MeOH aq.). pK_{a1} 11.3 (80% EtOH aq.).

Sulfate (2:1):
Cryst. + $7H_2O$ (Me_2CO aq.). Mp 113° (hydrate) Mp 231° (anhyd.).

15-Epimer: ***15-Epiajaconine****. Deacetylspiramine F*
$C_{22}H_{33}NO_3$ 359.508
Alkaloid from *Spiraea japonica* var. *ovalifolia*. Plates (Me_2CO). Mp 149-151°.

15-Epimer, 15-Ac: ***Spiramine F***
[142750-37-6]
$C_{24}H_{35}NO_4$ 401.545
Alkaloid from roots of *Spiraea japonica* var. *acuminata* (Rosaceae). Amorph. $[\alpha]_D^{18}$ -101 (c, 2.5 in $CHCl_3$).

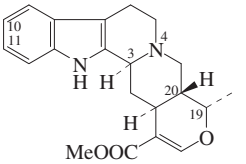
15-Epimer, di-Ac: ***Spiramine E***
[142750-36-5]
$C_{26}H_{37}NO_5$ 443.582
Alkaloid from roots of *Spiraea japonica* var. *acuminata* (Rosaceae). Amorph. $[\alpha]_D^{20}$ -97 (c, 1.9 in $CHCl_3$).

15-Epimer, 19-oxo, 15-Ac: ***Spiramine R***
[162858-00-6]
$C_{24}H_{33}NO_5$ 415.528
Alkaloid from roots of *Spiraea japonica* var. *incisa* (Rosaceae). Needles (EtOAc). Mp 190-192°. $[\alpha]_D$ -180 (c, 0.39 in $CHCl_3$).

Keller, O. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1913, **251**, 207; *CA*, **8**, 674 (*isol*)
Dvornik, D. *et al., Tetrahedron*, 1961, **14**, 54 (*isol, ir, struct*)
Scott, A.I. *et al., Tetrahedron*, 1971, **27**, 4787 (*cd*)
Sastry, S.D. *et al., Chem. Ind. (London)*, 1972, 381 (*ms*)
Pelletier, S.W. *et al., Heterocycles*, 1979, **12**, 779; 1981, **16**, 747; 1983, **20**, 1347 (*occur*)
Pelletier, S.W. *et al., J. Nat. Prod.*, 1980, **43**, 395 (*isol, ir, pmr*)
Hao, X.-J. *et al., Heterocycles*, 1993, **36**, 825 (*Spiramine E, Spiramine F*)
Hao, X.-J. *et al., Phytochemistry*, 1995, **38**, 545 (*Spiramine R*)
Ulubelen, A. *et al., J. Nat. Prod.*, 1996, **59**, 907 (*cmr*)
Zuo, G.Y. *et al., Heterocycles*, 2001, **55**, 487-493 (*15-Epiajaconine*)
González-Coloma, A. *et al., Chem. Biodiversity*, 2004, **1**, 1327-1335 (*isol, pmr*)

Ajmalicine A-212

Methyl 16,17-didehydro-19-methyloxayohimban-16-carboxylate, 9CI. Tetrahydroserpentine. Raubasine. δ-Yohimbine. Vinceine. Vincaine†. Py-tetrahydroserpentine. Lamuran



Absolute Configuration

$C_{21}H_{24}N_2O_3$ 352.432
Log P 2.76 (calc).

(-)-form [483-04-5]
Alkaloid from *Rauwolfia serpentina*, many other *Rauwolfia* spp., *Catharanthus roseus* and many other spp. in the Apocynaceae. Antidiuretic agent, CNS depressant. Vasodilator. Has been used to treat peripheral and cerebral vascular disorders. Active against fungi. Prisms (MeOH). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 259° dec. $[\alpha]_D$ -66 ($CHCl_3$). λ_{max} 227 (ε 40740); 246 (sh) (ε 11750); 280 (ε 6920); 292 (ε 6160) (MeOH) (Berdy).
▶ LD_{50} (mus, orl) 400 mg/kg. Human systemic effects by ingestion. AX7875000

Hydrochloride:
Leaflets (EtOH). Mp 289°. $[\alpha]_D^{20}$ -17 (c, 0.5 in MeOH).

3-Epimer: ***3-Isoajmalicine***
[483-03-4]
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from *Mitragyna* and *Uncaria* spp. (Rubiaceae). Needles (Et_2O). Mp 193-194°. λ_{max} 225 (log ε 4.61); 250 (log ε 4.14); 282 (log ε 3.93); 291 (log ε 3.87) (EtOH).

19-Epimer: ***Mayumbine****. 19-Epiajmalicine*
[25532-45-0]
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from *Pseudocinchona mayumbensis* (syn. *Corynanthe mayumbensis*), *Uncaria elliptica* and *Rauwolfia yunnanensis* (Rubiaceae, Rubiaceae, Apocynaceae). Mp 216°. $[\alpha]_D$ -68 (Py). λ_{max} 227 (log ε 4.6); 280 (log ε 3.84); 292 (log ε 3.8) (MeOH).

19-Epimer, hydrochloride: Mp 293-294°. $[\alpha]_D^{20}$ -96 (MeOH).

19-Epimer, 20,21-didehydro: see Cathenamine, C-207

20-Epimer: ***Tetrahydroalstonine***
[6474-90-4]
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from *Alstonia*, *Amsonia*, *Cabucala*, *Catharanthus*, *Mitragyna*, *Rauwolfia*, *Uncaria*, *Rhazya* and *Voacanga* spp. Active against gram-positive bacteria. Lustrous plates (EtOH aq.). Mp 230-231°. $[\alpha]_D^{27}$ -108 (c, 0.5 in $CHCl_3$). λ_{max} 226 (log ε 4.64); 248 (sh) (log ε 4.07); 272 (log ε 3.78); 280 (sh) (log ε 3.85); 291 (log ε 3.83) (MeOH) (Berdy).

20-Epimer, N^b*-oxide(*R-*):* ***Tetrahydroalstonine (4*R*)-*N*-oxide***
[41590-28-7]
$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from *Uncaria* spp. (Rubiaceae). Cryst. (Me_2CO/Et_2O). Mp 172-174° dec. $[\alpha]_D^{20}$ +33.8 (c, 0.11 in MeOH). λ_{max} 224 (ε 43400); 245 (sh) (ε 11800); 273 (sh) (ε 7100); 282 (ε 7450); 290 (ε 6400) (EtOH).

20-Epimer, N^b*-Me:* ***Melinonine A***. N^b*-Methyltetrahydroalstonine*
[6801-41-8]
$C_{22}H_{27}N_2O_3^{\oplus}$ 367.467
Quaternary alkaloid from *Strychnos melinoniana* and *Rauwolfia volkensii* (Loganiaceae, Apocynaceae). Hygroscopic needles ($EtOH/Me_2CO$) (as chloride). Mp 260-261° (chloride). $[\alpha]_D^{20}$ -120 (H_2O) (chloride). λ_{max} 225 (log ε 4.8); 279 (log ε 4); 290 (log ε 3.8) (MeOH).

3,19-Diepimer: ***19-Epi-3-isoajmalicine***
[25532-46-1]
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from *Uncaria elliptica, Uncaria attenuata* and *Catharanthus roseus* (Rubiaceae, Apocynaceae). λ_{max} 225 ; 273 (sh) ; 283 ; 290 (MeOH).

3,20-Diepimer: ***Akuammigine***
[642-17-1]
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from *Picralima nitida (Picralima klaineana)* and some *Uncaria* spp. (Apocynaceae, Rubiaceae). Mp 125° (113°). $[\alpha]_D^{20}$ -44.4 (EtOH). $[\alpha]_D^{18.5}$ -42 (c, 1.6 in EtOH).

3,20-Diepimer, hydrochloride: Mp 287°. $[\alpha]_D^{20}$ -38 (MeOH).

*3,20-Diepimer, (4*R*)-*N*-oxide:* ***Akuammigine (4*R*)-*N*-oxide***
[41590-26-5]
$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from an *Uncaria* sp. Cryst. (Me_2CO/Et_2O). Mp 214-215°. $[\alpha]_D^{20}$ -20 (c, 0.11 in MeOH). $[\alpha]_D^{20}$ -46 (c, 0.41 in Py). λ_{max} 223 (ε 43000); 245 (sh) (ε 13150); 281 (ε 8300); 291 (ε 6600) (EtOH).

*3,20-Diepimer, (4S)-*N*-oxide:* ***Akuammigine (4*S*)-*N*-oxide***

[41590-27-6]
$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from an *Uncaria* sp. (Rubiaceae). Cryst. (Me_2CO/Et_2O). Mp 195-197° dec. $[\alpha]_D^{20}$ -112 (c, 0.12 in MeOH). λ_{max} 224 (ε 43400); 246 (sh) (ε 10200); 273 (sh) (ε 7900); 282 (ε 8350); 290 (ε 7150) (EtOH).

19,20-Diepimer: ***Rauniticine****. Ervine†*
[5299-09-2]
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from *Rauwolfia nitida, Uncaria elliptica, Uncaria attenuata, Vinca libanotica, Vinca major* and *Veratrum album lobelianum* (Apocynaceae, Rubiaceae, Liliaceae). Cryst. (MeOH). Mp 233-235°. $[\alpha]_D$ -6.6 (Py). $[\alpha]_D$ -38.4 ($CHCl_3$). λ_{max} 228 (log ε 4.65); 246 (sh) (log ε 4.09); 282 (log ε 3.91); 288 (log ε 3.79) (EtOH).

19,20-Diepimer, 14α-hydroxy: ***14α-Hydroxyrauniticine***
[77101-58-7]
$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from the leaves of *Uncaria attenuata* and *Uncaria elliptica* (Rubiaceae). Plates (MeOH). Mp 174-175° dec. $[\alpha]_D$ -17.5 (c, 0.1 in MeOH). Originally proposed as 14β-Hydroxy-3-isorauniticine.

3,19,20-Triepimer: ***3-Isorauniticine***
[6870-40-2]
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from *Corynanthe mayumbensis* and the leaves of *Uncaria elliptica* (Apocynaceae, Rubiaceae). Cryst. + ½ H_2O (as hydrochloride). Mp 277° (hydrochloride). $[\alpha]_D$ +25 (c, 1 in MeOH) (as hydrochloride).

(±)-*form* [24196-16-5]
Synthetic. Mp 228-231°.

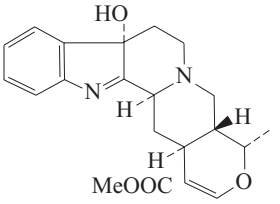
Hydrochloride: Mp 285-286° dec.

3,20-Diepimer: [20361-85-7]
Synthetic. Mp 143° (125-126°).

Henry, T.A. *et al., J.C.S.*, 1932, 2759-2768 (*Akuammigine, isol*)
Schlittler, E. *et al., Helv. Chim. Acta*, 1952, **35**, 29-45 (*Melinonine A*)
Klohs, M.W. *et al., J.A.C.S.*, 1954, **76**, 1332-1334 (*isol, uv, ir*)
Robinson, R. *et al., J.C.S.*, 1954, 3479-3482 (*Akuammigine, isol, uv, ir, struct*)
Raymond-Hamet, *et al., C. R. Hebd. Seances Acad. Sci.*, 1961, **253**, 2776-2778 (*Akuammigine, pharmacol*)
Salkin, R. *et al., J. Pharm. Sci.*, 1961, **50**, 1038-1041 (*Rauniticine, isol, uv, ir, struct*)
Antonaccio, L.D. *et al., J.A.C.S.*, 1962, **84**, 2161-2169 (*ms*)
Shamma, M. *et al., J.A.C.S.*, 1963, **85**, 2507-2512 (*ir, pmr, config*)
Hesse, M. *et al., Helv. Chim. Acta*, 1965, **48**, 674-689 (*Melinonine A, ms*)
Finch, N. *et al., Tetrahedron*, 1966, **22**, 1327-1333 (*Rauniticine, uv, ord, stereochem*)
Laubie, M. *et al., Arzneim.-Forsch.*, 1969, **19**, 1820-1826 (*pharmacol*)
Winterfeld, E. *et al., Chem. Ber.*, 1969, **102**, 3558-3572 (*epimer, synth*)
Van Tamelen, E.E. *et al., J.A.C.S.*, 1969, **91**, 7359-7371 (*synth*)
Gutzwiller, J. *et al., J.A.C.S.*, 1971, **93**, 5907-5908 (*synth, ir, ms, pmr, Akuammigine*)
Merlini, L. *et al., Tetrahedron*, 1972, **28**, 5971-5975 (*Akuammigine oxides, Tetrahydroalstonine oxide, isol, synth*)
Levin, R.H. *et al., J.O.C.*, 1973, **38**, 1983-1992 (*cmr*)
Lohr, J.P. *et al., Arzneim.-Forsch.*, 1975, **25**, 870-873 (*metab*)
Wenkert, E. *et al., J.A.C.S.*, 1976, **98**, 3645-3655 (*Akuammigine, Tetrahydroalstonine, synth, cmr*)
Brown, R.T. *et al., J.C.S. Perkin 1*, 1976, 160-162 (*Mayumbine, Tetrahydroalstonine, synth*)
Brown, R.T. *et al., Chem. Comm.*, 1977, 636-638 (*synth, Akuammigine, Tetrahydroalstonine*)
Melchio, J. *et al., Tet. Lett.*, 1977, 315-316 (*Mayumbine, 3-Isorauniticine, bibl, config*)
Sakai, S. *et al., Chem. Pharm. Bull.*, 1978, **26**, 2596-2598 (*Akuammigine, 3-Isorauniticine, synth*)
Stöckigt, J. *et al., Phytochemistry*, 1979, **18**, 965-971 (*biosynth*)
Akinloye, B.A. *et al., Phytochemistry*, 1980, **19**, 307-311 (*Melinonine A*)
Ponglux, D. *et al., Phytochemistry*, 1980, **19**, 2013-2016 (*Rauniticine, isol, uv, ir, ms*)
Gutzwiller, J. *et al., Helv. Chim. Acta*, 1981, **64**, 1663-1671 (*synth*)
Wenkert, E. *et al., Acta Chem. Scand., Ser. B*, 1982, **36**, 607-611 (*stereochem, config*)
Kohl, W. *et al., Z. Naturforsch., B*, 1982, **37**, 1346-1351 (*3,19-diepimer, isol, uv, pmr, ms*)
Seguin, E. *et al., Helv. Chim. Acta*, 1983, **66**, 2059-2068 (*cd*)
Phillipson, J.D. *et al., Phytochemistry*, 1983, **22**, 1809-1813 (*3-Isorauniticine, Rauniticine, 3,19-diepimer, Tetrahydroalstonine N-oxide, isol*)
Massiot, G. *et al., Chem. Comm.*, 1984, 715-716 (*synth*)
Lala, P.K. *et al., J. Inst. Chem. (India)*, 1984, **56**, 42-47 (*ms*)
Palmisano, G. *et al., J.C.S. Perkin 1*, 1985, 923-926 (*19-Epiajmalicine, Mayumbine, synth, uv, ir, pmr, ms*)
Hatakeyama, S. *et al., Tet. Lett.*, 1985, **26**, 865-868 (*synth*)
Yamanaka, E. *et al., Chem. Pharm. Bull.*, 1986, **34**, 3713-3721 (*14α-Hydroxyrauniticine, synth, pmr*)
Naito, T. *et al., Heterocycles*, 1986, **24**, 2117-2120 (*synth*)
Mekkawi, A.G. *et al., Anal. Profiles Drug Subst.*, 1987, **16**, 731 (*rev*)
Morales-Rios, M.S. *et al., Magn. Reson. Chem.*, 1987, **25**, 377-395 (*cmr*)
Negwer, M. *et al., Organic-Chemical Drugs and their Synonyms, 6th edn., Akademie-Verlag*, 1987, 6133
Takano, S. *et al., Chem. Comm.*, 1988, 59-60 (*synth, Tetrahydroalstonine*)
Hirai, Y. *et al., J.A.C.S.*, 1988, **110**, 958-960 (*synth, Tetrahydroalstonine*)
Martin, S.F. *et al., J.A.C.S.*, 1988, **110**, 5925-5927 (*Tetrahydroalstonine, synth, bibl*)
Baggiolini, E.G. *et al., Tetrahedron*, 1988, **44**, 3203-3208 (*19-Epiajmalicine, Mayumbine, synth, ir, pmr, ms*)
Oppolzer, W. *et al., J.A.C.S.*, 1991, **113**, 9660-9661 (*3-Isorauniticine, synth*)
Hanessian, S. *et al., J.O.C.*, 1991, **56**, 2947-2949 (*19-Epiajmalicine, Mayumbine, synth*)
Honda, T. *et al., J.C.S. Perkin 1*, 1993, 539-540 (*19-Epiajmalicine, Mayumbine, synth*)
Lögers, M. *et al., J.A.C.S.*, 1995, **117**, 9139-9150 (*synth*)
Arbain, D. *et al., Aust. J. Chem.*, 1998, **51**, 961-964 (*Rauniticine, 14-Hydroxyrauniticine, isol, pmr, cryst struct*)
Laus, G. *et al., Helv. Chim. Acta*, 2008, **91**, 831-837 (*Akuammigine, cryst struct*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, AFG750

Ajmalicine hydroxyindolenine A-213

[5802-03-9]

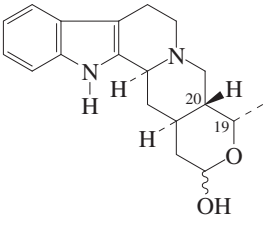


$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from *Catharanthus roseus* tissue culture (Apocynaceae).

Guéritte, F. *et al., J. Nat. Prod.*, 1983, **46**, 144-148 (*isol*)

Ajmalicinial A-214

[81737-77-1]



$C_{19}H_{24}N_2O_2$ 312.411
Alkaloid from *Strychnos johnsonii*. No phys. props. reported.

N^1*-Methoxycarbonyl:* ***Ajmalicidine***
[109031-00-7]
$C_{21}H_{26}N_2O_4$ 370.447
Alkaloid from the roots of *Rauwolfia serpentina* (Apocynaceae). Plates (MeOH/EtOAc). Mp 235-236°. $[\alpha]_D^{20}$ +190 ($CHCl_3$). The struct. assigned is prob. incorrect. Proposed by Lounasmaa *et al* to be possibly identical with Ajmalicinine, A-215. λ_{max} 208 ; 225 ; 285 (no solvent reported).

N^1*-Methoxycarbonyl, Ac:* [109031-01-8]
Needles. Mp 251-252°.

20-Epimer. ***Tetrahydroalstonial***
[85717-32-4]
$C_{19}H_{24}N_2O_2$ 312.411
Alkaloid from *Strychnos johnsonii*. No phys. props. reported.

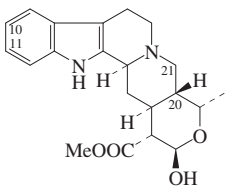
Stereoisomer (?): ***16-Descarbomethoxy-16,17-dihydro-17-hydroxy-19-epiajmalicine***
[78184-81-3]
$C_{19}H_{24}N_2O_2$ 312.411
Alkaloid from the bark of *Hunteria zeylanica* and the root bark of *Aspidosperma marcgravianum* (Apocynaceae). Mp 185°. $[\alpha]_D$ -86 (Py). Stereochem. unclear. Shown in both papers as having same 19-config. as Ajmalicine, but both papers refer to it as an 19-epiajmalicine. May be identical with Ajmalicinial.

Arambewela, L.S.R. *et al., Phytochemistry*, 1981, **20**, 349-350 (*Descarbomethoxydihydrohydroxyepiajmalicine*)

Chatterjee, A. *et al., J.O.C.*, 1982, **47**, 3113-3117 (*synth, pmr*)
Robert, G.M.T. *et al., J. Nat. Prod.*, 1983, **46**, 694-707 (*Descarbomethoxydihydrohydroxyepiajmalicine*)
Palmisano, G. *et al., J.C.S. Perkin 1*, 1985, 923-926 (*synth, pmr, ms*)
Siddiqui, S. *et al., Phytochemistry*, 1987, **26**, 875-877 (*Ajmalicidine*)
Massiot, G. *et al., Phytochemistry*, 1987, **26**, 2839-2846 (*Ajmalicinial, Tetrahydroalstonial*)
Lounasmaa, M. *et al., Planta Med.*, 1994, **60**, 480-481 (*Ajmalicidine*)

Ajmalicinine A-215

[55529-55-0]



Absolute Configuration

$C_{21}H_{26}N_2O_4$ 370.447
Alkaloid from the root bark of *Cabucala striolata* and the stem bark of *Rauwolfia cumminsii* and *Rauwolfia caffra* (Apocynaceae).

11-Methoxy: ***Tetraphyllinine***
[23924-91-6]
$C_{22}H_{28}N_2O_5$ 400.474
Alkaloid from *Rauwolfia discolor* and from the leaves of *Neisosperma glomerata* (Apocynaceae). Plates (MeOH). Mp 231-234°. $[\alpha]_D^{20}$ -35 (c, 0.42 in Py).

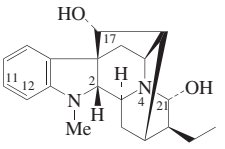
10,11-Dimethoxy: ***10,11-Dimethoxyajmalicinine***
[55511-11-0]
$C_{23}H_{30}N_2O_6$ 430.5
Alkaloid from the root bark of *Cabucala striolata* and the trunk bark of *Ochrosia moorei* (Apocynaceae).

Stereoisomer, 20,21-didehydro: ***16,17-Dihydro-17-hydroxy-19-epicathenamine***
[69284-02-2]
$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from *Guettarda eximia* (Rubiaceae). Isol. as an inseparable mixt. of two epimers at C-16 and/or C-17. Not named in the original papers.

Winternitz, F. *et al., Phytochemistry*, 1969, **8**, 1797-1802 (*Tetraphyllinine, synth, pmr, abs config*)
Bombardelli, E. *et al., Fitoterapia*, 1974, **45**, 183-187; *CA*, **83**, 25051u (*Ajmalicinine, Dimethoxyajmalicinine, isol, struct*)
Kan-Fan, C. *et al., Chem. Comm.*, 1978, 618-619 (*16,17-Dihydro-17-hydroxy-19-epicathenamine*)
Iwu, M.M. *et al., Phytochemistry*, 1978, **17**, 1651-1654 (*isol*)
Brown, R.T. *et al., Chem. Comm.*, 1979, 877-879 (*16,17-Dihydro-17-hydroxy-19-epicathenamine, synth*)
Ahond, A. *et al., J. Nat. Prod.*, 1981, **44**, 193-199 (*Dimethoxyajmalicinine*)
Seguin, E. *et al., J. Nat. Prod.*, 1982, **45**, 738-744 (*Tetraphyllinine, isol*)
Seguin, E. *et al., Helv. Chim. Acta*, 1983, **66**, 2059-2068 (*cd*)
Nasser, A.M.A.G. *et al., J. Ethnopharmacol.*, 1984, **11**, 99-117; *CA*, **102**, 3224m (*isol*)

Ajmaline, BAN, JAN A-216

Ajmalan-17,21-diol, 9CI. Ajimaline. Gilurytmal. Merabitol. Raugalline. Rauwolfine. Rytmalin. Tachmalin. Many other names
[4360-12-7]



Absolute Configuration

$C_{20}H_{26}N_2O_2$ 326.438
Alkaloid from *Rauwolfia serpentina* and most *Rauwolfia* spp., *Melodinus balansae* and *Tonduzia longifolia* (Apocynaceae). Antiarrhythmic (Class Ia) drug which functions by inhibition of glucose uptake by heart tissue mitochondria. Platelet activating factor antagonist. Antiinflammatory agent. Mp 158-160° (MeOH solvate) Mp 205-207° (anhyd.). $[\alpha]_D$ +144 ($CHCl_3$). Log P 1.26 (uncertain value) (calc).

▶ High doses may cause cardiac arrhythmias, coma and death. Adverse neurological, hepatic, and haematological effects also recorded. LD_{50} (rat, orl) 360 mg/kg. LD_{50} (rat, ipr) 94 mg/kg. AX8050000

Hydrochloride: [4410-48-4]
Amber prisms + $2H_2O$. Mp 133-134° Mp 253-255° (anhyd.).

▶ AX8100000

Hydrochloride (1:2):
Plates. Mp 305-306° dec.

Picrate:
Plates (EtOH). Mp 126-127° Mp 223° (anhyd.).

21-O-β-D-Glucopyranoside: ***Rauglucine***
[119365-83-2]
$C_{26}H_{36}N_2O_7$ 488.58
Alkaloid from *Rauwolfia serpentina* (Apocynaceae).

17-Ac: ***17-O-Acetylajmaline***
[19918-92-4]
$C_{22}H_{28}N_2O_3$ 368.475
Alkaloid from cell suspension cultures of *Rauwolfia serpentina*. Rods (Et_2O), cryst. (EtOH). Mp 150° (rods) Mp 214-215° (cryst.).

17-Ac, 21-O-β-D-glucopyranoside: ***Acetylrauglucine***
[119329-01-0]
$C_{28}H_{38}N_2O_8$ 530.617
Alkaloid from *Rauwolfia serpentina* (Apocynaceae). $[\alpha]_D^{20}$ +17 (c, 0.36 in EtOH).

21-Ac:
Needles (EtOAc). Mp 190-192°.

Di-Ac: [19775-56-5]
Needles (metastable) or rods. Mp 132° Mp 187-189° (double Mp).

17-O-(3,4,5-Trimethoxybenzoyl): ***Ajmalimine. Willicourtine***
[59846-31-0]
[110941-51-0]
$C_{30}H_{36}N_2O_6$ 520.624
Alkaloid from *Rauwolfia obscura*, *Rauwolfia serpentina* and *Rauwolfia vomitoria* (Apocynaceae). Needles (MeOH/EtOAc). Mp 188-189°. $[\alpha]_D^{20}$ +105. Struct. of Ajmalimine revised in 2001.

17-O-Chloroacetyl: ***Lorajmine, INN***
[47562-08-3]
$C_{22}H_{27}ClN_2O_3$ 402.92
Cardiac depressant, antiarrhythmic agent. Cryst. Mp 232-235°. $[\alpha]_D$ +27.5 ($CHCl_3$). Log P 2.32 (uncertain value) (calc).

17-O-Chloroacetyl; hydrochloride: ***Lorajmine hydrochloride, USAN.*** *Nevergor. Ritmos. Ritmosel. Viaductor. Win 11831*
[40819-93-0]
Cryst. Mp 230-235°. $[\alpha]_D$ +40 ($CHCl_3$).
▶ LD_{50} (rat, orl) 480 mg/kg. LD_{50} (rat, ivn) 17.3 mg/kg. AX7710000

N^4-Me: ***N^b-Methylajmaline***
$C_{21}H_{29}N_2O_2^{\oplus}$ 341.472
Alkaloid from the roots of *Rauwolfia serpentina*. Amorph. powder (as chloride). $[\alpha]_D^{28}$ +113 (c, 1.1 in MeOH) (chloride). λ_{max} 205 (log ϵ 4.4); 244 (log ϵ 3.86); 288 (log ϵ 3.4) (MeOH) (chloride).

N^4-Propyl, hydrogen tartrate: ***Prajmalium bitartrate, BAN, INN.*** *Neorythmin. GT 1012. NPAB*
[2589-47-1]
$C_{27}H_{38}N_2O_8$ 518.606
Cardiac antiarrhythmic agent. Cryst. (EtOH/Et_2O). Mp 149-152°.
▶ LD_{50} (rat, orl) 54 mg/kg. LD_{50} (rat, ivn) 3.4 mg/kg. Hepatotoxic. AX7750000

N-De-Me: ***Norajmaline***
[23944-24-3]
$C_{19}H_{24}N_2O_2$ 312.411
Alkaloid from *Rauwolfia macrophylla, Rauwolfia obscura* and *Rauwolfia suaveolens* (Apocynaceae). Yellow-grey amorph. powder. $[\alpha]_D$ +36 (c, 0.67 in $CHCl_3$).

N-De-Me, 17-Ac: ***17-O-Acetylnorajmaline***
[80202-83-1]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from cell suspension cultures of *Rauwolfia serpentina*.

N-De-Me, 17-Ac, 21-O-β-D-glucopyranoside: ***Acetylnorrauglucine***
[119365-66-1]
$C_{27}H_{36}N_2O_8$ 516.59
Alkaloid from *Rauwolfia serpentina* (Apocynaceae).

17-Ketone: ***Ajmalidine***
[639-30-5]
$C_{20}H_{24}N_2O_2$ 324.422
Alkaloid from *Rauwolfia sellowii, Rauwolfia mauiensis* and *Rauwolfia vomitoria* (Apocynaceae). Prisms (MeOH). Mp 241-242°. $[\alpha]_D^{25}$ -80 (c, 1 in AcOH). pK_{a1} 6.3 (80% DMF). pK_{a1} 6.6 (60% DMF).

17-Ketone, O-Ac:
Needles (EtOH). Mp 218-220°. $[\alpha]_D^{25}$ +242 (c, 1 in Py).

11-Hydroxy: ***Ajmalinol***
[73012-74-5]
$C_{20}H_{26}N_2O_3$ 342.437
Alkaloid from *Rauwolfia vomitoria*

(Apocynaceae). Plates (C_6H_6/MeOH). Mp 209-210°. $[\alpha]_D^{30}$ +132 ($CHCl_3$). λ_{max} 254 ; 294 (no solvent reported).

12-Hydroxy: ***12-Hydroxyajmaline***
[152014-38-5]
$C_{20}H_{26}N_2O_3$ 342.437
Alkaloid from hairy roots of *Rauwolfia serpentina* (Apocynaceae). λ_{max} 250 ; 290 (MeOH).

12-Methoxy, 17-ketone: ***Vomalidine***
[639-28-1]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from the roots of *Rauwolfia vomitoria*, and root bark and stems of *Rauwolfia obscura* (Apocynaceae). Prisms (Me_2CO). Mp 242-243°. $[\alpha]_D^{20}$ +210 (c, 0.5 in Py). $[\alpha]_D$ +318 (c, 1 in $CHCl_3$).

12-Methoxy; 17-ketone, hydrochloride:
Cryst. (EtOH). Mp 239-242°.

12-Methoxy, 17-ketone, O-*Ac:*
Cryst. (Et_2O). Mp 252-254°. $[\alpha]_D^{20}$ +195 (c, 1 in Py).

2-Epimer: [51019-46-6]
Noncryst. $[\alpha]_D$ +55 (c, 1 in $CHCl_3$).

17-Epimer: ***Sandwicine****. Epiajmaline*
[509-37-5]
$C_{20}H_{26}N_2O_2$ 326.438
Alkaloid from *Rauwolfia sandwicensis, Rauwolfia mauiensis* and *Rauwolfia vomitoria* (Apocynaceae). Antiarrhythmic agent. Amorph. (MeOH aq. or Me_2CO/hexane). $[\alpha]_D^{20}$ +174 (c, 1 in MeOH).

17-Epimer, hydrochloride (1:2):
Cryst. (Me_2CO). Mp 210-213°. $[\alpha]_D$ +129 (MeOH).

17-Epimer, di-Ac:
Cryst. (petrol). Mp 105-108°. $[\alpha]_D^{20}$ +104 (c, 1 in $CHCl_3$).

20,21-Diepimer: ***Isoajmaline***
[6989-79-3]
$C_{20}H_{26}N_2O_2$ 326.438
Alkaloid from the roots of *Rauwolfia serpentina* (Apocynaceae). Prisms (MeOH aq.), plates (Et_2O). Mp 265° dec. $[\alpha]_D^{18}$ +72 (c, 0.7 in $CHCl_3$). pK_a 8.05.

20,21-Diepimer, hydrochloride (1:2):
Plates. Mp 310° dec.

20,21-Diepimer, di-Ac:
Plates (Et_2O). Mp 224-225°.

20,21-Diepimer, N^4*-Me:* ***N^b-Methylisoajmaline***
$C_{21}H_{29}N_2O_2^{\oplus}$ 341.472
Alkaloid from the roots of *Rauwolfia serpentina*. Powder (as chloride). $[\alpha]_D^{21}$ +88 (c, 1.2 in MeOH) (chloride). λ_{max} 204 (log ϵ 4.41); 244 (log ϵ 3.88); 288 (log ϵ 3.42) (MeOH) (chloride).

17,20,21-Triepimer: ***Isosandwicine***
[6835-90-1]
$C_{20}H_{26}N_2O_2$ 326.438
Alkaloid from the roots of *Rauwolfia vomitoria* (Apocynaceae). Cryst. (MeOH aq.). Mp 250° (sinters at 160°). $[\alpha]_D^{20}$ +130 (c, 1.18 in $CHCl_3$).

17,20,21-Triepimer, hydrochloride: Mp 244-245°. $[\alpha]_D^{20}$ +133 (c, 1 in MeOH).

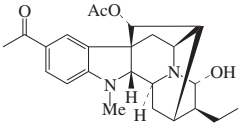
17,20,21-Triepimer, di-Ac:
Cryst. (EtOH aq.). Mp 160° (sinters at 110°). $[\alpha]_D^{20}$ +101 (c, 1 in $CHCl_3$).

[31081-68-2 , 35080-11-6 , 110906-81-5]

Anet, F.A.L. *et al., J.C.S.*, 1954, 1242-1260 (*isol, uv, struct, synth*)
Pakrashi, S.C. *et al., J.A.C.S.*, 1955, **77**, 6687-6689 (*Ajmalidine, isol, uv*)
Woodward, R.B. *et al., Angew. Chem.*, 1956, **68**, 13-20 (*rev, struct*)
Djerassi, C. *et al., J.A.C.S.*, 1956, **78**, 1259-1260 (*Ajmalidine, struct*)
Hofmann, A. *et al., Helv. Chim. Acta*, 1957, **40**, 1866-1874 (*Vomalidine*)
Gorman, M. *et al., Tetrahedron*, 1957, **1**, 328-337 (*Sandwicine*)
Bartlett, M.F. *et al., J.A.C.S.*, 1962, **84**, 622-630 (*abs config*)
Bonati, A. *et al., Farmaco, Ed. Sci.*, 1963, **18**, 851-863 (*Prajmalium, synth*)
Biemann, K. *et al., Tet. Lett.*, 1963, 1969-1973 (*Ajmalidine, ms*)
Keck, J. *et al., Z. Naturforsch., B*, 1963, **18**, 177-179 (*Prajmalium*)
Biemann, K. *et al., J.A.C.S.*, 1964, **86**, 4624-4628 (*Ajmaline, Vomalidine, ms*)
Albright, J.D. *et al., J.A.C.S.*, 1967, **89**, 2416-2423 (*Ajmalidine, synth, ir*)
Masamune, S. *et al., J.A.C.S.*, 1967, **89**, 2506-2509 (*synth*)
Mashimo, K. *et al., Tetrahedron*, 1970, **26**, 803-812 (*Isoajmaline, synth*)
Ronchetti, F. *et al., Phytochemistry*, 1971, **10**, 1385-1388 (*Sandwicine, Isosandwicine*)
Koch, M. *et al., Arzneim.-Forsch.*, 1972, **22**, 2079; 2085; 1973, **23**, 642 (*Prajmalium*)
Majumdar, S.P. *et al., Phytochemistry*, 1973, **12**, 1167-1169 (*Norajmaline*)
Petter, A. *et al., Arzneim.-Forsch.*, 1974, **24**, 873; 874; 876 (*rev, pharmacol, props*)
Timmins, P. *et al., Phytochemistry*, 1974, **13**, 281-282; 1997; 1976, **15**, 733-735 (*Norajmaline, Vomalidine*)
Hubert-Brierre, Y. *et al., Tetrahedron*, 1975, **31**, 3049-3054 (*synth, epimer*)
Kuhnert-Brandstaetter, M. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1976, **309**, 699-706 (*polymorphs*)
Van Tamelen, E.E. *et al., Bioorg. Chem.*, 1976, **5**, 309-326 (*synth*)
Timmins, P. *et al., Planta Med.*, 1976, **29**, 283-288 (*Ajmalimine*)
Prewo, R. *et al., Acta Cryst. B*, 1978, **34**, 454-460 (*cryst struct*)
Chatterjee, A. *et al., Tet. Lett.*, 1978, 3879-3882 (*cmr*)
Siddiqui, S. *et al., J. Chem. Soc. Pak.*, 1979, **1**, 1-4; *CA*, **92**, 111204p (*Ajmalinol, isol*)
Capra, C. *et al., Farmaco, Ed. Prat.*, 1980, **35**, 49-70 (*Lorajmine, pharmacol*)
Libot, F. *et al., Phytochemistry*, 1980, **19**, 989-991 (*Isoajmaline, cmr*)
Iwu, M.M. *et al., Planta Med.*, Suppl, 1980, 13 (*Ajmalimine*)
Stöckigt, J. *et al., Plant Cell Rep.*, 1981, **1**, 36-39 (*17-O-Acetylajmaline, 17-O-Acetylnorajmaline*)
Danieli, B. *et al., Tetrahedron*, 1984, **40**, 5255-5261 (*cmr*)
Johnston, M.D. *et al., J. Het. Chem.*, 1988, **25**, 1803-1807 (*cmr*)
Ruyter, C.M. *et al., Z. Naturforsch., C*, 1988, **43**, 479-484 (*Rauglucine, Acetylrauglucine, Acetylnorrauglucine*)
Alvarez, J.L. *et al., J. Cardiovasc. Pharmacol.*, 1992, **20**, 43-49 (*Prajmalium, pharmacol*)
Köppel, C. *et al., J. Chromatogr.*, 1992, **575**, 87-91 (*Ajmaline, hplc*)
Falkenhagen, H. *et al., Can. J. Chem.*, 1993, **71**, 2201-2203 (*12-Hydroxyajmaline*)
Saeed, S.A. *et al., J. Pharm. Pharmacol.*, 1993, **45**, 715-719 (*Ajmaline, pharmacol*)
Bailey, P.D. *et al., J.C.S. Perkin 1*, 1993, 441-449 (*synth*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 58; 67
Negwer, M. *et al., Organic-Chemical Drugs and their Synonyms, 7th edn., Akademie-Verlag*, 1994, 7912 (*synonyms*)
Jokela, R. *et al., Planta Med.*, 1996, **62**, 577-579 (*Isoajmaline, Isosandwicine, pmr, cmr*)
Li, J. *et al., J.A.C.S.*, 1999, **121**, 6998-7010 (*synth*)
Hanhinen, P. *et al., J. Nat. Prod.*, 2001, **64**, 686-687 (*Ajmalimine*)
Wang, T. *et al., Org. Lett.*, 2001, **3**, 345-348 (*synth*)
Itoh, A. *et al., J. Nat. Prod.*, 2005, **68**, 848-852 (N^b*-Methylajmaline,* N^b*-Methylisoajmaline*)
Lewis, S.E. *et al., Tetrahedron*, 2006, **62**, 8655-8681 (*rev*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, AFH250; DNB000; AFH280; PNC875

Ajmalinimine A-217

*10-Acetyl-17-*O*-acetylajmaline*



Absolute Configuration

$C_{24}H_{30}N_2O_4$ 410.512

Shown to be an artifact formed from 17-*O*-Acetylajmaline in A-216. Alkaloid from the roots of *Rauwolfia serpentina*. Elongated rods (moist MeOH). Mp 198-199°. $[\alpha]_D^{20}$ +205 (c, 0.3 in $CHCl_3$).

Ac:
Needles. Mp 205-206°.

Siddiqui, S. *et al., Heterocycles*, 1987, **26**, 463 (*isol, uv, ir, pmr, cmr, ms, struct*)
Lounasmaa, M. *et al., Heterocycles*, 2007, **72**, 647-648

Ajmalinine A-218

[73144-99-7]

$C_{22}H_{26}N_2O_3$ 366.459

Struct. unknown. Alkaloid from *Rauwolfia vomitoria* and the roots of *Rauwolfia serpentina* and *Rauwolfia sellowii* (Apocynaceae). Antihypertensive agent. Weak sympatholytic agent. Hexagonal prisms + $1H_2O$ (EtOAc). Mp 180-181°. $[\alpha]_D^{33}$ -97. Conts. OH and OMe but no NMe. Prob conts. a 5-Methoxyindole chromophore. Props. very close to Isorauhimbine in Y-13 isol. from the same sources (Bader *et al*, *Experientia*, 1954). λ_{max} 273 ; 300 (no solvent reported).

Hydrochloride:
Powder (EtOH/Et_2O). Mp 240-245° dec. $[\alpha]_D^{40}$ -44 (c, 1 in H_2O).

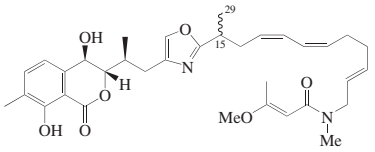
Methiodide:
Rods (EtOH). Mp 233-234° dec.

Picrate:
Yellow powder. Mp 200-205°.

Siddiqui, S. *et al., J. Indian Chem. Soc.*, 1931, **8**, 669-680; 1932, **9**, 539-544; 1935, **12**, 37-47 (*isol*)
Raymond-Hamet, M. *et al., C. R. Hebd. Seances Acad. Sci.*, 1953, **237**, 1435-1438 (*uv*)
Bader, F.E. *et al., Experientia*, 1954, **10**, 298 (*bibl*)

Seba, R.A. *et al., CA*, 1955, **49**, 14270e (*isol*)
Bader, F.E. *et al., J.A.C.S.*, 1955, **77**, 3547-3550 (*bibl*)
Malik, A. *et al., Pak. J. Sci. Ind. Res.*, 1979, **22**, 121-123 (*isol*)

Ajudazol B A-219



Relative Configuration

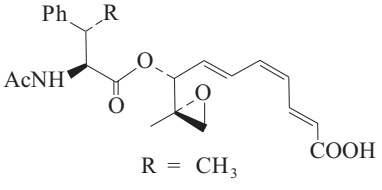
$C_{34}H_{44}N_2O_7$ 592.731
Prod. by *Chondromyces crocatus*. Inhibitor of mitochondrial electron transport. Amorph. solid. $[\alpha]_D^{21}$ +6.1 (c, 1.34 in MeOH). λ_{max} 214 (log ϵ 4.58); 237 (log ϵ 4.54); 306 (sh) ; 319 (log ϵ 3.66) (MeOH).

15,29-Didehydro: ***Ajudazol A***
$C_{34}H_{42}N_2O_7$ 590.715
Prod. by *Chondromyces crocatus*. Inhibitor of mitochondrial electron transport. Amorph. powder. $[\alpha]_D^{21}$ -44.3 (c, 1 in MeOH). λ_{max} 213 (log ϵ 4.67); 235 (log ϵ 4.59); 320 (log ϵ 3.69) (MeOH).

Jansen, R. *et al., Eur. J. Org. Chem.*, 2002, 917-921 (*isol, pmr, cmr*)
Kunze, B. *et al., J. Antibiot.*, 2004, **57**, 151-155 (*activity*)
Buntin, K. *et al., Angew. Chem., Int. Ed.*, 2008, **47**, 4595-4599 (*biosynth*)

AK toxin I A-220

N-*Acetyl-β-methyl-L-phenylalanine 7-carboxy-1-(2-methyloxiranyl)-2,4,6-heptatrienyl ester, 9CI*
[85146-09-4]



$C_{23}H_{27}NO_6$ 413.469
Prod. by *Alternaria alternata* Japanese pear pathotype and *Alternaria kikuchiana*. Phytotoxin. Cryst. (MeOH). Mp 168° dec. $[\alpha]_D^{25}$ +164 (c, 0.128 in MeOH). λ_{max} 285 (ϵ 27600) (MeOH) (Derep).

Nakashima, T. *et al., Agric. Biol. Chem.*, 1985, **49**, 807 (*isol, struct, props*)
Uemura, I. *et al., Tetrahedron*, 2002, **58**, 2351 (*synth*)

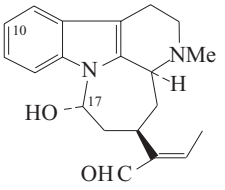
AK toxin II A-221

[85146-10-7]
As AK toxin I, A-220 with
R = H
$C_{22}H_{25}NO_6$ 399.443
Prod. by *Alternaria alternata*. Phytotoxin. Cryst. (MeOH). Mp 163° dec. $[\alpha]_D^{23}$ +125 (c, 0.132 in MeOH). λ_{max} 285 (ϵ 27600) (MeOH) (Derep).

Nakashima, T. *et al., Agric. Biol. Chem.*, 1985, **49**, 807 (*isol, struct, props*)
Ando, K. *et al., Heterocycles*, 1989, **29**, 1023 (*synth*)
Irie, H. *et al., Chem. Pharm. Bull.*, 1990, **38**, 1451 (*synth*)
Uemura, I. *et al., Tetrahedron*, 2002, **58**, 2351 (*synth*)

Akagerine A-222

α-Ethylidene-1,2,3,3a,4,5,6,7-octahydro-7-hydroxy-3-methyl-3,7a-diazacyclohepta[jk]fluorene-5-acetaldehyde, 9CI
[56519-07-4]



Absolute configuration

$C_{20}H_{24}N_2O_2$ 324.422
Alkaloid from *Strychnos usambarensis*, *Strychnos gardneri*, *Strychnos jobertiana*, *Strychnos parvifolia*, *Strychnos camptoneura*, *Strychnos spinosa*, *Strychnos nigritana* and *Strychnos decussata*. Convulsant. Platelets (hexane). Sol. MeOH, $CHCl_3$. Mp 188° dec. $[\alpha]_D^{20}$ -16.6 (c, 1 in MeOH). λ_{max} 227 (ϵ 32360); 276 (ϵ 6600); 283 (ϵ 6610); 293 (ϵ 5370) (MeOH) (Berdy).

Me ether: ***17-O-Methylakagerine***
[69241-17-4]
$C_{21}H_{26}N_2O_2$ 338.449
Alkaloid from *Strychnos dale*, *Strychnos decussata* and *Strychnos elaeocarpa* (Loganiaceae). Convulsant. Cryst. (EtOH). Mp 187-189°.

▶ HM1068000

Et ether: ***17-O-Ethylakagerine***
$C_{22}H_{28}N_2O_2$ 352.475
Alkaloid from the root bark of *Strychnos johnsonii* (Loganiaceae). $[\alpha]_D$ -13 (c, 0.6 in MeOH). Poss. an artifact.

10-Hydroxy: ***10-Hydroxyakagerine***
[74765-89-2]
$C_{20}H_{24}N_2O_3$ 340.421
Alkaloid from leaves of *Strychnos spinosa* (Loganiaceae). Cryst. ($CHCl_3$/EtOAc). Mp 149-150°. $[\alpha]_D^{20}$ -4.6 (c, 1 in MeOH).

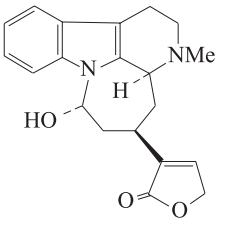
10-Hydroxy, 17-Me ether: ***10-Hydroxy-17-O-methylakagerine***
[73360-05-1]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from *Strychnos decussata* stem bark (Loganiaceae).

▶ HM1060000

Angenot, L. *et al., Tet. Lett.*, 1975, 1357 (*isol, ir, uv, ms, pmr, cryst struct*)
Rolfsen, W. *et al., Planta Med.*, 1978, **34**, 264-273 (*deriv*)
Oguakwa, J. *et al., Gazz. Chim. Ital.*, 1980, **110**, 97-100 (*10-Hydroxyakagerine*)
Rolfsen, W. *et al., J. Nat. Prod.*, 1980, **43**, 97-102 (*10-Hydroxyakagerine, 10-Hydroxy-17-O-methylakagerine*)
Marini-Bettolo, G.B. *et al., J. Nat. Prod.*, 1980, **43**, 717 (*isol*)
Benson, W. *et al., Heterocycles*, 1981, **15**, 935 (*synth*)
Verpoorte, R. *et al., Planta Med.*, 1981, **42**, 32-36 (*isol, uv, pmr*)
Massiot, G. *et al., Phytochemistry*, 1987, **26**, 2839-2846 (*O-Ethylakagerine*)
Danieli, B. *et al., J.O.C.*, 1995, **60**, 2506 (*synth*)
Delaude, C. *et al., Bull. Soc. R. Sci. Liege*, 1997, **66**, 183-286 (*occur, Strychnos*)
Bennasar, M.-L. *et al., J.O.C.*, 1999, **64**, 9605-9612 (*synth*)

Akagerine lactone A-223

[75667-85-5]



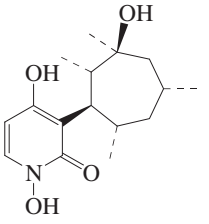
Absolute configuration

$C_{20}H_{22}N_2O_3$ 338.405
Alkaloid from *Strychnos decussata* and from *Strychnos johnsonii* (Loganiaceae). Mp 184-186°.

Et ether: **O-*Ethylakagerine lactone***
[113141-70-1]
$C_{22}H_{26}N_2O_3$ 366.459
Alkaloid from root bark of *Strychnos johnsonii* (Loganiaceae). $[\alpha]_D$ -12 (c, 0.4 in $CHCl_3$).

Olaniyi, A.A. *et al., J. Nat. Prod.*, 1980, **43**, 595-597 (*isol, uv, ir, pmr, ms, struct*)
Massiot, G. *et al., Phytochemistry*, 1987, **26**, 2839-2846 (*O-Ethylakagerine lactone*)

Akanthomycin A-224

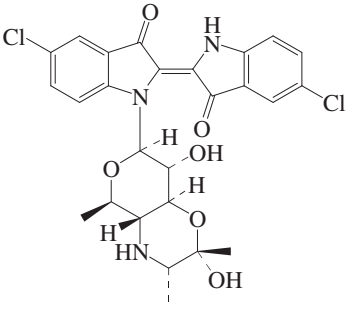


$C_{16}H_{25}NO_4$ 295.378
Isol. from the entomopathogenic fungus *Akanthomyces gracilis*. Antibacterial agent. Cryst. Isol. as a mixt. of two atropisomers.

Wagenaar, M.M. *et al., Org. Lett.*, 2002, **4**, 671-673 (*isol, pmr, cmr*)

Akashin C A-225

[428517-19-5]



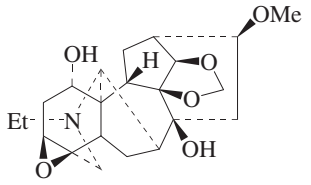
$C_{26}H_{25}Cl_2N_3O_6$ 546.405

N-Glycoside of 6,6′-Dichloroindigotin, D-353. Prod. by *Streptomyces* sp. GW 48/1497. $[\alpha]_D^{25}$ +3100 (c, 0.0058 in MeOH). λ_{max} 241 (log ϵ 4.58); 290 (log ϵ 4.43); 619 (log ϵ 4.2) (MeOH).

Maskey, R.P. *et al., Angew. Chem., Int. Ed.*, 2002, **41**, 597-599 (*isol, pmr, cmr, ms*)
Maskey, R.P. *et al., Nat. Prod. Res.*, 2005, **19**, 137-142 (*struct*)

Akirine **A-226**

[402821-48-1]



$C_{22}H_{31}NO_6$ 405.49
Alkaloid from *Aconitum kirinense* (Ranunculaceae). Cryst. (Me_2CO). Mp 214-217°.

Nishanov, A.A. *et al., Khim. Prir. Soedin.*, 1992, **28**, 534-537; *Chem. Nat. Compd. (Engl. Transl.)*, 1992, **28**, 466-469 (*isol, pmr, ms, cryst struct*)

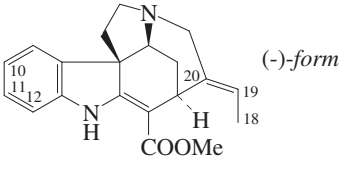
Akuammenine **A-227**

Struct. unknown
$C_{20}H_{22}N_2O_4$ 354.405
Minor alkaloid from *Picralima klaineana* (Apocynaceae). Scarlet flakes (MeOH)(as picrate). Mp 225° (picrate).

Henry, T.A. *et al., J.C.S.*, 1932, 2759-2768

Akuammicine **A-228**

Methyl 2,16,19,20-tetradehydrocuran-17-oate, 9CI



(-)-*form*

$C_{20}H_{22}N_2O_2$ 322.406

(-)-*form* [639-43-0]
Alkaloid from *Catharanthus roseus*, *Picralima nitida*, *Picralima klaineana*, *Amsonia brevifolia*, *Alstonia angustifolia*, *Alstonia scholaris* and other *Alstonia* spp., several *Vinca* spp., *Strychnos angolensis*, *Rauwolfia volkensii*, seeds of *Hunteria congolana*, *Catharanthus microphyllus*, *Cabucala erythrocarpa* leaves, and *Pandaca ochrascens*. Mp 177.5°. $[\alpha]_D^{19}$ -738 ($CHCl_3$). pK_a 7.45. λ_{max} 228 (ϵ 12300); 298 (ϵ 11800); 328 (ϵ 17400) (MeOH) (Berdy).

Hydrochloride: Mp 144° (hydrate) Mp 171° (anhyd.).

Picrate: Mp 169°.

N^b-*Oxide:* ***Akuammicine*** **N^b-*oxide***
[60048-86-4]
$C_{20}H_{22}N_2O_3$ 338.405
Alkaloid from *Alstonia scholaris* root, *Alstonia angustifolia* stem bark, *Rauwolfia* spp. and *Tabernaemontana* spp. (Apocynaceae). Amorph. powder. Mp 200.7-200.8°. $[\alpha]_D^{22}$ -624.5 (c, 0.55 in $CHCl_3$).

N^b-*Me:* ***Akuammicine*** **N^b-*methosalt***
[100680-12-4]
$C_{21}H_{25}N_2O_2^{\oplus}$ 337.441
Alkaloid from *Alstonia scholaris*, root and stem bark of *Hunteria eburnea* and leaves of *Vinca minor* (Apocynaceae). Mp 270° dec. (as chloride). $[\alpha]_D^{20}$ -120 (c, 0.1 in EtOH) (chloride). CAS no. refers to chloride.

*19,20*S*-Dihydro:* ***19,20-Dihydroakuammicine***
[2912-08-5]
$C_{20}H_{24}N_2O_2$ 324.422
Minor alkaloid from leaves of *Pleiocarpa pycnantha* var. *tubicina* and *Rauwolfia caffra* (Apocynaceae). Mp 169-171°. $[\alpha]_D^{27}$ -636.6 (c, 0.74 in MeOH).

19α,20α-Epoxide: ***19,20-Epoxyakuammicine***
[173658-92-9]
$C_{20}H_{22}N_2O_3$ 338.405
Alkaloid from leaves of *Rauwolfia sellowii* (Apocynaceae). No phys. props. reported.

10-Hydroxy: ***Sewarine***. *10-Hydroxyakuammicine*
[27160-72-1]
$C_{20}H_{22}N_2O_3$ 338.405
Alkaloid from leaves of *Rauwolfia stricta* and leaves and roots of *Rhazya stricta* (Apocynaceae). Shows cytotoxic activity. Cryst. or off-white powder. Mp 245° dec. $[\alpha]_D^{20}$ -720 (c, 0.1 in EtOH). λ_{max} 220 (ϵ 10800); 311 (ϵ 14400); 340 (ϵ 11900) (MeOH).

10-Hydroxy; hydrochloride: Mp 210° dec. $[\alpha]_D^{32}$ -724 (EtOH).

12-Hydroxy: ***Vinervine***. *12-Hydroxyakuammicine*
[1963-86-6]
$C_{20}H_{22}N_2O_3$ 338.405
Originally considered to be 11-Hydroxyakuammicine. Alkaloid from *Vinca erecta* upper parts, also obt. from cell suspension cultures of *Stemmadenia tomentosa* (Apocynaceae). Mp 154-155° dec. λ_{max} 234 (log ϵ 4.22); 290 (log ϵ 3.86); 336 (log ϵ 4.22) (EtOH).

19,20-Dihydro, 19-hydroxy: see Echitamidine, E-30

19,20-Dihydro, hydroxy: ***Hydroxy-19,20-dihydroakuammicine***
[59981-20-3]
$C_{20}H_{24}N_2O_3$ 340.421
Minor alkaloid from *Alstonia scholaris* root bark (Apocynaceae). Amorph. powder. Appears to be distinct from the 18- or 19-hydroxy compd. above. Could be identical with Echitamidine, E-30 or a stereo- or regioisomer of it.

19,20-Dihydro, 18- or 19-hydroxy: ***18(19)-Hydroxy-19,20-dihydroakuammicine***
$C_{20}H_{24}N_2O_3$ 340.421
Minor alkaloid from *Alstonia scholaris* root bark (Apocynaceae). Amorph. powder. Not compared with Echitamidine, could be identical or a stereo- or regioisomer of it.

11-Methoxy: ***11-Methoxyakuammicine***
[54484-54-7]
$C_{21}H_{24}N_2O_3$ 352.432
Minor alkaloid from *Alstonia muelleriana* bark, *Alstonia lanceolifera* stem bark, *Alstonia odontophora* and other *Alstonia* spp. (Apocynaceae). $[\alpha]_D$ -505 (EtOAc). Originally considered to be identical with Vinervinine, but when the struct. of Vinervinine was revised to 12-methoxyakuammicine it was reexamined and found to be different. λ_{max} 232 (ϵ 11500); 305 (ϵ 5620); 324 (ϵ 6525) (MeOH).

11-Methoxy, N^b*-oxide:* ***11-Methoxyakuammicine*** **N^b-*oxide***
[94444-35-6]
$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from leaves of *Alstonia macrophylla* (Apocynaceae). Solid. $[\alpha]_D^{25}$ -419.1 (c, 2.65 in MeOH).

11-Methoxy, 19,20α-epoxide: ***Alstolagumine***. *11-Methoxy-19,20α-epoxyakuammicine*
[154849-51-1]
$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from leaves of *Alstonia macrophylla* (Apocyanaceae). Solid. $[\alpha]_D^{22}$ -73.4 (c, 1.30 in MeOH).

12-Methoxy: ***Vinervinine***. *12-Methoxyakuammicine*
[17366-53-9]
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from the epigeal parts of *Vinca major* and *Vinca erecta* (Apocynaceae). Mp 190-191°. $[\alpha]_D^{20}$ -564 (c, 1.877 in $CHCl_3$).

12-Methoxy, N^b*-Me:* ***12-Methoxy-N^b-methylakuammicine***
[123064-76-6]
$C_{22}H_{27}N_2O_3^{\oplus}$ 367.467
Quaternary alkaloid from the root bark of *Alstonia congensis* (Apocynaceae). $[\alpha]_D$ +70 (c, 0.15 in $CHCl_3$) (as 3-pyridinecarboxylate). λ_{max} 225 ; 282 ; 289 ; 333 (MeOH) (3-pyridinecarboxylate).

12-Methoxy, 19α,20α-epoxide: ***12-Methoxy-19α,20α-epoxyakuammicine***
[104696-13-1]
$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from the leaves of *Amsonia lenormandii* var. *lenormandii* (Apocynaceae). Cryst. (Et_2O). Mp 188°. $[\alpha]_D$ -590 (c, 1 in $CHCl_3$).

19,20α-Dihydro, 19-oxo, 20-hydroxy: Lagumicine
$C_{20}H_{22}N_2O_4$ 354.405
Alkaloid from the leaves of *Alstonia angustifolia* var. *latifolia*. Light yellow oil. $[\alpha]_D$ -552 (c, 0.07 in $CHCl_3$). λ_{max} 234 (log ϵ 3.79); 294 (log ϵ 3.71); 328 (log ϵ 3.85) (EtOH).

Δ^{18}-Isomer: ***Angustimicine***
[54086-20-3]
$C_{20}H_{22}N_2O_2$ 322.406

Alkaloid from *Amsonia angustifolia* (Apocynaceae). Struct. appears dubious. The obvious intercorrelation with Akuammicine has not been carried out.

(±)-form

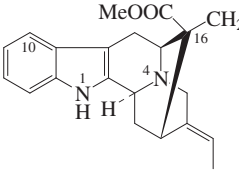
Pseudakuammicine. Pseudoakuammicine
[7344-80-1]
Alkaloid from seeds of *Picralima nitida* (Apocynaceae). Mp 187.5°.

Hydrochloride:
Minute needles (EtOH or H_2O). Mp 216°.

Henry, T.A. *et al., J.C.S.*, 1927, 1950-1959; 1932, 2759-2768 (*isol*)
Aghoramurthy, K. *et al., Tetrahedron*, 1957, **1**, 172 (*isol, struct*)
Lévy, J. *et al., Bull. Soc. Chim. Fr.*, 1960, 979-981 (*Akuammicine*)
Edwards, P.N. *et al., J.C.S.*, 1961, 152-165 (*abs config*)
Bartlett, M.F. *et al., J.O.C.*, 1963, **28**, 1445-1449 (*isol, synth, methosalt*)
Budzikiewicz, H. *et al., Tetrahedron*, 1963, **19**, 1265-1276 (*ms*)
Kump, W.G. *et al., Helv. Chim. Acta*, 1964, **47**, 1497-1503 (*19,20-Dihydroakuammicine*)
Kuchenkova, M.A. *et al., Izv. Akad. Nauk SSSR, Ser. Khim.*, 1965, 2152; *CA*, **64**, 11269c (*Vinervine, isol*)
Yuldashev, P.Kh. *et al., Khim. Prir. Soedin.*, 1965, **1**, 34-42; 1967, **3**, 310-315; 1974, **10**, 260-261; 1983, **19**, 210-212; *Chem. Nat. Compd. (Engl. Transl.)*, 1965, **1**, 25-30; 1967, **3**, 263-266; 1974, **10**, 276-277; 1983, **19**, 199-201 (*Vinervine, Vinervinine, isol, cmr, struct, bibl*)
Ahmad, Y. *et al., J. Pharm. Sci.*, 1971, **60**, 1581-1583 (*Sewarine, isol, uv, ms*)
Karle, J.M. *et al., Chem. Comm.*, 1972, 416-417 (*Sewarine, cryst struct*)
Burke, D.E. *et al., Phytochemistry*, 1973, **12**, 1467-1474 (*11-Methoxyakuammicine*)
Böjthe-Korvath, K. *et al., CA*, 1974, **81**, 136347 (*Angustimicine*)
Kutney, J.P. *et al., Heterocycles*, 1975, **3**, 197-204 (*synth*)
Burke, D.E. *et al., J.O.C.*, 1975, **40**, 1367-1368 (*11-Methoxyakuammicine*)
Boonchuay, W. *et al., Phytochemistry*, 1976, **15**, 821 (*Alstonia scholaris alkaloids*)
Akinloye, B.A. *et al., Phytochemistry*, 1980, **19**, 307-311 (*Sewarine, isol, uv, ms, ir*)
Mukopadhyay, S. *et al., J. Nat. Prod.*, 1981, **44**, 696-700 (*Sewarine, isol, pharmacol*)
Ravao, T. *et al., Phytochemistry*, 1982, **21**, 2160-2161 (*11-Methoxyakuammicine, Angustimicine*)
Stöckigt, J. *et al., Z. Naturforsch., C*, 1982, **37**, 857-860 (*Vinervine, isol*)
Legseir, B. *et al., Phytochemistry*, 1986, **25**, 1735-1738 (*12-Methoxy-19,20-epoxyakuammicine*)
Caron, C. *et al., Phytochemistry*, 1989, **28**, 1241-1244 (*12-Methoxy-N^b-methylakuammicine*)
Proksa, B. *et al., Planta Med.*, 1989, **55**, 188-190 (*Akuammicine N-methosalt*)
Hu, W.-L. *et al., Planta Med.*, 1989, **55**, 463-466 (*Akuammicine N-oxide*)
Amat, M. *et al., J.O.C.*, 1990, **55**, 6299-6312 (*19,20-Dihydroakuammicine, synth*)
Abe, F. *et al., Phytochemistry*, 1994, **35**, 249-252; 253-257 (*11-Methoxyakuammicine N^b-oxide, 11-Methoxy-19,20α-epoxyakuammicine*)
Solé, D. *et al., J.O.C.*, 1996, **61**, 4194-4195 (*synth*)
Batista, C.V.F. *et al., Phytochemistry*, 1996, **41**, 969-973 (*epoxide*)
Bonjoch, J. *et al., J.A.C.S.*, 1997, **119**, 7230-7240 (*synth*)
Ito, M. *et al., J.A.C.S.*, 2001, **123**, 8003-8010 (*synth*)
Salim, A.A. *et al., J. Nat. Prod.*, 2004, **67**, 1591-1594 (*oxide*)
Kam, T.-S. *et al., Phytochemistry*, 2004, **65**, 603-608 (*Lagumicine*)

Akuammidine A-229

Methyl 17-hydroxysarpagan-16-carboxylate, 9CI†. Rhazine
[639-36-1]



Absolute Configuration

$C_{21}H_{24}N_2O_3$ 352.432
Pmr and cmr spectral data revised in 1996. Alkaloid from *Picralima nitida*, *Amsonia brevifolia*, *Rauwolfia vomitoria*, *Picralima nitida*, *Rhazya stricta*, *Strychnos angolensis* and *Strychnos potatorum*. Mp 234-236° Mp 265°.

Picrate:
Yellow spheroids (EtOH). Mp 215°.

N^4-*Me:* ***Macusine C***
[6801-17-8]
$C_{22}H_{27}N_2O_3^{\oplus}$ 367.467
Quaternary alkaloid from the bark of *Strychnos toxifera* (Loganiaceae). Cryst. (EtOH/Et_2O) (as chloride). Mp 264-265° (260-261°) dec. (chloride). $[\alpha]_D^{24}$ -60.8 (c, 2.13 in H_2O) (chloride).

O-*Ac:*
Prisms ($CHCl_3$/EtOH). Mp 272°.

Z-Isomer: ***(Z)-Akuammidine***
[113973-31-2]
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from roots of *Gelsemium elegans*. Needles (Me_2CO). Mp 240-242°. $[\alpha]_{Hg}^{16}$ +9 (c, 0.16 in MeOH).

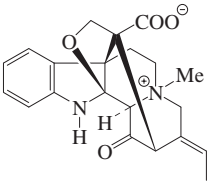
10-Methoxy, N^1*-Me:* ***N^a-Methyl-10-methoxyakuammidine***
[56440-63-2]
$C_{23}H_{28}N_2O_4$ 396.485
Alkaloid from the aerial parts of *Alstonia lanceolifera* and *Alstonia boulindaensis* (Apocynaceae). Mp 234-236°. $[\alpha]_D$ +52 (c, 1 in $CHCl_3$).

16-Epimer: see Polyneuridine, P-562

Chatterjee, A. *et al., Chem. Ind. (London)*, 1961, 1034-1035 (*isol, uv, ir*)
Chatterjee, A. *et al., J. Sci. Ind. Res., Sect. B*, 1962, **21**, 147 (*pmr*)
Silvers, S. *et al., Tet. Lett.*, 1962, 339-343 (*cryst struct*)
Ohashi, M. *et al., Tetrahedron*, 1963, **19**, 2241-2246 (*ms*)
Battersby, A.R. *et al., J.C.S.*, 1964, 4419-4427 (*Macusine C*)
Bláha, K. *et al., Coll. Czech. Chem. Comm.*, 1974, **39**, 3168-3176 (*uv, cd, ord*)
Lewin, G. *et al., Phytochemistry*, 1975, **14**, 2067-2071 (*N^a-Methyl-10-methoxyakuammidine*)
Jewers, K. *et al., Planta Med.*, 1980, **38**, 359-362 (*cmr*)
Ponglux, D. *et al., Tetrahedron*, 1988, **44**, 5075-5094 (*Z-isomer*)
Lin, L. *et al., Phytochem. Anal.*, 1990, **1**, 26 (*pmr, cmr, Z-isomer*)
Jokela, R. *et al., Heterocycles*, 1996, **43**, 1015-1020 (*pmr, cmr*)

Akuammiginone A-230

[761445-62-9]



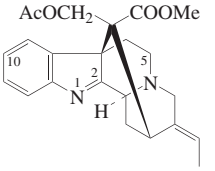
Relative Configuration

$C_{21}H_{22}N_2O_4$ 366.416
Alkaloid from the bark of *Alstonia scholaris*. Amorph. light yellow powder. $[\alpha]_D^{25}$ +23.4 (c, 0.5 in MeOH). Zwitterionic. λ_{max} 221 (log ε 3.7); 232 (log ε 3.69); 286 (log ε 3.36) (MeOH).

Salim, A.A. *et al., J. Nat. Prod.*, 2004, **67**, 1591-1594 (*isol, pmr, cmr*)

Akuammiline A-231

Methyl 17-(acetyloxy)akuammilan-16-carboxylate, 10CI. Methyl 16-[(acetyloxy)methyl]akuammilan-17-oate, 9CI
[1897-26-3]



Absolute Stereochemistry

$C_{23}H_{26}N_2O_4$ 394.469
Alkaloid from *Picralima nitida, Conopharyngia durissima, Vinca minor, Rauwolfia oreogiton* and *Rauwolfia vomitoria* (Apocynaceae). Cryst. (Et_2O). Mp 157-161°. $[\alpha]_D^{24}$ +83 (c, 0.5 in $CHCl_3$).

Hydrochloride:
Cryst. + $1H_2O$ (H_2O or EtOH). Mp 196°. $[\alpha]_D^{20}$ -29.6 (c, 3.84 in H_2O).

Methiodide:
Needles (H_2O). Mp 233°. $[\alpha]_D^{20}$ -83 (c, 1.36 in EtOH).

N^4-*Oxide:* ***Akuammiline N^4-oxide***
$C_{23}H_{26}N_2O_5$ 410.469
Alkaloid from *Kopsia griffithii*. $[\alpha]_D$ -144 (c, 0.13 in $CHCl_3$). λ_{max} 222 (log ε 4.35); 270 (log ε 3.77) (EtOH).

O-*De-Ac:* ***Rhazimol***. *Deacetylakuammiline. Ercinaminine*
[1897-30-9]
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from *Vinca minor, Picralima nitida, Rauwolfia vomitoria, Rauwolfia oreogiton* and *Rhazya stricta* (Apocynaceae). Pale yellow amorph. powder. $[\alpha]_D^{21}$ +19.7 (MeOH).

O-*De-Ac,* O-*(3,4,5-trimethoxybenzoyl):* ***Alstolenine***
[85769-33-1]

$C_{31}H_{34}N_2O_7$ 546.619
Minor alkaloid from the leaves of *Alstonia venenata*. Amorph. $[\alpha]_D$ -70.9 (EtOH).

1,2β-Dihydro: ***1,2β-Dihydroakuammiline***
[77485-26-8]
$C_{23}H_{28}N_2O_4$ 396.485
Alkaloid from the leaves of *Rauwolfia oreogiton* (Apocynaceae). Off-white amorph. powder. $[\alpha]_D^{21}$ -9.4 (MeOH).

1,2β-Dihydro, O*-de-Ac:* ***Deacetyl-1,2β-dihydroakuammiline***
[77485-27-9]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from the leaves of *Rauwolfia oreogiton* (Apocynaceae). Mp 228-230°. $[\alpha]_D^{21}$ +99 (MeOH).

5-Oxo, 1,2ξ-dihydro, O*-de-Ac:* ***Deacetyl-1,2-dihydro-5-oxoakuammiline***
[870995-65-6]
$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from the leaves of *Alstonia scholaris*. Powder. Mp 290-292°. $[\alpha]_D^{13}$ -147.5 (c, 0.35 in $CHCl_3$).

10-Hydroxy, O*-de-Ac:* ***Ercinamine****. 10-Hydroxydeacetylakuammiline*
[85783-98-8]
$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from *Catharanthus roseus* and *Vinca erecta*. Mp 238-240°. $[\alpha]_D$ +53.

10-Methoxy: ***Raufloricine***
[38734-62-2]
$C_{24}H_{28}N_2O_5$ 424.496
Alkaloid from *Vinca minor* and from the root bark of *Rauwolfia confertiflora* (Apocynaceae). Cryst. (Me_2CO/hexane or EtOAc). Mp 190-193°. $[\alpha]_D^{20}$ +129 (c, 1.5 in $CHCl_3$).

10-Methoxy, O*-de-Ac:* ***Nervobscurine****. 10-Methoxydeacetylakuammiline*
[38734-63-3]
$C_{22}H_{26}N_2O_4$ 382.458
Alkaloid from *Vinca minor*. Amorph. $[\alpha]_D^{25}$ +83 (c, 0.72 in EtOH).

5α,10-Dimethoxy, O*-de-Ac,* O*-benzoyl:* ***Deacetyl-O-benzoyl-5,10-dimethoxyakuammiline***
$C_{30}H_{32}N_2O_6$ 516.593
Alkaloid from *Alstonia villosa*. Solid. $[\alpha]_D^{20}$ -169.7 (c, 0.38 in MeOH).

5α,10-Dimethoxy, O*-de-Ac,* O*-(3,4,5-trimethoxybenzoyl):* ***5,10-Dimethoxyalstolenine***
$C_{33}H_{38}N_2O_9$ 606.671
Alkaloid from *Alstonia villosa*. Prisms. Mp 190-192°. $[\alpha]_D^{25}$ -213 (c, 0.82 in $CHCl_3$). λ_{max} 218 (log ϵ 4.71); 279 (log ϵ 4.22); 300 (sh) (log ϵ 4.13) (MeOH).

5β,11-Dimethoxy, O*-de-Ac:* ***Deacetyl-5β,11-dimethoxyakuammiline***
$C_{23}H_{28}N_2O_5$ 412.485
Alkaloid from the roots of *Rauwolfia yunnanensis*. Amorph. yellow solid. $[\alpha]_D^{24}$ -124 (c, 0.46 in Py). λ_{max} 208 (log ϵ 4.24); 224 (log ϵ 4.2); 230 (log ϵ 4.21); 289 (log ϵ 3.53) (MeOH).

5β-Hydroxymethyl: ***5-Hydroxymethylakuammiline***
[77485-24-6]
$C_{24}H_{28}N_2O_5$ 424.496
Alkaloid from the leaves of *Rauwolfia oreogiton* (Apocynaceae). Off-white amorph. powder. $[\alpha]_D^{21}$ -141 (MeOH).

16-Epimer: ***16-Epiakuammiline***
[958247-21-7]
$C_{23}H_{26}N_2O_4$ 394.469
Alkaloid from *Kopsia singapurensis*. Oil. $[\alpha]_D^{25}$ +116 (c, 0.23 in $CHCl_3$). λ_{max} 210 (log ϵ 3.99); 220 (log ϵ 4.05); 265 (log ϵ 3.35) (EtOH).

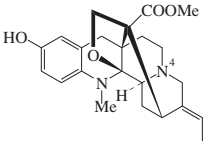
16-Epimer, O*-de-Ac:* ***16-Epideacetylakuammiline***
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from the stem bark of *Kopsia deverrei*. $[\alpha]_D^{20}$ +232 (c, 0.53 in $CHCl_3$). λ_{max} 220 (log ϵ 4.22); 265 (log ϵ 3.18) (EtOH).

16-Epimer, O*-de-Ac,* N^4*-oxide:* ***16-Epideacetylakuammiline*** **N^4*-oxide***
$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from *Kopsia griffithii*. $[\alpha]_D$ -66 (c, 0.15 in $CHCl_3$). λ_{max} 222 (log ϵ 4.12); 272 (log ϵ 3.57) (EtOH).

Henry, T.A. *et al., J.C.S.*, 1932, 2759 (*isol*)
Dugan, J.J. *et al., Helv. Chim. Acta*, 1969, **52**, 701 (*isol, uv, ir, pmr, ms*)
Savaşkan, S. *et al., Helv. Chim. Acta*, 1972, **55**, 2861 (*Akuammiline, Raufloricine, Nervobscurine*)
De Maindreville, M.D. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1975, **280**, 131 (*config*)
Akinloye, B.A. *et al., Phytochemistry*, 1980, **19**, 2741 (*Dihydroakuammiline, Rhazimol, Deacetyldihydroakuammiline*)
Majumder, P. *et al., Phytochemistry*, 1982, **21**, 2389 (*Alstolenine*)
Gueritte, F. *et al., J. Nat. Prod.*, 1983, **46**, 144 (*Ercinamine*)
Yagudaev, M.R. *et al., Khim. Prir. Soedin.*, 1983, **19**, 483; *Chem. Nat. Compd. (Engl. Transl.)*, 1983, **19**, 454 (*Ercinamine, Ercinaminine*)
Kan, C. *et al., Nat. Prod. Lett.*, 1995, **7**, 275 (*16-Epideacetylakuammiline*)
Abe, F. *et al., Chem. Pharm. Bull.*, 1998, **46**, 1235-1238 (*5,10-Dimethoxydeacetylakuammilines*)
Kam, T.-S. *et al., Phytochemistry*, 1999, **50**, 75-79 (*N^4-oxides*)
Zhou, H.-U. *et al., Helv. Chim. Acta*, 2005, **88**, 2508-2512 (*Deacetydihydrooxoakuammiline*)
Hu, X.-J. *et al., Helv. Chim. Acta*, 2006, **89**, 1344-1350 (*Deacetyl-5,11-dimethoxyakuammiline*)
Subramaniam, G. *et al., J. Nat. Prod.*, 2007, **70**, 1783-1789 (*16-Epiakuammiline*)

Akuammine A-232

Vincamajoridine
[3512-87-6]



Absolute configuration

$C_{22}H_{26}N_2O_4$ 382.458
Alkaloid from *Picralima nitida (Picralima klaineana), Cabucala erythrocarpa* and *Vinca herbacea* (Apocynaceae). Needles (EtOH). Mp 255° Mp 278-280° (295°). $[\alpha]_D^{20}$ -73.4 (c, 0.87 in $CHCl_3$).

Hydrochloride:
Cryst. + $1H_2O$. Mp 227°. $[\alpha]_D^{22}$ -26.6 (c, 0.88 in H_2O).

Picrate:
Yellow needles (EtOH). Mp 199°.

N^4-Oxide: ***Akuammine* N-*oxide***
$C_{22}H_{26}N_2O_5$ 398.458
Alkaloid from *Vinca major*. Cryst. (EtOH). Mp 178-180°. λ_{max} 243 (log ϵ 2.91); 312 (log ϵ 3.21) (EtOH).

Ac:
Prisms (EtOH). Mp 226°. $[\alpha]_D^{20}$ -52.1 (c, 0.64 in EtOH).

Me ether: ***O-Methylakuammine***
[36101-52-7]
$C_{23}H_{28}N_2O_4$ 396.485
Alkaloid from *Rauwolfia oreogiton, Vinca erecta* and *Cabucala fasciculata* (Apocynaceae). Needles (Me_2CO). Mp 242-243°.

10-Deoxy: ***Pseudoakuammigine****. ψ-Akuammigine*
[2447-70-3]
$C_{22}H_{26}N_2O_3$ 366.459
Alkaloid from *Alstonia scholaris, Picralima klaineana* and *Picralima nitida* (Apocynaceae). Prisms (EtOH aq.), plates (C_6H_6/cyclohexane). Mp 165° (158°). $[\alpha]_D^{20}$ -53.8 (c, 3.42 in EtOH).

10-Deoxy; hydrochloride:
Prisms (H_2O). Mp 183° (solvate) Mp 218° (anhyd.). $[\alpha]_D^{20}$ -15.4 (c, 1.065 in EtOH).

10-Deoxy, picrate:
Yellow needles (Me_2CO). Mp 223°.

10-Deoxy, N^4*-oxide:* ***Pseudoakuammigine* N-*oxide***
[125205-49-4]
$C_{22}H_{26}N_2O_4$ 382.458
Alkaloid from the stem bark of *Alstonia angustifolia* (Apocynaceae). Mp 204.3-204.4°. $[\alpha]_D^{22}$ -11.5 (c, 0.17 in $CHCl_3$).

*10-Deoxy, 17*S*-hydroxy:* ***17-Hydroxy-ψ-akuammigine****. 10-Deoxy-17-hydroxyakuammine. 17-Hydroxypseudoakuammigine*
[79839-00-2]
$C_{22}H_{26}N_2O_4$ 382.458
Alkaloid from *Hunteria congolana* (Apocynaceae). Mp 131°. $[\alpha]_D$ -8.6 (c, 0.5 in $CHCl_3$).

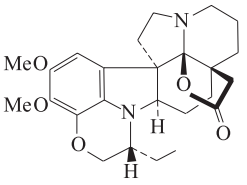
*10-Deoxy, 17*S*-methoxy:* ***17-Methoxy-ψ-akuammigine***
[84959-48-8]
$C_{23}H_{28}N_2O_4$ 396.485
Alkaloid from *Hunteria congolana* (Apocynaceae). Cryst. (Et_2O). $[\alpha]_D$ -8 (c, 0.5 in Et_2O).

Henry, T.A. *et al., J.C.S.*, 1927, 1950 (*isol*)
Joule, J.A. *et al., J.C.S.*, 1962, 312 (*struct, derivs*)
Olivier, L. *et al., Bull. Soc. Chim. Fr.*, 1965, 868 (*struct, abs config*)
Rakhimov, D.A. *et al., Khim. Prir. Soedin.*, 1971, **7**, 677; *Chem. Nat. Compd. (Engl. Transl.)*, 1971, **7**, 663 (*isol, uv, ir, pmr, ms, struct, O-Methylakuammine*)
Morita, Y. *et al., Helv. Chim. Acta*, 1977, **60**, 1419 (*isol, Pseudoakuammigine*)
Banerji, A. *et al., Indian J. Chem., Sect. B*, 1977, **15**, 390 (*isol, uv, ir, pmr, ms, Pseudoakuammigine*)
Akinloye, B.A. *et al., Phytochemistry*, 1980, **19**, 2741 (*isol, O-Methylakuammine*)
Vercauteren, J. *et al., Tet. Lett.*, 1981, **22**, 2871 (*17-Hydroxy-ψ-akuammigine, Pseudoakuammigine*)

Vercauteren, J. *et al., Bull. Soc. Chim. Fr.*, *Part II*, 1982, 291 (*derivs*)
Zhukovich, E.N. *et al., Khim. Prir. Soedin.*, 1989, **25**, 434-435; *Chem. Nat. Compd. (Engl. Transl.)*, 1989, **25**, 378 (*N-oxide*)
Hu, W.-L. *et al., Planta Med.*, 1989, **55**, 463 (*Pseudoakuammigine N-oxide*)

Alalakine A-233

22-Ethyl-19-hydroxy-15,16-dimethoxy-4,5-secoobscurinervan-21-oic acid γ-lactone, 9CI
[68346-07-6]

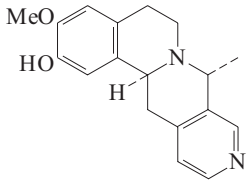


Relative configuration

$C_{25}H_{32}N_2O_5$ 440.538
Alkaloid from *Aspidosperma album* (Apocynaceae). Cryst. (Me_2CO/hexane). Mp 195°. $[\alpha]_D$ -38 ($CHCl_3$).

Urrea, M. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1978, **287**, 63 (*ir, uv, ms, pmr, struct*)

Alamaridine A-234



$C_{18}H_{20}N_2O_2$ 296.368

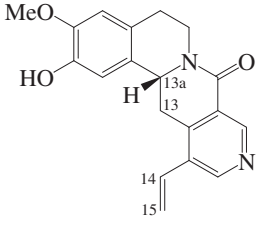
Natural-*form*
Alkaloid from the seeds of *Alangium lamarckii* (Alangiaceae). Light-yellow needles (MeOH). Mp 196°. Opt. rotn. not determined due to paucity of material. λ_{max} 226 (sh) (log ε 3.85); 258 (log ε 3.35); 286 (log ε 3.31) (EtOH).

(±)-*form* [107588-71-6]
Synthetic. Pale yellow granules (MeOH). Mp 242-244°.

Bhattacharjya, A. *et al., Tetrahedron*, 1988, **44**, 3477-3488 (*isol, uv, ir, pmr, ms, synth, struct*)
Reimann, E. *et al., Monatsh. Chem.*, 1994, **125**, 1397-1406 (*synth*)

Alangimaridine A-235

*12-Ethenyl-5,6,13,13*a*-tetrahydro-2-hydroxy-3-methoxy-8*H*-isoquino[2,1-*b*][2,7]naphthyridin-8-one, 9CI*
[77173-59-2]



$C_{19}H_{18}N_2O_3$ 322.363

(*R*)-*form* [178121-46-5]
Alkaloid from the seeds of *Alangium lamarckii* (Alangiaceae). Cryst. (MeOH/$CHCl_3$). Mp 278°. $[\alpha]_D$ +429 (c, 0.35 in $CHCl_3$).

Ac:
Cryst. (MeOH). Mp 232°.

*13,13*a*-Didehydro:* ***Alangimarine***
[77156-16-2]
$C_{19}H_{16}N_2O_3$ 320.347
Alkaloid from the seeds of *Alangium lamarckii* (Alangiaceae). Mp 247°. Achiral.

*13,13*a*-Didehydro, Ac:* Mp 202°.

*13,13*a*-Didehydro,* O*-de-Me,* O^2*-Me:* ***Isoalangimarine***
[96422-49-0]
$C_{19}H_{16}N_2O_3$ 320.347
Alkaloid from the seeds of *Alangium lamarckii* (Alangiaceae). Yellow needles ($CHCl_3$/MeOH). Mp 249°.

14-Oxo, 13,13a-didehydro, 14,15-dihydro: ***Alangimarinone***
[96422-50-3]
$C_{19}H_{16}N_2O_4$ 336.346
Alkaloid from the seeds of *Alangium lamarckii* (Alangiaceae). Yellow needles. Mp 282°.

14ξ-Hydroxy, 14,15-dihydro: ***Dihydroalamarine***
[97168-61-1]
$C_{19}H_{20}N_2O_4$ 340.378
Alkaloid from the seeds of *Alangium lamarckii* (Alangiaceae). Pale-yellow needles ($CHCl_3$/MeOH). Mp 252-253°. $[\alpha]_D$ +347 (c, 0.35 in Py).

14ξ-Hydroxy, 14,15-dihydro, O*-de-Me,* O^2*-Me:* ***Dihydroisoalamarine***
[96422-51-4]
$C_{19}H_{20}N_2O_4$ 340.378
Alkaloid from the seeds of *Alangium lamarckii* (Alangiaceae). Yellow needles ($CHCl_3$/MeOH). Mp 268-270°. $[\alpha]_D$ +140 (c, 0.07 in Py).

14ξ-Hydroxy, 13,13a-didehydro, 14,15-dihydro: ***Alamarine***
[77156-18-4]
$C_{19}H_{18}N_2O_4$ 338.362
Alkaloid from the seeds of *Alangium lamarckii* (Alangiaceae). Yellow needles ($CHCl_3$/MeOH). Mp 288°. $[\alpha]_D$ 0 ($CHCl_3$).

*14ξ-Hydroxy, 13,13*a*-didehydro, 14,15-dihydro,* O*-de-Me,* O^2*-Me:* ***Isoalamarine***
[77156-20-8]
$C_{19}H_{18}N_2O_4$ 338.362
Alkaloid from the seeds of *Alangium lamarckii* (Alangiaceae). Yellow needles (MeOH/$CHCl_3$). Mp 301-303°.

(±)-*form*
Synthetic. Cryst. (MeOH/$CHCl_3$). Mp 242-245°.

Pakrashi, S.C. *et al., Indian J. Chem., Sect. B*, 1985, **24**, 19-28 (*Alangimarine, Alangimaridine, Isoalangimarine, Alangimarinone, Alamarine, Dihydroalamarine, Dihydroisoalamarine, Isoalamarine,isol, uv, ir, pmr, ms, cd, struct*)
Jahangir, *et al., Can. J. Chem.*, 1987, **65**, 2362-2368 (*Alangimarine, Alangimaridine, synth, ir, pmr, cmr, ms*)
Chowdhury, U.S. *et al., Tetrahedron*, 1990, **46**, 7893-7900 (*Isoalamarine, synth*)
Itoh, A. *et al., J. Nat. Prod.*, 1996, **59**, 535-538 (*Alangimaridine, Alangimarine, synth, cd, abs config*)
Reimann, E. *et al., Monatsh. Chem.*, 2005, **136**, 193-209 (*Alangimarine, synth*)

Alangine A A-236

[6793-39-1]

$C_{15}H_{23}NO_2$ 249.352
Struct. unknown. Alkaloid from *Alangium lamarckii* (Alangiaceae). Cryst. (Et_2O/hexane). Mp 85°. $[\alpha]_D$ -41.3 (c, 0.9 in $CHCl_3$). Was assigned the struct. 3-(4-methoxyphenyl)-2-(1-piperidyl)-1-propanol, but synthetic material differed from the alkaloid.

Hydrochloride:
Cryst. (EtOH/Et_2O). Mp 250°.

Methiodide:
Cryst. (Me_2CO/Et_2O). Mp 184°.

Picrate:
Cryst. (EtOH). Mp 138°.

Bhakuni, D.S. *et al., J. Sci. Ind. Res., Sect. B*, 1960, **19**, 8-10; *CA*, **54**, 21168h
Kapil, R.S. *et al., J. Sci. Ind. Res.*, 1961, **20**, 136; *CA*, **55**, 18792g

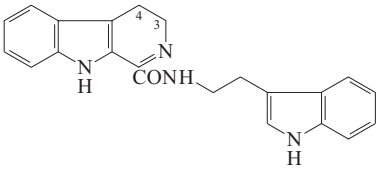
Alanginine A-237

Struct. unknown. Alkaloid from the root bark of *Alangium lamarckii* (Alangiaceae). Cream-coloured amorph. solid. Mp 245-247°.

Singh, M.P. *et al., Proc. Natl. Acad. Sci., India, Sect. A*, 1948, **17**, 1-6; *CA*, **45**, 10489h

Alangiobussine A-238

[171090-88-3]



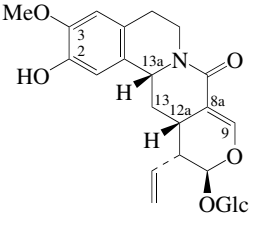
$C_{22}H_{20}N_4O$ 356.426
Alkaloid from leaves of *Alangium bussyanum*. Cryst. (MeOH). Mp 152-154°. λ_{max} 220 (log ε 4.93); 250 (sh) (log ε 4.49); 290 (log ε 4.18); 334 (log ε 4.31) (MeOH).

3,4-Didehydro: ***Alangiobussinine***
[171090-89-4]
$C_{22}H_{18}N_4O$ 354.41
Trace alkaloid from leaves of *Alangium bussyanum* (Alangiaceae). Cryst. (MeOH). Mp 188-190°.

Diallo, A.O. *et al., Phytochemistry*, 1995, **40**, 975-977 (*isol, uv, pmr, cmr, ms*)

Alangiside A-239

[34482-51-4]



$C_{25}H_{31}NO_{10}$ 505.521
Alkaloid from the roots, leaves and fruit of *Alangium lamarckii* (best source unripe fruit) (Alangiaceae). Amorph. powder + 2.5 H_2O. Mp 187° dec. (shrinks at 164°). $[\alpha]_D^{26}$ -105 (c, 1.0 in MeOH).

Tetra-Ac:
Amorph. powder. $[\alpha]_D^{21}$ -50.4 (c, 1.81 in $CHCl_3$).

2′-(4-Hydroxy-3-methoxy-E-*cinnamoyl):* ***2′*-O-trans-*Feruloylalangiside***
[173180-42-2]
$C_{35}H_{39}NO_{13}$ 681.692
Alkaloid from fruits of *Alangium lamarckii* (Alangiaceae). Amorph. powder. $[\alpha]_D^{24}$ -153 (c, 1.0 in MeOH).

2′-(4-Hydroxy-3,5-dimethoxy-E-*cinnamoyl):* ***2′*-O-trans-*Sinapoylalangiside***
[173180-45-5]
$C_{36}H_{41}NO_{14}$ 711.718
From fruits of *Alangium lamarckii* (Alangiaceae). Cryst. (H_2O). Mp 179-181°. $[\alpha]_D^{23}$ -157 (c, 1.0 in MeOH).

2′-O-*[4-(1,3-Dihydroxypropoxy)-3-methoxy*-E-*cinnamoyl]:* ***2′*-O-trans-*[4-(1,3-Dihydroxypropoxy)-3-methoxycinnamoyl]alangiside***
[173180-47-7]
$C_{38}H_{45}NO_{15}$ 755.771
From fruits of *Alangium lamarckii* (Alangiaceae). Cryst. (H_2O). Mp 166-169°. $[\alpha]_D^{27}$ -153 (c, 0.51 in MeOH).

Me ether:
Needles + 1.5 H_2O (EtOAc). Mp 236°.

O-*De-Me:* ***Demethylalangiside***
[47763-23-5]
$C_{24}H_{29}NO_{10}$ 491.494
Alkaloid from the roots of *Cephaelis ipecacuanha* (Rubiaceae) and leaves of *Alangium platanifolium* var. *trilobum* (Alangiaceae). Needles (MeOH aq.). Mp 180-182°. $[\alpha]_D^{24}$ -73 (c,0.2 in MeOH).

O-*De-Me, 2*-O-*β-D-glucopyranoside:*
[408363-51-9]
$C_{30}H_{39}NO_{15}$ 653.636
Alkaloid from the roots of *Cephaelis acuminata*. Amorph. powder. $[\alpha]_D^{27}$ -24 (c, 0.34 in MeOH). λ_{max} 206 (log ϵ 4.4); 231 (log ϵ 4.25); 242 (sh) (log ϵ 4.18); 280 (log ϵ 3.66) (MeOH).

O-*De-Me, 6′-(4-hydroxy-3-methoxycinnamoyl):* ***6′*-O-*Feruloyldemethylalangiside***
[141361-35-5 , 141434-40-4]
$C_{34}H_{37}NO_{13}$ 667.665
Alkaloid from leaves of *Alangium platanifolium* var. *trilobum* (Alangiaceae). Powder. Isol. as a mixt. of *cis*- and *trans*-forms.

O-*De-Me, 2′-(4-hydroxy-3-methoxy*-E-*cinnamoyl):* ***2′*-O-trans-*Feruloyldemethylalangiside***
[173180-41-1]
$C_{34}H_{37}NO_{13}$ 667.665
From fruits of *Alangium lamarckii* (Alangiaceae). Cryst. (H_2O). Mp 175-177°. $[\alpha]_D^{27}$ -162 (c, 0.44 in MeOH).

O-*De-Me, 2′-(4-hydroxy-3,5-dimethoxy*-E-*cinnamoyl):* ***2′*-O-trans-*Sinapoyldemethylalangiside***
[173180-44-4]
$C_{35}H_{39}NO_{14}$ 697.691
From fruits of *Alangium lamarckii* (Alangiaceae). Cryst. (H_2O). Mp 183.5-186°. $[\alpha]_D^{26}$ -155 (c, 0.43 in MeOH).

O-*De-Me, 6′-(4-hydroxy-3,5-dimethoxycinnamoyl):* ***6′-Sinapoyldemethylalangiside***
[141435-01-0 , 141361-36-6]
$C_{35}H_{39}NO_{14}$ 697.691
Alkaloid from leaves of *Alangium platanifolium* var. *trilobum* (Alangiaceae). Powder. Isol. as mixt. of *cis*- and *trans*-isomers.

O-*De-Me,* O^2-*Me:* ***3*-O-*Demethyl-2*-O-*methylalangiside***
[57071-85-9]
$C_{25}H_{31}NO_{10}$ 505.521
Alkaloid from fruits of *Alangium lamarckii* (Alangiaceae) and roots of *Cephaelis ipecacuanha* (Rubiaceae). Needles (MeOH aq.). Mp 275-277°. $[\alpha]_D^{26}$ -48 (c, 1.0 in MeOH).

O-*De-Me,* O^2-*Me, 2′-(4-hydroxy-3-methoxy*-E-*cinnamoyl):* ***2′*-O-trans-*Feruloyl-3*-O-*demethyl-2*-O-*methylalangiside***
[173180-43-3]
$C_{35}H_{39}NO_{13}$ 681.692
From fruits of *Alangium lamarckii* (Alangiaceae). Amorph. powder. $[\alpha]_D^{28}$ -115 (c, 0.43 in MeOH).

O-*De-Me,* O^2-*Me, 2′-(4-hydroxy-3,5-dimethoxy*-E-*cinnamoyl):* ***2′*-O-trans-*Sinapoyl-3*-O-*demethyl-2*-O-*methylalangiside***
[173180-46-6]
$C_{36}H_{41}NO_{14}$ 711.718
From fruits of *Alangium lamarckii* (Alangiaceae). Amorph. powder. $[\alpha]_D^{28}$ -126 (c, 0.39 in MeOH).

3-Demethoxy, 1-hydroxy: ***Demethylneoalangiside***
[169304-90-9]
$C_{24}H_{29}NO_{10}$ 491.494
Alkaloid from the fruits of *Alangium lamarckii*. Cryst. (MeOH aq.). Mp 193-195°. $[\alpha]_D^{28}$ -9.8 (c, 1 in MeOH). λ_{max} 231 (sh) (log ϵ 4.24); 239 (log ϵ 4.25); 287 (sh) (log ϵ 3.37) (MeOH).

3-Demethoxy, 1-hydroxy, O^2-*Me:* ***Neoalangiside***
[169391-62-2]
$C_{25}H_{31}NO_{10}$ 505.521
Alkaloid from the fruits of *Alangium lamarckii*. Amorph. powder. $[\alpha]_D^{25}$ +7.7 (c, 0.25 in MeOH). λ_{max} 230 (sh) (log ϵ 4.27); 234 (log ϵ 4.27); 286 (sh) (log ϵ 3.38) (MeOH).

*$\Delta^{8a,12a}$-Isomer, 9*R-*methoxy, 13,13*a-*didehydro:* [206875-77-6]
$C_{26}H_{31}NO_{11}$ 533.531
Alkaloid from the fruit of *Alangium lamarckii*. Pale yellow powder. $[\alpha]_D^{27}$ +8.5 (c, 1 in MeOH). λ_{max} 221 (log ϵ 4.32); 226 (log ϵ 4.32); 243 (sh) (log ϵ 4.02); 258 (sh) (log ϵ 3.79); 267 (log ϵ 3.84); 351 (log ϵ 4.33); 366 (sh) (log ϵ 4.24) (MeOH).

*$\Delta^{8a,12a}$-Isomer, 9*S-*methoxy, 13,13*a-*didehydro:* [206875-80-1]
$C_{26}H_{31}NO_{11}$ 533.531
Alkaloid from the fruit of *Alangium lamarckii*. Pale yellow needles (MeOH). Mp 219-220°. $[\alpha]_D^{20}$ -105 (c, 1 in MeOH). λ_{max} 226 (log ϵ 4.38); 244 (sh) (log ϵ 4.1); 260 (sh) (log ϵ 3.89); 266 (log ϵ 3.91); 334 (sh) (log ϵ 4.21); 351 (log ϵ 4.37); 367 (sh) (log ϵ 4.28) (MeOH).

6′-O-*α-D-Xylopyranosyl:* ***6′*-O-*α-D-Xylopyranosylalangiside***
[201555-41-1]
$C_{30}H_{39}NO_{14}$ 637.636
Alkaloid from the fruit of *Alangium lamarckii* (Alangiaceae). Amorph. powder. $[\alpha]_D^{29}$ -38 (c, 0.3 in MeOH). λ_{max} 233 (log ϵ 4.32); 284 (log ϵ 3.68) (MeOH).

3′-O-*β-D-Glucopyranosyl:* ***3′*-O-*β-D-Glucopyranosylalangiside***
[201555-37-5]
$C_{31}H_{41}NO_{15}$ 667.663
Alkaloid from the fruit of *Alangium lamarckii* (Alangiaceae). Amorph. powder. $[\alpha]_D^{26}$ -107 (c, 0.5 in MeOH). λ_{max} 233 (log ϵ 4.34); 284 (log ϵ 3.71) (MeOH).

6′-O-*α-D-Glucopyranosyl:* ***6′*-O-*α-D-Glucopyranosylalangiside***
[201555-38-6]
$C_{31}H_{41}NO_{15}$ 667.663
Alkaloid from the fruit of *Alangium lamarckii* (Alangiaceae). Amorph. powder. $[\alpha]_D^{26}$ -33 (c, 1 in MeOH). λ_{max} 234 (log ϵ 4.34); 284 (log ϵ 3.69) (MeOH).

6′-O-*β-D-Glucopyranosyl:* ***6′*-O-*β-D-Glucopyranosylalangiside***
[201555-36-4]
$C_{31}H_{41}NO_{15}$ 667.663
Alkaloid from the fruit of *Alangium lamarckii* (Alangiaceae). Amorph. powder. $[\alpha]_D^{26}$ -81 (c, 0.7 in MeOH). λ_{max} 233 (log ϵ 4.32); 284 (log ϵ 3.67) (MeOH).

6′-O-*α-D-Glucopyranosyl,* O-*de-Me,* O^2-*Me:* ***6′*-O-*α-D-Glucopyranosyl-3*-O-*demethyl-2*-O-*methylalangiside***
[201555-39-7]
$C_{31}H_{41}NO_{15}$ 667.663
Alkaloid from the fruit of *Alangium lamarckii* (Alangiaceae). Amorph. powder. $[\alpha]_D^{30}$ +2.4 (c, 0.7 in MeOH). λ_{max} 234 (log ϵ 4.32); 283 (log ϵ 3.65); 292 (sh) (log ϵ 3.55) (MeOH).

*13*a-*Epimer:* ***Isoalangiside***
[57128-91-3]
$C_{25}H_{31}NO_{10}$ 505.521
Alkaloid from fruits of *Alangium lamarckii* (Alangiaceae). Amorph. powder. $[\alpha]_D^{25}$ -118 (c, 0.86 in MeOH).

*13*a-*Epimer, Me ether:* ***Methylisoalangiside***
$C_{26}H_{33}NO_{10}$ 519.547
Alkaloid from fruits of *Alangium lamarckii* (Alangiaceae). Amorph. powder. $[\alpha]_D^{25}$ -141 (c, 0.28 in MeOH).

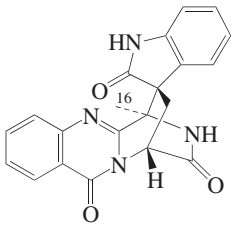
*13*a-*Epimer,* O-*de-Me:* ***Demethylisoalangiside***
[169531-70-8]
$C_{24}H_{29}NO_{10}$ 491.494
Alkaloid from the roots of *Cephaelis acuminata*. Amorph. powder. $[\alpha]_D^{27}$ -143 (c, 0.24 in MeOH). λ_{max} 234 (log ϵ 4.24); 287 (log ϵ 3.64) (MeOH).

13a-Epimer, O-*de-Me,* O^2-*Me:* ***3-O-Demethyl-2-O-methylisoalangiside***
[57128-93-5]
$C_{25}H_{31}NO_{10}$ 505.521
Alkaloid from fruits of *Alangium lamarckii* (Alangiaceae). Amorph. powder. $[\alpha]_D^{28}$ -169 (c, 0.45 in MeOH).

Shoeb, A. *et al., J.C.S. Perkin 1*, 1975, 1245-1248 (*isol, uv, ir, pmr, ms, struct, abs config*)
Nagakura, N. *et al., Chem. Comm.*, 1978, 896-897 (*cmr*)
Höfle, G. *et al., Chem. Ber.*, 1980, **113**, 566-576 (*synth, uv, ir, pmr, cmr, ms*)
Itoh, A. *et al., Phytochemistry*, 1991, **30**, 3117-3123; 1992, **31**, 1037-1040; 1994, **36**, 383-387 (*Demethylalangiside, 6′-O-Feruloyldemethylalangiside, 6′-O-Sinapoyldemethylalangiside, 3-O-Demethyl-2-O-methylalangiside*)
Itoh, A. *et al., J. Nat. Prod.*, 1995, **58**, 1228-1239 (*Isoalangiside, Methylisoalangiside, 3-O-Demethyl-2-O-methylisoalangiside, Neoalangiside, Demethylneoalangiside*)
Itoh, A. *et al., Phytochemistry*, 1996, **41**, 651-656; 1997, **46**, 1225-1229 (*esters, glycosyl derivs*)
Itoh, A. *et al., Heterocycles*, 1998, **48**, 499-505 (*9-methoxy derivs*)
Itoh, A. *et al., Phytochemistry*, 2002, **59**, 91-97 (*Demethylisoalangiside, O-de-Me glucoside*)

Alantrypinone A-240

PF 1198A. Antibiotic PF 1198A



(+)-*form*

$C_{21}H_{16}N_4O_3$ 372.382

(+)-*form* [212911-06-3]
Prod. by *Aspergillus terreus* PF1198 and *Penicillium thymicola*. Mycotoxin. Insecticidal agent. Amorph. solid. $[\alpha]_D^{22}$ +37 (c, 2.1 in EtOH). λ_{max} 210 (log ϵ 3.78); 257 (log ϵ 3.15); 266 (log ϵ 3.17); 277 (log ϵ 3.08); 292 (log ϵ 2.73); 303 (log ϵ 2.77); 316 (log ϵ 2.62) (EtOH).

16-Hydroxy: ***(-)-Serantrypinone***
[956006-97-6]
$C_{21}H_{16}N_4O_4$ 388.382
Prod. by *Penicillium thymicola*. Mp > 240°. $[\alpha]_D^{22}$ -12 (c, 0.12 in EtOH). λ_{max} 218 (log ϵ 4.55); 267 (log ϵ 3.54); 278 (log ϵ 3.51); 290 (log ϵ 3.36); 305 (log ϵ 3.16); 318 (log ϵ 3.05) (EtOH).

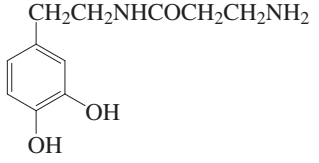
(-)-*form*

16-Hydroxy: ***(+)-Serantrypinone****. Antibiotic PF 1198B. PF 1198B*
[366785-28-6]
$C_{21}H_{16}N_4O_4$ 388.382
Prod. by *Aspergillus terreus* PF 1198. Mp > 250°. $[\alpha]_D$ +21.7 (c, 0.1 in MeOH). λ_{max} 208 ; 258 ; 266 ; 278 ; 303 ; 315 (MeOH).

Larsen, T.O. *et al., J. Nat. Prod.*, 1998, **61**, 1154-1157 (*isol, uv, pmr, cmr, cryst struct, abs config*)
Ariza, M.R. *et al., J. Nat. Prod.*, 2001, **64**, 1590-1592 (*Serantrypinone*)
Hart, D.J. *et al., J.A.C.S.*, 2001, **123**, 5892-5899 (*synth, abs config*)
Kuriyama, T. *et al., J. Agric. Food Chem.*, 2004, **52**, 3884-3887 (*isol, pmr, cmr*)
Chen, Z. *et al., J.O.C.*, 2004, **69**, 79-85 (*synth*)
Hart, D.J. *et al., Tet. Lett.*, 2007, **48**, 7069-7071 (*Serantrypinone, synth, abs config*)

N-β-Alanyldopamine A-241

*3-Amino-*N-*[2-(3,4-dihydroxyphenyl)ethyl]propanamide, 9CI*
[54653-62-2]
[58077-93-3]



$C_{11}H_{16}N_2O_3$ 224.259
Occurs in insects. Precursor to sclerotized insect cuticle; functions as cross-linking agent between peptide chains. No phys. props. reported.

*3-*O-*β-D-Glucopyranoside:* [96735-97-6]
$C_{17}H_{26}N_2O_8$ 386.401
Occurs in insects. Precursor in insect cuticule sclerotization.

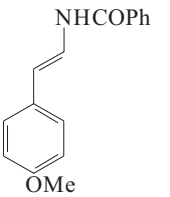
*4-*O-*β-D-Glucopyranoside:* [96848-78-1]
$C_{17}H_{26}N_2O_8$ 386.401
Isol. from *Manduca sexta* insects. No phys. props. reported.

N-*Ac, 3-*O-*β-D-glucopyranoside:* [88874-85-5]
$C_{19}H_{28}N_2O_9$ 428.438
Isol. from praying mantis *Hierodula patellifera*, *Manduca sexta* and *Mantis religiosa*. No phys. props. reported.

Hopkins, T.L. *et al., Science (Washington, D.C.)*, 1982, **217**, 364-366 (*isol, synth, biochem*)
Yago, M. *et al., Insect Biochem.*, 1984, **14**, 7-9; 487-489 (*N-Ac glucoside*)
Mueller, D.D. *et al., Bioconjug. Chem.*, 1993, **4**, 47-53 (*cmr, pmr*)
Hopkins, T.L. *et al., Insect Biochem. Mol. Biol.*, 1995, **25**, 29-37 (*3-glucoside*)
Merritt, M.E. *et al., J.A.C.S.*, 1996, **118**, 11278-11282 (*props*)

Alatamide A-242

N-*[2-(4-Methoxyphenyl)ethenyl]benzamide, 9CI.* N-(p-*Methoxystyryl)benzamide*



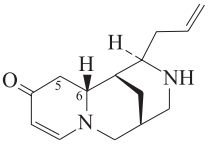
$C_{16}H_{15}NO_2$ 253.3

(*E*)-*form* [54797-23-8]
Obt. from leaves of *Pleiospermium alatum* (Rutaceae) and aerial parts of *Piper guayranum* (Piperaceae). Cryst. (C_6H_6/$CHCl_3$), granular cryst. (CH_2Cl_2/petrol), flakes (MeOH/$CHCl_3$). Mp 169° Mp 178-180° Mp 190-193°. Although thought to be principally the (*E*)-form, Mp variations may be the result of config. inhomogeneity.

Galat, A. *et al., J.A.C.S.*, 1950, **72**, 4436 (*synth*)
Chatterjee, A. *et al., Aust. J. Chem.*, 1975, **28**, 457 (*isol, ir, uv, ms*)
Ghosh, S. *et al., Synth. Commun.*, 1987, **17**, 299 (*synth, ir*)
Maxwell, A. *et al., J. Nat. Prod.*, 1989, **52**, 411 (*isol, uv, ir, pmr, ms*)

Albine A-243

Dehydroalbine
[53915-26-7]



Absolute configuration

$C_{14}H_{20}N_2O$ 232.325
Alkaloid from *Lupinus albus* and *Lupinus termis* seeds (Fabaceae). Mp 50°. $[\alpha]_D^{25}$ -103. The *N*-Methyl deriv. was formerly reported erroneously (see Alkaloid LC2, A-554).

Perchlorate: Mp 253°. $[\alpha]_D^{25}$ -76 (H_2O).

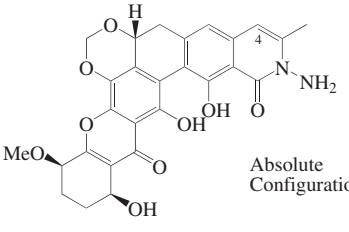
N-*Formyl:* **N-*Formylalbine***
$C_{15}H_{20}N_2O_2$ 260.335
Trace alkaloid in seeds and leaves of *Lupinus albescens* (Fabaceae). Provisional identification.

5,6-Didehydro: ***Δ⁵-Dehydroalbine***
$C_{14}H_{18}N_2O$ 230.309
Alkaloid from seeds of *Lupinus termis* (Fabaceae). Oil. $[\alpha]_D^{25}$ -44.6 (c, 0.02 in MeOH).

Wiewiórowski, M. *et al., Bull. Acad. Pol. Sci., Ser. Sci. Chim.*, 1964, **12**, 213; 217 (*isol, ir*)
Chekhlov, A.N. *et al., J. Struct. Chem. (Engl. Transl.)*, 1974, **15**, 848 (*cryst struct*)
Wolńska-Mocydlarz, J. *et al., Bull. Acad. Pol. Sci., Ser. Sci. Chim.*, 1976, **24**, 613 (*ir, struct*)
Mohamed, M.H. *et al., Phytochemistry*, 1991, **30**, 3111 (*Δ⁵-Dehydroalbine*)
Planchuelo-Ravelo, A.M. *et al., Z. Naturforsch., C*, 1993, **48**, 414 (*N-Formylalbine*)

Albofungin A-244

Kanchanomycin. BA 180265A. P 42-1. Antibiotic P 42-1
[37895-35-5]



Absolute Configuration

$C_{27}H_{24}N_2O_9$ 520.495
Stereochem. revised in 1992. Metab. of *Actinomyces albus* var. *fungatus* and *Actinomyces tumemacerans*. Antifungal agent with antineoplastic props. Yellow cryst. ($MeNO_2$). Mp 304-307°. $[\alpha]_D^{20}$ -670

(DMF). Log P 0.34 (uncertain value) (calc). λ_{max} 250 (ϵ 9000); 320 (ϵ 5000); 388 (ϵ 8000) (MeOH/NaOH) (Derep). λ_{max} 230 (ϵ 36400); 253 (ϵ 36500); 300 (ϵ 14600); 364 (sh) (ϵ 22400); 373 (ϵ 23700) (MeOH) (Derep).

► LD_{50} (mus, ipr) 2 mg/kg. ZD5706000

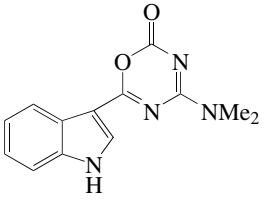
Penta-Ac: Mp 230-233°.

4-Chloro: ***Chloroalbofungin***. *Albofungin B*
[37891-66-0]
$C_{27}H_{23}ClN_2O_9$ 554.939
From *Actinomyces albus* var. *fungatus* and from *Streptomyces* spp. Possesses antifungal and antineoplastic activities. Cryst. ($MeNO_2$). Sol. Me_2CO, DMF, DMSO, Py, $CHCl_3$, dioxan, AcOH; fairly sol. MeOH, EtOH, $CHCl_3$, C_6H_6, butanol; poorly sol. H_2O, Et_2O, hexane. Mp 327-330°. $[\alpha]_D^{20}$ -560 (DMF). Log P 1.27 (uncertain value) (calc). λ_{max} 230 (E1%/1cm 530); 257 (E1%/1cm 540); 311 (E1%/1cm 330); 365 (E1%/1cm 320) (MeOH) (Berdy). λ_{max} 233 (ϵ 26300); 254 (ϵ 31600); 305 (ϵ 12300); 384 (ϵ 20900) (EtOH) (Berdy).

Gurevich, A.I. *et al., Tet. Lett.*, 1972, **13**, 1751-1754; 1974, **15**, 2801 (*Albofungin, Chloroalbofungin, isol, uv, pmr*)
Fukushima, K. *et al., J. Antibiot.*, 1973, **26**, 65-69 (*P42-1*)
Kogan, G.A. *et al., J. Struct. Chem. (Engl. Transl.)*, 1975, **15**, 793-799 (*cd*)
Onoprienko, V.V. *et al., Bioorg. Khim.*, 1978, **4**, 1418-1422 (*struct*)
Cooper, R. *et al., J. Antibiot.*, 1992, **45**, 444-453 (*pmr, cmr, stereochem, abs config*)

Alboinone A-245

4-(Dimethylamino)-6-(1H-indol-3-yl)-2H-1,3,5-oxadiazin-2-one, 9CI
[188547-40-2]

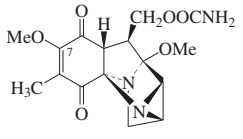


$C_{13}H_{12}N_4O_2$ 256.263
First naturally occurring oxadiazinone. Alkaloid from the ascidian *Dendrodoa grossularia*. λ_{max} 210 ; 252 ; 270 ; 334 (MeOH).

Bergmann, T. *et al., Tetrahedron*, 1997, **53**, 2055-2060 (*isol, uv, ir, pmr, cmr, ms, struct, synth*)

Albomitomycin A A-246

Antibiotic AX 1
[110934-24-2]



Absolute Configuration

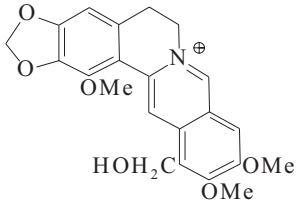
$C_{16}H_{19}N_3O_6$ 349.343
Quinone antibiotic. Metab. of *Streptomyces caespitosus*. Prod. by intramolecular rearrangement of Mitomycin A, M-653. Plates ($CHCl_3$). $[\alpha]_D^{23}$ -2.7 (c, 0.5 in $CHCl_3$). Dec. at >130°. λ_{max} 215 (ϵ 3300); 288 (ϵ 10000) (MeOH) (Berdy).

7-Demethoxy, 7-amino: ***Albomitomycin C***
[111750-67-5]
$C_{15}H_{18}N_4O_5$ 334.331
From *Streptomyces* sp. Prisms. Mp 120° dec. $[\alpha]_D^{26}$ +34.7 (c, 0.3 in $CHCl_3$). Incorrect MF given in paper. λ_{max} 242 (ϵ 5012); 344 (ϵ 6310) (MeOH) (Berdy).

Fukuyama, T. *et al., Tet. Lett.*, 1986, **27**, 6299 (*synth*)
Kono, M. *et al., J.A.C.S.*, 1987, **109**, 7224 (*isol, struct*)
Hirayama, N. *et al., Acta Cryst. C*, 1991, **47**, 409 (*cryst struct*)
Kono, M. *et al., J. Antibiot.*, 1995, **48**, 179 (*Albomitomycin C, isol, pmr, cmr, uv*)

Alborine A-247

Pangrenine. Alkaloid PO5. Alkaloid R-K
[23943-91-1]

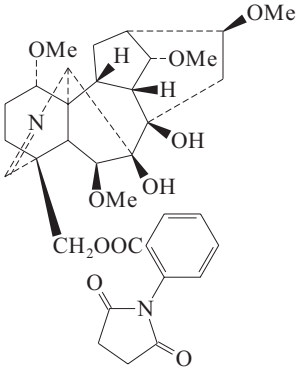


$C_{22}H_{22}NO_6^{\oplus}$ 396.419
Alkaloid from *Papaver pseudocanescens, Papaver oreophilum, Papaver nudicaule* var. *leiocarpum, Papaver pyrenaicum, Papaver alboroseum* and *Papaver angrenicum*. Yellow needles (MeOH)(as iodide or perchlorate). Mp 255-258° dec. (sinters from 228°)(as perchlorate) Mp 281-283° (as nitrate).

Preininger, V. *et al., Coll. Czech. Chem. Comm.*, 1970, **35**, 124; 1440 (*uv, pmr, struct, bibl*)
Pfeifer, S. *et al., Pharmazie*, 1972, **27**, 48
Novák, V. *et al., Coll. Czech. Chem. Comm.*, 1974, **39**, 883 (*isol*)
Siddikov, D. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2005, **41**, 442-445 (*isol, cryst struct*)

Alboviolaconitine D A-248

[138842-68-9]

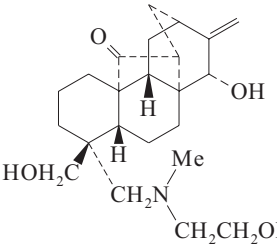


$C_{34}H_{42}N_2O_{10}$ 638.713
Alkaloid from roots of *Aconitum alboviolaceum* (Ranunculaceae).

Chen, D. *et al., Huaxue Xuebao*, 1992, **50**, 1211; *CA*, **118**, 230146m

Albovionitine A-249

[138935-81-6]

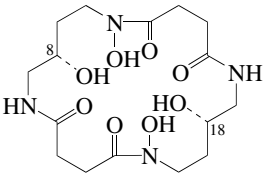


$C_{23}H_{35}NO_4$ 389.534
Alkaloid from *Aconitum alboviolaceum*. Cryst. ($CHCl_3$). Mp 150-152°.

Zhigang, H. *et al., Phytochemistry*, 1991, **30**, 3494-3496 (*isol, pmr, cmr, ms*)

Alcaligin A-250

1,8,11,18-Tetrahydroxy-1,6,11,16-tetraazacycloeicosane-2,5,12,15-tetrone, 9CI
[117959-43-0]



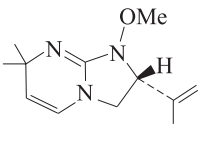
$C_{16}H_{28}N_4O_8$ 404.419
Isol. from *Alcaligenes denitrificans* ssp. *xylosoxydans*, *Bordetella pertussis* and *Bordetella bronchiseptica*. Siderophore. Cryst. + $2H_2O$ (H_2O). $[\alpha]_D^{27}$ +40.4 (c, 0.54 in MeOH). λ_{max} 206 ; 426 (H_2O) (Berdy).

8,18-Dideoxy: 1,11-Dihydroxy-1,6,11,16-tetraazacycloeicosane-2,5,12,15-tetrone, 9CI. ***Putrebactin***
[188944-66-3]
$C_{16}H_{28}N_4O_6$ 372.42
Prod. by *Shewanella putrefaciens*. Siderophore.

Nishio, T. *et al., J.A.C.S.*, 1988, **110**, 8733 (*isol, struct*)
Nishio, T. *et al., Agric. Biol. Chem.*, 1990, **54**, 1837 (*isol*)
Bergeron, R.J. *et al., J.O.C.*, 1991, **56**, 5560 (*synth*)
Moore, C.H. *et al., J. Bacteriol.*, 1995, **177**, 1116 (*isol*)
Ledyard, K.M. *et al., J. Biol. Inorg. Chem.*, 1997, **2**, 93-97 (*Putrebactin*)

Alchorneine A-251

1,2,3,7-Tetrahydro-1-methoxy-7,7-dimethyl-2-(1-methylethenyl)imidazo[1,2-a]pyrimidine, 9CI



Absolute configuration

$C_{12}H_{19}N_3O$ 221.302

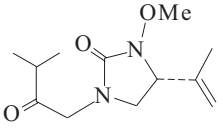
(R)-form [28340-21-8]
Alkaloid from *Alchornea floribunda* and *Alchornea hirtella* (Euphorbiaceae). Effective as a spasmolytic agent in dogs. Ganglioplegic parasympathomimetic agent. Strong vagolytic agent and inhibitor of intestinal peristalsis. Mp 43°. $[\alpha]_D$ -105 (c, 1 in $CHCl_3$).

Methiodide:
Cryst. (Me_2CO/MeOH). Mp 159°. $[\alpha]_D$ -28 (EtOH).

Cesario, M. *et al., Acta Cryst. B*, 1972, **28**, 151 (*cryst struct*)
Fr. Pat., 1972, 2 087 982; *CA*, **77**, 88757a (*isol, use*)
Khuong-Huu, F. *et al., Tetrahedron*, 1972, **28**, 5207 (*isol, ir, uv, pmr, ms, struct, abs config*)
Büchi, G. *et al., J.O.C.*, 1989, **54**, 4494 (*synth*)

Alchorneinone A-252

[41758-41-2]

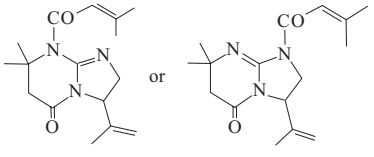


$C_{12}H_{20}N_2O_3$ 240.302
Alkaloid from the leaves of *Alchornea floribunda* (Euphorbiaceae). Liq. $[\alpha]_D$ -66 (c, 1 in $CHCl_3$).

Khuong-Huu, F. *et al., Tetrahedron*, 1972, **28**, 5207 (*isol, ir, pmr, ms, struct*)

Alchornidine A-253

[25801-15-4]



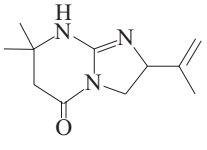
Preferred structure

$C_{16}H_{23}N_3O_2$ 289.377
Spectroscopic data do not allow a firm choice to be made between two alternative structs. Minor alkaloid from the leaves of *Alchornea javanensis* (Euphorbiaceae). Glistening needles by subl. Mp 96-97°. $[\alpha]_D$ -18 (c, 1.1 in $CHCl_3$).

Hart, N.K. *et al., Aust. J. Chem.*, 1970, **23**, 1679-1693 (*isol, ir, pmr, ms, struct*)

Alchornine A-254

[25819-91-4]



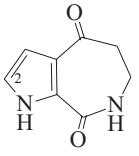
$C_{11}H_{17}N_3O$ 207.275
A major constit. of both the leaves and bark of *Alchornea javanensis* (Euphorbiaceae). Needles (petrol/C_6H_6). Mp 134-135°. $[\alpha]_D$ +74 (c, 1.5 in $CHCl_3$).

Picrate:
Yellow prisms (EtOH). Mp 275-278°.

Hart, N.K. *et al., Aust. J. Chem.*, 1970, **23**, 1679 (*isol, ir, pmr, ms, struct*)

Aldisine A-255

6,7-Dihydropyrrolo[2,3-c]azepine-4,8(1H,5H)-dione, 9CI
[72908-87-3]



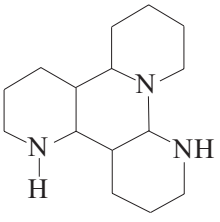
$C_8H_8N_2O_2$ 164.163
Isol. from the marine sponges *Hymeniacidon aldis*, *Axinella carteri* and *Pseudaxinyssa cantharella*. Mp 275-277° (269° dec.). $[\alpha]_D$ -6 (c, 0.12 in MeOH). λ_{max} 216 (ϵ 19100); 245 (ϵ 8370); 295 (ϵ 6770) (MeOH) (Derep).

2-Bromo: ***2-Bromoaldisine***
[96562-96-8]
$C_8H_7BrN_2O_2$ 243.059
Isol. from *Hymeniacidon aldis*, an unidentified sponge from Fiji, a *Lissodendoryx* sp. of sponge from Sri Lanka and from *Pseudaxinyssa cantharella*. Cryst. (MeOH). Mp 265° (243°). $[\alpha]_D$ +5 (c, 0.47 in MeOH). λ_{max} 220 (ϵ 29600); 244 (sh) (ϵ 12100); 303 (ϵ 8130) (MeOH) (Derep).

Sharma, G.M. *et al., Chem. Comm.*, 1980, 435 (*synth, uv, pmr, cmr*)
Schmitz, F.J. *et al., J. Nat. Prod.*, 1985, **48**, 47 (*isol, uv, ir, pmr, cmr, ms, struct, deriv*)
Utkina, N.K. *et al., Khim. Prir. Soedin.*, 1985, **21**, 578; *Chem. Nat. Compd. (Engl. Transl.)*, 1985, **21**, 547 (*isol*)
De Nanteuil, G. *et al., Tetrahedron*, 1985, **41**, 6019 (*isol, uv, ir, pmr, cmr, ms, cd, deriv*)
Xu, X.-H. *et al., J. Struct. Chem. (Engl. Transl.)*, 2001, **20**, 173-175 (*cryst struct*)

α-Aldotripiperideine A-256

[642-10-4]

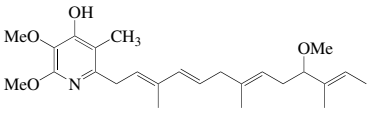


$C_{15}H_{27}N_3$ 249.398
Alkaloid from *Coelidium fourcadei* dried branches and leaves (Fabaceae). Cryst. (hexane). Mp 121° (115-118°). Prob. an artifact of thermal dec.

Schöpf, C. *et al., Angew. Chem.*, 1950, **62**, 452 (*synth*)
Arndt, R.R. *et al., J. S. Afr. Chem. Inst.*, 1968, **21**, 54; *CA*, **70**, 4342f (*isol*)

Aleicide B A-257

2,3-Dimethoxy-6-(10-methoxy-3,7,11-trimethyl-2,4,7,11-tridecatetraenyl)-5-methyl-4-pyridinol, 9CI
[156204-42-1]



$C_{25}H_{37}NO_4$ 415.572
Prod. by *Streptomyces aurantiacus*. Insecticide.

Shopotova, L.P. *et al., Zh. Prikl. Khim. (Leningrad)*, 1993, **66**, 1111-1117 (*isol, pmr, cmr, ms*)

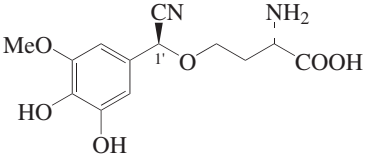
Aleicide C A-258

$C_{25}H_{37}NO_5$ 431.571
Prod. by *Streptomyces aurantiacus*. Insecticide.

Navashin, S.M. *et al., Antibiotiki (Moscow)*, 1994, **39**, 3-12

Aleurodisconitrile A-259

[1000180-33-5]



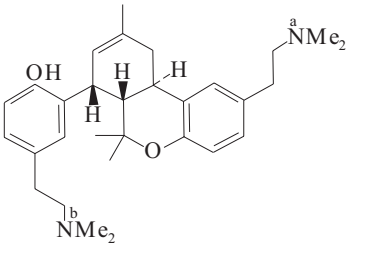
$C_{13}H_{16}N_2O_6$ 296.279
Isol. from the fruiting bodies of *Aleurodiscus amorphus*. Solid. λ_{max} 212 (log ϵ 4.07); 246 (log ϵ 3.31); 274 (log ϵ 2.79) (MeOH).

Decyano, 1′-oxo: ***Aleurodiscoester***
[1000180-34-6]
$C_{12}H_{15}NO_7$ 285.253
Isol. from fruiting bodies of *Aleurodiscus amorphus*. Solid. $[\alpha]_D^{25}$ +70 (c, 0.13 in MeOH). λ_{max} 217 (log ϵ 3.57); 277 (log ϵ 3.18) (MeOH).

Kindler, B.L.J. *et al., Angew. Chem., Int. Ed.*, 2007, **46**, 8076-8078 (*isol, cd, pmr, cmr*)

Alfileramine A-260

[73326-84-8]



$C_{30}H_{42}N_2O_2$ 462.674

A bishordeninylterpene alkaloid related structurally to the cannabinoids. Exists in soln. as an equilib. mixt. of 2 rotamers. Alkaloid from the leaves of *Zanthoxylum punctatum*, *Zanthoxylum chiriquinum* and *Zanthoxylum coriaceum* (Rutaceae). Mp 185-187°. Opt. inactive.

Methiodide (1:2): Mp 253-255°.

N[a]-*De-Me:* **N[a]-*Demethylalfileramine***
[129743-97-1]
$C_{29}H_{40}N_2O_2$ 448.647
Alkaloid from the leaves of *Zanthoxylum coriaceum* (Rutaceae). Opt. inactive.

N[b]-*De-Me:* **N[b]-*Demethylalfileramine***
[129743-98-2]
$C_{29}H_{40}N_2O_2$ 448.647
Alkaloid from the leaves of *Zanthoxylum coriaceum* (Rutaceae). Opt. inactive.

N[a],N[b]-*Di-de-Me:* **N[a],N[b]-*Didemethylalfileramine***
[129743-95-9]
$C_{28}H_{38}N_2O_2$ 434.62
Alkaloid from the leaves of *Zanthoxylum coriaceum* (Rutaceae). Amorph. Opt. inactive.

Me ether: **O-*Methylalfileramine***
[128700-82-3]
$C_{31}H_{44}N_2O_2$ 476.701
Alkaloid from the leaves of *Zanthoxylum chiriquinum* (Rutaceae). Oil (solidifies upon standing). Opt. inactive.

Caolo, M.A. *et al., Tetrahedron*, 1979, **35**, 1487-1492 (*isol, uv, ir, pmr, ms, cryst struct*)
Swinehart, J.A. *et al., Phytochemistry*, 1980, **19**, 1219-1223 (*isol*)
Marcos, M. *et al., Tetrahedron*, 1989, **45**, 7477-7484 (*uv, ir, pmr, cmr, ms*)
Marcos, M. *et al., J. Nat. Prod.*, 1990, **53**, 459-461 (*O-Methylalfileramine*)
Marcos, M. *et al., Phytochemistry*, 1990, **29**, 2315-2319 (*Demethylalfileramines*)

Alginidine A-261

[1353-94-2]

Struct. unknown

$C_{27}H_{43}NO_4$ 445.641

Steroidal alkaloid. Alkaloid from *Fritillaria severzowii* (Liliaceae). Mp 164°. $[\alpha]_D$ -24.6 (MeOH).

Hydrochloride: Mp 230-232°.

Methiodide: Mp 288-289°.

Nuriddinov, R.N. *et al., CA*, 1962, **57**, 15165

Alginine† A-262

$C_{23}H_{39}NO_3$ 377.566

Steroidal alkaloid of unknown struct. contg. 3 OH groups. Alkaloid from *Fritillaria severzowii* (Liliaceae). CNS stimulant, adrenergic blocking agent, local anaesthetic. Mp 271-272°. $[\alpha]_D$ +108.5.

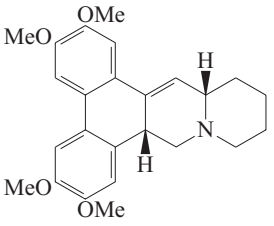
Hydrochloride: Mp 323-325°.

Methiodide: Mp 310-311°.

Yunusov, S. *et al., J. Gen. Chem. USSR (Engl. Transl.)*, 1939, **9**, 1911; *CA*, **34**, 4070

Alihirsutine A A-263

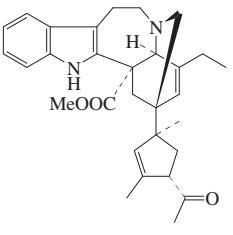
[147526-80-5]



$C_{25}H_{29}NO_4$ 407.508
Alkaloid from aerial parts of *Tylophora hirsuta* (Asclepiadaceae). Cryst. ($CHCl_3$/MeOH 1:1). Mp 296-298°.

Ali, M. *et al., Fitoterapia*, 1992, **63**, 243 (*isol, uv, ir, pmr, ms, struct*)

Alioline A-264



Absolute Configuration

$C_{30}H_{36}N_2O_3$ 472.626
Unusual iboga-type alkaloid containing an additional C_9 terpenoid unit, the origin of which is unclear. Alkaloid from *Catharanthus roseus*. $[\alpha]_D^{24}$ +105.5 (MeOH). λ_{max} 227 (log ϵ 4.13); 283 (log ϵ 3.69); 292 (log ϵ 3.61) (MeOH).

Habib-ur-Rahman, *et al., Z. Naturforsch., B*, 2005, **60**, 870-874 (*isol, pmr, cmr*)

Aconitum nemorosum C_{20} Alkaloid A-265

$C_{20}H_{25}NO_3$ 327.422

Struct. unknown. Alkaloid from *Aconitum nemorosum*. Cryst. (Me_2CO). Mp 244-246°. Could be identical with Hetisinone (see under Hetisan-2,11,13-triol, H-202.

Monakhova, T.E. *et al., Khim. Prir. Soedin.*, 1965, **1**, 113; *Chem. Nat. Compd. (Engl. Transl.)*, 1965, **1**, 88

Aconitum nemorosum C_{23} Alkaloid A-266

$C_{23}H_{29}NO_6$ 415.485

Struct. unknown. Alkaloid from *Aconitum nemorosum*. Mp 270-272° (as hydrochloride). MF erroneously given as $C_{23}H_{29}NO_3$ in ref. Anal. figures given correspond to O_6.

Monakhova, T.E. *et al., Khim. Prir. Soedin.*, 1965, **1**, 113; *Chem. Nat. Compd. (Engl. Transl.)*, 1965, **1**, 88

Erythrophleum C_{24} Alkaloid A-267

$C_{24}H_{37}NO_7$ 451.559

Struct. unknown. Alkaloid from the bark of *Erythrophleum chlorostachys* (Fabaceae). Glass.

Hydrochloride:
Needles (EtOH/EtOAc). Mp 191° (solvate).

3-Ac: **C_{24} *Amine 3β-acetate***
$C_{26}H_{39}NO_8$ 493.596
Alkaloid from the bark of *Erythrophleum chlorostachys* (Fabaceae).

C_{24} amide (rearrangement product):
Cryst. (EtOAc). Mp 186°. Obt. by treating the C_{24} amine with 5*M* NaOH.

Falkiner, M.J. *et al., Aust. J. Chem.*, 1975, **28**, 645-650 (*isol, pmr*)

Aconitum kirinense Alkaloid A-268

$C_{26}H_{41}NO_8$ 495.612

Struct. unknown. Isol. from *Aconitum kirinense*. Mp 134.5° (as nitrate). Conts. 4 OH, 3 OMe and 1 NMe groups.

Monakhova, T.E. *et al., Khim. Prir. Soedin.*, 1965, **1**, 113-116; *Chem. Nat. Compd. (Engl. Transl.)*, 1965, **1**, 88

Aconitum koreanum Alkaloid A-269

$C_{35}H_{41}NO_{10}$ 635.71

Struct. unknown. Isol. from *Aconitum koreanum*. Mp 210° (as hydrobromide). $[\alpha]_D^{27}$ -18.7 (c, 4.27 in EtOH). Species name given as coreanum in the English-language translation of the paper. No further reports to 2007. Later investigations of this species do not refer.

Monakhova, T.E. *et al., Khim. Prir. Soedin.*, 1965, **1**, 113-116; *Chem. Nat. Compd. (Engl. Transl.)*, 1965, **1**, 88-90
Kao, H.C. *et al., Yaoxue Xuebao*, 1966, **13**, 186-194; *CA*, **65**, 3922g (*Aconitum koreanum constits*)

Alstonia constricta Alkaloid A-270

Struct. unknown

$C_{43}H_{50}N_4O_7$ 734.891

Bisindole alkaloid. Alkaloid from the root bark of *Alstonia constricta* (Apocynaceae). Needles (Me_2CO). Mp 196-197°. $[\alpha]_D$ +9 (c, 3.3 in $CHCl_3$).

Crow, W.D. *et al., Aust. J. Chem.*, 1970, **23**, 2489-2501 (*isol, uv, ir, pmr*)

Ammodendron karelinii Alkaloid A-271

Struct. unknown

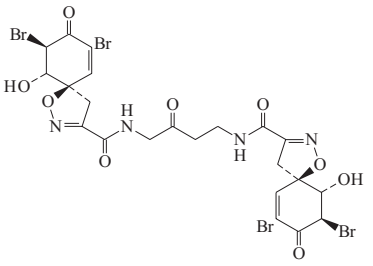
$C_{15}H_{24}N_2O$ 248.367

Quinolizidine alkaloid, prob. of Sparteine group. Alkaloid from *Ammodendron karelinii* (Fabaceae). Oil.

Kushmuradov, Yu.K. *et al., Khim. Prir. Soedin.*, 1977, **13**, 717-718; *Chem. Nat. Compd. (Engl. Transl.)*, 604-605 (*isol*)

Aplysina archeri Alkaloid A-272

[179523-37-6]



$C_{22}H_{20}Br_4N_4O_9$ 804.037

Probable abs. config. illus. Metab. from the Caribbean sponge *Aplysina archeri*. Shows antifungal activity. λ_{max} 252 (ε 7850) (MeOH).

Ciminiello, P. *et al., Tetrahedron*, 1996, **52**, 9863 (*isol, uv, ir, pmr, cmr, cd, struct*)

Artemisia rutifolia Alkaloid A-273

$C_{22}H_{31}NO_8$ 437.489

Struct. unknown. Isol. from epigeal parts of *Artemisia rutifolia*. Amorph. solid. Mp 189-190°. Prob. artifact (NH_3 used in extraction). *Artemisia* is not an alkaloid-bearing genus.

Brutko, L.I. *et al., Khim. Prir. Soedin.*, 1967, **3**, 292; *Chem. Nat. Compd. (Engl. Transl.)*, 1967, **3**, 247

Astragalus berterianus Alkaloid A-274

Struct. unknown. Alkaloid from *Astragalus berterianus* (Fabaceae). Mp 210°.

Gutierrez, C.P. *et al., An. Fac. Quim. Farm. (Univ. Chile)*, 1960, **12**, 120; *CA*, **56**, 5121h

Buxus Alkaloid 1 A-275

Struct. unknown. Alkaloid from *Buxus sempervirens* (Buxaceae). Mp 199°. $[\alpha]_D$ +31 ($CHCl_3$). Props. similar to Buxaminol E in B-456 and *Buxus* Alkaloid B398, A-398.

Stauffacher, D. *et al., Helv. Chim. Acta*, 1964, **47**, 968-981 (*isol*)

Buxus Alkaloid 2 A-276

Struct. unknown. Alkaloid from *Buxus sempervirens* (Buxaceae). Mp 195°. $[\alpha]_D$ +92 ($CHCl_3$).

Stauffacher, D. *et al., Helv. Chim. Acta*, 1964, **47**, 968-981 (*isol*)

Buxus Alkaloid 3 A-277

Struct. unknown. Alkaloid from *Buxus sempervirens* (Buxaceae). Mp 281°. $[\alpha]_D$ +68 ($CHCl_3$).

Stauffacher, D. *et al., Helv. Chim. Acta*, 1964, **47**, 968-981 (*isol*)

Buxus Alkaloid 4 A-278

Struct. unknown. Alkaloid from *Buxus sempervirens* (Buxaceae). Mp 177°. $[\alpha]_D$ +147 ($CHCl_3$). Props. corresp. to Buxtauine M, B-482.

Stauffacher, D. *et al., Helv. Chim. Acta*, 1964, **47**, 968-981 (*isol*)

Buxus Alkaloid 5 A-279

Struct. unknown. Alkaloid from *Buxus sempervirens* (Buxaceae). Mp 156°. $[\alpha]_D$ +40 ($CHCl_3$).

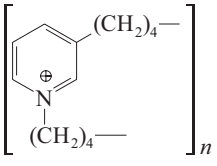
Stauffacher, D. *et al., Helv. Chim. Acta*, 1964, **47**, 968-981 (*isol*)

C-Alkaloid I A-280

Minimum formula. Struct. unknown. Alkaloid from calabash curare (*Strychnos* spp.) (Loganiaceae). Prisms (Me_2CO aq.) (as picrate). Mp 194° (picrate). Blue-violet col. with $Ce(SO_4)_2$, becoming carmine on standing.

Kebrle, J. *et al., Helv. Chim. Acta*, 1953, **36**, 102-121; 1384-1386 (*isol*)

Callyspongia fibrosa Alkaloid A-281



High molecular weight oligomer or polymer. Alkaloid from the Micronesian sponge *Callyspongia fibrosa*. Inhibitor of the epidermal growth factor receptor.

Davies-Coleman, M.T. *et al., J.O.C.*, 1993, **58**, 5925

Chamaecytisus Alkaloid A-282

$C_{12}H_{20}N_2O$ 208.303

Struct. unknown. Alkaloid from *Chamaecytisus austriacus stefanoffi, Chamaecytisus ciliatus* and *Chamaecytisus polytrichus polytrichus* (Fabaceae). Mp 168-170°. Ir 1675 cm^{-1}. Prob. a tertiary amide.

Deili, A. *et al., Farmatsiya (Sofia)*, 1977, **27**, 15-18; *CA*, **89**, 56427z (*isol*)

Colchicum luteum Alkaloid A-283

$C_{19}H_{23}NO_4$ 329.395

Struct. unknown. Alkaloid from *Colchicum luteum* (Liliaceae). Mp 237-238°.

Chommadov, B. *et al., Khim. Prir. Soedin.*, 1985, 810; *Chem. Nat. Compd. (Engl. Transl.)*, 770-773 (*isol, ir, pmr, ms*)

Crotalaria retusa Alkaloid A-284

Struct. unknown. Isol. from *Crotalaria retusa*. Cryst. (Me_2CO). Mp 130-132°.

Culvenor, C.C.J. *et al., Aust. J. Chem.*, 1957, **10**, 464-473 (*isol*)

Cytisus laburnum Alkaloid A-285

$C_{12}H_{22}N_2O$ 210.319

Struct. unknown. Pyrrolizidine alkaloid. Alkaloid from *Cytisus laburnum (Laburnum laburnum)* (Fabaceae). Mp 128-129°. $[\alpha]_D^{19}$ +18.6 (EtOH). Prob. conts. one NH (?lactam) group, no NMe group.

Galinovsky, F. *et al., Sci. Pharm.*, 1953, **21**, 256; *CA*, **49**, 6977

Cytisus ruthenicus Alkaloid A-286

$C_{15}H_{16}N_2O_5$ 304.302

Prob. a quinolizidine (Sparteine-group) alkaloid. Struct. unknown. Alkaloid from *Cytisus ruthenicus* (Fabaceae). Mp 171.5-173°. $[\alpha]_D^{18}$ -15.26. Conts. *N*-Me group. Co-occurs with Sparteine.

Hydroiodide: Mp 231-233°.

Perchlorate: Mp 198-200°.

Dipicrate: Mp 199-201°.

Alekseev, V.S. *et al., Farm. Zh. (Kiev)*, 1967, **22**, 59-60; *CA*, **67**, 54325m (*isol*)

Dendrobates Alkaloid 185 A-287

Struct. unknown. Trace alkaloid from skin extracts of *Dendrobates auratus* (Dendrobatidae). Mol. formula not known; m/e 185 (1), 170 (100). Cannot be hydrogenated.

Daly, J.W. *et al., Toxicon*, 1978, **16**, 163-180 (*isol, ms, rev*)

Daly, J.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 205 (*ms, rev*)

Dendrobates Alkaloid 197 A-288

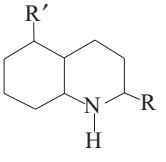
Struct. unknown. Trace alkaloid from skin extracts of *Dendrobates auratus* (Dendrobatidae). Mol. formula not known; m/e 197 (1), 180 (100), 126 (35). Cannot be hydrogenated.

Daly, J.W. *et al., Toxicon*, 1978, **16**, 163-180 (*isol, ms, rev*)

Daly, J.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 205 (*ms, rev*)

Dendrobates Alkaloid 203 A-289

Decahydro-2-(2-penten-4-ynyl)quinoline



R = $CH_2CH{=}CHC{\equiv}CH$, R′= H

$C_{14}H_{21}N$ 203.327

Tentative struct. A major alkaloid in skin extracts of *Dendrobates fulguritus*, trace constit. in *Dendrobates auratus, Dendrobates histrionicus, Dendrobates minutus* and *Dendrobates pumilio* (Dendrobatidae). m/e 203(1), 202(2), 138(100). H_6-deriv., m/e 209, 138. Does not appear to form an *N*-Ac deriv.

Dihydro (?): **Dendrobates *Alkaloid 205***
$C_{14}H_{23}N$ 205.342
Trace alkaloid from skin extracts of *Dendrobates histrionicus* (Dendrobatidae). Tentative mol. formula. m/e 205(1), 204(2), 138(100).

Daly, J.W. *et al., Toxicon*, 1978, **16**, 163 (*isol, ms, rev*)

Daly, J.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 205 (*ms, rev*)
Spande, T.F. *et al., J. Nat. Prod.*, 1999, **62**, 5-21 (*pmr, cmr, occur*)

Dendrobates Alkaloid 217 A-290

$C_{15}H_{23}N$ 217.353

Struct. unknown. A major alkaloid from skin extracts of one population of *Dendrobates bombetes* and *Dendrobates minutus*; minor constit. in *Dendrobates tricolor* (Dendrobatidae). m/e 217 (2), 216 (3), 152 ($C_{10}H_{18}N$, 100). H_6-deriv, m/e 223, 152. Did not form an *N*-Ac deriv.

Daly, J.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 205 (*ms, rev*)

Dendrobates Alkaloid 225 A-291

$C_{14}H_{27}NO$ 225.373

Struct. unknown. Trace alkaloid from skin extracts of *Dendrobates tinctorius* (Dendrobatidae). Mol. formula tentative; m/e 225 (3), 224 (6), 208 (2), 168 (100), 152 (25). Possibly a hydroxypumiliotoxin C. Cannot be hydrogenated.

Daly, J.W. *et al., Toxicon*, 1978, **16**, 163-180 (*isol, ms, rev*)
Daly, J.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 205 (*ms, rev*)

Dendrobates Alkaloid 233 A-292

$C_{16}H_{27}N$ 233.396

Struct. unknown. Minor alkaloid from skin extracts of *Dendrobates* sp. (Colombia) (Dendrobatidae). Mol. formula tentative; m/e 233 (2), 232 (2), 166 (100). Probably higher homologue of *Dendrobates* Alkaloid 223B, A-404 with 2 double bonds in the R side chain. H_4-deriv, m/e 237, 166.

Daly, J.W. *et al., Toxicon*, 1978, **16**, 163-180 (*isol, ms, rev*)
Daly, J.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 205 (*ms, rev*)

Dendrobates Alkaloid 295 A-293

$C_{19}H_{37}NO$ 295.507

Struct. unknown. Trace alkaloid from skin extracts of *Dendrobates auratus* (Dendrobatidae). Mol. formula tentative; m/e 295 (3), 278 (4), 138 (100).

Daly, J.W. *et al., Toxicon*, 1978, **16**, 163 (*isol, ms, rev*)
Daly, J.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 205 (*ms, rev*)

Dendrobates Alkaloid 301 A-294

$C_{21}H_{35}N$ 301.514

Struct. unknown. Trace alkaloid from skin extracts of *Dendrobates azureus* (Dendrobatidae). Mol. formula tentative; m/e 301 (<1), 260 (100). Possibly a member of Pumiliotoxin-C class with an allyl R-substituent and a C_9H_{15} R′-substituent, see *Dendrobates* Alkaloid 167A, A-354.

Daly, J.W. *et al., Toxicon*, 1978, **16**, 163-180 (*isol, ms, rev*)
Daly, J.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 205 (*ms, rev*)

Dendrobates Alkaloid 325 A-295

$C_{19}H_{35}NO_3$ 325.49

Struct. unknown. A major alkaloid from skin extracts of *Dendrobates fulguritus* and *Dendrobates minutus* (Dendrobatidae). Mol. formula tentative; m/e 325 (3), 308 (12), 280 (3), 210 (2), 182 (56), 114 (16), 112 (9), 70 (100). Forms H_2-deriv, m/e similar to H_4-deriv of Pumiliotoxin B.

Daly, J.W. *et al., Toxicon*, 1978, **16**, 163-188 (*isol, ms, rev*)
Daly, J.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 205 (*ms, rev*)

Dendrobates Alkaloid 351 A-296

$C_{21}H_{37}NO_3$ 351.528

Struct. unknown. Trace alkaloid from skin extracts of *Dendrobates auratus* (Dendrobatidae). Mol. formula tentative; m/e 351 (6), 350 (2), 336 (4), 152 (38), 138 (65), 70 (100). Probably a member of the Pumiliotoxin A class, but the large peak at 138 is atypical.

Daly, J.W. *et al., Toxicon*, 1978, **16**, 163-180 (*isol, ms, rev*)
Daly, J.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 205 (*ms, rev*)

Fritillaria Alkaloid 5 A-297

Fritillaria *Base 5*

Struct. unknown. Alkaloid from *Fritillaria raddeana* (Liliaceae), occurring with Raddeamine, R-7. Mp 245-247°.

Aslanov, Kh.A. *et al., Zh. Obshch. Khim.*, 1956, **26**, 579; *J. Gen. Chem. USSR (Engl. Transl.)*, 1956, **26**, 623

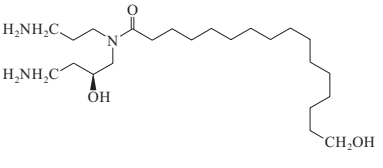
Fritillaria Alkaloid 6 A-298

Fritillaria *Base 6*

Struct. unknown. Alkaloid from *Fritillaria raddeana* (Liliaceae). Mp 197-199° (as hydrochloride).

Aslanov, Kh.A. *et al., Zh. Obshch. Khim.*, 1956, **26**, 579; *J. Gen. Chem. USSR (Engl. Transl.)*, 1956, **26**, 623

Fromia monilis Alkaloid A-299



$C_{23}H_{49}N_3O_3$ 415.658

(*S*)-*form* [162340-03-6]

Alkaloid from the New Caledonian starfish *Fromia monilis*. Cytotoxic agent. $[\alpha]_D$ +3.5.

Palagiano, E. *et al., Tetrahedron*, 1995, **51**, 3675 (*isol, pmr, cmr, struct*)

Galanthus caucasicus Alkaloid A-300

$C_{17}H_{19}NO_4$ 301.341

Amaryllidaceae alkaloid. Struct. unknown. Isol. from *Galanthus caucasicus* (Amaryllidaceae). Cryst. (H_2O). Mp 214°. $[\alpha]_D^{20}$ +94.3 (c, 0.71 in MeOH).

Tsakadze, D.M. *et al., Khim. Prir. Soedin.*, 1969, **5**, 331; *Chem. Nat. Compd. (Engl. Transl.)*, 1969, **5**, 281 (*isol*)

Gentiana Alkaloid I A-301

$C_{13}H_{16}N_2O_3$ 248.281

Struct. unknown. Monoterpene alkaloid. Alkaloid from *Gentiana asclepiadea* and *Gentiana punctata* (Gentianaceae). Mp 183-187°.

Mollov, N.M. *et al., Dokl. Bulg. Akad. Nauk*, 1965, **18**, 947-949; *CA*, **64**, 10084h (*isol, uv, ir*)
Cordell, G.A. *et al., Alkaloids (Academic Press)*, 1977, **16**, 431 (*rev*)

Gentiana Alkaloid V A-302

$C_{10}H_9NO_2$ 175.187

Struct. unknown. Monoterpene alkaloid. Alkaloid from *Gentiana asclepiadea, Gentiana bulgarica, Gentiana cruciata, Gentiana lutea* (yellow gentian) and *Gentiana punctata* (Gentianaceae). Mp 240°.

Marekov, N. *et al., Dokl. Bulg. Akad. Nauk*, 1965, **18**, 999-1002; *CA*, **64**, 11270a (*isol, ir*)
Cordell, G.A. *et al., Alkaloids (Academic Press)*, 1977, **16**, 431 (*rev*)

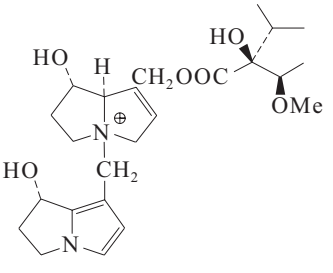
Gynura segetum Alkaloid A-303

$C_{18}H_{25}NO_5$ 335.399

Pyrrolizidine alkaloid. Struct. unknown. Possibly related to Seneciphylline, S-240. Alkaloid from *Gynura segetum*. Antimalarial agent. Cryst. Mp 223-224°.

Tang, S.-R. *et al., Zhongcaoyao*, 1980, **11**, 193-195; *CA*, **94**, 36187w

Heliotropium europaeum Alkaloid A-304



$C_{24}H_{37}N_2O_6^{\oplus}$ 449.566

Dimeric pyrrolizidine alkaloid, originally thought to be a C_{12} monomer. Alkaloid from *Heliotropium europaeum* (Boraginaceae). Prisms (Me_2CO/MeOH)(as chloride). Mp 158-159° dec. (as chloride). Results from alkylation of Heliotrine, H-95 by dehydroheliotrine in the plant. Does not appear to be an artifact.

Culvenor, C.C.J. *et al., Aust. J. Chem.*, 1954, **7**, 287 (*isol*)
Culvenor, C.C.J. *et al., Tet. Lett.*, 1969, 3603 (*pmr, struct*)

Helleborus Alkaloid V A-305

$C_{25}H_{43}NO_6$ 453.618

Struct. unknown. Alkaloid from *Helleborus viridis*. Mp 267-268° (browns from 210°). V. weak base.

Keller, O. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1928, **266**, 545-572

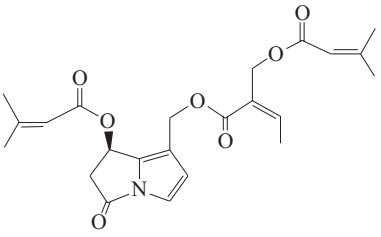
Hovea longipes Alkaloid A-306

Struct. unknown. Alkaloid from the whole plant of *Hovea longipes* (Fabaceae). Cryst. (EtOH/HCl)(as hydrochloride). Mp 238-239° (hydrochloride).

Fitzgerald, J.S. *et al., An. Quim.*, 1972, **68**, 737 (*isol*)

Jacmaia incana Alkaloid A-307

[78869-20-2]



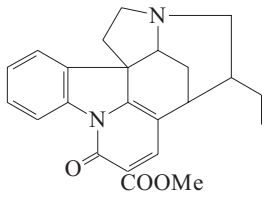
$C_{23}H_{27}NO_7$ 429.469

Alkaloid from the aerial parts of *Jacmaia incana* (Asteraceae). Gum. $[\alpha]_D^{24}$ -12 (c, 0.9 in $CHCl_3$). Closely related to the Senampelines (see Senampelines, S-233).

Bohlmann, F. *et al., Phytochemistry*, 1981, **20**, 831-832 (*ir, pmr, ms, struct*)

Leuconotis Alkaloid 376 A-308

[131242-30-3]



$C_{23}H_{24}N_2O_3$ 376.454

Alkaloid from *Leuconotis griffithii* and *Leuconotis eugenifolia*.

Goh, S.H. *et al., Tetrahedron*, 1989, **45**, 7899 (*isol, uv, ir, pmr, cmr, ms, struct*)

Leuconotis griffithii Alkaloid 308 A-309

Struct. and MF unknown. Alkaloid from *Leuconotis griffithii*.

Goh, S. *et al., Tetrahedron*, 1989, **45**, 7899-7820 (*isol, uv, pmr, cmr, ms*)

Lycopodium Alkaloid V A-310

Lycopodium *Base V*

$C_{17}H_{27}NO_2$ 277.406

Struct. unknown. Alkaloid from *Lycopodium annotinum* (Lycopodiaceae).

Methiodide: Mp 304°. $[\alpha]_D^{20}$ -66.

Methochloride: Mp 258°.

Methoperchlorate: Mp 321°.

Achmatowicz, O. *et al., Pol. J. Chem. (Rocz. Chem.)*, 1958, **32**, 485 (*isol, uv*)

Lycopodium Alkaloid X A-311

Lycopodium *Base X*

$C_{17}H_{25}NO_3$ 291.389

Struct. unknown. Alkaloid from *Lycopodium annotinum* (Lycopodiaceae).

Methiodide: Mp 315°. $[\alpha]_D^{18}$ -30.9.

Methochloride: Mp 269°.

Methoperchlorate: Mp 335°.

Methopicrate: Mp 151°.

Achmatowicz, O. *et al., Pol. J. Chem. (Rocz. Chem.)*, 1958, **32**, 485 (*isol, uv*)

Lycopodium Alkaloid 168 A-312

Lycopodium *Base 168*

$C_{16}H_{23}NO_3$ 277.363

Struct. unknown. Trace alkaloid from *Lycopodium clavatum* (Lycopodiaceae). Mp 168°.

Rodewald, W.J. *et al., Pol. J. Chem. (Rocz. Chem.)*, 1977, **51**, 1271 (*isol, ir, ms*)

Lycopodium Alkaloid 258 A-313

Lycopodium *Base 258*

Molecular formula not known; MW = 263. Struct. unknown. Trace alkaloid from *Lycopodium clavatum* (Lycopodiaceae). Mp 258°.

Rodewald, W.J. *et al., Pol. J. Chem. (Rocz. Chem.)*, 1977, **51**, 1271 (*isol*)

Lycopodium annotinum Alkaloid† A-314

Struct. unknown. Alkaloid from *Lycopodium annotinum* (Lycopodiaceae).

Perchlorate:
Cryst. (H_2O). Mp 234° dec.

Picrate: Mp 241-241.5° dec.

Methiodide:
Cryst. (EtOH). Mp 261° dec.

Bertho, A. *et al., Chem. Ber.*, 1952, **85**, 663 (*isol*)

Lycopodium annotinum Alkaloid† A-315

Struct. unknown. Alkaloid from *Lycopodium annotinum* (Lycopodiaceae).

Picrate:
Yellow rosettes (EtOH). Mp 121° dec. (sint. at 110°).

Methiodide:
Cryst. (EtOH). Mp 290°.

Bertho, A. *et al., Chem. Ber.*, 1952, **85**, 663 (*isol*)

Lycopodium clavatum Alkaloid A-316

Struct. unknown. Alkaloid from *Lycopodium clavatum* var. *megastachyon* (Lycopodiaceae). Mp 261-263°.

Ayer, W.A. *et al., Can. J. Chem.*, 1962, **40**, 2088 (*isol*)

Lycopodium thyoides Alkaloid A-317

$C_{18}H_{27}NO_3$ 305.416

Struct. unknown. Alkaloid from *Lycopodium thyoides* and *Lycopodium contiguum* (Lycopodiaceae).

Perchlorate:
Cryst. (Me_2CO). Mp 210-212°.

Ayer, W.A. *et al., Phytochemistry*, 1974, **13**, 653 (*isol, ir, ms*)

Mantella Alkaloid 161 A-318

$C_9H_{11}N_3$ 161.206

Struct. unknown. Trace alkaloid from skin extracts of the Madagascan frog *Mantella laevigata*. Minor alkaloid in *Mantella* sp. cf. *madagascariensis*.

Garraffo, H.M. *et al., J. Nat. Prod.*, 1993, **56**, 1016-1038 (*isol, ir, ms*)

Mantella Alkaloid 191 A-319

Struct. and MF unknown. Possibly related to Precoccinelline. Trace alkaloid from skin extracts of the Madagascan frog *Mantella betsileo*.

Garraffo, H.M. *et al., J. Nat. Prod.*, 1993, **56**, 1016-1038 (*isol, ms*)

Mantella Alkaloid 317 A-320

Homopumiliotoxin 317

Struct. and MF unknown. Trace alkaloid from skin extracts of the Madagascan frog *Mantella betsileo*.

Garraffo, H.M. *et al., J. Nat. Prod.*, 1993, **56**, 1016-1038 (*isol, ms*)

Mucuna pruriens Alkaloid X A-321

Mucuna pruriens *Base X*

$C_{11}H_{25}NO_3$ 219.323

Struct. unknown. Alkaloid from *Mucuna pruriens* (Fabaceae). Mp 94-95°.

Picrate: Mp 130-132°.

Rakhit, S. *et al., Indian J. Pharm.*, 1956, **18**, 285; *CA*, **52**, 5748e (*isol*)

Pachysandra Alkaloid V A-322

Pachysandra *Base V*

Steroidal alkaloid. Struct. unknown. Isol. from *Pachysandra terminalis* (Buxaceae). Mp 218-221°.

Kikuchi, T. *et al., Tet. Lett.*, 1964, 1817
Kikuchi, T. *et al., Yakugaku Zasshi*, 1967, **87**, 215; *CA*, **67**, 32888v

Pancratium Alkaloid 6 A-323

Pancratium *Base 6*

$C_{16}H_{17}NO_4$ 287.315

Amaryllidaceae alkaloid. Struct. unknown. Isol. from *Pancratium maritimum* (Amaryllidaceae). Needles (MeOH). Mp 267-270°. $[\alpha]_D^{21}$ -184 (c, 1.04 in MeOH).

Sandberg, F. *et al., J. Nat. Prod.*, 1963, **26**, 78-90 (*isol, ir*)

Pancratium Alkaloid 31 A-324

Pancratium *Base 31*

$C_{18}H_{21}NO_5$ 331.368

Amaryllidaceae alkaloid. Struct. unknown. Isol. from *Pancratium maritimum* (Amaryllidaceae). Prisms (Me_2CO). Mp 213-216° dec. $[\alpha]_D^{21}$ -61 (c, 1.23 in $CHCl_3$).

Sandberg, F. *et al., J. Nat. Prod.*, 1963, **26**, 78-90 (*isol, ir*)

Pancratium sickenbergi Alkaloid A-325

$C_9H_{13}NO_3$ 183.207

Amaryllidaceae alkaloid. Struct. unknown. Isol. from *Pancratium sickenbergeri* (Amaryllidaceae). Mp 161° dec.

Fahmy, I.R. *et al., J. Pharm. Sci. U.A.R.*, 1960, **1**, 133-147; *CA*, **56**, 10280i (*isol*)

Papaver rhoeas Alkaloid A-326

$C_{19}H_{19}NO_6$ 357.362

Struct. unknown. Alkaloid from *Papaver rhoeas*. Cryst. ($CHCl_3$/EtOH). Mp 208-209°. $[\alpha]_D^{23}$ +235 ($CHCl_3$).

Slavik, J. *et al., Chem. Listy*, 1958, **52**, 1957-1964; *CA*, **53**, 1640h (*isol*)

Pseudaxinyssa Alkaloid A-327

$C_9H_{14}BrN_5O$ 288.146

Struct. unknown. Isol. from the marine sponge *Pseudaxinyssa cantharella*. Amorph. $[\alpha]_D$ +15.

De Nanteuil, G. *et al., Tetrahedron*, 1985, **41**, 6019-6033

Rhynchosia pyramidalis Alkaloid A-328

Struct. unknown. Alkaloid from *Rhynchosia pyramidalis* (Fabaceae). Mp 132° (as picrate).

Ristic, S. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1962, **295**, 510; *CA*, **57**, 14180e

Rosmarinus officinalis Alkaloid 2 A-329

$C_{20}H_{27}NO_4$ 345.438

Struct. unknown. Isol. from rosemary (*Rosmarinus officinalis*) using NH_3 during extraction. Cryst. (toluene). Mp 197-198° dec. $[\alpha]_D$ +36 (c, 1.48 in dioxan). Artifact.

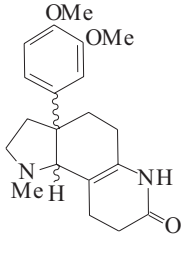
Hydrochloride:
Cryst. (H_2O). Mp 214-216° dec.

N,O,O-*Tri-Ac:*
Cryst. (MeOH). Mp 291-292° dec.

Yakhontova, L.D. *et al., Khim. Prir. Soedin.*, 1967, **3**, 140; *Chem. Nat. Compd. (Engl. Transl.)*, 1967, **3**, 118

Sceletium namaquense Alkaloid A-330

[82545-08-2]



$C_{20}H_{26}N_2O_3$ 342.437

Compd. not named in reference. Alkaloid from *Sceletium namaquense* (Aïzoaceae). Oil. Related to *Sceletium* Alkaloid A_4, A-346.

Jeffs, P.W. *et al., J.O.C.*, 1982, **47**, 3611 (*isol, ir, cd, pmr, ms, struct*)

Senecio borysthenicus Alkaloid A-331

$C_{18}H_{23}NO_5$ 333.383

Struct. unknown. Pyrrolizidine alkaloid. Alkaloid from *Senecio borysthenicus* (Asteraceae). Mp 195° dec. Conts. an OH group.

Red'ko, A.L. *et al., CA*, 1959, **53**, 20695

Senecio renardi Alkaloid 4 A-332

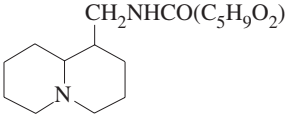
Senecio renardi *Base 4*

Struct. unknown. Alkaloid from *Senecio renardi* (Asteraceae). Cryst. (Me_2CO). Mp 176-178°.

Danilova, A.V. *et al., J. Gen. Chem. USSR (Engl. Transl.)*, 1950, **20**, 1921; *CA*, **45**, 2960

Sophora Alkaloid 9 A-333

Sophora *Base 9*



$C_{16}H_{28}N_2O_3$ 296.409

Struct. of acyl group not known. Alkaloid from *Sophora alopecuroides* (Fabaceae). Related to Sophorine in O-59.

Kuchkarov, S. *et al., Khim. Prir. Soedin.*, 1979, **15**, 413-414; *Chem. Nat. Compd. (Engl. Transl.)*, 364-365

Strempeliopsis strempelioides Alkaloid A-334

Strempeliopsis *Bisindole base*

$C_{38}H_{46}N_4$ 558.808

Struct. unknown. Alkaloid from the roots of *Strempeliopsis strempelioides* (Apocynaceae). Mp 158-171°. $[\alpha]_D^{20}$ +210 ($CHCl_3$).

Laguna, A. *et al., Planta Med.*, 1984, **50**, 285-288 (*isol, uv, ir, ms*)

Thermopsis lanceolata Alkaloid A-335

Struct. unknown. Alkaloid from *Thermopsis lanceolata* epigeal parts (Fabaceae). Cryst. (Me_2CO). Mp 235°. $[\alpha]_D$ +121.8 (c, 1 in $CHCl_3$).

Vinogradova, V.I. *et al., Khim. Prir. Soedin.*, 1971, 463-466; *Chem. Nat. Compd. (Engl. Transl.)*, 440 (*isol*)

Ulex europaeus Alkaloid A-336

$C_{15}H_{20}N_2O_5$ 308.333

Struct. unknown. Alkaloid from shoots of *Ulex europaeus* (Fabaceae). Lustrous plates (petrol). Mp 170°.

Clemo, G.R. *et al., J.C.S.*, 1935, 10 (*isol*)

Uncaria callophylla Alkaloid A-337

Bisindole alkaloid; probably derived from Gambirine, G-13 and Pseudoyohimbine. Struct. unknown. Minor alkaloid from the leaves of *Uncaria callophylla* (Rubiaceae). Yellow powder. Mp 330°. Mol. formula not reported.

Goh, S.H. *et al., Phytochemistry*, 1985, **24**, 880-881 (*isol, uv, ir, pmr*)

Ungernia severtzovii Alkaloid A-338

$C_{17}H_{19}NO_3$ 285.342

Amaryllidaceae alkaloid. Struct. unknown. Isol. from the leaves of *Ungernia severtzovii* (Amaryllidaceae). Mp 186-187°. Opt. inactive.

Nitrate: Mp 245-246°.

Picrate: Mp 241-243°.

Smirnova, L.S. *et al., Dokl. Akad. Nauk SSSR, Ser. Khim.*, 1964, **154**, 171-173; *CA*, **60**, 9324b (*isol*)

Veratrum Alkaloid X A-339

Steroidal alkaloid. Struct. unknown. Isol. from *Veratrum lobelianum* (Liliaceae). Needles (MeOH). Mp 215-217°. ir shows C=C, OH and NH_2 groups.

Shinkarenko, A.L. *et al., Khim. Prir. Soedin.*, 1966, **2**, 293; *Chem. Nat. Compd. (Engl. Transl.)*, 1966, **2**, 239

Voacanga thouarsii Alkaloid I A-340

[50924-03-3]

$C_{43}H_{48}N_4O_6$ 716.875

Bisindole alkaloid. Struct. unknown. Alkaloid from the leaves of *Voacanga thouarsii* (Apocynaceae). Amorph. Intense blue col. with HNO_3. λ_{max} 223 ; 264 ; 300 ; 327 (EtOH).

Rolland, Y. *et al., Phytochemistry*, 1973, **12**, 2039-2042 (*isol, uv, ir, pmr*)

Zephyranthes Alkaloid A-341

Amaryllidaceae alkaloid. Struct. unknown. Isol. from the bulbs of *Zephyranthes robusta* and *Zephyranthes sulphurea* (Amaryllidaceae). Stout prisms (MeOH). Mp 252-254°.

Rao, R.V.K. *et al., Indian J. Pharm.*, 1969, **31**, 62-63; 86-87; *CA*, **71**, 109780w; 128623p (*isol*)

Alkaloid 1 (Calabash curare) A-342

$C_{20}H_{21}N_2^{\oplus}$ 289.399

Struct. unknown. Alkaloid from calabash curare (*Strychnos* spp.) (Loganiaceae). Mp 239-243° (as chloride). $[\alpha]_D^{20}$ -134 (c, 8.95 in H_2O) (chloride). Deep-blue col. with $Ce(SO_4)_2$.

Wieland, T. *et al., Chem. Ber.*, 1952, **85**, 731-743

Alkaloid 2 (Calabash curare) A-343

Struct. unknown. Quaternary alkaloid from calabash curare (*Strychnos* spp.) (Loganiaceae). $[\alpha]_D^{20}$ -659 (as chloride). Red-violet col. with $Ce(SO_4)_2$.

▶ Toxic.

Wieland, T. *et al., Chem. Ber.*, 1952, **85**, 731

Lycopodium Alkaloid IV A-344

Lycopodium *Base IV*

$C_{16}H_{23}NO$ 245.364

Struct. unknown. Alkaloid from *Lycopodium annotinum* (Lycopodiaceae).

Methiodide: Mp 265°. $[\alpha]_D^{20}$ -150.1.

Methochloride: Mp 210°.

Methoperchlorate: Mp 270°.

Methopicrate: Mp 230-232°.

Achmatowicz, O. *et al., Pol. J. Chem. (Rocz. Chem.)*, 1958, **32**, 485-498 (*isol, uv*)

Daphniphyllum Alkaloid A_1 A-345

$C_{23}H_{33}NO_3$ 371.519

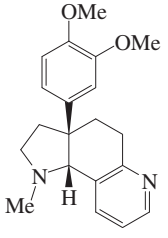
Struct. unknown. Alkaloid from the bark and leaves of *Daphniphyllum macropodum* (Daphniphyllaceae). Mp 225-226° (as methiodide).

Toda, M. *et al., Tetrahedron*, 1972, **28**, 1477 (*isol, ir, pmr, ms*)

Sceletium Alkaloid A_4 A-346

3a-(3,4-Dimethoxyphenyl)-2,3,3a,4,5,9b-hexahydro-1-methyl-1H-pyrrolo[2,3-f]quinoline, 9CI

[35135-35-4]



Absolute Configuration

$C_{20}H_{24}N_2O_2$ 324.422

Alkaloid from *Sceletium namaquense* and *Sceletium tortuosum* (Aïzoaceae). Prisms (EtOAc). Mp 153.3-154.5°. $[\alpha]_D$ +131 (MeOH).

Luhan, P.A. *et al., J.C.S. Perkin 2*, 1972, 2006 (*cryst struct*)

Jeffs, P.W. *et al., J.O.C.*, 1974, **39**, 2703 (*isol, uv, ir, pmr, ms, cd, struct*)

Martin, N.H. *et al., Org. Mass Spectrom.*, 1976, **11**, 1 (*ms*)

Stevens, R.V. *et al., Acc. Chem. Res.*, 1977, **10**, 193 (*synth*)

Kamikubo, T. *et al., Chem. Comm.*, 1998, 783-784 (*synth, abs config*)

Yamada, O. *et al., Tet. Lett.*, 1998, **39**, 7747-7750 (*synth*)

Hayashi, M. *et al., Tet. Lett.*, 2002, **43**, 1461-1464 (*synth*)

Abrus precatorius Alkaloid A A-347

Struct. unknown. Alkaloid from seeds of *Abrus precatorius.* Mp 143° dec.

Tung, Y.-C. *et al., CA*, 1960, **55**, 17770g; **61**, 9777c; *Biol. Abstr.*, **36**, 65720

Buxus Alkaloid A1 A-348

Struct. unknown. Alkaloid from *Buxus sempervirens* var. *rotundifolia* (Buxaceae). Cryst. (CH_2Cl_2). Mp 195-197°. Contains NMe_2 group at C-3.

Huong, L. *et al., Coll. Czech. Chem. Comm.*, 1981, **46**, 1425-1432 (*isol, ms*)

Buxus Alkaloid A2 A-349

Struct. unknown. Alkaloid from *Buxus sempervirens* var. *rotundifolia* (Buxaceae). Cryst. (Me_2CO/MeOH). Mp 138-142°.

Huong, L. *et al., Coll. Czech. Chem. Comm.*, 1981, **46**, 1425-1432 (*isol, ms*)

Buxus Alkaloid A3 A-350

Struct. unknown. Alkaloid from *Buxus sempervirens* var. *rotundifolia* (Buxaceae). Cryst. (Me_2CO/MeOH). Mp 272-274°. $[\alpha]_D^{22}$ +20 (c, 0.25 in EtOH).

Huong, L. *et al., Coll. Czech. Chem. Comm.*, 1981, **46**, 1425-1432 (*isol, ms*)

Buxus Alkaloid A4 A-351

Struct. unknown. Alkaloid from *Buxus sempervirens* var. *rotundifolia* (Buxaceae). Cryst. (CH_2Cl_2). Mp 252-256°. $[\alpha]_D^{22}$ -109 (c, 0.51 in MeOH).

Huong, L. *et al., Coll. Czech. Chem. Comm.*, 1981, **46**, 1425-1432 (*isol, ms*)

Buxus Alkaloid A5 A-352

$C_{40}H_{60}N_2O_7$ 680.923

Struct. unknown. Alkaloid from *Buxus sempervirens* var. *rotundifolia* (Buxaceae). Cryst. (CH_2Cl_2). Mp 125-127°. $[\alpha]_D^{22}$ -10 (c, 0.3 in CH_2Cl_2).

Huong, L. *et al., Coll. Czech. Chem. Comm.*, 1981, **46**, 1425-1432 (*isol, ms*)

Chondrodendron limaciifolium Alkaloid A A-353

$C_{36}H_{38}N_2O_6$ 594.706

Struct. unknown. Bisbenzylisoquinoline alkaloid. Alkaloid from the wood of *Chondrodendron limaciifolium* (Menispermaceae). Thin plates or flattened needles (Py, $CHCl_3$/MeOH or MeOH). Mp 270-300° dec.

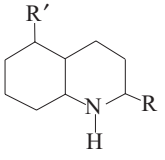
Sulfate:

Rhombic plates +10H_2O. Mp 289° (efferv.).

Barltrop, J.A. *et al., J.C.S.*, 1954, 159 (*isol*)

Dendrobates Alkaloid 167A A-354

2-Ethyldecahydroquinoline



R = CH_2CH_3, R′ = H

$C_{11}H_{21}N$ 167.294

Tentative struct. Trace alkaloid from skin extracts of *Dendrobates auratus* (Dendrobatidae). Mol. formula tentative; m/e 167(1), 166(1), 138(100). Cannot be hydrogenated.

Daly, J.W. *et al., Toxicon*, 1978, **16**, 163 (*isol, ms, rev*)

Daly, J.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 205 (*ms, rev*)

Spande, T.F. *et al., J. Nat. Prod.*, 1999, **62**, 5-21 (*pmr, cmr, occur*)

Dendrobates Alkaloid 181A A-355

2-Ethyldecahydro-5-methylquinoline

As *Dendrobates* Alkaloid 167A, A-354 with

R = CH_2CH_3, R′ = CH_3

$C_{12}H_{23}N$ 181.32

Tentative struct. Trace alkaloid from skin extracts of *Dendrobates auratus* (Dendrobatidae). Mol. formula tentative; m/e 181(2), 180(1), 152(100). Cannot be hydrogenated.

Daly, J.W. *et al., Toxicon*, 1978, **16**, 163 (*isol, ms, rev*)

Daly, J.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 205 (*ms, rev*)

Spande, T.F. *et al., J. Nat. Prod.*, 1999, **62**, 5-21 (*pmr, cmr, occur*)

Dendrobates Alkaloid 209A A-356

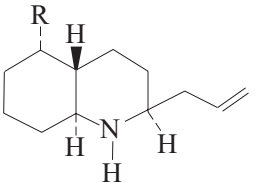
$C_{13}H_{25}NO$ 211.347

Struct. unknown. Trace alkaloid from skin extracts of an undescribed *Dendrobates* sp. from Panama (Dendrobatidae). Mol. formula tentative; m/e 209 (5), 168 (100). H_2-deriv, m/e 211, 168.

Daly, J.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 205 (*ms, rev*)

Dendrobates Alkaloid 219A A-357

Decahydro-2,5-bis(2-propenyl)quinoline. 2,5-Diallyldecahydroquinoline



R = $CH_2CH=CH_2$

$C_{15}H_{25}N$ 219.369

A major constit. in skin extracts of *Dendrobates auratus, Dendrobates azureus, Dendrobates granuliferus, Dendrobates histrionicus, Dendrobates parvulus* and *Dendrobates truncatus* (Dendrobatidae). $[\alpha]_D^{24}$ +9.7 (c, 2.0 in MeOH).

Tetrahydro: Decahydro-2,5-dipropylquinoline. **Dendrobates *Alkaloid 223A*†.** *Pumiliotoxin C_{II}*

[63983-61-9]

[112791-03-4 , 112790-00-8 , 112789-97-6 , 67920-43-8 , 112789-98-7]

$C_{15}H_{29}N$ 223.401

Minor or trace alkaloids in skin extracts of *Dendrobates auratus, Dendrobates histrionicus* (various populations), *Dendrobates lehmanni, Dendrobates minutus, Dendrobates occultator, Dendrobates truncatus* and *Dendrobates* sp. of Colombia (Dendrobatidae).

5-Epimer: **Dendrobates *Alkaloid 219A′***

$C_{15}H_{25}N$ 219.369

Present in skin extracts from one population of *Dendrobates histrionicus* and *Dendrobates auratus* (Dendrobatidae). $[\alpha]_D$ +5.8 (c, 0.31 in $CHCl_3$).

Daly, J.W. *et al., Toxicon*, 1978, **16**, 163 (*isol, ms, rev*)
Daly, J.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 205 (*ms, rev*)
Tokuyama, T. *et al., Tetrahedron*, 1986, **42**, 3453; 1991, **47**, 5401 (*isol, pmr, cmr, ms, cryst struct, abs config*)
McCloskey, P.J. *et al., J.O.C.*, 1988, **53**, 1380 (*tetrahydro, synth*)
Spande, T.F. *et al., J. Nat. Prod.*, 1999, **62**, 5-21 (*pmr, cmr, occur*)
Toyooka, N. *et al., J.O.C.*, 2002, **67**, 6078-6081 (*synth*)

Dendrobates Alkaloid 231A A-358

5-Ethyldecahydro-2-(2-penten-4-ynyl)quinoline

As *Dendrobates* Alkaloid 167A, A-354 with

R = $-CH_2CH{=}CHC{\equiv}CH$,
R′ = CH_2CH_3

$C_{16}H_{25}N$ 231.38

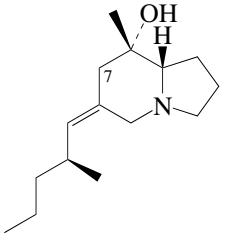
Tentative struct. Minor alkaloid from skin extracts of *Dendrobates histrionicus* and *Dendrobates minutus* (Dendrobatidae). Mol. formula tentative; m/e 231(2), 230(1), 166(100). Forms H_6-deriv., m/e 237, 166. Does not appear to form an *N*-Ac deriv.

Daly, J.W. *et al., Toxicon*, 1978, **16**, 163 (*isol, ms, rev*)
Daly, J.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 205 (*ms, rev*)
Spande, T.F. *et al., Phytochemistry*, 1999, **62**, 5-21 (*pmr, cmr, occur*)

Dendrobates Alkaloid 237A A-359

Octahydro-8-methyl-6-(2-methylpentylidene)-8-indolizinol, 9CI. 8-Hydroxy-8-methyl-6-(2-methylpentylidene)indolizidine

[73376-36-0]



$C_{15}H_{27}NO$ 237.384

Proposed struct. A major alkaloid from skin extracts of *Dendrobates abditus*; trace constit. in *Dendrobates histrionicus* (Dendrobatidae).

7-Hydroxy: **Dendrobates *Alkaloid 253A***
[73376-37-1]
$C_{15}H_{27}NO_2$ 253.384
A major alkaloid of *Dendrobates abditus*; minor constit. in *Dendrobates lehmanni* and *Dendrobates auratus* (Dendrobatidae). Stereochem. undefined.

7-Hydroxy, didehydro (?): **Dendrobates *Alkaloid 251E***
$C_{15}H_{25}NO_2$ 251.368
Minor alkaloid from skin extracts of *Dendrobates minutus* (Dendrobatidae). Mol. formula and structure tentative; m/e 251(3), 250(1), 234(2), 168(30), 84(18), 70(100).

Daly, J.W. *et al., Toxicon*, 1978, **16**, 163 (*isol, ms, rev*)
Daly, J.W. *et al., J.A.C.S.*, 1980, **102**, 830 (*struct*)
Daly, J.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 205 (*ms, rev*)
Thanh, G.V. *et al., Tet. Lett.*, 1999, **40**, 3713-3716 (*synth*)

Dendrobates Alkaloid 239A A-360

$C_{15}H_{29}NO$ 239.4

Struct. unknown. Trace alkaloid from skin extracts of *Dendrobates occultator* (Dendrobatidae). Mol. formula tentative; m/e 239 (2), 238 (3), 182 (100). Cannot be hydrogenated.

Daly, J.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 205 (*ms, rev*)

Dendrobates Alkaloid 241A A-361

Dendrobates *Alkaloid 241*

Struct. unknown

Trace alkaloid from skin extracts of *Dendrobates occultator* (Dendrobatidae). Mol. formula not known; m/e 241 (2), 240 (3), 166 (100), 126 (48). Does not separate from major alkaloids 239 *A, B, C, D.*

Daly, J.W. *et al., Toxicon*, 1978, **16**, 163-180 (*isol, ms, rev*)
Daly, J.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 205 (*ms, rev*)

Dendrobates Alkaloid 243A A-362

Decahydro-5-(2-penten-4-ynyl)-2-(2-propenyl)quinoline. 2-Allyl-5-(2-penten-4-ynyl)decahydroquinoline

As *Dendrobates* Alkaloid 219A, A-357 with

R = $-CH_2CH{=}CHC{\equiv}CH$ (*Z*-)

$C_{17}H_{25}N$ 243.391

A major alkaloid in *Dendrobates auratus, Dendrobates azureus, Dendrobates granuliferus, Dendrobates histrionicus*; minor or trace constit. in *Dendrobates pictus, Dendrobates tinctorius, Dendrobates trivittatus* and *Dendrobates truncatus* (Dendrobatidae). $[\alpha]_D^{16}$ -15.2 (c, 1.37 in MeOH). $[\alpha]_D^{16}$ -30.7 (c, 1.37 in $CHCl_3$).

Stereoisomer: Dendrobates *Alkaloid 243A′*
$C_{17}H_{25}N$ 243.391
Present in some skin extracts of *Dendrobates* spp. (Dendrobatidae). $[\alpha]_D^{16}$ -0.96 (c, 0.73 in MeOH). $[\alpha]_D^{16}$ -18.6 (c, 0.73 in $CHCl_3$). Of unknown config.

Daly, J.W. *et al., Toxicon*, 1978, **16**, 163 (*isol, ms, rev*)
Daly, J.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 205 (*ms, rev*)
Tokuyama, T. *et al., Tetrahedron*, 1986, **42**, 3453 (*isol, pmr, cmr, struct*)
Spande, T.F. *et al., J. Nat. Prod.*, 1999, **62**, 5-21 (*pmr, cmr, occur*)

Dendrobates Alkaloid 251A A-363

$C_{17}H_{33}N$ 251.454

Struct. unknown. Trace alkaloid from skin extracts of *Dendrobates histrionicus* (Dendrobatidae). Mol. formula tentative; m/e 251 (2), 208 (6), 152 (100). Possibly in Pumiliotoxin-C class with R = C_7H_{15} (see *Dendrobates* Alkaloid 223C, A-438 and *Dendrobates* Alkaloid 167A, A-354.

Daly, J.W. *et al., Toxicon*, 1978, **16**, 163-180 (*isol, ms, rev*)
Daly, J.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 205 (*ms, rev*)

Dendrobates Alkaloid 257A A-364

$C_{18}H_{25}N$ 255.402

Struct. unknown. Minor alkaloid from skin extracts of *Dendrobates trivittatus* (Dendrobatidae). Mol. formula tentative; m/e 257 (1), 256 (2), 216 (100). Cannot be acetylated, but consumes 4 molar equivs. of H_2. Possibly a perhydropyrroloquinoline of the gephyrotoxin class.

Daly, J.W. *et al., Toxicon*, 1978, **16**, 163-180 (*isol, ms, rev*)
Daly, J.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 205 (*ms, rev*)

Dendrobates Alkaloid 265A A-365

Struct. unknown. Trace alkaloid from skin extracts of *Dendrobates abditus, Dendrobates auratus, Dendrobates azureus, Dendrobates histrionicus, Dendrobates lehmanni, Dendrobates occultator, Dendrobates parvulus* and *Dendrobates tinctorius* (Dendrobatidae). Mol. formula not known; m/e 265 (50), 264 (100), 222 (58), 180 (72). Very atypical mass spectrum for a dendrobatid alkaloid. Possibly a degradation artifact.

Daly, J.W. *et al., Toxicon*, 1978, **16**, 163-180 (*isol, ms, rev*)
Daly, J.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 205 (*ms, rev*)

Dendrobates Alkaloid 269A A-366

Decahydro-2-(3,4-pentadienyl)-5-(2-penten-4-ynyl)quinoline, 9CI. Dendrobates histrionicus *Alkaloid III*

[63983-62-0]

As *Dendrobates* Alkaloid 167A, A-354 with

R = $CH_2CH_2CH{=}C{=}CH_2$,
R′ = $CH_2CH{=}CHCdCH$

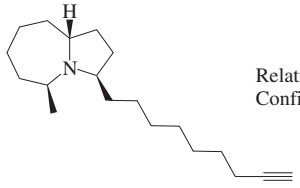
$C_{19}H_{27}N$ 269.429

Tentative struct. Minor or trace alkaloid in skin extracts of *Dendrobates granuliferus, Dendrobates histrionicus* (several populations), *Dendrobates occultator, Dendrobates trivittatus* and *Dendrobates truncatus* (Dendrobatidae), also in skin of the Madagascan frog *Mantella madagascariensis* (Ranidae, subfamily Mantellinae). m/e 269(4), 268(12), 204(100). H_{10}-deriv., m/e 279, 208.

Daly, J.W. *et al., Helv. Chim. Acta*, 1977, **60**, 1128 (*isol, ms*)
Daly, J.W. *et al., Toxicon*, 1978, **16**, 163; 1984, **22**, 905 (*isol, ms, rev*)
Daly, J.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 205 (*ms, rev*)
Spande, T.F. *et al., J. Nat. Prod.*, 1999, **62**, 5-21 (*pmr, cmr, occur*)

Dendrobates Alkaloid 275A A-367

*Octahydro-5-methyl-10-(8-nonynyl)-1*H*-pyrrolo[1,2-*a*]azepine, 9CI. 5-Methyl-10-(8-nonynyl)lehmizidine*



Relative Configuration

$C_{19}H_{33}N$ 275.476

Major alkaloid from the skin extracts of the frog *Dendrobates lehmanni*.

*8,9-Dihydro: Octahydro-5-methyl-10-(8-nonenyl)-1*H*-pyrrolo[1,2-*a*]azepine.* **Dendrobates *Alkaloid 277A*.** *5-Methyl-10-(8-nonenyl)lehmizidine*
$C_{19}H_{35}N$ 277.492
Alkaloid from *Dendrobates lehmanni*.

*Oxo: Octahydro-5-methyl-10-(oxo-8-nonynyl)-1*H*-pyrrolo[1,2-*a*]azepine.* **Dendrobates *Alkaloid 289A***
$C_{19}H_{31}NO$ 289.46
Alkaloid from *Dendrobates lehmanni*.
Posn. of oxo group not known.

*6′,7′-Didehydro, 8,9-dihydro: Octahydro-5-methyl-10-(6,8-nonadienyl)-1*H*-pyrrolo[1,2-*a*]azepine.* **Dendrobates *Alkaloid 275G*.** *5-Methyl-10-(6,8-nonadienyl)lehmizidine*
$C_{19}H_{33}N$ 275.476
Alkaloid from *Dendrobates lehmanni*.
Tentative struct. assigned.

3,5-Diepimer: **Dendrobates *Alkaloid 275A′***
$C_{19}H_{33}N$ 275.476
Alkaloid from *Dendrobates lehmanni*.

[120037-67-4]

Garraffo, H.M. *et al., J. Nat. Prod.*, 2001, **64**, 421-427

Dendrobates Alkaloid 281A A-368

$C_{17}H_{31}NO_2$ 281.437

Struct. unknown. A major alkaloid from skin extracts of *Dendrobates minutus*; trace constit. in *Dendrobates abditus*. Mol. formula tentative; m/e 281(4), 280(2), 264(2), 194(12), 166(72), 70(100). H_2-deriv., m/e 283(1), 282(2), 266(4), 208(40), 138(10), 110(10), 84(100), 70(85).

Daly, J.W. *et al., Toxicon*, 1978, **16**, 163-188 (*isol, ms, rev*)
Daly, J.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 205 (*ms, rev*)

Dendrobates Alkaloid 297A A-369

$C_{17}H_{31}NO_3$ 297.437

Struct. unknown. A major alkaloid from skin extracts of *Dendrobates minutus* (Dendrobatidae). m/e 297 (3), 296 (4), 280 (9), 236 (2), 210 (3), 194 (4), 193 (3), 182 (21), 114 (27), 112 (16), 70 (100). Lowest molecular-weight member of the Pumiliotoxin-A class to contain 3 oxygens. H_2-deriv, m/e 299 (4), 282 (12), 256 (6), 224 (4), 110 (50), 84 (100), 70 (75).

Daly, J.W. *et al., Toxicon*, 1978, **16**, 163 (*isol, ms, rev*)
Daly, J.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 205 (*ms, rev*)

Dendrobates Alkaloid 309A A-370

Dihydropumiliotoxin A

$C_{19}H_{35}NO_2$ 309.491

Struct. unknown. Minor alkaloid from skin extracts of *Dendrobates minutus* and *Dendrobates viridis* (Dendrobatidae). Mol. formula tentative; m/e 309 (9), 308 (3), 292 (2), 280 (4), 206 (4), 194 (15), 176 (5), 166(100), 110 (10), 84 (20), 70 (51). Forms H_2-deriv.

Daly, J.W. *et al., Toxicon*, 1978, **16**, 163-188 (*isol, ms, rev*)
Daly, J.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 205 (*ms, rev*)

Erythrophleum Alkaloid A A-371

$C_{25}H_{37}NO_6$ 447.57

Struct. unknown. Dimethylaminoethanol esterified with an α,β-unsaturated diterpene acid carrying a methoxycarbonyl group and 3 Me groups. UV shows no evidence for a 6,7-dione as observed in other *E.* alkaloids. Alkaloid from the bark of *Erythrophleum africanum* (Fabaceae). Cryst. (Et_2O/hexane). Mp 105°. Poss. identical with an alkaloid from *E. guineense* with the same MF. No further data to 2007.

Friedrich-Fichtl, J. *et al., Chem. Ber.*, 1971, **104**, 3535-3548 (*Erythrophleum guineense alkaloid*)
Jansson, S. *et al., Acta Pharm. Suec.*, 1976, **13**, 51-54; *CA*, **84**, 147726j (*isol, uv, ir, pmr, ms*)

Euonymus Alkaloid A A-372

$C_{29}H_{37}NO_{13}$ 607.61

Struct. unknown. Alkaloid from the seeds of *Euonymus europaea*. Mp 258-260°. $[\alpha]_D$ +21 ($CHCl_3$).

De-Ac: **Euonymus *Alkaloid B***
$C_{27}H_{35}NO_{12}$ 565.573
Alkaloid from the seeds of *Euonymus europaea*. Mp 288-290°. $[\alpha]_D$ +14 ($CHCl_3$).

Ac: **Euonymus *Alkaloid C***
$C_{31}H_{39}NO_{14}$ 649.647
Alkaloid from the seeds of *Euonymus europaea*. Mp 164-168°. $[\alpha]_D$ +8 ($CHCl_3$).

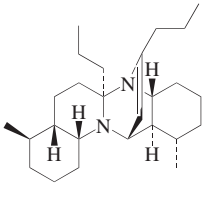
Doebel, K. *et al., Helv. Chim. Acta*, 1949, **32**, 592-597 (*isol*)

Fritillaria Alkaloid A A-373

Struct. unknown. Alkaloid from *Fritillaria meleagris* (Liliaceae). Mp 156-158°. Cooccurs with Imperialine in C-298.

Bauer, S. *et al., Chem. Zvesti*, 1958, **12**, 584

Mantella Alkaloid 384A A-374



Relative Configuration

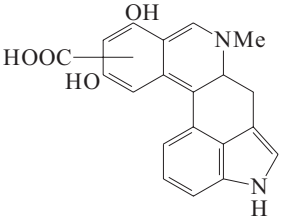
$C_{26}H_{44}N_2$ 384.647

Tentative struct. shown. Obt. as mixt. with *Mantella* Alkaloid 384B. Major constit. of skin extracts of the Madagascan frog *Mantella betsileo*. Minor constit. in *Mantella* sp. cf. *madagascariensis* and *Mantella laevigata*. No CAS no. found to 15CI.

Garraffo, H.M. *et al., J. Nat. Prod.*, 1993, **56**, 1016-1038 (*isol, ir, ms*)

Securidaca longipedunculata Alkaloid A A-375

[146442-66-2]



$C_{20}H_{16}N_2O_4$ 348.357

Alkaloid from roots of *Securidaca longipedunculata* (Polygalaceae).

Costa, C. *et al., J. Het. Chem.*, 1992, **29**, 1641-1647

Stephania glabra Alkaloid A A-376

Stephania glabra *Base A*

$C_{19}H_{21}NO_4$ 327.379

Struct. unknown, conts. 2 OMe groups. Authors suggest the struct. to be *N*-methylhydroxystepharine. Isol. from herbage of *Stephania glabra*. Mp 205-206°. $[\alpha]_D^{21}$ -70. λ_{max} 242 ; 282 (no solvent reported).

Shchelchkova, I.I. *et al., Khim. Prir. Soedin.*, 1965, **1**, 271-275; *Chem. Nat. Compd. (Engl. Transl.)*, 1965, **1**, 210-212 (*isol*)

Stephania glabra Alkaloid A A-377

$C_{19}H_{18}NO_2$ 292.357

Struct. unknown. The MF assigned is impossible. Isol. from tubers of *Stephania glabra*. Cryst. (Et_2O). Mp 79-81°. $[\alpha]_D$ -88 (c, 1 in EtOH). Prob. an aporphine alkaloid. Contains an NMe group. No further reports, although later investigations of the species have been reported.

Hydrochloride: Mp 252-253°.

N-*Ac:*
Cryst. (Me_2CO). Mp 146°.

Kin, F.K. *et al., Khim. Prir. Soedin.*, 1965, **1**, 392-394; *Chem. Nat. Compd. (Engl. Transl.)*, 1965, **1**, 308-309 (*isol*)
Cava, M.P. *et al., J.O.C.*, 1968, **33**, 2785-2789 (*Stephania glabra constits*)

Stephania japonica Alkaloid A A-378

Stephania *Base A*

$C_{21}H_{26}ClNO_7$ 439.892

Struct. unknown. Alkaloid from the stems and rhizomes of *Stephania japonica* var. *australis* (Menispermaceae). Prisms (MeOH). Mp 248°. Ir shows OH

and γ-lactam groups, pmr shows 4 OMe groups, 1 NMe group, and 2 aromatic protons. Ms m/e 257.1068, indicating a hasubanan alkaloid.

Matsui, M. *et al., Phytochemistry*, 1979, **18**, 1087 (*isol, ir, pmr, ms*)

Taxus baccata Alkaloid A A-379

$C_{33}H_{43}N_2O_{14}$ 691.708

Struct. unknown. The MF given is impossible. Isol. from leaves of *Taxus baccata*. Cryst. (petrol). Mp 112-113°. $[\alpha]_D^{17}$ +10.7 (c, 0.835 in $CHCl_3$). Co-occurs with Taxol, T-52.

Mirzoev, Kh.M. *et al., Khim. Prir. Soedin.*, 1970, **6**, 777-778; *Chem. Nat. Compd. (Engl. Transl.)*, 1970, **6**, 797

Thermopsis lanceolata Alkaloid A A-380

[78040-76-3]

Struct. unknown. Constit. of *Thermopsis lanceolata*.

Chao, K.-S. *et al., CA*, 1981, **95**, 35461q (*isol, props*)

Alangium Alkaloid AL64 A-381

$C_{29}H_{37}N_3O_3$ 475.63

Struct. unknown. Poss. identical with Alangimarckine in T-675. Alkaloid from the root bark of *Alangium lamarckii* (Alangiaceae). Glistening needles (CH_2Cl_2 and/or MeOH). Mp 272°. $[\alpha]_D$ -64 ($CHCl_3$). λ_{max} 226 (log ϵ 4.28); 283 (log ϵ 4.18) (EtOH).

Mono-Ac: Mp 184°.

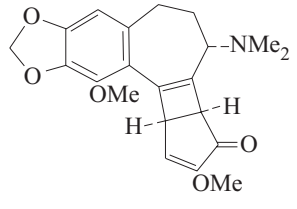
Di-Ac: Mp 150°.

Pakrashi, S. *et al., Indian J. Chem.*, 1964, **2**, 468 (*isol, uv*)

Alkaloid AM 3 A-382

N-*Deacetyl*-N,N-*dimethyl*-γ-*lumicorniger-ine*

[99499-80-6]



$C_{21}H_{23}NO_5$ 369.416

Alkaloid from the aerial parts of *Androcymbium melanthioides* var. *stricta* (Liliaceae). Needles. Mp 245-247°. $[\alpha]_D^{23}$ -391 (c, 1.0 in $CHCl_3$).

Potěšilová, H. *et al., Planta Med.*, 1985, 344 (*isol, uv, ir, pmr, cmr, ms, cd, struct*)

Alangium Alkaloid B1 A-383

$C_{20}H_{31}NO_5$ 365.469

Struct. unknown. Alkaloid from the bark of *Alangium lamarckii*. Mp 197-198° Mp 228-229° (as hydrochloride).

Basu, N.K. *et al., J. Indian Chem. Soc.*, 1957, **34**, 629-639; *CA*, **52**, 7337g

Alangium Alkaloid B2 A-384

$C_{27}H_{43}NO_6$ 477.64

Struct. unknown. Alkaloid from the bark of *Alangium lamarckii*. Mp 119-120° Mp 188° (as hydrochloride).

Basu, N.K. *et al., J. Indian Chem. Soc.*, 1957, **34**, 629-639; *CA*, **52**, 7337g

Alangium Alkaloid B3 A-385

Struct. unknown. Alkaloid from the bark of *Alangium lamarckii*. Mp 160-161° Mp 181° (as hydrochloride).

Basu, N.K. *et al., J. Indian Chem. Soc.*, 1957, **34**, 629-639; *CA*, **52**, 7337g

Alangium Alkaloid B4 A-386

$C_{19}H_{27}NO_7$ 381.425

Struct. unknown. Alkaloid from the bark of *Alangium lamarckii*. Mp 149-151° Mp 199° (as hydrochloride).

Basu, N.K. *et al., J. Indian Chem. Soc.*, 1957, **34**, 629-639; *CA*, **52**, 7337g

Alangium Alkaloid B5 A-387

$C_{21}H_{31}NO_8$ 425.478

Struct. unknown. Alkaloid from the bark of *Alangium lamarckii*. Mp 177-179° Mp 208° (as hydrochloride).

Basu, N.K. *et al., J. Indian Chem. Soc.*, 1957, **34**, 629-639; *CA*, **52**, 7337g

Asteracantha Alkaloid B1 A-388

Struct. unknown. Alkaloid from *Asteracantha longifolia* (preferred genus name *Hygrophila*). Mp 294°.

Basu, N.K. *et al., Indian J. Pharm.*, 1952, **14**, 212-213; *CA*, **47**, 4044g

Asteracantha Alkaloid B2 A-389

$C_5H_{13}NO_3$ 135.163

Struct. unknown. Alkaloid from *Asteracantha longifolia* (preferred genus name *Hygrophila*). Mp 194°.

Basu, N.K. *et al., Indian J. Pharm.*, 1952, **14**, 212-213; *CA*, **47**, 4044g

Buxus Alkaloid B A-390

$C_{24}H_{42}N_2O$ 374.609

Struct. unknown. Alkaloid from *Buxus sempervirens* (Buxaceae). Mp 205-207°.

Schlittler, E. *et al., Helv. Chim. Acta*, 1949, **32**, 2209-2226 (*isol*)

Buxus Alkaloid B1 A-391

Struct. unknown. Alkaloid from *Buxus sempervirens* var. *rotundifolia* (Buxaceae). Cryst. (Me_2CO/MeOH). Mp 280° dec. $[\alpha]_D^{22}$ +11.8 (c, 0.55 in MeOH). Contains MeNH group. λ_{max} 243 (log ϵ 4.19) (MeOH).

Huong, L. *et al., Coll. Czech. Chem. Comm.*, 1981, **46**, 1425-1432 (*isol, uv, ms*)

Buxus Alkaloid B4 A-392

Struct. unknown. Alkaloid from *Buxus sempervirens* var. *rotundifolia* (Buxaceae). Cryst. ($CHCl_3$). Mp 150-152°.

Huong, L. *et al., Coll. Czech. Chem. Comm.*, 1981, **46**, 1425-1432 (*isol, ms*)

Buxus Alkaloid B5 A-393

Struct. unknown. Alkaloid from *Buxus sempervirens* var. *rotundifolia* (Buxaceae). Cryst. ($CHCl_3$). Mp 179-182°. $[\alpha]_D^{22}$ +9.6 (c, 0.5 in $CHCl_3$).

Huong, L. *et al., Coll. Czech. Chem. Comm.*, 1981, **46**, 1425-1432 (*isol, ms*)

Buxus Alkaloid B6 A-394

Struct. unknown. Alkaloid from *Buxus sempervirens* var. *rotundifolia* (Buxaceae). Cryst. (MeOH). Mp 214-216°. $[\alpha]_D^{22}$ +6.6 (c, 0.15 in MeOH). Contains OH group and C_6-C_7 double bond.

Huong, L. *et al., Coll. Czech. Chem. Comm.*, 1981, **46**, 1425-1432 (*isol, ir, ms*)

Buxus Alkaloid B7 A-395

Struct. unknown. Alkaloid from *Buxus sempervirens* var. *rotundifolia* (Buxaceae). Cryst. (Me_2CO). Mp 245-247°.

Huong, L. *et al., Coll. Czech. Chem. Comm.*, 1981, **46**, 1425-1432 (*isol, ms*)

Buxus Alkaloid B8 A-396

Struct. unknown. Alkaloid from *Buxus sempervirens* var. *rotundifolia* (Buxaceae). Cryst. (Me_2CO). Mp 265°. $[\alpha]_D^{22}$ +34.6 (c, 0.54 in $CHCl_3$). Mass spec. indicated a MeNH group at C-20 and a dimethyl group at C-3.

Huong, L. *et al., Coll. Czech. Chem. Comm.*, 1981, **46**, 1425-1432 (*isol, ms*)

Buxus Alkaloid B387 A-397

$C_{25}H_{41}NO_2$ 387.604

Steroidal alkaloid. Struct. unknown. Alkaloid from *Buxus microphylla* var. *sinica* (Buxaceae). Mp 188-189°. $[\alpha]_D$ +6.7 ($CHCl_3$). ORD spectrum resembles that of 4,4*a*-dihydrobuxpiine.

Bauerová, O. *et al., Pharmazie*, 1973, **28**, 212-214; *CA*, **78**, 156665s (*isol, ir, uv, ms, ord*)

Buxus Alkaloid B398 A-398

Struct. unknown. Alkaloid from *Buxus sempervirens* var. *argentea* (Buxaceae). Cryst. (C_6H_6/MeOH). Mp 197-199°.

Kuchkova, K.I. *et al., Chem. Zvesti*, 1976, **30**, 174-178 (*isol*)

Buxus Alkaloid B426 A-399

Struct. unknown. Alkaloid from *Buxus sempervirens* var. *argentea* (Buxaceae). Cryst. (MeOH/CH_2Cl_2). Mp 208-210°.

Kuchkova, K.I. *et al., Chem. Zvesti*, 1976, **30**, 174-178; *CA*, **87**, 2362q (*isol*)

C-Alkaloid B A-400

$C_{20}H_{23}N_2O^{\oplus}$ 307.414

Minimum formula. Struct. unknown. Alkaloid from calabash curare and *Strychnos mitscherlichii* (Loganiaceae).

Mp 270° (as picrate). Red-violet col. with $Ce(SO_4)_2$, becoming brown on standing.

Schmid, H. *et al., Helv. Chim. Acta*, 1952, **35**, 1864-1879; 1953, **36**, 102-121

Dendrobates Alkaloid 181B A-401

Decahydro-2-propylquinoline

As *Dendrobates* Alkaloid 167A, A-354 with

R = C_3H_7, R′ = H

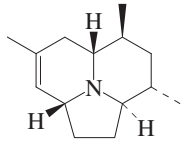
$C_{12}H_{23}N$ 181.32

Tentative struct. Trace alkaloid from skin extracts of *Dendrobates auratus, Dendrobates azureus, Dendrobates fulguritus* and *Dendrobates trivittatus* (Dendrobatidae). Mol. formula tentative; m/e 181(2), 180(2), 138(100). Cannot be hydrogenated.

Daly, J.W. *et al., Toxicon*, 1978, **16**, 163 (*isol, ms, rev*)
Daly, J.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 205 (*ms, rev*)
Spande, T.F. *et al., J. Nat. Prod.*, 1999, **62**, 5-21 (*pmr, cmr, occur*)

Dendrobates Alkaloid 205B A-402

Alkaloid 205B



Absolute Configuration

$C_{14}H_{23}N$ 205.342

Proposed gross struct. confirmed and stereochem. revised in 2003. Trace alkaloid from skin extracts of the Panamanian poison-frog *Dendrobates pumilio* (Dendrobatidae). $[\alpha]_D$ -8.5 (c, 0.59 in $CHCl_3$).

Tokuyama, T. *et al., Tetrahedron*, 1987, **43**, 643 (*isol, pmr, cmr, ms, struct*)
Toyooka, N. *et al., Angew. Chem., Int. Ed.*, 2003, **42**, 3808-3810 (*synth, abs config*)
Smith, A.B. *et al., J.O.C.*, 2006, **71**, 2547-2557 (*synth*)

Dendrobates Alkaloid 219B A-403

Decahydro-5-methyl-2-(2,4-pentadienyl)-quinoline

As *Dendrobates* Alkaloid 167A, A-354 with

R = $-CH_2CH{=}CHCH{=}CH_2$,
R′ = CH_3

$C_{15}H_{25}N$ 219.369

Tentative struct. Minor alkaloid from skin extracts of *Dendrobates histrionicus* and *Dendrobates* sp. (Colombia), trace constit. in *Dendrobates azureus* (Dendrobatidae). Mol. formula tentative, m/e 219(1), 218(2), 152(100). H_4-deriv., m/e 223, 152.

Daly, J.W. *et al., Toxicon*, 1978, **16**, 163 (*isol, ms, rev*)
Daly, J.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 205 (*ms, rev*)
Spande, T.F. *et al., J. Nat. Prod.*, 1999, **62**, 5-21 (*pmr, cmr, occur*)

Dendrobates Alkaloid 223B A-404

As *Dendrobates* Alkaloid 167A, A-354 with

R = C_4H_9, R′ = CH_2CH_3

$C_{15}H_{29}N$ 223.401

Tentative struct. Minor or trace alkaloid in skin extracts of *Dendrobates auratus, Dendrobates histrionicus, Dendrobates minutus, Dendrobates truncatus* and *Dendrobates* sp. of Colombia (Dendrobatidae). m/e 223(1), 222(2), 166(100). Cannot be hydrogenated.

Daly, J.W. *et al., Toxicon*, 1978, **16**, 163 (*isol, ms, rev*)
Daly, J.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 205 (*ms, rev*)
Spande, T.F. *et al., J. Nat. Prod.*, 1999, **62**, 5-21 (*pmr, cmr, occur*)

Dendrobates Alkaloid 225B A-405

[103881-40-9]

$C_{15}H_{31}N$ 225.417

Struct. unknown. May be a 2,6-dipentylpiperidine. Trace constit. of *Dendrobates histrionicus* and a minor constit. in an undescribed *Dendrobates* sp. from Panama (Dendrobatidae).

Daly, J.W. *et al., J. Nat. Prod.*, 1986, **49**, 265-280

Dendrobates Alkaloid 231B A-406

As *Dendrobates* Alkaloid 167A, A-354 with

R = C_6H_7, R′ = CH_3

$C_{16}H_{25}N$ 231.38

Tentative struct. Minor or trace alkaloid from skin extracts of *Dendrobates azureus, Dendrobates histrionicus, Dendrobates lehmanni, Dendrobates occultator, Dendrobates tinctorius* and *Dendrobates* sp. (Colombia) (Dendrobatidae). Mol. formula tentative; m/e 231(2), 230(1), 152(100). Forms H_6-deriv. m/e 237, 152.

Daly, J.W. *et al., Toxicon*, 1978, **16**, 163 (*isol, ms, rev*)
Daly, J.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 205 (*ms, rev*)
Spande, T.F. *et al., J. Nat. Prod.*, 1999, **62**, 5-21 (*pmr, cmr, occur*)

Dendrobates Alkaloid 237B A-407

$C_{14}H_{23}NO_2$ 237.341

Struct. unknown. Trace constit. in skin extracts of *Dendrobates abditus* and *Dendrobates fulguritus* (Dendrobatidae). Mol. formula tentative; m/e 237 (1), 236 (2), 182 (60), 114 (30), 112 (25), 70 (100).

Daly, J.W. *et al., Toxicon*, 1978, **16**, 163-188 (*isol, ms, rev*)
Daly, J.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 205 (*ms, rev*)

Dendrobates Alkaloid 239B A-408

$C_{15}H_{29}NO$ 239.4

Struct. unknown. Minor alkaloid from skin extracts of *Dendrobates bombetes*; trace constit. in *Dendrobates occultator* (Dendrobatidae). Mol. formula tentative; m/e 239 (2), 238 (3), 180 (100). Cannot be hydrogenated.

Daly, J.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 205 (*ms, rev*)

Dendrobates Alkaloid 253B A-409

$C_{16}H_{33}NO$ 255.443

Struct. unknown. Trace alkaloid from skin extracts of an undescribed *Dendrobates* sp. from Panama (Dendrobatidae). Mol. formula tentative; m/e 253 (1), 138 (100). Cannot be hydrogenated.

Daly, J.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 205 (*ms, rev*)

Dendrobates Alkaloid 257B A-410

Struct. unknown. Trace alkaloid from skin extracts of *Dendrobates lehmanni* (Dendrobatidae). Mol. formula not known; m/e 257 (60), 256 (100), 152 (20). Very atypical mass spectrum for a dendrobatid alkaloid. Possibly a degradation artifact.

Daly, J.W. *et al., Toxicon*, 1978, **16**, 163-180 (*isol, ms, rev*)
Daly, J.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 205 (*ms, rev*)

Dendrobates Alkaloid 267B A-411

Struct. unknown. Trace alkaloid from skin extracts of *Dendrobates auratus* and *Dendrobates minutus* (Dendrobatidae). Mol. formula not known; m/e 267 (7), 266 (4), 250 (1), 170 (100), 152 (4), 112 (13). The base peak is atypical for a dendrobatid alkaloid.

Daly, J.W. *et al., Toxicon*, 1978, **16**, 163-180 (*isol, ms, rev*)
Daly, J.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 205 (*ms, rev*)

Dendrobates Alkaloid 269B A-412

As *Dendrobates* Alkaloid 167A, A-354 with

R = $CH_2CH{=}CHC{\equiv}CH$,
R′ = $CH_2CH{=}CHCH{=}CH_2$

$C_{19}H_{27}N$ 269.429

Tentative struct. Minor or trace alkaloid in skin extracts of *Dendrobates granuliferus, Dendrobates histrionicus* (several populations), *Dendrobates occultator, Dendrobates trivittatus* and *Dendrobates truncatus* (Dendrobatidae). m/e 269(4), 286(12), 202(100). H_{10}-deriv., m/e 279, 208.

Daly, J.W. *et al., Helv. Chim. Acta*, 1977, **60**, 1128 (*isol, ms*)
Daly, J.W. *et al., Toxicon*, 1978, **16**, 163 (*isol, ms, rev*)
Daly, J.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 205 (*ms, rev*)

Dendrobates Alkaloid 281B A-413

$C_{18}H_{35}NO$ 281.481

Struct. unknown. Trace alkaloid from skin extracts of *Dendrobates granuliferus* (Dendrobatidae). Mol. formula tentative; m/e 281 (4), 264 (12), 208 (25), 206 (20), 150 (65), 98 (5), 96 (20), 70 (100). Atypical spectrum for a dendrobatid alkaloid. Probably in

Pumiliotoxin-A class. Cannot be hydrogenated.

Daly, J.W. *et al., Toxicon*, 1978, **16**, 163-180 (*isol, ms, rev*)
Daly, J.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 205 (*ms, rev*)

Dendrobates Alkaloid 283B A-414

$C_{17}H_{33}NO_2$ 283.453

Struct. unknown. A major alkaloid in skin extracts of *Dendrobates histrionicus* and *Dendrobates occultator* (Dendrobatidae). m/e 283 (<1), 282 (1), 254 (2), 212 ($C_{12}H_{22}NO_2$, 40), 152 ($C_{10}H_{18}N$, 23), 140 ($C_9H_{18}N$, 100). Cannot be hydrogenated.

Daly, J.W. *et al., Toxicon*, 1978, **16**, 163-180 (*isol, ms, rev*)
Daly, J.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 205 (*ms, rev*)

Dendrobates Alkaloid 297B A-415

$C_{18}H_{35}NO_2$ 297.48

Struct. unknown. Trace alkaloid from skin extracts of *Dendrobates auratus* (Dendrobatidae). m/e 297 (10), 166 (92), 70 (100). Forms H_4-deriv.

Daly, J.W. *et al., Toxicon*, 1978, **16**, 163-188 (*isol, ms, rev*)
Daly, J.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 205 (*ms, rev*)

Dendrobates Alkaloid 307B A-416

Isopumiliotoxin A
[67255-98-5]

$C_{19}H_{33}NO_2$ 307.475

Struct. unknown. Isomer of Pumiliotoxin A, P-791 without a large fragment ion for loss of OH. Minor or trace alkaloid in skin extracts of *Dendrobates auratus*, *Dendrobates granuliferus*, *Dendrobates lehmanni*, *Dendrobates minutus* and *Dendrobates pumilio* (Dendrobatidae). m/e 307 (12), 306 (4), 290 (2), 194 (24), 193(45), 166 (100), 70 (56). H_2-deriv, m/e 309(1), 280 (3), 208 (10), 138 (25), 110 (60), 84(100), 70 (45). H_4-deriv, m/e 311 (1), 110(25), 84 (100), 70 (30).

Daly, J.W. *et al., Toxicon*, 1978, **16**, 163-188 (*isol, ms, rev*)
Daly, J.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 205 (*ms, rev*)

Dendrobates Alkaloid 309B A-417

$C_{20}H_{39}NO$ 309.534

Struct. unknown. Trace alkaloid from skin extracts of *Dendrobates auratus* and *Dendrobates granuliferus* (Dendrobatidae). Mol. formula tentative; m/e 309 (1), 152 (100). Possibly member of Hydroxy pumiliotoxin-C class with OH group in the side chain.

Daly, J.W. *et al., Toxicon*, 1978, **16**, 163-180 (*isol, ms, rev*)
Daly, J.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 205 (*ms, rev*)

Gentiana macrophylla Alkaloid B A-418

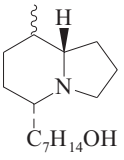
$C_9H_9NO_2$ 163.176

Struct. unknown. Monoterpene alkaloid. Alkaloid from the roots of *Gentiana macrophylla* (Gentianaceae). Cryst. (C_6H_6/petrol). Mp 128-130°.

Fu, F.-Y. *et al., Yaoxue Xuebao*, 1958, **6**, 198-203; *CA*, **53**, 8310b (*isol, uv*)

Mantella Alkaloid 253B A-419

(Octahydro-8-methyl-5-indolizinyl)-sec-*heptanol, 9CI. Indolizidine 253B*
[151871-22-6]



$C_{16}H_{31}NO$ 253.427

Provisional struct. Secondary alcohol. Minor alkaloid from skin extracts of one population of the Madagascan frog *Mantella madagascariensis*.

Garraffo, H.M. *et al., J. Nat. Prod.*, 1993, **56**, 1016 (*isol, ir, ms*)

Mantella Alkaloid 271B A-420

Struct. and MF unknown. Trace alkaloid from skin extracts of the Madagascan frog *Mantella betsileo*.

Garraffo, H.M. *et al., J. Nat. Prod.*, 1993, **56**, 1016-1038 (*isol, ir, ms*)

Mantella Alkaloid 293B A-421

Struct. and MF unknown. Minor alkaloid from skin extracts of the Madagascan frog *Mantella* sp. cf. *madagascariensis*. Minor or trace constit. in *Mantella madagascariensis*.

Garraffo, H.M. *et al., J. Nat. Prod.*, 1993, **56**, 1016-1038 (*isol, ir, ms*)

Mantella Alkaloid 295B A-422

Struct. and MF unknown. Tentatively classified as an indolizidine. Forms a di-*O*-Ac deriv. Minor alkaloid from skin extracts of the Madagascan frog *Mantella crocea*.

Garraffo, H.M. *et al., J. Nat. Prod.*, 1993, **56**, 1016-1038 (*isol, ir, ms*)

Pseudophryne Alkaloid 252B A-423

$C_{14}H_{24}N_2O_2$ 252.356

Struct. unknown. Possibly analogous to Spiropyrrolizidine 252, S-437 but with the hydroxy group in another part of the struct. Minor alkaloid from skin extracts of one population of the Australian frog *Pseudophryne coriacea* (trace constit. in a different population of the same frog).

Daly, J.W. *et al., J. Nat. Prod.*, 1990, **53**, 407-421 (*isol, ms*)

Skytanthus acutus Alkaloid B A-424

$C_{11}H_{21}N$ 167.294

Struct. unknown. Monoterpene alkaloid. Alkaloid from *Skytanthus acutus* (Apocynaceae). Bp_5 190°.

Appel, H.H. *et al., Scientia (Valparaiso)*, 1961, **28**, 5-9; *CA*, **57**, 2332g

Sophora griffithii Alkaloid B A-425

Struct. unknown. Constit. of *Sophora griffithii*.

Primukhamedov, I. *et al., Rastit. Resur.*, 1969, **5**, 572-575; *CA*, **72**, 118549

Strychnos camptoneura Alkaloid B A-426

[58572-16-0]

Struct. unknown. Bisindole alkaloid. Alkaloid from *Strychnos camptoneura* (Loganiaceae). Mol. formula not reported (MW 622).

Verpoorte, R. *et al., Acta Pharm. Suec.*, 1975, **12**, 455-460 (*isol, uv, ir, ms*)

Thermopsis lanceolata Alkaloid B A-427

[78040-77-4]

Struct. unknown. Constit. of *Thermopsis lanceolata*.

▶ AZ7675000

Chao, K.-S. *et al., CA*, 1981, **95**, 35461q (*isol, props*)

Alkaloid 241B A-428

[97380-36-4]

$C_{16}H_{35}N$ 241.459

Struct. unknown. Major alkaloid from skin extracts of the Madagascan frog *Mantella madagascariensis* (family Ranidae, subfamily Mantellinae). m/e 241 (15), 135 (45), 58 (100). Cannot be hydrogenated. No exchangeable hydrogen. Apparently lacks rings. Has not been detected in dendrobatid frogs.

Daly, J.W. *et al., Toxicon*, 1984, **22**, 905-919 (*isol, ms*)

C-Alkaloid BL A-429

$C_{40}H_{50}N_4O_2^{2\oplus}$ 618.861

An oxidn. prod. of *C*-Alkaloid D, A-476. Struct. unknown. Alkaloid from calabash curare (*Strychnos* spp.) (Loganiaceae).

▶ Toxic (0.02 x Toxiferine).

Dichloride:
Cryst. + $2H_2O$. Dec. without melting, turning yellow, red then black. Deep-blue col. with $Ce(SO_4)_2$, becoming blue-green on standing.

Dipicrate: Mp 172-178°.

Schmidt, I. *et al., Helv. Chim. Acta*, 1960, **43**, 1218 (*isol, ir, uv*)
Gorman, A.A. *et al., Alkaloids (London)*, 1971, **1**, 200-338

Buxus Alkaloid BX6 A-430

Struct. unknown. Alkaloid from *Buxus sempervirens* (Buxaceae). Mp 207-212°.

Döpke, W. *et al., Pharmazie*, 1969, **24**, 649; *CA*, **72**, 43929p (*isol*)

Buxus Alkaloid BX10 A-431

Struct. unknown. Alkaloid from *Buxus sempervirens* (Buxaceae). Mp 221-224°.

Döpke, W. *et al., Pharmazie*, 1969, **24**, 649; *CA*, **72**, 43929p (*isol*)

Chamaecytisus Alkaloid C_1 A-432

$C_{15}H_{24}N_2O_2$ 264.367

Struct. unknown. Prob. a hydroxylupanine. Alkaloid from *Chamaecytisus frivaldskyanus, Chamaecytisus albus* and *Chamaecytisus calcareus* (Fabaceae). Mp 207-209°. $[\alpha]_D^{25}$ +59.2 (c, 0.38 in EtOH).

Daily, A. *et al., Planta Med.*, 1977, **32**, 380-383

Chamaecytisus Alkaloid C_2 A-433

$C_{12}H_{20}N_2O$ 208.303

Struct. unknown. Alkaloid from *Chamaecytisus austriacus, Chamaecytisus ciliatus* and *Chamaecytisus polytrichus* (Fabaceae). Mp 168-170°. $[\alpha]_D^{25}$ +38 (c, 0.4 in EtOH).

Daily, A. *et al., Planta Med.*, 1977, **32**, 380-383,

Rauwolfia obscura Alkaloid C_2 A-434

$C_{30}H_{34}N_4O$ 466.625

Bisindole alkaloid. Struct. unknown. Alkaloid from the leaves of *Rauwolfia obscura* (Apocynaceae). Mp 142-144°.

Timmins, P. *et al., Planta Med.*, 1975, **27**, 105-111 (*isol, uv, ir, pmr, ms*)

Buxus Alkaloid C A-435

$C_{24}H_{42}N_2O$ 374.609

Struct. unknown. Alkaloid from *Buxus sempervirens* (Buxaceae). Mp 212-214°. $[\alpha]_D$ +60 ($CHCl_3$). Props. similar to Cyclobuxamine H in C-846.

Schlittler, E. *et al., Helv. Chim. Acta*, 1949, **32**, 2209-2226 (*isol*)

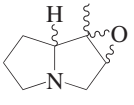
C-Alkaloid C A-436

Struct. unknown. Alkaloid from calabash curare (*Strychnos* spp.) (Loganiaceae). Characterised as picrate, dec. >270° without melting. Red-violet col. with $Ce(SO_4)_2$, becoming brown on standing.

Schmid, H. *et al., Helv. Chim. Acta*, 1952, **35**, 1864-1879; 1953, **36**, 102-121

Crotalaria goreensis Alkaloid C A-437

Crotalaria goreensis *Base C*



Possible structure

$C_8H_{13}NO$ 139.197

Alkaloid from *Crotalaria goreensis* whole plant (Fabaceae). Bp_3 112-114°. $[\alpha]_D$ +9.3 (EtOH). pK_a 8.8. Conts. one C-Me group. Gives a dihydro deriv.

Culvenor, C.C.J. *et al., Aust. J. Chem.*, 1961, **14**, 284

Dendrobates Alkaloid 223C A-438

[67217-78-1]

As *Dendrobates* Alkaloid 167A, A-354 with

R = C_5H_{11}, R′ = CH_3

$C_{15}H_{29}N$ 223.401

Tentative struct. Minor or trace alkaloid in skin extracts of *Dendrobates auratus, Dendrobates histrionicus* (various populations), *Dendrobates truncatus* and *Dendrobates* sp. of Colombia (Dendrobatidae). m/e 223(1), 222(2), 152(100). Cannot be hydrogenated.

Hydroxy (?)(1): **Dendrobates *Alkaloid 239E***

$C_{15}H_{29}NO$ 239.4

Trace alkaloid from skin extracts of *Dendrobates histrionicus* (Dendrobatidae). Mol. formula tentative. m/e 239(2), 238(3), 210(40), 152(100). Poss. a side-chain substd. deriv. of 223C. Cannot be hydrogenated.

Hydroxy (?)(2): **Dendrobates *Alkaloid 239F***

$C_{15}H_{29}NO$ 239.4

Trace alkaloid from skin extracts of *Dendrobates histrionicus* (Dendrobatidae). Mol. formula tentative. m/e 239(1), 168(100). Cannot be hydrogenated, forms *O*-Ac deriv.Poss. ring-substd. deriv. of 223C.

Daly, J.W. *et al., Toxicon*, 1978, **16**, 163 (*isol, ms, rev*)

Daly, J.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 205 (*ms, rev*)

Spande, T.F. *et al., J. Nat. Prod.*, 1999, **62**, 5-21 (*pmr, cmr, occur*)

Dendrobates Alkaloid 225C A-439

$C_{15}H_{31}N$ 225.417

Struct. unknown. Tentatively proposed to be a 2-*n*-butyl-5-*n*-heptylpyrrolidine. Trace constit. in *Dendrobates histrionicus* (Dendrobatidae).

Daly, J.W. *et al., J. Nat. Prod.*, 1986, **49**, 265-280

Dendrobates Alkaloid 237C A-440

$C_{16}H_{31}N$ 237.428

Struct. unknown. Minor alkaloid from skin extracts of *Dendrobates histrionicus* (Dendrobatidae). Mol. formula tentative; m/e 237 (2), 236 (1), 180 (100). Probably higher homologue of 223B. Cannot be hydrogenated.

Daly, J.W. *et al., Toxicon*, 1978, **16**, 163-180 (*isol, ms, rev*)

Daly, J.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 205 (*ms, rev*)

Dendrobates Alkaloid 239C A-441

$C_{15}H_{29}NO$ 239.4

Struct. unknown. Trace alkaloid from skin extracts of *Dendrobates occultator* (Dendrobatidae). Mol. formula tentative; m/e 239 (2), 238 (3), 196 (100). Cannot be hydrogenated.

Daly, J.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 205 (*ms, rev*)

Dendrobates Alkaloid 251C A-442

$C_{16}H_{29}NO$ 251.411

Struct. unknown. Trace alkaloid from skin extracts of *Dendrobates minutus* (Dendrobatidae). Mol. formula tentative; m/e 251 (2), 234 (4), 154 (100). H_2-deriv, m/e 253, 154.

Daly, J.W. *et al., Toxicon*, 1978, **16**, 163 (*isol, ms, rev*)

Daly, J.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 205 (*ms, rev*)

Dendrobates Alkaloid 283C A-443

$C_{17}H_{33}NO_2$ 283.453

Struct. unknown. A major alkaloid from skin extracts of *Dendrobates histrionicus* and *Dendrobates occultator* (Dendrobatidae). m/e 283 (<1), 282 (1), 240 (5), 226 ($C_{13}H_{24}NO_2$, 28), 224 ($C_{15}H_{30}N$, 10), 166 ($C_{11}H_{20}N$, 60), 126 ($C_8H_{16}N$, 100). Cannot be hydrogenated.

Daly, J.W. *et al., Toxicon*, 1978, **16**, 163-180 (*isol, ms, rev*)

Daly, J.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 205 (*ms, rev*)

Dendrobates Alkaloid 307C A-444

$C_{19}H_{33}NO_2$ 307.475

Struct. unknown. Minor alkaloid from skin extracts of *Dendrobates lehmanni* and *Dendrobates pumilio* (Dendrobatidae). m/e 307 (9), 290 (11), 182 (62), 70 (100). H_4-deriv, m/e 311 (3), 294 (3), 268 (5), 236(2), 110 (30), 84 (100), 70 (35).

Daly, J.W. *et al., Toxicon*, 1978, **16**, 163-180 (*isol, ms, rev*)

Daly, J.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 205 (*ms, rev*)

Dendrobates Alkaloid 309C A-445

$C_{19}H_{35}NO_2$ 309.491

Struct. unknown. Minor alkaloid from skin extracts of an undescribed *Dendrobates* sp. from Panama (Dendrobatidae). Mol. formula tentative; m/e 309 (3), 308 (2), 292 (1), 280 (4), 266 (4), 194 (15), 166 (100), 70(90). H_2-deriv, m/e 311 (3), 110 (25), 84(100), 70 (30).

Daly, J.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 205 (*ms, rev*)

Erythrophleum Alkaloid C A-446

Struct. unknown. Alkaloid from the bark of *Erythrophleum couminga* (Fabaceae). Cryst. (petrol). Mp 116°. Readily dec. Possibly an artifact.

Cronlund, A. *et al., Acta Pharm. Suec.*, 1975, **12**, 467-478 (*isol, uv, ir, pmr, ms*)

Gentiana macrophylla Alkaloid C A-447

Struct. unknown. Mol. formula not recorded. Monoterpene alkaloid. Alkaloid from the roots of *Gentiana macrophylla* (Gentianaceae). Cryst. (Me_2CO). Mp 206-208°.

Fu, F.-Y. *et al., Yaoxue Xuebao*, 1958, **6**, 198-203; *CA*, **53**, 8310b (*isol, uv*)

Leucojum Alkaloid C A-448

Leucojum *Base C*

$C_{16}H_{17}NO_5$ 303.314

Amaryllidaceae alkaloid. Struct. unknown. Isol. from *Leucojum* sp.

(Amaryllidaceae). Mp 185-186°. $[\alpha]_D$ -29 ($CHCl_3$).

Raffauf, R.F. *et al., Handb. Alkaloids Alkaloid-Containing Plants*, Wiley, 1970, 284

Mantella Alkaloid 205C A-449

Struct. and MF unknown. Trace alkaloid from skin extracts of one population of the Madagascan frog *Mantella madagascariensis*.

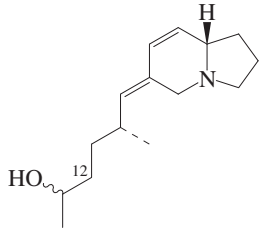
Garraffo, H.M. *et al., J. Nat. Prod.*, 1993, **56**, 1016 (*isol, ms*)

Mantella Alkaloid 211C A-450

Struct. and MF unknown. Trace alkaloid from skin extracts of the Madagascan frog *Mantella laevigata*.

Garraffo, H.M. *et al., J. Nat. Prod.*, 1993, **56**, 1016-1038 (*isol, ir, ms*)

Mantella Alkaloid 235C A-451



$C_{15}H_{25}NO$ 235.369

Structure revised in 2005. Alkaloid from skin extracts of the Madagascan frogs *Mantella aurantiaca*, *Mantella madagascariensis* and *Mantella crocea*.

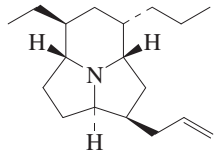
Ketone: **Mantella *Alkaloid 233F***
$C_{15}H_{23}NO$ 233.353
Trace alkaloid from skin extracts of *Mantella madagascariensis, Mantella aurantiaca* and *Mantella crocea*.

12ξ-Hydroxy: **Mantella *Alkaloid 251G***
$C_{15}H_{25}NO_2$ 251.368
Alkaloid from a *Mantella* sp. Tentative struct. assigned.

Garraffo, H.M. *et al., J. Nat. Prod.*, 1993, **56**, 1016-1038 (*isol, ir, ms*)

Andriamaharavo, N.R. *et al., J. Nat. Prod.*, 2005, **68**, 1743-1748 (*synth, ir, pmr, ms*)

Mantella Alkaloid 261C A-452



$C_{18}H_{31}N$ 261.45
Major alkaloid from skin extracts of the frog *Mantella betsileo*.

Dihydro(?): **Mantella *Alkaloid 263G***
$C_{18}H_{33}N$ 263.465
Alkaloid from skin extracts of *Mantella betsileo*.

Didehydro(?): Mantella *Alkaloid 259D*
$C_{18}H_{29}N$ 259.434
Alkaloid from the skin extracts of *Mantella betsileo*.

Hydroxy(?): **Mantella *Alkaloid 277G***
$C_{18}H_{31}NO$ 277.449
Alkaloid from the skin extracts of *Mantella betsileo*.

Hydroxy(?): **Mantella *Alkaloid 277H***
$C_{18}H_{31}NO$ 277.449
Alkaloid from the skin extracts of *Mantella betsileo*.

Kaneko, T. *et al., Heterocycles*, 2003, **59**, 745-757 (*isol, pmr, cmr, ms*)

Toyooka, N. *et al., Synlett*, 2005, 3109-3110 (*synth*)

Mantella Alkaloid 321C A-453

Allopumiliotoxin 321C

Struct. and MF unknown. Trace alkaloid from skin extracts of the Madagascan frog *Mantella betsileo*.

Garraffo, H.M. *et al., J. Nat. Prod.*, 1993, **56**, 1016-1038 (*isol, ms*)

Salicornia herbacea Alkaloid C A-454

Struct. unknown. Alkaloid from *Salicornia herbacea* (Chenopodiaceae). Mp 236-238°.

Perchlorate: Mp 210-212°.

Picrate: Mp 117°.

Borkowski, B. *et al., Pharmazie*, 1965, **20**, 390-393; *CA*, **63**, 15223c

Stephania glabra Alkaloid C A-455

$C_{21}H_{25}NO_4$ 355.433

Struct. unknown. Not reported in further investigations of this species. Isol. from tubers of *Stephania glabra*. Cryst. (Me_2CO). Mp 182-183°. $[\alpha]_D$ +259 (c, 1 in EtOH). Conts. 3 OMe and 1 NMe group. λ_{max} 267 ; 304 (no solvent reported).

Hydrochloride: Mp 230-232°.

Kin, F.K. *et al., Khim. Prir. Soedin.*, 1965, **1**, 392-394; *Chem. Nat. Compd. (Engl. Transl.)*, 1965, **1**, 308-309

Cava, M.P. *et al., J.O.C.*, 1968, **33**, 2785-2789 (*Stephania glabra constits*)

Voacanga thouarsii Alkaloid C A-456

[50924-00-0]

$C_{42}H_{54}N_4O_{10}$ 774.909

Bisindole alkaloid. Struct. unknown. Alkaloid from the leaves of *Voacanga thouarsii* (Apocynaceae). Cryst. (MeOH). Mp 290-295° dec. $[\alpha]_D$ -282. Intense blue col. with HNO_3. λ_{max} 223 (log ϵ 4.57); 263 (log ϵ 4.1); 299 (log ϵ 4.17); 328 (log ϵ 4.21) (EtOH).

Rolland, Y. *et al., Phytochemistry*, 1973, **12**, 2039-2042 (*isol, uv, ir, pmr*)

Alkaloid C2 A-457

$C_{30}H_{34}N_4O$ 466.625

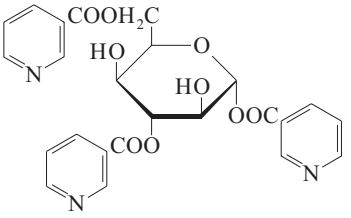
Prob. of Usambarine type. Struct. unknown. Alkaloid from the leaves of *Rauwolfia obscura* (Apocynaceae). Cryst. Mp 142-144°.

Timmins, P. *et al., Planta Med.*, 1975, **27**, 105-111 (*isol, uv, ir, pmr, ms*)

Alkaloid CB2 A-458

α-D-Glucopyranose 1,3,6-tri-3-pyridinecarboxylate, 9CI. 1,3,6-Tri-O-nicotinoyl-α-D-glucopyranose

[76129-64-1]

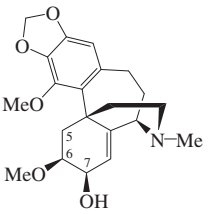


$C_{24}H_{21}N_3O_9$ 495.445
Alkaloid from stems of *Cryptolepis buchanani* (Asclepiadaceae). Mp 131-133°.

Dutta, S.K. *et al., Phytochemistry*, 1980, **19**, 1278 (*isol, uv, ir, pmr, ms, struct*)

Alkaloid CC 2 A-459

[35320-76-4]



Absolute Configuration

$C_{21}H_{27}NO_5$ 373.448
Alkaloid from the corms of *Colchicum cornigerum* (Liliaceae). Cryst. (EtOAc/Et_2O). Mp 172-174° (168-170°). $[\alpha]_D^{22}$ +40 (c, 0.48 in $CHCl_3$).

Ac: Mp 135-137°.

5,6-Didehydro, 7-ketone: ***Alkaloid CC 20***
[35320-75-3]
$C_{21}H_{23}NO_5$ 369.416
Alkaloid from the corms of *Colchicum cornigerum* (Liliaceae). Cryst. (EtOAc/Et_2O). Mp 210-212°. $[\alpha]_D^{22}$ +324 (c, 0.26 in $CHCl_3$).

Saleh, M. *et al., Coll. Czech. Chem. Comm.*, 1963, **28**, 3413 (*isol*)

Potěšilová, H. *et al., Coll. Czech. Chem. Comm.*, 1969, **34**, 3540 (*isol, uv, ir*)

Battersby, A.R. *et al., J.C.S.(C)*, 1971, 3514 (*uv, ir, pmr, cryst struct*)

Alkaloid CC 3 A-460

$C_{20}H_{25}NO_5$ 359.421

Struct. unknown. Alkaloid from the corms of *Colchicum cornigerum* (Liliaceae). Fine needles (EtOAc/Et_2O). Mp 197-199°. $[\alpha]_D^{22}$ +155 (c, 0.76 in $CHCl_3$).

El-Hamidi, A. *et al., Coll. Czech. Chem. Comm.*, 1962, **27**, 2111-2118 (*isol, uv, ir*)

Alkaloid CC 11 A-461

Mol. formula not reported. Struct. unknown. Alkaloid from the corms of *Colchicum cornigerum* (Liliaceae). Mp 251-253°.

Saleh, M. *et al., Coll. Czech. Chem. Comm.*, 1963, **28**, 3413-3423 (*isol*)

Alkaloid CC 13 **A-462**

Mol. formula not reported. Struct. unknown. Alkaloid from the seeds of *Colchicum cornigerum* (Liliaceae). Cryst. (MeOH). Mp 115-117°.

Saleh, M. *et al., Coll. Czech. Chem. Comm.*, 1963, **28**, 3413-3423 (*isol*)

Alkaloid CC 14 **A-463**

Struct. unknown. Mol. formula not reported. Alkaloid from the stems of *Colchicum cornigerum* (Liliaceae). Mp 182-185°.

Saleh, M. *et al., Coll. Czech. Chem. Comm.*, 1963, **28**, 3413-3423 (*isol*)

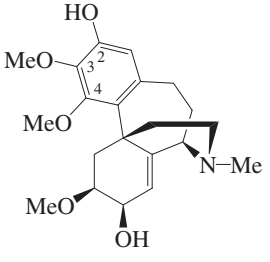
Alkaloid CC 23 **A-464**

Struct. unknown. MF = $C_{21\text{-}22}H_{23\text{-}27}NO_{5\text{-}6}$. Alkaloid from the corms of *Colchicum cornigerum* (Liliaceae). Mp 240-243°. $[\alpha]_D^{22}$ -22 (c, 0.2 in $CHCl_3$). $[\alpha]_D$ -4 (c, 0.3 in MeOH).

Potěšilová, H. *et al., Coll. Czech. Chem. Comm.*, 1969, **34**, 3540-3552 (*isol, uv, ir*)

Alkaloid CC 3b **A-465**

[35320-77-5]



$C_{21}H_{29}NO_5$ 375.464

Probable struct. May be the O^4-de-Me, O^2-Me isomer. Alkaloid from the corms of *Colchicum cornigerum* (Liliaceae). Cryst. (EtOAc). Mp 210-212°. $[\alpha]_D^{22}$ +25 (c, 0.76 in $CHCl_3$).

Di-Ac: Mp 205-206°.

Potěšilová, H. *et al., Coll. Czech. Chem. Comm.*, 1969, **34**, 3540 (*isol, uv, ir*)
Battersby, A.R. *et al., J.C.S.(C)*, 1971, 3514 (*uv, ir, pmr, struct*)

***Papaver* Alkaloid** **A-466**
$C_{21}H_{21}NO_6$

$C_{21}H_{21}NO_6$ 383.4

Struct. unknown. Alkaloid from the flowers of *Papaver rhoeas*. Yellow prisms. Mp 172-174°.

Awe, W. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1957, **290**, 367-376 (*isol*)

***Hortia* Alkaloid** **A-467**
$C_{22}H_{19}N_3O_3$

$C_{22}H_{19}N_3O_3$ 373.41

Struct. unknown. Alkaloid from the bark of *Hortia arborea*. Cryst. (Et_2O). Mp 136-139° Mp 191-194° (as hydrochloride).

Antonaccio, L.D. *et al., Ann. Acad. Bras. Cinc.*, 1956, **28**, 183-188; *CA*, **51**, 7385d (*isol*)

Alkaloid CN1 **A-468**

[126161-02-2]

$C_{23}H_{25}NO_5$ 395.454

Struct. unknown. Minor alkaloid from the aerial parts of *Corydalis nobilis* (Papaveraceae). Long thin needles (MeOH). Mp 210-211°.

Slavík, J. *et al., Coll. Czech. Chem. Comm.*, 1989, **54**, 2009-2020 (*isol, ms*)

Alkaloid CN2 **A-469**

[126161-13-5]

Struct. unknown. Minor alkaloid from the aerial parts of *Corydalis nobilis* (Papaveraceae). Light yellow prismatic needles (MeOH). Mp 260-261°. Ir 1660 cm^{-1} (CO), OH band absent.

Slavík, J. *et al., Coll. Czech. Chem. Comm.*, 1989, **54**, 2009-2020 (*isol, uv, ir*)

Alkaloid CR1 **A-470**

$C_{22}H_{34}NO_2^{\oplus}$ 344.516

Struct. unknown. Alkaloid from whole plants of *Consolida regalis*. Mp 288° (as iodide). $[\alpha]_D^{24}$ +29 (c, 0.2 in MeOH) (iodide). Contains a CO group (1760 cm^{-1}) and an OH group (3320 cm^{-1}). Prob. a quaternary C_{20}-diterpenoid alkaloid.

Slavík, J. *et al., Coll. Czech. Chem. Comm.*, 1987, **52**, 804-811 (*isol, uv, pmr, ms*)

Alkaloid CRB 11 **A-471**

$C_{21}H_{26}N_2O_3$ 354.448

Struct. unknown. Trace alkaloid from root of *Rauwolfia cumminsii* (Apocynaceae). Off-white amorph. powder. Prob. an indolenine.

Iwu, M.M. *et al., Planta Med.*, 1978, **34**, 390-396 (*isol, uv, ir, ms*)

Alkaloid CSA 3 **A-472**

CSA 3

Struct. unknown. Mol. formula not reported. Co-occurs with Cryptolepine and Indolo[3,2-*b*]quinoline, I-109. Could possibly be identical with Isocryptolepine in I-110. Alkaloid from roots of *Cryptolepis sanguinolenta* (Asclepiadaceae). Mp 300°.

Dwuma-Badu, D. *et al., J. Pharm. Sci.*, 1978, **67**, 433-434 (*isol*)

***Rauwolfia obscura* Alkaloid** **A-473**
D_1

$C_{30}H_{34}N_4O$ 466.625

Struct. unknown. Bisindole alkaloid. Alkaloid from the leaves of *Rauwolfia obscura* (Apocynaceae). Mp 190-192°.

Timmins, P. *et al., Planta Med.*, 1975, **27**, 105-111 (*isol, uv, ir, ms*)

***Rauwolfia obscura* Alkaloid** **A-474**
D_2

$C_{31}H_{36}N_4O$ 480.652

Struct. unknown. Bisindole alkaloid. Alkaloid from the leaves of *Rauwolfia obscura* (Apocynaceae). Amorph. yellow powder.

Timmins, P. *et al., Planta Med.*, 1975, **27**, 105-111 (*isol, uv, ms*)

***Buxus* Alkaloid D** **A-475**

Struct. unknown

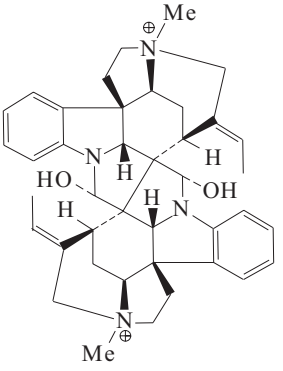
$C_{29}H_{50}N_2O$ 442.727

Alkaloid from *Buxus sempervirens* (Buxaceae). Mp 182-183°. $[\alpha]_D$ +50 ($CHCl_3$).

Schlittler, E. *et al., Helv. Chim. Acta*, 1949, **32**, 2209-2226 (*isol*)

***C*-Alkaloid D** **A-476**

[6902-18-7]



$C_{40}H_{48}N_4O_2^{2\oplus}$ 616.845

Alkaloid from calabash curare (*Strychnos* spp.) and from *Strychnos castelneana* (Loganiaceae), also obt. by acid treatment of C-dihydrotoxiferine I. Shows low curarising activity. $[\alpha]_D$ -51 (50% Me_2CO aq.) (as dichloride). Characterised as dichloride and dipicrate, dec. >270° without melting. Red-violet col. with $Ce(SO_4)_2$ turning yellowish on standing.

▶ EY5200000

Di-N-*de-Me:* ***Bisnor*-C-*alkaloid D***

[62510-51-4]

$C_{38}H_{42}N_4O_2$ 586.775

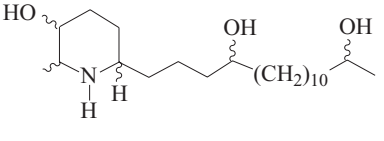
Alkaloid from stem bark of *Strychnos dolichothyrsa* and from *Strychnos matopensis*. Poss. artifact. Tentative identification.

Schmid, H. *et al., Helv. Chim. Acta*, 1952, **35**, 1864; 1953, **36**, 102; 1954, **37**, 1993; 1961, **44**, 34 (*isol, uv, props*)
Battersby, A.R. *et al., Proc. Chem. Soc., London*, 1961, 413 (*struct*)
Delle Monache, F. *et al., J. Nat. Prod.*, 1970, **33**, 279 (*isol*)
Verpoorte, R. *et al., J. Nat. Prod.*, 1976, **39**, 357-362 (*Bisnor-C-alkaloid D*)
Massiot, G. *et al., Phytochemistry*, 1988, **27**, 3293-3304 (*isol, cmr*)

***Cassia* Alkaloid D** **A-477**

16-(5-Hydroxy-6-methyl-2-piperidinyl)-2,13-hexadecanediol, 9CI. 6-(4,15-Dihydroxyhexadecyl)-3-hydroxy-2-methylpiperidine

[38839-06-4]



$C_{22}H_{45}NO_3$ 371.602
Minor alkaloid from *Cassia carnaval* whole plant (Fabaceae). Oil. Cryst. salts could not be obt.

Lythgoe, D. *et al., An. Asoc. Quim. Argent.*, 1972, **60**, 317; *CA*, **77**, 164901 (*isol, uv, ir, ms*)

Coelidium Alkaloid D A-478

[11051-60-8]

$C_{16}H_{27}N_3$ 261.409

Struct. unknown. Alkaloid from *Coelidium fourcadei* dried leaves and branches (Fabaceae). Cryst. (hexane). Mp 138-139°. Interconverts with *Coelidium* Alkaloid E, A-497 in dil. acid. Cooccurs with Isotripiperideine, I-340 and α-Aldotripiperideine.

Arndt, R.R. *et al., J. S. Afr. Chem. Inst.*, 1968, **21**, 54-57 (*isol, ir, uv, pmr*)

Dendrobates Alkaloid 223D A-479

As *Dendrobates* Alkaloid 167A, A-354 with
R = C_6H_{13}, R′ = H

$C_{15}H_{29}N$ 223.401

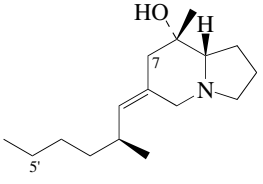
Tentative struct. Minor or trace alkaloid in skin extracts of *Dendrobates histrionicus* (various populations), *Dendrobates minutus, Dendrobates pumilio* and *Dendrobates truncatus* (Dendrobatidae). m/e 223(1), 222(2), 138(100). Cannot be hydrogenated.

Hydroxy (?): **Dendrobates *Alkaloid 239G***
$C_{15}H_{29}NO$ 239.4
Trace alkaloid from skin extracts of *Dendrobates histrionicus* (Dendrobatidae). Mol. formula tentative. m/e 239(1), 238(3), 138(100). Poss. side-chain hydroxy deriv. of 223D. Cannot be hydrogenated.

Daly, J.W. *et al., Toxicon*, 1978, **16**, 163 (*isol, ms, rev*)
Daly, J.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 205 (*ms, rev*)
Spande, T.F. *et al., J. Nat. Prod.*, 1999, **62**, 5-21 (*pmr, cmr, occur*)

Dendrobates Alkaloid 251D A-480

Octahydro-8-methyl-6-(2-methylhexylidene)-8-indolizinol, 9CI. Pumiliotoxin 251D
[73376-35-9]



$C_{16}H_{29}NO$ 251.411
A major alkaloid in skin extracts of the neotropical poison-frogs *Dendrobates tricolor, Dendrobates silverstonei, Dendrobates bombetes, Dendrobates* sp. (Colombia); minor or trace constit. of *Dendrobates auratus, Dendrobates histrionicus, Dendrobates lehmanni* and *Dendrobates minutus* (Dendrobatidae).
$[\alpha]_D^{20}$ -8.5 (c, 1 in $CHCl_3$) (synthetic).

Hydrochloride:
Cryst. (hexane/EtOAc). Mp 206-206.5° (evac. capillary). $[\alpha]_D^{25}$ +32 (c, 0.5 in MeOH) (synthetic).

7β-Hydroxy: ***Allopumiliotoxin 267A***
[73376-38-2]
$C_{16}H_{29}NO_2$ 267.411
A major alkaloid in *Dendrobates auratus, Dendrobates azureus, Dendrobates fulguritus, Dendrobates granuliferus, Dendrobates lehmanni, Dendrobates leucomelas, Dendrobates minutus* (all populations), *Dendrobates tinctorius*; minor or trace constit. in *Dendrobates auratus* (different population), *Dendrobates histrionicus* and *Dendrobates pumilio* (Dendrobatidae). $[\alpha]_D^{25}$ +24.7 (c, 0.17 in MeOH).

5′ξ-Hydroxy: [94596-77-7]
$C_{16}H_{29}NO_2$ 267.411
Major alkaloid from skin of the Brazilian toad *Melanophyrniscus moreirae*. $[\alpha]_D^{25}$ +7.2 (c, 0.8 in MeOH). Has not been detected in dendrobatid frogs.

Daly, J.W. *et al., Toxicon*, 1978, **16**, 163 (*isol, ms*)
Daly, J.W. *et al., J.A.C.S.*, 1980, **102**, 830 (*isol, pmr, cmr, cryst struct, abs config*)
Overman, L.E. *et al., J.A.C.S.*, 1984, **106**, 4192 (*synth, pmr, cmr, ms*)
Tokuyama, T. *et al., Tetrahedron*, 1984, **40**, 1183 (*deriv*)
Daly, J.W. *et al., Toxicon*, 1984, **22**, 905 (*Pumiliotoxin 267C*)
Fox, D.N.A. *et al., J.A.C.S.*, 1991, **113**, 2652 (*synth*)
Honda, T. *et al., Heterocycles*, 1992, **34**, 1515 (*synth*)
Goldstein, S.W. *et al., J.O.C.*, 1992, **57**, 1179 (*Allopumiliotoxin 267A, synth*)
Aoyagi, S. *et al., J.A.C.S.*, 1993, **115**, 11393 (*Allopumiliotoxin 267A, synth*)
Honda, T. *et al., J.C.S. Perkin 1*, 1994, 2091 (*synth*)
Cossy, J. *et al., Synlett*, 1996, 909 (*synth*)
Martin, S.F. *et al., Tetrahedron*, 1999, **55**, 8905-8914 (*synth*)
Tang, X.-Q. *et al., J.A.C.S.*, 2000, **122**, 6950-6954 (*Allopumiliotoxin 267A, synth*)
Ni, Y. *et al., J.C.S. Perkin 1*, 2000, 3264-3266 (*synth*)
Comins, D.L. *et al., Org. Lett.*, 2001, **3**, 469-471 (*Allopumiliotoxin 267A, synth*)
Sudau, A. *et al., Eur. J. Org. Chem.*, 2002, 3315-3325 (*synth, pmr, cmr, ms*)
Woodin, K.S. *et al., J.O.C.*, 2007, **72**, 7451-7454 (*synth*)

Dendrobates Alkaloid 253D A-481

2-Allyl-5-(2,3-dihydroxypropyl)decahydroquinoline
As *Dendrobates* Alkaloid 219A, A-357 with
R = $-CH_2CH(OH)CH_2OH$

$C_{15}H_{27}NO_2$ 253.384
Alkaloid from skin extracts of the Colombian poison-frog *Dendrobates histrionicus* (Dendrobatidae).

Tokuyama, T. *et al., Tetrahedron*, 1986, **42**, 3453 (*isol, pmr, cmr, ms, struct*)
Spande, T.F. *et al., J. Nat. Prod.*, 1999, **62**, 5-21 (*pmr, cmr, occur*)

Dendrobates Alkaloid 285D A-482

Struct. unknown. Trace alkaloid from skin extracts of an undescribed *Dendrobates* sp. (Colombia)(Dendrobatidae). Mol. formula not known; m/e 285 (3), 270 (2), 256 (2), 180 (35), 140 (100). Atypical spectrum for a dendrobatid alkaloid.

Daly, J.W. *et al., Toxicon*, 1978, **16**, 163-180 (*isol, ms, rev*)
Daly, J.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 205 (*ms, rev*)

Dendrobates Alkaloid 307D A-483

$C_{18}H_{31}NO_3$ 309.448

Struct. unknown. Trace alkaloid from skin extracts of an undescribed *Dendrobates* sp. from Panama (Dendrobatidae). Mol. formula tentative; m/e 307 (8), 306 (5), 292 (3), 290 (5), 264 (4), 262 (11), 206 (11), 194(18), 166 (100), 70 (85). H_4-deriv, m/e 311, 110, 84, 70.

Daly, J.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 205 (*ms, rev*)

Leucojum Alkaloid D A-484

Leucojum *Base D*

$C_{16}H_{19}NO_3$ 273.331

Amaryllidaceae alkaloid. Struct. unknown. Isol. from *Leucojum* sp. (Amaryllidaceae).

Raffauf, R.F. *et al., Handb. Alkaloids Alkaloid-Containing Plants*, Wiley, 1970, 284

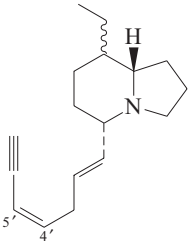
Mantella Alkaloid 211D A-485

Struct. and MF unknown. Trace alkaloid from skin extracts of the Madagascan frogs *Mantella* sp. cf. *madagascariensis, Mantella betsileo* and *Mantella laevigata*.

Garraffo, H.M. *et al., J. Nat. Prod.*, 1993, **56**, 1016-1038 (*isol, ir, ms*)

Mantella Alkaloid 243D A-486

8-Ethyl-5-(1,4-heptadien-6-ynyl)octahydroindolizine, 9CI. Indolizidine 243D
[151834-95-6]



$C_{17}H_{25}N$ 243.391
Provisional struct. Minor or trace alkaloid from skin extracts of 2 populations of the Madagascan frog *Mantella madagascariensis.*

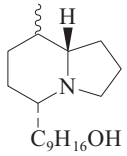
4′,5′-Dihydro: 8-Ethyl-5-(1-hepten-6-ynyl)octahydroindolizine, 9CI. **Mantella *Alkaloid 245C***. *Indolizidine 245C*
[151805-29-7]
$C_{17}H_{27}N$ 245.407
Minor or trace alkaloid in 2 populations of *Mantella madagascariensis.* Provisional struct.

Garraffo, H.M. *et al., J. Nat. Prod.*, 1993, **56**, 1016 (*isol, ir, ms*)

Mantella Alkaloid 279D A-487

(Octahydro-8-methyl-5-indolizinyl)-sec-*nonenol, 9CI. Indolizidine 279D*

[151871-23-7]



$C_{18}H_{33}NO$ 279.465

Provisional struct. Secondary alcohol contg. a *Z*-double bond. Minor or trace alkaloid from skin extracts of 2 populations of the Madagascan frog *Mantella madagascariensis*.

Garraffo, H.M. *et al., J. Nat. Prod.*, 1993, **56**, 1016 (*isol, ir, ms*)

Melodinus aeneus Alkaloid D A-488

Struct. unknown. Bisindole alkaloid. Alkaloid from *Melodinus aeneus* (Apocynaceae). No phys. props. recorded. M.W. = 534.

Baassou, S. *et al., Phytochemistry*, 1978, **17**, 1449-1450 (*isol*)

Narcissus Alkaloid D A-489

Narcissus *Base D*

$C_{17}H_{19}NO_3$ 285.342

Amaryllidaceae alkaloid. Approx. MF given (may be H_{21}). Struct. unknown. Isol. from *Narcissus* sp. (Amaryllidaceae). Prisms (Me_2CO). Mp 228-229° dec. $[\alpha]_D^{25}$ -175 (c, 0.2 in $CHCl_3$).

Boit, H.-G. *et al., Chem. Ber.*, 1957, **90**, 2197-2202 (*isol*)

Pandaca caducifolia Alkaloid D A-490

$[C_{40}H_{44\text{-}46}N_4O_{3\text{-}4}]$

Struct. unknown. Bisindole alkaloid. Alkaloid from *Pandaca caducifolia* (Apocynaceae). Noncryst. $[\alpha]_D$ +236 (MeOH). Alternative mol. formula $C_{40}H_{46}N_4O_4$.

Zeches, M. *et al., Phytochemistry*, 1975, **14**, 1122-1124 (*isol, uv, ir, pmr, ms*)

Salicornia herbacea Alkaloid D A-491

Struct. unknown. Alkaloid from *Salicornia herbacea* (Chenopodicaeae). Mp 178-180°.

Borkowski, B. *et al., Pharmazie*, 1965, **20**, 390-393; *CA*, **63**, 15223c

Stephania glabra Alkaloid D A-492

$C_{20}H_{25}NO_4$ 343.422

Struct. unknown. Isol. from tubers of *Stephania glabra*. Cryst. (C_6H_6). Mp 153-154°. Conts. 2 OMe and 1 NMe groups. Not reported in further investigations of this species. λ_{max} 265 (no solvent reported).

Hydrochloride: Mp 227-228°.

Hydrobromide: Mp 229-230°.

Kin, F.K. *et al., Khim. Prir. Soedin.*, 1965, **1**, 392-394; *Chem. Nat. Compd. (Engl. Transl.)*, 1965, **1**, 308-309 (*isol*)

Cava, M.P. *et al., J.O.C.*, 1968, **33**, 2785-2789 (*Stephania glabra constits*)

Alkaloid D1† A-493

Prob. of Usambarine type. Struct. unknown. Alkaloid from the leaves of *Rauwolfia obscura* (Apocynaceae). Off-white cryst. Mp 190-192°.

Timmins, P. *et al., Planta Med.*, 1975, **27**, 105-111 (*isol, uv, ir, pmr, ms*)

Alkaloid D2 A-494

Prob. of Usambarine type. Struct. unknown. Alkaloid from the leaves of *Rauwolfia obscura* (Apocynaceae). Amorph. yellow powder.

Timmins, P. *et al., Planta Med.*, 1975, **27**, 105-111

Alkaloid 267D A-495

[97380-35-3]

$C_{16}H_{29}NO_2$ 267.411

Struct. unknown. Alkaloid from skin extracts of the Australian frog *Pseudophryne semimarmorata* (Myobatrachidae) and the Madagascan frog *Mantella aurantiaca* (family Ranidae, subfamily Mantellinae). m/e 267 (13), 250 (10), 194 (16), 166 (100), 70(80). Forms H_2-deriv. Two exchangeable hydrogens. Has not been detected in dendrobatid frogs.

Daly, J.W. *et al., Toxicon*, 1984, **22**, 905-919 (*isol, ms*)

Buxus Alkaloid E A-496

$C_{27}H_{50}N_2O_3$ 450.704

Struct. unknown. Alkaloid from *Buxus balearica* (Buxaceae). Mp 287-289°. $[\alpha]_D^{20}$ +12 (c, 0.6 in $CHCl_3$/MeOH).

Kurakina, I.O. *et al., Khim. Prir. Soedin.*, 1969, **5**, 26-28; *Chem. Nat. Compd. (Engl. Transl.)*, 1969, **5**, 20-21 (*isol*)

Coelidium Alkaloid E A-497

[11051-61-9]

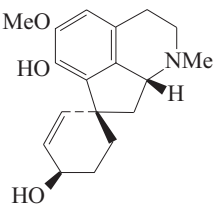
$C_{16}H_{27}N_3$ 261.409

Struct. unknown. Alkaloid from *Coelidium fourcadei* dried leaves and branches (Fabaceae). Cryst. (hexane). Mp 148-149°. Interconverts with *Coelidium* Alkaloid D, A-478 in dil. acid. Cooccurs with α-aldotripiperideine and Isotripiperideine, I-340.

Arndt, R.R. *et al., J. S. Afr. Chem. Inst.*, 1968, **21**, 54-57 (*isol, ir, uv, pmr*)

Croton linearis Alkaloid E A-498

[58206-97-6]



$C_{18}H_{23}NO_3$ 301.385

Belongs to diastereomeric series to alkaloids covered by Amuroline, A-957 and Cryprochine, C-781. Alkaloid from *Croton linearis* (Euphorbiaceae).

Di-Ac: Mp 190-193°. $[\alpha]_D^{26}$ -18 (c, 0.5 in MeOH).

4-Ketone, N-*de-Me:* ***Jacularine***
[20361-70-0]
$C_{17}H_{19}NO_3$ 285.342
Alkaloid from *Croton linearis* (Euphorbiaceae). Enantiomer of Isocrotsparinine in A-957.

Haynes, L.J. *et al., J.C.S.(C)*, 1966, 1680-1685 (*Alkaloid E*)

Stuart, K.L. *et al., Tet. Lett.*, 1968, 4473-4474 (*Jacularine*)

Casagrande, C. *et al., J.C.S. Perkin 1*, 1975, 1659-1663 (*stereochem*)

Dendrobates Alkaloid 223E A-499

$C_{14}H_{25}NO$ 223.358

Struct. unknown. Trace alkaloid from skin extracts of *Dendrobates lehmanni, Dendrobates occultator* and *Dendrobates tinctorius* (Dendrobatidae). Mol. formula tentative; m/e 223 (2), 222 (3), 168 (100). Possibly an analogue of *Dendrobates* Alkaloid 225, A-291 with double bond in side chain. H_2-deriv, m/e 223, 168.

Daly, J.W. *et al., Toxicon*, 1978, **16**, 163-180 (*isol, ms, rev*)

Daly, J.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 205 (*ms, rev*)

Dendrobates Alkaloid 237E A-500

$C_{15}H_{27}NO$ 237.384

Struct. unknown. Trace alkaloid from skin extracts of *Dendrobates histrionicus* (Dendrobatidae). Mol. formula tentative; m/e 237 (1), 236 (3), 208 (70), 152 (100). Possibly a hydroxypumiliotoxin C. H_2-deriv, m/e 239, 152.

Daly, J.W. *et al., Toxicon*, 1978, **16**, 163-180 (*isol, ms, rev*)

Daly, J.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 205 (*ms, rev*)

Lycopodium Alkaloid E A-501

Lycopodium *Base E*

$C_{17}H_{25}NO_2$ 275.39

Struct. unknown. Alkaloid from *Lycopodium fawcettii* (Lycopodiaceae). Mp 267-269° dec. (as perchlorate).

Burnell, R.H. *et al., J.C.S.*, 1959, 3091 (*isol, ir*)

Muntafara sessilifolia Alkaloid E A-502

Struct. unknown. Bisindole alkaloid. Alkaloid from *Muntafara sessilifolia* (preferred genus name *Tabernaemontana*) (Apocynaceae). Other dimeric alkaloids isol. from *M. sessilifolia* designated F, I, J, N, O, P, Q and R. No phys. props. recorded.

Panas, J.M. *et al., Phytochemistry*, 1975, **14**, 1120-1122 (*isol*)

Pandaca caducifolia Alkaloid E A-503

$C_{40}H_{46}N_4O_4$ 646.828

Struct. unknown. Bisindole alkaloid. Alkaloid from *Pandaca caducifolia* (Apocynaceae). Noncryst. $[\alpha]_D$ -51 (MeOH).

Zeches, M. *et al., Phytochemistry*, 1975, **14**, 1122-1124 (*isol, uv, ir, pmr*)

Skytanthus acutus Alkaloid E A-504

$C_{10}H_{19}N$ 153.267

Struct. unknown. Monoterpene alkaloid. Alkaloid from *Skytanthus acutus* (Apocynaceae). $Bp_{1.5}$ 120-140°.

Appel, H.H. *et al., Scientia (Valparaiso)*, 1961, **28**, 5-9; *CA*, **57**, 2332g

Sophora microphylla Alkaloid E A-505

Sophora *Base E*

Struct. unknown. Alkaloid from *Sophora microphylla* (Fabaceae). Mp 168-171°.

Briggs, L.H. *et al., J.C.S.*, 1937, 1795 (*isol*)

Voacanga thouarsii Alkaloid E A-506

[50924-06-6]

$C_{43}H_{50}N_4O_7$ 734.891

Bisindole alkaloid. Struct. unknown. Alkaloid from the leaves of *Voacanga thouarsii* (Apocynaceae). Cryst. (MeOH). Mp 235-238°. $[\alpha]_D$ -140. Intense blue col. with HNO_3. λ_{max} 225 (log ϵ 4.66); 265 (log ϵ 4.08); 283 (sh) (log ϵ 3.96); 291 (sh) (log ϵ 3.9) (EtOH).

Rolland, Y. *et al., Phytochemistry*, 1973, **12**, 2039-2042 (*isol, uv, ir, pmr*)

Buxus Alkaloid F A-507

Struct. unknown. Alkaloid from *Buxus wallichiana* (Buxaceae). Mp 190°. $[\alpha]_D^{28}$ +26.6 (c, 0.76 in EtOH). MW 442.

Vassová, A. *et al., Pharmazie*, 1970, **25**, 363; *CA*, **73**, 127748n

Dendrobates Alkaloid 223F A-508

$C_{14}H_{25}NO$ 223.358

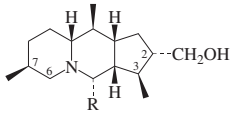
Struct. unknown. Trace alkaloid from skin extracts of an undescribed *Dendrobates* sp. from Panama (Dendrobatidae). Mol. formula tentative; m/e 223 (1), 138 (100). H_2-deriv, m/e 225, 182.

Daly, J.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 205 (*ms, rev*)

Dendrobates Alkaloid 251F A-509

Dodecahydro-3,7,10-trimethylcyclopenta[b]quinolizine-2-methanol, 9CI. Indolizidine 251F

[142543-01-9]



Absolute Configuration

R = H

$C_{16}H_{29}NO$ 251.411

Major alkaloid from the skin extracts of the Colombian dendrobatid frog *Minyobates bombetes*. Pale yellow oil. $[\alpha]_D$ -11.1 (c, 0.96 in MeOH).

Aldehyde: Dodecahydro-3,7,10-trimethylcyclopenta[b]quinolizine-2-carboxaldehyde, 9CI. **Dendrobates *Alkaloid 249B.*** *Indolizidine 249B*
[142543-05-3]
$C_{16}H_{27}NO$ 249.395
Alkaloid from *Minyobates bombetes*. Tentative struct.

2,3,6,7-Tetradehydro: **Dendrobates *Alkaloid 247***
[142543-06-4]
$C_{16}H_{25}NO$ 247.38
Alkaloid from *Minyobates bombetes*. Tentative struct.

2,3,6,7-Tetradehydro, aldehyde: **Dendrobates *Alkaloid 245***
[142543-07-5]
$C_{16}H_{23}NO$ 245.364
Alkaloid from *Minyobates bombetes*. Tentative struct.

Deoxy: Dodecahydro-2,3,7,10-tetramethylcyclopenta[b]quinolizine, 9CI. Dendrobates *Alkaloid 235H. Indolizidine 235H*
[142543-02-0]
$C_{16}H_{29}N$ 235.412
Alkaloid from *Minyobates bombetes*. Tentative struct.

Deoxy, 2ξ-hydroxy: Dodecahydro-2,3,7,10-tetramethylcyclopenta[b]quinolizin-2-ol, 9CI. **Dendrobates *Alkaloid 251J.*** *Indolizidine 251J*
[142543-08-6]
$C_{16}H_{29}NO$ 251.411
Alkaloid from *Minyobates bombetes*. Tentative struct.

2-Epimer: **Dendrobates *Alkaloid 251F'.*** *Indolizidine 251F'*
[142631-46-7]
$C_{16}H_{29}NO$ 251.411
Alkaloid from *Minyobates bombetes*. Tentative struct.

Homologue (R = CH_3): Dodecahydro-3,4,7,10-tetramethylcyclopenta[b]quinolizine-2-methanol, 9CI. **Dendrobates *Alkaloid 265B.*** *Indolizidine 265B*
[142543-03-1]
$C_{17}H_{31}NO$ 265.438
Alkaloid from *Minyobates bombetes*. Tentative struct.

Homologue (R = CH_2CH_3): 4-Ethyldodecahydro-3,7,10-trimethylcyclopenta[b]quinolizine-2-methanol, 9CI. **Dendrobates *Alkaloid 279B.*** *Indolizidine 279B*
[142543-04-2]
$C_{18}H_{33}NO$ 279.465
Alkaloid from *Minyobates bombetes*. Tentative struct.

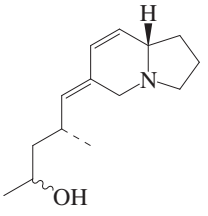
Homologue (R = CH_2CH_3), deoxy, 2ξ-hydroxy: 4-Ethyldodecahydro-2,3,7,10-tetramethylcyclopenta[b]quinolizin-2-ol, 9CI. **Dendrobates *Alkaloid 279C.*** *Indolizidine 279C*
[142543-09-7]
$C_{18}H_{33}NO$ 279.465
Alkaloid from *Minyobates bombetes*. Tentative struct.

Spande, T.F. *et al., J. Nat. Prod.*, 1992, **55**, 707-722 (*isol, pmr, ms*)

Taber, D.F. *et al., J.A.C.S.*, 1995, **117**, 5757-5762 (*synth, pmr, cmr*)

Wrobleski, A. *et al., J.A.C.S.*, 2004, **126**, 5475-5481 (*synth*)

Mantella Alkaloid 221F A-510



$C_{14}H_{23}NO$ 221.342

Structure tentatively reassigned in 2005. Trace alkaloid from skin extracts of the Madagascan frog *Mantella aurantiaca*.

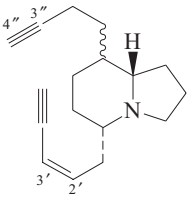
Garraffo, H.M. *et al., J. Nat. Prod.*, 1993, **56**, 1016-1038 (*isol, ms*)

Adriamaharavo, N.R. *et al., J. Nat. Prod.*, 2005, **68**, 1743-1748 (*struct*)

Mantella Alkaloid 241F A-511

8-(3-Butynyl)octahydro-5-(2-penten-4-ynyl)indolizine, 9CI. Indolizidine 241F

[151805-25-3]



$C_{17}H_{23}N$ 241.375

Provisional struct. Minor alkaloid from skin extracts of 2 populations of the Madagascan frog *Mantella madagascariensis*.

2′,3′-Dihydro: 8-(3-Butynyl)octahydro-5-(4-pentynyl)indolizine, 9CI. **Mantella *Alkaloid 243B.*** *Indolizidine 243B*
[151805-26-4]
$C_{17}H_{25}N$ 243.391
Trace alkaloid in one population of *Mantella madagascariensis*. Provisional struct.

3″,4″-Dihydro: 8-(3-Butenyl)octahydro-5-(2-penten-4-ynyl)indolizine, 9CI. **Mantella *Alkaloid 243C.*** *Indolizidine 243C*
[151805-27-5]
$C_{17}H_{25}N$ 243.391
Minor or trace alkaloid in 2 populations of *Mantella madagascariensis*. Provisional struct.

2′,3′,3″,4″-Tetrahydro: 8-(3-Butenyl)octahydro-5-(4-pentynyl)indolizine, 9CI. **Mantella *Alkaloid 245B.*** *Indolizidine 245B*
[151805-28-6]
$C_{17}H_{27}N$ 245.407

Trace alkaloid in 1 population of *Mantella madagascariensis*. Provisional struct.

Garraffo, H.M. *et al., J. Nat. Prod.*, 1993, **56**, 1016 (*isol, ir, ms*)

Mantella Alkaloid 249F A-512

Homopumiliotoxin 249F

Struct. and MF unknown. Trace alkaloid from skin extracts of one population of the Madagascan frog *Mantella madagascariensis*.

Garraffo, H.M. *et al., J. Nat. Prod.*, 1993, **56**, 1016-1038 (*isol, ir, ms*)

Mantella Alkaloid 265F A-513

$C_{16}H_{27}NO_2$ 265.395

Struct. unknown. May be related to alkaloids of the 235C class. Trace alkaloid from skin extracts of the Madagascan frog *Mantella aurantiaca*.

Garraffo, H.M. *et al., J. Nat. Prod.*, 1993, **56**, 1016-1038 (*isol, ms*)

Mantella Alkaloid 281F A-514

Struct. unknown. Probably belongs to the pumiliotoxin A class of alkaloid (see Pumiliotoxin A, P-791). Alkaloid from skin extracts of two populations of the Madagascan frog *Mantella madagascariensis*.

Garraffo, H.M. *et al., J. Nat. Prod.*, 1993, **56**, 1016-1038 (*isol, ir, ms*)

Pandaca caducifolia Alkaloid F A-515

$C_{40}H_{46}N_4O_4$ 646.828

Struct. unknown. Bisindole alkaloid. Alkaloid from *Pandaca caducifolia* (Apocynaceae). Noncryst. $[\alpha]_D$ +56 (MeOH).

Zeches, M. *et al., Phytochemistry*, 1975, **14**, 1122-1124 (*isol, uv, ir, pmr*)

Lycopodium Alkaloid G A-516

Lycopodium *Base G*

$C_{18}H_{27}NO_3$ 305.416

Struct. unknown. Alkaloid from *Lycopodium fawcettii* (Lycopodiaceae). Mp 198-200° (as perchlorate).

Burnell, R.H. *et al., J.C.S.*, 1959, 3091 (*isol, ir*)

Mantella Alkaloid 207G A-517

Homopumiliotoxin 207G

Struct. and MF unknown. Trace alkaloid from skin extracts of the Madagascan frog *Mantella viridis*.

Garraffo, H.M. *et al., J. Nat. Prod.*, 1993, **56**, 1016-1038 (*isol, ms*)

Pandaca caducifolia Alkaloid G A-518

$C_{40}H_{46}N_2O_4$ 618.814

Struct. unknown. Bisindole alkaloid. Alkaloid from *Pandaca caducifolia* (Apocynaceae). Noncryst. $[\alpha]_D$ +35 (MeOH).

Zeches, M. *et al., Phytochemistry*, 1975, **14**, 1122-1124 (*isol, uv, ir, pmr*)

Voacanga thouarsii Alkaloid G A-519

[50923-99-4]

$C_{42}H_{50}N_4O_5$ 690.881

Bisindole alkaloid. Struct. unknown. Alkaloid from the leaves of *Voacanga thouarsii* (Apocynaceae). Cryst. (Et_2O). Mp 280-285° dec. $[\alpha]_D$ +46. Pink col. with HNO_3. λ_{max} 221 (log ϵ 4.63); 260 (log ϵ 4.29); 298 (log ϵ 3.7) (EtOH).

Rolland, Y. *et al., Phytochemistry*, 1973, **12**, 2039-2042 (*isol, uv, ir, pmr*)

Alkaloid 251G A-520

[97380-38-6]

$C_{15}H_{25}NO_2$ 251.368

Struct. unknown. Alkaloid from skin extracts of the Madagascan frog *Mantella aurantiaca* (family Ranidae, subfamily Mantellinae). m/e 251 (26), 250 (45), 162 (100). Forms H_2-deriv. Two exchangeable hydrogens. Hydroxy congener of Alkaloid 235C. Has not been detected in dendrobatid frogs.

Daly, J.W. *et al., Toxicon*, 1984, **22**, 905-919 (*isol, ms*)

Alkaloid GB14 A-521

$C_{24}H_{33}NO_5$ 415.528

Struct. unknown. Alkaloid from the bark of *Himantandra belgraveana* (*Galbulimima belgraveana*) (Himantandraceae). Prisms + $1H_2O$ (Me_2CO/heptane). Mp 106°.

Binns, S.V. *et al., Aust. J. Chem.*, 1965, **18**, 569-573 (*isol*)

Alkaloid GB15 A-522

$C_{22}H_{35}NO_3$ 361.523

Struct. unknown. Alkaloid from the bark of *Himantandra* (*Galbulimima*) *belgraveana* (Himantandraceae). Needles (C_6H_6). Mp 230°. $[\alpha]_D$ +58 (c, ca. 1 in $CHCl_3$).

Binns, S.V. *et al., Aust. J. Chem.*, 1965, **18**, 569-573 (*isol*)

Alkaloid GB16 A-523

$C_{20}H_{27}NO_2$ 313.439

Struct. unknown. Alkaloid from the bark of *Himantandra* (*Galbulimima*) *belgraveana* (Himantandraceae). Prisms (EtOAc). Mp 203°. $[\alpha]_D$ +550 (c, ca. 1 in $CHCl_3$).

Binns, S.V. *et al., Aust. J. Chem.*, 1965, **18**, 569-573 (*isol*)

Alkaloid GB17 A-524

$C_{21}H_{31}NO_3$ 345.481

Struct. unknown. Alkaloid from the bark of *Himantandra* (*Galbulimima*) *baccata* (Himantandraceae). Needles + $1H_2O$ (MeOH aq.). Mp 115°. $[\alpha]_D$ -21 (c, ca. 1 in $CHCl_3$).

Binns, S.V. *et al., Aust. J. Chem.*, 1965, **18**, 569-573 (*isol*)

Alkaloid GB18 A-525

$C_{22}H_{33}NO_3$ 359.508

Struct. unknown. Alkaloid from the bark of *Himantandra baccata* (preferred genus name *Galbulimima*) (Himantandraceae). Prisms (heptane). Mp 120°. $[\alpha]_D$ +37 (c, ca. 1 in $CHCl_3$).

Binns, S.V. *et al., Aust. J. Chem.*, 1965, **18**, 569-573 (*isol*)

Gentiana Alkaloid II A-526

Struct. unknown. Monoterpene alkaloid. Alkaloid from *Gentiana asclepiadea, Gentiana bulgarica, Gentiana cruciata, Gentiana lutea* and *Gentiana punctata* (Gentianaceae).

Mollov, N.M. *et al., Dokl. Bulg. Akad. Nauk*, 1965, **18**, 947; *CA*, **64**, 10084h (*isol, ir*)

Cordell, G.A. *et al., Alkaloids (Academic Press)*, 1977, **16**, 431 (*rev*)

Sternbergia Alkaloid III A-527

Sternbergia *Base III*

Amaryllidaceae alkaloid. Struct. unknown. Isol. from *Sternbergia fischeriana* (Amaryllidaceae). Mp 212-213°. Opt. inactive, mol. formula not recorded.

Hydrobromide: Mp 174-175°.

Picrate: Mp 217-219°.

Proskurnina, N.F. *et al., Chem. Zentralbl.*, 1954, **125**, 8353 (*isol*)

Solanum Alkaloid IV A-528

Struct. unknown. A glycoalkaloid cont. NH, OH and conjugated C=O. Isol. from epigeal parts of *Solanum nigrum* (Solanaceae). Cryst. (MeOH). Mp 320-325°. Cooccurs with Solasonine, Solamargine and β-Solamargine (see Spirosol-5-en-3-ol, S-456).

Aslanov, S.M. *et al., Khim. Prir. Soedin.*, 1971, **7**, 674; *Chem. Nat. Compd. (Engl. Transl.)*, 1971, **7**, 658

Ungernia Alkaloid IV A-529

Ungernia *Base IV*

Amaryllidaceae alkaloid. Struct. unknown. Isol. from the leaves of *Ungernia minor* (Amaryllidaceae). Cryst. (MeOH). Mp 193-194°.

Normatov, M. *et al., Uzb. Khim. Zh.*, 1965, **9**, 25-30; *CA*, **63**, 7061f (*isol*)

Gentiana cruciata Alkaloid IVb A-530

$C_{10}H_{16}N_2O_7$ 276.246

Struct. unknown. Monoterpene alkaloid. Alkaloid from *Gentiana cruciata* (Gentianaceae). Mp 138-140°.

Marekov, N. *et al., Dokl. Bulg. Akad. Nauk*, 1965, **18**, 999-1002; *CA*, **64**, 11270a (*isol, ir*)

Cordell, G.A. *et al., Alkaloids (Academic Press)*, 1977, **16**, 431-510 (*rev*)

Lycopodium annotinum Alkaloid IX A-531

Lycopodium *Base IX*

$C_{17}H_{25}NO_2$ 275.39

Struct. unknown. Alkaloid from *Lycopodium annotinum* (Lycopodiaceae).

Methiodide: Mp 324°. $[\alpha]_D^{20}$ -49.8.

Methochloride: Mp 274°.

Methoperchlorate: Mp 316°.

Methopicrate: Mp 78-80°.

Achmatowicz, O. *et al., Pol. J. Chem. (Rocz. Chem.)*, 1958, **32**, 485 (*isol, uv*)

C-Alkaloid J A-532

$C_{19}H_{21}N_2$ 277.388

Struct. unknown. Alkaloid from calabash curare (*Strychnos* spp.) (Loganiaceae). Mp 260° dec. (as picrate). Red-orange col. with $Ce(SO_4)_2$.

Kebrle, J. *et al., Helv. Chim. Acta*, 1953, **36**, 102-121 (*isol, uv*)

Mantella Alkaloid 207J A-533

Struct. and MF unknown. Possibly a homologue of Precoccinelline in D-886. Trace alkaloid from skin extracts of one population of the Madagascan frog *Mantella madagascariensis.*

Garraffo, H.M. *et al., J. Nat. Prod.*, 1993, **56**, 1016-1038 (*isol, ir, ms*)

Mantella Alkaloid 235J A-534

Homopumiliotoxin 235J

Struct. and MF unknown. Trace alkaloid from skin extracts of one population of the Madagascan frog *Mantella madagascariensis.*

Garraffo, H.M. *et al., J. Nat. Prod.*, 1993, **56**, 1016-1038 (*isol, ir, ms*)

Mantella Alkaloid 235K A-535

Struct. and MF unknown. Considered to be a tricyclic alkaloid. Trace alkaloid from skin extracts of the Madagascan frog *Mantella betsileo.*

Garraffo, H.M. *et al., J. Nat. Prod.*, 1993, **56**, 1016-1038 (*isol, ms*)

Alkaloid K2 A-536

$C_{21}H_{27}NO_6$ 389.447

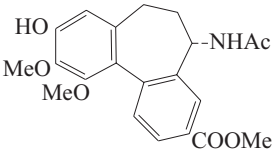
Struct. unknown. Alkaloid from the above-ground parts of *Colchicum kesselringii* (Liliaceae). Mp 226-228°.

Methiodide: Mp 247-249°.

Yusupov, M.K. *et al., J. Gen. Chem. USSR (Engl. Transl.)*, 1964, **34**, 1682 (*isol*)

Alkaloid K4 A-537

2-Demethylallocolchicine



$C_{21}H_{23}NO_6$ 385.416

(*S*)-*form*

Alkaloid from the above-ground parts of *Colchicum kesselringii* (Liliaceae). Mp 238-240° (natural) Mp 259-260° (semisynthetic). $[\alpha]_D^{20}$ -152 (c, 0.92 in MeOH) (semisynthetic).

Ac:

Cryst. ($Et_2O/CHCl_3$). Mp 230-232°. $[\alpha]_D^{22}$ -150 (c, 1.0 in MeOH).

Me ether: ***Allocolchicine****. Suhailamine. Alkaloid K3*

[641-28-1]

$C_{22}H_{25}NO_6$ 399.443

Alkaloid from the flowers of *Colchicum autumnale*, from *Colchicum decaisnei* and above ground parts of *Colchicum kesselringii* (Liliaceae). Cryst. ($Et_2O/CHCl_3$) or amorph. solid. Mp 257-258°. $[\alpha]_D^{22}$ -150 (c, 1.2 in MeOH) (semisynthetic). First descr. as Alkaloid K3 without abs. config. or opt. rotn. Suhailamine (1991) assigned (*S*)-config. However, spectroscopic and phys. props. of authentic Allocolchicine differ from those of Suhailamine and therefore the true struct. of the latter remains unclear.

▶ HO7884000

Yusupov, M.K. *et al., Zh. Obshch. Khim.*, 1964, **34**, 1677-1680; *J. Gen. Chem. USSR (Engl. Transl.)*, 1964, **34**, 1686-1688 (*isol struct*)

Yusupov, M.K. *et al., Khim. Prir. Soedin.*, 1973, **9**, 194-196; *Chem. Nat. Compd. (Engl. Transl.)*, 1973, **9**, 188-189

Mackay, M.F. *et al., Acta Cryst. C*, 1989, **45**, 795-799 (*Allocolchicine, cryst struct*)

Abu Zarga, M.H. *et al., J. Nat. Prod.*, 1991, **54**, 936-940 (*Suhailamine*)

Banwell, M.G. *et al., Chem. Comm.*, 1994, 2647-2649 (*Suhailamine*)

Leblanc, M. *et al., Org. Lett.*, 2005, **7**, 2849-2852 (*synth*)

Alkaloid K5 A-538

$C_{19}H_{25}NO_4$ 331.411

Struct. unknown. Alkaloid from the above-ground parts of *Colchicum kesselringii* (Liliaceae). Mp 224-226°.

Hydrochloride: Mp 239-241°.

Methiodide: Mp 278-280°.

Yusupov, M.K. *et al., J. Gen. Chem. USSR (Engl. Transl.)*, 1964, **34**, 1682 (*isol*)

Alkaloid K6 A-539

Struct. unknown. Alkaloid from the above-ground parts of *Colchicum kesselringii* (Liliaceae).

Methiodide: Mp 253-254°.

Yusupov, M.K. *et al., J. Gen. Chem. USSR (Engl. Transl.)*, 1964, **34**, 1682 (*isol*)

Alkaloid K7 A-540

$C_{21}H_{29}NO_4$ 359.464

Struct. unknown. Alkaloid from the above-ground parts of *Colchicum kesselringii* (Liliaceae). Mp 144-146°.

Hydrochloride: Mp 232-234°.

Methiodide: Mp 247-248°.

Yusupov, M.K. *et al., J. Gen. Chem. USSR (Engl. Transl.)*, 1964, **34**, 1682 (*isol*)

Alkaloid K9 A-541

Struct. unknown. Alkaloid from the above-ground parts of *Colchicum kesselringii* (Liliaceae).

Methiodide: Mp 245-247°.

Yusupov, M.K. *et al., J. Gen. Chem. USSR (Engl. Transl.)*, 1964, **34**, 1682 (*isol*)

Alkaloid K10 A-542

$C_{18}H_{23}NO_4$ 317.384

Struct. unknown. Alkaloid from the above-ground parts of *Colchicum kesselringii* (Liliaceae). Cryst. (Me_2CO/MeOH). Mp 232-234°.

Hydrochloride: Mp 261-263°.

Methiodide: Mp 249-251°.

Yusupov, M.K. *et al., J. Gen. Chem. USSR (Engl. Transl.)*, 1964, **34**, 1682 (*isol*)

Alkaloid K11 A-543

Struct. unknown. Alkaloid from the above-ground parts of *Colchicum kesselringii* (Liliaceae). Mp 274-276°.

Yusupov, M.K. *et al., J. Gen. Chem. USSR (Engl. Transl.)*, 1964, **34**, 1682 (*isol*)

C-Alkaloid L A-544

Struct. unknown. Alkaloid from calabash curare (*Strychnos* spp.) (Loganiaceae). Prisms (Me_2CO aq.) (as picrate). Mp 171° (picrate). Red col. with $Ce(SO_4)_2$.

Kebrle, J. *et al., Helv. Chim. Acta*, 1953, **36**, 102-121 (*isol, uv*)

Colubrina Alkaloid L A-545

$C_{37}H_{40}N_2O_6$ 608.733

Bisbenzylisoquinoline alkaloid. Struct. unknown. Alkaloid from the stem bark of *Colubrina faralaotra* ssp. *faralaotra* (Rhamnaceae).

Guinaudeau, H. *et al., Planta Med.*, 1975, **27**, 304-318 (*isol, uv, pmr, ms*)

Mantella Alkaloid 251L A-546

Homopumiliotoxin 251L

Struct. and MF unknown. Occurs mainly as the *O*-Ac deriv. Trace alkaloid from skin extracts of one population of the Madagascan frog *Mantella madagascariensis.*

Garraffo, H.M. *et al., J. Nat. Prod.*, 1993, **56**, 1016-1038 (*isol, ir, ms*)

Alkaloid L10 A-547

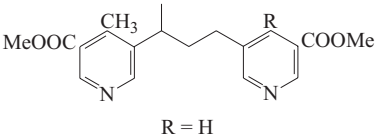
$C_{16}H_{27}NO$ 249.395

Struct. unknown. Alkaloid from *Lycopodium annotinum* (Lycopodiaceae). Mp 223° (as perchlorate).

Manske, R.H.F. *et al., Can. J. Res., Sect. B*, 1943, **21**, 92-96 (*isol*)

Alkaloid LA 4 A-548

[116097-93-9]



R = H

$C_{19}H_{22}N_2O_4$ 342.394

Alkaloid artifact generated by NH_3 and secoiridoid glucoside from ripe fruits of the common privet *Ligustrum vulgare* (Oleaceae). Semi-solid. $[\alpha]_D^{20}$ -0.23 (c, 1.0 in EtOH).

Willems, M. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1988, **321**, 229 (*isol, uv, ir, pmr, cmr, ms, struct*)

Alkaloid LA 5 A-549

[115531-75-4]

As Alkaloid LA 4, A-548 with

R = CH_3

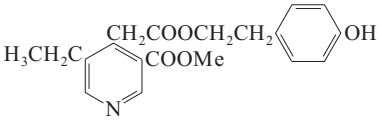
$C_{20}H_{24}N_2O_4$ 356.421

Alkaloid artifact generated by NH_3 and secoiridoid glucosides from ripe fruit of the common privet *Ligustrum vulgare* (Oleaceae). Semi-solid. $[\alpha]_D^{20}$ -0.39 (c, 1.0 in EtOH).

Willems, M. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1988, **321**, 229 (*isol, uv, ir, pmr, cmr, ms, struct*)

Alkaloid LA 6 A-550

[113145-61-2]



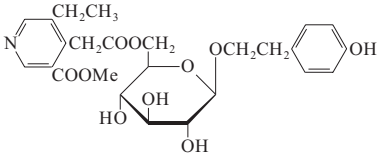
$C_{19}H_{21}NO_5$ 343.379

Alkaloid artifact generated by NH_3 and secoiridoid glucosides from ripe fruits of the common privet *Ligustrum vulgare* (Oleaceae). Needles (EtOAc/MeOH). Mp 115-116°.

Willems, M. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1987, **320**, 1245 (*isol, uv, ir, pmr, cmr, ms, struct*)

Alkaloid LA 9 A-551

[116057-84-2]



$C_{25}H_{31}NO_{10}$ 505.521

Alkaloid artifact generated by NH_3 and secoiridoid glucosides from ripe fruits of the common privet *Ligustrum vulgare* (Oleaceae). Cryst. (EtOAc/MeOH). Mp 64-66°. $[\alpha]_D^{20}$ -0.1 (c, 1.0 in EtOH).

Willems, M. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1988, **321**, 357 (*isol, uv, ir, pmr, cmr, struct*)

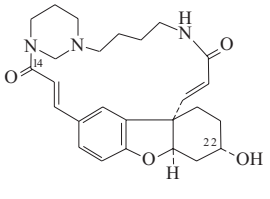
Alkaloid LB1 A-552

Prob. a spermidine related alkaloid. Struct. unknown. Minor alkaloid from the seeds of *Lunaria biennis* (Brassicaceae). Mp 220° dec.

Hairs, E. *et al., Bull. Acad. R. Med. Belg.*, 1909, 1042-1048; *CA*, 1892, **4**, 1042 (*isol*)

Alkaloid LBZ A-553

[38143-11-2]



$C_{26}H_{33}N_3O_4$ 451.564

CAS numbering shown. Minor alkaloid from the seeds of *Lunaria biennis* (Brassicaceae). Amorph.

22-Ketone: ***Alkaloid LBX***

[38143-10-1]

$C_{26}H_{31}N_3O_4$ 449.549

Minor alkaloid from the seeds of *Lunaria biennis* (Brassicaceae). Cryst. (MeOH/Me_2CO or MeOH/Et_2O). Mp 250° dec. $[\alpha]_D^{20}$ +201 (c, 0.6 in $CHCl_3$).

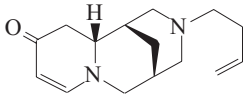
Doskotch, R.W. *et al., Experientia*, 1972, **28**, 382 (*struct*)

Poupat, C. *et al., Tetrahedron*, 1972, **28**, 3087 (*uv, ir, pmr, struct*)

Alkaloid LC2 A-554

*3-(3-Butenyl)-1,2,3,4,5,6,11,11*a*-octahydro-1,5-methano-10*H*-pyrido[1,2-*a*][1,5]diazocin-10-one, 9CI. 1,13-Didehydro-10,11-secomultiflorine. 11,12-Seco-12-dehydromultiflorine.* N*-Methylalbine (incorr.)*

[71635-26-2]



$C_{15}H_{22}N_2O$ 246.352

Struct. revised in 1988. Some isolates were prev. reported erroneously as *N*-methylalbine (see Albine, A-243). Alkaloid from the leaves and seeds of *Lupinus cosentinii*, *Lupinus albus* and *Lupinus formosus* (Fabaceae). Cryst. (cyclohexane). Mp 60°. $[\alpha]_D^{25}$ -520 (c, 1.0 in MeOH).

[97906-66-6 , 6822-63-5]

Beck, A.B. *et al., J. Nat. Prod.*, 1979, **42**, 385 (*isol, uv, ir, pmr, ms, struct*)

Wysocka, W. *et al., Planta Med.*, 1988, **54**, 522 (*cmr, ms, struct*)

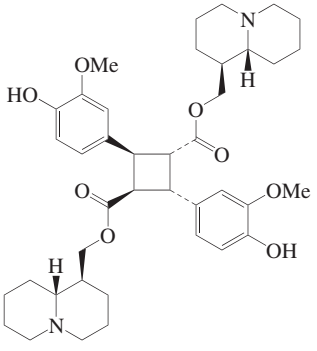
Brukwicki, T. *et al., J. Mol. Struct.*, 1989, **196**, 343 (*cmr, conform, bibl*)

Wyrzykiewicz, E. *et al., Org. Mass Spectrom.*, 1990, **25**, 453 (*ms*)

Dutkiewicz, G. *et al., Acta Cryst. C*, 1995, **51**, 1182 (*cryst struct*)

Alkaloid LC7 A-555

Alkaloid LV3†



Probable structure

$C_{40}H_{54}N_2O_8$ 690.875

Truxillate-type dimer of Epilupinyl transferulate in E-95. Alkaloid from leaves of *Lupinus cosentinii* (Fabaceae). Cryst. (MeOH/$CHCl_3$). Mp 228°. $[\alpha]_D^{25}$ +23 (c, 1 in $CHCl_3$/MeOH 1:1).

Beck, A.B. *et al., J. Nat. Prod.*, 1979, **42**, 385 (*isol, struct, uv, ir, pmr, ms*)

Alkaloid LE1 A-556

$C_{28}H_{47}N_3O$ 441.699

Struct. unknown. Alkaloid from *Lycopodium erythraeum* (Lycopodiaceae).

MacLean, D.B. *et al., Alkaloids (Academic Press)*, 1985, **26**, 241

Alkaloid LO1 A-557

$C_{31}H_{39}N_3O_2$ 485.668

Struct. unknown. Alkaloid from *Lycopodium obtusifolium* (Lycopodiaceae).

MacLean, D.B. *et al., Alkaloids (Academic Press)*, 1985, **26**, 241

Alkaloid LO2 A-558

$C_{30}H_{49}N_3O$ 467.737

Struct. unknown. Alkaloid from *Lycopodium obtusifolium* (Lycopodiaceae).

MacLean, D.B. *et al., Alkaloids (Academic Press)*, 1985, **26**, 241

Alkaloid LO3 A-559

$C_{29}H_{49}N_3$ 439.726

Struct. unknown. Alkaloid from *Lycopodium obtusifolium* (Lycopodiaceae).

MacLean, D.B. *et al., Alkaloids (Academic Press)*, 1985, **26**, 241

Alkaloid LS14 A-560

$C_{30}H_{49}N_3O$ 467.737

Struct. unknown. Alkaloid from *Lycopodium saururus* (Lycopodiaceae).

MacLean, D.B. *et al., Alkaloids (Academic Press)*, 1985, **26**, 241

Alkaloid LV1† A-561

$C_{15}H_{22}N_2O$ 246.352

Not the same as Alkaloid LV1, A-562. Struct. unknown. Alkaloid from *Lupinus digitatus* (Fabaceae). Needles (Me_2CO/petrol). Mp 108-109°. $[\alpha]_D$ -314 (MeOH). Deep-red col. with $FeCl_3$.

Perchlorate:

Cream needles + ½H_2O (EtOH). Mp 160-162° dec. Cryst. with difficulty.

Methiodide:

Cream nodules (EtOH). Mp 246-248° dec.

Crow, W.D. *et al., Aust. J. Chem.*, 1955, **8**, 136-139; 1957, **10**, 177-181

Gladstones, J.S. *et al., J. R. Soc. West. Aust.*, 1958, **41**, 29

Alkaloid LV1† A-562

$C_{29}H_{45}N_3$ 435.695

Not the same as Alkaloid LV1, A-561. Struct. unknown. Alkaloid from *Lycopodium verticillatum* (Lycopodiaceae).

MacLean, D.B. *et al., Alkaloids (Academic Press)*, 1985, **26**, 241

Alkaloid LV2 A-563

$C_{15}H_{24}N_2O_2$ 264.367

Struct. unknown. Tentative mol. formula. Trace alkaloid from seeds of *Lupinus varius* (Fabaceae).

Crow, W.D. *et al., Aust. J. Chem.*, 1955, **8**, 136-139

Alkaloid LV3† A-564

$C_{20}H_{27}NO_4$ 345.438

Struct. unknown. Alkaloid from *Lupinus digitatus* (Fabaceae). Needles (MeOH). Mp 232-233° dec. Conts. one OMe group. λ_{max} 235 nm. Possibly the monomer of Alkaloid LC7, A-555.

Picrate:
Yellow needles (Me_2CO aq.). Mp 186°. Dec. sharply at 231°.

Crow, W.D. *et al., Aust. J. Chem.*, 1957, **10**, 177-181
Gladstones, J.S. *et al., J. R. Soc. West. Aust.*, 1958, **41**, 29

Alkaloid LV4 A-565

$C_{17}H_{23}NO_5$ 321.372

Provisional mol. formula. Struct. unknown. Alkaloid from *Lupinus digitatus* (Fabaceae). Needles ($CHCl_3$/petrol). Mp 235-237° dec.

Crow, W.D. *et al., Aust. J. Chem.*, 1957, **10**, 177-181
Gladstones, J.S. *et al., J. R. Soc. West. Aust.*, 1958, **41**, 29

Buxus Alkaloid M† A-566

See also *Buxus* Alkaloid M, A-567.
Struct unknown. Alkaloid from *Buxus wallichiana* (Buxaceae). Mp 261°. $[\alpha]_D^{23}$ +27 (c, 0.33 in $CHCl_3$).

Vassová, A. *et al., Pharmazie*, 1970, **25**, 363-365; *CA*, **73**, 127748n

Buxus Alkaloid M† A-567

$C_{27}H_{46}N_2O$ 414.673

Struct. unknown. Alkaloid from *Buxus sempervirens* (Buxaceae). Mp 203-205°. $[\alpha]_D$ -80 ($CHCl_3$).

Friedrich, W. *et al., Helv. Chim. Acta*, 1950, **33**, 873-878 (*isol*)

C-Alkaloid M A-568

$C_{20}H_{23}N_2O_2^{\oplus}$ 323.414

Struct. unknown. Minimum formula. Alkaloid from calabash curare (*Strychnos* spp.) (Loganiaceae). Slowly developing yellow col. with $Ce(SO_4)_2$.

Asmis, H. *et al., Helv. Chim. Acta*, 1954, **37**, 1968-1973 (*isol, uv*)

Alkaloid MB 10 A-569

$C_{23}H_{30}N_2O_5$ 414.5

Struct. unknown. Alkaloid from roots of *Rauwolfia mombasiana* (Apocynaceae). Off-white amorph. powder. Conts. 2 OMe groups.

Iwu, M.M. *et al., Planta Med.*, 1980, **38**, 260-263 (*isol, uv, ir, ms*)

Buxus Alkaloid N A-570

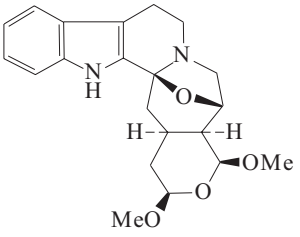
$C_{22}H_{35}NO_2$ 345.524

Struct. unknown. Poss. identical with Buxtauine M, B-482. Alkaloid from *Buxus sempervirens* (Buxaceae). Mp 178-179°. $[\alpha]_D$ +150 ($CHCl_3$). Props. corresp. to Buxtauine M, B-482.

Friedrich, W. *et al., Helv. Chim. Acta*, 1950, **33**, 873-878 (*isol*)

Alkaloid ND 370 A-571

[37304-95-3]

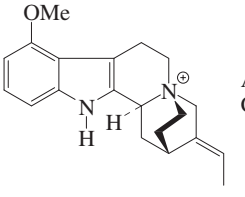


$C_{21}H_{26}N_2O_4$ 370.447
Alkaloid from the bark of *Nauclea diderrichii* (Rubiaceae). Cryst. by subl. Mp 209-211°.

MacLean, S. *et al., Can. J. Chem.*, 1972, **50**, 1496; 1976, **54**, 1262 (*uv, ir, pmr, ms, struct*)

C-Alkaloid O A-572

19,20-Didehydro-9-methoxy-4,17-cyclocorynanium, 9CI
[86138-68-3]
[86138-69-4]



Absolute Configuration

$C_{20}H_{25}N_2O^{\oplus}$ 309.43
Quaternary alkaloid from calabash curare and *Strychnos guianensis* (Loganiaceae). Mp 288-289° dec. (as chloride). $[\alpha]_D^{22}$ -150 (c, 0.283 in 5%Py aq.) (as chloride). λ_{max} 227 (log ϵ 4.1); 266 (log ϵ 3.88); 282 (log ϵ 3.77); 291 (log ϵ 3.73) (MeOH).

Giesbrecht, E. *et al., Helv. Chim. Acta*, 1954, **37**, 1974-1982 (*isol*)
Borris, R.P. *et al., Helv. Chim. Acta*, 1983, **66**, 405 (*struct, spectra*)
Penelle, J. *et al., Phytochemistry*, 2000, **53**, 1057-1066; 2001, **58**, 619-626 (*isol, uv, ir, cd, pmr, cmr, activity*)

Alkaloid Or_2 A-573

Struct. unknown
Alkaloid from *Papaver orientale* and *Papaver pseudo-orientale* (Papaveraceae). Cryst. (petrol). Mp 124-127° (120-121°). Unstable, not obt. completely pure. m/e 333.

Délenk-Heydenreich, K. *et al., Pharmazie*, 1969, **24**, 635-645 (*isol, uv, ms*)
Shafiee, A. *et al., J. Pharm. Sci.*, 1975, **64**, 1570-1572 (*isol, uv, pmr*)

Baptisia Alkaloid P_2 A-574

$C_{11}H_{18}N_2O$ 194.276

Struct. unknown. Isol. from *Baptisia australis* and *Baptisia perfoliata*. Cryst. ($MeOH/Et_2O$). Mp 300°.

Perchlorate:
Needles (MeOH). Mp 198°.

Marion, L. *et al., J.A.C.S.*, 1948, **70**, 691-692; 3253-3254 (*isol*)
Oung-Boran, *et al., Planta Med.*, 1969, **17**, 301-318 (*isol*)

Baptisia Alkaloid P_4 A-575

Struct. unknown. Isol. from *Baptisia minor*. Oil. $Bp_{0.05}$ 175-200°.

Perchlorate:
Needles. Mp 286°.

Marion, L. *et al., J.A.C.S.*, 1948, **70**, 3472-3474 (*isol*)

C-Alkaloid P A-576

$C_{20}H_{23}N_2O^{\oplus}$ 307.414

Struct. unknown. Quaternary alkaloid from calabash curare (*Strychnos* spp.) (Loganiaceae). Mp 224-232° (as picrate). Blue col. with $Ce(SO_4)_2$.

Giesbrecht, E. *et al., Helv. Chim. Acta*, 1954, **37**, 1974-1982 (*isol, uv*)

Lupinus Alkaloid P1 A-577

$C_{15}H_{22}N_2O$ 246.352

Tentative mol. form. Struct. unknown. Alkaloid from *Lupinus macounii* (Fabaceae). Small plates (EtOH/petrol). Mp 126° (sinters at 123°). Salts could not be obt. crystalline. Cooccurs with Anagyrine, A-970 and Lupanine, L-302.

Marion, L. *et al., J.A.C.S.*, 1946, **68**, 759-760

Lupinus Alkaloid P2 A-578

$C_{11}H_{18}N_2O$ 194.276

Tentative mol. formula. Lupine alkaloid. Struct. unknown. Alkaloid from *Baptisia australis* and *Baptisia perfoliata* (Fabaceae). Cryst. ($MeOH/Et_2O$). Mp 300°.

Perchlorate:
Needles (MeOH). Mp 198°.

Picrate(?): Mp 241° (sinters at 185°).

Marion, L. *et al., J.A.C.S.*, 1948, **70**, 691-692; 3253-3254 (*isol*)

Mucuna pruriens Alkaloid P A-579

Mucuna pruriens *Base P*

$C_{17}H_{26}NO_6$ 340.395

Struct. unknown. Alkaloid from *Mucuna pruriens* (Fabaceae). Bp 118-119°.

Picrate: Mp 100-101°.

Rakhit, S. *et al., Indian J. Pharm.*, 1956, **18**, 285; *CA*, **52**, 5748e (*isol*)

Alkaloid PAR 1 A-580

Struct. unknown. Mol. formula not recorded. Minor alkaloid from *Papaver argemone* (Papaveraceae). Prisms (MeOH). Mp 193-195°.

Táborská, E. *et al., Coll. Czech. Chem. Comm.*, 1988, **53**, 1845 (*isol, uv*)

Alkaloid PAR 2 A-581

Struct. unknown. Mol. formula not

recorded. Minor alkaloid from *Papaver argemone* (Papaveraceae). Prisms (MeOH). Mp 252-256°.

Táborská, E. *et al., Coll. Czech. Chem. Comm.*, 1988, **53**, 1845 (*isol, uv*)

Alkaloid PAR 3 **A-582**

Struct. unknown. Quaternary alkaloid. Mol. formula and counterion not specified. Minor alkaloid from *Papaver argemone* (Papaveraceae). Amorph.

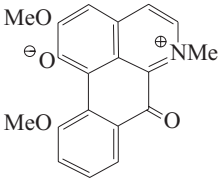
Táborská, E. *et al., Coll. Czech. Chem. Comm.*, 1988, **53**, 1845 (*isol, uv*)

Alkaloid PO3 **A-583**

1-Hydroxy-2,11-dimethoxy-6-methyl-7H-dibenzo[de,g]quinolinium hydroxide inner salt, 9CI

[27699-47-4]

[101064-66-8]



$C_{19}H_{15}NO_4$ 321.332

Alkaloid from *Papaver orientale* (Papaveraceae). Amorph.

Perchlorate: Mp 253-255°.

Preininger, V. *et al., CA*, 1967, **67**, 54290w (*isol*)

Preininger, V. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1969, **302**, 808 (*uv, ir, pmr*)

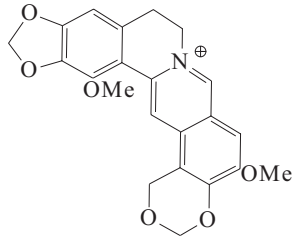
Saá, C. *et al., Tet. Lett.*, 1985, **26**, 4559 (*synth*)

Atanes, N. *et al., J.O.C.*, 1991, **56**, 2984 (*synth*)

Alkaloid PO4 **A-584**

Dehydroorientalidine

[23943-92-2]



$C_{22}H_{20}NO_6^{\oplus}$ 394.403

Alkaloid from *Papaver orientale, Papaver oreophilum, Papaver nudicaule* var. *leiocarpum, Papaver pyrenaicum* ssp. *rhoeaticum* and *Papaver alboroseum* (Papaveraceae).

Preininger, V. *et al., Coll. Czech. Chem. Comm.*, 1970, **35**, 124 (*uv, pmr, struct, bibl*)

Alkaloid PP1† **A-585**

$C_{19}H_{15}NO_5$ 337.331

Struct. unknown. Quaternary phenolic protoberberine. Minor alkaloid from *Papaver pavoninum* (Papaveraceae). Orange needles (MeOH) (as iodide). Mp 250° dec. (iodide). λ_{max} 222 ; 239 ; 251 ; 272 ; 352 (sh) ; 360 ; 468 (MeOH).

Táborská, E. *et al., Coll. Czech. Chem. Comm.*, 1988, **53**, 1845 (*isol, uv, ir, ms*)

Alkaloid PP1†, 9CI **A-586**

[158827-53-3]

$C_{17}H_{19}NO_3$ 285.342

Struct. unknown, prob. a normorphinane. Alkaloid from *Papaver pinnatifidium* (Papaveraceae). Mp 179°. Laevorotatory.

Slavík, J. *et al., Coll. Czech. Chem. Comm.*, 1994, **59**, 1879-1883 (*isol*)

***C*-Alkaloid Q** **A-587**

$C_{22}H_{27}N_3O_3$ 381.474

Minimum formula. Struct. unknown. Alkaloid from calabash curare (*Strychnos* spp.) (Loganiaceae). Mp 276-283° dec. No col. with $Ce(SO_4)_2$.

Meyer, H. *et al., Helv. Chim. Acta*, 1956, **39**, 1208-1213 (*isol, uv*)

***Mucuna pruriens* Alkaloid Q** **A-588**

Mucuna pruriens *Base Q*

Struct. unknown. Alkaloid from *Mucuna pruriens* (Fabaceae). Bp 220-221°.

Picrate: Mp 152-154°.

Rakhit, S. *et al., Indian J. Pharm.*, 1956, **18**, 285; *CA*, **52**, 5748e (*isol*)

***Veratrum* Alkaloid Q** **A-589**

$C_{32}H_{53}NO_4$ 515.775

Steroidal alkaloid. Struct. unknown. Alkaloid from *Veratrum californicum* (Liliaceae). Mp 209-210°. $[\alpha]_D^{25}$ -95 ($CHCl_3$).

Keeler, R.F. *et al., Phytochemistry*, 1968, 303 (*isol*)

***C*-Alkaloid R** **A-590**

$C_{21}H_{27}N_2O_2^{\oplus}$ 339.456

Minimum formula. Struct. unknown. Quaternary alkaloid from calabash curare (*Strychnos* spp.) (Loganiaceae). Violet col. with $Ce(SO_4)_2$. UV suggests indoline chromophore resembling *C*-Alkaloid B, A-400, *C*-Alkaloid C, A-436 and *C*-Alkaloid D, A-476.

Chloride: Mp 312° dec.

Perchlorate: Mp 317° dec.

Meyer, H. *et al., Helv. Chim. Acta*, 1956, **39**, 1208-1213 (*isol, uv*)

Fritillaria imperialis **A-591**

Alkaloid R

Fritillaria *Base R*

Prob. a steroidal alkaloid. Struct. unknown. Alkaloid from *Fritillaria imperialis* var. *lutea* (Liliaceae). Mp 134-136° Mp 213-215° (double Mp). Co-occurs with Imperonine, I-53.

Hydroiodide: Mp 205-207°.

Perchlorate: Mp 193-196°.

Methiodide: Mp 269° dec.

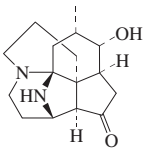
Paul, L. *et al., Chem. Ber.*, 1958, **91**, 1968

Lycopodium fawcwttii **A-592**

Alkaloid R

Lycopodium *Base R*

[53938-16-2]



Absolute Configuration

$C_{16}H_{24}N_2O_2$ 276.378

Alkaloid from *Lycopodium fawcettii* (Lycopodiaceae). Mp 129-130°. $[\alpha]_D$ +104.

Perchlorate: Mp 198-199°.

Burnell, R.H. *et al., Can. J. Chem.*, 1963, **41**, 3091 (*isol, ir*)

Burnell, R.H. *et al., Chem. Comm.*, 1974, 391 (*cryst struct*)

***Mucuna pruriens* Alkaloid R** **A-593**

Mucuna pruriens *Base R*

$C_{23}H_{35}NO_4$ 389.534

Struct. unknown. Alkaloid from *Mucuna pruriens* (Fabaceae). Bp 320°.

Oxalate: Mp 130-131° dec.

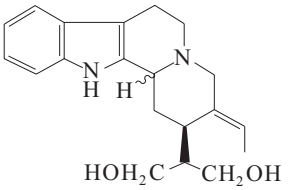
Picrate: Mp 172-173°.

Methiodide: Mp 95-96°.

Rakhit, S. *et al., Indian J. Pharm.*, 1956, **18**, 285; *CA*, **52**, 5748e (*isol*)

Alkaloid RMB 10 **A-594**

[71635-30-8]



$C_{20}H_{26}N_2O_2$ 326.438

Alkaloid from the stem bark of *Rauwolfia mombasiana* (Apocynaceae). Yellow amorph. powder.

Iwu, M.M. *et al., Planta Med.*, 1979, **36**, 208 (*isol, uv, ir, ms, struct*)

Voacanga schweinfurthii **A-595**

Alkaloid S_2

Struct. unknown. Bisindole alkaloid (*Aspidosperma-Aspidosperma* type). Alkaloid from the leaves of *Voacanga schweinfurthii* (Apocynaceae). Mol. formula not reported.

Newcombe, F. *et al., Planta Med.*, 1969, **17**, 276-280 (*isol, uv*)

Cordell, G.A. *et al., Alkaloids (Academic Press)*, 1981, **20**, 1; 266 (*rev*)

Voacanga schweinfurthii **A-596**

Alkaloid S_3

Struct. unknown. Bisindole alkaloid (*Aspidosperma-Aspidosperma* type). Alkaloid from the leaves of *Voacanga schweinfurthii* (Apocynaceae). Mol. formula not reported.

Newcombe, F. *et al., Planta Med.*, 1969, **17**, 276-280 (*isol, uv*)
Cordell, G.A. *et al., Alkaloids (Academic Press)*, 1981, **20**, 1; 266 (*rev*)

C-Alkaloid S A-597

$C_{19}H_{22}N_2$ 278.396

Approx. minimum formula. Struct. unknown. Alkaloid from calabash curare (*Strychnos* spp.) (Loganiaceae). Mp 250° (as picrate). Red-violet col. with $Ce(SO_4)_2$ becoming colourless on standing. Tertiary base.

Meyer, H. *et al., Helv. Chim. Acta*, 1956, **39**, 1208-1213 (*isol, uv*)

Mucuna pruriens Alkaloid S A-598

Mucuna pruriens *Base S*

Struct. unknown. Alkaloid from *Mucuna pruriens* (Fabaceae). Bp 320°.

Picrate: Mp 165-166°.

Rakhit, S. *et al., Indian J. Pharm.*, 1956, **18**, 285; *CA*, **52**, 5748e (*isol*)

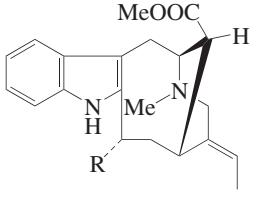
Alkaloid S-F A-599

$C_{15}H_{21}NO_3$ 263.336

Pyrrolizidine alkaloid. Struct. unknown. Alkaloid from *Senecio viscosus* dried plants (Asteraceae). Mp 228-230° dec. $[\alpha]_D^{22}$ -148 (c, 0.573 in $CHCl_3$).

Šantavý, F. *et al., Coll. Czech. Chem. Comm.*, 1962, **27**, 1666-1671

Alkaloid TC-D A-600



R = $C_2H_6NO_2$

$C_{23}H_{31}N_3O_4$ 413.516

Similar to Pagisulfine, P-11. Minor alkaloid from the root bark of *Tabernaemontana chippii* (Apocynaceae).

van Beek, T.A. *et al., J. Nat. Prod.*, 1985, **48**, 400-423 (*isol, uv, pmr, cmr, ms*)
Saxton, J.E. *et al., Nat. Prod. Rep.*, 1987, **4**, 591 (*rev, struct*)

Veratrum Alkaloid U A-601

$C_{36}H_{55}NO_{13}$ 709.829

Steroidal alkaloid, poss. an ester of Protoverine. Struct. unknown. Alkaloid from *Veratrum lobelianum* (Liliaceae). Mp 181-183°. $[\alpha]_D$ +7.6 ($CHCl_3$).

Bondarenko, N.V. *et al., Zh. Obshch. Khim.*, 1967, **37**, 332; *J. Gen. Chem. USSR (Engl. Transl.)*, 1967, **37**, 310 (*isol*)

C-Alkaloid UB A-602

$C_{19}H_{23}N_2O_3^{\oplus}$ 327.402

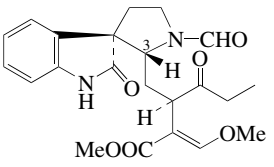
Minimum formula. Struct. unknown. Alkaloid from calabash curare (*Strychnos* spp.) (Loganiaceae). Mp 238-240° dec. (as picrate). Carmine col. with $Ce(SO_4)_2$, becoming brown on standing.

Schmid, H. *et al., Helv. Chim. Acta*, 1947, **30**, 2081-2091; 1952, **35**, 1846-1879 (*isol, uv*)

Alkaloid Us 7 A-603

Us 7

[188790-08-1]



$C_{22}H_{26}N_2O_6$ 414.457

Alkaloid from *Uncaria attenuata*. Pale yellow oil. $[\alpha]_D^{25}$ -12.9 (c, 1.10 in MeOH). λ_{max} 208 ; 244 (MeOH).

3-Epimer: ***Alkaloid Us 8***. *Us 8*
[188790-09-2]
$C_{22}H_{26}N_2O_6$ 414.457
From *Uncaria attenuata*. Yellow oil. $[\alpha]_D^{25}$ -9.6 (c, 1.25 in MeOH). λ_{max} 208 ; 244 (MeOH).

Aimi, N. *et al., J.C.S. Perkin 1*, 1997, 187 (*isol, uv, pmr, cmr, struct*)

Gentiana Alkaloid VI A-604

$C_{16}H_{18}N_2O_3$ 286.33

Struct. unknown. Monoterpene alkaloid. Alkaloid from *Gentiana asclepiadea, Gentiana bulgarica* and *Gentiana cruciata* (Gentianaceae). Mp 248-252°.

Mollov, N.M. *et al., Dokl. Bulg. Akad. Nauk*, 1965, **18**, 947-949; *CA*, **64**, 10084h (*isol, ir*)
Cordell, G.A. *et al., Alkaloids (Academic Press)*, 1977, **16**, 431 (*rev*)

Lycopodium annotinum A-605
Alkaloid VI

Lycopodium *Base VI*

$C_{16}H_{23}NO_2$ 261.363

Struct. unknown. Alkaloid from *Lycopodium annotinum* (Lycopodiaceae).

Methiodide: Mp 294°. $[\alpha]_D^{20}$ -13.9.

Methochloride: Mp 263°.

Methoperchlorate: Mp 287.5°.

Methopicrate: Mp 163°.

Achmatowicz, O. *et al., Pol. J. Chem. (Rocz. Chem.)*, 1958, **32**, 485 (*isol, uv*)

Lycopodium annotinum A-606
Alkaloid VII

Lycopodium *Base VII*

$C_{20}H_{29}NO_4$ 347.453

Struct. unknown. Alkaloid from *Lycopodium annotinum* (Lycopodiaceae).

Methiodide: Mp 292°. $[\alpha]_D^{20}$ -11.1.

Methochloride: Mp 261°.

Methoperchlorate: Mp 295°.

Achmatowicz, O. *et al., Pol. J. Chem. (Rocz. Chem.)*, 1958, **32**, 485 (*isol, uv*)

Pachysandra terminalis A-607
Alkaloid VI

Pachysandra *Base VI*

Steroidal alkaloid. Struct. unknown. Isol. from *Pachysandra terminalis* (Buxaceae). Mp 290-295°.

Kikuchi, T. *et al., Tet. Lett.*, 1964, 1817
Kikuchi, T. *et al., Yakugaku Zasshi*, 1967, **87**, 215; *CA*, **67**, 32888v

Rhodophiala bifida A-608
Alkaloid VI

Rhodophiala *Base VI*

$C_{16}H_{17}NO_4$ 287.315

Amaryllidaceae alkaloid. Struct. unknown. Isol. from the bulbs of *Rhodophiala bifida* (Amaryllidaceae). Mp 272-273°. $[\alpha]_D^{25}$ -74 (MeOH).

Di-O-*Ac:* Mp 163-165°.

Dihydro: Mp 271°.

Wildman, W.C. *et al., Pharmazie*, 1967, **22**, 725; *CA*, **69**, 19337m (*isol*)

Lycopodium annotinum A-609
Alkaloid VIII

Lycopodium *Base VIII*

$C_{16}H_{21}NO_3$ 275.347

Struct. unknown. Alkaloid from *Lycopodium annotinum* (Lycopodiaceae).

Methiodide: Mp 216-217°.

Methochloride: Mp 255°.

Methoperchlorate: Mp 234-236°.

Methopicrate: Mp 134-136°.

Achmatowicz, O. *et al., Pol. J. Chem. (Rocz. Chem.)*, 1958, **32**, 485 (*isol, uv*)

Lycopodium annotinum A-610
Alkaloid XI

Lycopodium *Base XI*

$C_{18}H_{25}NO_3$ 303.4

Struct. unknown. Alkaloid from *Lycopodium annotinum* (Lycopodiaceae).

Methiodide: Mp 272°. $[\alpha]_D^{20}$ -95.8.

Methochloride: Mp 250°.

Methoperchlorate: Mp 267-268°.

Achmatowicz, O. *et al., Pol. J. Chem. (Rocz. Chem.)*, 1958, **32**, 485 (*isol, uv*)

Lycopodium annotinum A-611
Alkaloid XII

Lycopodium *Base XII*

$C_{18}H_{25}NO_4$ 319.4

Struct. unknown. Alkaloid from *Lycopodium annotinum* (Lycopodiaceae).

Methiodide: Mp 283°. $[\alpha]_D^{20}$ -168.8.

Methochloride: Mp 270°.

Methyl perchlorate: Mp 259-260°.

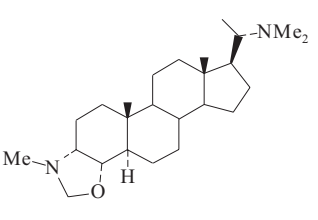
Methopicrate: Mp 219°.

Achmatowicz, O. *et al., Pol. J. Chem. (Rocz. Chem.)*, 1958, **32**, 485 (*isol, uv*)

Pachysandra terminalis A-612
Alkaloid XI

20-(Dimethylamino)-2′,3,3′,4-tetrahydro-3′-methylpregn-3-eno[3,4-d]oxazole, 8CI

[15027-86-8]



$C_{25}H_{44}N_2O$ 388.635
Alkaloid from *Pachysandra terminalis* (Buxaceae) after hydrol. Mp 201-202°. $[\alpha]_D$ -60 ($CHCl_3$). Could be an artifact.

Kikuchi, T. *et al., Tet. Lett.*, 1964, 1817-1823 (*isol*)

Rhodophiala bifida Alkaloid XIII A-613

Rhodophiala *Base XIII*

$C_{16}H_{17}NO_4$ 287.315

Amaryllidaceae alkaloid. Struct. unknown. Isol. from the bulbs of *Rhodophiala bifida* (Amaryllidaceae). Mp 248-250°. $[\alpha]_D^{21}$ +12 (MeOH).

Wildman, W.C. *et al., Pharmazie*, 1967, **22**, 725; *CA*, **69**, 19337m (*isol*)

Pachysandra terminalis Alkaloid XVI A-614

Pachysandra *Base XVI*
Steroidal alkaloid. Struct unknown. Alkaloid from *Pachysandra terminalis* (Buxaceae). Mp 272-276°.

Kikuchi, T. *et al., Tet. Lett.*, 1964, 1817
Kikuchi, T. *et al., Yakugaku Zasshi*, 1967, **87**, 215; *CA*, **67**, 32888v

Rhodophiala bifida Alkaloid XXV A-615

Rhodophiala *Base XXV*

$C_{20}H_{23}NO_5$ 357.405

Amaryllidaceae alkaloid. Struct. unknown. Isol. from the bulbs of *Rhodophiala bifida* (Amaryllidaceae). Mp 204-206°. $[\alpha]_D^{21}$ -65 (MeOH).

Wildman, W.C. *et al., Pharmazie*, 1967, **22**, 725; *CA*, **69**, 19337m (*isol*)

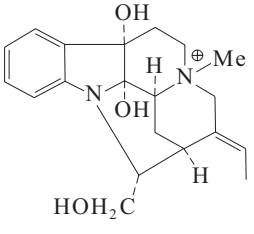
Pachysandra terminalis Alkaloid XXVII A-616

Pachysandra *Base XXVII*
Steroidal alkaloid. Struct. unknown. Alkaloid from *Pachysandra terminalis* (Buxaceae).

Kikuchi, T. *et al., Yakugaku Zasshi*, 1967, **87**, 215; *CA*, **67**, 32888v

C-Alkaloid Y A-617

C-*Profluorocurine. 2,7-Dihydroxymavacurine*
[6822-67-9]



$C_{20}H_{27}N_2O_3^{\oplus}$ 343.445
Quaternary alkaloid from *Strychnos guianensis*, *Strychnos toxifera* and calabash curare (*Strychnos* spp.) (Loganiaceae). Cryst. (as chloride). Red-violet colour with Ce(IV) becoming olive-green on standing.

17-Carboxylic acid, N-*de-Me, Me ester:*
2,7-Dihydro-2,7-dihydroxypleiocarpamine. *2,7-Dihydroxypleiocarpamine*
[87614-66-2]
$C_{20}H_{24}N_2O_4$ 356.421
Alkaloid from *Alstonia plumosa* (Apocynaceae). Cryst. (Me_2CO). Mp 152-158°. $[\alpha]_D$ +66 (c, 0.5 in MeOH). Called 2,7-Dihydroxypleiocarpamine in the lit., which is not strictly correct. No stereochem. assigned. CAS no. not found 8-14 CI.

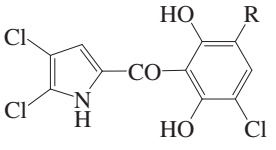
Asmis, H. *et al., Helv. Chim. Acta*, 1954, **37**, 1968-1973 (*isol, uv*)
Fritz, H. *et al., Annalen*, 1958, **611**, 268-276 (*uv*)
Hesse, M. *et al., Helv. Chim. Acta*, 1964, **47**, 878-911 (*struct*)
Jacquier, M.J. *et al., Phytochemistry*, 1982, **21**, 2973 (*2,7-Dihydroxypleiocarpamine*)
Penelle, J. *et al., Phytochemistry*, 2000, **53**, 1057-1066 (*isol, ir*)

Alkaloid YC2 A-618

Struct. unknown. Alkaloid from *Peganum harmala* (Zygophyllaceae). Characterised mainly by colour reactions and chem. props.

McKenzie, E. *et al., Phytochemistry*, 1975, **14**, 273-275 (*isol, uv*)

2-(3-Alkyl-5-chloro-2,6-dihydroxybenzoyl)-4,5-dichloro-1*H*-pyrroles A-619



2-(3-Chloro-5-hexyl-2,6-dihydroxybenzoyl)-4,5-dichloro-1*H*-pyrrole [188988-62-7]
$C_{17}H_{18}Cl_3NO_3$ 390.692
Prod. by *Streptomyces* sp. PA48424. GABA receptor antagonist, antibacterial agent. Yellow cryst. Sol. $CHCl_3$, EtOAc, MeOH; poorly sol. H_2O. Mp 145-147°. λ_{max} 225 ; 310 (ϵ 10000); 358 (ϵ 10700) (MeOH) (Berdy). λ_{max} 260 (ϵ 5200); 310 (ϵ 15000); 340 (MeOH/HCl) (Berdy). λ_{max} 233 ; 280 (ϵ 6400); 369 (ϵ 21300) (MeOH/NaOH) (Berdy).

2-[3-Chloro-2,6-dihydroxy-5-(4-methylpentyl)benzoyl]-4,5-dichloro-1*H*-pyrrole [188988-63-8]
$C_{17}H_{18}Cl_3NO_3$ 390.692
Prod. by *Streptomyces* sp. PA48424. GABA receptor antagonist, antibacterial agent. Yellow cryst. Sol. $CHCl_3$, EtOAc, MeOH; poorly sol. H_2O. λ_{max} 255 ; 310 (ϵ 10400); 358 (ϵ 10300) (MeOH) (Berdy). λ_{max} 260 (ϵ 5300); 310 (ϵ 14900); 340 (MeOH/HCl) (Berdy).

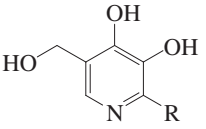
2-[3-Chloro-2,6-dihydroxy-3-(4-methylhexyl)benzoyl]-4,5-dichloro-1*H*-pyrrole [189008-36-4]
$C_{18}H_{20}Cl_3NO_3$ 404.719
Prod. by *Streptomyces* sp. PA48424. GABA receptor antagonist, antibacterial agent. Yellow cryst. Sol. $CHCl_3$, MeOH, EtOAc; poorly sol. H_2O. λ_{max} 225 ; 310 (ϵ 9300); 358 (ϵ 10000) (MeOH) (Berdy). λ_{max} 260 (ϵ 4800); 310 (ϵ 14100) (MeOH/HCl) (Berdy). λ_{max} 279 (ϵ 6100); 370 (ϵ 16000) (MeOH/NaOH) (Berdy).

2-[3-Chloro-2,6-dihydroxy-5-(5-methylhexyl)benzoyl]-4,5-dichloro-1*H*-pyrrole [188988-64-9]
$C_{18}H_{20}Cl_3NO_3$ 404.719
Prod. by *Streptomyces* sp. PA48424. GABA receptor antagonist, antibacterial agent. Yellow cryst. Sol. $CHCl_3$, MeOH, EtOAc; poorly sol. H_2O. λ_{max} 225 ; 310 (ϵ 9800); 357 (ϵ 4800) (MeOH) (Berdy). λ_{max} 258 (ϵ 4900); 310 (ϵ 14200) (MeOH/HCl) (Berdy). λ_{max} 233 ; 281 (ϵ 6100); 371 (ϵ 19700) (MeOH/NaOH) (Berdy).

Japan. Pat., 1997, 97 59 249; *CA*, **126**, 276425v

2-Alkyl-3,4-dihydroxy-5-hydroxymethylpyridines A-620

2-Alkyl-5-hydroxymethyl-3,4-pyridinediols



3,4-Dihydroxy-5-hydroxymethyl-2-propylpyridine
5-Hydroxymethyl-2-propyl-3,4-pyridinediol
$C_9H_{13}NO_3$ 183.207
Prod. by *Streptomyces* sp. GW23/1540.

3,4-Dihydroxy-5-hydroxymethyl-2-isopropylpyridine
5-Hydroxymethyl-2-(1-methylethyl)-3,4-pyridinediol
$C_9H_{13}NO_3$ 183.207
Prod. by *Streptomyces* sp. GW23/1540.

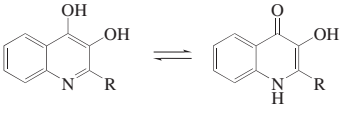
3,4-Dihydroxy-5-hydroxymethyl-2-(1-methylpropyl)pyridine
*5-Hydroxymethyl-2-(1-methylpropyl)-3,4-pyridinediol. 2-*sec*-Butyl-3,4-dihydroxy-5-hydroxymethylpyridine*
$C_{10}H_{15}NO_3$ 197.233
Prod. by *Streptomyces* sp. GW63/1571.

3,4-Dihydroxy-5-hydroxymethyl-2-(2-methylpropyl)pyridine
5-Hydroxymethyl-2-(2-methylpropyl)-3,4-pyridinediol. 3,4-Dihydroxy-5-hydroxymethyl-2-isobutylpyridine
$C_{10}H_{15}NO_3$ 197.233
Prod. by *Streptomyces* sp. GW23/1540.

Maskey, R.P. *et al., Z. Naturforsch., B*, 2005, **60**, 63-66 (*isol, pmr, cmr, ms*)

2-Alkyl-3,4-dihydroxyquinolines A-621

*2-Alkyl-3-hydroxy-4(1*H*)-quinolinones. 2-Alkyl-3,4-quinolinediols*



Metabs. of *Pseudomonas aeruginosa*. Signalling compds. involved in cell-to-cell signalling.

3,4-Dihydroxy-2-pentylquinoline
*2-Pentyl-3,4-quinolinediol, 9CI. 3-Hydroxy-2-pentyl-4(1*H*)-quinolinone*
[521313-34-8]
$C_{14}H_{17}NO_2$ 231.294

2-Hexyl-3,4-dihydroxyquinoline
*2-Hexyl-3,4-quinolinediol. 2-Hexyl-3-hydroxy-4(1*H*)-quinolinone*
[678172-89-9]
$C_{15}H_{19}NO_2$ 245.321

2-Heptyl-3,4-dihydroxyquinoline
*2-Heptyl-3,4-quinolinediol, 9CI. 2-Heptyl-3-hydroxy-4(1*H*)-quinolinone. PQS*
[521313-35-9]
$C_{16}H_{21}NO_2$ 259.347

3,4-Dihydroxy-2-octylquinoline
*2-Octyl-3,4-quinolinediol. 3-Hydroxy-2-octyl-4(1*H*)-quinolinone*
[678172-90-2]
$C_{17}H_{23}NO_2$ 273.374

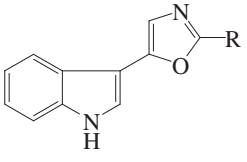
3,4-Dihydroxy-2-nonylquinoline
*2-Nonyl-3,4-quinolinediol, 9CI. 3-Hydroxy-2-nonyl-4(1*H*)-quinolinone*
[521313-36-0]
$C_{18}H_{25}NO_2$ 287.401

3,4-Dihydroxy-2-undecylquinoline
*2-Undecyl-3,4-quinolinediol, 9CI. 3-Hydroxy-2-undecyl-4(1*H*)-quinolinone*
[678172-91-3]
$C_{20}H_{29}NO_2$ 315.455

Takeda, R. *et al., CA*, 1960, **54**, 16533i (*isol*)
Pesci, E.C. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 1999, **96**, 11229-11234 (*heptyl, isol, synth, pmr, cmr*)
Lepine, F. *et al., Biochim. Biophys. Acta*, 2003, **1622**, 36-41 (*detn*)
Deziel, E. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 2004, **101**, 1339-1344 (*occur, biosynth, ms*)
Bredenbruch, F. *et al., J. Bacteriol.*, 2005, **187**, 3630-3635 (*biosynth*)

3-(2-Alkyl-5-oxazolyl)-1*H*-indoles A-622

*2-Alkyl-5-(1*H*-indol-3-yl)oxazole*



Revised structs. (1999) for several members of this series which were formerly descr. as pyrazoloisoquinolines.

3-(2-Methyl-5-oxazolyl)-1*H*-indole, 9CI
5-(3-Indolyl)-2-methyloxazole. ***Pimprinine****. WS 30581C. Antibiotic WS 30581C. APHE 3*
[13640-26-1]
[179728-23-5]
$C_{12}H_{10}N_2O$ 198.224
Metab. of *Streptomyces pimprina*, *Streptoverticillium griseocarneum* and *Streptoverticillium olivoreticuli*. Monoamine oxidase inhibitor. Shows antiepileptic effects. Prisms (C_6H_6), needles. Mp 204-205°. λ_{max} 224 (ϵ 24600); 266 (ϵ 15500); 282 (sh) (ϵ 12100); 298 (sh) (ϵ 11000) (EtOH) (Derep).

3-(2-Ethyl-5-oxazolyl)-1*H*-indole, 9CI
2-Ethyl-5-(3-indolyl)oxazole. ***Pimprinethine****. APHE 1*
[73053-81-3]
[146426-35-9]
$C_{13}H_{12}N_2O$ 212.251
Metab. of *Streptoverticillium olivoreticuli*, *Streptoverticillium griseocarneum* and *Streptomyces cinnamomeus*. Cryst. (C_6H_6 or $CHCl_3$). Mp 163-165° (161-163°).

3-(2-Propyl-5-oxazolyl)-1*H*-indole
5-(3-Indolyl)-2-propyloxazole. ***Antibiotic WS 30581A****. APHE 2. WS 30581A*
[93773-64-9]
[146426-36-0]
$C_{14}H_{14}N_2O$ 226.277
Prod. by *Streptoverticillium waksmanii* and *Streptoverticillium griseocarneum*. Antiplatelet, cytotoxic and antithrombotic agent. Needles. Sol. MeOH, EtOAc; poorly sol. H_2O. Mp 128-130°. λ_{max} 224 (ϵ 24000); 266 (ϵ 15400); 282 (sh) (ϵ 13000); 298 (sh) (ϵ 11200) (EtOH) (Derep).
▶ LD_{50} (mus, ipr) 250-750 mg/kg.

3-(2-Butyl-5-oxazolyl)-1*H*-indole, 9CI
2-Butyl-5-(3-indolyl)oxazole. ***Antibiotic WS 30581B****. APHE 4. WS 30581B*
[93773-63-8]
[179728-24-6]
$C_{15}H_{16}N_2O$ 240.304
Prod. by *Streptoverticillium waksmanii* and *Streptoverticillium griseocarneum*. Platelet aggregation inhibitor. An antithrombotic agent. Needles (C_6H_6/hexane). Sol. MeOH, EtOAc; poorly sol. H_2O. Mp 123-125°. λ_{max} 224 (ϵ 24000); 266 (ϵ 15400); 282 (sh) (ϵ 13000); 298 (sh) (ϵ 11200) (EtOH) (Derep).

3-[2-(2-Methylpropyl)-5-oxazolyl]-1*H*-indole
5-(3-Indolyl)-2-isobutyloxazole. ***Labradorin 1***
[477951-20-5]
$C_{15}H_{16}N_2O$ 240.304
Prod. by *Pseudomonas syringae* pv. *coronafaciens*. Cytotoxic. Prisms (Me_2CO). Mp 147-148°.

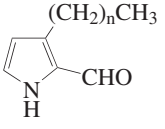
3-(2-Pentyl-5-oxazolyl)-1*H*-indole
5-(3-Indolyl)-2-pentyloxazole. ***Labradorin 2***
[326494-56-8]
$C_{16}H_{18}N_2O$ 254.331
Prod. by *Pseudomonas syringae* pv. *coronafaciens*. Cytotoxic. Small plates (MeOH). Mp 130-132°.

3-(2-Benzyl-5-oxazolyl)-1*H*-indole, 9CI
*3-[2-(Phenylmethyl)-5-oxazolyl]-1*H*-indole. 2-Benzyl-5-(3-indolyl)oxazole.* ***Pimprinaphine***
[73053-85-7]
$C_{18}H_{14}N_2O$ 274.321
Metab. of *Streptoverticillium olivoreticuli*. Cryst. (C_6H_6). Mp 200-201° (198-200°).

Bhate, D.S. *et al., Experientia*, 1960, **16**, 504 (*Pimprinine, isol*)
Joshi, B.S. *et al., Tetrahedron*, 1963, **19**, 1437-1439 (*Pimprinine, uv, ir, struct, synth*)
Oikawa, Y. *et al., Heterocycles*, 1979, **12**, 1457-1462 (*synth*)
Koyama, Y. *et al., Agric. Biol. Chem.*, 1981, **45**, 1285-1287 (*Pimprinine, Pimprinethine, Pimprinaphine, isol, uv, pmr, synth*)
Yoshioka, T. *et al., J. Chem. Res., Synop.*, 1981, 194-195; *J. Chem. Res., Miniprint*, 2252-2281 (*synth, uv, ir, pmr, ms*)
Noltemeyer, M. *et al., J. Antibiot.*, 1982, **35**, 549-555 (*Pimprinethine, isol, uv, ir, pmr, cmr, ms, cryst struct*)
Umehara, K. *et al., J. Antibiot.*, 1984, **37**, 1153-1160 (*WS 30581*)
Somei, M. *et al., Heterocycles*, 1985, **23**, 1101-1106 (*synth*)
Doyle, K.J. *et al., Synthesis*, 1994, 1021-1022 (*synth, ir, pmr, cmr*)
Kelly, T.R. *et al., Tet. Lett.*, 1999, **40**, 1857-1860 (*APHE 1-4*)
Pettit, G.R. *et al., J. Nat. Prod.*, 2002, **65**, 1793-1797 (*Labradorins, cryst struct*)
Kumar, D. *et al., Tet. Lett.*, 2008, **49**, 867-869 (*synth*)

3-Alkyl-1*H*-pyrrole-2-carboxaldehydes A-623

3-Alkyl-2-formylpyrroles



Isol. as a mixt. of 3.3% n = 18, 12.5% n = 19, 49% n = 20, 25% n = 21, and 10.2% n = 22. The substitution pattern of these constits. has been questioned (Stierle *et al*). Metabs. of the marine sponge *Oscarella lobularis*.

3-Nonadecyl-1*H*-pyrrole-2-carboxaldehyde
[57992-51-5]
$C_{24}H_{43}NO$ 361.61
n = 18.

3-Eicosyl-1*H*-pyrrole-2-carboxaldehyde
*3-Icosyl-1*H*-pyrrole-2-carboxaldehyde*
[57992-52-6]
$C_{25}H_{45}NO$ 375.637
n = 19.

3-Heneicosyl-1*H*-pyrrole-2-carboxaldehyde
[57992-53-7]
$C_{26}H_{47}NO$ 389.663
n = 20.

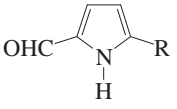
*12′,13′-Didehydro(*E*-): 13-(12-Heneicosenyl)-1*H*-pyrrole-2-carboxaldehyde, 9CI*
[57992-57-1]
$C_{26}H_{45}NO$ 387.648
Isol. from the marine sponge *Oscarella lobularis*.

3-Docosyl-1*H*-pyrrole-2-carboxaldehyde
[57992-54-8]
$C_{27}H_{49}NO$ 403.69
n = 21.

3-Tricosyl-1*H*-pyrrole-2-carboxaldehyde
[57992-55-9]
$C_{28}H_{51}NO$ 417.717
n = 22.
Cimino, G. *et al., Experientia*, 1975, **31**, 1387-1389 (*isol, uv, ir, pmr, ms, struct*)
Stierle, D.B. *et al., J.O.C.*, 1980, **45**, 4980-4982 (*struct*)

5-Alkyl-1*H*-pyrrole-2-carboxaldehydes A-624

2-Alkyl-5-formylpyrroles



5-Nonyl-1*H*-pyrrole-2-carboxaldehyde
[89631-84-5]
$C_{14}H_{23}NO$ 221.342
Isol. from a soft coral, *Telesto* sp., and its associated, but unidentified, demosponge. Yellow oil. Not possible to identify the exact source of the natural product since it perfused both organisms.

5-Pentadecyl-1*H*-pyrrole-2-carboxaldehyde
[75233-97-5]
$C_{20}H_{35}NO$ 305.503
Metab. from a marine sponge *Laxosuberites* sp. Isol. in admixture (46%) with the hexadecyl (12%), heptadecyl (23%) and nonadecyl (19%) homologues. λ_{max} 297 (ϵ 16000) (MeCN) (Derep).

*6′,7′*E*-Didehydro: 5-(6-Pentadecenyl)-1*H*-pyrrole-2-carboxaldehyde*
$C_{20}H_{33}NO$ 303.487
Metab. of the sponge *Mycale tenuispiculata*. Pale yellow solid. Mp 42-44°. λ_{max} 297 (ϵ 15400) (MeCN).

5-(13-Methyltetradecyl)-1*H*-pyrrole-2-carboxaldehyde [233744-63-3]
$C_{20}H_{35}NO$ 305.503
Isol. from the sponges *Desmapsamma anchorata* and *Mycale microsigmatosa*.

5-Hexadecyl-1*H*-pyrrole-2-carboxaldehyde
[75233-98-6]
$C_{21}H_{37}NO$ 319.529
Metab. from *Laxosuberites* sp. See note under pentadecyl above.

5-(14-Methylpentadecyl)-1*H*-pyrrole-2-carboxaldehyde [233744-64-4]
$C_{21}H_{37}NO$ 319.529
Isol. from the sponges *Desmapsamma anchorata* and *Mycale microsigmatosa*.

5-Heptadecyl-1*H*-pyrrole-2-carboxaldehyde
[75233-99-7]
$C_{22}H_{39}NO$ 333.556
Metab. from *Laxosuberites* sp. See note under pentadecyl above.

*9,10*Z*-Didehydro: 5-(9*Z*-Heptadecenyl)-1*H*-pyrrole-2-carboxaldehyde*
[233744-73-5]
$C_{22}H_{37}NO$ 331.54
Isol. from the sponges *Desmapsamma anchorata* and *Mycale microsigmatosa*.

5-Octadecyl-1*H*-pyrrole-2-carboxaldehyde
[262351-87-1]
$C_{23}H_{41}NO$ 347.583
Isol. from *Mycale mytilorum*. Pale yellow flakes. Mp 56-58°. λ_{max} 302 (ϵ 16000) (EtOH).

5-(16-Methylheptadecyl)-1*H*-pyrrole-2-carboxaldehyde
Mycalazal 6
[705973-02-0]
$C_{23}H_{41}NO$ 347.583
Isol. from the sponge *Mycale cecilia*. Amorph. powder. λ_{max} 203 (ϵ 6260); 249 (ϵ 2080); 300 (ϵ 9790) (MeOH).

5-Nonadecyl-1*H*-pyrrole-2-carboxaldehyde
[75234-00-3]
$C_{24}H_{43}NO$ 361.61
Metab. from *Laxosuberites* sp. See note under pentadecyl above.

*9,10*Z*-Didehydro: 5-(9*Z*-Nonadecenyl)-1*H*-pyrrole-2-carboxaldehyde*
[233744-74-6]
$C_{24}H_{41}NO$ 359.594
Isol. from the sponges *Desmapsamma anchorata* and *Mycale microsigmatosa*.

*12,13*Z*-Didehydro: 5-(12*Z*-Nonadecenyl)-1*H*-pyrrole-2-carboxaldehyde.* ***Mycalazal 4***
[705972-97-0]
$C_{24}H_{41}NO$ 359.594
Isol. from the sponge *Mycale cecilia*. Amorph. powder. λ_{max} 202 (ϵ 7585); 249 (ϵ 2340); 300 (ϵ 11760) (MeOH).

5-Eicosyl-1*H*-pyrrole-2-carboxaldehyde
[233744-67-7]
$C_{25}H_{45}NO$ 375.637
Isol. from the sponges *Desmapsamma anchorata* and *Mycale microsigmatosa*.

5-(9*Z*-Heneicosenyl)-1*H*-pyrrole-2-carboxaldehyde [233744-65-5]
$C_{26}H_{45}NO$ 387.648
Isol. from the sponges *Desmapsamma anchorata* and *Mycale microsigmatosa*.

5-(14*Z*-Heneicosenyl)-1*H*-pyrrole-2-carboxaldehyde
Mycalazal 8
[705973-25-7]
Isol. from the sponge *Mycale cecilia*. Amorph. powder. λ_{max} 202 (ϵ 7800); 248 (ϵ 2320); 300 (ϵ 11290) (MeOH).

5-(12*Z*,15*Z*-Heneicosadienyl)-1*H*-pyrrole-2-carboxaldehyde
Mycalazal 5
[705972-98-1]
$C_{26}H_{43}NO$ 385.632
Isol. from the sponge *Mycale cecilia*. Oil. λ_{max} 204 (ϵ 9250); 248 (ϵ 2390); 300 (ϵ 11150) (MeOH).

5-(12*Z*,15*Z*,18*Z*-Heneicosatrienyl)-1*H*-pyrrole-2-carboxaldehyde
Mycalazal 3
[705972-95-8]
$C_{26}H_{41}NO$ 383.616
Isol. from the sponge *Mycale cecilia*. Oil. λ_{max} 204 (ϵ 14690); 248 (ϵ 3440); 300 (ϵ 15400) (MeOH).

5-(12*Z*-Docosenyl)-1*H*-pyrrole-2-carboxaldehyde [233744-66-6]
$C_{27}H_{47}NO$ 401.674
Isol. from the sponges *Desmapsamma anchorata* and *Mycale microsigmatosa*. Indexed as the Δ^{11}-isomer in CAS.

5-Tricosyl-1*H*-pyrrole-2-carboxaldehyde
[233744-70-2]
$C_{28}H_{51}NO$ 417.717
Isol. from the sponges *Desmapsamma anchorata* and *Mycale microsigmatosa*.

*9,10*Z*-Didehydro: 5-(9*Z*-Tricosenyl)-1*H*-pyrrole-2-carboxaldehyde*
[233744-68-8]
$C_{28}H_{49}NO$ 415.701
Isol. from the sponges *Desmapsamma anchorata* and *Mycale microsigmatosa*.

*14,15*Z*-Didehydro: 5-(14*Z*-Tricosenyl)-1*H*-pyrrole-2-carboxaldehyde*
[233744-69-9]
$C_{28}H_{49}NO$ 415.701
Isol. from the sponges *Desmapsamma anchorata* and *Mycale microsigmatosa*.

*14,15*Z*,17,18*Z*-Tetradehydro: 5-(14*Z*,17*Z*-Tricosadienyl)-1*H*-pyrrole-2-carboxaldehyde.* ***Mycalazal 9***
[705973-27-9]
$C_{28}H_{47}NO$ 413.685
Isol. from the sponge *Mycale cecilia*. Oil. λ_{max} 201 (ϵ 14170); 248 (ϵ 4060); 300 (ϵ 21160) (MeOH).

*14,15*Z*,17,18*Z*,20,21*Z*-Hexadehydro: 5-(14*Z*,17*Z*,20*Z*-Tricosatrienyl)-1*H*-pyrrole-2-carboxaldehyde.* ***Mycalazal 7***
[705973-15-5]
$C_{28}H_{45}NO$ 411.67
Isol. from the sponge *Mycale cecilia*. Oil. λ_{max} 204 (ϵ 9250); 248 (ϵ 2390); 300 (ϵ 11150) (MeOH).

5-(11*Z*-Pentacosenyl)-1*H*-pyrrole-2-carboxaldehyde [233744-71-3]
$C_{30}H_{53}NO$ 443.755
Isol. from the sponges *Desmapsamma anchorata* and *Mycale microsigmatosa*.

5-(15*Z*-Pentacosenyl)-1*H*-pyrrole-2-carboxaldehyde [233744-72-4]
$C_{30}H_{53}NO$ 443.755
Isol. from the sponges *Desmapsamma anchorata* and *Mycale microsigmatosa*.

5-(16*Z*-Pentacosenyl)-1*H*-pyrrole-2-carboxaldehyde
Mycalazal 12
[705973-36-0]
$C_{30}H_{53}NO$ 443.755
Isol. from the sponge *Mycale cecilia*.

5-(18*Z*-Pentacosenyl)-1*H*-pyrrole-2-carboxaldehyde
Mycalazal 13
[705973-38-2]
$C_{30}H_{53}NO$ 443.755
Isol. form the sponge *Mycale cecilia*.

5-(16*Z*,19*Z*-Pentacosadienyl)-1*H*-pyrrole-2-carboxaldehyde
Mycalazal 11
[705973-35-9]
Isol. from the sponge *Mycale cecilia*. Oil. λ_{max} 202 (ϵ 6040); 248 (ϵ 1800); 301 (ϵ 7630) (MeOH).

5-(16*Z*,19*Z*,22*Z*-Pentacosatrienyl)-1*H*-pyrrole-2-carboxaldehyde
Mycalazal 10
[705973-28-0]
Isol. from the sponge *Mycale cecilia*. Oil. λ_{max} 204 (ϵ 11920); 248 (ϵ 3690); 300 (ϵ 16900) (MeOH).

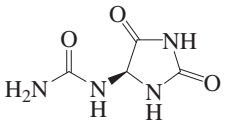
5-(10*Z*,13*Z*,16*Z*,19*Z*,22*Z*-Pentacosapentaenyl)-1*H*-pyrrole-2-carboxaldehyde, 9CI
Mycalazal 2
[185389-83-7]
$C_{30}H_{45}NO$ 435.692
Metab. from *Mycale micracanthoxea*. Cytotoxic agent. Oil.

5-(7*Z*,10*Z*,13*Z*,16*Z*,19*Z*,22*Z*-Pentacosahexaenyl)-1*H*-pyrrole-2-carboxaldehyde
Mycalazal 1
[185389-71-3]
Metab. of the sponge *Mycale micracanthoxea*. Oil.

Stierle, D.B. *et al., J.O.C.*, 1980, **45**, 4980 (*isol, uv, ir, pmr, cmr, ms, struct*)
Bowden, B.F. *et al., Aust. J. Chem.*, 1984, **37**, 227 (*isol, uv, ir, pmr, cmr, ms, struct, synth*)
Ortega, M.J. *et al., Tetrahedron*, 1997, **53**, 331-340; 2004, **60**, 2517-2524 (*Mycalazals 1-13*)
Compagnone, R.S. *et al., Nat. Prod. Lett.*, 1999, **13**, 203-211 (*alkenyls, branched-chain alkyls*)
Reddy, G.B.S. *et al., Bioorg. Med. Chem.*, 2000, **8**, 27-36 (*octadecyl*)
Venkatesham, U. *et al., J. Nat. Prod.*, 2000, **63**, 1318-1320 (*6-pentadecenyl*)
Hansen, T.V. *et al., Tet. Lett.*, 2004, **45**, 2809-2811 (*Mycalazal 2, synth*)

Allantoin, BAN, USAN A-625

(2,5-Dioxo-4-imidazolidinyl)urea, 9CI. 5-Ureido-2,4-imidazolidinedione. Glyoxylic diureide. 5-Ureidohydantoin. Dermalex. Cordianin. Actinac. Alphosyl



(*R*)-*form*

$C_4H_6N_4O_3$ 158.116

(±)-*form* [5377-33-3]
Occurs in allantoic fluid. A product of purine metabolism. V. widely distributed in biol. systems, isol. from numerous plants. Isol. from Bambusa oldhamii (green tomato), *Allophylus edulis* var *edulis*, *Allophylus edulis* var *gracilis*, *Strychnos cathayensis*, roots of *Pyrostegia venusta*, marine sponges *Cymbastela cantharella* and *Tedania digitala*, and cows milk. Formed in animals, except primates, by enzymic oxidn. of Uric acid, U-45. Antiinflammatory, antipsoriatic (disputed), topical vulnerary agent. Promotes wound healing. Monoclinic prisms (H_2O). V. spar. sol. H_2O; spar. sol. org. solvs. Mp 238-240° dec. Log P -1.54 (calc). Component of numerous prepns. Actinac, Alphosyl, Dermalex.

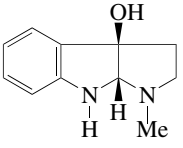
▶ YT1600000

[97-59-6 ((±)-*form*), 61504-48-1]

Org. Synth., Coll. Vol., 2, 1943, 21-23 (*synth, bibl*)
Karrer, W. *et al., Konstitution und Vorkommen der Organischen Pflanzenstoffe*, 2nd edn., Birkhäuser Verlag, 1972, no. 2569 (*occur*)
Mecca, S.B. *et al., Soap, Perfum. Cosmet.*, 1976, **49**, 434; 481; 483-485 (*rev*)
Coxon, B. *et al., J.O.C.*, 1977, **42**, 3132-3140 (*cmr*)
Mecca, S.B. *et al., Cosmet. Toiletries*, 1978, **93**, 39-41 (*rev*)
Cook, A.F. *et al., J.O.C.*, 1980, **45**, 4020-4025 (*isol*)
Chen, K.J. *et al., Taiwan Kexue*, 1989, **42**, 21-24; *CA*, **113**, 55816 (*(±)-form, isol*)
Hoffmann-Bohm, K. *et al., Planta Med.*, 1992, **58**, 544-548 (*(±)-form, isol*)
Mourabit, A.A. *et al., J. Nat. Prod.*, 1997, **60**, 290-291 (*(±)-form, isol*)
Shingfield, K.J. *et al., J. Chromatogr., B*, 1998, **706**, 342-346 (*hplc*)
Ferreira, D.T. *et al., Quim. Nova*, 2000, **23**, 42-46 (*isol*)

Alline A-626

2,3,8,8a-Tetrahydro-1-methylpyrrolo[2,3-b]indol-3a(1H)-ol, 9CI
[101053-34-3]



Relative Configuration

$C_{11}H_{14}N_2O$ 190.244
Alkaloid from Chinese chives (*Allium odorum*) and several other *Allium* spp. Mp 91-92°. $[\alpha]_D$ +136.3 (c, 1.218 in HCl). λ_{max} 245 (log ϵ 3.68); 303 (log ϵ 3.14) (no solvent reported).

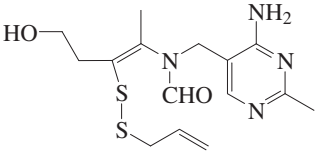
Hydrochloride: Mp 196-197°.

Me ether, N^8*-Me: 2,3,8,8a-Tetrahydro-3a-methoxy-1,8-dimethylpyrrolo[2,3-b]indole.* ***Alkaloid CPC 1****. CPC 1*
$C_{13}H_{18}N_2O$ 218.298
Alkaloid from *Chimonanthus praecox* f. *concolor*. Amorph. solid. $[\alpha]_D^{26}$ -88 (c, 0.1 in MeOH). (3*aR*,8*aR*)-config. determined. λ_{max} 205 (log ϵ 4.15); 251 (log ϵ 3.72); 301 (log ϵ 3.14) (MeOH).

Tashkhodzhaev, B. *et al., Khim. Prir. Soedin.*, 1985, **21**, 687-691; *Chem. Nat. Compd. (Engl. Transl.)*, 1985, **21**, 645-649 (*isol, cryst struct, uv*)
Samikov, K. *et al., Khim. Prir. Soedin.*, 1986, **22**, 383; *Chem. Nat. Compd. (Engl. Transl.)*, 1986, **22**, 362 (*occur*)
Antsupova, T.P. *et al., Rastit. Resur.*, 1987, **23**, 436; *CA*, **107**, 214830x (*occur*)
Kitajima, M. *et al., Tet. Lett.*, 2006, **47**, 3199-3202 (*CPC1*)

Allithiamine A-627

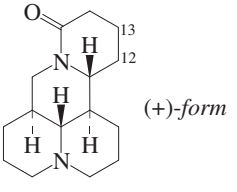
N-*[(4-Amino-2-methyl-5-pyrimidinyl)-methyl]*-N-*[4-hydroxy-1-methyl-2-(2-propenyldithio)-1-butenyl]formamide, 9CI*
[554-44-9]



$C_{15}H_{22}N_4O_2S_2$ 354.496
Naturally-occurring open-chain thiamine analogue. Obt. from garlic (*Allium sativum*). Imparts meaty flavour to foods. Has vitamin B_1 activity. Investigated as a dietary supplement to enhance muscle performance and as treatment for thiamine deficiency. Cryst. (C_6H_6). Mp 132-133° dec.

Matsukawa, T. *et al., Science (Washington, D.C.)*, 1953, **118**, 325 (*isol, struct*)
Matsukawa, T. *et al., CA*, 1955, **49**, 7572g (*synth*)
Baker, H. *et al., J. Nutr. Sci. Vitaminol.*, Suppl., 1976, **22**, 63-68 (*pharmacol*)
Doyle, M.R. *et al., Int. J. Sport Nutr.*, 1997, **7**, 39-47 (*use*)

Allomatrine A-628



(+)-*form*

$C_{15}H_{24}N_2O$ 248.367
Stereoisomer of Matrine, M-121, Isomatrine, I-244, Sophoridine, S-380 and Darvasamine, D-79.

(+)-*form* [641-39-4]
Obt. by isomerisation of Matrine, M-121. Mp 103-105°. $[\alpha]_D^{25}$ +77.9. Incorr. stated by Ibragimov *et al* (1979) to have been isol. by Ueno *et al* from *Sophora flavescens*. This was Isomatrine.

Methiodide: Dec. at 315°.

Picrate: Mp 177°.

(-)-*form*
***Leontine*†**. *Isoleontine*
[6783-60-4]
Alkaloid from *Leontice eversmannii* and *Leontice darvasica* (Leonticaceae). Mp 107-108°. Bp_3 175-190°. $[\alpha]_D$ -78.2 (EtOH). The original isolate of Leontine from *L. eversmannii* (Yunusov, 1949) was opt. inactive. It may have been the (±)-form, or a different alkaloid. Platonova *et al* (1953) isolated the (-)-form, which they called Isoleontine, but later workers used the name Leontine for the (-)-form.

Perchlorate: Mp 252°.

Methiodide: Mp 297°.

13-Oxo: ***Leontalbamine***
$C_{15}H_{22}N_2O_2$ 262.351
Alkaloid from *Leontice alberti*. Mp 195°. $[\alpha]_D$ -93. Struct. dubious. Given in the ref. as the unlikely 12,13-didehydro, 13-hydroxy enol tautomer. However struct. and MF do not agree in ref. CAS no. not found 8-14 CI. λ_{max} 220 (log ϵ 3.4) (no solvent reported).

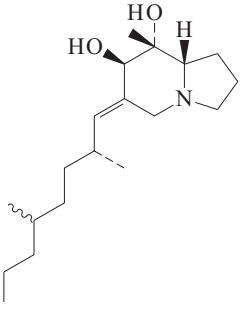
(±)-*form*
Mp 85-87°.

Hydrochloride: Mp 215-217°.

Platonova, T.F. *et al., J. Gen. Chem. USSR (Engl. Transl.)*, 1953, **23**, 921-926 (*Leontine*)
Bohlmann, F. *et al., Chem. Ber.*, 1958, **91**, 2176-2189 (*ir*)
Rulko, F. *et al., J. Gen. Chem. USSR (Engl. Transl.)*, 1961, **31**, 282-285 (*Leontine*)
Mandell, L. *et al., J.A.C.S.*, 1965, **87**, 5234-5236 (*synth*)
Vul'fson, N.S. *et al., Khim. Geterotsikl. Soedin.*, 1974, 251-260; *Chem. Heterocycl. Compd. (Engl. Transl.)*, 1974, **10**, 221-229 (*ir*)
Bohlmann, F. *et al., Chem. Ber.*, 1975, **108**, 1043-1051 (*cmr*)
Ibragimov, B.T. *et al., Khim. Prir. Soedin.*, 1979, **15**, 416-417; *Chem. Nat. Compd. (Engl. Transl.)*, 368-369 (*cryst struct*)
Ibragimov, B.T. *et al., Khim. Prir. Soedin.*, 1982, **18**, 71-75; *Chem. Nat. Compd. (Engl. Transl.)*, 66-69 (*rev, stereochem*)
Shakirov, R. *et al., Khim. Prir. Soedin.*, 1996, **32**, 615-681; *Chem. Nat. Compd. (Engl. Transl.)*, 1996, **32**, 596-675 (*Leontalbamine*)

Allopumiliotoxin 309D A-629

6-(2,5-Dimethyloctylidene)octahydro-8-methyl-7,8-indolizinediol, 9CI
[141643-33-6]

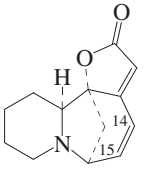


$C_{19}H_{35}NO_2$ 309.491
Alkaloid from skin extracts of the Panamanian poison frog *Dendrobates pumilio*.

Tokuyama, T. *et al., Tetrahedron*, 1991, **47**, 5415 (*isol, cmr, ms, struct*)

Allosecurinine A-630

Phyllochrysine. 2-Episecurinine. Viroallosecurinine



(-)-*form*

$C_{13}H_{15}NO_2$ 217.267
Viroallosecurinine is the (+)-enantiomer.

(-)-*form* [884-68-4]
Alkaloid from the leaves and roots of *Securinega suffruticosa*. Minor alkaloid from the roots of *Phyllanthus discoides*. Also isol. from bark and roots of *Margaritaria indica* (Euphorbiaceae). Yellow needles (Et_2O). Mp 136-138° (128°). $[\alpha]_D^{26}$ -1082 (EtOH). $[\alpha]_D$ -1140 ($CHCl_3$).

Hydrochloride:
Cubes (EtOH). Mp 248° dec. $[\alpha]_D^{30}$ -335 (EtOH).

Picrate:
Yellow needles (EtOH). Mp 231-232° dec.

14,15-Dihydro:
Needles (petrol). Mp 91°.

14,15-Dihydro, 15β-hydroxy: ***14,15-Dihydroallosecurinine-15-ol***
[119817-92-4]
$C_{13}H_{17}NO_3$ 235.282
Alkaloid from the leaves of *Phyllanthus discoides* (Euphorbiaceae). Orange-yellow cryst. (1-propanol). Mp 157-158°. $[\alpha]_D^{25}$ -96 (c, 0.48 in EtOH).

14,15-Dihydro, 15α-methoxy: ***14,15-Dihydro-15-methoxyphyllochrysine****. 15-Methoxy-14,15-dihydrophyllochrysine*
[128855-48-1]
$C_{14}H_{19}NO_3$ 249.309
Alkaloid from bark and roots of *Margaritaria indica* (Euphorbiaceae). Needles (petrol). Mp 141°. $[\alpha]_D$ +71 (c, 0.6 in MeOH).

14,15-Dihydro, 15α-methoxy, hydrobromide:
Plates (MeOH/Me_2CO). Mp 182-183°.

(+)-*form* [1857-30-3]
Alkaloid from the leaves of *Securinega virosa* (Euphorbiaceae). Yellow prisms (Me_2CO). Mp 136-138°. $[\alpha]_D^{20}$ +1084.6 (c, 0.05 in EtOH).

14,15-Dihydro, 15β-ethoxy: ***15β-Ethoxy-14,15-dihydroviroallosecurinine***
[936951-59-6]
$C_{15}H_{21}NO_3$ 263.336
Alkaloid from *Securinega suffruticosa*.

Parello, J. *et al., Bull. Soc. Chim. Fr.*, 1963, 898-910 (*uv, ir, pmr*)
Nakano, T. *et al., J.O.C.*, 1963, **28**, 2619-2621; 1964, **29**, 3441-3443 (*uv, ord, cd, conformn, abs config*)
Saito, S. *et al., Chem. Ind. (London)*, 1964, 1263-1264 (*struct, Viroallosecurinine*)
Bevan, C.W.L. *et al., Chem. Ind. (London)*, 1964, 2054 (*isol*)
Chatterjee, A. *et al., J. Indian Chem. Soc.*, 1964, **41**, 163-172 (*isol, ir, pmr, struct*)
Saito, S. *et al., Yakugaku Zasshi*, 1964, **84**, 1126; *CA*, **62**, 5498d (*isol, Viroallosecurinine*)
Mukherjee, R. *et al., Indian J. Chem.*, 1966, **4**, 459 (*isol, uv*)
Horii, Z. *et al., Chem. Pharm. Bull.*, 1970, **18**, 2009-2012 (*synth*)
Sankawa, U. *et al., Tet. Lett.*, 1974, 1867-1868 (*biosynth*)
Beutler, J.A. *et al., J. Nat. Prod.*, 1984, **47**, 677-681 (*cmr*)
Mensah, J.L. *et al., J. Nat. Prod.*, 1988, **51**, 1113-1115 (*14,15-Dihydroallosecurinine-15β-ol*)
Arbain, D. *et al., Aust. J. Chem.*, 1990, **43**, 439-445 (*15α-Methoxy-14,15-dihydrophyllochrysine, cryst struct, abs config*)
Honda, T. *et al., Tet. Lett.*, 2004, **45**, 5211-5213 (*synth*)
Wang, Y. *et al., Zhongguo Tianran Yaowu*, 2006, **4**, 260-263; *CA*, **146**, 518050b (*Ethoxydihydroviroallosecurinine*)
Yuan, W. *et al., Nat. Prod. Res.*, 2007, **21**, 234-242 (*isol, pmr, cmr*)
Bardaji, G.G. *et al., J.O.C.*, 2008, **73**, 7657-7662 (*synth*)

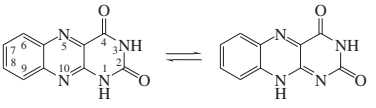
Allothiobinupharidine A-631

Struct. unknown
$C_{30}H_{42}N_2O_2S$ 494.74
Nuphar alkaloid. Alkaloid from the rhizomes of *Nuphar luteum* (Nymphaeaceae). Plates (as diperchlorate). Mp 320-325° (diperchlorate).

Achmatowicz, O. *et al., Pol. J. Chem. (Rocz. Chem.)*, 1962, **36**, 1815-1825 (*isol*)

Alloxazine A-632

Benzo[g]pteridine-2,4(1H,3H)-dione, 9CI. 6,7-Benzolumazine
[490-59-5]



$C_{10}H_6N_4O_2$ 214.183
Parent compd. exists in 1*H*,3*H*-form. In the older lit., posns. 5,6,7,8,9,10 are often numbered 10,5,6,7,8,9 respectively. Greyish-green powder. V. spar. sol. EtOH; insol. H_2O, Et_2O. Mp 300° dec. The original synthesis of alloxazine (Kühling, 1891) prob. gave a material containing little of the desired product.

(3*H*,10*H*)-*form*
Benzo[g]pteridine-2,4(3H,10H)-dione. Isoalloxazine. Flavin
Parent residue present in Riboflavine. Many substd. derivs. synthesised. Same CAS no. as Alloxazine.

3,10-Di-Me: [4074-59-3]
$C_{12}H_{10}N_4O_2$ 242.237
Orange-yellow needles (AcOH). Mp 320-325° dec. Bitter taste.

10-Ph: [6851-14-5]
$C_{16}H_{10}N_4O_2$ 290.281
Orange-yellow prisms (AcOH). V. spar. sol. H_2O. Tasteless.

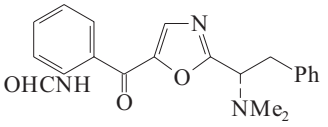
10-Ph, 3-Me: [35804-39-8]
$C_{17}H_{12}N_4O_2$ 304.307
Orange-yellow cryst. (AcOH). Stable on heating to at least 360°. Tasteless.

10-Benzyl: [21708-43-0]
$C_{17}H_{12}N_4O_2$ 304.307
Mp 273-276°.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 894C (*ir*)

Kuhn, R. *et al., Ber.*, 1934, **67**, 1459; 1935, **68**, 1282 (*Isoalloxazine derivs*)
Tishler, M. *et al., J.A.C.S.*, 1945, **67**, 2165 (*synth*)
Lambooy, J.P. *et al., Heterocycl. Compd.*, (ed. Elderfield, R.C.) Wiley, New York, 1967, **9**, 118 (*rev*)
Szymusiak, H. *et al., J.C.S. Perkin 2*, 1990, 229 (*struct, props*)
Villemin, D. *et al., Synth. Commun.*, 1995, **25**, 2315 (*synth*)
Kaupp, G. *et al., Eur. J. Org. Chem.*, 2002, 1368-1373 (*synth, ir, pmr, cmr*)
Chattopadhyay, P. *et al., Synth. Commun.*, 2006, **36**, 1857-1861 (*10-benzyl*)

Almazole A A-633



$C_{21}H_{21}N_3O_3$ 363.415

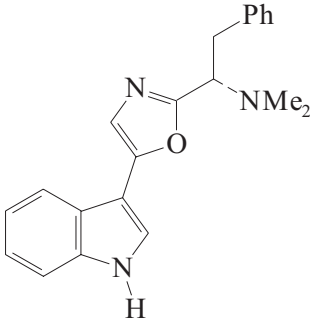
(*S*)-*form* [157382-33-7]
Alkaloid from the red alga *Haraldiophyllum* sp. Semisolid. $[\alpha]_D^{20}$ +103 (c, 0.155 in MeOH). λ_{max} 204 (ϵ 36700); 237 (ϵ 26400); 278 (ϵ 18200); 320 (ϵ 6000) (MeOH) (Derep).

Deformyl: ***Almazole B***
[157382-34-8]
$C_{20}H_{21}N_3O_2$ 335.405
Alkaloid from *Haraldiophyllum* sp. Yellow semisolid. $[\alpha]_D^{20}$ +92 (c, 0.05 in MeOH). λ_{max} 203 (ϵ 40300); 234 (ϵ 22600); 260 (ϵ 16500); 396 (ϵ 6300) (MeOH) (Derep).

N'Diaye, I. *et al., Tet. Lett.*, 1994, **35**, 4827-4830 (*isol, uv, cd, pmr, cmr, ms*)
Khalafy, J. *et al., Aust. J. Chem.*, 1999, **52**, 31-36 (*synth*)

Almazole C A-634

[161068-69-5]

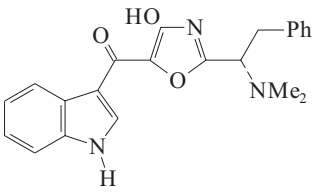


$C_{21}H_{21}N_3O$ 331.416
Alkaloid from the red alga *Haraldiophyllum* sp. CNS active. $[\alpha]_D^{20}$ +168 (c, 1.08 in MeOH). λ_{max} 222 (ϵ 26000); 271 (ϵ 15100); 282 (ϵ 14500); 300 (ϵ 12900) (MeOH) (Berdy).

Guella, G. *et al., Helv. Chim. Acta*, 1994, **77**, 1999-2006 (*isol, synth, cd, uv, pmr, cmr, ms*)

Almazole D A-635

[176739-66-5]



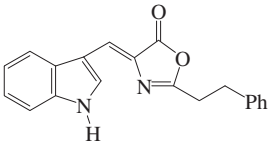
$C_{22}H_{21}N_3O_3$ 375.426
Alkaloid from the red alga *Haraldiophyllum* sp. Shows antifungal activity. Powder. $[\alpha]_D^{20}$ +20 (c, 0.07 in MeOH).

Me ether:
Powder. $[\alpha]_D^{20}$ +70 (c, 0.1 in MeOH).

N'Diaye, I. *et al., Tet. Lett.*, 1996, **37**, 3049-3050 (*isol, uv, pmr, cmr, ms*)

Almazolone A-636

[878143-16-9]
[878143-15-8 (*Z*-form), 878143-13-6 (*E*–form)]



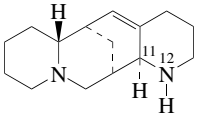
(*Z*)-*form*

$C_{20}H_{16}N_2O_2$ 316.359
Isol. from the red alga *Haraldiophyllum* sp. Yellow powder. Mp 245-247°. Isol. as an 80:20 mixt. of (*Z*/*E*)-isomers to which data refers.

Guella, G. *et al., Tetrahedron*, 2006, **62**, 1165-1170 (*isol, synth, pmr, cmr, ms*)

Aloperine A-637

16,17-Didehydro-9-de-2-piperidinylormosanine, 9CI. Allopterin
[56293-29-9]



Absolute Configuration

$C_{15}H_{24}N_2$ 232.368
Alkaloid from seeds and green parts of *Sophora alopecuroides* (Fabaceae). Large prisms (petrol). Mp 73-75° (70-71°). $[\alpha]_D^{20}$ +82.1 (c, 0.85 in EtOH). Incorr. stereochem. assigned in CA (1997).

▶ RM2979500

Hydrochloride: Mp 208°.

Hydrochloride (1:2): Mp 265°.

N-*Benzoyl:*
Cryst. (Et_2O). Mp 161-162°.

N-*Me:* **N-*Methylaloperine***
[63128-33-6]
$C_{16}H_{26}N_2$ 246.395
Alkaloid from *Sophora alopecuroides* (Fabaceae). Mp 94-95°. $[\alpha]_D$ +140 (EtOH).

N-*(2-Propenyl):* **N-*Allylaloperine***
[56595-96-1]
$C_{18}H_{28}N_2$ 272.433
Alkaloid from *Sophora alopecuroides* (Fabaceae). Oil. Mp 235-237° (as hydrobromide)(synthetic).

11,12-Didehydro: ***11,12-Didehydroaloperine***
[142808-31-9]
$C_{15}H_{22}N_2$ 230.352
Alkaloid from leaves and stalks of *Sophora alopecuroides* (Fabaceae).

5,6,11,12,13,14,15,16-Octadehydro: ***5,6,11,12,13,14,15,16-Octadehydroaloperine***
$C_{15}H_{16}N_2$ 224.305
Alkaloid from *Sophora alopecuroides*. Oil. Unpublished data (1999).

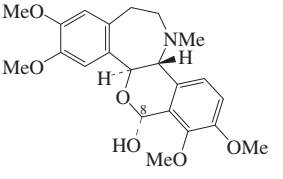
Stereoisomer(1)(?): **Sophora alopecuroides *Alkaloid A₁***. Sophora alopecuroides *Base A₁*
$C_{15}H_{24}N_2$ 232.368
Alkaloid from *Sophora alopecuroides* (Fabaceae). Cryst. (Me_2CO). Mp 92°. $[\alpha]_D$ +195.5 (MeOH).

Stereoisomer(2)(?): **Sophora alopecuroides *Alkaloid A₂***. Sophora alopecuroides *Base A₂*
$C_{15}H_{24}N_2$ 232.368
Alkaloid from *Sophora alopecuroides* (Fabaceae). Cryst. (petrol). Mp 206-208°. $[\alpha]_D$ +25.5 ($CHCl_3$). Possibly the 11-epimer of Aloperine, since it gave the same salts but a different *N*-Me deriv.

Orechoff, A. *et al., Ber.*, 1935, **68**, 431 (*isol*)
Aslanov, Kh.A. *et al., CA*, 1965, **63**, 2050h (*stereoisomers*)
Tolkachev, O.N. *et al., Khim. Prir. Soedin.*, 1975, **11**, 30; *Chem. Nat. Compd. (Engl. Transl.)*, 1975, **11**, 29 (*ms, pmr, struct*)
Kuchkarov, S. *et al., Khim. Prir. Soedin.*, 1979, **15**, 413; *Chem. Nat. Compd. (Engl. Transl.)*, 1979, **15**, 364 (*isol*)
Wang, Z. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 1991, **33**, 727; *CA*, **117**, 86697b (*11,12-Didehydroaloperine*)
Brosius, A.D. *et al., Acta Cryst. C*, 1997, **53**, 1510-1512 (*cryst struct, abs config*)
Brosius, A.D. *et al., J.O.C.*, 1997, **62**, 440 (*abs config, synth*)
Brosius, A.D. *et al., J.A.C.S.*, 1999, **121**, 700-709 (*synth*)
Passarella, D. *et al., Org. Lett.*, 2002, **4**, 2925-2928 (*synth*)

Alpinigenine A-638

2,3,10,11-Tetramethoxy-16-methylrheadan-8-ol, 9CI. Alkaloid E†



(+)-*form*

$C_{22}H_{27}NO_6$ 401.458

Biogenetic numbering shown. Other systems also used.

(+)-*form* [14028-91-2]
Alkaloid from *Papaver alpinum* various ssp., *Papaver bracteatum, Papaver fugax* (= *Papaver aucasicum*), *Papaver orientale*

and *Papaver pseudo-orientale* (Papaveraceae). Prismatic cryst. (C_6H_6/MeOH or EtOAc). Mp 193-195° (186.5-187.5°). $[\alpha]_D^{22}$ +286 (c, 0.63 in MeOH). $[\alpha]_D^{22}$ +306 (c, 1.08 in MeOH).

Hydrochloride: Mp 161-163° dec. $[\alpha]_D^{18}$ +210 (c, 0.796 in MeOH).

Me ether: ***Epialpinine***. O-*Methylalpinigenine*
[15210-99-8]
$C_{23}H_{29}NO_6$ 415.485
Alkaloid from *Papaver alpinum*, various ssp. (Papaveraceae). Cryst. (MeOH aq.). Mp 105-106° Mp 122-123°. $[\alpha]_D^{18}$ +302 (c, 0.511 in MeOH).

Et ether: **O-*Ethylalpinigenine***
$C_{24}H_{31}NO_6$ 429.512
Isol. from *Papaver fugax* (Papaveraceae). Prob. an artifact.

8-Epimer, Me ether: ***Alpinine***†. N-*Methylpapaverrubine G*
[14028-90-1]
$C_{23}H_{29}NO_6$ 415.485
Alkaloid from *Papaver alpinum*, various ssp., *Papaver bracteatum* and *Papaver pseudo-orientale* (Papaveraceae). Noncryst. $[\alpha]_D^{22}$ +288 (c, 0.82 in $CHCl_3$).

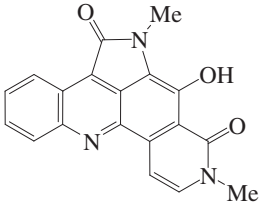
8-Epimer, Me ether, N-*de-Me:* ***Papaverrubine G.*** N-*Demethylalpinine*
[17597-20-5]
$C_{22}H_{27}NO_6$ 401.458
Alkaloid from *Papaver alpinum*, various ssp., and *Papaver anomalum* (*Papaver nudicaule* ssp. *amurense*) (Papaveraceae). $[\alpha]_D$ +397 (c, 0.12 in MeOH). Indefinite Mp.

(±)-*form* [40170-39-6]
Synthetic. Needles (EtOAc). Mp 172-173° (168-169°).

Maturová, M. *et al., Coll. Czech. Chem. Comm.*, 1967, **32**, 419 (*ir, pmr, ms, struct*)
Pfeifer, S. *et al., Pharmazie*, 1967, **22**, 343; 1968, **23**, 585; 1972, **27**, 48 (*Papaverrubine G*)
Dolejš, L. *et al., Tetrahedron*, 1967, **23**, 2997 (*ms*)
Irie, H. *et al., J.C.S. Perkin 1*, 1972, 2986 (*synth*)
Rönsch, H. *et al., Helv. Chim. Acta*, 1977, **60**, 2402 (*Epialpinine*)
Meshulam, H. *et al., Phytochemistry*, 1980, **19**, 2633 (*isol*)
Lavie, D. *et al., J.C.S. Perkin 1*, 1981, 1019 (*isol, cmr, cryst struct, abs config*)
Prabhaker, S. *et al., J.C.S. Perkin 1*, 1981, 1273 (*synth*)
Phillipson, J.D. *et al., Planta Med.*, 1981, **43**, 105; 261 (*O-Ethylalpinigenine*)
Hanaoka, M. *et al., Chem. Pharm. Bull.*, 1985, **33**, 2273 (*synth*)

Alpkinidine A-639

[486992-29-4]

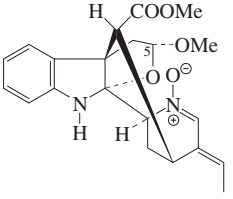


$C_{19}H_{13}N_3O_3$ 331.33
Alkaloid from *Xestospongia* cf. *carbonaria*. Purple solid.

Thale, Z. *et al., J.O.C.*, 2002, **67**, 9384-9391 (*isol, pmr, cmr, cryst struct*)

Alschomine A-640

[123045-72-7]



Absolute Configuration

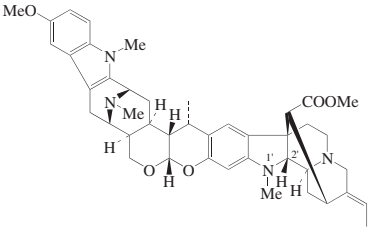
$C_{21}H_{24}N_2O_5$ 384.431
Alkaloid from the leaves of *Alstonia scholaris* (Apocynaceae). Prisms (MeOH). Mp 233-240° dec. $[\alpha]_D^{27}$ +116.1 (c, 0.25 in MeOH).

5-Epimer: ***Isoalschomine***
[123062-73-7]
$C_{21}H_{24}N_2O_5$ 384.431
Alkaloid from leaves of *Alstonia scholaris* (Apocynaceae). Prisms (MeOH). Mp 220-230° dec. $[\alpha]_D^{27}$ +112.3 (c, 0.14 in MeOH).

Abe, F. *et al., Chem. Pharm. Bull.*, 1989, **37**, 887 (*isol, uv, pmr, cmr, cryst struct*)

Alstocraline A-641

[120416-01-5]



Absolute Configuration

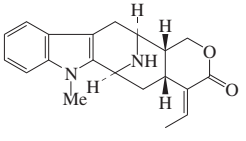
$C_{43}H_{52}N_4O_5$ 704.908
Alkaloid from the leaves of *Alstonia angustifolia* (Apocynaceae). $[\alpha]_D$ +3 (c, 0.7 in MeOH). λ_{max} 227 (log ϵ 4.02); 282 (log ϵ 4.45); 295 (sh) (log ϵ 4.44) (MeOH).

1′-N-*De-Me, 1′,2′-didehydro:* ***Foliacraline***
[120374-18-7]
$C_{42}H_{48}N_4O_5$ 688.865
Alkaloid from the leaves of *Alstonia angustifolia* (Apocynaceae). $[\alpha]_D$ +55 (c, 0.3 in $CHCl_3$). λ_{max} 220 ; 228 ; 289 ; 302 (sh) (MeOH).

Ghedira, K. *et al., Phytochemistry*, 1988, **27**, 3955-3962 (*isol, uv, ir, pmr, cmr, ms, struct*)

Alstolactone A-642

[701950-29-0]



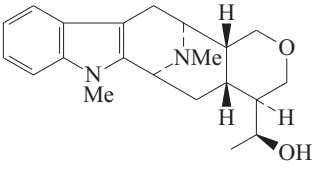
Absolute Configuration

$C_{20}H_{22}N_2O_2$ 322.406
Alkaloid from the leaves of *Alstonia angustifolia* var. *latifolia*. Light yellow oil. $[\alpha]_D$ -10 (c, 0.05 in $CHCl_3$). λ_{max} 216 (log ϵ 4.23); 228 (log ϵ 4.3); 284 (log ϵ 3.76); 293 (log ϵ 3.71) (EtOH).

Kam, T.-S. *et al., Phytochemistry*, 2004, **65**, 603-608 (*isol, pmr, cmr*)

Alstomacroine A-643

[160866-97-7]

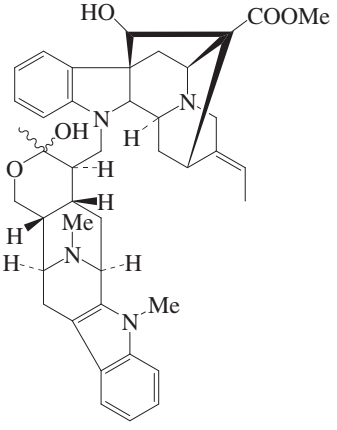


$C_{21}H_{28}N_2O_2$ 340.464
Alkaloid from the leaves of *Alstonia macrophylla*. $[\alpha]_D$ +2.6 (c. 0.02 in $CHCl_3$). λ_{max} 230 (log ϵ 4.6); 285 (log ϵ 4.5) (MeOH).

Atta-ur-Rahman, *et al., Nat. Prod. Lett.*, 1994, **5**, 201-209 (*isol, pmr, cmr, ms*)

Alstomacroline A-644

[199800-14-1]

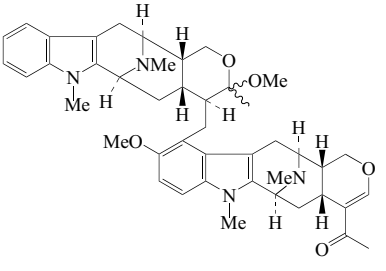


$C_{42}H_{50}N_4O_5$ 690.881
Alkaloid from the root bark of *Alstonia macrophylla*. Amorph. powder. $[\alpha]_D^{20}$ +54.6 (c, 0.4 in $CHCl_3$). λ_{max} 232 (log ϵ 4.44); 251 (log ϵ 3.88); 293 (log ϵ 3.78) (MeOH).

Keawpradub, N. *et al., Phytochemistry*, 1997, **46**, 757-762 (*isol, uv, ir, pmr, cmr, ms*)

Alstomacrophylline A-645

[199800-12-9]

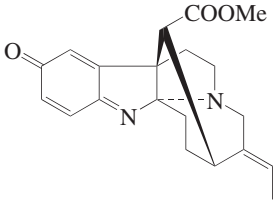


$C_{44}H_{54}N_4O_5$ 718.934
Alkaloid from the root bark of *Alstonia macrophylla* (Apocynaceae). Amorph. powder. $[\alpha]_D^{20}$ +42.8 (c, 0.09 in MeOH). λ_{max} 232 (log ϵ 4.27); 260 (log ϵ 3.67); 292 (log ϵ 3.51) (MeOH).

Keawpradub, N. *et al., Phytochemistry*, 1997, **46**, 757-762 (*isol, uv, ir, pmr, cmr, ms*)

Alstomaline A-646

[685508-21-8]

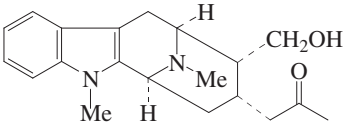


$C_{20}H_{22}N_2O_3$ 338.405
Represents a new structural subtype related to the akuammiline alkaloids, which has however been found previously in a small number of dimers, e.g. Flexicorine, F-88. Alkaloid from the leaves of *Alstonia macrophylla*. Yellowish oil. $[\alpha]_D$ -244 (c, 0.04 in $CHCl_3$). λ_{max} 202 (log ϵ 3.77); 273 (log ϵ 3.85); 317 (log ϵ 3.12) (EtOH).

Kam, T.-S. *et al., J. Nat. Prod.*, 2004, **67**, 547-552 (*isol, pmr, cmr*)

Alstomicine A-647

[5594-43-4]

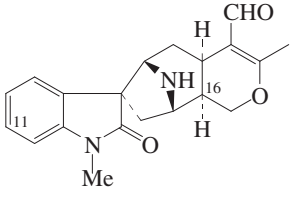


$C_{20}H_{26}N_2O_2$ 326.438
Alkaloid from the leaves of *Alstonia macrophylla*. Light yellowish oil. $[\alpha]_D$ +74 (c, 0.14 in $CHCl_3$). λ_{max} 230 (log ϵ 3.8); 289 (log ϵ 3.11) (EtOH).

Kam, T.-S. *et al., J. Nat. Prod.*, 2004, **67**, 547-552 (*isol, pmr, cmr, ms*)

Alstonal A-648

20-Deacetyl-20-formyl-17-methylalstonisine, 9CI
[172924-28-6]



$C_{20}H_{22}N_2O_3$ 338.405
Alkaloid from bark of *Alstonia macrophylla*. Needles (petrol/Me_2CO). Mp 198-199°. $[\alpha]_D$ +167 (c, 0.062 in $CHCl_3$).

N-*De-Me:* **N-*Demethylalstonal***
[301323-29-5]
$C_{19}H_{20}N_2O_3$ 324.379
Alkaloid from *Alstonia macrophylla*. Not obt. pure.

16-Hydroxy: ***16-Hydroxyalstonal***
[683239-99-8]
$C_{20}H_{22}N_2O_4$ 354.405
Alkaloid from the leaves of *Alstonia macrophylla*. Amorph. powder. $[\alpha]_D$ +153 (c, 0.26 in $CHCl_3$). λ_{max} 207 (log ϵ 4.61); 263 (log ϵ 4.35) (EtOH).

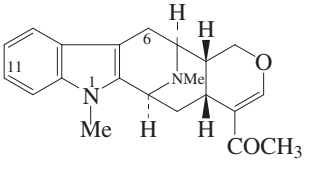
11-Methoxy: ***N^b-Demethylalstophyllal oxindole***. *11-Methoxyalstonal*
[172927-64-9]
$C_{21}H_{24}N_2O_4$ 368.432
From bark of *Alstonia macrophylla*. Needles (petrol/Me_2CO). Mp 190-191°. $[\alpha]_D$ +174 (c, 0.063 in $CHCl_3$).

11-Methoxy, 16-hydroxy: ***16-Hydroxy-11-methoxyalstonal***
[683240-00-8]
$C_{21}H_{24}N_2O_5$ 384.431
Alkaloid from the leaves of *Alstonia macrophylla*. Amorph. powder. $[\alpha]_D$ +203 (c, 0.11 in $CHCl_3$). λ_{max} 220 (log ϵ 4.54); 267 (log ϵ 4.2) (EtOH).

Wong, W.-H. *et al., Phytochemistry*, 1996, **41**, 313 (*isol, pmr, cmr, ms, struct*)
Kam, T.-S. *et al., Tetrahedron*, 2000, **56**, 6143-6150 (*N-Demethylalstonal*)
Kam, T.-S. *et al., J. Nat. Prod.*, 2004, **67**, 547-552 (*16-Hydroxyalstonal, 16-Hydroxy-11-methoxyalstonal*)

Alstonerine A-649

Alstophyllan-19-one, 9CI. Alkaloid D†
[25921-22-6]



$C_{21}H_{24}N_2O_2$ 336.433
Alkaloid from bark of *Alstonia muelleriana* (Apocynaceae). Cryst. (Et_2O). Mp 172-173°. $[\alpha]_D^{25}$ -195 (c, 0.6 in EtOH).

N^4^-*De-Me:* **N^4^-*Demethylalstonerine***
[701304-79-2]
$C_{20}H_{22}N_2O_2$ 322.406
Alkaloid from the leaves of *Alstonia angustifolia* var. *latifolia*.

11-Methoxy: ***Alstophylline***
[3382-41-0]
$C_{22}H_{26}N_2O_3$ 366.459
Alkaloid from *Alstonia macrophylla* and *Alstonia glabriflora* (Apocynaceae). Cryst. (CH_2Cl_2/hexane). Mp 155-158°. $[\alpha]_D^{26}$ -151 (c, 0.326 in MeOH).

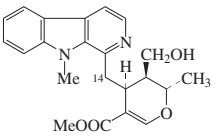
11-Methoxy, N^1^*-de-Me:* **N^1^-*Demethylalstophylline***
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from the bark of *Alstonia macrophylla*.

11-Methoxy, 6-oxo: ***6-Oxoalstophylline***
[683240-01-9]
$C_{22}H_{24}N_2O_4$ 380.443
Alkaloid from the leaves of *Alstonia macrophylla*.

Kishi, T. *et al., Helv. Chim. Acta*, 1965, **48**, 1349; 1966, **49**, 946 (*Alstonerine, Alstophylline, isol, uv, ir, pmr, struct, synth*)
Cook, J.M. *et al., Chem. Comm.*, 1969, 1306 (*uv, ir, pmr, ms, struct*)
Hart, N.K. *et al., Aust. J. Chem.*, 1972, **25**, 2739 (*Alstophylline, isol*)
Elderfield, R.C. *et al., Phytochemistry*, 1972, **11**, 339 (*isol, ir, uv*)
Garnick, R.L. *et al., J.A.C.S.*, 1978, **100**, 4213 (*synth, ms*)
Zhang, L.H. *et al., J.A.C.S.*, 1990, **112**, 4088 (*synth*)
Takayama, H. *et al., Tetrahedron*, 1991, **47**, 1383 (*synth*)
Bi, Y. *et al., J.A.C.S.*, 1994, **116**, 9027 (*synth*)
Yu, P. *et al., J.O.C.*, 2000, **65**, 3173-3191 (*synth*)
Kam, T.-S. *et al., J. Nat. Prod.*, 2004, **67**, 547-552 (*6-Oxoalstophylline*)
Kam, T.-S. *et al., Phytochemistry*, 2004, **65**, 603-608 (*N^4^-Demethylalstonerine*)
Kam, T.-S. *et al., Tetrahedron*, 2004, **60**, 3957-3966 (*N^1^-Demethylalstophylline*)
Tran, Y.S. *et al., Org. Lett.*, 2005, **7**, 4289-4291 (*synth*)
Liao, X. *et al., J.O.C.*, 2006, **71**, 8884-8890 (*synth*)
Miller, K.A. *et al., Org. Lett.*, 2007, **9**, 1113-1116 (*synth*)

Alstonidine A-650

[25394-75-6]



Relative Configuration

$C_{22}H_{24}N_2O_4$ 380.443
Alkaloid from *Alstonia constricta* (Apocynaceae). Mp 188-190°. $[\alpha]_D$ -99 (c, 1.0 in $CHCl_3$).

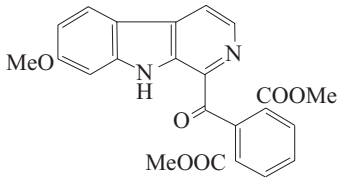
Ac:
Needles + $3H_2O$ (Me_2CO aq.). Mp 92-96°.

14-Oxo: ***14-Ketoalstonidine***
$C_{22}H_{22}N_2O_5$ 394.426
Alkaloid from stem bark of *Alstonia constricta* (Apocynaceae). Noncryst. Labile.

Boaz, H. *et al., J. Am. Pharm. Assoc.*, 1957, **46**, 510 (*isol, uv, ir, struct*)
Crow, W.D. *et al., Aust. J. Chem.*, 1970, **23**, 2489 (*isol, pmr, ms, config*)
Allam, K. *et al., J. Nat. Prod.*, 1987, **50**, 623 (*14-Ketoalstonidine*)

Alstonilidine A-651

[31185-76-9]



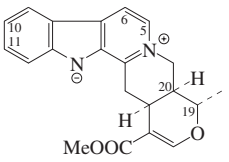
$C_{23}H_{18}N_2O_6$ 418.405
A secoyohimbane. Alkaloid from the

root bark of *Alstonia constricta* (Apocynaceae). Needles (EtOH). Mp 244-245°.

Crow, W.D. *et al., Aust. J. Chem.*, 1970, **23**, 2489 (*isol, uv, ir, pmr, ms, struct*)

Alstonine A-652

[47485-83-6]



Absolute Configuration

$C_{21}H_{20}N_2O_3$ 348.401

The early history of alkaloids called Alstonine is confused. Alkaloid from *Alstonia constricta*, *Rauwolfia obscura*, *Rauwolfia volkensii*, *Rauwolfia nitida*, *Rauwolfia serpentina*, *Catharanthus roseus*, *Strychnos camptoneura* and *Strychnos gossweileri* (Apocynaceae, Loganiaceae). Shows neoplasm-inhibiting props. Mp 205-210° dec. λ_{max} 252 ; 289 ; 309 ; 336 ; 369 (MeOH) (Berdy).

Hydrochloride: Mp 278-279° dec.

Perchlorate: Mp 239-240°. $[\alpha]_D^{20}$ +154 (Me_2CO).

10,11-Dimethoxy: ***Bleekerine***. *10,11-Dimethoxyalstonine*
[41758-43-4]
$C_{23}H_{24}N_2O_5$ 408.453
Alkaloid from the stem bark of *Bleekeria vitiensis* (preferred genus name *Ochrosia*) (Apocynaceae). Pale yellow prisms (EtOH). Mp 276-277°. $[\alpha]_{Hg}^{22.5}$ +612 (MeOH).

10,11-Dimethoxy, 5,6-dihydro: ***Ochropposine***
[38146-72-4]
$C_{23}H_{26}N_2O_5$ 410.469
Alkaloid from the bark of *Ochrosia oppositifolia* and *Ochrosia moorei* (Apocynaceae). Mp 312-314° dec. (as perchlorate). λ_{max} 222 (log ϵ 4.44); 401 (log ϵ 4.43) (no solvent reported) (perchlorate).

19-Epimer: ***19-Epialstonine***
$C_{21}H_{20}N_2O_3$ 348.401
Alkaloid from the roots of *Amphicome emodi* (preferred genus name *Incarvillea*). Cryst. Mp 245° dec.

20-Epimer: ***Serpentine***
[18786-24-8]
$C_{21}H_{20}N_2O_3$ 348.401
Alkaloid from *Rauwolfia serpentina* and many other *Rauwolfia* spp., *Strychnos camptoneura*, *Catharanthus roseus*, *Catharanthus ovalis* and *Vinca major* (Apocynaceae). Shows antitumour activity. Mp 156-157° dec. (170°). $[\alpha]_D$ +292 (MeOH). λ_{max} 251 (log ϵ 4.5); 307 (log ϵ 4.31); 368 (log ϵ 3.55) (MeOH).

20-Epimer, hydrochloride: Mp 246-248°. $[\alpha]_D^{25}$ +178 (H_2O).

19,20-Diepimer: ***19-Episerpentine***
[64753-57-7]
$C_{21}H_{20}N_2O_3$ 348.401
Alkaloid from the roots of *Rauwolfia cumminsii* (Apocynaceae). Yellow cryst. powder. Mp 240° dec.

19,20-Diepimer, 11-methoxy: ***Serpenticine***
[81149-04-4]
$C_{22}H_{22}N_2O_4$ 378.427
Alkaloid from *Rauwolfia vomitoria* (Apocynaceae). Yellow plates + $5H_2O$ ($MeOH/C_6H_6$). Mp 275-276°. λ_{max} 265 (log ϵ 4.4); 310 (log ϵ 4.2); 365 (log ϵ 3.6) (no solvent reported).

19,20-Diepimer, 11-methoxy, hydrochloride: Mp 289-290°.

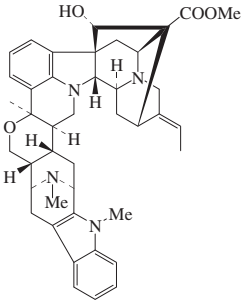
19,20-Diepimer, 11-methoxy, picrate: Mp 196-198°.

[642-18-2]

Sharp, T.M. *et al., J.C.S.*, 1934, 287-291 (*isol*)
Raymond-Hamet, *et al., C. R. Hebd. Seances Acad. Sci.*, 1948, **227**, 344-345 (*uv*)
Elderfield, R.C. *et al., J.O.C.*, 1951, **16**, 506-523 (*struct*)
Schlittler, E. *et al., Helv. Chim. Acta*, 1952, **35**, 271-276; 1954, **37**, 1912-1920 (*isol, Serpentine, uv, ir, struct*)
Bader, F.E. *et al., Helv. Chim. Acta*, 1953, **36**, 215-226 (*struct*)
Wenkert, E. *et al., J.A.C.S.*, 1957, **79**, 1519-1520; 1958, **80**, 1613-1619 (*config, synth*)
Fritz, H. *et al., Annalen*, 1962, **655**, 148-167 (*Serpentine, config, ir, uv*)
Saxton, J.E. *et al., Alkaloids (Academic Press)*, 1965, **8**, 159-202 (*bibl*)
Battersby, A.R. *et al., Chem. Comm.*, 1966, 888-890 (*biosynth*)
Peube-Locou, N. *et al., Phytochemistry*, 1972, **11**, 2109-2111 (*Ochropposine*)
Sainsbury, M. *et al., Phytochemistry*, 1972, **11**, 2337-2339 (*Bleekerine*)
Timmins, P. *et al., Phytochemistry*, 1976, **15**, 733-735 (*isol*)
Iwu, M.M. *et al., Planta Med.*, 1977, **32**, 158-161 (*19-Episerpentine*)
Malik, A. *et al., Heterocycles*, 1981, **16**, 1727-1733 (*Serpenticine*)
Ahond, A. *et al., J. Nat. Prod.*, 1981, **44**, 193-199 (*Ochropposine, isol*)
Dinda, B. *et al., Indian J. Chem., Sect. B*, 2002, **41**, 2698-2700 (*19-Epialstonine*)
Wachsmuth, O. *et al., Phytochemistry*, 2002, **61**, 705-709 (*Serpentine, isol, pmr, cmr, ms*)

Alstonisidine A-653

[36474-13-2]



Absolute Configuration

$C_{42}H_{48}N_4O_4$ 672.866

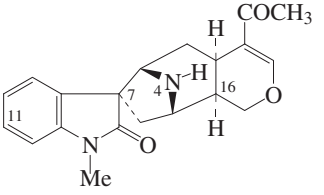
Alkaloid from the bark of *Alstonia muelleriana* (Apocynaceae). Rods (MeOH). Mp 325° dec. $[\alpha]_D$ -234 (c, 1.0 in EtOH). $[\alpha]_D$ -133 (c, 0.208 in $CHCl_3$) (natural). $[\alpha]_D$ -144 (c, 0.335 in $CHCl_3$) (synthetic).

Hydrochloride (1:2):
Cryst. (MeOH). Mp 268° (dec. *in vacuo*). $[\alpha]_D^{25}$ +137 (c, 0.6 in H_2O).

Cook, J.M. *et al., J.O.C.*, 1971, **36**, 582 (*uv, ir, pmr, ms*)
Elderfield, R.C. *et al., Phytochemistry*, 1972, **11**, 339 (*isol, uv, ir*)
Burke, D.E. *et al., J.A.C.S.*, 1973, **95**, 546 (*synth, struct*)
Hoard, L.D. *et al., Diss. Abstr. Int., B*, 1977, **38**, 2690 (*cryst struct*)

Alstonisine, 9CI A-654

Alkaloid C†
[35804-91-2]



$C_{20}H_{22}N_2O_3$ 338.405

Alkaloid from the bark of *Alstonia muelleriana* and *Alstonia macrophylla* (Apocynaceae). Cryst. (MeOH aq.). Mp 168-169°. $[\alpha]_D^{25}$ +200 (c, 1.0 in EtOH).

Hydrochloride: Mp 250-260° dec. $[\alpha]_D^{25}$ +155 (c, 1.0 in H_2O).

N^4*-Formyl:* N^4*-Formylalstonisine.* ***Alstofoline***
[301521-97-1]
$C_{21}H_{22}N_2O_4$ 366.416
Alkaloid from *Alstonia macrophylla*. $[\alpha]_D$ +39 (c, 0.21 in $CHCl_3$). λ_{max} 214 (log ϵ 4.02); 246 (log ϵ 4.01); 254 (log ϵ 4.05); 290 (log ϵ 3.13) (EtOH).

N-*De-Me:* **N-*Demethylalstonisine***
[301323-28-4]
$C_{19}H_{20}N_2O_3$ 324.379
Alkaloid from *Alstonia macropylla*.

16-Hydroxy: ***16-Hydroxyalstonisine***
[683239-98-7]
$C_{20}H_{22}N_2O_4$ 354.405
Alkaloid from the leaves of *Alstonia macrophylla*. Amorph. powder. $[\alpha]_D$ +170 (c, 0.15 in $CHCl_3$). λ_{max} 209 (log ϵ 4.17); 256 (log ϵ 3.95) (EtOH).

11-Methoxy: $\mathbf{N^b}$***-Demethylalstophylline oxindole***
[108195-73-9]
$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from leaves and bark of *Alstonia macrophylla*. Prisms (petrol/Me_2CO). Mp 205-206°. $[\alpha]_D$ +126 (c, 0.068 in $CHCl_3$).

11-Methoxy, 16-hydroxy: ***16-Hydroxy-*** $\mathbf{N^b}$***-demethylalstophylline oxindole***. *14-Hydroxy-11-methoxyalstonisine, 9CI*
[114466-39-6]
$C_{21}H_{24}N_2O_5$ 384.431
Alkaloid from leaves of *Alstonia macrophylla*. Mp 215°. $[\alpha]_D$ +104.47 (c, 0.067 in $CHCl_3$).

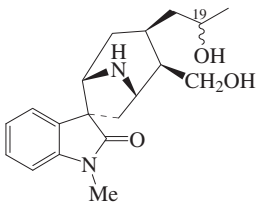
7-Epimer: ***Isoalstonisine***
[301521-98-2]
$C_{20}H_{22}N_2O_3$ 338.405
Alkaloid from *Alstonia macrophylla*. $[\alpha]_D$ +207 (c, 0.07 in $CHCl_3$). λ_{max} 210 (log ϵ 3.93); 255 (log ϵ 3.8) (EtOH).

Nordman, C.E. *et al., J.A.C.S.*, 1963, **85**, 353 (*cryst struct*)
Elderfield, R.C. *et al., Phytochemistry*, 1972, **11**, 339 (*isol, uv, ir*)

Atta-ur-Rahman, *et al., Phytochemistry*, 1987, **26**, 865 (*N^b-Demethylalstophylline oxindole*)
Atta-ur-Rahman, *et al., Heterocycles*, 1988, **27**, 725 (*16-Hydroxy-N^b-demethylalstophylline oxindole*)
Wong, W.-H. *et al., Phytochemistry*, 1996, **41**, 313 (*N^b-Demethylalstophylline oxindole*)
Kam, T.-S. *et al., Tetrahedron*, 2000, **56**, 6143-6150 (*Isoalstonisine, N-Demethylalstonisine, Alstofoline*)
Wearing, X.Z. *et al., Org. Lett.*, 2002, **4**, 4237-4240 (*synth*)
Kam, T.-S. *et al., J. Nat. Prod.*, 2004, **67**, 547-552 (*16-Hydroxyalstonisine*)

Alstonoxine B A-655

[301521-96-0]

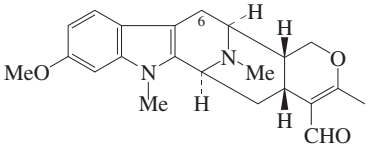


$C_{19}H_{26}N_2O_3$ 330.426
Alkaloid from *Alstonia macrophylla*. $[\alpha]_D$ -12 (c, 0.41 in $CHCl_3$). λ_{max} 213 (log ϵ 4.15); 255 (log ϵ 3.65) (EtOH).

19-Ketone: ***Alstonoxine A***
[301521-95-9]
$C_{19}H_{24}N_2O_3$ 328.41
Alkaloid from *Alstonia macrophylla*. $[\alpha]_D$ -34 (c, 0.19 in $CHCl_3$). λ_{max} 216 (log ϵ 3.89); 255 (log ϵ 3.7); 285 (log ϵ 3.18) (EtOH).
Kam, T.-S. *et al., Tetrahedron*, 2000, **56**, 6143-6150

Alstophyllal A-656

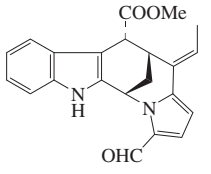
[685508-23-0]



$C_{22}H_{26}N_2O_3$ 366.459
Alkaloid from the leaves of *Alstonia macrophylla*.

6-Oxo: ***6-Oxoalstophyllal***
[683240-02-0]
$C_{22}H_{24}N_2O_4$ 380.443
Alkaloid from the leaves of *Alstonia macrophylla*.
Kam, T.-S. *et al., J. Nat. Prod.*, 2004, **67**, 547-552 (*isol, pmr, cmr*)

Alstoscholarine A-657



Absolute Configuration

(*E*)-*form*

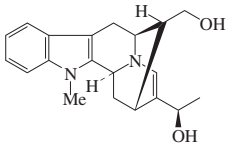
$C_{22}H_{20}N_2O_3$ 360.412

(***E*)-*form*** [937245-47-1]
Alkaloid from the leaves of *Alstonia scholaris*. Green prisms. Mp 168-170°. $[\alpha]_D^{20}$ -53 (c, 0.065 in $CHCl_3$). λ_{max} 223 ; 291 ; 300 ($CHCl_3$).

(***Z*)-*form*** [937245-48-2]
Alkaloid from the leaves of *Alstonia scholaris*. Powder. $[\alpha]_D^{25}$ -140 (c, 0.05 in $CHCl_3$). λ_{max} 220 ; 286 ; 293 ($CHCl_3$).
Cai, X.-H. *et al., Org. Lett.*, 2007, **9**, 1817-1820 (*isol, pmr, cmr, cryst struct*)

Alstoumerine A-658

[135824-73-6]

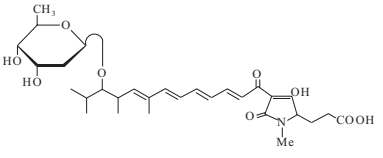


Absolute Configuration

$C_{20}H_{24}N_2O_2$ 324.422
Alkaloid from *Alstonia macrophylla* (Apocynaceae). Pale yellow cryst. Mp 170°. $[\alpha]_D$ -5.5 (c, 0.0034 in $CHCl_3$).
Atta-ur-Rahman, *et al., J. Nat. Prod.*, 1991, **54**, 750-754 (*isol, uv, ir, pmr, cmr, ms, struct*)

Altamycin A A-659

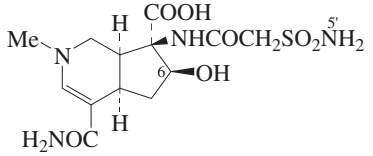
[60202-22-4]



$C_{30}H_{43}NO_9$ 561.671
Polyene-type antibiotic. Sol. MeOH, EtOH, Me_2CO, DMF, bases, AcOH, Py, butanol; poorly sol. dioxan, MeCN, $CHCl_3$, acids, H_2O, hexane. Mp 140-142°. $[\alpha]_D$ -72 (c, 0.5 in EtOH). No biol. source referred to in abstract. λ_{max} 262 (E1%/1cm 105); 343 (E1%/1cm 400); 355 (E1%/1cm 450); 375 (E1%/1cm 320) (MeOH) (Berdy).
Shenin, Yu.D. *et al., CA*, 1987, **106**, 66971f (*struct*)

Altemicidin A-660

Artemicidine
[125399-82-8]



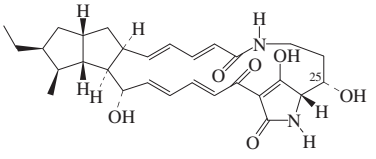
$C_{13}H_{20}N_4O_7S$ 376.39
Prod. by *Streptomyces sioyaensis*. Possesses acaricidal, miticidal and antitumour activities. Powder. Sol. H_2O; fairly sol. MeOH, EtOH; poorly sol. Me_2CO, hexane. Mp 195-199° dec. $[\alpha]_D^{27}$ -7.6 (c, 1 in H_2O). λ_{max} 305 (ϵ 11300) (0.1*M* HCl) (Derep). λ_{max} 300 (ϵ 20800) (0.1*M* NaOH) (Derep). λ_{max} 300 (ϵ 20300) (pH 6.8 phosphate buffer) (Derep).
▶ LD_{50} (mus, ivn) 0.3 mg/kg. UW8797000

*5′-*N*-(2*S*-Amino-3*S*-methylpentanoyl):* ***Antibiotic SB 203207***. *SB 203207*
$C_{19}H_{31}N_5O_8S$ 489.549
Prod. by *Streptomyces* sp. NCIMB 40513. Isoleucyl tRNA synthetase inhibitor. Powder. λ_{max} 299 (H_2O).

*5′-*N*-(2*S*-Amino-3*S*-methylpentanoyl), 6-*O*-(2*S*-amino-3*S*-phenylbutanoyl):* ***Antibiotic SB 203208***. *SB 203208*
$C_{29}H_{42}N_6O_9S$ 650.752
Prod. by *Streptomyces* sp. NCIMB 40513. Isoleucyl tRNA synthetase inhibitor. Powder. λ_{max} 297 (H_2O).
Takahashi, A. *et al., J. Antibiot.*, 1989, **42**, 1556-1561; 1562-1566 (*isol, struct*)
Takahashi, A. *et al., Tetrahedron*, 1991, **47**, 3621-3632 (*pmr, cmr*)
Kende, A.S. *et al., J.A.C.S.*, 1995, **117**, 10597-10598 (*synth*)
Stefanska, A.L. *et al., J. Antibiot.*, 2000, **53**, 357-363 (*SB 203207/8*)
Houge-Frydrych, C.S.V. *et al., J. Antibiot.*, 2000, **53**, 364-372 (*SB 203207/8*)

Alteramide A A-661

[142131-06-4]



$C_{29}H_{38}N_2O_6$ 510.629
Macrocylic lactam antibiotic. Isol. from an *Alteromonas* sp. associated with the sponge *Halichondria okadai*. Exhibits cytotoxicity against murine leukaemia P388 cells, murine lymphoma L1210 cells and the human epidermoid carcinoma KB cells *in vitro*. Yellow powder. Sol. MeOH, EtOAc, $CHCl_3$; poorly sol. H_2O. Mp 200° (dec.). $[\alpha]_D^{22}$ +36.2 (c, 0.1 in MeOH). λ_{max} 268 (ϵ 30300); 347 (ϵ 11000) (MeOH) (Derep).

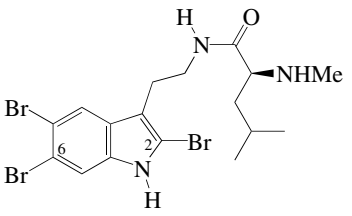
25-Deoxy: ***Alteramide B***
$C_{29}H_{38}N_2O_5$ 494.63
From an *Alteromonas* sp. Sol. MeOH, EtOAc, $CHCl_3$; poorly sol. H_2O. λ_{max} 268 ; 347 (MeOH) (Berdy).

[142131-07-5]

Shigemori, H. *et al., J.O.C.*, 1992, **57**, 4317-4320 (*isol, ir, uv, pmr, cmr, struct*)

Alternatamide B A-662

[191212-58-5]



$C_{17}H_{22}Br_3N_3O$ 524.092
Alkaloid from the marine bryozoan *Amathia alternata*. Moderate antibacterial agent. Amorph. powder.

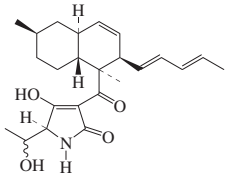
N^1-*Me:* ***Alternatamide A***
[191212-57-4]
$C_{18}H_{24}Br_3N_3O$ 538.119
Alkaloid from *Amathia alternata*. Amorph. powder.

2-Debromo: ***Alternatamide D***
[191212-60-9]
$C_{17}H_{23}Br_2N_3O$ 445.196
Alkaloid from *Amathia alternata*. Amorph. powder.

6-Debromo: ***Alternatamide C***
[191212-59-6]
$C_{17}H_{23}Br_2N_3O$ 445.196
Alkaloid from *Amathia alternata*. Amorph. powder.

Lee, N.-K. *et al., J. Nat. Prod.*, 1997, **60**, 697-699 (*isol, uv, cd, ir, pmr, cmr, ms*)

Altersetin A-663



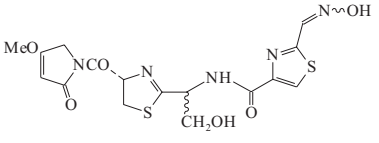
Absolute Configuration

$C_{24}H_{33}NO_4$ 399.529
Tetramic acid antibiotic. Enolised triketone. Related to Equisetin, E-142 and Phomasetin, P-373. Prod. by *Alternaria* spp. P 0506 and P 0535. Active against gram-positive and -negative bacteria and yeasts. Solid. λ_{max} 234 (log ϵ 4.37); 286 (log ϵ 3.84) (MeOH).

Hellwig, V. *et al., J. Antibiot.*, 2002, **55**, 881-892 (*isol, cd, pmr, cmr, ms*)

Althiomycin, 8CI A-664

Matamycin. Antibiotic 116A
[12656-40-5]



$C_{16}H_{17}N_5O_6S_2$ 439.472
Peptide antibiotic. The nat. prod. has the thiazole-ring *S*-config. as illus. but is prob. a mixt. of side-chain diastereoisomers. The oxime config. also appears uncertain although the *Z*-isomer has been prepd. synthetically. Isol. from *Cystobacter fuscus, Myxococcus virescens, Myxococcus xanthus, Streptomyces althioticus, Streptomyces chartreusis* and *Streptomyces matensis*. Active against gram-positive organisms. Also shows anticoccidial and antiherpes activity. Cryst. (CH_2Cl_2/EtOH). Mp 181-184° (dec.). $[\alpha]_D^{25}$ +37.8 (c, 2 in EtOH/CH_2Cl_2). λ_{max} 235 (ϵ 22800); 312 (ϵ 11500) (0.1*N* NaOH) (Derep). λ_{max} 222 (ϵ 36600); 238 (ϵ 28300); 285 (ϵ 8200) (EtOH) (Derep).

▶ LD_{Lo} (mus, ipr) 720 mg/kg.

Yamaguchi, H. *et al., J. Antibiot., Ser. A*, 1957, **10**, 195 (*isol*)
Cram, D.J. *et al., J.A.C.S.*, 1963, **85**, 1430 (*uv, ir, pmr*)
Sakakibara, H. *et al., J. Antibiot.*, 1974, **27**, 897 (*pmr, cmr, cryst struct*)
Pestka, S. *et al., Antibiotics (N.Y.)*, 1975, **3**, 323 (*rev*)
Bycroft, B.W. *et al., Chem. Comm.*, 1975, 121 (*struct, ms, ir, uv, pmr, cmr*)
Kirst, H.A. *et al., J. Antibiot.*, 1975, **28**, 286 (*struct, nmr, ir, uv, ms*)
Kunze, B. *et al., J. Antibiot.*, 1982, **35**, 635 (*isol, bibl*)
Shiba, T. *et al., Tet. Lett.*, 1984, **25**, 2009 (*synth*)
Inami, K. *et al., Bull. Chem. Soc. Jpn.*, 1986, **59**, 2185 (*activity, synth, derivs*)
Toogood, P.L. *et al., Bioorg. Med. Chem. Lett.*, 1996, **6**, 1543 (*synth*)

Alvanidine A-665

$C_{20}H_{33}NO_2$ 319.486
Prob. a steroidal alkaloid. Struct. unknown. Alkaloid from *Fritillaria raddeana* (Liliaceae) occurring with Alvanine, A-666 and Raddeamine, R-7. Cryst. Mp 235-236°.

Hydrochloride: Mp 174-175°.

Aslanov, Kh.A. *et al., Zh. Obshch. Khim.*, 1956, **26**, 579; *J. Gen. Chem. USSR (Engl. Transl.)*, 1956, **26**, 623

Alvanine A-666

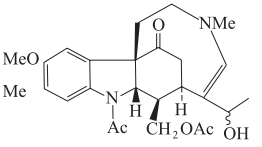
$C_{26}H_{43}NO_3$ 417.631
Prob. a steroidal alkaloid. Struct. unknown. Alkaloid from *Fritillaria raddeana* (Liliaceae). Cryst. Mp 185-187°. Co-occurs with Alvanidine, A-665 and Raddeamine, R-7.

Hydrochloride: Mp 163-165°.

Aslanov, Kh.A. *et al., Zh. Obshch. Khim.*, 1956, **26**, 579-583; *J. Gen. Chem. USSR (Engl. Transl.)*, 1956, **26**, 623

Alvimine A-667

1-Acetyl-17-(acetyloxy)-20,21-didehydro-19-hydroxy-10,11-dimethoxy-4-methyl-3,4-secocuran-3-one, 9CI
[82083-63-4]



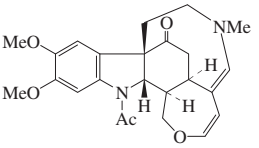
Absolute configuration

$C_{26}H_{34}N_2O_7$ 486.564
Alkaloid from bark of *Strychnos alvimiana* (Loganiaceae). Cryst. (EtOAc/hexane). Mp 124-126°. $[\alpha]_D^{20}$ +282 (c, 0.5 in EtOH).

Marini-Bettolo, G.B. *et al., An. Asoc. Quim. Argent.*, 1982, **70**, 263 (*isol, ir, uv, pmr, ms, struct*)

Alviminine A-668

[82083-62-3]



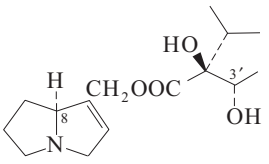
Probable Absolute Configuration

$C_{24}H_{28}N_2O_5$ 424.496
Tentative struct. Alkaloid from the bark of *Strychnos alvimiana* (Loganiaceae). Cryst. (EtOAc/hexane). Mp 103-106°.

Marini-Bettolo, G.B. *et al., An. Asoc. Quim. Argent.*, 1982, **70**, 263 (*isol, uv, pmr, cmr, ms, struct*)

Amabiline† A-669

[17958-43-9]



$C_{15}H_{25}NO_4$ 283.367
Amabiline and its stereoisomers are esters of Supinidine, S-644 with stereoisomers of 2,3-Dihydroxy-2-isopropylbutanoic acid. Alkaloid from *Cynoglossum amabile* dried whole plants and from whole plants of *Neatostema apulum* (Boraginaceae). Noncryst. $[\alpha]_D^{20}$ -7.1 (c, 2.02 in EtOH). Cryst. derivs. could not be obt.

N-*Oxide:* ***Amabiline* N-*oxide***
[145265-23-2]
$C_{15}H_{25}NO_5$ 299.366
Alkaloid from whole plants of *Neatostema apulum* (Boraginaceae). $[\alpha]_D$ -12 (c, 1.4 in EtOH).

8-Epimer: ***Cynaustine***
[17958-39-3]
$C_{15}H_{25}NO_4$ 283.367
Minor alkaloid from *Cynoglossum australe* dried plants (Boraginaceae). Pale-yellow gum. $[\alpha]_D^{20}$ +13.2 (c, 1.59 in EtOH). Ester of (+)-supinine with (-)-viridifloric acid.

▶ EK7792000

8-Epimer, picrate:
Yellow plates (EtOH). Mp 135-136°.

3′-Epimer: ***Supinine***
[551-58-6]
$C_{15}H_{25}NO_4$ 283.367
Alkaloid from *Heliotropium supinum* and *Heliotropium europaeum* (Boraginaceae). Shows antineoplastic props. Needles (Me_2CO). Mp 148-149° (146-147.5°). $[\alpha]_D$ -23.8 (EtOH). $[\alpha]_D$ -12.1 (c, 1.98 in EtOH). Log P 0.2 (calc).

▶ Hepatotoxin. WU2050000

3′-Epimer, O$^{3'}$*-Me,* N-*oxide:* ***Heleurine* N-*oxide***
[132886-10-3]
$C_{16}H_{27}NO_5$ 313.393
Alkaloid from aerial parts of *Heliotropium hirsutissimum* (Boraginaceae).

Gummy solid. $[\alpha]_D^{20}$ +19.5 (c, 0.55 in $CHCl_3$).

3′-Epimer, O$^{3'}$-Me: ***Heleurine****. Alkaloid C*†
[488-00-6]
$C_{16}H_{27}NO_4$ 297.394
Alkaloid from *Heliotropium indicum* and *Heliotropium europaeum* (Boraginaceae). Large transparent prisms. Sol. H_2O. Mp 67-68°. $[\alpha]_D^{16}$ -12 (c, 5.15 in EtOH). Discolours rapidly unless v. pure.

▶EK7879200

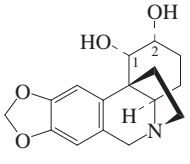
2′-Epimer: ***Heliovinine***
[84471-36-3]
$C_{15}H_{25}NO_4$ 283.367
Minor alkaloid from *Heliotropium curassavicum* (Boraginaceae). Gum. Probable struct. Obt. only as a mixt. with Coromandalinine and Curassavinine.

2′,3′-Diepimer: ***Coromandalinine***
[85798-06-7]
$C_{15}H_{25}NO_4$ 283.367
Probable struct. Obt. only as a mixt. with Heliovinine and Curassavinine. Minor alkaloid from *Heliotropium curassavicum* (Boraginaceae). Gum.

Men'shikov, G.P. *et al., J. Gen. Chem. USSR (Engl. Transl.)*, 1949, **19**, 1382; *CA*, **44**, 3486 (*isol, Supinine*)
Culvenor, C.C.J. *et al., Aust. J. Chem.*, 1954, **7**, 287; 1967, **20**, 2499 (*Supinine, Amabiline, Cynaustine, Heleurine*)
Culvenor, C.C.J. *et al., Chem. Ind. (London)*, 1959, 20 (*synth, Supinine*)
Mattocks, A.R. *et al., Nature (London)*, 1968, **217**, 723 (*tox, Supinine*)
Šimánek, V. *et al., Coll. Czech. Chem. Comm.*, 1969, **34**, 1832 (*uv, Supinine*)
Culvenor, C.C.J. *et al., J.C.S.(C)*, 1971, 3653 (*cd*)
Mohanraj, S. *et al., Phytochemistry*, 1982, **21**, 1775 (*Coromandalinine, Heliovinine*)
Mackay, M.F. *et al., Acta Cryst. C*, 1985, **41**, 722-725 (*cryst struct, Supinine, Heleurine*)
Roeder, E. *et al., Phytochemistry*, 1992, **31**, 3613 (*Amabiline N-oxide*)
Constantinidis, T. *et al., Phytochemistry*, 1993, **32**, 1335 (*Heleurine N-oxide*)
Logie, C.G. *et al., Phytochemistry*, 1994, **37**, 43-109 (*rev, pmr*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, SOW500

Amabiline† A-670

Crinan-1,2-diol, 9CI
[151204-56-7]



Absolute Configuration

$C_{16}H_{19}NO_4$ 289.33
Alkaloid from bulbs of *Crinum amabile* and *Crinum kirkii* (Amaryllidaceae). Mp 210° dec. $[\alpha]_D^{20}$ -32 (c, 0.3 in EtOH). λ_{max} 209 (log ϵ 4.13); 234 (log ϵ 3.49); 292 (log ϵ 3.61) (EtOH).

2-Epimer, O^2-Ac: ***Josephinine***
[157469-84-6]
$C_{18}H_{21}NO_5$ 331.368
Alkaloid from bulbs of *Brunsvigia josephinae* (Amaryllidaceae). Mp 230-232°. $[\alpha]_D^{22}$ -30.9 (c, 0.5 in EtOH).

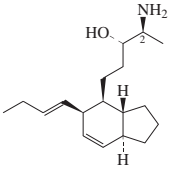
1,2-Diepimer: ***4a-Deoxycrinamabine****. 4a-Dehydroxycrinamabine*
[211234-46-7]
$C_{16}H_{19}NO_4$ 289.33
Alkaloid from the bulbs of *Crinum amabile*. Mp 208-210° dec. $[\alpha]_D^{29}$ +28 (c, 0.1 in MeOH). λ_{max} 205 (log ϵ 4.07); 237 (sh) (log ϵ 3.4); 289 (log ϵ 3.24) (MeOH).

1,2-Diepimer, 1,2-di-Ac: ***1-Epidemethoxybowdensine***
[184900-14-9]
$C_{20}H_{23}NO_6$ 373.405
Alkaloid from bulbs of *Brunsvigia orientalis*. Mp 96-98°. $[\alpha]_D^{22}$ +20 (c, 0.78 in $CHCl_3$).

Likhitwitayawuid, K. *et al., J. Nat. Prod.*, 1993, **56**, 1331-1338 (*isol, uv, ir, pmr, cmr, ms, struct*)
Viladomat, F. *et al., Phytochemistry*, 1994, **35**, 809-812; 1996, **43**, 1379-1384 (*Josephinine, 1-Epidemethoxybowdensine*)
Pearson, W.H. *et al., J.O.C.*, 1998, **63**, 3607-3617 (*synth*)
Pham, L.H. *et al., Phytochemistry*, 1998, **48**, 371-376 (*4a-Deoxycrinamabine*)
Machocho, A.K. *et al., Phytochemistry*, 2004, **65**, 3143-3149 (*isol*)

Amaminol A A-671

[261622-18-8]



Absolute Configuration

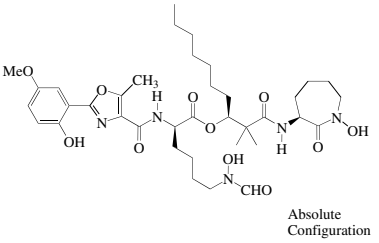
$C_{18}H_{31}NO$ 277.449
Isol. from an unidentified tunicate of the family Polyclinidae. Cytotoxic agent. Pale yellow oil. $[\alpha]_D^{24}$ -170.8 (c, 0.2 in MeOH).

2-Epimer: ***Amaminol B***
[261622-22-4]
$C_{18}H_{31}NO$ 277.449
Isol. from an unidentified tunicate of the family Polyclinidae. Cytotoxic agent. Pale yellow oil. $[\alpha]_D^{24}$ -112.4 (c, 0.2 in MeOH).

Sata, N.U. *et al., Tet. Lett.*, 2000, **41**, 489-492 (*isol, pmr, cmr*)
Kumpulainen, E.T.T. *et al., Org. Lett.*, 2007, **9**, 5043-5045 (*synth, abs config*)

Amamistatin A A-672

[225505-59-9]



Absolute Configuration

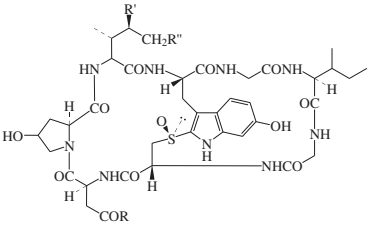
$C_{37}H_{55}N_5O_{11}$ 745.868
Prod. by *Nocardia asteroides* SCRC-A 2359. Antitumour and antiproliferative agent. Mast cell growth inhibitor. $[\alpha]_D^{26}$ -9.8 (c, 0.61 in MeOH). Related to Formobactin, F-130 and Nocobactin NA, N-267. λ_{max} 272 (ϵ 22000); 335 (ϵ 11000) (MeOH).

Demethoxy: ***Amamistatin B***
[225505-77-1]
$C_{36}H_{53}N_5O_{10}$ 715.842
Prod. by *Nocardia asteroides* SCRC-A 2359. Antitumour and antiproliferative agent. Mast cell growth inhibitor. $[\alpha]_D^{28}$ -8.2 (c, 0.47 in MeOH). λ_{max} 266 (ϵ 22000); 307 (ϵ 12000) (MeOH).

Yokokawa, F. *et al., Tetrahedron*, 2000, **56**, 3027-3034 (*synth*)
Kokubo, S. *et al., Tetrahedron*, 2000, **56**, 6435-6440 (*isol, uv, ir, pmr, cmr, abs config*)
Fennell, K.A. *et al., J.O.C.*, 2008, **73**, 1018-1024 (*synth*)

Amanitin† A-673

Amantin. Amatoxin



α-Amanitin R = NH_2, R' = R" = OH
β–Amanitin R' = R" = OH
γ-Amanitin R = NH_2, R' = OH, R" = H
ε-Amanitin R = R' = OH, R" = H
Amanullin R =NH_2, R' = R" = H
Amanullin acid R = OH, R' = R" = H

α-Amanitin [23109-05-9]
$C_{39}H_{54}N_{10}O_{14}S$ 918.98
Toxic constit. of *Amanita phalloides*. Also from *Amanita verna, Amanita bisporigera, Galerina autumnalis, Galerina marginata* and *Galerina venenata*. Needles. Sol. MeOH, H_2O. Mp 254-255° dec. $[\alpha]_D^{20}$ +191 (H_2O). λ_{max} 302 (MeOH) (Berdy).

▶Systemic effects in humans by ingestion. Can cause hepatic necrosis, liver failure and death if untreated. Nephrotoxic. LD_{50} (mus, ipr) 0.1 mg/kg. Some human and exp. toxic effects are delayed (2-8 d after administration) *cf.* phallotoxins. Gastrointestinal effects occur 2-4 h after ingestion. BD6195000

Deoxy: ***Amaninamide***
[58311-65-2]
$C_{39}H_{54}N_{10}O_{13}S$ 902.981
Isol. from *Amanita virosa*. Lacks the OH group on the tryptophan ring.

β-Amanitin
1-L-Aspartic acid-α-amanitin, 9CI
[21150-22-1]
$C_{39}H_{53}N_9O_{15}S$ 919.965
Toxic constit. of several spp. of *Amanita*, notably *Amanita phalloides* and also

found in *Galerina autumnalis, Galerina venenata, Galerina marginata* and *Amanita bisporigera*. Cryst. (EtOH). Sol. H_2O, EtOH. Mp 300°. λ_{max} 302 (MeOH) (Berdy).

► LD_{50} (mus, ipr) 0.4 mg/kg. NJ8324000

Deoxy: ***Amanin***. *1-L-Aspartic acid-4-(2-mercapto-L-tryptophan)-α-amanitin, 9CI*
[21150-21-0]
$C_{39}H_{53}N_9O_{14}S$ 903.966
Constit. of *Amanita phalloides* toxin. Lacks the OH-group on the tryptophan ring.

► LD_{50} (mus, ipr) 0.5 mg/kg. NJ8326000

γ-Amanitin
3-(4-Hydroxy-L-isoleucine)-α-amanitin, 9CI
[21150-23-2]
$C_{39}H_{54}N_{10}O_{13}S$ 902.981
Constit. of *Amanita phalloides.*

► LD_{50} (mus, ipr) 0.2 mg/kg. NJ8323000

ε-Amanitin
1-L-Aspartic acid-3-(S)-4-hydroxy-L-isoleucine-α-amanitin, 9CI
[21705-02-2]
$C_{39}H_{53}N_9O_{14}S$ 903.966

► LD_{50} (mus, ipr) 0.3 mg/kg. NJ8325000

Amanullinic acid
1-L-Aspartic acid-3-isoleucine-α-amanitin, 9CI
[54532-45-5]
$C_{39}H_{53}N_9O_{13}S$ 887.966
Constit. of *Amanita phalloides.*

► LD_{50} (mus, ipr) >20 mg/kg. BD6093000

Amanullin [21803-57-6]
$C_{39}H_{54}N_{10}O_{12}S$ 886.981
Constit. of *Amanita phalloides.*

► LD_{50} (mus, ipr) >20 mg/kg. BD6200000

Deoxy: ***Proamanullin***. *2-L-Proline-3-isoleucine-α-amanitin*
[54532-46-6]
$C_{39}H_{54}N_{10}O_{11}S$ 870.982
Constit. of *Amanita phalloides.* Lacks the 4-hydroxyprolyl OH group.

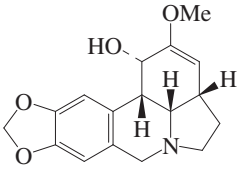
► LD_{50} >20mg/Kg (mus, ipr). BD6300000

[11030-71-0]

Wieland, T. *et al., Prog. Chem. Org. Nat. Prod.*, 1967, **25**, 214 (*rev*)
Wieland, T. *et al., Annalen*, 1974, 1561; 1570; 1580; 1587 (*bibl, abs config*)
Yocum, R.R. *et al., Biochemistry*, 1978, **17**, 3786; 3790 (*isol, purifn, cryst struct*)
Wieland, T. *et al., Crit. Rev. Biochem.*, 1978, **5**, 185 (*rev*)
Buku, A. *et al., Experientia*, 1980, **36**, 33-34 (*Amaninamide*)
Wieland, T. *et al., Peptides of Poisonous Amanita Mushrooms*, Springer-Verlag, 1986, (*book*)
Michelot, D. *et al., Drug Metab. Drug Interact.*, 1988, **6**, 265 (*biol props*)
Shoham, G. *et al., J.A.C.S.*, 1989, **111**, 4791 (*cryst struct*)
Pehk, T. *et al., Magn. Reson. Chem.*, 1989, **27**, 173 (*pmr, conformn*)
Antkowiak, R. *et al., Alkaloids (Academic Press)*, 1991, **40**, 189 (*rev*)
Tagliaro, F. *et al., J. Chromatogr.*, 1991, **563**, 299 (*hplc*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 1390
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, AHI625

Amarbellisine A-674

[767356-23-0]

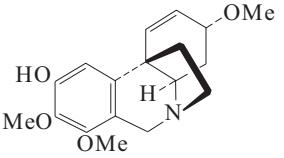


$C_{17}H_{19}NO_4$ 301.341
Alkaloid from the bulbs of *Amaryllis belladonna*. Needles (MeOH). Mp > 300°. $[\alpha]_D^{25}$ -39.2 (c, 0.7 in $CHCl_3$). λ_{max} 244 (log ε 2.9); 293 (log ε 2.9) (MeOH).

Evidente, A. *et al., Phytochemistry*, 2004, **65**, 2113-2118 (*isol, cd, pmr, cmr, ms*)

Amaryllisine A-675

[6874-70-0]



$C_{18}H_{23}NO_4$ 317.384
Alkaloid from *Amaryllis belladonna (Brunsvigia rosea)* (Amaryllidaceae). Prisms (MeOH). Mp 255-258° dec. $[\alpha]_D^{24}$ +2.4. $[\alpha]_{436}^{24}$ -6.6 (c, 0.27 in $CHCl_3$).

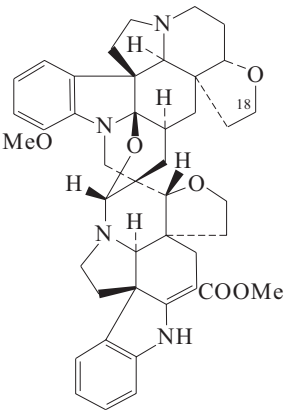
Ac: Mp 181-182°.

Me ether:
Fine prisms (cyclohexane). Mp 99-100°. $[\alpha]_D^{24}$ -16.4 (c, 1.6 in $CHCl_3$).

Burlingame, A.L. *et al., J.A.C.S.*, 1964, **86**, 4976 (*isol, uv, ir, pmr, ms, struct*)

Amataine A-676

Grandifoline†. *Subsessiline*†
[31148-60-4]



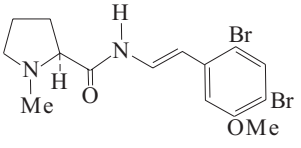
$C_{43}H_{48}N_4O_6$ 716.875
Alkaloid from the root bark of *Hedranthera (Callichilia) barteri* and *Voacanga chalotiana*, the stems of *Callichilia subsessilis* and the leaves of *Voacanga grandifolia* (Apocynaceae). Shows antimicrobial activity. Cryst. (hexane). Mp 216-221°. $[\alpha]_D^{26}$ -262 (c, 0.727 in $CHCl_3$).

18-Oxo: ***Subsessiline lactone***. *18-Oxoamataine. Alkaloid H*†
[59796-72-4]
$C_{43}H_{46}N_4O_7$ 730.859
Alkaloid from the leaves of *Voacanga thouarsii* (Apocynaceae). Cryst. (Me_2CO). Mp 237-239° dec. $[\alpha]_D$ -292.

Agwada, V. *et al., Helv. Chim. Acta*, 1970, **53**, 1567; 1977, **60**, 2830 (*isol, uv, ir, pmr, ms, ord, struct*)
Rolland, Y. *et al., Phytochemistry*, 1973, **12**, 2039 (*deriv*)
Gabetta, B. *et al., Fitoterapia*, 1974, **45**, 32; *CA*, **81**, 166291t (*isol*)
Rolland, Y. *et al., J.O.C.*, 1976, **41**, 3270 (*cmr, struct, deriv*)
Rolland, Y. *et al., Helv. Chim. Acta*, 1977, **60**, 2854 (*cd, ms, deriv*)
Villar, A. *et al., Planta Med.*, 1986, **52**, 556-557 (*activity*)

Amathamide A A-677

[99615-75-5]



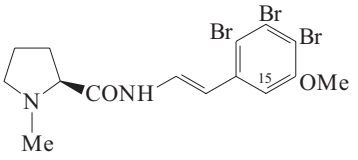
$C_{15}H_{18}Br_2N_2O_2$ 418.127
Alkaloid from the marine bryozoan *Amathia wilsoni*. Mp 189-190.5°.

(Z)-Isomer: ***Amathamide B***
[99615-76-6]
Alkaloid from *Amathia wilsoni*. Oil.

Blackman, A.J. *et al., Heterocycles*, 1985, **23**, 2829-2833 (*isol, ir, pmr, cmr, ms, cd, struct, abs config*)

Amathamide E A-678

[112515-28-3]



$C_{15}H_{17}Br_3N_2O_2$ 497.023
Alkaloid from the bryozoan *Amathia wilsoni*. Light yellow oil.

N-*Me:* ***Amathamide C***
[112515-26-1]
$C_{16}H_{19}Br_3N_2O_2$ 511.05
Alkaloid from *Amathia wilsoni* and *Amathia pinnata*. Pale yellow oil.

Dihydro: ***Amathamide D***
[112515-27-2]
$C_{15}H_{19}Br_3N_2O_2$ 499.039
Alkaloid from *Amathia wilsoni*. Light green oil.

(Z)-Isomer: ***Amathamide F***
[112515-29-4]

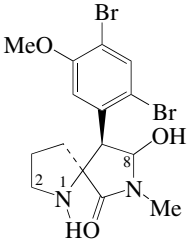
$C_{15}H_{17}Br_3N_2O_2$ 497.023
Alkaloid from *Amathia wilsoni*. Oil.

N-*Me, 15-methoxy:* ***Amathamide G***
[149355-72-6]
$C_{17}H_{21}Br_3N_2O_3$ 541.076
Alkaloid from *Amathia convoluta*. Oil.

Blackman, A.J. *et al., Aust. J. Chem.*, 1987, **40**, 1655-1662 (*isol, ir, pmr, cmr, ms, struct*)
Blackman, A.J. *et al., Aust. J. Chem.*, 1993, **46**, 401-405 (*Amathamide G*)

Amathaspiramide C A-679

[226993-86-8]



$C_{15}H_{18}Br_2N_2O_3$ 434.127
Alkaloid from the marine bryozoan *Amathia wilsoni*. Amorph. solid. $[\alpha]_D^{25}$ -2 (c, 0.005 in MeOH). λ_{max} 215 (log ϵ 4.16); 289 (log ϵ 3.15); 294 (log ϵ 3.15) (MeOH).

N^1-*Me:* ***Amathaspiramide A***
[226993-84-6]
$C_{16}H_{20}Br_2N_2O_3$ 448.154
Alkaloid from *Amathia wilsoni*. Amorph. solid. $[\alpha]_D^{25}$ -3 (c, 0.004 in MeOH). λ_{max} 216 (log ϵ 4.2); 289 (log ϵ 3.34); 295 (log ϵ 3.36) (MeOH).

1,2-Didehydro: ***Amathaspiramide E***
[226993-88-0]
$C_{15}H_{16}Br_2N_2O_3$ 432.111
Alkaloid from *Amathia wilsoni*. Amorph. solid. $[\alpha]_D^{25}$ -21 (c, 0.002 in MeOH). λ_{max} 220 (log ϵ 4.13); 289 (log ϵ 3.17); 295 (log ϵ 3.17) (MeOH).

2-Oxo: ***Amathaspiramide D***
[226993-87-9]
$C_{15}H_{16}Br_2N_2O_4$ 448.11
Alkaloid from *Amathia wilsoni*. Amorph. solid. $[\alpha]_D^{25}$ -44 (c, 0.002 in MeOH). λ_{max} 215 (log ϵ 4.03); 289 (log ϵ 3.22); 295 (log ϵ 3.22) (MeOH).

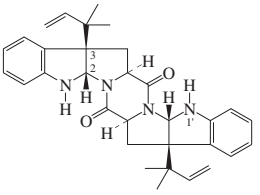
2-Oxo, N^1*-Me:* ***Amathaspiramide B***
[226993-85-7]
$C_{16}H_{18}Br_2N_2O_4$ 462.137
Alkaloid from *Amathia wilsoni*. Amorph. solid. $[\alpha]_D^{25}$ -13 (c, 0.002 in MeOH). λ_{max} 208 (log ϵ 4.5); 310 (log ϵ 4.38); 436 (log ϵ 4.6) (MeOH).

8-Epimer: ***Amathaspiramide F***
[226993-89-1]
$C_{15}H_{18}Br_2N_2O_3$ 434.127
Alkaloid from *Amathia wilsoni*. Amorph. solid. $[\alpha]_D$ -10 (c, 0.002 in MeOH). λ_{max} 214 (log ϵ 4.12); 290 (log ϵ 3.08); 296 (log ϵ 3.08) (MeOH).

Morris, B.D. *et al., J. Nat. Prod.*, 1999, **62**, 688-693 (*isol, uv, ir, pmr, cmr, ms*)
Hughes, C.C. *et al., Angew. Chem., Int. Ed.*, 2002, **41**, 4556-4559 (*Amathaspiramide F, synth*)
Sakaguchi, K. *et al., Org. Lett.*, 2008, **10**, 5449-5452 (*Amathaspiramide F, synth*)

Amauromine A-680

FR 900220. WF 6237. Antibiotic FR 900220. Antibiotic WF 6237
[88360-87-6]



Absolute Configuration

$C_{32}H_{36}N_4O_2$ 508.662
Diketopiperazine antibiotic. Isol. from *Amauroascus* sp. ATCC 20595 and *Penicillium nigricans* IMI 228669. Hypotensive vasodilator; gastric juice secretion inhibitor, calcium channel blocker. Prisms (EtOH). Sol. MeOH, Me_2CO, Py, $CHCl_3$; poorly sol. H_2O, hexane. Mp 156-158°. $[\alpha]_D^{23}$ -583 (c, 1 in $CHCl_3$). λ_{max} 245 (ϵ 11000); 300 (ϵ 4200) (EtOH) (Derep).
▶ LD_{50} (mus, ipr) 200 mg/kg. UQ3987000

2,3-Diepimer: ***Epiamauromine***
[143168-22-3]
$C_{32}H_{36}N_4O_2$ 508.662
Metab. from sclerotia of *Aspergillus ochraceus* NRRL 3519. Insect antifeedant, insecticide. Solid. Mp 134°. $[\alpha]_D$ -50 (c, 0.18 in $CHCl_3$). λ_{max} 215 (ϵ 100000); 243 (ϵ 100000); 300 (ϵ 40000) (MeOH) (Berdy).

2,3-Diepimer, $N^{1'}$*-Me:* **N-*Methylepiamauromine***
[143086-28-6]
$C_{33}H_{38}N_4O_2$ 522.689
Metab. from the sclerotia of *Aspergillus ochraceus* NRRL 3519. Insect antifeedant, insecticide. $[\alpha]_D$ -29.1 (c, 0.46 in $CHCl_3$). λ_{max} 214 (ϵ 25000); 244 (ϵ 12500); 303 (ϵ 6400) (MeOH) (Berdy).

Stereoisomer: ***Nigrifortine***
[97859-13-7]
$C_{32}H_{36}N_4O_2$ 508.662
Metab. of *Penicillium nigricans*. Stereochem. not determined. May be identical with Amauromine or Epiamauromine.

Takase, S. *et al., J. Antibiot.*, 1984, **37**, 1320-1323 (*isol, props*)
Laws, I. *et al., Phytochemistry*, 1985, **24**, 1395-1397 (*Nigrifortine*)
Takase, S. *et al., Tetrahedron*, 1985, **41**, 3037-3048; 1986, **42**, 5887-5894 (*cryst struct, synth*)
De Guzman, F.S. *et al., J. Nat. Prod.*, 1992, **55**, 931-939 (*Epiamauromine, N-Methylepiamauromine*)
Marsden, S.P. *et al., J.A.C.S.*, 1994, **116**, 11143-11144 (*synth*)
Depew, K.M. *et al., J.A.C.S.*, 1999, **121**, 11953-11963 (*synth*)

Ambaline A-681

$C_{38}H_{42}N_2O_{10}$ 686.757
Struct. unknown. Alkaloid from *Pycnarrhena manillensis*. Mp 123° Mp 265° (as dihydrochloride). $[\alpha]_D$ +143 ($CHCl_3$). Nonphenolic.

Quibilan, G.Q. *et al., CA*, 1934, **28**, 4735[2] (*isol*)

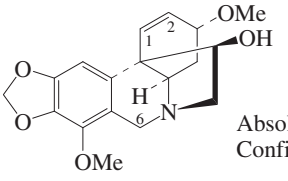
Ambalinine A-682

$C_{18}H_{21}NO_3$ 299.369
Struct. unknown. Nonphenolic, conts. 1 *N*-Me and 1 *O*Me group. Alkaloid from *Pycnarrhena manillensis*. Mp 203-204° Mp 238° (as picrate).

Villanos, M.I. *et al., CA*, 1936, **30**, 4171[7] (*isol*)

Ambelline A-683

[3660-62-6]



Absolute Configuration

$C_{18}H_{21}NO_5$ 331.368
C-12 config. incorr. given as 12*S*- in CAS. Alkaloid of *Brunsvigia rosea* (*Amaryllis belladonna*) and many other spp. in the Amaryllidaceae. Cytotoxic to P-388 sarcoma cells *in vitro*, shows no activity *in vivo*. Weak transient hypotensive agent and cardiac stimulant. Epinephrine potentiator, respiratory paralytic. Sol. MeOH, $CHCl_3$. Mp 260-261° (254-256°). $[\alpha]_D^{22}$ +81 (c, 0.56 in $CHCl_3$). $[\alpha]_D^{25}$ -13.6 (c, 0.11 in MeOH). λ_{max} 213 (log ϵ 4.6); 244 (sh) (log ϵ 3.64); 286 (log ϵ 3.24) (MeOH).
▶ Toxic, LD_{50} (mus, scu) 5 mg/kg.
Hydrochloride: Mp 227-230° dec.
Perchlorate: Mp 200° dec.

Ac: ***11*-O-*Acetylambelline***
[98983-14-3]
$C_{20}H_{23}NO_6$ 373.405
Alkaloid from bulbs of *Brunsvigia josephinae* (Amaryllidaceae). Mp 80-82°. $[\alpha]_D^{22}$ -23.5 (c, 0.59 in $CHCl_3$).

11-O-*(3-Pyridinecarbonyl):* ***Filifoline***†.
11-O-*Nicotinoylambelline*
$C_{24}H_{24}N_2O_6$ 436.463
Alkaloid from the bulbs of *Nerine filifolia*. Powder. Mp 191-193°. $[\alpha]_D^{20}$ +12 (c, 0.85 in MeOH). λ_{max} 280 (log ϵ 5.93) (EtOH).

1β,2β-Epoxide: ***1,2-Epoxyambelline***
[93771-88-1]
$C_{18}H_{21}NO_6$ 347.367
Alkaloid from *Crinum latifolium* (Amaryllidaceae). Prisms (Me_2CO). Mp 245-246°. $[\alpha]_D^{22}$ +22.4 (c, 0.32 in $CHCl_3$).

1β,2β-Epoxide, Ac: ***11*-O-*Acetyl-1,2-epoxyambelline***
[93771-89-2]
$C_{20}H_{23}NO_7$ 389.404
Alkaloid from *Ammocharis tinneana*. Needles (Me_2CO). Mp 201-203° (195-197°).

Dihydro: ***Dihydroambelline***
$C_{18}H_{23}NO_5$ 333.383
Isol. from *Nerine crispa* (Amaryllidaceae). Mp 198-199°. $[\alpha]_D^{24}$ -12.6 (c, 0.5 in $CHCl_3$).

6α-Hydroxy: ***Crinafoline***
[106534-56-9]

$C_{18}H_{21}NO_6$ 347.367
Alkaloid from the mature fruits of *Crinum latifolium* (Amaryllidaceae). Has antitumour props. Microcryst. (MeOH). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 234-237°. $[\alpha]_D^{28}$ +44.7 (c, 0.35 in MeOH). 12-Config. incorrectly given as 12*S*- in CAS.

6α-Hydroxy, di-Ac:
Prisms (MeOH/Me_2CO). Mp 214-215°.

6α-Hydroxy, N-*Me:*
$C_{19}H_{24}NO_5^{\oplus}$ 346.402
Straw-coloured solid (as iodide). Mp 262-265° dec.(iodide).

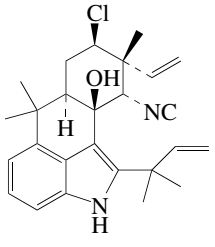
3-Epimer: ***Brunsbelline***
[171119-08-7]
$C_{18}H_{21}NO_5$ 331.368
Alkaloid from the bulbs of *Brunsvigia josephinae*. Mp 226-228°. $[\alpha]_D^{22}$ -97.8 (c, 0.1 in EtOH).

Stereoisomer, 1,2-epoxide: ***Cavinine***
[58189-38-1]
$C_{18}H_{21}NO_6$ 347.367
Alkaloid from *Hippeastrum puniceum* (Amaryllidaceae). Identified by ms only and assigned the same plane struct. as 1,2-Epoxyambelline without assignment of stereochem. May be identical with 1,2-Epoxyambelline.

Mason, L.H. *et al., J.A.C.S.*, 1955, **77**, 1253-1256 (*isol, uv, ir*)
Döpke, W. *et al., Naturwissenschaften*, 1962, **49**, 469 (*Dihydroambelline*)
Naegeli, P. *et al., J.O.C.*, 1963, **28**, 206-210 (*ir, pmr, struct*)
Duffield, A.M. *et al., J.A.C.S.*, 1965, **87**, 4902-4912 (*ms*)
Samuel, E.H.S. *et al., Org. Mass Spectrom.*, 1975, **10**, 427-431 (*Cavinine*)
Roques, R. *et al., Acta Cryst. B*, 1976, **32**, 1394-1398 (*cryst struct*)
Ghosal, S. *et al., J. Chem. Res., Synop.*, 1984, 232-233; 1986, 312-313 (*Epoxyambelline, Crinafoline*)
Viladomat, F. *et al., Phytochemistry*, 1994, **35**, 809-812 (*isol, cd, pmr, cmr, ms*)
Viladomat, F. *et al., Phytochemistry*, 1995, **40**, 961-965 (*11-O-Acetylambelline, Brunsbelline*)
Pham, L.H. *et al., Phytochemistry*, 1998, **48**, 371-376 (*isol, cd, uv, pmr, cmr, ms*)
Machocho, A. *et al., Phytochemistry*, 1999, **51**, 1185-1191 (*Epoxyambelline, O-Acetylepoxyambelline*)
Nair, J.J. *et al., Phytochemistry*, 2005, **66**, 373-382 (*Filifoline*)

Ambiguine B isonitrile A-684

A 89271C. Antibiotic A 89271C
[138630-60-1]



Relative Configuration

$C_{26}H_{31}ClN_2O$ 422.996
Alkaloid from the terrestrial blue-green alga *Fischerella ambigua*, also from *Hapalosiphon hibernicus* and *Westrellopsis prolifica*. Amorph. solid. $[\alpha]_D$ -44.3 (c, 0.1 in MeOH). λ_{max} 223 (ε 40700); 281 (ε 9400); 291 (ε 7700) (MeOH).

Deoxy: ***Ambiguine A isonitrile****. A 89271B. Antibiotic A 89271B*
[138630-59-8]
$C_{26}H_{31}ClN_2$ 406.997
From the terrestrial blue-green algae *Fischerella ambigua* and *Hapalosiphon hibernicus*, also *Westrellopsis prolifica*. Needles (hexane/CH_2Cl_2). Mp > 300° dec. $[\alpha]_D$ -37 (c, 0.1 in MeOH). λ_{max} 225 (ε 32400); 282 (ε 7600); 295 (sh) (ε 6500) (MeOH).

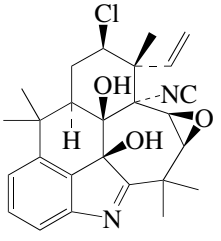
Dechloro: ***Ambiguine C isonitrile****. A 89271E. Antibiotic A 89271E*
[138630-61-2]
$C_{26}H_{32}N_2O$ 388.552
From *Fischerella ambigua*. Amorph. solid. $[\alpha]_D$ -9.5 (c, 0.1 in MeOH). λ_{max} 223 (ε 36000); 281 (ε 8400); 291 (ε 6800) (MeOH).

Dechloro, deoxy: ***Ambiguine H isonitrile***
$C_{26}H_{32}N_2$ 372.552
From a *Fischerella* sp. Amorph. solid. $[\alpha]_D^{25}$ -65 (c, 0.51 in MeOH). λ_{max} 222 (log ε 4.38); 282 (log ε 3.72); 291 (log ε 3.62) (MeOH).

Smitka, T.A. *et al., J.O.C.*, 1992, **57**, 857-861 (*isol, cd, uv, ir, pmr, cmr*)
Raveh, A. *et al., J. Nat. Prod.*, 2007, **70**, 196-201 (*isol, pmr, cmr*)

Ambiguine D isonitrile A-685

A 89271A. Antibiotic A 89271A
[138666-15-6]



Relative Configuration

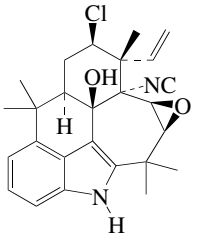
$C_{26}H_{29}ClN_2O_3$ 452.979
Alkaloid from the terrestrial blue-green algae *Fischerella ambigua* and *Westiellopsis prolifica*. Cryst. (MeOH aq.). Mp > 300° dec. $[\alpha]_D$ -30.3 (c, 0.1 in MeOH). λ_{max} 227 (ε 13900); 301 (ε 2170) (MeOH).

Dechloro: ***Ambiguine J isonitrile***
$C_{26}H_{30}N_2O_3$ 418.535
From a *Fischerella* sp. Amorph. solid. $[\alpha]_D^{25}$ -32 (c, 0.1 in MeOH). λ_{max} 222 (log ε 3.68); 270 (log ε 2.97); 308 (log ε 2.78) (MeOH).

Smitka, T.A. *et al., J.O.C.*, 1992, **57**, 857-861 (*isol, cd, uv, ir, pmr, cmr, cryst struct*)
Raveh, A. *et al., J. Nat. Prod.*, 2007, **70**, 196-201 (*isol, pmr, cmr*)

Ambiguine E isonitrile A-686

A 89271D. Antibiotic A 89271D
[138666-16-7]



Relative Configuration

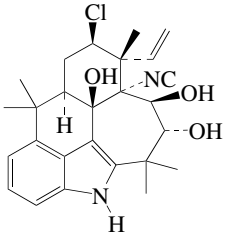
$C_{26}H_{29}ClN_2O_2$ 436.98
Alkaloid from the terrestrial blue-green algae *Fischerella ambigua*, *Hapalosiphon hibernicus* and *Westiellopsis prolifica*. Needles (hexane/CH_2Cl_2). Mp > 300° dec. $[\alpha]_D$ -59.7 (c, 0.1 in MeOH). λ_{max} 223 (ε 36000); 272 (ε 7100); 279 (ε 6800) (MeOH).

Dechloro: ***Ambiguine I isonitrile***
$C_{26}H_{30}N_2O_2$ 402.535
From a *Fischerella* sp. Amorph. solid. $[\alpha]_D^{25}$ -39 (c, 0.29 in MeOH). λ_{max} 222 (log ε 4.04); 282 (log ε 3.69); 286 (log ε 3.67) (MeOH).

Smitka, T.A. *et al., J.O.C.*, 1992, **57**, 857-861 (*isol, cd, uv, ir, pmr, cmr*)
Raveh, A. *et al., J. Nat. Prod.*, 2007, **70**, 196-201 (*isol, pmr, cmr*)

Ambiguine F isonitrile A-687

A 89271F. Antibiotic A 89271F
[138630-62-3]



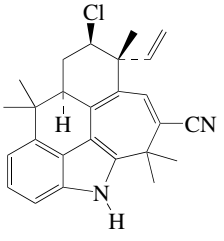
Relative Configuration

$C_{26}H_{31}ClN_2O_3$ 454.995
Alkaloid from the terrestrial blue-green alga *Fischerella ambigua*. Amorph. solid. $[\alpha]_D$ -18.2 (c, 0.1 in MeOH). λ_{max} 224 (ε 36000); 280 (ε 7200); 290 (ε 5500) (MeOH).

Smitka, T.A. *et al., J.O.C.*, 1992, **57**, 857 (*isol, uv, ir, pmr, cmr, cd, struct*)

Ambiguine G nitrile A-688

[213911-41-2]

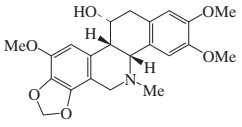


$C_{26}H_{27}ClN_2$ 402.965
Isol. from the blue-green alga *Hapalosiphon delicatulus*. $[\alpha]_D$ +138.3 (c, 0.6 in $CHCl_3$). λ_{max} 230 (ϵ 32400); 274 (ϵ 13900); 390 (ϵ 6750) (MeOH).

Huber, U *et al., J. Nat. Prod.*, 1998, **61**, 1304-1306 (*isol, uv, ir, pmr, cmr, ms*)

Ambinine A-689

[96935-26-1]



Absolute Configuration

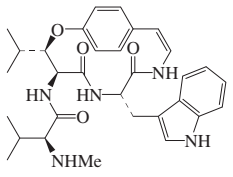
$C_{23}H_{27}NO_6$ 413.469
Minor alkaloid from the stem tuber of *Corydalis ambigua* (Papaveraceae). Prisms (EtOH). Mp 218-219°. $[\alpha]_D^{22}$ -106 (c, 1.3 in $CHCl_3$).

Hydrobromide: [132296-33-4]
Fine needles (EtOH). Mp 199-202°.

Cui, Z. *et al., Yaoxue Xuebao*, 1984, **19**, 904; *CA*, **103**, 19853x (*isol, uv, ir, pmr, cmr, ms, struct*)
Cui, Z. *et al., J. Nat. Prod.*, 1990, **53**, 1182 (*abs config, cd, cryst struct*)
Hanaoka, M. *et al., Chem. Pharm. Bull.*, 1991, **39**, 242 (*synth*)

Americine A-690

N-*[7-(1*H*-Indol-3-ylmethyl)-3-(1-methylethyl)-5,8-dioxo-2-oxa-6,9-diazabicyclo[10.2.2]hexadeca-10,12,14,15-tetraen-4-yl]-3-methyl-2-(methylamino)butanamide, 9CI*
[18867-84-0]



Absolute Configuration

$C_{31}H_{39}N_5O_4$ 545.68
Alkaloid from the root bark of *Ceanothus americanus* (New Jersey tea) (Rhamnaceae). Mp 135.5-137°. $[\alpha]_D^{20}$ -198 (c, 0.51 in MeOH).

N-*Me:* **N-*Methylamericine***. *5-β-Indolylmethyl-8*N-*(*N,N*-dimethylvalyl)-9-isopropylphencyclopeptine*
[70403-89-3]
$C_{32}H_{41}N_5O_4$ 559.707
Alkaloid from *Ceanothus integerrimus* and *Ceanothus sanguineus*. Mp 233° (229°).

Klein, F.K. *et al., J.A.C.S.*, 1968, **90**, 2398-2404 (*isol, uv, ir, pmr, ms, struct*)
Lagarias, J.C. *et al., J. Nat. Prod.*, 1979, **42**, 220-227; 663-668 (*N-Me*)

Amianthine A-691

$C_{27}H_{41}NO_2$ 411.626

Steroidal alkaloid. Struct. unknown. Alkaloid from *Amianthium muscaetoxicum* (*Zygadenus muscaetoxicum*) (Liliaceae). Long prisms (Me_2CO). Mp 251-253° dec. $[\alpha]_D^{20}$ -87 (c, 0.173 in $CHCl_3$). pK_a 9.7.

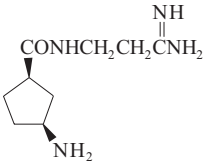
Tertiary base contg. conjugated CO and acylable OH gps.

Ac: Mp 206-207° dec.

Neuss, N. *et al., J.A.C.S.*, 1953, **75**, 2772-2773 (*isol*)

Amidinomycin A-692

N-*(2-Amidinoethyl)-3-aminocyclopentanecarboxamide. Myxoviromycin*
[3572-60-9]



$C_9H_{18}N_4O$ 198.267
Prod. by *Streptomyces flavochromogenes*. Antifungal antiviral agent. Antineoplastic antibiotic. Sol. H_2O, EtOH, MeOH; poorly sol. butanol, hexane. Log P -2.26 (uncertain value) (calc). λ_{max} 205 (ϵ 4460) (0.1*N* HCl) (Derep). λ_{max} 219 (ϵ 1580) (0.1*N* NaOH) (Derep). λ_{max} 212 (ϵ 1170) (pH 3 H_2O) (Derep). λ_{max} 212 (E1%/1cm 59) (H_2O) (Berdy). λ_{max} 205 (E1%/1cm 225) (HCl) (Berdy). λ_{max} 219 (E1%/1cm 79) (NaOH) (Berdy).

▶ LD_{50} (mus, orl) 140 mg/kg, LD_{50} (mus, ivn) 18 mg/kg, LD_{50} (mus, ipr) 200 mg/kg. GY2555000

Sulfate:
Plates or needles (MeOH aq.). Mp 285-288° dec. $[\alpha]_D^{21}$ -3.9 (c, 3 in H_2O).

[19946-52-2]

Nakamura, S. *et al., Chem. Pharm. Bull.*, 1961, **9**, 641 (*synth, struct*)
Nakamura, S. *et al., J. Antibiot., Ser. A*, 1961, **14**, 103 (*isol, struct*)
Katsube, J. *et al., Chem. Pharm. Bull.*, 1968, **16**, 232 (*synth, ir, pmr*)
Allan, R.D. *et al., Aust. J. Chem.*, 1979, **32**, 2517 (*synth, struct*)
Kaneda, M. *et al., J. Antibiot.*, 1980, **33**, 778 (*cryst struct, abs config*)
Sapse, A.M. *et al., J. Biomol. Struct. Dyn.*, 1993, **10**, 709 (*conformn*)
Chenevert, R. *et al., Chem. Lett.*, 1994, 93 (*synth, abs config*)

2-Amino-12 methyl-1,3,12-tetradecanetriol A-693

$H_3CCH_2C(OH)(CH_3)(CH_2)_8$-
$CH(OH)CH(NH_2)CH_2OH$

$C_{15}H_{33}NO_3$ 275.431

N-*Hydroxy,* N-*nitroso: 2-(Hydroxynitrosoamino)-12-methyl-1,3,12-tetradecanetriol, 9CI*. ***Nitrososstromelin***
[182064-61-5]
$C_{15}H_{32}N_2O_5$ 320.428
Prod. by a *Streptomyces* sp. Stromelysin inhibitor.

U.K. Pat., 1996, 2 297 324; *CA*, **125**, 245813v (*isol*)

2-Aminoacetophenone, 8CI A-694

2-Amino-1-phenylethanone, 9CI. Phenacylamine. Phenomydrol. Benzoylmethylamine. (Aminoacetyl)benzene
[613-89-8]
$PhCOCH_2NH_2$

C_8H_9NO 135.165
Component of tortilla aroma and of other corn flour products. Constit. of *Castanopsis cuspidata* and *Vitis* sp. Aroma threshold 0.2 ppb in H_2O.

▶ Exp. reprod. effects. AM5775000

Hydrochloride: [5468-37-1]
Needles (Me_2CO/EtOH). Mp 188°.

▶ AM5940000

Oxime:
$C_8H_{10}N_2O$ 150.18
Mp 140°.

2,4-Dinitrophenylhydrazone: Mp 221°.

Di-Et ketal:
$C_{12}H_{19}NO_2$ 209.288
Liq. $Bp_{0.5}$ 68°.

N-*Formyl:* [73286-37-0]
$C_9H_9NO_2$ 163.176
Cryst. (Me_2CO/hexane). Mp 80-82°.

N-*Ac:* [1846-33-9]
$C_{10}H_{11}NO_2$ 177.202
Mp 85°.

N-*Benzoyl: 2-(Benzoylamino)acetophenone.* N-*Phenacylbenzamide.* ***Muricatisine***
[4190-14-1]
$C_{15}H_{13}NO_2$ 239.273
Alkaloid from *Oxytropis muricata* and *Oxytropis puberula*. Cryst. (EtOH). Mp 122-124°.

N-*Me: α-Methylaminoacetophenone*
[35534-19-1]
$C_9H_{11}NO$ 149.192
Yellow oil.

N-*Me; hydrochloride:* [23826-47-3]
Plates. Mp 219° dec.

N-*Me,* N-*Ac:*
$C_{11}H_{13}NO_2$ 191.229
Mp 156°.

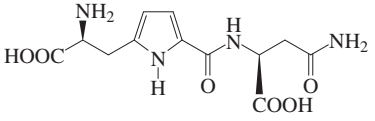
N,N-*Di-Me: 2-(*N,N*-Dimethylamino)acetophenone*
[3319-03-7]
$C_{10}H_{13}NO$ 163.219
Isol. from *Desmodium gangeticum*. Liq. Bp_{20} 130-132°.

[25384-14-9]

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 46D (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **2**, 867A (*nmr*)
Tiffeneau, M. *et al., Bull. Soc. Chim. Fr.*, 1931, **49**, 1761 (*rev*)
Stalham, F.S. *et al., J.C.S.*, 1951, 213 (*synth*)
Chapman, N.B. *et al., J.C.S.*, 1963, 1385 (*synth, deriv*)
Tanaka, H. *et al., CA*, 1971, **75**, 147849 (*struct*)
Ghosal, S. *et al., Planta Med.*, 1972, **22**, 434 (*isol, deriv*)
Bellamy, L.J. *et al., Spectrochim. Acta A*, 1972, **28**, 1869 (*ir*)
Yamaguchi, K. *et al., J. Agric. Food Chem.*, 1979, **27**, 847 (*isol*)
Muchowski, J.M. *et al., J.O.C.*, 1986, **51**, 3374 (*N-formyl*)
Abdalla, G.M. *et al., J. Het. Chem.*, 1987, **24**, 297 (*synth, ir, pmr*)
Yamagama, C. *et al., Aust. J. Chem.*, 1989, **42**, 463 (*N-15 nmr*)
Baumstark, A.L. *et al., Chem. Comm.*, 1989, 767 (*O-17 nmr*)
Buttery, R.G. *et al., J. Agric. Food Chem.*, 1994, **42**, 1-2 (*occur, anal*)

Shure, K.B. *et al., J. Agric. Food Chem.*, 1994, **42**, 350 (*isol*)
Demeuov, N.B. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1998, **34**, 484-485 (*Muricatisine*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, AHR250

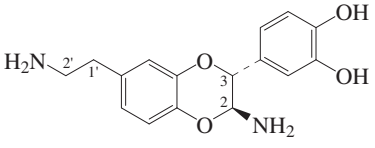
α-Amino-5-[[(2-aminocarbonyl-1-carboxyethyl)amino]carbonyl]-2-pyrrolepropanoic acid, 9CI A-695



$C_{12}H_{16}N_4O_6$ 312.282
Minor metab. of *Pantoea agglomerans* (formerly *Erwinia herbicola*). λ_{max} 200 (ϵ 6440); 220 (sh) (ϵ 2994); 275 (ϵ 10890) (H_2O).

Jin, M. *et al., Angew. Chem., Int. Ed.*, 2003, **42**, 2898-2901; 2902-2905 (*isol, pmr, cmr, ms*)

2-Amino-6-(2-aminoethyl)-3-(3,4-dihydroxyphenyl)-1,4-benzodioxan A-696
2-Amino-3-(3,4-dihydroxyphenyl)-2,3-dihydro-1,4-benzodioxin-6-ethanamine



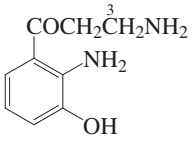
$C_{16}H_{18}N_2O_4$ 302.329
Dimer of Dopamine, D-920.

(2S,3R)-form
N,N′-*Ac:*
$C_{20}H_{22}N_2O_6$ 386.404
Isol. from the cast-off shells of the cicada *Cryptotympana* sp. Component of Zentai. Yellow powder. Mp 115-120°. $[\alpha]_D$ +28.2 (c, 1 in MeOH).

*1′,2′-Didehydro(*E-*),* N,N′*-di-Ac:*
$C_{20}H_{20}N_2O_6$ 384.388
Isol. from the cast-off shells of *Cryptotympana pustulata*. Yellow powder. $[\alpha]_D^{25}$ +33.8 (c, 0.1 in MeOH). λ_{max} 282 (log ϵ 4.32) (MeOH).

Noda, N. *et al., Chem. Pharm. Bull.*, 2000, **48**, 1749-1752 (*isol, pmr, cmr*)
Xu, M.-Z. *et al., Bioorg. Med. Chem.*, 2006, **14**, 7826-7834 (*deriv*)

3-Amino-1-(2-amino-3-hydroxyphenyl)-1-propanone A-697
2′,3-Diamino-3′-hydroxypropiophenone. 2-Amino-3-(3-aminopropanoyl)phenol. 3-Hydroxykynuramine

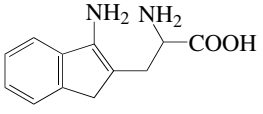


$C_9H_{12}N_2O_2$ 180.206

N^3-Ac: ***Erebusinone****. Eribusinone*
[325477-44-9]
[194615-13-9]
$C_{11}H_{14}N_2O_3$ 222.243
Isol. from the sponge *Isodictya erinacea*. Yellow solid. λ_{max} 238 (ϵ 1240); 372 (ϵ 180) (MeOH).

Moon, B. *et al., Tetrahedron*, 2000, **56**, 9057-9062 (*Erebusinone*)

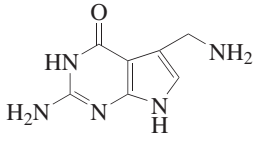
2-Amino-3-(3-amino-1*H*-inden-2-yl)propanoic acid A-698
*α,3-Diamino-1*H*-indene-2-propanoic acid, 9CI. 3-(3-Amino-1*H*-inden-2-yl)alanine.* ***Cycasindene***
[192801-71-1]



$C_{12}H_{14}N_2O_2$ 218.255
Constit. of the seeds of *Cycas revoluta* (Cycadaceae). Microcryst.

Pan, M. *et al., Phytochemistry*, 1997, **45**, 517-519 (*isol, pmr, cmr*)

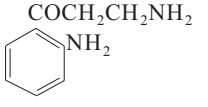
2-Amino-5-(aminomethyl)-pyrrolo[2,3-*d*]pyrimidin-4(3*H*)-one, 9CI A-699
7-Aminomethyl-7-deazaguanine. Pre-Q1 base
[69251-45-2]



$C_7H_9N_5O$ 179.181
Isol. from *Escherichia coli* tRNA. Biosynthetic precursor of Queuine, Q-9. Solid; cryst. + $2H_2O$ (as hydrochloride). Mp 220-225° dec. (hydrochloride).

Ohgi, T. *et al., Chem. Lett.*, 1979, 1283 (*synth, ir, ms, pmr, uv, derivs*)
Okada, N. *et al., J. Biol. Chem.*, 1979, **254**, 3067 (*isol, synth*)
Farkas, W.R. *et al., Biochim. Biophys. Acta*, 1984, **781**, 64 (*metab*)
Akimoto, H. *et al., J.C.S. Perkin 1*, 1988, 1637 (*synth, ir, pmr, bibl*)
Klepper, F. *et al., Helv. Chim. Acta*, 2005, **88**, 2610-2616 (*synth, ir, pmr, cryst struct*)

3-Amino-1-(2-aminophenyl)-1-propanone, 9CI A-700
2′,3-Diaminopropiophenone. ***Kynuramine***
[363-36-0]



$C_9H_{12}N_2O$ 164.207
Found in rat brains, and derived from tryptophan. Liq.

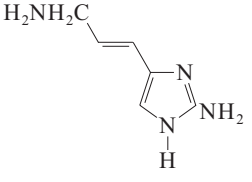
Hydrochloride: Mp 185-187° dec.

Picrate: Mp 176-177° dec.

N^3-Ac: ***N^3-Acetylkynuramine***
$C_{11}H_{14}N_2O_2$ 206.244
Prod. by the marine-derived *Janibacter limosus* Hel 1. Light yellow oil. λ_{max} 202 (log ϵ 4.21); 227 (log ϵ 4.31); 362 (log ϵ 3.61) (MeOH). λ_{max} 208 (log ϵ 4.3); 227 (log ϵ 4.31); 255 (log ϵ 3.77); 360 (log ϵ 3.68) (MeOH/NaOH).

Butenandt, A. *et al., Z. Naturforsch., B*, 1953, **86**, 454 (*synth, pharmacol*)
Seiler, N. *et al., CA*, 1971, **74**, 39005 (*ms*)
Gal, E.M. *et al., J. Neurochem.*, 1978, **30**, 607 (*occur*)
Asolkar, R.N. *et al., J. Antibiot.*, 2004, **57**, 17-23 (*N^3-Acetylkynuramine*)

2-Amino-4-(3-amino-1-propenyl)-1*H*-imidazole A-701
*4-(3-Amino-1-propenyl)-1*H*-imidazol-2-amine, 9CI. 3-(2-Amino-1*H*-imidazol-4-yl)-2-propen-1-amine. 3-Amino-1-(2-aminoimidazolyl)-1-propene*

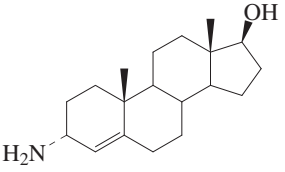


$C_6H_{10}N_4$ 138.172

(E)-form [140381-65-3]
Alkaloid from *Agelas oroides*, *Ptilocaulis walpersi* and *Teichaxinella morchella*. Light brown oil. λ_{max} 276 (ϵ 8790) (MeOH) (Derep).

Wright, A.E. *et al., J. Nat. Prod.*, 1991, **54**, 1684-1686 (*isol, uv, pmr, cmr*)
Tasdemir, D. *et al., Bioorg. Med. Chem.*, 2008, **15**, 6834-6845 (*isol, pmr, cmr*)

3-Aminoandrost-4-en-17-ol A-702



$C_{19}H_{31}NO$ 289.46

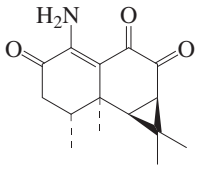
(3α,17β)-form
N-*Carbamoyl:* ***3-Ureidoandrost-4-en-17-ol***
$C_{20}H_{32}N_2O_2$ 332.485
Alkaloid from the musk of *Moschus moschiferus*. Amorph. powder. Mp 210-212°. $[\alpha]_D^{25}$ +250 (c, 0.02 in MeOH). Dec. at 215°.

17-Ketone, N-*carbamoyl:* ***3-Ureidoandrost-4-en-17-one***
$C_{20}H_{30}N_2O_2$ 330.469
Alkaloid from the musk of *Moschus moschiferus*. Amorph. powder. Mp

220-223°. $[\alpha]_D^{25}$ +115 (c, 0.002 in MeOH).

Oh, S.-R. *et al., Chem. Pharm. Bull.*, 2002, **50**, 663-664 (*isol, pmr, cmr*)

1-Amino-1(10)-aristolene-2,8,9-trione A-703



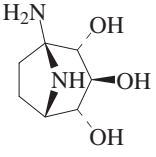
$C_{15}H_{19}NO_3$ 261.32

ent-form
Lepidamine
[609332-21-0]
Prod. by *Russula lepida*. Pale yellow oil. $[\alpha]_D$ +125 (c, 0.36 in $CHCl_3$). λ_{max} 242 ; 409 (Et_2O).

Tan, J. *et al., Helv. Chim. Acta*, 2003, **86**, 307-309 (*isol, pmr, cmr, ms*)

1-Amino-8-azabicyclo[3.2.1]octane-2,3,4-triol A-704

1-Amino-2,3,4-trihydroxynortropane



$C_7H_{14}N_2O_3$ 174.199

(1*S*,2*R*,3*R*,4*S*)-*form*
Calystegine N_1
[177794-03-5]
Alkaloid from *Hyoscyamus niger* (Solanaceae). Shows glycosidase inhibitory activity. $[\alpha]_D$ +59.4 (c, 0.2 in H_2O).

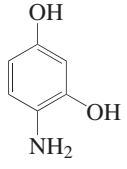
Asano, N. *et al., Carbohydr. Res.*, 1996, **284**, 169-178 (*isol, pmr, cmr, activity*)

Bekkouche, K. *et al., Phytochemistry*, 2001, **58**, 455-462 (*ms, occur*)

Biastoff, S. *et al., Alkaloids (Academic Press)*, 2007, **64**, 49-102 (*rev*)

4-Amino-1,3-benzenediol, 9CI A-705

4-Aminoresorcinol, 8CI. 2,4-Dihydroxyaniline
[13066-95-0]



$C_6H_7NO_2$ 125.127
Used in hair dyes. pK_{a1} 7.91; pK_{a2} 9.16; pK_{a3} 11.24 (20°). Unstable.

3-Me ether: 4-Amino-3-methoxyphenol
[61638-01-5]
$C_7H_9NO_2$ 139.154
Reddish-brown needles (toluene). Mp 175-180°. Blackens at 160°. Aq. solns. discolour in air.

3-Me ether, N-*Ac: 4-Hydroxy-2-methoxyacetanilide*
[5307-06-2]
$C_9H_{11}NO_3$ 181.191
Isol. from a fungal endophyte of spruce needles and from a soil fungus. Also prod. by a marine-derived *Penicillium* sp. Red needles (toluene). Mp 169-171°.

Di-Me ether: 2,4-Dimethoxyaniline
[2735-04-8]
$C_8H_{11}NO_2$ 153.18
Alarm pheromone isol. from *Neanura muscorum*. Plates (petrol) or oil. Mp 32.5-33.5°. $Bp_{0.006}$ 75-80°.

▶ LD_{50} (rat, orl) 464 mg/kg. BX4200000

Di-Me ether, hydrochloride: [54150-69-5]
Mp 230° dec.

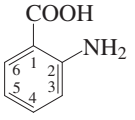
[37966-57-7]

Collins, R.F. *et al., J.C.S.(C)*, 1966, 366 (*synth*)

Messer, C. *et al., CA*, 1999, **131**, 71415y (*2,4-Dimethoxyaniline, isol*)

2-Aminobenzoic acid, 9CI A-706

Anthranilic acid, 8CI. Vitamin L_1
[118-92-3]
[1321-11-5]



$C_7H_7NO_2$ 137.138
Prod. by bacteria and fungi. An important intermed. in the synth. of many compds., corrosion inhibitor for metals. Used as 3% aq. soln. of Na salt for gravimetric detn. of Co, Ni, Cu(*II*), Hg(*II*), Mn, Pb, Cd, U(*VI*), Zn. Inducer of fruiting body formation. Transient receptor potential (TRP) channel blocker. Leaflets. Sol. hot H_2O, EtOH, Et_2O. Mp 144-148°. pK_{a1} 1.97; pK_{a2} 4.79 (25°). pK_{a1} 2.17; pK_{a2} 4.85 (25°, 0.1*M* KCl). Sublimes, triboluminescent. λ_{max} 218 (ϵ 20200); 248 (ϵ 7000); 335 (ϵ 4700) (MeOH) (Berdy).

▶ LD_{50} (mus, orl) 1400 mg/kg. Exp. reprod. effects. CB2450000

Hydrochloride: [2099-63-0]
Mp 193-194°.

β-D-Glucopyranosyl ester: β-D-Glucopyranosyl anthranilate
[55798-72-6]
$C_{13}H_{17}NO_7$ 299.28
Constit. of the fruit of piñuela (*Bromelia plumieri*, Bromeliaceae) and of *Arabidopsis thaliana*.

α-L-Rhamnopyranosyl ester: α-L-Rhamnopyranosyl anthranilate
$C_{13}H_{17}NO_6$ 283.28
Prod. by *Actinomyces* sp. Stamm K 17/2. Amorph. solid. $[\alpha]_D^{20}$ -76 (c, 0.1 in MeOH). λ_{max} 219 (log ϵ 4.25); 249 (log ϵ 3.72); 341 (log ϵ 3.55) (MeOH).

6-Deoxy-α-L-talopyranosyl ester: 2-Aminobenzoyl 6-deoxy-α-L-talopyranoside
$C_{13}H_{17}NO_6$ 283.28
Prod. by *Streptomyces* sp. GöM1. Amorph. solid. λ_{max} 219 (log ϵ 3.93); 248 (log ϵ 3.43); 340 (log ϵ 3.19) (MeOH).

Me ester: Methyl 2-aminobenzoate. FEMA 2682
[134-20-3]
$C_8H_9NO_2$ 151.165
Found in essential oils, including bergamot, orange peel, lemon peel, jasmine, ylang-ylang and neroli. Also present in concord grape, strawberry, star fruit, black tea and rice bran. Found in egg masses of the muricid mollusc *Trunculariopsis trunculus*. Used in perfumery as artificial orange blossom fragrance, also employed extensively in the form of its Schiff's bases (e.g. with Hydroxycitronellal). Flavouring agent. Cryst. Mp 24-25°. Bp_{15} 133.5°. pK_a 2.32 (25°, 1% EtOH aq.). Steam-volatile.

▶ Skin irritant. LD_{50} (rat, orl) 2910 mg/kg. Exp. reprod. effects. CB3325000

Et ester: Ethyl 2-aminobenzoate. FEMA 2421
[87-25-2]
$C_9H_{11}NO_2$ 165.191
Present in orange and grape. Flavouring ingredient. Liq. with faint orange-flower odour and flavour. d_4^{20} 1.12. Mp 13°. Bp 266-268° Bp_{15} 145-147°.

▶ DG2448000

Amide: 2-Aminobenzamide. Anthranilamide
[88-68-6]
$C_7H_8N_2O$ 136.153
Prod. by a marine *Cytophaga marinoflava* sp. AM13.1. Acetaldehyde scavenger for polyethylene beverage bottles. Fluorescent label for polysaccharides etc. Leaflets. Mp 109-111.5° dec.

▶ CU8993000

Amide, N^2*-(2S-hydroxypropanoyl): 2-[(2-Hydroxypropanoyl)amino]benzamide*
[18326-27-7]
$C_{10}H_{12}N_2O_3$ 208.216
Prod. by *Penicillium chrysogenum*. Oil.

N-*Eicosanoyl:* N-*Eicosanoylanthranilic acid.* N-*Arachidylanthranilic acid*
[165393-50-0]
$C_{27}H_{45}NO_3$ 431.657
Constit. of *Inula japonica* and *Ononis natrix*. Cryst. (MeOH). Mp 86-87°.

N-*Docosanoyl:* **N-*Docosanoylanthranilic acid***
[85563-88-8]
$C_{29}H_{49}NO_3$ 459.711
Constit. of *Inula oculus-christi* and *Inula japonica*. Cryst. (Me_2CO/petrol). Mp 91-93°.

N-*Docosanoyl, Et ester:* ***Ethyl* N-*docosanoylanthranilate***
[209523-04-6]
$C_{31}H_{53}NO_3$ 487.765
Constit. of the roots of *Gentiana tibetica*. Antifungal agent.

N-*(13Z-Docosenoyl):* N-*(13-Docosenoyl)anthranilic acid*
[129277-41-4]
$C_{29}H_{47}NO_3$ 457.695
Constit. of *Ononis natrix* ssp. *hispanica*. Oil.

N-*Tricosanoyl:* **N-*Tricosanoylanthranilic acid***
$C_{30}H_{51}NO_3$ 473.738
Constit. of *Inula japonica*.

N-*Tetracosanoyl:* **N-*Tetracosanoylanthranilic acid***
$C_{31}H_{53}NO_3$ 487.765
Constit. of *Inula japonica*.

N-*(Carboxyacetyl): 2-[(Carboxyacetyl)amino]benzoic acid, 9CI.* ***2-(Malonylamino)benzoic acid***
[53947-84-5]
$C_{10}H_9NO_5$ 223.185
Isol. from the leaves of the peanut (*Arachis hypogaea*). Cryst. (Me_2CO/hexane). Mp 190-192°.

N-*(3ξ-Hydroxyeicosanoyl):* **N-*(3-Hydroxyeicosanoyl)anthranilic acid***
[856686-30-1]
$C_{27}H_{45}NO_4$ 447.657
Constit. of the aerial parts of *Ononis natrix*.

N-*Succinoyl:* **N-*Succinoylanthranilic acid***
[5694-37-1]
[120572-43-2 (Et ester)]
$C_{11}H_{11}NO_5$ 237.212
Alkaloid from *Aconitum septentrionale*. Cryst. (Me_2CO) (as di-Et ester). Mp 57-58° (di-Et ester). Prob. artifact.

N-*Succinoyl, Me ester:* ***Methyl* N-*succinoylanthranilate***
[108540-96-1]
$C_{12}H_{13}NO_5$ 251.238
Constit. of *Aconitum laeve*. Amorph. powder.

N-*[3-(Methoxycarbonyl)propanoyl], Me ester:* [59868-50-7]
$C_{13}H_{15}NO_5$ 265.265
Constit. of the alga *Jolyna laminarioides*. Chymotrypsin inhibitor. Amorph. powder. Mp 50°. λ_{max} 222 ; 251 ; 307 (MeOH).

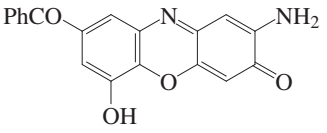
N-*(4-Methylbenzyl): 2-[(4-Methylbenzyl)amino]benzoic acid.* ***Onosmin A***
$C_{15}H_{15}NO_2$ 241.289
Constit. of *Onosma hispida*. Lipoxygenase inhibitor. Amorph. solid. Mp 185-187°. λ_{max} 284 ; 343 (MeOH).

N-*(4-Methylbenzyl), Me ester:* ***Onosmin B***
$C_{16}H_{17}NO_2$ 255.316
Constit. of *Onosma hispida*. Lipoxygenase inhibitor. Amorph. solid. Mp 137-140°. λ_{max} 275 ; 353 (MeOH).

[99196-75-5 , 552-37-4 , 99197-00-9 , 117808-63-6 , 99196-74-4]

Kimura, Y. *et al., Agric. Biol. Chem.*, 1974, **38**, 1507-1510 (*2-Malonylaminobenzoic acid*)
Malakov, P.Y. *et al., Phytochemistry*, 1982, **21**, 2589-2590 (*Docosanoylanthranilic acid*)
Barrero, A.F. *et al., Phytochemistry*, 1990, **29**, 1967-1969 (*Docosenoylanthranilic acid*)
Al-Khalil, S. *et al., J. Nat. Prod.*, 1995, **58**, 760-763 (*Eicosanoylanthranilic acid*)
Usmanova, S.K. *et al., Khim. Prir. Soedin.*, 1996, **32**, 77-81; *Chem. Nat. Compd. (Engl. Transl.)*, 1996, **32**, 62-65 (*N-succinoyl*)
Tan, R.X. *et al., Phytochemistry*, 1998, **47**, 1223-1226 (*Ethyl docosanoylanthranilate*)
Nawasreh, M. *et al., Alexandria J. Pharm. Sci.*, 2004, **18**, 165-170; *CA*, **143**, 93919r (*N-3-Hydroxyeicosanoylanthranilic acid*)
Shaaban, M. *et al., Dissertation*, Univ. of Göttingen, 2004, (*marine, isol*)
Ahmad, I. *et al., Chem. Pharm. Bull.*, 2005, **53**, 907-910 (*Onosmins A,B*)
Shaheen, F. *et al., Phytochemistry*, 2005, **66**, 935-940 (*Methyl N-succinoylanthranilate*)
Wang, J. *et al., Plant J.*, 2005, **44**, 606-619 (*biosynth*)
Bitzer, J. *et al., Eur. J. Org. Chem.*, 2006, 3661-3666 (*6-deoxytalopyranosyl ester*)
Qin, J.J. *et al., Chin. Chem. Lett.*, 2008, **19**, 556-558 (*Inula japonica N-acyl derivs*)

2-Amino-8-benzoyl-6-hydroxy-3*H*-phenoxazin-3-one A-707



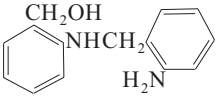
$C_{19}H_{12}N_2O_4$ 332.315
Prod. by marine bacterium *Halomonas* sp. GWS-BW-H8hM. Moderately cytotoxic. Red solid. λ_{max} 257 (log ε 3.81); 309 (log ε 3.59); 432 (log ε 3.46) (MeOH). λ_{max} 254 (log ε 3.73); 305 (log ε 3.53); 454 (log ε 3.57) (MeOH/HCl). λ_{max} 243 (log ε 3.89); 438 (log ε 3.67) (MeOH/NaOH).

*4′-Hydroxy: 2-Amino-6-hydroxy-8-(4-hydroxybenzoyl)-3*H*-phenoxazin-3-one*
$C_{19}H_{12}N_2O_5$ 348.314
Prod. by *Halomonas* sp. GWS-BW-H8hM. Red solid. λ_{max} 266 (log ε 3.54); 300 (log ε 3.52); 428 (log ε 3.44); 434 (log ε 3.45) (MeOH). λ_{max} 249 (log ε 3.62); 304 (log ε 3.58); 465 (log ε 3.35) (MeOH/HCl). λ_{max} 239 (log ε 3.61); 346 (log ε 3.56); 445 (log ε 3.49) (MeOH/NaOH).

Bitzer, J. *et al., J. Antibiot.*, 2006, **59**, 86-92 (*isol, uv, pmr, cmr, ms*)

2-(2-Aminobenzylamino)benzyl alcohol A-708

2-[[(2-Aminophenyl)methyl]amino]benzenemethanol, 9CI
[83326-78-7]

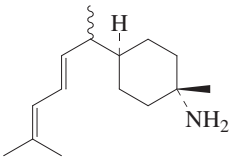


$C_{14}H_{16}N_2O$ 228.293
Isol. from the Indian medicinal plant *Justicia gendarussa* (Acanthaceae). Fine needles ($CHCl_3$/petrol). Mp 131°.

Me ether: ***2-Amino-N-[2-(methoxymethyl)phenyl]benzenemethanamine, 9CI***
[83326-77-6]
$C_{15}H_{18}N_2O$ 242.32
From *Justicia gendarussa* (Acanthaceae). Viscous oil.

Chakravarty, A.K. *et al., Tetrahedron*, 1982, **38**, 1797 (*isol*)
Kamat, V.P. *et al., Org. Prep. Proced. Int.*, 1994, **26**, 494 (*synth, pmr*)
Bhattacharyya, S. *et al., Synth. Commun.*, 1995, **25**, 3597 (*synth*)

3-Amino-8,10-bisaboladiene A-709



$C_{15}H_{27}N$ 221.385

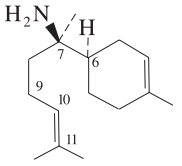
(3α,6β,7ξ,8*E*)-*form*
N-*Formyl:* ***3-Formamido-8,10-bisaboladiene***
[134781-22-9]
$C_{16}H_{27}NO$ 249.395
Isol. from the sponge *Halichondria* cf. *lendenfeldi*. Dec. on isol.

Isocyanide: ***3-Isocyano-8,10-bisaboladiene***
[134781-21-8]
$C_{16}H_{25}N$ 231.38
Isol. from the sponge *Halichondria* cf. *lendenfeldi* and the mollusc *Phyllidia pustulosa*. Oil. $[\alpha]_D$ -5.6 (c, 0.2 in $CHCl_3$). Has -NC replacing NH_2. λ_{max} 230 (sh) (ε 14000); 237 (ε 15300); 246 (sh) (ε 11100) (no solvent reported).

Kassühlke, K.E. *et al., J.O.C.*, 1991, **56**, 3747-3750 (*isol, pmr, cmr*)

7-Amino-2,10-bisaboladiene A-710

7-Amino-7,8-dihydro-α-bisabolene. 7-Aminobisabolene



(6*R*,7*R*)-*form*

$C_{15}H_{27}N$ 221.385

(6*R*,7*R*)-*form* [105281-34-3]
Constit. of *Ciocalypta* sp. Oil. $[\alpha]_D$ -15 (c, 0.4 in MeOH).

Hydrochloride: [105281-33-2]
Yellow oil. $[\alpha]_D^{23}$ -8.3 (c, 0.5 in MeOH).

(6*R*,7*S*)-*form* [105281-43-4]
Constit. of a *Halichondria* sp. and a sponge *Theonella* sp. Oil. $[\alpha]_D$ +39 (MeOH). $[\alpha]_D^{20}$ +59.9 (c, 3 in $CHCl_3$).

Δ^9-Isomer, 11-hydroxy: 7-Amino-2,9-bisaboladien-11-ol. ***Aminobisabolenol***
[108384-61-8]
$C_{15}H_{27}NO$ 237.384
Constit. of *Theonella* sp. Oil. Sol. MeOH, Me_2CO, $CHCl_3$; poorly sol. H_2O. $[\alpha]_D$ +29 (MeOH).

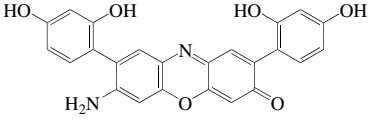
*Δ^{11}-Isomer, 10*R*-hydroxy: 7-Amino-2,11-bisaboladien-10*R*-ol.* ***Isoaminobisabolenol b***
[108384-62-9]
$C_{15}H_{27}NO$ 237.384
Constit. of *Theonella* sp. Oil. Sol. MeOH, Me_2CO, $CHCl_3$; poorly sol. H_2O. $[\alpha]_D$ +40 (MeOH).

*Δ^{11}-Isomer, 10*S*-hydroxy: 7-Amino-2,11-bisaboladien-10*S*-ol.* ***Isoaminobisabolenol a***
[108449-15-6]
$C_{15}H_{27}NO$ 237.384
Constit. of *Theonella* sp. Oil. Sol. MeOH, Me_2CO, $CHCl_3$; poorly sol. H_2O. $[\alpha]_D$ +34 (MeOH).

Sullivan, B.W. *et al., J.O.C.*, 1986, **51**, 5134-5136 (*Halichondria constits*)
Gulavita, N.K. *et al., J.O.C.*, 1986, **51**, 5136-5139 (*Ciocalypta constit*)
Kitagawa, I. *et al., Chem. Pharm. Bull.*, 1987, **35**, 928 (*Theonella constits, cryst struct*)

7-Amino-2,8-bis(2,4-dihydroxyphenyl)-3*H*-phenoxazin-3-one, 9CI A-711

Resorcein
[33869-21-5]

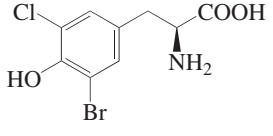


$C_{24}H_{16}N_2O_6$ 428.4
Tentative isolation. Constit. of tobacco leaves. Used in hair preparations and as an elastin stain. Violet needles (C_6H_6/Me_2CO). Dec. at 300°. λ_{max} 587 (MeOH).

Musso, H. *et al., Chem. Ber.*, 1963, **96**, 1579 (*synth, uv*)
Lillie, R.D. *et al., Acta Histochem.*, Suppl., 1971, **No. 9**, 625 (*synth, use*)
Avunddzhyan, E.S. *et al., CA*, 1974, **81**, 166553e (*isol*)

2-Amino-3-(3-bromo-5-chloro-4-hydroxyphenyl)propanoic acid A-712

3-Bromo-5-chlorotyrosine, 9CI. 3-Chloro-5-bromotyrosine (incorr.)



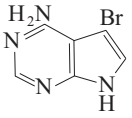
$C_9H_9BrClNO_3$ 294.532

(*S*)-*form*
L-form
Isol. from the operculum of *Buccinum undatum* and cuticle of *Limulus polyphemus.*

Hunt, S. *et al., Biochim. Biophys. Acta*, 1971, **252**, 401-404 (*isol*)
Welinder, B.S. *et al., Biochim. Biophys. Acta*, 1972, **279**, 491-497 (*isol, synth, ms*)

4-Amino-5-bromopyrrolo[2,3-*d*]pyrimidine A-713

*5-Bromo-1*H*-pyrrolo[2,3-*d*]pyrimidin-4-amine, 9CI*
[22276-99-9]

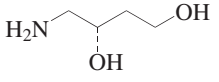


$C_6H_5BrN_4$ 213.036
Isol. from a sponge *Echinodictyum* sp. Bronchodilator and hypotensive agent. Adenosine kinase inhibitor. Needles (EtOH aq.). Mp 240-241° (238-239°) dec. λ_{max} 232 (ϵ 16600); 282 (ϵ 8710) (pH 1) (Derep). λ_{max} 225 (ϵ 14800); 279 (ϵ 8910) (pH 11) (Derep).

Gerster, J.F. *et al., J. Het. Chem.*, 1969, **6**, 207-213 (*synth, uv*)
Kazlauskas, R. *et al., Aust. J. Chem.*, 1983, **36**, 165-170 (*isol, uv, pmr, cmr, ms*)

4-Amino-1,3-butanediol A-714

[130239-34-8]



(*S*)-*form*

$C_4H_{11}NO_2$ 105.136

(*S*)-*form* [637343-51-2]
Oil.

(±)-*form*
Oil.

N-E-*Cinnamoyl:* ***Piperlotine K***
[958296-18-9]
$C_{13}H_{17}NO_3$ 235.282
Alkaloid from the leaves of *Piper lolot*. Syrup. Racemate. λ_{max} 211 ; 218 ; 224 ; 280 (MeOH).

N-E-*Cinnamoyl (*E*):* ***Piperlotine J***
[958296-17-8]
$C_{15}H_{19}NO_4$ 277.319
Alkaloid from the leaves of *Piper lolot*. Syrup. Racemate. λ_{max} 212 ; 218 ; 223 ; 280 (MeOH).

(ξ)-*form*
N-E-*Cinnamoyl, 1,3-di-Ac:* ***Piperlotine L***
[958296-19-0]
$C_{17}H_{21}NO_5$ 319.357
Alkaloid from the leaves of *Piper lolot*. Syrup. $[\alpha]_D$ +42.2 (c, 0.1 in MeOH). λ_{max} 210 ; 216 ; 222 ; 274 (MeOH).

Kuriyama, N. *et al., Synthesis*, 1990, 735-738 (*synth*)
Pat. Coop. Treaty (WIPO), 2003, 03 106 413; *CA*, **140**, 59633 (*S-form, synth*)
Li, C.-Y. *et al., J. Agric. Food Chem.*, 2007, **55**, 9436-9442 (*Piperlotines J,K,L*)

4-Aminobutanoic acid, 9CI A-715

γ-Aminobutyric acid. Piperidinic acid. Piperidic acid. Aminalon. Gamalon. GABA
[56-12-2]
[28805-76-7]
$H_2NCH_2CH_2CH_2COOH$
$C_4H_9NO_2$ 103.121
Widely distributed in higher plants. Prod. by *Monascus pilosus* (Ifo4520). Antihypertensive agent. The natural inhibitory transmitter at synaptic junctions in some regions of the mammalian brain and spinal cord. Prisms (EtOH). V. sol. H_2O; sl. sol. EtOH, Me_2CO; insol. Et_2O. Mp 203° dec. Log P -3.33 (calc). Homopolymers (polyamides) are usually derived from the lactam 2-Pyrrolidinone, P-956.

▶ LD_{50} (mus, orl) 12680 mg/kg. ES6300000

Hydrochloride: Mp 135-136°.

Hydrobromide: [36551-16-3]
Orange solid. Mp 215°.

Me ester: [13031-60-2]
$C_5H_{11}NO_2$ 117.147
Solid (EtOH/Et_2O) (as hydrochloride). Mp 119° (114-115°) (hydrochloride).

▶ ES7065000

Et ester: [5959-36-4]
$C_6H_{13}NO_2$ 131.174
Bp_{12} 75-77°.

Et ester; hydrochloride: Mp 65-72°. Hygroscopic.

▶ LD_{50} (mus, ivn) 425 mg/kg. Exp. reprod. effects.

N-*Ac:* [3025-96-5]
$C_6H_{11}NO_3$ 145.158
Mp 129-131°.

▶ ES5610000

N-*Ac; hydrochloride:* Mp 133°.

N-*(2,2-Dimethylpropanoyl): 4-[(2,2-Dimethyl-1-oxopropyl)amino]butanoic acid, 9CI.* ***Pivagabine, INN***
[69542-93-4]
$C_9H_{17}NO_3$ 187.238
Anticonvulsant.

N-*(5-Hydroxy-3-methyl-2*Z*-pentenoyl):* ***Fuscoatramide***
$C_{10}H_{17}NO_4$ 215.249
Prod. by *Humicola fuscoatra* NRRL 22980. Oil. λ_{max} 233 (ϵ 3900) (MeOH).

N-tert-*Butyloxycarbonyl:* [57294-38-9]
$C_9H_{17}NO_4$ 203.238
Cryst. (EtOAc/hexane). Mp 53-54°. $Bp_{0.2}$ 78-82°.

N-tert-*Butyloxycarbonyl, anhydride:* [89231-63-0]
$C_{18}H_{32}N_2O_7$ 388.46
Cryst. (EtOAc/petrol). Mp 106°.

N-*Benzyloxycarbonyl:* [5105-78-2]
$C_{12}H_{15}NO_4$ 237.255
Needles (EtOAc/hexane). Mp 65-67°.

N-*Benzyloxycarbonyl, amide:* [35821-20-6]
$C_{12}H_{16}N_2O_3$ 236.27
Cryst. Mp 125-128°.

N-*Me:* [1119-48-8]
$C_5H_{11}NO_2$ 117.147
Cryst. Mp 151.5-153°.

N-*Me; hydrochloride:* [6976-17-6]
Mp 124-126°.

N,N-*Di-Me: 4-(Dimethylamino)butanoic acid*
[693-11-8]
$C_6H_{13}NO_2$ 131.174
Mp 102-104°. Bp_{10} 135-137°.

N,N-*Di-Me; hydrochloride:* Mp 145-147°.

N,N-*Di-Me, Me ester:* [22041-22-1]
$C_7H_{15}NO_2$ 145.201
Sol. H_2O. Mp 171.5-173°.

▶ ES9850000

N-*(2-Nitrobenzenesulfenyl):* [80977-11-3] [104809-33-8]
$C_{10}H_{12}N_2O_4S$ 256.282
Solid. Mp 102° (92.5-94°).

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 577C; 577D (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 877C (*nmr*)
Org. Synth., Coll. Vol., 2, 1943, 25 (*synth*)
Synge, R.L.M. *et al., Biochem. J.*, 1951, **48**, 429 (*isol*)
Thompson, J.F. *et al., Arch. Biochem. Biophys.*, 1953, **46**, 248 (*synth*)
Reppe, W. *et al., Annalen*, 1955, **596**, 158 (*derivs*)
Goerdler, J. *et al., Angew. Chem.*, 1959, **71**, 775 (*N-(2-nitrophenylsulfenyl), synth*)
Evans, R.L. *et al., J.O.C.*, 1959, **24**, 863-864 (*benzyloxycarbonyl*)
Taddei, F. *et al., J.C.S.*, 1964, 1553 (*pmr*)
Voellmin, J. *et al., Microchem. J.*, 1966, **11**, 73 (*ms*)
Karrer, W. *et al., Konstitution und Vorkommen der Organischen Pflanzenstoffe*, 2nd edn., Birkhäuser Verlag, 1972, no. 2427 (*occur*)
Steward, E.G. *et al., Acta Cryst. B*, 1973, **29**, 2038; 2825 (*cryst struct*)
Tomita, K. *et al., Bull. Chem. Soc. Jpn.*, 1973, **46**, 2199 (*cryst struct*)
Galzigna, L. *et al., Arch. Int. Pharmacodyn. Ther.*, 1978, **235**, 73 (*Pivagabine*)
Terano, S. *et al., Phytochemistry*, 1978, **17**, 550 (*biosynth*)
Krogsgaard-Larsen, P. *et al., Gaba-Neuro-Transm.: Pharmacochem., Biochem., Pharmacol. Aspects, 1979*, Academic Press, N.Y., 1979,
Rauls, D.O. *et al., J. Med. Chem.*, 1979, **22**, 81-86 (*benzyloxycarbonyl amide*)
Stewart, F.H.C. *et al., Aust. J. Chem.*, 1981, **34**, 2439-2447 (*N-(2-nitrophenylsulfenyl), synth*)
Meldrum, B. *et al., Clin. Neuropharmacol.*, 1982, **5**, 293
Battersby, A.R. *et al., J.C.S. Perkin 1*, 1982, 455 (*biosynth*)
Weber, H.P. *et al., Acta Cryst. B*, 1983, **39**, 360 (*cryst struct*)
Shashua, V.E. *et al., J. Med. Chem.*, 1984, **27**, 659-664 (*tert-butyloxycarbonyl anhydride*)
Blankespoor, R.L. *et al., J.O.C.*, 1984, **49**, 4441-4446 (*benzyloxycarbonyl, synth, ir, pmr*)
Galakatos, N.G. *et al., J.O.C.*, 1985, **50**, 1302 (*deriv, synth, pmr*)
De Feudis, F.V. *et al., Drugs of Today (Barcelona)*, 1986, **22**, 563 (*rev*)
Roberts, E. *et al., Recept. Biochem. Methodol.*, 1986, **5**, 1 (*rev*)
Negwer, M. *et al., Organic-Chemical Drugs and their Synonyms, 6th edn., Akademie-Verlag*, 1987, 223 (*synonyms*)
Kirk, D.N. *et al., J.C.S. Perkin 1*, 1988, 2979-2982 (*tert-butyloxycarbonyl*)
Houssin, R. *et al., Synthesis*, 1988, 259-261 (*tert-butyloxycarbonyl*)
Nisticò, G. *et al., GABA: Basic Research and Clinical Applications*, Pythagora Press, 1989, (*book*)
Ramek, M. *et al., Int. J. Quantum Chem.*, 1990, **17**, 45 (*conformn*)
Erdoe, S.L. *et al., J. Neurochem.*, 1990, **54**, 363 (*rev*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 1336
Bon, E. *et al., J.O.C.*, 1994, **59**, 1904 (*synth, ir, pmr, cmr*)
Joshi, B.K. *et al., J. Nat. Prod.*, 2002, **65**, 1734-1737 (*Fuscoatramide*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, AAJ350; PIM500

4-Amino-1-butanol A-716

[13325-10-5]
$H_2NCH_2CH_2CH_2CH_2OH$
$C_4H_{11}NO$ 89.137
Oil. Sol. EtOH, insol. Et_2O. Bp 206° Bp_{34} 125°. Forms a hydrate in water. Absorbs CO_2 and H_2O from air.

▶ LD_{50} (rat, orl) 1150 mg/kg. EK9700000

Picrate: Mp 86.6-88.6°.

N-*Benzyloxycarbonyl:* [17996-13-3]
$C_{12}H_{17}NO_3$ 223.271
Cryst. (EtOAc/hexane). Mp 78-79°.

N-*[3-(Methylthio)-2*E*-propenoyl]:* N-*(4-Hydroxybutyl)-3-(methylthio)-2-propenamide.* ***Aglatenol***
$C_8H_{15}NO_2S$ 189.278
Alkaloid from the leaves of *Aglaia tenuicaulis*. λ_{max} 224 (log ϵ 3.78); 274 (log ϵ 4.32) (MeOH aq.).

N-O-*Bis[3-(methylthio)-2*E*-propenoyl]:* ***Aglatenin***
$C_{12}H_{19}NO_3S_2$ 289.419
Alkaloid from the leaves of *Aglaia tenuiformis*. Cryst. Mp 81-83°. λ_{max} 224 (log ϵ 3.75); 274 (log ϵ 4.49) (MeOH aq.).

N-E-*Cinnamoyl,* O-*[3-(methylthio)-2*E*-propenoyl]:* ***Tenuicaulin A***
$C_{17}H_{21}NO_3S$ 319.424
Alkaloid from the leaves of *Aglaia tenuicaulis*. Cryst. Mp 75-77°. λ_{max} 216 (log ϵ 4.18); 221 (sh) (log ϵ 4.12); 276 (log ϵ 4.52) (MeOH aq.).

N-E-*Cinnamoyl,* O-*[3-(methylthio)-2*Z*-propenoyl]:* ***Isotenucaulin A***
$C_{17}H_{21}NO_3S$ 319.424
Alkaloid from the leaves of *Aglaia tenuicaulis*. Isol. as a mixt. with Tenucaulin B. λ_{max} 216 (log ϵ 4.17); 221 (sh) (log ϵ 4.12); 282 (log ϵ 4.48) (MeOH aq.).

N-E-*Cinnamoyl,* O-*benzoyl:* ***Caulitenin***
$C_{20}H_{21}NO_3$ 323.391
Alkaloid from the stem bark of *Aglaia tenuicaulis*. λ_{max} 218 (sh) (log ϵ 4.32); 222 (log ϵ 4.32); 231 (sh) (log ϵ 4.18); 274 (log ϵ 4.35) (MeOH aq.).

N,O-*Di*-E-*cinnamoyl:* ***Tenaglin***
$C_{22}H_{23}NO_3$ 349.429
Alkaloid from the stem bark of *Aglaia tenuicaulis*. λ_{max} 216 (log ϵ 4.4); 221 (sh) (log ϵ 4.35); 274 (log ϵ 4.54) (MeOH aq.).

N-Z-*Cinnamoyl,* O-*[3-(methylthio)-2*E*-propenoyl]:* ***Tenucaulin B***
$C_{17}H_{21}NO_3S$ 319.424
Alkaloid from the leaves of *Aglaia tenuicaulis*. Isol. as a mixt. with Isotenucaulin A. λ_{max} 274 (log ϵ 4.16) (MeOH aq.).

N-*Me:* [42042-68-2]
$C_5H_{13}NO$ 103.164
Liq. $Bp_{0.36}$ 71°.

N,N-*Di-Me: 4-(Dimethylamino)-1-butanol, 9CI*
[13330-96-6]
$C_6H_{15}NO$ 117.191
Oil. Bp 186-189° Bp_{14} 80-81°.

Me ether: 4-Methoxy-1-butylamine. 1-Amino-4-methoxybutane
[34039-36-6]
$C_5H_{13}NO$ 103.164
Sol. H_2O, EtOH, Et_2O. Bp 142-145°.

N,N-*Dibutyl:* [94473-23-1]
$C_{12}H_{27}NO$ 201.351
Bp_{40} 172-175°.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 338D (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 538A (*nmr*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 429A (*ir*)
Henry, L. *et al., Ber.*, 1900, **33**, 3170 (*synth*)
Lunsford, C.D. *et al., J.O.C.*, 1957, **22**, 1225 (*N,N-dibutyl*)
Kaluszyner, A. *et al., J.O.C.*, 1961, **26**, 3536 (*deriv*)
Hoffman, R.V. *et al., J.C.S. Perkin 1*, 1989, 1375 (*deriv*)
Zoppetti, G. *et al., Biochim. Biophys. Acta*, 1992, **1156**, 92 (*N,N-dibutyl*)
Wilk, A. *et al., J.O.C.*, 1999, **64**, 7515-7522 (*N-Me, synth, pmr, cmr*)
Wakayima, T. *et al., Bull. Chem. Soc. Jpn.*, 2004, **77**, 331-340 (*N-benzyloxycarbonyl*)
Greger, H. *et al., Phytochemistry*, 2008, **69**, 928-938 (*Aglaia tenuicaulis alkaloids*)

4-Amino-2-butenoic acid, 9CI A-717

4-Aminocrotonic acid
[25747-40-4]
$H_2NCH_2CH{=}CHCOOH$
$C_4H_7NO_2$ 101.105

(E)-form [38090-53-8] Neurochemical transmission inhibitor. Prisms (EtOH). Sol. H_2O. Mp 164° dec.

(ξ)-form

N-*Ac: 4-(Acetylamino)-2-butenoic acid, 9CI*
[64120-63-4]
$C_6H_9NO_3$ 143.142
Metab. of *Fusarium graminearum*. Cryst. ($MeOH/CHCl_3$). Mp 140°.

Balenovic, K. *et al., J.O.C.*, 1954, **19**, 1589 (*synth*)
Jones, G.P. *et al., J.C.S. Perkin 2*, 1975, 1059 (*cryst struct*)
Vesonder, R.F. *et al., Phytochemistry*, 1977, **16**, 1296 (*deriv, isol*)
Allan, R.D. *et al., Aust. J. Chem.*, 1978, **31**, 2283 (*synth*)

N-(4-Aminobutyl)-*N*-(3-aminopropyl)-1,4-butanediamine, 9CI A-718

5-(3-Aminopropyl)-1,9-diamino-5-azanonane. N^5*-(3-Aminopropyl)homospermidine*
[143085-75-0]
$(H_2NCH_2CH_2CH_2CH_2)_2NCH_2CH_2CH_2NH_2$
$C_{11}H_{28}N_4$ 216.369
Isol. from thermophilic bacteria.

Hamana, K. *et al., Biochem. J.*, 1992, **284**, 741-747

(4-Aminobutyl)guanidine, 9CI A-719

4-Guanidinobutylamine. 1-Amino-4-guanidinobutane. ***Agmatine***
[306-60-5]
$HN{=}^{6}C(NH_2)NH(CH_2)_3CH_2NH_2$
$C_5H_{14}N_4$ 130.192
Present in ergot, pollen of *Ambrosia artemisiifolia* (Asteraceae), the sea anemone *Anthopleura japonica* and herring semen (*Clupea* sp.). Occurs in *Stichopus japonicus*, *Halocynthia roretzi*, *Crassostrea gigas* and *Tapes philippinarum*. Metab. intermed. for polyamines. Synth. in mammalian brain. Endogenous neurotransmitter. Inhibits hyperalgesia and tolerance to morphine. NMDA receptor antagonist and nitric oxide synthase inhibitor. Mp 101.5-103°.

Sulfate: [2482-00-0]
Cryst. Mp 229° (224-225°).

N^{1}*-Ac:* **N^{1}-*Acetylagmatine***
[3031-89-8]
$C_7H_{16}N_4O$ 172.23
Isol. from *Actinia equina* and *Actinia fragacea*.

N^{1}*-(3*S*-Methyldecanoyl):* ***Aplysillamide B***
[164301-83-1]
$C_{16}H_{34}N_4O$ 298.471
Alkaloid from *Psammaplysilla purea*. Exhibits modest antimicrobial activity against some fungi and bacteria. Not cytotoxic. Oil. Sol. MeOH. $[\alpha]_D^{21}$ -2.4 (c, 0.1 in MeOH) (natural). $[\alpha]_D^{22}$ -5.1 (c, 1.6 in MeOH) (synthetic).

N^{1}*-(3-Methyl-2*Z*-decenoyl):* ***Aplysillamide A***
[164301-82-0]
$C_{16}H_{32}N_4O$ 296.455
Alkaloid from the Okinawan marine sponge *Psammaplysilla purea*. Exhibits modest antimicrobial activity against some fungi and bacteria. Cytotoxic against murine lymphoma L1210 and human epidermoid carcinoma KB cells. Oil. Sol. MeOH. λ_{max} 225 (ϵ 10000) (MeOH) (Berdy).

N^{1}*-(4-Hydroxy-*E*-cinnamoyl):* **N^{1}-trans-p-*Coumaroylagmatine***
[47096-24-2]
[7295-86-5]
$C_{14}H_{20}N_4O_2$ 276.338
Alkaloid from barley seedlings, *Hordeum bulbosum, Hordeum distichon, Hordeum jubatum, Hordeum murinum* and *Hordeum spontaneum* (Poaceae). Exhibits weak antifungal activity. Sol. H_2O. Mp 215-217° (as picrate). λ_{max} 229 (ϵ 33100); 300 (ϵ 26300) (H_2O) (Berdy).

N^{1}*-(4-Hydroxy-*Z*-cinnamoyl):* **N^{1}-cis-p-*Coumaroylagmatine***
[191330-81-1]
$C_{14}H_{20}N_4O_2$ 276.338
Constit. of *Albizzia julibrissin*. Leaf-opening factor. Syrup or powder. λ_{max} 278 (ϵ 2000) (H_2O).

N^{1}*-(4-Hydroxy-3-methoxy-*E*-cinnamoyl):* **N^{1}-trans-*Feruloylagmatine***
[188305-06-8]
$C_{15}H_{22}N_4O_3$ 306.364
Isol. from *Corydalis saxicola* and from *Triticum aestivum* (wheat) exposed to low temps. Antifungal agent.

N^{1}*-(3,4-Dimethoxycinnamoyl):* **N^{1}-*(3,4-Dimethoxycinnamoyl)agmatine***
[128009-18-7]
[146072-40-4]
$C_{16}H_{24}N_4O_3$ 320.391
Alkaloid from *Verbesina caracasana*.

N^{6}*-Me:* N-*(4-Aminobutyl)*-N′*-methylguanidine.* **N^{6}-*Methylagmatine***
[77414-15-4]
$C_6H_{16}N_4$ 144.219
Constit. of *Glycine max* and *Medicago sativa*.

N^{6}*-(3-Methyl-2-butenyl):* N-*(4-Aminobutyl)*-N′*-prenylguanidine.* **N^{6}-*(3-Methyl-2-butenyl)agmatine***. N^{6}*-Prenylagmatine*
[128009-17-6]
$C_{10}H_{22}N_4$ 198.311
Alkaloid from *Verbesina caracasana*. Antihypertensive.

N^{6}*-(3-Methyl-2-butenyl),* N^{1}*-(3,4-dimethoxycinnamoyl):* see Caracasanamide, C-107

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 821B (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 1330A (*nmr*)
Kossel, A. *et al., Hoppe-Seyler's Z. Physiol. Chem.*, 1910, **66**, 257-261; **68**, 170-171 (*isol, struct, synth*)
Heyl, F.W. *et al., J.A.C.S.*, 1919, **41**, 670-682 (*isol*)
Stoessl, A. *et al., Phytochemistry*, 1965, **4**, 973-976 (*isol, uv, struct, synth, N-coumaroyl*)
Boldt, A. *et al., Phytochemistry*, 1971, **10**, 731-738 (*biosynth*)
Smith, T.A. *et al., Phytochemistry*, 1978, **17**, 1093-1098 (*occur, N-coumaroyl*)
Kowabata, T. *et al., CA*, 1979, **89**, 178349 (*isol*)
Robin, Y. *et al., Oceanis*, 1980, **5**, 575-580; *CA*, **94**, 118125p (N^{1}*-Acetylagmatine*)
Bird, C.R. *et al., Phytochemistry*, 1981, **20**, 2345-2346 (*biosynth, N-coumaroyl*)
Chandrasekhar, K. *et al., Acta Cryst. B*, 1982, **38**, 2538-2540 (*cryst struct*)
Cho, Y.B. *et al., Anal. Biochem.*, 1987, **160**, 429-433 (N^{6}*-Methylagmatine*)
Matsuzaki, S. *et al., Phytochemistry*, 1990, **29**, 1313-1315 (N^{6}*-Methylagmatine*)
Hamana, K. *et al., Comp. Biochem. Physiol., B: Comp. Biochem.*, 1991, **100**, 59-62 (*occur, hplc*)
Mitchinson, A. *et al., Chem. Comm.*, 1994, 2613-2614 (*synth*)
Honma, K. *et al., Tetrahedron*, 1995, **51**, 3745 (*Aplysillamides*)
Ueda, M. *et al., Biosci., Biotechnol., Biochem.*, 1998, **62**, 2133-2137 (*Z-coumaroyl*)
Reis, D.J. *et al., Ann. N.Y. Acad. Sci.*, 1999, **881**, 65-80 (*rev, activity*)
Monache, G.D. *et al., Bioorg. Med. Chem. Lett.*, 1999, **9**, 3249-3254 (*Prenylagmatine, Dimethoxycinnamoylagmatine*)
Jin, S. *et al., Biosci., Biotechnol., Biochem.*, 2000, **64**, 1614-1617 (*Feruloylagmatine*)
Fairbanks, C.A. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 2000, **97**, 10584-10589 (*pharmacol*)
Reis, D.J. *et al., Trends Pharmacol. Sci.*, 2000, **21**, 187-193 (*pharmacol, rev*)
Demady, D.R. *et al., Mol. Pharmacol.*, 2001, **59**, 24-29 (*pharmacol*)
Cheng, X. *et al., Chem. Biodiversity*, 2008, **5**, 1335-1344 (*Feruloylagmatine*)

(4-Aminobutyl)urea, 8CI A-720

N-*Carbamoylputrescine*
[6851-51-0]
$H_2NCH_2(CH_2)_3NHCONH_2$
$C_5H_{13}N_3O$ 131.177
Alkaloid from *Hordeum vulgare* (barley) and *Sesamum indicum* (sesame) (K-deficient plants)(Poaceae, Pedaliaceae).

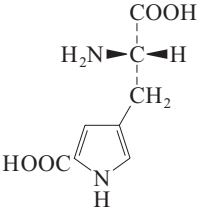
Hydrochloride: Mp 185-186°.

Dipicrate: Mp 164-165°.

Linneweh, F. *et al., Hoppe-Seyler's Z. Physiol. Chem.*, 1932, **205**, 126; *CA*, **26**, 3276 (*synth*)
Smith, T.A. *et al., Phytochemistry*, 1964, **3**, 23 (*occur, synth*)
Crocomo, O.J. *et al., Phytochemistry*, 1970, **9**, 1487 (*occur*)

4-(2-Amino-2-carboxyethyl)-1*H*-pyrrole-2-carboxylic acid A-721

3-(2-Carboxy-4-pyrrolyl)alanine. 2-Amino-3-(2-carboxy-4-pyrrolyl)propanoic acid



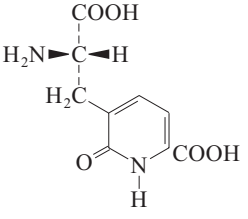
$C_8H_{10}N_2O_4$ 198.178

(*S*)-*form*
L-*form*
[137309-97-8]
Isol. from the toxic mushroom *Clitocybe acromelalga*. Mp 200-202° dec.

(±)-*form*
Mp 200-202° dec.
Yamano, K. *et al., Tetrahedron*, 1992, **48**, 1457 (*isol, synth, struct*)

α-Amino-6-carboxy-2-oxo-3-pyridinepropanoic acid A-722

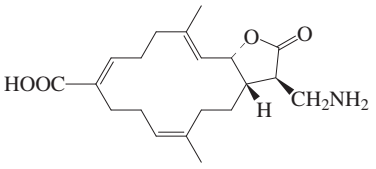
3-(6-Carboxy-2-oxo-4-pyridinyl)alanine



$C_9H_{10}N_2O_5$ 226.188
Sol. H_2O, MeOH; poorly sol. EtOAc, hexane. λ_{max} 241 (ϵ 12000); 315 (ϵ 13500) (H_2O) (Berdy).

(*S*)-*form* [148001-20-1]
Isol. from the toxic mushroom *Clitocybe acromelalga*. $[\alpha]_D^{23}$ -5.8 (c, 0.13 in H_2O).
Yamano, K. *et al., Heterocycles*, 1993, **35**, 125 (*isol, struct*)
Yamano, K. *et al., Tetrahedron*, 1993, **49**, 2427 (*isol*)

17-Amino-3,7,11-cembratrien-16,2-olid-19-oic acid A-723



$C_{20}H_{29}NO_4$ 347.453

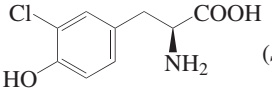
(1*S*,2*S*,3*E*,7*E*,11*E*,15*R*)-*form*

N,N-*Di-Me: 17-Dimethylaminolobohedleolide (incorr.)*
[267007-12-5]
$C_{22}H_{33}NO_4$ 375.507
Constit. of a *Lobophytum* sp. Shows moderate anti-HIV activity. Gum. $[\alpha]_D$ +13.1 (c, 0.25 in $CHCl_3$). λ_{max} 218 (log ϵ 3.6); 222 (log ϵ 3.56) (EtOH).

Rashid, M.A. *et al., J. Nat. Prod.*, 2000, **63**, 531-533 (*isol, pmr, cmr*)

2-Amino-3-(3-chloro-4-hydroxyphenyl)propanoic acid A-724

3-Chlorotyrosine. Monochlorotyrosine
[7298-90-0]



(*S*)-*form*

$C_9H_{10}ClNO_3$ 215.636

(*R*)-*form*

D-*form*
[162599-96-4]
[905309-56-0 (hydrochloride)]
Mp 255-256° dec. $[\alpha]_D^{20}$ +26 (c, 0.9 in H_2O). $[\alpha]_D$ -12 (c, 3.05 in MeOH).

N-*(3-Methoxycarbonyl-2*E*-propenoyl): **Xylariamide A***
[853259-88-8]
$C_{14}H_{14}ClNO_6$ 327.72
Isol. from *Xylaria* sp. (FRR 5657). Pale yellow gum. $[\alpha]_D^{24}$ -22 (c, 0.06 in MeOH). λ_{max} 202 (log ϵ 4.05); 217 (sh) (log ϵ 3.74); 278 (log ϵ 3.12) (MeOH).

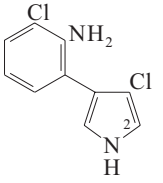
(*S*)-*form*

L-*form*
[7423-93-0]
Isol. from hydrolysates of mollusc (*Buccinum undatum*) scleroproteins and insect cuticle (*Schistocerca gregaria* and *Limulus polyphemus*). $[\alpha]_D^{20}$ -26.2.

Dibbo, A. *et al., J.C.S.*, 1961, 2645-2651 (*R-form, synth*)
Welinder, B.S. *et al., Biochim. Biophys. Acta*, 1972, **279**, 491-497 (*isol, ms*)
Hunt, S. *et al., FEBS Lett.*, 1972, **24**, 109-112 (*isol*)
Patel, V.F. *et al., J. Med. Chem.*, 1999, **42**, 2588-2603 (*synth, pmr, cmr*)
Davis, R.A. *et al., J. Nat. Prod.*, 2005, **68**, 769-772 (*Xylariamide A*)
Davis, R.A. *et al., Tet. Lett.*, 2005, **46**, 5199-5201 (*Xylariamide A, synth*)

3-(2-Amino-3-chlorophenyl)-4-chloro-1*H*-pyrrole, 8CI A-725

*2-Chloro-6-(4-chloro-1*H*-pyrrol-3-yl)benzenamine, 9CI. **Aminopyrrolnitrin**. WB 2838. Antibiotic WB 2838*
[16386-65-5]



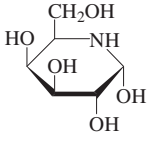
$C_{10}H_8Cl_2N_2$ 227.092
Prod. by *Pseudomonas aureofaciens* and *Pseudomonas cepacia*. Androgen-receptor antagonist and antifungal agent. Pale yellow needles (MeOH aq.). Mp 91° (synthetic). Similar to Pyrrolnitrin, P-961. λ_{max} 216 (ϵ 21400); 270 (ϵ); 299 (ϵ 3890) (solvent not reported) (Derep).

*2-Chloro: **4-(2-Amino-3-chlorophenyl)-2,3-dichloro-1H-pyrrole**. Aminochloropyrrolnitrin*
[124201-43-0]
$C_{10}H_7Cl_3N_2$ 261.537
From *Pseudomonas cepacia*. λ_{max} 212 (ϵ 34500); 302 (ϵ 4080) (MeOH) (Berdy).

Salcher, O. *et al., Tet. Lett.*, 1978, 3097 (*isol, pmr*)
Roitman, J.N. *et al., Appl. Microbiol. Biotechnol.*, 1990, **34**, 381 (*isol*)
Roitman, J.N. *et al., J. Agric. Food Chem.*, 1990, **38**, 538 (*isol*)
Hori, Y. *et al., J. Antibiot.*, 1993, **46**, 1327 (*isol, props*)

5-Amino-5-deoxygalactose A-726

*6-Hydroxymethyl-2,3,4,5-piperidinetetrol, 9CI. **Galactostatin**. galacto-Nojirimycin. 5-Amino-5-deoxygalactopyranose*



α-D-Pyranose-*form*

$C_6H_{13}NO_5$ 179.172
Log P -3.55 (calc).

D-*form* [107537-94-0]
Isol. from *Streptomyces lydicus* . β-Galactosidase inhibitor. Amorph. solid + ½ H_2O or syrup. Mp 94-98°. $[\alpha]_D^{23}$ +85.6 (c, 1 in H_2O). Stable up to 5d at 4°.

Bisulfite adduct: Mp 149-150°. $[\alpha]_D$ +19 (c, 0.8 in H_2O).

D-Pyranose-*form*

Pentakis(trimethylsilyl): [40222-80-8]
$C_{21}H_{53}NO_5Si_5$ 540.081
Liq.

α-D-Furanose-*form*

*1,2-Isopropylidene: 5-Amino-5-deoxy-1,2-*O*-isopropylidene-α-D-galactofuranose*
$C_9H_{17}NO_5$ 219.237
Hygroscopic solid. $[\alpha]_D^{22}$ -25.3 (c, 1.0 in MeOH).

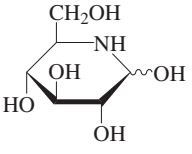
*6-Trityl, 1,2-isopropylidene: 5-Amino-5-deoxy-1,2-*O*-isopropylidene-6-*O*-trityl-α-D-galactofuranose*
$C_{28}H_{31}NO_5$ 461.557
Mp 135°. $[\alpha]_D^{23}$ -11.5 (c, 1.0 in $CHCl_3$).

[40222-81-9 , 108147-56-4 , 109718-63-0]

Inouye, S. *et al., CA*, 1973, **78**, 47847g (*silyl deriv*)
Legler, G. *et al., Carbohydr. Res.*, 1986, **155**, 119 (*α-D-fur deriv*)
Miyake, Y. *et al., J. Antibiot.*, 1987, **40**, 122-123 (*isol*)
Miyake, Y. *et al., Agric. Biol. Chem.*, 1988, **52**, 153-158; 661-666 (*isol, pmr, cmr, struct, props*)
Aoyagi, S. *et al., J.O.C.*, 1991, **56**, 815-819 (*synth*)
Chida, N. *et al., Chem. Comm.*, 1994, 1247-1248 (*synth*)
Kirihata, M. *et al., Heterocycles*, 1995, **41**, 2271 (*synth*)
Dondoni, A. *et al., J.O.C.*, 1995, **60**, 4749 (*synth, pmr*)
Pérez, P.D. *et al., Eur. J. Org. Chem.*, 2005, 2903-2913 (*α-D-fur 1,2-isopropylidene*)

5-Amino-5-deoxyglucose, 9CI, 8CI A-727

6-(Hydroxymethyl)-2,3,4,5-piperidinetetrol



D-Pyranose-*form*

$C_6H_{13}NO_5$ 179.172

D-Pyranose-*form*
Nojirimycin
[15218-38-9]
[19130-94-0 (α-D-pyr-form)]

Amino sugar antibiotic. Produced by several *Streptomyces* spp. Primarily active against gram-positive bacteria. Sol. H_2O; fairly sol. MeOH, EtOH; poorly sol. butanol, hexane. Mp 126-130° dec. $[\alpha]_D^{24}$ +100 (3 min.) → +73.5 (20 hr.).

▶ LD_{50} (mus, ipr) 1600 mg/kg; LD_{50} (mus, ivn) 1250 mg/kg. LZ5655000

1-Deoxy: see 2-(Hydroxymethyl)-3,4,5-piperidinetriol, H-616

L-Pyranose-*form*
Mp 122-124°. $[\alpha]_D^{20}$ -72.1 (c, 0.3 in H_2O).

α-D-Furanose-*form*

*1,2-*O*-Isopropylidene: 5-Amino-5-deoxy-1,2-*O*-isopropylidene-α-D-glucofuranose*
[16958-27-3]
$C_9H_{17}NO_5$ 219.237
Cryst. (EtOAc). Mp 125-126° Mp 175°. $[\alpha]_D^{25}$ -13.75 (c, 4 in MeOH). Higher Mp product (2004) may be the β-L-*ido*-analogue.

*1,2:3,6-Diisopropylidene: 5-Amino-5-deoxy-1,2:3,6-di-*O*-isopropylidene-α-D-glucofuranose*

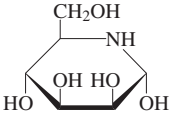
$C_{12}H_{21}NO_5$ 259.302
Needles (EtOAc/heptane). Mp 68-69°.

1,2-O-Isopropylidene, N-3,6-tri-Ac: 5-Acetamido-3,5-di-O-acetyl-5-deoxy-1,2-O-isopropylidene-α-D-glucofuranose
[16958-28-4]
$C_{15}H_{23}NO_8$ 345.349
Needles (Et_2O). Mp 145-146°. $[\alpha]_D^{25}$ +1.3 (c, 6 in $CHCl_3$).

Inouye, S. *et al., J. Antibiot.*, 1966, **19**, 288 (*struct, nmr*)
Saeki, H. *et al., Chem. Pharm. Bull.*, 1968, **16**, 962 (*synth*)
Nayak, U.G. *et al., J.O.C.*, 1968, **33**, 3582-3585 (*α-D-fur isopropylidene, α-D-fur isopropylidene tri-Ac*)
Inouye, S. *et al., Tetrahedron*, 1968, **24**, 2125 (*ir, ms, nmr, struct, synth*)
Ger. Pat., 1978, 2 658 561; *CA*, **89**, 152713 (*use*)
Kinast, G. *et al., Angew. Chem., Int. Ed.*, 1981, **20**, 805 (*bibl*)
Austrian Pat., 1982, 366 032; *CA*, **97**, 90401 (*synth*)
Vasella, A. *et al., Helv. Chim. Acta*, 1982, **65**, 1134 (*synth*)
Ezure, Y. *et al., Agric. Biol. Chem.*, 1985, **49**, 1119 (*isol, bibl*)
Iida, H. *et al., J.O.C.*, 1987, **52**, 3337 (*synth*)
Tsuda, Y. *et al., Heterocycles*, 1988, **27**, 63 (*synth*)
Kayakiri, H. *et al., Chem. Pharm. Bull.*, 1991, **39**, 1397-1401 (*α-D-fur isopropylidene*)
Chida, N. *et al., Carbohydr. Res.*, 1992, **237**, 185 (*synth*)
Dondoni, A. *et al., Tetrahedron*, 1993, **49**, 2939 (*synth, L-form*)
Dondoni, A. *et al., Chem. Eur. J.*, 1995, **1**, 505-520 (*α-D-fur isopropylidene*)
Moutel, S. *et al., J.C.S. Perkin 1*, 1999, 1403-1406 (*synth*)
Gottschaldt, M. *et al., Carbohydr. Res.*, 2004, **339**, 1941-1952 (*α-D-fur isopropylidene, α-D-fur diisopropylidene*)
Morwenna, M.S.M. *et al., Eur. J. Org. Chem.*, 2005, 2159-2191 (*rev, synth*)

5-Amino-5-deoxymannose A-728

Nojirimycin B. *Mannonojirimycin. Mannojirimycin*



α-D-Pyranose-*form*

$C_6H_{13}NO_5$ 179.172
Aminoglycoside antibiotic.

D-Pyranose-*form* [62362-40-7]
Prod. by *Streptomyces lavendulae* SF-425. Weakly active against *Xanthomonas oryzae*. Glucosidase and mannosidase inhibitor. Pale yellow powder. Sol. H_2O; poorly sol. Me_2CO, hexane. Unstable.

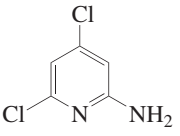
Bisulfite adduct:
Needles (H_2O). Mp 163-165° dec. $[\alpha]_D^{20}$ +4.6 (c, 0.5 in H_2O).

L-Pyranose-*form*
Mp 162-164° (as bisulfite adduct). $[\alpha]_D^{20}$ -4.5 (c, 0.31 in H_2O).

Japan. Pat., 1976, 76 151 393; *CA*, **86**, 153954 (*isol*)
Niwa, T. *et al., J. Antibiot.*, 1984, **37**, 1579 (*isol, cryst struct, props, nmr, ir*)
Dondoni, A. *et al., Tetrahedron*, 1993, **49**, 2939 (*L-form*)

2-Amino-4,6-dichloropyridine A-729

4,6-Dichloro-2-pyridinamine



$C_5H_4Cl_2N_2$ 163.005
Reported from Ku Shu (*Picrasma quassioides*). Cryst. (petrol). Mp 112.5°.

N-*Ac:* [63763-91-7]
$C_7H_6Cl_2N_2O$ 205.043
Cryst. (EtOH). Mp 218-219°.

2-N,N-Di-Me: 4,6-Dichloro-N,N-dimethyl-2-pyridinamine, 9CI. 2,4-Dichloro-6-(dimethylamino)pyridine
[849937-99-1]
$C_7H_8Cl_2N_2$ 191.059
Platelets (hexane). Mp 45-46°.

Den Hertog, H.J. *et al., Rec. Trav. Chim. (J. R. Neth. Chem. Soc.)*, 1950, **69**, 673-699 (*synth*)
Li, T.S.C. *et al., Chinese and Related North American Herbs*, CRC Press, 2002, 113 (*occur*)
Schlosser, M. *et al., J.O.C.*, 2005, **70**, 2494-2502 (*di-Me*)

4-Amino-1,13-diguanidino-5-tridecanone A-730

$HN{=}C(NH_2)NH(CH_2)_8CO^4CH(NH_2)CH_2CH_2CH_2NHC(NH_2){=}NH$

$C_{15}H_{33}N_7O$ 327.472

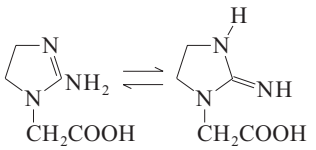
N^4-*Ac:* [167103-52-8]
$C_{17}H_{35}N_7O_2$ 369.509
Isol. from the fermentation broth of an actinomycete (SCC 2268) prob. belonging to the genus *Streptomyces*. Muscarinic receptor antagonist. Sol. H_2O, MeOH; poorly sol. EtOAc, hexane. Mp 250°.

N^4-*(9-Guanidinononanoyl):*
$C_{25}H_{52}N_{10}O_2$ 524.752
Isol. from SCC 2268 broth. Muscarinic receptor antagonist. Sol. H_2O, MeOH; poorly sol. EtOAc, hexane. Mp 250°. $[\alpha]_D^{26}$ -30 (c, 0.3 in H_2O).

Hegde, V.R. *et al., J. Nat. Prod.*, 1995, **58**, 843 (*isol, ir, pmr, cmr, struct*)

2-Amino-4,5-dihydro-1*H*-imidazole-1-acetic acid, 9CI A-731

2-Imino-1-imidazolidineacetic acid. 1-(Carboxymethyl)-2-iminoimidazolidine. Cyclocreatine
[35404-50-3]



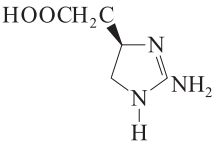
$C_5H_9N_3O_2$ 143.145
Substrate for creatine kinase *in vitro*.

3-Phosphate: 1-(Carboxymethyl)-2-imino-3-phosphonoimidazolidine
[61839-19-8]
$C_5H_{10}N_3O_5P$ 223.125
Source of high energy phosphate. Stored in muscle, heart and brain.

Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 1329B (*nmr*)
Struve, G.E. *et al., J.O.C.*, 1977, **42**, 4035 (*synth, cmr, struct*)
Woznicki, D.T. *et al., J. Neurochem.*, 1979, **33**, 75 (*formn*)
Phillips, G.N. *et al., J.A.C.S.*, 1979, **101**, 7120 (*bibl, cryst struct, phosphate*)
Roberts, J.J. *et al., Arch. Biochem. Biophys.*, 1983, **220**, 563 (*activity*)

2-Amino-4,5-dihydro-1*H*-imidazole-4-acetic acid, 9CI A-732

2-[2-Amino-2-imidazolin-4-yl]acetic acid
[69098-41-5]



(*R*)-*form*

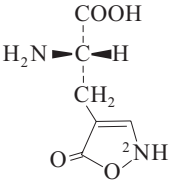
$C_5H_9N_3O_2$ 143.145

(*R*)-*form* [65388-06-9]
Isol. from the seeds of *Lonchocarpus* spp. Cryst. ($EtOH/Et_2O$).

Fellows, L.E. *et al., Phytochemistry*, 1977, **16**, 1957 (*isol, ir, pmr, cmr, ms, struct*)
Evans, S.V. *et al., Biochem. Syst. Ecol.*, 1985, **13**, 271 (*isol*)

α-Amino-2,5-dihydro-5-oxo-4-isoxazolepropanoic acid, 9CI A-733

α-Amino-5-oxo-3-isoxazoline-4-propionic acid, 8CI. 3-(Isoxazolin-5-on-4-yl)alanine. 4-Alanyl-3-isovalin-5-one. TAN 950A. Antibiotic TAN 950A



$C_6H_8N_2O_4$ 172.14
Exists in tautomeric equilibrium with Antibiotic TAN 950B. λ_{max} 253 (ε 8060) (H_2O) (Derep).

(*S*)-*form*
L-*form*
[127607-88-9]
Prod. by *Streptomyces platensis*. Antifungal agent. Powder + 1H_2O (as Na salt). Sol. H_2O, DMSO, DMF; poorly sol. Me_2CO, $CHCl_3$, EtOAc. $[\alpha]_D^{23}$ -69.5 (c, 0.52 in H_2O) (as Na salt). λ_{max} 253 (E1%/1cm 380) (H_2O) (Berdy). λ_{max} 259 (E1%/1cm 421) (HCl) (Berdy).

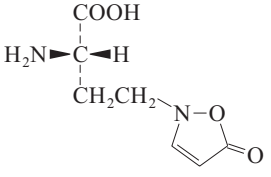
N^2-*β-D-Glucosyl:* [29790-46-3]
$C_{12}H_{18}N_2O_9$ 334.282
Isol. from *Pisum sativum* and *Lathyrus odoratus*. Cryst. (MeOH/propanol). Mp 182° dec.

[130620-29-0 , 130621-41-9 , 130621-42-0 , 130621-61-3]

Lambein, F. *et al., Biochem. Biophys. Res. Commun.*, 1970, **40**, 557; 1974, **61**, 155 (*isol, struct, uv, pmr, ir*)
Murakoshi, I. *et al., Phytochemistry*, 1975, **14**, 1515 (*biosynth*)
Iwama, T. *et al., Eur. J. Pharmacol.*, 1991, **197**, 187 (*props*)
Tsubotani, S. *et al., Tetrahedron*, 1991, **47**, 8079-8090 (*synth, cryst struct*)
Hakoda, S. *et al., J. Antibiot.*, 1992, **45**, 854 (*isol*)

2-Amino-4-(2,5-dihydro-5-oxo-2-isoxazolyl)butanoic acid A-734

2-Amino-4-(isoxazolin-5-on-2-yl)butanoic acid
[59476-62-9]

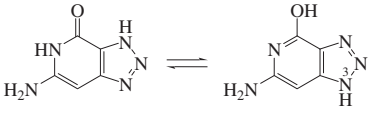


$C_7H_{10}N_2O_4$ 186.167
Incorrect (3-isoxazolyl) struct. in published work. Isol. from sweet pea extracts. Cryst. L-Config. not stated but assumed on biogenetic grounds.

Lambein, F. *et al., Biochem. Biophys. Res. Commun.*, 1974, **61**, 155 (*isol, struct*)
Kuo, Y.H. *et al., Arch. Int. Physiol. Biochim.*, 1976, **84**, 169 (*isol*)
Tamura, N. *et al., Chem. Pharm. Bull.*, (Footnote to), 1992, **40**, 381 (*struct*)

5-Amino-1,6-dihydro-7*H*-1,2,3-triazolo[4,5-*d*]pyrimidin-7-one, 9CI A-735

8-Azaguanine. Guanazole†*. Pathocidin. NSC 749. SF 337. Antibiotic SF 337. Azan*
[134-58-7]



$C_4H_4N_6O$ 152.115
The name 8-Azaguanine comes from the alternative purine numbering. Systematic (CAS) numbering shown. Isol. from *Streptomyces albus* and *Streptomyces morookaensis*. Purine antagonist. Tumour inhibitor. Active against fungi. Cryst. (H_2O). Mp 305° dec. λ_{max} 250 (ε 12500); 270 (sh) (ε 9880) (0.1*N* HCl) (Derep). λ_{max} 247 (ε 4860); 278 (ε 6540) (0.1*N* NaOH) (Derep). λ_{max} 247 (ε 9580); 273 (ε 6300) (H_2O) (Derep).
▶ Exp. reprod. and teratogenic effects. LD_{50} (mus, orl) 1500 mg/kg. XZ6157000

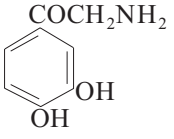
*3*N-*β*-D-*Ribofuranosyl: 8-Azaguanosine*
[2133-80-4]
$C_9H_{12}N_6O_5$ 284.231
Purine antagonist. Mp 250-252° dec. λ_{max} 255 (ε 13600); 269 (ε 10300) (0.01*N* HCl). λ_{max} 221 (ε 23000); 279 (ε 11600) (0.03*N* NaOH).
▶ XZ6157200

*3*N-*β*-D-*Ribofuranosyl, 5′-phosphate: 8-Azaguanosine 5′-phosphate*
[1165-66-8]
$C_9H_{13}N_6O_8P$ 364.211
Appears to be the key intermed. in the conversion of the anticancer drug, 8-Azaguanine, into its active form. λ_{max} 256 (ε 12900) (pH 2).

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 716C (*ir*)
Roblin, R.K. *et al., J.A.C.S.*, 1945, **67**, 290-294 (*synth*)
Friedkin, M. *et al., J. Biol. Chem.*, 1954, **209**, 295-301 (*8-Azaguanosine*)
Davoll, J. *et al., J.C.S.*, 1958, 1593-1599 (*8-Azaguanosine*)
Blank, H.U. *et al., J.O.C.*, 1970, **35**, 1131-1138 (*synth*)
Crit. Rev. Toxicol., 1973, **2**, 159-209 (*tox, rev*)
Kozlowski, D.L. *et al., Acta Cryst. B*, 1975, **31**, 1751-1753 (*cryst struct*)
Elliott, R.D. *et al., J. Med. Chem.*, 1976, **19**, 1186-1191 (*8-Azaguanosine*)
Luedemann, H.D. *et al., Z. Naturforsch., C*, 1976, **31**, 135-140; *CA*, **84**, 146335u (*8-Azaguanosine, conformn, pmr*)
Bose, S.N. *et al., Biomed. Mass Spectrom.*, 1977, **4**, 305-309 (*ms*)
Purnell, L.G. *et al., Org. Magn. Reson.*, 1977, **10**, 1-4 (*cmr*)
Hirasawa, K. *et al., J. Antibiot.*, 1978, **31**, 628-629 (*isol, props*)
Grunberger, D. *et al., Antibiotics (N.Y.)*, 1979, **5**, 110-123 (*rev*)
Contreras, J.G. *et al., Bioorg. Chem.*, 1998, **26**, 345-355 (*tautom*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, AJO500

2-Amino-3′,4′-dihydroxyacetophenone, 8CI A-736

*2-Amino-1-(3,4-dihydroxyphenyl)ethanone. **Noradrenalone**. Arterenone. 2-Oxodopamine*
[499-61-6]



$C_8H_9NO_3$ 167.164
Isol. from hydrolysates of sclerotized insect cuticle.
▶ AM5900000

N-*Ac: **2-Acetamido-3′,4′-dihydroxyacetophenone**.* N-*Acetyl-2-oxodopamine*
$C_{10}H_{11}NO_4$ 209.201
Isol. from the cast-off shells of the cicada, *Cryptotympana* sp. Yellow cryst. Mp 168-175°.

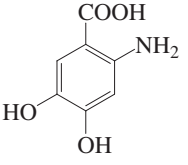
N-*Me: 1-(3,4-Dihydroxyphenyl)-2-(methylamino)ethanone. 3′,4′-Dihydroxy-2-methylaminoacetophenone. **Adrenolone, INN, USAN**. Chemosan. Damazor. Haemodan. Kephrine. Ketogaze. Remestyp*†*. Stryphnon. Stypnon. Adrenone*
[99-45-6]
$C_9H_{11}NO_3$ 181.191
Shows similar physiological activity to Adrenaline, A-152. Sympathomimetic, vasoconstrictor and haemostatic agent. Needles. Mp 235-236° dec. Log P 0.32 (calc).
▶ LD_{50} (mus, ivn) 275 mg/kg. AM8050000

N-*Me; hydrochloride:* [62-13-5]
Mp 242°.
▶ AM8225000

Stolz, F. *et al., Ber.*, 1904, **37**, 4152
Friedmann, E. *et al., Chem. Zentralbl.*, 1906, **1**, 1620 (*synth*)
Lands, A.M. *et al., J. Pharmacol. Exp. Ther.*, 1948, **92**, 369 (*pharmacol*)
Ravina, A. *et al., Therapie*, 1953, **8**, 224 (*props, use*)
Remizov, A.L. *et al., Zh. Obshch. Khim.*, 1958, **28**, 2530 (*synth*)
Biniecki, S. *et al., Acta Pol. Pharm.*, 1963, **20**, 245 (*synth*)
Anderson, S.O. *et al., J. Insect Physiol.*, 1970, **16**, 1951 (*isol*)
Bergin, R. *et al., Acta Cryst. B*, 1971, **27**, 2139 (*N-Me, cryst struct*)
Hussain, A. *et al., J. Pharm. Sci.*, 1976, **65**, 1510 (*deriv*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 1240
Noda, N. *et al., Chem. Pharm. Bull.*, 2000, **48**, 1749-1752 (*isol, N-Ac*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, MGC350

2-Amino-4,5-dihydroxybenzoic acid A-737

6-Aminoprotocatechuic acid. 4,5-Dihydroxyanthranilic acid
[114874-99-6]



$C_7H_7NO_4$ 169.137
Prod. by *Botrytis* sp. AM13791. Inhibitor of protein-tyrosine kinase.

N-*Et, amide: 2-(Ethylamino)-4,5-dihydroxybenzamide, 9CI*
[127793-87-7]
$C_9H_{12}N_2O_3$ 196.205
Alkaloid from *Piper nigrum* (pepper).

*4-Me ether: 2-Amino-5-hydroxy-4-methoxybenzoic acid. 2-Amino-5-hydroxy-*p*-anisic acid, 8CI*
[31839-21-1]
$C_8H_9NO_4$ 183.163
Mp 214-215° (194-195°).

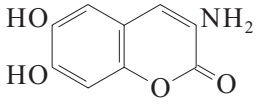
4-Me ether, N-*(4-hydroxy-3-methoxy-*E*-cinnamoyl): **Avenanthramide 2***
[154992-25-3]
$C_{18}H_{17}NO_7$ 359.335
Constit. of *Avena sativa* (oat).

Bandyopadhyay, C. *et al., J. Agric. Food Chem.*, 1990, **38**, 1696-1699 (*N-Et amide*)
Dimberg, L.H. *et al., Cereal Chem.*, 1993, **70**, 637-641 (*Avenanthramide 2*)

3-Amino-6,7-dihydroxy-2*H*-1-benzopyran-2-one, 9CI A-738

3-Amino-6,7-dihydroxycoumarin

[22065-08-3]



$C_9H_7NO_4$ 193.159

Shows hypotensive props. Mp 258-260°.

N-*Formyl: 3-(Formylamino)-6,7-dihydroxycoumarin*. ***Pseudoverdin***
[150624-46-7]
$C_{10}H_7NO_5$ 221.169
Prod. by *Pseudomonas aeruginosa*. Chromophore.

*Di-Me ether: 3-Amino-6,7-dimethoxy-2*H*-1-benzopyran-2-one. 3-Amino-6,7-dimethoxycoumarin*
[150358-93-3]
$C_{11}H_{11}NO_4$ 221.212
Cryst. (EtOH aq.). Mp 170°.

Di-Me ether, N-*formyl:* [150358-91-1]
$C_{12}H_{11}NO_5$ 249.223
Mp 246°.

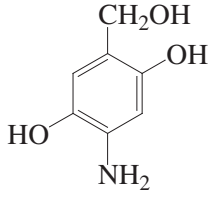
Di-Me ether, N-*Ac: 3-(Acetylamino)-6,7-dimethoxycoumarin*
[150358-92-2]
$C_{13}H_{13}NO_5$ 263.249
Cryst. (EtOH aq.). Mp 248°.

Fr. Pat., 1968, 1 523 317; *CA*, **72**, 31615v (*synth*)

Longerich, I. *et al., Z. Naturforsch., C*, 1993, **48**, 425 (*isol, synth, derivs*)

4-Amino-2,5-dihydroxybenzyl alcohol A-739

2-Amino-5-(hydroxymethyl)-1,4-benzenediol



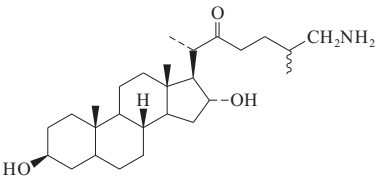
$C_7H_9NO_3$ 155.153

N-*Ac: 2,5-Dihydroxy-4-(hydroxymethyl)acetanilide*
$C_9H_{11}NO_4$ 197.19
Prod. by *Actinomyces* sp. Lu 9419 isol. from *Cetonia aureata*. Solid. Mp 176°. λ_{max} 209 (ϵ 12300); 245 (ϵ 4840); 302 (ϵ 3400) (MeOH).

1′-Me ether, N-*Ac: 2,5-Dihydroxy-4-(methoxymethyl)acetanilide*
$C_{10}H_{13}NO_4$ 211.217
Prod. by *Actinomyces* sp. Lu 9419 isol. from *Cetonia aureata*. Solid.

Schlörke, O. *et al., J. Antibiot.*, 2002, **55**, 635-642 (*N-Ac, isol, pmr, cmr, ms*)

26-Amino-3,16-dihydroxycholestan-22-one A-740



$C_{27}H_{47}NO_3$ 433.673

(3β,5α,16α,25ξ)-*form*

N-*Ac, 3*-O-*[β-D-xylopyranosyl-(1→2)-α-L-rhamnopyranosyl-(1→4)-β-D-glucopyranoside]:* ***Abutiloside B***
[177262-59-8]
$C_{46}H_{77}NO_{17}$ 916.111
Constit. of *Solanum abutiloides*. Solid. $[\alpha]_D^{26}$ -41.9 (c, 0.49 in MeOH).

N-*Butanoyl, 3*-O-*[α-L-rhamnopyranosyl-(1→4)-β-D-glucopyranoside]:* ***Abutiloside K***
[449178-14-7]
$C_{43}H_{73}NO_{13}$ 812.049
Constit. of *Solanum abutiloides*. Powder. $[\alpha]_D^{25}$ -50.4 (c, 0.25 in MeOH).

N-*Butanoyl, 3*-O-*[β-D-xylopyranosyl-(1→2)-α-L-rhamnopyranosyl-(1→4)-β-D-glucopyranoside]:* ***Abutiloside J***
[449176-35-6]
$C_{48}H_{81}NO_{17}$ 944.164
Constit. of *Solanum abutiloides*. Powder. $[\alpha]_D^{25}$ -54.1 (c, 0.95 in MeOH).

N-*(3-Methylbutanoyl), 3*-O-*[α-L-rhamnopyranosyl-(1→4)-β-D-glucopyranoside]:* ***Abutiloside I***
[449176-33-4]
$C_{44}H_{75}NO_{13}$ 826.075
Constit. of *Solanum abutiloides*. Powder. $[\alpha]_D^{25}$ -38.7 (c, 0.15 in MeOH).

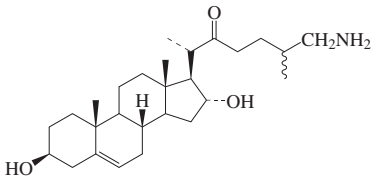
N-*(3-Methylbutanoyl), 3*-O-*[β-D-xylopyranosyl-(1→2)-α-L-rhamnopyranosyl-(1→4)-β-D-glucopyranoside]:* ***Abutiloside A***
[171864-79-2]
$C_{49}H_{83}NO_{17}$ 958.191
Constit. of *Solanum abutiloides*. Amorph. powder. $[\alpha]_D^{22}$ -49.2 (MeOH).

Tian, R.-H. *et al., Chem. Pharm. Bull.*, 1996, **44**, 1119-1121 (*isol, pmr, cmr*)

Tian, R.-H. *et al., Phytochemistry*, 1997, **44**, 723-726 (*Abutiloside A*)

Yoshimitsu, H. *et al., Chem. Pharm. Bull.*, 2002, **50**, 284-286 (*Abutilosides I,J,K*)

26-Amino-3,16-dihydroxycholest-5-en-22-one A-741



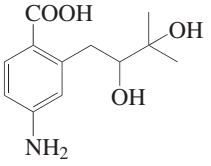
$C_{27}H_{45}NO_3$ 431.657

(3β,16α,26ξ)-*form*

N-*Ac, 3*-O-*[β-D-xylopyranosyl-(1→2)-α-L-rhamnopyranosyl-(1→4)-β-D-glucopyranoside]:* ***Abutiloside H***
[449176-31-2]
Constit. of *Solanum abutiloides*. Powder. $[\alpha]_D^{25}$ -107 (c, 0.2 in MeOH).

Yoshimitsu, H. *et al., Chem. Pharm. Bull.*, 2002, **50**, 284-286

4-Amino-2-(2,3-dihydroxy-3-methylbutyl)benzoic acid A-742



$C_{12}H_{17}NO_4$ 239.271

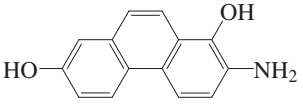
(-)-*form*

Me ester: [1009318-74-4]
$C_{13}H_{19}NO_4$ 253.297
Isol. from *Xylaria* sp. BCC 9653. Gum. $[\alpha]_D^{27}$ -19.2 (c, 0.9 in $CHCl_3$).

Pongcharoen, W. *et al., Chem. Pharm. Bull.*, 2007, **55**, 1647-1648 (*isol, pmr, cmr, ms*)

2-Amino-1,7-dihydroxyphenanthrene A-743

2-Amino-1,7-phenanthrenediol, 9CI



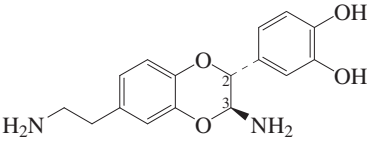
$C_{14}H_{11}NO_2$ 225.246

Di-Me ether, N-*Ac:* N-*(1,7-Dimethoxy-2-phenanthrenyl)acetamide. 2-Acetamido-1,7-dimethoxyphenanthrene*
$C_{18}H_{17}NO_3$ 295.337
Alkaloid from *Sinomenium acutum*. Yellow-green needles. λ_{max} 256 ; 282 ; 310 (no solvent reported).

Cheng, W.M. *et al., Chin. Chem. Lett.*, 2005, **16**, 1481-1483 (*di-Me ether N-Ac, isol, pmr, cmr*)

3-Amino-2-(3,4-dihydroxyphenyl)-2,3-dihydro-1,4-benzodioxin-6-ethanamine A-744

2-Amino-7-(2-aminoethyl)-3-(3,4-dihydroxyphenyl)-1,4-benzodioxan



$C_{16}H_{18}N_2O_4$ 302.329

Dimer of Dopamine, D-920.

(2*R*,3*S*)-*form*

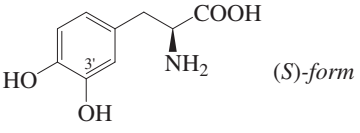
N,N′-*Di-Ac:*

$C_{20}H_{22}N_2O_6$ 386.404
Isol. from the cast-off shells of the cicada *Cryptotympana* sp. Component of Zentai. Yellow powder. Mp 118-126°. $[\alpha]_D$ +51.7 (c, 1 in MeOH).

Noda, N. *et al., Chem. Pharm. Bull.*, 2000, **48**, 1749-1752 (*isol, pmr, cmr*)

2-Amino-3-(3,4-dihydroxyphenyl)propanoic acid A-745

3-Hydroxytyrosine, 9CI. 3,4-Dihydroxyphenylalanine. DOPA
[587-45-1]



(*S*)-*form*

$C_9H_{11}NO_4$ 197.19
Used in treatment of the Parkinsonian syndrome. The immediate precursor of the neurotransmitter dopamine. Usually administered with a peripheral DOPA decarboxylase inhibitor. Intermed. in biosynth. of various marine alkaloids, e.g. the Lamellarins. Log P -2.82 (uncertain value) (calc).

(*R*)-*form*
D-form
[5796-17-8]
Prisms (H_2SO_3 aq.). Mp 282°. $[\alpha]_D$ +11.9.

(*S*)-*form*
L-form. ***Levodopa, BAN, INN, JAN, USAN***. *Bendopa. Brocadopa. Dopar. Larodopa. Levopa. Veldopa. Many other names*
[59-92-7]
Occurs in seedlings and pods of *Vicia faba*, in *Mucuna pruriens, Sarothamnus scoparius, Stizolobium deeringianum, Stizolobium hassjoo, Aristolochia clematitis* and other plants. Also prod. by *Bacillus* spp. Prisms, needles (H_2O + SO_2) or plates (EtOH aq.). Mp 285.5° dec. $[\alpha]_D^{20}$ -12.15 (c, 4 in 1*N* HCl). Pharmacol. active isomer. Rapidly turns green in air, aq. solns. darken in air. Green col. with $FeCl_3$. Reduces $AgNO_3$, NH_3 and acid $KMnO_4$. Component of Sinemet. High-mol.-wt. polymers have been synth.
▶ Systemic (e.g. CNS) and adverse effects when used therapeutically. LD_{50} (rat, orl) 1780 mg/kg. Exp. reprod. and teratogenic effects. AY5600000

Hydrochloride: [5796-14-5]
Prisms. Mp 209°.

3′-O-Sulfate: 3-(Sulfooxy)tyrosine, 9CI
[96253-55-3]
$C_9H_{11}NO_7S$ 277.254
Constit. of the brown alga *Ascophyllum nodosum*.

3′-O-β-D-Glucopyranoside: [2275-95-8]
$C_{15}H_{21}NO_9$ 359.332
Isol. from *Pisum sativum* (peas) and *Vicia faba*. Resin or syrup.

Me ester: ***Melevodopa, INN***. *Levomet*
[7101-51-1]
[1421-65-4]

$C_{10}H_{13}NO_4$ 211.217
Antiparkinsonian agent. Dopamine receptor agonist. Mp 170.5-171.5° (as hydrochloride). $[\alpha]_D^{22}$ +14.7 (c, 12.5 in MeOH) (hydrochloride). CAS no. refers to the hydrochloride. Prodrug of levodopa.

Et ester: ***Etilevodopa, USAN***
[37178-37-3]
$C_{11}H_{15}NO_4$ 225.244
Sol. prodrug of levodopa.

Et ester, hydrochloride: [39740-30-2]
Cryst. (Et_2O/EtOH). Mp 126-129°. $[\alpha]_D^{22}$ -8.95 (c, 1.05 in H_2O).

N-*Ac:* N-*Acetyl-3,4-dihydroxyphenylalanine*
[19641-90-8]
$C_{11}H_{13}NO_5$ 239.227
Prod. by *Streptomyces akiyoshiensis* ATCC13480. Sol. H_2O, MeOH. $[\alpha]_D^{20}$ +68.2 (c, 1 in MeOH). λ_{max} 198 (ε 34200); 280 (ε 2210) (H_2O) (Berdy).

O,O,N-*Tribenzoyl:* [97857-68-6]
$C_{30}H_{23}NO_7$ 509.514
Needles (AcOH). Mp 170°.

N-*(4-Hydroxy-*E*-cinnamoyl):* **N-trans-p-*Coumaroyl-DOPA***
[77201-64-0]
$C_{18}H_{17}NO_6$ 343.335
Constit. of the bark of *Dalbergia melanoxylon* and of roasted cocoa powder.

N-*(4-Hydroxy-Z-cinnamoyl):* **N-cis-p-*Coumaroyl-DOPA***
[77201-63-9]
$C_{18}H_{17}NO_6$ 343.335
Constit. of the bark of *Dalbergia melanoxylon*.

N-*(4-Methylbenzenesulfonyl):* [37169-34-9]
$C_{16}H_{17}NO_6S$ 351.379
Cryst. (EtOAc/petrol). Mp 188°. $[\alpha]_D^{25}$ -5.4 (c, 1 in MeOH).

N-tert-*Butyloxycarbonyl:* [30033-24-0]
$C_{14}H_{19}NO_6$ 297.307
Solid (EtOAc/cyclohexane). Mp 148° (142-144°). $[\alpha]_D^{25}$ +16.4 (c, 1 in MeOH).

N-tert-*Butyloxycarbonyl, Me ester:*
[37169-36-1]
$C_{15}H_{21}NO_6$ 311.334
Solid (MeOH aq.). Mp 140-141° (133-135°). $[\alpha]_D^{25}$ +12.3 (c, 1 in MeOH) (+7.6).

N-tert-*Butyloxycarbonyl, benzyl ester:*
[37169-37-2]
$C_{21}H_{25}NO_6$ 387.432
Brown glass. $[\alpha]_D^{25}$ -4.2 (c, 1 in MeOH).

N-*(9-Fluorenylmethyloxycarbonyl): Fmoc-L-DOPA*
[137018-93-0]
$C_{24}H_{21}NO_6$ 419.433
Solid.

N,N,N-*Tri-Me, betaine: α-Carboxy-3,4-dihydroxy*-N,N,N-*trimethylbenzeneethanaminium(1+). DOPA betaine*
[81130-72-5]
$C_{12}H_{18}NO_4^{\oplus}$ 240.279
Constit. of *Lobaria laetevirens*.

N,N,N-*Tri-Me, Me ester: 3,4-Dihydroxy-α-(methoxycarbonyl)*-N,N,N-*trimethylbenzeneethanaminium(1+), 9CI.* ***Sticticin***
[77035-53-1]
$C_{13}H_{20}NO_4^{\oplus}$ 254.305
Isol. from the thallus of *Lobaria laetevirens* and present in other lichens of the Stictaceae. V. hygroscopic solid (as chloride).

3′-Me ether: 4-Hydroxy-3-methoxyphenylalanine. 3-Methoxytyrosine
[300-48-1]
$C_{10}H_{13}NO_4$ 211.217
Isol. from *Cortinarius brunneus, Pachymatisma johnstoni* and the blood of Parkinsonian patients. Cryst. (H_2O). $[\alpha]_D$ -34 (c, 0.39 in H_2O). $[\alpha]_D$ -15.4 (c, 0.36 in 0.1*M* HCl).

5,5′-Dimer: α,α′-Diamino-5,5′,6,6′-tetrahydroxy-3,3′-biphenyldipropanoic acid, 8CI
[17785-52-3]
$C_{18}H_{20}N_2O_8$ 392.365
Powder (H_2O containing SO_2). Mp 300°.

N-*Jasmonoyl:* **N-*Jasmonoyl DOPA***
[866421-54-7]
$C_{21}H_{27}NO_6$ 389.447
Constit. of the flowers of *Vicia faba* (broad bean).

(±)-*form* [63-84-3]
Cryst. (H_2O or $NaHSO_3$ aq.). Mp 271-272° dec.
▶ AY5250000

Hydrochloride: [63302-79-4]
Plates (MeOH). Mp 246° dec.

Hydrobromide:
Plates (MeOH). Mp 212° dec.

Me ester: [41439-83-2]
Mp 126°.

Me ester, hydrochloride: [40611-00-5]
Mp 180-181°.

Et ester: [23234-42-6]
Cryst. (EtOH aq.). Mp 129°.

O,O,N-*Tri-Ac:* [47302-76-1]
$C_{15}H_{17}NO_7$ 323.302
Prisms (H_2O). Mp 171-172°.

N-*Benzoyl:* [38250-04-3]
$C_{16}H_{15}NO_5$ 301.298
Cryst. Mp 190-195° (anhyd.).

N-tert-*Butyloxycarbonyl:* [59686-55-4]
Solid (EtOAc/C_6H_6). Mp 140-142°.

N-tert-*Butyloxycarbonyl, Me ester:*
[59686-54-3]
Solid (MeOH aq.). Mp 186-188°.

N-tert-*Butyloxycarbonyl, di-Ac:* [59686-56-5]
$C_{18}H_{23}NO_8$ 381.382
Solid. Mp 132-134°.

3′-Me ether: [4214-13-5]
Prisms + $2H_2O$ (H_2O). Mp 255-256° dec.

3′-Me ether, N-*benzoyl:* [2901-78-2]
$C_{17}H_{17}NO_5$ 315.325
Plates (H_2O or EtOH). Mp 164°.

3′,4′-Di-Me ether: [33522-62-2]
$C_{11}H_{15}NO_4$ 225.244
Needles (EtOH aq.). Mp 252-255°.

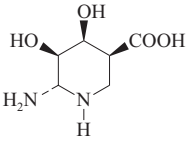
3′,4′-Di-Me ether, N-*benzoyl:* [34996-90-2]
$C_{18}H_{19}NO_5$ 329.352

Mp 173-174°.

[57308-51-7 , 127441-81-0]

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 257A; 257B (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **2**, 1190A; 1190B (*nmr*)
O'Neill, J.J. *et al., J.O.C.*, 1956, **21**, 363-364 (*Me ester*)
Losse, G. *et al., Chem. Ber.*, 1961, **94**, 2271-2277 (*Et ester, synth*)
Andrews, R.S. *et al., Nature (London)*, 1965, **205**, 1213 (*glucoside*)
Kaiser, A. *et al., Helv. Chim. Acta*, 1970, **53**, 1708-1712 (*N-Ac, Boc-L-DOPA, synth, pmr*)
Chapman, R.F. *et al., J.C.S.(C)*, 1970, 865 (*dimer*)
Vorbruggen, H. *et al., Chem. Ber.*, 1972, **105**, 1168 (*synth*)
Ger. Pat., 1972, 2 153 811; *CA*, **77**, 62311a (*Boc derivs*)
Griffith, T. *et al., Phytochemistry*, 1973, **12**, 1651 (*biosynth*)
Mostad, A. *et al., Acta Chem. Scand., Ser. B*, 1974, **28**, 1161 (*cryst struct*)
Renth, E.-O. *et al., Angew. Chem., Int. Ed.*, 1975, **14**, 361 (*synth*)
Fellman, J.H. *et al., Biochim. Biophys. Acta*, 1975, **381**, 9 (*isol, deriv*)
Bartholini, G. *et al., Pharmacol. Ther., Part B*, 1975, **1**, 407 (*rev, pharmacol*)
Gomez, R. *et al., Anal. Profiles Drug Subst.*, 1976, **5**, 189 (*rev*)
Bannerjee, S.N. *et al., J.O.C.*, 1976, **41**, 3056-3058 (*Boc derivs*)
Boder, N. *et al., J. Med. Chem.*, 1977, **20**, 1435-1445 (*S-form Me ester, synth, pmr*)
Dardenne, G. *et al., Phytochemistry*, 1977, **16**, 1822 (*deriv*)
Yamamoto, H. *et al., Polymer*, 1977, **18**, 979; 1978, **19**, 1115 (*polym*)
Fuller, W.D. *et al., Biopolymers*, 1978, **17**, 2939 (*polym*)
Rudd, E.A. *et al., J. Med. Chem.*, 1979, **22**, 233-237 (*Boc-L-DOPA Me ester*)
Bernard, T. *et al., Phytochemistry*, 1980, **19**, 1967 (*Sticticin*)
Van Heerden, F.R. *et al., Phytochemistry*, 1980, **19**, 2125 (*N-p-coumaroyl*)
Bernard, T. *et al., Phytochemistry*, 1981, **20**, 2325 (*betaine*)
Danishevsky, S. *et al., Tetrahedron*, 1981, **37**, 4081 (*synth*)
Nutt, J.G. *et al., Clin. Neuropharmacol.*, 1984, **7**, 35 (*rev, metab*)
Laycock, M.V. *et al., J. Nat. Prod.*, 1984, **47**, 1033 (*isol, sulfate*)
Lee, M. *et al., Chem. Pharm. Bull.*, 1987, **35**, 235 (*hplc, bibl, anal*)
Cooper, D.R. *et al., J. Pharm. Pharmacol.*, 1987, **39**, 627-635; 809-818 (*Et ester*)
Behrman, E.J. *et al., Org. Prep. Proced. Int.*, 1989, **21**, 351 (*synth, sulfate*)
Negwer, M. *et al., Organic-Chemical Drugs and their Synonyms, 7th edn., Akademie-Verlag*, 1994, 1471 (*synonyms*)
Smith, K.C. *et al., J. Nat. Prod.*, 1995, **58**, 1274 (*isol, N-Ac*)
Brunner-Guenat, M. *et al., J. Pharm. Pharmacol.*, 1995, **47**, 861 (*Me ester*)
Djaldetti, R. *et al., Ann. Neurol.*, 1996, **39**, 400-404 (*Et ester*)
Martindale, The Extra Pharmacopoeia, 32nd edn., Pharmaceutical Press, 1999, 1137
Chen, F.-Y. *et al., J.O.C.*, 2001, **66**, 3650-3652 (*R-form, ir, pmr, cmr*)
Sever, M.J. *et al., Tetrahedron*, 2001, **57**, 6139-6146 (*Fmoc/TBDMS derivs*)
Kramell, R. *et al., J. Nat. Prod.*, 2005, **68**, 1345-1349 (*N-jasmonoyl*)
Stark, T. *et al., J. Agric. Food Chem.*, 2006, **54**, 2859-2867 (*N-4-hydroxycinnamoyl, isol*)
Aubry, S. *et al., Eur. J. Org. Chem.*, 2007, 5212-5225 (*S-form, Me ester*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, DNA200

6-Amino-4,5-dihydroxy-3-piperidinecarboxylic acid A-746



(3*S*,4*S*,5*R*,6*S*)–*form*

$C_6H_{12}N_2O_4$ 176.172

(3*S*,4*S*,5*R*,6*S*)-*form*

N-*Ac:* ***Siastatin B***. *A 72363B. Antibiotic A 72363B*
[54795-58-3]
$C_8H_{14}N_2O_5$ 218.209
Isol. from *Streptomyces verticillus* var. *quintum* and *Streptomyces nobilis*. Potent neuraminidase inhibitor. Needles. Mp 137° dec. $[\alpha]_D^{25}$ +57.2 (c, 1 in H_2O).

▶ TM6125400

(3*R,4*R**,5*R**,6*R**)-*form***

N-*Ac:* ***Antibiotic A 72363A1***. *A 72363A-1*
$C_8H_{14}N_2O_5$ 218.209
Prod. by *Streptomyces nobilis*. Heparanase inhibitor. Sol. H_2O; poorly sol. Me_2CO, hexane. $[\alpha]_D^{23}$ +29 (c, 1 in H_2O).

(3*R,4*S**,5*R**,6*R**)-*form***

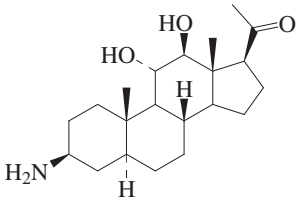
N-*Ac:* ***Antibiotic A 72363A2***. *A 72363A-2*
$C_8H_{14}N_2O_5$ 218.209
Prod. by *Streptomyces nobilis*. Heparanase inhibitor. Sol. H_2O; poorly sol. Me_2CO, hexane. $[\alpha]_D^{23}$ -31 (c, 1 in H_2O).

(3*R,4*R**,5*S**,6*S**)-*form***

N-*Ac:* ***Antibiotic A 72363C***. *A 72363C*
$C_8H_{14}N_2O_5$ 218.209
Prod. by *Streptomyces nobilis*. Heparanase inhibitor. Sol. H_2O; poorly sol. Me_2CO, hexane. $[\alpha]_D^{27}$ -59 (c, 0.7 in H_2O).

Umezawa, H. *et al., J. Antibiot.*, 1974, **27**, 963 (*isol, ir, props*)
Aoyagi, T. *et al., Experientia*, 1975, **31**, 896 (*struct*)
Nishimura, Y. *et al., J.A.C.S.*, 1988, **110**, 7249 (*synth, abs config*)
Nishimura, Y. *et al., Bull. Chem. Soc. Jpn.*, 1992, **65**, 978 (*synth*)
Nishimura, Y. *et al., Stud. Nat. Prod. Chem.*, 1995, **16**, 75 (*rev, synth*)
Takatsu, T. *et al., J. Antibiot.*, 1996, **49**, 54; 61 (*A 73263, pmr, cmr, activity*)
Knapp, S. *et al., Org. Lett.*, 2000, **2**, 4037-4040 (*Siastatin B, synth*)

3-Amino-11,12-dihydroxypregnan-20-one A-747



$C_{21}H_{35}NO_3$ 349.512

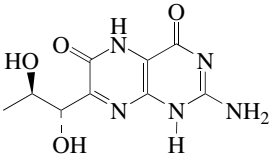
(3β,5α,11α,12β)-*form*

N,N-*Di-Me, 11*-O-*(3,4-dimethyl-3-pentenoyl), 12-Ac:* ***Pachysanonin***
[873799-27-0]
$C_{32}H_{51}NO_5$ 529.759
Constit. of *Pachysandra axillaris*.
Cryst. (Me_2CO). Mp 153.5-154.5°.

Qiu, M.-H. *et al., Chem. Biodiversity*, 2005, **2**, 866-871 (*Pachysanonin*)

2-Amino-7-(1,2-dihydroxypropyl)-1,5-dihydro-4,6-pteridinedione, 9CI A-748

6-Oxoprimapterin. *6-Oxo-7-biopterin*
[115991-76-9]

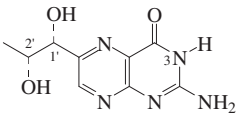


$C_9H_{11}N_5O_4$ 253.217
Occurs in the urine of humans with hyperphenylalaninemia.

Curtuis, H.C. *et al., J. Biol. Chem.*, 1990, **265**, 3923-3930 (*isol, ms, struct*)

2-Amino-6-(1,2-dihydroxypropyl)-4(1*H*)-pteridinone A-749

2-Amino-4-hydroxy-6-(1,2-dihydroxypropyl)pterin



(1′*R*,2′*R*)-*form*

$C_9H_{11}N_5O_3$ 237.218

(1′*R*,2′*R*)-*form*

D-threo-*form*. ***Dictyopterin***
[13019-52-8]
Isol. from *Dictyostelium discoideum*. Mp 300°. pK_{a1} 2.2; pK_{a2} 7.92.

(1′*R*,2′*S*)-*form*

L-erythro-*form*. ***Biopterin***. *Ranachrome 1*
[22150-76-1]
Widely distributed in microorganisms, insects, algae, amphibia and mammals. Found in urine. Growth factor. Pale yellow cryst. (AcOH aq.). Mp 250-280° dec. $[\alpha]_D^{20}$ -66 (c, 0.2 in 0.1*M* HCl). pK_{a1} 2.23; pK_{a2} 7.89.

▶ UO3506000

1′-O-D-*Glucopyranoside: Biopterin glucose*
[32838-67-8]
$C_{15}H_{21}N_5O_8$ 399.36
Constit. of a marine plankton.

2′-O-α-D-*Glucopyranoside:* [235416-12-3]
$C_{15}H_{21}N_5O_8$ 399.36
Isol. from *Spirulina* (*Arthrospira*) *platensis*.

2′-O-*(2-Acetamido-2-deoxy-β-D-glucopyranoside):* ***Limipterin***

[164803-20-7]
$C_{17}H_{24}N_6O_8$ 440.412
Prod. by *Chlorobium limicola f. thiosulfatophilum*.

3-Me: ***2-Amino-6-(1,2-dihydroxypropyl)-3-methylpterin-4-one***
[111317-37-4]
$C_{10}H_{13}N_5O_3$ 251.244
Isol. from the marine anthozoan *Astroides calycularis*. Pale yellow cryst. powder (MeOH). Sol. MeOH, H_2O. Mp 229-231°. $[\alpha]_D$ -60 (c, 0.3 in 0.1*M* HCl). λ_{max} 230 (ϵ 28200); 319 (ϵ 11700) (pH 1 H_2O) (Derep). λ_{max} 242 (ϵ 28200); 276 (ϵ 24000); 356 (ϵ 9550) (H_2O pH 7) (Derep).

7,8-Dihydro: 7,8-Dihydrobiopterin
[6779-87-9]
[7644-44-2]
$C_9H_{13}N_5O_3$ 239.233
Hygroscopic needles (H_2O or MeOH aq.). $[\alpha]_D^{22}$ +35 (c, 0.4 in 0.1*M* NaOH).

5,6,7,8-Tetrahydro: see 5,6,7,8-Tetrahydrobiopterin, T-142

(1′*S*,2′*R*)-*form*
D-erythro-*form*
[13039-62-8]
Mp 300°. pK_{a1} 2.23; pK_{a2} 7.9.

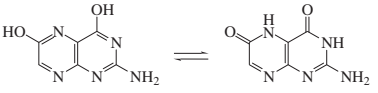
(1′*S*,2′*S*)-*form*
L-threo-*form*. ***Orinapterin***. *Ciliapterin*
[13039-82-2]
Isol. from human urine. Prod. by *Aphanizomenon flos-aquae*. Pale yellow cryst. (AcOH aq.). Mp 300°. $[\alpha]_D$ +72 (0.1*M* HCl). pK_{a1} 2.24; pK_{a2} 7.87.

2′-O-(2-Acetamido-2-deoxy-β-D-glucopyranoside): ***Tepidopterin***
[188778-28-1]
$C_{17}H_{24}N_6O_8$ 440.412
Prod. by *Chlorobium tepidum*.

Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 480B (*nmr*)
Patterson, E.L. *et al., J.A.C.S.*, 1955, **77**, 3167
Kidder, G.W. *et al., J. Biol. Chem.*, 1968, **243**, 826 (*Ciliapterin*)
Kidder, G.W. *et al., Methods Enzymol.*, 1971, **18B**, 739 (*Ciliapterin*)
Rembold, H. *et al., Angew. Chem., Int. Ed.*, 1972, **11**, 1061 (*biochem*)
Blair, J.A. *et al., Tet. Lett.*, 1973, 203-204 (*synth, uv, dihydro*)
Sugimoto, T. *et al., Bull. Chem. Soc. Jpn.*, 1975, **48**, 3767 (*synth*)
Taylor, E.C. *et al., J.A.C.S.*, 1976, **98**, 2301 (*synth*)
Schircks, B. *et al., Helv. Chim. Acta*, 1977, **60**, 211; 1978, **61**, 2731-2738; 1985, **68**, 1639 (*synth, pmr, cmr, derivs*)
Fukushima, T. *et al., Methods Enzymol.*, 1980, **66**, 508-511 (*synth, uv, dihydro*)
Armarego, W.L.F. *et al., Aust. J. Chem.*, 1982, **35**, 785 (*synth*)
Kappel, M. *et al., Annalen*, 1984, 1815 (*synth*)
Aiello, A. *et al., Experientia*, 1987, **43**, 950 (*deriv*)
Mori, K. *et al., Annalen*, 1989, 958; 1212 (*synth, bibl*)
Klein, R. *et al., Eur. J. Biochem.*, 1990, **187**, 665 (*Dictyopterin*)
Ogiwara, S. *et al., Biol. Chem. Hoppe-Seyler*, 1992, **373**, 1061 (*Orinapterin*)
Cha, K.W. *et al., Helv. Chim. Acta*, 1995, **78**, 600-614 (*Limipterin*)
Ikawa, M. *et al., Phytochemistry*, 1995, **38**, 1229 (*isol, pmr, ms*)
Fernandez, A.M. *et al., J.O.C.*, 1996, **61**, 8698 (*synth*)
Cho, S.-H. *et al., Biochim. Biophys. Acta*, 1998, **1379**, 53-60 (*Tepidopterin*)
Noguchi, Y. *et al., Mar. Biotechnol.*, 1999, **1**, 207-210 (*2′-glucoside*)
Hanaya, T. *et al., Tetrahedron*, 2008, **64**, 2090-2100 (*Limipterin, Tepidopterin, synth*)

2-Amino-4,6-dihydroxypteridine A-750

2-Amino-1,5-dihydro-4,6-pteridinedione, 9CI. ***Xanthopterin***. *Uropterin*
[119-44-8]
[5979-01-1]



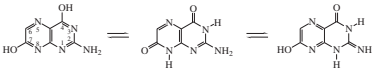
$C_6H_5N_5O_2$ 179.138
Important naturally occurring pteridine. Normal constit. of human urine. Yellow wing pigment of butterflies e.g. *Gonepteryx rhamni*, *Appias nero*, *Colias edusa*. Inhibits cell proliferation. Sol. acids, alkalis. Mp 410° (carbonises above 360°). pK_{a1} 6.25; pK_{a2} 9.23 (20°).

6-O-Sulfate: ***Xanthopterinsulfonic acid***
$C_6H_5N_5O_5S$ 259.202
Prod. by *Azotomonas insolita* and *Escherichia coli*. Needles (H_2O) (as Na salt). Mp 300° (Na salt).

Schöpf, C. *et al., Annalen*, 1933, **507**, 266
Goto, M. *et al., Arch. Biochem. Biophys.*, 1965, **111**, 8 (*Xanthopterinsulfonic acid*)
Taylor, E.C. *et al., J.A.C.S.*, 1973, **95**, 4455 (*synth*)
Bieri, J.H. *et al., Helv. Chim. Acta*, 1976, **59**, 2374 (*cryst struct*)
Pfleiderer, W. *et al., J. Het. Chem.*, 1992, **29**, 583 (*rev*)
Rubenstein, M. *et al., Int. J. Biochem.*, 1993, **25**, 1873

2-Amino-4,7-dihydroxypteridine A-751

*2-Amino-4,7(1*H,8H*)-pteridinedione, 9CI*. ***Isoxanthopterin***. *Ranachrome 4*
[529-69-1]



$C_6H_5N_5O_2$ 179.138
Widespread insect pigment found in amphibian and fish skin; normal constit. of urine. Mp 300°. pK_{a1} 7.34; pK_{a2} 10.06 (20°,H_2O).

▶ UO3425000

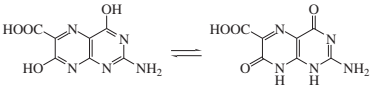
1H,3H-form

Me ether, 1,3-di-Me: ***N^1,N^3,O^7-Trimethylisoxanthopterin***
$C_9H_{11}N_5O_2$ 221.218
Isol. from a *Eudistoma* sp. Solid. λ_{max} 208 (sh) (log ϵ 4); 236 (sh) (log ϵ 3.7); 268 (log ϵ 3.4); 316 (log ϵ 3.6); 328 (sh) (log ϵ 3.6); 350 (sh) (log ϵ 3) (MeOH).

Aldrich Library of NMR Spectra, 2nd edn., 1983, **2**, 769A (*nmr*)
Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 895D (*ir*)
Pfleiderer, W. *et al., Chem. Ber.*, 1961, **94**, 1 (*struct, bibl, uv*)
Konrad, G. *et al., Chem. Ber.*, 1970, **103**, 735 (*uv, props*)
Taylor, E.C. *et al., J.O.C.*, 1975, **40**, 2341 (*synth, bibl*)
Pfleiderer, W. *et al., J. Het. Chem.*, 1992, **29**, 583 (*rev*)
Van Wagoner, R.M. *et al., J. Nat. Prod.*, 2001, **64**, 1100-1101 (*N,N,O-trimethyl*)

2-Amino-4,7-dihydroxy-6-pteridinecarboxylic acid A-752

2-Amino-1,4,7,8-tetrahydro-4,7-dioxo-6-pteridinecarboxylic acid, 9CI. ***Isoxanthopterincarboxylic acid, 8CI***. *Cyprino-Pourpre B*
[3254-85-1]

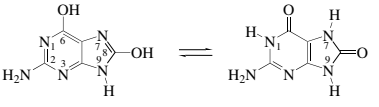


$C_7H_5N_5O_4$ 223.148
Isol. from the scales and skin of various fish. Cryst. Mp > 360°. λ_{max} 224 (log ϵ 4.57); 259 (log ϵ 4); 282 (sh) (log ϵ 3.53); 347 (log ϵ 4.17) (0.1*M* NaOH).

Purrmann, R *et al., Annalen*, 1941, **548**, 284-292 (*synth*)
Matsuura, S *et al., J. Biochem. (Tokyo)*, 1955, **42**, 419-422 (*isol*)
Taylor, E.C. *et al., J.A.C.S.*, 1959, **81**, 2474-2479 (*synth*)
Taylor, E.C *et al., Tet. Lett.*, 1973, 2093-2095 (*synth*)

2-Amino-6,8-dihydroxypurine A-753

*2-Amino-7,9-dihydro-1*H*-purine-6,8-dione, 9CI*. *8-Oxoguanine. 7,8-Dihydro-8-oxoguanine. 2-Aminopurine-6,8-diol. 8-Hydroxyguanine*
[5614-64-2]



$C_5H_5N_5O_2$ 167.127
Other tautomers possible. 8-Oxo form predominates. Prod. *in vivo* by free radical hydroxylations of guanine radicals in DNA. Involved in base pair mismatches in mutagenesis. Crystalline powder. Mp 300°.
▶ Potent mutagen.

7-Me: 2-Amino-6,8-dihydroxy-7-methylpurine. 2-Amino-7-methyl-6,8-purinediol. 8-Hydroxy-7-methylguanine
[1688-85-3]
$C_6H_7N_5O_2$ 181.154
Platelets.

*9-Me: 2-Amino-6,8-dihydroxy-9-methylpurine. 2-Amino-9-methyl-6,8-purinediol. 8-Hydroxy-9-methylguanine. 9-Methylguanin-8(7*H*)-one*
[21823-84-7]
$C_6H_7N_5O_2$ 181.154
Cryst. + H_2O. Mp 400°.

*1,7-Di-Me: 1,7-Dimethyl-8-oxo-9*H*-guanine*
[65879-11-0]
$C_7H_9N_5O_2$ 195.18
Cryst. (H_2O). Gradual dec. >240°.

7,O^6-Di-Me: ***2-Amino-8-hydroxy-6-methoxy-7-methylpurine****. 2-Amino-7,9-dihydro-6-methoxy-7-methyl-8*H*-purin-8-one. 6-Methoxy-7-methyl-8-oxoguanine*
[247165-80-6]
$C_7H_9N_5O_2$ 195.18
Isol. from the ascidian *Symplegma rubra*. Solid. λ_{max} 210 (log ε 4.2); 246 (log ε 3.6); 284 (log ε 3.9) (MeOH).

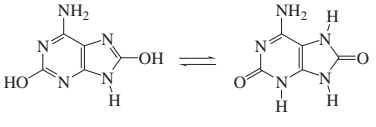
*9-Et: 2-Amino-9-ethyl-6,8-dihydroxypurine. 2-Amino-9-ethyl-6,8(1*H*,9*H*)-purinedione*
[21823-85-8]
$C_7H_9N_5O_2$ 195.18
Cryst. (KOH aq./AcOH). Mp 359-360°.

[112009-08-2]

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 716D (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 217C (*nmr*)
Fischer, E. *et al., Ber.*, 1897, **30**, 570 (*synth*)
Karrer, P. *et al., Helv. Chim. Acta*, 1948, **31**, 1214 (*isol*)
Cavalieri, L.F. *et al., J.A.C.S.*, 1950, **72**, 2587 (*synth, uv*)
Borowitz, I.J. *et al., Biochemistry*, 1965, **4**, 650 (*7-Me*)
Perini, F. *et al., J.O.C.*, 1970, **35**, 812 (*synth, uv, derivs*)
Brown, R. *et al., J.C.S. Perkin 1*, 1977, 1003 (*9-Me*)
Parham, J.C. *et al., J.O.C.*, 1978, **43**, 2325 (*di-Me*)
Dizdaroglu, M. *et al., Biochemistry*, 1985, **24**, 4476 (*formn*)
Kohda, K. *et al., Biochem. Biophys. Res. Commun.*, 1987, **149**, 1141 (*formn*)
Kasai, H. *et al., Bull. Chem. Soc. Jpn.*, 1987, **60**, 3799 (*cryst struct, 9-Et*)
Floyd, R.A. *et al., Carcinogenesis (London)*, 1990, **11**, 1447 (*rev*)
Doi, M. *et al., J.C.S. Perkin 1*, 1991, 55 (*cryst struct, 9-Et*)
Brown, T. *et al., Chem. Ber.*, 1993, 484 (*rev*)
Linday, B.S. *et al., J. Nat. Prod.*, 1999, **62**, 1573-1575 (*2-Amino-8-hydroxy-6-methoxy-7-methylpurine*)

6-Amino-2,8-dihydroxypurine A-754

*6-Amino-1*H*-purine-2,8(3*H*,7*H*)-dione, 9CI. 6-Aminopurine-2,8-diol. 2,8-Dihydroxyadenine*
[30377-37-8]



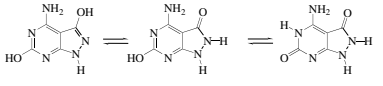
$C_5H_5N_5O_2$ 167.127
Other tautomers possible. Prod. by *Alcaligenes aquamarinus.* Found in urine of humans with 2,8-dihydroxyadenine urolithiasis associated with adenine phosphoribosyltransferase deficiency. Xanthine oxidase inhibitor. Sol. bases; fairly sol. H_2O; poorly sol. MeOH, DMSO, hexane. Mp 335-340° dec. λ_{max} 305 (ε 19950) (HCl) (Berdy). λ_{max} 300 (ε 14800) (NaOH) (Berdy).

(1H,3H)-form
*1,3-Di-Me: 6-Amino-1,3-dimethyl-1*H*-purine-2,8(3*H*,8*H*)-dione. 1,3-Dimethyl-8-oxoisoguanine*
[683228-71-9]
$C_7H_9N_5O_2$ 195.18
Isol. from the ascidian *Pseudodistoma cereum* and from *Phestilla melanobtanchia* and a *Tubastrea* sp. Amorph. solid. λ_{max} 203 (log ε 3.89); 308 (log ε 3.57) (MeOH).

Bendich, A. *et al., J. Biol. Chem.*, 1950, **183**, 267-277 (*isol*)
Cavalieri, L.F. *et al., J.A.C.S.*, 1950, **72**, 2587-2594 (*synth*)
Klenow, H. *et al., Biochem. J.*, 1952, **50**, 404-407 (*isol*)
Stevens, M.A. *et al., J.A.C.S.*, 1960, **82**, 1148-1152 (*synth*)
Simmonds, H.A. *et al., Biochem. J.*, 1976, **157**, 485-487 (*isol*)
Sunahara, N. *et al., Agric. Biol. Chem.*, 1977, **41**, 1103-1109 (*isol*)
Simmonds, H.A. *et al., Clin. Chim. Acta*, 1986, **160**, 103-108 (*biochem, rev*)
Kamatani, N. *et al., Pharma Med.*, 1988, **6**, 39-42 (*rev*)
Kojima, T. *et al., Biomed. Chromatogr.*, 1991, **5**, 57-61 (*hplc*)
Simmonds, H.A. *et al., Lancet*, 1992, **ii**, 1295-1296 (*biochem*)
Sumi, S. *et al., J. Chromatogr., B*, 1995, **672**, 233-239 (*hplc*)
Sevcik, J. *et al., Clin. Chim. Acta*, 1996, **245**, 85-92 (*occur*)
Engle, S.J. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 1996, **93**, 5307-5312 (*biochem*)
Appleton, D.R. *et al., Nat. Prod. Res.*, 2004, **18**, 39-42 (*1,3-di-Me*)

4-Amino-3,6-dihydroxy-1*H*-pyrazolo[3,4-*d*]pyrimidine A-755

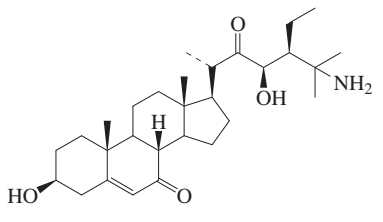
*4-Amino-1*H*-pyrazolo[3,4-*d*]pyrimidine-3,6(2*H*,5*H*)-dione, 9CI.* ***Hydroxyakalone***
[182056-35-5]



$C_5H_5N_5O_2$ 167.127
Prod. by the marine *Agrobacterium aurantiacum*. Xanthine oxidase inhibitor. Shows antigout activity. Powder. Sol. bases, DMSO; poorly sol. MeOH, hexane, $CHCl_3$. λ_{max} 298 (H_2O). λ_{max} 298 (pH12 buffer) (Berdy).

Izumida, H. *et al., J. Antibiot.*, 1997, **50**, 916-918 (*isol, pmr, cmr*)

25-Amino-3,23-dihydroxystigmast-5-ene-7,22-dione A-756



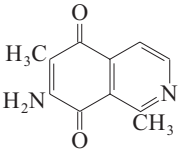
$C_{29}H_{47}NO_4$ 473.695

(3β,23R,24S)-form
N-*Me, 3-*O*-β-D-glucopyranoside:* ***Triumfettoside A***
[551929-44-3]
$C_{36}H_{59}NO_9$ 649.863
Alkaloid from the aerial parts of *Triumfetta flavescens.* Amorph. powder. Mp > 300°.

Ahmed, B. *et al., Pharmazie*, 2002, **57**, 709-713 (*isol, pmr, cmr, ms*)

7-Amino-1,6-dimethyl-5,8-isoquinolinedione, 9CI A-757

Cribrostatin 1
[144279-35-6]



$C_{11}H_{10}N_2O_2$ 202.212
Alkaloid from the blue marine sponge *Cribrochalina* sp. Exhibits cytotoxicity against the P388 lymphocytic leukaemia cell line. Red-orange cryst. (CH_2Cl_2/MeOH). Mp 220-235° dec. λ_{max} 207 (ε 8730); 232 (ε 4700); 256 (ε 4170); 272 (ε 4160); 304 (ε 537) (MeOH) (Berdy).

Pettit, G.R. *et al., Can. J. Chem.*, 1992, **70**, 1170 (*isol, uv, ir, pmr, cmr, cryst struct*)

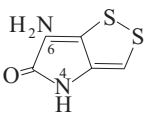
2-Amino-14,16-dimethyl-3-octadecanol A-758

Paecilaminol*. Antibiotic FKI 0550. FKI 0550*
$H_3CCH_2CH(CH_3)CH_2CH(CH_3)(CH_2)_{10}CH(OH)CH(NH_2)CH_3$
$C_{20}H_{43}NO$ 313.566
Prod. by *Fusarium avenaceum* and *Paecilomyces* sp. FKI-0550. NADH-fumarate reductase inhibitor. Cytotoxic. Mycotoxin. Pale yellow oil. $[\alpha]_D^{25}$ +26.7 (c, 0.24 in MeOH). λ_{max} 203 (ε 8250); 220 (sh) (ε 4400); 246 (ε 2040); 265 (sh) (ε 1570) (MeOH).

Uhlig, S. *et al., Toxicon*, 2005, **46**, 513-522 (*isol, pmr, cmr, ms*)
Ui, H. *et al., J. Antibiot.*, 2006, **59**, 591-596 (*isol, pmr, cmr, activity*)

6-Amino-1,2-dithiolo[4,3-*b*]pyrrol-5(4*H*)-one, 9CI A-759

Holothin
[488-03-9]



$C_5H_4N_2OS_2$ 172.231
Hydrol. prod. of Holomycin. Greenish-black cryst. (as hydrochloride). Mp 300° (hydrochloride).

► AB7450000

N^6-*Ac:* ***Holomycin****.* N-*Demethylthiolutin.*

Antibiotic MM 21801. MM 21801
[488-04-0]
$C_7H_6N_2O_2S_2$ 214.269
Prod. by *Streptomyces* sp. P6621 and *Streptomyces clavuligerus*. Shows antibiotic props. Orange-yellow flakes (MeOH/EtOAc). Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. Mp 268-270° dec. λ_{max} 246 (ϵ 6460); 302 (ϵ 3090); 388 (ϵ 11200) (MeOH or EtOH) (Derep). λ_{max} 246 (ϵ 4665); 301 (ϵ 2354); 388 (ϵ 7918) (MeOH) (Berdy). λ_{max} 245 (ϵ 6310); 302 (ϵ 3310); 390 (ϵ 11750) (EtOH) (Berdy).

▶ AB7450000

N^6-*Propanoyl:* **N-*Propionylholothin***. N-*(4,5-Dihydro-5-oxo-1,2-dithiolo[4,3-*b*]-pyrrol-6-yl)propanamide, 9CI*
[4708-23-0]
$C_8H_8N_2O_2S_2$ 228.295
Isol. from *Streptomyces* P6621. Orange-yellow prisms. Sol. MeOH. Mp 255-264° dec. λ_{max} 246 (ϵ 6460); 302 (ϵ 3090); 388 (ϵ 11200) (MeOH or EtOH) (Derep). λ_{max} 246 (ϵ 7800); 302 (ϵ 4250); 388 (ϵ 14400) (MeOH) (Berdy).

N^6-*Hexanoyl:* ***Xenorhabdin 1***. N-*(4,5-Dihydro-5-oxo-1,2-dithiolo[4,3-*b*]pyrrol-6-yl)hexanamide, 9CI*
[92680-94-9]
$C_{11}H_{14}N_2O_2S_2$ 270.376
Prod. by *Xenorhabdus* spp. Possesses antimicrobial and insecticidal props. Sol. MeOH, EtOAc, DMSO; fairly sol. hexane; poorly sol. H_2O. Mp 192-193°. Related to Thiolutin and Aureothricin. λ_{max} 243 (sh) (ϵ 6000); 300 (ϵ 3100); 387 (ϵ 11000) (MeOH) (Derep). λ_{max} 250 ; 310 ; 390 (MeOH) (Berdy).

N^6-*Octanoyl:* ***Xenorhabdin 3***
[92680-91-6]
$C_{13}H_{18}N_2O_2S_2$ 298.429
Prod. by *Xenorhabdus* spp. Possesses antimicrobial and insecticidal props. Sol. MeOH, DMSO, EtOAc; fairly sol. hexane; poorly sol. H_2O. Mp 360°. λ_{max} 243 (sh) (ϵ 6000); 300 (ϵ 3100); 387 (ϵ 11000) (MeOH) (Derep). λ_{max} 250 ; 310 ; 390 (MeOH) (Berdy). λ_{max} 300 ; 387 (MeOH) (Berdy).

N^6-*Tetradecanoyl:* N-*Tetradecanoylholothin*
$C_{19}H_{30}N_2O_2S_2$ 382.59
Prod. by a marine-derived *Alteromonas* sp.

N^6-*(5-Methylhexanoyl):* ***Xenorhabdin 2***
[92680-90-5]
$C_{12}H_{16}N_2O_2S_2$ 284.403
Prod. by *Xenorhabdus* spp. Possesses antimicrobial and insecticidal props. Sol. MeOH, EtOAc, DMSO; fairly sol. hexane; poorly sol. H_2O. Mp 210-213°. λ_{max} 243 (sh) (ϵ 6000); 300 (ϵ 3100); 387 (ϵ 11000) (MeOH) (Derep). λ_{max} 244 ; 300 ; 387 (MeOH) (Berdy).

*4-Me: 6-Amino-4-methyl-1,2-dithiolo[4,3-*b*]pyrrol-5(4*H*)-one.* ***Pyrrothine***
[642-77-3]
$C_6H_6N_2OS_2$ 186.258
Isol. from a *Streptomyces* sp. Active against gram-positive and -negative bacteria. Amorph. yellow solid. Mp 191-194° dec.

4-Me; hydrochloride:
Yellow prisms + 1H_2O. Sinters at *ca.* 200°.

4-Me, N^6*-Ac:* ***Thiolutin***. N-*Acetylpyrrothine. Farcinicine*†. *Acetopyrrothine*
[87-11-6]
$C_8H_8N_2O_2S_2$ 228.295
Prod. by *Streptomyces albus*, *Streptomyces pimprina*, *Streptomyces thioluteus*, other *Streptomyces* spp. and *Saccharothrix* sp. SA 233. Antibiotic which inhibits microbiological growth in beer. Phytotoxic in high concentrations. Shows platelet aggregation props. Brilliant yellow needles (1-butanol). Sol. MeOH, $CHCl_3$; poorly sol. H_2O, C_6H_6, Et_2O, hexane. Mp 273-276° dec. $Bp_{0.1}$ 200° subl. λ_{max} 248 (ϵ 6300); 311 (ϵ 5700); 388 (ϵ 10800) (MeOH) (Derep). λ_{max} 250 (ϵ 6030); 311 (ϵ 5600); 388 (ϵ 10960) (MeOH) (Berdy).

▶ LD_{50} (mus, scu) 25 mg/kg. JP1355000

4-Me, N^6*-propanoyl:* ***Aureothricin***. *Propionylpyrrothine. Farcinicin*†
[574-95-8]
$C_9H_{10}N_2O_2S_2$ 242.322
Isol. from *Streptomyces celluloflavus* 39a, *Streptomyces cyanoflavus*, *Streptomyces kasugaensis* and *Streptomyces farcinicus*. Antibiotic and antifungal agent. Platelet aggregation inhibitor. Golden-yellow cryst. (EtOAc). Sol. MeOH, $CHCl_3$; fairly sol. C_6H_6; poorly sol. Et_2O, H_2O, hexane. Mp 260-270° dec. λ_{max} 246 (ϵ 6500); 313 (ϵ 4000); 390 (ϵ 11100) (EtOH) (Berdy).

▶ LD_{50} (mus, scu) 10 mg/kg.

4-Me, N^6*-butanoyl:* N-*(4,5-Dihydro-4-methyl-5-oxo-1,2-dithiolo[4,3-*b*]pyrrol-6-yl)butanamide.* **N-*Butanoylpyrrothine***. *Antibiotic PSC$_2$. PSC$_2$*
[112843-01-3]
$C_{10}H_{12}N_2O_2S_2$ 256.349
Prod. by *Xenorhabdus bovienii* A2 and *Saccharothrix* sp. SA 233. Yellow powder. λ_{max} 308 (log ϵ 3.7); 389 (log ϵ 3.92) (MeOH).

4-Me, N^6*-(2-methylpropanoyl):* N-*(2-Methylpropanoyl)pyrrothine.* ***Isobutyropyrrothine***†. N-*Isobutyrylpyrrothine. Antibiotic PSC$_1$. PSC$_1$*
[39859-18-2]
$C_{10}H_{12}N_2O_2S_2$ 256.349
Prod. by *Streptomyces pimprina* and *Saccharothrix* sp. SA 233. Shows platelet aggregation props. Orange-red plates (C_6H_6). Sol. $CHCl_3$, EtOAc, Me_2CO; fairly sol. C_6H_6; poorly sol. H_2O, hexane. Mp 228-229°. λ_{max} 245 ; 290 ; 310 ; 388 (MeOH) (Berdy). λ_{max} 246 (ϵ 5400); 302 (ϵ 3000); 386 (ϵ 11000) (MeOH) (Derep).

4-Me, N^6*-hexanoyl:* ***Xenorhabdin 4***. N-*Pentanoylpyrrothine*
[92680-92-7]
$C_{12}H_{16}N_2O_2S_2$ 284.403
From *Xenorhabdus* spp. Possesses antimicrobial and insecticidal props. Sol. MeOH, DMSO, EtOAc; fairly sol. hexane; poorly sol. H_2O. Mp 165°. λ_{max} 246 (sh) (ϵ 6300); 308 (ϵ 5700); 388 (ϵ 11000) (MeOH) (Derep). λ_{max} 245 ; 310 (ϵ 1000); 312 ; 390 (ϵ 10000) (MeOH) (Berdy).

4-Me, N^6*-(3-methylbutanoyl):* N-*(4,5-Dihydro-4-methyl-5-oxo-1,2-dithiolo[4,3-*b*]pyrrol-6-yl)-3-methylbutanamide.* ***N-(3-Methylbutanoyl)pyrrothine***
[167559-98-0]
$C_{11}H_{14}N_2O_2S_2$ 270.376
Isol. from *Xenorhabdus bovienii* A2. Solid.

4-Me, N^6*-(5-methylhexanoyl): N-(5-Methylhexanoyl)pyrrothine.* ***Xenorhabdin 5***
[92680-93-8]
$C_{13}H_{18}N_2O_2S_2$ 298.429
From *Xenorhabdus* spp. Possesses antimicrobial and insecticidal props. Sol. MeOH, EtOAc, DMSO; fairly sol. hexane; poorly sol. H_2O. λ_{max} 246 (sh) (ϵ 6300); 308 (ϵ 5700); 388 (ϵ 11000) (MeOH) (Derep). λ_{max} 246 ; 250 ; 308 ; 310 (ϵ 1000); 388 ; 390 (ϵ 10000) (MeOH) (Berdy).

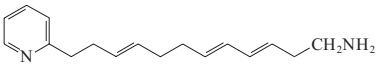
4-Me, N^6*-(3-methyl-2-butenoyl):* **N-*Senecioylpyrrothine***. *PSA. Antibiotic PSA*
$C_{11}H_{12}N_2O_2S_2$ 268.36
Prod. by *Saccharothrix* sp. SA 233. Yellow-orange powder. λ_{max} 302 (log ϵ 3.87); 402 (log ϵ 3.97) (MeOH).

4-Me, N^6*-tigloyl:* **N-*Tigloylpyrrothine***. *PSB. Antibiotic PSB*
$C_{11}H_{12}N_2O_2S_2$ 268.36
Prod. by *Saccharothrix* sp. SA 233. Yellow-orange powder. λ_{max} 302 (log ϵ 3.85); 402 (log ϵ 3.96) (MeOH).

Celmer, W.D. *et al., J.A.C.S.*, 1952, **74**, 6304; 1955, **77**, 2861 (*Pyrrothine, Aureothricin, Thiolutin, isol, ir, uv, struct*)
Ettlinger, L. *et al., Helv. Chim. Acta*, 1959, **42**, 563 (*isol*)
Bhate, D.S. *et al., Experientia*, 1960, **16**, 504-505 (*Isobutyropyrrothine*)
Schmidt, U. *et al., Chem. Ber.*, 1964, **97**, 1511 (*synth, uv, ir*)
Büchi, G. *et al., J.A.C.S.*, 1964, **86**, 5654 (*synth*)
Yamagishi, S. *et al., Yakugaku Zasshi*, 1971, **91**, 351 (*Aureothicin, isol, struct, ir, pmr, ms*)
Hagio, K. *et al., Bull. Chem. Soc. Jpn.*, 1974, **47**, 1484 (*Holothin, Thiolutin, Aureothricin, synth, ir, uv, pmr*)
Okamura, K. *et al., J. Antibiot.*, 1977, **30**, 334-336 (*isol, ir, ms*)
Ellis, J.E. *et al., J.O.C.*, 1977, **42**, 2891-2893 (*synth, ir, uv, ms, nmr*)
Kenig, M. *et al., J. Antibiot.*, 1979, **32**, 549-554 (*MM 21801*)
Ninomiya, Y.T. *et al., Chem. Pharm. Bull.*, 1980, **28**, 3157-3162 (*Pyrrothine, Thiolutin, props, ms*)
Deb, P.R. *et al., Curr. Sci. (India)*, 1984, **53**, 659 (*Thiolutin, props*)
Pat. Coop. Treaty (WIPO), 1984, 01 775; *CA*, **101**, 189727 (*Xenorhabdins*)
McInerney, B.V. *et al., J. Nat. Prod.*, 1991, **54**, 774 (*Xenorhabdins*)
Dell, I. *et al., ACS Symp. Ser.*, 1992, **504**, 384 (*synth*)
Sato, A. *et al., Annu. Rep. Sankyo Res. Lab.*, 1995, **47**, 1-58 (*N-Tetradecanoylholothin*)
Li, J. *et al., J. Nat. Prod.*, 1995, **58**, 1081-1086 (*N-Butanoylpyrrothine, N-3-Methylbutanoylpyrrothine*)
Lamari, L. *et al., J. Antibiot.*, 2002, **55**, 696-701; 702-706 (*Saccharothrix pyrrothines*)
Hjelmgaard, T. *et al., Org. Biomol. Chem.*, 2007, **5**, 344-348 (*synth*)

2-(12-Amino-3,7,9-dodecatrienyl)pyridine A-760

12-(2-Pyridinyl)-3,5,9-dodecatrien-1-amine



$C_{17}H_{24}N_2$ 256.39

(all-*E*)-*form*

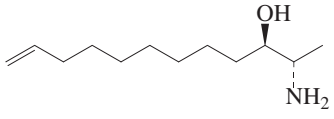
Naloamine

[179118-58-2]

Alkaloid from the mollusc *Smaragdinella calyculata*. Amorph. solid. λ_{max} 206 (ϵ 12000); 230 (ϵ 15000); 262 (ϵ 4300); 268 (ϵ 4200); 280 (ϵ 2700) (MeOH).

Szabo, C.M. *et al., Tetrahedron*, 1996, **52**, 9681 (*isol, uv, pmr, cmr, ms, struct*)

2-Amino-11-dodecen-3-ol A-761



$C_{12}H_{25}NO$ 199.336

(2*S*,3*R*)-*form*

Halaminol B

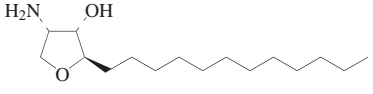
[389125-59-1]

Isol. from a marine sponge *Haliclona* n. sp. Oil. $[\alpha]_D$ +2.1 (c, 0.06 in CH_2Cl_2).

Clark, R.J. *et al., J. Nat. Prod.*, 2001, **64**, 1568-1571 (*Halaminol B, isol, pmr, cmr*)

4-Amino-2-dodecyltetrahydro-3-furanol A-762

4-Amino-2-dodecyl-3-hydroxytetrahydrofuran



$C_{16}H_{33}NO_2$ 271.442

(2*R,3*S**,4*S**)-*form***

N-*(2*R*-Hydroxyheptadecanoyl):* ***Suillumide***

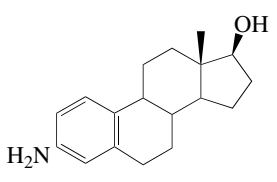
[1067910-08-0]

$C_{33}H_{65}NO_4$ 539.881

Isol. from *Suillus luteus*. Amorph. solid. $[\alpha]_D^{25}$ +16.3 (c, 0.1 in $CHCl_3$).

León, F. *et al., Chem. Biodiversity*, 2008, **5**, 120-125 (*isol, pmr, cmr, ms*)

3-Aminoestra-1,3,5(10)-trien-17-ol A-763



$C_{18}H_{25}NO$ 271.402

17β-*form*

Hedonegamin

[10427-24-4]

Constit. of the female of fossil plant *Palaeogelos doleros*. Cryst. (EtOAc). Mp 144-146° (63-65°).

Dannenberg, H. *et al., Hoppe-Seyler's Z. Physiol. Chem.*, 1967, **348**, 775-782 (*synth*)
Roedder, W. *et al., Pharm. Ztg.*, 1976, **121**, 479-484 (*isol*)
Smith, W.B. *et al., Org. Prep. Proced. Int.*, 1990, **22**, 501-506 (*synth, cmr*)

2-Aminoethanesulfinic acid, 9CI A-764

Hypotaurine. *Cystaminesulfinic acid*

[300-84-5]

$H_2NCH_2CH_2SO_2H$

$C_2H_7NO_2S$ 109.149

Constit. of rat brain. Found in the marine vestimentiferan worm *Riftia pachyptila* and other marine invertebrates. Mp 186-188°. pK_{a1} 2.16; pK_{a2} 9.56.

Chatagner, F. *et al., C. R. Hebd. Seances Acad. Sci.*, 1951, **232**, 448 (*isol*)
Biochem. Prep., 1963, **10**, 72-75 (*synth*)
Hope, D.B. *et al., J.C.S.(C)*, 1970, 270 (*synth*)
Fellman, J.H. *et al., J. Labelled Compd. Radiopharm.*, 1981, **18**, 765 (*synth*)
Stipanuk, M.H. *et al., Methods Enzymol.*, 1987, **143**, 155 (*hplc*)
Fugler-Domenico, L. *et al., Biol. Amines*, 1989, **6**, 289 (*conformn*)
Chaimbault, P. *et al., Anal. Biochem.*, 2004, **332**, 215-225 (*marine, occur*)

2-Aminoethanesulfonic acid, 9CI A-765

Taurine, 8CI, INN. *Aminoethylsulfonic acid*. *Ethylaminesulfonic acid*. *FEMA 3813*

[107-35-7]

$H_2NCH_2CH_2SO_3H$

$C_2H_7NO_3S$ 125.148

Occurs free in animal tissues, bacteria, sponges, red algae, e.g. isol. from *Macrocallista nimbosa*, *Turbo stenogyrus*, *Calyx nicaeensis*, *Geodia gigas*, *Mytilus edulis*. Also from green algae, e.g. *Caulerpa okamurai*, *Caulerpa racemosa*, *Chlorodesmis comosa*, *Codium adherens*, *Codium fragile* and *Enteromorpha linza*. Isol. from marine vestimentarian worm *Riftia pachyptila* and from higher plants, e.g. leguminous seedlings. A non-essential amino acid. Intermed. in metab. of cysteine. Used as an adjunct in treatment of hypercholesterolaemia. Metabolic regulator. Monoclinic prismatic rods with sharp taste. Sol. H_2O, insol. EtOH. Mp 328° (320-325° dec.). pK_{a1} 1.5; pK_{a2} 8.74. Dec. at 300°.

▶ LD_{50} (mus, scu) 6000 mg/kg. WX0175000

Amide: [4378-70-5]
$C_2H_8N_2O_2S$ 124.163
Plates (EtOH) (as hydrochloride). Mp 133° (hydrochloride).

N-*Me:* [107-68-6]
$C_3H_9NO_3S$ 139.175
Widely distributed in marine algae including the red alga *Ptilota pectinata* and green alga *Chlorodesmis comosa*. Also found in sponges *Calyx nereis* and *Halichondria* sp. Prisms. V. sol. H_2O; insol. EtOH, Et_2O. Mp 241-242°.

N,N-*Di-Me:* [637-95-6]
$C_4H_{11}NO_3S$ 153.202
Obt. from *Corallina officinalis*. Present in *Furcellaria fastigiata* and other red algae. Prisms (MeOH). V. sol. H_2O, AcOH, insol. EtOH, Et_2O. Mp 315-316° dec.

N,N-*Bis(2-chloroethyl): Taumustine*
[98277-87-3]
$C_6H_{13}Cl_2NO_3S$ 250.145
Cryst. (H_2O). Mp 178-180°.

N-*(2,3-Dihydroxypropyl):* N-*Glyceryltaurine*
[65222-42-6]
$C_5H_{13}NO_5S$ 199.227
Isol. from the red alga *Gigartina leptorhynchos*. Cryst. (EtOH aq.). Mp 163-164°. $[\alpha]_D^{23}$ -21 (H_2O).

N-*(15-Methyl-9Z-hexadecenoyl):* **N-*(15-Methyl-9-hexadecenoyl)taurine***
[679834-30-1]
$C_{19}H_{37}NO_4S$ 375.572
Isol. from the sponge *Erylus nobilis*.

N-*(5Z,8Z,11Z,14Z-Eicosatetraenoyl):* N-*(5,8,11,14-Eicosatetraenoyl)taurine*
[679834-28-7]
$C_{22}H_{37}NO_4S$ 411.605
Isol. from the starfish *Certonardoa semiregularis*.

[7347-25-3 , 4316-74-9]

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 890A (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 1433C (*nmr*)
Org. Synth., Coll. Vol., 2, 1943, 563; 564 (*synth*)
Ishidate, M. *et al., Chem. Pharm. Bull.*, 1954, **2**, 275-279 (*synth*)
Lindberg, B. *et al., Acta Chem. Scand.*, 1955, **9**, 1093-1096; 1323-1326 (*isol, N-Me, N,N-di-Me*)
Wickberg, B. *et al., Acta Chem. Scand.*, 1956, **10**, 1097-1099 (*Glyceryltaurine*)
Sutherland, H.H. *et al., Acta Cryst.*, 1963, **16**, 897-901 (*cryst struct*)
Huxtable, R. *et al., Taurine, [Int. Symp.], 1st, 1975 (1976)*, (Eds.), Raven Press, New York, 1975, (*book*)
Utkina, N.K. *et al., Khim. Prir. Soedin.*, 1984, 124-125; *Chem. Nat. Compd. (Engl. Transl.)*, 1984, **20**, 126-127 (*N-Me, occur*)
Hashem, K.M.E. *et al., Bull. Soc. Chim. Belg.*, 1985, **94**, 735-754 (*cmr*)
Taurine: Nutritional Value and Mechanisms of Action, (eds. Lombardini, J.B. *et al*), Plenum Press, 1992, (*book*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 1419
Fenaroli's Handbook of Flavor Ingredients, 4th edn., (ed. Burdock, G.A.), CRC Press, 2001, 1665-1666 (*use, occur*)
Merck Index, 13th edn., 2001, No. 9163 (*bibl*)
Hibbs, D.E. *et al., Chem. Eur. J.*, 2003, **9**, 1075-1084 (*cryst struct*)
Wang, W. *et al., Nat. Prod. Sci.*, 2003, **9**, 241-244; *CA*, **140**, 335912 (*N-Methylhexadecenoyl, N-Eicosatetraenoyl*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, TAG750

2-Aminoethanesulfonothioic acid, 9CI A-766

S-*(2-Aminoethyl) thiosulfate, 8CI*. ***Thiotaurine***

[2937-54-4]

[31999-89-0 (Na salt)]

$H_2NCH_2CH_2SO_2SH$

$C_2H_7NO_2S_2$ 141.215

Isol. from various marine invertebrates incl. *Bathymodiolus* spp., *Calyptogena magnifica* and *Riftia pachyptila*. Biomarker of sulfur-based symbiosis in deep-sea bivalves. Cryst. (EtOH aq.). Mp 213° dec.

Sörbö, B.H. *et al., Acta Chem. Scand.*, 1958, **12**, 146 (*synth*)
Biochem. Prep., 1963, **10**, 72-75 (*synth*)
Pruski, A.M. *et al., J. Exp. Biol.*, 2003, **206**, 2923-2930 (*biosynth*)
Chaimbault, P. *et al., Anal. Biochem.*, 2004, **332**, 215-225 (*occur*)

2-Aminoethanol, 9CI A-767

2-Hydroxyethylamine. Ethanolamine. Monoethanolamine. Colamine. Olamine

[141-43-5]

$H_2NCH_2CH_2OH$

C_2H_7NO 61.083

Manuf. from ethylene oxide and NH_3. Widely distributed in biol. tissues. Component of lecithin. Constit. of defence secretions of *Chrysolina* and related beetles. Chemical intermed., org. base. Removes CO_2 and H_2S from gases. Reagent for fluorimetric anal. of carbohydrates by hplc. Selectively cleaves the glycosyl ester bond of peracylated aldoses. Curing agent for epoxy resins. Viscous, hygroscopic liq. Misc. H_2O, MeOH, Me_2CO; spar. sol. C_6H_6, Et_2O. d_4^{25} 1.01. Mp 10.5°. Bp 171°. n_D^{20} 1.4539. pK_a 9.47. Vp 0.48 mmHg (20°).

► Fl. p. 85°, autoignition temp. 410°. Corrosive and irritating to skin, eyes and mucous membranes. LD_{50} (rat, orl) 1720 mg/kg. Exp. teratogen. OES: long-term 3 ppm; short-term 6 ppm. KJ5775000

O-*Ac:* **O-*Acetylethanolamine*.** *2-Acetoxyethylamine*
[1854-30-4]
$C_4H_9NO_2$ 103.121
Isol. from seeds of *Lens culinaris* (lentil), also present in other Fabaceae. Shows antiinflammatory props., stimulates cockroach heart. $Bp_{0.3}$ 134-135°.

N-*(9Z,12Z-Octadecadienoyl):* N-*(2-Hydroxyethyl)-9,12-octadecadienamide, 9CI.* **N-*(2-Hydroxyethyl)linoleamide***
[68171-52-8]
[10015-67-5]
$C_{20}H_{37}NO_2$ 323.518
Alkaloid from *Vaccaria segetalis*.

[96-80-0 , 20739-39-3]

Hayman, A.R. *et al., Phytochemistry*, 1987, **26**, 839 (*O-Acetylethanolamine*)
Sang, S. *et al., CA*, 1999, **130**, 349718n (*N-Hydroxyethyllinoleamide, isol*)

2-Aminoethyl dihydrogen phosphate A-768

Ethanolamine O-*phosphate.* O-*Phosphoethanolamine*
[1071-23-4]
$H_2NCH_2CH_2OP(O)(OH)_2$
$C_2H_8NO_4P$ 141.063

Isol. from eye lens tissue and gram-negative bacteria. Intermed. in phosphoglyceride biosynth. in mammals. Cryst. (EtOH aq.). Mp 242° (231.5-234°).

Mono-Et ester: Ethyl hydrogen 2-aminoethyl phosphate
$C_4H_{12}NO_4P$ 169.117
Cryst. (EtOH/Me_2CO). Mp 238°.

Diisopropyl ester: Diisopropyl 2-aminoethyl phosphate
[14646-04-9]
$C_8H_{20}NO_4P$ 225.224
Liq. $Bp_{0.06}$ 75°.

Mono-Ph ester: Phenyl hydrogen 2-aminoethyl phosphate
$C_8H_{12}NO_4P$ 217.161
Solid. V. sol. H_2O; spar. sol. EtOH; insol. C_6H_6, $CHCl_3$, Et_2O.

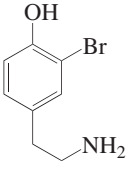
N-*Ac: 2-Acetamidoethyl phosphate*
[89603-45-2]
$C_4H_{10}NO_5P$ 183.101
Occurs in O-antigen polysaccharide of *Proteus mirabilis* 038. No phys. props. reported.

[87111-65-7 , 3724-89-8 , 18672-70-3 , 19077-76-0 , 131703-98-5 , 61020-38-0 , 31512-55-7 , 32607-10-6 , 37785-54-9 , 63441-18-9]

Plapinger, R.E. *et al., J.A.C.S.*, 1953, **75**, 5757
Cherbuliez, E. *et al., Helv. Chim. Acta*, 1956, **39**, 1455-1461 (*N-Ac, synth*)
Tsizin, Y.S. *et al., Zh. Obshch. Khim.*, 1963, **33**, 2873; *J. Gen. Chem. USSR (Engl. Transl.)*, 1963, **33**, 2800 (*synth, ir*)
Greenhalgh, R. *et al., Can. J. Chem.*, 1967, **45**, 495 (*diisopropyl ester, synth, ir, pmr, P nmr*)
Greiner, J.V. *et al., Exp. Eye Res.*, 1982, **34**, 545 (*P-31 nmr*)
Glonek, T. *et al., J. Neurochem.*, 1982, **39**, 1210 (*P-31 nmr*)
Trigalo, F. *et al., J.C.S. Perkin 1*, 1982, 1733 (*monoethyl ester*)
Weber, H.P. *et al., Acta Cryst. B*, 1984, **40**, 506 (*cryst struct*)
Cates, L.A. *et al., J. Med. Chem.*, 1984, **27**, 654 (*synth*)
Hayase, Y. *et al., Chem. Pharm. Bull.*, 1986, **34**, 2251 (*isol, ir, pmr, cmr*)
Bissinger, P. *et al., Chem. Ber.*, 1991, **124**, 509 (*synth, salts, cryst struct*)
Ger. Pat., 1993, 4 141 842; *CA*, **120**, 57142 (*N-Ac, synth*)
Kandakova, A.N. *et al., Carbohydr. Res.*, 2003, **338**, 2387-2392 (*N-Ac, occur*)

4-(2-Aminoethyl)-2-bromophenol, 9CI A-769

2-(3-Bromo-4-hydroxyphenyl)ethylamine. 3-Bromotyramine
[104616-74-2]



$C_8H_{10}BrNO$ 216.077

Isol. from the ascidian *Cnemidocarpa bicornuta*. Cryst. Mp 162-164°. λ_{max} 203 (log ϵ 4.4); 283 (log ϵ 3.3) (MeOH).

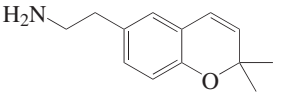
Hydrochloride:
Cryst. (MeOH/EtOAc). Mp 205.5-207°.

N,N,N-*Tri-Me: 3-Bromo-4-hydroxy-*N,N,N-*trimethylbenzeneethanaminium, 9CI. 3-Bromo-*N,N,N-*trimethyltyramine*
[259533-84-1]
$C_{11}H_{17}BrNO^{\oplus}$ 259.165
Isol. from the sponge *Verongula gigantea*. Isol. as trifluoroacetate salt. λ_{max} 281 (ϵ 1485) (MeOH).

Tolkachev, O.N. *et al., Zh. Obshch. Khim.*, 1958, **28**, 3320-3323; *J. Gen. Chem. USSR (Engl. Transl.)*, 1958, **28**, 3345-3348 (*synth*)
Lindsay, B.S. *et al., J. Nat. Prod.*, 1998, **61**, 857-858 (*isol, uv, ir, pmr, cmr, ms*)
Ciminiello, P. *et al., J. Nat. Prod.*, 2000, **63**, 263-266 (*N-tri-Me deriv*)

6-(2-Aminoethyl)-2,2-dimethyl-2*H*-1-benzopyran A-770

*(2,2-Dimethyl-2*H*-1-benzopyran-6-yl)ethanamine*



$C_{13}H_{17}NO$ 203.283

N-*(2-Methylpropanoyl):* [124704-80-9]
$C_{17}H_{23}NO_2$ 273.374
Alkaloid from roots of *Amyris sylvatica* (Rutaceae).

N-*(3-Methylbutanoyl):* [124704-79-6]
$C_{18}H_{25}NO_2$ 287.401
Alkaloid from roots of *Amyris sylvatica* (Rutaceae). Mp 104-105°.

N-*Benzoyl:* N-*[2-(2,2-Dimethyl-2*H*-1-benzopyran-6-yl)ethyl]benzamide, 9CI.* ***6-(2-Benzamidoethyl)-2,2-dimethyl-2*H*-1-benzopyran***
[89764-18-1]
$C_{20}H_{21}NO_2$ 307.391
Alkaloid from the aerial portions of *Amyris plumieri* (Rutaceae). Mp 133.5-134.5°.

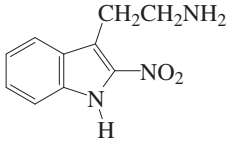
N-*(3-Pyridinecarbonyl):* **N-*[2-(2,2-Dimethyl-2*H*-1-benzopyran-6-yl)ethyl]-3-pyridinecarboxamide, 9CI***
[69142-83-2]
$C_{19}H_{20}N_2O_2$ 308.379
Alkaloid from *Amyris plumieri* (Rutaceae). Mp 99-100°.

N-*(3-Pyridinecarbonyl),* N-*Me:* **N-*[2-(2,2-Dimethyl-2*H*-1-benzopyran-6-yl)ethyl]*-N-*methyl-3-pyridinecarboxamide***
[137132-29-7]
$C_{20}H_{22}N_2O_2$ 322.406
Alkaloid from *Amyris texana* (Rutaceae). Oil.

Burke, B.A. *et al., Tet. Lett.*, 1978, **19**, 2723-2726 (*N-3-pyridinecarbonyl*)
Philip, S. *et al., Heterocycles*, 1984, **22**, 9-12 (*N-benzoyl*)
Hasbun, C. *et al., J. Nat. Prod.*, 1989, **52**, 868-870 (*Amyris sylvatica constit*)
De la Fuente, G. *et al., Phytochemistry*, 1991, **30**, 2677-2684 (*Amyris texana constit*)

3-(2-Aminoethyl)-2-nitroindole A-771

*2-Nitro-1*H*-indole-3-ethanamine. 2-Nitrotryptamine*



$C_{10}H_{11}N_3O_2$ 205.216

N^b-*Ac:* **N^b-*Acetyl-2-nitrotryptamine***
$C_{12}H_{13}N_3O_3$ 247.253
Isol. from the marine-derived *Flavobacterium* sp. T436.

Schuhmann, I. *et al., Dissertation*, Univ. of Göttingen, 2005, (*Ac, isol*)

(2-Aminoethyl)phosphinic acid, 9CI A-772

(2-Aminoethyl)phosphonous acid. 2-(Hydroxyphosphinyl)ethylamine. Antibiotic MP 105. MP 105
[85618-16-2]
$H_2NCH_2CH_2PH(O)OH \Leftrightarrow H_2NCH_2CH_2P(OH)_2$
$C_2H_8NO_2P$ 109.064
Prod. by *Streptomyces hygroscopicus* SF-1293. Amorph. powder. Mp 208-210° dec. (natural) Mp 255° (synthetic).

Seto, H. *et al., Biochem. Biophys. Res. Commun.*, 1983, **111**, 1008-1014 (*isol*)
Dingwall, J.G. *et al., Tetrahedron*, 1989, **45**, 3787-3808 (*synth, pmr, P-31 nmr*)
Berlicki, L. *et al., J.O.C.*, 2005, **70**, 6340-6349 (*synth*)

(2-Aminoethyl)phosphonic acid, 9CI A-773

Ciliatine. AEP
[2041-14-7]
$H_2NCH_2CH_2P(O)(OH)_2$
$C_2H_8NO_3P$ 125.064
Constit. as glyceryl esters of rumen protozoan, *Tetrahymena pyriformis*, sea anemones, bovine brain, mycobacteria, and a fungus *Pythium prolatum*. Rhombic cryst. or needles (EtOH aq.). Mp 295-297° dec. pK_{a1} 2.45; pK_{a2} 7; pK_{a3} 10.8. pK_{a1} 1.3; pK_{a2} 6.51; pK_{a3} 11.5 (25°). The metastable rhombic form is difficult to prepare. First known natural compd. contg. the C–P bond.

Di-Et ester: [41468-36-4]
$C_6H_{16}NO_3P$ 181.171
Liq. $Bp_{0.025}$ 54-56°.

N-*Benzoyl: 2-(Benzoylamino)ethylphosphonic acid*
$C_9H_{12}NO_4P$ 229.172
Solid. Mp 191-192°.

N-*Me:* N-*Methylciliatine. 2-(Methylamino)ethylphosphonic acid*
[14596-55-5]
$C_3H_{10}NO_3P$ 139.091
Isol. from the sea anemone *Anthopleura xanthogrammica*. Needles (MeOH aq.). Mp 291° dec.

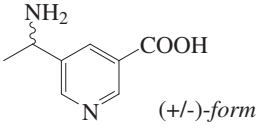
N,N-*Di-Me: 2-Dimethylaminoethylphosphonic acid.* N,N-*Dimethylciliatine*
[14596-56-6]
$C_4H_{12}NO_3P$ 153.117
Isol. from *Anthopleura xanthogrammica*. Pale yellow cryst. (MeOH aq.). Mp 249.5° dec.

N,N-*Di-Me, Et ester:* [41948-36-1]
$C_6H_{16}NO_3P$ 181.171
Bp_1 100°.

N-*Phthalimide, di-Et ester: Diethyl (2-phthalimidoethyl)phosphonate*
$C_{14}H_{18}NO_5P$ 311.274
Cryst. (Et_2O/petrol). Mp 58°.

Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 1477A (*nmr*)
Kosolapoff, G.M. *et al., J.A.C.S.*, 1947, **69**, 2112 (*synth*)
Top. Phosphorus Chem., Interscience, 1966, **4**, 23: **11**; 297 (*rev*)
Barycki, J. *et al., Tet. Lett.*, 1970, 3147 (*synth*)
Isbell, A.F. *et al., J.O.C.*, 1972, **37**, 4399 (*synth, bibl*)
Harvey, D.J. *et al., J. Chromatogr.*, 1973, **79**, 65 (*ms*)
Lagrange, C.G. *et al., Can. J. Chem.*, 1978, **56**, 663 (*ir, Raman*)
Brigot, D. *et al., Tetrahedron*, 1979, **35**, 1345 (*synth, pmr, derivs*)
Fabre, G. *et al., Can. J. Chem.*, 1981, **59**, 2864 (*synth, di-Et ester, ir, pmr*)
Varlet, J.M. *et al., Tetrahedron*, 1981, **37**, 3713 (*dervis*)
Al-Rawi, J.M.A. *et al., Org. Magn. Reson.*, 1983, **21**, 75 (*di-Et ester, cmr*)
Appleton, T.G. *et al., Aust. J. Chem.*, 1984, **37**, 1833 (*props, cmr, P-31 nmr*)
Yamauchi, K. *et al., J.O.C.*, 1984, **49**, 1158 (*N-phthalimide deriv*)
Gubnitskaya, E.S. *et al., Zh. Obshch. Khim.*, 1986, **56**, 2017; *J. Gen. Chem. USSR (Engl. Transl.)*, 1986, **56**, 1779 (*esters, synth, ir*)
Osapay, G. *et al., Tetrahedron*, 1987, **43**, 2977 (*ir, pmr*)
Lazukina, L.A. *et al., Zh. Obshch. Khim.*, 1988, **58**, 939; *J. Gen. Chem. USSR (Engl. Transl.)*, 1988, **58**, 833 (*synth, P-31 nmr*)
Thayer, J.S. *et al., Appl. Organomet. Chem.*, 1989, **3**, 203 (*rev*)
Warielewski, C. *et al., J. Prakt. Chem.*, 1989, **331**, 507 (*synth, ir*)
Harris, R.K. *et al., Magn. Reson. Chem.*, 1989, **27**, 470 (*cmr, N-15 nmr, P-31 nmr*)
Glowacki, Z. *et al., Magn. Reson. Chem.*, 1989, **27**, 897 (*cmr*)
Warielewski, C. *et al., Synthesis*, 1989, 52 (*synth, ir, pmr*)
Ohashi, K. *et al., Tetrahedron*, 1989, **45**, 2557 (*N-Me, synth, ir*)
Hayashi, A. *et al., Chem. Phys. Lipids*, 1990, **52**, 57 (*fab-ms*)
Neidlein, R. *et al., Helv. Chim. Acta*, 1992, **75**, 2545 (*N-phthalimide deriv*)
Ohno, K. *et al., J. Mol. Struct.*, 1993, **298**, 1 (*ir, Raman, conformn*)
Fields, S.C. *et al., Tetrahedron*, 1999, **55**, 12237-12273 (*rev, synth*)

5-(1-Aminoethyl)-3-pyridinecarboxylic acid, 9CI A-774



(+/-)-*form*

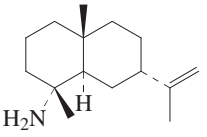
$C_8H_{10}N_2O_2$ 166.179

(±)-*form*
Me ester:
Syrup.
p-*Nitrobenzoyl:*
Needles. Mp 154-157°.

(ξ)-*form*
Me ester: ***Methyl 5-(1-aminoethyl)-3-pyridinecarboxylate, 9CI****. 3-(1-Aminoethyl)-5-carbomethoxypyridine*
[38940-68-0]
$C_9H_{12}N_2O_2$ 180.206
Alkaloid from *Nauclea diderrichii* (Rubiaceae). Oil. $[\alpha]_D^{25}$ +27 (c, 0.34 in MeOH).

McLean, S. *et al., Can. J. Chem.*, 1971, **50**, 1478 (*isol, ms, pmr, uv, synth*)

4-Amino-11-eudesmene A-775



$C_{15}H_{27}N$ 221.385

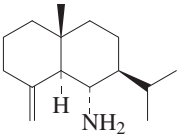
(4α,7α)-*form* [442851-12-9]
[442851-11-8]
Constit. of *Axinyssa ambrosia*. Oil; cryst. (as hydrochloride). Mp 210-220° (hydrochloride). $[\alpha]_D$ -17.5 (c, 0.9 in $CHCl_3$).

N-*Formyl:* ***4-Formamido-11-eudesmene***
[442851-14-1]
$C_{16}H_{27}NO$ 249.395
Constit. of *Axinyssa ambrosia*. Cryst. Mp 104-107°. $[\alpha]_D$ -10 (c, 0.22 in $CHCl_3$).

4-Isocyanide: ***4-Isocyano-11-eudesmene***
[442851-13-0]
$C_{16}H_{25}N$ 231.38
Constit. of *Axinyssa ambrosia*. Oil. $[\alpha]_D$ -15 (c, 0.2 in $CHCl_3$). Has -NC in place of NH_2.

Petrichtcheva, N.V. *et al., J. Nat. Prod.*, 2002, **65**, 851-855 (*isol, pmr, cmr*)

6-Amino-4(15)-eudesmene A-776



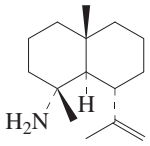
$C_{15}H_{27}N$ 221.385

6α-*form*
Halichonadin D
[847605-79-2]
Constit. of a *Halichondria* sp. Yellow oil. $[\alpha]_D^{27}$ +18 (c, 0.2 in $CHCl_3$).

N-*Methoxycarbonyl:* ***Halichonadin B***
[847605-77-0]
$C_{17}H_{29}NO_2$ 279.422
Constit. of a *Halichondria* sp. Amorph. solid. $[\alpha]_D^{24}$ -10 (c, 1 in $CHCl_3$).

Ishiyama, H. *et al., Tetrahedron*, 2005, **61**, 1101-1105 (*isol, pmr, cmr*)

4-Amino-11-gorgonene A-777



$C_{15}H_{27}N$ 221.385

(4α,6α)-*form*

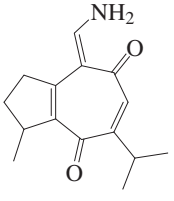
N-*Formyl: 4-Formamido-11-gorgonene*
[134781-19-4]
$C_{16}H_{27}NO$ 249.395
Isol. from the molluscs *Phyllidia pustulosa* and *Phyllidia varicosa*. Cryst. $[\alpha]_D$ -61.8 (c, 0.11 in $CHCl_3$). Mp >300° dec.

4-Isocyanide: ***4-Isocyano-11-gorgonene***
[134781-18-3]
$C_{16}H_{25}N$ 231.38
Isol. from the molluscs *Phyllidia pustulosa* and *Phyllidia varicosa*. Oil. $[\alpha]_D$ -66.9 (c, 1.6 in $CHCl_3$).

4-Isothiocyanate: 4-Isothiocyanato-11-gorgonene
[134781-20-7]
$C_{16}H_{25}NS$ 263.446
Isol. from *Phyllidia pustulosa*. Oil. $[\alpha]_D$ -101.6 (c, 0.5 in $CHCl_3$).

Kassühlke, K.E. *et al., J.O.C.*, 1991, **56**, 3747-3750 (*isol, pmr, cmr, ms*)

14-Amino-1(5),7,10(14)-guaiatriene-6,9-dione A-778



$C_{15}H_{19}NO_2$ 245.321

(4ξ,10*Z*)-*form*
Muscicapine A
[873684-18-5]
Alkaloid from the roots of *Croton muscicapa*. Amorph. yellow solid. $[\alpha]_D^{20}$ -44 (c, 0.05 in $CHCl_3$).

N-*(2-Methylbutyl):* ***Muscicapine C***
[873684-20-9]
$C_{20}H_{29}NO_2$ 315.455
Alkaloid from the roots of *Croton muscicapa*. Yellow oil. $[\alpha]_D^{20}$ -9 (c, 0.05 in $CHCl_3$).

N-*(3-Methylbutyl):* ***Muscicapine B***
[873684-19-6]
$C_{20}H_{29}NO_2$ 315.455
Alkaloid from the roots of *Croton muscicapa*. Yellow oil. $[\alpha]_D^{20}$ -6 (c, 0.02 in $CHCl_3$).

Araújo-Júnior, V.T. *et al., J. Braz. Chem. Soc.*, 2005, **16**, 553-557 (*isol, pmr, cmr, ms*)

3-Amino-5-guanidinopentanoic acid A-779

3-Amino-5-[(aminoiminomethyl)amino]-pentanoic acid, 9CI. β-Arginine
$HN{=}C(NH_2)NHCH_2CH_2$-$CH(NH_2)CH_2COOH$
$C_6H_{14}N_4O_2$ 174.202

N^3*-Me: 5-[(Aminoiminomethyl)amino]-3-(methylamino)pentanoic acid, 9CI. 5-Guanidino-3-methylaminopentanoic acid*
[67396-07-0]
$C_7H_{16}N_4O_2$ 188.229
Component of Antibiotic LL-BM 547β.

McGahren, W.J. *et al., J.O.C.*, 1977, **42**, 1282
Nomoto, S. *et al., Chem. Lett.*, 1978, 589 (*synth*)

1-Amino-20-guanidino-4,8,12,16-tetraazaicosane A-780

22-Amino-2,7,11,15,19-pentaazadocosanimidamide
[864812-20-4]
$H_2N(CH_2)_3NH(CH_2)_3NH(CH_2)_3NH(CH_2)_3NH(CH_2)_4NHC(^{\omega}NH_2){=}NH$
$C_{17}H_{42}N_8$ 358.572
Isol. from the venom of the spider *Paracoelotes birulai*.

N^{ω}*-Ac:* [864812-18-0]
$C_{19}H_{44}N_8O$ 400.61
Isol. from the venom of *Paracoelotes birulai*.

Tzouros, M. *et al., Toxicon*, 2005, **46**, 350-354

1-Amino-16-guanidino-4,8,12-triazahexadecane A-781

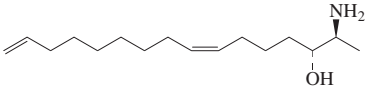
18-Amino-2,7,11,15-tetraazaoctadecanimidamide, 9CI
[864812-13-5]
$H_2N^1(CH_2)_3^4NH(CH_2)_3NH(CH_2)_3NH(CH_2)_4NHC(NH_2){=}NH$
$C_{14}H_{35}N_7$ 301.477
Isol. from the venom of the spider *Paracoelotes birulai*.

N^1*-Ac:* [864812-15-7]
$C_{16}H_{37}N_7O$ 343.515
Isol. from the venom of the spider *Paracoelotes birulai*.

*4-*N*-Hydroxy:* [864812-14-6]
$C_{14}H_{35}N_7O$ 317.477
Isol. from the venom of the spider *Paracoelotes birulai*.

Tzouros, M. *et al., Toxicon*, 2005, **46**, 350-354 (*isol, 4-N-hydroxy, N^1-Ac*)

2-Amino-7,15-hexadecadien-3-ol A-782

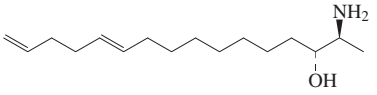


$C_{16}H_{31}NO$ 253.427

(2*S*,3*R*,7*Z*)-*form*
Obscuraminol B
[350485-82-4]
Isol. from the tunicate *Pseudodistoma obscurum*. Oil (as di-Ac). $[\alpha]_D^{24}$ -21.1 (c, 0.65 in MeOH) (di-Ac).

Garrido, L. *et al., Tetrahedron*, 2001, **57**, 4579-4588 (*isol, pmr, cmr, abs config*)

2-Amino-11,15-hexadecadien-3-ol A-783



$C_{16}H_{31}NO$ 253.427

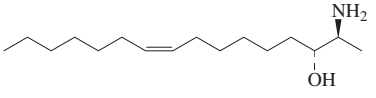
(2*S*,3*R*,11*E*)-*form*
Obscuraminol C
[350484-95-6]
Isol. from the tunicate *Pseudodistoma obscurum*. Amorph. solid (as di-Ac). $[\alpha]_D^{24}$ -24.5 (c, 0.83 in MeOH) (di-Ac).

11,12-Dihydro: 2-Amino-15-hexadecen-3-ol. ***Obscuraminol F***
[350485-01-7]
$C_{16}H_{33}NO$ 255.443
Isol. from *Pseudodistoma obscurum*. Amorph. solid (as di-Ac). $[\alpha]_D^{24}$ -19.2 (c, 0.71 in MeOH) (di-Ac).

15,16-Dihydro: 2-Amino-11-hexadecen-3-ol. ***Obscuraminol E***
[350485-00-6]
$C_{16}H_{33}NO$ 255.443
Isol. from *Pseudodistoma obscurum*. Oil (as di-Ac).

Garrido, L. *et al., Tetrahedron*, 2001, **57**, 4579-4588 (*Obscuraminols C,E,F, isol, pmr, cmr, abs config*)

2-Amino-9-hexadecen-3-ol A-784



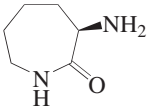
$C_{16}H_{33}NO$ 255.443

(2*S*,3*R*,9*Z*)-*form*
Obscuraminol D
[350484-99-0]
Isol. from the tunicate *Pseudodistoma obscurum*. Oil (as di-Ac). $[\alpha]_D^{24}$ -21.6 (c, 0.44 in MeOH) (di-Ac).

Garrido, L. *et al., Tetrahedron*, 2001, **57**, 4579-4588 (*isol, ir, pmr, cmr, abs config*)

3-Aminohexahydro-2*H*-azepin-2-one, 9CI A-785

3-Amino-ε-caprolactam
[671-42-1]



(*R*)-*form*

$C_6H_{12}N_2O$ 128.174

(*R*)-*form* [28957-33-7]
Hydrochloride: [26081-03-8]
Solid (MeOH). $[\alpha]_D^{26}$ +26.4 (c, 4 in 1*M* HCl) (>99% ee).

Hydrobromide: [16473-63-5]
$[\alpha]_D^{20}$ +20.7 (c, 5 in H_2O).

(*S*)-*form* [21568-87-6]
Mp 71-72°. $[\alpha]_D^{25}$ -34 (c, 4 in 1*M* HCl) (100% ee).

Hydrochloride: [26081-07-2]
Mp 270°. $[\alpha]_D^{25}$ -27 (c, 2.98 in 1*M* HCl).

Hydrobromide: [16473-62-4]
Mp 285-288° dec. $[\alpha]_D^{20}$ -20.7 (c, 5 in H_2O).

N^3-*(6-Methyloctanoyl):* ***Caprolactin B***
[151379-42-9]
$C_{15}H_{28}N_2O_2$ 268.398
Isol. from a marine bacterium. Cytotoxic agent. $[\alpha]_D^{22}$ +5.4 (c, 1.03 in CH_2Cl_2). Isol. as a mixt. with Caprolactin A. Data given is for the mixt. λ_{max} 219 ; 274 (sh) (MeOH).

N^3-*(7-Methyloctanoyl):* ***Caprolactin A***
[151379-41-8]
$C_{15}H_{28}N_2O_2$ 268.398
Isol. from a marine bacterium. Cytotoxic agent. Isol. as a mixt. with Caprolactin B. λ_{max} 219 ; 274 (MeOH) (Berdy).

(±)-*form* [17929-90-7]
Cryst. (EtOAc). Mp 68-71° Mp 147-149°. $Bp_{0.1}$ 105°.

Hydrochloride: [29426-64-0]
Mp 294-296°.

Picrate:
Needles (H_2O). Mp 233° dec.

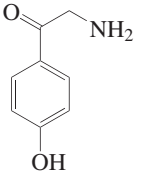
N-*Ac:*
$C_8H_{14}N_2O_2$ 170.211
Cryst. (EtOAc). Mp 160-162°.

N-*Benzoyl:*
$C_{13}H_{16}N_2O_2$ 232.282
Cryst. (EtOH). Mp 203-211°.

Pellegata, R. *et al., Synthesis*, 1978, 614 (*synth, S-form*)
Boyle, W.J. *et al., J.O.C.*, 1979, **44**, 4841 (*synth*)
Davidson, B.S. *et al., Tetrahedron*, 1993, **49**, 6569-6574 (*Caprolactins*)
Uchikawa, J. *et al., J. Het. Chem.*, 1994, **31**, 877 (*N-Ac, N-benzoyl*)
Sakai, K. *et al., Tetrahedron: Asymmetry*, 2003, **14**, 3713-3718 (***resoln***)
Urbanczyk-Lipkowska, Z. *et al., Tetrahedron: Asymmetry*, 2007, **18**, 1254-1256 (*resoln, S-form*)

2-Amino-4′-hydroxyacetophenone A-786

2-Amino-1-(4-hydroxyphenyl)ethanone, 9CI. p-*Hydroxyphenacylamine*
[77369-38-1]



$C_8H_9NO_2$ 151.165
Plates (EtOH). Mp 190-193° dec.

Hydrochloride: [19745-72-3]
Needles (HCl aq.), prisms (EtOH). Mp 241-245° Mp 249-251° dec.

N-*(4-hydroxy-3-methoxy-*E*-cinnamoyl):* ***Terrestriamide***
[157536-49-7]
$C_{18}H_{17}NO_5$ 327.336
Alkaloid from the fruit of *Tribulus terrestris*. Light yellow cryst. Mp 218-220°.

N-*Di-Me:*
$C_{10}H_{13}NO_2$ 179.218
Prisms (Et_2O/petrol). Mp 142°.

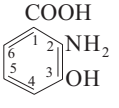
Me ether: 2-Amino-4′-methoxyacetophenone
[3883-94-1]
$C_9H_{11}NO_2$ 165.191 HCl
Cryst. (EtOH) (as hydrochloride). Mp 200-201° (hydrochloride). CAS no. refers to hydrochloride.

[40513-43-7]

Tutin, F. *et al., J.C.S.*, 1910, **97**, 2520
Mannich, C. *et al., Ber.*, 1911, **44**, 1547
Voswinckel, H. *et al., Ber.*, 1912, **45**, 1005
Mannich, C. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1915, **253**, 193
Corrigan, J.R. *et al., J.A.C.S.*, 1945, **67**, 1894
Yinglin, H. *et al., Synthesis*, 1990, 615 (*Me ether, synth, ir, pmr*)
Ren, Y.J. *et al., Yaoxue Xuebao*, 1994, **29**, 204 (*Terrestriamide*)

2-Amino-3-hydroxybenzoic acid A-787

3-Hydroxyanthranilic acid
[548-93-6]



$C_7H_7NO_3$ 153.137
Metab. of Tryptophan, T-640 in humans, rats and *Claviceps* spp. Isol. from cultures of *Klebsiella pneumoniae*. Also isol. from *Brassica oleracea* (cauliflower). Leaflets (H_2O). Mp 164°. pK_{a2} 5.19; pK_{a3} 10.12 (20°).

▶ Exp. carcinogen. DG2625000

Hydrochloride: [4920-81-4]
Cryst. (HCl). Mp 198-200°.

N-*Ac, amide: 2-Acetamido-3-hydroxybenzamide*
$C_9H_{10}N_2O_3$ 194.19
Prod. by *Streptomyces* sp. GW37/3236. Solid. λ_{max} 240 (sh) ; 295 (log ϵ 3.68) (MeOH).

Me ether: 2-Amino-3-methoxybenzoic acid. 3-Methoxyanthranilic acid
[3177-80-8]
$C_8H_9NO_3$ 167.164
Leaflets (AcOH). Mp 170-171°.

Trifluoromethyl ether:
$C_8H_6F_3NO_3$ 221.136
Needles (H_2O). Mp 99-101°.

O,N-*Di-Me: 3-Methoxy-2-methylaminobenzoic acid. Damascenenic acid. Damascenic acid*
[485-27-8]
$C_9H_{11}NO_3$ 181.191
Mp 144°. Forms a trihydrate, Mp 80°.

O,N-*Di-Me; hydrochloride:* Mp 210-211°.

O,N-*Di-Me, Me ester:* ***Damascenine***
[483-64-7]
$C_{10}H_{13}NO_3$ 195.218
Alkaloid from seeds of *Nigella damascena* (Ranunculaceae). Mp 24-26°. Bp 270° dec. Bp_{10} 147-148°.

O,N-*Di-Me, Me ester; hydrochloride:*
Cryst. + $1H_2O$. Mp 122° Mp 156° (anhyd.).

O,N-*Di-Me, Me ester, picrate:* Mp 158-159°.

Me ether, nitrile: 2-Amino-3-methoxybenzonitrile. 2-Cyano-6-methoxyaniline
[148932-68-7]
$C_8H_8N_2O$ 148.164
Powder. Mp 64-67°.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 206C (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **2**, 1098C; 1123C (*nmr*)
CRC Atlas of Spectral Data and Physical Constants, b842 (*uv, ir*)
Ewins, A.J. *et al., J.C.S.*, 1912, **101**, 544-552 (*Damascenine*)
Froelicher, V. *et al., J.C.S.*, 1921, **119**, 1425-1432 (*Me ether, synth*)
Muelle, F. *et al., Planta*, 1961, **57**, 403-477 (*isol*)
Munsche, D. *et al., Phytochemistry*, 1965, **4**, 705-712 (*biosynth*)
Kuhn, R. *et al., Chem. Ber.*, 1968, **101**, 3597-3603 (*Damascenine*)
Kuznezova, L.E. *et al., Nature (London)*, 1969, **222**, 484-485 (*props*)
Thoinet, M. *et al., Ann. Pharm. Fr.*, 1978, **36**, 337-339 (*synth, Damascenine*)
Mohr, N. *et al., Annalen*, 1981, 1515-1518 (*isol*)
Okabe, N. *et al., Acta Cryst. C*, 1996, **52**, 2345-2347 (*cryst struct*)
Goto, K. *et al., Chem. Pharm. Bull.*, 1996, **44**, 547-551 (*Me ether nitrile*)
Nagasaka, T. *et al., J.O.C.*, 1998, **63**, 6797-6801 (*Me ether, synth, ir, pmr*)
Leroux, F. *et al., J.O.C.*, 2003, **68**, 4693-4699 (*trifluoromethyl ether, synth, pmr, cmr*)
Fotso, S. *et al., Z. Naturforsch., B*, 2003, **58**, 1242-1246 (*2-Acetamido-3-hydroxybenzamide*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, AKE750

2-Amino-4-hydroxybenzoic acid A-788

4-Hydroxyanthranilic acid
[38160-63-3]

$C_7H_7NO_3$ 153.137
Needles (H_2O). Mp 148° (dec.).

Hydrochloride:
Needles.

Me ester:
$C_8H_9NO_3$ 167.164
Needles. Mp 132-133°.

Me ether: 2-Amino-4-methoxybenzoic acid. 2-Aminoanisic acid. 4-Methoxyanthranilic acid
[4294-95-5]
$C_8H_9NO_3$ 167.164
Plates (EtOH). Mp 166° (dec.) Mp 190°. pK_{a1} 2.06; pK_{a2} 4.88 (25°, 0.1*M* KCl).

N-*(4-Hydroxycinnamoyl)* (E-*): 4-Hydroxy-*N*-(4-hydroxycinnamoyl)anthranilic acid.* ***Avenanthramide G***
$C_{16}H_{13}NO_5$ 299.282
Stress metab. in oats (*Avena sativa*) induced by Victorin M. Cryst. + ¼ MeOH (MeOH/1% AcOH aq.). Mp

290-291°.

CRC Atlas of Spectral Data and Physical Constants, b843 (*uv*)
Drain, D.G. *et al., J.C.S.*, 1949, 1489 (*synth*)
van der Stelt, C. *et al., Rec. Trav. Chim. (J. R. Neth. Chem. Soc.)*, 1953, **72**, 195 (*synth*)
Jilek, J. *et al., Coll. Czech. Chem. Comm.*, 1985, **50**, 519 (*synth, uv, ir, pmr, deriv*)
Paulidis, V.H. *et al., Synth. Commun.*, 1994, **24**, 533 (*Me ether, synth, ir, pmr, cmr*)
Miyagawa, H. *et al., Phytochemistry*, 1996, **41**, 1473 (*Avenanthramide G*)
Boojamra, C.G. *et al., J.O.C.*, 1997, **62**, 1240-1256 (*Me ether*)

2-Amino-5-hydroxybenzoic acid A-789

5-Hydroxyanthranilic acid
[394-31-0]

$C_7H_7NO_3$ 153.137
Metab. of Tryptophan in rats. Oral hypoglycaemic agent. Violet cryst. (H_2O). Mp 252° dec. pK_{a1} 2.72; pK_{a2} 5.37 (25°, 0.1*M* KCl). Log P 0.66 (calc).

Me ester: [1882-72-0]
$C_8H_9NO_3$ 167.164
Yellow needles. Mp 158°.

Et ester:
$C_9H_{11}NO_3$ 181.191
Cryst. (EtOH). Mp 140°.

8-Methylnonyl ester: Isodecyl 5-hydroxyanthranilate. ***Antibiotic BU 4601A****. BU 4601A*
[148915-76-8]
$C_{17}H_{27}NO_3$ 293.405
Prod. by a *Streptomyces* sp. 5-Lipoxygenase inhibitor. Powder. Sol. MeOH, CCl_4, EtOH, DMSO, EtOAc; fairly sol. hexane; poorly sol. H_2O. λ_{max} 212 (ϵ 29200); 234 (ϵ 9100); 300 (ϵ 3800) (MeOH/HCl) (Derep). λ_{max} 208 (ϵ 33800); 225 (ϵ 24600); 372 (ϵ 4600) (MeOH/NaOH) (Derep). λ_{max} 219 (ϵ 24600); 246 (sh) (ϵ); 360 (ϵ 5200) (MeOH) (Derep).

9-Methyldecyl ester: Isoundecyl 5-hydroxyanthranilate. ***Antibiotic BU 4601B****. BU 4601B*
[148915-77-9]
$C_{18}H_{29}NO_3$ 307.432
Prod. by a *Streptomyces* sp. 5-Lipoxygenase inhibitor. Powder. Sol. MeOH, EtOAc, EtOH, DMSO, CCl_4; fairly sol. hexane; poorly sol. H_2O. λ_{max} 212 (ϵ 29200); 234 (ϵ 9100); 300 (ϵ 3800) (MeOH/HCl) (Derep). λ_{max} 208 (ϵ 33800); 225 (ϵ 24600); 372 (ϵ 4600) (MeOH/NaOH) (Derep). λ_{max} 219 (ϵ 24600); 246 (sh) (ϵ); 360 (ϵ 5200) (MeOH) (Derep).

10-Methylundecyl ester: Isolauryl 5-hydroxyanthranilate. ***Antibiotic BU 4601C****. BU 4601C*
[148915-78-0]
$C_{19}H_{31}NO_3$ 321.459
Prod. by a *Streptomyces* sp. 5-Lipoxygenase inhibitor. Powder. Sol. MeOH, CCl_4, EtOH, DMSO, EtOAc; fairly sol. hexane; poorly sol. H_2O. λ_{max} 212 (ϵ 29200); 234 (ϵ 9100); 300 (ϵ 3800) (MeOH/HCl) (Derep). λ_{max} 208 (ϵ 33800); 225 (ϵ 24600); 372 (ϵ 4600) (MeOH/NaOH) (Derep). λ_{max} 219 (ϵ 24600); 246 (sh) (ϵ); 360 (ϵ 5200) (MeOH) (Derep). λ_{max} 208 (ϵ 33900); 223 (ϵ 4700); 372 (ϵ 4100) (MeOH-NaOH) (Berdy).

N-*(4-Hydroxybenzoyl): 5-Hydroxy*-N-*(4-hydroxybenzoyl)anthranilic acid.* ***Melandrin***
[110846-17-8]
$C_{14}H_{11}NO_5$ 273.245
Constit. of *Melandrium firmum*. Prisms (MeOH). λ_{max} 237 ; 290 ; 336 (MeOH).

N-*(4-Hydroxycinnamoyl)(E-): 5-Hydroxy*-N-*(4-hydroxycinnamoyl)anthranilic acid.* ***Avenanthramide A****. Avenalumin I*
[108605-70-5]
$C_{16}H_{13}NO_5$ 299.282
Isol. from the grains of oats (*Avena sativa*). Phytoalexin. Pale yellow needles (Me_2CO aq.). Mp 277°. Darkens at 235°. Originally descr. as Avenalumin I, given the wrong struct. λ_{max} 320 (ϵ 15400); 344 (ϵ 13400) (MeOH/HCl) (Derep). λ_{max} 366 (ϵ 16600) (MeOH/NaOH) (Derep). λ_{max} 317 (ϵ 15200); 336 (ϵ 15900) (MeOH) (Derep).

N-*(4-Hydroxycinnamoyl)(Z-):* [116764-20-6]
$C_{16}H_{13}NO_5$ 299.282
Isol. from oats (*Avena sativa*).

N-*(3,4-Dihydroxycinnamoyl)(E-):* N-*(3,4-Dihydroxycinnamoyl)-5-hydroxyanthranilic acid.* ***Avenanthramide C***
$C_{16}H_{13}NO_6$ 315.282
Isol. from the grains of *Avena sativa*.

N-*(3,4-Dihydroxycinnamoyl)(Z-):*
[116764-22-8]
$C_{16}H_{13}NO_6$ 315.282
Isol. from oats (*Avena sativa*).

N-*(4-Hydroxy-3-methoxycinnamoyl)(E-):* N-*Feruloyl-5-hydroxyanthranilic acid.* ***Avenanthramide B****. Avenanthramide 1*
[108605-69-2]
$C_{17}H_{15}NO_6$ 329.309
Isol. from the grains of *Avena sativa*. Long pale yellow needles (Me_2CO aq.). Sol. EtOAc, Et_2O, H_2O-Me_2CO; poorly sol. $CHCl_3$, C_6H_6, H_2O. Mp 246°. λ_{max} 228 ; 315 ; 361 ; 392 (MeOH-NaOH) (Berdy).

N-*(4-Hydroxy-3-methoxycinnamoyl)(Z-):* [116764-21-7]
$C_{17}H_{15}NO_6$ 329.309
Isol. from oats (*Avena sativa*).

Me ether: 2-Amino-5-methoxybenzoic acid. 5-Methoxyanthranilic acid
[6705-03-9]
$C_8H_9NO_3$ 167.164
Needles (H_2O). Mp 179-180° (155-156° dec.). pK_{a1} 2.37; pK_{a2} 5.57 (25°, 0.1*M* KCl).

Me ether, nitrile: 2-Amino-5-methoxybenzonitrile, 9CI. 2-Cyano-4-methoxyaniline
[23842-82-2]
$C_8H_8N_2O$ 148.164
Solid. Mp 46°.

Trifluoromethyl ether: 2-Amino-5-(trifluoromethoxy)benzoic acid, 9CI
[83265-56-9]
$C_8H_6F_3NO_3$ 221.136
Needles (H_2O). Mp 137-138°.

Et ether: 2-Amino-5-ethoxybenzoic acid
$C_9H_{11}NO_3$ 181.191
Yellowish solid. Mp 179-180°.

Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **2**, 1122B (*nmr*)
CRC Atlas of Spectral Data and Physical Constants, 6844 (*uv*)
Puxeddu, E. *et al., Gazz. Chim. Ital.*, 1929, **59**, 14; 492
van der Stelt, C. *et al., Rec. Trav. Chim. (J. R. Neth. Chem. Soc.)*, 1953, **72**, 195
Zeitler, H.J. *et al., Hoppe-Seyler's Z. Physiol. Chem.*, 1965, **340**, 73 (*synth, props*)
Mitchell, S.C. *et al., J. Chromatogr.*, 1978, **151**, 249
Woo, W.S. *et al., Phytochemistry*, 1987, **26**, 2099 (*Melandrin*)
Collins, F.W. *et al., J. Agric. Food Chem.*, 1989, **37**, 60 (*Avenanthramides*)
Crombie, L. *et al., Tet. Lett.*, 1990, **31**, 2647 (*synth, Avenanthramides*)
Dimberg, L.H. *et al., Cereal Chem.*, 1993, **70**, 637-641 (*Avenanthramides*)
Ohkuma, H. *et al., J. Antibiot.*, 1993, **46**, 705 (*BU 4601*)
Pavlidis, V.H. *et al., Synth. Commun.*, 1994, **24**, 533 (*Me ether*)
Zhang, P. *et al., J. Med. Chem.*, 1995, **38**, 1679 (*Et ether, synth, ir, pmr*)
Ishihara, A. *et al., Phytochemistry*, 1999, **50**, 237-242 (*Avenanthramides, biosynth*)
Leroux, F. *et al., J.O.C.*, 2003, **68**, 4693-4699 (*trifluoromethyl ether, synth, pmr, cmr*)
Manetsch, R. *et al., Chem. Eur. J.*, 2004, **10**, 2487-2506 (*Me ether nitrile*)

3-Amino-5-hydroxybenzoic acid A-790

[76045-71-1]

$C_7H_7NO_3$ 153.137
Key biogenetic precursor of aromatic nuclei in ansamycin, mitomycin and maytansinoid antibiotics.

Hydrochloride: [14206-69-0]
Mp 200-230°.

Me ester: [67973-80-2]
$C_8H_9NO_3$ 167.164
Cryst. ($MeOAc/CHCl_3$). Mp 125-127°.

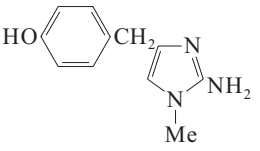
N-*Ac:* [93561-88-7]
$C_9H_9NO_4$ 195.174
Amorph. (MeOH aq.). Mp 245-253°.

Me ether, nitrile: 3-Amino-5-methoxybenzonitrile, 9CI. 3-Cyano-5-methoxyaniline
[269411-71-4]
$C_8H_8N_2O$ 148.164
Yellow solid. Mp 81-85°.

Bickel, H. *et al., Tetrahedron, Suppl.*, No. 8, 1966, 171-179 (*synth*)
Herlt, A.J. *et al., Aust. J. Chem.*, 1981, **34**, 1319 (*synth, ms, pmr*)
Kibby, J.J. *et al., J. Antibiot.*, 1981, **34**, 605 (*isol*)
Becker, A.M. *et al., Tetrahedron*, 1983, **20**, 4189 (*synth, pmr, ms*)
Becker, A.M. *et al., Aust. J. Chem.*, 1984, **37**, 2103-2109 (*use, N-Ac*)
Kim, C.G. *et al., J.A.C.S.*, 1992, **114**, 4941; 1996, **118**, 7486 (*biosynth*)
Watson, T.J.N. *et al., Synth. Commun.*, 1999, **29**, 1379-1382 (*synth, pmr, cmr*)
Reich, S.H. *et al., J. Med. Chem.*, 2000, **43**, 1670-1683 (*Me ether nitrile*)
Clark, J.D. *et al., Org. Process Res. Dev.*, 2004, **8**, 571-575 (*synth*)
Wang, Z. *et al., Bioorg. Med. Chem.*, 2006, **14**, 2242-2252 (*synth, pmr, cmr*)

2-Amino-4-(4-hydroxybenzyl)-1-methyl-1*H*-imidazole A-791

*4-[(2-Amino-1-methyl-1*H*-imidazol-4-yl)methyl]phenol.* ***Dorimidazole A***
[138935-50-9]

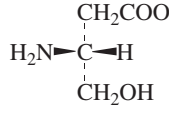


$C_{11}H_{13}N_3O$ 203.243
Alkaloid from the nudibranch *Notodoris gardineri* and *Notodoris citrina*. Anthelminthic, antiparasitic. Yellow powder; cryst. (MeCN) (as hydrobromide). Mp 175-176° (hydrobromide). λ_{max} 228; 269; 297; 300 (MeOH) (Derep). λ_{max} 228; 269; 297; 360 (MeOH) (Berdy).

Alvi, K.A. *et al., J. Nat. Prod.*, 1991, **54**, 1509-1515 (*isol, uv, pmr, cmr, ms, struct, synth*)
Molina, P. *et al., J.O.C.*, 1999, **64**, 2540-2544 (*synth, pmr, cmr*)

3-Amino-4-hydroxybutanoic acid, 9CI A-792

γ-Hydroxy-β-aminobutyric acid. GOBAB
[589-44-6]



(*R*)-*form*

$C_4H_9NO_3$ 119.12
Antiinflammatory, antifungal and antiseptic agent.

(*R*)-*form* [16504-56-6]

Hydrochloride: [196950-52-4]
Mp 177-178°.

*Lactone: 4-Aminodihydro-2(3*H*)-furanone. β-Amino-γ-butyrolactone*
$C_4H_7NO_2$ 101.105
Mp 175-177° (as hydrochloride). $[\alpha]_D^{20}$ +56.7 (c, 1 in H_2O).

N-*Benzyl, lactone:* [152783-42-1]
$C_{11}H_{13}NO_2$ 191.229
Oil. $[\alpha]_D^{25}$ +16.5 (c, 1.0 in $CHCl_3$).

(*S*)-*form* [16504-57-7] Pharmacol. active isomer.

Lactone: Mp 198-201° (as hydrobromide). $[\alpha]_D^{20}$ -42.6 (c, 1.08 in H_2O).

N-*Benzoyl, lactone:*
$C_{11}H_{11}NO_3$ 205.213
Mp 123.5-126°. $[\alpha]_D^{20}$ -97 (c, 1.41 in $CHCl_3$).

N-tert-*Butyloxycarbonyl, lactone:*
$C_9H_{15}NO_4$ 201.222
Solid. Mp 113-114° (106-108°). $[\alpha]_D^{25}$ -54.3 (c, 1.15 in $CHCl_3$).

N-*Benzyloxycarbonyl, lactone:*
$C_{12}H_{13}NO_4$ 235.239
Cryst. Mp 103-105°. $[\alpha]_D^{20}$ -54.9 (c, 2.27 in $CHCl_3$).

N-*Trifluoroacetyl, benzyl ester:* [673470-50-3]
$C_{13}H_{14}F_3NO_4$ 305.253
Cryst. solid. Mp 70-71°. $[\alpha]_D^{22.5}$ +9.1 (c, 0.99 in $CHCl_3$).

(±)-*form* [16504-55-5]
Needles. Mp 184°.

Lactone: [16504-58-8]
Mp 185-186° (as hydrochloride).

Lactone, N-*benzyl:* [157037-11-1]
$C_{11}H_{13}NO_2$ 191.229
Oil.

(ξ)-*form*
O-*(4-Hydroxybenzoyl),* N,N,N-*tri-Me, betaine: 1-Carboxy-3-[(4-hydroxybenzoyl)oxy]*-N,N,N-*trimethyl-2-propanaminium inner salt, 9CI.*
Zooxanthellabetaine A
[208256-89-7]
$C_{14}H_{19}NO_5$ 281.308
Isol. from the cultures of a symbiotic dinoflagellate *Symbiodinium* sp. Oil. $[\alpha]_D^{20}$ -13 (c, 0.0035 in MeOH).

Jolles, P. *et al., Bull. Soc. Chim. Fr.*, 1951, 862-863 (*synth*)
Chibnall, A.C. *et al., Biochem. J.*, 1958, **68**, 122-128 (*synth*)
Nagai, K. *et al., Arzneim.-Forsch.*, 1967, **17**, 1575-1577 (*synth, isomers, pharmacol*)
Kim, Y.B. *et al., Arch. Pharmacal Res.*, 1985, **8**, 1-6; *CA*, **103**, 98858d (*cryst struct*)
McGarvey, G.J. *et al., J.A.C.S.*, 1986, **108**, 4943-4952 (*lactone N-benzyloxycarbonyl, synth, ir, pmr*)
Hvidt, T. *et al., Can. J. Chem.*, 1988, **66**, 779-782 (*synth, pmr, cmr*)
Hanessian, S. *et al., Can. J. Chem.*, 1993, **71**, 1407-1411 (*lactone, N-tert-butyloxycarbonyl, synth, ir, pmr*)
Maude, A.B. *et al., J.C.S. Perkin 1*, 1997, 2513-2526 (*synth, ir, pmr*)
Calvisi, G. *et al., Synlett*, 1997, 71-74 (*lactone, synth, pmr*)
Nakamura, H. *et al., Bull. Chem. Soc. Jpn.*, 1998, **71**, 781-787 (*Zooanthellabetaine A*)
El Hadri, A. *et al., J. Med. Chem.*, 2002, **45**, 2824-2831 (*N-benzyl lactone, synth*)
Jackson, R.F.W. *et al., Org. Biomol. Chem.*, 2004, **2**, 110-113 (*N-trifluoroacetyl benzyl ester, synth, pmr, cmr*)

1-Amino-3-hydroxy-8-decen-5-one A-793

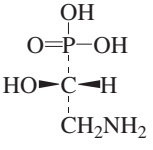
$H_3CCH{=}CHCH_2CH_2COCH_2$-$CH(OH)CH_2CH_2NH_2$
$C_{10}H_{19}NO_2$ 185.266

(+)-(*E*)-*form*
N-*Ac:* ***Streptenol E***
$C_{12}H_{21}NO_3$ 227.303
Prod. by *Streptomyces* sp. strain A1. Oil. $[\alpha]_D^{22}$ +33 (c, 0.34 in $CHCl_3$).

Puder, C. *et al., J. Nat. Prod.*, 2001, **64**, 42-45

(2-Amino-1-hydroxyethyl)-phosphonic acid, 9CI A-794

[41744-58-5]



(*R*)-*form*

$C_2H_8NO_4P$ 141.063

(*R*)-*form* [115511-00-7]
Isol. from the plasma membrane of *Acanthamoeba castellanii*. Cryst. (EtOH aq.). Mp 244-246° dec. $[\alpha]_D^{20}$ -31.4 (c, 0.52 in H_2O).

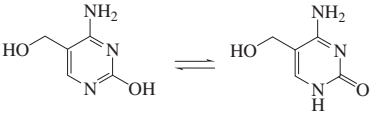
(*S*)-*form* [121421-25-8]
Cryst. (EtOH aq.). Mp 245-247° dec. $[\alpha]_D^{22}$ +32.5 (c, 1 in H_2O).

(±)-*form* [114157-09-4]
Cryst. (EtOH aq.). Mp 260-262° dec.

Korn, E.D. *et al., J. Biol. Chem.*, 1973, **248**, 2257 (*isol*)
Hammerschmidt, F. *et al., Annalen*, 1988, 537-542; 955-960; 961-964; 1989, 577-583 (*synth, abs config*)
Heisler, A. *et al., Tetrahedron: Asymmetry*, 1993, **4**, 959-960 (*synth*)

4-Amino-2-hydroxy-5-(hydroxymethyl)pyrimidine A-795

*4-Amino-2-hydroxy-5-pyrimidinemethanol. 4-Amino-5-hydroxymethyl-2(1*H*)-pyrimidinone. 5-Hydroxymethylcytosine*
[1123-95-1]



$C_5H_7N_3O_2$ 141.129
DNA constit. of various plants and viruses. Cryst. + $0.5H_2O$ (H_2O). Mp 300° dec. pK_{a1} 4.32; pK_{a2} 13.

OH-form

2-Me ether: 4-Amino-5-(hydroxymethyl)-2-methoxypyrimidine. 4-Amino-2-methoxy-5-pyrimidinemethanol. ***Bacimethrin***
$C_6H_9N_3O_2$ 155.156
Prod. by *Bacillus megaterium* and *Streptomyces albus.* Active against gram-positive and -negative bacteria. Thiamine antagonist. Needles (MeOH or EtOH/Et_2O). Sol. H_2O, MeOH, AcOH; fairly sol. EtOH, Py; poorly sol. butanol, hexane. Mp 175°. λ_{max} 230 (ε 8540); 263 (ε 9590) (0.1*M* HCl) (Derep). λ_{max} 228 (ε 8760); 271 (ε 8170) (0.1*M* NaOH) (Derep). λ_{max} 228 (ε 8310); 270 (ε 7630) (H_2O) (Derep). λ_{max} 229 (ε 6600); 273 (ε 6200) (MeOH) (Berdy).

▶ LD_{50} (mus, ivn) 300 mg/kg.

2-Me ether, O-*Ac:*
$C_8H_{11}N_3O_3$ 197.193
Mp 131°.

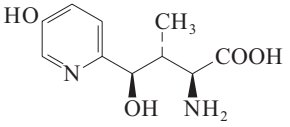
2-Me ether, O,N-*Di-Ac:*
$C_{10}H_{13}N_3O_4$ 239.23
Mp 142°.

Wyatt, G.R. *et al., Biochem. J.*, 1953, **55**, 774 (*isol*)
Miller, C.S. *et al., J.A.C.S.*, 1955, **77**, 752 (*synth, uv*)
Tanaka, F. *et al., J. Antibiot., Ser. A*, 1961, **14**, 161 (*Me ether, isol, struct*)
Koppel, H.C. *et al., J.O.C.*, 1962, **27**, 1492; 3614 (*Me ether, synth, uv*)
Drautz, M. *et al., J. Antibiot.*, 1987, **40**, 1431 (*Me ether, isol, synth, props*)
Isono, K. *et al., J. Antibiot.*, 1988, **41**, 1711 (*rev*)

Hudson, R.H.E. *et al., Can. J. Chem.*, 2007, 302-312 (*synth, pmr, cmr*)

2-Amino-4-hydroxy-4-(5-hydroxy-2-pyridinyl)-3-methylbutanoic acid A-796

α-Amino-γ,5-dihydroxy-β-methyl-2-pyridinebutanoic acid, 9CI



$C_{10}H_{14}N_2O_4$ 226.232

(2*S*,3*R*,4*R*)-*form* [76249-78-0]
Amino acid residue from Nikkomycin Z, N-218.

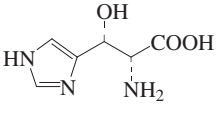
(2*S*,3*S*,4*S*)-*form*
Nikkomycin D
[67676-66-8]
The terminal amino acid of the nikkomycins and neopolyoxins. Fine needles (H_2O). Mp 230° dec Mp 207° dec. $[\alpha]_D^{20}$ -13.4 (c, 0.59 in H_2O).

[76612-52-7 , 83572-53-6 , 83572-54-7 , 83572-56-9 , 83572-55-8]

Koenig, W.A. *et al., Annalen*, 1980, 1728; 1982, 1615 (*isol, synth, cryst struct*)
Teintze, M. *et al., Biochemistry*, 1981, **20**, 6446 (*isol*)
Uramoto, M. *et al., Tetrahedron*, 1982, **38**, 1599 (*isol*)

2-Amino-3-hydroxy-3-(4-imidazolyl)propanoic acid A-797

β-Hydroxyhistidine, 9CI



(2*R*,3*R*)-*form*

$C_6H_9N_3O_3$ 171.155

(2*R*,3*R*)-*form*
D-threo-*form*
[35849-15-1 (hydrochloride)]
Pale yellow cryst. (as hydrochloride). $[\alpha]_D^{25}$ +15 (c, 1.2 in H_2O) (hydrochloride).

N^{α}-*Ac:* $[\alpha]_D^{25}$ -17 (c, 1.25 in H_2O).

(2*S*,3*R*)-*form*
L-erythro-*form*
[41215-80-9]
[51077-31-7 (hydrochloride)]
Component of antibiotics of the Bleomycin A_2 group. Cryst. Mp 205° dec. $[\alpha]_D^{28}$ +40 (c, 1 in H_2O) (hydrochloride).

(2*S*,3*S*)-*form*
L-threo-*form*
[148219-09-4]
Constit. of a pyoverdin isol. from *Pseudomonas fluorescens* 244. Pale yellow solid. $[\alpha]_D$ -9 (c, 1 in H_2O).

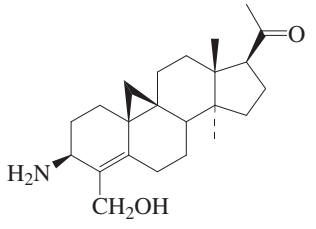
(2*RS*,3*RS*)-*form*
(±)-threo-*form*
[35849-17-3]
Solid (as hydrochloride). CAS no. refers to hydrochloride.

(2*RS*,3*SR*)-*form*
(±)-erythro-*form*
[71389-30-5]
Cryst. Mp 205° dec.

Hydrochloride: [35849-19-5]
Needles (2-propanol/EtOH aq.). Mp 228°.

Takita, T. *et al., J. Antibiot.*, 1971, **24**, 795 (*isol, nmr, struct, synth*)
Ohashi, Y. *et al., Agric. Biol. Chem.*, 1973, **37**, 2283 (*isol*)
Koyama, G. *et al., J. Antibiot.*, 1973, **26**, 109 (*cryst struct*)
Naganawa, H. *et al., J. Antibiot.*, 1977, **30**, 388 (*cmr*)
Hecht, S.M. *et al., J.A.C.S.*, 1979, **101**, 3982 (*synth, pmr*)
Owa, T. *et al., Chem. Lett.*, 1988, 83; 1873 (*synth*)
Hancock, D.K. *et al., Chem. Comm.*, 1993, 468 (*isol, pmr, cmr*)
Dong, L. *et al., J.O.C.*, 2002, **67**, 4759-4770 (*S,S-form, synth, pmr, cmr*)

3-Amino-4-hydroxymethyl-14-methyl-9,19-cyclopregn-4-en-20-one A-798

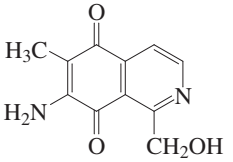


$C_{23}H_{35}NO_2$ 357.535

3β-*form*
N-*Me:* ***30-Hydroxycyclomicrobuxene***
[220705-48-6]
$C_{24}H_{37}NO_2$ 371.562
Alkaloid from the roots of *Buxus sempervirens*. Amorph. solid. $[\alpha]_D^{20}$ +84 (c, 0.69 in $CHCl_3$). Misleading synonym. λ_{max} 202 (MeOH).

Atta-ur-Rahman, *et al., Nat. Prod. Lett.*, 1998, **12**, 299-306 (*isol, pmr, cmr*)

7-Amino-1-hydroxymethyl-6-methyl-5,8-isoquinolinedione, 9CI A-799



$C_{11}H_{10}N_2O_3$ 218.212

O-*Angeloyl:* ***Cribrostatin 3***
[276682-84-9]
$C_{16}H_{16}N_2O_4$ 300.313
Alkaloid from *Cribrochalina* sp. Cytotoxic agent. Orange-red needles (CH_2Cl_2/MeOH). Mp 190-192°.

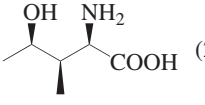
N^7-*Me,* O-*angeloyl:* ***Cribrostatin 5***
[276682-90-7]
$C_{17}H_{18}N_2O_4$ 314.34
Alkaloid from *Cribrochalina* sp. Cytotoxic agent. Red-brown plates (MeOH/CH_2Cl_2).

N^7-*(2-Sulfoethyl),* O-*angeloyl:* ***Cribrostatin 7***
[683276-94-0]
$C_{18}H_{20}N_2O_7S$ 408.431
Alkaloid from a *Petrosia* sp. Cytotoxic agent. Dark red film. λ_{max} 210 (ε 14500); 282 (ε 6500); 338 (ε 2000); 474 (ε 1700) (MeOH).

Pettit, G.R. *et al., J. Nat. Prod.*, 2000, **63**, 793-798 (*Cribrostatin 3, Cribrostatin 5*)
Sandoval, I.T. *et al., Nat. Prod. Res.*, 2004, **18**, 89-93 (*Cribrostatin 7*)

2-Amino-4-hydroxy-3-methylpentanoic acid A-800

2-Amino-2,3,5-trideoxy-3-methylpentonic acid. 4-Hydroxyisoleucine
[50764-07-3]



(2*R*,3*R*,4*R*)-*form*

$C_6H_{13}NO_3$ 147.174

(2*R*,3*R*,4*R*)-*form*
D-xylo-*form. 2-Amino-2,3,5-trideoxy-3-methyl-D-xylonic acid*
[60010-78-8]
Cryst. (EtOH aq.). Mp *ca.*° 230. $[\alpha]_D^{20}$ -35.6 (c, 1.2 in D_2O).

*1,4-Lactone: 3-Aminodihydro-4,5-dimethyl-2(3*H*)-furanone*
$C_6H_{11}NO_2$ 129.158
Cryst. (EtOH/petrol) (as hydrochloride). Mp 222° (hydrochloride). $[\alpha]_D^{25}$ +88.7 (c, 1 in MeOH).

1,4-Lactone, N-*Ac:*
Needles (EtOH). Mp 140°. $[\alpha]_D^{25}$ +88 (c, 1 in DMSO).

(2*R*,3*R*,4*S*)-*form*
L-arabino-*form. 2-Amino-2,3,5-trideoxy-3-methyl-L-arabinonic acid*
[60010-73-3]
Minor amino acid constit. of *Trigonella foenum-graecum* (fenugreek) seeds. $[\alpha]_D^{20}$ +1 (c, 1 in H_2O). Orginally thought to be the 2*R*,3*R*,4*R*-form.

1,4-Lactone:
Cryst. (as hydrochloride). Mp 170-175° (hydrochloride).

1,4-Lactone, N-*Ac: 3-Acetamidodihydro-4,5-dimethyl-2(3*H*)-furanone.* ***Desmodilactone***
[60010-74-4]
$C_8H_{13}NO_3$ 171.196
Constit. of *Desmodium styracifolium*. Component of Guang Jin Qian Cao. Cryst. Mp 84-85°. $[\alpha]_D^{18}$ -16.4 (c, 0.11 in MeOH).

(2*S*,3*R*,4*R*)-*form*
D-lyxo-*form. 2-Amino-2,3,5-trideoxy-3-methyl-D-lyxonic acid*
[55399-92-3]
Cryst. (EtOH aq.). Mp *ca.*° 220. $[\alpha]_D^{20}$ -

24.9 (c, 1.17 in D_2O).

1,4-Lactone:
Needles (EtOH/petrol) (as hydrochloride). Mp 255° (hydrochloride). $[\alpha]_D^{25}$ +24.3 (c, 1 in MeOH).

1,4-Lactone, N-*Ac:*
Needles (EtOH). Mp 141°.

(2*S*,3*R*,4*S*)-*form*
L-ribo-*form. 2-Amino-2,3,5-trideoxy-3-methyl-L-ribonic acid*
[55399-93-4]
Major constit. of *Trigonella foenum-graecum* (fenugreek). Cryst. (EtOH aq.). Mp 224-225°. $[\alpha]_D^{20}$ +31 (c, 1 in H_2O). Stereochem. revised in 1989.

1,4-Lactone:
Needles (EtOH/petrol) (as hydrochloride). Mp 230° (hydrochloride). $[\alpha]_D^{25}$ -15.5 (c, 1 in MeOH).

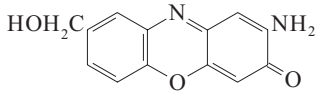
1,4-Lactone, N-*Ac:*
Needles (EtOH). Mp 94°.

(2*S*,3*S*,4*R*)-*form*
D-arabino-*form. 2-Amino-2,3,5-trideoxy-3-methyl-D-arabinonic acid*
[21704-86-9]
Constit. of the flowers of *Quararibea funebris.* Mp 205-207°. $[\alpha]_D^{27}$ +2.9 (c, 0.1 in H_2O). λ_{max} 197 (ε 250) (H_2O).

1,4-Lactone: [71392-28-4]
[90693-46-2]
Constit. of the flowers of *Quararibea funebris.* Powder (as hydrochloride). Mp 212-215° (hydrochloride). $[\alpha]_D^{25}$ -14.8 (c, 0.7 in MeOH).

Fowden, L. *et al., Phytochemistry*, 1973, **12**, 1707-1711 (*Trigonella foenum-graecum constits*)
Gieren, A. *et al., Annalen*, 1974, 1561-1569 (*synth*)
Hasan, M. *et al., Annalen*, 1976, 781-787 (*lactone, synth, pmr*)
Raffauf, R.F. *et al., J.O.C.*, 1984, **49**, 2714-2718 (*Quararbea funebris constit*)
Alcock, N.W. *et al., Phytochemistry*, 1989, **28**, 1835-1841 (*struct*)
Inghardt, T. *et al., Tetrahedron*, 1991, **47**, 6469-6482 (*synth, abs config, cryst struct*)
Yang, J. *et al., Yaoxue Xuebao*, 1993, **28**, 197-201; *CA*, **119**, 156209m (*Desmodilactone*)
Wang, Q. *et al., Eur. J. Org. Chem.*, 2002, 834-839 (*synth, pmr, cmr*)
Rolland-Fulcrand, V. *et al., Eur. J. Org. Chem.*, 2004, 873-877 (*synth, pmr, cmr*)
Aouadi, K. *et al., Synthesis*, 2007, 3399-3405 (*2S,3R,4R-form, synth, pmr, cmr, ms*)

2-Amino-8-(hydroxymethyl)-3*H*-phenoxazin-3-one A-801



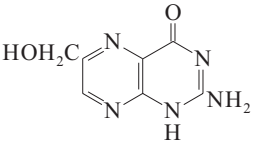
$C_{13}H_{10}N_2O_3$ 242.234

N-*Ac: 2-Acetamido-8-(hydroxymethyl)-3*H*-phenoxazin-3-one. **Exfoliazone**. BT 38. Antibiotic BT 38*
[132627-73-7]
$C_{15}H_{12}N_2O_4$ 284.271
Prod. by *Streptomyces exfoliatus.* Active against *Valsa ceratosperma*. Orange needles ($CHCl_3$). Sol. MeOH, $CHCl_3$, EtOAc; poorly sol. H_2O, butanol. Mp 294-296°. λ_{max} 238 (ε 75300); 400 (ε 42300) (solvent not reported) (Derep). λ_{max} 238 (ε 75300); 400 (ε 42300) (MeOH) (Berdy).

Imai, S. *et al., J. Antibiot.*, 1990, **43**, 1606

2-Amino-6-(hydroxymethyl)-4(1*H*)-pteridinone, 9CI A-802

*6-Hydroxymethylpterin. **Ranachrome 3**. 2-Amino-4-hydroxy-6-(hydroxymethyl)pteridine*
[712-29-8]



$C_7H_7N_5O_2$ 193.165
Occurs widely in nature. The 7,8-dihydro deriv. is the biological precursor of folic acid. Cryst. (H_2O). Mp 320° dec.

▶ UO3450000

O-*[4-O-Methyl-α-D-glucuronopyranosyl-(1→6)-β-D-galactopyranoside]: **Cyanopterin***
[223532-84-1]
$C_{20}H_{27}N_5O_{13}$ 545.459
Isol. from *Synechocystis* sp. PCC 6803. λ_{max} 192 ; 236 ; 276 ; 345 (H_2O).

O-*Ac:* [73978-45-7]
$C_9H_9N_5O_3$ 235.202
Cryst. (H_2O). Mp 300° dec.

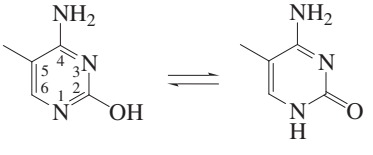
N^2,O-*Di-Ac:* [32363-58-9]
$C_{11}H_{11}N_5O_4$ 277.239
Cryst. (Me_2CO). Mp 239-242° dec. (227-229°).

[1501-52-6]

Blair, J.A. *et al., Org. Mass Spectrom.*, 1969, **2**, 923 (*ms*)
Thijssen, H.H.W. *et al., Anal. Biochem.*, 1973, **54**, 609 (*synth*)
Boyle, P.H. *et al., Chem. Ber.*, 1980, **113**, 1514 (*synth, uv, pmr*)
Waring, P. *et al., Aust. J. Chem.*, 1985, **38**, 629 (*synth, bibl*)
Zeitler, H.J. *et al., Methods Enzymol.*, 1986, **122**, 273 (*rev, hplc*)
Burgmayer, S.J.N. *et al., Inorg. Chem.*, 1988, **27**, 4059 (*ir*)
Lee, H.W. *et al., Biochim. Biophys. Acta*, 1999, **1410**, 61-70 (*Cyanopterin*)

4-Amino-2-hydroxy-5-methylpyrimidine A-803

*4-Amino-5-methyl-2(1*H*)-pyrimidinone, 9CI. 4-Amino-5-methyl-2-pyrimidinol. 5-Methylcytosine*
[554-01-8]



$C_5H_7N_3O$ 125.13
Constit. of DNA of plants and animals. Cryst. (H_2O). Mp 287-292°.

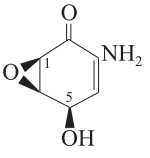
Hydrochloride:
Plates or prisms. Mp 288-290°.

1-β-D-(2,3-Dideoxyribofuranosyl): 2′,3′-Dideoxy-5-methylcytidine, 9CI
[107036-56-6]
$C_{10}H_{15}N_3O_3$ 225.247
Lyophilised solid.

Fox, J.J. *et al., J.A.C.S.*, 1951, **73**, 3256 (*synth*)
Kream, J. *et al., J.A.C.S.*, 1952, **74**, 5157 (*isol*)
Thomas, A.J. *et al., Biochem. J.*, 1956, **62**, 1 (*isol*)
Kokko, J. *et al., J.A.C.S.*, 1962, **84**, 1042 (*pmr*)
Rice, J.M. *et al., J.A.C.S.*, 1965, **87**, 4569 (*ms*)
Kloetzer, W. *et al., Monatsh. Chem.*, 1965, **96**, 1721 (*synth*)
Padmaja, N. *et al., Acta Cryst. C*, 1987, **43**, 2157 (*cryst struct*)
Kim, C.H. *et al., J. Med. Chem.*, 1987, **30**, 862 (*β-D-2,3-dideoxyribofuranosyl, synth, pmr, ms*)
Buchini, S. *et al., Eur. J. Org. Chem.*, 2006, 3152-3168 (*synth, pmr, cmr, ms*)

3-Amino-5-hydroxy-7-oxabicyclo[4.1.0]hept-3-en-2-one, 9CI A-804

2-Amino-5,6-epoxy-4-hydroxy-2-cyclohexen-1-one



(1*R*,5*R*,6*R*)–*form*

$C_6H_7NO_3$ 141.126

(1*R*,5*R*,6*R*)-*form*
N-*Ac: Antibiotic MT 35214. MT 35214*
[89020-32-6]
$C_8H_9NO_4$ 183.163
Semisynthetic. Weakly active against gram-positive and -negative bacteria and *Candida* spp. Prisms (Me_2CO/Et_2O). Mp 149-151° dec. $[\alpha]_D^{20}$ +104 (c, 1 in MeOH). λ_{max} 265 (ε 5910); 321 (ε 12700) (0.1*N* NaOH) (Derep). λ_{max} 212 (ε 11000); 276 (ε 3510) (H_2O) (Derep).

N-*Ac, 5-ketone: 3-(Acetylamino)-7-oxabicyclo[4.1.0]hept-3-ene-2,5-dione. 2-(Acetylamino)-5,6-epoxy-2-cyclohexene-1,4-dione. Antibiotic MT 36531. MT 36531*
[89020-31-5]
$C_8H_7NO_4$ 181.148
Semisynthetic. Shows weak antibacterial activity. Needles (EtOAc/Et_2O). Mp 144-145°. $[\alpha]_D^{20}$ -99 (c, 0.5 in MeOH).

(1*S*,5*S*,6*S*)-*form*
***Antibiotic MM 14201**. MM 14201*
[89020-30-4]
Isol. from *Streptomyces* spp. Sol. MeOH, H_2O; poorly sol. hexane. $[\alpha]_D^{20}$ -202 (c, 0.334 in MeOH). λ_{max} 304 (H_2O) (Derep). λ_{max} 304 (EtOH) (Berdy).

N-*Ac:* N-*(5-Hydroxy-2-oxo-7-oxabicyclo[4.1.0]hept-3-en-3-yl)acetamide. **Antibiotic LL C10037α**. LL C10037α*

[93752-54-6]
$C_8H_9NO_4$ 183.163
Isol. from *Streptomyces* spp. Shows antitumour props. Weakly active against bacteria. Fluffy powder. Sol. H_2O, MeOH, EtOH; poorly sol. Me_2CO, hexane. Mp 153°. $[\alpha]_D^{26}$ -155 (c, 0.1 in H_2O). $[\alpha]_D^{20}$ -202 (c, 0.3 in MeOH). Revised struct. λ_{max} 265 (ϵ 5910); 321 (ϵ 12700) (0.1*N* NaOH) (Derep). λ_{max} 212 (ϵ 11000); 276 (ϵ 3510) (H_2O) (Derep). λ_{max} 212 (ϵ 10970); 275 (ϵ 3510) (H_2O) (Berdy). λ_{max} 265 (ϵ 5200); 321 (ϵ 15200) (NaOH) (Berdy).

(1*RS*,5*RS*,6*RS*)-*form*

N-*Ac:* [157183-80-7]
Cryst. (Me_2CO/Et_2O). Mp 167° dec.

N-*Ac, 5-ketone:*
Pale yellow solid (EtOAc/petrol). Mp 169-170° dec.

(1*RS*,5*SR*,6*RS*)-*form*

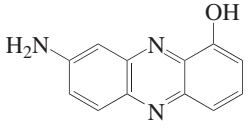
N-*Ac: (±)-Epi-LL-C10037α*
[157183-81-8]
Mp 154° dec.

[121055-94-5 , 121055-92-3]

Box, S.J. *et al., J. Antibiot.*, 1983, **36**, 1631 (*isol, props*)
Lee, M.D. *et al., J. Antibiot.*, 1984, **37**, 1149 (*isol, struct*)
Whittle, Y.G. *et al., J.A.C.S.*, 1987, **109**, 5043 (*biosynth, struct*)
Gould, S.J. *et al., J.A.C.S.*, 1989, **111**, 7932 (*biosynth*)
Shen, B. *et al., J.O.C.*, 1990, **55**, 4422 (*pmr, cryst struct*)
Wipf, P. *et al., J.O.C.*, 1994, **59**, 3520 (*synth, LL C10037*)
Wipf, P. *et al., Synthesis*, 1995, 1549 (*synth*)
Kapfer, I. *et al., Tet. Lett.*, 1996, **37**, 2101 (*synth, LL C10037α*)
Taylor, R.J.K. *et al., Synthesis*, 1998, 775-790 (*synth, LL-C10037α, 5-ketone, ir, pmr, cmr, ms*)
Macdonald, G. *et al., Tet. Lett.*, 1998, **39**, 5433-5436 (*synth*)
Murphy, S.T. *et al., Org. Lett.*, 1999, **1**, 1483-1485 (*synth, LL C10037α*)
Block, O. *et al., J.O.C.*, 2000, **65**, 716-721 (*synth, LL C10037α*)

8-Amino-1-hydroxyphenazine A-805

8-Amino-1-phenazinol, 9CI

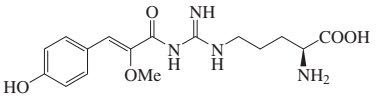


$C_{12}H_9N_3O$ 211.223
Prod. by an unidentified bacterium. λ_{max} 275 ; 376 ; 480 (MeOH) (Berdy).

Me ether: 8-Amino-1-methoxyphenazine
[23448-77-3]
$C_{13}H_{11}N_3O$ 225.249
Bright orange solid. Mp 180° Mp 240-243° (dec.) (double Mp). λ_{max} 275 ; 376 ; 480 (EtOH).

Gerber, N.N. *et al., J. Het. Chem.*, 1969, **6**, 297-300 (*isol*)

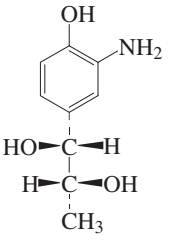
2-Amino-5-[[[3-(4-hydroxyphenyl)-2-methoxy-2-propenoyl]amino](imino)methyl]amino]pentanoic acid A-806



$C_{16}H_{22}N_4O_5$ 350.374
Isol. from the ascidian *Atriolum robustum*. Amorph. solid. $[\alpha]_D^{25}$ -3.2 (c, 0.15 in H_2O). λ_{max} 295 (ϵ 34000) (H_2O).

Kehraus, S. *et al., J. Med. Chem.*, 2004, **47**, 2243-2255 (*isol*)

1-(3-Amino-4-hydroxyphenyl)-1,2-propanediol A-807



$C_9H_{13}NO_3$ 183.207

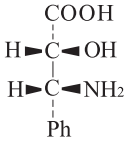
(1*R*,2*R*)-*form*

4′-Me ether, N-*Ac:* ***Agaridiol***
[243864-56-4]
$C_{12}H_{17}NO_4$ 239.271
Prod. by an *Agaricus* sp. Antibacterial agent.

Berg, A. *et al., J. Basic Microbiol.*, 1999, **39**, 213-215

3-Amino-2-hydroxy-3-phenylpropanoic acid A-808

β-Amino-α-hydroxybenzenepropanoic acid, 9CI. 3-Amino-3-phenyllactic acid. 3-Phenylisoserine
[6049-55-4]



(2*R*,3*R*)–*form*

$C_9H_{11}NO_3$ 181.191

(2*R*,3*S*)-*form*

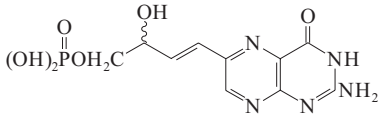
(-)-threo-*form*
[136561-53-0] Residue present in, and intermed. in synth. of, the sidechain of Taxol, T-52.
Solid. Mp 224-226° Mp 238° dec. (as hydrochloride). $[\alpha]_D$ -14.9 (c, 0.55 in 6*M* HCl). $[\alpha]_D^{25}$ -14.5 (c, 0.37 in MeOH) (as hydrochloride).

N-*Benzoyl:* [132201-33-3]
$C_{16}H_{15}NO_4$ 285.299
Isol. from *Taxus baccata*. Sidechain of Taxol, T-52. Cryst. (EtOAc). Mp 177-178° (166-168°). $[\alpha]_D^{25}$ -36.3 (c, 0.73 in EtOH). $[\alpha]_D^{25}$ -31.7 (c, 1.0 in EtOH).

Harada, K. *et al., J.O.C.*, 1966, **31**, 1407 (*abs config*)
Kamandi, E. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1974, **307**, 871-878 (*synth, amide*)
Harada, K. *et al., Bull. Chem. Soc. Jpn.*, 1974, **47**, 2911 (*synth, abs config*)
Bruncko, M. *et al., Angew. Chem., Int. Ed.*, 1997, **36**, 1483-1486 (*synth, 2R,3S-form*)
Zhou, Z. *et al., Synth. Commun.*, 2001, **31**, 3609-3615; 2003, **33**, 723-728 (*synth, ir, pmr, amide, N-benzoyl*)

2-Amino-6-[3-hydroxy-4-(phosphonooxy)-1-butenyl]-4(1*H*)-pteridinone, 9CI A-809

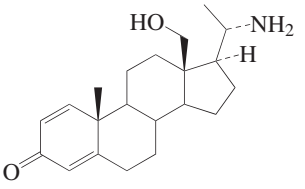
2-Amino-4-hydroxy-6-(3-hydroxy-4-phosphonooxy-1-butenyl)pteridine
[136338-57-3]



$C_{10}H_{12}N_5O_6P$ 329.208
Isol. from *Rhodopseudomonas sphaeroides.*

Seo, N. *et al., Biochim. Biophys. Acta*, 1991, **1074**, 439 (*isol, synth*)

20-Amino-18-hydroxypregna-1,4-dien-3-one A-810



$C_{21}H_{31}NO_2$ 329.481

(20*S*)-*form*

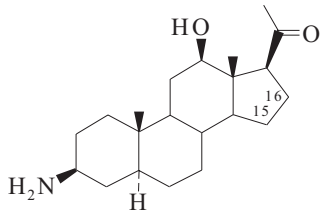
N-*Me:* ***18-Hydroxy-20-(methylamino)-pregna-1,4-dien-3-one***
[113846-36-9]
$C_{22}H_{33}NO_2$ 343.508
Alkaloid from the leaves of *Didymeles madagascariensis* (Didymelaceae). $[\alpha]_D$ +31 (c, 1.71 in EtOH).

N,N-*Di-Me:* ***20-(Dimethylamino)-18-hydroxypregna-1,4-dien-3-one***
[91147-28-3]
$C_{23}H_{35}NO_2$ 357.535
Alkaloid from the stem bark of *Didymeles madagascariensis* (Didymelaceae). λ_{max} 241 (log ϵ 4.39); 322 (log ϵ 4.07) (EtOH).

18-Aldehyde, N,N-*di-Me:* ***20-(Dimethylamino)-3-oxopregna-1,4-dien-18-al***
[91147-29-4]
$C_{23}H_{33}NO_2$ 355.519
Alkaloid from the stem bark of *Didymeles madagascariensis* (Didymelaceae). Cryst. (Et_2O). Mp 157°. $[\alpha]_D$ +69 (c, 0.01 in $CHCl_3$).

Sánchez, V. *et al., Bull. Soc. Chim. Fr.*, Part II, 1984, 71; 1987, 877 (*isol, uv, cd, pmr, cmr, ms, struct*)

3-Amino-12-hydroxypregnan-20-one A-811



$C_{21}H_{35}NO_2$ 333.513

(3β,5α,12β)-*form*
Bokitamine
[5224-04-4]
Alkaloid from a *Holarrhena* sp. (poss. *Holarrhena wulfsbergii*) (Apocynaceae). Cryst. (EtOAc). Mp 191°.

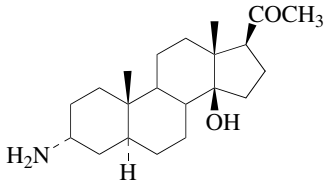
N-*Ac:*
$C_{23}H_{37}NO_3$ 375.55
Mp 247-248°. $[\alpha]_D$ +22.5 ($CHCl_3$).

N,O-*Di-Ac:*
$C_{25}H_{39}NO_4$ 417.587
Mp 202-204°.

15,16-Didehydro: 3-Amino-12-hydroxypregn-15-en-20-one. ***Kisantamine***
[69375-36-6]
$C_{21}H_{33}NO_2$ 331.497
Alkaloid from *Holarrhena congolensis* (Apocynaceae). $[\alpha]_D^{20}$ -16 (c, 0.1 in $CHCl_3$) (as *N*-Ac).

Nellé, S. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1970, **271**, 153 (*isol, struct, synth*)
Dadoun, H. *et al., Plant. Med. Phytother.*, 1978, **12**, 225; *CA*, **90**, 100106r (*deriv*)

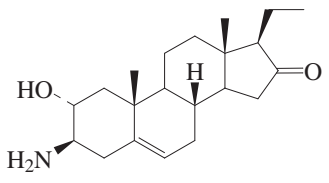
3-Amino-14-hydroxypregnan-20-one A-812



$C_{21}H_{35}NO_2$ 333.513

(3α,5α,14β)-*form* [215595-77-0]
Alkaloid from *Holarrhena curtisii*. Cytotoxic and leishmanicidal agent. Amorph. $[\alpha]_D$ +23.3 (c, 0.26 in $CHCl_3$).
Kam, T.-S. *et al., J. Nat. Prod.*, 1998, **61**, 1332-1336 (*isol, pmr, cmr, ms*)

3-Amino-2-hydroxypregn-5-en-16-one A-813



$C_{21}H_{33}NO_2$ 331.497

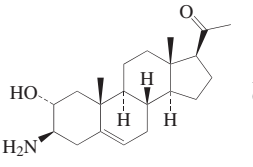
(2α,3β)-*form*
N-*Me: 2-Hydroxy-3-(methylamino)-pregn-5-en-16-one.* ***Kurchiphyllamine***
[1433-87-0]
$C_{22}H_{35}NO_2$ 345.524
Alkaloid from the leaves of *Holarrhena antidysenterica* (Apocynaceae). Mp 161°. $[\alpha]_D$ -211 (c, 1.3 in $CHCl_3$).

N,N-*Di-Me: 3-(Dimethylamino)-2-hydroxypregn-5-en-16-one.* ***Kurchiphylline***
[1433-88-1]
$C_{23}H_{37}NO_2$ 359.551
Alkaloid from the leaves of *Holarrhena antidysenterica* (Apocynaceae). Mp 184°. $[\alpha]_D$ -173 (c, 1 in $CHCl_3$).

N,N-*Di-Me,* O-*Ac:* Mp 125°.

Janot, M.-M. *et al., Bull. Soc. Chim. Fr.*, 1966, 1212-1216 (*Kuchiphyllamine, Kurchiphylline*)

3-Amino-2-hydroxypregn-5-en-20-one A-814



Absolute Configuration

$C_{21}H_{33}NO_2$ 331.497

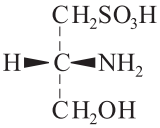
(2α,3β)-*form*
N,N-*Di-Me: 3-(Dimethylamino)-2-hydroxypregn-5-en-20-one.* ***Kurchiline***
$C_{23}H_{37}NO_2$ 359.551
Alkaloid from the leaves of *Holarrhena antidysenterica* (Apocynaceae). Mp 219°. $[\alpha]_D$ +46 (c, 1 in $CHCl_3$).

N,N-*Di-Me,* O-*Ac:* Mp 139°.

Ghosh, S. *et al., J. Indian Chem. Soc.*, 1928, **5**, 477 (*isol*)
Janot, M.-M. *et al., Bull. Soc. Chim. Fr.*, 1964, 2158 (*isol, ir, pmr, ms, struct*)

2-Amino-3-hydroxy-1-propanesulfonic acid A-815

Cysteinolic acid
[3687-17-0]



(*R*)–*form*

$C_3H_9NO_4S$ 155.174

Stereochem. and registry nos. are confused. Wickberg states that the L-form was isol., but his exptl. work shows clearly that it was D (i.e. *S* as it is related to D-Cysteine). CAS uses the same registry no. for L- (in 8CI) and (*S*-)(in 10CI).

(*R*)-*form*
L-form
Isol. from red alga *Polysiphonia fastigiata*. Mp 279-281° dec. $[\alpha]_D$ -6 (c, 2.0 in H_2O).

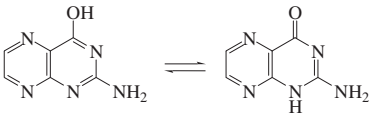
(*S*)-*form*
D-form
Isol. from brown (e.g. *Hijikia fusiforme*) and green (*Ulva pertusa*, *Enteromorpha linza*) algae. Also from diatoms, e.g. *Navicula pelliculosa* and from the starfish *Asterina pectinifera*. Mp 279-282° dec. $[\alpha]_D$ +7 (H_2O).

[15509-62-3 , 16421-58-2 , 56942-41-7]

Wickberg, B. *et al., Acta Chem. Scand.*, 1957, **11**, 506 (*isol*)
Yoneda, T. *et al., CA*, 1967, **66**, 113388p (*isol*)
Higashiura, K. *et al., J.O.C.*, 1992, **57**, 764 (*synth*)

2-Amino-4-hydroxypteridine A-816

2-Amino-4(1H)-pteridinone, 9CI. 2-Amino-4-pteridinol. ***Pterin****. Pteridoxamine*
[2236-60-4]



$C_6H_5N_5O$ 163.138

4-One-form predominates. Isol. from numerous natural sources. Yellow cryst. (HCOOH aq.). Fluoresces: violet in neutral/alkaline soln.: yellow-green in acid soln.

► UO3505000

8-Oxide: [42346-89-4]
$C_6H_5N_5O_2$ 179.138
Bright-yellow cryst. Mp 360°.

2-N-*Ac:*
$C_8H_7N_5O_2$ 205.176
Cryst. (propanol). Mp 350°. Browns at 270°.

2-N-*Me: 2-(Methylamino)-4(1H)-pteridinone, 9CI*
[13005-84-0]
$C_7H_7N_5O$ 177.165
Pale-yellow cryst. Mp 350°.

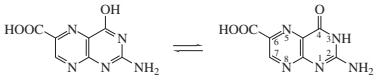
N^1-*Me: 2-Amino-1-methyl-4(1H)-pteridinone, 9CI*
[13005-86-2]
$C_7H_7N_5O$ 177.165
Mp 335-337° dec.

[938-42-1]

Dick, G.P.G. *et al., J.C.S.*, 1955, 1379 (*synth*)
Pfleiderer, W. *et al., Chem. Ber.*, 1960, **93**, 2015 (*synth, struct*)
Brown, D.J. *et al., J.C.S.*, 1961, 4413 (*tautom*)
Viscontini, M. *et al., Helv. Chim. Acta*, 1963, **46**, 1181 (*pmr*)
McCormack, J.J. *et al., J.O.C.*, 1964, **29**, 3370 (*synth*)
Müller, G. *et al., Helv. Chim. Acta*, 1973, **56**, 2680 (*cmr*)
Williams, V.P. *et al., J. Het. Chem.*, 1973, **10**, 827 (*ms*)
Albert, A. *et al., J.C.S. Perkin 2*, 1973, 1101 (*uv*)
Taylor, E.C. *et al., J.O.C.*, 1975, **40**, 2341 (*oxide*)
Tobias, S. *et al., Chem. Ber.*, 1985, **118**, 354 (*cmr*)

2-Amino-4-hydroxy-6-pteridinecarboxylic acid A-817

*2-Amino-1,4-dihydro-4-oxo-6-pteridinecarboxylic acid. 2-Amino-4(3*H*)-pteridinone-6-carboxylic acid. Pterin-6-carboxylic acid. Ranachrome 5*
[948-60-7]



$C_7H_5N_5O_3$ 207.148
Isol. from various biol. sources incl. human blood, sheep pineals, various amphibians, fish and soybeans. Also from the Chinese drug Jin Yu. Metab. of Pteroylglutamic acid, P-772. Cream cryst. Mp 360°.

Me ester: [31010-61-4]
$C_8H_7N_5O_3$ 221.175
Cryst. (DMF). Mp 285° dec.

2-N-*Ac:* [31010-65-8]
$C_9H_7N_5O_4$ 249.185
Cryst. (MeOH). Mp 210°.

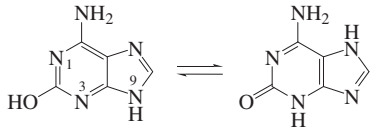
2-N-*Ac, Me ester:* [31010-67-0]
$C_{10}H_9N_5O_4$ 263.212
Mp 283°.

7,8-Dihydro: ***7,8-Dihydropterin-6-carboxylic acid***
$C_7H_8N_5O_3$ 210.172
Light emitter of the millipede *Luminodesmus sequoiae.*

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 896C (*ir*)
Baugh, C.M. *et al., J.O.C.*, 1964, **29**, 3610 (*synth*)
Pfleiderer, W. *et al., Annalen*, 1970, **741**, 64 (*synth, derivs*)
Iwanami, Y. *et al., Tet. Lett.*, 1972, 3219 (*ms*)
Nair, M.G. *et al., J.O.C.*, 1973, **38**, 2185 (*synth*)
Mengel, R. *et al., Chem. Ber.*, 1978, **111**, 3790 (*synth*)
Kohashi, M. *et al., J. Biochem. (Tokyo)*, 1980, **87**, 1581 (*isol*)
Zeitler, M. *et al., Methods Enzymol.*, 1986, **122**, 273 (*isol*)
Sato, N. *et al., J. Het. Chem.*, 1988, **25**, 1737 (*synth, derivs*)
Suga, T. *et al., J. Nat. Prod.*, 1988, **51**, 713 (*isol*)
Kuse, M. *et al., Bioorg. Med. Chem. Lett.*, 2001, **11**, 1037-1040 (*7,8-dihydro*)

6-Amino-2-hydroxypurine A-818

*6-Amino-1,3-dihydro-2*H*-purin-2-one, 9CI. Isoguanine. Guanopterin*
[3373-53-3]



$C_5H_5N_5O$ 151.127
Several tautomers possible. Aglycone from *Croton tiglium*. Isol. from the wings of the butterfly *Prioneris thestylis.* Amorph. powder. Mp 360°. pK_{a1} 4.47; pK_{a2} 9.03 (20°).

9-(β-D-Arabinofuranosyl): [38819-11-3]
$C_{10}H_{13}N_5O_5$ 283.243
Light yellow powder. Mp 269-272° dec. $[\alpha]_D^{24}$ +29.5 (c, 0.5 in H_2O).

9-β-D-Ribofuranosyl: see Isoguanosine

*1-Me: 6-Amino-1,3-dihydro-1-methyl-2*H*-purin-2-one, 9CI*
[73691-67-5]
$C_6H_7N_5O$ 165.154
Powder. Mp 300°.

1-Me, 9-β-D-arabinofuranosyl: Ara-doridosine
[77856-33-8]
$C_{11}H_{15}N_5O_5$ 297.27
Shows antiviral props. Plates (H_2O). Mp 223-225° dec. $[\alpha]_D^{24}$ +25.5 (c, 0.5 in H_2O).

*1-Me, 6-*N*-Ac:* [98933-71-2]
$C_8H_9N_5O_2$ 207.191
Cryst. (MeOH). Mp 222-223° Mp 274° dec.

1-Me, 6,9-di-Ac: [98933-69-8]
$C_{10}H_{11}N_5O_3$ 249.229
Cryst. Mp 222-223° dec. Exists as 6-imino tautomer.

*6-*N*-Me: 6-(Methylamino)-1,3-dihydro-2*H*-purin-2-one, 9CI.* ***2-Hydroxy-6-methylamino-9*H*-purine***
[24391-35-3]
$C_6H_7N_5O$ 165.154
Isol. from the blue coral NIO-156 and from the bacterium *Pseudomonas syringae.* Cytokinin. Sol. H_2O. λ_{max} 265 ; 282 (MeOH) (Berdy).

1,3-Di-Me: ***1,3-Dimethylisoguanine****. 1,3-Dimethylisoguaninium*
[191614-40-1]
$C_7H_9N_5O$ 179.181
Isol. from the sponges *Amphimedon viridis, Amphimedon paraviridis* and *Xestospongia exigua*. Also from *Cnemidocarpa bicornuta*. Powder; cryst. (as salt). Isol. by different groups both as the free base and as salts protonated on the imino N. λ_{max} 207 (log ϵ 4.5); 295 (log ϵ 3.9) (MeOH).

3,7-Di-Me: ***3,7-Dimethylisoguanine***
[18904-09-1]
$C_7H_9N_5O$ 179.181
Isol. from the Caribbean sponge *Agelas longissima* and *Zyzzya fuliginosa*. Sol. MeOH, butanol. λ_{max} 245 (ϵ 8500); 285 (ϵ 9900) (MeOH) (Berdy).

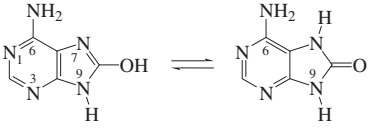
N^3,O-*Di-Me:* ***Mucronatine***†
$C_7H_9N_5O$ 179.181
Isol. from the sponge *Stryphnus mucronatus.* Solid. Mp 200-202°. Tautomeric.

*7,8-Dihydro, 6-*N*-(3-methylbutyl): 7,8-Dihydro-2-hydroxy-*N^6*-(3-methylbutyl)adenine. 7,8-Dihydro-2-hydroxy-6-(3-methylbutylamino)purine*
[188542-24-7]
$C_{10}H_{17}N_5O$ 223.277
Constit. of *Artemisia annua*.

Spies, J.R. *et al., J.A.C.S.*, 1939, **61**, 350-351 (*Isoguanine, isol*)
Purrmann, R. *et al., Annalen*, 1940, **544**, 182-190 (*Isoguanine, isol*)
Taylor, E.C. *et al., J.A.C.S.*, 1959, **81**, 2442-2448 (*Isoguanine, synth, uv*)
Veillard, A. *et al., J. Chim. Phys.*, 1962, **59**, 1056-1066 (*pmr*)
Pal, B.C. *et al., J.C.S.*, 1964, 400-405 (*ir*)
Pettit, G.R. *et al., J. Nat. Prod.*, 1976, **39**, 363-367 (*Isoguanine, isol*)
Yamazaki, A. *et al., Nucleic Acids Res.*, 1976, **3**, 251-259 (*Isoguanine, synth*)
Nachman, R.J. *et al., J.C.S. Perkin 1*, 1985, 1315-1321 (*1-Me, 1-Me-6,9-di-Ac, synth, cmr, pmr, ms, uv, ir, cryst struct*)
Farooqi, A.H.A. *et al., Phytochemistry*, 1990, **29**, 2061-2063 (*6-N-Me, isol*)
Cafieri, F. *et al., Tet. Lett.*, 1995, **36**, 7893-7896 (*3,7-Dimethylisoguanine*)
Shukla, A. *et al., J. Indian Chem. Soc.*, 1997, **74**, 59 (*Artemisia annua constit*)
Mitchell, S.S. *et al., J. Nat. Prod.*, 1997, **60**, 727-728 (*1,3-Dimethylisoguanine*)
Chehade, C.C. *et al., J. Nat. Prod.*, 1997, **60**, 729-731 (*1,3-Dimethylisoguanine*)
Do Prado, G.M.T. *et al., Acta Cryst. C*, 1999, **55**, 1585-1587 (*trihydrate, 1,3-di-Me, cryst struct*)
Bourguet-Kondracki, M.-L. *et al., Tet. Lett.*, 2001, **42**, 7257-7259 (*Mucronatine*)
Jeong, S-J. *et al., Chem. Pharm. Bull.*, 2003, **51**, 731-733 (*1,3-Dimethylisoguaninium*)
Blas, J.R. *et al., J.A.C.S.*, 2004, **126**, 154-164 (*tautom*)
Panthong, K. *et al., Acta Cryst. C*, 2006, **62**, o193-o195 (*1,3-Dimethylisoguanine, isol, cryst struct*)
Bats, J.W. *et al., Acta Cryst. E*, 2006, **62**, 2040-2042 (*cryst struct*)

6-Amino-8-hydroxypurine A-819

*6-Amino-1,7-dihydro-8*H*-purin-8-one, 9CI. 6-Amino-8-purinol, 8CI. 7,8-Dihydro-8-oxoadenine. 8-Hydroxyadenine. 8-Oxoadenine*
[21149-26-8]



$C_5H_5N_5O$ 151.127
8-Oxo-form predominates. Other tautomers are possible. Results *in vivo* from hydroxylation of DNA by OH radicals. Found in the urine of humans suffering from leukaemia. Isol. from the ascidian *Symplegma rubra* and a Thorectidae sponge. Potential cause of DNA mismatch in mutagenesis. Needles + $^1/_2H_2SO_4$. Mp 300° (H_2SO_4). Unlike 2-Amino-6,8-dihydroxypurine, A-753, is not particularly mutagenic.

*6-*N*-Me:* [89073-90-5]
$C_6H_7N_5O$ 165.154
Needles (MeOH aq.). Mp >300°. λ_{max} 273 (ϵ 16900) (H_2O).

*9-Me: 6-Amino-7,9-dihydro-9-methyl-8*H*-purin-8-one, 9CI. 9-Methyl-8-oxoadenine*
[119138-92-0]
$C_6H_7N_5O$ 165.154
Isol. from a Thorectidae sponge. Prisms (H_2O). Mp 300°.

*6-*N*,9-Di-Me: 7,9-Dihydro-9-methyl-6-(methylamino)-8*H*-purin-8-one, 9CI.* N^6*,9-Dimethyl-8-oxoadenine*
[119138-91-9]
$C_7H_9N_5O$ 179.181
Needles (EtOH). Mp 300°.

N^6*-(3,5-Dibromo-4-hydroxybenzyl):*

Aplidiamine
[188348-59-6]
$C_{12}H_9Br_2N_5O_2$ 415.043
Isol. from the marine ascidian *Aplidiopsis* sp. Sol. H_2O, MeOH. Mp 241-243°. λ_{max} 221 (ϵ 17300); 273 (ϵ 15800) (MeOH/CH_2Cl_2 1:1). λ_{max} 223 (ϵ 19000); 290 (ϵ 15200) (MeOH/CH_2Cl_2/HCl). λ_{max} 223 (ϵ 52500); 250 (sh) ; 283 (ϵ 30700); 313 (sh) ; 377 (sh) (MeOH/CH_2Cl_2/NaOH).

1*H*-*form*

1-Me: [186391-69-5]
$C_6H_7N_5O$ 165.154
Needles +1H_2O (MeOH aq.). Mp > 300°. Various tautomers possible. λ_{max} 216 (ϵ 22000) (H_2O).

1,9-Di-Me: see 1,6,7,9-Tetrahydro-6-imino-1,9-dimethyl-8*H*-purin-8-one, T-194

3*H*-*form*

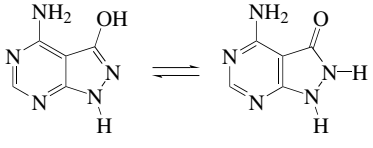
*3-Me: 6-Amino-3,7-dihydro-3-methyl-8*H*-purin-8-one. 8-Hydroxy-3-methyladenine*
[185201-03-0]
$C_6H_7N_5O$ 165.154
Needles. Mp > 300°. pK_a 4.1 (30°,H_2O). λ_{max} 232 (ϵ 18800) (95% EtOH).

*3,9-Di-Me: 3,6,7,9-Tetrahydro-6-imino-3,9-dimethyl-8*H*-purin-8-one, 9CI*
[198758-37-1]
[198023-18-6]
$C_7H_9N_5O$ 179.181
Plates (HCl aq.) (as hydrochloride). Mp 274-276° dec. (hydrochloride).

Robins, R.K. *et al., J.A.C.S.*, 1958, **80**, 6671-6679 (*synth, uv*)
Fujii, T. *et al., Chem. Pharm. Bull.*, 1990, **38**, 2146-2150 (*Me derivs, synth, ir, uv, pmr*)
Brown, T. *et al., Chem. Br.*, 1993, **29**, 484-486 (*rev*)
Itaya, T. *et al., Chem. Pharm. Bull.*, 1996, **44**, 2025-2032; 2318-2321; 1997, **45**, 1582-1588; 1867-1869 (*synth, ir, uv, pmr, bibl, Me derivs*)
Kang, H. *et al., Tet. Lett.*, 1997, **38**, 941-944 (*Aplidiamine*)
Itaya, T. *et al., Chem. Pharm. Bull.*, 1999, **47**, 1297-1300 (*Aplidiamine, synth, struct*)
Lindsay, B.S. *et al., J. Nat. Prod.*, 1999, **62**, 1573-1575 (*Symplegma rubra constit*)
Madyastha, K.M. *et al., J.C.S. Perkin 1*, 1999, 677-680 (*isol*)
Makarieva, T.N. *et al., Nat. Prod. Commun.*, 2006, **1**, 711-714 (*9-Methyl-8-oxoadenine, isol*)

4-Amino-3-hydroxy-1*H*-pyrazolo[3,4-*d*]pyrimidine A-820

*4-Amino-1,2-dihydro-3*H*-pyrazolo[3,4-d]pyrimidin-3-one, 9CI. **Akalone***
[128850-54-4]

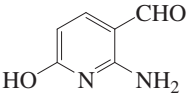


$C_5H_5N_5O$ 151.127
Prod. by the marine bacterium *Agrobacterium aurantiacum* and *Flavobacterium* sp. N-81106. Xanthine oxidase inhibitor. Powder or light green needles. Sol. bases, DMSO; poorly sol. MeOH, hexane, $CHCl_3$. Mp > 350°. λ_{max} 269 (ϵ 1690) (H_2O).

Anderson, J.D. *et al., J. Het. Chem.*, 1990, **27**, 439-453 (*synth*)
Japan. Pat., 1993, 93 317 070; *CA*, **120**, 189879d (*isol*)
Izumida, H. *et al., J. Mar. Biotechnol.*, 1995, **2**, 115-118 (*isol, ir, cmr, pmr*)

2-Amino-6-hydroxy-3-pyridinecarboxaldehyde A-821

2-Amino-3-formyl-6-hydroxypyridine



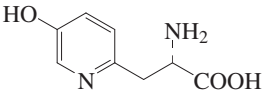
$C_6H_6N_2O_2$ 138.126

Me ether: 2-Amino-6-methoxy-3-pyridinecarboxaldehyde. 2-Amino-3-formyl-6-methoxypyridine
$C_7H_8N_2O_2$ 152.152
Alkaloid from the basidiomycete *Cortinarius umidicola*. Needles (MeOH). Mp 186-187°. λ_{max} 205 (log ϵ 4.32); 252 (log ϵ 4.38) (MeOH).

Hu, L. *et al., Z. Naturforsch., C*, 2003, **58**, 659-662 (*isol, pmr, cmr, ms*)

α-Amino-5-hydroxy-2-pyridinepropanoic acid, 9CI A-822

*β-(5-Hydroxy-2-pyridyl)alanine. **Azatyrosine**. Antibiotic SF 1346. SF 1346*



$C_8H_{10}N_2O_3$ 182.179
Amino acid antibiotic.

(S)-form [58525-82-9]
Isol. from *Streptomyces chibaensis*. Antiviral, antitumour, antibacterial and antineoplastic agent. Also shows antiinflammatory activity. Cryst. (H_2O). Sol. H_2O, MeOH, butanol-H_2O, bases; fairly sol. EtOH; poorly sol. Me_2CO, hexane. Mp 262-263° dec. $[\alpha]_D^{25}$ -33 (c, 1.0 in H_2O). $[\alpha]_D$ +55 (c, 1.1 in 1*M* HCl). λ_{max} 219 (E1%/1cm 330); 280 (E1%/1cm 140); 320 (E1%/1cm 15) (H_2O) (Berdy). λ_{max} 228 (E1%/1cm 175); 289 (E1%/1cm 235) (HCl) (Berdy). λ_{max} 241 (E1%/1cm 445); 302 (E1%/1cm 165) (NaOH) (Berdy).

Hydrochloride (1:3):
Hygroscopic foam + 2½H_2O. $[\alpha]_D^{25}$ +28 (c, 0.06 in 1*M* HCl).

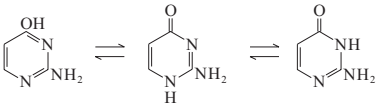
Me ester: [58485-16-8]
Cryst. (as hydrochloride). Mp 224-225° dec. (hydrochloride). $[\alpha]_D^{20}$ +38 (c, 1.0 in H_2O).

(±)-*form* [943-82-8]
Prisms (H_2O). Mp 272-273° dec.

Inouye, S. *et al., Chem. Pharm. Bull.*, 1975, **23**, 2669 (*isol*)
Harris, R.L.N. *et al., Aust. J. Chem.*, 1977, **30**, 649 (*isol*)
Ger. Pat., 1978, 2 823 346; *CA*, **90**, 133025s (*synth, props*)
Fukuyasu, H. *et al., CA*, 1984, **101**, 48223 (*props*)
Izawa, M. *et al., Cancer Res.*, 1992, **52**, 1628-1630 (*pharmacol*)
Schow, S.R. *et al., J.O.C.*, 1994, **59**, 6850 (*synth*)
Ye, B. *et al., J.O.C.*, 1995, **60**, 2640 (*synth, ir, pmr*)
Coper, M.S. *et al., Bioorg. Med. Chem. Lett.*, 1996, **6**, 2613 (*synth*)
Myers, A.G. *et al., J.O.C.*, 1996, **61**, 813 (***synth, ir, pmr, bibl***)
Monden, Y. *et al., Ann. N.Y. Acad. Sci.*, 1999, **886**, 109-121 (*rev, activity*)

2-Amino-4-hydroxypyrimidine A-823

*2-Amino-4(1*H*)-pyrimidinone, 9CI. 2-Amino-4-pyrimidinol. Isocytosine*
[108-53-2]



1*H–form* 3*H–form*

$C_4H_5N_3O$ 111.103
NH-forms predominate. Prisms (H_2O). Mp 280° dec. pK_{a1} 3.91; pK_{a2} 9.54 (25°).

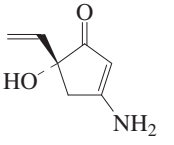
1*H*-*form*

*1-β-D-Ribopyranosyl: **Isocytidine***
[489-59-8]
$C_9H_{13}N_3O_5$ 243.219
Isol. from a strain of *Penicillium brevicompactum*. Glass. λ_{max} 256 nm, λ_{min} 240 nm (H_2O, pH1).

Lis, A.W. *et al., Biochim. Biophys. Acta*, 1962, **61**, 250 (*Isocytidine*)

3-Amino-5-hydroxy-5-vinyl-2-cyclopenten-1-one A-824

3-Amino-5-ethenyl-5-hydroxy-2-cyclopenten-1-one, 9CI



$C_7H_9NO_2$ 139.154
Incorrect struct. given in CAS.

(R)-form
Myrothenone B
[878633-73-9]
[858126-05-3]
Prod. by *Streptomyces* sp. GT-20026114 obt. from the mangrove plant *Aegiceras comiculatum* and from a marine-derived fungus *Myrothecium* sp. Yellowish oil. $[\alpha]_D^{20}$ +127.1 (c, 1.54 in MeOH). $[\alpha]_D^{20}$ +35 (c, 0.6 in MeOH). λ_{max} 270 (MeOH). λ_{max} 203 (log ϵ 3.7); 268 (log ϵ 4) (MeOH).

N-*Formyl:* ***Myrothenone A***
$C_8H_9NO_3$ 167.164
Prod. by *Myrothecium* sp. Tyrosinase inhibitor. Oil. $[\alpha]_D^{20}$ +61 (c, 0.6 in MeOH). λ_{max} 203 (log ϵ 3.7); 272 (log ϵ 4.2) (MeOH).

N-*Methoxycarbonyl:* [878633-74-0]
$C_9H_{11}NO_4$ 197.19
Prod. by *Streptomyces* sp. GT-20026114. Yellowish oil. $[\alpha]_D^{20}$ +67.6 (c, 1.16 in MeOH). λ_{max} 261 (MeOH).

N,N-*Di-Me:* ***3-(Dimethylamino)-5-hydroxy-5-vinyl-2-cyclopenten-1-one***. *3-(Dimethylamino)-5-ethenyl-5-hydroxy-2-cyclopenten-1-one*
[179422-20-9]
Isol. from *Trichoderma koningii*. Amorph. powder. Sol. H_2O, MeOH, $CHCl_3$, DMSO; fairly sol. Me_2CO, MeCN, EtOAc; poorly sol. hexane. Mp 137-139°. $[\alpha]_D^{20}$ +69.3 (c, 0.2 in H_2O). Biol. inactive. λ_{max} 280 (ϵ 30000) (MeOH).

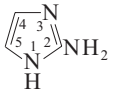
N-*[2-(4-Hydroxyphenyl)ethyl]:* [878633-75-1]
$C_{15}H_{17}NO_3$ 259.304
Prod. by *Streptomyces* sp. GT-20026114. Yellowish oil. $[\alpha]_D^{20}$ +59.3 (c, 1.73 in MeOH). λ_{max} 232 (MeOH).

2-Bromo: 3-Amino-2-bromo-5-hydroxy-5-vinyl-2-cyclopenten-1-one. ***2-Bromomyrothenone B***
[929276-07-3]
$C_7H_8BrNO_2$ 218.05
Prod. by a marine-derived *Botrytis* sp. Red oil. $[\alpha]_D^{20}$ +61 (c, 0.9 in MeOH). λ_{max} 210 (log ϵ 3.7); 277 (log ϵ 4.2) (MeOH).

Mukhopadhyay, T. *et al., J. Antibiot.*, 1996, **49**, 210-211 (*N,N-di-Me*)
Li, X. *et al., Chem. Pharm. Bull.*, 2005, **53**, 453-455 (*Myrothenones A,B*)
Lin, W. *et al., J. Antibiot.*, 2005, **58**, 594-598 (*isol, cd, pmr, cmr, ms*)
Li, X. *et al., J. Nat. Prod.*, 2007, **70**, 307-309 (*2-Bromomyrothenone B*)

2-Aminoimidazole, 8CI A-825

*1*H-*Imidazol-2-amine, 9CI. 2-Aminoglyoxaline*
[7720-39-0]



$C_3H_5N_3$ 83.093
Isol. from the sponges *Halichondria* sp. and *Reniera cratera*. Also occurs in the seeds of the legume *Mundulea sericea*, and has been shown to be a precursor of the antibiotic 2-Nitroimidazole, N-250 in *Streptomyces eurocidicus*.

Hydrochloride: [57575-96-9]
Mp 152°. Hygroscopic.

Nitrate: Mp 135-136°.

Sulfate (2:1): [1450-93-7]
[42383-61-9]
Mp 270° dec.

Picrate: Mp 236°.

2-N-*Ac: 2-Acetamidoimidazole*
[52737-49-2]
$C_5H_7N_3O$ 125.13
Mp 285° (270-275°) dec.

1-Me: [6646-51-1]
$C_4H_7N_3$ 97.119
Prismatic needles (EtOH/EtOAc) (as hydrochloride). Mp 84° (hydrochloride).

[1450-94-8]

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 614D (*ir*)
Lawson, A. *et al., J.C.S.*, 1956, 307 (*synth*)
Seki, Y. *et al., J. Biochem. (Tokyo)*, 1970, **67**, 389 (*isol, ir, pmr*)
Cimino, G. *et al., Comp. Biochem. Physiol., B: Comp. Biochem.*, 1974, **47**, 895 (*isol, uv, pmr, ms*)
Fellows, L.E. *et al., Phytochemistry*, 1977, **16**, 1399 (*isol, pmr, ms*)
Kirk, K.L. *et al., J.O.C.*, 1978, **43**, 4381-4383 (*synth, pmr*)
Utkina, N.K. *et al., Khim. Prir. Soedin.*, 1984, 124-125; *Chem. Nat. Compd. (Engl. Transl.)*, 1984, **20**, 126-127 (*isol, Halichondria*)
Weinmann, H. *et al., Tet. Lett.*, 2002, **43**, 593-595 (*synth, ir, pmr*)
Yano, S. *et al., Chem. Pharm. Bull.*, 2004, **12**, 3443-3450 (*1-Me, synth, pmr*)

4(5)-Aminoimidazole A-826

*1*H-*Imidazol-4-amine. 4-Aminoglyoxaline*
[4919-03-3]
$C_3H_5N_3$ 83.093
Present in biotin-restricted yeast. Mp 184° (as hydrochloride).

N^4-*Ac:* [51741-72-1]
$C_5H_7N_3O$ 125.13
Cryst. (dioxan). Sol. H_2O. Mp 226°.

N^4-*Ac, picrate:* Mp 208°.

1H-form

*1-Benzyl: 4-Amino-1-benzyl-1*H-*imidazole*
[53594-77-7]
$C_{10}H_{11}N_3$ 173.217
Cryst, (MeCN) (as hydrochloride). Mp 179-182° (hydrochloride). CAS no. refers to hydrochloride.

1-Benzyl, N^4-*Ac:* [7524-03-0]
$C_{12}H_{13}N_3O$ 215.254
Cryst. (EtOAc). Mp 168-168.8°.

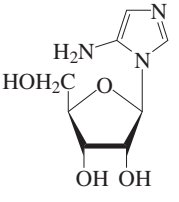
3H-form

*3-Me: 5-Amino-1-methyl-1*H-*imidazole*
[66787-75-5]
$C_4H_7N_3$ 97.119
Purple solid. Mp 107-109°.

Hunter, G. *et al., Can. J. Res., Sect. B*, 1941, **19**, 296; *CA*, **36**, 1321 (*synth, N-Ac*)
Whitaker, J.M. *et al., Arch. Biochem. Biophys.*, 1962, **96**, 541 (*isol*)
Coburn, M.D. *et al., J. Het. Chem.*, 1970, **7**, 1391-1393 (*synth*)
Buchman, R. *et al., J. Med. Chem.*, 1974, **17**, 1168-1171 (*N-benzyl derivs*)
Al-Shaar, A.H.M. *et al., J.C.S. Perkin 1*, 1992, 2779 (*3-Me*)

5-Aminoimidazole riboside A-827

*1-β-D-Ribofuranosyl-1*H-*imidazol-5-amine, 9CI*
[30597-39-8]

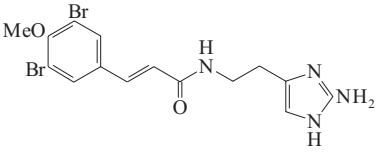


$C_8H_{13}N_3O_4$ 215.208
Prod. by *Escherichia coli* strain K-12. Hygroscopic pale grey solid. Mp 92-94°. λ_{max} 300 (no solent reported).

5′-Phosphate: 5-Aminoimidazole ribonucleotide. AIR
[25635-88-5]
$C_8H_{14}N_3O_7P$ 295.188
Intermed. in biosynth. of purine ribonucleotides. Precursor of thiamine in *Escherichia coli*. Solid.

Love, S.H. *et al., Biochim. Biophys. Acta*, 1959, **35**, 367 (*isol*)
Schrimsher, J.L. *et al., Biochemistry*, 1986, **25**, 4356-4365 (*synth, pmr, cmr*)
Bhat, B. *et al., J.A.C.S.*, 1990, **112**, 4891-4897 (*synth, pmr*)
Firestine, S.M. *et al., Biochemistry*, 1994, **33**, 11917-11926 (*synth, ir, pmr, cmr*)
Humphries, M.J. *et al., Synthesis*, 1999, 985-992 (*synth, pmr*)

N-[2-(2-Amino-1*H*-imidazol-4-yl)ethyl]-3-(3,5-dibromo-4-methoxyphenyl)-2-propenamide, 9CI A-828



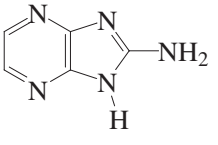
$C_{15}H_{16}Br_2N_4O_2$ 444.125

(E)-form [160491-72-5]
Metab. from the Caribbean sponge *Verongula* sp. Amorph. solid (as trifluoroacetate). CAS no. refers to trifluoroacetate.

Ciminiello, P. *et al., J. Nat. Prod.*, 1994, **57**, 1564 (*isol, uv, ir, pmr, cmr, struct*)

2-Amino-1*H*-imidazo[4,5-*b*]pyrazine A-829

*1*H-*Imidazo[4,5-*b*]pyrazin-2-amine.* ***Zarzissine***

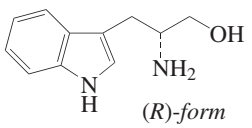


$C_5H_5N_5$ 135.128
Struct. of Zarzissine revised in 2001. Alkaloid from the Mediterranean sponge *Anchinoe paupertas*. Cytotoxic. Active against *Candida*, bacteria and some tumour lines. Cryst. (H_2O or MeOH). Mp > 300° dec. λ_{max} 217 (sh) ; 244 (log ϵ 3.3); 318 (log ϵ 4.03) (MeOH). λ_{max} 206 (log ϵ 4.31); 230 (sh) ; 282 (sh) ; 326 (log ϵ 5.39) (MeOH/NaOH).

Bouaicha, N. *et al., J. Nat. Prod.*, 1994, **57**, 1455 (*isol*)
Wan, Z.K. *et al., Tetrahedron*, 2001, **57**, 5497-5507 (*synth, uv, pmr, cmr*)

2-Amino-3-(3-indolyl)-1-propanol A-830

β-Amino-1H-indole-3-propanol, 9CI. Tryptophanol
[526-53-4]



(*R*)-*form*

$C_{11}H_{14}N_2O$ 190.244
► NM1320000

(*R*)-*form*
D-form
[52485-52-6]
Cryst. (EtOAc). Mp 80-81°. $[\alpha]_D^{25}$ +20.9 (c, 1 in MeOH).
Oxalate salt (1:1): [58889-66-0]
Mp 202-203°. $[\alpha]_D^{20}$ +22.1 (c, 1.02 in H_2O).

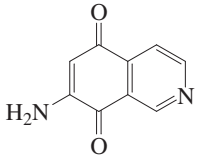
(*S*)-*form*
L-form
[2899-29-8]
Cryst. (EtOAc). Mp 84-85°. $[\alpha]_D^{25}$ -20.5 (c, 1 in MeOH).
Oxalate salt (1:1): [2899-30-1]
Mp 203-205°. $[\alpha]_D^{20}$ -22.4 (c, 1.03 in H_2O).
N-*Ac:* **N-*Acetyltryptophanol***
$C_{13}H_{16}N_2O_2$ 232.282
Prod. by *Streptomyces pleomorphus* (strain YIM33176). Amorph. powder. $[\alpha]_D^{25}$ +27 (c, 1.2 in $CHCl_3$). λ_{max} 221 (log ϵ 4.49); 281 (log ϵ 3.77) (no solvent reported).

(±)-*form* [154-09-6]
Cryst. (C_6H_6). Mp 85-86°.
Hydrochloride: [25825-57-4]
Cryst. (EtOH/Et_2O). Mp 178-179°.

Hellmann, H. *et al., Chem. Ber.*, 1958, **91**, 2290 (*synth*)
Ito, A. *et al., Chem. Pharm. Bull.*, 1975, **23**, 3106 (*synth*)
Repke, D.B. *et al., J. Het. Chem.*, 1976, **13**, 775 (*synth, pmr*)
Hvidt, T. *et al., Can. J. Chem.*, 1988, **66**, 779 (*synth, pmr, cmr*)
Li, Y.Q. *et al., Chin. Chem. Lett.*, 2005, **16**, 613-615 (*N-Acetyltryptophanol*)

7-Amino-5,8-isoquinolinedione A-831

7-Amino-5,8-isoquinolinequinone



$C_9H_6N_2O_2$ 174.159

N^7-*Me: 7-(Methylamino)-5,8-isoquinolinedione, 9CI.* ***Caulibugulone A***
[662167-15-9]
$C_{10}H_8N_2O_2$ 188.185
Alkaloid from the marine bryozoan *Caulibugula intermis.* Cytotoxic. Dark red solid. λ_{max} 237 (log ϵ 4.24); 268 (log ϵ 4.1); 451 (log ϵ 3.61) (MeOH).

N^7-*(2-Hydroxyethyl): 7-[(2-Hydroxyethyl)amino]-5,8-isoquinolinedione.* ***Caulibugulone D***
[662167-18-2]
$C_{11}H_{10}N_2O_3$ 218.212
Alkaloid from *Caulibugula intermis.* Cytotoxic. Dark orange solid. λ_{max} 273 (log ϵ 3.95); 450 (log ϵ 3.35) (MeOH).

N^7-*Me, 5-imine:* ***Caulibugulone E***
[662167-19-3]
$C_{10}H_9N_3O$ 187.201
Alkaloid from *Caulibugula intermis.* Cytotoxic. Dark orange solid (as TFA salt). λ_{max} 213 (log ϵ 3.71); 245 (log ϵ 3.75); 441 (log ϵ 3.09) (MeOH) (TFA salt).

N^7-*Me, 5-(2-hydroxyethyl)imide:* ***Caulibugulone F***
[662167-20-6]
$C_{12}H_{13}N_3O_2$ 231.254
Alkaloid from *Caulibugula intermis.* Cytotoxic. Dark orange solid (as TFA salt). λ_{max} 215 (log ϵ 3.79); 245 (log ϵ 3.75); 440 (log ϵ 3.16) (MeOH) (TFA salt).

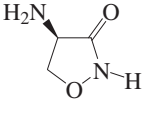
6-Chloro, N^7-*Me: 6-Chloro-7-(methylamino)-5,8-isoquinolinedione.* ***Caulibugulone B***
[662167-17-1]
$C_{10}H_7ClN_2O_2$ 222.63
Alkaloid from *Caulibugula intermis.* Cytotoxic. Dark red solid. λ_{max} 251 (log ϵ 4.03); 274 (log ϵ 3.97); 475 (log ϵ 3.36) (MeOH).

6-Bromo, N^7-*Me: 6-Bromo-7-(methylamino)-5,8-isoquinolinedione.* ***Caulibugulone C***
[662167-16-0]
$C_{10}H_7BrN_2O_2$ 267.082
Alkaloid from *Caulibugula intermis.* Cytotoxic. Dark red solid. λ_{max} 254 (log ϵ 4); 272 (log ϵ 3.97); 474 (log ϵ 3.49) (MeOH).

Milanowski, D.J. *et al., J. Nat. Prod.*, 2004, **67**, 70-73 (*Caulibugulones, isol, pmr, cmr*)
Wipf, P. *et al., Org. Biomol. Chem.*, 2004, **2**, 2173-2174 (*synth, activity*)
Alagille, D. *et al., Tet. Lett.*, 2004, **45**, 6179-6181 (*synth*)

4-Amino-3-isoxazolidinone, 9CI, 8CI A-832

Cycloserine, BAN, INN, USAN*. Cyclomycin. Closina. Micoserina. Farmiserina. Orientomycin. Oxymycin. Antibiotic 106-7. Antibiotic 5915. Antibiotic 8217. Antibiotic 17452. Antibiotic E 733A. Antibiotic I 1431. Antibiotic K 300. Antibiotic NJ 21. Antibiotic PA 94. Antibiotic Ro 1-9213. Oxamycin. Seromycin. Orientmycin. Many other names*
[4834-58-6]



(*R*)-*form*

$C_3H_6N_2O_2$ 102.093
λ_{max} 226 (ϵ 4140) (H_2O) (Derep).

(*R*)-*form* [68-41-7]
Prod. by *Streptomyces garyphalus, Streptomyces orchidaceus, Streptomyces lavendulae* and *Streptomyces nagasakiensis.* Shows antibiotic activity primarily against mycobacteria. Tuberculostatic. Cryst. Sol. H_2O, alkalis. Mp 155-156° dec. $[\alpha]_D^{23}$ +116 (c, 1.17 in H_2O). Of limited clinical use due to toxicity.
► CNS adverse effects reported when used therapeutically. LD_{50} (mus, orl) 5290 mg/kg. NY2975000
N-*Ac:*
$C_5H_8N_2O_3$ 144.13
Needles. Mp 179-180°.
N,N′-*Di-Ac:*
$C_7H_{10}N_2O_4$ 186.167
Chunky needles (Me_2CO). Mp 121-122°.

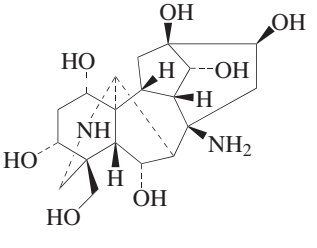
(*S*)-*form*
Levcycloserine, INN, USAN
[339-72-0]
Enzyme inhibitor used in the treatment of Gaucher's disease. Mp 146° dec. $[\alpha]_D^{20}$ -104 (c, 1 in H_2O).
► NY2976000

(±)-*form* [68-39-3]
Mp 137-140°.
► NY2974900

[339-72-0]

Aldrich Library of NMR Spectra, 2nd edn., 1983, **1**, 678B; 678C; 678D (*nmr*)
Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 810A; 810D; 811A (*ir*)
Harned, R.L. *et al., Antibiot. Chemother. (Washington, D.C.)*, 1955, **5**, 204 (*struct*)
Stammer, C.H. *et al., J.A.C.S.*, 1955, **77**, 2344; 2345; 2346; 1957, **79**, 3236 (*struct, synth, isol, resoln*)
Neuhaus, F.C. *et al., Antibiotics (N.Y.)*, 1967, **1**, 40 (*rev*)
Milne, G.W.A. *et al., Tetrahedron*, 1967, **23**, 65 (*nmr, ms*)
Lamb, J.W. *et al., Anal. Profiles Drug Subst.*, 1972, **1**, 53 (*rev, synth, anal*)
O'Brien, P. *et al., Met. Ions Biol. Syst.*, 1985, **19**, 295 (*rev, pharmacol*)
Negwer, M. *et al., Organic-Chemical Drugs and their Synonyms, 6th edn., Akademie-Verlag*, 1987, 107 (*synonyms*)
El-Obeid, H.A. *et al., Anal. Profiles Drug Subst.*, 1989, **18**, 567 (*rev*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 156
Hofmann, S.G. *et al., CNS Drug Rev.*, 2006, **12**, 208-217 (*rev, pharmacol*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, CQH000

8-Amino-4-methylaconitane-1,3,6,13,14,16,18-heptol A-833

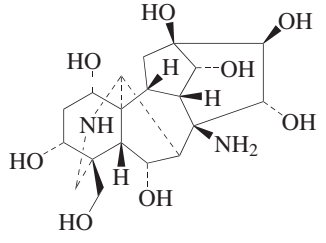


$C_{19}H_{30}N_2O_7$ 398.455

(1α,3α,5β,6α,14α,16β)-*form*

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et:* ***Hemsleyatine***
[618456-73-8]
$C_{25}H_{42}N_2O_7$ 482.616
Alkaloid from the roots of *Aconitum hemsleyanum*. Amorph. powder. Mp 89-90°. $[\alpha]_D$ +36.5 (c, 0.55 in $CHCl_3$).
Zhou, X.L. *et al., Chem. Pharm. Bull.*, 2003, **51**, 592-594 (*Hemsleyatine*)

8-Amino-4-methylaconitane-1,3,6,13,14,15,16,18-octol A-834

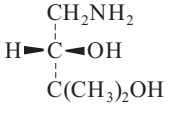


$C_{19}H_{30}N_2O_8$ 414.455

(1α,3α,5β,6α,14α,15α,16β)-*form*

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et:* ***Lasianine***
[799782-01-7]
$C_{25}H_{42}N_2O_8$ 498.615
Alkaloid from the roots of *Aconitum nagarum* var. *lasiandrum*. Needles. Mp 134-136°. $[\alpha]_D$ +12.9 (c, 0.4 in MeOH).
Ji, H. *et al., Heterocycles*, 2004, **63**, 2363-2370 (*isol, pmr, cmr*)

1-Amino-3-methyl-2,3-butanediol A-835



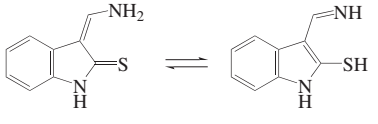
$C_5H_{13}NO_2$ 119.163

(*S*)-*form*

N-*Ac:* N-*(2,3-Dihydroxy-3-methylbutyl)acetamide, 9CI*
[81892-89-9]
$C_7H_{15}NO_3$ 161.2
Isol. from *Verbesina encelioides*. $[\alpha]_D^{25}$ -20.7 (c, 0.15 in $CHCl_3$).
Eichholzer, J.V. *et al., Phytochemistry*, 1982, **21**, 97 (*isol, struct, synth*)
Eichholzer, J.V. *et al., Aust. J. Chem.*, 1986, **39**, 1907 (*synth, abs config, pmr, cmr*)

3-(Aminomethylene)-1,3-dihydro-2*H*-indole-2-thione A-836

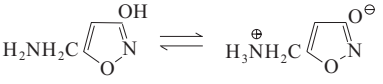
3-Aminomethyleneindole-2-thione
[212390-47-1]



$C_9H_8N_2S$ 176.242
Intermed. in the detoxification of the phytoalexins Cyclobrassinin, C-842 and Brassinin, B-284 by the fungus *Leptosphaeria maculans*/*Phoma lingam*. Mp 197-200°.
Pedras, M.S.C. *et al., Chem. Comm.*, 1998, 1565-1566 (*synth, pmr, cmr*)
Pedras, M.S.C. *et al., J. Agric. Food Chem.*, 1999, **47**, 1196-1202 (*isol, synth, pmr, cmr*)
Pedras, M.S.C. *et al., Org. Biomol. Chem.*, 2005, **3**, 2002-2007 (*isol*)

5-(Aminomethyl)-3(2*H*)-isoxazolone, 9CI A-837

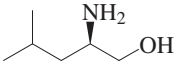
Pantherine*. Agarin. Muscimol. Pyroibotenic acid. β-Toxin*
[2763-96-4]



$C_4H_6N_2O_2$ 114.104
Exists as betaine in solid phase. Constit. of fly agaric (*Amanita muscaria*). GABA$_A$ agonist. Used in neurochemical research. Insecticide against flies. Cryst. (EtOH). Sol. H_2O. Mp 174-176° dec. λ_{max} 212 (ε 9700) (H_2O) (Berdy). λ_{max} 220 (ε 7500) (pH 12 buffer) (Berdy). λ_{max} 212 (ε 8700) (pH 2 buffer) (Berdy).
▶ LD_{50} (rat, orl) 45 mg/kg. NY3325000
Nakamura, N. *et al., Chem. Pharm. Bull.*, 1971, **19**, 46 (*synth*)
Brehm, C. *et al., Acta Chem. Scand.*, 1972, **26**, 1298 (*cryst struct*)
Krogsgaard-Larsen, P. *et al., Acta Chem. Scand., Ser. B*, 1976, **30**, 281; 1981, **35**, 311 (*synth, pharmacol*)
McCarry, B.E. *et al., Tet. Lett.*, 1981, 5153 (*synth*)
Konda, Y. *et al., Chem. Pharm. Bull.*, 1985, **33**, 1083 (*ir, pmr, cmr, struct, synth, bibl*)
Chiarino, D. *et al., Tet. Lett.*, 1986, **27**, 3181 (*synth*)
Pevarello, P. *et al., Synth. Commun.*, 1992, **22**, 1939 (*synth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, AKT750

2-Amino-4-methyl-1-pentanol, 9CI A-838

2-Amino-1-hydroxy-4-methylpentane. Leucinol
[502-32-9]



(*R*)-*form*

$C_6H_{15}NO$ 117.191

(*R*)-*form*

D-form
[53448-09-2]
Bp_{11} 98-99°.
Oxalate: Mp 216°. $[\alpha]_D^{20}$ -7.

(*S*)-*form*

L-form
[7533-40-6]
[14438-11-0] Bp_{11} 98-99°. $[\alpha]_D^{17}$ +4.15 (EtOH).

N-tert-*Butyloxycarbonyl:* [82010-31-9]
$C_{11}H_{23}NO_3$ 217.308
Oil. Bp_5 141°. $[\alpha]_D^{20}$ -28.36 (c, 0.95 in $CHCl_3$).

N-*Benzyl:* [10249-88-4]
$C_{13}H_{21}NO$ 207.315
Cryst. Mp 70°. $[\alpha]_D^{20}$ +31 (c, 1.0 in $CHCl_3$).

(±)-*form* [16369-17-8] Sol. H_2O, EtOH, spar. sol. Et_2O. Bp 198-200°.
Hydrochloride: Mp 161-162°.

(ξ)-*form*

N-*Ac:* N-*[1-(Hydroxymethyl)-3-methylbutyl]acetamide, 9CI.* N-*[2-(1-Hydroxy-4-methylpentyl)]acetamide*
[150206-13-6]
$C_8H_{17}NO_2$ 159.228
Prod. by *Streptomyces globisporus* and *Streptomyces griseus.*
Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 337A (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 541C (*nmr*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 426D; 427A (*ir*)
Karrer, W. *et al., Helv. Chim. Acta*, 1921, **4**, 90; 1948, **31**, 1617 (*synth, abs config*)
Enz, W. *et al., Helv. Chim. Acta*, 1946, **29**, 1048 (*synth, use*)
Adkins, H. *et al., J.A.C.S.*, 1947, **69**, 3039 (*synth*)
Dillon, J. *et al., J.A.C.S.*, 1975, **97**, 5409; 5825 (*config*)
Jizba, J. *et al., Coll. Czech. Chem. Comm.*, 1993, **58**, 1452-1456 (*N-Ac, isol, pmr, cmr, ms*)
Ibuka, T. *et al., J.O.C.*, 1997, **62**, 999-1015 (*N-tert-butoxycarbonyl, synth, ir, pmr*)
Braüner-Osborne, H. *et al., Org. Biomol. Chem.*, 2005, **3**, 3926-3936 (*N-benzyl*)

4-Amino-4-methyl-2-pentanone, 9CI A-839

Diacetonamine
[625-04-7]
$(H_3C)_2C(NH_2)CH_2COCH_3$
$C_6H_{13}NO$ 115.175
Isol. from *Genista hystrix* subspecies. Also isol. as a salt from *Temnopleurus hardwickii*. Mod. sol. H_2O. Bp 178-181° $Bp_{0.2}$ 25°. *G.* isolates stated to be prob. as artifacts.

Oxime: [69151-99-1]
$C_6H_{14}N_2O$ 130.189
Needles. Mp 58°. Bp_{14} 130°.
Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 460A (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 659B (*nmr*)
Haeseler, P.R. *et al., J.A.C.S.*, 1925, **47**, 1195 (*synth*)
Org. Synth., Coll. Vol., 1, 1932, 191 (*synth*)
Smith, M.E. *et al., J.A.C.S.*, 1938, **60**, 408 (*synth*)
U.S. Pat., 1950, 2 497 548; *CA*, **44**, 4494 (*synth*)
Steinegger, E. *et al., Pharm. Acta Helv.*, 1976, **51**, 172; 203 (*isol, Genista*)
Chen, L. *et al., J. Nat. Prod.*, 2006, **69**, 1787-1789 (*isol, Temnopleurus*)

1-Amino-2-methyl-2-propanol, 9CI A-840

Amino-tert-*butyl alcohol. 2-Hydroxyisobutylamine. Aminotrimethylcarbinol*
[2854-16-2]
$(H_3C)_2C(OH)CH_2NH_2$
$C_4H_{11}NO$ 89.137
Component of phospholipids of *Neurospora crassa*. d_{20}^{20} 0.93. Bp 151° Bp_{20} 81°. n_D^{18} 1.4460.

► UA6125000

Hydrochloride: [30533-50-7]
Hygroscopic cryst. Mp 62-65°.

N-*Benzoyl:* [33561-46-5]
$C_{11}H_{15}NO_2$ 193.245
Mp 108°.

N,N-*Di-Me: 1-(Dimethylamino)-2-methyl-2-propanol*
[14123-48-9]
$C_6H_{15}NO$ 117.191
Aggregation pheromone of cockroach *Blattella germanica*. Liq. Bp_{48} 60°.

N-*(2,4-Dinitrophenyl):*
Yellow-orange cryst. (C_6H_6/petrol). Mp 107-108°.

[119330-21-1]

Krassusky, K. *et al., C. R. Hebd. Seances Acad. Sci.*, 1908, **146**, 238 (*synth*)
Cairn, T.L. *et al., J.A.C.S.*, 1941, **63**, 1034 (*synth*)
Vanderwerf, C.A. *et al., J.A.C.S.*, 1954, **76**, 1231 (*synth*)
Ellman, G.L. *et al., J.A.C.S.*, 1954, **76**, 4028 (*isol*)
Pfleiderer, W. *et al., Chem. Ber.*, 1966, **99**, 3008 (*synth*)
Magnet, M. *et al., Bull. Soc. Chim. Fr.*, 1978, 539; 550 (*synth*)
Sakuma, M. *et al., Appl. Entomol. Zool.*, 1990, **25**, 355 (*N-di-Me, isol*)
Rai, B.L. *et al., J. Med. Chem.*, 1998, **41**, 3347-3359 (*synth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, ALB250

2-(Aminomethyl)-2-propenoic acid, 9CI A-841

3-Amino-2-methylenepropanoic acid. α-Methylene-β-alanine
[4452-16-8]
$H_2C{=}C(COOH)CH_2NH_2$
$C_4H_7NO_2$ 101.105
Toxic amino acid from the sponge *Fasciospongia cavernosa* and other sponges. Also prod. by a *Streptomyces* sp. Shows herbicidal props. Sol. H_2O.

Hydrochloride: [75509-28-3]
Cryst. (MeOH/Me_2CO). Mp 153-154°.

Me ester: [87375-90-4]
$C_5H_9NO_2$ 115.132
From *Fasciospongia cavernosa*. Mp 107-108° (as hydrochloride).

N-*Tetradecanoyl:* [70290-27-6]
$C_{18}H_{33}NO_3$ 311.464
Isol. from *Spongia* cf. *zimocca*.

N-*Pentadecanoyl:* [70290-28-7]
$C_{19}H_{35}NO_3$ 325.49
Isol. from *Spongia* cf. *zimocca*.

N-*Hexadecanoyl:* [70290-29-8]
$C_{20}H_{37}NO_3$ 339.517
Isol. from *Spongia* cf. *zimocca*.

N-*Tetradecanoyl, Me ester:* [70290-25-4]
$C_{19}H_{35}NO_3$ 325.49
Isol. from *Fasciospongia cavernosa* and *Spongia* cf. *zimocca*.

N-*Pentadecanoyl, Me ester:* [70290-26-5]
$C_{20}H_{37}NO_3$ 339.517
Isol. from *Fasciospongia cavernosa* and *Spongia* cf. *zimocca*.

N-*Hexadecanoyl, Me ester:* [52634-29-4]
$C_{21}H_{39}NO_3$ 353.544
Isol. from *Fasciospongia cavernosa*, a *Hippospongia* sp. and *Spongia* cf. *zimocca*.

N-*(14-Methylpentadecanoyl), Me ester:* ***Hurghamide A***
$C_{21}H_{39}NO_3$ 353.544
Isol. from a *Hippospongia* sp. Wax.

N-*(15-Methylhexadecanoyl), Me ester:* ***Hurghamide B***
$C_{22}H_{41}NO_3$ 367.571
Isol. from a *Hippospongia* sp. Wax.

N-*(Methylhexadecanoyl), Me ester:* ***Hurghamide C***
$C_{22}H_{41}NO_3$ 367.571
Isol. from a *Hippospongia* sp. Wax. Posn. of methyl on *N*-acyl group not determined.

N-*Heptadecanoyl, Me ester:* [52634-30-7]
$C_{22}H_{41}NO_3$ 367.571
Isol. from *Fasciospongia cavernosa* and a *Hippospongia* sp.

N-*(13-Octadecenoyl), Me ester:* ***Hurghamide D***
$C_{23}H_{41}NO_3$ 379.582
Isol. from a *Hippospongia* sp.

N-*Octadecanoyl, Me ester:* [52634-31-8]
$C_{23}H_{43}NO_3$ 381.598
Isol. from *Fasciospongia cavernosa*.

N-*Nonadecanoyl, Me ester:* [52634-32-9]
$C_{24}H_{45}NO_3$ 395.624
Isol. from *Fasciospongia cavernosa*.

N-*Eicosanoyl, Me ester:* [52634-33-0]
$C_{25}H_{47}NO_3$ 409.651
Isol. from *Fasciospongia cavernosa*.

N-*(2-Oxotetradecanoyl), Me ester:*
[70290-19-6]
$C_{19}H_{33}NO_4$ 339.474
Isol. from *Spongia* cf. *zimocca* and *Sinularia dissecta*.

N-*(2-Oxopentadecanoyl), Me ester:*
[70290-20-9]
$C_{20}H_{35}NO_4$ 353.501
Isol. from *Spongia* cf. *zimocca* and *Sinularia dissecta*.

N-*(2-Oxohexadecanoyl), Me ester:*
[70290-21-0]
$C_{21}H_{37}NO_4$ 367.528
Isol. from *Spongia* cf. *zimocca*.

N-*(2-Hydroxytetradecanoyl), Me ester:*
[70290-22-1]
$C_{19}H_{35}NO_4$ 341.49
Isol. from *Spongia* cf. *zimocca*.

N-*(2-Hydroxypentadecanoyl), Me ester:*
[70290-23-2]
$C_{20}H_{37}NO_4$ 355.517
Isol. from *Spongia* cf. *zimocca*.

N-*(2-Hydroxyhexadecanoyl), Me ester:*
[70290-24-3]
$C_{21}H_{39}NO_4$ 369.543
Isol. from *Spongia* cf. *zimocca*.

N-*(2-Acetoxy-2-tetradecenoyl), Me ester:*
$C_{21}H_{35}NO_5$ 381.511
Isol. from *Fasciospongia cavernosa*.

N-*(2-Acetoxy-2-pentadecenoyl), Me ester:*
$C_{22}H_{37}NO_5$ 395.538
Isol. from *Fasciospongia cavernosa*.

N-*(15-Methyl-8-hexadecenoyl), Me ester:* ***Hurghamide E***
[330203-64-0]
$C_{22}H_{39}NO_3$ 365.555
Isol. from a *Hippospongia* sp. Wax.
λ_{max} 205 (ε 14700) (MeOH).

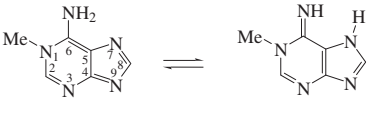
N-*(2-Alkylcyclopropyl)alkanoyl, Me ester (1):* ***Hurghamide F***
[330203-65-1]
$C_{22}H_{39}NO_3$ 365.555
Isol. from a *Hippospongia* sp. Wax. Posn. of cyclopropyl ring in side-chain not yet determined.

N-*(2-Alkylcyclopropylalkanoyl), Me ester (2):* ***Hurghamide G***
[330203-66-2]
$C_{24}H_{43}NO_3$ 393.609
Isol. from a *Hippospongia* sp. Wax. Posn. of cyclopropyl not determined.

Kashman, Y. *et al., Tetrahedron*, 1973, **29**, 3655 (*isol*)
Yunker, M.B. *et al., Tet. Lett.*, 1978, 4651 (*isol*)
Holm, A. *et al., Tet. Lett.*, 1980, 1125 (*synth*)
Neeman, J. *et al., Arch. Toxicol.*, Suppl., 1983, **6**, 258 (*isol*)
Jackson, W.R. *et al., Tet. Lett.*, 1988, **29**, 1983 (*synth*)
Isaac, B.G. *et al., J. Antibiot.*, 1991, **44**, 795 (*isol*)
Guo, Y. *et al., Nat. Prod. Lett.*, 1997, **9**, 281-288 (*Hurghamides A-D*)
Venkateswarlu, Y. *et al., Indian J. Chem., Sect. B*, 1998, **37**, 832-834 (*N-2-acetoxy-2-alkenoyl derivs*)
Ramesh, P. *et al., Biochem. Syst. Ecol.*, 1999, **27**, 661-662 (*2-oxoalkyl derivs, isol, Sinularia*)
Guo, Y.-W. *et al., J. Asian Nat. Prod. Res.*, 2000, **2**, 251-256 (*Hurghamides E-G*)

6-Amino-1-methylpurine A-842

*1-Methyl-1*H*-purin-6-amine, 9CI. 1-Methyladenine. 1-Methyl-6-iminopurine.* ***Spongopurine***
[5142-22-3]



$C_6H_7N_5$ 149.155
Exists in the imino form in nonpolar solvs. and the amino form in H_2O. Isol. from starfishes *Asterias amurensis*, *Asterias rubens* and *Marthasterias glacialis*, and sponges *Geodia gigas* and *Hymeniacidon sanguinea*. Spawning-inducing factor in *Asterias*. Cryst. (H_2O). Mp 296-299° dec. pK_{a1} 7.2; pK_{a2} 11.

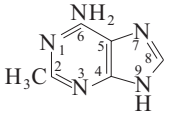
Picrate: Mp 255-257°.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 714A (*ir*)
Ackermann, D. *et al., Hoppe-Seyler's Z. Physiol. Chem.*, 1958, **312**, 210-213; 1961, **323**, 192-193 (*isol, ir, struct*)
Brookes, P. *et al., J.C.S.*, 1960, 539-545 (*synth*)

Karatani, H. *et al., Nature (London)*, 1969, **221**, 273-274 (*isol*)
Lichtenberg, D. *et al., J. Magn. Reson.*, 1972, **6**, 600-604 (*nmr*)
Garrett, E.R. *et al., J.A.C.S.*, 1972, **94**, 8532-8541 (*synth, uv*)
Doree, M. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 1976, **73**, 1669-1673 (*biochem, bibl*)
Dreyfus, M. *et al., J.A.C.S.*, 1977, **99**, 7027-7037 (*tautom, bibl*)
Cimino, G. *et al., J. Nat. Prod.*, 1985, **48**, 523-528 (*isol, pmr*)

6-Amino-2-methylpurine A-843

*2-Methyl-1*H*-purin-6-amine, 9CI. 2-Methyladenine*
[1445-08-5]



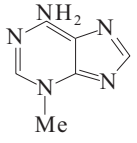
$C_6H_7N_5$ 149.155
Obt. by hydrol. of RNAs. Cryst. (EtOH). Mp 350°.

▶ AU6519000

Robins, R.K. *et al., J.A.C.S.*, 1953, **75**, 263 (*synth*)
Littlefield, J.W. *et al., Biochem. J.*, 1958, **70**, 642 (*isol*)
Starr, J.L. *et al., J. Biol. Chem.*, 1964, **239**, 3457 (*isol*)
Huynh-Dinh, T. *et al., J. Het. Chem.*, 1975, **12**, 111 (*synth, ir, pmr, uv, ms*)

6-Amino-3-methylpurine A-844

*3-Methyl-3*H*-purin-6-amine, 9CI. 3-Methyladenine, 8CI*
[5142-23-4]



$C_6H_7N_5$ 149.155
Isol. from the marine sponges *Plakortis* aff. *simplex* and *Topsentia genitrix*. Cryst. (H_2O). Mp 300° (291-292° dec.). pK_a 6.1. λ_{max} 273 (ϵ 14000) (MeOH) (Derep). λ_{max} 273 (ϵ 14010) (MeOH) (Berdy).

▶ AU6520000

9-β-D-Ribofuranosyl: 3-Methyladenosine
[72055-63-1]
$C_{11}H_{15}N_5O_4$ 281.271
Plates (MeOH) (as tosylate salt). Mp 150° dec. (tosylate salt). $[\alpha]_D^{20}$ -28.2 (c, 1.00 in H_2O) (tosylate salt). Imino at C-6.

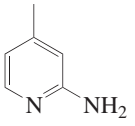
9-(2-Deoxy-β-D-ribofuranosyl): 2′-Deoxy-3-methyladenosine
[76227-26-4]
$C_{11}H_{15}N_5O_3$ 265.271
Powder (as tosylate salt). Mp 120° dec. (tosylate salt). Imino at C-6.

7-Oxide:
$C_6H_7N_5O$ 165.154
Sl. dark prisms. Mp 250-260° (dec.).

Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 217A (*nmr*)
Brookes, P. *et al., J.C.S.*, 1960, 539 (*synth*)
Denayer, R. *et al., Bull. Soc. Chim. Fr.*, 1962, 1358 (*synth, uv*)
Jones, J.W. *et al., J.A.C.S.*, 1962, **84**, 1914 (*synth, uv*)
Elion, G.B. *et al., J.O.C.*, 1962, **27**, 2478 (*synth, uv*)
Pal, B.C. *et al., J.C.S.*, 1964, 400 (*ir, cryst struct*)
Lichtenberg, D. *et al., J. Magn. Reson.*, 1972, **6**, 600 (*nmr*)
Yamauchi, K. *et al., J.O.C.*, 1975, **40**, 385 (*synth*)
Stoller, C. *et al., J. Nat. Prod.*, 1988, **51**, 383 (*isol, uv, pmr, cmr, ms*)
Fujii, T. *et al., Chem. Pharm. Bull.*, 1989, **37**, 2601 (*nucleosides*)
Itaya, T. *et al., Chem. Pharm. Bull.*, 1996, **44**, 2025 (*7-oxide*)
Rudi, A. *et al., J. Nat. Prod.*, 2003, **66**, 682-685 (*isol, pmr, cmr*)

2-Amino-4-methylpyridine A-845

2-Amino-γ-picoline. 4-Methyl-2-pyridinamine, 9CI. W 45
[695-34-1]



$C_6H_8N_2$ 108.143
Alkaloid from *Acacia rigidula*. Analgesic, cardiac stimulant. Leaflets (petrol). Mp 98°. Bp 200-250°. pK_a 7.38. Sublimes. Component of Ascensil.

▶ LD_{50} (rat, orl) 200 mg/kg. TJ5150000

Hydrochloride: [2403-84-1]
Prisms (EtOH). Mp 176-177°.

Camphorsulfonate: Piricardio. Varunax
[12261-97-1]

N-*Ac:* [5327-32-2]
$C_8H_{10}N_2O$ 150.18
Prisms (C_6H_6). Mp 102-103° Mp 75-76°.

N-*Benzoyl:* [33120-20-6]
$C_{13}H_{12}N_2O$ 212.251
Cryst. (petrol). Mp 114°.

N-*Me:* [45699-12-5]
$C_7H_{10}N_2$ 122.169
Mp 90-92°.

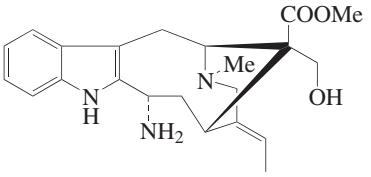
N-*Benzyl:* [13021-71-1]
$C_{13}H_{14}N_2$ 198.267
Cryst. (EtOH aq.). Mp 98-100°.

N-*Nitro:* [33245-30-6]
$C_6H_7N_3O_2$ 153.14
Solid. Mp 220°.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 771B (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 298C (*nmr*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 1539B (*ir*)
Seide, O. *et al., Ber.*, 1924, **57**, 791-794 (*synth, derivs*)
Sprinzak, Y. *et al., J.A.C.S.*, 1956, **78**, 3207-3208 (*N-benzyl*)
Marchetti, G. *et al., Arch. Int. Pharmacodyn. Ther.*, 1963, **143**, 385-400 (*pharmacol*)
Clement, B.A. *et al., Phytochemistry*, 1998, **49**, 1377-1380 (*isol*)
Bhattacharya, A. *et al., Org. Process Res. Dev.*, 2007, **11**, 885-888 (*N-nitro*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, ALC250

3-Amino-N^b-methylseco-voacarpine A-846

[169133-06-6]

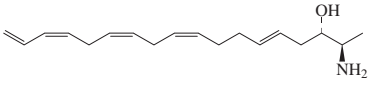


Absolute Configuration

$C_{22}H_{29}N_3O_3$ 383.489
Alkaloid from leaves of *Hunteria zeylanica* (Apocynaceae). Mp 154-155°.

Subhadhirasakul, S. *et al., Heterocycles*, 1995, **41**, 2049-2056 (*isol, uv, pmr, cmr, ms, cd, struct*)

2-Amino-5,9,12,15,17-octadecapentaen-3-ol, 9CI A-847



$C_{18}H_{29}NO$ 275.433

(2R,3S,5E,9Z,12Z,15Z)-form Crucigasterin 275
[150151-84-1]
Isol. from *Pseudodistoma crucigaster*. Light yellow oil. λ_{max} 204 (ϵ 6200); 227 (ϵ 8700) (MeOH).

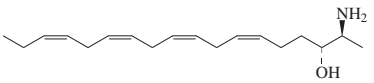
N,O-*Di-Ac:* [149849-81-0]
Oil. $[\alpha]_D^{29}$ +36 (c, 0.26 in MeOH).

17,18-Dihydro: 2-Amino-5,9,12,15-octadecatetraen-3-ol, 9CI. ***Crucigasterin 277***
[150151-83-0]
$C_{18}H_{31}NO$ 277.449
Isol. from *Pseudodistoma crucigaster*. Oil. λ_{max} 204 (ϵ 7900) (MeOH).

17,18-Dihydro, N,O-*di-Ac:* [149849-80-9]
Oil. $[\alpha]_D^{23}$ +36 (c, 0.53 in MeOH).

Jares-Erijman, E.A. *et al., J.O.C.*, 1993, **58**, 5732-5737 (*isol*)
Garrido, L. *et al., Tetrahedron*, 2001, **57**, 4579-4588 (*abs config*)

2-Amino-6,9,12,15-octadecatetraen-3-ol A-848



$C_{18}H_{31}NO$ 277.449

(2S,3R,6Z,9Z,12Z,15Z)-form Obscuraminol A. *Halaminol D*
[350484-80-9]
Isol. from the tunicate *Pseudodistoma obscurum*. Oil. $[\alpha]_D^{20}$ +5 (c, 0.14 in MeOH). $[\alpha]_D$ -23 (c, 0.78 in MeOH) (as di-Ac).

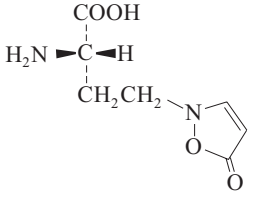
Clark, R.J. *et al., J. Nat. Prod.*, 2001, **64**, 1568-1571 (*Halaminol D*)

Garrido, L. *et al., Tetrahedron*, 2001, **57**, 4579-4588 (*Obscuraminol A*)

α-Amino-5-oxo-2(5*H*)-isoxazolebutanoic acid, 9CI A-849

α-Amino-γ-(isoxazolin-5-on-2-yl)butyric acid

[60102-46-7]



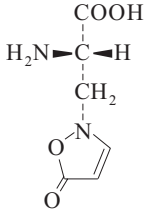
$C_7H_{10}N_2O_4$ 186.167

Isol. from sweet pea root exudates. Cryst. L-Config. not stated but presumed on biogenetic grounds.

Van Rompuy, L. *et al., J.C.S. Perkin 1*, 1973, 2503 (*pmr, uv*)
Lambein, F. *et al., Biochem. Biophys. Res. Commun.*, 1974, **61**, 155 (*isol, struct, uv, pmr*)
Kuo, Y.H. *et al., Arch. Int. Physiol. Biochim.*, 1976, **84**, 169 (*isol*)

α-Amino-5-oxo-2(5*H*)-isoxazolepropanoic acid, 9CI A-850

α-Amino-5-oxo-3-oxazoline-2-propionic acid, 8CI. β-(Isoxazolin-5-on-2-yl)alanine. 2-Alanyl-3-isoxazolin-5-one



$C_6H_8N_2O_4$ 172.14

(*S*)-*form*

L-form

[59476-61-8]

Amino acid from the roots of pea seedlings (*Pisum* spp.) and *Lathyrus* spp. Fairly sol. H_2O. Mp 203-205° dec. $[\alpha]_D^{20}$ -62 (c, 1.4 in H_2O). Base-labile. λ_{max} 265 (ε 12300) (pH 2 buffer) (Berdy). λ_{max} 267 (ε 13190) (pH 10 buffer) (Berdy).

N-*(4-Amino-4-carboxybutanoyl): γ-Glutamyl-β-(isoxazolin-5-on-2-yl)alanine*
[142115-24-0]
$C_{11}H_{15}N_3O_7$ 301.255
Constit. of *Lens culinaris* (lentil) and some *Lathyrus* spp. Cryst. (Me_2CO aq.).

Lambein, F. *et al., Biochem. Biophys. Res. Commun.*, 1969, **37**, 375 (*isol*)
Lambein, F. *et al., Heterocycles*, 1976, **4**, 567 (*isol*)
Baldwin, J.E. *et al., Tet. Lett.*, 1985, **26**, 5931 (*synth, pmr, ir*)
Lambein, F. *et al., Phytochemistry*, 1992, **31**, 887 (*glutamyl deriv*)
Kuo, Y.-H *et al., Phytochemistry*, 1998, **49**, 43-48 (*occur, metab, biosynth*)

8-Amino-7-oxononanoic acid, 9CI A-851

[4707-58-8]

$H_3CCH(NH_2)CO(CH_2)_5COOH$

$C_9H_{17}NO_3$ 187.238

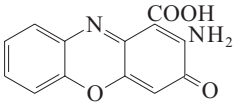
Isol. from *Penicillium chrysogenum* as a biotin intermediate. Cryst. (EtOH/Et_2O). Mp 133-134°.

Suyama, T. *et al., CA*, 1964, **60**, 4013 (*synth*)
Iwahara, S. *et al., Agric. Biol. Chem.*, 1966, **30**, 304
Eisenburg, M.A. *et al., Biochemistry*, 1970, **9**, 108

2-Amino-3-oxo-3*H*-phenoxazine-1-carboxylic acid A-852

*2-Amino-1-carboxy-3*H*-phenoxazin-3-one*

[14994-68-4]



$C_{13}H_8N_2O_4$ 256.217

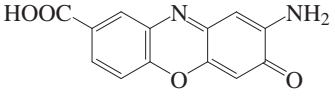
Prod. by a *Nocardia* strain. Dark orange needles. Sol. bases, MeOH, $CHCl_3$; poorly sol. H_2O, acids. Mp 310-320°. λ_{max} 233 (ε 28220); 425 (ε 10620); 442 (ε 10380) (EtOH) (Berdy). λ_{max} 230 ; 441 (HCl) (Berdy).

Gerber, N.N. *et al., Biochemistry*, 1966, **5**, 3824 (*isol, synth, uv, ir*)
Gerber, N.N. *et al., Can. J. Chem.*, 1968, **46**, 790 (*synth, ir*)

2-Amino-3-oxo-3*H*-phenoxazine-8-carboxylic acid A-853

***Umycin C**. SM 76. Antibiotic SM 76*

[149837-40-1]



$C_{13}H_8N_2O_4$ 256.217

Prod. by *Streptomyces* sp. DSM 3813. Anthelmintic. Red powder. λ_{max} 247 (ε 21900); 257 (ε 23400); 426 (ε 15800); 436 (ε 16200); 485 (sh) (ε 5010) (MeOH) (Derep).

N^2-*Ac:* ***Umycin A**. SM 35. Antibiotic SM 35*
[116511-07-0]
$C_{15}H_{10}N_2O_5$ 298.254
Prod. by *Streptomyces* sp. DSM 3813. Anthelmintic. Red powder.

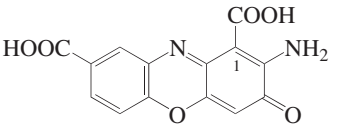
N^2-*Me: 2-(Methylamino)-3-oxo-3*H*-phenoxazine-8-carboxylic acid.* ***Texazone***
[87081-53-6]
$C_{14}H_{10}N_2O_4$ 270.244
Prod. by an *Actinomyces* strain WRAT-210. Dark red needles (Me_2CO). Sol. DMSO, Py; fairly sol. EtOAc, EtOH, Et_2O, $CHCl_3$; poorly sol. H_2O. Dec. without melting at 240°. λ_{max} 247 (ε 21900); 257 (ε 23400); 426 (ε 15800); 436 (ε 16200); 485 (sh) (ε 5010) (MeOH). λ_{max} 247 (ε 22000); 257 (ε 23440); 426 (ε 15850); 436 (ε 16218); 480 (ε 5110) (MeOH) (Berdy).

N^2-*Me, Et ester:* [87081-50-3]
Reddish-orange. Mp 256-257°.

N^2-*Me, amide:* ***Antibiotic BE 39907B**. BE 39907B*
[181469-60-3]
$C_{14}H_{11}N_3O_3$ 269.259
Prod. by *Saccharopolyspora* sp. A39907. Cytotoxic agent.

Gerber, N.N. *et al., J. Antibiot.*, 1983, **36**, 688 (*Texazone*)
Eur. Pat., 1988, 260 486; *CA*, **109**, 142586p (*Umycins*)
Japan. Pat., 1996, 96 198 861; *CA*, **125**, 219739f (*BE 39907B*)

2-Amino-3-oxo-3*H*-phenoxazine-1,8-dicarboxylic acid A-854



$C_{14}H_8N_2O_6$ 300.227

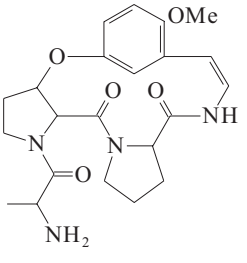
*1-Amide: 8-Amino-9-(aminocarbonyl)-7-oxo-7*H*-phenoxazine-2-carboxylic acid.* ***Elloxazinone B***
[943756-13-6]
$C_{14}H_9N_3O_5$ 299.242
Prod. by *Streptomyces griseus* Acta 2871. Antitumour agent. Red solid. λ_{max} 240 (log ε 2.12); 256 (log ε 1.93); 412 (log ε 1.42); 431 (log ε 1.5) (MeOH).

1-Amide, 8-Me ester: ***Elloxazinone A***
[943756-12-5]
$C_{15}H_{11}N_3O_5$ 313.269
Prod. by *Streptomyces griseus* Acta 2871. Red solid. λ_{max} 239 (log ε 2.73); 259 (log ε 2.57); 411 (log ε 2.07); 428 (log ε 2.09) (MeOH).

Graf, E. *et al., J. Antibiot.*, 2007, **60**, 277-284 (*isol, uv, pmr, cmr, activity*)

1-(2-Amino-1-oxopropyl)-2,3,3*a*,13*a*,14,15,16,18*a*-octahydro-8-methoxy-5,9-metheno-9*H*-dipyrrolo[3,2-*b*:1′,2′-*e*][1,5,8]oxadiazacyclopentadecine-13,18(1*H*,12*H*)-dione, 9CI A-855

[147471-65-6]

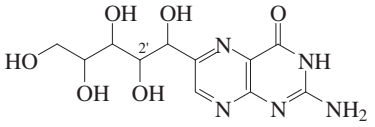


$C_{22}H_{28}N_4O_5$ 428.487

Related to the Zizyphines. Alkaloid from flowers of *Sphaeranthus indicus* (Asteraceae). Mp 72°.

Chughtai, M.I.D. *et al., Sci. Int. (Lahore)*, 1992, **4**, 151; *CA*, **118**, 230141f (*isol, struct*)

2-Amino-6-(1,2,3,4,5-pentahydroxypentyl)-4(1*H*)-pteridinone A-856



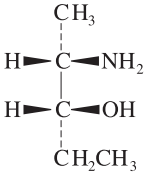
$C_{11}H_{15}N_5O_6$ 313.269
Cryst. (EtOH aq.). $[\alpha]_D$ +3.7 (c, 0.1 in NH_4OH aq.).

2′-O-β-D-Glucuronopyranoside:
$C_{17}H_{23}N_5O_{12}$ 489.395
Isol. from cultures of *Mycobacterium phlei* and *Mycobacterium smegmatis*. Mp 250-280° (dec.). $[\alpha]_D^{25}$ +7.2 (c, 0.26 in H_2O).

Goto, M. *et al., Annalen*, 1965, **689**, 221 (*isol, uv, ir, ms*)

2-Amino-3-pentanol, 9CI A-857

[116836-16-9]



(2*S*,3*R*)-*form*

$C_5H_{13}NO$ 103.164

(2*S*,3*R*)-*form* [111061-02-0]
Oil. $[\alpha]_D^{23}$ +14 (c, 1 in $CHCl_3$).

N-*Ac:* [138145-16-1]
$C_7H_{15}NO_2$ 145.201
Isol. from the fungus *Scolecotrichum graminis*. $[\alpha]_D^{22}$ -25 (c, 1 in EtOH).

N,N-*Dibenzyl:* [111060-70-9]
$C_{19}H_{25}NO$ 283.413
Oil. $[\alpha]_D^{23}$ +48.2 (c, 1 in $CHCl_3$).

(2*S*,3*S*)-*form* [180187-00-2]
Solid (hexane). Mp 67-68°. $[\alpha]_D^{23}$ -15.9 (c, 0.34 in MeOH).

N-*Ac:* [138145-17-2]
Isol. from *Scolecotrichum graminis*. $[\alpha]_D^{22}$ -188 (c, 0.5 in EtOH).

N,N-*Dibenzyl:* [111060-69-6]
Oil. $[\alpha]_D^{23}$ +70.5 (c, 1 in $CHCl_3$).

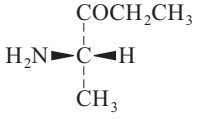
(2*RS*,3*RS*)-*form*
(±)-threo-*form*
[147975-87-9]
Mp 104-105° (as oxalate).

(2*RS*,3*SR*)-*form*
(±)-erythro-*form*
[147975-86-8]
Mp 124-126° (as oxalate).

[141824-38-6 , 599207-02-0]

Reetz, M.T. *et al., Angew. Chem., Int. Ed.*, 1987, **26**, 1141-1143 (*synth*)
Tabuchi, H. *et al., Agric. Biol. Chem.*, 1991, **55**, 2669-2671 (*N-Ac, isol*)
Andrés, J.M. *et al., J.O.C.*, 1996, **61**, 4210-4213 (*synth, ir, pmr, cmr*)
Ueda, S. *et al., Bioorg. Med. Chem.*, 2004, **12**, 4101-4116 (*synth, pmr*)

2-Amino-3-pentanone A-858



$C_5H_{11}NO$ 101.148

(*S*)-*form* [138145-15-0]
N-*Ac:* ***2-Acetamido-3-pentanone***
$C_7H_{13}NO_2$ 143.185
Isol. from the fungus *Scolecotrichum graminis*. $[\alpha]_D^{25}$ -69.8 (c, 1 in EtOH).

(±)-*form* [93222-93-6]
Off-white cryst. (as hydrochloride). Mp 127-129° (hydrochloride). CAS no. refers to hydrochloride.

N,N-*Di-Me:* [71504-23-9]
$C_7H_{15}NO$ 129.202
Bp_{40} 63-64°.

[79851-68-6]

Coffen, D.L. *et al., J.O.C.*, 1984, **49**, 5109 (*synth*)
Tabuchi, H. *et al., Agric. Biol. Chem.*, 1991, **55**, 2669 (*isol, deriv, synth*)
Collina, S. *et al., Tetrahedron: Asymmetry*, **10**, 2387-2397 (*N,N-di-Me, synth*)

(5-Aminopentyl)guanidine, 9CI A-859

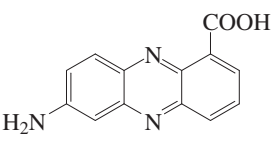
1-Amino-5-guanidinopentane. ***Homoagmatine***
[18431-52-2]
$HN{=}C(NH_2)NH(CH_2)_4CH_2NH_2$
$C_6H_{16}N_4$ 144.219
Constit. of *Lathyrus sativus* (chickling pea). Major intermed. in homoarginine metab. pathway. Mp 135-137° (as hydrochloride).

N^5-*Ac:* ***Acetylhomoagmatine***
[180251-16-5]
$C_8H_{18}N_4O$ 186.256
Constit. of *Cliona celata*. Yellow amorph. solid. λ_{max} 206 (log ε 3.23) (MeOH).

Ramakrishna, S. *et al., Phytochemistry*, 1973, **12**, 2691-2695 (*isol, synth, ir*)
Lenis, L.A. *et al., Nat. Prod. Lett.*, 1996, **8**, 15-23 (*Acetylhomoagmatine*)
Castellanos, L. *et al., Mar. Drugs*, 2006, **4**, 286-289 (*Acetylhomoagmatine, synth*)

7-Amino-1-phenazinecarboxylic acid, 8CI A-860

[24827-33-6]



$C_{13}H_9N_3O_2$ 239.233
Red needles ($PhNO_2$). Mp 340° dec.

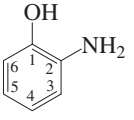
Me ester: [24535-36-2]
$C_{14}H_{11}N_3O_2$ 253.26
Red needles (toluene). Mp 202-204°.

N^5-*Me, betaine: 7-Amino-1-carboxy-5-methylphenazinium hydroxide inner salt, 9CI.* ***Aeruginosin A***. *Eruginosin A*
[21668-67-7]
$C_{14}H_{11}N_3O_2$ 253.26
Pigment from *Pseudomonas aeruginosa*. Insol. nonpolar. solvs., sol. H_2O, acids, bases, poorly sol. butanol, hexane. Red-purple fluor. in uv light. Dec. on heating. λ_{max} 235 (ε 31620); 280 (ε 44670); 396 (ε 11750); 515 (ε 14120) (pH 7 buffer) (Berdy). λ_{max} 235 ; 285 ; 380 ; 538 (HCl) (Berdy). λ_{max} 235 ; 275 ; 375 ; 525 (NaOH aq.) (Berdy).

Holliman, F.G. *et al., Tetrahedron*, 1963, **19**, 1841-1848 (*synth, Me ester*)
Hansford, G.S. *et al., J.C.S. Perkin 1*, 1972, 103 (*betaine, synth, biosynth*)

2-Aminophenol, 9CI A-861

o-*Hydroxyaniline. 1-Amino-2-hydroxybenzene.* ***Questiomycin B***
[95-55-6]
[27598-85-2]



C_6H_7NO 109.127
Manuf. by redn. of 2-nitrophenol. Isol. from *Streptomyces* sp. and *Penicillium notatum*. Also isol. from a purple bacterium from a sponge of *Adocia* sp. Electrochem. polym. gives electroactive polymer films. Dye intermediate. Tuberculostatic. Possesses antibacterial props. Cryst. (H_2O). Sol. MeOH, H_2O, Et_2O, EtOAc; fairly sol. CCl_4; poorly sol. hexane. Mp 174°. pK_{a1} 4.78; pK_{a2} 9.97 (20°). Free base readily oxidised. λ_{max} 235 (ε 28400); 467 (ε 1700) (0.25*N* HCl) (Derep). λ_{max} 335 (ε 1230) (0.1*N* KOH) (Derep). λ_{max} 240 (ε 26300); 435 (ε 2330) (pH 7.4) (Derep). λ_{max} 229 ; 283 (H_2O) (Berdy). λ_{max} 268 (HCl) (Berdy). λ_{max} 300 (NaOH) (Berdy).

▶ Eye and respiratory tract irritant. LD_{50} (rat, orl) 1300 mg/kg. LD_{50} (mus, ipr) 350 mg/kg. Exp. reprod. and teratogenic effect. SJ4950000

Hydrochloride: [51-19-4]
Mp 207°.

▶ SJ6069000

N-*Formyl:* N-*(2-Hydroxyphenyl)formamide, 9CI. 2-Hydroxyformanilide.* N-*Formylquestiomycin B*
[2843-27-8]
$C_7H_7NO_2$ 137.138
Prod. by *Penicillium notatum*. Needles (H_2O). Mp 129-129.5°. λ_{max} 218 (ε 10280); 245 (ε 11910); 286 (ε 6295) (MeOH) (Berdy).

N-*Ac: 2-Acetamidophenol. 2-Hydroxyacetanilide.* N-*(2-Hydroxyphenyl)acetamide*
[614-80-2]
$C_8H_9NO_2$ 151.165

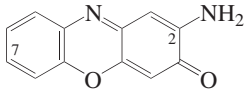
Prod. by *Streptomyces* sp. Plates (EtOH). Sol. hot H_2O. Mp 209°.

► Eye irritant. AE4025000

Anzai, K. *et al., J. Antibiot., Ser. A*, 1960, **13**, 125 (*isol*)
Pfeifer, S. *et al., Pharmazie*, 1972, **27**, 536-542 (*isol*)
Oclarit, J.M. *et al., Fish. Sci.*, 1994, **60**, 559 (*isol*)
Pusecker, K. *et al., J. Antibiot.*, 1997, **50**, 479 (*N-Ac, isol, ir, pmr, ms*)
Rahaim, R.J. *et al., Synthesis*, 2006, 3316-3340 (*synth, pmr, cmr, N-Ac*)

2-Amino-3*H*-phenoxazin-3-one, 9CI, 8CI A-862

Questiomycin A. *AV toxin C*
[1916-59-2]



$C_{12}H_8N_2O_2$ 212.207
Isol. from *Acrospermum viticola, Brevibacterium iodinum, Calocybe gambosa* (St George's mushroom), *Microbispora aerata, Streptomyces thioluteus, Pycnoporus* sp., *Waksmania* sp., and mushroom *Lepiota americana*. Used as a 1m*M* soln. in EtOH as redox indicator for titanometric detn. of Fe(*III*), Au(*III*), $Cr_2O_7^{2\ominus}$, $VO_4^{3\ominus}$ and some organic compds.; redox indicator for stannometry. Aromatase and sulfatase inhibitor. Active against gram-positive bacteria, mycobacteria, *Candida albicans* and shows antitumour activity. Phytotoxin. Dark brown or red cryst. (EtOH). Sol. EtOH. Subl. 255-257. Sometimes occurs in amorph. form with Mp 296-297°. E° + 0.372V (pH 0.92, 23°). λ_{max} 235 (ϵ 28400); 467 (ϵ 1700) (0.25*N* HCl) (Derep). λ_{max} 335 (ϵ 1230) (0.1*N* KOH) (Derep). λ_{max} 240 (ϵ 26300); 435 (ϵ 2330) (pH 7.4) (Derep).

► LD_{50} (mus, ipr) 200 mg/kg. SP7695000

N-*β-D-Glucopyranosyl:* **N-*β-D*-Glucopyranosylquestiomycin A**
$C_{18}H_{18}N_2O_7$ 374.349
Prod. by *Microbispora* sp. TP-A0184. Antibacterial and cytotoxic agent. Red powder. Sol. DMSO, Py; fairly sol. MeOH; poorly sol. $CHCl_3$, EtOAc. Mp > 195° dec. $[\alpha]_D^{28}$ +16.5 (c, 0.1 in Py). λ_{max} 240 (log ϵ 4.33); 423 (log ϵ 4.23) (MeOH).

N-*Ac:* N-*(3-Oxo-3*H*-phenoxazin-2-yl)acetamide, 9CI. 2-Acetamido-3*H*-phenoxazin-3-one.* **N-*Acetylquestiomycin A***
[1916-55-8]
$C_{14}H_{10}N_2O_3$ 254.245
From *Brevibacterium iodinum*, *Microbispora aerata*, *Streptomyces thioluteus* and *Waksmania aerata*. Used as a 1m*M* soln. in EtOH as redox indicator for titanometric detn. of Fe(*III*), Au(*III*), Ce(*IV*), $Cr_2O_7^{2\ominus}$, $VO_4^{3\ominus}$ and some organic compounds. Active against *Sarcina lutea* and *Trichophyton* sp. Orange cryst. Sol. EtOH, Et_2O, C_6H_6, MeOH; poorly sol. H_2O. Subl. 165°. E° + 0.375V (pH 0.84, 23°). λ_{max} 240 (E1%/1cm 1400); 405 (E1%/1cm 1100) (EtOH) (Berdy).

N-*Hydroxyacetyl:* N-*Hydroxyacetylquestiomycin A*. ***Chandrananimycin B***
$C_{14}H_{10}N_2O_4$ 270.244
Prod. by a marine *Actinomadura* sp. M045. Orange solid. λ_{max} 238 (log ϵ 3.85); 399 (log ϵ 3.66) (MeOH).

*6-Hydroxy: 2-Amino-6-hydroxy-3*H*-phenoxazin-3-one.* ***6-Hydroxyquestiomycin A***
$C_{12}H_8N_2O_3$ 228.207
Prod. by the marine *Halomonas* sp. GWS-BW-H8hM. Red solid. λ_{max} 236 (log ϵ 3.93); 277 (log ϵ 3.75); 430 (log ϵ 3.72) (MeOH). λ_{max} 230 (log ϵ 3.91); 284 (log ϵ 3.61); 464 (log ϵ 3.5) (MeOH/HCl).

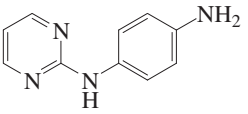
9-Hydroxy, N-*Ac:* N-*Acetyl-9-hydroxyquestiomycin A*. ***Chandrananimycin A***
$C_{14}H_{10}N_2O_4$ 270.244
Prod. by a marine *Actinomadura* sp. M048. Orange solid. λ_{max} 226 (log ϵ 4.52); 270 (log ϵ 4.38); 423 (log ϵ 4.45) (MeOH).

*7,8-Dimethoxy: 2-Amino-7,8-dimethoxy-3*H*-phenoxazin-3-one. 7,8-Dimethoxyquestiomycin A*. ***Peristrophine***
$C_{14}H_{12}N_2O_4$ 272.26
Alkaloid from *Peristrophe roxburghiana*. Mp 250° dec. λ_{max} 235 ; 280 (sh) ; 484 (MeOH). λ_{max} 239 ; 273 (sh) ; 320 (sh) ; 544 (sh) ; 583 (MeOH/HCl).

Fischer, O. *et al., Ber.*, 1961, **27**, 2784 (*synth*)
Gerber, N.N. *et al., Biochemistry*, 1964, **3**, 598; 1966, **5**, 3824 (*isol, uv, ir*)
Gerber, N.N. *et al., J.O.C.*, 1967, **32**, 4055 (*isol, uv, ir, bibl*)
Ruzička, E. *et al., Mikrochim. Acta*, 1967, 277 (*use*)
Ruzička, E. *et al., CA*, 1968, **69**, 40930j (*stannometry*)
Ikekawa, T. *et al., Chem. Pharm. Bull.*, 1968, **16**, 1705 (*synth, ir*)
Sullivan, G. *et al., J. Pharm. Sci.*, 1971, **60**, 1097 (*isol*)
Baer, H. *et al., Pharmazie*, 1971, **26**, 108; 314 (*isol*)
Hishida, T. *et al., Chem. Lett.*, 1974, 293 (*synth*)
Schlunegger, U.V. *et al., Helv. Chim. Acta*, 1976, **59**, 1383 (*isol*)
Motohashi, N. *et al., Yakugaku Zasshi*, 1983, **103**, 364 (*synth, props*)
Bolognese, A. *et al., J. Het. Chem.*, 1986, **23**, 1003 (*synth, pmr, uv, deriv*)
Kinjo, J. *et al., Tet. Lett.*, 1987, **28**, 3697 (*isol*)
Simandi, L.I. *et al., Tet. Lett.*, 1993, **34**, 717 (*synth*)
Igarashi, Y. *et al., J. Antibiot.*, 1998, **51**, 915-920 (*Glucosylquestiomycin A*)
Qin, J.P. *et al., Yaoxue Xuebao*, 1999, **34**, 599-603 (*Peristrophine*)
Kim, D.S. *et al., Planta Med.*, 2000, **66**, 78 (*Questiomycin A, isol, activity*)
Bolognese, A. *et al., J. Med. Chem.*, 2002, **45**, 5205-5216 (*synth, N-Ac, uv, pmr*)
Maskey, R.P. *et al., J. Antibiot.*, 2003, **56**, 622-629 (*Chandrananimycins*)
Bitzer, J. *et al., J. Antibiot.*, 2006, **59**, 86-92 (*6-Hydroxyquestiomycin A*)
Giurg, M. *et al., Pol. J. Chem. (Rocz. Chem.)*, 2006, **80**, 297-306 (*synth*)
Giurg, M. *et al., Synth. Commun.*, 2007, **37**, 1779-1789 (*synth, ir, uv, pmr*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, QCJ275

2-[(4-Aminophenyl)amino]-pyrimidine A-863

N-*(2-Pyrimidinyl)-1,4-benzenediamine*
[743449-54-9]

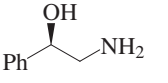


$C_{10}H_{10}N_4$ 186.216
Alkaloid from the bulbs of *Scilla maderensis*. α_1-Adrenoceptor antagonist. Needles (MeOH). Mp 270-271°. λ_{max} 213 ; 270 (MeOH).

Dias, C. *et al., Planta Med.*, 2003, **69**, 1060-1062 (*isol, pmr, cmr, ms*)

2-Amino-1-phenylethanol A-864

α-Aminomethylbenzenemethanol, 9CI. α-(Aminomethyl)benzyl alcohol, 8CI. β-Amino-α-hydroxyethylbenzene. (Aminomethyl)phenylcarbinol. 2-Hydroxy-2-phenylethylamine. 1-Phenylethanolamine. ***Resedinine***†. *Apophedrin. Norphedrin. Bisnorephedrine*
[7568-93-6]



(R)-form

$C_8H_{11}NO$ 137.181
Log P 0.27 (calc).

► LD_{50} (mus, ipr) 250 mg/kg. DN5500000

(R)-form [2549-14-6]
Mp 54-58°. $[\alpha]_D^{20}$ -42.2 (c, 1 in EtOH).

O-*Benzoyl:* [111025-00-4]
$C_{15}H_{15}NO_2$ 241.289
Isol. from *Oxytropis pseudoglandulosa*. Needles (pentane). Mp 38-40°. $[\alpha]_D^{21}$ +181.9 (c, 2.275 in MeOH).

N-*Benzoyl:* N-*Benzoyl-2-hydroxy-2-phenylethylamine. 2-(Benzoylamino)-1-phenylethanol*
[111059-46-2]
$C_{15}H_{15}NO_2$ 241.289
Constit. of *Oxytropis pseudoglandulosa* (Fabaceae). Plates (MeOH/Et_2O). Mp 151-152° (143-144°). $[\alpha]_D^{24}$ -16.2 (c, 0.81 in MeOH). $[\alpha]_D$ -21 (c, 0.7 in MeOH).

N-*(3-Pyridinecarbonyl):* **N-*Nicotinoyl-2-hydroxy-2-phenylethylamine***. *2-(Nicotinoylamino)-1-phenylethanol*
[168780-03-8]
$C_{14}H_{14}N_2O_2$ 242.277
Isol. from aerial parts of *Oxytropis puberula*. Mp 157-158°. $[\alpha]_D$ -25.3 (c, 0.79 in MeOH).

N-*Me: Halostachine. α-[(Methylamino)methyl]benzenemethanol, 9CI. α-[(Methylamino)methyl]benzyl alcohol, 8CI. 2-(Methylamino)-1-phenethanol. β-Hydroxy-*N*-methylphenethylamine*
[495-42-1]
Alkaloid from *Halostachys caspica* (Chenopodiaceae). Hypertensive agent showing ephedrine-like activity. Mp 43-45°. $[\alpha]_D$ -47.

N-*Me, hydrochloride:* Mp 113-114°. $[\alpha]_D$ -52.4.

N,N-*Di-Me: 2-Dimethylamino-1-phenylethanol. α-[(Dimethylamino)methyl]benzenemethanol, 9CI. α-[(Dimethylamino)methyl]benzyl alcohol, 8CI.* N,N-*Dimethyl-1-phenylethanolamine.* ***Ubine***
[34469-09-5]
Alkaloid from *Dolichothele uberiformis* (Cactaceae), also detected by ms in *Dolichothele longimamma*. $Bp_{0.15}$ 58-60°. $[\alpha]_D^{25}$ -62.5 (c, 1.0 in MeOH). n_D^{25} 1.5164.

Me ether: 2-Methoxy-2-phenylethylamine. β-Methoxybenzeneethanamine, 9CI
[55163-76-3]
$C_9H_{13}NO$ 151.208
d_4^{20} 1.02. Bp_{20} 110-113°. $[\alpha]_D^{22}$ -118.5 (neat).

Me ether, hydrochloride: [62064-68-0]
Mp 158-159°.

► SH8090000

(*S*)-*form* [56613-81-1]
Mp 61-62° (55-57°). $[\alpha]_D$ +47.9 (c, 2.4 in EtOH).

Hydrochloride: [71025-82-6]
Mp 209-210°. $[\alpha]_D^{13}$ +48.8 (c, 5.08 in H_2O).

N-*Ac:* [155073-71-5]
$C_{10}H_{13}NO_2$ 179.218
$[\alpha]_D$ +73 (c, 0.2 in $CHCl_3$) (>90% ee; room temp.).

N-*Benzoyl:* Constit. of *Oxytropis trichophysa* and *Oxytropis muricata*. Cryst. (Me_2CO). Mp 154-155°. $[\alpha]_D^{30}$ +35.2 (c, 0.68 in MeOH).

N-*Benzoyl,* O-*Ac: 2-Acetyloxy*-N-*benzoyl-2-phenylethylamine.* ***Muricatide***
[111025-01-5]
[128820-22-4 , 109393-37-5]
$C_{17}H_{17}NO_3$ 283.326
Alkaloid from *Oxytropis muricata*. Needles (hexane/petrol). Mp 114-115° (110-112°). $[\alpha]_D^{20}$ +40.7 (c, 0.43 in $CHCl_3$). λ_{max} 208 (sh) ; 226 (EtOH).

N-tert-*Butyloxycarbonyl:*
$C_{13}H_{19}NO_3$ 237.298
Solid. Mp 66-68°. $[\alpha]_D^{20}$ +3.5 (c, 1 in EtOH) (99% ee).

N-*Me: 2-(Methylamino)-1-phenylethanol*
[65058-52-8]
$C_9H_{13}NO$ 151.208
Solid. Mp 45-47° (39-40°). $Bp_{0.1}$ 99-102°. $[\alpha]_D^{20}$ +40.41 (c, 1.89 in EtOH).

N,N-*Di-Me:* [2202-69-9]
[939-45-7]
Mp 113.5° (as hydrochloride). $[\alpha]_D^{23}$ +77.6 (c, 0.1 in EtOH).

N-*Benzyl:*
$C_{15}H_{17}NO$ 227.305
Cryst. (EtOAc/petrol). Mp 105-107°. $[\alpha]_D^{20}$ +33.8 (c, 2 in EtOH) (99% ee).

(±)-*form* [1936-63-6]
Pale yellow cryst. Mp 56-57°. Bp_{17} 160°. pK_{a1} 8.79; pK_{a2} 11.9 (25°, 0.1*M* KCl).

► DA4727250

Sulfate: [50835-37-5]
Cryst. Mp 275-276°.

► DA4729900

N-*Ac:* [3306-05-6]
$C_{10}H_{13}NO_2$ 179.218
Solid. Mp 125-126°.

N-*Benzoyl:* [96328-15-3]
Leaflets (EtOH). Mp 148-149.5°.

N-tert-*Butyloxycarbonyl:*
Solid. Mp 120-121°.

N-*Me:* [68579-60-2]
Cryst. (CH_2Cl_2/hexane). Mp 72-73°.

► DA4976000

N,N-*Di-Me:* [2202-68-8]
[1797-76-8]
Isol. from leaves of *Aptenia cordifolia*, as partial racemate of low opt. rotn. Mp 144-145° (as hydrochloride)(synthetic). $[\alpha]_D^{25}$ +1.1 (c, 0.08 in $CHCl_3$) (nat.).

N-*Benzyl:*
Solid (EtOAc/petrol). Mp 93-96°.

Me ether: [3490-79-7]
Bp_{12} 103-105°.

(ξ)-*form*
Alkaloid from *Reseda luteola* (Resedaceae), also obt. by hydrol. of 5-Phenyl-2-oxazolidinone, P-347. Vasoconstrictor. Mp 112-114°. Prob. artifact. The identification is dubious in view of the Mp which is higher than that of either the chiral or racemic form of authentic substance.

O-*Benzoyl:* ***Trichophydine***. *Trichophidine*
[67031-54-3]
$C_{15}H_{15}NO_2$ 241.289
Isol. from epigeal parts of *Oxytropis trichophysa*. Cryst. (hexane/petrol). Mp 200-203° (as hydrochloride). It is claimed that a previous alkaloid, Mp 38-40°, isolated from *Oxytropis pseudoglandulosa* given this struct. was erroneous and that it is an oxazoline of undetermined struct.

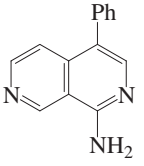
N,O-*Dibenzoyl:* ***Trichophysine***
$C_{22}H_{19}NO_3$ 345.397
Isol. from epigeal parts of *Oxytropis trichophysa*. Cryst. (hexane/Et_2O). Mp 100-103°.

[36297-03-7 , 61217-79-6 , 6027-95-8 , 6589-55-5 , 6853-14-1 (*N*-Me), 18867-43-1 , 80997-83-7]

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 1272B (*ir*)
Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 1277A (*N-Me, ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **2**, 585B (*N-Me, nmr*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **2**, 575C (*nmr*)
Rosenmund, K.W. *et al., Ber.*, 1913, **46**, 1034-1050 (*Me ether*)
Mannich, C. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1927, **2**, 10 (*Me ether*)
Men'shikov, G.P. *et al., J. Gen. Chem. USSR (Engl. Transl.)*, 1943, **13**, 801; 1947, **17**, 1569; *CA*, **39**, 1172; **42**, 2245 (*N-Me, isol, struct, synth*)
Rebstock, M.C. *et al., J.A.C.S.*, 1951, **73**, 3666-3670 (*synth*)
Dornow, A. *et al., Chem. Ber.*, 1955, **88**, 1267-1275 (*synth*)
Schöpf, C. *et al., Annalen*, 1959, **626**, 150-154 (*abs config*)
Poos, G.I. *et al., J. Med. Chem.*, 1963, **6**, 266-272 (*synth*)
Lukes, R. *et al., CA*, 1964, **61**, 693g (*N-Me, abs config, synth*)
Reisch, J. *et al., Fresenius' Z. Anal. Chem.*, 1968, **238**, 29-35 (*nmr, struct*)
Cocolas, G.H. *et al., J. Pharm. Sci.*, 1971, **60**, 1749 (*N-di-Me, synth*)
Sabelli, H.C. *et al., Adv. Behav. Biol.*, 1974, **10**, 331 (*rev, props*)
Kirmse, W. *et al., Chem. Ber.*, 1975, **108**, 79-87 (*Me ether*)
Tadzhibaev, M.M. *et al., Khim. Prir. Soedin.*, 1976, **12**, 270-271; *Chem. Nat. Compd. (Engl. Transl.)*, 1976, **12**, 245-246 (*isol*)
Angeloni, A.S. *et al., Gazz. Chim. Ital.*, 1977, **107**, 421 (*N-di-Me, abs config*)
Ranieri, R.L. *et al., J. Nat. Prod.*, 1977, **40**, 173 (*N-di-Me, isol*)
Kruger, T.L. *et al., J.O.C.*, 1977, **42**, 4161 (*N-di-Me, ms, occur*)
Frank, H. *et al., Angew. Chem.*, 1978, **90**, 396-398 (*glc, resoln*)
Kniezo, L. *et al., Coll. Czech. Chem. Comm.*, 1978, **43**, 1917-1923 (*synth*)
Wehrli, H. *et al., Helv. Chim. Acta*, 1980, **63**, 1915 (*N-Me, synth, ir, pmr*)
Meyers, A.I. *et al., J.O.C.*, 1980, **45**, 2785-2791 (*synth*)
Shannon, H.E. *et al., J. Pharmacol. Exp. Ther.*, 1981, **217**, 379-385 (*pharmacol, rev*)
Midland, M.M. *et al., J.O.C.*, 1985, **50**, 3237-3239 (*synth*)
Coote, S.J. *et al., J.C.S. Perkin 1*, 1989, 2223-2228 (*S-form, N-Me, synth, ir, pmr, cmr*)
Ziegler, T. *et al., Synthesis*, 1990, 575-578 (*R-form, synth, pmr*)
Brussee, J. *et al., Tetrahedron*, 1990, **46**, 1653-1658 (*R-form, synth*)
Izumi, T. *et al., Bull. Chem. Soc. Jpn.*, 1993, **66**, 1216-1221 (*Muricatide, synth*)
Akhmedzhanova, V.I. *et al., Khim. Prir. Soedin.*, 1993, **29**, 90-91; 1994, **30**, 414-416; 1996, **32**, 212-216; 1997, **33**, 424-427; *Chem. Nat. Compd. (Engl. Transl.)*, 1993, **29**, 76; 1994, **30**, 379-380; 1996, **32**, 187-189; 1997, **33**, 326-328 (*N-nicotinoyl, Trichophydine, Trichophysine, Muricatide*)
Uccello-Barretta, G. *et al., J.O.C.*, 1997, **62**, 827-835 (*R and S forms, synth, pmr*)
Laïb, T. *et al., Tetrahedron: Asymmetry*, 1998, **9**, 168-178 (*S-form, N-Ac, synth*)
Kawamoto, A.M. *et al., J.C.S. Perkin 1*, 2001, 1916-1928 (*N-benzyl, N-Boc, synth, ir, pmr, cmr*)
Becker, C.W. *et al., Synthesis*, 2005, 2549-2561 (*S-form, N-Me, resoln*)
Veum, L. *et al., Eur. J. Org. Chem.*, 2006, 1664-1671 (*N-Ac*)
Tanis, S. *et al., Tetrahedron*, 2006, **17**, 2154-2182 (*R-form, S-form, N-Me*)
Green, M.D. *et al., Chem. Biodiversity*, 2007, **4**, 118-128 (*N-di-Me, isol, pmr, cmr*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, HNF000

1-Amino-4-phenyl-2,7-naphthyridine A-865

4-Phenyl-2,7-naphthyridin-1-amine, 9CI. ***Lophocladine B***

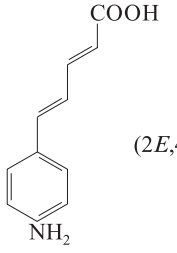


$C_{14}H_{11}N_3$ 221.261
Alkaloid from *Lophocladia* sp. Cytotoxic. Yellowish gum. λ_{max} 220 (log ϵ

4.01); 254 (log ϵ 4.02); 336 (log ϵ 3.89) (MeOH).

Gross, H. *et al., J. Nat. Prod.*, 2006, **69**, 640-644 (*isol, pmr, cmr, ms*)

5-(4-Aminophenyl)-2,4-pentadienoic acid A-866



(2*E*,4*E*)–*form*

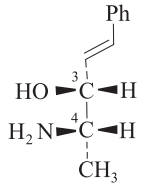
$C_{11}H_{11}NO_2$ 189.213
Prod. by *Streptomyces* sp. Tu 3946. Orange-brown solid. Mp 178°. Isol. as a mixt. of (2*E*,4*E*)- and (2*E*,4*Z*)-isomers.

Amide: 5-(4-Aminophenyl)-2,4-pentadienamide
$C_{11}H_{12}N_2O$ 188.229
Prod. by *Streptomyces* sp. Tu 3946. Yellow solid. Mp 205°. Mixt. of (2*E*,4*E*)- and (2*E*,4*Z*)-isomers.

[154824-88-1 , 154824-87-0 , 154824-83-6 , 154824-82-5]

Potterat, O. *et al., Helv. Chim. Acta*, 1994, **77**, 569 (*isol, synth*)

4-Amino-1-phenyl-1-penten-3-ol, 9CI A-867



(3*R*,4*S*)–*form*

$C_{11}H_{15}NO$ 177.246

(1*E*,3*R*,4*S*)-*form*
Merucathine
[107673-74-5]
Alkaloid from *Catha edulis* (Celastraceae). Needles. Mp 129-130°. $[\alpha]_D^{20}$ +29.6 (c, 0.6 in MeOH).

Hydrochloride: [107673-75-6]
Mp 142-144°. $[\alpha]_D^{20}$ -5.2 (c, 0.4 in H_2O).

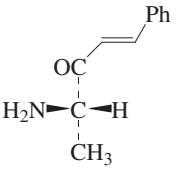
(1*E*,3*S*,4*S*)-*form*
Pseudomerucathine
[96861-89-1]
Alkaloid from *Catha edulis* (Celastraceae). Cryst. Mp 103-104°. $[\alpha]_D^{20}$ -15 (mixed solvent).

Hydrochloride: [107673-76-7]
Powder. Mp 194-196°. $[\alpha]_D^{20}$ -17.4 (c, 0.4 in H_2O).

Brenneisen, R. *et al., Planta Med.*, 1984, 531 (*isol, struct*)
Wolf, J.-P. *et al., Helv. Chim. Acta*, 1986, **69**, 918 (*struct, pmr, uv, cd, synth, abs config*)
Adam, W. *et al., Synthesis*, 1995, 1066 (*synth*)

4-Amino-1-phenyl-1-penten-3-one, 9CI A-868

Merucathinone



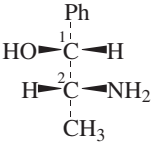
$C_{11}H_{13}NO$ 175.23

(1*E*,4*S*)-*form* [107638-80-2]
Alkaloid detected in *Catha edulis* (Celastraceae). Mp 144° dec. (as oxalate salt). $[\alpha]_D$ +7.5 (c, 0.85 in 2M HCl).

Wolf, J.-P. *et al., Helv. Chim. Acta*, 1986, **69**, 1498 (*synth, abs config, ir, uv, cd, pmr*)

2-Amino-1-phenyl-1-propanol A-869

α-(1-Aminoethyl)benzenemethanol, 9CI
[48115-38-4]



(1*R*,2*R*)-*form*

$C_9H_{13}NO$ 151.208
See also refs. under 2-(Methylamino)-1-phenyl-1-propanol, M-386. Anorectic agent, resolving agent. Log P 0.58 (calc).

(1*R*,2*R*)-*form*
D-threo-*form*. ***Nor-ψ-ephedrine****. Norpseudoephedrine. Norisoephedrine. Cathine, INN*
[37577-07-4]
Found in "Ma Huang" and *Catha edulis* (Celastraceae) (Khat), used as a stimulant drink in Arab countries. Plates (MeOH). Mp 77°. $[\alpha]_D^{20}$ +33.14 (EtOH). Pharmacol. active isomer.

Hydrochloride: [53643-20-2]
Mp 180-181°. $[\alpha]_D^{20}$ +42.5 (H_2O).
▶ RC9350000

N-*Me:* see 2-(Methylamino)-1-phenyl-1-propanol, M-386

(1*S*,2*S*)-*form*
(-)-Nor-ψ-ephedrine. Katine
[492-39-7]
Synthetic. Mp 77.5-78°. $[\alpha]_D^{20}$ -32.64 (EtOH).
▶ LD_{50} (rat, orl) 1538 mg/kg. RC9100000

Hydrochloride: Mp 180-181°. $[\alpha]_D^{20}$ -42.7 (H_2O).

N-*Me:* see 2-(Methylamino)-1-phenyl-1-propanol, M-386

N,N-*Di-Me:* see 2-Dimethylamino-1-phenyl-1-propanol, D-738

(1*S*,2*R*)-*form*
(+)-Norephedrine
[37577-28-9]
Synthetic. Mp 52°. $[\alpha]_D^{27}$ +14.76 (EtOH).

Hydrochloride: [40626-29-7]
Mp 171-172°. $[\alpha]_D^{27}$ +33.4 (EtOH).
▶ RC3325000

N-*Me:* see 2-(Methylamino)-1-phenyl-1-propanol, M-386

N,N-*Dibutyl:* [114389-70-7]
$C_{17}H_{29}NO$ 263.422
Chiral catalyst, e.g. for enantioselective addn. of R_2Zn to aldehydes. Oil. Bp_2 170°. $[\alpha]_D^{22}$ -24.4 (c, 2 in hexane).

(1*R*,2*S*)-*form*
Norephedrine
[492-41-1]
Alkaloid from "Ma Huang", *Ephedra vulgaris* and *Catha edulis* (Ephedraceae, Celastraceae). Mp 51°. $[\alpha]_D$ -15 (EtOH).
▶ RC2275000

Hydrochloride: [3198-15-0]
Mp 171-172°. $[\alpha]_D^{20}$ -33.27 (H_2O).
▶ RC3240000

N-*Formyl:* **N-*Formylnorephedrine***
$C_{10}H_{13}NO_2$ 179.218
Alkaloid from leaves of *Catha edulis* (Celastraceae). Needles (Et_2O/hexane). Mp 72-73°. $[\alpha]_D^{25}$ -45 (c, 1.1 in $CHCl_3$).

(1*RS*, 2*RS*)-*form*
(±)-Nor-ψ-ephedrine
[54680-46-5]
Plates (petrol). Mp 77°.

Hydrochloride: [1485-15-0]
Mp 172-173°.

N-*Me:* see 2-(Methylamino)-1-phenyl-1-propanol, M-386

(1*RS*,2*SR*)-*form*
(±)-Norephedrine. ***Phenylpropanolamine, BAN, INN****. Propadrine. Mydriatine*
[14838-15-4]
Adrenergic, vasoconstrictor. Nasal decongestant. Plates (H_2O). Mp 104-105° (101-101.5°). Log P 0.58 (calc).
▶ LD_{50} (rat, scu) 850 mg/kg. RC2625000

Hydrochloride: ***Phenylpropanolamine hydrochloride, USAN***
[154-41-6] Nasal decongestant. Sol. H_2O. Mp 194°. Component of Allerest, Demazin, Dimetapp, Sinarest.
▶ Hypertensive and CNS effects reported when used therapeutically. LD_{50} (rat, orl) 1490 mg/kg. Exp. teratogen. DN4200000

Complex with sulfonated styrene/divinylbenzene copolymer: ***Phenylpropanolamine polistirex, USAN***
Adrenergic, vasoconstrictor.

N-*Me:* see 2-(Methylamino)-1-phenyl-1-propanol, M-386

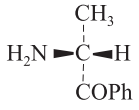
[36393-56-3 , 2153-98-2 , 54705-32-7 , 53631-70-2 , 700-65-2 , 4345-16-8 , 115651-77-9]

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 1273A; 1273B (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **2**, 577A; 577B; 577C; 578A (*nmr*)
Wolfes, O. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1930, **268**, 81 (*isol*)
Leithe, W. *et al., Ber.*, 1932, **65**, 660 (*abs config*)
Hoover, F.W. *et al., J.O.C.*, 1947, **12**, 506 (*synth*)
Heacock, R.A. *et al., Can. J. Pharm. Sci.*, 1974, **9**, 64 (*pharmacol*)

Smith, T.A. *et al., Phytochemistry*, 1977, **16**, 9 (*occur*)
Baudet, M. *et al., Anal. Lett.*, 1979, **12**, 641 (*cmr*)
Kaufer, I. *et al., Anal. Profiles Drug Subst.*, 1983, **12**, 357
Al-Meshal, I.A. *et al., Phytochemistry*, 1986, **25**, 2241 (*N-Formylnorephedrine*)
Negwer, M. *et al., Organic-Chemical Drugs and their Synonyms, 6th edn., Akademie-Verlag*, 1987, 1277
Lasagna, L. *et al., Phenylpropanolamine: A Review*, Wiley, New York, 1988, (*book*)
Jackson, W.R. *et al., Aust. J. Chem.*, 1990, **43**, 2045 (*synth*)
Fieser and Fieser's Reagents for Organic Synthesis, Wiley, 1990, **15**, 219 (*use*)
Soai, K. *et al., J.O.C.*, 1991, **56**, 4264 (*synth, ir, pmr, use, deriv*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 1222; 1252
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, NNM000; NNN000; NNO000; NNM500; NNW500; PMJ500; NNV500; NNN500

2-Amino-1-phenyl-1-propanone, 9CI A-870

α-Aminopropiophenone. α-Benzoylethylamine. ***Cathinone, INN****. Norephedrine*
[5265-18-9]



(*R*)–*form*

$C_9H_{11}NO$ 149.192
Analgesic, anorectic, antinociceptive agent. Possesses psychostimulant props. Log P 0.84 (calc).

(*R*)-*form* [80096-54-4]
► UC0418990
Hydrochloride: [76333-53-4]
Cryst. (2-propanol/THF). Mp 189-190° dec. (175-177°). $[\alpha]_D^{23}$ +47.3 (c, 1 in H_2O).

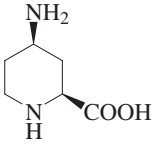
(*S*)-*form* [71031-15-7]
Isol. from leaves of *Catha edulis* (Khat) (Celastraceae) which are chewed for narcotic effect. $[\alpha]_D^{26}$ -26.5 (c, 0.24 in CH_2Cl_2). Pharmacol. active enantiomer. Unstable except in dilute non-polar non-hydroxylic soln. Cathinone is the true alkaloid but is transformed in unfresh leaves to Ephedrine and Pseudoephedrine.
► UC0419000
Hydrochloride: [72739-14-1]
Cryst. (2-propanol/Et_2O). Mp 188-190° (176-178°). $[\alpha]_D^{21}$ -46.9 (c, 1 in H_2O).
Oxalate salt: [81626-17-7]
Fine cryst. (EtOH). Mp 173-175°. $[\alpha]_D^{25}$ -40.5 (c, 0.3 in MeOH).

(±)-*form* [75925-46-1]
Unstable solid. Mp 112-114°.
Hydrochloride: [42787-61-1]
Needles (EtOH/Et_2O). Mp 187°.
N-*Formyl:* [102831-14-1]
$C_{10}H_{11}NO_2$ 177.202
Cryst. (Me_2CO/hexane). Mp 93-96°.
N-*Ac:*
$C_{11}H_{13}NO_2$ 191.229
Cryst. (C_6H_6). Mp 90-91°.
N-*Me: 2-Methylamino-1-phenyl-1-propanone. Ephedrone*
[5650-44-2]
$C_{10}H_{13}NO$ 163.219
Yellow oil. Bp_{11} 120-121°.
N-*Et:* [51553-17-4]
$C_{11}H_{15}NO$ 177.246
Shows anorexigenic activity in rats. Mp 196-198° (as hydrochloride). CAS no. refers to hydrochloride.

Gabriel, S. *et al., Ber.*, 1908, **41**, 1127 (*synth*)
Eberhard, A. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1915, **253**, 62
Kirchner, G. *et al., Annalen*, 1959, **625**, 104 (*synth*)
Schorno, X. *et al., Experientia*, 1979, **35**, 572 (*isol*)
Szendrei, K. *et al., Bull. Narc.*, 1980, **32**, 5 (*rev*)
Glennon, R.A. *et al., J. Med. Chem.*, 1980, **23**, 294 (*pharmacol*)
Berrang, B.D. *et al., J.O.C.*, 1982, **47**, 2643 (*resoln*)
Martindale, The Extra Pharmacopoeia, 28th/29th edn., Pharmaceutical Press, 1982, 12537
Kalix, P. *et al., Alcohol Alcohol.*, 1984, **19**, 319 (*pharmacol, use*)
Wolf, J.-P. *et al., Helv. Chim. Acta*, 1986, **69**, 918; 1498 (*synth, bibl*)
Muchowski, J.M. *et al., J.O.C.*, 1986, **51**, 3374 (*deriv*)
Farouz-Grant, F. *et al., J. Med. Chem.*, 1997, **40**, 1977-1981 (*synth, pmr*)

4-Amino-2-piperidinecarboxylic acid, 9CI A-871

4-Aminopipecolic acid, 8CI



(2*S*,4*R*)-*form*

$C_6H_{12}N_2O_2$ 144.173

(2*S*,4*R*)-*form*
Trifluoroacetate salt: [756486-08-5]
Solid. Mp 314° dec. $[\alpha]_D^{25}$ -5.1 (c, 0.75 in H_2O).

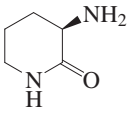
(2*S*,4*S*)-*form*
L-trans-*form*
Trifluoroacetate salt: [756486-10-9]
Solid. Mp 290° dec. $[\alpha]_D^{25}$ -10.4 (c, 0.64 in H_2O).
N-*Ac:* ***4-Acetamidopipecolic acid****. 2-Carboxy-4-acetylaminopiperidine*
[72015-68-0]
$C_8H_{14}N_2O_3$ 186.21
Alkaloid from leaves of *Calliandra haematocephala* (Fabaceae). Cryst. + $^1/_2$ H_2O (Me_2CO aq.). $[\alpha]_D^{20}$ -6 (c, 0.20 in H_2O). $[\alpha]_D^{20}$ +0.5 (c, 0.196 in 2M HCl). Not correlated with the parent amine above due to scarcity of material. Incorr. descr. as (2*S*,4*R*) in the lit.

(-)-*form*
Present in *Strophanthus scandens* (Apocynaceae). Powder. Hygroscopic. Config. unknown.

Schenk, W. *et al., Naturwissenschaften*, 1961, **48**, 223 (*isol*)
Marlier, M. *et al., Phytochemistry*, 1979, **18**, 479 (*deriv*)
Machetti, F. *et al., Eur. J. Org. Chem.*, 2004, 2928-2935 (*2S,4R-form, 2S,4S-form, synth, pmr, cmr*)

3-Amino-2-piperidinone, 9CI A-872

Ornithine lactam. Cycloornithine
[1892-22-4]



(*R*)-*form*

$C_5H_{10}N_2O$ 114.147

(*R*)-*form* [88763-76-2]
Residue occurring in pyoverdins. Cryst. (EtOAc). Mp 85.5-87.5°.
N-tert-*Butyloxycarbonyl:* [221874-51-7]
$C_{10}H_{18}N_2O_3$ 214.264
Oil. $[\alpha]_D^{24}$ -57.4 (c, 1.07 in $CHCl_3$).
N-*Hydroxy; hydrochloride:* [37524-32-6]
Cryst. (MeOH/EtOH). Mp 208-215° dec. $[\alpha]_D^{24}$ -0.8 (c, 0.83 in H_2O).

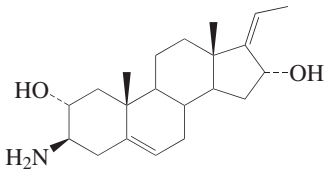
(*S*)-*form* [34294-79-6]
Cryst. (EtOAc). Mp 42° Mp 86-87°. $[\alpha]_D^{25}$ -12.4 (c, 3.44 in $CHCl_3$). $[\alpha]_D^{25}$ -19.9 (dioxan).
Hydrochloride: [42538-31-8]
Mp 218-220° dec.
N^3-*Benzoyl:* [148824-28-6]
[3328-28-7 (L-form)]
$C_{12}H_{14}N_2O_2$ 218.255
Mp 170-172°.
N-*Hydroxy:* [40716-77-6]
$C_5H_{10}N_2O_2$ 130.146
Isol. from cultures of *Rhodotorula pilimanae*. Needles (MeOH/EtOH) (as hydrochloride). Mp 211-212° dec. (hydrochloride).
N^1-*4-Methylbenzenesulfonyl:* [20803-07-0]
Cryst. (MeOH). Mp 185-186°. $[\alpha]_D^{25}$ +60.9 (c, 2.04 in DMF).

(±)-*form* [4077-38-7]
Mp 42°. $Bp_{2.5}$ 125-135° lit. gives a pressure range.
N^3-*Ac:* [98336-92-6]
$C_7H_{12}N_2O_2$ 156.184
Needles ($CHCl_3$/Et_2O). Mp 187-188°.
N-*Hydroxy; hydrochloride:*
[7438-77-9 (free base)]
Cryst. (EtOH). Mp 211-212°.
N-*Hydroxy,* N^3-*Ac:* [37524-31-5]
$C_7H_{12}N_2O_3$ 172.183
Cryst. (MeOH). Mp 203-205°.

Bergmann, M. *et al., Hoppe-Seyler's Z. Physiol. Chem.*, 1926, **159**, 179-189 (N^3-*Ac, synth*)
Emery, T.F. *et al., Biochemistry*, 1966, **5**, 3694-3701 (*S-form, hydroxy, synth*)
Isowa, Y. *et al., Bull. Chem. Soc. Jpn.*, 1972, **45**, 1464-1466 (*R-form, N-hydroxy, (±)-form, N-hydroxy* N^3-*Ac, synth*)
Akers, H.A. *et al., Biochemistry*, 1973, **12**, 1006 (*isol, synth, S-form, N-hydroxy*)

Terashima, S. *et al., Tetrahedron*, 1973, **29**, 1487 (*synth*)
Merguro, H. *et al., Tet. Lett.*, 1975, 1309 (*cd*)
Pellegata, R. *et al., Synthesis*, 1978, 614-616 (*S-form, synth*)
Blade-Font, A. *et al., Tet. Lett.*, 1980, **21**, 2443 (*synth*)
Winter, W. *et al., Annalen*, 1983, 2021 (*synth*)
Miyamura, K. *et al., J.C.S. Dalton*, 1987, 1127 (*synth*)
Toshima, H. *et al., Tetrahedron*, 1999, **55**, 5793-5808 (*R-form, N-tert-butyloxycarbonyl*)
Abe, M. *et al., Bioorg. Med. Chem.*, 2005, **13**, 785-797 (*S-form, synth, pmr, cmr*)
Kubota, D. *et al., Bioorg. Med. Chem.*, 2006, **14**, 4158-4171 (*S-form, synth, pmr*)
Urbanczyk-Lipkowska, Z. *et al., Tetrahedron: Asymmetry*, 2007, **18**, 1254-1256 (*resoln, S-form*)

3-Aminopregna-5,17(20)-diene-2,16-diol A-873



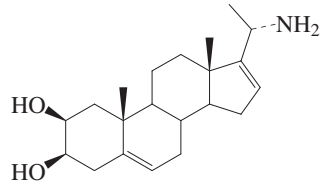
$C_{21}H_{33}NO_2$ 331.497

(2α,3β,16α,17*Z*)-*form*

N,N-*Di-Me: 3-(Dimethylamino)pregna-5,17(20)-diene-2,16-diol*. ***Kurchaline***
[6885-72-9]
$C_{23}H_{37}NO_2$ 359.551
Alkaloid from the leaves of *Holarrhena antidysenterica* (Apocynaceae). Cryst. (Me_2CO). Mp 185°. $[\alpha]_D$ -37 (c, 1 in $CHCl_3$).

Janot, M.M. *et al., Bull. Soc. Chim. Fr.*, 1966, 1212-1216 (*struct, ir, pmr, ms*)

20-Aminopregna-5,16-diene-2,3-diol A-874



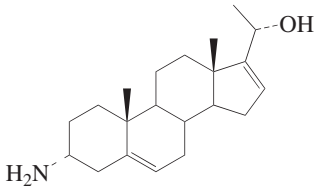
$C_{21}H_{33}NO_2$ 331.497

(2β,3β,20*S*)-*form*

3-Me ether, N^{20},N^{20}-*di-Me: 3-Methoxy-20-(dimethylamino)pregna-5,16-dien-2-ol*. ***Qasmine A***. *2-Hydroxy*-N-*methylsalignamine*
[657411-72-8]
$C_{24}H_{39}NO_2$ 373.578
Alkaloid from *Sarcococca saligna*. Acetylcholinesterase inhibitor. Yellow gum. $[\alpha]_D^{20}$ -26 (c, 0.02 in $CHCl_3$). Incorrect synonym assigned in ref. λ_{max} 206 (log ϵ 3.8) (MeOH).

Zaheer-ul-Haq, *et al., Bioorg. Med. Chem. Lett.*, 2003, **13**, 4375-4380 (*isol*)
Atta-ur-Rahman, *et al., Helv. Chim. Acta*, 2004, **87**, 439-448 (*isol, pmr, cmr, ms*)

3-Aminopregna-5,16-dien-20-ol A-875



$C_{21}H_{33}NO$ 315.498

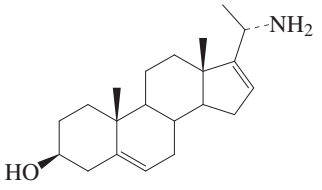
(3α,20*S*)-*form*

N-*Me:* ***Holadysamine***
[1433-91-6]
$C_{22}H_{35}NO$ 329.525
Minor alkaloid from the leaves of *Holarrhena antidysenterica* (Apocynaceae). Cryst. (hexane). Mp 173°. $[\alpha]_D$ -78 (c, 1 in $CHCl_3$).

N-*Me,* O,N-*di-Ac:* Mp 136°. $[\alpha]_D$ -74 (c, 1.3 in $CHCl_3$).

Janot, M.M. *et al., Bull. Soc. Chim. Fr.*, 1964, 2158-2166; 1966, 1212-1216 (*isol, struct, ir, pmr, ms*)

20-Aminopregna-5,16-dien-3-ol A-876



$C_{21}H_{33}NO$ 315.498

(3β,20*S*)-*form*

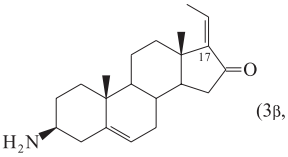
Me ether, N-*Me: 3-Methoxy-20-(methylamino)pregna-5,16-diene*. ***Salignamine***. *Qasmine B*
[657411-73-9]
$C_{23}H_{37}NO$ 343.551
Alkaloid from *Sarcococca saligna*. Cholinesterase and acetylcholinesterase inhibitor. Yellow gum. $[\alpha]_D^{20}$ -23 (c, 0.12 in $CHCl_3$). λ_{max} 202 (log ϵ 2.9) (MeOH).

Me ether, N-*Me,* N-*formyl:* ***N^{20}-Demethyl-N^{20}-formylsalonine B***
[657403-05-9]
$C_{24}H_{37}NO_2$ 371.562
Alkaloid from *Sarcococca saligna*. Cholinesterase inhibitor. Yellow gum. $[\alpha]_D^{20}$ -21 (c, 0.07 in MeOH). λ_{max} 237 (log ϵ 2.86) (MeOH).

Me ether, N,N-*di-Me: 20-(Dimethylamino)-3-methoxypregna-5,16-diene*. ***Salonine B***
[618852-70-3]
$C_{24}H_{39}NO$ 357.578
Alkaloid from *Sarcococca saligna*. Cholinesterase inhibitor. Powder. $[\alpha]_D^{20}$ -116 (c, 0.04 in MeOH). λ_{max} 206 (MeOH).

Zaheer-ul-Haq, *et al., Bioorg. Med. Chem. Lett.*, 2003, **13**, 4375-4380 (N^{20}-*Demethyl-*N^{20}*-formylsalonine B*)
Atta-ur-Rahman, *et al., Nat. Prod. Res.*, 2003, **17**, 235-241 (*Salonine B*)
Atta-ur-Rahman, *et al., Helv. Chim. Acta*, 2004, **87**, 439-448 (*Salignamine*)

3-Aminopregna-5,17(20)-dien-16-one A-877



(3β,17*E*)–*form*

$C_{21}H_{31}NO$ 313.482

(3β,17*E*)-*form*

N-*Me:* ***3-Methylaminopregna-5,17(20)-dien-16-one***
[113846-33-6]
$C_{22}H_{33}NO$ 327.509
Alkaloid from leaves of *Didymeles perrieri* (Didymelaceae). $[\alpha]_D$ -37 (c, 0.60 in EtOH).

(3β,17*Z*)-*form*

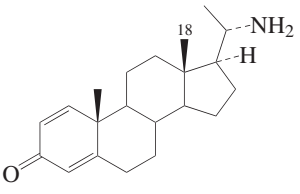
Alkaloid from leaves of *Didymeles perrieri* (Didymelaceae). $[\alpha]_D$ -63 (c, 0.41 in $CHCl_3$).

N-*Me:* [113846-32-5]
Alkaloid from leaves of *Didymeles perrieri* (Didymelaceae). $[\alpha]_D$ -16 (c, 0.68 in $CHCl_3$).

Sánchez, V. *et al., Bull. Soc. Chim. Fr.*, Part II, 1987, 877

20-Aminopregna-1,4-dien-3-one A-878

[77546-81-7]



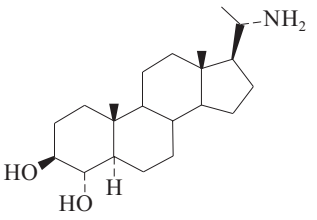
$C_{21}H_{31}NO$ 313.482

(20*S*)-*form* [78548-54-6]

N,N-*Di-Me:* ***20-(Dimethylamino)pregna-1,4-dien-3-one***
[91147-27-2]
$C_{23}H_{35}NO$ 341.536
Alkaloid from the stem bark of *Didymeles* cf *madagascariensis* (Didymelaceae). $[\alpha]_D$ +48 (c, 0.1 in $CHCl_3$).

Sánchez, V. *et al., Bull. Soc. Chim. Fr.*, Part II, 1984, 71; 1987, 877 (*isol, uv, cd, pmr, cmr, ms, struct*)
De, D. *et al., Steroids*, 1991, **56**, 189 (*synth*)

20-Aminopregnane-3,4-diol A-879



$C_{21}H_{37}NO_2$ 335.529

(3β,4α,5α,20*S*)-*form*

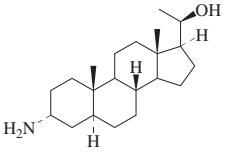
N,N-*Di-Me:* ***Terminaline***
[15112-49-9]
$C_{23}H_{41}NO_2$ 363.582
Alkaloid from *Pachysandra terminalis* and *Sarcococca hookeriana*. Cryst. Mp 243-244° (216-218°). $[\alpha]_D^{25}$ +115 (c, 0.04 in MeOH). λ_{max} 242 (ϵ 1000) (MeOH).

N,N-*Di-Me, Di*-O-*Ac:* Mp 202-204°. $[\alpha]_D$ +40 ($CHCl_3$).

Kikuchi, T. *et al., Tet. Lett.*, 1965, **24**, 1993-1999 (*isol, pmr, ms*)
Choudhary, M.I. *et al., Steroids*, 2005, **70**, 295-303 (*isol, pmr, cmr*)

3-Aminopregnan-20-ol A-880

3-Amino-20-hydroxypregnane



(3α,5α,20*R*)-*form*

$C_{21}H_{37}NO$ 319.529

(3α,5α,20*R*)-*form*

Isofuntumidine. Epifuntumidine
[516-52-9]
Cryst. (MeOH). Mp 172-173°. $[\alpha]_D$ -6.2 (c, 2.7 in $CHCl_3$).

(3α,5α,20*S*)-*form*

Funtumidine
[474-44-2]
Alkaloid from *Funtumia latifolia* (Apocynaceae). Hypocholesterolaemic agent. Shows antigonadotrophic, corticotrophic antiinflammatory and hypotensive activity. Respiratory stimulant. Mp 182°. $[\alpha]_D$ +10 (c, 1.5 in $CHCl_3$).
► TU4200000

(3α,5β,20*R*)-*form*

Cryst. (DMF). Mp 160-163°. $[\alpha]_D^{23.5}$ +14.4 (c, 1 in $CHCl_3$).

(3β,5α,20*R*)-*form*

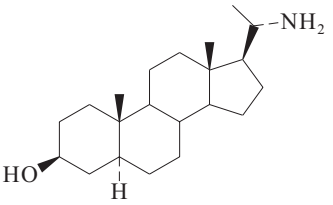
Cryst. Mp 172-174°. $[\alpha]_D^{21.5}$ +5.4 (c, 1 in $CHCl_3$).

(3β,5β,20*R*)-*form*

Cryst. (EtOAc). Mp 150-152°. $[\alpha]_D^{20}$ 0 (c, 1 in $CHCl_3$).

Janot, M.-M. *et al., C. R. Hebd. Seances Acad. Sci.*, 1958, **246**, 3076; 1959, **248**, 982 (*ir, struct, Funtumidine*)
U.S. Pat., 1963, 3 098 082; *CA*, **59**, 11632d (*synth*)
Schmitt, J. *et al., Bull. Soc. Chim. Fr.*, 1964, 761 (*synth*)
Dodoun, H. *et al., Phytochemistry*, 1973, **12**, 923 (*Isofuntumidine*)

20-Aminopregnan-3-ol A-881



$C_{21}H_{37}NO$ 319.529

(3β,5α,20*S*)-*form*

Funtuphyllamine A
[667-71-0]
Alkaloid from *Funtumia africana* (Apocynaceae). Mp 173°. $[\alpha]_D$ +13 (c, 1.3 in $CHCl_3$).

N-*Ac:* ***Holacetine***
[60882-55-5]
$C_{23}H_{39}NO_2$ 361.567
Alkaloid from *Holarrhena antidysenterica* root bark (Apocynaceae). Mp 258°. $[\alpha]_D^{25}$ +6.9 (EtOH).

N-*Me: 20-Methylaminopregnan-3-ol.* ***Funtuphyllamine B***
[474-81-7]
$C_{22}H_{39}NO$ 333.556
Alkaloid from *Funtumia africana* and *Malouetia bequaertiana* (Apocynaceae). Mp 214°. $[\alpha]_D$ +24 ($CHCl_3$).

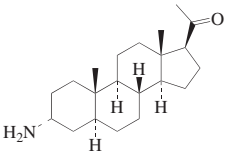
N,N-*Di-Me: 20-(Dimethylamino)pregnan-3-ol.* ***Funtuphyllamine C****. Sarcorucinine D*
[474-51-1]
$C_{23}H_{41}NO$ 347.583
Alkaloid from *Funtumia africana* (Apocynaceae). Also from *Sarcococca ruscifolia* (Buxaceae). Mp 172°. $[\alpha]_D$ +24 ($CHCl_3$).

N,N-*Di-Me,* O-*β-D-glucopyranoside:* ***Pachyaxioside A***
[128255-18-5]
$C_{29}H_{51}NO_6$ 509.725
Alkaloid from *Pachysandra axillaris.*

N,N-*Di-Me,* O-*(3-methyl-2-butenoyl):* **O-*β,β*-Dimethylacrylylfuntuphyllamine *C***
$C_{28}H_{47}NO_2$ 429.685
Alkaloid from *Sarcococca pruniformis* (Buxaceae). Mp 274-276°. $[\alpha]_D^{26}$ +10 ($CHCl_3$).

Černy, V. *et al., Coll. Czech. Chem. Comm.*, 1957, **22**, 76 (*synth*)
Janot, M.-M. *et al., C. R. Hebd. Seances Acad. Sci.*, 1960, **250**, 2445 (*isol, ir, struct*)
Chatterjee, A. *et al., Chem. Ind. (London)*, 1966, 769 (*Dimethylacrylylfuntuphyllamine C*)
Demailly, G. *et al., Tet. Lett.*, 1975, 2471 (*synth*)
Rej, R.N. *et al., Phytochemistry*, 1976, **15**, 1173 (*Holacetine*)
Biesemans, M. *et al., Bull. Soc. Chim. Belg.*, 1985, **94**, 59 (*pmr, cmr, conformn*)
Qiu, M. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 1989, **31**, 535; *CA*, **113**, ; 74724n (*Sarcorucinine D*)
Qiu, M. *et al., CA*, 1990, **113**, 55838m (*N,N-di-Me glucoside*)

3-Aminopregnan-20-one A-882



(3α,5α)-*form*

$C_{21}H_{35}NO$ 317.514

(3α,5α)-*form*

Funtumine
[474-45-3]
Alkaloid from *Funtumia latifolia*, *Holarrhena febrifuga* and *Holarrhena congolensis* (Apocynaceae). Hypocholesterolaemic agent, shows antigonadotropic, corticotropic, antiinflammatory and hypotensive props. Respiratory stimulant. Mp 126°. $[\alpha]_D$ +95 (c, 1.7 in $CHCl_3$).
► LD_{50} (mus, ivn) 30 mg/kg. TU4375000

Hydrochloride: Mp 280°. $[\alpha]_D$ +60 (c, 0.67 in MeOH).

N-*Ac:* [4465-66-1]
Mp 240°.

N-*Me: 3-(Methylamino)pregnan-20-one.* **N-*Methylfuntumine***
[40855-51-4]
$C_{22}H_{37}NO$ 331.54
Alkaloid from *Holarrhena febrifuga* and *Sarcococca coriacea*. Yellow cryst.($CHCl_3$). Mp 129-130°. $[\alpha]_D^{20}$ +92 (c, 0.9 in $CHCl_3$). λ_{max} 202 (log ϵ 4.8) (MeOH).

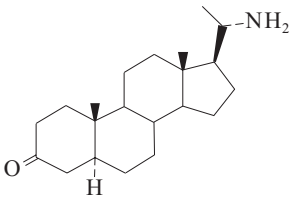
N,N-*Di-Me: 3-(Dimethylamino)pregnan-20-one.* **N,N-*Dimethylfuntumine***
[3022-47-7]
$C_{23}H_{39}NO$ 345.567
Alkaloid from *Holarrhena febrifuga* (Apocynaceae). Mp 128-130°. $[\alpha]_D^{20}$ +92 (c, 1.8 in $CHCl_3$).

(3β,5α)-*form*

Dihydroholaphyllamine
[2136-36-9]
[24202-19-5 (hydrochloride)]
Alkaloid from *Holarrhena floribunda* (Apocynaceae). Noncryst.

Janot, M.-M. *et al., C. R. Hebd. Seances Acad. Sci.*, 1958, **246**, 3076; 1959, **248**, 982 (*isol, ir, struct*)
Leboeuf, M. *et al., Ann. Pharm. Fr.*, 1969, **27**, 217-218 (*Dihydroholaphyllamine*)
Boutigue, M.H. *et al., Bull. Soc. Chim. Fr.*, 1973, 750-753 (*synth, N-Methylfuntumine, N,N-Dimethylfuntumine*)
Dadoun, H. *et al., Phytochemistry*, 1973, **12**, 923-928 (*Funtumine, N-Methylfuntumine, N,N-Dimethylfuntumine*)
Kapnang, H. *et al., Tet. Lett.*, 1977, 3469-3472 (*N,N-Dimethylfuntumine, synth*)
Kalauni, S.K. *et al., Chem. Pharm. Bull.*, 2002, **50**, 1423-1426 (*N-Methylfuntumine, pmr, cmr*)

20-Aminopregnan-3-one A-883



$C_{21}H_{35}NO$ 317.514

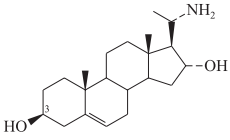
(5α,20*S*)-*form*
Wrightiamine B
[640266-39-3]
Alkaloid from the leaves of *Wrightia japonica*. Amorph. solid. $[\alpha]_D^{25}$ +5 (c, 0.04 in MeOH).

N-*Me:* ***20-(Methylamino)pregnan-3-one. Funtumafrine B***
[474-82-8]
$C_{22}H_{37}NO$ 331.54
Alkaloid from the leaves of *Funtumia africana*. Mp 160°. $[\alpha]_D$ +43 (c, 1.2 in $CHCl_3$).

N,N-*Di-Me: 20-(Dimethylamino)pregnan-3-one.* ***Funtumafrine C***
[474-52-2]
$C_{23}H_{39}NO$ 345.567
Alkaloid from *Funtumia africana*, *Chonemorpha macrophylla* and *Sarcococca coriacea*. Cryst.($CHCl_3$). Mp 176° (174°). $[\alpha]_D^{25}$ +50 (c, 0.6 in $CHCl_3$). λ_{max} 202 (log ϵ 4.7) (MeOH).

Janot, M.M. *et al., C. R. Hebd. Seances Acad. Sci.*, 1960, **250**, 2445-2447 (*isol, struct, synth*)
Banerji, J. *et al., Indian J. Chem., Sect. B*, 1978, **16**, 346 (*isol*)
Kalauni, S.K. *et al., Chem. Pharm. Bull.*, 2002, **50**, 1423-1426 (*Funtumafrine C, pmr, cmr*)
Kawamoto, S. *et al., Chem. Pharm. Bull.*, 2003, **51**, 737-739 (*Wrightiamine B*)

20-Aminopregn-5-ene-3,16-diol A-884



(3β,16α,20*S*)-*form*

$C_{21}H_{35}NO_2$ 333.513

(3β,16α,20*S*)-*form*
N-*Me: 20-(Methylamino)pregn-5-ene-3,16-diol*
[16378-59-9]
$C_{22}H_{37}NO_2$ 347.54
Mp 265°. $[\alpha]_D^{24}$ -69.9 (c, 0.5 in propanol).

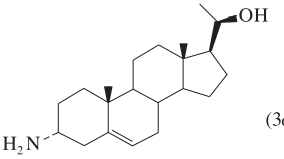
N-*Me,* N,*3,16-tri-Ac:* Mp 214°. $[\alpha]_D^{30.5}$ -142 (c, 1 in $CHCl_3$).

(3β,16β,20*S*)-*form*
3-Me ether, N,N-*di-Me: 20-(Dimethylamino)-3-methoxypregn-5-en-16-ol.* ***Pachyaximine B***
[128286-24-8]
$C_{24}H_{41}NO_2$ 375.593
Alkaloid from *Pachysandra axillaris* (Buxaceae).

Di-Me ether, N,N-*di-Me: 3,16-Dimethoxy-*N,N-*dimethylpregn-5-en-20-amine, 9CI. 20-(Dimethylamino)-3,16-dimethoxypregn-5-ene.* ***Sarcosaligmine.*** *Sracosalgmine*
[873804-22-9]
$C_{25}H_{43}NO_2$ 389.62
Alkaloid from *Sarcococca saligna*. Solid. Mp 212-217°. $[\alpha]_D^{27}$ +77 (c, 0.44 in $CHCl_3$).

Schmitt, J. *et al., Bull. Soc. Chim. Fr.*, 1963, 2240-2248 (*N-Me, synth*)
Qui, M. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 1989, **31**, 535-539; *CA*, **113**, 74724n (*Pachyaximine B*)
Naeem, I. *et al., CA*, 2005, **144**, 146530m (*Sarcosaligmine*)

3-Aminopregn-5-en-20-ol A-885



(3α,20*R*)-*form*

$C_{21}H_{35}NO$ 317.514

(3α,20*R*)-*form*
Holaminol
[28375-11-3]
Minor alkaloid from the leaves of *Holarrhena febrifuga* (Apocynaceae). Mp 205°. $[\alpha]_D$ -78.6 ($CHCl_3$). Phys. consts. for synthetic sample.

O,N-*Di-Ac:* Mp 226°. $[\alpha]_D^{20}$ -23.8 (c, 0.9 in $CHCl_3$).

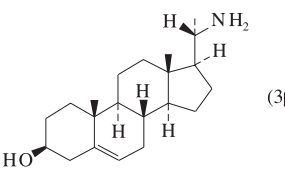
(3β,20*R*)-*form*
N-*Me:* ***Holaphyllinol***
[5750-08-3]
$C_{22}H_{37}NO$ 331.54
Alkaloid from *Holarrhena floribunda* (Apocynaceae). Mp 226-227°. $[\alpha]_D$ -71 (c, 1.3 in $CHCl_3$).

(3β,20*S*)-*form*
N-*Me:* ***Holaphyllidine***
[3837-07-8]
$C_{22}H_{37}NO$ 331.54
Alkaloid from *Holarrhena africana* (*Holarrhena floribunda*) (Apocynaceae).

Goutarel, R. *et al., Bull. Soc. Chim. Fr.*, 1962, 646 (*synth*)
Leboeuf, M. *et al., C. R. Hebd. Seances Acad. Sci.*, 1964, **259**, 3401 (*Holaphyllidine*)
Leboeuf, M. *et al., Ann. Pharm. Fr.*, 1969, **27**, 217 (*Holaphyllinol*)
Dadoun, H. *et al., Ann. Pharm. Fr.*, 1973, **31**, 237 (*isol, pmr, ms*)

20-Aminopregn-5-en-3-ol A-886

20-Amino-3-hydroxypregn-5-ene



(3β,20*S*)-*form*

$C_{21}H_{35}NO$ 317.514

(3β,20*S*)-*form*
Holafebrine
[5035-10-9]
Alkaloid from *Holarrhena febrifuga, Holarrhena mitis, Holarrhena crassifolia* and *Kibatalia arborea* (Apocynaceae). Mp 177°. $[\alpha]_D$ -61.5 (c, 0.85 in $CHCl_3$). $[\alpha]_D^{25}$ -66.6 (90% Py aq.).

O-*β-D-Glucopyranoside:* ***Conopharyngine***†
[7067-29-0]
$C_{27}H_{45}NO_6$ 479.656
Alkaloid from *Conopharyngia pachysiphon* (Apocynaceae). Hypotensive agent. Mp 285-288°.

O-*β-D-Glucopyranoside; hydrochloride:* Mp 259-260°. $[\alpha]_D^{25}$ -66.6 (90% Py aq.).

O,N-*Di-Ac:* Mp 250°. $[\alpha]_D$ -56.6 (c, 0.7 in $CHCl_3$).

N-*Me: 20-Methylaminopregn-5-en-3-ol.* ***Irehamine***
[7083-27-4]
$C_{22}H_{37}NO$ 331.54
Alkaloid from *Funtumia elastica, Funtumia latifolia* and *Dictyophleba lucida* (Apocynaceae). Mp 230°. $[\alpha]_D$ -33 (c, 0.9 in $CHCl_3$).

N,N-*Di-Me: 20-Dimethylaminopregn-5-en-3-ol.* ***Irehine.*** *Buxomegine*
[2309-39-9]
$C_{23}H_{39}NO$ 345.567
Alkaloid from *Funtumia elastica* and *Buxus sempervirens.* Mp 174°. $[\alpha]_D^{25}$ +40 (c, 1.3 in $CHCl_3$). λ_{max} 204 (MeOH).

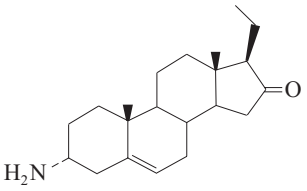
N,N-*Di-Me,* O-*β-D-glucopyranoside:* ***Pachyaxioside B***
[128255-19-6]
$C_{29}H_{49}NO_6$ 507.709
Alkaloid from *Pachysandra axillaris.*

Me ether, N,N-*di-Me: 3-Methoxy-20-dimethylaminopregn-5-ene.* ***Pachyaximine A***
[128255-08-3]
[32164-75-3]
$C_{24}H_{41}NO$ 359.594
Alkaloid from *Pachysandra axillaris* and *Sarcococca pruniformis.* Needles. Mp 155° (152-153°). $[\alpha]_D^{30}$ -32 ($CHCl_3$). Alkaloid C from *S. pruniformis* originally assigned 3α-config.

Lucas, R.A. *et al., J.A.C.S.*, 1960, **82**, 5688 (*glucoside*)
Janot, M.-M. *et al., Bull. Soc. Chim. Fr.*, 1962, 285 (*isol, struct*)
Vetter, W. *et al., Bull. Soc. Chim. Fr.*, 1963, 1324 (*ms*)
Truong-Ho, M. *et al., Bull. Soc. Chim. Fr.*, 1963, 2332 (*derivs*)
Votický, Z. *et al., Coll. Czech. Chem. Comm.*, 1965, **30**, 348 (*derivs*)
Robinson, C.H. *et al., Chem. Ind. (London)*, 1966, 377 (*pmr*)
Kohli, K.M. *et al., Phytochemistry*, 1971, **10**, 442 (*Alkaloid C*)
Einhorn, J. *et al., Phytochemistry*, 1972, **11**, 769 (*isol*)
Dadoun, H. *et al., Ann. Pharm. Fr.*, 1973, **31**, 237 (*isol*)
Qiu, M. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 1989, **31**, 535; *CA*, **113**, 74724 (*Pachyaximine A*)
Qiu, M. *et al., CA*, 1990, **113**, 55838m (*glucoside*)

Atta-ur-Rahman, *et al., Nat. Prod. Res.*, 2003, **17**, 235-241 (*Alkaloid C*)
Babar, Z.U. *et al., Steroids*, 2006, **71**, 1045-1051 (*Irehine*)

3-Aminopregn-5-en-16-one A-887



$C_{21}H_{33}NO$ 315.498

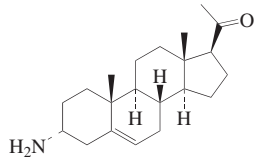
3α-form

N-*Me: 3-Methylaminopregn-5-en-16-one.* ***Holadysine***
$C_{22}H_{35}NO$ 329.525
Alkaloid from the leaves of *Holarrhena antidysenterica* (Apocynaceae). Cryst. (hexane). Mp 120°. $[\alpha]_D$ -199 (c, 1.2 in $CHCl_3$).

N-*Me,* N-*Ac:*
Cryst. by subl. Mp 175°. $[\alpha]_D$ -163 (c, 1.3 in $CHCl_3$).

Janot, M.M. *et al., Bull. Soc. Chim. Fr.*, 1964, 2158; 1966, 1212 (*isol, struct, ir, pmr, ms*)

3-Aminopregn-5-en-20-one A-888



3α-*form*

$C_{21}H_{33}NO$ 315.498
Log P 4.13 (uncertain value) (calc).

3α-form

Holamine
[28840-94-0]
Alkaloid from *Holarrhena curtisii* and *Holarrhena floribunda* and leaves of *Holarrhena febrifuga* (Apocynaceae). Antigonadotropic, corticotropic and antiinflammatory agent. Strong local anaesthetic. Respiratory depressant. Diuretic causing sodium retention. Cytotoxic and leishmanicidal agent. Cryst. (EtOAc). Mp 135-136°. $[\alpha]_D$ +23 (c, 0.88 in $CHCl_3$).

N-*Me: 3-Methylaminopregn-5-en-20-one.* ***Monomethylholamine***
[41567-48-0]
$C_{22}H_{35}NO$ 329.525
Alkaloid from leaves of *Holarrhena febrifuga* (Apocynaceae). Cryst. (Me_2CO). $[\alpha]_D^{20}$ +25 (c, 1 in $CHCl_3$). Constants refer to a synthetic sample.

N,N-*Di-Me: 3-Dimethylaminopregn-5-en-20-one.* ***Dimethylholamine***
[41515-65-5]
$C_{23}H_{37}NO$ 343.551
Alkaloid from leaves of *Holarrhena febrifuga* (Apocynaceae). Cryst. (Me_2CO). Mp 135°. $[\alpha]_D$ +18 (c, 1 in $CHCl_3$). Constants are for a synthetic sample.

15α-Hydroxy: 3-Amino-15-hydroxypregn-5-en-20-one. ***15-Hydroxyholamine***
[215595-78-1]
$C_{21}H_{33}NO_2$ 331.497
Alkaloid from *Holarrhena curtisii*. Cytotoxic and leishmanicidal agent. Amorph. $[\alpha]_D$ +47.2 (c, 0.23 in $CHCl_3$).

3β-form

Holaphyllamine
[7068-92-0 (hydrochloride)]
Alkaloid from *Holarrhena floribunda* and *Holarrhena crassifolia* (Apocynaceae). Antiinflammatory agent. Noncryst. Mp 300° dec. (260°) (as hydrochloride). $[\alpha]_D$ +33 (c, 0.68 in MeOH) (hydrochloride). Log P 4.13 (uncertain value) (calc).

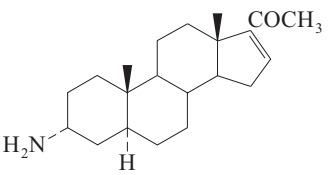
N-*Me:* ***Holaphylline***
[562-02-7]
$C_{22}H_{35}NO$ 329.525
Alkaloid from *Holarrhena floribunda*, *Holarrhena febrifuga*, *Holarrhena congolensis* and *Holarrhena crassifolia* (Apocynaceae). Antigonatotropic, corticotropic and antiinflammatory agent. Respiratory depressant, diuretic. Mp 128°. $[\alpha]_D$ +23.7 ($CHCl_3$).

N-*Me,* N-*Ac:* [2842-66-2]
Mp 205-206°. $[\alpha]_D$ +16.7 (c, 1.2 in $CHCl_3$).

N,N-*Di-Me:* ***Dimethylholaphyllamine.*** *Methylholaphylline*
[6405-70-5]
$C_{23}H_{37}NO$ 343.551
Alkaloid from *Holarrhena floribunda* (Apocynaceae). Cryst. (MeOH). Mp 121°. $[\alpha]_D$ +30.5 (c, 0.86 in $CHCl_3$).

Janot, M.-M. *et al., Bull. Soc. Chim. Fr.*, 1959, 896-900 (*Holamine, Monomethylholamine, Dimethylholamine*)
Janot, M.-M. *et al., C. R. Hebd. Seances Acad. Sci.*, 1960, **251**, 559-561 (*Holaphyllamine, Holamine*)
Goutarel, R. *et al., Bull. Soc. Chim. Fr.*, 1967, 4575-4582 (*synth, pmr*)
Einhorn, J. *et al., Phytochemistry*, 1972, **11**, 769-777 (*Holaphyllamine, Holaphylline*)
Dadoun, H. *et al., Phytochemistry*, 1973, **12**, 923-928 (*Holamine, Methylholamine, Dimethylholamine, isol, synth*)
Kam, T.-S. *et al., J. Nat. Prod.*, 1998, **61**, 1332-1336 (*Holamine, 15α-Hydroxyholamine, pmr, cmr*)

3-Aminopregn-16-en-20-one A-889



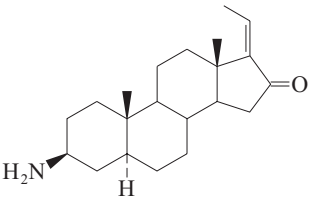
$C_{21}H_{33}NO$ 315.498

(3α,5α)-form

N-*Di-Me: 3-Dimethylaminopregn-16-en-20-one.* ***Sarcorucinine B***
[143086-42-4]
$C_{23}H_{37}NO$ 343.551
Alkaloid from aerial parts of *Sarcococca ruscifolia* (Buxaceae).

Qiu, M. *et al., Yunnan Zhiwu Yanjiu*, 1991, **13**, 445; *CA*, **117**, 108079f (*isol, ir, pmr, ms*)

3-Aminopregn-17(20)-en-16-one A-890



$C_{21}H_{33}NO$ 315.498

(3β,5α,17*E*)-form

N-*Me: 3β-(Methylamino)pregn-17(20)-en-16-one*
[113846-34-7]
$C_{22}H_{35}NO$ 329.525
Alkaloid from the leaves of *Didymeles perrieri* (Didymelaceae). $[\alpha]_D$ -64 (c, 0.52 in $CHCl_3$).

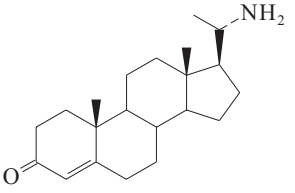
N,N-*Di-Me: 3-(Dimethylamino)pregn-17(20)-en-16-one.* **E-*Salignone***
[204450-32-8]
$C_{23}H_{37}NO$ 343.551
Constit. of *Sarcococca saligna*. Oil. $[\alpha]_D^{25}$ -26 (c, 0.076 in $CHCl_3$). λ_{max} 242 (log ϵ 3.8) (MeOH).

(3β,5α,17*E*)-form

N,N-*Di-Me:* **Z-*Salignone***
[204450-33-9]
$C_{23}H_{37}NO$ 343.551
Constit. of *Sarcococca saligna*. Oil. $[\alpha]_D^{25}$ -46 (c, 0.086 in $CHCl_3$). λ_{max} 242 (log ϵ 3.7) (MeOH).

Sánchez, V. *et al., Bull. Soc. Chim. Fr.*, Part II, 1987, 877 (*isol, uv, ir, pmr, ms, cd, struct*)
Atta-ur-Rahman, *et al., Nat. Prod. Lett.*, 1998, **11**, 81-91 (*Salignones*)

20-Aminopregn-4-en-3-one A-891



$C_{21}H_{33}NO$ 315.498

(20*S*)-form

N-*Me: 20-Methylaminopregn-4-en-3-one.* ***4-Dehydrofuntumafrine B***
[16316-42-0]
$C_{22}H_{35}NO$ 329.525
Alkaloid from the leaves of *Didymeles madagascariensis*. $[\alpha]_D$ +91 (c, 0.72 in EtOH).

N,N-*Di-Me: 20-Dimethylaminopregn-4-en-3-one.* ***4-Dihydrofuntumafrine C.*** *Buxaprogestine*
[113762-72-4]

$C_{23}H_{37}NO$ 343.551
Alkaloid from the leaves of *Didymeles perrieri* and from leaves of *Buxus papilosa* (Buxaceae). $[\alpha]_D$ +49 (c, 1.8 in EtOH). $[\alpha]_D$ +26 (c, 1.78 in $CHCl_3$). Identity of the two samples not establ.

Sánchez, V. *et al., Bull. Soc. Chim. Fr., Part II*, 1987, 877 (*isol, uv, ir, pmr, ms, cd, struct*)
Choudhary, M.I. *et al., Phytochemistry*, 1988, **27**, 271 (*Buxaprogestine*)

3-Aminopropanal, 9CI A-892
3-Aminopropionaldehyde, 8CI
[352-92-1]
$H_2NCH_2CH_2CHO$
C_3H_7NO 73.094
Liq. Bp_{12} 45-46°.

2,4-Dinitrophenylhydrazone:
Cryst. (EtOH). Mp 178°.

Di-Et acetal: 3,3-Diethoxy-1-propylamine. APEA
[41365-75-7]
$C_7H_{17}NO_2$ 147.217
Liq. Bp_{20} 68-70°.

N-*(3-Methylbutanoyl): 3-Methyl*-N-*(3-oxopropyl)butanamide, 9CI.* Diplocardia *Luciferin*
[58947-91-4]
$C_8H_{15}NO_2$ 157.212
Bioluminescent constit. of the earthworm *Diplocardia longa*. Oil.

N-*(3-Methylbutanoyl), 2,4-dinitrophenylhydrazone:*
Yellow cryst. Mp 174°.

N-tert-*Butyloxycarbonyl:* [58885-60-2]
$C_8H_{15}NO_3$ 173.211
Oil.

N-*Benzyloxycarbonyl:* [65564-05-8]
$C_{11}H_{13}NO_3$ 207.229
Mp 57-58°.

Albers, H. *et al., Ber.*, 1946, **79**, 623
Birkhofer, L. *et al., Chem. Ber.*, 1958, **91**, 2383
Ohtsuka, H. *et al., Biochemistry*, 1976, **15**, 1001 (*Luciferin*)
Geall, A.J. *et al., Tetrahedron*, 2000, **56**, 2449-2460 (*N-benzyloxycarbonyl, synth, pmr, cmr*)
Delfourne, E. *et al., J. Med. Chem.*, 2003, **46**, 3536-3545 (*N-tert-butyloxycarbonyl, synth, pmr, cmr*)

2-Amino-1,3-propanediol, 9CI, 8CI A-893
Serinol
[534-03-2]
$(HOCH_2)_2CHNH_2$
$C_3H_9NO_2$ 91.11
Mp 128°. Bp 264-265° $Bp_{0.06}$ 115-120°.

Hydrochloride: [73708-65-3]
Mp 104°.

Oxalate: [24070-20-0]
Hygroscopic cryst. Mp 202-203°.

N-*Ac:* [2655-79-0]
$C_5H_{11}NO_3$ 133.147
Mp 89-90°.

N-*(*tert-*Butyloxycarbonyl):* [125414-41-7]
$C_8H_{17}NO_4$ 191.227
Needles (hexane/EtOAc). Mp 84-85°.

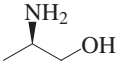
N-*(2-Hydroxybenzoyl):* **N-*Salicyloyl-2-amino-1,3-propanediol***
$C_{10}H_{13}NO_4$ 211.217
Prod. by *Streptomyces hygroscopicus.* Antibacterial agent. Amorph. solid. λ_{max} 225 (log ϵ 4.32); 283 (sh) (log ϵ 3.54); 302 (sh) (log ϵ 3.5) (MeOH).

N-*(2-Hydroxybenzoyl), 1-Ac:*
$C_{12}H_{15}NO_5$ 253.254
Prod. by *Streptomyces hygroscopicus.* Antibacterial agent. Yellow amorph. solid. $[\alpha]_D^{25}$ -29 (c, 0.14 in MeOH). λ_{max} 228 (log ϵ 4.56); 282 (sh) (log ϵ 4.17); 301 (sh) (log ϵ 4.13) (MeOH).

Dibenzyl ether:
$C_{17}H_{21}NO_2$ 271.358
Oil.

Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 551B (*nmr*)
Den Otter, H.P. *et al., Rec. Trav. Chim. (J. R. Neth. Chem. Soc.)*, 1938, **57**, 13 (*synth*)
Karrer, P. *et al., Helv. Chim. Acta*, 1948, **31**, 1617 (*oxalate, synth*)
Adkins, H. *et al., J.A.C.S.*, 1948, **70**, 3121 (*synth*)
Langenbeck, W. *et al., Naturwissenschaften*, 1955, **42**, 389 (*synth*)
Foster, A.B. *et al., J.C.S.*, 1958, 1890 (*synth*)
Szammer, J. *et al., Acta Chim. Acad. Sci. Hung.*, 1969, **61**, 417 (*synth*)
Japan. Pat., 1976, 76 67 788; *CA*, **85**, 157975 (*biosynth*)
Rai, B.L. *et al., J. Med. Chem.*, 1998, **41**, 3347-3359 (*dibenzyl ether*)
Neri, C. *et al., Adv. Synth. Catal.*, 2003, **345**, 835-848 (*tert-butyloxycarbonyl*)
Hossain, M.S. *et al., Phytochemistry*, 2004, **65**, 2147-2151 (*N-salicyloyl amides*)
Gu, K. *et al., Bioorg. Med. Chem.*, 2006, **14**, 1339-1347 (*synth, pmr, cmr*)

2-Amino-1-propanol, 9CI A-894
Alaninol. 2-Hydroxyisopropylamine
[78-91-1]


(*R*)-*form*

C_3H_9NO 75.11

(*S*)-*form* [2749-11-3]
Oil. Bp_{11} 72-73°. $[\alpha]_D^{20}$ +15.8.

N-*(2-Hydroxybenzoyl):* **N-*Salicyloyl-2-amino-1-propanol***
$C_{10}H_{13}NO_3$ 195.218
Prod. by *Streptomyces hygroscopicus.* Antibacterial agent. Amorph. solid. $[\alpha]_D^{25}$ -2.5 (c, 0.08 in MeOH).

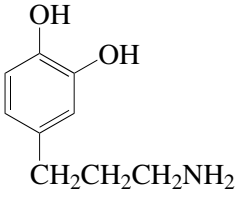
[27646-78-2 , 92596-51-5 , 40916-69-6 , 40916-61-8 , 40916-73-2 , 57707-57-0 , 54490-98-1 , 15521-18-3]

Hossain, M.S. *et al., Phytochemistry*, 2004, **65**, 2147-2151 (*N-salicyloyl amide*)

(3-Aminopropoxy)guanidine, 9CI A-895
γ-Guanidinooxypropylamine
[97091-01-5]
$HN{=}C(NH_2)NHOCH_2CH_2CH_2NH_2$
$C_4H_{12}N_4O$ 132.165
Constit. of *Canavalia gladiata* (sword-bean) and *Wisteria floribunda*.

Hamana, K. *et al., Biochem. Biophys. Res. Commun.*, 1985, **129**, 46 (*isol*)
Matsuzaki, S. *et al., Phytochemistry*, 1990, **29**, 1311 (*isol*)

4-(3-Aminopropyl)-1,2-benzenediol, 9CI A-896
3-(3,4-Dihydroxyphenyl)-1-propylamine. Homodopamine
[52336-45-5]



$C_9H_{13}NO_2$ 167.207

Hydrobromide: [52336-30-8]
Cryst. (2-propanol). Mp 156-158°.

Di-Me ether: 3,4-Dimethoxybenzenepropanamine, 9CI. 3-(3,4-Dimethoxyphenyl)propylamine, 8CI
[14773-42-3]
$C_{11}H_{17}NO_2$ 195.261
Constit. of *Piper arboricola*. Bp_{15} 158-161°.

Di-Me ether, hydrochloride: [59734-58-6]
Cryst. (MeOH/EtOAc). Mp 166-167°.

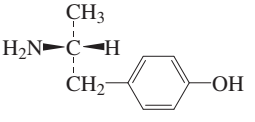
Di-Me ether, picrate:
Cryst. (EtOH). Mp 145-146°.

Benington, F. *et al., J.O.C.*, 1956, **21**, 1545-1546 (*synth, di-Me ether*)
Winn, M. *et al., J. Med. Chem.*, 1975, **18**, 434-437 (*synth*)
Ho, C.F. *et al., CA*, 1981, **95**, 138470w (*isol, deriv*)

***N*-(3-Aminopropyl)-1,5-pentanediamine, 9CI** A-897
N-*(3-Aminopropyl)cadaverine. 1,9-Diamino-4-azanonane. 1,5,11-Triazaundecane.* as-*Homospermidine*
[56-19-9]
$H_2NCH_2(CH_2)_3CH_2NHCH_2CH_2$-$CH_2NH_2$
$C_8H_{21}N_3$ 159.274
Isol. from *Hydrogenobacter halophilus* and *Paracoccus* sp. Cryst. (EtOH) (as trihydrochloride). Mp 258-259° (trihydrochloride). Bp 94-95°.

Mervyn, I. *et al., J. Med. Chem.*, 1964, **7**, 710-716 (*synth*)
Hamana, K. *et al., Biochem. J.*, 1992, **284**, 741-747 (*isol*)

4-(2-Aminopropyl)phenol, 9CI, 8CI A-898
1-(4-Hydroxyphenyl)-2-propylamine. p-*β-Aminopropylphenol.* ***Hydroxyamfetamine, INN.*** *Hydroxyamphetamine, BAN. Methyltyramine. Norpholedrine. Norveritol. Oxamphetamine. Paredrinex*
[103-86-6]


(*R*)-*form*

$C_9H_{13}NO$ 151.208

Sympathomimetic and mydriatic drug. Amphetamine metab. Log P 0.92 (calc).

► SJ6475010

(*R*)-*form* [1518-89-4]
Mp 109-111.5°. $[M]_D^{20}$ -56° (c, 0.02 in EtOH).

Me ether: [50505-80-1]
$C_{10}H_{15}NO$ 165.235
Needles (EtOH/Et_2O) (as hydrochloride). Mp 251-253° dec. (hydrochloride). $[\alpha]_D^{25}$ -23.2 (c, 2.03 in H_2O). CAS no. refers to hydrochloride.

(*S*)-*form* [1693-66-9]
Mp 110-111.5°. $[M]_D^{20}$ + 59° (c, 0.02 in EtOH).

(±)-*form* [1518-86-1]
Alkaloid from *Acacia rigidula*. Cryst. (C_6H_6). Mp 125°.

Hydrobromide: ***Hydroxyamphetamine hydrobromide, USAN****. Mycadrine. Paredrine. Pedrolon*
[140-36-3]
Cryst. (EtOH/Et_2O). Mp 171-172°.

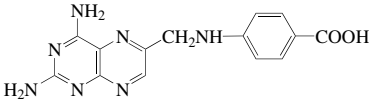
► SJ6650000

Me ether: 4-Methoxy-α-methylbenzeneethanamine. 1-(4-Methoxyphenyl)-2-propylamine. 4-Methoxyamphetamine
[23239-32-9]
[64-13-1]
$C_{10}H_{15}NO$ 165.235
Alkaloid from *Acacia rigidula*.
Liq. Mp 210° (as hydrochloride). Bp_{14} 141°.

Mannich, C. *et al., Ber.*, 1910, **43**, 189 (*synth*)
Hoover, F.W. *et al., J.O.C.*, 1947, **12**, 501 (*synth*)
Dirkx, I.P. *et al., Rec. Trav. Chim. (J. R. Neth. Chem. Soc.)*, 1964, **83**, 535 (*ord*)
v. Dijk, J. *et al., Rec. Trav. Chim. (J. R. Neth. Chem. Soc.)*, 1965, **84**, 521 (*resoln*)
Sever, P.S. *et al., Biochem. Soc. Trans.*, 1973, **1**, 1158 (*metab*)
Hahn, W.E. *et al., Acta Pol. Pharm.*, 1979, **36**, 259 (*synth*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 1246
Clement, B.A. *et al., Phytochemistry*, 1998, **49**, 1377-1380 (*Me ether, isol*)
Kohno, H. *et al., Synth. Commun.*, 1998, **28**, 1935-1945 (*Me ether*)

Aminopteroic acid A-899

4-[[(2,4-Diamino-6-pteridinyl)methyl]amino]benzoic acid, 9CI. p-[N-*2,4-Diamino-6-pteridyl]methylaminobenzoic acid*
[36093-85-3]



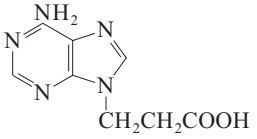
$C_{14}H_{13}N_7O_2$ 311.302
Parent acid present in Aminopterin.

N^{ar}-*Me: 4-[[(2,4-Diamino-6-pteridinyl)-methyl]methylamino]benzoic acid*
[19741-14-1]
$C_{15}H_{15}N_7O_2$ 325.329
Orange powder. Mp > 300°.

Sato, H. *et al., Nippon Kagaku Kaishi*, 1951, **72**, 866; *CA*, **47**, 5946
U.S. Pat., 1951, 2 568 597; *CA*, **46**, 5094
Venditti, J.M. *et al., Cancer Res.*, 1960, **20**, 691
Elliott, R.D. *et al., J.O.C.*, 1970, **35**, 1676-1680 (*N-Me*)
Piper, J.R. *et al., J.O.C.*, 1977, **42**, 208

6-Amino-9*H*-purine-9-propanoic acid, 9CI A-900

3-(9-Adeninyl)propionic acid
[4244-47-7]



$C_8H_9N_5O_2$ 207.191
Isol. from *Lentinus edodes* (shiitake). Exhibits anticholesteraemic activity. Mp 277-278° dec. λ_{max} 262 (ϵ 14400) (0.1*N* NaOH). λ_{max} 259 (ϵ 13800) (0.1*N* HCl).

Me ester: [70259-15-3]
$C_9H_{11}N_5O_2$ 221.218
Cryst. (Et_2O/MeOH). Mp 182-183°.

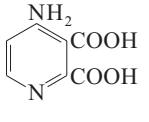
Et ester: [7083-40-1]
$C_{10}H_{13}N_5O_2$ 235.245
Solid. Mp 167-168°.

Nitrile: 6-Amino-9-(2-cyanoethyl)purine
[4244-45-5]
$C_8H_8N_6$ 188.191
Solid (H_2O). Mp 258-261° (245-247°).

Lira, E.P. *et al., J.O.C.*, 1966, **31**, 2188-2191 (*acid, nitrile, synth*)
Chakraborti, S.K. *et al., Indian J. Chem.*, 1969, **7**, 426 (*synth*)
Saito, Y. *et al., Tet. Lett.*, 1970, 4863 (*isol, struct, synth*)
Holy, A. *et al., Coll. Czech. Chem. Comm.*, 1978, **43**, 3444-3465 (*synth*)
Poritere, S.E. *et al., Khim. Geterotsikl. Soedin.*, 1982, 539-541; *Chem. Heterocycl. Compd. (Engl. Transl.)*, 1982, 415-417 (*nitrile*)

4-Amino-2,3-pyridinedicarboxylic acid, 9CI A-901

[122475-55-2]

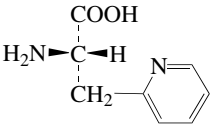


$C_7H_6N_2O_4$ 182.135
Isol. from fruit bodies of the poisonous mushroom *Clitocybe acromelalga*. Cryst. (H_2O). Sol. H_2O, MeOH; poorly sol. Me_2CO, hexane. λ_{max} 262 (ϵ 9550) (0.1*N* HCl) (Derep). λ_{max} 245 (sh) (ϵ 8710); 290 (ϵ 2090) (H_2O at pH 11) (Derep). λ_{max} 265 (ϵ 9120) (H_2O pH 7) (Derep). λ_{max} 252 (ϵ 10000) (MeOH) (Berdy). λ_{max} 265 (ϵ 9800); 290 (ϵ 2080) (H_2O) (Berdy).

Hirayama, F. *et al., Phytochemistry*, 1989, **28**, 1133 (*isol, uv, ir, pmr, cmr, ms, synth, struct*)

2-Amino-3-(2-pyridinyl)propanoic acid A-902

α-Amino-2-pyridinepropanoic acid, 9CI. 3-(2-Pyridinyl)alanine. Antibiotic SF 2538. SF 2538
[17407-39-5]
[37535-52-7]



(*S*)-*form*

$C_8H_{10}N_2O_2$ 166.179

(*S*)-*form* [37535-51-6]
[120191-52-8]
Prod. by *Streptomyces albus*. Cryst. Sol. H_2O; poorly sol. Me_2CO, hexane. $[\alpha]_D$ -33.6 (H_2O). Incorrectly indexed in CA. λ_{max} 254 (ϵ 3720); 260 (ϵ 4170); 266 (ϵ 3100) (H_2O). λ_{max} 254 (ϵ 3720); 260 (ϵ 4170); 266 (ϵ 3100) (H_2O) (Berdy). λ_{max} 261 (ϵ 7600) (HCl) (Berdy).

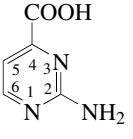
(±)-*form* [17407-44-2]
Cryst. (EtOH aq.). Mp 209-212° (209-210°).

[177164-50-0 , 169547-60-8 , 33715-92-3 , 172927-00-3 , 163513-22-2 , 33560-87-1]

Slater, G. *et al., Tetrahedron*, 1967, **23**, 2823-2828 (*synth*)
Watanabe, H. *et al., Bull. Chem. Soc. Jpn.*, 1968, **41**, 1634-1638 (*synth*)
Veselova, L.N. *et al., Zh. Obshch. Khim.*, 1972, **42**, 1123-1125; 1973, **43**, 1637-1640 (*synth, resoln*)
Iwata, M. *et al., CA*, 1989, **110**, 169903x (*isol*)
Zhao, J.S. *et al., Yaoxue Xuebao*, 1994, **29**, 558-560; *CA*, **122**, 10513w (*synth*)

2-Amino-4-pyrimidinecarboxylic acid A-903

[2164-65-0]



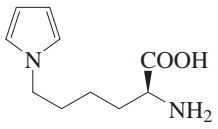
$C_5H_5N_3O_2$ 139.113
Constit. of *Lathyrus tingitanus* seeds. Precursor of the pyrimidine moiety of Lathyrine. Fine needles (H_2O). Mp 265° dec Mp 285° dec.

Nitrile: 2-Amino-4-cyanopyrimidine
[36314-98-4]
$C_5H_4N_4$ 120.113
Mp 222° dec.

Matsukawa, T. *et al., Yakugaku Zasshi*, 1952, **72**, 909; *CA*, **47**, 6425d (*synth*)
Whitlock, B.J. *et al., J.O.C.*, 1965, **30**, 115 (*synth, uv*)
Brown, E.C. *et al., Phytochemistry*, 1996, **42**, 61 (*occur*)
Doláková, P. *et al., Heterocycles*, 2007, **71**, 1107-1115 (*nitrile*)

α-Amino-1*H*-pyrrole-1-hexanoic acid, 9CI A-904

N$^{\epsilon}$-*Pyrrolylnorleucine. Pyrrole-1-norleucine. 1-(5′-Amino-5′-carboxypentyl)pyrrole*



$C_{10}H_{16}N_2O_2$ 196.249

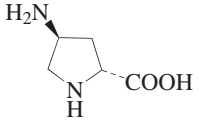
(*S*)-*form*

L-form
[156539-32-1]
Secondary lipid peroxidation prod. derived from L-lysine and 4,5-epoxy-2-alkenols. Widely distributed in fresh foodstuffs, e.g. meats, fish, vegetables and nuts. Characterised spectroscopically.

Chiang, G.H. *et al., J. Agric. Food Chem.*, 1988, **36**, 506-509 (*hplc, occur*)
Zamora, R. *et al., Lipids*, 1994, **29**, 243-249; 1995, **30**, 477-483 (*synth, detn, pmr, cmr*)
Zamora, R. *et al., Biochim. Biophys. Acta*, 1995, **1258**, 319-327 (*formn*)
Hidalgo, F.J. *et al., J. Agric. Food Chem.*, 1995, **43**, 1023-1028 (*occur, formn*)
Zamora, R. *et al., J. Agric. Food Chem.*, 1999, **47**, 1942-1947 (*occur*)

4-Amino-2-pyrrolidinecarboxylic acid A-905

4-Aminoproline, 9CI
[3285-76-5]



(2*R*,4*S*)-*form*

$C_5H_{10}N_2O_2$ 130.146

(2*R*,4*S*)-*form*

(+)-trans-*form*
Prod. by *Ascochyta caulina*. Phytotoxin. $[\alpha]_D^{21}$ +47.2 (c, 0.4 in H_2O).

(2*S*,4*R*)-*form*

(-)-trans-*form*
[16257-88-8]
Prisms. Mp 229-230° dec. $[\alpha]_D^{21}$ -57.8 (H_2O).

Hydrochloride (1:2): [16257-89-9]
Mp 257-258°.

N-tert-*Butyloxycarbonyl:* [132622-69-6]
$C_{10}H_{18}N_2O_4$ 230.263
Solid. Mp 240-241° dec. $[\alpha]_D$ -35.9 (c, 1.0 in H_2O).

N^1-*(4-Methylbenzenesulfonyl):* [16257-87-7]
$C_{12}H_{16}N_2O_4S$ 284.335
Prisms (EtOH aq.). Mp 275-276° dec. $[\alpha]_D^{20}$ -62.7 (EtOH aq.).

(2*S*,4*S*)-*form*

(-)-cis-*form*
[16257-83-3]
Prisms (EtOH aq.). Mp 191-193° dec. $[\alpha]_D^{20}$ -57.4 (H_2O). Unstable.

Hydrochloride (1:2): [16257-84-4]
Mp 247°.

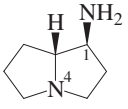
N-tert-*Butyloxycarbonyl:* [132622-66-3]
Solid. Mp 225-228° dec. $[\alpha]_D^{20}$ +21 (c, 0.24 in H_2O).

N^1-*(4-Methylbenzenesulfonyl):* [16257-82-2]
Needles (EtOH aq.). Mp 284-285° dec. $[\alpha]_D^{20}$ -72 (EtOH aq.).

Andreatta, R.H. *et al., Aust. J. Chem.*, 1967, **20**, 1493; 2701 (*synth, pmr*)
Webb, T.R. *et al., J.O.C.*, 1991, **56**, 3009-3016 (*N-Boc*)
Evidente, A. *et al., Phytochemistry*, 2000, **53**, 231-237 (*isol, pmr, cmr*)
Fisher, A. *et al., J. Med. Chem.*, 2006, **49**, 307-317 (*N-Boc*)

1-Aminopyrrolizidine A-906

*Hexahydro-1*H*-pyrrolizin-1-amine*
[170442-12-3]



$C_7H_{14}N_2$ 126.201

(1*S*,7*aR*)-*form*

(-)-cis-*form*
Waxy solid. $[\alpha]_D^{20}$ -24.1 (c, 5.5 in MeOH).

N^1-*(2-Methylbutanoyl):* ***Laburnamine***
[2072-58-4]
$C_{12}H_{22}N_2O$ 210.319
Alkaloid from the seeds of *Cytisus laburnum*. Mp 125-127°.

N^1-*(4-Methoxy*-E-*cinnamoyl):* ***Absouline***
[112513-33-4]
$C_{17}H_{22}N_2O_2$ 286.373
Alkaloid from *Hugonia oreogena* and *Hugonia penicillanthemum*. Cryst. (Me_2CO). Mp 186°. $[\alpha]_D$ +56 (c, 1 in EtOH).

N^1-*(4-Methoxy*-E-*cinnamoyl),* N^4-*oxide:* ***Absouline* N-*oxide***
[112494-54-9]
$C_{17}H_{22}N_2O_3$ 302.372
From *Hugonia oreogena* and *Hugonia penicillanthemum*. Amorph. $[\alpha]_D$ +13 (c, 0.9 in EtOH).

N^1-*(4-Methoxy*-Z-*cinnamoyl):* ***Isoabsouline***
[112513-34-5]
$C_{17}H_{22}N_2O_2$ 286.373
From *Hugonia oreogena* and *Hugonia penicillanthemum*. Amorph.

N^1-*(4-Methoxy*-Z-*cinnamoyl),* N^4-*oxide:* ***Isoabsouline* N-*oxide***
[112494-55-0]
$C_{17}H_{22}N_2O_3$ 302.372
From *Hugonia oreogena* and *Hugonia penicillanthemum*. Amorph.

(1*RS*,7*aRS*)-*form*

(±)-trans-*form*
[141197-03-7]
Amorph. solid.

(1*RS*,7*aSR*)-*form*

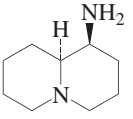
(±)-cis-*form*
[145511-58-6]
Characterised spectroscopically.

[66393-07-5 , 66393-06-4]

Neuner-Jehle, N. *et al., Monatsh. Chem.*, 1965, **96**, 321-338 (*Laburnamine*)
Ikhiri, K. *et al., J. Nat. Prod.*, 1987, **50**, 626-630 (*Absouline, Absouline N-oxide, Isoabsouline, Isoabsouline N-oxide*)
Christine, C. *et al., Tetrahedron*, 2000, **56**, 1837-1850 (*SR-form, RS,RS-form, RS,SR-form, synth, pmr, cmr*)
Giri, N. *et al., J.O.C.*, 2004, **69**, 7303-7308 (*(-)-cis-form*)
Vargas-Sanchez, M. *et al., Org. Lett.*, 2005, **7**, 5861-5864 (*synth*)
Matos, M.N. *et al., Tetrahedron*, 2005, **61**, 1221-1244 (*Laburnamine, synth*)

1-Aminoquinolizidine A-907

*Octahydro-2*H*-quinolizin-1-amine, 9CI*
[80220-52-6]



$C_9H_{18}N_2$ 154.255

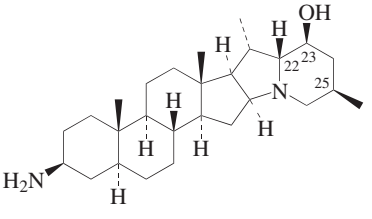
(1*S*,9*aS*)-*form*

N^1-*Ac: 1-Acetamidoquinolizidine.* ***Epiquinamide****. Alkaloid 196. Quinolizidine 196*
[616235-95-1]
$C_{11}H_{20}N_2O$ 196.292
Alkaloid from the skin extracts of the frog *Epipedobates tricolor*. Nicotinic agonist. $[\alpha]_D^{20}$ +19 (c, 0.9 in $CHCl_3$).

Fitch, R.W. *et al., J. Nat. Prod.*, 2003, **66**, 1345-1350 (*isol, pmr, cmr*)
Kanakubo, A. *et al., Bioorg. Med. Chem. Lett.*, 2006, **16**, 4648-4651 (*synth*)
Huang, P.-Q. *et al., Org. Lett.*, 2006, **8**, 1435-1438 (*synth*)
Suyama, T.L. *et al., Org. Lett.*, 2006, **8**, 4541-4543 (*synth*)
Tong, S.T. *et al., Tet. Lett.*, 2006, **47**, 5017-5020 (*synth*)
Voituriez, A. *et al., Org. Lett.*, 2007, **9**, 4705-4708 (*synth*)
Wijdeven, M.A. *et al., Org. Lett.*, 2008, **10**, 4001-4003 (*synth, abs config*)

3-Aminosolanidan-23-ol, 9CI A-908

3-Amino-23-hydroxysolanidane



(3β,5α,22*R*,23*S*,25*R*)-*form*

$C_{27}H_{46}N_2O$ 414.673

(3β,5α,22*R*,23*S*,25*R*)-*form*
Solanogantine
[63785-19-3]
Alkaloid from leaves of *Solanum giganteum* (Solanaceae). Glass. Unusual 22β*H*-config., first natural 3-aminosolanidane.

N,O-*Di-Ac:* Mp 219-221° dec. $[\alpha]_D$ +27.2 ($CHCl_3$).

N,N-*Di-Me:* Mp 111-112°. $[\alpha]_D$ +41.3 ($CHCl_3$).

(3β,5α,22*S*,23*S*,25*R*)-*form*
Solanogantamine
[72075-33-3]
Alkaloid from *Solanum giganteum* and *Solanum vegum* (major alkaloid) (Solanaceae). Plates (MeOH/MeCN). Mp 180°. $[\alpha]_D$ +35 ($CHCl_3$).

N,O-*Di-Ac:*
Needles (Me_2CO aq.). Mp 229-231°. $[\alpha]_D$ +11 ($CHCl_3$).

N,N-*Di-Me:* Mp 207-210°. $[\alpha]_D$ +50 ($CHCl_3$).

(3α,5α,22*S*,23*S*,25*R*)-*form*
Isosolanogantamine
[72075-53-7]
Alkaloid from *Solanum giganteum* (Solanaceae). Flakes ($CHCl_3$/petrol). Mp 252-254°. $[\alpha]_D$ +31 ($CHCl_3$).

N,O-*Di-Ac:*
Cryst. (Me_2CO). Mp 257-259°. $[\alpha]_D$ +35.5 ($CHCl_3$).

N,N-*Di-Me:*
Flakes (MeOH). Mp 200-203°. $[\alpha]_D$ +41 ($CHCl_3$).

(3β,5α,22*S*,23*S*,25*S*)-*form*
Solanopubamine
[97858-53-2]
Alkaloid from the aerial parts of *Solanum pubescens* (Solanaceae). Needles (Me_2CO/MeOH). Mp 263°. $[\alpha]_D$ +30.5 (MeOH).

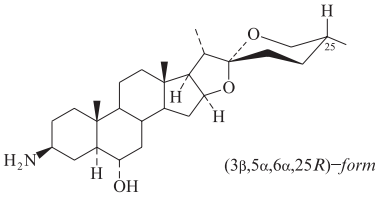
N-*Formyl:* ***Solanopubamide A***
[105705-84-8]
$C_{28}H_{46}N_2O_2$ 442.684
Alkaloid from the aerial parts of *Solanum pubescens* (Solanaceae). Needles (MeOH). Mp 209-210°. $[\alpha]_D$ +26.1 ($CHCl_3$).

N-*Ac:* ***Solanopubamide B***
[105814-55-9]
$C_{29}H_{48}N_2O_2$ 456.71
Alkaloid from the aerial parts of *Solanum pubescens* (Solanaceae). Needles (MeOH). Mp 255-256°. $[\alpha]_D$ +40 ($CHCl_3$).

N,O-*Di-Ac:*
Needles (MeOH). Mp 232°.

Pakrashi, S.C. *et al., Tet. Lett.*, 1977, 645 (*isol, ms, pmr, struct, synth*)
Pakrashi, S.C. *et al., J. Indian Chem. Soc.*, 1978, **55**, 1109 (*isol, ir, pmr*)
Chakravarty, A.K. *et al., J.C.S. Perkin 1*, 1984, 467 (*config*)
Krishna, G.N. *et al., Phytochemistry*, 1985, **24**, 1369 (*Solanopubamine*)
Kumari, G.N.K. *et al., Phytochemistry*, 1986, **25**, 2003 (*Solanopubamides*)

3-Aminospirostan-6-ol, 9CI A-909



(3β,5α,6α,25*R*)–*form*

$C_{27}H_{45}NO_3$ 431.657

(3β,5α,6α,25*R*)-*form*
Isojuripidine
[23656-00-0]
Alkaloid from *Solanum asterophorum* and *Solanum paniculatum*. Cryst. (MeOH). Mp 204-205° (200°). $[\alpha]_D$ -47 (c, 0.013 in $CHCl_3$).

O,N-*Di-Ac:* Mp 153-154°.

Glycoside: ***Isojuripine***
$C_{33}H_{55}NO_8$ 593.799
From *Solanum paniculatum* (Solanaceae). Mp 162-171°. $[\alpha]_D$ -20 (Py). β-Glycoside of undetd. struct.

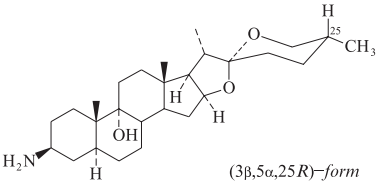
(3β,5α,6α,25*S*)-*form*
Juripidine
[89945-92-6]
Alkaloid from roots of *Solanum hispidum*.

N-*Ac:*
Cryst. (MeCN). Mp 260-262°. $[\alpha]_D$ -78.12 (c, 0.32 in $CHCl_3$).

N,O-*Di-Ac:* Mp 264-266°. $[\alpha]_D$ -63.9 (c, 0.36 in $CHCl_3$).

Gandolfi, C. *et al., Tet. Lett.*, 1970, **11**, 1677-1680 (*synth*)
Cambiaghi, S. *et al., Ann. Chim. (Rome)*, 1971, **61**, 99; *CA*, **75**, 36397x (*Isojuripidine*)
Chakravarty, A.K. *et al., Phytochemistry*, 1983, **22**, 2843-2845 (*Juripidine*)
Silva, T.M.S. *et al., J. Braz. Chem. Soc.*, 2005, **16**, 1467-1471 (*Isojuripidine*)

3-Aminospirostan-9-ol, 9CI A-910



(3β,5α,25*R*)–*form*

$C_{27}H_{45}NO_3$ 431.657

(3β,5α,25*R*)-*form*
Isopaniculidine
[16577-35-8]
Alkaloid from *Solanum paniculatum* (Solanaceae). Mp 202-204°. $[\alpha]_D$ -70 (c, 0.01 in $CHCl_3$).

N-*Ac:* Mp 282-284°.

(3β,5α,25*S*)-*form*
Paniculidine
[16577-34-7]
Alkaloid from *Solanum paniculatum* (Solanaceae). Needles (MeOH). Mp 228-244°. $[\alpha]_D^{22}$ -82.2 (c, 1.447 in $CHCl_3$).

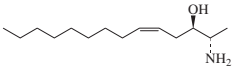
Cambiaghi, S. *et al., Ann. Chim. (Rome)*, 1971, **61**, 99; *CA*, **75**, 36397x (*ir, pmr, isol, struct*)

14-Aminotetradecanoic acid A-911

14-Aminomyristic acid
[17437-20-6]
$H_2NCH_2(CH_2)_{12}COOH$
$C_{14}H_{29}NO_2$ 243.389
Constit. of the roots of *Decalepis hamiltonii*. Antioxidant. Mp 178-179°.

Hünig, S. *et al., Chem. Ber.*, 1967, **100**, 3039-3044 (*synth*)
Srivastava, A. *et al., J. Agric. Food Chem.*, 2006, **54**, 790-795 (*isol, pmr, cmr*)

2-Amino-5-tetradecen-3-ol A-912



(2*S*,3*R*,5*Z*)-*form*

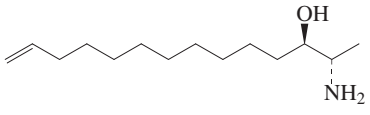
$C_{14}H_{29}NO$ 227.389

(2*S*,3*R*,5*Z*)-*form*
Halaminol C
[389125-68-2]
Isol. from a marine sponge *Haliclona* n. sp. Oil. $[\alpha]_D$ +1.9 (c, 0.025 in CH_2Cl_2).

(2*S*,3*S*,5*E*)-*form* [181523-19-3]
N,O-*Di-Ac:* [181523-11-5]
$C_{18}H_{33}NO_3$ 311.464
Isol. from a marine ascidian (*Pseudodistoma* sp.).

Hooper, G.J. *et al., Nat. Prod. Lett.*, 1995, **6**, 31-35 (*isol*)
Clark, R.J. *et al., J. Nat. Prod.*, 2001, **64**, 1568-1571 (*isol, pmr, cmr*)
Garrido, L. *et al., Tetrahedron*, 2001, **57**, 4579-4588 (*abs config*)

2-Amino-13-tetradecen-3-ol A-913



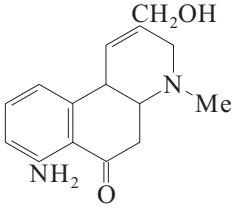
$C_{14}H_{29}NO$ 227.389

(2*S*,3*R*)-*form*
Halaminol A
[389125-56-8]
Isol. from the marine sponge *Haliclona* n. sp. Oil. $[\alpha]_D$ +1.7 (c, 0.04 in CH_2Cl_2). $[\alpha]_D$ -30 (c, 0.003 in MeOH) (as *N*,*O*-di-Ac).

Clark, R.J. *et al., J. Nat. Prod.*, 2001, **64**, 1568-1571 (*Halaminol A, isol, pmr, cmr*)

7-Amino-3,4,4*a*,10*b*-tetrahydro-2-(hydroxymethyl)-4-methylbenzo[*f*]quinolin-6(5*H*)-one A-914

[134677-39-7]



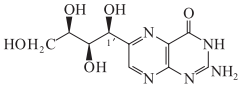
$C_{15}H_{18}N_2O_2$ 258.319
Isol. from *Claviceps purpurea*. Cryst. (Et_2O). Prob. a degradn. prod. of ergot alkaloids.

Deoxy: ***7-Amino-3,4,4a,10b-tetrahydro-2,4-dimethylbenzo[f]quinolin-6(5H)-one***
[134677-38-6]

$C_{15}H_{18}N_2O$ 242.32
Isol. from *Claviceps purpurea*. Cryst. (Me_2CO). Prob. a degradn. prod. of ergot alkaloids.

Flieger, M. *et al., J. Nat. Prod.*, 1991, **54**, 390 (*isol, pmr, cmr, ms, struct*)

2-Amino-6-(1,2,3,4-tetrahydroxybutyl)-4(1*H*)-pteridinone, 9CI A-915
2-Amino-4-hydroxy-6-(1,2,3,4-tetrahydroxybutyl)pteridine. Rs I
[13392-23-9]


(1′*R*,2′*S*,3′*R*)-*form*

$C_{10}H_{13}N_5O_5$ 283.243

(1′*R*,2′*S*,3′*R*)-*form*
D-arabino-*form*
[735-67-1]
$[\alpha]_D$ -97.3 (c, 0.3 in 0.1*M* NaOH). Dec. slowly above 220°.

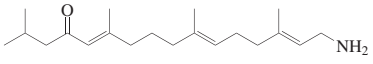
(1′*R*,2′*S*,3′*S*)-*form*
L-xylo-*form*
[153829-74-4]
$[\alpha]_D$ -69 (c, 0.4 in 0.1*M* NaOH).

(1′*S*,2′*S*,3′*R*)-*form*
D-ribo-*form*
[153829-70-0]
Isol. from *Rhodopseudomonas spheroides*.

[735-67-1 , 95840-18-9 , 153829-73-3 , 153829-71-1 , 153829-72-2 , 95191-28-9]

Petering, H.G. *et al., J.A.C.S.*, 1949, **71**, 3977 (*synth*)
Henseke, G. *et al., Chem. Ber.*, 1956, **89**, 2904 (*synth*)
Taylor, E.C. *et al., J.A.C.S.*, 1976, **98**, 2301 (*synth*)
Seo, N. *et al., Biochim. Biophys. Acta*, 1991, **1074**, 439 (*isol*)
Hariu, T. *et al., Pteridines*, 1993, **4**, 63 (*abs config*)

16-Amino-2,6,10,14-tetramethyl-5,10,14-hexadecatrien-4-one A-916


(5*E*,10*E*,14*E*)-*form*

$C_{20}H_{35}NO$ 305.503

(5*E*,10*E*,14*E*)-*form*
N-*Formyl:* ***Malonganenone H***
[945458-51-5]
$C_{21}H_{35}NO_2$ 333.513
Isol. from *Euplexaura nuttingi*. Oil.

(5*Z*,10*E*,14*E*)-*form*
N-*Formyl:* ***Malonganenone C***
[882403-71-6]
$C_{21}H_{35}NO_2$ 333.513
Isol. from *Leptogorgia gilchristi*. Yellow solid. λ_{max} 230 (ϵ 8800); 276 (ϵ 1400) (MeOH).

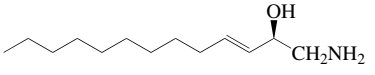
Keyzers, R.A. *et al., Tetrahedron*, 2006, **62**, 2200-2206 (*Malonganenone C*)
Sorek, H. *et al., J. Nat. Prod.*, 2007, **70**, 1104-1109 (*Malonganenone H*)

1-Amino-4,12-tridecadien-2-ol, 9CI A-917
$H_2C{=}CH(CH_2)_6CH{=}CHCH_2CH(OH)CH_2NH_2$
$C_{13}H_{25}NO$ 211.347

(±)-(*E*)-*form* [181523-21-7]
N,O-*Di-Ac:* [181523-13-7]
$C_{17}H_{29}NO_3$ 295.421
Isol. from a marine ascidian (*Pseudodistoma* sp.).

Hooper, G.J. *et al., Nat. Prod. Lett.*, 1995, **6**, 31-35 (*isol*)

1-Amino-3-tridecen-2-ol A-918



$C_{13}H_{27}NO$ 213.362

(2*R*,3*E*)-*form* [150922-61-5]
Isol. from the ascidian *Didemnum* sp.

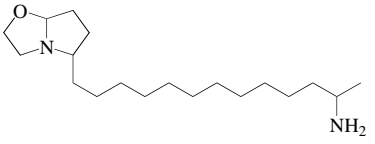
Searle, P.A. *et al., J.O.C.*, 1993, **58**, 7578-7580 (*isol*)

1-Amino-5-tridecen-2-ol A-919
$C_{13}H_{27}NO$ 213.362

(2*R*,5*E*)-*form* [150922-60-4]
Isol. from the ascidian *Didemnum* sp. Antifungal agent. $[\alpha]_D$ +1.9 (c, 0.4 in MeOH) (as trifluoroacetate salt).

Searle, P.A. *et al., J.O.C.*, 1993, **58**, 7578-7580 (*isol, ir, pmr, abs config*)

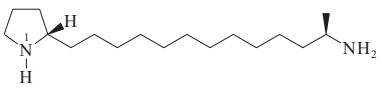
5-(12-Aminotridecyl)hexahydropyrrolo[2,1-*b*]oxazole A-920
Hexahydro-α-methylpyrrolo[2,1-b]oxazole-5-dodecanamine, 9CI
[192213-01-7]



$C_{19}H_{38}N_2O$ 310.522
Alkaloid from the ladybirds *Epilachna boraelis* and *Epilachna varivestis*.

Radford, P. *et al., J. Nat. Prod.*, 1997, **60**, 755-759 (*isol, pmr, cmr, ms*)

2-(12-Aminotridecyl)pyrrolidine A-921
α-Methyl-2-pyrrolidinedodecanamine, 9CI. 13-(2-Pyrrolidinyl)-2-tridecylamine



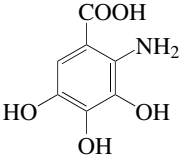
$C_{17}H_{36}N_2$ 268.485

(2*S*,12′*R*)-*form* [151751-64-3]
Alkaloid from whole body extracts of the Mexican bean beetle *Epilachna varivestis*.
$[\alpha]_D^{22}$ +9.3 (c, 0.15 in $CDCl_3$).

N^1-*(2-Hydroxyethyl): 2-(12-Aminotridecyl)-1-pyrrolidineethanol, 9CI.* ***1-(2-Hydroxyethyl)-2-(12-aminotridecyl)-pyrrolidine***
[151751-65-4]
$C_{19}H_{40}N_2O$ 312.538
Alkaloid present in eggs, larvae, pupae and adults of *Epilachna varivestis*. $[\alpha]_D^{22}$ +38.8 (c, 0.18 in $CDCl_3$).

Attygalle, A.B. *et al., Tetrahedron*, 1993, **49**, 9333 (*isol, ir, pmr, cmr, ms, struct*)
Shi, X. *et al., Tetrahedron*, 1996, **52**, 6859 (*isol, pmr, cmr, ms, synth, abs config*)
Shi, X. *et al., Tet. Lett.*, 1997, **38**, 6479 (*synth, abs config*)

2-Amino-3,4,5-trihydroxybenzoic acid, 9CI A-922
3,4,5-Trihydroxyanthranilic acid, 9CI



$C_7H_7NO_5$ 185.136

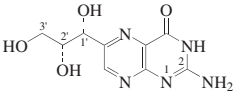
5-Me ether: 2-Amino-3,4-dihydroxy-5-methoxybenzoic acid
[1035536-86-7]
$C_8H_9NO_5$ 199.163
Alkaloid from the leaves of *Cyclocaryapaliurus*. Needles. Mp 186-188°. λ_{max} 290 (ϵ 3450) ($CHCl_3$).

Tri-Me ether: 2-Amino-3,4,5-trimethoxybenzoic acid
[61948-85-4]
$C_{10}H_{13}NO_5$ 227.216
Mp 138-140°.

Tri-Me ether, Me ester: [5035-82-5]
$C_{11}H_{15}NO_5$ 241.243
Mp 44-45°. $Bp_{0.1}$ 127-140°.

Hammen, P.D. *et al., J. Het. Chem.*, 1987, **24**, 1701-1704
Li, J. *et al., Planta Med.*, 2008, **74**, 287-289 (*5-Me ether, isol*)

2-Amino-6-(1,2,3-trihydroxypropyl)-4(1*H*)-pteridinone, 9CI A-923
[670-65-5]


(1′*R*,2′*R*)-*form*

$C_9H_{11}N_5O_4$ 253.217

(1′*R*,2′*R*)-*form*
D-threo-*form*. ***D-Monapterin***. *Umanopterin*
[10162-32-0]
Isol. from *Tetrahymena pyriformis* and from the urine of cancer patients. $[\alpha]_D^{25}$ -92 (c, 0.3 in 0.1*M* HCl).

*5,6*R*,7,8-Tetrahydro:* ***5,6,7,8-Tetrahydro-D-monapterin***
[99630-31-6]

$C_9H_{15}N_5O_4$ 257.249
Isol. from *Tetrahymena pyriformis.*

(1′*S*,2′*S*)-*form*
L-threo-*form*. ***L-Monapterin***
[2277-42-1]
Constit. of human blood and urine. Yellow cryst. $[\alpha]_D^{25}$ +97 (c, 0.3 in 0.1*M* HCl).

*2-*N,N*-Di-Me: 2-Dimethylamino-6-(1,2,3-trihydroxypropyl)-4(3*H*)-pteridinone.* ***Euglenapterin***
[73789-39-6]
[73789-45-4]
$C_{11}H_{15}N_5O_4$ 281.271
Found in the alga *Euglena gracilis.* Yellow cryst. (H_2O). Mp 200°. Yellow fluor. in soln.

*2-*N,N*-Di-Me, 3′-phosphate:*
$C_{11}H_{16}N_5O_7P$ 361.251
Found in the alga *Euglena gracilis.* Yellow fluor. in soln.

*2-*N,N*-Di-Me, 2′,3′-cyclic phosphate:*
$C_{11}H_{14}N_5O_6P$ 343.235
Found in the alga *Euglena gracilis.* Yellow fluor. in soln.

*5,6*R*,7,8-Tetrahydro:* ***5,6,7,8-Tetrahydro-L-monapterin***
[348622-74-2]
$C_9H_{15}N_5O_4$ 257.249
Isol. from *Escherichia coli.* Needles ($CHCl_3$) (as hexa-Ac). Mp 139.5-141.5° (hexa-Ac).

(1′*S*,2′*R*)-*form*
D-erythro-*form*. ***Neopterin***
[2009-64-5]
Found in human blood and urine. First isol. from the pupae of bees. Precursor in biosynth. of 2-Amino-6-(1,2-dihydroxypropyl)-4(1*H*)-pteridinone, A-749. $[\alpha]_D^{25}$ +45 (c, 0.3 in 0.1*M* HCl).

3′-O-β-D-Glucopyranoside: ***Solfapterin***. *Neopterin 3-O-β-D-glucoside*
[114312-02-6]
$C_{15}H_{21}N_5O_9$ 415.359
Isol. from *Sulfolobus solfataricus.*

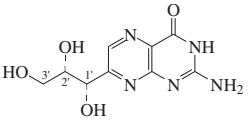
(1′*R*,2′*S*)-*form*
L-erythro-*form*. ***Bufochrome***
[2277-43-2]
Found in human blood and urine. Also isol. from toad skins. Growth factor for the protozoan *Crithidia fasiculata*. $[\alpha]_D^{25}$ -44 (c, 0.3 in 0.1*M* HCl). λ_{max} 275 (ε 14600); 348 (ε 6180) (H_2O). λ_{max} 255 (ε 24000); 365 (ε 7050) (0.1*M* NaOH). λ_{max} 248 (ε 11600); 321 (ε 8020) (0.1*M* HCl).

[39923-31-4 , 87174-05-8 , 81873-20-3]

Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 480C (*nmr*)
Rembold, H. *et al., Chem. Ber.*, 1963, **96**, 1406 (*struct, synth*)
Andrews, K.J.M. *et al., Chem. Comm.*, 1968, 120
v. Viscontini, M. *et al., Helv. Chim. Acta*, 1968, **51**, 1495 (*synth, pmr*)
Fukushima, T. *et al., J. Biol. Chem.*, 1972, **247**, 4549 (*isol*)
Elstner, E. *et al., Arch. Biochem. Biophys.*, 1976, **173**, 614 (*Euglenapterin*)
Schircks, B. *et al., Helv. Chim. Acta*, 1976, **59**, 248 (*cmr*)
Sugimoto, T. *et al., Bull. Chem. Soc. Jpn.*, 1980, **53**, 2344 (*synth*)
Fukushima, T. *et al., Methods Enzymol.*, 1980, **66**, 508 (*rev, isol*)
Jacobi, P.A. *et al., J.O.C.*, 1981, **46**, 5416 (*Euglenapterin, synth*)
Sun, J.H. *et al., Diss. Abstr. Int., B*, 1983, **43**, 3990 (*synth*)
Böhme, M. *et al., Annalen*, 1986, 1705 (*Euglenapterin, isol, cryst struct, uv, cd, pmr, synth*)
Zeitler, H.J. *et al., Methods Enzymol.*, 1986, **122**, 273 (*rev, detn*)
Huber, C. *et al., Dtsch. Med. Wochenschr.*, 1987, **112**, 107 (*rev*)
Lin, X. *et al., J. Bacteriol.*, 1988, **170**, 1396 (*Solfapterin*)
Klein, R. *et al., Biochimie*, 1991, **73**, 1281 (*D-Monapterin*)
Ogiwara, S. *et al., Biol. Chem. Hoppe-Seyler*, 1992, **373**, 1061 (*isol*)
Ogiwara, S. *et al., Tet. Lett.*, 1992, **33**, 1341 (*Umanopterin*)
Sugimoto, T. *et al., Helv. Chim. Acta*, 2001, **84**, 918-927 (*Tetrahydro-D-monapterin*)
Ikemoto, K. *et al., Biol. Chem.*, 2002, **383**, 325-330 (*Tetrahydro-L-monapterin*)
Chen, N. *et al., Heterocycles*, 2005, **65**, 2917-2924 (*acetates, cd, abs config*)

2-Amino-7-(1,2,3-trihydroxypropyl)-4(1*H*)-pteridinone A-924

7-(1,2,3-Trihydroxypropyl)pterin



(1′*R*,2′*S*)-*form*

$C_9H_{11}N_5O_4$ 253.217
Abnormal pterin isol. from urine of patients with atypical phenylketonuria (abs. config. of nat. metab. not yet known).

(1′*R*,2′*S*)-*form*
L-erythro-*form*
$[\alpha]_D$ -13.

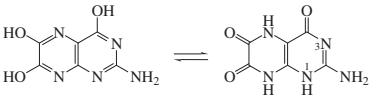
3′-Deoxy: ***Primapterin***. *7-Biopterin*
[2636-52-4]
$C_9H_{11}N_5O_3$ 237.218
Occurs in urine of patients with atypical phenylketonuria. Also in patients with hyperphenylalaninemia. $[\alpha]_D^{22}$ -37.4 (c, 0.1 in 0.1*M* HCl).

(1′*S*,2′*R*)-*form*
D-erythro-*form*. ***Anapterin***. *7-Neopterin*
[126779-19-9]
Occurs in urine of patients with hyperphenylalaninemia. Microcryst. (H_2O). $[\alpha]_D^{22}$ +19.5 (c, 0.4 in 1*M* HCl). CA erroneously names Anapterin as 7-(12-dihydroxypropyl)pterin.

Rembold, H. *et al., Chem. Ber.*, 1963, **96**, 1395-1405 (*7-Biopterin, synth, uv*)
Curtis, H.-C. *et al., Biochem. Biophys. Res. Commun.*, 1988, **153**, 715-721 (*Anapterin, Primapterin, isol*)
Viscontini, M. *et al., Helv. Chim. Acta*, 1990, **73**, 337-345 (*Primapterin, Anapterin, synth, cd, pmr, bibl*)
Curtius, H.-C. *et al., J. Biol. Chem.*, 1990, **265**, 3923-3930 (*7-Neopterin, 7-Biopterin, isol*)

2-Amino-4,6,7-trihydroxypteridine A-925

*2-Amino-5,8-dihydro-4,6,7(1*H*)-pteridinetrione, 9CI.* ***Leucopterin***
[492-11-5]



$C_6H_5N_5O_3$ 195.137
Found in the wings of many butterflies, e.g. *Pieris brassicae.* Cryst. Blue fluor. in alkaline soln. Forms yellow salts.

Wieland, Th. *et al., Annalen*, 1940, **544**, 172 (*synth*)
Pfleiderer, W. *et al., Chem. Ber.*, 1957, **90**, 2631; 1961, **94**, 118 (*synth, struct*)
Mueller, G. *et al., Helv. Chim. Acta*, 1973, **56**, 2680 (*cmr*)
Pfleiderer, W. *et al., J. Het. Chem.*, 1992, **29**, 583 (*rev*)

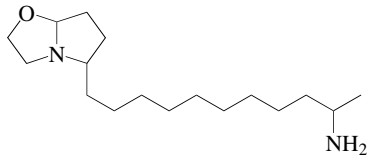
4-Amino-*N*,*N*,*N*-tris(3-aminopropyl)-1-butanaminium, 9CI A-926

N^4,N^4*-Bis(3-aminopropyl)spermidine*
[143085-76-1]
$(H_2NCH_2CH_2CH_2)_3N^+(CH_2)_3CH_2NH_2$
$C_{13}H_{34}N_5^{\oplus}$ 260.445
Isol. from the thermophilic bacteria *Bacillus schlegelii*, *Thermoleophilum album*, *Thermoleophilum minutum*, *Hydrogenobacter thermophilus* and *Hydrogenobacter halophilus.* Counterion not specified.

Hamana, K. *et al., Biochem. J.*, 1992, **284**, 741-747 (*isol*)

5-(10-Aminoundecyl)hexahydropyrrolo[2,1-*b*]oxazole A-927

*Hexahydro-α-methylpyrrolo[2,1-*b*]oxazole-5-decanamine, 9CI*
[192213-02-8]

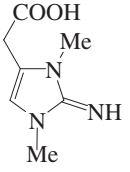


$C_{17}H_{34}N_2O$ 282.468
Alkaloid from the ladybird *Epilachna borealis.*

Radford, P. *et al., J. Nat. Prod.*, 1997, **60**, 755-759 (*isol, ms*)

Aminozooanemonin A-928

*2,3-Dihydro-2-imino-1,3-dimethyl-1*H*-imidazole-4-acetic acid, 9CI*
[213749-79-2]



$C_7H_{11}N_3O_2$ 169.183

Prototropic guanidino system showing zwitterion formation. Shown here and in the CAS name as the neutral species.
Alkaloid from the sponge *Agelas dispar*.
Amorph. solid. λ_{max} 226 (ϵ 3500); 262 (ϵ 1500) (MeOH).

Cafieri, F. *et al., J. Nat. Prod.*, 1998, **61**, 1171-1173 (*isol, uv, ir, pmr, cmr*)

Ammocalline A-929

[1354-30-9]

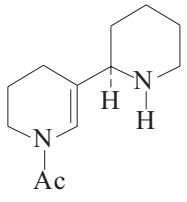
$C_{19}H_{22}N_2$ 278.396

Struct. unknown. Alkaloid from roots of *Catharanthus roseus* (Apocynaceae).
Needles (Me_2CO). Mp 335° dec. pK_a 7.3 (33% DMF aq.).

Svoboda, G.H. *et al., J. Nat. Prod.*, 1963, **26**, 141-153 (*isol, ir, uv*)

Ammodendrine A-930

1-Acetyl-1,2,3,4-tetrahydro-5-(2-piperidinyl)pyridine, 9CI. 1′-Acetyl-1,1′,2,3,4,4′,5,5′,6,6′-decahydro-2,3′-bipyridine. N-*Acetyl-Δ²-tetrahydroanabasine. Sphaerocarpine*
[27542-15-0]



$C_{12}H_{20}N_2O$ 208.303

►Exp. teratogen.

(R)-form

Isoammodendrine
[494-15-5]
Alkaloid from *Genista sphaerocarpa, Ammodendron conollyi*, *Lupinus formosus* and other plant spp. Cryst. or oil. Mp 43-46°. $[\alpha]_D^{24}$ +5.4 (c, 1.3 in MeOH). Many isolates with higher opt rotations were probably contaminated.

►UR9150000

Perchlorate:
Cryst. (H_2O or Me_2CO). Mp 210-211°.

N-*Formyl:* **N′-*Formylammodendrine***
[53508-17-1]
$C_{13}H_{20}N_2O_2$ 236.313
Alkaloid from *Dichilus strictus* and *Spartidium saharae*.

N-*Me:* **N′-*Methylammodendrine***
[52196-10-8]
$C_{13}H_{22}N_2O$ 222.33
Alkaloid in *Lupinus formosus* (Fabaceae). Oil (natural), cryst. (petrol)(-synthetic). Mp 65-66°. $[\alpha]_D^{23}$ +62.4 (c, 0.5 in MeOH).

(±)-form [20824-32-2]
Alkaloid from *Ammodendron conollyi*, other *Ammodendron* spp. *Sophora franchetiana* and *Coelidium fourcadei* (Fabaceae). Mp 50-60°.

Monohydrate: Mp 73-74°.

Hydroiodide:
Cryst. (EtOH). Mp 221-222°.

N-*Me:*
Cryst. (petrol). Mp 65-66°.

N-*Me; hydroiodide:* Mp 184-185°.

(ξ)-form
Alkaloid from *Ammodendron karelinii, Ammodendron longiracemosum, Ammodendron lehmanni, Genista hystrix, Lupinus mutabilis, Castilleja miniata, Ammopiptanthus mongolicus, Thermopsis lupinoides* and other plants (opt. rotn. of these isolates mostly unreported) (Fabaceae).

Orekhov, A.P. *et al., Ber.*, 1935, **68**, 1807 (*isol*)
Orekhov, A.P. *et al., Bull. Soc. Chim. Fr.*, 1938, **5**, 29 (*struct*)
Dominguez, J. *et al., An. R. Soc. Esp. Fis. Quim., Ser. B*, 1956, 43; *CA*, **51**, 1212h (*struct, resoln*)
Ribas-Marques, I. *et al., An. R. Soc. Esp. Fis. Quim., Ser. B*, 1962, **57**, 781; *CA*, **58**, 5738c (*abs config*)
Schöpf, C. *et al., Annalen*, 1964, **674**, 87 (*synth*)
Arndt, R.R. *et al., J. S. Afr. Chem. Inst.*, 1968, **21**, 54; *CA*, **70**, 4342f (*isol, pmr*)
Fitch, W.L. *et al., J.A.C.S.*, 1974, **96**, 4917 (*ms*)
Fitch, W.L. *et al., J.O.C.*, 1974, **39**, 2974 (*isol, deriv*)
Kushmuradov, Yu.K. *et al., Khim. Prir. Soedin.*, 1977, 717; 1979, 871; *Chem. Nat. Compd. (Engl. Transl.)*, 604; 780 (*isol*)
Tashkhodzhaev, B. *et al., Khim. Prir. Soedin.*, 1982, 661; *Chem. Nat. Compd. (Engl. Transl.)*, 631 (*cryst struct*)
Van Wyk, B.E. *et al., S. Afr. J. Bot.*, 1989, **55**, 523 (*N′-Formylammodendrine*)
Lee, S.T. *et al., J. Nat. Prod.*, 2005, **68**, 681-685 (*isol, resoln, tox*)

Ammorosine A-931

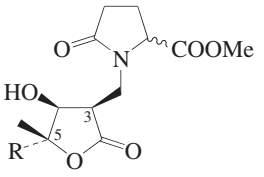
[1354-31-0]

Struct. unknown. Alkaloid from roots of *Catharanthus roseus* (Apocynaceae).
Blades (MeOH). Mp 221-225°. pK_a 7.3 (33% DMF aq.).

Svoboda, G.H. *et al., J. Nat. Prod.*, 1963, **26**, 141-153 (*isol, ir, uv*)

Amphiasterin C_1 A-932

[330680-37-0]



R = -$(CH_2)_3$$^{4"}$CH=$^{5"}CH(CH_2)_9CH_3$(*E*-)

Relative Configuration

$C_{27}H_{45}NO_6$ 479.656
Isol. from *Plakortis quasiamphiaster*. Oil. $[\alpha]_D^{20}$ -19.3 (c, 0.14 in $CHCl_3$).

4″,5″-Dihydro: ***Amphiasterin C₃***
[330680-39-2]
$C_{27}H_{47}NO_6$ 481.671
Isol. from *Plakortis quasiamphiaster*. Oil. $[\alpha]_D^{20}$ -8 (c, 0.4 in $CHCl_3$).

3-Epimer: ***Amphiasterin D₁***
[330680-41-6]
$C_{27}H_{45}NO_6$ 479.656
Isol. from *Plakortis quasiamphiaster*. Oil. $[\alpha]_D^{20}$ -16 (c, 0.06 in $CHCl_3$).

3,4,5-Triepimer: ***Amphiasterin E₁***
[330680-44-9]
$C_{27}H_{45}NO_6$ 479.656
Isol. from *Plakortis quasiamphiaster*. Oil. $[\alpha]_D^{20}$ -3.8 (c, 0.11 in $CHCl_3$).

Zampella, A. *et al., Tetrahedron*, 2001, **57**, 257-263 (*Amphiasterins C_1,C_3,D_1,E_1*)

Amphiasterin C_2 A-933

[330680-38-1]
As Amphiasterin C_1, A-932 with
R = -$(CH_2)_5CH$=$CH(CH_2)_9CH_3$(*E*-)

$C_{29}H_{49}NO_6$ 507.709
Isol. from *Plakortis quasiamphiaster*. Oil. $[\alpha]_D^{20}$ -12.3 (c, 0.65 in $CHCl_3$).

6″,7″-Dihydro: ***Amphiasterin C₄***
[330680-40-5]
$C_{29}H_{51}NO_6$ 509.725
Isol. from *Plakortis quasiamphiaster*. Oil. $[\alpha]_D^{20}$ -11.5 (c, 0.13 in $CHCl_3$).

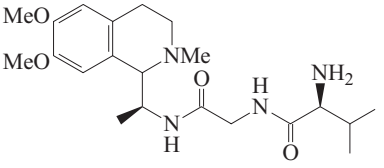
3-Epimer: ***Amphiasterin D₂***
[330680-42-7]
$C_{29}H_{49}NO_6$ 507.709
Isol. from *Plakortis quasiamphiaster*. Oil. $[\alpha]_D^{20}$ -2.9 (c, 0.24 in $CHCl_3$).

3-Epimer, 6″,7″-dihydro: ***Amphiasterin D₃***
[330680-43-8]
$C_{29}H_{51}NO_6$ 509.725
Isol. from *Plakortis quasiamphiaster*. Oil. $[\alpha]_D^{20}$ -1.5 (c, 0.1 in $CHCl_3$).

Zampella, A. *et al., Tetrahedron*, 2001, **57**, 257-263 (*Amphiasterins C_2,C_4,D_2,D_3*)

Amphibine I A-934

L-Valyl-N-*[1-(1,2,3,4-tetrahydro-6,7-dimethoxy-2-methyl-1-isoquinolinyl)ethyl]-glycinamide, 9CI*
[53098-67-2]



$C_{21}H_{34}N_4O_4$ 406.524

Consists of mixt. of diastereoisomer shown with 1,9-diepimer. Alkaloid from *Zizyphus amphibia* (Rhamnaceae). Pale yellow foam. $[\alpha]_D^{20}$ -50 (c, 0.6 in C_6H_6).

Hydrochloride (1:2):
Cryst. ($CHCl_3$/petrol). Mp 175° dec. $[\alpha]_D^{20}$ -3.4 (c, 0.24 in MeOH).

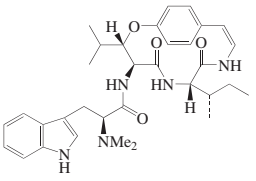
N-*Ac:*
Needles (CH_2Cl_2). Mp 188-190°. $[\alpha]_D^{20}$ -20 (c, 0.1 in EtOH).

Tschesche, R. *et al., Chem. Ber.*, 1974, **107**, 1329; 1975, **108**, 2247 (*ir, uv, ms, pmr, isol, struct, synth, config, cd*)

Koyama, J. *et al., Heterocycles*, 1978, **9**, 443 (*synth, cd*)

Amphibine A A-935

[36535-97-4]



Absolute Configuration

$C_{33}H_{43}N_5O_4$ 573.734

Prob. identical with Discarine A and possibly also with Waltherine B. Alkaloid from the bark of *Zizyphus amphibia* and *Zizyphus spinachristi* and from the root bark of *Zizyphus nummularia* (Rhamnaceae). Needles (CH_2Cl_2/MeOH). Mp 237-239° dec. $[\alpha]_D^{20}$ -310 (c, 0.021 in MeOH).

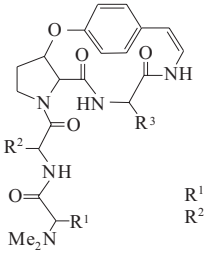
Stereoisomer (1)(?): ***Waltherine B***
[243464-60-0]
$C_{33}H_{43}N_5O_4$ 573.734
Alkaloid from the root bark of *Waltheria douradinha*. Needles ($CHCl_3$/MeOH). Mp 242-243°. $[\alpha]_D^{20}$ -201.8 (c. 0.21 in MeOH).

Stereoisomer (2)(?): ***Discarine A***
[36211-12-8]
$C_{33}H_{43}N_5O_4$ 573.734
Alkaloid from the roots of *Discaria longispina* (Rhamnaceae). Cryst. (CH_2Cl_2/Et_2O). Mp 229-231°. $[\alpha]_D$ -282 (c, ca. 0.05 in $CHCl_3$).

González Sierra, M. *et al., Chem. Comm.*, 1972, 915-916 (*Discarine A, pmr, stereochem*)
Mascaretti, O.A. *et al., Phytochemistry*, 1972, **11**, 1133 (*Discarine A, isol, struct*)
Tschesche, R. *et al., Tet. Lett.*, 1972, 865-868 (*Amphibine A, ms, struct*)
Tschesche, R. *et al., Phytochemistry*, 1974, **13**, 1633 (*Amphibine A, isol*)
Tschesche, R. *et al., Tetrahedron*, 1975, **31**, 2944-2947 (*Amphibine A, isol*)
Païs, M. *et al., Phytochemistry*, 1979, **18**, 1869-1872 (*Discarine A, cmr*)
Morel, A.F. *et al., Phytochemistry*, 1999, **51**, 473-477 (*Waltherine B, isol*)

Amphibine B A-936

[38541-74-1]



$R^1 = R^3 = CH_2Ph$
$R^2 = CH(CH_3)CH_2CH_3$

$C_{39}H_{47}N_5O_5$ 665.831

Stereochem. not yet determined. Alkaloid from the bark of *Zizyphus amphibia* and *Zizyphus rugosa*, and from *Ziziphus oenoplia*, *Zizyphus mauritiana* (Rhamnaceae). Amorph. $[\alpha]_D^{20}$ -181 (c, 0.08 in MeOH). λ_{max} 210 (end) ; 260 (sh) (MeOH).

Tschesche, R. *et al., Chem. Ber.*, 1972, **105**, 3094-3105 (*Zizyphus amphibia constit, struct*)
Tschesche, R. *et al., Annalen*, 1974, 1694-1701 (*Ziziphus mauritiana constit*)
Singh, A. *et al., J. Indian Chem. Soc.*, 2008, **85**, 658-659 (*Zizyphus rugosa constit*)

Amphibine C A-937

[38496-01-4]
As Amphibine B, A-936 with
$R^1 = CH_2CH(CH_3)_2$, $R^2 = CH(CH_3)CH_2CH_3$, $R^3 = CH_2Ph$

$C_{36}H_{49}N_5O_5$ 631.814

Alkaloid from the bark of *Zizyphus amphibia* (Rhamnaceae). Amorph. $[\alpha]_D^{20}$ -224 (c, 0.075 in MeOH).

Tschesche, R. *et al., Chem. Ber.*, 1972, **105**, 3094 (*isol, uv, cd, ir, pmr, ms, struct*)

Amphibine D A-938

[38496-02-5]
As Amphibine B, A-936 with
$R^1 = CH_2Ph$, $R^2 = R^3 = CH(CH_3)CH_2CH_3$

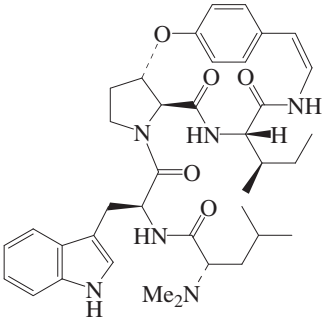
$C_{36}H_{49}N_5O_5$ 631.814

Alkaloid from the bark of *Zizyphus amphibia*, *Zizyphus mauritiana*, *Zizyphus rugosa* and *Zizyphus juazeiro* (Rhamnaceae). Amorph. $[\alpha]_D^{20}$ -203 (c, 0.09 in MeOH).

Tschesche, R. *et al., Chem. Ber.*, 1972, **105**, 3094-3105 (*isol, uv, cd, ir, pmr, ms, struct*)
Hindenlang, D.M. *et al., Annalen*, 1980, 447-450 (*cmr*)
Tschesche, R. *et al., Pharmazie*, 1981, **36**, 511 (*isol, uv, ir, pmr, ms*)

Amphibine E A-939

[38541-75-2]



$C_{38}H_{50}N_6O_5$ 670.85

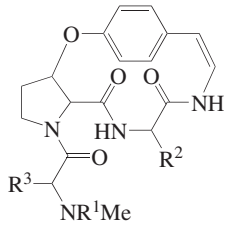
Alkaloid from the bark of *Zizyphus amphibia*, *Zizyphus mauritiana* and *Zizyphus spinachristi* (Rhamnaceae). Amorph. $[\alpha]_D^{20}$ -175 (c, 0.14 in MeOH).

N-*De-Me:* ***Mauritine J***
[177715-71-8]
$C_{37}H_{48}N_6O_5$ 656.823
Alkaloid from root bark of *Zizyphus mauritiana*. Amorph. $[\alpha]_D$ -175.9 (c, 1.0 in MeOH).

Tschesche, R. *et al., Chem. Ber.*, 1972, **105**, 3094-3105 (*isol, uv, cd, ir, pmr, ms, struct*)
Tschesche, R. *et al., Annalen*, 1974, 1694-1702 (*isol*)
Tschesche, R. *et al., Phytochemistry*, 1974, **13**, 1633 (*isol*)
Hindenlang, D.M. *et al., Annalen*, 1980, 447-450 (*cmr*)
Jossang, A. *et al., Phytochemistry*, 1996, **42**, 565-567 (*Mauritine J*)

Amphibine F A-940

[52617-26-2]



$R^1 = H$, $R^2 = -CH_2Ph$
$R^3 = -CH(CH_3)CH_2CH_3$

$C_{29}H_{36}N_4O_4$ 504.628

Alkaloid from the bark of *Zizyphus amphibia*, *Zizyphus mauritiana* and *Zizyphus spinachristi* (Rhamnaceae). Amorph. $[\alpha]_D^{20}$ -171 (c, 0.26 in $CHCl_3$).

Dihydro, N-*Me:*
Needles (Me_2CO/cyclohexane). Mp 152-156°. $[\alpha]_D^{20}$ -119 (c, 0.05 in $CHCl_3$).

Tschesche, R. *et al., Chem. Ber.*, 1974, **107**, 686 (*isol, uv, ir, pmr, ms, struct*)
Tschesche, R. *et al., Annalen*, 1974, 1694 (*isol*)
Tschesche, R. *et al., Phytochemistry*, 1974, **13**, 1633 (*isol*)

Amphibine G A-941

[52617-27-3]
As Amphibine F, A-940 with
$R^1 = Me$, $R^2 = -CH_2CH(CH_3)_2$, R^3 = 3-Indolyl–CH_2–

$C_{32}H_{39}N_5O_4$ 557.691

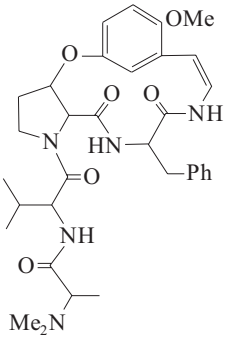
Alkaloid from the bark of *Zizyphus amphibia* (Rhamnaceae). Needles (CCl_4). Mp 182-185°. $[\alpha]_D^{20}$ -218 (c, 0.24 in $CHCl_3$).

Dihydro:
Amorph. $[\alpha]_D^{20}$ +119 (c, 0.2 in $CHCl_3$).

Tschesche, R. *et al., Chem. Ber.*, 1974, **107**, 686 (*isol, uv, cd, ir, pmr, ms, struct*)

Amphibine H A-942

[52659-55-9]



$C_{33}H_{43}N_5O_6$ 605.733

Alkaloid from the bark or root bark of *Zizyphus amphibia*, *Zizyphus nummularia*, *Zizyphus jujuba*, *Zizyphus spina-christi* and *Zizyphus xylopyra*. Shows antibacterial activity. Cryst. ($CHCl_3$/petrol). Mp 205°. $[\alpha]_D^{20}$ -570 (c, 0.12 in MeOH).

N-*De-Me:* ***Nummularine B***. N-*Demethylamphibine H*. *Daechuine S27*
[53947-96-9]
$C_{32}H_{41}N_5O_6$ 591.706
Alkaloid from the root bark or stem bark of *Zizyphus nummularia*, *Zizyphus jujuba*, *Zizyphus sativa* and *Zizyphus xylopyra* (Rhamnaceae). Shows antibacterial activity. Needles (MeOH). Mp 230-231°. $[\alpha]_D^{20}$ -390 (c, 0.2 in $CHCl_3$).

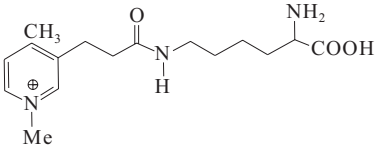
N-*De-Me,* N-*formyl:* ***Nummularine T***
[99694-95-8]
$C_{33}H_{41}N_5O_7$ 619.716
Alkaloid from bark of *Zizyphus nummularia* (Rhamnaceae). Granules (MeOH). Mp 188-190°.

*Dihydro:*Shows antibacterial activity. Needles (CH_2Cl_2/Me_2CO). Mp 281°. $[\alpha]_D^{20}$ -381 (c, 0.15 in MeOH).

Tschesche, R. *et al., Chem. Ber.*, 1974, **107**, 686; 3180 (*isol, uv, ir, pmr, ms, struct*)
Tschesche, R. *et al., Phytochemistry*, 1976, **15**, 541; 1979, **18**, 702 (*isol*)
Pandey, V.B. *et al., Phytochemistry*, 1984, **23**, 2118 (*isol*)
Han, B.H. *et al., Pure Appl. Chem.*, 1989, **61**, 443 (*isol, Nummularine B*)
Pandey, V.B. *et al., Planta Med.*, 1990, **56**, 649 (*activity*)
Singh, B. *et al., Phytochemistry*, 1995, **38**, 271 (*Nummularine T*)

Amphikuemin A-943

[105870-54-0]

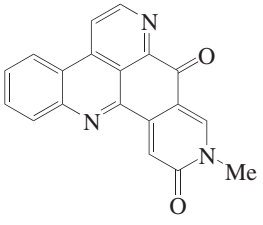


$C_{16}H_{26}N_3O_3^{\oplus}$ 308.4
Isol. from the sea anenome *Radianthus kuekenthali*. Induces symbiosis between sea anenome and anenome fish.

Murata, M. *et al., Science (Washington, D.C.)*, 1986, **234**, 585-587 (*isol, uv, pmr, struct*)
Konno, K. *et al., Heterocycles*, 1990, **30**, 247-251 (*synth*)

Amphimedine A-944

*10-Methyl-8*H*-benzo[*b*]pyrido[4,3,2-de][1,8]phenanthroline-8,11(10*H*)-dione, 9CI*
[86047-14-5]

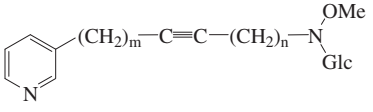


$C_{19}H_{11}N_3O_2$ 313.315
Alkaloid from an *Amphimedon* sp. of Pacific sponge and *Xestospongia carbonaria*. Cytotoxic; topoisomerase II inhibitor. Yellow solid. Fairly sol. MeOH; poorly sol. butanol, hexane. Mp 360°. λ_{max} 210 (ϵ 19700); 233 (ϵ 39400); 281 (ϵ 9100); 341 (ϵ 6060) (EtOH) (Derep). λ_{max} 245 (ϵ 38000); 281 (ϵ 10000); 340 (ϵ 7000) (MeOH) (Berdy). λ_{max} 235 (ϵ 38000); 281 (ϵ 10000); 340 (ϵ 7000) (EtOH) (Berdy).

Schmitz, F.J. *et al., J.A.C.S.*, 1983, **105**, 4835 (*isol, uv, ir, pmr, cmr, ms, struct*)
Kubo, A. *et al., Heterocycles*, 1988, **27**, 2095 (*synth, uv, ir, pmr, ms*)
Echavarren, A.M. *et al., J.A.C.S.*, 1988, **110**, 4051 (*synth*)
Prager, R.H. *et al., Aust. J. Chem.*, 1991, **44**, 277 (*synth, uv, ir*)
Guillier, F. *et al., J.O.C.*, 1995, **60**, 292 (*synth*)
Bracher, F. *et al., Annalen*, 1996, 115 (*synth*)
Nakahara, S. *et al., Heterocycles*, 1996, **43**, 2113 (*synth*)

Amphimedoside A A-945

[915721-96-9]



m = 4, n = 10

$C_{28}H_{46}N_2O_6$ 506.681
Similar to Hachijodines, H-3. Alkaloid from *Amphimedon* sp. Cytotoxic.

Takekawa, Y. *et al., J. Nat. Prod.*, 2006, **69**, 1503-1505 (*isol, pmr, cmr, ms*)

Amphimedoside B A-946

[915722-03-1]
As Amphimedoside A, A-945 with
m = 4, n = 8
$C_{26}H_{42}N_2O_6$ 478.628
Alkaloid from *Amphimedon* sp. Cytotoxic.

Takekawa, Y. *et al., J. Nat. Prod.*, 2006, **69**, 1503-1505 (*isol, pmr, cmr, ms*)

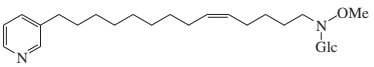
Amphimedoside C A-947

[915722-04-2]
As Amphimedoside A, A-945 with
m = 2, n = 10
$C_{26}H_{42}N_2O_6$ 478.628
Alkaloid from *Amphimedon* sp. Cytotoxic.

Takekawa, Y. *et al., J. Nat. Prod.*, 2006, **69**, 1503-1505 (*isol, pmr, cmr, ms*)

Amphimedoside E A-948

[915722-06-4]

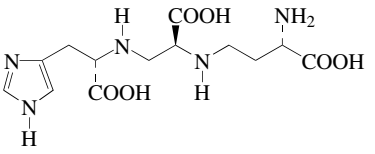


$C_{26}H_{44}N_2O_6$ 480.643
Alkaloid from *Amphimedon* sp. Cytotoxic.

Takekawa, Y. *et al., J. Nat. Prod.*, 2006, **69**, 1503-1505 (*isol, pmr, cmr, ms*)

Amphistin A-949

[199783-52-3]

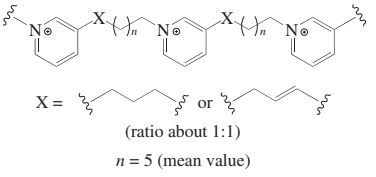


$C_{13}H_{21}N_5O_6$ 343.339
Prod. by an actinomycete strain KP-3052. Melanogenesis inhibitor. Powder. Mp 260° (dec.). $[\alpha]_D^{25}$ -9 (c, 0.6 in H_2O). λ_{max} 220 (ϵ 7500) (H_2O).

Arai, N. *et al., J. Antibiot.*, 1997, **50**, 808-814 (*isol, uv, ir, pmr, cmr, N-15 nmr*)

Amphitoxin A-950

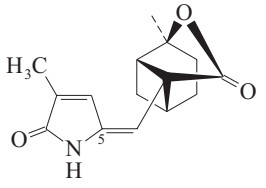
[165724-12-9]



Polymeric alkaloid from the Caribbean sponge *Amphimedon compressa*. Exhibits antifeedant activity. λ_{max} 266 (H_2O).

Albrizio, S. *et al., J. Nat. Prod.*, 1995, **58**, 647 (*isol, uv, ir, pmr, cmr*)

Ampullicin A-951



$C_{15}H_{17}NO_3$ 259.304
Metab. of an *Ampulliferina*-like fungal sp. Needles + ½ H_2O (Me_2CO/C_6H_6/hexane). Mp 197-198°. $[\alpha]_D^{20}$ -32 (c, 0.5 in MeOH). λ_{max} 281 (ϵ 14700) (EtOH) (Derep). λ_{max} 281 (ϵ 14700) (EtOH) (Berdy).

5,6-Dihydro: ***Dihydroampullicin***
[149182-93-4]
$C_{15}H_{19}NO_3$ 261.32
Metab. of an *Ampulliferina*-like fungus. Plant growth regulator. Needles. Sol. MeOH, Me_2CO, EtOAc. Mp 180-181°. $[\alpha]_D^{20}$ +36 (c, 0.25 in MeOH). λ_{max} 244 (ϵ 2490); 248 (ϵ 3000); 254 (ϵ 3350); 260 (ϵ 2400) (EtOH). λ_{max} 244 (ϵ 2940); 248 (ϵ 3000); 254 (ϵ 3350); 260 (ϵ 2400) (EtOH) (Berdy).

5Z-Isomer: ***Isoampullicin***
[127943-13-9]
$C_{15}H_{17}NO_3$ 259.304
From an *Ampulliferina*-like fungal sp. Mp 202-203°. $[\alpha]_D^{20}$ +110 (c, 0.5 in MeOH). λ_{max} 281 (ϵ 14700) (EtOH) (Derep). λ_{max} 284 (ϵ 20500) (EtOH) (Berdy).

Kimura, Y. *et al., Agric. Biol. Chem.*, 1990, **54**, 813 (*isol, pmr, cmr*)
Kimura, Y. *et al., Biosci., Biotechnol., Biochem.*, 1993, **57**, 687-688 (*Dihydroampullicin*)
Rico, R. *et al., Tet. Lett.*, 1995, **36**, 7889-7892; 1996, **37**, 5809-5812 (*synth*)
Marcos, I. *et al., Tet. Lett.*, 2000, **41**, 8451-8455 (*synth, Dihydroampullicin*)
Bermejo, F.A. *et al., J.O.C.*, 2001, **66**, 8287-8292 (*synth, abs config*)

Amsoniaefoline A-952

Struct. unknown

$C_{25}H_{32}N_2O_5$ 440.538

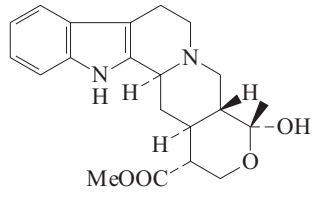
Alkaloid from *Rauwolfia amsoniaefolia* (Apocynaceae). Mp 220-223°.

Gomez, R. *et al., J. Philipp. Pharm. Assoc.*, 1957, **44**, 101; 127

Amsosinine A-953

Methyl 19-hydroxy-19-methyloxayohimban-16-carboxylate, 9CI. 19-Hydroxy-16,17-dihydromayumbine

[136092-57-4]



$C_{21}H_{26}N_2O_4$ 370.447

Alkaloid from *Amsonia sinensis* (Apocynaceae). Cryst. Mp 221-222°. $[\alpha]_D^{14}$ -51.6 (c, 0.05 in Me_2CO).

16,19-Diepimer: ***Diangoutengjian I***

[344927-27-1]

$C_{21}H_{26}N_2O_4$ 370.447

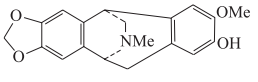
Alkaloid from *Uncaria yunanensis*. Cryst. (MeOH). Mp 190-191°.

Liu, H.-M. *et al., Planta Med.*, 1991, **57**, 566 (*isol, uv, ir, pmr, cmr, ms, struct*)
Tao, Z.-Y. *et al., Yaoxue Xuebao*, 2001, **36**, 120-122 (*Diangoutengjian I*)

Amurensine† A-954

10,11-Dihydro-7-methoxy-13-methyl-11,5-(iminomethano)-5H-benzo[4,5]cyclohepta[1,2-f]-1,3-benzodioxol-8-ol, 9CI. Xanthopetaline

[10481-92-2]



Absolute configuration

$C_{19}H_{19}NO_4$ 325.363

Alkaloid from *Papaver alpinum, Papaver alpinum* var. *tatricum*, var. *burseri*, var. *kerneri, Papaver pseudocanescens, Papaver nudicaule* var. *amurense*, var. *xanthopetalum*, var. *leiocarpum*, var. *rubroaurantiacum, Papaver pyrenaicum, Papaver tatricum, Papaver suaveolens* and *Papaver anomalum* (Papaveraceae). Cryst. (Me_2CO or MeOH/Et_2O/hexane). Mp 221-223° (206-8°, 213°, 216-217°). $[\alpha]_D^{22}$ -178 (c, 0.819 in MeOH). $[\alpha]_D^{22}$ -194 (c, 0.25 in $CHCl_3$).

Hydroiodide: Mp 255° dec.

Picrate: Mp 132°.

Me ether: ***Amurensinine***

[10470-47-0]

$C_{20}H_{21}NO_4$ 339.39

Alkaloid from *Papaver tauricola, Papaver anomalum, Papaver pyrenaicum, Papaver pseudocanescens, Papaver alpinum, Papaver alpinum* var. *rhoeaticum*, var. *burseri*, var. *kerneri*, var. *tatricum, Papaver nudicaule* var. *xanthopetalum*, var. *leiocarpum*, var. *rubroaurantiacum, Papaver radicatum* and *Papaver suaveolens* (Papaveraceae). Cryst. (Et_2O or MeOH). Mp 136-138° Mp 144-146° Mp 162-164°. $[\alpha]_D^{22}$ -162 (c, 0.80 in $CHCl_3$).

Me ether, hydroiodide: Cryst. (MeOH/Et_2O). Mp 236-245° dec.

Me ether, N-*oxide(*R-*):* ***Amurensinine* N-oxide B**

$C_{20}H_{21}NO_5$ 355.39

Alkaloid from *Meconopsis horridula* var. *racemosa*. $[\alpha]_D^{27}$ -89 (c, 0.38 in $CHCl_3$).

Me ether, N-*oxide(*S-*):* ***Amurensinine* N-oxide A**

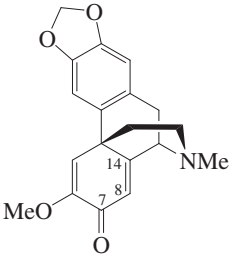
$C_{20}H_{21}NO_5$ 355.39

Alkaloid from *Meconopsis horridula* var. *racemosa*. $[\alpha]_D^{27}$ -101 (c, 0.3 in $CHCl_3$).

Boit, H.-G. *et al., Naturwissenschaften*, 1960, **47**, 180 (*isol*)
Maturová, M. *et al., Planta Med.*, 1962, **10**, 345; 1966, **14**, 22 (*isol*)
Šantavý, F. *et al., Chem. Comm.*, 1966, 36; 144
Šantavý, F. *et al., Coll. Czech. Chem. Comm.*, 1966, **31**, 4286 (*uv, ir, pmr, struct*)
Dolejš, L. *et al., Coll. Czech. Chem. Comm.*, 1968, **33**, 600 (*ms*)
Pfeifer, S. *et al., Pharmazie*, 1968, **23**, 585 (*isol, uv*)
Shamma, M. *et al., Tet. Lett.*, 1971, 3425 (*uv, cd*)
Pfeifer, S. *et al., Pharmazie*, 1972, **27**, 48 (*isol, uv, pmr, ms*)
Novák, V. *et al., Coll. Czech. Chem. Comm.*, 1974, **39**, 883 (*isol, uv*)
Böhm, V.H. *et al., Planta Med.*, 1975, **28**, 210 (*isol*)
Dyke, S.F. *et al., Tetrahedron*, 1978, **34**, 241 (*cd*)
Sariyar, G. *et al., Phytochemistry*, 1980, **19**, 2189 (*isol, ms*)
Carrillo, L. *et al., J.O.C.*, 1997, **62**, 6716-6721 (*Amurensinine, synth*)
Xie, H. *et al., Fitoterapia*, 2001, **72**, 120-123 (*Amurensinine N-oxides*)
Tambar, U.K. *et al., J.A.C.S.*, 2006, **128**, 11752-11753 (*Amurensinine, synth*)

Amurine A-955

5,6,8,14-Tetradehydro-6-methoxy-17-methyl-2,3-[methylenebis(oxy)]morphinan-7-one, 9CI



(+)-*form*

$C_{19}H_{19}NO_4$ 325.363

(+)-*form* [4984-99-0]

Alkaloid from *Papaver* spp., esp. *Papaver nudicaule* (Papaveraceae). Cryst. (Me_2CO). Mp 213-215°. $[\alpha]_D^{26}$ +10 (c, 1.0 in $CHCl_3$). λ_{max} 238 (log ε 3.67); 290 (log ε 3.7) (EtOH).

N-*De-Me:* Synthetic. Oil. $[\alpha]_D^{25}$ +29.6 (c, 0.3 in $CHCl_3$).

7α-Alcohol: ***Nudaurine****. Amurinol I*

[4850-04-8]

$C_{19}H_{21}NO_4$ 327.379

Alkaloid from *Papaver nudicaule* var. *aurantiacum* and *Papaver croceum* (Papaveraceae). Cryst. (Me_2CO). Mp 201-202°. $[\alpha]_D^{22}$ -52 (c, 1 in $CHCl_3$). Abs. config. revised in 1993. λ_{max} 244 (log ε 4); 292 (log ε 3.78) (EtOH).

7α-Alcohol, hydroiodide: Mp 198° dec.

7α-Alcohol, picrate: Mp 150° dec.

8,14β-Dihydro, 7α-alcohol: ***Dihydronudaurine***

$C_{19}H_{23}NO_4$ 329.395

Alkaloid from aerial parts of *Papaver pilosum*. Noncryst. $[\alpha]_D^{20}$ +100 (c, 0.32 in $CHCl_3$). Incorrectly indexed in CA. λ_{max} 233 (log ε 3.97); 292 (log ε 3.85) (MeOH).

(-)-*form* [77449-68-4]

Alkaloid from *Roemeria refracta* and *Stephania aculeata*. Amorph. $[\alpha]_D$ -14 (c, 0.11 in MeOH). $[\alpha]_D$ -10 (c, 0.15 in $CHCl_3$). λ_{max} 242 (log ε 4.18); 291 (log ε 3.87) (MeOH).

N-*De-Me:* ***Noramurine***

[132209-25-7]

$C_{18}H_{17}NO_4$ 311.337

Alkaloid from *Roemeria refracta* (Papaveraceae). Amorph. $[\alpha]_D$ -8 (c, 0.1 in $CHCl_3$). $[\alpha]_D^{25}$ -33.3 (c, 0.3 in $CHCl_3$) (synthetic). λ_{max} 240 (log ε 4.08); 290 (log ε 3.84) (MeOH).

(±)-*form* [21124-18-5]

Yellowish oil.

N-*Me:* Cryst. (MeOH) (as iodide). Mp 230-233° (222-224°, 202-206° dec.) (iodide).

7α-Alcohol: ***(±)-Nudaurine****. Alkaloid PN1*

Alkaloid from *Papaver nudicaule* ssp. *xanthopetalum* and *Papaver nudicaule* ssp. *album* (Papaveraceae). Needles (MeOH). Mp 116-117°. Suggested struct. λ_{max} 215 (log ε 4.23); 245 (sh) (log ε 3.95); 294 (log ε 3.91) (MeOH).

8,14ξ-Dihydro: ***8,14-Dihydroamurine***

[1012311-30-6]

$C_{19}H_{21}NO_4$ 327.379

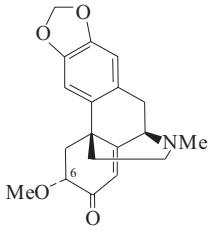
Alkaloid from *Papaver nudicaule*. Amorph. solid. Racemic. λ_{max} 222 (log ε 3.79); 254 (log ε 3.66); 268 (log ε 3.5); 280 (log ε 3.49) (MeOH).

Snatzke, G. *et al., J.C.S.(C)*, 1966, 1681-1685 (*cd*)
Döpke, W. *et al., Tetrahedron*, 1968, **24**, 4459-4476 (*struct, pmr*)
Kametani, T. *et al., J.C.S.(C)*, 1969, 801; 1971, 2446-2448; 2712-2714 (*synth*)
Kotani, E. *et al., Tet. Lett.*, 1973, 4759-4762 (*synth*)
Horii, Z. *et al., Chem. Pharm. Bull.*, 1974, **22**, 583-586 (*synth*)
Roblot, F. *et al., Bull. Soc. Chim. Fr.*, 1984, 139-141 (*cmr*)

Vezník, F. *et al., Coll. Czech. Chem. Comm.*, 1985, **50**, 1745-1752; 1987, **52**, 1634-1640 (*Amurine, Alkaloid PN1, isol*)
Gozler, B. *et al., J. Nat. Prod.*, 1990, **53**, 986-988 (*isol, pmr, struct, cd, abs config*)
Gollwitzer, J. *et al., Nat. Prod. Lett.*, 1993, **2**, 197-201 (*Nudaurine, cryst struct, abs config*)
Hara, H. *et al., Tetrahedron: Asymmetry*, 1995, **6**, 1683-1692 (*Amurine, Noramurine, synth*)
Blanchfield, J.T. *et al., Phytochemistry*, 2003, **63**, 711-720 (*(-)-Amurine, isol, pmr, cmr, cryst struct*)
Philipov, S. *et al., Nat. Prod. Res.*, 2007, **21**, 852-856 (*8,14-Dihydroamurine*)

Amurinine A-956

[87245-86-1]

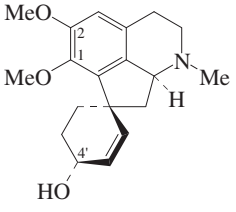


$C_{19}H_{21}NO_4$ 327.379
Alkaloid from the aerial parts of *Papaver pilosum* and *Papaver apokrinomenon* (Papaveraceae). $[\alpha]_D^{20}$ +42 (c, 0.18 in $CHCl_3$). $[\alpha]_D^{20}$ +42 (c, 0.18 in MeOH).

6-Epimer: ***Epiamurinine***
[87220-76-6]
$C_{19}H_{21}NO_4$ 327.379
Alkaloid from the aerial parts of *Papaver pilosum* and *Papaver apokrinomenon* (Papaveraceae). $[\alpha]_D^{20}$ -68 (c, 0.58 in $CHCl_3$).

Hocquemiller, R. *et al., J. Nat. Prod.*, 1984, **47**, 342 (*isol, uv, ir, pmr, ms, struct*)
Oztekin, A. *et al., J. Nat. Prod.*, 1984, **47**, 560 (*isol*)

Amuroline A-957



(+)-*form*

$C_{19}H_{25}NO_3$ 315.411
Diastereomeric with Cryprochine, C-781.

(+)-*form* [10214-57-0]
Alkaloid from *Papaver nudicaule* var. *amurense* (Papaveraceae). Prisms (Me_2CO). Mp 165-166°. $[\alpha]_D^{26}$ +106 (c, 0.3 in $CHCl_3$).

Perchlorate: Mp 151-153°.

Ac: Mp 152-154°. $[\alpha]_D^{24}$ +147 (c, 0.85 in $CHCl_3$).

4-Ketone: ***Amuronine***
[10214-56-9]
$C_{19}H_{23}NO_3$ 313.396
Alkaloid from *Papaver nudicaule* var. *amurense* (Papaveraceae). Mp 119-120° Mp 132-133° (double Mp). $[\alpha]_D^{26}$ +140 (c, 0.3 in $CHCl_3$).

4-Ketone, O[1]-de-Me: **N-*Methylisocrotsparinine***
$C_{18}H_{21}NO_3$ 299.369
Alkaloid from *Croton sparsiflorus* (Euphorbiaceae). Mp 197-199°. $[\alpha]_D$ +111.5 (c, 0.34 in MeOH).

4-Ketone, O[1]-de-Me, N-*de-Me:* ***Isocrotsparinine***
[58166-01-1]
$C_{17}H_{19}NO_3$ 285.342
Alkaloid from the aerial parts of *Croton sparsiflorus* (Euphorbiaceae). Cryst. (EtOAc). Mp 198-199°. $[\alpha]_D$ +112.5 (c, 0.23 in $CHCl_3$).

4-Ketone, O[2]-de-Me: ***Linearisine***
[10214-55-8]
$C_{18}H_{21}NO_3$ 299.369
Alkaloid from *Croton linearis* (Euphorbiaceae). Mp 219-222°. $[\alpha]_D^{28}$ +116 (c, 0.83 in MeOH).

4-Ketone, O[2]-de-Me, hydrochloride: Mp 300° dec.

10-Epimer, O-*de-Me (?):* ***Discolorine***
$C_{18}H_{23}NO_3$ 301.385
Alkaloid from *Croton discolor* (Euphorbiaceae). Mp 206-208°. $[\alpha]_D$ +99 (c, 0.5 in EtOH). Struct. assigned here on the basis of later work on the stereochem. of these alkaloids. The Me ether was not the same as Amuronine, but MnO_2 oxidn. of the Me ether gave Amuronine (incl. opt. rotn.).

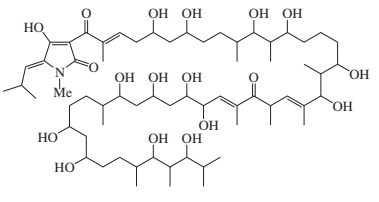
(±)-*form*
Synthetic. Noncryst.

Hydrochloride:
Cryst. (MeOH/Et_2O). Mp 235° dec. (preheated to 230°).

Boit, H.-G. *et al., Naturwissenschaften*, 1959, **46**, 514 (*isol*)
Haynes, L.J. *et al., J.C.S.*, 1963, 1784-1788; 1789-1793 (*Linearisine, Amuronine, isol, uv, ir, pmr*)
Haynes, L.J. *et al., J.C.S.(C)*, 1966, 1676-1679 (*Linearisine, Amuronine, struct*)
Snatzke, G. *et al., J.C.S.(C)*, 1966, 1681-1685 (*cd, abs config*)
Baldwin, M. *et al., J.C.S.(C)*, 1967, 154-161 (*ms*)
Bernauer, K. *et al., Helv. Chim. Acta*, 1968, **51**, 1119 (*synth*)
Döpke, W. *et al., Tetrahedron*, 1968, **24**, 2297 (*pmr, cd, struct, stereochem*)
Slavík, J. *et al., Coll. Czech. Chem. Comm.*, 1970, **35**, 1558 (*ord*)
Stuart, K.L. *et al., J.C.S.(C)*, 1970, 1228-1230 (*Discolorine*)
Dolejš, L. *et al., Coll. Czech. Chem. Comm.*, 1974, **39**, 571 (*ms*)
Casagrande, C. *et al., J.C.S. Perkin 1*, 1975, 1659-1663 (*Isocrotsparinine, N-Methylisocrotsparinine*)

Amycomycin A-958

[344362-08-9]

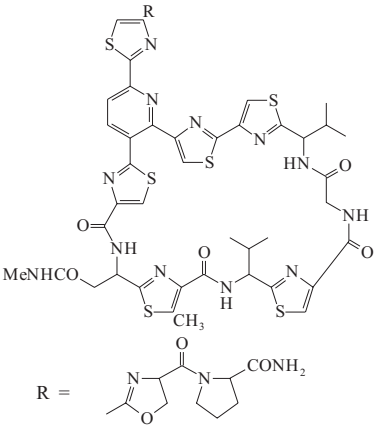


$C_{65}H_{115}NO_{18}$ 1198.619
Tetramic acid antibiotic. Prod. by *Amycolatopsis* sp. ST101170. Active against gram-positive bacteria. Amorph. solid. λ_{max} 229 (log ϵ 3.29); 281 (log ϵ 3.16) (no solvent reported).

Eur. Pat., 2001, 1 106 604; *CA*, **135**, 32809t (*isol*)

Amythiamicin A A-959

MI 481-42F4A. Antibiotic MI 481-42F4A
[152741-89-4]

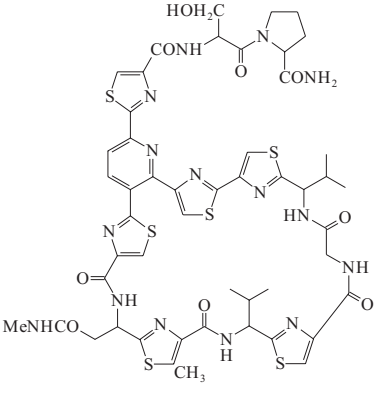


$C_{50}H_{51}N_{15}O_8S_6$ 1182.445
CycliC thiazole peptide. Prod. by *Amycolatopsis* sp. MI 481-42F4. Active against gram-positive bacteria. Sol. MeOH, DMSO; poorly sol. H_2O, hexane. $[\alpha]_D^{28}$ +133 (c, 0.7 in DMSO). λ_{max} 203 (ϵ 83200); 221 (ϵ 77600); 250 (ϵ 53700); 310 (ϵ 35500); 345 (ϵ 13500) (MeOH) (Derep). λ_{max} 203 (ϵ 85113); 223 (ϵ 79432); 303 (ϵ 33884) (MeOH/HCl). λ_{max} 204 (ϵ 288400); 309 (ϵ 33880) (MeOH/NaOH).

Shimanaka, K. *et al., J. Antibiot.*, 1994, **47**, 668-674; 1145-1152; 1153-1159 (*isol, uv, ir, pmr, cmr, props*)
Nicolaou, K.C. *et al., Chem. Comm.*, 2008, 2632-2634 (*synth*)

Amythiamicin B A-960

MI 481-42F4B. Antibiotic MI 481-42F4B
[156620-48-3]



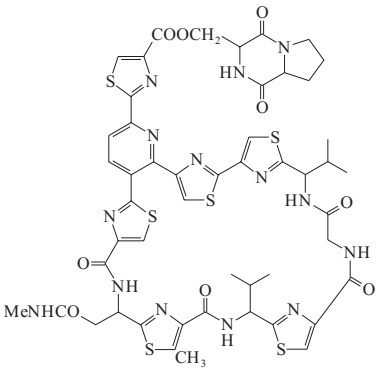
$C_{50}H_{53}N_{15}O_9S_6$ 1200.46

Cyclic polythiazole peptide. Prod. by *Amycolatopsis* sp. MI 481-42F4. Active against gram-positive bacteria. Sol. MeOH, DMSO; poorly sol. H_2O, hexane. $[\alpha]_D^{23}$ +155 (c, 0.25 in MeOH). Nontoxic. λ_{max} 203 (ϵ 83200); 221 (ϵ 77600); 250 (sh) (ϵ 52500); 308 (ϵ 35500); 345 (sh) (ϵ 13500) (MeOH) (Derep). λ_{max} 204 (ϵ 58884); 222 (ϵ 56234); 308 (ϵ 23988) (MeOH/HCl).

Shimanaka, K. *et al., J. Antibiot.*, 1994, **47**, 668-674; 1145-1152; 1153-1159 (*isol, uv, ir, pmr, cmr, props*)
Nicolaou, K.C. *et al., Chem. Comm.*, 2008, 2632-2634 (*synth*)

Amythiamicin C A-961

MI 481-42F4C. Antibiotic MI 481-42F4C
[156620-47-2]



$C_{50}H_{50}N_{14}O_9S_6$ 1183.429

Cyclic polythiazole peptide. Prod. by *Amycolatopsis* sp. MI 481-42F4. Active against gram-positive bacteria. Poorly sol. H_2O, hexane. $[\alpha]_D^{24}$ +112 (c, 0.25 in MeOH). λ_{max} 203 (ϵ 83200); 221 (ϵ 77600); 250 (sh) (ϵ 52500); 308 (ϵ 35500); 345 (sh) (ϵ 13500) (MeOH) (Derep). λ_{max} 203 (ϵ 60256); 221 (ϵ 57543); 306 (ϵ 25700) (MeOH/HCl). λ_{max} 203 (ϵ 27542); 306 (ϵ 24547) (MeOH/NaOH).

Shimanaka, K. *et al., J. Antibiot.*, 1994, **47**, 668-674; 1145-1152; 1153-1159 (*isol, uv, ir, pmr, cmr, props*)
Nicolaou, K.C. *et al., Chem. Comm.*, 2008, 2632-2634 (*synth*)

Amythiamicin D A-962

MI 481-42F4D. Antibiotic MI 481-42F4D
[156620-46-1]
As Amythiamicin A, A-959 with R = –COOMe

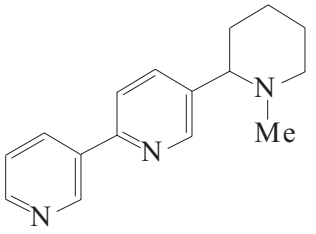
$C_{43}H_{42}N_{12}O_7S_6$ 1031.277

Cyclic polythiazole peptide.
Prod. by *Amycolatopsis* sp. MI 481-42F4. Active against gram-positive bacteria. Sol. MeOH, DMSO; poorly sol. H_2O, hexane. $[\alpha]_D^{22}$ +179 (c, 0.5 in MeOH). λ_{max} 204 (ϵ 52500); 224 (ϵ 61700); 250 (sh) (ϵ 36300); 307 (ϵ 30900); 345 (sh) (ϵ 11000) (MeOH) (Derep). λ_{max} 205 (ϵ 52480); 224 (ϵ 63095); 307 (ϵ 31622) (MeOH/HCl). λ_{max} 204 (ϵ 60260); 224 (ϵ 61660); 308 (ϵ 30900) (MeOH/NaOH).

Shimanaka, K. *et al., J. Antibiot.*, 1994, **47**, 668-674; 1145-1152; 1153-1159 (*isol, uv, ir, pmr, cmr, props*)
Hughes, R.A. *et al., J.A.C.S.*, 2005, **127**, 15644-15651 (*synth*)

Anabasamine A-963

5-(1-Methyl-2-piperidinyl)-2,3′-bipyridine, 9CI
[20410-87-1]



$C_{16}H_{19}N_3$ 253.346
Alkaloid from the seeds of *Anabasis aphylla* (Chenopodiaceae). Mp 65-66°. $[\alpha]_D$ +107 (c, 3.65 in EtOH).

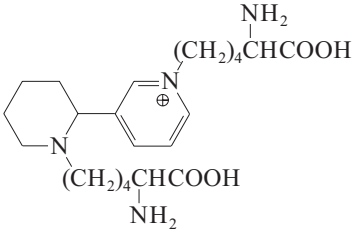
▶ BV4299600

N-*De-Me: 1′′,2′′,3′′,4′′,5′′,6′′-Hexahydro-2,3′:5,2′′-terpyridine. 5-(2-Piperidinyl)-2,3′-bipyridine.* ***Noranabasamine***
[85365-52-2]
$C_{15}H_{17}N_3$ 239.319
Minor alkaloid from skin extracts of the Colombian poison-dart frog *Phyllobates terribilis*. Also identified by gc-ms in skin extracts of *Phyllobates aurotaenia* and *Phyllobates bicolor*. $[\alpha]_D^{25}$ -14.4 (MeOH).

Sadykov, A.S. *et al., Dokl. Akad. Nauk SSSR*, 1967, **24**, 34; *CA*, **68**, 78473e (*isol, uv, ir, pmr, ms, struct*)
Mukhamedzhanov, S.Z. *et al., Khim. Prir. Soedin.*, 1968, **4**, 158; *Chem. Nat. Compd. (Engl. Transl.)*, 1968, **4**, 136 (*uv, ir, pmr, ms, struct*)
Tokuyama, T. *et al., Tetrahedron*, 1983, **39**, 41 (*Noranabasamine*)

Anabilysine A-964

1-(1-Amino-1-carboxypentyl)-3-[1-(1-amino-1-carboxypentyl)-2-piperidinyl]-pyridinium(1+)
[66517-63-3]

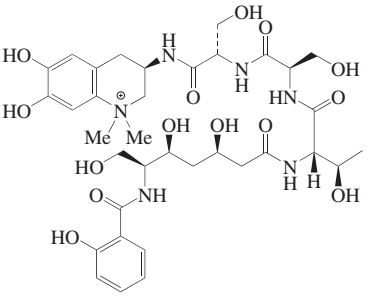


$C_{22}H_{37}N_4O_4^{\oplus}$ 421.559
Isol. from acid hydrolysates of glutaraldehyde-treated ovalbumin. CAS no. refers to chloride. λ_{max} 263 (ϵ 400) (NH_4OH).

Hardy, P.M. *et al., J.C.S. Perkin 1*, 1979, 2282 (*isol, struct, synth, pmr, cmr*)

Anachelin H A-965

[326490-92-0]



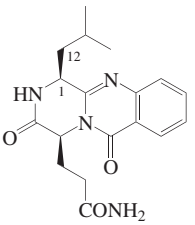
Absolute Configuration

$C_{35}H_{51}N_6O_{14}^{\oplus}$ 779.82
Isol. from *Anabaena cylindrica* CCAP 1403/2A. Siderophore.

Beiderbeck, H. *et al., Z. Naturforsch., C*, 2000, **55**, 681-687 (*isol*)
Gademann, K. *et al., J.O.C.*, 2007, **72**, 8361-8370 (*synth*)

Anacine A-966

[154613-22-6]



Absolute Configuration

$C_{18}H_{22}N_4O_3$ 342.397
Struct. revised in 1999. Related to Fumiquinazoline A, F-185. Metab. of marine-derived and terrestrial *Penicillium aurantiogriseum*. Also from *Penicillium polonicum*. Mycotoxin. Amorph. solid. Sol. H_2O; poorly sol. Me_2CO, hexane. $[\alpha]_D^{24}$ +233.3 (c, 0.21 in MeOH). λ_{max} 226 (log ϵ 4.23); 270 (log ϵ 3.6) (MeOH).

1,12-Didehydro(Z-): ***Aurantiomide C***
[915190-86-2]
$C_{18}H_{20}N_4O_3$ 340.381
Prod. by the marine-derived *Penicillium aurantiogriseum* SP0-16. Amorph. powder. $[\alpha]_D^{24}$ +25.8 (c, 0.1 in $CHCl_3$). λ_{max} 314 (log ϵ 4.48) (MeOH).

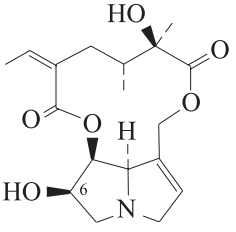
1-Hydroxy: ***Aurantiomide B***
[915190-84-0]
$C_{18}H_{22}N_4O_4$ 358.396
Prod. by the marine-derived *Penicillium aurantiogriseum* SP0-19. Amorph. powder. $[\alpha]_D^{24}$ +96.5 (c, 0.09 in $CHCl_3$). $[\alpha]_D$ +172 (c, 1.8 in MeOH). λ_{max} 280 (log ϵ 4.6); 311 (log ϵ 4.28) (MeOH).

1-Methoxy: ***Aurantiomide A***
[915190-85-1]
$C_{19}H_{24}N_4O_4$ 372.423
Prod. by the marine-derived *Penicillium aurantiogriseum* SP0-19. Oil. $[\alpha]_D^{24}$ +16 (c, 0.05 in $CHCl_3$). λ_{max} 282 (log ϵ 3.9); 311 (log ϵ 3.71) (MeOH).

Boyes-Korkis, J.M. *et al., J. Nat. Prod.*, 1993, **56**, 1707-1717 (*isol, uv, ir, pmr, cmr, ms*)
Larsen, T.O. *et al., J. Nat. Prod.*, 1999, **62**, 1578-1580 (*struct*)
Wang, H. *et al., J. Nat. Prod.*, 2001, **64**, 1497-1501 (*synth, pmr, cmr*)
Xin, Z.H. *et al., J. Nat. Prod.*, 2007, **70**, 853-855 (*Aurantiomides A-C*)

Anacrotine A-967

6,12-Dihydroxysenecionan-11,16-dione, 9CI. Crotalaburnine
[5096-49-1]



Absolute configuration

$C_{18}H_{25}NO_6$ 351.399

Cyclic diester of Crotanecine, C-775 with senecic acid. Alkaloid from *Crotalaria laburnifolia* (Fabaceae). Mp 191-192°. $[\alpha]_D$ +30 (EtOH).

▶ Hepato- and pneumotoxin. VT5707000

O^6*-Ac:* ***Acetylanacrotine***
$C_{20}H_{27}NO_7$ 393.436
Alkaloid from *Crotalaria agatiflora* (Fabaceae). Mp 106-107°. $[\alpha]_D$ +74 (c, 0.4 in EtOH).

6-Epimer: ***Uspallatine***
[98264-41-6]
Alkaloid from the roots of *Senecio uspallatensis* (Asteraceae). Cryst. ($MeOH/CHCl_3$). Mp 205-207°. $[\alpha]_D^{20}$ +4.11 (c, 0.0764 in MeOH).

*(*E*)-Isomer:* **trans-*Anacrotine***
$C_{18}H_{25}NO_6$ 351.399
Minor alkaloid from seeds of *Crotalaria capensis* (Fabaceae). $[\alpha]_D^{22}$ +11 (c, 1.7 in $CHCl_3$).

*(*E*)-Isomer,* O^6*-Ac:* ***Acetyl*-trans-*anacrotine***
$C_{20}H_{27}NO_7$ 393.436
Alkaloid from *Crotalaria agatiflora* (Fabaceae). Prisms (EtOH). Mp 96-97°. $[\alpha]_D$ +65 (c, 1.37 in EtOH).

*(*E*)-Isomer,* O^6*-angeloyl,* N*-oxide:* ***Angeloyl*-trans-*anacrotine* N-*oxide***
$C_{23}H_{31}NO_8$ 449.5
Alkaloid from *Crotalaria agatiflora* (Fabaceae). Mp 175-176°.

Atal, C.K. *et al., Tet. Lett.*, 1966, 537 (*isol, struct, pmr*)
Culvenor, C.C.J. *et al., An. Quim.*, 1972, **68**, 883 (*derivs*)
Crout, D.H.G. *et al., J.C.S. Perkin 1*, 1972, 1602 (*isol*)
Culvenor, C.C.J. *et al., Chem. Biol. Interact.*, 1976, **12**, 299 (*tox*)
Jones, A.J. *et al., Aust. J. Chem.*, 1982, **35**, 1173 (*cmr*)
Mackay, M.F. *et al., Acta Cryst. C*, 1984, **40**, 1073 (*cryst struct*)
Pestchanker, M.J. *et al., Phytochemistry*, 1985, **24**, 1622 (*Uspallatine*)
Verdoorn, G.H. *et al., Phytochemistry*, 1992, **31**, 369 (*trans-Anacrotine*)

Anacycline A-968

N-*(2-Methylpropyl)-2,4-tetradecadiene-8,10-diynamide, 9CI. 2,4-Tetradecadiene-8,10-diynoic acid isobutylamide*
[502-57-8]
$H_3CCH_2CH_2C{\equiv}CC{\equiv}CCH_2CH_2CH{=}CHCH{=}CHCONHCH_2CH(CH_3)_2$

$C_{18}H_{25}NO$ 271.402
λ_{max} 230 (ϵ 10000); 259 (ϵ 33500); 265 (sh) (ϵ 29800) (EtOH) (Derep).

(E,E)-form [94413-18-0]
Alkaloid from the roots of *Anacyclus pyrethrum* (Asteraceae) and *Achillea* spp. Cryst. (Et_2O/petrol). Mp 122°.

Maleic anhydride adduct:
Cryst. (Et_2O/petrol). Mp 196°.

N-*Me:* N-*Methyl*-N-*(2-methylpropyl)-2,4-tetradecadiene-8,10-diynamide.* **N-*Methylanacycline***
[38340-83-9]
$C_{19}H_{27}NO$ 285.428
Constit. of the roots of *Anacyclus pyrethrum* (Asteraceae). Oil. λ_{max} 251 nm.

Tetrahydro:
Waxy needles. Mp 40°.

12,13-Didehydro: N-*Isobutyl-2,4,12-tetradecatriene-8,10-diynamide. Dehydroanacycline. 12,13-Didehydroanacycline*
[29428-83-9]
$C_{18}H_{23}NO$ 269.386
Alkaloid from *Anacyclus fuscata* and *Achillea* spp. (Asteraceae). Cryst. (petrol). Mp 150.5°. Becomes rose-pink on prolonged exposure to sunlight.

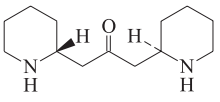
(E,Z)-form [37064-16-7]
Synthetic. Cryst. (Et_2O/petrol). Mp 85.5°.

[112711-13-4 , 94481-83-1]

Crombie, L. *et al., J.C.S.*, 1955, 999 (*isol, uv, ir, struct*)
Bohlmann, F. *et al., Chem. Ber.*, 1956, **89**, 1276; 1970, **103**, 2856; 1974, **107**, 2120 (*synth, biosynth, uv, ir, Didehydroanacycline*)
Crombie, L. *et al., Chem. Ind. (London)*, 1956, 409 (*synth, uv*)
Crombie, L. *et al., J.C.S.*, 1957, 2767 (*synth*)
Jente, R. *et al., Chem. Ber.*, 1972, **105**, 1694 (*isol, synth, ir, pmr, uv*)
Kuropka, G. *et al., Planta Med.*, 1987, **53**, 440 (*isol*)
Crombie, L. *et al., Tet. Lett.*, 1987, **28**, 4875 (*synth*)
Greger, H. *et al., Phytochemistry*, 1989, **28**, 2363 (*isol*)

Anaferine A-969

1,3-Di-2-piperidinyl-2-propanone, 9CI



(R,R)–form

$C_{13}H_{24}N_2O$ 224.345

The isolated alkaloid is the *meso*-form, but Anaferine readily racemises and the (±)-form epimerises to the *meso*-form in aq. soln., so it is probable that the nat. alkaloid is opt. active.

(R,R)-form [19519-55-2]
[19519-54-1 dihydrobromide]
Mp 242.5-243.5° (as dihydrochloride). $[\alpha]_D^{22}$ -49.8 (c, 0.529 in MeOH) (dihydrochloride).

(S,S)-form [19519-53-0]
[19519-52-9 dihydrochloride]
Mp 242.5-244° (as dihydrochloride). $[\alpha]_D^{22}$ +50.7 (c, 0.736 in MeOH) (dihydrochloride).

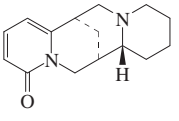
(RS,RS)-form
(±)-form
[28666-51-5]
Dihydrobromide: Mp 247-249°.
Dipicrate: Mp 177-179°.

(RS,SR)-form
meso-*form*
[28699-15-2]
Constit. of root of *Withania somnifera* (Solanaceae). Mp 16-17°. $Bp_{0.01}$ 55°.
Dihydrochloride: Mp 226-228°.
Dihydrobromide: Mp 227-229°.
Dipicrate: Mp 180-182° Mp 193-195° (dimorph.).

Rother, A. *et al., Chem. Ind. (London)*, 1962, 654 (*isol, ir, ms, pmr, struct*)
Schöpf, C. *et al., Annalen*, 1970, **737**, 1 (*synth, ir, abs config*)
Beyerman, H.C. *et al., Rec. Trav. Chim. (J. R. Neth. Chem. Soc.)*, 1971, **90**, 1326 (*abs config*)
Cymerman Craig, J. *et al., J.O.C.*, 1978, **48**, 347 (*ord, cd*)
Blechert, S. *et al., Eur. J. Org. Chem.*, 2002, 2855-2858 (*synth, abs config*)

Anagyrine A-970

*7,7*a*,8,9,10,11,13,14-Octahydro-7,14-methano-4*H*,6*H*-dipyrido[1,2-*a*;1′,2′-*e*][1,5]diazocin-4-one, 9CI. Rhombinine. Monolupine. Alkaloid III*
[486-89-5]
[34389-11-2 ((±)-form)]



Absolute Configuration

$C_{15}H_{20}N_2O$ 244.336

Alkaloid from *Anagyris foetida*, several *Cytisus*, *Genista*, *Lupinus*, *Sophora* and *Ammodendron* spp, *Ulex europaeus*, *Ulex nanus*, *Templetonia retusa* and *Thermopsis chinensis*. Antiarrhythmic, diuretic, purgative agent. Cardiotonic agent inducing tachycardia. Major toxic alkaloid responsible for "crooked calf disease" caused by leguminous plants. Noncryst. $[\alpha]_D$ -165 (EtOH). Log P 0.82 (calc). A reported crystal structure determination (1991) of Anagyrine was erroneous; it was Thermopsine, T-363.

▶ Exp. teratogen. BV5620000

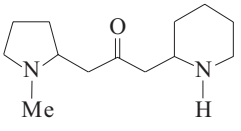
Hydrochloride: Mp 295-297°.
Methiodide: Mp 264° dec.

Hydroxy: ***Hydroxyanagyrine***
[67984-05-8]
$C_{15}H_{20}N_2O_2$ 260.335
Alkaloid from *Anagyris foetida* (Fabaceae). No phys. props. reported. Substd. in the D-ring (ring remote from the carbonyl function); posn. of subn. unknown.

11-Epimer: see Thermopsine, T-363

Couch, J.F. *et al., J.A.C.S.*, 1939, **61**, 3327 (*isol*)
Ribas, I. *et al., An. R. Soc. Esp. Fis. Quim., Ser. B*, 1952, **48**, 161; 167 (*isol*)
van Tamelen, E.E. *et al., J.A.C.S.*, 1958, **80**, 4659 (*synth*)
Fales, H.M. *et al., J.A.C.S.*, 1970, **92**, 1590 (*ms*)
Goldberg, S.I. *et al., J.O.C.*, 1972, **37**, 1823 (*synth*)
Bohlmann, F. *et al., Chem. Ber.*, 1975, **108**, 1043 (*cmr*)
Keeler, R.F. *et al., CA*, 1976, **85**, 138290f (*tox*)
Lobo, J.M. *et al., An. Quim.*, 1977, **73**, 1366 (*Hydroxyanagyrine*)
Rycroft, D.S. *et al., Magn. Reson. Chem.*, 1991, **29**, 936 (*pmr, cmr, conformn*)
Robins, D.J. *et al., Magn. Reson. Chem.*, 1992, **30**, 1125 (*config*)
Rode, J.E. *et al., J. Mol. Struct.*, 2005, **749**, 1 (*cryst struct*)
Gray, D. *et al., Angew. Chem., Int. Ed.*, 2006, **45**, 2419-2423 (*synth*)

Anahygrine A-971



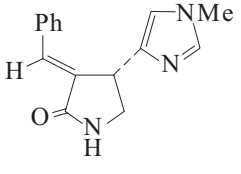
$C_{13}H_{24}N_2O$ 224.345
Alkaloid from roots of *Withania somnifera* (Solanaceae). Pale yellow oil. $Bp_{0.2}$ 106°.

Dihydrochloride: Mp 216.5-217.5°.

Dipicrate: Mp 173-174.5°.

Schwarting, A.E. *et al., J. Nat. Prod.*, 1963, **26**, 258 (*isol*)
Leary, J.D. *et al., Chem. Ind. (London)*, 1964, 283 (*isol*)
El-Olemy, M.M. *et al., Experientia*, 1965, **21**, 249 (*synth*)

Anantine† A-972



$C_{15}H_{15}N_3O$ 253.303
λ_{max} 218 (ϵ 15800); 277 (ϵ 25000) (prob. MeOH) (Derep).

(R)-form [50656-82-1]
Alkaloid from the leaves of *Cynometra ananta* and from the root bark, trunk bark and leaves of *Cynometra lujae* (Fabaceae). Mp 204°. $[\alpha]_D$ -549.

N-*Ac:* Mp 99°. $[\alpha]_D$ -365.

N-*De-Me:* ***Noranantine***
[85651-90-7]
$C_{14}H_{13}N_3O$ 239.276
Alkaloid from the root bark and trunk bark of *Cynometra lujae* (Fabaceae). Cryst. (Me_2CO/MeOH). Mp 205°. $[\alpha]_D^{20}$ -431 (c, 1 in $CHCl_3$).

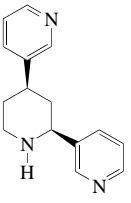
3′-Hydroxy: ***Hydroxyanantine***
[85644-21-9]
$C_{15}H_{15}N_3O_2$ 269.302
Alkaloid from the root bark and trunk bark of *Cynometra lujae* (Fabaceae). Cryst. (Me_2CO/MeOH). Mp 170°. $[\alpha]_D^{20}$ -433 (c, 1 in $CHCl_3$). Hydroxylated in the phenyl ring.

(±)-form [68069-26-1]
Synthetic. Mp 179°.

Khuong-Huu, F. *et al., Tet. Lett.*, 1973, 1757 (*ir, uv, pmr, cmr, struct*)
Tchissambou, L. *et al., Tet. Lett.*, 1978, 1801 (*synth*)
Tchissambou, L. *et al., Tetrahedron*, 1982, **38**, 2687 (*isol, cmr, struct, derivs*)
Naito, T. *et al., Chem. Pharm. Bull.*, 1997, **45**, 1932-1939 (*synth*)

Anatalline A-973

3,3′-(2,4-Dipiperidinediyl)bispyridine, 9CI. 2,4-Di-3-pyridylpiperidine
[18793-19-6]



Relative configuration

$C_{15}H_{17}N_3$ 239.319
Alkaloid from the leaves and roots of *Nicotiana tabacum*. Also found in *Duboisia hopwoodii*. Amorph. solid. Bp_3 225°. $[\alpha]_D$ 0. Isol. as a mixt. with its *trans*-isomer. Dehydrogenation gives 3,2′:4′,3″-Terpyridine, T-98.

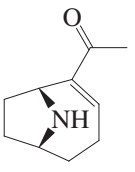
Perchlorate (1:3): [18793-18-5]
Cryst. (MeOH/Et_2O). Mp 244-252°.

Picrate: [18793-20-9]
Mp 258.5°.

Kisaki, T. *et al., Phytochemistry*, 1968, **7**, 323-327 (*isol, ir, pmr, ms*)
Rao, H.S.P. *et al., Indian J. Chem., Sect. B*, 1997, **36**, 557-561 (*synth, pmr, cmr, config*)
Häkkinen, S.T. *et al., Planta Med.*, 2004, **70**, 936-941 (*isol, pmr, cmr, ms*)

Anatoxin a A-974

1-(9-Azabicyclo[4.2.1]non-2-en-2-yl)ethanone, 9CI. 2-Acetyl-9-azabicyclo[4.2.1]non-2-ene. Very fast death factor. VFDF. AnTx



(+)-*form*

$C_{10}H_{15}NO$ 165.235

(+)(HCl)-form [64285-06-9]
[64314-16-5 (hydrochloride)]
Alkaloid from *Anabaena flos-aquae* NRC-44h (Euphorbiaceae). Also isol. from *Oscillatoria* spp., *Aphanizomenon flos-aquae* and *Cylindrospermum* sp. Depolarising agent. Potent agonist for the nicotinic acetylcholine receptor. Oil. Sol. H_2O, MeOH. $[\alpha]_D^{24}$ +43.2 (c, 0.676 in EtOH). λ_{max} 226 (ϵ 8300) (MeOH) (Berdy). λ_{max} 227 (ϵ 10000) (EtOH) (Berdy).
▶ Exp. reprod. effects. Very toxic by intraperitoneal route; LD_{50} (mus, ipr) 0.3 mg/kg, LD_{50} (mus, ipr) 0.2 mg/kg. KM5527000

N-*Ac:* Mp 117-118°. $[\alpha]_D$ -127 (c, 4.8 in EtOH).

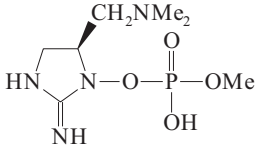
(-)(HCl)-form [92142-32-0]
Synthetic. $[\alpha]_D^{23}$ -45 (c, 0.3 in EtOH) (hydrochloride).

Devlin, J.P. *et al., Can. J. Chem.*, 1977, **55**, 1367-1371 (*isol, pmr, cmr, ms*)
Campbell, H.F. *et al., Can. J. Chem.*, 1977, **55**, 1372 (*synth*)
Bates, H.A. *et al., J.A.C.S.*, 1979, **101**, 1259-1265 (*synth*)
Spivak, C.E. *et al., Mol. Pharmacol.*, 1980, **18**, 384-394; 1983, **23**, 337-343; 1986, **29**, 250-257 (*pharmacol*)
Petersen, J.S. *et al., J.A.C.S.*, 1984, **106**, 4539-4547 (*synth*)
Koskinen, A.M.P. *et al., J. Med. Chem.*, 1985, **28**, 1301-1309 (*synth, cryst struct*)
Danheiser, R.L. *et al., J.A.C.S.*, 1985, **107**, 8066 (*synth*)
Tufariello, J.J. *et al., Tetrahedron*, 1985, **41**, 3447 (*synth*)
Wiseman, J.R. *et al., J.O.C.*, 1986, **51**, 2485 (*synth, bibl*)
Vernon, P. *et al., Chem. Comm.*, 1987, 245 (*synth, bibl*)
Stjernloef, P. *et al., Acta Chem. Scand.*, 1989, **43**, 917 (*synth*)
Matsunaga, S. *et al., J.A.C.S.*, 1989, **111**, 8021 (*isol*)
Sardina, F.J. *et al., J.O.C.*, 1989, **54**, 4654; 1990, **55**, 5025 (*synth, bibl*)
Gallon, J.R. *et al., Phytochemistry*, 1990, **29**, 1107; 1994, **35**, 1195 (*biosynth*)
Somfai, P. *et al., Tet. Lett.*, 1992, **33**, 3791 (*synth*)
Skrinjar, M. *et al., Tetrahedron: Asymmetry*, 1992, **3**, 1263 (*synth*)
Harada, K. *et al., Tetrahedron*, 1993, **49**, 9251 (*isol*)
Newcombe, N.J. *et al., Chem. Comm.*, 1995, 831 (*synth*)
Hemscheidt, T. *et al., Chem. Comm.*, 1995, 1361-1362 (*biosynth*)
Molloy, L. *et al., Eur. J. Pharmacol.*, 1995, **289**, 447-453 (*pharmacol*)
Mansell, H.L. *et al., Tetrahedron*, 1996, **52**, 6025 (*rev, synth*)
Parsons, P.J. *et al., Tetrahedron*, 1996, **52**, 11637 (*synth*)
Oh, C.-Y. *et al., Tet. Lett.*, 1998, **39**, 2133-2136 (*synth*)
Food Sci. Technol., Seafood and Freshwater Toxins, (ed. Botana, L.M.), Marcel Dekker, 2000, **103**, (*revs*)
Parsons, P.J. *et al., Tetrahedron*, 2000, **56**, 309-315 (*synth*)
Mori, M. *et al., Tet. Lett.*, 2004, **45**, 4397-4399 (*synth*)
Brenneman, J.B. *et al., Tetrahedron*, 2004, **60**, 7301-7314 (*synth*)
Ho, T.-L. *et al., Helv. Chim. Acta*, 2006, **89**, 134-137 (*synth*)

Wonnacott, S. *et al., Mar. Drugs*, 2006, **4**, 228-254 (*rev, activity*)
Tomita, T. *et al., Tetrahedron*, 2006, **62**, 10518-10527 (*synth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, AOO120

Anatoxin a(s) A-975

2-Amino-4,5-dihydro-1-[(hydroxymethoxyphosphinyl)oxy]-N,N-*dimethyl-1*H-*imidazole-5-methanamine, 9CI*
[103170-78-1]

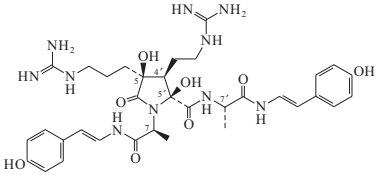


$C_7H_{17}N_4O_4P$ 252.209
Isol. from the blue-green alga, *Anabaena flos-aquae* NRC525.17. Potent neurotoxin with anticholinesterase activity. Dec. slowly at -20°. λ_{max} 200 (MeOH) (Berdy).
▶ LD_{50} (mus, ipr) 0.05 mg/kg.
BV6593100

Matsunaga, S. *et al., J.A.C.S.*, 1989, **111**, 8021-8023 (*isol, pmr, cmr*)

Anchinopeptolide A A-976

[152369-61-4]



$C_{34}H_{46}N_{10}O_8$ 722.8
Stereochem. at C-5, C-4′ and C-5′ is relative. Isol. from the marine sponge *Anchinoe tenacior*. $[\alpha]_D$ -103.6 (c, 4 in MeOH). λ_{max} 217 (ϵ 13600); 285 (ϵ 20000) (MeOH) (Derep).

7-Demethyl: ***Anchinopeptolide C***
[160041-36-1]
$C_{33}H_{44}N_{10}O_8$ 708.773
From *Anchinoe tenacior*. $[\alpha]_D$ -6.3 (c, 1 in MeOH). λ_{max} 284 (ϵ 14490); 320 (MeOH) (Berdy).

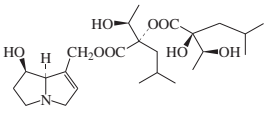
7′-Demethyl: ***Anchinopeptolide B***
[160072-37-7]
$C_{33}H_{44}N_{10}O_8$ 708.773
From *Anchinoe tenacior*. $[\alpha]_D$ -12.4 (c, 0.7 in MeOH). λ_{max} 284 (ϵ 12070); 318 (MeOH) (Berdy).

7,7′-Bis(demethyl): ***Anchinopeptolide D***
[160072-38-8]
$C_{32}H_{42}N_{10}O_8$ 694.746
From *Anchinoe tenacior*. $[\alpha]_D$ +11.4 (c, 1 in MeOH). λ_{max} 284 (ϵ 16940); 318 (MeOH) (Berdy).

Casapullo, A. *et al., Tet. Lett.*, 1993, **34**, 6297 (*isol, uv, ir, pmr, cmr, struct*)
Casapullo, A. *et al., J. Nat. Prod.*, 1994, **57**, 1227 (*Anchinopeptolides B-D*)
Snider, B.B. *et al., J.O.C.*, 2000, **65**, 793-800 (*Anchinopeptolide D, synth*)

Anchustrigosine A-977

[701974-94-9]

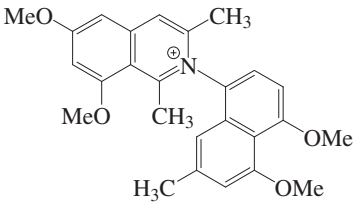


$C_{24}H_{41}NO_8$ 471.59
Alkaloid from the roots of *Anchusa strigosa*. Red oil. $[\alpha]_D^{25}$ -4 (c, 0.1 in MeOH). λ_{max} 239 (sh) ; 286 (MeOH).

Braca, A. *et al., Planta Med.*, 2003, **69**, 835-841 (*isol, pmr, cmr*)

Ancisheynine A-978

[603933-04-6]

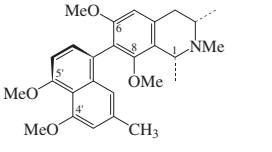


$C_{26}H_{28}NO_4^{\oplus}$ 418.512
Quaternary alkaloid from the aerial parts of *Ancistrocladus heyneanus*. Yellow solid. Counterion not specified. Racemate. λ_{max} 233 (log ϵ 4.47); 264 (log ϵ 4.29); 307 (log ϵ 3.89); 358 (log ϵ 3.71) (MeOH).

Yang, L.-K. *et al., Tet. Lett.*, 2003, **44**, 5827-5829
Bringman, G. *et al., Org. Lett.*, 2006, **8**, 1037-1040 (*synth*)

Ancistrobrevine A A-979

[169276-08-8]



$C_{27}H_{33}NO_4$ 435.562
Alkaloid from *Ancistrocladus abbreviatus* (Ancistrocladaceae).

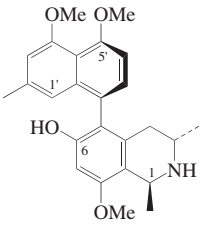
*1-Epimer, 5′,8-di-*O*-de-Me,* N*-de-Me:* ***Ancistrogriffine C***
[478796-16-6]
$C_{24}H_{27}NO_4$ 393.482
Alkaloid from *Ancistrocladus griffithii*. Light yellow powder (MeOH). Mp 165°. $[\alpha]_D^{25}$ +13.8 (c, 0.25 in MeOH).

*Atropisomer, 1-epimer, 4′,6-di-*O*-de-Me:* ***Ancistrogriffine A***
[478796-14-4]
$C_{25}H_{29}NO_4$ 407.508
Alkaloid from *Ancistrocladus griffithii*. Cryst. (MeOH). Mp 148°. $[\alpha]_D^{25}$ +26 (c, 0.4 in MeOH).

Bringmann, G. *et al., Magn. Reson. Chem.*, 1997, **35**, 297-301 (*pmr, config*)
Bringmann, G. *et al., Phytochemistry*, 2002, **61**, 195-204 (*Ancistrogriffines*)

Ancistrobrevine B A-980

[146471-74-1]



$C_{25}H_{29}NO_4$ 407.508
Alkaloid from *Ancistrocladus abbreviatus* and *Ophiopogon japonicus*. Amorph. powder (MeOH/Me_2CO). Mp 122-124°. $[\alpha]_D$ -68 (c, 0.81 in $CHCl_3$).

6-Me ether: ***Ancistrotectoriline A***
[302543-63-1]
$C_{26}H_{31}NO_4$ 421.535
Alkaloid from *Ancistrocladus tectorius*. Amorph. solid. Mp 103-105°. $[\alpha]_D^{25}$ +1.3 (c, 0.75 in $CHCl_3$).

6-Me ether, N*-Me:* ***5-Epi-6-*O*-methylancistrobertsonine A***. N*-Methylancistrotectoriline A*
$C_{27}H_{33}NO_4$ 435.562
Alkaloid from a Congolese *Ancistrocladus* sp. Amorph. solid. $[\alpha]_D^{25}$ +1.2 (c, 0.09 in MeOH). λ_{max} 237 (log ϵ 1.29); 307 (log ϵ 0.4); 321 (log ϵ 0.33); 337 (log ϵ 0.26) (CH_2Cl_2).

*4′,8-Di-*O*-de-Me, 6-Me ether,* N*-Me:*
[222409-76-9]
$C_{25}H_{29}NO_4$ 407.508
Alkaloid from *Ancistrocladus likoko*.

1,2-Didehydro, 6-Me ether: ***Ancistrotanzanine B***
[604767-80-8]
$C_{26}H_{29}NO_4$ 419.519
Alkaloid from *Ancistrocladus likoko* and *Ancistrocladus tanzaniensis*. Yellow oil. $[\alpha]_D^{25}$ +44 (c, 0.01 in MeOH). λ_{max} 230 (log ϵ 1.89); 305 (log ϵ 1.42) (MeOH).

*1-Epimer, 4′-*O*-de-Me, 6-Me ether,* N*-Me:* ***5-Epi-4′-*O*-demethylancistrobertsonine C***
$C_{26}H_{31}NO_4$ 421.535
Alkaloid from a Congolese *Ancistrocladus* sp. Cryst. (MeOH). Mp 92° (synthetic). $[\alpha]_D^{25}$ +15.7 (c, 0.12 in MeOH) (natural). $[\alpha]_D^{20}$ +51.8 (c, 1 in MeOH) (synthetic). λ_{max} 230 (log ϵ 1.05); 307 (log ϵ 0.42) (CH_2Cl_2).

Epimer, 6-Me ether, N*-Me:* [222409-80-5]
$C_{27}H_{33}NO_4$ 435.562
Alkaloid from *Ancistrocladus likoko*. Possesses *cis*-config.

Atropisomer, N*-Me:* ***Ancistrobertsonine A***
$C_{26}H_{31}NO_4$ 421.535
Alkaloid from *Ancistrocladus robertsoniorum* (Ancistrocladaceae). Cryst. (MeOH aq.). Mp 220-222°. $[\alpha]_D^{25}$ +29 (c, 0.5 in $CHCl_3$).

*Atropisomer, 5′-*O*-de-Me:* ***Ancistroguineine A***
[202343-74-6]
$C_{24}H_{27}NO_4$ 393.482
Alkaloid from *Ancistrocladus guineen-*

sis. Needles ($CHCl_3$). Mp 202-204°. $[\alpha]_D^{25}$ +191.4 (c, 0.5 in $CHCl_3$).

*Atropisomer, 5′-*O*-de-Me, 6-Me ether:* ***Ancistroealaine B***
[303752-19-4]
$C_{25}H_{29}NO_4$ 407.508
Alkaloid from *Ancistrocladus ealaensis.* Yellow powder (MeOH). Mp 248°. $[\alpha]_D^{20}$ -16.7 (c, 0.71 in EtOH).

Atropisomer, 1,2-didehydro: ***6-O-Demethylancistroealaine A***
$C_{25}H_{27}NO_4$ 405.493
Alkaloid from a Congolese *Ancistrocladus* sp. Yellow cryst. Mp 155-160°. $[\alpha]_D^{25}$ -63.2 (c, 0.1 in MeOH). λ_{max} 232 (log ϵ 1.06); 310 (log ϵ 0.34); 316 (log ϵ 0.34); 321 (log ϵ 0.35); 334 (log ϵ 0.33) (CH_2Cl_2).

Atropisomer, 1,2-didehydro, 6-Me ether: ***Ancistroealaine A***
[303752-18-3]
$C_{26}H_{29}NO_4$ 419.519
Alkaloid from *Ancistrocladus ealaensis.* Light yellow powder (MeOH). Mp 94-96°. $[\alpha]_D^{25}$ -34.3 (c, 0.55 in EtOH).

*Atropisomer, 1,2-didehydro, 4′-*O*-de-Me:* ***Ancistrolikokine D***
$C_{24}H_{25}NO_4$ 391.466
Alkaloid from *Ancistrocladus likoko*. Amorph. solid. Mp 122-124°. $[\alpha]_D^{25}$ +191.6 (c, 0.15 in $CHCl_3$).

*Atropisomer, 1,2-didehydro, 5′-*O*-de-Me:* ***5′,6-Di-O-demethylancistroealaine A***
$C_{24}H_{25}NO_4$ 391.466
Alkaloid from a Congolese *Ancistrocladus* sp. Amorph. yellow solid. $[\alpha]_D^{25}$ -68.6 (c, 0.1 in MeOH). λ_{max} 235 (log ϵ 1.15); 313 (log ϵ 0.47); 316 (log ϵ 0.47); 321 (log ϵ 0.48); 325 (log ϵ 0.47); 335 (log ϵ 0.45) (CH_2Cl_2).

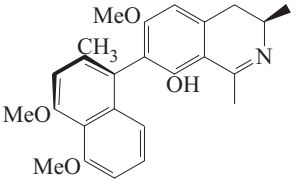
Atropisomer, 1-epimer, 6-Me ether, N*-Me:* ***Ancistrobertsonine C***
[250130-68-8]
$C_{27}H_{33}NO_4$ 435.562
Alkaloid from *Ancistrocladus robertsoniorum*. Mp 148-149°. $[\alpha]_D^{25}$ -3 (c, 0.09 in $CHCl_3$).

*Atropisomer, 3-epimer, 5′-*O*-de-Me:* ***Ancistroguineine B***
[202420-24-4]
$C_{24}H_{27}NO_4$ 393.482
Alkaloid from *Ancistrocladus guineensis.* Amorph. solid. $[\alpha]_D^{25}$ -141.2 (c, 0.04 in $CHCl_3$).

Bringmann, G. *et al., Phytochemistry*, 1992, **31**, 4011; 1998, **47**, 31-35; 37-43; 1999, **52**, 321-332 (*isol, ir, cd, pmr, ms, struct, derivs*)
Bringmann, G. *et al., Phytochemistry*, 1998, **49**, 1667 (*Ancistrorobertsonine A*)
Hoye, T.R. *et al., J.O.C.*, 1999, **64**, 7184-7201 (*synth*)
Bringmann, G. *et al., Magn. Reson. Chem.*, 1999, **37**, 98-102 (*Ancistrocladus likoko derivs*)
Tang, C.-P. *et al., J. Nat. Prod.*, 2000, **63**, 1384-1387 (*Ancistrotectoriline A*)
Bringmann, G. *et al., J. Nat. Prod.*, 2000, **63**, 1465-1470; 2003, **66**, 1159-1165 (*Ancistroealaines A-B, Ancistrotanzanine B, Ancistrotectoriline A*)
Bringmann, G. *et al., Phytochemistry*, 2003, **62**, 631-636; 2008, **69**, 1065-1075 (*Ancistrolikokine D, 6-Demethylancistroealaine, 5′,6-Didemethylancistroealaine, 5-Epiancistrobertsonines*)
Bringmann, G. *et al., Tetrahedron*, 2004, **60**, 4349-4360 (*Ancistroealaine A, Ancistrotanzanine B, synth*)
Bringmann, G. *et al., Tetrahedron*, 2008, **64**, 5563-5568 (*5-Epidemethylancistrobertsonine C, synth*)

Ancistrobrevine C A-981

7-(4,5-Dimethoxy-2-methyl-1-naphthalenyl)-3,4-dihydro-6-methoxy-1,3-dimethyl-8-isoquinolinol
[151870-96-1]



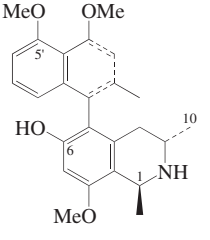
$C_{25}H_{27}NO_4$ 405.493
Alkaloid from stem bark and roots of *Ancistrocladus abbreviatus* (Ancistrocladaceae). Amorph. yellow solid. Mp 180-183°. $[\alpha]_D^{25}$ +13 (c, 0.69 in $CHCl_3$).

1,2-Dihydro, stereoisomer: ***Ancistine***
[58738-33-3]
$C_{25}H_{29}NO_4$ 407.508
Alkaloid from the roots of *Ancistrocladus ealaensis* (Ancistrocladaceae). Cryst. (Me_2CO). Mp 275-276°. $[\alpha]_D^{20}$ -34 (c, 1 in $CHCl_3$/MeOH 1:1). Stereochem. not determined.

Foucher, J.P. *et al., Phytochemistry*, 1975, **14**, 2699 (*Ancistine*)
Bringmann, G. *et al., Phytochemistry*, 1993, **33**, 1511 (*Ancistrobrevine C*)

Ancistrocladine A-982

5-(4,5-Dimethoxy-2-methyl-1-naphthalenyl)-1,2,3,4-tetrahydro-8-methoxy-1,3-dimethyl-6-isoquinolinol, 9CI
[32221-59-3]



Absolute Configuration

$C_{25}H_{29}NO_4$ 407.508
Alkaloid from *Ancistrocladus heyneanus*, *Ancistrocladus congolensis*, *Ancistrocladus hamatus* and *Ancistrocladus tectorius.* Shows antimalarial activity. Cryst. (MeOH). Mp 265-267° dec.

Hydrochloride:
Needles (MeOH/Me_2CO). Mp 220-224° dec. $[\alpha]_D^{25}$ -25.5 (c, 2.3 in MeOH).

N*-Ac:*
Cryst. (Et_2O). Mp 277-279°.

Me ether: **O***-Methylancistrocladine*
[32215-20-6]
$C_{26}H_{31}NO_4$ 421.535
Alkaloid from the root and stem bark of *Ancistrocladus congolensis* (Ancistrocladaceae). Fluffy needles (MeOH). Mp 200-202°.

Me ether, hydrochloride:
Needles (Me_2CO). Mp 315-317° dec. $[\alpha]_D^{25}$ -56.1 (c, 1.9 in $CHCl_3$).

O,N*-Di-Me:* **O,N-*Dimethylancistrocladine***
[32215-13-7]
Alkaloid from the leaves of *Ancistrocladus tanzaniensis.* Prisms (Et_2O). Mp 183-185° (163° dec.). $[\alpha]_D^{25}$ -21 (c, 2.55 in $CHCl_3$).

*4′-*O*-De-Me:* ***4′-O-Demethylancistrocladine***
[165816-69-3]
$C_{24}H_{27}NO_4$ 393.482
Alkaloid from bark of *Ancistrocladus tectorius* (Ancistrocladaceae). Gum. $[\alpha]_D$ +2.5 (c, 1 in $CHCl_3$).

*4′-*O*-De-Me, 6-Me ether:* ***4′-O-Demethyl-6-O-methylancistrocladine***
$C_{25}H_{29}NO_4$ 407.508
Alkaloid from *Ancistrocladus tectorius.* Light yellow powder. $[\alpha]_D^{25}$ -3.1 (c, 0.38 in MeOH).

1,2-Didehydro: ***Ancistrocladinine***
[36209-87-7]
$C_{25}H_{27}NO_4$ 405.493
Minor alkaloid from the roots of *Ancistrocladus heyneanus* (Ancistrocladaceae). Mp 235-238° dec. $[\alpha]_D^{25}$ -321.8 (c, 1.06 in Py).

1,2-Didehydro, Me ether: ***6-O-Methylancistrocladinine***
[134984-06-8]
$C_{26}H_{29}NO_4$ 419.519
Alkaloid from the leaves of *Ancistrocladus tanzaniensis.* Amorph. solid. Mp 102°. $[\alpha]_D^{25}$ -31 (c, 0.4 in MeOH). λ_{max} 231 (log ϵ 0.22); 303 (log ϵ 0.04) (MeOH).

1,2,3,4-Tetradehydro: ***Ancistrocladeine***
[58738-34-4]
$C_{25}H_{25}NO_4$ 403.477
Alkaloid from roots of *Ancistrocladus ealaensis* and *Ancistrocladus tectorius* (Ancistrocladaceae). Cryst. (Me_2CO). Mp 275-277°.

1-Epimer: ***Isoancistrocladine****. 1-Epiancistrocladine*
[36209-88-8]
$C_{25}H_{29}NO_4$ 407.508
Alkaloid from roots of *Ancistrocladus heyneanus* (Ancistrocladaceae). Cryst. (MeOH). Mp 230-232°. $[\alpha]_D$ +59.5 (c, 0.6 in $CHCl_3$).

1-Epimer, N*-Me:* ***Ancistrocline***
[82189-88-6]
$C_{26}H_{31}NO_4$ 421.535
Alkaloid from *Ancistrocladus tectorius* (Ancistrocladaceae). Mp 223-224°. $[\alpha]_D^{25}$ +59.1 (c, 0.23 in $CHCl_3$).

*1-Epimer, 5′-*O*-de-Me,* N*-Me:* ***5′-O-Demethylancistrocline***
[828935-65-5]
$C_{25}H_{29}NO_4$ 407.508
Alkaloid from the stem bark of *Ancistrocladus benomensis.* Amorph. brown solid (MeOH). Mp 213°. $[\alpha]_D^{25}$ +61.7 (c, 0.01 in MeOH). λ_{max} 203 (log ϵ 0.35); 227 (log ϵ 0.42); 307 (log ϵ 0.07); 319

(log ϵ 0.06); 335 (log ϵ 0.05) (MeOH).

1- And/or 3-epimer, Me ether: ***Ancistroealaensine***
[54382-93-3]
$C_{26}H_{31}NO_4$ 421.535
Alkaloid from the roots of *Ancistrocladus ealaensis* (Ancistrocladaceae). Mp 84° (softens). $[\alpha]_D^{20}$ -26 (c, 1 in MeOH). Config. unknown.

1- And/or 3-epimer, Me ether, perchlorate: Cryst. (MeOH). Mp 132-135°. $[\alpha]_D^{20}$ -84 (c, 1 in MeOH).

Atropisomer: ***Hamatine***
[56688-90-5]
$C_{25}H_{29}NO_4$ 407.508
Alkaloid from the roots of *Ancistrocladus hamatus* (Ancistrocladaceae). Mp 250-252°. $[\alpha]_D$ +77.44 ($CHCl_3$) (+68). Has opposite chirality of the biaryl system.

Atropisomer, Me ether:
Cryst. (hexane). Mp 160-162°. $[\alpha]_D$ +27.2 (c, 1 in $CHCl_3$).

Atropisomer, O,N-*di-Me:*
Needles (Et_2O). Mp 170-172°.

*Atropisomer, 4′-*O-*de-Me, 6-Me ether:* ***4′-O-Demethyl-6-O-methylhamatine***
$C_{25}H_{29}NO_4$ 407.508
Alkaloid from *Ancistrocladus tectorius*. Light yellow powder. $[\alpha]_D^{25}$ +12.4 (c, 0.36 in MeOH).

*Atropisomer, 5′-*O-*de-Me:* ***5′-O-Demethylhamatine***
$C_{24}H_{27}NO_4$ 393.482
Alkaloid from a Congolese *Ancistrocladus* sp. Amorph. solid. Mp 174-180°. $[\alpha]_D^{25}$ +26 (c, 0.1 in MeOH). λ_{max} 237 (log ϵ 1.42); 309 (log ϵ 0.41); 322 (log ϵ 0.37); 337 (log ϵ 0.34) (CH_2Cl_2).

Atropisomer, 1,2-didehydro: ***Hamatinine***
[194811-19-3]
$C_{25}H_{27}NO_4$ 405.493
Alkaloid from leaves of *Ancistrocladus cochinchinensis*. Isol. as a *ca*. 1:1 inseparable mixt. with Ancistrocladinine.

Atropisomer, 1,2-didehydro, Me ether: ***6-O-Methylhamatinine***
[194242-88-1]
$C_{26}H_{29}NO_4$ 419.519
Alkaloid from leaves of *Ancistrocladus cochinchinensis*. Amorph. $[\alpha]_D^{22}$ +34.1 (c, 1.0 in $CHCl_3$).

*Atropisomer, 1,2-didehydro, 5′-*O-*de-Me:* ***5′-O-Demethylhamatinine***
$C_{24}H_{25}NO_4$ 391.466
Alkaloid from a Congolese *Ancistrocladus* sp. Amorph. yellow solid. $[\alpha]_D^{25}$ +25 (c, 0.1 in MeOH). λ_{max} 235 (log ϵ 1.05); 311 (log ϵ 0.34); 321 (log ϵ 0.33); 335 (log ϵ 0.3) (CH_2Cl_2).

Atropisomer, 1,2,3,4-tetradehydro, 6-Me ether: ***6-O-Methylhamateine***
$C_{26}H_{27}NO_4$ 417.504
Alkaloid from the leaves of *Ancistrocladus cochinchinensis*. Cryst. ($CHCl_3$/hexane). Mp 233-236°. $[\alpha]_D^{22}$ -41.4 (c, 0.46 in $CHCl_3$).

*Atropisomer, 10-hydroxy, 1,2,3,4-tetradehydro, 4′-*O-*de-Me:* ***6-O-Demethylancistrobenomine A***
[828935-64-4]
$C_{24}H_{23}NO_5$ 405.449
Alkaloid from the stem bark of *Ancistrocladus benomensis*. Pale yellow solid (MeOH). Mp 169°. $[\alpha]_D^{25}$ -34.4 (c, 0.05 in MeOH). λ_{max} 231 (log ϵ 0.44); 259 (log ϵ 0.28); 307 (log ϵ 0.07); 335 (log ϵ 0.08); 363 (log ϵ 0.05) (MeOH).

*Atropisomer, 10-hydroxy, 1,2,3,4-tetradehydro, 4′-*O-*de-Me, 6-Me ether:* ***Ancistrobenomine A***
[828935-63-3]
$C_{25}H_{25}NO_5$ 419.476
Alkaloid from the stem bark of *Ancistrocladus benomensis*. Pale yellow powder (MeOH). Mp 270° dec. $[\alpha]_D^{25}$ -21 (c, 0.1 in MeOH). λ_{max} 219 (log ϵ 1.79); 235 (log ϵ 2.09); 259 (log ϵ 1.95); 307 (log ϵ 0.85); 323 (log ϵ 0.81); 335 (log ϵ 0.85); 363 (log ϵ 0.58) (MeOH).

Atropisomer, 1-epimer, Me ether: ***Ancistrobertsonine B***
$C_{26}H_{31}NO_4$ 421.535
Alkaloid from *Ancistrocladus robertsoniorum*. Mp 192-193°. $[\alpha]_D^{25}$ +4 (c, 0.09 in $CHCl_3$).

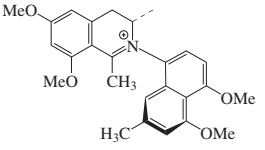
Stereoisomer, O,N-*di-Me: 5-(4,5-Dimethoxy-2-methyl-1-naphthalenyl)-1,2,3,4-tetrahydro-6,8-dimethoxy-1,2,3-trimethylisoquinoline.* ***Ancistrocladonine***
[54382-91-1]
$C_{27}H_{33}NO_4$ 435.562
Alkaloid from the roots of *Ancistrocladus ealaensis* (Ancistrocladaceae). Needles (Et_2O). Mp 82-83°. $[\alpha]_D^{20}$ +20 (c, 1 in MeOH). Stereochem. unknown.

Stereoisomer, O,N-*di-Me, perchlorate:* Cryst. (MeOH). Mp 256-258°. $[\alpha]_D^{20}$ +71 (c, 1 in MeOH).

Govindachari, T.R. *et al., Tetrahedron*, 1971, **27**, 1013 (*isol, uv, ir, pmr, struct*)
Govindachari, T.R. *et al., J.C.S. Perkin 1*, 1974, 1413 (*config, cryst struct, pmr*)
Foucher, J.P. *et al., Phytochemistry*, 1974, **13**, 1253; 1975, **14**, 2699 (*Ancistrocladine, Ancistroealaensine, Ancistrocladonine*)
Govindachari, T.R. *et al., Indian J. Chem., Sect. B*, 1977, **15**, 871 (*Hamatine*)
Bringmann, G. *et al., Angew. Chem., Int. Ed.*, 1982, **21**, 200; 1986, **25**, 913 (*synth, biosynth*)
Bringmann, G. *et al., Heterocycles*, 1989, **28**, 137 (*synth*)
Rizzacasa, M.A. *et al., J.C.S. Perkin 1*, 1991, 2773 (*synth, Ancistrocladinine*)
Bringmann, G. *et al., Phytochemistry*, 1992, **31**, 3297; 1994, **35**, 259; 1999, **52**, 321-332 (*Ancistrocline, Isoancistrocladine, Ancistrorobertsonine B*)
Bringmann, G. *et al., Tetrahedron*, 1993, **49**, 3305 (*cd*)
Fleischhauer, J. *et al., Z. Naturforsch., B*, 1993, **48**, 140 (*cd, Ancistrocladine*)
Montagnac, A. *et al., Phytochemistry*, 1995, **39**, 701 (*4′-O-Demethylancistrocladine*)
Anh, N.H. *et al., Phytochemistry*, 1997, **45**, 1287 (*Hamatinine, O-Methylhamatinine*)
Fleischhauer, J. *et al., Z. Naturforsch., A*, 1998, **53**, 993-996 (*Isoancistrocladine, abs config*)
Tang, C.-P. *et al., J. Nat. Prod.*, 2000, **63**, 1384-1387 (*4′-Demethyl-6-methylancistrocladine, 4′-Demethyl-6-methylhamatine*)
Bringmann, G. *et al., J. Nat. Prod.*, 2004, **67**, 743-748; 2058-2062 (*O,N-Dimethylancistrocladine, 6-O-Methylancistrocladinine, Ancistrobenomine A, 5′-O-Demethylancistrocline*)
Bringmann, G. *et al., Phytochemistry*, 2008, **69**, 1065-1075 (*5′-Demethylhamatine, 5′-Demethylhamatinine*)

Ancistrocladinium A A-983

[918875-18-0]



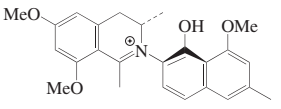
Absolute Configuration

$C_{26}H_{30}NO_4^{\oplus}$ 420.527
Alkaloid from the leaves of *Ancistrocladus* sp. Pale yellow cryst. Mp > 230° dec. $[\alpha]_D^{20}$ -6 (c, 0.05 in MeOH). λ_{max} 214 (log ϵ 2.73); 225 (log ϵ 2.69); 335 (log ϵ 1.65) (MeOH).

Bringmann, G. *et al., J.O.C.*, 2006, **71**, 9348-9356 (*isol, cd, pmr, cmr*)

Ancistrocladinium B A-984

[918875-19-1]
[918875-20-4]



(*R*)-*form*

$C_{25}H_{28}NO_4^{\oplus}$ 406.501
Alkaloid from the leaves of *Ancistrocladus* sp. Pale yellow cryst. Mp > 230° dec. $[\alpha]_D^{20}$ -8 (c, 0.06 in MeOH). Occurs as a mixt. of the two atropisomers, to which the data refers. λ_{max} 227 (log ϵ 0.94); 346 (log ϵ 0.34) (MeOH).

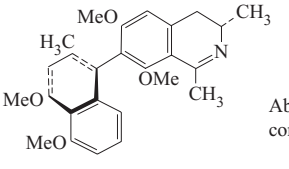
(R)-form
$[\alpha]_D$ -4.5 (c, 0.04 in MeOH).

(S)-form
$[\alpha]_D^{20}$ -11.3 (c, 0.04 in MeOH).

Bringmann, G. *et al., J.O.C.*, 2006, **71**, 9348-9356 (*isol, cd, pmr, cmr*)

Ancistrocladisine A-985

7-(4,5-Dimethoxy-2-methyl-1-naphthalenyl)-3,4-dihydro-6,8-dimethoxy-1,3-dimethylisoquinoline, 9CI
[41787-65-9]



Absolute configuration

$C_{26}H_{29}NO_4$ 419.519
Alkaloid from the roots of *Ancistrocladus heyneanus* and *Ancistrocladus hamatus* (Ancistrocladaceae). Pale-brown needles (Et_2O or petrol). Mp 178-180°. $[\alpha]_D^{25}$ +7.8 (c, 0.53 in $CHCl_3$) (synthetic).

Hydrochloride:
Needles (MeOH/Me_2CO). Mp 220-222° dec. $[\alpha]_D$ -16.13 (c, 1.29 in $CHCl_3$).

Methiodide:
Pale-yellow needles. Mp 220-224° dec.

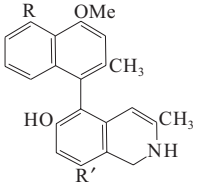
O^6-*De-Me:* ***1,2-Didehydroancistrobertsonine D***. 6-O-*Demethylancistrocladisine*

[250131-08-9]
$C_{25}H_{27}NO_4$ 405.493
Alkaloid from *Ancistrocladus robertsoniorum*. Cryst. (MeOH aq.). Mp 185-187°. $[\alpha]_D^{25}$ -30 (c, 0.04 in $CHCl_3$).

Govindachari, T.R. *et al., Indian J. Chem.*, 1972, **10**, 1117 (*uv, pmr, isol, struct*)
Govindachari, T.R. *et al., J.C.S. Perkin 1*, 1975, 2134 (*uv, abs config*)
Parthasarathy, P.C. *et al., Indian J. Chem., Sect. B*, 1983, **22**, 590 (*cryst struct*)
Bringmann, G. *et al., Angew. Chem., Int. Ed.*, 1989, **28**, 1672 (*synth*)
Bringmann, G. *et al., Phytochemistry*, 1999, **52**, 321-332 (*1,2-Didehydroancistrorobertsonine D*)

Ancistrocongine A-986

1,2-Dihydro-5-(4-methoxy-2-methyl-1-naphthalenyl)-3-methyl-6,8-isoquinolinediol, 9CI
[56973-82-1]



R = H, R′ = OH

$C_{22}H_{21}NO_3$ 347.413
Alkaloid from the roots of *Ancistrocladus congolensis* (Ancistrocladaceae). Cryst. (Me_2CO). Mp 298-299°. $[\alpha]_D$ 0 (MeOH).

Foucher, J.P. *et al., Plant. Med. Phytother.*, 1975, **9**, 87 (*isol, spectra, struct*)

Ancistrocongolensine A-987

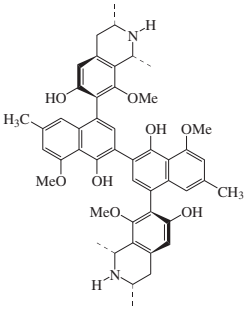
5-(4,5-Dimethoxy-2-methyl-1-naphthalenyl)-1,2-dihydro-8-methoxy-3-methyl-6-isoquinolinol, 9CI
[56973-81-0]
As Ancistrocongine, A-986 with R = R′ = OMe

$C_{24}H_{25}NO_4$ 391.466
Alkaloid from the roots of *Ancistrocladus congolensis* (Ancistrocladaceae). Cryst. (Me_2CO). Mp 258°. $[\alpha]_D$ 0 (MeOH).

Foucher, J.P. *et al., Plant. Med. Phytother.*, 1975, **9**, 87 (*isol, spectra, struct*)

Ancistrogriffithine A A-988

[346702-11-2]



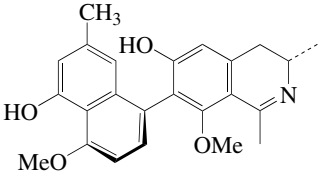
Absolute Configuration

$C_{48}H_{52}N_2O_8$ 784.947
Alkaloid from *Ancistrocladus griffithii*. Light yellow powder (MeOH). Mp 230° dec. $[\alpha]_D^{25}$ +73.5 (c, 0.3 in MeOH).

Bringmann, G. *et al., Phytochemistry*, 2002, **61**, 195-204 (*isol, pmr, cmr, ms, cd*)

Ancistroheynine A A-989

[185417-34-9]



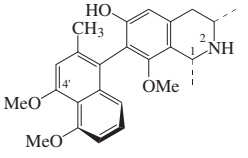
Absolute Configuration

$C_{24}H_{25}NO_4$ 391.466
Alkaloid from *Ancistrocladus heyneanus*. Antimalarial agent. Yellow amorph. powder. $[\alpha]_D^{25}$ +68 (c, 0.3 in $CHCl_3$).

Bringmann, G. *et al., Phytochemistry*, 1996, **43**, 1405 (*isol, ir, pmr, cms, ms, cd, struct*)

Ancistrorobertsonine D A-990

[250131-22-7]



Absolute Configuration

$C_{25}H_{29}NO_4$ 407.508
Alkaloid from *Ancistrocladus robertsoniorum*. Amorph. yellow powder. Mp 133-134°. $[\alpha]_D^{25}$ +82 (c, 0.51 in $CHCl_3$).

N-*Me:* ***6-O-Demethyl-8-O-methyl-7-epiancistrobrevine D***. N-*Methylancistrorobertsonine D*
[169168-91-6]
$C_{26}H_{31}NO_4$ 421.535
Alkaloid from the leaves of *Ancistrocladus cochinchinensis*.

8-O-*De-Me,* N-*Me:* ***6-O-Demethyl-7-epiancistrobrevine D***
[194141-89-4]
$C_{25}H_{29}NO_4$ 407.508
Alkaloid from the leaves of *Ancistrocladus cochinchinensis*. Cryst. ($CHCl_3$/hexane). Mp 229-232°. $[\alpha]_D^{22}$ +51.8 (c, 0.49 in $CHCl_3$).

8-O-*De-Me,* O^6,N-*di-Me:* ***7-Epiancistrobrevine D***
[194242-89-2]
$C_{26}H_{31}NO_4$ 421.535
Alkaloid from the leaves of *Ancistrocladus cochinchinensis*. Cryst. ($CHCl_3$/hexane). Mp 177-178°. $[\alpha]_D^{22}$ +46.1 (c, 1 in $CHCl_3$).

1-Epimer, 4′-O-*de-Me, 6-Me ether:* ***Ancistrotectoriline B***
[302543-64-2]
$C_{25}H_{29}NO_4$ 407.508
Alkaloid from *Ancistrocladus tectorius*. Light yellow powder. $[\alpha]_D^{25}$ +79.1 (c, 0.46 in $CHCl_3$).

1-Epimer, 8-O-*de-Me:* ***Ancistrogriffine B***
[478796-15-5]
$C_{24}H_{27}NO_4$ 393.482
Alkaloid from *Ancistrocladus griffithii*.

3-Epimer: ***Ancistrocongoline D***
[455255-22-8]
$C_{25}H_{29}NO_4$ 407.508
Alkaloid from the root bark of *Ancistrocladus congolensis*. Brownish powder. Mp 232°. $[\alpha]_D^{24}$ -6.7 (c, 0.52 in $CHCl_3$).

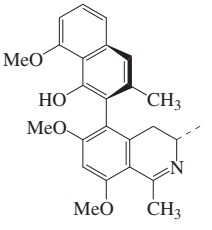
Stereoisomer: 7-(4,5-Dimethoxy-2-methyl-1-naphthalenyl)-1,2,3,4-tetrahydro-8-methoxy-1,3-dimethyl-6-isoquinolinol. ***Ancistrine***
[58738-35-5]
$C_{25}H_{29}NO_4$ 407.508
Alkaloid from the roots of *Ancistrocladus ealaensis*. Cryst. (Me_2CO). Mp 230-231°. $[\alpha]_{Hg}^{20}$ -35 (c, 1 in MeOH). Stereochem. not determined-identity uncertain.

Atropisomer, 8-O-*de-Me,* O^6,N-*di-Me:* ***Ancistrobrevine D***
[167503-63-1]
$C_{26}H_{31}NO_4$ 421.535
Alkaloid from *Ancistrocladus abbreviatus*. Mp 172°. $[\alpha]_D^{25}$ +24.9 (c, 0.37 in $CHCl_3$).

Foucher, J.P. *et al., Phytochemistry*, 1975, **14**, 2699-2702 (*Ancistrine*)
Bringmann, G. *et al., Planta Med.*, Suppl.1, 1992, **58**, 703-704 (*Ancistrobrevine D*)
Anh, N.H. *et al., Phytochemistry*, 1997, **45**, 1287-1291 (*7-Epiancistrobrevine D derivs*)
Bringmann, G. *et al., Phytochemistry*, 1999, **52**, 321-332 (*isol, cd, ir, pmr, cmr, ms, abs config*)
Tang, C.-P. *et al., J. Nat. Prod.*, 2000, **63**, 1384-1387 (*Ancistrotectoriline B*)
Bringmann, G. *et al., J. Nat. Prod.*, 2002, **65**, 1096-1101 (*Ancistrocongoline D*)
Bringmann, G. *et al., Phytochemistry*, 2002, **61**, 195-204 (*Ancistrogriffine B*)

Ancistrotanzanine A A-991

[613245-54-8]



Absolute Configuration

$C_{25}H_{27}NO_4$ 405.493
Alkaloid from *Ancistrocladus tanzanien-*

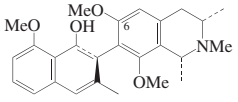
sis. Pale yellow powder. $[\alpha]_D^{25}$ +69.5 (c, 0.1 in EtOH). λ_{max} 231 (log ϵ 1.87); 307 (log ϵ 1.43) (MeOH).

Bringmann, G. *et al., J. Nat. Prod.*, 2003, **66**, 1159-1165 (*isol, cd, pmr, cmr, ms*)

Ancistrotectorine **A-992**

8-Methoxy-3-methyl-2-(1,2,3,4-tetrahydro-6,8-dimethoxy-1,2,3-trimethyl-7-isoquinolinyl)-1-naphthalenol. 1,2,3,4-Tetrahydro-7-(1-hydroxy-8-methoxy-3-methyl-2-naphthalenyl)-6,8-dimethoxy-1,2,3-trimethylisoquinoline

[98985-59-2]



Absolute Configuration

$C_{26}H_{31}NO_4$ 421.535

Alkaloid from the leaves of *Ancistrocladus guineensis* and *Ancistrocladus tectorius*. Shows antimalarial props. Pale yellow needles (Me_2CO). Mp 134-140° Mp 150-151°. $[\alpha]_D^{25}$ -3.6 (c, 0.2 in EtOH).

O^6*-De-Me:* ***Ancistrotanzanine C***

[692755-31-0]

$C_{25}H_{29}NO_4$ 407.508

Alkaloid from the leaves of *Ancistrocladus tanzaniensis*. Yellow oil. $[\alpha]_D$ -75.5 (c, 0.01 in $CHCl_3$). λ_{max} 231 (log ϵ 0.74); 307 (log ϵ 0.07) (MeOH).

1,2-Didehydro, N*-de-Me:* ***Ancistrocladidine***

[52659-52-6]

$C_{25}H_{27}NO_4$ 405.493

Alkaloid from *Ancistrocladus heyneanus* and *Ancistrocladus tectorius*. Pale yellow needles (Me_2CO). Mp 255-258° dec. $[\alpha]_D^{25}$ -149.7 (c, 1.13 in $CHCl_3$). λ_{max} 238 (log ϵ 4.22); 255 (sh) (log ϵ 3.89); 285 (log ϵ 3.63); 306 (sh) (log ϵ 3.41); 320 (log ϵ 3.34); 335 (log ϵ 3.42) (MeOH).

1,2-Didehydro, O^6*-de-Me,* N*-de-Me:* ***Ancistroheynine B***

[813458-56-9]

$C_{24}H_{25}NO_4$ 391.466

Alkaloid from the leaves of *Ancistrocladus heyneanus*. Yellow oil. $[\alpha]_D^{25}$ -194.9 (c, 0.02 in MeOH). λ_{max} 231 ; 319 ; 335 (EtOH).

Govindachari, T.R. *et al., J.C.S. Perkin 1*, 1975, 2134-2136 (*Ancistrocladidine*)

Ruangrungsi, N. *et al., J. Nat. Prod.*, 1985, **48**, 529-535 (*isol, uv, ir, pmr, ms, cd, cryst struct, abs config*)

Meksuriyen, D. *et al., Phytochemistry*, 1990, **29**, 2750-2752 (*Ancistrocladidine, pmr, cmr*)

Bringmann, G. *et al., Phytochemistry*, 1998, **47**, 37-43 (*isol, cd, cmr, abs config*)

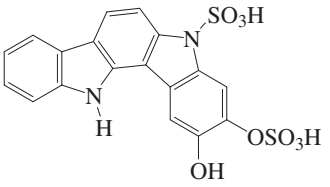
Bringmann, G. *et al., J. Nat. Prod.*, 2004, **67**, 743-748 (*Ancistrotanzanine C*)

Bringmann, G. *et al., Phytochemistry*, 2004, **65**, 2903-2907 (*Ancistroheynine B*)

Bungard, C.J. *et al., J.O.C.*, 2006, **71**, 7354-7363 (*Ancistrocladidine, synth*)

Ancorinazole **A-993**

[473740-10-2]



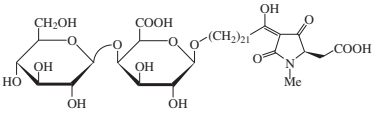
$C_{18}H_{12}N_2O_8S_2$ 448.433

Alkaloid from the sponge *Ancorina* sp. Powder (as di-Na salt). Registry number refers to di-Na salt. λ_{max} 242 (log ϵ 4.28); 280 (log ϵ 4.23); 296 (sh) (log ϵ 3.97); 308 (log ϵ 4); 340 (log ϵ 3.78); 356 (log ϵ 3.95) (MeOH) (di-Na salt).

Meragelman, K.M. *et al., J.O.C.*, 2002, **67**, 6671-6677 (*isol, pmr, cmr, ms*)

Ancorinoside A **A-994**

[194426-98-7]



$C_{41}H_{69}NO_{17}$ 847.993

Tetramic acid deriv. Isol. from the sponges *Ancorina* sp. and *Penares sollasi*. Specifically inhibits blastulation of starfish embryos. Inhibits MT1-matrix metalloproteinase. Oil. $[\alpha]_D^{25}$ -5.5 (c, 0.09 in MeOH). λ_{max} 240 (ϵ 5600); 283 (ϵ 7700) (MeOH).

Mg salt:

$C_{41}H_{67}MgNO_{17}$ 870.282

Isol. from *Ancorina* sp. Powder. Mp 200-208° dec. $[\alpha]_D^{25}$ -7.7 (c, 0.18 in H_2O). λ_{max} 243 (ϵ 8900); 285 (ϵ 9300) (H_2O).

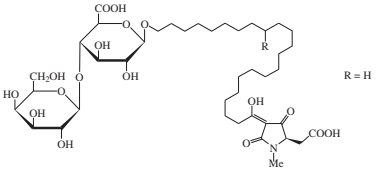
Ohta, S. *et al., J.O.C.*, 1997, **62**, 6452-6453 (*isol, uv, ir, pmr, cmr*)

Fujita, M. *et al., Tetrahedron*, 2001, **57**, 1229-1234 (*isol, activity*)

Ohta, E. *et al., Tetrahedron*, 2001, **57**, 4699-4703 (*Mg salt, isol, cd, pmr, cmr, ms*)

Ancorinoside B **A-995**

[334519-25-4]



$C_{41}H_{69}NO_{17}$ 847.993

Enolised β-triketone. Isol. from the sponge *Penares sollasi*. Powder. $[\alpha]_D^{24}$ +1.5 (c, 0.1 in MeOH). λ_{max} 282 (ϵ 8540) (MeOH).

Fujita, M. *et al., Tetrahedron*, 2001, **57**, 1229-1234 (*isol, pmr, cmr, uv*)

Ancorinoside C **A-996**

[334519-26-5]

As Ancorinoside B, A-995 with

R = CH_3

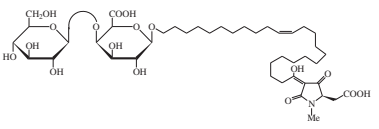
$C_{42}H_{71}NO_{17}$ 862.019

Enolised β-triketone. Isol. from the sponge *Penares sollasi*. Powder. $[\alpha]_D^{24}$ +2.8 (c, 0.1 in MeOH). λ_{max} 282 (ϵ 8430) (MeOH).

Fujita, M. *et al., Tetrahedron*, 2001, **57**, 1229-1234 (*isol, pmr, cmr, uv*)

Ancorinoside D **A-997**

[334519-27-6]



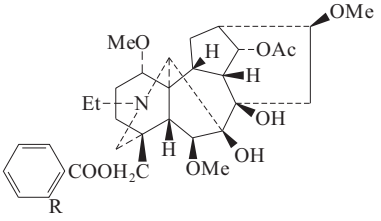
$C_{43}H_{71}NO_{17}$ 874.03

Enolised β-triketone. Isol. from the sponge *Penares sollasi*. Powder. $[\alpha]_D^{24}$ -5.2 (c, 0.1 in MeOH). λ_{max} 282 (ϵ 9630) (MeOH).

Fujita, M. *et al., Tetrahedron*, 2001, **57**, 1229-1234 (*isol, pmr, cmr, uv*)

Andersonine **A-998**

[119419-69-1]



R = NHCOCH$_2$CH(CH$_3$)COOMe / NHCOCH(CH$_3$)CH$_2$COOMe

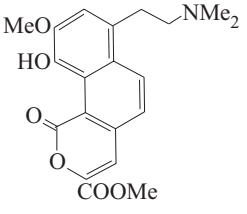
$C_{39}H_{54}N_2O_{12}$ 742.862

Mixt. of regioisomers. Alkaloid from the aerial parts of *Delphinium andersonii* (Ranunculaceae). Amorph. $[\alpha]_D$ +34 (c, 1.0 in $CHCl_3$). Possibly an artifact formed from Nudicauline in G-91 during the isol. process.

Pelletier, S.W. *et al., Heterocycles*, 1988, **27**, 2387 (*isol, ir, pmr, cmr, ms, struct*)

Andesine† **A-999**

[96158-02-0]



$C_{20}H_{21}NO_6$ 371.389

Alkaloid from the stems of *Berberis*

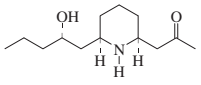
darwinii and the stems and twigs of *Berberis actinacantha* (Berberidaceae). Amorph. red solid.

Weiss, I. *et al., Heterocycles*, 1985, **23**, 301 (*isol, uv, ir, pmr, ms, struct*)

Andrachcinidine A-1000

2-(2-Hydroxypentyl)-6-(2-oxopropyl)piperidine

[274925-36-9]



Absolute Configuration

$C_{13}H_{25}NO_2$ 227.346

Alkaloid from *Andrachne aspera*. Oil. $[\alpha]_D^{22}$ -20 (c, 1.6 in $CHCl_3$).

Mill, S. *et al., J. Nat. Prod.*, 2000, **63**, 762-764 (*isol*)
Shu, C. *et al., J.A.C.S.*, 2003, **125**, 2878-2879 (*synth*)
Jung, H.H. *et al., J.O.C.*, 2007, **72**, 7359-7366 (*synth*)
Krishna, P.R. *et al., Tet. Lett.*, 2007, **48**, 7279-7282 (*synth*)

Andrachnine A-1001

[11023-51-1]

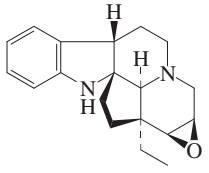
$C_{11}H_{17}NO_2$ 195.261

Struct. unknown. Alkaloid from subterranean parts of *Andrachne rotundifolia* (Euphorbiaceae). Cryst. (C_6H_6). Mp 97-99°.

Vil'yams, V.V. *et al., Khim. Prir. Soedin.*, 1966, **2**, 257-260; *Chem. Nat. Compd. (Engl. Transl.)*, 1966, **2**, 207

Andrangine A-1002

[52659-54-8]



Absolute Configuration

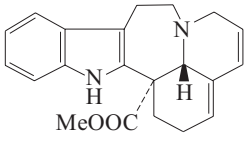
$C_{19}H_{24}N_2O$ 296.411

Abs. config. enantiomeric with Vallesamidine, V-8. Alkaloid from *Craspidospermum verticillatum* and *Crioceras dipladeniiflorus* (Apocynaceae). Cryst. (hexane). Mp 132°. $[\alpha]_D^{20}$ -42 (c, 1 in $CHCl_3$). λ_{max} 248 (log ϵ 4.12); 299 (log ϵ 3.71) (EtOH).

Cavé, A. *et al., Tet. Lett.*, 1973, 5081-5084 (*cmr*)
Kan-Fan, C. *et al., Bull. Soc. Chim. Fr.*, 1974, 2839-2841 (*isol, uv, ms, pmr, struct*)

Andranginine A-1003

[53912-96-2]



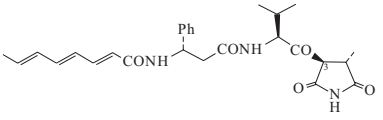
$C_{21}H_{22}N_2O_2$ 334.417

Unusual type of iboga alkaloid showing C18 →C17 in place of C 16 → C21 cyclisation. Alkaloid from *Craspidospermum verticillatum* var. *petiolare* (Apocynaceae). Mp 240°. Racemic.

Kan-Fan, C. *et al., Chem. Comm.*, 1974, 164 (*uv, ir, pmr, cmr, ms, struct, synth*)
Massiot, G. *et al., J.A.C.S.*, 1975, **97**, 3277 (*pmr*)
Andriamialisoa, R.Z. *et al., Tetrahedron*, 1975, **31**, 2347 (*synth*)
Riche, P.G. *et al., Acta Cryst. B*, 1979, **35**, 666 (*cryst struct*)

Andrimide A-1004

[108868-95-7]



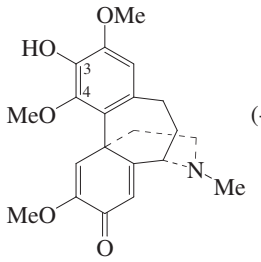
$C_{27}H_{33}N_3O_5$ 479.575

Peptide antibiotic. Prod. by a bacterial symbiont from *Nilaparvata lugens*, a marine *Pseudomonas fluorescens* and an *Enterobacter* sp. Active against *Xanthomonas* sp. Mp 172-173.5°. λ_{max} 297 (ϵ 38000) (MeOH/AcOH) (Derep). λ_{max} 297 (ϵ 51100) (MeOH/NaOH) (Derep). λ_{max} 297 (ϵ 41200) (MeOH) (Derep).

3-Epimer, 3-hydroxy: ***Moiramide C***
[155233-32-2]
$C_{27}H_{33}N_3O_6$ 495.574
Metab. of a marine *Pseudomonas fluorescens*. Amorph. solid. Sol. MeOH, EtOAc. λ_{max} 289 (ϵ 29711) (MeOH) (Berdy).

Fredenhagen, A. *et al., J.A.C.S.*, 1987, **109**, 4409
Kenny, P.T. *et al., Pestic. Sci.*, 1987, **27**, 117 (*isol*)
McWhorter, W. *et al., Chem. Comm.*, 1989, 299 (*synth*)
Rama Rao, A.V. *et al., Tet. Lett.*, 1991, **32**, 4393 (*synth*)
Needham, J. *et al., J.O.C.*, 1994, **59**, 2058-2063 (*Andrimid, Moiramide C*)
Davies, S.G. *et al., J.C.S. Perkin 1*, 1998, 2635-2643 (*synth*)

Androcymbine A-1005



(-)-*form*

$C_{21}H_{25}NO_5$ 371.432

(-)-*form* [2115-98-2]
Alkaloid from *Androcymbium melanthioides* var. *stricta* (Liliaceae). Mp 199-201°. $[\alpha]_D^{22}$ -260 ($CHCl_3$). λ_{max} 211 (log ϵ 4.6); 241 (log ϵ 4.28); 280 (log ϵ 3.7) (EtOH).

Me ether: **O-*Methylandrocymbine***
[6890-90-0]
[38739-42-3 , 31735-12-3]
$C_{22}H_{27}NO_5$ 385.459
Alkaloid from *Colchicum autumnale* and *Colchicum szovitsii* (Liliaceae). Cryst. (Et_2O/hexane). Mp 176-178°. $[\alpha]_D^{24}$ -295 (c, 0.13 in $CHCl_3$). $[\alpha]_D$ -140 ($CHCl_3$).

Me ether, O^2*-de-Me:* ***Isoandrocymbine***
[13205-97-5]
$C_{21}H_{25}NO_5$ 371.432
Alkaloid from *Colchicum stevenii*.

Me ether, O^4*-de-Me:* ***Collutine***
[20055-75-8]
$C_{21}H_{25}NO_5$ 371.432
Alkaloid from *Colchicum luteum* (Liliaceae). Cryst. (Me_2CO). Mp 192-194°. $[\alpha]_D$ -182 (c, 1.7 in $CHCl_3$). λ_{max} 238 (log ϵ 4.3); 275 (sh) (log ϵ 2.81) (MeOH).

Me ether, O^4*-de-Me,* N-*oxide:* ***Collutine* N-*oxide***
[102719-92-6]
$C_{21}H_{25}NO_6$ 387.432
Alkaloid from *Colchicum luteum* (Liliaceae). Cryst. (Me_2CO). Mp 217-219°. $[\alpha]_D$ -204 (c, 0.36 in $CHCl_3$).

(+)-*form*

Me ether, O^2*-de-Me:* ***Alkaloid CC 10***
[35320-74-2]
$C_{21}H_{25}NO_5$ 371.432
Alkaloid from the corms of *Colchicum cornigerum* (Liliaceae). Prisms (EtOAc). Mp 209-212° (200-204°). $[\alpha]_D^{22}$ +308 (c, 0.87 in $CHCl_3$). $[\alpha]_D^{22}$ +336 (c, 0.10 in EtOH). Enantiomer of Isoandrocymbine.

(±)-*form* [31730-26-4]
Noncryst. λ_{max} 240 (log ϵ 4.18); 279 (log ϵ 3.62) (MeOH).

(ξ)-*form*

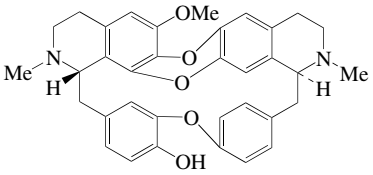
Me ether, 7ξ-alcohol: ***Szovitsidine***
[57912-36-4]
$C_{22}H_{29}NO_5$ 387.475
Alkaloid from *Colchicum szovitsii* (Liliaceae). No phys. props. reported.

Hrbek, J. *et al., Coll. Czech. Chem. Comm.*, 1962, **27**, 255-267 (*isol, ir, uv*)
Saleh, M. *et al., Coll. Czech. Chem. Comm.*, 1963, **28**, 3413 (*Alkaloid CC 10, isol, uv*)
Potěšilová, H. *et al., Coll. Czech. Chem. Comm.*, 1969, **34**, 3540 (*Alkaloid CC 10, isol, uv, ir*)
Battersby, A.R. *et al., J.C.S.(C)*, 1971, 3514 (*Alkaloid CC 10, uv, ir, struct*)
Kametani, T. *et al., J.O.C.*, 1971, **36**, 3729-3733; 3733-3736 (*synth*)
Battersby, A.R. *et al., J.C.S. Perkin 1*, 1972, 1736-1740 (*ir, pmr, ms, struct*)
Mukhamed'yarova, N.L. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1975, **11**, 781-783 (*Collutine, isol, uv, pmr, struct*)
Yusupov, M.K. *et al., Khim. Prir. Soedin.*, 1975, **11**, 271; *Chem. Nat. Compd. (Engl. Transl.)*, 1975, **11**, 289 (*Szovitsidine*)
Chommadov, B. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1985, **21**, 770-773 (*Collutine N-oxide*)

Nasreen, A. *et al., Tet. Lett.*, 1996, **37**, 8161-8164 (*Isoandrocymbine*)
Barker, A.C. *et al., J.C.S. Perkin 1*, 1998, 2989-2994; 3003-3009 (*isol, synth, Me ether*)
Al-Mahmoud, M.S. *et al., Nat. Prod. Res.*, 2006, **20**, 153-160 (*Isoandrocymbine*)

Angchibangkine **A-1006**

[187109-61-1]



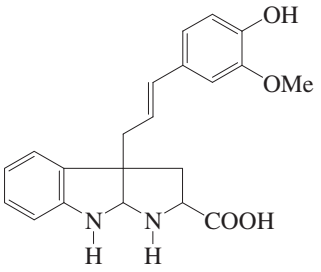
$C_{35}H_{34}N_2O_5$ 562.664
Alkaloid from stem bark of *Pachygone dasycarpa*. Exhibits antiplasmodial activity. $[\alpha]_D$ +450 (c, 0.1 in $CHCl_3$). λ_{max} 234 (sh) (log ϵ 4.67); 290 (log ϵ 3.71) (MeOH).

Me ether: [187086-18-6] Shows antiplasmodial activity. $[\alpha]_D$ +392 (c, 0.05 in $CHCl_3$).

Guinaudeau, H. *et al., J. Nat. Prod.*, 1997, **60**, 258 (*isol, uv, cd, pmr, ms, struct*)

Angelicastigmine **A-1007**

[312584-11-5]

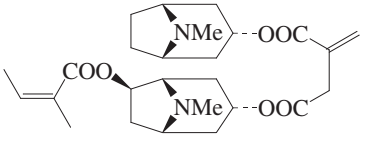


$C_{21}H_{22}N_2O_4$ 366.416
Alkaloid from the roots of *Angelica polymorpha*. Brownish amorph. solid. $[\alpha]_D^{20}$ -92 (c, 0.79 in MeOH). λ_{max} 212 (ϵ 18740); 268 (ϵ 10750); 292 (ϵ 6750) (MeOH).

Pachaly, P. *et al., Pharmazie*, 2000, **55**, 777-778 (*isol, pmr, cmr, ms*)

6-Angeloyloxyditropan-3-yl itaconate **A-1008**

[182015-05-0]

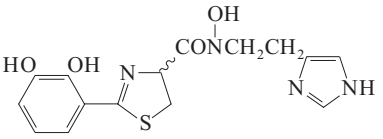


$C_{26}H_{38}N_2O_6$ 474.596
Alkaloid from the leaves of *Schizanthus litoralis*. Oil. $[\alpha]_D$ -10 (c, 0.09 in EtOH).

Muñoz, O. *et al., Phytochemistry*, 1996, **43**, 709-713 (*isol, pmr, cmr, ms*)

Anguibactin **A-1009**

*2-(2,3-Dihydroxyphenyl)-4,5-dihydro-*N*-hydroxy-*N*-[2-(1*H*-imidazol-4-yl)ethyl]-4-thiazolecarboxamide, 9CI*
[117308-63-1]

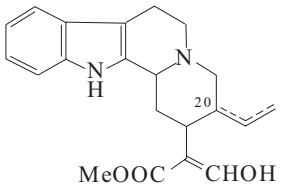


$C_{15}H_{16}N_4O_4S$ 348.382
Isol. from the iron-deficient cultures of a marine *Vibrio anguillarum*. Siderophore. λ_{max} 216 ; 266 ; 327 (MeOH) (Berdy). λ_{max} 214 ; 260 (ϵ 11000); 315 ; 410 (pH 7 buffer) (Berdy). λ_{max} 214 ; 258 ; 335 ; 415 (pH 10 buffer) (Berdy).

Actis, L.A. *et al., J. Bacteriol.*, 1986, **167**, 57 (*isol*)
Jalal, M.A.F. *et al., J.A.C.S.*, 1989, **111**, 292-296 (*Anguibactin*)

Angusteine **A-1010**

[54163-65-4]

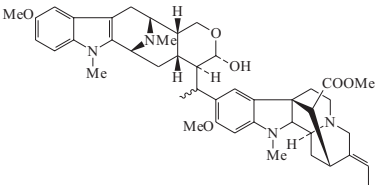


$C_{21}H_{24}N_2O_3$ 352.432
Stereochem. undefined, position of double bond in side chain at C-20 unknown. Alkaloid from *Amsonia angustifolia* (Apocynaceae).

Kocsis, A. *et al., Acta Pharm. Hung.*, 1974, **44**, 70-73; *CA*, **81**, 120843w (*isol, uv, ir, ms, struct*)

Angusticraline **A-1011**

[120374-19-8]

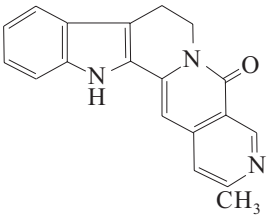


$C_{44}H_{56}N_4O_6$ 736.95
Alkaloid from the leaves of *Alstonia angustifolia* (Apocynaceae). $[\alpha]_D$ +6 (c, 1.1 in MeOH).

Ghedira, K. *et al., Phytochemistry*, 1988, **27**, 3955 (*isol, uv, ir, pmr, cmr, ms, struct*)

Angustidine **A-1012**

*8,13-Dihydro-2-methylindolo[2′,3′:3,4]pyrido[1,2-*b*][2,7]naphthyridin-5(7*H*)-one, 9CI*
[40217-50-3]

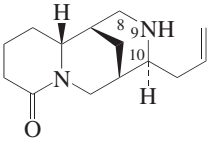


$C_{19}H_{15}N_3O$ 301.347
Alkaloid from the leaves of *Strychnos angustiflora* and from several other *Strychnos, Mitragyna, Nauclea* and *Uncaria* spp. (Loganiaceae, Rubiaceae). Yellow needles ($CHCl_3$). Mp 309-310°.

Au, T.Y. *et al., J.C.S. Perkin 1*, 1973, 13 (*isol, uv, ir, pmr, struct*)
Phillipson, J.D. *et al., Phytochemistry*, 1974, **13**, 973 (*isol*)
Ninomiya, I. *et al., J.C.S. Perkin 1*, 1976, 1865 (*synth, ir, pmr*)
Repke, D.B. *et al., Tetrahedron*, 1989, **45**, 2541 (*synth*)
Delaude, C. *et al., Bull. Soc. R. Sci. Liege*, 1997, **66**, 183-286 (*occur, Strychnos*)
Abreu, P. *et al., Heterocycles*, 1998, **48**, 885-891 (*isol, uv, ir, pmr, cmr, ms*)

Angustifoline† **A-1013**

*Decahydro-4-(2-propenyl)-1,5-methano-8*H*-pyrido[1,2-*a*][1,5]diazocin-8-one, 9CI. Jamaicensine*
[550-43-6]



(-)-*form*

$C_{14}H_{22}N_2O$ 234.341

(-)-*form*
Alkaloid from *Lupinus angustifolius, Lupinus polyphyllus, Lupinus albus, Ormosia jamaicensis* and *Ormosia panamensis* (Fabaceae). Active against gram-positive bacteria. Mp 80.5-81°. $[\alpha]_D$ -7.5 (+5.2) (EtOH).

Hydrochloride: Mp 96-97°.

Picrate: Mp 182-185°.

N-*Formyl:* **N-*Formylangustifoline***
[4697-81-8]
$C_{15}H_{22}N_2O_2$ 262.351
Alkaloid from combined leaf and hypocotyl extracts of *Lupinus polyphyllus* (Fabaceae).

N-*Ac:* Mp 151-152°.

N-*Methoxycarbonyl:* ***Angustifoline* N-*carboxymethyl ester***
[145889-87-8]
$C_{16}H_{24}N_2O_3$ 292.377
Alkaloid from combined leaf and

hypocotyl extracts of *Lupinus polyphyllus* (Fabaceae).

N-*Ethoxycarbonyl:* ***Angustifoline* N-*carboxyethyl ester***
[145889-88-9]
$C_{17}H_{26}N_2O_3$ 306.404
Alkaloid from combined leaf and hypocotyl extracts of *Lupinus polyphyllus* (Fabaceae).

N-*Me:* **N-*Methylangustifoline***
[4697-79-4]
$C_{15}H_{24}N_2O$ 248.367
A principal alkaloid of the oil of *Lupinus mutabilis* (Fabaceae). Mp 86° (synthetic). $[\alpha]_D^{21}$ +7.24 (c, 2.35 in EtOH) (synthetic). Isoln. is poorly documented.

Deoxo: ***Deoxoangustifoline***. *Deoxyangustifoline*
[72710-32-8]
$C_{14}H_{24}N_2$ 220.357
Alkaloid from *Thermopsis mongolica* (Fabaceae).

8,9-Didehydro: ***Dehydroangustifoline***. *Alkaloid W102*
[85530-32-1]
$C_{14}H_{20}N_2O$ 232.325
Alkaloid from *Lupinus albus* and *Lupinus angustifolius* (Fabaceae). Mp 105°.

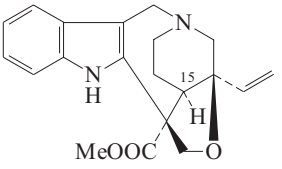
10-Epimer: ***Isoangustifoline***
[82189-28-4]
$C_{14}H_{22}N_2O$ 234.341
Alkaloid from phloem exudate of *Lupinus angustifolius*, and from *Lupinus polyphyllus*. Identified only by ms.

(+)-*form* [150283-69-5]
Alkaloid from seeds of *Lupinus termis*. Minor constit. in seeds of *Lupinus albus* cv. BAC. Oil. Mp 77°. $[\alpha]_D^{20}$ +4.9 (solv. unspecified). $[\alpha]_D^{25}$ +5.2 (c, 0.1 in MeOH).

Bohlmann, F. *et al., Chem. Ber.*, 1960, **93**, 1956-1960; 1962, **95**, 944-948 (*isol, ir, struct, synth*)
Lloyd, H.A. *et al., J.O.C.*, 1960, **25**, 1959-1962 (*isol*)
Marion, L. *et al., Tet. Lett.*, 1960, **No. 19**, 1-5 (*struct, Angustifoline, Dehydroangustifoline*)
Fales, H.M. *et al., J.A.C.S.*, 1970, **92**, 1590-1597 (*ms*)
Lloyd, H.A. *et al., Phytochemistry*, 1975, **14**, 155-159 (*biosynth*)
Bratek-Wiewiorowska, M.D. *et al., Pol. J. Chem. (Rocz. Chem.)*, 1979, **55**, 69-87 (*ir, pmr, conformn*)
Hatzold, T. *et al., Fette, Seifen, Anstrichm.*, 1982, **84**, 59-64 (*isol, N-Methylangustifoline*)
Wink, M. *et al., Planta Med.*, 1982, **44**, 15-20 (*Isoangustifoline*)
Fraser, A.M. *et al., Chem. Comm.*, 1984, 1477-1479 (*biosynth*)
Tyski, S. *et al., J. Plant Physiol.*, 1988, **133**, 240-242 (*activity*)
Mohamed, M.H. *et al., J. Nat. Prod.*, 1990, **53**, 1578-1580 (*(+)-form, isol*)
Christov, V. *et al., J. Nat. Prod.*, 1991, **54**, 1413-1415 (*Deoxoangustifoline*)
Veen, G. *et al., Phytochemistry*, 1992, **31**, 4343-4345 (*Lupinus polyphyllus constits*)
Wysocka, W. *et al., Planta Med.*, 1993, **59**, 289 (*(+)-form, isol, cmr*)
Bäumel, P. *et al., Z. Naturforsch., C*, 1993, **48**, 436-443 (*Isoangustifoline*)
Wysocka, W. *et al., Monatsh. Chem.*, 1994, **125**, 1267-1272 (*pmr, cmr, conformn*)

Angustilobine A A-1014

[112464-20-7]



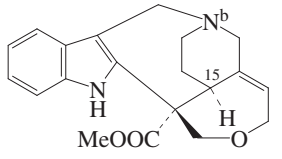
$C_{20}H_{22}N_2O_3$ 338.405
Alkaloid from *Alstonia angustiloba*, *Alstonia congensis* and *Alstonia pneumatophora* (Apocynaceae). $[\alpha]_D$ +84 (c, 0.45 in $CHCl_3$).

15-Hydroxy: ***15-Hydroxyangustilobine A***
[112464-21-8]
$C_{20}H_{22}N_2O_4$ 354.405
Alkaloid from *Alstonia angustiloba* and *Alstonia pneumatophora* (Apocynaceae). $[\alpha]_D$ -160 (c, 0.5 in $CHCl_3$).

Zeches, M. *et al., J. Nat. Prod.*, 1987, **50**, 714 (*isol*)
Caron, C. *et al., Phytochemistry*, 1989, **28**, 1241 (*isol*)

Angustilobine B A-1015

[112448-50-7]



$C_{20}H_{22}N_2O_3$ 338.405
Alkaloid from *Alstonia angustifolia, Alstonia congensis* and *Alstonia pneumatophora* (Apocynaceae). $[\alpha]_D$ -136 (c, 0.5 in $CHCl_3$).

N^b-*Oxide:* ***Angustilobine B* N^b-*oxide***
[123085-03-0]
$C_{20}H_{22}N_2O_4$ 354.405
Alkaloid from *Alstonia congensis* and *Alstonia scholaris*. $[\alpha]_D$ +97 (c, 0.2 in $CHCl_3$).

N^b-*Me:* **N^b-*Methylangustilobine B***
$C_{21}H_{25}N_2O_3^{\oplus}$ 353.44
Alkaloid from *Alstonia scholaris*. Counterion not specified.

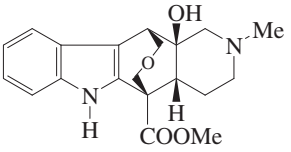
Parent acid: ***Angustilobine B acid***
[126594-74-9]
$C_{19}H_{20}N_2O_3$ 324.379
Alkaloid from leaves of *Alstonia scholaris* (Apocynaceae). Fine prisms. Mp 230-235° dec. $[\alpha]_D^{24}$ -117.4 (c, 0.66 in Py).

15-Epimer(?): ***Alstonamine***
[1394-99-6]
$C_{20}H_{22}N_2O_3$ 338.405
Alkaloid from the leaves of *Alstonia scholaris* (Apocynaceae). Amorph. solid. Mp 126°. $[\alpha]_D^{20}$ +46 (c, 2 in $CHCl_3$). Same gross struct. assigned to Alstonamine as to Angustilobine B but with undetd. 15-config. Clearly not the same as Angustilobine B.

Zeches, M. *et al., J. Nat. Prod.*, 1987, **50**, 714 (*Angustilobine B*)
Atta-ur-Rahman, *et al., Phytochemistry*, 1987, **26**, 2139 (*Alstonamine*)
Caron, C. *et al., Phytochemistry*, 1989, **28**, 1241 (*oxide*)
Yamauchi, T. *et al., Phytochemistry*, 1990, **29**, 3321; 3547 (*isol, pmr, cmr*)
Macabeo, A.P.G. *et al., Phytochemistry*, 2005, **66**, 1158-1162 (*N-Methylangustilobine B*)

Angustilodine A-1016

[740811-97-6]

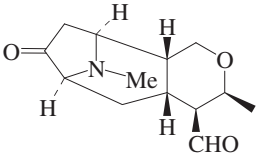


$C_{20}H_{24}N_2O_4$ 356.421
Alkaloid from the leaves of *Alstonia angustiloba*. Oil. $[\alpha]_D$ -622 (c, 0.16 in $CHCl_3$). λ_{max} 224 (log ϵ 4.23); 281 (log ϵ 3.6) (EtOH).

Kam, T.-S. *et al., Helv. Chim. Acta*, 2004, **87**, 366-369 (*isol, pmr, cmr*)

Angustimalal A-1017

[714252-05-8]

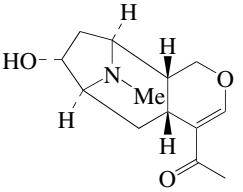


$C_{13}H_{19}NO_3$ 237.298
Alkaloid from the bark of *Alstonia macrophylla*. Oil. $[\alpha]_D$ +78 (c, 0.06 in $CHCl_3$). Prob. derived from a macroline-type precursor. λ_{max} 211 (log ϵ 3.09); 256 (log ϵ 2.42) (EtOH).

Kam, T.-S. *et al., Tetrahedron*, 2004, **60**, 3957-3966 (*isol, pmr, cmr, ms*)

Angustimaline A-1018

[186772-63-4]

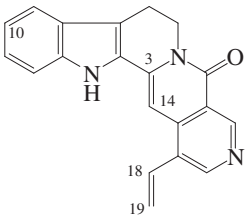


$C_{13}H_{19}NO_3$ 237.298
Alkaloid from the stem bark of *Alstonia angustifolia*. Amorph. $[\alpha]_D$ +115 (c, 0.1 in $CHCl_3$). Prob. derived from a macroline-type precursor. λ_{max} 257 (log ϵ 4.11) (No solvent reported).

Kam, T.-S. *et al., Tet. Lett.*, 1997, **38**, 477 (*isol, uv, ir, pmr, cmr, ms, struct*)

Angustine A-1019

1-Ethenyl-8,13-dihydroindolo[2′,3′:3,4]pyrido[1,2-b][2,7]naphthyridin-5(7H)-one, 9CI
[40041-96-1]



$C_{20}H_{15}N_3O$ 313.358
Alkaloid from *Strychnos angustiflora* and other *Strychnos* spp., *Mitragyna*, *Nauclea* and *Uncaria* spp. (Loganiaceae, Rubiaceae). Shows anticancer props. Yellow plates. Mp 283-284° dec., (>340°). λ_{max} 220 (log ϵ 4.54); 255 (log ϵ 4.32); 291 (log ϵ 4.1); 304 (log ϵ 4.03); 380 (log ϵ 4.58); 400 (log ϵ 4.59) (EtOH).

3,14-Dihydro: ***3,14-Dihydroangustine***. *13b,14-Dihydroangustine*
[116965-55-0]
$C_{20}H_{17}N_3O$ 315.374
Alkaloid from the root bark of *Nauclea pobeguinii* (Rubiaceae). Shows anticancer props. The synthetic racemate had Mp 305-306°.

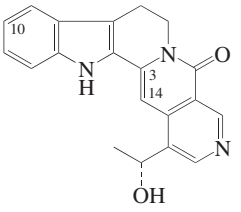
18,19-Dihydro: ***18,19-Dihydroangustine***
[40042-52-2]
$C_{20}H_{17}N_3O$ 315.374
Alkaloid from leaves of *Nauclea orientalis* (Rubiaceae). Exhibits *in vitro* antiproliferative activity. Orange cryst. solid. λ_{max} 221 (log ϵ 4.44); 252 (log ϵ 4.15); 290 (log ϵ 3.9); 300 (log ϵ 3.81); 375 (log ϵ 4.46); 395 (log ϵ 4.48) (EtOH).

3,14,18,19-Tetrahydro: ***3,14,18,19-Tetrahydroangustine***
[52410-21-6]
$C_{20}H_{19}N_3O$ 317.39
Alkaloid from leaves of *Nauclea orientalis* (Rubiaceae). Exhibits *in vitro* antiproliferative activity. Shows anticancer props. Yellowish amorph. solid.

10-Hydroxy: ***10-Hydroxyangustine***
[142115-23-9]
$C_{20}H_{15}N_3O_2$ 329.357
Alkaloid from leaves of *Nauclea orientalis* and from *Nauclea latifolia* (Rubiaceae). Exhibits *in vitro* antiproliferative activity. Orange cryst. solid. λ_{max} 205 (ϵ 20000); 253 (ϵ 6300); 303 (ϵ 4000); 310 (ϵ 4000); 384 (ϵ 12500); 404 (ϵ 12500) (EtOH) (Berdy).

Au, T.Y. *et al., J.C.S. Perkin 1*, 1973, 13-16 (*isol, uv, ir, pmr, struct*)
Phillipson, J.D. *et al., Phytochemistry*, 1974, **13**, 973-978 (*isol, uv, ir, pmr*)
Kametani, T. *et al., J.O.C.*, 1976, **41**, 2542-2545 (*synth, uv, ir, pmr*)
Zeches, M. *et al., J. Nat. Prod.*, 1985, **48**, 42-46 (*3,14-Dihydroangustine*)
Repke, D.B. *et al., Tetrahedron*, 1989, **45**, 2541-2550 (*synth, Angustine, 3,14-Dihydroangustine*)
Erdelmeier, C.A.J. *et al., Planta Med.*, 1990, **56**, 507 (*activity*)
Erdelmeier, C.A.J. *et al., Planta Med.*, 1992, **58**, 43-48 (*10-Hydroxyangustine, 18,19-Dihydroangustine, 3,14,18,19-Tetrahydroangustine*)
Abreu, P. *et al., Heterocycles*, 1998, **48**, 885-891 (*isol, uv, ir, pmr, cmr, ms*)
Lavilla, R. *et al., Eur. J. Org. Chem.*, 1999, 373-378 (*synth*)

Angustoline A-1020



(*R*)-*form*

$C_{20}H_{17}N_3O_2$ 331.373

(*R*)-*form* [40041-95-0]
Alkaloid from *Strychnos angustiflora* and several other *Strychnos* spp., and from *Uncaria* spp. (Loganiaceae, Rubiaceae). Yellow needles ($CHCl_3$/MeOH). Mp 310-314°. $[\alpha]_D$ -34 ($CHCl_3$).

Me ether: ***19-O-Methylangustoline***
[132074-99-8]
$C_{21}H_{19}N_3O_2$ 345.4
Alkaloid from the seeds of *Camptotheca acuminata* (Nyssaceae). Cytotoxic agent. Yellow cryst. (Me_2CO). Mp 222-225°. $[\alpha]_D$ -6.3 (c, 0.008 in MeOH). λ_{max} 204 (ϵ 56234); 370 (ϵ 17380); 395 (ϵ 14125) (MeOH) (Berdy).

3,14-Dihydro: ***3,14-Dihydroangustoline***
[142115-22-8]
[142186-12-7]
$C_{20}H_{19}N_3O_2$ 333.389
Alkaloid from leaves of *Nauclea orientalis* (Rubiaceae). Yellowish amorph. solid. $[\alpha]_D^{20}$ -172.5 (c, 0.20 in EtOH). $[\alpha]_D^{20}$ -301.4 (c, 0.33 in EtOH). Two diastereoisomers isol. λ_{max} 204 ; 265 ; 373 ; 396 (EtOH) (Berdy).

Ketone: ***Naucletine***
[54698-29-2]
$C_{20}H_{15}N_3O_2$ 329.357
Alkaloid from the root bark of *Nauclea latifolia* (Rubiaceae). Orange cryst. (MeOH). Mp 310°.

10-Hydroxy: ***Naucleofficine E***
$C_{20}H_{17}N_3O_3$ 347.373
Alkaloid from the stems of *Nauclea officinalis*. Orange-yellow powder. Mp 279-281°. $[\alpha]_D^{20}$ -29.3 (c, 0.21 in MeOH). Probable abs. config. λ_{max} 220 (log ϵ 4.31); 251 (log ϵ 4.02); 307 (log ϵ 3.9); 400 (log ϵ 4.67) (MeOH).

(±)-*form*
Synthetic. Pale-yellow cryst. (MeOH/$CHCl_3$). Mp 292-294°.

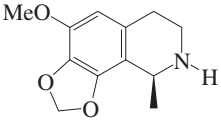
(ξ)-*form*
O-*Ac:* **O-*Acetylangustoline***
[40042-53-3]
$C_{22}H_{19}N_3O_3$ 373.41
Alkaloid from the root bark of *Nauclea pobeguinii* (Rubiaceae). Yellow needles + 1.5H_2O ($CHCl_3$). Mp 148-152° (synthetic). Nat. alkaloid obt. only in small amt., no info. on opt. rotn. or abs. config.

Et ether: ***19-O-Ethylangustoline***
[210895-10-6]
$C_{22}H_{21}N_3O_2$ 359.427
Alkaloid from the stem bark *of Sarcocephalus latifolius*. Mp 230-240°. $[\alpha]_D$ -0.01 ($CHCl_3$). Appears to be a virtual racemate.

Au, T.Y. *et al., J.C.S. Perkin 1*, 1973, 13-16 (*isol, uv, ir, pmr, ms, struct*)
Phillipson, J.D. *et al., Phytochemistry*, 1974, **13**, 973-978 (*occur*)
Hotellier, F. *et al., Phytochemistry*, 1975, **14**, 1407-1409 (*Naucletine, isol, uv, ir, pmr, ms, struct*)
Ninomiya, I. *et al., J.C.S. Perkin 1*, 1976, 1865-1868 (*synth, ir, pmr*)
Zeches, M. *et al., J. Nat. Prod.*, 1985, **48**, 42-46 (*O-Acetylangustoline*)
Lin, L.-Z. *et al., Phytochemistry*, 1990, **29**, 2744-2746 (*19-O-Methylangustoline*)
Erdelmeier, C.A.J. *et al., Planta Med.*, 1992, **58**, 43-48 (*3,14-Dihydroangustoline*)
Abreu, P. *et al., Heterocycles*, 1998, **48**, 885-891 (*19-O-Ethylangustoline, isol, uv, ir, ord, pmr, cmr, abs config*)
Lavilla, R. *et al., Eur. J. Org. Chem.*, 1999, 373-378 (*synth*)
Sun, J. *et al., Phytochemistry*, 2008, **69**, 1405-1410 (*Naucleofficine E*)

Anhalonine A-1021

6,7,8,9-Tetrahydro-4-methoxy-9-methyl-1,3-dioxolo[4,5-h]isoquinoline, 9CI. 1,2,3,4-Tetrahydro-6-methoxy-1-methyl-7,8-methylenedioxyisoquinoline



(*S*)-*form*

$C_{12}H_{15}NO_3$ 221.255

(*R*)-*form*
Obt. by resoln. Mp 84.5-85.5°. $[\alpha]_D^{25}$ +56.7 ($CHCl_3$).

(*S*)-*form* [519-04-0]
Alkaloid from *Anhalonium lewinii* (*Lophophora williamsii*), *Gymnocalycium lecanum* and *Trichocereus terscheckii* (Cactaceae). Also obt. by resoln. and by synth. Cryst. (Et_2O/petrol). Mp 85-86°. $[\alpha]_D^{25}$ -56.3 ($CHCl_3$). $[\alpha]_D^{25}$ -62.9 (c, 1 in MeOH). $[\alpha]_D^{25}$ -51 (c, 1 in 1*M* HCl).

Hydrochloride: Mp 258-259°. $[\alpha]_D^{25}$ -40 (c, 1 in 50% EtOH).

Hydrobromide:
Cryst. (H_2O). Mp 270-271°. $[\alpha]_D^{25}$ -30 (c, 1 in H_2O).

N-*Me:* ***Lophophorine***. *6,7,8,9-Tetrahydro-4-methoxy-8,9-dimethyl-1,3-dioxolo[4,5-h]isoquinoline, 9CI. 1,2,3,4-Tetrahydro-6-methoxy-1,2-dimethyl-7,8-methylenedioxyisoquinoline*
[17627-78-0]
$C_{13}H_{17}NO_3$ 235.282
Alkaloid from *Gymnocalycium gibbosum*, *Gymnocalycium lecanum*, *Lopho-*

phora diffusa and *Lophophora williamsii* (Cactaceae). Respiratory stimulant, convulsive agent. Oil. $Bp_{0.05}$ 140-145°. $[\alpha]_D^{25}$ -47.3 ($CHCl_3$).

▶ Toxic, LD_{50} (rbt, ivn) 15-20 mg/kg. JI4800000

N-*Me; hydrochloride:* Cryst. (EtOH). Mp 236-237°. $[\alpha]_D^{25}$ -15.6 (c, 1 in H_2O).

N-*Me, picrate:* Mp 162-163°.

N-*Formyl:* ***N-Formylanhalonine***
$C_{13}H_{15}NO_4$ 249.266
Isol. from *Anhalonium lewinii* (Cactaceae). Abs. config. of this isolate unknown; identified by glc/ms comparison with an authentic prepn.

N-*Ac:* **N-*Acetylanhalonine***
$C_{14}H_{17}NO_4$ 263.293
Constit. of *Anhalonium lewinii* (Cactaceae). Identified by glc/ms comparison.

N-*Et:* ***Peyophorine***. N-*Ethylanhalonine*
[22030-12-2]
$C_{14}H_{19}NO_3$ 249.309
Alkaloid from *Anhalonium lewinii* (Cactaceae). Abs. config. not determined.

N-*Et, picrate:* Mp 155-156°.

N,N-*Di-Me: 6,7,8,9-Tetrahydro-4-methoxy-8,8,9-trimethyl-1,3-dioxolo[4,5-h]isoquinolinium(1+), 9CI.* ***Lophotine***
[19267-94-8]
[19445-63-7]
$C_{14}H_{20}NO_3^{\oplus}$ 250.317
Alkaloid from *Anhalonium lewinii*. Cryst. (EtOH/EtOAc) (as iodide). Mp 223° (softens) Mp 240-242° (iodide). Abs. config. not certain. Double Mp attributed to thermal racemisation.

(±)-form
Synthetic. Cryst. (MeOH) (as hydrochloride). Mp 262-264° (hydrochloride).

N-*Me; hydrobromide:* Cryst. (EtOH). Mp 221-222°.

N,N-*Di-Me, iodide:* Mp 242-243°.

Heffter, A. *et al., Ber.*, 1896, **29**, 216 (*isol*)
Späth, E. *et al., Monatsh. Chem.*, 1923, **44**, 103
Späth, E. *et al., Ber.*, 1935, **68**, 501; 1663 (*struct, synth, resoln*)
Battersby, A.R. *et al., J.C.S.*, 1960, 1214 (*abs config*)
Battersby, A.R. *et al., Tet. Lett.*, 1967, 563 (*biosynth*)
Kapadia, G.J. *et al., Chem. Comm.*, 1968, 1688 (*N-Formylanhalonine, N-Acetylanhalonine*)
Kapadia, G.J. *et al., J. Pharm. Sci.*, 1968, **57**, 254; 2017 (*isol, Lophotine, Peyophorine*)
Brossi, A. *et al., J.A.C.S.*, 1971, **93**, 6248 (*synth, ord, cd, ms, uv, pmr, abs config, cryst struct*)
Cymerman Craig, J. *et al., J.A.C.S.*, 1977, **99**, 7996 (*uv, cd*)
Mata, R. *et al., Phytochemistry*, 1983, **22**, 1263 (*cmr, Lophophorine*)

Anhweiaconitine A-1022

[1354-38-7]

Struct. unknown

$C_{30}H_{41}NO_9$ 559.655

Probably a C_{19}-diterpene alkaloid. Alkaloid from the roots of the Chinese drug Tzu-Tsao-Wu (*Aconitum* spp.) (Ranunculaceae). Mp 199°. $[\alpha]_D^{11}$ +25.2 (c, 1 in $CHCl_3$). Conts. *N*-Me, 4 OH, 3 OMe and PhCOO groups.

Nitrate: Mp 188-189°.

Perchlorate: Mp 226°.

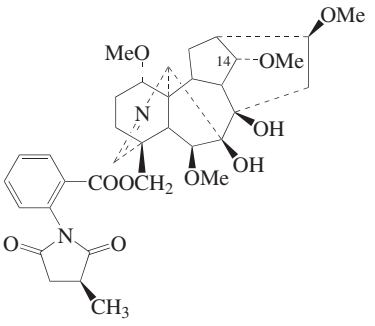
Methiodide: Mp 210-213°.

Tetra-Ac: Mp 181-183°.

Chu, J.-H. *et al., Huaxue Xuebao*, 1959, **25**, 214-217; *CA*, **54**, 4642e

Anhweidelphinine A-1023

[102503-60-6]



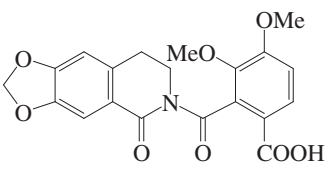
$C_{35}H_{44}N_2O_{10}$ 652.74
Alkaloid from the roots of *Delphinium anhweinse* and whole plants of *Delphinium nuttallianum*. Defective diag. in CAS.

O^{14}-*De-Me, 14-Ac:* ***14-O-Demethyl-14-acetylanhweidelphinine***
$C_{36}H_{44}N_2O_{11}$ 680.75
Alkaloid from *Delphinium pentagynum*. Amorph. solid. $[\alpha]_D^{25}$ +67.1 (c, 0.16 in $CHCl_3$).

O^{14}-*De-Me, 14-*O-*(2-methylpropanoyl):* ***14-O-Demethyl-14-isobutyrylanhweidelphinine***
$C_{38}H_{48}N_2O_{11}$ 708.804
Alkaloid from *Delphinium pentagynum*. Amorph. solid. $[\alpha]_D^{25}$ +65.2 (c, 0.14 in $CHCl_3$).

Jin, J. *et al., Zhongcaoyao*, 1986, **17**, 1; *CA*, **105**, 3523v
Bai, Y. *et al., Heterocycles*, 1989, **29**, 1017 (*isol*)
Joshi, B.S. *et al., J. Nat. Prod.*, 1990, **53**, 1028 (*config*)
Díaz, J.G. *et al., Phytochemistry*, 2004, **65**, 2123-2127 (*14-demethyl-14-acyl derivs*)

Anhydroberberillic acid A-1024



$C_{20}H_{17}NO_8$ 399.356
Alkaloid from the roots of *Phellodendron amurense* var. *wilsonii*. Powder (MeOH). Mp 252-253°. λ_{max} 224 ; 254 ; 299 ; 335 (MeOH).

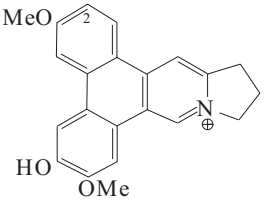
Me ester:

$C_{21}H_{19}NO_8$ 413.383
Alkaloid from the roots of *Phellodendron amurense* var. *wilsonii*. Powder (MeOH). Mp 183-184°. λ_{max} 224 ; 260 ; 316 (MeOH).

Chiang, Y.-L. *et al., Heterocycles*, 2006, **68**, 339-345 (*isol, pmr, cmr, ms*)

Anhydrodehydrotylophorinidine A-1025

[52985-89-4]



$C_{22}H_{20}NO_3^{\oplus}$ 346.405
Trace quaternary alkaloid from the leaves and stems of *Tylophora asthmatica* (Asclepiadaceae). No phys. props. reported. Prob. an artifact.

Me ether: ***Anhydrodehydrotylophorinine***. *Tylophoridicine D*
[52936-83-1]
[415898-72-5]
$C_{23}H_{22}NO_3^{\oplus}$ 360.432
Trace quaternary alkaloid from leaves and stems of *Tylophora asthmatica* and from *Tylophora atrofolliculata*. Yellow amorph. powder (as chloride). Mp 295-310° (chloride). $[\alpha]_D^{16}$ +0.5 (c, 1 in MeOH) (chloride). Prob. an artifact. λ_{max} 257 (log ε 4.68); 284 (log ε 4.56); 309 (sh) (log ε 4.06); 340 (log ε 3.46) (MeOH).

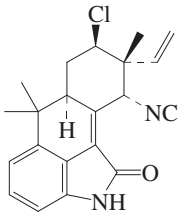
2-*Methoxy, Me ether:* ***Dehydrotylophorine***
[52936-55-7]
$C_{24}H_{24}NO_4^{\oplus}$ 390.458
Quaternary alkaloid from leaves and stems of *Tylophora asthmatica* (Asclepiadaceae), also obt. by air oxidn. of Tylophorine in diffused daylight. Yellow needles + $2H_2O$ (MeOH)(as chloride). Mp 245-250° dec. (chloride). Prob. an artifact.

7-*Demethoxy, 2-methoxy, Me ether:* ***Dehydroantofine***
[126262-29-1]
$C_{23}H_{22}NO_3^{\oplus}$ 360.432
Quaternary alkaloid from the leaves, twigs, roots and fruit of *Cryptocarya phyllostemon* (Lauraceae). Yellow cryst. (MeOH)(as perchlorate). Mp 230° dec. (perchlorate). Poss. artifact. CAS no. refers to perchlorate.

Wiegrebe, W. *et al., Annalen*, 1969, **721**, 154 (*Dehydroantofine, synth*)
Govindachari, T.R. *et al., Indian J. Chem.*, 1973, **11**, 1215 (*Anhydrodehydrotylophorinidine, Anhydrodehydrotylophorinine, Dehydrotylophorine*)
Cavé, A. *et al., Aust. J. Chem.*, 1989, **42**, 2243 (*Dehydroantofine, isol*)
Huang, X.S. *et al., Planta Med.*, 2004, **70**, 441-445 (*Tylophoridicine D*)

Anhydrohapaloxindole A A-1026

[109217-16-5]



$C_{21}H_{21}ClN_2O$ 352.862
Minor alkaloid from the blue-green alga *Hapalosiphon fontinalis*. Mp 123° dec. $[\alpha]_D$ +150 (c, 0.4 in EtOH). Appears to be a $^1O_2$ oxidn. prod. of Hapalindole A, H-48, the major alkaloid in this cyanophyte.

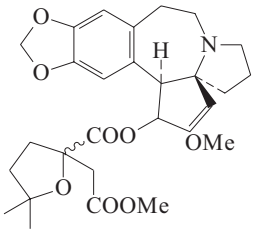
Isothiocyanate: ***Anhydrohapaloxindole B***
[123519-73-3]
$C_{21}H_{21}ClN_2OS$ 384.928
Minor alkaloid from the blue-green alga *Hapalosiphon fontinalis*. Has -NCS replacing -NC.

Dechloro, isothiocyanate: ***Anhydrohapaloxindole M***
[123498-03-3]
$C_{21}H_{22}N_2OS$ 350.484
Minor alkaloid from *Hapalosiphon fontinalis*.

Moore, R.E. *et al., J.O.C.*, 1987, **52**, 3773 (*Anhydrohapaloxindole A*)
Moore, R.E. *et al., Phytochemistry*, 1989, **28**, 1565 (*Anhydrohapaloxindoles B,M*)

Anhydroharringtonine A-1027

[142735-74-8]

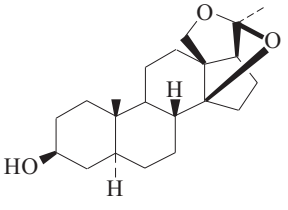


$C_{28}H_{35}NO_8$ 513.586
Alkaloid from *Cephalotaxus fortunei*. Shows significant antileukaemic activity.

Wang, D.Z. *et al., Yaoxue Xuebao*, 1992, **27**, 173; *CA*, **117**, 86698c

Anhydroholantogenin A-1028

14,20:18,20-Diepoxypregnan-3-ol
[28719-41-7]



$C_{21}H_{32}O_3$ 332.482
Aglycone from Holantosine B. Cryst. (Me_2CO). Mp 179°. $[\alpha]_D^{20}$ -38 ($CHCl_3$).

*4-Amino-2,4,6-trideoxy-3-*O*-methyl-β-D-*ribo*-hexopyranoside:* ***Holantosine B***
[28719-39-3]
$C_{28}H_{45}NO_5$ 475.667
Constit. of *Holarrhena antidysenterica* (Apocynaceae). Cryst. (Me_2O) (as *N*-Ac). Mp 0° (-290° as *N*-Ac). $[\alpha]_D$ -29 ($CHCl_3$) (as *N*-Ac).

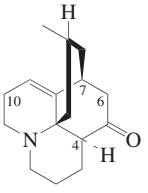
*4-Amino-2,4,6-trideoxy-3-*O*-methyl-α-L-*arabino*-hexopyranoside:* ***Holantosine D***
[33662-04-3]
$C_{28}H_{45}NO_5$ 475.667
Constit. of *Holarrhena antidysenterica* (Apocynaceae). Cryst. (Me_2CO)(as Ac). Mp 262-263° (Ac). $[\alpha]_D$ -67 (c, 6 in $CHCl_3$).

*4-Amino-2,4,6-trideoxy-3-*O*-methyl-β-D-*xylo*-hexopyranoside:* ***Holantosine F***
[40738-41-8]
$C_{28}H_{45}NO_5$ 475.667
Isol. from *Holarrhena antidysenterica* (Apocynaceae). Mp 134° (as *N*-Ac). $[\alpha]_D^{20}$ -43 (c, 1 in $CHCl_3$) (as *N*-Ac).

Schaffner, B.P. *et al., Helv. Chim. Acta*, 1970, **53**, 2266 (*synth*)
Janot, M.-M. *et al., Tetrahedron*, 1970, **26**, 1695 (*isol*)
Khuong-Huu, Q. *et al., Bull. Soc. Chim. Fr.*, 1971, 864 (*isol*)
Goutarel, R. *et al., Carbohydr. Res.*, 1972, **24**, 297 (*Holantosine F*)

Anhydrolycodoline A-1029

[18834-79-2]



Absolute Configuration

$C_{16}H_{23}NO$ 245.364
Alkaloid from *Lycopodium alopecuroides*, *Lycopodium carolinum*, *Lycopodium clavatum* var. *borbonicum*, *Lycopodium gnidioides*, *Lycopodium inundatum*, *Lycopodium phlegmaria* and *Lycopodium saururus* (Lycopodiaceae). Oil; off-white cryst. (as hydrochloride). Mp 274-276° dec. (as hydrochloride). Darkens and dec. on exp. to air.

N-*Me:* ***Lycopodatine B***
[872610-91-8]
$C_{17}H_{26}NO^{\oplus}$ 260.399
Alkaloid from *Lycopodium inundatum*. Solid. $[\alpha]_D^{33}$ -36 (c, 0.3 in MeOH). Counterion not specified.

7-Hydroxy: ***Serratidine***
[20084-82-6]
$C_{16}H_{23}NO_2$ 261.363
Alkaloid from *Lycopodium serratum* (Lycopodiaceae). Mp 143-144°. First Lycopodium alkaloid with a bridgehead OH group.

10β-Hydroxy: ***Lycophlegmine***
[82841-97-2]
$C_{16}H_{23}NO_2$ 261.363
Alkaloid from *Lycopodium phlegmaria* (Lycopodiaceae). Mp 121-123°.

4,7-Dihydroxy: ***4-Hydroxyserratidine***
[485817-34-3]
$C_{16}H_{23}NO_3$ 277.363
Alkaloid from *Huperzia serrata*. Prisms (Me_2CO/MeOH). Mp 230-232° dec. $[\alpha]_D^{25}$ -0.7 (c, 0.18 in MeOH).

6α,7-Dihydroxy: ***6α-Hydroxyserratidine***
[485817-33-2]
$C_{16}H_{23}NO_3$ 277.363
Alkaloid from *Huperzia serrata*. Prisms (Me_2CO/MeOH). Mp 223-225°. $[\alpha]_D^{25}$ -0.5 (c, 1.2 in MeOH).

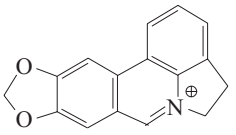
4,6α,7-Trihydroxy: ***4,6α-Dihydroxyserratidine***
[485817-35-4]
$C_{16}H_{23}NO_4$ 293.362
Alkaloid from *Huperzia serrata*. Yellow amorph. solid. $[\alpha]_D^{25}$ -0.2 (c, 0.17 in MeOH).

4-Epimer: ***Lycopodatine C***
[872610-92-9]
$C_{16}H_{23}NO$ 245.364
Alkaloid from *Lycopodium inundatum*. Solid. $[\alpha]_D^{33}$ -118 (c, 1 in MeOH).

Ayer, W.A. *et al., Can. J. Chem.*, 1964, **42**, 2514-2522; 1968, **46**, 14-20 (*isol, ir, pmr, ms, synth*)
Inubushi, Y. *et al., Chem. Comm.*, 1968, 1138-1139 (*Serratidine*)
Kim, S.-W. *et al., Chem. Pharm. Bull.*, 1978, **26**, 3150-3153 (*synth, ir, pmr, ms*)
Inubushi, Y. *et al., Yakugaku Zasshi*, 1982, **102**, 434-439; *CA*, **97**, 107030q (*Lycophlegmine*)
Tan, C.-H. *et al., Nat. Prod. Lett.*, 2002, **16**, 149-153 (*Serratidine, Hydroxyserratidines*)
Morita, H. *et al., J. Nat. Prod.*, 2005, **68**, 1809-1812 (*Lycopodatines B,C*)

Anhydrolycorinium A-1030

[61221-42-9 (chloride)]

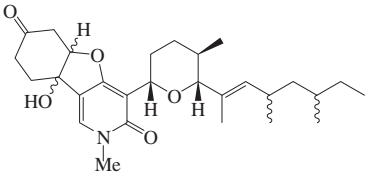


$C_{16}H_{12}NO_2^{\oplus}$ 250.276
Quaternary alkaloid from the bulbs of *Amaryllis belladonna* (Amaryllidaceae). Cryst. + 1.33 H_2O (EtOH)(as chloride). Sol. MeOH, $CHCl_3$, H_2O, poorly sol. hexane. Mp 280-285° (264-270°dec.) (chloride). λ_{max} 258 (ε 32300); 267 (ε 29500); 279 (ε 28800); 341 (ε 12100) (MeOH) (chloride).

Humber, L.G. *et al., J.C.S.*, 1954, 4622 (*synth, uv*)
Pettit, G.R. *et al., J. Nat. Prod.*, 1984, **47**, 796 (*isol, uv, ir, pmr, cmr*)
Boger, D.L. *et al., J.O.C.*, 2000, **65**, 9120-9124 (*synth*)

4,6′-Anhydrooxysporidinone A-1031

[933044-87-2]



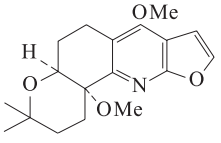
$C_{28}H_{41}NO_5$ 471.636

Anhydro deriv. of Oxysporidinone, O-226. Prod. by *Fusarium oxysporum* EPH2R_{AA}. Cryst. (MeOH). Mp 160-161°. $[\alpha]_D^{25}$ -78.6 (c, 0.3 in MeOH). λ_{max} 290 (log ϵ 3.7) (MeOH).

Zhan, J. *et al., J. Nat. Prod.*, 2007, **70**, 227-232 (*isol, pmr, cmr, ms*)

Anhydroperforine A-1032

[22952-50-7]



Relative configuration

$C_{18}H_{23}NO_4$ 317.384

Alkaloid from the seeds of *Haplophyllum perforatum* (Rutaceae). Mp 143-144°. $[\alpha]_D^{20}$ -35.1 (c, 2.19 in MeOH).

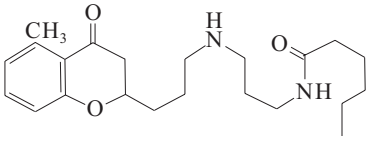
Bessonova, I.A. *et al., Khim. Prir. Soedin.*, 1974, **10**, 682; *Chem. Nat. Compd. (Engl. Transl.)*, 1974, **10**, 710 (*pmr, struct*)

Karimov, Z. *et al., Khim. Prir. Soedin.*, 1979, **15**, 805; *Chem. Nat. Compd. (Engl. Transl.)*, 1979, **15**, 712 (*cryst struct*)

Anhydroperipentamine A-1033

N-*[3-[[3-(3,4-Dihydro-5-methyl-4-oxo-2*H*-1-benzopyran-2-yl)propyl]amino]propyl]hexanamide, 9CI*

[100595-82-2]



$C_{22}H_{34}N_2O_3$ 374.522

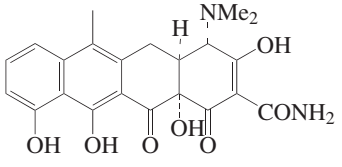
Minor alkaloid from the bark of *Peripentadenia mearsii* (Elaeocarpaceae). Also obt. by dehydration of Peripentamine under mild acid conditions. Needles + 2½ H_2O (Me_2CO aq.). Mp 96°.

Bick, I.R.C. *et al., Tetrahedron*, 1985, **41**, 5627 (*isol, uv, ir, pmr, cmr, ms, struct, synth*)

Anhydrotetracycline A-1034

*4-(Dimethylamino)-1,4,4*a*,5,12,12*a*-hexahydro-3,10,11,12*a*-tetrahydroxy-6-methyl-1,12-dioxo-2-naphthacenecarboxamide, 9CI. Deschloroanhydroaureomycin*

[1665-56-1]



$C_{22}H_{22}N_2O_7$ 426.425

Toxic degradn. and photolysis prod. derived from Tetracycline. Intermed. in tetracyline biosynth. Cryst. (C_6H_6/hexane). Mp 225-226° (215-220° dec.). $[\alpha]_D^{25}$ +25 (c, 1 in 2-ethoxyethanol).

[7518-17-4]

Waller, C.W. *et al., J.A.C.S.*, 1952, **74**, 4981-4982 (*synth*)

Stephens, C.R. *et al., J.A.C.S.*, 1954, **76**, 3568-3575 (*synth*)

Simmons, D.L. *et al., J. Pharm. Sci.*, 1966, **55**, 219-220 (*synth*)

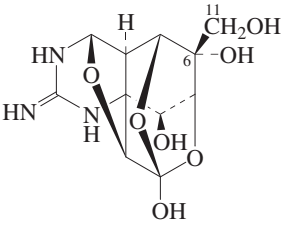
Hasan, T. *et al., J.O.C.*, 1985, **50**, 1755-1757

Dos Santos, H.F. *et al., J. Pharm. Sci.*, 1998, **87**, 190-195 (*conformn*)

Zhang, W. *et al., J.A.C.S.*, 2008, **130**, 6068-6069 (*biosynth*)

4,9-Anhydrotetrodotoxin A-1035

[13072-89-4]



$C_{11}H_{15}N_3O_7$ 301.255

Isol. from newts, other marine animals incl. *Cynops ensicauda*, *Fugu* spp. and *Octopus maculosus*, prob. as endobacterial prod. Toxic sodium channel blocker; phycotoxin. Amorph.

▶ Paralytic poison.

6-Epimer: ***4,9-Anhydro-6-epitetrodotoxin***
[113565-40-5]
$C_{11}H_{15}N_3O_7$ 301.255
Isol. from the newt *Cynops ensicauda*. Amorph. $[\alpha]_D^{25}$ +10 (c, 0.08 in AcOH aq.).

11-Deoxy: ***4,9-Anhydro-11-deoxytetrodotoxin***
[113507-22-5]
$C_{11}H_{15}N_3O_6$ 285.256
Isol. from the newt *Cynops ensicauda*. Amorph.

Tsuda, K. *et al., Chem. Pharm. Bull.*, 1964, **12**, 634-642; 642-645; 1357-1374

Tamura, C. *et al., Acta Cryst. C*, 1966, **21**, 226-236 (*cryst struct*)

Nakamura, M. *et al., Toxicon*, 1985, **23**, 271-276 (*isol*)

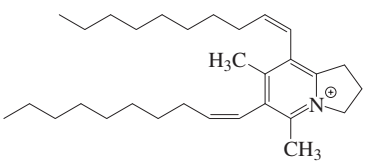
Yasumoto, T. *et al., Agric. Biol. Chem.*, 1986, **50**, 793-795 (*isol*)

Yasumoto, T. *et al., J.A.C.S.*, 1988, **110**, 2344-2345 (*isol, pmr, cmr*)

Dyankonov, A.L. *et al., Khim. Prir. Soedin.*, 1997, **33**, 297-351; *Chem. Nat. Compd. (Engl. Transl.)*, 1997, **33**, 221-267 (*rev*)

Anibamine A-1036

[725265-00-9]



$C_{30}H_{50}N^{\oplus}$ 424.732

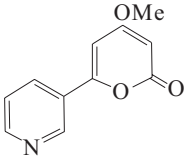
Quaternary alkaloid from the stems of an *Aniba* sp. Amorph. solid (as TFA salt). λ_{max} 222 (ϵ 36270); 284 (ϵ 17140) (MeOH) (TFA salt).

Jayasuriya, H. *et al., J. Nat. Prod.*, 2004, **67**, 1036-1038 (*isol, pmr, cmr*)

Anibine A-1037

*4-Methoxy-6-(3-pyridinyl)-2*H*-pyran-2-one, 9CI*

[643-91-4]



$C_{11}H_9NO_3$ 203.197

Alkaloid from *Aniba rosaeodora* and other *Aniba* spp. (Lauraceae). Mp 179-180°.

Picrate: Mp 199-201°.

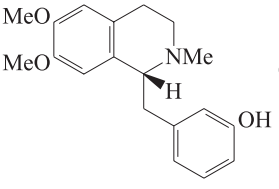
Methiodide: Mp 233-236° dec.

Mors, W.B. *et al., J.A.C.S.*, 1957, **79**, 4507 (*ir, uv, isol, struct*)

Ziegler, E. *et al., Monatsh. Chem.*, 1958, **89**, 391; 716 (*synth*)

Anicanine A-1038

1,2,3,4-Tetrahydro-1-(3-hydroxybenzyl)-6,7-dimethoxy-2-methylisoquinoline



(*R*)–*form*

$C_{19}H_{23}NO_3$ 313.396

(R)-form [151841-47-3]

Trace alkaloid from the stem bark of *Aniba canelilla* (Lauraceae). Isol. only as a 1:2 mixt. with Armepavine, A-1444.

N-*De-Me:* ***Noranicanine***
[38974-83-3]
$C_{18}H_{21}NO_3$ 299.369
Alkaloid from the stem bark of *Aniba canelilla* (Lauraceae). Amorph. solid or needles (synthetic). Mp 182° synthetic. $[\alpha]_D$ +36 (c, 1 in $CHCl_3$).

(S)-form

N-*De-Me:* Synthetic. Flakes (EtOAc). Mp 188-189.5°. $[\alpha]_D^{25}$ -25.6 (c, 0.5 in $CHCl_3$).

N-*De-Me, hydrochloride:*
Off-white solid (Me_2CO/Et_2O). Mp 140° dec.

O^6-*De-Me:* ***Canelilline***
[151757-04-9]
$C_{18}H_{21}NO_3$ 299.369
Alkaloid from the stem bark of *Aniba canelilla* (Lauraceae). $[\alpha]_D$ +43 (c, 0.5 in MeOH).

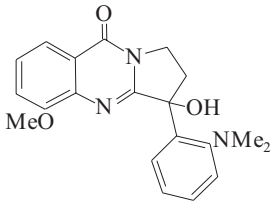
O^6,N-*Di-de-Me:* ***Norcanelilline***
[151757-03-8]
$C_{17}H_{19}NO_3$ 285.342
Alkaloid from the stem bark of *Aniba canelilla* (Lauraceae). $[\alpha]_D$ -18 (c, 1 in

$CHCl_3$).

Oger, J.M. *et al., Heterocycles*, 1992, **34**, 17 (*Noranicanine*)
Oger, J.M. *et al., Can. J. Chem.*, 1993, **71**, 1128 (*Anicanine, Canelilline, Norcanelilline*)
Meyers, A.I. *et al., Heterocycles*, 1994, **39**, 513 (*synth, Noranicanine*)
Komori, K. *et al., Heterocycles*, 1996, **43**, 1681 (*synth, Noranicanine*)

Aniflorine A-1039

3-[2-(Dimethylamino)phenyl]-2,3-dihydro-3-hydroxy-5-methoxypyrrolo[2,1-b]quinazolin-9(1H)-one, 9CI
[29048-81-5]



$C_{20}H_{21}N_3O_3$ 351.404
Minor alkaloid from the leaves and branches of *Anisotes sessiliflorus* (Acanthaceae). Cryst. (MeOH). Mp 195-197°. Opt. inactive.

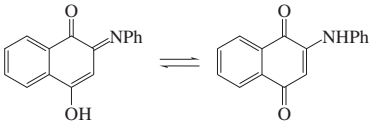
Deoxy: ***Deoxyaniflorine***
[16688-22-5]
$C_{20}H_{21}N_3O_2$ 335.405
Minor alkaloid from leaves and branches of *Anisotes sessiliflorus* (Acanthaceae). Cryst. (MeOH). Mp 168-172°. Opt. inactive.

Demethoxy: ***Demethoxyaniflorine***
[178631-30-6]
$C_{19}H_{19}N_3O_2$ 321.378
Alkaloid from leaves of *Adhatoda vasica*. Mp 128-129°.

Arndt, R.R. *et al., Tetrahedron*, 1967, **23**, 3521 (*isol, uv, ir, pmr, ms, struct, synth*)
Thappa, R.K. *et al., Phytochemistry*, 1996, **42**, 1485 (*Demethoxyaniflorine*)

2-Anilino-1,4-naphthoquinone, 8CI A-1040

2-(Phenylamino)-1,4-naphthalenedione, 9CI. 4-Hydroxy-2-(phenylimino)-1(2H)-naphthalenone, 9CI. ***Lutine***
[66855-47-8]



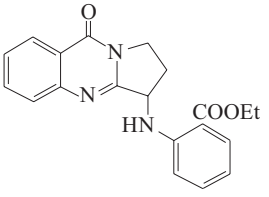
$C_{16}H_{11}NO_2$ 249.268
Alkaloid from *Reseda luteola* (Resedaceae). Dye for wool and silk. Cherry-red cryst. ($CHCl_3$ or EtOH aq.). Mp 190-191°. λ_{max} 220 (log ϵ 4.2); 271 (log ϵ 4.53); 325 (log ϵ 3.68); 465 (log ϵ 3.77) (EtOH).

[6628-97-3]

Blackhall, A. *et al., J.C.S.*, 1953, 1138-1143 (*synth*)
Inoue, A. *et al., CA*, 1961, **55**, 13853i (*synth*)
Jerzy, M. *et al., Pol. J. Chem. (Rocz. Chem.)*, 1974, **48**, 147-153 (*uv*)
Lutfullin, K.L. *et al., Khim. Prir. Soedin.*, 1977, 826-830; *Chem. Nat. Compd. (Engl. Transl.)*, 1978, **13**, 696-699 (*isol, ir, ms, uv*)

Anisessine A-1041

Methyl 2-[(1,2,3,9-tetrahydro-9-oxopyrrolo[2,1-b]quinazolin-3-yl)amino]benzoate, 9CI. Methyl N-(1,2,3,9-tetrahydro-9-oxopyrrolo[2,1-b]quinazolin-3-yl)anthranilate, 8CI
[16688-20-3]



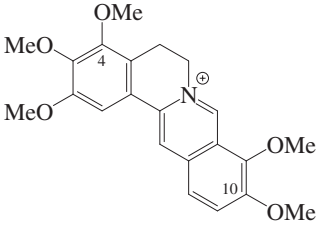
$C_{20}H_{19}N_3O_3$ 349.388
Minor alkaloid from the leaves and branches of *Anisotes sessiliflorus* (Acanthaceae). Cryst. (MeOH). Mp 170-171°. Opt. inactive.

Me ester analogue: ***Vasnetine***
[158734-26-0]
$C_{19}H_{17}N_3O_3$ 335.362
Alkaloid from leaves of *Adhatoda vasica* (Acanthaceae). Mp 185-187°.

Arndt, R.R. *et al., Tetrahedron*, 1967, **23**, 3521 (*isol, uv, ir, pmr, ms, struct*)
Onaka, T. *et al., Tet. Lett.*, 1971, 4387 (*synth*)
Joshi, B.S. *et al., J. Nat. Prod.*, 1994, **57**, 953 (*Vasnetine*)

Anisocycline A-1042

5,6-Dihydro-2,3,4,9,10-pentamethoxydibenzo[a,g]quinolizinium(1+), 9CI
[125085-14-5]



$C_{22}H_{24}NO_5^{\oplus}$ 382.435
Quaternary alkaloid from the roots of *Anisocycla cymosa* (Menispermaceae). Yellow needles (MeOH). Mp 195°. Counterion not specified.

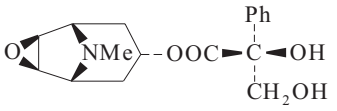
O^4-De-Me: ***Lincangenine***
[142741-22-8]
$C_{21}H_{22}NO_5^{\oplus}$ 368.409
Alkaloid from the roots of *Stephania lincangensis* (Menispermaceae).

O^4,O^{10}-Di-de-Me: ***Fissisaine***
[211235-37-9]
$C_{20}H_{20}NO_5^{\oplus}$ 354.382
Alkaloid from *Fissistigma balansae*. Yellow needles (as chloride). Mp >300° (chloride). λ_{max} 206 ; 230 ; 282 ; 337 (EtOH).

Kanyinda, B. *et al., Planta Med.*, 1989, **55**, 394 (*isol, uv, ir, pmr, ms, struct*)
Chen, Y. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 1991, **33**, 552; *CA*, **117**, 86637g (*Lincangenine*)
Chia, Y.C. *et al., Phytochemistry*, 1998, **48**, 367-369 (*Fissisaine*)

Anisodine A-1043

9-Methyl-3-oxa-9-azatricyclo[3.3.1.$0^{2,4}$]-non-7-yl α-hydroxy-α-(hydroxymethyl)-benzeneacetate, 9CI. 3α-(2,3-Dihydroxy-2-phenylpropionyl)-6β,7β-epoxytropane. 6,7-Epoxy-3-tropanyl 2,3-dihydroxy-2-phenylpropionate. α-Hydroxyscopolamine. Daturamine
[52646-92-1]



$C_{17}H_{21}NO_5$ 319.357
Ester of Scopine, S-158 with 2,3-Dihydroxy-2-phenylpropanoic acid. Antispasmodic, anticholinergic agent. Mp 182-183° (as hydrochloride). $[\alpha]_D$ -18.5 (c,3 in H_2O). Log P -0.51 (calc).

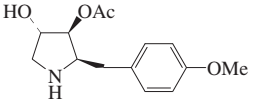
(S)-form
Minor alkaloid from *Datura sanguinea* (Solanaceae), impurity in coml. Scopolamine. Present in many Chinese plants. Shows strong depressant effect in rabbits. Some claimed syntheses are dubious.

(±)-form
Mp 217-219° (as hydrochloride).

Moorhoff, C.F. *et al., Planta Med.*, 1975, **28**, 106-108 (*isol*)
Minina, S.A. *et al., Khim. Prir. Soedin.*, 1977, **13**, 712-713; *Chem. Nat. Compd. (Engl. Transl.)*, 1977, **13**, 598 (*isol*)
Bode, J. *et al., Acta Cryst. B*, 1982, **38**, 333-335 (*cryst struct, abs config*)
Bian, C. *et al., CA*, 1982, **96**, 46211e (*pharmacol*)
Xie, J. *et al., CA*, 1982, **97**, 216529c; **98**, 215843m; 1984, **100**, 139413 (*S-form, synth, abs config*)
Fodor, G. *et al., Nat. Prod. Rep.*, 1984, **1**, 232-234 (*rev*)
He, L. *et al., CA*, 1991, **114**, 129215 (*occur*)
Wu, Y.F. *et al., Chin. Chem. Lett.*, 2005, **16**, 1287-1289 (*synth*)

Anisomycin A-1044

2-(4-Methoxyphenylmethyl)-3,4-pyrrolidinediol 3-acetate, 9CI. Flagecidin. PA 106. SA 3097C_1. Antibiotic SA 3097C_1. Antibiotic PA 106. Anhydroscopin A. NSC 76712



(-)-*form*

$C_{14}H_{19}NO_4$ 265.308
Log P 1.13 (calc). λ_{max} 223 (ϵ 10900); 276 (ϵ 1790); 283 (ϵ 1550) (MeOH) (Derep).
► BZ9800000

(-)-form [22862-76-6]
Isol. from *Streptomyces griseolus*, *Streptomyces anhydroscopicus* and *Streptomyces roseochromogenes*. Antibiotic and

antifungal agent. Protein synthesis inhibitor. Has been used to induce amnesia in animal models. Long needles (EtOAc, H_2O or toluene). Mp 141.6-142.2°. $[\alpha]_D^{23}$ -30 (c, 1 in MeOH). $[\alpha]_D$ -44.6 ($CHCl_3$). pK_a 7.9. Pharmacol. active isomer.

► LD_{50} (rat, orl) 72 mg/kg. LD_{50} (rat, ipr) 345 mg/kg.

Hydrochloride:
Cryst. (EtOAc/EtOH). Mp 187-188°.

O-*De-Ac: Deacetylanisomycin*. ***Antibiotic SA 3097D$_1$***. *SA 3097D$_1$*
[27958-06-1]
$C_{12}H_{17}NO_3$ 223.271
Prod. by *Streptomyces* sp. SA3097. Solid. Sol. MeOH, H_2O. $[\alpha]_D^{25}$ -22.5 (c, 1 in MeOH). λ_{max} 223 (ϵ 11000); 276 (ϵ 1100); 282 (sh) (ϵ 1000) (MeOH) (Derep). λ_{max} 225 ; 277 (MeOH) (Berdy).

O-*De-Ac, 3-propanoyl:* ***Antibiotic SA 3097B$_1$***. *SA 3097B$_1$*
[139755-62-7]
$C_{15}H_{21}NO_4$ 279.335
Prod. by *Streptomyces* sp. SA3097. Powder. Sol. MeOH, H_2O. λ_{max} 223 (ϵ 10900); 276 (ϵ 1790); 283 (ϵ 1550) (MeOH) (Derep). λ_{max} 224 ; 275 ; 282 (MeOH) (Berdy). λ_{max} 223 ; 276 ; 282 (EtOH) (Berdy).

O-*De-Ac, 3-butanoyl:* ***Anisomycin C***
[96740-19-1]
$C_{16}H_{23}NO_4$ 293.362
Prod. by *Streptomyces* sp. C4826. Cryst. Sol. MeOH, EtOAc; poorly sol. H_2O. λ_{max} 225 (ϵ 12300); 277 (ϵ 1380); 283 (ϵ 1090) (EtOH).

O-*De-Ac, 3-(3-methylbutanoyl):* ***Anisomycin D***
[96751-33-6]
$C_{17}H_{25}NO_4$ 307.389
Prod. by *Streptomyces* sp. C4826. Cryst. Sol. MeOH, EtOAc; poorly sol. H_2O. $[\alpha]_D$ -43 (MeOH). λ_{max} 225 (ϵ 14500); 276 (ϵ 2190); 283 (ϵ 1820) (EtOH).

O-*De-Me: De*-O-*methylanisomycin*. ***Antibiotic SA 3097C$_2$***. *SA 3097C$_2$*
[139755-64-9]
$C_{13}H_{17}NO_4$ 251.282
Prod. by *Streptomyces* sp. SA3097. Oil. Sol. MeOH, H_2O. λ_{max} 223 (ϵ 10900); 276 (ϵ 1790); 283 (ϵ 1550) (MeOH) (Derep). λ_{max} 225 ; 275 ; 280 (MeOH) (Berdy). λ_{max} 225 ; 277 (EtOH) (Berdy).

O-*De-Me,* O-*de-Ac: Deacetylde*-O-*methylanisomycin*. ***Antibiotic SA 3097D$_2$***. *SA 3097D$_2$*
[152338-66-4]
$C_{11}H_{15}NO_3$ 209.244
Prod. by *Streptomyces* sp. SA3097. Sol. MeOH, H_2O. λ_{max} 223 (ϵ 11000); 276 (ϵ 1100); 282 (sh) (ϵ 1000) (MeOH) (Derep). λ_{max} 225 ; 277 (MeOH) (Berdy).

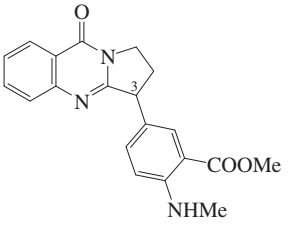
O-*De-Me, 3-propanoyl,* O-*de-Ac:* ***Antibiotic SA 3097B$_2$***. *SA 3097B$_2$*
[139755-63-8]
$C_{14}H_{19}NO_4$ 265.308
Prod. by *Streptomyces* sp. SA3097. Oil. Sol. MeOH, H_2O. λ_{max} 223 (ϵ 10900); 276 (ϵ 1790); 283 (ϵ 1550) (MeOH) (Derep). λ_{max} 225 ; 275 ; 280 (MeOH) (Berdy). λ_{max} 225 ; 277 (EtOH) (Berdy).

(±)-*form*
Cryst. (EtOAc). Mp 126-127°.

Sobin, B.A. *et al., J.A.C.S.*, 1954, **76**, 4053 (*isol*)
Schaefer, J.P. *et al., J.O.C.*, 1968, **33**, 166 (*cryst struct*)
Butler, K. *et al., J.O.C.*, 1968, **33**, 2136 (*struct, pmr, conformn*)
Wong, C.M. *et al., Can. J. Chem.*, 1969, **47**, 2421 (*synth, ir*)
Oida, S. *et al., Chem. Pharm. Bull.*, 1969, **17**, 1405
Felner, I. *et al., Helv. Chim. Acta*, 1970, **53**, 754 (*synth, ir, ms*)
Verheyden, J.P. *et al., Pure Appl. Chem.*, 1978, **50**, 1363 (*rev*)
Jimenez, A. *et al., Antibiotics (N.Y.)*, 1979, **5**, 1 (*rev*)
Martinez, J.L. *et al., Prog. Neurobiology*, 1981, **16**, 155 (*pharmacol, rev*)
Schumacher, D.P. *et al., J.A.C.S.*, 1982, **104**, 6076 (*synth*)
Buchanan, J.G. *et al., Chem. Comm.*, 1983, 486 (*synth*)
Shono, T. *et al., Chem. Lett.*, 1987, 697 (*synth, bibl*)
Baer, H.H. *et al., J.O.C.*, 1988, **53**, 4786 (*synth, bibl*)
Takano, S. *et al., Heterocycles*, 1989, **29**, 1861 (*synth*)
Ballini, R. *et al., J.O.C.*, 1992, **57**, 1316 (*synth*)
Hosoya, Y. *et al., J. Antibiot.*, 1993, **46**, 1300 (*sar*)
LeFevre, J.W. *et al., Magn. Reson. Chem.*, 1993, **31**, 318 (*cmr*)
Cano, E. *et al., Mol. Cell. Biochem.*, 1994, **14**, 7352 (*pharmacol*)
Yoda, H. *et al., Heterocycles*, 1995, **41**, 2423 (*synth*)
Huang, P.Q. *et al., Nat. Prod. Lett.*, 1998, **11**, 101-106 (*synth*)
Reddy, G.V. *et al., Indian J. Chem., Sect. B*, 1999, **38**, 133-136 (*synth, de-Ac*)
Delair, P. *et al., J.O.C.*, 1999, **64**, 1383-1386 (*synth*)
Hulme, A.N. *et al., Org. Lett.*, 2002, **4**, 265-267 (*synth*)
Chandrasekhar, S. *et al., Synthesis*, 2002, 1867-1870 (*de-Ac*)
Merino, P. *et al., Eur. J. Org. Chem.*, 2003, 2877-2881 (*de-Ac, synth*)
Chang, M.-Y. *et al., Heterocycles*, 2003, **60**, 1203-1209 (*synth*)
Ono, M. *et al., Tetrahedron*, 2004, **60**, 10187-10195 (*synth*)
Joo, J.-E. *et al., Org. Lett.*, 2007, **9**, 3627-3630 (*synth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, AOY000

Anisotine A-1045

*Methyl 2-(methylamino)-5-(1,2,3,9-tetrahydro-9-oxopyrrolo[2,1-*b*]quinazolin-3-yl)benzoate, 9CI. Methyl* N*-methyl-5-(1,2,3,9-tetrahydro-9-oxopyrrolo[2,1-*b*]quinazolin-3-yl)anthranilate, 8CI*
[16688-19-0]



$C_{20}H_{19}N_3O_3$ 349.388
Minor alkaloid from the leaves and branches of *Anisotes sessiliflorus*. Also isol. from *Adhatoda vasica* (Acanthaceae). Cryst. (Me_2CO/hexane). Mp 189-190°. Opt. inactive.

Deoxo: ***Adhatodine***
[33903-14-9]
$C_{20}H_{21}N_3O_2$ 335.405
Alkaloid from *Adhatoda vasica* (Acanthaceae). Cryst. (Me_2CO/hexane or $CHCl_3$/heptane). Mp 183°.

3-Hydroxy: ***3-Hydroxyanisotine***
[16688-24-7]
$C_{20}H_{19}N_3O_4$ 365.388
Alkaloid from *Adhatoda vasica*. Mp 185-187° (182-184°). λ_{max} 226 (log ϵ 4.74); 263 (log ϵ 4.46); 302 (log ϵ 3.98); 314 (log ϵ 3.87); 353 (log ϵ 3.69) (EtOH).

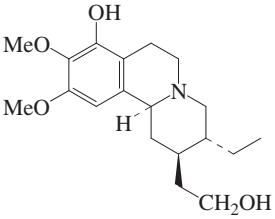
Arndt, R.R. *et al., Tetrahedron*, 1967, **23**, 3521-3532 (*isol, uv, ir, pmr, ms, struct*)
Johne, S. *et al., Helv. Chim. Acta*, 1971, **54**, 826 (*isol, uv, ir, pmr, ms, struct, Anisotine,Adhatodine*)
Joshi, B.S. *et al., J. Nat. Prod.*, 1994, **57**, 953-962 (*isol, pmr, cmr*)

Ankoline A-1046

$C_{17}H_{36}N_2O_4$ 332.482
Struct. unknown. Alkaloid from *Alangium lamarckii*. Brownish-yellow cryst. Mp 110° Mp 153° (as picrate).

Basu, N.K. *et al., Indian J. Pharm.*, 1950, **12**, 98-99 (*isol*)

Ankorine A-1047



(-)-*form*

$C_{19}H_{29}NO_4$ 335.442
The 8-hydroxy congener of Protoemetinol in P-664.

(-)-*form* [13849-54-2]
Alkaloid from the leaves of *Alangium lamarckii* and the branches of *Alangium salviifolium* (Alangiaceae). Prisms (Me_2CO). Mp 176-177° (174-176°). $[\alpha]_D^{16}$ -58 (c, 0.23 in $CHCl_3$). λ_{max} 272 (log ϵ 2.96) (EtOH). λ_{max} 287 (log ϵ 3.43) (0.1*M* NaOH). λ_{max} 230 (sh) (log ϵ 3.97); 273 (log ϵ 3.01); 280 (sh) (log ϵ 2.94) (MeOH). λ_{max} 273 (log ϵ 3.02); 279 (sh) (log ϵ 3.01) (0.1*M* NCl).

Hydrochloride:
Cryst. + 1H_2O (EtOH/Et_2O). Mp 233-234°.

Hydrobromide: Mp 220-222° dec.

Carboxylic acid: ***Alancine***
[92631-63-5]
$C_{19}H_{27}NO_5$ 349.426
Alkaloid from the stem bark of *Alangium lamarckii* (Alangiaceae). Mp 229-

230°. $[\alpha]_D^{25}$ -40 (c, 0.1 in MeOH). Forms hemihydrate, Mp 216-220.5° dec.

Carboxylic acid, hydrochloride: Minute prisms (EtOH). Mp 247.5-248.5°. $[\alpha]_D^{22}$ -28 (c, 0.101 in MeOH).

(±)-*form* [56816-22-9]
Synthetic. Mp 200-202° (192.5°).

Hydrochloride: Mp 132-133°.

Carboxylic acid: Synthetic. Prisms + 1/2H_2O (EtOH aq.). Mp 217-218° dec.

Carboxylic acid, hydrochloride: Minute needles (EtOH aq.). Mp 241.5-245° dec.

Dasgupta, B. *et al., J. Pharm. Sci.*, 1965, **54**, 481-483 (*isol, uv, ir, pmr*)
Battersby, A.R. *et al., Tet. Lett.*, 1966, 4965-4971 (*uv, ir, pmr, ms*)
Yoshifuji, S. *et al., Tet. Lett.*, 1975, 1965-1968 (*abs config*)
Szántay, C. *et al., Chem. Ber.*, 1976, **109**, 2420-2429 (*struct, synth, ir, pmr, ms*)
Fujii, T. *et al., J.O.C.*, 1980, **45**, 1889-1893 (*uv, ir, pmr, ms, abs config*)
Fujii, T. *et al., Tetrahedron*, 1980, **36**, 965-968 (*synth*)
Chen, M.-J. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 1980, **22**, 257; *CA*, **94**, 12818b (*isol*)
Chattopadhyay, S.K. *et al., Heterocycles*, 1984, **22**, 1965-1968 (*Alancine, isol, uv, ir, pmr, cmr, ms, struct, synth*)
Fujii, T. *et al., Chem. Pharm. Bull.*, 1986, **34**, 669-676; 1987, **35**, 3470-3474; 1988, **36**, 2665-2668 (*Alancine, Ankorine, synth, uv, ir, pmr, cd*)

Annapawine A-1048

$C_{16}H_{17}NO_3$ 271.315

Amaryllidaceae alkaloid. Struct unknown. Isol. from the *Hippeastrum* hybrid "Anna Pavlovna" (Amaryllidaceae). Cryst. (Me_2CO). Mp 219°. $[\alpha]_D^{25}$ +74 (c, 0.2 in $CHCl_3$).

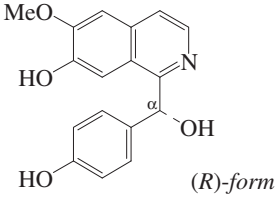
Hydroiodide: Mp 221° dec.

Picrate: Mp 249° dec.

Boit, H.-G. *et al., Naturwissenschaften*, 1960, **47**, 470-471 (*isol*)

Annocherine A A-1049

Annocherine C



(*R*)-*form*

$C_{17}H_{15}NO_4$ 297.31

Annocherine A was the *S*-enantiomer and Annocherine C the *R*-form.

(*R*)-*form* [431982-10-4]
Alkaloid from the leaves of *Annona cherimola* (cherimoya). Yellow amorph. powder. Mp 123-125°. $[\alpha]_D^{25}$ -125 (c, 0.3 in $CHCl_3$). λ_{max} 260 ; 300 ; 331 (MeOH).

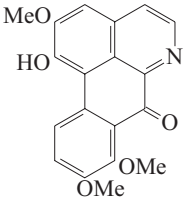
(*S*)-*form*
Alkaloid from *Annona cherimola* (cherimoya). Yellow needles. Mp 156-158°. $[\alpha]_D^{24}$ +135 (c, 0.1 in $CHCl_3$). λ_{max} 260 (log ε 3.41); 300 (log ε 3.1); 330 (log ε 3.52) (MeOH).

α-Me ether: ***Annocherine B***
$C_{18}H_{17}NO_4$ 311.337
Alkaloid from *Annona cherimola* (cherimoya). Amorph. yellow powder. Mp 196-198°. $[\alpha]_D^{24}$ +115 (c, 0.1 in $CHCl_3$). λ_{max} 260 (log ε 3.32); 300 (log ε 3.11); 331 (log ε 3.6) (MeOH).

Chen, C.-Y. *et al., J. Chin. Chem. Soc. (Taipei)*, 2001, **48**, 1203-1206 (*Annocherine C*)
Chen, C.-Y. *et al., Phytochemistry*, 2001, **56**, 753-757 (*Annocherine A,B*)

Annolatine A-1050

[149998-52-7]

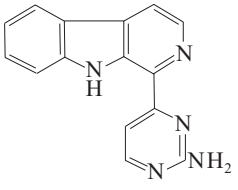


$C_{19}H_{15}NO_5$ 337.331
Alkaloid from leaves of *Annona montana* (Annonaceae). Green amorph. powder.

Wu, Y.-C. *et al., Phytochemistry*, 1993, **33**, 497 (*isol, uv, ir, pmr, ms, struct*)

Annomontine A-1051

*4-(9*H*-Pyrido[3,4-*b*]indol-1-yl)-2-pyridinamine, 9CI. 1-(2-Amino-4-pyrimidinyl)-β-carboline. Annomurine*
[82504-00-5]



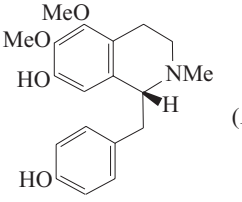
$C_{15}H_{11}N_5$ 261.285
Alkaloid from the bark of *Annona foetida* and *Annona montana*. Yellow cryst. (CH_2Cl_2). Mp 249-250°. λ_{max} 246 ; 312 ; 398 ; 428 ($CHCl_3$).

N^9*-Hydroxy:* ***N^9-Hydroxyannomontine***
$C_{15}H_{11}N_5O$ 277.285
Alkaloid from the bark of *Annona foetida*. Red needles ($CHCl_3$). Mp 249-250°. Hydroxylated at the indolic N. λ_{max} 244 (log ε 4.3); 314 (log ε 3.97); 434 (log ε 3.63) ($CHCl_3$).

*6-Methoxy: 4-(6-Methoxy-9*H*-pyrido[3,4-*b*]indol-1-yl)-2-pyrimidamine, 9CI. 1-(2-Amino-4-pyrimidinyl)-6-methoxy-β-carboline.* ***Methoxyannomontine***
[82504-01-6]
$C_{16}H_{13}N_5O$ 291.312
Alkaloid from the root bark of *Annona montana* (Annonaceae). Orange cryst. (EtOH). Mp 229-230° (223°).

Yokomori, Y. *et al., Bull. Chem. Soc. Jpn.*, 1982, **55**, 2236 (*isol, cryst struct*)
Leboeuf, M. *et al., J.C.S. Perkin 1*, 1982, 1205 (*uv, ir, pmr, cmr, ms, struct, deriv*)
Bracher, F. *et al., Annalen*, 1993, 837 (*synth*)
Costa, E.V. *et al., J. Nat. Prod.*, 2005, **69**, 292-294 (*N-Hydroxyannomontine*)

Annonelliptine A-1052



(*R*)–*form*

$C_{19}H_{23}NO_4$ 329.395

(*R*)-*form* [96400-46-3]
Alkaloid from the leaves and stems of *Annona elliptica* (Annonaceae). Needles (MeOH). Mp 198-200°. $[\alpha]_D^{22}$ -101 (c, 0.38 in $CHCl_3$/MeOH 1:1). λ_{max} 225 (sh) (log ε 4.22); 282 (log ε 3.51) (MeOH).

N-*De-Me:* ***Anomoline***
[142287-93-2]
$C_{18}H_{21}NO_4$ 315.368
Alkaloid from stems of *Annona cherimola* (Annonaceae). Mp 193-194.5°. $[\alpha]_D^{25}$ +27.82 (MeOH).

(±)-*form*
Synthetic. Mp 182.5-184°. CAS No. not found 10-14CI.

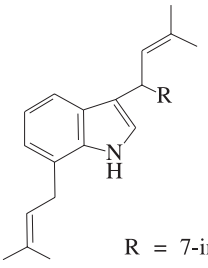
Hydrochloride: [173789-57-6]
Cryst. (EtOH). Mp 230-231°.

N-*De-Me, hydrochloride:* [173789-58-7]
Cryst. (EtOH). Mp 238.5-240°.

Sandoval, D. *et al., Phytochemistry*, 1985, **24**, 375-376 (*isol, uv, ir, pmr, cmr, ms, ord, struct*)
Yang, T.H. *et al., Chin. Pharm. J. (Taipei)*, 1991, **43**, 457-463; *CA*, **117**, 44523m (*Anomoline*)
Chen, C.-M. *et al., J. Nat. Prod.*, 1995, **58**, 1767-1771 (*synth, Annonelliptine, Anomoline*)

Annonidine A A-1053

[99102-30-4]



R = 7-indolyl

$C_{26}H_{28}N_2$ 368.521
Alkaloid from the stem bark of *Anonidium mannii* (Annonaceae) and roots of *Esenbeckia leiocarpa* (Rutaceae). Needles (petrol/EtOAc). Mp 106-108°. $[\alpha]_D^{20}$ 0 (c, 1.0 in $CHCl_3$).

Achenbach, H. *et al., Heterocycles*, 1985, **23**, 2075 (*isol, uv, pmr, cmr, ms, struct*)

Somei, M. *et al., Heterocycles*, 1987, **26**, 1783 (*synth*)
Delle Monache, F. *et al., Gazz. Chim. Ital.*, 1989, **119**, 435 (*isol*)

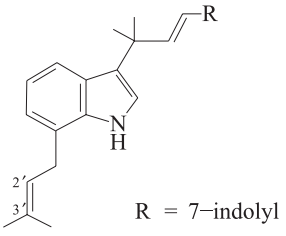
Annonidine B **A-1054**

[99102-31-5]
As Annonidine A, A-1053 with
R = 3-indolyl
$C_{26}H_{28}N_2$ 368.521
Alkaloid from the stem bark of *Anonidium mannii* (Annonaceae).

Achenbach, H. *et al., Heterocycles*, 1985, **23**, 2075 (*isol, uv, pmr, cmr, ms, struct*)

Annonidine C **A-1055**

[99102-32-6]



R = 7−indolyl

$C_{26}H_{28}N_2$ 368.521
Alkaloid from the stem bark of *Anonidium mannii* (Annonaceae) and roots of *Esenbeckia leiocarpa* (Rutaceae). Oil.

2′,3′-Epoxide: ***Annonidine E***
[99102-36-0]
$C_{26}H_{28}N_2O$ 384.52
Alkaloid from the stem bark of *Anonidium mannii*.

Achenbach, H. *et al., Heterocycles*, 1985, **23**, 2075 (*isol, uv, pmr, cmr, ms, struct*)
Delle Monache, F. *et al., Gazz. Chim. Ital.*, 1989, **119**, 435 (*isol*)

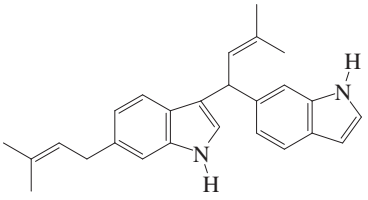
Annonidine D **A-1056**

[99102-34-8]
As Annonidine C, A-1055 with
R = 6-indolyl
$C_{26}H_{28}N_2$ 368.521
Alkaloid from the stem bark of *Anonidium mannii* (Annonoceae). Oil.

Achenbach, H. *et al., Heterocycles*, 1985, **23**, 2075 (*isol, uv, pmr, cmr, ms, struct*)

Annonidine F **A-1057**

[820965-40-0]

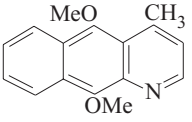


$C_{26}H_{28}N_2$ 368.521
Alkaloid from *Monodora angolensis.* Yellow oil.

Nkunya, M.H.H. *et al., Nat. Prod. Res.*, 2004, **18**, 253-258 (*isol, pmr, cmr*)

Annopholine **A-1058**

5,10-Dimethoxy-4-methylbenzo[g]quinoline, 9CI
[112494-58-3]

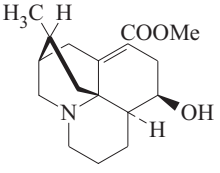


$C_{16}H_{15}NO_2$ 253.3
Alkaloid from the stem bark of *Annona hayesii* (Annonaceae). Amorph.

Rasamizafy, S. *et al., J. Nat. Prod.*, 1987, **50**, 759 (*isol, uv, pmr, ms, struct*)
Vallejos, G. *et al., Synth. Commun.*, 1999, **29**, 809-814 (*synth, ir, pmr, cmr*)

Annopodine **A-1059**

[20390-90-3]



Absolute configuration

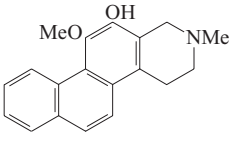
$C_{17}H_{25}NO_3$ 291.389
Alkaloid from *Lycopodium annotinum* (Lycopodiaceae). Mp 211-212°.

Perchlorate: Mp 210-212°.
Methiodide: Mp 240-242°.

Ayer, W.A. *et al., Tet. Lett.*, 1968, 4597 (*ir, uv, pmr, cryst struct*)

Annoretine **A-1060**

[149998-37-8]

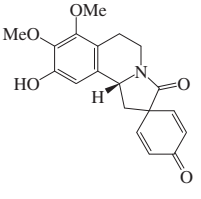


$C_{19}H_{19}NO_2$ 293.365
Alkaloid from leaves of *Annona montana* (Annonaceae). Exhibits significant cytotoxicity. Purple cryst. Mp 160-163°. λ_{max} 205 (ϵ 12020); 231 (ϵ 9770); 255 (ϵ 22387); 302 (ϵ 12020); 343 (ϵ 3300) (MeOH) (Berdy). λ_{max} 205 (ϵ 15488); 258 (ϵ 12882); 312 (ϵ 5128); 345 (ϵ 4900) (MeOH-NaOH) (Berdy).

Wu, Y.-C. *et al., Phytochemistry*, 1993, **33**, 497 (*isol, uv, ir, pmr, cmr, ms, struct*)
Pampin, M.C. *et al., Tet. Lett.*, 2001, **42**, 2307-2308 (*synth, cryst struct*)

Annosqualine **A-1061**

[770737-96-7]



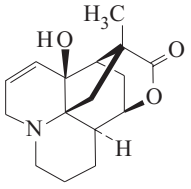
Absolute Configuration

$C_{19}H_{19}NO_5$ 341.363
Alkaloid from the stems of *Annona squamosa* (sugar apple). Syrup. $[\alpha]_D^{27}$ +56 (c 0.19 in MeOH).

Yang, Y.-L. *et al., Helv. Chim. Acta*, 2004, **87**, 1392-1399 (*isol, pmr, cmr, ms*)
Shigehisa, H. *et al., Tet. Lett.*, 2006, **47**, 7301-7306 (*synth*)

Annotine **A-1062**

Alkaloid L11
[5096-59-3]



Absolute configuration

$C_{16}H_{21}NO_3$ 275.347
Alkaloid from *Lycopodium annotinum* (Lycopodiaceae). Prisms (EtOH). Mp 174.5-176°. $[\alpha]_D^{21}$ -114 (c, 1 in $CHCl_3$).

Methiodide: Mp 236-237° dec.

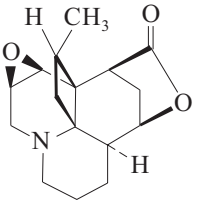
Dihydro: Mp 203-204°.

1:1 Complex with Acrifoline: Annotoxine
$C_{32}H_{44}N_2O_5$ 536.71
Isol. from *Lycopodium annotinum* (Lycopodiaceae). Cryst. (Me_2CO or MeOH). Mp 196-197°. $[\alpha]_D^{20}$ -187.1 (c, 1 in $CHCl_3$).

Bertho, A. *et al., Chem. Ber.*, 1952, **85**, 663 (*isol, uv*)
Achmatowicz, O. *et al., Pol. J. Chem. (Rocz. Chem.)*, 1955, **29**, 509 (*Annotoxine*)
Perry, G.S. *et al., Can. J. Chem.*, 1956, **34**, 1189 (*Annotoxine*)
Szarek, W.A. *et al., Can. J. Chem.*, 1964, **42**, 2584 (*ir, pmr, struct*)
MacLean, D.B. *et al., Can. J. Chem.*, 1966, **44**, 611 (*ms*)
Hughes, D.W. *et al., Can. J. Chem.*, 1989, **67**, 1765 (*pmr, cmr, struct*)

Annotinine **A-1063**

Alkaloid L7
[559-49-9]



$C_{16}H_{21}NO_3$ 275.347
Alkaloid from *Lycopodium annotinum, Lycopodium annotinum* var. *acrifolium, Lycopodium flabelliforme* and *Lycopodium obscurum* (Lycopodiaceae). Mp 232°.

▶ CA1190000

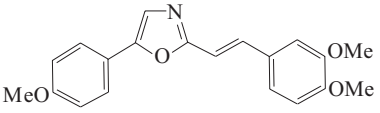
Hydrochloride:
Cryst. + ½ H_2O. Mp 210-211° dec.

Perchlorate: Mp 267°.

Manske, R.H.F. *et al., Can. J. Res., Sect. B*, 1943, **21**, 92 (*isol*)
Przybylska, M. *et al., Acta Cryst.*, 1958, **11**, 718 (*cryst struct*)
Wiesner, K. *et al., Tet. Lett.*, 1961, 187 (*abs config*)
MacLean, D.B. *et al., Can. J. Chem.*, 1963, **41**, 2654 (*ms*)
Wiesner, K. *et al., Can. J. Chem.*, 1969, **47**, 433 (*synth*)
Ho, T.-L. *et al., Tet. Lett.*, 1969, 1307 (*abs config*)
Hughes, D.W. *et al., Can. J. Chem.*, 1989, **67**, 1765 (*pmr, cmr*)
Ayer, W.A. *et al., Can. J. Chem.*, 1999, **77**, 1514-1520 (*pmr, conformn*)
Pihko, A.J. *et al., Tetrahedron*, 2005, **61**, 8769-8807 (*synth, rev*)

Annuloline A-1064

[3988-51-0]



$C_{20}H_{19}NO_4$ 337.374
Alkaloid from *Lolium multiflorum* (annual rye grass) (Poaceae). Mp 114° (105-106°).

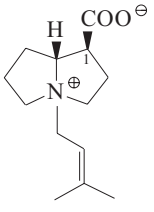
Hydrochloride: Mp 174-177°.

Picrate: Mp 216-218°.

Axelrod, B. *et al., J.O.C.*, 1958, **23**, 919 (*isol, uv*)
Karimoto, R.S. *et al., Tet. Lett.*, 1962, 83 (*pmr, synth*)
O'Donovan, D.G. *et al., J.C.S.(C)*, 1971, 331 (*biosynth*)
Smith, T.A. *et al., Phytochemistry*, 1977, **16**, 9 (*occur*)
Molina, P. *et al., Heterocycles*, 1993, **36**, 2255 (*synth*)

Anodendrine A-1065

*1-Carboxyhexahydro-4-(3-methyl-2-butenyl)-1*H*-pyrrolizinium, 9CI.* N-*Isopentenyllaburninic acid*
[28942-07-6]



$C_{13}H_{21}NO_2$ 223.314
Alkaloid from *Anodendron affine* (Apocynaceae). $[\alpha]_D^{25}$ +9.5 (EtOH). pK_a 3.7 (MeOH).

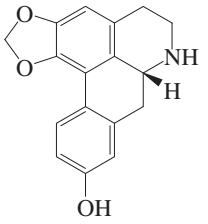
Picrate:
Yellow needles. Mp 123-124°.

1-Epimer: ***Alloanodendrine***
[29391-56-8]
$C_{13}H_{21}NO_2$ 223.314
From *Anodendron affine* (Apocynaceae). Oil. $[\alpha]_D^{25}$ +18 (EtOH). pK_a 3.2 (H_2O).

Sasaki, K. *et al., Tetrahedron*, 1970, **26**, 2119

Anolobine A-1066

9-Hydroxy-1,2-methylenedioxynoraporphine. Analobine



(*R*)-*form*

$C_{17}H_{15}NO_3$ 281.31

(R)-form [641-17-8]
Alkaloid from a variety of genera in the Annonaceae (*Annona, Asimina, Duguetia, Guatteria, Monodora, Polyalthia, Schefferomitra*) and Magnoliaceae (*Magnolia*). Shows antimicrobial activity. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 242-244° (>310°). $[\alpha]_D^{30}$ -19 (c, 0.42 in $CHCl_3$/MeOH).

N-*Formyl:* **N-*Formylanolobine***
$C_{18}H_{15}NO_4$ 309.321
Alkaloid from *Sciadotenia toxifera*. Purple-grey needles (CH_2Cl_2). Mp 284° dec. λ_{max} 246 (log ε 2.8); 282 (log ε 2.8); 294 (log ε 2.81); 310 (log ε 2.79) (MeOH).

N-*Ac:* **N-*Acetylanolobine***
[220464-95-9]
$C_{19}H_{17}NO_4$ 323.348
Alkaloid from *Magnolia coco*. Cryst. (MeOH). Mp 295-297°. λ_{max} 201 (log ε 3.56); 282 (log ε 3.04) (MeOH).

N-*Me: 9-Hydroxy-1,2-methylenedioxyaporphine.* ***Roemeroline****. Remeroline.* N-*Methylanolobine*
[21059-86-9]
$C_{18}H_{17}NO_3$ 295.337
Alkaloid from *Roemeria refracta*, *Stephania pierrei*, *Stephania sasakii* and *Duguetia obovata*. Shows antimalarial props. Needles + 1MeOH (MeOH). Mp 218-220° (sint. at 133-135°). $[\alpha]_D$ -32.1 (c, 0.437 in $CHCl_3$). λ_{max} 281 (ε 8912) (MeOH) (Berdy).

N-*Me; hydrochloride:*
Cryst. (HCl aq.). Mp 220-225°.

Me ether: 9-Methoxy-1,2-methylenedioxynoraporphine. ***Xylopine****.* O-*Methylanolobine. Artabotrinine*
[517-71-5]
$C_{18}H_{17}NO_3$ 295.337
Alkaloid from *Guatteria amplifolia*, *Xylopia discreta* and *Xylopia papuana*, poss. also from the bark of *Artabotrys suaveolens* (Annonaceae). CNS depressant, shows antimicrobial activity. Mp 78-102°. $[\alpha]_D^{22}$ -28.2 (c, 0.001 in MeOH). Struct. of Artabotrinine not definitely establ., identity with Xylopine not certain.

Me ether, hydrochloride: Mp 250°.

Me ether, N-*formyl:* **N-*Formylxylopine***
[89368-31-0]
$C_{19}H_{17}NO_4$ 323.348
Trace alkaloid from the leaves of *Duguetia obovata* (Annonaceae).
Cryst. (MeOH). Mp 173°. $[\alpha]_D$ -248 (c, 1.70 in $CHCl_3$).

Me ether, N-*methoxycarbonyl: 9-Methoxy-*N*-methoxycarbonyl-1,2-methylenedioxynoraporphine*
$C_{20}H_{19}NO_5$ 353.374
Alkaloid from the stems of *Fissistigma bracteolatum*. Powder. Mp 174-176°. $[\alpha]_D^{20}$ -281.7 (c, 0.01 in $CHCl_3$). MF incorr. in ref. λ_{max} 215 (log ε 4.38); 239 (log ε 4.03); 282 (log ε 4.24); 325 (log ε 3.41) (no solvent reported).

Me ether, N-*Me: 9-Methoxy-1,2-methylenedioxyaporphine.* ***(-)-Isolaureline****.* N-*Methylxylopine*
[475-84-3]
$C_{19}H_{19}NO_3$ 309.364
Trace alkaloid from the leaves of *Duguetia obovata* and from *Stephania pierrei* . Antimalarial. Needles (Me_2CO/Et_2O). Mp 108-110°. $[\alpha]_D^{26}$ -36.7 (EtOH).

Me ether, N-*Me, hydrochloride:*
Prisms (MeOH/2-propanol). Mp 243-246° dec.

Me ether, N-*Me,* N-*oxide:* ***Isolaureline* N-*oxide***
[104385-28-6]
$C_{19}H_{19}NO_4$ 325.363
Alkaloid from *Magnolia obovata*.

Me ether, N,N-*di-Me:* **N,N-*Dimethylxylopine***
$C_{20}H_{22}NO_3^{\oplus}$ 324.399
Quaternary alkaloid from *Monodora grandidieri* and *Monodora junodii*. Prisms (MeOH) (as iodide). Mp 229-232° dec. (iodide).

Me ether, N-*nitroso:* **N-*Nitrosoxylopine***
$C_{18}H_{16}N_2O_4$ 324.335
Alkaloid from *Duguetia furfuracea*. Amorph. solid (MeOH/$CHCl_3$). $[\alpha]_D^{25}$ -264 (c, 0.5 in $CHCl_3$).

(S)-form

Me ether, N-*Me:* ***(+)-Isolaureline***
$C_{19}H_{19}NO_3$ 309.364
Alkaloid from *Liriodendron tulipifera* (Magnoliaceae). Needles (Et_2O). Mp 108-109°. $[\alpha]_D$ +40.3 (EtOH).

(±)-form
Synthetic. Pale brown cryst. ($CHCl_3$/MeOH). Mp 242-244°.

N-*Me:*Synthetic. Cryst. (MeOH). Mp 218-220°.

Me ether, N-*Me:*
Cryst. (C_6H_6). Mp 109-110°.

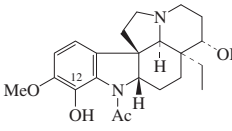
Me ether, N-*Me, hydrochloride:* Mp 238-240°.

Manske, R. *et al., Can. J. Res.*, 1938, **16**, 76 (*isol*)
Barger, G. *et al., J.C.S.*, 1939, 991 (*Artabotrinine*)
Faltis, F. *et al., Ber.*, 1944, **77**, 686 (*synth*)
Marion, L. *et al., J.A.C.S.*, 1944, **66**, 1125 (*synth*)
Schmutz, J. *et al., Helv. Chim. Acta*, 1959, **42**, 335 (*Xylopine, Isolaureline, isol, uv, synth*)
Slavík, J. *et al., Coll. Czech. Chem. Comm.*, 1968, **33**, 4066 (*Roemeroline*)
Johns, S.R. *et al., Aust. J. Chem.*, 1969, **21**, 1383 (*Xylopine, isol, pmr*)
Gellert, E. *et al., Aust. J. Chem.*, 1972, **25**, 2477 (*isol, pmr, ir, uv, ms*)

Ziyaev, R. *et al., Khim. Prir. Soedin.*, 1974, **10**, 685; *Chem. Nat. Compd. (Engl. Transl.)*, 1974, **10**, 714 (*Isolaureline*)
Pai, B.R. *et al., Heterocycles*, 1977, **6**, 1993 (*Roemeroline, synth*)
Suguna, H. *et al., Indian J. Chem., Sect. B*, 1977, **15**, 416 (*synth, uv, pmr*)
Ricca, G.S. *et al., Gazz. Chim. Ital.*, 1979, **109**, 1 (*pmr, cmr, Xylopine*)
Kunitomo, J. *et al., Chem. Pharm. Bull.*, 1981, **29**, 2251 (*Roemeroline*)
Roblot, F. *et al., J. Nat. Prod.*, 1983, **46**, 862 (*pmr, cmr: N-Formylxylopine*)
Villar, A. *et al., Farm. Tijdschr. Belg.*, 1984, **61**, 300 (*activity*)
Simeon, S. *et al., Pharmazie*, 1990, **45**, 442-443 (*activity*)
Sturua, M. *et al., CA*, 1998, **128**, 268208c (*Isolaureline N-oxide*)
Yu, H.-J. *et al., J. Chin. Chem. Soc. (Taipei)*, 1998, **45**, 773-778 (*N-Acetylanolobine*)
Freyer, A.J. *et al., Heterocycles*, 1999, **51**, 2221-2226 (*N-Formylanolobine*)
Deng, Y. *et al., Chin. Chem. Lett.*, 2002, **13**, 862-864 (*Me ether, N-methoxycarbonyl*)
Nishiyama, Y. *et al., Nat. Med. (Tokyo)*, 2004, **58**, 303-306; *CA*, **143**, 363319h (*N,N-Dimethylxylopine*)
Carollo, C.A. *et al., J. Nat. Prod.*, 2006, **69**, 1222-1224 (*N-Nitrosoxylopine*)

Anomaline† A-1067

1-Acetyl-16-methoxyaspidospermidine-6,17-diol, 9CI
[88660-02-0]



Relative Configuration

$C_{22}H_{30}N_2O_4$ 386.49
Alkaloid from the bark and leaves of *Microplumeria anomala* (Apocynaceae). Needles (EtOAc). Mp 216-218°. λ_{max} 226 (log ϵ 4.27); 259 (log ϵ 3.85) (MeOH).

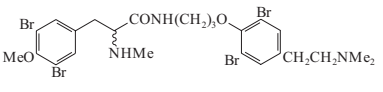
O^{12}-*Me:* ***12-O-Methylanomaline****. 1-Acetyl-16,17-dimethoxyaspidospermidin-6-ol, 9CI*
[88660-03-1]
$C_{23}H_{32}N_2O_4$ 400.517
Minor alkaloid from leaves of *Microplumeria anomala* (Apocynaceae).

Demethoxy: ***Demethoxyanomaline****. 1-Acetylaspidospermidine-6,17-diol, 9CI*
[88669-30-1]
$C_{21}H_{28}N_2O_3$ 356.464
Minor alkaloid from leaves of *Microplumeria anomala* (Apocynaceae). Needles (EtOAc). Mp 263-265°. λ_{max} 221 (log ϵ 4.13); 260 (log ϵ 3.72); 288 (log ϵ 3.47) (MeOH).

Luz, A.I.R. *et al., Phytochemistry*, 1983, **22**, 2301-2304 (*isol, uv, ir, pmr, cmr, ms, struct*)

Anomoian A A-1068

[129602-20-6]

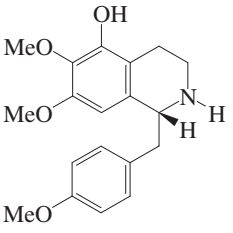


$C_{24}H_{31}Br_4N_3O_3$ 729.143
Metab. of the verongid sponge *Anomoianthella popeae*. Powder (as hydrochloride). Mp 200° dec. (hydrochloride). $[\alpha]_D$ +5.1 (c, 0.013 in MeOH). λ_{max} 245 (ϵ 12300); 276 (ϵ 9400); 283 (ϵ 7800) (MeOH).

Kernan, M.R. *et al., J. Nat. Prod.*, 1990, **53**, 720-723 (*isol, uv, ir, pmr, cmr, ms*)

Anomuricine A-1069

1,2,3,4-Tetrahydro-6,7-dimethoxy-1-[(4-methoxyphenyl)methyl]-5-isoquinolinol, 9CI. 1,2,3,4-Tetrahydro-5-hydroxy-6,7-dimethoxy-1-(4-methoxybenzyl)isoquinoline
[78416-89-4]



$C_{19}H_{23}NO_4$ 329.395

(R)-form

Me ether, N,N-*di-Me:* **N,N-*Dimethylanomurine***
Quaternary alkaloid from the roots of *Xylopia parviflora*. Amorph. powder (as perchlorate). $[\alpha]_D^{22}$ -26.3 (c, 0.32 in MeOH) (perchlorate). λ_{max} 277 (log ϵ 3.49); 283 (log ϵ 3.47) (MeOH) (perchlorate).

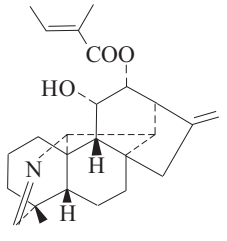
(ξ)-*form*
Minor alkaloid from the root and stem barks of *Annona muricata* (soursop) (Annonaceae). Noncryst.

Me ether: 1,2,3,4-Tetrahydro-5,6,7-trimethoxy-1-[(4-methoxyphenyl)methyl]isoquinoline, 9CI. ***Anomurine***
[78478-27-0]
$C_{20}H_{25}NO_4$ 343.422
Minor alkaloid from the root and stem bark of *Annona muricata* (soursop) (Annonaceae). Noncryst.

Leboeuf, M. *et al., Planta Med.*, 1981, **42**, 37 (*Anomurine, Anomuricine*)
Nishiyama, Y. *et al., Phytochemistry*, 2004, **65**, 939-944 (*N,N-Dimethylanomurine*)

Anopterimine A-1070

19,21-Didehydro-4-methyl-16-methylene-14,20-cycloveatchane-11,12-diol 12-(2-methyl-2-butenoate), 9CI
[60718-14-1]



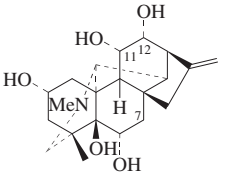
$C_{25}H_{33}NO_3$ 395.541
Minor alkaloid from the leaves of *Anopterus macleayanus* (Escalloniaceae). Prisms (Me_2CO). Mp 235-238°. $[\alpha]_D$ +106 (c, 0.6 in $CHCl_3$).

N-*Oxide:* ***Anopterimine* N-*oxide***
[60706-77-6]
$C_{25}H_{33}NO_4$ 411.54
Minor alkaloid from the leaves of *Anopterus macleayanus* (Escalloniaceae). Needles (Me_2CO). Mp 233-235°. $[\alpha]_D$ +95 (c, 1.1 in $CHCl_3$).

Hart, N.K. *et al., Aust. J. Chem.*, 1976, **29**, 1295; 1319 (*isol, ir, pmr, cmr, ms, struct*)

Anopteryl alcohol A-1071

[38826-63-0]



Absolute Configuration

$C_{21}H_{31}NO_5$ 377.48

12-Tigloyl: ***Anopteryl 12-tiglate***
$C_{26}H_{37}NO_6$ 459.581
Minor alkaloid from the root bark of *Anopterus macleayanus* (Escalloniaceae). Cryst. (Me_2CO). Mp 172-173°. $[\alpha]_D$ +15 (c, 0.21 in $CHCl_3$). Sometimes resolidifies and remelts at 205° when slowly heated.

11,12-Ditigloyl: ***Anopterine****. Anopteryl 11,12-ditiglate*
[38826-62-9]
$C_{31}H_{43}NO_7$ 541.683
Alkaloid from leaves and bark of *Anopterus macleayanus* and *Anopterus glandulosus* (Escalloniaceae). Antineoplastic agent. Prisms (Me_2CO). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 222-223°. $[\alpha]_D$ -12 (c, 1.47 in $CHCl_3$). Log P 0.88 (uncertain value) (calc).
▶ LD_{50} (mus, ipr) 100 mg/kg.

11-O-(4-Hydroxybenzoyl), 12-tigloyl: ***Anopteryl 11-4′-hydroxybenzoate 12-tiglate***
$C_{33}H_{41}NO_8$ 579.689
Minor alkaloid from *Anopterus macleayanus* (Escalloniaceae). Prisms (Me_2CO). Mp 273-276°. $[\alpha]_D$ -28 (c, 1.0 in $CHCl_3$/MeOH, 1:1).

7β-Hydroxy, 11,12-ditigloyl: ***Hydroxyanopterine***
$C_{31}H_{43}NO_8$ 557.683
Alkaloid from leaves and bark of *Anopterus macleayanus* and *Anopterus glandulosus* (Escalloniaceae). Needles (Me_2CO). Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. Mp 247-249°. $[\alpha]_D$ -14 (c, 1.1 in MeOH).

*7β-Hydroxy, 11-O-(4-hydroxy-3-methyl-2*E*-butenoyl), 12-tigloyl:* ***Dihydroxyanopterine***
$C_{31}H_{43}NO_9$ 573.682
Minor alkaloid from *Anopterus macleayanus* and *Anopterus glandulosus*

(Escalloniaceae). Cryst. (Me_2CO). Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. Mp 242-244°. $[\alpha]_D$ -9 (c, 1.2 in MeOH).

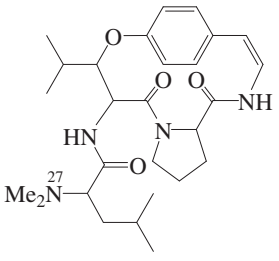
7β-Hydroxy, 11-benzoyl, 12-tigloyl: ***7-Hydroxyanopteryl 11-benzoate 12-tiglate***
$C_{33}H_{41}NO_8$ 579.689
Minor alkaloid from *Anopterus macleayanus* (Escalloniaceae). Amorph.

*7β-Hydroxy, 11-*O*-(4-hydroxybenzoyl), 12-tigloyl:* ***7-Hydroxyanopteryl 11-4′-hydroxybenzoate 12-tiglate***
$C_{33}H_{41}NO_9$ 595.688
Minor alkaloid from *Anopterus macleayanus* (Escalloniaceae). Noncryst.

Denne, W.A. *et al., Tet. Lett.*, 1972, 2727 (*Anopterine, cryst struct*)
Hart, N.K. *et al., Aust. J. Chem.*, 1976, **29**, 1295 (*isol, ir, pmr, cmr, ms, struct*)
Johns, S.R. *et al., Aust. J. Chem.*, 1985, **38**, 1091 (*Hydroxyanopterine, Dihydroxyanopterine*)

Anorldianine A-1072

[123690-71-1]



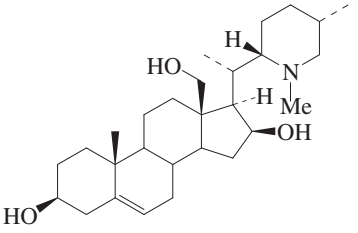
$C_{27}H_{40}N_4O_4$ 484.637
Alkaloid from the stem bark of *Canthium anorldianum* (Rubiaceae). Pinkish cryst. (Et_2O). Mp 160°.

N^{27}-Oxide: ***Anorldianine N^{27}-oxide***
$C_{27}H_{40}N_4O_5$ 500.637
Alkaloid from *Heisteria nitida*.

Dongo, E. *et al., J. Nat. Prod.*, 1989, **52**, 840 (*isol, uv, ir, pmr, cmr, ms, struct*)
El-Seedi, H.R. *et al., Phytochemistry*, 1999, **52**, 1739-1744 (*N^{27}-oxide*)

Anrakorinine A-1073

20-(1,5-Dimethyl-2-piperidinyl)-pregn-5-ene-3,16,18-triol, 9CI
[78285-94-6]

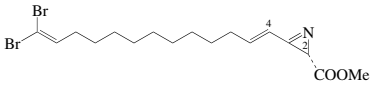


$C_{28}H_{47}NO_3$ 445.684
Alkaloid from the aerial parts of *Fritillaria camtschatcensis* (Liliaceae). Needles (Me_2CO). Mp 248-251°. $[\alpha]_D$ -50.4 (c, 0.79 in $CHCl_3$).

Tri-Ac:
Amorph.

Kaneko, K. *et al., Tet. Lett.*, 1978, 2099-2102 (*isol, struct, synth, pmr*)

Antazirine A-1074



(2*S*,4*E*)-*form*

$C_{17}H_{25}Br_2NO_2$ 435.198

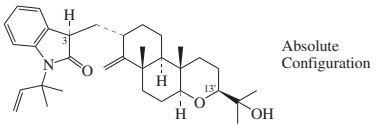
(2*S*,4*E*)-*form* [170385-24-7]
Isol. from the sponge *Dysidea fragilis*. Oil. $[\alpha]_D^{24}$ +16.7 (c, 0.58 in hexane) (30% e.e.). λ_{max} 213 ; 220 (sh) (MeOH).

(2*S*,4*Z*)-*form* [170554-75-3]
Isol. from *Dysidea fragilis*. Oil. $[\alpha]_D^{24}$ +98.9 (c, 3.33 in hexane) (78% e.e.). λ_{max} 215 ; 220 (sh) (MeOH).

Salomon, C.E. *et al., J. Nat. Prod.*, 1995, **58**, 1463-1466 (*isol, uv, ir, pmr, cmr, ms, struct*)
Skepper, C.K. *et al., J.O.C.*, 2008, **73**, 2592-2597 (*isol, pmr, cmr*)

Anthcolorin A A-1075

[358334-50-6]



$C_{33}H_{47}NO_3$ 505.739
Prod. by *Aspergillus versicolor* OUPS-N136 isol. from the sea urchin *Anthocidaris crassispina*.

3-Hydroxy: ***Anthcolorin G***
[358334-56-2]
$C_{33}H_{47}NO_4$ 521.739
Prod. by *Aspergillus versicolor* OUPS-N136 from the sea urchin *Anthocidaris crassispina*.

3-Epimer: ***Anthcolorin B***
[358334-51-7]
$C_{33}H_{47}NO_3$ 505.739
Prod. by *Aspergillus versicolor* OUPS-N136 from the sea urchin *Anthocidaris crassispina*.

3-Epimer, 3-hydroxy: ***Anthcolorin H***
[358334-57-3]
$C_{33}H_{47}NO_4$ 521.739
Prod. by *Aspergillus versicolor* OUPS-N136 from the sea urchin *Anthocidaris crassispina*.

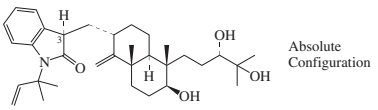
13′-Epimer: ***Anthcolorin C***
[358334-52-8]
$C_{33}H_{47}NO_3$ 505.739
Prod. by *Aspergillus versicolor* OUPS-N136 from the sea urchin *Anthocidaris crassispina*.

3,13′-Diepimer: ***Anthcolorin D***
[358334-53-9]
$C_{33}H_{47}NO_3$ 505.739
Prod. by *Aspergillus versicolor* OUPS-N136 from the sea urchin *Anthocidaris crassispina*.

Yamada, K. *et al., CA*, 2001, **135**, 204898 (*isol*)

Anthcolorin E A-1076

[358334-54-0]



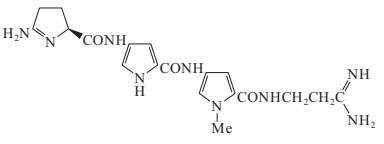
$C_{33}H_{49}NO_4$ 523.754
Prod. by *Aspergillus versicolor* OUPS-N136 isol. from the sea urchin *Anthocidaris crassispina*.

3-Epimer: ***Anthcolorin F***
[358334-55-1]
$C_{33}H_{49}NO_4$ 523.754
Prod. by *Aspergillus versicolor* OUPS-N136.

Yamada, K. *et al., CA*, 2001, **135**, 204898 (*isol*)

Anthelvencin A A-1077

[58616-25-4]



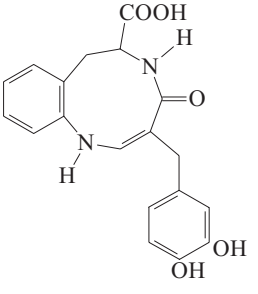
$C_{19}H_{25}N_9O_3$ 427.465
Oligopeptide antibiotic. Similar to Kikumycin A, K-43. Isol. from *Streptomyces venezuelae* ATCC14583. Anthelmintic, antiparasitic and nematocidal agent. Sol. MeOH, acids; fairly sol. H_2O; poorly sol. Me_2CO, hexane. Mp 170-175° dec. $[\alpha]_D^{22}$ +9.7 (H_2O). λ_{max} 235 (ϵ 18700); 300 (ϵ 19300) (HCl salt/H_2O) (Derep). λ_{max} 235 (E1%/1cm 437); 300 (E1%/1cm 451) (H_2O) (Berdy).
▶ LD_{50} (mus, ipr) 177 mg/kg. CA7808000

[113598-34-8 , 113598-28-0]

Probst, G.W. *et al., Antimicrob. Agents Chemother.*, 1965, 789
Lee, M. *et al., J.O.C.*, 1988, **53**, 1855 (*synth*)

Anthocerodiazonin A-1078

[159903-66-9]



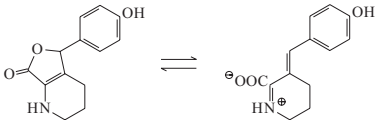
$C_{19}H_{18}N_2O_5$ 354.362

Alkaloid from *in vitro* cultures of *Anthoceros agrestis*. Amorph. solid. $[\alpha]_D^{20}$ +73.

Trennheuser, F. *et al., Phytochemistry*, 1994, **37**, 899 (*isol, uv, ir, pmr, cmr, struct*)

Anthosamine A A-1079

3,4,5,6-Tetrahydro-3-[(4-hydroxyphenyl)-methylene]-2-pyridinecarboxylic acid, 9CI
[165074-97-5]



$C_{13}H_{13}NO_3$ 231.251

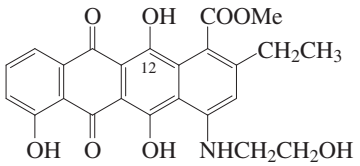
Shows reversible equilib. between lactone and zwitterion form; the latter predominates in protic solv. the former in aprotic solvs. Metab. from the marine sponge *Anthosigmella* aff. *raromicrosclera*. Induces larval metamorphosis in ascidians. Yellow solid. λ_{max} 229 (ϵ 7300); 249 (ϵ 6400); 283 (ϵ 4200); 368 (ϵ 14500) (MeOH) (Berdy). λ_{max} 287 (ϵ 7000) (DMSO) (Berdy).

N-*Me:* ***Anthosamine B****. 1,3,4,5-Tetrahydro-5-(4-hydroxyphenyl)-1-methylfuro[3,4-b]pyridin-7(2H)-one, 9CI*
[165074-96-4]
$C_{14}H_{15}NO_3$ 245.277
Metab. of *Anthosigmella* aff. *raromicrosclera*. Induces larval metamorphosis in ascidians. Yellow solid. $[\alpha]_D^{24}$ 0 (c, 0.15 in MeOH). λ_{max} 249 (ϵ 7100); 369 (ϵ 18400); 453 (ϵ 1900) (MeOH) (Berdy). λ_{max} 285 (ϵ 6000); 357 (ϵ 2400); 486 (ϵ 3600) (DMSO) (Berdy).

Tsukamoto, S. *et al., Tetrahedron*, 1995, **51**, 6687 (*isol, uv, ir, pmr, cmr, struct*)

Anthracyclinone blue B A-1080

Methyl 2-ethyl-5,7,12-trihydroxy-4-[(2-hydroxyethyl)amino]-6,11-dioxo-1-naphthacenecarboxylate
[140900-60-3]



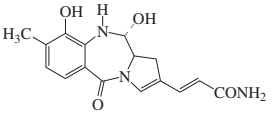
$C_{24}H_{21}NO_8$ 451.432
Prod. by a blocked mutant of *Streptomyces griseus* sp. ZIMET 43707. Deep blue solid.

12-Deoxy: ***Anthracyclinone blue A***
[140900-59-0]
$C_{24}H_{21}NO_7$ 435.432
Prod. by a blocked mutant of *Streptomyces galilaeus* S 383. Blue solid.

Eckardt, K. *et al., J. Basic Microbiol.*, 1991, **31**, 371-376

Anthramycin, USAN A-1081

3-(5,10,11,11a-Tetrahydro-9,11-dihydroxy-8-methyl-5-oxo-1H-pyrrolo[2,1-c][1,4]benzodiazepin-2-yl)-2-propenamide, 9CI. ***Antramycin, INN****. Refuin. Ro 5-9000. Antibiotic Ro 5-9000*
[4803-27-4]



$C_{16}H_{17}N_3O_4$ 315.328
Isol. from *Streptomyces refuineus* var. *thermotolerans* and *Streptomyces spadicogriseus*. Antibiotic with antineoplastic activity. DNA complexing agent. Small yellow prisms (Me_2CO aq.). Sol. DMF, DMSO, MeOH, butanol; poorly sol. hexane. Mp 188-194°. $[\alpha]_D^{25}$ +930 (c, 1 in DMF). Log P -1.1 (uncertain value) (calc). Cryst. from hot aq. MeOH gives the Me ether. Epimerises in soln. λ_{max} 235 (ϵ 18200); 333 (ϵ 31800) (MeCN) (Derep). λ_{max} 220 (ϵ 34000); 235 (sh) (ϵ 30000); 335 (ϵ 39400) (MeOH) (Derep).

▶ LD_{50} (mus, ipr) 0.65 mg/kg. UY8429000

11-Me ether:
Pale-yellow needles (H_2O). Mp 120° dec. $[\alpha]_D^{25}$ +1002 (c, 1 in DMF). λ_{max} 218 (ϵ 30000); 231 (ϵ 22100); 232 (sh); 334 (ϵ 40800); 360 (sh) (MeCN) (Derep).

Stereoisomer(?): ***Antibiotic PBA***
[16397-13-0]
$C_{16}H_{17}N_3O_4$ 315.328
Isol. from *Streptomyces spadicogriseus*. Antitumour agent. Cryst. (Me_2CO/EtOAc). Stereochem. not determined, may be identical with Anthramycin.

Leimgruber, W. *et al., J.A.C.S.*, 1965, **87**, 5791; 1968, **90**, 5641 (*isol, ir, uv, ms, nmr, struct, synth*)
Kohn, K.W. *et al., Antibiotics (N.Y.)*, 1975, **3**, 3 (*rev*)
Horwitz, S.B. *et al., Handb. Exp. Pharmacol.*, 1975, **38**, 642 (*rev, pharmacol*)
Hurley, L.H. *et al., J. Antibiot.*, 1977, **30**, 349-370 (*rev, biosynth*)
U.S. Pat., 1977, 4 011 140; *CA*, **86**, 153957 (*Antibiotic PBA*)
Mostad, A. *et al., Acta Chem. Scand., Ser. B*, 1978, **32**, 639 (*cryst struct*)
Komatsu, N. *et al., J. Antibiot.*, 1980, **33**, 54 (*isol*)
Hurley, L.H. *et al., Antibiotics (N.Y.)*, 1981, **4**, 262 (*rev*)
Ishikura, M. *et al., Chem. Comm.*, 1982, 741 (*synth*)
Peña, M.R. *et al., J.A.C.S.*, 1989, **111**, 5417 (*synth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, API000

Antibiotic 68-1147 A-1082

[66771-52-6]

Thiazole-peptide antibiotic complex. Struct. unknown. Prod. by *Micromonospora arborensis*. Antibacterial agent.

Antibiotic 68-1147-I
Sch 18640A. Antibiotic Sch 18640A
[66771-53-7]
Mp 229-231° dec. $[\alpha]_D^{26}$ -87.5 (c, 0.4 in dioxan). λ_{max} 202 ; 247 ; 308 (EtOH).

Antibiotic 68-1147-II
68-1147-II. Sch 18640B. Antibiotic Sch 18640B
[66771-54-8] Sol. $CHCl_3$, EtOAc; poorly sol. H_2O, hexane, Et_2O. Mp 300° dec. $[\alpha]_D^{26}$ -65.5 (c, 0.4 in dioxan). λ_{max} 240 ; 300 (EtOH). λ_{max} 240 (E1%/1cm 188); 300 (E1%/1cm 54) (EtOH) (Berdy).

U.S. Pat., 1978, 4 078 056; *CA*, **89**, 105873c

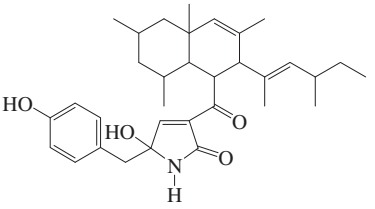
Antibiotic 69 A-1083

Struct. unknown. Related to Lyngbyatoxin A, L-367. Prod. by *Streptomyces* sp. No. 69. Antiparasitic and anthelmintic agent. Brown powder. Sol. H_2O, MeOH, AcOH, Me_2CO aq., Py; poorly sol. EtOAc, hexane.

Mori, R. *et al., J. Antibiot.*, 1961, **14**, 280-285; 286-288 (*isol*)

Antibiotic 2158 A-1084

Antibiotic 1270
[182320-34-9]



$C_{33}H_{45}NO_4$ 519.723

Tetramic acid deriv. Similar to Oteromycin, O-134. Prod. by *Sclerophoma pythiophila* and *Sclerophoma* sp. MO1270. PAF synthesis inhibitor. Powder.

U.S. Pat., 1996, 5 550 148; *CA*, **125**, 257170w

Antibiotic 5102-2 A-1085

[83137-91-1]

Thiazole-peptide antibiotic. Struct. unknown. Prod. by *Streptomyces hygroscopicus-yingchengensis*. Powder. λ_{max} 224 ; 275 (1-propanol).

Zhang, S. *et al., CA*, 1982, **97**, 143076t

Antibiotic 9408 A-1086

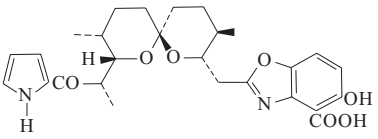
Tunicamycin-type antibiotic. Struct. unknown. Prod. by *Streptomyces* sp. 9408. Powder. $[\alpha]_D$ +68.6. CAS no. not found to 2008.

▶ LD_{50} (mus, ivn) 3.6 mg/kg, LD_{50} (mus, ipr) 16.5 mg/kg.

Jpn. J. Antibiot., 1956, **9**, 201

Antibiotic X 14885A A-1087

X 14885A
[83917-57-1]
[83874-20-8 (Na salt)]



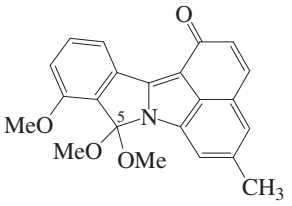
$C_{27}H_{32}N_2O_7$ 496.559

Polyether antibiotic related to Calcimycin, C-26. Isol. from *Streptomyces* sp. X-14885. Active against gram-positive bacteria and *Treponema hyodysenteriae*. Cryst. + $1H_2O$ (as Na salt). Sol. MeOH, C_6H_6; fairly sol. hexane; poorly sol. H_2O. Mp 264-266° (Na salt). $[\alpha]_D$ +177 (c, 1 in $CHCl_3$) (Na salt). λ_{max} 204 (ϵ 30700); 257 (ϵ 15100); 306 (ϵ 21800) (EtOH) (Derep).

Liu, C.-M. *et al., J. Antibiot.*, 1983, **36**, 1118; 1275 (*isol, uv, ir, struct*)
U.S. Pat., 1983, 4 547 523; *CA*, **104**, 49844 (*deriv*)
Albrecht-Gary, A.M. *et al., J.A.C.S.*, 1989, **111**, 8598 (*pmr, props*)

Antibiotic 0231A A-1088

*8,8,9-Trimethoxy-5-methylbenz[*cd*]isoindolo[2,1-*a*]indol-1(8*H*)-one*
[357924-11-9]



$C_{22}H_{19}NO_4$ 361.396

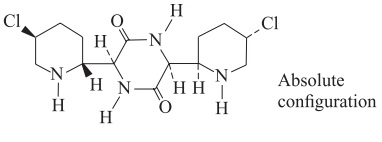
Prod. by *Streptomyces* sp. HKI 0231. Inhibitor of 3α-hydroxysteroid dehydrogenase. Yellow solid. Mp 125°. Fluorescent. λ_{max} 240 ; 285 ; 365 ; 380 ; 425 ; 440 ; 462 (MeOH).

5-Demethoxy: ***Antibiotic 0231B****. 0231B*
[357924-12-0]
$C_{21}H_{17}NO_3$ 331.37
Prod. by *Streptomyces* sp. HKI 0231. Inhibitor of 3α-hydroxysteroid dehydrogenase. Yellow solid. Mp 135°. Racemic. λ_{max} 240 ; 285 ; 365 ; 380 ; 420 ; 440 ; 460 (MeOH).

Kleinwachter, P. *et al., J. Antibiot.*, 2001, **54**, 510-512 (*isol*)
Komoda, T. *et al., Biosci., Biotechnol., Biochem.*, 2003, **67**, 659-662 (*0231B, synth*)
Kraus, G.A. *et al., Tetrahedron*, 2005, **61**, 9502-9505 (*0231B, synth*)

Antibiotic 593A A-1089

3,6-Bis(5-chloro-2-piperidinyl)-2,5-piperazinedione, 9CI
[41871-93-6]



$C_{14}H_{22}Cl_2N_4O_2$ 349.259

Diketopiperazine antibiotic. Isol. from *Streptomyces griseoluteus*. Shows antitumour activity. Sol. H_2O, MeOH, $CHCl_3$; poorly sol. hexane, Et_2O. Mp 235-240° dec. (as sulfate).

► LD_{50} (mus, ipr) 5 mg/kg.

Gitterman, C.O. *et al., J. Antibiot.*, 1970, **23**, 305 (*isol*)
Arison, B.H. *et al., Tetrahedron*, 1973, **29**, 2743 (*ir, uv, ms, nmr, struct*)
Pettit, G.R. *et al., J.A.C.S.*, 1976, **98**, 6742 (*cryst struct, abs config*)
Fukuyama, T. *et al., J.A.C.S.*, 1980, **102**, 2122 (*synth*)
Von Dreele, R.B. *et al., Acta Cryst. B*, 1981, **37**, 93 (*cryst struct*)
Frank, R.K. *et al., Diss. Abstr. Int., B*, 1983, **44**, 495 (*synth*)

Antibiotic 859A A-1090

859A
[97955-48-1]

Nucleoside-type antibiotic complex with 2 components. Struct. unknown. Prod. by *Streptomyces griseoruber*. Active against gram-positive and -negative bacteria. Powder.

U.S. Pat., 1985, 4 521 408; *CA*, **103**, 103458e

Antibiotic 875A A-1091

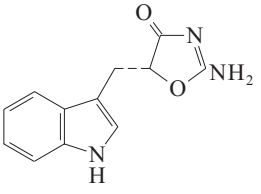
875A
[89491-83-8]

Nucleoside-type antibiotic complex. Prod. by *Streptomyces hygroscopicus* ATCC39665. Active against gram-positive and -negative bacteria. λ_{max} 262 (H_2O).

U.S. Pat., 1984, 4 427 655; *CA*, **100**, 155206d

Antibiotic 927A A-1092

*2-Amino-5-(1*H*-indol-3-ylmethyl)-4(5*H*)-oxazolone, 9CI*. C,N-*Didemethylindolmycin*
[65954-89-4]

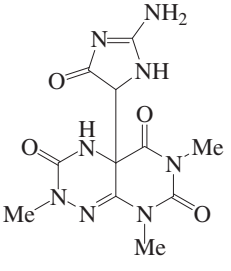


$C_{12}H_{11}N_3O_2$ 229.238

Isol. from *Streptomyces griseus*. Shows activity against gram-positive bacteria. Prisms (EtOAc). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 219-222°. λ_{max} 217 (ϵ 44550); 273 (ϵ 5080); 280 (ϵ 5310); 288 (ϵ 4580) (MeOH) (Berdy).

Hirota, A. *et al., Agric. Biol. Chem.*, 1978, **42**, 147 (*isol*)

Antibiotic 2096A A-1093



$C_{11}H_{14}N_8O_4$ 322.283

Prod. by *Streptomyces* sp. IM 2096. Unstable.

Stereoisomer: ***Antibiotic 2096B***
$C_{11}H_{14}N_8O_4$ 322.283
Prod. by *Streptomyces* sp. IM 2096. Unstable.

Wang, H. *et al., J. Nat. Prod.*, 2000, **63**, 1641-1646

Antibiotic 2197A A-1094

SF 2197A
[98565-52-7]

Related to Matlystatin A_1. Struct. unknown. Prod. by *Microbispora* sp. SF-2197. Antibacterial agent. Cryst. (EtOAc/hexane). Sol. MeOH, EtOAc, $CHCl_3$; poorly sol. H_2O, hexane. $[\alpha]_D$ -132 (MeOH). λ_{max} 200 (H_2O).

► LD_{50} (mus, ipr) 100-300 mg/kg.

Japan. Pat., 1985, 85 83 585; *CA*, **103**, 159107g (*isol*)

Antibiotic A 6984 A-1095

A 6984

Thiazole-peptide antibiotic complex. Struct. unknown. Prod. by *Actinoplanes utahensis* A6984. Antibacterial agent. No description found of component A.

Antibiotic A 6984B

A 6984B

Yellow powder. Sol. Py, DMSO; poorly sol. H_2O, C_6H_6, hexane. $[\alpha]_D$ +33 (Py). λ_{max} 218 ; 325 ; 416 ; 440 (MeOH). λ_{max} 218 (E1%/1cm 794); 231 (E1%/1cm 246); 351 (E1%/1cm 237) (MeOH/HCl) (Berdy). λ_{max} 215 (E1%/1cm 288); 414 (E1%/1cm 136) (MeOH/NaOH) (Berdy).

Antibiotic A 6984C

A 6984C

Yellow cryst. Sol. Py, DMSO; poorly sol. H_2O, C_6H_6, hexane. $[\alpha]_D$ +75 (Py). λ_{max} 218 (E1%/1cm 689); 324 (E1%/1cm 222); 412 (E1%/1cm 93) (MeOH) (Berdy). λ_{max} 218 (E1%/1cm 715); 300 (E1%/1cm 190); 333 (E1%/1cm 215); 351 (E1%/1cm 211) (MeOH/HCl) (Berdy). λ_{max} 232 (E1%/1cm 553); 295 (E1%/1cm 248); 408 (E1%/1cm 151) (MeOH/NaOH) (Berdy).

Antibiotic A 6984D

A 6984D

Yellow cryst. Sol. Py, DMSO; poorly sol. H_2O, hexane, C_6H_6. $[\alpha]_D$ +53 (Py). λ_{max} 219 (E1%/1cm 641); 327 (E1%/1cm 267); 414 (E1%/1cm 141) (MeOH) (Berdy). λ_{max} 219 (E1%/1cm 715); 300 (E1%/1cm 215); 333 (E1%/1cm 247); 352 (E1%/1cm 242) (MeOH/HCl) (Berdy). λ_{max} 232 (E1%/1cm 577); 298 (E1%/1cm 268); 410 (E1%/1cm 177) (MeOH/NaOH) (Berdy).

Japan. Pat., 1979, 79 32 401; 79 32 402; *CA*, **91**, 18344; 18345

Antibiotic A 7413 A-1096

A 7413

Thiazole-peptide antibiotic complex. Struct. unknown. Prod. by *Actinoplanes* sp. NRRL 8122.

Antibiotic A 7413A

A 7413A
[64296-61-3]

Light yellow cryst. (EtOH). Sol. $C_2H_4Cl_2$, MeOH, $CHCl_3$, DMSO, DMF; fairly sol. EtOH; poorly sol.

Me_2CO, C_6H_6, CCl_4, CH_2Cl_2, EtOAc, H_2O, Et_2O. Mp 205-212° dec. $[\alpha]_D^{25}$ +54.5 (c, 2 in $CHCl_3$). λ_{max} 215 ; 260 ; 300 ; 358 (EtOH). λ_{max} 217 (E1%/1cm 440); 265 (E1%/1cm 227); 293 (E1%/1cm 210); 358 (E1%/1cm 95) (EtOH/HCl) (Berdy). λ_{max} 278 (E1%/1cm 255); 408 (E1%/1cm 80) (EtOH/NaOH) (Berdy).

▶ LD_{50} (mus, ipr) 400 - 1600 mg/kg.

Antibiotic A 7413B

A 7413B

[64295-99-4]

Light yellow powder. Sol. MeOH, DMF, $CHCl_3$, DMSO, $C_2H_4Cl_2$; fairly sol. EtOH; poorly sol. Me_2CO, CCl_4, C_6H_6, H_2O, Et_2O, hexane. $[\alpha]_D$ -26.2 (c, 7.5 in DMSO). λ_{max} 268 (E1%/1cm 104); 357 (E1%/1cm 30) (EtOH) (Berdy). λ_{max} 268 (E1%/1cm 108); 357 (E1%/1cm 35) (EtOH/HCl) (Berdy). λ_{max} 268 (E1%/1cm 179) (EtOH/NaOH) (Berdy).

Antibiotic A 7413C

A 7413C

[64296-00-0]

Light yellow powder. Sol. MeOH, $CHCl_3$, DMF, $C_2H_4Cl_2$, DMSO; fairly sol. EtOH; poorly sol. Me_2CO, H_2O, hexane, Et_2O, CCl_4, C_6H_6. Mp > 250°. λ_{max} 205 (E1%/1cm 356); 235 (E1%/1cm 180); 260 (E1%/1cm 127); 290 (E1%/1cm 104) (EtOH) (Berdy). λ_{max} 205 (E1%/1cm 356); 235 (E1%/1cm 180); 260 (E1%/1cm 127); 290 (E1%/1cm 103); 355 (E1%/1cm 40) (EtOH/HCl) (Berdy). λ_{max} 260 (E1%/1cm 268); 325 (E1%/1cm 189) (EtOH/NaOH) (Berdy).

U.S. Pat., 1979, 4 174 390; *CA*, **92**, 56811g

Antibiotic A 10947 A-1097

A 10947

[72509-93-4]

Thiazole-peptide antibiotic. Struct. unknown. Prod. by *Actinoplanes* sp. A10947. Antibacterial agent. Cryst. Sol. AcOH, Py, DMSO, $CHCl_3$; fairly sol. MeOH, EtOAc, EtOH, butanol; poorly sol. C_6H_6, hexane, H_2O. Mp 205-220° dec. $[\alpha]_D^{25}$ +64.1 (c, 0.66 in $CHCl_3$). λ_{max} 217 ; 261 ; 302 ; 372 ; 409 (MeOH).

▶ LD_{50} (mus, ipr) 500 - 1500 mg/kg.

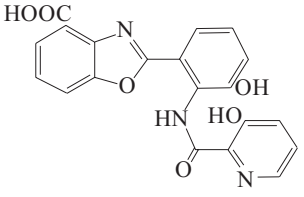
Yaginuma, S. *et al., J. Antibiot.*, 1979, **32**, 967-969

Japan. Pat., 1979, 79 157 502; *CA*, **92**, 126912s

Antibiotic A 33853 A-1098

2-[3-Hydroxy-2-[[(3-hydroxy-2-pyridinyl)carbonyl]amino]]-4-benzoxazolecarboxylic acid, 9CI. A 33853

[80148-45-4]



$C_{20}H_{13}N_3O_6$ 391.339

Isol. from *Streptomyces* sp., NRRL 12068. Active against gram-positive bacteria, viruses, *Eimeria tenella*, trichomonads and mosquito larvae. Cryst. ($CHCl_3$/MeOH). Sol. DMSO, bases, $CHCl_3$, Py; fairly sol. Me_2CO, EtOAc, H_2O, MeOH; poorly sol. hexane. Mp 310-315° dec. Possible identity with Antibiotic U 60394. λ_{max} 255 (ϵ 39000); 310 (ϵ 17000); 360 (ϵ 11000); 400 (ϵ 11000) (dioxan/KOH) (Derep). λ_{max} 260 (sh) (ϵ 18000); 317 (ϵ 28300) (dioxan) (Derep). λ_{max} 322 (ϵ 28000) (dioxan-HC) (Berdy). λ_{max} 254 (ϵ 39000); 310 (ϵ 17000); 360 (ϵ 11000); 400 (ϵ 10500) (dioxan-NA) (Berdy).

▶ LD_{50} (mus, ipr) 300 - 700 mg/kg.

DM4675350

Tetra-Ac: [80161-47-3] Less active than parent compd. Less active than parent compd. Cryst. ($CHCl_3$/EtOH). Mp 184-189°.

U.S. Pat., 1980, 4 293 649; *CA*, **96**, 33349 (*isol*)

Michel, K.H. *et al., J. Antibiot.*, 1984, **37**, 441 (*isol, uv, ir, cryst struct*)

Antibiotic A 65636 A-1099

A 65636

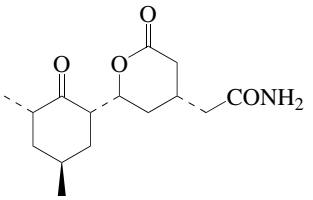
$C_{19}H_{23}N_3O_4$ 357.408

Benzodiazepine antibiotic. Struct. may be known, but lit. is inaccessible. Prod. by an actinomycete. Antibacterial agent. Yellow powder. λ_{max} 236 (ϵ 12630); 336 (ϵ 20870) (MeOH). λ_{max} 236 (ϵ 12632); 336 (ϵ 20870) (MeOH) (Berdy). λ_{max} 208 (ϵ 15500); 336 (ϵ 20000) (MeOH-HCl) (Berdy).

Intersci. Conf. Antimicrob. Agents Chemoth., 28th, 1987, 27

Antibiotic A 75943 A-1100

A 75943



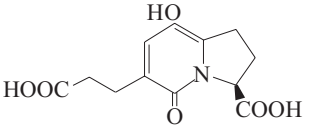
$C_{15}H_{23}NO_4$ 281.351

Related to Cycloheximide in D-765. Prod. by *Streptomyces* sp. SANK 61296. Bone resorption inhibitor. Amorph. powder. $[\alpha]_D^{25}$ -2.7 (c, 0.5 in $CHCl_3$).

Morishita, T. *et al., J. Antibiot.*, 1998, **51**, 531-538 (*isol, synth, ir, pmr, cmr*)

Antibiotic A 58365A A-1101

3-Carboxy-1,2,3,5-tetrahydro-8-hydroxy-5-oxo-6-indolizinepropanoic acid, 9CI. A 58365A



$C_{12}H_{13}NO_6$ 267.238

λ_{max} 243 (ϵ 7200); 355 (ϵ 7400) (MeOH/NaOH) (Derep). λ_{max} 232 (ϵ 6000); 327 (ϵ 7600) (MeOH) (Derep).

(S)-form [87896-52-4]

Isol. from *Streptomyces chromofuscus.* Angiotensin converting enzyme inhibitor. Amorph. powder. Sol. H_2O, DMSO, EtOH, MeOH; fairly sol. Me_2CO; poorly sol. C_6H_6, hexane. $[\alpha]_D^{25}$ -199.5 (c, 1 in H_2O).

(±)-form

Pale yellow plates (H_2O). Mp 163-165°.

Nakatsukasa, W.M. *et al., J. Antibiot.*, 1985, **38**, 997 (*isol*)

Samlaska, S.K. *et al., J. Antibiot.*, 1985, **38**, 1003 (*isol, uv, ir, pmr, struct*)

Hunt, A.H. *et al., J. Antibiot.*, 1988, **41**, 771 (*pmr, cmr, uv, cryst struct*)

Fang, F.G. *et al., Tet. Lett.*, 1989, **30**, 3621 (*synth*)

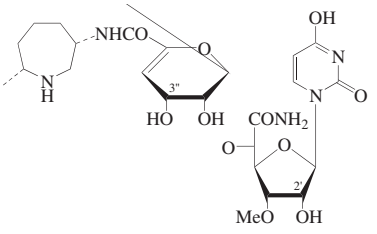
Clive, D.L.J. *et al., Tet. Lett.*, 1998, **39**, 2519-2522 (*synth*)

Straub, C.S. *et al., Org. Lett.*, 1999, **1**, 83-85 (*synth*)

Reichelt, A. *et al., Tetrahedron*, 2002, **58**, 6323-6328 (*synth*)

Antibiotic A 500359A A-1102

A 500359A



$C_{24}H_{33}N_5O_{12}$ 583.551

Homologue of Capuramycin, C-103. Prod. by *Streptomyces griseus* SANK 60196. Powder. $[\alpha]_D^{20}$ +94.7 (c, 1 in MeOH). λ_{max} 257 (ϵ 10300) (H_2O).

2′-O-Carbamoyl: ***Antibiotic A 503083A***. *A 503083A*

$C_{25}H_{34}N_6O_{13}$ 626.576

Prod. by *Streptomyces* sp. SANK 62799. Powder. $[\alpha]_D^{29}$ +84 (c, 0.7 in H_2O). Stereochem. not confirmed. λ_{max} 257 (ϵ 11000) (H_2O).

O-De-Me: ***Antibiotic A 500359C***. *A 500359C*

$C_{23}H_{31}N_5O_{12}$ 569.524

Prod. by *Streptomyces griseus* SANK 60196. Powder. $[\alpha]_D^{20}$ +89 (c, 0.44 in H_2O). λ_{max} 257 (ϵ 10700) (H_2O).

3″-Deoxy: ***Antibiotic A 500359D***. *A 500359D*

$C_{24}H_{33}N_5O_{11}$ 567.552

Prod. by *Streptomyces griseus* SANK 60196. Powder. $[\alpha]_D^{20}$ +68 (c, 0.69 in H_2O). λ_{max} 244 (ϵ 10000) (H_2O).

Muramatsu, Y. *et al., J. Antibiot.*, 2003, **56**, 243-252; 253-258; 259-267; 268-279 (*isol, pmr, cmr, biosynth*)

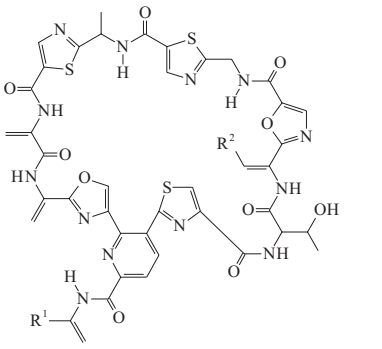
Muramatsu, Y. *et al., J. Antibiot.*, 2004, **57**, 639-646 (*A 503083A*)

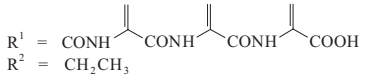
Muramatsu, Y. *et al., J. Antibiot.*, 2006, **59**, 601-606 (*prodn*)

Antibiotic A 10255B A-1103

Thioplabin B. A 10255B

[119166-38-0]





$C_{53}H_{48}N_{16}O_{15}S_3$ 1245.258

Cyclic thiopeptide antibiotic. Prod. by *Streptomyces gardneri* and *Streptomyces* sp. R1401. Feed additive. Noncryst. Sol. DMSO, THF-H_2O, $CHCl_3$-MeOH, Py, DMF, MeOH, $CHCl_3$, Me_2CO; poorly sol. H_2O. λ_{max} 247 (ϵ 78700) (EtOH) (Derep). λ_{max} 245 (ϵ 66000) (MeOH) (Berdy). λ_{max} 247 (ϵ 78700) (MeOH/HCl) (Berdy). λ_{max} 245 (ϵ 66000) (MeOH/NaOH) (Berdy).

▶ LD_{50} (mus, ipr) 300 - 700 mg/kg.

Boeck, L.D. *et al., J. Antibiot.*, 1992, **45**, 1222; 1278 (*isol, biosynth*)

Favret, M.E. *et al., J. Antibiot.*, 1992, **45**, 1809-1811 (*biosynth*)

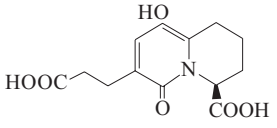
Debono, M. *et al., J.O.C.*, 1992, **57**, 5200-5208 (*isol, pmr, cmr, struct*)

Ohyama, S. *et al., J. Antibiot.*, 2002, **55**, 83-91 (*Thioplabin*)

Antibiotic A 58365B A-1104

*4-Carboxy-1,3,4,6-tetrahydro-9-hydroxy-6-oxo-2*H*-quinolizine-7-propanoic acid, 9CI. A 58365B. Alkaloid A 58365B*

[87896-53-5]



$C_{13}H_{15}NO_6$ 281.265

Isol. from *Streptomyces chromofuscus*. Angiotensin converting enzyme inhibitor. Amorph. powder. Sol. H_2O, MeOH, DMSO, EtOH; fairly sol. Me_2CO; poorly sol. C_6H_6, hexane. $[\alpha]_D^{25}$ -141.2 (c, 0.16 in H_2O). λ_{max} 243 (ϵ 7200); 355 (ϵ 7400) (MeOH/NaOH) (Derep). λ_{max} 232 (ϵ 6000); 327 (ϵ 7600) (MeOH) (Derep). λ_{max} 233 (ϵ 3800); 332 (ϵ 4500); 333 (ϵ 4500) (MeOH) (Berdy). λ_{max} 244 ; 360 (MeOH-NaOH) (Berdy).

Nakatsukasa, W.M. *et al., J. Antibiot.*, 1985, **38**, 997 (*isol*)

Samlaska, S.K. *et al., J. Antibiot.*, 1985, **38**, 1003 (*isol, uv, ir, pmr, struct*)

Hunt, A.H. *et al., J. Antibiot.*, 1988, **41**, 771 (*pmr, cmr, uv, cryst struct*)

Clive, D.L.J. *et al., J.O.C.*, 1999, **64**, 1447-1454 (*synth*)

Antibiotic A 10255C A-1105

A 10255C

[119166-39-1]

Thiazole-peptide antibiotic. Struct. unknown. Prod. by *Streptomyces gardneri*. Feed additive. Yellow powder. Sol. DMSO, DMF, THF-H_2O, MeOH, $CHCl_3$-MeOH, $CHCl_3$, Me_2CO, Py; poorly sol. H_2O. Mp 221-224°. $[\alpha]_D$ +66.6 (EtOH). λ_{max} 243 (ϵ 63000) (MeOH).

▶ LD_{50} (mus, ipr) 300 - 700 mg/kg.

U.S. Pat., 1993, 5 229 362; *CA*, **119**, 269171m

Antibiotic A 58365C A-1106

A 58365C

[87913-25-5]

$C_{14}H_{17}NO_6$ 295.291

Quinolizine antibiotic. Related to Antibiotic A 58365A, A-1101. Prod. by *Streptomyces chromofuscus* NRRL 15098. ACE inhibitor. Hypotensive agent. Powder. Sol. H_2O, DMSO, MeOH, EtOH; fairly sol. Me_2CO; poorly sol. C_6H_6, hexane. λ_{max} 233 (ϵ 3800); 332 (ϵ 4500) (MeOH). λ_{max} 244 ; 360 (MeOH/NaOH) (Berdy).

Eur. Pat., 1982, 103 403; *CA*, **100**, 207884v

Antibiotic A 7413D A-1107

A 7413D

Thiazole-peptide antibiotic. Struct. unknown. Prod. by *Actinoplanes* sp. Antibacterial agent.

Ger. Pat., 1977, 2 703 938; *CA*, **87**, 165997q

Antibiotic A 10255E A-1108

Thioplabin C. A 10255E

[145427-74-3]

As Antibiotic A 10255B, A-1103 with R^1 = CONHC(=CH_2)CONHC(=CH_2)CONHC(=CH_2)COOH, R^2 = $CH(CH_3)_2$

$C_{54}H_{50}N_{16}O_{15}S_3$ 1259.285

Thiazole peptide antibiotic. Prod. by *Streptomyces gardneri* and *Streptomyces* sp. R1401. Yellow powder.

Favret, M.E. *et al., J. Antibiot.*, 1992, **45**, 1499-1511; 1809-1811 (*isol, pmr, cmr*)

U.S. Pat., 1993, 5 229 362; *CA*, **119**, 269171m (*isol*)

Ohyama, S. *et al., J. Antibiot.*, 2002, **55**, 83-91 (*Thioplabin*)

Antibiotic A 10255F A-1109

A 10255F

[119166-41-5]

Thiazole-peptide antibiotic. Struct. unknown. Prod. by *Streptomyces gardneri*. Feed additive. Yellow powder. Sol. DMSO, $CHCl_3$, Me_2CO, DMF, THF-H_2O, MeOH, $CHCl_3$-MeOH, Py; poorly sol. H_2O. λ_{max} 245 (ϵ 71500) (MeOH).

▶ LD_{50} (mus, ipr) 300 - 700 mg/kg.

U.S. Pat., 1993, 5 229 362; *CA*, **119**, 269171m

Antibiotic A 10255H A-1110

A 10255H

[119166-43-7]

Thiazole-peptide antibiotic. Struct. unknown. Prod. by *Streptomyces gardneri*. Feed additive. Yellow powder. Sol. DMSO, Me_2CO, $CHCl_3$, MeOH, DMF, Py, $CHCl_3$-MeOH, THF-H_2O; poorly sol. H_2O. λ_{max} 244 (ϵ 74000) (MeOH). λ_{max} 245 (ϵ 74500) (MeOH/HCl) (Berdy). λ_{max} 211 (ϵ 23800) (MeOH/NaOH) (Berdy).

▶ LD_{50} (mus, ipr) 300 - 700 mg/kg.

U.S. Pat., 1993, 5 229 362; *CA*, **119**, 269171m

Antibiotic AB 97 A-1111

AB 97

[68652-25-5]

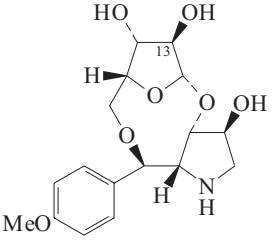
Thiazole-peptide antibiotic. Struct. unknown. Prod. by *Actinomadura helvata* var. *antibiotica*. Active against gram-positive bacteria. Yellow powder. Sol. EtOAc, bases, DMSO, MeOH; poorly sol. acids, hexane. $[\alpha]_D$ +764 (DMSO). λ_{max} 245 ; 290 ; 350 ; 410 (MeOH). λ_{max} 245 ; 360 (MeOH/HCl) (Berdy). λ_{max} 295 ; 415 (MeOH/NaOH) (Berdy).

Japan. Pat., 1978, 78 101 301; *CA*, **90**, 37630q

Antibiotic AB 3217A A-1112

AB 3217A

[139158-99-9]



$C_{17}H_{23}NO_7$ 353.371

Prod. by *Streptomyces platensis*. Active against mites. Needles (MeOH). Sol. H_2O, MeOH; fairly sol. EtOAc, $CHCl_3$; poorly sol. hexane. Mp 241°. $[\alpha]_D^{24}$ -52.5 (c, 1 in H_2O). λ_{max} 226 (ϵ 11400); 272 (ϵ 1100); 278 (ϵ 900) (H_2O) (Derep). λ_{max} 226 (ϵ 10900); 272 (ϵ 1100); 279 (ϵ 900) (NaOH) (Berdy). λ_{max} 226 (ϵ 11400); 272 (ϵ 1100); 278 (ϵ 900) (H_2O) (Berdy). λ_{max} 227 (ϵ 11300); 272 (ϵ 1100); 279 (ϵ 900) (HCl) (Berdy).

13-O-*(6-Hydroxy-6-methylheptanoyl):* ***Antibiotic AB 3217B****. AB 3217B*

[139159-00-5]

$C_{25}H_{37}NO_9$ 495.569

Prod. by *Streptomyces platensis*. Active against mites. Sol. H_2O, MeOH; fairly sol. EtOAc, $CHCl_3$; poorly sol. hexane. Mp 116° (monohydrochloride). $[\alpha]_D^{25}$ -68.3 (c, 1 in H_2O). λ_{max} 226 (ϵ 11500); 272 (ϵ 990); 278 (ϵ 842) (H_2O) (Derep). λ_{max} 226 (E1%/1cm 233); 272 (ϵ 20); 278 (E1%/1cm 17) (H_2O) (Berdy).

13-O-*(4-Methylpentanoyl):* ***Antibiotic AB 3217C****. AB 3217C*

[139159-01-6]

$C_{23}H_{33}NO_8$ 451.516

Prod. by *Streptomyces platensis*. Active against mites. Sol. H_2O, MeOH; fairly sol. EtOAc, $CHCl_3$; poorly sol. hexane. Mp 117° (monohydrochloride). $[\alpha]_D^{25}$ -76.8 (c, 1 in H_2O). λ_{max} 226 (ϵ 13000);

272 (ϵ 1260); 278 (ϵ 1130) (H_2O) (Derep). λ_{max} 226 (E1%/1cm 288); 272 (E1%/1cm 28); 278 (E1%/1cm 25) (H_2O) (Berdy).

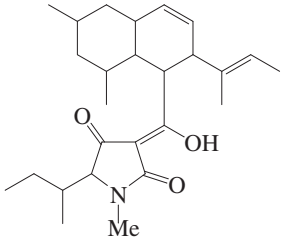
Kanbe, K. *et al., J. Antibiot.*, 1992, **45**, 458; 568 (*isol, pmr, cmr, props*)

Nakata, M. *et al., Bull. Chem. Soc. Jpn.*, 1994, **67**, 3057 (*synth*)

Antibiotic AB 4015B A-1113

AB 4015B

[162857-79-6]



$C_{26}H_{39}NO_3$ 413.599

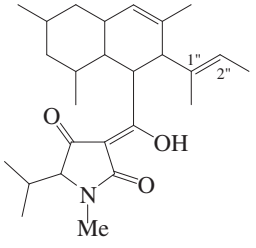
Tetramic acid deriv. Prod. by *Phoma* sp. AB4015. Active against bacteria and fungi. Orange oil. Sol. $CHCl_3$, MeOH. λ_{max} 228 (ϵ 4450); 290 (ϵ 6740) (MeOH). λ_{max} 228 (ϵ 4450); 290 (ϵ 8580) (MeOH-HCl) (Berdy). λ_{max} 248 (ϵ 7390); 290 (ϵ 9370) (MeOH-NaOH) (Berdy).

Japan. Pat., 1995, 95 48 348; *CA*, **122**, 289047r

Antibiotic AB 4063B A-1114

AB 4063B

[160041-33-8]



$C_{26}H_{39}NO_3$ 413.599

Tetramic acid deriv. Prod. by *Phoma* sp. AB4063. Active against phytopathogenic fungi. λ_{max} 228 (ϵ 6200); 290 (ϵ 12800) (MeOH) (Berdy). λ_{max} 204 (ϵ 12600); 226 (ϵ 6600); 290 (ϵ 11100) (MeOH-HCl) (Berdy). λ_{max} 209 (ϵ 9100); 248 (ϵ 10300); 290 (ϵ 12700) (MeOH-NaOH) (Berdy).

1″,2″-Epoxide: ***Antibiotic AB 4063A***. *AB 4063A*

[160041-32-7]

$C_{26}H_{39}NO_4$ 429.598

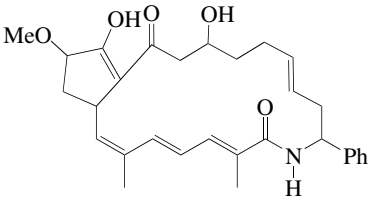
Prod. by *Phoma* sp. AB4063. Active against phytopathogenic fungi. λ_{max} 228 (ϵ 6500); 292 (MeOH) (Berdy). λ_{max} 227 (ϵ 6700); 292 (ϵ 13400) (MeOH-HCl) (Berdy). λ_{max} 246 (ϵ 11200); 290 (ϵ 14300) (MeOH-NaOH) (Berdy).

Japan. Pat., 1994, 94 277 084; *CA*, **122**, 54155k

Antibiotic AF 140 A-1115

*9,10,13,14,15,16,20,20*a-*Octahydro-15-hydroxy-19-methoxy-2,6-dimethyl-9-phenylcyclopent[*i*]azacyclononadecine-7,17(8*H*,19*H*)-dione, 9CI. AF 140*

[157375-70-7]



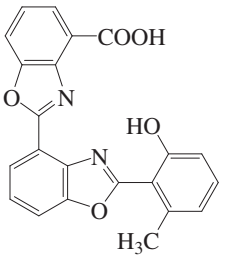
$C_{30}H_{37}NO_5$ 491.626

Prod. by *Amycolatopsis* sp. TA 0234. Antifungal and cytotoxic agent. Cryst. (MeOH). Sol. MeOH.

Japan. Pat., 1994, 94 178 693; *CA*, **122**, 131134g (*isol*)

Antibiotic AJI 9561 A-1116

AJI 9561



$C_{22}H_{14}N_2O_5$ 386.363

Similar to Antibiotic UK 1, A-1302. Prod. by *Streptomyces* sp. AJ9561. Cytotoxic. Powder. Mp 251-252°. λ_{max} 250 (ϵ 27700); 272 (ϵ 23800); 281 (ϵ 24900); 311 (ϵ 37500); 319 (ϵ 38100); 328 (ϵ 37200); 347 (ϵ 27000); 361 (ϵ 21600) (MeOH).

Sato, S. *et al., J. Antibiot.*, 2001, **54**, 102-104

Antibiotic ASK 753 A-1117

ASK 753

[54650-03-2]

Related to Ferrimycin A_1, F-37. Prod. by *Streptomyces* sp. AS-K-753. Siderophore. Antibacterial agent. Off-white cryst. Sol. MeOH, Et_2O, $CHCl_3$; fairly sol. H_2O, EtOAc; poorly sol. C_6H_6, hexane. Mp 120° dec. λ_{max} 270 (EtOH). λ_{max} 270 (E1%/1cm 120) (EtOH) (Berdy). λ_{max} 270 (E1%/1cm 120) (EtOH-HCl) (Berdy). λ_{max} 287 (E1%/1cm 135) (EtOH-NaOH) (Berdy).

▶ LD_{50} (mus, ipr) 58 mg/kg.

Shimi, I.R. *et al., J. Antibiot.*, 1969, **22**, 106-111

Antibiotic AS-N-7A A-1118

AS-N-7A

[60730-59-8]

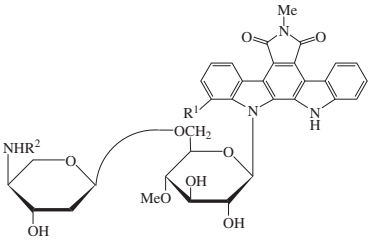
Related to Ferrimycin A_1, F-37. Prod. by *Streptomyces erythrochromogenes*. Siderophore. Antibacterial agent.

▶ LD_{50} (mus, ims) 1.1 mg/kg.

Abdallah, N.M. *et al., CA*, 1976, **85**, 171695q

Antibiotic AT 2433 A-1119

AT 2433



Antibiotic AT 2433A_1 R^1 = Cl, R^2 = CH_3
AT 2433A_2 R^1 = Cl, R^2 = H
AT 2433B_1 R^1 = H, R^2 = CH_3
AT 2433B_2 R^1 = R^2 = H

Nucleoside-type antibiotic complex. Stereochem. of sugar residues revised in 1999. Closely related to Rebeccamycin, R-32. Prod. by *Actinomadura melliaura* and *Actinomadura fulva*. Shows antibacterial and antineoplastic props.

Antibiotic AT 2433A_1

AT 2433A_1

[102644-20-2]

$C_{34}H_{35}ClN_4O_9$ 679.125

Sol. MeOH, EtOAc, $CHCl_3$-MeOH, DMSO; fairly sol. THF, EtOAc; poorly sol. H_2O, hexane. λ_{max} 200 (ϵ 30800); 235 (ϵ 39900); 284 (ϵ 34300); 315 (ϵ 45500); 395 (ϵ 3860) (MeOH) (Derep). λ_{max} 234 (ϵ 38645); 286 (ϵ 33598); 314 (ϵ 43890); 394 (ϵ 3453) (MeOH) (Berdy).

Antibiotic AT 2433A_2

AT 2433A_2

[102644-19-9]

$C_{33}H_{33}ClN_4O_9$ 665.098

Sol. MeOH, $CHCl_3$-MeOH, DMSO, EtOAc; fairly sol. THF, EtOAc; poorly sol. H_2O, hexane. λ_{max} 200 (ϵ 30800); 235 (ϵ 39900); 284 (ϵ 34300); 315 (ϵ 45500); 395 (ϵ 3860) (MeOH) (Derep). λ_{max} 234 (ϵ 38645); 286 (ϵ 33598); 314 (ϵ 43890); 394 (ϵ 3453) (MeOH) (Berdy).

Antibiotic AT 2433B_1

AT 2433B_1

[102622-96-8]

$C_{34}H_{36}N_4O_9$ 644.68

Sol. MeOH, $CHCl_3$-MeOH, EtOAc, DMSO; fairly sol. THF, EtOAc; poorly sol. H_2O, hexane. λ_{max} 202 (ϵ 29000); 234 (ϵ 41300); 283 (ϵ 33600); 316 (ϵ 46900); 400 (ϵ 4060) (MeOH) (Derep). λ_{max} 234 (ϵ 41280); 284 (ϵ 33617); 316 (ϵ 46948); 400 (ϵ 4057) (MeOH) (Berdy).

Antibiotic AT 2433B_2

AT 2433B_2

[102622-95-7]

$C_{33}H_{34}N_4O_9$ 630.653

Sol. DMSO, $CHCl_3$-MeOH; fairly sol. THF, EtOAc; poorly sol. cyclohexane. λ_{max} 202 (ϵ 29000); 234 (ϵ 41300); 283 (ϵ 33600); 316 (ϵ 46900); 400 (ϵ 4060) (MeOH) (Derep). λ_{max} 233 (ϵ 41076); 282

(ϵ 33390); 315 (ϵ 46935); 400 (ϵ 3969) (MeOH) (Berdy).

Eur. Pat., 1986, 175 309; *CA*, **105**, 5184 (*isol*)
Matson, J.A. *et al., J. Antibiot.*, 1989, **42**, 1547; 1784 (*isol, pmr, cmr, struct*)
Chisholm, J.D. *et al., J.A.C.S.*, 1999, **121**, 3801-3802 (*synth, config*)
Chisholm, J.D. *et al., J.O.C.*, 2000, **65**, 7541-7543; 8406 (*synth*)

Antibiotic 1401B A-1120

1401B

Thiazole-peptide antibiotic. Struct. unknown. Prod. by *Streptomyces corchorusii*. Antibacterial agent. Yellow powder. Sol. DMF, $CHCl_3$, dioxan, AcOH; fairly sol. MeOH, EtOH; poorly sol. acids, bases. $[\alpha]_D$ -93.8 (dioxan).

Gauze, G.F. *et al., Antibiotiki (Moscow)*, 1983, **28**, 643-647

Antibiotic 4181B A-1121

4181B

[115088-45-4]

$C_{28}H_{19}NO_9$ 513.459

Quinone antibiotic. Struct. was under investigation; prob. identical with De-*O*-methylcervinomycin A_2 in C-287, but no further reports to 2007. Isol. from *Streptomyces griseus*. Exhibits antibacterial, antifungal and antitumour props. Red-orange powder. Sol. MeOH, EtOAc; fairly sol. $CHCl_3$, EtOAc, DMSO, MeOH; poorly sol. H_2O, hexane, Et_2O. Mp 260° dec. λ_{max} 258 (ϵ 22700); 327 (ϵ 27000); 377 (sh) (ϵ 5220); 418 (ϵ 3770) (MeOH) (Derep). λ_{max} 280 ; 330 ; 410 (MeOH) (Berdy). λ_{max} 258 (ϵ 22700); 327 (ϵ 18000); 418 (ϵ 3770) ($CHCl_3$) (Berdy).

▶ LD_{50} (mus, ipr) 40 - 60 mg/kg.

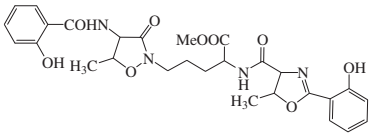
CB9133810

Otani, T. *et al., J. Antibiot.*, 1988, **41**, 275-281 (*isol, props*)

Antibiotic B 4317 A-1122

B 4317

[173075-46-2]



$C_{28}H_{32}N_4O_9$ 568.582

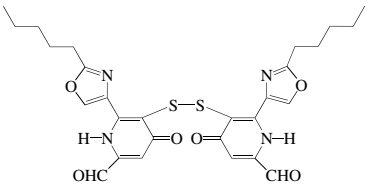
Prod. by *Alteromonas rava*. Leucotriene antagonist. Antibacterial and antiinflammatory agent. Siderophore. Powder. $[\alpha]_D^{25}$ -50.2 (c, 1.3 in $CHCl_3$). λ_{max} 207 (ϵ 59600); 240 (ϵ 19800); 303 (ϵ 1050) (MeOH).

Japan. Pat., 1995, 95 291 992; *CA*, **124**, 115565j

Antibiotic B 90063 A-1123

5,5′-Dithiobis[1,4-dihydro-4-oxo-6-(2-pentyl-4-oxazolyl)-2-pyridinecarboxaldehyde], 9CI. B 90063. 5,5′-Dithiobis[4-hydroxy-6-(2-pentyl-4-oxazolyl)-2-pyridinecarboxaldehyde]

[215377-24-5]
[181634-31-1]



$C_{28}H_{30}N_4O_6S_2$ 582.7

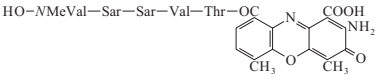
Prod. by the marine bacterium *Blastobacter* sp. SANK 71894. Endothelin-converting enzyme inhibitor. Yellow cryst. Mp 73-74° Mp 116-118° (+ 2MeOH). The alternative CAS no. refers to the bis(4-hydroxypyridine) tautomeric struct. under which it was originally descr. λ_{max} 214 (ϵ 47400); 261 (ϵ 37200); 340 (sh) (ϵ 8100); 360 (sh) (ϵ 4100) (MeCN).

Japan. Pat., 1996, 96 208 646; *CA*, **125**, 219743c
Takaishi, S. *et al., J. Antibiot.*, 1998, **51**, 805-815 (*isol, uv, ir, pmr, cmr, ms*)

Antibiotic B 1625FA$_{2\beta\text{-}1}$ A-1124

B 1625FA$_{2\beta\text{-}1}$

[111420-30-5]



$C_{37}H_{49}N_7O_{12}$ 783.834

Actinomycin-related antibiotic. Isol. from *Streptomyces antibioticus*. Orange-red powder. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 185°. $[\alpha]_D$ +3 ($CHCl_3$). λ_{max} 427 (ϵ 32100); 443 (ϵ 32300) (MeOH-$CHCl_3$) (Berdy).

Fujimoto, Y. *et al., Agric. Biol. Chem.*, 1987, **51**, 803 (*isol, struct, props*)

Antibiotic BA 181314A A-1125

BA 181314A

$C_{28}H_{26}N_2O_{11}$ 566.52

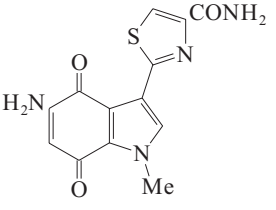
Struct. unknown. Related to Albofungin, A-244. Prod. by *Streptomyces aspergilloides* ATCC14808. Pale yellow plates (MeOH). Sol. Py, DMF, DMSO; fairly sol. H_2O, Me_2CO, $CHCl_3$, EtOAc, EtOH, MeOH; poorly sol. C_6H_6, hexane. Dec. at 315-320°. λ_{max} 250 (E1%/1cm 700); 361 (E1%/1cm 400); 375 (E1%/1cm 450) (MeOH) (Berdy).

U.S. Pat., 1967, 3 328 248; *CA*, **67**, 89788s

Antibiotic BE 10988 A-1126

2-(5-Amino-4,7-dihydro-1-methyl-4,7-dioxo-1H-indol-3-yl)-4-thiazolecarboxamide, 9CI. BE 10988

[135261-89-1]



$C_{13}H_{10}N_4O_3S$ 302.313

Prod. by *Streptomyces* sp. BA10988.

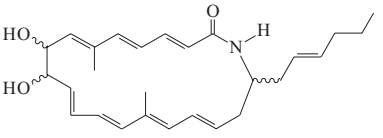
Cytotoxic. Topoisomerase II inhibitor. Dark red cryst. Sol. DMSO; fairly sol. MeOH; poorly sol. H_2O. Mp 300°. λ_{max} 213 (ϵ 43200); 235 (sh) (ϵ 24200); 278 (ϵ 22300); 305 (sh) (ϵ 13300); 318 (sh) (ϵ 12100); 385 (ϵ 7300); 525 (ϵ 2400) (MeOH).

Oka, H. *et al., J. Antibiot.*, 1991, **44**, 486-491 (*isol, uv, ir, pmr*)
Suda, H. *et al., Tet. Lett.*, 1991, **32**, 2791-2792 (*pmr, cmr*)
Rauhut, T. *et al., J.O.C.*, 2008, **73**, 5279-5286 (*biosynth, cmr, ms*)

Antibiotic BE 14106 A-1127

BE 14106. GT 32A. Antibiotic GT 32A

[140212-86-8]



$C_{27}H_{37}NO_3$ 423.594

Macrocyclic lactam antibiotic. Prod. by *Streptomyces spheroides* A14106 and *Streptomyces* sp. GT 32. Cytotoxic agent. Amorph. Sol. DMSO; fairly sol. MeOH; poorly sol. H_2O. Mp 270°. λ_{max} 230 (sh) (ϵ 11800); 278 (ϵ 91800); 288 (ϵ 110800); 310 (sh) (ϵ 22000); 325 (sh) (ϵ 16100) (MeOH) (Derep).

▶ CL6400000

8-Deoxy: ***Antibiotic GT 32B****. GT 32B. Immunosuppressant GT 32B*

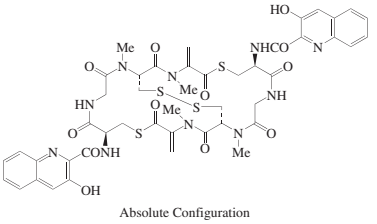
[178560-35-5]
$C_{27}H_{37}NO_2$ 407.595
Prod. by *Streptomyces* sp. GT 32. Immunosuppressant. Powder. Sol. MeOH, DMSO, butanol. λ_{max} 280 (ϵ 74000); 289 (ϵ 92000); 310 (sh) (ϵ 20000); 325 (sh) (ϵ 15000) (MeOH).

Kojiri, K. *et al., J. Antibiot.*, 1992, **45**, 868-874 (*isol, ir, pmr, cmr*)
Takahashi, I. *et al., J. Antibiot.*, 1997, **50**, 186-188 (*GT 32*)
Mitchell, S.S. *et al., J. Nat. Prod.*, 2004, **67**, 1400-1402 (*pmr, cmr*)

Antibiotic BE 22179 A-1128

BE 22179

[147816-33-9]



Absolute Configuration

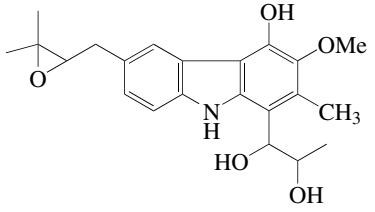
$C_{46}H_{48}N_{10}O_{12}S_4$ 1061.209

Depsipeptide antibiotic. Prod. by *Streptomyces* sp. A22179. Topoisomerase II inhibitor. Antitumour agent. Active against gram-positive bacteria. Pale yellow cryst. $[\alpha]_D^{20}$ -96.6 (c, 0.47 in $CHCl_3$). λ_{max} 218 (ϵ 87500); 226 (ϵ 84600); 290 (ϵ 12800); 360 (ϵ 12000) (MeOH).

Okada, H. *et al., J. Antibiot.*, 1994, **47**, 129-135 (*isol, uv, ir, pmr, activity*)

Boger, D.L. *et al., J.A.C.S.*, 2001, **123**, 561-568 (*synth, abs config*)

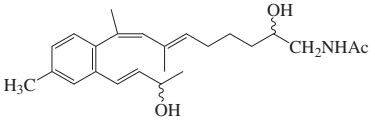
Antibiotic BE 48021 **A-1129**
BE 48021
[182230-51-9]



$C_{22}H_{27}NO_5$ 385.459
Prod. by *Streptomyces* sp. A48021. Cytotoxic agent. Sol. MeOH. λ_{max} 227 ; 249 ; 269 ; 291 ; 332 ; 344 (MeOH) (Berdy).

Japan. Pat., 1996, 96 198 874; *CA*, **125**, 273720f

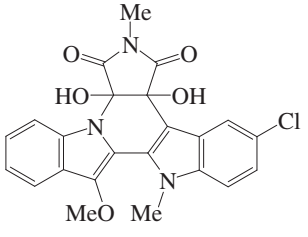
Antibiotic BE 52211 **A-1130**
BE 52211
[205449-00-9]



$C_{24}H_{35}NO_3$ 385.545
Prod. by *Streptomyces* sp. A52211. Cytotoxic agent. λ_{max} 212 ; 240 (MeOH).

Japan. Pat., 1998, 98 67 725; *CA*, **128**, 269581f (*isol*)

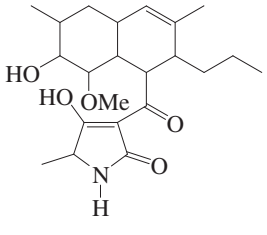
Antibiotic BE 54017 **A-1131**
BE 54017
[274694-01-8]



$C_{23}H_{18}ClN_3O_5$ 451.865
Prod. by *Streptomyces* sp. A54017. Antileukaemic agent.

Japan. Pat., 2000, 178 274; *CA*, **133**, 42244c

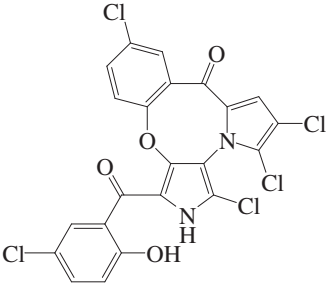
Antibiotic BE 54476 **A-1132**
BE 54476
[261360-41-2]



$C_{22}H_{33}NO_5$ 391.506
Prod. by a *Streptomyces* sp. Antibacterial agent.

Japan. Pat., 2000, 86 627; *CA*, **132**, 221452v

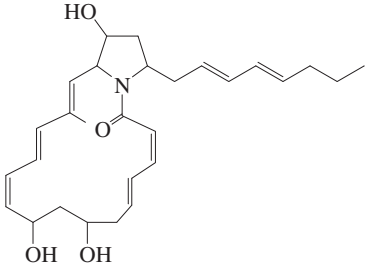
Antibiotic BE 55051 **A-1133**
3,5,6,10-Tetrachloro-1-(5-chloro-2-hydroxybenzoyl)-2H,8H-dipyrrolo[3,4-b:1′,2′-d][1,4]benzoxazocin-8-one, 9CI. BE 55051
[222548-15-4]



$C_{22}H_9Cl_5N_2O_4$ 542.588
Prod. by *Streptomyces* sp. A55051. Antitumour agent.

Japan. Pat., 1999, 99 71 379; *CA*, **130**, 280924g

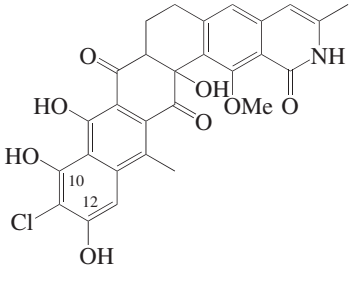
Antibiotic BE 67251 **A-1134**
BE 67251
[261625-75-6]



$C_{28}H_{39}NO_4$ 453.62
Prod. by *Streptomyces* sp. A67251. Antitumour agent.

Japan. Pat., 2000, 86 664; *CA*, **132**, 221455y

Antibiotic BE 19412A **A-1135**
BE 19412A
[173774-90-8]

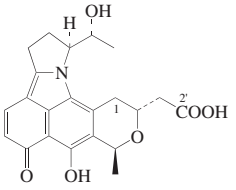


$C_{28}H_{22}ClNO_8$ 535.936
Prod. by *Streptomyces* sp. A19412. Cytotoxic agent. Greyish-green powder. λ_{max} 243 ; 287 ; 412 ; 431 (MeOH).
▶ LD_{50} (mus, ipr) 200 mg/kg.

10,12-Di-Me ether: Antibiotic BE 19412B. BE 19412B
[173774-91-9]
$C_{30}H_{26}ClNO_8$ 563.99
Semisynthetic. Cytotoxic agent. Dark yellow powder. λ_{max} 234 ; 290 ; 338 ; 404 (MeOH) (Berdy).

Tsukamoto, M. *et al., J. Antibiot.*, 1998, **51**, 908-914 (*isol, uv, ir, pmr, cmr*)

Antibiotic BE 54238A **A-1136**
BE 54238A
[205433-26-7]



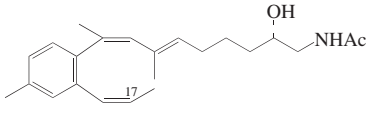
Absolute Configuration

$C_{22}H_{23}NO_6$ 397.427
Prod. by *Streptomyces* sp. A54238. Cytotoxic agent. Orange-yellow powder. λ_{max} 276 (ϵ 16700); 411 (ϵ 27700) (MeOH).

*1α-Hydroxy, 2′ →1-lactone: **Antibiotic BE 54238B**. BE 54238B*
[205433-27-8]
$C_{22}H_{21}NO_6$ 395.411
Prod. by *Streptomyces* sp. A54238. Cytotoxic agent. Orange-yellow powder. Mp 209° dec. (hydrochloride). $[\alpha]_D$ -521 (c, 0.29 in DMSO) (hydrochloride). λ_{max} 278 (ϵ 21500); 420 (ϵ 27600) (MeOH).

Tsukamoto, M. *et al., J. Antibiot.*, 2000, **53**, 26-32 (*isol, pmr, N-15 nmr*)
Tatsuta, K. *et al., J. Antibiot.*, 2004, **57**, 291-297 (*synth, pmr*)

Antibiotic BE 52211C **A-1137**
BE 52211C



Absolute Configuration

$C_{23}H_{33}NO_2$ 355.519
Analogue of Antibiotic BE 52211, A-1130. Prod. by *Streptomyces* sp. Cytotoxic. Pale yellow oil. $[\alpha]_D^{25}$ -38 (c, 0.008 in MeOH). Obt. as a mixt. with BE 52211B to which the data refers. λ_{max} 224 (log ϵ 4.41); 238 (sh) (log ϵ 4.37) (MeOH).

*Δ^{17}-Isomer: **Antibiotic BE 52211B**. BE 52211B*
$C_{23}H_{33}NO_2$ 355.519
Prod. by a *Streptomyces* sp. Obt. as a mixt. with BE52211C.

Kubota, N.K. *et al., J. Nat. Prod.*, 2004, **67**, 85-87 (*isol, pmr, cmr, ms*)

Antibiotic BMY 42428 A-1138

BMY 42428

[140879-94-3]

$C_{52}H_{69}NO_{23}$ 1076.11

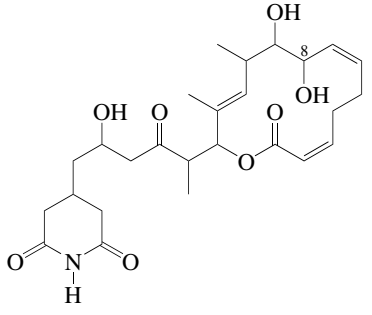
Related to Albofungin, A-244. Struct. unknown. Prod. by *Actinomadura madurae* ATCC53806. Cytotoxic agent active against gram-positive bacteria. Greenish-orange cryst. (MeOH/$CHCl_3$/hexane). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. λ_{max} 226 (E1%/1cm 239); 254 (E1%/1cm 262); 324 (E1%/1cm 157); 396 (E1%/1cm 76) (MeOH) (Berdy). λ_{max} 224 (E1%/1cm 292); 254 (E1%/1cm 317); 324 (E1%/1cm 187); 396 (E1%/1cm 85) (MeOH/HCl) (Berdy). λ_{max} 222 (E1%/1cm 302); 246 (E1%/1cm 315); 344 (E1%/1cm 120); 444 (E1%/1cm 95) (MeOH/NaOH) (Berdy).

U.S. Pat., 1992, 5 087 567; *CA*, **116**, 172425x

Antibiotic BR 040 A-1139

BR 040

[167503-59-5]



$C_{26}H_{37}NO_8$ 491.58

Glutarimide-type antibiotic. Prod. by *Streptomyces hygroscopicus* var. *ossamyceticus*. Osteophatic and bone absorption inhibitor. Powder. $[\alpha]_D$ -160 (MeOH). λ_{max} 204 (ϵ 17000) (MeOH). λ_{max} 204 (ϵ 17000) (MeOH) (Berdy).

8-Me ether: ***Antibiotic BR 042***. *BR 042*

[167503-60-8]

$C_{27}H_{39}NO_8$ 505.607

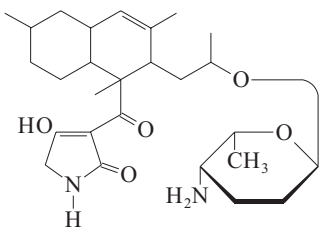
Prod. by *Streptomyces hygroscopicus* var. *ossamyceticus*. Osteophatic and bone absorption inhibitor. Powder. $[\alpha]_D$ -64 (MeOH). λ_{max} 205 (ϵ 14000) (MeOH). λ_{max} 205 (ϵ 14000) (MeOH) (Berdy).

Japan. Pat., 1995, 95 138 257; *CA*, **123**, 167722g (*isol*)

Antibiotic BU 4514N A-1140

BU 4514N

[151013-39-7]



$C_{27}H_{42}N_2O_5$ 474.639

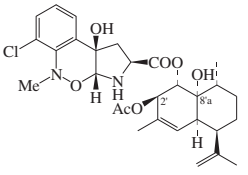
Prod. by a *Microtetraspora* sp. Neuritogenetic agent. Also active against gram-positive bacteria. Fine needles + $^3/_4H_2O$ (MeOH aq.). Sol. acids, DMSO, MeOH; poorly sol. H_2O, $CHCl_3$, EtOAc. Mp 185-186°. $[\alpha]_D^{25}$ -140 (c, 0.5 in 0.1*M* HCl). Related to Lydicamycin, L-353. λ_{max} 204 (ϵ 6540); 254 (sh) (ϵ 4320); 286 (ϵ 9000) (MeOH/HCl) (Derep). λ_{max} 205 (ϵ 8440); 248 (ϵ 9200); 287 (ϵ 8200) (MeOH/NaOH) (Derep). λ_{max} 204 (ϵ 6300); 251 (ϵ 4360); 286 (ϵ 8530) (MeOH) (Derep). λ_{max} 204 (ϵ 6540); 286 (ϵ 9000) (MeOH-HCl) (Berdy).

Toda, S. *et al., J. Antibiot.*, 1993, **46**, 875 (*isol, pmr, cmr, struct, props*)

Antibiotic CJ 12662 A-1141

CJ 12662

[169062-89-9]



Absolute Configuration

$C_{29}H_{37}ClN_2O_7$ 561.073

Related to Paeciloxazine, P-9. Prod. by *Aspergillus fischeri* var. *thermomutans* ATCC 18618. Antiparasitic agent. Sol. MeOH, Me_2CO, EtOAc, $CHCl_3$; fairly sol. H_2O. λ_{max} 217 ; 248 ; 287 (MeOH).

Dechloro: ***Antibiotic CJ 12663***. *CJ 12663*

[169062-90-2]

$C_{29}H_{38}N_2O_7$ 526.628

Prod. by *Aspergillus fischeri* var. *thermomutans* ATCC 18618. Antiparasitic agent. Sol. MeOH, $CHCl_3$, EtOAc, Me_2CO; fairly sol. H_2O. λ_{max} 217 ; 248 ; 287 (MeOH).

8′a-Deoxy, deacetoxy: ***Antibiotic UK 88051***. *UK 88051*

[138399-19-6]

$C_{27}H_{35}ClN_2O_4$ 487.037

Prod. by *Chrysosporium* sp. N845. Antiparasitic agent. Powder. Stereochem. not confirmed. λ_{max} 217 (ϵ 17530); 248 (ϵ 4300); 287 (ϵ 1390) (MeOH).

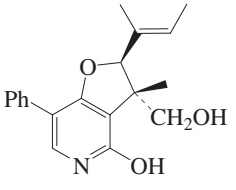
U.K. Pat., 1991, 2 240 100; *CA*, **116**, 39777x (*UK 88051*)

Pat. Coop. Treaty (WIPO), 1995, 95 19 363; *CA*, **123**, 254718d (*CJ 12662, CJ 12663*)

Didier, C. *et al., J.O.C.*, 2004, **69**, 7875-7879 (*synth, abs config*)

Antibiotic CJ 16170 A-1142

2,3-Dihydro-4-hydroxy-3-methyl-2-(1-methyl-1-propenyl)-7-phenylfuro[3,2-c]pyridine-3-methanol. CJ 16170



$C_{19}H_{21}NO_3$ 311.38

Prod. by *Cladobotryum varium* CL12284. Glass. $[\alpha]_D^{24}$ +15.4 (c, 0.26 in MeOH). λ_{max} 206 (ϵ 22000); 246 (ϵ 21000) (MeOH).

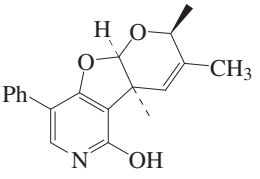
Sakemi, S. *et al., J. Antibiot.*, 2002, **55**, 6-18 (*isol, pmr, cmr*)

Clive, D.L.J. *et al., Tetrahedron*, 2002, **58**, 10243-10250 (*epimer, synth*)

Snider, B.B. *et al., Org. Lett.*, 2004, **6**, 2877-2880 (*synth*)

Antibiotic CJ 16171 A-1143

CJ 16171



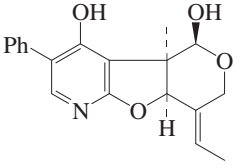
$C_{19}H_{19}NO_3$ 309.364

Prod. by *Cladobotryum varium* CL12284. Needles (MeOH). Mp 243-244°. $[\alpha]_D^{24}$ -22.7 (c, 0.33 in MeOH). λ_{max} 207 (ϵ 28000); 247 (ϵ 27000) (MeOH).

Sakemi, S. *et al., J. Antibiot.*, 2002, **55**, 6-18 (*isol, pmr, cmr, cryst struct*)

Antibiotic CJ 16173 A-1144

CJ 16173



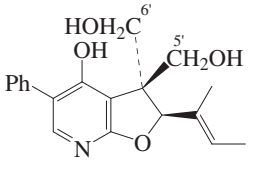
$C_{19}H_{19}NO_4$ 325.363

Prod. by *Cladobotryum varium* CL12284. Needles (MeOH). Mp 234-235°. $[\alpha]_D^{24}$ +205 (c, 0.12 in MeOH). λ_{max} 208 (ϵ 28000); 235 (ϵ 25000) (MeOH).

Sakemi, S. *et al., J. Antibiot.*, 2002, **55**, 6-18 (*isol, pmr, cmr, cryst struct*)

Antibiotic CJ 16174 A-1145

2,3-Dihydro-4-hydroxy-2-(1-methyl-1-propenyl)-5-phenylfuro[2,3-b]pyridine-3,3-dimethanol. CJ 16174



$C_{19}H_{21}NO_4$ 327.379

Prod. by *Cladobotryum varium* CL12284. Needles (MeOH). Mp 214-216°. $[\alpha]_D^{24}$ +40 (c, 0.02 in MeOH). λ_{max} 207 (ϵ 15000); 234 (ϵ 13000) (MeOH).

6′-Deoxy: ***Antibiotic CJ 16169***. *CJ 16169*

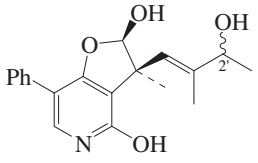
$C_{19}H_{21}NO_3$ 311.38
Prod. by *Cladobotryum varium* CL12284. Needles (MeOH). Mp 207-208°. $[\alpha]_D^{24}$ +52.3 (c, 0.09 in MeOH). λ_{max} 208 (ϵ 24000); 233 (ϵ 19000) (MeOH).

6′-Deoxy, 5′-aldehyde: ***Cladobotryal****. Antibiotic CJ 15696. CJ 15696*
[189010-01-3]
$C_{19}H_{19}NO_3$ 309.364
Prod. by *Cladobotryum varium*. Needles (MeOH) (as hemiacetal). Mp 198-199° (hemiacetal). $[\alpha]_D^{24}$ +21.2 (c. 0.52 in MeOH) (CJ 15696). $[\alpha]_D^{24}$ +65 (c, 0.8 in $CHCl_3$) (Cladobotryal). λ_{max} 209 (ϵ 24000); 234 (ϵ 19000) (MeOH).

Breinholt, J. *et al., Acta Chem. Scand.*, 1998, **52**, 631-634 (*Cladobotryal*)
Sakemi, S. *et al., J. Antibiot.*, 2002, **55**, 6-18 (*isol, pmr, cmr, cryst struct*)
Snider, B.B. *et al., Org. Lett.*, 2004, **6**, 2877-2880 (*synth*)

Antibiotic CJ 16196 A-1146

2,3-Dihydro-3-(3-hydroxy-2-methyl-1-butenyl)-3-methyl-7-phenylfuro[3,2-c]pyridine-2,4-diol. CJ 16196



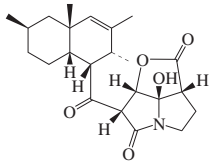
$C_{19}H_{21}NO_4$ 327.379
Prod. by *Cladobotryum varium* CL12284. Glass. $[\alpha]_D^{24}$ -7.4 (c, 0.11 in MeOH). λ_{max} 206 (ϵ 23000); 245 (ϵ 23000) (MeOH).

3′-Epimer: ***Antibiotic CJ 16197****. CJ 16197*
$C_{19}H_{21}NO_4$ 327.379
Prod. by *Cladobotryum varium* CL12284. Glass. $[\alpha]_D^{24}$ +2.2 (c, 0.14 in MeOH). λ_{max} 207 (ϵ 22000); 245 (ϵ 22000) (MeOH).

Sakemi, S. *et al., J. Antibiot.*, 2002, **55**, 6-18 (*isol, pmr, cmr*)

Antibiotic CJ 16264 A-1147

CJ 16264



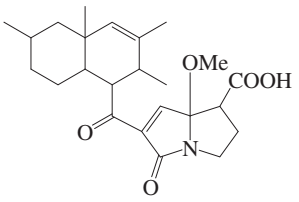
Relative Configuration

$C_{23}H_{31}NO_5$ 401.502
Related to Antibiotic UCS 1025B, A-1301. Prod. by the fungal strain CL39457. Antibacterial agent. Powder. $[\alpha]_D^{24}$ +27.3 (c, 0.11 in MeOH). λ_{max} 208 (ϵ 12000); 225 (sh) (ϵ 6200) (MeOH).

Sugie, Y. *et al., J. Antibiot.*, 2001, **54**, 917-925 (*isol, uv, pmr, cmr, activity*)

Antibiotic CJ 16367 A-1148

CJ 16367

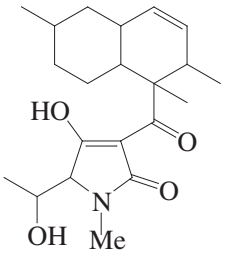


$C_{24}H_{33}NO_5$ 415.528
Prod. by the fungal strain CL39457. Antibacterial agent. Powder. $[\alpha]_D^{24}$ +17 (c, 0.11 in MeOH). λ_{max} 207 (ϵ 24000); 226 (sh) (ϵ 10000) (MeOH).

Sugie, Y. *et al., J. Antibiot.*, 2001, **54**, 917-925 (*isol, uv, pmr, cmr, activity*)

Antibiotic CJ 17572 A-1149

CJ 17572

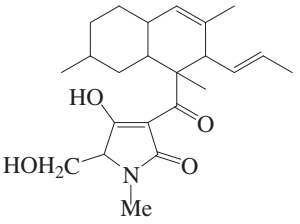


$C_{21}H_{31}NO_4$ 361.48
Tetramic acid antibiotic. Prod. by the fungus *Pezicula* sp. CL11877. Antibacterial incl. MDR bacteria. Amorph. powder. $[\alpha]_D^{25}$ +110.5 (c, 0.42 in MeOH). λ_{max} 255 (ϵ 12700); 292 (ϵ 15700) (MeOH).

Sugie, Y. *et al., J. Antibiot.*, 2002, **55**, 19-24 (*isol, uv, pmr, cmr, activity*)

Antibiotic CJ 21058 A-1150

CJ 21058



$C_{23}H_{33}NO_4$ 387.518
Tetramic acid antibiotic. Methyl analogue of Equisetin, E-142. Prod. by an unidentified fungus CL47745. SecA inhibitor. Antibacterial agent. Cytotoxic. Powder. $[\alpha]_D^{23}$ +318 (c, 0.5 in MeOH). λ_{max} 205 (ϵ 13500); 252 (ϵ 6100); 293 (ϵ 7900) (MeOH).

Sugie, Y. *et al., J. Antibiot.*, 2002, **55**, 25-29 (*isol, pmr, cmr, activity*)

Antibiotic CP 35763 A-1151

Antibiotic 35763. CP 35763
[64735-13-3]
$C_{26}H_{37}N_3O_7$ 503.594
Cyclic peptide antibiotic (Mikamycin A group). Probably identical with Madumycin II, M-35. Prod. by *Actinoplanes auranticolor* and *Actinoplanes azureus*. Active against gram-positive bacteria. Animal growth promoter. Powder. Sol. MeOH, $CHCl_3$, CH_2Cl_2; poorly sol. Et_2O, hexane. Mp 100° dec. $[\alpha]_D^{25}$ -114 (c, 1 in EtOH). Inseparable from A2315A. λ_{max} 218 (EtOH). λ_{max} 218 (E1%/1cm 669) (EtOH) (Berdy).

Ger. Pat., 1975, 2 516 020; *CA*, **84**, 87960
U.S. Pat., 1977, 4 038 383; *CA*, **88**, 20525v

Antibiotic CP 41043 A-1152

CP 41043. Antibiotic 41043
[63799-02-0]
Thiazole-peptide antibiotic. Struct. unknown. Prod. by *Pseudonocardia fastidiosa*. Antibacterial agent. Amorph. solid. Sol. Me_2CO, DMSO, DMF, EtOH, $CHCl_3$, EtOAc; poorly sol. Et_2O, H_2O, hexane. $[\alpha]_D$ +77 (c, 1 in Me_2CO). λ_{max} 225 (E1%/1cm 444); 270 (E1%/1cm 217); 350 (E1%/1cm 91) (EtOH) (Berdy).

U.S. Pat., 1977, 4 031 206; *CA*, **87**, 100678s

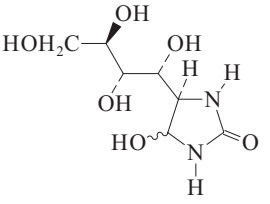
Antibiotic CP 41494 A-1153

CP 41494. Antibiotic 41494
[63799-03-1]
Thiazole-peptide antibiotic. Struct. unknown. Prod. by *Pseudonocardia fastidiosa*. Antibacterial agent. Amorph. solid. Sol. Me_2CO, EtOH, DMF, DMSO, EtOAc, $CHCl_3$; poorly sol. Et_2O, hexane, H_2O. $[\alpha]_D$ +29 (c, 0.5 in Me_2CO). λ_{max} 270 ; 295 ; 350 (EtOH).

U.S. Pat., 1977, 4 031 206; *CA*, **87**, 100678s

Antibiotic CV 1 A-1154

CV 1
[108351-34-4]

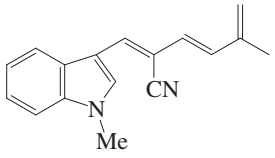


$C_7H_{14}N_2O_6$ 222.197
Aminoglycoside-related antibiotic. Isol. from *Streptomyces* sp. CO 1. Lipopolysarcharide synthesis Inhibitor active against gram-negative bacteria and *E. coli*. Synergistic with Spiramycin. Powder. Sol. H_2O, DMSO; poorly sol. MeOH, hexane. Mp 85-90°. $[\alpha]_D^{28}$ +66 (c, 0.9 in H_2O).

Ichimura, M. *et al., J. Antibiot.*, 1987, **40**, 723; 727 (*isol, struct, props*)

Antibiotic 0089D A-1155

*5-Methyl-2-[(1-methyl-1*H*-indol-3-yl)-methylene]-3,5-hexadienenitrile, 9CI*
[215876-60-1]

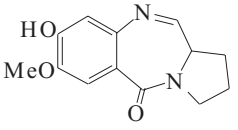


$C_{17}H_{16}N_2$ 248.327
Prod. by *Nocardia brasiliensis*. Antitumour and antibacterial agent.

Japan. Pat., 1998, 98 287 647; *CA*, **130**, 3119j

Antibiotic DC 81 A-1156

*1,2,3,11*a*-Tetrahydro-8-hydroxy-7-methoxy-5*H*-pyrrolo[2,1-*c*]benzodiazepin-5-one. DC 81*
[89824-22-6]

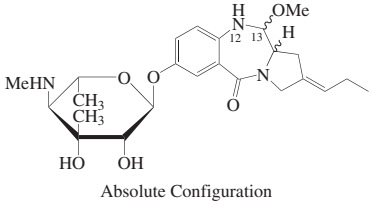


$C_{13}H_{14}N_2O_3$ 246.265
Anthramycin-type antibiotic. Prod. by *Streptomyces roseiscleroticus*. Weakly active against gram-positive and -negative bacteria and tumours. Powder. Sol. MeOH, EtOAc, Py; poorly sol. H_2O, hexane. Mp 98-105°. $[\alpha]_D^{22}$ +135 (c, 0.2 in MeOH). λ_{max} 224 ; 236 ; 316 (MeOH) (Berdy).
▶ LD_{50} (mus, ipr) 42 mg/kg. UY8546700

Japan. Pat., 1983, 83 180 487; *CA*, **100**, 173150 (*isol, struct, nmr*)
Weidner-Wells, M.A. *et al., J.O.C.*, 1989, **54**, 5746 (*synth*)
Wang, T. *et al., Org. Lett.*, 1999, **1**, 1835-1837 (*synth*)
Hu, W.-P. *et al., J.O.C.*, 2001, **66**, 2881-2883 (*synth*)

Antibiotic DC 102 A-1157

DC 102
[115722-50-4]



Absolute Configuration

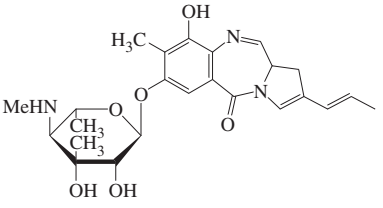
$C_{24}H_{35}N_3O_6$ 461.557
Isol. from a *Streptomyces* sp. Weakly active against gram-positive bacteria. Active against murine leukaemia. Powder. Sol. MeOH, Me_2CO; fairly sol. H_2O; poorly sol. $CHCl_3$, hexane, EtOAc. Mp 120° dec. λ_{max} 210 (ϵ 14000); 244 (sh) (ϵ 11000); 310 (ϵ 6500) (MeOH) (Derep).
▶ LD_{50} (mus, ipr) 1-5 mg/kg. UY8534200

Demethoxy, 12,13-didehydro: ***Sibanomicin****. SF 2364. Antibiotic SF 2364*
[117782-84-0]
[119180-42-6]
$C_{23}H_{31}N_3O_5$ 429.515
Anthramycin-type antibiotic. Prod. by *Micromonospora* sp. SF2364. Antitumour agent. Amorph. solid (as hydrochloride). Sol. H_2O, butanol, MeOH; poorly sol. EtOAc, hexane. Mp 185-195° dec. (hydrochloride). $[\alpha]_D^{22}$ +59 (c, 1 in H_2O). $[\alpha]_D^{22}$ +371 (c, 0.2 in DMSO). λ_{max} 206 (ϵ 37700); 240 (sh) (ϵ 15400); 310 (ϵ 2140) (0.1*N* HCl) (Derep). λ_{max} 217 (ϵ 21400); 240 (sh) (ϵ 14900); 314 (ϵ 4330) (0.1*N* NaOH) (Derep). λ_{max} 214 (ϵ 35400); 240 (sh) (ϵ 13500); 314 (ϵ 3630) (H_2O) (Derep).
▶ LD_{50} (mus, ipr) 1.3 mg/kg, LD_{50} (mus, ivn) 2.1 mg/kg.

Hara, M. *et al., J. Antibiot.*, 1988, **41**, 702 (*DC 102*)
Itoh, J. *et al., J. Antibiot.*, 1988, **41**, 1281 (*Sibanomicin*)

Antibiotic DC 105 A-1158

DC 105
[123731-93-1]

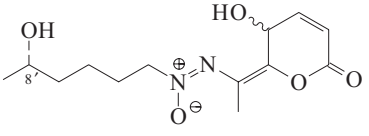


$C_{24}H_{31}N_3O_6$ 457.525
Benzodiazepine antibiotic. Similar to Sibiromycin. Prod. by *Streptomyces* sp. DO-105. Cytotoxic agent. Yellow cryst. Sol. $CHCl_3$, MeOH, DMSO; fairly sol. butanol; poorly sol. H_2O. $[\alpha]_D$ +567.5 ($CHCl_3$). λ_{max} 268 (MeOH). λ_{max} 268 (H_2O) (Berdy). λ_{max} 270 ; 302 ; 440 (HCl) (Berdy). λ_{max} 280 ; 360 ; 410 ; 425 (NaOH) (Berdy).
▶ LD_{50} (mus, ipr) .147 mg/kg.

Japan. Pat., 1989, 89 121 296; *CA*, **111**, 230672k

Antibiotic DC 8118A A-1159

DC 8118A
[150045-16-2]



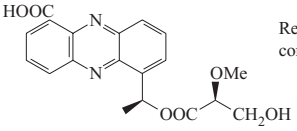
$C_{13}H_{20}N_2O_5$ 284.311
Prod. by *Streptomyces* sp. (DO-118; BP3595). Antibacterial and antitumour agent. Sol. MeOH, Me_2CO; poorly sol. H_2O. $[\alpha]_D^{25}$ -176. λ_{max} 212 (ϵ 4600); 288 (ϵ 2600) (MeOH) (Berdy).

8′-Ketone: Antibiotic DC 8118B. DC 8118B
[150045-17-3]
$C_{13}H_{18}N_2O_5$ 282.296
Prod. by *Streptomyces* sp. (DO-118; BP3595). Antibacterial and antitumour agent. Sol. MeOH, Me_2CO; poorly sol. H_2O. $[\alpha]_D^{25}$ -245. λ_{max} 286 (ϵ 3800) (MeOH) (Berdy).

Pat. Coop. Treaty (WIPO), 1993, 09 110; *CA*, **119**, 158353 (*isol, pmr, cmr, uv*)

Antibiotic DOB 41 A-1160

6-[1-(3-Hydroxy-2-methoxy-1-oxopropoxy)ethyl]-1-phenazinecarboxylic acid, 9CI. DOB 41
[115666-98-3]

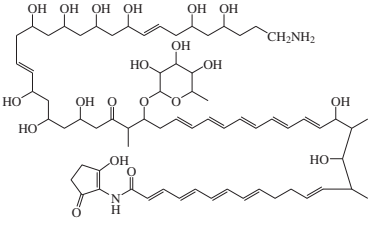


$C_{19}H_{18}N_2O_6$ 370.361
Phenazine antibiotic. Isol. from a *Pseudomonas* sp. Active against gram-positive bacteria and a murine leukaemia P388. Yellow needles. Sol. MeOH, DMSO, $CHCl_3$; poorly sol. Et_2O, hexane, H_2O. Mp 201°. λ_{max} 255 (ϵ 76700); 370 (ϵ 15700) ($CHCl_3$) (Derep).

Shoji, T. *et al., J. Antibiot.*, 1988, **41**, 589 (*isol, pmr, cmr, struct*)

Antibiotic ECO 02301 A-1161

ECO 02301

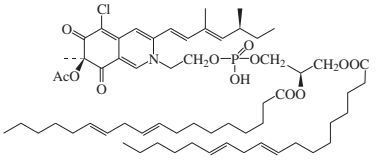


$C_{70}H_{108}N_2O_{20}$ 1297.625
Prod. by *Streptomyces aizunensis* NRRL B-11277. Antifungal agent. Yellow solid. λ_{max} 319 (ϵ 110000); 334 (ϵ 146000); 351 (ϵ 128000) (MeOH).

McAlpine, J.B. *et al., J. Nat. Prod.*, 2005, **68**, 493-496 (*isol, pmr, cmr*)

Antibiotic EGS 1300-1 A-1162

EGS 1300-1
[218937-20-3]

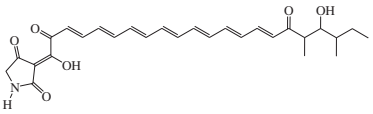


$C_{62}H_{95}ClNO_{12}P$ 1112.859
Prod. by *Penicillium* sp. G-1300. Sialyltransferase inhibitor. Red glassy solid. Related to Isochromophilone VI, I-205.

Japan. Pat., 1998, 98 330 364; *CA*, **130**, 80425h

Antibiotic F 1778 A-1163

F 1778
[204992-07-4]



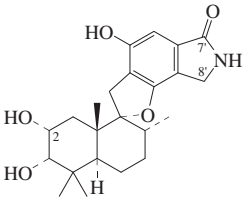
$C_{28}H_{33}NO_6$ 479.572

Tetramic acid deriv. Prod. by the discomycete *Tapesia* sp. SANK 18896. Antifungal agent.

Tanaka, A. *et al., Annu. Rep. Sankyo Res. Lab.*, 1997, **49**, 135-141; *CA*, **128**, 241597s

Antibiotic F 1839A A-1164

F 1839A
[159096-43-2]



Probable Absolute Configuration

$C_{23}H_{31}NO_5$ 401.502

Struct. of Stachybotrylactam revised in 2003. The structs. of other members of the group must currently be regarded as probable only. Prod. by *Stachybotrys* sp. F-1839. Inhibitor of pancreatic cholesterol esterase. Amorph. powder. Sol. MeOH, Py, DMSO; fairly sol. EtOAc, 2-butanone; poorly sol. H_2O, hexane. $[\alpha]_D^{25}$ -29.6 (c, 0.1 in MeOH). λ_{max} 218 (ϵ 37400); 262 (ϵ 6550); 301 (ϵ 3180) (MeOH) (Derep).

2,3-Di-Ac: [163391-78-4]
$C_{27}H_{35}NO_7$ 485.576
Prod. by *Stachybotrys chartarum* and *Stachybotrys complementi*. Immunosuppressive. Powder. $[\alpha]_D$ -29 (MeOH). λ_{max} 216 ; 258 ; 299 (MeCN).

N-*(2-Hydroxyethyl):* ***Antibiotic F 1839E***. *F 1839E*
[159096-46-5]
$C_{25}H_{35}NO_6$ 445.555
From *Stachybotrys* sp. F-1839. Inhibitor of cholesterol esterase, anticholesterolemic. Amorph. powder. Sol. MeOH, Py, DMSO; fairly sol. EtOAc, 2-butanone; poorly sol. H_2O, hexane. λ_{max} 217 (ϵ 31500); 262 (ϵ 6410); 302 (ϵ 2310) (MeOH) (Derep).

N-*(3-Carboxypropyl):* [214132-31-7]
$C_{27}H_{37}NO_7$ 487.592
Metab. of *Stachybotrys chartarum*.

N-*(3-Methoxycarbonylpropyl):* ***Antibiotic F 1839F***. *F 1839F*
[159096-48-7]
$C_{28}H_{39}NO_7$ 501.619
From *Stachybotrys* sp. F-1839. Inhibitor of cholesterol esterase, anticholesterolemic. Amorph. powder. Sol. MeOH, Py, DMSO; fairly sol. EtOAc, 2-butanone; poorly sol. H_2O, hexane. λ_{max} 217 (ϵ 33100); 267 (ϵ 5290); 300 (ϵ 2530) (MeOH) (Derep).

N-*(4-Carboxybutyl):* ***Antibiotic Q 11270B***. *Q 11270B*
[150459-98-6]
$C_{28}H_{39}NO_7$ 501.619
Prod. by *Stachybotrys chartarum*. Powder. $[\alpha]_D^{25}$ +25.5 (c,0.19 in MeOH). C-2 config. not certain.

N-*(1-Carboxy-2-methylpropyl):* [685141-56-4]
$C_{28}H_{39}NO_7$ 501.619
Metab. of *Stachybotrys chartarum*. Amorph. solid.

N-*(1-Carboxy-2-methylbutyl):* [685141-58-6]
$C_{29}H_{41}NO_7$ 515.645
Constit. of *Stachybotrys chartarum*.

N-*(1-Carboxy-3-methylbutyl):* [685141-57-5]
$C_{29}H_{41}NO_7$ 515.645
Constit. of *Stachybotrys chartarum*.

N-*(1-Carboxy-2-phenylethyl):* [685141-59-7]
$C_{32}H_{39}NO_7$ 549.663
Constit. of *Stachybotrys chartarum*. Pale yellow solid.

2-Deoxy: ***Stachybotrylactam***. *Spirodihydrobenzofuranlactam I*
[163391-76-2]
[173220-01-4]
$C_{23}H_{31}NO_4$ 385.502
Prod. by *Stachybotrys chartarum* and *Stachybotrys complementii*. Immunosuppressant. Endothelin antagonist, inhibitor of HIV-1 protease. Powder. λ_{max} 216 ; 257 ; 298 (MeCN).

2-Deoxy, 3-Ac: [163391-77-3]
$C_{25}H_{33}NO_5$ 427.539
Prod. by *Stachybotrys chartarum* and *Stachybotrys complementi* ATCC20511. Immunosuppressant. Powder. λ_{max} 216 ; 257 ; 298 (MeCN).

2-Deoxy, N-*(2-hydroxyethyl):* ***Stachybotramide***. *Spirodihydrobenzofuranlactam II*. *Stachybotrin*†
[149598-71-0]
[149691-32-7 , 207453-12-1 , 173220-02-5]
$C_{25}H_{35}NO_5$ 429.555
Prod. by *Stachybotrys alternans*, *Stachybotrys chartarum* and *Stachybotrys cylindrospora*. Cryst. (MeOH). Mp 202°. $[\alpha]_D^{24}$ -12.5 (c, 0.8 in $CHCl_3$/MeOH) (tri-Ac).

2-Deoxy, N-*(1-carboxy-2-hydroxypropyl):* [685141-55-3]
$C_{27}H_{37}NO_7$ 487.592
Metab. of *Stachybotrys chartarum*. Amorph. solid.

2-Deoxy, N-*(1,3-dicarboxypropyl):* ***Spirodihydrobenzofuranlactam IV***
[173220-03-6]
[685141-54-2]
$C_{28}H_{37}NO_8$ 515.602
Prod. by *Stachybotrys chartarum*. Enzyme inhibitor, HIV-1 protease; tyrosine kinase inhibitor. Amorph. solid.

2-Deoxy, N-*(4-carboxybutyl):* ***Spirodihydrobenzofuranlactam III***. *Q 11270A*. *Antibiotic Q 11270A*
[150459-97-5]
$C_{28}H_{39}NO_6$ 485.619
Prod. by *Stachybotrys chartarum* and another *Stachybotrys* sp. $[\alpha]_D^{25}$ -167.5 (c,0.04 in MeOH).

2-Deoxy, N-*(3-methoxycarbonylbutyl):* ***Antibiotic F 1839J***. *F 1839J*
[159096-47-6]
$C_{29}H_{41}NO_6$ 499.646
From *Stachybotrys* sp. F-1839. Cholesterol esterase inhibitor, anticholesterolemic. Amorph. powder. Sol. MeOH, Py, DMSO; fairly sol. EtOAc, 2-butanone; poorly sol. H_2O, hexane. λ_{max} 217 (ϵ 33100); 267 (ϵ 5290); 300 (ϵ 2530) (MeOH) (Derep). λ_{max} 218 (ϵ 32041); 261 (ϵ 9412); 301 (ϵ 2323) (MeOH) (Berdy).

2-Deoxy, 4′-Me ether, N-*(2-hydroxyethyl):* ***Stachybotrin A***†
[256520-70-4]
$C_{26}H_{37}NO_5$ 443.582
Prod. by *Stachybotrys alternans.*

8′-Oxo, 2-deoxy: ***Spirodihydrobenzofuranlactam V***
[173220-04-7]
$C_{23}H_{29}NO_5$ 399.486
Prod. by *Stachybotrys chartarum* and *Stachybotrys atra*.

7′-Deoxo, 8′-oxo: ***Antibiotic F 1839D***. *F 1839D*
[159096-45-4]
$C_{23}H_{31}NO_5$ 401.502
From *Stachybotrys* sp. F-1839. Inhibitor of cholesterol esterase, anticholesterolemic. Amorph. powder. Sol. MeOH, Py, DMSO; fairly sol. EtOAc, 2-butanone; poorly sol. H_2O, hexane. λ_{max} 225 (ϵ 31600); 255 (ϵ 10400); 298 (ϵ 4920) (MeOH) (Derep).

8′-Methoxy: ***Antibiotic F 1839B***. *F 1839B*
[159096-44-3]
$C_{24}H_{33}NO_6$ 431.528
From *Stachybotrys* sp. F-1839. Inhibitor of cholesterol esterase, anticholesterolaemic. Amorph. powder. Sol. MeOH, DMSO, Py; fairly sol. EtOAc, 2-butanone; poorly sol. H_2O, hexane. λ_{max} 218 (ϵ 41300); 271 (ϵ 6230); 308 (ϵ 2910) (base in MeOH) (Derep).

8′-Epimer, 8′-methoxy: ***Antibiotic F 1839C***. *F 1839C*
[159170-51-1]
$C_{24}H_{33}NO_6$ 431.528
From *Stachybotrys* sp. F-1839. Inhibitor of cholesterol esterase, anticholesterolemic. Amorph. powder. Sol. MeOH, Py, DMSO; fairly sol. EtOAc, 2-butanone; poorly sol. H_2O, hexane. λ_{max} 217 (ϵ 33100); 267 (ϵ 5290); 302 (ϵ 2530) (MeOH) (Derep). λ_{max} 218 (ϵ 41300); 271 (ϵ 6230); 308 (ϵ 2910)

(MeOH) (Derep). λ_{max} 217 (ϵ 33069); 267 (ϵ 5293); 302 (ϵ 2525) (MeOH) (Berdy).

Ayer, W.A. *et al., Can. J. Chem.*, 1993, **71**, 487-493 (*Stachybotramide*)
Sakai, K. *et al., J. Antibiot.*, 1995, **48**, 447-456 (*isol, pmr, cmr*)
Jarvis, B.B. *et al., Nat. Toxins*, 1995, **3**, 10-16 (*Stachybotrylactam*)
Kamalov, L.S. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1997, **33**, 599-607; 1998, **34**, 666-669; 1999, **35**, 103-107 (*Stachybotrin, Stachybotrin A*)
Deng, W.P. *et al., J.O.C.*, 2003, **68**, 7422-7427 (*synth, struct, cryst struct*)
Vázquez, M.J. *et al., Tetrahedron*, 2004, **60**, 2379-2385 (*Stachybotrys chartarum metabs*)

Antibiotic F 10C A-1165

F 10C

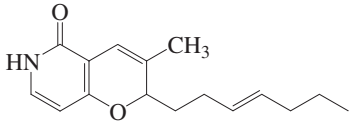
Pyrrothine-related antibiotic. Struct. unknown. Prod. by *Streptomyces luteoreticuli*. Antibacterial and antifungal agent. Orange cryst. Sol. EtOAc. λ_{max} 245 ; 310 ; 340 (MeOH).

Fukui Kenkyo Nempo, 1957, **10**, 52

Antibiotic FA 4283 A-1166

2-(3-Heptenyl)-2,6-dihydro-3-methyl-5H-pyrano[3,2-c]pyridin-5-one. FA 4283

[115501-93-4]



$C_{16}H_{21}NO_2$ 259.347

Prod. by *Penicillium funiculosum*. Inhibitor of fatty acid synth. Antiobesity agent. Yellow cryst. (C_6H_6/hexane). Sol. MeOH, DMSO, DMF, $CHCl_3$; fairly sol. EtOAc, Et_2O; poorly sol. H_2O. $[\alpha]_D$ +38.3 (EtOH). λ_{max} 235 (E1%/1cm 810); 330 (E1%/1cm 350) (MeOH) (Berdy).

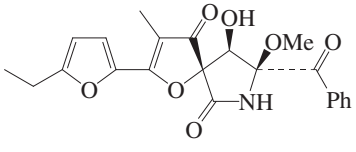
▶ LD_{50} (mus, ipr) 400-1200 mg/kg.

Eur. Pat., 1988, 259 811; *CA*, **109**, 53213x

Antibiotic FD 838 A-1167

FD 838

[110341-78-1]



$C_{22}H_{21}NO_7$ 411.41

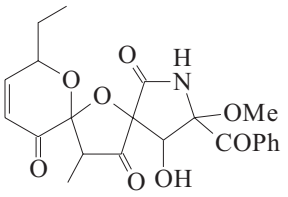
Tetramic acid deriv. Related to Antibiotic FD 839, A-1168. Prod. by *Streptomyces fumigatus fresenius*. Antitumour agent. Pale green powder. Sol. MeOH, $CHCl_3$, C_6H_6; fairly sol. Et_2O, hexane; poorly sol. H_2O. Mp 98-99°. λ_{max} 252 (ϵ 7500); 283 (ϵ 4110); 336 (ϵ 10010) (MeOH).

Eur. Pat., 1987, 216 607; *CA*, **107**, 132627x
Orellana, A. *et al., Chem. Comm.*, 2008, (*synth*)

Antibiotic FD 839 A-1168

FD 839

[135862-94-1]



$C_{22}H_{23}NO_8$ 429.426

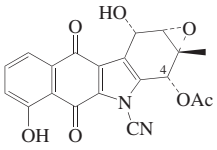
Prod. by *Aspergillus fumigatus fresenius*. Antitumour agent. Mp 105-107°. λ_{max} 249 (ϵ 11100); 283 (ϵ 3170) (MeOH).

Japan. Pat., 1991, 91 10 689; *CA*, **115**, 112816v (*isol*)

Antibiotic FL 120B′ A-1169

FL 120B′

[156429-12-8]



Absolute Configuration

$C_{20}H_{14}N_2O_7$ 394.34

Prod. by *Streptomyces chattanoogensis* ssp. *taitungensis*. Active against gram-positive bacteria. Orange cryst. (EtOAc/$CHCl_3$). Sol. MeOH, EtOAc; poorly sol. H_2O. Mp 155-160° dec. Similar to Kinamycin F. λ_{max} 207 (ϵ 14000); 247 (ϵ 15300); 275 (ϵ 10300); 295 (sh) (ϵ 6500); 309 (sh) (ϵ 5300); 394 (ϵ 5700); 445 (ϵ 4200) (MeOH). λ_{max} 218 (ϵ 11600); 240 (ϵ 15400); 274 (ϵ 13900); 309 (ϵ 7600); 392 (ϵ 5300); 545 (ϵ 5000) (MeOH/NaOH) (Berdy).

O-*De-Ac, 4*-O-*(2-methylpropanoyl):* ***Antibiotic FL 120B***. *FL 120B*

[156429-11-7]

$C_{22}H_{18}N_2O_7$ 422.393

Prod. by *Streptomyces chattanoogensis* ssp. *taitungensis*. Active against gram-positive bacteria. Orange needles ($CHCl_3$/EtOAc). Sol. MeOH, EtOAc; poorly sol. H_2O. Mp 185-190° dec. λ_{max} 206 (ϵ 12500); 243 (ϵ 10600); 274 (ϵ 7600); 294 (sh) (ϵ 4600); 308 (sh) (ϵ 3200); 394 (ϵ 3400); 445 (ϵ 3700) (MeOH). λ_{max} 218 (ϵ 14300); 238 (ϵ 14800); 275 (ϵ 14100); 308 (ϵ 6400); 389 (ϵ 3900); 539 (ϵ 4000) (MeOH/NaOH) (Berdy).

Chang, L.-R. *et al., J. Antibiot.*, 1994, **47**, 675-680; 681-687 (*isol, uv, ir, pmr, cmr, props*)

Antibiotic FR 3383 A-1170

FR 3383

[60351-50-0]

Nucleoside-type antibiotic. Struct. unknown. Prod. by *Streptomyces odainensis*. Antibacterial agent. Yellow cryst. (butanol). Sol. H_2O; poorly sol. MeOH, Me_2CO, EtOAc, $CHCl_3$. λ_{max} 215 (E1%/1cm 340); 258 (E1%/1cm 210) (MeOH) (Berdy). λ_{max} 215 (E1%/1cm 340); 258 (E1%/1cm 210) (H_2O) (Berdy). λ_{max} 212 (E1%/1cm 360); 240 (E1%/1cm 300) (HCl) (Berdy).

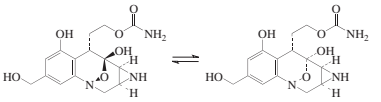
▶ LD_{50} (mus, ipr) 1000 - 2000 mg/kg.

Japan. Pat., 1976, 76 54 988; *CA*, **85**, 121791x
Japan. Pat., 1977, 77 93 701; *CA*, **87**, 199159h

Antibiotic FR 66979 A-1171

FR 66979

[102409-60-9]



$C_{14}H_{17}N_3O_6$ 323.305

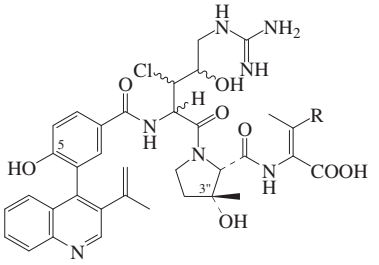
Exists as tautomeric mixt. Prod. by *Streptomyces sandaensis*. Shows weak activity against bacteria, fungi and yeasts. Powder. Sol. H_2O, MeOH; poorly sol. Me_2CO, $CHCl_3$. Mp 165-170° dec. $[\alpha]_D^{23}$ +12.5. Related to Antibiotic FR 900482, A-1177. λ_{max} 214; 240 (sh); 280 (H_2O/HCl) (Derep). λ_{max} 223; 250 (sh); 298 (H_2O/NaOH) (Derep). λ_{max} 215 (ϵ 20000); 240 (sh) (ϵ 5000); 280 (ϵ 1600) (H_2O) (Derep).

▶ LD_{50} (mus, ivn) 40 mg/kg. KC5010000

Terano, H. *et al., J. Antibiot.*, 1989, **42**, 145 (*isol, pmr, cmr, struct*)
Ducray, R. *et al., Angew. Chem., Int. Ed.*, 2002, **41**, 4688-4691 (*synth*)
Judd, T.C. *et al., J.O.C.*, 2004, **69**, 2825-2830 (*synth*)

Antibiotic FR 225656 A-1172

FR 225656



R = CH_2CH_3

$C_{37}H_{44}ClN_7O_8$ 750.249

Prod. by *Helicomyces* sp. No. 19353. Gluconeogenesis inhibitor. Powder. Mp 230° dec. $[\alpha]_D^{23}$ +37 (c, 0.5 in DMSO). λ_{max} 232 (ϵ 63000) (MeOH).

5-Me ether:

$C_{38}H_{46}ClN_7O_8$ 764.276

Prod. by *Helicomyces* sp. No. 19353. Gluconeogenesis inhibitor. Powder. Mp 210-215° dec. $[\alpha]_D^{23}$ +31 (c, 0.3 in DMSO). λ_{max} 232 (ϵ 49000) (MeOH).

Ohtsu, Y. *et al., J. Antibiot.*, 2003, **56**, 682-688; 689-693; 694-699 (*isol, ir, pmr, cmr, activity*)

Antibiotic FR 225659 A-1173

FR 225659

As Antibiotic FR 225656, A-1172 with R = CH_3

$C_{36}H_{42}ClN_7O_8$ 736.223
Prod. by *Helicomyces* sp. No. 19353. Gluconeogenesis inhibitor. Potential anti-diabetic agent. Powder. Mp 225-230° dec. $[\alpha]_D^{23}$ +40 (c, 0.5 in DMSO). λ_{max} 233 (ϵ 54000) (MeOH).

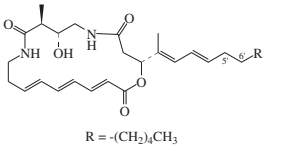
5-Me ether:
$C_{37}H_{44}ClN_7O_8$ 750.249
Prod. by *Helicomyces* sp. No. 19353. Gluconeogenesis inhibitor. Powder. Mp 230-235° dec. $[\alpha]_D^{23}$ +35 (c, 0.1 in DMSO). λ_{max} 228 (ϵ 43000) (MeOH).

3″-Deoxy:
$C_{36}H_{42}ClN_7O_7$ 720.223
Prod. by *Helicomyces* sp. No. 19353. Gluconeogenesis inhibitor. Powder. Mp 225-230° dec. $[\alpha]_D^{23}$ +22 (c, 0.06 in DMSO). λ_{max} 232 (ϵ 47000) (MeOH).

Ohtsu, Y. *et al., J. Antibiot.*, 2003, **56**, 682-688; 689-693; 694-699 (*isol, ir, pmr, cmr, cryst struct, activity*)

Antibiotic FR 252921 A-1174

FR 252921



$C_{29}H_{44}N_2O_5$ 500.677
Prod. by *Pseudomonas fluorescens* No. 408813. Immunosuppressant. Powder. Mp 140-144°. $[\alpha]_D^{23}$ -222 (c, 0.2 in DMSO). λ_{max} 239 (ϵ 32200); 304 (ϵ 39700) (MeCN).

Fujine, K. *et al., J. Antibiot.*, 2003, **56**, 55-61; 62-67; 68-71 (*isol, activity*)
Yu, S. *et al., Tet. Lett.*, 2006, **47**, 9155-9157 (*synth*)
Falck, J.R. *et al., Angew. Chem., Int. Ed.*, 2007, **46**, 4527-4529 (*synth, abs config*)

Antibiotic FR 252922 A-1175

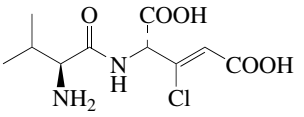
FR 252922
As Antibiotic FR 252921, A-1174 with R = $-(CH_2)_6CH_3$
$C_{31}H_{48}N_2O_5$ 528.731
Prod. by *Pseudomonas fluorescens* No. 408813. Immunosuppressant. Powder. Mp 142-146°. $[\alpha]_D^{23}$ -235 (c, 0.2 in DMSO). λ_{max} 239 (ϵ 29300); 304 (ϵ 36700) (MeCN).

5′,6′-Didehydro: ***Antibiotic FR 256523***. *FR 256523*
$C_{31}H_{46}N_2O_5$ 526.715
Prod. by *Pseudomonas fluorescens* No. 408813. Immunosuppressant. Powder. Mp 88-93°. $[\alpha]_D^{23}$ -72 (c, 0.3 in DMSO). λ_{max} 266 (sh) ; 278 (ϵ 60700); 291 (ϵ 59400) (MeCN).

Fujine, K. *et al., J. Antibiot.*, 2003, **56**, 55-61; 62-67; 68-71 (*isol, activity*)

Antibiotic FR 900148 A-1176

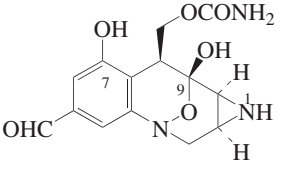
FR 900148
[74242-74-3]
[73706-57-7]



$C_{10}H_{15}ClN_2O_5$ 278.692
Peptide antibiotic. Struct. revised in 1991. Isol. from *Streptomyces xanthocidicus*. Active against gram-positive and -negative bacteria. Inhibits cell wall synth. by spheroplast formn. Amphoteric powder + $2H_2O$ (as Na salt). Sol. H_2O, MeOH; fairly sol. EtOH; poorly sol. Me_2CO, HCl. Mp 143-147° dec. (Na salt). $[\alpha]_D^{20}$ +77.1 (c, 0.75 in H_2O). pK_{a1} 3.25; pK_{a2} 7.9.
▶ LD_{50} (mus, ivn) 3500-6500 mg/kg.
Kuroda, Y. *et al., J. Antibiot.*, 1980, **33**, 259; 267 (*isol*)
Yasuda, N. *et al., J. Antibiot.*, 1991, **44**, 801-802 (*struct*)

Antibiotic FR 900482 A-1177

FR 900482
[102363-08-6]



$C_{14}H_{15}N_3O_6$ 321.289
Exhibits epimerisation at anomeric centre. Prod. by *Streptomyces sandaensis* isol. from soil. Active against gram-positive and -negative bacteria and tumours. Powder. Sol. MeOH, H_2O; poorly sol. Me_2CO, $CHCl_3$. Mp 175° dec. $[\alpha]_D^{23}$ +8 (c, 1 in H_2O). Synthetic derivs. showed antileukaemic activity. λ_{max} 214 (ϵ 31000); 240 (sh) (ϵ 7400); 282 (ϵ 2500); 331 (ϵ 600) (MeOH/HCl) (Derep). λ_{max} 238 (ϵ 15700); 302 (ϵ 2600); 374 (ϵ 2200) (MeOH/NaOH) (Derep). λ_{max} 236 (ϵ 19200); 281 (ϵ 6100); 330 (ϵ 2200) (MeOH) (Derep). λ_{max} 218 (E1%/1cm 630); 236 (E1%/1cm 600); 281 (E1%/1cm 190); 330 (E1%/1cm 70) (MeOH) (Berdy). λ_{max} 216 ; 282 ; 331 (MeOH/HCl) (Berdy).
▶ LD_{50} (mus, ipr) 32 mg/kg. KC5000000

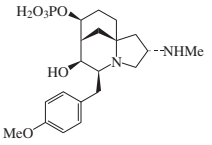
1,7,9-Tri-Ac: FK973
[114580-45-9]
$C_{20}H_{21}N_3O_9$ 447.401
Isol. from *Streptomyces sandaensis*. Antitumour antibiotic.

7-Me ether, 1,9-di-Ac: FK317
[102409-92-7]
$C_{19}H_{21}N_3O_8$ 419.39
Antineoplastic antibiotic. Used in the treatment of solid tumours. Metab. of FK973.

Eur. Pat., 1986, (*(Fujisawa)*)166 389; *CA*, **104**, 223624y (*FK 317*)
Kiyoto, S. *et al., J. Antibiot.*, 1987, **40**, 589-593; 594-599; 600-606; 607-611 (*isol, struct, props*)
Uchida, I. *et al., J.A.C.S.*, 1987, **109**, 4108-4109 (*struct*)
Fujita, T. *et al., J. Antibiot.*, 1988, **41**, 392-394 (*biosynth*)
Masuda, K. *et al., Jpn. J. Pharmacol.*, 1989, **51**, 219-226 (*FK 973*)
Yasuda, N. *et al., Tet. Lett.*, 1989, **30**, 3397-3400 (*synth*)
Fukuyama, T. *et al., J.A.C.S.*, 1992, **114**, 383-385 (*synth*)
Schkeryantz, J.M. *et al., J.A.C.S.*, 1995, **117**, 4722-4723 (*synth*)
Katoh, T. *et al., Tetrahedron*, 1997, **53**, 10229-10238; 10239-10252; 10253-10270 (*synth*)
Naoe, Y. *et al., Cancer Chemother. Pharmacol.*, 1998, **42**, 31-36 (*FK 317*)
Hoshi, A. *et al., Drugs of the Future*, 1998, **23**, 483-484 (*FK 317*)
Inami, M. *et al., Cancer Lett. (Shannon, Irel.)*, 2002, **181**, 39-45 (*FK 317, pharmacol*)
Paleo, M.R. *et al., J.O.C.*, 2003, **68**, 130-138 (*synth*)
Judd, T.C. *et al., J.O.C.*, 2004, **69**, 2825-2830 (*synth*)
Suzuki, M. *et al., J.O.C.*, 2004, **69**, 2831-2843 (*synth*)
Trost, B.M. *et al., Org. Lett.*, 2008, **10**, 1369-1372 (*epimer, synth*)

Antibiotic FR 901483 A-1178

FR 901483. WF 11231A. Antibiotic WF 11231A
[150151-86-3]



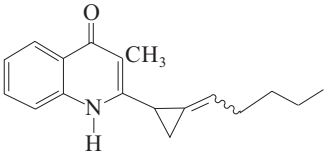
$C_{20}H_{31}N_2O_6P$ 426.449
Prod. by *Cladobotryum* sp. No. 11231. Immunosuppressant. Lymphocyte proliferation inhibitor. Purine nucleotide biosynth. inhibitor. Mycotoxin. Needles. Sol. MeOH, H_2O; poorly sol. Me_2CO, EtOAc. Mp 210-213°. $[\alpha]_D^{25}$ -11 (c, 0.7 in $CHCl_3$). λ_{max} 225 ; 275 ; 285 (sh) (MeOH).

[150284-39-2]

Sakamoto, K. *et al., J. Antibiot.*, 1996, **49**, 37-44 (*isol, uv, ir, pmr, cmr, props*)
Ousmer, M. *et al., J.A.C.S.*, 2001, **123**, 7534-7538 (*synth*)
Ousmer, M. *et al., Org. Lett.*, 2001, **3**, 765-769 (*synth*)
Maeng, J.-H. *et al., Org. Lett.*, 2001, **3**, 1125-1128 (*synth*)
Kan, T. *et al., Org. Lett.*, 2004, **6**, 2729-2731 (*synth*)
Brummond, K.M. *et al., J.O.C.*, 2005, **70**, 907-916 (*synth*)

Antibiotic G 1499-2 A-1179

3-Methyl-2-(pentylidenecyclopropyl)-4(1H)-quinolinone, 9CI. G 1499-2
[68978-12-1]



$C_{18}H_{21}NO$ 267.37
Prod. by *Cytophaga johnsonii*. Possesses limited antibiotic activity against a few bacteria. Rosettes (Me_2CO). Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. Mp 192-

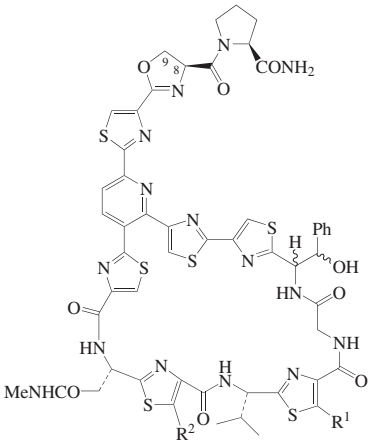
193°. $[\alpha]_D^{25}$ +172 (c, 0.5 in $CHCl_3$). λ_{max} 236 (ϵ 49100); 310 (ϵ 10900) (MeOH/HCl) (Derep). λ_{max} 244 (ϵ 33600); 322 (ϵ 11200); 336 (ϵ 11900) (MeOH) (Derep).

► LD_{50} (mus, ipr) 500 - 1500 mg/kg.
VC8298500

Evans, J.R. *et al., J. Antibiot.*, 1978, **31**, 952 (*isol, uv, ir, pmr, cmr, ms*)

Antibiotic GE 2270 A-1180

GE 2270



A $R^1 = CH_2OMe$, $R^2 = CH_3$
B_2 $R^1 = R^2 = CH_3$
C_1 $R^1 = H$, $R^2 = CH_3$
C_{2a} $R^1 = CH_2OMe$, $R^2 = CH_2OH$
C_{2b} $R^1 = CH_2OMe$, $R^2 = H$
D_2 $R^1 = CH_2OH$, $R^2 = CH_3$

Peptide antibiotic complex. Structs. revised in 1994. Prod. by *Planobispora rosea* ATCC 53773. Active against gram-positive bacteria and anaerobes. Sol. MeOH, EtOAc; poorly sol. hexane.

Antibiotic GE 2270A

GE 2270A. MDL 62879. Antibiotic MDL 62879

$C_{56}H_{55}N_{15}O_{10}S_6$ 1290.541
Amorph. powder. $[\alpha]_D$ +140.8 (EtOH). λ_{max} 240 (sh) (ϵ 54100); 309 (ϵ 34400); 340 (sh) (ϵ 13800) (MeOH/HCl) (Derep). λ_{max} 240 (sh) (ϵ 58800); 310 (ϵ 34200); 340 (sh) (ϵ 15500) (MeOH/NaOH) (Derep). λ_{max} 240 (sh) (ϵ 58800); 310 (ϵ 34200); 340 (sh) (ϵ 15500) (MeOH) (Derep).

N-*De-Me:* ***Antibiotic GE 2270B$_1$***. *GE 2270B$_1$*
[139351-31-8]
$C_{55}H_{53}N_{15}O_{10}S_6$ 1276.514
Sol. MeOH, EtOAc; poorly sol. H_2O, hexane. λ_{max} 310 (MeOH) (Berdy).

8,9-Didehydro: ***Antibiotic GE 2270T***. *GE 2270T*
[138967-24-5]
$C_{56}H_{53}N_{15}O_{10}S_6$ 1288.525
Powder. Sol. MeOH, EtOAc; poorly sol. H_2O, hexane. λ_{max} 250 ; 280 ; 345 (MeOH) (Berdy). λ_{max} 311 (MeOH/NaOH) (Berdy). λ_{max} 250 (HCl) (Berdy).

Antibiotic GE 2270B$_2$

GE 2270B$_2$
[139351-32-9]
$C_{55}H_{53}N_{15}O_9S_6$ 1260.515
Sol. MeOH, EtOAc; poorly sol. H_2O, hexane.

Antibiotic GE 2270C$_1$

GE 2270C$_1$
[139351-33-0]
$C_{54}H_{51}N_{15}O_9S_6$ 1246.488
Sol. MeOH, EtOAc; poorly sol. H_2O, hexane.

N-*De-Me:* ***Antibiotic GE 2270D$_1$***. *GE 2270D$_1$*
[138948-59-1]
$C_{53}H_{49}N_{15}O_9S_6$ 1232.461
Sol. MeOH, EtOAc; poorly sol. H_2O, hexane. λ_{max} 310 (MeOH) (Berdy).

Antibiotic GE 2270C$_{2a}$

GE 2270C$_{2a}$
[145118-96-3]
$C_{56}H_{55}N_{15}O_{11}S_6$ 1306.54

Antibiotic GE 2270C$_{2b}$

GE 2270C$_{2b}$
[139351-34-1]
$C_{55}H_{53}N_{15}O_{10}S_6$ 1276.514

Antibiotic GE 2270D$_2$

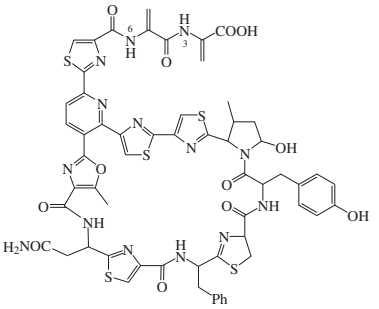
GE 2270D$_2$
[138948-60-4]
$C_{55}H_{53}N_{15}O_{10}S_6$ 1276.514
Sol. MeOH, EtOAc; poorly sol. H_2O, hexane. λ_{max} 310 (MeOH) (Berdy).

N-*De-Me:* ***Antibiotic GE 2270E***. *GE 2270E*
$C_{54}H_{51}N_{15}O_{10}S_6$ 1262.487

Selva, E. *et al., J. Antibiot.*, 1991, **44**, 693-701; 702-715; 1995, **48**, 1039-1042 (*isol, pmr, cmr*)
Colombo, L. *et al., Org. Mass Spectrom.*, 1992, **27**, 219-225 (*ms*)
Tavecchia, P. *et al., J. Antibiot.*, 1994, **47**, 1564-1567 (*ms, struct*)
Colombo, L. *et al., Rapid Commun. Mass Spectrom.*, 1995, **9**, 717-722 (*ms*)
De Pietro, M.T. *et al., J. Antibiot.*, 2001, **54**, 1066-1071 (*biosynth*)
Müller, H.M. *et al., Angew. Chem., Int. Ed.*, 2007, **46**, 4771-4774 (*synth*)
Nicolaou, K.C. *et al., Chem. Asian J.*, 2008, **3**, 413-429 (*GE 2270A, GE 2270T, synth*)

Antibiotic GE 37468A A-1181

GE 37468A
[160262-65-7]



$C_{59}H_{52}N_{14}O_{12}S_5$ 1309.476
Prod. by *Streptomyces* sp. ATCC 55365. Bacterial protein synthesis inhibitor. Active against gram-positive bacteria. Solid. Mp 180-189°. $[\alpha]_D^{20}$ +105 (c, 0.04 in MeOH/DMSO). λ_{max} 250 (sh) (ϵ 43000); 305 (ϵ 34400); 340 (sh) (ϵ 18300) (MeOH/MeCN aq.).

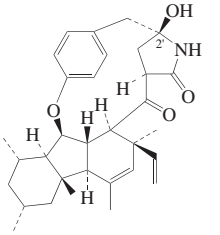
3-N-*De(carboxyalkyl):* ***Antibiotic GE 37468B***. *GE 37468B*
[160262-64-6]
$C_{56}H_{50}N_{14}O_{10}S_5$ 1239.429
Prod. by *Streptomyces* sp. ATCC 55365. Yellow powder. λ_{max} 302 ; 317 ; 334 (NAOH) (Berdy).

6-N-*De(alkylaminoalkyl):* ***Antibiotic GE 37468C***. *GE 37468C*
[160262-66-8]
$C_{53}H_{47}N_{13}O_9S_5$ 1170.366
Prod. by *Streptomyces* sp. ATCC 55365. Yellow powder. λ_{max} 302 ; 317 ; 334 (NAOH) (Berdy).

Pat. Coop. Treaty (WIPO), 1994, 94 14 838; *CA*, **122**, 128491r (*derivs*)
Stella, S. *et al., J. Antibiot.*, 1995, **48**, 780-786; 1304-1311 (*isol, uv, pmr, ms, props*)

Antibiotic GKK 1032A$_2$ A-1182

GKK 1032A$_2$
[358375-09-4]



Relative Configuration

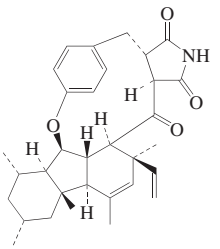
$C_{32}H_{41}NO_4$ 503.68
Similar to Pyrrocidine B, P-940. Prod. by *Penicillium* sp. GKK1032. Antitumour agent. Mp 147-148°. $[\alpha]_D^{19}$ +104 (c, 0.2 in MeOH). λ_{max} 203 (ϵ 17400); 226 (sh) (ϵ 6200) (MeOH).

2′-Me ether: ***Antibiotic GKK 1032A$_1$***. *GKK 1032A$_1$*
[358375-08-3]
$C_{33}H_{43}NO_4$ 517.707
Prod. by *Penicillium* sp. GKK1032. Antitumour agent. Mp 238-239°. $[\alpha]_D^{19}$ +87 (c, 0.4 in MeOH). λ_{max} 209 (ϵ 19200); 225 (sh) (ϵ 12400) (MeOH).

Japan. Pat., 2001, 01 247 574; *CA*, **135**, 209979b (*isol*)
Oikawa, H. *et al., J.O.C.*, 2003, **68**, 3552-3557 (*pmr, cmr, biosynth*)

Antibiotic GKK 1032B A-1183

GKK 1032B
[358375-11-8]



Relative Configuration

$C_{32}H_{39}NO_4$ 501.664

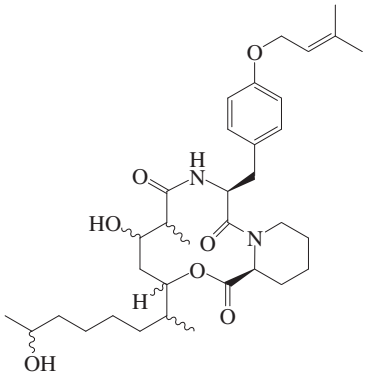
Similar to Pyrrocidine B, P-940. Prod. by *Penicillium* sp. GKK1032. Antitumour agent. Mp 159-161°. $[\alpha]_D^{20}$ +172 (c, 0.2 in MeOH). λ_{max} 202 (ϵ 23000); 230 (sh) (ϵ 4600) (MeOH).

Japan. Pat., 2001, 01 247 574; *CA*, **135**, 209979b

Oikawa, H. *et al., J.O.C.*, 2003, **68**, 3552-3557 (*biosynth*)

Antibiotic HA 23 A-1184

HA 23



$C_{34}H_{52}N_2O_7$ 600.794

Prod. by *Fusarium* sp. CANU-HA 23. Oil. $[\alpha]_D^{20}$ -46 (c, 0.001 in MeOH). λ_{max} 232 (log ϵ 3.23); 278 (log ϵ 2.8) (MeOH).

Feng, Y. *et al., Org. Lett.*, 2002, **4**, 2095-2096 (*isol, pmr, cmr*)

Antibiotic IC 202A A-1185

IC 202A

[221456-27-5]

$H_2N(CH_2)_5N(OH)COCH_2CH_2CONH(-CH_2)_5N(OH)COCH_2CH_2CONH-(CH_2)_5N(O)=CHCH_2CH_2CH_3$

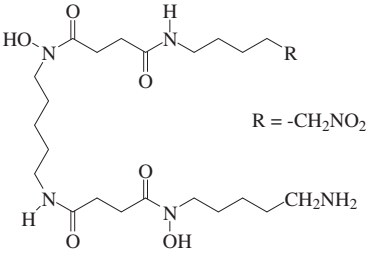
$C_{27}H_{52}N_6O_7$ 572.744

Closely related to Deferoxamine, D-142. Prod. by *Streptoalloteichus* sp. 1454-19. Siderophore. Immunosuppressant. Powder.

Iijima, M. *et al., J. Antibiot.*, 1999, **52**, 20-24; 25-28

Antibiotic IC 202B A-1186

IC 202B



$C_{23}H_{44}N_6O_8$ 532.636

Prod. by *Streptoalloteichus* sp. 1454-19. Siderophore. Immunosuppressant. Pale yellow powder. Mp 117-119°.

Iijima, M. *et al., J. Antibiot.*, 1999, **52**, 775-780

Antibiotic IC 202C A-1187

IC 202C

As Antibiotic IC 202B, A-1186 with R = -CH=NOH

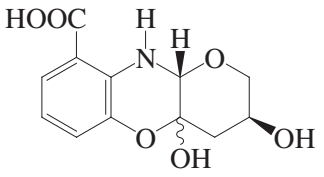
$C_{23}H_{44}N_6O_7$ 516.637

Prod. by *Streptoalloteichus* sp. 1454-19. Siderophore. Immunosuppressant. Powder. Mp 140-141°. Isol. as a mixt. of *E*- and *Z*- isomers.

Iijima, M. *et al., J. Antibiot.*, 1999, **52**, 775-780; 2000, **53**, 1411-1415

Antibiotic ICM 0201 A-1188

ICM 0201



$C_{12}H_{13}NO_6$ 267.238

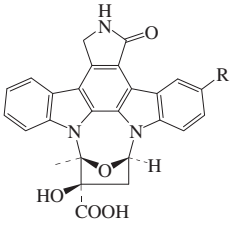
Prod. by *Cunninghamella* sp. F-1490. Inhibitor of osteoclastogenesis. Pale yellow powder. Mp 125-131° dec. $[\alpha]_D^{22}$ -57.5 (c, 0.4 in MeOH).

Inoue, H. *et al., J. Antibiot.*, 2003, **56**, 209-213; 214-218 (*isol, synth, pmr, cmr*)

Antibiotic K 252b A-1189

K 252b. SF 2370. Antibiotic SF 2370

[99570-78-2]



Absolute Configuration

R = H

$C_{26}H_{19}N_3O_5$ 453.453

No stereochem. indicated for SF 2370 but it appears to be identical with K 252b. Isol. from *Nocardiopsis* sp. and *Actinomadura* sp. Protein kinase C inhibitor. Histamine inhibitor. Neurotrophin-3 potentiator. Calmodulin inhibitor. Shows activity against bacteria and fungi. Protects against rice blast disease. Pale yellow powder or cryst. Sol. Me_2CO, MeCN, dioxan, DMSO, THF, Py, $CHCl_3$; fairly sol. MeOH, EtOAc, EtOH, butanol; poorly sol. H_2O, Et_2O, acids. Mp 262-266° dec. $[\alpha]_D^{20}$ +97 (c, 0.6 in DMF). $[\alpha]_D^{25}$ +57 (c, 0.1 in MeOH). λ_{max} 227 (ϵ 42000); 249 (ϵ 41000); 264 (sh) (ϵ 44000); 280 (sh) (ϵ 68000); 290 (ϵ 102000); 320 (sh) (ϵ 19000); 334 (ϵ 26000); 350 (ϵ 19000); 367 (ϵ 21000) (MeOH) (Derep). λ_{max} 371 (ϵ 13000) (MeOH) (Berdy).

Me ester: ***Antibiotic K 252a****. K 252a*

[99533-80-9]

$C_{27}H_{21}N_3O_5$ 467.48

Isol. from *Nocardiopsis* sp.and *Streptomyces longisporoflavus* R19. Protein kinase C and phosphorylase kinase inhibitor. Calmodulin inhibitor. Anti-allergic agent, vasorelaxant. Pale yellow cryst. (Me_2CO/MeOH). Sol. Me_2CO, dioxan, Py, THF, DMSO, MeCN, $CHCl_3$; fairly sol. MeOH, butanol, EtOAc, EtOH; poorly sol. H_2O, acids, Et_2O. Mp 262-273° dec. $[\alpha]_D^{20}$ -23 (c, 0.5 in $CHCl_3$). $[\alpha]_D^{20}$ +52 (c, 0.1 in MeOH). λ_{max} 227 (ϵ 42000); 249 (ϵ 41000); 264 (sh) (ϵ 44000); 280 (sh) (ϵ 68000); 290 (ϵ 102000); 320 (sh) (ϵ 19000); 334 (ϵ 26000); 350 (ϵ 19000); 367 (ϵ 21000) (MeOH) (Derep).

Hexyl ester: KT 5720

[108068-98-0]

[161510-88-9]

$C_{32}H_{31}N_3O_5$ 537.614

Protein kinase inhibitor. Reverses multidrug resistance. Mp 145-147°.

3′-Deoxy, 3′-(methylamino), Me ester:

[183145-61-1]

$C_{28}H_{24}N_4O_4$ 480.522

Prod. by *Streptomyces longisporoflavus*. Cryst. (CH_2Cl_2). Mp 152-155°.

Koyama, M. *et al., J. Antibiot.*, 1985, **38**, 1437-1439 (*SF 2370*)

Kase, H. *et al., J. Antibiot.*, 1986, **39**, 1059-1065 (*isol, props*)

Nakanishi, S. *et al., J. Antibiot.*, 1986, **39**, 1066-1071 (*isol, props*)

Yasuzawa, T. *et al., J. Antibiot.*, 1986, **39**, 1072-1078 (*isol, uv, ir, pmr, cmr, ms, cryst struct*)

Eur. Pat., 1994, (*(Kyowa Hakko Kogyo)*)630 898; *CA*, **122**, 10020h (*KT 5720, synth, pharmacol*)

Galski, H. *et al., Eur. J. Cancer, Part A*, 1995, **31**, 380-388 (*KT 5720, pharmacol*)

Lowinger, T.B. *et al., Tet. Lett.*, 1995, **36**, 8383-8386 (*synth*)

Cai, Y. *et al., J. Antibiot.*, 1996, **49**, 1060-1062 (*3′-deoxy-3′-methylamino Me ester*)

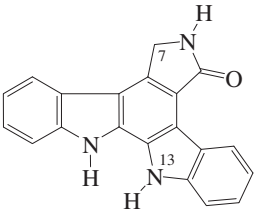
Wood, J.L. *et al., J.A.C.S.*, 1996, **118**, 10656-10657 (*synth*)

Kobayashi, Y. *et al., J.A.C.S.*, 1999, **121**, 6501-6502 (*synth*)

Antibiotic K 252c A-1190

*6,7,12,13-Tetrahydro-5*H*-indolo[2,3-a]pyrrolo[3,4-c]carbazol-5-one, 9CI. Staurosporine aglycone. Staurosporinone. K 252c*

[85753-43-1]



$C_{20}H_{13}N_3O$ 311.342

Isol. from *Nocardiopsis* sp. K290e and from the marine ascidian *Eudistoma* sp., also from *Streptomyces longisoroflavus*

R19, *Streptomyces mediocidicus* ATCC 13279 and the fruiting bodies of the myxomycete *Lycogala epidendrum*. Protein kinase C inhibitor, calmodulin inhibitor, serotonin release inhibitor and cell adhesion inhibitor. Pale yellow needles. Sol. DMSO; fairly sol. MeOH, $CHCl_3$; poorly sol. H_2O, acids, bases. Mp > 300°. λ_{max} 230 (ϵ 37000); 238 (sh) (ϵ 34000); 246 (sh) (ϵ 28000); 257 (sh) (ϵ 29000); 287 (ϵ 86000); 320 (sh) (ϵ 16000); 331 (ϵ 20000); 341 (ϵ 16000); 358 (ϵ 11000) (MeOH) (Derep).

N^{13}-*(α-L-Rhamnopyranosyl)*: ***Antibiotic K 252d***. *K 252d*
[105114-22-5]
$C_{26}H_{23}N_3O_5$ 457.485
Isol. from *Nocardiopsis* sp. K290e. Protein kinase C inhibitor, calmodulin inhibitor and serotonin release inhibitor. Pale yellow needles. Sol. MeOH, $CHCl_3$, DMSO; poorly sol. H_2O, bases, acids. Mp 240-245° dec. $[\alpha]_D^{20}$ +35 (c, 0.4 in MeOH). λ_{max} 223 (ϵ 40000); 233 (ϵ 39700); 248 (sh) (ϵ 31000); 260 (sh) (ϵ 34000); 268 (sh) (ϵ 38000); 280 (sh) (ϵ 61000); 290 (ϵ 98800); 320 (sh) ; 322 (ϵ 17000); 335 (ϵ 20300); 347 (ϵ 13200); 364 (ϵ 11500) (MeOH) (Derep).

N^{13}-*(2,6-Dideoxy-α-D-*ribo-*hexopyranosyl)*: ***Antibiotic RK 286D***. *RK 286D*
[140429-37-4]
$C_{26}H_{23}N_3O_4$ 441.485
Prod. by *Streptomyces* sp. RK-286/P10634. Inhibitor of protein kinase C, also antiinflammatory, platelet agglutination inhibitor, bleb formation inhibitor and antioncotic promoter. Pale yellow powder. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 225-230°. $[\alpha]_D^{20}$ -60 (c, 0.13 in MeOH). λ_{max} 223 (ϵ 40000); 233 (ϵ 39700); 248 (sh) (ϵ 31000); 260 (sh) (ϵ 34000); 268 (sh) (ϵ 38000); 280 (sh) (ϵ 61000); 290 (ϵ 98800); 320 (sh) ; 322 (ϵ 17000); 335 (ϵ 20300); 347 (ϵ 13200); 364 (ϵ 11500) (MeOH) (Derep).

N^{13}-*(3-Amino-2,3,6-trideoxy-α-L-*ribo-*hexopyranosyl)*: ***Holyrine A***
[249512-77-4]
$C_{26}H_{24}N_4O_3$ 440.501
Prod. by a marine actinomycete.

N^{13}-*(3-Amino-2,3,6-trideoxy-5-hydroxy-α-L-*erythro-*hexopyranosyl)*: ***Holyrine B***
[249512-78-5]
$C_{26}H_{24}N_4O_4$ 456.5
Prod. by a marine actinomycete.

N^6-*(1-Methylethoxy)methyl:* [178276-03-4]
$C_{24}H_{21}N_3O_2$ 383.449
Prod. by *Streptomyces longisporoflavus*. Yellowish solid. Mp 45-50°.

7-Oxo: see Arcyriaflavin A, A-1393

2-Hydroxy: ***2-Hydroxystaurosporinone***
$C_{20}H_{13}N_3O_2$ 327.342
Isol. from *Lycogala epidendrum*. Protein tyrosine kinase inhibitor. Cytotoxic. Light brown solid. λ_{max} 226 (log ϵ 10.2); 294 (log ϵ 10.9); 342 (log ϵ 9.8) (MeOH).

7-Methoxy: [137888-73-4]
$C_{21}H_{15}N_3O_2$ 341.368
Prod. by *Saccharothrix aerocolonigenes* ssp. *copiosa* ATCC 53856. Yellow powder. λ_{max} 206 (ϵ 24000); 234 (ϵ 23000); 296 (ϵ 45600); 332 (ϵ 8000); 344 (ϵ 6500); 361 (ϵ 4700) (MeOH) (Berdy).

Sarstedt, B. *et al., Heterocycles*, 1983, **20**, 469-476 (*synth*)
Nakanishi, S. *et al., J. Antibiot.*, 1986, **39**, 1066-1071 (*isol, props*)
Yasuzawa, T. *et al., J. Antibiot.*, 1986, **39**, 1072-1078 (*isol, uv, ir, pmr, cmr, ms, struct*)
Hughes, I. *et al., J.C.S. Perkin 1*, 1990, 2475-2480 (*synth, uv, pmr*)
Pat. Coop. Treaty (WIPO), 1991, 91 9 034; *CA*, **116**, 39768v (*7-methoxy*)
Osada, H. *et al., J. Antibiot.*, 1992, **45**, 278-279 (*Antibiotic RK286D*)
Moody, C.J. *et al., J.O.C.*, 1992, **57**, 2105-2114 (*synth*)
Horton, P.A. *et al., Experientia*, 1994, **50**, 843-845 (*isol*)
Xie, G. *et al., Tet. Lett.*, 1994, **35**, 5555-5558 (*synth*)
Cai, Y. *et al., J. Antibiot.*, 1996, **49**, 519-526 (*N^6-(1-methylethoxy)methyl, ir, pmr, cmr, cd*)
Mahboobi, S. *et al., J.O.C.*, 1999, **64**, 4697-4704 (*synth*)
Williams, D.E. *et al., Tet. Lett.*, 1999, **40**, 7171-7174 (*Holyrines*)
Hosoya, T. *et al., Bioorg. Med. Chem. Lett.*, 2005, **15**, 2776-2780 (*2-Hydroxystaurosporinone*)

Antibiotic KG 431A A-1191

KG 431A
[149146-28-1]
Indole antibiotic. Struct. unknown. Prod. by *Clostridium* sp. KH-431. Antibacterial and antifungal agent. Powder. Sol. MeOH, Me_2CO, EtOH; poorly sol. H_2O, C_6H_6, hexane, $CHCl_3$.

Hong, S.H. *et al., CA*, 1993, **109**, 90899c; 113035j

Antibiotic L 11-1 A-1192

L 11-1
[105054-65-7]
$C_{37}H_{53}N_3O_9$ 683.84
Possibly identical with Tredimycin B in O-155. Prod. by *Streptomyces* sp. L11-1. Active against *Streptococcus* sp. Powder. Sol. MeOH, $CHCl_3$; poorly sol. cyclohexane. $[\alpha]_D$ +43.4 (MeOH). λ_{max} 233 (E1%/1cm 496); 247 (E1%/1cm 510); 267 (E1%/1cm 419); 297 (E1%/1cm 389) (MeOH) (Berdy).

Japan. Pat., 1986, 86 111 696; *CA*, **105**, 189459g

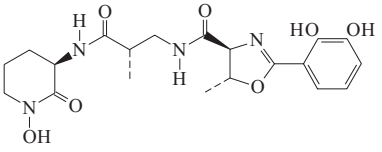
Antibiotic L 13365 A-1193

L 13365
[66105-52-0]
Thiazole-peptide antibiotic. Struct. unknown. Prod. by *Actinoplanes sarvepar-ensis*. Antibacterial agent. Light yellow cryst. (MeOH/EtOAc). Sol. DMSO, $CHCl_3$-MeOH, DMF; fairly sol. $CHCl_3$-MeOH, AcOH; poorly sol. EtOH, hexane, H_2O. Mp 210°. $[\alpha]_D$ +125 (MeOH/$CHCl_3$). λ_{max} 237 ; 290 (sh) ; 378 (H_2O). λ_{max} 237 (E1%/1cm 326); 378 (E1%/1cm 67) (pH 7.5 buffer) (Berdy). λ_{max} 238 (E1%/1cm 336); 408 (E1%/1cm 99) (pH 9 buffer) (Berdy). λ_{max} 237 (E1%/1cm 326); 360 (E1%/1cm 103) (HCl) (Berdy).
▶ LD_{50} (mus, ipr) 1000 - 2000 mg/kg.

Ger. Pat., 1978, 2 724 090; *CA*, **88**, 168482p

Antibiotic L 654040 A-1194

L 654040
[127964-76-5]

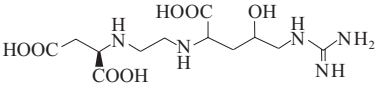


$C_{20}H_{26}N_4O_7$ 434.448
Struct. in abstract is misleading. Prod. by *Streptoverticillium syroense*. Sol. MeOH, H_2O. λ_{max} 255 (E1%/1cm 338); 318 (E1%/1cm 79) (MeOH) (Berdy). λ_{max} 255 (E1%/1cm 303); 315 (E1%/1cm 68) (H_2O) (Berdy). λ_{max} 267 (E1%/1cm 390); 340 (E1%/1cm 65) (HCl) (Berdy).

Eur. Pat., 1989, 332 248; *CA*, **113**, 38891 (*isol*)

Antibiotic L 681176 A-1195

L 681176. Antibiotic 176
[91386-17-3]

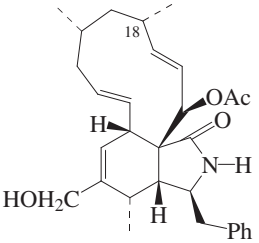


$C_{12}H_{23}N_5O_7$ 349.343
Amino acid antibiotic. Isol. from *Streptomyces* sp. MA5143a. Inhibits angiotensin converting enzyme and the pressor response to angiotensin I in rat. Needles (H_2O). Sol. H_2O, MeOH.

Huang, L. *et al., J. Antibiot.*, 1984, **37**, 462 (*isol, props*)
Hensens, O.D. *et al., J. Antibiot.*, 1984, **37**, 466 (*pmr, ms, struct*)

Antibiotic L 697318 A-1196

L 697318
[142494-53-9]



$C_{30}H_{39}NO_4$ 477.642
Metab. of *Hypoxylon fragiforme*. Amorph. Sol. DMSO, CH_2Cl_2, MeOH; poorly sol. H_2O, hexane.

Deoxy: ***Antibiotic L 696475***. *L 696475*
[142494-54-0]
$C_{30}H_{39}NO_3$ 461.643
Metab. of *Hypoxylon fragiforme*. Amorph. Sol. DMSO, MeOH, CH_2Cl_2; poorly sol. H_2O, hexane.

18β-Hydroxy: ***Cytochalasin U***†

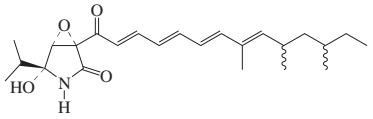
[145040-61-5]
$C_{30}H_{39}NO_5$ 493.642
Isol. from a *Pestalotia* sp. Immunosuppressant. λ_{max} 286 (ϵ 330) (MeOH) (Derep).

Deoxy, 18β-hydroxy: ***Antibiotic RKS 1778***. *RKS 1778*
[191475-89-5]
$C_{30}H_{39}NO_4$ 477.642
Metab. of *Phoma* sp. SNF-1778. Mammalian cell cycle inhibitor. Powder. Mp 117-120°. $[\alpha]_D$ -20 (c, 0.05 in MeOH).

Ondeyka, J. *et al., J. Antibiot.*, 1992, **45**, 679-685; 686-691 (*isol, pmr, cmr, struct*)
Burres, N.S. *et al., J. Antibiot.*, 1992, **45**, 1367-1369 (*Cytochalasin U*)
Kakeya, H. *et al., J. Nat. Prod.*, 1997, **60**, 669-672 (*RK 1778*)

Antibiotic L 755807 A-1197

4-Hydroxy-4-(1-methylethyl)-1-(8,10,12-trimethyl-1-oxo-2,4,6,8-tetradecatetraenyl)-6-oxa-3-azabicyclo[3.1.0]hexan-2-one, 9CI. L 755807
[173293-97-5]

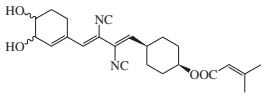


$C_{24}H_{35}NO_4$ 401.545
Tetramic acid deriv. Isol. from an endophytic *Microsphaeropsis* sp. Bradykinin binding inhibitor. Yellow gum. Sol. MeOH, $CHCl_3$. $[\alpha]_D^{21}$ -87.3 (c, 0.65 in MeOH). λ_{max} 256 (log ϵ 3.86); 361 (log ϵ 4.44); 381 (sh) (log ϵ 4.33) (MeOH). λ_{max} 256 (ϵ 7245); 361 (ϵ 27542); 381 (MeOH) (Berdy).

Stahl, M. *et al., J.O.C.*, 1996, **61**, 8083-8088 (*config*)
Lam, Y.K.T. *et al., Tetrahedron*, 1996, **52**, 1481-1486 (*isol, struct*)

Antibiotic L 970843 A-1198

L 970843



Relative Configuration

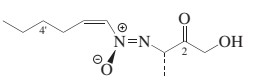
$C_{23}H_{28}N_2O_4$ 396.485
Related to Xanthocillin X, X-7. Prod. by fungal species HIL Y-903146. Antifungal agent. Pale yellow solid. Mp 118-119°. $[\alpha]_D^{20}$ -20 (c, 0.02 in MeOH). λ_{max} 224 ; 288 ; 300 (MeOH).

Stereoisomer: ***Antibiotic L 970844***. *L 970844*
$C_{23}H_{28}N_2O_4$ 396.485
Prod. by fungal species HIL Y-903146. Antifungal agent. Pale yellow shiny flakes. Mp 116-117°. $[\alpha]_D$ +20 (c, 0.02 in MeOH).

Vijayakumar, E.K.S. *et al., J. Antibiot.*, 2001, **54**, 973-976 (*isol, pmr, cmr*)

Antibiotic LL-BH872α A-1199

[3-(1-Hexenyl)-ONN-azoxy]-1-hydroxy-2-butanone, 9CI. LL-BH872α
[24397-77-1]



Absolute Configuration

$C_{10}H_{18}N_2O_3$ 214.264
Prod. by *Streptomyces hinnulinus*. Potent antifungal agent. Light yellow oil. $[\alpha]_D^{25}$ +157 (c, 1.7 in MeOH). Dec. v. readily. λ_{max} 238 (ϵ 9000) (MeOH) (Berdy).

Ac: [36846-66-9]
Semisynthetic. Antifungal agent. More stable than parent compd.

2ξ-Alcohol: ***[3-(1-Hexenyl)-ONN-azoxy]-1,2-butanediol***
[131205-70-4]
[637035-36-0]
$C_{10}H_{20}N_2O_3$ 216.28
Prod. by an *Actinomadura* sp. isol. from the roots of *Prunus armeniaca* (apricot). Also prod. by *Streptomyces misionensis* FERM 10459. Antihepatotoxic agent. Yellow oil. $[\alpha]_D^{25}$ -30 (c, 0.2 in MeOH). Stereochemical information incomplete. The two isolates may be stereoisomeric. λ_{max} 228 (ϵ 9900) (EtOH).

4′ξ-Hydroxy, 2ξ-alcohol: 3-[(4-Hydroxy-1-hexenyl)-ONN-azoxy]-1,2-butanediol. ***Antibiotic MH 072***. *MH 072*
[131205-71-5]
$C_{10}H_{20}N_2O_4$ 232.279
Isol. from *Streptomyces misionensis*. Antihepatotoxic.

McGahren, W.J. *et al., J.A.C.S.*, 1969, **91**, 2808-2810; 1970, **92**, 1587-1590 (*isol, cd*)
McGahren, W.J. *et al., J.O.C.*, 1972, **37**, 902-906 (*cd, struct*)
U.S. Pat., 1972, 3 647 776; *CA*, **77**, 3778 (*isol, synth*)
Japan. Pat., 1990, 90 202 867; *CA*, **114**, 23409b (*Streptomyces misonensis isolates*)
Bianchi, G. *et al., Planta Med.*, 2003, **69**, 574-576 (*2-alcohol, isol, pmr, cmr*)

Antibiotic LL-BO 2964 A-1200

LL-BO 2964
[96119-50-5]
Nucleoside-type antibiotic complex. Struct. unknown. Prod. by *Streptomyces coeruleorubidus* ssp. *rubidus*. Active against gram-positive and -negative bacteria and mycobacteria.

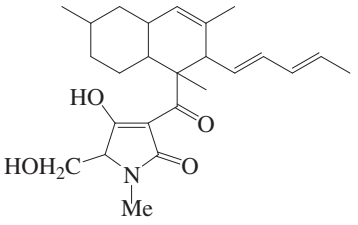
Antibiotic LL-BO 2694α
LL-BO 2964α
[96119-51-6] Cell wall biosynth. inhibitor. Powder. Sol. MeOH, EtOH, H_2O; poorly sol. hexane, $CHCl_3$, toluene. $[\alpha]_D$ -10 (H_2O). λ_{max} 221 ; 254 (H_2O). λ_{max} 240 (NaOH aq.) (Berdy). λ_{max} 221 ; 254 (HCl) (Berdy).

Antibiotic LL-BO 2964β
LL-BO 2964β
[96119-52-7] Cell wall biosynthesis Inhibitor. Powder. Sol. MeOH, EtOH, H_2O; poorly sol. $CHCl_3$, toluene, hexane. $[\alpha]_D$ -19 (H_2O). λ_{max} 220 ; 256 (HCl) (Berdy). λ_{max} 238 (NaOH aq.) (Berdy). λ_{max} 220 ; 256 (H_2O) (Berdy).

Antibiotic LL-BO 2964γ
LL-BO 2964γ
[96119-53-8] Cell Wall Biosynthesis Inhibitor. Powder. Sol. MeOH, EtOH, H_2O; poorly sol. hexane, $CHCl_3$, toluene. $[\alpha]_D$ -20 (H_2O). λ_{max} 225 ; 259 (H_2O). λ_{max} 245 (NaOH aq.) (Berdy). λ_{max} 220 ; 262 (HCl) (Berdy).
U.S. Pat., 1985, 4 499 075; *CA*, **102**, 183743m

Antibiotic LL-49F233α A-1201

LL-49F233α
[220756-92-3]



$C_{25}H_{35}NO_4$ 413.556
Tetramic acid deriv. Similar to Equisetin, E-142. Prod. by an unknown fungus, LL-49F233.

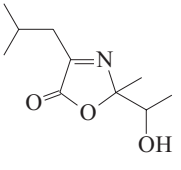
Singh, M.P. *et al., J. Antibiot.*, 1998, **51**, 1109-1112

Antibiotic M 259 A-1202

Antibiotic A 6413. A 6413. M 259. NSC 51954
Benzodiazepine-type antibiotic. Struct. unknown. Prod. by *Streptomyces nigellus*. Antiinflammatory and cytotoxic agent. Yellow prisms (Me_2CO/EtOAc). Sol. $CHCl_3$, DMSO, DMF, MeOH, EtOH; fairly sol. butanol, Me_2CO, EtOAc, hexane, C_6H_6; poorly sol. H_2O. Mp 155-157° (dec.). $[\alpha]_D^{25}$ +0.9 (EtOH). λ_{max} 235 ; 335 (EtOH). λ_{max} 235 (E1%/1cm 480); 335 (E1%/1cm 960) (EtOH) (Berdy).
▶ LD_{50} (mus, ipr) 1.47 mg/kg, LD_{50} (mus, ivn) 2.21 mg/kg.
U.S. Pat., 1963, 3 094 461; *CA*, **59**, 5733d

Antibiotic MBH 001 A-1203

2-(1-Hydroxyethyl)-2-methyl-4-(2-methylpropyl)-5(2H)-oxazolone, 9CI. MBH 001
[147368-20-5]

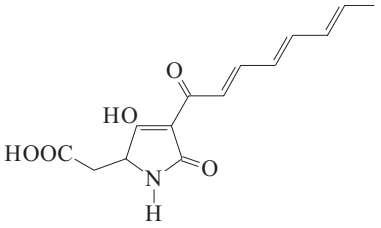


$C_{10}H_{17}NO_3$ 199.249
Prod. by an insect symbiotic microorganism N1-Ishi-YC50807-1-7. Shows herbicidal props. Sol. MeOH, butanol, EtOAc, DMSO, hexane, $CHCl_3$; poorly sol. H_2O. $[\alpha]_D^{25}$ 0.

Japan. Pat., 1992, 92 342 576; *CA*, **118**, 211447 (*isol, uv, ir, pmr, cmr*)

Antibiotic MBP 039-06 A-1204

*2,5-Dihydro-3-hydroxy-5-oxo-4-(1-oxo-2,4,6-octatrienyl)-1*H*-pyrrole-2-acetic acid, 9CI. MBP 039-06*
[152158-05-9]

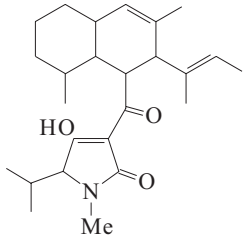


$C_{14}H_{15}NO_5$ 277.276
Prod. by *Phaeosphaeria* sp. L288. Proline hydroxylase inhibitor. Mp 212-214°. λ_{max} 254 (ϵ 8450); 386 (ϵ 19500) (MeOH) (Berdy). λ_{max} 257 (ϵ 6770); 347 (ϵ 15300) (MeOH-NaOH) (Berdy).

Japan. Pat., 1993, 93 239 023; *CA*, **120**, 52821 (*isol, pmr, cmr, ir, uv*)

Antibiotic MBP 049-13 A-1205

MBP 049-13
[143208-09-7]

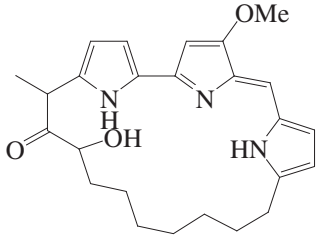


$C_{25}H_{37}NO_3$ 399.572
Prod. by *Ophiobolus rubellus*. Proline hydroxylase inhibitor. $[\alpha]_D$ +58.9. λ_{max} 248 (ϵ 5023); 292 (ϵ 8069) (MeOH) (Berdy). λ_{max} 224 (ϵ 8405); 291 (ϵ 6028) (MeOH/HCl) (Berdy).

Japan. Pat., 1992, 92 74 163; *CA*, **117**, 169564g (*isol, pmr, cmr, ir, uv*)

Antibiotic 610MF A-1206

610MF

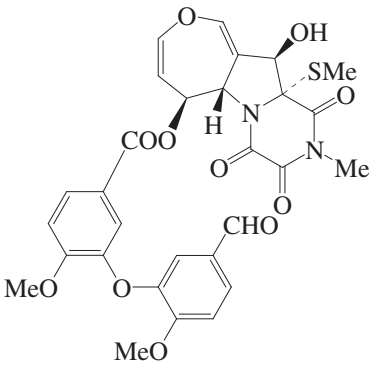


$C_{25}H_{31}N_3O_3$ 421.538
Pyrrole antibiotic. Struct. not certain, may have oxo and OH functions interchanged. Prod. by *Actinomadura madurae*. λ_{max} 547 ($CHCl_3$) (Berdy). λ_{max} 538 (EtOH/HCl) (Berdy).

Gerber, N.N. *et al., J. Het. Chem.*, 1973, **10**, 925-929

Antibiotic MPC 1001F A-1207

MPC 1001F

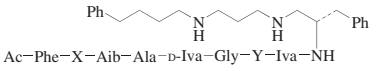


$C_{29}H_{26}N_2O_{11}S$ 610.597
Related to Emestrin. Prod. by *Cladorrhinum* sp. KY4922. Powder. Mp 138-139°. $[\alpha]_D^{28}$ +19.7 (c, 0.12 in $CHCl_3$). λ_{max} 262 (ϵ 21600) (MeOH).

Onodera, H. *et al., Org. Lett.*, 2004, **6**, 4101-4104 (*isol, ir, pmr, cmr, ms*)

Antibiotic MS 681 A-1208

MS 681



Ac–Phe–X–Aib–Ala–D-Iva–Gly–Y–Iva–NH

Antibiotic		
	MS 681A	X = Aib, Y = Trp
	MS 681B	X = Aib, Y = Phe
	MS 681C	X = Iva, Y = Trp
	MS 681D	X = Iva, Y = Phe

Peptide antibiotic complex. Prod. by *Myrothecium* sp. (KY6568; FERM-BP-4634). Inhibitor of myosin light chain kinase and cyclic nucleotide phosphodiesterase.

Antibiotic MS 681A

MS 681A
[173485-72-8]
$C_{61}H_{91}N_{13}O_9$ 1150.472
Pale yellow solid. Sol. MeOH, Me_2CO; fairly sol. EtOAc, $CHCl_3$; poorly sol. hexane, H_2O. $[\alpha]_D^{26}$ +20.4 (c, 0.2 in MeOH). λ_{max} 217 (ϵ 26700); 281 (ϵ 3700); 289 (ϵ 3100) (MeOH).

Antibiotic MS 681B

MS 681B
[173485-73-9]
$C_{59}H_{90}N_{12}O_9$ 1111.435
Pale yellow solid. Sol. MeOH, $CHCl_3$, Me_2CO; fairly sol. EtOAc; poorly sol. hexane, H_2O. $[\alpha]_D^{26}$ +28.2 (c, 0.2 in MeOH). λ_{max} 260 (ϵ 1200) (MeOH).

Antibiotic MS 681C

MS 681C
[173485-74-0]
$C_{62}H_{93}N_{13}O_9$ 1164.498
Pale yellow solid. Sol. MeOH, Me_2CO; fairly sol. EtOAc, $CHCl_3$; poorly sol. hexane, H_2O. $[\alpha]_D^{26}$ +24.7 (c, 0.2 in MeOH). λ_{max} 218 (ϵ 31100); 281 (ϵ 4100); 289 (ϵ 3600) (MeOH).

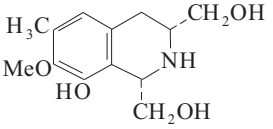
Antibiotic MS 681D

MS 681D
[173485-75-1]
$C_{60}H_{92}N_{12}O_9$ 1125.462
Pale yellow solid. Sol. MeOH, $CHCl_3$, Me_2CO; fairly sol. EtOAc; poorly sol. hexane, H_2O. $[\alpha]_D^{26}$ +24.4 (c, 0.2 in MeOH). λ_{max} 260 (ϵ 1500) (MeOH).

Japan. Pat., 1995, 7 285 993 (*isol*)
Yano, H. *et al., J. Antibiot.*, 1997, **50**, 992-997; 998-1006 (*isol, uv, ir, pmr, cmr, ms*)

Antibiotic MY 336a A-1209

1,2,3,4-Tetrahydro-8-hydroxy-7-methoxy-6-methyl-1,3-isoquinolinedimethanol, 9CI. MY 336a
[95727-08-5]



$C_{13}H_{19}NO_4$ 253.297
Isol. from *Streptomyces gabonae* ATCC15282. Effective in blocking sympathetic nerve receptors. β-Adrenergic antagonist. Needles. Sol. acids, MeOH; fairly sol. Me_2CO, H_2O, Et_2O; poorly sol. hexane. Mp 177-178°. λ_{max} 293 (ϵ 3500) (EtOH/NaOH) (Derep). λ_{max} 285 (ϵ 2800) (EtOH) (Derep).

Eur. Pat., 1985, 130 554; *CA*, **102**, 147548 (*isol*)
Kase, H. *et al., J. Antibiot.*, 1986, **39**, 354 (*isol*)
Hirayama, N. *et al., Acta Cryst. C*, 1990, **46**, 86 (*cryst struct*)
Kaufman, T.S. *et al., J.C.S. Perkin 1*, 1996, 2497 (*synth*)

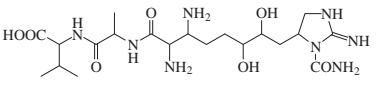
Antibiotic MYC 8005 A-1210

MYC 8005
[37372-39-7]
Tunicamycin-type antibiotic. Struct. unknown. Prod. by *Streptomyces exfoliatus* var. *echinosporus*. Acaricide and insecticide. Cryst. (1-butanol aq.). Sol. Py, MeOH, bases, Me_2CO-H_2O; poorly sol. Me_2CO, hexane. $[\alpha]_D$ +60 (Py). λ_{max} 219 ; 259 (MeOH). λ_{max} 219 (E1%/1cm 170); 259 (E1%/1cm 118) (MeOH) (Berdy).
▶ LD_{50} (mus, ipr) 1.5 mg/kg, LD_{50} (mus, orl) 37 mg/kg.

Meltzer, J. *et al., Eur. J. Plant Pathol. (Neth. J. Plant Pathol.)*, 1972, **78**, 1-14; 77-78

Antibiotic NA 22598A$_1$ A-1211

NA 22598A$_1$
[188674-15-9]

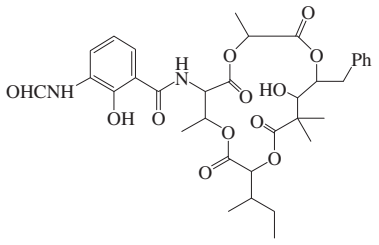


$C_{20}H_{38}N_8O_7$ 502.57
Prod. by *Streptomyces* sp. NA22598. Cytotoxic agent. Powder. Mp 190-195°.

Kuwahara, A. *et al., J. Antibiot.*, 1997, **50**, 712-713 (*isol, pmr*)

Antibiotic NA 30851A A-1212

NA 30851A
[221209-96-7]

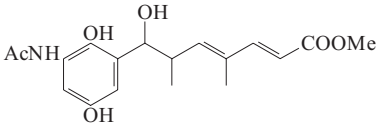


$C_{34}H_{42}N_2O_{12}$ 670.712
Prod. by *Streptomyces* sp. NA 30851A.

Japan. Pat., 1999, 99 49 768; *CA*, **130**, 337075n

Antibiotic NFAT 68 A-1213

Methyl 7-(3-acetylamino-2,5-dihydroxyphenyl)-7-hydroxy-4,6-dimethyl-2,4-heptadienoate. NFAT 68
[165133-84-6]

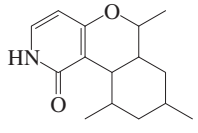


$C_{18}H_{23}NO_6$ 349.383
Prod. by a *Streptomyces* sp. Blocks NFAT-dependent transcription and shows immunosuppressant props. Oil.

Burres, N.S. *et al., J. Antibiot.*, 1995, **48**, 380 (*isol, pmr, cmr, props*)

Antibiotic NG 311 A-1214

2,6,6a,7,8,9,10,10a-Octahydro-6,8,10-trimethyl-1H-[2]benzopyrano[4,3-c]pyridin-1-one, 9CI. NG 311
[172318-70-6]

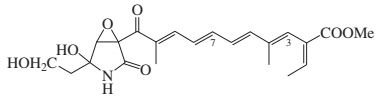


$C_{15}H_{21}NO_2$ 247.336
Related to Fusaricide, F-225. Prod. by a fungal sp. strain TF0407. Shows nerve growth factor-like activity. Neuroprotective and antidementia agent. Powder.

Japan. Pat., 1995, 95 233 168; *CA*, **124**, 86990m

Antibiotic NG 391 A-1215

NG 391
[185850-14-0]



$C_{22}H_{27}NO_7$ 417.458
Tetramic acid deriv. Closely related to Fusarin C, F-227. Prod. by *Fusarium* sp. TF-0452, *Fusarium* sp. RK 97-94 and *Metarhizium anisopliae* (KOB1-3). Neuroprotectant. Mutagenic. Yellow powder. Sol. MeOH. $[\alpha]_D$ +39.3 (MeOH). λ_{max} 283 (ϵ 9100); 366 (ϵ 35500) (MeOH).

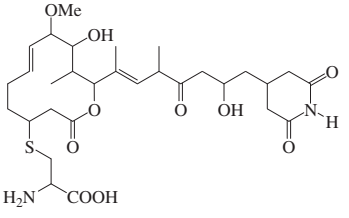
*(3Z)-Isomer: **Antibiotic NG 392**. NG 392*
[185850-15-1]
$C_{22}H_{27}NO_7$ 417.458
Prod. by *Fusarium* sp. TF-0452. Neuroprotectant. Yellow powder. Sol. MeOH. $[\alpha]_D$ -13.4 (MeOH). λ_{max} 290 (ϵ 7600); 343 (ϵ 11900) (MeOH).

*(7Z)-Isomer: **Antibiotic NG 393**. NG 393*
[185850-16-2]
$C_{22}H_{27}NO_7$ 417.458
Prod. by *Fusarium* sp. TF-0452 and *Metarhizium anisopliae* (KOB1-3). Neuroprotectant. Mutagenic. Yellow powder. Sol. MeOH. $[\alpha]_D$ +32 (MeOH). λ_{max} 273 (ϵ 8000); 367 (ϵ 61200) (MeOH).

Japan. Pat., 1996, 96 319 289; *CA*, **126**, 103149e
Kakeya, H. *et al., J. Antibiot.*, 2001, **54**, 850-853 (*isol*)
Hayashi, Y. *et al., Tetrahedron*, 2002, **58**, 9839-9846 (*synth, abs config*)
Krasnoff, S.B. *et al., J. Agric. Food Chem.*, 2006, **54**, 7083-7088 (*isol, activity*)

Antibiotic NK 30424A A-1216

NK 30424A



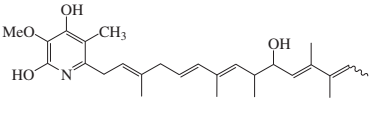
$C_{30}H_{46}N_2O_{10}S$ 626.767
Glutarimide-macrolide antibiotic. Prod. by *Streptomyces* sp. NA30424. Antitumour agent. Powder. Mp 129-131° dec. $[\alpha]_D^{20}$ +10.8 (c, 0.5 in H_2O). λ_{max} 206 (log ϵ 4.28); 286 (log ϵ 2.53) (no solvent reported).

*Stereoisomer: **Antibiotic NK 30424B**. NK 30424B*
$C_{30}H_{46}N_2O_{10}S$ 626.767
Prod. by *Streptomyces* sp. NA30424. Antitumour agent. Powder. Mp 129-133° dec. $[\alpha]_D^{20}$ +11.2 (c, 0.5 in H_2O). λ_{max} 206 (log ϵ 4.28); 283 (log ϵ 2.72) (no solvent reported).

Takayasu, Y. *et al., J. Antibiot.*, 2001, **54**, 1111-1115 (*isol, pmr, cmr*)

Antibiotic NK 170204B A-1217

4-Hydroxy-6-(10-hydroxy-3,7,9,12,13-pentamethyl-2,5,7,11,13-pentadecapentaenyl)-3-methoxy-5-methyl-2(1H)-pyridinone, 9CI. NK 170204B
[161161-46-2]



$C_{27}H_{39}NO_4$ 441.609
Closely related to Piericidin, P-421. Prod. by *Streptomyces* sp. NK170204.

Japan. Pat., 1994, 94 293 736; *CA*, **122**, 158767c

Antibiotic NP 522 A-1218

NP 522
$C_{14}H_{15}N_3O_2$ 257.291
Struct. unknown. Prod. by *Streptomyces hygroscopicus*. Antibacterial agent. Prisms (MeOH/EtOAc). Sol. MeOH, Me_2CO, EtOH, butyl acetate, $CHCl_3$, EtOAc; fairly sol. H_2O, C_6H_6, Et_2O; poorly sol. hexane. Mp 204-205°. $[\alpha]_D$ -190 (c, 2 in MeOH). λ_{max} 220 (E1%/1cm 2741); 274 (E1%/1cm 250); 281 (E1%/1cm 266); 290 (E1%/1cm 229) (MeOH) (Berdy).
▶ LD_{50} (mus, ims) 800 mg/kg; LD_{50} (mus, scu) 800 mg/kg.

Japan. Pat., 1964, 64 10 247; *CA*, **61**, 12593d

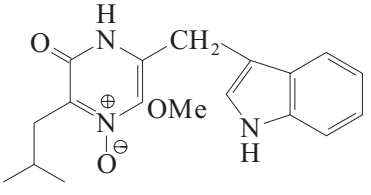
Antibiotic NRCS 15 A-1219

NRCS 15
[52229-10-4]
Related to Ferrimycin A_1, F-37. Prod. by *Streptomyces* sp. NRCS15. Siderophore. Antibacterial agent. Powder. Sol. H_2O, MeOH, $CHCl_3$; fairly sol. Et_2O; poorly sol. hexane. λ_{max} 210 (EtOH). λ_{max} 210 (E1%/1cm 122.5) (EtOH) (Berdy). λ_{max} 208 (E1%/1cm 112) (EtOH-HCl) (Berdy). λ_{max} 222 (E1%/1cm 12.2) (EtOH-NaOH) (Berdy).
▶ LD_{50} (mus, scu) 50 mg/kg.

Haroun, B.M. *et al., J. Antibiot.*, 1974, **27**, 14-19

Antibiotic OPC 15161 A-1220

OPC 15161
[121071-92-9]



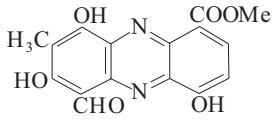
$C_{18}H_{21}N_3O_3$ 327.382
Artifact. Degradn. prod. of Antibiotic OPC 15160 (isol. from *Thielavia major*). Inhibitor of superoxide anion generation. More potent than OPC 15160. Pale yellow prisms (MeOH). Mp 223.5-225.5°. $[\alpha]_D$ 0. λ_{max} 220 (ϵ 49400); 279 (ϵ 10320); 354 (ϵ 7370) (EtOH) (Derep).

Nakano, Y. *et al., J. Antibiot.*, 1991, **44**, 52 (*isol, pmr, cmr, struct*)
Jing, H. *et al., Heterocycles*, 1992, **34**, 1847 (*synth, bibl*)
Shinhama, K. *et al., Tetrahedron*, 2000, **56**, 7427-7431 (*synth*)

Antibiotic PD 116152 A-1221

Methyl 6-formyl-4,7,9-trihydroxy-8-methyl-1-phenazinecarboxylate, 9CI. PD 116152

[101708-64-9]



$C_{16}H_{12}N_2O_6$ 328.281

Phenazine antibiotic. Similar to Lomofungin, L-241. Prod. by *Streptomyces lomondensis* subsp. *galanosa*. Active against *Streptococcus pneumoniae* and murine P388 leukemia. Fairly sol. MeOH, EtOAc; poorly sol. $CHCl_3$, hexane. λ_{max} 262 (ϵ 21000); 294 (ϵ 23800); 351 (ϵ 19800); 415 (ϵ 5100); 440 (ϵ 4700) (MeOH/KOH) (Derep). λ_{max} 226 (ϵ 15900); 271 (ϵ 26540); 385 (ϵ 6070) (MeOH) (Derep).

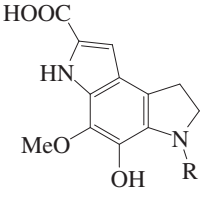
Tunac, J.B. *et al., J. Antibiot.*, 1986, **39**, 192 (*isol, props*)

Smitka, T.A. *et al., J. Antibiot.*, 1986, **39**, 800 (*isol, cryst struct*)

Antibiotic PDE I A-1222

PDE I

[62497-62-5]



R = -$CONH_2$

$C_{13}H_{13}N_3O_5$ 291.263

Isol. from culture closely related to *Streptomyces griseoflavus*. Shows antitumour activity. Inhibitor of cyclic adenosine-3′,5′-monophosphate phosphodiesterase. Cryst. (MeOH). Sol. DMSO, Py; fairly sol. MeOH; poorly sol. EtOH, C_6H_6. Mp 235° dec. λ_{max} 253 (ϵ 41000); 310 (ϵ 17000) (MeOH) (Derep). λ_{max} 256 (ϵ 39000); 320 (ϵ 19000) (HCl) (Berdy). λ_{max} 234 (ϵ 33000); 253 (ϵ 38000); 338 (ϵ 22000) (NaOH) (Berdy).

▶ DF4936665

Enomoto, Y. *et al., Agric. Biol. Chem.*, 1978, **42**, 1331; 1337; 1979, **43**, 559 (*isol, uv, ir, pmr, cmr, cryst struct, synth*)

Carter, P. *et al., J.A.C.S.*, 1987, **109**, 2711 (*synth, bibl*)

Boger, D.L. *et al., J.A.C.S.*, 1987, **109**, 2717 (*synth*)

Bolton, R.E. *et al., J.C.S. Perkin 1*, 1987, 931 (*synth*)

Antibiotic PDE II A-1223

PDE II

[62874-94-6]

As Antibiotic PDE I, A-1222 with R = Ac

$C_{14}H_{14}N_2O_5$ 290.275

Isol. from culture closely related to *Streptomyces griseoflavus*. Shows antitumour props. Inhibitor of cyclic adenosine-3′,5′-monophosphate phosphodiesterase. Sol. DMSO, Py; fairly sol. MeOH; poorly sol. EtOH, C_6H_6. Mp 253° dec. λ_{max} 266 (ϵ 35600); 323 (ϵ 14600) (pH 2) (Derep). λ_{max} 266 (ϵ 26000); 344 (ϵ 17900) (pH 12) (Derep). λ_{max} 263 (ϵ 38200); 275 (ϵ 17000); 310 (ϵ 11700) (MeOH) (Derep).

▶ DF4936663

Enomoto, Y. *et al., Agric. Biol. Chem.*, 1978, **42**, 1331; 1337; 1979, **43**, 559 (*isol, struct, synth*)

Bolton, R.E. *et al., J.C.S. Perkin 1*, 1987, 931 (*synth*)

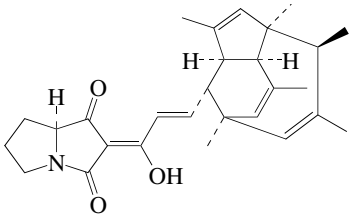
Carter, P. *et al., J.A.C.S.*, 1987, **109**, 2711 (*synth, bibl*)

Boger, D.L. *et al., J.A.C.S.*, 1987, **109**, 2717 (*synth*)

Antibiotic PF 1018 A-1224

PF 1018

[131256-42-3]



$C_{28}H_{35}NO_3$ 433.589

Prod. by *Humicola* sp. Insecticidal agent. Pale yellow cryst. (MeOH). Sol. $CHCl_3$, Me_2CO, EtOAc; poorly sol. H_2O. Mp 182-184°. $[\alpha]_D^{24}$ -185 (c, 1 in $CHCl_3$). λ_{max} 251 (E1%/1cm 294); 320 (E1%/1cm 355) (MeOH) (Berdy). λ_{max} 235 (E1%/1cm 229); 332 (E1%/1cm 471) (MeOH/HCl) (Berdy). λ_{max} 254 (E1%/1cm 326); 316 (E1%/1cm 340) (MeOH/NaOH) (Berdy).

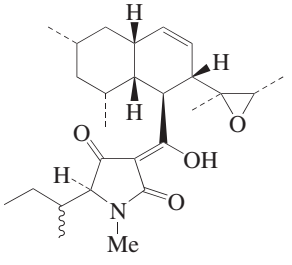
▶ LD_{50} (mus, ipr) 1.25-2.5 mg/kg, LD_{50} (mus, orl) 37 mg/kg.

Gomi, S. *et al., J. Antibiot.*, 1994, **47**, 571

Antibiotic PF 1052 A-1225

PF 1052

[147317-15-5]



$C_{26}H_{39}NO_4$ 429.598

Tetramic acid deriv. Similar to Vermisporin, V-77. Prod. by *Phoma* sp. PF1052 and *Phoma* sp. FKI-1840. Antibacterial agent. Oil. $[\alpha]_D$ +52.9 ($CHCl_3$). λ_{max} 229 (ϵ 6100); 291 (ϵ 12100) (MeOH).

Japan. Pat., 1992, 92 316 578; *CA*, **118**, 211424j

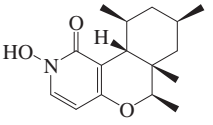
Kock, I. *et al., Dissertation*, Univ. of Paderborn, Germany, 2005, (*isol, pmr, cmr, ms*)

Koyama, N. *et al., J. Antibiot.*, 2005, **58**, 338-345 (*isol, pmr, cmr*)

Antibiotic PF 1140 A-1226

2,6,6a,7,8,9,10,10a-Octahydro-2-hydroxy-6,6a,8,10-tetramethyl-1H-[2]benzopyrano[4,3-c]pyridin-1-one, 9CI. Fungicide PF 1140. PF 1140

[173560-58-2]



Absolute Configuration

$C_{16}H_{23}NO_3$ 277.363

Related to Cordypyridone D, C-647 and Fusaricide, F-225. Prod. by *Eupenicillium* sp. PF1140. Antifungal agent. Cryst. Sol. MeOH. $[\alpha]_D$ -148 (MeOH). λ_{max} 286 (MeOH).

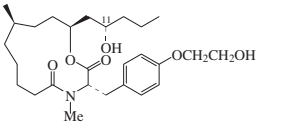
Japan. Pat., 1995, 95 267 962; *CA*, **124**, 143744k (*isol, props*)

Fujita, Y. *et al., J. Antibiot.*, 2005, **58**, 425-427 (*abs config*)

Fujita, Y. *et al., Tet. Lett.*, 2005, **46**, 5885-5888 (*biosynth*)

Antibiotic PF 1163A A-1227

PF 1163A



Absolute Configuration

$C_{27}H_{43}NO_6$ 477.64

Prod. by *Penicillium* sp. PF1163. Antifungal agent. Oil. $[\alpha]_D^{25}$ -91.8 (c, 1 in MeOH). λ_{max} 224 (ϵ 11500); 276 (ϵ 1700); 282 (ϵ 1400) (MeOH).

11-Deoxy: ***Antibiotic PF 1163B***. *PF 1163B*

$C_{27}H_{43}NO_5$ 461.64

Prod. by *Penicillium* sp. PF 1163. Antifungal agent. Oil. $[\alpha]_D^{25}$ -111.6 (c, 1.2 in MeOH). λ_{max} 224 (ϵ 11000); 276 (ϵ 1500); 282 (ϵ 1300) (MeOH).

Tatsuta, K. *et al., J. Antibiot.*, 1999, **52**, 1146-1151 (*synth, abs config*)

Nose, H. *et al., J. Antibiot.*, 2000, **53**, 33-37; 38-44; 2002, **55**, 969-974 (*isol, pmr, cmr, activity*)

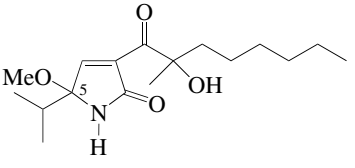
Bouazza, F. *et al., Org. Lett.*, 2003, **5**, 4049-4052 (*synth*)

Antibiotic PI 091 A-1228

PI 091

[129051-63-4]

[169869-85-6 , 169735-66-4]



$C_{17}H_{29}NO_4$ 311.42

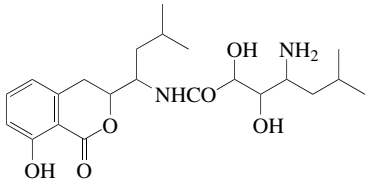
Prod. by *Paecilomyces* sp. F-3430. Platelet aggregation inhibitor. Oil. $[\alpha]_D^{29}$ -26.3 (c, 0.8 in $CHCl_3$). Obt. as a diastereoisomeric 1:1 mixture. Probable artifact.

[169735-66-4]

Shiraki, R. *et al., J.O.C.*, 1996, **61**, 2845-2852 (*synth, ir, pmr, cmr*)
Iwasama, N. *et al., J.O.C.*, 1997, **62**, 1918-1919 (*synth*)

Antibiotic PM 94128 A-1229

PM 94128
[182292-49-5]

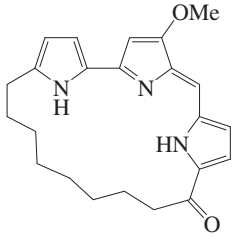


$C_{22}H_{34}N_2O_6$ 422.52
Prod. by a marine *Bacillus* sp. Antitumour agent. Mp 172-173°. $[\alpha]_D^{25}$ -88.9 (c, 2 in $CHCl_3$). Related to Amicoumacin B. λ_{max} 208 (ϵ 27000); 246 (ϵ 6400); 314 (ϵ 4380) (no solvent reported).

Canedo, L.M. *et al., J. Antibiot.*, 1997, **50**, 175-176 (*isol, uv, ir, pmr, cmr*)
Patel, S.K. *et al., Org. Lett.*, 2003, **5**, 4081-4084 (*synth*)

Antibiotic R 39MF A-1230

R 39MF
[52288-96-7]

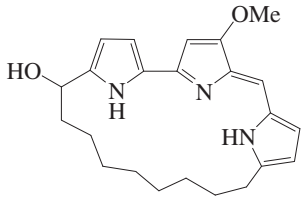


$C_{23}H_{27}N_3O_2$ 377.485
Pyrrole antibiotic. Prod. by *Actinomadura madurae*. λ_{max} 554 ($CHCl_3$) (Berdy). λ_{max} 547 (EtOH/HCl) (Berdy).

Gerber, N.N. *et al., J. Het. Chem.*, 1973, **10**, 925-929

Antibiotic R 39SF A-1231

R 39SF
[52288-97-8]

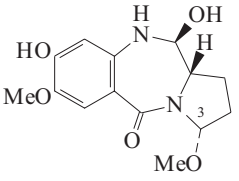


$C_{23}H_{29}N_3O_2$ 379.501
Pyrrole antibiotic. Prod. by *Actinomadura madurae*. λ_{max} 547 ($CHCl_3$) (Berdy). λ_{max} 538 (EtOH/HCl) (Berdy).

Gerber, N.N. *et al., J. Het. Chem.*, 1973, **10**, 925-929

Antibiotic RK 1441A A-1232

1,2,3,10,11,11a-Hexahydro-8,11-dihydroxy-3,7-dimethoxy-5H-pyrrolo[2,1-c][1,4]benzodiazepin-5-one, 9CI. RK 1441A
[132035-29-1]



$C_{14}H_{18}N_2O_5$ 294.307
Anthramycin-type antibiotic. Prod. by *Streptomyces* sp. RK-1441. Possesses antibacteriophage activity. Yellow powder. Mp 115-120° dec. $[\alpha]_D^{21}$ +692 (c, 0.52 in MeOH). Related to Neothramycin. λ_{max} 235 (ϵ 31000); 264 (ϵ 11900); 318 (ϵ 5900) (50% EtOH) (Derep).

11-Ketone, 3-O-de-Me: ***Antibiotic RK 1441B****. RK 1441B*
[132138-94-4]
$C_{13}H_{14}N_2O_5$ 278.264
Prod. by *Streptomyces* sp. RK-1441. Possesses antibacteriophage activity. Pale yellow powder. Mp 224-225°. $[\alpha]_D^{21}$ +219 (c, 0.54 in EtOH). λ_{max} 235 (ϵ 55000); 267 (sh) (ϵ 15400); 300 (ϵ 8600); 310 (sh) (ϵ 6600) (50% EtOH) (Derep).

[132035-30-4]

Osada, H. *et al., Agric. Biol. Chem.*, 1990, **54**, 2875; 2883 (*isol, pmr, cmr, uv, props*)

Antibiotic RP 6798† A-1233

RP 6798†
$C_{42}H_{54}N_{10}O_{13}$ 906.948
Nucleoside-peptide type antibiotic. Struct. unknown. Prod. by *Streptomyces peruviensis*. Powder. Sol. H_2O, DMF; fairly sol. butanol-H_2O; poorly sol. Me_2CO, hexane. Mp 240-245°. $[\alpha]_D$ -21 (NaOH aq.). λ_{max} 222 ; 257 (MeOH). λ_{max} 222 (E1%/1cm 519); 257 (E1%/1cm 235) (MeOH) (Berdy).
▶ LD_{50} (mus, ivn) .1 mg/kg, LD_{50} (mus, scu) .5 mg/kg.

U.K. Pat., 1960, 846 801; *CA*, **55**, 6778h

Antibiotic RP 13252 A-1234

RP 13252
Benzodiazepine-type antibiotic. Struct. unknown. Prod. by *Streptomyces croceus*. Cytotoxic agent. Powder. Sol. MeOH, $CHCl_3$; fairly sol. Et_2O, H_2O; poorly sol. hexane. λ_{max} 222 ; 238 ; 313 (MeOH). λ_{max} 222 (E1%/1cm 760); 238 (E1%/1cm 690); 313 (E1%/1cm 126) (MeOH) (Berdy).
▶ LD_{50} (mus, ivn) 2.5 mg/kg, LD_{50} (mus, ipr) .75 mg/kg, LD_{50} (mus, scu) 2.5 mg/kg, LD_{50} (mus, orl) 6 mg/kg.

Fr. Pat., 1968, 1 516 743; *CA*, **71**, 2128

Antibiotic S 433 A-1235

S 433
[82642-91-9]
Related to Cervinomycin A_1, C-287. Struct. unknown. Prod. by *Streptomyces* sp. ATCC31668. Antibacterial and antitumour agent. Orange-red cryst. ($CHCl_3$). Sol. DMF, DMSO, AcOH; fairly sol. $CHCl_3$, CH_2Cl_2; poorly sol. MeOH, H_2O, hexane, Et_2O. λ_{max} 266 ; 321 (H_2O). λ_{max} 265 (E1%/1cm 414); 315 (E1%/1cm 335) (HCl) (Berdy). λ_{max} 266 (E1%/1cm 414); 321 (E1%/1cm 326) (pH 7.4 buffer) (Berdy). λ_{max} 266 (E1%/1cm 403); 322 (E1%/1cm 326) (pH 9.3 buffer) (Berdy).

Eur. Pat., 1982, 50 749; *CA*, **97**, 90410p

Antibiotic S 53210A A-1236

S 53210A
Thiazole-peptide antibiotic complex. Struct. unknown. Prod. by *Microellobosporia brunea* sp. S53210A.

Antibiotic S 53210A-I

S 53210A-I
[69670-88-8]
Berdy 6614. Yellow powder. Sol. DMF, MeCN, dioxan, DMSO; fairly sol. $CHCl_3$, MeOH, EtOH; poorly sol. H_2O, hexane. $[\alpha]_D$ +104 ($CHCl_3$). λ_{max} 215 ; 305 ; 355 (MeCN) (Berdy).

Antibiotic S 53210A-II

S 53210A-II
[69670-89-9]
Yellow powder. Sol. $CHCl_3$, DMF, MeCN, dioxan, DMSO; fairly sol. MeOH, EtOH; poorly sol. H_2O, hexane. $[\alpha]_D$ +107 ($CHCl_3$). λ_{max} 215 ; 305 ; 355 (MeCN) (Berdy).

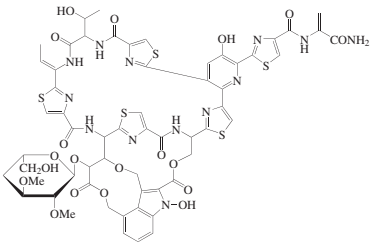
Antibiotic S 53210A-III

S 53210A-III
[69670-90-2]
Yellow powder. Sol. $CHCl_3$, DMSO, MeCN, DMF, dioxan; fairly sol. MeOH, EtOH; poorly sol. H_2O, hexane. $[\alpha]_D$ +67.2 ($CHCl_3$). λ_{max} 215 ; 300 ; 350 (MeCN) (Berdy).

U.S. Pat., 1980, 4 216 206; *CA*, **93**, 184280r

Antibiotic S 54832A A-1237

S 54832A



Depsipeptide antibiotics. Struct. shown is S 54832A-I. Isol. from *Micromonospora globosa*. Active against gram-positive bacteria, mycoplasms and *Neisseriae* sp.

Antibiotic S 54832A-I

S 54832A-I

[73666-05-4]

$C_{59}H_{55}N_{13}O_{19}S_5$ 1410.489

Yellow powder. Mp 310° dec. $[\alpha]_D^{20}$ +118.7 (c, 1.140 in Py). pK_{a1} 7.65; pK_{a2} 10.7 (84% 2-methoxyethanol).

Dihydro: ***Antibiotic S 54832A-IV***. *S 54832A-IV*
[73666-08-7]
$C_{59}H_{57}N_{13}O_{19}S_5$ 1412.505
Pale yellow powder. Mp 310° dec. $[\alpha]_D^{20}$ +153.2 (c, 0.752 in Py).

Antibiotic S 54832A-II
S 54832A-II
[73666-06-5]
Pale yellow powder. Mp 310° dec. Struct. unknown.

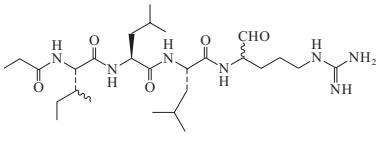
Antibiotic S 54832A-III
S 54832A-III
[73666-07-6]
Pale yellow powder. Mp 310° dec. Struct. unknown.

[94588-49-5 , 94588-48-4]

Ger. Pat., 1979, 2 921 148; *CA*, **93**, 6124 (*isol, props, nmr*)
U.S. Pat., 1984, 4 478 831; *CA*, **102**, 77266 (*isol*)

Antibiotic SAB 711 A-1238

SAB 711
[89342-57-4]



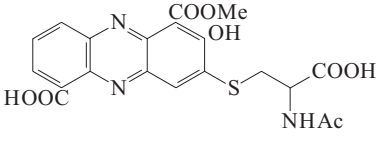
$C_{27}H_{51}N_7O_5$ 553.744

Oligopeptide antibiotic. Isol. from *Streptomyces kaizukaensis*. Protease inhibitor. Amorph. powder + $4H_2O$. Sol. H_2O. Mp 176-182° dec. $[\alpha]_D^{23}$ -35.1 (c, 0.115 in MeOH). Similar to Leupeptin.

Japan. Pat., 1983, 83 198 453; *CA*, **100**, 137364 (*isol, props*)

Antibiotic SB 212305 A-1239

SB 212305
[170591-56-7]



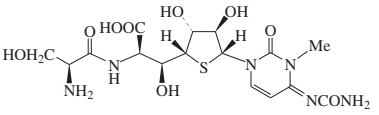
$C_{20}H_{17}N_3O_8S$ 459.436

Phenazine antibiotic. Prod. by a *Streptomyces* sp. Inhibitor of metalloenzymes such as metallolactamases. Sol. MeOH, bases, butanol; poorly sol. H_2O. λ_{max} 212 (ϵ 25422); 249 (ϵ 18754); 305 (ϵ 33757); 380 (ϵ 5000); 530 (ϵ 2084) (MeOH) (Berdy). λ_{max} 212 (ϵ 22288); 251 (ϵ 22921); 278 (ϵ 23755); 378 (ϵ 7084); 440 (ϵ 2917) (MeOH/HCl) (Berdy). λ_{max} 249 (ϵ 18754); 305 (ϵ 36674); 370 (ϵ 2917); 515 (ϵ 2500) (MeOH/NaOH) (Berdy).

Gilpin, M.L. *et al., J. Antibiot.*, 1995, **48**, 1081 (*isol, pmr, cmr, uv, props*)

Antibiotic SB 217452 A-1240

SB 217452



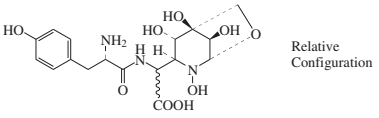
$C_{16}H_{24}N_6O_9S$ 476.466

Prod. by *Streptomyces* sp. ATCC 700974. Enzymic cleavage prod. of Albomycin. Seryl tRNA synthetase inhibitor. $[\alpha]_D$ -14.9 (c, 0.22 in H_2O). λ_{max} 215 ; 229 ; 306 (1*M* HCl).

Stefanska, A.L. *et al., J. Antibiot.*, 2000, **53**, 1346-1353

Antibiotic SB 219383 A-1241

SB 219383



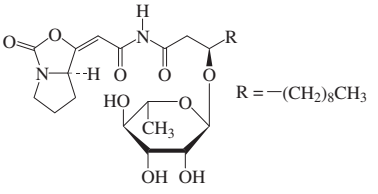
$C_{17}H_{23}N_3O_9$ 413.383

Prod. by *Micromonospora* sp. NCIMB 40684. Tyrosyl tRNA synthetase inhibitor. Powder. $[\alpha]_D^{22}$ +25.3 (EtOH aq./4*M* HCl) (as Et ester). λ_{max} 225 ; 275 (H_2O).

Stefanska, A.L. *et al., J. Antibiot.*, 2000, **53**, 345-350 (*isol*)
Houge-Frydrych, C.S.V. *et al., J. Antibiot.*, 2000, **53**, 351-356 (*struct*)

Antibiotic SB 291071 A-1242

SB 291071



$C_{26}H_{42}N_2O_9$ 526.626

Prod. by *Pseudomonas fluorescens* DSM 11579. Inhibitor of lipoprotein associated phospholipase A_2 ($LpPLA_2$).

Homologue (R = -$C_{11}H_{21}$): ***Antibiotic SB 291072***. *SB 291072*
$C_{28}H_{44}N_2O_9$ 552.664
Prod. by *Pseudomonas fluorescens* DSM 11579. Inhibitor of $LpPLA_2$. Posn. of double bond in R group not determined.

Homologue (R = -$(CH_2)_{10}CH_3$): ***Antibiotic SB 253514***. *SB 253514*
$C_{28}H_{46}N_2O_9$ 554.679
Prod. by *Pseudomonas fluorescens* DSM 11579. Inhibitor of $LpPLA_2$. Powder. λ_{max} 252 (ϵ 14900) (MeOH).

Homologue (R = -$C_{13}H_{25}$): ***Antibiotic SB 253517***. *SB 253517*
$C_{30}H_{48}N_2O_9$ 580.717
Prod. by *Pseudomonas fluorescens* DSM 11579. Inhibitor of $LpPLA_2$. Posn. of double bond in R group not determined.

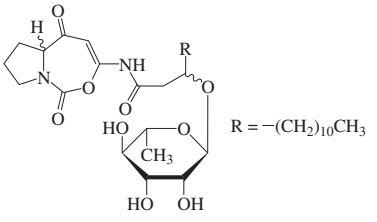
Homologue (R = -$(CH_2)_{12}CH_3$): ***Antibiotic SB 253518***. *SB 253518*
$C_{30}H_{50}N_2O_9$ 582.733
Prod. by *Pseudomonas fluorescens* DSM 11579. Inhibitor of $LpPLA_2$.

Homologue (R = -$C_{15}H_{29}$): ***Antibiotic SB 291073***. *SB 291073*
$C_{32}H_{52}N_2O_9$ 608.771
Prod. by *Pseudomonas fluorescens* DSM 11579. Inhibitor of $LpPLA_2$. Posn. of double bond in R group not determined.

Thirkettle, J. *et al., J. Antibiot.*, 2000, **53**, 664-669; 733-735 (*isol, activity*)
Busby, D.J. *et al., J. Antibiot.*, 2000, **53**, 670-676 (*pmr, cmr, ms, cryst struct*)

Antibiotic SB 315021 A-1243

SB 315021



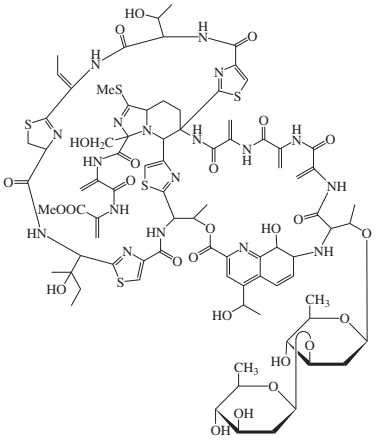
$C_{28}H_{46}N_2O_9$ 554.679

Major component of a series of unstable factors. Related to Cyclocarbamide A, C-852. Prod. by *Pseudomonas fluorescens* DSM 11579. Inhibitor of lipoprotein-associated phospholipase A_2 ($LpPLA_2$). Off-white powder. λ_{max} 280 (ϵ 10400) (EtOH).

Thirkettle, J. *et al., J. Antibiot.*, 2000, **53**, 664-669 (*isol, activity*)
Busby, D.J. *et al., J. Antibiot.*, 2000, **53**, 670-676 (*pmr, cmr, ms, cryst struct*)

Antibiotic Sch 40832 A-1244

Sch 40832
[205925-96-8]

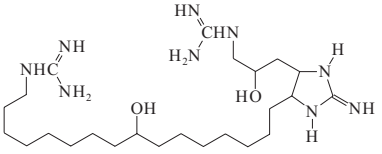


$C_{84}H_{104}N_{18}O_{26}S_5$ 1942.181
Prod. by *Micromonospora carbonaceae* var. *africana*. Solid. $[\alpha]_D^{26}$ -163.1 (c, 0.9 in $CHCl_3$). λ_{max} 234 (ϵ 68320); 295 (ϵ 16960); 307 (ϵ 11630) (MeOH).

Puar, M.S. *et al., J. Antibiot.*, 1998, **51**, 221-224 (*pmr, cmr, ms, struct*)

Antibiotic Sch 40873 A-1245

Sch 40873
[120201-09-4]
[119948-40-2 (hydrochloride)]



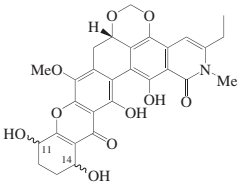
$C_{24}H_{51}N_9O_2$ 497.726
Prod. by an *Actinomadura* sp. Antifungal agent. Solid (as hydrochloride). Sol. MeOH, H_2O. Mp 270° (hydrochloride). $[\alpha]_D^{26}$ -1.5 (c, 0.5 in MeOH).

▶ LD_{50} (mus, ivn) 1.5 mg/kg.

Hegde, V.R. *et al., J.O.C.*, 1989, **54**, 2402 (*isol, struct*)

Antibiotic Sch 42137 A-1246

Sch 42137
[142383-44-6]



Absolute Configuration

$C_{29}H_{27}NO_{10}$ 549.533
Prod. by an *Actinoplanes* sp. ATCC53878. Antifungal agent. Yellow solid. $[\alpha]_D^{26}$ +681 (c, 0.5 in DMF). λ_{max} 253 (ϵ 35500); 320 (ϵ 12900); 379 (sh) (ϵ 22900); 395 (ϵ 25100) (MeOH) (Derep). λ_{max} 214 (ϵ 1.66); 225 ; 255 (ϵ 1.817); 260 ; 310 ; 319 (ϵ 0.66); 370 ; 381 (ϵ 1156); 385 ; 396 (ϵ 1.297) (MeOH) (Berdy).

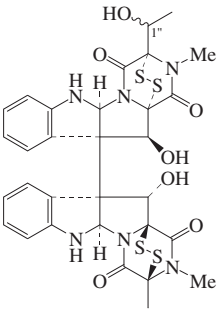
11-Ac: [144050-51-1]
$C_{31}H_{29}NO_{11}$ 591.57
Prod. by *Actinoplanes* sp. ATCC53878. λ_{max} 225 ; 260 ; 310 ; 370 ; 385 (MeOH) (Berdy).

14-Ac: [144074-97-5]
$C_{31}H_{29}NO_{11}$ 591.57
Prod. by *Actinoplanes* sp. ATCC53878. λ_{max} 225 ; 260 ; 310 ; 370 ; 385 (MeOH) (Berdy).

Cooper, R. *et al., J. Antibiot.*, 1992, **45**, 444-453; C3 (*isol, pmr, cmr, struct*)
U.S. Pat., 1992, 5126350; *CA*, **117**, 198525a (*isol, derivs*)

Antibiotic Sch 52900 A-1247

Sch 52900
[174285-71-3]



Relative Configuration

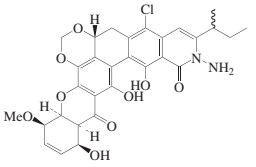
$C_{31}H_{30}N_6O_7S_4$ 726.878
Epithiodioxopiperazine antibiotic. Closely related to Verticillin A, V-89. Prod. by *Gliocladium* sp. SCF1168 and *Gliocladium roseum* 1A. Signal transduction pathway inhibitor. Oncogene induction inhibitor. Powder. Sol. MeOH, DMSO, THF, CH_2Cl_2; poorly sol. hexane, H_2O. Mp 202-205° dec. $[\alpha]_D^{22}$ +769 (c, 0.1 in $CHCl_3$). λ_{max} 242 ; 301 (MeOH) (Berdy).

1′′-Deoxy: ***Antibiotic Sch 52901***. *Sch 52901*
[174285-72-4]
$C_{31}H_{30}N_6O_6S_4$ 710.879
Prod. by *Gliocladium* sp. SCF1168 and *Gliocladium roseum* 1A. Signal transduction pathway inhibitor. Oncogene induction inhibitor. Powder. Sol. MeOH, CH_2Cl_2, THF, DMSO; poorly sol. hexane, H_2O. Mp 199-200° dec. $[\alpha]_D^{22}$ +688 (c, 0.1 in $CHCl_3$). λ_{max} 241 ; 305 (MeOH) (Berdy).

Chu, M. *et al., J. Antibiot.*, 1995, **48**, 1440-1445 (*isol, uv, ir, pmr, cmr*)
Dong, J.-Y. *et al., J. Nat. Prod.*, 2005, **68**, 1510-1513 (*isol, pmr, cmr*)

Antibiotic Sch 54445 A-1248

Sch 54445
[175448-19-8]



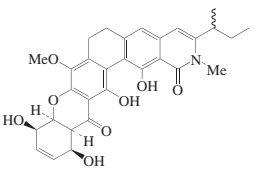
Relative Configuration

$C_{30}H_{29}ClN_2O_9$ 597.02
Prod. by *Actinoplanes* sp. SCC2314. Antifungal agent. Brownish-yellow needles. Mp 201-203° dec. $[\alpha]_D^{23}$ -558 (c, 0.2 in $CHCl_3$). λ_{max} 215 ; 251 ; 270 (sh) ; 326 ; 393 (MeOH).

Chu, M. *et al., J. Nat. Prod.*, 1997, **60**, 525-528 (*isol, pmr, cmr*)

Antibiotic Sch 56036 A-1249

Sch 56036
[215596-10-4]
[175448-20-1]



Relative Configuration

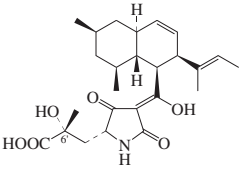
$C_{30}H_{31}NO_8$ 533.577
Related to Albofungin, A-244. Prod. by an *Actinoplanes* sp. SCC2314. Antifungal agent. Amorph. yellow powder. Sol. $CHCl_3$, MeOH, CH_2Cl_2, DMSO; poorly sol. H_2O, hexane. Mp 195°. $[\alpha]_D^{25}$ +212.5 (c, 0.2 in $CHCl_3$). λ_{max} 260 ; 290 (sh) ; 315 ; 354 (sh) ; 365 (MeOH).

▶ LD_{50} (mus, ipr) 2.5 mg/kg.

U.S. Pat., 1994, 5 494 913; *CA*, **124**, 258681e
Chu, M. *et al., Tet. Lett.*, 1998, **39**, 7649-7652 (*isol, uv, ir, pmr, cmr*)

Antibiotic Sch 210971 A-1250

Sch 210971



Relative Configuration

$C_{25}H_{35}NO_6$ 445.555
Enolised β-triketone. Prod. by *Chaetomium globosum* (Mer-0229). Mp 126-128°. $[\alpha]_D^{24}$ +127.5 (c, 0.1 in Me_2CO). λ_{max} 220 ; 290 (MeOH).

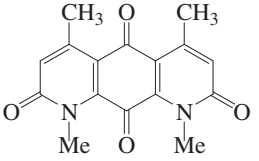
6′-Epimer: ***Antibiotic Sch 210972***. *Sch 210972*
$C_{25}H_{35}NO_6$ 445.555
Prod. by *Chaetomium globosum* (Mer-0229). Chemokine receptor CCR-5 inhibitor. Mp 149-150°. $[\alpha]_D^{24}$ +40 (c, 0.1 in Me_2CO). λ_{max} 220 ; 295 (MeOH).

6′-Epimer, Me ester: ***Antibiotic Sch 213766***. *Sch 213766*
[364779-57-7]
$C_{26}H_{37}NO_6$ 459.581
Prod. by *Chaetomium globosum* (Mer-0229). Chemokine receptor CCR-5 inhibitor. Gum. λ_{max} 220 ; 295 (MeOH).

Yang, S.-W. *et al., J. Nat. Prod.*, 2006, **69**, 1025-1028 (*Sch 210971, Sch 210972, cryst struct*)
Yang, S.-W. *et al., J. Antibiot.*, 2007, **60**, 524-528 (*Sch 213766*)

Antibiotic Sch 538415 A-1251

1,4,6,9-Tetramethylpyrido[3,2-g]quinoline-2,5,8,10-(1H,9H)-tetrone, 9CI. Sch 538415



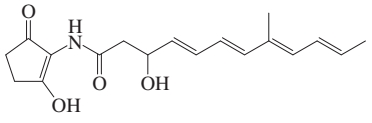
$C_{16}H_{14}N_2O_4$ 298.298

Related to Diazaquinomycin B, D-295. Isol. from an unidentified bacterium and a *Streptomyces* sp. Acyl carrier protein synthase inhibitor. Antineoplastic agent. Orange-red powder. λ_{max} 254 ; 268 ; 282 ; 302 ; 313 ; 348 ; 435 (no solvent reported).

Chu, M. *et al., Bioorg. Med. Chem. Lett.*, 2003, **13**, 3827-3829 (*isol, pmr, cmr*)
Pettit, G.R. *et al., J. Nat. Prod.*, 2006, **69**, 804-806 (*isol, pmr, cmr*)

Antibiotic Sch 725424 A-1252

Sch 725424



$C_{18}H_{23}NO_4$ 317.384

Enolised β-diketone. Prod. by *Kitasatospora* sp. (SPRI-0408). Antibacterial agent.

Yang, S.-W. *et al., J. Antibiot.*, 2005, **58**, 192-195 (*isol, pmr, cmr*)

Antibiotic SF 1508 A-1253

SF 1508
[56378-68-8]

Nucleoside-type antibiotic. Struct. unknown. Prod. by *Streptomyces hygroscopicus* SF1508. Antifungal agent. Needles. Sol. acids, AcOH; fairly sol. H_2O; poorly sol. EtOH, hexane. $[\alpha]_D$ +21.2 (H_2O). Dec. at 192-195°. λ_{max} 286 (E1%/1cm 230) (H_2O) (Berdy). λ_{max} 295 (E1%/1cm 240) (HCl) (Berdy). λ_{max} 242 (E1%/1cm 280); 243 (E1%/1cm 282); 312 (E1%/1cm 180); 318 (E1%/1cm 180) (NaOH aq.) (Berdy).

▶ LD_{50} (mus, ipr) 25 mg/kg.

Japan. Pat., 1975, 75 19 992; *CA*, **83**, 56712q
Takashi, O. *et al., CA*, 1977, **86**, 53844k

Antibiotic SF 1739 A-1254

SF 1739
[61991-01-3]

$C_{22}H_{29}N_3O_6$ 431.488

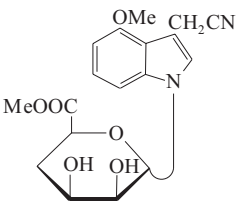
Struct. unknown. See also Antibiotic SF 1739HP in N-32. Isol. from *Streptomyces griseoplanus*. Antibiotic active against gram-positive and -negative bacteria. Orange powder (as hydrochloride). Sol. H_2O, MeOH; poorly sol. C_6H_6, hexane, Et_2O. Mp 120-135° (hydrochloride). $[\alpha]_D^{20}$ +163 (hydrochloride). λ_{max} 268 (E1%/1cm 190); 455 (E1%/1cm 30) (H_2O) (Berdy). λ_{max} 262 (E1%/1cm 166); 410 (E1%/1cm 25) (HCl) (Berdy). λ_{max} 272 (E1%/1cm 144); 510 (E1%/1cm 43) (NaOH aq.) (Berdy).

▶ LD_{50} (mus, ivn) .54 mg/kg. VU6306000

Japan. Pat., 1976, 76 125 798; *CA*, **86**, 119253a (*isol*)

Antibiotic SF 2140 A-1255

SF 2140
[91284-30-9]



$C_{18}H_{20}N_2O_6$ 360.366

Nucleoside antibiotic. Prod. by *Actinomadura albolutea*. Antiviral agent. Shows weak broad spectrum of antibacterial activity. Cryst. ($CHCl_3$/MeOH). Sol. MeOH, EtOAc, EtOH, Me_2CO, $CHCl_3$; fairly sol. C_6H_6; poorly sol. H_2O, hexane. Mp 174-176°. $[\alpha]_D^{20}$ +59 (c, 1.0 in MeOH). Similar to Neosidomycin, N-138. λ_{max} 222 (ϵ 34600); 258 (sh) (ϵ 7630); 265 (ϵ 8210); 284 (ϵ 6260); 294 (ϵ 6910) (MeOH) (Derep).

▶ LD_{50} (mus, ipr) 2000-4000 mg/kg. MQ3160000

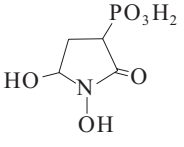
Di-Ac:
Cryst. Mp 114°.

[83652-17-9 , 93207-27-3]

Japan. Pat., 1982, 82 85 397; *CA*, **97**, 214253 (*isol*)
Ito, T. *et al., J. Antibiot.*, 1984, **37**, 931 (*isol, cryst struct*)
Tohyama, H. *et al., J. Antibiot.*, 1984, **37**, 1145 (*isol*)
Buchanan, J.G. *et al., J.C.S. Perkin 1*, 1994, 1417 (*synth*)

Antibiotic SF 2312 A-1256

(1,5-Dihydroxy-2-oxo-3-pyrrolidinyl)phosphonic acid, 9CI. SF 2312
[107729-45-3]



$C_4H_8NO_6P$ 197.084

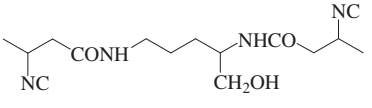
Prod. by *Micromonospora* sp. Active against *Pseudomonas* and *Proteus* spp. Sol. H_2O; poorly sol. EtOH, MeOH, C_6H_6. Isol. as Na salt.

Mono-Na salt:
Cryst. + ½ H_2O. Mp 160-164° dec.

Japan. Pat., 1985, 85 224 493; *CA*, **104**, 107918
Watabe, H. *et al., CA*, 1987, **106**, 134903; 152686 (*isol, struct, props*)

Antibiotic SF 2369 A-1257

2,5-Bis[(3-isocyanobutanoyl)amino]-1-pentanol. SF 2369



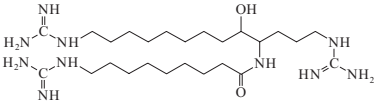
$C_{15}H_{24}N_4O_3$ 308.38

Isol. from *Actinomadura* sp. SF-2369.

Japan. Pat., 1986, 86 280 286; *CA*, **107**, 152846w (*isol*)
Sasaki, T. *et al., CA*, 1988, **108**, 201434s (*isol*)

Antibiotic SF 2425 A-1258

SF 2425
[120692-47-9]



$C_{25}H_{54}N_{10}O_2$ 526.767

Prod. by *Streptomyces* sp. SF 2425. Powder + $2H_2O$ (as trihydrochloride). Sol. H_2O, MeOH; poorly sol. Me_2CO, hexane. Mp 124-127° (trihydrochloride). $[\alpha]_D^{22}$ +14.8 (c, 1 in H_2O).

Japan. Pat., 1989, 89 63 587; *CA*, **111**, 193068v (*isol*)

Antibiotic SF 2695 A-1259

SF 2695
[130151-71-2]

$C_{29}H_{42}N_8O_{18}S$ 822.76

Related to Actinoplanone A in A-128. Structs. unknown. Prod. by *Actinomadura* sp. SF2695. Antitumour agents. Active against gram-positive bacteria and mycoplasma.

Antibiotic SF 2695A

SF 2695A
[138634-42-1]

$C_{36}H_{35}NO_{13}$ 689.671

Yellow powder. Sol. $CHCl_3$, Me_2CO, EtOAc; fairly sol. MeOH, hexane; poorly sol. H_2O. $[\alpha]_D$ -94.9 ($CHCl_3$). λ_{max} 211 (E1%/1cm 899); 237 (E1%/1cm 585); 263 (E1%/1cm 508); 399 (E1%/1cm 115) (MeOH) (Berdy). λ_{max} 210 (E1%/1cm 880); 239 (E1%/1cm 574); 262 (E1%/1cm 547); 293 (E1%/1cm 255); 298 (E1%/1cm 117) (MeOH/HCl) (Berdy). λ_{max} 213 (E1%/1cm 1231); 270 (E1%/1cm 376); 347 (E1%/1cm 155); 414 (E1%/1cm 169) (MeOH/NaOH) (Berdy).

Antibiotic SF 2695B

SF 2695B
[138634-41-0]

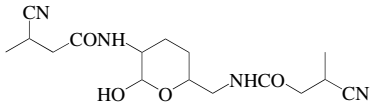
$C_{35}H_{33}NO_{13}$ 675.645

Yellow powder. Sol. $CHCl_3$, EtOAc, Me_2CO; fairly sol. MeOH, hexane; poorly sol. H_2O. $[\alpha]_D$ -106.7 ($CHCl_3$). λ_{max} 211 (E1%/1cm 916); 238 (E1%/1cm 598); 263 (E1%/1cm 511); 296 (E1%/1cm 245); 399 (E1%/1cm 117) (MeOH) (Berdy). λ_{max} 211 (E1%/1cm 891); 238 (E1%/1cm 595); 262 (E1%/1cm 560); 295 (E1%/1cm 255); 397 (E1%/1cm 120) (MeOH/HCl) (Berdy). λ_{max} 215 (E1%/1cm 1301); 270 (E1%/1cm 367); 346 (E1%/1cm 170); 414 (E1%/1cm 172) (MeOH/NaOH) (Berdy).

Japan. Pat., 1991, 91 198 783; *CA*, **116**, 57529x

Antibiotic SF 2768 A-1260

*3-Cyano-*N*-[6-[[(3-cyano-1-oxobutyl)amino]methyl]tetrahydro-2-hydroxy-*2H*-pyran-3-yl]butanamide, 9CI. SF 2768*
[159392-35-5]



$C_{16}H_{24}N_4O_4$ 336.39

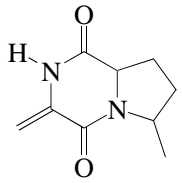
Aminoglycoside antibiotic. Prod. by *Streptomyces* sp. SF2768. Active against a wide spectrum of bacteria and fungi. Melanin formation inhibitor. Oil. Sol. $CHCl_3$, Me_2CO, MeOH, EtOAc; poorly sol. H_2O, hexane. $[\alpha]_D$ +25.6 (MeOH). λ_{max} 200 (MeOH). λ_{max} 210 (MeOH) (Berdy).

Japan. Pat., 1994, 94 234 784; *CA*, **122**, 8152j (*isol*)

Tabata, Y. *et al., CA*, 1996, **124**, 255435s (*isol*)

Antibiotic SF 2771 A-1261

*Hexahydro-6-methyl-3-methylenepyrrolo[1,2-*a*]pyrazine-1,4-dione, 9CI. SF 2771*
[168074-99-5]



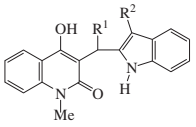
$C_9H_{12}N_2O_2$ 180.206

Prod. by *Streptomyces* sp. SF2771. Antibacterial and cytotoxic agent. Cryst. Sol. MeOH, Me_2CO. $[\alpha]_D$ -109.1 (MeOH). λ_{max} 225 (MeOH).

Japan. Pat., 1995, 95 165 761; *CA*, **123**, 254695u (*isol*)

Antibiotic SF 2809 A-1262

SF 2809



SF 2809-I R^1 = H, R^2 = CH_2CH_2NHAc
SF 2809-II R^1 = 4-Hydroxyphenyl, R^2 = CH_2CH_2NHAc
SF 2809-III R^1 = H, R^2 = CH_2CH_2OH
SF 2809-IV R^1 = 4-Hydroxyphenyl, R^2 = CH_2CH_2OH
SF 2809-V R^1 = Ph, R^2 = CH_2CH_2NHAc
SF 2809-VI R^1 = Ph, R^2 = CH_2CH_2OH

Prod. by *Dactylosporangium* sp. SF2809. Chymase inhibitors.

Antibiotic SF 2809-I

SF 2809-I
[271580-72-4]

$C_{23}H_{23}N_3O_3$ 389.453

Pale yellow powder. λ_{max} 227 (ε 45900); 277 (ε 10900); 284 (ε 10900); 319 (ε 6420); 332 (ε 5250) (MeOH/1*M* HCl). λ_{max} 206 (ε 54900); 222 (ε 54500); 257 (sh) (ε 14000); 292 (ε 12100); 310 (ε 11700) (MeOH/1*M* NaOH).

Antibiotic SF 2809-II

SF 2809-II
[271580-73-5]

$C_{29}H_{27}N_3O_4$ 481.55

Pale red powder. λ_{max} 227 (ε 68600); 278 (ε 15500); 286 (ε 15500); 322 (ε 10600); 335 (ε 7730) (MeOH/1*M* HCl). λ_{max} 207 (ε 93200); 223 (ε 81600); 260 (sh) (ε 29000); 283 (ε 23200); 292 (ε 22700); 310 (sh) (ε 18800) (MeOH/1*M* NaOH).

Antibiotic SF 2809-III

SF 2809-III
[271580-74-6]

$C_{21}H_{20}N_2O_3$ 348.401

Pale yellow powder. λ_{max} 227 (ε 47000); 276 (ε 10800); 284 (ε 11000); 319 (ε 6450); 332 (ε 5050) (MeOH/1*M* HCl). λ_{max} 205 (ε 44300); 223 (ε 46300); 257 (sh) (ε 12200); 292 (ε 10500); 310 (ε 10100) (MeOH/1*M* NaOH).

Antibiotic SF 2809-IV

SF 2809-IV
[271580-75-7]

$C_{27}H_{24}N_2O_4$ 440.498

Pale red powder. λ_{max} 228 (ε 57400); 280 (ε 14500); 323 (ε 8020); 334 (ε 6170) (MeOH/1*M* HCl). λ_{max} 205 (ε 75700); 223 (ε 58000); 260 (sh) (ε 16700); 286 (ε 16000); 293 (ε 16000); 310 (ε 13600) (MeOH/1*M* NaOH).

Antibiotic SF 2809-V

SF 2809-V
[271580-76-8]

$C_{29}H_{27}N_3O_3$ 465.551

Powder. λ_{max} 227 (ε 62800); 278 (ε 14400); 284 (ε 14000); 323 (ε 9120); 335 (ε 6980) (MeOH/1*M* HCl). λ_{max} 207 (ε 83700); 222 (ε 75300); 257 (sh) (ε 23700); 284 (ε 17700); 292 (ε 18100); 310 (ε 15800) (MeOH/1*M* NaOH).

Antibiotic SF 2809-VI

SF 2809-VI
[271580-77-9]

$C_{27}H_{24}N_2O_3$ 424.498

Powder. λ_{max} 227 (ε 50200); 278 (ε 11900); 322 (ε 7490); 334 (ε 5960) (MeOH/1*M* HCl). λ_{max} 205 (ε 51700); 223 (ε 51100); 258 (sh) (ε 13200); 293 (ε 10500); 310 (ε 9790) (MeOH/1*M* NaOH).

Tani, M. *et al., J. Antibiot.*, 2004, **57**, 83-88; 89-96 (*isol, uv, pmr, cmr, activity*)

Antibiotic SF 2197B A-1263

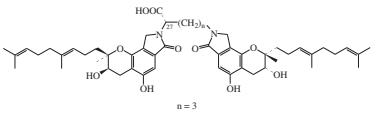
SF 2197B
[105634-06-8]

Related to Matlystatin A_1. Struct. unknown. Prod. by *Microbispora* sp. SF-2197. Antibacterial agent. Powder. Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. $[\alpha]_D$ -20.2 (MeOH). λ_{max} 200 (MeOH).

Japan. Pat., 1986, 86 141 889; *CA*, **106**, 3851w (*isol*)

Antibiotic SMTP 7 A-1264

SMTP 7



$C_{51}H_{68}N_2O_{10}$ 869.106

Related to Stachybotrin A in S-490. Abs. config. only known at C-27. Rel. configs. determined for other centres. Prod. by *Stachybotrys microspora*. Light brown oil. $[\alpha]_D$ -35.9 (c, 0.85 in MeOH). λ_{max} 213 (ε 82500); 257 (ε 18800); 302 (ε 5820) (MeOH).

27-Epimer: SMTP 7D. Antibiotic SMTP 7D

Prod. by *Stachybotrys microspora* fed with D-Orn. Light brown oil. $[\alpha]_D^{20}$ -2.4 (c, 0.8 in MeOH).

Hu, W. *et al., J. Antibiot.*, 2000, **53**, 241-247; 2003, **56**, 832-837 (*isol, pmr, cmr*)

Antibiotic SMTP 8 A-1265

SMTP 8

As Antibiotic SMTP 7, A-1264 with n = 4

$C_{52}H_{70}N_2O_{10}$ 883.132

Prod. by *Stachybotrys microspora*. Light brown oil. $[\alpha]_D$ -30 (c, 1 in MeOH). λ_{max} 213 (ε 79500); 257 (ε 18200); 302 (ε 5600) (MeOH).

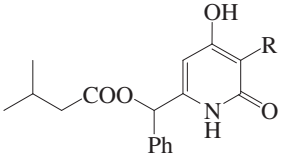
27-Epimer: SMTP 8D. Antibiotic SMTP 8D

Prod. by *Stachybotrys microspora* fed with D-Lys. Light brown oil. $[\alpha]_D^{20}$ -5.2 (c, 0.8 in MeOH).

Hu, W. *et al., J. Antibiot.*, 2000, **53**, 241-247; 2003, **56**, 832-837 (*isol, pmr, cmr*)

Antibiotic SPF 32629A A-1266

SPF 32629A



R = H

$C_{17}H_{19}NO_4$ 301.341

Prod. by *Penicillium* sp. SPF-32629. Human chymase inhibitor. Pale yellow powder. $[\alpha]_D^{25}$ +26.4 (c, 0.58 in $CHCl_3$). λ_{max} 206 (ε 22000); 286 (ε 4300) (MeOH).

Shimatani, T. *et al., J. Antibiot.*, 2006, **59**, 29-34 (*isol, pmr, cmr*)

Vegi, S.R. *et al., Tet. Lett.*, 2008, **49**, 6297-6299 (*synth*)

Antibiotic SPF 32629B A-1267

SPF 32629B

As Antibiotic SPF 32629A, A-1266 with R = -COOH

$C_{18}H_{19}NO_6$ 345.351

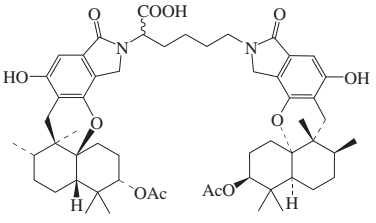
Prod. by *Penicillium* sp. SPF-32629. Specific inhibitor of human chymase.

Pale yellow powder. $[\alpha]_D^{25}$ +24.5 (c. 0.4 in $CHCl_3$). λ_{max} 203 (ϵ 16500); 215 (sh) (ϵ 13900); 303 (ϵ 6300) (MeOH).

Shimatani, T. *et al., J. Antibiot.*, 2006, **59**, 29-34 (*isol, pmr, cmr*)

Antibiotic SQ 02-S-L1 A-1268

SQ 02-S-L1



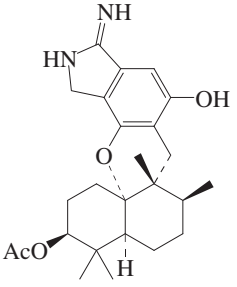
$C_{56}H_{74}N_2O_{12}$ 967.207

Related to Stachybocin A, S-489. Prod. by *Stachybotrys* sp. RF-7260. Powder. $[\alpha]_D^{24}$ +131 (c, 0.63 in MeOH). λ_{max} 218 (ϵ 64100); 261 (ϵ 14000); 301 (ϵ 4300) (MeOH).

Minagawa, K. *et al., J. Antibiot.*, 2002, **55**, 239-248 (*isol, pmr, cmr*)

Antibiotic SQ 02-S-V2 A-1269

SQ 02-S-V2



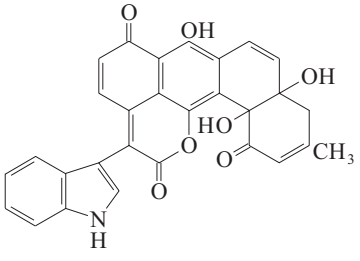
$C_{25}H_{34}N_2O_4$ 426.555

Related to Stachybotrin and Stachyflin, S-492. Prod. by *Stachybotrys* sp. RF-7260. Antiviral agent. Powder (as hydrochloride). $[\alpha]_D^{24}$ +113.6 (c, 0.47 in MeOH) (hydrochloride). λ_{max} 223 (ϵ 27700); 273 (ϵ 6200); 314 (ϵ 2600) (MeOH) (hydrochloride).

Minagawa, K. *et al., J. Antibiot.*, 2002, **55**, 239-248 (*isol, pmr, cmr*)

Antibiotic SS 228B A-1270

SS 228B



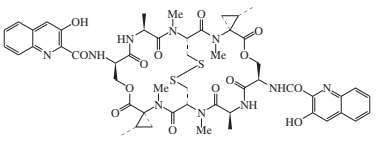
$C_{29}H_{19}NO_7$ 493.472

Angucycline antibiotic. Prod. by a *Chainia* sp. Blue solid.

Rohr, J. *et al., Nat. Prod. Rep.*, 1992, **9**, 103-137

Antibiotic SW 163C A-1271

SW 163C



$C_{52}H_{60}N_{10}O_{14}S_2$ 1113.237

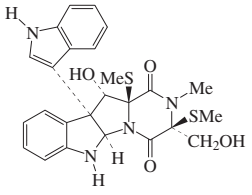
Depsipeptide antibiotic. Related to Quinomycin A, Q-58. Prod. by *Streptomyces* sp. SNA15896. Antitumour agent. Pale yellow powder. Mp 240-243°. $[\alpha]_D^{28}$ -78.6 (c, 0.2 in $CHCl_3$). λ_{max} 214 (ϵ 78300); 230 (ϵ 77400); 299 (ϵ 9800); 359 (ϵ 9800) (MeOH).

Takahashi, K. *et al., J. Antibiot.*, 2001, **54**, 615-621; 622-627 (*isol, struct*)

Nakaya, M. *et al., Biosci., Biotechnol., Biochem.*, 2007, **71**, 2969-2976 (*isol*)

Antibiotic T 988B A-1272

T 988B



Relative Configuration

$C_{25}H_{26}N_4O_4S_2$ 510.637

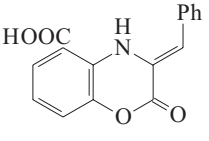
Prod. by *Tilachlidium* sp. (CANU-T988). Cytotoxic. Amorph. solid. $[\alpha]_D^{20}$ +330 (c, 0.001 in MeOH). λ_{max} 210 (log ϵ 4.14); 232 (log ϵ 4.2); 258 (log ϵ 4.22); 292 (log ϵ 4.22) (MeOH).

Feng, Y. *et al., J. Nat. Prod.*, 2004, **67**, 2090-2092 (*isol, pmr, cmr*)

Antibiotic TA 3037A A-1273

3-Benzylidene-3,4-dihydro-2-oxo-2H-1,4-benzoxazine-5-carboxylic acid. TA 3037A

[143651-44-9]



$C_{16}H_{11}NO_4$ 281.267

Prod. by *Streptomyces* sp. TA-3037. Inhibitor of glutathione *S*-transferase. Antiallergic agent. Yellow needles ($MeOH/CHCl_3$). Sol. THF, DMF, dioxan; poorly sol. H_2O, MeOH, hexane, EtOAc. Mp 248-250°. λ_{max} 205 (ϵ 21900); 241 (ϵ 18200); 282 (ϵ 9120); 350 (sh) (ϵ 8710); 382 (ϵ 14500) (EtOH/HCl) (Derep). λ_{max} 324 (ϵ 9120) (EtOH/NaOH) (Derep). λ_{max} 204 (ϵ 26900); 242 (ϵ 15800); 282 (ϵ 9330); 383 (ϵ 14500) (EtOH) (Derep).

Komagata, D. *et al., J. Antibiot.*, 1992, **45**, 1117-1121; 1122-1124 (*isol, pmr, cmr, uv, ir, props*)

Kelly, T.R. *et al., Heterocycles*, 1997, **45**, 87-93 (*synth*)

Antibiotic TAN 883 A-1274

TAN 883

Tetramic acid derivs. Structs. not known except probably for 883B in X-6. Prod. by *Lysobacter gummosus*. Angiogenic and antiulcer agent.

Antibiotic TAN 883A

TAN 883A

[138636-81-4]

Antibiotic TAN 883C

TAN 883C

[138636-82-5]

Antibiotic TAN 883D

TAN 883D

[138634-39-6]

$C_{29}H_{38}N_2O_5$ 494.63

Yellow cryst. $[\alpha]_D$ +724 (DMF). λ_{max} 259 ; 340 (MeOH).

Japan. Pat., 1991, 91 178 988; *CA*, **116**, 57524s

Antibiotic TAN 1263 A-1275

TAN 1263

Tetramic acid derivs. Prod. by *Corollospora gracilis* IFO32111. Antifungal agent.

Antibiotic TAN 1263A

TAN 1263A

[148092-20-0]

$C_{22}H_{23}NO_6$ 397.427

Powder. Sol. MeOH, EtOAc. Mp 139-140°. $[\alpha]_D^{27}$ -55.1 (c, 0.5 in MeOH). λ_{max} 254 ; 279 (MeOH).

Antibiotic TAN 1263B

TAN 1263B

[148092-21-1]

$C_{22}H_{25}NO_7$ 415.442

Powder. Sol. MeOH, EtOAc. $[\alpha]_D^{27}$ +22.4 (c, 0.53 in MeOH). λ_{max} 253 ; 283 (MeOH).

Antibiotic TAN 1263C

TAN 1263C

[148092-22-2]

$C_{22}H_{25}NO_7$ 415.442

Powder. Sol. MeOH, EtOAc. Mp 93.5-95.5°. $[\alpha]_D^{22}$ +44.8 (c, 0.28 in MeOH). λ_{max} 252 ; 282 (MeOH).

Antibiotic TAN 1263D

TAN 1263D

[148092-23-3]

$C_{22}H_{25}NO_7$ 415.442

Powder. Sol. MeOH, EtOAc. $[\alpha]_D^{22}$ -62.9 (c, 0.25 in MeOH). λ_{max} 252 ; 282 (MeOH).

Japan. Pat., 1992, 92 330 091; *CA*, **119**, 15319k

Antibiotic TAN 1280 A-1276

TAN 1280

[138264-01-4]

$C_7H_5N_3O_3$ 179.135

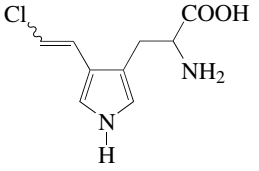
Struct. unknown. Prod. by *Streptomyces* sp. TAN-1280. Antifungal agent. Brown

cryst. Sol. H_2O. λ_{max} 205 (E1%/1cm 883); 239 (E1%/1cm 621); 272 (E1%/1cm 467); 312 (E1%/1cm 360); 451 (E1%/1cm 193) (pH 7 buffer) (Berdy).

Japan. Pat., 1991, 91 161 494; *CA*, **116**, 39773t (*isol*)

Antibiotic TAN 1307 A-1277

α-Amino-4-(2-chloroethenyl)-1H-pyrrole-3-propanoic acid, 9CI. TAN 1307
[137400-60-3]

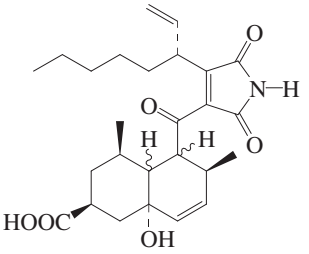


$C_9H_{11}ClN_2O_2$ 214.651
Prod. by a *Streptomyces* sp. Antifungal agent. Powder. Sol. H_2O, MeOH; poorly sol. $CHCl_3$, EtOAc. $[\alpha]_D$ +1.3 (H_2O). λ_{max} 210 (H_2O).

Japan. Pat., 1991, 91 157 366; *CA*, **115**, 255901e (*isol*)

Antibiotic TAN 1813 A-1278

TAN 1813
[172924-31-1]

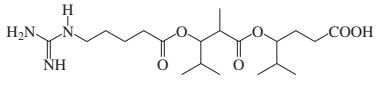


$C_{26}H_{35}NO_6$ 457.566
Prod. by *Phoma* sp. FL4150. Ras-Farnesyltransferase inhibitor. Antitumour agent. Yellow powder. Sol. MeOH, DMSO, $CHCl_3$, EtOAc; poorly sol. H_2O, hexane. $[\alpha]_D$ -48.9 (MeOH). λ_{max} 240 (ϵ 16500) (MeOH).

Eur. Pat., 1995, 677 513; *CA*, **124**, 106637g
Ishii, T. *et al., J. Antibiot.*, 2000, **53**, 765-778

Antibiotic TAN 2020 A-1279

1-(1-Carboxyethyl)-2-methylpropyl 3-[[5-[(aminoiminomethyl)amino]-1-oxopentyl]oxy]-2,4-dimethylpentanoate. TAN 2020
[177191-46-7]

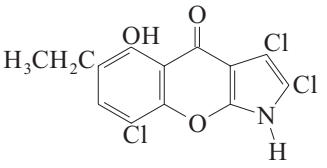


$C_{20}H_{37}N_3O_6$ 415.529
Isol. from *Actinomadura* sp. Cell adhesion inhibitor.

Japan. Pat., 1996, 08 67 664; *CA*, **125**, 8686y (*isol*)

Antibiotic TAN 876A A-1280

2,3,8-Trichloro-6-ethyl-5-hydroxy[1]benzopyrano[2,3-b]pyrrol-4(1H)-one, 9CI. TAN 876A
[119059-71-1]



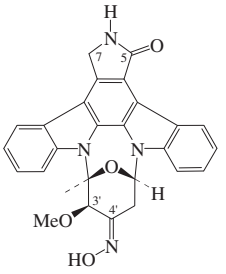
$C_{13}H_8Cl_3NO_3$ 332.569
Pyrrole antibiotic. Isol. from the culture broth of *Streptomyces* sp. C-70899. Shows antimicrobial activity with immunomodulating props. Sol. MeOH, C_6H_6; poorly sol. H_2O. λ_{max} 247 (E1%/1cm 1134); 357 (E1%/1cm 332) (MeOH/HCl) (Berdy). λ_{max} 242 (E1%/1cm 830); 266 (E1%/1cm 648); 300 (E1%/1cm 540); 370 (E1%/1cm 356) (MeOH/NaOH) (Berdy).

▶ LD_{50} (mus, scu) 400 - 800 mg/kg.

Funabashi, Y. *et al., Takeda Kenkyushoho*, 1992, **51**, 73; *CA*, **118**, 55722x (*isol*)

Antibiotic TAN 1030A A-1281

TAN 1030A
[126221-76-9]



Absolute Configuration

$C_{27}H_{22}N_4O_4$ 466.495
Isol. from culture broths of *Streptomyces longisporoflavus* R19 and *Streptomyces* sp. C-71799. Possesses macrophage-activating props. Cryst. + $1H_2O$. Sol. MeOH, EtOAc, $CHCl_3$; poorly sol. H_2O, hexane. Mp 290-295° dec. $[\alpha]_D^{24}$ 0 (c, 0.5 in DMF). Related to Staurosporine, S-498. λ_{max} 233 (ϵ 29400); 244 (sh) (ϵ 28000); 263 (sh) (ϵ 31300); 275 (sh) (ϵ 42000); 289 (ϵ 71000); 319 (sh) (ϵ 13400); 333 (ϵ 17700); 352 (ϵ 12100); 369 (ϵ 13400) (MeOH) (Derep). λ_{max} 233 (ϵ 29400); 289 (ϵ 71000); 333 (ϵ 17700); 352 (ϵ 12100); 369 (ϵ 13400) (MeOH) (Berdy).

N^6-(Methoxymethyl): [178276-02-3]
$C_{29}H_{26}N_4O_5$ 510.548
Prod. by *Streptomyces longisporoflavus* R19. Cryst. (CH_2Cl_2/2-propanol). Mp >300° dec.

N^6-(Isopropoxymethyl): [178276-04-5]
$C_{31}H_{30}N_4O_5$ 538.602
Prod. by *Streptomyces longisporoflavus* R19. Cryst. (CH_2Cl_2/2-propanol). Mp 266-272° (dec.).

7ξ-Hydroxy: [178276-00-1]
$C_{27}H_{22}N_4O_5$ 482.495
Prod. by *Streptomyces longisporoflavus*. Cryst. (MeCN aq.). Sol. MeOH, EtOAc, $CHCl_3$; poorly sol. H_2O. Mp 240° (dec.).

7-Oxo: [178276-01-2]
$C_{27}H_{20}N_4O_5$ 480.479
Prod. by *Streptomyces longisporoflavus*. Yellow cryst. (CH_2Cl_2/2-propanol). Sol. MeOH, $CHCl_3$, EtOAc; poorly sol. H_2O. Mp 265-270° (dec.).

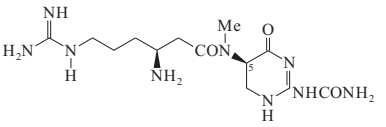
4′-De(hydroxyimino), 4′-oxo: [178276-05-6]
$C_{27}H_{21}N_3O_4$ 451.481
Prod. by *Streptomyces longisporoflavus*. Cryst. (CH_2Cl_2). Mp 236-243°.

3′-Epimer, 4′-de(hydroxyimino), 4′-oxo: [178455-10-2]
$C_{27}H_{21}N_3O_4$ 451.481
Prod. by *Streptomyces longisporoflavus* R19. Cryst. (CH_2Cl_2). Mp 171-176°.

Tanida, S. *et al., J. Antibiot.*, 1989, **42**, 1619-1630 (*isol, struct, props*)
Tsubotani, S. *et al., Tetrahedron*, 1991, **47**, 3565-3574 (*pmr, cmr*)
Cai, Y. *et al., J. Antibiot.*, 1996, **49**, 519-526 (*Streptomyces longisporoflavus isolates, abs config*)
Wood, J.L. *et al., Tet. Lett.*, 1996, **37**, 7335-7338 (*synth*)

Antibiotic TAN 1057A A-1282

TAN 1057A
[128126-44-3]



$C_{13}H_{25}N_9O_3$ 355.399
Prod. by *Flexibacter* spp. Active against gram-positive and -negative bacteria. Powder (as dihydrochloride). $[\alpha]_D^{22}$ -39.1 (c, 0.53 in H_2O) (dihydrochloride). λ_{max} 215 (ϵ 23200); 245 (ϵ 11800) (H_2O) (Derep).

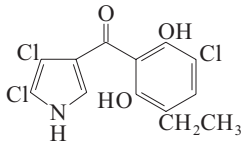
5-Epimer: ***Antibiotic TAN 1057B****. TAN 1057B*
[128126-45-4]
$C_{13}H_{25}N_9O_3$ 355.399
Prod. by *Flexibacter* spp. Active against gram-positive and -negative bacteria. Powder (as dihydrochloride). $[\alpha]_D^{22}$ +72.6 (c, 0.52 in H_2O) (dihydrochloride). λ_{max} 215 (ϵ 23200); 245 (ϵ 11800) (H_2O) (Derep).

▶ MN7880200

Katayama, N. *et al., J. Antibiot.*, 1993, **46**, 606 (*isol, props*)
Funabashi, Y. *et al., Tetrahedron*, 1993, **49**, 13 (*pmr, cmr, cd*)
Yuan, C. *et al., J.A.C.S.*, 1997, **119**, 11777-11784 (*synth*)
Sokolov, V.V. *et al., Eur. J. Org. Chem.*, 1998, 777-783 (*synth*)
Belov, V.N. *et al., Tetrahedron*, 2004, **60**, 7579-7589 (*synth*)

Antibiotic TAN 876B A-1283

*(3-Chloro-5-ethyl-2,6-dihydroxyphenyl)(4,5-dichloro-1*H*-pyrrol-3-yl)methanone. 2,3-Dichloro-4-(3-chloro-5-ethyl-2,6-dihydroxybenzoyl)pyrrole. TAN 876B*
[119059-72-2]



$C_{13}H_{10}Cl_3NO_3$ 334.585

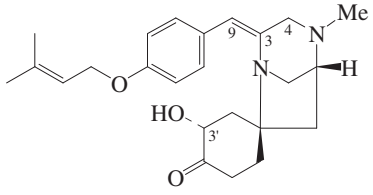
Pyrrole antibiotic. Prod. by *Streptomyces* sp. C-70899. Shows antimicrobial activity with immunomodulating props. Sol. MeOH, C_6H_6; poorly sol. H_2O. λ_{max} 308 (E1%/1cm 417) (MeOH) (Berdy). λ_{max} 220 ; 308 (E1%/1cm 417) (MeOH/HCl) (Berdy). λ_{max} 321 (E1%/1cm 721) (MeOH/NaOH) (Berdy).

▶ LD_{50} (mus, scu) 400 - 800 mg/kg, LD_{50} (mus, scu) 12.5-50 mg/kg, LD_{50} (mus, orl) 50 mg/kg.

Funabashi, Y. *et al., Takeda Kenkyushoho*, 1992, **51**, 73; *CA*, **118**, 55722x (*isol, struct*)

Antibiotic TAN 1251B A-1284

TAN 1251B
[138214-46-7]



$C_{24}H_{32}N_2O_3$ 396.528

Incorrect name in CA. Prod. by *Penicillium thomii* RA-89. Muscarinic receptor antagonist. Hydriatic, antispasmodic and antiulcer agent. Sol. MeOH, $CHCl_3$, EtOAc; poorly sol. H_2O. λ_{max} 265 (ϵ 22700); 304 (ϵ 1700) (MeOH) (Berdy).

3′-Deoxy: ***Antibiotic TAN 1251A***. *TAN 1251A*
[138214-45-6]
[211506-06-8]
$C_{24}H_{32}N_2O_2$ 380.529
Prod. by *Penicillium thomii* RA-89. Muscarinic receptor antagonist. Hydriatic, antispasmodic and antiulcer agent. Sol. MeOH, $CHCl_3$, EtOAc; poorly sol. H_2O. λ_{max} 265 (ϵ 23800); 304 (ϵ 1600) (MeOH) (Berdy).

3′-Deoxy, 3,9-dihydro: ***Antibiotic TAN 1251D***. *TAN 1251D*
[138214-48-9]
$C_{24}H_{34}N_2O_2$ 382.545
Prod. by *Penicillium thomii* RA-89.

3′-Deoxy, $\Delta^{3,4}$-isomer: ***Antibiotic TAN 1251C***. *TAN 1251C*
[138214-47-8]
$C_{24}H_{32}N_2O_2$ 380.529
Prod. by *Penicillium thomii* RA-89.

Pat. Coop. Treaty (WIPO), 1991, 91 13887; *CA*, **116**, 39780t (*isol*)

Snider, B.B. *et al., Org. Lett.*, 2000, **2**, 643-646 (*synth*)

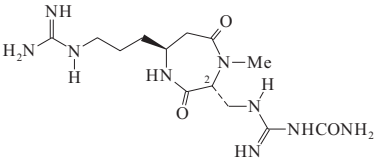
Ousmer, M. *et al., J.A.C.S.*, 2001, **123**, 7534-7538 (*TAN 1251C, synth*)

Nagumo, S. *et al., Tetrahedron*, 2002, **58**, 4917-4924; 9871-9877 (*TAN 1251A, synth*)

Mizutani, H. *et al., Heterocycles*, 2004, **62**, 343-355 (*TAN 1251A, synth*)

Antibiotic TAN 1057C A-1285

TAN 1057C
[128126-46-5]



$C_{13}H_{25}N_9O_3$ 355.399

Prod. by *Flexibacter* spp. Active against gram-positive and -negative bacteria.

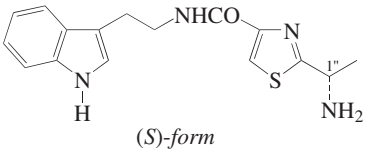
2-Epimer: ***Antibiotic TAN 1057D***. *TAN 1057D*
[128126-47-6]
$C_{13}H_{25}N_9O_3$ 355.399
Prod. by *Flexibacter* spp. Active against gram-positive and -negative bacteria.

Katayama, N. *et al., J. Antibiot.*, 1993, **46**, 606

Yuan, C. *et al., J.A.C.S.*, 1997, **119**, 11777-11784 (*synth*)

Antibiotic TM 64 A-1286

2-(1-Aminoethyl)-N-*[2-(1*H*-indol-3-yl)ethyl]-4-thiazolecarboxamide, 9CI. TM 64*



(*S*)-*form*

$C_{16}H_{18}N_4OS$ 314.41

(S)-form [58887-22-2]
Prod. by *Thermoactinomyces* sp. TM-64. Sol. acids, MeOH, $CHCl_3$; fairly sol. C_6H_6; poorly sol. H_2O. Mp 120° (145-147°). $[\alpha]_D^{20}$ -6 (c, 1 in MeOH). $[\alpha]_D$ -8.3 (c, 1 in EtOH). λ_{max} 223 (ϵ 51750); 275 (ϵ 10500); 282 (ϵ 10500); 291 (ϵ 8350) (MeOH).

*1″-*N*-Ac:* ***Microbiaeratin***
[58887-23-3]
[1020001-70-0]
$C_{18}H_{20}N_4O_2S$ 356.448
Prod. by the marine-derived *Microbispora aerata* IMBAS-11A and from *Thermoactinomyces* sp. TA66-2. Powder. λ_{max} 224 ; 282 ; 290 (MeOH).

(ξ)-form
*1″-*N*-Propanoyl:* [1020001-66-4]
$C_{19}H_{22}N_4O_2S$ 370.474
Prod. by *Thermoactinomyces* sp. TA66-2. Powder.

Omura, S. *et al., J. Antibiot.*, 1975, **28**, 609-610 (*isol*)

Konda, Y. *et al., Chem. Pharm. Bull.*, 1976, **24**, 92-96 (*uv, ir, pmr, ms, struct*)

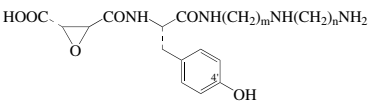
Onda, M. *et al., Chem. Pharm. Bull.*, 1978, **26**, 2167-2169 (*synth*)

Ivanova, V. *et al., Prep. Biochem. Biotechnol.*, 2007, **37**, 161-168 (*Microbiaeratin*)

Korkmaz, C.A. *et al., Magn. Reson. Chem.*, 2008, **46**, 80-83 (*N-propanoyl*)

Antibiotic TMC 52 A-1287

TMC 52



TMC 52A, m = 3, n = 4
TMC 52B, m = 4, n = 3

Similar to Cathestatin B, C-208. Prod. by a *Gliocladium* sp. (fungal strain F-2665). Cysteine proteinase inhibitors.

Antibiotic TMC 52A
TMC 52A
[213417-23-3]
$C_{20}H_{30}N_4O_6$ 422.48
Sol. H_2O, MeOH, DMSO, EtOH; poorly sol. $CHCl_3$, EtOAc. $[\alpha]_D^{24}$ +22 (c, 0.4 in H_2O). λ_{max} 275 (ϵ 1200); 281 (sh) (ϵ 1000) (H_2O). λ_{max} 275 (ϵ 1200); 281 (ϵ 1000) (H_2O) (Berdy).

4′-Deoxy: ***Antibiotic TMC 52C***. *TMC 52C*
[213417-24-4]
$C_{20}H_{30}N_4O_5$ 406.481
Sol. H_2O, DMSO, MeOH, EtOH; poorly sol. $CHCl_3$, EtOAc. $[\alpha]_D$ +17 (c, 0.5 in H_2O). λ_{max} 251 (ϵ 180); 257 (ϵ 210); 263 (ϵ 170) (H_2O). λ_{max} 251 (ϵ 180); 257 (ϵ 210); 263 (ϵ 170) (H_2O) (Berdy).

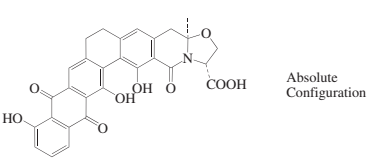
Antibiotic TMC 52B
TMC 52B
[213330-57-5]
$C_{20}H_{30}N_4O_6$ 422.48
Sol. H_2O, MeOH, EtOH, DMSO; poorly sol. $CHCl_3$, EtOAc. $[\alpha]_D^{24}$ +22 (c, 0.4 in H_2O). λ_{max} 275 (ϵ 1200); 281 (sh) (ϵ 1000) (H_2O). λ_{max} 275 (ϵ 1200); 281 (ϵ 1000) (H_2O) (Berdy).

4′-Deoxy: ***Antibiotic TMC 52D***. *TMC 52D*
[213417-25-5]
$C_{20}H_{30}N_4O_5$ 406.481
Sol. H_2O, DMSO, EtOH, MeOH; poorly sol. $CHCl_3$, EtOAc. $[\alpha]_D^{24}$ +11 (c, 0.5 in H_2O). λ_{max} 251 (ϵ 180); 257 (ϵ 210); 263 (ϵ 170) (H_2O). λ_{max} 251 (ϵ 180); 257 (ϵ 210); 263 (ϵ 170) (H_2O) (Berdy).

Isshiki, K. *et al., J. Antibiot.*, 1998, **51**, 629-634 (*isol, uv, ir, pmr, cmr*)

Antibiotic TMC 66 A-1288

TMC 66
[245660-81-5]



Absolute Configuration

$C_{29}H_{21}NO_9$ 527.486

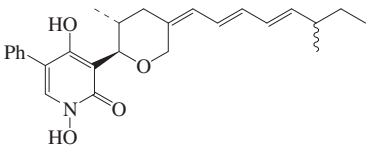
Related to Pradimicin A. Prod. by *Streptomyces* sp. A5008. Endothelin converting enzyme inhibitor. Reddish-brown powder. Mp 215-220° (dec.). $[\alpha]_D^{24}$ -327 (c, 0.01 in $CHCl_3$). λ_{max} 215 (ϵ 27400); 245 (ϵ 28600); 310 (sh) (ϵ 11700); 365 (ϵ 4400); 465 (ϵ 10500) (MeOH).

Asai, Y. *et al., J. Antibiot.*, 1999, **52**, 607-612 (*isol, uv, ir, pmr, cmr*)

Hosokawa, S. *et al., Tet. Lett.*, 2007, **48**, 7305-7308 (*synth, abs config*)

Antibiotic TMC 69 A-1289

TMC 69



$C_{26}H_{31}NO_4$ 421.535

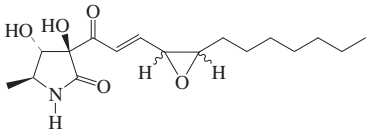
Prod. by *Chrysosporium* sp. TC 1068. Antitumour agent. Amorph. powder. Related to Funiculosin, F-197 and Sambutoxin, S-48. λ_{max} 245 (sh) (log ϵ 4.54); 262 (log ϵ 4.69); 275 (log ϵ 4.76); 287 (log ϵ 4.63) (MeOH).

Hirano, N. *et al., J. Antibiot.*, 2001, **54**, 421-427 (*isol, activity*)

Kohno, J. *et al., Tetrahedron*, 2001, **57**, 1731-1735 (*isol, pmr, cmr*)

Antibiotic TMC 260 A-1290

TMC 260



$C_{17}H_{27}NO_5$ 325.404

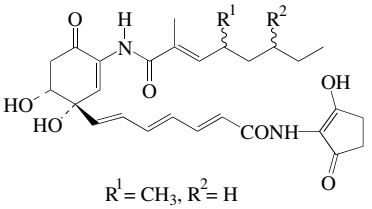
Prod. by *Acremonium kiliense* Grütz TC 1703. IL-4 signal transduction inhibitor. Powder (EtOAc/hexane). Mp 140-144°. $[\alpha]_D^{20}$ -29 (c, 0.096 in MeOH). λ_{max} 245 (ϵ 14050) (MeOH).

Sakurai, M. *et al., J. Antibiot.*, 2003, **56**, 787-791 (*isol, pmr, cmr*)

Antibiotic TMC 1A A-1291

TMC 1A

[177079-60-6]



$R^1 = CH_3$, $R^2 = H$

$C_{28}H_{36}N_2O_7$ 512.602

Prod. by *Streptomyces* sp. A-230. Cytotoxic agent. Yellow powder. Sol. MeOH, Me_2CO, butanol, EtOAc, DMSO, $CHCl_3$; poorly sol. H_2O, hexane. $[\alpha]_D^{24}$ -55 (c, 0.1 in $CHCl_3$). Mp >95° dec. Related to Manumycin A, M-87. λ_{max} 262 (ϵ 38800); 304 (ϵ 43400) (MeOH) (Berdy).

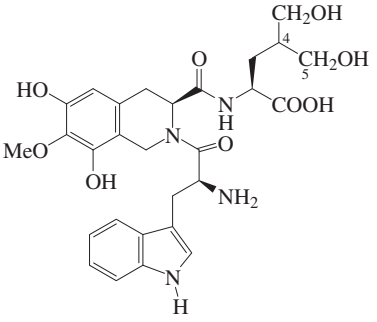
Kohno, J. *et al., J. Antibiot.*, 1996, **49**, 1212-1220 (*isol, uv, ir, pmr, cmr*)

Cronje Grove, J.J. *et al., Chem. Comm.*, 1999, 421-422 (*synth*)

Antibiotic TMC 2A A-1292

TMC 2A

[195976-77-3]



$C_{28}H_{34}N_4O_9$ 570.598

Prod. by *Aspergillus oryzae*. Dipeptidyl peptidase IV inhibitor. Powder. Mp 166-168° (dec.). $[\alpha]_D^{24}$ +2.4 (c, 0.2 in H_2O). λ_{max} 212 (ϵ 9300); 272 (sh) (ϵ 1550); 280 (ϵ 1800); 288 (ϵ 1350) (MeOH).

5-Deoxy: ***Antibiotic TMC 2B****. TMC 2B*
[196212-08-5]
$C_{28}H_{34}N_4O_8$ 554.599
Prod. by *Aspergillus oryzae*. Dipeptidyl peptidase IV inhibitor. Powder. Mp 168-169° (dec.). $[\alpha]_D$ +11.4 (c, 0.1 in H_2O). λ_{max} 212 (ϵ 9200); 272 (sh) (ϵ 1500); 280 (ϵ 1650); 288 (ϵ 1200) (MeOH).

4-Epimer, 5-deoxy: ***Antibiotic TMC 2C****. TMC 2C*
$C_{28}H_{34}N_4O_8$ 554.599
Prod. by *Aspergillus oryzae*. Dipeptidyl peptidase IV inhibitor. Powder. Mp 175-181° (dec.). $[\alpha]_D^{24}$ -17.5 (c, 0.1 in MeOH). λ_{max} 212 (ϵ 10400); 272 (sh) (ϵ 1650); 280 (ϵ 1750); 288 (ϵ 1300) (MeOH).

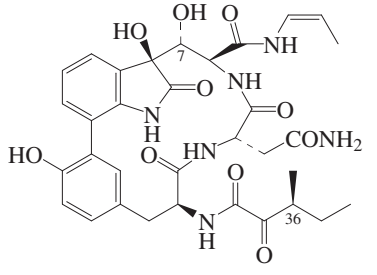
Nonaka, N. *et al., J. Antibiot.*, 1997, **50**, 646-652; 653-658 (*isol, uv, ir, pmr, cmr, cryst struct*)

Ohnuki, T. *et al., Drugs of the Future*, 1999, **24**, 665-670 (*rev*)

Antibiotic TMC 95A A-1293

TMC 95A

[220666-21-7]



$C_{33}H_{38}N_6O_{10}$ 678.697

Cyclic peptide antibiotic. Prod. by *Apiospora montagnei* Sacc. TC 1093. Proteasome inhibitor. Cytotoxic agent. Powder. $[\alpha]_D^{23}$ +102 (c, 0.54 in MeOH). λ_{max} 206 (log ϵ 4.59); 222 (log ϵ 4.63); 294 (log ϵ 3.74) (MeOH).

7-Epimer: ***Antibiotic TMC 95C****. TMC 95C*
[262854-07-9]
$C_{33}H_{38}N_6O_{10}$ 678.697
Prod. by *Apiospora montagnei*. Proteasome inhibitor. Powder. $[\alpha]_D^{23}$ -18 (c, 0.23 in MeOH). λ_{max} 207 (log ϵ 4.55); 222 (log ϵ 4.6); 295 (log ϵ 3.72) (MeOH).

36-Epimer: ***Antibiotic TMC 95B****. TMC 95B*
[262854-05-7]
$C_{33}H_{38}N_6O_{10}$ 678.697
Prod. by *Apiospora montagnei*. Proteasome inhibitor. Powder. $[\alpha]_D^{23}$ +74 (c, 0.47 in MeOH). λ_{max} 206 (log ϵ 4.6); 222 (log ϵ 4.62); 295 (log ϵ 3.73) (MeOH).

7,36-Diepimer: ***Antibiotic TMC 95D****. TMC 95D*
[262854-09-1]
$C_{33}H_{38}N_6O_{10}$ 678.697
Prod. by *Apiospora montagnei*. Proteasome inhibitor.

Koguchi, Y. *et al., J. Antibiot.*, 2000, **53**, 105-109 (*isol, activity*)

Kohno, J. *et al., J.O.C.*, 2000, **65**, 990-995 (*uv, ir, pmr, cmr, struct*)

Ma, D. *et al., Tet. Lett.*, 2000, **41**, 9089-9093 (*synth*)

Inoue, M. *et al., Angew. Chem., Int. Ed.*, 2003, **42**, 2654-2657 (*synth*)

Inoue, M. *et al., Bioorg. Med. Chem. Lett.*, 2004, **14**, 663-665 (*TMC-95A, pharmacol*)

Kaiser, M. *et al., ChemBioChem*, 2004, **5**, 1256-1266 (*TMC-95A, pharmacol*)

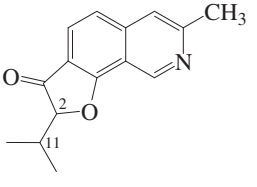
Lin, S. *et al., J.A.C.S.*, 2004, **126**, 6347-6355 (*synth*)

Albrecht, B.K. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 2004, **101**, 11949-11954 (*synth*)

Antibiotic TMC 120A A-1294

*2,3-Dihydro-7-methyl-2-(1-methylethyl)-furo[3,2-*h*]isoquinolin-3-one, 9CI. TMC 120A*

[250231-80-2]



$C_{15}H_{15}NO_2$ 241.289

Prod. by *Aspergillus ustus*. Pale yellow solid. Mp 115-116°. $[\alpha]_D^{23}$ -18 (c, 0.5 in MeOH). λ_{max} 210 (log ϵ 4.5); 250 (log ϵ 4.53); 323 (sh) (log ϵ 3.85); 340 (log ϵ 4.05); 354 (log ϵ 4.11) (MeOH).

2,11-Didehydro: ***Antibiotic TMC 120B****. TMC 120B*
[250231-81-3]
$C_{15}H_{13}NO_2$ 239.273
Prod. by *Aspergillus ustus* and the

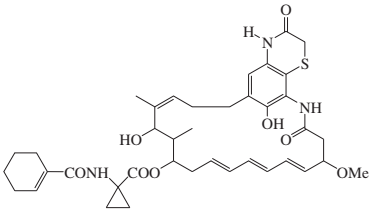
marine *Aspergillus pseudodeflectus*. Moderate inhibitor of eosinophil survival. Pale yellow needles. Mp 176-177°. λ_{max} 212 (log ϵ 4.54); 233 (log ϵ 4.11); 239 (log ϵ 4.11); 271 (log ϵ 4.37); 295 (sh) (log ϵ 4.33); 302 (log ϵ 4.33); 365 (log ϵ 3.89) (MeOH).

2-Hydroxy: ***Antibiotic TMC 120C***. *TMC 120C*
[250231-82-4]
$C_{15}H_{15}NO_3$ 257.288
Prod. by *Aspergillus ustus*. Pale yellow needles. Mp 176-177° dec. Possibly racemic. λ_{max} 211 (log ϵ 4.51); 253 (log ϵ 4.5); 354 (log ϵ 4.01); 413 (sh) (log ϵ 3.05) (MeOH).

Kohno, J. *et al., J. Antibiot.*, 1999, **52**, 913-916 (*isol, activity*)
Kohno, J. *et al., Tetrahedron*, 1999, **55**, 11247-11252 (*uv, ir, pmr, cmr, TMC 120B, TMC 120C, cryst struct*)
Ogawa, A. *et al., Bioorg. Med. Chem. Lett.*, 2004, **14**, 3539-3543 (*TMC 120B, isol, pmr, cmr*)
Kumemura, T. *et al., Chem. Pharm. Bull.*, 2005, **53**, 393-397 (*TMC 120B, synth*)

Antibiotic TMC 135A A-1295

TMC 135A

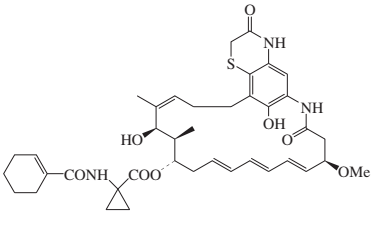


$C_{39}H_{49}N_3O_8S$ 719.897
Ansamycin-type antibiotic. Related to Thiazinotrienomycin A. Prod. by *Streptomyces* sp. TC 1190. Cytotoxic agent. Pale yellow powder. Mp 166-168°. λ_{max} 216 (log ϵ 4.42); 259 (log ϵ 4.5); 270 (log ϵ 4.46); 282 (log ϵ 4.34); 310 (log ϵ 3.33) (MeOH).

Nishio, M. *et al., J. Antibiot.*, 2000, **53**, 724-727

Antibiotic TMC 135B A-1296

TMC 135B

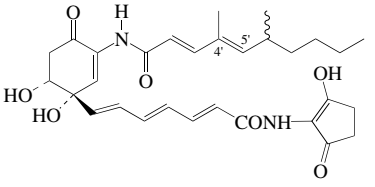


$C_{39}H_{49}N_3O_8S$ 719.897
Ansamycin antibiotic. Related to Thiazinotrienomycin C. Prod. by *Streptomyces* sp. TC 1190. Cytotoxic agent. Pale yellow powder. Mp 190-192°. λ_{max} 217 (log ϵ 4.46); 259 (log ϵ 4.63); 270 (log ϵ 4.58); 281 (log ϵ 4.43); 310 (log ϵ 3.56) (MeOH).

Nishio, M. *et al., J. Antibiot.*, 2000, **53**, 724-727

Antibiotic TMC 1C A-1297

TMC 1C
[177079-62-8]



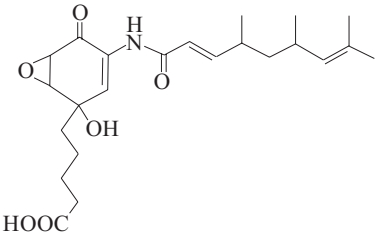
$C_{30}H_{38}N_2O_7$ 538.639
Prod. by *Streptomyces* sp. A-230. Cytotoxic agent. Yellow powder. Sol. MeOH, Me_2CO, butanol, EtOAc, DMSO, $CHCl_3$; poorly sol. H_2O, hexane. $[\alpha]_D^{24}$ +116 (c, 0.1 in $CHCl_3$). Mp >106° dec. Related to Manumycin A, M-87. λ_{max} 265 (sh) (ϵ 49500); 285 (ϵ 52700); 306 (sh) (ϵ 47800) (MeOH).

4′,5′-Dihydro: ***Antibiotic TMC 1D***. *TMC 1D*
[177079-63-9]
$C_{30}H_{40}N_2O_7$ 540.655
Prod. by *Streptomyces* sp. A-230. Cytotoxic agent. Yellow powder. Sol. MeOH, DMSO, Me_2CO, EtOAc, $CHCl_3$, butanol; poorly sol. H_2O, hexane. $[\alpha]_D^{24}$ +16 (c, 0.1 in $CHCl_3$). Mp >89° dec. λ_{max} 263 (ϵ 40700); 278 (ϵ 40200); 304 (ϵ 42700) (MeOH).

Kohno, J. *et al., J. Antibiot.*, 1996, **49**, 1212-1220 (*isol, uv, ir, pmr, cmr*)

Antibiotic U 62162 A-1298

2-Hydroxy-5-oxo-4-[(4,6,8-trimethyl-1-oxo-2,7-nonadienyl)amino]-7-oxabicyclo[4.1.0]hept-3-ene-2-pentanoic acid. U 62162
[82516-67-4]

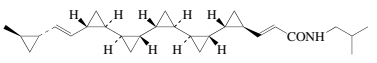


$C_{23}H_{33}NO_6$ 419.517
Isol. from *Streptomyces verdensis*. Active *in vitro* against gram-positive bacteria esp. *Staphylococcus aureus*. Needles (EtOAc/petrol). Sol. MeOH, toluene, DMF, DMSO, C_6H_6; poorly sol. H_2O, hexane. Mp 96-98°. $[\alpha]_D^{25}$ +74 (c, 0.97 in Me_2CO). λ_{max} 235 (ϵ 14000); 276 (sh) (ϵ 8150) (no solvent reported) (Derep). λ_{max} 235 (ϵ 14000); 276 (ϵ 8150) (MeOH) (Berdy). λ_{max} 232 (ϵ 14750); 276 (ϵ 8100) (MeOH-HCl) (Berdy).

Slechta, L. *et al., J. Antibiot.*, 1982, **35**, 556
Alcaraz, L. *et al., Chem. Comm.*, 1998, 1157-1158 (*synth*)

Antibiotic U 106305 A-1299

U 106305
[170591-54-5]

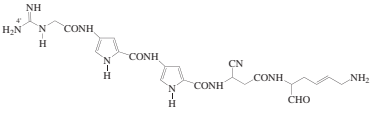


$C_{28}H_{41}NO$ 407.638
Prod. by *Streptomyces* sp. UC 11136. Potent inhibitor of the cholesteryl ester transfer protein. $[\alpha]_D$ -270 (c, 0.3 in $CHCl_3$). Similar to Jawsamycin. λ_{max} 215 ; 240 (MeOH) (Berdy).

Kuo, M.S. *et al., J.A.C.S.*, 1995, **117**, 10629-10634 (*isol, pmr, cmr, struct*)
Barrett, A.G.M. *et al., J.A.C.S.*, 1996, **118**, 7863-7864 (*synth, config*)
Charette, A.B. *et al., J.A.C.S.*, 1996, **118**, 10327-10328 (*synth*)
Pietruszka, J. *et al., Chem. Rev.*, 2003, **103**, 1051-1070 (*rev*)

Antibiotic UCH 15A A-1300

UCH 15A
[189080-82-8]



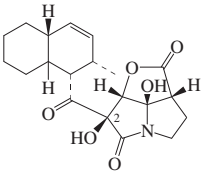
$C_{23}H_{29}N_{11}O_5$ 539.553
Oligopeptide antibiotic. Related to Anthelvencin A, A-1077. Prod. by *Streptomyces* sp. UCH15. Antibacterial and antitumour agent. Powder. Sol. H_2O, DMSO, MeOH; poorly sol. $CHCl_3$. λ_{max} 233 (ϵ 26300); 297 (ϵ 29600) (MeOH).

$N^{4'}$*-Hydroxy:* ***Antibiotic UCH 15B***. *UCH 15B*
[189080-83-9]
$C_{23}H_{29}N_{11}O_6$ 555.552
Prod. by *Streptomyces* sp. UCH15. Antibacterial and antitumour agent. Powder. Sol. H_2O, DMSO, MeOH; poorly sol. $CHCl_3$. λ_{max} 232 (ϵ 27000); 297 (ϵ 32500) (MeOH).

Pat. Coop. Treaty (WIPO), 1997, 97 10 208; *CA*, **126**, 292503z (*isol*)

Antibiotic UCS 1025B A-1301

UCS 1025B
[209126-30-7]



Absolute Configuration

$C_{20}H_{25}NO_6$ 375.421
Prod. by *Acremonium* sp. KY4917. Needles (hexane/EtOAc). Mp 221-223°. $[\alpha]_D^{28}$ -31.8 (c, 0.1 in MeOH).

2-Deoxy: ***Antibiotic UCS 1025A***. *UCS 1025A*
[209126-31-8]
$C_{20}H_{25}NO_5$ 359.421
Prod. by *Acremonium* sp. KY4917.

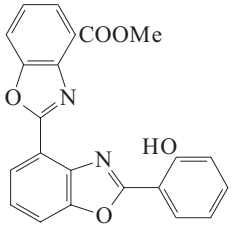
Telomerase inhibitor. Antibacterial and antitumour agent. Needles (hexane/EtOAc). Mp 135-137°. $[\alpha]_D^{28}$ +30.1 (c, 0.1 in MeOH). λ_{max} 260 (ϵ 7100) (MeOH).

Nakai, R. *et al., J. Antibiot.*, 2000, **53**, 294-296 (*isol, pmr, cmr*)
Agatsuma, T. *et al., Org. Lett.*, 2002, **4**, 4387-4390 (*cryst struct, abs config*)
Lambert, T.H. *et al., J.A.C.S.*, 2006, **128**, 426-427 (*UCS 1025A, synth*)
Hoye, T.R. *et al., J.A.C.S.*, 2006, **128**, 2550-2551 (*UCS 1025A, synth*)

Antibiotic UK 1 A-1302

UK 1

[151271-53-3]



$C_{22}H_{14}N_2O_5$ 386.363

Prod. by a close relative of *Streptomyces morookaense*. Mg ion-dependent DNA binding agent and inhibitor of human topoisomerase II. Cytotoxic. Needles (MeOH). Sol. $CHCl_3$, C_6H_6, Py, CH_2Cl_2; fairly sol. MeOH, EtOAc, hexane, DMF; poorly sol. H_2O. Mp 217-219°. λ_{max} 249 (ϵ 21000); 263 (ϵ 20200); 271 (ϵ 19800); 314 (ϵ 29000); 325 (ϵ 32500); 348 (ϵ 27800); 363 (ϵ 18700); 420 (ϵ 1480) (MeOH) (Derep).

Parent acid: Demethyl Antibiotic UK 1.

Demethyl UK 1

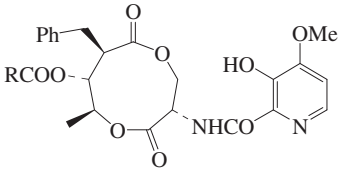
$C_{21}H_{12}N_2O_5$ 372.336

Prod. by *Actinomyces* sp. Stamm K 17/9. Yellow solid. λ_{max} 233 (log ϵ 4.09); 264 (sh) ; 270 (log ϵ 4); 308 (sh) ; 324 (log ϵ 4.15); 340 (log ϵ 4.19); 415 (log ϵ 3.92) (MeOH).

Ueki, M. *et al., J. Antibiot.*, 1993, **46**, 1089-1094; 1095-1100 (*isol, uv, pmr, cmr*)
Reynolds, M.B. *et al., Bioorg. Chem.*, 1999, **27**, 326-337 (*activity*)
Ströch, K. *et al., Dissertation*, Univ. of Göttingen, 2003, (*Demethyl UK1*)

Antibiotic UK 2 A-1303

UK 2



UK 2A R = -$CH(CH_3)_2$
UK 2B R = -$C(CH_3)$=$CHCH_3$(*E*-)
UK 2C R = -$CH_2CH(CH_3)_2$
UK 2D R = -$CH(CH_3)CH_2CH_3$

Prod. by *Streptomyces morookaense*. Antifungal agent.

Antibiotic UK 2A

UK 2A

[167173-85-5]

$C_{26}H_{30}N_2O_9$ 514.531

Needles. Mp 207-209°. $[\alpha]_D^{23}$ +89.1 (c, 0.8 in $CHCl_3$).

*Demethoxy: **Antibiotic UK 3A**. UK 3A*

[194931-82-3]

$C_{25}H_{28}N_2O_8$ 484.505

Prod. by *Streptomyces* sp. 517-02. Antifungal agent. Needles. Stereochem. not confirmed.

Antibiotic UK 2B

UK 2B

[167173-86-6]

$C_{27}H_{30}N_2O_9$ 526.542

$[\alpha]_D^{17}$ +87.5 (c, 0.3 in $CHCl_3$).

Antibiotic UK 2C

UK 2C

[167173-87-7]

$C_{27}H_{32}N_2O_9$ 528.558

Inseparable mixture with UK 2D.

Antibiotic UK 2D

UK 2D

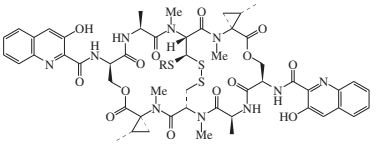
[167173-88-8]

$C_{27}H_{32}N_2O_9$ 528.558

Inseparable mixture with UK 2C.

Ueki, M. *et al., J. Antibiot.*, 1996, **49**, 639; 1997, **50**, 1052 (*isol, activity*)
Hanafi, M. *et al., J. Antibiot.*, 1996, **49**, 1226 (*pmr, cmr, struct*)
Ueki, M. *et al., J. Antibiot.*, 1997, **50**, 551 (*UK 3A*)
Shibata, K. *et al., J. Antibiot.*, 1998, **51**, 1113-1116 (*abs config, conformn*)
Shimano, M. *et al., Tetrahedron*, 1998, **54**, 12745-12774 (*synth, abs config*)

Antibiotic UK 63052 A-1304



UK 63052 R = -$CH(CH_3)CH_2CH_3$
UK 63598 R = -CH_3
UK 65662 R = -$CH(CH_3)_2$
UK 163E R = -CH_2CH_3

Depsipeptide antibiotics. Related to Quinomycin A, Q-58. Isol. from *Streptomyces braegensis* ssp. *japonicus*. Several uncharacterised components are also prod.

Antibiotic UK 63052

UK 63052. L 52-71A. SW 163G. Antibiotic L 52-71A. Antibiotic SW 163G

[120763-23-7]

$C_{56}H_{68}N_{10}O_{14}S_2$ 1169.344

Also from *Streptomyces* sp. SNA15896. Off-white solid + $1H_2O$. Sol. Py, DMSO, CH_2Cl_2, $CHCl_3$; fairly sol. MeOH, EtOAc; poorly sol. H_2O, hexane. Mp 252-255°. $[\alpha]_D$ -166.2 (c, 0.1 in $CHCl_3$). λ_{max} 223 (ϵ 65600); 247 (ϵ 82000); 399 (ϵ 11200) (MeOH/NaOH) (Derep). λ_{max} 219 (ϵ 77300); 231 (ϵ 78300); 300 (ϵ 9400); 306 (ϵ 9200); 359 (ϵ 10200) (MeOH) (Derep).

Antibiotic UK 63598

UK 63598. SW 163D. Antibiotic SW 163D

[120832-02-2]

$C_{53}H_{62}N_{10}O_{14}S_2$ 1127.263

Also from *Streptomyces* sp. SNA15896. Off-white solid + $1H_2O$. Sol. Py, CH_2Cl_2, $CHCl_3$, DMSO; fairly sol. MeOH, EtOAc; poorly sol. H_2O, hexane. Mp 235-241°. $[\alpha]_D$ -126.8 (c, 0.1 in $CHCl_3$). λ_{max} 223 (ϵ 67800); 247 (ϵ 80600); 399 (ϵ 11500) (MeOH/NaOH) (Derep). λ_{max} 219 (ϵ 75100); 231 (ϵ 76700); 300 (ϵ 9750); 308 (ϵ 9600); 359 (ϵ 10500) (MeOH) (Derep).

Antibiotic UK 65662

UK 65662. L 52-71B. SW 163F. Antibiotic L 52-71B. Antibiotic SW 163F

[120796-23-8]

$C_{55}H_{66}N_{10}O_{14}S_2$ 1155.317

Also from *Streptomyces* sp. SNA15896. Sol. Py, $CHCl_3$, DMSO, CH_2Cl_2; fairly sol. MeOH, EtOAc; poorly sol. H_2O, hexane. Mp 240-244°. $[\alpha]_D$ -168.1 (c, 0.1 in $CHCl_3$). λ_{max} 223 (ϵ 65600); 247 (ϵ 82000); 399 (ϵ 11200) (MeOH/NaOH) (Derep). λ_{max} 219 (ϵ 77300); 231 (ϵ 78300); 300 (ϵ 9400); 306 (ϵ 9200); 359 (ϵ 10200) (MeOH) (Derep).

Antibiotic UK 163E

SW 163E. Antibiotic SW 163E. UK 163E

$C_{54}H_{64}N_{10}O_{14}S_2$ 1141.29

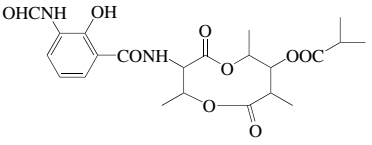
Prod. by *Streptomyces* sp. SNA15896. Antitumour agent. Pale yellow needles. Mp 234-237°. $[\alpha]_D^{28}$ -157.1 (c, 0.2 in $CHCl_3$). λ_{max} 214 (ϵ 70500); 230 (ϵ 66200); 299 (ϵ 9800); 359 (ϵ 9200) (MeOH).

Range, M.J. *et al., J. Antibiot.*, 1989, **42**, 206-217 (*isol, struct, props*)
Takahashi, K. *et al., J. Antibiot.*, 2001, **54**, 615-621; 622-627 (*SW 163E*)
Nakaya, M. *et al., Biosci., Biotechnol., Biochem.*, 2007, **71**, 2969-2976 (*SW 163*)

Antibiotic USF 19A A-1305

USF 19A

[165337-87-1]



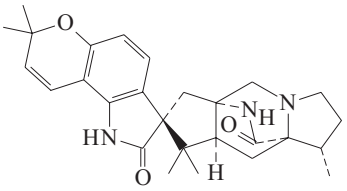
$C_{22}H_{28}N_2O_9$ 464.471

Prod. by *Streptomyces* sp. USF-19. Lipoxygenase inhibitor. Amorph. powder. Mp 180°. Similar to Antimycin A. λ_{max} 240 (ϵ 1850); 302 (ϵ 1510) (EtOH). λ_{max} 240 (ϵ 1853); 302 (ϵ 1510) (EtOH) (Berdy).

Komoda, T. *et al., Biosci., Biotechnol., Biochem.*, 1995, **59**, 924-926 (*isol, pmr, cmr, uv, ir*)

Antibiotic VM 55595 A-1306

VM 55595
[138797-22-5]

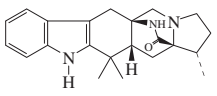


$C_{27}H_{33}N_3O_3$ 447.576
Prod. by a *Penicillium* sp. IMI 332995. Mycotoxin, antiparasitic agent. Related to a Paraherquamide A, P-90. λ_{max} 245 (MeOH) (Berdy).

Blanchflower, S.E. *et al., J. Antibiot.*, 1993, **46**, 1355 (*isol*)

Antibiotic VM 55599 A-1307

VM 55599
[148717-88-8]



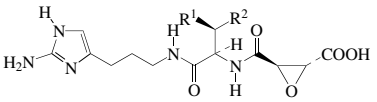
Absolute Configuration

$C_{22}H_{27}N_3O$ 349.475
Shunt metab. of *Penicillium* sp. IMI33995 and *Penicillium fellutanum*. Related to Paraherquamide A, P-90. λ_{max} 226 (ϵ 29700); 280 (ϵ 5600) (MeOH) (Derep).

Blanchflower, S.E. *et al., J. Antibiot.*, 1993, **46**, 1355-1363 (*isol, cryst struct*)
Sanz-Cervera, J.F. *et al., J.A.C.S.*, 2002, **124**, 2556-2559 (*synth, abs config*)
Domingo, L.R. *et al., J.O.C.*, 2003, **68**, 2895-2902 (*biosynth*)
Ding, Y. *et al., J. Nat. Prod.*, 2008, **71**, 1574-1578 (*isol, biosynth, ms*)

Antibiotic WF 14865 A-1308

WF 14865



WF 14865A $R^1 = CH_3$, $R^2 = CH_2CH_3$
WF 14865B $R^1 = H$, $R^2 = CH(CH_3)_2$

Prod. by *Aphanoascus fulvescens* and *Anixiopsis stercoraria*.

Antibiotic WF 14865A

WF 14865A
[178439-23-1]
$C_{16}H_{25}N_5O_5$ 367.404
Cathepsin B inhibitor, shows antiarthritic props. Powder. Sol. MeOH, H_2O; fairly sol. Me_2CO; poorly sol. $CHCl_3$. $[\alpha]_D$ +30 (MeOH). λ_{max} 200 (MeOH).

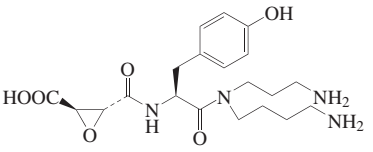
Antibiotic WF 14865B

WF 14865B
[178439-24-2]
$C_{16}H_{25}N_5O_5$ 367.404
Powder. Sol. MeOH, H_2O; fairly sol. Me_2CO; poorly sol. $CHCl_3$. $[\alpha]_D$ +35 (MeOH). λ_{max} 200 (MeOH).

Japan. Pat., 1996, 96 119 983; *CA*, **125**, 86398v (*isol*)
Otsuka, T. *et al., J. Antibiot.*, 2000, **53**, 449-458 (*isol, activity*)

Antibiotic WF 14861A A-1309

WF 14861A
[176777-37-0]



Absolute Configuration

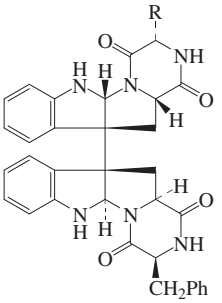
$C_{20}H_{30}N_4O_6$ 422.48
Prod. by *Colletotrichum* sp. WF 14861A. Inhibitor of Cathepsins B and L. Amorph. powder. Sol. H_2O, MeOH; poorly sol. $CHCl_3$, EtOAc. $[\alpha]_D$ +43 (c, 0.5 in MeOH).

4′-Deoxy: ***Antibiotic 460B****. 460B*
[207442-33-9]
$C_{20}H_{30}N_4O_5$ 406.481
Prod. by *Aspergillus* sp. Cathepsin L inhibitor.

Japan. Pat., 1996, 96 34 792; *CA*, **124**, 341065c
Japan. Pat., 1998, 98 101 662; *CA*, **129**, 3915v (*Antibiotic 460B*)
Otsuka, T. *et al., J. Antibiot.*, 1999, **52**, 536-541; 542-547 (*isol, pmr, cmr, ms, activity*)
Detterbeck, R. *et al., Helv. Chim. Acta*, 2003, **86**, 222-232 (*synth, abs config*)

Antibiotic WIN 64745 A-1310

WIN 64745. Q 20547C. Antibiotic Q 20547C
[150881-28-0]



Absolute Configuration

R = $-CH_2CH(CH_3)_2$

$C_{37}H_{38}N_6O_4$ 630.745
Isol. from *Aspergillus* sp. ATCC74177. Neurokinin antagonist. Solid. Mp 194-196°. $[\alpha]_D$ +280 (c, 0.012 in MeOH). Related to Chaetocin, C-320. λ_{max} 242 (ϵ 10000); 301 (ϵ 4500) (MeOH).

Barrow, C.J. *et al., J.O.C.*, 1993, **58**, 6016-6021 (*isol, uv, ir, pmr, cmr, cd, struct*)
Sedlock, D.M.J. *et al., J. Antibiot.*, 1994, **47**, 391-398; 399-410; 411-419 (*isol, biochem, biosynth*)
Japan. Pat., 1995, 258 266; *CA*, **124**, 28114t (*Q 20547C*)
Pérez-Balado, C. *et al., Org. Lett.*, 2008, **10**, 3701-3704 (*synth*)

Antibiotic WIN 64821 A-1311

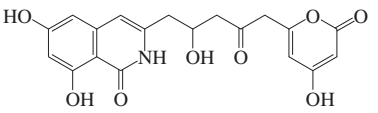
WIN 64821. Q 20547A. Antibiotic Q 20547A
[150881-27-9]
As Antibiotic WIN 64745, A-1310 with R = CH_2Ph

$C_{40}H_{36}N_6O_4$ 664.762
Isol. from *Aspergillus* sp. SC 319. Competitive antagonist to substance P at the human NK1 receptor. Solid. Mp 203-205°. $[\alpha]_D$ +200 (c, 0.15 in MeOH). Related to Chaetocin, C-320. λ_{max} 241 (ϵ 12100); 301 (ϵ 5300) (MeOH).

Barrow, C.J. *et al., J.O.C.*, 1993, **58**, 6016-6021 (*isol, uv, ir, pmr, cmr, cd, struct*)
Sedlock, D.M. *et al., J. Antibiot.*, 1994, **47**, 391-398; 399-410; 411-419 (*R = CH_2Ph, isol, biochem, biosynthetic analogues, pharmacol*)
Barrow, C.J. *et al., Bioorg. Med. Chem. Lett.*, 1995, **5**, 377-380 (*sar*)
Japan. Pat., 1995, 258 266; *CA*, **124**, 28114t (*Q 20547A*)
Overman, L.E. *et al., J.A.C.S.*, 2001, **123**, 9465-9467 (*synth*)
Movassaghi, M. *et al., Angew. Chem., Int. Ed.*, 2008, **47**, 1485-1487 (*synth*)
Pérez-Balado, C. *et al., Org. Lett.*, 2008, **10**, 3701-3704 (*synth*)

Antibiotic WJ 35 A-1312

WJ 35
[894085-53-1]

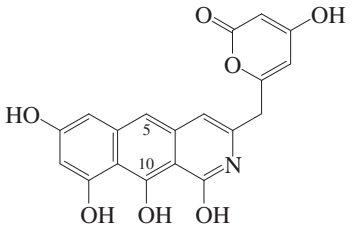


$C_{19}H_{17}NO_8$ 387.345
Prod. by engineered *Streptomyces coelicolor* strain CH999.

Zhang, W. *et al., Appl. Environ. Microbiol.*, 2006, **72**, 2573-2580 (*isol, biosynth, pmr, cmr*)

Antibiotic WJ 85 A-1313

4-Hydroxy-6-(1,7,9,10-tetrahydroxybenz[g]isoquinolin-3-yl)-2H-pyran-2-one. WJ 85
[917571-64-3]



$C_{19}H_{13}NO_7$ 367.314
Prod. by *Streptomyces coelicolor* strain CH999. Pale yellow solid. λ_{max} 262 (sh) (log ϵ 4.05); 293 (log ϵ 4.22); 376 (log ϵ 3.45) (MeCN).

5-Hydroxy, 5,10-quinone: ***Antibiotic WJ 85B****. WJ 85B*
[917571-67-6]
$C_{19}H_{11}NO_8$ 381.298
Prod. by *Streptomyces coelicolor* CH999. Yellow solid. λ_{max} 248 (log ϵ 3.36); 279 (sh) (log ϵ 3.35); 322 (log ϵ 3.46); 431 (log ϵ 2.99) (MeCN).

Zhang, W. *et al., J. Nat. Prod.*, 2006, **69**, 1633-1636 (*isol, pmr, cmr*)

Antibiotic WS 1921 A-1314

WS 1921

[12704-00-6]

$C_8H_{10}N_2OS_2$ 214.312

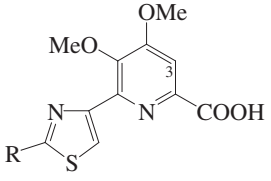
Pyrrothine-related antibiotic. Struct. unknown. Prod. by *Streptomyces griseolus-sulfoantibioticus.* Antibacterial agent. Orange-yellow cryst. Sol. MeOH, $CHCl_3$; fairly sol. C_6H_6; poorly sol. hexane, H_2O. Mp 191-193° (dec.). λ_{max} 230 (E1%/1cm 450); 370 (E1%/1cm 1150) (MeOH) (Berdy).

Japan. Pat., 1972, 72 00 679; *CA*, **76**, 125429x (*isol*)

Antibiotic WS 75624A A-1315

WS 75624A

[170663-44-2]



R = -$\overset{1''}{C}H_2(CH_2)_3C(OH)(CH_3)_2$

$C_{18}H_{24}N_2O_5S$ 380.464

Prod. by *Saccharothrix* sp. 75624. Endothelin converting enzyme inhibitor; Collagenase:Nep II processing protease inhibitor. Powder. Sol. MeOH, $CHCl_3$, Me_2CO; fairly sol. EtOAc; poorly sol. H_2O. Mp 53-54°. $[\alpha]_D^{23}$ 0 (c, 0.5 in MeOH). λ_{max} 215 ; 245 ; 298 (MeOH). λ_{max} 215 ; 242 ; 313 (MeOH/HCl) (Berdy). λ_{max} 215 ; 238 ; 290 ; 303 (MeOH/NaOH).

3-Hydroxy, amide: ***Karnamicin D_1.*** *BU 3557D_1. Antibiotic BU 3557D_1*

[122535-59-5]

$C_{18}H_{25}N_3O_5S$ 395.479

Isol. from *Saccharothrix aerocolonigenes.* Active against fungi and yeasts. Powder. Sol. MeOH, C_6H_6, EtOH, $CHCl_3$, EtOAc, DMSO; poorly sol. hexane, H_2O. Mp 146.5-148°. $[\alpha]_D^{25}$ 0 (c, 1 in $CHCl_3$). λ_{max} 219 (ϵ 26300); 242 (ϵ 23500); 317 (ϵ 6800) (MeOH). λ_{max} 220 (sh) (ϵ 23300); 243 (ϵ 26400); 317 (ϵ 8000) (MeOH/HCl). λ_{max} 221 (ϵ 22900); 252 (ϵ 20800); 292 (ϵ 16400); 342 (ϵ 8800) (MeOH/NaOH).

1'',3-Dihydroxy, amide: ***Karnamicin A_3.*** *BU 3557A_3. Antibiotic BU 3557A_3*

[122535-50-6]

$C_{18}H_{25}N_3O_6S$ 411.478

Isol. from *Saccharothrix aerocolonigenes.* Active against fungi and yeasts. Powder + ½H_2O. Sol. MeOH, EtOH, $CHCl_3$, EtOAc, DMSO, C_6H_6; poorly sol. hexane, H_2O. Mp 69-72°. $[\alpha]_D^{25}$ -19 (c, 0.25 in $CHCl_3$). λ_{max} 218 (ϵ 26400); 242 (ϵ 23700); 317 (ϵ 6800) (MeOH). λ_{max} 220 (ϵ 25000); 243 (ϵ 25000); 317 (ϵ 7300) (MeOH/HCl). λ_{max} 220 (ϵ 24200); 251 (ϵ 22200); 282 (ϵ 17400); 342 (ϵ 9200) (MeOH/NaOH).

[157242-76-7 , 157242-77-8]

Nishio, M. *et al., J. Antibiot.*, 1989, **42**, 852-868 (*Karnamicins*)

Tsurumi, Y. *et al., J. Antibiot.*, 1995, **48**, 1066-1072; 1073-1075 (*WS 75624A*)

Antibiotic WS 75624B A-1316

WS 75624B

[157242-75-6]

As Antibiotic WS 75624A, A-1315 with R = -$(CH_2)_5CH(OH)CH_3$

$C_{18}H_{24}N_2O_5S$ 380.464

Prod. by *Saccharothrix* sp. 75624. Endothelin converting enzyme inhibitor, collagenase; NEP II inhibitor. Powder. Sol. MeOH, Me_2CO, $CHCl_3$; fairly sol. EtOAc; poorly sol. H_2O. Mp 139-140°. $[\alpha]_D^{23}$ +3 (c, 1 in MeOH). λ_{max} 215 ; 245 ; 298 (MeOH). λ_{max} 215 ; 242 ; 313 (MeOH/HCl). λ_{max} 215 ; 238 ; 285 ; 298 (MeOH/NaOH).

[170129-40-5]

Tsurumi, Y. *et al., J. Antibiot.*, 1995, **48**, 1066-1072; 1073-1075 (*isol, pmr, cmr, synth, props*)

Patt, W.C. *et al., Tet. Lett.*, 1997, **38**, 1297 (*synth*)

Huang, S.-T. *et al., Tet. Lett.*, 1998, **39**, 9335-9338 (*synth*)

Antibiotic XK 211 A-1317

XK 211

[76930-06-8]

$C_{13}H_{20}N_4O_7S$ 376.39

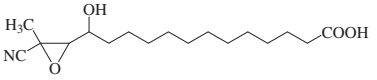
Possibly identical with Altemicidin, A-660. Prod. by *Streptomyces nigrescens* XK 211. Cryst. (H_2O). Sol. bases, $CHCl_3$; fairly sol. acids, MeOH; poorly sol. EtOAc, hexane. Mp 210°. $[\alpha]_D^{20}$ -27 (c, 0.1 in H_2O). λ_{max} 302 (H_2O). λ_{max} 308 (HCl) (Berdy). λ_{max} 305 (NaOH aq.) (Berdy).

Japan. Pat., 1980, 80 122 795; *CA*, **94**, 137795y

Antibiotic Y 03559J-A A-1318

3-Cyano-μ-hydroxy-3-methyloxiranetridecanoic acid, 9CI. Y 03559J-A

[162559-36-6]



$C_{17}H_{29}NO_4$ 311.42

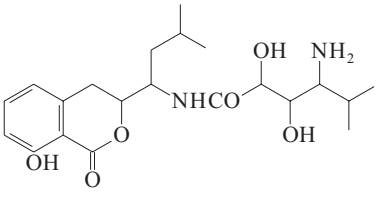
Prod. by *Micromonospora* sp. Y-03559J. Active against gram-positive bacteria incl. MRSA. Oil.

Japan. Pat., 1995, 95 02 821; *CA*, **122**, 263680s (*isol*)

Antibiotic Y 05460MA A-1319

Y 05460MA

[126262-07-5]



$C_{21}H_{32}N_2O_6$ 408.494

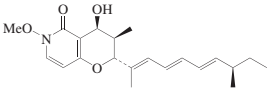
Prod. by a *Bacillus* sp. Y-05460M. Active against gram-positive and -negative bacteria. Shows antitumour and antiulcer activities. Powder. Mp 104-106°. Related to Amicoumacin B. λ_{max} 248 (sh); 347 (0.1*M* NaOH) (Derep). λ_{max} 208 (ϵ 27300); 248 (ϵ 6000); 314 (ϵ 4000) (H_2O) (Derep). λ_{max} 208 (ϵ 27300); 246 (ϵ 6400); 314 (ϵ 4380) (MeOH) (Berdy). λ_{max} 245 ; 313 (EtOH) (Berdy).

Sato, T. *et al., J. Antibiot.*, 1992, **45**, 1949

Antibiotic YCM 1008A A-1320

YCM 1008A

[944271-69-6]



Absolute Configuration

$C_{21}H_{29}NO_4$ 359.464

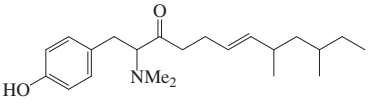
Similar to Antibiotic FA 4283, A-1166. Prod. by *Fusarium* sp. Calcium signalling inhibitor. Pale yellow powder. $[\alpha]_D$ -58.1 (c, 0.03 in MeOH).

Koizumi, F. *et al., J. Antibiot.*, 2007, **60**, 455-458 (*isol, pmr, cmr*)

Tatsuta, K. *et al., Tet. Lett.*, 2007, **48**, 4187-4190 (*synth, abs config*)

Antibiotic YM 193221 A-1321

2-(Dimethylamino)-1-(4-hydroxyphenyl)-8,10-dimethyl-6-dodecen-3-one. YM 193221



$C_{22}H_{35}NO_2$ 345.524

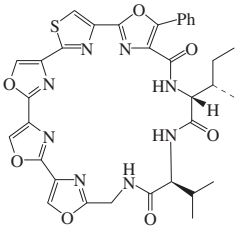
Prod. by *Pseudallescheria ellipsoidea* CBS 128.78. Antifungal agent. Yellow oil. λ_{max} 226 ; 280 (MeOH).

Kamigiri, K. *et al., J. Antibiot.*, 2004, **57**, 569-572 (*isol, pmr, cmr*)

Antibiotic YM 216391 A-1322

YM 216391

[230645-58-6]



Absolute Configuration

$C_{34}H_{32}N_8O_7S$ 696.742

Cyclic peptide antibiotic. Prod. by *Streptomyces nobilis* JCM 4274. Cytotoxic. Powder. Mp 238° dec. $[\alpha]_D^{25}$ +48 (c, 0.1 in MeCN). λ_{max} 261 (ϵ 31000); 273 (ϵ 31200); 287 (ϵ 32000); 322 (sh) (ϵ 8700) (MeCN).

Sohda, K. *et al., J. Antibiot.*, 2005, **58**, 27-31; 32-36 (*isol, pmr, cmr, ms, activity*)

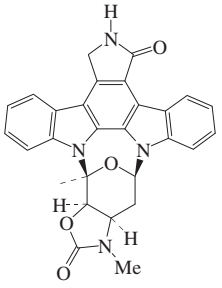
Antibiotic YN 0165JA A-1323

4-[[(Methyl-aci-*nitro)acetyl]amino]butanamide, 9CI. YN 0165JA*
[102692-05-7]
$MeON(O)=CHCONH(CH_2)_3CONH_2$
$C_7H_{13}N_3O_4$ 203.197
Prod. by *Streptomyces* sp. Active against gram-positive bacteria. Cryst. (EtOAc). Sol. MeOH, DMSO. Mp 120-121° dec. Related to Enteromycin. λ_{max} 252 (ε 14800) (MeOH) (Derep). λ_{max} 252 (ε 14837) (MeOH) (Berdy).

Imai, H. *et al., J. Antibiot.*, 1986, **39**, 601 (*isol, struct, nmr*)

Antibiotic ZHD 0501 A-1324

ZHD 0501



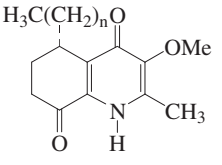
Absolute Configuration

$C_{28}H_{22}N_4O_4$ 478.506
Related to Staurosporine, S-498. Prod. by a marine-derived *Actinomadura* sp. 007. Cytotoxic. Pale yellow cryst. ($CHCl_3$/MeOH). Mp 283.4-285.5°. $[\alpha]_D^{20}$ +83.2 (c, 0.1 in MeOH). λ_{max} 232 (ε 19610); 243 (sh) (ε 19020); 275 (sh) (ε 19720); 290 (ε 33210); 318 (ε 9940); 332 (ε 9640); 351 (ε 6750); 369 (ε 6920) (MeOH).

Han, X.-X. *et al., Tet. Lett.*, 2005, **46**, 6137-6140 (*isol, uv, pmr, cmr*)

Antidesmone A-1325

*6,7-Dihydro-3-methoxy-2-methyl-5-octyl-4,8(1*H*,5*H*)-quinolinedione. Hyeronine A*
[222629-77-8]
[221037-18-9]



n = 7

Absolute Configuration

$C_{19}H_{29}NO_3$ 319.443
Struct. revised in 2000. Alkaloid from *Antidesma membranaceum*, many other *Antidesma* spp., *Hieronima oblonga* and *Melochia chamaedrys*. Shows strong fungitoxic activity. Pale yellow oil. $[\alpha]_D^{26}$ +24 (c, 0.2 in $CHCl_3$). $[\alpha]_D^{25}$ +48.6 (c, 1 in $CHCl_3$). Genus name given as Hyeronema. The higher opt. rotn. was reported for Hyeronine A from *H. oblonga*. λ_{max} 247 (log ε 4.21); 275 (log ε 3.44); 327 (log ε 3.52) (MeOH).

*8α-Alcohol: 5,6,7,8-Tetrahydro-8-hydroxy-3-methoxy-2-methyl-5-octyl-4(1*H*)-quinolinone.* ***Hyeronimone***
[138690-48-9]
$C_{19}H_{31}NO_3$ 321.459
Alkaloid from roots of *Hieronima alchorneoides* (Euphorbiaceae). Mp 85-86°. $[\alpha]_D$ +115 (c, 0.06 in $CHCl_3$). Abs. config. not determined.

8α-Alcohol, O-Ac: ***8-O-Acetylhyeronimone***
[138690-49-0]
$C_{21}H_{33}NO_4$ 363.496
From roots of *Hieronima alchorneoides* (Euphorbiaceae). Mp 75-77°. $[\alpha]_D$ +178 (c, 0.06 in $CHCl_3$).

7′-(β-D-Glucopyranosyloxy):
$C_{25}H_{39}NO_9$ 497.584
Alkaloid from *Antidesma membranaceum*. $[\alpha]_D^{23}$ +0.2 (c, 0.16 in MeOH). λ_{max} 248 (log ε 4.1); 276 (log ε 3.31); 328 (log ε 3.49) (MeOH).

*8-Deoxo: 6,7,8,9-Tetrahydro-3-methoxy-2-methyl-5-octyl-4(1*H*)-quinolinone.* ***8-Deoxoantidesmone***
$C_{19}H_{31}NO_2$ 305.459
Alkaloid from *Antidesma* spp.

*8-Deoxo, 17-hydroxy: 6,7,8,9-Tetrahydro-2-(hydroxymethyl)-3-methoxy-5-octyl-4(1*H*)-quinolinone.* ***Vanessine***
$C_{19}H_{31}NO_3$ 321.459
Alkaloid from the stems of *Waltheria douradinha*. Yellow viscous oil. $[\alpha]_D^{25}$ +18.5 (c, 0.12 in $CHCl_3$).

8-Deoxo, 7′-(β-D-glucopyranosyloxy):
$C_{25}H_{41}NO_8$ 483.601
Alkaloid from *Antidesma membranaceum*. $[\alpha]_D^{24}$ -49.1 (c, 0.13 in MeOH). λ_{max} 203 (log ε 4.22); 219 (log ε 4.12); 231 (log ε 4.11); 275 (log ε 3.9) (MeOH).

*Lower homologue (n = 5): 5-Hexyl-6,7-dihydro-3-methoxy-2-methyl-4,8(1*H*,5*H*)-quinolinedione. 17,18-Bisnorantidesmone.* ***Hyeronine B***
[221037-19-0]
$C_{17}H_{25}NO_3$ 291.389
Alkaloid from *Antidesma velutinosum*, *Hieronima alchorneoides* and *Hieronima oblonga*. Amorph. yellow powder. $[\alpha]_D^{25}$ +16.4 (c, 1 in $CHCl_3$). λ_{max} 210 (sh) ; 248 (no solvent reported).

*Lower homologue (n = 6): 5-Heptyl-6,7-dihydro-3-methoxy-2-methyl-4,8(1*H*,5*H*)-quinolinedione.* ***18-Norantidesmone***
$C_{18}H_{27}NO_3$ 305.416
Alkaloid from *Antidesma* spp. and *Hieronima alchorneoides*.

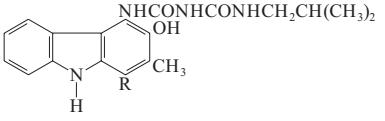
Tinto, W.F. *et al., J. Nat. Prod.*, 1991, **54**, 1309-1313 (*Hyeronimone, Acetylhyeronimone*)
Alves, T.M.A. *et al., Tet. Lett.*, 1999, **40**, 205-208 (*Hyeronimines*)
Bringmann, G. *et al., J.A.C.S.*, 2000, **122**, 9905-9910 (*biosynth*)
Bringmann, G. *et al., Tetrahedron*, 2000, **56**, 3691-3695 (*Antidesmone*)
Buske, A. *et al., Eur. J. Org. Chem.*, 2001, 3537-3543 (*glucosyloxy derivs*)
Buske, A. *et al., Phytochemistry*, 2002, **60**, 489-496 (*isol, occur, ms, struct, activity*)
Dias, G.O.C. *et al., Planta Med.*, 2007, **73**, 289-292 (*isol, pmr, cmr*)
Gressler, V. *et al., Phytochemistry*, 2008, **69**, 994-999 (*Vanessine*)

Antifungin A-1326

Phenazine antibiotic. Struct unknown. Prod. by *Pseudomonas mycophaga*. Antifungal agent. Cryst. Sol. MeOH, Et_2O.
▶ LD_{50} (mus, scu) 300 - 700 mg/kg.

Khudyakov, Y.P. *et al., Prikl. Biokhim. Mikrobiol.*, 1965, **1**, 186-190; *CA*, **63**, 7619f

Antiostatin B A-1327



Antiostatin	B_2	R =	$(CH_2)_5CH_3$
	B_3	R =	$(CH_2)_4CH(CH_3)_2$
	B_4	R =	$(CH_2)_6CH_3$
	B_5	R =	$(CH_2)_5CH(CH_3)_2$

Carbazole antibiotic complex. Isol. from *Streptomyces cyaneus*. Antioxidative agent.

Antiostatin B_2 [131602-18-1]
$C_{25}H_{34}N_4O_3$ 438.569
Sol. MeOH, EtOAc, $CHCl_3$, Me_2CO; poorly sol. H_2O, hexane. Mp 119-120°. Grad. starts to subl. at 90°. λ_{max} 218 (ε 44300); 238 (ε 35300); 301 (ε 20900); 338 (ε 6160); 352 (ε 6290) (MeOH) (Derep).

Antiostatin B_3 [131602-19-2]
$C_{26}H_{36}N_4O_3$ 452.595
Sol. MeOH, $CHCl_3$, Me_2CO, EtOAc; poorly sol. H_2O, hexane. Mp 117-118°. Grad. starts to subl. at 90°. λ_{max} 218 (ε 44300); 238 (ε 35300); 301 (ε 20900); 338 (ε 6160); 352 (ε 6290) (MeOH) (Derep).

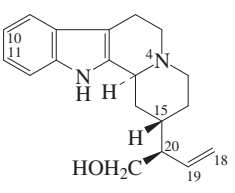
Antiostatin B_4 [131643-62-4]
$C_{26}H_{36}N_4O_3$ 452.595
Sol. MeOH, Me_2CO, $CHCl_3$, EtOAc; poorly sol. H_2O, hexane. Mp 118-120°. Grad. starts to subl. at 90°. λ_{max} 218 (ε 44300); 238 (ε 35300); 301 (ε 20900); 338 (ε 6160); 352 (ε 6290) (MeOH) (Derep).

Antiostatin B_5 [131602-20-5]
$C_{27}H_{38}N_4O_3$ 466.622
Sol. MeOH, EtOAc, $CHCl_3$, Me_2CO; poorly sol. H_2O, hexane. Mp 92-94°. Grad. starts to subl. at 90°. λ_{max} 218 (ε 44300); 238 (ε 35300); 301 (ε 20900); 338 (ε 6160); 352 (ε 6290) (MeOH) (Derep).

Mo, C.-J. *et al., J. Antibiot.*, 1990, **43**, 1337 (*isol, cmr*)

Antirhine A-1328

Rhazinine. Anthirine
[16049-28-8]



Absolute Configuration

$C_{19}H_{24}N_2O$ 296.411

Alkaloid from *Antirhea putaminosa*, *Rhazya stricta*, *Catharanthus longifolius* and some other spp. in the Apocynaceae. Mp 115-116°. $[\alpha]_D^{25}$ -2 ($CHCl_3$) ((+4)). λ_{max} 225 ; 275 (sh) ; 282 ; 290 (MeOH).

Hydrochloride: Mp 220°. $[\alpha]_D^{25}$ +2 (EtOH).

N^4 *α–Me: Antirhine* α-N-*methosalt*
[50315-65-6]
[50315-63-4] Synthetic. Cryst. (Me_2CO aq.)(as chloride). Mp 325-328° dec.(chloride). $[\alpha]_D$ -17.9 (c, 0.27 in MeOH aq.) (chloride). CAS no. refers to chloride.

N^4*-β-Me:* ***Antirhine β-N-methosalt***. N^4-*Methylantirhine*
[58580-53-3]
$C_{20}H_{27}N_2O^{\oplus}$ 311.446
Quaternary alkaloid from *Hunteria eburnea, Amsonia elliptica* and *Strychnos usambarensis* and *Strychnos camptoneura* (Apocynaceae, Loganiaceae). Cryst. (EtOH)(as chloride). Mp 306° dec.(chloride). $[\alpha]_D$ +75 (c, 0.04 in EtOH) (chloride).

18,19-Dihydro: ***Dihydroantirhine***
[16049-29-9]
$C_{19}H_{26}N_2O$ 298.427
Alkaloid from *Aspidosperma marcgravianum* (Apocynaceae). Mp 106-108° (120-125°). $[\alpha]_D$ +23 (c, 0.12 in $CHCl_3$).

18,19-Dihydro, N^4*-α-Me: Dihydroantirhine α-methochloride*
[53729-45-6]
Synthetic. Cryst. (EtOH aq.)(as chloride). Mp 310-312° dec. (chloride). $[\alpha]_D$ -8 (c, 0.13 in EtOH aq.) (chloride). CAS no. refers to chloride.

18,19-Dihydro, N^4*-β-Me:* ***Dihydroantirhine β-N-methosalt***. H-*Alkaloid J*
[53643-59-7]
$C_{20}H_{29}N_2O^{\oplus}$ 313.462
Quaternary alkaloid from the root and stem bark of *Hunteria eburnea* (Apocynaceae). Cryst. (EtOH) (as chloride). Mp 305° dec. (chloride). $[\alpha]_D$ +71.4 (c, 0.13 in H_2O) (chloride). CAS no. refers to chloride.

15-Epimer, Δ^{19}*-isomer (Z-):* ***Isoantirhine***†. *Isoanthirine*
[113122-68-2]
$C_{19}H_{24}N_2O$ 296.411
Isol. from stem bark of *Strychnos johnsonii* and *Aspidosperma marcgravianum*. Yellow cryst. $[\alpha]_D$ -15 (c, 0.1 in MeOH). λ_{max} 228 ; 275 ; 282 ; 290 (MeOH).

10-Hydroxy: ***Hunterburnine***. *10-Hydroxyantirhine*
[6870-62-8]
$C_{19}H_{24}N_2O_2$ 312.411
Alkaloid from leaves of *Ochrosia alyxioides* (Apocynaceae). Noncryst. $[\alpha]_D^{20}$ +15 (c, 0.5 in MeOH). λ_{max} 230 (log ϵ 3.76); 276 (log ϵ 3.62); 291 (log ϵ 3.52); 310 (log ϵ 3.33) (MeOH). λ_{max} 280 (log ϵ 3.66); 300 (sh) (log ϵ 3.56); 312 (sh) (log ϵ 3.5); 330 (sh) (log ϵ 3.23) (MeOH/NaOH).

10-Hydroxy, N^4*-α-Me:* ***Hunterburnine α-N-metho salt***
$C_{20}H_{27}N_2O_2^{\oplus}$ 327.445
Quaternary alkaloid from *Hunteria eburnea, Ochrosia sandwicensis* and *Pleiocarpa mutica* (Apocynaceae). Cryst. (H_2O) (as chloride). Mp 335° (322-324°) (chloride). No CAS no. to 14CI. λ_{max} 268 (sh) (log ϵ 4.05); 274 (log ϵ 4.08); 302 (log ϵ 3.78); 311 (sh) (log ϵ 3.72) (MeOH) (chloride).

10-Hydroxy, N^4*β–Me:* ***Hunterburnine β-N-metho salt***
$C_{20}H_{27}N_2O_2^{\oplus}$ 327.445
Quaternary alkaloid from *Hunteria eburnea* and *Pleiocarpa mutica* (Apocynaceae). Cryst. (Me_2CO aq.)(as chloride). Mp 307-308° (chloride). $[\alpha]_D$ +105 (72.5% MeOH aq.) (chloride). No CAS no. to 14CI. λ_{max} 276 (log ϵ 4); 300 (sh) (log ϵ 3.66) (95% EtOH) (chloride).

10-Methoxy: ***10-Methoxyantirhine***
[126223-76-5]
$C_{20}H_{26}N_2O_2$ 326.438
Alkaloid from leaves and stem bark of *Ochrosia alyxioides* (Apocynaceae). Noncryst. $[\alpha]_D^{20}$ +17 (c, 0.2 in MeOH). λ_{max} 230 (log ϵ 3.78); 276 (log ϵ 3.64); 291 (log ϵ 3.53); 310 (log ϵ 3.33) (MeOH).

10-Methoxy, 11-hydroxy: ***Alangine***
[262369-77-7]
$C_{18}H_{25}NO_3$ 303.4
Alkaloid from the fruit of *Alangium lamarckii*. Amorph. powder. $[\alpha]_D$ -0.9 (c, 0.21 in MeOH). $[\alpha]_D$ -2.5 (c, 0.2 in $CHCl_3$). λ_{max} 225 (sh) (log ϵ 3.74); 285 (log ϵ 3.45) (MeOH).

ar-*Methoxy:* ***Methoxyantirhine***
[88608-78-0]
$C_{20}H_{26}N_2O_2$ 326.438
Alkaloid from the seeds of *Aspidosperma oblongum* (Apocynaceae). Obt. in admixture with Antirhine. May be identical with 10-Methoxyantirhine.

3-Epimer: ***3-Epiantirhine***. *3-Isoantirhine*
[34384-65-1]
$C_{19}H_{24}N_2O$ 296.411
Alkaloid from the leaves of *Guettarda heterosepala* (Rubiaceae). Cryst. ($CHCl_3$). Mp 207°. $[\alpha]_D^{20}$ +57 (c, 0.42 in EtOH).

20-Epimer: ***20-Epiantirhine***
[155418-10-3]
$C_{19}H_{24}N_2O$ 296.411
Alkaloid from roots of *Antirhea portoricensis* (Rubiaceae) and from *Strychnos potatorum*. Amorph. $[\alpha]_D^{25}$ +57 (c, 0.5 in $CHCl_3$).

20-Epimer, 18,19-dihydro: ***(20S)-Dihydroantirhine***
[144606-86-0]
$C_{19}H_{26}N_2O$ 298.427
Alkaloid from *Strychnos potatorum*. No phys. props. reported.

Bartlett, M.F. *et al., J.O.C.*, 1963, **28**, 1445-1449 (*Hunterburnine, isol, uv, struct*)

Khan, Z.M. *et al., Helv. Chim. Acta*, 1965, **48**, 1957-1965 (*Hunterburnine, isol, uv, ir, ms*)

Asher, J.D.M. *et al., J.C.S.*, 1965, 6355-6367 (*Hunterburnine, cryst struct*)

Jordan, W. *et al., Tetrahedron*, 1965, **21**, 3731-3740 (*Hunterburnine α-N-methosalt, isol, uv, pmr*)

Johns, S.R. *et al., Aust. J. Chem.*, 1967, **20**, 1463-1471 (*isol, uv, ir, pmr, ms, struct*)

Sawa, Y.K. *et al., Tetrahedron*, 1969, **25**, 5319-5328 (*Hunterburnine N-methosalts, abs config*)

Sakai, S. *et al., Yakugaku Zasshi*, 1973, **93**, 483; *CA*, **79**, 63538h (*Antirhine N-methosalt*)

Burnell, R.H. *et al., Can. J. Chem.*, 1974, **52**, 2327-2330 (*Antirhine N-methosalt, Dihydroantirhine N-methosalt*)

Bisset, N.G. *et al., Phytochemistry*, 1974, **13**, 1265-1267 (*Antirhine N-methosalt*)

Ficini, J. *et al., J.A.C.S.*, 1979, **101**, 1318-1319 (*synth*)

Takano, S. *et al., Chem. Comm.*, 1981, 1155-1156 (*synth*)

Robert, G.M.T. *et al., J. Nat. Prod.*, 1983, **46**, 694-707; 708-722 (*Dihydroantirhine, 10-Methoxyantirhine*)

Suzuki, T. *et al., Chem. Pharm. Bull.*, 1986, **34**, 3135-3141 (*synth, ir, pmr*)

Kan-Fan, C. *et al., J. Nat. Prod.*, 1986, **49**, 1130-1132 (*3-Epiantirhine*)

Massiot, G. *et al., Phytochemistry*, 1987, **26**, 2839-2846 (*Isoantirhine*)

Boughandjioua, N. *et al., J. Nat. Prod.*, 1989, **52**, 1107-1112 (*10-Hydroxyantirhine, 10-Methoxyantirhine*)

Lounasmaa, M. *et al., Tetrahedron*, 1989, **45**, 7449-7458 (*18,19-Dihydroantirhine, synth*)

Brown, R.T. *et al., Chem. Comm.*, 1991, 825-826 (*synth*)

Pancrazi, A. *et al., Tet. Lett.*, 1991, **32**, 4483-4486 (*synth*)

Massiot, G. *et al., Phytochemistry*, 1992, **31**, 2873-2876 (*Dihydroantirhine, (20S)-Dihydroantirhine*)

Wei, S.Y. *et al., Tetrahedron*, 1993, **49**, 1025-1042 (*synth*)

Weniger, B. *et al., J. Nat. Prod.*, 1994, **57**, 287-290 (*20-Epiantirhine*)

Danieli, B. *et al., Tetrahedron*, 1994, **50**, 8837-8852 (*synth*)

Tietze, L.F. *et al., Liebigs Ann./Recl.*, 1997, 881-886 (*synth*)

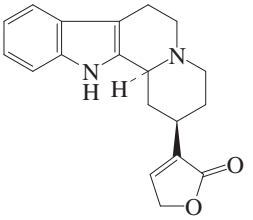
Hanhinen, P. *et al., Heterocycles*, 1999, **51**, 1827-1842 (*synth*)

Itoh, A. *et al., J. Nat. Prod.*, 2000, **63**, 723-725 (*Alangine, isol, struct*)

Takayama, H. *et al., Chem. Pharm. Bull.*, 2002, **50**, 1141-1143 (*Alangine, synth*)

Antirhine lactone A-1329

Anthirine lactone
[113122-67-1]



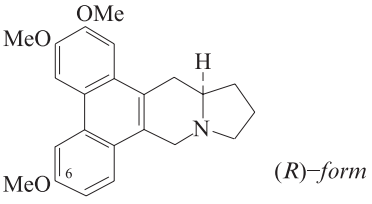
$C_{19}H_{20}N_2O_2$ 308.379

CAS gives the opposite abs. config., apparently incorrectly. Alkaloid from stem bark of *Strychnos johnsonii*. λ_{max} 228 ; 282 ; 290 (MeOH).

Massiot, G. *et al., Phytochemistry*, 1987, **26**, 2839-2846 (*isol, uv, ir, pmr, cmr, ms, struct*)

Antofine A-1330

9,11,12,13,13a,14-Hexahydro-2,3,6-trimethoxydibenzo[f,h]pyrrolo[1,2-b]isoquinoline, 9CI. 2,3,6-Trimethoxyphenanthroindolizidine. Tylophorine B



(*R*)–*form*

$C_{23}H_{25}NO_3$ 363.455

Tylophorine B was the racemate.

(*R*)-*form* [32671-82-2]

Alkaloid from *Antitoxicum funebre* (preferred genus name *Vincetoxicum*), *Cynanchum vincetoxicum*, *Vincetoxicum nigrum*, *Tylophora asthmatica* and *Ficus septica* (Asclepiadaceae, Moraceae). Possesses pronounced antibacterial and antifungal props. Cryst. (EtOH or $CHCl_3$/EtOH). Mp 212-214°. $[\alpha]_D^{22}$ -165 (c, 1.9 in $CHCl_3$). λ_{max} 259 (log ϵ 4.71); 286 (log ϵ 4.46); 342 (log ϵ 2.99); 360 (log ϵ 2.61) (MeOH).

Methiodide:
Needles (EtOH). Mp 206°.

N-*Oxide(α-):* ***Antofine α*-N-oxide**
[142698-18-8]
$C_{23}H_{25}NO_4$ 379.455
Alkaloid from *Cynanchum vincetoxicum* (Asclepiadaceae).

N-*Oxide(β-):* ***Antofine β*-N-oxide**
[314744-19-9]
$C_{23}H_{25}NO_4$ 379.455
Alkaloid from *Cynanchum vincetoxicum* (Asclepiadaceae). Shows cytotoxic activity. $[\alpha]_D^{21}$ -37.3 (c, 0.13 in MeOH).

O^6-*De-Me:* ***6-Demethylantofine***. *Alkaloid C*†
[32392-19-1]
$C_{22}H_{23}NO_3$ 349.429
Alkaloid from aerial parts of *Cynanchum vincetoxicum* and *Cynanchum hancockianum*. Cryst. (EtOH). Mp 226-228°. $[\alpha]_D^{22}$ -125 (c, 1.05 in Py). $[\alpha]_D^{26}$ -51.5 (c, 0.27 in Py). λ_{max} 260 (ϵ 4.74); 287 (ϵ 4.47); 344 (ϵ 3.05); 362 (ϵ 2.75) (MeOH).

*14*R-*Hydroxy:* ***14-Hydroxyantofine***
[32684-56-3]
$C_{23}H_{25}NO_4$ 379.455
Alkaloid from *Cynanchum komarovii* and *Cynanchum vincetoxicum* (Asclepiadaceae). $[\alpha]_D^{25}$ -72.2 (c, 1 in $CHCl_3$).

*14*R-*Hydroxy,* N-*oxide(β-):* ***14-Hydroxyantofine β*-N-oxide**
[142330-17-4]
$C_{23}H_{25}NO_5$ 395.454
Alkaloid from *Cynanchum komarovii* and *Cynanchum vincetoxicum*. Gum.

(*S*)-*form* [51745-04-1]
Synthetic. Mp 206-211°. $[\alpha]_D^{22}$ +66 ($CHCl_3$).

(±)-*form* [26648-81-7]
Alkaloid from *Albizzia julibrissin*. Needles (Me_2CO). Mp 213-215°.

Methiodide:
Cryst. (EtOH). Mp 204-205°.

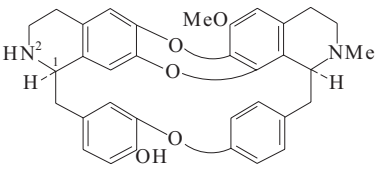
O^6-*De-Me:* [26648-80-6]
Synthetic. Mp 225-228° (216-218).

[142698-18-8]

Wiegrebe, W. *et al., Annalen*, 1969, **721**, 154-162; 1970, **733**, 125-140 (*isol, uv, pmr, ms, struct, synth, Alkaloid C*)
Wiegrebe, W. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1970, **303**, 1009-1012; 1981, **314**, 240-250 (*14-Hydroxyantofine, isol, uv, ir, pmr, ms, struct*)
Chauncy, B. *et al., Aust. J. Chem.*, 1970, **23**, 2503-2516 (*synth, uv, ir, pmr*)
Herbert, R.B. *et al., Phytochemistry*, 1972, **11**, 1184 (*isol*)
Faber, L. *et al., Helv. Chim. Acta*, 1973, **56**, 2882-2884 (*synth*)
Govindachari, T.R. *et al., J.C.S. Perkin 1*, 1974, 1161-1165 (*ord, abs config*)
Bhakuni, D.S. *et al., Indian J. Chem., Sect. B*, 1982, **21**, 393-395 (*synth, Alkaloid C*)
Iwao, M. *et al., Tetrahedron*, 1983, **39**, 1955-1962 (*synth*)
Li, X. *et al., Heterocycles*, 1989, **29**, 1797-1808 (*6-O-Demethylantofine*)
Capo, M. *et al., J. Nat. Prod.*, 1989, **52**, 389-390 (*isol*)
Zhang, R. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 1991, **33**, 870-875 (*14-Hydroxyantofine β-N-oxide*)
Mi, J.F. *et al., Yaoxue Xuebao*, 1992, **27**, 197-203 (*14-Hydroxyantofine, cd, abs config*)
Lavault, M. *et al., Pharm. Acta Helv.*, 1994, **68**, 225; *CA*, **121**, 17809k (*N-oxides*)
Ciufolini, M.A. *et al., J.A.C.S.*, 1996, **118**, 12082-12089 (*synth*)
Lebrun, S. *et al., Tetrahedron*, 1999, **55**, 2659-2670 (*synth*)
Wang, Q. *et al., Acta Cryst. C*, 2000, **56**, 197-198 (*Tylophorine B, cryst struct*)
Staerk, D. *et al., J. Nat. Prod.*, 2000, **63**, 1584-1586; 2002, **65**, 1299-1302 (*isol, pmr, cmr, N-oxide, activity*)
Kim, S. *et al., J.O.C.*, 2004, **69**, 3144-3149 (*synth*)
Fürstner, A. *et al., Chem. Eur. J.*, 2006, **12**, 7398-7410 (*synth*)
Camacho-Davila, A. *et al., J.O.C.*, 2006, **71**, 6682-6685 (*synth*)
Toribio, A. *et al., Org. Lett.*, 2006, **8**, 3825-3828 (*isol, pmr, cmr, 6-O-Demethylantofine, 14-Hydroxyantofine*)
Wang, K.-L. *et al., Tetrahedron*, 2008, **64**, 7504-7510 (*synth*)

Apateline A-1331

[68779-85-1]



$C_{34}H_{32}N_2O_5$ 548.637

Alkaloids covered by this entry are diastereomeric with those under Isotrilobine, I-339. Alkaloid from the bark of *Daphnandra apatela* (Monimiaceae). Cryst. + 1MeOH (MeOH). Mp 197-200° dec. $[\alpha]_D$ +270 ($CHCl_3$).

Dipicrate:
Cryst. + $1.5H_2O$. Mp 205-210° dec.

N-*Me:* **N-*Methylapateline***
[68779-86-2]
$C_{35}H_{34}N_2O_5$ 562.664
Alkaloid from the leaves, stems and bark of *Daphnandra johnsonii* and from the stems of *Cocculus pendulus* (Monimiaceae, Menispermaceae). Cryst. (MeOH). Mp 165-167° (sinters) Mp 198-200° dec.

O-*De-Me:* Mp 286-292° dec.

O-*De-Me,* N-*Me:* **N-*Methylnorapateline***
[69088-72-8]
$C_{34}H_{32}N_2O_5$ 548.637
Alkaloid from the leaves, stems and bark of *Daphnandra johnsonii* (Monimiaceae). Needles + $0.2CHCl_3$. Mp 257-259° dec. $[\alpha]_D^{19}$ +235 ($CHCl_3$).

Me ether: ***Telobine***
[41758-42-3]
$C_{35}H_{34}N_2O_5$ 562.664
Alkaloid from the bark of *Doryphora apatela* and *Doryphora* sp. Dt-7 (Monimiaceae). Yellow powder + 1/3 CCl_4. Mp 185-195° dec. $[\alpha]_D^{19}$ +188 ($CHCl_3$).

Me ether, dipicrate:
Cryst. + $1H_2O$. Mp 198-204° dec.

Me ether, N-*Ac:* Mp 178-182° dec. $[\alpha]_D^{18}$ +115 ($CHCl_3$).

Me ether, N-*Me:* **N-*Methyltelobine***
$C_{36}H_{36}N_2O_5$ 576.691
Alkaloid from tubers of *Stephania erecta* (Menispermaceae). Cryst. (Me_2CO aq.). Mp 175-180° dec. (172°). $[\alpha]_D^{18}$ +248 (+226) ($CHCl_3$). λ_{max} 207 (ϵ 44600); 233 (ϵ 36300); 280 (ϵ 4460); 305 (ϵ 2950) (MeOH) (Berdy).

5′-Hydroxy: ***5′-Hydroxyapateline***
$C_{34}H_{32}N_2O_6$ 564.637
Alkaloid from the leaves of *Cocculus pendulus*. $[\alpha]_D^{25}$ +185 (c, 0.07 in MeOH).

5′-Hydroxy, O^{12}-*Me:* ***5′-Hydroxytelobine***
$C_{35}H_{34}N_2O_6$ 578.663
Alkaloid from the leaves of *Cocculus pendulus*. $[\alpha]_D^{25}$ +154 (c, 0.11 in $CHCl_3$).

Bick, I.R.C. *et al., Aust. J. Chem.*, 1978, **31**, 2077; 2539 (*Telobine, Apateline, N-Methylapateline, N-Methylnorapateline*)
Bick, I.R.C. *et al., Heterocycles*, 1981, **16**, 2105 (*biosynth*)
Hussain, S.F. *et al., Tetrahedron*, 1984, **40**, 2513 (*N-Methylapateline, 1,2-Dehydroapateline*)
Atta-ur-Rahman, *et al., Pure Appl. Chem.*, 1986, **58**, 663 (*5′-Hydroxyapateline, 5′-Hydroxytelobine*)
Guinaudeau, H. *et al., Phytochemistry*, 1987, **26**, 829 (*5′-Hydroxyapateline, 5′-Hydroxytelobine*)
Likhitwitayawuid, K. *et al., J. Nat. Prod.*, 1993, **56**, 30 (*2-N-Methyltelobine*)

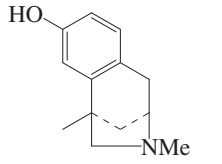
Apc† A-1332

Aphonopelma chalcodes *Toxin*
Two toxins, Apc_{600} and Apc_{728} partially characterised. Appear to be alkaloidal not polypeptide, contg. spermine, 1,3-diaminopropane and a tyramine-like residue. Isol. from the venom of the tarantula *Aphonopelma chalcodes*. Paralytic toxins.

Skinner, W.S. *et al., Toxicon*, 1990, **28**, 541-546 (*isol*)

Aphanorphine A-1333

2,3,4,5-Tetrahydro-1,3-dimethyl-1,4-methano-1H-benzazepin-8-ol, 9CI
[118964-06-0]



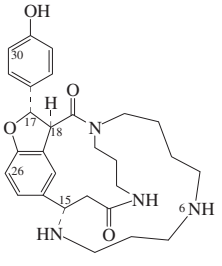
Absolute Configuration

$C_{13}H_{17}NO$ 203.283
Isol. from the freshwater blue-green alga *Aphanizomenon flos-aquae*. Prisms (Me_2CO aq.). Mp 223-229°. $[\alpha]_D^{25}$ -43.7 (c, 0.47 in H_2O) (as hydrochloride). $[\alpha]_D^{25}$ -20.2 (c, 0.15 in MeOH).

Gulavita, N. *et al., Tet. Lett.*, 1988, **29**, 4381 (*isol, struct, props*)
Takano, S. *et al., Chem. Comm.*, 1989, 1591; 1990, 290 (*synth, abs config*)
Honda, T. *et al., J.C.S. Perkin 1*, 1992, 531 (*synth*)
Meyers, A.I. *et al., Heterocycles*, 1995, **40**, 525 (*synth, O-Methylaphanorphine*)
Hulme, A.N. *et al., J.O.C.*, 1995, **60**, 1265 (*synth*)
Fadel, A. *et al., Tetrahedron: Asymmetry*, 1995, **6**, 893; 1997, **8**, 371-374 (*synth*)
Shimizu, M. *et al., Heterocycles*, 1997, **46**, 21-26 (*synth*)
Tamura, O. *et al., Org. Lett.*, 2001, **3**, 2427-2429 (*synth*)
Tanaka, K. *et al., Tet. Lett.*, 2001, **42**, 1049-1052 (*synth*)
Kita, Y. *et al., J.O.C.*, 2003, **68**, 5917-5924 (*synth*)
Bower, J.F. *et al., Chem. Comm.*, 2005, 5793-5795 (*synth*)
Grainger, R.S. *et al., Angew. Chem., Int. Ed.*, 2007, **46**, 5377-5380 (*synth*)
Katoh, M. *et al., Heterocycles*, 2007, **72**, 497-516 (*synth*)
Li, M. *et al., Synthesis*, 2007, 55-60 (*synth, pmr, cmr*)
Ma, Z. *et al., Tetrahedron*, 2007, **63**, 7523-7531 (*synth*)
Yang, X. *et al., Org. Lett.*, 2008, **10**, 2457-2460 (*synth*)
Yoshimitsu, T. *et al., Tet. Lett.*, 2008, **49**, 4473-4475 (*synth*)

Aphelandrine A-1334

11-Epiephedradine A. 11-Epiorantine



(+)-*form*

$C_{28}H_{36}N_4O_4$ 492.617

(+)-*form* [69721-57-9]
Alkaloid from *Aphelandra squarrosa* and other *Aphelandra* spp., from *Encephalosphaera lasiandra* and *Premna integrifolia* (Acanthaceae, Verbenaceae). Plates (MeOH), needles (H_2O). Mp 263° dec. $[\alpha]_D$ +214 (c, 0.674 in $CHCl_3$/MeOH 9:1).

Perchlorate (1:2):
Cryst. (EtOH). Mp 252-253° dec.

N^6-*Hydroxy:* **N^6-*Hydroxyaphelandrine***
[259813-07-5]
$C_{28}H_{36}N_4O_5$ 508.616
Alkaloid from *Aphelandra fuscopunctata*. Cryst. Mp 186-190° (dec.). $[\alpha]_D^{21}$ +125 (c, 0.18 in EtOH). λ_{max} 232 ; 280 ; 286 (EtOH).

N^6-*Acetoxy:* **N^6-*Acetoxyaphelandrine***
[259813-08-6]
$C_{30}H_{38}N_4O_6$ 550.653
Alkaloid from *Aphelandra fuscopunctata*. Cryst. Mp 176-184° (dec.). $[\alpha]_D^{22}$ +192 (c, 0.2 in EtOH). λ_{max} 232 ; 280 ; 286 (EtOH).

17,18-Diepimer: ***Orantine**. Ephedradine A*
[71461-13-7]
$C_{28}H_{36}N_4O_4$ 492.617
Isol. from the crude drug "Mao-kon", made from the roots of *Ephedra* spp. (Ephedraceae). Hypotensive principle. Noncryst.; cryst. + $1H_2O$ (as dihydrochloride). Mp 222-225° (dihydrochloride).

17,18-Diepimer, N,N,O-*tri-Ac:* Mp 165-175°.

17,18-Diepimer, Me ether: **O-*Methylorantine***
[64366-67-2]
$C_{29}H_{38}N_4O_4$ 506.644
Alkaloid from *Chaenorhinum minus, Chaenorhinum villosum* and *Aphelandra sinclairiana* (Scrophulariaceae, Acanthaceae). Cryst. (C_6H_6). Mp 167° dec. $[\alpha]_D$ -84 (c, 0.88 in $CHCl_3$/MeOH).

17,18-Diepimer, 26-methoxy: ***Ephedradine D***
[81349-26-0]
$C_{29}H_{38}N_4O_5$ 522.643
Isol. from the crude drug "Mao-kon", made from the roots of *Ephedra* spp. (Ephedraceae). Hypotensive principle. Noncryst. Mp 219-221° (as hydrobromide). $[\alpha]_D$ -85.3 (H_2O) (hydrobromide).

17,18-Diepimer, 30-methoxy, Me ether: ***Ephedradine C***
[73276-37-6]
$C_{30}H_{40}N_4O_5$ 536.67
Isol. from the crude drug "Mao-kon", made from the roots of *Ephedra* spp. (Ephedraceae). Hypotensive principle. Noncryst.; cryst. + $1H_2O$ (as hydrobromide). Mp 224-225° (hydrobromide). $[\alpha]_D$ -100.7 (H_2O).

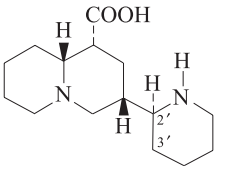
17,18-Diepimer, deoxy, 30-methoxy: ***Ephedradine B***
[71327-57-6]
$C_{29}H_{38}N_4O_5$ 522.643
Isol. from the crude drug "Mao-kon", made from the roots of *Ephedra* spp. (Ephedraceae). Hypotensive principle. Noncryst.; cryst. + $1H_2O$ (as hydrobromide). Mp 219-221° (hydrobromide). $[\alpha]_D$ -101.5 (H_2O).

(-)-*form* [133162-95-5]
Alkaloid from the whole plant of *Schweinfurthia papilionacea* (Scrophulariaceae). Mp 200° dec. $[\alpha]_D$ -13 (c, 0.3 in MeOH). This alkaloid, claimed as new and named as 11-Epiephedradine A or 11-Epiorantine, appears to be (-)-Aphelandrine of low opt. purity. However this requires confirmation.

Dätwyler, P. *et al., Helv. Chim. Acta*, 1978, **61**, 2646-2671; 1979, **62**, 2712-2723 (*Aphelandrine, Orantine, O-Methylorantine*)
Tamada, M. *et al., Heterocycles*, 1979, **12**, 783-786 (*Ephedradine B*)
Tamada, M. *et al., Tet. Lett.*, 1979, 873-876 (*Ephedradine A, cryst struct, abs config*)
Konno, C. *et al., Heterocycles*, 1980, **14**, 295-298 (*Ephedradine C*)
Hikino, H. *et al., Heterocycles*, 1982, **17**, 155-158 (*Ephedradine D*)
Wasserman, H.M. *et al., J.A.C.S.*, 1985, **107**, 519-521 (*synth*)
Guggisberg, A. *et al., Helv. Chim. Acta*, 1986, **69**, 1012-1016 (*Aphelandrine, cryst struct, abs config*)
Ahmad, V.U. *et al., J. Nat. Prod.*, 1990, **53**, 1162-1167 (*11-Epiephedradine A*)
Youhnovski, N. *et al., Phytochemistry*, 1999, **52**, 1717-1723 (*N-Hydroxyaphelandrine, N-acetoxyaphelandrine*)
Nezbedova, L. *et al., Tet. Lett.*, 2000, **41**, 7859-7862 (*biosynth*)
Kurosawa, W. *et al., Tetrahedron*, 2004, **60**, 9615-9628 (*Orantine, synth*)

Aphyllic acid A-1335

Octahydro-3-(2-piperidinyl)-2H-quinolizine-1-carboxylic acid, 9CI. Aphyllinic acid
[642-67-1]



Absolute configuration

$C_{15}H_{26}N_2O_2$ 266.383
Artifact obt. during coml. acid treatment of *Anabasis aphylla* alkaloids (Chenopodiaceae). Powder, cryst. + $5H_2O$. Mp 218-219° (anhyd.). $[\alpha]_D$ +14. Almost certainly derived by ring-opening of Aphylline, which it readily reforms (with some stereomutation).

Hydrochloride (1:2): Mp 262-264°.

Me ester: ***Methyl aphyllate***
Alkaloid from seeds of *Anabasis aphylla* (Chenopodiaceae). Cryst. (petrol). Mp 80-81°. $[\alpha]_D$ +8.9 (synthetic).

2′,3′-Didehydro: ***Aphyllidinic acid***
$C_{15}H_{24}N_2O_2$ 264.367
Alkaloid artifact from *Anabasis aphylla* acid treatment, also obt. from Aphyllidine by treatment with H_2SO_4 aq.(Chenopodiaceae). Mp 215-216° dec. $[\alpha]_D^{20}$ -8 (c, 7 in MeOH).

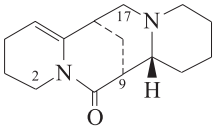
2′,3′-Didehydro, picrate: Mp 196° dec.

Labenskii, A.S. *et al., Zh. Obshch. Khim.*, 1958, **28**, 547; *J. Gen. Chem. USSR (Engl. Transl.)*, 537 (*isol, struct*)
Sadykov, A.S. *et al., Zh. Obshch. Khim.*, 1960, **30**, 1733; *J. Gen. Chem. USSR (Engl. Transl.)*, 1720 (*isol, struct*)
Aslanov, Kh.A. *et al., CA*, 1967, **67**, 73730f (*isol*)

Cho, Y.D. *et al., Anal. Biochem.*, 1971, **44**, 49 (*glc, ms*)
Ishbaev, A.I. *et al., Khim. Prir. Soedin.*, 1972, **8**, 328; *Chem. Nat. Compd. (Engl. Transl.)*, 1972, **8**, 322 (*ord*)

Aphyllidine A-1336

*3,4,7,7*a,*8,9,10,11,13,14-Decahydro-7,14-methano-2*H,*6*H-*dipyrido[1,2-*a*:*1′,2′-*e*]*[1,5]diazocin-6-one, 9CI*
[643-32-3]



(+)–*form*

$C_{15}H_{22}N_2O$ 246.352

(+)-*form* [124223-08-1]
Alkaloid from *Anabasis aphylla* (Chenopodiaceae) and *Lupinus argenteus* spp. *rubricaulis* (Fabaceae). Mp 112-113°. $[\alpha]_D^{26}$ +7.3 (c, 2.18 in EtOH). $[\alpha]_D^{18}$ +5.6 (MeOH).

Hydrochloride: Mp 235-237°. $[\alpha]_D$ +30 (H_2O).

*2*R-*Hydroxy:* **2R-*Hydroxyaphyllidine***
[124223-06-9]
$C_{15}H_{22}N_2O_2$ 262.351
Constit. of *Lupinus argenteus* ssp. *rubricaulis* (Fabaceae). Solid. Mp 150-155°. $[\alpha]_D^{26}$ -15 (c, 0.2 in $CHCl_3$).

*2*S-*Hydroxy:* **2S-*Hydroxyaphyllidine***
[124223-07-0]
$C_{15}H_{22}N_2O_2$ 262.351
Constit. of *Lupinus argenteus* ssp. *rubricaulis* (Fabaceae).

*2*R,*9*R-*Dihydroxy:* **2R,9R-*Dihydroxyaphyllidine***
[124125-78-6]
$C_{15}H_{22}N_2O_3$ 278.35
Constit. of *Lupinus argenteus* ssp. *rubricaulis* (Fabaceae). Oil (as di-Ac). $[\alpha]_D^{26}$ +38.5 (c, 0.62 in $CHCl_3$) (as di-Ac).

*2*S,*9*R-*Dihydroxy:* **2S,9R-*Dihydroxyaphyllidine***
[124125-77-5]
$C_{15}H_{22}N_2O_3$ 278.35
Constit. of *Lupinus argenteus* ssp. *rubricaulis* (Fabaceae). Prisms (MeOH/Et_2O). Mp 122-123°. $[\alpha]_D^{26}$ +53.6 (c, 1.48 in $CHCl_3$).

17-Oxo: ***Oxoaphyllidine***. *Oxaphyllidine*
$C_{15}H_{20}N_2O_2$ 260.335
Alkaloid from *Anabasis aphylla* (Chenopodiaceae). Also obt. by oxidn. of Aphyllidine. Mp 188-189° (182-184°). $[\alpha]_D^{20}$ -29.8 (c, 0.56 in EtOH) (-21). The higher Mp and opt. rotn. are for semisynthetic material, the lower for the nat. prod. An incorr. abs. config. was prev. given. λ_{max} 244 (log ϵ 0.75) (EtOH).

*13*S-*Hydroxy:* ***13α-Hydroxyaphyllidine***
$C_{15}H_{22}N_2O_2$ 262.351
Alkaloid from *Lupinus hartwegii* (Fabaceae). Oil. $[\alpha]_D^{25}$ +44 (c, 0.1 in $CHCl_3$). λ_{max} 239 (log ϵ 3.9) (MeOH).

(-)-*form*
Alkaloid from *Argyrolobium megarhizum* (Fabaceae). Prisms (Et_2O/hexane). Mp 101-106°. $[\alpha]_D$ -9.1 (c, 2.2 in EtOH).

Hydrochloride:
Prisms (MeOH/Me_2CO/Et_2O). Mp 228-230° dec.

2ξ-Hydroxy: ***Argyrolobine***
[6871-18-7]
$C_{15}H_{22}N_2O_2$ 262.351
Alkaloid from *Argyrolobium megarhizum* whole plants (Fabaceae). Prisms (Me_2CO). Mp 168-169°. $[\alpha]_D$ +13.3 (c, 1.4 in $CHCl_3$). Subl. undec. Unstable in $CHCl_3$ soln.

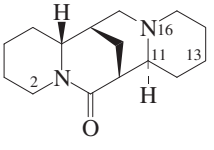
2ξ-Hydroxy; hydrochloride:
Prisms (MeOH/EtOAc). Mp 170-172°.

2ξ-Acetoxy:
Prisms. Mp 61°.

Orechoff, A. *et al., Ber.*, 1932, **65**, 234; 1934, **67**, 1845; 1976
Späth, E. *et al., Ber.*, 1942, **75**, 805 (*isol*)
Tsuda, Y. *et al., Can. J. Chem.*, 1964, **42**, 764 (*isol, uv, struct, Aphyllidine, Argyrolobine*)
Schumann, D. *et al., Monatsh. Chem.*, 1968, **99**, 390 (*ms*)
Zakharov, V.P. *et al., Khim. Prir. Soedin.*, 1973, **9**, 805; *Chem. Nat. Compd. (Engl. Transl.)*, 1973, **9**, 775 (*isol*)
Nurimov, E. *et al., CA*, 1974, **80**, 130536s (*biosynth*)
Ishbaev, A.I. *et al., Khim. Prir. Soedin.*, 1974, **10**, 113; *Chem. Nat. Compd. (Engl. Transl.)*, 1974, **10**, 128 (*Oxoaphyllidine, pmr, uv*)
Arslanian, R.L. *et al., J.O.C.*, 1990, **55**, 1204 (*isol, derivs*)
Mohamed, M.H. *et al., Phytochemistry*, 1997, **46**, 365 (*13-Hydroxyaphyllidine*)

Aphylline A-1337

10-Oxosparteine
[577-37-7]



$C_{15}H_{24}N_2O$ 248.367
Alkaloid from *Anabasis aphylla, Virgilia oroboides, Cytisus canariensis* and *Lupinus hartwegii* (Chenopodiaceae, Fabaceae). Mp 52-53°. Bp_4 200°. $[\alpha]_D$ +10.3 (20% MeOH aq.). Cryst. with difficulty.

Hydrochloride:
Cryst. + $1H_2O$. $[\alpha]_D^{20}$ +13.6 (H_2O).

Picrolonate: Mp 230-231° dec.

Methiodide: Mp 212-213° dec.

N*16*-*Oxide:* ***Aphylline* N*16*-*oxide***
[41451-56-3]
$C_{15}H_{24}N_2O_2$ 264.367
Alkaloid from *Anabasis aphylla* leaves (Chenopodiaceae).

2α-Hydroxy: ***2α-Hydroxyaphylline***
[197297-29-3]
$C_{15}H_{24}N_2O_2$ 264.367
Alkaloid from *Lupinus hartwegii*.
Amorph. $[\alpha]_D^{25}$ +30.4 (c, 0.1 in $CHCl_3$).

11-Epimer: ***Epiaphylline***. *Alkaloid A1*. *α-Isoaphylline*
[1218-51-5]
$C_{15}H_{24}N_2O$ 248.367
Alkaloid from *Lupinus hartwegii* whole plants (Fabaceae). Cryst. Config. incorr. descr. as 11*S*-.

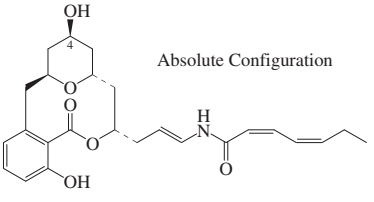
11-Epimer, 2,3-didehydro: ***2,3-Dehydroepiaphylline***. *2,3-Dehydro-α-isoaphylline*. *2,3-Dehydro-10-oxo-α-isosparteine*
$C_{15}H_{22}N_2O$ 246.352
Alkaloid from *Uresiphita reversalis* larvae fed on *Cytisus monspessulanus* leaves. Needles. Mp 98-103°. $[\alpha]_D^{26}$ +132 (c, 0.6 in EtOH). λ_{max} 257 (log ϵ 3.07) (MeOH).

[10159-81-6]

Orechoff, A. *et al., Ber.*, 1932, **65**, 234 (*isol*)
Galinovsky, F. *et al., Monatsh. Chem.*, 1953, **84**, 199 (*struct*)
Edwards, O.E. *et al., Can. J. Chem.*, 1954, **32**, 235 (*config*)
Wiewiorowski, M. *et al., Can. J. Chem.*, 1967, **45**, 1447 (*ir, pmr, conformn*)
Schumann, D. *et al., Monatsh. Chem.*, 1968, **99**, 390 (*ms*)
Steinegger, E. *et al., An. Quim.*, 1972, **68**, 893 (*isol*)
Klyne, W. *et al., J.C.S. Perkin 1*, 1974, 2565 (*cd*)
Anderson, J.N. *et al., J.O.C.*, 1976, **41**, 3441 (*isol, ms, Aphylline, Epiaphylline*)
Nizamkodzhaeva, A.N. *et al., CA*, 1978, **88**, 121499v (*isol, oxide*)
Abdusalamov, B.A. *et al., Khim. Prir. Soedin.*, 1980, **16**, 56; *Chem. Nat. Compd. (Engl. Transl.)*, 1980, **16**, 46 (*biosynth*)
Mohamed, M.H. *et al., Phytochemistry*, 1997, **46**, 365-369 (*2-Hydroxyaphylline*)
Nihei, K. *et al., Phytochemistry*, 2002, **61**, 987-990 (*Dehydroepiaphylline*)

Apicularen A A-1338

[220757-04-0]



$C_{25}H_{31}NO_6$ 441.523
Prod. by *Chondromyces apiculatus*, *Chondromyces robustus* and other *Chondromyces* spp. Cytotoxic agent. Vacuolar-type ATPase inhibitor. Antineoplastic agent. Mp 139-141° dec. $[\alpha]_D$ -36.1 (c, 1 in MeCN). λ_{max} 278 (log ϵ 4.43) (MeOH).

4-O-*(2-Acetamido-2-deoxy-β-D-glucopyranoside):* ***Apicularen B***
[220757-06-2]
$C_{33}H_{44}N_2O_{11}$ 644.717
Prod. by *Chondromyces* spp. Cytotoxic agent. $[\alpha]_D$ -5.5 (c, 0.3 in MeOH). λ_{max} 280 (log ϵ 4.49) (MeOH).

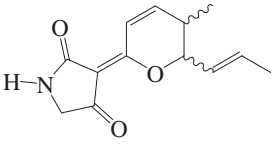
Kunze, B. *et al., J. Antibiot.*, 1998, **51**, 1075-1080 (*isol, ir, activity*)
Jansen, R. *et al., Eur. J. Org. Chem.*, 2000, 913-919 (*pmr, cmr, ms, abs config*)
Bhattacharjee, A. *et al., Tet. Lett.*, 2001, **42**, 1217-1220 (*synth*)
Yet, L. *et al., Chem. Rev.*, 2003, **103**, 4283-4306 (*rev*)

Lewis, A. *et al., Org. Biomol. Chem.*, 2003, **1**, 104-116 (*synth*)
Graetz, B.R. *et al., Org. Lett.*, 2003, **5**, 3357-3360 (*synth*)
Petri, A.F. *et al., Angew. Chem., Int. Ed.*, 2004, **43**, 5821-5823 (*synth*)
Nicolaou, K.C. *et al., Chem. Eur. J.*, 2004, **9**, 6177-6191 (*synth*)
Su, Q. *et al., J.A.C.S.*, 2004, **126**, 2425-2430 (*synth*)
Hilli, F. *et al., Org. Lett.*, 2004, **6**, 1289-1292 (*synth*)
Huss, M. *et al., BMC Biochem.*, 2005, **6**, 13 (*pharmacol*)
Hong, J. *et al., J. Pharmacol. Exp. Ther.*, 2005, **312**, 968-977 (*pharmacol*)
Li, M. *et al., Org. Lett.*, 2006, **8**, 6087-6090 (*synth*)
Jung, Y.-H. *et al., Chem. Asian J.*, 2007, **2**, 656-661 (*synth*)

Apiodionene A-1339

3-[5,6-Dihydro-5-methyl-6-(1-propenyl)-2H-pyran-2-ylidene]-2,4-pyrrolidinedione, 9CI

[142808-38-6]



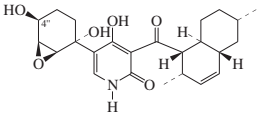
$C_{13}H_{15}NO_3$ 233.266

Tetramic acid deriv. Isol. from *Apiosordaria effusa*. Inhibits topoisomerase. Cytotoxic. Antiinflammatory and anticancer agent. Sol. MeOH, DMF, Me_2CO, DMSO; poorly sol. H_2O, hexane. Mp 190-192°. $[\alpha]_D^{25}$ +155.4. λ_{max} 222 (ϵ 3700); 327 (ϵ 18600) (MeOH) (Berdy). λ_{max} 245 (ϵ 12300); 277 (ϵ 8700) (MeOH-HCl) (Berdy).

Japan. Pat., 1992, 92 49 289; *CA*, **117**, 88730f (*isol, ir, uv, pmr, cmr*)
Takahashi, S. *et al., CA*, 1993, **118**, 187475; **119**, 24279z (*isol, pmr, cmr, props*)

Apiosporamide A-1340

[162414-45-1]



Absolute Configuration

$C_{24}H_{31}NO_6$ 429.512

Prod. by the fungus *Apiospora montagnei* (terrestrial strain). Antifungal agent. Sol. MeOH; fairly sol. $CHCl_3$, Me_2CO; poorly sol. H_2O, C_6H_6, hexane. Mp 240-250° dec. $[\alpha]_D$ -97.4 (c, 0.04 in MeOH). λ_{max} 210 (ϵ 13700); 231 (ϵ 11400); 279 (ϵ 4200); 330 (ϵ 7100) (MeOH) (Berdy).

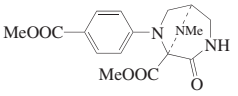
N-*Hydroxy:* ***N-Hydroxyapiosporamide***
[179638-09-6]
$C_{24}H_{31}NO_7$ 445.511
Metab. of a fungus *Cytospora* sp. associated with the ant *Pogonomyrmex badius*. Cholesteryl ester transfer protein inhibitor. Light yellow solid. Mp 148° (dec.). $[\alpha]_D^{25}$ -59.7 (c, 0.5 in MeOH). λ_{max} 231 (ϵ 19000); 283 (ϵ 12000); 339 (ϵ 12000) (MeOH).

4″-Ketone: ***Antibiotic YM 215343***. *YM 215343*
$C_{24}H_{29}NO_6$ 427.496
Prod. by *Phoma* sp. QN04621. Antifungal agent. Powder. $[\alpha]_D^{25}$ -44 (c, 0.1 in MeOH). λ_{max} 231 (ϵ 15300); 279 (ϵ 5200); 330 (ϵ 8900) (MeOH).

Alfatafta, A.A. *et al., J. Nat. Prod.*, 1994, **57**, 1696-1702 (*isol, uv, ir, pmr, cmr, ms*)
Lee, J.C. *et al., J. Antibiot.*, 1996, **49**, 693-696 (*N-Hydroxyapiosporamide*)
Shibazaki, M. *et al., J. Antibiot.*, 2004, **57**, 379-382 (*YM 215343*)
Williams, D.R. *et al., Angew. Chem., Int. Ed.*, 2005, **44**, 6715-6718 (*synth, abs config*)

Aplaminal A-1341

[1005010-20-7]



Absolute Configuration

$C_{16}H_{19}N_3O_5$ 333.343

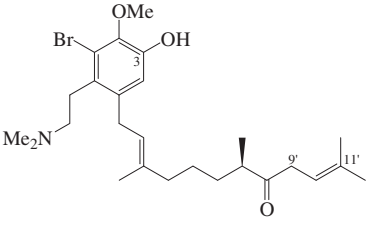
Isol. from *Aplysia kurodai*. Cytotoxic. Plates (MeOH). Mp 235-237°. $[\alpha]_D^{20}$ -133 (c, 0.02 in MeOH).

Kuroda, T. *et al., Org. Lett.*, 2008, **10**, 489-491 (*isol, pmr, cmr, cryst struct*)
Smith, A.B. *et al., Org. Lett.*, 2008, **10**, 4363-4365 (*synth*)

Aplaminone A-1342

12-[3-Bromo-2-[2-(dimethylamino)ethyl]-5-hydroxy-4-methoxyphenyl]-2,6,10-trimethyl-2,10-dodecadien-5-one, 9CI

[131815-20-8]



$C_{26}H_{40}BrNO_3$ 494.511

(R)-form
Isol. from the marine mollusc *Aplysia kurodai*. Cytotoxic. Oil. $[\alpha]_D^{23}$ -2.9 (c, 1.18 in MeOH). λ_{max} 225 (ϵ 11000); 285 (ϵ 2900) (MeOH) (Berdy).

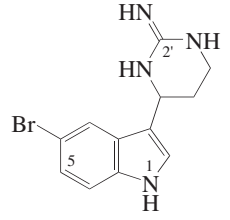
*$\Delta^{9'}$-Isomer(*E*-), 11′-hydroxy:* ***Neoaplaminone***
[131815-21-9]
$C_{26}H_{40}BrNO_4$ 510.51
Alkaloid from the marine mollusc *Aplysia kurodai*. Cytotoxic. Oil. $[\alpha]_D^{23}$ -5.3 (c, 0.65 in MeOH). λ_{max} 226 (ϵ 11000); 284 (ϵ 2500) (MeOH) (Derep).

*$\Delta^{9'}$-Isomer(*E*-), 11′-hydroxy, 3-*O*-sulfate:* ***Neoaplaminone sulfate***
[131815-22-0]
$C_{26}H_{40}BrNO_7S$ 590.574
Isol. from the marine mollusc *Aplysia kurodai*. Cytotoxic. $[\alpha]_D^{27}$ -3 (c, 1.29 in $CHCl_3$). λ_{max} 227 (ϵ 11000); 282 (ϵ 1700) (MeOH) (Derep).

Kigoshi, H. *et al., Tet. Lett.*, 1990, **31**, 4911-4914; 1992, **33**, 4195-4198 (*isol, uv, ir, pmr, cmr, ms, struct, abs config*)

Aplicyanin A A-1343

[936633-59-9]



$C_{12}H_{13}BrN_4$ 293.166

Alkaloid from *Aplidium cyaneum*. Pale yellow oil. $[\alpha]_D^{25}$ -0.8 (c, 0.1 in $CHCl_3$).

$N^{2'}$-*Ac:* ***Aplicyanin B***
[936633-60-2]
$C_{14}H_{15}BrN_4O$ 335.203
Alkaloid from *Aplidium cyaneum*. Cytotoxic. Pale yellow oil. $[\alpha]_D^{25}$ +8.7 (c, 0.1 in $CHCl_3$).

1-Methoxy: ***Aplicyanin C***
[936633-61-3]
$C_{13}H_{15}BrN_4O$ 323.192
Alkaloid from *Aplidium cyaneum*. Pale yellow oil. $[\alpha]_D^{25}$ +3.1 (c, 0.1 in $CHCl_3$).

1-Methoxy, $N^{2'}$-*Ac:* ***Aplicyanin D***
[936633-62-4]
$C_{15}H_{17}BrN_4O_2$ 365.229
Alkaloid from *Aplidium cyaneum*. Cytotoxic. Pale yellow oil. $[\alpha]_D^{25}$ +9.5 (c, 0.1 in $CHCl_3$).

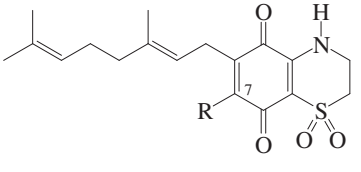
5-Bromo, 1-methoxy: ***Aplicyanin E***
[936633-63-5]
$C_{13}H_{14}Br_2N_4O$ 402.088
Alkaloid from *Aplidium cyaneum*. Cytotoxic. Pale yellow oil. $[\alpha]_D^{25}$ +0.5 (c, 0.1 in $CHCl_3$).

5-Bromo, 1-methoxy, $N^{2'}$-*Ac:* ***Aplicyanin F***
[936633-64-6]
$C_{15}H_{16}Br_2N_4O_2$ 444.125
Alkaloid from *Aplidium cyaneum*. Pale yellow oil. $[\alpha]_D^{25}$ +1.9 (c, 0.1 in $CHCl_3$).

Reyes, F. *et al., Tetrahedron*, 2008, **64**, 5119-5123 (*isol, pmr, cmr*)

Aplidinone A A-1344

[875057-52-6]



R = -OMe

$C_{19}H_{25}NO_5S$ 379.476

Alkaloid from the ascidian *Aplidium conicum*. Orange amorph. solid. λ_{max} 310 (ϵ 5700) (MeOH).

Aiello, A. *et al., Eur. J. Org. Chem.*, 2005, 5024-5030 (*isol, pmr, cmr*)

Aplidinone B A-1345

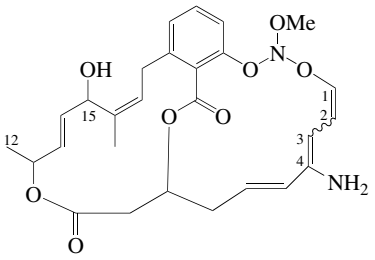
[875081-15-5]
As Aplidinone A, A-1344 with
R = -NH_2
$C_{18}H_{24}N_2O_4S$ 364.465
Alkaloid from the ascidian *Aplidium conicum*. Violet amorph. solid. λ_{max} 330 (ϵ 2600) (MeOH).

N^7-*(2-Sulfoethyl):* ***Aplidinone C***
[875082-39-6]
$C_{20}H_{28}N_2O_7S_2$ 472.582
Alkaloid from *Aplidium conicum*. Red-violet amorph. solid. λ_{max} 340 (ϵ 2900) (MeOH).

Aiello, A. *et al., Eur. J. Org. Chem.*, 2005, 5024-5030 (*isol, pmr, cmr*)

Aplidite A A-1346

[165689-34-9]



$C_{27}H_{32}N_2O_8$ 512.558
Unique orthonitrite functionality. Alkaloid from the Australian marine tunicate *Aplidium* sp. Solid. Mp 126-128°. $[\alpha]_D$ -15.8 (c, 0.58 in MeOH). λ_{max} 213 (ϵ 14300); 284 (ϵ 3785) (MeOH) (Berdy).

N,O-*Di-Ac:*Synthetic. Yellow solid. Mp 84-86.5°.

12-Hydroxy: ***Aplidite C***
[165689-35-0]
$C_{27}H_{32}N_2O_9$ 528.558
From *Aplidium* sp. Solid. Mp 103.5-105.5°. λ_{max} 208 (ϵ 11733); 280 (ϵ 6746) (MeOH) (Berdy).

12-Hydroxy, 15-Ac: ***Aplidite E***
[165689-36-1]
$C_{29}H_{34}N_2O_{10}$ 570.595
From *Aplidium* sp. Solid. Mp 104-105°. $[\alpha]_D$ -50 (c, 0.71 in MeOH). λ_{max} 208 (ϵ 12892); 280 (ϵ 8686) (MeOH) (Berdy).

Geom. isomer: ***Aplidite B***
[165883-78-3]
$C_{27}H_{32}N_2O_8$ 512.558
From *Aplidium* sp. Solid. Mp 124.5-126°. $[\alpha]_D$ -32.9 (c, 0.665 in MeOH). Possibly has opposite config. at the Δ^1 double bond. λ_{max} 213 (ϵ 14300); 284 (ϵ 3785) (MeOH) (Berdy).

Geom. isomer, 12-hydroxy: ***Aplidite D***
[165883-79-4]
$C_{27}H_{32}N_2O_9$ 528.558
From *Aplidium* sp. Solid. Mp 107.5-109°. $[\alpha]_D$ -17.8 (c, 0.105 in MeOH). λ_{max} 206 (ϵ 15000); 282 (ϵ 8800) (MeOH) (Berdy).

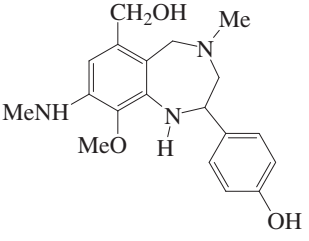
Geom. isomer, 12-hydroxy, 15-Ac: ***Aplidite F***
[165883-80-7]
$C_{29}H_{34}N_2O_{10}$ 570.595
From *Aplidium* sp. Solid. Mp 105-109°. $[\alpha]_D$ -8.6 (c, 0.245 in MeOH). λ_{max} 208 (ϵ 5286); 285 (ϵ 2830) (MeOH) (Berdy).

Geom. isomer, 12-acetoxy: ***Aplidite G***
[165689-37-2]
$C_{29}H_{34}N_2O_{10}$ 570.595
From *Aplidium* sp. Solid. Mp 106-108°. $[\alpha]_D$ -26.9 (c, 0.60 in MeOH). λ_{max} 201 (ϵ 27400); 286 (ϵ 11000) (MeOH) (Berdy).

Murray, L. *et al., Aust. J. Chem.*, 1995, **48**, 1253-1266 (*isol, uv, ir, pmr, cmr, ms, struct*)

Aplysepine A-1347

[151756-71-7]

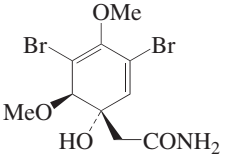


$C_{19}H_{25}N_3O_3$ 343.425
Alkaloid from the sea hare *Aplysia kurodai*. $[\alpha]_D^{12}$ -3 (c, 0.47 in MeOH). λ_{max} 231 (ϵ 33600); 256 (sh) (ϵ 9400); 298 (sh) (ϵ 1600) (MeOH) (Derep).

Ojika, M. *et al., Tet. Lett.*, 1993, **34**, 5307-5308 (*isol, ir, pmr, cmr, struct*)

Aplysinafulvin A-1348

[1025766-28-2]

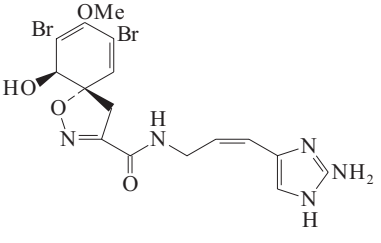


$C_{10}H_{13}Br_2NO_4$ 371.025
Isol. from *Aplysina fulva*. Glassy solid. $[\alpha]_D^{25}$ +130 (c, 0.002 in MeOH). λ_{max} 230 (log ϵ 3.68); 286 (log ϵ 3.69) (MeOH).

Nuñez, C.V. *et al., Biochem. Syst. Ecol.*, 2008, **36**, 283-296 (*isol, cd, pmr, cmr*)

Aplysinamisine I A-1349

[150417-67-7]

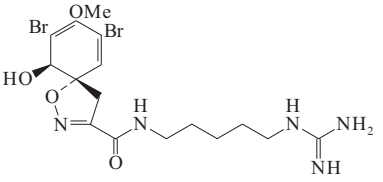


$C_{16}H_{17}Br_2N_5O_4$ 503.149
Alkaloid from the Caribbean sponge *Aplysina cauliformis*. Oil. $[\alpha]_D^{26}$ +121.9 (c, 5.7 in MeOH). λ_{max} 226 (ϵ 13700); 266 (ϵ 13100) (MeOH) (Berdy).

Rodríguez, A.D. *et al., J. Nat. Prod.*, 1993, **56**, 907 (*isol, uv, ir, pmr, cmr, ms, struct*)

Aplysinamisine II A-1350

[150417-68-8]

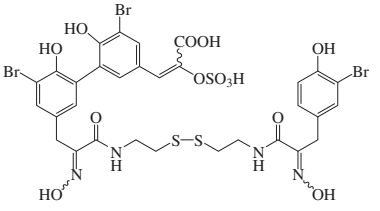


$C_{16}H_{23}Br_2N_5O_4$ 509.197
Alkaloid from the Caribbean sponge *Aplysina cauliformis*. Semisolid. $[\alpha]_D^{26}$ +47 (c, 7.9 in MeOH). λ_{max} 218 (ϵ 4600); 284 (ϵ 2500) (MeOH) (Berdy).

Rodríguez, A.D. *et al., J. Nat. Prod.*, 1993, **56**, 907 (*isol, uv, ir, pmr, cmr, ms, struct*)

Aplysinellin A A-1351

[325155-76-8]

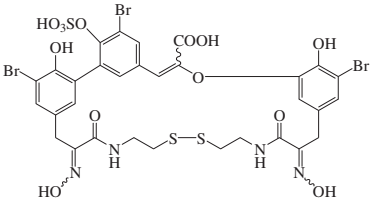


$C_{31}H_{29}Br_3N_4O_{13}S_3$ 1001.499
Isol. from the sponge *Aplysinella rhax*. Amorph. yellow solid (as di-Na salt). Mp 191-194° dec. (di-Na salt). λ_{max} 204 (log ϵ 4.83); 291 (log ϵ 4.11) (MeOH) (di-Na salt).

Shin, J. *et al., Tetrahedron*, 2000, **56**, 9071-9077

Aplysinellin B A-1352

[325155-78-0]

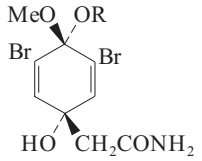


$C_{31}H_{27}Br_3N_4O_{13}S_3$ 999.483
Isol. from the sponge *Aplysinella rhax*. Amorph. yellow solid (as mono-Na salt). Mp 236-239° dec. (Na salt). λ_{max} 205 (log ϵ 4.88); 280 (log ϵ 3.93) (MeOH) (Na salt).

Shin, J. *et al., Tetrahedron*, 2000, **56**, 9071-9077

Aplysinketal A A-1353

[129138-56-3]



R = $(CH_2)_3CH_3$

$C_{13}H_{19}Br_2NO_4$ 413.105

Related to 3,5-Dibromo-1-hydroxy-4,4-dimethoxy-2,5-cyclohexadiene-1-acetamide, D-318. Metab. of *Aplysina thiona*. Cryst. Mp 194-195°.

Cruz, F. *et al., J. Nat. Prod.*, 1990, **53**, 543-548 (*isol, pmr, ms*)

Toscano, R.A. *et al., Acta Cryst. C*, 1992, **48**, 2235-2237 (*cryst struct*)

Aplysinketal B A-1354

[129138-57-4]

As Aplysinketal A, A-1353 with

R = $(CH_2)_4CH_3$

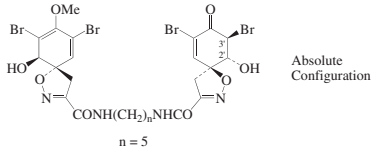
$C_{14}H_{21}Br_2NO_4$ 427.132

Metab. of *Aplysina thiona*. Cryst. Mp 194-195°.

Cruz, F. *et al., J. Nat. Prod.*, 1990, **53**, 543-548 (*isol, pmr, ms*)

Aplysinone A A-1355

[943837-22-7]



$C_{24}H_{26}Br_4N_4O_8$ 818.107

Constit. of *Aplysina gerardogreeni*. Cytotoxic. Amorph. solid. $[\alpha]_D^{25}$ +65 (c, 0.1 in Me_2CO).

3′-Debromo, 2′-deoxy, 2′α,3′α-epoxide: ***Aplysinone C***

[943837-24-9]

$C_{24}H_{25}Br_3N_4O_8$ 737.196

Constit. of *Aplysina gerardogreeni*. Amorph. solid. $[\alpha]_D^{25}$ +102 (c, 0.1 in Me_2CO).

Hernández-Guerrero, C.J. *et al., Bioorg. Med. Chem.*, 2007, **15**, 5275-5282 (*isol, pmr, cmr*)

Aplysinone D A-1356

[943837-25-0]

As Aplysinone A, A-1355 with

n = 4

$C_{23}H_{24}Br_4N_4O_8$ 804.081

Constit. of *Aplysina gerardogreeni*. Amorph. solid. $[\alpha]_D^{25}$ +86 (c, 0.1 in Me_2CO).

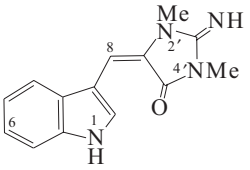
Hernández-Guerrero, C.J. *et al., Bioorg. Med. Chem.*, 2007, **15**, 5275-5282 (*isol, pmr, cmr*)

Aplysinopsin A-1357

*2-Imino-5-(1*H*-indol-3-ylmethylene)-1,3-dimethyl-4-imidazolidinone, 9CI*

[63153-56-0]

[138127-90-9]



$C_{14}H_{14}N_4O$ 254.291

Metab. of the marine sponges *Verongia spengelii* and *Thorecta* sp. and from the anthozoan *Astroides calycularis*. Antibiotic with antitumour props. Fine yellow needles + $1H_2O$ (MeOH aq. + Et_2NH). Mp 235-237° dec. (232-233°). λ_{max} 217 (ϵ 27500); 280 (ϵ 10300); 406 (ϵ 24800) (EtOH aq./HCl) (Derep). λ_{max} 260 (ϵ 10000); 376 (ϵ 21200) (EtOH aq./NaOH) (Derep). λ_{max} 225 (ϵ 23000); 268 (ϵ 8800br); 383 (ϵ 21500) (50% EtOH) (Derep).

Di-Ac:

Fine yellow needles (EtOH). Mp 221-222° dec. (217-220°).

N^{1}*-Propanoyl:* ***N*^{1}*-Propionylaplysinopsin***

[100667-70-7]

$C_{17}H_{18}N_4O_2$ 310.355

Metab. from the anthozoan *Astroides calycularis*. Cryst. (MeOH). Mp 300°.

3′-N-*Me:* ***N-3′-Methylaplysinopsin***

[66492-97-5]

[66492-99-7]

$C_{15}H_{16}N_4O$ 268.318

Prod. by *Aplysinopsis reticulata*. Monoamine oxidase inhibitor, serotonergic neurotransmission potentiator. Sol. MeOH, $CHCl_3$; poorly sol. H_2O.

3′-N-*Et:* ***N-3′-Ethylaplysinopsin***

$C_{16}H_{18}N_4O$ 282.344

Isol. from the Jamaican sponge *Smenospongia aurea*. Yellowish gum. No CAS no. found to CA 136-139. λ_{max} 219 (log ϵ 4.13); 276 (log ϵ 3.74) (MeOH).

$N^{2'}$*-De-Me:* ***2′-N-Demethylaplysinopsin***

[72479-07-3]

$C_{13}H_{12}N_4O$ 240.264

Metab. of the marine sponge *Dercitus* sp., also isol. from the nudibranch *Phestilla melanobranchia* and the corals *Tubastrea coccinea* and *Dendrophyllia* sp. Mp 235° (with charring from 180°). λ_{max} 217 (ϵ 27500); 280 (ϵ 10300); 406 (ϵ 24800) (EtOH aq./HCl) (Derep). λ_{max} 260 (ϵ 10000); 376 (ϵ 21200) (EtOH aq./NaOH) (Derep). λ_{max} 225 (ϵ 23000); 268 (ϵ 8800br); 383 (ϵ 21500) (50% EtOH) (Derep). λ_{max} 385 (ϵ 25000) (MeOH) (Berdy).

$N^{2'}$*-De-Me, 3′*-N-*Me:* ***2′-N-Demethyl-N-3′-methylaplysinopsin***

[126149-80-2]

$C_{14}H_{14}N_4O$ 254.291

Isol. from *Dendrophyllia* sp. Yellow solid. Mp > 250° dec. Obt. as an *E*/*Z*-mixt., Z-form predominates.

$N^{4'}$*-De-Me, 3′*-N-*Me:* ***Isoplysin A***

[158761-04-7]

$C_{14}H_{14}N_4O$ 254.291

Metab. from the Okinawan marine sponge *Aplysina* sp. Weakly cytotoxic. Yellow needles. Mp 310° dec. λ_{max} 220 (ϵ 14000); 278 (ϵ 5400); 405 (ϵ 13000) (MeOH) (Berdy).

1′,8-Dihydro: ***1′,8-Dihydroaplysinopsin***

[85079-46-5]

$C_{14}H_{16}N_4O$ 256.307

Isol. from the coral *Tubastrea coccinea*.

3′-Deimino, 3′-oxo: [63153-57-1]

[117604-23-6 , 117603-69-7]

$C_{14}H_{13}N_3O_2$ 255.276

Alkaloid from the coral *Tubastrea* sp. Obt. as an *E*/*Z*-mixt.

3′-Deimino, 3′-oxo, $N^{2'}$,$N^{4'}$*-di-de-Me:*

[117490-33-2 , 117490-34-3]

$C_{12}H_9N_3O_2$ 227.222

Alkaloid from the coral *Leptopsammia pruvoti*. Obt. as an *E*/*Z*-mixt.

6-Bromo: ***6-Bromoaplysinopsin***

[85079-45-4]

$C_{14}H_{13}BrN_4O$ 333.187

Isol. from the marine sponge *Smenospongia aurea*, the anthozoan *Astroides calycularis* and the coral *Tubastrea coccinea*. Cryst. (MeOH). Sol. MeOH, C_6H_6; poorly sol. H_2O. Mp 283-285°. λ_{max} 230 (ϵ 35000); 284 (ϵ 15000); 364 (ϵ 26000); 385 (ϵ 24000) (MeOH) (Berdy).

6-Bromo, N^{1}*-propanoyl:* ***6-Bromo-N*^{1}*-propionylaplysinopsin***

[100667-71-8]

$C_{17}H_{17}BrN_4O_2$ 389.251

Metab. from the anthozoan *Astroides calycularis*. Cryst. (MeOH). Mp 300°.

6-Bromo, $N^{2'}$*-de-Me:* ***6-Bromo-2′-N-demethylaplysinopsin***

[72479-08-4]

$C_{13}H_{11}BrN_4O$ 319.16

Metab. of the marine sponge *Dercitus* sp. Also isol. from the nudibranch *Phestilla melanobranchia* and the coral *Tubastrea coccinea*. Mp 186-188° (with charring from 175°). λ_{max} 390 (ϵ 23000) (MeOH) (Derep).

6-Bromo, $N^{2'}$*-de-Me, 3′*-N-*Me:* ***6-Bromo-2′-N-demethyl-N-3′-methylaplysinopsin***

[126149-84-6 (*E*-form), 126149-81-3 (*Z*-form)]

$C_{14}H_{13}BrN_4O$ 333.187

Isol. from *Dendrophyllia* sp. Yellow solid. Mp > 280° dec. Obt. as an *E*/*Z*-mixt., *Z*-form predominates. λ_{max} 238 (ϵ 8500); 286 (ϵ 5200); 385 (ϵ 10700) (MeOH).

6-Bromo, $N^{4'}$*-de-Me:* ***6-Bromo-4′-N-demethylaplysinopsin***

[97480-15-4]

$C_{13}H_{11}BrN_4O$ 319.16

Metab. of the marine sponge *Smenospongia aurea*. Sol. MeOH, C_6H_6; poorly sol. H_2O. Mp 290° (as Ac). Characterised as the Ac deriv. λ_{max} 390 (ϵ 23000) (MeOH) (Derep). λ_{max} 230 (ϵ 35000); 284 (ϵ 15000); 364 (ϵ 26000)

(MeOH) (Berdy).

6-Bromo, 1′,8-dihydro: ***6-Bromo-1′,8-dihydroaplysinopsin***
[85079-47-6]
$C_{14}H_{15}BrN_4O$ 335.203
Isol. from the coral *Tubastrea coccinea*.

6-Bromo, 1′,8-dihydro, 1′ξ-hydroxy: ***6-Bromo-1′,8-dihydro-1′-hydroxyaplysinopsin***
[868830-18-6]
$C_{14}H_{15}BrN_4O_2$ 351.202
Isol. from a *Thorectandra* sp. Red solid. $[\alpha]_D^{25}$ +1 (c, 0.5 in MeOH).

6-Bromo, 1′,8-dihydro, 1′ξ-methoxy: ***6-Bromo-1′,8-dihydro-1′-methoxyaplysinopsin***
[868830-19-7]
$C_{15}H_{17}BrN_4O_2$ 365.229
Isol. from a *Thorectandra* sp. Red solid. $[\alpha]_D^{25}$ +3 (c, 1.4 in MeOH).

6-Bromo, 1′,8-dihydro, 1′ξ-ethoxy: ***6-Bromo-1′-ethoxy-1′,8-dihydroaplysinopsin***
[868830-20-0]
$C_{16}H_{19}BrN_4O_2$ 379.256
Isol. from a *Smenospongia* sp. Red solid. $[\alpha]_D^{25}$ +19.3 (c, 0.05 in MeOH).

6-Bromo, 3′-deimino, 3′-oxo: ***6-Bromo-3′-deimino-3′-oxoaplysinopsin***
[117490-31-0 , 117490-32-1]
$C_{14}H_{12}BrN_3O_2$ 334.172
Alkaloid from the coral *Tubastrea* sp. Obt. as an *E*-/*Z*-mixt.

6-Bromo, 3′-deimino, 3′-oxo, $N^{2'}$,$N^{4'}$*-di-de-Me:* ***6-Bromo-3′-deimino-2′,4′-bis(-demethyl)-3′-oxoaplysinopsin***
[117490-30-9 , 117490-29-6]
$C_{12}H_8BrN_3O_2$ 306.118
Alkaloid from the coral *Leptopsammia pruvoti*. Obt. as an *E*-/*Z*-mixt.

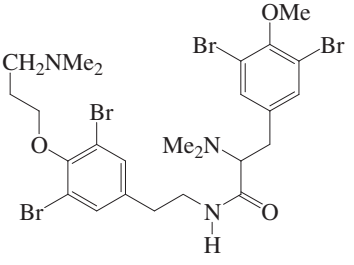
5,6-Dibromo, $N^{2'}$*-de-Me: 5,6-Dibromo-2′-*N*-demethylaplysinopsin*
[376598-41-3]
$C_{13}H_{10}Br_2N_4O$ 398.056
Isol. from the sponge *Hyrtios erecta*. Yellow powder. λ_{max} 246 (ϵ 8500); 293 (ϵ 2700); 385 (ϵ 8600) (MeOH).

Z-Isomer, 5,6-dibromo, $N^{2'}$*-de-Me:*
[376598-39-9]
$C_{13}H_{10}Br_2N_4O$ 398.056
Isol. from *Hyrtios erecta*. Yellow powder. λ_{max} 247 (ϵ 17300); 294 (ϵ 4400); 383 (ϵ 20700) (MeOH).

Hollenbeak, K.H. *et al., J. Nat. Prod.*, 1977, **40**, 479-481 (*isol, uv, ir, pmr, ms, struct*)
Kazlauskas, R. *et al., Tet. Lett.*, 1977, 61-64 (*uv, ir, pmr, ms, struct*)
Djura, P. *et al., J.O.C.*, 1980, **45**, 735-737 (*2′-N-Demethylaplysinopsin, 6-Bromo-2′-N-demethylaplysinopsin*)
Okuda, R.K. *et al., Pure Appl. Chem.*, 1982, **54**, 1907-1914 (*1′,8-Dihydroaplysinopsin, 6-Bromo-1′,8-dihydroaplysinopsin*)
Fattorusso, E. *et al., J. Nat. Prod.*, 1985, **48**, 924-927 (N^1*-Propionylaplysinopsin, 6-Bromo-*N^1*-propionylaplysinopsin*)
Tymiak, A.A. *et al., Tetrahedron*, 1985, **41**, 1039-1047 (*6-Bromoaplysinopsin, 6-Bromo-4′-N-demethylaplysinopsin*)
Guella, G. *et al., Helv. Chim. Acta*, 1988, **71**, 773-781; 1989, **72**, 1444-1450 (*Dendrophyllia constits, Tubastrea constits*)
Dalkafouki, A. *et al., Tet. Lett.*, 1991, **32**, 5325-5328 (*synth*)
Gulati, D. *et al., Indian J. Chem.*, 1994, **33**, 4-9; 10-16 (*synth*)
Kondo, K. *et al., J. Nat. Prod.*, 1994, **57**, 1008-1011 (*Isoplysin A*)
Molina, P. *et al., Tetrahedron*, 1994, **50**, 2241-2254 (*synth, derivs*)
Aoki, S. *et al., Chem. Pharm. Bull.*, 2001, **49**, 1372-1374 (*5,6-Dibromo-N-demethylaplysinopsin*)
Hu, J.-F. *et al., J. Nat. Prod.*, 2002, **65**, 476-480 (*N-3′-Ethylaplysinopsin, N-3′-Methylaplysinopsin*)
Segraves, N.L. *et al., J. Nat. Prod.*, 2005, **68**, 1484-1488 (*6-Bromo-1′,8-dihydro-1′-hydroxyaplysinopsin*)

Aplyzanzine A A-1358

[327165-67-3]

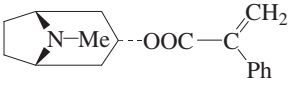


$C_{25}H_{33}Br_4N_3O_3$ 743.17
Isol. from an *Aplysina* sp. Pale orange oil.

Evan, T. *et al., J. Nat. Prod.*, 2001, **64**, 226-227

Apoatropine A-1359

8-Methyl-8-azabicyclo[3.2.1]oct-3-yl α-methylenebenzeneacetate, 9CI. Tropine atropate. Atropamine. Atropyltropein
[500-55-0]



$C_{17}H_{21}NO_2$ 271.358
Alkaloid from *Atropa belladonna, Datura pruinosa, Datura stramonium, Duboisia leichhardtii, Anisodus tanguticus* root, *Hyoscyamus orientalis, Mandragora* spp., *Physochlaina alaica* and other spp. (Solanaceae). Also obt. by dehydration of atropine with acids, acetic anhydride, etc. Antispasmodic agent. Cryst. (Et_2O). Mp 60-62°. Log P 2.64 (calc).

▶ YM4025000

Hydrochloride:
Leaflets (H_2O). Mp 245-246° (237-239°).

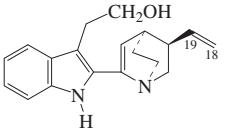
Picrate:
Yellow needles. Mp 166-168°.

N-*Oxide:*
Cryst. (EtOH/Me_2CO). Mp 127-128°.

N-*De-Me:* ***Aponoratropine****. Atropoylnortropan-3-ol*
$C_{16}H_{19}NO_2$ 257.332
Minor alkaloid from leaves of *Anthotroche myoporoides* (Solanaceae).

Ladenburg, A. *et al., Annalen*, 1883, **217**, 74 (*synth*)
Hesse, O. *et al., Annalen*, 1893, **277**, 290 (*synth*)
Wolffenstein, R. *et al., Ber.*, 1908, **41**, 723 (*synth*)
Takeuchi, Y. *et al., Chem. Pharm. Bull.*, 1971, **19**, 2603 (*synth, ir, pmr*)
Sharova, E.G. *et al., Khim. Prir. Soedin.*, 1977, 126 (*isol*)
Kagei, K. *et al., Yakugaku Zasshi*, 1980, **100**, 216 (*isol*)
Evans, W.C. *et al., Phytochemistry*, 1981, **20**, 497 (*isol, Aponoratropine*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, AQO250

Apocinchonamine A-1360



Absolute Configuration

$C_{19}H_{22}N_2O$ 294.396
Parent not isol.

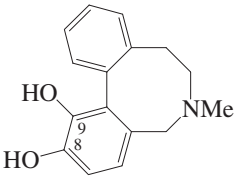
O-*Ac:* ***5-O-Acetylapocinchonamine***
$C_{21}H_{24}N_2O_2$ 336.433
Alkaloid from the leaves of *Remijia peruviana*. Amorph. $[\alpha]_D^{25}$ +4.6 (c, 0.22 in EtOH). λ_{max} 207 (log ϵ 4.26); 302 (log ϵ 3.8) (EtOH).

18,19-Dihydro: ***Apodihydrocinchonamine***
[151271-88-4]
Alkaloid from the leaves of *Isertia haenkeana*. Amorph. solid. $[\alpha]_D^{20}$ +12 (c, 2 in $CHCl_3$). λ_{max} 224 (log ϵ 4.46); 347 (log ϵ 4.34) (MeOH).

Bruix, M. *et al., Phytochemistry*, 1993, **33**, 1257-1261 (*Apodihydrocinchonamine*)
Díaz, J.G. *et al., J. Nat. Prod.*, 2004, **67**, 1667-1671 (*5-Acetylapocinchonamine*)

Apogalanthamine A-1361

5,6,7,8-Tetrahydro-6-methyldibenz[c,e]azocine-1,2-diol, 9CI
[26955-02-2]



$C_{16}H_{17}NO_2$ 255.316
Mp 202-203° dec.

▶ CD9380000

O^8-*Me:* ***Nivalidine***
[18126-83-5]
$C_{17}H_{19}NO_2$ 269.343
Alkaloid from *Galanthus nivalis* var. *gracilis* (Amaryllidaceae). Antiarrhythmic, hypertensive. Approved for use as a hypertensive agent *ca.* 1969 (USSR). Needles (C_6H_6). Mp 206-208°. Log P 3.4 (calc). Also produced by treatment of Galanthamine with HCl aq. Probably an artifact.

O^8-*Me, hydrochloride: Apochlorine. Apokhlorin*
[24620-67-5]

Creamy cryst. (EtOH). Mp 163-166° (foaming).

▶ CD9380000

O^8-*Me, hydrobromide:* Mp 238-239°.

O^8-*Me, Ac:*
Cryst. (Et_2O). Mp 107-109.5°.

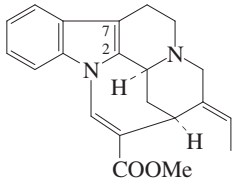
O^9-*Me:* ***8-O-Demethylbuflavine***
[61972-44-9]
$C_{17}H_{19}NO_2$ 269.343
Alkaloid from bulbs of *Boophone flava* (Amaryllidaceae). Amorph. solid. Mp 112-114°. Genus name given as Boophane.

Di-Me ether: ***Buflavine***
[65762-70-1]
$C_{18}H_{21}NO_2$ 283.369
Alkaloid from bulbs of *Boophone flava* (Amaryllidaceae). Amorph. solid. Mp 106-108°.

Kobayashi, S. *et al., J.C.S.*, 1957, 638-645 (*Apogalanthamine*)
Bubewa-Iwanova, L. *et al., Chem. Ber.*, 1962, **95**, 1348 (*Nivalidine, synth, ir, uv*)
Abdusamatov, A. *et al., Khim. Prir. Soedin.*, 1969, **5**, 194; *Chem. Nat. Compd. (Engl. Transl.)*, 1969, **5**, 168 (*Nivalidine, synth, use*)
Viladomat, F. *et al., Phytochemistry*, 1995, **40**, 307-311 (*Buflavine, Demethylbuflavine*)
Hoarau, C. *et al., J.O.C.*, 2002, **67**, 5846-5849 (*Buflavine, synth*)
Sahakitpichan, P. *et al., Tet. Lett.*, 2003, **44**, 5239-5241 (*Buflavine, synth*)
Kodama, S. *et al., Tetrahedron*, 2004, **60**, 4901-4907 (*Buflavine, synth*)

Apogeissoschizine A-1362

[6900-80-7]



Absolute Configuration

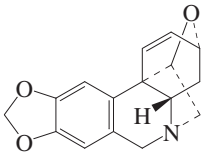
$C_{21}H_{22}N_2O_2$ 334.417
Obt. by treatment of Geissospermine, G-35 with conc. HCl. Cryst. (MeOH/EtOAc/hexane)(as hydrochloride). Mp 139-142° (hydrochloride). λ_{max} 273 (ϵ 19300); 324 (ϵ 19000) (EtOH) (as hydrochloride).

2,7-Dihydro, 2α,7α-dihydroxy: ***2,7-Dihydroxyapogeissoschizine***
[154850-61-0]
$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from root bark of *Strychnos gossweileri* (Loganiaceae). λ_{max} 211 (ϵ 12600); 285 (ϵ 10000); 316 (ϵ 15800) (MeOH/HCl) (Derep). λ_{max} 219 (ϵ 12600); 288 (ϵ 10000); 326 (ϵ 15800) (MeOH/NaOMe) (Derep). λ_{max} 211 (ϵ 12600); 288 (ϵ 10000); 323 (ϵ 15800) (MeOH) (Derep).

Rapoport, H. *et al., J.A.C.S.*, 1958, **80**, 1601-1604; 1960, **82**, 4404-4414 (*Apogeissoschizine*)
Quetin-Leclercq, J. *et al., Phytochemistry*, 1994, **35**, 533-536 (*2,7-Dihydroxyapogeissoschizine*)

Apohaemanthamine A-1363

Apohemanthamine
[6900-81-8]

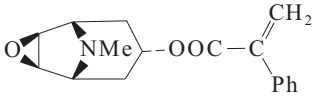


$C_{16}H_{15}NO_3$ 269.299
Alkaloid from *Eucharis amazonica*. Amorph. solid. Mp 145-147°. $[\alpha]_D^{22}$ +198 (c, 0.63 in $CHCl_3$).

Campbell, W.E. *et al., Phytochemistry*, 2000, **53**, 587-591 (*synth, pmr, cmr*)
Cabezas, F. *et al., Chem. Pharm. Bull.*, 2003, **51**, 315-317 (*isol, cd*)

Apohyoscine A-1364

9-Methyl-3-oxa-9-azatricyclo[3.3.1.0^{2,4}]-non-7-yl α-methylbenzeneacetate, 9CI. 6,7-Epoxy-3-atropolyoxytropane. Oscine atropate. Aposcopolamine
[535-26-2]



$C_{17}H_{19}NO_3$ 285.342
Alkaloid from the aerial parts of *Datura innoxia, Datura meteloides, Hyoscyamus niger* and *Anthocercis frondosa* (stem-bark and roots)(Solanaceae). Needles (Et_2O). Mp 97°. Opt. inactive (*meso*-).

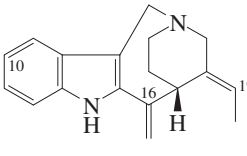
Picrate:
Needles (MeOH aq.). Mp 216° dec.

N-*De-Me:* ***Aponorhyoscine***
[25650-56-0]
$C_{16}H_{17}NO_3$ 271.315
Minor alkaloid from roots of *Anthocercis genistoides* (Solanaceae). Plates (EtOH aq.)(as picrate). Mp 224-225° (picrate).

Evans, W.C. *et al., J.C.S.*, 1965, 4936 (*isol*)
Sharova, E.G. *et al., Khim. Prir. Soedin.*, 1977, **13**, 126; *Chem. Nat. Compd. (Engl. Transl.)*, 1977, **13**, 117 (*isol*)
Evans, W.C. *et al., J. Pharm. Pharmacol., Suppl.*, 1979, **31**, 9P (*isol*)
Evans, W.C. *et al., Phytochemistry*, 1981, **20**, 497 (*isol, Aponorhyoscine*)

Appariicine A-1365

*4-Ethylidene-1,3,4,5,6,7-hexahydro-6-methylene-2,5-ethano-2*H*-azocino[4,3-b]indole, 9CI. Gomezine. Pericalline. Tabernoschizine*



(*R*)-*form*

$C_{18}H_{20}N_2$ 264.369

(R)-form [3463-93-2]
Alkaloid from the bark of *Aspidosperma dasycarpon* and from *Aspidosperma olivaceum*, *Vallesia antillana*, *Parkia speciosa*, *Tabernaemontana dichotoma* and *Sapium sebiferum*. Cryst. (Me_2CO). Mp 192-194°. $[\alpha]_D^{27}$ +176 (c, 2.16 in $CHCl_3$). λ_{max} 303 (ϵ 46500) (EtOH) (Berdy).

(S)-form [2122-36-3]
Found in *Aspidosperma olivaceum* and several other *Aspidosperma* spp., *Catharanthus ovalis*, *Catharanthus roseus*, *Pandaca ochrascens*, *Pandaca eusepala*, *Ervatamia heyneana*, *Tabernaemontana cumminsii*, *Schizozygia caffaeoides* and other spp. in the Apocynaceae. Shows cytotoxic activity against mouse lymphocyte P-388 cells. Also shows weak antibacterial activity. Antiviral agent active against Polio virus but not Vaccinia. Shows pronounced analeptic props. Cryst. (Me_2CO or petrol/$CHCl_3$). Mp 196-202° (188-190°). $[\alpha]_D^{27}$ -179 (c, 2.16 in $CHCl_3$). pK_{a1} 8.05 (33% DMF). pK_{a1} 7.26 (80% 2-methoxyethanol). λ_{max} 218 (ϵ 31300); 230 (ϵ 49000); 307 (ϵ 41800) (MeOH) (Berdy).

*19*R,*20*R-*Epoxide:* ***Epchrosine***. *19,20-Epoxyapparicine*
[103763-50-4]
$C_{18}H_{20}N_2O$ 280.369
Alkaloid from cell suspension cultures of *Ochrosia elliptica* (Apocynaceae).

10-Hydroxy: ***10-Hydroxyapparicine***
[70503-70-7]
$C_{18}H_{20}N_2O$ 280.369
Alkaloid from the leaves of *Ochrosia oppositifolia* (Apocynaceae). Noncryst. $[\alpha]_D^{25}$ -90 ($CHCl_3$). λ_{max} 314 (log ϵ 4.92) (no solvent reported).

16α-Hydroxy, 16,22-dihydro: ***16,22-Dihydro-16-hydroxyapparicine***
[94061-32-2]
$C_{18}H_{22}N_2O$ 282.385
Alkaloid from the leaves of *Tabernaemontana dichotoma* (Apocynaceae). Also isol. from whole plants and callus cultures of *Tabernaemontana elegans*. $[\alpha]_D^{20}$ +129 (c, 0.1 in EtOH). λ_{max} 220 (log ϵ 4.43); 284 (log ϵ 3.79); 292 (sh) (EtOH).

10-Methoxy: ***10-Methoxyapparicine***
[70503-71-8]
$C_{19}H_{22}N_2O$ 294.396
Alkaloid from the leaves of *Ochrosia oppositifolia* (Apocynaceae). Cryst. (Me_2CO). Mp 199-202°. $[\alpha]_D^{25}$ -129 ($CHCl_3$). λ_{max} 314 (log ϵ 4.92) (no solvent reported).

(ξ)-form

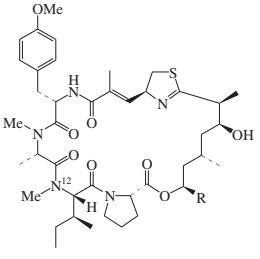
19,20-Dihydroxy, 19,20-dihydro: ***Brafouedine***
[104021-43-4]
$C_{18}H_{22}N_2O_2$ 298.384
Alkaloid from the stem bark of *Strychnos dinklagei*. Noncryst. $[\alpha]_D^{20}$ -26 (c, 0.02 in MeOH). Stereochem. undefined. CAS assigns an abs. config. although none was determined. λ_{max} 220 (log ϵ 4.02); 230 (sh) (log ϵ 3.93);

300 (log ϵ 3.65); 313 (sh) (log ϵ 3.6) (EtOH).

Svoboda, G.H. *et al., J. Pharm. Sci.*, 1963, **52**, 407-408 (*Pericalline*)
Joule, J.A. *et al., J.C.S.*, 1965, 4773-4780 (*struct*)
Gilbert, B. *et al., Tetrahedron*, 1965, **21**, 1141-1166 (*isol, ir*)
Joule, J.A. *et al., Tetrahedron*, 1965, **21**, 1717-1734 (*isol, uv, pmr, struct*)
Farnsworth, N.R. *et al., J. Pharm. Sci.*, 1969, **58**, 280 (*props*)
Cosson, J.P. *et al., Phytochemistry*, 1970, **9**, 1353-1354 (*isol*)
Segelman, A.B. *et al., J. Pharm. Sci.*, 1974, **63**, 1419-1422 (*isol, uv*)
Panas, J.M. *et al., Phytochemistry*, 1974, **13**, 1969-1974 (*isol, uv, ms*)
Akhter, L. *et al., Tet. Lett.*, 1978, 4137 (*10-Hydroxyapparicine, 10-Methoxyapparicine*)
Langlois, N. *et al., Phytochemistry*, 1979, **18**, 467-471 (*isol*)
Laguna, A. *et al., Coll. Czech. Chem. Comm.*, 1980, **45**, 1419 (*isol, uv, ir, pmr, ms*)
Heatley, F. *et al., J.C.S. Perkin 2*, 1980, 919-924 (*pmr, conformn*)
Gunasekera, S.P. *et al., Phytochemistry*, 1980, **19**, 1213-1218 (*isol, uv, ir, pmr, ms*)
Massiot, G. *et al., Chem. Comm.*, 1982, 768-769 (*cmr*)
Perera, P. *et al., J. Nat. Prod.*, 1984, **47**, 835-838 (*16,22-Dihydro-16-hydroxyapparicine*)
Michel, S. *et al., J. Nat. Prod.*, 1986, **49**, 452-455 (*Brafouedine*)
Van der Heijden, R. *et al., Phytochemistry*, 1986, **25**, 843-846 (*16,22-Dihydro-16-hydroxyapparicine*)
Pawelka, K.-H. *et al., Plant Cell Rep.*, 1986, **5**, 147-149 (*Epchrosine*)

Apratoxin A A-1366

[350791-64-9]



Absolute Configuration

R = -C(CH$_3$)$_3$

$C_{45}H_{69}N_5O_8S$ 840.135
Isol. from *Lyngbya majuscula*. Potent cytotoxin. Amorph. solid. $[\alpha]_D^{25}$ -161 (c, 1.3 in MeOH).

N^{12}-*De-Me:* ***Apratoxin B***
[444885-29-4]
$C_{44}H_{67}N_5O_8S$ 826.108
Isol. from *Lyngbya* sp. Amorph. solid. $[\alpha]_D^{25}$ -73 (c, 0.2 in MeOH). λ_{max} 200 (log ϵ 4.64); 230 (log ϵ 4.36) (MeOH).

Luesch, H. *et al., J.A.C.S.*, 2001, **123**, 5418-5423 (*isol, pmr, cmr*)
Luesch, H. *et al., Bioorg. Med. Chem.*, 2002, **10**, 1973-1978 (*Apratoxin B*)
Chen, J. *et al., J.A.C.S.*, 2003, **125**, 8734-8735 (*synth*)
Ma, D. *et al., Chem. Eur. J.*, 2006, **12**, 7615-7626 (*synth*)
Doi, T. *et al., Org. Lett.*, 2006, **8**, 531-534 (*synth*)

Apratoxin C A-1367

[444885-30-7]
As Apratoxin A, A-1366 with
R = -CH(CH$_3$)$_2$
$C_{44}H_{67}N_5O_8S$ 826.108
Isol. from *Lyngbya* sp. Cytotoxic agent. Amorph. solid. $[\alpha]_D^{25}$ -171 (c, 0.22 in MeOH). λ_{max} 201 (log ϵ 4.64); 230 (log ϵ 4.31) (MeOH).

Luesch, H. *et al., Bioorg. Med. Chem.*, 2002, **10**, 1973-1978

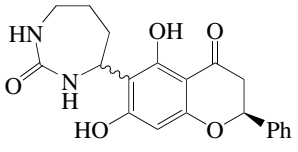
Aquaticine A-1368

$C_{18}H_{25}NO_5$ 335.399
Struct. unknown. Alkaloid from *Senecio aquaticus* (Asteraceae). Octahedral cryst. (EtOH). Mp 220° dec. $[\alpha]_D^{15}$ -83 (c, 1 in $CHCl_3$).

Picrate:
Yellow needles (MeOH). Mp 182°.

Evans, W.C. *et al., Nature (London)*, 1949, **164**, 30-31

Aquiledine A-1369



$C_{20}H_{20}N_2O_5$ 368.388
Constit. of *Aquilegia ecalcarata*. Amorph. powder (MeOH). Mp 214-215°. $[\alpha]_D$ +21 (c, 0.54 in MeOH). λ_{max} 288 ; 368 (sh) (MeOH).

Chen, S.-B. *et al., J. Nat. Prod.*, 2001, **64**, 85-87

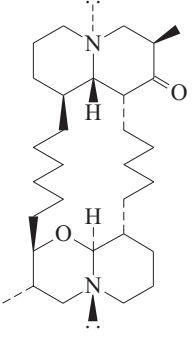
Aquileginine A-1370

$C_{41}H_{56}N_2O_2^{2\oplus}$ 608.906
Struct. unknown. Prob. a bisbenzylisoquinoline alkaloid. Alkaloid from the roots of *Aquilegia hybrida* "Scott-Elliott" (Ranunculaceae). Plates (MeOH)(as diiodide). Mp 238-239° (diiodide). $[\alpha]_D^{22}$ -7.8 (c, 0.36 in $CHCl_3$) (diiodide).

Winek, C.L. *et al., J. Nat. Prod.*, 1964, **27**, 111-114 (*isol, uv*)

Aragupetrosine A A-1371

[125236-58-0]

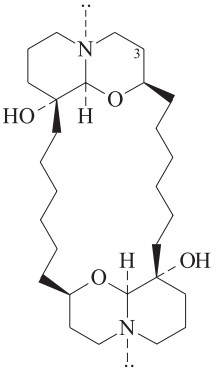


$C_{30}H_{52}N_2O_2$ 472.753
Alkaloid from an Okinawan marine sponge *Xestospongia* sp. Exhibits vasodilatory activity. $[\alpha]_D$ -18.8 ($CHCl_3$).

Kobayashi, M. *et al., Tet. Lett.*, 1989, **30**, 4149 (*isol, ir, pmr, cmr, struct, abs config*)

Aragupetrosine C A-1372

[122908-10-5]



Relative configuration

$C_{28}H_{50}N_2O_4$ 478.714
Alkaloid from an Okinawan marine sponge, *Xestospongia* sp. and from the sponge *Haliclona exigua*. Exhibits vasodilative activity. $[\alpha]_D$ +11.1 ($CHCl_3$).

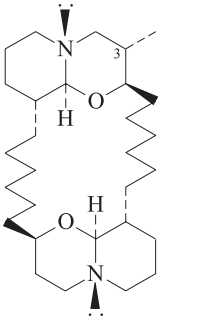
N-*Oxide:* ***Aragusponginе L***
$C_{28}H_{50}N_2O_5$ 494.713
Alkaloid from *Xestospongia exigua*. Needles. $[\alpha]_D^{25}$ +1.7 (c, 0.36 in $CHCl_3$).

3α-Methyl: ***3α-Methylaragusponginе C***
[159392-28-6]
$C_{29}H_{52}N_2O_4$ 492.741
Alkaloid from the sponge *Haliclona exigua*. Amorph. solid. $[\alpha]_D$ +1.2 (c, 0.15 in $CHCl_3$).

Kobayashi, M. *et al., Chem. Pharm. Bull.*, 1989, **37**, 1676 (*isol, pmr, cmr, struct*)
Venkateswarlu, Y. *et al., J. Nat. Prod.*, 1994, **57**, 1283 (*3α-Methylaragusponginе C*)
Orabi, K.Y. *et al., J. Nat. Prod.*, 2002, **65**, 1782-1785 (*Aragusponginеs C,L*)

Aragusponginе F A-1373

[122908-11-6]



Absolute configuration

$C_{29}H_{52}N_2O_2$ 460.742
Alkaloid from an Okinawan marine sponge, *Xestospongia* sp. Exhibits vasodilatory activity. $[\alpha]_D$ +8.6 ($CHCl_3$). Work in 1998 suggested that the stereochemistries may require revision.

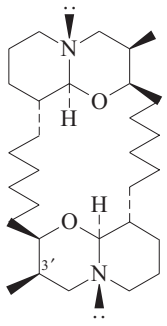
3-Epimer: ***Aragusponginе G***

[123000-04-4]
$C_{29}H_{52}N_2O_2$ 460.742
Alkaloid from *Xestospongia* sp. Shows vasodilatory activity. $[\alpha]_D$ -16 ($CHCl_3$).

Kobayashi, M. *et al., Chem. Pharm. Bull.*, 1989, **37**, 1676 (*isol, pmr, cmr, struct, abs config*)
Baldwin, J.E. *et al., J.A.C.S.*, 1998, **120**, 8559-8560 (*configs*)

Araguspongine J A-1374

[123000-05-5]



$C_{30}H_{54}N_2O_2$ 474.769
Alkaloid from an Okinawan marine sponge, *Xestospongia* sp. Exhibits vasodilatory activity. $[\alpha]_D$ -23.4 ($CHCl_3$). Work in 1998 suggested that the stereochemistries may need revision.

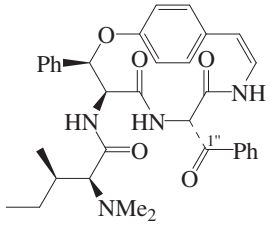
3′-Epimer: ***Araguspongine H***
[122908-12-7]
$C_{30}H_{54}N_2O_2$ 474.769
Alkaloid from *Xestospongia* sp. Shows vasodilatory activity. $[\alpha]_D$ -9 ($CHCl_3$).

3,3′,5,9-Tetraepimer: ***3R,3′R-Dimethylxestospongin C***
[203576-22-1]
$C_{30}H_{54}N_2O_2$ 474.769
Isol. from a *Xestospongia* sp.

Kobayashi, M. *et al., Chem. Pharm. Bull.*, 1989, **37**, 1676 (*isol, ir, pmr, cmr, struct, abs config*)
Reddy, M.V.R. *et al., Nat. Prod. Lett.*, 1997, **11**, 53-59 (*3,3′-Dimethylxestospongin C*)
Baldwin, J.E. *et al., J.A.C.S.*, 1998, **120**, 8559-8560 (*configs*)

Aralionine A A-1375

N-*(7-Benzoyl-5,8-dioxo-3-phenyl-2-oxa-6,9-diazabicyclo[10.2.2]hexadeca-10,12,14,15-tetraen-4-yl)-2-(dimethylamino)-3-methylpentanamide, 9CI. Aralionine*
[21761-48-8]



$C_{34}H_{38}N_4O_5$ 582.698
Major alkaloid from the leaves of *Araliorhamnus vaginatus* (Rhamnaceae). Cryst. (petrol or EtOH aq.). Mp 165-167°. $[\alpha]_D^{20}$ +82 (c, 0.2 in MeOH). λ_{max} 246 (ε 19000) (MeOH). λ_{max} 305 (ε 10600) (MeOH/KOH).

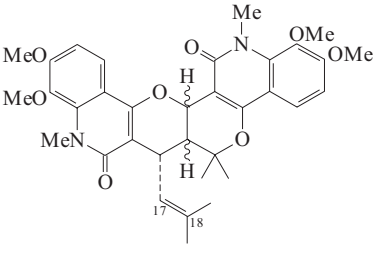
*1″-Alcohol(*R*):* ***Aralionine C***
[64309-20-2]
$C_{34}H_{40}N_4O_5$ 584.714
Alkaloid from the bark of *Araliorhamnus vaginatus* (Rhamnaceae). Needles (EtOH aq.). Mp 95-97°. $[\alpha]_D^{20}$ -17 (c, 0.015 in MeOH).

1″-Deoxo: ***Deoxoaralionine A***. *Deoxyaralionine A*
[70420-57-4]
$C_{34}H_{40}N_4O_4$ 568.714
Alkaloid from the root bark of *Ceanothus integerrimus* var. *integerrimus* and *Ceanothus integerrimus* var. *californicus* (Rhamnaceae). Mp 350°. No stereochem. indicated.

Tschesche, R. *et al., Chem. Ber.*, 1969, **102**, 50-63 (*isol, uv, cd, ir, pmr, ms, struct*)
González Sierra, M. *et al., Chem. Comm.*, 1972, 915-916 (*stereochem*)
Tschesche, R. *et al., Phytochemistry*, 1977, **16**, 1025-1028 (*Aralionine C*)
Lagarias, J.C. *et al., J. Nat. Prod.*, 1979, **42**, 220 (*Deoxoaralionine A*)

Araliopdimerine A A-1376

[119089-40-6]



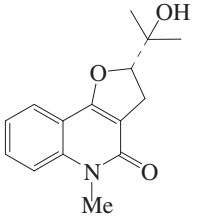
$C_{34}H_{38}N_2O_8$ 602.683
Alkaloid from the bark of *Araliopsis tabouensis* (Rutaceae). Cryst. ($CHCl_3$/hexane). Mp 259-260°. Racemic.

17,18-Dihydro, 18-hydroxy: ***Araliopdimerine B***
[119089-41-7]
$C_{34}H_{40}N_2O_9$ 620.698
Alkaloid from the bark of *Araliopsis tabouensis* (Rutaceae). Yellow granules (Et_2O). Mp 246-247°. Racemic. Authors' numbering.

Ngadjui, B.T. *et al., Phytochemistry*, 1988, **27**, 2979 (*isol, uv, ir, pmr, cmr, ms, struct*)

Araliopsine A-1377

3,5-Dihydro-2-(1-hydroxy-1-methylethyl)-5-methylfuro[3,2-c]quinolin-4(2H)-one, 9CI. Pseudoisoplatydesmine



(*S*)-*form*

$C_{15}H_{17}NO_3$ 259.304
Absolute configuration revised in 2000.

(S)-form [82226-76-4]
[60354-62-3]
Alkaloid from the root bark of *Araliopsis soyauxii* (Rutaceae). Beige cryst. ($CHCl_3$). Mp 152°. $[\alpha]_D$ +40 (c, 1 in $CHCl_3$).

(±)-form [89708-41-8]
Synthetic. Mp 141-144°.

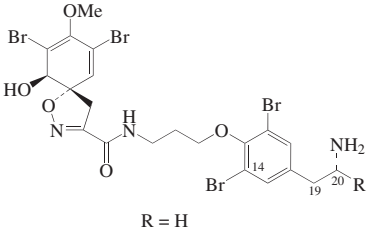
(ξ)-form

1′-Deoxy, 1′,2′-didehydro: 3,5-Dihydro-5-methyl-2-(1-methylethenyl)furo[3,2-c]quinolin-4(2H)-one. 3,5-Dihydro-2-isopropenyl-5-methylfuro[3,2-c]quinolin-4(2H)-one. ***Almeine***
[88839-93-4]
$C_{15}H_{15}NO_2$ 241.289
Alkaloid from the stem and root barks of *Almeidea guyanensis* (Rutaceae). Noncryst.

Vaquette, J. *et al., Phytochemistry*, 1976, **15**, 743 (*isol, ir, uv, ms, pmr, struct*)
Coppola, G.M. *et al., J. Het. Chem.*, 1983, **20**, 1589 (*synth, uv, ir, pmr, cmr*)
Moulis, C. *et al., Phytochemistry*, 1983, **22**, 2095 (*Almeine*)
Reisch, J. *et al., Monatsh. Chem.*, 1989, **120**, 363; 1993, **124**, 1225 (*Almeine, synth, uv, ir, pmr, cmr, ms*)
Barr, S.A. *et al., Chem. Comm.*, 1994, 153 (*synth*)
Reisch, J. *et al., Pharmazie*, 1994, **49**, 62 (*Almeine, synth*)
Boyd, D.R. *et al., J.C.S. Perkin 1*, 2000, 3397-3405 (*synth, abs config*)
Bar, G. *et al., Tetrahedron*, 2001, **57**, 4719-4728 (*synth*)

Araplysillin I A-1378

N-*[3-[4-(2-Aminoethyl)-2,6-dibromophenoxy]propyl]-7,9-dibromo-10-hydroxy-8-methoxy-1-oxa-2-azaspiro[4.5]deca-2,6,8-triene-3-carboxamide, 9CI. Hexadellin A*
[129313-98-0]



R = H

$C_{21}H_{23}Br_4N_3O_5$ 717.046
Relative configs. only known in this series. The compds. covered by this entry have not been correlated. Identity of Araplysillin I and Hexadellin A not confirmed. Isol. from the sponge *Psammaplysilla arabica*. ATPase inhibitor. Shows antimicrobial props. Amorph. Mp 140-142°. $[\alpha]_D$ -70 (c, 0.7 in MeOH).

N^{20}-Sulfo: ***Araplysillin I N^{20}-sulfamate***
[945408-71-9]
$C_{21}H_{23}Br_4N_3O_8S$ 797.11
Isol. from *Aplysina fulva*. Amorph.

solid (as Na salt). $[\alpha]_D^{23}$ +100 (c, 0.06 in MeOH) (Na salt). λ_{max} 206 (log ϵ 4.7); 278 (log ϵ 3.84) (MeOH) (Na salt).

N^{20}-*(13-Methyltetradecanoyl):* ***Araplysillin II***
[129277-05-0]
$C_{36}H_{51}Br_4N_3O_6$ 941.431
From the sponge *Psammaplysilla arabica*. ATPase inhibitor. Shows antimicrobial props. Amorph. Mp 40-42°. $[\alpha]_D$ -38 (c, 0.73 in $CHCl_3$). λ_{max} 270 (ϵ 11650) (MeOH) (Berdy).

N^{20},N^{20}-*Di-Me:* ***Purealidin P***
[167394-81-2]
$C_{23}H_{27}Br_4N_3O_5$ 745.099
Alkaloid from the Okinawan sponge *Psammaplysilla purea*. Cytotoxic against murine lymphoma and human KB carcinoma cells. Oil (as trifluoroacetate). Sol. MeOH, EtOAc; poorly sol. H_2O. $[\alpha]_D$ +6.6 (c, 0.75 in MeOH). λ_{max} 277 (ϵ 1700); 284 (ϵ 1400) (MeOH) (Berdy).

N^{20},N^{20},N^{20}-*Tri-Me:* ***Purealidin B***
[138590-55-3]
$C_{24}H_{30}Br_4N_3O_5^{\oplus}$ 760.134
Quaternary alkaloid from *Psammaplysilla purea* and *Pseudoceratina verrucosa*. Antibacterial and cytotoxic. Amorph. solid (prob. as trifluoroacetate). $[\alpha]_D^{18}$ -4.5 (c, 1.3 in MeOH). λ_{max} 220 (ϵ 10000); 284 (ϵ 1000) (MeOH) (Berdy).

14-Debromo: ***14-Debromoaraplysillin I***
[136685-29-5]
$C_{21}H_{24}Br_3N_3O_5$ 638.15
From the sponge *Psammaplysilla purpurea*. Glass. $[\alpha]_D$ +21 (c, 0.47 in MeOH/$CHCl_3$). λ_{max} 240 (ϵ 23000); 287 (ϵ 16700) (MeOH) (Berdy).

19-Hydroxy, N^{20}*-Ac:* ***Aplysinamisine III***
[150417-69-9]
$C_{23}H_{25}Br_4N_3O_7$ 775.082
Isol. from the Caribbean sponge *Aplysina cauliformis*. Semisolid. $[\alpha]_D^{26}$ +69 (c, 6.4 in MeOH). λ_{max} 218 (ϵ 14500); 282 (ϵ 5200) (MeOH) (Berdy).

[121135-00-0]

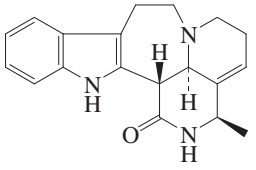
Morris, S.A. *et al., Can. J. Chem.*, 1989, **67**, 677 (*Hexadellin A, isol, ir, pmr, cmr, ms*)
Longeon, A. *et al., Experientia*, 1990, **46**, 548 (*Araplysillin I*)
James, D.M. *et al., J. Nat. Prod.*, 1991, **54**, 1137 (*14-Debromoaraplysillin I*)
Kobayashi, J. *et al., Tetrahedron*, 1991, **47**, 6617 (*Purealdin B, isol, pmr, cmr, uv, ir, ms, cd*)
Rodriguez, A.D. *et al., J. Nat. Prod.*, 1993, **56**, 907 (*Aplysinamisine III*)
Kobayashi, J. *et al., Chem. Pharm. Bull.*, 1995, **43**, 403 (*Purealidin P*)
Rogers, E.W. *et al., J. Nat. Prod.*, 2007, **70**, 1191-1194 (*sulfamate*)

Araplysillin III A-1379

[245436-90-2]
As Araplysillin I, A-1378 with
R = COOH
$C_{22}H_{23}Br_4N_3O_7$ 761.056
Isol. from the sponge *Aiolochroia crassa*. Amorph. solid. $[\alpha]_D$ +96.3 (c, 0.19 in MeOH). λ_{max} 208 (ϵ 8100); 284 (ϵ 1200) (EtOH).

Gao, H. *et al., Tetrahedron*, 1999, **55**, 9717-9726

Arboflorine A-1380

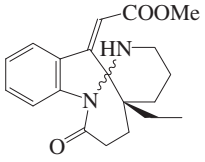


$C_{19}H_{21}N_3O$ 307.394
Modified Tubotaiwine-type alkaloid. Alkaloid from the stem bark of *Kopsia arborea*. Oil. $[\alpha]_D$ +71 (c, 0.07 in $CHCl_3$). λ_{max} 224 ; 283 ; 291 (EtOH).

Lim, K.-H. *et al., Org. Lett.*, 2006, **8**, 1733-1735 (*isol, pmr, cmr*)

Arboloscine A-1381

[926927-38-0]



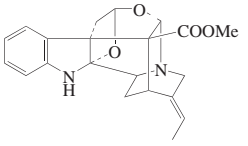
Absolute Configuration

$C_{20}H_{24}N_2O_3$ 340.421
Highly rearranged aspidosperma-type skeleton. Alkaloid from the stem bark of *Kopsia arborea*. Oil. $[\alpha]_D$ +137 (c, 0.15 in $CHCl_3$). λ_{max} 210 (log ϵ 3.83); 247 (log ϵ 4.14); 265 (log ϵ 3.99); 321 (log ϵ 3.38) (EtOH).

Lim, K.-H. *et al., Helv. Chim. Acta*, 2007, **90**, 31-35 (*isol, pmr, cmr, ms*)

Arbophylline A-1382

[917600-41-0]



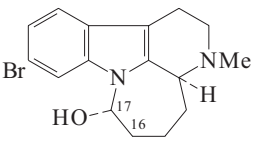
Relative Configuration

$C_{21}H_{22}N_2O_4$ 366.416
Sarpagine-related skeleton. Alkaloid from the leaves of *Kopsia arborea*. Oil. $[\alpha]_D$ +2 (c, 0.16 in $CHCl_3$). λ_{max} 210 ; 242 ; 297 (EtOH).

Lim, K.-H. *et al., Tet. Lett.*, 2006, **47**, 8653-8655 (*isol, pmr, cmr*)

Arborescidine C A-1383

[147395-94-6]



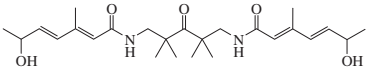
$C_{16}H_{19}BrN_2O$ 335.243
Alkaloid from the marine tunicate *Pseudodistoma arborescens*. Cryst. (MeOH). Mp 172-173°. $[\alpha]_D$ +3 (c, 1 in $CHCl_3$).

17-Epimer: ***Arborescidine D***
[147512-45-6]
$C_{16}H_{19}BrN_2O$ 335.243
Alkaloid from the marine tunicate *Pseudodistoma arborescens*. Exhibits moderate cytotoxicity *in vitro* against KB human buccal carcinoma. Amorph. solid. λ_{max} 231 (ϵ 29800); 285 (ϵ 8000) (MeOH) (Berdy).

17-Deoxy, 16,17-didehydro: ***Arborescidine B***
[147395-93-5]
$C_{16}H_{17}BrN_2$ 317.228
Alkaloid from *Pseudodistoma arborescens*. Oil. $[\alpha]_D$ +70 (c, 0.6 in $CHCl_2$).

Chbani, M. *et al., J. Nat. Prod.*, 1993, **56**, 99-104 (*isol, cd, uv, ir, pmr, cmr, ms*)
Burm, B.E.A. *et al., Tetrahedron*, 1998, **54**, 6135-6146 (*synth, pmr, cmr*)
Santos, L.S. *et al., J.O.C.*, 2004, **69**, 1283-1289 (*synth*)

Arboreumine A-1384

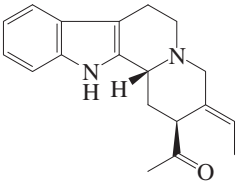


$C_{25}H_{40}N_2O_5$ 448.601
Alkaloid from the leaves of *Piper arboreum*. Antifungal agent. Amorph. solid. λ_{max} 240 (ϵ 2607) (MeOH).

Vasques da Silva, R. *et al., Phytochemistry*, 2002, **59**, 521-527 (*isol, pmr, cmr*)

Arboricine† A-1385

[929606-10-0]

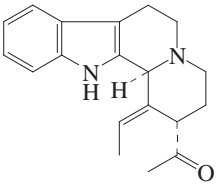


$C_{19}H_{22}N_2O$ 294.396
Alkaloid from the leaves of *Kopsia arborea*. Prisms. Mp 126-128°. $[\alpha]_D$ -110 (c, 0.14 in $CHCl_3$). λ_{max} 225 ; 282 ; 290 (EtOH).

Lim, K.-H. *et al., Tet. Lett.*, 2007, **48**, 1143-1145 (*isol, pmr, cmr*)

Arboricinine A-1386

[929606-12-2]

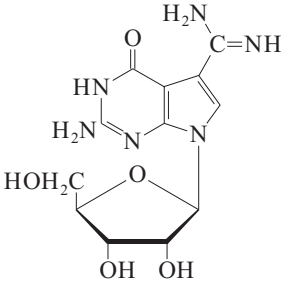


$C_{19}H_{22}N_2O$ 294.396
Alkaloid from the leaves of *Kopsia arborea*. Oil. $[\alpha]_D$ -18 (c, 0.14 in $CHCl_3$).

Lim, K.-H. *et al., Tet. Lett.*, 2007, **48**, 1143-1145 (*isol, pmr, cmr*)

Archaeosine A-1387

*2-Amino-4,7-dihydro-4-oxo-7-β-D-ribofuranosyl-1*H*-pyrrolo[2,3-*d*]pyrimidine-5-carboximidamide. 7-Formamidino-7-deazaguanosine*
[148608-52-0]

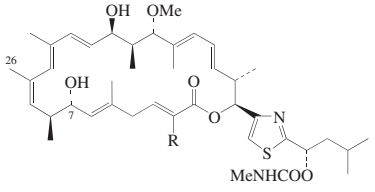


$C_{12}H_{16}N_6O_5$ 324.296
Constit. of archaeal transfer RNA.

Gregson, J.M. *et al., J. Biol. Chem.*, 1993, **268**, 10076 (*isol, synth*)

Archazolide A A-1388

[149633-98-7]



R = CH_3

$C_{42}H_{62}N_2O_7S$ 739.027
Prod. by *Archangium gephyra* and *Cystobacter violaceus*. V-ATPase inhibitor. Antifungal and antineoplastic agent. Sol. MeOH, EtOAc; poorly sol. H_2O. λ_{max} 228 (ϵ 39810) (MeOH) (Berdy).

*7-*O*-β-D-Glucopyranoside:* ***Archazolide C***
$C_{48}H_{72}N_2O_{12}S$ 901.169
Isol. from *Cystobacter violaceus* Cb vil05. Amorph. solid. $[\alpha]_D^{22}$ -33.9 (c, 6.2 in MeOH). λ_{max} 228 (log ϵ 4.6) (MeOH).

*26-Hydroxy, 7-*O*-β-D-glucopyranoside:* ***Archazolide D***
[945027-76-9]
$C_{48}H_{72}N_2O_{13}S$ 917.168
Prod. by *Cystobacter violaceus* strain Cb vi105. V-ATPase inhibitor. Amorph. solid. $[\alpha]_D^{22}$ -26.8 (c, 0.22 in MeOH). λ_{max} 231 (MeOH).

Ger. Pat., 1993, 4 142 951; *CA*, **119**, 137527 (*Archazolide A*)
Sasse, F. *et al., J. Antibiot.*, 2003, **56**, 520-525 (*Archazolide A, activity*)
Hassfeld, J. *et al., Org. Lett.*, 2006, **8**, 4751-4754 (*Archazolide A, abs config*)
Menche, D. *et al., Eur. J. Org. Chem.*, 2007, 1196-1202 (*Archazolide C*)
Menche, D. *et al., J. Antibiot.*, 2007, **60**, 328-331 (*Archazolide D*)
Menche, D. *et al., J.A.C.S.*, 2007, **129**, 6100-6101 (*synth*)

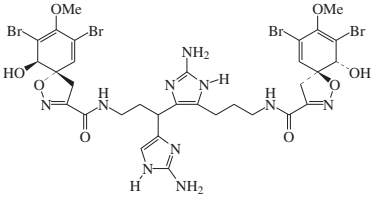
Archazolide B A-1389

As Archazolide A, A-1388 with R = H

$C_{41}H_{60}N_2O_7S$ 725
Prod. by *Archangium gephyra*. V-ATPase inhibitor. Cytotoxic.

Sasse, F. *et al., J. Antibiot.*, 2003, **56**, 520-525 (*isol, activity*)
Hassfeld, J. *et al., Org. Lett.*, 2006, **8**, 4751-4754 (*pmr, abs config*)
Roethle, P.A. *et al., J.A.C.S.*, 2007, **129**, 8960-8961 (*synth*)

Archerine A-1390

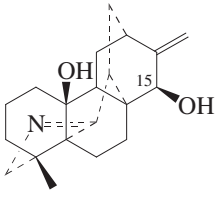


$C_{32}H_{36}Br_4N_{10}O_8$ 1008.315
Isol. from *Aplysina archeri*. Amorph. brown solid. $[\alpha]_D^{25}$ +111.4 (c, 0.07 in MeOH). λ_{max} 221 (ϵ 17600); 279 (ϵ 9500) (MeOH).

Ciminiello, P. *et al., Eur. J. Org. Chem.*, 2001, 55-60

Arcutinidine A-1391

[441064-17-1]



$C_{20}H_{27}NO_2$ 313.439

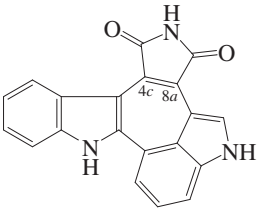
*15-*O*-(2-Methylpropanoyl):* ***Arcutinine***
[441064-16-0]
$C_{24}H_{33}NO_3$ 383.53
Alkaloid from the aerial parts of *Aconitum arcuatum*.

*15-*O*-(2-Methylbutanoyl):* ***Arcutine***
[336819-46-6]
$C_{25}H_{35}NO_3$ 397.556
Alkaloid from the aerial parts of *Aconitum arcuatum*. Cryst. (hexane). Mp 225-226°.

Tashkhodzhaev, B. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2000, **36**, 79-83 (*Arcutine*)
Saidkhodzhaeva, S.A. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2001, **37**, 466-469 (*Arcutinine*)

Arcyriacyanin A A-1392

*5,9-Dihydro-1*H*-pyrrolo[3′,4′:6,7]cyclohepta[2,1-*b*:4,3-*c′*d′]diindole-1,3(2*H*)-dione, 9CI*
[188548-81-4]



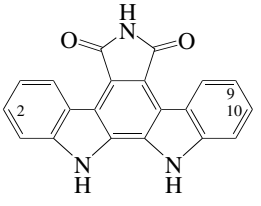
$C_{20}H_{11}N_3O_2$ 325.326
Pigment from *Arcyria nutans*. Cytotoxic agent. Protein kinase C and protein tyrosine kinase inhibitor. Green-blue solid. Mp > 300°. λ_{max} 224 (log ϵ 4.06); 243 (log ϵ 4.15); 264 (sh) (log ϵ 3.88); 360 (log ϵ 3.72); 625 (log ϵ 2.49) (MeOH).

*4c,8a-Dihydro (*cis-*):* ***Dihydroarcyriacyanin A***
$C_{20}H_{13}N_3O_2$ 327.342
Pigment from *Arcyria nutans* and *Arcyria obvelata*. Amorph. powder. λ_{max} 344 (ϵ 38000); 363 (ϵ 32000) (MeOH).

Gill, M. *et al., Prog. Chem. Org. Nat. Prod.*, 1987, **51**, 216 (*rev, uv*)
Brenner, M. *et al., Chem. Eur. J.*, 1997, **3**, 70-74 (*synth, uv, ir, pmr, cmr*)
Murase, M. *et al., Chem. Pharm. Bull.*, 1998, **46**, 889-892; 2000, **48**, 81-84 (*synth, uv, ir, pmr, cmr, ms, activity*)
Kamata, K. *et al., J. Nat. Prod.*, 2006, **69**, 1252-1254 (*Dihydroarcyriacyanin A*)
Kraus, G.A. *et al., Org. Lett.*, 2008, **10**, 3061-3063 (*synth*)

Arcyriaflavin A A-1393

*12,13-Dihydro-5*H*-indolo[2,3-*a*]pyrrolo[3,4-*c*]carbazole-5,7(6*H*)-dione, 9CI*
[118458-54-1]



$C_{20}H_{11}N_3O_2$ 325.326
Minor pigment from the fruiting bodies of the slime mould *Arcyria denudata*. Also isol. from the tunicate *Eudistoma* sp. and from *Nocardiopsis* sp. Orange solid. Mp 360°. λ_{max} 235 (log ϵ 4.8); 257 (log ϵ 4.42); 272 (log ϵ 4.45); 281 (log ϵ 4.55); 300 (sh) (log ϵ 4.64); 314 (log ϵ 4.86); 402 (log ϵ 3.81) (MeOH).

N^{12}-β-D-Glucopyranosyl: ***Antibiotic BMY 41219****. BMY 41219. Didechloro-4′-*O*-demethylrebeccamycin*
[158204-55-8]
$C_{26}H_{21}N_3O_7$ 487.468
Prod. by *Saccharothrix aerocolonigenes*. Orange-yellow powder. Sol.

MeOH, DMSO, THF; poorly sol. H_2O. λ_{max} 236 (ϵ 29970); 284 (ϵ 17750); 316 (ϵ 37420); 404 (ϵ 3020) (MeOH).

Deoxo: see Antibiotic K 252c, A-1190

2-Hydroxy: ***Arcyriaflavin B***
[73697-64-0]
$C_{20}H_{11}N_3O_3$ 341.325
Isol. from *Arcyria denudata* and *Metatrichia vesparium*. Pale yellow. Mp 350°. λ_{max} 229 (log ϵ 4.07); 271 (log ϵ 3.7); 280 (log ϵ 3.75); 323 (log ϵ 4.11); 414 (log ϵ 3.19) (MeOH).

1,11-Dihydroxy: ***Antibiotic BE 13793C****. BE 13793C. Antibiotic J 104303. J 104303*
[133805-03-5]
$C_{20}H_{11}N_3O_4$ 357.325
Prod. by *Streptomyces mobaraensis* sp. BA-13793. Antitumour agent. Topoisomerase inhibitor. Yellow-orange powder. Sol. THF, DMSO; fairly sol. MeOH; poorly sol. H_2O. Mp 295°. λ_{max} 245 (ϵ 63500); 298 (ϵ 38100); 307 (ϵ 37400); 325 (sh) (ϵ 21900); 430 (ϵ 5600) (MeOH) (Derep).

▶ NM3457000

2,3-Dihydroxy: ***2,3-Dihydroxyarcyriaflavin A***
$C_{20}H_{11}N_3O_4$ 357.325
Isol. from *Lycogala epidendrum*. Cytotoxic. Amorph. yellow solid. λ_{max} 230 (log ϵ 10.5); 284 (log ϵ 9.8); 330 (log ϵ 10.5) (MeOH).

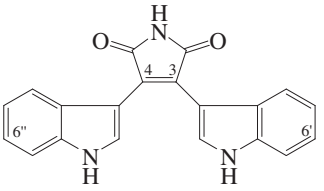
2,9-Dihydroxy: ***Arcyriaflavin D***
[179077-55-5]
$C_{20}H_{11}N_3O_4$ 357.325
Pigment from *Dictydiaethalium plumbeum*. Yellow cryst. powder. Mp > 300°.

2,10-Dihydroxy: ***Arcyriaflavin C***
[73697-65-1]
$C_{20}H_{11}N_3O_4$ 357.325
Isol. from *Arcyria denudata*, *Metatrichia vesparium* and *Streptosporangium vulgare* K254. Enzyme inhibitor, calmodulin antagonist, shows insecticidal props. Pale yellow. Mp 350°. λ_{max} 229 (ϵ 13800); 255 (sh) (ϵ 5890); 270 (ϵ 4570); 280 (ϵ 5010); 318 (sh) (ϵ 12300); 331 (ϵ 19500); 422 (ϵ 2190) (MeOH) (Derep).

Steglich, W. *et al., Angew. Chem., Int. Ed.*, 1980, **19**, 459-460 (*Arcyriaflavins, isol, uv, ir, pmr, struct*)
Bergman, J. *et al., J.O.C.*, 1989, **54**, 824-828 (*synth, ir, pmr*)
Steglich, W. *et al., Pure Appl. Chem.*, 1989, **61**, 281-288 (*Arcyriaflavin D*)
U.S. Pat., 1990, 5 326 754; *CA*, **121**, 221985u (*BMY 41219*)
Kojiri, K. *et al., J. Antibiot.*, 1991, **44**, 723-728 (*BE 13793C*)
Horton, P.A. *et al., Experientia*, 1994, **50**, 843-845 (*isol*)
Ohkubo, M. *et al., Tetrahedron*, 1996, **52**, 8099-8112 (*synth*)
Marques, M.M.B. *et al., Tet. Lett.*, 1999, **40**, 3795-3796 (*synth*)
Ohuchi, T. *et al., J. Antibiot.*, 2000, **53**, 393-403 (*BE13793C, biosynth*)
Bergman, J. *et al., J.C.S. Perkin 1*, 2000, 2609-2614 (*synth*)
Marques, M.M.B. *et al., Tet. Lett.*, 2000, **41**, 9835-9838 (*synth*)
Hosoya, T. *et al., Bioorg. Med. Chem. Lett.*, 2005, **15**, 2776-2780 (*2,3-Dihydroxyarcyriaflavin A*)
Alonso, D. *et al., Tet. Lett.*, 2005, **46**, 4839-4841 (*synth*)
Hinze, C. *et al., Synthesis*, 2007, 608-612 (*synth*)

Arcyriarubin A A-1394

*3,4-Di-1*H*-indol-3-yl-1*H*-pyrrole-2,5-dione, 9CI. 2,3-Bis(1*H*-indol-3-yl)maleimide*
[119139-23-0]



$C_{20}H_{13}N_3O_2$ 327.342
Red pigment from the fruiting bodies of the slime mould *Arcyria denudata*. Protein kinase C inhibitor. Mp 161° Mp 281°.

1-Me: Ro 31-6045
[113963-68-1] Negative control for protein kinase C inhibitory activity. Solid (Me_2CO). Mp 278°.

6′-Hydroxy: ***Arcyriarubin B***
[73697-62-8]
$C_{20}H_{13}N_3O_3$ 343.341
From *Arcyria denudata*. Red cryst. (MeOH). Mp 177° (154-155°). λ_{max} 281 (ϵ 8510); 392 (sh) (ϵ 3720); 465 (ϵ 5890) (MeOH) (Derep).

6′-Sulfooxy: Arcyriarubin B 6′-sulfate
$C_{20}H_{13}N_3O_6S$ 423.405
Isol. from *Arcyria denudata*. Amorph. powder. λ_{max} 278 (ϵ 37000); 374 (ϵ 15000) (MeOH).

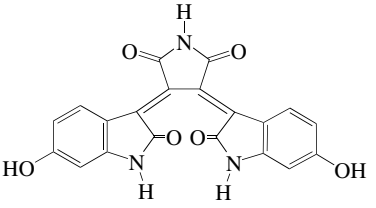
6′-Hydroxy, 3,4-dihydro: ***Dihydroarcyriarubin B***
$C_{20}H_{15}N_3O_3$ 345.357
From *Arcyria denudata*. Cryst. Mp 250° dec. Prob. the *trans*-isomer.

*6′,6″-Dihydroxy: 3,4-Bis(6-hydroxy-1*H*-indol-3-yl)-1*H*-pyrrole-2,5-dione, 9CI.* ***Arcyriarubin C***
[73697-63-9]
$C_{20}H_{13}N_3O_4$ 359.34
Red pigment from *Arcyria denudata* and *Arcyria ferruginea*. Mp 205-206°. λ_{max} 283 (ϵ 8510); 474 (ϵ 5750) (MeOH) (Derep).

6′,6″-Dihydroxy, 3α,4β-dihydro: ***Dihydroarcyriarubin C***
$C_{20}H_{15}N_3O_4$ 361.356
From *Arcyria ferruginea*. Cell-cycle inhibitor. Amorph. solid. Possesses *trans*-config. λ_{max} 221 ; 274 (no solvent reported).

Gill, M. *et al., Prog. Chem. Org. Nat. Prod.*, 1987, **51**, 218 (*isol*)
Brenner, M. *et al., Tetrahedron*, 1988, **44**, 2887-2892 (*synth, 1-Me*)
Davis, P.D. *et al., J. Med. Chem.*, 1992, **35**, 177-184 (*synth, cryst struct, pharmacol*)
Faul, M.M. *et al., Synthesis*, 1995, 1511-1516 (*synth, pmr, cmr, ir, uv, 1-Me*)
Marmy-Conus, N. *et al., FEBS Lett.*, 2002, **519**, 135-140 (*1-Me, pharmacol*)
Nakatani, S. *et al., Bioorg. Med. Chem. Lett.*, 2003, **13**, 2879-2881 (*Dihydroarcyriarubin C*)
Kamata, K. *et al., J. Nat. Prod.*, 2006, **69**, 1252-1254 (*Arcyriarubin B 6′-sulfate*)
Kaniwa, K. *et al., Bioorg. Med. Chem. Lett.*, 2007, **17**, 4254-4257 (*Dihydroarcyriarubin C, synth, config*)

Arcyriaverdin C A-1395

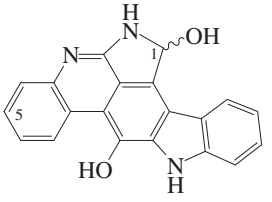


$C_{20}H_{11}N_3O_6$ 389.323
Green pigment from *Arcyria denudata*. Mp > 300°. λ_{max} 256 (sh) (log ϵ 3.91); 336 (log ϵ 3.51); 433 (log ϵ 3.69); 634 (log ϵ 2.82) (MeOH).

Gill, M *et al., Prog. Chem. Org. Nat. Prod.*, 1987, **51**, 216 (*rev, uv*)

Arcyrin A A-1396

*2,9-Dihydro-1*H*-indolo[3,2-*j*]pyrrolo[2,3,4-*gh*]phenanthridine-1,8-diol*

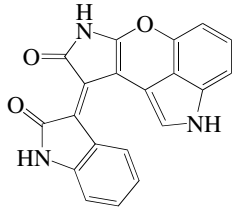


$C_{20}H_{13}N_3O_2$ 327.342
Systematic numbering shown. Isol. from *Arcyria* sp. No phys. props. reported. Not indexed by CAS.

1-Deoxy, 5-hydroxy: ***Arcyrin B***
$C_{20}H_{13}N_3O_2$ 327.342
Isol. from *Arcyria* sp. No phys. props. reported. Not indexed by CAS.

Steglich, W. *et al., Pure Appl. Chem.*, 1989, **61**, 281-288 (*occur*)

Arcyroxindole A A-1397



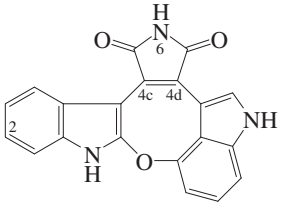
$C_{20}H_{11}N_3O_3$ 341.325
Orange pigment from *Arcyria denudata*. Mp 240° (dec.). λ_{max} 247 (sh) (log ϵ 4.08); 280 (sh) (log ϵ 3.89); 341 (sh) (log ϵ 3.43); 493 (log ϵ 3.45) (MeOH).

Gill, M *et al., Prog. Chem. Org. Nat. Prod.*,

1987, **51**, 216 (*rev, uv*)

Arcyroxocin A A-1398

*5,10-Dihydro-1*H*-pyrrolo[3′,4′:4,5]oxocino[2,3-*b*:6,7,8-*c*′*d*′]diindole-1,3(2*H*)-dione, 9CI*
[179632-33-8]



$C_{20}H_{11}N_3O_3$ 341.325
Red pigment from the slime mould *Arcyria denudata*. Red cryst. Mp > 300°. λ_{max} 276 (log ϵ 4.15); 285 (log ϵ 4.12); 364 (log ϵ 3.76); 465 (log ϵ 3.91) (MeOH).

4c,4d-Dihydro: ***Dihydroarcyroxocin A***
$C_{20}H_{13}N_3O_3$ 343.341
Pigment from *Arcyria nutans*. No phys. props reported. Possesses *cis*-config.

2-Hydroxy: ***Arcyroxocin B***
$C_{20}H_{11}N_3O_4$ 357.325
Pigment from *Arcyria denudata*. Amorph. powder. Mp 235° (dec.). λ_{max} 212 (ϵ 91000); 474 (ϵ 10000) (MeOH).

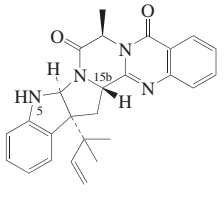
N^6*-Hydroxy:* ***Arcyroxepin A***
[73697-66-2]
$C_{20}H_{11}N_3O_4$ 357.325
Red pigment from fruiting bodies of the slime mould *Arcyria denudata*. Mp 268-270°. Originally assigned an erroneous struct. λ_{max} 226 (log ϵ 4.44); 273 (log ϵ 3.82); 283 (sh) (log ϵ 3.83); 362 (log ϵ 3.51); 471 (log ϵ 3.68) (MeOH).

N^6*,2-Dihydroxy:* ***Arcyroxepin B***. N-*Hydroxyarcyroxocin B*
$C_{20}H_{11}N_3O_5$ 373.324
Violet pigment from *Arcyria denudata*. Originally assigned an erroneous struct. Not indexed by CA to 2001. λ_{max} 274 ; 388 ; 484 (MeOH).

Steglich, W. *et al., Angew. Chem., Int. Ed.*, 1980, **19**, 459-460 (*Arcyroxepin A*)
Gill, M. *et al., Prog. Chem. Org. Nat. Prod.*, 1987, **51**, 216-297 (*isol, uv, struct, Arcyroxepin B, Arcyroxocin B*)
Steglich, W. *et al., Pure Appl. Chem.*, 1989, **61**, 281-288 (*Dihydroarcyroxocin A*)
Gribble, G.W. *et al., Stud. Nat. Prod. Chem.*, 1993, **12**, 365-409 (*struct, Arcyroxepin A*)
Mayer, G. *et al., Tet. Lett.*, 1996, **37**, 4483-4486 (*synth*)
Kamata, K. *et al., J. Nat. Prod.*, 2006, **69**, 1252-1254 (*Arcyroxocin B*)

Ardeemin A-1399

[148441-25-2]



Absolute Configuration

$C_{26}H_{26}N_4O_2$ 426.517
Prod. by *Aspergillus fischeri* var. *brasiliensis*. Antitumour drug resistance reversing agent. Mycotoxin. Cytotoxicity enhancer. Amorph. solid. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. $[\alpha]_D^{25}$ -92 (c, 0.24 in MeOH). Related to Asperlicin E, A-1481. λ_{max} 210 (ϵ 12600); 224 (ϵ 7400); 268 (ϵ 2700); 274 (ϵ 2600); 302 (ϵ 1700); 314 (ϵ 2600) (MeOH) (Derep).

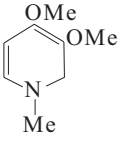
*5-*N*-Ac:* ***5-*N*-Acetylardeemin***
[148441-26-3]
$C_{28}H_{28}N_4O_3$ 468.554
Prod. by *Aspergillus fischeri* var. *brasiliensis*. Antitumour drug resistance reversing agent. Shows MDR modulatory props. Mycotoxin. Cryst. (MeOH). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 226-228°. $[\alpha]_D^{25}$ -33 (c, 0.78 in MeOH). λ_{max} 210 (ϵ 10700); 224 (ϵ 10700); 264 (ϵ 4300); 274 (ϵ 4000); 302 (ϵ 1700); 314 (ϵ 1360) (MeOH) (Derep).

*15*b-*Hydroxy, 5-*N*-Ac:* ***5-*N*-Acetyl-15*b*-hydroxyardeemin***
[148717-81-1]
$C_{28}H_{28}N_4O_4$ 484.554
Prod. by *Aspergillus fischeri* var. *brasiliensis*. Antitumour drug resistance reversing agent. Mycotoxin. Amorph. solid. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. $[\alpha]_D^{25}$ -245 (c, 0.21 in MeOH). λ_{max} 210 (ϵ 10700); 224 (ϵ 10700); 264 (ϵ 4300); 274 (ϵ 4000); 302 (ϵ 1700); 314 (ϵ 1360) (MeOH) (Derep).

Karwowski, J.P. *et al., J. Antibiot.*, 1993, **46**, 374-379; 380-386 (*isol, struct, props, activity*)
Marsden, S.P. *et al., J.A.C.S.*, 1994, **116**, 11143-11140 (*synth, 5-N-Acetylardeemin*)
Chou, T.-C. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 1998, **95**, 8369-8374 (*activity*)
Depew, K.M. *et al., J.A.C.S.*, 1999, **121**, 11953-11963 (*synth*)

Arecolidine A-1400

1,2-Dihydro-3,4-dimethoxy-1-methylpyridine, 9CI
[57680-57-6]



$C_8H_{13}NO_2$ 155.196
Although arecolidine has been referred to in the recent lit., the struct. proposed for it, if it is a genuine alkaloid, is very poorly founded. Recent synthetic studies show that the stability of compds. decreases the closer the target struct. is approached. Minor alkaloid from *Areca catechu* (betel) nuts (Arecaceae). Needles (Et_2O or by subl.). Mp 110°.

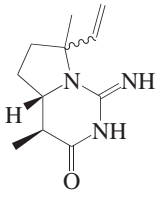
Hydrochloride: Mp 250°.

Hydrobromide: Mp 268-271°.

Emde, H. *et al., Chem. Zentralbl.*, 1915, 1381 (*isol*)
Marion, L. *et al., Alkaloids (Academic Press)*, 1949, **1**, 175
Dehmlow, E.V. *et al., Heterocycles*, 1994, **37**, 355-366

Arenaine A-1401

[35471-10-4]



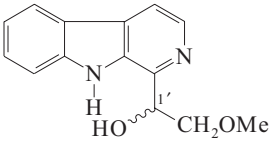
Relative Configuration

$C_{11}H_{17}N_3O$ 207.275
Alkaloid from seeds of *Plantago arenaria* (sand plantain) (Plantaginaceae). Mp 208-210°. $[\alpha]_D^{22}$ +305 (c, 1.7 in $CHCl_3$).

Rabaron, A. *et al., J.A.C.S.*, 1971, **93**, 6270-6271 (*uv, ir, pmr, cmr, struct*)

Arenarine B A-1402

*α-(Methoxymethyl)-9*H*-pyrido[3,4-*b*]indole-1-methanol, 9CI. 1-(1-Hydroxy-2-methoxyethyl)-β-carboline*
[123520-95-6]



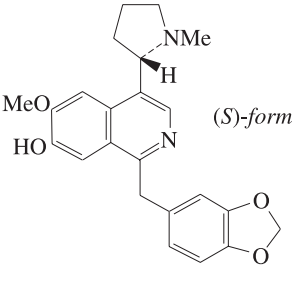
$C_{14}H_{14}N_2O_2$ 242.277
Alkaloid from the whole plant of *Arenaria kansuensis* (Caryophyllaceae). Pale-yellow needles (EtOAc). Mp 157-158°.

*1′-Ketone: 2-Methoxy-1-(9*H*-pyrido[3,4-*b*]indol-1-yl)ethanone, 9CI. 1-(Methoxyacetyl)-β-carboline.* ***Arenarine A***
[123520-94-5]
$C_{14}H_{12}N_2O_2$ 240.261
Alkaloid from *Arenaria kansuensis* (Caryaphyllaceae). Yellow needles (EtOAc). Mp 182-183°.

Wu, F. *et al., Chem. Pharm. Bull.*, 1989, **37**, 1808 (*isol, uv, ir, pmr, cmr, ms, struct*)
Bracher, F. *et al., J. Het. Chem.*, 2004, **41**, 173-176 (*synth, ir, pmr, cmr, ms, 1′-ketone*)

Arenine A-1403

[68676-55-1]



$C_{23}H_{24}N_2O_4$ 392.454

(R)-form

Me ether: Synthetic. Mp 95-100°. $[\alpha]_D^{25}$ +37 (c, 0.9 in $CHCl_3$).

(S)-form

Alkaloid from *Papaver arenarium* (Papa-

veraceae). Noncryst. $[\alpha]_D$ -31 (c, 1.03 in MeOH).

Me ether: ***Macrostomine***
[53912-94-0]
$C_{24}H_{26}N_2O_4$ 406.48
Alkaloid from *Papaver macrostomum* (Papaveraceae). Mp 107-110°. $[\alpha]_D^{25}$ -51 (c, 0.89 in $CHCl_3$).

Me ether, methiodide: Mp 220-230° dec.

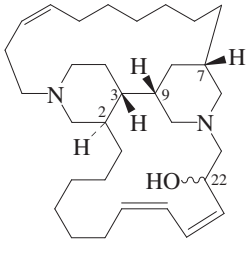
Me ether, N-*oxide(α-):* ***Macrostomine α-N-oxide***
[90138-27-5]
$C_{24}H_{26}N_2O_5$ 422.48
Alkaloid from *Papaver arenarium*. Cryst. (Me_2CO). Mp 141-142°. $[\alpha]_D$ +68 (c, 0.8 in MeOH).

Me ether, N-*oxide(β-):* ***Macrostomine β-N-oxide***
$C_{24}H_{26}N_2O_5$ 422.48
Alkaloid from *Papaver arenarium*. Amorph. $[\alpha]_D$ +35 (c, 0.8 in MeOH).

Mnatsukanyan, V.A. *et al., Tet. Lett.*, 1974, 851 (*Macrostomine*)
Mnatsukanyan, V.A. *et al., Coll. Czech. Chem. Comm.*, 1977, **42**, 1421 (*isol, uv, pmr, ms, struct, Macrostomine*)
Israilov, I.A. *et al., Khim. Prir. Soedin.*, 1978, **14**, 417; *Chem. Nat. Compd. (Engl. Transl.)*, 1978, **14**, 358 (*uv, ir, pmr, ms, struct*)
Wykypiel, W. *et al., Tet. Lett.*, 1980, 1927 (*synth, Macrostomine*)
Sharma, R.B. *et al., Indian J. Chem., Sect. B*, 1982, **21**, 141 (*synth, Macrostomine*)
Israilov, I.A. *et al., Khim. Prir. Soedin.*, 1984, **20**, 76-79; *Chem. Nat. Compd. (Engl. Transl.)*, 1984, **20**, 71-73 (*Macrostomine N-oxides*)
Brunner, H. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1988, **321**, 73 (*synth, pmr, Macrostomine*)
Mahboobi, S. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1991, **324**, 275 (*synth, pmr, Macrostomine*)

Arenosclerin A A-1404

[289041-16-3]



$C_{32}H_{54}N_2O$ 482.791
Alkaloid from the sponge *Arenosclera brasiliensis*. Glassy solid. $[\alpha]_D^{25}$ -3 (c, 0.01 in MeOH). λ_{max} 235 (ϵ 15100) (MeOH).

Deoxy: ***Haliclonacyclamine E***
[289041-15-2]
$C_{32}H_{54}N_2$ 466.792
Alkaloid from *Arenosclera brasiliensis*. Glassy solid. $[\alpha]_D^{25}$ +14 (c, 0.02 in MeOH). λ_{max} 236 (ϵ 14900) (MeOH).

Deoxy, 23,24-dihydro: ***Halichondramine***
$C_{32}H_{56}N_2$ 468.808
Alkaloid from *Halichondria* sp. Yellow oil. $[\alpha]_D^{25}$ +3.3 (c, 0.5 in MeOH).

2,3-Diepimer: ***Arenosclerin C***
[289041-18-5]
$C_{32}H_{54}N_2O$ 482.791
Alkaloid from *Arenosclera brasiliensis*. Glassy solid. $[\alpha]_D^{25}$ -17 (c, 0.02 in MeOH). λ_{max} 235 (ϵ 15150) (MeOH).

7,9-Diepimer, deoxy: ***Haliclonacyclamine F***
[934986-37-5]
$C_{32}H_{54}N_2$ 466.792
Alkaloid from *Pachychalina alcaloidifera*. Glassy solid. $[\alpha]_D^{25}$ +5.4 (c, 0.004 in MeOH). λ_{max} 226 (ϵ 2450) (MeOH).

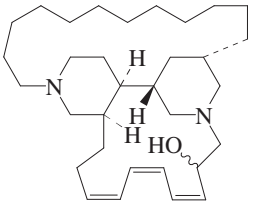
2,3,7-Triepimer: ***Arenosclerin B***
[289041-17-4]
$C_{32}H_{54}N_2O$ 482.791
Alkaloid from *Arenosclera brasiliensis*. Glassy solid. $[\alpha]_D^{25}$ +8.6 (c, 0.008 in MeOH). λ_{max} 235 (ϵ 15000) (MeOH).

Stereoisomer: ***Arenosclerin D***
[934986-38-6]
$C_{32}H_{54}N_2O$ 482.791
Alkaloid from *Pachychalina alcaloidifera*. Glassy solid. $[\alpha]_D^{25}$ +6.9 (c, 0.01 in MeOH). Prob. 9-epimer or 7,9-diepimer of Arenosclerin A. λ_{max} 236 (ϵ 28456) (MeOH).

Torres, Y.R. *et al., J. Nat. Prod.*, 2000, **63**, 1098-1105 (*isol*)
Chill, L. *et al., J. Nat. Prod.*, 2002, **65**, 1738-1741 (*Halichondramine*)
Torres, Y.R. *et al., Toxicon*, 2002, **40**, 885-891 (*props*)
De Oliveira, J.H.H.L. *et al., J. Nat. Prod.*, 2007, **70**, 538-543 (*Arenosclerin D, Haliclonacyclamide F*)

Arenosclerin E A-1405

[934986-39-7]

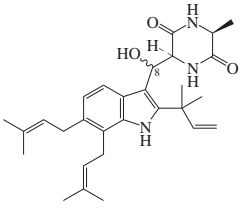


$C_{32}H_{54}N_2O$ 482.791
Alkaloid from *Pachychalina alcaloidifera*. Cytotoxic. Glassy solid. $[\alpha]_D^{25}$ +14.5 (c, 0.01 in MeOH). λ_{max} 235 (ϵ 23780) (MeOH).

De Oliveira, J.H.H.L. *et al., J. Nat. Prod.*, 2007, **70**, 538-543 (*isol, pmr, cmr, ms*)

Arestrictin A A-1406

[929101-59-7]



Absolute Configuration

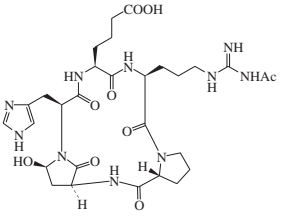
$C_{29}H_{39}N_3O_3$ 477.645
Prod. by *Aspergillus penicilloides* and *Aspergillus restrictus*. Pale yellow cryst. (MeOH). Mp 209°. λ_{max} 228 (log ϵ 4.62); 274 (log ϵ 3.95); 283 (log ϵ 3.92); 291 (log ϵ 3.82) (MeOH).

8-Deoxy: ***Arestrictin B***
[929101-60-0]
$C_{29}H_{39}N_3O_2$ 461.646
Prod. by *Aspergillus penicilloides* and *Aspergillus restrictus*. Cryst. (MeOH). Mp 228°. $[\alpha]_D^{25}$ -36.8 (c, 0.51 in $CHCl_3$). λ_{max} 230 (log ϵ 4.62); 278 (log ϵ 3.96); 283 (log ϵ 3.96); 294 (log ϵ 3.86) (MeOH).

Itabashi, T. *et al., Chem. Pharm. Bull.*, 2006, **54**, 1639-1641 (*isol, cd, pmr, cmr*)

Argadin A-1407

Antibiotic FO 7314. FO 7314
[289665-92-5]



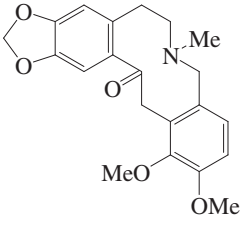
Absolute Configuration

$C_{29}H_{42}N_{10}O_9$ 674.712
Prod. by *Clonostachys* sp. FO-7314. Chitinase inhibitor. Powder. Mp 270° dec. $[\alpha]_D^{25}$ +52.1 (c, 0.1 in H_2O). λ_{max} 200 (ϵ 31400) (H_2O).

Arai, N. *et al., Chem. Pharm. Bull.*, 2000, **48**, 1442-1446 (*isol, pmr, cmr*)
Dixon, M.J. *et al., Eur. J. Org. Chem.*, 2006, 5002-5006; 5602 (*synth, stereochem*)

Argemexicaine A A-1408

[624736-05-6]

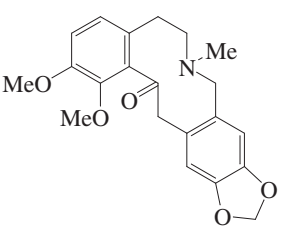


$C_{21}H_{23}NO_5$ 369.416
Alkaloid from the whole plant of *Argemone mexicana*. Cryst. (hexane). Mp 158-160°. λ_{max} 225 (log ϵ 4.35); 290 (log ϵ 4.21) (EtOH).

Chang, Y.-C. *et al., Planta Med.*, 2003, **69**, 148-152 (*isol, pmr, cmr, ms*)

Argemexicaine B A-1409

[624736-06-7]

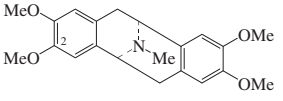


$C_{21}H_{23}NO_5$ 369.416
Alkaloid from the whole plant of *Argemone mexicana*. Powder. Mp 131-133°. λ_{max} 225 (log ϵ 4.33); 290 (log ϵ 4.04) (EtOH).

Chang, Y.-C. *et al., Planta Med.*, 2003, **69**, 148-152 (*isol, pmr, cmr, ms*)

Argemonine A-1410

*5,6,11,12-Tetrahydro-2,3,8,9-tetramethoxy-13-methyldibenzo[*a,e*]cyclooct-en-5,11-imine, 9CI. 2,3,8,9-Tetramethoxypavinane.* N-*Methylpavine*



(-)-*form*

$C_{21}H_{25}NO_4$ 355.433

(+)-*form* [16584-62-6]
Alkaloid from *Leontice smirnovii*, also obt. by resoln. (Leonticaceae). Shows weak *in vitro* antimicrobial activity against *Mycobactericum smegmatis*. Cryst. ($CHCl_3$). Mp 152-153°. $[\alpha]_D$ +218 (c, 2.11 in EtOH).

(-)-*form* [6901-16-2]
Alkaloid from *Argemone gracilenta*, other *Argemone* spp., *Berberis buxifolia, Thalictrum revolutum* and *Thalictrum strictum* (Papaveraceae, Berberidaceae, Ranunculaceae). Mp 155.5-156.5° (147-148°). $[\alpha]_D^{24}$ -214.22 (c, 1.01 in EtOH). $[\alpha]_D^{20}$ -222 (c, 0.1 in $CHCl_3$). Forms a hydrate Mp 125-135°. λ_{max} 230 (sh) (log ϵ 4.15); 276 (sh) (log ϵ 3.79); 282 (log ϵ 3.91); 287 (log ϵ 3.93); 292 (log ϵ 3.89) (95% EtOH).

N-*Oxide:* ***(-)-Argemonine* N-*oxide***
[18841-61-7]
$C_{21}H_{25}NO_5$ 371.432
Alkaloid from the above-ground parts of *Argemone gracilenta* (Papaveraceae). Glass + $1H_2O$ + $0.5CHCl_3$. Mp 140-160° dec. (efferv.). $[\alpha]_D^{25}$ -185 (c, 2.81 in $CHCl_3$).

N-*Me:* ***(-)-Argemonine* N-*methosalt***
[55056-96-7]
[18826-69-2]
$C_{22}H_{28}NO_4^{\oplus}$ 370.467
Quaternary alkaloid from above-ground parts of *Argemone gracilenta*, the roots and aerial parts of *Argemone platyceras* and the fruits of *Thalictrum revolutum* (Papaveraceae, Ranunculaceae). Needles (MeOH) (as iodide). Mp 272-274° (iodide). $[\alpha]_D^{25}$ -200 (c, 0.14 in MeOH). CAS no. refers to iodide.

O^2-*De-Me: 2-Hydroxy-3,8,9-trimethoxypavinane.* ***Norargemonine***
[5876-16-4]
$C_{20}H_{23}NO_4$ 341.406
Alkaloid from *Argemone brevicornuta, Argemone hispida, Argemone platyceras, Argemone munita* var. *rotundata, Eschscholtzia californica, Eschscholtzia glauca, Eschscholtzia douglasii, Berberis buxifolia, Thalictrum dasycarpum* and *Cryptocarya longifolia* (Papaveraceae, Berberidaceae, Ranunculaceae, Lauraceae). Cryst. ($CHCl_3$, $CHCl_3$/MeOH, C_6H_6/$CHCl_3$ or MeOH aq.). Mp 255-256° dec. (241-242°, 244-250°). $[\alpha]_D$ -154 (c, 2.79 in $CHCl_3$) (-147). λ_{max} 230 (sh) (log ϵ 4.12); 278 (sh) (log ϵ 3.81); 283 (log ϵ 3.92); 287 (log ϵ 3.93); 293 (log ϵ 3.92) (95% EtOH).

O^3-*De-Me: 3-Hydroxy-2,8,9-trimethoxypavinane.* ***Isonorargemonine***
[18826-67-0]
$C_{20}H_{23}NO_4$ 341.406
Alkaloid from *Argemone munita* var. *argentea*, the above-ground parts of *Argemone gracilenta*, and the tops of *Thalictrum revolutum* (Papaveraceae, Ranunculaceae). Cryst. + $1H_2O$ (MeOH aq.). Mp 219-221°. $[\alpha]_D^{25}$ -202 (c, 3.31 in $CHCl_3$). λ_{max} 287 (log ϵ 3.96) (MeOH).

O^2,O^9-*Di-de-Me: 2,9-Dihydroxy-3,8-dimethoxypavinane.* ***Bisnorargemonine***. *Rotundine*†
[6808-63-5]
$C_{19}H_{21}NO_4$ 327.379
Alkaloid from *Argemone hispida*, *Argemone munita* var. *rotundata*, *Thalictrum dasycarpum, Eschscholtzia californica, Eschscholtzia douglasii* and *Eschscholtzia glauca*, and *Cryptocarya longifolia* (Papaveraceae, Ranunculaceae, Lauraceae). Cryst. (MeOH or EtOH). Mp 254-255° (244-246°). $[\alpha]_D^{20}$ -244 (c, 0.19 in $CHCl_3$). $[\alpha]_D^{25}$ -265.8 (c, 0.158 in MeOH). λ_{max} 230 (sh) (log ϵ 4.07); 279 (sh) (log ϵ 3.83); 285 (log ϵ 3.92); 288 (log ϵ 3.93); 294 (log ϵ 3.89) (95% EtOH).

(±)-*form* [5531-95-3]
Synthetic. Cryst. (Et_2O/CH_2Cl_2). Mp 138-140°.

O^2-*De-Me:* [5876-37-9]
Synthetic. Needles (EtOH or EtOH aq.). Mp 222-223° (218-220°).

O^3-*De-Me:* [5876-50-6]
Synthetic. Plates (heptane). Mp 175-177°.

O^2,O^9-*Di-de-Me:* [29944-24-9]
Synthetic. Cryst. ($CHCl_3$ or butyronitrile). Mp 233.5-235° (226-227°).

Soine, T.O. *et al., J. Am. Pharm. Assoc.*, 1944, **33**, 185-188 (*isol*)
Battersby, A.R. *et al., J.C.S.*, 1955, 2888-2896 (*synth*)
Slavík, J. *et al., Coll. Czech. Chem. Comm.*, 1963, **28**, 1728-1737 (*Norargemonine, isol, uv, ir*)
Martell, M.J. *et al., J.A.C.S.*, 1963, **85**, 1022-1023 (*pmr, struct*)
Stermitz, F.R. *et al., J.O.C.*, 1966, **31**, 2925-2933 (*Argemonine, Norargemonine, Bisnorargemonine, isol, pmr, ms*)
Červinka, O. *et al., Tet. Lett.*, 1966, 5375-5377 (*abs config*)
Tomita, M. *et al., Yakugaku Zasshi*, 1966, **86**, 414-417; *CA*, **65**, 5500e (*ms*)
Martell, M. *et al., J. Pharm. Sci.*, 1967, **56**, 973-976 (*resoln*)
Barker, A.C. *et al., J.C.S.(C)*, 1967, 1317-1323 (*abs config, ord*)
Chan, R.P.K. *et al., Tetrahedron*, 1967, **23**, 4209-4214 (*uv, ord, cd*)
Lee, K.-H. *et al., J. Pharm. Sci.*, 1968, **57**, 1922-1926 (*Norargemonine, synth*)
Stermitz, F.R. *et al., J.O.C.*, 1969, **34**, 555-559 (*isol, ir, pmr, ms, struct, synth, Argemonine N-methosalt, N-oxide, Isonorargemonine*)
Kupchan, S.M. *et al., J.O.C.*, 1969, **34**, 1062-1065 (*Norargemonine, Bisnorargemonine*)
Slavík, J. *et al., Coll. Czech. Chem. Comm.*, 1971, **36**, 2067-2069 (*Norargemonine, Bisnorargemonine, isol*)
Chen, C.-H. *et al., J. Pharm. Sci.*, 1971, **60**, 1634-1638 (*Bisnorargemonine, synth*)
Kaneda, T. *et al., Bull. Chem. Soc. Jpn.*, 1976, **49**, 1263-1266 (*cryst struct*)
Wenkert, E. *et al., Top. Carbon-13 NMR Spectrosc.*, Vol. 2, (Levy, G.C., Ed.), Wiley, New York, 1976, 110 (*cmr*)
Wu, J. *et al., J. Nat. Prod.*, 1977, **40**, 593-601 (*Isonorargemonine*)
Wu, J. *et al., J. Nat. Prod.*, 1980, **43**, 270-277 (*isol, uv, cd, pmr, ms, synth, Argemonine N-methosalt*)
Rice, K.C. *et al., J.O.C.*, 1980, **45**, 601-607 (*Bisnorargemonine, synth, ms*)
Bick, I.R.C. *et al., Aust. J. Chem.*, 1981, **34**, 195-207 (*Norargemonine, Bisnorargemonine*)
Nomoto, T. *et al., Chem. Comm.*, 1982, 1113-1115 (*synth, pmr*)
Stadler, R. *et al., Phytochemistry*, 1989, **28**, 1083-1086 (*Bisnorargemonine, pmr, cmr*)
Johnson, A.P. *et al., J.C.S. Perkin 1*, 1996, 907-913 (*Norargemonine, synth, ir, pmr*)
Munchhof, M.J. *et al., J.O.C.*, 1996, **61**, 4607-4610 (*synth, pmr, cmr*)
Necas, M. *et al., Acta Cryst. C*, 2001, **57**, 66-71 (*cryst struct*)
Ruchirawat, S. *et al., Tet. Lett.*, 2001, **42**, 1359-1361 (*synth*)
Marek, R. *et al., Magn. Reson. Chem.*, 2002, **40**, 687-692 (*N-15 nmr*)
Youte, J.-J. *et al., J.O.C.*, 2004, **69**, 2737-2740 (*synth*)

Argentinamine A-1411

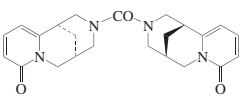
$C_{15}H_{20}N_2O_2$ 260.335

Prob. Quinolizidine alkaloid. Struct. unknown. Alkaloid from *Ammodendron argenteum* (Fabaceae). Mp 201-202°. $[\alpha]_D$ -142.3 (EtOH). Cooccurs with Sparteine, S-385, Lupanine, L-302 and Cytisine, C-938.

Kushmuradov, Yu.K. *et al., Nauch. Tr. Tashk. Gos. Univ. im. V.I. Lenina*, 1968, **341**, 95-98; *CA*, **73**, 32298b (*isol*)

Argentine A-1412

*3,3′-Carbonylbis[1,2,3,4,5,6-hexahydro-1,5-methano-2*H*-pyrido[1,2-*a*][1,5]diazocin-5-one], 9CI. 3,3′-Carbonylbiscytisine*
[37551-61-4]



Absolute Configuration

$C_{23}H_{26}N_4O_3$ 406.483
Alkaloid from *Ammodendron longiracemosum, Sophora griffithii* and *Thermopsis alterniflora* (Fabaceae). Mp 258-259°. $[\alpha]_D$ -305 (c, 3.28 in EtOH).

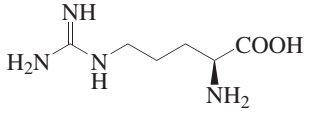
Octahydro:
Cryst. (Me_2CO/petrol). Mp 208-209°. $[\alpha]_D$ -143 (c, 0.81 in EtOH).

Primukhamedov, I. *et al., CA*, 1970, **72**, 79280j (*isol*)
Aslanov, Kh.A. *et al., CA*, 1972, **77**, 140388x (*ir, pmr, ms, uv, struct*)

Iskandarov, S. *et al., Khim. Prir. Soedin.*, 1972, 218-222; *Chem. Nat. Compd. (Engl. Transl.)*, 1972, **8**, 216-218 (*isol*)
Karakozova, S.A. *et al., Khim. Prir. Soedin.*, 1975, 664-665; *Chem. Nat. Compd. (Engl. Transl.)*, 1975, **11**, 703 (*isol*)
Ajaz, M.S. *et al., Thesis*, Uni. of Karachi, 1993, (*cmr*)

Arginine, INN, USAN A-1413

2-Amino-5-[(aminoiminomethyl)amino]-pentanoic acid. 2-Amino-5-guanidinovaleric acid. Arg
[7004-12-8]



(*S*)-*form*

$C_6H_{14}N_4O_2$ 174.202
Basic genetically coded amino acid. Essential amino acid for human development. Precursor of nitric oxide and is synth. by the body from 2,5-Diaminopentanoic acid. Diuretic agent. Growth hormone releaser. Immune stimulating agent and wound healing agent. Acidifying agent. Dietary supplement. Ammonia detoxicant (hepatic failure). Diagnostic aid for pituitary function. Log P -4.79 (calc).

(*S*)-*form*
L-*form*. L-*Arginine*. *FEMA 3819*
[74-79-3]
Found in seeds/shoots of pine, fir, acacia, arachis etc. and in many proteins. Reagent for the fluorimetric anal. of reducing sugars by hplc. Diagnostic aid (pituitary function determination); ammonia detoxicant; dietary supplement, nutrient. Plates or prisms + $2H_2O$ (H_2O), plates (EtOH). Sol. H_2O (15.0g/100g at 21°). Mp 207° Mp 244° dec. (anhyd. 105°). $[\alpha]_D$ +21.8 (H_2O). $[\alpha]_D^{25}$ +48.1 (c, 1 in 5*M* HCl). pK_{a1} 2.17; pK_{a2} 9.04; pK_{a3} 12.48 (guanido). Isoelectric point 10.76. Bitter taste. *N*-Protected derivs. useful in peptide synth. have been listed alphabetically elsewhere.

▶ CF1934200
N-*Tetradecanoyl:* **N-*Tetradecanoylarginine***
$C_{20}H_{40}N_4O_3$ 384.561
Isol. from environmental DNA expressed in *Escherichia coli*.

N-*Pentadecanoyl:* **N-*Pentadecanoylarginine***
$C_{21}H_{42}N_4O_3$ 398.588
Isol. from environmental DNA expressed in *Escherichia coli*.

N-*Hexadecanoyl:* **N-*Hexadecanoylarginine***
$C_{22}H_{44}N_4O_3$ 412.615
Isol. from environmental DNA expressed in *Escherichia coli*.

N-*(9Z-Hexadecenoyl):* **N-*(9Z-Hexadecenoyl)arginine***
$C_{22}H_{42}N_4O_3$ 410.599
Isol. from environmental DNA expressed in *Escherichia coli*.

N^2-*(4-Hydroxybenzoyl):* **N^2-*(4-Hydroxybenzoyl)arginine***
[178495-39-1]
$C_{13}H_{18}N_4O_4$ 294.31
Isol. from the ascidian *Leptoclinides dubius*. Sol. MeOH, butanol. $[\alpha]_D^{20}$ +19.5 (c, 2 in MeOH). λ_{max} 210 (log ϵ 3.46); 256 (log ϵ 3.49) (MeOH). λ_{max} 216 ; 294 (MeOH/NaOH) (Berdy).

N^2-*(2-Carboxyethyl):* **N^2-*(2-Carboxyethyl)arginine***
[151636-36-1]
$C_9H_{18}N_4O_4$ 246.266
Prod. by a *Streptomyces clavuligerus* mutant. Biosynth. intermed. of Clavulanic acid. Related to Octopine.

N^2-*(3-Carboxypropanoyl):* **N^2-*Succinoylarginine***
[2478-02-6]
$C_{10}H_{18}N_4O_5$ 274.276
Constit. of the shoots of pear trees.

N^2-*Oxalyl:* **N^2-*Oxalylarginine***
[90250-86-5]
$C_8H_{14}N_4O_5$ 246.222
Constit. of the shoots of apple and pear trees (*Malus* spp.).

N^2-*(3-Carboxy-2-hydroxypropanoyl):* **N^2-*(2-Hydroxysuccinoyl)arginine***. N^2-*(3-Carboxy-2-hydroxy-1-oxopropyl)arginine*
[87605-92-3]
$C_{10}H_{18}N_4O_6$ 290.275
Constit. of the seeds of *Vicia faba*, the tubers of *Smilax china* and the shoots of apple and pear trees.

N^2-*(3-Carboxy-3-hydroxypropanoyl):* **N^2-*(3-Hydroxysuccinoyl)arginine***
[90250-85-4]
$C_{10}H_{18}N_4O_6$ 290.275
Constit. of the shoots of apple and pear trees.

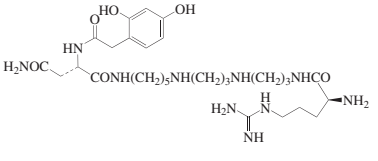
N^2-*[3-Carboxy-2-(carboxymethyl)-2-hydroxypropanoyl]:* **N^2-*(2-Carboxymethyl-2-hydroxysuccinoyl)arginine***
[87605-91-2]
$C_{12}H_{20}N_4O_8$ 348.312
Constit. of *Lilium maximowiczii* and the shoots of apple and pear tree.

[14975-30-5 , 50912-92-0 , 32042-43-6 , 63238-98-2 , 78851-84-0]

Karrer, W. *et al., Konstitution und Vorkommen der Organischen Pflanzenstoffe*, 2nd edn., Birkhäuser Verlag, 1972, no. 2392 (*occur*)
Elson, S.W. *et al., Chem. Comm.*, 1993, 1211; 1212 (*N^2-(2-Carboxylethyl)arginine*)
Garcia, A. *et al., J. Nat. Prod.*, 1996, **59**, 782-785 (*4-hydroxybenzoyl*)
Brady, S.F. *et al., Org. Lett.*, 2005, **7**, 3613-3616 (*N-acyl derivs*)

Argiopine A-1414

Argiotoxin 636
[105029-41-2]

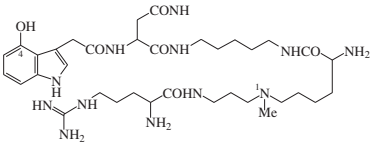


$C_{29}H_{52}N_{10}O_6$ 636.793
Isol. from venom of the spider *Argiope lobata*. Glutamate receptor antagonist.

Adams, M.E. *et al., Biochem. Biophys. Res. Commun.*, 1987, **148**, 678-683 (*isol, struct, activity*)
Shih, T.L. *et al., Tet. Lett.*, 1987, **28**, 6015 (*struct, bibl*)
Jasys, V.J. *et al., Tet. Lett.*, 1988, **29**, 6223 (*synth, cmr, pmr*)
Herlitze, S. *et al., Neuron*, 1993, **10**, 1131-1140 (*activity*)
Scott, R.H. *et al., Neuropharmacology*, 1998, **37**, 1563-1578 (*bibl, activity*)
Nihei, K. *et al., Tetrahedron*, 2006, **62**, 8335-8350 (*synth*)

Argiopinin II A-1415

[117233-42-8]



$C_{35}H_{60}N_{12}O_6$ 744.936
N^1 Numbered acc. to CAS. Isol. from the venom of the *Argiope lobatum* spider.

N^1-*Me:* ***Argiopinin I***
[117233-41-7]
$C_{36}H_{63}N_{12}O_6^{\oplus}$ 759.971
Isol. from the venom of *Argiope lobatum*.

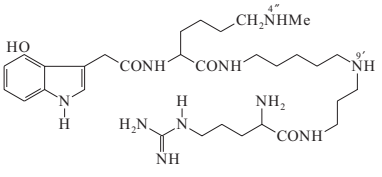
4-Deoxy, N^1-*de-Me:* ***Pseudoargiopinin II***
[117233-45-1]
$C_{34}H_{58}N_{12}O_5$ 714.91
Isol. from the venom of *Argiope lobatum*.

4-Deoxy, N^1-*Me:* ***Pseudoargiopinin I***
[117255-12-6]
$C_{36}H_{63}N_{12}O_5^{\oplus}$ 743.971
Isol. from the venom of *Argiope lobatum*.

Grishin, E.V. *et al., Bioorg. Khim.*, 1988, **14**, 883 (*isol*)
Grishin, E.V. *et al., Toxicon*, 1989, **27**, 541 (*isol*)

Argiopinin IV A-1416

[117233-43-9]



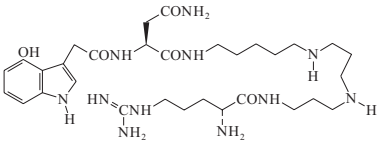
$C_{31}H_{54}N_{10}O_4$ 630.832
Isol. from the venom of the spider *Argiope lobatum*.

4″,9′-Di-Me: ***Argiopinin V***
[117233-44-0]
$C_{33}H_{58}N_{10}O_4$ 658.886
Isol. from the venom of the spider *Argiope lobatum*.

Grishin, E.V. *et al., Toxicon*, 1989, **27**, 541 (*isol*)

Argiotoxin 659 A-1417

Argiopinin III
[111944-83-3]



$C_{31}H_{53}N_{11}O_5$ 659.83

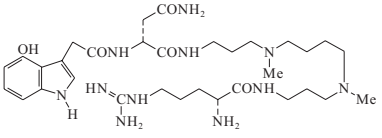
Argiopinin III had unspecified stereochem. and the two substances may not therefore be identical. Isol. from the venom of *Argiope aurantia* spider and (as Argiopinin III) from *Argiope lobatum* venom.

[117306-99-7]

Adams, M.E. *et al., Biochem. Biophys. Res. Commun.*, 1987, **148**, 678 (*isol*)
Jasys, V.J. *et al., Tet. Lett.*, 1988, **29**, 6223 (*synth, cmr, pmr*)
Grishin, E.V. *et al., Toxicon*, 1989, **27**, 541 (*Argiopinin III*)

Argiotoxin 673 A-1418

[111924-44-8]



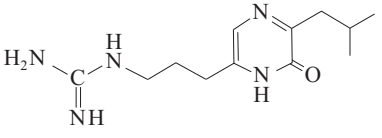
$C_{32}H_{55}N_{11}O_5$ 673.857

Isol. from the venom of *Argiope aurantia* spider.

Adams, M.E. *et al., Biochem. Biophys. Res. Commun.*, 1987, **148**, 678 (*isol*)
Jasys, V.J. *et al., Tet. Lett.*, 1988, **29**, 6223 (*synth, cmr, pmr*)

Arglecin A-1419

[3-[1,6-Dihydro-5-(2-methylpropyl)-6-oxopyrazinyl]propyl]guanidine, 9CI
[34098-41-4]



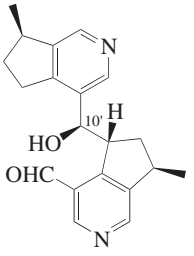
$C_{12}H_{21}N_5O$ 251.331

Diketopiperazine derived antibiotic. Produced by *Streptomyces toxytricini* and other *Streptomyces* sp. Enzyme inhibitor. Antiarrhythmic agent. Needles (EtOH/EtOAc)(as dihydrochloride). Sol. H_2O, DMSO, Py, MeOH; poorly sol. butanol, hexane. Mp 176-177° (hydrochloride). pK_{a1} 1.4; pK_{a2} 8.9. Log P -0.5 (calc). λ_{max} 226 (ϵ 8700); 338 (ϵ 9400) (0.1*N* HCl) (Derep). λ_{max} 232 (ϵ 8200); 321 (ϵ 9100) (0.1*N* NaOH) (Derep). λ_{max} 226 (ϵ 8000); 322 (ϵ 9600) (H_2O) (Derep). λ_{max} 258 (ϵ 8200); 321 (ϵ 9100) (NH_4OH) (Berdy).

Umezawa, S. *et al., Tet. Lett.*, 1971, 259 (*ir, uv, pmr, cmr, isol*)
Tatsuta, K. *et al., J. Antibiot.*, 1972, **25**, 674 (*ir, ms, nmr, synth, struct*)
MacDonald, J.C. *et al., Tetrahedron*, 1976, **32**, 655 (*pmr, cmr*)
MacDonald, J.C. *et al., Can. J. Biochem.*, 1977, **55**, 165 (*biosynth*)
Ohta, A. *et al., Heterocycles*, 1987, **26**, 3181 (*synth*)
Turck, A. *et al., J. Het. Chem.*, 1994, **31**, 1449 (*synth*)

Argutane A A-1420

[1003567-49-4]



Relative Configuration

$C_{20}H_{22}N_2O_2$ 322.406

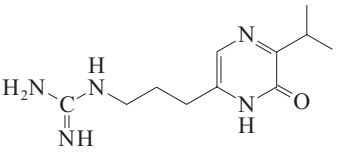
Alkaloid from the roots of *Incarvillea arguta*. Yellow oil. $[\alpha]_D^{25}$ +25.4 (c, 0.05 in MeOH).

10′-Epimer: ***Argutane B***
[1003567-50-7]
$C_{20}H_{22}N_2O_2$ 322.406
Alkaloid from the roots of *Incarvillea arguta*. Yellow oil. $[\alpha]_D^{25}$ +21 (c, 0.02 in MeOH).

Fu, J.-J. *et al., Helv. Chim. Acta*, 2007, **90**, 2151-2155 (*isol, pmr, cmr, ms*)

Argvalin A-1421

[3-[1,6-Dihydro-5-(1-methylethyl)-6-oxopyrazinyl]propyl]guanidine, 9CI. 6-(3-Guanidinylpropyl)-3-isopropyl-2(1H)-pyrazinone
[52159-72-5]



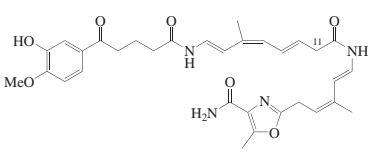
$C_{11}H_{19}N_5O$ 237.304

Microbial metab. of *Streptomyces* spp. Shows antibiotic props. Needles (EtOAc/2-propanol)(as hydrochloride). Sol. H_2O, MeOH. Mp 175-176° (hydrochloride). λ_{max} 226 (ϵ 8300); 321 (ϵ 9600) (H_2O) (Berdy). λ_{max} 226 (ϵ 9100); 333 (ϵ 9600) (HCl) (Berdy).

Tatsuta, K. *et al., J. Antibiot.*, 1973, **26**, 606 (*isol, struct, nmr*)
Ohta, A. *et al., Heterocycles*, 1988, **27**, 437 (*synth*)

Ariakemicin A A-1422

[1032399-11-3]



$C_{32}H_{38}N_4O_7$ 590.675

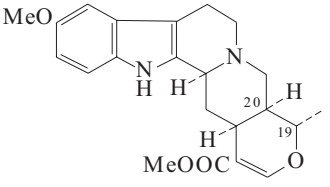
Alkaloid from the marine bacterium *Rapidithrix* sp. strain HC35. Reddish-brown amorph. solid. Isol. as a mixt. with Ariakemicin B to which data refers. λ_{max} 228 (ϵ 35000); 278 (ϵ 44000); 302 (ϵ 43000) (MeOH).

Δ^{11}-Isomer: ***Ariakemicin B***
[1032399-13-5]
$C_{32}H_{38}N_4O_7$ 590.675
Alkaloid from *Rapidithrix* sp. strain HC35.

Oku, N. *et al., Org. Lett.*, 2008, **10**, 2481-2484 (*isol, uv, ir, pmr, cmr*)

Aricine A-1423

Heterophylline†. *Cinchovatine*
[482-91-7]



$C_{22}H_{26}N_2O_4$ 382.458

Alkaloid from several *Cabucala*, *Ochrosia*, *Rauwolfia* and *Aspidosperma* spp., also from *Cinchona ledgeriana* and *Cinchona pelleteriana* (Apocynaceae, Rubiaceae). Cryst. (EtOH aq.). Mp 190° dec. $[\alpha]_D^{20}$ -91 (c, 1.4 in $CHCl_3$). $[\alpha]_D^{20}$ -63 (c, 1.5 in Py). $[\alpha]_D^{20}$ -57 (c, 1.0 in EtOH). λ_{max} 227 (log ϵ 4.54); 250 (log ϵ 4.05); 279 (log ϵ 3.98); 298 (sh) (log ϵ 3.88) (EtOH or MeOH).

Hydrochloride:
Plates (MeOH/Me_2CO). Mp 254°. $[\alpha]_D^{20}$ -5 (c, 0.9 in 50% EtOH aq.).

Hydrobromide:
Needles (MeOH). Mp 262-263° dec.

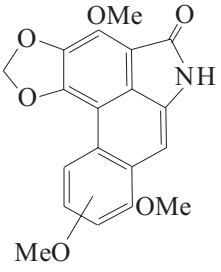
20-Epimer: ***Cabucine****. 10-Methoxyajmalicine*
[16812-97-8]
$C_{22}H_{26}N_2O_4$ 382.458
Alkaloid from *Cabucala madagascariensis, Cabucala erythrocarpa, Cabucala fasciculata, Cabucala striolata, Cabucala torulosa* and *Cabucala cryptophlebia* (Apocynaceae). Mp 125°. $[\alpha]_D$ -60 ($CHCl_3$).

19,20-Diepimer: ***Raumitorine***
[549-74-6]
$C_{22}H_{26}N_2O_4$ 382.458
Alkaloid from *Rauwolfia vomitoria* (Apocynaceae). Needles (MeOH). Mp 138°. $[\alpha]_D^{20}$ +60 (c, 0.54 in $CHCl_3$).

Goutarel, R. *et al., Bull. Soc. Chim. Fr.*, 1954, 1481-1482 (*Raumitorine*)
Stoll, A. *et al., Helv. Chim. Acta*, 1955, **38**, 270-283 (*isol, uv, ir, struct*)
Shamma, M. *et al., J.A.C.S.*, 1963, **85**, 2507-2512 (*stereochem*)
Finch, N. *et al., Tetrahedron*, 1966, **22**, 1327-1337 (*uv, ord, stereochem*)
Douzoua, L.L. *et al., Ann. Pharm. Fr.*, 1972, **30**, 199-204; *CA*, **77**, 72560v (*Cabucine*)
Sakai, S. *et al., Yakugaku Zasshi*, 1978, **98**, 850-862; *CA*, **89**, 197771u (*synth*)

Aristo red A-1424

[27323-39-3]

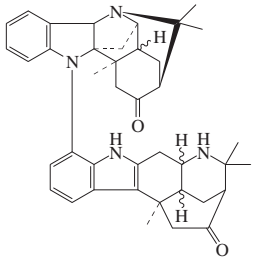


$C_{19}H_{15}NO_6$ 353.331
Alkaloid from *Aristolochia reticulata*, *Aristolochia serpentaria*, and from the roots of *Aristolochia bracteata* (Aristolochiaceae). Red needles (EtOH). Mp 286.5-287.5°.

Coutts, R.T. *et al., J.C.S.*, 1957, 4120-4124 (*isol, uv*)
Jagannadha Rao, K.V. *et al., Curr. Sci.*, 1958, **27**, 168; *J. Sci. Ind. Res., Sect. B*, 1959, **18**, 245; *CA*, **52**, 20421f; **54**, 14373a (*isol*)
Coutts, R.T. *et al., J. Pharm. Pharmacol.*, 1959, **11**, 607-617 (*isol*)

Aristoaristone A-1425

[155210-53-0]



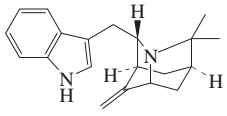
Relative Configuration

$C_{40}H_{46}N_4O_2$ 614.829
Alkaloid from *Aristotelia australasica* (Elaeocarpaceae).

Quirion, J.C. *et al., Nat. Prod. Lett.*, 1993, **2**, 41-48

Aristofruticosine A-1426

[116965-59-4]



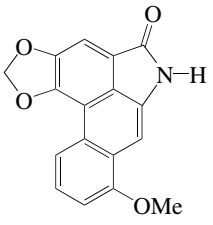
Absolute Configuration

$C_{20}H_{24}N_2$ 292.423
Unique 3-azatricyclo[3.3.1.$0^{3,7}$]nonane nucleus. Alkaloid from *Aristotelia fruticosa* (Elaeocarpaceae). Amorph. Mp 146° (synthetic). $[\alpha]_D^{15}$ +50.5 (c, 0.53 in $CHCl_3$). $[\alpha]_D^{25}$ +15.5 (c, 0.8 in $CHCl_3$) (synthetic).

Bick, I.R.C. *et al., Tet. Lett.*, 1988, **29**, 3355-3356 (*isol, pmr, ms, struct*)
Beerli, R. *et al., Helv. Chim. Acta*, 1991, **74**, 110-116 (*synth, ir, pmr, cmr, ms, abs config*)

Aristolactam I A-1427

8-Methoxybenzo[f]-1,3-benzodioxolo[6,5,4-cd]indol-5(6H)-one, 9CI. 10-Amino-8-methoxy-3,4-methylenedioxy-1-phenanthrenecarboxylic acid lactam. Aristolactam. Aristololactam
[13395-02-3]



$C_{17}H_{11}NO_4$ 293.278
Alkaloid from the roots of *Aristolochia argentina* and *Aristolochia indica*, and from the tubers of *Aristolochia rotunda*, also isol. from *Aristolochia debilis* and the Chinese drug Fang-chi (Aristolochiaceae). Cytotoxic. Yellow cryst. (by subl.). Mp 315-317°.

▶ DE5375000

N-*β-D-Glucopyranosyl:* ***Aristolactam I* N-*glucoside***
[17413-41-1]
$C_{23}H_{21}NO_9$ 455.42
Alkaloid from *Aristolochia indica*, *Aristolochia longa*, *Aristolochia contorta*, *Aristolochia kankunensis* and *Aristolochia tuberosa* (Aristolochiaceae). Pale yellow needles (MeOH aq.). Mp 331-333°. $[\alpha]_D^{25}$ -14 (c, 0.02 in H_2O) (c, 0.11 in DMF). λ_{max} 238 (ε 30900); 243 (ε 33200); 249 (ε 31400); 258 (ε 36500); 290 (ε 15300); 298 (ε 15200); 328 (ε 9521) (EtOH) (Derep). λ_{max} 214 ; 242 ; 260 ; 290 ; 330 ; 396 (MeOH) (Berdy).

N-*β-D-Glucopyranosyl, tetra*-O-*Ac:*
Pale yellow cryst. (MeOH/$CHCl_3$). Mp 287-289°. $[\alpha]_D^{25}$ -97 (c, 0.12 in $CHCl_3$).

N-*[4-Hydroxy*-E-*cinnamoyl-(→6)-β-D-glucopyranosyl]:* ***Aristolactam I* N-*(6′*-trans-p-*coumaroyl)-β-D-glucopyranoside***
$C_{32}H_{27}NO_{11}$ 601.565
Alkaloid from roots of *Aristolochia contorta* (Aristolochiaceae). Exhibits significant antibacterial activity against gram-positive bacteria. Yellow needles. Mp 260-264°. $[\alpha]_D^{20}$ -20.2 (c, 0.043 in MeOH). λ_{max} 208 ; 235 ; 295 ; 390 (MeOH) (Berdy).

O-*De-Me:* ***Aristolactam Ia***
[85814-30-8]
$C_{16}H_9NO_4$ 279.251
Alkaloid from the rhizomes of *Aristolochia argentina* and from *Aristolochia longa*, *Aristolochia indica*, *Aristolochia kankunensis* and *Stephania cepharantha*. Cryst. (AcOH). Mp 350°. λ_{max} 210 ; 238 ; 243 ; 250 ; 260 ; 292 ; 298 (MeOH) (Berdy).

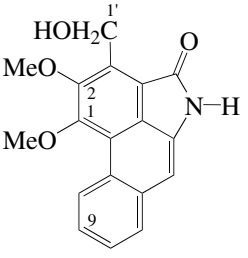
O-*De-Me,* N-*β-D-glucopyranosyl:* ***Aristolactam Ia* N-*β-D-glucoside***
[213530-43-9]
$C_{22}H_{19}NO_9$ 441.393
Alkaloid from *Aristolochia foveolata*. Yellow powder (MeOH). Mp >280°.

O-*De-Me,* O-*β-D-glucopyranoside: Aristolactam Ia* O-*glucoside.* ***Manshurienine B***
$C_{22}H_{19}NO_9$ 441.393
Alkaloid from the stems of *Aristolochia manshuriensis*. Yellow powder. Mp 292-293°. $[\alpha]_D^{25}$ -10.5 (c, 0.2 in MeOH). λ_{max} 246 ; 264 ; 275 ; 318 (MeOH).

Tomita, M. *et al., Yakugaku Zasshi*, 1959, **79**, 973; 1470 (*isol, uv, ir*)
Carboni, S. *et al., Gazz. Chim. Ital.*, 1966, **96**, 641 (*isol*)
Kupchan, S.M. *et al., J.O.C.*, 1968, **33**, 3735 (*isol, uv, ir, pmr, struct, glucoside*)
Priestap, H.A. *et al., An. Asoc. Quim. Argent.*, 1971, **59**, 245; *CA*, **76**, 43943n (*isol*)
Zhu, D. *et al., Zhongcaoyao*, 1981, **12**, 529; *CA*, **97**, 39261p (*isol, glucoside*)
Priestap, H.A. *et al., Phytochemistry*, 1985, **24**, 849-852 (*isol, uv, ir, pmr, ms, struct*)
Lee, H.S. *et al., J. Nat. Prod.*, 1992, **55**, 1165 (*glucosides*)
Leu, Y.-L. *et al., J. Chin. Chem. Soc. (Taipei)*, 1998, **45**, 539-541 (*Aristolactam Ia N-glucoside*)
Wu, T.-S. *et al., Chem. Pharm. Bull.*, 2000, **48**, 1006-1009 (*activity*)
Zhang, Y.-T. *et al., Helv. Chim. Acta*, 2006, **89**, 2665-2670 (*Manshurienine B*)

Aristolactam C II A-1428

[106283-30-1]



$C_{18}H_{15}NO_4$ 309.321
Struct. revised in 1988. CAS numbering shown. Alternative (phenanthrene) numbering frequently used, in which 1,2,9- become 4,3,6- respectively. Alkaloid from the rhizomes of *Aristolochia argentina* (Aristolochiaceae). Pale yellow needles (C_6H_6). Mp 190°.

N,O-*Di-Ac:* Mp 207-208°.

1′-Carboxylic acid, O^2*-de-Me:* ***Aristolactam D II***
[106283-33-4]
$C_{17}H_{11}NO_5$ 309.278
Alkaloid from the rhizomes of *Aristolochia argentina*. Yellow needles (DMSO/propanol). Mp 278-280°. Struct. revised in 1988.

9-Hydroxy, O^2*-de-Me:* ***Aristoliukine A***
$C_{17}H_{13}NO_5$ 311.293
Alkaloid from *Aristolochia kaempferi*. Yellowish needles (MeOH). Mp 274-276°. λ_{max} 239 ; 256 ; 280 (sh) ; 345 (sh) ; 404 (MeOH).

9-Methoxy: ***Aristolactam C III***
[106283-32-3]
$C_{19}H_{17}NO_5$ 339.347

Alkaloid from *Aristolochia argentina* rhizomes (Aristolochiaceae). Yellow needles (C_6H_6). Mp 230-235°.

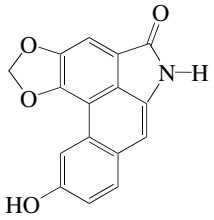
9-Methoxy, O^2*-de-Me:* ***Aristolactam C IV***
$C_{18}H_{15}NO_5$ 325.32
Alkaloid from *Aristolochia heterophylla*. Yellowish needles. Mp 206-207°. λ_{max} 207 (log ϵ 4.54); 239 (log ϵ 4.56); 253 (log ϵ 4.47); 281 (log ϵ 4.33); 293 (log ϵ 4.34); 316 (sh) (log ϵ 4.09); 399 (log ϵ 3.63) (MeOH).

9-Methoxy, 1′-carboxylic acid, O^2*-de-Me:* ***Aristolactam D III***
[106283-35-6]
$C_{18}H_{13}NO_6$ 339.304
Trace alkaloid from rhizomes of *Aristolochia argentina*.

Priestap, H.A. *et al., Phytochemistry*, 1985, **24**, 3035 (*isol, uv, ir, pmr, cmr, ms*)
Talapatra, S.K. *et al., Phytochemistry*, 1988, **27**, 903 (*struct*)
Wu, T.S. *et al., Chem. Pharm. Bull.*, 1998, **46**, 1624-1626 (*Aristoliukine A*)
Wu, T.-S. *et al., Chem. Pharm. Bull.*, 2000, **48**, 357-361 (*Aristolactam C IV*)

Aristolactam IIIa A-1429

10-Hydroxybenzo[f]-1,3-benzodioxolo[6,5,4-cd]indol-5(6H)-one, 9CI
[97399-89-8]



$C_{16}H_9NO_4$ 279.251
Alkaloid from *Aristolochia tuberosa* and from the rhizomes of *Aristolochia argentina* (Aristolochiaceae). Cytotoxic. Cryst. (AcOH). Mp 350°.

O-*β-D-Glucopyranoside: Aristolactam IIIa* O-*glucoside.* ***Manshurienine A***
$C_{22}H_{19}NO_9$ 441.393
Alkaloid from the stems of *Aristolochia manshuriensis*. Yellow powder. Mp 236-237°. $[\alpha]_D^{25}$ -8.5 (c, 0.2 in MeOH). λ_{max} 238 ; 253 ; 280 ; 324 (MeOH).

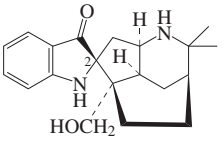
N-*β-D-Glucopyranosyl:* ***Aristolactam IIIa N-glucoside***
[80311-26-8]
$C_{22}H_{19}NO_9$ 441.393
Alkaloid from the roots of *Aristolochia indica* and from *Aristolochia tuberosa* (Aristolochiaceae). Deep brown amorph. powder. Mp 320°.

Me ether: ***Aristolactam III***
[81451-90-3]
$C_{17}H_{11}NO_4$ 293.278
Alkaloid from the rhizomes of *Aristolochia argentina* (Aristolochiaceae). Cryst. (AcOH). Mp 297-304°.

Achari, B. *et al., Phytochemistry*, 1981, **20**, 1444 (*isol, ir, pmr, ms, struct, glucoside*)
Zhu, D. *et al., Zhongcaoyao*, 1981, **12**, 529; *CA*, **97**, 39261p (*isol*)
Priestap, H.A. *et al., Phytochemistry*, 1985, **24**, 849 (*isol, uv, ir, pmr, ms, struct*)
Wu, T.-S. *et al., Chem. Pharm. Bull.*, 2000, **148**, 1006-1009 (*activity*)
Nascimento, I.R. *et al., Phytochemistry*, 2003, **63**, 953-957 (*glucoside*)
Zhang, Y.-T. *et al., Helv. Chim. Acta*, 2006, **89**, 2665-2670 (*Manshurienine A*)

Aristolarine A-1430

[90930-69-1]



Absolute Configuration

$C_{20}H_{26}N_2O_2$ 326.438
Alkaloid from *Aristotelia peduncularis* (Elaeocarpaceae). Yellow cryst. Mp 181-185.5°. $[\alpha]_D$ +264 (c, 1.12 in $CHCl_3$) (synthetic). λ_{max} 233 (sh) (log ϵ 4.24); 236 (log ϵ 4.24); 256 (sh) (log ϵ 3.8); 266 (sh) (log ϵ 3.63); 290 (sh) (log ϵ 3.07); 325 (sh) (log ϵ 2.89) (EtOH).

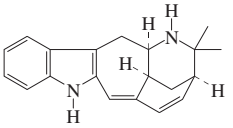
Deoxy: ***Aristotelone***
[59863-01-3]
$C_{20}H_{26}N_2O$ 310.438
Minor alkaloid from the leaves and stems of *Aristotelia chilensis* (Elaeocarpaceae). Also obt. from Serratoline, S-259 by boiling with dil. acid. Cryst. (MeOH). Mp 218-222°. $[\alpha]_D$ +41 ($CHCl_3$).

2-Epimer, deoxy: ***2-Epiaristotelone***
[144789-06-0]
$C_{20}H_{26}N_2O$ 310.438
Alkaloid from *Aristotelia chilensis.*

Bhakuni, D.S. *et al., Phytochemistry*, 1976, **15**, 574-575 (*Aristotelone*)
Kyburz, R. *et al., Helv. Chim. Acta*, 1984, **67**, 804-814 (*Aristolarine*)
Gueller, R. *et al., Helv. Chim. Acta*, 1993, **76**, 1847-1862 (*Aristotelone, synth*)
Stoermer, D. *et al., J.O.C.*, 1993, **58**, 564-568 (*Aristotelone, synth*)
He, K. *et al., Int. J. Pharmacogn.*, 1997, **35**, 215-217 (*2-Epiaristotelone*)

Aristolasene A-1431

[119459-70-0]



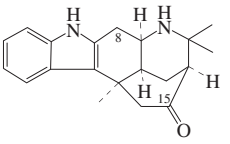
Relative Configuration

$C_{20}H_{22}N_2$ 290.407
Minor alkaloid from the aerial parts of *Aristotelia australasica* (Elaeocarpaceae). Yellow oil. $[\alpha]_D^{20}$ +493 (c, 0.9 in $CHCl_3$). λ_{max} 215 (log ϵ 4.13); 262 (log ϵ 3.9); 330 (log ϵ 3.89) (EtOH).

Quirion, J.C. *et al., Phytochemistry*, 1988, **27**, 3337-3339 (*isol, uv, ir, pmr, ms, struct*)

Aristolasicone A-1432

[117611-47-9]



Absolute Configuration

$C_{20}H_{24}N_2O$ 308.422
New inverted indole subgroup of Aristotelia alkaloids. Revised struct. (1992). Formerly assigned as 15-Oxoaristoteline. Alkaloid from *Aristotelia australasica* (Elaeocarpaceae). Mp 205-210°. $[\alpha]_D$ -161.

*15*R-*Alcohol:* ***Aristolasicol***
[117611-48-0]
$C_{20}H_{26}N_2O$ 310.438
Alkaloid from aerial parts of *Aristotelia australasica* (Elaeocarpaceae). Amorph. $[\alpha]_D^{20}$ +20.3 (c, 0.77 in $CHCl_3$). Revised struct. Prev. descr. as 15-hydroxyaristoteline. λ_{max} 226 (log ϵ 4.41); 282 (log ϵ 3.84); 289 (log ϵ 3.78) (EtOH).

Deoxo: ***Alloaristoteline****. Deoxoaristolasicone*
[117678-03-2]
$C_{20}H_{26}N_2$ 294.439
Alkaloid from *Aristotelia australasica* (Eleocarpaceae). Cryst. (THF/cyclohexane/Et_3N). Mp 219.5° (211.5-214°). $[\alpha]_D^{20}$ -32 (c, 1.4 in $CHCl_3$). Struct. revised in 1991. Previously descr. as 11-Epiaristoteline. λ_{max} 226 (log ϵ 4.32); 282 (log ϵ 3.85); 290 (log ϵ 3.8) (EtOH).

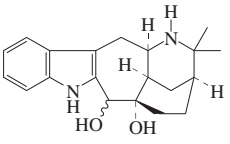
*8-Hydroxy, 15*R-*alcohol:* ***Aristolasicolone***
[117611-50-4]
$C_{20}H_{26}N_2O_2$ 326.438
Alkaloid from aerial parts of *Aristotelia australasica* (Elaeocarpaceae). Amorph. $[\alpha]_D^{20}$ -150 (c, 0.45 in $CHCl_3$). Revised struct. Previously descr. as 15-hydroxyaristotelinone. λ_{max} 213 (log ϵ 4.26); 244 (log ϵ 4.13); 266 (log ϵ 2.99); 301 (log ϵ 3.94) (EtOH).

[134779-80-9]

Kan-Fan, C. *et al., Tetrahedron*, 1988, **44**, 1651-1660 (*Aristolasicol, Aristolasicolone*)
Burkard, S. *et al., Helv. Chim. Acta*, 1991, **74**, 275-289; 1636-1642 (*synth, struct, bibl*)
Quirion, J.C. *et al., J.O.C.*, 1992, **57**, 5848-5851 (*Alloaristoteline, pmr, cmr, cryst struct*)
Gueller, R. *et al., Tetrahedron: Asymmetry*, 1992, **3**, 1197-1204 (*Alloaristoteline, synth, abs config*)
Stoermer, D. *et al., J.O.C.*, 1993, **58**, 564-568 (*synth, Alloaristoteline*)

Aristolasol A-1433

[119483-74-8]



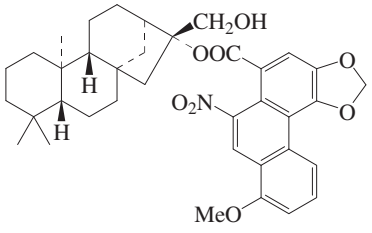
Relative Configuration

$C_{20}H_{26}N_2O_2$ 326.438
Minor alkaloid from the aerial parts of *Aristotelia australasica* (Elaeocarpaceae). Oil. $[\alpha]_D^{20}$ +36 (c, 0.6 in $CHCl_3$). λ_{max} 222 (log ϵ 4.33); 281 (log ϵ 3.85); 289 (log ϵ 3.83) (EtOH).

Quirion, J.C. *et al., Phytochemistry*, 1988, **27**, 3337-3339 (*isol, uv, ir, pmr, cmr, ms, struct*)

Aristolin A-1434

[1398-05-6]

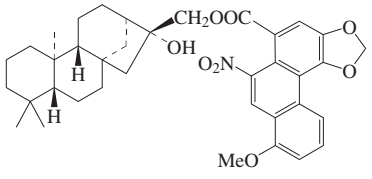


$C_{37}H_{43}NO_8$ 629.749
Ester of 8-Methoxy-3,4-methylenedioxy-10-nitro-1-phenanthrenecarboxylic acid, M-262 with 16,17-Kauranediol. Constit. of *Aristolochia elegans* and *Aristolochia pubescens.* Yellow cryst. ($CHCl_3$). Mp 119-120°. $[\alpha]_D^{25}$ -63.9 (c, 0.04 in $CHCl_3$). λ_{max} 226 (log ϵ 4.19); 254 (log ϵ 4.14); 321 (log ϵ 3.93); 390 (log ϵ 3.8) (no solvent reported).

Wu, T.S. *et al., J. Nat. Prod.*, 2002, **65**, 1522-1525 (*isol, pmr, cmr*)
Nascimento, I.R. *et al., Phytochemistry*, 2003, **63**, 953-957 (*isol, cmr*)

Aristoloin I A-1435

[611211-57-5]



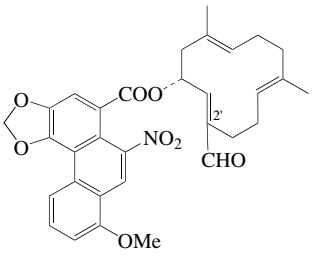
$C_{37}H_{43}NO_8$ 629.749
Ester of 8-Methoxy-3,4-methylenedioxy-10-nitro-1-phenanthrenecarboxylic acid, M-262 with 16,17-Kauranediol. Alkaloid from the tubercula of *Aristolochia pubescens.* Amorph. yellow solid. $[\alpha]_D^{25}$ -42.1 (c, 0.2 in $CHCl_3$). λ_{max} 223 (log ϵ 4.42); 256 (log ϵ 4.24); 289 (log ϵ 4.06); 316 (log ϵ 3.86); 389 (log ϵ 3.68) (MeOH).

Demethoxy: ***Aristoloin II***
[611211-59-7]
$C_{36}H_{41}NO_7$ 599.722
Alkaloid from the tubercula of *Aristolochia pubescens.* Amorph. yellow solid. $[\alpha]_D^{25}$ -53.4 (c, 0.16 in $CHCl_3$). λ_{max} 219 (log ϵ 4.28); 250 (log ϵ 4.19); 314 (log ϵ 3.8); 387 (log ϵ 3.5) (MeOH).

Nascimento, I.R. *et al., Phytochemistry*, 2003, **63**, 953-957 (*isol, pmr, cmr*)

Aristoloterpenate I A-1436

[184955-22-4]



$C_{32}H_{31}NO_8$ 557.599
Constit. of *Aristolochia mollissima* and *Aristolochia heterophylla*. Yellow needles (Me_2CO). Mp 247-249°. $[\alpha]_D$ -39.5 (c, 0.02 in $CHCl_3$). Ester of 8-Methoxy-3,4-methylenedioxy-10-nitro-1-phenanthrenecarboxylic acid, M-262. Abs. config. revised in 1999. λ_{max} 226 (log ϵ 4.5); 239 (log ϵ 4.4); 250 (log ϵ 4.36); 268 (log ϵ 4.21); 287 (log ϵ 3.98); 322 (log ϵ 3.99); 393 (log ϵ 3.76) (MeOH). λ_{max} 226 ; 239 ; 250 ; 268 ; 287 ; 322 ; 393 (MeOH) (Berdy).

*2′*E*-Isomer:* ***Aristoloterpenate III***
[222412-32-0]
$C_{32}H_{31}NO_8$ 557.599
Constit. of *Aristolochia heterophylla*. Yellow needles (Me_2CO). Mp 245-247°. $[\alpha]_D$ -86 (c, 0.038 in $CHCl_3$). λ_{max} 225 (log ϵ 4.31); 251 (log ϵ 4.31); 267 (log ϵ 4.18); 284 (log ϵ 3.98); 321 (log ϵ 3.96); 391 (log ϵ 3.74) (MeOH).

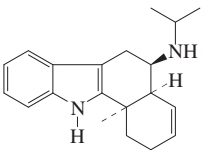
8-Demethoxy: ***Aristoloterpenate II***
[222403-62-5]
$C_{31}H_{29}NO_7$ 527.573
Constit. of *Aristolochia heterophylla*. Yellow needles (Me_2CO). Mp 241-243°. $[\alpha]_D$ -35.4 (c, 0.016 in $CHCl_3$). Ester of 3,4-Methylenedioxy-10-nitro-1-phenanthrenecarboxylic acid, M-447. λ_{max} 226 (log ϵ 4.57); 241 (log ϵ 4.46); 250 (log ϵ 4.41); 267 (log ϵ 4.27); 283 (log ϵ 4.08); 321 (log ϵ 4.05); 392 (log ϵ 3.82) (MeOH).

*8-Demethoxy, 2′*E*-isomer:* ***Aristoloterpenate IV***
[222403-63-6]
$C_{31}H_{29}NO_7$ 527.573
Constit. of *Aristolochia heterophylla*. Yellow needles (Me_2CO). Mp 234-236°. $[\alpha]_D$ -88.3 (c, 0.011 in $CHCl_3$). λ_{max} 210 (log ϵ 4.6); 219 (log ϵ 4.62); 243 (log ϵ 4.57); 251 (log ϵ 4.6); 266 (log ϵ 4.44); 298 (log ϵ 4.17); 375 (log ϵ 3.74) (MeOH). λ_{max} 210 ; 219 ; 243 ; 251 ; 266 ; 298 ; 375 (MeOH) (Berdy).

Wu, T.-S. *et al., J. Nat. Prod.*, 1999, **62**, 415-418 (*isol, uv, ir, pmr, cmr, ms*)

Aristomakine A-1437

[80787-63-9]



Probable Absolute Configuration

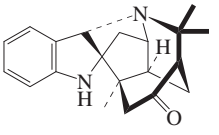
$C_{20}H_{26}N_2$ 294.439
Not apparently related biogenetically to the Aristotelia group of alkaloids. Abs. config. based on biogemetic considerations. Alkaloid from *Aristotelia serrata* (Elaeocarpaceae). Noncryst. $[\alpha]_D^{22}$ -79.1 (c, 1.5 in $CHCl_3$).

N-*Deisopropyl:* ***Aristomakinine***
$C_{17}H_{20}N_2$ 252.358
Alkaloid from *Aristotelia serrata* (Elaeocarpaceae). Amorph. $[\alpha]_D^{19}$ -72 ($CHCl_3$).

Bick, I.R.C. *et al., Tet. Lett.*, 1981, **22**, 3275-3276 (*ms, pmr, cmr, struct*)
Bick, I.R.C. *et al., Alkaloids (Academic Press)*, 1985, **24**, 113-151 (*rev, Aristomakinine*)
Burkard, S. *et al., Helv. Chim. Acta*, 1990, **73**, 298-302 (*Aristomakine, Aristomakinine, synth*)

Aristone A-1438

[66833-17-8]



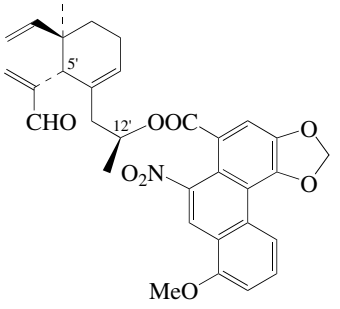
Relative Configuration

$C_{20}H_{24}N_2O$ 308.422
Trace alkaloid from *Aristotelia chilensis*, also isol. from aerial parts of *Aristotelia australasica* (Elaeocarpaceae). Mp 240-242° Mp 268-270°. $[\alpha]_D^{20}$ -130 (c, 0.4 in $CHCl_3$). λ_{max} 213 (log ϵ 3.85); 239 (log ϵ 2.32); 293 (log ϵ 0.8) (EtOH).

Bittner, M. *et al., Chem. Comm.*, 1978, 79-80 (*uv, struct*)
Zabel, V. *et al., J.C.S. Perkin 1*, 1980, 2842-2844 (*cryst struct*)
Quirion, J.-C. *et al., J.O.C.*, 1987, **52**, 4527-4530 (*isol, uv, ir, pmr, cmr, ms*)

Aristophyllide A A-1439

[221148-60-3]



$C_{32}H_{31}NO_8$ 557.599
Alkaloid from *Aristolochia heterophylla*. Yellow needles. Mp 226-228°. $[\alpha]_D$ +120 (c, 0.02 in $CHCl_3$). λ_{max} 224 (log ϵ 4.34); 251 (log ϵ 4.16); 266 (log ϵ 4.07); 283 (log ϵ 3.86); 320 (log ϵ 3.82); 390 (log ϵ 3.59) (MeOH).

5′,12′-Diepimer: ***Aristophyllide B***
[221148-61-4]
$C_{32}H_{31}NO_8$ 557.599
Constit. of *Aristolochia heterophylla*. Yellow needles. Mp 229-231°. $[\alpha]_D$ -79

(c, 0.02 in $CHCl_3$). λ_{max} 224 (log ϵ 4.55); 249 (log ϵ 4.4); 268 (log ϵ 4.28); 283 (log ϵ 4.04); 318 (log ϵ 4.04); 390 (log ϵ 3.79) (MeOH).

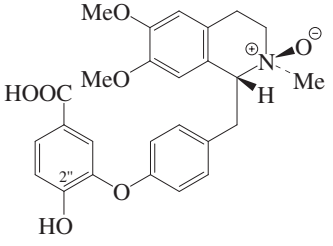
Demethoxy: ***Aristophyllide C***
[221148-62-5]
$C_{31}H_{29}NO_7$ 527.573
Alkaloid from *Aristolochia heterophylla*. Yellow needles. Mp 217-219°. $[\alpha]_D$ +113 (c, 0.06 in $CHCl_3$). λ_{max} 218 (log ϵ 4.33); 243 (log ϵ 4.32); 252 (log ϵ 4.37); 266 (log ϵ 4.2); 298 (log ϵ 3.98); 377 (log ϵ 3.48) (MeOH).

5′,12′-Diepimer, demethoxy: ***Aristophyllide D***
[221148-63-6]
$C_{31}H_{29}NO_7$ 527.573
Alkaloid from *Aristolochia heterophylla*. Yellow needles. Mp 220-222°. $[\alpha]_D$ -100 (c, 0.01 in $CHCl_3$). λ_{max} 219 (log ϵ 4.6); 242 (log ϵ 4.55); 252 (log ϵ 4.61); 266 (log ϵ 4.47); 297 (log ϵ 4.19); 355 (log ϵ 3.76); 373 (log ϵ 3.73) (MeOH).

Wu, T.-S. *et al., J. Nat. Prod.*, 1999, **62**, 348-351 (*isol, uv, ir, pmr, cmr, ms*)

Aristoquinoline C A-1440

[710319-87-2]



$C_{26}H_{27}NO_7$ 465.502
Alkaloid from *Aristolochia elegans*. Yellowish syrup. $[\alpha]_D^{25}$ -52 (c, 0.01 in MeOH). λ_{max} 248 (log ϵ 4.24); 274 (log ϵ 3.85) (MeOH).

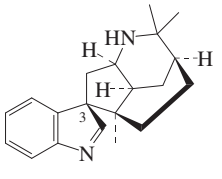
2″-Me ether: ***Aristoquinoline B***
[710319-86-1]
$C_{27}H_{29}NO_7$ 479.529
Alkaloid from *Aristolochia elegans*. Yellowish syrup. $[\alpha]_D^{25}$ -77.1 (c, 0.016 in MeOH). λ_{max} 235 (log ϵ 4.2); 280 (log ϵ 3.75) (MeOH).

N-*Epimer, 2″-Me ether:* ***Aristoquinoline A***
[710319-85-0]
$C_{27}H_{29}NO_7$ 479.529
Alkaloid from *Aristolochia elegans*. Yellowish syrup. $[\alpha]_D^{25}$ -31.1 (c, 0.03 in MeOH). λ_{max} 234 (log ϵ 4.26); 284 (log ϵ 3.75) (MeOH).

Shi, L.-S. *et al., Bioorg. Med. Chem.*, 2004, **12**, 439-446 (*isol, pmr, cmr, ms*)

Aristoserratenine A-1441

[95727-41-6]



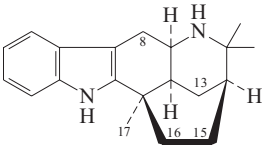
Absolute Configuration

$C_{20}H_{26}N_2$ 294.439
Alkaloid from *Aristotelia serrata* (Elaeocarpaceae). Amorph. $[\alpha]_D^{19}$ +58 ($CHCl_3$). λ_{max} 226 (log ϵ 4.38); 259 (log ϵ 3.57) (MeOH).

3-Epimer: ***3-Epiaristoserratenine***
[117678-05-4]
$C_{20}H_{26}N_2$ 294.439
Alkaloid from aerial parts of *Aristotelia australasica* (Elaeocarpaceae). Amorph. $[\alpha]_D$ +36 (c, 0.8 in $CHCl_3$). λ_{max} 226 (log ϵ 4.35); 258 (log ϵ 3.58) (EtOH).

Hai, M.A. *et al., Tetrahedron*, 1984, **40**, 4359-4361 (*Aristoserratenine, isol, uv, ir, pmr, cmr, struct*)
Kan-Fan, C. *et al., Tetrahedron*, 1988, **44**, 1651-1660 (*3-Epiaristoserratenine*)

Aristoteline A-1442



$C_{20}H_{26}N_2$ 294.439

(+)-form [57103-59-0]
Major alkaloid from *Aristotelia serrata, Aristotelia peduncularis* and from the leaves and stems of *Aristotelia chilensis* (Elaeocarpaceae). Shows hypotensive props., reduced pulse rate. Cryst. (MeOH). Mp 164°. $[\alpha]_D^{20}$ +16 (MeOH). $[\alpha]_D^{22}$ +23 (c, 1.84 in $CHCl_3$). λ_{max} 228 (log ϵ 4.52); 283 (log ϵ 3.88); 289 (sh) (log ϵ 3.81) (EtOH).

9,10-Didehydro: ***9,10-Dehydroaristoteline***
[117611-51-5]
$C_{20}H_{24}N_2$ 292.423
Alkaloid from aerial parts of *Aristotelia australasica* (Elaeocarpaceae). Amorph. $[\alpha]_D^{20}$ +272 (c, 0.8 in $CHCl_3$). λ_{max} 223 (log ϵ 4.82); 275 (log ϵ 4.2); 281 (log ϵ 4.2); 290 (log ϵ 4.14) (EtOH).

17-Hydroxy: ***Aristocarbinol***. *17-Hydroxyaristoteline*
[117611-49-1]
$C_{20}H_{26}N_2O$ 310.438
Alkaloid from aerial parts of *Aristotelia australasica* (Elaeocarpaceae). Amorph. $[\alpha]_D^{20}$ +4.3 (c, 0.7 in $CHCl_3$). Struct. needs reinvestigating after struct. revision of Aristolasicol. λ_{max} 226 (log ϵ 4.3); 280 (log ϵ 3.79) (EtOH).

8-Oxo: ***Aristotelinone***
[74260-87-0]
$C_{20}H_{24}N_2O$ 308.422
Minor alkaloid from *Aristotelia serrata* (Elaeocarpaceae). Fine needles. Mp 320°. $[\alpha]_D^{19}$ +122.7 (MeOH/$CHCl_3$ 1:1). Crystal change to larger needles at *ca.* 255°.

8-Oxo, 9,10-didehydro: ***Makonine***
[79592-57-7]
$C_{20}H_{22}N_2O$ 306.407
Alkaloid from *Aristotelia serrata* (Elaeocarpaceae). Cryst. (MeOH). Mp 310-312° dec. $[\alpha]_D^{19}$ +431.1 (c, 0.93 in MeOH + $CHCl_3$).

13-Oxo: ***Aristoserratine***
[76202-18-1]
$C_{20}H_{24}N_2O$ 308.422
Minor alkaloid from *Aristotelia peduncularis* and *Aristotelia serrata* (Elaeocarpaceae). Mp 199°. $[\alpha]_D^{19}$ +22.5 (c, 1.9 in $CHCl_3$). λ_{max} 228 (log ϵ 4.42); 282 (log ϵ 3.82); 290 (log ϵ 3.75) (EtOH).

13-Oxo, 15,16-didehydro: ***Peduncularistine***
[90930-65-7]
$C_{20}H_{22}N_2O$ 306.407
Alkaloid from *Aristotelia peduncularis* (Elaeocarpaceae). Amorph. λ_{max} 228 (log ϵ 4.56); 278 (sh) (log ϵ 3.89); 286 (log ϵ 3.93); 294 (log ϵ 3.88) (EtOH).

(-)-form
Alkaloid from *Aristotelia chilensis* (Elaeocarpaceae). Mp 164-165°. $[\alpha]_D^{25}$ -23 (c, 0.3 in $CHCl_3$). Not indexed by CAS.

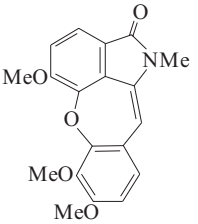
(±)-form [79171-58-7]
Synthetic. Mp 173-175°.

13-Oxo: Synthetic. Yellow amorph. powder.

Anderson, B.F. *et al., Chem. Comm.*, 1975, 511-512 (*cryst struct*)
Bhakuni, D.S. *et al., Phytochemistry*, 1976, **15**, 574-575 (*isol, uv, ir, pmr, ms*)
Hai, M.A. *et al., Helv. Chim. Acta*, 1980, **63**, 2130-2134 (*Aristoserratine*)
Bick, I.R.C. *et al., Tet. Lett.*, 1980, **21**, 545-546 (*Aristotelinone*)
Kyburz, R. *et al., Helv. Chim. Acta*, 1981, **64**, 2555-2561 (*isol, uv, ir, pmr, ms, cd*)
Bick, I.R.C. *et al., Heterocycles*, 1981, **16**, 1301-1303 (*Makonine*)
Mirand, C. *et al., J.O.C.*, 1982, **47**, 4169-4170 (*synth*)
Bick, I.R.C. *et al., Aust. J. Chem.*, 1983, **36**, 1037-1042 (*Aristoserratine, cryst struct*)
Stevens, R.V. *et al., Chem. Comm.*, 1983, 384-386 (*synth*)
Kyburz, R. *et al., Helv. Chim. Acta*, 1984, **67**, 804-818 (*Peduncularistine*)
Gribble, G.W. *et al., J.O.C.*, 1985, **50**, 5900-5902 (*synth, ir, pmr, cmr, ms*)
Kan-Fan, C. *et al., Tetrahedron*, 1988, **44**, 1651-1660 (*Aristocarbinol, 9,10-Dehydroaristoteline*)
Burkard, S. *et al., Helv. Chim. Acta*, 1989, **72**, 254-263 (*Aristoserratine*)
Quirion, J.-C. *et al., J.O.C.*, 1992, **57**, 5848-5851 (*pmr, cmr, struct*)
Stoermer, D. *et al., J.O.C.*, 1993, **58**, 564-568 (*synth*)

Aristoyagonine A-1443

[95377-98-3]



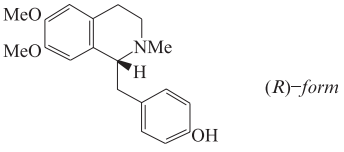
$C_{19}H_{17}NO_5$ 339.347
Alkaloid from *Sarcocapnos enneaphylla* (Papaveraceae). Yellow needles (MeOH). Mp 165-166°. λ_{max} 220 ; 230 ; 250 ; 296 ; 330 (sh) (EtOH).

Campello, M.J. *et al., Tet. Lett.*, 1984, **25**, 5933

(*uv, ir, pmr, cmr, ms*)
de Lera, A.R. *et al., J. Het. Chem.*, 1987, **24**, 313 (*synth*)
Tojo, E. *et al., Phytochemistry*, 1991, **30**, 1005-1010 (*isol, uv, ir, pmr, cmr, ms*)
Moreau, A. *et al., J.O.C.*, 2004, **69**, 4527-4530 (*synth*)

Armepavine A-1444

4-[(1,2,3,4-Tetrahydro-6,7-dimethoxy-2-methyl-1-isoquinolinyl)methyl]phenol, 9CI. 1,2,3,4-Tetrahydro-1-(4-hydroxybenzyl)-6,7-dimethoxyisoquinoline. Evoeuropine



(*R*)–*form*

$C_{19}H_{23}NO_3$ 313.396

(*R*)-*form* [524-20-9]
Alkaloid from *Papaver armeniacum* and many other spp. in several different families (Papaveraceae). Convulsive and irritant agent. Shows no spasmolytic, parasympatholytic or anaesthetic props. Produces cardiac irregularity. Mp 148-149° (138-148°). $[\alpha]_D^{18}$ -109 ($CHCl_3$).

Hydrochloride: Mp 151-152°.

Me ether: ***(-)-O-Methylarmepavine***
[5701-00-8]
$C_{20}H_{25}NO_3$ 327.422
Alkaloid from *Discaria serratifolia, Xylopia pancheri* and *Aconitum leucostomum* (Rhamnaceae, Annonaceae, Ranunculaceae). Cryst. (petrol). Mp 65°. $[\alpha]_D^{20}$ -81 (c, 1.2 in $CHCl_3$).

Me ether, N-*oxide:* **N-*Methylarmepavine* N-*oxide***
$C_{20}H_{25}NO_4$ 343.422
Alkaloid from *Xylopia pancheri* (Annonaceae). Cryst. (Me_2CO). Mp 170-172°. $[\alpha]_D$ -7.9 (EtOH).

N-*De-Me:* ***Norarmepavine***. N-*Demethylarmepavine*. N-*Desmethylarmepavine*
$C_{18}H_{21}NO_3$ 299.369
Alkaloid from the wood of *Magnolia kachirachirai*. Mp 157-158°. $[\alpha]_D^{22}$ +31.5.

(*S*)-*form*
From reductive cleavage of dimeric isoquinoline alkaloids, e.g. Stepinonine. Mp 149-150°. $[\alpha]_D^{20}$ +118 ($CHCl_3$).

Me ether: ***(+)-O-Methylarmepavine***
[3423-02-7]
$C_{20}H_{25}NO_3$ 327.422
Alkaloid from *Annona squamosa* (sugar apple) and *Magnolia acuminata* (Annonaceae, Magnoliaceae). Cryst. (petrol). Mp 60-62°. $[\alpha]_D^{20}$ +85.

Me ether, hydrochloride:
Cryst. ($CHCl_3$/petrol). Mp 198-199°.

O,N-*Di-Me:* ***Zanoxyline***
[73529-17-6]
$C_{21}H_{28}NO_3$ 342.457
Quaternary alkaloid from the stem bark of *Zanthoxylum oxyphyllum*. Mp 128° (as iodide) (nat.) Mp 135-137° (sinters at 128°) (iodide) (synthetic). $[\alpha]_D^{20}$ +66.3 (MeOH) (hydroxide) (nat.). $[\alpha]_D^{24}$ +91.7 (c, 0.193 in MeOH) (iodide) (synthetic). No abs. config. was assigned to the natural alkaloid but from the reported opt. rotation it is clearly *S*-.

N-*De-Me:* Alkaloid from leaves and stems of *Nelumbo lutea* and wood of *Machilus kusanoi*. Weak mydriatic and local anaesthetic. Cryst. (Me_2CO). Mp 152-153°. $[\alpha]_D^{25}$ -23 (c, 1.33 in $CHCl_3$).

N-*De-Me, hydrochloride:*
Cryst. (MeOH). Mp 159-162°.

(±)-*form*
Synthetic. Mp 166°.

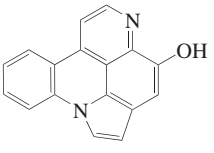
Me ether: [1934-93-6]
Synthetic. Prismatic needles (Et_2O). Mp 92° (62.5-63°).

O,N-*Di-Me:*
Small yellow prisms (MeOH)(as iodide). Mp 135-136° (iodide).

Marion, L. *et al., J.O.C.*, 1950, **15**, 216 (*deriv, synth*)
Tomita, M. *et al., Chem. Pharm. Bull.*, 1953, **1**, 10 (*deriv, synth*)
Ferrari, C. *et al., Tetrahedron*, 1962, **18**, 419 (*deriv, synth*)
Kupchan, S.M. *et al., Tetrahedron*, 1963, **19**, 227 (*isol, uv, ir, pmr, struct, Norarmepavine*)
Yang, T.H. *et al., Yakugaku Zasshi*, 1963, **83**, 22; *CA*, **59**, 3974d (*isol, uv, ir, struct, Norarmepavine*)
Kapadia, G.J. *et al., J. Pharm. Sci.*, 1964, **53**, 1140 (*deriv, isol, pmr, struct*)
Craig, J.C. *et al., Tetrahedron*, 1965, **21**, 401 (*ord*)
Tomita, M. *et al., Chem. Pharm. Bull.*, 1966, **14**, 232 (*ms*)
Albonico, S.M. *et al., J.C.S.(C)*, 1966, 1340 (*config*)
Cava, M.P. *et al., Tetrahedron*, 1969, **25**, 2795 (*synth*)
Bishay, D.W. *et al., Phytochemistry*, 1973, **12**, 693 (*isol, uv, ir, pmr, ms*)
Niéto, M. *et al., Planta Med.*, 1976, **30**, 48 (*oxide*)
Inubushi, Y. *et al., Chem. Pharm. Bull.*, 1977, **25**, 1636 (*synth*)
Sheth, J.P. *et al., Indian J. Chem., Sect. B*, 1977, **15**, 595 (*deriv, synth, ms*)
Shono, T. *et al., Tet. Lett.*, 1978, 4819 (*deriv, synth*)
Torres, R. *et al., J. Nat. Prod.*, 1979, **42**, 430 (*deriv, isol, uv, ir, pmr, ms*)
Tiwari, K.P. *et al., Phytochemistry*, 1979, **18**, 517 (*Zanoxyline*)
Bhaumik, P.K. *et al., Phytochemistry*, 1979, **18**, 1584 (*deriv, isol, uv, pmr*)
Marek, R. *et al., Coll. Czech. Chem. Comm.*, 1997, **62**, 1623-1630 (*isol, pmr, N-15 nmr, cryst struct*)
Marek, R. *et al., Magn. Reson. Chem.*, 1999, **37**, 195-202 (*N-15 nmr*)
Baxendale, I.R. *et al., Heterocycles*, 2003, **60**, 2707-2715 (*Norarmepavine, synth*)

Arnoamine A A-1445

*Pyrido[4,3,2-*mn*]pyrrolo[3,2,1-*de*]acridin-4-ol, 9CI. 4-Hydroxypyrido[4,3,2-*mn*]pyrrolo[3,2,1-*de*]acridine, 9CI*
[202652-44-6]



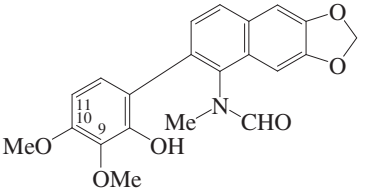
$C_{17}H_{10}N_2O$ 258.279
Alkaloid from the ascidian *Cystodytes* sp. Yellow glass. λ_{max} 278 (log ϵ 4.11); 401 (log ϵ 3.09); 486 (log ϵ 3.17) (trifluoroacetic acid/MeOH). λ_{max} 258 (ϵ 14125); 328 (ϵ 7762); 431 (ϵ 1023) (MeOH) (Berdy).

*Me ether: 4-Methoxypyrido[4,3,2-*mn*]pyrrolo[3,2,1-*de*]acridine.* ***Arnoamine B***
[202652-47-9]
$C_{18}H_{12}N_2O$ 272.306
Alkaloid from *Cystodytes* sp. Yellow glass. λ_{max} 280 (log ϵ 4.15); 398 (log ϵ 3.15); 467 (log ϵ 3.22) (trifluoroacetic acid/MeOH). λ_{max} 254 (ϵ 13800); 309 (ϵ 7582); 400 (ϵ 1483) (MeOH) (Berdy).

Plubrukarn, A. *et al., J.O.C.*, 1998, **63**, 1657-1659 (*isol, uv, ir, pmr, cmr, ms*)
Delfourne, E. *et al., J.O.C.*, 2000, **65**, 5476-5479 (*synth*)
Nakahara, S. *et al., Heterocycles*, 2007, **71**, 1801-1806 (*Arnoamine B, synth*)

Arnottianamide A-1446

N-*[6-(2-Hydroxy-3,4-dimethoxyphenyl)-naphtho[2,3-*d*]-1,3-dioxol-5-yl]*-N-*methylformamide, 9CI*
[60394-88-9]



$C_{21}H_{19}NO_6$ 381.384
A secobenzo[*c*]phenanthridine alkaloid. Alkaloid from the bark of *Zanthoxylum (Zanthoxylum, Fagara) arnottianum, Zanthoxylum cuspidatum* and *Zanthoxylum ailanthoides*, the root wood of *Zanthoxylum integrifoliolum*, the roots of *Toddalia asiatica*, and *Zanthoxylum bungeanum*, and the root bar. Cryst. (EtOAc/MeOH or $CHCl_3$/MeOH). Mp 271-273° (264-267°, 267-269°).

Ac: Mp 237°.

O^{10}-*De-Me:* ***Iwamide***
[61774-74-1]
$C_{20}H_{17}NO_6$ 367.357
Minor alkaloid from the bark of *Zanthoxylum arnottianum* (Rutaceae). Prisms ($CHCl_3$/MeOH). Mp 271-273° (267-268.5°).

9-Demethoxy, 11-methoxy: ***Isoarnottianamide***
[60394-91-4]
$C_{21}H_{19}NO_6$ 381.384
Alkaloid from the bark of *Zanthoxylum cuspidatum* (Rutaceae). Cryst. ($CHCl_3$). Mp 254-257° dec.

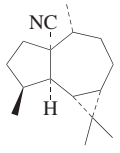
9-Demethoxy, 11-methoxy, O^{10}*-de-Me,* O^{8}*-Me:* ***Turraeanthine A***
$C_{21}H_{19}NO_6$ 381.384
Alkaloid from the stem bark of *Turraeanthus africanus*. Brown cryst. (Me_2CO). Mp 237-239°. λ_{max} 237 (log ϵ 4.73); 291 (log ϵ 4); 332 (log ϵ 3.85)

(MeOH).

Ishii, H. *et al., Tet. Lett.*, 1976, 1203 (*Arnottianamide*)
Ishii, H. *et al., Yakugaku Zasshi*, 1976, **96**, 1458; 1977, **97**, 890 (*Iwamide, Isoarnottianamide, isol, struct, ir, pmr, synth*)
Chou, F.Y. *et al., Heterocycles*, 1977, **7**, 969 (*isol*)
Sharma, P.N. *et al., Phytochemistry*, 1982, **21**, 252 (*isol*)
Vardamides, J.C. *et al., Chem. Pharm. Bull.*, 2006, **54**, 1034-1036 (*Turraeanthine A*)

Aromadendrane 1-isonitrile A-1447

1-Isocyanoaromadendrane



(1α,4β,5α,6β,7β,10α)-*form*

$C_{16}H_{25}N$ 231.38

(1α,4β,5α,6β,7β,10α)-*form*

Isothiocyanate:
$C_{16}H_{25}NS$ 263.446
Constit. of *Axinyssa aplysinoides*. Oil. $[\alpha]_D$ +128 (c, 0.24 in $CHCl_3$). Has -NCS replacing -NC.

(1β,4β,5α,6β,7β,10β)-*form* [112757-34-3]
Metab. of marine sponge *Acanthella acuta*. Ichthyotoxin, spongicide. Cryst. Sol. MeOH, C_6H_6; fairly sol. hexane; poorly sol. H_2O. Mp 65-66°. $[\alpha]_D$ -13.7 (c, 1.4 in $CHCl_3$).

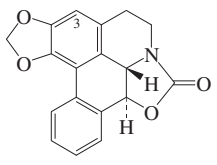
Isothiocyanate: ***Aromadendrane 1-isothiocyanate****. 1-Isothiocyanatoaromadendrane*
[112767-01-8]
$C_{16}H_{25}NS$ 263.446
Metab. of *Acanthella acuta*. Oil. $[\alpha]_D$ -32.8 (c, 0.7 in $CHCl_3$).

Formamide: ***1-Formamidoaromadendrane***
[126609-93-6]
$C_{16}H_{27}NO$ 249.395
Constit. of *Hexabranchus sanguineus*. Oil. $[\alpha]_D^{20}$ +16.7 (c, 1 in $CHCl_3$). Has -NHCHO replacing -NC.

Mayol, L. *et al., Tetrahedron*, 1987, **43**, 5381-5388 (*Acanthella acuta constits*)
He, H.-Y. *et al., J.O.C.*, 1992, **57**, 3191-3194 (*Axinyssa aplysinoides constit*)
Zhang, W. *et al., Tetrahedron*, 2007, **63**, 4725-4729 (*formamide*)

Artabonatine A A-1448

[247244-62-8]



Relative Configuration

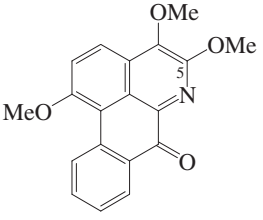
$C_{18}H_{13}NO_4$ 307.305
Alkaloid from fresh unripe fruit of *Artabotrys uncinatus*. Amorph. powder. $[\alpha]_D^{24}$ -102.7 (c, 0.4 in $CHCl_3$). λ_{max} 205 (log ϵ 4.11); 275 (log ϵ 3.94); 325 (log ϵ 3.76) (EtOH).

3-Methoxy: ***Artabonatine E***
[368422-66-6]
$C_{19}H_{15}NO_5$ 337.331
Alkaloid from *Artabotrys uncinata*. Amorph. powder. $[\alpha]_D^{24}$ -116.7 (c, 0.8 in $CHCl_3$). λ_{max} 250 (log ϵ 3.94); 280 (log ϵ 3.76); 325 (log ϵ 2.64) (EtOH).

Hsieh, T.-J. *et al., J. Nat. Prod.*, 1999, **62**, 1192-1193; 2001, **64**, 1157-1161 (*isol, uv, ir, pmr, cmr, ms*)

Artabonatine C A-1449

*1,4,5-Trimethoxy-7*H*-dibenzo[*de,g*]quinolin-7-one, 9CI*
[368422-64-4]



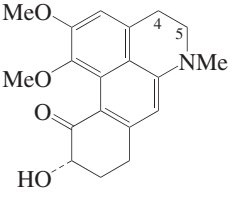
$C_{19}H_{15}NO_4$ 321.332
Alkaloid from *Artabotrys uncinata*. Green amorph. powder. λ_{max} 268 (log ϵ 3.34); 436 (log ϵ 3.42); 592 (log ϵ 4.62) (EtOH).

O^5*-De-Me:* ***Artabonatine D***
[368422-65-5]
$C_{18}H_{13}NO_4$ 307.305
Constit. of *Artabotrys uncinata*. Red amorph. powder. λ_{max} 204 (log ϵ 3.04); 280 (log ϵ 3.71); 506 (log ϵ 4.52) (EtOH).

Hsieh, T.-J. *et al., J. Nat. Prod.*, 2001, **64**, 1157-1161

Artacinatine A-1450

[123131-49-7]



$C_{19}H_{21}NO_4$ 327.379
Unusual reduced aporphine. Alkaloid from the stem parts of *Artabotrys uncinatus* (Annonaceae). Greenish prisms ($CHCl_3$/Me_2CO). Mp 160-162°. $[\alpha]_D^{24}$ 0 (c, 0.1 in MeOH). λ_{max} 214 (log ϵ 5.03); 261 (log ϵ 4.92); 290 (sh) (log ϵ 4.55); 344 (sh) (log ϵ 4.43); 382 (log ϵ 4.79) (no solvent reported).

4,5-Dioxo: ***4,5-Dioxoartacinatine***
[1001858-73-6]
$C_{19}H_{17}NO_6$ 355.346
Alkaloid from the stems of *Artabotrys uncinatus*. Yellow needles. Mp 167-169°. $[\alpha]_D$ +52.2 (c, 0.03 in MeOH). λ_{max} 230 ; 252 ; 282 ; 345 ; 355 ; 396 (no solvent reported).

Wu, Y.-C. *et al., Phytochemistry*, 1989, **28**, 2191-2195 (*Artacinatine, isol, uv, ir, pmr, cmr, ms, cryst struct*)
Lan, Y.-H. *et al., Chem. Pharm. Bull.*, 2007, **55**, 1597-1599 (*pmr, cmr, 4,5-Dioxoartacinatine*)

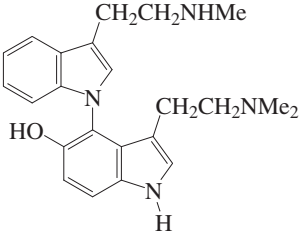
Arthrobactin A-1451

Terregens factor
[39007-57-3]
$[AcN(OH)(CH_2)_5NHCOCH_2]_2C(OH)$-COOH
$C_{20}H_{36}N_4O_9$ 476.526
Growth factor from *Arthrobacter pascens*. Microbial iron chelator. Powder. Sol. H_2O; poorly sol. $CHCl_3$, hexane. λ_{max} 405 (ϵ 1590) (pH 7.6 buffer) (Berdy). λ_{max} 477 (ϵ 940) (HCl) (Berdy).

Linke, W.D. *et al., Arch. Microbiol.*, 1972, **85**, 44
Lee, B.H. *et al., J.O.C.*, 1983, **48**, 24 (*synth*)

Arundamine A-1452

[475977-53-8]



$C_{23}H_{28}N_4O$ 376.5
Alkaloid from the roots of *Arundo donax*. Cryst. + $1H_2O$ (EtOH). Mp 104-105°.

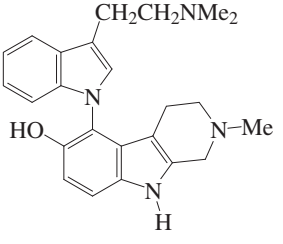
N′*-Ac:* ***Arundacine***
$C_{25}H_{30}N_4O_2$ 418.538
Alkaloid from the roots of *Arundo donax*. Cryst. (Me_2CO). Mp 192-193°.

N′*-Me:* ***Arundanine***
[618852-71-4]
$C_{24}H_{30}N_4O$ 390.527
Constit. of the roots of *Arundo donax*. Cryst. ($CHCl_3$/hexane). Mp 198-199°. λ_{max} 223 (log ϵ 4.65); 284 (log ϵ 4.07) (EtOH).

Zhalolov, I.Z. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2002, **38**, 83-86; 276-279; 280-283 (*isol, pmr, cmr, cryst struct*)
Khuzhaev, V.U. *et al., Russ. Chem. Bull. (Engl. Transl.)*, 2003, **52**, 745-747 (*Arundanine*)

Arundarine A-1453

[844830-22-4]



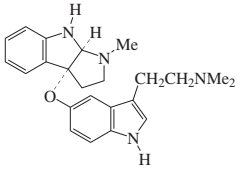
$C_{24}H_{28}N_4O$ 388.511

Alkaloid from the roots of *Arundo donax*. Cryst. Poorly sol. $CHCl_3$, MeOH, Me_2CO. Mp 250-252°.

Khuzhaev, V.U. *et al., Russ. Chem. Bull. (Engl. Transl.)*, 2004, **53**, 1765-1767 (*isol, pmr, cmr*)

Arundinine **A-1454**

[246856-96-2]

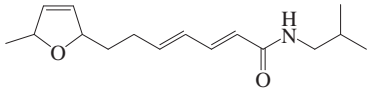


Absolute Configuration

$C_{23}H_{28}N_4O$ 376.5
Alkaloid from *Arundo donax*. Mp 148-150°.

Zhalolov, I. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1998, **34**, 706-710 (*isol, cryst struct*)

Asaramide **A-1455**

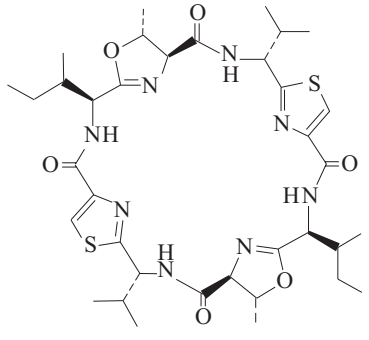


$C_{16}H_{25}NO_2$ 263.379
Alkaloid from *Asiasarum sieboldii*. Amorph. solid. λ_{max} 244 (ε 24145); 264 (ε 23710) (MeOH).

Opitz, M. *et al., Pharmazie*, 1999, **54**, 218-223

Ascidiacyclamide **A-1456**

[86701-12-4]

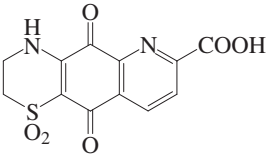


$C_{36}H_{52}N_8O_6S_2$ 756.989
Cyclic peptide antibiotic. Prod. by an unidentified ascidian. Cytotoxic. Active against PV_4 cultured cells transformed with Polyoma virus. Prisms (C_6H_6). Sol. Me_2CO, $CHCl_3$; poorly sol. H_2O. Mp 245-246° (139-139.5°). $[\alpha]_D^{25}$ +164 (c, 0.466 in $CHCl_3$). λ_{max} 232 (ε 21000) (MeOH) (Derep).

Hamamoto, Y. *et al., Chem. Comm.*, 1983, 323-324 (*struct, pmr, cmr*)
Hamada, Y. *et al., Tet. Lett.*, 1985, **26**, 3223 (*synth, config*)
Ishida, T. *et al., J.O.C.*, 1988, **53**, 107 (*struct, conformn*)
In, Y. *et al., Acta Cryst. C*, 1994, **50**, 2015 (*cryst struct*)

Ascidiathiazone A **A-1457**

[880137-41-7]

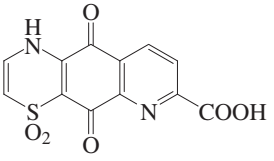


$C_{12}H_8N_2O_6S$ 308.271
Isol. from *Aplidium* sp. Antiinflammatory agent. Yellow powder. Mp 155° dec. λ_{max} 216 (log ε 4.37); 236 (log ε 4.46); 268 (log ε 4.21); 416 (log ε 3.4) (MeOH). λ_{max} 205 (log ε 4.43); 237 (log ε 4.55); 274 (log ε 4.18); 421 (log ε 3.56) (MeOH/trifluoroacetic acid). λ_{max} 211 (log ε 5.07); 236 (log ε 4.52); 329 (log ε 3.97); 467 (log ε 3.59) (MeOH/KOH).

Pearce, A.N. *et al., J. Nat. Prod.*, 2007, **70**, 936-940 (*isol, synth, uv, pmr, cmr*)

Ascidiathiazone B **A-1458**

[880137-42-8]

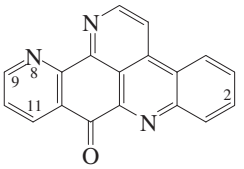


$C_{12}H_6N_2O_6S$ 306.255
Isol. from *Aplidium* sp. Pink powder. Mp 280° dec. λ_{max} 214 (log ε 4.5); 237 (log ε 4.02); 269 (log ε 3.91); 417 (log ε 3.11) (MeOH/trifluoroacetic acid). λ_{max} 207 (log ε 4.95); 237 (log ε 4.04); 279 (log ε 3.81); 311 (log ε 3.62); 472 (log ε 3.29) (MeOH/KOH).

Pearce, A.N. *et al., J. Nat. Prod.*, 2007, **70**, 936-940 (*isol, uv, pmr, cmr*)

Ascididemin **A-1459**

*9*H-*Quino[4,3,2*-de*][1,10]phenanthrolin-9-one, 9CI. Leptoclinidinone. Ascididemnin*
[114622-04-7]



$C_{18}H_9N_3O$ 283.289
CAS numbering shown. Other systems have been used. The name Ascididemnin found in the lit. appears to be an error. Alkaloid from the Okinawan tunicate *Didemnum* sp., *Cystodytes delle chiajei*, *Didemnum rubeum* and the Seychelles tunicate *Eudistoma* sp. Exhibits potent antineoplastic activity. Ca release agent. DNA intercalator and cleavage agent. Yellow solid. Sol. MeOH, EtOAc. Mp 300°. λ_{max} 220 (ε 49500); 248 (ε 48000); 273 (sh) (ε 27500); 298 (ε 17000); 308 (ε 15700); 340 (sh) (ε 11300); 377 (ε 13600) (MeOH) (Derep). λ_{max} 220 ; 247 ; 270 ; 308 ; 340 ; 375 (EtOH) (Berdy).

10-Hydroxy: ***11-Hydroxyascididemin***. *Cystodamine*
[129741-41-9]
[158761-11-6]
$C_{18}H_9N_3O_2$ 299.288
Alkaloid from the ascidian *Leptoclinides* sp. and *Cystodytes delle chiajei*. Cytotoxic agent. Yellow amorph. solid. Mp 250°. Struct. of Cystodamine revised in 2000. λ_{max} 203 (ε 25000); 227 (ε 38000); 275 (ε 18000); 285 (ε 17000); 370 (ε 11000) (MeOH) (Derep).

10-Hydroxy, 12,13-dihydro: ***8,9-Dihydro-11-hydroxyascididemin***
[151392-04-0]
$C_{18}H_{11}N_3O_2$ 301.304
Alkaloid from the Okinawan marine sponge *Biemna* sp. Cytotoxic agent. Yellow amorph. powder. Mp 300°. λ_{max} 218 (ε 17000); 273 (ε 9300); 319 (ε 6700); 355 (ε 5300) (MeOH) (Berdy).

6-Bromo: ***2-Bromoleptoclinidinone***
[109802-17-7]
$C_{18}H_8BrN_3O$ 362.185
Alkaloid from an ascidian, prob. *Leptoclinides* sp. Toxic to lymphocytic leukaemia cells *in vitro*. Protein phosphatase inhibitor. Yellow powder ($CHCl_3$/MeOH). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 300°. Revised struct. λ_{max} 227 (ε 152000); 247 (ε 27800); 254 (sh) (ε 27300); 278 (ε 32000); 298 (ε 30600); 335 (ε 18500); 371 (ε 21000) (EtOH) (Derep).

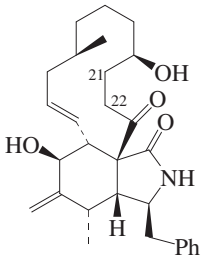
5-Hydroxy: Neocalliactine
[143370-24-5]
Obt. from Calliactine, C-34 by treatment with dil. acid. Cryst. (CH_2Cl_2/Et_2O)(as Ac). Mp 280-290° (Ac).

Bloor, S.J. *et al., J.A.C.S.*, 1987, **109**, 6134-6136 (*2-Bromoleptoclinidinone*)
Kitahara, Y. *et al., Tetrahedron*, 1987, **53**, 17029-17038 (*Neocalliactine*)
Kobayashi, J. *et al., Tet. Lett.*, 1988, **29**, 1177-1180 (*isol, uv, ir, pmr, cmr, ms, struct*)
Bracher, F. *et al., Heterocycles*, 1989, **29**, 2093-2095 (*synth*)
De Guzman, F.S. *et al., Tet. Lett.*, 1989, **30**, 1069-1070 (*2-Bromoleptoclinidinone, struct*)
Bracher, F. *et al., Annalen*, 1990, 205; 1992, 1205-1207 (*2-Bromoleptoclinidinone, Neocalliactine, synth, ir, pmr, cmr, ms*)
Schmitz, F.J. *et al., J.O.C.*, 1991, **56**, 804-808 (*11-Hydroxyascididemin*)
He, H.-Y. *et al., J.O.C.*, 1991, **56**, 5369-5371 (*isol*)
Moody, C.J. *et al., Tetrahedron*, 1992, **48**, 3589-3602 (*synth*)
Zeng, C.-M. *et al., Tetrahedron*, 1993, **49**, 8337-8342 (*8,9-Dihydro-11-hydroxyascididemin*)
Gellerman, G. *et al., Synthesis*, 1994, 239-241 (*synth*)

Lindsay, B.S. *et al., J. Chem. Crystallogr.*, 1998, **28**, 645-648 (*2-Bromoleptoclinidinone, cryst struct*)
Alvarez, M. *et al., Eur. J. Org. Chem.*, 2000, 849-855 (*synth*)
Delfourne, E. *et al., Tet. Lett.*, 2000, **41**, 3863-3864 (*Cystodamine, struct*)
Alvarez, M. *et al., Tetrahedron*, 2000, **56**, 3703-3708 (*11-Hydroxyascididemin, synth*)
Cuerva, J.M. *et al., J.C.S. Perkin 1*, 2002, 1360-1365 (*synth*)

Ascochalasin A-1460

[116095-60-4]



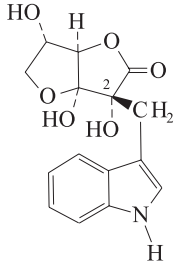
$C_{29}H_{39}NO_4$ 465.631
Isol. from *Ascochyta heteromorpha*. Amorph. solid.

*21,22-Didehydro(*E-*):* ***Deoxaphomin***
[51053-39-5]
$C_{29}H_{37}NO_4$ 463.616
Prod. by *Ascochyta heteromorpha* and a *Phoma* sp. Active against phytopathogenic fungi. Amorph. powder. $[\alpha]_D$ -50.8 (c, 0.18 in $CHCl_3$). λ_{max} 217 (log ϵ 4.15); 234 (log ϵ 3.94) (MeOH). λ_{max} 215 (ϵ 10715); 237 (ϵ 7410) (MeOH) (Berdy).

Binder, M. *et al., Helv. Chim. Acta*, 1973, **56**, 966-976 (*Deoxaphomin*)
Capasso, R. *et al., J. Nat. Prod.*, 1988, **51**, 567 (*isol, uv, ir, pmr, cmr, ms, struct*)
Evidente, A. *et al., Nat. Toxins*, 1998, **5**, 228-233; *CA*, **129**, 199012r (*activity*)

Ascorbigen A-1461

*2-*C*-(1*H*-Indol-3-ylmethyl)-3-hexulofuranosonic acid γ-lactone, 9CI*
[8075-98-7]



(2*R*)*–form*

$C_{15}H_{15}NO_6$ 305.287
Present in plants, esp. cabbage and other crucifers. Bound form of Ascorbic acid.

(2R)-form
*β-L-*xylo*-form.* ***Ascorbigen B***
[26548-49-2]
Light yellow amorph. powder. Mp 70° (sinters). $[\alpha]_D^{25}$ +12.5 (c, 1.0 in MeOH).

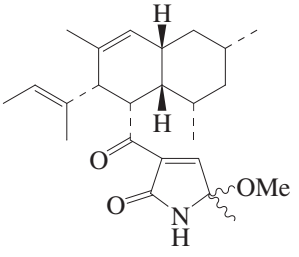
(2S)-form
*β-L-*xylo*-form.* ***Ascorbigen A***
[26676-89-1]
Amorph. powder. Mp *ca.* 65° (sinters). $[\alpha]_D^{25}$ +11 (c, 2.0 in EtOH).

[29400-26-8]

Piironen, E. *et al., Acta Chem. Scand.*, 1962, **16**, 1286 (*synth, bibl*)
Kiss, G. *et al., Helv. Chim. Acta*, 1966, **49**, 989 (*synth, ir, uv, pmr, struct*)
Korolev, A.M. *et al., Bioorg. Khim.*, 1991, **17**, 981

Ascosalipyrrolidinone B A-1462

[303052-08-6]



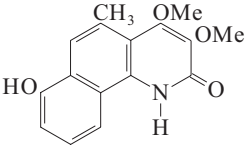
$C_{24}H_{35}NO_3$ 385.545
Prod. by the marine fungus *Ascochyta salicorniae*. Powder. Racemic. Related to Oteromycin, O-134. λ_{max} 207 (log ϵ 4.38); 225 (log ϵ 4.08); 273 (log ϵ 3.24) (EtOH).

O*-De-Me,* O*-butyl:* ***Ascosalipyrrolidinone A***
[303052-07-5]
$C_{27}H_{41}NO_3$ 427.626
Prod. by *Ascochyta salicorniae*. Antiplasmodial and antimicrobial agent. Inhibitor of tyrosine kinase. Amorph. powder. $[\alpha]_D^{20}$ -51.3 (c, 0.16 in EtOH). λ_{max} 211 (log ϵ 4.1); 225 (sh) (log ϵ 3.89); 267 (log ϵ 3.08) (EtOH).

Osterhage, C. *et al., J.O.C.*, 2000, **65**, 6412-6417 (*Ascosalipyrrolidinones A,B*)

Asimicilone A-1463

*7-Hydroxy-3,4-dimethoxy-5-methylbenzo[*h*]quinolin-2(1*H*)-one, 9CI*
[145701-06-0]

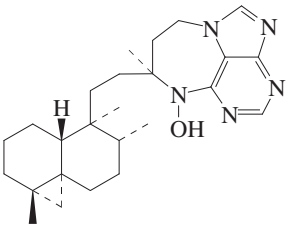


$C_{16}H_{15}NO_4$ 285.299
Alkaloid from twigs of *Asimina parviflora* (Annonaceae). Toxic to brine shrimp. Mp 191° (with dec. at 151°). λ_{max} 242 (ϵ 50100); 282 (ϵ 61700); 293 (ϵ 61700); 331 (ϵ 15500); 348 (ϵ 12900) (EtOH) (Derep). λ_{max} 242 (ϵ 50120); 282 (ϵ 61660); 293 (ϵ 61660); 331 (ϵ 15500); 348 (ϵ 12880) (MeOH) (Berdy).

Ratnayake, S. *et al., J. Nat. Prod.*, 1992, **55**, 1462 (*isol, uv, ir, pmr, cmr, ms, struct*)

Asmarine I A-1464

[805228-53-9]



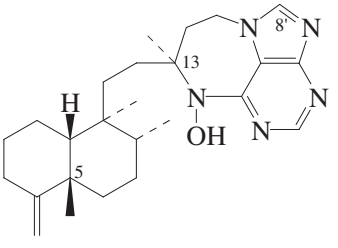
$C_{25}H_{37}N_5O$ 423.6
Alkaloid from the sponge *Raspailia* sp. Oil. $[\alpha]_D^{25}$ +24 (c, 0.6 in MeOH).

Deoxy: ***Asmarine J***
[805228-54-0]
$C_{25}H_{37}N_5$ 407.601
Alkaloid from a *Raspailia* sp. Oil. $[\alpha]_D^{25}$ +20 (c, 0.6 in MeOH).

Rudi, A. *et al., J. Nat. Prod.*, 2004, **67**, 1932-1935 (*isol, pmr, cmr*)

Asmarine B A-1465

[208391-67-7]



$C_{25}H_{37}N_5O$ 423.6
Alkaloid from the sponge *Raspailia* sp. Cytotoxic agent. Oil. $[\alpha]_D$ +60 (c, 0.5 in $CHCl_3$). λ_{max} 292 (ϵ 1000) (MeOH) (Berdy).

Deoxy: ***Asmarine K***
[805228-55-1]
$C_{25}H_{37}N_5$ 407.601
Alkaloid from a *Raspailia* sp. Oil. $[\alpha]_D^{25}$ +28 (c, 0.5 in MeOH).

5-Epimer: ***Asmarine A***
[208391-66-6]
$C_{25}H_{37}N_5O$ 423.6
Alkaloid from a *Raspailia* sp. Cytotoxic agent. Cryst. (MeOH). Mp 232°. $[\alpha]_D$ +55 (c, 0.5 in $CHCl_3$). λ_{max} 292 (ϵ 10000) (MeOH) (Berdy).

5-Epimer, Me ether: ***Asmarine G***
[662166-94-1]
$C_{26}H_{39}N_5O$ 437.627
Alkaloid from a *Raspailia* sp. Oil. $[\alpha]_D^{25}$ +40 (c, 1.2 in CH_2Cl_2).

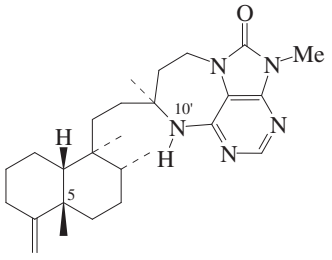
5-Epimer, deoxy: ***Asmarine H***
[662166-95-2]
$C_{25}H_{37}N_5$ 407.601
Alkaloid from a *Raspailia* sp. Oil. $[\alpha]_D^{25}$ +10 (c, 0.37 in CH_2Cl_2).

Yosief, T. *et al., J. Nat. Prod.*, 2000, **63**, 299-304 (*Asmarines A,B, isol, pmr, cmr, cryst struct, activity*)

Rudi, A. *et al., J. Nat. Prod.*, 2004, **67**, 106-109; 1932-1935 (*Asmarines G,H,K*)

Asmarine C A-1466

[208391-68-8]



$C_{26}H_{39}N_5O$ 437.627
Alkaloid from the sponge *Raspailia* sp. Oil.

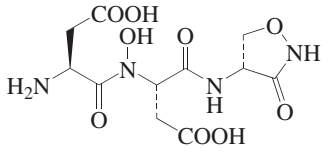
$N^{10'}$-*Methoxy:* ***Asmarine F***
[261630-39-1]
$C_{27}H_{41}N_5O_2$ 467.653
Constit. of a *Raspailia* sp.

5-Epimer: ***Asmarine D***
[261630-37-9]
$C_{26}H_{39}N_5O$ 437.627
Alkaloid from a *Raspailia* sp.

5-Epimer, $N^{10'}$*-methoxy:* ***Asmarine E***
[261630-38-0]
$C_{27}H_{41}N_5O_2$ 467.653
Alkaloid from a *Raspailia* sp.

Yosief, T. *et al., J. Nat. Prod.*, 2000, **63**, 299-304 (*isol, pmr, cmr*)

L-Aspartyl-L-N^2-hydroxyaspartyl-D-cycloserine A-1467

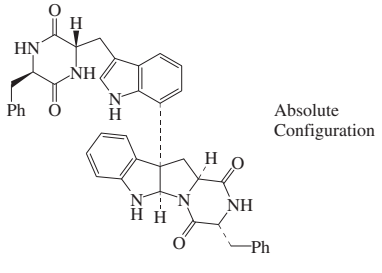


$C_{11}H_{16}N_4O_9$ 348.269
Incorr. named by CAS. Isol. from cultures of *Corynebacterium kutscheri* grown on an Fe-limiting medium. Cryst. (EtOH aq.).

McCullough, W.G. *et al., J. Bacteriol.*, 1979, **137**, 243-247 (*isol, pmr, cmr*)

Asperazine A-1468

[198953-76-3]

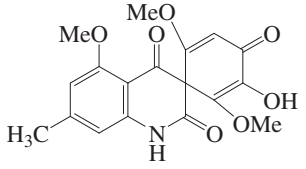


$C_{40}H_{36}N_6O_4$ 664.762
Alkaloid from the sponge-derived culture of *Aspergillus niger*. Amorph. powder. $[\alpha]_D$ +53 (c, 0.2 in MeOH). λ_{max} 225 ; 285 ; 300 (MeOH).

Varoglu, M. *et al., J.O.C.*, 1997, **62**, 7078-7079 (*isol, uv, ir, pmr, ms*)
Govek, S.P. *et al., Tetrahedron*, 2007, **63**, 8499-8513 (*synth*)

Asperfumoid A-1469

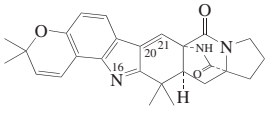
*3-Hydroxy-2,5′,6-trimethoxy-7′-methylspiro[2,5-cyclohexadiene-1,3′(2′*H*)-quinoline]-2′,4,4′(1′*H*)-trione, 9CI*
[848073-02-9]



$C_{18}H_{17}NO_7$ 359.335
Prod. by *Aspergillus fumigatus* CY018. Antifungal agent. Mp 284-286°. $[\alpha]_D^{20}$ +55.6 (c, 0.45 in $CHCl_3$).

Liu, J.Y. *et al., J. Biotechnol.*, 2004, **114**, 279-287 (*isol, pmr, cmr, ms*)

Aspergamide B A-1470



(+)-*form*

$C_{26}H_{27}N_3O_3$ 429.518

(+)-*form*
Prod. by *Aspergillus ochraceus*. No phys. props. reported. Incorr. named in CAS.

N^{16}*-Oxide:* ***Avrainvillamide****. CJ 17665. Antibiotic CJ 17665*
[269741-97-1]
$C_{26}H_{27}N_3O_4$ 445.517
Prod. by a marine *Aspergillus* sp. CNC358 and *Aspergillus ochraceus* CL 41582. Cytotoxic and antibacterial agent. Powder or yellow gum. $[\alpha]_D^{25}$ +12 (c, 0.6 in MeOH). λ_{max} 280 (ϵ 6300); 370 (ϵ 2720) (MeOH).

16,21-Dihydro: ***Stephacidin A***
[360765-74-8]
$C_{26}H_{29}N_3O_3$ 431.533
Prod. by *Aspergillus ochraceus* WC 76466. Cytotoxic. Amorph. solid. $[\alpha]_D$ +61.5 (c, 0.26 in CH_2Cl_2/MeOH). λ_{max} 211 (log ϵ 3.96); 242 (log ϵ 4.54); 309 (log ϵ 4.54); 335 (sh) (log ϵ 3.64) (MeOH).

20β-Hydroxy, 20,21-dihydro, N^{16}*-oxide:* ***Aspergamide A***
[863238-39-5]
$C_{26}H_{29}N_3O_5$ 463.532
Prod. by *Aspergillus ochraceus*. No phys. props. reported.

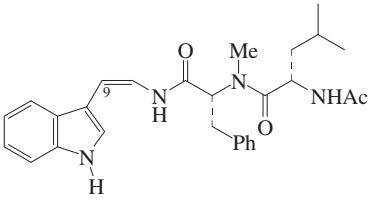
(-)-*form*

16,21-Dihydro: (-)-Stephacidin A
$C_{26}H_{29}N_3O_3$ 431.533
Prod. by *Aspergillus versicolor* NRRL 35600. $[\alpha]_D$ -32 (c, 0.05 in $CHCl_3$).

U.S. Pat., 2000, 6 066 635; *CA*, **132**, 346709r (*Avrainvillamide*)
Sugie, Y. *et al., J. Antibiot.*, 2001, **54**, 911-916 (*CJ 17665*)
U.S. Pat., 2001, 6 291 461; *CA*, **135**, 2364119 (*Stephacidin A*)
Williams, R.M. *et al., Chem. Pharm. Bull.*, 2002, **50**, 711-740 (*Aspergamides A,B*)
Qian-Cutrone, J. *et al., J.A.C.S.*, 2002, **124**, 14556-14557 (*Stephacidin A*)
Von Nussbaum, F. *et al., Angew. Chem., Int. Ed.*, 2003, **42**, 3068-3071 (*rev*)
Baran, P.S. *et al., J.A.C.S.*, 2006, **128**, 8678-8693 (*Stephacidin A, Avrainvillamide, synth*)
Grubbs, A.W. *et al., Angew. Chem., Int. Ed.*, 2007, **46**, 2257-2261; 2262-2265 (*Stephacidin A, synth*)
Greshock, T.J. *et al., Angew. Chem., Int. Ed.*, 2008, **47**, 3573-3577 (*(-)-Stephacidin A*)

Aspergillamide A A-1471

[217489-31-1]

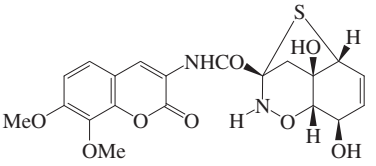


$C_{28}H_{34}N_4O_3$ 474.602
Prod. by a marine *Aspergillus* sp. Cytotoxic agent. Amorph. powder. $[\alpha]_D$ -26.2 (c, 3.05 in MeOH). Exists as a 1:1 mixt. of *cis*- and *trans*-amide rotational conformers. λ_{max} 200 (log ϵ 4.68); 221 (log ϵ 4.59); 286 (log ϵ 4.44) (MeOH).

*(*E*)-Isomer:* ***Aspergillamide B***
[217489-32-2]
$C_{28}H_{34}N_4O_3$ 474.602
Prod. by a marine *Aspergillus* sp. Amorph. powder.

Toske, S.G. *et al., Tetrahedron*, 1998, **54**, 13459-13466 (*isol*)
Rivas, L. *et al., Tet. Lett.*, 2002, **43**, 7639-7641 (*Aspergillamide B, synth*)
Su, S. *et al., Tetrahedron*, 2003, **59**, 8931-8946 (*synth, pmr, cmr*)

Aspergillazine A A-1472

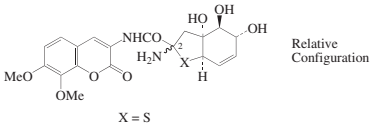


$C_{20}H_{20}N_2O_8S$ 448.453
Related to Trichodermamide A, T-487. Prod. by *Aspergillus unilateralis* (MST-F8675) and the marine-derived *Spicaria elegans*. Cytotoxic. Amorph. yellow solid. $[\alpha]_D$ -103 (c, 0.14 in MeOH). $[\alpha]_D$ -366.4 (c, 0.11 in MeOH). λ_{max} 205 (ϵ 19270); 245 (sh) ; 337 (ϵ 11100) (MeOH). λ_{max} 270 (log ϵ 3.95); 338 (log ϵ 4.29) (MeOH).

Liu, R. *et al., Arch. Pharmacal Res.*, 2005, **28**, 1042-1046 (*isol, pmr, cmr, ms*)

Capon, R.J. *et al., Org. Biomol. Chem.*, 2005, **3**, 123-129 (*isol, pmr, cmr*)

Aspergillazine B A-1473



Relative Configuration

$C_{20}H_{22}N_2O_8S$ 450.468

Related to Trichodermamide A, T-487. Prod. by *Aspergillus unilateralis* (MST-F8675). Amorph. yellow solid. $[\alpha]_D$ -172 (c, 0.07 in MeOH). λ_{max} 203 (ϵ 17850); 243 (sh) ; 335 (ϵ 9400) (MeOH).

2-Epimer: ***Aspergillazine C***
$C_{20}H_{22}N_2O_8S$ 450.468
Prod. by *Aspergillus unilateralis* (MST-F8675). Amorph. yellow solid. $[\alpha]_D$ +23 (c, 0.08 in MeOH). λ_{max} 205 (ϵ 16400); 243 (sh) ; 335 (ϵ 7700) (MeOH).

Capon, R.J. *et al., Org. Biomol. Chem.*, 2005, **3**, 123-129 (*isol, pmr, cmr*)

Aspergillazine D A-1474

As Aspergillazine B, A-1473 with X = O

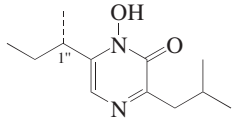
$C_{20}H_{22}N_2O_9$ 434.402
Prod. by *Aspergillus unilateralis* (MST-F8675). Amorph. yellow powder. $[\alpha]_D$ -79 (c, 0.14 in MeOH). Isol. as an equilibrating mixt. with Aspergillazine E to which data refers. λ_{max} 204 (ϵ 17280); 228 (sh) ; 333 (ϵ 11400) (MeOH).

2-Epimer: ***Aspergillazine E***
$C_{20}H_{22}N_2O_9$ 434.402
Prod. by *Aspergillus unilateralis* (MST-F8675).

Capon, R.J. *et al., Org. Biomol. Chem.*, 2005, **3**, 123-129 (*isol, pmr, cmr*)

Aspergillic acid, 8CI A-1475

*1-Hydroxy-6-(1-methylpropyl)-3-(2-methylpropyl)-2(1*H*)-pyrazinone, 9CI. Aspergillin*†*. Granegillin*
[490-02-8]



(*S*)-*form*

$C_{12}H_{20}N_2O_2$ 224.302

Identity of Granegillin with Aspergillic acid is tentative.

▶ CI9625000

(S)-form

Prod. by *Aspergillus flavus* and *Aspergillus sojae*. Shows antibiotic and hypotensive props. Pale yellow needles (MeOH) with odour of black walnuts. Sol. most org. solvs.; insol. H_2O. Mp 97-99°. $[\alpha]_D^{18}$ +13.3 (c, 3.9 in EtOH). pK_a 5.5 (20°, H_2O). λ_{max} 238 (ϵ 10900); 326 (ϵ 8900) (EtOH) (Berdy). λ_{max} 235 (ϵ 15900); 332 (ϵ 10400) (pH 7.5 buffer) (Berdy). λ_{max} 242 (ϵ 7300); 350 (ϵ 9700) (HCl) (Berdy).

▶ LD_{50} (mus, ipr) 150 mg/kg, LD_{50} (mus, orl) 250 mg/kg.

Hydrochloride: Mp 182° dec.

Fe complex: Ferriaspergillin
[77423-90-6]
$C_{36}H_{57}FeN_6O_6$ 725.73
Pigment from *Aspergillus flavus*, *Aspergillus parasiticus* and *Aspergillus subolivaceus*. Red oil.

Zn complex: Zn-Aspergillin
$C_{24}H_{38}N_4O_4Zn$ 511.979
Isol. from *Aspergillus sojae*.

Deoxy: ***Deoxyaspergillic acid***
[21641-71-4]
$C_{12}H_{20}N_2O$ 208.303
Metab. of *Aspergillus sojae*. Needles. Mp 85° Mp 102°. No antibiotic activity.

(ξ)-form

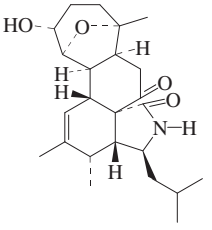
*1''ξ-Hydroxy: 1-Hydroxy-6-(1-hydroxy-1-methylpropyl)-3-(2-methylpropyl)-2(1*H*)-pyrazinone.* ***Hydroxyaspergillic acid***
[4562-39-4]
$C_{12}H_{20}N_2O_3$ 240.302
Isol. from *Aspergillus flavus*, *Aspergillus sojae* and *Aspergillus oryzae*. Shows antibiotic props. Needles (hexane). Sol. MeOH, bases, C_6H_6; fairly sol. Et_2O; poorly sol. H_2O, hexane. Mp 148-150°. $[\alpha]_D$ +36 (c, 1 in EtOH). pK_a 4.9. λ_{max} 232 (ϵ 7500); 330 (ϵ 7900) (MeOH) (Berdy). λ_{max} 235 (ϵ 8250); 328 (ϵ 8800) (EtOH) (Berdy). λ_{max} 245 (E1%/1cm 440); 363 (E1%/1cm 310) (H_3PO_4) (Berdy).

▶ LD_{50} (mus, ivn) 101 mg/kg, LD_{50} (mus, ipr) 90 - 100 mg/kg.

Deoxy, 1''ξ-hydroxy: ***Deoxyhydroxyaspergillic acid***
$C_{12}H_{20}N_2O_2$ 224.302
Metab. of *Aspergillus sojae*. Mp 107°.

Dutcher, J.D. *et al., J. Biol. Chem.*, 1947, **171**, 321-339; 341-353 (*Aspergillic acid, Deoxyaspergillic acid, isol, uv, struct*)
Newbold, G.T. *et al., J.C.S.*, 1951, 2679 (*Deoxyaspergillic acid*)
Gallagher, J.J. *et al., J.C.S.*, 1952, 4870 (*synth*)
Cieleszky, V. *et al., CA*, 1958, **52**, 15307 (*Granegillin*)
Dutcher, K. *et al., J. Biol. Chem.*, 1958, **232**, 785 (*Hydroxyaspergillic acid*)
Nakamuro, T. *et al., Bull. Agric. Chem. Soc. Jpn.*, 1959, **23**, 418 (*Hydroxyaspergillic acid*)
MacDonald, J.C. *et al., J. Biol. Chem.*, 1962, **237**, 1977 (*biosynth*)
Chigira, V.Y. *et al., Bull. Chem. Soc. Jpn.*, 1966, **39**, 632 (*ir, uv, nmr, synth*)
Masaki, M. *et al., J.O.C.*, 1966, **31**, 4143 (*synth, ir, uv, nmr*)
Bergeron, R.J. *et al., J.O.C.*, 1980, **45**, 163 (*Deoxyaspergillic acid*)
Assante, G. *et al., J. Agric. Food Chem.*, 1981, **29**, 785 (*Ferriaspergillin*)
Ohta, A. *et al., Chem. Pharm. Bull.*, 1983, **31**, 20-24 (*Hydroxyaspergillic acid, synth*)
Yamamoto, Y. *et al., Alkaloids (Academic Press)*, 1986, **29**, 185 (*rev, bibl, derivs*)
Okada, Y. *et al., Chem. Pharm. Bull.*, 1996, **44**, 2259-2262 (*synth, abs config*)
Cole, R.J. *et al., Handbook of Toxic Fungal Metabolites*, Academic Press, 1981, 794
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, ARO000

Aspergillin PZ A-1476



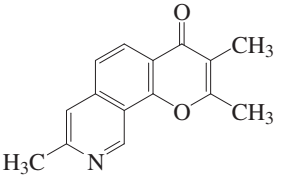
Relative Configuration

$C_{24}H_{35}NO_4$ 401.545

Cytochalasin related to Aspochalasin C, A-1502. Prod. by *Aspergillus awamori*. Square cryst. ($CHCl_3$/MeOH).

Zhang, Y. *et al., J. Antibiot.*, 2002, **55**, 693-695 (*isol, pmr, cmr*)

Aspergillitine A-1477



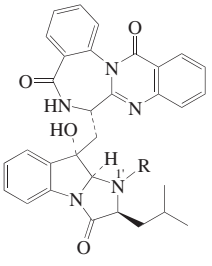
$C_{15}H_{13}NO_2$ 239.273

Prod. by the fungus *Aspergillus versicolor* isol. from the sponge *Xestospongia exigua*. Yellow powder (MeOH). λ_{max} 214 ; 245 ; 265 ; 295 ; 315 ; 370 (MeOH aq.).

Lin, W. *et al., J. Nat. Prod.*, 2003, **66**, 57-61 (*isol, pmr, cmr, ms*)

Asperlicin A-1478

[93413-04-8]



Absolute Configuration

$C_{31}H_{29}N_5O_4$ 535.601

Isol. from *Aspergillus alliaceus*. Nonpeptide cholecystokinin antagonist used for treatment of gastrointestinal and CNS disorders. Cryst. (MeOH). Sol. MeOH,

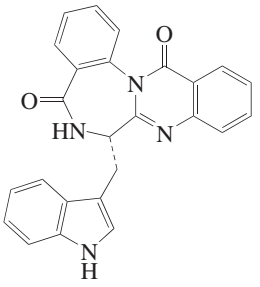
$CHCl_3$; poorly sol. H_2O. Mp 211-213°. $[\alpha]_D^{26.5}$ -185.3 (c, 1.1 in MeOH). Log P 3.08 (uncertain value) (calc). λ_{max} 230 (sh) (ϵ 48500); 258 (sh) (ϵ 17700); 266 (sh) (ϵ 14400); 278 (sh) (ϵ 10300); 310 (ϵ 4080); 322 (sh) (ϵ 3100) (MeOH) (Derep).

$N^{1'}$-Hydroxy: ***Asperlicin B***
[93413-08-2]
$C_{31}H_{29}N_5O_5$ 551.601
Minor metab. from *Aspergillus alliaceus*. Cholecystokinin antagonist (7 times more potent than Asperlicin). Powder. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Log P 2.93 (uncertain value) (calc). λ_{max} 230 (sh) (ϵ 48500); 258 (sh) (ϵ 17700); 266 (sh) (ϵ 14400); 278 (sh) (ϵ 10300); 310 (ϵ 4080); 322 (sh) (ϵ 3100) (MeOH) (Derep).

Albers-Schönberg, G. *et al., CA*, 1985, **104**, 205424 (*rev*)
Chang, R.S.L. *et al., J. Antibiot.*, 1985, **38**, 1633-1637; 1638-1641 (*isol, uv, ir, pmr, cmr, struct*)
Chang, R.S.L. *et al., Science (Washington, D.C.)*, 1985, **230**, 177-179 (*isol, props*)
Goetz, M.A. *et al., J. Antibiot.*, 1988, **41**, 875-877; 878-881; 882-891 (*isol, pmr, uv, ms, struct, Asperlicin B, biosynth, derivs*)
Wisner, J.R. *et al., Pancreas*, 1988, **3**, 174-179 (*pharmacol*)
Monaghan, R.L. *et al., J. Ind. Microbiol.*, 1989, **4**, 97-104 (*isol, bibl*)
Sun, H.H. *et al., J. Antibiot.*, 1994, **47**, 599-601 (*pmr, cmr*)
He, F. *et al., J.A.C.S.*, 1995, **120**, 6417-6418 (*synth*)

Asperlicin C A-1479

*6,7-Dihydro-7-(1*H*-indol-3-ylmethyl)quinazolino[3,2-*a*][1,4]benzodiazepine-5,13-dione, 9CI*



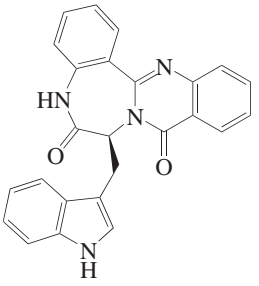
$C_{25}H_{18}N_4O_2$ 406.443

(S)-form [93413-06-0]
Isol. from *Aspergillus alliaceus* ATCC 20655. Cholecystokinin antagonist. Off-white powder. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. λ_{max} 222 (ϵ 56300); 268 (ϵ 15100); 289 (sh) (ϵ 8480); 310 (ϵ 4650); 321 (sh) (ϵ 3590) (MeOH) (Derep).

Bock, M.G. *et al., J.O.C.*, 1987, **52**, 1644-1646 (*synth*)
Goetz, M.A. *et al., J. Antibiot.*, 1988, **41**, 875-877; 878-881; 882-891 (*isol, uv, ir, pmr, cmr, struct*)
Liu, J.-F. *et al., J.O.C.*, 2005, **70**, 10488-10493 (*synth*)

Asperlicin D A-1480

*7-(1*H*-Indol-3-ylmethyl)quinazolino[3,2-*d*][1,4]benzodiazepine-6,9(5*H*,7*H*)-dione, 9CI*



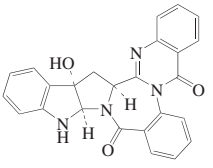
$C_{25}H_{18}N_4O_2$ 406.443

(S)-form [93413-07-1]
Isol. from *Aspergillus alliaceus* ATCC 20655. Cholecystokynin antagonist. Powder. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. λ_{max} 222 (ϵ 61100); 283 (sh) (ϵ 13800); 290 (ϵ 14600); 310 (ϵ 5920) (MeOH) (Derep).

Goetz, M.A. *et al., J. Antibiot.*, 1988, **41**, 875; 878; 882 (*isol, uv, ir, pmr, cmr*)
Al-Said, N.H. *et al., Tet. Lett.*, 2006, **47**, 693-694 (*synth*)

Asperlicin E A-1481

*13,17*b*,18,18*a*-Tetrahydro-17*b*-hydroxy-11*H*-indolo[3′,2′:4,5]pyrrolo[2,1-*c*]quinazolino[3,2-*a*][1,4]benzodiazepine-5,11(12a*H*)-dione, 9CI*
[93413-05-9]

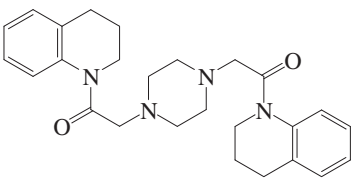


Absolute Configuration

$C_{25}H_{18}N_4O_3$ 422.442
Isol. from *Aspergillus alliaceus* ATCC20655. Cholecystokinin antagonist. Off-white powder. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. λ_{max} 213 (sh) (ϵ 37200); 227 (ϵ 38500); 268 (ϵ 8680); 277 (sh) (ϵ 7830); 310 (sh) (ϵ 4850); 324 (ϵ 3200) (MeOH) (Derep).

Bock, M.G. *et al., J.O.C.*, 1987, **52**, 1644-1646 (*synth*)
Goetz, M.A. *et al., J. Antibiot.*, 1988, **41**, 875; 878; 882 (*isol, uv, ir, pmr, cmr, struct*)
Liu, J.-F. *et al., J.O.C.*, 2005, **70**, 10488-10493 (*synth*)

Aspernigerin A-1482

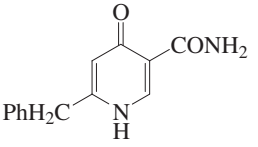


$C_{26}H_{32}N_4O_2$ 432.564
Prod. by *Aspergillus niger* IFB-E003. Cytotoxic. Cryst. ($CHCl_3$/MeOH). Mp 186-188°. λ_{max} 215 (log ϵ 4.37); 246 (log ϵ 4.23) (MeOH).

Shen, L. *et al., Chem. Eur. J.*, 2006, **12**, 4393-4396 (*isol, pmr, cmr, ms, cryst struct*)

Aspernigrin A A-1483

*1,4-Dihydro-4-oxo-6-(phenylmethyl)-3-pyridinecarboxamide. 2-Benzyl-5-carbamoyl-4(1*H*)-pyridinone*
[773855-60-0]

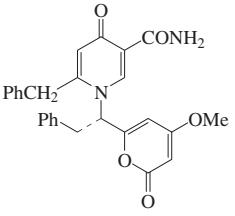


$C_{13}H_{12}N_2O_2$ 228.25
Struct. revised in 2005. Prod. by *Aspergillus niger* isol. from the sponge *Axinella damicornis*. Also prod. by the terrestrial *Cladosporium herbarum* IFB-E002 and *Pestalotiopsis theae*. Prisms ($CHCl_3$/MeOH). Mp 197-199°. λ_{max} 217 (log ϵ 4.25); 257 (log ϵ 4.68) (MeOH).

Hiort, J. *et al., J. Nat. Prod.*, 2004, **67**, 1532-1543; 2005, **68**, 1821 (*isol, pmr, cmr*)
Ye, Y.H. *et al., J. Nat. Prod.*, 2005, **68**, 1106-1108 (*isol, pmr, cmr, ms, cryst struct*)

Aspernigrin B A-1484

[773855-63-3]



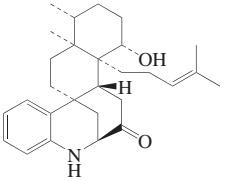
Absolute Configuration

$C_{27}H_{24}N_2O_5$ 456.497
Struct. revised in 2005. Prod. by *Aspergillus niger* isol. from the sponge *Axinella damicornis*. Neuroprotective agent. Oil. $[\alpha]_D^{20}$ +37.8 (c, 0.5 in DMSO).

Hiort, J. *et al., J. Nat. Prod.*, 2004, **67**, 1532-1543; 2005, **68**, 1821 (*isol, cd, pmr, cmr*)

Aspernomine A-1485

[138605-80-8]



Absolute Configuration

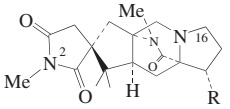
$C_{28}H_{39}NO_2$ 421.622
Prod. by *Aspergillus nomius* NRRL6552/NRRL18836. Exhibits cytotoxic and insecticidal activities. Mycotoxin. Fine needles. $[\alpha]_D^{27}$ +225 (c, 0.12 in MeOH).

λ_{max} 222 (ϵ 5460); 244 (ϵ 5760); 302 (ϵ 2510); 333 (ϵ 1150) (MeOH) (Derep).

Staub, G.M. *et al., J.A.C.S.*, 1992, **114**, 1015-1017 (*isol, pmr, cmr, struct*)
Liu, Y. *et al., Org. Lett.*, 2003, **3**, 333-335 (*biosynth*)

Asperparaline A A-1486

VM 55598. Antibiotic VM 55598. Aspergillimide
[195966-93-9]



Relative Configuration

R = CH_3

$C_{20}H_{29}N_3O_3$ 359.467

Related to Paraherquamide A, P-90. Prod. by *Aspergillus* sp. IMI 337664 and *Aspergillus japonicus* JV-23. Anthelmintic agent. Paralytic agent against *Bombyx mori*. Prisms (toluene). Mp 203-205°. $[\alpha]_D^{20}$ -8.5 (c, 0.2 in MeOH). λ_{max} 206 (no solvent reported).

N^2-*De-Me:* ***Asperparaline B***
[227598-73-4]
$C_{19}H_{27}N_3O_3$ 345.441
Prod. by *Aspergillus japonicus* JV-23. Prisms (EtOAc). Mp 250-252°. $[\alpha]_D^{20}$ -3 (c, 0.08 in MeOH).

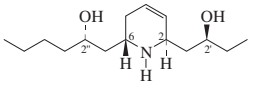
16-Oxo: ***16-Ketoaspergillimide****. 16-Oxoaspergillimide. SB 202327. Antibiotic SB 202327*
[199784-50-4]
$C_{20}H_{27}N_3O_4$ 373.451
Prod. by *Aspergillus* sp. IMI 337664. Anthelmintic agent.

Lower homologue (R = H): ***Asperparaline C***
[227598-74-5]
$C_{19}H_{27}N_3O_3$ 345.441
Prod. by *Aspergillus japonicus* JV-23. Prisms (toluene). Mp 175-177°. $[\alpha]_D^{20}$ -20 (c, 0.05 in MeOH).

Banks, R.M. *et al., J. Antibiot.*, 1997, **50**, 840-846 (*isol, pmr, cmr*)
Hayashi, H. *et al., Tet. Lett.*, 1997, **38**, 5655-5658 (*isol, ir, pmr, cmr, cryst struct*)
Hayashi, H. *et al., CA*, 1999, **131**, 99865u (*Asperparaline B*)
Hayashi, H. *et al., Biosci., Biotechnol., Biochem.*, 2000, **64**, 111-115 (*Asperparalines*)
Williams, R.M. *et al., Chem. Pharm. Bull.*, 2002, **50**, 711-740 (*rev, synth, biosynth*)
Gray, C. *et al., J.A.C.S.*, 2003, **125**, 14692-14693 (*biosynth*)

Aspertine B A-1487

1,2,5,6-Tetrahydro-2-(2-hydroxybutyl)-6-(2-hydroxyhexyl)pyridine
[442155-61-5]



Absolute Configuration

$C_{15}H_{29}NO_2$ 255.4
Alkaloid from the aerial parts of *Andrachne aspera*. Gum. $[\alpha]_D$ -85 (c, 0.8 in $CHCl_3$).

Ahmad, V.U. *et al., Turk. J. Chem.*, 2002, **26**, 245-250 (*isol, pmr, cmr*)

Aspidexcelcine A-1488

[1354-51-4]

Bisindole alkaloid. Struct. unknown. Alkaloid from *Aspidosperma excelsum* (Apocynaceae). Mp 76-81°. $[\alpha]_D^{20}$ +72 (c, 0.2 in $CHCl_3$). Mol. formula not recorded (MW 622 by ms).

Relyveld, P. *et al., Pharm. Weekbl.*, 1965, **100**, 614-615; *CA*, **63**, 7254d (*isol, uv, ir*)

Aspidexcine A-1489

[1354-55-8]

$C_{42}H_{56}N_4O_4$ 680.929

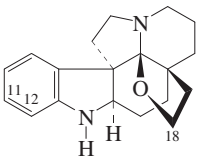
Bisindole alkaloid. Struct. unknown. May be the same as Tetrahydrosecamine in S-174 (same source and MF, but no further information). Alkaloid from *Aspidosperma excelsum* and *Aspidosperma marcgravianum* (Apocynaceae). Sol. Me_2CO, H_2O. Mp 76-81°. $[\alpha]_D^{20}$ -14 (c, 0.2 in $CHCl_3$). λ_{max} 220 ; 283 ; 292 (MeOH) (Berdy).

Hydrochloride: Mp 212° dec.

Relyveld, P. *et al., Pharm. Weekbl.*, 1965, **100**, 614-615; *CA*, **63**, 7254d (*isol, uv, ir*)

Aspidoalbidine A-1490

19,21-Epoxyaspidospermidine, 9CI. Fendleridine
[36459-35-5]



Absolute Configuration

$C_{19}H_{24}N_2O$ 296.411
Alkaloid from seeds of *Aspidosperma fendleri* (Apocynaceae). Cryst. (Me_2CO). Mp 185-186°. λ_{max} 242 (ϵ 7300); 293 (ϵ 3050) (EtOH).

N-*Ac:* **N-*Acetylaspidoalbidine***. *Dehydroxyhaplocidine*
[2671-45-6]
$C_{21}H_{26}N_2O_2$ 338.449
Alkaloid from *Vallesia dichotoma* and bark of *Aspidosperma pyrifolium* (Apocynaceae). Mp 173-174°. $[\alpha]_D$ +46 ($CHCl_3$) (+1). The low opt. rotn. of the *A. pyrifolium* sample (Dehydroxyhaplocidine) suggests that it was largely racemic. λ_{max} 212 (log ϵ 4.43); 253 (log ϵ 4.17) (EtOH).

12-Hydroxy, N-*Ac:* ***Haplocidine****. 1-Acetyl-12-hydroxyaspidoalbidine*
[2671-46-7]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from *Haplophyton cimicidum, Aspidosperma discolor* and *Vallesia dichotoma* (Apocynaceae). Cryst. ($MeOH/Et_2O$). Mp 184-189°. $[\alpha]_D^{23}$ +214 (c, 0.35 in $CHCl_3$).

12-Hydroxy, N-*propanoyl:* ***Haplocine***
[6879-62-5]
$C_{22}H_{28}N_2O_3$ 368.475
Alkaloid from *Haplophyton cimicidum* (Apocynaceae). Mp 186-187°. $[\alpha]_D$ +196 ($CHCl_3$).

12-Methoxy: ***Fannine***
[79405-65-5]
$C_{20}H_{26}N_2O_2$ 326.438
Alkaloid from stems of *Strempeliopsis strempelioides* (Apocynaceae).

12-Methoxy, N-*formyl:* **N-*Formyl-12-methoxyaspidoalbidine***. N-*Formyl-17-methoxyaspidoalbidine*
[2671-44-5]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from *Vallesia dichotoma* (Apocynaceae). Mp 208-210°. $[\alpha]_D$ +20 ($CHCl_3$).

12-Methoxy, N-*propanoyl:* [100979-51-9]
Plates (MeOH). Mp 240-241°. $[\alpha]_D^{30}$ +5 (c, 1.25 in $CHCl_3$).

11,12-Dihydroxy, N-*Ac:* ***Aspidofendlerine***
[4913-97-7]
$C_{21}H_{26}N_2O_4$ 370.447
Constit. of the seeds of *Aspidosperma fendleri* (Apocynaceae). Cryst. (EtOH). Mp 278° dec. λ_{max} 225 (ϵ 11500); 259 (ϵ 5000) (EtOH).

11-Methoxy, 12-hydroxy, N-*Ac:* ***Aspidolimidine***
[2494-58-8]
$C_{22}H_{28}N_2O_4$ 384.474
Constit. of *Aspidosperma limae, Aspidosperma fendleri* and *Aspidosperma album* (Apocynaceae). Prisms (MeOH). Mp 196-199°. $[\alpha]_D$ +245 (c, 1.26 in $CHCl_3$).

11-Methoxy, 12-hydroxy, N-*propanoyl:* ***Fendlerine***. N-*Propionyl*-N-*deacetylaspidolimidine*
[4913-93-3]
$C_{23}H_{30}N_2O_4$ 398.501
Alkaloid from the stem bark of *Aspidosperma album*, also from fruit and bark of *Aspidosperma fendleri* (Apocynaceae). Glass or cryst. (Me_2CO). Mp 179-181°. $[\alpha]_D$ +226 (c, 1.08 in $CHCl_3$). λ_{max} 225 (ϵ 19200); 258 (ϵ 3560) (EtOH).

10,11-Dimethoxy, 12-hydroxy, N-*Ac:* ***Kromantine***. N-*Acetyl*-N-*depropionylaspidoalbine*
[2122-26-1]
$C_{23}H_{30}N_2O_5$ 414.5
Alkaloid from the bark of *Aspidosperma album* and other *Aspidosperma* spp. (Apocynaceae). Mp 194-195° (176°). $[\alpha]_D$ +174 (c, 1.93 in $CHCl_3$) (+159). λ_{max} 227 (log ϵ 4.43); 267 (log ϵ 4.11) (EtOH).

10,11-Dimethoxy, 12-hydroxy, N-*propanoyl:* ***Aspidoalbine***
[2122-25-0]
$C_{24}H_{32}N_2O_5$ 428.527
Alkaloid from the bark of *Aspidosperma album* and other *Aspidosperma* spp. (Apocynaceae). Mp 174-177°. $[\alpha]_D^{25}$ +164 (c, 2.12 in $CHCl_3$). λ_{max} 227 (log ϵ 4.16); 267 (log ϵ 3.88) (EtOH).

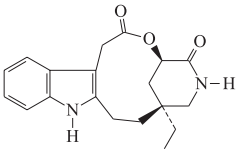
10,11,12-Trimethoxy, N-*propanoyl:* Mp 128-131°. $[\alpha]_D$ +9.2 (c, 1.84 in MeOH).

Gilbert, B. *et al., Chem. Ind. (London)*, 1962, 1949-1950 (*Aspidolimidine, pmr, ms, struct*)
Djerassi, C. *et al., Tet. Lett.*, 1962, **3**, 1001-1009 (*Aspidoalbine, uv, ir, pmr, ms, struct*)

Ferrari, C. *et al., Can. J. Chem.*, 1963, **41**, 1531-1534 (*Aspidoalbine, N-Acetyl-N-depropionylaspidoalbine*)
Relyveld, P. *et al., Pharm. Weekbl.*, 1963, **98**, 47-48 (*Kromantine*)
Brown, K.S. *et al., Tet. Lett.*, 1963, **4**, 1731-1736 (*N-Ac, isol, ir, uv, ms, struct*)
Ferrari, C. *et al., Can. J. Chem.*, 1964, **42**, 2705-2709 (*Aspidolimidine, Fendlerine*)
Cava, M.P. *et al., Tetrahedron*, 1964, **20**, 581-583 (*Haplocidine*)
Walser, A. *et al., Helv. Chim. Acta*, 1965, **48**, 391 (*N-Formyl-12-methoxyaspidoalbidine, Haplocidine, isol*)
Gilbert, B. *et al., Tetrahedron*, 1965, **21**, 1141-1166 (*Kromantine*)
Burnell, R.H. *et al., Can. J. Chem.*, 1966, **44**, 28-31 (*isol, uv, ir, pmr, ms, struct, Aspidofendlerine, Fendlerine*)
Dastoor, N.J. *et al., Helv. Chim. Acta*, 1967, **50**, 213-231 (*isol, uv, ir, ms, Haplocidine*)
Ban, Y. *et al., Tet. Lett.*, 1975, **16**, 727-730 (*synth, Aspidoalbidine*)
Honma, Y. *et al., Heterocycles*, 1976, **5**, 47-51 (*synth, ms, uv, Aspidoalbidine*)
Laguna, A. *et al., CA*, 1981, **95**, 165600v (*Fannine*)
Robert, G.M.T. *et al., J. Nat. Prod.*, 1983, **46**, 694-707 (*18-Oxohaplocidine*)
Laguna, A. *et al., Planta Med.*, 1984, **50**, 285-288 (*Fannine*)
Overman, L.E. *et al., J.A.C.S.*, 1991, **113**, 2598-2610 (*N-Acetylaspidoalbidine, synth*)
Mitaine, A.C. *et al., Planta Med.*, 1996, **62**, 458 (*Dehydroxyhaplocidine*)
Mitaine, A.-C. *et al., Planta Med.*, 1998, **64**, 487 (*Fendlerine, pmr, cmr*)
Pihko, A.J. *et al., Tetrahedron*, 2005, **61**, 8769-8807 (*synth, rev*)

Aspidochibine A-1491

Alkaloid AQC2
[139955-86-5]



Relative configuration

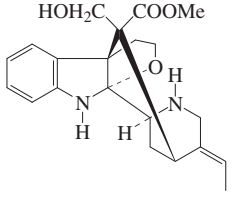
$C_{19}H_{22}N_2O_3$ 326.394

New structural class of the quebrachamine series. Alkaloid from cell cultures of *Aspidosperma quebracho-blanco* (quebracho) (Apocynaceae). Amorph.

Aimi, N. *et al., Tet. Lett.*, 1991, **32**, 4949 (*isol, pmr, cmr, struct*)

Aspidodasycarpine A-1492

Methyl 2,5-epoxy-1,2-dihydro-16-(hydroxymethyl)-4,5-secoakuammilan-17-oate, 9CI
[2744-47-0]



Absolute Configuration

$C_{21}H_{26}N_2O_4$ 370.447

Alkaloid from the bark of *Aspidosperma dasycarpon* and *Aspidosperma cuspa* (Apocynaceae). Cryst. (Me_2CO). Mp 207-209°. $[\alpha]_D^{25}$ -101 (c, 1.42 in $CHCl_3$).

N^4*-Ac:* Mp 250-253°. $[\alpha]_D$ -147.

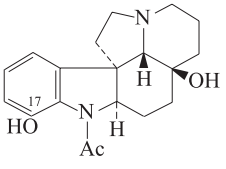
N^4,O-*Di-Ac:*
Cryst. (Me_2CO). Mp 175°. $[\alpha]_D$ -174 ($CHCl_3$).

16-Epimer: ***Lonicerine***†. *16-Epiaspidodasycarpine*
[26988-11-4]
$C_{21}H_{26}N_2O_4$ 370.447
Alkaloid from the root bark of *Callichilia barteri* (Apocynaceae). Plates (Me_2CO/hexane). Mp 105-107°. $[\alpha]_D^{24}$ -127 (c, 0.98 in $CHCl_3$).

Joule, J.A. *et al., Tetrahedron*, 1965, **21**, 1717 (*isol, uv, ir, pmr, ms, struct*)
Burnell, R.H. *et al., Phytochemistry*, 1968, **7**, 2045 (*isol, uv, ir, pmr, ms*)
Naranjo, J. *et al., Helv. Chim. Acta*, 1970, **53**, 749 (*Lonicerine*)
Simões, J.C. *et al., Phytochemistry*, 1976, **15**, 543 (*isol*)

Aspidodispermine A-1493

[21451-67-2]



Absolute configuration

$C_{19}H_{24}N_2O_3$ 328.41

Alkaloid from *Aspidosperma dispermum* (Apocynaceae). Noncryst. $[\alpha]_D$ +119 (MeOH).

O^{17}*-Me:* Mp 189-191°. $[\alpha]_D$ -43 (MeOH).

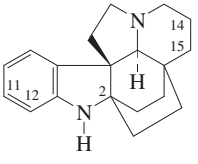
O^{17}*-Me; hydrobromide:* Mp 259-261°.

17-Deoxy: ***Deoxyaspidodispermine***
[21446-30-0]
[54191-59-2]
$C_{19}H_{24}N_2O_2$ 312.411
Alkaloid from *Aspidosperma dispermum* (Apocynaceae). Amorph.; cryst. + $1H_2O$ (as picrate). Mp 184-186° (picrate). $[\alpha]_D$ -20 (MeOH).

Ikeda, M. *et al., Tet. Lett.*, 1968, 5837 (*uv, ir, pmr, ms, struct*)
Ling, N.C. *et al., Tet. Lett.*, 1970, 3015 (*cryst struct*)
Ohnuma, T. *et al., Chem. Comm.*, 1974, 296 (*synth, deriv*)
Ban, Y. *et al., Lect. Heterocycl. Chem.*, 1976, **3**, 55 (*synth*)
Honma, Y. *et al., Heterocycles*, 1977, **6**, 129 (*synth*)

Aspidofractinine A-1494

*2,3,4,5,11,12-Hexahydro-6*H,*13*a*H-3a,5a-ethano-1*H*-indolizino[8,1-*cd*]carbazole, 9CI*
[6871-25-6]
[60365-41-5 ((±)-form)]



Absolute Configuration

$C_{19}H_{24}N_2$ 280.412

Considerable confusion regarding the abs. configs. of this group of alkaloids. All appear to have the abs. config indicated. The key ref. is Guggisberg 1969 but this has often been overlooked in CAS and elsewhere. Note also that in Aspidofractinine and other alkaloids unsubstituted on the ethylene bridges, C-2 is not a chiral centre. Alkaloid from *Aspidosperma refractum*, the leaves of *Pleiocarpa tubicina*, and the stem and root barks of *Hunteria elliotii* (Apocynaceae). Prisms (pentane). Mp 101-102°. $Bp_{0.001}$ 110°. $[\alpha]_D^{23}$ -20 (c, 0.58 in $CHCl_3$). λ_{max} 241 (log ε 3.83); 291 (log ε 3.46) (EtOH).

N-*Ac:* Mp 127-130°. $[\alpha]_D^{23.5}$ +27 (c, 0.25 in $CHCl_3$).

N^1*-Me:* ***N^1-Methylaspidofractinine***
[132356-83-3]
$C_{20}H_{26}N_2$ 294.439
Alkaloid from the roots of *Vinca sardoa* (Apocynaceae). Amorph. solid. λ_{max} 208 (log ε 4.13); 257 (log ε 3.7); 300 (log ε 3.15) (MeOH).

14,15-Didehydro, N^1*-formyl:* ***N-Formyl-14,15-didehydroaspidofractinine***
$C_{20}H_{22}N_2O$ 306.407
Alkaloid from *Vinca sardoa* (Apocynaceae). Cryst. (cyclohexane). Mp 138-140°. $[\alpha]_D^{23}$ +55.8 (c, 0.5 in MeOH). CAS no. not found to 14CI. λ_{max} 211 (log ε 4.34); 254 (log ε 4.13); 278 (log ε 3.76); 287 (log ε 3.7) (MeOH).

14,15-Didehydro, N^1*-Me:* ***N^1-Methyl-14,15-didehydroaspidofractinine***
[131711-44-9]
$C_{20}H_{24}N_2$ 292.423
Alkaloid from the roots of *Vinca sardoa* (Apocynaceae). Cryst. (EtOH) (hydrobromide). Mp 285-295° (hydrobromide).

12-Hydroxy, N-*Ac:* ***Aspidofiline***
$C_{21}H_{26}N_2O_2$ 338.449
Alkaloid from the leaves of *Aspidosperma pyrifolium* (Apocynaceae). Needles (Et_2O). Mp 190-191°. $[\alpha]_D^{20}$ -174 ($CHCl_3$). Publ. details on abs. config. are fragmentary. The abs. config. given here is probable on biogenetic grounds. λ_{max} 231 (log ε 3.76); 308 (log ε 4.31) (EtOH/base). λ_{max} 258 (log ε 3.85); 282 (sh) (EtOH).

12-Hydroxy, N-*Ac, picrate:*
Cryst. (Me_2CO). Mp 146°.

12-Hydroxy, 14,15-didehydro, N^1*-formyl:* ***N^1-Formyl-14,15-didehydro-12-hydroxyaspidofractinine***
$C_{20}H_{22}N_2O_2$ 322.406
Alkaloid from *Vinca sardoa* (Apocynaceae). Cryst. (cyclohexane). Mp 165° dec. $[\alpha]_D^{20}$ -39 (c, 0.3 in MeOH). CAS no. not found to 14CI. λ_{max} 216 (log ε 4.41); 256 (log ε 3.94); 286 (log ε 3.69) (MeOH).

12-Hydroxy, 14,15-didehydro, N^1*-Me:* ***14,15-Didehydro-12-hydroxy-N^1-methylaspidofractinine****. 12-Hydroxy-*N^1*-methyl-14,15-didehydroaspidofractinine*
$C_{20}H_{24}N_2O$ 308.422
Alkaloid from *Vinca sardoa* (Apocy-

naceae). Amorph. $[\alpha]_D^{23}$ +98.4 (c, 0.2 in MeOH). CAS no. not found to 14CI. λ_{max} 214 (log ε 4.3); 253 (log ε 3.76); 292 (log ε 3.46) (MeOH).

12-Methoxy: ***12-Methoxyaspidofractinine****. 17-Methoxyaspidofractinine*
$C_{20}H_{26}N_2O$ 310.438
Alkaloid from *Aspidosperma populifolium* (Apocynaceae). Cryst. (Me_2CO). Mp 128-130°. $[\alpha]_D^{25}$ +3 (c, 0.67 in $CHCl_3$). CAS no. not found 8-14 CI.

12-Methoxy, N-*formyl:* **N-*Formyl-12-methoxyaspidofractinine***
$C_{21}H_{26}N_2O_2$ 338.449
Alkaloid from *Aspidosperma populifolium* (Apocynaceae). Amorph. CAS no. not found 8-14CI. λ_{max} 255 (log ε 4.04); 288 (log ε 3.42) (EtOH).

12-Methoxy, 14,15-didehydro, N^1*-Me:* ***14,15-Didehydro-12-methoxy-N^1-methylaspidofractinine****. 12-Methoxy-*N^1*-methyl-14,15-didehydroaspidofractinine*
$C_{21}H_{26}N_2O$ 322.449
Alkaloid from *Vinca sardoa* (Apocynaceae). Cryst. (EtOAc/cyclohexane). Mp 138-140°. $[\alpha]_D^{23}$ +159 (c, 0.1 in MeOH). CAS no. not found to 14CI. λ_{max} 211 (log ε 4.35); 257 (log ε 3.96); 295 (log ε 3.56) (MeOH).

11,12-Dimethoxy: ***11,12-Dimethoxyaspidofractinine****. 16,17-Dimethoxyaspidofractinine*
$C_{21}H_{28}N_2O_2$ 340.464
Alkaloid from *Aspidosperma populifolium* (Apocynaceae). Cryst. (Me_2CO). Mp 140-142°. $[\alpha]_D^{27}$ -141 (c, 2.61 in $CHCl_3$). CAS no. not found. λ_{max} 214 (log ε 4.5); 298 (log ε 3.39) (EtOH).

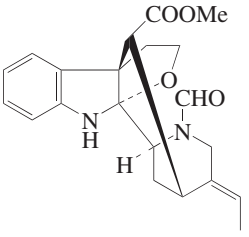
11,12-Dimethoxy, N^1*-formyl:* **N-*Formyl-11,12-dimethoxyaspidofractinine***
$C_{22}H_{28}N_2O_3$ 368.475
Alkaloid from *Aspidosperma populifolium* (Apocynaceae). Amorph. CAS no. not found. λ_{max} 253 (log ε 3.86); 287 (log ε 3.42) (EtOH).

17-Oxo: see Kopsinone, K-80

Antonaccio, L.D. *et al., J.O.C.*, 1960, **25**, 1262-1263 (*Aspidofiline, isol, uv, ir*)
Djerassi, C. *et al., Experientia*, 1962, **18**, 397-398 (*Aspidofiline, pmr, ms, struct*)
Djerassi, C. *et al., Helv. Chim. Acta*, 1963, **46**, 742-751 (*ms, struct*)
Bycroft, B.W. *et al., Helv. Chim. Acta*, 1964, **47**, 1147-1152 (*isol, uv, ir, pmr*)
Gilbert, B. *et al., Tetrahedron*, 1965, **21**, 1141-1166 (*Aspidosperma populifolium constits*)
Klyne, W. *et al., Helv. Chim. Acta*, 1968, **51**, 1168-1184 (*ord*)
Guggisberg, A. *et al., Helv. Chim. Acta*, 1969, **52**, 76-89 (*abs config*)
Ban, Y. *et al., Tet. Lett.*, 1976, 1111-1114 (*synth, uv, ir, ms*)
Vercauteren, J. *et al., Phytochemistry*, 1980, **19**, 1959-1961 (*isol*)
Craveiro, A.A. *et al., Phytochemistry*, 1983, **22**, 1526-1528 (*Aspidofiline, isol, ir, pmr*)
Cartier, D. *et al., Tet. Lett.*, 1989, **30**, 1951-1954 (*synth*)
Dufour, M. *et al., Tet. Lett.*, 1989, **30**, 3429-3432 (*synth*)
Crippa, S. *et al., Heterocycles*, 1990, **31**, 1663-1667 (*N-Methylaspidofractinine*)
Wenkert, E. *et al., J.O.C.*, 1994, **59**, 7677-7682 (*synth*)
Nicoletti, M. *et al., Phytochemistry*, 1998, **47**, 149-151 (*didehydro derivs*)

Aspidophylline A A-1495

[958247-22-8]

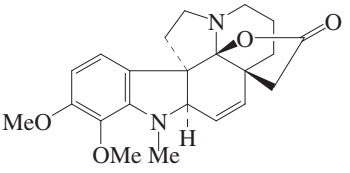


$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from *Kopsia singapurensis.* Cryst. ($CHCl_3$). Mp 110-111°. $[\alpha]_D^{25}$ -86 (c, 0.09 in $CHCl_3$). λ_{max} 206 (log ε 4.52); 239 (log ε 4.04); 293 (log ε 3.58) (EtOH).

Subramaniam, G. *et al., J. Nat. Prod.*, 2007, **70**, 1783-1789 (*isol, pmr, cmr, ms*)

Aspidophytine A-1496

3,4-Didehydro-19-hydroxy-16,17-dimethoxy-1-methylaspidospermidin-21-oic acid, γ-lactone, 9CI
[16625-21-1]

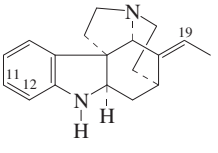


$C_{22}H_{26}N_2O_4$ 382.458
Possible biosynthetic precursor of Haplophytine, H-58. Needles (EtOH). Mp 201-203°. $[\alpha]_D^{25}$ -122 (c, 0.16 in $CHCl_3$). λ_{max} 222 (ε 28700); 256 (ε 5900); 304 (ε 2400) (EtOH).

Yates, P. *et al., J.A.C.S.*, 1973, **95**, 7842-7850 (*isol*)
Sumi, S. *et al., Tetrahedron*, 2003, **59**, 8571-8587 (*synth, pmr, cmr*)
Mejia-Oneto, J.M. *et al., Org. Lett.*, 2006, **8**, 3275-3278 (*synth*)
Marino, J.P. *et al., Tet. Lett.*, 2006, **47**, 7711-7713 (*synth*)
Nicolaou, K.C. *et al., J.A.C.S.*, 2008, **130**, 14942-14943 (*synth*)

Aspidospermatidine A-1497

14,19-Didehydrocondyfolan, 9CI
[3890-05-9]



Absolute Configuration

$C_{18}H_{22}N_2$ 266.385
Alkaloid from *Aspidosperma quebracho-blanco* (quebracho) (Apocynaceae). Cryst. (Et_2O/hexane). Mp 168-170° Mp 184-186°. λ_{max} 242 (log ε 3.83); 296 (log ε 3.48) (EtOH).

N-*Ac:* **N-*Acetylaspidospermatidine***
$C_{20}H_{24}N_2O$ 308.422
Alkaloid from *Vallesia dichotoma* (Apocynaceae). Noncryst. $[\alpha]_D$ -28 (EtOH). CAS No. not found 8-14CI. λ_{max} 210 ; 253 ; 289 ($CHCl_3$).

N-*Me:* **N-*Methylaspidospermatidine***
$C_{19}H_{24}N_2$ 280.412
Alkaloid in *Aspidosperma quebracho-blanco* (quebracho) (Apocynaceae). Amorph. CAS No. not found 8-14CI.

11-Hydroxy, N-*Ac:* **N-*Acetyl-11-hydroxyaspidospermatidine***
$C_{20}H_{24}N_2O_2$ 324.422
Minor alkaloid from *Aspidosperma compactinervium* (Apocynaceae). Noncryst. CAS No. not found 8-14CI. λ_{max} 218 (log ε 4.23); 252 (log ε 3.89); 294 (log ε 3.65); 300 (log ε 3.65) (EtOH).

12-Hydroxy, N-*Ac:* ***Limatinine***
[11035-45-3]
[19046-21-0]
$C_{20}H_{24}N_2O_2$ 324.422
Alkaloid from *Aspidosperma tomentosum, Aspidosperma limae* and *Aspidosperma subincanum* (Apocynaceae). Prisms (Et_2O/pentane). Mp 162-163° (158-160°). $[\alpha]_D^{22}$ +170 (c, 0.24 in EtOH). $[\alpha]_D^{25}$ +162 (c, 0.83 in $CHCl_3$). 19-Config. uncertain. λ_{max} 220 (log ε 4.36); 259 (log ε 3.85); 290 (log ε 3.49) (EtOH).

12-Hydroxy, N-*Ac, picrate:*
Cryst. (Me_2CO/MeOH or Me_2CO aq.). Mp 250° dec.

12-Hydroxy, N-*propanoyl:* ***Limatine***
$C_{21}H_{26}N_2O_2$ 338.449
Alkaloid from the stem bark of *Aspidosperma limae* (Apocynaceae). Cryst. (Me_2CO/hexane). Mp 175-176°. $[\alpha]_D^{20}$ +166 (c, 0.85 in $CHCl_3$). 19-Config. uncertain. CAS No. not found 8-14CI. λ_{max} 220 (log ε 4.66); 259 (log ε 4.51); 290 (log ε 3.83) (EtOH).

12-Hydroxy, N-*propanoyl, picrate:*
Cryst. (Me_2CO/EtOAc or Me_2CO aq.). Mp 265° dec.

11-Methoxy, 12-hydroxy: ***11-Methoxylimatine***
[11044-89-6]
$C_{22}H_{28}N_2O_3$ 368.475
Alkaloid from the stem bark of *Aspidosperma limae* (Apocynaceae). Prisms (MeOH/Et_2O/pentane). Mp 75-78°. $[\alpha]_D^{23}$ +168 (c, 0.21 in $CHCl_3$). 19-Config. uncertain. λ_{max} 227 (log ε 4.39); 262 (log ε 3.91) (EtOH).

11-Methoxy, 12-hydroxy, N-*Ac:* ***11-Methoxylimatinine***
[11035-48-6]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from *Aspidosperma limae* (Apocynaceae). Prisms (Et_2O/pentane or Me_2CO/hexane). Mp 139-140°. $[\alpha]_D^{23}$ +181 (c, 0.17 in $CHCl_3$). 19-Config. uncertain. λ_{max} 229 (log ε 4.38); 261 (log ε 3.77) (EtOH).

11-Methoxy, 12-hydroxy, N-*Ac, picrate:*
Cryst. (Me_2CO/EtOH). Mp 238-244° dec.

11-Methoxy, 12-hydroxy, N-*propanoyl, picrate:*

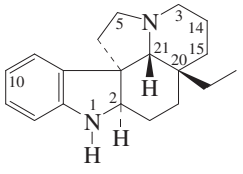
Cryst. (Me_2CO/EtOH). Dec. >250° without melting.

12-Methoxy, N-*Ac:* ***Aspidospermatine***
[5794-14-9]
$C_{21}H_{26}N_2O_2$ 338.449
Alkaloid from *Aspidosperma quebracho-blanco* (quebracho) and *Vallesia glabra*. Mp 162° (157-159°). $[\alpha]_D$ -73 (EtOH). 19-Config. uncertain. λ_{max} 219 (log ϵ 4.54); 255 (log ϵ 4.1); 290 (log ϵ 3.62) (EtOH).

12-Methoxy, 19,20-dihydro, N-*Ac:* ***Dihydroaspidospermatine***
$C_{21}H_{28}N_2O_2$ 340.464
Alkaloid from *Aspidosperma quebracho-blanco* (quebracho) (Apocynaceae). Noncryst. CAS No. not found 8-14CI.

Biemann, K. *et al., J.A.C.S.*, 1963, **85**, 631-638 (*Aspidospermatidine, N-Methylaspidospermatidine, Aspidospermatine, Dihydroaspidospermatine*)
Walser, A. *et al., Helv. Chim. Acta*, 1965, **48**, 391-404 (N-*Acetylaspidospermatidine*)
Pinar, M. *et al., Helv. Chim. Acta*, 1965, **48**, 822-825; 1967, **50**, 89-93 (*Aspidosperma limae alkaloids*)
Gilbert, B. *et al., Tetrahedron*, 1965, **21**, 1141-1166 (N-*Acetyl-11-hydroxyaspidospermatidine*)
Klyne, W. *et al., Helv. Chim. Acta*, 1966, **49**, 833-841 (*Limatine, isol, ord, abs config*)
Arndt, R.R. *et al., Phytochemistry*, 1967, **6**, 1653-1658 (*Limatinine, abs config*)
Zeches, M. *et al., Planta Med.*, 1995, **61**, 89-91 (*Aspidospermatine*)

Aspidospermidine A-1498



(+)-*form*

$C_{19}H_{26}N_2$ 282.428

(+)-*form* [2912-09-6]
Alkaloid from *Amsonia tabernaemontana, Gonioma kamassi, Aspidosperma quebracho-blanco* (quebracho) and several other *Aspidosperma* spp. (Apocynaceae). Mp 119.5-121°. $[\alpha]_D^{23}$ +21 (EtOH).

N^1-*Ac:* **N-*Acetylaspidospermidine***. *Demethoxyaspidospermine*
[2111-81-1]
$C_{21}H_{28}N_2O$ 324.465
Alkaloid from *Aspidosperma exalatum*, *Aspidosperma discolor*, *Geissospermum argenteum* and *Vallesia dichotoma* (Apocynaceae). Cryst. (hexane or Et_2O/hexane). Mp 114° (103-105°). $[\alpha]_D^{20}$ -15 (c, 1 in $CHCl_3$).

N^1-*Ac; perchlorate:*
Cryst. (MeOH/Et_2O). Mp 164-170° dec.

N-*Propanoyl:* ***Demethoxypalosine***
[17472-57-0]
$C_{22}H_{30}N_2O$ 338.492
Alkaloid from seeds of *Aspidosperma exalatum*, bark of *Aspidosperma rhombeosignatum, Aspidosperma discolor* and *Aspidosperma limae* (Apocynaceae). Cryst. (pentane). Mp 117-120°. $[\alpha]_D$ -20 ($CHCl_3$).

N-*(β-threo-Pentopyranos-4-uloside):* ***Aspidospermiose***
[183803-80-7]
$C_{24}H_{32}N_2O_5$ 428.527
Alkaloid from leaves of *Rhazya stricta*. Stereochem. of sugar residue not totally determined. λ_{max} 207 (log ϵ 4.12); 235 (log ϵ 3.18); 250 (log ϵ 3.14); 300 (log ϵ 2.3) (MeOH).

N^1*-(β-D-*xylo-*Hexos-4-uloside):* ***Aspidospermidose***
[110325-67-2]
$C_{25}H_{34}N_2O_5$ 442.554
Alkaloid from leaves of *Rhazya stricta* (Apocynaceae). $[\alpha]_D^{24}$ +203 (MeOH). The first alkaloidal glycoside with an oxidised sugar unit.

N^1*-Me:* ***α-Methylaspidospermidine***
[2671-47-8]
$C_{20}H_{28}N_2$ 296.455
Alkaloid from *Vinca minor* (Apocynaceae). $[\alpha]_D^{24}$ +24.4 (c, 1.25 in $CHCl_3$).

14,15-Didehydro, N^1*-Me:* ***14,15-Dehydro-N-methylaspidospermidine***. *6,7-Didehydro-1-methylaspidospermidine, 9CI*
$C_{20}H_{26}N_2$ 294.439
Alkaloid from *Vallesia herbacea* (Apocynaceae). Cryst. (EtOH). Mp 110-112°. $[\alpha]_D$ -40 (c, 0.3 in $CHCl_3$).

21-Hydroxy: ***Fendlispermine***
[52309-71-4]
$C_{19}H_{26}N_2O$ 298.427
Alkaloid from *Aspidosperma fendleri* (Apocynaceae).

14β,15α-Dihydroxy, N^1*-Me:* ***14,15-Dihydroxy-N-methylaspidospermidine***
$C_{20}H_{28}N_2O_2$ 328.453
Alkaloid from *Tabernaemontana bovina*. Cryst. (Me_2CO). Mp 200-203°. $[\alpha]_D^{30}$ +15.3 (c, 0.06 in MeOH).

3-Oxo: ***Melocelinine***
[52628-61-2]
$C_{19}H_{24}N_2O$ 296.411
Alkaloid from *Melodinus celastroides* (Apocynaceae).

5-Oxo: ***Meloceline***
[52617-21-7]
$C_{19}H_{24}N_2O$ 296.411
Alkaloid from *Melodinus celastroides* (Apocynaceae).

10-Methoxy: ***10-Methoxyaspidospermidine***
$C_{20}H_{28}N_2O$ 312.454
Alkaloid from stem bark of *Aspidosperma pyrifolium*. $[\alpha]_D$ +2.4 (c, 0.5 in $CHCl_3$). Largely racemic.

20,21-Diepimer: ***20,21-Epiaspidospermidine***. *5,19-Epiaspidospermidine*
[52152-79-1]
$C_{19}H_{26}N_2$ 282.428
Alkaloid from *Melodinus celastroides* (Apocynaceae).

20,21-Diepimer, N^b*-oxide:* ***20,21-Epiaspidospermidine N-oxide***. N^b*-Oxy-20,21-epiaspidospermidine*
[52077-40-4]
$C_{19}H_{26}N_2O$ 298.427
Alkaloid from *Melodinus celastroides* (Apocynaceae).

(-)-*form*

14,15-Didehydro, N^1*-Me:* **ent-*14,15-Didehydro-*N^1*-methylaspidospermidine***
[16718-72-2]
$C_{20}H_{26}N_2$ 294.439
Alkaloid from the roots of *Vinca sardoa* (Apocynaceae). Cryst. (petrol). Mp 118-120°. Double bond omitted from struct. diag. in ref.

(±)-*form* [7689-02-3]
Mp 108-110°.

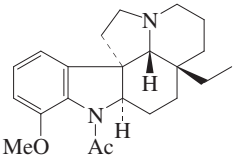
N^1*-Ac:* [56197-28-5]
Resin.

Ferreira, J.M. *et al., Experientia*, 1963, **19**, 585 (*N-Acetylaspidospermidine, Demethoxypalosine*)
Biemann, K. *et al., J.A.C.S.*, 1963, **85**, 631 (*ms*)
Smith, G.F. *et al., J.C.S.*, 1963, 4002 (*synth, uv*)
Walser, A. *et al., Helv. Chim. Acta*, 1965, **46**, 391 (*N-Acetylaspidospermidine*)
Gilbert, B. *et al., Tetrahedron*, 1965, **21**, 1141 (*N-Acetylaspidospermidine, isol*)
Mokrý, J. *et al., Coll. Czech. Chem. Comm.*, 1967, **32**, 2523 (*N-Methylaspidospermidine*)
Dastoor, N.J. *et al., Helv. Chim. Acta*, 1967, **50**, 213 (*N-Acetylaspidospermidine, isol*)
Klyne, W. *et al., Helv. Chim. Acta*, 1968, **51**, 1169 (*ord*)
Rabaron, A. *et al., Plant. Med. Phytother.*, 1973, **7**, 319 (*Oxoaspidospermidine, epimers*)
Medina, J.D. *et al., Rev. Latinoam. Quim.*, 1973, **4**, 73; *CA*, **80**, 27419g (*Fendlispermine*)
Laronze, J.-Y. *et al., Tet. Lett.*, 1974, 491 (*synth*)
Babaev, N.A. *et al., Khim. Prir. Soedin.*, 1975, **11**, 267; *Chem. Nat. Compd. (Engl. Transl.)*, 1975, **11**, 283 (*14,15-Didehydro-N-methylaspidospermidine*)
Seki, K. *et al., Tet. Lett.*, 1975, 723 (*synth*)
Paccioni, J.P. *et al., Phytochemistry*, 1978, **17**, 2146
Gallagher, T. *et al., J.A.C.S.*, 1983, **105**, 4750 (*synth*)
Atta-ur-Rahman, *et al., J.C.S. Perkin 1*, 1987, 1701 (*Aspidospermidose*)
Mandal, S.B. *et al., J.O.C.*, 1988, **53**, 4236 (*synth*)
Crippa, S. *et al., Heterocycles*, 1990, **31**, 1663 (*ent-14,15-Didehydro-N-methyl-aspidospermidine*)
Node, M. *et al., J.O.C.*, 1990, **55**, 517 (*synth*)
Le Ménez, P. *et al., J.O.C.*, 1991, **56**, 2915 (*synth*)
Desmaële, D. *et al., J.O.C.*, 1994, **59**, 2292 (*synth*)
Wenkert, E. *et al., J.O.C.*, 1994, **59**, 7677 (*synth*)
Habib-ur-Rehman, *et al., Fitoterapia*, 1996, **67**, 145 (*Aspidospermiose*)
Forns, P. *et al., J.O.C.*, 1996, **61**, 7882 (*synth*)
Mitaine, A.C. *et al., Planta Med.*, 1996, **62**, 458 (*10-Methoxyaspidospermidine*)
Schultz, A.G. *et al., J.O.C.*, 1997, **62**, 6855-6861 (*synth*)
Lien, T.P. *et al., Phytochemistry*, 1998, **49**, 1457-1461 (*14,15-Dihydroxy-N-methylaspidospermidine*)
Callaghan, O. *et al., J.C.S. Perkin 1*, 1999, 995-1001 (*synth*)
Callaghan, O. *et al., Tet. Lett.*, 1999, **40**, 161-164; 2225 (*synth, bibl*)
Toczko, M.A. *et al., J.O.C.*, 2000, **65**, 2642-2645 (*synth*)
Kozmin, S.A. *et al., J.A.C.S.*, 2002, **124**, 4628-4641 (*synth*)
Marino, J.P. *et al., J.A.C.S.*, 2002, **124**, 13398-13399 (*synth*)
Banwell, M.G. *et al., Aust. J. Chem.*, 2005, **58**, 722-737 (*synth*)

Iyengar, R. *et al., J.O.C.*, 2005, **70**, 10645-10652 (*synth*)
Callier-Dublanchet, A.-C. *et al., Tetrahedron*, 2008, **64**, 4803-4816 (*synth*)

Aspidospermine A-1499

1-Acetyl-17-methoxyaspidospermidine, 9CI
[466-49-9]



(-)-*form*

$C_{22}H_{30}N_2O_2$ 354.491
Alkaloid from *Aspidosperma quebracho-blanco* (quebracho) and several other *Aspidosperma* spp., *Vallesia glabra*, *Vallesia dichotoma* and *Strychnos angolensis*. Diuretic, repiratory stimulant. λ_{max} 218 (ϵ 37500); 255 (ϵ 11000); 285 (ϵ 3400) (MeOH) (Berdy).

▶ LD_{50} (mus, ipr) 40 mg/kg.

N-*De-Ac:* ***Deacetylaspidospermine***. *Deformylvallesine. 17-Methoxyaspidospermidine*
[2447-50-9]
$C_{20}H_{28}N_2O$ 312.454
Alkaloid from *Strempeliopsis strempelioides* and *Vallesia antillana*. Cryst. (pentane). Mp 107-109°. $[\alpha]_D^{20}$ +8 (MeOH).

N-*De-Ac, hydroiodide (1:2):*
Prisms. Mp 243° (after sintering from 235°).

N-*De-Ac,* N-*formyl:* ***Vallesine***
[466-46-6]
$C_{21}H_{28}N_2O_2$ 340.464
Alkaloid from *Strempeliopsis strempelioides, Vallesia glabra* and *Vallesia dichotoma* (Apocynaceae). Needles (Me_2CO/Et_2O). Mp 154-155°. $[\alpha]_D$ -92 (c, 0.12 in $CHCl_3$).

N-*De-Ac,* N-*propanoyl:* ***Palosine***
[466-48-8]
$C_{23}H_{32}N_2O_2$ 368.518
Alkaloid from *Aspidosperma polyneuron* and stem bark of *Aspidosperma pyrifolium* (Apocynaceae). Needles (Et_2O/petrol). Mp 149-152°. $[\alpha]_D^{24}$ -85.9 (c, 0.734 in $CHCl_3$).

O-*De-Me:* ***Demethylaspidospermine***
[2122-21-6]
$C_{21}H_{28}N_2O_2$ 340.464
Alkaloid from *Aspidosperma discolor, Aspidosperma neblinae, Aspidosperma eburneum, Geissospermum argenteum, Strempeliopsis strempelioides* and *Vallesia antillana* (Apocynaceae). Needles. Mp 112-114°. $[\alpha]_D^{20}$ +114 ($CHCl_3$).

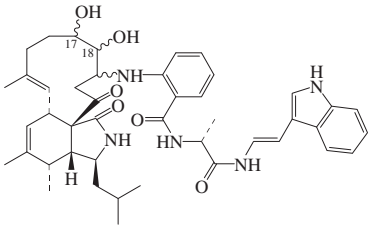
O-*De-Me, perchlorate:*
Cryst. + 1 MeOH (MeOH). Mp 170° dec. $[\alpha]_D^{25}$ +94 (c, 0.98 in MeOH).

O-*De-Me,* N-*de-Ac:* ***Aspidosine***
[466-47-7]
$C_{19}H_{26}N_2O$ 298.427
Alkaloid from the leaves of *Strempeliopsis strempelioides* (Apocynaceae). Mp 255.5-257.5° (250-253°). $[\alpha]_D^{20}$ -12 (EtOH). λ_{max} 246 (log ϵ 3.91); 289 (log ϵ 3.42) (MeOH).

O-*De-Me,* N-*de-Ac,* N-*propanoyl:* **O-*Demethylpalosine***
[16049-40-4]
$C_{22}H_{30}N_2O_2$ 354.491
Alkaloid from *Tabernaemontana amygdalaefolia* roots (Apocynaceae). Mp 169°. $[\alpha]_D^{20}$ +118 (c, 0.36 in $CHCl_3$).

Ewins, A.J. *et al., J.C.S.*, 1914, **105**, 2738 (*synth*)
Schlittler, E. *et al., Helv. Chim. Acta*, 1948, **31**, 446 (*synth, uv*)
Witkop, B. *et al., J.A.C.S.*, 1954, **76**, 5603 (*synth, uv*)
Chalmers, J.R. *et al., J.C.S.*, 1957, 1115 (*uv*)
Conroy, H. *et al., J.A.C.S.*, 1958, **80**, 5178 (*ir, pmr*)
Schmutz, J. *et al., Helv. Chim. Acta*, 1959, **42**, 874 (*Palosine*)
Taylor, W.I. *et al., Helv. Chim. Acta*, 1959, **42**, 2750 (*Palosine*)
Holker, J.S.E. *et al., J.O.C.*, 1959, **24**, 314 (*Vallesine*)
Gilbert, B. *et al., Chem. Ind. (London)*, 1962, 1949 (*Demethoxypalosine*)
Ferreira, J.M. *et al., Experientia*, 1963, **19**, 585 (*uv, ir, pmr, ms, struct, deriv*)
Biemann, K. *et al., J.A.C.S.*, 1963, **85**, 631 (*ms*)
Walser, A. *et al., Helv. Chim. Acta*, 1965, **48**, 391 (*deriv*)
Klyne, W. *et al., Helv. Chim. Acta*, 1965, **48**, 443; 1966, **49**, 833 (*ord, uv, abs config*)
Ban, Y. *et al., Tet. Lett.*, 1965, 2261 (*synth*)
Gilbert, B. *et al., Tetrahedron*, 1965, **21**, 1141 (*isol*)
Achenbach, H. *et al., Tet. Lett.*, 1966, 5027 (*Demethylpalosine*)
Craven, B.M. *et al., Experientia*, 1968, **24**, 770 (*cryst struct, abs config*)
Sakabe, N. *et al., Tet. Lett.*, 1969, 2527 (*cryst struct*)
Stevens, R.V. *et al., Chem. Comm.*, 1971, 857 (*synth*)
Paccioni, J.P. *et al., Phytochemistry*, 1978, **17**, 2146 (*isol*)
Laguna, A. *et al., Coll. Czech. Chem. Comm.*, 1980, **45**, 1419-1423 (*Vallesine, Aspidosine, Demethylaspidospermine*)
Meyers, A.I. *et al., J.O.C.*, 1989, **54**, 4673 (*synth*)
Campbell, W.E. *et al., Spectrosc. Lett.*, 1993, **26**, 707 (*pmr, cmr*)
Mitaine, A.C. *et al., Planta Med.*, 1996, **62**, 458 (*Palosine, isol, pmr, cmr*)
Fukuda, Y.-I. *et al., Org. Lett.*, 2003, **5**, 749-751 (*synth*)

Aspochalamin A A-1500



$C_{44}H_{55}N_5O_6$ 749.948
Prod. by *Aspergillus niveus* LU 9575.

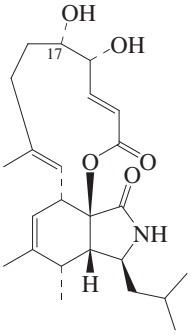
17-Deoxy: ***Aspochalamin C***
$C_{44}H_{55}N_5O_5$ 733.949
Prod. by *Aspergillus niveus* LU 9575.

17,18-Dideoxy: ***Aspochalamin D***
$C_{44}H_{55}N_5O_4$ 717.95
Prod. by *Aspergillus niveus* LU 9575.

Stereoisomer: ***Aspochalamin B***
$C_{44}H_{55}N_5O_6$ 749.948
Prod. by *Aspergillus niveus* LU 9575.

Gebhardt, K. *et al., J. Antibiot.*, 2004, **57**, 707-714; 715-720 (*isol, pmr, cmr*)

Aspochalasin I A-1501



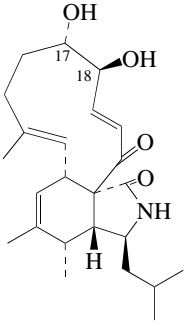
$C_{24}H_{35}NO_5$ 417.544
Prod. by *Aspergillus flavipes*. Solid. Mp 136-138°. $[\alpha]_D^{27}$ -166.6 (c, 0.2 in $CHCl_3$).

17-Deoxy: ***Aspochalasin J***
$C_{24}H_{35}NO_4$ 401.545
Prod. by *Aspergillus flavipes*. Solid.

Zhou, G.-X. *et al., J. Nat. Prod.*, 2004, **67**, 328-332 (*isol, pmr, cmr*)

Aspochalasin C A-1502

[72401-79-7]



$C_{24}H_{35}NO_4$ 401.545
Metab. of *Aspergillus microcysticus*. Metab. inactive. Amorph. powder. $[\alpha]_D^{25}$ -86 (c, 1.37 in $CHCl_3$). λ_{max} 244 (ϵ 7320) (EtOH) (Derep). λ_{max} 240 (EtOH) (Berdy).

18-Ketone: ***Aspochalasin B***
[72363-47-4]
$C_{24}H_{33}NO_4$ 399.529
From *Aspergillus microcysticus*. Inactive. Yellow amorph. powder. $[\alpha]_D^{25}$ -118 (c, 1.37 in $CHCl_3$). λ_{max} 225 (ϵ 9770) (EtOH) (Derep). λ_{max} 225 (ϵ 9900) (EtOH) (Berdy).

17,18-Diketone: ***Aspochalasin A***. *Asposterol*
[72363-48-5]
$C_{24}H_{31}NO_4$ 397.513

From *Aspergillus microcysticus*. Antibiotic. Light yellow amorph. powder. $[\alpha]_D^{25}$ -20 (c, 0.27 in $CHCl_3$). λ_{max} 265 (ϵ 407); 410 (ϵ 12) (EtOH) (Derep).

17-Deoxy: 17-Deoxyaspochalasin C. ***TMC 169****. Antibiotic TMC 169*
$C_{24}H_{35}NO_3$ 385.545
Prod. by *Aspergillus flavipes*. Powder. Mp 103-105° Mp 112-114°. $[\alpha]_D^{23}$ -50 (c, 0.31 in MeOH). C-18 config. not determined.

17,18-Dideoxy: ***Aspochalasin Z***
$C_{24}H_{35}NO_2$ 369.546
Prod. by *Aspergillus niveus* LU 9575.

17,18-Dideoxy, 17,18-epoxide: ***Aspochalasin G***
$C_{24}H_{33}NO_3$ 383.53
Prod. by *Aspergillus* sp. FO-4282. Inhibits lipid droplet formation. Pale yellow solid. Mp 95°. $[\alpha]_D^{25}$ -77.9 (c, 1 in EtOH). Stereochem. not determined. λ_{max} 205 (ϵ 9800); 240 (sh) ; 280 (sh) (MeOH).

19,20-Dihydro, 19ξ-hydroxy: ***Aspochalasin E***
[149598-68-5]
$C_{24}H_{37}NO_5$ 419.56
Prod. by *Aspergillus flavipes* and an unidentified fungal sp. FA-2277. Powder. Sol. MeOH, $CHCl_3$. Mp 129-131°. $[\alpha]_D^{24}$ -52 (c, 0.5 in $CHCl_3$). λ_{max} 265 (ϵ 407); 410 (ϵ 12) (EtOH) (Derep).

19,20-Dihydro, 19ξ-hydroxy, 18-Me ether: ***Aspochalasin K***
$C_{25}H_{39}NO_5$ 433.587
Prod. by *Aspergillus flavipes*. Amorph. solid. Mp 185-186°. $[\alpha]_D^{27}$ -81.4 (c, 1 in $CHCl_3$). Stereochem. not confirmed.

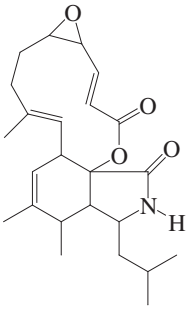
17-Epimer: ***Aspochalasin D***
[71968-02-0]
$C_{24}H_{35}NO_4$ 401.545
Prod. by *Aspergillus flavipes* and *Aspergillus microcysticus*. Shows selective cytotoxicity. Needles (EtOAc). Mp 148° dec. $[\alpha]_D^{25}$ -81 (c, 1.43 in EtOH). Unknown stereochem. λ_{max} 244 (ϵ 7320) (EtOH) (Derep). λ_{max} 248 (ϵ 9300) (EtOH) (Berdy).

17-Epimer, 19α, 20β-epoxide: ***Aspochalasin H***
$C_{24}H_{35}NO_5$ 417.544
Prod. by *Aspergillus* sp. AJ117509. Powder.

Heberle, W. *et al., Arch. Microbiol.*, 1974, **100**, 73 (*isol*)
Keller-Schierlein, W. *et al., Helv. Chim. Acta*, 1979, **62**, 1501 (*struct*)
Neupert-Laves, K. *et al., Helv. Chim. Acta*, 1982, **65**, 1426 (*cryst struct*)
Trost, B.M. *et al., J.A.C.S.*, 1989, **4**, 8284 (*synth*)
Naruse, N. *et al., J. Antibiot.*, 1993, **46**, 679-681 (*Aspochalasin E*)
Fang, F. *et al., J. Antibiot.*, 1997, **50**, 919-925 (*Aspochalasin G*)
Kohno, J. *et al., J. Antibiot.*, 1999, **52**, 575-577 (*TMC 169*)
Namatame, I. *et al., J. Antibiot.*, 2000, **53**, 19-25 (*Aspochalasin G, activity*)
Tomikawa, T. *et al., J. Antibiot.*, 2001, **54**, 379-381; 2002, **55**, 666-668 (*Aspochalasins D,H*)
Gebhardt, K. *et al., J. Antibiot.*, 2004, **57**, 707-714; 715-720 (*Aspochalasin Z*)
Zhou, G.-X. *et al., J. Nat. Prod.*, 2004, **67**, 328-332 (*Aspochalasin K*)

Aspochalasin F A-1503

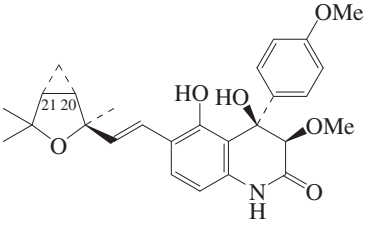
[200631-32-9]



$C_{24}H_{33}NO_4$ 399.529
Prod. by *Aspergillus* sp. FO-4282. Inhibits lipid droplet formation. Pale yellow solid. Mp 96-97°. $[\alpha]_D^{25}$ +9.8 (c, 1 in EtOH). Stereochem. not determined. λ_{max} 203 (ϵ 10200) (MeOH).

Fang, F. *et al., J. Antibiot.*, 1997, **50**, 919-925 (*isol, uv, ir, pmr, cmr*)
Namatame, I. *et al., J. Antibiot.*, 2000, **53**, 19-25 (*activity*)

Aspoquinolone A A-1504

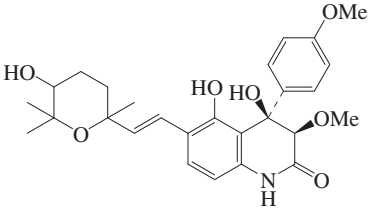


$C_{27}H_{31}NO_6$ 465.545
Prod. by *Aspergillus nidulans* HKI0410. Amorph. solid. λ_{max} 201 (ϵ 34200); 217 (ϵ 27900); 279 (ϵ 15100); 323 (ϵ 14000) (MeOH).

20,21-Diepimer: ***Aspoquinolone B***
$C_{27}H_{31}NO_6$ 465.545
Prod. by *Aspergillus nidulans* HKI0410. Amorph. solid. λ_{max} 201 (ϵ 33000); 217 (ϵ 27100); 279 (ϵ 14400); 323 (ϵ 13200) (MeOH).

Scherlach, K. *et al., Org. Biomol. Chem.*, 2006, **4**, 3517-3520 (*isol, pmr, cmr, ms*)

Aspoquinolone C A-1505



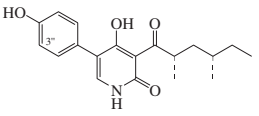
$C_{27}H_{33}NO_7$ 483.56
Closely related to Penigequinolone A, P-191. Prod. by *Aspergillus nidulans* HKI0410. Amorph. solid. Isol. as an inseparable mixt. with Aspoquinolone D to which data refers. λ_{max} 201 (ϵ 30600); 279 (ϵ 11800); 323 (ϵ 10600) (MeOH).

Stereoisomer: ***Aspoquinolone D***
$C_{27}H_{33}NO_7$ 483.56
Prod. by *Aspergillus nidulans* HKI0410. Stereoisomeric on pyran ring.

Scherlach, K. *et al., Org. Biomol. Chem.*, 2006, **4**, 3517-3520 (*isol, pmr, cmr, ms*)

Aspyridone A A-1506

[935863-26-6]



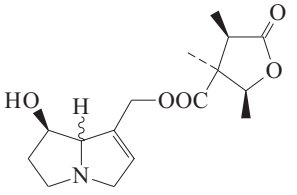
$C_{19}H_{23}NO_4$ 329.395
Prod. by *Aspergillus nidulans*. Amorph. powder. λ_{max} 203 (log ϵ 4.39); 247 (log ϵ 4.37); 344 (log ϵ 3.74) (MeOH).

3″-Hydroxy: ***Aspyridone B***
[935863-27-7]
$C_{19}H_{23}NO_5$ 345.394
Prod. by *Aspergillus nidulans*. Amorph. powder. λ_{max} 204 (log ϵ 4.4); 214 (log ϵ 4.41); 251 (log ϵ 4.21); 344 (log ϵ 3.61) (MeOH).

Bergmann, S. *et al., Nat. Chem. Biol.*, 2007, **3**, 213-217 (*isol, biosynth, pmr, cmr, ms*)

Assamicadine A-1507

[126260-96-6]

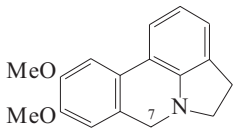


$C_{16}H_{23}NO_5$ 309.361
Rel. config. only of lactone portion detd. Minor alkaloid from seeds of *Crotalaria assamica* (Fabaceae). Viscous oil. $[\alpha]_D^{19}$ -9.4 (c, 0.4 in MeOH).

Cheng, D. *et al., J. Nat. Prod.*, 1989, **52**, 1153 (*isol, ir, pmr, cmr, ms, cd, struct*)

Assoanine A-1508

*4,5-Dihydro-9,10-dimethoxy-7*H*-pyrrolo[3,2,1-*de*]phenanthridine, 9CI. Anhydromethylpseudolycorine*
[107208-75-3]



$C_{17}H_{17}NO_2$ 267.327
Alkaloid from the bulbs of *Narcissus pseudonarcissus*, the aerial parts of *Narcissus assoanus* collected at flowering and from the whole plant of *Narcissus jace-*

tanus (Amaryllidaceae). Cryst. (EtOH). Air oxidn. occurs during determination of the Mp, and the dec. point finally observed is that of the 7-oxo compd.

N-*Me:* **N-*Methylassoaninium***
[132368-07-1]
$C_{18}H_{20}NO_2^{\oplus}$ 282.361
Alkaloid from *Lapiedra martinezii* (Amaryllidaceae). CAS no. refers to the chloride.

O^{10}-*De-Me:* ***Anhydropseudolycorine***
$C_{16}H_{15}NO_2$ 253.3
Alkaloid from *Hymenocallis guianensis*, *Hymenocallis lobata* and *Hymenocallis tubiflora*.

*7(*N*)-Dehydro:* see Vasconine, V-35

4,5-Didehydro, O^{10}*-de-Me:* ***4,5-Dehydroanhydropseudolycorine***
$C_{16}H_{13}NO_2$ 251.284
Alkaloid from *Hymenocallis tubiflora* and *Hymenocallis venezuelensis.*

7-Oxo: ***Oxoassoanine****. 7-Oxoanhydromethylpseudolycorine*
[65367-74-0]
$C_{17}H_{15}NO_3$ 281.31
Alkaloid from the aerial parts of *Narcissus assoanus* collected at flowering and from the whole plant of *Narcissus jacetanus* (Amaryllidaceae). Prisms ($CHCl_3$/EtOH). Mp 272-274° (247-250°).

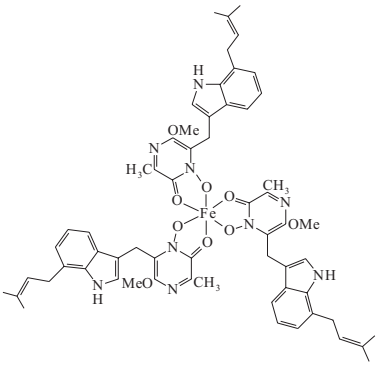
7-Oxo, N-*oxide:* ***Oxoassoanine* N-*oxide***
[129225-26-9]
$C_{17}H_{15}NO_4$ 297.31
Alkaloid from the bulbs of *Narcissus bicolor* (Amaryllidaceae). Cryst. + $2^1/_2H_2O$. Mp 196-198°.

8-Methoxy, 7-oxo: ***8-Methoxyoxoassoanine***
$C_{18}H_{17}NO_4$ 311.337
Alkaloid from *Eucharis amazonica*. Amorph. solid. Mp 245-247°.

Fales, H.M. *et al., J.A.C.S.*, 1956, **78**, 4145 (*isol, uv, struct, synth, deriv*)
Llabrés, J.M. *et al., Phytochemistry*, 1986, **25**, 2637 (*isol, uv, ir, pmr, cmr, ms, deriv*)
Bastida, J. *et al., Planta Med.*, 1988, **54**, 362 (*isol, Assoanine, Oxoassoanine*)
Suau, R. *et al., An. Quim.*, 1990, **86**, 672; *CA*, **114**, 98281n (*N-Methylassoaninium*)
Viladomat, F. *et al., Phytochemistry*, 1990, **29**, 1307 (*Oxoassoanine N-oxide*)
Meyers, A.I. *et al., Tet. Lett.*, 1993, **34**, 6185 (*synth, Oxoassoanine*)
Iwao, M. *et al., Heterocycles*, 1994, **38**, 1717
Parnes, J.S. *et al., J.O.C.*, 1994, **59**, 3497 (*synth, Assoanine, Oxoassoanine*)
Banwell, M.G. *et al., Chem. Comm.*, 1995, 2551 (*synth, Oxoassoanine*)
Hutchings, R.H. *et al., J.O.C.*, 1996, **61**, 1004 (*synth, Oxoassoanine*)
Rosa, A.M. *et al., Tetrahedron*, 1997, **53**, 299 (*synth, Assoanine, Oxoassoanine*)
Padwa, A. *et al., J.O.C.*, 1998, **63**, 3986-3997 (*Oxassoanine, synth*)
Cabezas, F. *et al., Chem. Pharm. Bull.*, 2003, **51**, 315-317 (*8-Methoxyoxoassoanine*)
Harayama, T. *et al., Heterocycles*, 2003, **60**, 2429-2434 (*synth*)
Rivero, N. *et al., Pharm. Biol.*, 2004, **42**, 280-285 (*Anhydropseudolycorine, 4,5-Dehydroanhydropseudolycorine*)
Harayama, T. *et al., Tetrahedron*, 2004, **60**, 1611-1616 (*synth*)
Ganton, M.D. *et al., Org. Lett.*, 2005, **7**, 4777-4779 (*synth*)

Astechrome A-1509

[75310-10-0]

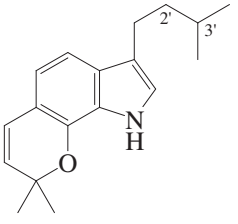


$C_{60}H_{66}FeN_9O_9$ 1113.083
Isol. from *Aspergillus terreus* grown in the presence of Fe ions. Shows weak antibiotic activity. Dark-red needles ($CHCl_3$/hexane). Sol. MeOH, C_6H_6; poorly sol. H_2O. Mp 188-189° dec. λ_{max} 223 (ϵ 151360); 282 (ϵ 24550); 292 (ϵ 21900); 347 (ϵ 26300); 450 (ϵ 4790) (MeOH) (Berdy).

Arai, K. *et al., Chem. Pharm. Bull.*, 1981, **29**, 1510 (*isol, uv, ir, ms, struct*)
Ohta, A. *et al., Heterocycles*, 1992, **34**, 111 (*synth*)
Jing, H. *et al., Chem. Pharm. Bull.*, 1994, **42**, 277 (*synth*)

Asteranthine A-1510

*2,9-Dihydro-2,2-dimethyl-7-(3-methylbutyl)pyrano[3,2-*g*]indole*



$C_{18}H_{23}NO$ 269.386
Parent not known.

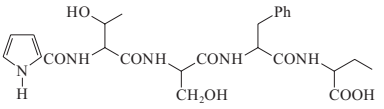
2′,3′-Didehydro, 2′,3′-epoxide: ***2′,3′-Epoxyasteranthine***
[187523-31-5]
$C_{18}H_{21}NO_2$ 283.369
Alkaloid from *Asteranthe asterias.* Yellowish oil. $[\alpha]_D^{21}$ +4 (c, 1 in $CHCl_3$). Mixt. of stereoisomers.

2′,3′-Dihydroxy: ***2′,3′-Dihydroxyasteranthine***
[187523-32-6]
$C_{18}H_{23}NO_3$ 301.385
Alkaloid from *Asteranthe asterias.* Cryst. Mp 138-140°. $[\alpha]_D^{21}$ -8 (c, 0.7 in $CHCl_3$). Mixt. of stereoisomers.

Nkunya, M.H.H. *et al., Nat. Prod. Lett.*, 1996, **9**, 71-78

Asterin A† A-1511

[151964-51-1]



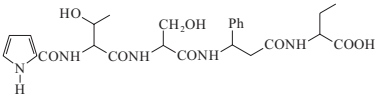
$C_{25}H_{33}N_5O_8$ 531.564
Oligopeptide. Constit. of the roots of *Aster tataricus.*

Me ester: ***Asterin B***
[151964-52-2]
$C_{26}H_{35}N_5O_8$ 545.591
Constit. of the roots of *Aster tataricus.*

Chen, D. *et al., Chin. Chem. Lett.*, 1993, **4**, 605 (*isol, struct*)

Asterinin A A-1512

2,3,4,5-Tetradehydroprolylallothreonylseryl-3-phenyl-β-alanyl-2-aminobutanoic acid, 9CI
[157536-40-8]



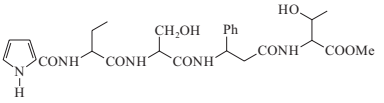
$C_{25}H_{33}N_5O_8$ 531.564
Constit. of the roots of *Aster tataricus.* Amorph. powder (MeOH aq.). Mp 272-274°. $[\alpha]_D$ +38.5 (c, 0.33 in Py).

Me ester: ***Asterinin B***
[157536-41-9]
$C_{26}H_{35}N_5O_8$ 545.591
Constit. of the roots of *Aster tataricus.* Amorph. powder (MeOH aq.). Mp 235-237°. $[\alpha]_D$ +3.1 (c, 0.57 in Py).

Cheng, D. *et al., Phytochemistry*, 1994, **36**, 945 (*isol, pmr, cmr, uv, ir, ms*)

Asterinin C A-1513

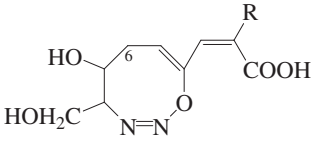
[157605-23-7]



$C_{26}H_{35}N_5O_8$ 545.591
Constit. of the roots of *Aster tataricus* (Asteraceae). Amorph. powder. Mp 250-252°. $[\alpha]_D$ -4.9 (c, 0.33 in Py). λ_{max} 209 (ϵ 13800); 267 (ϵ 18200) (MeOH).

Cheng, D. *et al., Phytochemistry*, 1994, **36**, 945 (*isol, uv, pmr, cmr, ms*)

Asterionellin A A-1514



R = CH_3

$C_{10}H_{14}N_2O_5$ 242.231

Isol. from an *Asterionella* sp. Not indexed in CAS.

Shimizu, Y. *et al., Chem. Rev.*, 1993, **93**, 1685-1698

Asterionellin B **A-1515**

As Asterionellin A, A-1514 with R = H

$C_9H_{12}N_2O_5$ 228.204

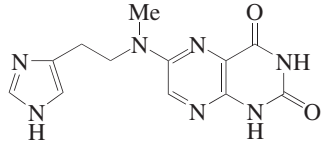
Isol. from the microalga *Asterionella* sp. Antibiotic.

6-Hydroxy: ***Asterionellin C***
$C_9H_{12}N_2O_6$ 244.204
Isol. from *Asterionella* sp.

Shimizu, Y. *et al., Chem. Rev.*, 1993, **93**, 1685-1698

Asteropterin **A-1516**

[1041186-56-4]

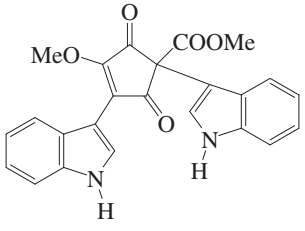


$C_{12}H_{13}N_7O_2$ 287.28

Alkaloid from *Asteropus simplex*. Cathepsin B inhibitor. Yellowish powder. λ_{max} 279 (ϵ 1360); 416 (ϵ 290) (MeOH).

Murayama, S. *et al., Tet. Lett.*, 2008, **49**, 4186-4188 (*isol, pmr, cmr*)

Asterredione **A-1517**



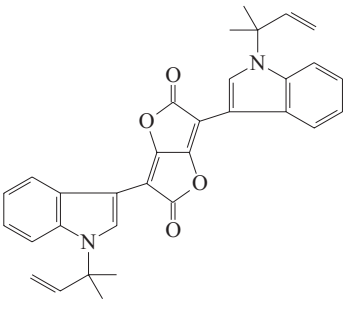
$C_{24}H_{18}N_2O_5$ 414.417

Prod. by *Aspergillus terreus* isol. from *Opuntia versicolor*. Cytotoxic. Yellow powder. $[\alpha]_D^{25}$ -2.3 (c, 0.5 in $CHCl_3$). Dec. at >112°. λ_{max} 218 (log ϵ 5.68); 269 (log ϵ 5.23); 411 (log ϵ 4.92) (EtOH).

Wijeratne, E.M.K. *et al., J. Nat. Prod.*, 2003, **66**, 1567-1573 (*isol, pmr, cmr*)

Asterridinone **A-1518**

[161300-75-0]



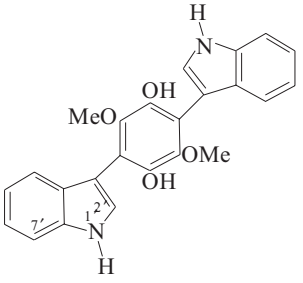
$C_{32}H_{28}N_2O_4$ 504.584

Metab. from the mycelium of *Aspergillus terreus*. Orange needles (MeOH). Mp 261-263° dec.

Kaji, A. *et al., Chem. Pharm. Bull.*, 1994, **42**, 1682 (*isol, uv, ir, pmr, struct*)

Asterriquinol D **A-1519**

*2,5-Bis(1*H*-indol-3-yl)-3,6-dimethoxy-1,4-benzenediol. Asterriquinone D hydroquinone*



$C_{24}H_{20}N_2O_4$ 400.433

Parent compd. (currently unknown as a natural product) of a series of prenylated metabolites related to the asterriquinones; see Asterriquinone, A-1520 and Asterriquinone D, A-1521.

Di-Me ether: ***Di-O-methylasterriquinol D***
$C_{26}H_{24}N_2O_4$ 428.487
Prod. by *Aspergillus solerotiorum* and *Aspergillus terreus*. Solid. Mp 187-189°.

2′,3′-Dihydro, 2′-oxo, di-Me ether: ***2′-Oxoasterriquinol D di-Me ether***
$C_{26}H_{24}N_2O_5$ 444.486
Prod. by *Aspergillus sclerotiorum*. Solid. Mp 145-147° (dec.). $[\alpha]_D$ -13.9 (c, 0.001 in MeOH). λ_{max} 232 (ϵ 5500); 276 (ϵ 2600) (MeOH).

1′-(1,1-Dimethyl-2-propenyl), di-Me ether: ***1-(1,1-Dimethyl-2-propenyl)-3-[4-(1*H*-indol-3-yl)-2,3,5,6-tetramethoxyphenyl]-1*H*-indole, 9CI***
[78279-80-8]
$C_{31}H_{32}N_2O_4$ 496.605
Metab. of *Aspergillus terreus* var. *africanus*. Mp 202-204°.

2′-(1,1-Dimethyl-2-propenyl): ***2-[2-(1,1-Dimethyl-2-propenyl)-1*H*-indol-3-yl]-5-(1*H*-indol-3-yl)-3,6-dimethoxy-1,4-benzenediol, 9CI***. *Asterriquinone C1 hydroquinone*
[78279-79-5]
$C_{29}H_{28}N_2O_4$ 468.551
Metab. of *Aspergillus terreus* var. *africanus*. Mp 206-208°. Oxidised gradually in air, rapidly by aq. $FeCl_3$, to Asterriquinone C1 in A-1521.

1′,1″-Bis(1,1-dimethyl-2-propenyl): ***2,5-Bis[1-(1,1-dimethyl-2-propenyl)-1*H*-indol-3-yl]-3,6-dimethoxy-1,4-benzenediol, 9CI***. *Asterriquinone A1 hydroquinone*
[78279-78-4]
$C_{34}H_{36}N_2O_4$ 536.669
Metab. of *Aspergillus terreus* var. *africanus*. Mp 242-245°. Oxidised gradually in air, rapidly by $FeCl_3$ aq., to Asterriquinone A1 in A-1520.

1′,1″-Bis(1,1-dimethyl-2-propenyl), di-Me ether: ***3,3′-(2,3,5,6-Tetramethoxy-1,4-phenylene)bis[1-(1,1-dimethyl-2-propenyl)-1*H*-indole], 9CI***
[78302-49-5]
$C_{36}H_{40}N_2O_4$ 564.723
Metab. of *Aspergillus terreus* var. *africanus*. Mp 158-159°.

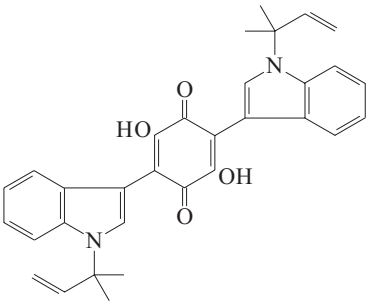
7′-(3-Methyl-2-butenyl), di-Me ether: ***3-[4-(1*H*-Indol-3-yl)-2,3,5,6-tetramethoxyphenyl]-7-(3-methyl-2-butenyl)-1*H*-indole, 9CI***
[78279-81-9]
$C_{31}H_{32}N_2O_4$ 496.605
Metab. of *Aspergillus terreus* var. *africanus*. Mp 226.5-228.5°.

Arai, K. *et al., Chem. Pharm. Bull.*, 1981, **29**, 1005

Whyte, A.C. *et al., J. Nat. Prod.*, 2000, **63**, 1006-1009 (*2′-Oxoasterriquinol D*)

Asterriquinone **A-1520**

*2,5-Bis[1-(1,1-dimethyl-2-propenyl)-1*H*-indol-3-yl]-3,6-dihydroxy-2,5-cyclohexadiene-1,4-dione, 9CI. NSC 289487*
[60696-52-8]



$C_{32}H_{30}N_2O_4$ 506.6

Benzoquinone antibiotic. Metab. of *Aspergillus terreus*. Antineoplastic agent, shows anti-HIV activity. Dark purple needles (MeOH). Sol. MeOH, Et_2O; poorly sol. H_2O. Mp 218-220° dec. Log P 5.92 (uncertain value) (calc). λ_{max} 298 (ϵ 32400); 508 (ϵ 5500) ($CHCl_3$) (Derep). λ_{max} 298 (ϵ 30000); 508 (ϵ 6600) ($CHCl_3$) (Berdy).

Mono-Ac: ***Asterriquinone monoacetate***
[160786-85-6]
$C_{34}H_{32}N_2O_5$ 548.637
Metab. of *Aspergillus terreus*. Blue-purple needles (hexane/CH_2Cl_2). Mp 172-174° dec. λ_{max} 225 (ϵ 46000); 292 (ϵ 27600); 487 (ϵ 6400) (EtOH) (Berdy).

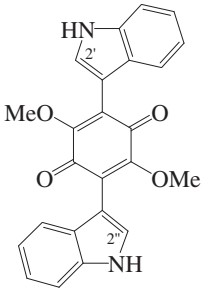
Mono-Me ether: O-*Methylasterriquinone.* ***Asterriquinone SU5504***
$C_{33}H_{32}N_2O_4$ 520.627
Prod. by *Aspergillus candidus*. Purple powder. λ_{max} 225 ; 292 ; 489 (no solvent reported).

Di-Me ether: ***Asterriquinone A1***
[60924-75-6]
$C_{34}H_{34}N_2O_4$ 534.654
Metab. of *Aspergillus terreus* var. *africanus*. Purple needles (EtOH). Sol. MeOH, Et_2O; poorly sol. H_2O. Mp 168°. λ_{max} 295 ; 299 ; 490 (EtOH)

(Berdy).
Kiriyama, N. *et al., Chem. Pharm. Bull.*, 1976, **24**, 1853 (*isol, uv, ir, pmr, cmr, ms, struct*)
Arai, K. *et al., Chem. Pharm. Bull.*, 1981, **29**, 961; 991; 1005; 1990, **38**, 2929 (*derivs, biosynth*)
Shimizu, S. *et al., Chem. Pharm. Bull.*, 1982, **30**, 1896; 1990, **38**, 2617 (*pharmacol*)
Ono, K. *et al., Biochem. Biophys. Res. Commun.*, 1991, **174**, 56 (*anti-HIV activity*)
Kaji, A. *et al., Chem. Pharm. Bull.*, 1994, **42**, 1682 (*monoacetate*)
Alvi, K.A. *et al., J. Antibiot.*, 1999, **52**, 215-223 (*Asterriquinone SU5504*)

Asterriquinone D A-1521

[78723-19-0]



$C_{24}H_{18}N_2O_4$ 398.417

Benzoquinone antibiotic. Isol. from *Aspergillus terreus* var. *africanus*. Shows weak antitumour activity. Purple powder (Me_2CO). Mp 178-180°. λ_{max} 222 (log ϵ 5.69); 282 (log ϵ 5.42); 480 (log ϵ 4.71) (EtOH).

N-*(1,1-Dimethyl-2-propenyl)*: ***Asterriquinone B3***
[78708-37-9]
$C_{29}H_{26}N_2O_4$ 466.535
From *Aspergillus terreus* var. *africanus*. Shows weak antitumour activity. Reddish-purple powder (cyclohexane). Sol. MeOH, C_6H_6; poorly sol. H_2O. Mp 148-150°. λ_{max} 240 ; 284 ; 484 (EtOH) (Berdy).

Di-O-*de*-*Me*: ***Didemethylasterriquinone D***
[78860-40-9]
$C_{22}H_{14}N_2O_4$ 370.364
Prod. by *Aspergillus terreus* and *Chrysosporium merdarium*.

2′-(1,1-Dimethyl-2-propenyl): ***Asterriquinone C1***
[78723-18-9]
$C_{29}H_{26}N_2O_4$ 466.535
From *Aspergillus terreus* var. *africanus*. No biol. activity. Purple needles (C_6H_6). Mp 162-164° Mp 213-214°. λ_{max} 222 (log ϵ 5.49); 281 (log ϵ 5.12); 367 (log ϵ 3.97); 489 (log ϵ 4.19) (EtOH).

2′,N$^{I''}$-Bis(1,1-dimethyl-2-propenyl): ***Asterriquinone A3***
[78723-15-6]
$C_{34}H_{34}N_2O_4$ 534.654
From *Aspergillus terreus* var. *africanus*. Shows weak antitumour activity. Deep purple powder (C_6H_6). Sol. MeOH, Et_2O; poorly sol. H_2O. Mp 112-114°. λ_{max} 284 ; 292 ; 376 ; 516 (EtOH) (Berdy).

2′,2′′-Bis(1,1-dimethyl-2-propenyl): ***Asterriquinone B4***
[78723-17-8]
$C_{34}H_{34}N_2O_4$ 534.654
From *Aspergillus terreus* var. *africanus*. Shows weak antitumour activity. Reddish-purple plates (MeOH). Sol. MeOH, C_6H_6; poorly sol. H_2O. Mp 300°. λ_{max} 284 ; 292 ; 385 ; 502 (EtOH) (Berdy).

2′-(3-Methyl-2-butenyl), di-O-*de*-*Me*: ***Asterriquinone SU5228***
[78860-46-5]
$C_{27}H_{22}N_2O_4$ 438.482
Prod. by *Aspergillus candidus*. Purple powder. Mp 150-154°. λ_{max} 260 ; 285 ; 290 ; 489 (no solvent reported).

5′-(3-Methyl-2-butenyl), di-O-*de*-*Me*: ***Semicochliodinol A***
[194224-72-1]
$C_{27}H_{22}N_2O_4$ 438.482
Prod. by *Chrysosporium merdarium*. Mp 195-197°.

6′-(3-Methyl-2-butenyl), di-O-*de*-*Me*: ***Semicochliodinol B***
[194224-73-2]
$C_{27}H_{22}N_2O_4$ 438.482
Prod. by *Chrysosporium merdarium*. Mp > 240°.

7′-(3-Methyl-2-butenyl): ***Asterriquinone C2***
[78708-38-0]
$C_{29}H_{26}N_2O_4$ 466.535
From *Aspergillus terreus* var. *africanus*. Shows weak antitumour activity. Purple needles (MeOH). Mp 202-203°. λ_{max} 285 ; 290 ; 485 (EtOH) (Berdy).

7′-(3-Methyl-2-butenyl), 2′-(1,1-dimethyl-2-propenyl): ***Asterriquinone B2***
[78708-36-8]
$C_{34}H_{34}N_2O_4$ 534.654
From *Aspergillus terreus* var. *africanus*. Shows weak antitumour activity. Deep purple prisms (C_6H_6). Sol. MeOH, C_6H_6; poorly sol. H_2O. Mp 199-200°. λ_{max} 283 ; 292 ; 372 ; 518 (EtOH) (Berdy).

7′-(3-Methyl-2-butenyl), 2′,2′′-bis(1,1-dimethyl-2-propenyl): ***Asterriquinone A4***
[78723-16-7]
$C_{39}H_{42}N_2O_4$ 602.772
From *Aspergillus terreus* var. *africanus*. Shows weak antitumour activity. Reddish-purple prisms (C_6H_6). Sol. MeOH, Et_2O; poorly sol. H_2O. Mp 252-253°. λ_{max} 284 ; 291 ; 390 ; 497 (EtOH) (Berdy).

7′′-(3-Methyl-2-butenyl), 2′-(1,1-dimethyl-2-propenyl): ***Asterriquinone B1***
[78708-35-7]
$C_{34}H_{34}N_2O_4$ 534.654
From *Aspergillus terreus* var. *africanus*. Shows weak antitumour activity. Deep purple prisms (C_6H_6). Sol. MeOH, C_6H_6; poorly sol. H_2O. Mp 208-209°. λ_{max} 285 ; 292 ; 382 ; 522 (EtOH) (Berdy).

7′′-(3-Methyl-2-butenyl), N$^{I'}$-(1,1-dimethyl-2-propenyl), di-O-*de*-*Me*: ***Asterriquinone SU 5501***
[226562-16-9]
$C_{32}H_{30}N_2O_4$ 506.6
Prod. by *Aspergillus candidus*. Purple powder. λ_{max} 260 ; 285 ; 290 ; 489 (no solvent reported).

2′,2′′-Bis(3-methyl-2-butenyl), di-O-*de*-*Me*: *Neoasterriquinone. Asterriquinone CT5*. ***Asterriquinone E***
[78860-48-7]
$C_{32}H_{30}N_2O_4$ 506.6
Metab. of *Aspergillus terreus*. Inhibits binding of proteins to the EGF receptor tyrosine kinase. Dark purple needles or powder. Mp 300° dec., approx (192°-193° dec.). λ_{max} 295 (log ϵ 4.49); 448 (log ϵ 3.7) (no solvent reported). λ_{max} 260 ; 279 ; 290 ; 492 (MeOH). λ_{max} 295 (ϵ 30900); 448 (ϵ 5110) (MeOH) (Berdy).

2′,2′′-Bis(3-methyl-2-butenyl), di-O-*de*-*Me*, O-*Ac*: ***Asterriquinone SU5500***
[213831-76-6]
$C_{34}H_{32}N_2O_5$ 548.637
Prod. by *Aspergillus candidus*. Purple powder. λ_{max} 225 ; 285 ; 292 ; 487 (no solvent reported).

2′,2′′-Bis(3-methyl-2-butenyl), 7′-carboxy, di-O-*de*-*Me*: ***Asterriquinone SU 5503***
[226562-14-7]
$C_{33}H_{30}N_2O_6$ 550.61
Prod. by *Aspergillus candidus*. Purple powder. λ_{max} 260 ; 282 ; 294 ; 479 (no solvent reported).

6′,6′′-Bis(3-methyl-2-butenyl), di-O-*de*-*Me*: ***Asterriquinone CT3***
[182182-93-0]
$C_{32}H_{30}N_2O_4$ 506.6
Prod. by *Humicola grisea*. Dark purple powder. Mp *ca.* 300° dec. λ_{max} 297 (log ϵ 4.45); 452 (log ϵ 3.61) (no solvent reported). λ_{max} 297 (ϵ 28200); 452 (ϵ 4073) (MeOH) (Berdy).

7′,7′′-Bis(3-methyl-2-butenyl), di-O-*de*-*Me*: ***Asterriquinone CT4***
[182182-94-1]
$C_{32}H_{30}N_2O_4$ 506.6
Prod. by *Humicola fuscoatra*. Dark purple powder. Mp 295-300° dec. λ_{max} 303 (log ϵ 4.43); 470 (log ϵ 3.79) (no solvent reported). λ_{max} 303 (ϵ 26900); 470 (ϵ 6166) (MeOH) (Berdy).

7′,7′′-Bis(3-methyl-2-butenyl), 2′-(1,1-dimethyl-2-propenyl): ***Asterriquinone A2***
[78723-14-5]
$C_{39}H_{42}N_2O_4$ 602.772
Prod. by *Aspergillus terreus* var. *africanus*. Shows weak antitumour activity. Deep purple prisms (C_6H_6). Sol. MeOH, Et_2O; poorly sol. H_2O. Mp 189-192°. λ_{max} 283 ; 292 ; 374 ; 505 (EtOH) (Berdy).

5′-(3-Methyl-1,3-butadienyl): ***Asterriquinone PM 53***. *PM 53*
[198992-52-8]
$C_{29}H_{24}N_2O_4$ 464.52
From *Petromyces muricatus*. Deep blue cryst. (hexane/CH_2Cl_2). Mp 240° dec. λ_{max} 219 (log ϵ 4.42); 274 (log ϵ 4.44); 308 (log ϵ 4.21); 614 (log ϵ 3.14) (dioxane).

6′′-(3-Methyl-1,3-butadienyl), 6′-(3-methyl-2-butenyl), di-O-*de*-*Me*: ***Asterriquinone CT2***

[182182-92-9]
$C_{32}H_{28}N_2O_4$ 504.584
Prod. by *Botryotrichum* sp. Black powder. Mp *ca.* 350° dec. λ_{max} 303 (log ϵ 4.82); 470 (log ϵ 3.64) (no solvent reported). λ_{max} 303 (ϵ 66000); 470 (ϵ 4365) (MeOH) (Berdy).

*6′,6″-Bis(3-methyl-1,3-butadienyl)(*E,E*-), di-*O*-de-Me:* ***Asterriquinone CT1***
[182182-91-8]
$C_{32}H_{26}N_2O_4$ 502.568
Prod. by *Humicola fuscoatra*. Black powder. Mp 350-355° dec. λ_{max} 305 (log ϵ 4.68); 470 (log ϵ 3.79) (no solvent reported). λ_{max} 305 (ϵ 12022); 470 (ϵ 6166) (MeOH) (Berdy).

*7″-(3-Methyl-2-butenyl), 2′-(1,1-dimethyl-2-propenyl), di-*O*-de-Me:* ***Demethylasterriquinone B1****. LY 783281*
[78860-34-1]
$C_{32}H_{30}N_2O_4$ 506.6
Isol. from *Pseudomassaria* fungus. Small mol. insulin mimetic. Shows antidiabetic activity. Dark purple needles (EtOAc/hexane). Mp 199-201°.

Arai, K. *et al., Chem. Pharm. Bull.*, 1981, **29**, 961-969; 991-999; 1005-1012; 1990, **38**, 2929-2932 (*LY 783281, biosynth*)
Mocek, U. *et al., J. Antibiot.*, 1996, **49**, 854-859 (*Asterriquinones CT1-CT5*)
Ooike, M. *et al., Chem. Pharm. Bull.*, 1997, **45**, 1694-1696 (*PM 53*)
Fredenhagen, A. *et al., J. Antibiot.*, 1997, **50**, 395-401 (*Semicochliodinols, Didemethylasterriquinone*)
Alvi, K.A. *et al., J. Antibiot.*, 1999, **52**, 215-223 (*Asterriquinone SU derivs, isol, activity*)
Harris, G.D. *et al., Org. Lett.*, 1999, **1**, 431-433 (*synth, deriv*)
Zhang, B. *et al., Science (Washington, D.C.)*, 1999, **284**, 974-977 (*LY 783281, isol, pharmacol*)
Liu, K. *et al., Tet. Lett.*, 1999, **40**, 5119-5122 (*Asterriquinone B1, synth*)
Tatsuta, K. *et al., J. Antibiot.*, 2001, **54**, 105-108 (*Asterriquinone B1, synth*)
Wijeratne, E.M.K. *et al., J. Nat. Prod.*, 2003, **66**, 1567-1573 (*isol, pmr*)
Pirrung, M.C. *et al., J.A.C.S.*, 2005, **127**, 4609-4624 (*Demethylasterriquinone B1, synth*)

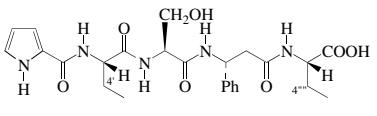
Asterubin A-1522

2-[[(Dimethylamino)iminomethyl]amino]ethanesulfonic acid, 9CI
[6249-86-1]
$HN{=}C(NMe_2)NHCH_2CH_2SO_3H$
$C_5H_{13}N_3O_3S$ 195.242
Isol. from starfish. Needles (MeOH aq.). Mp 272-273° dec.

Ackermann, D. *et al., Hoppe-Seyler's Z. Physiol. Chem.*, 1935, **232**, 206; **235**, 233 (*isol, synth*)

Astin J A-1523

Asterinin D
[163136-31-0]



$C_{25}H_{33}N_5O_7$ 515.565
Constit. of the roots of *Aster tataricus* (Asteraceae). Amorph. powder (EtOH aq.). Mp 280° dec. (261°-265° dec.). $[\alpha]_D$ -19.8 (c, 0.2 in EtOH aq.). $[\alpha]_D$ +6 (c, 0.1 in Py). λ_{max} 210 (ϵ 12600); 269 (ϵ 22400) (MeOH).

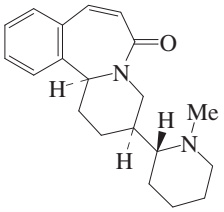
Me ester: ***Asterinin F***
[148057-47-0]
$C_{26}H_{35}N_5O_7$ 529.592
Constit. of the roots of *Aster tataricus* (Asteraceae). Amorph. powder (EtOH aq.). Mp 236-241° dec. $[\alpha]_D$ -30.9 (c, 0.2 in EtOH aq.). λ_{max} 210 (ϵ 30900); 267 (ϵ 26900) (MeOH).

*4′*S*,4‴′*S*-Dihydroxy, Me ester:* ***Asterinin E***
[172548-92-4]
$C_{26}H_{35}N_5O_9$ 561.591
Constit. of the roots of *Aster tataricus* (Asteraceae). Amorph. powder (EtOH aq.). Mp 277-281° dec. $[\alpha]_D$ +43.1 (c, 0.3 in EtOH aq.). λ_{max} 212 (ϵ 34700); 267 (ϵ 21900) (MeOH).

Morita, H. *et al., Chem. Pharm. Bull.*, 1995, **43**, 271 (*Astin J*)
Cheng, D.-L. *et al., Phytochemistry*, 1996, **41**, 225-227 (*Asterinins*)

Astrocasine A-1524

*1,3,4,12*b*-Tetrahydro-3-(1-methyl-2-piperidinyl)pyrido[2,1-*a*][2]benzazepin-6(2*H*)-one, 9CI*
[2114-92-3]



$C_{20}H_{26}N_2O$ 310.438
Alkaloid from *Astrocasia phyllanthoides* (Euphorbiaceae). Mp 171-172°. $[\alpha]_D^{24}$ -270 (EtOH).

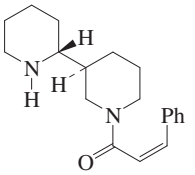
Perchlorate: Mp 149-151°.

Methiodide: Mp 227-228°.

Lloyd, H.A. *et al., Tet. Lett.*, 1965, 1761 (*isol, uv, ir, pmr, struct*)
Bright, W.M. *et al., J.O.C.*, 1976, **41**, 2454 (*cryst struct, abs config*)

Astrophylline A-1525

1′-(1-Oxo-3-phenyl-2-propenyl)-2,3′-bipiperidine, 9CI. 1′-Cinnamoyl-2,3′-bipiperidine
[5081-53-8]



Absolute Configuration

$C_{19}H_{26}N_2O$ 298.427
Alkaloid from *Astrocasia phyllanthoides* (Euphorbiaceae). Viscous oil. $Bp_{0.001}$ 115°. $[\alpha]_D^{20}$ +27 (c, 0.35 in EtOH).

Perchlorate: Mp 172-174°.

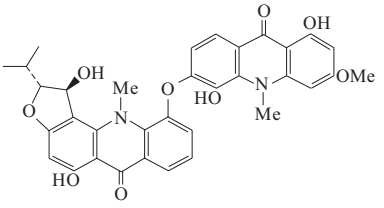
Picrate: Mp 146-148° dec.

N-*Me:*
Oil. $[\alpha]_D$ +92 (EtOH).

Lloyd, H.A. *et al., Tet. Lett.*, 1965, 4537-4540 (*isol, uv, ir, pmr, struct, abs config*)
Schaudt, M. *et al., J.O.C.*, 2003, **68**, 2913-2920 (*synth, pmr, cmr, ms*)

Atalanine A-1526

trans-*Atalantine*
[50906-85-9]

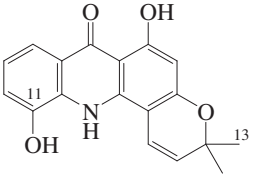


$C_{34}H_{30}N_2O_9$ 610.619
Alkaloid from *Atalantia ceylanica* (Rutaceae). Mp 216.5-217.5°.

Fraser, A.W. *et al., Chem. Comm.*, 1973, 615 (*isol, struct*)

Atalaphyllidine† A-1527

*3,12-Dihydro-6,11-dihydroxy-3,3-dimethyl-7*H*-pyrano[2,3-*c*]acridin-7-one, 9CI*
[57959-88-3]



$C_{18}H_{15}NO_4$ 309.321
See also 1,3,8-Trihydroxy-2,7-diprenylacridone, T-548. Alkaloid from the root bark of *Atalantia monophylla* (Rutaceae). Mp 275° dec.

N-*Me:* **N-*Methylatalaphyllidine****. 5-Hydroxynoracronycine*
[27067-70-5]
$C_{19}H_{17}NO_4$ 323.348
Alkaloid from *Atalantia ceylanica*, *Citrus depressa* and *Citrus maxima*; metab. of Acronycine, A-120 in the guinea pig. Red needles (Et_2O/petrol). Mp 252-254°.

N-*Me, di-Ac:*
Prisms (Et_2O/petrol). Mp 178-181°.

11-Me ether: Mp 200°.

11-Me ether, N-*Me:* see 11-Methoxy, *O*-de-Me, in Acronycine, A-120

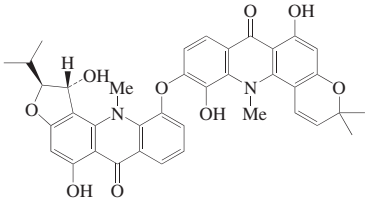
Di-Me ether, N-*Me: 5-Methoxyacronycine*
Yellow needles (Et_2O/petrol). Mp 97-98°.

13-Hydroxy, N-*Me:* ***5,13-Dihydroxynoracronycine***
[904327-13-5]
$C_{19}H_{17}NO_5$ 339.347
Alkaloid from the stem bark of *Citrus maxima* (pummelo). Yellow. Mp 162-163°. λ_{max} 266 (log ϵ 4.34); 283 (log ϵ 4.21) (MeOH).

Sullivan, H.R. *et al., J. Med. Chem.*, 1970, **13**, 904 (*isol, deriv*)
Fraser, A.W. *et al., J.C.S. Perkin 1*, 1973, 1173 (*isol, uv, ir, nmr, ms, struct, deriv*)
Basa, S.C. *et al., Experientia*, 1975, **31**, 1387 (*isol, uv, ir, pmr, ms, struct*)
Adams, J.H. *et al., J. Nat. Prod.*, 1976, **39**, 399 (*synth, deriv*)
Wu, T.-S. *et al., Heterocycles*, 1982, **19**, 273 (*isol, deriv*)
Teng, W.-Y. *et al., J. Chin. Chem. Soc. (Taipei)*, 2005, **52**, 1253-1255 (*5,13-Dihydroxynoracronycine*)

Ataline A-1528

[50906-86-0]



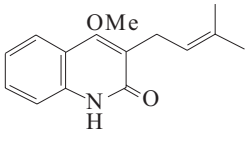
Relative Configuration
Probable structure

$C_{38}H_{34}N_2O_9$ 662.695
Alkaloid from *Atalantia ceylanica* (Rutaceae). Mp 209-210°.

Fraser, A.W. *et al., Chem. Comm.*, 1973, 615 (*isol, struct*)

Atanine A-1529

*4-Methoxy-3-(3-methyl-2-butenyl)-2(1*H*)-quinolinone, 9CI. 2-Hydroxy-4-methoxy-3-prenylquinoline*
[7282-19-1]



$C_{15}H_{17}NO_2$ 243.305
Alkaloid from the heartwood of *Fagara xanthoxyloides* and the leaves of *Ravenia spectabilis* (Rutaceae). Also present in *Evodia rutaecarpa*. Possesses anthelmintic and antiparasitic activity. Needles (Me_2CO). Mp 133°.

N-*Me:* **N-*Methylatanine***
[22826-43-3]
$C_{16}H_{19}NO_2$ 257.332
Alkaloid from the root bark and stem bark of *Almeidea guyanensis* (Rutaceae). Needles (MeOH). Mp 130°.

O-*De-Me,* N-*Me:* ***4-Demethyl-*N*-methylatanine***
[15954-07-1]
$C_{15}H_{17}NO_2$ 243.305
Alkaloid from the root bark of *Almeidea guyanensis* (Rutaceae). Needles (Et_2O). Mp 164°.

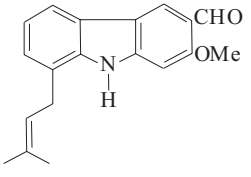
O-*De-Me,* O-*(3-methyl-2-butenyl):* ***3-(3-Methyl-2-butenyl)-4-[(3-methyl-2-butenyl)oxy]-2(1*H*)-quinolinone****. 3-(3,3-Dimethylallyl)-4-(3,3-dimethylallyloxy)-2-quinolone. 2-Hydroxy-3-prenyl-4-prenyloxyquinoline. 3-Prenyl-4-prenyloxy-2(1*H*)-quinolinone*
[18118-29-1]
$C_{19}H_{23}NO_2$ 297.396
Alkaloid from the leaves and stems of *Haplophyllum tuberculatum* (Rutaceae). Also isol. from *Evodia roxburghiana*. Exhibits modest anti-HIV activity against HIV-1 in cultured human lymphoblastoid CEM-SS cells. Cryst. (Me_2CO). Mp 114-115°.

2′,3′-Epoxide, O-*de-Me,* N-*Me: 3-(2,3-Epoxy-3-methylbutyl)-4-hydroxy-*N*-methyl-2-quinolone.* ***2′,3′-Epoxy-4-*O*-demethyl-*N*-methylatanine***
$C_{15}H_{17}NO_3$ 259.304
Alkaloid from the bark of *Galipea officinalis.*

Paul, B.D. *et al., J. Indian Chem. Soc.*, 1968, **45**, 552 (*occur*)
Eshiett, I.T. *et al., J.C.S.(C)*, 1968, 481 (*isol, uv, ir, pmr, struct*)
Lavie, D. *et al., Tetrahedron*, 1968, **24**, 3011-3018 (*Prenylprenyloxyquinolinone*)
Moulis, C. *et al., Phytochemistry*, 1983, **22**, 2095 (*N-Methylatanine, 4-Demethyl-N-methylatanine*)
Perrett, S. *et al., Planta Med.*, 1995, **61**, 276 (*isol, activity*)
McCormick, J.L. *et al., J. Nat. Prod.*, 1996, **59**, 469 (*Prenylprenyloxyquinolinone, isol*)
Shin, H.-K. *et al., Planta Med.*, 1998, **64**, 764-765 (*isol, uv, pmr, cmr, ms*)
Jacquemond-Collet, I. *et al., Fitoterapia*, 2000, **71**, 605-606 (*Epoxydemethyl-N-methylatanine*)
Jones, K. *et al., Org. Biomol. Chem.*, 2003, **1**, 4380-4383 (*synth, pmr, cmr*)

Atanisatine A-1530

*2-Methoxy-8-(3-methyl-2-butenyl)-9*H*-carbazole-3-carboxaldehyde, 9CI. 3-Formyl-2-methoxy-8-prenylcarbazole*
[58523-26-5]

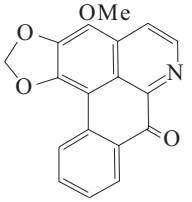


$C_{19}H_{19}NO_2$ 293.365
Alkaloid from the stems of *Clausena anisata* (Rutaceae). Isomeric with Indizoline, I-75.

Okorie, D.A. *et al., Phytochemistry*, 1975, **14**, 2720 (*occur*)

Atherospermidine A-1531

*4-Methoxy-8*H*-benzo[g]benzodioxolo[6,5,4-de]quinolin-8-one. 3-Methoxy-1,2-methylenedioxyoxoaporphine. Psilopine*
[3912-57-0]



$C_{18}H_{11}NO_4$ 305.289
Alkaloid from the bark of *Atherosperma moschatum*, the leaves and stems of *Guatteria psilopus* and the leaves of *Enantia polycarpa* (Monimiaceae, Annonaceae). Yellow needles ($CHCl_3$ or Py). Mp 276-278° dec Mp 283-285°. λ_{max} 247 (ϵ 23000); 280 (ϵ 36000); 315 (ϵ 8900) (MeOH) (Berdy). λ_{max} 247 (ϵ 17000); 281 (ϵ 34000); 312 (ϵ 9600) (EtOH) (Berdy).

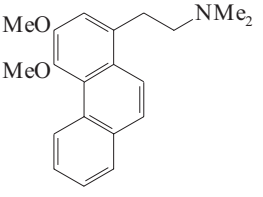
Hydrochloride:
Scarlet needles (5% HCl). Mp 256-258° dec.

Oxime:
Cryst. (1-butanol). Mp 247-250° dec.

Bick, I.R.C. *et al., Aust. J. Chem.*, 1956, **9**, 111; 1965, **18**, 1997 (*isol, uv, struct, synth*)
Harris, W.M. *et al., J.O.C.*, 1965, **30**, 432 (*isol, uv*)
Pai, B.R. *et al., Tetrahedron*, 1965, **21**, 2579 (*synth*)
Bick, I.R.C. *et al., Aust. J. Chem.*, 1967, **20**, 1403 (*ms*)
Jossang, A. *et al., Planta Med.*, 1977, **32**, 249 (*isol*)

Atherosperminine A-1532

*3,4-Dimethoxy-*N*,*N*-dimethyl-1-phenanthreneethanamine, 9CI. 1-Dimethylaminoethyl-3,4-dimethoxyphenanthrene*
[5531-98-6]
[98900-05-1]



$C_{20}H_{23}NO_2$ 309.407
Alkaloid from the bark of *Atherosperma moschatum* and *Cryptocarya angulata*, the leaves of *Enantia chlorantha*, the stem bark of *Duguetia calycina* and *Annona muricata* (soursop), the leaves and stem bark of *Annona montana*. Needles (Me_2CO/petrol). Mp 199-200°.

Hydrochloride: [54749-97-2] Shows antiplatelet and vasorelaxing activity. Mp 234-235° dec.

Picrate: [5531-99-7]
Yellow needles (Me_2CO/MeOH). Mp 189-190°.

N-*Oxide:* ***Atherosperminine* N-*oxide***
[91174-15-1]
$C_{20}H_{23}NO_3$ 325.407
Alkaloid from the stem bark of *Guatteria discolor* (Annonaceae). Shows antiplatelet and vasorelaxing activity. Noncryst.

N-*Me:* **N-*Methylatherosperminium***
[98900-03-9]
[98900-04-0 , 5532-00-3]
$C_{21}H_{26}NO_2^{\oplus}$ 324.442
Alkaloid from the stem bark and stem wood of *Fissistigma glaucescens* (Annonaceae). Needles (EtOH)(as iodide). Mp 282-284° (iodide).

N-*De-Me:* ***Noratherosperminine***
[74606-53-4]

$C_{19}H_{21}NO_2$ 295.38
Alkaloid from *Duguetia* spp. (Annonaceae). Mp 180°.

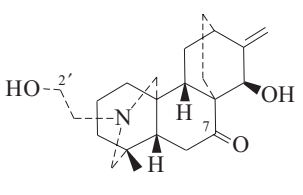
2-O-De-Me: 1-[2-(Dimethylamino)ethyl]-4-methoxy-3-phenanthrenol. 1-(2-Dimethylaminoethyl)-3-hydroxy-4-methoxyphenanthrene. ***Argentinine***
[16625-57-3]
$C_{19}H_{21}NO_2$ 295.38
Alkaloid from the roots of *Aristolochia argentina*, the leaves of *Enantia chlorantha*, the stem bark and leaves of *Annona montana* and from *Monodora angolensis* (Aristolochiaceae, Annonaceae). Oil.

2-O-De-Me, N*-oxide:* ***Argentinine* N-oxide**
[138690-45-6]
$C_{19}H_{21}NO_3$ 311.38
Alkaloid from *Monocyclanthus vignei* (Annonaceae). Oil. Possible artifact.

Cooke, R.G. *et al., Aust. J. Chem.*, 1954, **7**, 99 (*isol, uv*)
Bick, I.R.C. *et al., Aust. J. Chem.*, 1956, **9**, 111; 1965, **18**, 1997 (*isol, pmr, uv*)
Priestap, H.A. *et al., Chem. Comm.*, 1967, 754 (*Argentinine, Atherosperminine*)
Aguilar-Santos, G. *et al., Philipp. J. Sci.*, 1967, **96**, 399; *CA*, **74**, 1066r (*isol*)
Priestap, H.A. *et al., An. Asoc. Quim. Argent.*, 1972, **60**, 309; *CA*, **77**, 164898q (*Argentinine, Atherosperminine*)
Roblot, F. *et al., Plant. Med. Phytother.*, 1978, **12**, 259
Guinaudeau, H. *et al., J. Nat. Prod.*, 1979, **42**, 325 (*Noratherosperminine*)
Leboeuf, M. *et al., Planta Med.*, 1980, **38**, 33; 1981, **42**, 37
Castedo, L. *et al., Heterocycles*, 1982, **19**, 209 (*Noratherosperminine, synth*)
Hocquemiller, R. *et al., J. Nat. Prod.*, 1984, **47**, 353 (*Atherosperminine N-oxide*)
Lu, S.T. *et al., Phytochemistry*, 1985, **24**, 1829 (*N-Methylatherosperminium*)
Achenbach, H. *et al., J. Nat. Prod.*, 1991, **54**, 1331 (*Argentinine N-oxide*)
Chen, K.-S. *et al., J. Nat. Prod.*, 1996, **59**, 531-534 (*activity*)
Lopez-Martin, J. *et al., Chem. Pharm. Bull.*, 2002, **50**, 1613-1615 (*Argentinine, isol, pmr, cmr*)

Atidine A-1533

[467-91-4]



$C_{22}H_{33}NO_3$ 359.508
Alkaloid from the roots of *Aconitum heterophyllum* (Ranunculaceae). Prisms (C_6H_6 or Et_2O). Mp 182.5-183.5°. $[\alpha]_D$ -47 ($CHCl_3$). pK_a 7.53 (50% MeOH).

Hydrochloride:
Rosettes (MeOH/Me_2CO). Mp 204-215° dec.

7α-Alcohol: ***Dihydroajaconine***
[1466-07-5]
$C_{22}H_{35}NO_3$ 361.523
Minor alkaloid from the seeds of *Consolida ambigua* (*Delphinium ajacis*), also obt. by mild redn. of Ajaconine (Ranunculaceae). Needles (EtOH aq.). Mp 99-100°. $[\alpha]_D^{24}$ -35 (c, 1.0 in EtOH).

7α-Alcohol, 2′-aldehyde: ***Consorientaline***
$C_{22}H_{33}NO_3$ 359.508
Alkaloid from *Consolida orientalis*. Amorph. $[\alpha]_D^{25}$ -22.7 (c, 0.33 in $CHCl_3$).

1′,2′-Didehydro, 7α-alcohol: ***Uncinatine***
$C_{22}H_{33}NO_3$ 359.508
Alkaloid from *Delphinium uncinatum*. Amorph.

7-Deoxo: ***Dihydroatisine***
[17934-91-7]
$C_{22}H_{35}NO_2$ 345.524
Alkaloid from roots of *Aconitum heterophyllum* (Ranunculaceae). Cryst. (Me_2CO). Mp 159-161°. $[\alpha]_D$ -44.5 (EtOH). $[\alpha]_D^{27}$ -43.9 (c, 1.41 in $CHCl_3$).

7-Deoxo, 2′-aldehyde: ***Chellespontine***
[149998-46-9]
$C_{22}H_{33}NO_2$ 343.508
Alkaloid from aerial parts of *Consolida hellespontica* (Ranunculaceae). Plates. Mp 227-230°. $[\alpha]_D$ +14.6 (c, 0.56 in MeOH).

7-Deoxo, 19-oxo: ***19-Oxodihydroatisine***
$C_{22}H_{33}NO_3$ 359.508
Alkaloid from *Delphinium staphisagria*. Cryst. ($CHCl_3$). Mp 221-223°. $[\alpha]_D^{25}$ -31.2 (c, 0.57 in $CHCl_3$).

7-Deoxo, 19-oxo, 2′-Ac: ***22-O-Acetyl-19-oxodihydroatisine***
$C_{24}H_{35}NO_4$ 401.545
Alkaloid from *Delphinium staphisagria*. Gum. $[\alpha]_D^{25}$ -35.2 (c, 0.54 in $CHCl_3$).

14-Oxo, 15-deoxy, 7α-alcohol: ***Spiramine G***
[142750-44-5]
$C_{22}H_{33}NO_3$ 359.508
Alkaloid from roots of *Spiraea japonica* var. *acuminata* (Rosaceae). Needles (Et_2O). Mp 160-162°. $[\alpha]_D^{20}$ -16 (c, 0.95 in $CHCl_3$).

15-Epimer, 7α-alcohol, 2′-aldehyde: ***Spiratine A***
$C_{22}H_{33}NO_3$ 359.508
Alkaloid from the roots of *Spiraea japonica* var. *acuta*. Amorph. powder. $[\alpha]_D^{24}$ -6.2 (c, 1 in MeOH).

15-Epimer, 7-deoxo, 14-oxo: ***Spiramine H***
[142750-45-6]
$C_{22}H_{33}NO_3$ 359.508
Alkaloid from *Spiraea japonica* var. *acuminata* (Rosaceae) and *Aconitum kusnezoffii*. Cryst. (Me_2CO/cyclohexane). Mp 150-151°. $[\alpha]_D^{17}$ -39.7 (c, 0.295 in EtOH).

15-Epimer, 7-deoxo, 14-oxo, 15-Ac: ***Spiramine I***
[142761-31-7]
$C_{24}H_{35}NO_4$ 401.545
Alkaloid from *Spiraea japonica* var. *acuminata* (Rosaceae).

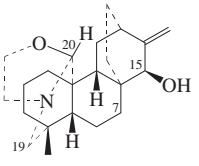
15-Epimer, 7-deoxo, 14-oxo, 1α-hydroxy: ***Beiwusine A***
[224790-29-8]
$C_{22}H_{33}NO_4$ 375.507
Alkaloid from the roots of *Aconitum kusnezoffii*. Amorph. powder. $[\alpha]_D^{17}$ -34.1 (C, 0.41 in EtOH).

15-Epimer, 7-deoxo, 14-oxo, 1β-hydroxy: ***Beiwusine B***
[224790-30-1]
$C_{22}H_{33}NO_4$ 375.507
Alkaloid from the roots of *Aconitum kusnezoffii*. Amorph. powder. $[\alpha]_D^{17}$ -42 (c, 0.41 in EtOH).

Dvornik, D. *et al., Tetrahedron*, 1961, **14**, 54 (*Atidine, synth*)
Pelletier, S.W. *et al., J.A.C.S.*, 1965, **87**, 777; 799 (*Atidine, ir, pmr, struct, synth*)
Pelletier, S.W. *et al., Phytochemistry*, 1968, **7**, 625 (*Atidine, isol*)
Pelletier, S.W. *et al., Tetrahedron*, 1968, **24**, 2019 (*Atidine, pmr*)
Pelletier, S.W. *et al., J.A.C.S.*, 1978, **100**, 7976 (*Dihydroatisine, cryst struct, abs config*)
Finer-Moore, J. *et al., Cryst. Struct. Commun.*, 1979, **8**, 649 (*Atidine, cryst struct*)
Pelletier, S.W. *et al., J. Nat. Prod.*, 1980, **43**, 395 (*Dihydroajaconine*)
Hao, X.-J. *et al., Yunnan Zhiwu Yanjiu*, 1991, **13**, 452; 1994, **16**, 301; *CA*, **117**, 108080z; **122**, 101603s (*Spiramines H,I*)
Hao, X.-J. *et al., Heterocycles*, 1993, **36**, 825 (*Spiramine G, isol, ir, pmr, cmr, cryst struct*)
Desai, H.K. *et al., Heterocycles*, 1993, **36**, 1081 (*Chellespontine*)
Li, Z.-B. *et al., J. Asian Nat. Prod. Res.*, 1998, **1**, 87-92 (*Beiwusines A,B*)
Ulubelen, A. *et al., Phytochemistry*, 1998, **47**, 1141-1144 (*Uncinatine*)
Diaz, J.G. *et al., J. Nat. Prod.*, 2000, **63**, 1136-1139 (*19-Oxodihydroatisine, 22-Acetyl-19-oxodihydroatisine*)
He, H.-P. *et al., J. Nat. Prod.*, 2001, **64**, 379-380 (*Spiratine A*)
Mericli, F. *et al., J. Nat. Prod.*, 2001, **64**, 787-789 (*Consorientaline*)

Atisine, 9CI A-1534

Anthorine
[466-43-3]



Absolute Configuration

$C_{22}H_{33}NO_2$ 343.508
Exists as a mixt. of C-20 epimers in soln. Alkaloid from *Aconitum heterophyllum, Aconitum gigas, Aconitum anthara* and *Aconitum heterophylloides* (Ranunculaceae). Resin. $[\alpha]_D$ -21 (c, 2.4 in EtOH). $[\alpha]_D$ -30.7 (EtOH). pK_a 12.8 (50% MeOH). Undergoes a ready isomerisation of the oxazolidine ring to Isoatisine, I-192 on treatment with methanolic alkali or even by boiling MeOH.

Hydrochloride: Atisinium chloride. Guanfu base H
[4758-99-0]
Mp 311-312° (303°) dec. $[\alpha]_D^{25}$ +28 (c, 1.10 in H_2O). Exists as a quaternary iminium salt rather than a protonated NH^+ salt.

*7β,19*R*-Dihydroxy:* ***Delphatisine A***
[1003600-46-1]
$C_{22}H_{33}NO_4$ 375.507
Alkaloid from *Delphinium chrysotrichum*. Amorph. powder. $[\alpha]_D^{27}$ +16 (c, 1 in $CHCl_3$).

6β,7α-Diacetoxy, 15-deoxy, 19-oxo: ***Spiramide***†

[301541-30-0]
$C_{26}H_{35}NO_6$ 457.566
Alkaloid from the roots of *Spiraea japonica* var. *acuta*. Amorph. powder. $[\alpha]_D^{26}$ -63.4 (c, 4.2 in $CHCl_3$).

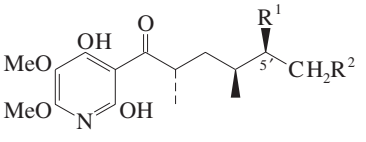
15-Epimer, 19-oxo, 7α-hydroxy: ***Deacetylspiramine S***
[340814-10-0]
$C_{22}H_{31}NO_4$ 373.491
Alkaloid from *Spiraea japonica* var. *ovalifolia*. Prisms ($CHCl_3$/MeOH). Mp 113-115°. $[\alpha]_D^{21}$ -74.3 (c, 0.27 in MeOH).

15-Epimer, 19-oxo, 7α-hydroxy, 7-Ac: ***Spiramine V***
[501327-99-7]
$C_{24}H_{33}NO_5$ 415.528
Alkaloid from *Spiraea japonica* var. *ovalifolia*.

15-Epimer, 19-oxo, 7α-hydroxy, 15-Ac: ***Spiramine S***
$C_{24}H_{33}NO_5$ 415.528
Alkaloid from *Spiraea japonica*. Incorrect struct. given in one ref.

Lawson, A. *et al., J.C.S.*, 1937, 1640-1643 (*isol*)
Jacobs, W.A. *et al., J. Biol. Chem.*, 1942, **143**, 589-603 (*isol*)
Edwards, O.E. *et al., Can. J. Chem.*, 1954, **32**, 465-473; 1955, **33**, 448-451 (*isol, uv, ir, struct*)
Nagata, W. *et al., J.A.C.S.*, 1963, **85**, 2342-2343; 1967, **89**, 1483-1499 (*synth*)
Dvornik, D. *et al., Can. J. Chem.*, 1964, **42**, 137-149 (*struct*)
Masamune, S. *et al., J.A.C.S.*, 1964, **86**, 291-292 (*synth*)
Pelletier, S.W. *et al., Phytochemistry*, 1968, **7**, 625-635 (*isol, isom*)
Pelletier, S.W. *et al., Tetrahedron*, 1968, **24**, 2019-2038 (*pmr*)
Pradhan, S.K. *et al., Chem. Comm.*, 1970, 644-645 (*struct*)
Scott, A.I. *et al., Tetrahedron*, 1971, **27**, 4787-4819 (*cd*)
Pelletier, S.W. *et al., J.A.C.S.*, 1977, **99**, 284-286; 1978, **100**, 7976-7987 (*cmr, cryst struct, abs config*)
Mody, N.V. *et al., Tetrahedron*, 1978, **34**, 2421-2431 (*cmr*)
Shishido, K. *et al., Chem. Comm.*, 1987, 1360-1361 (*synth*)
Ihara, M. *et al., J.A.C.S.*, 1990, **112**, 1164-1171 (*synth*)
Banerjee, A.K. *et al., Bull. Soc. Chim. Belg.*, 1994, **103**, 67-82 (*rev, synth*)
Hao, X.Y. *et al., Guizhou Kexue*, 1995, **13**, 25-28 (*Spiramine S*)
Zuo, G.Y. *et al., Heterocycles*, 2001, **55**, 487-493 (*Deacetylspiramine S*)
He, H.P. *et al., J. Nat. Prod.*, 2001, **64**, 379-380 (*Spiramide, Spiramine S*)
Li, L. *et al., Eur. J. Pharmacol.*, 2002, **449**, 23-28 (*Spiramine V*)
He, Y.Q. *et al., Chin. Chem. Lett.*, 2007, **18**, 545-547 (*Delphatisine A*)

Atpenin A-1535



Atpenin A_4 R^1 = Cl, R^2 = H
A_5 R^1 = R^2 = Cl
B R^1 = R^2 = H

Antibiotic complex of which 3 components have been isol. Prod. by *Penicillium* sp. FO-125. Antifungal agent.

Atpenin A_4 [119509-25-0]
$C_{15}H_{22}ClNO_5$ 331.795
Powder. Sol. MeOH, Et_2O; poorly sol. H_2O. Mp 98°. $[\alpha]_D^{22}$ -8.6 (c, 1 in EtOH). λ_{max} 240 (ε 11500); 270 (ε 7500); 318 (ε 7000) (EtOH/HCl) (Derep). λ_{max} 242 (ε 9500); 290 (ε 9600); 355 (ε 4300) (EtOH/NaOH) (Derep). λ_{max} 235 (ε 12200); 267 (ε 8400); 320 (ε 5800) (EtOH) (Derep).
▶ LD_{50} (mus, ipr) 50 - 150 mg/kg. CJ8794000

Atpenin A_5
WF 16775A_1. Antibiotic WF 16775A_1
[119509-24-9]
$C_{15}H_{21}Cl_2NO_5$ 366.24
Also prod. by *Chaetasbolisia erysiphoides*. Angiogenesis inhibitor. Needles. Mp 86°. $[\alpha]_D^{22}$ -0.8 (c, 1 in EtOH). λ_{max} 240 (ε 11500); 270 (ε 7000); 318 (ε 7000) (EtOH/HCl) (Derep). λ_{max} 242 (ε 9500); 290 (ε 9500); 355 (ε 4300) (EtOH/NaOH) (Derep). λ_{max} 236 (ε 16800); 270 (ε 11300); 319 (ε 9500) (EtOH) (Derep).
▶ CJ8800000

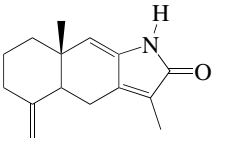
5′-Chloro: ***Antibiotic WF 16775A_2****. WF 16775A_2*
$C_{15}H_{20}Cl_3NO_5$ 400.685
Prod. by *Chaetasbolisia erysiphoides*. Angiogenesis and neovascularisation inhibitor. Needles. Sol. MeOH, EtOAc; poorly sol. H_2O. Mp 119.5-121°. $[\alpha]_D^{20}$ -52 (c, 0.5 in $CHCl_3$). λ_{max} 240 (ε 11500); 270 (ε 7500); 318 (ε 7000) (MeOH/HCl) (Derep). λ_{max} 242 (ε 9500); 290 (ε 9600); 355 (ε 4300) (MeOH/NaOH) (Derep). λ_{max} 236 (ε 19200); 269 (ε 12400); 322 (ε 11600) (MeOH) (Derep). λ_{max} 235 (ε 14600); 270 (ε 9600); 322 (ε 8400) (MeOH-HCl) (Berdy). λ_{max} 245 (ε 11400); 292 (ε 11200); 350 (ε 4000) (MeOH-NAOH) (Berdy).

Atpenin B [119509-26-1]
$C_{15}H_{23}NO_5$ 297.35
Prod. by *Chaetasbolisia erysiphoides*. Powder. Sol. MeOH, Et_2O; poorly sol. H_2O. Mp 78°. $[\alpha]_D^{22}$ -27 (c, 1 in EtOH). λ_{max} 240 (ε 11500); 270 (ε 7500); 318 (ε 7000) (EtOH/HCl) (Derep). λ_{max} 242 (ε 9500); 290 (ε 9600); 355 (ε 4300) (EtOH/NaOH) (Derep). λ_{max} 237 (ε 5600); 270 (ε 3600); 318 (ε 3100) (EtOH) (Derep).
▶ LD_{50} (mus, ipr) 50 - 150 mg/kg. CJ8810000

Omura, S. *et al., J. Antibiot.*, 1988, **41**, 1769 (*isol*)
Kumagai, H. *et al., J. Antibiot.*, 1990, **43**, 1553 (*pmr, cmr, struct*)
Otsuka, T. *et al., J. Antibiot.*, 1992, **45**, 1970
Trecourt, F. *et al., J.O.C.*, 1994, **59**, 6173 (*synth, Atpenin B*)

Atractylenolactam A-1536

[193757-67-4]

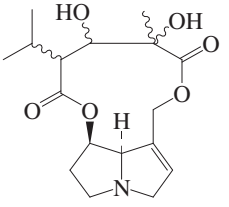


$C_{15}H_{19}NO$ 229.321
Constit. of *Atractylodes macrocephala*. Needles. Mp 225-227°.

Chen, Z.-L. *et al., Phytochemistry*, 1997, **45**, 765-767 (*isol, pmr, cmr*)

Aucherine A-1538

[123715-12-8]

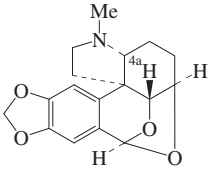


$C_{17}H_{25}NO_6$ 339.388
Alkaloid from aerial parts of *Senecio integrifolius* subsp. *aucheri* (Asteraceae).

Sener, B. *et al., Gazi Univ. Eczacilik Fak. Derg.*, 1988, **5**, 157; *CA*, **111**, 211907z

Augustamine A-1539

[86734-72-7]



Absolute Configuration

$C_{17}H_{19}NO_4$ 301.341
Alkaloid from the leaves, bulbs and roots of *Crinum augustum*. Prisms (Me_2CO). Mp 173-175°. $[\alpha]_D^{20}$ -83 (c, 1.4 in $CHCl_3$). λ_{max} 214 (ε 83440); 241 (ε 45510); 292 (ε 46300) (MeOH).

N-*De-Me:* ***Noraugustamine***
$C_{16}H_{17}NO_4$ 287.315
Alkaloid from the bulbs of *Crinum kirkii*. Mp 149-151°. $[\alpha]_D^{20}$ -50 (c, 0.9 in MeOH).

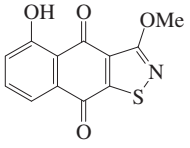
N,*4*a-*Didehydro,* N-*de-Me:* ***4*a,N-*Didehydronoraugustamine***
$C_{16}H_{15}NO_4$ 285.299
Alkaloid from the bulbs of *Crinum kirkii*. Mp 127-130°. $[\alpha]_D^{20}$ -242.6 (c, 0.27 in MeOH).

Ali, A.A. *et al., Phytochemistry*, 1981, **20**, 1121-1123; 1983, **22**, 283-287 (*isol, uv, ir, pmr, cmr, ms*)
Pearson, W.H. *et al., J.O.C.*, 1998, **63**, 3607-3617 (*synth*)

Joshi, B.S *et al., J. Chem. Crystallogr.*, 2000, **30**, 135-138 (*cryst struct*)
Machocho, A.K. *et al., Phytochemistry*, 2004, **65**, 3143-3149 (*Noraugustamines*)

Aulosirazole A-1540

*5-Hydroxy-3-methoxynaphth[2,3-*d*]isothiazole-4,9-dione, 9CI*
[159194-92-0]

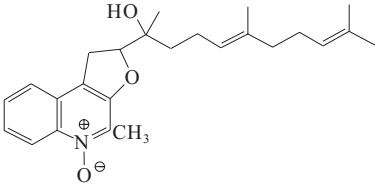


$C_{12}H_7NO_4S$ 261.258
Isol. from the blue-green alga *Aulosira fertilissima*. Cytotoxic agent. Deep yellow cryst. (MeOH aq.). λ_{max} 216 (ε 20500); 248 (ε 11200); 272 (ε 8500); 424 (ε 6300) (MeOH). λ_{max} 226 ; 280 ; 312 ; 536 (MeOH/NaOH) (Berdy).

Stratmann, K. *et al., J.O.C.*, 1994, **59**, 6279-6281

Aurachin A A-1541

*α-(4,8-Dimethyl-3,7-nonadienyl)-1,2-dihydro-α,4-dimethylfuro[2,3-*c*]quinoline-2-methanol 5-oxide, 9CI*
[108354-15-0]

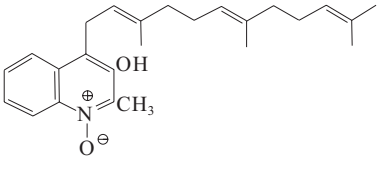


$C_{25}H_{33}NO_3$ 395.541
Prod. by *Stigmatella aurantiaca* Sg a15. Active against gram-positive bacteria and a few yeasts and molds. Cryst. (Et_2O). Sol. MeOH, $CHCl_3$; fairly sol. Et_2O; poorly sol. H_2O, hexane. Mp 111-112°. $[\alpha]_D$ -49.2 (c, 0.4 in MeOH). λ_{max} 219 (ε 22100); 239 (ε 24400); 249 (ε 26000); 304 (ε 3600); 317 (ε 4200); 354 (ε 5200); 369 (ε 6100) (MeOH) (Derep). λ_{max} 237 (ε 32000); 300 (ε 1700); 315 (ε 2400); 354 (ε 5100); 365 (ε 6100) (MeOH/HCl aq.).

Kunze, B. *et al., J. Antibiot.*, 1987, **40**, 258-265 (*isol, props*)
Höfle, G. *et al., J. Nat. Prod.*, 2008, **71**, 1843-1849 (*pmr, cmr, biosynth*)

Aurachin B A-1542

[108354-12-7]

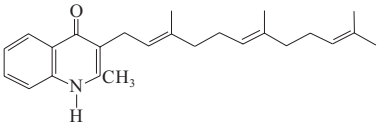


$C_{25}H_{33}NO_2$ 379.541
Prod. by *Stigmatella aurantiaca* Sg a15. Active against gram-positive bacteria and a few yeasts and molds. Cryst. (Et_2O). Mp 93-94°. λ_{max} 242 (ε 39600); 288 (sh) (ε 2900); 302 (ε 5500); 315 (ε 6900); 342 (ε 7100); 352 (ε 7600) (pH 2.5 MeOH) (Derep).

Kunze, B. *et al., J. Antibiot.*, 1987, **40**, 258-265 (*isol, props*)
Höfle, G. *et al., J. Nat. Prod.*, 2008, **71**, 1843-1849 (*pmr, cmr, biosynth*)

Aurachin D A-1543

[108354-13-8]



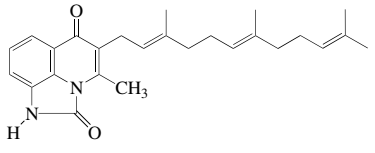
$C_{25}H_{33}NO$ 363.542
Prod. by *Stigmatella aurantiaca* Sg a15. Active against gram-positive bacteria and a few yeasts and molds. Cryst. (Et_2O). Sol. MeOH, EtOAc; poorly sol. H_2O, hexane. Mp 165-168°. λ_{max} 240 (ε 33000); 245 (ε 33500); 280 (sh) (ε 3300); 291 (sh) (ε 4300); 308 (sh) (ε 7400); 321 (ε 11400); 334 (ε 11400) (MeOH) (Derep).

N-*Hydroxy:* ***Aurachin C***
[108354-14-9]
$C_{25}H_{33}NO_2$ 379.541
From *Stigmatella aurantiaca* Sg a15. Active against gram-positive bacteria and a few yeasts and molds. Cryst. (Et_2O). Mp 124-125°. λ_{max} 212 (ε 34000); 249 (ε 30600); 334 (ε 10400) (MeOH).

Kunze, B. *et al., J. Antibiot.*, 1987, **40**, 258-265 (*isol, props*)
Höfle, G. *et al., J. Nat. Prod.*, 2008, **71**, 1843-1849 (*biosynth, pmr, cmr*)

Aurachin E A-1544

*4-Methyl-5-(3,7,11-trimethyl-2,6,10-dodecatrienyl)-6*H*-imidazo[4,5,1-*ij*]quinoline-2,6(1*H*)-dione, 9CI*
[113366-10-2]

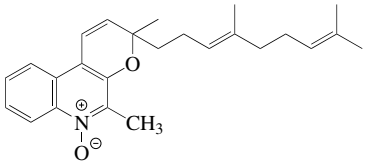


$C_{26}H_{32}N_2O_2$ 404.551
Isol. from *Stigmatella aurantiaca* Sg a15. Needles (Et_2O). Mp 168-169°. λ_{max} 241 (log ε 4.43); 249 (log ε 4.49); 300 (sh) (log ε 3.68); 339 (log ε 4.12) (MeOH).

Ger. Pat., 1986, 3 520 229; *CA*, **110**, 73858k
Höfle, G. *et al., J. Nat. Prod.*, 2008, **71**, 1843-1849 (*biosynth, pmr, cmr, ms*)
Höfle, G. *et al., J. Nat. Prod.*, 2008, **71**, 1967-1969 (*synth*)

Aurachin F A-1545

*3-(4,8-Dimethyl-3,7-nonadienyl)-3,5-dimethyl-3*H*-pyrano[2,3-*c*]quinoline 6-oxide, 9CI*
[113366-11-3]

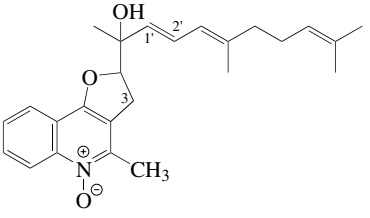


$C_{25}H_{31}NO_2$ 377.525
Alkaloid from *Stigmatella aurantiaca* Sg a15. Amorph. solid. λ_{max} 241 (sh) (log ε 4.27); 253 (log ε 4.43); 267 (sh) (log ε 4.1); 279 (sh) (log ε 3.89); 305 (log ε 3.49); 320 (log ε 3.62); 336 (log ε 3.75); 373 (log ε 3.64); 390 (log ε 3.69) (MeOH).

Ger. Pat., 1986, 3 520 229; *CA*, **110**, 73858k
Höfle, G. *et al., J. Nat. Prod.*, 2008, **71**, 1843-1849 (*pmr, cmr, biosynth*)

Aurachin G A-1546

*α-(4,8-Dimethyl-1,3,7-nonatrienyl)-2,3-dihydro-α,4-dimethylfuro[3,2-*c*]quinoline-2-methanol 5-oxide, 9CI*
[113366-12-4]



$C_{25}H_{31}NO_3$ 393.525
Isol. from *Stigmatella aurantiaca* Sg a15. Amorph. solid. λ_{max} 210 (log ε 4.47); 238 (log ε 4.52); 247 (log ε 4.55); 350 (sh) (log ε 4.02) (MeOH).

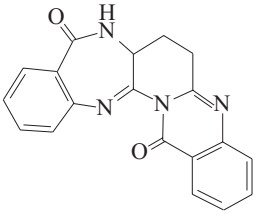
1′,2′-Dihydro: ***Aurachin H***
[113366-13-5]
$C_{25}H_{33}NO_3$ 395.541
From *Stigmatella aurantiaca* Sg a15. Amorph. solid. λ_{max} 216 (log ε 4.62); 249 (log ε 4.57); 339 (log ε 4.07) (MeOH).

3ξ-Methoxy, 1′,2′-dihydro: ***Aurachin I***
[113366-14-6]
$C_{26}H_{35}NO_4$ 425.567
From *Stigmatella aurantiaca* Sg a15. Amorph. solid. λ_{max} 216 (log ε 4.62); 249 (log ε 4.56); 350 (log ε 3.95) (MeOH).

Ger. Pat., 1986, 3 520 229; *CA*, **110**, 73858k
Höfle, G. *et al., J. Nat. Prod.*, 2008, **71**, 1843-1849 (*pmr, cmr, biosynth*)

Auranthine A-1547

[107290-05-1]



$C_{19}H_{14}N_4O_2$ 330.345

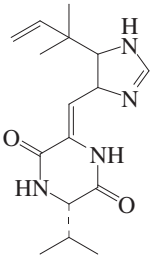
Metab. from sporing cultures of *Penicillium aurantiogriseum*. Mycotoxin. Nephrotoxic agent. Amorph. solid. Sol. MeOH, C_6H_6; poorly sol. H_2O. $[\alpha]_D^{25}$ -164 (c, 1 in EtOH). λ_{max} 228 (ϵ 38400); 268 (ϵ 8790); 280 (ϵ 7470); 310 (ϵ 3760); 312 (ϵ 3850) (MeOH) (Berdy).

Yeulet, S.E. *et al., J.C.S. Perkin 1*, 1986, 1891 (*isol, uv, ir, pmr, cmr, ms, struct*)

Aurantiamine A-1548

Alkaloid 302

[143085-86-3]



Absolute Configuration

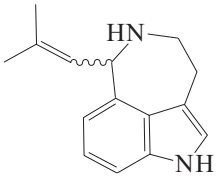
$C_{16}H_{22}N_4O_2$ 302.375

Metab. from *Penicillium aurantiogriseum* var. *aurantiogriseum* and *Penicillium aurantiogriseum* var. *neoechinulatum*. Mycotoxin. Cryst. Mp 238-239°. $[\alpha]_D^{23}$ -116 (c, 0.5 in MeOH). λ_{max} 230 ; 320 (MeCN aq.) (Berdy).

Larsen, T.O. *et al., Phytochemistry*, 1992, **31**, 1613-1615 (*isol, uv, pmr, cmr, ms*)

Aurantioclavine A-1549

*3,4,5,6-Tetrahydro-6-(2-methyl-1-propenyl)-1*H*-azepino[5,4,3-*cd*]indole, 9CI*



$C_{15}H_{18}N_2$ 226.321

(-)-*form* [80152-02-9]

Isol. from *Penicillium aurantio-virens*. No opt. rotn. reported.

N^5-*Et:* **N^5-*Ethylaurantioclavine***

[174792-01-9]

$C_{17}H_{22}N_2$ 254.374

Prod. by *Penicillium janczewskii*.

(±)-*form* [99211-67-3]

Off-white powder. Mp 194-195°.

Kozlovskii, A.G. *et al., Dokl. Akad. Nauk SSSR, Ser. Khim.*, 1981, **260**, 230-233; *CA*, **96**, 3403b (*isol, struct*)

Sakharovskii, V.G. *et al., Khim. Prir. Soedin.*, 1983, 656-657; *Chem. Nat. Compd. (Engl. Transl.)*, 1983, **19**, 626-627 (*pmr, conformn*)

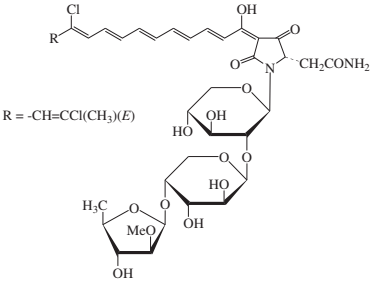
Yamada, F. *et al., Chem. Pharm. Bull.*, 1985, **33**, 2162-2163 (*synth, ir, pmr*)

Hegedus, L.S. *et al., J.O.C.*, 1987, **52**, 3319-3322 (*synth, bibl*)

Kozlovskii, A.G. *et al., Prikl. Biokhim. Mikrobiol.*, 1997, **33**, 70-74 (*N-Ethylaurantioclavine*)

Aurantoside A A-1550

[137895-70-6]



$C_{36}H_{46}Cl_2N_2O_{15}$ 817.669

Tetramic acid glycoside. Geom. isom. of terminal double bond revised in 1999. Isol. from the sponge *Theonella* sp. Cytotoxic agent. Orange solid. $[\alpha]_D^{23}$ -568 (c, 0.1 in MeOH). λ_{max} 242 (ϵ 12100); 414 (ϵ 46700) (H_2O).

O-*De-Me:* ***Aurantoside B***

[137895-71-7]

$C_{35}H_{44}Cl_2N_2O_{15}$ 803.642

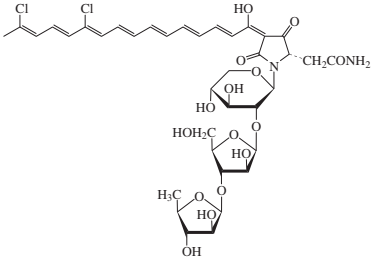
Isol. from *Theonella* sp. Cytotoxic agent. Orange solid. $[\alpha]_D^{23}$ -492 (c, 0.1 in MeOH). λ_{max} 242 (ϵ 10900); 414 (ϵ 49100) (H_2O).

Matsunaga, S. *et al., J.A.C.S.*, 1991, **113**, 9690-9692 (*isol, uv, ir, pmr, cmr, ms*)

Sata, N.U. *et al., J. Nat. Prod.*, 1999, **62**, 969-971 (*struct*)

Aurantoside C A-1551

[219297-37-7]



$C_{37}H_{46}Cl_2N_2O_{15}$ 829.68

Tetramic acid deriv. Isol. from the sponge *Homophymia conferta*. Amorph. red powder. $[\alpha]_D^{20}$ -480 (c, 0.2 in CH_2Cl_2/MeOH). λ_{max} 252 (ϵ 9700); 426 (ϵ 41600) (H_2O).

Wolf, D. *et al., J. Nat. Prod.*, 1999, **62**, 170-172 (*isol, uv, ir, pmr, cmr, ms*)

Aurantoside E A-1552

[233608-98-5]

As Aurantoside A, A-1550 with

R = -CH=CHCH=CCl(CH$_3$) (*E,Z*-)

$C_{38}H_{48}Cl_2N_2O_{15}$ 843.707

Tetramic acid glycoside. Isol. from the sponge *Siliquariaspongia japonica*. Antifungal agent. Red solid. $[\alpha]_D^{24}$ -1038 (c, 0.001 in MeOH). λ_{max} 250 (log ϵ 4.12); 423 (log ϵ 4.99) (MeOH).

O-*De-Me:* ***Aurantoside D***

[233608-94-1]

$C_{37}H_{46}Cl_2N_2O_{15}$ 829.68

Isol. from *Siliquariaspongia japonica*. Antifungal agent. Red solid. $[\alpha]_D^{24}$ -536 (c, 0.001 in MeOH). λ_{max} 244 (log ϵ 4.3); 433 (log ϵ 4.83) (MeOH).

Sata, N.U. *et al., J. Nat. Prod.*, 1999, **62**, 969-971 (*isol, uv, pmr, cmr*)

Aurantoside F A-1553

[233608-99-6]

As Aurantoside A, A-1550 with

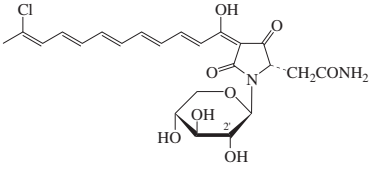
R = -CH=CHCH=CHCH=CClCH$_3$ (*Z*-)

$C_{40}H_{50}Cl_2N_2O_{15}$ 869.745

Tetramic acid glycoside. Isol. from the sponge *Siliquariaspongia japonica*. Antifungal agent. Red solid. $[\alpha]_D^{24}$ -1012 (c, 0.001 in MeOH). λ_{max} 440 (log ϵ 4.79); 465 (log ϵ 4.85) (MeOH).

Sata, N.U. *et al., J. Nat. Prod.*, 1999, **62**, 969-971 (*isol, uv, pmr, cmr*)

Aurantoside G A-1554



$C_{23}H_{27}ClN_2O_8$ 494.928

Tetramic acid glycoside. Isol. from the sponge *Theonella swinhoei*. Orange solid. $[\alpha]_D^{24}$ -116 (c, 0.1 in MeOH). λ_{max} 240 (log ϵ 3.72); 280 (log ϵ 3.69); 376 (log ϵ 3.57) (MeOH).

2′-O-*β-D-Arabinopyranosyl:* ***Aurantoside H***

$C_{28}H_{35}ClN_2O_{12}$ 627.043

Isol. from *Theonella swinhoei*. Orange solid. $[\alpha]_D^{24}$ -295 (c, 0.1 in MeOH). λ_{max} 240 (log ϵ 3.79); 280 (log ϵ 3.79); 434 (log ϵ 3.95) (MeOH).

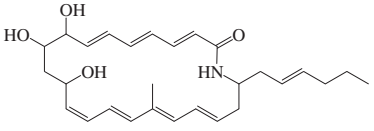
2′-O-*[5-Deoxy-2-*O*-methyl-β-D-arabinofuranosyl-(1→4)-β-D-arabinopyranosyl]:* ***Aurantoside I***

$C_{34}H_{45}ClN_2O_{15}$ 757.187
Isol. from *Theonella swinhoei*. Orange solid. $[\alpha]_D^{24}$ -210 (c, 0.1 in MeOH). λ_{max} 242 (log ϵ 3.68); 282 (log ϵ 3.68); 430 (log ϵ 3.72) (MeOH).

Ratnayake, A.S. *et al., J. Nat. Prod.*, 2005, **68**, 104-107 (*isol, pmr, cmr*)

Aureoverticillactam A-1555

22-(2-Hexenyl)-9,10,12-trihydroxy-17-methylazacyclodocosa-3,5,7,13,15,17,19-heptaen-2-one, 9CI
[682774-28-3]

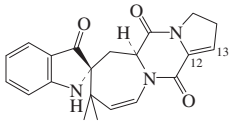


$C_{28}H_{39}NO_4$ 453.62
Closely related to Antibiotic BE 14106, A-1127. Prod. by the marine *Streptomyces aureoverticillatus* (NPS001583). Shows moderate cytotoxic activity. Amorph. solid. λ_{max} 283 (sh) ; 290 ; 310 (sh) ; 330 (sh) (MeCN aq.).

Mitchell, S.S. *et al., J. Nat. Prod.*, 2004, **67**, 1400-1402 (*isol, pmr, cmr*)

Austamide A-1556

[34427-31-1]



Absolute Configuration

$C_{21}H_{21}N_3O_3$ 363.415
Metab. of *Aspergillus ustus*. Tremorgenic toxin. Yellow amorph. solid. Sol. MeOH, $CHCl_3$. $[\alpha]_D^{20}$ +152 (c, 1 in EtOH). λ_{max} 234 (ϵ 26300); 256 (ϵ 2344); 282 (ϵ 8700); 392 (ϵ 2700) (EtOH) (Berdy).

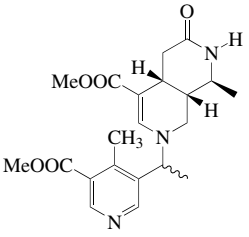
12S,13-Dihydro: ***12,13-Dihydroaustamide***
[34506-79-1]
$C_{21}H_{23}N_3O_3$ 365.431
Minor metab. of *Aspergillus ustus*. Cryst. (Me_2CO). Mp 235-238°. $[\alpha]_D^{22}$ +55 (c, 1.1 in $CHCl_3$). Fluorescent.

12ξ-Hydroxy, 12,13-dihydro: ***12,13-Dihydro-12-hydroxyaustamide***
[59476-59-4]
$C_{21}H_{23}N_3O_4$ 381.43
Minor metab. from *Aspergillus ustus*. Cryst. (MeOH). Mp 164-165°.

Coetzer, J. *et al., Acta Cryst. B*, 1973, **29**, 685 (*cryst struct*)
Steyn, P.S. *et al., Tetrahedron*, 1973, **29**, 107-120 (*isol, uv, ir, pmr, ms, struct, deriv*)
Steyn, P.S. *et al., Phytochemistry*, 1976, **15**, 355-356 (*dihydro*)
Harrison, D.M. *et al., Tet. Lett.*, 1981, **22**, 2501-2504 (*synth*)
Stocking, E.M. *et al., J.A.C.S.*, 2000, **122**, 9089-9098 (*biosynth*)
Williams, R.M. *et al., Chem. Pharm. Bull.*, 2002, **50**, 711-740 (*rev, synth, biosynth*)
Cole, R.J. *et al., Handbook of Toxic Fungal Metabolites*, Academic Press, 1981, 484

Austrodimerine A-1557

[206440-45-1]



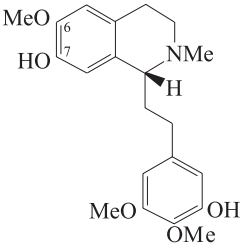
Relative Configuration

$C_{21}H_{27}N_3O_5$ 401.461
Alkaloid from *Osmanthus austrocaledonica*. $[\alpha]_D^{20}$ +75 (C, 1 in $CHCl_3$). λ_{max} 207 (log ϵ 4.27); 232 (log ϵ 3.79); 290 (log ϵ 4.17) (MeOH).

Benkrief, R. *et al., Phytochemistry*, 1998, **47**, 825-832 (*isol, uv, ir, pmr, cmr*)

Autumnaline A-1558

1,2,3,4-Tetrahydro-7-hydroxy-1-(3-hydroxy-4,5-dimethoxyphenethyl)-6-methoxy-2-methylisoquinoline. Alkaloid CC22



(R)–form

$C_{21}H_{27}NO_5$ 373.448

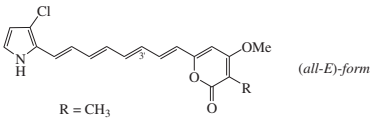
(R)-form [23068-65-7]
Alkaloid from *Colchicum cornigerum, Colchicum visianii, Colchicum latifolium* and *Colchicum ritchii* (Liliaceae). Mp 166-168°. $[\alpha]_D^{22}$ -5 (c, 0.2 in $CHCl_3$). $[\alpha]_D$ -8 (c, 0.29 in MeOH). Incorr. given (*S*)-config. in CA.

O⁶-De-Me, O⁷-Me: ***Isoautumnaline***
[111509-11-6]
$C_{21}H_{27}NO_5$ 373.448
Alkaloid from *Colchicum ritchii* (Liliaceae). Amorph. $[\alpha]_D$ -6 (c, 0.4 in $CHCl_3$). $[\alpha]_D$ -1 (c, 0.4 in MeOH).

(±)-form
Mp 170-172°.
Hydrochloride: Mp 235°.
O⁶-De-Me, O⁷-Me:
Prisms ($CHCl_3$/hexane). Mp 190-191°.

Potěšilová, H. *et al., Coll. Czech. Chem. Comm.*, 1969, **34**, 3540 (*isol, uv, ir*)
Battersby, A.R. *et al., J.C.S.(C)*, 1971, 3514 (*uv, ir, ms, pmr, struct*)
Battersby, A.R. *et al., J.C.S. Perkin 1*, 1972, 1741 (*synth, biosynth*)
Freyer, A.J. *et al., J. Nat. Prod.*, 1987, **50**, 684 (*Autumnaline, Isoautumnaline, isol, cd, pmr, abs config*)
Nimgirawath, S. *et al., Aust. J. Chem.*, 1994, **47**, 957 (*Isoautumnaline, synth*)

Auxarconjugatin A A-1559



(all-E)-form

$C_{19}H_{18}ClNO_3$ 343.809
Related to Rumbrin, R-160.

(all-E)-form
Alkaloid from *Auxarthron conjugatum* and *Gymnoascus reessii*. Cytotoxic. Red powder (MeOH aq.). Mp >300°. λ_{max} 205 (log ϵ 4.19); 222 (log ϵ 4.14); 267 (log ϵ 4.34); 327 (sh) (log ϵ 4.25); 340 (log ϵ 4.31); 442 (log ϵ 4.91) (MeOH).

Dechloro: ***Auxarconjugatin C***
$C_{19}H_{19}NO_3$ 309.364
Alkaloid from *Auxarthron conjugatum*. Red prisms (MeOH aq.). Mp >300°. λ_{max} 204 (log ϵ 4.27); 224 (log ϵ 4.17); 266 (log ϵ 4.38); 328 (sh) (log ϵ 4.16); 340 (log ϵ 4.21); 448 (log ϵ 4.91) (MeOH).

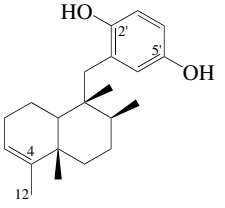
Lower homologue (R = H): ***Auxarconjugatin B***
$C_{18}H_{16}ClNO_3$ 329.782
Alkaloid from *Auxarthron conjugatum*. Red prisms (MeCN aq.). Mp 203-205°. λ_{max} 220 (log ϵ 3.6); 261 (log ϵ 3.75); 321 (sh) (log ϵ 3.6); 331 (log ϵ 3.66); 435 (log ϵ 4.33) (MeOH).

(1′E,3′Z,5′E,7′E)-form
Alkaloid from *Auxarthron conjugatum*. Red cryst. (MeOH aq.). Mp 123-125°. λ_{max} 206 (log ϵ 4.36); 268 (log ϵ 4.36); 329 (sh) (log ϵ 4.56); 341 (log ϵ 4.61); 440 (log ϵ 4.83) (MeOH).

Hosoe, T. *et al., Phytochemistry*, 1999, **52**, 459-463 (*isol, uv, ir, pmr, cmr, ms*)
Clark, B.R. *et al., Org. Lett.*, 2006, **8**, 701-704 (*isol*)

Avarol A-1560

[55303-98-5]



Absolute Configuration

$C_{21}H_{30}O_2$ 314.467
Constit. of *Dysidea avara*. Immunostimulant. Shows antiinflammatory, analgesic, ichthyotoxic, antimutagenic and anti-HIV activity. Cryst. ($CHCl_3$). Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. Mp 148-150°. $[\alpha]_D$ +6.1. Log P 6.98 (calc). λ_{max} 298 (ϵ 3900) (no solvent reported) (Derep).

▶ LD_{50} (mus, ipr) 269 mg/kg. Antimutagenic activity with inhibiting effect on

benzo[*a*]pyrene monooxygenase.
CZ9026700

2′,5′-Quinone, 3′-amino: ***3′-Aminoavarone***
$C_{21}H_{29}NO_2$ 327.466
Isol. from a *Dysidea* sp. Red oil. $[\alpha]_D^{22}$ +45 (c, 0.1 in CH_2Cl_2).

2′,5′-Quinone, 3′-(methylamino): ***3′-Methylaminoavarone***
[83995-06-6]
$C_{22}H_{31}NO_2$ 341.492
Found in the sponge *Dysidea avara*. Inhibitor of cell division in sea urchin eggs. Red cryst. Sol. MeOH, $CHCl_3$; poorly sol. hexane. Mp 153-155°. Poss. artifact. Called 2-methylamino in the lit. λ_{max} 288 (ϵ 50029); 486 (ϵ 2088) (MeOH) (Berdy).

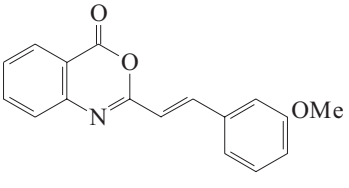
2′,5′-Quinone, 4′-(methylamino): ***4′-Methylaminoavarone***
[83995-05-5]
$C_{22}H_{31}NO_2$ 341.492
Isol. from the sponge *Dysidea avara*. Inhibitor of cell division in sea urchin eggs. Red cryst. Sol. MeOH, $CHCl_3$; poorly sol. hexane. Mp 160-163°. Poss. artifact. Called 3-methylamino in the lit. λ_{max} 288 (ϵ 5030); 486 (ϵ 2090) (MeOH) (Derep). λ_{max} 289 (ϵ 4688); 485 (ϵ 1065) (MeOH) (Berdy).

2′,5′-Quinone, 3′-(2-phenylethylamino): ***3′-(2-Phenylethylamino)avarone***
$C_{29}H_{37}NO_2$ 431.617
Isol. from a *Dysidea* sp. Reddish oil. $[\alpha]_D^{22}$ -89 (c, 0.1 in CH_2Cl_2).

Cimino, G. *et al., Experientia*, 1982, **38**, 896 (*Methylaminoavarones*)
Puliti, R. *et al., J. Mol. Struct.*, 2000, **516**, 31-41 (*3′-Methylaminoavarone, cryst struct*)
Diaz-Marrero, A.R. *et al., Org. Lett.*, 2006, **8**, 3749-3752 (*3′-Aminoavarone, 3′-Phenethylaminoavarone*)

Avenalumin II A-1561

*2-[2-(3-Methoxyphenyl)ethenyl]-4*H*-3,1-benzoxazin-4-one, 9CI. 2-(3-Methoxycinnamoyl)-4*H*-3,1-benzoxazin-4-one*
[78214-14-9]

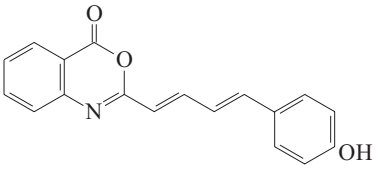


$C_{17}H_{13}NO_3$ 279.295
The proposed struct. illus. has been questioned (see Crombie *et al*). Phytoalexin from oat (*Avena sativa*) infected with rust fungus *Puccinia coronata*. Poorly sol. hexane. λ_{max} 317 ; 336 (MeOH) (Berdy).

Mayama, S. *et al., Physiol. Plant Pathol.*, 1981, **19**, 217 (*isol*)
Collins, F.W. *et al., Spectroscopy (Ottawa)*, 1985, **4**, 171 (*synth, ms*)
Crombie, L. *et al., Tet. Lett.*, 1990, **31**, 2647 (*synth*)

Avenalumin III A-1562

*2-[4-(4-Hydroxyphenyl)-1,3-butadienyl]-4*H*-3,1-benzoxazin-4-one, 9CI*
[78214-15-0]

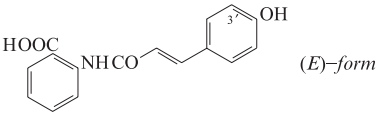


$C_{18}H_{13}NO_3$ 291.306
The proposed struct. illus. has been questioned (see Crombie *et al*). Phytoalexin isol. from oat (*Avena sativa*) infected with rust fungus (*Puccinia coronata*). Poorly sol. hexane.

Mayama, S. *et al., Physiol. Plant Pathol.*, 1981, **19**, 217 (*isol*)
Crombie, L. *et al., Tet. Lett.*, 1990, **31**, 2647 (*synth*)

Avenanthramide D A-1563

N-p-*Hydroxycinnamoylanthranilic acid. Dianthramide P*
[115610-36-1]



(*E*)–*form*

$C_{16}H_{13}NO_4$ 283.283
Sol. EtOAc, Et_2O, H_2O-Me_2CO; poorly sol. $CHCl_3$, H_2O, C_6H_6. λ_{max} 218 (ϵ 19950); 329 (ϵ 29500) (MeOH) (Berdy). λ_{max} 213 (ϵ 26900); 314 (ϵ 12020); 371 (ϵ 32360) (MeOH/NaOH) (Berdy).

(E)-form
Isol. from the oat *Avena sativa* and *Dianthus caryophyllus*. Rods (Me_2CO aq.). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 219°. λ_{max} 300 ; 329 (MeOH) (Berdy).

3′-Methoxy: ***Avenanthramide E***. N-*Feruloylanthranilic acid*
[93755-77-2]
$C_{17}H_{15}NO_5$ 313.309
Isol. from the oat *Avena sativa*. Pale yellow needles (Me_2CO aq.). Sol. EtOAc, Et_2O, H_2O-Me_2CO; poorly sol. $CHCl_3$, H_2O, C_6H_6. Mp 235°. λ_{max} 211 ; 338 (MeOH) (Berdy). λ_{max} 219 ; 385 (MeOH/NaOH) (Berdy).

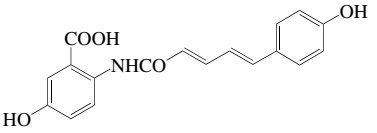
(Z)-form
Isol. from *Avena sativa* (oat) and *Dianthus caryophyllus*.

3′-Methoxy: Z-*Avenanthramide E*
[116764-24-0]
$C_{17}H_{15}NO_5$ 313.309
Isol. from oat (*Avena sativa*).

Collins, F.W. *et al., J. Chromatogr.*, 1988, **445**, 363 (*hplc*)
Ponchet, M. *et al., Phytochemistry*, 1988, **27**, 725
Collins, F.W. *et al., J. Agric. Food Chem.*, 1989, **37**, 60 (*isol, pmr, cmr, uv, ms*)
Crombie, L. *et al., Tet. Lett.*, 1990, **31**, 2647 (*synth*)
Ishihara, A. *et al., Phytochemistry*, 1999, **50**, 237-242 (*biosynth*)

Avenanthramide L A-1564

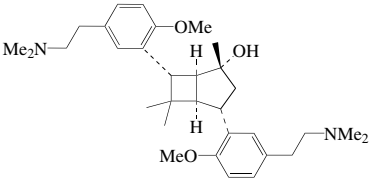
[172549-38-1]



$C_{18}H_{15}NO_5$ 325.32
Isol. from oat, *Avena sativa*, inoculated with *Puccinia coronata* f.sp. *avenae*. Phytoalexin. Yellow cryst. Mp 267-269°. λ_{max} 355 (log ϵ 4.8) (MeOH).

Miyagawa, H. *et al., Biosci., Biotechnol., Biochem.*, 1995, **59**, 2305-2306 (*isol, uv, pmr*)
Ishihara, A. *et al., Phytochemistry*, 1999, **50**, 237-242 (*biosynth*)

Avicennamine A-1565

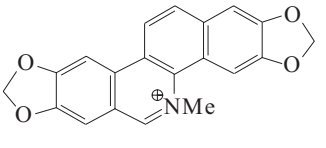


$C_{32}H_{48}N_2O_3$ 508.743
Alkaloid from *Zanthoxylum avicennae*. Amorph. $[\alpha]_D^{28}$ -52.9 (c, 1 in $CHCl_3$).

Thuy, T.T. *et al., Phytochemistry*, 1999, **50**, 903-907 (*isol, cd, pmr, cmr, ms*)

Avicine A-1566

5-Methyl-1,3-benzodioxolo[5,6-c][1,3]dioxolo[4,5-j]phenanthridinium(1+), 9CI
[24939-31-9]



$C_{20}H_{14}NO_4^{\oplus}$ 332.335
Alkaloid from the root bark of *Zanthoxylum avicennae* and the bark of *Zanthoxylum inerme* (= *Fagara boninensis*) (Rutaceae). Rather unstable; disproportionates into its dihydro- and oxy-derivs.

Acetate:
Bright yellow needles + $2H_2O$ (EtOH). Mp 160° dec.

N-*De-Me:* ***Des*-N-*methylavicine***. *Noravicine*

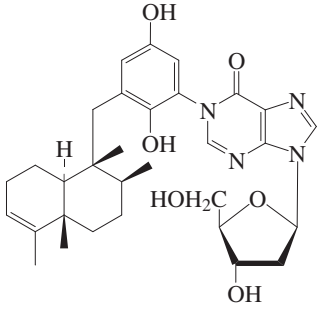
[217-52-7]
$C_{19}H_{11}NO_4$ 317.3
Alkaloid from the bark of *Zanthoxylum cuspidatum* (Rutaceae). Needles (Py). Mp 325° dec. (290-295°).

8-Methoxy, N*-de-Me:* ***Rhoifoline A***
$C_{20}H_{13}NO_5$ 347.326
Alkaloid from the stem bark of *Zanthoxylum rhoifolium*. Solid. Mp 168-169°.

Arthur, H.R. *et al., J.C.S.*, 1959, 4007 (*isol*)
Gopinath, K.W. *et al., Tetrahedron*, 1961, **14**, 322 (*synth, uv, deriv*)
Ishii, H. *et al., Yakugaku Zasshi*, 1972, **92**, 118; 1976, **96**, 1458; *CA*, **77**, 16530y; **86**, 136297k (*isol, pmr, deriv*)
Kessar, S.V. *et al., Tet. Lett.*, 1974, 2269 (*synth*)
Ishii, H. *et al., Chem. Pharm. Bull.*, 1985, **33**, 4139 (*synth*)
Green, G.R. *et al., J.C.S. Perkin 1*, 1996, 1647 (*synth*)
Gonzaga, W. de A. *et al., Planta Med.*, 2003, **69**, 371-374 (*Rhoifoline A*)

Avinosol A-1567

[909576-71-2]

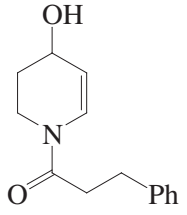


$C_{31}H_{40}N_4O_6$ 564.68
Conjugate of Avarol, A-1560 and 2′-Deoxyinosine. Isol. from a *Dysidea* sp. Unstable solid. $[\alpha]_D^{22}$ -26.9 (c, 0.35 in MeOH).

Diaz-Marrero, A.R. *et al., Org. Lett.*, 2006, **8**, 3749-3752 (*isol, pmr, cmr*)

Awaine A-1568

3-Phenylpropanoic acid 2,3-didehydro-4-hydroxypiperidide
[593254-86-5]

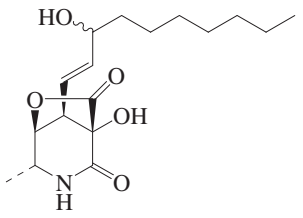


$C_{14}H_{17}NO_2$ 231.294
Alkaloid from the aerial parts of *Piper methysticum*. Oil.

Dragull, K. *et al., Phytochemistry*, 2003, **63**, 193-198 (*isol, pmr, cmr*)

Awajanomycin A-1569

[913260-20-5]

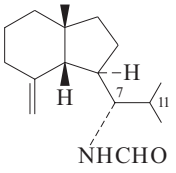


$C_{17}H_{27}NO_5$ 325.404
Prod. by a marine-derived *Acremonium* sp. AWA16-1. Cytotoxic. Gum. $[\alpha]_D^{25}$ +78 (c, 0.1 in MeOH). λ_{max} 274 (log ϵ 3.73) (MeOH).

Jang, J.-H. *et al., J. Nat. Prod.*, 2006, **69**, 1358-1360 (*isol, pmr, cmr*)

Axamide 1 A-1570

[56012-88-5]



$C_{16}H_{27}NO$ 249.395
Constit. of *Axinella cannabina*. Oil. $[\alpha]_D$ +10 (c, 1.2 in $CHCl_3$).

7,11-Didehydro: ***Axamide 4***
[62078-09-5]
$C_{16}H_{25}NO$ 247.38
Constit. of *Axinella cannabina*. Cryst. Mp 81-84°. $[\alpha]_D$ +63.3.

Isothiocyanate: ***Axisothiocyanate 1***
[53822-97-2]
$C_{16}H_{25}NS$ 263.446
Isol. from *Axinella cannabina*. Oil. $[\alpha]_D$ +5.9 (c, 2.5 in $CHCl_3$). Has -NCS replacing -NHCHO.

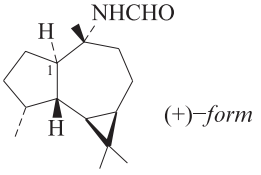
Isocyanide: ***Axisonitrile 1***
[53822-96-1]
$C_{16}H_{25}N$ 231.38
From *Axinella cannabina* and *Phyllidia pulitzeri*. Ichthyotoxic agent. Cryst. Mp 43-45°. $[\alpha]_D$ +22.6 (c, 1 in $CHCl_3$). Has -NC replacing -NHCHO.

7,11-Didehydro, isocyanide: ***Axisonitrile 4***
[62078-10-8]
$C_{16}H_{23}N$ 229.364
Isol. from *Axinella cannabina*. Cryst. Mp 56-58°. $[\alpha]_D$ +51.4 (c, 1 in $CHCl_3$).

7,11-Didehydro, isothiocyanate: ***Axisothiocyanate 4***
[62078-11-9]
$C_{16}H_{23}NS$ 261.43
Isol. from *Axinella cannabina*. Oil. $[\alpha]_D$ -35.9 (c, 1.2 in $CHCl_3$).

Cafieri, F. *et al., Tetrahedron*, 1973, **29**, 4259 (*isol*)
Fattorusso, E. *et al., Tetrahedron*, 1975, **31**, 269 (*isol*)
Iengo, A. *et al., Experientia*, 1977, **33**, 11; 1979, **35**, 10 (*isol, struct*)
Adinolfi, M. *et al., Tet. Lett.*, 1977, 2815 (*struct*)
Piers, E. *et al., Can. J. Chem.*, 1986, **64**, 2475 (*synth*)
Piers, E. *et al., Tetrahedron*, 1987, **43**, 5521 (*synth*)
Chenera, B. *et al., J.O.C.*, 1992, **57**, 2018 (*synth*)
Ohkubo, T. *et al., Tet. Lett.*, 1995, **36**, 3365 (*synth*)
Guevel, A.-C. *et al., J.O.C.*, 1996, **61**, 473 (*synth*)

Axamide 2 A-1571



$C_{16}H_{27}NO$ 249.395

(+)-form [56012-89-6]
Constit. of *Axinella cannabina*. Oil. $[\alpha]_D$ +37.5 (c, 0.9 in $CHCl_3$).

Isocyanide: ***Axisonitrile 2***
[55907-33-0]
$C_{16}H_{25}N$ 231.38
From *Axinella cannabina*, *Phyllidia pustulosa* and *Cadlina luteomarginata*. Oil. $[\alpha]_D$ +29 (c, 0.5 in $CHCl_3$). Has -NC relacing -NHCHO.

Isothiocyanate: ***Axisothiocyanate 2***
[56012-90-9]
$C_{16}H_{25}NS$ 263.446
Isol. from *Axinella cannabina*. Oil. $[\alpha]_D$ +12.8 (c, 1.5 in $CHCl_3$). Has -NCS replacing -NHCHO.

1-Epimer: ***10α-Formamidoalloaromadendrane***
[108739-41-9]
$C_{16}H_{27}NO$ 249.395
Constit. of *Axinella cannabina*. Oil.

1-Epimer, isocyanide: ***10α-Isocyanoalloaromadendrane***
[108739-39-5]
$C_{16}H_{25}N$ 231.38
Isol. from *Axinella cannabina*. Oil. $[\alpha]_D$ -17.21 (c, 0.7 in $CHCl_3$).

1-Epimer, isothiocyanate: ***10α-Isothiocyanatoalloaromadendrane***
[108739-40-8]
$C_{16}H_{25}NS$ 263.446
From *Axinella cannabina*. Oil. $[\alpha]_D$ -6.95 (c, 0.9 in $CHCl_3$).

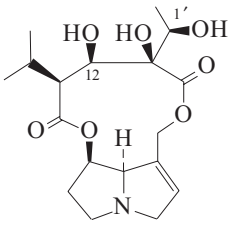
(-)-form

1-Epimer, isothiocyanate:
$C_{16}H_{25}NS$ 263.446
Constit. of *Acanthella cavernosa*. Oil. $[\alpha]_D$ +8 (c, 0.1 in $CHCl_3$). Not indexed by CAS.

Fattorusso, E. *et al., Tetrahedron*, 1974, **30**, 3911-3913; 1975, **31**, 269-270 (*Axisonitrile 2, Axisothiocyanate 2, Axamide 2*)
Ciminiello, P. *et al., Can. J. Chem.*, 1987, **65**, 518-522 (*Axinella cannabina constits*)
Fusetani, N. *et al., Tet. Lett.*, 1991, **32**, 7291-7294 (*Axisonitrile 2*)
Da Silva, C.C. *et al., J.O.C.*, 1994, **59**, 2880-2881 (*synth*)
Hirota, H. *et al., Tetrahedron*, 1996, **52**, 2359 (*isol, pmr, cmr*)

Axillarine† A-1572

[19637-66-2]



$C_{18}H_{27}NO_7$ 369.414

Cyclic ester of retronecine. Alkaloid from the seed of *Crotalaria axillaris*. Major alkaloid from *Crotalaria scassellatii* (Fabaceae). Cryst. (MeOH/$CHCl_3$). Mp 205° dec. $[\alpha]_D^{20}$ +65.1 (c, 0.82 in Py). The config. of the isopropyl group is not clear from the lit. and may be the opposite of that shown.

Hydrochloride:
Needles (MeOH). Mp 228°.

Picrate: Mp 214-216° dec.

1′-Deoxy: ***Axillaridine***
[23506-96-9]
$C_{18}H_{27}NO_6$ 353.414
From *Crotalaria axillaris* and *Crotalaria scassellatii* (Fabaceae). Cryst. (H_2O). Mp 148-152° dec. $[\alpha]_{400}^{21}$ +241 (c, 0.12 in MeOH).

1′-Deoxy, picrate:
Silky yellow needles. Mp 235° dec.

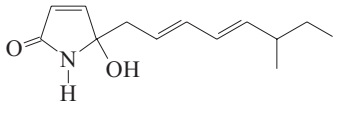
12-Deoxy: ***12-Deoxyaxillarine***. *12-Desoxyaxillarine*
[96400-47-4]
$C_{18}H_{27}NO_6$ 353.414
Minor alkaloid from seeds of *Crotalaria scassellatii* (Fabaceae). $[\alpha]_D^{20}$ -5 ($CHCl_3$).

Stereoisomer, 1′-deoxy: ***Othonnine***
[119565-25-2]
$C_{18}H_{27}NO_6$ 353.414
Alkaloid from *Senecio othonnae* (Asteraceae). Partial stereochem. known.

Crout, D.H.G. *et al., J.C.S.(C)*, 1969, 1379 (*isol, ms, struct*)
Culvenor, C.C.J. *et al., J.C.S.(C)*, 1971, 3653 (*cd*)
Stoeckli-Evans, H. *et al., Helv. Chim. Acta*, 1976, **59**, 2168 (*cryst struct*)
Weidenfeld, H. *et al., Phytochemistry*, 1985, **24**, 376 (*12-Deoxyaxillarine*)
Sener, B. *et al., CA*, 1988, **110**, 132140v (*Othonnine*)

Axinellamide A-1573

*1,5-Dihydro-5-hydroxy-5-(6-methyl-2,4-octadienyl)-2*H*-pyrrol-2-one, 9CI. 5-Hydroxy-5-(6-methyl-2,4-octadienyl)-3-pyrrolin-2-one*
[167425-78-7]

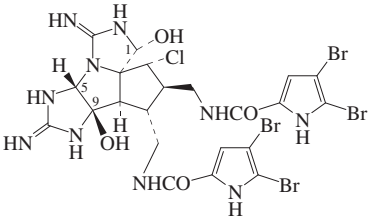


$C_{13}H_{19}NO_2$ 221.299
Alkaloid from the marine sponge *Axinella* sp. Pale yellow gum. $[\alpha]_D$ -26.2 (c, 0.08 in $CHCl_3$). λ_{max} 277 (ϵ 8700) (MeOH) (Berdy).

Miller, S.L. *et al., Tet. Lett.*, 1995, **36**, 5851 (*isol, uv, ir, pmr, cmr, struct*)

Axinellamine A† A-1574

[221225-27-0]



$C_{22}H_{23}Br_4ClN_{10}O_4$ 846.557

CAS nos. refer to bis(trifluoroacetates). Alkaloid from the Australian sponge *Axinella* sp. Powder (as bistrifluoroacetate salt). $[\alpha]_D^{20}$ -18 (c, 0.16 in MeOH). λ_{max} 277 (ϵ 11400) (MeOH).

1-Me ether: ***Axinellamine C***
[221226-05-7]
$C_{23}H_{25}Br_4ClN_{10}O_4$ 860.584
Alkaloid from an *Axinella* sp. Pale yellow oil. $[\alpha]_D^{20}$ -9 (c, 1.1 in MeOH). λ_{max} 277 (ϵ 6500) (MeOH).

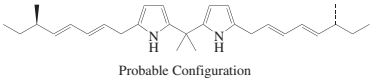
5,9-Diepimer: ***Axinellamine B***†
[221226-09-1]
$C_{22}H_{23}Br_4ClN_{10}O_4$ 846.557
Alkaloid from an *Axinella* sp. Pale yellow oil. $[\alpha]_D^{20}$ -7 (c, 0.21 in MeOH). λ_{max} 277 (ϵ 8000) (MeOH).

5,9-Diepimer, 1-Me ether: ***Axinellamine D***
[221226-07-9]
$C_{23}H_{25}Br_4ClN_{10}O_4$ 860.584
Alkaloid from an *Axinella* sp. Pale yellow oil. $[\alpha]_D^{20}$ -6 (c, 0.5 in MeOH). λ_{max} 276 (ϵ 8000) (MeOH).

Urban, S. *et al., J.O.C.*, 1999, **64**, 731-735 (*isol, uv, ir, pmr, cmr, ms*)
Dransfield, P.J. *et al., Tetrahedron*, 2006, **62**, 5223-5247 (*synth*)
O'Malley, D.P. *et al., Angew. Chem., Int. Ed.*, 2008, **47**, 3581-3583 (*synth*)

Axinellamine B† A-1575

[213269-07-9]



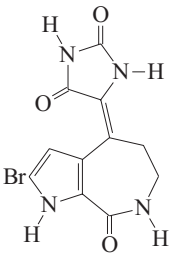
Probable Configuration

$C_{29}H_{42}N_2$ 418.664
Alkaloid from the marine sponge *Axinella* sp. Pale yellow gum. $[\alpha]_D$ -8.9 (c, 0.2 in $CHCl_3$). λ_{max} 228 (ϵ 6500) (MeOH).

Bascombe, K.C. *et al., Heterocycles*, 1998, **48**, 1461-1464 (*isol, uv, ir, pmr, cmr, ms*)
Seki, M. *et al., Eur. J. Org. Chem.*, 2001, 503-506 (*config*)

Axinohydantoin A-1576

*5-(2-Bromo-5,6,7,8-tetrahydro-8-oxopyrrolo[2,3-c]azepin-4(1*H*)-ylidene)-2,4-imidazolidinedione, 9CI*
[132160-42-0]



$C_{11}H_9BrN_4O_3$ 325.121
Alkaloid from the sponges *Axinella* sp. and *Monanchora* sp. Yellow prisms (MeOH). Mp 350°. λ_{max} 264 ; 345 (ϵ 14400) (MeOH) (Berdy).

Debromo: ***Debromoaxinohydantoin***
$C_{11}H_{10}N_4O_3$ 246.225
Isol. from the Papua New Guinea sponge *Monanchora* sp. Mp 300° dec. λ_{max} 208 (ϵ 16000); 225 (ϵ 11200); 255 (ϵ 15500); 339 (ϵ 27500) (MeOH) (Berdy).

*(*Z*)-Isomer:* ***Spongiacidin D***. *(*Z*)-Axinohydantoin*. *Fuscin*†
[193411-88-0]
$C_{11}H_9BrN_4O_3$ 325.121
Isol. from the sponges *Phakellia fusca*, *Stylotella aurantium* and *Hymeniacidon* sp. Inhibitor of protein kinase C. Amorph. solid. Mp 221-227° (dec.). There is confusion in CAS w.r.t. the config. of the *Phakellia* isolate. λ_{max} 272 (ϵ 10000); 310 (ϵ 4000) (MeOH).

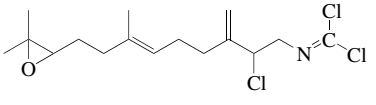
*Debromo, (*Z*)-isomer:* ***Spongiacidin C***. *(*Z*)-Debromoaxinohydantoin*
[193202-57-2]
$C_{11}H_{10}N_4O_3$ 246.225
Isol. from the sponge *Stylotella aurantia* and *Hymeniacidon* sp. Inhibitor of protein kinase C. Amorph. solid. Mp 213-218° (dec.). λ_{max} 273 (ϵ 9700); 312 (ϵ 3800) (MeOH).

[132160-43-1]

Pettit, G.R. *et al., Can. J. Chem.*, 1990, **68**, 1621 (*isol, uv, ir, pmr, cryst struct*)
Fu, X. *et al., Chem. Res. Chin. Univ.*, 1991, **7**, 178; *CA*, **118**, 36148y (*Fuscin*)
Groszek, G. *et al., Annalen*, 1995, 715 (*Debromoaxinohydantoin*)
Patil, A.D. *et al., Nat. Prod. Lett.*, 1997, **9**, 201-207 (*Z-isomers*)
Inaba, K. *et al., J. Nat. Prod.*, 1998, **61**, 693-695 (*Spongiacidins C and D*)
Sosa, A.C.B. *et al., J.O.C.*, 2002, **67**, 4498-4500 (*synth*)

Axinyssimide A A-1577

[184173-50-0]



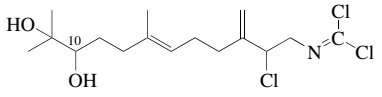
$C_{16}H_{24}Cl_3NO$ 352.73

Constit. of an *Axinyssa* sponge and *Phyllidia pustulosa*. Antifouling agent. $[\alpha]_D$ +1.7 (c, 0.06 in $CHCl_3$).

Hirota, H. *et al., Tetrahedron*, 1998, **54**, 13971-13980 (*isol, pmr, cmr*)

Axinyssimide B A-1578

[184173-51-1]



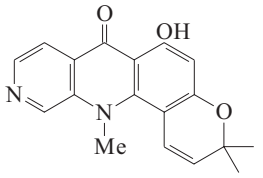
$C_{16}H_{26}Cl_3NO_2$ 370.745
Constit. of an *Axinyssa* sponge. Antifouling agent. $[\alpha]_D$ -22.5 (c, 0.02 in $CHCl_3$).

10-Epimer: ***Axinyssimide C***
[217481-01-1]
$C_{16}H_{26}Cl_3NO_2$ 370.745
Constit. of an *Axinyssa* sponge. Antifouling agent. $[\alpha]_D$ +7.3 (c, 0.015 in $CHCl_3$).

Hirota, H. *et al., Tetrahedron*, 1998, **54**, 13971-13980 (*isol, pmr, cmr*)

Azaacridone A A-1579

Azacridone A
[150050-14-9]

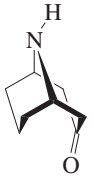


$C_{18}H_{16}N_2O_3$ 308.336
First naturally occurring azaacridone alkaloid. Alkaloid from roots of *Citrus paradisi* (grapefruit) (Rutaceae). Light brown oil.

Takemura, Y. *et al., Chem. Pharm. Bull.*, 1993, **41**, 789 (*isol, uv, ir, pmr, struct*)
Scopton, A. *et al., Org. Lett.*, 2004, **6**, 3869-3871 (*synth*)

9-Azabicyclo[3.3.1]nonan-3-one, 9CI A-1580

Granatonine. Norgranatan-3-one. Norpseudopelletierine
[4390-39-0]



$C_8H_{13}NO$ 139.197
Found in pomegranate (*Punica granatum*) bark (Punicaceae). Mp 123°.

▶ CL5593500

Picrate:
Cryst. (MeOH). Mp 216°.

N-*(Trifluoroacetyl):* [180406-55-7]
$C_{10}H_{12}F_3NO_2$ 235.206
Cryst. (Et_2O/hexane). Mp 70-73°.

N-*Benzoyl:* [36146-90-4]
$C_{15}H_{17}NO_2$ 243.305
Oil.

N-*(4-Methylbenzenesulfonyl):* [180406-57-9]
$C_{15}H_{19}NO_3S$ 293.386
Cryst. (EtOH). Mp 149-151°.

N-*Me: 9-Methyl-9-azabicyclo[3.3.1]nonan-3-one, 9CI. Granatan-3-one.* N-*Methylgranatonine. Pseudopelletierine. Ψ-Pelletierine*
[552-70-5]
$C_9H_{15}NO$ 153.224
Found in bark of pomegranate (*Punica granatum*). Prismatic plates (petrol). V. sol. H_2O. Mp 62-64°. Bp 246°. Strong base.

N-*Me, oxime:* [6164-67-6]
$C_9H_{16}N_2O$ 168.238
Plates (Et_2O). Mp 128-129°.

N-*Me,* N-*oxide:*
$C_9H_{15}NO_2$ 169.223
Mp 160-162°.

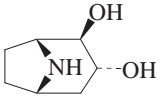
N-*Me,* N-*oxide; hydrochloride:* Mp 224°.

N-*Benzyl:*
$C_{15}H_{19}NO$ 229.321
Mp 72°. $Bp_{0.005}$ 115-120°.

Org. Synth., Coll. Vol., 4, 1963, 816 (*synth, bibl*)
Chen, C.-Y. *et al., J.C.S.(B)*, 1966, 539 (*conformn*)
Guthrie, R.D. *et al., J.C.S.(C)*, 1966, 1207 (*ms, N-Me*)
Wiseman, J.R. *et al., J.O.C.*, 1977, **42**, 629 (*synth, N-Me*)
Dupeyre, R.M. *et al., Bull. Soc. Chim. Fr.*, Part II, 1978, 612-620 (*synth, pmr, N-benzyl*)
Hill, R.K. *et al., Tetrahedron*, 1982, **38**, 1959 (*synth, N-Me*)
Neuhoefer, H. *et al., Pharmazie*, 1993, **48**, 389-391 (*isol*)
Momose, T. *et al., J.C.S. Perkin 1*, 1997, 1307-1313 (*N-benzyl*)
Kirihara, M. *et al., Tetrahedron*, 1999, **55**, 2911-2926 (*derivs*)

8-Azabicyclo[3.2.1]octane-2,3-diol A-1581

2,3-Nortropanediol. 2,3-Dihydroxynortropane



(2*R*,3*R*)-*form*

$C_7H_{13}NO_2$ 143.185

(2*R*,3*R*)-*form*
Alkaloid from the fruit of *Morus alba*. Powder. $[\alpha]_D$ -33.9 (c, 0.32 in H_2O).

(2*S*,3*R*)-*form*
Alkaloid from the fruit of *Morus alba*. Powder. $[\alpha]_D$ -34 (c, 0.61 in H_2O).

(2*S*,3*S*)-*form*
Alkaloid from *Calystegia soldanella*. $[\alpha]_D$ +48.4 (c, 0.82 in H_2O). Abs. config. not detd. but clearly enantiomeric with the (2*R*,3*R*)-form above.

2-Benzoyl: ***2-Benzoyloxy-3-hydroxynortropane***
[34622-25-8]
$C_{14}H_{17}NO_3$ 247.293
Alkaloid from *Peripentadenia mearsii* (Elaeocarpaceae). Needles (Me_2CO). Mp 187-188°. $[\alpha]_D$ +68 (c, 0.27 in $CHCl_3$).

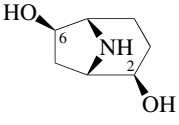
N-*Me: 2,3-Tropanediol*
$C_8H_{15}NO_2$ 157.212
Synthetic. Mp 133-135°.

(2*R,3*S**)-*form***
N-*Me, 2*-O-*(1-methyl-2-pyrrolecarbonyl):* ***Vaccinine A***
[864962-36-7]
$C_{14}H_{20}N_2O_3$ 264.324
Alkaloid from the bark of *Erythroxylum vacciniifolium*. Amorph. solid. $[\alpha]_D^{20}$ +37.1 (c, 0.51 in EtOH). λ_{max} 268 (log ϵ 4.19) (EtOH).

Johns, S.R. *et al., Aust. J. Chem.*, 1971, **24**, 2399 (*isol, ir, ms, pmr, struct*)
Asano, N. *et al., Phytochemistry*, 2001, **57**, 721-726 (*isol, pmr, cmr*)
Kusano, G. *et al., Chem. Pharm. Bull.*, 2002, **50**, 185-192 (*isol, pmr, cmr, abs config*)
Zanolari, B. *et al., J. Nat. Prod.*, 2005, **68**, 1153-1158 (*Vaccinine A*)

8-Azabicyclo[3.2.1]octane-2,6-diol A-1582

2,6-Nortropanediol. 2,6-Dihydroxynortropane



(2*R**,6*R**)-*form*

$C_7H_{13}NO_2$ 143.185

(2*R,6*R**)-*form***
(2β,6β)-form. ***Baogongteng C***
[107259-50-7]
Alkaloid from *Erycibe elliptilimba*, *Erycibe hainanensis* and *Erycibe obtusifolia* (Convolvulaceae). Oil.

6-Ac: ***Baogongteng A***
[74239-84-2]
$C_9H_{15}NO_3$ 185.222
Alkaloid from *Erycibe obtusifolia* and *Erycibe hainanensis* (Convolvulaceae). Myotic agent. $[\alpha]_D^{28}$ -7.21 (c, 0.97 in H_2O).

(2*RS*,6*RS*)-*form*
6-Ac: [126640-93-5]
2-Benzoyl, 6-Ac: [126640-96-8]
Needles (Me_2CO). Mp 158-159°.

(2*RS*,6*SR*)-*form*
6-Ac: [153222-79-8]
Needles. Mp 125-128°.

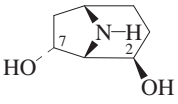
(2ξ,6ξ)-*form*
N-*Me: 8-Methyl-8-azabicyclo[3.2.1]octane-2,6-diol.* ***2,6-Tropanediol****. 2,6-Dihydroxytropane*
[65356-02-7]
$C_8H_{15}NO_2$ 157.212
2,6-Tropanediol of undefined config. was isol. from epigeal parts and roots of *Datura stramonium* (Solanaceae).

[107633-96-5]

Sharova, E.G. *et al., Khim. Prir. Soedin.*, 1977, 126; *Chem. Nat. Compd. (Engl. Transl.)*, 117 (*isol, N-Me*)
Yao, T. *et al., Yaoxue Xuebao*, 1981, **16**, 582; *CA*, **96**, 48972c
Chen, Z. *et al., Zhongcaoyao*, 1986, **17**, 386; *CA*, **106**, 153016s (*2,6-Dihydroxynortropane*)
Wang, P. *et al., Huaxue Xuebao*, 1989, **47**, 1002 (*isol*)
Jung, M.E. *et al., J.O.C.*, 1992, **57**, 3528 (*synth, pmr, Baogongteng A*)
Pei, X. *et al., Heterocycles*, 1993, **36**, 2549 (*synth, ir, pmr*)
Pham, V.C *et al., J.O.C.*, 1995, **60**, 8051 (*Baogongteng A, synth*)
Rezel, S. *et al., Heterocycles*, 1999, **51**, 989-1002 (*Baogongteng A, synth*)
Zhang, Y. *et al., J.A.C.S.*, 2006, **128**, 465-472 (*Baogongteng A, synth*)

8-Azabicyclo[3.2.1]octane-2,7-diol A-1583

2,7-Dihydroxynortropane. 2,7-Nortropanediol



(2*R**,7*R**)-*form*

$C_7H_{13}NO_2$ 143.185

(2*R,7*R**)-*form*** [357426-27-8]
Alkaloid from *Calystegia* spp. and *Ipomoea* spp. $[\alpha]_D$ +13.1 (c, 2.3 in H_2O).

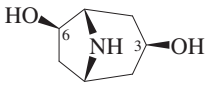
N-*Me, 2*-O-*(1-methyl-2-pyrrolecarbonyl):* ***Vaccinine B***
[864962-37-8]
$C_{14}H_{20}N_2O_3$ 264.324
Alkaloid from the bark of *Erythroxylum vacciniifolium*. Amorph. solid. $[\alpha]_D^{20}$ -2 (c, 0.47 in EtOH). λ_{max} 267 (log ϵ 4.1) (EtOH).

(2*R,7*S**)-*form***
Erycibelline
[107633-95-4]
Alkaloid from the stems of *Erycibe elliptilimba*.

Lu, Y. *et al., Yaoxue Xuebao*, 1986, **21**, 829-835; *CA*, **106**, 153028x (*Erycibelline*)
Asano, N. *et al., Phytochemistry*, 2001, **57**, 721-726 (*isol, pmr, cmr*)
Zanolari, B. *et al., J. Nat. Prod.*, 2005, **68**, 1153-1158 (*Vaccinine B*)

8-Azabicyclo[3.2.1]octane-3,6-diol A-1584

3,6-Dihydroxynortropane. 3,6-Nortropanediol



(3*S*,6*R*)-*form*

$C_7H_{13}NO_2$ 143.185

(3*S*,6*R*)-*form*
Alkaloid from the fruit of *Morus alba* (white mulberry). Powder. $[\alpha]_D$ -1.3 (c, 0.6 in H_2O).

(3*R,6*R**)-*form***

N-*Me:* see 8-Methyl-8-azabicyclo[3.2.1]octane-3,6-diol, M-391

3-O-*Tigloyl:* ***3-Tigloyloxynortropan-6-ol***
[65636-83-1]
[65636-84-2]
$C_{12}H_{19}NO_3$ 225.287
Alkaloid from *Datura sanguinea* (Solanaceae). Plates (EtOH) (as hydrochloride). Mp 289-290° (hydrochloride). Opt. rotn. not measured.

3-O-*Benzoyl:* ***3-Benzoyloxynortropan-6-ol***
$C_{14}H_{17}NO_3$ 247.293
Alkaloid from the leaves of *Erythroxylum macrocarpum* and *Erythroxylum sideroxyloides* (Erythroxylaceae). Mp 225° (as picrate).

6-O-*Benzoyl, 3-(2-methylpropanoyl):* ***6-Benzoyloxy-3-isobutanoyloxynortropane***
$C_{18}H_{23}NO_4$ 317.384
Alkaloid from the leaves of *Erythroxylum moonii*. Light brown powder. $[\alpha]_D^{25}$ -21.4 (c, 0.07 in MeOH). λ_{max} 232 (log ϵ 4.07); 275 (log ϵ 2.87) (MeOH).

3-O-*(3,4,5-Trimethoxybenzoyl):* ***3-(3,4,5-Trimethoxybenzoyloxy)nortropan-6-ol***
$C_{17}H_{23}NO_6$ 337.372
Alkaloid from *Erythroxylum zambesiacum* (Erythroxylaceae). Prisms (EtOH aq.) (as picrate). Mp 201° (picrate).

6-O-E-*Cinnamoyl, 3*-O-*propanoyl:* ***6-trans-Cinnamoyloxy-3-propanoyloxynortropane***
$C_{19}H_{23}NO_4$ 329.395
Alkaloid from the leaves of *Erythroxylum moonii*. Amorph. solid. $[\alpha]_D^{25}$ -23.1 (c, 0.31 in MeOH). λ_{max} 280 (log ϵ 4.37) (MeOH).

6-O-*(3,4,5-Trimethoxy-Z-cinnamoyl), 3*-O-*(2-methylpropanoyl):* ***3-Isobutanoyloxy-6-(3,4,5-trimethoxy-cis-cinnamoyloxy)nortropane***
$C_{23}H_{31}NO_7$ 433.5
Alkaloid from the leaves of *Erythroxylum moonii*. Semisolid. $[\alpha]_D^{25}$ -25.2 (c, 0.07 in $CHCl_3$). λ_{max} 326 (log ϵ 4.43) (MeOH).

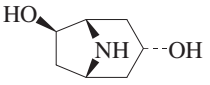
(3*R*,6*S*)-*form*
3β,6β-Dihydroxynortropane
Alkaloid from the fruit of *Morus alba* (white mulberry). $[\alpha]_D$ -8.2 (c, 0.34 in H_2O).

Di-O-*tigloyl: 3,6-Ditigloyloxynortropane*
[359723-70-9]
$C_{17}H_{25}NO_4$ 307.389
Alkaloid from the leaves of *Erythroxylum argentinum*.

Evans, W.C. *et al., Phytochemistry*, 1978, **17**, 171 (*3-tiglate*)
Al-Said, M.S. *et al., Phytochemistry*, 1986, **25**, 851-853 (*3-benzoate*)
El-Iman, Y.M.A. *et al., Phytochemistry*, 1987, **26**, 2385-2389 (*3-trimethoxybenzoate*)
Zuanazzi, J.A.S. *et al., Biochem. Syst. Ecol.*, 2001, **29**, 819-825 (*ditiglate*)
Asano, N. *et al., J. Agric. Food Chem.*, 2001, **49**, 4208-4213 (*3β,6β-form*)
Kusano, G. *et al., Chem. Pharm. Bull.*, 2002, **50**, 185-192 (*Morus alba isolate*)
Khattak, K.F. *et al., Heterocycles*, 2003, **60**, 917-924 (*Erythroxylum moonii esters*)

8-Azabicyclo[3.2.1]octane-3,7-diol A-1585

3,7-Dihydroxynortropane. 3,7-Nortropanediol



$C_7H_{13}NO_2$ 143.185

(3*R*,7*R*)-*form*
Alkaloid from *Duboisia leichardtii.*

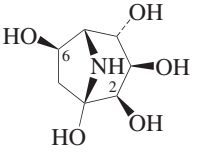
3-(2-Methylpropanoyl): ***3-Isobutyryloxy-nortropan-7-ol***
$C_{11}H_{19}NO_3$ 213.276
Alkaloid from the leaves of *Erythroxylum moonii*. Amorph. powder. $[\alpha]_D^{25}$ -13.4 (c, 0.04 in MeOH). λ_{max} 208 (log ϵ 3.85); 264 (log ϵ 2.37) (MeOH).

7-Phenylacetyl: ***7-Phenylacetoxynortropan-3-ol***
$C_{15}H_{19}NO_3$ 261.32
Alkaloid from the leaves of *Erythroxylum moonii*. Amorph. powder. $[\alpha]_D^{25}$ +7.2 (c, 0.25 in MeOH). λ_{max} 208 (log ϵ 3.85); 264 (log ϵ 2.37) (MeOH).

Asano, N. *et al., Phytochemistry*, 2001, **57**, 721-726 (*isol, pmr, cmr*)
Khattak, K.F. *et al., J. Nat. Prod.*, 2002, **65**, 929-931 (*3-isobutyryl-, 7-phenylacetyl derivs*)

8-Azabicyclo[3.2.1]octane-1,2,3,4,6-pentol A-1586

1,2,3,4,6-Pentahydroxynortropane. 1,2,3,4,6-Nortropanepentol



(1*R**,2*R**,3*R**,4*S**,6*R**)-*form*

$C_7H_{13}NO_5$ 191.183

(1*R*,2*R*,3*R*,4*S*,6*R*)-*form*
Calystegine C₂
[190957-44-9]
Alkaloid from *Duboisia leichardtii* and *Lycium chinense* (Chinese boxthorn). $[\alpha]_D$ -40.6 (c, 0.32 in H_2O).

(1*R*,2*S*,3*R*,4*S*,6*R*)-*form*
Calystegine C₁
[156705-04-3]
Alkaloid from *Morus alba* (white mulberry) and *Lycium chinense* (Chinese boxthorn). Powder. $[\alpha]_D$ +23.1 (c, 0.8 in H_2O).

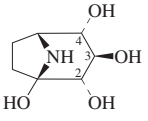
N-*Me:* **N-*Methylcalystegine C₁***
[197449-07-3]
$C_8H_{15}NO_5$ 205.21
Alkaloid from the roots of *Lycium chinense* (Chinese boxthorn). $[\alpha]_D$ +27.6 (c, 0.3 in H_2O).

Asano, N. *et al., Eur. J. Biochem.*, 1995, **229**, 369-376; 1997, **248**, 296-303 (*isol, pmr, cmr*)

Kato, A. *et al., Phytochemistry*, 1997, **45**, 425-429 (*Calystegine C_2*)
Schimming, T. *et al., Phytochemistry*, 1998, **49**, 1989-1995 (*occur*)
Watson, A.A. *et al., Phytochemistry*, 2001, **56**, 265-295 (*rev*)
Dräger, B. *et al., Nat. Prod. Rep.*, 2004, **21**, 211-223 (*rev*)
Biastoff, S. *et al., Alkaloids (Academic Press)*, 2007, **64**, 49-102 (*rev*)

8-Azabicyclo[3.2.1]octane-1,2,3,4-tetrol A-1587

1,2,3,4-Tetrahydroxynortropane. 1,2,3,4-Nortropanetetrol



(1*R*,2*S*,3*R*,4*S*)-*form*

$C_7H_{13}NO_4$ 175.184

(1*R*,2*S*,3*R*,4*S*)-*form*
Calystegine B_2. *Nortropanoline*
[127414-85-1]
Alkaloid from *Atropa belladonna*, leaves of *Solanum tuberosum*, *Solanum dulcamara*, *Solanum melongena*, *Solanum dimidiatum*, *Solanum kwebense* and *Datura wrightii* (Solanaceae), *Calystegia arvensis* and *Calystegia sepium* (Convolvulaceae). $[\alpha]_D$ +2.9 (c, 0.2 in H_2O). $[\alpha]_D$ +17.1 (c, 0.41 in H_2O) (synthetic).

N-*Me:* **N-*Methylcalystegine B_2***
[184045-65-6]
$C_8H_{15}NO_4$ 189.211
Alkaloid from the roots of *Lycium chinense* (Chinese boxthorn). $[\alpha]_D$ +22.2 (c, 0.22 in H_2O).

(1*S*,2*R*,3*S*,4*R*)-*form* [146275-92-5]
Synthetic. $[\alpha]_D$ -17.5 (c, 0.37 in H_2O).

4-O-*α*-*D*-*Galactopyranoside:* ***4*-O-*α*-*D*-Galactopyranosylcalystegine B_2***
$C_{13}H_{23}NO_9$ 337.326
Alkaloid from the fruit of *Morus alba* (white mulberry). $[\alpha]_D$ +114.5 (c, 0.48 in H_2O).

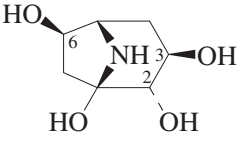
(1*R*,2*R*,3*R*,4*S*)-*form*
Calystegine B_3
[178231-95-3]
Alkaloid from *Hyoscyamus niger* and *Physalis alkekengi* var. *francheti* (Solanaceae). Powder. $[\alpha]_D$ +82.8 (c, 0.5 in H_2O).

(1*R*,2*S*,3*R*,4*R*)-*form*
Calystegine B_4
[184046-85-3]
Alkaloid from *Scopolia japonica* (Solanaceae). Trehalase inhibitor. Powder. $[\alpha]_D$ -63 (c, 0.65 in H_2O).

Goldmann, A. *et al., Phytochemistry*, 1990, **29**, 2125 (*isol*)
Ducrot, P.-H. *et al., Tet. Lett.*, 1990, **31**, 3879; 3883 (*pmr, cmr, struct, synth*)
Boyer, F.-D. *et al., Synlett*, 1992, 969 (*synth*)
Duclos, O. *et al., Tet. Lett.*, 1992, **33**, 8061 (*synth*)
Nash, R.J. *et al., Phytochemistry*, 1993, **34**, 1281 (*occur*)
Boyer, F.-D. *et al., Tetrahedron*, 1994, **50**, 10443 (*synth*)
Asano, N. *et al., Eur. J. Biochem.*, 1995, **229**, 369 (*Calystegine B_3*)
Asano, N. *et al., Carbohydr. Res.*, 1996, **284**, 169; **293**, 195 (*Calystegine B_3, Calystegine B_4*)
Goldmann, A. *et al., J. Nat. Prod.*, 1996, **59**, 1137
Soulí, J. *et al., Tetrahedron*, 1996, **52**, 15137 (*synth*)
Asano, N. *et al., Eur. J. Biochem.*, 1997, **248**, 296-303 (*N-Methylcalystegine B_2*)
Schimming, T. *et al., Phytochemistry*, 1998, **49**, 1989-1995 (*occur*)
Asano, N. *et al., J. Agric. Food Chem.*, 2001, **49**, 4208-4213 (*4-Galactosylcalystegine B_2*)
Watson, A.A. *et al., Phytochemistry*, 2001, **56**, 265-295 (*rev*)
Bekkouche, K. *et al., Phytochemistry*, 2001, **58**, 455-462 (*occur*)
Boyer, F.-D. *et al., Tet. Lett.*, 2001, **42**, 1275-1277 (*Calystegine B_2, synth*)
Marco-Contelles, J. *et al., J.O.C.*, 2002, **67**, 3705-3717 (*Calystegine B_2, synth*)
Skaanderup, P.R. *et al., J.O.C.*, 2003, **68**, 2115-2122 (*Calystegine B_2 B_3 B_4, synth*)
Scholl, Y. *et al., Phytochemistry*, 2003, **62**, 325-332 (*biosynth*)
Dräger, B. *et al., Nat. Prod. Rep.*, 2004, **21**, 211-223 (*rev*)
Biastoff, S. *et al., Alkaloids (Academic Press)*, 2007, **64**, 49-102 (*rev*)
Chen, Y.-L. *et al., Org. Biomol. Chem.*, 2007, **5**, 3330-3339 (*Calystegine A_3, synth*)

8-Azabicyclo[3.2.1]octane-1,2,3,6-tetrol A-1588

1,2,3,6-Tetrahydroxynortropane. 1,2,3,6-Nortropanetetrol



$C_7H_{13}NO_4$ 175.184

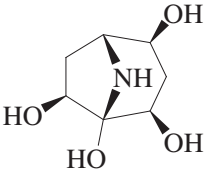
(1*S*,2*R*,3*S*,6*S*)-*form*
Calystegine B_1
[127414-86-2]
Alkaloid from *Atropa belladonna* and *Nicandra physalodes* (Solanaceae), *Calystegia arvensis* and *Calystegia sepium* (Convolvulaceae). Powder. $[\alpha]_D$ -13 (c, 0.6 in H_2O).

3-O-*β*-*D*-*Glucopyranoside:* [176678-49-2]
$C_{13}H_{23}NO_9$ 337.326
Alkaloid from fruits of *Nicandra physalodes.*

Goldmann, A. *et al., Phytochemistry*, 1990, **29**, 2125 (*isol*)
Ducrot, P.-H. *et al., Tet. Lett.*, 1990, **31**, 3879; 3883 (*pmr, cmr, struct, synth*)
Asano, N. *et al., Eur. J. Biochem.*, 1995, **229**, 369 (*isol, pmr, cmr*)
Griffiths, R.C. *et al., Tet. Lett.*, 1996, **37**, 3207 (*glucoside*)
Schimming, T. *et al., Phytochemistry*, 1998, **49**, 1989-1995 (*occur*)
Watson, A.A. *et al., Phytochemistry*, 2001, **56**, 265-295 (*rev*)
Bekkouche, K. *et al., Phytochemistry*, 2001, **58**, 455-462 (*occur*)
Dräger, B. *et al., Nat. Prod. Rep.*, 2004, **21**, 211-223 (*rev*)
Biastoff, S. *et al., Alkaloids (Academic Press)*, 2007, **64**, 49-102 (*rev*)

8-Azabicyclo[3.2.1]octane-1,2,4,7-tetrol A-1589

1,2,4,7-Tetrahydroxynortropane. 1,2,4,7-Nortropanetetrol



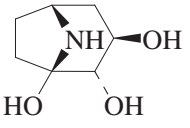
$C_7H_{13}NO_4$ 175.184

(1*R,2*R**,4*S**,7*S**)-*form***
Calystegine B_5
[197565-91-6]
Alkaloid from the roots of *Lycium chinense* (Chinese boxthorn). $[\alpha]_D$ +9.6 (c, 0.31 in H_2O).

Asano, N. *et al., Eur. J. Biochem.*, 1997, **248**, 296-303 (*Calystegine B_5*)
Dräger, B. *et al., Nat. Prod. Rep.*, 2004, **21**, 211-223 (*rev*)
Biastoff, S. *et al., Alkaloids (Academic Press)*, 2007, **64**, 49-102 (*rev*)

8-Azabicyclo[3.2.1]octane-1,2,3-triol A-1590

1,2,3-Trihydroxynortropane. 1,2,3-Nortropanetriol



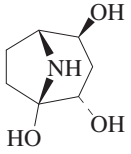
$C_7H_{13}NO_3$ 159.185

(1*R*,2*S*,3*R*)-*form*
Calystegine A_3
[131580-36-4]
Alkaloid from *Atropa belladonna* (Solanaceae), *Calystegia arvensis* and *Calystegia sepium* (Convolvulaceae) and *Solanum tuberosum* (potato) (Solanaceae). Powder. $[\alpha]_D$ -17.3 (c, 0.5 in H_2O).

Goldmann, A. *et al., Phytochemistry*, 1990, **29**, 2125 (*isol*)
Ducrot, P.-H. *et al., Tet. Lett.*, 1990, **31**, 3879; 3883 (*pmr, cmr, struct, synth*)
Boyer, F.-D. *et al., Synlett*, 1992, 357 (*synth*)
Nash, R.J. *et al., Phytochemistry*, 1993, **34**, 1281 (*occur*)
Asano, N. *et al., Eur. J. Biochem.*, 1995, **229**, 369 (*isol, pmr, cmr*)
Schimming, T. *et al., Phytochemistry*, 1998, **49**, 1989-1995 (*occur*)
Bekkouche, K. *et al., Phytochemistry*, 2001, **58**, 455-462 (*occur*)
Dräger, B, *et al., Nat. Prod. Rep.*, 2004, **21**, 211-223 (*rev*)
Biastoff, S. *et al., Alkaloids (Academic Press)*, 2007, **64**, 49-102 (*rev*)

8-Azabicyclo[3.2.1]octane-1,2,4-triol A-1591

1,2,4-Trihydroxynortropane. 1,2,4-Nortropanetriol

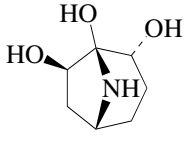


$C_7H_{13}NO_3$ 159.185

(1*R,2*S**,4*S**)-*form***
Calystegine A_7
[197565-90-5]
Alkaloid from the roots of *Lycium chinense* (Chinese boxthorn). $[\alpha]_D$ -10.8 (c, 0.27 in H_2O).
Asano, N. *et al., Eur. J. Biochem.*, 1997, **248**, 296-303 (*isol*)
Dräger, B. *et al., Nat. Prod. Rep.*, 2004, **21**, 211-223 (*rev*)
Biastoff, S. *et al., Alkaloids (Academic Press)*, 2007, **64**, 49-102 (*rev*)
Csuk, R. *et al., Tetrahedron*, 2008, **64**, 9417-9422 (*synth*)

8-Azabicyclo[3.2.1]octane-1,2,7-triol A-1592

1,2,7-Trihydroxynortropane. 1,2,7-Nortropanetriol

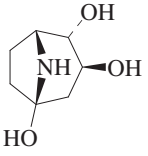


$C_7H_{13}NO_3$ 159.185

(1*R,2*R**,7*R**)-*form***
Calystegine A_6
[177794-04-6]
Alkaloid from *Hyoscyamus niger* and *Lycium chinense*. $[\alpha]_D$ -27.6 (c, 0.4 in H_2O).
Asano, N. *et al., Carbohydr. Res.*, 1996, **284**, 169-178 (*isol, pmr, cmr*)
Asano, N. *et al., Eur. J. Biochem.*, 1997, **248**, 296-303 (*isol*)
Schimming, T. *et al., Phytochemistry*, 1998, **49**, 1989-1995 (*occur*)
Dräger, B. *et al., Nat. Prod. Rep.*, 2004, **21**, 211-223 (*rev*)
Biastoff, S. *et al., Alkaloids (Academic Press)*, 2007, **64**, 49-102 (*rev*)

8-Azabicyclo[3.2.1]octane-1,3,4-triol A-1593

1,3,4-Trihydroxynortropane. 1,3,4-Nortropanetriol

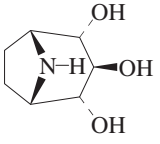


$C_7H_{13}NO_3$ 159.185

(1*R,3*S**,4*S**)-*form***
Calystegine A_5
[165905-26-0]
Alkaloid from *Hyoscyamus niger* and *Physalis alkekengi* var. *francheti* (Solanaceae). Powder. $[\alpha]_D$ +68.7 (c, 0.6 in H_2O).
Asano, N. *et al., Eur. J. Biochem.*, 1995, **229**, 369-376 (*isol, pmr, cmr*)
Asano, N. *et al., Carbohydr. Res.*, 1996, **284**, 169-175 (*isol*)
Schimming, T. *et al., Phytochemistry*, 1998, **49**, 1989-1995 (*occur*)
Dräger, B. *et al., Nat. Prod. Rep.*, 2004, **21**, 211-223 (*rev*)
Biastoff, S. *et al., Alkaloids (Academic Press)*, 2007, **64**, 49-102 (*rev*)

8-Azabicyclo[3.2.1]octane-2,3,4-triol A-1594

2,3,4-Trihydroxynortropane. 2,3,4-Nortropanetriol

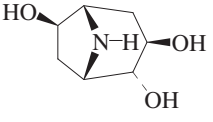


$C_7H_{13}NO_3$ 159.185

(1*RS*,2*SR*,3*RS*,4*RS*,5*SR*)-*form*
Alkaloid from the fruit of *Morus alba*. Powder. *meso*-Stereoisomer.
Kusano, G. *et al., Chem. Pharm. Bull.*, 2002, **50**, 185-192

8-Azabicyclo[3.2.1]octane-2,3,6-triol A-1595

2,3,6-Trihydroxynortropane. 2,3,6-Nortropanetriol

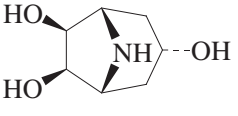


$C_7H_{13}NO_3$ 159.185

(1*S*,2*R*,3*R*,5*S*,6*R*)-*form*
Alkaloid from the fruit of *Morus alba*. Powder. $[\alpha]_D$ -27.3 (c, 0.55 in H_2O).
Kusano, G. *et al., Chem. Pharm. Bull.*, 2002, **50**, 185-192

8-Azabicyclo[3.2.1]octane-3,6,7-triol A-1596

3,6,7-Trihydroxynortropane. 3,6,7-Nortropanetriol

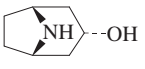


$C_7H_{13}NO_3$ 159.185

(1*R,3*S**,6*S**,7*R**)-*form***
(3α,6β,7β)-form
3-O-*Benzoyl, 6*-O-*(2ξ-hydroxy-3-phenylpropanoyl)*: ***3-Benzoyloxy-6-hydroxy-7-(2-hydroxy-3-phenylpropanoyloxy)nortropane***
$C_{23}H_{25}NO_6$ 411.454
Alkaloid from the leaves of *Erythroxylum moonii*. Semisolid. $[\alpha]_D^{25}$ +17.6 (c, 0.13 in $CHCl_3$). Chiral by asymmetric substitution but the abs. config. is not known. λ_{max} 209 (log ϵ 3.93); 230 (log ϵ 3.99); 266 (log ϵ 2.41); 276 (log ϵ 2.91) (MeOH).
N-*Me:* see 8-Methyl-8-azabicyclo[3.2.1]octane-3,6,7-triol, M-392
Khattak, K.F. *et al., Heterocycles*, 2003, **60**, 917-924 (*isol, pmr, cmr, ms*)

8-Azabicyclo[3.2.1]octan-3-ol, 9CI A-1597

3-Hydroxynortropane. 3-Nortropanol



(1*RS*,3*RS*,5*SR*)-*form*

$C_7H_{13}NO$ 127.186

(1*RS*,3*SR*,5*SR*)-*form*
exo-*form*. ***Nor-ψ-tropine***. *Norpseudotropine*
[501-33-7]
Alkaloid from the fruit of *Morus alba* (white mulberry). Cryst. (C_6H_6/pentane). Mp 134.5-135° (129-130°).
▶ LD_{50} (mus, orl) 227 mg/kg. RD0875000
Hydrochloride: [14383-51-8]
Cryst. Mp 280-282° dec.
▶ RD0600000
N-*Benzoyl:* ***Nortropacocaine***
[18470-33-2]
$C_{14}H_{17}NO_2$ 231.294
Alkaloid in *Erythroxylum mamacoca* (Erythroxylaceae). Feathery cryst. (synthetic, as picrate). Mp 234° (picrate).
N-*Me:* see 8-Methyl-8-azabicyclo[3.2.1]octan-3-ol, M-393

(1*RS*,3*RS*,5*SR*)-*form*
endo-*form*. *Nortropeine*. *Tropigenin*. *Nortropenol*. *Nortropine*
[538-09-0]
▶ LD_{50} (mus, orl) 1420 mg/kg. RD0700000
Hydrochloride: [17366-48-2]
Cryst. Mp 200°.
O-*(2-Methylbutanoyl):* ***Isoporoidine***
[537-28-0]
$C_{12}H_{21}NO_2$ 211.303
Alkaloid from *Duboisia myoporoides* and *Erythroxylum deckindtii* (Solanaceae, Erythroxylaceae).
O-*(3-Methylbutanoyl):* ***Poroidine***
[500-58-3]
$C_{12}H_{21}NO_2$ 211.303
Alkaloid from *Duboisia myoporoides* and root-bark of *Erythroxylum deckindtii* (Solanaceae, Erythroxylaceae).

Co-isol. with Isoporoidine, difficult to separate.

O-*Benzoyl:* ***3α-Benzoyloxynortropane***
$C_{14}H_{17}NO_2$ 231.294
Alkaloid from leaves, root bark and stem bark of *Erythroxylum macrocarpum* and *Erythroxylum sideroxyloides* (Erythroxylaceae). Mp 232° (as picrate).

O-*(4-Methoxybenzoyl):* ***Merresectine A***
$C_{15}H_{19}NO_3$ 261.32
Alkaloid from *Merremia dissecta* and *Merremia quinquefolia*. Yellow solid.

O-*Phenylacetyl:* ***Nortropan-3-yl phenylacetate***
$C_{15}H_{19}NO_2$ 245.321
Minor alkaloid from the root bark of *Erythroxylum hypericifolium* (Erythroxylaceae).

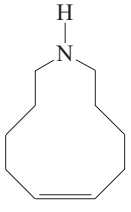
O-*Cinnamoyl* (E-)*:* ***Nortropinyl cinnamate***
[126394-79-4]
$C_{16}H_{19}NO_2$ 257.332
Alkaloid from *Pellacalyx axillaris* (Rhizophoraceae). Yellow gum.

O-*Cinnamoyl,* N-*Ac:* [136945-63-6]
Needles (CH_2Cl_2/petrol). Mp 143°.

N-*Me:* see 8-Methyl-8-azabicyclo[3.2.1]octan-3-ol, M-393

Barger, G. *et al., J.C.S.*, 1937, 1820 (*Poroidine, Isoporoidine*)
Werner, G. *et al., Annalen*, 1967, **708**, 210 (*synth*)
Kraiss, G. *et al., Tet. Lett.*, 1971, 57 (*synth*)
Chappell, G.S. *et al., J. Pharm. Sci.*, 1973, **62**, 414 (*nmr*)
Tufariello, J.J. *et al., J.A.C.S.*, 1979, **101**, 2435 (*synth*)
Al-Yahya, M.A.I. *et al., J.C.S. Perkin 1*, 1979, 2130 (*isol, Poroidine, Isoporoidine*)
El-Imam, Y.M.A. *et al., Phytochemistry*, 1985, **24**, 2285-2289 (*Nortropacocaine*)
Al-Said, M.S. *et al., J.C.S. Perkin 1*, 1986, 957 (*Phenylacetate*)
Al-Said, M.S. *et al., Phytochemistry*, 1986, **25**, 851-853 (*isol, ir, pmr, ms, struct, deriv*)
Arbain, D. *et al., Aust. J. Chem.*, 1991, **44**, 1013 (*Nortropinyl cinnamate*)
Kusano, G. *et al., Chem. Pharm. Bull.*, 2002, **50**, 185-192 (*isol, pmr, cmr*)
Jenett-Siems, K. *et al., Phytochemistry*, 2005, **66**, 1448-1464 (*Merresectine A*)

Azacyclo-6-undecene, 9CI A-1598



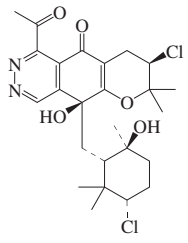
$C_{10}H_{19}N$ 153.267

(Z)-form
Keramaphidin C
[126412-12-2]
Isol. from the Okinawan marine sponge *Amphimedon* sp. Plausible biogenetic precursor of Manzamine C, M-93. Amorph. solid. Mp 106-109°.

Torisawa, Y. *et al., Tetrahedron*, 1991, **47**, 8067 (*synth*)
Tsuda, M. *et al., Tet. Lett.*, 1994, **35**, 4387 (*isol, ir, pmr, cmr*)
Tsuda, M. *et al., Heterocycles*, 1997, **46**, 765-794 (*rev*)

Azamerone A-1599

[897385-39-6]



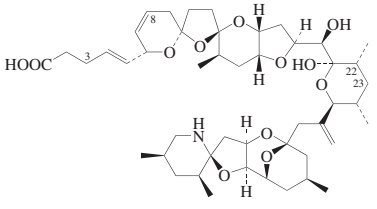
Absolute Configuration

$C_{25}H_{32}Cl_2N_2O_5$ 511.444
Isol. from the marine-derived *Streptomyces* sp. CNQ766. Cryst. Mp 210-212°. $[\alpha]_D$ -8.8 (c, 0.002 in MeOH). λ_{max} 217 (sh) (log ϵ 3.9); 250 (sh) (log ϵ 3.4); 323 (log ϵ 3.3) (MeOH).

Cho, J.Y. *et al., Org. Lett.*, 2006, **8**, 2471-2474 (*isol, pmr, cmr, cryst struct*)

Azaspiracid 1 A-1600

Killarytoxin 3
[214899-21-5]



Absolute Configuration

$C_{47}H_{71}NO_{12}$ 842.077
Struct. finally confirmed in 2004. There are various errors in the assignment of CAS numbers to the minor congeners. Alkaloid from *Mytilus edulis* (blue mussel). Shellfish toxin. Amorph. solid. $[\alpha]_D^{20}$ -21 (c, 0.1 in MeOH).

*3*R-*Hydroxy:* ***Azaspiracid 7***
[629656-50-4]
$C_{47}H_{71}NO_{13}$ 858.077
Alkaloid from *Mytilus edulis* (blue mussel).

*23*R-*Hydroxy:* ***Azaspiracid 8***
[629656-53-7]
$C_{47}H_{71}NO_{13}$ 858.077
Alkaloid from *Mytilus edulis* (blue mussel).

22-Demethyl: ***Azaspiracid 3***
[265996-93-8]
$C_{46}H_{69}NO_{12}$ 828.051
Alkaloid from *Mytilus edulis* (blue mussel).

*22-Demethyl, 3*R-*hydroxy:* ***Azaspiracid 4***
[344422-49-7]
$C_{46}H_{69}NO_{13}$ 844.05
Alkaloid from *Mytilus edulis* (blue mussel).

*22-Demethyl, 23*S-*hydroxy:* ***Azaspiracid 5***
[344422-51-1]
$C_{46}H_{69}NO_{13}$ 844.05
Alkaloid from *Mytilus edulis* (blue mussel).

8-Methyl: ***Azaspiracid 2***
[265996-92-7]
$C_{48}H_{73}NO_{12}$ 856.104
Alkaloid from *Mytilus edulis* (blue mussel).

*8-Methyl, 3*R-*hydroxy:* ***Azaspiracid 11***
[629656-62-8]
$C_{48}H_{73}NO_{13}$ 872.104
Alkaloid from *Mytilus edulis* (blue mussel).

*8-Methyl, 23*R-*hydroxy:* ***Azaspiracid 12***
[629656-65-1]
$C_{48}H_{73}NO_{13}$ 872.104
Alkaloid from *Mytilus edulis* (blue mussel).

8-Methyl, 22-demethyl: ***Azaspiracid 6***
[629656-47-9]
$C_{47}H_{71}NO_{12}$ 842.077
Alkaloid from *Mytilus edulis* (blue mussel).

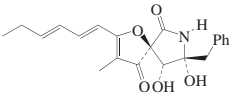
*8-Methyl, 22-demethyl, 3*R-*hydroxy:* ***Azaspiracid 9***
[629656-56-0]
$C_{47}H_{71}NO_{13}$ 858.077
Alkaloid from *Mytilus edulis* (blue mussel).

*8-Methyl, 22-demethyl, 23*R-*hydroxy:* ***Azaspiracid 10***
[629656-59-3]
$C_{47}H_{71}NO_{13}$ 858.077
Alkaloid from *Mytilus edulis* (blue mussel). Cahn-Ingold-Prelog priorities change at C-23.

Satake, M. *et al., J.A.C.S.*, 1998, **120**, 9967-9968 (*Azaspiracid 1*)
Ofuji, K. *et al., Nat. Toxins*, 1999, **7**, 99-102 (*Azaspiracids 2,3*)
Food Sci. Technol., Seafood and Freshwater Toxins, (ed. Botana, L.M.), Marcel Dekker, 2000, **103**,
Ofuji, K. *et al., Biosci., Biotechnol., Biochem.*, 2001, **65**, 740-742 (*Azaspiracids 4,5*)
James, K.J. *et al., Toxicon*, 2003, **41**, 277-283 (*isol, ms*)
Lehane, M. *et al., J. Chromatogr., A*, 2004, **1024**, 63-70 (*hplc-ms*)
Nicolaou, K.C. *et al., Chem. Asian J.*, 2006, **1**, 245-263 (*synth*)
Nicolaou, K.C. *et al., J.A.C.S.*, 2006, **128**, 2244-2257; 2258-2267; 2859-2872 (*synth, struct*)
Evans, D.A. *et al., J.A.C.S.*, 2008, **130**, 16295-16309 (*synth*)
Twiner, M.J. *et al., Mar. Drugs*, 2008, **6**, 39-72 (*rev*)
Rehmann, N. *et al., Rapid Commun. Mass Spectrom.*, 2008, **22**, 549-558 (*isol, ms*)

Azaspirene A-1601

[461644-34-8]



Absolute Configuration

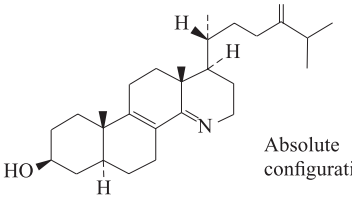
$C_{21}H_{23}NO_5$ 369.416
Related to Pseurotins, P-738 and Synerazol, S-660. Prod. by the fungus *Neosartorya* sp. Angiogenesis inhibitor. Pale

yellow powder. Mp 166-167°. $[\alpha]_D^{25}$ -204.4 (c, 0.16 in MeOH). λ_{max} 231 (ϵ 5900); 341 (ϵ 27860) (MeOH).

Hayashi, Y. *et al., J.A.C.S.*, 2002, **124**, 12078-12079 (*synth, abs config*)
Asami, Y. *et al., Org. Lett.*, 2002, **4**, 2845-2848 (*isol, pmr, cmr*)
Aoki, S. *et al., Heterocycles*, 2004, **62**, 161-166 (*synth, pmr, cmr*)

15-Azasterol A-1602

15-Aza-D-*homoergosta-8,14,24(28)-trien-3-ol, 9CI. A 25822B. Antibiotic A 25822B. Geotrichum alkaloid A 25822B. UCA 1064A. Antibiotic UCA 1064A*
[50686-98-1]



Absolute configuration

$C_{28}H_{45}NO$ 411.67
Main alkaloid from cultures of *Geotrichum flavo-brunneum*. Also prod. by *Wallemia sebi*. Antifungal agent, active against *Candida* and *Trichophyton* spp. Sol. MeOH, $CHCl_3$; fairly sol. C_6H_6; poorly sol. H_2O, hexane. Mp 115-118°. $[\alpha]_D^{25}$ -20 (c, 0.78 in MeOH). λ_{max} 277 (ϵ 13400) (EtOH/HCl) (Derep). λ_{max} 240 (ϵ 12300); 270 (sh) (EtOH) (Derep). λ_{max} 241 ; 270 (MeOH) (Berdy). λ_{max} 238 (ϵ 12300) (EtOH) (Berdy). λ_{max} 277 (ϵ 13400) (EtOH-HCl) (Berdy). λ_{max} 279 (MeOH-HCl) (Berdy). λ_{max} 241 (MeOH-NaOH) (Berdy).

Ac: ***Geotrichum alkaloid A 25822M***. *A 25822M. Antibiotic A 25822M*
[50886-40-3]
$C_{30}H_{47}NO_2$ 453.707
Prod. by *Geotrichum flavo-brunneum*. Yellowish amorph. powder. Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. $[\alpha]_D$ -15 (c, 0.021 in MeOH). pK_a 7.9 (66% DMF aq.). λ_{max} 278 (ϵ 14200) (EtOH/HCl) (Derep). λ_{max} 239 (ϵ 13900) (EtOH/NaOH) (Derep). λ_{max} 239 (ϵ 13900) (EtOH) (Derep). λ_{max} 239 (ϵ 13900) (EtOH) (Berdy). λ_{max} 278 (ϵ 14200) (EtOH-HCl) (Berdy).

3-Ketone: ***Geotrichum alkaloid A 25822N***. *A 25822N. Antibiotic A 25822N*
[50687-00-8]
$C_{28}H_{43}NO$ 409.654
Prod. by *Geotrichum flavo-brunneum*. Microcryst. solid (Me_2CO). Sol. MeOH, Et_2O; fairly sol. C_6H_6, hexane; poorly sol. H_2O. Mp 165°. $[\alpha]_D^{25}$ -14 (c, 0.05 in MeOH). pK_a 7.45 (66% in DMF aq.). λ_{max} 277 (ϵ 13400) (EtOH/HCl) (Derep). λ_{max} 240 (ϵ 12300); 270 (sh) (EtOH) (Derep). λ_{max} 239 (ϵ 13900) (EtOH) (Berdy). λ_{max} 278 (ϵ 14100) (EtOH-HCl) (Berdy).

24,28-Dihydro: 24,28-Dihydro-15-azasterol. UCA 1064B. ***Antibiotic UCA 1064B***
$C_{28}H_{47}NO$ 413.685
Prod. by *Wallemia sebi*. Antitumour agent. Powder. $[\alpha]_D^{24}$ -28.5 (c, 0.5 in MeOH). λ_{max} 241 ; 270 (MeOH) (Berdy). λ_{max} 279 (MeOH-HCl) (Berdy). λ_{max} 241 (MeOH-NaOH) (Berdy).

16ξ-Hydroxy: ***Geotrichum alkaloid A 25822D***. *Antibiotic A 25822D. A 25822D*
[50687-01-9]
$C_{28}H_{45}NO_2$ 427.669
Minor metab. of *Geotrichum flavo-brunneum*. Shows antifungal props. Amorph. Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. $[\alpha]_D^{25}$ +39 (c, 0.722 in MeOH). pK_a 7.7 (66% DMF aq.). Indefinite Mp. λ_{max} 277 (ϵ 13400) (EtOH/HCl) (Derep). λ_{max} 240 (ϵ 12300); 270 (sh) (EtOH) (Derep). λ_{max} 235 (ϵ 10400) (EtOH) (Berdy). λ_{max} 270 (ϵ 8600) (EtOH-HCl) (Berdy).

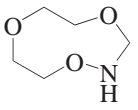
16-Oxo: ***Geotrichum alkaloid A 25822L***. *Antibiotic A 25822L. A 25822L*
[50687-02-0]
$C_{28}H_{43}NO_2$ 425.653
Minor metab. of *Geotrichum flavo-brunneum*. Shows antifungal props. Amorph. Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. $[\alpha]_D^{25}$ +75 (c, 0.072 in MeOH). pK_a 4.75 (66% DMF aq.). λ_{max} 278 (ϵ 10800) (EtOH/HCl) (Derep). λ_{max} 262 (ϵ 10200) (EtOH/NaOH) (Derep). λ_{max} 262 (ϵ 10200) (EtOH) (Derep). λ_{max} 262 (ϵ 10200) (EtOH) (Berdy). λ_{max} 278 (ϵ 10800) (EtOH-HCl) (Berdy).

[55187-53-6 , 74608-58-5]

Chamberlin, J.W. *et al., J. Antibiot.*, 1974, **27**, 992; 1975, **28**, 102 (*isol, uv, ir, pmr, cryst struct*)
Boeck, L.D. *et al., J. Antibiot.*, 1975, **28**, 95 (*deriv*)
Michel, K.H. *et al., J. Antibiot.*, 1975, **28**, 102 (*isol, struct, nmr, ir*)
Rodriguez, R.J. *et al., Antimicrob. Agents Chemother.*, 1980, **18**, 822 (*isol, props*)
Parks, L.W. *et al., Biochem. Soc. Trans.*, 1983, **1**, 656 (*rev*)
Chrisp, P. *et al., Z. Naturforsch., C*, 1990, **45**, 179 (*isol*)
Takahashi, I. *et al., J. Antibiot.*, 1993, **46**, 1312 (*UCA 1064*)
Back, T.G. *et al., Tetrahedron*, 1993, **49**, 337 (*synth*)

1-Aza-2,5,8-trioxacyclononane A-1603

Hexahydro-1,4,7,2-trioxaazonine, 9CI



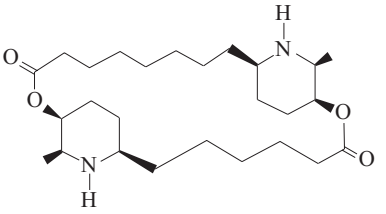
$C_5H_{11}NO_3$ 133.147

N-*Butyl:* ***Trigoxazonane***
[957466-26-1]
$C_9H_{19}NO_3$ 189.254
Alkaloid from the roots of *Trigonella foenum-graecum* (fenugreek). Allelopathic agent. Oil.

Evidente, A. *et al., Phytochemistry*, 2007, **68**, 2487-2492 (*isol, pmr, cmr, ms*)

Azcarpine, 9CI A-1604

[17420-53-0]

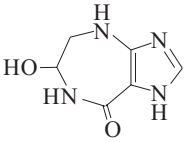


$C_{26}H_{46}N_2O_4$ 450.66
Unsymmetrical homologue intermediate between Carpaine, C-168 and Azimine, A-1608. Alkaloid from dried leaves and stems of *Azima tetracantha* (Salvadoraceae). Plates (petrol). Mp 78-80°. $[\alpha]_{230}^{22}$ -343 (c, 0.11 in MeOH).

Smalberger, T.M. *et al., Tetrahedron*, 1968, **24**, 6417 (*isol, struct, abs config*)

Azepinomycin A-1605

4,5,6,7-Tetrahydro-6-hydroxyimidazo[4,5-e][1,4]diazepin-8(1H)-one, 9CI
[89354-15-4]

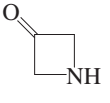


$C_6H_8N_4O_2$ 168.155
Isol. from *Streptomyces* MF718-03. Possesses antiguanase and antitumour activities. Sol. MeOH, EtOH, butanol; fairly sol. H_2O; poorly sol. C_6H_6, hexane. λ_{max} 203 (ϵ 12600); 279 (ϵ 8250) (H_2O) (Derep). λ_{max} 290 (MeOH) (Berdy). λ_{max} 290 (ϵ 3600) (H_2O) (Berdy).

Japan. Pat., 1983, 58 159 494; *CA*, **100**, 137362 (*isol*)
Isshiki, K. *et al., J. Antibiot.*, 1987, **40**, 1461 (*synth*)
Fujii, T. *et al., Heterocycles*, 1988, **27**, 1163 (*synth*)
Isono, K. *et al., J. Antibiot.*, 1988, **41**, 1711 (*rev*)
Fujii, T. *et al., Chem. Pharm. Bull.*, 1994, **42**, 1231 (*synth*)

3-Azetidinone A-1606

[54044-11-0]



C_3H_5NO 71.079
Claimed syntheses prior to 1988 were prob. erroneous.

Covalent hydrate: ***3,3-Azetidinediol***. *3,3-Dihydroxyazetidine. Antibiotic BM 1. BM 1*
[244145-62-8]
$C_3H_7NO_2$ 89.094
Prod. by *Bacillus mesentericus*. Promotes growth of *Bifidobacterium* sp.

Hydrochloride: [17557-84-5]
Solid. Sol. H_2O. Mp 110-140°. Con-

tains *ca.* 20% MeOH.

N-*Ac:* [179894-05-4]
$C_5H_7NO_2$ 113.116
Oil.

N-*Ac, oxime:* [179894-09-8]
$C_5H_8N_2O_2$ 128.13
Microcryst. solid (Me_2CO). Mp 220-221° dec.

N-*Benzoyl:* [25566-02-3]
$C_{10}H_9NO_2$ 175.187
Cryst. Mp 85-86°.

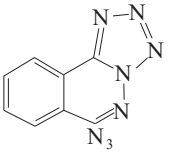
N-*(4-Methylbenzenesulfonyl):* N-*Tosyl-3-azetidinone*
[76543-27-6]
$C_{10}H_{11}NO_3S$ 225.268
Mp 149°.

N-*Nitro:* [157952-92-6]
$C_3H_4N_2O_3$ 116.076
Microcryst. solid. Mp 61-62°.

Baumann, H. *et al., Helv. Chim. Acta*, 1988, **71**, 1035 (*synth, ir, pmr*)
Katritzky, A.R. *et al., J. Het. Chem.*, 1994, **31**, 271 (*tosyl*)
Marchand, A.P. *et al., J.O.C.*, 1994, **59**, 5499 (*N-nitro*)
Marchand, A.P. *et al., J. Het. Chem.*, 1996, **33**, 837 (*N-benzoyl*)
Dave, P.R. *et al., J.O.C.*, 1996, **61**, 5453-5455 (*N-Ac, N-nitro, synth, pmr, cmr*)
Eur. Pat., 1999, 943 309; *CA*, **131**, 242089b (*Antibiotic BM1*)
Marchand, A.P. *et al., Synth. Commun.*, 1999, **29**, 885-890 (*N-Ac, N-benzoyl*)
Seo, G. *et al., Microbios*, 2000, **101**, 105-114 (*Antibiotic BM1*)
Dejaegher, Y. *et al., Chem. Rev.*, 2002, **102**, 29-60 (*derivs, rev*)

6-Azidotetrazolo[5,1-*a*]phthalazine, 9CI A-1607

[51627-67-9]



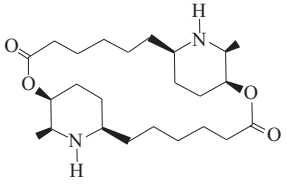
$C_8H_4N_8$ 212.173
Isol. from the toxic flagellate *Gymnodinium breve*. Ichthyotoxin. Mp 152° (synthetic).

► LD_{50} 0.4 μg/ml (fish). Potentially explosive.

Reynolds, G.A. *et al., J.O.C.*, 1959, **24**, 1205 (*synth, struct*)
Waller, A.R. *et al., J. Chromatogr.*, 1979, **179**, 392 (*ir*)
Hossain, M.B. *et al., Acta Cryst. C*, 1985, **41**, 1199 (*cryst struct*)

Azimine, 9CI A-1608

[17398-27-5]



$C_{24}H_{42}N_2O_4$ 422.607
Lower homologue of Carpaine, C-168. Alkaloid from dried leaves and stems of *Azima tetracantha* (Salvadoraceae). Cubes (Et_2O). Mp 112-113°. $[\alpha]_{231}^{22}$ -899 (c, 0.11 in MeOH).

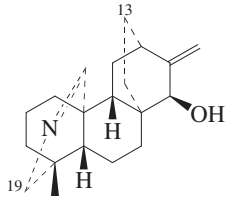
Hydrochloride: Mp 284-287°.

Di-N-*Me:* Mp 92-93°.

Smalberger, T.M. *et al., Tetrahedron*, 1968, **24**, 6417 (*isol, struct, abs config*)
Brown, E. *et al., J.C.S. Perkin 1*, 1976, 2190 (*synth*)
Hanessian, S. *et al., Tet. Lett.*, 1979, 3391 (*synth*)
Natsume, M. *et al., Heterocycles*, 1980, **14**, 169 (*synth*)
Sato, T. *et al., Org. Lett.*, 2003, **5**, 3839-3842 (*synth*)

Azitine A-1609

Atisine azomethine
[18041-82-2]



$C_{20}H_{29}NO$ 299.455
Alkaloid from *Aconitum zeravschanicum* and *Consolida hellespontica*. Cryst. (hexane/Me_2CO). Mp 177-179° Mp 180-182°.

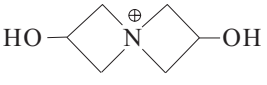
13-(2-Methylbutanoyloxy): ***13-(2-Methylbutanoyloxy)azitine***
$C_{25}H_{37}NO_3$ 399.572
Alkaloid from the roots of *Delphinium scabriflorum*. Amorph. $[\alpha]_D^{20}$ -7.6 (c, 0.2 in $CHCl_3$). λ_{max} 214 (log ϵ 3.43) (EtOH).

$\Delta^{19(N)}$-Isomer: ***Isoazitine***
[290818-20-1]
$C_{20}H_{29}NO$ 299.455
Alkaloid from *Delphinium staphisagria*. Gum. $[\alpha]_D^{25}$ -6.7 (c, 0.63 in $CHCl_3$).

Edwards, O.E. *et al., Can. J. Chem.*, 1992, **70**, 1397-1405 (*synth, pmr, cmr*)
Salimov, B.T. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1993, **29**, 70 (*isol*)
Desai, H.K. *et al., Heterocycles*, 1993, **36**, 1081 (*isol, pmr, cmr, struct*)
Diaz, J.G. *et al., J. Nat. Prod.*, 2000, **63**, 1136-1139 (*Isoatizine*)
Shrestha, P.M. *et al., J. Nat. Prod.*, 2004, **67**, 1574-1576 (*13-(2-Methylbutanoyloxy)azitine*)

4-Azoniaspiro[3.3]heptane-2,6-diol A-1610

Charamin
[106500-22-5]

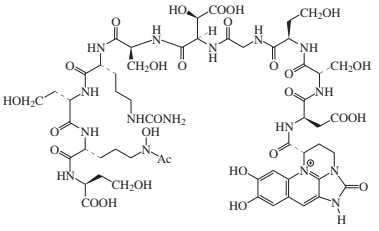


$C_6H_{12}NO_2^{\oplus}$ 130.166
Isol. from the green alga *Chara globularis*. Possesses antibacterial props. No phys. props. reported.

Anthoni, U. *et al., J.O.C.*, 1987, **52**, 694 (*isol, synth*)

Azotobactin D A-1611

[109336-19-8]

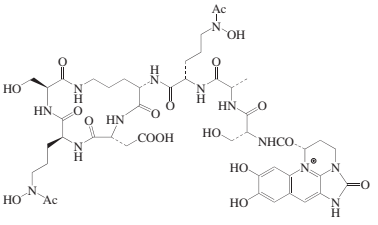


$C_{55}H_{79}N_{16}O_{28}^{\oplus}$ 1412.32
Struct. revised in 1988. Positive charge delocalised over the two ring Ns. Prod. by *Azotobacter vinelandii*. Siderophore. λ_{max} 336 (sh) (ϵ 19600); 380 (ϵ 23500) (pH 5 buffer).

Demange, P. *et al., Biochemistry*, 1988, **27**, 2745-2752 (*isol, pmr, cmr, uv, struct*)

Azotobactin G173 A-1612

[535994-94-6]

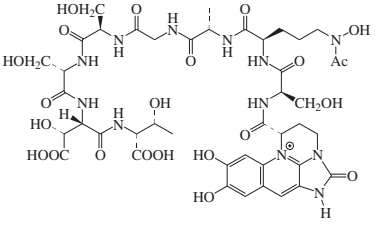


$C_{46}H_{64}N_{13}O_{19}^{\oplus}$ 1103.087
Prod. by *Pseudomonas fluorescens* G173. Siderophore.

Fernandez, D.U. *et al., Z. Naturforsch., C*, 2003, **58**, 1-10 (*isol, pmr, cmr, ms*)

Azotobactin P19 A-1613

[280142-34-9]

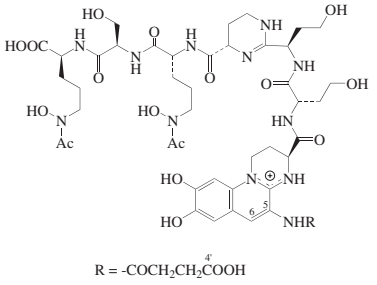


$C_{43}H_{59}N_{12}O_{22}^{\oplus}$ 1096.006
Positive charge delocalised over the two ring N atoms. Prod. by *Pseudomonas fluorescens* P19. Siderophore.

Vossen, W. *et al., Z. Naturforsch., C*, 2000, **55**, 153-164

Azoverdin A A-1614

[176450-81-0]



R = -COCH$_2$CH$_2$$^{4'}$COOH

$C_{46}H_{67}N_{12}O_{19}^{\oplus}$ 1092.104

Isol. from *Azomonas macrocytogenes* ATCC 12334. Siderophore. Struct. revised in 1996. λ_{max} 400 (ϵ 19500) (MeOH) (Berdy). λ_{max} 366 (ϵ 11220); 375 (ϵ 10964) (pH 3 buffer) (Berdy). λ_{max} 399 (ϵ 17350) (H_2O) (Berdy).

4′-Amide: ***Azoverdin***

[131688-65-8]

$C_{46}H_{68}N_{13}O_{18}^{\oplus}$ 1091.12

Isol. from *Azomonas macrocytogenes* ATCC 12334. Siderophore. Sol. H_2O. Azoverdin and Azoverdin A are different compounds. λ_{max} 380 ; 450 (pH 5 buffer) (Berdy).

Linget, C. *et al., Tet. Lett.*, 1992, **33**, 1889-1892 (*isol, ms, pmr, cmr*)

Bernardini, J.-J. *et al., BioMetals*, 1996, **9**, 107-120 (*isol, pmr, cmr, N-15 nmr*)

Michalke, R. *et al., Z. Naturforsch., C*, 1996, **51**, 772-780 (*isol, uv, pmr, cmr*)

Azoverdin G A-1615

[187271-50-7]

As Azoverdin A, A-1614 with

R = -COCH$_2$CH$_2$CH(NH$_2$)COOH

$C_{47}H_{70}N_{13}O_{19}$ 1121.146

Isol. from *Azomonas macrocytogenes*. Siderophore. λ_{max} 366 (ϵ 10920); 375 (ϵ 11200) (pH 3 buffer) (Berdy). λ_{max} 400 (ϵ 11220) (H_2O) (Berdy).

5β,6-Dihydro: ***5,6-Dihydroazoverdin G***

[203264-21-5]

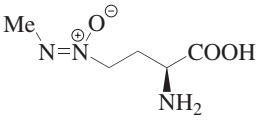
$C_{47}H_{72}N_{13}O_{19}$ 1123.162

Isol. from *Azomonas macrocytogenes*. Siderophore. λ_{max} 301 (MeOH) (Berdy). λ_{max} 250 ; 318 ; 535 (pH 3 buffer) (Berdy). λ_{max} 250 ; 328 ; 517 (H_2O) (Berdy).

Michalke, R. *et al., Z. Naturforsch., C*, 1996, **51**, 772-780; 1997, **52**, 855-857 (*isol, uv, pmr, cmr, Dihydroazoverdin G*)

Azoxybacilin A-1616

*2-Amino-4-(methyl-*NNO-*azoxy)butanoic acid, 9CI*



$C_5H_{11}N_3O_3$ 161.16

(Z,S)-form [157998-96-4]

Prod. by *Bacillus cereus* NR2991. Methionine antagonist. Antifungal agent. Needles (MeOH aq.). Sol. H_2O, MeOH, DMSO; poorly sol. Me_2CO, hexane. Mp 203-205°. $[\alpha]_D^{24}$ +9.4 (c, 1 in H_2O). λ_{max} 215 (ϵ 8400) (MeOH) (Berdy).

Ohwada, J. *et al., Chem. Pharm. Bull.*, 1994, **42**, 1703 (*synth*)

Fujiu, M. *et al., J. Antibiot.*, 1994, **47**, 833 (*isol, struct*)

Aoki, Y. *et al., J. Antibiot.*, 1994, **47**, 909 (*props*)

Aztequine A-1617

[57608-18-1]

$C_{30}H_{40}N_2O_7$ 540.655

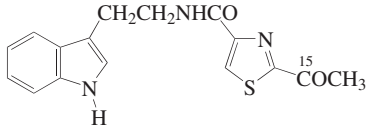
Bisbenzylisoquinoline alkaloid. Struct. unknown. A struct. was originally proposed, but is v. improbable. Alkaloid from the powdered leaves of Yoloxochitl (*Embriophyta* sp.; not a recognised genus, prob. *Magnolia* sp.) (Magnoliaceae). Light-brown. Mp 176°.

Pallares, E.S. *et al., Arch. Biochem.*, 1948, **16**, 275-282

Kametani, T. *et al., Chem. Pharm. Bull.*, 1968, **16**, 949-952

Bacillamide A B-1

Microbiaeratinin
[637344-98-0]



$C_{16}H_{15}N_3O_2S$ 313.379
Prod. by the marine *Bacillus* sp. SY-1, *Bacillus endophyticus* SP31, *Microbispora aerata* IMBAS-11A and *Thermoactinomyces* sp. TA66-2. Algicide active against *Cochlodinium polykrikoides*. Amorph. powder. λ_{max} 279 (log ϵ 3.72) (no solvent reported).

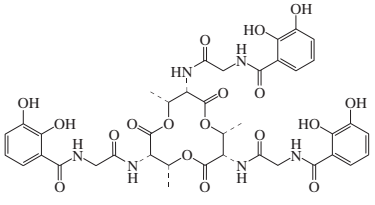
*15*R-*Alcohol:* ***Bacillamide B***
[959853-21-5]
$C_{16}H_{17}N_3O_2S$ 315.395
Prod. by *Bacillus endophyticus* SP31. Light brown solid. $[\alpha]_D^{20}$ +7.4 (c, 0.09 in MeOH).

*15-Deoxo, 15*R-*acetamido:* ***Bacillamide C***
[959853-22-6]
$C_{18}H_{20}N_4O_2S$ 356.448
Prod. by *Bacillus endophyticus* SP31. Light brown solid. $[\alpha]_D^{24}$ -15.2 (c, 0.08 in MeOH). λ_{max} 223 (log ϵ 4.05); 280 (log ϵ 3.5); 288 (log ϵ 3.41); 340 (log ϵ 2.71) (MeOH).

Jeong, S.-Y. *et al., Tet. Lett.*, 2003, **44**, 8005-8007 (*isol, pmr, cmr*)
Socha, A.M. *et al., J. Nat. Prod.*, 2007, **70**, 1793-1795 (*Bacillamides B,C*)
Ivanova, V. *et al., Prep. Biochem. Biotechnol.*, 2007, **37**, 161-168 (*isol, pmr, cmr*)

Bacillibactin B-2

Corynebactin
[95536-41-7]

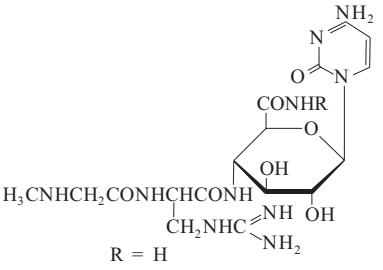


$C_{39}H_{42}N_6O_{18}$ 882.79
Related to Enterobactin, E-86. Prod. by *Bacillus subtilis* ATCC 21332 and *Corynebacterium glutamicum* ATCC 14067. Siderophore.

Budzikiewicz, H. *et al., Z. Naturforsch., C*, 1997, **52**, 551-554 (*Corynebactin*)
May, J.J. *et al., J. Biol. Chem.*, 2001, **276**, 7209-7217 (*isol*)
May, J.J. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 2002, **99**, 12120-12125 (*synth*)
Dertz, E.A. *et al., J.A.C.S.*, 2006, **128**, 22-23 (*activity*)

Bagougeramine A B-3

[104840-35-9]



$C_{17}H_{28}N_{10}O_7$ 484.471
Nucleoside antibiotic. Prod. by *Bacillus circulans*. Shows broad spectrum antimicrobial activity and active against two-spotted spider-mite. Sol. H_2O; poorly sol. MeOH, Me_2CO. λ_{max} 274 (ϵ 13060) (0.1*N* HCl) (Derep). λ_{max} 235 (sh) ; 265 (ϵ 9680) (0.1*N* NaOH) (Derep). λ_{max} 232 (ϵ 9220); 265 (ϵ 9310) (H_2O) (Derep).
▶ LZ6560000

Sulfate (1:1.5):
Hygroscopic powder + $3H_2O$. Mp 230° dec. $[\alpha]_D^{27}$ +34.1 (c, 0.5 in H_2O).

Takahashi, A. *et al., J. Antibiot.*, 1986, **39**, 1033; 1041 (*isol, struct, props*)
Isono, K. *et al., J. Antibiot.*, 1988, **41**, 1711 (*rev*)

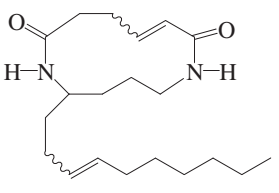
Bagougeramine B B-4

[104840-34-8]
As Bagougeramine A, B-3 with
R = $-(CH_2)_3NH(CH_2)_4NH_2$
$C_{24}H_{44}N_{12}O_7$ 612.688
Nucleoside antibiotic. Prod. by *Bacillus circulans*. Miticide, acaricide. Shows broad spectrum antimicrobial activity and active against two-spotted spider mite. Hygroscopic powder + $6H_2O$ (as sulfate). Sol. H_2O; poorly sol. MeOH, Me_2CO. Mp 237° dec. (sulfate). $[\alpha]_D^{27}$ +22.1 (c, 0.5 in H_2O) (sulfate). λ_{max} 274 (ϵ 13060) (0.1*M* HCl) (Derep). λ_{max} 235 (sh) ; 265 (ϵ 9680) (0.1*M* NaOH) (Derep). λ_{max} 232 (ϵ 9220); 265 (ϵ 9310) (H_2O) (Derep).
▶ LZ6550000

Takahashi, A. *et al., J. Antibiot.*, 1986, **39**, 1033; 1041 (*isol, struct, props*)
Isono, K. *et al., J. Antibiot.*, 1988, **41**, 1711 (*rev*)

Bahamamide B-5

2-(3-Decenyl)-1,6-diazacyclododec-8-ene-7,12-dione, 9CI
[190782-45-7]

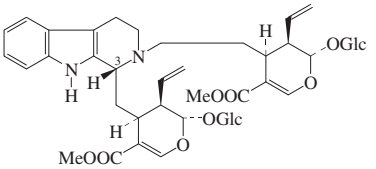


$C_{20}H_{34}N_2O_2$ 334.501
Prod. by an unidentified marine bacterium. Oil. $[\alpha]_D$ +27.8 (c, 0.5 in $CHCl_3$). λ_{max} 227 (ϵ 1700) (THF).

Boehler, M. *et al., Nat. Prod. Lett.*, 1997, **10**, 75-78 (*isol, uv, ir, pmr, cmr*)

Bahienoside A B-6

[552333-59-2]



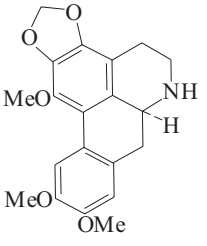
$C_{44}H_{58}N_2O_{18}$ 902.945
Alkaloid from the aerial parts of *Psychotria bahiensis*. Creamy amorph. solid (EtOAc). Mp 156-158°. $[\alpha]_D^{25}$ -128 (c, 0.003 in MeOH). λ_{max} 228 (log ϵ 4.63); 284 (sh) (MeOH).

3-Epimer: ***Bahienoside B***
[552333-60-5]
$C_{44}H_{58}N_2O_{18}$ 902.945
Alkaloid from the aerial parts of *Psychotria bahiensis*. Pale yellowish amorph. solid (EtOAc). Mp 164-166°. $[\alpha]_D^{25}$ +65 (c, 0.003 in MeOH). λ_{max} 226 (log ϵ 4.5); 286 (log ϵ 3.79) (MeOH).

Paul, J.H.A. *et al., J. Nat. Prod.*, 2003, **66**, 752-754 (*isol, pmr, cmr, ms*)

Baicaline B-7

*5,6,6*a*,7-Tetrahydro-9,10,12-trimethoxy-4*H*-benzo[*g*]-1,3-benzodioxolo[4,5,6-de]-quinoline, 9CI. 1,9,10-Trimethoxy-2,3-methylenedioxynoraporphine*



$C_{20}H_{21}NO_5$ 355.39

(S)-form [83008-38-2]
Alkaloid from *Thalictrum baicalense* (Ranunculaceae). Mp 169-172°. $[\alpha]_D$ +48 (MeOH).

N-*Me:* ***Baicalidine***
[83008-39-3]
[109010-09-5]
$C_{21}H_{23}NO_5$ 369.416
Alkaloid from *Thalictrum baicalense* (Ranunculaceae). Cryst. (Me_2CO). Mp 146-147°. $[\alpha]_D$ +55 (MeOH). λ_{max} 217 ; 242 ; 291 ; 306 ; 318 (MeOH).

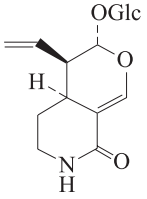
Maekh, S.K. *et al., Khim. Prir. Soedin.*, 1982, **18**, 227; *Chem. Nat. Compd. (Engl. Transl.)*, 1982, **18**, 208 (*isol, uv, pmr, ms, struct*)

Maekh, S.K. *et al., Khim. Prir. Soedin.*, 1982, **18**, 791; *Chem. Nat. Compd. (Engl. Transl.)*, 1982, **18**, 761 (*Baicalidine*)

Bakankoside B-8

Bakankosine

[1398-17-0]



Absolute configuration

$C_{16}H_{23}NO_8$ 357.36

Alkaloid from the seeds of *Strychnos vacacoua* and from *Strychnos madagascariensis* (Loganiaceae). Cryst. + H_2O (H_2O). Mp 162° (solidifies and remelts at 211-212°). $[\alpha]_D$ -195.

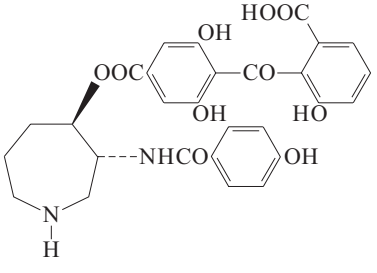
Tetra-O-*Ac:* Mp 212-214°. $[\alpha]_D^{18}$ -158 (c, 1.6 in EtOH).

Balenović, K. *et al., Helv. Chim. Acta*, 1952, **35**, 2519 (*uv, ir, struct*)
Büchi, G. *et al., Tet. Lett.*, 1960, **No. 26**, 5 (*struct*)
Inouye, H. *et al., Chem. Pharm. Bull.*, 1976, **24**, 1406 (*synth, struct*)
Inouye, H. *et al., J. Chromatogr.*, 1976, **118**, 201 (*ms*)
Tietze, L.F. *et al., Tet. Lett.*, 1976, 2535-2538 (*isol, struct*)
Bailleul, F. *et al., Phytochemistry*, 1977, **16**, 723 (*cmr*)
Tietze, L.F. *et al., Tetrahedron*, 1989, **45**, 681 (*synth, uv, ir, pmr*)

Balanol B-9

Azepinostatin. Ophiocordin

[63590-19-2]



$C_{28}H_{26}N_2O_{10}$ 550.521

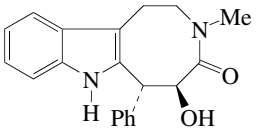
Prod. by *Cordyceps ophioglossoides, Fusarium merismoides* and *Verticillium balanoides.* Protein kinase C inhibitor. Antifungal agent. Pale yellow amorph. powder. Mp 175° dec. $[\alpha]_D$ -127.8 (0.3 in MeOH). λ_{max} 217 (ϵ 19600); 292 (ϵ 13500) (MeOH/NaOH) (Derep). λ_{max} 213 (ϵ 18600); 258 (ϵ 9600); 274 (ϵ 9020); 285 (sh); 360 (ϵ 1380) (MeOH) (Derep).

[158931-29-4 , 147397-03-3]

Kneifel, H. *et al., Arch. Microbiol.*, 1977, **113**, 121 (*isol, ms, ir, nmr*)
Koenig, W.A. *et al., Chem. Ber.*, 1980, **113**, 2221 (*ms, nmr, struct*)
Kulanthaivel, P. *et al., J.A.C.S.*, 1993, **115**, 6452 (*isol*)
Ohshima, S. *et al., J. Antibiot.*, 1994, **47**, 639 (*isol*)
Boros, C. *et al., J. Antibiot.*, 1994, **47**, 1010 (*isol, pmr*)
Miyabe, H. *et al., J.O.C.*, 1998, **63**, 4397-4407 (*synth, bibl*)
Phansavath, P. *et al., Eur. J. Org. Chem.*, 2000, 3903-3907 (*synth*)
Laursen, B. *et al., Tetrahedron*, 2002, **58**, 2231-2238 (*synth, bibl*)
Patil, M.L. *et al., Tetrahedron*, 2004, **60**, 1869-1873 (*synth*)
Sullivan, B. *et al., J. Nat. Prod.*, 2008, **71**, 346-350 (*synth*)
Sullivan, B. *et al., Tet. Lett.*, 2008, **49**, 5211-5213 (*synth, bibl*)

Balasubramide B-10

[190905-98-7]

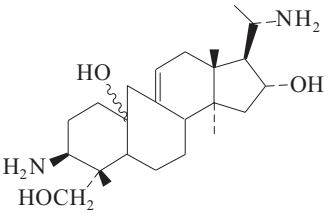


$C_{20}H_{20}N_2O_2$ 320.39

Alkaloid from leaves of *Clausena indica*. Oil. $[\alpha]_D$ +7 (c, 0.5 in $CHCl_3$). λ_{max} 224 ; 274 (sh) ; 283 ; 292 (Et_2O).

Riemer, B. *et al., Phytochemistry*, 1997, **45**, 337-341 (*isol, uv, ir, pmr, cmr, ms, struct*)
Yang, L. *et al., Org. Lett.*, 2007, **9**, 1387-1390 (*synth*)

Baleabuxaline I B-11



$C_{24}H_{42}N_2O_3$ 406.607

The suffix letter in *Buxus* alkaloids systematically designates the *N*-subn. pattern. The parent compd., Baleabuxaline I, is unknown.

N^{20},N^{20}-*Di-Me,* N^3-*(2-methylpropanoyl):* **N-*Isobutyrylbaleabuxaline F***

[14155-71-6]

$C_{30}H_{52}N_2O_4$ 504.752

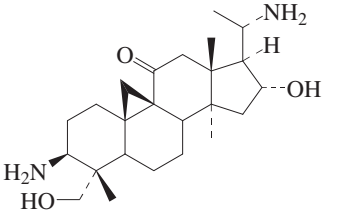
Alkaloid from *Buxus balearica* (Buxaceae). Mp 275°. $[\alpha]_D$ -32 ($CHCl_3$).

N^{20},N^{20}-*Di-Me,* N^3-*(2-methylpropanoyl),* O,O′-*di-Ac:* Mp 261°. $[\alpha]_D$ -10 ($CHCl_3$).

Khuong-Huu, F. *et al., Tetrahedron*, 1966, **22**, 3321-3327 (*isol, ir, pmr*)

Baleabuxidine I B-12

3,20-Diamino-16-hydroxy-4-hydroxymethyl-4,14-dimethyl-9,19-cyclopregnan-11-one. Cycloxobuxidine I



$C_{24}H_{40}N_2O_3$ 404.592

The suffix letter in *Buxus* alkaloids systematically designates the *N*-subn. pattern. The parent compd., Baleabuxidine I, is unknown.

N^{20}-*Me,* N^3-*(2-methylpropanoyl):* ***3*-N-*Isobutyrylcycloxobuxidine H***

[19330-62-2]

$C_{29}H_{48}N_2O_4$ 488.709

Alkaloid from *Buxus balearica* (Buxaceae). Cryst. (EtOAc). Mp 285°. $[\alpha]_D$ +75 ($CHCl_3$).

N^{20},N^{20}-*Di-Me:* ***Baleabuxidine F****. Cycloxobuxidine F. Buxidine F*†

[4947-53-9]

$C_{26}H_{44}N_2O_3$ 432.645

Alkaloid from *Buxus balearica* (Buxaceae). Mp 242° (227-230°). $[\alpha]_D$ +127 (+114) ($CHCl_3$). Reacn. with HCHO gives Cyclobuxoxazine A.

N^{20},N^{20}-*Di-Me,* N^3-*(2-methylpropanoyl):* ***Isobutyrylbaleabuxidine F****. Baleabuxidine.* N^3-*Isobutyrylcycloxobuxidine F*

$C_{30}H_{50}N_2O_4$ 502.736

Alkaloid from *Buxus balearica* (Buxaceae). Mp 257° (236-238°). $[\alpha]_D$ +71 ($CHCl_3$).

N^{20},N^{20}-*Di-Me,* N^3-*benzoyl:* ***Benzoylbaleabuxidine F****.* N^3-*Benzoylcycloxobuxidine F*

[15524-62-6]

$C_{33}H_{48}N_2O_4$ 536.753

Alkaloid from *Buxus balearica* and *Buxus sempervirens* (Buxaceae). Mp 277° (274-276°). $[\alpha]_D$ +57 ($CHCl_3$).

N^{20},N^{20}-*Di-Me,* N^3-*benzoyl,* O^{16}-*Ac:* **N-*Benzoyl-16-acetylcycloxobuxidine***

[108567-60-8]

$C_{35}H_{50}N_2O_5$ 578.79

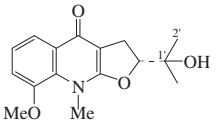
Alkaloid from the leaves of *Buxus papilosa* (Buxaceae). Amorph. needles. $[\alpha]_D$ +42. Shown in the reference with the incorrect C_4-config. which has been reversed for these alkaloids.

Herlem-Gaulier, D. *et al., Bull. Soc. Chim. Fr.*, 1966, 3478-3486; 1968, 763-773 (*Buxus balearica constits*)
Khuong-Huu, F. *et al., Tetrahedron*, 1966, **22**, 3321-3327 (*Benzoylbaleabuxidine F, Isobutyrylbaleabuxidine F*)
Kurakina, I.O. *et al., Khim. Prir. Soedin.*, 1969, **5**, 26-28; 1970, **6**, 231-235; *Chem. Nat. Compd. (Engl. Transl.)*, 1969, **5**, 20-21; 1970, **6**, 225-227 (N^3-*Isobutyrylcycloxobuxidine F*)

Kupchan, S.M. *et al., Tetrahedron*, 1973, **23**, 4563-4586 (*Benzoylbaleabuxidine F*)
Sangare, M. *et al., Tet. Lett.*, 1975, 1791-1794 (*cmr, struct*)
Guilhem, J. *et al., Tet. Lett.*, 1975, **16**, 2937-2938 (*cryst struct, Baleabuxidine*)
Atta-ur-Rahman, *et al., Planta Med.*, 1987, **53**, 75 (N-*Benzoyl-16-acetylcycloxobuxidine*)

Balfourodine B-13

3,9-Dihydro-2-(1-hydroxy-1-methylethyl)-8-methoxy-9-methylfuro[2,3-b]quinolin-4(2H)-one, 9CI. Hydroxylunacrine



(*R*)-*form*

$C_{16}H_{19}NO_4$ 289.33

(*R*)-*form* [484-61-7]
Alkaloid from *Balfourodendron riedelianum* (Rutaceae). Cryst. ($CHCl_3$/C_6H_6). Mp 188-189°. $[\alpha]_D$ +49 (c, 1 in EtOH).
Perchlorate: Mp 212-213°.

1′-Deoxy: ***Lunacrine***
[82-40-6]
$C_{16}H_{19}NO_3$ 273.331
Alkaloid from leaves of *Lunasia amara* and other *Lunasia* spp. (Rutaceae). Hypotensive agent. Needles (EtOAc). Mp 117-119°. $[\alpha]_D^{25}$ -50 (c, 0.8 in EtOH). Forms monohydrate, Mp 96°.
► Toxic, LD_{50} (mus, ivn) 80 mg/kg.

(*S*)-*form* [17958-35-9]
Alkaloid from *Lunasia amara* (Rutaceae). Mp 201-203°.
Perchlorate: Mp 216-218°. $[\alpha]_D^{24}$ -14.6 (EtOH).

(±)-*form*
Prisms (EtOAc). Mp 189-191°.
Perchlorate: Mp 212-213°.

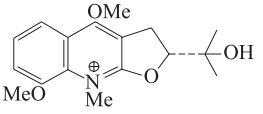
1′-Deoxy:
$C_{16}H_{19}NO_3$ 273.331
Alkaloid from bark of *Lunasia amara* (Rutaceae). Mp 145-147°.

(ξ)-*form*

1′-Deoxy, 1′,2′-didehydro: ***Neoacutifolin***
[145237-09-8]
$C_{16}H_{17}NO_3$ 271.315
Alkaloid from leaves of *Zanthoxylum petiolare* (Rutaceae). Viscous oil. $[\alpha]_D$ +124 (c, 0.0004 in $CHCl_3$).
Goodwin, S. *et al., J.A.C.S.*, 1959, **81**, 1908; 3065; 6209 (*Lunacrine, Balfourodine*)
Rapoport, H. *et al., J.A.C.S.*, 1959, **81**, 3738; 1960, **82**, 4395 (*Balfourodine*)
Clarke, E.A. *et al., J.C.S.*, 1964, 438; 4196 (*synth*)
Bowman, R.M. *et al., J.C.S. Perkin 1*, 1973, 1051 (*config*)
Hammerum, S. *et al., Acta Chem. Scand., Ser. B*, 1977, **31**, 31 (*ms*)
Rideau, M. *et al., Phytochemistry*, 1979, **18**, 155 (*isol, pmr, ms*)
Ramesh, M. *et al., Tetrahedron*, 1984, **40**, 3431 (*synth, pmr*)
Arruda, M.S.P. *et al., Phytochemistry*, 1992, **31**, 3617; 1994, **36**, 1303 (*Neoacutifolin*)
Anand, R.C. *et al., J. Chem. Res., Synop.*, 1998, 6-7 (*synth, abs config*)
Sekar, M. *et al., J. Nat. Prod.*, 1998, **61**, 294-296 (*synth, pmr*)

Balfourodinium B-14

2,3-Dihydro-2-(1-hydroxy-1-methylethyl)-4,8-dimethoxy-9-methylfuro[2,3-b]quinolinium, 9CI. O^4*-Methylbalfourodinium*



(*R*)–*form*

$C_{17}H_{22}NO_4^{\oplus}$ 304.365

(*R*)-*form* [38487-24-0]
Alkaloid from the bark of *Balfourodendron riedelianum* (Rutaceae). Cryst. (H_2O or EtOH/Et_2O) (as perchlorate). Mp 124-125° (perchlorate). $[\alpha]_D^{25}$ +9 (EtOH).

O^8*-De-Me: 2,3-Dihydro-8-hydroxy-2-(1-hydroxy-1-methylethyl)-4-methoxy-9-methylfuro[2,3-b]quinolinium.* ***Pteleatine****. Pteleatinium*
[34443-73-7]
$C_{16}H_{20}NO_4^{\oplus}$ 290.338
Alkaloid from *Ptelea trifoliata* (Rutaceae). Shows antimicrobial activity. Cryst. (MeOH) (as chloride). Mp 267-270° (chloride). λ_{max} 213 ; 233 ; 257 ; 277 (MeOH).

1′-Deoxy: 2,3-Dihydro-4,8-dimethoxy-9-methyl-2-(1-methylethyl)furo[2,3-b]quinolinium. 2,3-Dihydro-2-isopropyl-4,8-dimethoxy-9-methylfuro[2,3-b]quinolinium. ***Lunasine***
[6901-22-0]
$C_{17}H_{22}NO_3^{\oplus}$ 288.366
Alkaloid from the bark and leaves of *Lunasia quercifolia* (Rutaceae). Microcryst. powder (MeOH/Et_2O) (as perchlorate). Mp 195-196° (perchlorate). $[\alpha]_D^{20}$ -29.3 (c, 0.96 in MeOH).

(*S*)-*form* [70494-63-2]
Alkaloid from the leaves, roots and stems of *Choisya ternata* (Rutaceae). Mp 184-185° (as chloride). $[\alpha]_D^{20}$ -15.3 (c, 0.02 in MeOH).

*1′-Deoxy:*Synthetic. Tan cryst. (MeOH) (as perchlorate). Mp 195-196° (perchlorate). $[\alpha]_D^{24}$ +33.9 (c, 0.193 in $CHCl_3$).

(±)-*form*
Synthetic. Prisms (MeOH/Et_2O) (as perchlorate). Mp 203-204° (perchlorate).

N-*De-Me:* ***8-Methoxyplatydesmine***
$C_{16}H_{19}NO_4$ 289.33
Alkaloid from the leaves of *Melicope semecarpifolia*. Prisms ($CHCl_3$/MeOH). Mp 166-168°. λ_{max} 217 (log ϵ 4.44); 248 (log ϵ 4.59); 280 (log ϵ 3.82); 314 (log ϵ 3.45); 327 (log ϵ 3.44) (EtOH).

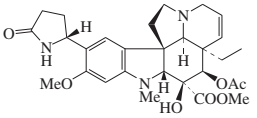
*1′-Deoxy:*Synthetic. Mp 130-132° dec.(as iodide).

(ξ)-*form*

1′-Deoxy, 1′,2′-didehydro: ***Ptelecultinium***
[111509-10-5]
$C_{17}H_{20}NO_3^{\oplus}$ 286.35
Quaternary alkaloid from roots and callus strains of *Ptelea trifoliata* (Rutaceae). Mp 210-212° dec. (as chloride).
Price, J.R. *et al., Aust. J. Chem.*, 1959, **12**, 458 (*Lunasine, isol, ir*)
Goodwin, S. *et al., J.A.C.S.*, 1959, **81**, 1908 (*Lunasine, synth, uv, ir*)
Rapoport, H. *et al., J.A.C.S.*, 1959, **81**, 3738 (*isol, uv, struct, synth*)
Clarke, E.A. *et al., J.C.S.*, 1964, 4196 (*synth, iv*)
Hart, N.K. *et al., Aust. J. Chem.*, 1966, **19**, 2185 (*Lunasine, isol*)
Bowman, R.M. *et al., J.C.S. Perkin 1*, 1973, 1051 (*Lunasine, config*)
Mitscher, L.A. *et al., J. Nat. Prod.*, 1975, **38**, 109-116 (*Pteleatine, activity*)
Rideau, M. *et al., Phytochemistry*, 1979, **18**, 155 (*isol, pmr, ms, struct*)
Ramesh, M. *et al., Tetrahedron*, 1984, **40**, 3431 (*synth*)
Petit-Paly, G. *et al., Plant Cell Rep.*, 1987, **6**, 309 (*Ptelecultinium*)
Petit-Paly, G. *et al., Planta Med.*, 1989, **55**, 209 (*Ptelecultinium*)
Chen, J.-J. *et al., Planta Med.*, 2003, **69**, 542-546 (*8-Methoxyplatydesmine*)

Bannucine B-15

[104380-51-0]



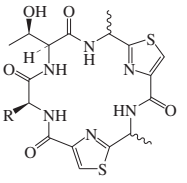
Absolute Configuration

$C_{29}H_{37}N_3O_7$ 539.627
Alkaloid from the leaves of *Catharanthus roseus* (Apocynaceae). Mp 152-154°. $[\alpha]_D$ -33 (c, 0.26 in $CHCl_3$).

Atta-ur-Rahman, *et al., J.C.S. Perkin 1*, 1986, 923 (*isol, uv, ir, pmr, cmr, ms, struct*)

Banyascyclamide B B-16

[501904-00-3]



R = -$CH_2CH(CH_3)_2$

$C_{22}H_{30}N_6O_5S_2$ 522.648
Isol. from *Nostoc* sp. TAU strain IL-235.

Ploutno, A. *et al., Tetrahedron*, 2002, **58**, 9949-9957 (*isol, pmr, cmr, ms*)

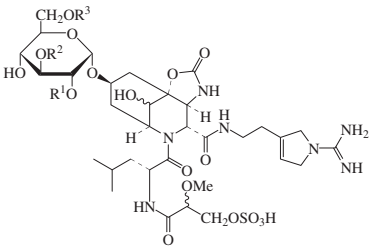
Banyascyclamide C B-17

[501904-01-4]
As Banyascyclamide B, B-16 with
R = -CH_2Ph

$C_{25}H_{28}N_6O_5S_2$ 556.665
Isol. from *Nostoc* sp. TAU strain IL-235. $[\alpha]_D^{25}$ +50.1 (c, 0.1 in MeOH). This is an isomer of Didmolamide B, D-382. λ_{max} 222 (ϵ 15100); 238 (ϵ 16300) (MeOH).

Ploutno, A. *et al., Tetrahedron*, 2002, **58**, 9949-9957 (*isol, pmr, cmr, ms*)

Banyaside A B-18



R^1 = -$CO(CH_2)_4CH_3$, R^2 = -$CONH_2$, R^3 = H

$C_{40}H_{64}N_8O_{19}S$ 993.054
Isol. from a *Nostoc* sp. Trypsin and thrombin inhibitor. Glassy solid. $[\alpha]_D^{20}$ +28.7 (c, 1 in MeOH). λ_{max} 218 (ϵ 4000); 271 (ϵ 2400) (MeOH).

Pluotno, A. *et al., Tetrahedron*, 2005, **61**, 575-583 (*isol, pmr, cmr*)

Banyaside B B-19

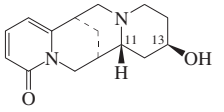
As Banyaside A, B-18 with
$R^1 = R^2 = H$, R^3 = -$CO(CH_2)_4CH_3$

$C_{39}H_{63}N_7O_{18}S$ 950.029
Isol. from a *Nostoc* sp. Trypsin and thrombin inhibitor. Glassy solid. $[\alpha]_D^{20}$ +17.3 (c, 0.3 in MeOH). λ_{max} 234 (ϵ 3600); 268 (ϵ 2300) (MeOH).

Pluotno, A. *et al., Tetrahedron*, 2005, **61**, 575-583 (*isol, pmr, cmr*)

Baptifoline B-20

13-Hydroxyanagyrine. Alkaloid P3†
[732-50-3]



Absolute Configuration

$C_{15}H_{20}N_2O_2$ 260.335
Alkaloid from *Baptisia perfoliata, Baptisia minor, Sophora alopecuroides, Sophora flavescens* (seeds) and *Caulophyllum thalictroides* (blue cohosh) (Fabaceae, Leonticaceae). Hexagonal or triangular plates (MeOH), needles (Me_2CO). Mp 210°. $[\alpha]_D$ -147.7 (-140) (EtOH). $[\alpha]_D^{16}$ -89.05 (c, 1.415 in H_2O).

Perchlorate:
Plates (MeOH). Mp 286-287° (279°).

Picrate:
Yellow needles (MeOH). Mp 256° (sinters at 145°).

*Ac: **13-Acetoxyanagyrine**. O-Acetylbaptifoline*
$C_{17}H_{22}N_2O_3$ 302.372
Alkaloid in *Baptisia australis* and *Thermopsis chinensis* (Fabaceae). No phys. props. detd. for nat. alkaloid.

*13-Epimer: **13-Epibaptifoline**. 13-Epihydroxyanagyrine*
$C_{15}H_{20}N_2O_2$ 260.335
Alkaloid from *Genista sphaerocarpa* leaves and from *Genista monosperma* (Fabaceae). Mp 215°. $[\alpha]_D^{21}$ -138.9.

13-Epimer, hydrochloride:
Cryst. + $1H_2O$. Mp 270° dec. $[\alpha]_D$ -165.3 (H_2O).

13-Epimer, picrate: Mp 250°.

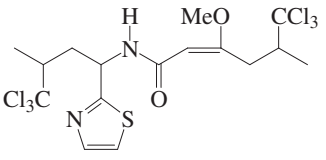
*11-Epimer: **Argentamine**. 13-Hydroxythermopsine*
[27773-56-4]
$C_{15}H_{20}N_2O_2$ 260.335
Alkaloid from *Ammodendron argenteum* and *Thermopsis licentiana* (Fabaceae). Cryst. (C_6H_6). Mp 203°. $[\alpha]_D$ -142.3 (c, 2.04 in EtOH).

11-Epimer, hydrochloride: Mp 298°.

11-Epimer, picrate:
Cryst. (EtOH). Mp 230°.

Marion, L. *et al., J.A.C.S.*, 1948, **70**, 3253; 3472 (*isol*)
Martin-Smith, M. *et al., Can. J. Chem.*, 1957, **35**, 37 (*struct*)
Bohlmann, F. *et al., Chem. Ber.*, 1958, **91**, 2189; 2194; 1962, **95**, 944 (*isol, struct, synth*)
Vazquez, M.D. *et al., An. R. Soc. Esp. Fis. Quim., Ser. B*, 1966, **62**, 837; *CA*, **66**, 76216h (*epimer*)
Flom, M.S. *et al., J. Pharm. Sci.*, 1967, **56**, 1515 (*isol*)
Pham Hoang Ngok, *et al., Khim. Prir. Soedin.*, 1970, **6**, 111; *Chem. Nat. Compd. (Engl. Transl.)*, 103 (*Argentamine*)
Monakhova, T.E. *et al., Khim. Prir. Soedin.*, 1973, **9**, 59; *Chem. Nat. Compd. (Engl. Transl.)*, 52 (*isol*)
Ohmiya, S. *et al., Phytochemistry*, 1974, **13**, 1016 (*isol*)
Wink, M. *et al., J. Nat. Prod.*, 1981, **44**, 14 (*isol, ms, acetate*)
Jia, Z. *et al., Gaodeng Xuexiao Huaxue Xuebao*, 1990, **11**, 1014; *CA*, **115**, 110591 (*Argentamine, O-Acetylbaptifoline*)
Kennelly, E.J. *et al., J. Nat. Prod.*, 1999, **62**, 1385-1389 (*isol, pmr, cmr*)

Barbaleucamide A B-21



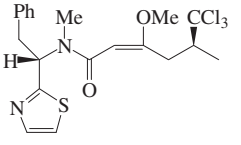
$C_{16}H_{20}Cl_6N_2O_2S$ 517.128
Isol. from a *Dysidea* sp. Pale yellow oil.

N-*Me: **Barbaleucamide B***
$C_{17}H_{22}Cl_6N_2O_2S$ 531.155
Isol. from a *Dysidea* sp. Pale yellow oil.

Harrigan, G.G. *et al., J. Nat. Prod.*, 2001, **64**, 1133-1138

Barbamide B-22

[174630-03-6]



Absloute Configuration

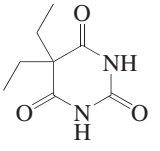
$C_{20}H_{23}Cl_3N_2O_2S$ 461.838
Metab. from the Caribbean cyanobacterium *Lyngbya majuscula*. Possesses molluscicidal activity. Pale yellow oil. Sol. MeOH, $CHCl_3$, EtOAc; poorly sol. hexane, H_2O. $[\alpha]_D^{26}$ -89 (c, 1.9 in MeOH). The first marine nat. prod. for which the biosynthetic gene cluster has been sequenced. λ_{max} 240 (ϵ 16000) (MeOH) (Berdy).

*Dechloro: **Dechlorobarbamide***
[327613-98-9]
$C_{20}H_{24}Cl_2N_2O_2S$ 427.393
Metab. of *Lyngbya majuscula*. Pale yellow oil. $[\alpha]_D^{25}$ -67 (c, 0.05 in MeOH). λ_{max} 238 (ϵ 16000) (MeOH).

Orjala, J. *et al., J. Nat. Prod.*, 1996, **59**, 427-430 (*isol, uv, ir, pmr, cmr, struct*)
Hartung, J. *et al., Angew. Chem., Int. Ed.*, 1999, **38**, 1209-1211 (*biosynth*)
Sitachitta, N. *et al., Tetrahedron*, 2000, **56**, 9103-9113 (*isol, biosynth, abs config, Dechlorobarbamide*)
Nguyen, V.-A. *et al., Chem. Comm.*, 2001, 1934-1935 (*synth*)
Flatt, P.M. *et al., J. Nat. Prod.*, 2006, **69**, 938-944 (*biosynth*)

Barbital, INN B-23

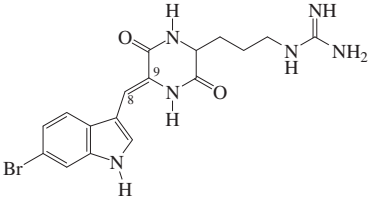
*5,5-Diethyl-2,4,6(1*H*,3*H*,5*H*)-pyrimidinetrione, 9CI. 5,5-Diethylbarbituric acid. Diethylmalonylurea. Barbitone, BAN. Veronal. Many other names*
[57-44-3]



$C_8H_{12}N_2O_3$ 184.194
Exists in several tautomeric forms. Isol. from tissues of the Indian puffer fish *Sphaeroides oblongus*. Powerful hypnotic and sedative of long duration. Faintly bitter cryst. (H_2O); polymorphic forms; trigonal cryst., monoclinic prisms, monoclinic needles, triclinic cryst. Mp 190° Mp 183° (181°, 176°). pK_{a1} 8.02 (25°). pK_a 7.43. Log P 0.66 (calc). λ_{max} 224 (EtOH) (Berdy). λ_{max} 224 ; 240 (EtOH/NaOH) (Berdy). λ_{max} 243 (NaOH) (Berdy).
▶ LD_{50} (mus, orl) 600 mg/kg. CQ3500000
Mitra, S.K. *et al., Chem. Comm.*, 1989, 16 (*isol, uv, ir, pmr, cmr*)

Barettin B-24

[104311-70-8]



$C_{17}H_{19}BrN_6O_2$ 419.28
Struct. and MF revised in 2002. Isol. from the sponge *Geodia barretti*. Selective 5-HT ligand. Yellow solid. Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. Mp 207-210°. $[\alpha]_D$ -25 (c, 3 in MeOH). λ_{max}

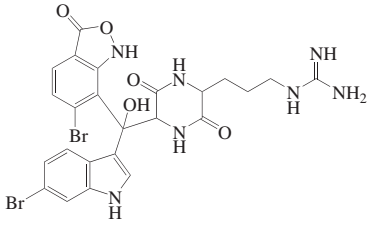
235 (ϵ 13000); 294 (sh) (ϵ 5200); 340 (ϵ 9700) (MeOH) (Derep).

8,9-Dihydro: ***8,9-Dihydrobarettin***
$C_{17}H_{21}BrN_6O_2$ 421.296
Isol. from *Geodia barretti*. Brownish solid. $[\alpha]_D^{21}$ -24 (c, 0.096 in MeOH). λ_{max} 225 (log ϵ 1.27); 286 (log ϵ 0.16) (MeOH).

Sölter, S. *et al., Tet. Lett.*, 2002, **43**, 3385-3386 (*isol, pmr, cmr, struct*)
Sjögren, M. *et al., J. Nat. Prod.*, 2004, **67**, 368-372 (*isol, activity*)
Johnson, A.-L. *et al., Tetrahedron*, 2004, **60**, 961-965 (*synth*)
Hedner, E. *et al., J. Nat. Prod.*, 2006, **69**, 1421-1424 (*activity*)

Barettin bromobenzisoxazolone B-25

Bromobenzisoxazolone Barettin
[1008125-63-0]

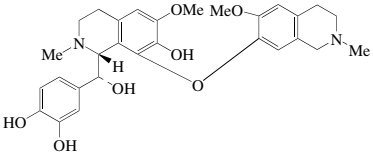


$C_{24}H_{23}Br_2N_7O_5$ 649.298
Related to Barettin, B-24. Alkaloid from *Geodia barretti*. Antifouling agent. Brownish-yellow solid. Mp 150-151°. $[\alpha]_D^{25}$ +0.01 (c, 0.01 in MeOH). λ_{max} 198 ; 229 ; 265 ; 348 (MeCN).

Hedner, E. *et al., J. Nat. Prod.*, 2008, **71**, 330-333 (*isol, pmr, cmr, activity*)

Bargustanine B-26

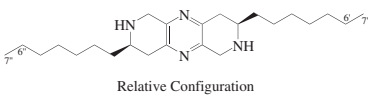
[169626-12-4]



$C_{29}H_{34}N_2O_7$ 522.597
Alkaloid from roots of *Berberis vulgaris* (barberry). Cryst. (MeOH). Mp 193-194°. $[\alpha]_D^{20}$ +114.2 (c, 0.3 in MeOH). λ_{max} 218 (sh) (log ϵ 4.85); 286 (log ϵ 3.98) (EtOH).

Karimov, A. *et al., Khim. Prir. Soedin.*, 1993, **29**, 44-47; *Chem. Nat. Compd. (Engl. Transl.)*, 1993, **29**, 35-38

Barrenazine A B-27



Relative Configuration

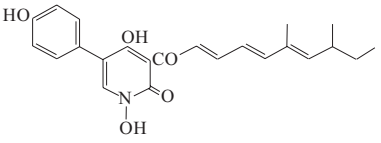
$C_{24}H_{42}N_4$ 386.623
Isol. from an unidentified tunicate. Cytotoxic. Oil. $[\alpha]_D^{21}$ -55 (4) (c, 0.48 in MeOH). λ_{max} 288 (ϵ 6950); 313 (sh) (MeOH).

6′,6″,7′,7″-Tetradehydro: ***Barrenazine B***
$C_{24}H_{38}N_4$ 382.591
Isol. from an unidentified tunicate. Oil. $[\alpha]_D^{21}$ -21 (c, 0.26 in MeOH). λ_{max} 288 (ϵ 6950); 313 (sh) (MeOH).

Chill, L. *et al., Org. Lett.*, 2003, **5**, 2433-2435 (*isol, pmr, cmr*)
Focken, T. *et al., Org. Lett.*, 2006, **8**, 2985-2988 (*synth*)
Martinez, M.M. *et al., Tet. Lett.*, 2007, **48**, 8536-8539 (*synth*)

Bassianin B-28

3-(6,8-Dimethyl-1-oxo-2,4,6-decatrienyl)-1,4-dihydroxy-5-(4-hydroxyphenyl)-2(1H)-pyridinone, 9CI
[54278-73-8]

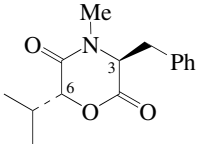


$C_{23}H_{25}NO_5$ 395.454
Metab. of *Beauveria bassiana*. Similar to Tenellin.

Brewer, D. *et al., Can. J. Bot.*, 1968, **46**, 441 (*isol*)
McInnes, A.G. *et al., Chem. Comm.*, 1974, 281 (*struct*)
McInnes, A.G. *et al., Can. J. Chem.*, 1977, **55**, 4090 (*struct*)

Bassiatin B-29

4-Methyl-6-(1-methylethyl)-3-(phenylmethyl)-2,5-morpholinedione, 9CI. 3-Benzyl-6-isopropyl-4-methyl-2,5-morpholinedione. PI 290. Antibiotic PI 290
[173008-70-3]



$C_{15}H_{19}NO_3$ 261.32
Identity with PI 290 not confirmed. Prod. by *Beauveria bassiana*. Platelet aggregation inhibitor. Cryst. (EtOAc/hexane). Mp 143-148°. $[\alpha]_D^{25}$ +181 (c, 0.02 in $CHCl_3$). Lateritin isol. from *Gibberella lateritium* is given the same gross struct. but data do not correspond. It was concluded that the struct. of Lateritin was incorrectly assigned.

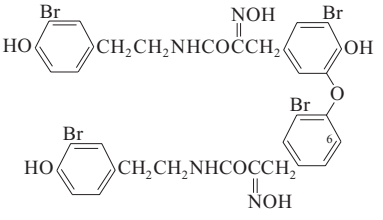
3-Epimer: ***3-Epibassiatin***
$C_{15}H_{19}NO_3$ 261.32
Prod. by the fruiting bodies of *Isaria japonica*. Apoptosis-inducing agent. Powder. $[\alpha]_D^{23}$ -48.8 (c, 0.43 in $CHCl_3$). λ_{max} 209 (ϵ 5056) (MeOH).

[164107-91-9 , 172721-96-9 , 65454-13-9 , 172721-98-1 , 172721-97-0]

Hasumi, K. *et al., J. Antibiot.*, 1993, **46**, 1782 (*Lateritin*)
Kagamizono, T. *et al., J. Antibiot.*, 1995, **48**, 1407 (*isol, pmr, cmr, ir, synth*)
Japan. Pat., 1995, 95 97 389; *CA*, **123**, 31396w (*PI 290*)
Oh, H. *et al., Planta Med.*, 2002, **68**, 345-348 (*3-Epibassiatin*)
Hughes, A.B. *et al., J.O.C.*, 2005, **70**, 3079-3088 (*synth*)

Bastadin 1 B-30

[75513-48-3]



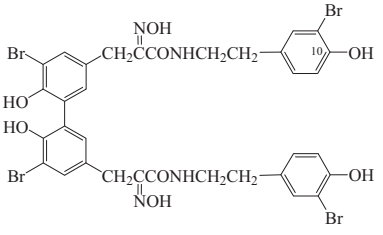
$C_{34}H_{30}Br_4N_4O_8$ 942.249
Isol. from the sponge *Ianthella basta*. Active against gram-positive bacteria. Foam. λ_{max} 220 (ϵ 63100); 283 (ϵ 10700); 288 (sh) (ϵ 8510) (MeOH) (Derep). λ_{max} 220 (ϵ 63000); 282 (ϵ 11400); 288 (ϵ 11000) (MeOH) (Berdy).

6-Bromo: ***Bastadin 2***
[75513-47-2]
$C_{34}H_{29}Br_5N_4O_8$ 1021.145
From *Ianthella basta*. Active against gram-positive bacteria. Foam. λ_{max} 220 (sh) (ϵ 50100); 280 (ϵ 8510); 293 (sh) (ϵ 7410) (MeOH) (Derep).

Kazlauskas, R. *et al., Aust. J. Chem.*, 1981, **34**, 765 (*isol, uv, pmr, cmr, ms, struct*)
Nishiyama, S. *et al., Tet. Lett.*, 1982, **23**, 1281 (*synth, ir*)
Guo, Z. *et al., J.O.C.*, 1998, **63**, 4269-4276 (*Bastadin 2, synth*)

Bastadin 3 B-31

[79067-77-9]



$C_{34}H_{30}Br_4N_4O_8$ 942.249
Isol. from the sponge *Ianthella basta*. Active against gram-positive bacteria. Pale yellow foam. Poorly sol. hexane. λ_{max} 220 (ϵ 63100); 283 (ϵ 10700); 288 (sh) (ϵ 8510) (MeOH) (Derep). λ_{max} 220 (ϵ 57200); 285 (ϵ 8700) (MeOH) (Berdy).

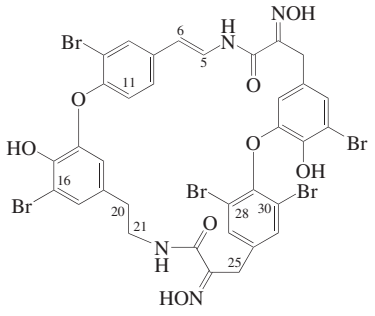
10-O-Sulfate: ***10-O-Sulfatobastadin 3***
[184478-47-5]
$C_{34}H_{30}Br_4N_4O_{11}S$ 1022.313
Isol. from *Ianthella basta*. Calcium ion release inducer. Calcium ion channel modulator. Powder (as Na salt). λ_{max} 209 (ϵ 84400); 279 (ϵ 5550) (MeOH) (as Na salt).

Kazlauskas, R. *et al., Aust. J. Chem.*, 1981, **34**, 765 (*isol, uv, pmr, cmr, ms, struct*)
Nishimaya, S. *et al., Tet. Lett.*, 1982, **23**, 1281 (*synth, ir*)

Franklin, M.A. *et al., J. Nat. Prod.*, 1996, **59**, 1121-1127 (*10-sulfate*)
Guo, Z. *et al., J.O.C.*, 1998, **63**, 4269-4276 (*synth*)

Bastadin 4 B-32

Cyclobastadin 1
[79067-76-8]



$C_{34}H_{25}Br_5N_4O_8$ 1017.113
Some Bastadins were renumbered in 1993. Isol. from the sponge *Ianthella basta*. Antiinflammatory agent. Active against gram-positive bacteria. Yellow needles (DMF aq.). Poorly sol. hexane. Mp 250° dec. λ_{max} 209 (ϵ 126000); 289 (ϵ 20000); 300 (sh) (ϵ 15800); 310 (ϵ 15800) (MeOH) (Derep). λ_{max} 210 (ϵ 68400); 228 (ϵ 10000); 315 (ϵ 10000) (MeOH) (Berdy).

5,6-Dihydro: ***Bastadin 5***. *Cyclobastadin 2*
[79067-75-7]
$C_{34}H_{27}Br_5N_4O_8$ 1019.129
From *Ianthella basta*. Cryst. (MeCN) (as tetra-Me ether). Poorly sol. hexane. Mp 262-264° (tetra-Me ether). λ_{max} 208 (ϵ 126000); 280 (ϵ 7940) (MeOH) (Derep).

*5,6-Dihydro, 6*S*-hydroxy:* ***Bastadin 8***
[127709-45-9]
$C_{34}H_{27}Br_5N_4O_9$ 1035.129
From *Ianthella basta*. Film. Fortuitously given the same trivial name by 2 independent groups. λ_{max} 208 (ϵ 126000); 280 (ϵ 7940) (MeOH) (Derep).

11-Bromo, 5,6-dihydro: ***Bastadin 6***. *Cyclobastadin 3*
[79067-74-6]
$C_{34}H_{26}Br_6N_4O_8$ 1098.025
From *Ianthella basta* and *Psammaplysilla purpurea*. Antiangiogenic agent. Powder. Poorly sol. hexane. λ_{max} 220 (sh) (ϵ 50000); 281 (ϵ 5500) (MeOH) (Derep).

11-Bromo, 20,21-didehydro, 5,6-dihydro: ***Bastadin 22***
$C_{34}H_{24}Br_6N_4O_8$ 1096.01
Isol. from *Dendrilla cactos*. Amorph. solid. Mp 198-202°.

11-Bromo, 25ξ-hydroxy, 5,6-dihydro: ***Bastadin 24***
$C_{34}H_{26}Br_6N_4O_9$ 1114.025
Isol. from *Ianthella quadrangulata*. Cytotoxic. Amorph. solid. $[\alpha]_D^{23}$ -36 (c, 0.88 in MeOH). λ_{max} 207 (ϵ 109225); 280 (ϵ 4873) (MeOH).

11-Bromo, 28-debromo, 20,21-didehydro, 5,6-dihydro: ***Bastadin 23***
$C_{34}H_{25}Br_5N_4O_8$ 1017.114
Isol. from *Dendrilla cactos*. Amorph. solid. Mp 205-208°.

16-Debromo: ***Bastadin 11***
[127687-09-6]
$C_{34}H_{26}Br_4N_4O_8$ 938.217
From *Ianthella basta*. Antiinflammatory agent. Film. λ_{max} 208 (ϵ 20000); 285 (ϵ 2510); 331 (ϵ 3160) (MeOH) (Derep).

16-Debromo, 5,6-dihydro: ***Bastadin 9***†
[127687-07-4]
$C_{34}H_{28}Br_4N_4O_8$ 940.233
From *Ianthella basta*. Antiinflammatory agent. Powder (MeOH aq.). λ_{max} 208 (ϵ 126000); 279 (ϵ 10000) (MeOH) (Derep).

*16-Debromo, 5,6-dihydro, 34-*O*-sulfate:* ***34-O-Sulfobastadin 9***
$C_{34}H_{28}Br_4N_4O_{11}S$ 1020.297
Isol. from *Ianthella basta*. Amorph. solid (as Na salt).

28-Debromo: ***Bastadin 7***. *Cyclobastadin 4*
[79067-73-5]
$C_{34}H_{26}Br_4N_4O_8$ 938.217
From *Ianthella basta*. Foam. Poorly sol. hexane. λ_{max} 290 (ϵ 15100); 315 (ϵ 15500) (MeOH) (Derep).

28-Debromo, 15,34-disulfate: ***15,34-Di-O-sulfatobastadin 7***
[184478-46-4]
$C_{34}H_{26}Br_4N_4O_{14}S_2$ 1098.346
From *Ianthella basta*. Calcium ion release inducer. Calcium ion channel modulator. Yellow solid (as di-Na salt). λ_{max} 207 (ϵ 82300); 321 (ϵ 12400) (MeOH) (di-Na salt).

*28-Debromo, 6*S*-hydroxy, 5,6-dihydro:* ***Bastadin 10***
[127687-08-5]
$C_{34}H_{28}Br_4N_4O_9$ 956.233
From *Ianthella basta*. Antiinflammatory agent. Inosine 5′-phosphate dehydrogenase inhibitor. Oil. λ_{max} 208 (ϵ 126000); 279 (ϵ 10000) (MeOH) (Derep). λ_{max} 210 (ϵ 50000); 277 (ϵ 5000) (MeOH) (Berdy).

28-Debromo, 11-bromo: ***Bastadin 14***. *Isobastadin 4*
[146345-73-5]
$C_{34}H_{25}Br_5N_4O_8$ 1017.113
Isol. from sponge *Psammaplysilla purpurea*. Dehydrofolate reductase inhibitor. λ_{max} 284 (ϵ 20000); 292 (ϵ 20000); 314 (ϵ 25000) (MeOH) (Berdy).

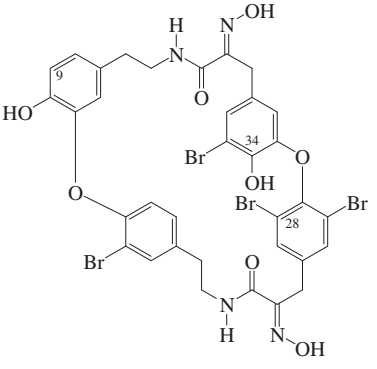
28-Debromo, 11-bromo, 5,6-dihydro: ***Bastadin 15***
[149420-79-1]
$C_{34}H_{27}Br_5N_4O_8$ 1019.129
Metab. of a temperate marine sponge *Ianthella* sp. Small -ve opt. rotn.

*28-Debromo, 11-bromo, 5,6-dihydro, 6*S*-hydroxy:* ***Bastadin 12***†. *Bastadin 9 (obsol.)*†
[150204-46-9]
$C_{34}H_{27}Br_5N_4O_9$ 1035.129
From *Ianthella basta*. Amorph. Renumbered in 1993. Name changed from Bastadin 9 to Bastadin 12 as the name Bastadin 9 was duplicated.

Kazlauskas, R. *et al., Aust. J. Chem.*, 1981, **34**, 765 (*isol, uv, ir, pmr, ms, cryst struct, derivs*)
Nishiyama, S. *et al., Tet. Lett.*, 1982, **23**, 3699 (*synth*)
Miao, S. *et al., J. Nat. Prod.*, 1990, **53**, 1441 (*isol, pmr, cmr, struct*)
Pordesimo, E.O. *et al., J.O.C.*, 1990, **55**, 4704 (*isol, pmr, cmr, struct*)
Carney, J.R. *et al., J. Nat. Prod.*, 1993, **56**, 153-157 (*nomencl*)
Dexter, A.F. *et al., J. Nat. Prod.*, 1993, **56**, 782 (*Bastadin 15*)
Pettit, G.R. *et al., J. Nat. Prod.*, 1995, **58**, 680-688 (*abs config*)
Franklin, M.A. *et al., J. Nat. Prod.*, 1996, **59**, 1121-1127 (*15,34-Disulfatobastadin 7*)
Guo, Z. *et al., J.O.C.*, 1998, **63**, 4269-4276 (*Bastadin 6, synth*)
Masuno, M.N. *et al., Mar. Drugs*, 2004, **2**, 176-184 (*34-Sulfobastadin 9*)
Kotoku, N. *et al., Tetrahedron*, 2005, **61**, 7211-7218 (*Bastadin 6, synth*)
Reddy, A.V. *et al., Bioorg. Med. Chem.*, 2006, **14**, 4452-4457 (*Bastadins 6,12,15,22,23*)
Greve, H. *et al., J. Nat. Prod.*, 2008, **71**, 309-312 (*Bastadin 24*)

Bastadin 13 B-33

Bastadin 12 (obsol.)†
[134981-78-5]



$C_{34}H_{28}Br_4N_4O_8$ 940.233
Originally isol. as Bastadin 12. Renumbered in 1993. Constit. of the sponge *Ianthella basta*. Powder. Mp 177-179°. λ_{max} 204 (ϵ 141000); 280 (ϵ 11200) (MeOH).

34-Sulfate: ***34-Sulfobastadin 13***
[152213-67-7]
$C_{34}H_{28}Br_4N_4O_{11}S$ 1020.297
Constit. of an *Ianthella* sp. Endothelin A binding inhibitor; inhibitor of ATP citrate lyase. CAS no. refers to the Na salt. λ_{max} 204 (ϵ 74000); 280 (ϵ 4800) (MeOH).

9-Bromo: ***Bastadin 19***
[158982-26-4]
$C_{34}H_{27}Br_5N_4O_8$ 1019.129
Isol. from *Ianthella basta*. Calcium channel modulator.

28-Debromo: ***Bastadin 21***
$C_{34}H_{29}Br_3N_4O_8$ 861.337
Isol. from *Ianthella quadrangulata*. Amorph. solid. λ_{max} 195 (log ϵ 4.56); 279 (log ϵ 3.4); 384 (log ϵ 2.99) (MeOH).

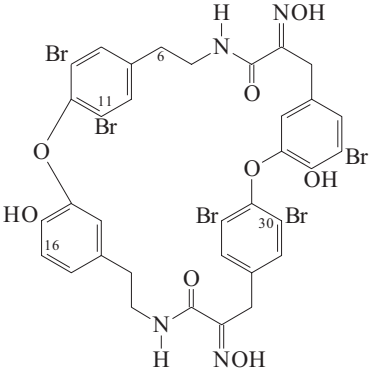
28-Debromo, 9-bromo: ***Bastadin 20***
[184679-29-6]
$C_{34}H_{28}Br_4N_4O_8$ 940.233
Isol. from *Ianthella basta*. Calcium

channel modulator. Solid. λ_{max} 209 (ϵ 84400); 279 (ϵ 5550) (MeOH).

Butler, M.S. *et al., Aust. J. Chem.*, 1991, **44**, 287-296 (*isol, pmr, cmr*)
Carney, J.R. *et al., J. Nat. Prod.*, 1993, **56**, 153-157 (*nomencl*)
Gulavita, N.K. *et al., J. Nat. Prod.*, 1993, **56**, 1613-1617 (*34-sulfate*)
Franklin, M.A. *et al., J. Nat. Prod.*, 1996, **59**, 1121-1127 (*Bastadin 19, Bastadin 20*)
Coll, J.C. *et al., J. Nat. Prod.*, 2002, **65**, 753-756 (*Bastadin 21*)

Bastadin 16 B-34

[156312-12-8]



$C_{34}H_{27}Br_5N_4O_8$ 1019.129
Constit. of the sponge *Ianthella basta* and *Psammaplysilla purpurea*. λ_{max} 280 (ϵ 3980) (MeOH) (Berdy).

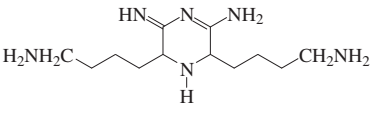
6-Hydroxy, 11-debromo: ***Bastadin 17***
[156312-13-9]
$C_{34}H_{28}Br_4N_4O_9$ 956.233
Constit. of *Ianthella basta*. λ_{max} 278 (ϵ 12600) (MeOH) (Berdy).

11,30-Bisdebromo, 16-bromo: ***Bastadin 18***
[157536-51-1]
$C_{34}H_{28}Br_4N_4O_8$ 940.233
Constit. of *Ianthella basta*. Inosine 5′-phosphate dehydrogenase inhibitor. Amorph. solid.

Park, S.K. *et al., J. Nat. Prod.*, 1994, **57**, 407 (*isol, pmr, cmr, struct*)
Jaspars, M. *et al., Tetrahedron*, 1994, **50**, 7367 (*Bastadin 18*)

Batrachamine B-35

3-Amino-1,2,5,6-tetrahydro-5-imino-2,6-pyrazinedibutanamine, 9CI. 2,6-Bis(4-aminobutyl)-3,5-diiminopiperazine
[255865-64-6]

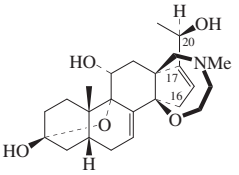


$C_{12}H_{26}N_6$ 254.378
Drawn in the ref. as the diimino tautomer. Tautomer shown corresponds to the CAS name. Isol. from J774 cells. Cell regulation modulator. Inhibitor of sphingosine burst.

Warden, L.A. *et al., J. Biol. Chem.*, 1999, **274**, 33875-33880 (*isol, pmr, cmr*)

Batrachotoxinin A B-36

[19457-37-5]



Absolute Configuration

$C_{24}H_{35}NO_5$ 417.544
Toxic principle from skin extracts of Colombian poison-dart frogs *Phyllobates aurotaenia*, *Phyllobates bicolor* and *Phyllobates terribilis*. Constit. of the skin and feathers of the toxic birds *Pitohui dichrous*, *Pitohui kirhocephalus* and *Ifrita kowaldi*, also melyrid beetles (*Choresine* sp.). Depolarizing agent for neurones and muscle cells *via* specific interaction with sodium channels. Noncryst. Mp 222-224° (as carbonate salt).

▶ Very toxic. LD_{50} (mus, scu) 1 mg/kg. Avoid skin contact. CR4025000

O^{20}*-(4-Bromobenzoyl):* Mp 213°.

O^{20}*-(2*E*-Butenoyl): Batrachotoxinin A* trans-*crotonate*
[832099-84-0]
$C_{28}H_{39}NO_6$ 485.619
Constit. of melyrid beetles (*Choresine* sp.), food of the toxic birds *Pitohui* spp. and *Ifrita kowaldi*.

O^{20}*-(2*Z*-Butenoyl): Batrachotoxinin A* cis-*crotonate*
[320591-33-1]
$C_{28}H_{39}NO_6$ 485.619
Constit. of feathers and skin of the toxic birds *Pitohui dichrous*, *Pitohui kirhocephalus* and *Ifrita kowaldi*, also melyrid beetles, a food of these birds (*Choresine* sp.).

O^{20}*-Pentenoyl: Batrachotoxinin A homo-crotonoate*
$C_{29}H_{39}NO_6$ 497.63
Constit. of melyrid beetles (*Choresine* sp.), a food of the toxic birds *Pitohui* spp. and *Ifrita kowaldi*. Full structure not assigned. 2004.

O^{20}*-(3-Hydroxypentanoyl):* [320600-82-6]
$C_{29}H_{43}NO_7$ 517.661
Constit. of the feathers and skin of the toxic birds *Pitohui dichrous* and *Pitohui kirhocephalus*.

O^{20}*-(2,4-Dimethyl-3-pyrrolecarboxylate):* ***Batrachotoxin***
[23509-16-2]
$C_{31}H_{42}N_2O_6$ 538.683
Alkaloid from poisonous dart frogs *Phyllobates aurotaenia*, *Phyllobates terribilis* and feathers and skin of the toxic birds *Pitohui dichrous*, *Pitohui kirhocephalus* and *Ifrita kowaldi*. Also constit. of melyrid beetles (*Choresine* sp.), food of *Pitohui* and *Ifrita* spp. Depolarising agent for neurones and muscle cells *via* specific interaction with sodium channels in plasma membranes. Noncryst.

▶ V. toxic, avoid skin contact. LD_{50} (mus, ipr) 0.002 mg/kg. LD_{50} (mus, scu) 0.002 mg/kg. Very toxic by intraperitoneal and subcutaneous routes. CR3990000

O^{20}*-(2,4-Dimethyl-3-pyrrolecarboxylate),* N-*de-Me:*
$C_{30}H_{40}N_2O_6$ 524.656
Constit. of melyrid beetles (*Choresine* sp.) - a food of the toxic birds *Pitohui* spp. and *Ifrita kowaldi*. Full structure not confirmed, 2004. May be an artifact.

O^{20}*-(2-Ethyl-4-methyl-3-pyrrolecarboxylate):* ***Homobatrachotoxin***
[23509-17-3]
$C_{32}H_{44}N_2O_6$ 552.709
Alkaloid from *Phyllobates aurotaenia* and *Phyllobates terribilis*. Also isol. from the feathers and skin of toxic birds *Pitohui dichrous*, *Pitohui kirhocephalus* and *Ifrita kowaldi*. Constit. of melyrid beetles (*Choresine* sp.), which are food of these birds. Noncryst.

▶ CR5075000

O^{3}*-Me,* O^{20}*-(2,4-dimethyl-3-pyrrolecarboxylate),:* ***3-O-Methylbatrachotoxin***
$C_{32}H_{44}N_2O_6$ 552.709
Alkaloid from *Phyllobates terribilis*. Probably an artifact. CAS no. not found 8-11CI.

O^{3}*-Me,* O^{20}*-(2-ethyl-4-methyl-3-pyrrolecarboxylate):* ***3-O-Methylhomobatrachotoxin***
$C_{33}H_{46}N_2O_6$ 566.736
Alkaloid from *Phyllobates terribilis*. Probably an artifact.

O^{3}*-Et,* O^{20}*-(2-butenoyl):*
$C_{30}H_{43}NO_6$ 513.673
Constit. of melyrid beetles (*Choresine* sp.), a food of the toxic birds *Pitohui* spp. and *Ifrita kowaldi*. Full structure not confirmed, 2004. May be an artifact.

16,17-Dihydro, O^{20}*-Ac:*
$C_{26}H_{39}NO_6$ 461.597
Constit. of feathers and skin of the toxic birds *Pitohui dichrous*, *Pitohui kirhocephalus* and *Ifrita kowaldi*. Also constit. of melyrid beetles (*Choresine* sp.), a food of the *Pitohui* spp. and *Ifrita kowaldi*. Incorrectly indexed in CA *134*.

4β-Hydroxy, O^{20}*-(2,4-dimethyl-3-pyrrolecarboxylate):* ***4-Hydroxybatrachotoxin***
[85439-39-0]
$C_{31}H_{42}N_2O_7$ 554.682
Alkaloid from *Phyllobates terribilis*.

4β-Hydroxy, O^{20}*-(2-ethyl-4-methyl-3-pyrrolecarboxylate):* ***4-Hydroxyhomobatrachotoxin***
[85439-40-3]
$C_{32}H_{44}N_2O_7$ 568.709
Alkaloid from *Phyllobates terribilis*.

20-Deoxy, 20-chloro:
$C_{24}H_{34}ClNO_4$ 435.99
Constit. of melyrid beetles (*Choresine* sp.), a food of the toxic birds *Pitohui* spp. and *Ifrita kowaldi*. Full structure not confirmed, 2004. May be an artifact.

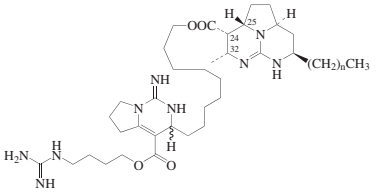
Epimer.
$C_{24}H_{35}NO_5$ 417.544
Constit. of feathers and skin of the

toxic bird *Pitohui dichrous*. Structure not elucidated. Unique CAS no not assigned by CA.

Daly, J.W. *et al., J.A.C.S.*, 1965, **87**, 124-126 (*isol, ms, ir, pmr*)
Tokuyama, T. *et al., J.A.C.S.*, 1969, **91**, 3931-3938 (*isol, ir, uv, pmr, ms, cryst struct*)
Imhof, R. *et al., Helv. Chim. Acta*, 1973, **56**, 139-162 (*synth*)
Witkop, B. *et al., Alkaloids (Academic Press)*, 1983, **21**, 219-223 (*pharmacol*)
Tokuyama, T. *et al., Tetrahedron*, 1983, **39**, 41-47 (Phyllobates terribilis *constits, cmr*)
Daly, J.W. *et al., Alkaloids: Chem. Biol. Perspect.*, 1986, **4**, 23 (*rev, pharmacol*)
Dumbacher, J.P. *et al., Science (Washington, D.C.)*, 1992, **258**, 799-801 (*Homobatrachotoxin, occur*)
Deligeorges, S. *et al., Recherches*, 1996, **284**, 50-51 (*Homobatrachotoxin, isol*)
Kurosu, M. *et al., J.A.C.S.*, 1998, **120**, 6627-6628 (*synth*)
Weldon, P.J. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 2000, **21**, 12948-12949 (*rev*)
Dumbacher, J.P. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 2000, **97**, 12970-12975; 2004, **101**, 15857-15860 (*occur, birds, insects*)
Pihko, A.J. *et al., Tetrahedron*, 2005, **61**, 8769-8807 (*synth, rev*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, BAR750

Batzelladine A B-37

[147664-18-4]



n = 8

Absolute Configuration

$C_{42}H_{73}N_9O_4$ 768.097

Major component of complex where in addn. n = 9 and 10. Alkaloids from the Caribbean sponge *Batzella* sp. Inhibits the binding of HIVgp-120 to CD4. Amorph. powder. $[\alpha]_D^{25}$ +8.9 (c, 2.3 in MeOH). λ_{max} 205 (ϵ 20100); 288 (ϵ 6820) (MeOH) (Derep).

[162047-80-5 , 162047-79-2]

Patil, A.D. *et al., J.O.C.*, 1995, **60**, 1182 (*isol, uv, ir, pmr, cmr, struct*)
Snider, B.B. *et al., J.O.C.*, 1999, **62**, 1707-1711 (*config*)
Franklin, A.S. *et al., J.O.C.*, 1999, **64**, 1512-1519 (*config*)
Shimokawa, J. *et al., Chem. Eur. J.*, 2005, **11**, 6878-6888 (*synth*)
Arnold, M.A. *et al., J.A.C.S.*, 2006, **128**, 13255-13260 (*synth*)

Batzelladine B B-38

[161503-23-7]

As Batzelladine A, B-37 with

n = 6, $\Delta^{24,32}$, 25-epimer

$C_{40}H_{67}N_9O_4$ 738.027

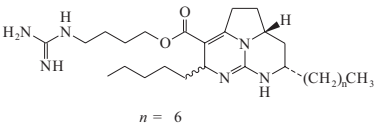
Major component of complex where in addn. n = 7 and 8. Alkaloids from the Caribbean sponge *Batzella* sp. Inhibitor of HIVgp-120-human CD4 binding. Interleukin binding inhibitor. Amorph. powder. Sol. H_2O; fairly sol. MeOH; poorly sol. Me_2CO, hexane. $[\alpha]_D^{25}$ +44.3 (c, 3.7 in MeOH). λ_{max} 206 (ϵ 16600); 289 (ϵ 9300); 340 (ϵ 4380) (MeOH) (Derep).

[162047-82-7 , 162047-81-6]

Patil, A.D. *et al., J.O.C.*, 1995, **60**, 1182 (*isol, uv, ir, pmr, cmr, struct*)
Franklin, A.S. *et al., J.O.C.*, 1999, **64**, 1512-1519 (*synth, config*)

Batzelladine C B-39

[161503-24-8]



n = 6

$C_{27}H_{48}N_6O_2$ 488.715

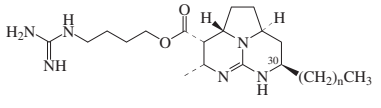
Major component of complex where in addn. n = 7 and 8. Alkaloids from the Caribbean sponge *Batzella* sp. Amorph. powder. $[\alpha]_D^{25}$ -3.7 (c, 2.4 in MeOH). λ_{max} 211 (ϵ 8080); 230 (ϵ 7830); 298 (ϵ 6940) (MeOH) (Derep).

[162047-84-9 , 162047-83-8]

Patil, A.D. *et al., J.O.C.*, 1995, **60**, 1182 (*isol, uv, ir, pmr, cmr, struct*)

Batzelladine D B-40

[161596-65-2]



n = 8

$C_{25}H_{46}N_6O_2$ 462.677

Major component of complex where in addn. n = 9 and 10. Alkaloids from the Caribbean sponge *Batzella* sp. Amorph. powder. $[\alpha]_D^{25}$ -1.2 (c, 0.9 in MeOH). λ_{max} 205 (ϵ 9170); 298 (ϵ 2380) (MeOH) (Derep).

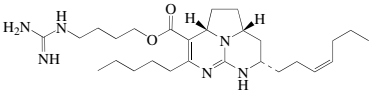
30-Epimer: ***30-Epibatzelladine D***
[147664-20-8]
$C_{25}H_{46}N_6O_2$ 462.677
Alkaloid from a *Batzella* sp. Cytotoxic agent. Powder. Sol. MeOH, H_2O.

[162047-86-1 , 162047-85-0]

Pat. Coop. Treaty (WIPO), 1993, 93 1 193; *CA*, **118**, 225662x (*30-epimer*)
Patil, A.D. *et al., J.O.C.*, 1995, **60**, 1182 (*isol, uv, ir, pmr, cmr, struct*)
Franklin, A.S. *et al., J.O.C.*, 1999, **64**, 1512-1519 (*config*)
Cohen, F. *et al., Org. Lett.*, 1999, **1**, 2169-2172 (*synth*)
Ishiwata, T. *et al., Org. Lett.*, 2002, **4**, 2921-2924 (*synth*)
Shimokawa, J. *et al., Chem. Eur. J.*, 2005, **11**, 6878-6888 (*synth*)
Arnold, M.A. *et al., J.A.C.S.*, 2006, **128**, 13255-13260 (*synth*)
Evans, P.A. *et al., Angew. Chem., Int. Ed.*, 2007, **46**, 7417-7419 (*synth*)

Batzelladine E B-41

[161503-25-9]



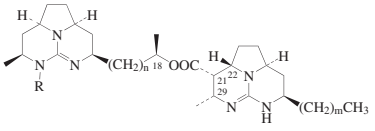
$C_{27}H_{46}N_6O_2$ 486.699

Alkaloid from the Caribbean sponge *Batzella* sp. Protein kinase C and interleukin binding inhibitor. Gum. Sol. H_2O; fairly sol. MeOH; poorly sol. Me_2CO, hexane. $[\alpha]_D^{25}$ +87.1 (c, 1.9 in MeOH). λ_{max} 207 (ϵ 7954); 227 (ϵ 7012); 291 (ϵ 3311); 345 (ϵ 2876) (MeOH) (Berdy).

Patil, A.D. *et al., J.O.C.*, 1995, **60**, 1182 (*isol, uv, ir, pmr, cmr, struct*)
Snider, B.B. *et al., Tet. Lett.*, 1998, **39**, 5697-5700 (*synth, config*)

Batzelladine F B-42

[188112-82-5]



R = H, m = 6, n = 7
Absolute Configuration

$C_{37}H_{64}N_6O_2$ 624.952

Struct. finalised in 2001. Alkaloid from the sponge *Monanchora arbuscula* (formerly *Batzella* sp.). Gum. $[\alpha]_D$ +19.4 (c, 0.87 in MeOH). λ_{max} 236 ; 254 ; 296 (MeOH).

21,22-Didehydro: ***Batzelladine N***
$C_{37}H_{62}N_6O_2$ 622.936
Alkaloid from *Monanchora unguifera*. Gum. $[\alpha]_D$ +8 (c, 0.1 in MeOH). C-18 and C-29 configs. not confirmed. λ_{max} 206 (ϵ 13340); 260 (ϵ 4320); 296 (ϵ 4184) (MeOH).

Patil, A.D. *et al., J.O.C.*, 1997, **62**, 1814-1819 (*isol, uv, ir, pmr, cmr, struct*)
Snider, B.B. *et al., J. Nat. Prod.*, 1999, **62**, 1707-1711 (*config*)
Black, G.P. *et al., Tetrahedron*, 1999, **55**, 6547-6554 (*synth, pmr, cmr, config*)
Cohen, F. *et al., J.A.C.S.*, 2006, **128**, 2594-2603; 2604-2608 (*synth, struct*)
Hua, H.-M. *et al., Tetrahedron*, 2007, **63**, 11179-11188 (*Batzelladine N*)

Batzelladine G B-43

[188112-84-7]

As Batzelladine F, B-42 with

R = OH, m = 8, n = 7

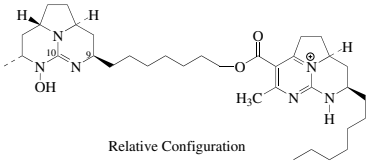
$C_{39}H_{68}N_6O_3$ 669.005

Alkaloid from the sponge *Batzella* sp. Immunosuppressant. Powder. Sol. H_2O; fairly sol. MeOH; poorly sol. Me_2CO, hexane. $[\alpha]_D$ +14.7 (c, 0.79 in MeOH). λ_{max} 233 ; 258 ; 295 (MeOH).

Patil, A.D. *et al., J.O.C.*, 1997, **62**, 1814-1819 (*isol, uv, ir, pmr, cmr, struct*)

Batzelladine H B-44

[188112-85-8]



Relative Configuration

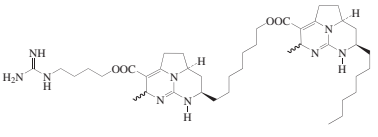
$C_{35}H_{57}N_6O_3^{\oplus}$ 609.874

Isol. as a 43:57 inseparable mixt. with Batzelladine I. Alkaloid from the sponge *Batzella* sp. Oil (as formate). Sol. H_2O; fairly sol. MeOH; poorly sol. Me_2CO, hexane. $[\alpha]_D$ +33.7 (c, 0.56 in MeOH) (formate). λ_{max} 217 ; 258 (MeOH).

Isomer: ***Batzelladine I***
[188112-86-9]
$C_{35}H_{57}N_6O_3^{\oplus}$ 609.874
From *Batzella* sp. Isomer of Batzelladine H in which the N-hydroxy group is located on the N between C-9 and C-10.

Patil, A.D. *et al., J.O.C.*, 1997, **62**, 1814-1819 (*isol, uv, ir, pmr, cmr, struct*)

Batzelladine J B-45



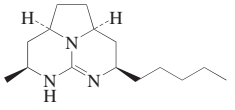
$C_{41}H_{67}N_9O_4$ 750.038

Alkaloid from the sponge *Monanchora unguifera*. $[\alpha]_D^{25}$ -11.8 (c, 0.13 in MeOH). λ_{max} 228 (ϵ 8800); 295 (ϵ 7200) (MeOH).

Gallimore, W.A. *et al., J. Nat. Prod.*, 2005, **68**, 1420-1423 (*isol, pmr, cmr, ms*)

Batzelladine K B-46

[956260-43-8]



Relative Configuration

$C_{15}H_{27}N_3$ 249.398

Alkaloid from *Monanchora unguifera*. Gum. $[\alpha]_D$ +6.4 (c, 0.14 in MeOH). λ_{max} 208 (ϵ 2880) (MeOH).

Hua, H.-M. *et al., Tetrahedron*, 2007, **63**, 11179-11188 (*isol, cd, pmr, cmr*)

Batzelladine L B-47

[956260-45-0]
As Batzelladine F, B-42 with
R = H, m = 8, n = 7

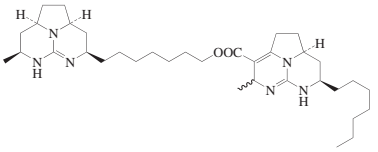
$C_{39}H_{68}N_6O_2$ 653.005

Alkaloid from *Monanchora unguifera*. Gum. $[\alpha]_D$ +5 (c, 0.1 in MeOH). λ_{max} 212 (ϵ 18440) (MeOH).

Hua, H.-M. *et al., Tetrahedron*, 2007, **63**, 11179-11188 (*isol, cd, pmr, cmr*)

Batzelladine M B-48

[956260-47-2]



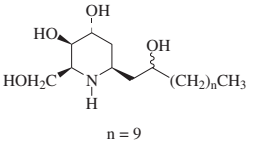
$C_{35}H_{58}N_6O_2$ 594.882

Alkaloid from *Monanchora unguifera*. Gum. $[\alpha]_D$ +41.1 (c, 0.09 in MeOH). λ_{max} 210 (ϵ 14600); 258 (ϵ 10203); 298 (ϵ 3530) (MeOH).

Hua, H.-M. *et al., Tetrahedron*, 2007, **63**, 11179-11188 (*isol, cd, pmr, cmr*)

Batzellaside A B-49

6-(2-Hydroxydodecyl)-2-(hydroxymethyl)-3,4-piperidinediol



Relative Configuration

n = 9

$C_{18}H_{37}NO_4$ 331.495

Alkaloid from the sponge *Batzella* sp. Oil. $[\alpha]_D^{25}$ +8.1 (c, 0.44 in MeOH).

Segraves, N.L. *et al., J. Nat. Prod.*, 2005, **68**, 118-121 (*isol, pmr, cmr*)

Batzellaside B B-50

2-(Hydroxymethyl)-6-(2-hydroxyundecyl)-3,4-piperidinediol
As Batzellaside A, B-49 with
n = 8

$C_{17}H_{35}NO_4$ 317.468

Alkaloid from the sponge *Batzella* sp. Oil. $[\alpha]_D^{25}$ +10 (c, 0.5 in MeOH).

Segraves, N.L. *et al., J. Nat. Prod.*, 2005, **68**, 118-121 (*isol, pmr, cmr*)

Batzellaside C B-51

2-(Hydroxymethyl)-6-(2-hydroxytridecyl)-3,4-piperidinediol
As Batzellaside A, B-49 with
n = 10

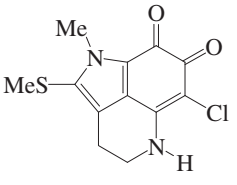
$C_{19}H_{39}NO_4$ 345.521

Alkaloid from the sponge *Batzella* sp. Oil. $[\alpha]_D^{25}$ +12 (c, 0.4 in MeOH).

Segraves, N.L. *et al., J. Nat. Prod.*, 2005, **68**, 118-121 (*isol, pmr, cmr*)

Batzelline A B-52

6-Chloro-1,3,4,5-tetrahydro-1-methyl-2-(methylthio)pyrrolo[4,3,2-de]quinoline-7,8-dione, 9CI
[123064-89-1]



$C_{12}H_{11}ClN_2O_2S$ 282.75

Alkaloid from the deep water Bahamas sponge *Batzella* sp. Black prisms ($CHCl_3$/MeOH). Mp 205°. λ_{max} 214 (ϵ 8900); 269 (ϵ 22100); 356 (ϵ 7900); 376 (ϵ 8000); 548 (ϵ 600) (MeOH) (Derep).

N-*Me:* Mp 202°.

N-*De-Me:* ***Batzelline B***
[123064-90-4]
$C_{11}H_9ClN_2O_2S$ 268.723
Isol. from *Batzella* sp. Herbicide. Dark brown solid. No definite Mp (dec.). λ_{max} 211 (ϵ 58300); 266 (ϵ 120800); 330 (sh) ; 387 (ϵ 51800); 550 (ϵ 4000) (MeOH) (Derep).

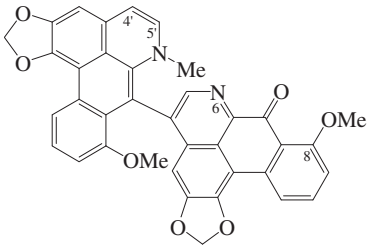
De(methylthio): ***Batzelline C***
[123064-91-5]
$C_{11}H_9ClN_2O_2$ 236.657
Isol. from *Batzella* sp. and *Zyzzya massalis*. Herbicide. Dark brown solid. No definite Mp (dec.). λ_{max} 211 (ϵ 7900); 250 (ϵ 17300); 331 (ϵ 9100); 380 (sh) ; 540 (ϵ 900) (MeOH) (Derep).

De(methylthio), N-*de-Me:* ***Batzelline D***
[437980-22-8]
$C_{10}H_7ClN_2O_2$ 222.63
Isol. from *Zyzzya fuliginosa* and *Zyzzya massalis*. Purple solid. λ_{max} 248 (log ϵ 4); 328 (log ϵ 3.73) (MeOH).

Sakemi, S. *et al., Tet. Lett.*, 1989, **30**, 2517 (*isol, uv, ir, pmr, cmr, ms, struct*)
Tao, X.L. *et al., Tetrahedron*, 1994, **50**, 2017 (*Batzelline C, synth*)
Yamada, F. *et al., Heterocycles*, 1995, **41**, 1905 (*Batzelline C, synth*)
Roberts, D. *et al., J.O.C.*, 1997, **62**, 568 (*Batzelline C, synth*)
Alvarez, M. *et al., Eur. J. Org. Chem.*, 1999, 1173-1183 (*synth*)
Chang, L.C. *et al., J. Nat. Prod.*, 2002, **65**, 776-778 (*Batzelline D*)
Dijou, M.-G. *et al., Bioorg. Med. Chem.*, 2005, **13**, 6035-6044 (*Batzelline C, D*)

Beccapoline B-53

[85643-65-8]



$C_{37}H_{24}N_2O_7$ 608.606

Alkaloid from *Polyalthia beccarii* and *Polyalthia cauliflora* var. *beccarii* (Annonaceae). Amorph. Mp 280° dec. λ_{max} 218 (sh) (log ϵ 4.52); 231 (log ϵ 4.63); 250 (sh) (log ϵ 4.53); 279 (log ϵ 4.4); 310 (log ϵ 4.01); 366 (sh) (log ϵ 4.07); 428 (log ϵ 4.22); 440 (log ϵ 4.21) (MeOH).

N^6-*Me:* ***Beccapolinium***
[85643-68-1]
$C_{38}H_{27}N_2O_7^{\oplus}$ 623.64
Alkaloid from *Polyalthia beccarii* and *Polyalthia cauliflora* var. *beccarii* (Annonaceae). Mp 250° dec. (as hydroxide). CAS no. refers to hydroxide.

4′,5′-Dihydro, 4′,5′-dioxo: ***Beccapolydione***
[91794-12-6]
$C_{37}H_{22}N_2O_9$ 638.589
Alkaloid from *Polyalthia cauliflora* var. *beccarii* (Annonaceae). Mp 280° dec. λ_{max} 218 (sh) (log ϵ 4.53); 224 (log ϵ 4.7); 250 (log ϵ 4.67); 276 (log ϵ 4.47); 314 (log ϵ 4.19); 325 (sh) (log ϵ 4.19); 370 (sh) (log ϵ 4.02); 438 (log ϵ 4.29) (MeOH).

8-Demethoxy: ***Polybeccarine***
[91794-11-5]
$C_{36}H_{22}N_2O_6$ 578.58
Alkaloid from *Polyalthia cauliflora* var. *beccarii* (Annonaceae). Mp 280°. λ_{max} 216 (log ϵ 4.66); 234 (log ϵ 4.7); 248 (sh) (log ϵ 4.68); 273 (log ϵ 4.55); 308 (log ϵ 4.17); 344 (log ϵ 4.05); 406 (log ϵ 4.24); 425 (log ϵ 4.23) (MeOH).

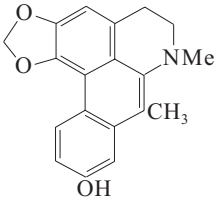
Jossang, A. *et al., Tet. Lett.*, 1982, **23**, 5147-5150 (*Beccapoline, struct*)
Jossang, A. *et al., J. Nat. Prod.*, 1984, **47**, 504-513 (*Beccapolinium, Beccapolydione, Polybeccarine*)

Beilupeimine B-54

$C_{27}H_{43}NO_3$ 429.642
Steroidal alkaloid. Struct. unknown. Isol. from the Chinese drug Bei-lu-pei-mu. Mp 155-157°. $[\alpha]_D$ -52.23 (EtOH). λ_{max} 289 (no solvent reported).
Chu, T.T. *et al., CA*, 1951, **51**, 445

Belemine B-55

[96400-75-8]

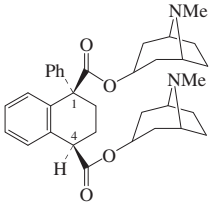


$C_{19}H_{17}NO_3$ 307.348
Alkaloid from the stem bark of *Guatteria schomburgkiana* (Annonaceae). Shows antimicrobial activity. Noncryst.

Cortes, D. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C, Ser.* 2, 1984, **299**, 311 (*uv, pmr, ms, struct*)
Villar, A. *et al., Farm. Tijdschr. Belg.*, 1984, **61**, 300 (*activity*)

Belladonnine B-56

1,2,3,4-Tetrahydro-1-phenyl-1,4-naphthalenedicarboxylic acid bis(8-methyl-8-azabicyclo[3.2.1]oct-3-yl) ester, 9CI. Isatropylditropein. 1,4-Ditropine isatropate
[510-25-8]



(1*RS*,4*RS*)-*form*

$C_{34}H_{42}N_2O_4$ 542.717
Alkaloid from *Mandragora officinarum* and *Orobanche aegyptiaca* (stereo undifferentiated). Also a thermal dimerisation prod. of Apoatropine, A-1359 and alkaloid occurrence may be as an artifact (Solanaceae, Orobanchaceae). Local anaesthetic potentiator.

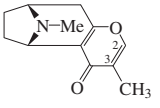
(1*RS*,4*RS*)-*form*
cis-*form*. ***β-Belladonnine***. *1,4-Ditropine β-isatropate*
[6696-63-5]
Alkaloid from *Hyoscyamus niger* (Solanaceae). Mp 58°.
Hydrochloride (1:2): Mp 195-196° dec.
Dipicrate: Mp 230-232° dec. (anhyd.).

(1*RS*,4*SR*)-*form*
trans-*form*. ***α-Belladonnine***. *1,4-Ditropine α-isatropate*
[5878-33-1]
Alkaloid from *Hyoscyamus niger* (Solanaceae). Mp 129°.
Perchlorate (1:2):
Cryst. + $1H_2O$. Mp 180° dec.
Dipicrate: Mp 150° dec.

Voigtländer, H.W. *et al., Annalen*, 1959, **625**, 196-205 (*struct, synth*)
Voigtländer, H.W. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1959, **292**, 632 (*synth*)
Staub, H. *et al., Helv. Chim. Acta*, 1962, **45**, 2297-2305 (*isol*)
Wartman-Hafner, F. *et al., Pharm. Acta Helv.*, 1966, **41**, 406-427 (*tlc*)
Jackson, B.P. *et al., Phytochemistry*, 1973, **12**, 1165-1166 (*isol*)
Sharova, E.G. *et al., Khim. Prir. Soedin.*, 1977, **13**, 126-127; *Chem. Nat. Compd. (Engl. Transl.)*, 1977, **13**, 117-118 (*isol*)

Bellendine B-57

6,7,8,9-Tetrahydro-3,10-dimethylcyclohepta[b]pyran-5,8-imin-4(5H)-one, 9CI



Absolute Configuration

$C_{12}H_{15}NO_2$ 205.256

(+)-*form* [32152-73-1]
Alkaloid from the upper leaves, flowers and flowering stems of *Bellendena montana* (Proteaceae). Fine needles (Et_2O/petrol). Mp 162-163°. $[\alpha]_D^{19}$ +168 ($CHCl_3$).

2,3-Dihydro: ***2,3-Dihydrobellendine***
[72362-47-1]
$C_{12}H_{17}NO_2$ 207.272
Isol. from *Bellendena montana* (Proteaceae). Noncryst. Mp 188-190° (as picrate). $[\alpha]_D^{19}$ +59 ($CHCl_3$).

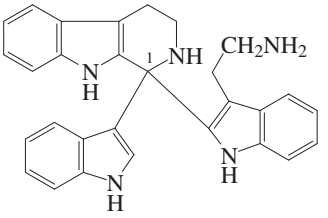
2,3-Dihydro, 3-epimer: ***2,3-Epidihydrobellendine***
[72401-75-3]
$C_{12}H_{17}NO_2$ 207.272
Isol. from *Bellendena montana* (Proteaceae). Noncryst. Mp 172-175° (as picrate). $[\alpha]_D^{19}$ +47 ($CHCl_3$).

(±)-*form* [52438-01-4]
Synthetic. Mp 128.5°.

Motherwell, W.D.S. *et al., Chem. Comm.*, 1971, 133-134 (*cryst struct*)
Bick, I.R.C. *et al., Phytochemistry*, 1971, **10**, 475-477 (*isol*)
Bick, I.R.C. *et al., Aust. J. Chem.*, 1979, **32**, 1827-1840 (*isol, pmr, cmr, ms, struct, synth, derivs*)

Bengacarboline B-58

[192947-81-2]

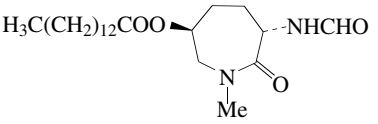


$C_{29}H_{27}N_5$ 445.566
Isol. from the ascidian *Didemnum* sp. Cytotoxic agent. Brown solid. λ_{max} 226 (ϵ 6719); 284 (ϵ 1877) (MeOH).

Foderaro, T.A. *et al., J.O.C.*, 1997, **62**, 6064-6065 (*isol, uv, ir, cd, pmr, cmr*)

Bengamide K B-59

[193894-98-3]

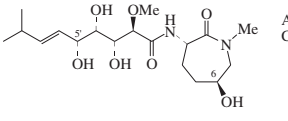


$C_{22}H_{40}N_2O_4$ 396.569
Isol. from the sponge *Jaspis carteri*. $[\alpha]_D^{25}$ +78.7 (c, 0.08 in MeOH).

D'Auria, M.V. *et al., J. Nat. Prod.*, 1997, **60**, 814-816 (*isol, pmr, cmr, ms*)

Bengamide Z B-60

[118477-10-4]



Absolute Configuration

$C_{18}H_{32}N_2O_7$ 388.46
Isol. from the sponge *Jaspis* cf. *coriacea* and from *Pachastrissa* sp. Cytotoxic agent; anthelmintic; nematocide; shows antiproliferative action. $[\alpha]_D^{20}$ +45 (c, 0.11 in MeOH).

6-O-*(3*R,*4*S,*5*R-*Trihydroxy-2*R-*methoxy-8-methyl-6-nonenoyl):* ***Bengamide D***
[118477-02-4]
$C_{29}H_{50}N_2O_{12}$ 618.72
From a Choristid sponge (Jaspidae). Anthelmintic, nematocide. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. $[\alpha]_D^{20}$ +19.8 (c, 0.086 in MeOH). Unstable in $CDCl_3$ soln.

6-O-*Tridecanoyl:* ***Bengamide H***
[193894-95-0]
$C_{31}H_{56}N_2O_8$ 584.792
Isol. from *Jaspis carteri* and *Jaspis* cf. *coriacea*. $[\alpha]_D^{25}$ +9.2 (c, 0.1 in MeOH).

6-O-*(12-Methyltridecanoyl):* ***Bengamide O***
$C_{32}H_{58}N_2O_8$ 598.819
Isol. from *Jaspis* cf. *coriacea*. Oil. $[\alpha]_D$ +35.8 (c, 23.9 in MeOH).

6-O-*Tetradecanoyl:* ***Bengamide B***. *NSC 646846*
[104947-69-5]
$C_{32}H_{58}N_2O_8$ 598.819
Isol. from *Jaspis* cf. *coriacea* and *Pachastrissa* sp. Anthelminthic and cytotoxic agent. Exhibits antiparasitic and antimicrobial activity. Shows antiproliferative action. Viscous oil. $[\alpha]_D^{20}$ +34.6 (c, 0.075 in MeOH).

6-O-*(13-Methyltetradecanoyl):* ***Bengamide M***
$C_{33}H_{60}N_2O_8$ 612.846
Isol. from *Jaspis* cf. *coriacea*. Oil. $[\alpha]_D$ +2.1 (c, 61.9 in MeOH).

6-O-*Pentadecanoyl:* ***Bengamide J***
[193894-97-2]
$C_{33}H_{60}N_2O_8$ 612.846
Isol. from *Jaspis carteri*. $[\alpha]_D^{25}$ +33 (c, 0.1 in MeOH).

N-*De-Me:* ***Bengamide Y***
[118477-09-1]
$C_{17}H_{30}N_2O_7$ 374.433
Isol. from *Jaspis* cf. *coriacea*. Cytotoxic agent. Shows antiproliferative action. $[\alpha]_D$ +14 (c, 0.11 in MeOH).

N-*De-Me, 6*S-*(3*R*,4*S*,5*R-*trihydroxy-2*R-*methoxy-8-methyl-6-nonenoyl):* ***Bengamide C***
[104975-72-6]
$C_{28}H_{48}N_2O_{12}$ 604.693
Constit. of a Choristid sponge (Jaspidae). Anthelmintic, nematocide. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Unstable in $CDCl_3$ soln.

N-*De-Me, 6*-O-*tridecanoyl:* ***Bengamide G***
[193894-94-9]
$C_{30}H_{54}N_2O_8$ 570.765
Isol. from *Jaspis carteri* and *Jaspis* cf. *coriacea*. Shows antiproliferative action. $[\alpha]_D^{25}$ +14 (c, 0.1 in MeOH).

N-*De-Me, 6*-O-*(12-methyltridecanoyl):* ***Bengamide N***
$C_{31}H_{56}N_2O_8$ 584.792
Isol. from *Jaspis* cf. *coriacea*. Oil. $[\alpha]_D$ +20.7 (c, 38 in MeOH).

N-*De-Me, 6*-O-*tetradecanoyl:* ***Bengamide A***. *NSC 613012*
[104947-68-4]
$C_{31}H_{56}N_2O_8$ 584.792
Isol. from *Jaspis* cf. *coriacea* and *Pachastrissa* sp. Anthelminthic, antiparasitic, antimicrobial and cytotoxic agent. Shows antiproliferative action. Cryst. (MeOH). Mp 114-115°. $[\alpha]_D^{20}$ +30.3 (c, 0.081 in MeOH).

N-*De-Me, 6*-O-*(13-methyltetradecanoyl):* ***Bengamide L***
[226922-85-6]
$C_{32}H_{58}N_2O_8$ 598.819
Isol. from the sponges *Pachastrissa* sp. and *Jaspis* cf. *coriacea*. $[\alpha]_D$ +18.5 (c, 1.4 in MeOH).

N-*De-Me, 6*-O-*pentadecanoyl:* ***Bengamide I***
[193894-96-1]
$C_{32}H_{58}N_2O_8$ 598.819
Isol. from *Jaspis carteri* and *Jaspis* cf. *coriacea*. $[\alpha]_D^{25}$ +32.4 (c, 0.7 in MeOH).

6-*Deoxy:* ***Bengamide F***
[118477-04-6]
$C_{18}H_{32}N_2O_6$ 372.461
Isol. from *Jaspis* cf. *coriacea*. Cytotoxic agent. Shows antiproliferative action. $[\alpha]_D^{20}$ +27.9 (c, 0.039 in MeOH).

6-*Deoxy, 5′*-O-*tetradecanoyl:* ***Bengamide Q***
$C_{32}H_{58}N_2O_7$ 582.819
Isol. from *Jaspis* cf. *coriacea*. Oil. $[\alpha]_D$ +14.1 (c, 10.7 in MeOH).

6-*Deoxy,* N-*de-Me:* ***Bengamide E***
[118477-03-5]
$C_{17}H_{30}N_2O_6$ 358.434
Isol. from *Jaspis* cf. *coriacea* and *Pachastrissa* sp. Cytotoxic agent; shows antiproliferative action; anthelmintic; nematocide. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. $[\alpha]_D^{20}$ +36.9 (c, 0.043 in MeOH).

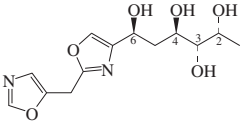
6-*Deoxy,* N-*de-Me, 5′*-O-*tetradecanoyl:* ***Bengamide P***
$C_{31}H_{56}N_2O_7$ 568.793
Isol. from *Jaspis* cf. *coriacea*. Oil. $[\alpha]_D$ +47.2 (c, 3.6 in MeOH).

6-*Deoxy,* N-*de-Me, 5′*-O-*hexadecanoyl:* ***Bengamide R***
$C_{33}H_{60}N_2O_7$ 596.846
Isol. from *Jaspis* cf. *coriacea*. Oil (impure).

Quiñoà, E. *et al., J.O.C.*, 1986, **51**, 4494-4497 (*isol, ir, pmr, cmr, ms, struct*)
Adamczeski, M. *et al., J.A.C.S.*, 1989, **111**, 647-654 (*isol, ir, pmr, cmr, ms, struct*)
Adamczeski, M. *et al., J.O.C.*, 1990, **55**, 240-242 (*abs config*)
Chida, N. *et al., Chem. Comm.*, 1992, 1064 (*synth, abs config*)
Marshall, J.A. *et al., J.O.C.*, 1993, **58**, 6229-6234 (*synth, bibl*)
D'Auria, M.V. *et al., J. Nat. Prod.*, 1997, **60**, 814-816 (*Bengamides G-J*)
Fernandez, R. *et al., J. Nat. Prod.*, 1999, **62**, 678-680 (*Bengamide L*)
Groweiss, A. *et al., J. Nat. Prod.*, 1999, **62**, 1691-1693 (*Bengamides Y,Z*)
Thale, Z. *et al., J.O.C.*, 2001, **66**, 1733-1741 (*Bengamides M-Q, isol, activity*)
Kinder, F.R. *et al., J.O.C.*, 2001, **66**, 2118-2122 (*Bengamides B,E, synth*)
Banwell, M.G. *et al., J.O.C.*, 2001, **66**, 6768-6774 (*Bengamide E, synth*)
Boeckman Jr., R.K. *et al., Org. Lett.*, 2002, **4**, 2109-2112 (*synth*)
Liu, W. *et al., Tet. Lett.*, 2002, **43**, 1373-1375 (*Bengamide E, synth*)
Sarabia, F. *et al., Tet. Lett.*, 2005, **46**, 1131-1135 (*synth*)

Bengazole Z B-61

[153549-05-4]



Absolute Configuration

$C_{13}H_{18}N_2O_6$ 298.295
Isol. from a *Jaspis* sp. sponge. Oil. $[\alpha]_D$ -7.5 (c, 0.17 in MeOH).

O^2-*Tetradecanoyl:* ***Bengazole C_2***
[153516-65-5]
$C_{27}H_{44}N_2O_7$ 508.654
Alkaloid from the Papua New Guinean marine sponge *Jaspis* cf. *coriacea*. Isol. as an insep. mixt. with 6 bengazoles C_3, C_4, C_6, D_2-D_4.

O^2-*(13-Methyltetradecanoyl):* ***Bengazole D_2***
[153516-66-6]
$C_{28}H_{46}N_2O_7$ 522.681
From *Jaspis* cf. *coriacea*.

O^3-*Tetradecanoyl:* ***Bengazole C_3***
[153590-03-5]
$C_{27}H_{44}N_2O_7$ 508.654
From *Jaspis* cf. *coriacea*.

O^3-*(13-Methyltetradecanoyl):* ***Bengazole D_3***
[153590-04-6]
$C_{28}H_{46}N_2O_7$ 522.681
From *Jaspis* cf. *coriacea*.

O^4-*Tetradecanoyl:* ***Bengazole C_4***
[153590-05-7]
$C_{27}H_{44}N_2O_7$ 508.654
From *Jaspis* cf. *coriacea*.

O^4-*(13-Methyltetradecanoyl):* ***Bengazole D_4***
[153590-06-8]
$C_{28}H_{46}N_2O_7$ 522.681
From *Jaspis* cf. *coriacea*.

O^6-*Tetradecanoyl:* ***Bengazole C_6***
[153516-67-7]
$C_{27}H_{44}N_2O_7$ 508.654
From *Jaspis* cf. *coriacea*.

O^2-*Pentadecanoyl:* [226922-32-3]
$C_{28}H_{46}N_2O_7$ 522.681
Isol. from *Pachastrissa* sp. $[\alpha]_D$ -10.5 (c, 0.6 in MeOH). λ_{max} 209 (MeOH).

O^2-*(14-Methylpentadecanoyl):* [226922-28-7]
$C_{29}H_{48}N_2O_7$ 536.707
Isol. from *Pachastrissa* sp. $[\alpha]_D$ -12.9 (c, 0.2 in MeOH). λ_{max} 209 (MeOH).

O^6-*Pentadecanoyl:* [226922-37-8]
$C_{28}H_{46}N_2O_7$ 522.681
Isol. from *Pachastrissa* sp. $[\alpha]_D$ -9.3 (c, 1.8 in MeOH). λ_{max} 209 (MeOH).

O^6-*(14-Methylpentadecanoyl):* [226922-30-1]
$C_{29}H_{48}N_2O_7$ 536.707
Isol. from *Pachastrissa* sp. $[\alpha]_D$ -8.5 (c, 0.9 in MeOH). λ_{max} 209 (MeOH).

O^2-*Hexadecanoyl:* [226922-26-5]
$C_{29}H_{48}N_2O_7$ 536.707
Isol. from *Pachastrissa* sp. $[\alpha]_D$ -9.5 (c, 0.3 in MeOH). λ_{max} 209 (MeOH).

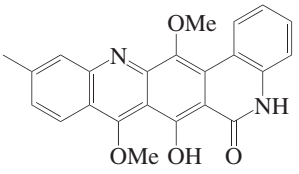
O^6-*Hexadecanoyl:* [226922-27-6]
$C_{29}H_{48}N_2O_7$ 536.707
Isol. from *Pachastrissa* sp. $[\alpha]_D$ -11.4 (c, 1.1 in MeOH). λ_{max} 209 (MeOH).

O^6-*Heneicosanoyl:* ***Digonazole***
[157536-06-6]
$C_{34}H_{58}N_2O_7$ 606.841
Metab. from the marine sponge *Jaspis digonoxea*. Viscous oil. $[\alpha]_D^{20}$ -8.9 (c, 2.2 in $CHCl_3$).

Rodríguez, J. *et al., J. Nat. Prod.*, 1993, **56**, 2034-2040 (*isol, pmr, cmr, struct*)
Rudi, A. *et al., J. Nat. Prod.*, 1994, **57**, 829-836 (*Digonazole*)
Fernandez, R. *et al., J. Nat. Prod.*, 1999, **62**, 678-680 (*Pachastrissa Bengazoles*)
Groweiss, A. *et al., J. Nat. Prod.*, 1999, **62**, 1691-1693 (*isol*)

Benhamycin B-62

[1011287-15-2]



$C_{23}H_{18}N_2O_4$ 386.406

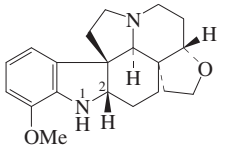
Prod. by *Streptomyces* sp. NR12. Antibacterial agent. Yellow solid. λ_{max} 215 (log ϵ 3.52); 245 (log ϵ 3.61); 348 (log ϵ 3.33); 452 (log ϵ 3.21) (MeOH).

Shaaban, M. *et al., Nat. Prod. Res.*, 2007, **21**, 1205-1211 (*isol, pmr, cmr*)

Beninine B-63

6,21-Epoxy-17-methoxyaspidospermidine, 9CI

[25480-48-2]



Absolute Configuration

$C_{20}H_{26}N_2O_2$ 326.438

Alkaloid from *Hedranthera barteri* (Apocynaceae). Cryst. (EtOAc). Mp 225-227°.

N-*Ac:* Mp 220°. $[\alpha]_D^{25}$ +11 (c, 0.047 in $CHCl_3$).

1,2-Didehydro: ***1,2-Dehydrobeninine****. 1,2-Didehydrobeninine*

[31146-53-9]

$C_{20}H_{24}N_2O_2$ 324.422

Alkaloid from *Hedranthera barteri* (Apocynaceae).

Gorman, A.A. *et al., Helv. Chim. Acta*, 1966, **49**, 2072 (*ir, uv, pmr, ms, struct*)

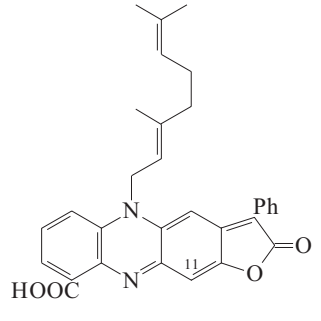
Agwada, V. *et al., Helv. Chim. Acta*, 1970, **53**, 1567 (*Dehydrobeninine*)

Kunesch, N. *et al., Helv. Chim. Acta*, 1977, **60**, 2854 (*cd*)

Benthocyanin A B-64

5-(3,7-Dimethyl-2,6-octadienyl)-2,5-dihydro-2-oxo-3-phenylfuro[2,3-b]phenazine-9-carboxylic acid, 9CI

[133410-66-9]



$C_{31}H_{28}N_2O_4$ 492.573

Phenazine antibiotic. Prod. by *Streptomyces prunicolor*. Free radical scavenger. Antioxidant. Dark blue diamond shaped cryst. Mp 195-196°. λ_{max} 246 (ϵ 30600); 340 (ϵ 18800); 635 (ϵ 16200); 690 (sh) (ϵ 10000) (MeOH/HCl) (Derep). λ_{max} 248 (ϵ 31400); 341 (ϵ 17400); 410 (ϵ 8000); 429 (ϵ 8000); 616 (ϵ 18400); 660 (sh) (ϵ 7000) (MeOH/NaOH) (Derep). λ_{max} 248 (ϵ 29000); 343 (ϵ 18600); 415 (ϵ 6100); 427 (ϵ 7400); 619 (ϵ 17200); 675 (sh) (ϵ 7000) (MeOH) (Derep).

11-Carboxy isomer: 5-(3,7-Dimethyl-2,6-octadienyl)-2,5-dihydro-2-oxo-3-phenylfuro[2,3-b]phenazine-11-carboxylic acid, 9CI. ***Benthocyanin B****. BK 97B1. Antibiotic BK 97B1*

[133683-28-0]

$C_{31}H_{28}N_2O_4$ 492.573

From *Streptomyces prunicolor*. Antioidant, free radical scavenger. Dark blue plates. Mp 235-236°. λ_{max} 246 (ϵ 30600); 340 (ϵ 18800); 635 (ϵ 16200); 690 (sh) (ϵ 10000) (MeOH/HCl) (Derep). λ_{max} 248 (ϵ 31400); 341 (ϵ 17400); 410 (ϵ 8000); 429 (ϵ 8000); 616 (ϵ 18400); 660 (sh) (ϵ 7000) (MeOH/NaOH) (Derep). λ_{max} 248 (ϵ 29000); 343 (ϵ 18600); 415 (ϵ 6100); 427 (ϵ 7400); 619 (ϵ 17200); 675 (sh) (ϵ 7000) (MeOH) (Derep). λ_{max} 205 (ϵ 21900); 249 (ϵ 24400); 344 (ϵ 15900); 415 (ϵ 6100); 430 (ϵ 6100); 615 (ϵ 15700) (MeOH) (Berdy). λ_{max} 208 (ϵ 34900); 250 (ϵ 26400); 343 (ϵ 17400); 415 (ϵ 6500); 430 (ϵ 6500); 615 (ϵ 17300) (MeOH/NaOH) (Berdy). λ_{max} 209 (ϵ 34900); 250 (ϵ 26400); 343 (ϵ 17400); 415 (ϵ 6500); 430 (ϵ 6500); 615 (ϵ 17300) (MeOH/HCl) (Berdy).

Hayakawa, Y. *et al., CA*, 1991, **114**, 225267 (*isol*)

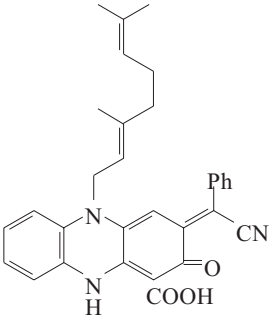
Shin-ya, K. *et al., Tet. Lett.*, 1991, **32**, 943 (*cryst struct*)

Shin-ya, K. *et al., J.O.C.*, 1993, **58**, 4170 (*isol, uv, ir, pmr, cmr*)

Benthocyanin C B-65

3-(Cyanophenylmethylene)-5-(3,7-dimethyl-2,6-octadienyl)-2,3,5,10-tetrahydro-2-oxo-1-phenazinecarboxylic acid, 9CI. BK 97B2. Antibiotic BK 97B2

[133683-29-1]



$C_{31}H_{29}N_3O_3$ 491.588

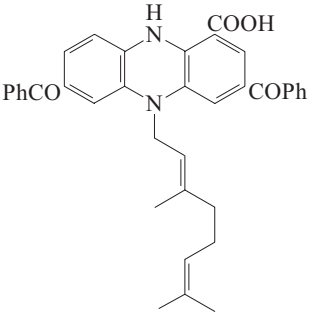
Phenazine antibiotic. Prod. by *Streptomyces prunicolor*. Antioxidant. Free radical scavenger. Violet powder. Mp 157-158°. λ_{max} 247 (ϵ 21100); 280 (ϵ 7800); 325 (ϵ 12100); 410 (ϵ 5300); 430 (ϵ 6400); 665 (ϵ 13100) (MeOH/HCl) (Derep). λ_{max} 251 (ϵ 16300); 335 (ϵ 8000); 410 (ϵ 3600); 440 (ϵ 4400); 535 (ϵ 11600) (MeOH/NaOH) (Derep). λ_{max} 246 (ϵ 18100); 283 (ϵ 11300); 445 (ϵ 5700); 470 (ϵ 5300); 570 (ϵ 11700) (MeOH) (Derep). λ_{max} 208 (ϵ 19700); 246 (ϵ 18100); 283 (ϵ 11300); 445 (ϵ 5700); 470 (ϵ 5300); 570 (ϵ 11700) (MeOH) (Berdy). λ_{max} 209 (ϵ 29500); 251 (ϵ 16300); 335 (ϵ 8000); 410 (ϵ 3600); 440 (ϵ 4400); 535 (ϵ 11600) (MeOH/HCl) (Berdy). λ_{max} 247 (ϵ 21200); 280 (ϵ 7800); 325 (ϵ 12100); 410 (ϵ 5300); 430 (ϵ 6400); 665 (ϵ 13100) (MeOH/NaOH) (Berdy).

Hayakawa, Y. *et al., CA*, 1991, **114**, 225267 (*isol*)

Shin-ya, K. *et al., J.O.C.*, 1993, **58**, 4170 (*isol, uv, ir, pmr, cmr, struct*)

Benthophoenin B-66

[152406-25-2]



$C_{37}H_{34}N_2O_4$ 570.687

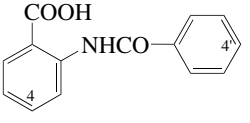
Isol. from the mycelium of *Streptomyces prunicolor*. Free radical scavenger, haemolysis inhibitor. Red powder. Sol. MeOH, Me_2CO, $CHCl_3$; poorly sol. H_2O. Mp 189-190°. λ_{max} 234 (ϵ 28000); 309 (ϵ 36500); 388 (ϵ 7100); 520 (ϵ 12400) (MeOH) (Berdy).

Shin-ya, K. *et al., J. Nat. Prod.*, 1993, **56**, 1255 (*isol, uv, ir, pmr, cmr, struct*)

2-Benzamidobenzoic acid B-67

2-(Benzoylamino)benzoic acid, 9CI. N-*Benzoylanthranilic acid.* ***Dianthramide B***†

[579-93-1]



$C_{14}H_{11}NO_3$ 241.246

The naming system for dianthramides was changed in 1988. Isol. from *Dianthus caryophyllus* (carnation). Phytoalexin. Cryst. (EtOH aq.). Sol. MeOH, EtOAc; poorly sol. H_2O. Mp 183-184°. λ_{max} 207 ; 245 ; 314 (MeOH) (Berdy). λ_{max} 239 ; 281 ; 319 (MeOH/NaOH) (Berdy).

Me ester: [7510-49-8]

$C_{15}H_{13}NO_3$ 255.273

Cryst. (petrol). Mp 101°.

2′-Hydroxy: N-*(2-Hydroxybenzoyl)anthranilic acid. (2-Hydroxybenzamido)benzoic acid.* N-*Salicoylanthranilic*

acid. ***Dianthramide S***
[13316-98-8]
$C_{14}H_{11}NO_4$ 257.245
Constit. of *Dianthus caryophyllus.* Phytoalexin. Cryst. (Me_2CO). Mp 219-220°.

2′-Hydroxy, Me ester: ***Dianthramide S methyl ester***
$C_{15}H_{13}NO_4$ 271.272
Constit. of *Delphinium staphisagria.* Amorph.

4-Hydroxy: 2-Benzamido-4-hydroxybenzoic acid. N-*Benzoyl-4-hydroxyanthranilic acid.* ***4-Hydroxydianthramide B***
[85915-70-4]
$C_{14}H_{11}NO_4$ 257.245
Constit. of *Dianthus caryophyllus.* Phytoalexin.

4-Hydroxy, Me ester: ***4-Hydroxydianthramide B methyl ester***
$C_{15}H_{13}NO_4$ 271.272
Constit. of *Dianthus caryophyllus.* Phytoalexin.

*2′,4-Dihydroxy: 4-Hydroxy-*N-*(2-hydroxybenzoyl)anthranilic acid. 4-Hydroxy-*N-*salicoylanthranilic acid.* ***4-Hydroxydianthramide S***
[115610-40-7]
$C_{14}H_{11}NO_5$ 273.245
Constit. of *Dianthus caryophyllus.* Phytoalexin. Cryst. (EtOH). Mp 262-264°.

2′,4-Dihydroxy, Me ester: Methyl 2-[(2-hydroxybenzoyl)amino]-4-hydroxybenzoate, 9CI. Methyl N-*salicoyl-4-hydroxyanthranilate.* ***Hydroxydianthramide S methyl ester****. Dianthramide B (obsol.)*†
[93289-91-9]
$C_{15}H_{13}NO_5$ 287.271
Constit. of *Dianthus caryophyllus.* Phytoalexin. Sol. MeOH, EtOAc; poorly sol. H_2O. λ_{max} 206 ; 252 ; 277 ; 313 (MeOH) (Berdy). λ_{max} 219 ; 239 ; 269 ; 302 (MeOH/NaOH) (Berdy).

2′,4′-Dihydroxy: N-*(2,4-Dihydroxybenzoyl)anthranilic acid.* N-*Resorcylanthranilic acid.* ***Dianthramide R***
[115610-37-2]
$C_{14}H_{11}NO_5$ 273.245
Constit. of *Dianthus caryophyllus.* Phytoalexin.

2′,4,4′-Trihydroxy: N-*(2,4-Dihydroxybenzoyl)-4-hydroxyanthranilic acid. 4-Hydroxy-*N-*resorcylanthranilic acid.* ***4-Hydroxydianthramide R***
[115610-38-3]
$C_{14}H_{11}NO_6$ 289.244
Constit. of *Dianthus caryophyllus.* Phytoalexin.

4-Methoxy: 2-Benzamido-4-methoxybenzoic acid. N-*Benzoyl-4-methoxyanthranilic acid.* ***4-Methoxydianthramide B***
[109437-82-3]
$C_{15}H_{13}NO_4$ 271.272
Constit. of *Dianthus caryophyllus.* Phytoalexin.

4-Methoxy, Me ester: ***4-Methoxydianthramide B methyl ester***
$C_{16}H_{15}NO_4$ 285.299
Constit. of *Dianthus superbus.* Cytotoxin. Powder. λ_{max} 214 (log ϵ 4.21); 251 (log ϵ 4.44); 278 (log ϵ 4.22); 311 (sh) (log ϵ 4.01) (MeOH).

4-Methoxy, 2′-hydroxy: N-*(2-Hydroxybenzoyl)-4-methoxyanthranilic acid. 4-Methoxy-*N-*salicoylanthranilic acid.* ***4-Methoxydianthramide S****. Dianthramide A (obsol.)*†
[93289-90-8]
$C_{15}H_{13}NO_5$ 287.271
Constit. of *Dianthus caryophyllus.* Phytoalexin. Cryst. (Me_2CO). Mp 216-217°.

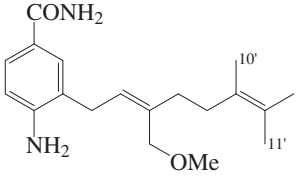
4-Methoxy, 2′,4′-dihydroxy: N-*(2,4-Dihydroxybenzoyl)-4-methoxyanthranilic acid. 4-Methoxy-*N-*resorcylanthranilic acid.* ***4-Methoxydianthramide R***
[115610-39-4]
$C_{15}H_{13}NO_6$ 303.271
Constit. of *Dianthus caryophyllus.* Phytoalexin.

4,4′-Dimethoxy, 2′-hydroxy: N-*(2-Hydroxy-4-methoxybenzoyl)-4-methoxyanthranilic acid.* ***4-Methoxydianthramide M***
[115610-35-0]
$C_{16}H_{15}NO_6$ 317.298
Constit. of *Dianthus caryophyllus.* Phytoalexin.

Zentmeyer, D.T. *et al., J.O.C.*, 1949, **14**, 967-981 (*synth*)
Ponchet, M. *et al., Phytochemistry*, 1984, **23**, 1901-1903; 1988, **27**, 725-730 (*isol, uv, ir, pmr, ms*)
Hauteville, M. *et al., J. Het. Chem.*, 1988, **25**, 715 (*synth, ir, pmr*)
Lee, C.K. *et al., J.O.C.*, 1989, **54**, 3744-3747 (*synth, uv, ir, pmr*)
Hsieh, P.-W. *et al., J. Nat. Prod.*, 2004, **67**, 1522-1527 (*4-Methoxydianthramide B Me ester*)
Diaz, J.G. *et al., Phytochemistry*, 2005, **66**, 733-739 (*Dianthramide S Me ester*)

Benzastatin A B-68

4-Amino-3-[3-(methoxymethyl)-6,7-dimethyl-2,6-octadienyl]benzamide, 9CI
[173429-75-9]



$C_{19}H_{28}N_2O_2$ 316.442
Prod. by *Streptomyces nitrosporeus.* Free radical scavenger. Powder. Sol. MeOH, Me_2CO, $CHCl_3$, EtOAc, DMSO; poorly sol. H_2O. Mp 74°. λ_{max} 206 (ϵ 33880); 284 (ϵ 12880) (MeOH).

Demethoxy: 4-Amino-3-(3,6,7-trimethyl-2,6-octadienyl)benzamide. ***Benzastatin B***
[173429-76-0]
$C_{18}H_{26}N_2O$ 286.416
Prod. by *Streptomyces nitrosporeus.* Free radical scavenger. Powder. Sol. MeOH, $CHCl_3$, DMSO, Me_2CO, EtOAc; poorly sol. H_2O. Mp 98°. λ_{max} 207 (ϵ 32360); 282 (ϵ 13500) (MeOH).

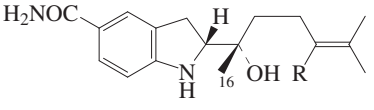
Demethoxy, 10′-hydroxy: ***Benzastatin H***
$C_{18}H_{26}N_2O_2$ 302.416
Prod. by *Streptomyces nitrosporeus.* Neuronal cell protectant. Powder. λ_{max} 206 (log ϵ 4.27); 286 (log ϵ 4.11) (no solvent reported).

Demethoxy, 11′-hydroxy: ***Benzastatin I***
$C_{18}H_{26}N_2O_2$ 302.416
Prod. by *Streptomyces nitrosporeus.* Neuronal cell protectant. Powder. λ_{max} 206 (log ϵ 4.32); 286 (log ϵ 4.14) (no solvent reported).

Kim, W.-G. *et al., J. Antibiot.*, 1996, **49**, 20-25; 26-30 (*Benzastatins A,B*)
Kim, W.-G. *et al., J. Antibiot.*, 2001, **54**, 513-516 (*Benzastatins H,I*)

Benzastatin F B-69

[189309-08-8]



R = CH_3

$C_{18}H_{26}N_2O_2$ 302.416
Prod. by *Streptomyces nitrosporeus.* Neuronal cell protecting agent. Powder. $[\alpha]_D^{18}$ +18 (c, 0.1 in MeOH). λ_{max} 206 (ϵ 19500); 230 (sh) ; 303 (ϵ 11000) (MeOH). λ_{max} 207 (ϵ 21300); 230 ; 303 (ϵ 11000) (MeOH) (Berdy).

16-Methoxy: ***Benzastatin E***
[189309-07-7]
$C_{19}H_{28}N_2O_3$ 332.442
Prod. by *Streptomyces nitrosporeus.* Neuronal cell protecting agent. Powder. $[\alpha]_D^{18}$ +17 (c, 0.1 in MeOH). λ_{max} 207 (ϵ 21300); 230 (sh) ; 303 (ϵ 11000) (MeOH).

Kim, W.-G. *et al., Tetrahedron*, 1997, **53**, 4309-4316 (*isol, uv, ir, pmr, cmr, ms*)
Toda, N. *et al., Org. Lett.*, 2003, **5**, 269-271 (*synth*)

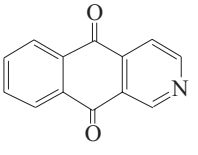
Benzastatin G B-70

[189309-09-9]
As Benzastatin F, B-69 with
R = H
$C_{17}H_{24}N_2O_2$ 288.389
Prod. by *Streptomyces nitrosporeus.* Neuronal cell protecting agent. Powder. $[\alpha]_D^{18}$ +23 (c, 0.1 in MeOH). λ_{max} 206 (ϵ 18000); 230 (sh) ; 301 (ϵ 8900) (MeOH).

Kim, W.-G. *et al., Tetrahedron*, 1997, **53**, 4309-4316 (*isol, uv, ir, pmr, cmr, ms*)

Benz[*g*]isoquinoline-5,10-dione B-71

Biquidone. 2-Azaanthraquinone. 3,4-Phthaloylpyridine. β-Anthrapyridinequinone
[46492-08-4]



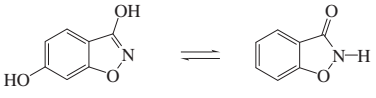
$C_{13}H_7NO_2$ 209.204
Alkaloid from *Mitracarpus scaber* and *Psychotria camponutans*. Shows antimicrobial activity. Yellow needles (C_6H_6 or CCl_4). Mp 181-183° (179°). Insect teratogen. λ_{max} 209 ; 249 (MeOH) (Berdy).

N-*Oxide:* [21628-57-9]
$C_{13}H_7NO_3$ 225.203
Yellow cryst. (EtOH). Mp 263°.

Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 462A (*nmr*)
Philips, A. *et al., Ber.*, 1894, **27**, 1923 (*synth*)
Étienne, A. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1978, **267**, 1826 (*deriv*)
Walton, B.T. *et al., Science (Washington, D.C.)*, 1983, **222**, 422 (*tox*)
Khanapure, S.S.P. *et al., Heterocycles*, 1988, **27**, 2643 (*synth*)
Ohgaki, E. *et al., J.C.S. Perkin 1*, 1990, 3109 (*synth, ir, pmr*)
Solis, P.N. *et al., Planta Med.*, 1995, **61**, 62 (*isol, uv, ir, pmr, cmr, ms, struct*)
Okunade, A.L. *et al., Planta Med.*, 1999, **65**, 447-448 (*isol, cmr, activity*)
Rebstock, A.-S. *et al., Org. Biomol. Chem.*, 2004, **2**, 291-295 (*synth*)

1,2-Benzisoxazole-3,6-diol B-72

*6-Hydroxy-1,2-benzisoxazol-3(2*H*)-one, 9CI. 3,6-Dihydroxy-1,2-benzisoxazole. Bactropone. Y-T 0678H. Antibiotic Y-T 0678H*
[86004-57-1]

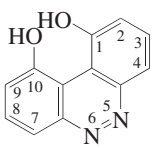


$C_7H_5NO_3$ 151.121
Exists in *NH*-form. Prod. by *Chromobacterium violaceum*. Active against gram-negative bacteria. Cryst. (EtOAc). Mp 248-250° dec. pK_{a1} 6.2; pK_{a2} 10.7 (2-methoxyethanol). λ_{max} 206 (ϵ 21100); 252 (ϵ 8230); 260 (sh); 280 (sh); 283 (ϵ 6340); 290 (ϵ 6340) (MeOH/HCl) (Derep). λ_{max} 220 (sh); 237 (ϵ 18100); 264 (ϵ 4380); 273 (sh); 296 (ϵ 5590) (MeOH/NaOH) (Derep). λ_{max} 220 (ϵ 18000); 251 (ϵ 6800); 259 (sh) (ϵ 6160); 273 (sh) (ϵ 4380); 279 (sh) (ϵ 5160); 283 (ϵ 6000); 289 (ϵ 5800) (MeOH) (Derep).
▶ DE4936000

[75661-62-0]

Japan. Pat., 1980, 80 102 597; *CA*, **93**, 236929 (*isol*)
Hamada, M. *et al., J. Antibiot.*, 1983, **36**, 445
Imai, H. *et al., J. Antibiot.*, 1983, **36**, 911

Benzo[*c*]cinnoline-1,10-diol, 9CI B-73

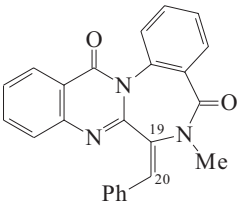


$C_{12}H_8N_2O_2$ 212.207

Di-Me ether: 1,10-Dimethoxybenzo[c]cinnoline. Antibiotic 4849F. 4849F
$C_{14}H_{12}N_2O_2$ 240.261
Prod. by *Streptomyces* sp. 4849. Inhibitor of IL-4 receptor. Yellow needles. Mp 233-235°. λ_{max} 270 (MeOH).
Wang, K. *et al., J. Antibiot.*, 2007, **60**, 325-327 (*di-Me ether, isol, pmr, cmr*)

Benzomalvin B B-74

6,7-Dihydro-6-methyl-7-(phenylmethylene)quinazolino[3,2-a][1,4]benzodiazepine-5,13-dione, 9CI
[157047-97-7]



$C_{24}H_{17}N_3O_2$ 379.417
Chiral molecule. Prod. by a *Penicillium* sp. Substance P inhibitor. Neurokinin receptor antagonist. Solid. Sol. MeOH, EtOAc; poorly sol. H_2O. Mp 260°. $[\alpha]_D$ +158 (c, 0.59 in MeOH). Related to Asperlicin C, A-1479. λ_{max} 234 (ϵ 19600); 269 (ϵ 7400); 280 (ϵ 6000); 312 (ϵ 3100); 323 (ϵ 2300) (MeOH) (Derep). λ_{max} 229 (ϵ 30000); 236 (ϵ 30100); 265 (ϵ 13800); 284 (ϵ 12700); 312 (ϵ 6500); 326 (ϵ 4700) (MeOH) (Berdy).

19α,20α-Epoxide: ***Benzomalvin C***
[157047-98-8]
$C_{24}H_{17}N_3O_3$ 395.417
Prod. by a *Penicillium* sp. Substance P inhibitor. Needles (MeOH aq.). Sol. MeOH, EtOAc; poorly sol. H_2O. $[\alpha]_D$ +69.7 (c, 0.38 in MeOH). λ_{max} 234 (ϵ 19600); 269 (ϵ 7400); 280 (ϵ 6000); 312 (ϵ 3100); 323 (ϵ 2300) (MeOH) (Derep). λ_{max} 229 (ϵ 27600); 273 (ϵ 6700); 283 (ϵ 5900); 312 (ϵ 2800); 323 (ϵ 2200) (MeOH) (Berdy).

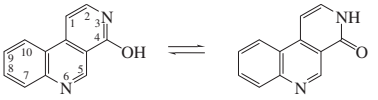
19α,20-Dihydro: ***Benzomalvin A***
[157047-96-6]
$C_{24}H_{19}N_3O_2$ 381.433
Prod. by a *Penicillium* sp. Substance P inhibitor. Solid. Sol. MeOH, EtOAc; poorly sol. H_2O. Mp 105-115°. $[\alpha]_D$ -106 (c, 1 in MeOH). λ_{max} 234 (ϵ 19600); 269 (ϵ 7400); 280 (ϵ 6000); 312 (ϵ 3100); 323 (ϵ 2300) (MeOH) (Derep).

19,20-Dihydro, atropisomer: ***Benzomalvin D***
[173007-03-9]
$C_{24}H_{19}N_3O_2$ 381.433
Prod. by a *Penicillium* sp. Solid. Sol. MeOH, EtOAc. $[\alpha]_D^{25}$ +48. Benzomalvins A and D interconvert in soln. to form a 4:1 mixt. at r.t. and are separable by hplc. λ_{max} 234 ; 269 ; 280 ; 312 ; 323 (MeOH) (Berdy).

Sun, H.H. *et al., J. Antibiot.*, 1994, **47**, 515 (*isol, pmr, cmr, uv, ir*)
Sun, H.H. *et al., J. Nat. Prod.*, 1995, **58**, 1575 (*Benzomalvin D, isol, pmr, cmr*)
Sugimori, T. *et al., Tetrahedron*, 1998, **54**, 7997-8008 (*synth, Benzomalvin A*)
Liu, J.-F. *et al., J.O.C.*, 2005, **70**, 10488-10493 (*Benzomalvin A, synth*)

Benzo[*c*][2,7]naphthyridin-4-ol B-75

*Benzo[c][2,7]naphthyridin-4(3*H*)-one, 9CI. 4-Hydroxybenzo[c][2,7]naphthyridine. 2,9-Diazaphenanthren-1(2*H*)-one.* ***Perlolidine****. Samoquasine A*
[7344-61-8]
[62574-41-8 (Samoquasine A)]



$C_{12}H_8N_2O$ 196.208
Samoquasine A finally shown to be identical with Perlolidine in 2008. Alkaloid from *Lolium perenne* and *Annona squamosa* (sugar apple). Mp 338-345° (332-334°). pK_{a1} 4.01; pK_{a2} 11.39 (18°). λ_{max} 239 (ϵ 50300); 243 (ϵ 49300); 252 (ϵ 45000); 322 (ϵ 11600); 337 (ϵ 13800) (EtOH aq.). λ_{max} 240 (ϵ 19400); 249 (ϵ 23500); 256 (ϵ 28000); 272 (ϵ 10700); 283 (ϵ 8800); 377 (ϵ 12200) (0.01M HCl). λ_{max} 237 ; 284 ; 325 ; 355 (0.01M NaOH).

OH-form

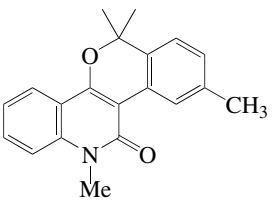
Me ether: 4-Methoxybenzo[c][2,7]-naphthyridine
[156780-62-0]
$C_{13}H_{10}N_2O$ 210.235
Cryst. Mp 88° Mp 139-141°.

Et ether: 4-Ethoxybenzo[c][2,7]-naphthyridine
[399039-97-5]
$C_{14}H_{12}N_2O$ 224.262
Beige cryst. Mp 104°.

Grimmett, R.E.R. *et al., N.Z. J. Sci. Technol., Sect. B*, 1943, **24**, 151 (*isol*)
White, E.P. *et al., N.Z. J. Sci. Technol., Sect. B*, 1946, **27**, 242
Powers, J.C. *et al., J.A.C.S.*, 1968, **90**, 7102 (*synth, uv, ir, ms*)
Lalezari, I. *et al., J. Het. Chem.*, 1980, **17**, 1761 (*synth, ms*)
Bracher, F. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1989, **322**, 511 (*synth, pmr, ms*)
Rocca, P. *et al., J.O.C.*, 1993, **58**, 7832 (*synth, pmr, ir*)
Björk, P. *et al., Heterocycles*, 1997, **44**, 237-253 (*synth, Me ether*)
Duvey, G. *et al., J. Het. Chem.*, 2001, **38**, 1039-1044 (*Me ether, Et ether*)
Yang, Y.-L. *et al., Tet. Lett.*, 2003, **44**, 319-322 (*isol, pmr, cmr*)
Timmons, C. *et al., J.O.C.*, 2008, **73**, 9168-9170 (*Samoquasine A*)

Benzosimuline B-76

[198336-58-2]

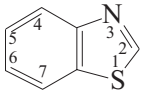


$C_{20}H_{19}NO_2$ 305.376
Alkaloid from the bark of *Zanthoxylum simulans* (Szechuan pepper) (Rutaceae). Oil. λ_{max} 210 (log ϵ 4.19); 233 (log ϵ 4.42); 250 (sh) (log ϵ 4.05); 268 (log ϵ 3.95); 310 (sh) (log ϵ 3.74); 320 (sh) (log ϵ 3.79); 331 (log ϵ 3.86); 346 (log ϵ 3.94); 365 (log ϵ 3.81) (EtOH).

Chen, I.-S. *et al., Phytochemistry*, 1997, **46**, 525-529 (*isol, uv, ir, pmr, cmr*)

Benzothiazole, 9CI B-77

[95-16-9]



C_7H_5NS 135.189
Isol. from tail glands of the red deer *Cervus elaphus* and cranberries. Used in synth. of α-hydroxy carbonyl compounds. Sol. EtOH, CS_2, v. spar. sol. H_2O. Bp 223-225° Bp_{25} 119-120°. pK_a 1.2 (H_2O). Steam-volatile.

▶ Fl. p. 112°. LD_{50} (rat, orl) 466 mg/kg; LD_{50} (mus, orl) 900 mg/kg. DL0875000
Picrate: Mp 176°.

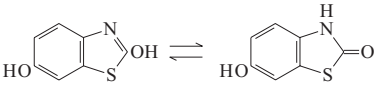
N-*Oxide:* [27655-38-5]
C_7H_5NOS 151.189
Prisms + $1H_2O$ (MeOAc or Et_2O). Mp 45-48°.

Methiodide: [2786-31-4]
Needles. Mp 210°.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 699C (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 200A (*nmr*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 1511A (*ir*)
Reid, W. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1962, **295**, 143 (*synth*)
Ellis, B. *et al., Spectrochim. Acta*, 1965, **21**, 1881 (*uv*)
Anjou, K. *et al., Acta Chem. Scand.*, 1967, **21**, 2076-2082 (*isol*)
Takahashi, S. *et al., Chem. Pharm. Bull.*, 1970, **18**, 1176 (*oxide*)
Witanowski, M. *et al., Tetrahedron*, 1972, **28**, 637 (*nmr*)
Selva, A. *et al., Org. Mass Spectrom.*, 1974, **9**, 1161 (*ms*)
Diehl, P. *et al., Org. Magn. Reson.*, 1976, **8**, 155 (*pmr*)
Faure, R. *et al., Can. J. Chem.*, 1978, **56**, 46 (*cmr*)
Fieser and Fieser's Reagents for Organic Synthesis, Wiley, 1980, **8**, 274; 1990, **15**, 20 (*use*)
Angelelli, J.M. *et al., Spectrosc. Lett.*, 1980, **13**, 741 (*ir*)
Bakke, J.M. *et al., J. Chem. Ecol.*, 1983, **9**, 513
Bieräugel, H. *et al., Tetrahedron*, 1983, **39**, 3971 (*synth*)
Bordwell, F.G. *et al., J.A.C.S.*, 1991, **113**, 985 (*deriv, synth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, BDE500

2,6-Benzothiazolediol B-78

2,6-Dihydroxybenzothiazole. 6-Hydroxy-2(3H)-benzothiazolone
[80567-65-3]



$C_7H_5NO_2S$ 167.188
Mp 233-235°.

6-Me ether: 6-Methoxy-2(3H)-benzothiazolone
[40925-65-3]
$C_7H_5NO_2S$ 167.188
Mp 163-165°.

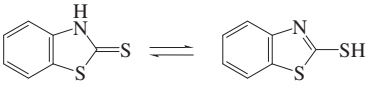
NH-form

N-*Me: 6-Hydroxy-3-methyl-2(3H)-benzothiazolone*
[96489-25-7]
$C_8H_7NO_2S$ 181.215
Prod. by a *Micrococcus* sp. found in *Tedania ignis*. Solid (EtOH). Mp 182-183°.

Jones, G.H. *et al., J. Med. Chem.*, 1987, **30**, 295 (*synth*)
Stierle, A.A. *et al., Tet. Lett.*, 1991, **32**, 4847 (*isol, deriv*)
Delhomel, J.F. *et al., J. Het. Chem.*, 2001, **38**, 633-639 (*N-Me*)

2(3*H*)-Benzothiazolethione, 9CI B-79

2-Benzothiazolethiol. 2-Mercaptobenzothiazole. 2-Benzothiazolinethione. Accelerator M. Accel M. Captax. Kaptax. Pneumax MBT. Thiotax. Vulkacit M. Wobezit M
[149-30-4]



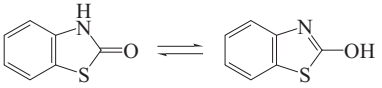
$C_7H_5NS_2$ 167.255
NH-form predominates. Isol. from a *Micrococcus* sp. in *Tedania ignis*. Also present in cranberries. Vulcanisation accelerator. Used as 1% $CHCl_3$ soln. for separation pptn. of Au, $I^{\ominus}$; photometric detn. of Pd, Os, Rh, Se, Ni (λ_{max} 750 nm). Needles (MeOH aq.). Spar. sol. EtOH, Et_2O, AcOH; insol. H_2O; sol. alkalis. Mp 177-179°. Readily oxidised to the disulfide.
▶ LD_{50} (rat, orl) 100 mg/kg. Exp. carcinogen. Exp. reprod. and teratogenic effects. DL6475000

[2492-26-4 , 37437-20-0 , 155-04-4]

Chesick, J.P. *et al., Acta Cryst. B*, 1971, **27**, 1441 (*cryst struct*)
DeJongh, D.C. *et al., Adv. Mass Spectrom.*, 1974, **6**, 99 (*ms*)
Faure, R. *et al., Org. Magn. Reson.*, 1978, **11**, 617 (*cmr, tautom*)
Cristiani, F. *et al., Phosphorus Sulfur Relat. Elem.*, 1984, **20**, 231 (*ir*)
Radha, A. *et al., Z. Kristallogr., Kristallgeom., Kristallphys., Kristallchem.*, 1985, **171**, 225 (*cryst struct*)
Stierle, A.A. *et al., Tet. Lett.*, 1991, **32**, 4847-4848 (*isol*)

2-Benzothiazolol B-80

2(3H)-Benzothiazolone, 9CI. 2-Benzothiazolinone. 2-Hydroxybenzothiazole



C_7H_5NOS 151.189
NH-form predominates. Prod. by a *Micrococcus* sp. found in *Tedania ignis*. Gives colour reaction with Pd (λ_{max} 368 nm). Needles (EtOH). Mp 138-139°.

Faure, R. *et al., Org. Magn. Reson.*, 1978, **11**, 617 (*tautom, cmr*)
Stierle, A.A. *et al., Tet. Lett.*, 1991, **32**, 4847 (*isol*)

2,4-Benzoxazolediol B-81

4-Hydroxy-2(3H)-benzoxazolone, 9CI. 4-Hydroxy-2-benzoxazolinone. 2,4-Dihydroxybenzoxazole
[28955-70-6]



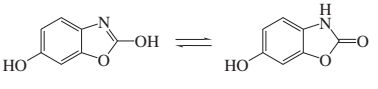
$C_7H_5NO_3$ 151.121
Exists in *NH*-form. Needles (H_2O). Mp 281-283° dec.

4-O-β-D-Glucopyranoside:
$C_{13}H_{15}NO_8$ 313.263
Constit. of *Acanthus ilicifolius*. Pale yellow solid. Mp 131-133°. λ_{max} 228 ; 265 (MeOH).

Zinner, H. *et al., Chem. Ber.*, 1960, **93**, 1331-1339 (*synth*)
Huo, C. *et al., Magn. Reson. Chem.*, 2005, **43**, 343-345 (*glucoside*)

2,6-Benzoxazolediol B-82

6-Hydroxy-2(3H)-benzoxazolone, 9CI. 6-Hydroxy-2-benzoxazolinone. 2,6-Dihydroxybenzoxazole
[78213-03-3]



$C_7H_5NO_3$ 151.121
Exists in *NH*-form. Alkaloid from *Acanthus arboreus*. Needles (H_2O) or pale yellow cryst. Mp 288-292° (260°). λ_{max} 268 ; 302 ; 305 ; 340 (MeOH).

6-Me ether: 2-Hydroxy-6-methoxybenzoxazole. 6-Methoxy-2(3H)-benzoxazolone. 6-Methoxy-2-benzoxazolinone. 6-Methoxy-2-benzoxazolol. MBOA. Coixol
[532-91-2]
$C_8H_7NO_3$ 165.148
Isol. from roots of *Coix lacryma jobi* (Job's tears) (Poaceae) and from seedlings of several cereal plants, e.g. wheat (*Triticum aestivum*), corn (*Zea mays*) and rye (*Secale cereale*). Also present in all plant parts of *Scoparia dulcis* (Scrophulariaceae)and isol from a

marine sponge *Oceanapia* sp. Disease and insect attack inhibitor in plants. Toxic to brine shrimp. Pink cryst. (MeOH aq.). Sol. bases, EtOH, Et_2O, C_6H_6; fairly sol. H_2O; poorly sol. hexane. Mp 160-161° (154-155°). λ_{max} 229 ; 286 (H_2O) (Berdy).

▶ DM5275200

NH-form

N-*Me:* [359434-29-0]
$C_8H_7NO_3$ 165.148
Solid (EtOH). Mp 203-204°.

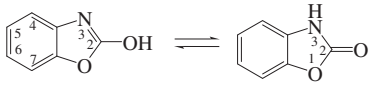
6-Me ether, N-*Ac:* [62655-08-7]
$C_{10}H_9NO_4$ 207.185
Needles. Mp 147.5°.

6-Me ether, N-*benzoyl:*
$C_{15}H_{11}NO_4$ 269.256
Needles. Mp 162-162.5°.

Koyama, T. *et al., Yakugaku Zasshi*, 1955, **75**, 699-701; *CA*, **50**, 34029 (*6-Me ether*)
Beck, S.D. *et al., J. Agric. Food Chem.*, 1957, **5**, 933-935 (*6-Me ether, detn*)
Smissman, E.E. *et al., J.A.C.S.*, 1957, **79**, 4697-4698 (*6-Me ether, isol, synth*)
Hietala, P.K. *et al., Acta Chem. Scand.*, 1958, **12**, 119-123 (*detn*)
Wahlroos, O. *et al., Acta Chem. Scand.*, 1958, **12**, 124-128 (*activity, 6-Me ether*)
List, P.H. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1959, **292**, 452-456 (*6-Me ether*)
Zinner, H. *et al., Chem. Ber.*, 1960, **93**, 1331-1339 (*synth*)
Allen, E.H. *et al., J.O.C.*, 1971, **36**, 2004-2005 (*6-Me ether*)
Richey, J.D. *et al., Agric. Biol. Chem.*, 1976, **40**, 2413-2416 (*6-Me ether, synth*)
Kubo, I. *et al., Experientia*, 1983, **39**, 355 (*6-Me ether, synth*)
Cole, E.R. *et al., Aust. J. Chem.*, 1986, **39**, 295-301 (*synth, ir, pmr*)
Sicher, D. *et al., Synthesis*, 1989, 875-876 (*6-Me ether*)
Maleski, R.J. *et al., J. Het. Chem.*, 1991, **28**, 1937-1939 (***synth***)
Bjostad, L.B. *et al., J. Chem. Ecol.*, 1992, **18**, 931-944 (*6-Me ether, isol*)
Hayashi, T. *et al., Phytochemistry*, 1994, **37**, 1611-1614 (*6-Me ether, occur*)
Venkateswarlu, Y. *et al., Biochem. Syst. Ecol.*, 1999, **27**, 519-520 (*6-Me ether, isol, activity*)
Delhomel, J.F. *et al., J. Het. Chem.*, 2001, **38**, 633-639 (*N-Me*)
Amer, M.E. *et al., J. Braz. Chem. Soc.*, 2004, **15**, 262-266 (*isol*)

2-Benzoxazolol B-83

*2(3*H*)-Benzoxazolone, 9CI. 2-Benzoxazolinone, 8CI. 2-Hydroxybenzoxazole. BOA*
[59-49-4]



$C_7H_5NO_2$ 135.122

Tautomeric. *NH*-form predominates. Found in rye seedlings. Sol. bases, Et_2O; fairly sol. H_2O; poorly sol. hexane. Mp 141-142°. pK_{a1} 8.9 (23°). λ_{max} 270 (H_2O) (Berdy). λ_{max} 275 (EtOH) (Berdy).

▶ LD_{50} (rat, orl) 700 mg/kg. LD_{50} (mus, orl) 554 mg/kg. DM4905000

Thompson, M.L. *et al., Can. J. Chem.*, 1973, **51**, 3313 (*ms*)
Llinares, J. *et al., Can. J. Chem.*, 1979, **57**, 937 (*cmr, tautom*)
Barnes, J.P. *et al., Phytochemistry*, 1987, **26**, 1385-1390 (*isol*)
Maleski, R.J. *et al., J. Het. Chem.*, 1991, **28**, 1937 (***synth***)
El-Faham, A. *et al., J. Het. Chem.*, 2006, **43**, 599-606 (*synth, ir, pmr, cmr, ms*)

Benzylamine, 8CI B-84

Benzenemethanamine, 9CI. α-Aminotoluene. Moringine
[100-46-9]
$PhCH_2NH_2$
C_7H_9N 107.155

Alkaloid from *Moringa oleifera* (horseradish tree) (Moringaceae). Reagent for gc anal. of alkyl isocyanates. d_4^{19} 0.98. Bp 185° Bp_{12} 90°. n_D^{20} 1.5401. pK_a 8.82 (20°, 60% dioxan aq.). Absorbs CO_2 from air.

▶ Fl. p. 63°. Reacts violently with *N*-haloimides. Corrosive and irritating to all tissues. DP1488500

Hydrochloride: [3287-99-8]
Mp 255-257°.

▶ DP5425000

Hydrobromide: [37488-40-7]
Mp 204°.

Hydroiodide: [45579-91-7]
Leaflets. Mp 162°.

Picrate: Mp 194°.

Sulfate: [2208-34-6]
Needles. Mp 93°.

N-*Ac:* N-*(Phenylmethyl)acetamide, 9CI*
[588-46-5]
$C_9H_{11}NO$ 149.192
Leaflets (petrol). Mp 61°.

▶ AB4546300

N-*Benzoyl:* N-*Benzylbenzamide*
[1485-70-7]
$C_{14}H_{13}NO$ 211.263
Constit. of the stems of *Salvadora persica*. Leaflets. Mp 105-106°.

N-tert-*Butyloxycarbonyl:*
$C_{12}H_{17}NO_2$ 207.272
Needles (petrol). Mp 53.5-55°.

N-*(4-Methylbenzenesulfonyl):*
$C_{14}H_{15}NO_2S$ 261.344
Mp 185°.

N-*Me:* [103-67-3]
$C_8H_{11}N$ 121.182
Minor constit. of Ma Huang (from *Ephedra* sp.). Bp 180-181° Bp_{14} 78°.

N-*Me; hydrochloride:* [13426-94-3]
Needles (EtOH/Et_2O). Mp 178°.

▶ DP5950000

N-*Me,* N-*nitroso: Benzylmethylnitrosamine*
[937-40-6]
$C_8H_{10}N_2O$ 150.18
Liq. Bp_{18} 145° $Bp_{0.3}$ 80°. $n_D^{31.5}$ 1.5388.

N,N-*Di-Me:* [103-83-3]
$C_9H_{13}N$ 135.208
Liq. Bp 181° Bp_{15} 66-67°. Steam-volatile.

▶ Corrosive and irritating to all tissues. LD_{50} (rat, orl) 265 mg/kg. LD_{50} (rbt, skn) 1660 mg/kg. Flammable, fl. p. 54°. DP4500000

N,N-*Di-Me; hydrochloride:* [1875-92-9]
Mp 175°.

▶ DP4700000

N,N-*Di-Et:* [772-54-3]
$C_{11}H_{17}N$ 163.262
Bp 211-212° Bp_{15} 94°.

▶ Fl. p. 77° (oc).

N-*Propyl:* [2032-33-9]
$C_{10}H_{15}N$ 149.235
Oil. Bp 214-216° Bp_{100} 129° $Bp_{0.2}$ 40-42°.

N-*Isopropyl:* N-*Benzylisopropylamine*
[102-97-6]
$C_{10}H_{15}N$ 149.235
Bp 200°.

N-*Butyl:* [2403-22-7]
$C_{11}H_{17}N$ 163.262
Bp_3 87-89°. n_D^{20} 1.5010.

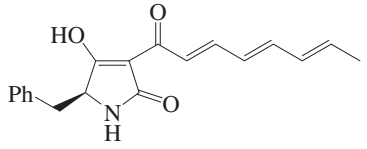
N-tert-*Butyl:* [3378-72-1]
$C_{11}H_{17}N$ 163.262
Bp_5 80°.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 1266B; 1266C; 1274A; 1274C; 1274D; 1275A; 1279B; **2**, 366B (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **2**, 565B; 565C; 581B; 582A; 582B; 582C; 589A; 1385A (*nmr*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 1163A; 1165D; 1166B; 1166C; 1167D (*ir*)
Chen, A.L. *et al., J. Am. Pharm. Assoc.*, 1931, **20**, 339 (*isol, derivs*)
Wegler, R. *et al., Ber.*, 1936, **69**, 2074 (*N,N-di-Et*)
Chakravarti, R.N. *et al., CA*, 1955, **50**, 16891f (*isol*)
Looney, C.E. *et al., J.A.C.S.*, 1957, **79**, 6136 (*N-Me N-nitroso, synth, pmr, ir*)
Leyson, R. *et al., Spectrochim. Acta*, 1963, **19**, 243 (*ir*)
Fieser and Fieser's Reagents for Organic Synthesis, Wiley, 1967, **1**, 51; 1975, **5**, 479; 1980, **8**, 70; 1982, **10**, 26 (*use*)
Witanowski, M. *et al., Can. J. Chem.*, 1969, **47**, 1321 (*N-15 nmr*)
Egli, R.A. *et al., Helv. Chim. Acta*, 1970, **53**, 47 (*synth*)
Aihara, A. *et al., Bull. Chem. Soc. Jpn.*, 1972, **45**, 1942 (*pmr*)
Lichter, R.L. *et al., J.A.C.S.*, 1972, **94**, 2495 (*N-15 nmr*)
Shapiro, M.J. *et al., J.O.C.*, 1976, **41**, 3197 (*cmr*)
Kostyanovsky, R.G. *et al., Org. Mass Spectrom.*, 1976, **11**, 237 (*ms*)
Knights, R.J. *et al., Anal. Biochem.*, 1977, **77**, 106 (*use*)
Bastaert, G. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1980, **290**, 193 (*uv*)
Bradamante, S. *et al., J.O.C.*, 1980, **45**, 105 (*cmr*)
Garrido, D.O.A. *et al., J.O.C.*, 1984, **49**, 2021 (*N-Alkyl derivs, synth, cmr*)
Boyer, J.H. *et al., Synthesis*, 1985, 677-679 (*N-Me N-nitroso*)
Elmore, D.T. *et al., Acta Cryst. C*, 1992, **48**, 1331 (*cryst struct*)
Ding, C.Z. *et al., J. Med. Chem.*, 1993, **36**, 1711 (*N,N-di-Me*)
Bhattacharyya, S. *et al., Synth. Commun.*, 1995, **25**, 2061 (*N,N-di-Me*)
Kanie, K. *et al., Bull. Chem. Soc. Jpn.*, 1998, **71**, 1973-1991 (*N-propyl*)
Collins, C.J. *et al., J.O.C.*, 1999, **64**, 2574-2576 (*N,N-di-Me, synth, pmr, cmr*)
Degani, I. *et al., Synthesis*, 1999, 1200-1208 (*N-benzoyl*)
Gibson, S.E. *et al., Org. Biomol. Chem.*, 2003, **1**, 676-683 (*N-boc, synth, ir, pmr*)
Khalil, A.T. *et al., Arch. Pharmacal Res.*, 2006, **29**, 952-956 (*N-Benzylbenzamide, isol, pmr, cmr*)

Bretherick, L. *et al., Handbook of Reactive Chemical Hazards, 4th edn., Butterworths*, 1990, 2631
Luxon, S.G. *et al., Hazards in the Chemical Laboratory, 5th edn., Royal Society of Chemistry*, 1992, 122
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, BDY000; DQQ000; DQP800

5-Benzyl-2,5-dihydro-4-hydroxy-3-(2,4,6-octatrienoyl)-1*H*-pyrrol-2-one B-85

*2,5-Dihydro-4-hydroxy-3-(1-oxo-2,4,6-octatrienyl)-5-(phenylmethyl)-1*H*-pyrrol-2-one*



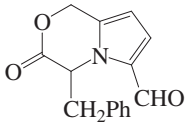
$C_{19}H_{19}NO_3$ 309.364

Enolised β-tricarbonyl compd. Isol. from *Leocarpus fragilis*. No phys. props. reported.

N-*Me: 2,5-Dihydro-4-hydroxy-1-methyl-3-(1-oxo-2,4,6-octatrienyl)-5-(phenylmethyl)-1*H*-pyrrol-2-one*
$C_{20}H_{21}NO_3$ 323.391
Isol. from *Leocarpus fragilis*.

Steglich, W. *et al., Pure Appl. Chem.*, 1989, **61**, 281-288

4-Benzyl-1,4-dihydro-3-oxo-3*H*-pyrrolo[2,1-*c*][1,4]oxazine-6-carboxaldehyde B-86



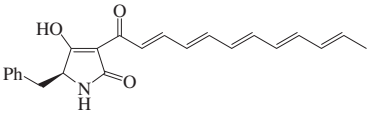
$C_{15}H_{13}NO_3$ 255.273

Alkaloid from the fruit of *Celastrus orbiculatus*. Cryst. ($CHCl_3$). Mp 112-114°. λ_{max} 291 (MeOH).

Guo, Y. *et al., Fitoterapia*, 2005, **76**, 273-275 (*isol, pmr, cmr*)

5-Benzyl-3-(2,4,6,8,10-dodecapentaenoyl)-2,5-dihydro-4-hydroxy-1*H*-pyrrol-2-one B-87

*2,5-Dihydro-4-hydroxy-3-(1-oxo-2,4,6,8,10-dodecapentaenyl)-5-(phenylmethyl)-1*H*-pyrrol-2-one*



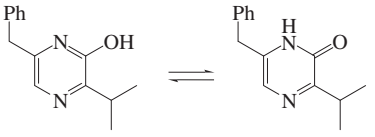
$C_{23}H_{23}NO_3$ 361.44

Enolised β-tricarbonyl compd. Isol. from *Leocarpus fragilis*. No phys. props. reported.

Steglich, W. *et al., Pure Appl. Chem.*, 1989, **61**, 281-288

5-Benzyl-3-hydroxy-2-isopropylpyrazine B-88

*3-(1-Methylethyl)-6-(phenylmethyl)-2(1*H*)-pyrazinone. 6-Benzyl-3-isopropyl-2(1*H*)-pyrazinone. 6-Benzyl-3-isopropyl-2-pyrazinol*. ***Phevalin***
[170713-71-0]



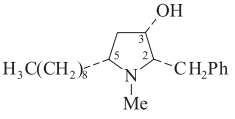
$C_{14}H_{16}N_2O$ 228.293

Prod. by *Streptomyces* sp. SC433. Calpain inhibitor. Sol. MeOH, EtOAc; poorly sol. H_2O. λ_{max} 205 (ε 2860); 325 (ε 1296) (MeOH).

Alvarez, M.E. *et al., J. Antibiot.*, 1995, **48**, 1165 (*isol, uv, ir, pmr, cmr, ms*)

2-Benzyl-3-hydroxy-1-methyl-5-nonylpyrrolidine B-89

1-Methyl-5-nonyl-2-(phenylmethyl)-3-pyrrolidinol, 9CI
[119463-16-0]



(2*S*,3*S*,5*R*)-*form*

$C_{21}H_{35}NO$ 317.514

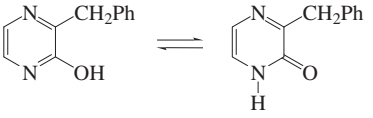
(2*S*,3*S*,5*R*)-*form*
Preussin. *L 657398*. *Antibiotic L 657398*
[125356-66-3]
Isol. from a *Preussia* sp. and *Aspergillus ochraceus*. Broad-spectrum antifungal agent. Yellow oil. $[\alpha]_D^{25}$ +22 (c, 1 in $CHCl_3$) (natural). $[\alpha]_D^{25}$ +31.1 (c, 1 in $CHCl_3$) (synthetic). λ_{max} 203 (ε 12900) (MeOH) (Derep).

(2*R*,3*R*,5*S*)-*form*
Synthetic.
Yellowish wax-like solid. $[\alpha]_D^{26}$ -21.6 (c, 1.0 in $CHCl_3$).

Schwartz, R.E. *et al., J. Antibiot.*, 1988, **41**, 1774 (*L 657398*)
Johnson, J.H. *et al., J. Antibiot.*, 1989, **42**, 1184 (*Preussin*)
Pak, C.S. *et al., J.O.C.*, 1991, **56**, 1128 (*synth*)
Shimazaki, M. *et al., Heterocycles*, 1993, **36**, 1823 (*synth*)
Deng, W. *et al., J.A.C.S.*, 1994, **116**, 11241 (*synth, bibl*)
Overhand, M. *et al., J.O.C.*, 1994, **59**, 4721 (*synth*)
Verma, R. *et al., Chem. Comm.*, 1997, 1601 (*synth*)
Kadota, I. *et al., Heterocycles*, 1997, **46**, 335-348 (*synth*)
Beier, C. *et al., Synthesis*, 1997, 1296-1300 (*synth*)
Kanazawa, A. *et al., J.O.C.*, 1998, **63**, 4660-4663 (*synth*)
De Armas, P. *et al., Tet. Lett.*, 1998, **39**, 131-134 (*synth, bibl*)
Veeresa, G. *et al., Tetrahedron*, 1998, **54**, 15673-15678 (*synth*)
Verma, R. *et al., J.C.S. Perkin 1*, 1999, 265-270 (*synth, pmr, cmr*)
Lee, K.-Y. *et al., Org. Lett.*, 2000, **2**, 4041-4042 (*synth*)
Krasinski, A. *et al., Heterocycles*, 2001, **54**, 581-584 (*synth*)
Okue, M. *et al., Tetrahedron*, 2001, **57**, 4107-4110 (*synth*)
Okue, M. *et al., Biosci., Biotechnol., Biochem.*, 2002, **66**, 1093-1096 (*synth, bibl*)
Davis, F.A. *et al., Tetrahedron*, 2004, **60**, 5111-5115 (*synth*)
Gogoi, N. *et al., Eur. J. Org. Chem.*, 2006, 1722-1725 (*synth*)
Bertrand, M.B. *et al., Org. Lett.*, 2006, **8**, 2353-2356 (*synth*)
Caldwell, J.J. *et al., ARKIVOC*, 2007, **xii**, 67-90 (*synth*)

2-Benzyl-3-hydroxypyrazine B-90

*3-(Phenylmethyl)-2(1*H*)-pyrazinone, 9CI. 3-Benzyl-2(1*H*)-pyrazinone. 3-Benzylpyrazinol*

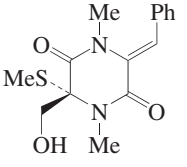


$C_{11}H_{10}N_2O$ 186.213

OH-form
Me ether: 2-Benzyl-3-methoxypyrazine
[57674-19-8]
$C_{12}H_{12}N_2O$ 200.24
Prod. by *Chondromyces crocatus*.

Schulz, S. *et al., Tetrahedron*, 2004, **60**, 3863-3872 (*isol*)

3-Benzylidene-6-(hydroxymethyl)-1,4-dimethyl-6-(methylthio)-2,5-piperazinedione B-91



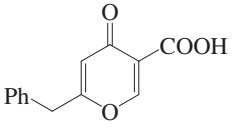
$C_{15}H_{18}N_2O_3S$ 306.385

(*R*,*Z*)-*form* [1028330-17-7]
Prod. by a marine-derived fungus of the Pleosporales (ascomycetes). Powder. $[\alpha]_D^{25}$ +416 (c, 0.47 in $CHCl_3$).

Prachyawarakorn, V. *et al., Planta Med.*, 2008, **74**, 69-72 (*isol, pmr, cmr*)

6-Benzyl-4-oxo-4*H*-pyran-3-carboxylic acid B-92

*4-Oxo-6-(phenylmethyl)-4*H*-pyran-3-carboxylic acid*



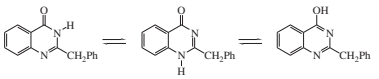
$C_{13}H_{10}O_4$ 230.22

*Amide: 6-Benzyl-4-oxo-4*H*-pyran-3-carboxamide.* ***Carbonarone A***
[937182-85-9]
$C_{13}H_{11}NO_3$ 229.235
Prod. by the marine-derived fungus *Aspergillus carbonarius* WZ-4-11 and from *Pestalotiopsis theae*. Cytotoxic. Amorph. yellow powder. λ_{max} 279 (log ϵ 4.2); 317 (log ϵ 3.66); 401 (log ϵ 3.6) (MeOH).

Zhang, Y. *et al., J. Antibiot.*, 2007, **60**, 153-157 (*isol, pmr, cmr*)

2-Benzyl-4(3*H*)-quinazolinone B-93

*2-(Phenylmethyl)-4(3*H*)-quinazolinone, 9CI.* ***Glycosminine****. Glycophymine. 2-Benzyl-4-hydroxyquinazoline. 2-(Phenylmethyl)-4-quinazolinol*
[4765-56-4]



$C_{15}H_{12}N_2O$ 236.273
Minor alkaloid from the leaves of *Glycosmis arborea*. Also isol. from the flowers of *Glycosmis pentaphylla (arborea)*. Cryst. (MeOH, EtOH, $CHCl_3$ or C_6H_6). Mp 254-256° (248-249°).

OH-form

Me ether: 4-Methoxy-2-(phenylmethyl)-quinazoline. 2-Benzyl-4-methoxyquinazoline. ***Glycophymoline***
[72361-61-6]
$C_{16}H_{14}N_2O$ 250.299
Minor alkaloid from the flower heads of *Glycosmis pentaphylla* (Rutaceae). Cryst. (C_6H_6/MeOH). Mp 165°.

1*H*-form

N-*Me: 1-Methyl-2-(phenylmethyl)-4(1*H*)-quinazolinone. 2-Benzyl-1-methyl-4(1*H*)-quinazolinone.* ***Arborine****. Glycosine*
[6873-15-0]
$C_{16}H_{14}N_2O$ 250.299
Major alkaloid from leaves of *Glycosmis arborea*. Also present in *Ruta graveolens* (rue) and in the fruits of *Zanthoxylum budrunga* (Rutaceae). Acetylcholine inhibitor, central hypotensive agent. *G. arborea* is a folk medicine against fever, anaemia and jaundice. Cryst. (MeOH/$CHCl_3$). Mp 161-162° (155-156°).

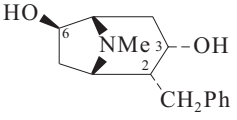
N-*Me, hydrochloride:*
Cryst. + $2H_2O$ (H_2O). Mp 215° dec. (partial melting at 106-108°).

N-*Me, picrate:*
Yellow needles (EtOH). Mp 172-173°.

Chakravarti, D. *et al., Tetrahedron*, 1961, **16**, 224-250 (*Arborine, uv, ir, pmr, struct*)
Pakrashi, S.C. *et al., Tetrahedron*, 1963, **19**, 1011 (*uv, ir, pmr, ms, struct, synth*)
Pakrashi, S.C. *et al., Indian J. Chem.*, 1968, **6**, 472 (*synth*)
O'Donovan, D.G. *et al., J.C.S.(C)*, 1970, 2466-2470 (*biosynth*)
Patel, V.S. *et al., J. Indian Chem. Soc.*, 1972, **49**, 59 (*uv*)
Kametani, T. *et al., J.A.C.S.*, 1977, **99**, 2306-2309 (*synth, ir, pmr*)
Rhee, R.P. *et al., J.O.C.*, 1977, **42**, 3650 (*synth, ir, pmr*)
Sarkar, M. *et al., Phytochemistry*, 1977, **16**, 2007 (*isol, uv, ir, ms, synth*)
Kametani, T. *et al., Heterocycles*, 1978, **9**, 1585 (*synth*)
Bhattacharyya, J. *et al., Heterocycles*, 1979, **12**, 929; 1980, **14**, 1469 (*uv, ir, pmr, cmr*)
Naik, N.R. *et al., J. Indian Chem. Soc.*, 1979, **56**, 708-711 (*synth, uv, ir*)
Sarkar, M. *et al., Phytochemistry*, 1979, **18**, 694 (*Glycophymoline*)
Yamato, M. *et al., Chem. Pharm. Bull.*, 1981, **29**, 3124 (*synth*)
Chakraborty, D.P. *et al., Synthesis*, 1981, 977-979 (*synth*)
Teshima, T. *et al., J. Biol. Chem.*, 1982, **257**, 5085 (*pharmacol*)
Ganjian, I. *et al., Synth. Commun.*, 1984, **14**, 33 (*synth, pmr*)
Johne, S. *et al., Alkaloids (Academic Press)*, 1986, **29**, 129-140 (*Arborine, rev, pharmacol*)
Uozumi, Y. *et al., J.A.C.S.*, 1989, **111**, 3725 (*synth, ir, pmr, ms*)
Muthukrishnan, J. *et al., Phytochemistry*, 1999, **50**, 249-254 (*Arborine, isol, pmr, cmr*)

2-Benzyl-3,6-tropanediol B-94

8-Methyl-2-(phenylmethyl)-8-azabicyclo[3.2.1]octane-3,6-diol, 9CI. 2-Benzyl-3,6-dihydroxytropane



$C_{15}H_{21}NO_2$ 247.336

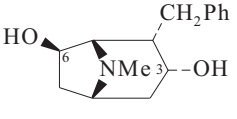
(2α,3α,6β)-*form* Abs config. not known - can only be deduced.

O^6-*Benzoyl:* ***Alkaloid C***†
[50656-88-7]
$C_{22}H_{25}NO_3$ 351.444
Alkaloid from the leaves of *Knightia deplanchei* (Proteaceae). Cryst. (C_6H_6). Mp 168-170°.

Kan-Fan, C. *et al., Acta Chem. Scand.*, 1973, **27**, 1039-1052 (*isol, ms, uv, pmr*)
Lounasmaa, M. *et al., J.O.C.*, 1975, **40**, 3694-3697 (*cmr, struct, config*)
Lounasmaa, M. *et al., Planta Med.*, 1978, **34**, 68-72 (*pmr, struct*)

4-Benzyl-3,6-tropanediol B-95

8-Methyl-4-(phenylmethyl)-8-azabicyclo[3.2.1]octane-3,6-diol, 9CI. 2-Benzyl-3,7-dihydroxytropane



$C_{15}H_{21}NO_2$ 247.336

(3α,4α,6β)-*form*

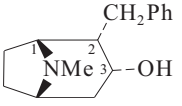
3-Ac: ***Knightoline***
[77053-08-8]
$C_{17}H_{23}NO_3$ 289.374
Alkaloid from the leaves of *Knightia strobilina* (Proteaceae). Cryst. (Me_2CO). Mp 191-192°. $[\alpha]_D^{20}$ +10 ($CHCl_3$). Abs. config. not known.

*3-(*E*-Cinnamoyl):* **Knightia *Alkaloid D***
[56761-54-7]
$C_{24}H_{27}NO_3$ 377.482
Alkaloid from the leaves of *Knightia deplanchei* (Proteaceae). Cryst. (C_6H_6/hexane). Mp 174-175°. Racemate.

Kan-Fan, C. *et al., Acta Chem. Scand.*, 1973, **27**, 1039-1052 (*isol, ms, pmr, uv*)
Lounasmaa, M. *et al., J.O.C.*, 1975, **40**, 3694-3697 (*cmr, struct, config*)
Lounasmaa, M. *et al., Planta Med.*, 1978, **34**, 66-72 (*pmr, struct*)
Lounasmaa, M. *et al., Phytochemistry*, 1980, **19**, 949-955 (*isol, ir, pmr, ms, struct*)

2-Benzyl-3-tropanol B-96

8-Methyl-2-(phenylmethyl)-8-azabicyclo[3.2.1]octan-3-ol, 9CI. 2-Benzyl-8-methyl-8-azabicyclo[3.2.1]octan-3-ol. 2-Benzyl-3-hydroxytropane



$C_{15}H_{21}NO$ 231.337

(1*RS*,2*SR*,3*RS*)-*form*

(±)-(2α,3α)-form
Cryst. (Me_2CO). Mp 123-124°.

Ac: ***Alkaloid KD1****. 2-Benzyl-*O*-acetyltropanol.* Knightia *Alkaloid B*
[50656-87-6]
$C_{17}H_{23}NO_2$ 273.374
Alkaloid from the leaves of *Knightia deplanchei* (Proteaceae). Viscous oil. $[\alpha]_D$ 0.

Benzoyl: **Knightia *Alkaloid A****. 2-Benzyl-3-*O*-benzoyltropanol*
[50656-86-5]
$C_{22}H_{25}NO_2$ 335.445
Alkaloid from the leaves of *Knightia deplanchei* (Proteaceae). Viscous oil. $[\alpha]_D$ 0.

1′-Hydroxy: see 2-(α-Hydroxybenzyl)-3-tropanol, H-429

Kan-Fan, C. *et al., Acta Chem. Scand.*, 1973, **27**, 1039-1052 (*isol, ms, pmr, uv*)
Lounasmaa, M. *et al., Tet. Lett.*, 1974, 2509-2512 (*synth*)
Lounasmaa, M. *et al., J.O.C.*, 1975, **40**, 3694-3697 (*cmr, config*)
Lounasmaa, M. *et al., Planta Med.*, 1978, **34**, 66-72 (*pmr, struct*)
Majewski, M. *et al., J.O.C.*, 1995, **60**, 5825-5830 (*synth, O^3-Ac, pmr, cmr*)

Benzylurea, 9CI B-97

Benzylcarbamide
[538-32-9]
$PhCH_2NHCONH_2$
$C_8H_{10}N_2O$ 150.18
Constit. of the stems of *Salvadora persica*. Mod. sol. hot H_2O. Mp 147-148°.

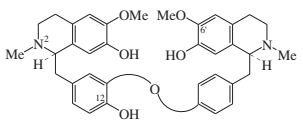
▶ LD_{50} (rat, orl) 2700 mg/kg. YS1780000

Boivin, J.L. *et al., Can. J. Chem.*, 1951, **29**, 478 (*synth*)
Argabright, P.A. *et al., J.O.C.*, 1967, **32**, 3261 (*synth*)
Patonay, T. *et al., Synth. Commun.*, 1996, **26**, 4253 (*synth*)
Khalil, A.T. *et al., Arch. Pharmacal Res.*, 2006, **29**, 952-956 (*isol, pmr, cmr*)

Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, BFN125

Berbamunine B-98

[485-18-7]



(+)-*form*

$C_{36}H_{40}N_2O_6$ 596.722

Alkaloids covered by this entry are enantiomeric with those covered by Grisabine, G-177 (1*S*,1′*R*)-config. and diastereomeric with those covered by Dauricine, D-88 (*R,R*-config.) and Thalibrine, T-309 (*S,S*-config.). Alkaloid from *Berberis amurensis*, *Berberis integerrima* and *Berberis oblonga*. Cryst. (Et_2O/Me_2CO). Mp 190-191°. $[\alpha]_D$ +87.

N^2-*De-Me:* ***2-Norberbamunine***
$C_{35}H_{38}N_2O_6$ 582.695
Alkaloid from callus cultures of *Berberis stolonifera*, *Berberis beaniana*, *Berberis giraldii*, *Berberis julianae*, *Berberis papillifera*, *Berberis taliensis*, *Berberis turcomanica* and *Berberis wilsonae* (Berberidaceae).

$O^{7'}$-*Me:* ***Temuconine***
[18210-69-0]
$C_{37}H_{42}N_2O_6$ 610.749
Alkaloid from *Berberis valdiviana* (Berberidaceae). Shows selective antiplasmodial activity. $[\alpha]_D^{25}$ +68 (c, 0.24 in MeOH). Struct. of this alkaloid recently revised from that publ. (Shamma, M. *et al.*, unpubl. results, personal communication).

O^{12}-*Me:* ***Thaligrisine***
[93780-78-0]
$C_{37}H_{42}N_2O_6$ 610.749
Alkaloid from the roots and rhizomes of *Thalictrum minus* var. *microphyllum* (Ranunculaceae). Needles (MeOH). $[\alpha]_D^{25}$ +57 (c, 0.13 in MeOH).

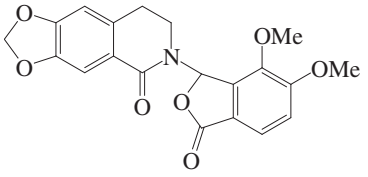
$O^{6'}$-*De-Me,* $O^{7'}$-*Me:* ***Espinine***
[26137-40-6]
$C_{36}H_{40}N_2O_6$ 596.722
Alkaloid from the root bark of *Berberis laurina* (Berberidaceae). Mp 123-125°. $[\alpha]_D$ +25 ($CHCl_3$).

$O^{6'}$-*De-Me,* $O^{7'}$,O^{12}-*di-Me:* ***Espinidine***
[26137-41-7]
$C_{37}H_{42}N_2O_6$ 610.749
Alkaloid from root bark of *Berberis laurina* (Berberidaceae). Amorph. $[\alpha]_D$ +31 ($CHCl_3$).

Tomita, M. *et al., Yakugaku Zasshi*, 1955, **75**, 753; 1957, **77**, 1075; 1079 (*isol, struct*)
Kametani, T. *et al., Yakugaku Zasshi*, 1968, **88**, 1163 (*synth*)
Kametani, T. *et al., Chem. Pharm. Bull.*, 1969, **17**, 2120 (*cd, ord, pmr*)
Falco, M.R. *et al., Experientia*, 1969, **25**, 1236 (*Espinine*)
Karimov, A. *et al., Khim. Prir. Soedin.*, 1977, **13**, 80; *Chem. Nat. Compd. (Engl. Transl.)*, 1977, **13**, 68 (*isol*)
Guinaudeau, H. *et al., Heterocycles*, 1982, **19**, 1009 (*Temuconine*)
Guinaudeau, H. *et al., Tetrahedron*, 1984, **40**, 1975 (*Thaligrisine*)
Cassels, B.K. *et al., Phytochemistry*, 1987, **26**, 1005 (*2-Norberbamunine*)
Angerhoffer, C.K. *et al., J. Nat. Prod.*, 1999, **62**, 59-66 (*Espinine, activity*)

Berberal† B-99

6-(1,3-Dihydro-6,7-dimethoxy-3-oxo-1-isobenzofuranyl)-7,8-dihydro-1,3-dioxolo[4,5-g]isoquinolin-5(6H)-one, 9CI
[66408-44-4]
[64939-64-6]



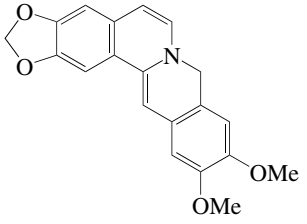
$C_{20}H_{17}NO_7$ 383.357

Not to be confused with Berberal in B-101. Alkaloid from leaves and young shoots of *Berberis heterobotrys*. Cryst. (Et_2O). Mp 151-153°. No evidence for abs.config. of nat. alkaloid but prob. racemic. λ_{max} 226 (log ϵ 4.92); 255 (log ϵ 4.6); 305 (log ϵ 4.41) (EtOH).

Perkin, W.H. *et al., J.C.S.*, 1890, **57**, 1079-1080 (*synth*)
Kondo, Y. *et al., J.C.S. Perkin 1*, 1980, 911-918 (*synth, pmr*)
Karimov, A. *et al., Khim. Prir. Soedin.*, 1993, 869-873; *Chem. Nat. Compd. (Engl. Transl.)*, 1993, **29**, 774-777 (*isol, pmr, cmr, ms*)

Berberilycine B-100

[186358-50-9]



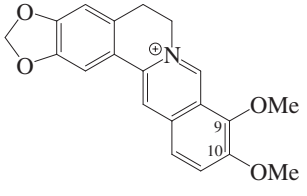
$C_{20}H_{17}NO_4$ 335.359

Alkaloid from the roots of *Berberis lycium* (Berberidaceae). Cryst. (MeOH). Mp 180-181°. λ_{max} 235 (log ϵ 7.5); 253 (log ϵ 6.5); 344 (log ϵ 6.2) (MeOH).

Ali, M. *et al., Indian J. Heterocycl. Chem.*, 1996, **6**, 127-130 (*isol, uv, ir, pmr, ms*)

Berberine B-101

5,6-Dihydro-9,10-dimethoxybenzo[g]-1,3-benzodioxolo[5,6-a]quinolizinium(1+), 9CI. Umbellatine†. Berbericine. Natural yellow 18. C.I. 75160. Majarine
[2086-83-1]



$C_{20}H_{18}NO_4^{\oplus}$ 336.366

Quaternary alkaloid from many *Berberis* and *Mahonia* spp. (Berberidaceae) and very many other spp. in several different families. Fluorescent stain for heparin. Pharmacol. extensively studied. Antiarrhythmic agent. α_2-Adrenoceptor agonist. Cholinesterase, tyrosine decarboxylase and tryptophanase inhibitor. Shows a wide variety of pharmacol. effects including respiratory stimulation, transient hypotension. Antianaemic, anticonvulsant, antiinflammatory agent. Shows antibacterial and antifungal props. and some cytotoxic and antineoplastic activity. Possesses immunostimulant, sedative and antitrypanosomal activity. Of clinical use in treatment of gastrointestinal disorders, has been used for cholera and infantile diarrhoea. Log P -0.4 (uncertain value) (calc).

▶ Adverse human effects including reduced body temperature. Can cause death by central paralysis. LD_{50} (mus, orl) 329 mg/kg. DR9870000

Chloride: Dirin. Kyoberin. Phelloberin. T-Up. Wakamato. Pool Eyes
[633-65-8] λ_{max} 230 (log ϵ 4.42); 266 (log ϵ 4.39); 352 (log ϵ 4.35); 432 (log ϵ 3.7) (96% EtOH).

▶ DR9866400

Iodide: [4263-84-7]
Mp 250° dec.

Hydroxide: [117-74-8] Traditional dyestuff. Mp 145° ($CHCl_3$ solvate). Forms hydrate, Mp variable, dec. *ca*. 160°.

▶ DR9866500

Sulfate: Berisol. Berberal†. Stogerin-Amp. Stopnin. NSC 5355
[633-66-9]
[6190-33-6]
Mp 274°. Not to be confused with Berberal, B-99.

▶ DR9867000

O^9-*De-Me:* ***Berberrubine***. *Chileninone*
[17388-19-1]
$C_{19}H_{16}NO_4^{\oplus}$ 322.34
Alkaloid from the twigs of *Berberis actinacantha* and from the stems of *Berberis darwinii* and *Berberis valdiviana*. Also from *Berberis vulgaris* (barberry), *Thalictrum polygamum* and *Fibraurea chloroleuca* (Berberidaceae, Ranunculaceae, Menispermaceae). Active against gram-positive bacteria. Deep red amorph. solid (as chloride).

O^{10}-*De-Me:* ***Thalifendine***
[18207-71-1]
$C_{19}H_{16}NO_4^{\oplus}$ 322.34
Quaternary alkaloid from *Thalictrum fendleri* (Ranunculaceae). Shows antiplasmodial and antiamoebic activities. Yellow cryst. (as chloride). Mp 230° (sinters) (chloride).

7,8-Dihydro, N-*Me:* see Lambertine, L-23

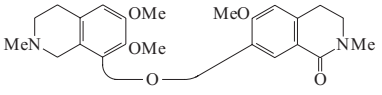
[79236-58-1]

Späth, E. *et al., Monatsh. Chem.*, 1929, **52**, 117-128 (*Berberrubine, isol*)
Shamma, M. *et al., Tet. Lett.*, 1965, 3595-3598 (*Thalifendine*)
Kametani, T. *et al., J.C.S.(C)*, 1969, 2036-2038 (*synth, ir*)
Preininger, V. *et al., Coll. Czech. Chem. Comm.*, 1970, **35**, 124-135 (*isol, uv*)

Jewers, K. *et al., J.C.S. Perkin 2*, 1972, 1393-1396 (*pmr*)
Gharbo, S.A. *et al., J. Nat. Prod.*, 1973, **36**, 349-351 (*Berberrubine, activity*)
Holland, H.L. *et al., Can. J. Chem.*, 1979, **57**, 1588-1597 (*biosynth*)
Dimlich, R.V.W. *et al., Stain Technol.*, 1980, **55**, 217-223 (*use*)
Siwon, J. *et al., Planta Med.*, 1981, **41**, 65-68 (*Berberrubine, occur*)
Valencia, E. *et al., Tetrahedron*, 1984, **40**, 3957-3962 (*Berberrubine, isol, uv, ir, pmr, ms*)
Suffness, M. *et al., Alkaloids (Academic Press)*, 1985, **25**, 191-193 (*antitumour props*)
Shamma, M. *et al., J. Nat. Prod.*, 1986, **49**, 398-405 (*Berberrubine, struct*)
Schiff, P.L. *et al., Alkaloids: Chem. Biol. Perspect.*, 1987, **5**, 363 (*rev, pharmacol*)
Blaskó, G. *et al., Heterocycles*, 1988, **27**, 911-916 (*cmr*)
Janssen, R.H.A.M. *et al., Phytochemistry*, 1989, **28**, 2833-2839 (*pmr, cmr*)
Hui, K.K. *et al., Life Sci.*, 1991, **49**, 315-324 (*pharmacol*)
Ishii, H. *et al., Heterocycles*, 1994, **37**, 897-902 (*synth*)
Wang, Y.-X. *et al., J. Cardiovasc. Pharmacol.*, 1994, **23**, 716-722 (*pharmacol*)
Chen, C.-M. *et al., J. Chromatogr., B*, 1995, **665**, 117-123 (*hplc*)
Marek, R. *et al., Magn. Reson. Chem.*, 1999, **37**, 195-202 (*N-15 nmr*)
Martindale, The Extra Pharmacopoeia, 32nd edn., Pharmaceutical Press, 1999, 1552
Wright, C.W. *et al., J. Nat. Prod.*, 2000, **63**, 1638-1640 (*Thalifendine, activity*)
Yadav, R.C. *et al., Bioorg. Med. Chem.*, 2005, **13**, 165-174 (*props*)
Doggrell, S.A. *et al., Expert Opin. Invest. Drugs*, 2005, **14**, 683-685 (*rev*)
Tripathi, A.N. *et al., Magn. Reson. Chem.*, 2007, **45**, 647-655 (*pmr, cmr, soln struct*)
Grycová, L. *et al., Phytochemistry*, 2007, **68**, 150-175 (*rev*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, BFN500

Berbidine B-102

3,4-Dihydro-6-methoxy-2-methyl-7-[(1,2,3,4-tetrahydro-6,7-dimethoxy-2-methyl-8-isoquinolinyl)oxy]-1(2H)-isoquinolinone, 9CI
[35611-57-5]

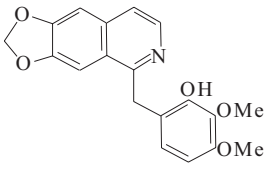


$C_{23}H_{28}N_2O_5$ 412.485
Alkaloid from aerial parts of *Berberis brandisiana* (Berberidaceae). Amorph.

Hussain, S.F. *et al., J. Nat. Prod.*, 1989, **52**, 317 (*isol, uv, ir, pmr, ms, struct*)

Berbithine B-103

6-(1,3-Dioxolo[4,5-g]isoquinolin-5-ylmethyl)-2,3-dimethoxyphenol, 9CI. 1-(2-Hydroxy-3,4-dimethoxybenzyl)-6,7-methylenedioxyisoquinoline
[105798-91-2]



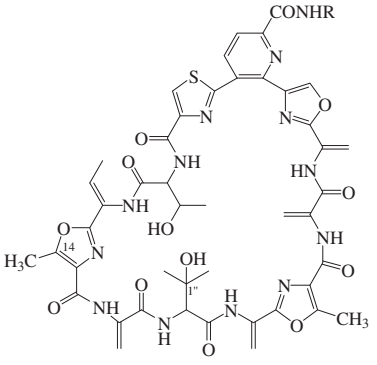
$C_{19}H_{17}NO_5$ 339.347
Alkaloid from the roots of *Berberis actinacantha* (Berberidaceae). Needles (EtOH). Mp 159-160°.

α-Oxo: see Rugosinone, R-156

Rahimizadeh, M. *et al., Planta Med.*, 1986, 339 (*isol, uv, pmr, ms, struct*)
Chantimakorn, V. *et al., Aust. J. Chem.*, 1989, **42**, 209 (*synth, uv, ir, pmr, ms*)

Berninamycin A, 9CI B-104

U 27810. Antibiotic U 27810
[58798-97-3]



R = -C(=CH$_2$)CONHC(=CH$_2$)CONH$_2$

$C_{51}H_{51}N_{15}O_{15}S$ 1146.121
Peptide antibiotic. Isol. from *Streptomyces bernensis*. Component of the Berninamycin complex which shows activity against gram-positive bacteria and is a potent inhibitor of bacterial protein synth. Sol. MeOH, butanol, DMF; poorly sol. H_2O, Me_2CO, hexane. Prob. identical with Theiomycetin. λ_{max} 208 (ε 71500); 236 (ε 73800); 255 (sh) (ε 71500) (MeOH) (Derep).

Dihydro: Mp 268-272° dec.

Hexahydro: Mp 275-280°.

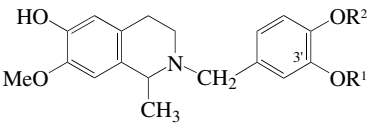
1″-Deoxy: ***Berninamycin B***
[58798-98-4]
$C_{51}H_{51}N_{15}O_{14}S$ 1130.122
Isol. from *Streptomyces bernensis*. Powder. λ_{max} 208 (ε 71500); 236 (ε 73800); 255 (sh) (ε 71500) (MeOH) (Derep).

14-Demethyl: ***Geninthiocin***
[158792-27-9]
$C_{50}H_{49}N_{15}O_{15}S$ 1132.095
Prod. by *Streptomyces* sp. DD84. tipA Promotor inducing agent. Amorph. powder. Mp 270-275° dec. $[\alpha]_D^{19}$ +174.3 (c, 0.1 in $CHCl_3$/MeOH). λ_{max} 215 (sh) (ε 76000); 240 (ε 85000); 315 (sh) (ε 13000) (EtOH) (Derep). λ_{max} 215 (ε 76000); 240 (ε 85000); 315 (ε 13000) (EtOH) (Berdy).

Liesch, J.M. *et al., CA*, 1976, **84**, 146412s (*struct*)
Liesch, J.M. *et al., J.A.C.S.*, 1976, **98**, 299; 1977, **99**, 1645 (*isol, struct*)
Pearce, C.J. *et al., J.A.C.S.*, 1979, **101**, 5069 (*biosynth*)
Abe, H. *et al., Tet. Lett.*, 1988, **29**, 1401 (*struct*)
Yun, B.-S. *et al., J. Antibiot.*, 1994, **47**, 969 (*Geninthiocin*)
Lau, R.C.M. *et al., J. Antibiot.*, 1994, **47**, 1466 (*cmr, struct*)
Lau, R.C.M. *et al., J.A.C.S.*, 1995, **117**, 7606 (*biosynth*)

Bernumicine B-105

[169626-38-4]



$R^1 = R^2 = Me$

$C_{20}H_{25}NO_4$ 343.422
Alkaloid from leaves of *Berberis nummularia*. Cryst. (as hydrochloride). Mp 211-212° (hydrochloride). $[\alpha]_D$ +14 (c, 0.02 in $CHCl_3$).

3′-O-De-Me: ***Nummularine***
[198704-40-4]
$C_{19}H_{23}NO_4$ 329.395
Alkaloid from *Berberis nummularia*. Cryst. Mp 134-135°. $[\alpha]_D$ +21 (c, 0.03 in MeOH).

Karimov, A. *et al., Khim. Prir. Soedin.*, 1993, **29**, 397; *Chem. Nat. Compd. (Engl. Transl.)*, 1993, **29**, 335
Faskhutdinov, M.F. *et al., Khim. Prir. Soedin.*, 1997, **33**, 91-93; *Chem. Nat. Compd. (Engl. Transl.)*, 1997, **33**, 70-71 (*Nummularine*)

Bernumine B-106

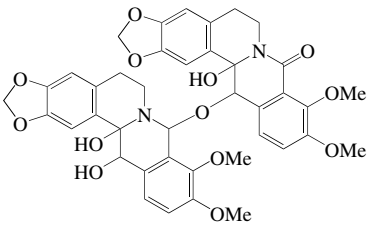
[169134-46-7]
As Bernumicine, B-105 with
R^1R^2 = –CH_2–
$C_{19}H_{21}NO_4$ 327.379
Alkaloid from leaves of *Berberis nummularia*. Oil. $[\alpha]_D$ +33 (c, 0.04 in $CHCl_3$).

Me ether: ***Bernumidine***
[169626-37-3]
$C_{20}H_{23}NO_4$ 341.406
From leaves of *Berberis nummularia*. Oil. Mp 180-181° (as hydrochloride). $[\alpha]_D$ +21 (c, 0.01 in $CHCl_3$).

Karimov, A. *et al., Khim. Prir. Soedin.*, 1993, **29**, 394; 397; *Chem. Nat. Compd. (Engl. Transl.)*, 1993, **29**, 331; 335

Berpodine B-107

[169238-48-6]



$C_{40}H_{38}N_2O_{13}$ 754.746
Alkaloid from young shoots of *Berberis heteropoda*. Cryst. (MeOH). Mp 197-198°.

Karimov, A. *et al., Khim. Prir. Soedin.*, 1993, **29**, 264; *Chem. Nat. Compd. (Engl. Transl.)*, 1993, **29**, 219

Bervulcine B-108

$C_{18}H_{19}NO_3$ 297.353

Struct. unknown. Alkaloid from *Berberis vulgaris* (barberry) (Berberidaceae). Mp 125-126° dec. $[\alpha]_D^{24}$ -185 (c, 0.2 in $CHCl_3$).

Hydroiodide:
Prisms (H_2O). Mp 236° dec.

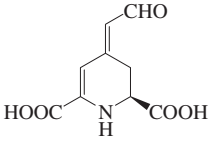
Methiodide:
Cryst. (H_2O). Mp 269° dec.

Picrate:
Fine needles (MeOH). Mp 188-190° dec.

Döpke, W. *et al., Naturwissenschaften*, 1963, **50**, 595

Betalamic acid B-109

1,2,3,4-Tetrahydro-4-(oxoethylidene)-2,6-pyridinedicarboxylic acid
[18766-66-0]



Absolute Configuration

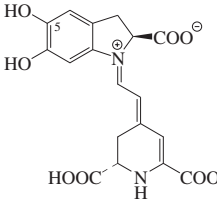
$C_9H_9NO_5$ 211.174

Precursor of betalains pigments in plants of the Centrospermae. Detected in *Beta vulgaris* (beetroot), *Celosia cristata* and *Portulaca grandiflora*. Yellow soln. in H_2O at pH 9, or amorph. green residue. Sensitive to air, acids and strong alkali. Various protected derivs. known. λ_{max} 430 (no solvent reported).

Kimler, L. *et al., Chem. Comm.*, 1971, 1329 (*isol, synth, struct*)
Döpp, H. *et al., Chem. Ber.*, 1973, **106**, 3473 (*synth, uv*)
Büchi, G. *et al., J.O.C.*, 1977, **42**, 2192 (*synth*)
Hilpert, H. *et al., Helv. Chim. Acta*, 1984, **67**, 1547 (*synth*)
Fischer, N. *et al., Helv. Chim. Acta*, 2004, **55**, 649-658 (*biosynth*)

Betanidin B-110

*2-Carboxy-1-[(2,6-dicarboxy-2,3-dihydro-4(1*H*)-pyridinylidene)ethylidene]-2,3-dihydro-5,6-dihydroxy-1*H*-indolium hydroxide inner salt*
[2181-76-2]



Absolute Configuration

$C_{18}H_{16}N_2O_8$ 388.333

Aglycone from Betanin. Cryst. (as hydrochloride). Forms cryst. K and NH_4 salts. Shows rapid *E*/*Z* isom. in soln. λ_{max} 271 (ϵ 8530); 295 (sh) (ϵ 7170); 544 (ϵ 51000) (no solvent reported) (hydrochloride).

5-O-*β*-D-*Glucopyranoside:* ***Betanin***. *Phytolaccanin. C.I. Natural Red 33. E 162*
[7659-95-2]
$C_{24}H_{26}N_2O_{13}$ 550.475
Red pigment from beetroot, *Beta vulgaris* var. *rubra* and other Centrospermae. Food dye. Chemotaxonomic marker for the Centrospermae.

▶ US7968100

5-O-*(3*-O-*Sulfo-β*-D-*glucopyranoside):* ***Rivinianin***
[58115-21-2]
$C_{24}H_{26}N_2O_{16}S$ 630.539
Pigment from *Rivina humilis* (Phytolaccaceae).

5-O-*(6*-O-*Sulfo-β*-D-*glucopyranoside):* ***Prebetanin***
[13798-16-8]
$C_{24}H_{26}N_2O_{16}S$ 630.539
Pigment from beetroot *Beta vulgaris* (Chenopodiaceae).

5-O-*(4*-O-*Malonyl-β*-D-*glucopyranoside):* ***Phyllocactin II***
$C_{27}H_{28}N_2O_{16}$ 636.522
Constit. of the fruit peel of *Hylocereus ocamponis.*

5-O-*(6*-O-*Malonyl-β*-D-*glucopyranoside):* ***Phyllocactin***
[15167-85-8]
$C_{27}H_{28}N_2O_{16}$ 636.522
Constit. of *Phyllocactus hybridus* (preferred genus name *Epiphyllum*) and *Hylocereus polyrhizus.*

5-O-*[3-Hydroxy-3-methylglutaroyl-(→6)-β*-D-*glucopyranoside]:* ***Hylocerenin***
$C_{30}H_{34}N_2O_{17}$ 694.602
Pigment from cactus *Hylocereus polyrhizus.*

5-O-*[4-Hydroxy-3-methoxy*-E-*cinnamoyl-(→6)-β*-D-*glucopyranoside]:* ***Lampranthin II***. *Monoferuloylbetanin*
[32074-65-0]
$C_{34}H_{34}N_2O_{16}$ 726.646
Isol. from petals of *Lampranthus peersii* and *Lampranthus sociorum*.

5-O-*[β*-D-*Apiofuranosyl-(1→2)-β*-D-*glucopyranoside]:*
$C_{29}H_{34}N_2O_{17}$ 682.591
Constit. of the fruit peel of *Hylocereus ocamponis.*

5-O-*[β*-D-*Apiofuranosyl-(1→2)-6*-O-*malonyl-β*-D-*glucopyranoside]:*
[290313-63-2]
$C_{32}H_{36}N_2O_{20}$ 768.638
Pigment from *Schlumbergera* x *buckleyi*.

5-O-*[4-Hydroxy-3-methoxy*-E-*cinnamoyl-(→5)-β*-D-*apiofuranosyl-(1→2)-β*-D-*glucopyranoside]:* [290313-64-3]
[178885-00-2]
$C_{39}H_{42}N_2O_{20}$ 858.762
Pigment from *Phytolacca americana* (pokeberry) and *Schlumbergera* x *buckleyi*.

5-O-*[4-Hydroxy-3-methoxy*-E-*cinnamoyl-(→5)-β*-D-*apiofuranosyl-(1→2)-6*-O-*malonyl-β*-D-*glucopyranoside]:*
[290313-68-7]
$C_{42}H_{44}N_2O_{23}$ 944.809
Pigment from *Schlumbergera* x *buckleyi*.

5-O-*[4-Hydroxy-3,5-dimethoxy*-E-*cinnamoyl-β*-D-*apiofuranosyl-(1→2)-β*-D-*glucopyranoside]:*
$C_{40}H_{44}N_2O_{21}$ 888.788
Constit. of the fruit peel of *Hylocereus ocamponis.*

5-O-*[β*-D-*Glucopyranosyl-(1→2)-β*-D-*glucopyranoside]:* ***Bougainvillein r-I***. *Betanidin 5-sophoroside*
[30513-63-4]
$C_{30}H_{36}N_2O_{18}$ 712.617
Pigment from a horticultural variety of *Bougainvillea* "Mrs. Butt" and from *Hylocereus ocamponis.* λ_{max} 538 (H_2O).

5-O-*[β*-D-*Glucopyranosyl-(1→2)-4*-O-*malonyl-β*-D-*glucopyranoside]:*
[951659-92-0]
$C_{33}H_{38}N_2O_{21}$ 798.664
Constit. of the fruit of *Mammillaria* spp. Tentative struct. assigned.

5-O-*[β*-D-*Glucopyranosyl-(1→2)-6*-O-*malonyl-β*-D-*glucopyranoside]:* ***Mammillarinin***
[951676-55-4]
$C_{33}H_{38}N_2O_{21}$ 798.664
Constit. of the fruit of *Mammillaria* spp.

5-O-*[β*-D-*Glucuronopyranosyl-(1→2)-β*-D-*glucopyranoside]:* ***Amaranthin***. *Amarantin*
[15167-84-7]
[11033-33-3]
$C_{30}H_{34}N_2O_{19}$ 726.601
Pigment from *Amaranthus caudatus* (love-lies-bleeding), *Amaranthus tricolor* (Chinese spinach), *Celosia plumosa, Salicornia europaea* and other spp. (Amaranthaceae, Chenopodiaceae).

5-O-*[4-Hydroxy*-E-*cinnamoyl-(→2)-β*-D-*glucuronopyranosyl-(1→2)-β*-D-*glucopyranoside]:* ***Celosianin I***
[114818-87-0]
$C_{39}H_{40}N_2O_{21}$ 872.746
Pigment from *Celosia cristata* (Amaranthaceae).

5-O-*[4-Hydroxy-3-methoxy*-E-*cinnamoyl-(→2)-β*-D-*glucuronopyranosyl-(1→2)-β*-D-*glucopyranoside]:* ***Celosianin II***. *Monoferuloylamaranthin*
[114847-18-6]
$C_{40}H_{42}N_2O_{22}$ 902.772
Isol. from cell suspension cultures of *Chenopodium rubrum* and from *Celosia cristata*.

5-O-*[β*-D-*Glucuronopyranosyl-(1→2)-[3-hydroxy-3-methylglutaryl-(→6)]-β*-D-*glucopyranoside]:* ***Iresinin I***
[78413-55-5]
$C_{36}H_{42}N_2O_{23}$ 870.727
Pigment from *Iresine herbstii* (Amaranthaceae). Violet cryst. $[\alpha]_{675}^{20}$ +160.

6-O-*β*-D-*Glucopyranoside:* ***Gomphrenin I***
[17008-59-2]
$C_{24}H_{26}N_2O_{13}$ 550.475
Violet pigment from the inflorescence of *Gomphrena globosa* (Amaranthaceae). Also isol. from bracts of *Bougainvillea glabra* (Nyctaginaceae).

6-O-*[4-Hydroxy*-E-*cinnamoyl-(→6)-β*-D-*glucopyranoside]:* ***Gomphrenin II***
[143022-02-0]
$C_{33}H_{32}N_2O_{15}$ 696.62
Pigment from *Gomphrena globosa* and

fruits of *Basella rubra* (Malabar spinach).

6-O-[4-Hydroxy-3-methoxycinnamoyl-(→6)-β-D-glucopyranoside]: ***Gomphrenin III****. Gomphrenin V*
[11048-86-5]
[16955-52-5]
$C_{34}H_{34}N_2O_{16}$ 726.646
Pigment from *Gomphrena globosa* (Amaranthaceae). Gomphrenin V mentioned in a 1967 paper only. Current evidence is that it was identical with Gomphrenin III. Other Gomphrenins (IV, VI, VII and VIII) were not fully characterised. λ_{max} 290 ; 319 ; 549 (no solvent reported).

6-O-[β-D-Glucopyranosyl-(1→2)-β-D-glucopyranoside]: ***Bougainvillein-v****. Betanidin 6-sophoroside*
[32100-96-2]
$C_{30}H_{36}N_2O_{18}$ 712.617
Pigment from bracts of *Bougainvillea glabra* (Nyctaginaceae).

6-O-[4-Hydroxycinnamoyl-(→6)-β-D-glucopyranosyl-(1→2)-β-D-glucopyranoside]: [160094-28-0]
$C_{39}H_{42}N_2O_{20}$ 858.762
From bracts of *Bougainvillea glabra* (Nyctaginaceae).

*6-O-[β-D-Glucopyranosyl-(1→2)-[4-hydroxy-*E*-cinnamoyl-(→6)]-β-D-glucopyranoside]:* [160094-29-1]
$C_{39}H_{42}N_2O_{20}$ 858.762
From bracts of *Bougainvillea glabra* (Nyctaginaceae).

6-O-[4-Hydroxycinnamoyl-(→6)-β-D-glucopyranosyl-(→2)-[4-hydroxycinnamoyl-(→6)]-β-D-glucopyranoside]: [160094-33-7]
$C_{48}H_{48}N_2O_{22}$ 1004.907
From bracts of *Bougainvillea glabra* (Nyctaginaceae).

6-O-[β-D-Glucopyranosyl-(1→2)-[4-hydroxycinnamoyl-(→6)]-β-D-glucopyranosyl-(1→2)-3,4-dihydroxycinnamoyl-(→6)-β-D-glucopyranoside]: [160094-31-5]
$C_{54}H_{58}N_2O_{28}$ 1183.049
From bracts of *Bougainvillea glabra* (Nyctaginaceae).

6-O-[β-D-Glucopyranosyl-(1→2)-[4-hydroxycinnamoyl-(→6)]-β-D-glucopyranosyl-(1→2)-4-hydroxycinnamoyl-(→6)-β-D-glucopyranoside]: [160094-32-6]
$C_{54}H_{58}N_2O_{27}$ 1167.049
From bracts of *Bougainvillea glabra* (Nyctaginaceae).

6-O-[β-D-Glucopyranosyl-(1→2)-[3,4-dihydroxycinnamoyl-(→6)]-β-D-glucopyranoside]: [160094-27-9]
$C_{39}H_{42}N_2O_{21}$ 874.762
From bracts of *Bougainvillea glabra* (Nyctaginaceae).

6-O-[β-D-Glucopyranosyl-(1→2)-[α-L-rhamnopyranosyl-(1→6)]-β-D-glucopyranoside]: Betanidin 6-(2^G-glucosylrutinoside). Betanidin rhamnosophoroside
$C_{36}H_{46}N_2O_{22}$ 858.76
Pigment from bracts of *Bougainvillea glabra*.

6-O-[4-Hydroxycinnamoyl-(→6)-β-D-glucopyranosyl-(1→2)-[3,4-dihydroxycinnamoyl-(→6)]-β-D-glucopyranosyl-(1→2)-β-D-glucopyranoside]: [160094-30-4]
$C_{60}H_{68}N_2O_{33}$ 1345.191
From bracts of *Bougainvillea glabra* (Nyctaginaceae).

Glycoside(1): ***Bougainvillein r-II***
Pigment from bracts of horticultural variety of *Bougainvillea* "Mrs Butt" (Nyctaginaceae). Complete struct. not determined. Alkaline hydrolysis gave Bougainvillein r-I, Isobougainvillein r-I, 4-Hydroxycinnamic and 3,4-Dihydroxycinnamic acids, ratio of latter two, 2:1. λ_{max} 280 ; 320 ; 541 (no solvent reported).

Glycoside(2): ***Bougainvillein r-III***
Pigment from bracts of horticultural variety of *Bougainvillea* "Mrs Butt" (Nyctaginaceae). Complete struct. not determined. Alkaline hydrolysis gave 4-Hydroxycinnamic acid and a mixt. of Bougainvillein r-I and Isobougainvillein r-I. λ_{max} 312 ; 541 (no solvent reported).

Glycoside(3): ***Bougainvillein r-IV***
Pigment from bracts of horticultural variety of *Bougainvillea* "Mrs Butt" (Nyctaginaceae). Complete struct. not determined. Alkaline hydrolysis gave 4-Hydroxycinnamic acid and a mixt. of Bougainvillein r-I and Isobougainvillein r-I.

Glycoside(4): ***Bougainvillein r-V***
Pigment from bracts of horticultural variety of *Bougainvillea* "Mrs Butt" (Nyctaginaceae). Complete struct. not determined. Alkaline hydrolysis gave 4-Hydroxycinnamic acid and a mixt. of Bougainvillein r-I and Isobougainvillein r-I.

Glycoside(5): ***Iresinin III***
[11025-56-2]
Minor pigment from *Iresine herbstii*. Complete struct. not determined. Alkaline hydrolysis gave Amarantin, Isoamarantin plus (*E*)-4-Hydroxycinnamic, (*E*)-3,4-Dihydroxycinnamic, (*E*)-4-Hydroxy-3-methoxycinnamic and (*E*)-4-Hydroxy-3,5-dimethoxycinnamic acids. λ_{max} 298 ; 537 (no solvent reported).

Glycoside(6): ***Iresinin IV***
[11025-57-3]
Minor pigment from *Iresine herbstii*. Complete struct. not determined. Alkaline hydrolysis gave Amarantin plus, Isoamarantin, 4-Hydroxy-3-methoxycinnamic and 4-Hydroxy-3,5-dimethoxycinnamic acids (ratio 1:1:1). λ_{max} 300 ; 321 ; 545 (no solvent reported).

Glycoside(7): ***Isobougainvillein r-II***
Pigment from bracts of horticultural variety of *Bougainvillea* "Mrs Butt" (Nyctaginaceae). Complete struct. not determined. Alkaline hydrolysis gave Bougainvillein r-I, Isobougainvillein r-I, 4-Hydroxycinnamic and 3,4-Dihydroxycinnamic acids (ratio of latter two, 2:1). λ_{max} 280 ; 320 ; 541 (no solvent reported).

14,15-Didehydro, 5-O-β-D-glucopyranoside: ***Neobetanin***
[71199-29-6]
$C_{24}H_{24}N_2O_{13}$ 548.459
Minor pigment from roots of *Bougainvillea vulgaris* ssp. *vulgaris*. Also in flowers of Barbary fig (*Opuntia ficus-indica*), *Portulaca grandiflora*, *Zygocactus truncatus* (preferred genus name *Schlumbergera*) and *Phytolacca bogotensis* (Chenopodiaceae, Portulaceae, Cactaceae, Phytolaccaceae). Prob. artifact. λ_{max} 267 ; 306 ; 470 (no solvent reported). λ_{max} 298 ; 365 (H_2O).

15-Epimer: ***Isobetanidin***
[4934-32-1]
$C_{18}H_{16}N_2O_8$ 388.333
Minor congener of Betanidin. Epimeric at the piperidine COOH group.

15-Epimer, 5-O-β-D-glucopyranoside: ***Isobetanin***
[15121-53-6]
$C_{24}H_{26}N_2O_{13}$ 550.475
Minor congener of Betanin, e.g. from *Beta vulgaris* and *Amaranthus* spp. (Chenopodiaceae, Amaranthaceae).

15-Epimer, 5-O-(4-O-malonyl-β-D-glucopyranoside): ***Isophyllocactin II***
$C_{27}H_{28}N_2O_{16}$ 636.522
Constit. of the fruit peel of *Hylocereus ocamponis*.

15-Epimer, 5-O-(6-O-malonyl-β-D-glucopyranoside): ***Isophyllocactin***
[28378-93-0]
$C_{27}H_{28}N_2O_{16}$ 636.522
Constit. of *Hylocereus polyrhizus* and *Phyllocactus hybridus*.

15-Epimer, 5-O-[3-hydroxy-3-methylglutaroyl-(→6)-β-D-glucopyranoside]: ***Isohylocerenin***
$C_{30}H_{34}N_2O_{17}$ 694.602
Constit. of the fruit of *Hylocereus ocamponis* and *Hylocereus polyrhizus*.

15-Epimer, 5-O-[β-D-apiofuranosyl-(1→2)-β-D-glucopyranoside]:
$C_{29}H_{34}N_2O_{17}$ 682.591
Constit. of the fruit peel of *Hylocereus ocamponis*.

15-Epimer, 5-O-[β-D-apiofuranosyl-(1→2)-6-O-malonyl-β-D-glucopyranoside]:
[290313-74-5]
$C_{32}H_{36}N_2O_{20}$ 768.638
Pigment from *Schlumbergera* x *buckleyi*.

*15-Epimer, 5-O-[4-hydroxy-3-methoxy-*E*-cinnamoyl-(→3)-β-D-apiofuranosyl-(1→2)-β-D-glucopyranoside]:*
$C_{39}H_{42}N_2O_{20}$ 858.762
Pigment from *Phytolacca americana* (pokeberry).

*15-Epimer, 5-O-[4-hydroxy-3,5-dimethoxy-*E*-cinnamoyl-(→5)-β-D-apiofuranosyl-(1→2)-β-D-glucopyranoside]:*
$C_{40}H_{44}N_2O_{21}$ 888.788
Constit. of the fruit peel of *Hylocereus ocamponis*.

*15-Epimer, 5-*O*-[β-D-glucopyranosyl-(1→2)-β-D-glucopyranoside]:* ***Isobougainvillein r-I***
[28146-90-9]
$C_{30}H_{36}N_2O_{18}$ 712.617
Pigment from *Bougainvillea* sp. (Nyctaginaceae). λ_{max} 538 (H_2O).

*15-Epimer, 5-*O*-[β-D-glucopyranosyl-(1→2)-4-*O*-malonyl-β-D-glucopyranoside]:* [951659-95-3]
$C_{33}H_{38}N_2O_{21}$ 798.664
Constit. of the fruit of *Mammillaria* spp. Tentative struct. assigned.

*15-Epimer, 5-*O*-[β-D-glucopyranosyl-(1→2)-6-*O*-malonyl-β-D-glucopyranoside]:* ***Isomammilarinin***
$C_{33}H_{38}N_2O_{21}$ 798.664
Constit. of the fruit of *Mammillaria* spp.

*15-Epimer, 5-*O*-[β-D-glucuronopyranosyl-(1→2)-β-D-glucopyranoside]:* ***Isoamaranthin****. Isoamarantin*
[15229-42-2]
$C_{30}H_{34}N_2O_{19}$ 726.601
Minor congener of Amaranthin.

*15-Epimer, 5-*O*-[4-hydroxy-*E*-cinnamoyl-(→2)-β-D-glucuronopyranosyl-(1→2)-β-D-glucopyranoside]:* ***Isocelosianin I***
[338948-27-9]
$C_{39}H_{40}N_2O_{21}$ 872.746
Pigment from *Celosia cristata* (Amaranthaceae).

*15-Epimer, 5-*O*-[4-hydroxy-3-methoxy-*E*-cinnamoyl-(→2)-β-D-glucuronopyranosyl-(1→2)-β-D-glucopyranoside]:* ***Isocelosianin II***
[338948-57-5]
$C_{40}H_{42}N_2O_{22}$ 902.772
Pigment from *Celosia cristata* (Amaranthaceae).

*15-Epimer, 5-*O*-[β-D-glucuronopyranosyl-(→2)-[3-hydroxy-3-methylglutaryl-(→6)]-β-D-glucopyranoside]:* ***Isoiresinin I****. Iresinin II*
[338947-95-8]
$C_{36}H_{42}N_2O_{23}$ 870.727
Pigment from *Iresine herbstii* (Amaranthaceae). Noncryst.

*15-Epimer, 6-*O*-β-D-glucopyranoside:* ***Isogomphrenin I***
[17008-60-5]
$C_{24}H_{26}N_2O_{13}$ 550.475
Violet pigment from *Gomphrena globosa* (Amaranthaceae).

*15-Epimer, 6-*O*-[4-hydroxy-*E*-cinnamoyl-(→6)-β-D-glucopyranoside]:* ***Isogomphrenin II***
[143062-65-1]
$C_{33}H_{32}N_2O_{15}$ 696.62
Pigment from *Gomphrena globosa* and fruits of *Basella rubra* (Malabar spinach).

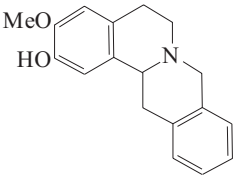
*15-Epimer, 6-*O*-[4-hydroxy-3-methoxy-cinnamoyl-(→6)-β-D-glucopyranoside]:* ***Isogomphrenin III***
[16955-53-6]
$C_{34}H_{34}N_2O_{16}$ 726.646
Pigment from *Gomphrena globosa* (Amaranthaceae) and fruits of *Basella pulva*.

*15-Epimer, 6-*O*-[β-D-glucopyranosyl-(1→2)-[α-L-rhamnopyranosyl-(1→6)]-β-D-glucopyranoside]: Isobetanidin 6-(2^G-glucosylrutinoside). Isobetanidin rhamnosophoroside*
$C_{36}H_{46}N_2O_{22}$ 858.76
Pigment from bracts of *Bougainvillea glabra*.

Dreiding, A.S. *et al., Helv. Chim. Acta*, 1965, **48**, 252-258; 1977, **60**, 673-683 (*synth, Betanin*)
Piattelli, M. *et al., Ann. Chim. (Rome)*, 1966, **56**, 1060; *CA*, **66**, 65805y (*Amaranthin*)
Minale, L. *et al., Phytochemistry*, 1966, **5**, 1037-1052 (*Iresinins, Phyllocactin*)
Wyler, H. *et al., Helv. Chim. Acta*, 1967, **50**, 545-560; 1984, **67**, 1793-1800 (*Prebetanin*)
Minale, L. *et al., Phytochemistry*, 1967, **6**, 703-709 (*Gomphrenins*)
Piattelli, M. *et al., Phytochemistry*, 1970, **9**, 455-458 (*Bougainvilleins*)
Imperato, F. *et al., Phytochemistry*, 1975, **14**, 2526-2527 (*Rivinianin, glucosylrutinosides*)
Hilpert, H. *et al., Helv. Chim. Acta*, 1984, **67**, 1547-1561 (*synth*)
Alard, D. *et al., Phytochemistry*, 1985, **24**, 2383-2385 (*Neobetanin*)
Strack, D. *et al., Phytochemistry*, 1988, **27**, 3529-3531 (*Lampranthin II, Celosianin II*)
Heuer, S. *et al., Phytochemistry*, 1992, **31**, 1801-1807; 1994, **37**, 3529-3531 (*sophorosides, Bougainvillea glabra constits*)
Schliemann, W. *et al., Phytochemistry*, 1996, **42**, 1039-1046 (*Phytolacca americana constits*)
Encyclopedia of Food and Color Additives, (ed. Burdock, G.A.), CRC Press, 1997, 241 (*Betanin, use*)
Kobayshi, N. *et al., Phytochemistry*, 2000, **54**, 419-426 (*Schlumbergera betacyanins*)
Cai, Y. *et al., J. Agric. Food Chem.*, 2001, **49**, 1971 (*bibl, Gomphrenin II, Celosianin I, Isocelosianins, Isogomphrenin II*)
Wybraniec, S. *et al., Phytochemistry*, 2001, **58**, 1209-1212; 2007, **68**, 251-259 (*Hylocerenin, Isohylocerenin, Bougainvillein r-1, Hylocereus ocamponis constits*)
Stintzing, F.C. *et al., Phytochemistry*, 2004, **65**, 415-422 (*pmr, cmr*)
Wybraniec, S. *et al., J. Agric. Food Chem.*, 2007, **55**, 8138-8143 (*Mammillaria constits*)

Bharatamine B-111

*5,8,13,13*a-*Tetrahydro-3-methoxy-6*H-*dibenzo[*a,g*]quinolizin-2-ol, 9CI*
*5,8,13,13*a-*Tetrahydro-2-hydroxy-3-methoxy-6*H-*dibenzo[*a,g*]quinolizine*



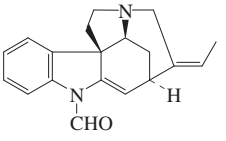
$C_{18}H_{19}NO_2$ 281.354
The first ring D unoxygenated protoberberine alkaloid. Biogenetically related to Emetine, E-72; prob. of mixed tyrosine-terpenoid derivation.

(±)-*form* [85769-48-8]
Alkaloid from the seeds of *Alangium lamarckii* (Alangiaceae). Granules ($CHCl_3$/petrol). Mp 182-183°. λ_{max} 224 (log ε 3.91); 285 (log ε 3.62) (MeOH). λ_{max} 224 (log ε 3.93); 286 (log ε 3.63) (MeOH/NaOH).

Pakrashi, S.C. *et al., Tet. Lett.*, 1983, **24**, 291-294 (*isol, biosynth, uv, ir, pmr, ms, struct*)
Patil, S.D. *et al., Indian J. Chem., Sect. B*, 1985, **24**, 360-362 (*synth, uv, ir, pmr, ms*)
Mandal, S.B. *et al., J.O.C.*, 1988, **53**, 4236-4241 (*synth*)
Takano, S. *et al., Heterocycles*, 1990, **31**, 1151-1156 (*synth*)
Grajewska, A. *et al., Tetrahedron: Asymmetry*, 2007, **18**, 2910-2914 (*synth*)

Bharhingine B-112

[112448-55-2]



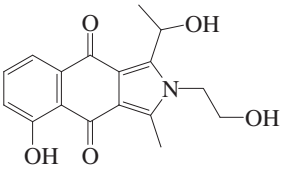
Absolute Configuration

$C_{19}H_{20}N_2O$ 292.38
Alkaloid from the leaves of *Rhazya stricta* (Apocynaceae). $[\alpha]_D^{26}$ -50 (MeOH).

Atta-ur-Rahman, *et al., Planta Med.*, 1987, **53**, 256 (*isol, uv, ir, pmr, ms, struct*)

Bhimamycin C B-113

*5-Hydroxy-1-(1-hydroxyethyl)-2-(2-hydroxyethyl)-3-methyl-2*H-*benz[*b*]isoindole-4,9-dione, 9CI*



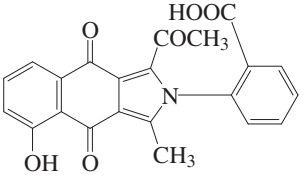
$C_{17}H_{17}NO_5$ 315.325

(ξ)-*form* [701915-60-8]
Prod. by a terrestrial streptomycete. Yellow powder. $[\alpha]_D^{20}$ -23.4 (c, 0.55 in $CHCl_3$). λ_{max} 380 (log ε 3.39) (MeOH).

Fotso, S. *et al., J. Antibiot.*, 2003, **56**, 931-941 (*isol, ir, pmr, cmr, ms*)

Bhimamycin D B-114

[701915-61-9]

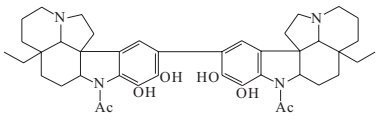


$C_{22}H_{15}NO_6$ 389.364
Prod. by a terrestrial streptomycete. Yellow powder. $[\alpha]_D^{20}$ -2.5 (c, 0.79 in $CHCl_3$). Bhimamycin F and Bhimamycin G are synthetic analogues. λ_{max} 248 (log ε 4.43); 404 (log ε 3.92) (MeOH).

Fotso, S. *et al., J. Antibiot.*, 2003, **56**, 931-941 (*isol, ir, pmr, cmr, ms*)

10,10′-Bi[*N*-acetyl-11,12-dihydroxyaspidospermidine] B-115

[24778-13-0]



$C_{42}H_{54}N_4O_6$ 710.912

Alkaloid from the bark of *Aspidosperma melanocalyx* (Apocynaceae). Cryst. (hexane). Mp 274-275°. $[\alpha]_D^{25}$ +108 (c, 1.01 in Py).

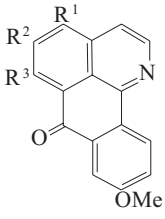
Tetra-Ac: Mp 135-140°.

Miranda, E.C. *et al., Experientia*, 1969, **25**, 575 (*uv, ir, pmr, ms, struct*)

Bianfugecine B-116

*5,9-Dimethoxy-7*H-*dibenzo[*de,h*]quinolin-7-one, 9CI*

[96681-50-4]



$R^1 = R^3 = H, R^2 = OMe$

$C_{18}H_{13}NO_3$ 291.306

Alkaloid from the rhizomes of *Menispermum dauricum* (Menispermaceae). Yellow plates (MeOH). Mp 199-201° (synthetic).

Hou, C. *et al., Yaoxue Xuebao*, 1985, **20**, 112; *CA*, **103**, 3691g

Kunitomo, J. *et al., Heterocycles*, 1986, **24**, 437 (*uv, ir, pmr, ms, struct*)

Bianfugedine B-117

*2-Methoxy-12*H-*benzo[*h*][1,3]benzodioxolo[6,5,4-*de*]quinolin-12-one, 9CI. 5,6-Methylenedioxy-9-methoxy-7*H-*dibenzo[*de,h*]quinolin-7-one*

[96681-51-5]

As Bianfugecine, B-116 with R^1 = H, R^2R^3 = –OCH_2O-

$C_{18}H_{11}NO_4$ 305.289

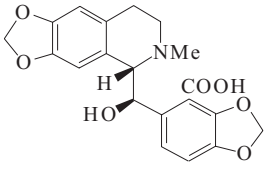
Alkaloid from the rhizomes of *Menispermum dauricum* (Menispermaceae).

Hou, C. *et al., Yaoxue Xuebao*, 1985, **20**, 112; *CA*, **103**, 3691g

Bicucine B-118

*5-[Hydroxy-(5,6,7,8-tetrahydro-6-methyl-1,3-dioxolo[4,5-*g*]isoquinolin-5-yl)methyl]-1,3-benzodioxole-4-carboxylic acid, 9CI*

[481-60-7]



$C_{20}H_{19}NO_7$ 385.373

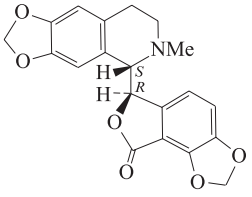
The hydroxy acid corresponding to Bicuculline, B-119 with which it equilibrates. Alkaloid from *Corydalis sempervirens* and *Dicentra cucullaria* (Papaveraceae). Stout prisms (conc. aq. NH_3). Mp 217° (215°).

Manske, R.H.F. *et al., Can. J. Res.*, 1933, **8**, 1 (*isol*)

Robinson, R. *et al., Annu. Rev. Biochem.*, 1935, **4**, 497 (*struct*)

Bicuculline B-119

*6-(5,6,7,8-Tetrahydro-6-methyl-1,3-benzodioxolo[4,5-*g*]isoquinolin-5-yl)furo[3,4-*e*]-1,3-benzodioxol-8(6*H*)-one, 9CI*



(+)–*form*

$C_{20}H_{17}NO_6$ 367.357

Diastereoisomeric with Adlumidine, A-145. Alkaloid from many *Corydalis* spp. and several *Fumaria* spp. (opt. rotn. of isolates not recorded in some cases). Also isol. from *Adlumia fungosa* (*Adlumia cirrhosa*) (Papaveraceae). $GABA_A$-receptor antagonist. Contradictory data as to activity towards heart, intestinal and uterine muscle (relaxant and tonic actions claimed). Convulsant. Much used pharmacological tool. Log P 2.66 (uncertain value) (calc).

(+)-*form* [485-49-4]

Alkaloid from *Corydalis gigantea, Corydalis gortschakovii, Corydalis govaniana, Corydalis lutea, Corydalis marshalliana, Corydalis pseudo-adunca, Fumaria parviflora (F. indica)* and *Fumaria vaillantii* (Papaveraceae). Cryst. (EtOH or MeOH). Mp 194-195° (177°) Mp 215°. $[\alpha]_D$ +137.2 ($CHCl_3$). $[\alpha]_D^{20}$ +132.7 (c, 0.049 in $CHCl_3$).

▶ DT4550000

Picrate: Mp 202°.

Methiodide: [40709-69-1] Cryst. Mp 203-207°.

(-)-*form* [19730-80-4]

Alkaloid from *Corydalis severtzovii* and *Fumaria vaillantii* (Papaveraceae). Cryst. (EtOH or MeOH/Me_2CO). Mp 193-195°. $[\alpha]_D^{33}$ -128 (c, 0.27 in $CHCl_3$) (-110).

Methiodide: [55950-07-7] Mp 236° dec. $[\alpha]_D$ -107 (c,1 in $CHCl_3$).

(±)-*form* [56083-00-2]

Alkaloid from *Fumaria indica* and *Fumaria schleicheri* (Papaveraceae). Mp 216°.

Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **2**, 1310A (*nmr*)

Edwards, O.E. *et al., Can. J. Chem.*, 1961, **39**, 1801 (*isol, uv, ir, pmr, bibl*)

Safe, S. *et al., Can. J. Chem.*, 1964, **42**, 160 (*pmr, config*)

Israilov, I.A. *et al., Khim. Prir. Soedin.*, 1968, **4**, 194; 1970, **6**, 588; 1974, **10**, 411; 476; *Chem. Nat. Compd. (Engl. Transl.)*, 1968, **4**, 167; 1970, **6**, 603; 1974, **10**, 418; 481 (*isol*)

Snatzke, G. *et al., Tetrahedron*, 1969, **25**, 5059 (*ord*)

Curtis, D.R. *et al., Nature (London)*, 1970, **226**, 1222 (*pharmacol*)

Teitel, S. *et al., J.O.C.*, 1972, **37**, 1879 (*synth*)

Gorinsky, C. *et al., J. Cryst. Mol. Struct.*, 1973, **3**, 299 (*cryst struct*)

Preininger, V. *et al., Coll. Czech. Chem. Comm.*, 1975, **40**, 699 (*isol*)

Mehra, K. *et al., Indian J. Chem., Sect. B*, 1976, **14**, 844 (*isol, ir, uv, pmr*)

Markosyan, S.S. *et al., CA*, 1977, **86**, 136375j; 1978, **88**, 133268g (*isol*)

Nalliah, B.L. *et al., Can. J. Chem.*, 1977, **55**, 922 (*synth*)

Kametani, T. *et al., J.C.S. Perkin 1*, 1977, 390 (*isol*)

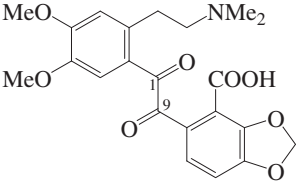
Hussain, S.F. *et al., J. Nat. Prod.*, 1981, **44**, 169; 475 (*isol*)

Benzodiazepine/GABA Recept. Chloride Channels: 1986, (Eds., Olsen, R.W. *et al*), A.R. Liss, 1986, (*pharmacol, book*)

Marek, R. *et al., Magn. Reson. Chem.*, 2002, **40**, 687-692 (*N-15 nmr*)

Bicucullinidine B-120

[78416-83-8]



$C_{22}H_{23}NO_8$ 429.426

Alkaloid from *Fumaria schrammii* (Papaveraceae). Cryst. ($CHCl_3$/EtOH). Mp 265-266°.

1-Deoxo: 5-[[2-[2-(Dimethylamino)ethyl]-4,5-dimethoxyphenyl]acetyl]-1,3-benzodioxole-4-carboxylic acid, 9CI. ***Adlumiceine***

[51059-66-6]

$C_{22}H_{25}NO_7$ 415.442

Alkaloid from *Corydalis sempervirens* and *Fumaria schrammii* (Papaveraceae). Isol. as an inseparable mixt. with Adlumidiceine A-143.

9-Deoxo: 5-[2-[2-[2-(Dimethylamino)ethyl]-4,5-dimethoxyphenyl]-2-oxoethyl]-1,3-dioxole-4-carboxylic acid, 9CI. ***Isoadlumiceine***

[223738-87-2]

$C_{22}H_{25}NO_7$ 415.442

Alkaloid from *Thalictrum triternatum*. Cryst. ($CHCl_3$/MeOH). Mp 218-220°.

Preininger, V. *et al., Phytochemistry*, 1973, **12**, 2513 (*Adlumiceine, pmr, ms, struct*)

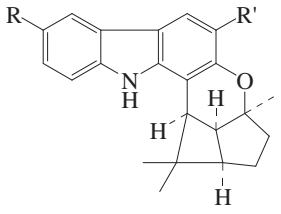
Kiryakov, H.G. *et al., Phytochemistry*, 1981, **20**, 1721 (*Bicucullinidine*)

Popova, M.E. *et al., Planta Med.*, 1982, **40**, 156 (*Adlumiceine, isol, ir, pmr, ms*)

Kintsurashvili, L. *et al., CA*, 1999, **130**, 322950v (*Isoadlumiceine*)

Bicyclomahanimbicine **B-121**

*1,2,2*a,*10,10*c,*11,11*a,*11*b-*Octahydro-2*a,*7,11,11-tetramethyl-3-oxa-10-aza-cyclobut[3,4]indeno[5,6-*a*]fluorene, 9CI*
[28613-80-1]



R = CH_3, R' = H

$C_{23}H_{25}NO$ 331.457

Alkaloid from the leaves of *Murraya koenigii* (curryleaf tree) (Rutaceae). Mp 218° dec. Probably an artifact. Also obt. by shaking a sol. of Mahanimbicine, M-46 with ion-exchange resin (H^+).

Kureel, S.P. *et al., Chem. Ind. (London)*, 1970, 958 (*uv, ir, pmr, struct, synth*)

Bicyclomahanimbine **B-122**

*1,2,2*a,*10,10*c,*11,11*a,*11*b-*Octahydro-2*a,*4,11,11-tetramethyl-3-oxa-10-azacyclobut[3,4]indeno[5,6-*a*]fluorene, 9CI*
[31077-94-8]

As Bicyclomahanimbicine, B-121 with R = H, R′ = CH_3

$C_{23}H_{25}NO$ 331.457

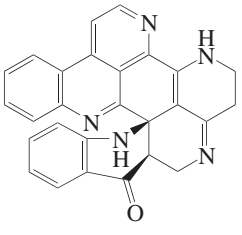
Alkaloid from the leaves of *Murraya koenigii* (curryleaf tree) (Rutaceae). Mp 145°. $[\alpha]_D^{23}$ -1.23 ($CHCl_3$). Probably an artifact. Also obt. readily from Mahanimbine in M-47.

N-*Me:* Mp 156°.

Kureel, S.P. *et al., Tet. Lett.*, 1969, 3857 (*uv, ir, pmr, ms*)

Bandaranayake, W.M. *et al., J.C.S. Perkin 1*, 1974, 998 (*struct*)

Biemnadin **B-123**



$C_{27}H_{19}N_5O$ 429.48

(±)-*form* [152053-10-6]

Alkaloid from the Okinawan marine sponge *Biemna* sp. and *Biemna fortis*. Cytotoxic. Neuronal differentiation inducer. Yellow cryst. (as hydrochloride). Mp 300° (hydrochloride). Closely related to Eudistone A, E-291. λ_{max} 229 (ε 29000); 256 (ε 17000); 370 (ε 5000) (MeOH).

Zeng, C.-M. *et al., Tetrahedron*, 1993, **49**, 8337-8342 (*isol, uv, ir, pmr, cmr, cryst struct*)

Aoki, S. *et al., Bioorg. Med. Chem.*, 2003, **11**, 1969-1973 (*isol, pmr, cmr*)

Biflorine† **B-124**

$C_{17}H_{17}NO_4$ 299.326

Struct. unknown. Alkaloid from *Oldenlandia biflora* (Rubiaceae) whole plant. Antibiotic. Possesses fungicidal props. Cryst. (EtOH). Mp 206°. $[\alpha]_D$ -135.4. Oxidn. gives Biflorone, B-125. Conts. 1MeO, 3OH and tertiary N, resistant to redn.

Hydrochloride: Mp 259° (sealed tube). Turns yellow before melting.

Nitrate:
Yellow cryst. Mp 278°.

Methiodide: Mp 124°.

Chauhan, R.N.S. *et al., J. Indian Chem. Soc.*, 1952, **29**, 386-390; 1954, **31**, 741-745

Biflorone **B-125**

$C_{17}H_{15}NO_4$ 297.31

Struct. unknown. Alkaloid from *Oldenlandia biflora* (Rubiaceae), also obt. by oxidn. of Biflorine, B-124. Hygroscopic brownish-yellow cryst. Mp 98°. $[\alpha]_D$ +193.4.

Hydrochloride:
Cryst. (EtOH). Mp 152°.

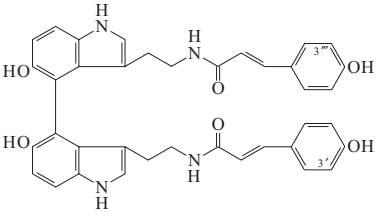
Nitrate: Mp 156°.

Methiodide: Mp 139°.

Chauhan, R.N.S. *et al., J. Indian Chem. Soc.*, 1952, **29**, 386-390; 1954, **31**, 741-745

4,4″-Bi[*N*-4-hydroxycinnamoylserotonin] **B-126**

*4,4″-Bis(*N-p-*coumaroylserotonin)*



$C_{38}H_{34}N_4O_6$ 642.71

(*E,E*)-*form* [175702-01-9]

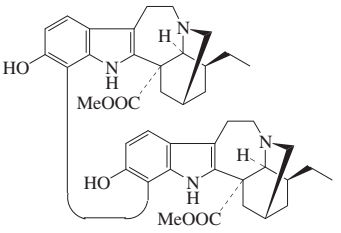
Isol. from safflower (*Carthamus tinctorius*) oil cake. Antioxidant. Powder. Mp 180-182°. λ_{max} 221 (ε 43000); 294 (ε 35000); 305 (ε 34700) (MeOH).

3′-Methoxy: ***4-[*N*-(p-Coumaroyl)serotonin-4″-yl]-*N*-feruloylserotonin***
[175702-02-0]
$C_{39}H_{36}N_4O_7$ 672.736
From *Carthamus tinctorius* oil cake. Antioxidant. Powder. Mp 179-181°. λ_{max} 221 (ε 70500); 292 (ε 51000); 309 (ε 52700) (MeOH).

3′,3‴-Dimethoxy: ***4,4″-Bi[*N*-(4-hydroxy-3-methoxycinnamoyl)serotonin]***. *4,4″-Bis(*N-*feruloyl)serotonin*
[175702-03-1]
$C_{40}H_{38}N_4O_8$ 702.762
From *Carthamus tinctorius* oil cake. Antioxidant. Mp 158-160°. λ_{max} 289 (ε 35400); 317 (ε 38800) (MeOH).

Zhang, H.-L. *et al., Chem. Pharm. Bull.*, 1997, **45**, 1910-1914 (*isol, uv, ir, pmr, cmr*)

12,12′-Bi[11-hydroxycoronaridine] **B-127**



$C_{42}H_{50}N_4O_6$ 706.88

Alkaloid from the leaves of *Bonafousia tetrastachya* (preferred genus name *Tabernaemontana*) and *Tabernaemontana citrifolia* (Apocynaceae). Amorph. $[\alpha]_D$ -43 (c, 0.37 in $CHCl_3$).

Mono-Me ether: ***Obovatine***
[163135-91-9]
$C_{43}H_{52}N_4O_6$ 720.907
Alkaloid from leaves of *Stemmadenia obovata* (Apocynaceae). Amorph. $[\alpha]_D^{25}$ +17.8 (c, 0.13 in $CHCl_3$).

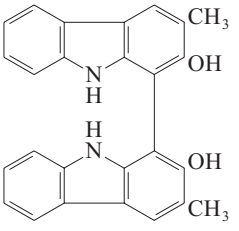
Damak, M. *et al., Tet. Lett.*, 1976, 3531 (*uv, ir, pmr, cmr, ms, struct*)

Abaul, J. *et al., J. Nat. Prod.*, 1989, **52**, 1279 (*isol*)

Valencia, E. *et al., J. Nat. Prod.*, 1995, **58**, 134 (*Obovatine*)

1,1′-Bi[2-hydroxy-3-methylcarbazole] **B-128**

*3,3′-Dimethyl-[1,1′-bi-9*H*-carbazole]-2,2′-diol, 9CI*
[155519-83-8]



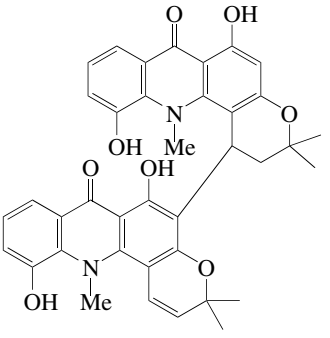
$C_{26}H_{20}N_2O_2$ 392.456

Alkaloid from roots of *Murraya koenigii* (curryleaf tree) (Rutaceae). Oil.

Ito, C. *et al., Chem. Pharm. Bull.*, 1993, **41**, 2096 (*isol, uv, ir, pmr, ms, struct*)

Knölker, H.J. *et al., Synlett*, 1996, 737 (*synth*)

Bi[5-hydroxynoracronycine] **B-129**

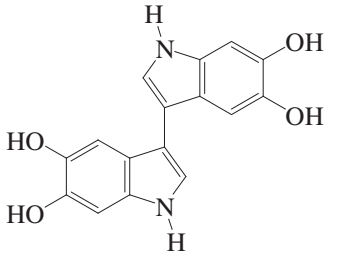


$C_{38}H_{34}N_2O_8$ 646.695
Alkaloid from the roots of *Citrus paradisi* (grapefruit). Yellow cubes (Me_2CO). Mp 207-209°. Racemic. λ_{max} 202 ; 231 ; 271 ; 290 (sh) ; 345 (sh) (EtOH).

Takemura, Y. *et al., Chem. Pharm. Bull.*, 1998, **46**, 693-696 (*isol, synth, uv, ir, pmr, cmr, ms*)

3,3′-Bi-1*H*-indole-5,5′,6,6′-tetrol B-130

*5,5′,6,6′-Tetrahydroxy-3,3′-bi-1*H*-indole*
[390401-91-9]

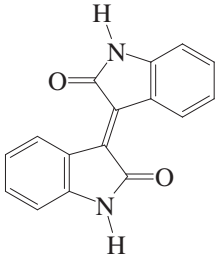


$C_{16}H_{12}N_2O_4$ 296.282
The synthesis in 2004 suggests that the struct. needs revision. Constit. of beet-root peel, *Beta vulgaris*.

Kujala, T. *et al., Z. Naturforsch., C*, 2001, **56**, 714-718 (*isol, pmr, cmr, ms*)
Mee, S.P.H. *et al., Tetrahedron*, 2004, **60**, 3695-3712 (*synth*)

[3,3′-Biindoline]-2,2′-dione, 8CI B-131

*3-(1,2-Dihydro-2-oxo-3*H*-indol-3-ylidene)-1,3-dihydro-2*H*-indol-2-one, 9CI*. ***Isoindigotin***. *Isoindigo. Indigo brown*
[476-34-6]
[180479-95-2]

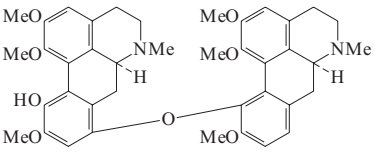


$C_{16}H_{10}N_2O_2$ 262.267
Minor constit. of various plant spp. incl. *Indigofera* spp., *Isatis tinctoria* and *Polygonum tinctorium*. Dark red-violet cryst. (hexane/petrol). Mp 364° (>325°). λ_{max} 396 (ϵ 10900); 483 (ϵ 5100) (tetrachloroethane).

Perkin, A.G. *et al., J.C.S.*, 1907, **91**, 279-288 (*isol*)
Eller-Pandraud, H. *et al., C. R. Hebd. Seances Acad. Sci.*, 1959, **248**, 2581-2583 (*cryst struct*)
Papageorgiou, C. *et al., Helv. Chim. Acta*, 1988, **71**, 1079-1083 (*synth*)
Maugard, T. *et al., Phytochemistry*, 2001, **58**, 897-904 (*synth, biosynth, uv*)

8′,11*O*-Biisocorydine B-132

*8′,11*O*-Bisisocorydine*



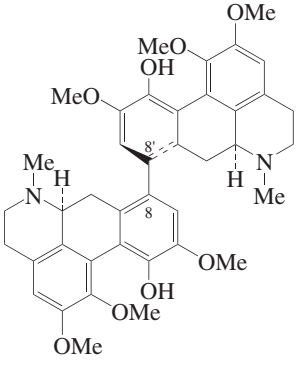
$C_{40}H_{44}N_2O_8$ 680.796

(6aS,6a′S)-form [176901-25-0]
Alkaloid from leaves of *Dehaasia triandra*. Amorph. solid. $[\alpha]_D^{20}$ +89 (c, 1.0 in MeOH).

Lee, S.-S. *et al., Tetrahedron*, 1996, **52**, 6561 (*isol, uv, ir, pmr, cmr, ms, cd, struct*)

8,8′-Biisocorydine B-133

*8′,11*O*-Bisisocorydine*



(6aS,6a'S,R$_{axial}$)-form

$C_{40}H_{44}N_2O_8$ 680.796

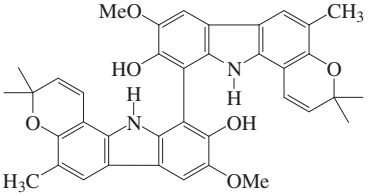
(6aS,6a′S,R$_{axial}$)-form
Alkaloid from leaves of *Dehaasia triandra*. Also obt. by oxidative coupling of Isocorydine, I-208. Amorph. solid. $[\alpha]_D^{20}$ +14 (c, 0.5 in MeOH).

(6aS,6a′S,S$_{axial}$)-form
From leaves of *Dehaasia triandra*. Also obt. by oxidative coupling. Amorph. solid. $[\alpha]_D^{20}$ +176 (c, 0.5 in MeOH).

Lee, S.-S. *et al., Tetrahedron*, 1996, **52**, 6561 (*isol, uv, ir, pmr, cmr, ms, cd, struct*)

8,8′-Bikoenigine B-134

8,8′-Biskoenigine
[477890-82-7]

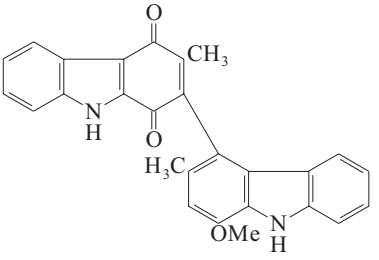


$C_{38}H_{36}N_2O_6$ 616.712
Alkaloid from the dried leaves of *Murraya koenigii*. Brown gum. $[\alpha]_D^{17}$ +139.6 (c, 0.01 in $CHCl_3$).

Wang, Y.-S. *et al., J. Nat. Prod.*, 2003, **66**, 416-418 (*isol, pmr, cmr*)

Bikoeniquinone A B-135

*1′-Methoxy-3,3′-dimethyl-[2,4′-bi-9*H*-carbazole]-1,4-dione, 9CI*
[155519-84-9]

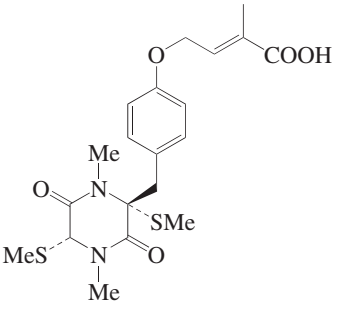


$C_{27}H_{20}N_2O_3$ 420.467
Alkaloid from roots of *Murraya koenigii* (curryleaf tree) (Rutaceae). Orange oil.

Ito, C. *et al., Chem. Pharm. Bull.*, 1993, **41**, 2096 (*isol, uv, ir, pmr, ms, struct*)

Bilain A B-136

[959779-92-1]



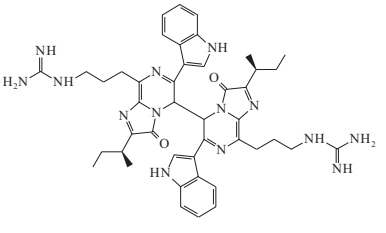
$C_{20}H_{26}N_2O_5S_2$ 438.568
Related to Bis(methylthio)silvatin. Prod. by the marine-derived *Penicillium bilaii* MST-MF667. Brown oil. $[\alpha]_D$ -10 (c, 0.25 in EtOH).

β-Alanine amide: ***Bilain C***
[959779-94-3]
$C_{23}H_{31}N_3O_6S_2$ 509.646
Prod. by *Penicillium bilaii* MST-MF667. Brown oil.

Capon, R.J. *et al., J. Nat. Prod.*, 2007, **70**, 1746-1752 (*isol, pmr, cmr*)

Cypridina Biluciferyl B-137

Cypridina *Biluciferol*
[96700-80-0]



$C_{44}H_{52}N_{14}O_2$ 808.987
Dimer of *Cypridina* Luciferin, L-281. Isol. from *Cypridina* sp. Bioluminescent compd.

Toya, Y. *et al., Tet. Lett.*, 1985, **26**, 239 (*uv, pmr, struct*)

Biochanin C B-138

$C_{16}H_{13}N_3O_4$ 311.296

Struct. unknown. Isol. from seeds of *Cicer arietinum* (chickpea). Large prisms (EtOH or H_2O). Sol. H_2O. Mp 315°. Conts. one OMe group, unsatd. to Br_2.

Siddiqui, S. *et al., J. Sci. Ind. Res.*, 1945, **4**, 68-70; *CA*, **40**, 1502

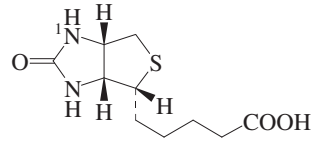
Warsi, S.A. *et al., Pak. J. Sci. Res.*, 1951, **3**, 85-88; *CA*, **47**, 3305f

Biotin, INN, USAN B-139

*Hexahydro-2-oxo-1*H*-thieno[3,4-*d*]imidazole-4-pentanoic acid, 9CI. Vitamin H. Coenzyme R. Vitamin B_7. Factor S*†

[58-85-5]

[22879-79-4]



$C_{10}H_{16}N_2O_3S$ 244.314

Occurs in yeast, eggs, liver. Prod. by various microorganisms and isol. from various higher plant sources, e.g. sweet corn seedlings, leaves of *Raphanus sativus*. Bacterial growth factor for egg white injury. Fine needles (H_2O). Sol. H_2O. Mp 232-233°. $[\alpha]_D^{20}$ +91 (c, 1 in 0.1*M* NaOH). Log P -0.18 (calc).

► Shows exp. reproductive effects.

S-*Oxide: Biotin sulfoxide*

[3376-83-8]

$C_{10}H_{16}N_2O_4S$ 260.313

Isol. from *Aspergillus niger*. Polymorphic plates (H_2O). Mp 238° part. dec. $[\alpha]_D^{20}$ -39.5 (c, 1.01 in 0.1*M* NaOH).

Me ester: [608-16-2]

$C_{11}H_{18}N_2O_3S$ 258.341

Cryst. Mp 166.5°. $[\alpha]_D^{15}$ +82 (c, 0.45 in MeOH).

Succinimidoyl ester: [35013-72-0]

$C_{14}H_{19}N_3O_5S$ 341.387

Reagent for biotinylation of proteins and nucleic acids. Cryst. (2-propanol). Mp 196-198°.

Amide: Biotinamide

[6929-42-6]

$C_{10}H_{17}N_3O_2S$ 243.329

Formed by the action of *Rhodotorula flava* on biotin. Rosettes (MeOH or H_2O). Mp 242-244°. $[\alpha]_D^{23}$ +80 (c, 2.5 in EtOH).

N^1*-Benzyl:* N-*Benzylbiotin. γ-Biotin*

[76335-62-1]

$C_{17}H_{22}N_2O_3S$ 334.438

Needles (MeOH aq.). Mp 183-184°. Originally descr. as a natural vitamin under the name γ-biotin and descr. as *N*-phenylbiotin. Later shown to be an artifact with no vitamin activity.

[10406-89-0]

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 809C (*ir*)

Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 1317C (*nmr*)

Harris, S.A. *et al., J.A.C.S.*, 1944, **66**, 1756-1757 (*synth, resoln*)

Wolf, D.E. *et al., J.A.C.S.*, 1951, **73**, 4142-4144 (*amide, synth*)

Jansen, A.B.A. *et al., J.C.S.*, 1962, 4909-4914; 1964, 1530-1531 (*γ-Biotin*)

Trotter, J. *et al., Biochemistry*, 1966, **5**, 713-714 (*cryst struct, abs config*)

Green, N.M. *et al., J.C.S.(C)*, 1970, 1330-1333 (*cd, ord*)

De Titta, G.T. *et al., J.A.C.S.*, 1976, **98**, 1920-1926 (*cryst struct*)

Marx, M. *et al., J.A.C.S.*, 1977, **99**, 6754-6756 (*synth, bibl*)

Ohrui, H. *et al., Agric. Biol. Chem.*, 1978, **42**, 865-868 (*synth*)

Vasilevskis, J. *et al., J.A.C.S.*, 1978, **100**, 7423-7424 (*synth, bibl*)

Uskokovic, M.R. *et al., Kirk-Othmer Encycl. Chem. Technol., 3rd edn., Wiley*, 1978, **24**, 41 (*rev*)

Baggiolini, E.G. *et al., J.A.C.S.*, 1982, **104**, 6460-6462 (*synth*)

Whitney, R.A. *et al., Can. J. Chem.*, 1983, **61**, 1158-1160 (*synth*)

Bonjour, J.-P. *et al., Handbook of Vitamins*, (ed. Machlin, L.J.), M. Dekker, New York, 1984, 403 (*rev*)

Dakshinamurti, K. *et al., Ann. N.Y. Acad. Sci.*, (Eds.), 1985, **447**, (*book*)

Bentley, R. *et al., Trends Biochem. Sci.*, 1985, **10**, 51-56 (*rev, abs config*)

Al-Hakim, A.H. *et al., Nucleic Acids Res.*, 1986, **14**, 9965-9976 (*succinimidoyl ester*)

Negwer, M. *et al., Organic-Chemical Drugs and their Synonyms, 6th edn., Akademie-Verlag*, 1987, 1715

Lee, H.L. *et al., Tetrahedron*, 1987, **43**, 4887-4903 (*synth*)

Corey, E.J. *et al., Tet. Lett.*, 1988, **29**, 57-60 (*synth*)

Lewis, R.J. *et al., Food Additives Handbook*, Van Nostrand Reinhold International, New York, 1989, BGD100

Senuma, M. *et al., Chem. Pharm. Bull.*, 1990, **38**, 882-887 (*rev, synth*)

Parameswaran, K.N. *et al., Org. Prep. Proced. Int.*, 1990, **22**, 119-121 (*succinimidoyl ester, synth*)

Alcázar, V. *et al., Tetrahedron*, 1990, **46**, 1057-1062 (*synth*)

Bihovsky, R. *et al., Tetrahedron*, 1990, **46**, 7667-7676 (*synth*)

De Titta, G.T. *et al., J.A.C.S.*, 1994, **116**, 6485-6493 (*cryst struct, nmr*)

Moolenaar, M.J. *et al., Angew. Chem., Int. Ed.*, 1995, **34**, 2391-2393 (*synth*)

Deroose, F.D. *et al., J.O.C.*, 1995, **60**, 321-330 (*synth, bibl*)

Nicolaou, K.C. *et al., Classics in Total Synthesis, Targets, Strategies, Methods*, VCH, 1996, 285 (*bibl, synth*)

De Clercq, P.J. *et al., Chem. Rev.*, 1997, **97**, 1755-1792 (*rev, synth*)

Martindale, The Extra Pharmacopoeia, 32nd edn., Pharmaceutical Press, 1999, 1336

Chen, F.-E. *et al., Synthesis*, 2000, 2004-2008; 2003, 2155-2160 (*synth, ir, pmr, ms*)

Mori, Y. *et al., Heterocycles*, 2002, **58**, 125-127 (*synth*)

Seki, M. *et al., J.O.C.*, 2002, **67**, 5527-5536 (*synth*)

Shimizu, T. *et al., Yakugaku Zasshi*, 2003, **123**, 43-52 (*synth*)

Seki, M. *et al., Chem. Eur. J.*, 2004, **10**, 6102-6110 (*synth*)

Kimura, M. *et al., Tet. Lett.*, 2004, **45**, 1635-1637 (*synth, bibl*)

Chavan, S.P. *et al., Tetrahedron*, 2005, **61**, 9273-9280 (*synth*)

Roje, S. *et al., Phytochemistry*, 2007, **68**, 1904-1921 (*biosynth, rev*)

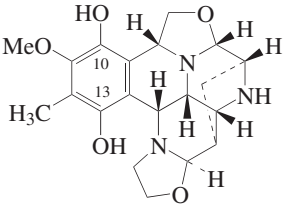
Huang, J. *et al., Tetrahedron: Asymmetry*, 2008, **19**, 1436-1443 (*synth*)

Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, VSU100

Bioxalomycin α1 B-140

Antibiotic 31F508α1. 31F508α1

[157207-82-4]



$C_{20}H_{25}N_3O_5$ 387.435

Isol. from the marine-derived *Streptomyces viridostaticus* ssp. *littoralis* (LL-31F508). Exhibits potent antimicrobial and antitumour activity. Powder. Sol. MeOH, H_2O, DMSO, Me_2CO; poorly sol. CH_2Cl_2, Me_2CO, MeCN, $CHCl_3$. λ_{max} 290 ; 294 (MeOH) (Berdy).

N-*Me:* ***Bioxalomycin α2***. *Antibiotic 31F508α2. 31F508α2*

[157207-83-5]

$C_{21}H_{27}N_3O_5$ 401.461

From *Streptomyces viridostaticus* ssp. *littoralis*. Exhibits potent antimicrobial and antitumour activity. Powder. Sol. MeOH, Me_2CO, DMSO, H_2O; poorly sol. CH_2Cl_2, $CHCl_3$, MeCN, Me_2CO. $[\alpha]_D^{25}$ +31 (MeOH). Unstable in soln. λ_{max} 292 (ε 2729) (MeOH) (Berdy).

10,13-Quinone: ***Bioxalomycin β1***. *Antibiotic 31F508β1. 31F508β1*

[157207-84-6]

$C_{20}H_{23}N_3O_5$ 385.419

Isol. from *Streptomyces viridostaticus* ssp. *littoralis*. Potent antitumour and antimicrobial agent. Sol. CH_2Cl_2, DMSO, MeOH, $CHCl_3$; poorly sol. H_2O, hexane.

10,13-Quinone, N-*Me:* ***Bioxalomycin β2***. *Antibiotic 31F508β2. 31F508β2*

$C_{21}H_{25}N_3O_5$ 399.446

From *Streptomyces viridostaticus* ssp. *littoralis*. Exhibits potent antitumour and antimicrobial activity. Sol. CH_2Cl_2, $CHCl_3$, DMSO, MeOH; poorly sol. H_2O, hexane. Erroneously given the same CAS no. as Naphthyridinomycin A, N-32. λ_{max} 270 (ε 10508); 370 (MeOH) (Berdy). λ_{max} 264 ; 370 (MeOH/HCl) (Berdy).

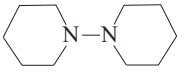
Bernan, V.S. *et al., J. Antibiot.*, 1994, **47**, 1417-1424 (*isol, props*)

Zaccardi, J. *et al., J.O.C.*, 1994, **59**, 4045-4047 (*isol, ir, uv, pmr, cmr, ms*)

1,1′-Bipiperidine, 9CI B-141

1,1′-Dipiperidine. ***Fabioline***

[6130-94-5]



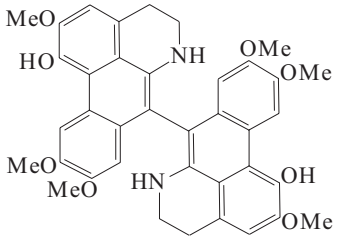
$C_{10}H_{20}N_2$ 168.281
Alkaloid from aerial parts of *Cassia grandis*. Needles. Mp 19.5-20.5°.

Picrate: Mp 153-154°.

Mackay, D. *et al., J.C.S.(C)*, 1966, 813 (*synth*)
Ogawa, K. *et al., J.C.S. Perkin 1*, 1982, 3031 (*synth*)
Valencia, E. *et al., Fitoterapia*, 1995, **66**, 476 (*isol, ir, pmr, cmr, ms, struct*)

Bipowine B-142

7,7′-Bis(6a,7-didehydrowilsonirine)
[107882-21-3]

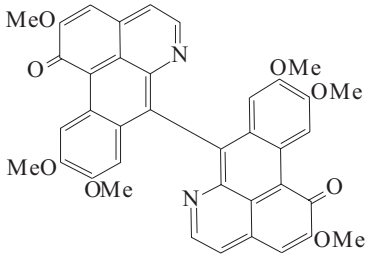


$C_{38}H_{36}N_2O_8$ 648.711
Alkaloid from the bark of *Popowia pisocarpa* (Annonaceae). Cryst. (Me_2CO). Mp 249-251°.

Jossang, A. *et al., J. Nat. Prod.*, 1986, **49**, 1028 (*uv, pmr, cmr, ms, struct*)
Ruchirawat, S. *et al., Heterocycles*, 2001, **55**, 371-376 (*synth*)

Bipowinone B-143

7,7′-Bispancoridine
[107882-20-2]

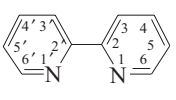


$C_{38}H_{28}N_2O_8$ 640.648
Alkaloid from the bark of *Popowia pisocarpa* (Annonaceae). Cryst. (Me_2CO). Mp 295°.

Jossang, A. *et al., J. Nat. Prod.*, 1986, **49**, 1028 (*uv, ir, pmr, cmr, ms, struct, synth*)
Ruchirawat, S. *et al., Heterocycles*, 2001, **55**, 371-376 (*synth*)

2,2′-Bipyridine, 9CI B-144

2,2′-Bipyridyl. α,α′-Bipyridyl. Bipy
[366-18-7]
[37275-48-2]



$C_{10}H_8N_2$ 156.187
Used in photometric detn. of Fe(*II*) (λ_{max} 522 nm, ϵ 8700, pH 2-9); as a masking agent for Zn, Cd, Cu. Fe(*II*) chelate is used as a redox indicator. Complexing agent for prepn. of inorganic complexes. Prisms (petrol). Sol. H_2O, EtOH, Et_2O, C_6H_6, $CHCl_3$, dil. acids. Mp 69.5°. Bp 272.5°. pK_{a1} 4.3 (25°, H_2O). Fe^{II} salts → red col.

▶ LD_{50} (rat, orl) 100 mg/kg. Exp. teratogen. DW1750000

Methiodide: [77972-47-5]
Yellow-white needles (Et_2O/MeCN). Mp 143-145°.

Chlorochromate: [76899-34-8]
$C_{10}H_9ClCrN_2O_3$ 292.642
Used to oxidise acid labile primary and secondary alcohols to carbonyl compounds. Yellow cryst.

Mono-N-*oxide:* [33421-43-1]
$C_{10}H_8N_2O$ 172.186
Mp 59°.

▶ DW1840000

N,N′-*Dioxide:* [7275-43-6]
$C_{10}H_8N_2O_2$ 188.185
Mp 310° dec.

▶ DW1770000

N,N′-*Di-Me:* ***1,1′-Dimethyl-2,2′-bipyridinium(2+)***
$C_{12}H_{14}N_2^{2\oplus}$ 186.256
Isol. from mollusc *Callista chione*.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 731C (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 239B; 483B (*nmr*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 1513B (*ir*)
Fresenius, W. *et al., Fresenius' Z. Anal. Chem.*, 1965, **209**, 340 (*detn, Fe*)
Schilt, A.A. *et al., Analytical Applications of 1,10-Phenanthroline and Related Compounds*, Pergamon, London, 1969, (*use*)
Nordén, B. *et al., Acta Chem. Scand.*, 1972, **26**, 429 (*spectra*)
French, W.J. *et al., Analyst (London)*, 1972, **97**, 828 (*detn, Fe*)
Org. Synth., Coll. Vol., 5, 1973, 102
Keats, N.G. *et al., J. Het. Chem.*, 1976, **13**, 369 (*ms*)
Guziec, F.S. *et al., Synthesis*, 1980, 691 (*chlorochromate, synth, use*)
Cheng, K.L. *et al., Handbook of Organic Analytical Reagents*, CRC Press, Boca Raton, 1982, 309 (*use*)
Wenkert, D. *et al., J.O.C.*, 1983, **48**, 283 (*oxides*)
Moran, D.B. *et al., J. Het. Chem.*, 1986, **23**, 1071 (*monoxide*)
Almenningen, A. *et al., Acta Chem. Scand.*, 1989, **43**, 932 (*ed, struct, bibl*)
Encyclopaedia of Reagents for Organic Synthesis, (ed. Paquette, L.A.), Wiley, 1995, **1**, 409-410 (*chlorochromate, use*)
Norrby, T. *et al., Acta Chem. Scand.*, 1998, **52**, 77-85 (*monoxide, methiodide*)
Demnitz, F.W.J. *et al., Org. Prep. Proced. Int.*, 1998, **30**, 467-469 (*monoxide*)
Vagias, C. *et al., Nat. Prod. Lett.*, 2000, **14**, 425-428 (*N,N′-di-Me, isol*)
Bowen, R.J. *et al., Acta Cryst. C*, 2004, **60**, o113-o114 (*cryst struct*)
Rajalakshmanan, E. *et al., Synth. Commun.*, 2005, **35**, 891-895 (*synth, pmr*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, BGO500

2,3′-Bipyridine, 9CI B-145

2,3′-Dipyridyl. ***Isonicoteine***
[581-50-0]
[37275-48-2]

$C_{10}H_8N_2$ 156.187
Occurs in tobacco (*Nicotiana tabacum*) (Solanaceae) and the marine hoplonemertine *Amphiporus angulatus*. Used for extraction-photometric detn. of Cu(*II*), and for extraction of Sc. Liq. Insol. H_2O. d_{20}^4 1.14. Bp 298°. n_D^{20} 1.6223.

▶ Crustacean convulsant, but weak activity in mice. Mutagenic props. DW1755000

Perchlorate (1:2): Mp 215-216°.

Picrate: Mp 153-154°.

Dipicrate: Mp 165-168°.

Methiodide (1:2): [63095-08-9]
Cryst. (EtOH aq.). Mp 210-214° dec.

1-Oxide: [39182-27-9]
$C_{10}H_8N_2O$ 172.186
Solid. Mp 135-137°. Prepared indirectly, not obt. by direct oxidation.

1′-Oxide: [39182-28-0]
$C_{10}H_8N_2O$ 172.186
Cryst. + $1H_2O$ (Me_2CO/hexane). Mp 78°.

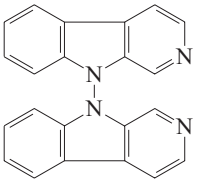
1,1′-Dioxide: [30651-23-1]
$C_{10}H_8N_2O_2$ 188.185
Cryst. (MeOH). Mp 240-243°.

[42907-60-8]

Smith, J.R. *et al., J.A.C.S.*, 1930, **52**, 397 (*synth*)
Morgan, G.T. *et al., J.C.S.*, 1932, 20 (*synth*)
Späth, E. *et al., Ber.*, 1936, **69**, 2448 (*isol*)
Talipov, S.T. *et al., Uzb. Khim. Zh.*, 1963, 22 (*detn, Cu*)
Leete, E. *et al., J.A.C.S.*, 1969, **91**, 1697 (*synth*)
Alimarin, I.P. *et al., CA*, 1973, **78**, 8393m (*sepn, Sc*)
Kem, W.R. *et al., Experientia*, 1976, **32**, 684-686 (*isol, ms, tox*)
Leete, E. *et al., J.A.C.S.*, 1976, **98**, 6326 (*biosynth*)
Moran, D.B. *et al., J. Het. Chem.*, 1986, **23**, 1071 (*oxides*)
Zoltewicz, J.A. *et al., J.O.C.*, 1992, **57**, 2392 (*deriv, synth, pmr*)
Zoltewicz, J.A. *et al., Tetrahedron*, 1995, **51**, 3103 (*1-oxide*)
Núñez, A. *et al., Tetrahedron*, 2004, **60**, 6217-6224 (*synth, pmr, cmr*)

9,9′-Bi-9*H*-pyrido[3,4-*b*]indole, 9CI B-146

N,N′-*Bi-β-carboline*
[85753-68-0]

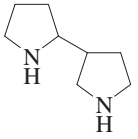


$C_{22}H_{14}N_4$ 334.379
Alkaloid from the ascidian *Didemnum* sp. Also obt. by photochemical dimerisation of β-Carboline, C-130. Needles (EtOAc/hexane). Mp 209-210° dec.

Erra-Balsells, R. *et al., Tetrahedron*, 1983, **39**, 33-39 (*synth*)
Erra-Balsells, R. *et al., Magn. Reson. Chem.*, 1988, **26**, 1109-1112 (*cmr*)
Kearns, P.S. *et al., J. Nat. Prod.*, 1995, **58**, 1075-1076 (*isol, uv, ir, pmr, cmr, ms*)

2,3′-Bipyrrolidine B-147

[107334-13-4]



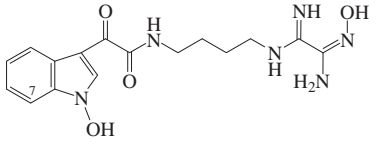
$C_8H_{16}N_2$ 140.228

N,N′-Di-Me: 1,1′-Dimethyl-2,3′-bipyrrolidine. 2,3′-Bi(1-methylpyrrolidine)
[6602-17-1]
$C_{10}H_{20}N_2$ 168.281
Alkaloid from the roots of *Nicotiana tabacum* (tobacco). Liq. $Bp_{0.1}$ 37-38°. Isol. as a mixt. of two diastereoisomers. Properties given for unspecified isomer composition.

N,N′-Di-Me, picrate (1:2):
Yellow cryst. (EtOH aq.). Mp 215-216°.

Bocz, A.K. *et al., Chem. Ber.*, 1966, **99**, 1923-1931 (*N,N′-di-Me, synth*)
Wei, X. *et al., Life Sci.*, 2005, **78**, 495-505 (*N,N′-di-Me, isol, synth, pmr, ms*)

Birnbaumin A B-148



$C_{16}H_{20}N_6O_4$ 360.372
Alkaloid from *Leucocoprinus birnbaumii*. Yellow solid. λ_{max} 212 (log ϵ 4.42); 250 (log ϵ 4.03); 322 (log ϵ 3.96) (MeOH).

7-Hydroxy: ***Birnbaumin B***
$C_{16}H_{20}N_6O_5$ 376.371
Alkaloid from *Leucocoprinus birnbaumii*. Yellow solid. λ_{max} 214 (log ϵ 4.74); 248 (log ϵ 4.34); 267 (sh) (log ϵ 4.19); 356 (log ϵ 4.16) (MeOH).

Bartsch, A. *et al., Angew. Chem., Int. Ed.*, 2005, **44**, 2957-2959 (*isol, ir, pmr, cmr, ms*)

Bis(4-aminobutyl)bis(3-aminopropyl)ammonium(1+) B-149

*4-Amino-*N*-(4-aminobutyl)-*N,N*-bis(3-aminopropyl)-1-butanaminium, 9CI.*
N^5,N^5*-Bis(3-aminopropyl)homospermidine*
[143085-77-2]
$(H_2NCH_2CH_2CH_2CH_2)_2N^{\oplus}(CH_2CH_2CH_2NH_2)_2$
$C_{14}H_{36}N_5^{\oplus}$ 274.472
Isol. from thermophilic bacteria. Counterion not specified.

Hamana, K. *et al., Biochem. J.*, 1992, **284**, 741-747

N,N′-Bis(4-aminobutyl)-1,4-butanediamine, 9CI B-150

1,6,11,16-Tetraazahexadecane. 1,14-Diamino-5,10-diazatetradecane. ***Homospermine****. PA444*
[45185-87-3]
$H_2NCH_2(CH_2)_3^{10}NH(CH_2)_4^5NH(CH_2)_3CH_2NH_2$
$C_{12}H_{30}N_4$ 230.396
Prod. by a *Rhizobium* sp. Also found in *Vicia sativa*, *Vicia villosa*, *Crotalaria spectabilis* and *Stichopus japonica*.

N^1,N^{14}*-Di-Et:* N,N′*-Bis[4-(ethylamino)-butyl]-1,4-butanediamine, 9CI.* N^1,N^{14}*-Diethylhomospermine. DEHSPM*
[119422-08-1]
[156886-86-1 (hydrochloride)]
$C_{16}H_{38}N_4$ 286.503
Antiproliferative agent. Plates (EtOH) (as tetrahydrochloride).

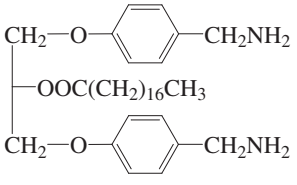
N^5*-(4-Aminobutyl):* $\mathbf{N^5}$***-(4-Aminobutyl)-homospermine***
[139035-35-1]
$C_{16}H_{39}N_5$ 301.518
Constit. of *Vicia sativa* and *Vicia villosa*.

N^5,N^{10}*-Bis(4-aminobutyl):* $\mathbf{N^5,N^{10}}$***-Bis(4-aminobutyl)homospermine***
[139035-38-4]
$C_{20}H_{48}N_6$ 372.639
Constit. of *Vicia sativa*.

Samejima, K. *et al., Chem. Pharm. Bull.*, 1984, **32**, 3428-3435 (*synth*)
Niitsu, M. *et al., Chem. Pharm. Bull.*, 1986, **34**, 1032-1038 (*synth, cmr*)
Fujihara, S. *et al., Biochem. Biophys. Res. Commun.*, 1989, **165**, 659-666 (*occur*)
Casero, R.A. *et al., Cancer Res.*, 1989, **49**, 639-643; 2959-2964 (*DEHSPM, pharmacol*)
Hamana, K. *et al., Comp. Biochem. Physiol., B: Comp. Biochem.*, 1991, **100**, 59-62 (*occur*)
Hamana, K. *et al., Phytochemistry*, 1991, **30**, 3319-3322 (*occur*)
Bergeron, R.J. *et al., J. Med. Chem.*, 1994, **37**, 3464-3476; 1996, **39**, 2461-2471 (*DEHSPM, synth, pharmacol*)
Hamana, K. *et al., Can. J. Bot.*, 1996, **74**, 1766-1772 (*occur*)
Bergeron, R.J. *et al., Drug Metab. Dispos.*, 1996, **24**, 334-343 (*DEHSPM, metab, pharmacokinet*)

1,3-Bis[(4-aminomethyl)phenyl]-2-octadecanoylglycerol B-151

[790693-27-5]



$C_{35}H_{56}N_2O_4$ 568.838
Alkaloid from the twigs of *Carapa guianensis*. Powder. Mp 115-116°. λ_{max} 209 ; 229 ; 256 ; 277 ; 287 (MeOH).

Qi, S.-H. *et al., Pharmazie*, 2004, **59**, 488-490 (*Carapa guianensis alkaloid*)

N,N-Bis(3-aminopropyl)-1,4-butanediamine B-152

N^4*-(3-Aminopropyl)spermidine*
[128837-67-2]
$(H_2NCH_2CH_2CH_2)_2N(CH_2)_3CH_2NH_2$
$C_{10}H_{26}N_4$ 202.342
Isol. from the thermophilic bacteria *Bacillus schlegelii*, *Thermoleophilum album*, *Thermoleophilum minutum* and *Hydrogenobacter thermophilus* TK-6.

Hamana, K. *et al., FEMS Microbiol. Lett.*, 1990, **66**, 35-38 (*Thermoleophilum constits*)
Hamana, K. *et al., Biochem. J.*, 1992, **284**, 741-747 (*Bacillus schlegelii constit, Hydrogenobacter thermophilus constit*)

N,N′-Bis(3-aminopropyl)-1,2-ethanediamine B-153

N′,N′′*-1,2-Ethanediylbis-1,3-propanediamine, 9CI. 1,5,8,12-Tetraazadodecane. 1,10-Diamino-4,7-diazadecane*
[10563-26-5]
$H_2NCH_2CH_2CH_2NHCH_2CH_2NHCH_2CH_2CH_2NH_2$
$C_8H_{22}N_4$ 174.289
Alkaloid from *Nuphar japonicum*. Bp_5 150-160°. n_D^{20} 1.4910.

Hydrochloride (1:4): [13493-17-9]
Solid (EtOH). Mp 275-276°.

Aldrich Library of NMR Spectra, 2nd edn., 1983, **1**, 267D
Aldrich Library of FT-IR Spectra, 1st edn., 1985, **3**, 398C
Barefield, E.K. *et al., Inorg. Synth.*, 1975, **16**, 220 (*synth*)
Hamana, K. *et al., Can. J. Bot.*, 1998, **76**, 130-133 (*isol*)
Rubio, M. *et al., Synth. Commun.*, 2002, **32**, 2441-2452 (*synth, pmr, cmr*)

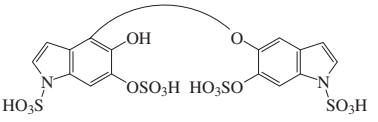
N,N′-Bis(3-aminopropyl)-1,3-propanediamine, 9CI B-154

1,11-Diamino-4,8-diazaundecane. 1,5,9,13-Tetraazatridecane, 8CI. Norspermine. ***Thermine***
[4605-14-5]
[16632-23-8]
$H_2NCH_2CH_2CH_2NHCH_2CH_2CH_2NHCH_2CH_2CH_2NH_2$
$C_9H_{24}N_4$ 188.315
Metab. of various bacteria and plant spp. Mp 260° (as tetrahydrochloride).

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 309B (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 503B (*nmr*)
Dagnall, S.P. *et al., J.C.S. Perkin 2*, 1984, 435 (*cmr*)
Clay, R.M. *et al., Inorg. Chem.*, 1985, **24**, 3330 (*synth*)
Hamana, K. *et al., J. Biochem. (Tokyo)*, 1985, **97**, 1595; 1991, **109**, 444 (*occur*)
Vaultier, M. *et al., Synth. Commun.*, 1992, **22**, 665 (*synth*)
Rubio, M. *et al., Synth. Commun.*, 2002, **32**, 2441-2452 (*synth, pmr, cmr*)

Bisancorinolate B B-155

[471913-82-3]

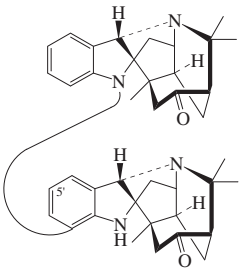


$C_{16}H_{12}N_2O_{16}S_4$ 616.539
Alkaloid from the sponge *Ancorina* sp. Powder (as tetra-Na salt). CAS no. refers to tetra Na salt. λ_{max} 221 (log ϵ 4.53); 268 (log ϵ 4.07); 301 (log ϵ 3.82) (MeOH) (tetra-Na salt).

Meragelman, K.M. *et al., J.O.C.*, 2002, **67**, 6671-6677 (*isol, pmr, cmr, ms*)

Bisaristone A B-156

[110192-13-7]



Relative Configuration

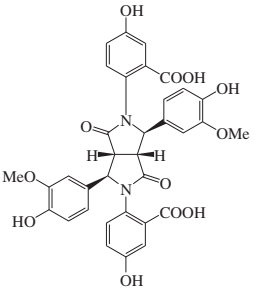
$C_{40}H_{46}N_4O_2$ 614.829

Alkaloid from the aerial parts of *Aristotelia australasica* (Elaeocarpaceae). Cryst. (MeOH). Mp 303-305°. λ_{max} 209 (log ϵ 4.41); 245 (log ϵ 3.97); 299 (log ϵ 3.5) (EtOH).

Quirion, J.-C. *et al., J.O.C.*, 1987, **52**, 4527-4530 (*isol, uv, ir, pmr, cmr, ms, struct*)

Bisavenanthramide B_1 B-157

[939790-85-9]



Relative Configuration

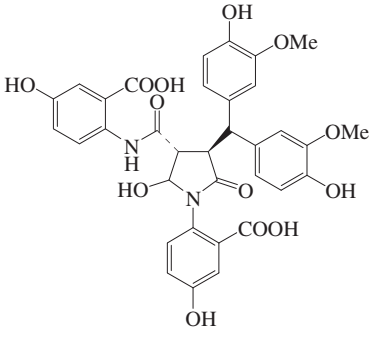
$C_{34}H_{28}N_2O_{12}$ 656.601

Isol. from elicited oat leaves (*Avena sativa*). Amorph. solid. Racemic. λ_{max} 210 (log ϵ 4.83); 233 (sh) (log ϵ 4.44); 285 (log ϵ 4.04); 300 (sh) (log ϵ 3.84) (MeOH).

Okazaki, Y. *et al., J.O.C.*, 2007, **72**, 3830-3839 (*isol, pmr, cmr, ms*)

Bisavenanthramide B_2 B-158

[939790-86-0]



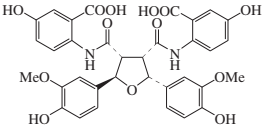
$C_{34}H_{30}N_2O_{13}$ 674.617

Isol. from elicited oat leaves (*Avena sativa*). Yellowish solid. Racemic. λ_{max} 204 (log ϵ 5.04); 265 (log ϵ 4.23); 317 (log ϵ 3.07) (MeOH).

Okazaki, Y. *et al., J.O.C.*, 2007, **72**, 3830-3839 (*isol, pmr, cmr, ms*)

Bisavenanthramide B_5 B-159

[939790-89-3]



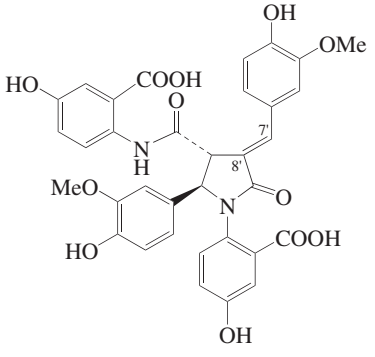
Relative Configuration

$C_{34}H_{30}N_2O_{13}$ 674.617

Isol. from elicited oat leaves (*Avena sativa*). Yellow solid. λ_{max} 204 (log ϵ 4.79); 224 (log ϵ 4.51); 263 (log ϵ 4.19); 328 (log ϵ 3.75) (MeOH).

Okazaki, Y. *et al., J.O.C.*, 2007, **72**, 3830-3839 (*isol, pmr, cmr, ms*)

Bisavenanthramide B_6 B-160



$C_{34}H_{28}N_2O_{12}$ 656.601

Isol. from elicited oat leaves (*Avena sativa*). Phytoalexin. Racemic. λ_{max} 204 (log ϵ 4.61); 265 (log ϵ 4.31); 329 (log ϵ 4.45) (MeOH).

7′,8′α-Dihydro, 7′ξ-hydroxy (1): ***Bisavenanthramide B_3***

[939790-87-1]

$C_{34}H_{30}N_2O_{13}$ 674.617

Isol. from elicited oat leaves (*Avena sativa*). Yellowish solid. Racemic. C-7′ epimer of B_4. λ_{max} 205 (log ϵ 4.76); 225 (sh) (log ϵ 4.42); 267 (log ϵ 3.98); 319 (log ϵ 3.49) (MeOH).

7′,8′α-Dihydro, 7′ξ-hydroxy (2): ***Bisavenanthramide B_4***

[939790-88-2]

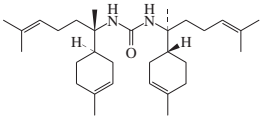
$C_{34}H_{30}N_2O_{13}$ 674.617

Isol. from elicited oat leaves (*Avena sativa*). Yellowish solid. Racemic. C-7′ epimer of B_3. λ_{max} 204 (log ϵ 4.87); 225 (sh) (log ϵ 4.59); 262 (log ϵ 4.19); 319 (log ϵ 3.67) (MeOH).

Okazaki, Y. *et al., Tetrahedron*, 2004, **60**, 4765-4771 (*isol, pmr, cmr, ms*)

Okazaki, Y. *et al., J.O.C.*, 2007, **72**, 3830-3839 (*isol, pmr, cmr, ms*)

N,N′-Bis(2,10-bisaboladien-7-yl)urea B-161



Absolute Configuration

$C_{31}H_{52}N_2O$ 468.765

(6R,6′R,7S,7′S)-form [105281-45-6]

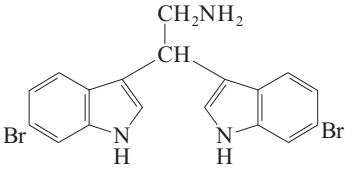
Isol. from a *Halichondria* sp. Mp 139-141°. $[\alpha]_D^{20}$ +44 (c, 1.1 in $CHCl_3$).

Sullivan, B.W. *et al., J.O.C.*, 1986, **51**, 5134-5136 (*isol, pmr, cmr*)

2,2-Bis(6-bromo-3-indolyl)ethylamine B-162

*6-Bromo-β-(6-bromo-1*H*-indol-3-yl)-1*H*-indole-3-ethanamine, 9CI*

[135077-20-2]



$C_{18}H_{15}Br_2N_3$ 433.145

Alkaloid from the marine tunicate *Didemnum candidum*. Also isol. from the deep-water New Caledonian sponge *Orina* sp. Pale yellow oil.

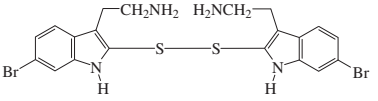
Fahy, E. *et al., J. Nat. Prod.*, 1991, **54**, 564-569 (*isol, uv, ir, pmr, cmr, ms, struct*)

Bifulco, G. *et al., J. Nat. Prod.*, 1995, **58**, 1254-1260 (*isol*)

Bis(6-bromo-2-tryptaminyl) disulfide B-163

*Bis[3-(2-aminoethyl)-6-bromo-1*H*-indol-2-yl] disulfide*

[622011-16-9]



$C_{20}H_{20}Br_2N_4S_2$ 540.345

Alkaloid from the defensive mucus of the marine snail *Calliostoma canaliculatum*. Potassium channel agonist. Neurotoxin.

Kelley, W.P. *et al., J. Biol. Chem.*, 2003, **278**, 34934-34942 (*isol, pmr, cmr, ms, activity*)

Wolters, A.M. *et al., J. Nat. Prod.*, 2005, **68**, 162-167 (*pmr, anal*)

N,N′-Bis[3-(carboxyamino)-4-methylphenyl]urea B-164

[Carbonylbis[imino(6-methyl-3,1-phenylene)]]biscarbamic acid



$C_{17}H_{18}N_4O_5$ 358.353

Di-Me ester:
$C_{19}H_{22}N_4O_5$ 386.407
Isol. from the Pliocene fossil wood of *Pinus armandii*. Powder. Mp 152-154°. λ_{max} 216 (log ϵ 4.57); 258 (log ϵ 4.58) (MeOH).

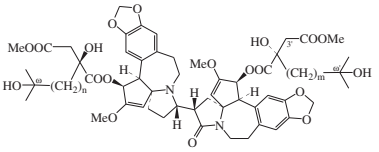
Dibutyl ester:
$C_{25}H_{34}N_4O_5$ 470.567
Isol. from the Pliocene fossil wood of *Pinus armandii*. Powder. Mp 153-155°.

Bis(2-methylpropyl) ester:
$C_{25}H_{34}N_4O_5$ 470.567
Isol. from Pliocene fossil wood of *Pinus armandii*. Powder. Mp 153-155°.

Zhao, Y.-X. *et al., Helv. Chim. Acta*, 2005, **88**, 325-329 (*isol, pmr, cmr, ms*)

Biscephalezomine A B-165

[769120-40-3]



$C_{57}H_{72}N_2O_{19}$ 1089.198
Alkaloid from the leaves of *Cephalotaxus harringtonia* var. *nana*. Amorph. solid. $[\alpha]_D$ -151 (c, 1 in MeOH). λ_{max} 209 (ϵ 34700); 291 (ϵ 6400) (MeOH).

*ω-Deoxy, 3′*S*-hydroxy:* ***Biscephalezomine D***
[769120-42-5]
$C_{57}H_{72}N_2O_{19}$ 1089.198
Alkaloid from the leaves of *Cephalotaxus harringtonia* var. *nana*. Amorph. solid. $[\alpha]_D$ -86 (c, 0.3 in MeOH). λ_{max} 207 (ϵ 41000); 290 (ϵ 4800) (MeOH).

Yoshinaga, M. *et al., Tetrahedron*, 2004, **60**, 7861-7868 (*isol, cd, pmr, cmr*)

Biscephalezomine B B-166

[769120-41-4]
As Biscephalezomine A, B-165 with
m = 2, n = 3
$C_{57}H_{72}N_2O_{19}$ 1089.198
Alkaloid from the leaves of *Cephalotaxus harringtonia* var. *nana*. Amorph. solid. $[\alpha]_D$ -126 (c, 1 in MeOH). λ_{max} 208 (ϵ 28200); 291 (ϵ 5300) (MeOH).

ω′-Deoxy: ***Biscephalezomine E***
[768392-34-3]
$C_{57}H_{72}N_2O_{18}$ 1073.198
Alkaloid from the leaves of *Cephalotaxus harringtonia* var. *nana*. Amorph. solid. $[\alpha]_D$ -146 (c, 0.4 in MeOH). λ_{max} 208 (ϵ 33600); 290 (ϵ 4300) (MeOH).

Yoshinaga, M. *et al., Tetrahedron*, 2004, **60**, 7861-7868 (*isol, cd, pmr, cmr*)

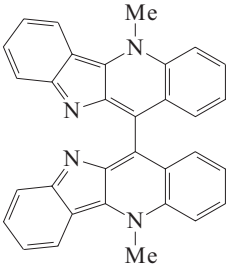
Biscephalezomine C B-167

[768392-32-1]
As Biscephalezomine A, B-165 with
m = n = 2
$C_{56}H_{70}N_2O_{19}$ 1075.171
Alkaloid from the leaves of *Cephalotaxus harringtonia* var. *nana*. Amorph. solid. $[\alpha]_D$ -118 (c, 0.5 in MeOH). λ_{max} 207 (ϵ 27000); 290 (ϵ 4000) (MeOH).

Yoshinaga, M. *et al., Tetrahedron*, 2004, **60**, 7861-7868 (*isol, cd, pmr, cmr*)

Biscryptolepine B-168

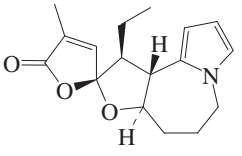
*5,5′-Dimethyl-11,11′-bi-5*H*-quindoline, 9CI*
[175178-79-7]



$C_{32}H_{22}N_4$ 462.553
Alkaloid from root bark of *Cryptolepis sanguinolenta*. Active against gram-positive bacteria and mycobacteria. Green amorph. powder.

Cimanga, K. *et al., Tet. Lett.*, 1996, **37**, 1703 (*isol, uv, pmr, cmr, ms, struct*)
Cimanga, K. *et al., Phytomedicine*, 1998, **5**, 209-214 (*activity*)

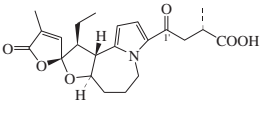
Bisdehydroneostemoninine B-169



$C_{17}H_{21}NO_3$ 287.358
Alkaloid from the roots of *Stemona tuberosa*. Amorph. yellow solid. $[\alpha]_D^{20}$ -132 (c, 0.06 in $CHCl_3$).

Lin, L.-G. *et al., J. Nat. Prod.*, 2006, **69**, 1051-1054 (*isol, pmr, cmr*)

Bisdehydrostemoninine A B-170



Relative Configuration

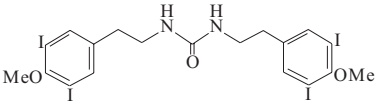
$C_{22}H_{27}NO_6$ 401.458
Alkaloid from the roots of *Stemona tuberosa*. Cubic cryst. (hexane/EtOAc). $[\alpha]_D^{20}$ -186 (c, 0.05 in $CHCl_3$).

1′-Deoxo: ***Bisdehydrostemoninine B***
$C_{22}H_{29}NO_5$ 387.475
Alkaloid from the roots of *Stemona tuberosa*. Amorph. yellow solid. $[\alpha]_D^{20}$ -122 (c, 0.14 in $CHCl_3$).

Lin, L.-G. *et al., J. Nat. Prod.*, 2006, **69**, 1051-1054 (*isol, pmr, cmr, ms, cryst struct*)

N,N′-Bis[2-(3,5-diiodo-4-methoxyphenyl)ethyl]urea, 9CI B-171

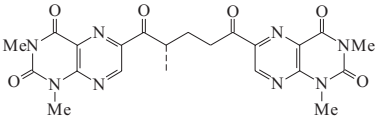
[89631-87-8]



$C_{19}H_{20}I_4N_2O_3$ 831.997
Minor metab. from an unidentified didemnid tunicate *Didemnum* sp. Mp 224-225°.

Sesin, D.F. *et al., Tet. Lett.*, 1984, **25**, 403-404 (*pmr, cmr, struct*)

1,5-Bis(1,3-dimethyl-6-lumazinyl)-2-methyl-1,5-pentanedione B-172

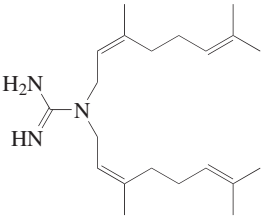


$C_{22}H_{22}N_8O_6$ 494.466

(S)-form [173324-68-0]
Metab. from the marine polychaete *Odontosyllis undecimdonta*. Solid (MeOH). Mp 114-115°. $[\alpha]_D^{25}$ -61.9 (c, 0.21 in $CHCl_3$).

Tanino, H. *et al., Heterocycles*, 1996, **42**, 125-128 (*isol, uv, ir, pmr, ms, synth, struct*)

N,N-Bis(3,7-dimethyl-2,6-octadienyl)guanidine B-173

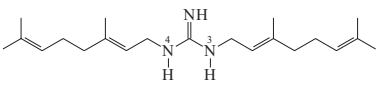


$C_{21}H_{37}N_3$ 331.543

(Z,Z)-form
N,N-*Dinerolylguanidine.* ***Nitensidine B***
[173221-01-7]
Alkaloid from leaves of *Pterogyne nitens.* Liq.

Bolzani, V. da.S. *et al., J. Nat. Prod.*, 1995, **58**, 1683 (*isol, ir, pmr, cmr, ms, struct*)

N,N′-Bis(3,7-dimethyl-2,6-octadienyl)guanidine B-174



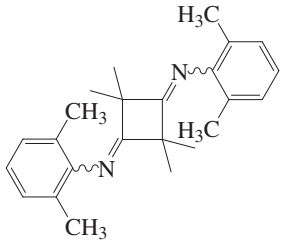
$C_{21}H_{37}N_3$ 331.543

(E,E)-form
N,N′-*Digeranylguanidine.* ***Nitensidine A***
[173221-00-6]
Alkaloid from leaves of *Pterogyne nitens.* Liq.

N^3,N^4-*Di-Me:* ***Nitensidine C***
[173221-02-8]
$C_{23}H_{41}N_3$ 359.597
From leaves of *Pterogyne nitens*. Liq.

Bolzani, Vda.S. *et al., J. Nat. Prod.*, 1995, **58**, 1683 (*isol, ir, pmr, cmr, ms, struct*)

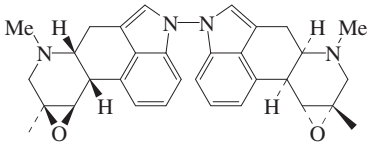
N,N′-Bis(2,6-dimethylphenyl)-2,2,4,4-tetramethyl-1,3-cyclobutanediimine B-175
N,N′-*(2,2,4,4-Tetramethyl-1,3-cyclobutanediylidene)bis[2,6-dimethylbenzenamine], 9CI*
[52199-12-9]



$C_{24}H_{30}N_2$ 346.514
Alkaloid from *Arundo donax*. Prisms (hexane/$CHCl_3$). Mp 176-178° (169-170°).

Miles, D.H. *et al., Phytochemistry*, 1993, **34**, 1277-1279 (*isol, pmr, cmr*)
Mochizuki, K. *et al., Biosci., Biotechnol., Biochem.*, 2000, **64**, 647-651 (*synth*)

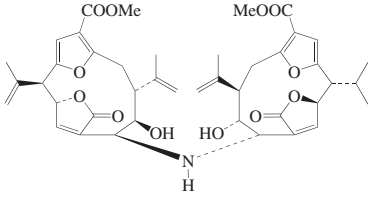
1,1-Bis(8,9-epoxy-6,8-dimethylergoline) B-176
8,9:8′,9′-Diepoxy-6,6′,8,8′-tetramethyl-1,1′-biergoline, 9CI
[132158-23-7]



$C_{32}H_{34}N_4O_2$ 506.646
Prod. by *Penicillium sizovae*. Mycotoxin. Cryst. (EtOAc/hexane). Sol. MeOH, $CHCl_3$, Me_2CO, EtOAc, MeCN, CCl_4; poorly sol. H_2O. λ_{max} 240 (ϵ 5890); 280 (ϵ 3710); 293 (ϵ 3310); 302 (ϵ 2950) (MeOH).

Zelenkova, N.F. *et al., Dokl. Akad. Nauk SSSR, Ser. Khim.*, 1990, **313**, 1494 (*isol, pmr, cmr*)
Zelenkova, N.F. *et al., Prikl. Biokhim. Mikrobiol.*, 1992, **28**, 738-741 (*isol, struct*)

Bis(gorgiacerol)amine B-177
[138828-03-2]



$C_{42}H_{47}NO_{12}$ 757.833
Constit. of *Pseudopterogorgia acerosa*. Cryst. Mp 248-249°. $[\alpha]_D$ +40 (c, 0.3 in $CHCl_3$).

Tinto, W.F. *et al., Tetrahedron*, 1991, **47**, 8679-8686 (*isol, pmr, cmr*)

***N,N′*-Bis(4-guanidinobutyl)oxamide** B-178
N,N′-*Bis[4-[(aminoiminomethyl)amino]butyl]ethanediamide, 9CI*. N,N′-*Bis(agmatine)oxamide*
[151368-32-0]
$HN{=}C(NH_2)NH(CH_2)_4NHCOCONH(CH_2)_4NHC(NH_2){=}NH$
$C_{12}H_{26}N_8O_2$ 314.39
Alkaloid from the spider *Plectreurys tristis*.

Quistad, G.B. *et al., Toxicon*, 1993, **31**, 920-924 (*isol, struct*)

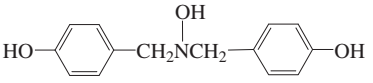
Bishaconitine B-179
[11011-58-8]
$C_{41}H_{53}NO_{13}$ 767.869
Tentatively classified as a C_{19}-diterpenoid alkaloid. Struct. unknown. Alkaloid from the Indian crude drug Bikh (or Bish or Mitha telia) (tuberous roots of *Aconitum falconeri*) (Ranunculaceae). Light yellow amorph. powder. Mp 118-119°. $[\alpha]_D^{18}$ +31.25.
Reineckate:
Microprisms + $4H_2O$ (EtOH aq.). Mp 179-181°.
Aurichloride:
Microcryst. powder. Mp 124-127°.

Singh, N. *et al., Indian J. Chem.*, 1966, **4**, 39 (*isol, ir*)

Bishatisine B-180
$C_{24}H_{37}NO_3$ 387.561
Tentatively classified as a C_{20}-diterpenoid alkaloid. Struct. unknown. Alkaloid from the Indian crude drug Bikh (or Bish or Mitha telia) (tuberous roots of *Aconitum falconeri*) (Ranunculaceae). Cryst. + $1\frac{1}{2}H_2O$. Mp 295-296°. $[\alpha]_D^{22}$ +18.6 (EtOH).
Hydrochloride:
Needles (EtOH). Mp 274°.
Hydrobromide:
Needles (EtOH/HBr). Mp 227-228°.
Hydroiodide:
Light yellow cryst. (EtOH/HI). Mp 271-272°.
Nitrate: Mp 238-239°.
Sulfate (2:1):
Rosettes of cryst. Mp 98-100°.
Perchlorate:
Needles. Mp 219-220°.
Picrate:
Cryst. (Me_2CO). Mp 146-147°.
Methiodide:
Cryst. (EtOH). Mp 269-270°.
Reineckate:
Cryst. + $2H_2O$ (EtOH). Mp 138-139.5°.
Ac:
Needles + $3H_2O$ (EtOH). Mp 224-225°.

Singh, N. *et al., Indian J. Chem.*, 1966, **4**, 39-42 (*isol, uv, ir*)

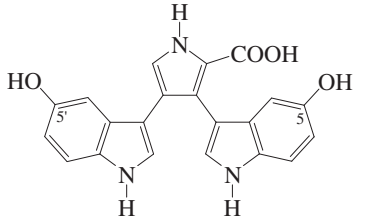
N,N-Bis(4-hydroxybenzyl)-hydroxylamine B-181
4,4′-[(Hydroxyimino)bis(methylene)]bisphenol, 9CI. ***Gastrodamine***
[245428-10-8]



$C_{14}H_{15}NO_3$ 245.277
Alkaloid from the tubers of *Gastrodia elata*. λ_{max} 238 (log ϵ 4.4); 279 (log ϵ 3.5); 282 (log ϵ 3.4) (MeOH).

Hao, X.Y. *et al., Chin. Chem. Lett.*, 1999, **10**, 467-468 (*isol*)

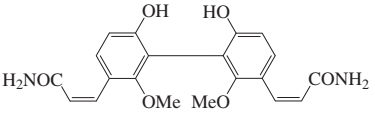
3,4-Bis(5-hydroxy-1*H*-indol-3-yl)-1*H*-pyrrole-2-carboxylic acid B-182



$C_{21}H_{15}N_3O_4$ 373.367
Me ester: ***Cinereapyrrole A***
$C_{22}H_{17}N_3O_4$ 387.394
Isol. from wild fruit bodies of *Arcyria cinerea*. Dark brown powder. λ_{max} 283 (ϵ 11000) (MeOH).
5′-Deoxy, Me ester: ***Cinereapyrrole B***
$C_{22}H_{17}N_3O_3$ 371.395
Isol. from the fruiting bodies of *Arcyria cinerea*. Dark brown powder. λ_{max} 230 (ϵ 36000); 286 (ϵ 14000) (MeOH).

Kamata, K. *et al., Chem. Pharm. Bull.*, 2005, **53**, 594-597 (*isol, pmr, cmr*)

3,3′-Bis-3-[(4-hydroxy-2-methoxyphenyl)-2-propenamide] B-183
3,3′-(6,6′-Dihydroxy-2,2′-dimethoxy-[1,1′-biphenyl]-3,3′-diyl)bis[2-propenamide], 9CI. 4,4′-Dihydroxy-2,2′-dimethoxy-3,3′-dicinnamide



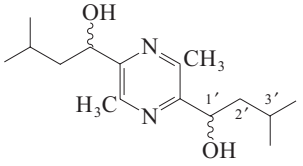
$C_{20}H_{20}N_2O_6$ 384.388

(Z,Z)-form [203524-81-6]
Constit. of *Sinularia flexibilis*.

Anjaneyulu, A.S.R. *et al., Nat. Prod. Lett.*, 1997, **11**, 5-11 (*isol*)

2,5-Bis(1-hydroxy-3-methylbutyl)-3,6-dimethylpyrazine B-184

3,6-Dimethyl-α,α′-bis(2-methylpropyl)-2,5-pyrazinemethanol, 9CI



$C_{16}H_{28}N_2O_2$ 280.409

Isol. as 2 diastereoisomers of unknown config.

High-melting-*form*

Isol. from ants of the genus *Mesoponera* (*Mesoponera castanea, Mesoponera castaneicolor*). Mp 129.5-130°.

Low-melting-*form*

From *Mesoponera castanea* and *Mesoponera castaneicolor*. Mp 99.5-100.5°.

Monoketone: ***2-(1-Hydroxy-3-methylbutyl)-3,6-dimethyl-5-(3-methylbutanoyl)pyrazine***
[118025-76-6]
$C_{16}H_{26}N_2O_2$ 278.394
Isol. from ants *Mesoponera castanea* and *Mesoponera castaneicolor*.

Diketone: ***2,5-Dimethyl-3,6-bis(3-methylbutanoyl)pyrazine***
[118025-79-9]
$C_{16}H_{24}N_2O_2$ 276.378
Isol. from *Mesoponera castanea* and *Mesoponera castaneicolor*. Mp 39.5-41°.

2′,3′-Didehydro, 1′-ketone: ***2-(1-Hydroxy-3-methylbutyl)-3,6-dimethyl-5-(3-methyl-2-butenoyl)pyrazine***
[118025-80-2]
$C_{16}H_{24}N_2O_2$ 276.378
Isol. from *Mesoponera castanea* and *Mesoponera castaneicolor*.

2′,3′-Didehydro, diketone: ***2,5-Dimethyl-3-(3-methylbutanoyl)-6-(3-methyl-2-butenoyl)pyrazine***
[118025-81-3]
$C_{16}H_{22}N_2O_2$ 274.362
Isol. from *Mesoponera castanea* and *Mesoponera castaneicolor*.

Monodeoxy: ***2-(1-Hydroxy-3-methylbutyl)-3,6-dimethyl-5-(3-methylbutyl)-pyrazine***
[118025-78-8]
$C_{16}H_{28}N_2O$ 264.41
Isol. from *Mesoponera castanea* and *Mesoponera castaneicolor*.

Dideoxy: ***2,5-Dimethyl-3,6-bis(3-methylbutyl)pyrazine***. *2,5-Diisopentyl-3,6-dimethylpyrazine*
[10132-44-2]
$C_{16}H_{28}N_2$ 248.411
Isol. from ants *Mesoponera castanea* and *Mesoponera castaneicolor*.

Dideoxy, 1′,2′-didehydro: ***2,5-Dimethyl-3-(3-methyl-1-butenyl)-6-(3-methylbutyl)pyrazine***
[118025-75-5]
$C_{16}H_{26}N_2$ 246.395
Isol. from *Mesoponera castanea* and *Mesoponera castaneicolor*. *E*- and *Z*-isomers reported. Tentative struct.

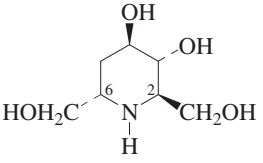
Dideoxy, 2′,3′-didehydro: ***2,5-Dimethyl-3-(3-methyl-2-butenyl)-6-(3-methylbutyl)pyrazine***
[118025-82-4]
$C_{16}H_{26}N_2$ 246.395
Isol. from *Mesoponera castanea* and *Mesoponera castaneicolor*. Tentative struct.

[118025-84-6 , 118025-77-7]

Fales, H.M. *et al., Tetrahedron*, 1988, **44**, 5045 (*occur, ir, pmr, cmr, ms, synth, struct*)

2,6-Bis(hydroxymethyl)-3,4-piperidinediol B-185

2,3,6-Trideoxy-2,6-iminoheptitol



$C_7H_{15}NO_4$ 177.2

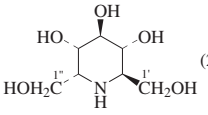
(2R,3R,4R,6S)-form

D-manno-*form*. *α-1*-C-*(Hydroxymethyl)-fagomine*
Constit. of the roots of *Stemona tuberosa*. Oil. $[\alpha]_D$ +28.9 (c, 0.2 in H_2O).

Goujon, J.-Y. *et al., Bioorg. Med. Chem.*, 2005, **13**, 2313-2324 (*synth, pmr, cmr*)
Asano, N. *et al., J. Nat. Prod.*, 2005, **68**, 1238-1242 (*isol, pmr, cmr*)

2,6-Bis(hydroxymethyl)-3,4,5-piperidinetriol, 9CI B-186

2,6-Dideoxy-2,6-iminoheptitol



(2*R*,3*R*,4*R*,5*S*,6*R*)-*form*

$C_7H_{15}NO_5$ 193.199

(2R,3R,4R,5S,6R)-form

D-glycero-*L*-gulo-*form*. ***α-Homonojirimycin***
[119557-99-2]
Alkaloid from *Aglaonema treubii*, *Commelina communis*, *Adenophora* spp. *Hyacinthus orientalis* and *Omphalea diandra*. Inhibitor of several α-glucosidases. Antidiabetic agent. Mp 206-207°. $[\alpha]_D^{20}$ +88.2 (c, 0.54 in H_2O).

1″-O-β-D-Glucopyranoside: ***7-O-β-D-Glucopyranosyl-α-homonojirimycin***. *MDL 25637. 2,6-Dideoxy-7-O-β-D-glucopyranosyl-2,6-imino-D-glycero-L-gulo-heptitol, 9CI*
[104343-33-1]
[104419-80-9]
$C_{13}H_{25}NO_{10}$ 355.341
Alkaloid from *Commelina communis*, *Aglaonema treubii*, *Hyacinthus orientalis* and *Lobelia sessilifolia*. Potent α-glucosidase inhibitor, competitive inhibitor for intestinal sucrase. Also inhibits maltase, trehalase, glucoamylase and α-amylase. Antidiabetic agent. Amorph. powder + $1H_2O$. Mp 84-86° Mp 131-134° (as hydrochloride) Mp 216-219° synthetic. $[\alpha]_D^{20}$ +20 (c, 0.5 in H_2O). $[\alpha]_D$ +24.7 (c, 0.7 in H_2O). $[\alpha]_D$ +27.5 (c, 1 in H_2O).

5-O-α-D-Galactopyranoside: ***5-O-α-D-Galactopyranosyl-α-homonojirimycin***
[185826-28-2]
$C_{13}H_{25}NO_{10}$ 355.341
Alkaloid from *Aglaonema treubii*. $[\alpha]_D$ +168.8 (c, 0.54 in H_2O).

1,3,4,5-Tetra-O-benzoyl: [110205-71-5]
Needles (Et_2O/petrol). Mp 76-78°.

(2R,3R,4R,5R,6S)-form
β-Homomannojirimycin
[154349-07-2]
Alkaloid from *Aglaonema treubii* and *Hyacinthus orientalis*. β-Mannosidase inhibitor. Hygroscopic solid. $[\alpha]_D$ +12.1 (c, 0.27 in H_2O).

(2R,3R,4S,5R,6S)-form
6-Epi-α-homomannojirimycin
[127995-31-7]
[127995-28-2]
Potent inhibitor of α-fucosidase. Hygroscopic solid; cryst. ($MeOH/CHCl_3$) (as hydrochloride). Mp 203-205° (hydrochloride). $[\alpha]_D^{20}$ +26.4 (c, 0.5 in H_2O).

(2R,3S,5S,6R)-form
D-glycero-*L*-galacto-*form*. ***α-Homogalactostatin***. ***3,4-Diepi-α-homonojirimycin***
[169872-51-9]
Alkaloid from *Aglaonema treubii*. $[\alpha]_D$ +39.1 (c, 0.51 in H_2O). Existence of this isomer as a natural product is in doubt. C-4 is achiral.

(2R,3R,5R,6R)-form
α-Homomannojirimycin
[127995-29-3]
Alkaloid from *Hyacinthus orientalis* and *Aglaonema treubii*. Nonselective α-glucosidase inhibitor. Hygroscopic solid. $[\alpha]_D$ +4.4 (c, 0.55 in H_2O) (natural). $[\alpha]_D^{20}$ +7.4 (c, 0.55 in H_2O) (synthetic). C-4 is achiral.

(2RS,3RS,4RS,5SR,6SR)-form
β-Homonojirimycin
[157544-15-5]
Alkaloid from *Aglaonema treubii and Hyacinthus orientalis*. No phys. props. reported. *Meso*-stereoisomer.

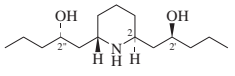
(2R,3R,4S,5S,6R)-form
D-glycerol-L-allo-*form*. ***α-Homoallonojirimycin***. *4-Epi-α-homonojirimycin*
[253785-13-6]
Alkaloid from *Aglaonema treubii*. $[\alpha]_D$ +39.1 (c, 0.51 in H_2O). Meso-stereoisomer. Stereochem. of natural product revised in 1999.

Rhinehart, B.L. *et al., J. Pharmacol. Exp. Ther.*, 1987, **24**, 915; *CA*, **107**, 109172m
Liu, P.S. *et al., J.O.C.*, 1987, **52**, 4717-4721 (*α-Homonojirimycin, pmr, ms, derivs, synth*)
Kite, G.C. *et al., Tet. Lett.*, 1988, **29**, 6483-6486 (*isol, cmr*)
Anzeveno, P.B. *et al., J.O.C.*, 1989, **54**, 2539-2542 (*MDL 25637, synth*)

Bruce, T. *et al., Tetrahedron*, 1992, **48**, 10191-10120 (*α-Homomannojirimycin, 6-Epi-α-homomannojirimycin, synth, pmr, cmr, biochem*)
Holt, K.E. *et al., J.C.S. Perkin 1*, 1994, 231-234 (*α-Homomannojirimycin, β-Homonojirimycin, synth, pmr, biochem*)
Asano, N. *et al., J. Nat. Prod.*, 1997, **60**, 98-101; 1998, **61**, 625-628 (*isol, pmr, cmr*)
Asano, N. *et al., J. Med. Chem.*, 1998, **41**, 2565-2571 (*synth, cryst struct, pmr, cmr, activity*)
Shilvlock, J.P. *et al., Tetrahedron: Asymmetry*, 1998, **9**, 3505-3516 (*α-Homomannojirimycin, β-Homomannojirimycin, synth, pmr*)
Martin, O.R. *et al., Bioorg. Med. Chem. Lett.*, 1999, **9**, 3171-3174 (*stereochem*)
Kim, H.S. *et al., Planta Med.*, 1999, **65**, 437-439 (*isol*)
Watson, A.A. *et al., Phytochemistry*, 2000, **56**, 265-295 (*rev*)
Morwenna, M.S.M. *et al., Eur. J. Org. Chem.*, 2005, 2159-2191 (*rev, synth*)

2,6-Bis(2-hydroxypentyl)piperidine B-187

α,α′-Dipropyl-2,6-piperidinediethanol, 9CI



(*2S,2'S,2"S,6S)-form*

$C_{15}H_{31}NO_2$ 257.415

(2S,2′S,2″S,6S)-form
Aspertine C
[442155-62-6]
Alkaloid from the aerial parts of *Andrachne aspera*. Gum. $[\alpha]_D$ -89 (c, 0.6 in $CHCl_3$).

(2RS,2′RS,2″SR,6SR)-form
N-*Me:* ***2,6-Bis(2-hydroxypentyl)-1-methylpiperidine***
[212006-67-2]
$C_{16}H_{33}NO_2$ 271.442
Alkaloid from *Siphocampylus verticillatus*. Fluffy needles ($CHCl_3$). Mp 31-32°. *meso*- Diastereoisomer.

(2RS,2′SR,2″RS,6SR)-form
Andrachamine
[107019-94-3]
Alkaloid from *Andrachne aspera*. *meso*-Diastereoisomer. Stereochem. revised in 1996.

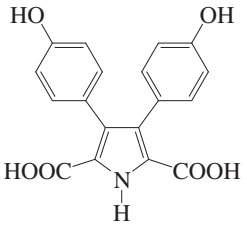
N-*Me:* ***8,10-Dipropyllobelidiol***. N-*Methylandrachamine*
[212511-78-9]
$C_{16}H_{33}NO_2$ 271.442
Alkaloid from *Dialypetalum floribundum*. *meso*-Diastereoisomer.

[178062-05-0 , 178062-06-1 , 212006-69-4]

Miguel, O.G. *et al., Acta Cryst. C*, 1996, **52**, 1223-1225 (*cryst struct, N-Me*)
Mill, S. *et al., Can. J. Chem.*, 1996, **74**, 2434-2443 (*Andrachamine*)
Biavatti, M.W. *et al., Phytochemistry*, 1998, **48**, 747-749 (*N-Me, isol, ir, pmr, cmr, ms*)
Krebs, H.C. *et al., Phytochemistry*, 1998, **48**, 911-913 (*N-Me, isol, pmr, cmr, ms*)
Ahmad, V.U. *et al., Turk. J. Chem.*, 2002, **26**, 245-250 (*Aspertine C*)

3,4-Bis(4-hydroxyphenyl)-1*H*-pyrrole-2,5-dicarboxylic acid B-188

[917608-79-8]

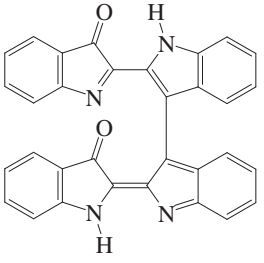


$C_{18}H_{13}NO_6$ 339.304
Prod. by the marine-derived *Halomonas* sp. DSM 17966. Amorph. solid. Mp 213° dec. λ_{max} 249 (log ϵ 4.27) (MeOH). λ_{max} 252 (log ϵ 4.27) (MeOH/HCl). λ_{max} 251 (log ϵ 4.28) (MeOH/NaOH).

*4′-Deoxy: 3-(4-Hydroxyphenyl)-4-phenyl-1*H*-pyrrole-2,5-dicarboxylic acid*
[917608-78-7]
$C_{18}H_{13}NO_5$ 323.304
Prod. by *Halomonas* sp. RK377. Amorph. solid. Mp 213° dec. λ_{max} 245 (log ϵ 4.26) (MeOH). λ_{max} 243 (log ϵ 4.26) (MeOH/HCl). λ_{max} 249 (log ϵ 4.27) (MeOH/NaOH).

Wang, L. *et al., Appl. Microbiol. Biotechnol.*, 2006, **72**, 816-822 (*isol, uv, pmr, cmr, ms, cryst struct*)

Bisindigotin B-189

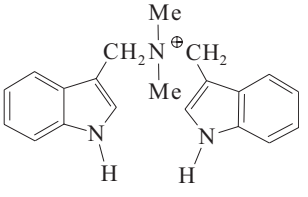


$C_{32}H_{18}N_4O_2$ 490.52
Alkaloid from the leaves of *Isatis indigotica*. TCDD antagonist. Deep purple amorph. powder. λ_{max} 227 (log ϵ 4.94); 261 (log ϵ 4.78); 352 (log ϵ 4.62); 568 (log ϵ 4.38) (THF).

Wei, X.Y. *et al., J. Nat. Prod.*, 2005, **68**, 427-429 (*isol, pmr, cmr*)

3,3′-Bis(indolylmethyl)dimethylammonium B-190

N-*(1*H*-Indol-3-ylmethyl)*-N,N-*dimethyl-1*H*-indole-3-methanaminium, 9CI*



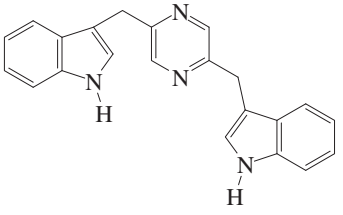
Quaternary alkaloid from flowers of *Arundo donax* (Poaceae).

Hydroxide: [35302-42-2]
Straw-coloured needles (EtOAc). Mp 179-180°.

Iodide:
Tan cryst. Mp 168-171°.

Ghosal, S. *et al., Phytochemistry*, 1971, **10**, 2852 (*isol, uv, ms*)

2,5-Bis(1*H*-indol-3-ylmethyl)pyrazine B-191

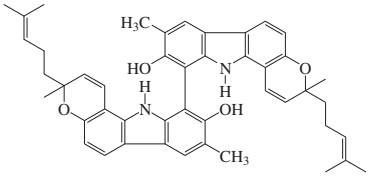


$C_{22}H_{18}N_4$ 338.411
Prod. by *Cytophaga marinoflava* sp. strain AM13.1.

Shaaban, M. *et al., J. Nat. Prod.*, 2002, **65**, 1660-1663 (*isol, pmr, cmr, ms*)

Bisisomahanine B-192

Bispyrafoline D
[832726-58-6]

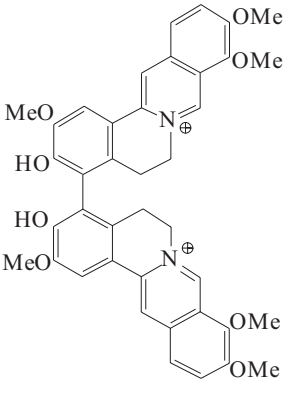


$C_{46}H_{48}N_2O_4$ 692.896
Alkaloid from the roots of *Glycosmis stenocarpa*. Pale cream powder. Mp 130-140°. $[\alpha]_D^{20}$ -13.1 (c, 0.25 in $CHCl_3$). λ_{max} 209 (log ϵ 4.1); 224 (log ϵ 3.7); 245 (log ϵ 5); 298 (log ϵ 4.9); 335 (log ϵ 4.4) ($CHCl_3$).

Cuong, N.M. *et al., Chem. Pharm. Bull.*, 2004, **52**, 1175-1178 (*isol, cd, pmr, cmr, ms*)

Bisjatrorrhizine B-193

[35470-49-6]

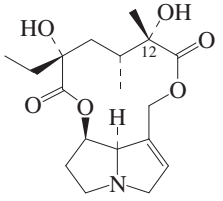


$C_{40}H_{38}N_2O_8^{2\oplus}$ 674.749
Alkaloid from the root of *Jateorhiza palmata* (Menispermaceae). Yellow-orange cryst. (as dichloride). Mp 270° dec. (dichloride).

Carvalhas, M.L. *et al., J.C.S. Perkin 1*, 1972, 327 (*isol, uv, ir, pmr, ms, struct, synth*)

Bisline B-194

15,20-Dihydro-12,15-dihydroxysenecionan-11,16-dione, 9CI
[30258-28-7]



$C_{18}H_{27}NO_6$ 353.414

C-15 config. revised in 2000. Alkaloid from *Senecio othonniformis* (*Senecio ruwenzoriensis*) and *Senecio petasis* (Asteraceae). Cryst. (Me_2CO/petrol). Mp 169°.

12-Ac: ***Isoline****. Ruwenine*
[30000-36-3]
$C_{20}H_{29}NO_7$ 395.452
Alkaloid from *Senecio othonniformis* (*Senecio ruwenzoriensis*) (Asteraceae). Cryst. (Me_2CO/petrol). Mp 173°. $[\alpha]_D^{29}$ -4.8 (c, 1.78 in EtOH).

▶ Hepatotoxic.

15-Deoxy: 15,20-Dihydro-12-hydroxysenecionan-11,16-dione. ***Yamataimine****. Duciformine*
[67113-69-3]
$C_{18}H_{27}NO_5$ 337.415
Alkaloid from of *Cacalia yatabei* and *Ligularia duciformis*. Mp 181-182°. $[\alpha]_D^{18}$ +63.6 (EtOH).

15-Deoxy, hydrobromide:
Needles (EtOH). Mp 249°.

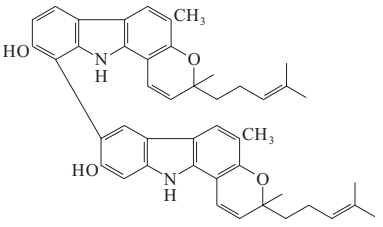
15-Deoxy, 12-Ac: **O-*Acetylyamataimine***
[217793-38-9]
$C_{20}H_{29}NO_6$ 379.452
Alkaloid from the roots of *Ligularia tsangchanensis*. Amorph. powder (Me_2CO). Mp 128-129°. $[\alpha]_D^{20}$ +8.6 (c, 10.4 in $CHCl_3$).

15-Deoxy, 12-Ac, N-*oxide:* **O-*Acetylyamataimine* N-*oxide***
[566901-96-0]
$C_{20}H_{29}NO_7$ 395.452
Alkaloid from the roots of *Ligularia tsangchanensis*. Yellow gum. $[\alpha]_D^{20}$ +15 (c, 4.4 in $CHCl_3$).

Coucourakis, E.D. *et al., J.C.S.(C)*, 1970, 2312-2315 (*isol*)
Coucourakis, E.D. *et al., J.C.S. Perkin 1*, 1972, 2339-2343 (*Isoline*)
Gonzalez, A. *et al., An. Quim.*, 1973, **69**, 1343-1345; *CA*, **80**, 96194s (*struct*)
Hikichi, M. *et al., Tet. Lett.*, 1978, **19**, 767-770 (*Yamataimine, cryst struct, ir, pmr, cmr, ms*)
Benn, M. *et al., Phytochemistry*, 1992, **31**, 3295-3296 (*Ruwenine*)
Niwa, H. *et al., Bull. Chem. Soc. Jpn.*, 1994, **67**, 3094-3099 (*Yamataimine, synth*)
Lin, G. *et al., Rapid Commun. Mass Spectrom.*, 1998, **12**, 1445-1456 (*Duciformine*)
Susag, L. *et al., Phytochemistry*, 2000, **54**, 933-935 (***struct, bibl***)
Tan, A. *et al., Heterocycles*, 2003, **60**, 1195-1198 (*Acetylyamataimines*)

Bismahanine B-195

[155519-87-2]

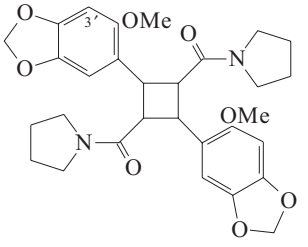


$C_{46}H_{48}N_2O_4$ 692.896
Alkaloid from the stem bark of *Murraya koenigii* (curryleaf tree) (Rutaceae). Oil.

Ito, C. *et al., Chem. Pharm. Bull.*, 1993, **41**, 2096 (*isol, uv, ir, pmr, ms, struct*)

1,1′-[[2,4-Bis(6-methoxy-1,3-benzodioxol-5-yl)-1,3-cyclobutanediyl]dicarbonyl]bispyrrolidine, 9CI B-196

2,4-Bis(5-methoxy-1,3-benzodioxol-6-yl)-1,3-cyclobutanedicarboxylic acid bispyrrolidide
[173866-77-8]

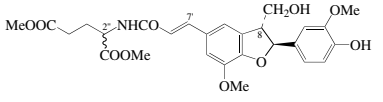


$C_{30}H_{34}N_2O_8$ 550.607
Alkaloid from leaves and stems of *Piper peepuloides*. Also obt. by irradiation (sunlight) of Peepuloidine, P-163. Mp 258°. λ_{max} 240 ; 304 ; 330 (MeOH).

3′-Methoxy: 1,1′-[[2-(6,7-Dimethoxy-1,3-benzodioxol-5-yl)-4-(6-methoxy-1,3-benzodioxol-5-yl)-1,3-cyclobutanediyl]dicarbonyl]bispyrrolidine, 9CI. 4-(4,5-Dimethoxy-1,3-benzodioxol-6-yl)-2-(5-methoxy-1,3-benzodioxol-6-yl)-1,3-cyclobutanedicarboxylic acid bispyrrolidide
[173866-76-7]
$C_{31}H_{36}N_2O_9$ 580.633
From leaves and stems of *Piper peepuloides*. Mp 265°. λ_{max} 240 ; 305 ; 333 (MeOH).

Dhar, K.L. *et al., Fitoterapia*, 1995, **66**, 390 (*isol, uv, ir, pmr, cmr, ms, struct*)

N-[1,3-Bis(methoxycarbonyl)propyl]-2,3-dihydro-2-(4-hydroxy-3-methoxyphenyl)-3-hydroxymethyl-7-methoxy-5-benzofuranpropenamide B-197



$C_{27}H_{31}NO_{10}$ 529.543

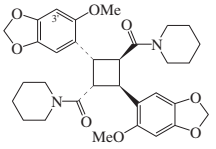
(2″ξ,7R,7′E,8S)-form [185311-15-3]
Constit. of *Boreava orientalis*. Pale yellow powder. Mp 82-84.5°. λ_{max} 288 (log ϵ 3.3); 320 (log ϵ 3.32) (MeOH).

(2″ξ,7R,7′Z,8S)-form [185311-14-2]
Constit. of *Boreava orientalis*. Pale yellow powder. Mp 95-99°. λ_{max} 287 (log ϵ 3.07); 318 (log ϵ 1.83) (MeOH).

Sakushima, A. *et al., Phytochemistry*, 1996, **43**, 1349-1354 (*isol, uv, ir, cd, pmr, cmr, ms*)

2,4-Bis(2-methoxy-4,5-methylenedioxyphenyl)-1,3-cyclobutanecarboxylic acid dipiperidide B-198

1,1′-[[2,4-Bis(6-methoxy-1,3-benzodioxol-5-yl)-1,3-cyclobutanediyl]dicarbonyl]bispiperidine, 9CI
[252361-69-6]



Relative Configuration

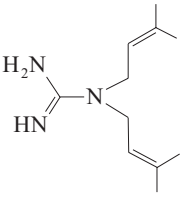
$C_{32}H_{38}N_2O_8$ 578.661
Alkaloid from *Piper peepuloides*. Mp 270°. λ_{max} 240 ; 304 ; 330 (MeOH).

3′-Methoxy: [252361-68-5]
$C_{33}H_{40}N_2O_9$ 608.687
Alkaloid from *Piper peepuloides*. Mp 280°. λ_{max} 240 ; 305 ; 353 (MeOH).

Sharma, R.L. *et al., Fitoterapia*, 1999, **70**, 144-147

N,N-Bis(3-methyl-2-butenyl)guanidine B-199

N,N-*Diisopentenylguanidine.* N,N-*Diprenylguanidine.* ***Pterogynine***
[25387-60-4]

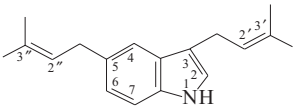


$C_{11}H_{21}N_3$ 195.307
Alkaloid from *Pterogyne nitens* and *Alchornea javanensis* (Fabaceae, Euphorbiaceae).
Hydrochloride: Mp 142-143°.
Picrate: Mp 157-158°.

Corral, R.A. *et al., Experientia*, 1969, **25**, 1020 (*isol, pmr, struct*)
Corral, R.A. *et al., Chem. Comm.*, 1970, 556 (*synth*)

3,5-Bis(3-methyl-2-butenyl)-1*H*-indole, 9CI B-200

3,5-Diisopentenylindole. 3,5-Diprenylindole. 3,5-Bis(γ,γ-dimethylallyl)indole. ***3,5-Hexalobine A***
[93822-62-9]



$C_{18}H_{23}N$ 253.386
Alkaloid from the stem bark of *Hexalobus crispiflorus* (Annonaceae). Needles. Mp 78-79°. λ_{max} 226 (log ϵ 4.6); 286 (log ϵ 3.9); 297 (log ϵ 3.8) (MeOH).

*2′*R,*3′-Epoxide: 3-(2,3-Epoxy-3-methylbutyl)-5-(3-methyl-2-butenyl)-1*H*-indole.* ***3,5-Hexalobine B***
[165905-10-2]
$C_{18}H_{23}NO$ 269.386
Alkaloid from the stem bark of *Hexalobus crispiflorus*. Oil. $[\alpha]_D^{21}$ -5 (c, 1.2 in $CHCl_3$). λ_{max} 226 (log ϵ 4.6); 286 (log ϵ 3.9); 297 (log ϵ 3.8) (MeOH).

*2′′*S,*3′′-Epoxide, 2′,3′-dihydro, 2′*R,*3′-dihydroxy:* ***3-(2,3-Dihydroxy-3-methylbutyl)-5-(2,3-epoxy-3-methylbutyl)-1*H*-indole***
[170384-65-3]
$C_{18}H_{25}NO_3$ 303.4
Alkaloid from the stem bark of *Hexalobus crispiflorus*. Oil. $[\alpha]_D^{21}$ +56 (c, 0.2 in $CHCl_3$). Poss. artifact. λ_{max} 227 (log ϵ 4.6); 286 (log ϵ 3.9); 295 (sh) (MeOH).

*(2′*R,*3′:2′′*S,*3′′)-Diepoxide: 3,5-Bis[(3,3-dimethyloxiranyl)methyl]-1*H*-indole, 9CI.* ***3,5-Hexalobine C***
[165942-81-4]
[93822-64-1]
$C_{18}H_{23}NO_2$ 285.385
Alkaloid from the stem bark of *Hexalobus crispiflorus* and *Isolona maitlandii* (Annonaceae). Oil. $[\alpha]_D^{21}$ +6 (c, 2.5 in $CHCl_3$). λ_{max} 226 (log ϵ 4.6); 271 (sh) (log ϵ 3.9); 285 (log ϵ 3.9); 296 (log ϵ 3.8) (MeOH).

*1′′-Oxo, 2′*R,*3′-epoxide:* ***3,5-Hexalobine D***
[165905-12-4]
$C_{18}H_{21}NO_2$ 283.369
Alkaloid from stem bark of *Hexalobus crispiflorus* and from *Isolona maitlandii*. Needles. Mp 130-132°. $[\alpha]_D^{21}$ +6 (c, 1.1 in $CHCl_3$). λ_{max} 216 (log ϵ 4.4); 267 (log ϵ 4.6); 310 (log ϵ 4.2) (MeOH).

1′′-Oxo, Δ$^{3'}$-isomer, 2′-hydroxy: ***3-(2-Hydroxy-3-methyl-3-butenyl)-5-(3-methyl-1-oxo-2-butenyl)-1*H*-indole***
[170128-43-5]
$C_{18}H_{21}NO_2$ 283.369
Alkaloid from stem bark of *Isolona maitlandii*. Oil. $[\alpha]_D^{21}$ -6 (c, 0.13 in $CHCl_3$). λ_{max} 216 (log ϵ 4.24); 267 (log ϵ 4.41); 311 (log ϵ 4.05) (MeOH).

*1′′-Oxo, 2′,3′-dihydro, 2′*R,*3′-dihydroxy: 3-(2,3-Dihydroxy-3-methylbutyl)-5-(3-methyl-1-oxo-2-butenyl)-1*H*-indole*
[165604-39-7]
$C_{18}H_{23}NO_3$ 301.385
Alkaloid from stem bark of *Hexalobus crispiflorus* and from *Isolona maitlandii*. Oil. $[\alpha]_D^{21}$ +62 (c, 0.3 in $CHCl_3$). Poss. artifact. λ_{max} 217 (log ϵ 4.3); 269 (log ϵ 4.5); 313 (log ϵ 4.2) (MeOH).

*1′′-Oxo, 2′,3′-dihydro, 2′*R*-hydroxy, 3′-methoxy: 3-(2-Hydroxy-3-methoxy-3-methylbutyl)-5-(3-methyl-1-oxo-2-butenyl)-1*H*-indole*
[170128-42-4]
$C_{19}H_{25}NO_3$ 315.411
Alkaloid from the stem bark of *Isolona maitlandii*. Oil. $[\alpha]_D^{21}$ +76 (c, 1.40 in $CHCl_3$). Poss. artifact. λ_{max} 217 (log ϵ 4.22); 268 (log ϵ 4.44); 311 (log ϵ 4.06) (MeOH).

*Δ$^{1''}$-Isomer, 3′′-hydroxy, 2′*R,*3′-epoxide:* ***3,5-Hexalobine E****. 3-(2,3-Epoxy-3-methylbutyl)-5-(3-hydroxy-3-methyl-1-butenyl)-1*H*-indole*
[165905-13-5]
$C_{18}H_{23}NO_2$ 285.385
Alkaloid from stem bark of *Hexalobus crispiflorus* and from *Isolona maitlandii*. Oil. $[\alpha]_D^{21}$ -6 (c, 0.25 in $CHCl_3$) (-3.3). λ_{max} 251 (log ϵ 4.7); 278 (sh) ; 306 (sh) (MeOH).

*Δ$^{1''}$-Isomer, 3′′,4′′-didehydro, 2′*R,*3′-epoxide: 3-(2,3-Epoxy-3-methylbutyl)-5-(3-methyl-1,3-butadienyl)-1*H*-indole*
[170128-44-6]
$C_{18}H_{21}NO$ 267.37
Alkaloid from the stem bark of *Isolona maitlandii*. Oil. $[\alpha]_D^{21}$ -4 (c, 0.66 in Me_2CO). λ_{max} 266 (log ϵ 4.49); 273 (sh) (log ϵ 4.45); 305 (log ϵ 4.28) (MeOH).

Achenbach, H. *et al., Annalen*, 1995, 1327-1337 (*isol, uv, pmr, cmr, ms, struct, derivs*)
Achenbach, H. *et al., Phytochemistry*, 1995, **40**, 967-973 (*derivs, isol, uv, ir, pmr, cmr*)

3,6-Bis(3-methyl-2-butenyl)-1*H*-indole, 9CI B-201

3,6-Bis(γ,γ-dimethylallyl)indole. 3,6-Diprenylindole. 3,6-Diisopentenylindole. ***3,6-Hexalobine A***
[73618-54-9]
$C_{18}H_{23}N$ 253.386
Alkaloid from the stem bark of *Uvaria elliotiana*, *Hexalobus crispiflorus*, *Hexalobus monopetalus* and *Isolona maitlandii* (Annonaceae). Mp 36-37°. λ_{max} 229 (ϵ 39810); 283 (ϵ 7940); 294 (ϵ 6310) (MeOH) (Berdy).

*2′*S,*3′-Epoxide: 3-[(3,3-Dimethyloxiranyl)methyl]-6-(3-methyl-2-butenyl)-1*H*-indole, 9CI.* ***3,6-Hexalobine B***
[165905-11-3]
[93822-63-0]
$C_{18}H_{23}NO$ 269.386
Alkaloid from the stem bark of *Hexalobus crispiflorus*, *Hexalobus monopetalus* and *Isolona maitlandii* (Annonaceae). Needles. Mp 72-73°. $[\alpha]_D^{21}$ +9 (c, 1.5 in $CHCl_3$). λ_{max} 227 (ϵ 39800); 283 (ϵ 6310); 293 (ϵ 5011) (MeOH) (Berdy).

*2′*R,*3′:2′′*R,*3′′-Bisepoxide:* **ent-*3,6-Hexalobine C***
[172821-83-9]
$C_{18}H_{23}NO_2$ 285.385
Alkaloid from stem bark and leaves of *Isolona maitlandii* (Annonaceae). Oil. $[\alpha]_D^{21}$ -12 (c, 1.6 in $CHCl_3$).

*2′*S,*3′:2′′*S,*3′′-Bisepoxide: 3,6-Bis[(3,3-dimethyloxiranyl)methyl]-1*H*-indole, 9CI.* ***3,6-Hexalobine C***
[166022-37-3]
[93822-65-2]
$C_{18}H_{23}NO_2$ 285.385
Alkaloid from the stem bark of *Hexalobus crispiflorus* and *Hexalobus monopetalus* (Annonaceae). Oil. $[\alpha]_D^{21}$ +16 (c, 0.4 in$CHCl_3$). λ_{max} 226 (ϵ 39800); 283 (ϵ 6310); 293 (ϵ 5000) (MeOH) (Berdy).

*2′,3′-Dihydro, 2′*S,*3′-dihydroxy:* ***3-(2,3-Dihydroxy-3-methylbutyl)-6-(3-methyl-2-butenyl)-1*H*-indole***
[165604-38-6]
[93822-66-3]
$C_{18}H_{25}NO_2$ 287.401
Alkaloid from *Hexalobus crispiflorus*. Oil. $[\alpha]_D^{21}$ -35 (c, 0.75 in $CHCl_3$). λ_{max} 228 (log ϵ 4.7); 283 (log ϵ 3.9); 293 (log ϵ 3.9) (MeOH).

*Δ$^{1''}$-Isomer(*E*-), 3′′-hydroxy, 2′*R,*3′-epoxide:* ***(E)-3,6-Hexalobine E***
[172670-42-7]
$C_{18}H_{23}NO_2$ 285.385
Alkaloid from the bark and leaves of *Isolona maitlandii*. Cryst. Mp 129-131°. $[\alpha]_D^{21}$ +1 (c, 0.5 in $CHCl_3$). λ_{max} 251 (log ϵ 4.46); 295 (log ϵ 4.14) (MeOH).

*Δ$^{1''}$-Isomer(*Z*-), 3′′-hydroxy, 2′*R,*3′-epoxide:* ***(Z)-3,6-Hexalobine E***
[172670-43-8]
$C_{18}H_{23}NO_2$ 285.385
Alkaloid from leaves of *Isolona maitlandii*. Oil. $[\alpha]_D^{21}$ -2 (c, 1.1 in $CHCl_3$). λ_{max} 231 (log ϵ 4.39); 242 (log ϵ 4.38); 292 (log ϵ 3.99) (MeOH).

Achenbach, H. *et al., Tet. Lett.*, 1979, 2571 (*uv, ir, pmr, cmr, struct*)
Achenbach, H. *et al., Annalen*, 1995, 1327-1337 (*isol, uv, pmr, cmr, ms, struct*)
Achenbach, H. *et al., Phytochemistry*, 1995, **40**, 967-973 (*bisepoxides*)

3,7-Bis(3-methyl-2-butenyl)-1*H*-indole, 9CI B-202

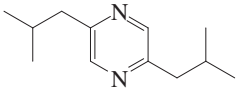
3,7-Diprenylindole. 3,7-Bis(γ,γ-dimethylallyl)indole. 3,7-Diisopentenylindole
$C_{18}H_{23}N$ 253.386
Constit. of *Glycosmis trichanthera*. Oil. λ_{max} 225 ; 275 (sh) ; 282 ; 292 (sh) (MeOH).

*4′-Hydroxy: 2-Methyl-4-[7-(3-methyl-2-butenyl)-1*H*-indol-3-yl]-2-buten-1-ol, 9CI. 3-(3-Hydroxymethyl-2-butenyl)-7-(3-methyl-2-butenyl)-1*H*-indole*
$C_{18}H_{23}NO$ 269.386
Alkaloid from *Glycosmis montana*. Oil. Possesses (*E*)-config. λ_{max} 226 ; 275 (sh) ; 282 ; 292 (sh) (MeOH).

Vajrodaya, S. *et al., Phytochemistry*, 1998, **48**, 897-902 (*isol, uv, ir, pmr, cmr, ms*)
Wang, J. *et al., Phytochemistry*, 2005, **66**, 697-701 (*Glycosmis montana constit*)

2,5-Bis(2-methylpropyl)pyrazine, 9CI B-203

2,5-Diisobutylpyrazine
[65032-04-4]

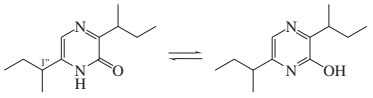


$C_{12}H_{20}N_2$ 192.303
Prod. by *Chondromyces crocatus* and *Paenibacillus polymyxa*.

Beck, H.C. *et al., FEMS Microbiol. Lett.*, 2003, **220**, 67-73 (*isol*)
Schulz, S. *et al., Tetrahedron*, 2004, **60**, 3863-3872 (*isol*)

3,6-Bis(1-methylpropyl)-2(1*H*)-pyrazinone, 9CI B-204

3,6-Bis(1-methylpropyl)-2-pyrazinol. 3-Hydroxy-2,5-bis(1-methylpropyl)pyrazine. 3,6-Di-sec*-butyl-2-hydroxypyrazine*
[17005-09-3]



$C_{12}H_{20}N_2O$ 208.303

Stereochem. of isolates undefined. Metab. from *Aspergillus flavus* and *Aspergillus sojae*. Mp 129°.

1′′-Hydroxy: ***6-(1-Hydroxy-1-methylpropyl)-3-(1-methylpropyl)-2(1H)-pyrazinone***
$C_{12}H_{20}N_2O_2$ 224.302
Metab. of *Aspergillus sojae*. Mp 117°. λ_{max} 233 ; 326 (MeOH) (Berdy).

NH-form

N^1*-Hydroxy:* ***1-Hydroxy-3,6-bis(1-methylpropyl)-2(1H)-pyrazinone***
$C_{12}H_{20}N_2O_2$ 224.302
Metab. from *Aspergillus flavus* and *Aspergillus sojae*. Oil. λ_{max} 233 ; 325 (MeOH) (Berdy).

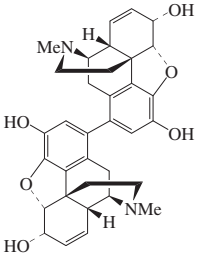
► LD_{50} (mus, ipr) 200 mg/kg.

1′′,N^1*-Dihydroxy:* ***1-Hydroxy-6-(1-hydroxy-1-methylpropyl)-3-(1-methylpropyl)-2(1H)-pyrazinone***
$C_{12}H_{20}N_2O_3$ 240.302
Metab. from *Aspergillus sojae*. Mp 120-121°.

Yamamoto, Y. *et al., Alkaloids (Academic Press)*, 1986, **29**, 185 (*rev, bibl*)

Bismorphine A B-205

[389117-13-9]



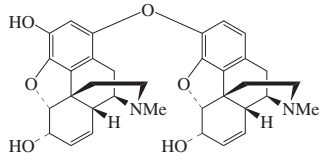
$C_{34}H_{36}N_2O_6$ 568.668

Dimer of Morphine, M-704. Alkaloid from wounded capsules of *Papaver somniferum*.

Morimoto, S. *et al., J. Biol. Chem.*, 2001, **276**, 38179-38184 (*isol, pmr, cmr*)
Morimoto, S. *et al., J. Nat. Prod.*, 2003, **66**, 987-989 (*isol*)

Bismorphine B B-206

[575487-91-1]



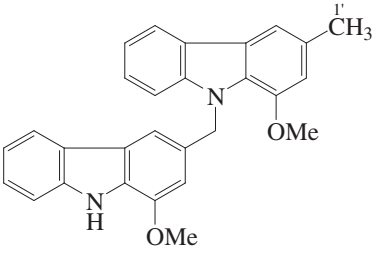
$C_{34}H_{36}N_2O_6$ 568.668

Dimer of Morphine, M-704. Alkaloid from wounded capsules of *Papaver somniferum*. Off-white powder + $1H_2O$. $[\alpha]_D^{28}$ -68.3 (c, 0.15 in MeOH). λ_{max} 284 (log ϵ 4.12) (MeOH).

Morimoto, S. *et al., J. Nat. Prod.*, 2003, **66**, 987-989 (*isol, pmr, cmr*)

Bismurrayafoline A B-207

*1-Methoxy-9-[(1-methoxy-9*H*-carbazol-3-yl)methyl]-3-methyl-9*H*-carbazole, 9CI*
[89368-89-8]



$C_{28}H_{24}N_2O_2$ 420.51

Alkaloid from *Murraya euchrestifolia* (Rutaceae). Shows cytotoxic activity. Needles (Et_2O). Mp 176-177°.

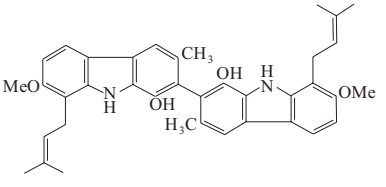
1′-Aldehyde: Chrestifoline D
[142750-14-9]
$C_{28}H_{22}N_2O_3$ 434.493
Alkaloid from root bark of *Murraya euchrestifolia* (Rutaceae). Oil.

1′-Hydroxy: ***Bismurrayafolinol***
[107903-16-2]
$C_{28}H_{24}N_2O_3$ 436.509
Alkaloid from stem bark of *Murraya euchrestifolia* (Rutaceae). Oil.

Furukawa, H. *et al., Chem. Pharm. Bull.*, 1983, **31**, 4202 (*uv, pmr, ms, struct*)
Ito, C. *et al., Chem. Pharm. Bull.*, 1987, **35**, 450; 1992, **40**, 230 (*Bismurrayafolinol, Chrestifoline D*)
Itoigawa, M. *et al., J. Nat. Prod.*, 2000, **63**, 893-897 (*activity*)

Bismurrayafoline B B-208

*7,7′-Dimethoxy-3,3′-dimethyl-8,8′-bis(3-methyl-2-butenyl)[2,2′-bi-9*H*-carbazole]-1,1′-diol, 9CI*
[89368-92-3]



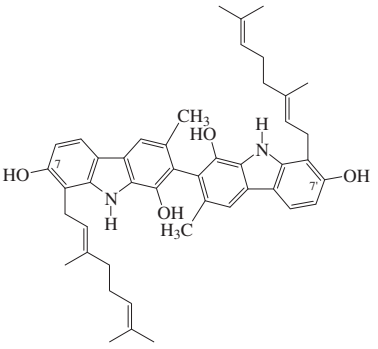
$C_{38}H_{40}N_2O_4$ 588.745

Alkaloid from *Murraya euchrestifolia* (Rutaceae). Needles (Me_2CO). Mp 260° dec.

Furukawa, H. *et al., Chem. Pharm. Bull.*, 1983, **31**, 4202 (*uv, ir, pmr, cmr, ms, struct*)

Bismurrayafoline C B-209

[139726-48-0]



$C_{46}H_{52}N_2O_4$ 696.928

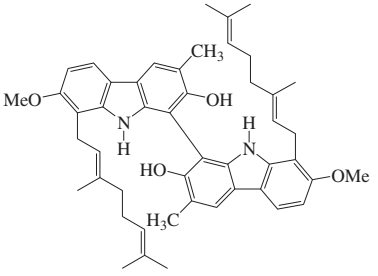
Alkaloid from the stem bark of *Murraya euchrestifolia*. Pale yellow oil. λ_{max} 226 ; 235 ; 260 (sh) ; 285 (sh) ; 311 ; 335 (sh) (MeOH).

7,7′-Di-Me ether: ***Bismurrayafoline D***
[139726-49-1]
$C_{48}H_{56}N_2O_4$ 724.981
Alkaloid from the stem bark of *Murraya euchrestifolia*. Prisms (Me_2CO). Mp 198-200°. λ_{max} 224 ; 238 ; 260 (sh) ; 285 (sh) ; 310 ; 334 (sh) (MeOH).

Ito, C. *et al., Chem. Pharm. Bull.*, 1991, **39**, 2525-2528

Bismurrayafoline E B-210

[252350-80-4]



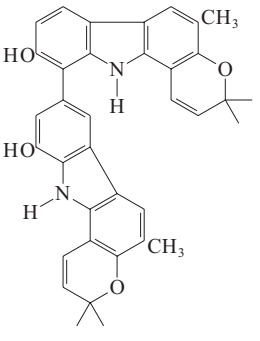
$C_{48}H_{56}N_2O_4$ 724.981

Alkaloid from the leaves of *Murraya koenigii* (curryleaf tree). Gum.

Nutan, M.T.H. *et al., Fitoterapia*, 1999, **70**, 130-133

6,8′-Bismurrayamine A B-211

Bis(7-hydroxygirinimbine B)
[133632-48-1]

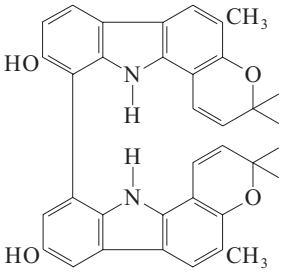


$C_{36}H_{32}N_2O_4$ 556.66
Alkaloid from leaves of *Murraya euchrestifolia* (Rutaceae). Pale yellow oil. Poss. artifact.

Wu, T.-S. *et al., Phytochemistry*, 1991, **30**, 1048; 1052

8,8′-Bismurrayamine A B-212

Bis(7-hydroxygirinimbine A)
[133655-90-0]



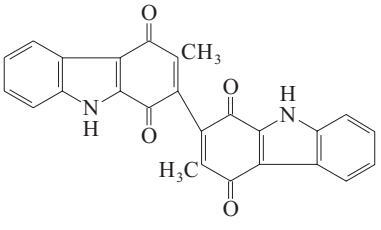
$C_{36}H_{32}N_2O_4$ 556.66
Alkaloid from leaves of *Murraya euchrestifolia* and from *Murraya exotica* (Rutaceae). Pale yellow oil. Poss. artifact.

Di-Me ether: ***Bis(7-methoxygirinimbine A)***
[133632-47-0]
$C_{38}H_{36}N_2O_4$ 584.713
Alkaloid from *Murraya exotica* (Rutaceae).

Wu, T.S. *et al., Phytochemistry*, 1991, **30**, 1048; 1052
Desoky, E.K. *et al., Bull. Fac. Pharm. (Cairo Univ.)*, 1992, **30**, 231; *CA*, **119**, 177557p (*Bis(7-methyoxygirinimbine A)*)

Bismurrayaquinone A B-213

*3,3′-Dimethyl-[2,2′-bi-1*H*-carbazole]-1,1′,4,4′(9*H*,9′*H*)-tetrone, 9CI*
[155519-86-1]

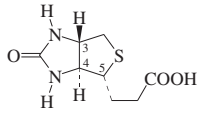


$C_{26}H_{16}N_2O_4$ 420.423
Alkaloid from roots of *Murraya koenigii* (curryleaf tree). Orange powder.

Ito, C. *et al., Chem. Pharm. Bull.*, 1993, **41**, 2096 (*isol, uv, ir, pmr, ms, struct*)
Bringmann, G. *et al., Tetrahedron*, 1995, **51**, 9353 (*synth*)
Murphy, W.S. *et al., J.C.S. Perkin 1*, 1998, 4115-4119 (*synth*)

Bisnorbiotin B-214

*Hexahydro-2-oxo-1*H*-thieno[3,4-*d*]imidazole-4-propanoic acid, 9CI*



(3S,4S,5R)-form

$C_8H_{12}N_2O_3S$ 216.26

(3S,4S,5R)-form
d-*Bisnorbiotin*
[16968-98-2]
Minor metab. of Biotin, B-139. Cryst. (EtOAc) (as Me ester). Mp 165-166° (Me ester). $[\alpha]_D^{25}$ +55.7 (c, 0.96 in DMSO) (Me ester).

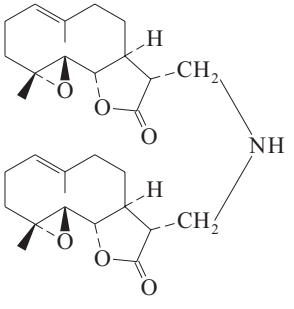
(3S,4S,5S)-form
d-*Allobisnorbiotin*
[51606-79-2]
Prod. by *Pseudomonas* sp. grown on Biotin, B-139.

[39871-27-7 , 57671-76-8 , 39871-28-8]

Im, W.B. *et al., J. Biol. Chem.*, 1973, **248**, 7798-7805 (*isol*)
Confalone, P.N. *et al., J.A.C.S.*, 1977, **99**, 7020-7026 (*synth*)
Im, W.B. *et al., Methods Enzymol.*, 1979, **62**, 385-390 (*isol*)

Bisparthenolidine B-215

[112078-76-9]



$C_{30}H_{43}NO_6$ 513.673
Constit. of *Paramichelia baillonii* (preferred genus name *Michelia*) and *Michelia rajaniana* (Magnoliaceae). Shows antitumour props. Cryst. ($CHCl_3$). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 100-103°. $[\alpha]_D^{20}$ -112 ($CHCl_3$).

Ruangrungsi, N. *et al., J. Nat. Prod.*, 1987, **50**, 891; 1988, **51**, 1230 (*isol, ir, ms, struct, pmr, cmr*)

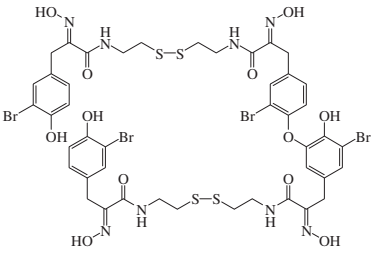
N,N′-Bis(2-phenylethyl)urea, 9CI B-216

N,N′-*Diphenethylurea. AM 2498. Metabolite AM 2498*
[5467-84-5]
$PhCH_2CH_2NHCONHCH_2CH_2Ph$
$C_{17}H_{20}N_2O$ 268.358
Metab. from the marine ascidian *Didemnum ternatanum*. Also isol. from a *Streptomyces* sp. strain No. AM-2498. Weak depressant lacking acute toxicity. Needles (MeOH). Sol. MeOH, C_6H_6; poorly sol. H_2O. Mp 138-141° (135°). λ_{max} 248 (ϵ 308); 251 (ϵ 411); 253 (ϵ 446); 256 (ϵ 535); 259 (ϵ 549); 262 (ϵ 543); 265 (ϵ 419); 269 (ϵ 351) (MeOH) (Derep).

▶ YS2768000

Iwai, Y. *et al., J. Antibiot.*, 1978, **31**, 375 (*isol, uv, ir, pmr, cmr, struct*)
Ireland, C.M. *et al., J. Nat. Prod.*, 1981, **44**, 360 (*isol, ir, pmr, cmr, ms, synth*)

Bispsammaplin A B-217

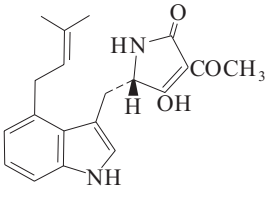


$C_{44}H_{46}Br_4N_8O_{12}S_4$ 1326.774
Isol. from an association of the sponges *Jaspis wondoensis* and *Poecillastra wondoensis*. Yellow oil. $[\alpha]_D^{23}$ -3 (c, 0.21 in MeOH).

Park, Y. *et al., J. Nat. Prod.*, 2003, **66**, 1495-1498 (*isol, pmr, cmr*)

Bissecodehydrocyclopiazonic acid B-218

Dehydrodisecocyclopiazonic acid. β-Cyclopiazonic acid
[31008-70-5]

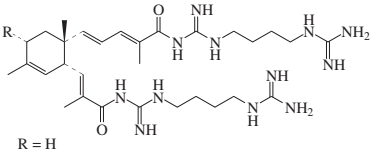


$C_{20}H_{22}N_2O_3$ 338.405
Isol. from *Penicillium cyclopium* and *Aspergillus versicolor*. Cryst. (MeOH). Mp 168-169°. $[\alpha]_D^{20}$ -186 (c, 0.42 in Py). λ_{max} 225 (ϵ 39800); 253 (ϵ 16600); 275 (sh) (ϵ 19100); 284 (ϵ 20400); 292 (sh) (ϵ 17400) (MeOH) (Derep). λ_{max} 226 (ϵ 38500); 276 (ϵ 11750) (MeOH) (Berdy).

Holzapfel, C.W. *et al., Tetrahedron*, 1970, **26**, 5239 (*isol, uv, ir, pmr, ms*)
Ohmomo, S. *et al., Nippon Nogei Kagaku Kaishi*, 1973, **47**, 57 (*isol, pmr*)
Nolte, M.J. *et al., J.C.S. Perkin 1*, 1980, 1057 (*cmr, tautom*)
Holzapfel, C.W. *et al., Aust. J. Chem.*, 1992, **45**, 99 (*synth*)
Cole, R.J. *et al., Handbook of Toxic Fungal Metabolites*, Academic Press, 1981, 504

Bistellettadine A B-219

[233766-63-7]



$C_{30}H_{52}N_{12}O_2$ 612.82
Isol. as a salt tetraprotonated at the guanidino residues. Counterion not specified. Alkaloid from the marine sponge *Stelletta* sp. $[\alpha]_D^{21}$ +2 (c, 0.72 in MeOH) (salt). λ_{max} 255 (ϵ 13000) (MeOH).

Tsukamoto, S. *et al., J.O.C.*, 1999, **64**, 3794-3795 (*isol, uv, pmr, cmr*)

Bistellettadine B B-220

[233766-64-8]

As Bistellettadine A, B-219 with

R = -$CH_2CH{=}C(CH_3)_2$

$C_{35}H_{60}N_{12}O_2$ 680.938

Isol. as a salt tetraprotonated at the guanidino residues. Counterion not specified. Alkaloid from the marine sponge *Stelletta* sp. $[\alpha]_D^{21}$ +3.9 (c, 0.1 in MeOH) (salt). λ_{max} 255 (ϵ 11000) (MeOH).

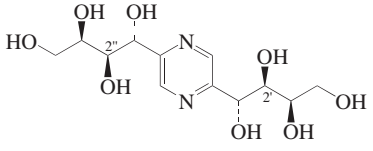
Tsukamoto, S. *et al., J.O.C.*, 1999, **64**, 3794-3795 (*isol, uv, pmr, cmr*)

2,5-Bis(1,2,3,4-tetrahydroxybutyl)pyrazine B-221

1,1′-(2,5-Pyrazinediyl)bis-1,2,3,4-butanetetrol, 9CI

[68538-87-4]

[220145-44-8 , 220145-46-0 , 220145-43-7 , 220145-45-9 , 220145-47-1]



(1′*R*,1″*R*,2′*R*,2″*R*,3′*R*,3″*R*)-*form*

$C_{12}H_{20}N_2O_8$ 320.299

(1′R,1″R,2′R,2″R,3′R,3″R)-form

D-lyxo-*form*

[13121-64-7]

Beige powder. Mp 109°.

(1′R,1″R,2′S,2″S,3′R,3″R)-form

D-arabino-*form*. D-*Fructosazine*

[13185-73-4]

Formed by the action of ammonia on glucose. Exhibits DNA strand cleavage activity. Needles (EtOH). Mp 237°. $[\alpha]_D^{20}$ -84.1 (c, 1 in H_2O).

Octa-Ac: [13051-88-2]

Mp 174°. $[\alpha]_D^{11}$ -7.2 (c, 1 in $CHCl_3$).

(1′R,1″R,2′S,2″S,3′S,3″S)-form

L-xylo-*form*. L-*Sorbosazine*

[41093-14-5]

Needles (EtOH). Mp 175-177°. $[\alpha]_D^{20}$ -27 (c, 0.1 in H_2O).

(1′ξ,1″ξ,2′ξ,2″ξ,3′ξ,3″ξ)-form

2′,2″-Bis-O-*(2-acetamido-2-deoxy-β-*D*-glucopyranoside):* Vibrio alginolyticus *Pyrazine. VAPY*

[165956-47-8]

$C_{28}H_{46}N_4O_{18}$ 726.687

Prod. by *Vibrio alginolyticus* TK-24 with chitin. Platelet aggregation inhibitor. Powder. Sol. MeOH, H_2O. λ_{max} 275 (H_2O).

[68510-02-1]

Fujii, S. *et al., J.O.C.*, 1966, **31**, 2239-2241 (*synth, fructosazine*)

Tsuchida, H. *et al., Agric. Biol. Chem.*, 1973, **37**, 2571-2578 (*Fructosazine, synth, uv, ir*)

Teglia, M.C. *et al., Carbohydr. Res.*, 1973, **26**, 377-384 (*synth, Sorbosazine*)

Tsuchida, H. *et al., Dev. Food Sci.*, 1986, **13**, 85-94 (*occur*)

Tsuchida, H. *et al., CA*, 1990, **113**, 229877r (*occur*)

Sumoto, K. *et al., Bull. Chem. Soc. Jpn.*, 1991, **39**, 792-794 (*Frucosazine, synth, ir, pmr, cmr*)

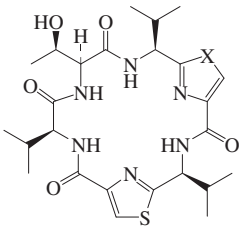
Yanai, T. *et al., J. Ferment. Bioeng.*, 1995, **80**, 406-407 (*VAPY*)

Japan. Pat., 1995, 95 118 286; *CA*, **124**, 7180w (*VAPY*)

Pat. Coop. Treaty (WIPO), 1999, 9 903 842; *CA*, **130**, 139579s (*synth, lyxo-form*)

Bistratamide I B-222

[501909-64-4]



X = O

$C_{25}H_{36}N_6O_6S$ 548.662

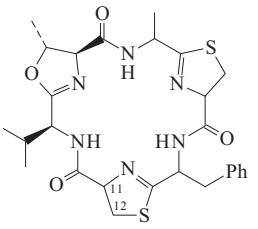
Isol. from the ascidian *Lissoclinum bistratum*. Solid. $[\alpha]_D$ -122 (c, 0.5 in MeOH). λ_{max} 243 (sh) (MeOH).

Perez, L.J. *et al., J. Nat. Prod.*, 2003, **66**, 247-250 (*isol, pmr, cmr, ms*)

You, S.-L. *et al., Tetrahedron*, 2005, **61**, 241-249 (*synth*)

Bistratamide A B-223

[120853-13-6]



$C_{27}H_{34}N_6O_4S_2$ 570.735

Cyclic hexapeptide from the ascidian *Lissoclinum bistratum* and from *Prochloron* sp. Cytotoxic agent. λ_{max} 232 (ϵ 13000) (CH_2Cl_2) (Derep).

11,12-Didehydro: ***Bistratamide B***

[120881-21-2]

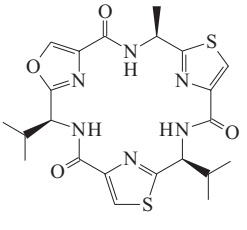
$C_{27}H_{32}N_6O_4S_2$ 568.72

From *Lissoclinum bistratum* and from *Prochloron* sp. Cytotoxic, but less so than Bistratamide A. λ_{max} 232 (ϵ 13000) (CH_2Cl_2) (Derep).

Degnan, B.M. *et al., J. Med. Chem.*, 1989, **32**, 1354-1359 (*isol, pmr, cmr, struct*)

Bistratamide C B-224

[145400-56-2]



$C_{22}H_{26}N_6O_4S_2$ 502.617

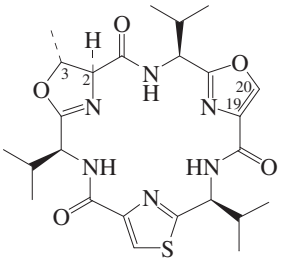
Cyclic hexapeptide from the ascidian *Lissoclinum bistratum*. Sol. MeOH, $CHCl_3$. $[\alpha]_D^{25}$ -65 (c, 0.42 in $CHCl_3$). λ_{max} 233 (ϵ 17000) (CH_2Cl_2) (Derep).

Foster, M.P. *et al., J.O.C.*, 1992, **57**, 6671-6675 (*isol, uv, ir, pmr, cmr, struct*)

Aguilar, E. *et al., Tet. Lett.*, 1994, **35**, 2477 (*synth*)

Bistratamide D B-225

[145427-87-8]



$C_{25}H_{34}N_6O_5S$ 530.647

Cyclic hexapeptide from the ascidian *Lissoclinum bistratum*. Shows sedative and depressant props. Sol. MeOH, $CHCl_3$. $[\alpha]_D^{25}$ -31 (c, 0.33 in $CHCl_3$). λ_{max} 233 (ϵ 17000) (CH_2Cl_2) (Derep).

19α,20-Dihydro: ***Bistratamide F***

[501909-61-1]

$C_{25}H_{36}N_6O_5S$ 532.663

Isol. from *Lissoclinum bistratum*. Cream solid. $[\alpha]_D$ +23.2 (c, 1 in MeOH). Incorrect MF in ref. λ_{max} 230 (sh) (MeOH).

2,3-Didehydro: ***Bistratamide G***

[501909-62-2]

$C_{25}H_{32}N_6O_5S$ 528.631

Isol. from *Lissoclinum bistratum*. Solid. $[\alpha]_D$ -73.8 (c, 1 in MeOH). λ_{max} 230 (sh) (MeOH).

Foster, M.P. *et al., J.O.C.*, 1992, **57**, 6671-6675 (*isol, uv, ir, pmr, cmr, struct*)

Downing, S.V. *et al., J.O.C.*, 1999, **64**, 826-831 (*synth, pmr, cmr*)

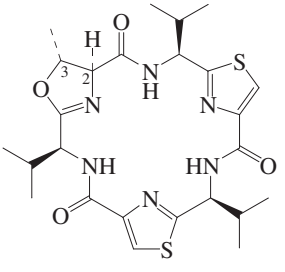
Perez, L.J. *et al., J. Nat. Prod.*, 2003, **66**, 247-250 (*Bistratamides F,G*)

Shin, C. *et al., Chem. Lett.*, 2004, **33**, 664-665 (*synth*)

You, S.-L. *et al., Tetrahedron*, 2005, **61**, 241-249 (*synth*)

Bistratamide E B-226

[501909-60-0]



$C_{25}H_{34}N_6O_4S_2$ 546.713

Isol. from the ascidian *Lissoclinum bistratum*. Glass. $[\alpha]_D$ -31 (c, 1 in MeOH). λ_{max} 237 (log ϵ 3030) (MeOH).

2,3-Didehydro: ***Bistratamide H***
[501909-63-3]
$C_{25}H_{32}N_6O_4S_2$ 544.698
Isol. from *Lissoclinum bistratum*. Solid. $[\alpha]_D$ -92.9 (c, 1 in MeOH). λ_{max} 237 (sh) (MeOH).

Perez, L.J. *et al., J. Nat. Prod.*, 2003, **66**, 247-250 (*isol, pmr, cmr, ms*)
You, S.-L. *et al., Tetrahedron*, 2005, **61**, 241-249 (*synth*)
Nakamura, Y. *et al., Tet. Lett.*, 2006, **47**, 239-243 (*Bistratamide H, synth*)
Bertram, A. *et al., Org. Biomol. Chem.*, 2007, **5**, 1541-1553 (*Bistratamide H, synth*)

Bistratamide J B-227

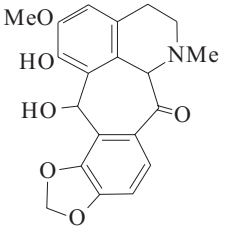
[501909-65-5]
As Bistratamide I, B-222 with
X = S

$C_{25}H_{36}N_6O_5S_2$ 564.729
Isol. from *Lissoclinum bistratum*. Solid. $[\alpha]_D$ -25 (c, 0.5 in MeOH). λ_{max} 248 (sh) (MeOH).

Perez, L.J. *et al., J. Nat. Prod.*, 2003, **66**, 247-250 (*isol, pmr, cmr, ms*)
You, S.-L. *et al., Chem. Eur. J.*, 2004, **10**, 71-74 (*synth*)

Bitlisine B-228

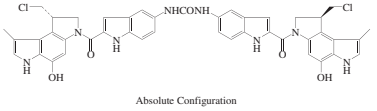
[105223-81-2]



$C_{20}H_{19}NO_6$ 369.373
Alkaloid from *Corydalis rutifolia* (Papaveraceae).
Şener, B. *et al., CA*, 1986, **105**, 206252d

Bizelesin, INN, USAN B-229

*6,6′-[Carbonylbis(imino-1*H*-indole-5,2-diylcarbonyl)]bis[8-(chloromethyl)-3,6,7,8-tetrahydro-1-methylbenzo[1,2-b:4,3-b′]dipyrrol-4-ol], 9CI. U 77779. NSC 615291. Antibiotic U 77779*
[129655-21-6]

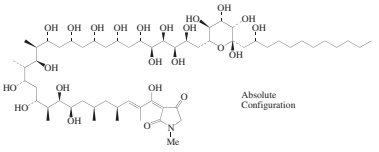


$C_{43}H_{36}Cl_2N_8O_5$ 815.713
Prod. by *Streptomyces zelenesis*. DNA alkylating agent. Antineoplastic agent. . Solid. Analogue of Rachelmycin, R-4.
[129655-29-4]

Eur. Pat., 1990, (*(Upjohn)*)359 454; *CA*, **113**, 152387w (*synth, pharmacol*)
Lee, C.S. *et al., Cancer Res.*, 1991, **51**, 6586-6591 (*pharmacol*)
Lee, C.S. *et al., Biochemistry*, 1993, **32**, 2592-2600 (*pharmacol*)
Sun, D. *et al., Chem. Res. Toxicol.*, 1993, **6**, 889-894 (*pharmacol*)
Butryn, R.K. *et al., Cancer Chemother. Pharmacol.*, 1994, **34**, 44-50; 317-322 (*pharmacol, hplc*)
Borman, S. *et al., Chem. Eng. News*, November 17, 1997, 37 (*rev, activity*)
Schwartz, G.H. *et al., Ann. Oncol.*, 2003, **14**, 775-782 (*clin trial*)

Blasticidin A B-230

[100513-53-9]



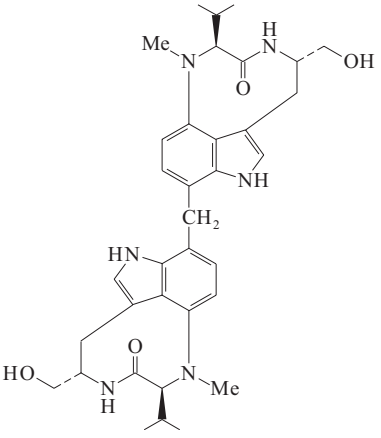
$C_{58}H_{107}NO_{23}$ 1186.476
Prod. by *Streptomyces griseochromogenes*. Shows broad antifungal and antibacterial spectrum. Exhibits aflatoxin production inhibitory activity. Pale yellow powder. Sol. MeOH, butanol, Py, DMSO, bases, AcOH, DMF; fairly sol. EtOH, H_2O; poorly sol. C_6H_6, Me_2CO, Et_2O, CCl_4, EtOAc, hexane, $CHCl_3$. Mp 197-201°. $[\alpha]_D$ +10.8 (c, 1 in DMSO). λ_{max} 235 ; 308 (MeOH) (Berdy). λ_{max} 246 (ϵ 11500); 299 (ϵ 5800) (MeOH aq.) (Berdy). λ_{max} 237 (ϵ 9000); 314 (ϵ 6400) (MeOH-HCl) (Berdy).

▶ LD_{50} (mus, ipr) 26 mg/kg.
Ca chelate: Mp 165.5-166.5°.

Fukunaga, K. *et al., Bull. Agric. Chem. Soc. Jpn.*, 1955, **19**, 181
Kono, Y. *et al., J. Antibiot., Ser. A*, 1968, **21**, 433
Sakuda, S. *et al., J. Antibiot.*, 2000, **53**, 1265-1271 (*pmr, cmr, struct*)
Sakuda, S. *et al., Tet. Lett.*, 2007, **48**, 2527-2531 (*abs config*)

Blastmycetin A B-231

[107783-16-4]



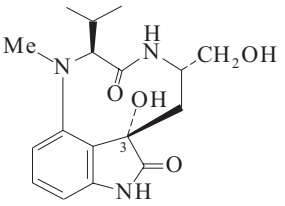
$C_{35}H_{46}N_6O_4$ 614.786
Isol. from *Streptoverticillium blastmyceticus*. Amorph. Sol. MeOH, $CHCl_3$. $[\alpha]_D^{26}$ -220 (c, 0.46 in EtOH). Related to Teleocidin B_1, T-63 and Indolactam V, I-78. λ_{max} 234 (ϵ 17200); 297 (sh) (ϵ 5900); 310 (ϵ 7100) (EtOH) (Derep). λ_{max} 231 (ϵ 49300); 259 (ϵ 15900); 303 (ϵ 16700) (EtOH) (Berdy).

▶ Tumour promotor.

Irie, K. *et al., Agric. Biol. Chem.*, 1987, **51**, 285-287; 1988, **52**, 641-648 (*isol, struct*)

Blastmycetin B B-232

[107745-57-3]



$C_{17}H_{23}N_3O_4$ 333.386
Isol. from *Streptoverticillium blastmyceticus*. Tumour promotor. Amorph. Sol. MeOH, $CHCl_3$. $[\alpha]_D^{20}$ -323 (c, 0.48 in MeOH). λ_{max} 234 (ϵ 17200); 297 (sh) (ϵ 5900); 310 (ϵ 7100) (EtOH) (Derep). λ_{max} 243 (ϵ 14300); 325 (ϵ 3700) (EtOH) (Berdy).

3-Deoxy: ***3-Deoxyblastmycetin B***
[111004-10-5]
$C_{17}H_{23}N_3O_3$ 317.387
From *Streptoverticillium blastmyceticus*. Tumour promotor. $[\alpha]_D^{24}$ -306.5 (c, 0.21 in MeOH).

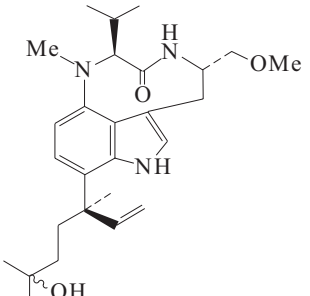
3-Epimer: ***Blastmycetin C***
[107797-58-0]
$C_{17}H_{23}N_3O_4$ 333.386
From *Streptoverticillium blastmyceticus*. Tumour promotor. Amorph. Sol. MeOH, $CHCl_3$. $[\alpha]_D^{19}$ +166.5 (c, 0.14 in MeOH). λ_{max} 234 (ϵ 17200); 297 (sh) (ϵ 5900); 310 (ϵ 7100) (EtOH) (Derep). λ_{max} 247 (ϵ 6300); 285 (ϵ 1500) (EtOH) (Berdy).

3-Epimer, 3-deoxy: ***3-Deoxyblastmycetin C***
[98770-63-9]
$C_{17}H_{23}N_3O_3$ 317.387
From *Streptoverticillium blastmyceticus*. Tumour promotor. $[\alpha]_D^{19}$ +89.6 (c, 0.17 in MeOH).

Irie, K. *et al., Agric. Biol. Chem.*, 1987, **51**, 285-287; 1988, **52**, 641-648 (*isol, struct*)

Blastmycetin D B-233

[110064-64-7]

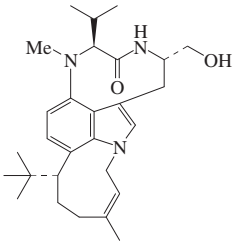


$C_{29}H_{45}N_3O_3$ 483.693
Isol. from *Streptoverticillium blastmyceticum*. Poss. precursor of the Teleocidins. Amorph. $[\alpha]_D^{23}$ -51 (c, 0.27 in MeOH). λ_{max} 234 (ϵ 17200); 297 (sh) (ϵ 5900); 310 (ϵ 7100) (EtOH) (Derep). λ_{max} 229 (ϵ 26200); 287 (ϵ 3600); 298 (ϵ 3400) (MeOH) (Berdy).

Irie, K. *et al., Agric. Biol. Chem.*, 1987, **51**, 1733 (*isol, struct*)
Irie, K. *et al., Tetrahedron*, 1990, **46**, 2773 (*isol*)

Blastmycetin E B-234

[121530-46-9]

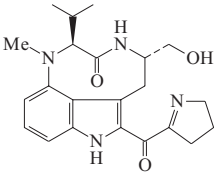


Absolute Configuration

$C_{28}H_{41}N_3O_2$ 451.651
Isol. from *Streptoverticillium blastmyceticum*. Tumour promoter. Powder. $[\alpha]_D^{22}$ -64.7 (c, 0.63 in EtOH). λ_{max} 234 (ϵ 17200); 297 (sh) (ϵ 5900); 310 (ϵ 7100) (EtOH) (Derep).
Irie, K. *et al., Tet. Lett.*, 1989, **30**, 2113 (*isol, struct*)
Irie, K. *et al., Tetrahedron*, 1990, **46**, 2773 (*isol*)

Blastmycetin F B-235

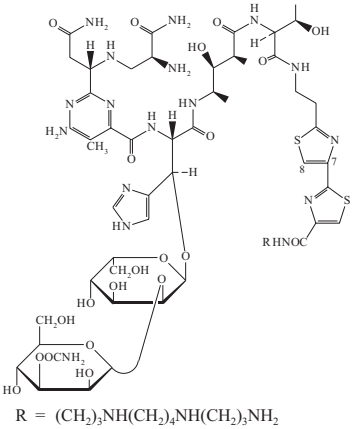
[156312-08-2]



$C_{22}H_{28}N_4O_3$ 396.488
Metab. of *Streptoverticillium blastmyceticum*. Tumour promoter. Red amorph. powder. $[\alpha]_D^{26}$ -147 (c, 0.21 in MeOH). λ_{max} 234 (ϵ 17200); 297 (sh) (ϵ 5900); 310 (ϵ 7100) (EtOH) (Derep). λ_{max} 223 (ϵ 27800); 273 (ϵ 12400); 344 (ϵ 11200); 432 (ϵ 4800) (MeOH) (Berdy).
Irie, K. *et al., J. Nat. Prod.*, 1994, **57**, 363 (*isol, pmr, cmr, ms, struct*)

Bleomycin A_6 B-236

N^1-[3-[[4-[(3-Aminopropyl)amino]butyl]amino]propyl]bleomycinamide, 9CI. Zhengguangmycin A_6
[37293-17-7]

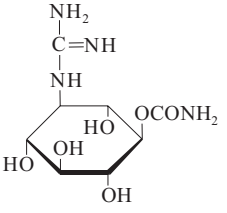


R = $(CH_2)_3NH(CH_2)_4NH(CH_2)_3NH_2$

$C_{60}H_{96}N_{20}O_{21}S_2$ 1497.672
Glycopeptide antibiotic. Isol. from *Streptomyces verticillus*. Sol. MeOH, H_2O; fairly sol. EtOH; poorly sol. Me_2CO, hexane. λ_{max} 244 ; 295 (H_2O) (Berdy).
Fujii, A. *et al., J. Antibiot.*, 1973, **26**, 398 (*isol*)

Bluensidine B-237

1-O-*Carbamoyl-3-deoxy-3-guanidino*-scyllo-*inositol*
[4939-64-4]

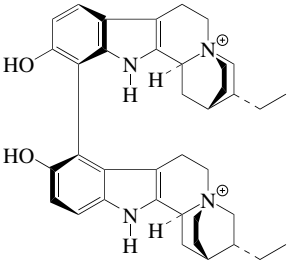


$C_8H_{16}N_4O_6$ 264.238
Mp 194-196° dec. (as hydrochloride). $[\alpha]_D$ +1 (H_2O).

N,N,O,O,O,O-Hexa-Ac: Mp 250-251° dec. $[\alpha]_D$ +5 (c, 0.9 in $CHCl_3$).
Bannister, B. *et al., J.A.C.S.*, 1963, **85**, 119

Blumeanine B-238

[214702-48-4]

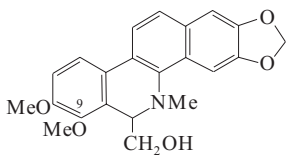


$C_{38}H_{48}N_4O_2^{2\oplus}$ 592.823
Alkaloid from *Ophiorrhiza blumeana*.

O,O-Di-Ac: [214702-53-1]
$C_{42}H_{52}N_4O_4^{2\oplus}$ 676.897
Plates (MeOH/EtOAc). $[\alpha]_D^{32}$ -155 (c, 0.003 in MeOH). Dec. without melting at 250°. Error in the MF given in the lit. The counterion is not clear from the reference. λ_{max} 220 (ϵ 25400); 291 (ϵ 7600) (MeOH).
Arbain, D. *et al., J.C.S. Perkin 1*, 1998, 2537-2540 (*isol, uv, ir, cd, pmr, cmr, ms*)

Bocconoline B-239

12,13-Dihydro-1,2-dimethoxy-12-methyl[1,3]benzodioxolo[5,6-c]phenanthridine-13-methanol, 9CI. 8-Hydroxymethyldihydrochelerythrine
[32906-88-0]



$C_{22}H_{21}NO_5$ 379.412
Probably an artifact. Alkaloid from *Macleaya cordata*, *Chelidonium japonicum*, *Glaucium flavum*, and from an unnamed *Fagara* sp. (Papaveraceae, Rutaceae). Pillars (MeOH). Mp 232-233° (215-218°, 221-222°).

*O^9-De-Me: **7,8-Dihydro-8-hydroxymethylfagaridine***
$C_{21}H_{19}NO_5$ 365.385
Alkaloid from stems and twigs of *Zanthoxylum microcarpum* (Rutaceae). Solid. Poss. artifact.

*Deoxy: **8-Methyldihydrochelerythrine***
[159465-79-9]
$C_{22}H_{21}NO_4$ 363.412
Alkaloid from root bark of *Zanthoxylum simulans* (Szechuan pepper) (Rutaceae). Needles (MeOH). Mp 203-205°.

Tani, C. *et al., Yakugaku Zasshi*, 1962, **82**, 755; *CA*, **58**, 5747f (*isol*)
Ishii, H. *et al., Tet. Lett.*, 1971, 2429 (*uv, ir, pmr, ms, struct*)
Novák, V. *et al., Coll. Czech. Chem. Comm.*, 1974, **39**, 3352 (*isol, uv*)
Ishii, H. *et al., Chem. Pharm. Bull.*, 1978, **26**, 166 (*uv, ir, pmr, ms, struct, synth*)
Itokawa, H. *et al., Phytochemistry*, 1978, **17**, 839 (*isol, uv, ir, pmr, ms*)
Castedo, L. *et al., Heterocycles*, 1981, **16**, 533 (*occur*)
Boulware, R.J. *et al., J. Nat. Prod.*, 1981, **44**, 200 (*7,8-Dihydro-8-hydroxymethylfagaridine*)
Chen, I.S. *et al., J. Nat. Prod.*, 1994, **57**, 1206 (*8-Methyldihydrochelerythrine*)

Bodamine B-240

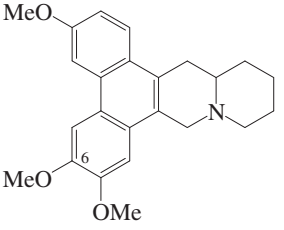
$C_{17}H_{21}NO_3$ 287.358
Amaryllidaceae alkaloid. Struct. unknown. Isol. from the bulbs of *Nerine bowdenii* (Amaryllidaceae). Mp 208-210°. $[\alpha]_D$ 0 (c, 0.15 in $CHCl_3$).

Hydroiodide: Mp 245° dec.

Methiodide: Mp 265° dec.
Boit, H.-G. *et al., Naturwissenschaften*, 1960, **47**, 109 (*isol*)

Boehmeriasine A B-241

11,12,13,14,14a,15-Hexahydro-3,6,7-trimethoxy-9H-phenanthro[9,10-b]quinolizine, 9CI



$C_{24}H_{27}NO_3$ 377.482

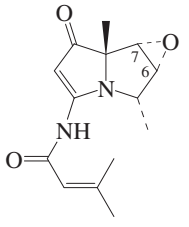
(ξ)-form
Alkaloid from *Boehmeria siamensis*. Cytotoxic. Needles (CH_2Cl_2/MeOH). Mp 216-218°. $[\alpha]_D^{20}$ -80.4 (c, 0.1 in MeOH). λ_{max} 227 (log ϵ 4.36); 253 (log ϵ 3.85); 282 (log ϵ 3.27) (MeOH).

O^6-*De-Me:* ***Boehmeriasine B***
$C_{23}H_{25}NO_3$ 363.455
Alkaloid from *Boehmeria siamensis*. Powder (CH_2Cl_2/MeOH). Mp 248-250°. $[\alpha]_D^{20}$ -63.7 (c, 0.2 in MeOH). λ_{max} 228 (log ϵ 4.39); 252 (log ϵ 3.9); 285 (log ϵ 3.34) (MeOH).

Luo, Y.G. *et al., Planta Med.*, 2003, **69**, 842-845 (*isol, pmr, cmr*)

Bohemamine B-242

[72926-12-6]



Relative Configuration

$C_{14}H_{18}N_2O_3$ 262.308
Prod. by *Actinosporangium* sp. strain C36145, *Streptomyces* sp. UMA-044 and the marine-derived *Streptomyces* sp. CNQ-583. Cell adhesion inhibitor. Cryst. (CH_2Cl_2/Et_2O). Mp 199-200° dec. $[\alpha]_D^{25}$ +16 (c, 2 in MeOH).

Deepoxy: Deepoxybohemamine. ***Antibiotic NP 25302****. NP 25302*
$C_{14}H_{20}N_2O_2$ 248.324
Prod. by *Streptomyces* sp. UMA-044 and the marine-derived *Streptomyces* sp. CNQ-583. Cell adhesion inhibitor. Amorph. solid ($CHCl_3$). Mp 229-230°. $[\alpha]_D$ +115.5 (c, 1.1 in MeOH). λ_{max} 250 ; 282 ; 334 (MeOH).

Deepoxy, 6α-hydroxy: ***Bohemamine B***
$C_{14}H_{20}N_2O_3$ 264.324
Prod. by the marine-derived *Streptomyces* sp. CNQ-583. Viscous oil. $[\alpha]_D^{25}$ -6.8 (c, 1 in MeOH). λ_{max} 250 (log ϵ 4.3); 284 (log ϵ 4); 332 (log ϵ 3.9) (MeOH).

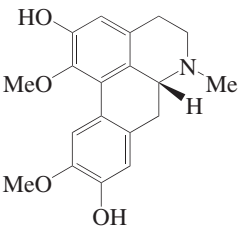
Deepoxy, 7α-hydroxy: ***Bohemamine C***
$C_{14}H_{20}N_2O_3$ 264.324
Prod. by the marine-derived *Streptomyces* sp. CNQ-583. $[\alpha]_D^{25}$ -12 (c, 0.6 in MeOH). λ_{max} 250 (log ϵ 4.2); 281 (log ϵ 3.7); 325 (log ϵ 3.4) (MeOH).

Deepoxy, 6β-chloro, 7α-hydroxy: ***6-Chlorobohemamine C***
$C_{14}H_{19}ClN_2O_3$ 298.768
Prod. by the marine-derived *Streptomyces* sp. CNQ-583. $[\alpha]_D^{25}$ -14.5 (c, 0.4 in MeOH). λ_{max} 250 (log ϵ 4.1); 281 (log ϵ 4); 330 (log ϵ 3.8) (MeOH).

Doyle, T.W. *et al., J.O.C.*, 1980, **45**, 1324-1326 (*isol, uv, pmr, cmr, ms, cryst struct*)
Zhang, Q. *et al., J. Antibiot.*, 2003, **56**, 673-681 (*isol, pmr, cmr, activity*)
Bugni, T.S. *et al., J. Nat. Prod.*, 2006, **69**, 1626-1628 (*marine, isol, pmr, cmr*)
Duvall, J.R. *et al., J.O.C.*, 2006, **71**, 8579-8590 (*NP 25302, synth*)

Boldine B-243

5,6,6a,7-Tetrahydro-1,10-dimethoxy-6-methyl-4H-dibenzo[de,g]quinoline-2,9-diol, 9CI. 2,9-Dihydroxy-1,10-dimethoxyaporphine
[476-70-0]



(*R*)-*form*

$C_{19}H_{21}NO_4$ 327.379
Log P 2.42 (uncertain value) (calc).
▶ CE0750000

(R)-form

N-*De-Me:* ***(-)-Laurolitsine***
[142794-65-8]
$C_{18}H_{19}NO_4$ 313.352
Alkaloid from bark of *Dehaasia kurzii* (Lauraceae). Solid. $[\alpha]_D^{27}$ -162 (c, 0.01 *M* in MeOH).

(S)-form

Alkaloid from a variety of genera in the Annonaceae (*Desmos*, *Polyalthia*), Lauraceae (*Actinodaphne*, *Litsea*, *Neolitsea*, *Sassafras*, *Laurus*, *Machilus*), Magnoliaceae (*Liriodendron*), Monimiaceae (*Peumus*, *Hedycarya*, *Monimia*), Rhamnaceae (*Retanilla*), and Monimiaceae (*Laurelia*). Diuretic. *Peumus boldus* and boldine have been used in treatment of gall-stones. Antioxidant, shows antitrypanosomal activity. Mp 161-163°. $[\alpha]_D^{13}$ +111 (c, 1.03 in EtOH). λ_{max} 220 (log ϵ 4.6); 283 (log ϵ 4.21); 304 (log ϵ 4.23) (EtOH).
▶ LD_{50} (mus, orl) 450 mg/kg. CE0750000

Hydrochloride: [16625-69-7]
Cryst. (MeOH/Et_2O). Mp 218-222° dec. $[\alpha]_D^{20}$ +118 (c, 0.1 in EtOH).

N-*Oxide*(R-*):* ***Boldine*** $\mathbf{N^{\beta}}$***-oxide***
[937018-76-3]
$C_{19}H_{21}NO_5$ 343.379
Alkaloid from the leaves of *Neolitsea sericea* var. *aurata*.

N-*De-Me: 2,9-Dihydroxy-1,10-dimethoxynoraporphine.* ***Laurolitsine****. Norboldine*
[5890-18-6]
$C_{18}H_{19}NO_4$ 313.352
Alkaloid from a wide variety of genera in the Annonaceae (*Xylopia*), Hernandiaceae (*Hernandia*), Lauraceae (*Actinodaphne, Cinnamomum, Lindera, Litsea, Neolitsea, Machilus, Phoebe, Sassafras*), Monimiaceae (*Monimia, Peumus*), Monimiaceae (*Laurelia*) and Rhamnaceae (*Retanilla*). Mp 138-140°. $[\alpha]_D$ +101 (c, 0.69 in EtOH).
▶ RB5935000

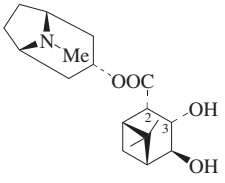
N-*De-Me,* N-*Ac:* Mp 255-260°. $[\alpha]_D$ +370 (c, 0.11 in $CHCl_3$).

N-*Me:* **N-*Methylboldine***
[73892-20-3]
$C_{20}H_{24}NO_4^{\oplus}$ 342.414
Quaternary alkaloid from the leaves of *Cocculus laurifolius* (Menispermaceae). Cryst. (MeOH/Et_2O) (as chloride). Mp 252-255° dec. (chloride).

Späth, E. *et al., Ber.*, 1933, **66**, 904-914 (*isol, struct*)
Nakasato, T. *et al., Chem. Pharm. Bull.*, 1959, **7**, 780-784 (*Laurolitsine*)
Johns, S.R. *et al., Aust. J. Chem.*, 1967, **20**, 1277-1281 (*isol, pmr, Laurolitsine*)
Tewari, S. *et al., Phytochemistry*, 1972, **11**, 1149-1152 (*Boldine, Laurolitsine, isol, pmr, uv, ms*)
Kupchan, S.M. *et al., Chem. Comm.*, 1976, 91 (*synth*)
Bhakuni, D.S. *et al., J.C.S. Perkin 1*, 1977, 706 (*biosynth*)
Bremner, J.B. *et al., Aust. J. Chem.*, 1978, **31**, 313-320 (*N-Methylboldine*)
Saxena, N.K. *et al., J. Indian Chem. Soc.*, 1979, **56**, 1020-1023 (*N-Methylboldine*)
Ringdahl, B. *et al., J. Nat. Prod.*, 1981, **44**, 80 (*cd*)
Atta-ur-Rahman, *et al., Fitoterapia*, 1991, **62**, 261-265 (*(-)-Laurolitsine*)
Asencio, M. *et al., Acta Cryst. C*, 1996, **52**, 1581 (*cryst struct*)
Martindale, The Extra Pharmacopoeia, 32nd edn., Pharmaceutical Press, 1999, 1554
Reveco, P.G. *et al., Synth. Commun.*, 2005, **35**, 341-347 (*ir, uv, derivs*)
Lee, S.-S. *et al., J. Nat. Prod.*, 2007, **70**, 637-642 (*N-oxide*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, DNZ100

Bonabiline A B-244

[935761-54-9]



Relative Configuration

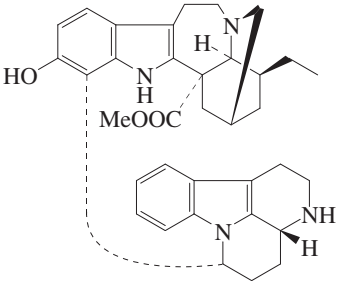
$C_{18}H_{29}NO_4$ 323.431
Alkaloid from the roots of *Bonamia spectabilis*. Muscarinic M_3 receptor antagonist. Yellow oil. $[\alpha]_D^{20}$ -7.3 (c, 0.3 in $CHCl_3$).

3-Deoxy, 2,3-didehydro: ***Bonabiline B***
[935761-55-0]
$C_{18}H_{27}NO_3$ 305.416
Alkaloid from the roots of *Bonamia spectabilis*. Yellow oil.

Ott, S.C. *et al., Planta Med.*, 2006, **72**, 1403-1406 (*isol, pmr, cmr, ms*)

Bonafousine B-245

[60820-65-7]



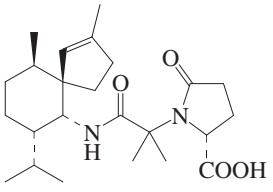
$C_{35}H_{40}N_4O_3$ 564.726
Alkaloid from the leaves of *Bonafousia tetrastachya* (preferred genus name *Tabernaemontana*) (Apocynaceae). Cryst. + 2MeOH (MeOH). Mp 199-200°. $[\alpha]_D^{20}$ -35 (c, 1 in $CHCl_3$).

Hydrochloride (1:2):
Cryst. + $3H_2O$ (H_2O). Mp 235° dec.

Damak, M. *et al., Chem. Comm.*, 1976, 510 (*uv, ir, pmr, cmr, ms, cryst struct*)
Damak, M. *et al., Bull. Soc. Chim. Fr.*, 1980, 490 (*isol, uv, ir, pmr, cmr, ms*)

Boneratamide A B-246

[786698-99-5]

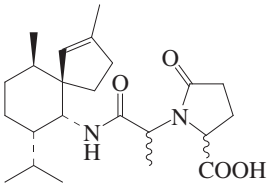


$C_{24}H_{38}N_2O_4$ 418.575
Constit. of *Axinyssa aplysinoides*. Deriv. of 1-Spiroaxen-6-amine, in S-425.

Williams, D.E. *et al., J. Nat. Prod.*, 2004, **67**, 1752-1754 (*isol, pmr, cmr, cryst struct*)

Boneratamide B B-247

[786699-00-1]



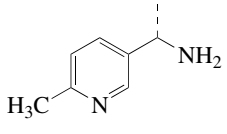
$C_{23}H_{36}N_2O_4$ 404.548
Constit. of *Axinyssa aplysinoides*. Deriv. of 1-Spiroaxen-6-amine, in S-425.

Stereoisomer: ***Boneratamide C***
[786699-02-3]
$C_{23}H_{36}N_2O_4$ 404.548
Constit. of *Axinyssa aplysinoides*.

Williams, D.E. *et al., J. Nat. Prod.*, 2004, **67**, 1752-1754 (*isol, pmr, cmr*)

Bongardine B-248

α,6-Dimethyl-3-pyridinemethanamine. 5-(1-Aminoethyl)-2-methylpyridine



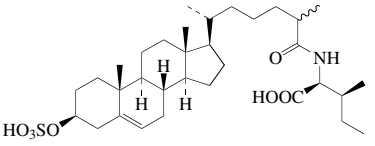
$C_8H_{12}N_2$ 136.196
Alkaloid from the tubers of *Bongardia chrysogonum*. Pale yellow powder. $[\alpha]_D^{29}$ -48 (c, 0.36 in MeOH). λ_{max} 205 (log ϵ 6.1); 265 (log ϵ 5.5) (MeOH).

N-*Ac: 5-[(1-Acetylamino)ethyl]-2-methylpyridine.* **N-*Acetylbongardine***
$C_{10}H_{14}N_2O$ 178.233
Alkaloid from the tubers of *Bongardia chrysogonum*. Amorph. powder. $[\alpha]_D^{25}$ -56 (c, 0.1 in MeOH). λ_{max} 200 (log ϵ 7.2); 280 (log ϵ 4.5) (MeOH).

Atta-ur-Rahman, *et al., Phytochemistry*, 1999, **50**, 333-336 (*isol, uv, pmr, cmr*)

Boophiline B-249

[199536-52-2]



$C_{33}H_{55}NO_7S$ 609.866
Isol. from the cattle tick *Boophilus microplus*. Powder. Mp 185-190°. $[\alpha]_D^{20}$ -29 (c, 0.5 in DMSO).

Potterat, O. *et al., Helv. Chim. Acta*, 1997, **80**, 2066-2072 (*isol, ir, pmr, cmr*)

Borbonicine B-250

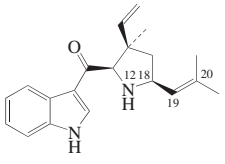
[105053-77-8]

$C_{17}H_{24}N_2O$ 272.389
Struct. unknown. Alkaloid from *Lycopodium clavatum* var. *borbonicum* (Lycopodiaceae).

MacLean, D.B. *et al., Alkaloids (Academic Press)*, 1985, **26**, 241
Gerard, R.V. *et al., Phytochemistry*, 1986, **25**, 1143-1150

Borrecapine B-251

*[3-Ethenyl-3-methyl-5-(2-methyl-1-propenyl)-2-pyrrolidinyl]-1*H*-indol-3-ylmethanone, 9CI*
[66408-14-8]



Relative Configuration

$C_{20}H_{24}N_2O$ 308.422
Various numbering systems in use. Alkaloid from *Borreria capitata* (Rubiaceae). Mp 203-205°. $[\alpha]_D$ -75 (c, 0.66 in MeOH). λ_{max} 215 (log ϵ 4.34); 245 (log ϵ 4.15); 263 (log ϵ 4.01); 304 (log ϵ 4.12) (MeOH).

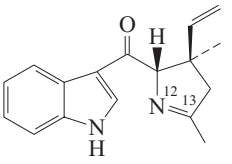
12,18-Didehydro: ***Dehydroborrecapine***
[80733-93-3]
$C_{20}H_{22}N_2O$ 306.407
Alkaloid from *Borreria capitata* (Rubiaceae). Cryst. (MeOH). Mp 179-181°.

12,18-Didehydro, 19ξ,20-epoxide: ***Borrecoxine***
[80733-92-2]
$C_{20}H_{22}N_2O_2$ 322.406
Alkaloid from *Borreria capitata* (Rubiaceae). Cryst. (MeOH). Mp 193°.

Jössang, A. *et al., Tet. Lett.*, 1977, **18**, 4317-4318 (*isol, uv, pmr, struct*)
Jössang, A. *et al., Planta Med.*, 1981, **43**, 301-304 (*Dehydroborrecapine, Borrecoxine*)

Borreline B-252

[64643-94-3]



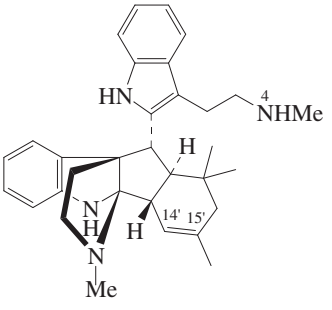
$C_{17}H_{18}N_2O$ 266.342
Alkaloid from *Borreria* spp. (Rubiaceae). Mp 215-216°. $[\alpha]_D$ -235 (c, 0.7 in MeOH).

12,13-Dihydro: Mp 216°.

Jössang, A. *et al., Tet. Lett.*, 1977, 1219-1220 (*uv, ir, ms, cmr, pmr, cryst struct*)

Borreverine B-253

[51109-65-0]



$C_{32}H_{40}N_4$ 480.695
Alkaloid from *Borreria verticillata* and *Flindersia fournieri* (Rubiaceae, Flindersiaceae). Strongly active against gram-positive bacteria. Mp 193°. Racemic. λ_{max} 225 (ϵ 60260); 284 (ϵ 27540); 295 (ϵ 25120) (EtOH).

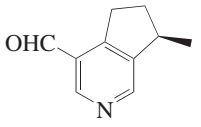
N^4-*Me:* ***Auricularine****. 4-Methylborreverine*
[73706-32-8]
$C_{33}H_{42}N_4$ 494.722
Isol. from *Flindersia fournieri* and *Hedyotis auricularia*. Amorph. $[\alpha]_D$ +41 (c, 0.03 in $CHCl_3$) (0.0). λ_{max} 226 (log ϵ 4.53); 250 (sh) (log ϵ 3.96); 286 (log ϵ 4.01); 294 (log ϵ 4.01) (EtOH).

14′,15′-Dihydro, 15ξ-hydroxy: ***15′-Hydroxy-14′,15′-dihydroborreverine***
[73706-33-9]
$C_{32}H_{42}N_4O$ 498.71
Isol. from *Flindersia fournieri*. Amorph.

Pousset, J.-L. *et al., Chem. Comm.*, 1977, 261-262 (*uv, ms, pmr, cryst struct*)
Tillequin, F. *et al., Chem. Comm.*, 1978, 826-828 (*synth*)
Tillequin, F. *et al., J. Nat. Prod.*, 1979, **42**, 92-95 (*isol*)
Tillequin, F. *et al., Phytochemistry*, 1979, **18**, 1559-1561; 2066-2067 (N^4*-Me, 14′,15′-dihydro-15′-hydroxy*)
Maynart, G. *et al., C. R. Hebd. Seances Soc. Biol. Ses Fil.*, 1980, **174**, 925-928 (*activity*)
Purushothaman, K.K. *et al., Phytochemistry*, 1981, **20**, 351-352 (*Auricularine*)

Boschniakine B-254

Indicaine



(R)-form

$C_{10}H_{11}NO$ 161.203

(*R*)-*form* [18070-40-1]

Alkaloid from *Boschniakia rossica, Pedicularis ludwigi, Pedicularis olgae, Plantago albicans, Plantago indica, Plantago major, Plantago notata, Plantago psyllium* (African plantain), *Plantago ramosa, Tecoma radicans* and *Tecoma stans*. Also found in the defence substance of *Megacrania tsudai*. Bp_3 80-90°. $[\alpha]_D^{20}$ +21 (c, 0.98 in $CHCl_3$).

Picrate: Mp 126-128° Mp 156° (dimorph.).

Semicarbazone: Mp 217-220° (210-224°).

N-*Et:* ***Indicainine***
[32152-74-2]
$C_{12}H_{16}NO^{\oplus}$ 190.264
Quaternary alkaloid from *Plantago olgae* (Scrophulariaceae). Mp 125-127° (as picrate). $[\alpha]_D^{30}$ +14.2 (c, 1.9 in $CHCl_3$) (picrate). The correctness of the struct. has been questioned (D. Gross *et al*).

Carboxylic acid: ***Boschniakinic acid***. *Plantagonine*
[21857-97-6]
$C_{10}H_{11}NO_2$ 177.202
Alkaloid from *Boschniakia rossica, Pedicularis dolichorrhiza, Pedicularis ludwigi, Pedicularis olgae, Plantago albicans, Plantago coronopus, Plantago crassifolia, Plantago crypsoides, Plantago cylindrica, Plantago indica, Plantago major, Plantago notata, Plantago ovata, Plantago psyllium* (African plantain), *Plantago ramosa, Verbascum songaricum* (Orobanchaceae, Scrophulariaceae, Plantaginaceae). Mp 218-220°. $[\alpha]_D$ +38.6 (+ 30.8). λ_{max} 271 (log ϵ 3.5) (MeOH).

(*S*)-*form*

Carboxylic acid: [21913-34-8
Alkaloid from *Incarvillea olgae* (Bignoniaceae) Mp 218-220°. $[\alpha]_D$ -30.1.]

(±)-*form*

*Carboxylic acid:*Synthetic. Mp 226-227°.

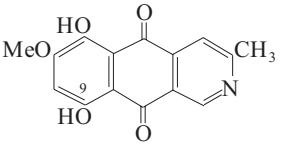
(ξ)-*form*

Carboxylic acid, Me ester: ***Deoxyrhexifoline***
[94054-29-2]
$C_{11}H_{13}NO_2$ 191.229
Alkaloid from the seeds of *Castilleja rhexifolia* aff. *miniata* (Scrophulariaceae). $[\alpha]_D^{20}$ -18 (c, 0.3 in $CHCl_3$) (synthetic). Abs. config. of natural product not detd. due to paucity of material. The *S*-enantiomer was synthesised as a foam.

Sakan, T. *et al., Tetrahedron*, 1967, **23**, 4635-4652 (*Boschniakine, Boschniakinic acid, uv, ir, synth, struct*)
Torssell, K. *et al., Acta Chem. Scand.*, 1968, **22**, 2715 (*struct*)
Dickinson, E.M. *et al., Tetrahedron*, 1969, **25**, 1523 (*pmr*)
Khakimdzhanov, S. *et al., Khim. Prir. Soedin.*, 1971, **7**, 126-127; *Chem. Nat. Compd. (Engl. Transl.)*, 1971, **7**, 121 (*Indicainine*)
Gross, D. *et al., Z. Chem.*, 1973, **13**, 296 (*ms*)
Cordell, G.A. *et al., Alkaloids (Academic Press)*, 1977, **16**, 431 (*rev*)
Roby, M.R. *et al., J. Nat. Prod.*, 1984, **47**, 846-853 (*Deoxyrhexifoline*)
Ranarivelo, Y. *et al., Heterocycles*, 1990, **31**, 1727-1731 (*(-)-Deoxyrhexifoline, synth*)
Ho, H.-Y. *et al., J. Chem. Ecol.*, 1993, **19**, 39-46 (*Megacrania, isol*)
Lin, L.-C. *et al., Chin. Pharm. J. (Taipei)*, 2004, **56**, 77-85 (*Boschniakinic acid, isol, pmr, cmr*)
Fu, J.-J. *et al., Helv. Chim. Acta*, 2007, **90**, 2151-2155 (*isol, pmr, cmr*)
Robert, N. *et al., Tetrahedron*, 2007, **63**, 3702-3706 (*synth*)

Bostrycoidin B-255

6,9-Dihydroxy-7-methoxy-3-methylbenz[g]isoquinoline-5,10-dione
[4589-33-7]



$C_{15}H_{11}NO_5$ 285.256
Pigment from *Fusarium bostrycoides* and *Fusarium solani*. Active against gram-positive bacteria and yeast. Antitubercular. Dark red needles. Sol. MeOH, acids, bases, $CHCl_3$; fairly sol. C_6H_6, Me_2CO; poorly sol. H_2O, hexane. Mp 241-243° dec. λ_{max} 252 (ϵ 25100); 321 (ϵ 5010); 475 (sh); 499 (ϵ 7940); 527 (sh) (EtOH) (Derep). λ_{max} 251 (ϵ 15850); 320 (ϵ 8510); 497 (ϵ 9550) (EtOH) (Berdy).

▶ LD_{50} (mus, ipr) 250 mg/kg, LD_{50} (mus, scu) 250 mg/kg.

Ac: Mp 214°.

9-Me ether: ***9-O-Methylbostrycoidin***
[73590-03-1]
$C_{16}H_{13}NO_5$ 299.282
Major pigment of a strain of *Fusarium moniliforme* and *Fusarium oxysporum*. Active against gram-positive bacteria. Red needles ($CHCl_3$/MeOH). Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. Mp 215-216°. 8-Me ether acc. to the trivial numbering system. λ_{max} 227 (ϵ 20900); 262 (ϵ 15800); 310 (ϵ 7590); 510 (ϵ 5370) (MeOH/HCl) (Derep). λ_{max} 259 (ϵ 27500); 306 (ϵ 6610); 546 (ϵ 10000) (MeOH/NaOH) (Derep). λ_{max} 248 (ϵ 31600); 318 (ϵ 8320); 480 (ϵ 6760) (MeOH) (Derep).

9-Me ether, Ac: Mp 245-246°.

7-O-De-Me: ***Tolypocladine***
[131815-26-4]
$C_{14}H_9NO_5$ 271.229
Prod. by *Tolypocladium inflatum*. Metal chelating agent. Sol. DMF, DMSO, bases; fairly sol. MeOH, Me_2CO, $CHCl_3$; poorly sol. hexane, H_2O. λ_{max} 250 ; 320 ; 505 ; 545 (MeOH) (Berdy). λ_{max} 219 (ϵ 14100); 280 (ϵ 10200); 290 ; 420 ; 525 ; 560 (MeOH/NaOH) (Berdy). λ_{max} 252 ; 340 ; 476 ; 496 ; 530 (EtOH) (Berdy).

6-Deoxy: ***6-Deoxybostrycoidin***
[126262-44-0]
$C_{15}H_{11}NO_4$ 269.256
Metab. of the fungus, *Nectria haematococca*. Yellow needles (CH_2Cl_2/hexane). Mp 195-196°. λ_{max} 207 ; 237 ; 270 ; 414 (MeOH) (Berdy).

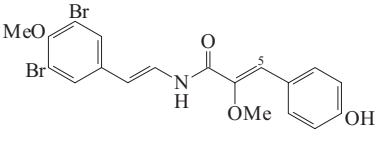
6-Deoxy, 9-Me ether: 7,9-Dimethoxy-3-methylbenz[g]isoquinoline-5,10-dione. ***Scorpinone***
$C_{16}H_{13}NO_4$ 283.283
Prod. by a *Bispora*-like fungal sp. Yellow needles ($CHCl_3$). Mp 195°. λ_{max} 238 ; 282 ; 321 (sh) ; 405 (MeOH).

6-Deoxy, 7-O-de-Me: ***7-O-Demethyl-6-deoxybostrycoidin***
[132311-85-4]
$C_{14}H_9NO_4$ 255.229
Metab. of *Nectria haematococca*. Yellow plates (EtOAc). Mp 300-305° dec. λ_{max} 205 (ϵ 25100); 239 (ϵ 26200); 280 (ϵ 13200); 421 (ϵ 5600) (MeOH) (Berdy).

Arsenault, G.P. *et al., Tet. Lett.*, 1965, 4033 (*struct*)
Steyn, P.S. *et al., Tetrahedron*, 1979, **35**, 1551 (*deriv*)
Cameron, D.W. *et al., Aust. J. Chem.*, 1982, **35**, 1439 (*synth, bibl*)
McCulloch, A.W. *et al., Can. J. Chem.*, 1982, **60**, 2943 (*isol, props*)
Watanabe, M. *et al., Tetrahedron*, 1987, **43**, 5281 (*synth*)
Parisot, D. *et al., Z. Naturforsch., B*, 1989, **44**, 1473 (*6-Deoxybostrycoidin*)
Graefe, U. *et al., Biol. Met.*, 1990, **3**, 39 (*Tolypocladine*)
Parisot, D. *et al., Phytochemistry*, 1990, **29**, 3364 (*deriv*)
Kesteleyn, B. *et al., J.O.C.*, 2000, **65**, 640-644 (*6-Deoxybostrycoidin, synth*)
Miljkovic, A. *et al., J. Nat. Prod.*, 2001, **64**, 1251-1253 (*Scorpinone*)
Van, T.N. *et al., Tetrahedron*, 2005, **61**, 2295-2300 (*synth*)
Van Wagoner, R.M. *et al., J. Nat. Prod.*, 2008, **71**, 426-439 (*Scorpinone, biosynth*)
Choshi, T. *et al., Tet. Lett.*, 2008, **49**, 3725-3728 (*Scorpinone, synth*)

Botryllamide A B-256

N-*[2-(3,5-Dibromo-4-methoxyphenyl)ethenyl]-3-(4-hydroxyphenyl)-2-methoxy-2-propenamide, 9CI*
[163564-64-5]



$C_{19}H_{17}Br_2NO_4$ 483.156
Isol. from the ascidians *Botrylloides tyreum*, *Botryllus schlosseri* and a *Bo-*

tryllus sp. from the Philippines. Needles ($CHCl_3$). Mp 169-171°.

4′-O-De-Me: ***Botryllamide G***
[724434-05-3]
$C_{18}H_{15}Br_2NO_4$ 469.129
Isol. from *Botrylloides tyreum*. Gum. λ_{max} 208 (ϵ 22230); 332 (ϵ 22150) (MeOH).

Monodebromo: ***Botryllamide C***
[163564-66-7]
$C_{19}H_{18}BrNO_4$ 404.259
Isol. from *Botrylloides tyreum*, *Botryllus schlosseri* and *Botryllus* sp. Needles ($CHCl_3$). Mp 173-175°.

Bis(debromo): ***Botryllamide E***
[724434-03-1]
$C_{19}H_{19}NO_4$ 325.363
Isol. from *Botrylloides tyreum*. Gum. λ_{max} 207 (ϵ 15000); 222 (ϵ 12540); 339 (ϵ 29800) (MeOH).

Bis(debromo), 4′-O-de-Me: ***Botryllamide F***
[724434-04-2]
$C_{18}H_{17}NO_4$ 311.337
Isol. from *Botrylloides tyreum*. Oil. λ_{max} 208 (ϵ 13780); 220 (ϵ 12000); 316 (ϵ 14260) (MeOH).

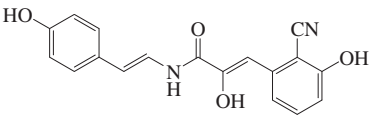
(5E)-Isomer: ***Botryllamide B***
[163564-65-6]
$C_{19}H_{17}Br_2NO_4$ 483.156
Isol. from *Botryllus schlosseri* and *Botryllus* sp. Gum.

(5E)-Isomer, monodebromo: ***Botryllamide D***
[163564-67-8]
$C_{19}H_{18}BrNO_4$ 404.259
Isol. from *Botryllus schlosseri*. Shows marginal cytotoxicity against the human cancer cell line HCT 116 but is inactive *in vivo*. Gum. λ_{max} 203 (ϵ 11100); 326 (ϵ 11700) (MeOH) (Berdy).

McDonald, L.A. *et al., Tetrahedron*, 1995, **51**, 5237-5244 (*isol, uv, ir, pmr, cmr, ms, Botryllamides B,C*)
Rao, M.R. *et al., J. Nat. Prod.*, 2004, **67**, 1064-1066 (*isol, pmr, cmr, Botryllamides E-G*)

Botryllamide H B-257

3-(2-Cyano-3-hydroxyphenyl)-2-hydroxy-N-[2-(4-hydroxyphenyl)ethenyl]-2-propenamide, 9CI
[724434-06-4]

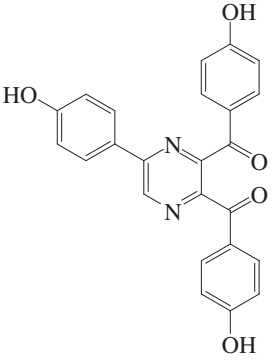


$C_{18}H_{14}N_2O_4$ 322.32
Isol. from the ascidian *Botrylloides tyreum*. Powder. λ_{max} 210 (ϵ 17630); 249 (ϵ 12570); 314 (ϵ 7790) (MeOH).

Rao, M.R. *et al., J. Nat. Prod.*, 2004, **67**, 1064-1066 (*isol, pmr, cmr*)

Botryllazine A B-258

2,3-Bis(4-hydroxybenzoyl)-5-(4-hydroxyphenyl)pyrazine
[252026-23-6]

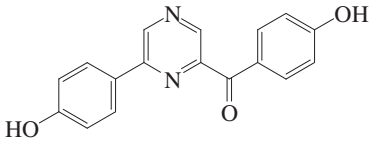


$C_{24}H_{16}N_2O_5$ 412.401
Alkaloid from the red ascidian *Botryllus leachi*. Yellow powder. λ_{max} 228 (ϵ 18500); 310 (ϵ 27500) (MeOH).

Duran, R. *et al., Tetrahedron*, 1999, **55**, 13225-13232 (*isol*)
Buron, F. *et al., J.O.C.*, 2005, **70**, 2616-2621 (*synth*)

Botryllazine B B-259

2-(4-Hydroxybenzoyl)-6-(4-hydroxyphenyl)pyrazine
[252026-25-8]

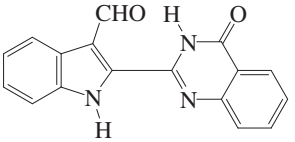


$C_{17}H_{12}N_2O_3$ 292.293
Alkaloid from the red ascidian *Botryllus leachi*. Yellow powder. λ_{max} 228 (ϵ 14700); 298 (ϵ 22800) (MeOH).

Duran, R. *et al., Tetrahedron*, 1999, **55**, 13225-13232 (*isol*)
Mahboobi, S. *et al., Monatsh. Chem.*, 2004, **135**, 333-342 (*synth*)
Buron, F. *et al., J.O.C.*, 2005, **70**, 2616-2621 (*synth*)

Bouchardatine B-260

[623903-29-7]

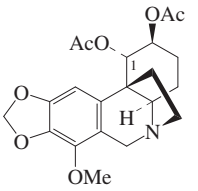


$C_{17}H_{11}N_3O_2$ 289.293
Alkaloid from the aerial parts of *Bouchardatia neurococca*. Amorph. yellow powder. λ_{max} 254 (log ϵ 3.3); 351 (log ϵ 3.2); 367 (sh) ; 391 (sh) (no solvent reported).

Wattanapiromsakul, C. *et al., Phytochemistry*, 2003, **64**, 609-615 (*isol, pmr, cmr*)

Bowdensine B-261

[1354-75-2]



Absolute Configuration

$C_{21}H_{25}NO_7$ 403.431
Alkaloid from the bulbs of *Nerine bowdenii* (Amaryllidaceae). Glass. $[\alpha]_D^{24}$ +17.3. $[\alpha]_{436}^{24}$ +48.1 (c, 1.06 in $CHCl_3$).

Perchlorate:
Prisms + $1Me_2CO$ (Me_2CO). Mp 260-262° dec. $[\alpha]_D^{24}$ +5. $[\alpha]_{436}^{24}$ +15 (c, 0.4 in 75% EtOH).

Methiodide:
Cryst. (EtOH). Mp 284-285° dec. $[\alpha]_D^{24}$ +9.8. $[\alpha]_{436}^{24}$ +25.5 (c, 1.30 in 90% EtOH).

Di-de-Ac: ***Deacetylbowdensine***
[3660-65-9]
$C_{17}H_{21}NO_5$ 319.357
Isol. from the bulbs of *Nerine bowdenii* and *Crinum erubescens* (Amaryllidaceae). Mp 277-278° dec. $[\alpha]_D^{25}$ -43.7. $[\alpha]_{436}^{25}$ -86.6 (c, 0.5 in EtOH). Probably an artifact.

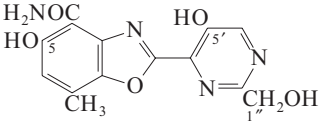
1-Epimer: ***1-Epibowdensine***
[184900-13-8]
$C_{21}H_{25}NO_7$ 403.431
Alkaloid from bulbs of *Brunsvigia orientalis*. Mp 124-126°. $[\alpha]_D^{22}$ +4 (c, 1.1 in $CHCl_3$).

1-Epimer, di-de-Ac: ***1-Epideacetylbowdensine***. *Bulbisine*
[101219-55-0]
$C_{17}H_{21}NO_5$ 319.357
Alkaloid from bulbs of *Brunsvigia orientalis* and *Crinum bulbispermum*. Mp 162-164°. $[\alpha]_D^{22}$ +22 (c, 0.47 in $CHCl_3$).

Lyle, R.E. *et al., J.A.C.S.*, 1960, **82**, 2620-2625 (*isol*)
Chapman, O.L. *et al., J.A.C.S.*, 1964, **86**, 1256-1258 (*di-de-Ac, pmr*)
Duffield, A.M. *et al., J.A.C.S.*, 1965, **87**, 4902-4912 (*di-de-Ac, ms, struct*)
Kobayashi, S. *et al., Chem. Pharm. Bull.*, 1984, **32**, 3015-3022 (*Deacetylbowdensine*)
Frahm, A.W. *et al., Magn. Reson. Chem.*, 1985, **23**, 804-808 (*cmr, Bulbisine*)
Ali, A.A. *et al., CA*, 1990, **112**, 84290m (*Bulbisine*)
Viladomat, F. *et al., Phytochemistry*, 1996, **43**, 1379-1384 (*epimers*)

Boxazomycin A B-262

5-Hydroxy-2-[5-hydroxy-2-(hydroxymethyl)-4-pyrimidinyl]-7-methyl-4-benzoxazolecarboxamide, 9CI
[107021-64-7]



$C_{14}H_{12}N_4O_5$ 316.273
Prod. by *Pseudonocardia* sp. G495-11. Active against gram-positive bacteria and anaerobes. Pale yellow needles (MeOH). Sol. bases, DMF; fairly sol. H_2O, Me_2CO, MeOH, EtOH; poorly sol. EtOAc, C_6H_6, hexane, $CHCl_3$. Mp 275° dec. λ_{max} 219 (ϵ 28800); 230 (sh) (ϵ 24500); 259 (sh) (ϵ 13200); 403 (ϵ 20000) (0.1*M* NaOH) (Derep). λ_{max} 364 (ϵ 13500); 379 (sh) (ϵ 12600); 420 (sh) (ϵ 6170) (EtOH) (Derep).

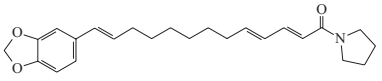
1″-Deoxy: ***Boxazomycin B***
[107021-65-8]
$C_{14}H_{12}N_4O_4$ 300.273
Prod. by *Pseudonocardia* sp. G495-11. Similar biol. props. as parent. Pale yellow powder (MeOH). Sol. bases, DMF; fairly sol. H_2O, Me_2CO, EtOH, MeOH; poorly sol. EtOAc, $CHCl_3$, hexane, C_6H_6. Mp 270° dec. λ_{max} 219 (ϵ 28800); 230 (sh) (ϵ 24500); 259 (sh) (ϵ 13200); 403 (ϵ 20000) (0.1*M* NaOH) (Derep). λ_{max} 364 (ϵ 13500); 379 (sh) (ϵ 12600); 420 (sh) (ϵ 6170) (EtOH) (Derep).

5-Deoxy: ***Boxazomycin C***
[107021-66-9]
[107021-71-6 (di-Ac)]
$C_{14}H_{12}N_4O_4$ 300.273
Prod. by *Pseudonocardia* sp. G495-11. Similar biol. props. as parent. Silky pink needles (as di-Ac). Mp 230-231° (di-Ac). λ_{max} 224 (ϵ 15800); 252 (ϵ 10200); 318 (ϵ 16200) (MeOH) (Derep).

Kusumi, T. *et al., J.A.C.S.*, 1988, **110**, 2954-2958 (*pmr, cmr, struct*)
Suto, M.J. *et al., Tet. Lett.*, 1995, **36**, 7213-7216 (*Boxazomycin B, synth*)

Brachyamide A B-263

1-[13-(1,3-Benzodioxol-5-yl)-1-oxo-2,4,12-tridecatrienyl]pyrrolidine, 9CI. 13-(3,4-Methylenedioxyphenyl)-2,4,12-tridecatrienoic acid pyrrolidide

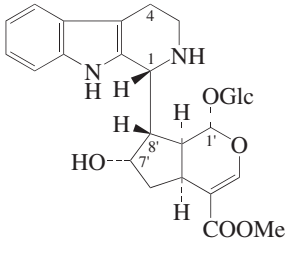


$C_{24}H_{31}NO_3$ 381.514

(E,E,E)-form [119736-85-5]
Minor alkaloid from the fruits of *Piper brachystachyum* (Piperaceae). Semisolid.
Koul, S.K. *et al., Phytochemistry*, 1988, **27**, 3523 (*isol, uv, ir, pmr, cmr, ms, struct*)

Brachycerine B-264

[349647-30-9]



$C_{27}H_{34}N_2O_{10}$ 546.573
Studies in 2008 suggest that the C-1′ config. should be revised to that shown. Alkaloid from the leaves of *Psychotria brachyceras*. Powder. $[\alpha]_D^{20}$ -24.5 (c, 0.2 in MeOH). λ_{max} 226 (log ϵ 4.59); 280 (log ϵ 3.88) (MeOH).

Deoxy, 7′,8′-didehydro: ***Croceaine A***
[800391-12-2]
$C_{27}H_{32}N_2O_9$ 528.558
Alkaloid from the leaves of *Palicourea crocea*. Amorph. solid. $[\alpha]_D^{25}$ -11 (c, 0.003 in MeOH).

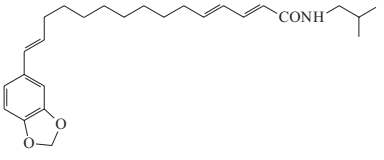
Deoxy, 1,2,3,4,7′,8′-hexadehydro: ***Croceaine B***
[800391-13-3]
$C_{27}H_{28}N_2O_9$ 524.526
Alkaloid from the leaves of *Palicourea crocea*. Amorph. solid. $[\alpha]_D^{25}$ -40 (c, 0.002 in MeOH).

1-Epimer, 7′-deoxy, 7′,8′-didehydro: ***Psychollatine****. Umbellatine*†
[850307-03-8]
[850355-58-7]
$C_{27}H_{32}N_2O_9$ 528.558
Alkaloid from the leaves of *Psychotria umbellata*. $5HT2_{A/C}$ serotonin modulator. Analgesic. Amorph. powder. $[\alpha]_D^{20}$ -24 (c, 0.6 in MeOH). λ_{max} 226 ; 280 (MeOH).

Kerber, V.A. *et al., J. Nat. Prod.*, 2001, **64**, 677-679; 2003, **66**, 1038 (*Brachycerine*)
Düsman, L.T. *et al., J. Nat. Prod.*, 2004, **67**, 1886-1888 (*Croceaine A,B*)
Both, F.L. *et al., J. Nat. Prod.*, 2005, **68**, 374-380; 2006, **69**, 342-345 (*activity, Psychollatine*)
Kerber, V.A. *et al., J. Nat. Prod.*, 2008, **71**, 697-700 (*Psychollatine, Croceaine A*)

Brachystamide B B-265

*15-(1,3-Benzodioxol-5-yl)-*N*-(2-methylpropyl)-2,4,14-pentadecatrienamide, 9CI. 15-(3,4-Methylenedioxyphenyl)-2,4,14-pentadecatrienoic acid isobutylamide.* N-*Isobutyl-15-(3,4-methylenedioxyphenyl)-2,4,14-pentadecatrienamide*



$C_{26}H_{37}NO_3$ 411.583

(E,E,E)-form [126394-65-8]
Alkaloid from the aerial parts of *Piper brachystachyum* (Piperaceae). Amorph. solid.

14,15-Dihydro: ***Brachystamide A****. 15-(1,3-Benzodioxol-5-yl)-*N*-(2-methylpropyl)-2,4-pentadecadienamide, 9CI. 15-(3,4-Methylenedioxyphenyl)-2,4-pentadecadienoic acid isobutylamide*
[126394-64-7]
$C_{26}H_{39}NO_3$ 413.599
Alkaloid from the aerial parts of *Piper brachystachyum* (Piperaceae). Mp 101°.

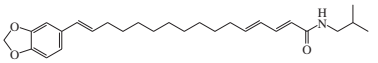
*14,15-Dihydro, 12,13-didehydro(*E-*): 15-(1,3-Benzodioxol-5-yl)-*N*-(2-methylpropyl)-2,4,12-pentadecatrienamide, 9CI.* N-*Isobutyl-15-(3,4-methylenedioxyphenyl)-2,4,12-pentadecatrienamide.* ***Ridleyamide***
[170475-09-9]
$C_{26}H_{37}NO_3$ 411.583
Isol. from stems and leaves of *Piper ridleyi* (Piperaceae). Cryst. Mp 95-98°.

*14,15-Dihydro, 13,14-didehydro(*E-*): 15-(1,3-Benzodioxol-5-yl)-*N*-(2-methylpropyl)-2,4,13-pentadecatrienamide.* N-*Isobutyl-15-(3,4-methylenedioxyphenyl)-2,4,13-pentadecatrienamide.* ***Brachystamide C***
$C_{26}H_{37}NO_3$ 411.583
Alkaloid from the aerial parts of *Piper brachystachyum*. Amorph. solid. Mp 90-95°. λ_{max} 208 (log ϵ 4.15); 260 (log ϵ 4.41) (EtOH).

Banerji, A. *et al., Phytochemistry*, 1989, **28**, 3039 (*isol, uv, ir, pmr, cmr, ms, struct*)
Ahmad, F. *et al., Phytochemistry*, 1995, **40**, 1163 (*Ridleyamide*)
Banerji, A. *et al., Phytochemistry*, 2002, **59**, 897-901 (*Brachystamide C*)

Brachystamide D B-266

*16-(1,3-Benzodioxol-5-yl)-*N*-(2-methylpropyl)-2,4,15-hexadecatrienamide. 16-(3,4-Methylenedioxyphenyl)-2,4,15-hexadecatrienoic acid isobutylamide. Pergumidiene*
[208345-31-7]



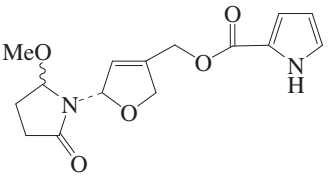
$C_{27}H_{39}NO_3$ 425.61
Alkaloid from the aerial parts of *Piper brachystachyum* and the fruit of *Piper longum*. Amorph. solid. Mp 88-90°.

15,16-Dihydro: 16-(3,4-Methylenedioxyphenyl)-2,4-hexadecadienoic acid isobutylamide. ***Brachystamide E***
$C_{27}H_{41}NO_3$ 427.626
Alkaloid from the aerial parts of *Piper brachystachyum*. Isol. as a mixt. with Brachystamide D.

Das, B. *et al., Nat. Prod. Sci.*, 1998, **4**, 23-25 (*Pergumidiene*)
Das, B. *et al., Tet. Lett.*, 1998, **39**, 9099-9100 (*synth*)
Banerji, A. *et al., Phytochemistry*, 2002, **59**, 897-901 (*isol, pmr, cmr, ms*)

Brachystemidine A B-267

[436807-92-0]

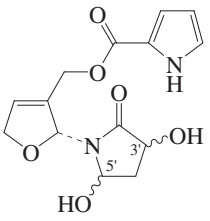


$C_{15}H_{18}N_2O_5$ 306.318
Alkaloid from the roots of *Brachystemma calycinum*. Amorph. solid. Mp 210-211.5°. Laevorotatory but unstable.

Cheng, Y.X. *et al., J. Nat. Prod.*, 2002, **65**, 750-752 (*isol, pmr, cmr, ms*)

Brachystemidine E B-268

[436807-96-4]



$C_{14}H_{16}N_2O_6$ 308.29
Alkaloid from the roots of *Brachystemma calycinum*. Gum. $[\alpha]_D^{28}$ +0.76 (c, 1.65 in MeOH).

5′-Me ether: ***Brachystemidine C***
[436807-94-2]
$C_{15}H_{18}N_2O_6$ 322.317
Alkaloid from the roots of *Brachystemma calycinum*. Gum. $[\alpha]_D^{21}$ -21 (c, 0.25 in $CHCl_3$).

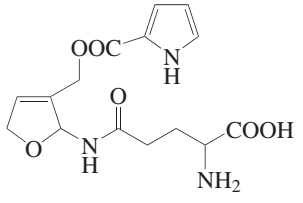
3′-Deoxy: ***Brachystemidine D***
[436807-95-3]
$C_{14}H_{16}N_2O_5$ 292.291
Alkaloid from the roots of *Brachystemma calycinum*. Amorph. solid. Mp 147.5-149°. $[\alpha]_D^{25}$ +3.5 (c, 0.43 in MeOH).

3′-Deoxy, 5′-Me ether: ***Brachystemidine B***
[436807-93-1]
$C_{15}H_{18}N_2O_5$ 306.318
Alkaloid from the roots of *Brachystemma calycinum*. Amorph. solid. Mp 151-152°. $[\alpha]_D^{27}$ -3.1 (c, 0.32 in MeOH).

Cheng, Y.-X. *et al., J. Nat. Prod.*, 2002, **65**, 750-752 (*isol, pmr, cmr, ms, cryst struct*)

Brachystemidine F B-269

[1050363-02-4]

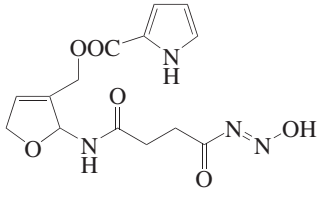


$C_{15}H_{19}N_3O_6$ 337.332
Alkaloid from the roots of *Brachystemma calycinum*. Oily solid. $[\alpha]_D^{24}$ +9.3 (c, 0.24 in MeOH). λ_{max} 202 ; 266 (MeOH).

Lu, Q. *et al., Chem. Biodiversity*, 2008, **4**, 2948-2952 (*isol, pmr, cmr, ms*)

Brachystemidine G B-270

[1050363-03-5]

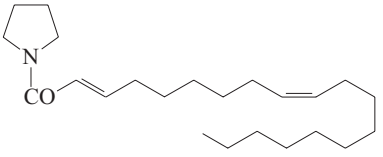


$C_{14}H_{16}N_4O_6$ 336.304
Alkaloid from the roots of *Brachystemma calycinum*. Potent immunosuppressant. Gum. $[\alpha]_D^{24}$ +71.4 (c, 0.13 in MeOH). λ_{max} 203 ; 269 (MeOH).

Lu, Q. *et al., Chem. Biodiversity*, 2008, **4**, 2948-2952 (*isol, pmr, cmr, ms*)

Brachystine B-271

1-(1-Oxo-2,9-nonadecadienyl)pyrrolidine, 9CI. 2,9-Nonadecadienoic acid pyrrolidide



$C_{23}H_{41}NO$ 347.583

(E,Z)-form [119736-86-6]
Minor constit. of fruits of *Piper brachystachyum* (Piperaceae). Semi-solid.

Koul, S.K. *et al., Phytochemistry*, 1988, **27**, 3523 (*isol, uv, ir, pmr, cmr, ms, struct*)

Bractamine B-272

[93586-21-1]

$C_{11}H_{15}NO_2$ 193.245
Struct. unknown. Alkaloid from *Papaver bracteatum* (Papaveraceae). Cryst. (EtOH). Mp 216°. Opt. inactive. Conts. 1 OMe, 1NMe and 1 OH gp.

Hydrochloride:
Cryst. (EtOH/Et_2O). Mp 143°.

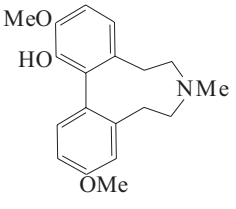
Methiodide:
Cryst. (EtOH). Mp 220-221°.

Picrate: Mp 184-185°.

Kiselev, V.V. *et al., J. Gen. Chem. USSR (Engl. Transl.)*, 1948, **18**, 142; *CA*, **42**, 5037b

Bractazonine B-273

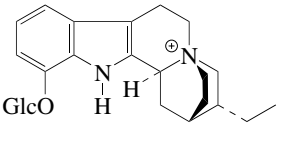
[93631-24-4]



$C_{19}H_{23}NO_3$ 313.396
Alkaloid from the capsules of *Papaver bracteatum* (Papaveraceae). Mp 101°.

Theuns, H.G. *et al., Phytochemistry*, 1984, **23**, 1157-1166 (*isol, synth, pmr, ms*)
Chen, W. *et al., J.O.C.*, 2003, **68**, 1929-1932 (*synth*)

Bracteatine B-274



$C_{25}H_{35}N_2O_6^{\oplus}$ 459.561
Quaternary alkaloid from the aerial parts of *Ophiorrhiza bracteata* (Rubiaceae).

Chloride: [203256-99-9]
$C_{25}H_{35}ClN_2O_6$ 495.014
Needles (MeOH/EtOAc). Mp 250° (dec.). $[\alpha]_D$ -123 (c, 0.8 in MeOH).

Arbain, D. *et al., Aust. J. Chem.*, 1997, **50**, 1111-1112 (*isol, pmr, cmr*)

Bracteine B-275

$C_{19}H_{21}NO_4$ 327.379
Struct. unknown. Probably identical with Orientalinone, O-112. Alkaloid from *Papaver bracteatum* (Papaveraceae). Cryst. (Et_2O). Mp 230°. $[\alpha]_D$ +120 ($CHCl_3$).

Hydrochloride: Mp 258°.

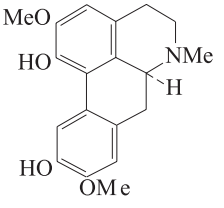
Perchlorate: Mp 231-232° dec.

Methiodide: Mp 205-215° (softens at 190°).

Kiselev, V.V. *et al., J. Gen. Chem. USSR (Engl. Transl.)*, 1948, **18**, 142; *CA*, **42**, 5037b
Shakirov, R. *et al., Khim. Prir. Soedin.*, 1996, **32**, 761-863; *Chem. Nat. Compd. (Engl. Transl.)*, 1996, **32**, 737-858 (*rev*)

Bracteoline B-276

5,6,6a,7-Tetrahydro-2,9-dimethoxy-6-methyl-4H-dibenzo[de,g]quinoline-1,10-diol, 9CI. 1,10-Dihydroxy-2,9-dimethoxyaporphine



(S)–form

$C_{19}H_{21}NO_4$ 327.379

(S)-form [25651-04-1]
Alkaloid from *Papaver bracteatum* and *Papaver orientale* (Papaveraceae). Cryst. (Et_2O). Mp 226-229° (218-221°). $[\alpha]_D^{20}$ +35 (c, 0.16 in $CHCl_3$).

N-*De-Me: 1,10-Dihydroxy-2,9-dimethoxynoraporphine.* ***Norbracteoline***
[89825-97-8]
$C_{18}H_{19}NO_4$ 313.352
Alkaloid from *Glaucium corniculatum*. Amorph. $[\alpha]_D$ +41 (c, 0.4 in MeOH).

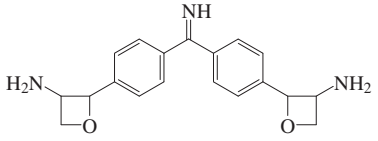
(±)-*form* [28230-74-2]
Synthetic. Pale yellow needles (Et_2O/MeOH). Mp 209-211° dec.

Heydenreich, K. *et al., Pharmazie*, 1967, **22**, 124-125 (*isol, uv, ir, struct*)
Délenk-Heydenreich, K. *et al., Pharmazie*, 1969, **24**, 635-645 (*isol, uv, ir, ms*)
Kametani, T. *et al., Chem. Pharm. Bull.*, 1971, **19**, 1513-1514 (*synth, uv, pmr, ms*)
Kametani, T. *et al., J.C.S.(C)*, 1971, 2446-2448 (*synth, uv, ms*)
Kerekes, P. *et al., Chem. Ber.*, 1972, **105**, 609-613 (*synth, uv, ir, pmr*)
Hara, H. *et al., Chem. Pharm. Bull.*, 1976, **24**, 1921-1925 (*synth, ir, pmr*)
Guinaudeau, H. *et al., J. Nat. Prod.*, 1979, **42**, 325-360 (*rev, cmr*)

Israilov, I.A. *et al., Khim. Prir. Soedin.*, 1983, **19**, 751-753; *Chem. Nat. Compd. (Engl. Transl.)*, 1983, **19**, 714-716 (*Norbracteoline*)

Bradyoxetin B-277

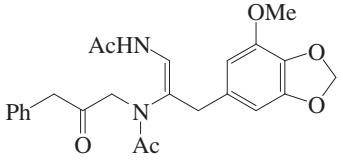
2,2′-(Carbonimidoyldi-4,1-phenylene)bis-3-oxetanamine, 9CI
[494225-42-2]



$C_{19}H_{21}N_3O_2$ 323.394
Prod. by *Bradyrhizobium japonicum*. Chemical signal involved in symbiotic gene regulation. λ_{max} 271 (MeOH aq.).

Loh, J. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 2002, **99**, 14446-14451 (*isol, pmr, cmr, activity*)

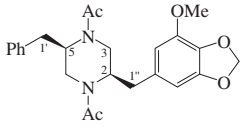
Brasiliamide A B-278



$C_{24}H_{26}N_2O_6$ 438.479
Prod. by *Penicillium brasilianum* Batista JV-379. Prisms (MeOH). Mp 133-134°. λ_{max} 211 (ϵ 42000); 235 (sh) (ϵ 21000); 253 (sh) (ϵ 16000) (MeOH).

Fujita, T. *et al., Biosci., Biotechnol., Biochem.*, 2002, **66**, 1697-1705 (*isol, pmr, cmr*)

Brasiliamide D B-279



Relative Configuration

$C_{24}H_{28}N_2O_5$ 424.496
Prod. by *Penicillium brasilianum* Batista JV-379. Amorph. powder. Mp 61-63°. $[\alpha]_D^{20}$ +52 (c, 0.72 in MeOH). λ_{max} 209 (ϵ 52000); 242 (sh) (ϵ 4700); 277 (ϵ 1200); 285 (sh) (ϵ 1000) (MeOH).

N^1-De-Ac: ***Brasiliamide E***
$C_{22}H_{26}N_2O_4$ 382.458
Prod. by *Penicillium brasilianum* Batista JV-379. Amorph. powder. Mp 34-36°. $[\alpha]_D^{20}$ -21 (c, 0.08 in MeOH). λ_{max} 209 (ϵ 49000); 241 (sh) (ϵ 4500); 278 (ϵ 1300); 285 (sh) (ϵ 1200) (MeOH).

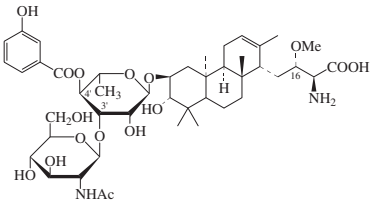
2,3-Didehydro: ***Brasiliamide B***
$C_{24}H_{26}N_2O_5$ 422.48
Prod. by *Penicillium brasilianum* Batista JV-379. Amorph. powder. Mp 59-61°. $[\alpha]_D^{20}$ +195 (c, 0.62 in MeOH). λ_{max} 208 (ϵ 46000); 270 (ϵ 21000) (MeOH).

*1′,5-Didehydro(*E-*):* ***Brasiliamide C***
$C_{24}H_{26}N_2O_5$ 422.48
Prod. by *Penicillium brasilianum* Batista JV-379. Amorph. powder. Mp 72-73°. $[\alpha]_D^{20}$ +42 (c, 0.07 in MeOH). λ_{max} 210 (ϵ 47000); 252 (ϵ 13000); 262 (sh) (ϵ 13000) (MeOH).

Fujita, T. *et al., Biosci., Biotechnol., Biochem.*, 2002, **66**, 1697-1705; 2004, **68**, 820-826 (*isol, uv, pmr, cmr, ms*)

Brasilicardin A B-280

[211108-46-2]



$C_{45}H_{68}N_2O_{16}$ 893.036
Constit. of *Nocardia brasiliensis*. Shows potent immunosuppressive activity. Cytotoxic agent. Amorph. solid. Mp 270-273°. $[\alpha]_D^{30}$ +15 (c, 0.5 in MeOH). λ_{max} 212 (ϵ 15000); 239 (ϵ 5200); 300 (ϵ 1900) (MeOH).

4′-Deacyl, 3′-deglycosyl: ***Brasilicardin C***
[799804-52-7]
$C_{30}H_{51}NO_9$ 569.734
Constit. of *Nocardia brasiliensis*. Amorph. solid. $[\alpha]_D^{23}$ +65 (c, 1 in MeOH).

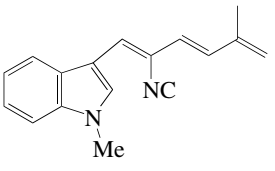
16-Demethoxy: ***Brasilicardin B***
[799804-51-6]
$C_{44}H_{66}N_2O_{15}$ 863.01
Constit. of *Nocardia brasiliensis*. Amorph. solid. $[\alpha]_D^{23}$ +17 (c, 1 in MeOH).

16-Demethoxy, 4′-deacyl, 3′-deglycosyl: ***Brasilicardin D***
[799804-53-8]
$C_{29}H_{49}NO_8$ 539.708
Constit. of *Nocardia brasiliensis*. Amorph. solid. $[\alpha]_D^{20}$ +79 (c, 0.5 in MeOH).

Shigemori, H. *et al., J.O.C.*, 1998, **63**, 6900-6904 (*Brasilicardin A, pmr, cmr, cryst struct*)
Komaki, H. *et al., J. Antibiot.*, 1999, **52**, 13-19; 2000, **53**, 75-77 (*Brasilicardin A, activity*)
Shigemori, H. *et al., Tet. Lett.*, 1999, **40**, 4353-4354 (*biosynth*)
Komatsu, K. *et al., Bioorg. Med. Chem.*, 2004, **12**, 5545-5551 (*Brasilicardins B-D, cryst struct*)
Komatsu, K. *et al., Bioorg. Med. Chem.*, 2005, **13**, 1507-1513 (*sar*)

Brasilidine A B-281

*3-(2-Isocyano-5-methyl-1,3,5-hexatrienyl)-1-methyl-1*H*-indole, 9CI*
[189827-04-1]

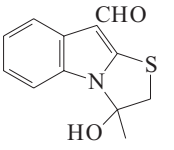


$C_{17}H_{16}N_2$ 248.327
Alkaloid from *Nocardia brasiliensis*. Cytotoxic agent. Amorph. yellow solid. λ_{max} 204 (ϵ 1800); 220 (sh) ; 268 (ϵ 40000); 332 (ϵ 20000) (EtOH).

Kobayashi, J. *et al., J. Nat. Prod.*, 1997, **60**, 719-720 (*isol, uv, ir, pmr, cmr*)

Brassicanal B B-282

*2,3-Dihydro-3-hydroxy-3-methylthiazolo[3,2-*a*]indole-9-carboxaldehyde, 9CI*
[126654-63-5]

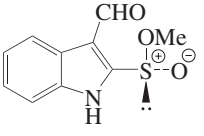


$C_{12}H_{11}NO_2S$ 233.29
Exists in CD_3OD as an equilibrium mixt. of the hemiaminal (illus.) and open-chain keto form. Alkaloid from Chinese cabbage *Brassica campestris* ssp. *pekinensis* inoculated with *Pseudomonas cichorii*. Phytoalexin. Mp 169-170°. $[\alpha]_D$ 0. λ_{max} 207 (ϵ 25800); 220 (ϵ 25400); 252 (ϵ 24100); 277 (ϵ 14200); 315 (ϵ 11700) (MeOH) (Berdy).

Monde, K. *et al., Chem. Lett.*, 1990, 209 (*isol, uv, ir, pmr, cmr, ms, struct*)

Brassicanal C B-283

*Methyl 3-formyl-1*H*-indole-2-sulfinate, 9CI*
[137761-23-0]

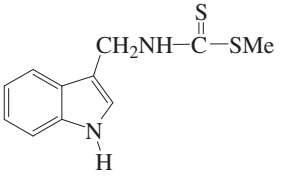


$C_{10}H_9NO_3S$ 223.252
Alkaloid from *Brassica oleracea* (cabbage) inoculated with *Pseudomonas cichorii*. Phytoalexin. Mp 150-151°. $[\alpha]_D$ -13.3 (c, 1.04 in MeOH) (natural). $[\alpha]_D$ -231 (c, 0.2 in MeOH) (synthetic). λ_{max} 215 (ϵ 18300); 247 (ϵ 13600); 309 (ϵ 9400) (MeOH).

Monde, K. *et al., Phytochemistry*, 1991, **30**, 2915-2917 (*isol, uv, ir, pmr, cmr, ms*)
Pedras, M.S.C. *et al., Phytochemistry*, 2006, **67**, 1503-1509 (*synth*)
Taniguchi, T. *et al., Org. Biomol. Chem.*, 2008, 4399-4405 (*ecd, vcd, abs config*)

Brassinin B-284

*Methyl (1*H*-indol-3-ylmethyl)carbamodithioate, 9CI*
[105748-59-2]



$C_{11}H_{12}N_2S_2$ 236.361

Isol. from Chinese cabbage (*Brassica campestris* ssp. *pekinensis*) (Brassicaceae) heads inoculated with *Pseudomonas cichorii*. Phytoalexin. Sol. MeOH, Et_2O, Me_2CO; fairly sol. H_2O. Mp 132-133°. First report of the isol. of sulfur-containing phytoalexins (see also Cyclobrassinin, C-842). λ_{max} 220 (ϵ 30000); 280 (ϵ 6000); 289 (ϵ 5000) (MeOH) (Derep). λ_{max} 218 (ϵ 38300); 236 (ϵ 87400); 268 (ϵ 16100); 287 (ϵ 9070) (MeOH) (Berdy).

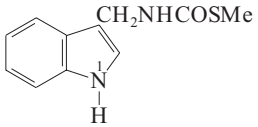
N^1-Methoxy: ***Methoxybrassinin***
[105748-60-5]
$C_{12}H_{14}N_2OS_2$ 266.387
Isol. from *Brassica campestris* ssp. *pekinensis* (Brassicaceae) inoculated with *Pseudomonas cichorii*. Phytoalexin. Viscous oil. λ_{max} 218 (ϵ 37300); 267 (ϵ 15800); 287 (sh) (ϵ 9470); 297 (sh) (ϵ 5740) (MeOH) (Derep). λ_{max} 218 (ϵ 37000); 241 (ϵ 13000); 267 (ϵ 15300) (MeOH) (Berdy). λ_{max} 218 (ϵ 24500); 267 (ϵ 16200) (EtOH) (Berdy).

4-Methoxy: ***4-Methoxybrassinin***
[129602-03-5]
$C_{12}H_{14}N_2OS_2$ 266.387
Isol. from white cabbage (*Brassica oleracea* var. *capitata*) (Brassicaceae) heads inoculated with *Pseudomonas cichorii*. Phytoalexin. Amorph. λ_{max} 219 (ϵ 44300); 265 (ϵ 18500) (MeOH) (Berdy).

Takasugi, M. *et al., Chem. Comm.*, 1986, 1077 (*isol, synth, struct, deriv*)
Kawasaki, T. *et al., Heterocycles*, 1990, **31**, 1605 (*synth, Methoxybrassinin*)
Monde, K. *et al., Phytochemistry*, 1990, **29**, 1499 (*4-Methoxybrassinin*)
Somei, M. *et al., Heterocycles*, 1992, **33**, 77 (*synth, Methoxybrassinin*)
Yamada, F. *et al., Heterocycles*, 1993, **36**, 2783 (*synth*)
Kutschy, P. *et al., Tetrahedron*, 1998, **54**, 3549-3566 (*synth*)
Pedras, M.S.C. *et al., Phytochemistry*, 2000, **53**, 161-176 (*rev*)

Brassitin B-285

S-*Methyl 1*H-*indol-3-ylmethylcarbamothioate, 9CI*
[113866-42-5]



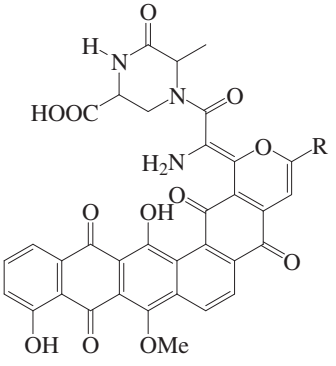
$C_{11}H_{12}N_2OS$ 220.295
Stress metab. from Japanese radish Daikon (*Raphanus sativus* var. *hortensis*, Brassicaceae), inoculated with *Pseudomonas cichorii*. Amorph. λ_{max} 218 (ϵ 36800); 271 (ϵ 5910); 277 (ϵ 5910); 287 (ϵ 4830) (MeOH) (Berdy).

1-Methoxy: ***Methoxybrassitin***
[113900-63-3]
$C_{12}H_{14}N_2O_2S$ 250.321
Isol. from Chinese cabbage (*Brassica campestris* ssp. *pekinensis*, Brassicaceae) inoculated with the bacterium *Pseudomonas cichorii*. Phytoalexin. Cryst. (Et_2O/EtOH). Mp 94-96°.

Takasugi, M. *et al., Bull. Chem. Soc. Jpn.*, 1988, **61**, 285 (*Methoxybrassitin*)
Monde, K. *et al., Phytochemistry*, 1995, **39**, 581 (*Brassitin*)
Kutschy, P. *et al., Tetrahedron*, 1998, **54**, 3549-3566 (*synth*)

Bravomicin A B-286

[251094-90-3]



R = -CH(CH$_3$)CH$_2$CH$_3$

$C_{38}H_{31}N_3O_{12}$ 721.676
Prod. by *Micromonospora polytrota* ATCC 202091. Antibacterial agent. Orange-red powder. Mp 208-210°. $[\alpha]_D$ -25.4 (c, 0.66 in MeOH/$CHCl_3$). λ_{max} 250 (log ϵ 4.46); 281 (sh) (log ϵ 4.32); 326 (log ϵ 4.1); 468 (log ϵ 4.17) (MeOH).

Me ester: ***Bravomicin B***
[251094-91-4]
$C_{39}H_{33}N_3O_{12}$ 735.703
Prod. by *Micromonospora polytrota* ATCC 202091. Orange-red powder. λ_{max} 249 (log ϵ 4.43); 281 (sh) (log ϵ 4.27); 325 (log ϵ 4); 467 (log ϵ 4.14) (MeOH).

Et ester: ***Bravomicin C***
[251094-92-5]
$C_{40}H_{35}N_3O_{12}$ 749.729
Prod. by *Micromonospora polytrota* ATCC 202091. Orange-red powder. λ_{max} 250 (log ϵ 4.44); 281 (sh) (log ϵ 4.26); 325 (log ϵ 4.03); 467 (log ϵ 4.18) (MeOH).

U.S. Pat., 1999, 5 994 543; *CA*, **132**, 2808n

Bravomicin D B-287

[251094-93-6]
As Bravomicin A, B-286 with
R = -CH(CH$_3$)CH$_2$CH$_2$CH$_3$
$C_{39}H_{33}N_3O_{12}$ 735.703
Prod. by *Micromonospora polytrota* ATCC 202091. Antibacterial agent. Orange-red powder. λ_{max} 250 (log ϵ 4.49); 281 (sh) (log ϵ 4.31); 326 (log ϵ 4.02); 468 (log ϵ 4.17) (MeOH).

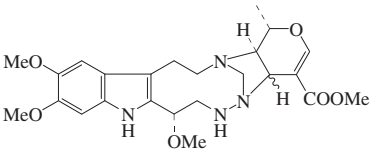
Me ester: ***Bravomicin E***
[251094-94-7]
$C_{40}H_{35}N_3O_{12}$ 749.729
Prod. by *Micromonospora polytrota* ATCC 202091. Orange-red powder. λ_{max} 250 (log ϵ 4.52); 281 (sh) (log ϵ 4.32); 325 (log ϵ 4.03); 469 (log ϵ 4.18) (MeOH).

Et ester: ***Bravomicin F***
[251094-95-8]
$C_{41}H_{37}N_3O_{12}$ 763.756
Prod. by *Micromonospora polytrota* ATCC 202091. Orange-red powder. λ_{max} 249 (log ϵ 4.56); 280 (sh) (log ϵ 4.28); 326 (log ϵ 4.06); 468 (log ϵ 4.14) (MeOH).

U.S. Pat., 1999, 5 994 543; *CA*, **132**, 2808n

Braznitidumine B-288

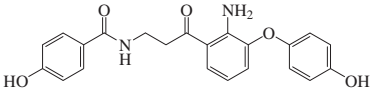
[926307-39-3]



$C_{24}H_{32}N_4O_6$ 472.54
Biogenetic origin uncertain. Alkaloid from the stem bark of *Aspidosperma nitidum*. Yellow solid. Mp 272.9-273.1°.
Pereira, M.M. *et al., J. Braz. Chem. Soc.*, 2006, **17**, 1274-1280 (*isol, pmr, cmr, N-15 nmr*)

Brefelamide B-289

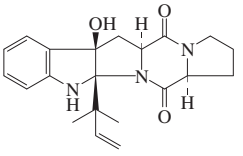
N-*[3-[2-Amino-3-(4-hydroxyphenoxy)-phenyl]-3-oxopropyl]-4-hydroxybenzamide, 9CI*
[868529-07-1]



$C_{22}H_{20}N_2O_5$ 392.41
Isol. from *Dictyostelium brefeldianum* and *Dictyostelium giganteum*. Inhibitor of astrocytoma. Yellow oil.
Kikuchi, H. *et al., J.O.C.*, 2005, **70**, 8854-8858 (*isol, synth, pmr, cmr*)

Brevianamide E B-290

[23454-27-5]



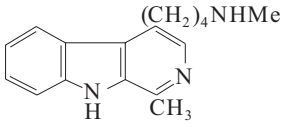
Absolute Configuration

$C_{21}H_{25}N_3O_3$ 367.447
Diketopiperazine. Metab. from *Penicillium brevi-compactum* and *Penicillium viridicatum*. Hepatotoxin. Noncryst. $[\alpha]_D^{20}$ -157 (c, 0.093 in EtOH). λ_{max} 239 (ϵ 7500); 296 (ϵ 2050) (EtOH).
Birch, A.J. *et al., Tetrahedron*, 1970, **26**, 2329-2344 (*isol, uv, ir, pmr, biosynth*)
Ritchie, R. *et al., Chem. Comm.*, 1975, 611-612 (*config*)
Kametani, T. *et al., J.C.S. Perkin 1*, 1981, 959-963 (*synth*)
Ritchie, R. *et al., Tetrahedron*, 1981, **37**, 4295-4303 (*synth*)
Schkeryantz, J.M. *et al., J.A.C.S.*, 1999, **121**, 11964-11975 (*synth*)
Williams, R.M. *et al., Chem. Pharm. Bull.*, 2002, **50**, 711-740 (*rev, synth, biosynth*)

Brevicarine B-291

N,*1-Dimethyl-9*H*-pyrido[3,4-*b*]indole-4-butanamine, 9CI. 4-(4-Methylaminobutyl)-β-carboline*

[25978-39-6]



$C_{17}H_{21}N_3$ 267.373

Alkaloid from *Carex brevicollis* and *Carex parva* (Cyperaceae). Mp 112° (anhyd.).

Sesquihydrate:

Cryst. (Me_2CO). Mp 61°.

Hydrochloride (1:2):

Cryst. (EtOH). Mp 195-196°.

Picrate: Mp 210-212° dec.

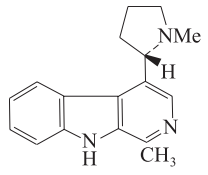
N-*Ac:* Mp 154°.

Terent'eva, I.V. *et al., Khim. Prir. Soedin.*, 1969, **5**, 397; 404; *Chem. Nat. Compd. (Engl. Transl.)*, 1969, **5**, 330; 335 (*isol, ms, pmr, struct, synth*)

Müller, W.H. *et al., Chem. Ber.*, 1977, **110**, 2424 (*synth*)

Brevicolline B-292

*1-Methyl-4-(1-methyl-2-pyrrolidinyl)-9*H*-pyrido[3,4-*b*]indole, 9CI. 1-Methyl-4-(1-methyl-2-pyrrolidinyl)-β-carboline*



(*S*)–*form*

$C_{17}H_{19}N_3$ 265.357

(*S*)-*form* [20069-02-7]

Main alkaloid of *Carex brevicollis* (Cyperaceae). Active against gram-positive bacteria and fungi. Prisms (MeOH). Mp 232-233°. $[\alpha]_D$ -164.5 (c, 1.8 in EtOH). λ_{max} 213 (ε 4.54); 232 (ε 4.68); 279 (ε 4.19); 287 (ε 4.39); 337 (ε 4.09); 351 (ε 4.12) (EtOH).

Didehydro: ***Dehydrobrevicolline****. Didehydrobrevicolline, 8CI*

[31049-73-7]

$C_{17}H_{17}N_3$ 263.341

Alkaloid from *Carex brevicollis* (Cyperaceae). Mp 237-238°. Struct. not clear from abstract, ref. inaccessible.

(±)-*form* [64364-56-3]

Noncryst.

N-*Me:* Mp 162°.

Vember, P.A. *et al., Khim. Prir. Soedin.*, 1967, **3**, 249; *Chem. Nat. Compd. (Engl. Transl.)*, 1967, **3**, 208 (*isol, uv, ir, struct*)

Terent'eva, I.V. *et al., CA*, 1971, **74**, 50497r (*Dehydrobrevicolline*)

Bláha, K. *et al., Coll. Czech. Chem. Comm.*, 1971, **36**, 3448 (*uv, pmr, config*)

Lovkova, M.Y. *et al., CA*, 1979, **91**, 1898537y (*biosynth*)

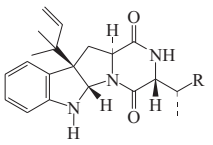
Towers, G.H.N. *et al., J. Nat. Prod.*, 1983, **46**, 576-581 (*activity*)

Mahboobi, S. *et al., J. Nat. Prod.*, 1999, **62**, 577-579 (*synth, uv, ir, pmr*)

Wagner, F.F. *et al., Org. Lett.*, 2006, **8**, 3549-3552 (*synth*)

Brevicompanine A B-293

[215121-46-3]



Absolute Configuration

R = CH_2CH_3

$C_{22}H_{29}N_3O_2$ 367.49

Related to Fructigenine B, F-160. Prod. by *Penicillium brevicompactum*. Plant growth regulator. Amorph. solid. Mp 61-65°. $[\alpha]_D^{20}$ -237.5 (c,0.7 in EtOH). λ_{max} 210 ; 245 ; 303 (EtOH). λ_{max} 210 ; 245 ; 303 (MeOH) (Berdy).

Kusano, M. *et al., J.C.S. Perkin 1*, 1998, 2823-2826 (*isol, uv, ir, pmr, cmr*)

Matsumara, K. *et al., Heterocycles*, 2001, **54**, 727-733 (*synth*)

Brevicompanine C B-294

As Brevicompanine A, B-293 with R = CH_3

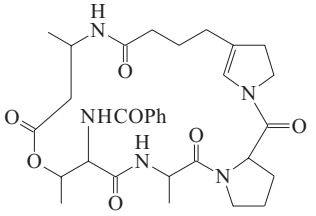
$C_{21}H_{27}N_3O_2$ 353.463

Prod. by *Penicillium brevi-compactum*. Plant growth regulator. Cryst. (EtOAc). Mp 94-96°. $[\alpha]_D^{20}$ -321.7 (c, 0.6 in EtOH). λ_{max} 207 (log ε 3.97); 245 (log ε 3.36); 302 (log ε 3.08) (EtOH).

Kimura, Y. *et al., J. Nat. Prod.*, 2005, **68**, 237-239 (*isol, pmr, cmr*)

Brevigellin B-295

[79432-16-9]

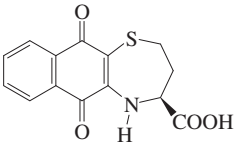


$C_{31}H_{41}N_5O_7$ 595.694

Depsipeptide antibiotic. Prod. by *Penicillium brevicompactum*. Glass, powder or gel. Mp 209-212°.

McCorkindale, N.J. *et al., Tetrahedron*, 1981, **37**, 1795 (*isol*)

Brevinic acid B-296



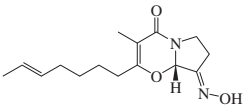
$C_{14}H_{11}NO_4S$ 289.311

Prod. by *Brevibacterium flavum*. Antibacterial agent. Deep purple cryst. (Et_2O/C_6H_6). Mp 168-172° dec. $[\alpha]_D^{23}$ +1260 (c, 0.0014 in MeOH).

Eguchi, C. *et al., Heterocycles*, Special Issue 2, 1984, **21**, 470 (*isol, struct*)

Brevioxime B-297

[198773-28-3]



Absolute Configuration

$C_{15}H_{22}N_2O_3$ 278.35

Prod. by *Penicillium brevicompactum*. Inhibitor of juvenile hormone biosynth. Cryst. Mp 147-149° (synthetic). $[\alpha]_D^{23}$ -39 (c, 0.24 in $CHCl_3$) (ca. 17% ee natural). $[\alpha]_D^{22}$ -209 (c, 0.26 in $CHCl_3$) (96% ee synthetic). λ_{max} 254 (ε 680) (no solvent reported).

Moya, P. *et al., J.O.C.*, 1997, **62**, 8544-8545 (*isol, uv, pmr, cmr, ms, cryst struct*)

Castillo, M. *et al., Arch. Insect Biochem. Physiol.*, 1998, **37**, 287-294 (*activity*)

Clive, D.L.J. *et al., J.O.C.*, 2000, **65**, 4923-4929 (*synth*)

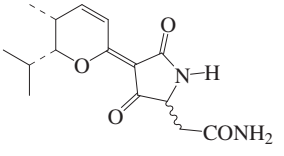
Clark, D. *et al., Tetrahedron*, 2000, **56**, 6181-6184 (*synth*)

Karadogan, B. *et al., Tetrahedron*, 2001, **57**, 8699-8703 (*synth*)

Nishimura, Y. *et al., Heterocycles*, 2003, **61**, 481-491 (*synth, abs config*)

Bripiodionene B-298

[190265-70-4]



$C_{15}H_{20}N_2O_4$ 292.334

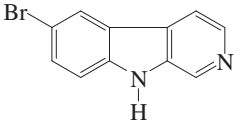
Tetramic acid deriv. Prod. by *Streptomyces* sp. WC76599. Inhibitor of human cytomegalovirus protease. Powder. Sol. MeOH, DMSO, butanol. Mp 195-198°. $[\alpha]_D$ -260 (c, 0.22 in MeOH). λ_{max} 228 (ε 3630); 328 (ε 13180) (MeOH). λ_{max} 228 (ε 3630); 328 (ε 13182) (MeOH) (Berdy).

Shu, Y.-Z. *et al., J. Nat. Prod.*, 1997, **60**, 529-532 (*isol*)

6-Bromo-β-carboline B-299

*6-Bromo-9*H*-pyrido[3,4-*b*]indole, 9CI.* ***Eudistomin N****. Bromonorharman*

[59444-69-8]



$C_{11}H_7BrN_2$ 247.094

Alkaloid from the Caribbean tunicate *Eudistoma olivaceum*. Mod. active against gram-positive bacteria, yeasts and viruses. Enzyme inhibitor. Yellow needles (MeOH/$CHCl_3$). Sol. MeOH, C_6H_6, $CHCl_3$; poorly sol. H_2O. Mp 265-268° dec. λ_{max} 233 (ε 39600); 251 (ε 21000); 283 (ε 9200); 291 (ε 15800); 342 (ε 3800); 357 (ε 3900) (MeOH) (Derep).

λ_{max} 333 ; 347 ; 361 ; 373 (MeOH) (Berdy). λ_{max} 235 (ϵ 23900); 292 (ϵ 10100); 335 (ϵ 2400); 347 (ϵ 2600) (hexane) (Berdy).

N-*Me:*
$C_{12}H_9BrN_2$ 261.121
Cryst. (Et_2O/hexane). Mp 108-112°.

Roques, B.P. *et al., Bull. Soc. Chim. Fr.*, 1975, 2403 (*pmr, struct, synth*)
Rinehart, K.L. *et al., J.A.C.S.*, 1987, **109**, 3378-3387 (*isol, struct, props*)
Ponce, M.A. *et al., J. Het. Chem.*, 2001, **38**, 1087-1095 (*synth, pmr, cmr, ms*)

7-Bromo-β-carboline **B-300**

*7-Bromo-9*H*-pyrido[3,4-*b*]indole.* ***Eudistomin O***

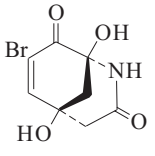
[88704-40-9]

$C_{11}H_7BrN_2$ 247.094
Alkaloid from *Eudistoma olivaceum* and from the New Zealand ascidian *Ritterella sigillinoides*. Shows mod. activity against bacteria and viruses. Enzyme inhibitor. Pale-yellow cryst. Sol. MeOH, C_6H_6, $CHCl_3$; poorly sol. H_2O. Mp 208-210°. λ_{max} 333 ; 347 ; 361 ; 373 (MeOH) (Berdy). λ_{max} 235 (ϵ 23900); 292 (ϵ 10100); 335 (ϵ 2400); 347 (ϵ 2600) (hexane) (Berdy). λ_{max} 211 (ϵ 15900); 238 (ϵ 24900); 289 (ϵ 8700); 294 (ϵ 11500); 336 (ϵ 2800) (EtOH) (Berdy).

Rinehart, K.L. *et al., J.A.C.S.*, 1987, **109**, 3378-3387 (*isol, synth*)
Lake, R.J. *et al., Aust. J. Chem.*, 1989, **42**, 1201-1206 (*isol, pmr*)

7-Bromocavernicolenone **B-301**

[98604-31-0]



$C_8H_8BrNO_4$ 262.059
Isol. from the Mediterranean sponge *Aplysina cavernicola* (*Verongia cavernicola*). Mildly antibacterial *in vitro*. Needles (MeOH). Sol. MeOH, $CHCl_3$, butanol; poorly sol. H_2O. Mp 165-170° dec. No observable opt. rotn. from 589 to 365 nm (MeOH). λ_{max} 254 (ϵ 2600) (MeOH) (Berdy).

Chloro analogue: ***7-Chlorocavernicolenone***
[102192-93-8]
$C_8H_8ClNO_4$ 217.608
Metab. from the sponge *Aplysina (Verongia) cavernicola*. Mp 197-198° dec. No opt. rotn. from 589 to 365 nm. A small excess of one of the enantiomers cannot be ruled out.

D'Ambrosio, M. *et al., Helv. Chim. Acta*, 1985, **68**, 1453-1460 (*7-Bromocavernicolenone, cryst struct*)
D'Ambrosio, M. *et al., Comp. Biochem. Physiol., B: Comp. Biochem.*, 1986, **83**, 309-312 (*7-Chlorocavernicolenone*)

Bromochloroacetic acid **B-302**

[5589-96-8]

ClCHBrCOOH

$C_2H_2BrClO_2$ 173.393
Constit. of the red alga *Asparagopsis taxiformis*.

(±)-*form*
Mp 31.5°. Bp 215° dec. Bp_{11} 103-104°.

Et ester: [22524-32-9]
$C_4H_6BrClO_2$ 201.447
Liq. Bp 174° dec. Bp_{12} 65°.

Chloride: [38282-29-0]
C_2HBrCl_2O 191.839
Bp 138-139°.

Amide: Bromochloroacetamide
[62872-34-8]
$C_2H_3BrClNO$ 172.408
Constit. of *Asparagopsis taxiformis*.
Cryst. Sol. hot H_2O. Mp 126° (117°).

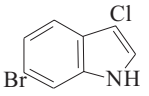
Nitrile: Bromochloroacetonitrile. Bromochlorocyanomethane
[83463-62-1]
$C_2HBrClN$ 154.393
Detected in drinking water. Bp 138-140°.

▶ Exp. carcinogen. Exp. reprod. effects.
AL8010000

Compton, H. *et al., J.C.S.*, 1921, 119; 1874 (*synth*)
Backer, H.J. *et al., J.C.S.*, 1928, 2125 (*synth*)
McBee, E.T. *et al., J.A.C.S.*, 1956, **78**, 4595 (*ester*)
Woolard, F.X. *et al., Tetrahedron*, 1976, **32**, 2843-2846 (*amide, isol*)
Woolard, F.X. *et al., Phytochemistry*, 1979, **18**, 617-620 (*isol*)
Oliver, B.G. *et al., Environ. Sci. Technol.*, 1983, **17**, 80 (*nitrile*)
Coleman, W.E. *et al., Environ. Sci. Technol.*, 1984, **18**, 674 (*ms, nitrile*)
IARC Monog., 1991, **52**, 269 (*rev, tox, nitrile*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, BMY800

6-Bromo-3-chloro-1*H*-indole, 9CI **B-303**

[57916-08-2]



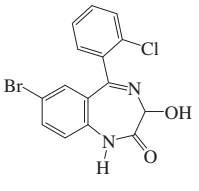
C_8H_5BrClN 230.491
Isol. from the yellow hemichordate *Ptychodera flava laysanica* and from *Ptychodera flava*. Mp 55-57° (54.5-56.5°).

Ac: Mp 158-159°.

Higa, T. *et al., Naturwissenschaften*, 1975, **62**, 395-396 (*isol, struct*)
Higa, T. *et al., Heterocycles*, 1976, **4**, 231-233 (*synth, ir, pmr, ms*)
Higa, T. *et al., Comp. Biochem. Physiol., B: Comp. Biochem.*, 1980, **65**, 525-530 (*isol*)

7-Bromo-5-(2-chlorophenyl)-1,3-dihydro-3-hydroxy-2*H*-1,4-benzodiazepin-2-one, 9CI **B-304**

[70030-11-4]

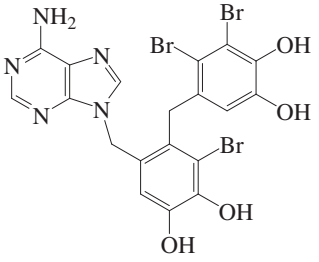


$C_{15}H_{10}BrClN_2O_2$ 365.613
Prod. by *Streptomyces roseochromogenes*. Improbable isolation. A benzodiazepine related to various synthetic drugs.

U.S.S.R. Pat., 1980, 787 027; *CA*, **94**, 101315c

9-[3-Bromo-2-(2,3-dibromo-4,5-dihydroxybenzyl)-4,5-dihydroxybenzyl]adenine **B-305**

[929006-58-6]

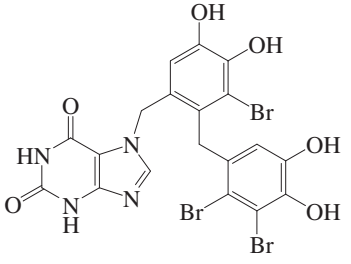


$C_{19}H_{14}Br_3N_5O_4$ 616.063
Isol. from *Rhodomela confervoides*.
Brown gum.

Ma, M. *et al., J. Nat. Prod.*, 2007, **70**, 337-341 (*isol, pmr, cmr, ms*)

7-[3-Bromo-2-(2,3-dibromo-4,5-dihydroxybenzyl)-4,5-dihydroxybenzyl]-3,7-dihydro-1*H*-purine-2,6-dione **B-306**

[929006-56-4]

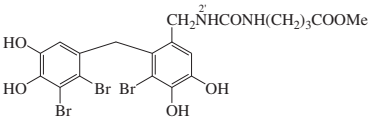


$C_{19}H_{13}Br_3N_4O_6$ 633.047
Isol. from *Rhodomela confervoides*.
Amorph. solid.

Ma, M. *et al., J. Nat. Prod.*, 2007, **70**, 337-341 (*isol, pmr, cmr, ms*)

***N*-[3-Bromo-2-(2,3-dibromo-4,5-dihydroxybenzyl)-4,5-dihydroxybenzyl]-*N′*-(3-methoxycarbonylpropyl)urea** **B-307**

Methyl N′*-[3-bromo-(2,3-dibromo-4,5-dihydroxybenzyl)-4,5-dihydroxybenzyl] γ-ureidobutyrate*



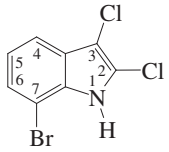
$C_{20}H_{21}Br_3N_2O_7$ 641.107
Constit. of *Rhodomela confervoides*.
Brown powder. Mp 176-178°.

N$^{2'}$-*(2,3-Dibromo-4,5-dihydroxybenzyl):*
$C_{27}H_{25}Br_5N_2O_9$ 921.023
Constit. of *Rhodomela confervoides.*
Brown gum.

Ma, M. *et al., J. Nat. Prod.*, 2006, **69**, 206-210 (*isol, pmr, cmr, ms*)

7-Bromo-2,3-dichloro-1*H*-indole, 9CI B-308

[68234-19-5]

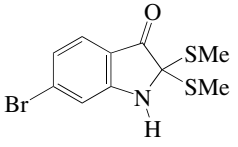


$C_8H_4BrCl_2N$ 264.936
Alkaloid from the marine red alga *Rhodophyllis membranacea*. Mp 82-83°.

Brennan, M.R. *et al., Tet. Lett.*, 1978, **19**, 1637-1640 (*isol, pmr, struct*)
Erickson, K.L. *et al., Synth. Commun.*, 1981, **11**, 253-259 (*synth, ir, pmr, ms*)

6-Bromo-1,2-dihydro-2,2-bis(methylthio)-3*H*-indol-3-one, 9CI B-309
Tyrindolinone

[50630-71-2]

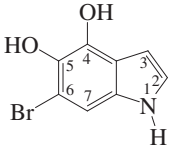


$C_{10}H_{10}BrNOS_2$ 304.231
Alkaloid from the molluscs *Dicathais orbita*, *Nucella lapillus* and *Thais clavigera*. Yellow needles (C_6H_6/petrol). Mp 117° dec. λ_{max} 225 (sh) (ϵ 21000); 248 (ϵ 25000); 270 (sh) (ϵ 8000); 355 (sh) (ϵ 1600); 402 (ϵ 2700) (EtOH).

Baker, J.T. *et al., Aust. J. Chem.*, 1973, **26**, 2153-2157 (*isol, uv, ir, pmr, ms*)
Cooksey, C.J. *et al., Molecules*, 2001, **6**, 736-769 (*rev*)

6-Bromo-4,5-dihydroxyindole B-310

*6-Bromo-1*H*-indole-4,5-diol, 9CI*
[211808-67-2]



$C_8H_6BrNO_2$ 228.045
Alkaloid from the gastropod *Drupella fragum*. Amorph. solid.

Ochi, M. *et al., J. Nat. Prod.*, 1998, **61**, 1043-1045 (*isol*)

6-Bromo-4,7-dihydroxyindole B-311

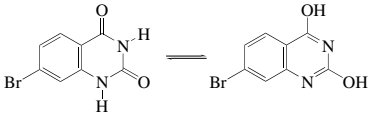
*6-Bromo-1*H*-indole-4,7-diol, 9CI*
[211808-68-3]

$C_8H_6BrNO_2$ 228.045
Alkaloid from the gastropod *Drupella fragum*. Amorph. solid.

Ochi, M. *et al., J. Nat. Prod.*, 1998, **61**, 1043-1045 (*isol*)

7-Bromo-2,4-dihydroxyquinazoline B-312

*7-Bromo-2,4(1*H*,3*H*)-quinazolinedione, 9CI. 7-Bromo-2,4-quinazolinediol*
[114703-12-7]

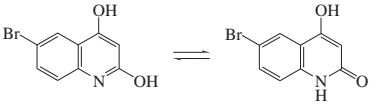


$C_8H_5BrN_2O_2$ 241.044
Alkaloid from the marine tunicate *Pyura sacciformis*. Cryst. (MeOH). Mp 330°. λ_{max} 225 (ϵ 47000); 310 (ϵ 4600) (EtOH) (Derep).

Niwa, H. *et al., J. Nat. Prod.*, 1988, **51**, 343-344 (*isol, uv, ir, pmr, ms, synth, struct*)

6-Bromo-2,4-dihydroxyquinoline B-313

*6-Bromo-4-hydroxy-2(1*H*)-quinolinone, 9CI. 6-Bromo-2,4-quinolinediol*
[54675-23-9]

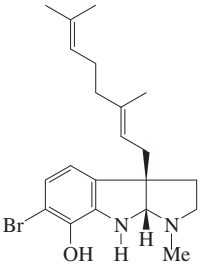


$C_9H_6BrNO_2$ 240.056
Isol. from the sponge *Hyrtios erecta*. Yellow powder. Mp >340°.

Buckle, D.R. *et al., J. Med. Chem.*, 1975, **18**, 726-732 (*synth*)
Aoki, S. *et al., Chem. Pharm. Bull.*, 2001, **49**, 1372-1374 (*isol, pmr, cmr*)

6-Bromo-3*a*-(3,7-dimethyl-2,6-octadienyl)-1,2,3,3*a*,8,8*a*-hexahydro-1-methylpyrrolo[2,3-*b*]indol-7-ol B-314

[474779-13-0]



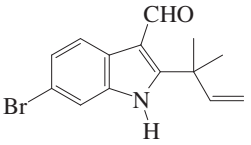
Relative Configuration

$C_{21}H_{29}BrN_2O$ 405.377
Alkaloid from the marine bryozoan *Flustra foliacea*. Yellow oil. $[\alpha]_D^{22}$ -22 (c, 0.1 in $CHCl_3$). λ_{max} 251 (log ϵ 4.7); 309 (log ϵ 4.5) (no solvent reported).

Peters, L. *et al., J. Nat. Prod.*, 2002, **65**, 1633-1637 (*isol, pmr, cmr, ms*)

6-Bromo-2-(1,1-dimethyl-2-propenyl)-1*H*-indole-3-carboxaldehyde B-315

6-Bromo-3-formyl-2-(1,1-dimethyl-2-propenyl)indole
[474657-70-0]

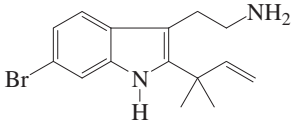


$C_{14}H_{14}BrNO$ 292.175
Alkaloid from the marine bryozoan *Flustra foliacea*. Yellow oil. λ_{max} 222 (log ϵ 4.6); 274 (log ϵ 4); 300 (log ϵ 3.9) (MeOH).

Peters, L. *et al., J. Nat. Prod.*, 2002, **65**, 1633-1637 (*isol, pmr, cmr, ms*)

6-Bromo-2-(1,1-dimethyl-2-propenyl)tryptamine B-316

*6-Bromo-2-(1,1-dimethyl-2-propenyl)-1*H*-indole-3-ethanamine, 9CI. 3-(2-Aminoethyl)-6-bromo-2-(1,1-dimethyl-2-propenyl)-1*H*-indole. 6-Bromo-2-(1,1-dimethylallyl)tryptamine*



$C_{15}H_{19}BrN_2$ 307.233

N^b-*Me:* ***Deformylflustrabromine***
[474657-72-2]
$C_{16}H_{21}BrN_2$ 321.259
Isol. from *Flustra foliacea*. Cytotoxic. Yellow oil. λ_{max} 231 (log ϵ 4.6); 289 (log ϵ 3.9) (MeOH). λ_{max} 204 (ϵ 30190); 230 (ϵ 22730); 282 (ϵ 4770) (MeOH).

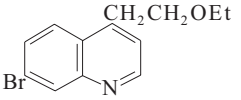
N^b-*Me,* N^b-*formyl:* ***Flustrabromine***
[80693-54-5]
$C_{17}H_{21}BrN_2O$ 349.27
Alkaloid from the marine bryozoan *Flustra foliacea*. Amorph. solid. Consists of two rotameric forms reflecting hindered rotation around the formamide C–N bond. Each rotamer also exists in equilib. with a form in which the amide nitrogen atom associates intramolecularly with the benzene ring.

N^b-*Me,* N^b-*(methylsulfonyl):* ***N-[2-[6-Bromo-2-(1,1-dimethyl-2-propenyl)-1H-indol-3-yl]ethyl]-N-methylmethanesulfonamide***
[474657-71-1]
$C_{17}H_{23}BrN_2O_2S$ 399.351
Isol. from *Flustra foliacea*. Yellow oil. λ_{max} 227 (log ϵ 4.8); 288 (log ϵ 4.3) (MeOH).

Wulff, P. *et al., J.C.S. Perkin 1*, 1981, 2895-2898 (*Flustrabromine, isol, uv, ir, pmr, cmr, ms, struct*)
Peters, L. *et al., J. Nat. Prod.*, 2002, **65**, 1633-1637 (*Deformylflustrabromine, N-Me N-methylsulfonyl*)
Lysek, N. *et al., Z. Naturforsch., C*, 2002, **57**, 1056-1061 (*Deformylflustrabromine*)

7-Bromo-4-(2-ethoxyethyl)-quinoline, 9CI B-317

[82503-96-6]

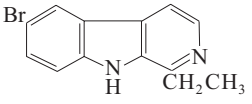


$C_{13}H_{14}BrNO$ 280.164
Minor alkaloid from the marine bryozoan *Flustra foliacea*. Possibly an artifact.

Wulff, P. *et al., Comp. Biochem. Physiol., B: Comp. Biochem.*, 1982, **71**, 525-526 (*isol, uv, pmr, ms, struct*)

6-Bromo-1-ethyl-β-carboline B-318

*6-Bromo-1-ethyl-9*H*-pyrido[3,4-*b*]indole, 9CI*
[113679-47-3]

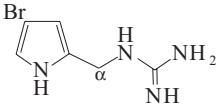


$C_{13}H_{11}BrN_2$ 275.147
Metab. from the marine hydroid *Aglaophenia pluma*. Cryst. (CH_2Cl_2). Mp 155-157°.

8-Bromo: ***6,8-Dibromo-1-ethyl-β-carboline***
[113679-48-4]
$C_{13}H_{10}Br_2N_2$ 354.043
Major metab. from *Aglaophenia pluma*. Cryst. (CH_2Cl_2). Mp 150-152°.

Aiello, A. *et al., Tetrahedron*, 1987, **43**, 5929-5932 (*isol, uv, pmr, cmr, struct, synth, deriv*)

4-Bromo-2-(guanidino-methyl)pyrrole B-319



$C_6H_9BrN_4$ 217.068
Isol. from the sponge *Agelas* sp.

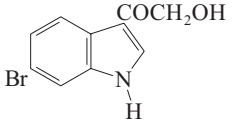
α-Oxo: **N-*(Aminoiminomethyl)-4-bromo-1*H*-pyrrole-2-carboxamide***
$C_6H_7BrN_4O$ 231.051
Isol. from an *Agelas* sp. Not named in the lit., not listed in CA.

Stempien, M.F. *et al., Abstr. Am. Chem. Soc. Natl. Mtg., MEDI Sect., 164th*, 1972, 21 (*α-oxo, isol*)

Christophersen, C. *et al., Alkaloids (Academic Press)*, 1985, **24**, 36 (*occur*)

6-Bromo-3-(hydroxyacetyl)-1*H*-indole B-320

*1-(6-Bromo-1*H*-indol-3-yl)-2-hydroxyethanone, 9CI*
[126235-45-8]

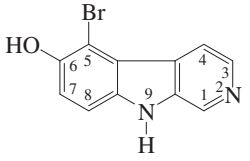


$C_{10}H_8BrNO_2$ 254.083
Alkaloid from the demosponge *Pleroma menouii*. Microcryst. powder (MeOH). Mp 194-196°. λ_{max} 217 (ε 24100); 242 (ε 13100); 265 (ε 12200); 293 (ε 9200) (no solvent reported).

Guella, G. *et al., Z. Naturforsch., C*, 1989, **44**, 914 (*isol, uv, ir, pmr, cmr, ms, struct*)

5-Bromo-6-hydroxy-β-carboline B-321

*5-Bromo-9*H*-pyrido[3,4-*b*]indol-6-ol, 9CI. 5-Bromo-6-hydroxy-9*H*-pyrido[3,4-*b*]indole.* ***Eudistomin D***
[88704-37-4]



$C_{11}H_7BrN_2O$ 263.093
Alkaloid from the Caribbean tunicate *Eudistoma olivaceum*. Mod. active against gram-positive bacteria and Herpes simplex virus. Yellow amorph. solid. Mp 280°. λ_{max} 215 (ε 14000); 233 (ε 24800); 246 (ε 19800); 286 (ε 8500); 294 (ε 15000); 365 (ε 4500) (MeOH) (Derep).

N^2-*Me:* ***N*²-Methyleudistomin D***
[380614-17-5]
$C_{12}H_{10}BrN_2O^{\oplus}$ 278.128
Quaternary alkaloid from *Eudistoma gilboverde*. Amorph. yellow powder. Counterion not specified. λ_{max} 214 (log ε 4.02); 236 (log ε 3.8); 268 (log ε 3.96); 303 (sh) (log ε 3.71); 314 (log ε 3.79); 416 (log ε 3.19) (EtOH).

N^9-*Me:* ***Eudistomidin D***
[125422-19-7]
$C_{12}H_9BrN_2O$ 277.12
Alkaloid from the Okinawan tunicate *Eudistoma glaucus*. Cytotoxic. Induces $Ca^{2\oplus}$ release from the sarcoplasmic reticulum. Yellow solid. Mp 180° dec. λ_{max} 254 (ε 7000); 299 (ε 8600); 342 (sh) ; 503 (ε 700) (MeOH/KOH) (Derep). λ_{max} 211 (ε 13600); 270 (ε 9800); 315 (ε 6800); 416 (ε 1800) (MeOH) (Derep).

Kobayashi, J. *et al., J.A.C.S.*, 1984, **106**, 1526-1528 (*isol, uv, pmr, struct*)

Rinehart, K.L. *et al., J.A.C.S.*, 1987, **109**, 3378-3387 (*isol, struct, props*)

Kobayashi, J. *et al., J.O.C.*, 1990, **55**, 3666-3670 (*Eudistomidin D*)

Rocca, P. *et al., Tet. Lett.*, 1995, **36**, 7085-7088 (*synth*)

Rashid, M.A. *et al., J. Nat. Prod.*, 2001, **64**, 1454-1456 (*N^2-Methyleudistomin D*)

7-Bromo-6-hydroxy-β-carboline B-322

*7-Bromo-9*H*-pyrido[3,4-*b*]indol-6-ol, 9CI.* ***Eudistomin J***
[88704-38-5]

$C_{11}H_7BrN_2O$ 263.093
Alkaloid from the Caribbean tunicate *Eudistoma olivaceum*. Shows modest antibiotic activity. Calcium release inducer. λ_{max} 215 (ε 14000); 233 (ε 24800); 246 (ε 19800); 286 (ε 8500); 294 (ε 15000); 365 (ε 4500) (MeOH) (Derep).

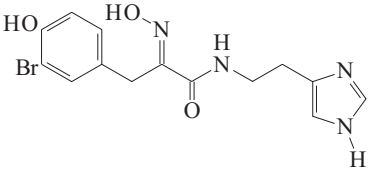
N^2-*Me:* ***N*²-Methyleudistomin J***
[380614-18-6]
$C_{12}H_{10}BrN_2O^{\oplus}$ 278.128
Quaternary alkaloid from *Eudistoma gilboverde*. Yellow gum. λ_{max} 212 (log ε 4.04); 236 (log ε 3.99); 271 (log ε 3.97); 307 (sh) (log ε 3.83); 321 (log ε 3.96); 412 (log ε 3.35) (EtOH).

Rinehart, K.L. *et al., J.A.C.S.*, 1987, **109**, 3378-3387 (*isol*)

Rashid, M.A. *et al., J. Nat. Prod.*, 2001, **64**, 1454-1456 (*N^2-Methyleudistomin J*)

3-Bromo-4-hydroxy-α-(hydroxyimino)-*N*-[2-(1*H*-imidazol-4-yl)ethyl]benzenepropanamide B-323

Pseudoceratina crassa *Alkaloid*
[165329-94-2]

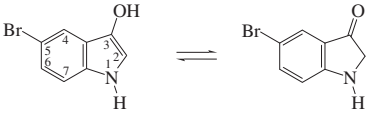


$C_{14}H_{15}BrN_4O_3$ 367.201
Alkaloid from the Caribbean sponge *Pseudoceratina crassa*.

Ciminiello, P. *et al., J. Nat. Prod.*, 1995, **58**, 689 (*isol, uv, ir, pmr, cmr, struct*)

5-Bromo-3-hydroxy-1*H*-indole B-324

*5-Bromo-1*H*-indol-3-ol. 5-Bromo-1,2-dihydro-3*H*-indol-3-one. 5-Bromo-3-indolone*



C_8H_6BrNO 212.045

OH-form

O-*β-D-Galactopyranoside: Z-gal*
[97753-82-7]
$C_{14}H_{16}BrNO_6$ 374.188
Chromogenic substrate for β-galactosidase.

O-*Ac:* [17357-14-1]
$C_{10}H_8BrNO_2$ 254.083
Stout needles (MeOH). Mp 187-188°.

N-*Ac:* [106698-07-1]
$C_{10}H_8BrNO_2$ 254.083
Cryst. (EtOH aq.). Mp 184-185°.

Di-Ac: [33588-54-4]
$C_{12}H_{10}BrNO_3$ 296.12
Needles (MeOH aq./Ac_2O). Mp 125-128°.

Oxo-*form*

Oxime: [76983-85-2]
$C_8H_7BrN_2O$ 227.06
Brown needles (C_6H_6). Mp 233-235°.

Su, H.C.F. *et al., J.A.C.S.*, 1960, **82**, 1187-1189 (*O-Ac, N-Ac*)

Torii, S. *et al., J.O.C.*, 1978, **43**, 2882 (*di-Ac*)
Aguzzi, A. *et al., Histochemistry*, 1994, **102**, 477-481 (*O-galactopyranosyl, use*)

6-Bromo-3-hydroxy-1*H*-indole B-325

*6-Bromo-1*H*-indol-3-ol, 9CI, 8CI. 6-Bromo-1,2-dihydro-3*H*-indol-3-one. 6-Bromo-3-indolone. 6-Bromoindoxyl*
[114224-27-0]
[52578-60-6 (oxo-form)]

C_8H_6BrNO 212.046
Constit. of egg masses of *Dicathais orbita*.

N-*Ac:* [244256-22-2]
$C_{10}H_8BrNO_2$ 254.083
Solid. Mp 187°.

O-*Ac:* [114306-17-1]
$C_{10}H_8BrNO_2$ 254.083
Solid (EtOH aq.). Mp 200°.

Di-Ac: [108996-91-4]
$C_{12}H_{10}BrNO_3$ 296.12
Solid (EtOH). Mp 123°.

Holt, S.J. *et al., J.C.S.*, 1958, 1217-1223 (*N-Ac*)
Holt, S.J. *et al., Proc. R. Soc. London, B*, 1958, **148**, 481-494 (*O-Ac, di-Ac*)
Pat. Coop. Treaty (WIPO), 1999, 99 50 538; *CA*, **131**, 243537h (*N-Ac, di-Ac, synth, pmr, cmr*)
Benkendorff, K. *et al., Molecules*, 2001, **6**, 70-78 (*isol*)

6-Bromo-5-hydroxy-1*H*-indole B-326

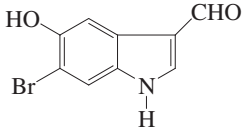
*6-Bromo-1*H*-indol-5-ol*
[211808-66-1]

C_8H_6BrNO 212.046
Alkaloid from the gastropod *Drupella fragum*. Shows antioxidant props. Amorph. solid.

Ochi, M. *et al., J. Nat. Prod.*, 1998, **61**, 1043-1045 (*isol*)

6-Bromo-5-hydroxy-1*H*-indole-3-carboxaldehyde B-327

6-Bromo-3-formyl-5-hydroxyindole
[151833-94-2]

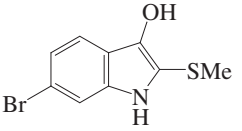


$C_9H_6BrNO_2$ 240.056
Isol. from sponge *Oceanapia bartschi*. λ_{max} 255 (ϵ 5800) (no solvent reported).

Cafieri, F. *et al., Z. Naturforsch., B*, 1993, **48**, 1408-1410

6-Bromo-3-hydroxy-2-(methylthio)indole B-328

*6-Bromo-2-(methylthio)-1*H*-indol-3-ol.* ***Tyrindoxol***
[142960-47-2]



C_9H_8BrNOS 258.138
Biosynthetic precursor of 6,6′-Dibromoindigotin, D-325 and 6,6′-Dibromoindirubin in I-73.

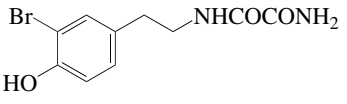
O-*Sulfate: Tyroxindoxyl sulfate*
[74626-31-6]
$C_9H_8BrNO_4S_2$ 338.203
Constit. of *Dicathais orbita*, *Mancinella keineri*, *Murex* spp. and other molluscs. Biosynthetic precursor of 6,6′-Dibromoindigotin, D-325 and 6,6′-Dibromoindirubin in I-73. Yellow leaflets + $1H_2O$ (as Ag salt). Mp 118-120° dec. (Ag salt).

S,S-*Dioxide,* O-*sulfate:*
$C_9H_8BrNO_6S_2$ 370.201
Isol. from *Murex trunculus*, *Murex erinaceum*, other *Murex* spp. and *Purpura haemastoma*. Probable biosynthetic precursor of Tyrian Purple.

Baker, J.T. *et al., Tet. Lett.*, 1968, 43-46; 1976, 1233-1234 (*isol, pmr, struct*)
Fouquet, H. *et al., Angew. Chem., Int. Ed.*, 1971, **10**, 816-817 (*isol*)
Prota, G. *et al., Marine Natural Products*, (ed. Scheuer, P.J.), Academic Press, 1980, **3**, 141-178 (*biosynth, rev*)
Cooksey, C.J. *et al., Molecules*, 2001, **6**, 736-769 (*rev*)

[2-(3-Bromo-4-hydroxyphenyl)ethyl]ethanediamide, 9CI B-329

[182496-50-0]



$C_{10}H_{11}BrN_2O_3$ 287.113
Isol. from the Papua New Guinea marine sponge *Ianthella basta*. Amorph. solid. λ_{max} 212 (log ϵ 3.89); 281 (log ϵ 3.14) (MeOH).

Pettit, G.R. *et al., J. Nat. Prod.*, 1996, **59**, 927-934 (*isol, uv, ir, pmr, cmr, ms, struct*)

3-Bromo-1*H*-indole, 9CI B-330

[1484-27-1]

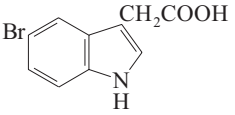
C_8H_6BrN 196.046
Trace odorous component of the marine hemichordate *Ptychodera flava laysanica*. Also isol. from sponge *Oceanapia bartschi*. Cryst. (heptane or EtOH aq.). Mp 66-67° (65-66° dec.).

N-*(4-Methylbenzenesulfonyl):* [90481-77-9]
$C_{15}H_{12}BrNO_2S$ 350.235
Needles (EtOH). Mp 119-120°.

Pappalardo, G. *et al., Gazz. Chim. Ital.*, 1958, **88**, 1147-1169 (*uv*)
Jardine, R.V. *et al., Can. J. Chem.*, 1963, **41**, 2067-2073; 2399-2401 (*synth, pmr*)
Higa, T. *et al., Naturwissenschaften*, 1975, **62**, 395-396 (*isol*)
Brennan, M.P. *et al., Heterocycles*, 1986, **24**, 2879-2885 (*synth, ir, pmr, cmr*)
Cafieri, F. *et al., Z. Naturforsch., B*, 1992, **48**, 1408-1410 (*isol, sponge*)
Hodson, H.F. *et al., Tetrahedron*, 1994, **50**, 1899-1906 (*N-tosyl*)

5-Bromo-1*H*-indole-3-acetic acid B-331

[40432-84-6]



$C_{10}H_8BrNO_2$ 254.083
Constit. of a sponge *Smenospongia* sp. Mp 143-145°.

Szewezyk, H. *et al., Rocz. Chem.*, 1972, **46**, 2135
Tasdemir, D. *et al., Z. Naturforsch., C*, 2002, **57**, 914-922 (*isol, pmr, cmr, ms*)

6-Bromo-1*H*-indole-3-acetic acid B-332

$C_{10}H_8BrNO_2$ 254.083

*Me ester: Methyl 6-bromo-1*H*-indole-3-acetate, 9CI*
[152213-63-3]
$C_{11}H_{10}BrNO_2$ 268.109
Alkaloid from the marine sponge *Pseudosuberites hyalinus*. Oil. λ_{max} 228 (log ϵ 4.49) (MeOH).

*Amide: 6-Bromo-1*H*-indole-3-acetamide, 9CI*
[152213-62-2]
$C_{10}H_9BrN_2O$ 253.098
Alkaloid from the marine sponge *Pseudosuberites hyalinus*. Mp 148-150°.

*Nitrile: 6-Bromo-1*H*-indole-3-acetonitrile, 9CI. 6-Bromo-3-(cyanomethyl)indole*
[152213-61-1]
$C_{10}H_7BrN_2$ 235.083
Alkaloid from the marine sponge *Pseudosuberites hyalinus*. Mp 114-115°.

Rasmussen, T. *et al., J. Nat. Prod.*, 1993, **56**, 1553-1558 (*isol, pmr, cmr, ir, uv, ms*)

6-Bromo-1*H*-indole-3-carboxaldehyde, 9CI B-333

6-Bromo-3-formylindole. 6-Bromoindole-3-carbaldehyde
[17826-04-9]

C_9H_6BrNO 224.056
Isol. from the marine tunicate *Pyura sacciformis*; also from *Pseudosuberites hyalinus*, *Pleroma menoui*, *Tubastrea coccinea*, *Dendrophyllia* spp. and sponges *Oceanapia bartschi*, *Halichondria* spp. and others. From *Acinetobacter sp.* associated with the ascidian *Stomozoa murrayi*. Exhibits antibacterial and antifouling activity; plant growth regulator; algicide. Solid (MeOH). Mp 203-204°.

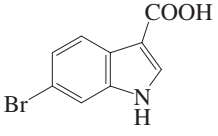
N-*(4-Methylbenzenesulfonyl):* [158991-81-2]
$C_{16}H_{12}BrNO_3S$ 378.246
Solid or cryst. ($CHCl_3$). Mp 115° Mp 146-147°.

Da Settimo, A. *et al., Gazz. Chim. Ital.*, 1967, **97**, 1304-1316 (*synth*)
Wratten, S.J. *et al., Antimicrob. Agents Chemother.*, 1977, **11**, 411-414 (*isol*)
Dellar, G. *et al., J.C.S. Perkin 1*, 1981, 1679-1680 (*synth, pmr*)

Okuda, R.K. *et al., Pure Appl. Chem.*, 1982, **54**, 1907-1914 (*isol*)
Schmidt, V. *et al., Annalen*, 1985, 1882-1894 (*synth*)
Niwa, H. *et al., J. Nat. Prod.*, 1988, **51**, 343-344 (*isol*)
Guella, G. *et al., Helv. Chim. Acta*, 1989, **72**, 1444-1450 (*isol, hplc*)
Cafieri, F. *et al., Z. Naturforsch., B*, 1992, **48**, 1408-1410 (*isol, sponge*)
Jiang, B. *et al., J.O.C.*, 1994, **59**, 6823-6827 (*synth, ir, pmr, ms*)
Olguin-Uribe, G. *et al., J. Chem. Ecol.*, 1997, **23**, 2507-2521 (*isol, activity*)
Jiang, B. *et al., J.O.C.*, 2001, **66**, 4865-4869 (*tosyl, synth, ir, pmr, cmr, ms*)

6-Bromo-1*H*-indole-3-carboxylic acid, 9CI B-334

[101774-27-0]



$C_9H_6BrNO_2$ 240.056

Early lit. mistakenly reports physical data for both acid and Et ester which actually refer to inseparable equimolar mixt. of 5- and 6-bromo isomers. Isol. from the marine sponge *Pseudosuberites hyalinus*.

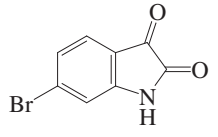
Me ester:
$C_{10}H_8BrNO_2$ 254.083
Alkaloid from *Smenospongia* sp. Yellow solid.

Et ester: [103858-55-5]
$C_{11}H_{10}BrNO_2$ 268.109
Alkaloid from the demosponge *Plerooma menoui* and the sponge *Iotrochota birotulata*. Microcryst. powder (MeOH). Mp 147-149°.

Leggetter, B.E. *et al., Can. J. Chem.*, 1960, **38**, 1467 (*synth*)
Guella, G. *et al., Z. Naturforsch., C*, 1989, **44**, 914-916 (*Et ester, isol*)
Rasmussen, T. *et al., J. Nat. Prod.*, 1993, **56**, 1553-1558 (*isol, ms, pmr, cmr*)
Segraves, N.L. *et al., J. Nat. Prod.*, 2005, **68**, 1484-1488 (*Me ester*)

6-Bromo-1*H*-indole-2,3-dione, 9CI B-335

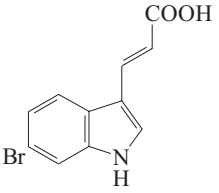
6-Bromoisatin
[6326-79-0]



$C_8H_4BrNO_2$ 226.029
Isol. from many molluscs. Plant growth regulator. Probably a precursor of 6,6′-Dibromoindirubin. Needles, yellow plates (AcOH). Mp 272.5°. pK_a 10.35.

Inagaki, S. *et al., Yakugaku Zasshi*, 1938, **58**, 961-975; *CA*, **33**, 2516 (*synth*)
Sadler, P.W. *et al., J.O.C.*, 1956, **21**, 169-170 (*synth*)
Budesinsky, Z. *et al., Coll. Czech. Chem. Comm.*, 1977, **42**, 3473-3483 (*synth*)
Clark, R.J.H. *et al., New J. Chem.*, 1999, **23**, 323-328 (*pmr*)
Cooksey, C.J. *et al., Molecules*, 2001, **6**, 736-769 (*rev*)

3-(6-Bromo-1*H*-indol-3-yl)-2-propenoic acid, 9CI B-336



$C_{11}H_8BrNO_2$ 266.094

(*E*)-*form*

Penaresin
[135250-41-8]
Alkaloid from the marine sponge *Penares* sp. Powerful Ca-inducer in sarcoplasmic reticulum. Pale yellow solid. Mp 189-192° dec. λ_{max} 228 (ϵ 27100); 280 (ϵ 18400); 307 (ϵ 18300) (MeOH).

Me ester: [134419-23-1]
[78520-47-5]
$C_{12}H_{10}BrNO_2$ 280.12
Alkaloid from the marine sponges *Hymeniacidon* sp., *Iotrochota* sp. and *Mycale adhaerens*. Clusters of prisms (Et_2O/hexane). Mp 186°. λ_{max} 226 (ϵ 34200); 283 (ϵ 19900); 324 (ϵ 26200) (MeOH) (Berdy).

Et ester: [226888-27-3]
$C_{13}H_{12}BrNO_2$ 294.147
Alkaloid from the sponge *Hymeniacidon* sp. Cryst. (Me_2CO/petrol) (synthetic). Mp 147-149° (synthetic).

(*Z*)-*form*

Me ester: [419567-80-9]
Alkaloid from *Hymeniacidon* sp.

Et ester: [419567-79-6]
Alkaloid from *Hymeniacidon* sp.

Dellar, G. *et al., J.C.S. Perkin 1*, 1981, 1679-1680 (*isol, ir, pmr, ms, struct, synth, Me ester*)
Kobayashi, J. *et al., Heterocycles*, 1990, **31**, 2205-2208 (*isol, uv, ir, pmr, ms, struct*)
Fusetani, N. *et al., J.O.C.*, 1991, **56**, 4971-4974 (*isol, Me ester*)
Beugelmans, R. *et al., Tetrahedron*, 1999, **55**, 5089-5112 (*Et ester, synth*)
Capon, R.J. *et al., J. Nat. Prod.*, 2002, **65**, 368-370 (*Me esters, Et esters, isol*)

Bromoiodoacetic acid B-337

[71815-43-5]
BrCHICOOH
$C_2H_2BrIO_2$ 264.845
Constit. of the red alga *Asparagopsis taxiformis*.

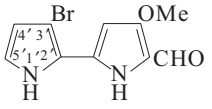
Et ester: [62874-49-1]
$C_4H_6BrIO_2$ 292.899
Constit. of *Asparagopsis taxiformis* and *Falkenbergia rufolonosa*.

Amide: Bromoiodoacetamide
[62872-36-0]
C_2H_3BrINO 263.86
Constit. of *Asparagopsis taxiformis*.

Woolard, F.X. *et al., Tetrahedron*, 1976, **32**, 2843-2846 (*amide, isol*)
Combaut, G. *et al., Phytochemistry*, 1978, **17**, 1661-1663 (*isol*)
Woolard, F.X. *et al., Phytochemistry*, 1979, **18**, 617-620 (*isol, ms*)

3′-Bromo-4-methoxy-2,2′-bipyrrole-5-carboxaldehyde B-338

3-Bromo-5′-formyl-4′-methoxy-2,2′-bipyrrole
[85849-99-6]



$C_{10}H_9BrN_2O_2$ 269.097
Isol. from the nembrothid nudibranchs *Roboastra tigris*, *Tambja eliora*, *Tambja abdere* and the bryozoan *Sessibugula translucens*. Mp 243-245° dec. Artifact.

Carté, B. *et al., J.O.C.*, 1983, **48**, 2314 (*isol, uv, ir, pmr, struct*)

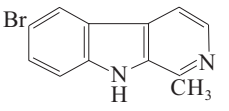
5′-Bromo-4-methoxy-2,2′-bipyrrole-5-carboxaldehyde B-339

5′-Bromo-5-formyl-4-methoxy-2,2′-bipyrrole
[85849-98-5]
$C_{10}H_9BrN_2O_2$ 269.097
Isol. from the nembrothid nudibranchs *Roboastra tigris*, *Tambja eliora*, *Tambja abdere* and the bryozoan *Sessibugula translucens*. Mp 235-238° dec. Artifact.

Carté, B. *et al., J.O.C.*, 1983, **48**, 2314 (*isol, uv, ir, pmr, struct*)

6-Bromo-1-methyl-β-carboline B-340

*6-Bromo-1-methyl-9*H*-pyrido[3,4-*b*]indole*
[18813-71-3]

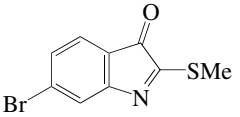


$C_{12}H_9BrN_2$ 261.12
Metab. from the marine hydroid *Aglaophenia pluma*. Cryst. (CH_2Cl_2). Mp 248-250°.

Aiello, A. *et al., Tetrahedron*, 1987, **43**, 5929-5932 (*isol, uv, pmr, cmr, struct, synth*)
Ponce, M.A. *et al., J. Het. Chem.*, 2001, **38**, 1087-1095 (*synth, pmr, cmr, ms*)

6-Bromo-2-(methylthio)-3*H*-indol-3-one, 9CI B-341

Tyrindoleninone
[50630-70-1]



C_9H_6BrNOS 256.123
Alkaloid from the molluscs *Dicathais orbita*, *Nucella lapillus*, *Thais clavigera* and *Murex brandaris*. Also occurs in egg masses of *Agnewia tritoniformis*, *Lepsiella reticularis*, *Morula marginalba* and other spp. Biosynthetic precursor of Tyrian Purple 6,6′-Dibromoindigotin, D-325. Red needles. Mp 109.5°. λ_{max} 217 (ϵ 8700); 242 (ϵ 25000); 247 (ϵ 25000); 278 (ϵ 11000); 318 (ϵ 5200); 333 (ϵ 5000); 355 (ϵ 2700); 426 (ϵ 1700); 447 (ϵ 1700) (hexane).

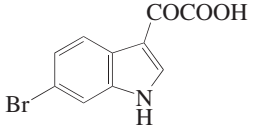
S-*Oxide:*
$C_9H_6BrNO_2S$ 272.122
Isol. from egg masses of *Dicathais orbita* and *Ceratostoma erinaceum*. CAS no. not found to 2007.

S,S-*Dioxide:*
$C_9H_6BrNO_3S$ 288.121
Doubtless present in molluscs. Putative precursor of Tyrian Purple 6,6′-Dibromoindigotin, D-325. CAS no. not found to 2007.

Baker, J.T. *et al., Aust. J. Chem.*, 1973, **26**, 2153-2157 (*isol, uv, ir, pmr, ms*)
Baker, J.T. *et al., Endeavour*, 1974, **33**, 11-17 (*rev*)
Prota, G. *et al., Marine Natural Products*, (ed. Scheuer, P.J.), Academic Press, 1980, **3**, 141-178 (*biosynth, rev*)
Benkendorff, K. *et al., J. Chem. Ecol.*, 2000, **26**, 1037-1050 (*isol*)
Benkendorff, K. *et al., Molecules*, 2001, **6**, 70-78 (*occur, S-oxide, S,S-dioxide*)

6-Bromo-α-oxo-1*H*-indole-3-acetic acid B-342

*(6-Bromo-1*H*-indol-3-yl)glyoxylic acid*



$C_{10}H_6BrNO_3$ 268.066

Me ester: [220407-33-0]
$C_{11}H_8BrNO_3$ 282.093
Alkaloid from *Spongosorites* sp. Amorph. yellow powder.

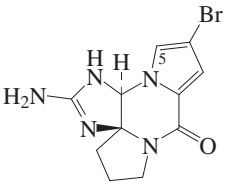
Et ester: [17826-12-9]
$C_{12}H_{10}BrNO_3$ 296.12
Alkaloid from the sponge *Iotrochota birotulata*. Pale yellow solid. λ_{max} 270 ; 320 (MeOH).

*Amide: 6-Bromo-α-oxo-1*H*-indole-3-acetamide*
[108061-75-2]
$C_{10}H_7BrN_2O_2$ 267.082
Alkaloid from *Spongosorites* sp. Amorph. yellow powder. λ_{max} 212 (log ϵ 3.21); 258 (log ϵ 2.73); 275 (log ϵ 2.75); 320 (log ϵ 2.61) (MeOH).

Li, L. *et al., Pharmazie*, 2003, **58**, 680-681 (*Et ester*)
Bao, B. *et al., Mar. Drugs*, 2007, **5**, 31-39 (*Me ester, amide*)

4-Bromophakellin B-343

Monobromophakellin



(-)-*form*

$C_{11}H_{12}BrN_5O$ 310.153

(-)-*form* [31955-05-2]
Alkaloid from the marine sponge *Phakellia flabellata*. Mp 170-180° dec. λ_{max} 227 (ϵ 7140); 277 (ϵ 5540) (as hydrochloride) (Derep). λ_{max} 228 (ϵ 7780); 275 (ϵ 6110) (MeOH) (Derep).

Hydrochloride: Mp 215-220°. $[\alpha]_D^{25}$ -123 (c, 3 in MeOH).

N^7-*Me:* ***4-Bromo-N^7-methylphakellin***.
N^7-Methylmonobromophakellin
[697284-91-6]
$C_{12}H_{14}BrN_5O$ 324.18
Isol. from an *Agelas* sp. Powder. $[\alpha]_D^{28}$ -35 (c, 1 in MeOH). λ_{max} 238 (ϵ 1700); 280 (ϵ 1280) (MeOH).

5-Bromo: ***(-)-Dibromophakellin***
[31954-96-8]
$C_{11}H_{11}Br_2N_5O$ 389.049
Alkaloid from *Phakellia flabellata*, *Phakellia mauritiana* and *Pseudaxinyssa cantharella*. Sol. MeOH, butanol. Mp 237-245° dec. λ_{max} 233 (ϵ 8880); 281 (ϵ 8810) (MeOH) (Derep). λ_{max} 211 (ϵ 104000); 237 (ϵ 10700); 285 (ϵ 11000) (EtOH) (Berdy).

5-Bromo; hydrochloride: Mp 220-221°. $[\alpha]_D^{25}$ -205 (c, 2.9 in MeOH).

5-Bromo, N^7-*Me:* ***N^7-Methyldibromophakellin***
[697284-90-5]
$C_{12}H_{13}Br_2N_5O$ 403.076
Isol. from an *Agelas* sp. Powder. $[\alpha]_D^{28}$ -19.8 (c, 1.4 in MeOH). λ_{max} 238 (ϵ 6780); 280 (ϵ 5430) (MeOH).

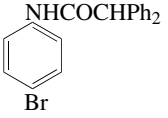
(+)-*form*

5-Bromo: ***(+)-Dibromophakellin***
$C_{11}H_{11}Br_2N_5O$ 389.049
Metab. of the New Caledonian sponge *Pseudaxinyssa cantharella*. Mp 220° dec. $[\alpha]_D^{20}$ +159 (c, 1.55 in MeOH). λ_{max} 233 (ϵ 8880); 281 (ϵ 8810) (MeOH) (Derep).

Sharma, G. *et al., J.O.C.*, 1977, **42**, 4118-4124 (*isol, uv, ir, pmr, cmr, ms, cryst struct*)
Foley, L.H. *et al., J.A.C.S.*, 1982, **104**, 1776-1777 (*synth*)
Utkina, N.K. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1985, **21**, 547-548 (*Dibromophakellin, isol*)
De Nanteuil, G. *et al., Tetrahedron*, 1985, **41**, 6019-6033 (*(+)-Dibromophakellin*)
Gautschi, J.T. *et al., J. Nat. Prod.*, 2004, **67**, 1256-1261 (*N^7-Methylphakellins*)
Atodiresei, I. *et al., Chirality*, 2007, **19**, 542-549 (*Dibromophakellin, electronic cd*)
Wang, S. *et al., Angew. Chem., Int. Ed.*, 2008, **47**, 1284-1286 (*synth*)
Meyer, S.W. *et al., J. Nat. Prod.*, 2008, **71**, 1524-1529 (*pmr, cmr, N-15 nmr*)

N-(4-Bromophenyl)-2,2-diphenylacetamide B-344

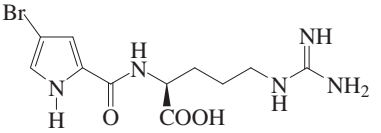
N-*(4-Bromophenyl)-α-phenylbenzeneacetamide, 9CI*. p-*Bromo-α,α-diphenylacetanilide*
[70481-06-0]



$C_{20}H_{16}BrNO$ 366.257
Alkaloid from *Arundo donax*. Needles (EtOAc/petrol). Mp 203-205°.

Stevens, C.L. *et al., J.O.C.*, 1964, **29**, 34 (*synth*)
Miles, D.H. *et al., J. Nat. Prod.*, 1993, **56**, 1590-1593 (*isol, pmr, cryst struct*)

N^2-(4-Bromo-1*H*-pyrrole-2-carbonyl)arginine B-345

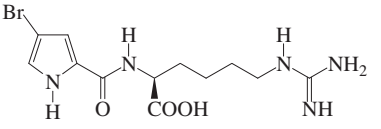


$C_{11}H_{16}BrN_5O_3$ 346.183
Isol. from *Stylissa caribica*. Light yellow oil. $[\alpha]_D^{23}$ -16 (c, 0.25 in MeOH).

Grube, A. *et al., J. Nat. Prod.*, 2006, **69**, 125-127 (*isol, synth, pmr, cmr*)

N^2-(4-Bromo-1*H*-pyrrole-2-carbonyl)homoarginine B-346

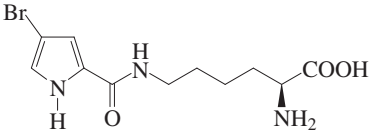
N^6-*(Aminoiminomethyl)*-N^2-*[(4-bromo-1*H*-pyrrol-2-yl)carbonyl]lysine, 9CI*
[242147-75-7]



$C_{12}H_{18}BrN_5O_3$ 360.21
Isol. from *Agelas wiedenmayeri*. λ_{max} 271 (ϵ 11500) (H_2O).

Assmann, M. *et al., Org. Lett.*, 1999, **1**, 455-457 (*isol, struct*)
Lindel, T. *et al., J. Nat. Prod.*, 2000, **63**, 1566-1569 (*synth, uv, ir, pmr, cmr*)

N^6-(4-Bromo-1*H*-pyrrole-2-carbonyl)lysine B-347

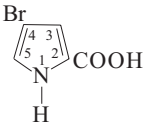


$C_{11}H_{16}BrN_3O_3$ 318.17
Isol. from *Stylissa caribica*. Light yellow oil. $[\alpha]_D^{23}$ +5.2 (c, 0.5 in MeOH).

Grube, A. *et al., J. Nat. Prod.*, 2006, **69**, 125-127 (*isol, synth, pmr, cmr*)

4-Bromo-1*H*-pyrrole-2-carboxylic acid, 9CI B-348

[27746-02-7]



$C_5H_4BrNO_2$ 189.996
Isol. from *Axinella verrucosa*. Mp 160° dec. pK_a 4.06 (25°,H_2O).

Me ester: [934-05-4]
$C_6H_6BrNO_2$ 204.023
Isol. from sponges *Axinella tenuidigitata* and *Lissodendoryx* sp. Mp 106-106.5° (98-99°). Struct. of nat. prod. revised in 1993.

Et ester: [433267-55-1]
$C_7H_8BrNO_2$ 218.05
Solid. Mp 55°.

Amide: [196106-96-4]
$C_5H_5BrN_2O$ 189.011
Isol. from the sponge *Acanthella carteri*. λ_{max} 202 (ϵ 13800); 230 (ϵ 9800); 267 (ϵ 16200) (MeOH).

*(Methoxymethyl)amide: 4-Bromo-*N^2*-methoxymethyl-1*H*-pyrrole-2-carboxamide*
$C_7H_9BrN_2O_2$ 233.064
Alkaloid from *Axinella verrucosa*.

Anderson, H.J. *et al., Can. J. Chem.*, 1965, **43**, 409-414 (*synth*)
Fringuelli, F. *et al., Tetrahedron*, 1969, **25**, 5815-5818 (*synth*)
Bélanger, P. *et al., Tet. Lett.*, 1979, **20**, 2505-2508 (*Me ester*)
Barrow, R.A. *et al., Nat. Prod. Lett.*, 1993, **1**, 243-250 (*Me ester, struct*)
Kitamura, C. *et al., J.C.S. Perkin 1*, 1997, 1443-1447 (*Me ester*)
Mancini, I. *et al., Tet. Lett.*, 1997, **38**, 6271-6274 (*amide, isol, uv, pmr, cmr, ms*)
Reddy, N.S. *et al., Indian J. Chem., Sect. B*, 1999, **38**, 1145-1147 (*Me ester, isol*)
Bergauer, M. *et al., Synthesis*, 2002, 274-278 (*Et ester*)
Aiello, A. *et al., Bioorg. Med. Chem.*, 2006, **14**, 17-24 (*methoxymethylamide, isol*)

5-Bromo-1*H*-pyrrole-2-carboxylic acid, 9CI B-349

[28383-57-5]

$C_5H_4BrNO_2$ 189.996
Mp 138° dec. (block). pK_a 4.17 (25°,H_2O).

Me ester: Methyl 5-bromo-2-pyrrolecarboxylate
[934-07-6]
$C_6H_6BrNO_2$ 204.023
Isol. from the sponge *Lissodendoryx* sp. Cryst. (hexane). Mp 106.5-108°.

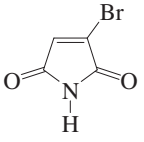
*Amide: 5-Bromo-1*H*-pyrrole-2-carboxamide*
[17543-94-1]
$C_5H_5BrN_2O$ 189.011
Alkaloid from the sponge *Agelas nakamurai*. Needles. Mp 137-139°. λ_{max} 213 (log ϵ 3.47); 268 (log ϵ 3.93) (MeOH).

*(Methoxymethyl)amide: 5-Bromo-*N^2*-(methoxymethyl)-1*H*-pyrrole-2-carboxamide*
[213619-56-8]
$C_7H_9BrN_2O_2$ 233.064
Alkaloid from *Agelas nakamurai*. Amorph. solid. λ_{max} 214 (log ϵ 3.6); 271 (log ϵ 4.05) (MeOH).

Anderson, H.J. *et al., Can. J. Chem.*, 1965, **43**, 409-414 (*synth*)
Hodge, P. *et al., J.C.S.*, 1965, 459-470 (*synth, uv, ir*)
Friguelli, F. *et al., Tetrahedron*, 1969, **25**, 5815-5818 (*synth*)
Schmitz, F.J. *et al., J. Nat. Prod.*, 1985, **48**, 47-53 (*Me ester, isol*)
Iwagawa, T. *et al., J. Nat. Prod.*, 1998, **61**, 1310-1312 (*isol, amides*)

3-Bromo-1*H*-pyrrole-2,5-dione B-350

2-Bromomaleimide
[45514-47-4]



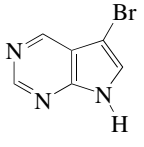
$C_4H_2BrNO_2$ 175.969
Alkaloid from the marine sponge *Axinella brevistyla*. Antifungal and cytotoxic agent. λ_{max} 201 (log ϵ 3.8); 229 (log ϵ 3.7); 245 (sh) (log ϵ 3.5) (MeOH).

N-*Ph:* [72000-67-0]
$C_{10}H_6BrNO_2$ 252.067
Pale yellow solid (EtOH). Mp 150-153°.

Choi, D.S. *et al., J.O.C.*, 1998, **63**, 2646-2655 (*N-Ph, synth*)
Tsukamoto, S. *et al., J. Nat. Prod.*, 2001, **64**, 1576-1578 (*isol, uv, ir, pmr, cmr*)

5-Bromo-7*H*-pyrrolo[2,3-*d*]pyrimidine B-351

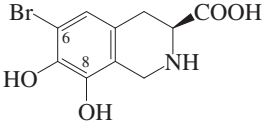
[175791-49-8]



$C_6H_4BrN_3$ 198.022
Isol. from a *Hypnea* sp. Scales. Mp 199-201°. CAS no. refers to 1*H*-form.

Naqvi, S.W.A. *et al., Bot. Mar.*, 1981, **24**, 51-55 (*isol*)
Sakamoto, T. *et al., J.C.S. Perkin 1*, 1996, 459 (*synth, pmr, ir*)

6-Bromo-1,2,3,4-tetrahydro-7,8-dihydroxy-3-isoquinolinecarboxylic acid B-352



$C_{10}H_{10}BrNO_4$ 288.097

(S)-form

7-Me ether: 6-Bromo-1,2,3,4-tetrahydro-8-hydroxy-7-methoxy-3-isoquinolinecarboxylic acid
$C_{11}H_{12}BrNO_4$ 302.124

7-Me ether, Me ester: [929006-62-2]
$C_{12}H_{14}BrNO_4$ 316.151
Alkaloid from *Rhodomela confervoides*. Brown gum. $[\alpha]_D^{20}$ -29 (c, 0.07 in MeOH). λ_{max} 206 (log ϵ 4.53); 275 (log ϵ 3.11) (MeOH).

Ma, M. *et al., J. Nat. Prod.*, 2007, **70**, 337-341 (*isol, pmr, cmr, ms*)

8-Bromo-1,2,3,4-tetrahydro-6,7-dihydroxy-3-isoquinolinecarboxylic acid B-353

$C_{10}H_{10}BrNO_4$ 288.097

(S)-form

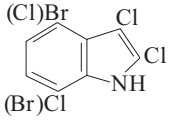
7-Me ether: 8-Bromo-1,2,3,4-tetrahydro-6-hydroxy-7-methoxy-3-isoquinolinecarboxylic acid
[929006-60-0]
$C_{11}H_{12}BrNO_4$ 302.124
Alkaloid from *Rhodomela confervoides*. Powder. $[\alpha]_D^{20}$ -99.1 (c, 0.11 in MeOH). λ_{max} 207 (log ϵ 4.49); 287 (log ϵ 3.41) (MeOH).

7-Me ether, Me ester: [929006-61-1]
$C_{12}H_{14}BrNO_4$ 316.151
Alkaloid from *Rhodomela confervoides*. Brown gum. $[\alpha]_D^{20}$ -49.6 (c, 0.07 in MeOH). λ_{max} 205 (log ϵ 4.56); 282 (log ϵ 3.53) (MeOH).

Ma, M. *et al., J. Nat. Prod.*, 2007, **70**, 337-341 (*isol, pmr, cmr, ms*)

4(7)-Bromo-2,3,7(2,3,4)-trichloro-1*H*-indole, 9CI B-354

[68124-92-5]

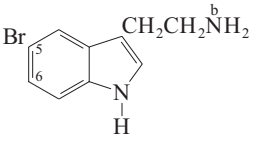


$C_8H_3BrCl_3N$ 299.381
Alkaloid from the marine red alga *Rhodophyllis membranacea*.

Brennan, M.R. *et al., Tet. Lett.*, 1978, 1637-1640 (*isol, pmr, struct*)

5-Bromotryptamine B-355

*5-Bromo-1*H*-indole-3-ethanamine, 9CI. 3-(2-Aminoethyl)-5-bromoindole, 8CI*
[3610-42-2]



$C_{10}H_{11}BrN_2$ 239.114
Radioprotective agent. Tryptophan, T-640 antagonist, 5-Hydroxytryptamine,

H-755 antimetabolite displaying vasoconstrictive and embryotoxic activity. Amber oil. Biosynth. precursor of Eudistomin H, E-288.

Hydrochloride: [81868-12-4]
Cryst. (EtOH/Et_2O) or solid. Mp 288-289° (286-287°).

N-*Ac:*
$C_{12}H_{13}BrN_2O$ 281.151
Solid. Mp 153.4-153.8°.

N^b-*Hydroxy: 5-Bromo-*N-*hydroxy-1*H-*indole-3-ethanamine. 5-Bromo-*N′-*hydroxytryptamine*
[123475-32-1]
$C_{10}H_{11}BrN_2O$ 255.114
Pale beige resinous material.

N^b,N^b-*Di-Me:* ***5-Bromo-*N^b*,*N^b*-dimethyltryptamine***. *5-Bromo-*N,N*-dimethyl-1*H*-indole-3-ethanamine, 9CI. 5-Bromo-3-(2-dimethylaminoethyl)indole*
[17274-65-6]
$C_{12}H_{15}BrN_2$ 267.168
Metab. of the marine sponge *Smenospongia aurea* and from *Polyfibrospongia echina*. Major alkaloid from the New Caledonian ascidian *Eudistoma fragum*. Antimicrobial compd. Cryst. (MeOH aq.). Sol. MeOH, EtOAc; poorly sol. H_2O. Mp 98-99° (90-92°). λ_{max} 225 (ϵ 39000); 285 (ϵ 4400); 305 (ϵ 2700) (MeOH) (Derep). λ_{max} 227 (ϵ 24000); 282 (ϵ 5500); 290 (ϵ 7943); 300 (ϵ 5012) (EtOH) (Berdy).

Quadbeck, G. *et al., Hoppe-Seyler's Z. Physiol. Chem.*, 1954, **297**, 229; *CA*, **51**, 15795i (*pharmacol*)
Ho, B.-T. *et al., J. Pharm. Sci.*, 1969, **58**, 563 (*pharmacol*)
Djura, P. *et al., J.O.C.*, 1980, **45**, 1435-1441 (*5-Bromo-N,N-dimethyltryptamine, isol, uv, ir, pmr, cmr, struct*)
Landau, M.A. *et al., Comp. Biochem. Physiol., C: Comp. Pharmacol.*, 1981, **69**, 359 (*tox*)
Tymiak, A.A. *et al., Tetrahedron*, 1985, **41**, 1039-1047 (*5-Bromo-N,N-dimethyltryptamine, isol, uv, ir, pmr, ms, synth*)
Kennaway, D.J. *et al., Aust. J. Biol. Sci.*, 1988, **41**, 393 (*synth*)
Debitus, C. *et al., J. Nat. Prod.*, 1988, **51**, 799-801 (*5-Bromo-N,N-dimethyltryptamine, isol, uv, pmr, cmr, ms*)
Still, I.W. *et al., Can. J. Chem.*, 1990, **68**, 1408-1419 (*synth, ir, pmr, cmr, ms*)
Shen, G.Q. *et al., Tet. Lett.*, 1994, **35**, 4923-4926 (*biochem*)
Somei, M. *et al., Heterocycles*, 1995, **40**, 119-122 (*synth, 5-Bromo-N,N-dimethyltryptamine*)

6-Bromotryptamine B-356

*6-Bromo-1*H*-indole-3-ethanamine, 9CI. 3-(2-Aminoethyl)-6-bromoindole*
[96624-18-9]
$C_{10}H_{11}BrN_2$ 239.114
Alkaloid from the encrusting grey marine tunicate *Didemnum candidum*. Mp 120-120.5°. λ_{max} 225 (ϵ 15800); 286 (ϵ 3100); 294 (ϵ 2700) (MeOH) (Berdy).

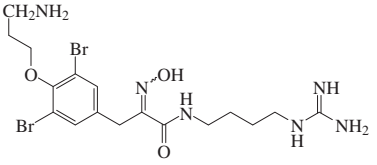
Hydrochloride: [108061-77-4]
Mp 215-217° dec.

N^b-*Me,* N^b-*formyl:* ***6-Bromo-*N^b*-formyl-*N^b*-methyltryptamine***. N-*[2-(6-Bromo-1*H*-indol-3-yl)ethyl]*-N-*methylformamide, 9CI*
[82503-95-5]
$C_{12}H_{13}BrN_2O$ 281.151
Alkaloid from the marine bryozoan *Flustra foliacea*. Amorph. solid. Shows restricted C–N bond rotn.

N^a-*(3-Methyl-2-butenyl),* N^b-*Me:* ***6-Bromo-*N^b*-methyl-*N^a*-prenyltryptamine***. *Deformylflustrabromine B*
$C_{16}H_{21}BrN_2$ 321.259
Alkaloid from *Flustra foliacea*. Yellow oil. λ_{max} 230 (log ϵ 4.1); 291 (log ϵ 3.3) (MeOH).

Wulff, P. *et al., Comp. Biochem. Physiol., B: Comp. Biochem.*, 1982, **71**, 523-524 (*N^b-Me N^b-formyl, isol, pmr, ms, struct*)
Groen, C. *et al., Acta Chem. Scand., Ser. B*, 1984, **38**, 709-711 (*synth, pmr, cmr, ir, uv*)
Rinehart, K.L. *et al., J.A.C.S.*, 1987, **109**, 3378-3387 (*synth, hplc, pmr, cmr, ms, uv, ir*)
Fahy, E. *et al., J. Nat. Prod.*, 1991, **54**, 564-569 (*isol, pmr, cmr*)
Peters, L. *et al., Planta Med.*, 2004, **70**, 883-886 (*Bromomethylprenyltryptamine*)

Oceanapia Bromotyrosine alkaloid B-357

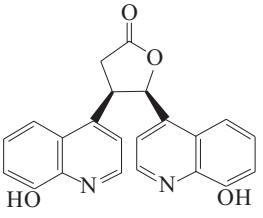


$C_{17}H_{26}Br_2N_6O_3$ 522.239
Isol. from the sponge *Oceanapia* sp. Inhibitor of mycothiol S-conjugate amidase. Related to Purealidin H, P-811.

Nicholas, G.M. *et al., Org. Lett.*, 2001, **3**, 1543-1545 (*isol, pmr, cmr*)
Kende, A.S. *et al., Tet. Lett.*, 2004, **45**, 133-135 (*synth*)
Chanda, B.M. *et al., Tet. Lett.*, 2005, **46**, 6461-6463 (*synth*)

Broussonetine B-358

*Dihydro-4,5-bis(8-hydroxy-4-quinolinyl)-2(3*H*)-furanone, 9CI. 3,4-Bis(8-hydroxy-4-quinolinyl)-γ-butyrolactone*
[92664-84-1]



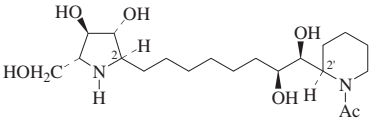
$C_{22}H_{16}N_2O_4$ 372.379
Alkaloid from the wood of *Broussonetia zeylanica* (Moraceae). Cryst. ($CHCl_3$). Mp 238-239°. $[\alpha]_D$ 0 (c, 0.11 in DMF).

Di-Ac:
Cryst. (C_6H_6/petrol). Mp 162-163°.

Gunatilaka, A.A. *et al., Phytochemistry*, 1984, **23**, 929 (*isol, uv, ir, pmr, cmr, ms, struct*)

Broussonetine I B-359

[215117-10-5]



$C_{20}H_{38}N_2O_6$ 402.53
Alkaloid from *Broussonetia kazinoki*. Oil. $[\alpha]_D$ +2.9 (c, 0.26 in MeOH).

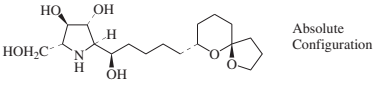
N^1-*Ac:* ***Broussonetine J***
[215117-17-2]
$C_{22}H_{40}N_2O_7$ 444.567
Alkaloid from *Broussonetia kazinoki*. Oil. $[\alpha]_D$ +2.1 (c, 0.7 in MeOH).

N-*De-Ac:* ***Broussonetine J$_2$***
$C_{18}H_{36}N_2O_5$ 360.493
Alkaloid from *Broussonetia kazinoki*. Oil. $[\alpha]_D$ +13.8 (c, 0.42 in MeOH).

N-*De-Ac,* N^1-*Ac:* ***Broussonetine J$_1$***
$C_{20}H_{38}N_2O_6$ 402.53
Alkaloid from *Broussonetia kazinoki*. Oil. $[\alpha]_D$ -17.5 (c, 0.3 in MeOH).

Shibano, M. *et al., Chem. Pharm. Bull.*, 1998, **46**, 1416-1420 (*isol, ir, pmr, cmr*)
Tsukamoto, D. *et al., Chem. Pharm. Bull.*, 2001, **49**, 1487-1491 (*Broussonetines J$_1$,J$_2$*)
Shibano, M. *et al., Heterocycles*, 2002, **57**, 1539-1553 (*biosynth*)

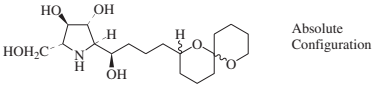
Broussonetine G B-360



$C_{18}H_{33}NO_6$ 359.462
Alkaloid from *Broussonetia kazinoki*. Glycosidase inhibitor. Oil. $[\alpha]_D$ +17.5 (c, 0.4 in MeOH).

Shibano, M. *et al., Chem. Pharm. Bull.*, 1998, **46**, 1048-1050 (*isol, ir, pmr, cmr, ms*)
Trost, B.M. *et al., Chem. Eur. J.*, 2006, **12**, 6607-6620 (*synth, abs config*)

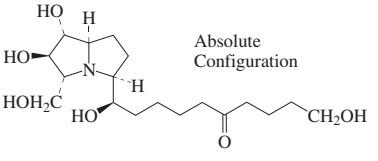
Broussonetine H B-361



$C_{18}H_{33}NO_6$ 359.462
Alkaloid from *Broussonetia kazinoki*. Glycosidase inhibitor. Oil. $[\alpha]_D$ +15.5 (c, 0.5 in MeOH).

Shibano, M. *et al., Chem. Pharm. Bull.*, 1998, **46**, 1048-1050 (*isol, ir, pmr, cmr, ms*)

Broussonetine N B-362

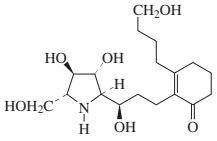


$C_{18}H_{33}NO_6$ 359.462

Alkaloid from *Broussonetia kazinoki*. Glycosidase inhibitor. Oil. $[\alpha]_D$ +5.4 (c, 0.17 in MeOH).

Shibano, M. *et al., Chem. Pharm. Bull.*, 1999, **47**, 907-908

Broussonetine R B-363

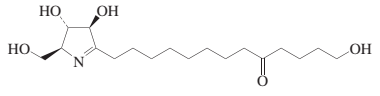


Absolute Configuration

$C_{18}H_{31}NO_6$ 357.446
Alkaloid from *Broussonetia kazinoki*. Oil. $[\alpha]_D$ +21.8 (c, 0.27 in MeOH). λ_{max} 247 (log ϵ 3.98) (MeOH).

Tsukamoto, D. *et al., Chem. Pharm. Bull.*, 2001, **49**, 492-496

Broussonetine U B-364



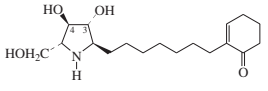
Absolute Configuration

$C_{18}H_{33}NO_5$ 343.462
Alkaloid from *Broussonetia kazinoki*. Oil. $[\alpha]_D$ -33.3 (c, 0.2 in MeOH).

Tsukamoto, D. *et al., Chem. Pharm. Bull.*, 2001, **49**, 492-496 (*isol, pmr, cmr*)

Broussonetine W B-365

[386702-83-6]



Absolute Configuration

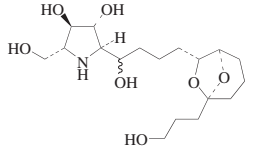
$C_{18}H_{31}NO_4$ 325.447
Alkaloid from *Broussonetia kazinoki*. Oil. $[\alpha]_D$ +16 (c, 0.07 in MeOH). λ_{max} 236 (log ϵ 3.59) (MeOH).

4-Epimer, 3-O-*β-D-glucopyranoside:* ***Broussonetine X***
[386702-84-7]
$C_{24}H_{41}NO_9$ 487.589
Alkaloid from *Broussonetia kazinoki*. Oil. $[\alpha]_D$ +13.7 (c, 0.51 in MeOH). λ_{max} 236 (log ϵ 3.96) (MeOH).

Tsukamoto, D. *et al., Chem. Pharm. Bull.*, 2001, **49**, 1487-1491

Broussonetine Z B-366

[647025-61-4]



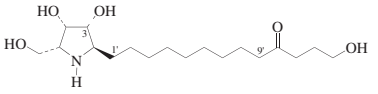
Relative Configuration

$C_{18}H_{33}NO_7$ 375.461
Alkaloid from the branches of *Broussonetia kazinoki*. $[\alpha]_D^{25}$ +25.9 (c, 0.57 in MeOH).

Tsukamoto, D. *et al., Nat. Med. (Tokyo)*, 2003, **57**, 68-72 (*isol, pmr, cmr*)

Broussonetinine A B-367

[173220-06-9]



$C_{18}H_{35}NO_5$ 345.478
Alkaloid from *Broussonetia kazinoki* (Moraceae). Inhibits glycosidases. Powder. Mp 126-128°. $[\alpha]_D$ +25.8 (c, 0.6 in MeOH).

3-O-*β-D-Glucopyranoside:* ***Broussonetine A***
[173220-07-0]
$C_{24}H_{45}NO_{10}$ 507.62
Alkaloid from *Broussonetia kazinoki* (Moraceae). Powder. Mp 164-166°. $[\alpha]_D$ +32.1 (c, 0.2 in MeOH).

4,13′-Di-O-*β-D-glucopyranoside:* ***Broussonetine Q***
$C_{30}H_{55}NO_{15}$ 669.762
Alkaloid from *Broussonetia kazinoki*. Powder. $[\alpha]_D$ +8.8 (c, 0.25 in MeOH).

10′-Deoxo, 9′-oxo: ***Broussonetinine B***
[190317-93-2]
$C_{18}H_{35}NO_5$ 345.478
Alkaloid from *Broussonetia kazinoki* (Moraceae). Inhibits glycosidases. Powder. Mp 128-130°. $[\alpha]_D$ +15.3 (c, 0.3 in MeOH).

10′-Deoxo, 9′-oxo, 3-O-*β-D-glucopyranoside:* ***Broussonetine B***
[190317-46-5]
$C_{24}H_{45}NO_{10}$ 507.62
Alkaloid from *Broussonetia kazinoki* (Moraceae). Powder. Mp 154-156°. $[\alpha]_D$ +29.8 (c, 0.4 in MeOH).

*10′-Deoxo, 9′-oxo, 3′,4′-didehydro(*E-*):* ***Broussonetine V***
$C_{18}H_{33}NO_5$ 343.462
Alkaloid from *Broussonetia kazinoki*. Powder. $[\alpha]_D$ +10.9 (c, 0.09 in MeOH).

4-Epimer: ***Broussonetine C***
[173727-05-4]
$C_{18}H_{35}NO_5$ 345.478
Alkaloid from *Broussonetia kazinoki*. Powder. Mp 147-149°. $[\alpha]_D$ +32 (c, 0.96 in MeOH) (+25).

*4-Epimer, 10′*S*-alcohol:* ***Broussonetine M***
$C_{18}H_{37}NO_5$ 347.494
Alkaloid from *Broussonetia kazinoki*. Powder. $[\alpha]_D$ +5.9 (c, 0.3 in MeOH).

*4-Epimer, 3′,4′-didehydro(*E-*):* ***Broussonetine O***
$C_{18}H_{33}NO_5$ 343.462
Alkaloid from *Broussonetia kazinoki*. Powder. $[\alpha]_D$ +22.7 (c, 0.37 in MeOH).

4-Epimer, 10′-deoxo, 9′-oxo: ***Broussonetine D***
[173220-08-1]
$C_{18}H_{35}NO_5$ 345.478
Alkaloid from *Broussonetia kazinoki*. Powder. Mp 136-138°. $[\alpha]_D$ +22.9 (c, 0.31 in MeOH).

*4-Epimer, 10′-deoxo, 9′-oxo, 3′,4′-didehydro(*E-*):* ***Broussonetine P***
$C_{18}H_{33}NO_5$ 343.462
Alkaloid from *Broussonetia kazinoki*. Powder. $[\alpha]_D$ +28.8 (c, 0.96 in MeOH).

*4-Epimer, 1′*R*-hydroxy:* ***Broussonetine E***
[190317-56-7]
$C_{18}H_{35}NO_6$ 361.478
Alkaloid from *Broussonetia kazinoki* (Moraceae). Powder. Mp 103-105°. $[\alpha]_D$ +4.9 (c, 1 in MeOH).

*4-Epimer, 1′*R*-hydroxy, 13′*-O-*β-D-glucopyranoside:* ***Broussonetine K***
[230285-77-5]
$C_{24}H_{45}NO_{11}$ 523.62
Alkaloid from *Broussonetia kazinoki*. β-Glucosidase inhibitor. Powder. $[\alpha]_D^{25}$ +20.1 (c, 0.26 in MeOH).

*4-Epimer, 1′*R*-hydroxy, 10′*S*-alcohol:* ***Broussonetine S***
$C_{18}H_{37}NO_6$ 363.493
Alkaloid from *Broussonetia kazinoki*. Powder. $[\alpha]_D$ +25.1 (c, 0.18 in MeOH).

*4-Epimer, 1′*R*-hydroxy, 10′-deoxo, 9′-oxo:* ***Broussonetine F***
[190317-57-8]
$C_{18}H_{35}NO_6$ 361.478
Alkaloid from *Broussonetia kazinoki* (Moraceae). Powder. Mp 105-107°. $[\alpha]_D$ +13.5 (c, 0.9 in MeOH).

*4-Epimer, 1′*R*-hydroxy, 10′-deoxo, 9′-oxo, 13′*-O-*β-D-glucopyranoside:* ***Broussonetine L***
[230285-78-6]
$C_{24}H_{45}NO_{11}$ 523.62
Alkaloid from *Broussonetia kazinoki*. β-Glucosidase inhibitor. Powder. $[\alpha]_D^{25}$ +21.3 (c, 0.56 in MeOH).

*4-Epimer, 9′*R*-hydroxy, 10′*R*-alcohol:* ***Broussonetine Y***
[647025-60-3]
$C_{18}H_{37}NO_6$ 363.493
Alkaloid from *Broussonetia kazinoki*. $[\alpha]_D^{25}$ +32.5 (c, 0.16 in MeOH).

*4-Epimer, 9′*R*-hydroxy, 10′-deoxo:* ***Broussonetine M_1***
$C_{18}H_{37}NO_5$ 347.494
Alkaloid from *Broussonetia kazinoki*. Powder. $[\alpha]_D$ +18.3 (c, 0.56 in MeOH).

*4-Epimer, 1′*R*,5′*S*-dihydroxy:* ***Broussonetine T***
$C_{18}H_{35}NO_7$ 377.477
Alkaloid from *Broussonetia kazinoki*. Oil. $[\alpha]_D$ +11 (c, 0.49 in MeOH).

*4-Epimer, 1′*R*,5′ξ,7′ξ,12′ξ-tetrahydroxy, 10′-deoxo: 3,4-Dihydroxy-2-(hydroxymethyl)-5-(1,5,7,12,13-pentahydroxytridecyl)pyrrolidine*
[710948-63-3]
$C_{18}H_{37}NO_8$ 395.492
Alkaloid from the bulbs of *Scilla peruviana*. Glucosidase inhibitor. Syrup. $[\alpha]_D$ +20.5 (c, 0.65 in H_2O).

3,5-Diepimer, 1,2-didehydro: ***Broussonetine U_1***
$C_{18}H_{33}NO_5$ 343.462
Alkaloid from *Broussonetia kazinoki*. Powder. $[\alpha]_D$ -30.2 (c, 0.09 in MeOH).

Shibano, M. *et al., Chem. Pharm. Bull.*, 1997, **45**, 505-508; 700-705; 1998, **46**, 1048-1050; 1416-1420; 1999, **47**, 472-476; 907-908; 2000, **48**, 1281-1285 (*isol, ir, pmr, cmr, abs config, activity*)

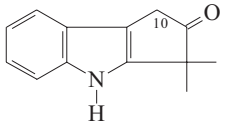
Yoda, H. *et al., Tet. Lett.*, 1999, **40**, 1335-1336 (*Broussonetine C, synth*)

Tsukamoto, D. *et al., Chem. Pharm. Bull.*, 2001, **49**, 492-496; 1487-1491 (*Broussonetines S,T,V,M_1,U_1*)

Shibano, M. *et al., Heterocycles*, 2002, **57**, 1539-1553 (*biosynth*)
Perlmutter, P. *et al., J. Carbohydr. Chem.*, 2003, **22**, 719-732 (*Broussonetine C, synth, pmr, cmr*)
Asano, N. *et al., J. Nat. Prod.*, 2004, **67**, 846-850 (*Scilla peruviana constit*)
Tsukamoto, D. *et al., Nat. Med. (Tokyo)*, 2004, **57**, 68-72 (*Broussonetine Y*)

Bruceolline D B-368

[66278-53-3]



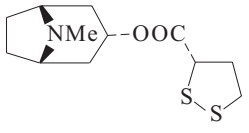
$C_{13}H_{13}NO$ 199.252
Alkaloid from root wood of *Brucea mollis* var. *tonkinensis* (Simaroubaceae). Needles (MeOH). Mp 160-162° dec.

10-Oxo: ***Bruceolline E***
[159903-54-5]
$C_{13}H_{11}NO_2$ 213.235
Alkaloid from root wood of *Brucea mollis* var. *tonkinensis* (Simaroubaceae). Pale yellow needles (MeOH). Mp 289-291° dec.

Ouyang, Y. *et al., Phytochemistry*, 1994, **37**, 575 (*isol, uv, ir, pmr, cmr, ms, struct*)

Brugine B-369

8-Methyl-8-azabicyclo[3.2.1]oct-3-yl 1,2-dithiolane-3-carboxylate, 9CI
[14912-30-2]



$C_{12}H_{19}NO_2S_2$ 273.42
Alkaloid from *Bruguiera sexangula*, *Bruguiera cylindrica* and *Crossostylis multiflora* (Rhizophoraceae). Noncryst. $[\alpha]_D^{24}$ -24 ($CHCl_3$). $[\alpha]_D^{24}$ +265 (EtOH).

Loder, J.W. *et al., Aust. J. Chem.*, 1969, **22**, 1271 (*isol, struct, ms, pmr, ord*)
Kato, A. *et al., Phytochemistry*, 1975, **14**, 1458 (*isol*)
Gnecco Medina, D.H. *et al., J. Nat. Prod.*, 1983, **46**, 398 (*isol*)

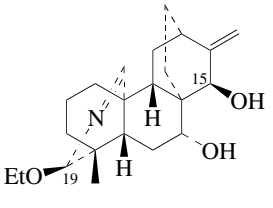
Brunfelsine B-370

Struct. unknown. Alkaloid from roots of *Brunfelsia hopeana* (Solanaceae).

Costa, O. de A. *et al., Bol. Assoc. Bras. Pharm.*, 1933, **14**, 295-299; *CA*, **27**, 5889

Brunonine B-371

[106982-88-1]



$C_{22}H_{33}NO_3$ 359.508
Alkaloid from the whole plant of *Delphinium brunonianum* (Ranunculaceae). Mp 208-209°. $[\alpha]_D^{21}$ +174 (c, 0.067 in EtOH).

15-Epimer: ***Spiramine N***
[137760-60-2]
$C_{22}H_{33}NO_3$ 359.508
Alkaloid from the roots of *Spiraea japonica* var. *acuminata* (Rosaceae). $[\alpha]_D^{20}$ +44.4 (c, 1 in $CHCl_3$). Has (*R*)-config. at C-19.

15-Epimer, O*-de-Et:* ***19-O-Deethylspiramine N***
$C_{20}H_{29}NO_3$ 331.454
Alkaloid from *Spiraea japonica* var. *ovalifolia*. Amorph. $[\alpha]_D^{23}$ +18 (c, 0.26 in MeOH).

15-Epimer, O*-de-Et,* O*^{19}-Me:* ***Spiramine O***
[137760-61-3]
$C_{21}H_{31}NO_3$ 345.481
Alkaloid from roots of *Spiraea japonica* var. *acuminata* (Rosaceae).

Deng, W. *et al., Heterocycles*, 1986, **24**, 869 (*pmr, cmr, struct*)
Hao, X. *et al., Chin. Chem. Lett.*, 1992, **3**, 427-430 (*Spiramine N*)
Hao, X.-J. *et al., Yunnan Zhiwu Yanjiu*, 1994, **16**, 301; *CA*, **122**, 101603s (*Spiramine O*)
Zuo, G.Y. *et al., Heterocycles*, 2001, **55**, 487-493 (*O-Deethylspiramine N*)

Brunsdonnine B-372

[1354-80-9]

$C_{18}H_{21}NO_5$ 331.368

Amaryllidaceae alkaloid. Struct. unknown. Isol. from the bulbs of *Brunsdonna tubergenii* (Amaryllidaceae). Cryst. (Me_2CO/MeOH). Mp 253°. $[\alpha]_D^{23}$ +75 (c, 0.2 in $CHCl_3$).

Hydroiodide: Mp 248° dec.

Perchlorate: Mp 232° dec.

Methiodide: Mp 280-281° dec.

Boit, H.-G. *et al., Naturwissenschaften*, 1960, **47**, 159 (*isol*)

Brunsvinine B-373

[1354-82-1]

$C_{17}H_{19}NO_4$ 301.341

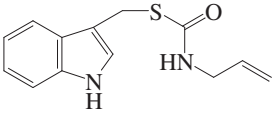
Amaryllidaceae alkaloid. Struct. unknown. Isol. from the bulbs of *Brunsvigia cooperi* (Amaryllidaceae). Mp 202°.

Picrate: Mp 67-69°.

Dry, L.J. *et al., J.C.S.*, 1958, 4701-4704 (*isol*)

Brussalexin A B-374

S-*(1*H*-Indol-3-ylmethyl) 2-propenylthiocarbamate.* S-*(1*H*-Indol-3-ylmethyl) allylthiocarbamate*
[940005-53-8]

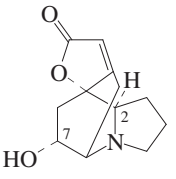


$C_{13}H_{14}N_2OS$ 246.332
Constit. of *Brassica oleracea* var. *gemmifera* (Brussels sprouts). Phytoalexin. Antifungal agent.

Pedras, M.S.C. *et al., Org. Biomol. Chem.*, 2007, **5**, 1167-1169 (*isol, synth, pmr, cmr*)

Bubbialine B-375

Bubbialidine
[138230-52-1 , 138230-51-0]



Relative Configuration

$C_{12}H_{15}NO_3$ 221.255
Bubbialine was the (+)-form and Bubbialidine the (-)-form.

(+)-form [131989-89-4]
Alkaloid from the leaves of *Zygogynum pauciflorum* (Winteraceae). Cryst. (Et_2O). Mp 144-145°. $[\alpha]_D$ +129 (c, 1 in MeOH).

2-Epimer: ***Epibubbialine****. Prenirurine*
[182209-98-9]
[138230-52-1]
$C_{12}H_{15}NO_3$ 221.255
Alkaloid from *Phyllanthus amarus*. Cryst. powder. Mp 107-108°. $[\alpha]_D$ -14.5.

7-Epimer: ***Isobubbialine***
[182209-97-8]
$C_{12}H_{15}NO_3$ 221.255
Alkaloid from *Phyllanthus amarus*. Cryst. powder. Mp 112-113°. $[\alpha]_D$ +11.7.

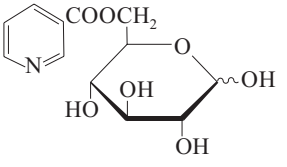
2,7-Diepimer: ***Niruroidine***
[175777-84-1]
$C_{12}H_{15}NO_3$ 221.255
Alkaloid from *Phyllanthus niruroides*. Amorph. solid.

(-)-form [132075-02-6]
Alkaloid from *Zygogynum pauciflorum*. Amorph. $[\alpha]_D$ -85 (c, 1.47 in MeOH).

Ahond, A. *et al., J. Nat. Prod.*, 1990, **53**, 875-881 (*isol, uv, ir, pmr, cmr, ms, cd, struct*)
Magnus, P. *et al., Tetrahedron*, 1993, **49**, 8059-8072 (*synth, pmr, cmr*)
Babady-Bida, *et al., Phytochemistry*, 1996, **41**, 1441-1443 (*Niruroidine*)
Houghton, P.J. *et al., Phytochemistry*, 1996, **43**, 715-717 (*Epibubbialine, Isobubbialine*)

Buchananine B-376

6-O-*Nicotinoyl-*α*-D-glucopyranose*
[70802-12-9]



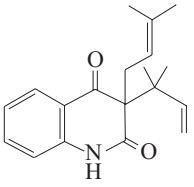
$C_{12}H_{15}NO_7$ 285.253
Alkaloid from the stems of *Cryptolepis buchanani* (Asclepiadaceae). *C. buchanani* has been used in Indian medicine for treatment of rickets. Cryst. (MeOH aq.). Mp 137-138°. $[\alpha]_D^{20}$ +38.4 (c, 3.08 in H_2O). λ_{max} 221 (ε 8510); 258 (sh) (ε 2690); 262 (ε 2820); 271 (sh) (ε 2340) (EtOH) (Derep).

Dutta, S.K. *et al., Phytochemistry*, 1978, **17**, 2047 (*uv, ir, pmr, ms, isol, struct*)

Buchapine **B-377**

*3-(1,1-Dimethyl-2-propenyl)-3-(3-methyl-2-butenyl)-2,4(1*H*,3*H*)-quinolinedione, 9CI. 3-(1,1-Dimethylallyl)-3-(3,3-dimethylallyl)-1,2,3,4-tetrahydro-2,4-quinolinedione*

[84017-97-0]



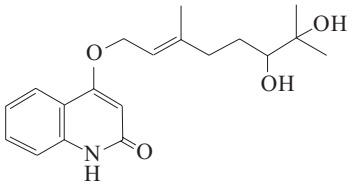
$C_{19}H_{23}NO_2$ 297.396

Alkaloid from the aerial parts of *Haplophyllum bucharicum* and from *Haplophyllum tuberculatum* (Rutaceae). Also isol. from *Evodia roxburghiana*. Exhibits modest anti-HIV activity against HIV-1 in cultured human lymphoblastoid CEM-SS cells. Mp 134-135° (121-123°).

Nesmelova, E.F. *et al., Khim. Prir. Soedin.*, 1982, **18**, 532; *Chem. Nat. Compd. (Engl. Transl.)*, 1982, **18**, 507 (*isol, struct*)
Bellino, A. *et al., Heterocycles*, 1986, **24**, 1821 (*synth, pmr*)
Sheriha, G.M. *et al., Phytochemistry*, 1987, **26**, 3339 (*isol, uv, ir, pmr, cmr, ms, struct*)
McCormick, J.L. *et al., J. Nat. Prod.*, 1996, **59**, 469 (*isol*)

Bucharaine **B-378**

[21059-47-2]



$C_{19}H_{25}NO_4$ 331.411

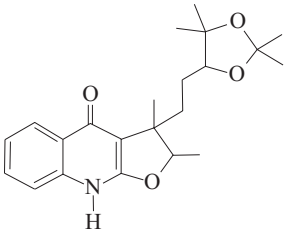
Alkaloid from *Haplophyllum bucharicum* (Rutaceae). Mp 151-152°.

N-*Me:* Mp 142-143°.

Fayzutdinova, Z.Sh. *et al., Khim. Prir. Soedin.*, 1970, **6**, 239; *Chem. Nat. Compd. (Engl. Transl.)*, 1970, **6**, 232
Grundon, M.F. *et al., Alkaloids (Academic Press)*, 1979, **17**, 173 (*rev*)
Grundon, M.F. *et al., J.C.S. Perkin 1*, 1981, 633 (*synth*)

Bucharamine **B-379**

[38485-09-5]



$C_{22}H_{29}NO_4$ 371.475

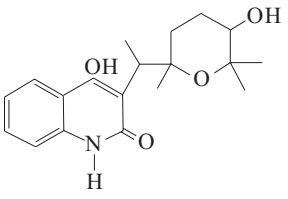
Alkaloid from *Haplophyllum bucharicum* (Rutaceae). Cryst. (Me_2CO). Mp 223°. Presumably artifact arising from Me_2CO during cryst.

Ubaidullaev, K. *et al., Khim. Prir. Soedin.*, 1972, 343; *Chem. Nat. Compd. (Engl. Transl.)*, 337 (*isol, uv, ms, struct*)

Bucharidine **B-380**

*4-Hydroxy-3-[1-(tetrahydro-5-hydroxy-2,6,6-trimethyl-2*H*-pyran-2-yl)ethyl]-2(1*H*)-quinolinone, 9CI*

[25865-94-5]



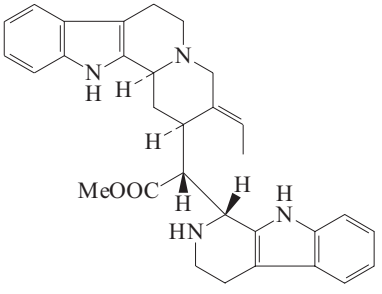
$C_{19}H_{25}NO_4$ 331.411

Alkaloid from *Haplophyllum bucharicum* (Rutaceae). Mp 251-252°.

Faizutdinova, Z.S. *et al., Khim. Prir. Soedin.*, 1969, **5**, 455; 1970, **6**, 239; *Chem. Nat. Compd. (Engl. Transl.)*, 1969, **5**, 380; 1970, **6**, 232 (*synth*)

Buchtienine **B-381**

[167875-14-1]



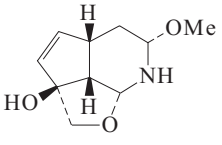
$C_{31}H_{34}N_4O_2$ 494.635

Alkaloid from stem bark of *Peschiera buchtieni* (Apocynaceae).

Azoug, M. *et al., Phytochemistry*, 1995, **39**, 1223 (*isol, uv, ir, pmr, cmr, ms, struct*)

Buddamine **B-382**

[98260-41-4]



$C_{10}H_{15}NO_3$ 197.233

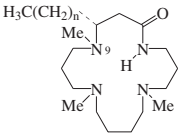
Alkaloid from the aerial parts of *Buddleia davidii* (Buddlejaceae). Cryst. (Me_2CO/MeOH/petrol). Mp 112°. Prob. artifact. Prev. reported as $C_{10}H_{15}NO_5$ with incorr. struct.

Röder, E. *et al., Planta Med.*, 1985, 164 (*isol, ir, pmr, cmr, ms*)
Stermitz, F.R. *et al., Tet. Lett.*, 1985, **26**, 5251 (*struct*)

Budmunchiamine A **B-383**

1,9,13-Trimethyl-8-undecyl-1,5,9,13-tetraazacycloheptadecan-6-one, 9CI

[139750-76-8]



Absolute Configuration

n = 10

$C_{27}H_{56}N_4O$ 452.766

Alkaloid from the seeds of *Albizzia amara* (Fabaceae). Yellow oil. $[\alpha]_D$ -16.3 (c, 1 in $CHCl_3$).

N^9-*De-Me:* ***Budmunchiamine F***

[143051-87-0]

$C_{26}H_{54}N_4O$ 438.739

Isol. from seeds of *Albizzia amara*. Yellowish solid. $[\alpha]_D$ -6.2 (c, 1 in MeOH). Obt. as inseparable mixt. with Budmunchiamine G to which props. refer.

8′-Oxo, N^1,N^9,N^{13}*-tri-de-Me:* ***Budmunchiamine L3***

[165467-48-1]

$C_{24}H_{48}N_4O_2$ 424.669

Isol. from seeds of *Albizzia lebbek*. Viscous liq.

Pezzuto, J.M. *et al., Heterocycles*, 1991, **32**, 1961 (*isol*)
Mar, W. *et al., J. Nat. Prod.*, 1991, **54**, 1531 (*props*)
Pezzuto, J.M. *et al., Phytochemistry*, 1992, **31**, 1795 (*Budmunchiamine F*)
Misra, L.N. *et al., Phytochemistry*, 1995, **39**, 247 (*Budmunchiamine L3*)
Popaj, K. *et al., Helv. Chim. Acta*, 2001, **84**, 180-186 (*synth*)
Detterbeck, R. *et al., Helv. Chim. Acta*, 2002, **85**, 1742-1748 (*synth, pmr, cmr, abs config*)

Budmunchiamine B **B-384**

1,9,13-Trimethyl-8-nonyl-1,5,9,13-tetraazacycloheptadecan-6-one, 9CI

[139750-77-9]

As Budmunchiamine A, B-383 with n = 8

$C_{25}H_{52}N_4O$ 424.712

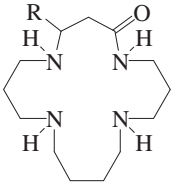
Alkaloid from the seeds of *Albizzia amara* (Fabaceae).

Pezzuto, J.M. *et al., Heterocycles*, 1991, **32**, 1961 (*isol*)
Popaj, K. *et al., Helv. Chim. Acta*, 2001, **84**, 180-186 (*synth*)

Budmunchiamine L1 **B-385**

8-Hexadecyl-1,5,9,13-tetraazacycloheptadecan-6-one, 9CI

[165561-01-3]



R = $-(CH_2)_{15}\overset{16'}{C}H_3$

$C_{29}H_{60}N_4O$ 480.819

Isol. as an inseparable mixt. with Budmunchiamine L2, B-386, to which props. refer. Alkaloid from seeds of *Albizzia lebbek*. Viscous liq.

16′-Hydroxy: ***Budmunchiamine L4†***
[195734-28-2]
$C_{29}H_{60}N_4O_2$ 496.819
Alkaloid from the seeds of *Albizia lebbek*. Viscous liq. $[\alpha]_D^{27}$ +13.5 (c, 0.02 in MeOH). Not to be confused with Budmunchiamine L4, B-387. The same name has been applied to two different homologues. λ_{max} 208 (log ϵ 4.01) (MeOH).

Misra, L.N. *et al., Phytochemistry*, 1995, **39**, 247-249 (*Budmunchiamine L1, isol, ir, pmr, cmr, ms, struct*)
Dixit, A.K. *et al., J. Nat. Prod.*, 1997, **60**, 1036-1037 (*Budmunchiamine L4*)

Budmunchiamine L2 B-386

8-Tetradecyl-1,5,9,13-tetraazacycloheptadecan-6-one
[165467-47-0]
As Budmunchiamine L1, B-385 with R = -$^{1'}CH_2(CH_2)_{12}^{14'}CH_3$

$C_{27}H_{56}N_4O$ 452.766

Isol. as an inseparable mixt. with Budmunchiamine L1, B-385, to which props. refer. Alkaloid from seeds of *Albizzia lebbek*. Viscous liq.

5′,6′Z,8′,9′Z,11′,12′Z-Hexadehydro: 8-(5,8,11-Tetradecatrienyl)-1,5,9,13-tetraazacycloheptadecan-6-one. ***Felipealbizine A***
[288094-80-4]
$C_{27}H_{50}N_4O$ 446.718
Alkaloid from the leaves of *Albizzia inopinata*.

Misra, L.N. *et al., Phytochemistry*, 1995, **39**, 247-249 (*Budmunchiamine L2, isol, ir, pmr, cmr, ms*)
Simoes de Assis, T. *et al., CA*, 2000, **133**, 168223p (*Felipealbizine A*)

Budmunchiamine L4† B-387

8-Tridecyl-1,5,9,13-tetraazacycloheptadecan-6-one, 9CI
[335153-43-0]
As Budmunchiamine L1, B-385 with R = -$(CH_2)_{12}CH_3$

$C_{26}H_{54}N_4O$ 438.739

Not to be confused with Budmunchiamine L4, B-385. The name has been applied to two different homologues. Alkaloid from *Albizia adinocephala*. Inhibitor of plasmepsin II. Oil. $[\alpha]_D$ -13 (c, 0.65 in MeOH).

N^1,N^{13}*-Di-Me:* ***Budmunchiamine G***
[143051-88-1]
$C_{28}H_{58}N_4O$ 466.792
From seeds of *Albizzia amara* and *Albizzia lebbek*.

N^1,N^9,N^{13}*-Tri-Me: 1,9,13-Trimethyl-8-tridecyl-1,5,9,13-tetraazacycloheptadecan-6-one.* ***Budmunchiamine C***
[139750-78-0]
$C_{29}H_{60}N_4O$ 480.819
Alkaloid from the seeds of *Albizzia amara* and stem bark of *Albizzia gummifera* (Fabaceae). Light yellow oil. $[\alpha]_D$ -5.1 (c, 0.08 in $CHCl_3$).

6′-Hydroxy, N^1,N^9,N^{13}*-tri-Me:* ***6′-Hydroxybudmunchiamine C***
[178494-83-2]
$C_{29}H_{60}N_4O_2$ 496.819
Alkaloid from stem bark of *Albizzia schimperana*. $[\alpha]_D$ -6.4 (c, 0.08 in $CHCl_3$).

9′-Oxo, N^1,N^{13}*-di-Me:* ***Budmunchiamine I***
[143051-90-5]
$C_{28}H_{56}N_4O_2$ 480.776
From seeds of *Albizzia amara*. Isol. as an inseparable mixt. with Budmunchiamine H.

9′-Oxo, N^1,N^9,N^{13}*-tri-Me:* ***Budmunchiamine E***
[143051-86-9]
$C_{29}H_{58}N_4O_2$ 494.803
From seeds of *Albizzia amara*. Isol. as an inseparable mixt. with Budmunchiamine D.

10′-Oxo, N^1,N^{13}*-di-Me:* ***Budmunchiamine H***
[143051-89-2]
$C_{28}H_{56}N_4O_2$ 480.776
From seeds of *Albizzia amara*. Yellowish cryst. (Me_2CO). $[\alpha]_D$ -8.1 (c, 0.2 in MeOH). Isol. as an inseparable mixt. with Budmunchiamine I, to which props. refer.

10′-Oxo, N^1,N^9,N^{13}*-tri-Me:* ***Budmunchiamine D***
[143070-37-5]
$C_{29}H_{58}N_4O_2$ 494.803
Isol. from seeds of *Albizzia amara*. Yellow solid (Me_2CO). $[\alpha]_D$ 0 (c, 1.6 in MeOH). Isol. as an inseparable mixt. with Budmunchiamine E to which props. refer.

Pezzuto, J.M. *et al., Heterocycles*, 1991, **32**, 1961 (*Budmunchiamines A-C*)
Mar, W. *et al., J. Nat. Prod.*, 1991, **54**, 1531 (*props*)
Pezzuto, J.M. *et al., Phytochemistry*, 1992, **31**, 1795 (*Budmunchiamines D-I*)
Misra, L.N. *et al., Phytochemistry*, 1995, **39**, 247 (*Budmunchiamine G*)
Rukunga, G.M. *et al., J. Nat. Prod.*, 1996, **59**, 850-853 (*Budmunchiamine G*)
Rukunga, G.M. *et al., Phytochemistry*, 1996, **42**, 1211-1215 (*6′-Hydroxybudmunchiamine C*)
Popaj, K. *et al., Helv. Chim. Acta*, 2001, **84**, 180-186 (*±-Budmunchiamine L4, ±-Budmunchiamine C, synth*)
Ovenden, S.P.B. *et al., Phytochemistry*, 2002, **60**, 175-177 (*Budmunchiamine L4*)

Budmunchiamine L5† B-388

8-(13-Heptadecenyl)-1,5,9,13-tetraazacycloheptadecan-6-one, 9CI
[195734-29-3]
As Budmunchiamine L1, B-385 with R = -$(CH_2)_{12}CH{=}CHCH_2CH_2CH_3$

$C_{30}H_{60}N_4O$ 492.83

Not to be confused with Budmunchiamine L5, B-389. The same name has been applied to two different homologues. Alkaloid from the seeds of *Albizia lebbek*. Viscous liq. $[\alpha]_D^{27}$ +13.2 (c, 0.01 in MeOH). λ_{max} 209 (log ϵ 4) (MeOH).

Dixit, A.K. *et al., J. Nat. Prod.*, 1997, **60**, 1036-1037

Budmunchiamine L5† B-389

8-Pentadecyl-1,5,9,13-tetraazacycloheptadecan-6-one, 9CI
[479243-93-1]
As Budmunchiamine L1, B-385 with R = -$(CH_2)_{14}CH_3$

$C_{28}H_{58}N_4O$ 466.792

Not to be confused with Budmunchiamine L5, B-388. The name has been applied to two different homologues. Alkaloid from *Albizia adinocephala*. Inhibitor of plasmepsin II. Oil. $[\alpha]_D$ -20 (c, 0.21 in MeOH).

N^1,N^9*-Di-Me:* ***13-Normethylbudmunchiamine K***
[180285-78-3]
$C_{30}H_{62}N_4O$ 494.846
Isol. from stem bark of *Albizia gummifera* and from *Albizia schimperana*. $[\alpha]_D$ -1.8 (c, 0.09 in $CHCl_3$).

N^1,N^{13}*-Di-Me:* ***9-Normethylbudmunchiamine K†***
[178494-84-3]
$C_{30}H_{62}N_4O$ 494.846
Isol. from stem bark of *Albizia schimperana*. $[\alpha]_D$ -5.1 (c, 0.08 in $CHCl_3$).

N^9,N^{13}*-Di-Me:* ***1-Normethylbudmunchiamine K***
[178494-86-5]
$C_{30}H_{62}N_4O$ 494.846
Alkaloid from stem bark of *Albizia schimperana*. $[\alpha]_D$ -1.8 (c, 0.09 in $CHCl_3$).

N^1,N^9,N^{13}*-Tri-Me:* ***Budmunchiamine K***
[178494-87-6]
$C_{31}H_{64}N_4O$ 508.873
Alkaloid from stem bark of *Albizia gummifera*. Yellow oil. $[\alpha]_D$ -9.3 (c, 0.09 in $CHCl_3$).

11′,12′-Didehydro: 8-(11-Pentadecenyl)-1,5,9,13-tetraazacycloheptadecan-6-one, 9CI. ***Budmunchiamine L6***
[195734-30-6]
$C_{28}H_{56}N_4O$ 464.777
Alkaloid from the seeds of *Albizia lebbek*. Viscous liq. $[\alpha]_D^{27}$ +11.2 (c, 0.01 in MeOH). λ_{max} 209 (log ϵ 3.98) (MeOH).

3′,4′Z,6′,7′Z,9′,10′Z-Hexadehydro: 8-(3,6,9-Pentadecatrienyl)-1,5,9,13-tetraazacycloheptadecan-6-one, 9CI. ***Felipealbizine B***
[288094-81-5]
$C_{28}H_{52}N_4O$ 460.745
Constit. of the leaves of *Albizzia inopinata*.

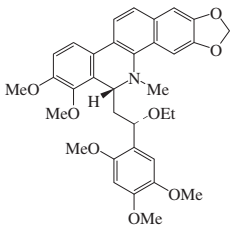
6′-Hydroxy, N^1,N^{13}*-di-Me:* ***6′-Hydroxy-9-normethylbudmunchiamine K***
[178494-85-4]
$C_{30}H_{62}N_4O_2$ 510.845
Isol. from stem bark of *Albizia schimperana*. $[\alpha]_D$ -2.3 (c, 0.01 in $CHCl_3$).

6′-Hydroxy, N^1,N^9,N^{13}*-tri-Me:* ***6′-Hydroxybudmunchiamine K***
[180285-72-7]
$C_{31}H_{64}N_4O_2$ 524.872
Isol. from stem bark of *Albizia gummifera*. $[\alpha]_D$ -6.4 (c, 0.07 in $CHCl_3$).

Rukunga, G.M. *et al., J. Nat. Prod.*, 1996, **59**, 850-853 (*Albizia gummifera alkaloids*)

Rukunga, G.M. *et al., Phytochemistry*, 1996, **42**, 1211-1215 (*Albizia schimperana alkaloids*)
Dixit, A.K. *et al., J. Nat. Prod.*, 1997, **60**, 1036-1037 (*Budmunchiamine L6*)
Simoes de Assis, T. *et al., CA*, 2000, **133**, 168223p (*Felipealbizine B*)
Ovenden, S.P.B. *et al., Phytochemistry*, 2002, **60**, 175-177 (*Budmunchiamine L5*)

Buesgeniine B-390



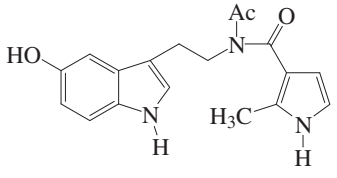
Relative Configuration

$C_{34}H_{37}NO_8$ 587.668
Alkaloid from the stem bark of *Zanthoxylum buesgenii*. Cryst. (MeOH). Mp 141-142°. λ_{max} 230 (log ϵ 5.1); 286 (log ϵ 5.15); 321 (log ϵ 4.57) (EtOH).

Tane, P. *et al., Fitoterapia*, 2005, **76**, 656-660 (*isol, pmr, cmr*)

Bufopyramide B-391

[220786-68-5]

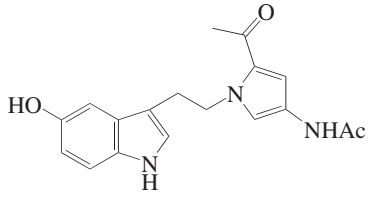


$C_{18}H_{19}N_3O_3$ 325.366
Alkaloid from the Chinese traditional drug Ch'an Su (prepared skin secretions of various *Bufo* spp.). Shows cytotoxic activity. Amorph. solid. λ_{max} 208 ; 225 ; 302 (MeOH).

Kamano, Y. *et al., Heterocycles*, 1999, **50**, 499-503 (*isol, uv, ir, pmr, cmr, ms, activity*)

Bufoserotonin C B-392

[1002722-87-3]

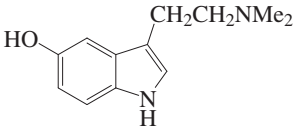


$C_{18}H_{19}N_3O_3$ 325.366
Alkaloid from the venom of *Bufo* spp. (ChanSu). Amorph. brown powder (MeOH). Mp 182-185°. λ_{max} 221 ; 292 ; 302 (MeOH).

Liu, R.-H. *et al., Helv. Chim. Acta*, 2007, **90**, 2427-2431 (*isol, pmr, cmr, ms*)

Bufotenine B-393

*3-(2-Dimethylaminoethyl)-1*H*-indol-5-ol, 9CI. 3-(2-Dimethylaminoethyl)-5-hydroxyindole.* N^b,N^b*-Dimethylserotonin. Cinobufotenine. Mappine. DM SHT*
[487-93-4]



$C_{12}H_{16}N_2O$ 204.271
Alkaloid from poisonous secretion of toads (*Bufo* spp.), from seeds of *Piptadenia peregrina*, many genera in the Fabaceae and Poaceae, and in some mushrooms, e.g. *Amanita citrina*. Also identified spectroscopically in the gorgonian *Paramuricea chamaeleon*. Hallucinogen. Sol. MeOH, acids, EtOH, bases; fairly sol. Et_2O; poorly sol. H_2O. Mp 146-147°. $Bp_{0.1}$ 320°. λ_{max} 225 ; 274 ; 300 (MeOH) (Berdy). λ_{max} 220 (ϵ 10000); 265 (ϵ 3000) (EtOH) (Berdy).

▶ Adverse systemic effects by intravenous route (psychotropic). LD_{50} (mus, ipr) 290 mg/kg. NM2800000

O-*Sulfate:* ***Bufoviridine****. Dihydrobufothionine*
[16369-08-7]
$C_{12}H_{16}N_2O_4S$ 284.335
Isol. from the skins of various amphibia incl. *Bufo viridis*.

O-*β-D-Glucopyranoside:* ***Bufotenine* O-*glucoside***
[64656-15-1]
$C_{18}H_{26}N_2O_6$ 366.413
Alkaloid from the leaves of *Citrus unshiu* (satsuma mandarin). $[\alpha]_D$ -58 (c, 0.5 in H_2O). λ_{max} 224 ; 274 (No solvent reported).

N^b*-Oxide:* ***Bufotenine* N-*oxide***
[1019-44-9]
$C_{12}H_{16}N_2O_2$ 220.271
Alkaloid from *Desmodium pulchellum* and *Desmodium caudatum* (Fabaceae). Also *Piptadenia macrocarpa* and *Amanita* spp. Constit. of toad venom (*Bufo* spp.). Cryst. Mp 214-215°.

N^b*-Oxide,* O*-β-D-glucopyranoside:* ***Bufotenine* O-*glucoside* N-*oxide***
$C_{18}H_{26}N_2O_7$ 382.413
Alkaloid from *Evodia fargesii*. Amorph. brown powder. $[\alpha]_D^{23}$ -37.4 (c, 0.42 in H_2O). λ_{max} 221 ; 279 (H_2O).

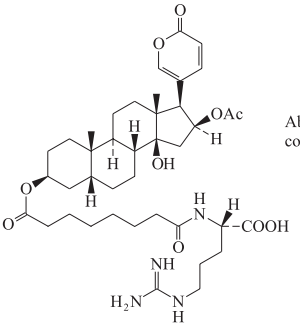
N^b*-Me, inner salt:* ***Bufotenidine***
[487-91-2]
$C_{13}H_{18}N_2O$ 218.298
Alkaloid from secretions of toad spp. Mp 209° (as hydriodide).

N^b*-Me, inner salt,* O*-sulfate:* ***Bufotenidine* O-*sulfate***
$C_{13}H_{18}N_2O_4S$ 298.362
Alkaloid from the skin of the toad *Nyctimystes tympanocryptis*. Genus name sometimes given as Nictimystes.

Aldrich Library of NMR Spectra, 2nd edn., 1983, **2**, 530D (*nmr*)
Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 663C (*ir*)
Wieland, T. *et al., Annalen*, 1953, **581**, 10-16 (*isol, uv*)
Stromberg, V.L. *et al., J.A.C.S.*, 1954, **76**, 1707 (*isol, uv*)
Harley-Mason, J. *et al., J.C.S.*, 1954, 1165-1171 (*synth*)
Fish, M.S. *et al., J.A.C.S.*, 1955, **77**, 5892-5895 (*oxide*)
Erspamer, V. *et al., Biochem. Pharmacol.*, 1959, **2**, 270 (*Bufoviridine*)
Pachter, I.J. *et al., J.O.C.*, 1959, **24**, 1285-1287 (*isol*)
Ghosal, S. *et al., J.O.C.*, 1966, **31**, 2284-2288 (*isol*)
Paris, R.R. *et al., Ann. Pharm. Fr.*, 1967, **25**, 509 (*oxide*)
Daly, J.W. *et al., J.A.C.S.*, 1967, **89**, 1032-1033 (*pmr*)
Creveling, C.R. *et al., Clin. Chem. (Winston-Salem, N.C.)*, 1968, **14**, 302-309 (*ms*)
Roseghini, M. *et al., Comp. Biochem. Physiol., C: Comp. Pharmacol.*, 1976, **54**, 31-43; 1989, **94**, 455-460 (*Bufoviridine*)
Sanders-Bush, E. *et al., Life Sci.*, 1976, **19**, 1407 (*metab*)
Schultes, R.E. *et al., Planta Med.*, 1976, **29**, 330
Roseghini, M. *et al., Z. Naturforsch., C*, 1976, **31**, 118-120 (*Bufoviridine, Bufotenidine O-sulfate*)
Shaw, G.J. *et al., Biomed. Mass Spectrom.*, 1977, **4**, 348-353 (*ms*)
Cimino, G. *et al., Comp. Biochem. Physiol., C: Comp. Pharmacol.*, 1978, **61**, 361-362 (*occur*)
Barlow, R.B. *et al., Br. J. Pharmacol.*, 1980, **69**, 597-600 (*pharmacol*)
Nishida, R. *et al., Agric. Biol. Chem.*, 1990, **54**, 1853-1855 (*glucoside*)
Martindale, The Extra Pharmacopoeia, 32nd edn., Pharmaceutical Press, 1999, 1555
Somei, M. *et al., Chem. Pharm. Bull.*, 2001, **49**, 87-96 (*synth*)
Zhang, P. *et al., Chem. Pharm. Bull.*, 2005, **53**, 1582-1586 (*toad venom constits*)
Qu, S.-J. *et al., Planta Med.*, 2006, **72**, 264-266 (*N-oxide glucoside*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, DPG109

Bufotoxin B-394

Vulgarobufotoxin
[464-81-3]



Absolute configuration

$C_{40}H_{60}N_4O_{10}$ 756.935
Ester of suberic acid with 14,15-Epoxy-3,5-dihydroxybufa-20,22-dienolide, E-132 and 2-Amino-4-hexynoic acid. Isol. from the toxic secretions of the common toad *Bufo vulgaris*. Cardiotonic agent. Mp 204-205°. $[\alpha]_D^{24}$ +3.9 (MeOH).

Bufotoxin is the most investigated of a series of frog toxin components known generally as Bufotoxins in which various steroidal genins are esterified at C-3 with suberoyl amino acid residues.The minor components have not all been characterised. See also 14,15-Epoxy-3,5-dihydroxybufa-20,22-dienolide, E-132.

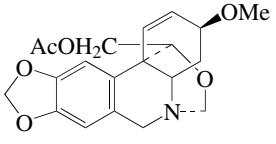
▶ LD_{50} (mus, scu) 0.4 mg/kg. LD_{50} (cat, ivn) 0.3 mg/kg. EI3160000

L-Glutamine analogue: see 14,15-Epoxy-3,5-dihydroxybufa-20,22-dienolide, E-132

Wieland, H. *et al., Annalen*, 1936, **524**, 203; 1941, **549**, 209 (*isol, uv, struct*)
Linde-Tempel, H.O. *et al., Helv. Chim. Acta*, 1970, **53**, 2188 (*struct*)
Shimada, K. *et al., Tet. Lett.*, 1979, 163
Pettit, G.R. *et al., J.O.C.*, 1987, **52**, 3573 (*synth*)

Bujeine B-395

[221011-11-6]

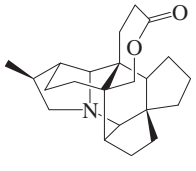


$C_{20}H_{23}NO_6$ 373.405
Alkaloid from *Narcissus bujei*. Mp 140-142°. $[\alpha]_D^{20}$ +129.4 (c, 0.11 in MeOH).

Labrana, J. *et al., Phytochemistry*, 1999, **50**, 183-188 (*isol, ir, cd, pmr, cmr, ms*)

Bukittinggine B-396

[128412-07-7]
[138435-38-8 ((±)-form)]



Absolute Configuration

$C_{22}H_{31}NO_2$ 341.492
Novel skeleton, closely related to the *Daphniphyllum* alkaloids such as Methyl homosecodaphniphyllate in H-346. Major alkaloid from the leaves and terminal branchlets of *Sapium baccatum* (Euphorbiaceae). Felted needles (hexane). Mp 135-137°. $[\alpha]_D$ -157 (c, 0.2 in $CHCl_3$).

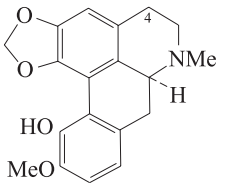
Hydrobromide:
Plates (MeOH/Me_2CO). Dec. at =310° without melting (sealed tube).

Methiodide:
Cryst. +1H_2O (MeOH/Me_2CO). Mp 187-189° dec.

Arbain, D. *et al., Aust. J. Chem.*, 1990, **43**, 185 (*isol, uv, ir, pmr, cmr, ms, cryst struct*)
Heathcock, C.H. *et al., J.O.C.*, 1992, **57**, 2575 (*synth*)
Pihko, A.J. *et al., Tetrahedron*, 2005, **61**, 8769-8807 (*synth, rev*)

Bulbocapnine B-397

*6,7,7*a*,8-Tetrahydro-11-methoxy-7-methyl-5*H*-benzo[*g*]-1,3-benzodioxolo[6,5,4-*de*]quinolin-12-ol, 9CI. 11-Hydroxy-10-methoxy-1,2-methylenedioxyaporphine.* N-*Methyllaunobine*



(*S*)–*form*

$C_{19}H_{19}NO_4$ 325.363
Shows antimicrobial activity. Log P 2.59 (uncertain value) (calc).

(*S*)-*form* [298-45-3]
Alkaloid from *Corydalis cava* (Papaveraceae). Antihypertensive, cataleptic, sedative agent. Possesses adrenolytic props. In low doses depresses spinal motorneurone synaptic reflexes. Shows antimicrobial activity. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 201-203°. $[\alpha]_D^{20}$ +232 (c, 0.92 in $CHCl_3$). Pharmacol. active isomer. λ_{max} 335 ; 397 (MeOH) (Berdy).

▶ LD_{50} (mus, scu) 195 mg/kg. CE1050000

N-*Oxide(β-):* ***Bulbocapnine β*-N-*oxide***
$C_{19}H_{19}NO_5$ 341.363
Alkaloid from *Glaucium fimbrilligerum*. Needles (Me_2CO). Mp 153-155°. $[\alpha]_D^{20}$ +180 (c, 0.65 in MeOH). λ_{max} 225 (log ϵ 4.19); 269 (log ϵ 3.86); 307 (log ϵ 3.57) (MeOH).

N-*Me:* **N-*Methylbulbocapnine***
[5787-06-4]
$C_{20}H_{22}NO_4^{\oplus}$ 340.398
Quaternary alkaloid from the tubers of *Corydalis cava*, also present in trace amount in the aerial parts (Papaveraceae). Needles (MeOH) (as iodide). Mp 268-269° (iodide). $[\alpha]_D^{22}$ +163 (c, 0.11 in MeOH).

▶ DE5380000

N-*De-Me: 11-Hydroxy-10-methoxy-1,2-methylenedioxynoraporphine.* ***Launobine.*** *Norbulbocapnine*
[20497-21-6]
$C_{18}H_{17}NO_4$ 311.337
Alkaloid from *Cassytha americana* and *Laurus nobilis* (bay laurel). Also occurs in the genera *Lindera* and *Illigera* (Lauraceae, Hernandiaceae). Shows bactericidal activity against *Scenedesmus obliquus*. Mp 214-215°. $[\alpha]_D^{21}$ +192 (c, 0.95 in $CHCl_3$).

Me ether: 10,11-Dimethoxy-1,2-methylenedioxyaporphine. **O-*Methylbulbocapnine.*** N,O-*Dimethylnandigerine*
[2490-83-7]
$C_{20}H_{21}NO_4$ 339.39
Alkaloid from *Lindera oldhamii* (Lauraceae). Shows antimicrobial activity. Mp 129-130°. $[\alpha]_D$ +248 (c, 0.67 in $CHCl_3$).

Me ether, N-*oxide(α-):* **O-*Methylbulbocapnine α*-N-*oxide***
[122331-84-4]
$C_{20}H_{21}NO_5$ 355.39
Alkaloid from the leaves of *Polyalthia longifolia* (Annonaceae). Yellowish oil. $[\alpha]_D$ +153 ($CHCl_3$).

Me ether, N-*oxide(β-):* **O-*Methylbulbocapnine β*-N-*oxide***
[122331-83-3]
$C_{20}H_{21}NO_5$ 355.39
Alkaloid from the leaves of *Polyalthia longifolia* (Annonaceae). Greyish-white needles (MeOH). Mp 115-117°. $[\alpha]_D$ +158 (c, 0.1 in MeOH).

Me ether, N-*de-Me,* N-*(*N-*methylcarbamoyl):* **O-*Methyl*-N-*(*N-*methylcarbamoyl)launobine.*** O-*Methyl*-N-*(*N-*methylcarbamoyl)nandigerine*
$C_{21}H_{22}N_2O_5$ 382.415
Alkaloid from *Hernandia nymphaeifolia*. Amorph. power. $[\alpha]_D^{23}$ +314 (c, 0.2 in $CHCl_3$). λ_{max} 225 (log ϵ 4.57); 272 (log ϵ 4.16); 308 (log ϵ 3.82) (EtOH).

4β-Hydroxy: ***4-Hydroxybulbocapnine***
[70475-64-8]
$C_{19}H_{19}NO_5$ 341.363
Alkaloid from the aerial parts of *Glaucium vitellinum* (Papaveraceae). Mp 231-233°. $[\alpha]_D$ +100 (c, 0.14 in $CHCl_3$).

(±)-*form*
Synthetic. Mp 213-214° (209-210°).

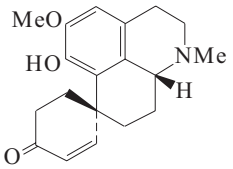
(ξ)-*form*

Me ether, N-*de-Me: 10,11-Dimethoxy-1,2-methylenedioxynoraporphine.* ***Litsedine***
[56245-65-9]
$C_{19}H_{19}NO_4$ 325.363
Alkaloid from the bark of *Litsea nitida* (Lauraceae). Lustrous brownish cryst. (MeOH/$CHCl_3$). Mp 182-183°.

Gulland, J.M. *et al., J.C.S.*, 1928, 1132 (*synth*)
Tomita, M. *et al., Yakugaku Zasshi*, 1963, **83**, 763 (*Launobine*)
Cava, M.P. *et al., J.O.C.*, 1968, **33**, 2443 (*Bulbocapnine, Launobine, isol*)
Mitscher, L.A. *et al., J. Nat. Prod.*, 1972, **35**, 157-176 (*activity*)
Lu, S.-T. *et al., Yakugaku Zasshi*, 1972, **92**, 910; *CA*, **77**, 101949m (*O-Methylbulbocapnine*)
Patnaik, P.C. *et al., Indian J. Chem.*, 1975, **13**, 197 (*Litsedine*)
Shafiee, A. *et al., J. Nat. Prod.*, 1979, **42**, 174 (*4-Hydroxybulbocapnine*)
Ringdahl, B. *et al., J. Nat. Prod.*, 1981, **44**, 80 (*cd*)
Guinaudeau, H. *et al., J. Nat. Prod.*, 1985, **48**, 646 (*4-Hydroxybulbocapnine*)
Soicke, H. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1988, **321**, 149 (*synth*)
Wu, Y.-C. *et al., Heterocycles*, 1989, **29**, 463 (*O-Methylbulbocapnine N-oxides*)
Ribár, B. *et al., Acta Cryst. C*, 1991, **47**, 2612 (*cryst struct*)
Abbasoglu, U. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1991, **324**, 379-380 (*activity*)
Shafiee, A. *et al., J. Nat. Prod.*, 1998, **61**, 1564-1565 (*β-N-oxide*)
Marek, R. *et al., Magn. Reson. Chem.*, 1999, **37**, 195-202 (*N-15 nmr*)
Chen, J.J. *et al., Planta Med.*, 2000, **66**, 251-256 (*O-Methyl-N-methylcarbamoyllaunobine*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, HLT000

Bulbocodine† B-398

[33792-78-8]



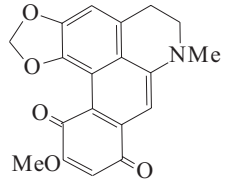
$C_{19}H_{23}NO_3$ 313.396

Alkaloid from the whole plants of *Bulbocodium vernum* (Liliaceae). Cryst. (Me_2CO). Mp 262° (220-222°). $[\alpha]_D^{22}$ +111 ($CHCl_3$).

Šantavý, F. *et al., Helv. Chim. Acta*, 1971, **54**, 1084 (*isol, uv, ir, pmr, ms, cd, struct*)

Bulbodione B-399

[96681-60-6]



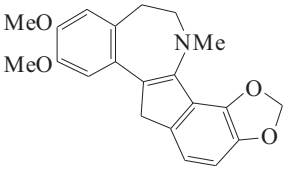
$C_{19}H_{15}NO_5$ 337.331

Minor alkaloid from *Corydalis bulbosa* (Papaveraceae). Blue-violet needles (EtOH). Mp 248-250°.

Kiryakov, H.G. *et al., Planta Med.*, 1984, **50**, 136 (*isol, uv, ir, pmr, ms, struct, synth*)

Bulgaramine B-400

[96681-78-6]



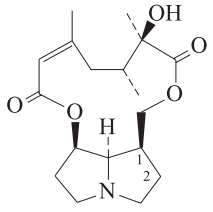
$C_{21}H_{21}NO_4$ 351.401

Alkaloid from Herba Fumaria Officinalis (commercial medicinal mixt. of several *Fumaria* spp. growing in Bulgaria) (Papaveraceae). Cryst. (EtOH). Mp 209°.

Yakimov, G.I. *et al., J. Nat. Prod.*, 1984, **47**, 1048 (*isol, uv, pmr, ms, struct*)
Blasko, G. *et al., Acta Chim. Hung.*, 1991, **128**, 819 (*synth*)
Giese, M.W. *et al., J.O.C.*, 2005, **70**, 6222-6229 (*synth*)

Bulgarsenine B-401

[62018-77-3]



Absolute configuration

$C_{18}H_{27}NO_5$ 337.415

Cyclic platynecine diester. Alkaloid from *Senecio nemorensis, Senecio doronicum* and *Senecio abrotanifolius* (Asteraceae). Mp 115° (112-113°). $[\alpha]_D^{24}$ -54 (c, 0.78 in $CHCl_3$). $[\alpha]_D^{20}$ -74.2 (EtOH).

O-*Ac:* ***11*-O-*Acetylbulgarsenine***

$C_{20}H_{29}NO_6$ 379.452

Alkaloid from *Senecio callosus*. Cryst. (EtOAc) (as dihydrochloride). Mp 123-125° (2HCl). $[\alpha]_D$ -46.9 (c, 0.26 in $CHCl_3$) (2HCl). λ_{max} 223 (log ϵ 3.9) (MeOH) (2HCl).

O-*Ac,* N-*oxide: 11*-O-*Acetylbulgarsenine* N-*oxide*

$C_{20}H_{29}NO_7$ 395.452

Alkaloid from *Senecio callosus*. Cryst. (EtOAc). Mp 142-144°. $[\alpha]_D$ -60.5 (c, 0.2 in $CHCl_3$). Possible artifact. λ_{max} 224 (log ϵ 3.87) (MeOH).

N-*(Chloromethyl):* **N-*Chloromethylbulgarsenine***

$C_{19}H_{29}ClNO_5^{\oplus}$ 386.895

Quaternary alkaloid from *Senecio callosus*. Cryst. (hexane/EtOAc) (as chloride). Mp 173-175° (chloride). $[\alpha]_D$ -48.1 (c, 0.3 in $CHCl_3$) (chloride). Possible artifact. λ_{max} 227 (log ϵ 4.19) (MeOH) (chloride).

1,2-Didehydro: ***Doronenine***

[74217-57-5]

$C_{18}H_{25}NO_5$ 335.399

Alkaloid from *Senecio doronicum* (Asteraceae). Mp 124-127°. $[\alpha]_D^{20}$ +123.4 (EtOH). Cyclic retronecine diester.

12,13-Diepimer: ***Iodanthine***

$C_{18}H_{27}NO_5$ 337.415

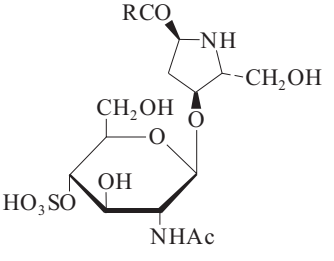
Alkaloid from *Senecio bracteatus* and *Senecio iodanthus*. Cryst. (hexane/EtOAc) (as hydrochloride). Mp 217-220° (hydrochloride). $[\alpha]_D^{25}$ -103.3 (c, 2.1 in $CHCl_3$) (hydrochloride).

Nghia, N.T. *et al., Coll. Czech. Chem. Comm.*, 1976, **41**, 2952 (*isol, uv, ms, pmr, struct*)
Stoeckli-Evans, H. *et al., Acta Cryst. B*, 1980, **36**, 3150 (*cryst struct*)
Kurfel, A. *et al., Cryst. Struct. Commun.*, 1980, **9**, 353 (*cryst struct, deriv*)
Roeder, E. *et al., Phytochemistry*, 1980, **19**, 1275; 1984, **23**, 1761 (*isol, ms, struct*)
Jones, A.J. *et al., Aust. J. Chem.*, 1982, **35**, 1173 (*cmr*)
Perez-Castorena, A.-L. *et al., J. Nat. Prod.*, 1998, **61**, 1288-1291; 1999, **62**, 1039-1043 (*11-Acetylbulgarsenine, Iodanthine*)

Bulgecin A B-402

β-Lactam activator F2

[92953-54-3]



R = $NHCH_2CH_2SO_3H$

$C_{16}H_{29}N_3O_{14}S_2$ 551.549

Aminoglycoside antibiotic. Isol. from *Pseudomonas acidophila* and *Pseudomonas mesoacidophila*. Induces formn. of bulges in bacterial cell walls by cooperation with β-lactam antibiotics. Sol. H_2O; fairly sol. MeOH, DMSO; poorly sol. EtOAc, phenol, hexane. Major component of Bulgecin complex.

▶ LD_{50} (mus, ivn) 1000-3000 mg/kg.

Mono-Na salt:

Needles (MeOH aq.). Mp 211-212°. $[\alpha]_D^{20}$ +6.5 (c, 0.5 in 1*M* AcOH).

Imada, A. *et al., J. Antibiot.*, 1982, **35**, 1400; 1985, **38**, 17 (*isol, ir, pmr, cmr, struct*)
Shinagawa, S. *et al., Tetrahedron*, 1984, **40**, 3465 (*isol, struct*)
Cintas, P. *et al., Tetrahedron*, 1991, **47**, 6079 (*synth*)

Bulgecin B B-403

F6. Antibiotic F6

[95863-86-8]

As Bulgecin A, B-402 with

R = $–NHCH_2CH_2COOH$

$C_{17}H_{29}N_3O_{13}S$ 515.494

Aminoglycoside antibiotic. From *Pseudomonas acidophila* and *Pseudomonas mesoacidophila*. Induces the formation of bulges in bacterial cell walls by cooperation with β-lactam antibiotics. Powder + $1H_2O$ (MeOH aq.) (as Na salt). $[\alpha]_D^{20}$ -2.6 (c, 0.5 in 1*M* AcOH) (Na salt). Minor component of Bulgecin complex.

Imada, A. *et al., J. Antibiot.*, 1982, **35**, 1400; 1985, **38**, 17 (*isol, ir, pmr, cmr, struct*)
Shinagawa, S. *et al., Tetrahedron*, 1984, **40**, 3465 (*isol, struct*)
Cintas, P. *et al., Tetrahedron*, 1991, **47**, 6079 (*synth*)

Bulgecin C B-404

[92953-56-5]

As Bulgecin A, B-402 with

R = OH

$C_{14}H_{24}N_2O_{12}S$ 444.416

Aminoglycoside antibiotic. From *Pseudomonas acidophila* and *Pseudomonas mesoacidophila*. Causes bulges in bacterial cell walls. Synergistic with β-lactam antibiotics in antimicrobial activity. Powder + ½ H_2O (MeOH aq.) (as Na salt). Sol. H_2O. $[\alpha]_D^{20}$ +2.9 (c, 0.6 in 1*M* AcOH) (Na salt). Minor component of Bulgecin complex.

▶ LD_{50} (mus, ivn) 1000-2000 mg/kg.

Imada, A. *et al., J. Antibiot.*, 1982, **35**, 1400; 1985, **38**, 17 (*isol, ir, pmr, cmr, struct*)
Shinagawa, S. *et al., Tetrahedron*, 1984, **40**, 3465 (*isol, struct*)
Barret, A.G.M. *et al., J.O.C.*, 1991, **56**, 2787 (*synth*)
Cintas, P. *et al., Tetrahedron*, 1991, **47**, 6079 (*synth*)

Bullatine A B-405

[1354-84-3]

$C_{21}H_{31}NO_2$ 329.481

Struct. unknown. Unsatd. base with an ethylimino group and 2 hydroxyls. Alkaloid from the Chinese drug Hye-shang-yi-zhi-hao (*Aconitum bullatifolium* var.

homotrichum, Ranunculaceae). Mp 251-253°. $[\alpha]_D^{27}$ -55 (MeOH).

Hydrochloride: Mp 265°.

Hydrobromide: Mp 263-264°.

Nitrate: Mp 237°.

Perchlorate: Mp 231-232°.

Picrate: Mp 221°.

Di-Ac: Mp 145-147°.

Chu, J.-H. *et al., Huaxue Xuebao*, 1964, **30**, 139-145; *CA*, **61**, 8128e

Bullatine D B-406

[1354-87-6]

$C_{23}H_{37}NO_9$ 471.547

Struct. unknown. Trace alkaloid from the Chinese drug Hye-shang-yi-zhi-hao (*Aconitum bullatifolium* var. *homotrichum*, Ranunculaceae). Mp 211°.

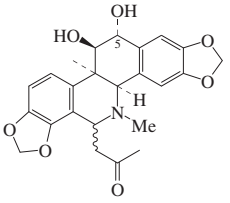
Hydrobromide: Mp 224°.

Chu, J.-H. *et al., Huaxue Xuebao*, 1964, **30**, 139-145; *CA*, **61**, 8128e

Bulleyanaline B-407

8-Acetonyl-5-hydroxycorynoline

[104574-44-9]



Absolute Configuration

$C_{24}H_{25}NO_7$ 439.464

Various numbering systems in use. The stereochem. of Bulleyanaline and the other alkaloids covered by this entry is uncertain. Alkaloid from *Corydalis bulleyana* whole plant (Papaveraceae). Cryst. (MeOH). Mp 199-201°. $[\alpha]_D^{18}$ +128.2 (EtOH).

5-Deoxy (?): 8-Acetonylcorynoline

[82189-89-7]

$C_{24}H_{25}NO_6$ 423.465

Minor alkaloid from *Corydalis delavayi* and *Corydalis bulleyana* (Papaveraceae). Mp 218-220° (210-212°). $[\alpha]_D^{17}$ +123. C-8 config. uncertain. The two 8-epimeric (±) isomers have been synthesized.

5-Deoxy, Ac: ***Consperine****. 6-Acetonylacetylcorynoline*

[91897-67-5]

$C_{26}H_{27}NO_7$ 465.502

Alkaloid from *Corydalis conspersa* whole plant (Papaveraceae). Granules ($CHCl_3$/MeOH). Mp 215-218°. $[\alpha]_D^{20}$ +107.54 ($CHCl_3$). CAS gives the 8α (14*R*-) config., but the authors state that the 8β- config. is more probable. However in a later paper it is shown as 8α but said to be uncertain. λ_{max} 232 (sh) (log ϵ 3.88); 287 (log ϵ 3.8) (EtOH).

Stereoisomer, 5-deoxy, Ac: ***Bulleyanine****. 8-Acetonylacetylisocorynoline*

[104639-71-6]

$C_{26}H_{27}NO_7$ 465.502

Alkaloid from *Corydalis bulleyana* whole plant (Papaveraceae). Powder. Stereochem. not certain. Prob. epimeric with Consperine at the ring junction, C-8 config. not detd. λ_{max} 235 ; 290 (EtOH).

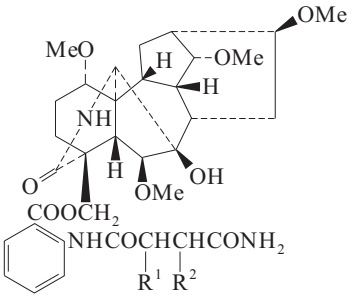
Takao, N. *et al., Chem. Pharm. Bull.*, 1978, **26**, 1880-1889 (*8-Acetonylcorynoline, synth, uv, ir, pmr, cmr, ms*)

Luo, S. *et al., Yunnan Zhiwu Yanjiu*, 1982, **4**, 69; *CA*, **97**, 20743a (*8-Acetonylcorynoline, isol, struct*)

Fang, Q. *et al., Planta Med.*, 1984, **50**, 25-27; 1986, **52**, 193-198 (*Consperine, Bulleyanine, Bulleyanaline*)

Bulleyanitine B B-408

[128717-98-6]



$R^1 = CH_3$, $R^2 = H$

$C_{35}H_{47}N_3O_{10}$ 669.77

Alkaloid from the roots of *Delphinium bulleyanum* (Ranunculaceae).

Wei, X. *et al., Yunnan Zhiwu Yanjiu*, 1989, **11**, 453; *CA*, **113**, 74750 (*isol*)

Joshi, B.S. *et al., J. Nat. Prod.*, 1990, **53**, 1028 (*config*)

Bulleyanitine C B-409

[128717-99-7]

As Bulleyanitine B, B-408 with

$R^1 = H$, $R^2 = CH_3$

$C_{35}H_{47}N_3O_{10}$ 669.77

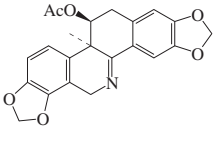
Alkaloid from the roots of *Delphinium bulleyanum* (Ranunculaceae).

Wei, X. *et al., Yunnan Zhiwu Yanjiu*, 1989, **11**, 453; *CA*, **113**, 74750 (*isol*)

Joshi, B.S. *et al., J. Nat. Prod.*, 1990, **53**, 1028 (*config*)

Bungeanine B-410

[113145-59-8]



Absolute Configuration

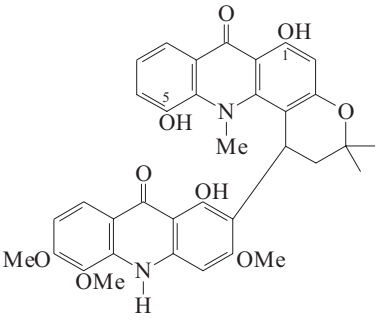
$C_{22}H_{19}NO_6$ 393.395

Alkaloid from *Corydalis bungeana* (Papaveraceae). Prisms ($CHCl_3$/MeOH). Mp 141-143°. $[\alpha]_D^{25}$ +40 (c, 0.37 in $CHCl_3$).

Weiguang, Z. *et al., Planta Med.*, 1987, **53**, 418 (*isol, uv, ir, pmr, cmr, ms, struct*)

Buntanbismine B-411

[176520-67-5]



$C_{35}H_{32}N_2O_9$ 624.646

Alkaloid from stem bark of *Citrus grandis* f. *buntan*. Red needles ($CHCl_3$). Mp >300°.

5-Ac:

Yellow needles ($CHCl_3$). Mp >250°.

1,5-Di-Ac:

Yellow syrup.

Wu, T.-S. *et al., Phytochemistry*, 1996, **42**, 221 (*isol, uv, ir, pmr, cmr, ms, struct*)

Buphacetine B-412

[1354-91-2]

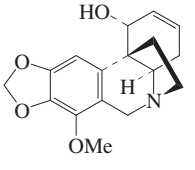
$C_{20}H_{25}NO_7$ 391.42

Amaryllidaceae alkaloid. Struct. unknown. Isol. from the bulbs of *Boophone disticha* (Amaryllidaceae). Needles (Me_2CO/Et_2O). Mp 182-183°. $[\alpha]_D^{21}$ -73 (c, 0.418 in $CHCl_3$). $[\alpha]_D^{21}$ -51 (c, 0.418 in EtOH).

Hauth, H. *et al., Helv. Chim. Acta*, 1961, **44**, 491-502 (*isol, uv, ir*)

Buphanamine B-413

[6793-24-4]



Absolute Configuration

$C_{17}H_{19}NO_4$ 301.341

Alkaloid from *Boophone fischeri*, *Boophone disticha* and *Crinum bulbispermum* (Amaryllidaceae). Mp 184-186°. $[\alpha]_D^{20}$ -205 (EtOH).

Perchlorate: Mp 232-234°. $[\alpha]_D^{20}$ -154 (95% ETOH).

Renz, J. *et al., Helv. Chim. Acta*, 1955, **38**, 1209 (*isol, uv, ir*)

Fales, F.C. *et al., J.O.C.*, 1961, **26**, 881 (*uv, ir, struct*)

Longévialle, P. *et al., Org. Mass Spectrom.*, 1973, **7**, 401 (*ms*)

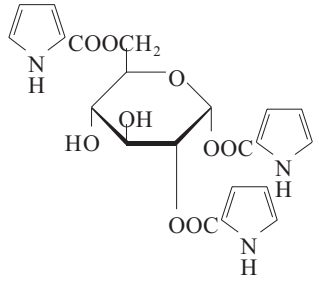
Buphanine B-414

[1390-55-2]

Amaryllidaceae alkaloid. Struct. unknown. Isol. from the bulbs of *Boophone disticha* (Amaryllidaceae). *B. disticha* has been used as an arrow poison. Amorph.

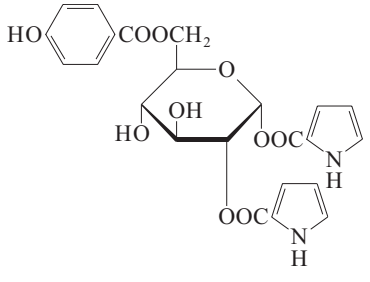
Mol. formula not determined. Converted by KOH to Nerbowdine, N-169.
▶ Highly toxic.
Tutin, F. *et al., J.C.S.*, 1911, **99**, 1240-1248 (*isol*)

Buprestin A **B-415**
*β-D-Glucopyranose 1,2,6-tri-1*H*-pyrrole-2-carboxylate*
[95245-60-6]



$C_{21}H_{21}N_3O_9$ 459.412
Isol. from the Jewel beetle *Stigmodera macularia*. Predator repellent. Amorph. solid. Mp 135-140° (softens at 125°).
Brown, W.V. *et al., Aust. J. Chem.*, 1985, **38**, 197 (*isol, cmr, pmr, ms*)
Moore, B.P. *et al., J. Aust. Entomol. Soc.*, 1985, **24**, 81; *CA*, **103**, 193347v
Schramm, S. *et al., Tet. Lett.*, 2006, **47**, 7741-7743 (*synth*)

Buprestin B **B-416**
*β-D-Glucopyranose-6-(4-hydroxybenzoate) 1,2-di-1*H*-pyrrole-2-carboxylate, 9CI*
[95258-10-9]

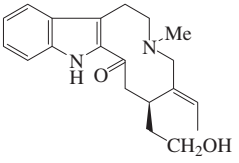


$C_{23}H_{22}N_2O_{10}$ 486.434
Isol. from the Jewel beetle *Stigmodera macularia*. Predator repellent.
λ_{max} 265 nm (MeOH).
Brown, W.V. *et al., Aust. J. Chem.*, 1985, **38**, 197 (*isol, pmr, cmr, ms*)
Schramm, S. *et al., Tet. Lett.*, 2006, **47**, 7741-7743 (*synth*)

Burmannaline **B-417**
$C_{21}H_{23}NO_4$ 353.417
Struct. unknown. Alkaloid from root of *Cyclea burmanni* (Menispermaceae). Mp 165°.
Saradamma, S.P. *et al., CA*, 1955, **49**, 11794a

Burmannine **B-418**
$C_{18}H_{21}NO_3$ 299.369
Struct. unknown. Alkaloid from roots of *Cyclea burmanni* (Menispermaceae). Mp 218°.
Hydrochloride: Mp 304°. $[\alpha]_D^{28.5}$ +235.5 (H_2O).
Sulfate: Mp 252° dec.
Methiodide: Mp 292°.
Picrate: Mp 246° dec.
Ac: Mp 140°.
Saradamma, S.P. *et al., CA*, 1955, **49**, 11794a

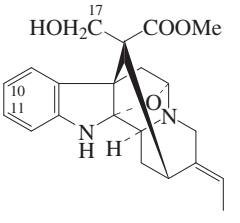
Burnamicine **B-419**
*5-Ethylidene-1,2,3,4,5,6,7,9-octahydro-6-(2-hydroxyethyl)-3-methyl-8*H*-azecino[5,4-b]indol-8-one, 9CI*
[2134-96-5]



Absolute Configuration

$C_{20}H_{26}N_2O_2$ 326.438
Alkaloid from *Hunteria eburnea* (Apocynaceae). Cryst. (EtOH). Mp 198-200° dec. (193-195°, synthetic). $[\alpha]_D^{24}$ -281 ($CHCl_3$). λ_{max} 311 (ϵ 14600) (no solvent reported).
Bartlett, M.F. *et al., J.A.C.S.*, 1963, **85**, 1203-1204 (*ms, struct*)
Bartlett, M.F. *et al., J.O.C.*, 1963, **28**, 2197-2199 (*isol, uv*)
Sakai, S. *et al., Heterocycles*, 1976, **4**, 981-983 (*synth, cd, abs config*)

Burnamine **B-420**
Deacetylpicraline
[6808-68-0]



Absolute Configuration

$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from the seeds of *Picralima nitida*, the stem bark of *Hunteria eburnea* and *Rauwolfia cumminsii*, and the bark of *Aspidosperma cuspa* (Apocynaceae). Cryst. (C_6H_6/Et_2O). Mp 197-198°. $[\alpha]_D$ -131 ($CHCl_3$). λ_{max} 236 (ϵ 7000); 289 (ϵ 2800) (EtOH).
Picrate:
Needles (MeOH). Mp 147-149°.
17-Ac: ***Picraline***
[2671-32-1]
$C_{23}H_{26}N_2O_5$ 410.469
Alkaloid from *Picralima klaineana*, the leaves of *Rauwolfia oreogiton* and the bark of *Aspidosperma rigidum* (Apocynaceae). Needles (C_6H_6/pentane). Mp 160-162° Mp 182°. λ_{max} 237 (ϵ 7400); 289 (ϵ 3200) (EtOH).
17-Ac, picrate:
Yellow prisms (MeOH). Mp 162-164°.
17-O-(3,4,5-Trimethoxybenzoyl): ***Deacetylpicraline 3,4,5-trimethoxybenzoate***
[102358-22-5]
$C_{31}H_{34}N_2O_8$ 562.618
Alkaloid from roots of *Alstonia yunnanensis*. Cryst. Mp 222°. $[\alpha]_D^{17}$ -185 (c, 0.05 in $CHCl_3$).
N^1*-Me:* ***N^a-Methylburnamine***. N^a-*Methyldeacetylpicraline*
[126594-72-7]
$C_{22}H_{26}N_2O_4$ 382.458
Alkaloid from the leaves of *Alstonia scholaris* (Apocynaceae). Amorph. solid. $[\alpha]_D^{28}$ -116.4 (c, 1.25 in MeOH).
N^1*-Me, 17-Ac:* ***Picratidine***. N-*Methylpicraline*
[131989-85-0]
$C_{24}H_{28}N_2O_5$ 424.496
Alkaloid from the seeds of *Picralima nitida* (Apocynaceae). Cryst. Mp 185-187°. $[\alpha]_D^{22}$ -100 (c, 0.07 in EtOH). λ_{max} 233 (log ϵ 8620); 293 (log ϵ 3430) (EtOH).
17-Aldehyde: ***Picralinal***
[20045-06-1]
$C_{21}H_{22}N_2O_4$ 366.416
Alkaloid from *Picralima klaineana*, *Alstonia scholaris*, *Rhazya stricta* and *Rhazya orientalis* (Apocynaceae). Cryst. (MeOH or C_6H_6/pentane). Mp 156-158° (154-155°) Mp 169-170° dec Mp 179-180°. λ_{max} 237 (ϵ 7400); 293 (ϵ 2690) (EtOH).
17-Aldehyde, picrate:
Yellow needles (MeOH). Mp 170-172°.
10-Methoxy, N^1*-Me, 17-benzoyl:* ***10-Methoxy-N^a-methylburnamine 17-O-benzoate***
[154849-48-6]
$C_{30}H_{32}N_2O_6$ 516.593
Alkaloid from leaves of *Alstonia macrophylla* (Apocynaceae). Prisms (MeOH). Mp 192-195°. $[\alpha]_D^{26}$ -151.1 (c, 0.17 in MeOH).
10-Methoxy, N^1*-Me, 17-O-(3,4-dimethoxybenzoyl):* ***10-Methoxy-N^a-methylburnamine 17-O-veratrate***
[154849-49-7]
$C_{32}H_{36}N_2O_8$ 576.645
Alkaloid from leaves of *Alstonia macrophylla* (Apocynaceae). Solid. $[\alpha]_D^{24}$ -129.8 (c, 1.24 in MeOH).
10-Methoxy, 17-aldehyde: ***Vincarinine***
[33023-09-5]
$C_{22}H_{24}N_2O_5$ 396.442
Alkaloid from *Vinca erecta* (Apocynaceae). Cryst. (C_6H_6). Mp 178-179°. $[\alpha]_D^{22}$ -81 (c, 0.1 in MeOH). Struct. revised in 1985. λ_{max} 238 (log ϵ 3.89); 312 (log ϵ 3.53) (EtOH).
10-Methoxy, 17-aldehyde, oxime:
Cryst. (MeOH). Mp 211-213° dec.
10,11-Dimethoxy, N^1*-Me:* ***10,11-Dimethoxy-1-methyldeacetylpicraline***
[79667-54-2]
$C_{24}H_{30}N_2O_6$ 442.511
Alkaloid from the leaves of *Alstonia lanceolifera* (Apocynaceae). Cryst. (MeOH). Mp 204°. $[\alpha]_D$ -90 (c, 0.7 in $CHCl_3$). λ_{max} 217 ; 248 ; 303 (MeOH).
10,11-Dimethoxy, N^1*-Me, 17-Ac:* ***10,11-Dimethoxy-1-methylpicraline***
[79659-66-8]

$C_{26}H_{32}N_2O_7$ 484.548
Alkaloid from the stem bark of *Alstonia lanceolata* (Apocynaceae). Cryst. (MeOH/Et_2O). Mp 228°. $[\alpha]_D$ -204 (c, 1.9 in $CHCl_3$) (-124). λ_{max} 215 ; 246 (log ϵ 3.84); 305 (log ϵ 3.68) (EtOH).

10,11-Dimethoxy, N^1*-Me, 17-benzoyl:* ***10,11-Dimethoxy-1-methyldeacetylpicraline benzoate***
[80787-53-7]
$C_{31}H_{34}N_2O_7$ 546.619
Alkaloid from the leaves of *Alstonia lanceolifera* (Apocynaceae). Cryst. (MeOH). Mp 114°. $[\alpha]_D$ -157 (c, 0.5 in $CHCl_3$). λ_{max} 220 ; 237 ; 282 (sh) ; 305 (MeOH).

10,11-Dimethoxy, N^1*-Me, 17-*O*-(3,4,5-trimethoxybenzoyl):* ***10,11-Dimethoxy-1-methyldeacetylpicraline 3,4,5-trimethoxybenzoate***
[79659-67-9]
$C_{34}H_{40}N_2O_{10}$ 636.697
Alkaloid from the leaves of *Alstonia lanceolifera* (Apocynaceae). Cryst. (MeOH). Mp 194°. $[\alpha]_D$ -126 (c, 0.98 in $CHCl_3$). λ_{max} 212 (log ϵ 4.64); 255 (log ϵ 4.09); 302 (log ϵ 3.16) (MeOH).

*Z-Isomer, 17-*O*-(3,4,5-trimethoxybenzoyl):* **O-*(3,4,5-Trimethoxybenzoyl)-(Z)-burnamine***
[214263-36-2]
$C_{31}H_{34}N_2O_8$ 562.618
Alkaloid from *Alstonia villosa*. Prisms. Mp 168-173°. $[\alpha]_D^{28}$ -199.2 (c, 1.12 in MeOH). λ_{max} 213 (log ϵ 4.59); 265 (log ϵ 4.04); 293 (log ϵ 3.83) (MeOH).

Z-Isomer, 17-aldehyde: ***(Z)-Picralinal***
[214263-35-1]
$C_{21}H_{22}N_2O_4$ 366.416
Alkaloid from *Alstonia villosa*. Solid. $[\alpha]_D^{28}$ -144.3 (c, 0.85 in MeOH). λ_{max} 208 (log ϵ 4.67); 230 (log ϵ 4.4); 290 (log ϵ 4.1) (MeOH).

Olivier, L. *et al., Bull. Soc. Chim. Fr.*, 1963, 646-650 (*Picraline, Picralinal, uv, ir, pmr, ms, struct*)
Britten, A.Z. *et al., J.C.S.*, 1963, 3850-3854 (*Picraline, Picralinal, uv, ir, synth, struct*)
Bartlett, M.F. *et al., J.O.C.*, 1963, **28**, 2197-2199 (*Burnamine, isol, uv, ir*)
Taylor, W.I. *et al., Bull. Soc. Chim. Fr.*, 1964, 392 (*Burnamine, uv, struct*)
Durham, L.J. *et al., Tet. Lett.*, 1965, 5-12 (*Picraline, pmr*)
Evans, D.A. *et al., Phytochemistry*, 1968, **7**, 1429-1431 (*Picralinal*)
Burnell, R.H. *et al., Phytochemistry*, 1968, **7**, 2045-2051 (*Burnamine, isol, uv, ir, pmr*)
Rastogi, R.C. *et al., Experientia*, 1970, **26**, 1056 (*Picralinal, isol*)
Il'yasova, Kh.T. *et al., Khim. Prir. Soedin.*, 1971, **7**, 164-166; *Chem. Nat. Compd. (Engl. Transl.)*, 1971, **7**, 155-156 (*Vincarinine*)
Vercauteren, J. *et al., Phytochemistry*, 1981, **20**, 1411-1413 (*10,11-Dimethoxy-1-methylpicraline*)
Petitfrère-Auvray, N. *et al., Phytochemistry*, 1981, **20**, 1987-1990 (*Alstonia lanceolifera alkaloids*)
Yagudaev, M.R. *et al., Khim. Prir. Soedin.*, 1985, **21**, 129-130; *Chem. Nat. Compd. (Engl. Transl.)*, 1985, **21**, 131-132 (*Vincarinine, pmr, cmr, struct*)
Chen, W. *et al., Yaoxue Xuebao*, 1985, **20**, 906-912; *CA*, **105**, 3520s (*Deacetylpicraline 3,4,5-trimethoxybenzoate*)
Ansa-Asamoah, R. *et al., J. Nat. Prod.*, 1990, **53**, 975-977 (*Picratidine*)
Yamauchi, T. *et al., Phytochemistry*, 1990, **29**, 3547-3552 (*N-Methylburnamine*)
Abe, F. *et al., Phytochemistry*, 1994, **35**, 253-257 (*10-Methoxy-N^a-methylburnamine 17-O-benzoate, 10-Methoxy-N^a-methylburnamine 17-O-veratrate*)
Abe, F. *et al., Chem. Pharm. Bull.*, 1998, **46**, 1235-1238 (*Z-Picralinal, Trimethoxybenzoyl-Z-burnamine*)

1,3-Butadiene-1,1,4,4-tetracarboxylic acid B-421

$(HOOC)_2C{=}CHCH{=}C(COOH)_2$

$C_8H_6O_8$ 230.131

Tetra-Et ester:
$C_{16}H_{22}O_8$ 342.345
Cryst. (EtOH). Mp 56°. $Bp_{0.2}$ 170°.

Tetrakis(methylamide): N,N′,N″,N‴-*Tetramethyl-1,3-butadiene-1,1,4,4-tetracarboxamide, 9CI.* ***Chevalieramide***
[124709-40-6]
$C_{12}H_{18}N_4O_4$ 282.299
Alkaloid from the soft coral *Lobophytum chevalieri*.

[64496-11-3]

Baganz, H. *et al., Chem. Ber.*, 1961, **94**, 2132 (*synth, ester*)
Li, R. *et al., CA*, 1990, **112**, 52550e (*Chevalieramide, isol, pmr, cmr, ms*)

1,4-Butanediamine, 9CI B-422

1,4-Diaminobutane. Tetramethylenediamine. ***Putrescine***
[110-60-1]
$H_2NCH_2CH_2CH_2CH_2NH_2$
$C_4H_{12}N_2$ 88.152
Manuf. by amination of 1,4-dihalobutanes. Prod. of dec. of excreta, dead animal matter etc. Isol. in small amts. from plants, e.g. *Datura stramonium*, and esp. from fungi. Anal sac secretion of the red fox *Vulpes vulpes*. Occurs in *Anthocidaris crassispina*, *Stichopus japonica*, *Halocynthia roretzi* and *Tapes philippinarum*. Prod. by the thermophilic eubacteria, *Thermoleophilum album*, *Thermoleophilum minutum* and *Hydrogenobacter thermophilus*. Cross-linking agent for epoxy resins. Comonomer with Hexanedioic acid, H-258 for manuf. of nylon 4.6. Cryst. with strong odour. Sol. H_2O. Mp 27-28°. Bp 158-159°. pK_a 5.29. Absorbs CO_2 from air.

▶ EJ6800000

Hydrochloride (1:2): [333-93-7]
Needles (H_2O). Sol. H_2O; insol. MeOH. Mp 290°.

▶ EJ7280000

N-*Ac:* [5699-41-2]
$C_6H_{14}N_2O$ 130.189
Mp 140-142°. Bp_8 116-118°.

N,N′-*Di-Ac:* N,N′-*1,4-Butanediylbisacetamide, 9CI*
[3073-57-2]
$C_8H_{16}N_2O_2$ 172.227
Cryst. (Me_2CO). Mp 137°.

N-*Hexadecanoyl:* **N-*Hexadecanoylputrescine***. N-*Palmitoylputrescine*
[126617-68-3]
$C_{20}H_{42}N_2O$ 326.565
Alkaloid from *Escherichia coli* transformed with a cosmid (pCSLF16) containing DNA. Powder.

N,N′-*Dibenzoyl:* N,N′-*1,4-Butanediylbisbenzamide, 9CI.* ***Haplamide***
[31991-78-3]
$C_{18}H_{20}N_2O_2$ 296.368
Isol. from *Haplophyllum latifolium*. Cryst. (EtOH). Mp 176-177° (172-173°).

N-*(2,3-Dihydroxybenzoyl):* N-*(4-Aminobutyl)-2,3-dihydroxybenzamide, 9CI.* N-*(2,3-Dihydroxybenzoyl)putrescine.* ***Aminochelin***
[114191-64-9]
$C_{11}H_{16}N_2O_3$ 224.259
Prod. by *Azotobacter vinelandii*. Siderophore. Solid. Sol. H_2O.

N,N′-*Bis(phenylacetyl):* N,N′-*1,4-Butanediylbis[benzeneacetamide], 9CI.* N,N′-*Bis(phenylacetyl)putrescine.* ***Aglaiduline****. Aglanthine*
[102552-55-6]
$C_{20}H_{24}N_2O_2$ 324.422
Alkaloid from *Aglaia edulis* and *Aglaia leptantha*. Needles (MeOH). Mp 162-163° Mp 175-178°. λ_{max} 222 (log ϵ 3.53); 260 (log ϵ 2.75) (MeOH).

N,N′-*Bis(benzenesulfonyl):* [97249-21-3]
$C_{16}H_{20}N_2O_4S_2$ 368.477
Leaflets (EtOH). Mp 132°.

Bis(4-methylbenzenesulfonyl): [15544-47-5]
$C_{18}H_{24}N_2O_4S_2$ 396.531
Mp 224°.

N-*Cinnamoyl:* see *N*-Cinnamoylputrescine, C-456

N,N′-*Dicinnamoyl:* see *N,N′*-Dicinnamoylputrescine, D-362

N-*Me:* N-*Methyl-1,4-butanediamine, 9CI*
[14475-60-6]
[89690-09-5 (dihydrochloride)]
$C_5H_{14}N_2$ 102.179
Constit. of tobacco. Cryst. (as dihydrochloride). Mp 177-179° (dihydrochloride).

N-*Me, dibenzoyl:*
$C_{19}H_{22}N_2O_2$ 310.395
Mp 115.5°.

N,N-*Di-Me:* N,N-*Dimethyl-1,4-butanediamine, 9CI*
[3529-10-0]
$C_6H_{16}N_2$ 116.206
Mp 142-143° (as dihydrochloride). Bp 150° Bp_{35} 73°.

N,N′-*Di-Me:* N,N′-*Dimethyl-1,4-butanediamine, 9CI. 1,4-Bis(methylamino)-butane*
[16011-97-5]
$C_6H_{16}N_2$ 116.206
Bp 168°.

N,N′-*Di-Me, dibenzoyl:* N,N′-*1,4-Butanediylbis[*N*-methylbenzamide], 9CI*
[16012-03-6]
$C_{20}H_{24}N_2O_2$ 324.422
Mp 117°.

N-*Tetra-Me:* see *N,N,N′,N′*-Tetramethyl-1,4-butanediamine, T-281

N-*Et:* N-*Ethyl-1,4-butanediamine, 9CI*
[89690-10-8]
$C_6H_{16}N_2$ 116.206

Cryst. (as dihydrochloride). Mp 220-221° (dihydrochloride).

N,N-*Di-Et:* N,N-*Diethyl-1,4-butanediamine, 9CI*
[27431-62-5]
$C_8H_{20}N_2$ 144.259
Bp_3 55°. n_D^{28} 1.4425.

N-*(3-Methyl-2-butenyl):* N-*(3-Methyl-2-butenyl)putrescine.* **N-*Prenylputrescine***
$C_9H_{20}N_2$ 156.27
Trace alkaloid from *Eremosparton flaccidum*. Bp_{10} 105-106°. Prob. struct. Struct. revised here from that originally proposed, *N*-(3-methyl-1-butenyl)-putrescine.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 291D; 292A (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 465A; 465B (*nmr*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 376A (*ir*)
Hill, A.J. *et al., J.A.C.S.*, 1939, **61**, 822-825 (*synth, N-Ac*)
Chambret, F. *et al., Bull. Soc. Chim. Fr.*, 1947, 1023-1026 (*synth*)
Schultz, H.P. *et al., J.A.C.S.*, 1948, **70**, 2666-2667 (*synth*)
Merlis, V.M. *et al., CA*, 1952, **46**, 7289 (*N-Prenylputrescine, isol*)
Jackson, E.L. *et al., J.O.C.*, 1956, **21**, 1374-1375 (*N-Ac*)
Rama Sastry, B.V. *et al., J.O.C.*, 1958, **23**, 1577-1578 (*N,N-di-Et*)
Lüttringhaus, A. *et al., Chem. Ber.*, 1959, **92**, 1756-1765 (*bisbenzenesulfonyl*)
Org. Synth., Coll. Vol., 4, 1963, 819-823 (*synth*)
Smith, T.A. *et al., Phytochemistry*, 1964, **3**, 23-26 (*biosynth*)
Morris, D.R. *et al., J. Biol. Chem.*, 1966, **241**, 3129-3135 (*biosynth*)
Roberts, J.D. *et al., J.A.C.S.*, 1972, **94**, 2495-2500 (*N-15 nmr*)
Sarneski, J.E. *et al., Anal. Chem.*, 1975, **47**, 2116-2124 (*cmr*)
Mayerl, F. *et al., Helv. Chim. Acta*, 1976, **59**, 127-133 (*ms*)
Albone, E.S. *et al., J. Chem. Ecol.*, 1976, **2**, 101-111; 167-175 (*occur*)
Gaymans, R.J. *et al., J. Polym. Sci., Polym. Chem. Ed.*, 1977, **15**, 537-545 (*polym*)
Nesmelova, E.F. *et al., Khim. Prir. Soedin.*, 1978, **14**, 749-752; *Chem. Nat. Compd. (Engl. Transl.)*, 1978, **14**, 637-639 (*Haplamide*)
Eur. Pat., 1983, 77 106; *CA*, **99**, 123162f (*nylon 4.6*)
Cirrincione, G. *et al., J.C.S. Perkin 2*, 1984, 1089-1091 (*benzoyl derivs*)
Frydman, B. *et al., J.O.C.*, 1984, **49**, 2021-2023 (*N-alkyl derivs*)
Page, W.J. *et al., J. Gen. Microbiol.*, 1988, **134**, 453-460 (*Aminochelin, isol*)
Golding, B.T. *et al., Tet. Lett.*, 1988, **29**, 6651-6654 (*N,N-di-Me*)
Hamana, K. *et al., Comp. Biochem. Physiol., B: Comp. Biochem.*, 1991, **100**, 59-62 (*occur*)
Hamana, K. *et al., Biochem. J.*, 1992, **284**, 741-747 (*thermophilic eubacteria constits*)
Linden, A. *et al., Acta Cryst. C*, 1999, **55**, IUC9900046 (*bisbenzenesulfonyl, cryst struct*)
Saifah, E. *et al., Phytochemistry*, 1999, **52**, 1085-1088 (*Aglaiduline*)
Thalladi, V.R. *et al., Angew. Chem., Int. Ed.*, 2000, **39**, 918-922 (*cryst struct*)
Greger, H. *et al., J. Nat. Prod.*, 2000, **63**, 616-620 (*Aglanthine*)
Brady, S.F. *et al., J. Nat. Prod.*, 2004, **67**, 1283-1286 (*N-Hexadecanoylputrescine*)
Pospieszna-Markiewicz, I. *et al., Acta Cryst. E*, 2007, **63**, o3650 (*cryst struct*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, BOS000; 1992, POK325

2-Butene-1,4-diamine B-423

1,4-Diamino-2-butene
[18231-61-3]
$H_2NCH_2CH{=}CHCH_2NH_2$
$C_4H_{10}N_2$ 86.136

(*E*)-*form* [40930-37-8]
[119874-79-2 (dihydrochloride)]
Potent irreversible inhibitor of kidney diamine oxidase. Bp 169° Bp_{45} 92-95°.

N,N′-*Dibenzoyl:* [156544-32-0]
$C_{18}H_{18}N_2O_2$ 294.352
Cryst. (EtOH aq.). Mp 178.5-179.5°.

N,N′-*Bis(benzenesulfonyl):*
$C_{16}H_{18}N_2O_4S_2$ 366.461
Cryst. (EtOH). Mp 155°.

N,N′-*Di*-E-*cinnamoyl:* **N^1,N^4-*Di*-E-*cinnamoyl-2,3-dehydroputrescine***
[849462-51-7]
$C_{22}H_{22}N_2O_2$ 346.428
Prod. by the mushroom *Pholiota spumosa*.

N,N,N′,N′-*Tetra-Me:* N,N,N′,N′-*Tetramethyl-2-butene-1,4-diamine. 1,4-Bis(-dimethylamino)-2-butene*
[4559-79-9]
$C_8H_{18}N_2$ 142.244
d 0.81. Bp_{735} 171-172° Bp_{33} 74-76°. n_D^{20} 1.4416. Props. may refer to a mixt. of geom. isomers.

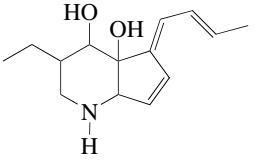
(*Z*)-*form* [40794-72-7]
[114118-70-6 (dihydrochloride)]
Potent irreversible inhibitor of kidney diamine oxidase. Mp 292-300° (as dihydrochloride). Bp_{15} 78°.

[111-52-4]

Amundsen, L. *et al., J.A.C.S.*, 1951, **73**, 2118-2121 (*E-form*)
Ger. Pat., 1968, 1 274 116; *CA*, **69**, 105875s (*N-tetra-Me*)
Fiegenbaum, A. *et al., Bull. Soc. Chim. Fr.*, 1973, 198-202 (*synth*)
Fabiano, E. *et al., Synthesis*, 1987, 190-192 (*Z-form*)
Saljoughian, M. *et al., J. Labelled Compd. Radiopharm.*, 1988, **25**, 313-328 (*E-form, Z-form, synth, pmr, bibl*)
He, Z. *et al., Biochim. Biophys. Acta*, 1995, **1253**, 117-127 (*E-form, Z-form, synth, pmr, activity*)
Clericuzio, M. *et al., Croat. Chem. Acta*, 2004, **77**, 605-611 (*dicinnamoyl*)

5-(2-Butenylidene)-3-ethyl-1,2,3,4,5,7*a*-hexahydro-4*aH*-1-pyrindine-4,4*a*-diol B-424

[154593-87-0]

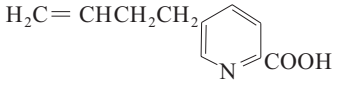


$C_{14}H_{21}NO_2$ 235.325
Prod. by *Streptomyces* sp. SCC 2313. Pale yellow solid. $[\alpha]_D^{21}$ -68.6 (c,0.04 in H_2O). Similar to Pyrindicine, P-932.

Hegde, V.R. *et al., J. Antibiot.*, 1994, **47**, 110

5-(3-Butenyl)-2-pyridine-carboxylic acid, 9CI B-425

Dehydrofusaric acid. 5-(3-Butenyl)picolinic acid
[3626-76-4]



$C_{10}H_{11}NO_2$ 177.202
Isol. from *Fusarium lycopersici* and *Gibberella fujikuroi*. Plant growth inhibitor. Sol. MeOH, Et_2O; fairly sol. hexane; poorly sol. H_2O. Mp 121°. λ_{max} 260 (ϵ 3901) (MeOH) (Berdy).

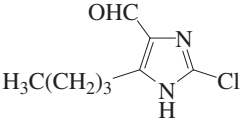
Me ester: [78106-26-0]
$C_{11}H_{13}NO_2$ 191.229
$Bp_{0.1}$ 110-120°. λ_{max} 225 (ϵ 7762); 264 (ϵ 3162) (MeOH) (Berdy).

Amide:
$C_{10}H_{12}N_2O$ 176.218
Mp 147-148°.

Steiner, K. *et al., Helv. Chim. Acta*, 1963, **46**, 690 (*synth*)
Pitel, D.W. *et al., Can. J. Biochem.*, 1970, **48**, 625 (*biosynth*)

5(4)-Butyl-2-chloro-1*H*-imidazole-4(5)-carboxaldehyde B-426

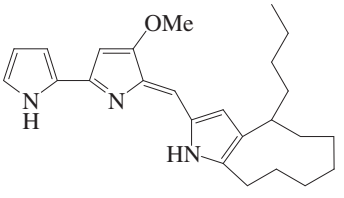
*4(5)-Butyl-2-chloro-5(4)-formyl-1*H*-imidazole*



$C_8H_{11}ClN_2O$ 186.64
Alkaloid from *Jatropha curcas*. Semi-solid.

Das, B. *et al., Indian J. Chem., Sect. B*, 2005, **44**, 1119-1120 (*isol, pmr, cmr*)

Butylcycloheptylprodigiosine B-427



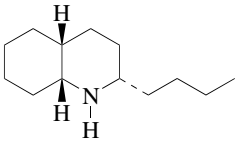
$C_{25}H_{33}N_3O$ 391.555
Following conflicting reports the structure was finally confirmed, in 2007, as the original assignment and distinct from Streptorubin B, S-572. Prod. by *Streptomyces* sp. Y-42 and *Streptomyces abikoensis*. Dark purple solid (as hydrochloride). Mp *ca.*170-175° (hydrochloride).

[56247-03-1]

Gerber, N.N. *et al., J. Antibiot.*, 1975, **28**, 194-199 (*isol, pmr, activity*)
Fürstner, A. *et al., Angew. Chem., Int. Ed.*, 2003, **42**, 3582-3603 (*rev*)
Fürstner, A. *et al., Chem. Eur. J.*, 2007, **13**, 1929-1945 (*synth, pmr, cmr, struct*)
Reeves, J.T. *et al., Org. Lett.*, 2007, **9**, 1879-1881 (*synth*)

2-Butyldecahydroquinoline, 9CI B-428

Pumiliotoxin C$_{III}$. Dendrobates histrionicus *Alkaloid I*
[63983-60-8]

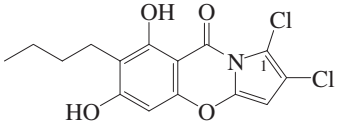


$C_{13}H_{25}N$ 195.347
Minor alkaloid from skin extracts of *Dendrobates histrionicus* (Dendrobatidae).

Daly, J.W. *et al., Helv. Chim. Acta*, 1977, **60**, 1128 (*isol, ms, struct*)

7-Butyl-1,2-dichloro-6,8-dihydroxy-9*H*-pyrrolo[2,1-*b*][1,3]benzoxazin-9-one, 9CI B-429

[208707-50-0]



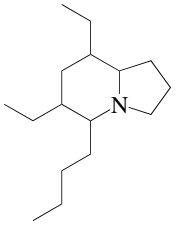
$C_{15}H_{13}Cl_2NO_4$ 342.177
Prod. by *Streptomyces rimosus.*

*1-Dechloro: 7-Butyl-2-chloro-6,8-dihydroxy-9*H*-pyrrolo[2,1-*b*][1,3]benzoxazin-9-one, 9CI*
$C_{15}H_{14}ClNO_4$ 307.733
Prod. by *Streptomyces rimosus.* Powder. λ_{max} 240 ; 295 ; 340 (MeCN aq.).

Pat. Coop. Treaty (WIPO), 1998, 98 25 931; *CA*, **129**, 52003e (*isol*)
Trew, S.J. *et al., J. Antibiot.*, 2000, **53**, 1-11 (*isol*)

5-Butyl-6,8-diethyloctahydroindolizine, 9CI B-430

5-Butyl-6,8-diethylindolizidine. Dendrobates *Alkaloid 237L. Indolizidine 237L*
[185417-26-9]

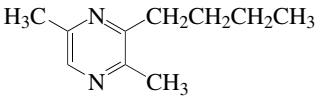


$C_{16}H_{31}N$ 237.428
Tentative struct. Alkaloid from skin extracts of a Panamanian population of the frog *Dendrobates pumilio.*

Garraffo, H.M. *et al., J. Nat. Prod.*, 1997, **60**, 2 (*isol, ms*)

3-Butyl-2,5-dimethylpyrazine B-431

[40790-29-2]

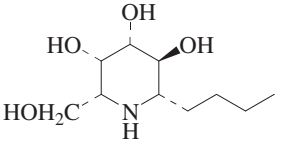


$C_{10}H_{16}N_2$ 164.25
Isol. from the ant *Iridomyrmex purpureus* and the fly *Anastrepha fraterculus.* Prod. by various marine bacteria. Bp_{12} 101°.

Zavylov, S.I. *et al., Izv. Akad. Nauk SSSR, Ser. Khim.*, 1973, 707 (*synth*)
Bus, J. *et al., Rec. Trav. Chim. (J. R. Neth. Chem. Soc.)*, 1973, **92**, 123 (*ir*)
Flament, I. *et al., Bull. Soc. Chim. Belg.*, 1979, **88**, 941 (*synth, ms*)
Cavill, G.W.K. *et al., Insect Biochem.*, 1984, **14**, 505 (*isol*)
Dickschat, J.S. *et al., Eur. J. Org. Chem.*, 2005, 4141-4153 (*marine isol*)
Dickschat, J.S. *et al., J. Chem. Ecol.*, 2005, **31**, 925-947 (*marine isol*)

2-Butyl-6-hydroxymethyl-3,4,5-piperidinetriol B-432

*2-Butyl-3,4,5-trihydroxy-6-hydroxymethylpiperidine. 1-*C*-(5-Amino-5-deoxygalactopyranosyl)butane*



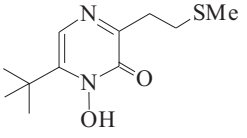
$C_{10}H_{21}NO_4$ 219.28

(2*S*,3*S*,4*R*,5*S*,6*R*)-*form*
1β-C-Butyl-1-deoxygalactonojirimycin
Alkaloid from *Adenophora* spp. $[\alpha]_D$ -12.8 (c, 0.36 in H_2O) (natural). $[\alpha]_D$ -14.8 (c, 0.39 in H_2O) (synthetic).

Ikeda, K. *et al., Carbohydr. Res.*, 2000, **323**, 73-80

6-*tert*-Butyl-1-hydroxy-3-[2-(methylthio)ethyl]-2(1*H*)-pyrazinone B-433

*1-Hydroxy-6-(1,1-dimethylethyl)-3-[2-(methylthio)ethyl]-2(1*H*)-pyrazinone*

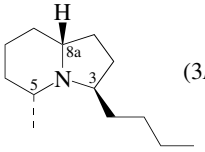


$C_{11}H_{18}N_2O_2S$ 242.341
Metab. from *Aspergillus flavus.* Mp 74-76°.

MacDonald, J.C. *et al., Can. J. Biochem.*, 1972, **50**, 543 (*isol, pmr, ms, struct*)

3-Butyloctahydro-5-methylindolizine B-434

3-Butyl-5-methylindolizidine
[42607-24-9]



(3*R*,5*R*,8*aR*)-*form*

$C_{13}H_{25}N$ 195.347

(3*R*,5*R*,8*aR*)-*form* [53447-41-9]
Isol. from dendrobatic frog skin. Pale yellow oil. $[\alpha]_D^{22}$ -97.1 (c, 0.12 in MeOH).
Hydrochloride: [94535-28-1]
$[\alpha]_D^{20}$ -69.2 (c, 0.55 in MeOH).

(3*R*,5*S*,8*aR*)-*form* [92841-44-6]
Isol. from thief ant, *Solenopsis* spp. venom. Pale yellow oil. $[\alpha]_D^{25}$ -36.5 (c, 0.14 in MeOH).

(3*R*,5*S*,8*aS*)-*form*
Monomorine I
[53447-44-2]
Trail pheromone of Pharaoh ant, *Monomorium pharaonis.* Pale yellow oil. Bp_{27} 119°. $[\alpha]_D^{25}$ +35.1 (c, 1.33 in hexane).

(3*S*,5*R*,8*aR*)-*form* [94535-27-0]
$[\alpha]_D^{20}$ -35.8 (c, 1.35 in hexane).

(3*S*,5*R*,8*aS*)-*form* [53447-42-0]
$[\alpha]_D^{26}$ +68.5 (c, 0.145 in MeOH).

(3*S*,5*S*,8*aS*)-*form*
Dendrobates *Alkaloid 195B. Indolizidine 195B*
[118015-64-8]
Isol. from skin of Colombian poison-frog *Dendrobates histrionicus.* Oil. $[\alpha]_D^{26}$ +99.6 (c, 0.23 in MeOH) (+65).
Hydrochloride: $[\alpha]_D^{24}$ +36 (c, 0.52 in MeOH).

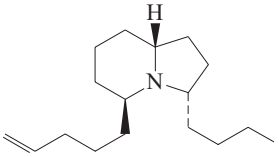
[53447-43-1 , 79465-32-0 , 82262-91-7 , 107597-44-4]

Ritter, F.J. *et al., Experientia*, 1973, **29**, 530 (*isol, ms*)
Sonnet, P.E. *et al., J.O.C.*, 1974, **34**, 2662
Sonnet, P.E. *et al., J. Het. Chem.*, 1975, **12**, 289; 1979, **16**, 1041 (*synth, pmr, cmr*)
Daly, J.W. *et al., Toxicon*, 1978, **16**, 163 (*isol, ms, rev*)
Spande, Th.F. *et al., Experientia*, 1981, **37**, 1242 (*config*)
Stevens, R.V. *et al., Chem. Comm.*, 1982, 102 (*synth*)
Jones, T.H. *et al., J. Chem. Ecol.*, 1984, **10**, 1233 (*isol*)
Royer, J. *et al., J.O.C.*, 1985, **50**, 670 (*synth, pmr, cmr, ms*)
Tokuyama, T. *et al., Tetrahedron*, 1986, **42**, 3453 (*isol, cmr, struct*)
Jefford, C.W. *et al., Helv. Chim. Acta*, 1989, **72**, 1749 (*synth*)
Yamazaki, N. *et al., J.A.C.S.*, 1989, **111**, 1396 (*synth, ir, pmr, cmr, ms*)
Watanabe, Y. *et al., J.O.C.*, 1989, **54**, 4088 (*synth, pmr, cmr, ms*)
Momose, T. *et al., Chem. Pharm. Bull.*, 1990, **38**, 2072 (*synth*)
Nagasaka, T. *et al., Heterocycles*, 1, Spec. Issue, 1990, **30**, 561 (*synth*)

Vavrecka, M. *et al., Helv. Chim. Acta*, 1991, **74**, 438 (*synth*)
Ito, M. *et al., J.A.C.S.*, 1991, **113**, 3513 (*synth*)
Saliou, C. *et al., Tet. Lett.*, 1991, **32**, 3365 (*synth*)
Takahata, H. *et al., Heterocycles*, 1993, **36**, 2777 (*synth, ir, pmr, cmr*)
Higashiyama, K. *et al., J.C.S. Perkin 1*, 1994, 351-353 (*synth, pmr, Indolizidine 195B, Monomorine I*)
Somfai, P. *et al., Acta Chem. Scand.*, 1997, **51**, 1024-1029 (*synth*)
Berry, M.B. *et al., Chem. Comm.*, 1997, 2141-2142 (*synth*)
Muraoka, O. *et al., J.C.S. Perkin 1*, 1997, 113 (*synth*)
Momose, T. *et al., J.C.S. Perkin 1*, 1997, 1315 (*synth*)
Mori, M. *et al., J.O.C.*, 1998, **63**, 4832-4833 (*synth*)
Celimene, C. *et al., Tetrahedron*, 1998, **54**, 10457-10468 (*synth*)
Riesinger, S.W. *et al., Eur. J. Org. Chem.*, 1999, 3277-3280; 2000, 867 (*synth*)
Yuguchi, M. *et al., Bull. Chem. Soc. Jpn.*, 2004, **77**, 1031-1032 (*synth*)
Toyooka, N. *et al., J.O.C.*, 2008, **73**, 4575-4577 (*synth*)
Kuhakarn, C. *et al., Tetrahedron*, 2008, **64**, 1663-1670 (*synth*)

3-Butyloctahydro-5-(4-pentenyl)indolizine B-435

3-Butyl-5-(4-pentenyl)indolizidine



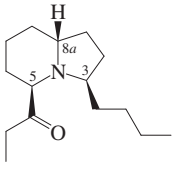
$C_{17}H_{31}N$ 249.439

(3*S*,5*R*,8*aS*)-*form* [128855-21-0]
Alkaloid from venom of the ant *Monomorium smithii*.

Jones, T.H. *et al., J. Nat. Prod.*, 1990, **53**, 375 (*isol, cmr, synth, struct*)

3-Butyloctahydro-5-propanoylindolizine B-436

1-(3-Butyloctahydro-5-indolizinyl)-1-propanone, 9CI. 3-Butyl-5-propanoylindolizidine



(3*R*,5*R*,8*aR*)-*form*

$C_{15}H_{27}NO$ 237.384

(3*R*,5*R*,8*aR*)-*form*
Myrmicarin 237B
[165877-93-0]
Alkaloid from the poison gland secretion of the African ant *Myrmicaria eumenoides*. Oil. $[\alpha]_D^{19}$ +14.1 (c, 0.81 in heptane).

(3*R*,5*R*,8*aS*)-*form*
Synthetic. $[\alpha]_D^{19}$ +12.6 (c, 2.39 in heptane).

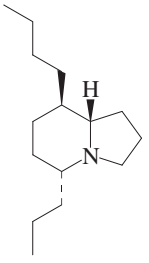
(3*R*,5*S*,8*aR*)-*form*
Myrmicarin 237A
[165877-92-9]
From *Myrmicaria eumenoides*. $[\alpha]_D^{20}$ -123 (c, 1.46 in heptane).

(3*R*,5*S*,8*aS*)-*form*
Synthetic. $[\alpha]_D^{20}$ -5.6 (c, 1.64 in heptane).

Francke, W. *et al., Annalen*, 1995, 965 (*isol, ir, pmr, cmr, ms, synth, struct*)

8-Butyloctahydro-5-propyl-1*H*-indolizine, 9CI B-437

8-Butyl-5-propylindolizidine. ***Indolizidine 223V.*** Dendrobates *Alkaloid 223V*
[194344-43-9]
[194344-44-0]

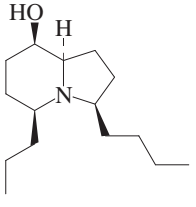


$C_{15}H_{29}N$ 223.401
Alkaloid from the poison frog *Dendrobates pumilio*.

Toyooka, N. *et al., Tetrahedron*, 2005, **61**, 1187-1198; 5139 (*synth, ms*)

3-Butyloctahydro-5-propyl-8-indolizinol B-438

3-Butyloctahydro-8-hydroxy-5-propylindolizine. 3-Butyl-8-hydroxy-5-propylindolizidine



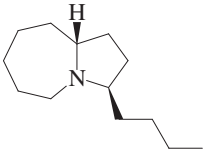
$C_{15}H_{29}NO$ 239.4

(3*R,5*S**,8*R*,8*aR**)-*form*** [929631-68-5]
Alkaloid from the venom of *Myrmicaria melanogaster*.

Jones, T.H. *et al., J. Nat. Prod.*, 2007, **70**, 160-168 (*isol, synth, ir, ms*)

3-Butyloctahydro-1*H*-pyrrolo[1,2-*a*]azepine B-439

3-Butyllehmizidine



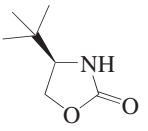
$C_{13}H_{25}N$ 195.347

(3*R*,9*aR*)-*form* [929631-67-4]
Alkaloid from the venom of *Myrmicaria melanogaster*.

Jones, T.H. *et al., J. Nat. Prod.*, 2007, **70**, 160-168 (*isol, synth, ir, ms*)

4-*tert*-Butyl-2-oxazolidinone B-440

4-(1,1-Dimethylethyl)-2-oxazolidinone, 9CI
[134668-36-3]
[142758-90-5]



(*R*)-*form*

$C_7H_{13}NO_2$ 143.185

(*R*)-*form* [142618-93-7]
Cryst. (toluene). Mp 119-120°. $[\alpha]_D^{20}$ +18.8 (c, 1.0 in EtOH) (>99% ee).

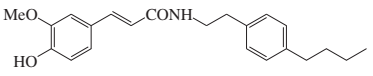
(*S*)-*form* [54705-42-9]
Cryst. (Et_2O/hexane) or needles (EtOAc/petrol). Mp 120° (110-111°). $[\alpha]_D^{20}$ -18 (c, 0.50 in EtOH).

(ξ)-*form*
Alkaloid from *Strychnos cathayensis*.

Hassner, A. *et al., Tetrahedron*, 1974, **30**, 2613-2621 (*S-form, synth, pmr*)
Ishizuka, T. *et al., Chem. Lett.*, 1992, 991-994 (*synth, resoln*)
Drauz, K. *et al., Chem. Eur. J.*, 1995, **1**, 538-540 (*R-form, synth, pmr*)
Tietze, L.F. *et al., Chem. Eur. J.*, 1996, **2**, 139-148 (*S-form, synth, pmr*)
Takacs, J.M. *et al., J.O.C.*, 1998, **63**, 2742-2748 (*R-form, synth*)
Cheng, M.-J. *et al., J. Chin. Chem. Soc. (Taipei)*, 2001, **48**, 235-239 (*isol*)

N-[2-(4-Butylphenyl)ethyl]-3-(4-hydroxy-3-methoxyphenyl)-2-propenamide B-441

4-Butyl-N-feruloylphenethylamine
[402499-33-6]

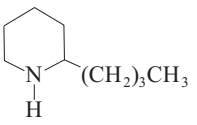


$C_{22}H_{27}NO_3$ 353.46
Alkaloid from *Cuscuta reflexa*. α-Glucosidase inhibitor. Solid. λ_{max} 220 (log ϵ 4.1); 292 (log ϵ 3.95); 325 (log ϵ 4.42) (MeOH).

Anis, E. *et al., Chem. Pharm. Bull.*, 2002, **50**, 112-114 (*isol, pmr, cmr, ms*)

2-Butylpiperidine B-442

[72939-22-1]



$C_9H_{19}N$ 141.256

(+)-*form*
$[\alpha]_D$ +15.7.
Hexachloroplatinate: Mp 131-132°.

(-)-*form*

$[\alpha]_D$ -18.7.

Tartrate salt:

Needles. Mp 41-42°. Forms a dihydrate.

(±)-*form* [68144-45-6]

Liq. Bp 191-193° Bp_{14} 75°.

Hydrochloride: Mp 191-193° (181-182°).

Hydrobromide: Mp 196-197°.

N-*Me:*

Liq. Mp 88° (as picrate). Bp_{15} 75-80°.

(ξ)-*form*

N-*Me:* ***2-Butyl-1-methylpiperidine***

$C_{10}H_{21}N$ 155.283

Trace alkaloid from oil of *Pimpinella acuminata* (Apiaceae). Opt. activity not reported.

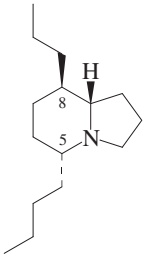
[68474-12-4]

Loffler, K. *et al., Ber.*, 1907, **40**, 1310 (*synth, resoln*)
Diels, O. *et al., Annalen*, 1937, **530**, 68 (*synth*)
Astier, A. *et al., Tet. Lett.*, 1978, 2051 (*synth*)
Ashraf, M. *et al., Pak. J. Sci. Ind. Res.*, 1979, **22**, 79 (*isol, deriv*)
Scully, F.E. *et al., J.O.C.*, 1980, **45**, 1515 (*synth, pmr, ir*)
Pirkle, W.H. *et al., J.O.C.*, 1984, **49**, 2504 (*resoln*)

5-Butyl-8-propylindolizidine B-443

*Octahydro-5-butyl-8-propyl-1*H*-indolizine, 9CI*. **Dendrobates *Alkaloid 223J***. *Indolizidine 223J*

[194344-81-5]



$C_{15}H_{29}N$ 223.401

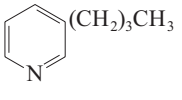
Tentative struct. assigned. Minor alkaloid from a frog *Dendrobates* sp. Oil. Mp 192-195° (as hydrochloride) (synthetic). $[\alpha]_D^{26}$ -131.9 (c, 0.5 in $CHCl_3$).

Toyooka, N. *et al., Tetrahedron*, 1997, **53**, 9553-9574 (*synth, ir, pmr, cmr, ms*)
Michel, P. *et al., J.O.C.*, 2000, **65**, 8908-8918 (*synth*)

3-Butylpyridine, 9CI B-444

Fusarinin†. *Fusarin*†

[539-32-2]



$C_9H_{13}N$ 135.208

Isol. from the fungus *Fusarium heterosporum*. Insol. H_2O. d_4^{20} 0.92. Bp 205-208° Bp_7 82°.

▶ US4056000

Hydrochloride:

Cryst. (H_2O). Mp 126°.

Picrate:

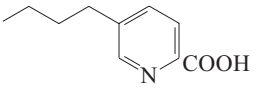
Yellow needles (EtOH). Mp 89-90°.

Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 245A (*nmr*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 1517B (*ir*)
Maas, E. *et al., Ber.*, 1914, **47**, 1164-1173 (*synth*)
Yabuta, Y. *et al., CA*, 1940, **34**, 3314 (*isol*)
Frank, R.L. *et al., J.A.C.S.*, 1948, **70**, 3482-3483 (*synth*)
Tamari, K. *et al., Nippon Nogei Kagaku Kaishi*, 1948, **22**, 16-17; *CA*, **46**, 5143 (*synth*)
Plattner, P.A. *et al., Helv. Chim. Acta*, 1954, **37**, 1379-1392 (*synth, ir, uv*)
Kyte, C.T. *et al., J.C.S.*, 1960, 4454-4472 (*synth, uv*)
Chelucci, G. *et al., J. Het. Chem.*, 1988, **25**, 1761-1765 (*synth, pmr*)

5-Butyl-2-pyridinecarboxylic acid, 9CI B-445

5-Butylpicolinic acid. ***Fusaric acid***

[536-69-6]



$C_{10}H_{13}NO_2$ 179.218

Isol. from *Fusarium lycopersici, Fusarium oxysporum, Fusarium vasinfectum* and *Gibberella fujikuroi*. Plant growth inhibitor. Shows antihypertensive and insecticidal activity. Dopamine β-hydroxylase inhibitor. Plates (petrol). Sol. MeOH, butanol; poorly sol. H_2O. Mp 108-109°. Log P 2.88 (calc). λ_{max} 260 (MeOH) (Berdy).

▶ LD_{50} (mus, ivn) 100 mg/kg, LD_{50} (mus, ipr) 80 mg/kg, LD_{50} (mus, orl) 230 mg/kg. US5625000

Picrate: Mp 83-89°.

Me ester: [17072-92-3]

$C_{11}H_{15}NO_2$ 193.245

Bp 98-99°. λ_{max} 225 (ϵ 5888); 264 (ϵ 2455) (MeOH) (Berdy).

Amide: ***Bupicomide, INN, USAN***. *Sch 10595*

[22632-06-0]

$C_{10}H_{14}N_2O$ 178.233

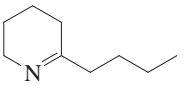
Dopamine β-hydroxylase inhibitor. Antihypertensive agent. Mp 127-128°. Log P 1.88 (calc).

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 786D (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 319C (*nmr*)
Grove, F. *et al., J.C.S.*, 1958, 1236 (*isol*)
Chumakov, Y.I. *et al., Tet. Lett.*, 1965, 129 (*synth, ir*)
Vogt, H. *et al., Tet. Lett.*, 1966, 5887 (*synth*)
U.S. Pat., 1970, 3 519 717; *CA*, **73**, 59319w (*bupicomide*)
Korduba, C.A. *et al., J. Pharmacol. Exp. Ther.*, 1973, **184**, 671 (*bupicomide*)
Symchowicz, S. *et al., J. Pharmacol. Exp. Ther.*, 1974, **191**, 324 (*bupicomide*)
Tschesche, R. *et al., Chem. Ber.*, 1978, **111**, 3502 (*synth, spectra*)
Medvedeva, T.M. *et al., Khim.-Farm. Zh.*, 1978, **12**, 66 (*synth, pharmacol*)
Piesche, L. *et al., Pharmazie*, 1979, **34**, 332 (*pharmacol*)
Langhals, E. *et al., Annalen*, 1982, 930 (*synth*)
Schroetter, E. *et al., Pharmazie*, 1984, **39**, 155 (*synth*)
Sagi, M. *et al., Heterocycles*, 1989, **29**, 2249 (*synth*)
Waldner, A. *et al., Synth. Commun.*, 1989, **19**, 2371 (*synth, pmr*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 841 (*Fusaric acid*)
Koyama, J. *et al., Heterocycles*, 1994, **38**, 1595 (*synth*)
Renslo, A.R. *et al., J.O.C.*, 1998, **63**, 7840-7850 (*synth, Me ester, ir, pmr, cmr*)
Song, J.J. *et al., J.O.C.*, 2001, **66**, 605-608 (*synth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, BSI000

2-Butyl-3,4,5,6-tetrahydropyridine B-446

2-Butyl-1-azacyclohexene

[1462-94-8]



$C_9H_{17}N$ 139.24

Isol. from the mushroom *Tylopilus* sp. Toxin. Oil.

Hoffmann, R.V. *et al., J.O.C.*, 1988, **53**, 3316-3321 (*synth*)
Watanabe, R. *et al., Tet. Lett.*, 2002, **43**, 6501-6504 (*isol*)

2-Butynedioic acid, 9CI B-447

Acetylenedicarboxylic acid, 8CI. *Ethynedicarboxylic acid*

[142-45-0]

HOOCC≡CCOOH

$C_4H_2O_4$ 114.057

Monomer for acetylenic polyesters. Cryst. + $2H_2O$. Mp 179°. pK_{a1} 1.23; pK_{a2} 2.53 (28°).

Diamide: Butynediamide. Aquamycin. Cellocidin. Lenamycin

[543-21-5]

$C_4H_4N_2O_2$ 112.088

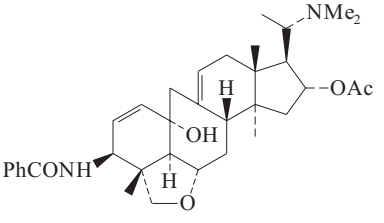
Isol. from *Streptomyces chibaensis* and *Streptomyces reticuli*. Active against gram-positive and -negative bacteria and HeLa cells. Cryst. (MeOH aq.). Mp 216-218° (dec.). Unstable in alkaline solns., evolving NH_3. λ_{max} 299 (ϵ 3248) (dil. NaOH) (Derep). λ_{max} 216 (ϵ 9150) (H_2O) (Derep).

▶ LD_{50} (mus, orl) 89.2 mg/kg. LD_{50} (mus, skn) 667 mg/kg. AO9900000

Suzuki, S. *et al., J. Antibiot., Ser. A*, 1958, **11**, 81 (*isol, amide*)

Buxafuranamide B-448

[123871-27-2]

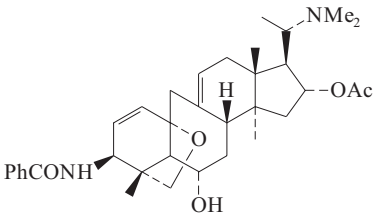


$C_{35}H_{48}N_2O_5$ 576.775
Alkaloid from *Buxus papilosa* (Buxaceae). $[\alpha]_D^{24}$ +190 ($CHCl_3$).

Atta-ur-Rahman, *et al., J. Nat. Prod.*, 1990, **53**, 319-324 (*isol, pmr, cmr, struct*)

O[10]-Buxafuranamine B-449

[142674-57-5]



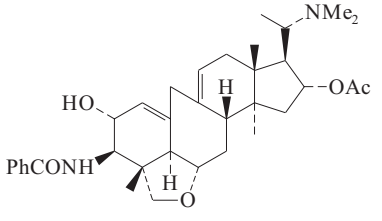
$C_{35}H_{48}N_2O_5$ 576.775
Alkaloid from leaves of *Buxus hildebrandtii* (Buxaceae). Gum. $[\alpha]_D^{20}$ -126.2 (c, 1.3 in $CHCl_3$).

Deoxy: ***6-Dehydroxy-O[10]-buxafuranamine***
[142674-58-6]
$C_{35}H_{48}N_2O_4$ 560.775
Alkaloid from leaves of *Buxus hildebrandtii* (Buxaceae). Gum. $[\alpha]_D^{20}$ -333 (c, 1.5 in $CHCl_3$).

Atta-ur-Rahman, *et al., Heterocycles*, 1992, **34**, 157-171 (*isol, uv, ir, pmr, ms, struct*)

O[6]-Buxafuranamine B-450

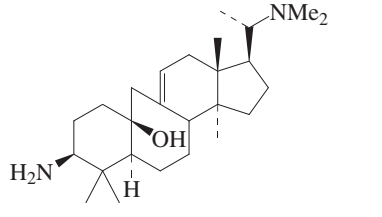
[142674-55-3]



$C_{35}H_{48}N_2O_5$ 576.775
Alkaloid from leaves of *Buxus hildebrandtii* (Buxaceae). Amorph. solid. $[\alpha]_D^{20}$ +20 (c, 0.7 in $CHCl_3$).

Atta-ur-Rahman, *et al., Heterocycles*, 1992, **34**, 157-171 (*isol, uv, ir, pmr, ms, struct*)

Buxahyrcanine B-451



$C_{26}H_{46}N_2O$ 402.662
Parent not known.

N[3]*-(2-Methylpropanoyl):* **N-*Isobutyryl-buxahyrcanine***
[552291-03-9]
$C_{30}H_{52}N_2O_2$ 472.753
Alkaloid from the leaves of *Buxus hyrcana*. Amorph. powder ($CHCl_3$). Mp 234-235°. $[\alpha]_D^{29}$ +14 (c, 0.12 in $CHCl_3$). λ_{max} 206 (log ϵ 4.33) (MeOH).

N[3]*-Tigloyl:* **N-*Tigloylbuxahyrcanine***
[552291-02-8]
$C_{31}H_{52}N_2O_2$ 484.764
Alkaloid from the leaves of *Buxus hyrcana*. Acetylcholinesterase inhibitor. Amorph. powder ($MeOH/C_6H_6$). Mp 245.5°. $[\alpha]_D^{29}$ +62 (c, 0.1 in $CHCl_3$). λ_{max} 206 (log ϵ 4.33) (MeOH).

N[3]*-Benzoyl:* **N-*Benzoylbuxahyrcanine***
[552291-00-6]
$C_{33}H_{50}N_2O_2$ 506.77
Alkaloid from the leaves of *Buxus hyrcana*. Amorph. powder (MeOH). Mp 239.7°. $[\alpha]_D^{29}$ +15 (c, 0.14 in $CHCl_3$). λ_{max} 223 (log ϵ 4.2) (MeOH).

Choudhary, M.I. *et al., J. Nat. Prod.*, 2003, **66**, 739-742 (*isol, pmr, cmr, cryst struct*)

Buxalfine B-452

Buxalphine
[1354-96-7]
$C_{33}H_{46}N_2O_3$ 518.738
Struct. unknown. Alkaloid from *Buxus sempervirens* (Buxaceae). $[\alpha]_D$ +56 (c, 0.87 in $CHCl_3$). $[\alpha]_D$ +61 (EtOH).

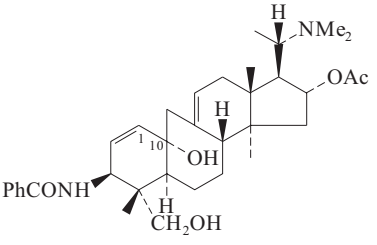
Dihydro: Buxalfol
Mp 244-249°. $[\alpha]_D$ +81 (c, 0.26 in $CHCl_3$).

Octahydro: Mp 152-155°. $[\alpha]_D$ +49 (c, 0.72 in $CHCl_3$).

Tomko, J. *et al., Chem. Zvesti*, 1964, **18**, 721-731; *CA*, **62**, 4321d (*isol*)
Votický, Z. *et al., CA*, 1967, **67**, 11668h (*isol*)

Buxalongifolamidine B-453

[149472-47-9]

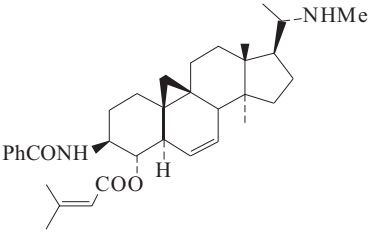


$C_{35}H_{50}N_2O_5$ 578.79
Alkaloid from leaves of *Buxus longifolia* (Buxaceae). Amorph. solid. $[\alpha]_D^{22}$ +23 (c, 0.085 in $CHCl_3$).

Atta-ur-Rahman, *et al., Phytochemistry*, 1993, **32**, 1059-1063 (*isol, uv, ir, pmr, cmr, ms, struct*)

Buxaltine H B-454

Buxaltine
[25650-66-2]

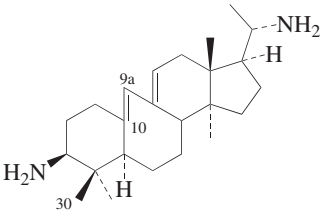


$C_{35}H_{48}N_2O_3$ 544.776
Struct. not well established. Alkaloid from *Buxus sempervirens* (Buxaceae). Mp 188-191°.

Döpke, W. *et al., Pharmazie*, 1969, **24**, 649; *CA*, **72**, 43929p (*isol, ir, ms, struct*)

Buxamine I B-455

4,4,14-Trimethyl-B-(9a)-homo-19-nor-pregna-9(11),9a-diene-3,20-diamine, 9CI



$C_{24}H_{40}N_2$ 356.593
The suffix letter in *Buxus* alkaloids systematically designates the *N*-subn. pattern. The parent compd., Buxamine I, is unknown.

N[3]*-Me:* ***Buxamine G****. Buxenine G. Norbuxamine*
[6246-56-6]
$C_{25}H_{42}N_2$ 370.62
Alkaloid from *Buxus sempervirens* (Buxaceae). Noncryst. Mp 298-300° dec. (as dihydroiodide). $[\alpha]_D^{20}$ +20 (c, 0.51 in $CHCl_3$).

N[3]*-Me,* N[20]*-Ac:* **N[20]-*Acetylbuxamine G***
[307317-34-6]
$C_{27}H_{44}N_2O$ 412.657
Alkaloid from *Buxus sempervirens*. Gum. $[\alpha]_D$ +20 (c, 0.41 in MeOH). λ_{max} 238 ; 245 ; 254 (sh) (no solvent reported).

N[3],N[3]*-Di-Me:* ***Buxamine E****. Buxamine*
[14317-17-0]
$C_{26}H_{44}N_2$ 384.647
Alkaloid from *Buxus sempervirens*, *Buxus balearica*, *Buxus microphylla* and *Buxus harlandi* (Buxaceae). HIV reverse transcriptase (HIV-rt) inhibitor. $[\alpha]_D^{20}$ +32 (c, 0.57 in $CHCl_3$).

N[3],N[3]*-Di-Me,* N[20]*-Ac:* **N[20]-*Acetylbuxamine E***
[76199-87-6]
$C_{28}H_{46}N_2O$ 426.684
Alkaloid from *Buxus sempervirens*. Gum. $[\alpha]_D$ +8 (c, 0.53 in MeOH). λ_{max} 238 ; 245 ; 254 (sh) (no solvent reported).

N[3],N[20]*-Di-Me:* ***Papilamine***
[96910-87-1]
$C_{26}H_{44}N_2$ 384.647
Alkaloid from the leaves of *Buxus papilosa* (Buxaceae). Cryst. Mp 240° dec. $[\alpha]_D$ +23.3. λ_{max} 210 ; 237 ; 245 ; 254 (No solvent reported).

N[20],N[20]*-Di-Me:* ***Buxamine F***
[231628-56-1]
$C_{26}H_{44}N_2$ 384.647
Alkaloid from *Buxus sempervirens*. Amorph. solid. $[\alpha]_D^{20}$ +49 (c, 0.4 in $CHCl_3$). λ_{max} 231 (sh) (log ϵ 3.2); 238 (log ϵ 3.4); 245 (log ϵ 2.9); 252 (sh) (log ϵ 3.1) (MeOH).

N[20],N[20]*-Di-Me,* N[3]*-benzoyl:* ***Buxabenza-***

midienine
[107259-38-1]
$C_{33}H_{48}N_2O$ 488.755
Alkaloid from leaves of *Buxus papilosa* (Buxaceae). Amorph. powder. $[\alpha]_D$ +6 (c, 1.59 in $CHCl_3$).

N^3,N^3,N^{20}-*Tri-Me:* ***Buxamine B***. *Papilicine*
[76186-32-8]
$C_{27}H_{46}N_2$ 398.674
Alkaloid from the leaves of *Buxus harlandi* and from *Buxus papilosa* (Buxaceae). Mp 248°. $[\alpha]_D^{23}$ +61.4 (c, 0.57 in $CHCl_3$). $[\alpha]_D$ +47.6 ($CHCl_3$). Papilicine, which was descr. as a gum, is of unclear stereochem. It could be the C-20 epimer of Buxamine B, which is unlikely, but was probably impure Buxamine B.

N^3,N^3,N^{20}-*Tri-Me,* N^{20}-*formyl:* **N-*Formylpapilicine***. N-*Formylbuxamine B*
[115713-19-4]
$C_{28}H_{46}N_2O$ 426.684
Alkaloid from the leaves of *Buxus papilosa* (Buxaceae). Amorph. $[\alpha]_D$ +36 (c, 0.35 in $CHCl_3$).

N^3,N^3,N^{20}-*Tri-Me,* N^{20}-*Ac:*
Cryst. (Me_2CO). Mp 186-190°.

N^3,N^{20},N^{20}-*Tri-Me:* ***Buxamine C***
[51059-62-2]
$C_{27}H_{46}N_2$ 398.674
Alkaloid from *Buxus papilosa* (Buxaceae). Cryst. (Me_2CO). Mp 153-155°. $[\alpha]_D$ +24 (c, 1.12 in $CHCl_3$).

N-*Tetra-Me:* ***Buxamine A***
[36127-40-9]
$C_{28}H_{48}N_2$ 412.701
Alkaloid from *Buxus madagascarica* (Buxaceae). Mp 134°. $[\alpha]_D$ +40 ($CHCl_3$).

9a,*10-Dihydro,* N^{20},N^{20}-*di-Me,* N^3-*benzoyl:* ***Buxabenzamidine***
[109305-86-4]
$C_{33}H_{50}N_2O$ 490.771
Alkaloid from leaves of *Buxus papilosa* (Buxaceae). Amorph. $[\alpha]_D$ +47 (c, 0.73 in $CHCl_3$).

1,2-Didehydro, N^{20},N^{20}-*di-Me,* N^3-*benzoyl:* ***Hyrcatrienine***
$C_{33}H_{46}N_2O$ 486.739
Alkaloid from the leaves of *Buxus hyrcana*. Amorph. solid. $[\alpha]_D^{24}$ +47.9 (c, 0.2 in $CHCl_3$). λ_{max} 232 ; 289 ($CHCl_3$).

30-Nor, N-*tetra-Me:* ***30-Norbuxamine A***
[129225-36-1]
$C_{27}H_{46}N_2$ 398.674
Alkaloid from leaves of *Buxus hildebrandtii* (Buxaceae). Amorph. $[\alpha]_D$ -13 ($CHCl_3$).

[89164-27-2 , 11037-97-1]

Stauffacher, D. *et al., Helv. Chim. Acta*, 1964, **47**, 968-981 (*Buxamine, Norbuxamine, isol, uv, ir, pmr*)
Kupchan, S.M. *et al., Tet. Lett.*, 1964, 3145-3150 (*Buxenine G, uv, ir, pmr, struct*)
Khuong-Huu, F. *et al., Tetrahedron*, 1966, **22**, 3321-3327 (*Buxus balearic constits*)
Khuong-Huu-Laine, F. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1971, **273**, 558-560 (*Buxamine A*)
Puckett, R.T. *et al., J.C.S.(B)*, 1971, 935-941 (*Buxenine G, cryst struct*)
Shamma, M. *et al., Phytochemistry*, 1973, **12**, 2051-2054 (*Buxamine C*)
Vassová, A. *et al., Chem. Zvesti*, 1980, **34**, 706-711 (*Buxamine B*)
Atta-ur-Rahman, *et al., Z. Naturforsch., B*, 1984, **39**, 127-128; 1985, **40**, 567-568 (*Papilicine, Papilamine*)
Choudhary, M.I. *et al., Tetrahedron*, 1986, **42**, 5747-5752 (*Buxabenzamidienine*)
Choudhary, M.I. *et al., J. Nat. Prod.*, 1987, **50**, 84-88 (*Buxabenzamidine*)
Choudhary, M.I. *et al., Phytochemistry*, 1988, **27**, 1561-1562 (*N-Formylpapilicine*)
Atta-ur-Rahman, *et al., Phytochemistry*, 1990, **29**, 1293-1296 (*30-Norbuxamine A*)
Sun, H.D. *et al., J. Nat. Prod.*, 1996, **59**, 525-528 (*activity*)
Atta-ur-Rahman, *et al., J. Nat. Prod.*, 1999, **62**, 665-669 (*Buxamine F*)
Loru, F. *et al., Phytochemistry*, 2000, **54**, 951-957 (N^{20}-*Acetylbuxamines*)
Choudhary, M.I. *et al., Chem. Biodiversity*, 2006, **3**, 1039-1052 (*Hyrcatrienine*)

Buxaminol I B-456

Buxodienine I
As Buxamine I, B-455 with
R = OH

$C_{24}H_{40}N_2O$ 372.593

The suffix letter in *Buxus* alkaloids systematically designates the *N*-subn. pattern. The parent compd., Buxaminol I, is unknown.

N^{20}-*Me,* N^3-*benzoyl, 16-Ac:* ***Nor-16-acetoxybuxabenzamidienine***
[126025-06-7]
$C_{34}H_{48}N_2O_3$ 532.765
Alkaloid from leaves of *Buxus sempervirens* (Buxaceae). Amorph. solid. $[\alpha]_D^{20}$ +17.5 (c, 0.4 in $CHCl_3$).

N^3,N^3-*Di-Me:* ***Buxaminol E***. *Buxaminol. Buxodienine E*
[14155-76-1]
[50861-49-9 (Buxodienine E)]
$C_{26}H_{44}N_2O$ 400.646
Alkaloid from *Buxus balearica* and *Buxus sempervirens*; main alkaloid of *Buxus sempervirens* var. *bullata* (Buxaceae). Cryst. (MeOH) or amorph. Mp 198°. $[\alpha]_D$ +40 ($CHCl_3$).

N^3,N^3-*Di-Me,* N^{20}-*formyl:* **N^{20}-*Formyl-buxaminol E***
[307317-32-4]
$C_{27}H_{44}N_2O_2$ 428.657
Alkaloid from *Buxus sempervirens*. Gum. $[\alpha]_D$ +13 (c, 0.15 in MeOH). λ_{max} 238 ; 245 ; 254 (sh) (no solvent reported).

N^3,N^3-*Di-Me,* N^{20}-*benzoyl:* **N-*Benzoyl-buxodienine E***
[49776-67-2]
$C_{33}H_{48}N_2O_2$ 504.754
Alkaloid from *Buxus sempervirens* (Buxaceae). Needles (Me_2CO). Mp 235-237°. $[\alpha]_D^{24}$ +34.6 ($CHCl_3$).

N^3,N^3-*Di-Me,* N^{20}-*benzoyl,* O-*Ac:* **N-*Benzoyl*-O-*acetylbuxodienine E***
[49776-68-3]
$C_{35}H_{50}N_2O_3$ 546.792
Alkaloid from *Buxus sempervirens* (Buxaceae). Amorph. $[\alpha]_D^{24}$ -6 ($CHCl_3$).

N^3,N^3-*Di-Me,* O-*(4-hydroxy-3,5-dimethoxybenzoyl):* ***16*-O-*Syringoylbuxaminol E***
[307317-33-5]
$C_{35}H_{52}N_2O_5$ 580.806
Alkaloid from *Buxus sempervirens*. Gum. $[\alpha]_D$ +83 (c, 0.53 in EtOH). λ_{max} 221 ; 236 ; 245 ; 254 (sh) ; 278 (no solvent reported).

N^3,N^{20}-*Di-Me,* N^3-*Ac:* [204449-46-7]
$C_{28}H_{46}N_2O_2$ 442.684
Alkaloid from *Buxus papilosa*. Gum. $[\alpha]_D$ +124 (c, 0.95 in $CHCl_3$). Synonym assigned in ref. is incorrect. λ_{max} 236 (sh) ; 238 ; 245 ; 251 (sh) (MeOH).

N^{20},N^{20}-*Di-Me,* N^3-*benzoyl,* O-*Ac:* ***16-Acetoxybuxabenzamidienine***
[107259-39-2]
$C_{35}H_{50}N_2O_3$ 546.792
Alkaloid from leaves of *Buxus papilosa* and *Buxus longifolia*. Amorph. $[\alpha]_D$ +6 (c, 1.02 in $CHCl_3$). λ_{max} 225 (log ϵ 4.28); 230 (log ϵ 4.3); 237 (log ϵ 4.32); 245 (log ϵ 4.35); 254 (log ϵ 4.4) (MeOH).

N^3,N^3,N^{20}-*Tri-Me:* ***Buxaminol B***
[58672-77-8]
$C_{27}H_{46}N_2O$ 414.673
Alkaloid from *Buxus sempervirens* var. *bullata* and *Buxus papilosa* (Buxaceae). Cryst. (Me_2CO). Mp 225°. $[\alpha]_D^{25}$ +20 (c, 0.59 in MeOH). λ_{max} 236 (log ϵ 4.45); 246 (log ϵ 4.49); 255 (log ϵ 4.28); 273 (log ϵ 2.68) (EtOH).

N^3,N^{20},N^{20}-*Tri-Me:* ***Buxaminol C***
[191288-32-1]
$C_{27}H_{46}N_2O$ 414.673
Alkaloid from the roots of *Buxus sempervirens* (Buxaceae). Gum. $[\alpha]_D^{20}$ +88 (c, 0.6 in $CHCl_3$). λ_{max} 230 (sh) ; 235 ; 247 ; 251 (sh) (MeOH).

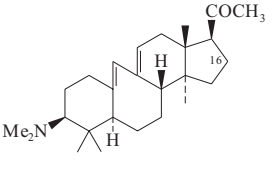
N-*Tetra-Me: Buxaminol A*
[58672-76-7]
Semisynthetic. Mp 146-147°. $[\alpha]_D^{22}$ +34 (c, 1.0 on $CHCl_3$).

[11037-98-2]

Stauffacher, D. *et al., Helv. Chim. Acta*, 1964, **47**, 968-981 (*Buxaminol*)
Khuong-Huu, F. *et al., Tetrahedron*, 1966, **22**, 3321-3327 (*Buxaminol E*)
Döpke, W. *et al., Z. Chem.*, 1973, **13**, 135-136 (*N-Benzoylbuxodienine E, N-Benzoyl-O-acetylbuxodienine E*)
Votický, Z. *et al., Coll. Czech. Chem. Comm.*, 1975, **40**, 3055-3060 (*Buxaminols A,B*)
Choudhary, M.I. *et al., Tetrahedron*, 1986, **42**, 5747-5752 (*16-Acetoxybuxabenzamidiene, Buxaminol B*)
Atta-ur-Rahman, *et al., J. Nat. Prod.*, 1989, **52**, 1319-1322; 1997, **60**, 770-774; 976-981 (*Nor-16α-acetoxybuxabenzamidienine, Buxaminol C, 16-Acetoxybuxbenzamidienine*)
Atta-ur-Rahman, *et al., Nat. Prod. Lett.*, 1998, **11**, 111-118 (*Buxus papilosa alkaloid*)
Loru, F. *et al., Phytochemistry*, 2000, **54**, 951-957 (N^{20}-*Formylbuxaminol E, O-Syringoylbuxaminol E*)

Buxaminone B-457

[114333-58-3]



$C_{26}H_{41}NO$ 383.616
Alkaloid from the leaves of *Buxus papilosa* (Buxaceae). Amorph. solid. $[\alpha]_D^{20}$ -22 (c, 1.58 in $CHCl_3$). λ_{max} 225 (ϵ 7760); 238 (ϵ 10700); 248 (ϵ 64600); 254 (ϵ 8130) (MeOH) (Derep).

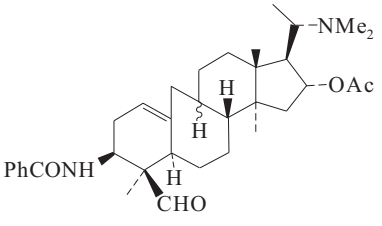
16,17-Didehydro: ***Buxpsiine K***. *Buxpsiine. Buxamideine K*
[5189-69-5]
$C_{26}H_{39}NO$ 381.6
Alkaloid from *Buxus balearica* and *Buxus sempervirens*. Mp 180-183° (176-178°). $[\alpha]_D$ +105 (c, 0.18 in $CHCl_3$).

16α-Hydroxy: ***Buxbarbarine K***. *16-Hydroxybuxaminone*
[90468-71-6]
$C_{26}H_{41}NO_2$ 399.615
Alkaloid from roots of *Buxus sempervirens* (Buxaceae). Gum. $[\alpha]_D^{20}$ -54 (c, 1.56 in $CHCl_3$).

Tomko, J. *et al., Tet. Lett.*, 1966, 915 (*Buxpsiine K*)
Kurakina, I.O. *et al., Khim. Prir. Soedin.*, 1969, **5**, 406; *Chem. Nat. Compd. (Engl. Transl.)*, 1969, **5**, 337 (*Buxpsiine K*)
Mokry, P. *et al., Chem. Zvesti*, 1984, **38**, 101-109 (*Buxbarbarine K*)
Atta-ur-Rahman, *et al., J. Nat. Prod.*, 1988, **51**, 309-310 (*Buxaminone*)
Atta-ur-Rahman, *et al., Phytochemistry*, 1992, **31**, 2933-2935 (*16-Hydroxybuxaminone*)

Buxanaldinine B-458

[107259-42-7]

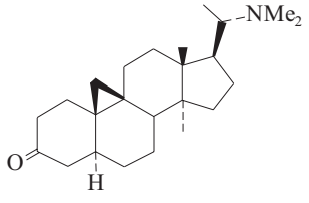


$C_{35}H_{50}N_2O_4$ 562.791
Alkaloid from the leaves of *Buxus papilosa* (Buxaceae). Amorph. $[\alpha]_D$ +12 (c, 1.39 in $CHCl_3$). Anomalous C-4 config.

Choudhary, M.I. *et al., Tetrahedron*, 1986, **42**, 5747-5752 (*isol, uv, ir, pmr, ms, struct*)

Buxandonine L B-459

20-Dimethylamino-14-methyl-9,19-cyclopregnan-3-one. Buxandonine
[17934-61-1]



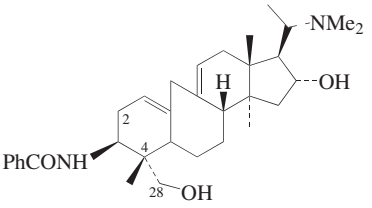
$C_{24}H_{39}NO$ 357.578
Rare *Buxus* alkaloid lacking C-4 subn. 9CI name incorrect. Alkaloid from *Buxus sempervirens* (Buxaceae). Mp 157-159° Mp 188-192°. $[\alpha]_D$ +14.

Deoxo: ***3-Deoxybuxandonine***
[142543-19-9]
$C_{24}H_{41}N$ 343.595
Alkaloid from roots of *Buxus papillosa* (Buxaceae). Amorph. powder. $[\alpha]_D^{26}$ +10 ($CHCl_3$).

Döpke, W. *et al., Pharmazie*, 1967, **22**, 666; 1969, **24**, 649; *CA*, **68**, 87471e; **72**, 43929p
Singh, C. *et al., Tetrahedron*, 1977, **33**, 1053-1055 (*synth*)
Atta-ur-Rahman, *et al., Tetrahedron*, 1992, **48**, 3577-3584 (*3-Deoxybuxandonine*)

Buxanoldine B-460

[107259-41-6]



$C_{33}H_{48}N_2O_3$ 520.754
Cycloartane-type numbering used here. The C-28*OH* (4α)-config. allocated here to these alkaloids is based on X-ray structures of alkaloids in this class and reverses the assignments made in the literature. Alkaloid from the leaves of *Buxus papilosa* (Buxaceae). Amorph. $[\alpha]_D$ -27.4 (c, 0.89 in $CHCl_3$). λ_{max} 228 (log ϵ 4.07) (MeOH).

16-Ac: ***Buxabenzacinine***
[149472-48-0]
$C_{35}H_{50}N_2O_4$ 562.791
Alkaloid from leaves of *Buxus longifolia* (Buxaceae). Amorph. solid. $[\alpha]_D^{22}$ +55 (c, 0.036 in $CHCl_3$). λ_{max} 226 (log ϵ 9.62) (MeOH).

28-Ac: ***28-Acetylbuxanoldine***
[128351-96-2]
$C_{35}H_{50}N_2O_4$ 562.791
Alkaloid from leaves of *Buxus sempervirens* (Buxaceae). Amorph. solid. $[\alpha]_D$ +50 (c, 1.6 in $CHCl_3$). Called 31-acetyl in the lit.

16,28-Di-Ac: ***16,28-Diacetylbuxanoldine***
[107259-43-8]
$C_{37}H_{52}N_2O_5$ 604.828
Alkaloid from the roots of *Buxus sempervirens*. Gum. $[\alpha]_D^{20}$ +107 (c, 0.26 in $CHCl_3$). Called 16,31-di-Ac in the lit. λ_{max} 226 (MeOH).

9,11-Dihydro, N^3*-Me, 16-Ac:* ***Buxabenzacine***
[128741-20-8]
$C_{36}H_{54}N_2O_4$ 578.834
Alkaloid from *Buxus papilosa* (Buxaceae). Cryst. $[\alpha]_D^{20}$ +48 ($CHCl_3$).

28-Deoxy: ***28-Deoxybuxanoldine***
[191101-02-7]
$C_{33}H_{48}N_2O_2$ 504.754
Alkaloid from *Buxus sempervirens* (Buxaceae). Amorph. solid. $[\alpha]_D^{20}$ +123 (c, 0.8 in $CHCl_3$). Called 31-deoxy in the lit. λ_{max} 228 (MeOH).

28-Deoxy, 16-Ac: ***Buxadienine***
[123116-12-1]
$C_{35}H_{50}N_2O_3$ 546.792
Alkaloid from *Buxus sempervirens* (Buxaceae).

2α-Hydroxy: Buxirane
Parent compd. not known.

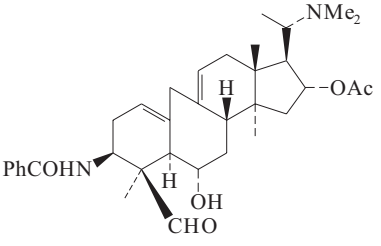
2α-Hydroxy, 2,16,28-tri-Ac: ***2,16,28-Triacetylbuxirane***
[912353-18-5]
$C_{39}H_{54}N_2O_7$ 662.865
Alkaloid from the leaves of *Buxus hyrcana*. $[\alpha]_D^{25}$ +107 (c, 0.26 in $CHCl_3$). λ_{max} 227 (MeOH).

2α-Hydroxy, 9,10-dihydro, 2,16,28-tri-Ac: ***2,16,28-Triacetyl-9,10-dihydrobuxirane***
[912353-19-6]
$C_{39}H_{56}N_2O_7$ 664.881
Alkaloid from the leaves of *Buxus hyrcana*. $[\alpha]_D^{25}$ +89 (c, 0.39 in $CHCl_3$). λ_{max} 226 (MeOH).

Choudhary, M.I. *et al., Tetrahedron*, 1986, **42**, 5747-5752 (*Buxanoldine*)
Atta-ur-Rahman, *et al., Fitoterapia*, 1989, **60**, 439-442 (*28-Acetylbuxanoldine*)
Atta-ur-Rahman, *et al., Phytochemistry*, 1989, **28**, 1293-1296; 1993, **32**, 1059-1063 (*Buxadienine, Buxabenzacinine*)
Atta-ur-Rahman, *et al., J. Nat. Prod.*, 1990, **53**, 319-324; 1997, **60**, 770-774 (*Buxabenzacine, Deoxybuxanoldine*)
Ata, A. *et al., Z. Naturforsch., C*, 2002, **57**, 21-28 (*Diacetylbuxanoldine*)
Meshkatalsadat, M.H. *et al., Z. Naturforsch., B*, 2006, **61**, 201-206 (*Buxus hyrcana constits*)

Buxapapinolamine B-461

[113762-73-5]

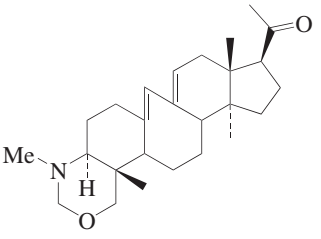


$C_{35}H_{48}N_2O_5$ 576.775
Alkaloid from the leaves of *Buxus papilosa* (Buxaceae). Amorph. $[\alpha]_D$ -16 (c, 1.84 in $CHCl_3$). Anomalous C-4 config.

Choudhary, M.I. *et al., Phytochemistry*, 1988, **27**, 271-274 (*isol, uv, ir, pmr, ms, struct*)

Buxaquamarine B-462

[98776-20-6]



$C_{26}H_{39}NO_2$ 397.6
Stereochem. revised in 2002. Alkaloid from *Buxus hyrcana*, the leaves of *Buxus*

papilosa and the roots of *Buxus sempervirens*. Gum. $[\alpha]_D^{20}$ +48 (c, 0.25 in $CHCl_3$). λ_{max} 230 (sh) ; 238 ; 245 ; 253 (sh) (MeOH).

Atta-ur-Rahman, *et al., Heterocycles*, 1985, **23**, 1951-1954 (*isol, uv, ir, pmr, ms, struct*)
Ata, A. *et al., Z. Naturforsch., C*, 2002, **57**, 21-28 (*isol, pmr*)
Babar, Z.U. *et al., Steroids*, 2006, **71**, 1045-1051 (*Buxus hyrcana constit*)

Buxazine B-463

[1354-97-8]

$C_{28}H_{48}N_2O_2$ 444.699

Struct. unknown. Alkaloid from *Buxus sempervirens* (Buxaceae). Cryst. (Me_2CO). Mp 238-239°. $[\alpha]_D$ +93 ($CHCl_3$).

Oxalate:
Amorph. Mp 257-260° dec.

O-*Ac:* Mp 238°.

Döpke, W. *et al., Naturwissenschaften*, 1965, **52**, 61 (*isol, ir*)

Buxdeltine B-464

[1354-98-9]

$C_{33}H_{46}N_2O_3$ 518.738

Struct. unknown. Alkaloid from *Buxus sempervirens* (Buxaceae). Cryst. (Et_2O/Me_2CO). Mp 275°. $[\alpha]_D^{23}$ +79 (c, 0.486 in EtOH).

Tomko, J. *et al., Chem. Zvesti*, 1964, **18**, 721-731; *CA*, **62**, 4321d (*isol*)
Voticky, Z. *et al., CA*, 1967, **67**, 11668h (*isol*)

Buxetine B-465

[1354-99-0]

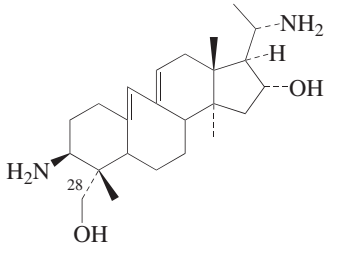
$C_{32}H_{50}N_2O_3$ 510.759

Struct. unknown. Alkaloid from *Buxus sempervirens* (Buxaceae). Mp 263-265°. $[\alpha]_D^{27}$ -30 (c, 0.816 in $CHCl_3$).

Tomko, J. *et al., Chem. Zvesti*, 1964, **18**, 721-731; *CA*, **62**, 4321d (*isol*)
Votický, Z. *et al., CA*, 1967, **67**, 11668h (*isol*)

Buxidienine I B-466

Baleabuxidienine I



$C_{24}H_{40}N_2O_2$ 388.592

Cycloartane numbering used here. The suffix letter in *Buxus* alkaloids systematically designates the *N*-subn. The parent compd., Buxidienine I, is unknown. There is uncertainty about the C-4 config. in some of these alkaloids. The accepted config. was revised in 1975 to 4*S*- (28-hydroxy), but structs. with the 4*R*- (29-hydroxy) config. continue to be published.

N^{20},N^{20}-*Di-Me: Buxidienine F*
[14777-61-8]
Mp 237°. $[\alpha]_D$ +8 ($CHCl_3$).

N^{20},N^{20}-*Di-Me,* N^3-*Ac:* Mp 263°. $[\alpha]_D$ -73.

N^{20},N^{20}-*Di-Me,* N^3-*(2-methylpropanoyl):* **N-*Isobutyrylbaleabuxidienine F*.** N-*Isobutyrylbuxidienine F*
[14155-73-8]
$C_{30}H_{50}N_2O_3$ 486.737
Alkaloid from *Buxus balearica* (Buxaceae). Mp 253°. $[\alpha]_D$ -67 ($CHCl_3$). Shown lacking the C-18 methyl group due to a drawing error.

N^{20},N^{20}-*Di-Me,* N^3-*angeloyl, 16-Ac:* ***Sempervirine***†
[135626-67-4]
$C_{33}H_{52}N_2O_4$ 540.785
Alkaloid from leaves of *Buxus sempervirens* (Buxaceae). Amorph. solid. $[\alpha]_D^{20}$ +2 ($CHCl_3$).

N^{20},N^{20}-*Di-Me,* N^3-*benzoyl:* **N-*Benzoylbaleabuxidienine F*.** N-*Benzoylbuxidienine F*
[14155-72-7]
$C_{33}H_{48}N_2O_3$ 520.754
Alkaloid from *Buxus balearica* (Buxaceae). Mp 291° Mp 286-288°. $[\alpha]_D$ -36 (-29) ($CHCl_3$). Shown lacking the C-18 methyl group in one paper.

N^{20},N^{20}-*Di-Me,* N^3-*benzoyl, 16-Ac:* ***16-O-Acetyl-N-benzoylbuxidienine***
[126035-07-2]
$C_{35}H_{50}N_2O_4$ 562.791
Alkaloid from leaves of *Buxus sempervirens* (Buxaceae). Amorph. solid. $[\alpha]_D^{20}$ -5 (c, 0.2 in $CHCl_3$). The 4-config. is shown as the reverse of what is now known for these alkaloids.

N^{20},N^{20}-*Di-Me,* N^3-*benzoyl, 28-Ac:* ***28-Acetoxy-N^a-benzoylbuxidienine***
[104104-37-2]
[123116-13-2]
$C_{35}H_{50}N_2O_4$ 562.791
Alkaloid from leaves of *Buxus papilosa* and from *Buxus sempervirens*. Amorph. $[\alpha]_D^{20}$ -40 ($CHCl_3$).

30-Aldehyde, N^{20}-*Me: Buxalongifoline*
Unknown parent.

30-Aldehyde, N^{20}-*Me,* N^3-*benzoyl, 16-Ac:* **O-*Acetyl*-N-*benzoylbuxalongifoline***
[194852-53-4]
$C_{34}H_{46}N_2O_4$ 546.748
Alkaloid from the leaves of *Buxus longifolia* (Buxaceae). Amorph. solid. $[\alpha]_D^{22}$ +16 (c, 0.06 in $CHCl_3$). λ_{max} 229 (log ϵ 4.28); 235 (log ϵ 4.29); 245 (log ϵ 4.3); 254 (sh) (log ϵ 4.32) (MeOH).

16-Deoxy, N^3,N^{20},N^{20}-*Tri-Me:* ***16-Deoxybuxidienine C***. *16-Desoxybuxidienine*
[36127-41-0]
$C_{27}H_{46}N_2O$ 414.673
Alkaloid from *Buxus papilosa* and *Buxus madagascarica* (Buxaceae). Cryst. (Me_2CO). Mp 200-201° Mp 183-185°. $[\alpha]_D^{25}$ +33 (c, 1.0 in $CHCl_3$).

16-Deoxy, N^3,N^{20},N^{20}-*tri-Me,* N^3-*(2S-hydroxy-3-methylbutanoyl):* ***Buxakarachiamine***
[398477-71-9]
$C_{32}H_{54}N_2O_3$ 514.79
Alkaloid from *Buxus papillosa*. Amorph. powder. $[\alpha]_D^{25}$ -9 (c, 0.22 in $CHCl_3$). λ_{max} 238 (log ϵ 4.2); 245 (log ϵ 4.2) (MeOH).

16-Deoxy, N^3,N^{20},N^{20}-*tri-Me,* N^3-*(2R-hydroxy-3ξ-methylpentanoyl):* ***Buxahejramine***
[398477-72-0]
$C_{33}H_{56}N_2O_3$ 528.817
Alkaloid from *Buxus papillosa*. Amorph. powder. $[\alpha]_D^{25}$ -7 (c, 0.14 in $CHCl_3$). Struct. drawn with missing *N*-Me group in ref. λ_{max} 239 (log ϵ 4.18); 245 (log ϵ 4.2) (MeOH).

16-Deoxy, N^3,N^{20},N^{20}-*tri-Me, 28-benzoyl:* **O^{28}-*Benzoyl-16-deoxybuxidienine C***
[129225-34-9]
$C_{34}H_{50}N_2O_2$ 518.781
Alkaloid from leaves of *Buxus hildebrandtii* (Buxaceae). Gum. $[\alpha]_D$ -75 ($CHCl_3$). Called 30-benzoyl in the lit.

16-Deoxy, N-*tetra-Me:* ***30-Hydroxybuxamine A***
[129225-35-0]
$C_{28}H_{48}N_2O$ 428.7
Alkaloid from leaves of *Buxus hildebrandtii* (Buxaceae). Amorph. $[\alpha]_D$ +61 ($CHCl_3$). Has C-4α hydroxymethyl group.

28-Deoxy, N^{20},N^{20}-*di-Me,* N^3-*benzoyl:* **N-*Benzoylbuxidienine***
[135626-69-6]
$C_{33}H_{48}N_2O_2$ 504.754
Alkaloid from *Buxus hyrcana* and *Buxus sempervirens*. Amorph. $[\alpha]_D^{25}$ +7 (c, 1.5 in $CHCl_3$).

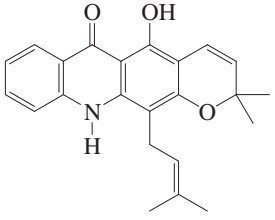
16-Epimer, N-*tetra-Me (?):* ***Buxaminol G***
[97763-00-3]
$C_{28}H_{48}N_2O_2$ 444.699
Alkaloid from the leaves of *Buxus papilosa* (Buxaceae). Gum. $[\alpha]_D$ +83.33 ($CHCl_3$). Little evidence for the assigned stereochem. The 4-config. is shown as the reverse of what is now known for these alkaloids. λ_{max} 237 (ϵ 6040); 245 (ϵ 5860); 253 (ϵ 4151) (MeOH).

Khuong-Huu, F. *et al., Tetrahedron*, 1966, **22**, 3321-3327 (*Buxus balearica constits*)
Herlem, D. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1967, **264**, 798-799 (*synth*)
Shamma, M. *et al., Phytochemistry*, 1973, **12**, 2051-2054 (*Desoxybuxidienine*)
Sangare, M. *et al., Tet. Lett.*, 1975, 1791-1794 (*config*)
Atta-ur-Rahman, *et al., Phytochemistry*, 1985, **24**, 1398-1399; 1990, **29**, 1293-1296; 1991, **30**, 1295-1298 (*Buxaminol G, 30-Hydroxybuxamine A, O-Benzoyl-16-deoxybuxidienine C, Sempervirine, N-Benzoylbuxidienine*)
Atta-ur-Rahman, *et al., J.C.S. Perkin 1*, 1986, 919-921 (*Acetoxybenzoylbuxidienine*)
Atta-ur-Rahman, *et al., J. Nat. Prod.*, 1989, **52**, 1319-1322; 1997, **60**, 976-981 (*O-Acetyl-*

N-benzoylbuxidienine, O-Acetyl-N-benzoylbuxalongifoline)
Atta-ur-Rahman, *et al., Phytochemistry*, 2001, **58**, 963-968 (*Buxakarachiamine, Buxahejramine*)
Babar, Z.U. *et al., Steroids*, 2006, **71**, 1045-1051 (*Benzoylbuxidienine*)

Buxifoliadine D B-467

[263007-68-7]

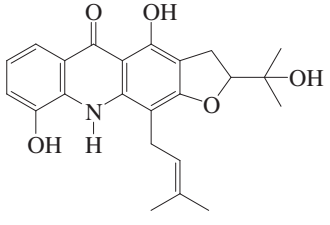


$C_{23}H_{23}NO_3$ 361.44
Alkaloid from the root bark of *Severinia buxifolia*. Yellow needles (Me_2CO). Mp 236-238°. λ_{max} 277 (log ϵ 3.32); 309 (sh) (log ϵ 3); 337 (sh) (log ϵ 2.02); 380 (log ϵ 1.72); 403 (log ϵ 1.84) (MeOH).

Wu, T.-S. *et al., Chem. Pharm. Bull.*, 2000, **48**, 85-90 (*isol, pmr, cmr, ms*)

Buxifoliadine E B-468

[263007-69-8]

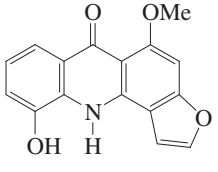


$C_{23}H_{25}NO_5$ 395.454
Alkaloid from the root bark of *Severinia buxifolia*. Yellow needles (Me_2CO). Mp 247-249°. Racemic. λ_{max} 259 (log ϵ 4.72); 270 (log ϵ 4.59); 273 (log ϵ 4.6); 277 (log ϵ 4.59); 284 (log ϵ 4.68); 330 (sh) (log ϵ 3.85); 393 (log ϵ 3.86) (MeOH).

Wu, T.-S. *et al., Chem. Pharm. Bull.*, 2000, **48**, 85-90 (*isol, pmr, cmr, uv, ms*)

Buxifoliadine F B-469

[263007-70-1]

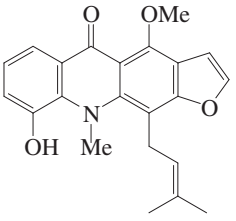


$C_{16}H_{11}NO_4$ 281.267
Alkaloid from the root bark of *Severinia buxifolia*. Yellow needles (Me_2CO). Mp >280°. λ_{max} 259 (log ϵ 4.23); 379 (log ϵ 3.53); 384 (log ϵ 3.55) (MeOH).

Wu, T.-S. *et al., Chem. Pharm. Bull.*, 2000, **48**, 85-90 (*isol, pmr, cmr, ms, uv*)

Buxifoliadine G B-470

[263007-71-2]

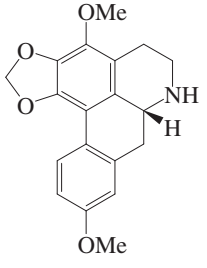


$C_{22}H_{21}NO_4$ 363.412
Alkaloid from the root bark of *Severinia buxifolia*. Yellow needles (Me_2CO). Mp 150-152° (dec.). λ_{max} 248 (log ϵ 3.44); 277 (log ϵ 3.71); 287 (sh) (log ϵ 3.68); 399 (log ϵ 3.05) (MeOH).

Wu, T.-S. *et al., Chem. Pharm. Bull.*, 2000, **48**, 85-90 (*isol, pmr, cmr, ms, uv*)

Buxifoliadine B-471

6,7,7a,8-Tetrahydro-4,10-dimethoxy-5H-benzo[g]-1,3-benzodioxolo[6,5,4-de]quinoline, 9CI. 3,9-Dimethoxy-1,2-methylenedioxynoraporphine



$C_{19}H_{19}NO_4$ 325.363

(R)-form [80151-81-1]
Alkaloid from *Xylopia buxifolia* and from the leaves and stem bark of *Duguetia obovata* (Annonaceae). Noncryst.

Hydrochloride:
Cryst. (MeOH). Mp 295° dec. $[\alpha]_D$ -15 (c, 0.34 in MeOH).

N-*Formyl:* **N-*Formylbuxifoline***
[89368-29-6]
$C_{20}H_{19}NO_5$ 353.374
Minor alkaloid from the leaves of *Duguetia obovata* (Annonaceae). Cryst. (MeOH). Mp 198°. $[\alpha]_D$ -181 (c, 0.11 in $CHCl_3$).

N-*Ac:*
Cryst. (MeOH). Mp 230°. $[\alpha]_D$ -295 (c, 0.40 in $CHCl_3$).

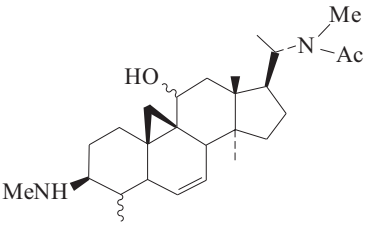
N-*Me:* **N-*Methylbuxifoline***. *3,9-Dimethoxy-1,2-methylenedioxyaporphine*
[89368-28-5]
$C_{20}H_{21}NO_4$ 339.39
Trace alkaloid from leaves of *Duguetia obovata* (Annonaceae). Noncryst. Negative opt. rotn. in $CHCl_3$.

7S-Hydroxy, N-*Me:* ***Polyalthine***
[67627-73-0]
$C_{20}H_{21}NO_5$ 355.39
Alkaloid from the trunk bark of *Polyalthia suaveolens*. Noncryst.; cryst. ($MeOH/Et_2O$) as hydrochloride. Mp 274° dec. $[\alpha]_D$ +11 (c, 0.8 in MeOH).

Cave, A. *et al., Planta Med.*, 1978, **33**, 243 (*Polyalthine*)
Hocquemiller, R. *et al., J. Nat. Prod.*, 1981, **44**, 551 (*uv, pmr, ms, struct*)
Roblot, F. *et al., J. Nat. Prod.*, 1983, **46**, 862 (*isol, cmr, pmr, struct, synth, derivs*)

Buxiramine D B-472

Buxiramine
[25650-67-3]

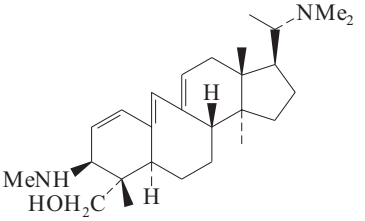


$C_{27}H_{44}N_2O_2$ 428.657
Struct. not certain. Alkaloid from *Buxus sempervirens* (Buxaceae). Prisms (Me_2CO). Mp 213-215°.

Döpke, W. *et al., Pharmazie*, 1969, **24**, 649; *CA*, **72**, 43929p (*isol, ms*)

Buxitrienine C B-473

[36151-06-1]



$C_{27}H_{44}N_2O$ 412.657
Alkaloid from *Buxus madagascarica* (Buxaceae). Cryst. (C_6H_6/hexane). Mp 192°. $[\alpha]_D^{20}$ +57 ($CHCl_3$).

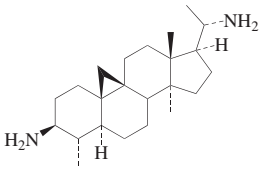
Deoxy: ***Papillotrienine***
[145385-74-6]
$C_{27}H_{44}N_2$ 396.658
Alkaloid from roots of *Buxus papillosa* (Buxaceae). Amorph. solid. $[\alpha]_D$ +60 ($CHCl_3$).

Deoxy, N^{20}*-de-Me:* **N^b-*Demethylpapillotrienine***
[145385-75-7]
$C_{26}H_{42}N_2$ 382.631
Isol. from roots of *Buxus papillosa* (Buxaceae). Amorph. solid. $[\alpha]_D^{20}$ +62 ($CHCl_3$).

Khong-Huu, F. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1971, **273**, 558-560 (*Buxitrienine C*)
Atta-ur-Rahman, *et al., J. Nat. Prod.*, 1992, **55**, 1063-1066 (*Papillotrienine, Demethylpapillotrienine, isol, pmr, cmr*)

Buxocyclamine I B-474

4,14-Dimethyl-9,19-cyclopregnane-3,20-diamine. 3,20-Diamino-4,14-dimethyl-9,19-cyclopregnane



$C_{23}H_{40}N_2$ 344.582

In *Buxus* alkaloids the suffix letter designates the *N*-subn. pattern. The parent compd., Buxocyclamine I, is unknown.

N^{20},N^{20}-*Di-Me,* N^3-*benzoyl:* ***Buxisine***. N-*Benzoylbuxocyclamine F*
$C_{32}H_{48}N_2O$ 476.744
Alkaloid from *Buxus sempervirens.*

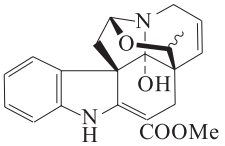
N-*Tetra-Me:* ***Buxocyclamine A***
[19642-32-1]
$C_{27}H_{48}N_2$ 400.69
Alkaloid from *Buxus sempervirens* (Buxaceae). Needles (Me_2CO). Mp 187-188°. $[\alpha]_D$ +87 (c, 0.15 in $CHCl_3$). 4β-Config was assigned in the original paper, but 4α-config is more likely by analogy with other similar alkaloids.

4,23-Didehydro, N^3,N^{20}-*di-Me,* N^3-*Ac:* ***Cyclobuxamidine***
$C_{27}H_{44}N_2O$ 412.657
Alkaloid from the leaves of *Buxus longifolia* (Buxaceae). Amorph. solid. $[\alpha]_D^{22}$ +24 (c, 0.04 in $CHCl_3$). λ_{max} 220 (log ϵ 4.36) (MeOH).

Döpke, W. *et al., Pharmazie*, 1968, **23**, 37-38 (*Buxocyclamines*)
Atta-ur-Rahman, *et al., J. Nat. Prod.*, 1997, **60**, 976-981 (*Cyclobuxamidine*)

Buxomeline B-475

Methyl 2,3,6,7-tetradehydro-10,20-epoxy-19-hydroxyaspidospermidine-3-carboxylate, 9CI
[69734-96-9]



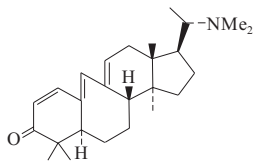
Relative configuration

$C_{21}H_{22}N_2O_4$ 366.416
Alkaloid from *Melodinus celastroides* (Apocynaceae). Noncryst. $[\alpha]_D^{22}$ -240 ($CHCl_3$).

Rabaron, A. *et al., Phytochemistry*, 1978, **17**, 1452 (*uv, ms, pmr, struct*)

Buxotrienine B-476

[107259-40-5]

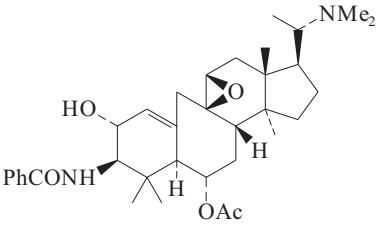


$C_{26}H_{39}NO$ 381.6
Alkaloid from the leaves of *Buxus papilosa* (Buxaceae). Amorph. $[\alpha]_D$ +13.5 (c, 1.81 in $CHCl_3$).

Choudhary, M.I. *et al., Tetrahedron*, 1986, **42**, 5747-5752 (*isol, uv, ir, pmr, ms, struct*)

Buxoxybenzamine B-477

[126794-77-2]



$C_{35}H_{50}N_2O_5$ 578.79
Alkaloid from the leaves of *Buxus papilosa* and *Buxus sempervirens.* Shows phytotoxic activity against *Lemna minor.* Amorph. solid. $[\alpha]_D^{20}$ -22 (MeOH).

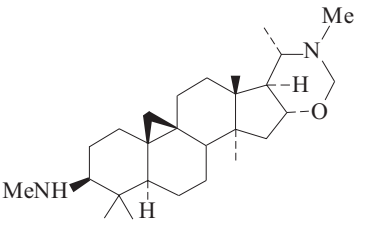
O-*Ac:* ***Buxapapilinine***
[129134-89-0]
$C_{37}H_{52}N_2O_6$ 620.828
Alkaloid from leaves of *Buxus papilosa* and *Buxus sempervirens.* Shows phytotoxic activity against *Lemna minor.* Amorph. solid. $[\alpha]_D^{20}$ -28 (c, 0.1 in $CHCl_3$). $[\alpha]_D^{25}$ +123 (c, 0.9 in $CHCl_3$). λ_{max} 227 ; 237 ; 245 (MeOH).

6-Deacetoxy, 16α-acetoxy, 2-Ac: ***2,16-Diacetoxy-9,11-epoxybuxamidine***
[207734-00-7]
$C_{37}H_{52}N_2O_6$ 620.828
Alkaloid from the leaves of *Buxus papillosa*. Amorph. solid. $[\alpha]_D^{20}$ -76 (c, 1.2 in $CHCl_3$). λ_{max} 228 (MeOH).

Atta-ur-Rahman, *et al., Heterocycles*, 1990, **31**, 493-498 (*Buxapapilinine*)
Atta-ur-Rahman, *et al., Phytochemistry*, 1990, **29**, 683-685 (*isol, uv, ir, pmr, cmr, ms*)
Atta-ur-Rahman, *et al., Heterocycles*, 1998, **48**, 519-528 (*Diacetoxyepoxybuxamidine*)
Atta-ur-Rahman, *et al., J. Nat. Prod.*, 1999, **62**, 665-669 (*activity*)
Babar, Z.U. *et al., Steroids*, 2006, **71**, 1045-1051 (*Buxapapilinine*)

Buxozine C B-478

[64938-84-7]



$C_{27}H_{46}N_2O$ 414.673
Alkaloid from *Buxus sempervirens* (Buxaceae). Cryst. (Et_2O). Mp 137°. $[\alpha]_D^{21}$ +65 (c, 0.6 in $CHCl_3$). Redn. gives Cyclovirobuxine C in C-917.

Votický, Z. *et al., Coll. Czech. Chem. Comm.*, 1977, **42**, 2549-2554 (*isol, ms, pmr, struct*)
Votický, Z. *et al., Phytochemistry*, 1977, **16**, 1860-1861 (*isol, ir, ms*)

Buxpapamine B-479

[11054-79-8]

$C_{28}H_{30}N_2O$ 410.558

Steroidal (*Buxus*) alkaloid. Struct. unknown. Alkaloid from *Buxus papilosa* (Buxaceae). Cryst. (Me_2CO). Mp 205-206°. $[\alpha]_D$ +93 (c, 1.28 in $CHCl_3$).

Ikram, M. *et al., Pak. J. Sci. Ind. Res.*, 1968, **11**, 253-254; *CA*, **71**, 779b (*isol*)

Buxpapine B-480

[11054-80-1]

$C_{27}H_{34}N_2O$ 402.578

Steroidal (*Buxus*) alkaloid. Struct. unknown. Alkaloid from *Buxus papilosa* (Buxaceae). Mp 111-112°. $[\alpha]_D$ +7.5 (c, 4.8 in $CHCl_3$).

Ikram, M. *et al., Pak. J. Sci. Ind. Res.*, 1968, **11**, 253-254; *CA*, **71**, 779b (*isol*)

Buxpapinine B-481

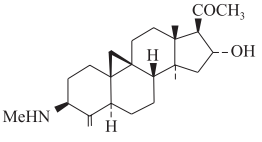
$C_{37}H_{52}N_2O_6$ 620.828

Struct. unknown. Alkaloid from *Buxus papilosa* leaves (Buxaceae). Mp 253-255°. $[\alpha]_D^{25}$ -53 (c, 1.24 in $CHCl_3$). Contains secondary amide and ester groups.

Ikram, M. *et al., Pak. J. Sci. Ind. Res.*, 1968, **11**, 488-489; *CA*, **71**, 88432s (*isol, ir, pmr*)

Buxtauine M B-482

16-Hydroxy-14-methyl-3-(methylamino)-4-methylene-9,19-cyclopregnan-20-one, 9CI. Buxtauine. Cyclomicrobuxinine. Cyclobuxoxine
[4236-73-1]



Absolute configuration

$C_{24}H_{37}NO_2$ 371.562
Alkaloid from *Buxus sempervirens, Buxus wallichiana, Buxus harlandi* and several other *Buxus* spp. (Buxaceae). Mp 178-181° (170°). $[\alpha]_D^{23}$ +154 (c, 0.77 in $CHCl_3$).

Oxime: Mp 235-238°.

O,N-*Di-Ac:* Mp 213-215° (193-197°). $[\alpha]_D$ +87 (c, 0.67 in $CHCl_3$).

N-*Me:* ***Buxpiine K***. *Cyclomicrobuxine. Buxpiine. Buxippine K*
[3296-11-5]
$C_{25}H_{39}NO_2$ 385.589
Alkaloid from *Buxus sempervirens, Buxus hyrcana* and *Buxus harlandi* (Buxaceae). Mp 178-180° (173°). $[\alpha]_D$ +172 (c, 2 in $CHCl_3$). $[\alpha]_D$ +159 ($CHCl_3$).

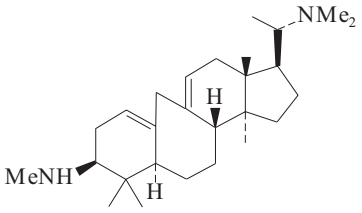
Deoxy: ***Cyclomicrobuxamine***
[128351-97-3]
$C_{24}H_{37}NO$ 355.562
Alkaloid from leaves of *Buxus sempervirens* (Buxaceae). Amorph. solid. $[\alpha]_D$ +140 (c, 5.8 in $CHCl_3$).

Votický, Z. *et al., Coll. Czech. Chem. Comm.*,

1965, **30**, 3705-3710 (*isol, ir, uv, ms, struct*)
Nakano, T. *et al., J.C.S.*, 1965, 6688-6694 (*isol, ir, pmr, struct*)
Votický, Z. *et al., Tet. Lett.*, 1965, 3579-3584 (*isol, ir, pmr, config*)
Atta-ur-Rahman, *et al., Fitoterapia*, 1989, **60**, 439-442 (*Cyclomicrobuxamine*)

Buxupapine B-483

[109305-87-5]



$C_{27}H_{46}N_2$ 398.674

Alkaloid from the leaves of *Buxus papilosa* (Buxaceae). Amorph. $[\alpha]_D$ +11 (c, 1.13 in $CHCl_3$).

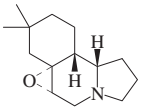
N^{20}-*De-Me:* **N^{b}-*Norbuxupapine***
[109305-88-6]
$C_{26}H_{44}N_2$ 384.647
Alkaloid from the leaves of *Buxus papilosa* (Buxaceae). Amorph. $[\alpha]_D$ +20 (c, 0.71 in $CHCl_3$).

N^{3}-*Me:* **N^{3}-*Methylbuxupapine***
[38406-16-5]
$C_{28}H_{48}N_2$ 412.701
Alkaloid from the leaves of *Buxus papilosa*. Gum. $[\alpha]_D^{20}$ +126 (c, 0.65 in $CHCl_3$). Synonym assigned in ref. is incorrect. λ_{max} 201 (MeOH).

Choudhary, M.I. *et al., J. Nat. Prod.*, 1987, **50**, 84-88 (*isol, ir, pmr, ms, struct, N^{20}-Norbuxupapine*)
Atta-ur-Rahman, *et al., Nat. Prod. Lett.*, 1998, **11**, 111-118 (*N^{3}-Methylbuxupapine*)

Buzonamine B-484

*Decahydro-3,3-dimethyl-2*H*-oxireno[*d*]-pyrrolo[2,1-*a*]isoquinoline, 9CI*
[270905-32-3]



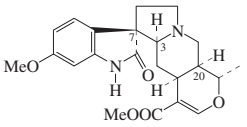
Relative Configuration

$C_{14}H_{23}NO$ 221.342
Alkaloid from the defensive secretion of the millipede *Buzonium crassipes.*

Wood, W.F. *et al., Biochem. Syst. Ecol.*, 2000, **28**, 305-312 (*isol, pmr, cmr, ms*)

Caboxine A C-1

[53851-13-1]



Absolute Configuration

$C_{22}H_{26}N_2O_5$ 398.458
Alkaloid from the leaves of *Cabucala fasciculata* (Apocynaceae). Mp 195-210°. $[\alpha]_D$ -68 ($CHCl_3$). λ_{max} 222 (log ϵ 4.45); 245 (log ϵ 4.13); 286 (log ϵ 3.43); 294 (log ϵ 3.26) ($CHCl_3$).

3-Epimer: ***Vineridine****. Isocaboxine A*
[3489-06-3]
$C_{22}H_{26}N_2O_5$ 398.458
Alkaloid from *Vinca erecta* and from *Cabucala fasciculata* (Apocynaceae). Cryst. (Me_2CO). Mp 179-180°. $[\alpha]_D^{22}$ +40.5 (c, 2.4 in $CHCl_3$). λ_{max} 220 (log ϵ 4.54) (EtOH).

► LR1240000

3-Epimer, nitrate: Mp 178° dec. (170°).

3-Epimer, N-*oxide:* ***Vineridine* N-*oxide***
[53643-15-5]
$C_{22}H_{26}N_2O_6$ 414.457
Alkaloid from *Vinca erecta* (Apocynaceae). Cryst. ($CHCl_3$). Mp 193-195°. $[\alpha]_D$ +20 (c, 0.68 in MeOH).

7-Epimer (?): ***Reserpinine oxindole***
[13483-85-7]
$C_{22}H_{26}N_2O_5$ 398.458
Trace alkaloid from leaves of *Rauwolfia vomitoria* (Apocynaceae). Off-white amorph. powder. $[\alpha]_D^{21}$ -22 (c, 0.1 in $CHCl_3$). C-7 config. not established.

20-Epimer: ***Tetraphylline oxindole A***
[62358-36-5]
$C_{22}H_{26}N_2O_5$ 398.458
Alkaloid from the bark of *Ochrosia glomerata* and from *Neisosperma glomerata*. Cryst. (MeOH). Mp 218°. $[\alpha]_D$ +20 ($CHCl_3$). λ_{max} 220 (log ϵ 4.45); 288 (log ϵ 3.43); 295 (log ϵ 3.28) (MeOH).

3,7-Diepimer: ***Vinerine****. Isocaboxine B*
[3382-38-5]
$C_{22}H_{26}N_2O_5$ 398.458
Alkaloid from *Vinca erecta* and *Cabucala fasciculata*. Cryst. (MeOH). Mp 202-203°. $[\alpha]_D$ +53 ($CHCl_3$). λ_{max} 220 (log ϵ 4.54) (EtOH).

3,7-Diepimer, nitrate: Mp 170° dec.

3,7-Diepimer, N-*oxide:* ***Vinerine* N-*oxide***
[61687-65-8]
$C_{22}H_{26}N_2O_6$ 414.457
Isol. from *Vinca erecta* (Apocynaceae). Cryst. (MeOH). Mp 246-247°.

3,7-Diepimer, N-*Ac:* **N-*Acetylvinerine***
[3382-39-6 , 33044-89-2]
$C_{24}H_{28}N_2O_6$ 440.495
Minor alkaloid from epigeal parts of *Vinca erecta* (Apocynaceae). Mp 159-160° (152-153°). $[\alpha]_D^{25}$ -99.5 (Me_2CO).

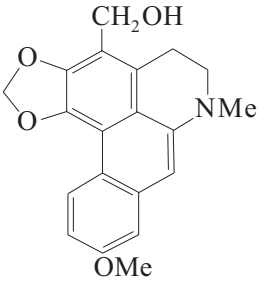
7,20-Diepimer: ***Tetraphylline oxindole B***
[62358-35-4]
$C_{22}H_{26}N_2O_5$ 398.458
Alkaloid from the leaves of *Ochrosia glomerata* and from *Neisosperma glomerata*. Mp 226°. $[\alpha]_D$ -26 ($CHCl_3$). λ_{max} 220 (log ϵ 4.45); 288 (log ϵ 3.43) (MeOH).

Stereoisomer (?): ***Erycinine****. Ericinine*
[19775-58-7]
$C_{22}H_{26}N_2O_5$ 398.458
From *Vinca erecta* (Apocynaceae). Mp 206-207°. $[\alpha]_D^{18}$ +43.8 (Me_2CO). May be identical with Isocaboxine A. Stereochem. at C-3 and C-7 is not known. λ_{max} 220 (log ϵ 4.68) (EtOH).

Kasymov, Sh.Z *et al., Khim. Prir. Soedin.*, 1966, **2**, 260-265; *Chem. Nat. Compd. (Engl. Transl.)*, 1966, **2**, 210-213 (*Vinerine, Vineridine*)
Aburakhimova, N. *et al., Khim. Prir. Soedin.*, 1968, **4**, 135; *Chem. Nat. Compd. (Engl. Transl.)*, 1968, **4**, 116 (*Erycinine*)
Malikov, V.M. *et al., Khim. Prir. Soedin.*, 1970, **6**, 640-641; *Chem. Nat. Compd. (Engl. Transl.)*, 1970, **6**, 662 (*N-Acetylvinerine*)
Khalmirzaev, M.M. *et al., Khim. Prir. Soedin.*, 1973, **9**, 806; *Chem. Nat. Compd. (Engl. Transl.)*, 1973, **9**, 776-777 (*Vineridine N-oxide*)
Titeux, F. *et al., Phytochemistry*, 1974, **13**, 1620-1621; 1975, **14**, 565-568 (*Caboxine A, Isocaboxine A, isol, uv, ir, pmr, abs config*)
Titeux, F. *et al., Bull. Soc. Chim. Fr.*, 1976, 1473-1475 (*Tetraphylline oxindoles A,B, synth, uv, ir, pmr, ms*)
Sharipov, M.R. *et al., Khim. Prir. Soedin.*, 1976, **12**, 401-402; *Chem. Nat. Compd. (Engl. Transl.)*, 1976, **12**, 355-356 (*Vinerine N-oxide*)
Amer, M.M. *et al., Phytochemistry*, 1980, **19**, 1833-1836 (*Reserpinine oxindole*)
Seguin, E. *et al., J. Nat. Prod.*, 1982, **45**, 738-744; 1984, **47**, 687-691 (*Tetraphylline oxindoles A,B, isol*)

Cabudine C-2

*6,7-Dihydro-10-methoxy-7-methyl-5*H*-benzo[g]-1,3-benzodioxolo[6,5,4-*de*]quinoline-4-methanol, 9CI. 5,6-Dihydro-3-hydroxymethyl-9-methoxy-6-methyl-1,2-methylenedioxy-4*H*-dibenzo[*de,g*]quinoline*
[59272-70-7]

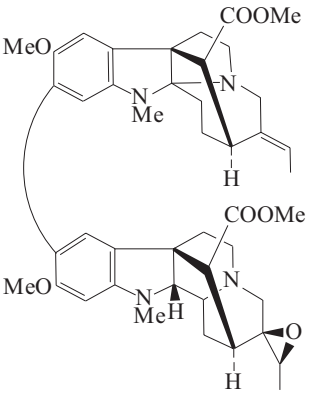


$C_{20}H_{19}NO_4$ 337.374
Alkaloid from *Thalictrum isopyroides* (Ranunculaceae). Exhibits adrenolytic activity. Mp 184-185°.

Kurbanov, M. *et al., Dokl. Akad. Nauk Tadzh. SSR*, 1975, **18**, 20; *CA*, **84**, 180440j (*isol, uv, ir, pms, ms, struct*)

Cabufiline C-3

[82854-07-7]



$C_{44}H_{54}N_4O_7$ 750.933
Alkaloid from the leaves of *Cabucala caudata* (Apocynaceae). Amorph. $[\alpha]_D$ -91 (c, 1.0 in EtOH).

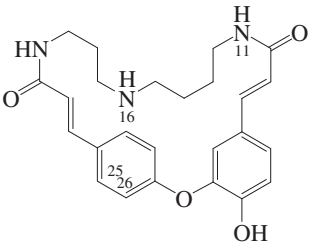
Deepoxy: ***Desoxycabufiline***
[82841-74-5]
$C_{44}H_{54}N_4O_6$ 734.934
Alkaloid from the stem bark of *Alstonia plumosa* (Apocynaceae). $[\alpha]_D$ -114 (c, 0.9 in MeOH).

Deepoxy, O-*de-Me:* ***Nordesoxycabufiline***
[82854-85-1]
$C_{43}H_{52}N_4O_6$ 720.907
Alkaloid from the stem bark of *Alstonia plumosa* (Apocynaceae). $[\alpha]_D$ -100 (c, 0.46 in Py). Posn. of demethylation not known.

Massiot, G. *et al., C. R. Hebd. Seances Acad. Sci., Ser.* 2, 1982, **294**, 579-582 (*uv, pmr, struct*)
Jacquer, M.J. *et al., Phytochemistry*, 1982, **21**, 2973-2977 (*isol, uv, ir, pmr, ms, struct, Desoxycabufiline, Nordesoxycabufiline*)
Subhadhirasakul, S. *et al., Chem. Pharm. Bull.*, 1994, **42**, 1427-1431 (*config, cmr*)

Cadabicine C-4

[99964-83-7]



$C_{25}H_{29}N_3O_4$ 435.522
CAS numbering shown. Numbering systems vary. Alkaloid from the stem bark of the famine food *Cadaba farinosa* (luquata sigmama) and *Crataeva nurvala* (Capparidaceae). Mp 270-272° dec. Crataeva is not a generally recognised genus.

N^{16},O-*Di-Ac:* ***Cadabicine diacetate***
[99964-84-8]

$C_{29}H_{33}N_3O_6$ 519.596
Alkaloid from *Crataeva nurvala* (Capparidaceae). Rods (MeOH). Mp 265-268°.

Me ether: ***Cadabicine methyl ether.*** *O-Methylcadabicine*
$C_{26}H_{31}N_3O_4$ 449.549
Alkaloid from stem bark of the famine food *Cadaba farinosa* (liquata sigmama) and *Crataeva nurvala* (Capparidaceae).

26-Methoxy: ***Isocodonocarpine***
[126431-38-7]
$C_{26}H_{31}N_3O_5$ 465.548
Alkaloid from root bark of *Capparis decidua* (Capparidaceae). Off-white cryst. (MeOH). Mp 220-222° dec. CAS gives incorrect name.

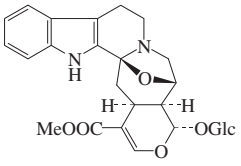
26-Methoxy, N^{16}*-Ac:* **N-*Acetylisocodonocarpine***
$C_{28}H_{33}N_3O_6$ 507.585
Alkaloid from root bark of *Capparis decidua* (Capparidaceae). Amorph. powder. Mp 234-236°. Called 14-*N*-Ac in the lit.

26-Methoxy, N^{16}*,*O*-di-Ac:*
Cryst. (MeOH). Mp 205-207°.

Ahmad, V.U. *et al., Phytochemistry*, 1985, **24**, 2709; 1989, **28**, 2493 (*isol, uv, ir, pmr, cmr, ms, cryst struct*)
Ahmad, V.U. *et al., J. Nat. Prod.*, 1987, **50**, 1186; 1992, **55**, 1509 (*isol, Cadabicine, Cadabicine diacetate, 14-N-Acetylisocodonocarpine*)
Ahmad, V.U. *et al., Pak. J. Sci. Ind. Res.*, 1992, **35**, 475; *CA*, **119**, 177556n (*Cadabicine methyl ether*)

Cadambine C-5

[54422-49-0]



Absolute Configuration

$C_{27}H_{32}N_2O_{10}$ 544.557
Alkaloid from the heartwood of *Anthocephalus cadamba* and the leaves of *Nauclea latifolia* (Nucleaceae). Mp 207-211°. $[\alpha]_D^{25}$ -71 (MeOH).

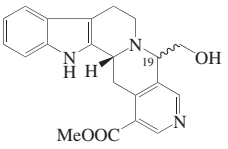
Tetra-O-*Ac:* Mp 149-151°. $[\alpha]_D^{20}$ -124 ($CHCl_3$).

Parent acid: ***Cadambine acid***
$C_{26}H_{30}N_2O_{10}$ 530.53
Alkaloid from the bark of *Nauclea diderrichii*. Amorph. yellow solid. Mp 225°. $[\alpha]_D^{20}$ -80 (c, 1 in MeOH). Conflicting stereochem. shown in 2005 ref.

Brown, R.T. *et al., Tet. Lett.*, 1974, 1957; 1991, **32**, 1987 (*uv, ir, ms, pmr, cd, struct, synth*)
Hotellier, F. *et al., Planta Med.*, 1979, **35**, 242 (*isol*)
Lamidi, M. *et al., Magn. Reson. Chem.*, 2005, **43**, 427-429 (*Cadambine acid*)

Cadamine C-6

*Methyl 5,7,8,13,13*b*,14-hexahydro-5-(hydroxymethyl)indolo[2′,3′:3,4]pyrido[1,2-*b*][2,7]naphthyridine-1-carboxylate, 9CI*
[60723-52-6]



Absolute Configuration

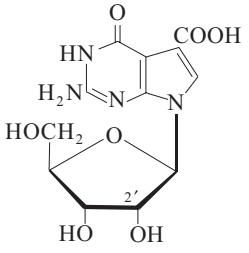
$C_{21}H_{21}N_3O_3$ 363.415
A heteroyohimbinoid. Alkaloid from leaves of *Anthocephalus cadamba* (Rubiaceae). $[\alpha]_D^{25}$ -65 ($CHCl_3$) (as *O*-Ac).

19-Epimer: ***Isocadamine***
[60761-52-6]
$C_{21}H_{21}N_3O_3$ 363.415
Alkaloid from leaves of *Anthocephalus cadamba* (Rubiaceae).

Brown, R.T. *et al., Tet. Lett.*, 1976, 1629-1630 (*isol, uv, struct*)

Cadeguomycin C-7

*2-Amino-4,7-dihydro-4-oxo-7-β-D-ribofuranosyl-1*H*-pyrrolo[2,3-*d*]pyrimidine-5-carboxylic acid. 7-Carboxy-7-deazaguanosine*
[81645-08-1]



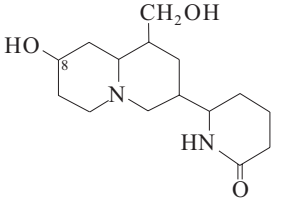
$C_{12}H_{14}N_4O_7$ 326.265
Nucleoside antibiotic. Isol. from *Streptomyces hygroscopicus*. Shows antineoplastic activity and immunostimulatory effects. Needles. Sol. MeOH, DMSO; fairly sol. H_2O; poorly sol. EtOH, hexane. Mp 231-239° dec. Log P -2.94 (calc). λ_{max} 231 (ε 14100); 272 (ε 6310); 297 (ε 6920) (0.1*M* HCl) (Derep). λ_{max} 225 (sh) (ε 9175); 268 (ε 9175); 282 (sh) (ε) (H_2O at pH 11) (Derep). λ_{max} 232 (ε 19680); 272 (ε 6881); 298 (ε 7610) (H_2O) (Derep).
▶ LD_{50} (mus, ipr) 200 - 600 mg/kg.
UY9358980

Nitrile: ***5-Cyano-7-deazaguanosine***
$C_{12}H_{13}N_5O_5$ 307.265
Isol. from $tRNA^{tyr}$ of an *Escherichia coli* mutant. Pale yellow cryst. Mp 260-270° dec. $[\alpha]_D^{15}$ -59.1 (c, 0.1 in DMSO).

Noguchi, S. *et al., Nucleic Acids Res.*, 1978, **5**, 4215 (*nitrile, isol*)
Tanake, H. *et al., J. Antibiot.*, 1982, **35**, 272 (*isol*)
Wu, R.T. *et al., J. Antibiot.*, 1982, **35**, 279 (*struct*)
Beylin, V.G. *et al., Tet. Lett.*, 1983, **24**, 4793 (*synth*)
Yuan, B.D. *et al., J. Antibiot.*, 1985, **38**, 642 (*props*)
Kondo, T. *et al., Tetrahedron*, 1986, **42**, 199; 207 (*synth, pmr, uv, ir, nitrile*)
Kim, S.H. *et al., J. Antibiot.*, 1987, **40**, 1776 (*pharmacol*)
Isono, K. *et al., J. Antibiot.*, 1988, **41**, 1711 (*rev*)
Ramasamy, K. *et al., J.C.S. Perkin 1*, 1989, 2375 (*synth, ir, pmr, uv*)

Cadiamine C-8

*6-[Octahydro-8-hydroxy-1-(hydroxymethyl)-2*H*-quinolizin-3-yl]-2-piperidinone, 9CI*
[58071-45-7]



$C_{15}H_{26}N_2O_3$ 282.382
A *seco*-sparteine alkaloid, cf. Aphyllic acid, A-1335. Alkaloid from *Cadia purpurea* (Fabaceae).

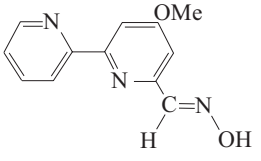
O^8*-(Hydroxyphenylacetyl):* ***Cadiamine hydroxyphenylacetate***
[61168-58-9]
$C_{23}H_{32}N_2O_5$ 416.516
Alkaloid from *Cadia purpurea* (Fabaceae). Full struct. not determined. The OH group is in the aromatic ring. Alkaloid not named in the lit.

O^8*-(2-Pyrrolecarbonyl):* ***Cadiamine 2-pyrrolecarboxylate***
[61166-49-2]
$C_{20}H_{29}N_3O_4$ 375.467
Alkaloid from *Cadia purpurea* (Fabaceae). Not named in the lit.

van Eijk, J.L. *et al., Planta Med.*, 1975, **28**, 139-142 (*isol*)
van Eijk, J.L. *et al., Tet. Lett.*, 1976, **24**, 2053-2054 (*struct, ms, derivs*)

Caerulomycin C-9

4-Methoxy-[2,2′-bipyridine]-6-carboxaldehyde oxime, 8CI. 4-Methoxy-2,2′-dipyridyl-6-aldoxime. Cerulomycin†*. Caerulomycin A*
[21802-37-9]



$C_{12}H_{11}N_3O_2$ 229.238
Antibiotic from *Streptomyces caeruleus* and *Nocardiopsis cirriefficiens*. Active primarily against yeasts, fungi and *Entamoeba histolytica*. Needles. Sol. MeOH, acids, bases, Et_2O; fairly sol. C_6H_6, hexane; poorly sol. H_2O. Mp 175°. pK_{a1} 4.38; pK_{a2} 9.81. Log P 2.27 (calc). λ_{max} 233 (ε 37000); 260 (ε); 283 (ε 15000); 293 (sh) (ε) (EtOH) (Derep). λ_{max} 240 (ε 28000); 273 (MeOH) (Berdy). λ_{max} 240 (ε 28840) (EtOH) (Berdy).

O-*Ac:* [14761-57-0]
Needles (EtOH aq.). Mp 102°.

O-*Me:* [14761-56-9]
Mp 90°.

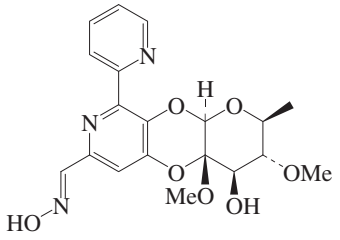
3-Hydroxy: ***Caerulomycin B***
[68560-29-2]
$C_{12}H_{11}N_3O_3$ 245.237
Metab. of *Streptomyces caeruleus* + tryptophan. Needles (MeOH). Sol. MeOH, Et_2O; poorly sol. H_2O. Mp 215-217°. λ_{max} 249 (ϵ 15500); 273 (sh) (ϵ 10000); 328 (ϵ 5620) (EtOH) (Derep). λ_{max} 249 ; 328 (MeOH) (Berdy).

3-Methoxy: ***Caerulomycin C***
[68560-30-5]
$C_{13}H_{13}N_3O_3$ 259.264
Isol. from *Streptomyces caeruleus* + tryptophan. Prisms (EtOH). Sol. MeOH; poorly sol. H_2O. Mp 208-210°. λ_{max} 229 (ϵ 13500); 263 (ϵ 9120) (MeOH) (Derep).

Divekar, P.V. *et al., Can. J. Chem.*, 1967, **45**, 1215 (*struct*)
Ranganathan, S. *et al., Can. J. Chem.*, 1969, **47**, 165 (*synth*)
McInnes, A.E. *et al., Can. J. Chem.*, 1977, **55**, 4159; 1979, **57**, 3200 (*biosynth, cmr*)
Japan. Pat., 1984, 84 51 797; *CA*, **101**, 71051 (*isol*)
Chatterjee, D.K. *et al., Z. Parasitenkd.*, 1984, **70**, 569 (*pharmacol*)
Vining, L. *et al., Can. J. Chem.*, 1988, **66**, 191 (*biosynth*)
Mongin, F. *et al., J.O.C.*, 2002, **67**, 3272-3276 (*Caerulomycin B,C, synth*)
Sammakia, T. *et al., Org. Lett.*, 2002, **4**, 2385-2388 (*Caerulomycin C, synth*)

Caerulomycin D C-10

[67857-43-6]

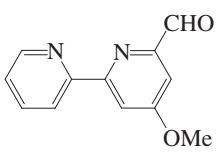


$C_{19}H_{21}N_3O_7$ 403.391
Metab. of *Streptomyces caeruleus.* Needles (EtOH). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 241-242°. λ_{max} 231 (ϵ 13800); 267 (ϵ 10000); 305 (sh) (ϵ 3310) (MeOH) (Derep).

McInnes, A.G. *et al., Can. J. Chem.*, 1978, **56**, 1836 (*isol*)

Caerulomycin E C-11

4-Methoxy-[2,2′-bipyridine]-6-carboxaldehyde, 9CI. 6-Formyl-4-methoxy-2,2′-bipyridine
[114115-50-3]

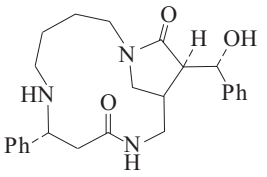


$C_{12}H_{10}N_2O_2$ 214.223
Prod. by *Streptomyces caeruleus.* Prisms. Mp 83°.

Vining, L.C. *et al., Can. J. Chem.*, 1988, **66**, 191 (*isol*)

Caesalpinine A C-12

[85702-14-3]

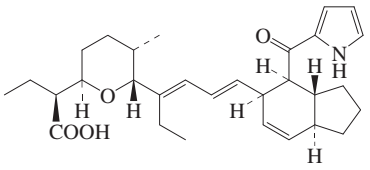


$C_{25}H_{31}N_3O_3$ 421.538
Alkaloid from *Caesalpinia digyna* (Caesalpiniaceae). Prisms (EtOAc). Mp 240-242°. $[\alpha]_D$ +16.6 (c, 0.42 in $CHCl_3$).

Mahato, S.B. *et al., J.A.C.S.*, 1983, **105**, 4441 (*isol, cryst struct, uv, cd, ir, pmr, ms*)

Cafamycin C-13

Kafamycin
[112303-17-0]



$C_{30}H_{41}NO_4$ 479.658
Polyether-type antibiotic. Analogue of Indanomycin, I-64. Isol. from a *Streptomyces* sp. Active against gram-positive bacteria. Ionophore. Sol. MeOH, bases, C_6H_6, $CHCl_3$; poorly sol. H_2O. Analogue of Indanomycin, I-64. λ_{max} 245 (ϵ 20420); 291 (ϵ 15850) (MeOH) (Berdy).

Murenets, N.V. *et al., Antibiot. Med. Biotekhnol.*, 1987, **32**, 811-814 (*isol, pmr, cd, struct*)
Antonenko, Y.N. *et al., Biol. Membr.*, 1988, **5**, 1326 (*props*)

Caffaeoschizine C-14

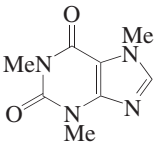
[1355-05-1]

$C_{20}H_{20}N_2O_4$ 352.389
Tentative mol. formula. Struct. unknown. Alkaloid from *Schizozygia caffaeoides* (Apocynaceae). Mp 208-212°. $[\alpha]_D^{25}$ +25.6 (c, 1 in $CHCl_3$).

Renner, U. *et al., Experientia*, 1963, **19**, 244-246 (*isol, uv, ir*)
Renner, U. *et al., J. Nat. Prod.*, 1964, **27**, 406-415 (*isol*)

Caffeine, BAN, USAN C-15

*3,7-Dihydro-1,3,7-trimethyl-1*H*-purine-2,6-dione, 9CI. 1,3,7-Trimethylxanthine. Theine. Guaranine. Coffeine. Methyltheobromine. Cafipel. FEMA 2224. Many other names*
[58-08-2]
[5743-12-4]



$C_8H_{10}N_4O_2$ 194.193
Component of coffee beans (*Coffea arabica*), many other *Coffea* spp., chocolate (*Theobroma cacao*), tea (*Camellia thea*), kolanut (*Cola acuminata*) and several other *Cola* spp. and several other plants (Rubiaceae, Sterculiaceae, Theaceae). Also occurs as a fungal metab. of *Claviceps sorghicola*. Stimulant used in many beverages. Flavouring ingredient. Adenosine receptor antagonist. Widely used CNS, respiratory and cardiac stimulant, main effect on the cerebral cortex. Possesses virucidal props. Chemosterilant against stored grain pests. In the horse is used to treat colic, heat stroke, circulatory disturbance and fatigue, also for horse doping. Mp 236° (phase transition at 141°). Log P -0.06 (uncertain value) (calc). Dimorphic, with β-form and α-form (only stable at high temps).

▶ Adverse systemic effects (by ingestion and other routes). Human and exp. reprod. effects. LD_{50} (rat, orl) 192 mg/kg. EV6475000

Perchlorate: Mp 89°.

Citrate: Caffeine citrate. Cafcit
[69-22-7] Used for the treatment of apnoea in premature infants. Cryst. powder.

N^9-*Me:*
[916669-59-5 (iodide, monohydride), 86180-38-3 (iodide)]
$C_9H_{13}N_4O_2^{\oplus}$ 209.227
Solid (as iodide). Mp 187-190° (iodide).

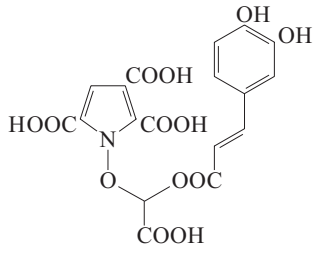
[8000-95-1]

Aldrich Library of NMR Spectra, 2nd edn., 1983, **2**, 586A (*nmr*)
Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 710B (*ir*)
Fischer, E. *et al., Ber.*, 1895, **28**, 2473; 3135 (*synth*)
Bredereck, H. *et al., Chem. Ber.*, 1950, **83**, 201; 1962, **95**, 1902 (*synth*)
Blout, E.R. *et al., J.A.C.S.*, 1950, **72**, 479 (*ir*)
Sutor, D.J. *et al., Acta Cryst.*, 1958, **11**, 453 (*cryst struct*)
Spiteller, G. *et al., Monatsh. Chem.*, 1962, **93**, 632 (*ms*)
Twanmoh, L.-M. *et al., J. Het. Chem.*, 1973, **10**, 187 (*pmr*)
Nicolau, C. *et al., Z. Naturforsch., C*, 1974, **29**, 475 (*cmr*)
Suzuki, T. *et al., Phytochemistry*, 1976, **15**, 1235 (*biosynth*)
Aranda, J.V. *et al., J. Pediatr.*, 1977, **90**, 467-472 (*Caffeine citrate, use*)
Zubair, M.U. *et al., Anal. Profiles Drug Subst.*, 1986, **15**, 71 (*rev, ir, uv, pmr, cmr, ms, occur, anal*)
Negwer, M. *et al., Organic-Chemical Drugs and their Synonyms, 6th edn., Akademie-Verlag*, 1987, 921
Arnaud, M.J. *et al., Prog. Drug Res.*, 1987, **31**, 273 (*rev, chem, pharmacol, tox*)
Somani, S.M. *et al., Int. J. Clin. Pharmacol., Ther. Toxicol.*, 1988, **26**, 521 (*rev*)

Lewis, R.J. *et al., Food Additives Handbook*, Van Nostrand Reinhold International, New York, 1989, CAK500
Benowitz, N.L. *et al., Annu. Rev. Med.*, 1990, **41**, 277 (*rev, pharmacol*)
IARC Monog., 1991, **51**, 291 (*rev, tox*)
Bott, K. *et al., Chem. Ber.*, 1993, **126**, 1955 (*synth*)
Sitkowski, J. *et al., Spectrochim. Acta A*, 1995, **51**, 839 (*pmr, cmr, N-15 nmr*)
Encyclopedia of Food and Color Additives, (ed. Burdock, G.A.), CRC Press, 1997, 363
Caffeine, (ed. Spiller, G.A.), CRC Press, 1998, (*book*)
Carrier, O. *et al., Clin. Pharmacol. Ther. (St. Louis)*, 1998, **44**, 145-151 (*Caffeine citrate, metab*)
Parliment, T.H. *et al., ACS Symp. Ser.*, 2000, **754**,
Bogo, A. *et al., Phytochemistry*, 2000, **54**, 937-939 (*isol, ms*)
Weinberg, B.A. *et al., The World of Caffeine*, Routledge, 2001, (*book*)
Waldvogel, S.R. *et al., Angew. Chem., Int. Ed.*, 2003, **42**, 604-605 (*rev*)
Zajac, M.A. *et al., Synth. Commun.*, 2003, **33**, 3291-3297 (*synth*)
Kaskatan-Nebioglu, A. *et al., J. Med. Chem.*, 2006, **49**, 6811-6818 (*methiodide*)
Lehmann, C.W. *et al., Chem. Eur. J.*, 2007, **13**, 2908-2911 (*cryst struct, dimorph*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, CAK500

1-[Caffeoyloxy(carboxy)-methoxy]-1*H*-pyrrole-2,3,5-tricarboxylic acid C-16

[133084-32-9]



$C_{18}H_{13}NO_{13}$ 451.3

Alkaloid from *Parietaria officinalis* (Urticaceae). Off-white granules. Mp 360°.

Budzianowski, J. *et al., Phytochemistry*, 1990, **29**, 3299 (*isol, pmr, uv, cmr*)

Cairomycin C C-17

[78922-12-0]

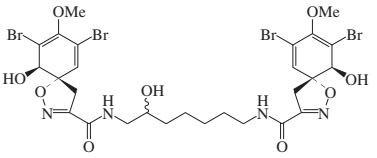
$C_{23}H_{38}N_6O_6$ 494.59

Peptide antibiotic. Struct. unknown. Contains piperazine nucleus, Lys, Gly, Val, Leu and Asp. Isol. from *Streptomyces* sp. ASC-19. Active against bacteria and fungi. Reddish-brown powder. Sol. $CHCl_3$, EtOAc, Me_2CO; fairly sol. butanol; poorly sol. H_2O, hexane. Mp 138-140°. λ_{max} 235 ; 275 (MeOH) (Berdy).

▶ LD_{50} (mus, ipr) 10 mg/kg. EV6691000

Shimi, I.R. *et al., Antimicrob. Agents Chemother.*, 1981, **19**, 941-944

Caissarine B C-18



Relative Configuration

$C_{27}H_{32}Br_4N_4O_9$ 876.187

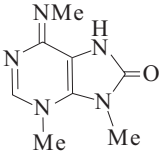
Isol. from the Brazilian sponge *Aplysina caissara*. Glassy solid. λ_{max} 234 (ϵ 9000); 283 (ϵ 4300) (MeOH).

Saeki, B.M. *et al., J. Nat. Prod.*, 2002, **65**, 796-799; 2003, **66**, 1039 (*isol, pmr, cmr, ms*)

Caissarone C-19

*3,5,7,9-Tetrahydro-3,9-dimethyl-6-(methylimino)-8*H*-purin-8-one, 9CI*

[106145-23-7]



$C_8H_{11}N_5O$ 193.208

Alkaloid from the sea anemone *Bunodosoma caissarum*. Inducer of anomalous growth in sea urchin eggs, increases muscle contraction. λ_{max} 228 (ϵ 21600); 302 (ϵ 17700) (MeOH) (Derep).

▶ Teratogen.

Hydrochloride:
Needles (MeOH aq.). Mp 285-290°.

Picrate:
Cryst. (EtOH). Mp 245-250°.

Zelnik, R. *et al., J.C.S. Perkin 1*, 1986, 2051 (*isol, uv, ir, pmr, cmr, cryst struct*)
Fujii, T. *et al., Tet. Lett.*, 1991, **32**, 97 (*synth*)
Itaya, T. *et al., Chem. Pharm. Bull.*, 1997, **45**, 1601-1607; 1867-1869 (*synth*)

Calabacine C-20

$C_{17}H_{25}N_3O_3$ 319.403

Struct. unknown. Alkaloid from the calabar bean (*Physostigma venenosum*) (Fabaceae). Mp 138°. $[\alpha]_D^{27}$ -198 (c, 0.2 in $CHCl_3$).

Picrate:
Prisms (MeOH). Mp 215°.

Döpke, W. *et al., Naturwissenschaften*, 1963, **50**, 713 (*isol*)

Calabatine C-21

$C_{17}H_{25}NO_2$ 275.39

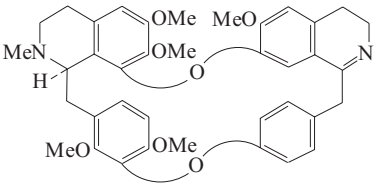
Struct. unknown. Alkaloid from the Calabar bean (*Physostigma venenosum*) (Fabaceae). Mp 119°. $[\alpha]_D^{24}$ -98 (c, 0.2 in $CHCl_3$).

Picrate:
Needles (MeOH). Mp 128°.

Döpke, W. *et al., Naturwissenschaften*, 1963, **50**, 713 (*isol*)

Calafatimine C-22

[77793-42-1]



$C_{38}H_{40}N_2O_7$ 636.743

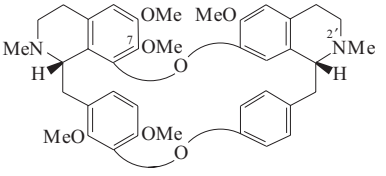
Alkaloid from *Berberis buxifolia* (Berberidaceae). Cryst. (C_6H_6/cyclohexane). Mp 180-182°. $[\alpha]_D^{20}$ -141 ($CHCl_3$).

Fajardo, V. *et al., Heterocycles*, 1981, **15**, 1137 (*uv, pmr, ms, struct*)

Calafatine C-23

6,6′,7,10,12-Pentamethoxy-2,2′-dimethylberbaman, 9CI

[73168-72-6]



$C_{39}H_{44}N_2O_7$ 652.786

Alkaloid from *Berberis buxifolia* (Berberidaceae). Needles (C_6H_6/cyclohexane). Mp 135-137°. $[\alpha]_D^{25}$ -154 (c, 0.28 in $CHCl_3$). CAS did not assign new nos. to corrected structs. for oxides. λ_{max} 258 (log ϵ 3.32); 281 (log ϵ 3.82) (MeOH).

$N^{2'}$-*α-Oxide:* ***Calafatine 2′α-N-oxide***
$C_{39}H_{44}N_2O_8$ 668.785
Alkaloid from *Berberis buxifolia* (Berberidaceae). Amorph. $[\alpha]_D^{25}$ -48 (c, 0.17 in MeOH). Struct. revised in 1985. λ_{max} 210 (log ϵ 4.95); 231 (sh) (log ϵ 4.67); 281 (log ϵ 3.91) (MeOH).

$N^{2'}$-*β-Oxide:* ***Calafatine 2′β-N-oxide***
$C_{39}H_{44}N_2O_8$ 668.785
Alkaloid from *Berberis buxifolia* (Berberidaceae). Amorph. $[\alpha]_D^{25}$ -19 (c, 0.14 in MeOH). Struct. revised in 1985. λ_{max} 206 (log ϵ 4.91); 229 (sh) (log ϵ 4.63); 280 (log ϵ 3.85) (MeOH).

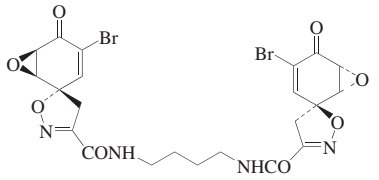
O^7-*De-Me:* ***Berbibuxine****. 7-Demethylcalafatine*
$C_{38}H_{42}N_2O_7$ 638.759
Alkaloid from *Berberis buxifolia* and *Berberis darwinii* (Berberidaceae). Amorph. $[\alpha]_D$ -228 (c, 0.19 in $CHCl_3$). CAS no. not found 10-14 CI.

[91126-81-7 , 91126-80-6]

Fajardo, V. *et al., Heterocycles*, 1979, **12**, 1559-1562; 1981, **15**, 1132-1139 (*uv, pmr, ms, struct*)
Leet, J.E. *et al., J. Nat. Prod.*, 1983, **46**, 908-912 (*stereochem*)
Leet, J.E. *et al., J.C.S. Perkin 1*, 1984, 651-652; 1985, 1565 (*isol, uv, cd, pmr, ms, oxides*)
Shamma, M. *et al., Personal Communication*, (*Berbibuxine, oxides*)

Calafianine C-24

[267876-68-6]



Absolute Configuration

$C_{22}H_{20}Br_2N_4O_8$ 628.23

Related to Aerothionin, A-158. Stereochem. revised in 2005. Isol. from the sponge *Aplysina gerardogreeni*. Solid. λ_{max} 210 (sh) ; 230 (sh) ; 260 (sh) (EtOH).

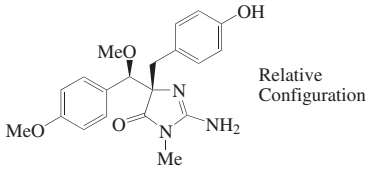
Encarnacion, R.D. *et al., J. Nat. Prod.*, 2000, **63**, 874-875 (*isol, pmr, cmr*)

Ogamino, T. *et al., Tet. Lett.*, 2005, **46**, 1083-1086 (*synth, struct*)

Bardhan, S. *et al., Org. Lett.*, 2006, **8**, 927-930 (*synth, abs config*)

Calcaridine A C-25

[568561-14-8]



Relative Configuration

$C_{20}H_{23}N_3O_4$ 369.419

Isol. from a calcareous sponge *Leucetta* sp. Yellow oil. $[\alpha]_D$ +1.6 (c, 0.12 in MeOH).

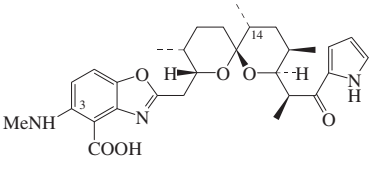
Edrada, R.A. *et al., J. Nat. Prod.*, 2003, **66**, 939-942 (*isol, pmr, cmr*)

Koswatta, P.B. *et al., Org. Lett.*, 2008, **10**, 5055-5058 (*synth, config*)

Calcimycin C-26

A 23187. Antibiotic A 23187. Calimycin

[52665-69-7]



$C_{29}H_{37}N_3O_6$ 523.628

Polyether antibiotic. Isol. from *Streptomyces chartreusensis*. Calcium ionophore, active against gram-positive and -negative bacteria and fungi. Used as a probe for calcium-potentiated biological processes. Sol. MeOH, Et_2O; poorly sol. H_2O. Mp 186-187° (181-182°). $[\alpha]_D^{25}$ -56 (c, 0.01 in $CHCl_3$). Earlier (positive) opt. rotn. is incorrect. λ_{max} 202 (ϵ 22200); 228 (ϵ 25600); 303 (ϵ 14500); 370 (ϵ 5700) (MeOH) (Derep). λ_{max} 204 (ϵ 28200); 225 (ϵ 26200); 278 (ϵ 18200); 378 (ϵ 8200) (EtOH) (Berdy). λ_{max} 204 (E1%/1cm 435); 226 (E1%/1cm 405); 278 (E1%/1cm 290); 380 (E1%/1cm 50) (EtOH/HCl) (Berdy). λ_{max} 292 (E1%/1cm 340); 353 (E1%/1cm 90) (EtOH/NaOH) (Berdy).

▶ LD_{50} (rat, ipr) 9.2 mg/kg, LD_{50} (mus, ipr) 10 mg/kg. DM4676000

Me ester: [58288-38-3]
Yellow solid. Mp 104-106°. $[\alpha]_D$ -11.2 (c, 0.035 in $CHCl_3$).

De(methylamino): ***Cezomycin***
[83874-22-0]
$C_{28}H_{34}N_2O_6$ 494.586
Prod. by *Streptomyces chartreusis* NRRL3882 with added tryptophan. Assists in transportation of calcium across a chloroformic membrane. Shows similar antibiotic activity to Calcimycin, C-26. Poorly sol. hexane. Mp 75-77°. $[\alpha]_D^{25}$ +151 (c, 0.012 in $CHCl_3$).

De(methylamino), 3-hydroxy: ***3-Hydroxycezomycin***. *AC 7230. Antibiotic AC 7230*
$C_{28}H_{34}N_2O_7$ 510.586
From *Dactylosporangium* sp. AC 7320. Active against gram-positive bacteria. Needles (as Na salt). Sol. MeOH, DMSO, $CHCl_3$; poorly sol. H_2O, hexane. Mp 300° (Na salt). $[\alpha]_D^{26}$ +328 (c, 0.6 in $CHCl_3$). Stereochem. not confirmed. λ_{max} 204 (ϵ 30700); 257 (ϵ 15100); 306 (ϵ 21800) (EtOH) (Derep).

▶ LD_{50} (mus, ipr) 50 mg/kg.

14-Demethyl, de(methylamino): 11-Demethylcezomycin. ***Frankiamide***
[726188-57-4]
$C_{27}H_{32}N_2O_6$ 480.56
Prod. by *Frankia* sp. strain AiPs1. Powder. $[\alpha]_D^{22}$ +192.4 (c, 0.008 in $CHCl_3$). Struct. of Frankiamide revised in 2003.

[79646-37-0]

Chaney, M.O. *et al., J.A.C.S.*, 1974, **96**, 1932 (*ir, uv, ms, pmr, cmr, cryst struct*)

Pressman, B.C. *et al., Annu. Rev. Biochem.*, 1976, **45**, 501 (*rev*)

Smith, G.O. *et al., J.A.C.S.*, 1976, **98**, 1578 (*cryst struct*)

Pfeiffer, D.R. *et al., Ann. N.Y. Acad. Sci.*, 1978, **307**, 402 (*rev*)

Evans, D.A. *et al., J.A.C.S.*, 1979, **101**, 6789 (*synth*)

Grieco, P.A. *et al., J.O.C.*, 1980, **45**, 3537 (*synth*)

David, L. *et al., J. Antibiot.*, 1982, **35**, 1409; 1616 (*Cezomycin*)

Martinez, G.R. *et al., J.A.C.S.*, 1982, **104**, 1436 (*synth*)

Prudhomme, M. *et al., Experientia*, 1983, **39**, 256 (*Cezomycin, synth*)

Zmijewski, M.J. *et al., Tetrahedron*, 1983, **39**, 1255 (*biosynth*)

Nakahara, Y. *et al., Tetrahedron*, 1986, **42**, 6465 (*synth, ir, pmr, ms, Me ester*)

Yaginuma, S. *et al., J. Antibiot.*, 1987, **40**, 239-241 (*3-Hydroxycezomycin*)

Negri, D.P. *et al., Tet. Lett.*, 1987, **28**, 1063 (*synth, bibl*)

Ziegler, F.E. *et al., J.O.C.*, 1989, **54**, 3347 (*synth*)

Synform, 1990, **8**, 38 (*rev, synth*)

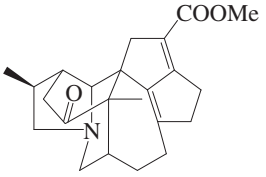
Boeckman, R.K. *et al., J.A.C.S.*, 1991, **113**, 5337 (*bibl, synth, Me ester, ir, pmr*)

Gruetter, C.A. *et al., Eur. J. Pharmacol.*, 1994, **257**, 275 (*activity*)

Klika, K.D. *et al., Z. Naturforsch., B*, 2003, **58**, 1210-1215 (*Frankiamide*)

Caldaphnidine A C-27

[871261-40-4]



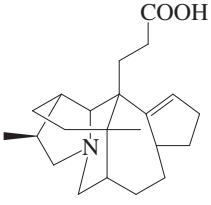
$C_{23}H_{29}NO_3$ 367.487

Alkaloid from *Daphniphyllum calycinum*. Cryst. (MeOH). Mp 193-194°. $[\alpha]_D^{20}$ +72 (c, 0.7 in MeOH). λ_{max} 223 (ϵ 3440); 297 (ϵ 9590) (MeOH).

Zhan, Z.-J. *et al., Tetrahedron*, 2005, **61**, 11038-11045 (*isol, pmr, cmr, ms, cryst struct*)

Caldaphnidine C C-28

[871261-42-6]



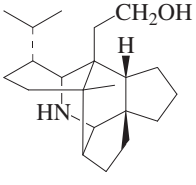
$C_{22}H_{33}NO_2$ 343.508

Alkaloid from *Daphniphyllum calycinum*. Amorph. powder. $[\alpha]_D^{20}$ -36.3 (c, 1 in MeOH).

Zhan, Z.-J. *et al., Tetrahedron*, 2005, **61**, 11038-11045 (*isol, pmr, cmr, ms*)

Caldaphnidine D C-29

[871261-43-7]



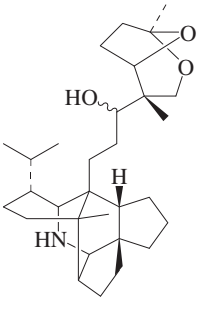
$C_{21}H_{35}NO$ 317.514

Alkaloid from *Daphniphyllum calycinum*. Oil. $[\alpha]_D^{20}$ -73 (c, 1.5 in $CHCl_3$).

Zhan, Z.-J. *et al., Tetrahedron*, 2005, **61**, 11038-11045 (*isol, pmr, cmr, ms*)

Caldaphnidine E C-30

[871261-44-8]

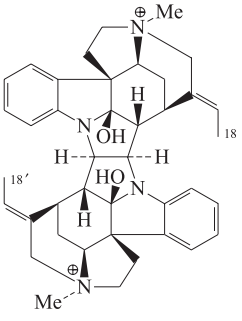


$C_{30}H_{49}NO_3$ 471.722
Alkaloid from *Daphniphyllum calycinum*. Oil. $[\alpha]_D^{20}$ -97 (c, 1.1 in $CHCl_3$).

Zhan, Z.-J. *et al., Tetrahedron*, 2005, **61**, 11038-11045 (*isol, pmr, cmr, ms*)

Calebassine C-31

C-*Toxiferine II*. C-*Strychnotoxine I*. C-*Calebassine*. C-*Strychnotoxine Ia*. C-*Curarine II*. C-*Calebassine A*
[7257-29-6]



Absolute configuration

$C_{40}H_{48}N_4O_2^{2\oplus}$ 616.845
V. readily forms the di-Me ether, and early refs. are confused between Calebassine and the di-Me ether with the same names being applied to both compds. Alkaloid from calabash curare, *Strychnos divaricans* and several other *Strychnos* spp. (Loganiaceae). Potent neuromuscular blocking agent (*ca.* 0.3 × Tubocurarine). Mp 216-218° (as dipicrate). $[\alpha]_D^{24}$ +72.1 (H_2O) (as dichloride). Blue-violet colour with $Ce(SO_4)_2$, becoming carmine on standing.

▶ Very toxic by intravenous route (lethal dose, rabbit *ca*. 135 μg/kg). FI9000000

Di-Me ether: Mp 232-233° dec. (as dipicrate).

18-Hydroxy: **C-*Alkaloid F***
[69356-54-3]
$C_{40}H_{48}N_4O_3^{2\oplus}$ 632.844
Alkaloid from calabash curare (Loganiaceae). Orange prisms (Me_2CO)(as dipicrate). Mp 209-210° dec. (dipicrate). Blue-violet colour with $Ce(SO_4)_2$, becoming carmine on standing.

▶ FI9200000

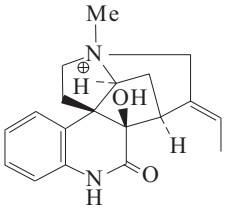
18,18′-Dihydroxy: **C-*Alkaloid A***. *Toxiferine IV*
[6844-05-9]
$C_{40}H_{48}N_4O_4^{2\oplus}$ 648.844
Alkaloid from calabash curare (Loganiaceae). Mp 228-229° (as dipicrate). $[\alpha]_D$ +64 (H_2O) (as dichloride). Blue-violet colour with $Ce(SO_4)_2$, becoming carmine on standing.

▶ FI9100000

Wieland, H. *et al., Annalen*, 1941, **547**, 156 (*isol*)
Schmid, H. *et al., Helv. Chim. Acta*, 1946, **29**, 1853; 1952, **35**, 1864; 1953, **36**, 345; 1956, **39**, 440; 1208; 1958, **41**, 673; 1961, **44**, 2211 (*isol, uv, ir, pmr, struct*)
Zürcher, A. *et al., J.A.C.S.*, 1958, **80**, 1500 (*isol*)
Berlage, F. *et al., Helv. Chim. Acta*, 1959, **42**, 2650-2654 (*C-Alkaloid F, C-Alkaloid A, synth*)
Grdinic, M. *et al., J.A.C.S.*, 1964, **86**, 3351 (*pmr*)
Fehlmann, M. *et al., Helv. Chim. Acta*, 1965, **48**, 303 (*cryst struct*)
Marini-Bettolo, G.B. *et al., CA*, 1980, **92**, 124942c (*isol*)

Calebassinine 1, 9CI C-32

[1355-07-3]



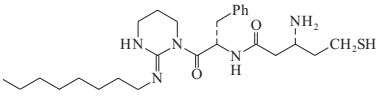
$C_{19}H_{23}N_2O_2^{\oplus}$ 311.403
Quaternary alkaloid from Calabash curare (*Strychnos* sp.) (Loganiaceae). Amorph. solid (as chloride). $[\alpha]_D^{22}$ +51.8 (c, 0.305 in EtOH) (chloride).

▶ EW5500000

Guggisberg, A. *et al., Helv. Chim. Acta*, 1982, **65**, 2586 (*uv, ir, pmr, ms, cryst struct*)

Caledonin C-33

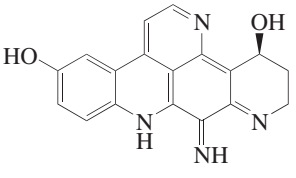
[171675-03-9]



$C_{26}H_{43}N_5O_2S$ 489.724
Modified peptide. Isol. from the marine tunicate *Didemnum rodriguesi*. Strongly binds Zn^{II} and Cu^{I} ions. Sol. MeOH, CH_2Cl_2; poorly sol. H_2O. Mp 170-172°. $[\alpha]_D^{20}$ +24 (c, 0.145 in MeOH). λ_{max} 234 (ε 2816) (MeOH) (Berdy).

Vázquez, M.J. *et al., Tet. Lett.*, 1995, **36**, 8853-8856 (*isol, uv, ir, pmr, cmr, struct*)

Calliactine C-34



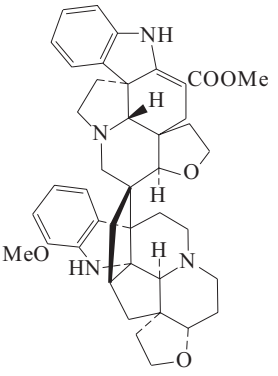
$C_{18}H_{14}N_4O_2$ 318.334
Preferred struct. shown. An isomeric struct. cannot be ruled out.

(S)-form
Pigment from the sea anemone *Calliactis parasitica*. λ_{max} 267 (ε 12000); 272 (ε 11700); 299 (ε 9200); 454 (ε 8500) (MeOH) (Berdy). λ_{max} 580 (MeOH/NaOH) (Berdy).

Lederer, E. *et al., Bull. Soc. Chim. Fr.*, 1940, **7**, 608-615 (*isol*)
Cimino, G. *et al., Pure Appl. Chem.*, 1986, **58**, 375-386 (*rev, bibl*)
Cimino, G. *et al., Tetrahedron*, 1987, **43**, 4023-4030 (*struct, uv, pmr, cmr*)
Voloshina, S. *et al., Int. J. Quantum Chem.*, 2004, **100**, 1104-1113 (*abs config*)

Callichiline, 9CI C-35

[31230-09-8]

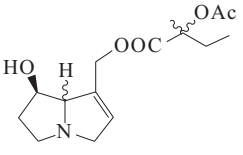


$C_{42}H_{48}N_4O_5$ 688.865
Alkaloid from *Callichilia (Hedranthera) subsessilis* and *Hedranthera barteri* (Apocynaceae). Cryst. (MeOH). Mp 208-210° Mp 228-230° (evacuated tube).

Goutarel, R. *et al., Bull. Soc. Chim. Fr.*, 1959, 893 (*isol, uv, ir*)
Plat, M. *et al., Bull. Soc. Chim. Fr.*, 1967, 2669 (*uv, ir, pmr, ms*)
Agwada, V. *et al., Helv. Chim. Acta*, 1967, **50**, 1939; 1970, **53**, 1567 (*isol, uv, ir, pmr, ms, ord*)
McPhail, A.T. *et al., Tetrahedron*, 1983, **39**, 3629 (*cmr, cryst struct*)

Callimorphine C-36

[74991-73-4]

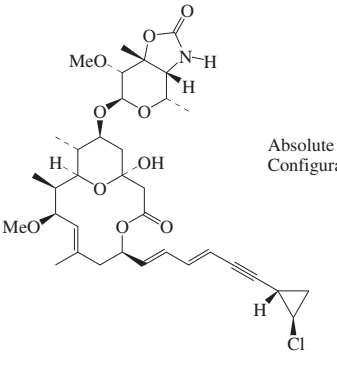


$C_{15}H_{23}NO_5$ 297.35
Ester of 2,3,5,7*a*-Tetrahydro-1-hydroxy-1*H*-pyrrolizine-7-methanol, T-188 of undetd. stereochem. "Metabolite" found in some Arctiid moths which feed as larvae on plants containing pyrrolizidine alkaloids.

Edgar, J.A. *et al., Tet. Lett.*, 1980, **21**, 1383 (*isol, ms, struct, synth*)
L'Empereur, K.M. *et al., J. Nat. Prod.*, 1989, **52**, 360 (*isol, pmr, cmr*)

Callipeltoside A C-37

[183671-13-8]



Absolute Configuration

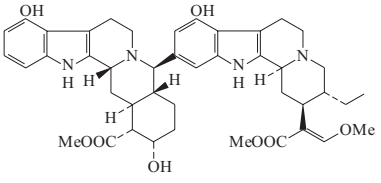
$C_{35}H_{48}ClNO_{10}$ 678.218

Macrolide antibiotic. Closely related to Phorbaside A. Isol. from the sponge *Callipelta* sp. Cytotoxic agent, cell proliferation inhibitor. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. $[\alpha]_D$ -17.6 (c, 0.04 in MeOH). λ_{max} 250 (ϵ 6730); 272 (ϵ 8030); 286 (ϵ 6270) (MeOH).

Zampella, A. *et al., J.A.C.S.*, 1996, **118**, 11085-11088 (*isol, uv, ir, pmr, cmr*)
Trost, B.M. *et al., Angew. Chem., Int. Ed.*, 2002, **41**, 841-843 (*synth, abs config*)
Trost, B.M. *et al., J.A.C.S.*, 2002, **124**, 10396-10415 (*synth, abs config*)
Paterson, I. *et al., Org. Lett.*, 2003, **5**, 4477-4480 (*synth*)
Huang, H. *et al., Org. Lett.*, 2004, **6**, 4383-4385 (*synth*)
Evans, D.A. *et al., Tetrahedron*, 2008, **64**, 4671-4699 (*synth*)

Callophylline B C-38

[141544-39-0]



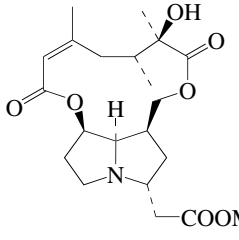
$C_{43}H_{52}N_4O_8$ 752.906

Alkaloid from the leaves of *Uncaria callophylla*. λ_{max} 227 ; 290 ; 300 (EtOH).

Kam, T.-S. *et al., Phytochemistry*, 1991, **30**, 3441-3444 (*isol, pmr, cmr*)

Callosine C-39

[213912-09-5]



$C_{21}H_{31}NO_7$ 409.478

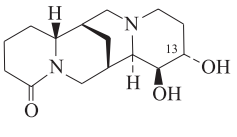
Alkaloid from *Senecio callosus*. Oil. $[\alpha]_D$ -14.7 (c, 0.23 in MeOH). λ_{max} 207 (log ϵ 3.94) (MeOH).

Perez-Castorena, A.-L. *et al., J. Nat. Prod.*, 1998, **61**, 1288-1291 (*isol, uv, pmr, cmr*)

Calpurmenine C-40

12,13-Dihydroxylupanine

[72047-67-7]



Probable absolute configuration

$C_{15}H_{24}N_2O_3$ 280.366

Alkaloid from *Calpurnia aurea* subsp. *sylvatica* (Fabaceae). Cryst. (MeOH/EtOAc/Et_2O).

O^{13}*-2-Pyrrolecarboxylate:* ***13-(2-Pyrrolylcarbonyl)calpurmenine***

[72047-68-8]

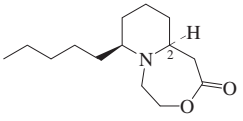
$C_{20}H_{27}N_3O_4$ 373.451

Alkaloid from *Calpurnia aurea* (Fabaceae). Cryst. (MeOH/Et_2O/CH_2Cl_2).

Radema, M.H. *et al., Phytochemistry*, 1979, **18**, 2063 (*isol, ms, ir*)
Vermin, W.J. *et al., Acta Cryst. B*, 1979, **35**, 1839 (*cryst struct*)

Calvine C-41

[232279-19-5]



Absolute Configuration

$C_{14}H_{25}NO_2$ 239.357

Alkaloid from the beetles *Calvia 10-guttata* and *Calvia 14-guttata*. Yellow oil. $[\alpha]_D^{20}$ +18 (c, 0.66 in CH_2Cl_2).

2-Epimer: ***2-Epicalvine***

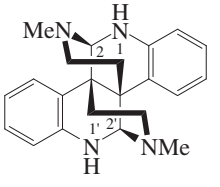
[229976-47-0]

$C_{14}H_{25}NO_2$ 239.357

Alkaloid from *Calvia 10-guttata* and *Calvia 14-guttata*. Yellow oil. $[\alpha]_D^{20}$ +8 (c, 0.58 in CH_2Cl_2).

Braekman, J.-C. *et al., Eur. J. Org. Chem.*, 1999, 1749-1755 (*isol, synth, pmr, ms*)
Laurent, P. *et al., Eur. J. Org. Chem.*, 2000, 2057-2062 (*synth, abs config*)
Calvet-Vitale, S. *et al., Tetrahedron*, 2005, **61**, 7774-7782 (*synth*)
Szolcsányi, P. *et al., Tet. Lett.*, 2008, **49**, 1357-1360 (*synth*)

Calycanthine, 9CI C-42



(+)-*form*

$C_{22}H_{26}N_4$ 346.474

Various numbering schemes possible. That shown is based on numbering of the quinoline residues.

(+)-*form* [595-05-1]

Alkaloid from *Calycanthus floridus* (Carolina allspice), other *Calycanthus* spp., *Psychotria forsteriana* and *Palicourea ovalis*. Shows cytotoxic activity. Platelet aggregation inhibitor. Mp 250-251° (anhyd.). $[\alpha]_D$ +684. λ_{max} 252 (log ϵ 4.26); 310 (log ϵ 3.8) (MeCN).

Hydrobromide (1:2): Mp 213-214°.

(-)-*form* [85548-42-1]

Alkaloid from Colombian poison-dart frog *Phyllobates terribilis*. Also isol. from stem bark and fruits of *Psychotria forsteriana* (Rubiaceae). Mp 245°. $[\alpha]_D^{25}$ -570 (MeOH).

1,2-Didehydro: ***Glomerulatine C***

[188846-23-3]

$C_{22}H_{24}N_4$ 344.458

Minor alkaloid from aerial parts of *Psychotria glomerulata*. λ_{max} 274 ; 304 (sh) (EtOH).

1,1′,2,2′-Tetradehydro: ***Glomerulatine A***

[188846-03-9]

$C_{22}H_{22}N_4$ 342.443

Alkaloid from aerial parts of *Psychotria glomerulata*. $[\alpha]_D^{20}$ -466.1 (c, 0.36 in $CHCl_3$). λ_{max} 274 ; 304 (sh) (EtOH).

1,1′,2,2′-Tetradehydro, N*-de-Me:* ***Glomerulatine B***

[188846-22-2]

$C_{21}H_{20}N_4$ 328.416

Minor alkaloid from aerial parts of *Psychotria glomerulata*. λ_{max} 279 (MeCN).

(±)-*form* [16739-56-3]

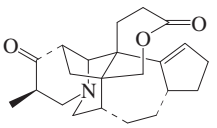
Synthetic. Mp 253-258°.

meso-form

Synthetic. Mp 265-268°.

Woodward, R.B. *et al., Proc. Chem. Soc., London*, 1960, 76-78 (*struct*)
Hamor, T.A. *et al., J.C.S.*, 1962, 194-205 (*cryst struct*)
Hendrikson, J.B. *et al., Tetrahedron*, 1964, **20**, 565-579 (*synth, ms, pmr, uv*)
Hall, E.S. *et al., Tetrahedron*, 1967, **23**, 4131-4141 (*synth, ir, uv, ms, pmr*)
Beecham, A.F. *et al., Nature (London), Phys. Sci.*, 1973, **244**, 30-32 (*config*)
Tokuyama, T. *et al., Tetrahedron*, 1983, **39**, 41-47 (*(-)-form, isol*)
Adjibade, Y. *et al., Phytochemistry*, 1992, **31**, 317-319 (*(-)-form, isol, uv, ir, pmr, cmr, ms*)
Link, J.T. *et al., J.A.C.S.*, 1996, **118**, 8166-8167 (*synth*)
Solis, P.N. *et al., Phytochemistry*, 1997, **44**, 963-969 (*Glomerulatines*)
Arteaga de Garcia, L. *et al., Rev. Colomb. Quim.*, 1997, **26**, 55-57; *CA*, **128**, 110442q (*activity*)
Verotta, L. *et al., J. Nat. Prod.*, 1998, **61**, 392-396 (*(-)-form, isol, pmr, cd*)
Overman, L.E. *et al., J.A.C.S.*, 1999, **121**, 7702-7703 (*synth*)
Movassaghi, M. *et al., Angew. Chem., Int. Ed.*, 2007, **46**, 3725-3728 (*synth*)

Calycilactone A C-43



Relative Configuration

$C_{22}H_{29}NO_3$ 355.476

Alkaloid from the leaves of *Daphniphyllum calycillum*. Oil. $[\alpha]_D^{25}$ -128 (c, 0.62 in $CHCl_3$).

Di, Y.-T. *et al., Tet. Lett.*, 2006, **47**, 5329-5331 (*isol, pmr, cmr*)

Calycine† C-44

$C_{23}H_{31}NO_3$ 369.503

Struct. unknown. Alkaloid from the leaves and bark of *Daphniphyllum calycinum* and the bark of *Daphniphyllum glaucescens* (Daphniphyllaceae). Cryst.

(Me_2CO). Mp 205° (vac.). $[\alpha]_D^{20}$ +58.7 ($CHCl_3$).

Picrate:
Cryst. (MeOH). Mp 215-218° (vac. dec.).

Methiodide:
Cryst. (EtOH/Me_2CO). Mp 252-254° (vac. dec.).

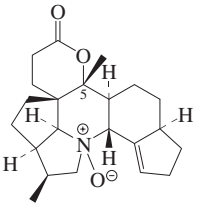
Ethiodide:
Cryst. (EtOH/Me_2CO). Mp 245-246°.

3,5-Dinitrobenzoyl:
Cryst. (EtOH or Me_2CO). Mp 218-221° (vac. dec.).

Arthur, H.R. *et al., Phytochemistry*, 1965, **4**, 627-629 (*isol, ir, pmr*)

Calyciphylline B C-45

[596799-33-6]



Absolute Configuration

$C_{22}H_{31}NO_3$ 357.492
Alkaloid from *Daphniphyllum calycinum* and *Daphniphyllum subverticillatum*. Needles (Me_2CO). Mp 178° dec. $[\alpha]_D^{20}$ -70.7 (c, 0.33 in MeOH).

N-*Deoxy:* ***Deoxycalyciphylline B***
[619326-74-8]
$C_{22}H_{31}NO_2$ 341.492
Alkaloid from the stems of *Daphniphyllum subverticillatum*. Cryst. (Me_2CO). Mp 182° dec. $[\alpha]_D^{20}$ -96 (c, 1.2 in MeOH).

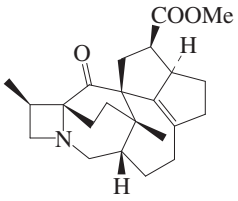
5-Epimer: Isocalyciphylline B
[619326-76-0]
$C_{22}H_{31}NO_3$ 357.492
Yellow gum. Artifact.

5-Epimer, N-*deoxy:* ***Deoxyisocalyciphylline B***
[619326-75-9]
$C_{22}H_{31}NO_2$ 341.492
Alkaloid from the stems of *Daphniphyllum subverticillatum*. Pale solid. Mp 86-88°. $[\alpha]_D^{20}$ -70.6 (c, 0.7 in MeOH).

Yang, S.-P. *et al., J.O.C.*, 2003, **68**, 7961-7966 (*isol, pmr, cmr, ms, cryst struct*)
Morita, H. *et al., Org. Lett.*, 2003, **5**, 2895-2898 (*isol, pmr, cmr*)

Calyciphylline C C-46

[930774-41-7]

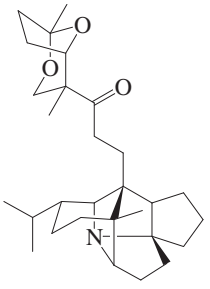


$C_{23}H_{31}NO_3$ 369.503
Alkaloid from the leaves of *Daphniphyllum calycinum*. Amorph. solid. $[\alpha]_D^{18}$ -21.5 (c, 0.2 in MeOH). λ_{max} 215 (ϵ 4760) (MeOH).

Saito, S. *et al., Tet. Lett.*, 2007, **48**, 1587-1589 (*isol, pmr, cmr*)

Calyciphylline D C-47

[929638-01-7]

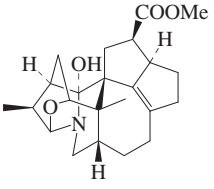


$C_{29}H_{45}NO_3$ 455.679
Alkaloid from the leaves of *Daphniphyllum calycinum*. Amorph. solid. $[\alpha]_D^{24}$ -25.6 (c, 0.5 in MeOH).

Saito, S. *et al., Org. Lett.*, 2007, **9**, 1207-1209 (*isol, pmr, cmr*)

Calyciphylline E C-48

[943528-89-0]



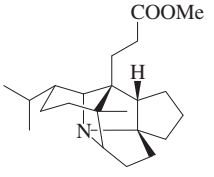
Relative Configuration

$C_{23}H_{31}NO_4$ 385.502
Alkaloid from the leaves of *Daphniphyllum calycinum*. Amorph. solid. $[\alpha]_D^{21}$ -39 (c, 0.5 in $CHCl_3$).

Saito, S. *et al., Tet. Lett.*, 2007, **48**, 3809-3812 (*isol, pmr, cmr*)

Calyciphylline F C-49

[943528-90-3]



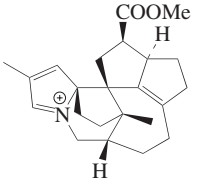
Relative Configuration

$C_{22}H_{35}NO_2$ 345.524
Alkaloid from the leaves of *Daphniphyllum calycinum*. Amorph. solid. $[\alpha]_D^{16}$ -37 (c, 1 in $CHCl_3$).

Saito, S. *et al., Tet. Lett.*, 2007, **48**, 3809-3812 (*isol, pmr, cmr*)

Calyciphylline G C-50

[947730-34-9]



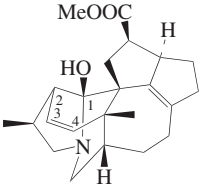
Relative Configuration

$C_{23}H_{30}NO_2^{\oplus}$ 352.496
Alkaloid from the stems of *Daphniphyllum calycinum*. Cytotoxic. Amorph. solid. $[\alpha]_D^{21}$ +8.5 (c, 1 in MeOH). Counterion not specified.

Saito, S. *et al., Tet. Lett.*, 2007, **48**, 5693-5695 (*isol, pmr, cmr*)

Calyciphylline H C-51

[1012789-71-7]



Relative Configuration

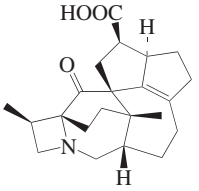
$C_{23}H_{31}NO_3$ 369.503
Alkaloid from *Daphniphyllum calycinum*. Amorph. solid. $[\alpha]_D^{22}$ +36.6 (c, 0.5 in $CHCl_3$).

1-Deoxy, 2-hydroxy, 3,4-dihydro: ***Calyciphylline I***
[1012789-72-8]
$C_{23}H_{33}NO_3$ 371.519
Alkaloid from *Daphniphyllum calycinum*. Amorph. solid. $[\alpha]_D^{22}$ -9.2 (c, 0.5 in $CHCl_3$).

Saito, S. *et al., Tetrahedron*, 2008, **64**, 1901-1908 (*isol, pmr, cmr*)

Calyciphylline J C-52

[1012789-73-9]



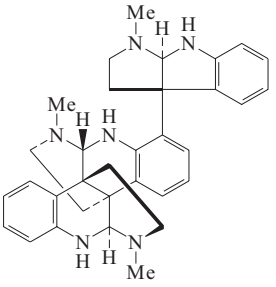
Absolute Configuration

$C_{22}H_{29}NO_3$ 355.476
Alkaloid from *Daphniphyllum calycinum*. Amorph. solid. $[\alpha]_D^{22}$ -45 (c, 1 in $CHCl_3$).

Saito, S. *et al., Tetrahedron*, 2008, **64**, 1901-1908 (*isol, pmr, cmr*)

Calycosidine C-53

[112262-96-1]



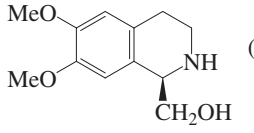
$C_{33}H_{38}N_6$ 518.703

Structurally related to Hodgkinsine, H-311. Alkaloid from the stem bark of *Calycodendron milnei* (Rubiaceae). Also obt. by acid catalyzed isomerisation of Hodgkinsine. Amorph. $[\alpha]_D$ -18 (c, 1 in $CHCl_3$).

Libot, F. *et al., J. Nat. Prod.*, 1987, **50**, 468 (*isol, uv, ir, pmr, cmr, ms*)
Libot, F. *et al., Heterocycles*, 1988, **27**, 2381 (*uv, ir, pmr, cmr, ms, struct*)

Calycotomine C-54

1,2,3,4-Tetrahydro-6,7-dimethoxy-1-isoquinolinemethanol, 9CI. 1,2,3,4-Tetrahydro-1-hydroxymethyl-6,7-dimethoxyisoquinoline



(*R*)-*form*

$C_{12}H_{17}NO_3$ 223.271

(*R*)-*form* [101141-28-0]
Synthetic. Mp 149-150° (145-148°). $[\alpha]_D$ -36 (c, 1.0 in H_2O) (-28.9).

(*S*)-*form* [486-99-7]
Alkaloid from *Calycotome spinosa, Calycotome proliferus* and *Acacia concinna* (Fabaceae). Also obt. by resoln. Mp 149-150° (synthetic); 139-141° (natural). $[\alpha]_D$ +36 (H_2O) (synthetic). $[\alpha]_D$ +21 (H_2O) (natural). The physicochemical data of optically pure (+)-calycotomine (Brossi, *et al*) do not correspond with those recorded for the alkaloid isolated by White, which seems to be a partial racemate.

Hydrochloride: Mp 204-205°. $[\alpha]_D$ +33 (c, 1.0 in H_2O) (opt. pure).

Benzyl ether: [204056-59-7]
Syrup. $[\alpha]_D^{25}$ +19.3 (c, 1.23 in EtOH).

(±)-*form* [4356-47-2]
Alkaloid from *Calycotome spinosa*, *Calycotome proliferus* and *Cytisus nigricans* (Fabaceae). Cryst. (C_6H_6 or EtOAc/petrol). Mp 139-141° (134-135°).

Hydrochloride:
Cryst. (C_6H_6/MeOH). Mp 196.7-198° (192°).

Picrate: Mp 203-204° (163-166°).

N-*Ac:*
Cryst. (EtOAc). Mp 166-167°.

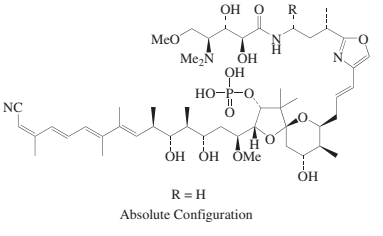
(ξ)-*form*

O^7-*De-Me,* N-*Me: 1,2,3,4-Tetrahydro-7-hydroxy-6-methoxy-2-methyl-1-isoquinolinemethanol. 1,2,3,4-Tetrahydro-7-hydroxy-1-hydroxymethyl-6-methoxy-2-methylisoquinoline.* ***Hedycarine***
$C_{12}H_{17}NO_3$ 223.271
Alkaloid from *Hedycarya baudouinii* (Monimiaceae).

White, E.P. *et al., N.Z. J. Sci. Technol., Sect. B*, 1944, **25**, 137; 1951, **33**, 38 (*isol, struct*)
Dúbravková, L. *et al., Chem. Zvesti*, 1958, **12**, 459 (*synth, uv*)
Battersby, A.R. *et al., J.C.S.*, 1959, 1909; 1960, 1214 (*synth, config*)
Brossi, A. *et al., Helv. Chim. Acta*, 1961, **44**, 1558 (*resoln*)
Bennington, F. *et al., J.O.C.*, 1961, **26**, 194 (*synth*)
Chatterjee, A. *et al., J.O.C.*, 1962, **27**, 309 (*synth, uv*)
Gibson, H.W. *et al., J. Het. Chem.*, 1964, **1**, 251 (*synth*)
Gupta, G.L. *et al., Planta Med.*, 1971, **19**, 55 (*isol*)
Czarnocki, Z. *et al., Can. J. Chem.*, 1986, **64**, 2205-2210 (*synth, pmr, ms*)
Menachery, M.D. *et al., J. Nat. Prod.*, 1986, **49**, 745 (*Hedycarine*)
Lenz, G.R. *et al., Heterocycles*, 1987, **26**, 721 (*synth, uv, pmr*)
Singh, H. *et al., Indian J. Chem., Sect. B*, 1989, **28**, 802 (*synth*)
Czarnocki, Z. *et al., J. Chem. Res., Synop.*, 1992, 334 (*synth*)
Kaufman, T.S. *et al., Synth. Commun.*, 1993, **23**, 473 (*synth*)
Suau, R. *et al., Heterocycles*, 1996, **43**, 545 (*synth*)
Morimoto, T. *et al., Tetrahedron: Asymmetry*, 1998, **9**, 183-187 (*S-form, synth, benzyl ether*)
Antri, A.E. *et al., Molecules*, 2004, **9**, 650-657 (*isol, pmr, cmr, cryst struct*)
Kaufman, T.S. *et al., Synthesis*, 2005, 339-360 (*rev, synth*)

Calyculin A C-55

[101932-71-2]



R = H
Absolute Configuration

$C_{50}H_{81}N_4O_{15}P$ 1009.181
Isol. from the marine sponge *Discodermia calyx* and from *Lamellomorpha strongylata*. Inhibitor of protein phosphatases. Apoptosis inducer. Needles (Me_2CO/Et_2O/hexane). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 247-249°. $[\alpha]_D^{15}$ +59.8 (c, 0.12 in EtOH). Major metab. The opt. rotn., uv data and yield reported in the original paper were incorr. λ_{max} 230 (ϵ 12000); 341 (ϵ 19000) (EtOH) (Derep).

O-*Dephosphono:* ***Dephosphonocalyculin A***
[191421-64-4]
$C_{50}H_{80}N_4O_{12}$ 929.202
Isol. from *Dysidea calyx*. Protein phosphatase inhibitor. Solid.

15-Amide: ***Calyculinamide A***
[187991-80-6]
$C_{50}H_{83}N_4O_{16}P$ 1027.197
Isol. from *Dysidea calyx* and *Lamellomorpha strongylata*. $[\alpha]_D$ -41 (c, 0.5 in EtOH). $[\alpha]_D$ -18 (c, 0.005 in MeOH). Isol. by two groups of workers. UV data not in agreement.

N-*De-Me:* **N-*Demethylcalyculin A***
[187944-08-7]
$C_{49}H_{79}N_4O_{15}P$ 995.155
Isol. from *Discodermia calyx*. Amorph. solid. $[\alpha]_D^{20}$ -18 (c, 0.01 in MeOH). λ_{max} 220 (ϵ 9000); 340 (ϵ 8000) (EtOH).

(9Z)-Isomer: ***Calyculin E***
[133445-05-3]
$C_{50}H_{81}N_4O_{15}P$ 1009.181
Isol. from *Discodermia calyx* and *Lamellomorpha strongylata*. Sol. MeOH, $CHCl_3$. $[\alpha]_D^{23}$ -83 (c, 0.2 in EtOH). λ_{max} 230 ; 325 (ϵ 22000) (MeOH) (Berdy). λ_{max} 227 (ϵ 13800); 321 (ϵ 16400) (EtOH) (Berdy).

(13E)-Isomer: ***Calyculin B***
[107537-44-0]
$C_{50}H_{81}N_4O_{15}P$ 1009.181
From *Discodermia calyx* and *Lamellomorpha strongylata*. Antitumour agent. Amorph. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. $[\alpha]_D$ -61 (c, 0.05 in EtOH). λ_{max} 230 (ϵ 12000); 341 (ϵ 19000) (EtOH) (Derep). λ_{max} 230 (ϵ 18000); 341 (ϵ 25000) (EtOH) (Berdy).

(13E)-Isomer, 15-amide: ***Calyculinamide B***
[188292-66-2]
$C_{50}H_{83}N_4O_{16}P$ 1027.197
Isol. from *Lamellomorpha strongylata*. Protein phosphatase inhibitor. Amorph. solid. $[\alpha]_D^{20}$ -27 (c, 0.1 in EtOH). λ_{max} 227 (ϵ 26000); 335 (ϵ 45600) (EtOH). λ_{max} 227 (ϵ 26000); 335 (ϵ 45600) (MeOH) (Berdy).

(9Z,13E)-Isomer: ***Calyculin F***
[133445-06-4]
$C_{50}H_{81}N_4O_{15}P$ 1009.181
Isol. from *Discodermia calyx* and *Lamellomorpha strongylata*. Sol. MeOH, $CHCl_3$. $[\alpha]_D^{23}$ -33 (c, 0.2 in EtOH). λ_{max} 230 ; 323 (ϵ 24000) (MeOH) (Berdy). λ_{max} 227 (ϵ 15200); 321 (ϵ 18400) (EtOH) (Berdy).

(9Z,13E)-Isomer, 15-amide: ***Calyculinamide F***
[187991-81-7]
$C_{50}H_{83}N_4O_{16}P$ 1027.197
Isol. from *Dysidea calyx*. Protein phosphatase inhibitor. Amorph. solid. $[\alpha]_D^{20}$ -23 (c, 0.01 in MeOH). λ_{max} 228 (ϵ 11000); 236 (ϵ 10000); 315 (ϵ 14000) (EtOH). λ_{max} 228 (ϵ 11000); 236 (ϵ 10000); 315 (ϵ 14000) (MeOH) (Berdy).

Kato, Y. *et al., J.A.C.S.*, 1986, **108**, 2780 (*isol, uv, ir, pmr, cmr, cryst struct*)
Kato, Y. *et al., J.O.C.*, 1988, **53**, 3930 (*isol, pmr, cmr*)
Okada, A. *et al., Agric. Biol. Chem.*, 1991, **55**, 2765-2771 (*Calyculins E-F*)
Matsunaga, S. *et al., Tetrahedron*, 1991, **47**, 2999
Evans, D.A. *et al., J.O.C.*, 1992, **57**, 1958; 1961; 1964 (*synth*)
Evans, D.A. *et al., Spec. Publ. - R. Soc. Chem.*, 1993, **119**, 117 (*rev*)
Tanimoto, N. *et al., Angew. Chem., Int. Ed.*, 1994, **33**, 673 (*synth*)

Dumdei, E.J. *et al., J.O.C.*, 1997, **62**, 2636 (*Calyculinamides*)
Matsunaga, S. *et al., J.O.C.*, 1997, **62**, 2640 (*Calyculinamides*)
Matsunaga, S. *et al., Tet. Lett.*, 1997, **38**, 3763 (*Dephosphonocalyculin A*)
Smith, A.B. *et al., J.O.C.*, 1998, **63**, 7596-7597 (*synth*)
Volter, K.E. *et al., Bioorg. Med. Chem. Lett.*, 1999, **9**, 717-722 (*pmr, cryst struct*)
Smith, A.B. *et al., J.A.C.S.*, 1999, **121**, 10468-10477; 10478-10486 (*synth*)

Calyculin C C-56

[107537-45-1]
As Calyculin A, C-55 with
R = CH_3
$C_{51}H_{83}N_4O_{15}P$ 1023.208
Isol. from *Discodermia calyx*. Antitumour agent. Smooth muscle contractor. Inhibitor of protein phosphatases. Amorph. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. $[\alpha]_D$ -65 (c, 0.05 in EtOH). λ_{max} 230 (ϵ 12000); 341 (ϵ 19000) (EtOH) (Derep). λ_{max} 230 (ϵ 15000); 340 (ϵ 19000) (EtOH) (Berdy).

(13*E*)-*form*

Calyculin D
[107447-09-6]
From *Discodermia calyx*. Antitumour agent. Smooth muscle contractor. Inhibitor of protein phosphatases. Amorph. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. $[\alpha]_D$ -41 (c, 0.05 in EtOH). λ_{max} 230 (ϵ 12000); 341 (ϵ 19000) (EtOH) (Derep).

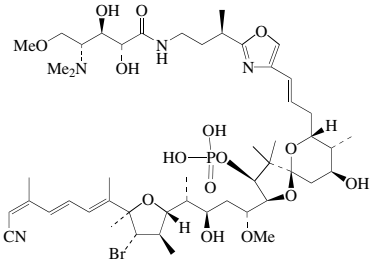
(9Z)-Isomer: ***Calyculin G***
[135212-39-4]
$C_{51}H_{83}N_4O_{15}P$ 1023.208
Isol. from *Discodermia calyx*. Protein phosphatase inhibitor. Smooth muscle contractor. Sol. MeOH, $CHCl_3$. $[\alpha]_D^{23}$ -81 (c, 0.1 in EtOH). λ_{max} 227 (ϵ 19000); 321 (ϵ 20800) (EtOH) (Berdy).

(9Z,13E)-Isomer: ***Calyculin H***
[135212-40-7]
$C_{51}H_{83}N_4O_{15}P$ 1023.208
Isol. from *Discodermia calyx*. Protein phosphatase inhibitor. Smooth muscle contractor. Sol. MeOH, $CHCl_3$. $[\alpha]_D^{23}$ -36 (c, 0.05 in EtOH). λ_{max} 227 (ϵ 22800); 321 (ϵ 28000) (EtOH) (Berdy).

Kato, Y. *et al., J.O.C.*, 1988, **53**, 3930 (*isol, pmr, cmr, struct*)
Matsunaga, S. *et al., Tetrahedron*, 1991, **47**, 2999 (*Z-isomers, isol*)
Scarlato, G.R. *et al., J.O.C.*, 1996, **61**, 6139; 6153 (*synth*)
Ogawa, A.K. *et al., J.A.C.S.*, 1998, **120**, 12435-12442 (*synth*)

Calyculin J C-57

[187991-79-3]

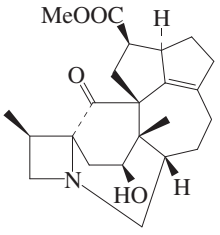


$C_{50}H_{80}BrN_4O_{15}P$ 1088.078
Isol. from the sponge *Discodermia calyx*. Protein phosphatase inhibitor. Yellow solid. $[\alpha]_D^{20}$ -10 (c, 0.08 in MeOH). λ_{max} 228 (ϵ 11000); 291 (ϵ 14000); 304 (ϵ 20000) (EtOH). λ_{max} 228 (ϵ 11000); 291 (ϵ 14000); 304 (ϵ 20000); 318 (ϵ 19000) (MeOH) (Berdy).

Matsunaga, S. *et al., J.O.C.*, 1997, **62**, 2640 (*isol, uv, pmr, cmr*)

Calydaphninone C-58

[929613-79-6]



$C_{23}H_{31}NO_4$ 385.502
Alkaloid from the leaves of *Daphniphyllum calycillum*. Powder. Mp 202-204°. $[\alpha]_D^{20}$ -66.7 (c, 0.38 in $CHCl_3$).

Di, Y.-T. *et al., Org. Lett.*, 2007, **9**, 1355-1358 (*isol, pmr, cmr, cryst struct*)

Calystegine† C-59

$C_{25}H_{23}NO_6$ 433.46
Struct. unknown. Alkaloid from the Chinese drug Chin-Kuo-Lan (*Calystegia hydraceae*) (Convolvulaceae). Brown prisms (Me_2CO/Et_2O). Mp 203°.

Hydrochloride:
Prisms. Mp 230°.

Hydrobromide:
Yellow needles. Mp 232°.

Perchlorate:
Yellow needles. Mp 268°.

Nitrate:
Yellow needles. Mp 233-234°.

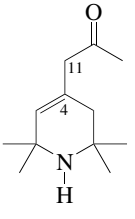
Picrate:
Brown needles. Mp 220°.

Methiodide:
Pale red needles. Mp 238°.

Chu, J.-H. *et al., Chem. Zentralbl.*, 1960, **131**, 1859 (*isol, props*)

Calyxamine A C-60

[199105-62-9]



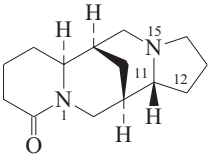
$C_{12}H_{21}NO$ 195.304
Alkaloid from the sponge *Calyx podatypa*. Needles ($CHCl_3$/hexane) (as trifluoroacetate salt). λ_{max} 205 (ϵ 1000) (MeOH) (TFA salt).

$\Delta^{4,11}$-Isomer: ***Calyxamine B***
[150710-72-8]
$C_{12}H_{21}NO$ 195.304
Alkaloid from *Calyx podatypa*. Cryst. (as trifluoroacetate salt). Possible artifact. λ_{max} 231 (ϵ 10400) (MeOH) (TFA salt).

Rodriguez, A.D. *et al., J. Nat. Prod.*, 1997, **60**, 1331-1333 (*isol, uv, ir, pmr, cmr, ms, cryst struct*)

Camoensidine C-61

[58845-84-4]



$C_{14}H_{22}N_2O$ 234.341
Alkaloid from the roots of *Camoensia maxima* and the seeds of *Camoensia brevicalyx* (Fabaceae). Noncryst. $[\alpha]_D^{20}$ -67 (c, 1 in EtOH).

15-N-*Oxide:* ***Camoensidine* N-*oxide***
$C_{14}H_{22}N_2O_2$ 250.34
Alkaloid from the stems of *Maackia tashiroi*. Cryst. $[\alpha]_D^{27}$ -57 (c, 0.79 in EtOH).

*12*S-*Hydroxy:* ***12-Hydroxycamoensidine***
[82041-86-9]
$C_{14}H_{22}N_2O_2$ 250.34
Alkaloid from the seeds of *Camoensia brevicalyx* (Fabaceae). Needles (MeOH). Mp 200°. $[\alpha]_D^{20}$ -50 (c, 0.1 in MeOH).

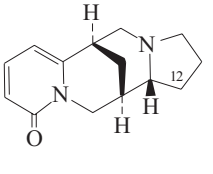
11-Epimer: ***Tetrahydroleontidine***
[35597-15-0]
$C_{14}H_{22}N_2O$ 234.341
Alkaloid from stems and leaves of *Maackia amurensis* (Fabaceae). Mp 62-67°. $[\alpha]_D$ -45.3. Probable stereochem.

[58845-85-5 , 81979-85-3]

Iskandarov, S. *et al., Khim. Prir. Soedin.*, 1971, **7**, 631; *Chem. Nat. Compd. (Engl. Transl.)*, 611 (*synth, Tetrahydroleontidine*)
Santamaria, J. *et al., Phytochemistry*, 1975, **14**, 2501 (*isol, ir, pmr, ms, struct, synth*)
Waterman, P.G. *et al., Phytochemistry*, 1982, **21**, 215 (*isol, ir, pmr, cmr, ms, deriv*)
Kinghorn, A.D. *et al., Phytochemistry*, 1982, **21**, 2269 (*isol, Tetrahydroleontidine*)
Ohmiya, S. *et al., Chem. Pharm. Bull.*, 1991, **39**, 1123 (*N-oxide*)

Camoensine C-62

*1,2,3,5,6,12,13,13*a-*Octahydro-6,13-methano-10*H-*pyrido[1,2-*a*]pyrrole[1,2-*e*][1,5]diazocin-10-one, 9CI*
[58845-83-3]



$C_{14}H_{18}N_2O$ 230.309
Alkaloid from the roots of *Camoensia maxima* and the seeds of *Camoensia*

brevicalyx (Fabaceae). Brown amorph. solid. $[\alpha]_D^{20}$ -108 (c, 1.0 in $CHCl_3$). $[\alpha]_D^{20}$ -186 (c, 1 in EtOH).

Methiodide:
Cryst. + $0.5H_2O$. Mp 292°.

12α-Hydroxy: ***12α-Hydroxycamoensine***
$C_{14}H_{18}N_2O_2$ 246.308
Alkaloid from the seeds of *Camoensia brevicalyx* (Fabaceae). Brown amorph. solid. $[\alpha]_D^{20}$ -115 (c, 1 in MeOH).

Tetrahydro: see Camoensidine, C-61

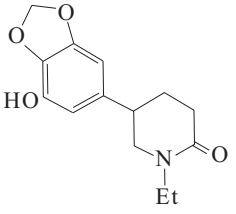
11-Epimer: ***Leontidine***
[35721-27-8]
$C_{14}H_{18}N_2O$ 230.309
Alkaloid from *Leontice eversmannii, Leontice albertii* and *Camoensia maxima* (Fabaceae, Leonticaceae). Cryst. (EtOAc). Mp 119° Mp 145°.

11-Epimer, perchlorate: Mp 278°.

Iskandarov, S. *et al., Khim. Prir. Soedin.*, 1971, **7**, 631; *Chem. Nat. Compd. (Engl. Transl.)*, 611 (*isol, ms, struct, synth, bibl, Leontidine*)
Santamaria, J. *et al., Phytochemistry*, 1975, **14**, 2501 (*isol, uv, ir, pmr, ms, struct, synth, Camoensine, Leontidine*)
Waterman, P.G. *et al., Phytochemistry*, 1982, **21**, 215 (*isol, uv, ir, pmr, cmr, ms, deriv*)

Campedine C-63

1-Ethyl-5-(7-hydroxy-1,3-benzodioxol-5-yl)-2-piperidinone, 9CI. 1-Ethyl-5-(3-hydroxy-4,5-methylenedioxyphenyl)-2-piperidone
[29028-18-0]



$C_{14}H_{17}NO_4$ 263.293
Alkaloid from seeds of *Campanula medium* (Campanulaceae). No phys. props. reported.

Döpke, W. *et al., Pharmazie*, 1970, **25**, 128 (*isol, ir, uv*)

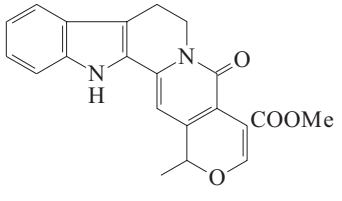
Campestrine C-64

$C_{13}H_{19}NO_3$ 237.298
Pyrrolizidine alkaloid. Struct. unknown. Alkaloid from *Senecio campestris* var. *maritimus* (Asteraceae). Mp 93°.

Blackie, J.J. *et al., Pharm. J.*, 1937, **138**, 102-104

Camptacumanine C-65

[121696-54-6]

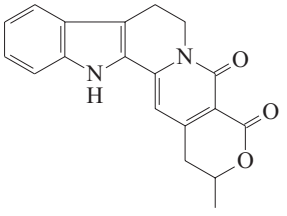


$C_{21}H_{18}N_2O_4$ 362.384
Anomalous indole alkaloid. The struct. does not correspond to Secologanin derivation. Minor alkaloid from seeds of *Camptotheca acuminata* (Nyssaceae).

Lin, L. *et al., Huaxue Xuebao*, 1988, **46**, 1207; *CA*, **111**, 54155h

Camptacumotine C-66

1,2,8,13-Tetrahydro-2-methyl-4H-indolo[2,3-a]pyrano[3,4-g]quinolizine-4,5(7H)-dione, 9CI
[121696-52-4]

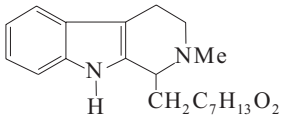


$C_{19}H_{16}N_2O_3$ 320.347
Minor alkaloid from seeds of *Camptotheca acuminata* (Nyssaceae).

Lin, L. *et al., Huaxue Xuebao*, 1988, **46**, 1207; *CA*, **111**, 54155h

Camptine C-67

[56236-21-6]



$C_{20}H_{28}N_2O_2$ 328.453
Struct. not fully known. Alkaloid from *Strychnos camptoneura* bark (Loganiaceae). Mp 174-176°. No further ref. to this comp. to 14CI, 2001.

Garnier, J. *et al., Plant. Med. Phytother.*, 1974, **8**, 281-286 (*isol, uv, ir, ms*)

Camptinine C-68

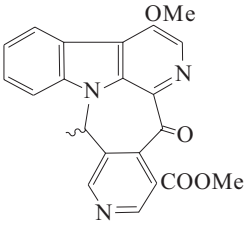
[56378-66-6]

$C_{43}H_{52}N_4O_6$ 720.907
Dimeric alkaloid prob. contg. Retuline, R-63 residue. Struct. unknown. Alkaloid from *Strychnos camptoneura* bark (Loganiaceae). Noncryst.

Garnier, J. *et al., Plant. Med. Phytother.*, 1974, **8**, 281-286 (*isol, uv, ms*)

Camptoneurine C-69

[38930-42-6]

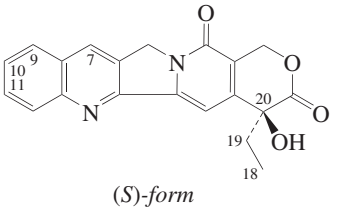


$C_{22}H_{17}N_3O_4$ 387.394
Alkaloid from *Strychnos camptoneura*. Mp 269-270°. $[\alpha]_D^{20}$ +189 (c, 1 in $CHCl_3$).

Koch, M. *et al., Ann. Pharm. Fr.*, 1972, **30**, 299-306 (*isol, uv, ir, pmr, ms, struct*)

Camptothecin C-70

4-Ethyl-4-hydroxy-1H-pyrano[3′,4′:6,7]indolizino[1,2-b]quinoline-3,14(4H,12H)-dione, 9CI. CPT. NSC 94600



(*S*)-*form*

$C_{20}H_{16}N_2O_4$ 348.357
Log P 0.6 (calc). Many syntheses reported. Those before 1997 are not shown.

▶ Adverse effects reported when used therapeutically. Na salt produces adverse haemopoietic effects. LD_{50} (mus, orl) 27 mg/kg. LD_{50} (mus, ipr) 64 mg/kg.

(S)-form [7689-03-4]
Alkaloid from *Camptotheca acuminata*, *Merrilliodendron megacarpum*, *Mappia foetida*, *Ervatamia heyneana*, *Nothapodytes foetida* and *Ophiorrhiza mungos* (Nyssaceae, Rubiaceae, Apocynaceae). Also a metab. of a fungus isol. from the bark of *Nothapodytes foetida*. Shows potent antineoplastic activity in exp. animals. Functions by enhancing binding of topoisomerase I to DNA, thus promoting DNA strand breaks. Used clinically in China against gastrointestinal tumours. Also shows plant growth regulatory and insect chemosterilant props. Severe side effects and rapid hydrol. at physiological pH have inhibited widespread clinical use. Also shows anti-HIV and antiprotozoal activity. Pale yellow needles (MeOH). Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. Mp 264-267° dec. $[\alpha]_D^{25}$ +31.3 ($CHCl_3$/MeOH, 4:1). Log P 0.6 (calc). Nonbasic. Some semisynthetic analogues, e.g. Belotecan, are marketed. λ_{max} 220 (ϵ 37320); 254 (ϵ 24230); 290 (ϵ 4980); 370 (ϵ 19900) (MeOH) (Berdy). λ_{max} 218 (ϵ 42700); 253 (ϵ 32400); 289 (ϵ 6460); 358 (ϵ 21900); 368 (ϵ 21900) (MeOH) (Derep).

▶ UQ0492000

O-β-D-Glucopyranoside: ***20-O-β-D-Glucopyranosylcamptothecin***
[246031-86-7]
$C_{26}H_{26}N_2O_9$ 510.499
Alkaloid from *Mostuea brunonis*. Amorph. yellow solid. $[\alpha]_D$ +23.5 (c, 0.52 in MeOH). λ_{max} 217 (log ϵ 4); 245 (log ϵ 3.8); 285 (log ϵ 3.2); 332 (log ϵ 3.3); 369 (log ϵ 3.5) (MeOH).

Ac: ***O-Acetylcamptothecin***
[7688-64-4]
$C_{22}H_{18}N_2O_5$ 390.395
Alkaloid from stems of *Nothapodytes*

foetida (Icacinaceae). Exhibits potent cytotoxicity. Yellowish needles. Mp 272-275° (271-274° dec.). λ_{max} 219 ; 253 ; 288 ; 358 ; 369 (MeOH) (Berdy).

Hexanoyl: ***20-Hexanoylcamptothecin***
[72594-33-3]
$C_{26}H_{26}N_2O_5$ 446.502
Minor alkaloid from the bark of *Camptotheca acuminata* (Nyssaceae). Mp 238-242°. $[\alpha]_D^{25}$ -26 (c, 0.0017 in $CHCl_3$).

18,19-Didehydro: ***18,19-Dehydrocamptothecin***
[119403-33-7]
$C_{20}H_{14}N_2O_4$ 346.342
Alkaloid from the wood of *Nothapodytes foetida* (Icacinaceae). Pale yellow solid.

9-Hydroxy, 9-β-D-glucopyranoside: ***9-β-D-Glucopyranosyloxycamptothecin***
[201805-58-5]
$C_{26}H_{26}N_2O_{10}$ 526.499
Alkaloid from regenerated plants of *Ophiorrhiza pumila*. λ_{max} 262 ; 304 ; 319 ; 359 ; 372 (sh) (MeOH).

10-Hydroxy: ***10-Hydroxycamptothecin***
[19685-09-7]
$C_{20}H_{16}N_2O_5$ 364.357
Minor alkaloid from *Camptotheca acuminata* (Nyssaceae). Antineoplastic agent. Cryst. + $1H_2O$. Mp 268-270°. Log P 0.65 (calc).

▶ UQ0491700

10-Hydroxy, di-Ac: Mp 270-273°.

10-Hydroxy, 20-deoxy: ***10-Hydroxy-deoxycamptothecin***
[123914-40-9]
$C_{20}H_{16}N_2O_4$ 348.357
Alkaloid from the seeds of *Camptotheca acuminata* (Nyssaceae). Shows strong cytotoxicity against P-388 leukaemia cells. Log P 1.06 (calc).

11-Hydroxy: ***11-Hydroxycamptothecin***
[68426-53-9]
$C_{20}H_{16}N_2O_5$ 364.357
Alkaloid from the fruits of *Camptotheca acuminata* (Nyssaceae). Has antineoplastic props. Mp 327-330° dec. $[\alpha]_D^{21}$ -30.7 (c, 0.326 in Py). Log P 0.65 (calc). λ_{max} 220 (ε 24600); 253 (ε 15800); 348 (ε 10450); 367 (ε 10700); 384 (ε 104450) (MeOH) (Berdy). λ_{max} 208 ; 265 ; 334 ; 370 ; 384 (MeOH/NaOH) (Berdy).

18-Hydroxy: ***18-Hydroxycamptothecin***
[116139-46-9]
$C_{20}H_{16}N_2O_5$ 364.357
Alkaloid from seeds of *Camptotheca acuminata* (Nyssaceae). Shows strong cytotoxicity against P-388 leukaemia cells *in vitro*. Yellow cryst. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 256-258°. $[\alpha]_D^{11}$ -21.4 (c, 0.1 in Py). Log P -1.39 (calc). λ_{max} 220 ; 250 ; 290 ; 320 (MeOH) (Berdy).

18-Hydroxy, 20-O-β-D-glucopyranoside: ***20-O-β-D-Glucopyranosyl-18-hydroxy-camptothecin***
$C_{26}H_{26}N_2O_{10}$ 526.499
Alkaloid from the root bark of *Camptotheca acuminata*. Amorph. powder. $[\alpha]_D^{25}$ -51.3 (c, 0.01 in MeOH). λ_{max} 216 (log ε 4.56); 255 (log ε 4.38); 290 (log ε 4.01); 359 (log ε 4.21); 370 (log ε 4.19) (MeOH).

7-Methoxy: ***7-Methoxycamptothecin***
[80735-03-1]
$C_{21}H_{18}N_2O_5$ 378.384
Alkaloid from leaves of *Ophiorrhiza filistipula* (Rubiaceae). Feathery needles (MeOH). Mp 260-270° dec. $[\alpha]_D$ +83 (c, 0.006 in $CHCl_3$).

9-Methoxy: ***9-Methoxycamptothecin***
[39026-92-1]
$C_{21}H_{18}N_2O_5$ 378.384
Alkaloid from *Mappia foetida, Ervatamia heyneana, Nothapodytes foetida*, *Merrilliodendron megacarpum* and *Ophiorrhiza mungos* (Rubiaceae, Apocynaceae, Icacinaceae). Antineoplastic agent. Shows v. strong activity vs. P-388 cells. Light yellow cryst. ($CHCl_3$/MeOH). Mp 258-260° dec. $[\alpha]_D^{24}$ -77.5 (c, 1 in Py). Log P 0.87 (calc). λ_{max} 219 (ε 33900); 256 (ε 24500); 265 (sh) (ε 21400); 305 (ε 7240); 320 (ε 11200); 358 (ε 20000); 371 (sh) (ε 19500) (MeOH) (Derep). λ_{max} 218 (ε 33100); 262 (ε 24000); 305 (ε 7080); 320 (ε 11200); 356 (ε 20000); 371 (sh) (MeOH) (Derep).

9-Methoxy, Ac: ***20-O-Acetyl-9-methoxy-camptothecin***
[39026-93-2]
Alkaloid from the stems of *Nothapodytes foetida*. Pale yellow needles (Me_2CO). Mp 231-232°. $[\alpha]_D^{25}$ -24 (c, 1.15 in $CHCl_3$).

9-Methoxy, 10-hydroxy, 10-O-β-D-glucopyranoside: ***Chaboside***
[131669-96-0]
$C_{27}H_{28}N_2O_{11}$ 556.525
Alkaloid from *Ophiorrhiza pumila* (Rubiaceae). Pale yellow powder. λ_{max} 222 ; 266 ; 293 ; 328 ; 376 (sh) (MeOH) (Derep).

10-Methoxy: ***10-Methoxycamptothecin***
[19685-10-0]
$C_{21}H_{18}N_2O_5$ 378.384
Alkaloid from *Camptotheca acuminata* and *Ophiorrhiza mungos* (Nyssaceae, Rubiaceae). Inhibitor of herpes virus. Yellow cryst. (Me_2CO). Mp 255-256° dec. Log P 0.87 (calc). λ_{max} 221 (ε 40300); 265 (ε 23800); 293 (ε 5200); 312 (ε 7200); 328 (ε 9200); 365 (ε 21600); 380 (ε 24400) (MeOH) (Berdy).

10-Methoxy, Ac: ***20-O-Acetyl-10-methoxycamptothecin***
$C_{23}H_{20}N_2O_6$ 420.421
Alkaloid from the root bark of *Camptotheca acuminata*. Needles ($CHCl_3$). Mp 275-276°. $[\alpha]_D^{25}$ -36.5 (c, 0.01 in MeOH). λ_{max} 218 (log ε 4.43); 262 (log ε 4.2); 330 (log ε 2.95); 370 (log ε 4.01); 380 (log ε 4.13) (MeOH).

10-Methoxy, 20-hexanoyl: ***20-Hexanoyl-10-methoxycamptothecin***
[72594-34-4]
$C_{27}H_{28}N_2O_6$ 476.528
Alkaloid from the bark of *Camptotheca acuminata* (Nyssaceae).

9,10-Methylenedioxy: ***9,10-Methylenedioxycamptothecin***
[143005-94-1]
$C_{21}H_{16}N_2O_6$ 392.367
Alkaloid from *Ophiorrhiza trichocarpon*. Bright yellow powder. $[\alpha]_D^{25}$ +28.8 (c, 0.2 in MeOH). λ_{max} 224 (log ε 4.36); 274 (log ε 4.3); 338 (log ε 4.24); 374 (log ε 4) (MeOH).

(±)-form
Synthetic. Cryst. (MeOH/$CHCl_3$ or EtOAc). Mp 276-278°.

20-Deoxy: ***20-Deoxycamptothecin***
[34141-35-0]
$C_{20}H_{16}N_2O_3$ 332.358
Minor alkaloid from the bark of *Camptotheca acuminata* (Nyssaceae). Cryst. ($CHCl_3$/MeOH/Et_2O). Mp 258-263°.

10-Hydroxy: [64439-81-2]
Synthetic. Cryst. + $1H_2O$ ($CHCl_3$/MeOH). Mp 327-330° (265-268°).

7-Methoxy: [68520-67-2]
Synthetic. Cryst. ($CHCl_3$/MeOH). Mp 295° dec.

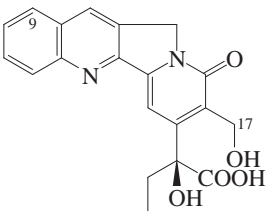
10-Methoxy: [64439-80-1]
Synthetic. Needles (MeOH/$CHCl_3$). Mp 272-273°.

Wall, M.E. *et al., J.A.C.S.*, 1966, **88**, 3888-3890 (*isol, uv, ir, pmr, cryst struct*)
Wani, M.C. *et al., J.O.C.*, 1969, **34**, 1364-1367 (*isol, uv, ir, pmr, struct, 10-Hydroxycamptothecin, 10-Methoxycamptothecin*)
Govindachari, T.R. *et al., Phytochemistry*, 1972, **11**, 3529-3531 (*9-Methoxycamptothecin*)
Schultz, A.G. *et al., Chem. Rev.*, 1973, **73**, 385-405 (*rev*)
Agarwal, J.S. *et al., Indian J. Chem.*, 1973, **11**, 969 (*9-Methoxycamptothecin*)
Tafur, S. *et al., J. Nat. Prod.*, 1976, **39**, 261-262 (*10-Methoxycamptothecin*)
Sheriha, G.M. *et al., Phytochemistry*, 1976, **15**, 505-508 (*biosynth*)
Heckendorf, A.H. *et al., Tet. Lett.*, 1977, 4153-4154 (*biosynth*)
Baxmann, E. *et al., Chem. Ber.*, 1978, **111**, 3403-3411 (*7-Methoxycamptothecin*)
Gunasekera, S.P. *et al., J. Nat. Prod.*, 1979, **42**, 475-477 (*9-Methoxycamptothecin*)
Adamovics, J.A. *et al., Phytochemistry*, 1979, **18**, 1085-1086 (*20-Deoxycamptothecin, 20-Hexanoylcamptothecin*)
Wani, M.C. *et al., J. Med. Chem.*, 1980, **23**, 554-560 (*20-Deoxycamptothecin, 10-Hydroxycamptothecin, 10-Methoxycamptothecin, synth*)
Kametani, T. *et al., J.C.S. Perkin 1*, 1981, 1563-1568 (*10-Methoxycamptothecin, synth*)
Hutchinson, C.R. *et al., Tetrahedron*, 1981, **37**, 1047-1065 (*rev*)
Martindale, The Extra Pharmacopoeia, 28th/29th edn., Pharmaceutical Press, 1982, 12515
Cai, J.-C. *et al., Alkaloids (Academic Press)*, 1983, **21**, 101-137 (*rev, pharmacol*)
Suffness, M. *et al., Alkaloids (Academic Press)*, 1985, **25**, 73-89 (*rev, antineoplastic activity*)
Wall, M.E. *et al., J. Med. Chem.*, 1986, **29**, 1553-1555 (*11-Hydroxycamptothecin*)
Aiyama, R. *et al., Phytochemistry*, 1988, **27**, 3663-3664 (*18,19-Dehydrocamptothecin*)
Lin, L.Z. *et al., Yaoxue Xuebao*, 1988, **23**, 186-188; *CA*, **109**, 107686z (*18-Hydroxycamptothecin*)

Lin, L. *et al., Huaxue Xuebao*, 1989, **47**, 506-508; *CA*, **111**, 228962m (*10-Hydroxydeoxycamptothecin*)
Lin, L.-Z. *et al., J. Nat. Prod.*, 1990, **53**, 186-189 (*Camptothecin, 10-Hydroxycamptothecin, cmr*)
Aimi, N. *et al., Tet. Lett.*, 1990, **31**, 5169-5172; 1992, **33**, 5403-5404 (*Chaboside*)
Ezell, E.L. *et al., J. Nat. Prod.*, 1991, **54**, 1645-1650 (*pmr, cmr*)
Arbain, D. *et al., Aust. J. Chem.*, 1993, **46**, 977-985 (*7-Methoxycamptothecin*)
Wall, M.E. *et al., Chron. Drug Discovery*, 1993, **3**, 327-348 (*rev*)
Beijnen, J.H. *et al., J. Chromatogr.*, 1993, **617**, 111-117 (*hplc*)
Camptothecins, (eds. Potmesil, M. *et al*), CRC Press, 1995, (*book*)
Wall, M.E. *et al., Cancer Res.*, 1995, **55**, 753-760 (*rev*)
Wu, T.-S. *et al., Phytochemistry*, 1995, **39**, 383-385 (*O-Acetylcamptothecin*)
Bodley, A.L. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 1995, **92**, 3726-3730 (*props*)
Murata, N. *et al., Synlett*, 1997, 298-300 (*synth*)
Cao, Z. *et al., Synth. Commun.*, 1997, **27**, 2013-2019 (*synth*)
Ciufolini, M.A. *et al., Tetrahedron*, 1997, **53**, 11049-11060 (*synth, bibl*)
Wall, M.E. *et al., Alkaloids (London)*, 1998, **50**, 509-536 (*rev*)
Kitajima, M. *et al., J.C.S. Perkin 1*, 1998, 389-390 (*9-Glucosyloxycamptothecin*)
Chavan, S.P. *et al., Tet. Lett.*, 1998, **39**, 6745-6748 (*synth*)
Dai, J.-R. *et al., J. Nat. Prod.*, 1999, **62**, 1427-1429 (*20-glucoside*)
Tagami, K. *et al., Heterocycles*, 2000, **53**, 771-775 (*synth*)
Blagg, B.S.J. *et al., Tetrahedron*, 2002, **58**, 6343-6349 (*synth, bibl*)
Soepenberg, O. *et al., Alkaloids (Academic Press)*, 2003, **60**, 1-50 (*rev, biochem*)
Srinivas, K.V.N.S. *et al., Biochem. Syst. Ecol.*, 2003, **31**, 85-87 (*20-O-Acetyl-9-methoxycamptothecin*)
Thomas, C.J. *et al., Bioorg. Med. Chem.*, 2004, **12**, 1585-1604 (*rev, synth, sar*)
Oberlies, N.H. *et al., J. Nat. Prod.*, 2004, **67**, 129-135 (*rev, history*)
Twin, H. *et al., Org. Lett.*, 2004, **6**, 4913-4916 (*synth*)
Lorence, A. *et al., Phytochemistry*, 2004, **65**, 2735-2749 (*rev*)
Zhang, Z. *et al., Planta Med.*, 2004, **70**, 1216-1221 (*20-O-Acetyl-10-methoxycamptothecin, 20-Glucosyl-18-hydroxycamptothecin*)
Chavan, S.P. *et al., Tet. Lett.*, 2004, **45**, 3113-3115 (*synth*)
Yu, J. *et al., Tet. Lett.*, 2004, **45**, 7247-7250 (*synth*)
Daud, A. *et al., Clin. Cancer Res.*, 2005, **11**, 3009-3016 (*karenitecin, clin trial*)
Puri, S.C. *et al., J. Nat. Prod.*, 2005, **68**, 1717-1719 (*fungal metab*)
Sriram, D. *et al., Nat. Prod. Res.*, 2005, **19**, 393-412 (*rev*)
Anderson, R.J. *et al., Org. Lett.*, 2005, **7**, 2989-2991 (*synth*)
Peters, R. *et al., Org. Biomol. Chem.*, 2006, **4**, 498-509 (*synth*)
Tang, C.-J. *et al., Org. Biomol. Chem.*, 2006, **4**, 3757-3759 (*synth*)
Klausmeyer, P. *et al., Planta Med.*, 2007, **73**, 49-52 (*9,10-Methylenedioxycamptothecin*)
Zamboni, W.C. *et al., Invest. New Drugs*, 2008, **26**, 399-406 (*DB67, pharmacol*)
Verma, R.P. *et al., Chem. Rev.*, 2009, **109**, (*rev, sar*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 11th edn., J. Wiley*, 2004, CBB870; CBB875

Camptothecinic acid C-71

α-Ethyl-9,11-dihydro-α-hydroxy-8-hydroxymethyl-9-oxoindolizino[1,2-b]quinoline-7-acetic acid, 9CI
[34079-22-6]



$C_{20}H_{18}N_2O_5$ 366.373

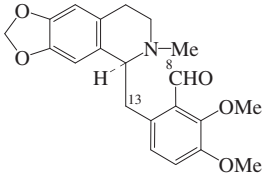
(*S*)-*form*

17-Ac: ***17-O-Acetylcamptothecinic acid***
[199581-40-3]
$C_{22}H_{20}N_2O_6$ 408.41
Alkaloid from *Mappia foetida*.

9-Methoxy, 17-Ac: ***17-O-Acetyl-9-methoxycamptothecinic acid***
[199581-41-4]
$C_{23}H_{22}N_2O_7$ 438.436
Alkaloid from *Mappia foetida*.

Pat. Coop. Treaty (WIPO), 1997, 97 43 290; *CA*, **128**, 34922d

Canadaline C-72



(*S*)-*form*

$C_{21}H_{23}NO_5$ 369.416
Protoberberine-type numbering shown. Abs. config. of nat. alkaloid revised to (*S*-) in 1989.

(*R*)-*form* [124649-83-8]
Synthetic. Mp 114-116°. $[\alpha]_D$ -38 (c, 0.1 in $CHCl_3$).

(*S*)-*form* [52801-27-1]
Alkaloid from *Hydrastis canadensis* (Papaveraceae). Cryst. (Et_2O). Mp 117-118°. $[\alpha]_D$ +43 (c, 0.5 in $CHCl_3$). λ_{max} 288 (ε 78000) (MeOH).

8-Alcohol, N-*de-Me:* ***Argenaxine***
[88114-59-4]
$C_{20}H_{23}NO_5$ 357.405
Alkaloid from the aerial parts of *Argemone mexicana*. Prisms. Mp 157-158°. $[\alpha]_D^{24}$ +95 (c, 0.34 in $CHCl_3$). λ_{max} 225 (log ε 4.14); 285 (log ε 3.38) (MeOH).

8-Carboxylic acid: ***Canadinic acid***
[190720-13-9]
$C_{21}H_{23}NO_6$ 385.416
Alkaloid from *Hydrastis canadensis* (Papaveraceae). Cryst. (EtOAc). Mp 130-132° dec. $[\alpha]_D^{20}$ -112 (c, 0.1 in MeOH). λ_{max} 235 (sh) (log ε 4.14); 289 (log ε 3.81) (EtOH).

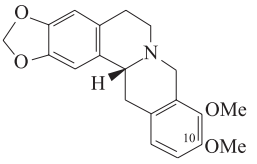
13-Oxo, 8-carboxylic acid: ***Berbervirine***
[167817-66-5]
$C_{21}H_{21}NO_7$ 399.399
Alkaloid from whole plants of *Berberis virgetorum* (Berberidaceae). Light pink needles ($CHCl_3$/MeOH). Mp 202-204°. $[\alpha]_D$ -200 (c, 1.625 in $CHCl_3$). Has *R*-config. λ_{max} 226 (log ε 4.39); 262 (log ε 3.82); 288 (log ε 3.9); 331 (log ε 3.35) (MeOH). λ_{max} 230 (log ε 4.21); 250 (log ε 4.36); 295 (log ε 1.4); 333 (log ε 1.03) (MeOH).

(±)-*form* [62475-57-4]
Synthetic. Prisms (MeOH). Mp 143-143.5° (139-140°). λ_{max} 226 (log ε 4.39); 262 (log ε 3.82); 288 (log ε 3.9); 331 (log ε 3.35) (MeOH).

Gleye, J. *et al., Phytochemistry*, 1974, **13**, 675-676 (*pmr, uv, ms, struct*)
Shamma, M. *et al., Tetrahedron*, 1978, **34**, 635-640 (*config, synth, ir, uv*)
Hanaoka, M. *et al., Chem. Pharm. Bull.*, 1983, **31**, 2685-2690 (*synth, uv, ir, pmr*)
Hanaoka, M. *et al., Heterocycles*, 1989, **29**, 221-224 (*abs config, synth*)
Liu, C. *et al., J. Nat. Prod.*, 1995, **58**, 1100-1102 (*Berbervirine*)
Galeffi, C. *et al., Planta Med.*, 1997, **63**, 194 (*Canadinic acid*)
Chang, Y.-C. *et al., Z. Naturforsch., C*, 2003, **58**, 521-526 (*Argenaxine*)

Canadine C-73

5,8,13,13a-Tetrahydro-9,10-dimethoxy-6H-benzo[g]-1,3-benzodioxolo[5,6-a]quinolizine, 9CI. 9,10-Dimethoxy-2,3-(methylenedioxy)berbine, 8CI. Tetrahydroberberine
[522-97-4]



(*R*)-*form*

$C_{20}H_{21}NO_4$ 339.39
Shows analgesic, hypotensive and papaverine-like spasmolytic activity. Potentiator of antimitotic effect of colchicine.

(*R*)-*form*
α-Canadine
[5096-57-1]
Alkaloid from *Corydalis tuberosa* (Papaveraceae). Mp 132°. $[\alpha]_D^{15}$ +299 ($CHCl_3$).
▶ LD_{50} (mus, orl) 940 mg/kg. DR9823000

O^{10}*-De-Me,* N-*Me:* ***Escholidine***
[30389-09-4]
$C_{20}H_{22}NO_4^{\oplus}$ 340.398
Principal quaternary alkaloid from the roots of *Eschscholtzia californica, Eschscholtzia douglasii* and *Eschscholtzia glauca*, also obt. from aerial parts of *Hunnemannia fumariaefolia* (Papaveraceae). Needles or prisms (MeOH) (as perchlorate). Mp 281-282° (perchlorate). $[\alpha]_D^{22}$ -155 (c, 0.27 in MeOH). Struct. revised in 2006.

(*S*)-*form*
β-Canadine
[2086-96-6]

Alkaloid from *Hydrastis canadensis* and several *Corydalis* spp. (Papaveraceae). Needles. Mp 134°. $[\alpha]_D$ -299 ($CHCl_3$).

N-*Me:* **N-*Methyl-β-canadine***
$C_{21}H_{24}NO_4^{\oplus}$ 354.425
Quaternary alkaloid from *Zanthoxylum brachyacanthum, Zanthoxylum veneficum* and *Fagara rhoifolia* (Rutaceae).

N-*Me, chloride:*
Needles (MeOH) or plates. Mp 235-237° dec Mp 240-242° (dimorph.). $[\alpha]_D^{22}$ -134.2 (c, 0.23 in H_2O). Epimers at N referred to as Canadine α- and β-methochlorides (confusing) may have been characterised.

N-*Me, iodide:*
Cryst. (EtOH). Mp 216-218° (resolidifies and remelts at 246° dec.). $[\alpha]_D^{22}$ -115 (c, 0.3 in H_2O).

O^9-*De-Me:* ***Nandinine****. Tetrahydroberberrubine*
[572-76-9]
[6724-39-6]
$C_{19}H_{19}NO_4$ 325.363
Alkaloid from the bark of *Nandina domestica* (Nandinaceae). Mp 195-196°. $[\alpha]_D$ +303 ($CHCl_3$). $[\alpha]_D$ +298 (EtOH).

O^{10}-*De-Me:* ***Tetrahydrothalifendine***
$C_{19}H_{19}NO_4$ 325.363
Alkaloid from *Thalictrum fendleri* (Ranunculaceae). Mp 209-211°. $[\alpha]_D$ -175 (MeOH).

8-Oxo: 12,13-Dihydro-8-oxoberberine. 8-Oxotetrahydroberberine. ***8-Oxocanadine****. Gusanlung B*
[79082-05-6]
$C_{20}H_{19}NO_5$ 353.374
Minor alkaloid from stems of *Coscinium fenestratum*, also isol. from stems of *Arcangelisia gusanlung* (Menispermaceae). Yellow needles. Mp 224-226° (211-213°, 218°). $[\alpha]_D$ -348 (c, 0.54 in $CHCl_3$). The name 12,13-Dihydro-8-oxoberberine is confusing. Pmr and cmr spectra reported by Malhotra *et al* were misassigned or misinterpreted. Genus name erroneously given as Acangelisia.

8-Oxo, O^9*-de-Me:* ***Gusanlung A****. 8-Oxoberberrubine*
[139220-06-7]
$C_{19}H_{17}NO_5$ 339.347
Alkaloid from *Berberis heteropoda* and stems of *Arcangelisia gusanlung* (Menispermaceae). Cryst. (Ac_2O). Mp 260-262° (245°-246°). $[\alpha]_D^{21}$ -395.5 (c, 0.27 in $CHCl_3$).

8-Oxo, O^{10}*-de-Me:* ***8-Oxotetrahydrothalifendine***
[142808-33-1]
$C_{19}H_{17}NO_5$ 339.347
Alkaloid from stems of *Coscinium fenestratum* (Menispermaceae). $[\alpha]_D$ -605 (c, 0.084 in MeOH).

(±)-*form* [29074-38-2]
Mp 169-170°.
► EX2675000

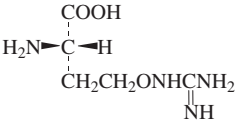
O^9*-De-Me:* [17388-17-9]
Mp 186°.

8-Oxo:
Pale yellow cryst. Mp 217-218°.

Späth, E. *et al., Ber.*, 1930, **63**, 3007; 1931, **64**, 1131 (*Canadine, Nandinine, isol, struct, resoln, bibl*)
Manske, R.H.F. *et al., Can. J. Res., Sect. B*, 1942, **20**, 57 (*isol*)
Corrodi, H. *et al., Helv. Chim. Acta*, 1956, **39**, 889 (*Nandinine, abs config*)
Kuchkova, K.I. *et al., Khim. Prir. Soedin.*, 1967, **3**, 141; *Chem. Nat. Compd. (Engl. Transl.)*, 1967, **3**, 148 (*methochlorides*)
Giacopello, D. *et al., Tetrahedron*, 1967, **23**, 3265 (*Nandinine, synth*)
Kametani, T. *et al., J.C.S.(C)*, 1969, 2036 (*synth, ir, pmr*)
Shamma, M. *et al., Tetrahedron*, 1971, **27**, 727 (*Tetrahydrothalifendine*)
Kametani, T. *et al., Heterocycles*, 1975, **3**, 811 (*Nandinine, synth*)
Hughes, D.W. *et al., Can. J. Chem.*, 1976, **54**, 2252 (*cmr*)
Narasimhan, N.S. *et al., Tetrahedron*, 1983, **39**, 1975 (*synth*)
Bhakuni, D.S. *et al., Alkaloids (Academic Press)*, 1986, **28**, 95 (*rev*)
Pyne, S.G. *et al., Tet. Lett.*, 1987, **28**, 4737 (*synth*)
Hussain, R.A. *et al., Heterocycles*, 1989, **29**, 2257 (*pmr, cmr*)
Malhotra, S. *et al., Phytochemistry*, 1989, **28**, 1998 (*8-Oxocanadine*)
Zhang, J.-S. *et al., Planta Med.*, 1991, **57**, 457 (*Gusanlungs*)
Kessar, S.V. *et al., J.O.C.*, 1992, **57**, 6716 (*synth*)
Pinho, P.M.M. *et al., Phytochemistry*, 1992, **31**, 1403 (*8-Oxocanadine, 8-Oxotetrahydrothalifendine*)
Yusupov, M.M. *et al., Khim. Prir. Soedin.*, 1993, **29**, 53; *Chem. Nat. Compd. (Engl. Transl.)*, 1993, **29**, 43 (*8-Oxoberberrubine*)
Nimgirawath, S. *et al., Aust. J. Chem.*, 1994, **47**, 951 (*synth, Gusanlung B*)
Marek, R. *et al., Magn. Reson. Chem.*, 1999, **37**, 195-202 (*N-15 nmr*)
Wang, X.-L. *et al., Acta Cryst. E*, 2006, **62**, 1764-1765 (*8-Oxocanadine, cryst struct*)
Chudik, S. *et al., J. Nat. Prod.*, 2006, **69**, 954-956 (*Escholidine*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, TCJ800

Canavanine C-74

O-[(Aminoiminomethyl)amino]homoserine, 9CI. 2-Amino-4-(guanidinooxy)butanoic acid



(*S*)-*form*

$C_5H_{12}N_4O_3$ 176.175

(*S*)-*form*
L-form
[543-38-4]
Stored in large quantities in the seeds of leguminous plants in three subfamilies. Isol. originally from Jackbean (*Canavalia ensiformis*). Insecticidal antimetabolite props. Antineoplastic, antibacterial and antifungal agent. Cryst. (EtOH). Sol. H_2O. Mp 184°. $[\alpha]_D^{20}$ +7.9 (H_2O).
► LD_{50} (rat, scu) 5900 mg/kg. ES7002000

Sulfate: [2219-31-0]
Cryst. (EtOH). Mp 172° dec.

Picrate: Mp 163-164°.

Tribenzoyl: Mp 86° dec.

(±)-*form* [13269-28-8]
Mp 180-182°. pK_{a1} 2.5; pK_{a2} 6.6; pK_{a3} 9.25 (25°).

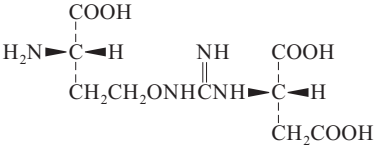
Hydrochloride: Mp 190°.

Hydrochloride (1:2):
Very hygroscopic solid.

Bell, A. *et al., Biochem. J.*, 1960, **75**, 618 (*occur*)
Nakatsu, S. *et al., CA*, 1963, **58**, 752 (*occur*)
Yamada, Y. *et al., Agric. Biol. Chem.*, 1973, **37**, 2201 (*synth*)
Rosenthal, G.A. *et al., Anal. Biochem.*, 1976, **77**, 147 (*isol*)
Rosenthal, G.A. *et al., Q. Rev. Biol.*, 1977, **52**, 155 (*rev*)
Boyar, A. *et al., J.A.C.S.*, 1982, **104**, 1995 (*cryst struct*)
Rosenthal, G.A. *et al., Phytochemistry*, 1991, **30**, 1055 (*biol props*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 12026
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, AKD500

Canavanosuccinic acid C-75

N-[[[(3-Amino-3-carboxypropoxy)amino]imino]methyl]aspartic acid, 9CI. Canavaninosuccinic acid
[24764-65-6]

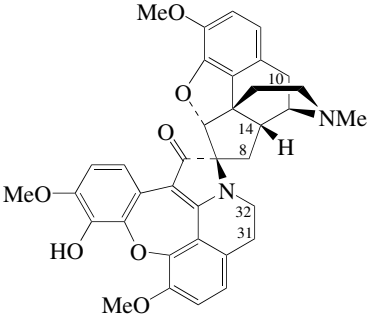


$C_9H_{16}N_4O_7$ 292.248
An intermed. in the canaline-urea cycle in plants. Purified as Ba^{2+} salt, not isol.

Walker, J.B. *et al., Arch. Biochem. Biophys.*, 1955, **59**, 233
Rosenthal, G.A. *et al., Anal. Biochem.*, 1975, **65**, 60

Cancentrine, 9CI C-76

Alkaloid F22
[29477-90-5]



$C_{36}H_{34}N_2O_7$ 606.674
Alkaloid from *Dicentra canadensis* (Papaveraceae). Orange needles ($CHCl_3$/MeOH). Mp 237-238°.

Hydrochloride:
Cryst. ($CHCl_3$/MeOH). Mp 286°.

Me ether:
Cryst. (MeOH/cyclohexane). Mp 269°.

8,14-Didehydro: ***Dehydrocancentrine A***
[38990-01-1]
$C_{36}H_{32}N_2O_7$ 604.658
Minor alkaloid from *Dicentra canadensis* (Papaveraceae). Yellow cryst. (MeOH). Mp 194°.

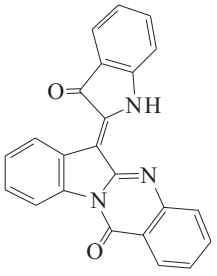
31,32-Didehydro: ***Dehydrocancentrine B***
[38990-02-2]
$C_{36}H_{32}N_2O_7$ 604.658
Minor alkaloid from *Dicentra canadensis* (Papaveraceae). Red cryst. (MeOH). Mp 206°.

10-Oxo: ***10-Oxocancentrine***
[68798-36-7]
$C_{36}H_{32}N_2O_8$ 620.657
Alkaloid from *Dicentra canadensis* (Papaveraceae). λ_{max} 268 (log ϵ 3.35); 284 (sh) (log ϵ 3.34); 324 (sh) (log ϵ 2.9); 436 (log ϵ 2.65) (EtOH).

Manske, R.H.F. *et al., Can. J. Res.*, 1932, **7**, 258; 1938, **16B**, 81 (*isol*)
Clark, G.R. *et al., J.A.C.S.*, 1970, **92**, 4998 (*struct*)
Rodrigo, R. *et al., Can. J. Chem.*, 1972, **50**, 853; 3900 (*uv, ir, pmr, ms, struct*)
MacLean, D.B. *et al., Can. J. Chem.*, 1972, **50**, 862 (*Dehydrocancentrines*)
Clark, G.R. *et al., J.C.S. Perkin 2*, 1972, 1219 (*cryst struct, abs config*)
Rodrigo, R. *et al., Alkaloids (Academic Press)*, 1973, **14**, 407 (*rev*)
Holland, H.L. *et al., Can. J. Chem.*, 1978, **56**, 2467-2471 (*cmr*)

Candidine† C-77

*6-(1,3-Dihydro-3-oxo-2*H*-indol-2-ylidene)indolo[2,1-*b*]quinazolin-12(6*H*)-one, 9CI. Indigo X. Qingdainone*
[97457-31-3]

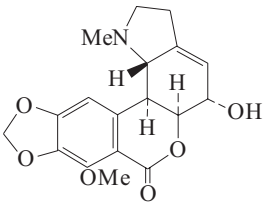


$C_{23}H_{13}N_3O_2$ 363.375
Isol. from *Candida lipolytica*, *Isatis indigotica* and *Phaius mishmensis*. Also isol. in small amts. from the urine of uraemic patients. Violet solid or dark black-brown needles. Mp 269-270°. λ_{max} 250 (log ϵ 4.16); 284 (log ϵ 4); 574 (log ϵ 3.88) ($CHCl_3$).

Bergman, J. *et al., Tetrahedron*, 1985, **41**, 2883-2884 (*struct*)
Laatsch, H. *et al., Annalen*, 1986, 1847-1853 (*isol, pmr*)
Bergman, J. *et al., Phytochemistry*, 1989, **28**, 3547
Jao, C.-W. *et al., J. Nat. Prod.*, 2008, **71**, 1275-1279 (*isol, pmr, cmr*)

Candimine C-78

[24585-19-1]



$C_{18}H_{19}NO_6$ 345.351
Alkaloid from *Hippeastrum candidum* (Amaryllidaceae). Cryst. (MeOH). Mp 218-220°. $[\alpha]_D^{24}$ +220 (c, 0.2 in $CHCl_3$).

Perchlorate:
Cryst. (H_2O). Mp 177-179°.

Picrate:
Cryst. (MeOH). Mp 220°.

Ac: Mp 239-241°.

Döpke, W. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1962, **295**, 920; *CA*, **58**, 11416a

Caneine C-79

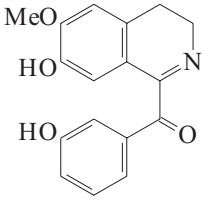
$C_{12}H_{24}N_2O_3$ 244.333
Struct. unknown. Constit. of *Canavalia ensiformis* seeds (jack bean) (Fabaceae). Lustrous needles. Mp 188-189°. Opt. inactive.

Picrate:
Pale yellow needles. Mp 120-121°.

Ackermann, D. *et al., Hoppe-Seyler's Z. Physiol. Chem.*, 1939, **262**, 103 (*isol*)

Canelillinoxine C-80

[151757-05-0]



$C_{17}H_{15}NO_4$ 297.31
Alkaloid from the stem bark of *Aniba canelilla* (Lauraceae).

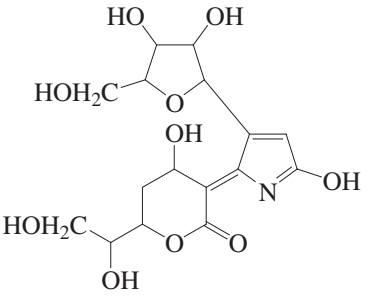
Oger, J.-M. *et al., Can. J. Chem.*, 1993, **71**, 1128 (*isol, uv, ir, pmr, ms, struct*)

Canembine C-81

Raunescine†
[1355-10-8]
$C_{22}H_{28}N_2O_3$ 368.475
Struct. unknown. Not the same as Raunescine in 17,18-Dihydroxyyohimban-16-carboxylic acid, D-687. Said to be a Yohimbine homologue. Alkaloid from *Rauwolfia canescens* (Apocynaceae). Clusters of pale-yellow needles (EtOAc).

Bhattacharji, S. *et al., Indian J. Pharm.*, 1956, **18**, 188-190; *CA*, **51**, 446a (*isol, ir, uv*)
Bhattacharji, S. *et al., J. Sci. Ind. Res.*, 1957, **16**, 97; *CA*, **53**, 8185g (*nomenclature*)

Cannabiloid B C-82

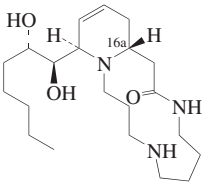


$C_{16}H_{21}NO_{10}$ 387.343
Constit. of *Senecio cannabifolius*. Liq. $[\alpha]_D^{20}$ +101.2 (c, 0.12 in MeOH). λ_{max} 210 (MeOH).

Wu, B. *et al., Pharm. Biol.*, 2006, **44**, 440-444 (*isol, pmr, cmr*)

Cannabisativine C-83

*13-(1,2-Dihydroxyheptyl)-1,4,5,6,7,8,9,10,11,13,16,16a-dodecahydropyrido[2,1-*d*][1,5,9]triazacyclotridecin-2(3*H*)-one, 9CI*
[57682-64-1]



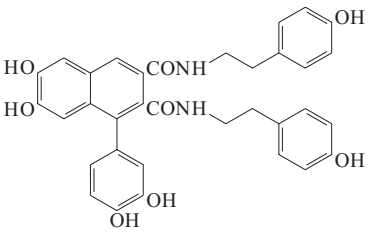
Absolute Configuration

$C_{21}H_{39}N_3O_3$ 381.557
Alkaloid from the leaves and roots of *Cannabis sativa* (Cannabidaceae). Plates (Me_2CO). Mp 167-168°. $[\alpha]_D^{25}$ +55.1 (c, 0.53 in $CHCl_3$).

1′-Deoxy, 2′-ketone: ***Anhydrocannabisativine***
[65664-79-1]
$C_{21}H_{37}N_3O_2$ 363.542
Alkaloid from the leaves and roots of *Cannabis sativa* (Cannabidaceae). $[\alpha]_D^{22}$ +18.7 (c, 0.1 in MeOH).

Lotter, H.L. *et al., Tet. Lett.*, 1975, 2815 (*Cannabisativine, ir, pmr, ms, cryst struct*)
Turner, C.E. *et al., J. Pharm. Sci.*, 1976, **65**, 1084 (*Cannabisativine, isol, uv, ir, pmr, ms*)
Elsohly, M.A. *et al., J. Pharm. Sci.*, 1978, **67**, 124 (*Anhydrocannabisativine, struct*)
Bailey, T.R. *et al., J.A.C.S.*, 1984, **106**, 3240 (*Anhydrocannabisativine, synth*)
Ogawa, M. *et al., Tet. Lett.*, 1984, **25**, 969 (*Cannabisativine, synth, cmr*)
Wasserman, H.H. *et al., Tetrahedron*, 1988, **44**, 3365 (*Cannabisativine, synth, ir, pmr, ms*)
Hamada, T. *et al., Tet. Lett.*, 1991, **32**, 1649 (*Cannabisativine, synth*)
Kuethe, J.T. *et al., J.O.C.*, 2004, **69**, 5219-5231 (*Cannabisativine, synth*)

Cannabisin A C-84

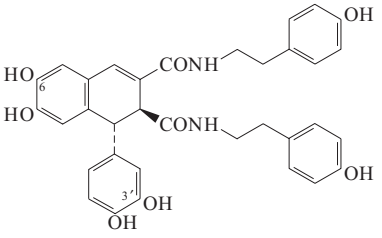


$C_{34}H_{30}N_2O_8$ 594.62
Constit. of the fruit of *Cannabis sativa*. Amorph. powder. λ_{max} 257 (log ϵ 4.79) (EtOH).

Hexa-Ac:
Needles. Mp 204-207°.

Sakakibara, I. *et al., Phytochemistry*, 1991, **30**, 3013-3016 (*isol, pmr, cmr*)

Cannabisin B C-85



$C_{34}H_{32}N_2O_8$ 596.635

(±)-*form* [144506-17-2]
Isol. from fruits of *Cannabis sativa* (Cannabaceae). Amorph. powder.

6-Me ether: ***Cannabisin C***
[144506-18-3]
$C_{35}H_{34}N_2O_8$ 610.662
From fruits of *Cannabis sativa* (Cannabaceae). Amorph. powder.

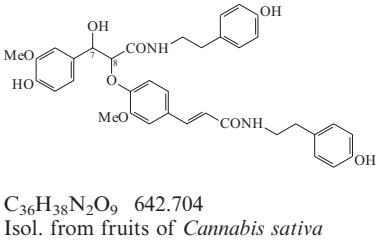
3′,6-Di-Me ether: ***Cannabisin D***
[144506-19-4]
$C_{36}H_{36}N_2O_8$ 624.689
From fruits of *Cannabis sativa* (Cannabaceae). Needles (MeOH). Mp 165-168°.

Hexa-Me ether:
Needles (MeOH). Mp 196-197°.

Sakakibara, I. *et al., Phytochemistry*, 1992, **31**, 3219 (*isol, uv, ir, pmr, cmr, struct*)

Cannabisin E C-86

[163136-16-1]



$C_{36}H_{38}N_2O_9$ 642.704
Isol. from fruits of *Cannabis sativa* (Cannabaceae). Amorph. powder.

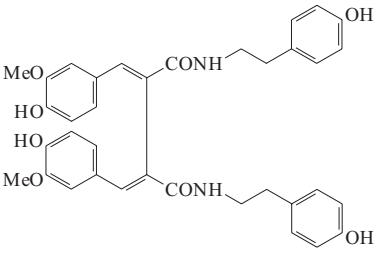
Tetra-Ac:
Needles. Mp 123-125°.

7-Deoxy, 7,8-didehydro: ***Cannabisin F***
[163136-19-4]
$C_{36}H_{36}N_2O_8$ 624.689
From fruits of *Cannabis sativa* (Cannabaceae). Amorph. powder.

Sakakibara, I. *et al., Phytochemistry*, 1995, **38**, 1003 (*isol, uv, ir, pmr, cmr, struct*)

Cannabisin G C-87

[163136-20-7]



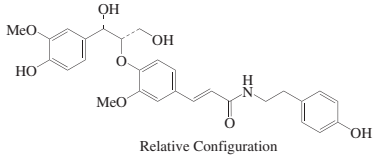
$C_{36}H_{36}N_2O_8$ 624.689
Dimer of *N*-Feruloyltyramine in H-667. Isol. from fruits of *Cannabis sativa* (Cannabaceae) and *Hyoscyamus niger*. Amorph. powder.

(Z,Z)-Isomer: ***Hyoscyamide***
$C_{36}H_{36}N_2O_8$ 624.689
Alkaloid from the seeds of *Hyoscyamus niger*. Yellow amorph. powder.

Sakakibara, I. *et al., Phytochemistry*, 1995, **38**, 1003 (*isol, uv, ir, pmr, cmr, struct*)
Ma, C.-Y. *et al., J. Nat. Prod.*, 2002, **65**, 206-209 (*Hyoscyamide*)

Cannabisin H C-88

[403647-08-5]

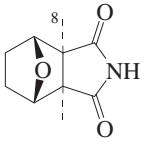


$C_{28}H_{31}NO_8$ 509.555
Alkaloid from the bark of *Hibiscus cannabinus*. Yellowish oil.

Seca, A.M.L. *et al., Phytochemistry*, 2001, **58**, 1219-1223 (*isol, pmr, cmr*)

Cantharimide C-89

*Hexahydro-3*a,7a*-dimethyl-4,7-epoxy-2*H*-isoindole-1,3-dione*
[76970-77-9]



$C_{10}H_{13}NO_3$ 195.218
Alkaloid from the Chinese blister beetle *Mylabris phalerata*. Needles (EtOH). Mp 205-206°.

N-*(3-Amino-1*S*-carboxypropyl):* N-*(*N^2-*L-Ornithyl)cantharimide*
[765922-94-9]
$C_{15}H_{22}N_2O_5$ 310.349
Alkaloid from *Mylabris phalerata*. Powder. Mp 157-160°. $[\alpha]_D$ -26.9 (c, 0.26 in MeOH aq.).

N-*(4-Amino-1*S*-carboxybutyl):* N-*(*N^2-*L-Lysyl)cantharimide*
[765922-93-8]
$C_{16}H_{24}N_2O_5$ 324.376
Alkaloid from *Mylabris phalerata*. Powder. Mp 159-162°. $[\alpha]_D$ -23.3 (c, 0.3 in MeOH).

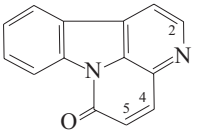
N-*(3-Guanidino-1*S*-carboxypropyl):* N-*(*N^2-*L-Argininyl)cantharimide*
[765922-95-0]
$C_{16}H_{24}N_4O_5$ 352.389
Alkaloid from *Mylabris phalerata*. Powder. Mp 195-197°. $[\alpha]_D$ -21.1 (c, 2.2 in MeOH aq.).

8-Hydroxy: ***8-Hydroxycantharimide***
[936025-60-4]
$C_{10}H_{13}NO_4$ 211.217
Alkaloid from *Mylabris phalerata*. Powder. Mp 195-197°.

Nakatani, T. *et al., Chem. Pharm. Bull.*, 2004, **52**, 807-809; 2007, **55**, 92-94 (*isol, pmr, cmr*)

Canthin-6-one C-90

6H-*Indolo[3,2,1-*de*][1,5]naphthyridin-6-one, 9CI*
[479-43-6]



$C_{14}H_8N_2O$ 220.23
Alkaloid from *Pentaceras australis*, *Phellodendron amurense*, *Zieria smithii*, *Ailanthus altissima*, *Ailanthus excelsa*, some *Fagara* and *Zanthoxylum* spp., *Quassia gabonensis*, *Xanthoxylum elephantiasis*, *Hibiscus syriacus*, *Zanthoxylum* sp., *Picrasma excelsa* , *Brucea antidysenterica*, *Hannoa klaineana* and others. Also isol. from the mushroom *Boletus curtisii*. Shows antimicrobial activity. Cytotoxic to guinea pig keratinocytes. Exhibits fungicide effects against a wide range of fungi. Antiinflammatory. Pale yellow needles (Me_2CO). Mp 162.5-163.5°. λ_{max} 250 (ϵ 13200); 259 (ϵ 12500); 267 (ϵ 11700); 300 (ϵ 8400); 347 (ϵ 8700); 362 (ϵ 14100); 381 (ϵ 11750) (EtOH) (Berdy).

Hydrochloride:
Pale yellow plates or needles (1*M* HCl). Mp 244-246° dec.

Picrate:
Yellow needles (MeOH). Mp 262-264° (softening >240°).

Methiodide:
Orange-red plates (H_2O). Mp 271-273°.

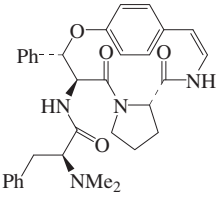
3-N-*Oxide:* ***Canthin-6-one* N-*oxide***
[60755-87-5]
$C_{14}H_8N_2O_2$ 236.229
Alkaloid from the wood and root bark of *Ailanthus altissima*. Shows cytotoxic activity against guinea pig keratinocytes. Pale yellow needles (MeOH). Sol. MeOH; poorly sol. H_2O. Mp 244-245°. λ_{max} 246 ; 278 ; 366 (MeOH) (Berdy). λ_{max} 246 (ϵ 11700); 279 (ϵ 24000); 370 (ϵ 13500) (EtOH) (Berdy).

4,5-Dihydro: ***4,5-Dihydrocanthin-6-one***
$C_{14}H_{10}N_2O$ 222.246
Alkaloid from cell cultures of *Ailanthus altissima*. Pale yellow needles (CH_2Cl_2/petrol). Mp 128°.

Haynes, H.F. *et al., Aust. J. Sci. Res., Ser. A*, 1952, **5**, 387 (*isol, uv, struct, oxide*)
Cannon, J.R. *et al., Aust. J. Chem.*, 1956, **6**, 86 (*isol*)
Rosenkranz, H.J. *et al., Annalen*, 1966, **691**, 159 (*synth, uv, ir*)
Mitscher, L.A. *et al., Heterocycles*, 1975, **3**, 7 (*synth*)
Oehl, R. *et al., Chem. Ber.*, 1976, **109**, 705 (*synth, uv, ir, ms*)
Ohmoto, T. *et al., Chem. Pharm. Bull.*, 1976, **24**, 1532; 1981, **29**, 390 (*isol, uv, ir, pmr, ms, synth, oxide*)
Campos, O. *et al., Heterocycles*, 1980, **14**, 975 (*synth*)
Forgacs, P. *et al., Planta Med.*, 1982, **46**, 187 (*isol*)
Anderson, L.A. *et al., J. Nat. Prod.*, 1983, **46**, 374 (*isol, biochem*)
Cain, M. *et al., J.A.C.S.*, 1983, **105**, 907 (*synth*)
Ohmoto, T. *et al., Alkaloids (Academic Press)*, 1989, **36**, 135-170 (*rev*)
He, W. *et al., Meded. Fac. Landbouwwet., Rijksuniv. Gent*, 1998, **64**, 565-569 (*activity*)
Rossler, U. *et al., Tet. Lett.*, 1999, **40**, 7075-7078 (*synth*)
Czerwinski, K.M. *et al., Synth. Commun.*, 2003, **33**, 1225-1231 (*synth, pmr, cmr*)
Bröckelmann, M.G. *et al., Eur. J. Org. Chem.*, 2004, 4856-4863 (*isol, pmr, cmr, ms*)
Soriano-Agatón, F. *et al., J. Nat. Prod.*, 2005, **68**, 1581-1587 (*synth, pmr, cmr*)
Suzuki, H. *et al., Synthesis*, 2005, 28-31 (*synth, ir, pmr, cmr*)

Canthiumine C-91

α-(Dimethylamino)-N-*(1,2,11,12,14,15,16,16a-octahydro-1,12-dioxo-10-phenyl-5,8-etheno-10H-pyrrolo[1,2-e][1,5,8]oxadiazacyclotetradecin-11-yl)benzenepropanamide, 9CI*
[26195-90-4]



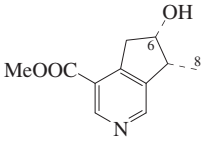
Absolute Configuration

$C_{33}H_{36}N_4O_4$ 552.672
Alkaloid from *Canthium euryoides* (Rubiaceae). Mp 232-233°. $[\alpha]_D$ -254 (c, 1 in $CHCl_3$).

Boulvin, G. *et al., Bull. Soc. Chim. Belg.*, 1969, **78**, 583; *CA*, **72**, 90691q
Gonzáles Sierra, M. *et al., Chem. Comm.*, 1972, 915 (*stereochem*)

Cantleyine C-92

[30333-81-4]



Absolute Configuration

$C_{11}H_{13}NO_3$ 207.229
Alkaloid from *Cantleya corniculata*, a *Jasminum* sp. *Dipsacus azureus*, *Strychnos nux-vomica*, *Strychnos dinklagei*, several other *Strychnos* spp. *Alstonia angustiloba*, *Alstonia pneumatophora*, *Alstonia spatulata*, *Scaevola racemigera* (Icacinaceae, Oleaceae, Dipsacaceae, Loganiaceae, Apocynaceae, Goodeniaceae). Needles (C_6H_6). Mp 132-133° (130°). $[\alpha]_D$ -34 (c, 1.2 in $CHCl_3$). $[\alpha]_D^{20}$ -40 (c, 1 in $CHCl_3$).

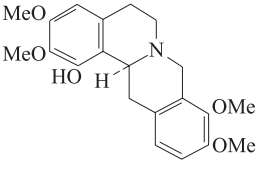
6-Epimer: ***Isocantleyine***
[143564-04-9]
$C_{11}H_{13}NO_3$ 207.229
Alkaloid from *Siphonostegia chinensis* (Scrophulariaceae). Cryst. Mp 124-125°.

*8-(*E*-4-Hydroxycinnamoyloxy):* ***8-Hydroxycantleyine*** **trans-p-*coumarate***
[119365-64-9]
$C_{20}H_{19}NO_6$ 369.373
Alkaloid from *Coelospermum billardieri*. Mp 180°. $[\alpha]_D^{23}$ -121 (c, 0.9 in EtOH). Not named in the paper. λ_{max} 207 ; 224 ; 314 (EtOH).

8-(Z-4-Hydroxycinnamoyloxy): 8-Hydroxycantleyine cis-p-*coumarate*
[119308-96-2]
$C_{20}H_{19}NO_6$ 369.373
Alkaloid from *Coelospermum billardieri*. Isol. as the diacetate. Not named in the paper.

Hart, N.K. *et al., Aust. J. Chem.*, 1969, **22**, 1283 (*isol, uv, ir, pmr, ms, struct*)
Sévenet, T. *et al., Bull. Soc. Chim. Fr.*, 1970, 3120 (*isol, uv, ir, pmr, ms, struct, synth*)
Rakhmatullaev, T.U. *et al., Khim. Prir. Soedin.*, 1972, **8**, 400; *Chem. Nat. Compd. (Engl. Transl.)*, 1972, **8**, 401 (*isol, uv, ir, pmr*)
Bisset, N.G. *et al., Phytochemistry*, 1974, **13**, 265 (*isol*)
Skaltsounis, A.-L. *et al., Helv. Chim. Acta*, 1985, **68**, 1679 (*isol*)
Michel, S. *et al., J. Nat. Prod.*, 1985, **48**, 86 (*isol*)
Ravao, T. *et al., Tet. Lett.*, 1985, **26**, 837 (*cmr*)
Lopez, J.L. *et al., J. Nat. Prod.*, 1988, **51**, 829 (*8-Hydroxycantleyine coumarates*)
Zhang, H.Y. *et al., Yaoxue Xuebao*, 1992, **27**, 113; *CA*, **117**, 147160v (*Isocantleyine*)
Delaude, C *et al., Bull. Soc. R. Sci. Liege*, 1997, **66**, 183-286 (*occur, Strychnos*)

Capaurine C-93



(*S*)*-form*

$C_{21}H_{25}NO_5$ 371.432

(S)-form [478-14-8]
Alkaloid from *Corydalis* spp. (Papaveraceae). Stout polyhedra (MeOH). Mp 164°. $[\alpha]_D^{24}$ -271 ($CHCl_3$).
▶ EX8100000
Hydrobromide:
Plates (MeOH). Mp 198-199°. $[\alpha]_D$ -423.

N-*Oxide:* ***Nokoensine***
[59870-71-2]
$C_{21}H_{25}NO_6$ 387.432
Alkaloid from *Corydalis nokoensis* (Papaveraceae). Mp 212°. $[\alpha]_D^{24}$ -180 (c, 0.58 in MeOH).

N-*Me(*cis-*):* ***9-O-Methylstecepharine.***
cis-N-*Methylcapaurine*
[179238-68-7]
$C_{22}H_{28}NO_5^{\oplus}$ 386.467
Quaternary alkaloid from the dried rhizomes of *Stephania cepharantha*. Amorph. powder(as perchlorate). $[\alpha]_D^{29}$ -156 (c, 0.96 in MeOH) (perchlorate). λ_{max} 233 (sh) (log ϵ 4.24); 280 (log ϵ 3.48) (MeOH).

Me ether: ***1,2,3,9,10-Pentamethoxytetrahydroprotoberberine.*** O-*Methylcapaurine. 1-Methoxytetrahydropalmatine*
[6033-73-4]
$C_{22}H_{27}NO_5$ 385.459
Alkaloid from roots of *Stephania lincangensis* (Menispermaceae). Prisms (MeOH). Mp 152°.

O^{10}*-De-Me:* ***Capaurimine***
[30758-81-7]
$C_{20}H_{23}NO_5$ 357.405
Alkaloid from *Corydalis montana* and *Corydalis pallida* (Papaveraceae). Stout prisms ($CHCl_3$/MeOH). Mp 212°. $[\alpha]_D^{24}$ -287 (c, 0.4 in $CHCl_3$).

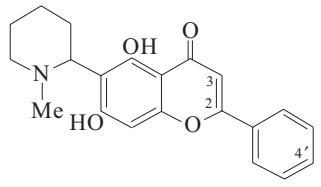
O^{9}*-De-Me,* N-*Me,(*cis-*):* ***Stecepharine***
[267006-16-6]
$C_{21}H_{26}NO_5^{\oplus}$ 372.44
Quaternary alkaloid from the dried rhizomes of *Stephania cepharantha*. Amorph. powder (as perchlorate). $[\alpha]_D^{30}$ -175 (c, 1.05 in MeOH). λ_{max} 230 (sh) (log ϵ 4.23); 282 (log ϵ 3.64) (MeOH).

(±)-form
Capauridine
[478-15-9]
Alkaloid from *Corydalis* spp. (Papaveraceae). Cryst. ($CHCl_3$/MeOH). Mp 208°.
▶ DS0175000
Me ether:
Needles (MeOH). Mp 208°.
O^{10}*-De-Me:* [32886-78-5]
Needles (MeOH). Mp 208-210°.

Manske, R.H.F. *et al., Can. J. Res., Sect. B*, 1942, **20**, 49 (*isol*)
Kametani, T. *et al., Tet. Lett.*, 1968, 4251 (*cryst struct*)
Kametani, T. *et al., J. Het. Chem.*, 1970, **7**, 491 (*synth*)
Kametani, T. *et al., J.C.S.(C)*, 1971, 2396 (*Capaurimine, synth, cryst struct*)
Takao, N. *et al., Chem. Pharm. Bull.*, 1976, **24**, 3185 (*pmr*)
Tani, C. *et al., Yakugaku Zasshi*, 1976, **96**, 527 (*Nokoensine*)
Taira, Z. *et al., Cryst. Struct. Commun.*, 1977, **6**, 755 (*Nokoensine, cryst struct*)
Sugiura, M. *et al., Chem. Pharm. Bull.*, 1978, **26**, 1168 (*cmr*)
Chen, Y. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 1991, **33**, 552; *CA*, **117**, 86637g (*Pentamethoxytetrahydroprotoberberine*)
Tanashi, T. *et al., Chem. Pharm. Bull.*, 2000, **48**, 370-373 (*Stecepharine, 9-O-Methylstecepharine*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, TDI750

Capitavine C-94

5,7-Dihydroxy-6-(1-methylpiperidin-2-yl)flavone
[91147-11-4]



$C_{21}H_{21}NO_4$ 351.401
Alkaloid from the seeds of *Buchenavia capitata* (Combretaceae). Cryst. (CH_2Cl_2/MeOH). Mp 146°. $[\alpha]_D$ +6 (c, 0.6 in EtOH).

N-*De-Me:* **N-*Demethylcapitavine***
[91147-12-5]
$C_{20}H_{19}NO_4$ 337.374
Alkaloid from the fruits of *Buchenavia macrophylla* (Combretaceae). Amorph. $[\alpha]_D$ -11 (c, 0.34 in EtOH).

2,3-Dihydro: ***2,3-Dihydrocapitavine***
[91147-13-6]
$C_{21}H_{23}NO_4$ 353.417
Alkaloid from the fruits of *Buchenavia macrophylla* (Combretaceae). Amorph. $[\alpha]_D$ 0 (c, 1.49 in EtOH).

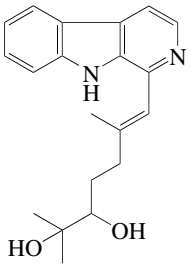
4′-Hydroxy: ***4′-Hydroxycapitavine***
[91147-14-7]
$C_{21}H_{21}NO_5$ 367.401
Alkaloid from the seeds of *Buchenavia capitata* (Combretaceae). Cryst. (MeOH/CH_2Cl_2). Mp 170-172°. $[\alpha]_D$ -11 (c, 0.2 in EtOH).

4′-Hydroxy, 2,3-dihydro: ***2,3-Dihydro-4′-hydroxycapitavine***
[91147-15-8]
$C_{21}H_{23}NO_5$ 369.416
Alkaloid from the seeds of *Buchenavia capitata* (Combretaceae). Amorph. $[\alpha]_D$ +51 (c, 1.23 in EtOH).

Ahond, A. *et al., Bull. Soc. Chim. Fr.*, Part II, 1984, 41 (*isol, uv, ir, pmr, cmr, ms, struct, derivs*)

Capitelline C-95

[204001-20-7]

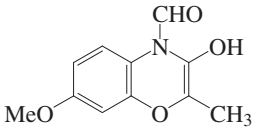


$C_{20}H_{24}N_2O_2$ 324.422
Alkaloid from *Hedyotis capitellata*. Oil. $[\alpha]_D$ -4 (c, 0.5 in $CHCl_3$). λ_{max} 240 (log ϵ 4.05); 290 (log ϵ 3.8); 354 (log ϵ 3.36) (EtOH).

Phuong, N.M. *et al., Nat. Prod. Lett.*, 1998, **11**, 93-100 (*isol, uv, ir, pmr, cmr, ms*)

Cappamensine C-96

*3-Hydroxy-7-methoxy-2-methyl-4*H*-1,4-benzoxazine-4-carboxaldehyde*

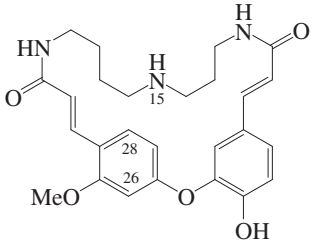


$C_{11}H_{11}NO_4$ 221.212
Constit. of the roots of *Capparis sikkimensis* ssp. *formosana*. Antitumour agent. Cryst. Mp 204-206°.

Wu, J.-H. *et al., Bioorg. Med. Chem. Lett.*, 2003, **13**, 2223-2225 (*isol, pmr, cmr*)

Capparisine C-97

[104899-66-3]



$C_{26}H_{31}N_3O_5$ 465.548
CAS numbering shown. Alkaloid from the root bark of *Capparis decidua* (Capparidaceae). Cryst. (MeOH). Mp 160-162°.

N^{15}-*Ac:* ***15-N-Acetylcapparisine***
$C_{28}H_{33}N_3O_6$ 507.585
Alkaloid from root bark of *Capparis decidua* (Capparidaceae). Amorph. powder. Mp 178-180°.

N^{15},O-*Di-Ac:* [104899-65-2]
Amorph. Mp 223-224°.

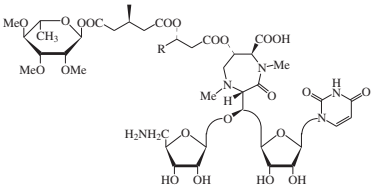
26-Methoxy: ***Capparidisine***
[100414-82-2]
$C_{27}H_{33}N_3O_6$ 495.574
Alkaloid from the root bark of *Capparis decidua* (Capparidaceae). Light cream-coloured cryst. (MeOH or Me_2CO aq.). Mp 180-181°.

28-Methoxy: ***Capparisinine***
[105694-42-6]
$C_{27}H_{33}N_3O_6$ 495.574
Alkaloid from root bark of *Capparis decidua*. Cryst. Mp 238°. Positional isomer of Capparidisine. Exists in soln. (DMSO-d_6) as slowly interconverting *E*- and *Z*-isomers.

28-Methoxy, N^{15},O-*di-Ac:* [105694-43-7]
Cryst. (MeOH). Mp 263°.

Ahmad, V.U. *et al., Heterocycles*, 1985, **23**, 3015 (*Capparidisine*)
Ahmad, V.U. *et al., Z. Naturforsch., B*, 1986, **41**, 1033 (*Capparisine*)
Ahmad, V.U. *et al., Annalen*, 1987, 161 (*Capparisinine*)
Ahmad, V.U. *et al., J. Nat. Prod.*, 1992, **55**, 1509 (*15-N-Acetylcapparisine*)

Caprazamycin C-98



Caprazamycin A R = -$(CH_2)_{12}CH_3$
B R = -$(CH_2)_{10}CH(CH_3)_2$
C R = -$(CH_2)_{11}CH_3$
D R = -$(CH_2)_9CH(CH_3)_2$
E R = -$(CH_2)_{10}CH_3$
F R = -$(CH_2)_8CH(CH_3)_2$
G R = -$(CH_2)_8CH(CH_3)CH_2CH_3$

Nucleoside antibiotic complex. Prod. by *Streptomyces* sp. MK730-62F2. Antituberculosis agents.

Caprazamycin A [327164-10-3]
$C_{53}H_{87}N_5O_{22}$ 1146.291
Powder. $[\alpha]_D^{23}$ -1.4 (c, 0.83 in DMSO). λ_{max} 261 (ϵ 7400) (MeOH).

Caprazamycin B [327164-11-4]
$C_{53}H_{87}N_5O_{22}$ 1146.291
Powder. $[\alpha]_D^{23}$ -2.6 (c, 0.91 in DMSO). λ_{max} 262 (ϵ 8000) (MeOH).

Caprazamycin C [327164-12-5]
$C_{52}H_{85}N_5O_{22}$ 1132.264
Powder. $[\alpha]_D^{23}$ -1.1 (c, 1.3 in DMSO). λ_{max} 261 (ϵ 8300) (MeOH).

Caprazamycin D [484686-59-1]
$C_{52}H_{85}N_5O_{22}$ 1132.264
Powder. $[\alpha]_D^{23}$ -3 (c, 1 in MeOH). λ_{max} 262 (ϵ 9200) (MeOH).

Caprazamycin E [327164-13-6]
$C_{51}H_{83}N_5O_{22}$ 1118.237
Powder. $[\alpha]_D^{23}$ -5.1 (c, 0.83 in DMSO). λ_{max} 262 (ϵ 7700) (MeOH).

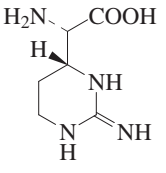
Caprazamycin F [327164-14-7]
$C_{51}H_{83}N_5O_{22}$ 1118.237
Powder. $[\alpha]_D^{23}$ -4.7 (c, 0.9 in DMSO). λ_{max} 262 (ϵ 7600) (MeOH).

Caprazamycin G [484686-64-8]
$C_{52}H_{85}N_5O_{22}$ 1132.264
Powder. $[\alpha]_D^{23}$ -4.2 (c, 1 in MeOH). λ_{max} 262 (ϵ 9000) (MeOH).

Igarashi, M. *et al., J. Antibiot.*, 2003, **56**, 580-583 (*isol*)
Igarashi, M. *et al., J. Antibiot.*, 2005, **58**, 327-337 (*pmr, cmr, cryst struct*)
Ichikawa, S. *et al., Chem. Pharm. Bull.*, 2008, **56**, 1059-1072 (*rev, synth*)

Capreomycidine C-99

α,2-Diamino-1,4,5,6-tetrahydro-4-pyrimidineacetic acid, 9CI. α-(Hexahydro-2-imino-4-pyrimidyl)glycine
[21012-69-1]



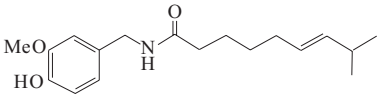
Absolute Configuration

$C_6H_{12}N_4O_2$ 172.186
Amino acid component of Capreomycin, Tuberactinomycin N and Tuberactinomycin O. Mp 218-230°. $[\alpha]_D^{50}$ +5.4 (c, 1 in H_2O). pK_{a1} 3; pK_{a2} 7.6; pK_{a3} 13.8 (66% DMF aq.).

Shiba, T. *et al., Tet. Lett.*, 1977, 2681 (*synth, bibl*)
DeMong, D.E. *et al., Tet. Lett.*, 2001, **42**, 3529-3532 (*synth*)
Yamashita, A. *et al., Synth. Commun.*, 2004, **34**, 795-803 (*synth*)

Capsaicin C-100

N-*[(4-Hydroxy-3-methoxyphenyl)-methyl]-8-methyl-6-nonenamide, 9CI. Natural capsaicin. Axsain. Capsacutin. Capsaiene. Mioton. Zostrix. FEMA 3404*
[404-86-4]



$C_{18}H_{27}NO_3$ 305.416
Pungent principle of various *Capsicum* spp. and *Heliopsis longipes*. Flavouring ingredient. Irritant used for desensitisation of sensory neurones. Used as a selective probe for studying neurogenic inflammation and the role of nociceptors in human physiol. Used as a counter-irritant and topical analgesic for some skin conditions. Shows anticancer, antimicrobial and antiinflammatory props. Insect antifeedant. Transient receptor potential vanilloid subfamily 1 (TRPV1) receptor agonist. . Cryst. with a burning pungent taste. Mp 64-65°. $Bp_{0.01}$ 210-220°. Log P 3.5 (uncertain value) (calc). λ_{max} 227 (ϵ 7000); 281 (ϵ 2500) (EtOH) (Derep).

▶ Skin and mucous membrane irritant. LD_{50} (mus, orl) 47.2 mg/kg. RA8530000

O-*β-D-Glucopyranoside: Capsaicin glucoside*
$C_{24}H_{37}NO_8$ 467.558
Constit. of the fruit of *Capsicum annuum* (red pepper).

Dihydro: N-*[(4-Hydroxy-3-methoxyphenyl)methyl]-8-methylnonanamide.* ***Dihydrocapsaicin***
[19408-84-5]
$C_{18}H_{29}NO_3$ 307.432
Minor constit. of natural Capsaicin. Cryst. Mp 65.5-65.8°.

Dihydro, O-*β-D-glucopyranoside: Dihydrocapsaicin glucoside*
$C_{24}H_{39}NO_8$ 469.574
Constit. of the fruit of *Capsicum annuum* (red pepper).

9′′-Hydroxy: N-*[(4-Hydroxy-3-methoxyphenyl)methyl]-9-hydroxy-8-methyl-6-nonenamide.* ***ω-Hydroxycapsaicin***
[69173-71-3]
$C_{18}H_{27}NO_4$ 321.416
Constit. of the fruit of *Capsicum annuum* (red pepper). Light yellow oil. $[\alpha]_D$ +3.5 (c, 0.28 in $CHCl_3$).

(Z)-isomer: ***Zucapsaicin, INN, USAN***
[25775-90-0]
$C_{18}H_{27}NO_3$ 305.416
Analgesic. Cryst. (Et_2O/hexane). Mp 68.5-69.5°.

Octanoyl analogue: **N-*[(4-Hydroxy-3-methoxyphenyl)methyl]octanamide, 9CI***
[58493-47-3]
$C_{16}H_{25}NO_3$ 279.378
Constit. of red pepper (*Capsicum annuum*). Component of La Jiao.

*6-Methyl-4*E*-heptenoyl analogue:* N-*[(4-Hydroxy-3-methoxyphenyl)methyl]-6-methyl-4-heptenamide.* ***Dinorcapsaicin****. Nornorcapsaicin*
[61229-09-2]
$C_{16}H_{23}NO_3$ 277.363
Constit. of red pepper (*Capsicum annuum*).

Nonanoyl analogue: N-*[(4-Hydroxy-3-methoxyphenyl)methyl]nonanamide, 9CI.* N-*Vanillylnonanamide, 8CI. Synthetic capsaicin. Pseudocapsaicin. Pelargonoyl vanillylamide.* ***Nonivamide, INN****. PSVA. FEMA 2787. HH 50. AH 23491X. 8-Nordihydrocapsaicin*
[2444-46-4]
$C_{17}H_{27}NO_3$ 293.405
Alkaloid from *Capsicum* spp. (Solanaceae). Topical antirheumatic agent. Shows cardiovascular activity. Cryst.; odourless with a pungent burning taste. $Bp_{0.05}$ 200-210°. Log P 3.59 (uncertain value) (calc).

6-Nonenoyl analogue: **N-*[(4-Hydroxy-3-methoxyphenyl)methyl]-6-nonenamide***
[92085-23-9]
$C_{17}H_{25}NO_3$ 291.389
Alkaloid of *Capsicum* spp. Incorr. named in 1997 ref.

7-Methyloctanoyl analogue: N-*[(4-Hydroxy-3-methoxyphenyl)methyl]-7-methyloctanamide, 9CI.* ***Nordihydrocapsaicin***
[28789-35-7]
$C_{17}H_{27}NO_3$ 293.405
Isol. from the pungent principle of red pepper (*Capsicum annuum*). Cryst. (Et_2O/petrol). Mp 60-61°.

*7-Methyl-5*E*-octenoyl analogue:* N-*[(4-Hydroxy-3-methoxyphenyl)methyl]-7-methyl-5-octenamide.* ***Norcapsaicin****. 7-Methyl-*N*-vanillyl-5-octenamide*
[61229-08-1]
[62356-06-3 , 112375-60-7]
$C_{17}H_{25}NO_3$ 291.389
Isol. from the pungent principle of red pepper (*Capsicum annuum*). Cryst. (Et_2O/hexane). Mp 42.5-44°.

Decanoyl analogue: **N-*[(4-Hydroxy-3-methoxyphenyl)methyl]decanamide***
[31078-36-1]
$C_{18}H_{29}NO_3$ 307.432
Alkaloid from *Capsicum* spp. Cryst. (petrol). Mp 59-60° (synthetic).

9-Methyldecanoyl analogue: N-*[(4-Hydroxy-3-methoxyphenyl)methyl]-9-methyldecanamide, 9CI.* ***Homodihydrocapsaicin***
[20279-06-5]
$C_{19}H_{31}NO_3$ 321.459
Isol. from the pungent principle of red pepper (*Capsicum annuum*). Cryst. (Et_2O/petrol). Mp 70-71°.

*8-Methyl-6*E*-decenoyl analogue:* **N-*[(4-Hydroxy-3-methoxyphenyl)methyl]-8-methyl-6-decenamide***
[71240-51-2]
$C_{19}H_{29}NO_3$ 319.443
Alkaloid from *Capsicum* spp.

*9-Methyl-7*E*-decenoyl analogue:* N-*[(4-Hydroxy-3-methoxyphenyl)methyl]-9-methyl-7-decenamide, 9CI.* ***Homocapsaicin****. 9-Methyl-*N*-vanillyl-7-decenamide*
[58493-48-4]
[112375-61-8 , 62356-07-4]
$C_{19}H_{29}NO_3$ 319.443
Isol. from the pungent principle of red pepper (*Capsicum annuum*). Cryst. (Et_2O/hexane). Mp 64.5-65.5°.

*10-Methyl-8*E*-undecenoyl analogue:* **N-*[(4-Hydroxy-3-methoxyphenyl)-methyl]-10-methyl-8-undecenamide***
[71226-60-3]
$C_{20}H_{31}NO_3$ 333.47
Alkaloid from *Capsicum* spp. Glass.

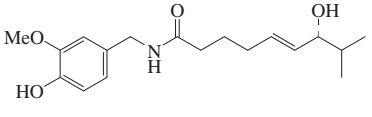
[7553-53-9]

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 1292A; 1293A (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **2**, 619A; 621A; 1378C (*nmr*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 1174D (*ir*)
Nelson, E.K. *et al., J.A.C.S.*, 1919, **41**, 1115-1121 (*struct*)
Crombie, L. *et al., J.C.S.*, 1955, 1025-1027 (*synth, bibl*)
Kosuge, S. *et al., CA*, 1963, **59**, 6724; 1964, **60**, 9827 (*Dihydrocapsaicin*)
Dirnhuber, P. *et al., J. Physiol. (London)*, 1965, **178**, 41P (*Nonivamide, pharmacol*)
Friedrich, H. *et al., Naturwissenschaften*, 1965, **52**, 514 (*Nonivamide*)
Ger. Pat., 1966, (*(Krewel-Leuffen)*)1 213 855; *CA*, **64**, 19504h (*Nonivamide, synth*)
Leete, E. *et al., J.A.C.S.*, 1968, **90**, 6837-6841 (*biosynth*)
Jentzsch, K. *et al., Monatsh. Chem.*, 1968, **99**, 661-663 (*Homodihydrocapsaicin*)
Bowman, W.R. *et al., Chem. Comm.*, 1969, 1075-1077 (*biosynth*)
Rangoonwala, R. *et al., Pharmazie*, 1969, **24**, 177 (*biosynth*)
Kosuge, S. *et al., Agric. Biol. Chem.*, 1970, **34**, 248-256 (*Nordihydrocapsaicin, Homodihydrocapsaicin*)
Refshange, C. *et al., Life Sci.*, 1974, **14**, 311 (*deriv*)
Jeso, I. *et al., Chem. Zvesti*, 1975, **29**, 714 (*synth*)
Todd, P. *et al., J. Chromatogr. Sci.*, 1975, **13**, 577 (*Nonivamide, tlc*)
Virus, R.M. *et al., Life Sci.*, 1979, **25**, 1273-1283 (*rev, props*)
Jurenitsch, J. *et al., Planta Med.*, 1979, **36**, 61-67 (*N-Octanoylcapsaicin, Homocapsaicin*)
Monsereenusorn, Y. *et al., Crit. Rev. Toxicol.*, 1982, **10**, 321-339 (*rev, props*)
Jurenitsch, J. *et al., Sci. Pharm.*, 1982, **50**, 64 (*Nonivamide, isol*)

Suzuki, T. *et al., Alkaloids (London)*, 1983, **23**, 227-299 (*rev*)
Skofitsch, G. *et al., Arzneim.-Forsch.*, 1984, **34**, 154 (*Nonivamide, pharmacol*)
Gannett, P.M. *et al., J.O.C.*, 1988, **53**, 1064-1071; 6162 (*Capsaicins, synth, ir, pmr, cmr, ms*)
Kaga, H. *et al., J.O.C.*, 1989, **54**, 3477-3478 (*synth, bibl*)
Kaga, H. *et al., Synthesis*, 1989, 864-866 (*Nordihydrocapsaicin, Homodihydrocapsaicin, synth, ir*)
Fuller, R.W. *et al., Arch. Int. Pharmacodyn. Ther.*, 1990, **303**, 147-156 (*rev, pharmacol*)
Maggi, C.A. *et al., Arch. Int. Pharmacodyn. Ther.*, 1990, **303**, 157-166 (*pharmacol*)
Kaga, H. *et al., Biosci., Biotechnol., Biochem.*, 1992, **56**, 946-948 (*Capsacinoids, synth*)
Cordell, G.A. *et al., Ann. Pharmacother.*, 1993, **27**, 330-336 (*rev*)
Janusz, J.M. *et al., J. Med. Chem.*, 1993, **36**, 2595-2604 (*Zucapsaicin*)
Lo, Y.-C. *et al., Brain Res. Bull.*, 1994, **35**, 15 (*Nonivamide, pharmacol*)
Kirby, G.W. *et al., Phytochemistry*, 1994, **36**, 185-187 (*purifn, bibl*)
Constant, H.L. *et al., J. Nat. Prod.*, 1995, **58**, 1925-1928 (*minor capsaicinoids, occur, anal*)
Surh, Y.-J. *et al., Life Sci.*, 1995, **56**, 1845-1855 (*rev, tox, metab*)
Kaga, H. *et al., Tetrahedron*, 1996, **52**, 8451-8470 (*Nordihydrocapsaicin, Homocapsaicin, synth, ir, pmr, cmr, ms*)
Fusco, B.M. *et al., Drugs*, 1997, **53**, 909-914 (*rev*)
Encyclopedia of Food and Color Additives, (ed. Burdock, G.A.), CRC Press, 1997, 1374-1375; 1979-1980 (*Capsaicin, Nonivamide*)
Maillard, M.N. *et al., Flavour Fragrance J.*, 1997, **12**, 409-413 (*minor capsacinoids, occur*)
David, W.I.F. *et al., Chem. Comm.*, 1998, 931-932 (*cryst struct*)
Molina-Torres, J. *et al., J. Ethnopharmacol.*, 1999, **64**, 241-248 (*activity*)
Martindale, The Extra Pharmacopoeia, 32nd edn., Pharmaceutical Press, 1999, 1559
Fenaroli's Handbook of Flavor Ingredients, 4th edn., (ed. Burdock, G.A.), CRC Press, 2001, 819-820; 1312 (*Capsaicin, Nonivamide*)
Merck Index, 13th edn., 2001, No. 1774 (*bibl*)
Ochi, T. *et al., J. Nat. Prod.*, 2003, **66**, 1094-1096 (*ω-Hydroxycapsaicin*)
Chayapathy, B. *et al., J. Agric. Food Chem.*, 2006, **54**, 1854-1859 (*biosynth*)
Higashiguchi, F. *et al., J. Agric. Food Chem.*, 2006, **54**, 5948-5953 (*glucosides*)
Remadevi, R. *et al., IDrugs*, 2008, **11**, 120-132 (*pharmacol*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, CBF750

Capsaicinol C-101

[133631-97-7 , 137493-36-8]



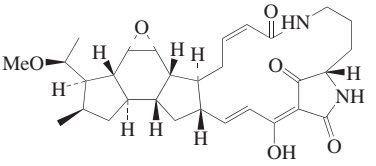
$C_{18}H_{27}NO_4$ 321.416

(*R*)-*form* [137493-35-7]
Constit. of the fruit of *Capsicum frutescens* (red chilli/tabasco pepper). Antioxidant. $[\alpha]_D^{22}$ -9 (c, 1 in $CHCl_3$).

Masuda, T. *et al., Agric. Biol. Chem.*, 1991, **55**, 2337-2340 (*synth, pmr, abs config*)
Kobata, K. *et al., Biosci., Biotechnol., Biochem.*, 2006, **70**, 1904-1912 (*synth, activity*)

Capsimycin C-102

N 461. Antibiotic N 461
[70694-08-5]



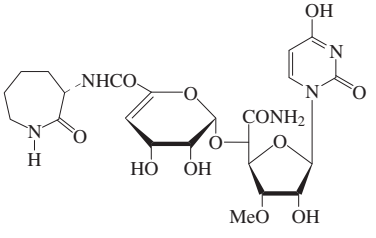
Absolute Configuration

$C_{30}H_{40}N_2O_6$ 524.656
Isol. from *Streptomyces* sp. C 49-87. Antifungal antibiotic, esp. against phytotoxic fungi. Apoptosis inducer. Sol. MeOH, $CHCl_3$, Py, EtOAc; fairly sol. H_2O; poorly sol. C_6H_6, hexane. Mp 186°. $[\alpha]_D^{20}$ +196 (c, 1 in $CHCl_3$). pK_a 5.5 (50% THF aq.). Similar to Ikarugamycin. λ_{max} 220 (ϵ 48200); 325 (ϵ 31200) (MeOH/HCl) (Derep). λ_{max} 320 (ϵ 29800) (MeOH/NaOH) (Derep).
▶ LD_{50} (mus, orl) 600-700 mg/kg. EY4930000

Seto, H. *et al., CA*, 1979, **92**, 211459 (*cryst struct*)
Aizawa, S. *et al., J. Antibiot.*, 1979, **32**, 193-196 (*isol*)

Capuramycin C-103

Antibiotic 446-S3-1. Antibiotic A 500359B. A 500359B
[102135-48-8]



$C_{23}H_{31}N_5O_{12}$ 569.524
Nucleoside antibiotic. Prod. by *Streptomyces griseus*. Active against *Streptococcus pneumoniae* and *Mycobacterium smegmatis*. Amorph. Mp 173-176°. $[\alpha]_D^{25}$ +99 (c, 0.5 in H_2O). λ_{max} 214 (ϵ 16200); 257 (MeOH) (Derep).

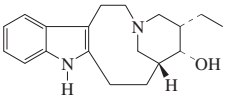
2′-O-*Carbamoyl:* ***Antibiotic A 503083B****. A 503083B*
$C_{24}H_{32}N_6O_{13}$ 612.549
Prod. by *Streptomyces* sp. SANK 62799. Powder. $[\alpha]_D^{29}$ +91 (c, 0.2 in H_2O). λ_{max} 257 (ϵ 10900) (H_2O).

O-*De-Me:* ***Antibiotic A 500359G****. A 500359G*
$C_{22}H_{29}N_5O_{12}$ 555.497
Prod. by *Streptomyces griseus* SANK 60196. Powder. $[\alpha]_D^{20}$ +110 (c, 0.72 in H_2O). λ_{max} 257 (ϵ 10000) (H_2O).

Yamagushi, H. *et al., J. Antibiot.*, 1986, **39**, 1047-1053 (*isol, struct, props, nmr, uv*)
Isono, K. *et al., J. Antibiot.*, 1988, **41**, 1711-1739 (*rev*)
Seto, H. *et al., Tet. Lett.*, 1988, **29**, 2343-2346 (*struct*)
Knapp, S. *et al., J.O.C.*, 1994, **59**, 281-283 (*synth*)
Muramatsu, Y. *et al., J. Antibiot.*, 2003, **56**, 243-252; 253-258; 259-267; 268-279 (*isol, pmr, cmr, biosynth*)
Muramatsu, Y. *et al., J. Antibiot.*, 2004, **57**, 639-646 (*A 503083B*)
Muramatsu, Y. *et al., J. Antibiot.*, 2006, **59**, 601-606 (*prodn*)

Capuronine C-104

*5-Ethyl-1,4,5,6,7,8,9,10-octahydro-2*H*-methanoazacycloundecino[5,4-*b*]indol-6-ol, 9CI*
[57550-22-8]



Absolute Configuration

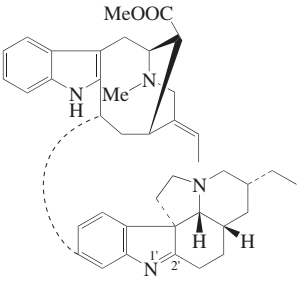
$C_{19}H_{26}N_2O$ 298.427
Alkaloid from stem bark of *Capuronetta elegans* (preferred genus name *Tabernaemontana*) (Apocynaceae). Cryst. (MeOH). Mp 75°. $[\alpha]_D^{20}$ +70 (c, 1 in $CHCl_3$).

O-*Ac:*
Cryst. (MeOH). Mp 135°. $[\alpha]_D^{20}$ -76 (c, 1 in $CHCl_3$).

Chardon-Loriaux, I. *et al., Tet. Lett.*, 1975, 1845 (*isol, uv, ms, pmr, cmr, struct*)

Capuvosidine C-105

[70031-43-5]



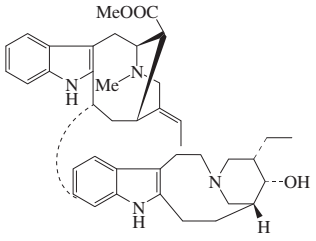
$C_{40}H_{48}N_4O_2$ 616.845
Alkaloid from *Capuronetta elegans* (preferred genus name *Tabernaemontana*) and *Pandaca boiteaui* (Apocynaceae). $[\alpha]_D^{20}$ -7 (c, 0.71 in $CHCl_3$).

1′,2′-Dihydro: ***Dihydrocapuvosidine***
[72186-19-7]
$C_{40}H_{50}N_4O_2$ 618.861
Alkaloid from *Capuronetta elegans* and *Pandaca boiteaui* (Apocynaceae). Amorph. λ_{max} 228 (log ϵ 4.61); 280 (log ϵ 3.99); 286 (log ϵ 3.99); 295 (log ϵ 3.86) (EtOH).

Husson, H.-P. *et al., J. Indian Chem. Soc.*, 1978, **55**, 1099-1102 (*uv, ir, pmr, ms, struct, dihydro*)
Chardon-Loriaux, I. *et al., Phytochemistry*, 1978, **17**, 1605-1608 (*isol, uv, ir, pmr, ms, struct*)
Andriantsiferana, M. *et al., Phytochemistry*, 1979, **18**, 911-912 (*isol, dihydro*)

Capuvosine C-106

[57533-88-7]



$C_{40}H_{50}N_4O_3$ 634.86

Alkaloid from the leaves and stem bark of *Capuronetta elegans* (preferred genus name *Tabernaemontana*) (Apocynaceae). Cryst. (MeOH). Mp 236°. $[\alpha]_D^{20}$ -53 (c, 1 in $CHCl_3$).

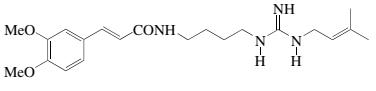
N-*De-Me:* **N-*Demethylcapuvosine***
[70031-42-4]
$C_{39}H_{48}N_4O_3$ 620.833
Alkaloid from *Capuronetta elegans* (Apocynaceae). Amorph. $[\alpha]_D^{20}$ -85 (c, 0.53 in $CHCl_3$).

Deoxy: ***Dehydroxycapuvosine***
[70031-41-3]
$C_{40}H_{50}N_4O_2$ 618.861
Alkaloid from *Capuronetta elegans* and *Pandaca boiteaui* (Apocynaceae). Amorph. $[\alpha]_D^{20}$ -98 (c, 0.83 in $CHCl_3$).

Chardon-Loriaux, I. *et al., Tet. Lett.*, 1975, 1845-1848 (*uv, ir, pmr, struct*)
Husson, H.-P. *et al., J. Indian Chem. Soc.*, 1978, **55**, 1099-1102 (*uv, ir, pmr, ms, Dehydroxycapuvosine*)
Chardon-Loriaux, I. *et al., Phytochemistry*, 1978, **17**, 1605-1608 (*isol, uv, ir, pmr, ms, struct, derivs*)

Caracasanamide C-107

3-(3,4-Dimethoxyphenyl)-N-*[4-[[imino[(3-methyl-2-butenyl)amino]methyl]amino]butyl]-2-propenamide, 9CI*
[128009-16-5]



$C_{21}H_{32}N_4O_3$ 388.509

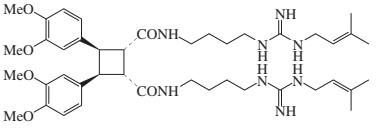
Antihypertensive agent.

(***E*)-*form*** [146269-39-8]
Constit. of *Verbesina caracasana*. Foam.

(***Z*)-*form*** [146269-40-1]
Constit. of *Verbesina caracasana*. Foam. λ_{max} 235 ; 291 ; 316 (MeOH).

Monache, G.D. *et al., Bioorg. Med. Chem. Lett.*, 1992, **2**, 415-418 (*isol, struct*)
Crombie, L. *et al., J.C.S. Perkin 1*, 1992, 3179-3183 (*synth, pmr*)
Monache, G.D. *et al., J. Med. Chem.*, 1993, **36**, 2956-2963 (*synth, uv, ir, pmr, cmr, ms, pharmacol*)

Caracasandiamide C-108



$C_{42}H_{64}N_8O_6$ 777.018

Deriv. of 3,4-Diphenyl-1,2-cyclobutanedicarboxylic acid. Alkaloid from *Verbesina caracasana*. Hypotensive agent. Foam.

Carmignani, M. *et al., J. Med. Chem.*, 1999, **42**, 3116-3125 (*isol, synth, pharmacol, ir, pmr, cmr, ms*)

Caracurine I C-109

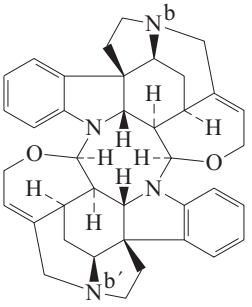
Struct. unknown. Alkaloid from calabash curare (*Strychnos* spp.) (Loganiaceae). Mp 300° (as picrate). Purple-red col. with $Ce(SO_4)_2$, becoming violet on standing.

▶ Highly toxic.

Asmis, H. *et al., Helv. Chim. Acta*, 1954, **37**, 1983-1992

Caracurine V, 9CI C-110

[630-87-5]



$C_{38}H_{40}N_4O_2$ 584.76

Alkaloid from *Strychnos toxifera*, *Strychnos afzelii*, *Strychnos dolichothyrsa*, *Strychnos urcolata*, *Strychnos angolensis*, *Strychnos chrysophylla* and calabash curare. Potent curarising muscle relaxant. Also shows antimicrobial props. Active against gram-positive bacteria and fungi. Amorph. Purple-red col. with $Ce(SO_4)_2$, turning brown on standing. λ_{max} 259 ; 299 (MeOH) (Berdy).

▶ Toxic.

N^b-*Oxide:* ***Caracurine V* N-*oxide***
[66067-01-4]
$C_{38}H_{40}N_4O_3$ 600.759
Alkaloid from *Strychnos dolichothyrsa* (Loganiaceae). Less potent muscle relaxant than Caracurine V but less toxic.

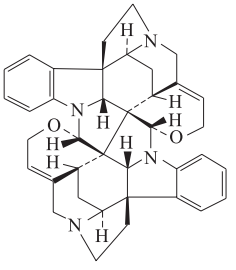
$N^b,N^{b'}$-*Dioxide:* ***Caracurine V di-*N-*oxide***
[66067-02-5]
$C_{38}H_{40}N_4O_4$ 616.758
Alkaloid from *Strychnos dolichothyrsa* and *Strychnos toxifera*. Less potent muscle relaxant than Caracurine V but less toxic. Active against gram-positive bacteria and fungi.

$N^b,N^{b'}$-*Di-Me:* ***Caracurine V dimethosalt***
$C_{40}H_{46}N_4O_2^{2\oplus}$ 614.829
Calabash curare alkaloid. Isom. to Toxiferine I, T-436 under mild acid conds.

Asmis, H. *et al., Helv. Chim. Acta*, 1954, **37**, 1983; 1993 (*isol, uv*)
Bernauer, K. *et al., Helv. Chim. Acta*, 1958, **41**, 2293 (*struct, synth*)
Battersby, A.R. *et al., J.C.S.*, 1960, 736 (*synth*)
Battersby, A.R. *et al., Proc. Chem. Soc., London*, 1961, 413 (*pmr*)
Verpoorte, R. *et al., J. Pharm. Sci.*, 1978, **67**, 171-174 (*isol, cmr, ir, oxides*)
Verpoorte, R. *et al., Planta Med.*, 1978, **33**, 237-242 (*activity*)
Bohlin, L. *et al., Planta Med.*, 6th Ed., 1979, **35**, 19 (*isol*)
Delaude, C. *et al., Bull. Soc. R. Sci. Liege*, 1997, **66**, 183-286 (*occur, Strychnos*)
Zlotos, D.P. *et al., J. Nat. Prod.*, 2000, **63**, 864-865 (*synth, pmr, cmr, abs config*)
Zlotos, D.P. *et al., Eur. J. Org. Chem.*, 2004, 2375-2380 (*pmr, conformn*)

Caracurine II C-111

[5516-84-7]



Absolute configuration

$C_{38}H_{38}N_4O_2$ 582.744

Alkaloid from *Strychnos toxifera* and calabash curare (Loganiaceae). Cryst. Mp 248-249°. $[\alpha]_D^{26}$ -232 (c, 0.66 in $CHCl_3$). Purple col. with $CeSO_4$, turning brown on standing.

$N^b,N^{b'}$-*Di-Me:* ***Toxiferine IX***. *Caracurine II dimethosalt*
$C_{40}H_{44}N_4O_2^{2\oplus}$ 612.813
Alkaloid from *Strychnos toxifera* (Loganiaceae). $[\alpha]_D^{24}$ -106 (c, 1.02 in 50% MeOH aq.). Violet col. with Ce(IV).

King, H. *et al., J.C.S.*, 1949, 3263 (*isol, deriv*)
Asmis, H. *et al., Helv. Chim. Acta*, 1954, **37**, 1983; 1993
Zürcher, A. *et al., J.A.C.S.*, 1958, **80**, 1500 (*isol*)
Battersby, A.R. *et al., J.C.S.*, 1960, 736; 1848 (*deriv*)
Schroeder, H.-D. *et al., Helv. Chim. Acta*, 1961, **44**, 34 (*uv, synth*)
Battersby, A.R. *et al., Proc. Chem. Soc., London*, 1961, 412; 413 (*pmr, uv, struct*)
McPhail, A.T. *et al., Proc. Chem. Soc., London*, 1961, 416 (*cryst struct*)
Bourne, P.E. *et al., J. Crystallogr. Spectrosc. Res.*, 1985, **15**, 453 (*cryst struct, deriv*)

Caracurine III C-112

[1355-13-1]

Struct. unknown. Alkaloid from the bark of *Strychnos toxifera* (Loganiaceae). Characterised as picrate, Mp. >300° (darkening from 210°). Purple-red col. with $Ce(SO_4)_2$, becoming brown-red on standing.

Asmis, H. *et al., Helv. Chim. Acta*, 1954, **37**, 1983-1992 (*isol, uv*)

Caracurine IV C-113

$C_{21}H_{24}N_2O_2$ 336.433

Minimum formula. Struct. unknown. Alkaloid from *Strychnos toxifera* (calabash curare) (Loganiaceae). Mp 300° (as

picrate). Violet col. with $Ce(SO_4)_2$, becoming orange-brown on standing.

Asmis, H. *et al., Helv. Chim. Acta*, 1954, **37**, 1983-1992 (*isol, uv*)

Caracurine IX C-114

Struct. unknown

Alkaloid from calabash curare (*Strychnos* spp.) (Loganiaceae). Mp 260° dec. (as picrate). Red-viol. col. with $Ce(SO_4)_2$, becoming brown on standing.

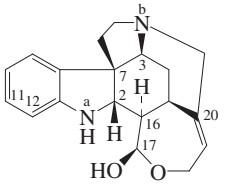
▶ Highly toxic, LD_{50} =1 mg/kg.

Asmis, H. *et al., Helv. Chim. Acta*, 1955, **38**, 1661-1668 (*isol, uv*)

Caracurine VII C-115

19,20-Didehydro-17,18-epoxycuran-17-ol, 9CI. Wieland-Gumlich aldehyde. Deacetyldiaboline

[466-85-3]



Absolute Configuration

$C_{19}H_{22}N_2O_2$ 310.395

Alkaloid from *Strychnos toxifera*, *Strychnos chrysophylla*, *Strychnos dolichothyrsa*, *Strychnos kasengaensis* and other *Strychnos* spp. Prev. known as an important degradn. prod. of strychnine. Key intermed. in the biosynth. of the dimeric calabash curare alkaloids (*C*-curarines, *C*-toxiferines, etc.). Mp 211-213° dec. $[\alpha]_D^{22}$ -134 (c, 0.52 in MeOH). Stable orange colour with $Ce(SO_4)_2$.

▶ Exp. reprod. effects. HI3300000

Picrate: Mp 235-237°.

N^b-*Oxide:* ***Wieland-Gumlich aldehyde* N-oxide**

[174364-49-9]

$C_{19}H_{22}N_2O_3$ 326.394

Alkaloid from the root bark of *Strychnos angolensis*. $[\alpha]_D$ -14 (c, 0.23 in MeOH).

N^a-*Ac:* ***Diaboline***

[509-40-0]

$C_{21}H_{24}N_2O_3$ 352.432

Alkaloid from *Strychnos diaboli, Strychnos potatorum, Strychnos henningsii, Strychnos nux-vomica, Strychnos fendleri, Strychnos castelneana, Strychnos cathayensis, Strychnos pseudoquina* and some other *Strychnos* spp. (Loganiaceae). Weak convulsive and hypotensive agent. Mp 187-189°. $[\alpha]_D^{27}$ +44.8 (c, 1 in EtOH).

▶ HI3162000

N^a-*Ac; hydrochloride:*

Cryst. + $2H_2O$. Mp 238-240° dec. $[\alpha]_D$ +110.5.

N^a-*Ac, picrate:* Mp 234-240°.

N^a-*Ac,* N^b-*oxide:* ***Diaboline* N-oxide**

[85769-35-3]

$C_{21}H_{24}N_2O_4$ 368.432

Alkaloid from root bark of *Strychnos potatorum*.

N^a,O-*Di-Ac:* ***Henningsamine****. Acetyldiaboline*

[2871-28-5]

$C_{23}H_{26}N_2O_4$ 394.469

Alkaloid from *Strychnos henningsii* bark, *Strychnos pungens* and *Strychnos potatorum* (Loganiaceae). Needles (EtOAc/petrol). Mp 205-206°. $[\alpha]_D^{19}$ -43.9 (c, 1 in $CHCl_3$).

N^a,O-*Di-Ac, picrate:*

Needles (MeOH). Mp 229-231°.

N^b-*Me:* ***Hemitoxiferine I****. Alkaloid A8*

[6879-95-4]

$C_{20}H_{25}N_2O_2^{\oplus}$ 325.43

Alkaloid from *Strychnos toxifera* (Loganiaceae). Mp 300° (as chloride). $[\alpha]_D^{24}$ -43 (c, 1 in H_2O). Stable orange colour with $Ce(SO_4)_2$.

Et ether, N^a-*Ac:* ***Ethyldiaboline***

$C_{23}H_{28}N_2O_3$ 380.486

Alkaloid from root bark of *Strychnos castelneana* (Loganiaceae). Mp 283-285° (as picrate). Doubtless an artifact, prob. derived from EtOH present in solvent $CHCl_3$. No CAS Reg. No. 1967-2001 (8CI-14CI).

Deoxy: ***Desoxy-Wieland-Gumlich aldehyde****. 19,20-Didehydro-17,18-epoxycuran*

$C_{19}H_{22}N_2O$ 294.396

Alkaloid from root bark of *Strychnos kasengaensis* and *Strychnos matopensis* and from stem bark of *Strychnos dolichothyrsa* (tentative identification) (Loganiaceae). No CAS Reg. No. 1967-2001 (8CI-14CI).

Deoxy, N^a-*formyl:* ***N^a-Formyloxydeoxy-Wieland-Gumlich aldehyde***

[119308-21-3]

$C_{20}H_{22}N_2O_2$ 322.406

Alkaloid from root bark of *Strychnos matopensis*. $[\alpha]_D$ +39 (c, 0.76 in $CHCl_3$). λ_{max} 218 ; 253 ; 282 ; 290 (MeOH).

2,16-Didehydro, N^a-*Ac:* ***2,16-Dehydrodiaboline***

$C_{21}H_{22}N_2O_3$ 350.416

Alkaloid from *Strychnos henningsii*. No phys. props. reported. No CAS Reg. No. 1967-2001 (8CI-14CI).

3α-Hydroxy, N^a-*Ac:* ***3-Hydroxydiaboline***

[85769-36-4]

$C_{21}H_{24}N_2O_4$ 368.432

Alkaloid from upper stem bark of *Strychnos castelneana* (Loganiaceae). Cryst. (EtOAc/hexane). Mp 218-221°. $[\alpha]_D^{20}$ +86 (c, 0.6 in $CHCl_3$).

11-Methoxy: ***11-Methoxy-Wieland-Gumlich aldehyde***

[36151-17-4]

$C_{20}H_{24}N_2O_3$ 340.421

Alkaloid from *Strychnos angolensis* (Loganiaceae).

11-Methoxy, N^a-*Ac:* ***11-Methoxydiaboline***

[36151-16-3]

$C_{22}H_{26}N_2O_4$ 382.458

Alkaloid from the stem bark of *Strychnos romeu-belenii, Strychnos rubiginosa* and *Strychnos malacoclados*, also from *Strychnos gardneri, Strychnos angolensis* and *Strychnos cathayensis* (Loganiaceae). Prisms (EtOAc). Mp 214-216°. $[\alpha]_D^{20}$ +20 (c, 1 in $CHCl_3$).

11-Methoxy, N^a-*Ac,* N^b-*oxide:* ***11-Methoxydiaboline* N-oxide**

$C_{22}H_{26}N_2O_5$ 398.458

Alkaloid from *Strychnos malacoclados*. Details not publ. (R. Verpoorte). No CAS Reg. No. 1967-2001 (8CI-14CI).

11-Methoxy, N^a,O-*di-Ac:* ***Condensamine****. 11-Methoxyhenningsamine*

[36536-63-7]

$C_{24}H_{28}N_2O_5$ 424.496

Alkaloid from the bark of *Strychnos henningsii*, from *Strychnos holstii* var. *reticulata*, *Strychnos cocculoides* and other *Strychnos* spp. (Loganiaceae). Mp 262-265° (238-240° dec.). $[\alpha]_D^{21}$ -20 ($CHCl_3$). 11-Methoxyhenningsamine and Condensamine are descr. as different alkaloids in the Delaude review, but clearly have the same struct.

11-Methoxy, Me ether: ***17-O-Methyl-11-methoxy-Wieland-Gumlich aldehyde****. 19,20-Didehydro-17,18-epoxy-11,17-dimethoxycuran, 9CI*

[70278-01-2]

$C_{21}H_{26}N_2O_3$ 354.448

Alkaloid from *Strychnos angolensis* (Loganiaceae).

11-Methoxy, 19,20-dihydro, N^a-*Ac:* ***19,20-Dihydro-11-methoxydiaboline***

[69320-14-5]

$C_{22}H_{28}N_2O_4$ 384.474

Alkaloid from *Strychnos malacoclados*.

11-Methoxy, 2,16-didehydro, N^a-*Ac:* ***2,16-Didehydro-11-methoxydiaboline****. 11-Methoxy-2,16-dehydrodiaboline*

$C_{22}H_{24}N_2O_4$ 380.443

Alkaloid from *Strychnos henningsii*. No CAS Reg. No. 1967-2001 (8CI-14CI).

11-Methoxy, 12-hydroxy, N^a-*Ac:* ***12-Hydroxy-11-methoxydiaboline***

[95260-32-5]

$C_{22}H_{26}N_2O_5$ 398.458

Alkaloid from *Strychnos potatorum* and *Strychnos panganensis*. $[\alpha]_D$ -147 (c, 1 in $CHCl_3$).

11-Methoxy, 12-hydroxy, N^a,O-*di-Ac:* ***12-Hydroxy-11-methoxyhenningsamine***

[18797-84-7]

$C_{24}H_{28}N_2O_6$ 440.495

Alkaloid from *Strychnos henningsii*, *Strychnos pungens* and *Strychnos staudtii* (Loganiaceae). $[\alpha]_D^{23}$ -142 (c, 0.7 in $CHCl_3$). V. readily hydrolysed.

17-Epimer, O^{17},N^a-*di-Ac:* ***Jobertine****. O-Acetyldiaboline B*

[2864-87-1]

$C_{23}H_{26}N_2O_4$ 394.469

Alkaloid from the root bark of *Strychnos jobertiana* and trunk bark of *Strychnos castelneana* (Loganiaceae). Mp 87-91° (92-94.5°). $[\alpha]_D^{21}$ +51.2 (c, 1 in $CHCl_3$).

17-Epimer, 11-methoxy, O^{17}-*Me,* N^a-*Ac:* ***17-Epi-11-methoxy-17-O-methyldiaboline***

[70280-98-7]

$C_{23}H_{28}N_2O_4$ 396.485

Alkaloid from *Strychnos angolensis*

(Loganiaceae). Needles (EtOAc/Et_2O). Mp 190-192°.

17-Epimer, 11-methoxy, 12-hydroxy, N^a-*Ac:* ***Henningsoline****. 17-Epi-12-hydroxy-11-methoxydiaboline*
[18797-85-8]
$C_{22}H_{26}N_2O_5$ 398.458
Alkaloid from the bark of *Strychnos henningsii, Strychnos cathayensis* and from stem bark of *Strychnos spinosa* (Loganiaceae). Prisms (Me_2CO). Mp 207-209°. $[\alpha]_D^{20}$ -200 (c, 1 in $CHCl_3$). pK_a 7.1.

17-Epimer, 11-methoxy, 12-hydroxy, N^a-*Ac, perchlorate:*
Prisms (MeOH). Mp 253-254° dec.

17-Epimer, 11-methoxy, 12-hydroxy, N^a-*Ac, picrate:*
Prisms (MeOH aq.). Mp 167-168°.

Wieland, H. *et al., Annalen*, 1932, **494**, 191-200; 1933, **506**, 60-76 (*synth*)
Asmis, H. *et al., Helv. Chim. Acta*, 1954, **37**, 1968-1973; 1993-2001 (*isol, uv*)
Battersby, A.R. *et al., Proc. Chem. Soc., London*, 1959, 126 (*Diaboline, struct*)
Battersby, A.R. *et al., J.C.S.*, 1960, 736-741; 1848-1854 (*Hemitoxiferine*)
Deyrup, J.A. *et al., Helv. Chim. Acta*, 1962, **45**, 2266-2272 (*Diaboline, synth*)
Occlowitz, J. *et al., Farmaco, Ed. Sci.*, 1965, **20**, 751-756 (*Condensamine*)
Grossert, J.S. *et al., J.C.S.*, 1965, 2812-2814; 2814-2818; 2818-2822 (*Henningsamine, Henningsoline, Jobertine, isol*)
Biemann, K. *et al., J.C.S.*, 1965, 2814-2818 (*Henningsamine, struct*)
Delle Monache, F. *et al., Ann. Ist. Super. Sanita*, 1967, **3**, 564; *CA*, **68**, 87440u (*Jobertine, struct*)
Spiteller-Friedmann, M. *et al., Annalen*, 1968, **712**, 179-194 (*Dehydrodiaboline, 2,16-Didehydro-11-methoxydiaboline, Henningsoline*)
Hymon, J.R. *et al., Helv. Chim. Acta*, 1969, **52**, 1564-1602 (*synth*)
Delle Monache, F. *et al., J. Nat. Prod.*, 1970, **33**, 279-283 (*Ethyldiaboline*)
Marini-Bettolo, G.B. *et al., Gazz. Chim. Ital.*, 1971, **101**, 971-980 (*11-Methoxydiaboline*)
Szabó, L. *et al., Acta Chim. Acad. Sci. Hung.*, 1977, **95**, 85-100 (*synth*)
Wenkert, E. *et al., J.O.C.*, 1978, **43**, 1099-1105 (*pmr, cmr*)
Verpoorte, R. *et al., Pharm. Weekbl.*, 1978, **113**, 1249-1261 (*19,20-Dihydro-11-methoxydiaboline*)
Bohlin, L. *et al., Planta Med.*, 1979, **35**, 19-30 (*Strychnos angolensis constits*)
Galeffi, G. *et al., Phytochemistry*, 1982, **21**, 2393-2395 (*3-Hydroxydiaboline*)
Verpoorte, R. *et al., Planta Med.*, 1982, **44**, 21-27 (*Desoxy-Wieland-Gumlich aldehyde*)
Thepenier, P. *et al., Phytochemistry*, 1984, **23**, 2659-2663; 1988, **27**, 657-659 (*Desoxy-Wieland-Gumlich aldehyde, 12-Hydroxy-11-methoxyhenningsamine, 12-Hydroxy-11-methoxydiaboline*)
Ohiri, F.C. *et al., Planta Med.*, 1984, **50**, 446-447 (*Henningsoline, isol, uv, pmr*)
Kapoor, V.K. *et al., Indian J. Chem., Sect. B*, 1988, **27**, 641-644 (*synth, uv, ir, pmr, ms, Diaboline*)
Massiot, G. *et al., Phytochemistry*, 1988, **27**, 3293-3304; 1992, **31**, 2873-2876 (*N-Formyldeoxy-Wieland-Gumlich aldehyde, Diaboline N-oxide*)
Magnus, P. *et al., J.A.C.S.*, 1993, **115**, 8116-8129 (*synth*)
Delaude, C. *et al., Bull. Soc. R. Sci. Liege*, 1995, **64**, 243-246; 1997, **66**, 183-286 (*N-oxide, isol, occur, derivs, rev*)

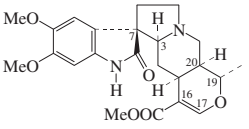
Caracurine VIII C-116

Struct. unknown. Alkaloid from bark of *Strychnos toxifera* (Loganiaceae). Mp 240° dec. (as picrate). Purple red col. with $Ce(SO_4)_2$, becoming brown on standing.
▶ Highly toxic, LD_{50} =1 mg/kg.

Asmis, H. *et al., Helv. Chim. Acta*, 1955, **38**, 1661-1668 (*isol, uv*)

Carapanaubine C-117

Isoreserpiline oxindole B. Vinine
[1255-02-3]



Absolute Configuration

$C_{23}H_{28}N_2O_6$ 428.484
Alkaloid from *Aspidosperma carapanauba, Rauwolfia vomitoria, Cabucala madagascariensis* var. *amygdalifolia* (Apocynaceae). Cryst. (EtOAc/hexane or EtOH aq.). Mp 221-223°. $[\alpha]_D^{30}$ -101 (c, 1.0 in $CHCl_3$). λ_{max} 218 (ϵ 28800); 245 (sh) ; 280 (ϵ 5000); 300 (sh) (EtOH).

N-*Oxide:* ***Carapanaubine* N-*oxide***
[64675-22-5]
$C_{23}H_{28}N_2O_7$ 444.483
Alkaloid from *Rauwolfia vomitoria* (Apocynaceae).

3-Epimer: ***Rauvoxine****. Reserpiline oxindole B. 10,11-Dimethoxyuncarine F*
[4062-36-6]
$C_{23}H_{28}N_2O_6$ 428.484
Alkaloid from the leaves of *Rauwolfia vomitoria* (Apocynaceae). Cryst. (MeOH). Mp 210°. $[\alpha]_D^{20}$ +98 (c, 1.34 in $CHCl_3$/EtOH 199:1). λ_{max} 218 (ϵ 26300); 245 (sh) ; 280 (ϵ 5300); 300 (sh) (EtOH).

7-Epimer: ***Isocarapanaubine****. Isoreserpiline oxindole A*
[17391-09-2]
$C_{23}H_{28}N_2O_6$ 428.484
Alkaloid from *Rauwolfia vomitoria, Rauwolfia salicifolia* and *Ochrosia moorei* (Apocynaceae). Amorph. $[\alpha]_D^{20}$ -64 ($CHCl_3$). λ_{max} 220 (log ϵ 4.52); 245 (sh) (log ϵ 4.19); 300 (sh) (log ϵ 3.91) (EtOH).

20-Epimer: ***10,11-Dimethoxymitraphylline***
$C_{23}H_{28}N_2O_6$ 428.484
Alkaloid from *Cabucala cryptophlebia*. Mp 181° (108-110°). $[\alpha]_D^{20}$ -4.6 (c, 0.21 in $CHCl_3$).

3,7-Diepimer: ***Rauvoxinine****. 10,11-Dimethoxyuncarine D. Reserpiline oxindole A*
[3993-09-7]
$C_{23}H_{28}N_2O_6$ 428.484
Alkaloid from *Rauwolfia vomitoria, Cabucala fasciculata* and *Cabucala madagascariensis* var. *amygdalifolia* (Apocynaceae). Mp 203-204°. $[\alpha]_D^{20}$ +64.6 (c, 1.17 in $CHCl_3$/EtOH 199:1). λ_{max} 218 (ϵ 24500); 245 (sh) ; 280 (ϵ 5600); 300 (sh) (EtOH).

7,19-Diepimer: ***Neisosposinine***
[122923-45-9]
$C_{23}H_{28}N_2O_6$ 428.484
Alkaloid from the stem bark of *Neisosperma oppositifolia*. Plates (Me_2CO). Mp 228-230°. λ_{max} 215 (log ϵ 4.54); 245 (sh) (log ϵ 4.21); 302 (sh) (log ϵ 3.87) (EtOH).

7,20-Diepimer: ***10,11-Dimethoxyisomitraphylline***
[53796-85-3]
$C_{23}H_{28}N_2O_6$ 428.484
Alkaloid from the aerial parts of *Cabucala madagascariensis* var. *amygdalifolia* and the leaves of *Cabucala fasciculata* (Apocynaceae). Mp 142° (115-117). $[\alpha]_D^{20}$ +19.6 (c, 0.2 in $CHCl_3$).

7,20-Diepimer, 16α,17-dihydro: ***Herbaline***
[6516-50-3]
$C_{23}H_{30}N_2O_6$ 430.5
Alkaloid from *Vinca herbacea* (Apocynaceae). Cryst. (EtOH). Mp 276-278° dec. $[\alpha]_D^{20}$ -147 (c, 1.5 in Py). λ_{max} 215 (ϵ 36000); 243 (sh) (ϵ 9450); 273 (ϵ 11250); 305 (ϵ 9900) (EtOH).

Finch, N. *et al., J.A.C.S.*, 1963, **85**, 1520-1523 (*Carapanaubine, synth*)
Gilbert, B. *et al., J.A.C.S.*, 1963, **85**, 1523-1528 (*Carapanaubine, isol, uv, pmr, ms, struct*)
Pousset, J.-L. *et al., C. R. Hebd. Seances Acad. Sci.*, 1964, **259**, 597-600 (*Rauvoxine, Rauvoxinine, isol, pmr, struct*)
Patel, M.B. *et al., J. Pharm. Pharmacol.*, 1964, **16**, 163T-165T (*Rauvoxine, Rauvoxinine, isol, uv, ir*)
Ognyanov, I. *et al., Chem. Ber.*, 1966, **99**, 2052-2056 (*Herbaline*)
Pousset, J.-L. *et al., Bull. Soc. Chim. Fr.*, 1967, 2766-2779 (*Isocarapanaubine, Rauvoxine, Rauvoxinine, synth, ir, uv, pmr, config*)
Ognyanov, I. *et al., Chem. Comm.*, 1967, 579-581 (*Herbaline, stereochem*)
Shamma, M. *et al., J.A.C.S.*, 1967, **89**, 1739-1740 (*stereochem*)
Poisson, J. *et al., Tet. Lett.*, 1967, 1919-1923 (*config*)
Pascard-Billy, C. *et al., Bull. Soc. Chim. Fr.*, 1968, 3289-3295 (*Rauvoxinine, cryst struct*)
Kan-Fan, C. *et al., Phytochemistry*, 1972, **11**, 435 (*Dimethoxyisomitraphylline*)
Iwu, M.M. *et al., Planta Med.*, 1977, **32**, 88 (*Carapanaubine N-oxide*)
Sierra, P. *et al., Coll. Czech. Chem. Comm.*, 1982, **47**, 2912-2921 (*Isocarapanaubine*)
Verpoorte, R. *et al., Org. Magn. Reson.*, 1984, **22**, 328-335 (*cmr*)
Gunatilaka, A.A. *et al., Heterocycles*, 1989, **28**, 999-1005 (*Neisosposinine*)
Rasoanaivo, P. *et al., Fitoterapia*, 2001, **72**, 588-590 (*Dimethoxymitraphylline, Dimethoxyisomitraphylline*)

Carategine C-118

[1355-17-5]

Pyrrolizidine alkaloid. Struct. unknown. Alkaloid from *Solenanthus circinatus, Solenanthus karateginus* and *Rindera oblongifolia* (Boraginaceae). No phys. props. accessible. Conts. halogen, presumably an artifact.

Akramov, S.T. *et al., Dokl. Akad. Nauk UzSSR*, 1965, **22**, 35-38; *CA*, **63**, 16770f

(Carbamoylmethyl)trimethylammonium(1+), 8CI C-119

2-Amino-N,N,N-*trimethyl-2-oxoethanaminium(1+), 9CI. Aminoacetamide trimethylbetaine.* ***Kalidine***

[16676-65-6]

$Me_3N^{\oplus}CH_2CONH_2$

$C_5H_{13}N_2O^{\oplus}$ 117.17

Alkaloid from the aerial parts of *Kalidium gracile* (Chenopodiaceae). Cryst. (Me_2CO aq.) (as chloride). Mp 238-239° (189-192°) (chloride).

▶ BP0715000

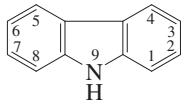
Barrass, B.C. *et al., Br. J. Pharmacol.*, 1968, **34**, 345 (*synth*)

Batbayar, N. *et al., Khim. Prir. Soedin.*, 1987, **23**, 558; *Chem. Nat. Compd. (Engl. Transl.)*, 1987, **23**, 466 (*cryst struct*)

Carbazole, 9CI C-120

9-Azafluorene. Dibenzopyrrole. Diphenylenimine

[86-74-8]



$C_{12}H_9N$ 167.21

Alkaloid from the root bark of *Glycosmis pentaphylla* (Rutaceae). Co-product in manuf. of Anthracene from coal tar. Used in manuf. of dyes. Plates (xylene). Spar. sol. most org. solvs.; sol. hot EtOH. Mp 246.1°. Bp 354.7° Bp_{147} 200°. Sublimes readily. Exhibits practically no basic props. Sol. H_2SO_4, repptd. unchanged by H_2O.

▶ LD_{50} (mus, ipr) 200 mg/kg. FE3150000

[244-56-4 , 244-58-6]

Joule, J.A. *et al., Adv. Heterocycl. Chem.*, 1984, **35**, 83 (*rev*)

Hallberg, A. *et al., J. Het. Chem.*, 1984, **21**, 837 (*ms, cmr*)

Chowdhury, B.K. *et al., Phytochemistry*, 1987, **26**, 2138 (*isol*)

Yamaguchi, H. *et al., Spectrochim. Acta A*, 1987, **43**, 1431 (*uv*)

9*H*-Carbazole-3-carboxaldehyde, 9CI C-121

3-Formylcarbazole. 2-Formylcarbazole (obsol.)

[51761-07-0]

$C_{13}H_9NO$ 195.22

Alkaloid from the roots of *Clausena lansium* (wampee) and *Murraya euchrestifolia* (Rutaceae). Pale yellow needles (C_6H_6), prisms (Me_2CO/hexane). Mp 153-154°.

Hydrazone:
$C_{13}H_{11}N_3$ 209.25
Prisms. Mp 340°.

2,4-Dinitrophenylhydrazone:
Red prisms. Mp 326-328° dec.

N-*Me:* [21240-56-2]
$C_{14}H_{11}NO$ 209.247
Solid (hexane/EtOH). Mp 71-73°.

N-*Et:* [7570-45-8]
$C_{15}H_{13}NO$ 223.274
Mp 85-87°.

N-*Et, methylphenylhydrazone:* [75232-44-9]
$C_{22}H_{21}N_3$ 327.428
Charge-transporting agent for electrophotographic photoreceptors. Cryst. (EtOAc/EtOH). Mp 128-130°.

N-*Et, diphenylhydrazone:* [73276-70-7]
$C_{27}H_{23}N_3$ 389.499
Charge-transporting agent for electrophotographic photoreceptors. No phys. props. accessible.

N-*Ph:* [87220-68-6]
$C_{19}H_{13}NO$ 271.318
Solid (hexane/EtOH). Mp 105-107°.

N-*Methoxy:* **N-*Methoxy-3-formylcarbazole***
[117592-01-5]
$C_{14}H_{11}NO_2$ 225.246
Alkaloid from the root bark of *Murraya euchrestifolia* (Rutaceae). Yellow oil. First example of an *N*-methoxycarbazole alkaloid.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 681A (*ir*)

Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 163C (*nmr*)

Carter, P.H. *et al., J.C.S.*, 1957, 2210-2215 (*synth*)

Ger. Pat., 1980, 3019395; *CA*, **94**, 156746z (*N-Et hydrazones*)

Ito, C. *et al., Chem. Pharm. Bull.*, 1988, **36**, 2377 (*isol, uv, ir, pmr, cmr, ms, struct*)

Kawasaki, T. *et al., Heterocycles*, 1990, **31**, 1605 (*synth, deriv*)

Li, W.-S. *et al., Phytochemistry*, 1991, **30**, 343 (*isol, uv, ir, pmr, cmr, ms*)

Mochizuki, H. *et al., Macromolecules*, 2003, **36**, 3457-3464 (*N-Me, N-Ph*)

9*H*-Carbazole-3-carboxylic acid C-122

2-Carbazolecarboxylic acid (obsol.)

[51035-17-7]

$C_{13}H_9NO_2$ 211.22

Plates (AcOH). Mp 270-272°.

Me ester: ***Methyl 3-carbazolecarboxylate.*** *2-Carbomethoxycarbazole*
[97931-41-4]
$C_{14}H_{11}NO_2$ 225.246
Alkaloid from the roots of *Clausena lansium* (wampee) (Rutaceae). Plates (MeOH). Mp 175-177°.

Et ester: 2-Carbethoxycarbazole
[51035-14-4]
$C_{15}H_{13}NO_2$ 239.273
Cryst. solid. Mp 165-168°.

Hydrazide:
$C_{13}H_{11}N_3O$ 225.249
Prisms (EtOH). Mp 261-263°.

Nitrile: 3-Cyanocarbazole
[57102-93-9]
$C_{13}H_8N_2$ 192.22
Needles (toluene). Mp 184-185°.

N-*Me:* [89374-79-8]
$C_{14}H_{11}NO_2$ 225.246
Solid (Me_2CO). Mp 256-258°.

N-*Me, Me ester:* [89369-35-7]
$C_{15}H_{13}NO_2$ 239.273
Solid (MeOH). Mp 130-132°.

Plant, S.G.P. *et al., J.C.S.*, 1934, 1142-1143 (*synth, Et ester*)

Dunlop, H.G. *et al., J.C.S.*, 1939, 1945-1956 (*synth*)

Preston, R.W.G. *et al., J.C.S.*, 1942, 500-504 (*nitrile*)

Carter, P.H. *et al., J.C.S.*, 1957, 2210-2215 (*Me ester, hydrazide*)

Zelent, B. *et al., Can. J. Chem.*, 1982, **60**, 945-956 (*synth, ir, pmr, ms*)

Moody, C.J. *et al., J.C.S. Perkin 1*, 1990, 673-679 (*Et ester, synth, ir, pmr, ms*)

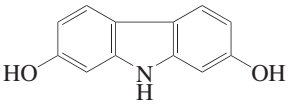
Li, W.-S. *et al., Phytochemistry*, 1991, **30**, 343 (*isol, ester*)

Plekhanova, N.G. *et al., Zh. Org. Khim.*, 2004, **40**, 402-405; *Russ. J. Org. Chem. (Engl. Transl.)*, 2004, **40**, 372-376 (*N-Me, N-Me Me ester*)

Liu, Z. *et al., Tetrahedron*, 2007, **63**, 347-355 (*Me ester, synth*)

9*H*-Carbazole-2,7-diol, 9CI C-123

2,7-Dihydroxycarbazole



$C_{12}H_9NO_2$ 199.209

Di-Me ether: 2,7-Dimethoxycarbazole, 9CI. ***Clausine V***
[61822-18-2]
$C_{14}H_{13}NO_2$ 227.262
Alkaloid from *Clausena excavata*. Mp 272° (synthetic) Mp 238-230° (natural).

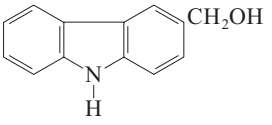
Raj, K. *et al., Indian J. Chem., Sect. B*, 1976, **14**, 371

Zelent, B. *et al., J. Photochem. Photobiol., A*, 1991, **56**, 165

Wu, T.-S. *et al., Phytochemistry*, 1999, **52**, 523-527 (*isol, uv, pmr, ms*)

9*H*-Carbazole-3-methanol C-124

*3-(Hydroxymethyl)-9*H*-carbazole*



$C_{13}H_{11}NO$ 197.236

N-*Me, Ac:* [94054-92-9]
$C_{16}H_{15}NO_2$ 253.3
Cryst. (hexane). Mp 73°.

N-*Et: 3-(Hydroxymethyl)-9-ethyl-9*H*-carbazole*
[24301-79-9]
$C_{15}H_{15}NO$ 225.29
Cryst. (EtOH or cyclohexane/C_6H_6). Mp 87-87.5° (75-76°).

N-*Methoxy: 3-(Hydroxymethyl)-9-methoxy-9*H*-carbazole*
[142768-49-8]
$C_{14}H_{13}NO_2$ 227.262
Alkaloid from the root bark of *Murraya euchrestifolia* (Rutaceae). Oil.

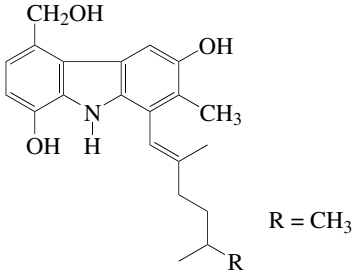
[94054-93-0 , 122624-68-4]

Bruck, P. *et al., J.O.C.*, 1970, **35**, 2222 (*derivs*)

Simionescu, C.I. *et al., J. Polym. Sci., Polym. Chem. Ed.*, 1979, **17**, 2287 (*deriv*)
Natansohn, A. *et al., J. Polym. Sci., Polym. Chem. Ed.*, 1984, **22**, 3161 (*derivs*)
Ito, C. *et al., Chem. Pharm. Bull.*, 1992, **40**, 230 (*isol, deriv*)

Carbazomadurin A C-125

[197703-37-0]



$C_{22}H_{27}NO_3$ 353.46
Prod. by *Actinomadura madurae*. Neuronal cell protectant. Pale yellow powder. Mp 108-110° (dec.). λ_{max} 237 (ϵ 31700); 250 (sh) (ϵ 25800); 289 (sh) (ϵ 7200); 299 (ϵ 9400); 345 (ϵ 6100); 357 (ϵ 6600) (MeOH).

Kotoda, N. *et al., J. Antibiot.*, 1997, **50**, 770-772 (*isol, uv, ir, pmr, cmr*)
Knölker, H.J. *et al., Chem. Comm.*, 2003, 1170-1171 (*synth*)

Carbazomadurin B C-126

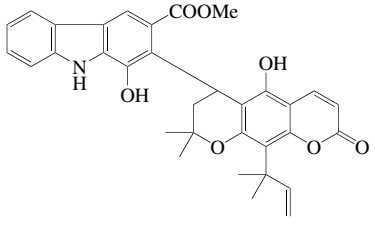
[197703-38-1]
As Carbazomadurin A, C-125 with
R = CH_2CH_3

$C_{23}H_{29}NO_3$ 367.487
Prod. by *Actinomadura madurae*. Neuronal cell protectant. Pale yellow powder. Mp 108-110° (dec.). $[\alpha]_D^{24}$ +4 (c, 0.05 in MeOH). λ_{max} 237 (ϵ 35700); 249 (sh) (ϵ 29100); 289 (sh) (ϵ 7400); 299 (ϵ 10400); 347 (ϵ 6500); 357 (ϵ 7300) (MeOH).

Kotoda, N. *et al., J. Antibiot.*, 1997, **50**, 770-772 (*isol, uv, ir, pmr, cmr*)

Carbazomarin A C-127

[184427-83-6]

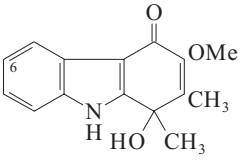


$C_{33}H_{31}NO_7$ 553.61
Alkaloid from root bark of *Clausena excavata*. Yellow powder. Mp 238-239°. $[\alpha]_D$ -27 (c, 0.0259 in $CHCl_3$). λ_{max} 215 (log ϵ 4.47); 240 (log ϵ 4.4); 253 (sh) (log ϵ 4.38); 267 (log ϵ 4.58); 326 (sh) (log ϵ 4.12); 338 (log ϵ 4.14) (MeOH).

Wu, T.-S. *et al., Tet. Lett.*, 1996, **37**, 7819-7822 (*isol, uv, ir, pmr, cmr, ms, struct*)

Carbazomycin G C-128

*1,9-Dihydro-1-hydroxy-3-methoxy-1,2-dimethyl-4*H*-carbazol-4-one, 9CI*
[115920-44-0]



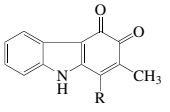
$C_{15}H_{15}NO_3$ 257.288
Isol. from *Streptoverticillium ehimense*. Shows moderate antifungal activity. Prisms. Mp 241-243° Mp 266-268°. Racemic. λ_{max} 214 (ϵ 33200); 253 (ϵ 19800); 272 (sh) (ϵ 8600); 278 (ϵ 7400); 340 (ϵ 5600) (MeOH) (Derep).

6-Methoxy: ***Carbazomycin H***
[115920-42-8]
$C_{16}H_{17}NO_4$ 287.315
From *Streptoverticillium ehimense*. Shows no significant biol. activity. Prisms. Sol. EtOAc, MeOH; poorly sol. H_2O, hexane. Mp 228-230°. Racemic. λ_{max} 214 (ϵ 35700); 253 (ϵ 23800); 261 (sh) (ϵ 20300); 292 (ϵ 10100); 310 (sh) (ϵ 5800); 340 (ϵ 3500) (MeOH) (Derep).

Kaneda, M. *et al., J. Antibiot.*, 1988, **41**, 602-608 (*isol, pmr, cmr, ir, uv, struct*)
Hagiwara, H. *et al., Tetrahedron*, 2000, **56**, 5807-5811 (*synth*)
Knölker, H.J. *et al., Eur. J. Org. Chem.*, 2003, 740-746 (*synth*)

Carbazoquinocin C-129

*1-Alkyl-2-methyl-3*H*-carbazole-3,4(9*H*)-dione. CW 69. WS 63967. Antibiotic CW 69. Antibiotic WS 63967*



Carbazoquinocin A - R = $CH_2CH_2CH(CH_3)CH_2CH_3$ (*S*-)

Carbazoquinocin B - R = $(CH_2)_4CH(CH_3)_2$

Carbazoquinocin C - R = $(CH_2)_6CH_3$

Carbazoquinocin D - R = $(CH_2)_4CH(CH_3)CH_2CH_3$ (S-)

Carbazoquinocin E - R = $(CH_2)_5CH(CH_3)_2$

Carbazoquinocin F - R = $(CH_2)_6CH(CH_3)_2$

Antibiotic WS 63967A - R = $(CH_2)_4CH_3$

Antibiotic WS 63967C - R = $(CH_2)_5CH_3$

Carbazole antibiotic complex. Prod. by *Streptomyces violaceus* and *Streptomyces griseochromogenes*. Antioxidant and GMP phosphodiesterase inhibitor.

Carbazoquinocin A

*2-Methyl-1-(3-methylpentyl)-3*H*-carbazole-3,4(9*H*)-dione. WS 63967B. Antibiotic WS 63967B. CW 69A. Antibiotic CW 69A*
[164322-78-5]
$C_{19}H_{21}NO_2$ 295.38
Dark green powder. Mp 210-212°. λ_{max} 240 (ϵ 13500); 284 (ϵ 11500); 453 (ϵ 3500) (MeOH/NaOH) (Derep). λ_{max} 228 (ϵ 14200); 264 (ϵ 11200); 398 (ϵ 2700) (MeOH) (Derep).

Carbazoquinocin B

*2-Methyl-1-(5-methylhexyl)-3*H*-carbazole-3,4(9*H*)-dione. WS 63967D. Antibiotic WS 63967D. CW 69B. Antibiotic CW 69B*
[155233-26-4]
$C_{20}H_{23}NO_2$ 309.407
Dark green powder. Mp 213-217°. λ_{max} 240 (ϵ 13500); 284 (ϵ 11500); 453 (ϵ 3500) (MeOH/NaOH) (Derep). λ_{max} 228 (ϵ 14200); 264 (ϵ 11200); 398 (ϵ 2700) (MeOH) (Derep).

Carbazoquinocin C

*1-Heptyl-2-methyl-3*H*-carbazole-3,4(9*H*)-dione. WS 63967E. Antibiotic WS 63967E. CW 69C. Antibiotic CW 69C*
[155233-27-5]
$C_{20}H_{23}NO_2$ 309.407
Dark green powder. Mp 227-228° (210-212°). λ_{max} 240 (ϵ 13500); 284 (ϵ 11500); 453 (ϵ 3500) (MeOH/NaOH) (Derep). λ_{max} 228 (ϵ 14200); 264 (ϵ 11200); 398 (ϵ 2700) (MeOH) (Derep).

Carbazoquinocin D

*2-Methyl-1-(5-methylheptyl)-3*H*-carbazole-3,4(9*H*)-dione. WS 63967F. Antibiotic WS 63967F. CW 69D. Antibiotic CW 69D*
[155233-28-6]
$C_{21}H_{25}NO_2$ 323.434
Dark green powder. Mp 208-210°. λ_{max} 240 (ϵ 12100); 284 (ϵ 10700); 453 (ϵ 3200) (MeOH/NaOH) (Derep). λ_{max} 228 (ϵ 12700); 264 (ϵ 10600); 398 (ϵ 2400) (MeOH) (Derep).

Carbazoquinocin E

*2-Methyl-1-(6-methylheptyl)-3*H*-carbazole-3,4(9*H*)-dione. CW 69E. Antibiotic CW 69E*
[164177-49-5]
$C_{21}H_{25}NO_2$ 323.434
Dark green powder. Mp 209-210°. λ_{max} 240 (ϵ 12100); 284 (ϵ 10700); 453 (ϵ 3200) (MeOH/NaOH) (Derep). λ_{max} 228 (ϵ 12700); 264 (ϵ 10600); 398 (ϵ 2400) (MeOH) (Derep).

Carbazoquinocin F

*2-Methyl-1-(7-methyloctyl)-3*H*-carbazole-3,4(9*H*)-dione. CW 69F. Antibiotic CW 69F*
[164177-50-8]
$C_{22}H_{27}NO_2$ 337.461
Dark green powder. Mp 208-210°. λ_{max} 240 (ϵ 12100); 284 (ϵ 10700); 453 (ϵ 3200) (MeOH/NaOH) (Derep). λ_{max} 228 (ϵ 12700); 264 (ϵ 10600); 398 (ϵ 2400) (MeOH) (Derep).

Antibiotic WS 63967A

*2-Methyl-1-pentyl-3*H*-carbazole-3,4(9*H*)-dione. WS 63967A*
[155233-23-1]

$C_{18}H_{19}NO_2$ 281.354

Antibiotic WS 63967C

*1-Hexyl-2-methyl-3*H*-carbazole-3,4(9*H*)-dione. WS 63967C*

[155233-25-3]

$C_{19}H_{21}NO_2$ 295.38

[155233-24-2]

Japan. Pat., 1993, 93 301 857; *CA*, **121**, 7425t (*Carbazoquinocins, isol, struct*)

Tanaka, M. *et al., J. Antibiot.*, 1995, **48**, 326-328 (*Carbazoquinocins, isol, uv, ir, pmr, cmr*)

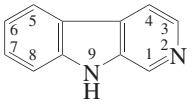
Choshi, T. *et al., J.O.C.*, 1997, **62**, 2535-2543 (*Carbazoquinocins C,D,E,F, synth, ir, pmr, cmr*)

Knoelker, H.-J. *et al., Synthesis*, 2002, 557-564 (*Carbazoquinocin C, synth, ir, uv, pmr, cmr, ms*)

β-Carboline C-130

*9*H*-Pyrido[3,4-*b*]indole, 9CI. 2,9-Diazafluorene. Norharman. 2-Carboline. Carbazoline*†

[244-63-3]



$C_{11}H_8N_2$ 168.198

Constit. of espresso coffee. Alkaloid from *Chrysophyllum lacourtianum*, *Nocardia* sp., *Catharanthus roseus* leaves, *Lolium perenne*, *Strychnos johnsonii*, *Strychnos potatorum*, and *Festuca arundinacea*. Prod. by *Streptomyces* sp., a metab. from the New Zealand ascidian *Ritterella sigillinoides*. Also a trace constit. of the fluorescent dinoflagellate *Noctiluca miliaris*. Plant growth and enzyme inhibitor. Potentiator of benzo[*a*]pyrene induced mutagenicity, antiparasitic, antirypanosomal agent. A comutagen with aromatic amines active towards bacteria. Needles (EtOH). Sol. hot H_2O; spar. sol. C_6H_6, petrol. Mp 198.5°. Blue fluor. in dil. acid soln. λ_{max} 235 (ϵ 31000); 290 ; 350 (ϵ 4600) (MeOH) (Berdy).

► Exp. nephrotoxic at high doses. A comutagen. UU9350000

N^2*-Oxide:* [24223-07-2]
$C_{11}H_8N_2O$ 184.197
Mp 256°.

N^2*-Me: 2-Methyl-9*H*-pyrido[3,4-*b*]indolium. **Normelinonine F***
[17994-14-8]
[5667-11-8 , 21951-87-1]
$C_{12}H_{11}N_2^{\oplus}$ 183.232
Quaternary alkaloid from *Strychnos usambarensis* (Loganiaceae). Antimitotic agent. Poorly sol. hexane.

*3,4-Dihydro, 9-Ac: 9-Acetyl-4,9-dihydro-3*H*-pyrido[3,4-*b*]indole, 9CI. 9-Acetyl-3,4-dihydro-β-carboline*
[76528-83-1]
$C_{13}H_{12}N_2O$ 212.251
Alkaloid from the roots of *Adhatoda vasica* (Acanthaceae). Mp 165-166°
Mp 187-188° (as hydrochloride).

1,2,3,4-Tetrahydro, 2-Me: see 1,2,3,4-Tetrahydro-2-methyl-β-carboline, T-203 [244-66-6]

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 681D (*ir*)

Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 164C (*nmr*)

Kermack, W.O. *et al., J.C.S.*, 1921, **119**, 1602-1642 (*synth*)

Späth, E. *et al., Ber.*, 1940, **73**, 719-723 (*synth*)

Pruckner, F. *et al., Annalen*, 1943, **554**, 127-144 (*uv*)

Poindexter, E.H. *et al., Phytochemistry*, 1961, **1**, 215 (*isol, uv, ir*)

Coutts, R.T. *et al., Org. Mass Spectrom.*, 1970, **3**, 879 (*ms*)

Balkau, F. *et al., Aust. J. Chem.*, 1973, **26**, 1501 (*pmr*)

Bush, L.P. *et al., J. Chromatogr.*, 1975, **111**, 165 (*isol*)

Deumie, M. *et al., J. Photochem.*, 1979, **10**, 365 (*uv*)

Inoue, S. *et al., Chem. Lett.*, 1980, 297-298 (*isol, dinoflagellate*)

Bobbitt, J.M. *et al., J.O.C.*, 1980, **45**, 1978 (*synth*)

Jain, M.P. *et al., Phytochemistry*, 1980, **19**, 1880 (*9-Ac-3,4-dihydro*)

Sugimura, T. *et al., Biol. React. Intermed. 2, Chem. Mech. Biol. Eff.*, Snyder, R. *et al* (ed.), (see *Adv. Exp. Med. Biol.* v136A-136B), Plenum Press, 1982, 1011 (*comutagenicity*)

Caprasse, M. *et al., J. Pharm. Belg.*, 1983, **38**, 135-139 (*Normelinonine F*)

Nakagawa, M. *et al., Tet. Lett.*, 1983, **24**, 2171 (*synth*)

Hiemstra, H.C. *et al., Tetrahedron*, 1983, **39**, 3981 (*synth*)

Becalski, A. *et al., Acta Pol. Pharm.*, 1984, **41**, 601 (*synth*)

Koike, K. *et al., Org. Magn. Reson.*, 1984, **22**, 471 (*cmr*)

Atta-ur-Rahman, *et al., Planta Med.*, 1985, 287 (*isol, uv, ir, pmr, cmr, ms*)

Rommelspacher, H. *et al., Prog. Drug Res.*, 1985, **29**, 415 (*rev*)

Yomosa, K. *et al., Agric. Biol. Chem.*, 1987, **51**, 921 (*isol, bibl*)

Lake, R.J. *et al., Aust. J. Chem.*, 1989, **42**, 1201 (*isol, uv, ir, pmr, cmr*)

Hagiwara, A. *et al., Toxicol. Pathol.*, 1992, **20**, 197 (*tox*)

Rocca, P. *et al., Tetrahedron*, 1993, **49**, 49 (*synth*)

Nakano, K. *et al., Mutat. Res.*, 2000, **470**, 141-146 (*comutagenicity, pmr*)

Kast, O. *et al., Synth. Commun.*, 2003, **33**, 3843-3850 (N^2*-oxide*)

Alves, R.C. *et al., J. Agric. Food Chem.*, 2007, **55**, 1832-1838 (*isol*)

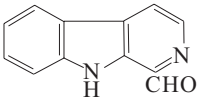
Huang, W. *et al., Synth. Commun.*, 2007, **37**, 2137-2143 (*synth, ir, pmr*)

Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, NNR300

β-Carboline-1-carboxaldehyde C-131

*9*H*-Pyrido[3,4-*b*]indole-1-carboxaldehyde, 9CI. 1-Formyl-β-carboline. **Kumujian C***

[20127-63-3]



$C_{12}H_8N_2O$ 196.208

Alkaloid from the wood of *Picrasma quassioides* (Simaroubaceae). Yellow needles (Me_2CO). Mp 202° (198-200°).

Jordaan, A. *et al., J. S. Afr. Chem. Inst.*, 1968, **21**, 22 (*synth*)

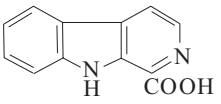
Koike, K. *et al., Org. Magn. Reson.*, 1984, **22**, 471 (*cmr*)

Ohmoto, T. *et al., Chem. Pharm. Bull.*, 1984, **32**, 3579 (*isol, uv, ir, synth*)

β-Carboline-1-carboxylic acid C-132

*9*H*-Pyrido[3,4-*b*]indole-1-carboxylic acid, 9CI*

[26052-96-0]



$C_{12}H_8N_2O_2$ 212.207

Bright yellow cryst. Insol. most solvs. Mp 272° dec. (235°).

Me ester: ***1-Methoxycarbonyl-β-carboline****. 1-Carbomethoxy-β-carboline*
[3464-66-2]
$C_{13}H_{10}N_2O_2$ 226.234
Isol. from stem bark of *Pleiocarpa mutica* and from *Nauclea diderrichii*, *Ailanthus malabarica*, *Ailanthus altissima*, *Aeschrion crenata* (preferred genus name *Picrasma*), *Commelina communis* and *Picrasma* spp. (e.g. *Picrasma quassinoides*) (Apocynaceae, Rubiaceae, Simaroubaceae). Active against gram-positive bacteria. Needles by subl. Mp 165-168° (160-161°). λ_{max} 246 (ϵ 14800); 256 (ϵ 18200); 257 (ϵ 18200); 275 (ϵ 20420); 301 (ϵ 11750); 370 (ϵ 6760) (EtOH).

Et ester: ***1-Ethoxycarbonyl-β-carboline****. 1-Carbethoxy-β-carboline. Kumujian A*
[72755-19-2]
$C_{14}H_{12}N_2O_2$ 240.261
Alkaloid from the wood of *Picrasma quassioides* (Simaroubaceae). Needles (Me_2CO). Mp 123°. λ_{max} 218 (log ϵ 4.9); 247 (log ϵ 4.52); 258 (log ϵ 4.52); 288 (log ϵ 4.56); 302 (log ϵ 4.31); 368 (log ϵ 4.06) (EtOH).

Butyl ester: ***1-Butoxycarbonyl-β-carboline****. 1-Carbobutoxy-β-carboline*
[153535-98-9]
$C_{16}H_{16}N_2O_2$ 268.315
Alkaloid from *Polygala tenuifolia*. Component of Yuan Zhi. Mp 95°.

Amide: ***1-Carbamoyl-β-carboline****. β-Carboline-1-carboxamide. Harman carboxamide*
[38940-60-2]
$C_{12}H_9N_3O$ 211.223
Isol. from *Nauclea diderrichii* and *Ailanthus malabarica* bark and roots (Simaroubaceae). Also present in root bark of *Strychnos potatorum* (Loganiaceae). Pale yellow needles (CH_2Cl_2). Mp 230° (224-226°). Erroneously claimed to be novel by Massiot *et al.* λ_{max} 214 (ϵ 36000); 240 (sh) (ϵ 17400); 244 (ϵ 18200); 250 (sh) (ϵ 17000); 270 (ϵ 17800); 298 (ϵ 10000); 366 (ϵ 5900) (no solvent reported).

Nitrile: 1-Cyano-β-carboline

[79960-43-3]
$C_{12}H_7N_3$ 193.207
Yellow needles (toluene/$CHCl_3$). Mp 230-232°.

Snyder, H.R. *et al., J.A.C.S.*, 1949, **71**, 527-529 (*synth*)
Kump, C. *et al., Helv. Chim. Acta*, 1963, **46**, 498-505 (*Me ester, synth, uv*)
Achenbach, H. *et al., J.A.C.S.*, 1965, **87**, 4177-4181 (*Me ester, isol, ir, uv, ms, pmr*)
Sánchez, E. *et al., Phytochemistry*, 1971, **10**, 2155-2159 (*Me ester, isol*)
McLean, S. *et al., Can. J. Chem.*, 1972, **50**, 1478-1485 (*Me ester, amide, isol*)
Kondo, Y. *et al., Chem. Pharm. Bull.*, 1973, **21**, 837-839 (*Me ester, isol, uv, pmr*)
Joshi, B.S. *et al., Heterocycles*, 1977, **7**, 193-200 (*amide, ester*)
Yang, J.S. *et al., Yaoxue Xuebao*, 1979, **14**, 167-177 (*Me ester, activity*)
Yang, J.-S. *et al., CA*, 1980, **92**, 72679a (*isol*)
Ohmoto, T. *et al., Chem. Pharm. Bull.*, 1984, **32**, 3579-3583 (*esters, isol, uv, ir, synth*)
Koike, K. *et al., Org. Magn. Reson.*, 1984, **22**, 471-473 (*cmr*)
Rinehart, K.L. *et al., J.A.C.S.*, 1987, **109**, 3378-3387 (*nitrile, synth*)
Massiot, G. *et al., Phytochemistry*, 1992, **31**, 2873-2876 (*amide*)
Jin, B. *et al., CA*, 1994, **120**, 240067s (*butyl ester, isol*)
Panosyan, F.B. *et al., Can. J. Chem.*, 2001, **79**, 1110-1114 (*Me ester, synth, ir, pmr*)
Kast, O. *et al., Synth. Commun.*, 2003, **33**, 3843-3850 (*amide, nitrile*)

β-Carboline-3-carboxylic acid C-133

*9*H-*Pyrido[3,4-*b*]indole-3-carboxylic acid, 9CI. Norharmancarboxylic acid*
[74214-63-4]
$C_{12}H_8N_2O_2$ 212.207
Esters are benzodiazepine tranquilliser antagonists. Lemon-yellow plates (AcOH) or pale buff powder. Mp 309-310° dec. (303-305°). Gives blue fluorescence in dilute mineral acids.

Monohydrate: Mp 275-283° (250°).

Me ester: ***3-Methoxycarbonyl-β-carboline***
[69954-48-9]
$C_{13}H_{10}N_2O_2$ 226.234
Prod. by *Streptomyces* sp. Ma5373. Diazepam antagonist, tranquilliser. Cryst. (MeCN). Mp 261-262° (248-249°). Mp highly dependent on rate of heating.

Et ester: ***3-Ethoxycarbonyl-β-carboline***
[74214-62-3]
$C_{14}H_{12}N_2O_2$ 240.261
Isol. from human urine and brain tissue prob. as artifact. Alkaloid from *Picrasma quassioides* (Simaroubaceae). Cryst. (EtOAc/hexane) or yellow needles (MeOH). Mp 229-230° (222-224°). λ_{max} 215 ; 242 ; 279 (no solvent reported).

Propyl ester: [76808-18-9]
$C_{15}H_{14}N_2O_2$ 254.288
Cryst. (MeCN). Mp 187-188°.

Amide: [88932-13-2]
$C_{12}H_9N_3O$ 211.223
Cryst. (MeOH). Mp 320° dec. (318-319°).

Methylamide: N-*Methyl-β-carboline-3-carboxamide. β-CCA methylamide. FG 7142*
[78538-74-6]
$C_{13}H_{11}N_3O$ 225.249
Formed naturally during the combustion process of many plant leaves, most notably tobacco. Component of cigarette smoke. Benzodiazepine partial inverse receptor agonist. Anxiogenic agent. Anorectic. Mp 265° dec.

Ethylamide: [78538-80-4]
$C_{14}H_{13}N_3O$ 239.276
Mp 247-249° dec.

*2-Me: 3-Carboxy-2-methyl-9*H*-pyrido[3,4-*b*]indolinium inner salt.* ***3-Carboxy-2-methyl-β-carbolinium***
[228091-07-4]
$C_{13}H_{10}N_2O_2$ 226.234
Quaternary alkaloid from the soft coral *Lignopsis spongiosum*. Pale yellow solid (MeOH). Mp 203-205°. λ_{max} 210 (log ε 4.16); 236 (log ε 4.05); 264 (log ε 4.26); 308 (log ε 3.88); 384 (log ε 3.45) (MeOH).

9-Me, Me ester: [82596-95-0]
$C_{14}H_{12}N_2O_2$ 240.261
Cryst. (MeOH). Mp 200-201°.

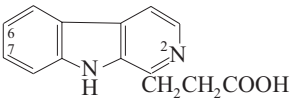
Tetrahydro: see 2,3,4,9-Tetrahydro-1*H*-pyrido[3,4-*b*]indole-3-carboxylic acid, T-224

1-Methoxy: 1-Methoxy-β-carboline-3-carboxylic acid. ***Taraxacine B***
$C_{13}H_{10}N_2O_3$ 242.234
Alkaloid from the aerial parts of *Taraxacum formosanum*. Pale yellow syrup. λ_{max} 216 (log ε 4.3); 232 (log ε 4.3); 270 (log ε 4.4); 287 (sh) (log ε 4); 303 (log ε 3.8); 333 (log ε 3.5); 346 (log ε 3.5) (MeOH).

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 682D (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 167A; 167B (*nmr*)
King, H. *et al., J.C.S.*, 1937, 466-473 (*synth*)
Braestrup, C. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 1980, **77**, 2288-2292 (*isol, ms, pmr, cmr*)
Petersen, E.N. *et al., Eur. J. Pharmacol.*, 1982, **82**, 217-221 (*methylamide, pharmacol*)
Cain, M. *et al., J. Med. Chem.*, 1982, **25**, 1081-1091 (*9-Me Me ester*)
Lippke, K.P. *et al., J. Med. Chem.*, 1983, **26**, 499-503 (*synth, propyl ester, pharmacol*)
Coutts, R.T. *et al., Heterocycles*, 1984, **22**, 131-142 (*amides*)
Moody, C.J. *et al., J.C.S. Perkin 1*, 1984, 2895-2901 (*synth*)
Plate, R. *et al., J.O.C.*, 1986, **51**, 309-314 (*synth*)
Maclaren, J.A. *et al., Aust. J. Chem.*, 1989, **42**, 813-821 (*synth, bibl*)
Koike, K. *et al., Phytochemistry*, 1990, **29**, 3060-3061 (*Et ester*)
Dekhane, M. *et al., Tetrahedron*, 1994, **50**, 6299-6306 (*synth*)
Cabrera, G.M. *et al., J. Nat. Prod.*, 1999, **62**, 759-760 (*3-Carboxy-2-methyl-β-carbolinium*)
Kubicki, M. *et al., Acta Cryst. C*, 2001, **57**, 728-729 (*Me ester, cryst struct*)
Leu, Y.-L. *et al., Chem. Pharm. Bull.*, 2003, **51**, 599-601 (*Taraxacine B*)
Evans, A.K. *et al., CNS Drug Rev.*, 2007, **13**, 475-501 (*methylamide, rev, pharmacol*)

β-Carboline-1-propanoic acid C-134

*9*H-*Pyrido[3,4-*b*]indole-1-propanoic acid, 9CI*
[89915-39-9]



$C_{14}H_{12}N_2O_2$ 240.261
Alkaloid from the wood of *Picrasma quassioides*. Isol. from the mushrooms *Boletus curtisii* and *Cortinarius infractus*. Needles ($CHCl_3$/MeOH). Mp 215°. λ_{max} 212 (log ε 4.24); 236 (log ε 4.47); 250 (sh) (log ε 4.34); 282 (sh) (log ε 3.92); 288 (log ε 4.1); 302 (sh) (log ε 3.64); 338 (log ε 3.57); 350 (log ε 3.6) (MeOH).

Me ester: ***Infractine****. Kumujanrine*
[91147-07-8]
$C_{15}H_{14}N_2O_2$ 254.288
Alkaloid from the fruiting bodies of the gilled agaric *Cortinarius infractus* and from the wood of *Picrasma quassioides*. Cryst. (toluene). Mp 145-146°.

Et ester: ***Ethyl β-carboline-1-propionate***
[90686-24-1]
$C_{16}H_{16}N_2O_2$ 268.315
Alkaloid from the roots of *Hannoa klaineana* (Simaroubaceae). Whitish-yellow needles (EtOH or C_6H_6/petrol). Mp 125-126°.

*Et ester, 2*N*-oxide:* ***Ethyl β-carboline-2*****N*****-oxide-1-propionate***
[90686-25-2]
$C_{16}H_{16}N_2O_3$ 284.314
Alkaloid from the roots of *Hannoa klaineana* (Simaroubaceae). Whitish-yellow needles (EtOH).

Pentyl ester: ***Pentyl β-carboline-1-propionate***
$C_{19}H_{22}N_2O_2$ 310.395
Alkaloid from the roots of *Eurycoma longifolia*. Yellow powder (C_6H_6). Mp 127° dec. λ_{max} 235 (log ε 3.9); 247 (log ε 3.85); 289 (log ε 3.6); 303 (log ε 3.5); 335 (log ε 3.07); 350 (log ε 3.08); 376 (log ε 2.93) (MeOH).

N-*Me:*
$C_{15}H_{14}N_2O_2$ 254.288
Alkaloid from the mushroom *Boletus curtisii*. Straw-yellow solid. Mp > 340°. Zwitterionic. λ_{max} 254 (log ε 4.46); 308 (log ε 4.29); 374 (log ε 3.67) (MeOH).

6-Hydroxy, Me ester: ***6-Hydroxyinfractine***
[91147-08-9]
$C_{15}H_{14}N_2O_3$ 270.287
Alkaloid from the fruiting bodies of the gilled agaric *Cortinarius infractus*. Yellow cryst. +1H_2O (MeOH aq.). Mp 130° Mp 310-320° (double Mp).

7-Hydroxy: ***7-Hydroxy-β-carboline-1-propanoic acid***
$C_{14}H_{12}N_2O_3$ 256.26
Alkaloid from *Eurycoma harmandiana* and *Fontinalis squamosa*. Microcryst. powder. Mp 245° dec.

6-Methoxy: 6-Methoxy-β-carboline-1-propanoic acid. ***Aervolanine****. Ervolanine*

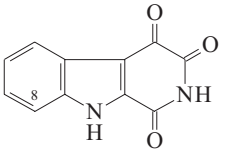
[139742-35-1]
$C_{15}H_{14}N_2O_3$ 270.287
Alkaloid from aerial parts of *Aerva lanata* (Amaranthaceae). Yellow needles (EtOH). Mp 194-196°.

7-Methoxy: ***7-Methoxy-β-carboline-1-propanoic acid***
[137756-13-9]
$C_{15}H_{14}N_2O_3$ 270.287
Alkaloid from the roots of *Eurycoma longifolia* (Simaroubaceae). Shows antimalarial activity. Needles. Mp 160-162°.

Haynes, H.F. *et al., Aust. J. Sci. Res., Ser. A*, 1952, **5**, 387 (*synth*)
Ohmoto, T. *et al., Chem. Pharm. Bull.*, 1984, **32**, 3579 (*isol, uv, ir, synth*)
Yang, J. *et al., Huaxue Xuebao*, 1984, **42**, 679; *CA*, **101**, 207605a (*isol, Infractine*)
Koike, K. *et al., Org. Magn. Reson.*, 1984, **21**, 471 (*cmr*)
Lumonadio, L. *et al., Phytochemistry*, 1984, **23**, 453 (*isol, uv, ir, pmr, ms, struct, derivs*)
Steglich, W. *et al., Tet. Lett.*, 1984, **25**, 2341 (*isol, uv, ir, pmr, cmr, ms, Infractine, 6-Hydroxyinfractine*)
Kardono, L.B.S. *et al., J. Nat. Prod.*, 1991, **54**, 1360 (*7-Methoxy-β-carboline-1-propanoic acid*)
Zapesochnaya, G. *et al., Planta Med.*, 1992, **58**, 192 (*6-Methoxy-β-carboline-1-propanoic acid*)
Nowak, W. *et al., Annalen*, 1993, 153 (*synth, Infractine, 6-Hydroxyinfractine*)
Bracher, F. *et al., Pharmazie*, 1995, **50**, 182 (*synth*)
Salm, R.F. *et al., Phytochemistry*, 1998, **49**, 887-892 (*7-Hydroxy-β-carboline-1-propanoic acid*)
Kanchanapoom, T. *et al., Phytochemistry*, 2001, **56**, 383-386 (*7-Hydroxy-β-carboline-1-propanoic acid*)
Kuo, P.C. *et al., J. Nat. Prod.*, 2003, **66**, 1324-1327 (*pentyl ester*)
Bröckelmann, M.G. *et al., Eur. J. Org. Chem.*, 2004, 4856-4863 (*isol, uv, pmr, cmr, ms*)

β-Carboline-1,3,4-trione C-135

9H-Pyrido[3,4-b]indole-1,3,4(2H,9H)-trione, 9CI, 8CI
[16641-79-5]



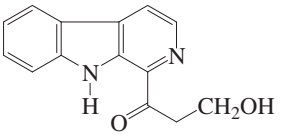
$C_{11}H_6N_2O_3$ 214.18
Alkaloid from *Picrasma quassioides* (Simaroubaceae). Yellow prisms (MeOH aq.). Mp 300°.

8-Methoxy: 8-Methoxy-β-carboline-1,3,4-trione. 8-Methoxy-9H-pyrido[3,4-b]carbazole-1,3,4(2H,9H)-trione, 9CI. ***Picrasidine V***
[131653-92-4]
$C_{12}H_8N_2O_4$ 244.206
Alkaloid from *Picrasma quassioides* (Simaroubaceae). Orange prisms (MeOH aq.). Mp 300°.

Vember, P.A. *et al., Khim. Prir. Soedin.*, 1967, **3**, 249; *Chem. Nat. Compd. (Engl. Transl.)*, 1967, **3**, 208 (*synth*)
Koike, K. *et al., Phytochemistry*, 1990, **29**, 3060 (*isol, struct, Picrasidine V*)

1-(β-Carbolin-1-yl)-3-hydroxy-1-propanone C-136

3-Hydroxy-1-(9H-pyrido[3,4-b]indol-1-yl)-1-propanone. 1-(3-Hydroxypropanoyl)-β-carboline

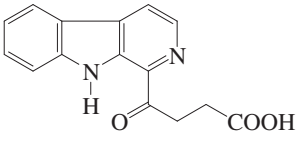


$C_{14}H_{12}N_2O_2$ 240.261
Prod. by the marine bacterium strain Bio215. Yellowish-green solid.

Shaaban, M. *et al., Dissertation*, Univ. of Göttingen, 2004, (*isol, pmr, ms*)

4-(β-Carbolin-1-yl)-4-oxobutanoic acid C-137

4-Oxo-4-(9H-pyrido[3,4-b]indol-1-yl)butanoic acid

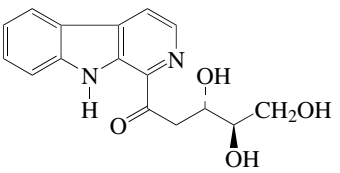


$C_{15}H_{12}N_2O_3$ 268.271
Alkaloid from the roots of *Anemone altaica*. Yellow powder. Mp 234-236°. λ_{max} 220 ; 283 ; 310 ; 380 (no solvent reported).

Zou, Z.-J. *et al., Chin. Chem. Lett.*, 2005, **16**, 1484-1486 (*isol, pmr, cmr*)
Zou, Z.-J. *et al., J. Integ. Plant Biol.*, 2005, **47**, 1145-1147 (*isol pmr, cmr, ms*)

1-(β-Carbolin-1-yl)-3,4,5-trihydroxy-1-pentanone C-138

1-(3,4,5-Trihydroxypentanoyl)-β-carboline. ***Alkaloid D***†
[180995-40-8]

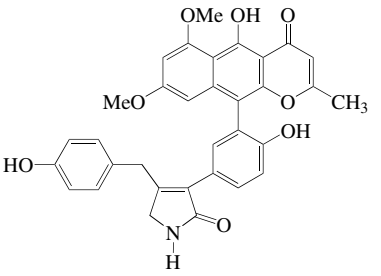


$C_{16}H_{16}N_2O_4$ 300.313
Alkaloid from cultured hybrid cells of *Rauwolfia serpentina* x *Rhazya stricta*. Amorph. powder. $[\alpha]_D^{23}$ -39 (c, 0.048 in MeOH). Not named in the paper. λ_{max} 217 ; 234 (sh) ; 243 ; 251 ; 260 ; 284 ; 307 ; 380 (MeOH).

Aimi, N. *et al., Chem. Pharm. Bull.*, 1996, **44**, 1637 (*isol, uv, pmr, cmr, ms, struct*)
Kitajima, M. *et al., Chem. Pharm. Bull.*, 1996, **44**, 2195 (*synth, abs config*)

Carbonarin C C-139

[177912-42-4]

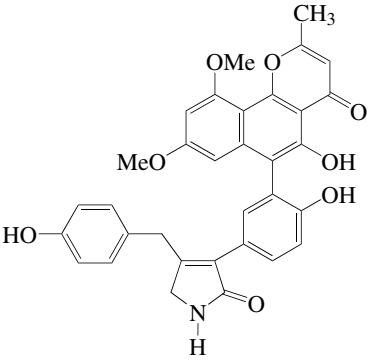


$C_{33}H_{27}NO_8$ 565.578
Prod. by *Aspergillus carbonarius*. Insecticidal agent. λ_{max} 228 (ϵ 17400); 280 (ϵ 18500); 410 (ϵ 2900) (MeOH) (Berdy).

U.S. Pat., 1996, 5 519 052; *CA*, **125**, 28297a (*isol, uv, pmr, cmr*)

Carbonarin D C-140

[177912-43-5]

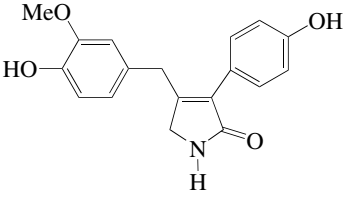


$C_{33}H_{27}NO_8$ 565.578
Prod. by *Aspergillus carbonarius*. Insecticidal agent. λ_{max} 244 (ϵ 17400); 285 (ϵ 11500); 380 (ϵ 28400) (MeOH) (Berdy).

U.S. Pat., 1996, 5 519 052; *CA*, **125**, 28297a (*isol, uv, ir, pmr*)

Carbonarin E C-141

1,5-Dihydro-4-[(4-hydroxy-3-methoxyphenyl)methyl]-3-(4-hydroxyphenyl)-2H-pyrrol-2-one, 9CI
[177912-44-6]

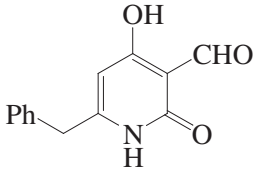


$C_{18}H_{17}NO_4$ 311.337
Prod. by *Aspergillus carbonarius*. λ_{max} 225 (ϵ 10200); 280 (ϵ 5800); 371 (ϵ 1100) (MeOH) (Berdy).

U.S. Pat., 1996, 5 519 052; *CA*, **125**, 28297a

Carbonarone B C-142

4-Hydroxy-2-oxo-6-(phenylmethyl)-1H-pyridine-3-carboxaldehyde. 6-Benzyl-1,2-dihydro-4-hydroxy-2-oxo-3-pyridinecarboxaldehyde. 6-Benzyl-3-formyl-4-hydroxy-2-pyridone. 6-Benzyl-2,4-dihydroxy-3-pyridinecarboxaldehyde
[937182-86-0]

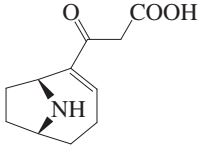


$C_{13}H_{11}NO_3$ 229.235
Prod. by the marine-derived *Aspergillus carbonarius* WZ-4-11. Cytotoxic. Needles. Mp 209-209.5°. λ_{max} 340 (log ϵ 3.87) (MeOH).

Zhang, Y. *et al., J. Antibiot.*, 2007, **60**, 153-157 (*isol, pmr, cmr, cryst struct*)

11-Carboxyanatoxin a C-143

β-Oxo-9-azabicyclo[4.2.1]non-2-ene-2-propanoic acid
[923925-57-9]



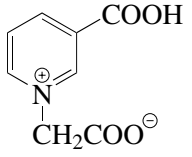
Absolute Configuration

$C_{11}H_{15}NO_3$ 209.244
Isol. from *Aphanizomenon issatschenkoi* (CAWBG02).

Selwood, A.I. *et al., Environ. Sci. Technol.*, 2007, **41**, 506-510

3-Carboxy-1-(carboxymethyl)pyridinium betaine C-144

1-Carboxymethylnicotinic acid
[137591-89-0]
[148717-06-0 , 148717-05-9]

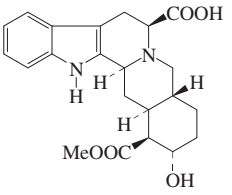


$C_8H_7NO_4$ 181.148
Alkaloid from the sponge *Anthosigmella* cf. *raromicrosclera*. Cysteine protease inhibitor. λ_{max} 267 (ϵ 5000) (H_2O).

Chen, X.-M. *et al., J. Mol. Struct.*, 1991, **249**, 135-140 (*synth, cryst struct*)
Chen, X.-M. *et al., J. Crystallogr. Spectrosc. Res.*, 1993, **23**, 291-296 (*cryst struct*)
Matsunaga, S. *et al., J. Nat. Prod.*, 1998, **61**, 671-672 (*isol, synth, uv, pmr, cmr*)

5-Carboxycorynanthine C-145

Methyl 17-hydroxyyohimban-5,16-dicarboxylate, 9CI



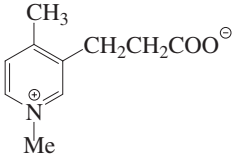
Absolute Configuration

$C_{22}H_{26}N_2O_5$ 398.458

5β-*form* [55624-07-2]
Alkaloid from *Adina rubescens*. Incorr. descr. in the paper as 5α-.
Me ester: Mp 235-237°. $[\alpha]_D^{25}$ -29 ($CHCl_3$).
Brown, R.T. *et al., Tet. Lett.*, 1974, **15**, 3429-3430 (*isol, ms, pmr, cd, struct*)

3-(2-Carboxyethyl)-1,4-dimethylpyridinium, 9CI C-146

Sulcatine
[264870-65-7]



$C_{10}H_{13}NO_2$ 179.218
Zwitterionic. Isol. from the ascidian *Microcosmus vulgaris*. Shows antiproliferative activity. Amorph. solid.
Aiello, A. *et al., J. Nat. Prod.*, 2000, **63**, 517-519 (*isol, pmr, cmr*)

3-(Carboxymethylamino)propanoic acid C-147

N-*(Carboxymethyl)-β-alanine, 9CI*. N-*(Carboxyethyl)glycine. Iminopropionicacetic acid*
[505-72-6]
$HOO^1CCH_2CH_2NHCH_2COOH$
$C_5H_9NO_4$ 147.13
Isol. from *Phaseolus radiatus* var. *typicus*. Cryst. (H_2O or EtOH aq.). Mp 195-198° (191-192°) dec.

Hydrochloride: Mp 120-122°.

Di-Et ester: [3783-61-7]
$C_9H_{17}NO_4$ 203.238
Oil. Bp 253° sl. dec. Bp_1 98-99°.

Di-Et ester, hydrochloride: Mp 85-87°.

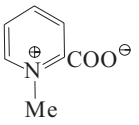
1-Nitrile: N-*(2-Cyanoethyl)glycine, 9CI. 3-(Carboxymethylamino)propionitrile*
[3088-42-4]
$C_5H_8N_2O_2$ 128.13
Cryst. Mp 193-195°.

▶ MB9275000

Cocker, W. *et al., J.C.S.*, 1952, 1182 (*deriv*)
McKinney, L.L. *et al., J.A.C.S.*, 1952, **74**, 1942; 5183 (*synth*)
Coburn, M.D. *et al., J. Het. Chem.*, 1965, **2**, 308 (*deriv*)
Kasai, T. *et al., Agric. Biol. Chem.*, 1971, **35**, 1603 (*isol, synth*)
Kawashiro, K. *et al., Bull. Chem. Soc. Jpn.*, 1984, **57**, 1097; 2871 (*synth, ms*)

2-Carboxy-1-methylpyridinium betaine C-148

2-Carboxy-1-methylpyridinium hydroxide inner salt, 9CI. N-*Methylpicolinic betaine.* ***Homarine***
[445-30-7]



$C_7H_7NO_2$ 137.138
Alkaloid from fungus *Polyporus sulphureus*, lobsters *Homarus vulgaris* and *Homarus americanus*, Antarctic soft coral *Gersemia antarctica*, Antarctic gastropod *Marseniopsis mollis*, red alga *Pterocladia capillacea* and other spp. Shows antibacterial activity. Feeding deterrent in marine organisms. Cryst. (EtOH). Dec. on heating, deliquescent.

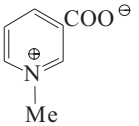
Hydrochloride: Mp 170-175° dec.

Picrate: Mp 158-160°.

Hantzsch, A. *et al., Ber.*, 1886, **19**, 31 (*synth*)
Hoppe-Seyler, F. *et al., Hoppe-Seyler's Z. Physiol. Chem.*, 1933, **222**, 105-115 (*isol*)
Green, R.W. *et al., J.A.C.S.*, 1956, **78**, 4896 (*uv, tautom*)
Leonard, G.J. *et al., Nature (London)*, 1963, **200**, 78 (*isol*)
Groenneberg, T. *et al., Chem. Scr.*, 1972, **2**, 17 (*ms*)
Sciuto, S. *et al., J. Nat. Prod.*, 1988, **51**, 322-325 (*isol, red alga*)
McClintock, J.B. *et al., J. Chem. Ecol.*, 1994, **20**, 2539-2549 (*isol, activity*)
Slattery, M. *et al., Marine Ecol.: Progr. Ser.*, 1997, **161**, 133-144; *CA*, **128**, 119209b (*isol, activity*)
Polychronopoulos, P. *et al., Nat. Prod. Lett.*, 2001, **15**, 411-418 (*Homarine, pmr, cmr, ms*)

3-Carboxy-1-methylpyridinium betaine C-149

3-Carboxy-1-methylpyridinium hydroxide inner salt. N-*Methylnicotinic betaine.* ***Trigonelline***. *Gynesis. Coffearin*
[535-83-1]



$C_7H_7NO_2$ 137.138
Alkaloid from fenugreek (*Trigonella foenum-graecum*) (Fabaceae), *Schumanniophyton magnificum* (Rubiaceae), *Mappia foetida*, *Strophanthus* sp., *Cannabis sativa* and very many other spp.; also present in coffee beans, in many animals, the sponge *Calyx nicaeensis*, the soft coral *Gersemia antarctica*, and the red seaweed *Pterocladia capillacea*. Prisms + $1H_2O$ (EtOH

aq.). V. sol. H_2O; sol. MeOH, EtOH; poorly sol. $CHCl_3$, Et_2O. Mp 218° dec. (anhyd.).

► LD_{50} (rat, orl) 5000 mg/kg. YF6825000

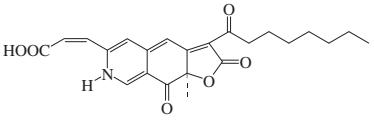
Hydrochloride: [6138-41-6]
Cryst. (EtOH aq.). Mp 257-258° (250°, 245-250° dec.).

Picrate: Mp 205-206° (198-200°).

Gorter, K. *et al., Annalen*, 1910, **372**, 237-246 (*isol*)
Späth, E. *et al., Ber.*, 1944, **77**, 362-369 (*synth*)
Ackermann, D. *et al., Hoppe-Seyler's Z. Physiol. Chem.*, 1961, **326**, 197-199 (*occur*)
Wang, S.Y. *et al., Biochemistry*, 1968, **7**, 3740-3744 (*uv*)
Wehrli, F.W. *et al., Helv. Chim. Acta*, 1971, **54**, 229-243 (*pmr, cmr*)
Ghosal, S. *et al., Planta Med.*, 1973, **23**, 321-329 (*isol, uv, ir, pmr*)
Houghton, P.J. *et al., Planta Med.*, 1987, **53**, 262-264 (*isol*)
Slattery, M. *et al., Marine Ecol.: Progr. Ser.*, 1997, **161**, 133-144; *CA*, **128**, 119209e (*isol, activity*)
Merck Index, 13th edn., 2001, No. 9765 (*bibl*)
Blunden, G. *et al., Phytochemistry*, 2001, **58**, 451-454 (*occur*)

12-Carboxymonascorubramine C-150

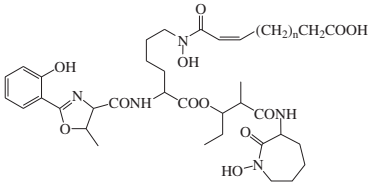
PP-V
[321922-28-5]



$C_{23}H_{25}NO_6$ 411.454
Prod. by *Penicillium* sp. AZ. Violet solid.

Ogihara, J. *et al., J. Biosci. Bioeng.*, 2000, **90**, 549-554; 678-680 (*isol, struct, biosynth*)

Carboxymycobactins C-151



n = 2,3,4,5,6,7,8 for Carboxymycobactins 1-7

Complex. Isol. from *Mycobacterium smegmatis* grown under iron-deficient conditions. Extracellular mycobactins isol. from *Mycobacterium avium*. Siderophores and growth factors. Similar to Mycobactin, M-787.

Carboxymycobactin 1
$C_{36}H_{51}N_5O_{12}$ 745.825
Incorrectly indexed in CA.

Carboxymycobactin 2
$C_{37}H_{53}N_5O_{12}$ 759.852
Incorrectly indexed in CA.

Carboxymycobactin 3
$C_{38}H_{55}N_5O_{12}$ 773.879
Incorrectly indexed in CA.

Carboxymycobactin 4
$C_{39}H_{57}N_5O_{12}$ 787.906
Incorrectly indexed in CA.

Carboxymycobactin 5
$C_{40}H_{59}N_5O_{12}$ 801.932
Incorrectly indexed in CA.

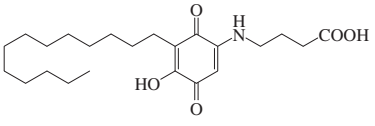
Carboxymycobactin 6
$C_{41}H_{61}N_5O_{12}$ 815.959
Incorrectly indexed in CA.

Carboxymycobactin 7
$C_{42}H_{63}N_5O_{12}$ 829.986
Incorrectly indexed in CA.

Lane, S.J. *et al., Tet. Lett.*, 1995, **36**, 4129-4132; 1996, **37**, 1 (*isol, struct*)
Ratledge, C. *et al., Microbiology (Reading, U.K.)*, 1996, **142**, 2207-2212 (*occur, props*)

5-[(3-Carboxypropyl)amino]-2-hydroxy-3-tridecyl-1,4-benzoquinone C-152

4-[(4-Hydroxy-3,6-dioxo-5-tridecyl-1,4-cyclohexadien-1-yl)amino]butanoic acid
[915728-09-5]

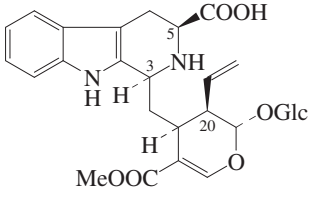


$C_{23}H_{37}NO_5$ 407.549
Constit. of the roots of *Embelia ribes*. Amorph. red powder. λ_{max} 207 (log ε 1.74); 317 (log ε 1.32); 500 (log ε 0.09) (MeOH).

Lin, P. *et al., J. Nat. Prod.*, 2006, **69**, 1629-1632 (*isol, pmr, cmr, ms*)
McErlean, C.S.P. *et al., J.O.C.*, 2007, **72**, 10298-10301 (*synth, pmr, cmr*)

5-Carboxystrictosidine, 8CI C-153

Tetrahydrodeoxycordifoline
[34371-11-4]



$C_{28}H_{34}N_2O_{11}$ 574.583
Alkaloid from the roots of *Rhazya orientalis*, *Guettarda platypoda* and *Uncaria tomentosa*. Mp 232° (225°). $[\alpha]_D$ -280 (MeOH).

N^4,O-Penta-Ac, Me ester: [34417-91-9]
$C_{39}H_{46}N_2O_{16}$ 798.796
Mp 200°. $[\alpha]_D^{20}$ -46 (c, 1 in $CHCl_3$).

3,4-Didehydro: ***3,4-Dehydro-5-carboxystrictosidine***. *5-Carboxy-3,4-didehydrostrictosidine*
$C_{28}H_{32}N_2O_{11}$ 572.568
Alkaloid from *Uncaria tomentosa*.
λ_{max} 239 ; 357 (MeOH).

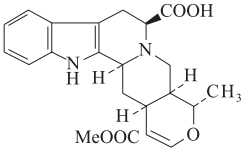
Parent acid: ***3α,5α-Tetrahydrodeoxycordifolic acid***
$C_{27}H_{32}N_2O_{11}$ 560.557
Alkaloid from the roots of *Rhazya orientalis* (Apocynaceae). Amorph. Not named in the paper.

[134454-28-7]

De Silva, K.T.D. *et al., Chem. Comm.*, 1971, 908-909 (*struct, synth*)
Ferrari, F. *et al., J. Nat. Prod.*, 1986, **49**, 1150-1151 (*isol, pmr, cmr*)
Aimi, N. *et al., Chem. Pharm. Bull.*, 1992, **40**, 2588-2590 (*synth*)
Kitajima, M. *et al., Chem. Pharm. Bull.*, 2000, **48**, 1410-1412; 2002, **50**, 1376-1378 (*Dehydrocarboxystrictosidine, isol, synth, abs config*)

5-Carboxytetrahydroalstonine C-154

[53938-11-7]

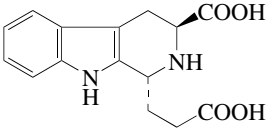


Absolute configuration

$C_{22}H_{24}N_2O_5$ 396.442
Alkaloid from *Adina rubescens*. Noncryst. $[\alpha]_D^{25}$ -86 ($CHCl_3$) (as Me ester).

Brown, R.T. *et al., Tet. Lett.*, 1974, 1649-1652 (*uv, ir, ester, ms, pmr, struct*)

3-Carboxy-1,2,3,4-tetrahydro-β-carboline-1-propanoic acid C-155



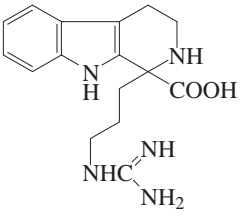
$C_{15}H_{16}N_2O_4$ 288.302
Constit. of various food sources.

[136612-30-1 , 126366-08-3]

Liu, Z. *et al., Tet. Lett.*, 1989, **30**, 3457-3460 (*synth*)
Bailey, P.D. *et al., J.C.S. Perkin 1*, 1993, 441-449 (*synth, pmr, cmr*)
Gutsche, B. *et al., J. Agric. Food Chem.*, 1997, **45**, 2458-2462 (*isol, pmr, ms*)

1-Carboxytrypargine C-156

[227935-85-5]



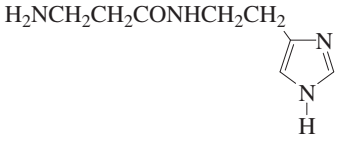
$C_{16}H_{21}N_5O_2$ 315.374
Abs stereochem. not determined. Alka-

loid from a *Eudistoma* sp. Amorph. solid. λ_{max} 204 (log ϵ 4); 226 (log ϵ 4.3); 274 (log ϵ 3.7); 282 (log ϵ 3.7); 290 (log ϵ 3.6) (MeOH).

Van Wagoner, R.M. *et al., J. Nat. Prod.*, 1999, **62**, 794-797 (*isol, uv, cd, pmr, cmr*)

Carcinine C-157

*3-Amino-*N*-[2-(1*H*-imidazol-4-yl)ethyl]-propanamide, 9CI.* N-*β-Alanylhistamine*
[56897-53-1]



$C_8H_{14}N_4O$ 182.225
Occurs in cardiac tissue of *Carcinus maenas* and other crustacea. Lowers blood pressure; shows antioxidant props. Mp 67-68° Mp 114-117°.

Hydrochloride (1:2): [57022-38-5]
Cryst. Mp 94° Mp 195°.

N-tert-*Butoxycarbonyl:* [143885-59-0]
$C_{13}H_{22}N_4O_3$ 282.342
Mp 147-148°.

Arnould, J.-M. *et al., Comp. Biochem. Physiol., C: Comp. Pharmacol.*, 1975, **50**, 59-66; **51**, 301-307 (*synth*)
Arnould, J.-M. *et al., Arch. Int. Physiol. Biochim.*, 1977, **85**, 339-350 (*synth*)
Nanasawa, M. *et al., Bull. Chem. Soc. Jpn.*, 1981, **54**, 1101-1104 (*synth*)
Babizhayev, M.A. *et al., Biochem. J.*, 1994, **304**, 509-516 (*props, ir, pmr, cmr*)
Impellizzeri, G. *et al., Eur. J. Org. Chem.*, 2000, 1065-1076 (*N-tert-butoxycarbonyl, synth*)

Cardiochrysine C-158

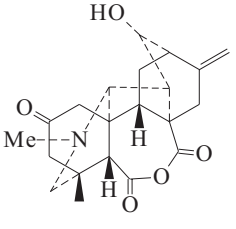
Struct. unknown. Alkaloid from the leaves of *Chrysophyllum perpulchrum* (Sapotaceae). Mp 185°.

Hydrochloride: Mp 264°. $[\alpha]_D$ +21 (c, 0.5 in H_2O).

Foussard-Blanpin, O. *et al., Ann. Pharm. Fr.*, 1965, **23**, 727-731; *CA*, **65**, 1242a

Cardionidine C-159

[142609-18-5]

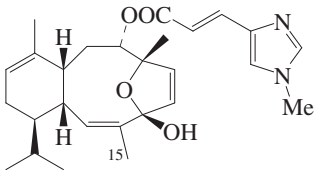


$C_{21}H_{25}NO_5$ 371.432
The config. of the 13-*OH* group is *S*-. Alkaloid from *Delphinium cardiopetalum* (Ranunculaceae). Mp 310-315° dec. $[\alpha]_D$ -50 (c, 0.03 in EtOH).

Reina, M. *et al., Tet. Lett.*, 1992, **33**, 1661 (*isol, pmr, cmr, struct*)

Caribaeorane C-160

[346406-75-5]



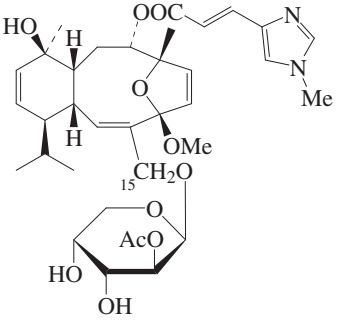
$C_{27}H_{36}N_2O_4$ 452.592
Constit. of *Erythropodium caribaeorum*.

15-Hydroxy: ***15-Hydroxycaribaeorane***
[216317-92-9]
$C_{27}H_{36}N_2O_5$ 468.592
Constit. of *Erythropodium caribaeorum*.

Britton, R. *et al., Tet. Lett.*, 2001, **42**, 2953-2956 (*isol, pmr, cmr*)

Caribaeoside C-161

[259728-79-5]



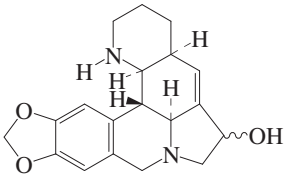
$C_{35}H_{48}N_2O_{11}$ 672.771
Constit. of *Erythropodium caribaeorum*. Related to Eleutherobin in E-64.

Aglycone, 15-Ac: ***Caribaeolin***
[259728-87-5]
$C_{30}H_{40}N_2O_7$ 540.655
Constit. of *Erythropodium caribaeorum*.

Cinel, B. *et al., Org. Lett.*, 2000, **2**, 257-260 (*isol, pmr, cmr*)

Caribine C-162

[74483-60-6]

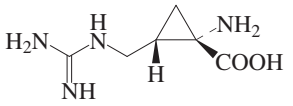


$C_{19}H_{22}N_2O_3$ 326.394
Alkaloid from *Hymenocallis arenicola*. Prisms (Me_2CO). Mp 200-204°.

Doepke, W. *et al., Z. Chem.*, 1980, **20**, 26-27

Carnosadine C-163

1-Amino-2-[[(aminoiminomethyl)amino]methyl]cyclopropanecarboxylic acid, 9CI. 1-Amino-2-(guanidinomethyl)-1-cyclopropanecarboxylic acid
[93961-20-7]



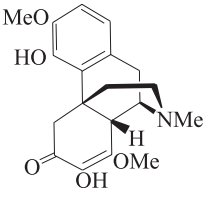
$C_6H_{12}N_4O_2$ 172.186
Amino acid from red alga *Grateloupia carnosa*. Antiinflammatory agent. Hygroscopic powder. Sol. H_2O; poorly sol. butanol, hexane.

*Bis(*p*-hydroxyazobenzenesulfonate):*
[94061-93-5]
Mp 226-232° dec. (no clear Mp).

Wakamiya, T. *et al., Tet. Lett.*, 1984, **25**, 4411-4412; 1986, **27**, 2143-2144 (*isol, pmr, cmr, struct, synth*)
Stammer, H. *et al., Tetrahedron*, 1990, **46**, 2231-2254 (*rev*)
Burgess, K. *et al., J.O.C.*, 1994, **59**, 2179-2185 (*synth, pmr, cmr*)

Carococculine C-164

7,8-Didehydro-4,7-dihydroxy-3,8-dimethoxy-17-methylmorphinan-6-one, 9CI
[54302-44-2]



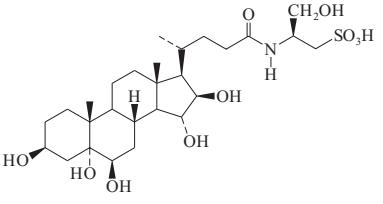
Absolute configuration

$C_{19}H_{23}NO_5$ 345.394
Alkaloid from the leaves and stems of *Cocculus carolinus* (Menispermaceae). Rods (EtOH). Mp 219-220° dec. $[\alpha]_D^{26}$ -29.5 (c, 0.715 in $CHCl_3$).

Slatkin, D.J. *et al., J. Nat. Prod.*, 1974, **37**, 488 (*isol, struct*)
Elsohly, M.A. *et al., J. Pharm. Sci.*, 1976, **65**, 132 (*isol*)

Carolisterol A C-165

[151171-32-3]



$C_{27}H_{47}NO_{10}S$ 577.735
Constit. of *Styracaster caroli*.

6-Ketone: ***Carolisterol B***
[151171-33-4]
$C_{27}H_{45}NO_{10}S$ 575.719
Constit. of *Styracaster caroli*.

6-Epimer, 5-deoxy: ***Carolisterol C***
[151171-34-5]
$C_{27}H_{47}NO_9S$ 561.736
Constit. of *Styracaster caroli*.
De Riccardis, F. *et al., Tet. Lett.*, 1993, **34**, 4381 (*isol, pmr, cmr*)

Carosidine C-166

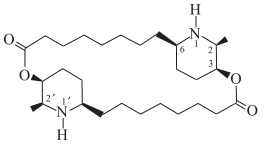
[1355-18-6]
Bisindole alkaloid. Struct. unknown. Alkaloid from *Catharanthus roseus* (Apocynaceae). Mp 263-278° gradual dec. $[\alpha]_D^{26}$ -89.8 (c, 1 in $CHCl_3$). Mol. formula not recorded.
Svoboda, G.H. *et al., J. Pharm. Sci.*, 1962, **51**, 518-523 (*isol, uv, ir*)

Carosine C-167

[1355-19-7]
$C_{46}H_{56}N_4O_{10}$ 824.969
Bisindole alkaloid. Struct. unknown. Alkaloid from *Catharanthus roseus* (Apocynaceae). Needles (CH_2Cl_2/Et_2O). Mp 214-218°. $[\alpha]_D^{26}$ +6 (c, 1 in $CHCl_3$). λ_{max} 255 (E1%/1cm 162); 294 (E1%/1cm 155) (EtOH) (Berdy).
Svoboda, G.H. *et al., J. Pharm. Sci.*, 1962, **51**, 518-523 (*isol, uv, ir*)

Carpaine, 9CI C-168

[3463-92-1]



Absolute configuration

$C_{28}H_{50}N_2O_4$ 478.714
Homologue of Azimine, A-1608. Originally considered to be a monomeric 13-membered cyclic lactone. Alkaloid from leaves of *Carica papaya* (papaya) (Caricaceae). Cardiotonic agent, CNS depressant, also showing other physiological effects (also reported to be cardiodepressant). Cubes (Et_2O). Sol. MeOH, C_6H_6; poorly sol. hexane. Mp 119-120° (117-118.5°). $[\alpha]_D$ +21.65 (c, 1.0 in EtOH). $[\alpha]_{230}^{22}$ -240 (c, 0.12 in MeOH). Log P 4.77 (calc). Prob. formed *in vivo* by dimerisation of Carpamic acid, from which it has been made *in vitro*.

1,2-Didehydro: ***Dehydrocarpaine I***. *12,13-Didehydrocarpaine, 9CI*
[72362-02-8]
$C_{28}H_{48}N_2O_4$ 476.698
Alkaloid from the leaves of *Carica papaya* (papaya) (Caricaceae). Viscous oil.

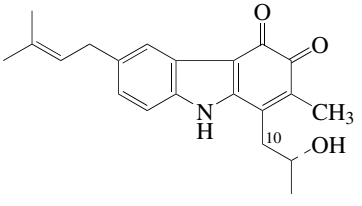
1,1′,2,2′-Tetradehydro: ***Dehydrocarpaine II***. *12,13,25,26-Tetradehydrocarpaine, 9CI*
[72362-03-9]
$C_{28}H_{46}N_2O_4$ 474.682
Alkaloid from the leaves of *Carica papaya* (papaya) (Caricaceae). Viscous oil.

2-Epimer: ***Pseudocarpaine***. *ψ-Carpaine*
[3760-91-6]
$C_{28}H_{50}N_2O_4$ 478.714
Minor alkaloid from leaves of *Carica papaya* (papaya) (Caricaceae). Cryst. (petrol). Mp 65-68°. $[\alpha]_D^{28}$ +4.95 (c, 1.62 in EtOH). Yields carpamic and pseudocarpamic acids on hydrol.

2-Epimer, hydrochloride:
Cryst. (EtOH). Mp 295°.
Greshoff, M. *et al., Ber.*, 1890, **23**, 3537 (*isol*)
Govindachari, T.R. *et al., J.C.S.*, 1954, 1847; 1955, 1563 (*isol, props, Carpaine, Pseudocarpaine*)
Narasimhan, N.S. *et al., Chem. Ind. (London)*, 1956, 1526 (*synth*)
Spiteller-Friedmann, M. *et al., Monatsh. Chem.*, 1964, **95**, 1234 (*ms, struct*)
Coke, J.L. *et al., J.O.C.*, 1965, **30**, 3420 (*abs config*)
Govindachari, T.R. *et al., Tet. Lett.*, 1965, 1907 (*ms, pmr, struct*)
Brown, E. *et al., Chem. Lett.*, 1974, 109 (*synth*)
Corey, E.J. *et al., J.A.C.S.*, 1975, **97**, 654 (*synth*)
Topuriya, L.I. *et al., Khim. Prir. Soedin.*, 1978, 414; *Chem. Nat. Compd. (Engl. Transl.)*, 1978, 354 (*isol*)
Tang, C.-S. *et al., Phytochemistry*, 1979, **18**, 651 (*Dehydrocarpaines*)
Hanessian, S. *et al., Tet. Lett.*, 1979, 3391 (*synth*)
Natsume, M. *et al., Heterocycles*, 1980, **14**, 169 (*synth*)
Rajnikant, G. *et al., Mol. Cryst. Liq. Cryst. Sci. Technol., Sect. C*, 1998, **9**, 131-137 (*cryst struct*)
Sato, T. *et al., Org. Lett.*, 2003, **5**, 3839-3842 (*synth*)
Randl, S. *et al., Tet. Lett.*, 2004, **45**, 1167-1169 (*synth*)

Carquinostatin A C-169

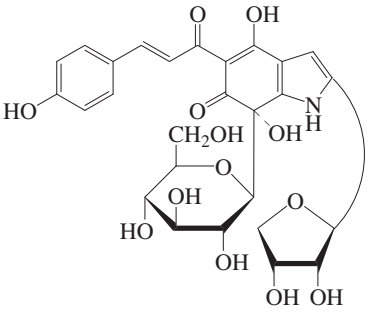
*1-(2-Hydroxypropyl)-2-methyl-6-(3-methyl-2-butenyl)-3*H*-carbazole-3,4(9*H*)-dione, 9CI. CS 79A. Antibiotic CS 79A*
[150957-18-9]



$C_{21}H_{23}NO_3$ 337.418
Alkaloid from *Streptomyces exfoliatus*. Potent neuronal cell protecting substance. Also shows radical scavenging activity. Reddish powder. Mp 144-145°. λ_{max} 242 (ϵ 30400); 287 (ϵ 28000); 470 (ϵ 8100) (MeOH/NaOH) (Derep). λ_{max} 230 (ϵ 22200); 267 (ϵ 29700); 425 (ϵ 5400) (MeOH) (Berdy).

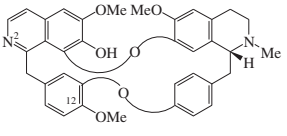
*10*S*-Hydroxy:* ***Carquinostatin B***. *Antibiotic CS 79B. CS 79B*
[155569-69-0]
$C_{21}H_{23}NO_4$ 353.417
Prod. by *Streptomyces exfoliatus* and *Streptomyces tendae*. Neuronal cell protecting agent. Antioxidant. Reddish-brown powder. Sol. DMSO, DMF, EtOH, EtOAc, $CHCl_3$, MeOH; poorly sol. hexane. λ_{max} 223 ; 248 ; 428 (MeOH) (Berdy).
Shin-ya, K. *et al., Tet. Lett.*, 1993, **34**, 4943-4944 (*isol, uv, ir, pmr, cmr, struct*)
Japan. Pat., 1994, 94 32 778; *CA*, **121**, 7450x (*CS 79B*)
Shin-ya, K. *et al., Biosci., Biotechnol., Biochem.*, 1997, **61**, 1768-1769 (*Carquinostatin B*)
Orihara, N. *et al., J. Antibiot.*, 1997, **50**, 979-981 (*biosynth*)
Knolker, H.-J. *et al., Synlett*, 1999, 596-598 (*synth*)
Knoelker, H.-J. *et al., Tet. Lett.*, 2000, **41**, 1171-1174 (*synth*)

Cartormin C-170



$C_{27}H_{29}NO_{13}$ 575.525
Enolised β-diketone. Constit. of *Carthamus tinctorius* (safflower). Yellow prisms (MeOH). $[\alpha]_D^{27}$ -153.4 (c, 0.01 in Py). Mp >230° dec.
Yin, H.-B. *et al., Tet. Lett.*, 2000, **41**, 1955-1958 (*isol, pmr, cmr, ms, cryst struct*)

Caryolivine C-171



(*R*)-*form*

$C_{36}H_{34}N_2O_6$ 590.674

(R)-form [103956-43-0]
Alkaloid from *Caryomene olivascens* (Menispermaceae). $[\alpha]_D$ -46 (c, 0.08 in MeOH).

N^2-*Me:* ***Berbacolorflammine***
[80550-38-5]
$C_{37}H_{37}N_2O_6^{\oplus}$ 605.709
Alkaloid from the stem and roots of *Pycnarrhena longifolia* (Menispermaceae). $[\alpha]_D^{20}$ +1000 (c, 0.004 in $CHCl_3$). No counterion indicated (prob. chloride).

(S)-form

N^2-*Me:* ***Fenfangjine D***. *1,3,4-Tridehydrofangchinolinium*
[115439-62-8]
$C_{37}H_{37}N_2O_6^{\oplus}$ 605.709
Quaternary alkaloid from "Fen-Fang-Ji" (roots of *Stephania tetrandra*) (Menispermaceae). Angiotensin I-converting enzyme inhibitor. Orange amorph. powder +½ H2O (as hydroxide); orange granules (MeOH/Me_2-CO)(as chloride). Mp 300°. $[\alpha]_D^{25}$ +67.8

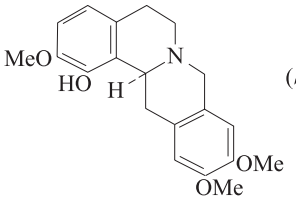
(c, 0.116 in MeOH). The assigned struct. is the enantiomer of Berbacolorflammine but the reported opt. rotn. is much smaller.

O^{12}-*De-Me:* ***Dehatridine***. *Stepierrine*
[121256-46-0]
$C_{35}H_{32}N_2O_6$ 576.648
Alkaloid from the leaves of *Dehaasia triandra* (Lauraceae) and from tubers of *Stephania pierrii* (Menispermaceae). Needles (MeOH). Mp 274-276°. $[\alpha]_D^{23}$ +98 (c, 0.1 in MeOH). $[\alpha]_D$ +55 (c, 0.10 in $CHCl_3$). Identity of Dehatridine and Stepierrine not yet establ. Mp refers to Dehatridine. λ_{max} 202 (ϵ 25100); 243 (ϵ 15900); 282 (ϵ 2510); 335 (ϵ 1590) (EtOH) (Derep). λ_{max} 207 (ϵ 100000); 263 (ϵ 12600); 293 (sh) (ϵ 3980); 373 (ϵ 2000) (EtOH/KOH) (Derep).

Van Beek, T.A. *et al., J.O.C.*, 1982, **47**, 898 (*Berbacolorflammine*)
Lavault, M. *et al., Chem. Pharm. Bull.*, 1986, **34**, 1148 (*Caryolivine*)
Ogino, T. *et al., Heterocycles*, 1988, **27**, 1149 (*Fengfanjine B*)
Tantisewie, B. *et al., J. Nat. Prod.*, 1989, **52**, 846 (*Stepierrine*)
Lu, S.T. *et al., Phytochemistry*, 1989, **28**, 615 (*Dehatridine*)
Chen, C.-K. *et al., Chin. Pharm. J. (Taipei)*, 2003, **55**, 35-47 (*Dehatridine*)

Caseadine C-172

Alkaloid F35



(*S*)–*form*

$C_{20}H_{23}NO_4$ 341.406

(*S*)-*form* [34413-12-2]
Alkaloid from *Corydalis caseana* (Papaveraceae). Mp 145°. $[\alpha]_D$ -393 (c, 1.22 in $CHCl_3$).

α-N-*Oxide:* **cis-*Caseadine* N-*oxide***
[151563-67-6]
$C_{20}H_{23}NO_5$ 357.405
Alkaloid from *Ceratocapnos heterocarpa* (Papaveraceae). Amorph. powder. Mp 156°. $[\alpha]_D$ -199 (c, 0.06 in MeOH).

Me ether: Mp 186°. $[\alpha]_D$ -360 (c, 0.4 in $CHCl_3$).

O^{11}-*De-Me:* ***Caseamine***. *Alkaloid F33*
[27498-04-0]
$C_{19}H_{21}NO_4$ 327.379
Struct. revised in 1988. Alkaloid from *Corydalis caseana* (Papaveraceae). Major alkaloid from the whole plant of *Ceratocapnos heterocarpa* (Papaveraceae). Cryst. ($CHCl_3$/MeOH). Mp 246-247° (257°). $[\alpha]_D$ -365 (c, 0.04 in $CHCl_3$). $[\alpha]_D$ -406 (c, 0.12 in $CHCl_3$).

O^{11}-*De-Me,* α-N-*oxide:* **cis-*Caseamine* N-*oxide***
[151563-66-5]
$C_{19}H_{21}NO_5$ 343.379
Alkaloid from *Ceratocapnos heterocarpa* (Papaveraceae). Pale yellowish cryst. (MeOH). Mp 244-246°. $[\alpha]_D$ -216 (c, 0.05 in MeOH).

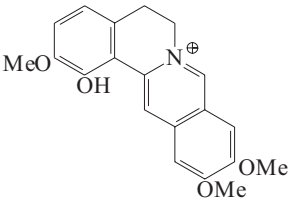
(±)-*form*

Me ether:
Cryst. (Et_2O). Mp 165°.

Manske, R.H.F. *et al., Can. J. Res., Sect. B*, 1938, **16**, 153 (*Caseadine, Caseamine, isol*)
Chen, C.Y. *et al., Tet. Lett.*, 1968, 349 (*Caseamine, uv, ms*)
Govindachari, T.R. *et al., Heterocycles*, 1977, **6**, 1811 (*struct, bibl*)
Ognyanov, V. *et al., Heterocycles*, 1982, **19**, 1069 (*synth*)
Suau, R. *et al., Phytochemistry*, 1988, **27**, 1920; 1993, **34**, 559 (*oxides*)

Caseadinium(1+) C-173

[152343-37-8]

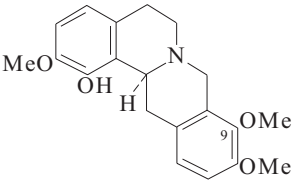


$C_{20}H_{20}NO_4^{\oplus}$ 338.382
Alkaloid from *Ceratocapnos heterocarpa* (Papaveraceae). Yellowish solid (as chloride). Mp 192° (chloride). CAS no. refers to choride.

Suau, R. *et al., Phytochemistry*, 1993, **34**, 559 (*isol, uv, pmr, ms, struct*)

Caseanadine C-174

*5,8,13,13*a-*Tetrahydro-2,9,10-trimethoxy-6*H-*dibenzo[*a,g*]quinolizin-1-ol. 2,9,10-Trimethoxyberbin-1-ol*



$C_{20}H_{23}NO_4$ 341.406
Unusual 1,2,9,10-tetraoxygenated substitution pattern.

(*S*)-*form* [40141-47-7]
Alkaloid from *Corydalis caseana* and from the leaves, stems and flowers of *Corydalis clarkei* (Papaveraceae). Cryst. (MeOH). Mp 169-170°. $[\alpha]_D$ -267 ($CHCl_3$) (-212).

O^9-*De-Me:* ***Clarkeanidine***
[99615-99-3]
$C_{19}H_{21}NO_4$ 327.379
Alkaloid from the leaves, stems and flowers of *Corydalis clarkei* (Papaveraceae). Cryst. (2-propanol). Mp 178-179°. $[\alpha]_D$ -277 ($CHCl_3$).

Yu, C.K. *et al., Can. J. Chem.*, 1971, **49**, 124 (*isol, uv, ir, pmr, ms, struct*)
Rothera, M.A. *et al., J. Nat. Prod.*, 1985, **48**, 802 (*isol, uv, ir, pmr, cmr, ms, deriv*)
Suau, R. *et al., Phytochemistry*, 1988, **27**, 1920 (*synth, struct, Clarkeanidine*)

Casimirine C-175

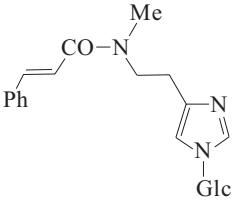
$C_{30}H_{32}N_2O_5$ 500.593

Struct. unknown. Alkaloid from *Casimiroa edulis* (Mexican apple). Mp 106°.

Bickern, *et al., Arch. Pharm. (Weinheim, Ger.)*, 1903, **241**, 166-176 (*isol*)

Casimiroedine C-176

N-*[2-(1-β-D-Glucopyranosyl-1*H-*imidazol-4-yl)ethyl]*-N-*methyl-3-phenyl-2-propenamide, 9CI.* N^{α}-*Cinnamoyl-*N^{α}-*methylhistamine* N-*glucoside*
[5853-02-1]
[51013-83-3 (*Z*-isomer)]



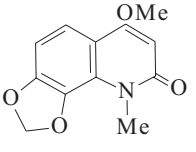
$C_{21}H_{27}N_3O_6$ 417.461
Alkaloid from the seeds of *Casimiroa edulis.* Antineoplastic, carcinostatic agent. Mp 226.5-228° (223-224°). $[\alpha]_D^{20}$ -21.3 (c, 1.2 in 5% HCl aq.) (-27, -30.7). Log P -2.06 (calc).

Picrate: Mp 110-112°.

Power, F.B. *et al., J.C.S.*, 1911, 1993 (*isol*)
Aebi, A. *et al., Helv. Chim. Acta*, 1956, **39**, 1495 (*isol, ir, uv*)
Djerassi, C. *et al., Tetrahedron*, 1958, **2**, 168a (*struct*)
Raman, S. *et al., Tet. Lett.*, 1962, 357 (*cryst struct*)
Panzica, R.P. *et al., J.A.C.S.*, 1973, **95**, 8737 (*uv, pmr, ms, synth, struct*)
Reynolds, W.F. *et al., Magn. Reson. Chem.*, 2000, **38**, 366-369 (*pmr, cmr*)

Casimiroin C-177

*6-Methoxy-9-methyl-1,3-dioxolo[4,5-*h*]quinolin-8(9*H*)-one, 9CI. 4-Methoxy-1-methyl-7,8-methylenedioxy-2(1*H*)-quinolinone*
[477-89-4]



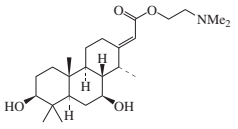
$C_{12}H_{11}NO_4$ 233.223
Alkaloid from the seed and bark of *Casimiroa edulis* (Mexican apple) (Rutaceae). Cryst. (Me_2CO/hexane). Mp 202-203°. λ_{max} 226 ; 236 ; 260 ; 300 (MeOH) (Berdy). λ_{max} 232 ; 262 (ϵ 8); 465 (EtOH) (Berdy).

Kincl, F.A. *et al., J.C.S.*, 1956, 4163 (*isol, uv, ir*)
Iriarte, J. *et al., J.C.S.*, 1956, 4170 (*isol*)

Meisels, A. *et al., J.A.C.S.*, 1957, **79**, 6328 (*struct*)
Weinstein, B. *et al., Tetrahedron*, 1964, **20**, 1725 (*synth, uv, ir*)

Cassaidine C-178

[26296-41-3]



Absolute Configuration

$C_{24}H_{41}NO_4$ 407.592
Alkaloid from the bark of *Erythrophleum guineense, Erythrophleum chlorostachys, Erythrophleum couminga* and *Erythrophleum ivorense* (Fabaceae). Cardiac stimulant, hypertensive, antiseptic agent. Local anaesthetic. Cryst. (Me_2CO/Et_2O). Mp 139.5°. $[\alpha]_D^{20}$ -98 (c, 1 in EtOH). Log P 3.67 (calc).

▶ Toxic.

Hydrochloride: Mp 249-252°. $[\alpha]_D^{22}$ -96 (c, 0.75 in H_2O).

3-O-*(3-Hydroxy-3-methylbutanoyl):* ***Coumidine***
[22149-19-5]
$C_{29}H_{49}NO_6$ 507.709
Alkaloid from the bark of *Erythrophleum guineense* and *Erythrophleum ivorense* (Fabaceae). Cryst. (Et_2O). Mp 130-132°. $[\alpha]_D$ -58 (c, 0.5 in $CHCl_3$).

N-*De-Me:* ***Norcassaidine***
$C_{23}H_{39}NO_4$ 393.565
Trace alkaloid detected in extracts of the bark of *Erythrophleum chlorostachys* by pmr (Fabaceae). Not indexed by CAS.

7-Ketone: ***Cassaine***
[468-76-8]
$C_{24}H_{39}NO_4$ 405.576
Alkaloid from *Erythrophleum guineense, Erythrophleum ivorense, Erythrophleum suaveolens* and *Erythrophleum couminga* (Fabaceae). Strong cardiac stimulant showing digitalis-like action. Antihypertensive agent. Shows local anaesthetic props. Shows cytotoxicity against KB carcinoma cells but inactive in several other test systems. Sol. MeOH, Et_2O, C_6H_6; poorly sol. H_2O. Mp 142.5°. $[\alpha]_D^{20}$ -103 (c, 1 in EtOH). Log P 3.27 (calc).

▶ Can cause respiratory and cardiac paralysis.

7-Ketone, hydrochloride:
Cryst. + $1H_2O$ (EtOH/butanone/Et_2O). Mp 220° (212-213°).

7-Ketone, 3-O-*(3-methyl-2-butenoyl):* ***3-(3-Methylcrotonyl)cassaine***
[51771-63-2]
$C_{29}H_{45}NO_5$ 487.678
Alkaloid from bark of *Erythrophleum ivorense* (Fabaceae). Cryst. (Et_2O). Mp 169-170°.

7-Ketone, 3-O-*(3-hydroxy-3-methylbutanoyl):* ***Coumingine****. β-Hydroxyisovalerylcassaine*
[26241-81-6]
$C_{29}H_{47}NO_6$ 505.693
Alkaloid from the bark of *Erythrophleum couminga* (Fabaceae). Cardiac stimulant, hypertensive agent, smooth muscle stimulant, inotropic agent. Shows local anaesthetic props. Cryst. (Et_2O). Mp 142°. $[\alpha]_D^{20}$ -70 (c, 1 in EtOH). Log P 4.27 (calc).

▶ Highly toxic.

7-Ketone, 3-O-*(3-hydroxy-3-methylbutanoyl); hydrochloride:*
Needles (EtOH/Et_2O). Mp 195°.

7-Ketone, N-*de-Me, 3*-O-*acyl:* ***Coumingidine***
$C_{28}H_{45}NO_6$ 491.667
Alkaloid from the bark of *Erythrophleum couminga* (Fabaceae). Cryst. (Et_2O). Mp 160-161°. Acylated with a small MW hydroxyacyl group. MF not certain, may be $C_{27}H_{43}NO_6$. No further data to 2007.

7-Ketone, N-*de-Me, 3*-O-*acyl, hydrochloride:*
Cryst. (EtOH/Et_2O). Mp 217-219°.

7-Ketone, N-*de-Me, 3*-O-*(3-methyl-2-butenoyl):* ***Ivorine***
[1748-19-2]
$C_{28}H_{43}NO_5$ 473.651
Alkaloid from the bark of *Erythrophleum ivorense* (Fabaceae). Mp 158-159°. $[\alpha]_D^{20}$ -43 (c, 0.77 in $CHCl_3$).

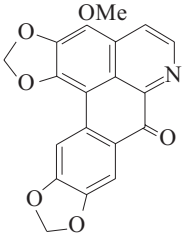
7-Ketone, N-*de-Me, 3*-O-*(3-methyl-2-butenoyl), hydrochloride:* Mp 224-225°.

19-Hydroxy, 7-ketone: ***19-Hydroxycassaine***
[51795-37-0]
$C_{24}H_{39}NO_5$ 421.576
Alkaloid from the bark of *Erythrophleum ivorense* (Fabaceae). Cryst. ($CHCl_3$/petrol). Mp 144-145°.

Dalma, G. *et al., Helv. Chim. Acta*, 1939, **22**, 1497-1512 (*Cassaine, isol*)
Ruzicka, L. *et al., Helv. Chim. Acta*, 1940, **23**, 753-764; 1941, **24**, 63-76; 1449-1458 (*Cassaidine, Cassaine, Coumingine, isol, uv*)
Schlittler, E. *et al., Helv. Chim. Acta*, 1941, **24**, 319E-352E (*Coumingidine*)
Engel, B.G. *et al., Helv. Chim. Acta*, 1949, **32**, 2364-2381 (*Cassaine, Cassaidine, isol*)
Ottinger, R. *et al., Bull. Soc. Chim. Belg.*, 1965, **74**, 198-199 (*Ivorine*)
Turner, R.B. *et al., J.A.C.S.*, 1966, **88**, 1766-1775 (*synth, struct*)
Clarke, R.L. *et al., J.A.C.S.*, 1966, **88**, 5865-5871 (*uv, pmr, config*)
Morin, R.B. *et al., Alkaloids (Academic Press)*, 1967, **10**, 298 (*Coumingidine, struct*)
Thorell, A. *et al., Acta Chem. Scand.*, 1968, **22**, 2835-2844 (*Coumidine*)
Cronlund, A. *et al., Acta Pharm. Suec.*, 1971, **8**, 351-360; 1973, **10**, 507-514; *CA*, **76**, 11995y; **80**, 80085w (*Cassaidine, Coumidine, 19-Hydroxycassain, 3-(3-Methylcrotonoyl)cassaine*)
Friedrich-Fiechtl, J. *et al., Chem. Ber.*, 1971, **104**, 3535-3548 (*ms*)
Loder, J.W. *et al., Aust. J. Chem.*, 1974, **27**, 179-185 (*Norcassaidine*)
Cronlund, A. *et al., Planta Med.*, 1976, **29**, 126 (*Cassaidine, Cassaine, occur*)
Suffness, M. *et al., Alkaloids (Academic Press)*, 1985, **25**, 4-6 (*pharmacol, antitumour props*)
Phoenix, S. *et al., J.A.C.S.*, 2008, **130**, 13989-13995 (*Cassaine, synth*)

Cassamedine C-179

*4-Methoxy-8*H-*bis[1,3]benzodioxolo[6,5,4-de:5′,6′-g]quinolin-8-one, 9CI*
[16408-75-6]



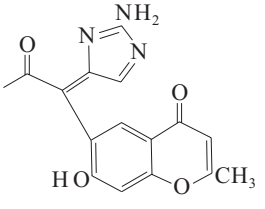
$C_{19}H_{11}NO_6$ 349.299
Alkaloid from *Cassytha americana* (*Cassytha filiformis*) and from the trunk wood of *Siparuna guianensis* (Lauraceae, Monimiaceae). Orange microcryst. solid ($CHCl_3$/EtOH). Mp 278°.

Demethoxy: ***Cassameridine***
[16408-76-7]
$C_{18}H_9NO_5$ 319.273
Alkaloid from *Cassytha americana* and from root wood of *Litsea kawakamii* (Lauraceae). Shows antimicrobial activity. Cryst. ($CHCl_3$/MeOH). Mp 301-302°. λ_{max} 251 (ϵ 29000); 274 (ϵ 24500); 323 (ϵ 12000); 353 (ϵ 8100); 388 (ϵ 7000); 440 (ϵ 5400) (EtOH) (Berdy).

Cava, M.P. *et al., J.O.C.*, 1968, **33**, 2443 (*isol, uv, ir, pmr, struct*)
Cava, M.P. *et al., Tetrahedron*, 1973, **29**, 2245 (*isol, uv, ir, pmr, struct, synth, deriv*)
Braz Filho, R. *et al., Phytochemistry*, 1976, **15**, 1187 (*isol*)
Lu, S.T. *et al., CA*, 1979, **92**, 194484d (*isol, deriv*)
Hufford, C.D. *et al., J. Pharm. Sci.*, 1980, **69**, 1180-1182 (*activity*)

Cassiadinine C-180

[104777-95-9]

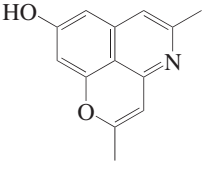


$C_{16}H_{13}N_3O_4$ 311.296
Alkaloid from the flowers of *Cassia siamea* (Fabaceae). Green needles (CH_2Cl_2/petrol). Mp 80° dec. V. unstable.

Biswas, K.M. *et al., Phytochemistry*, 1986, **25**, 1727 (*isol, uv, ir, pmr, ms, struct*)

Cassiarine A C-181

[951306-03-9]

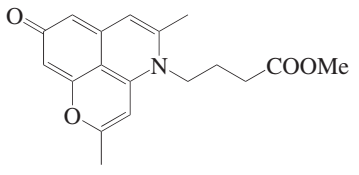


$C_{13}H_{11}NO_2$ 213.235
Alkaloid from the leaves of *Cassia siamea*. Antiplasmodial agent. Reddish solid. λ_{max} 215 (ϵ 19000); 230 (sh) (ϵ 14000); 253 (ϵ 13600); 315 (sh) (ϵ 3600); 338 (ϵ 5000); 370 (sh) (ϵ 3200) (MeOH).

Morita, H. *et al., Org. Lett.*, 2007, **9**, 3691-3693 (*isol, uv, pmr, cmr*)
Oshimi, S. *et al., Bioorg. Med. Chem. Lett.*, 2008, **18**, 3761-3765 (*biosynth*)
Yao, Y.-S. *et al., J.O.C.*, 2008, **73**, 5221-5225 (*synth*)
Rudyanto, M. *et al., Org. Lett.*, 2008, **10**, 1921-1922 (*synth*)

Cassiarine B C-182

[951306-04-0]

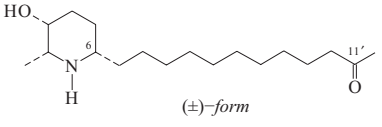


$C_{18}H_{19}NO_4$ 313.352
Alkaloid from the leaves of *Cassia siamea*. Reddish solid. λ_{max} 220 (ϵ 9400); 235 (ϵ 8800); 245 (ϵ 9400); 255 (ϵ 9700); 275 (ϵ 4400); 317 (ϵ 3800); 372 (ϵ 2500) (MeOH).

Morita, H. *et al., Org. Lett.*, 2007, **9**, 3691-3693 (*isol, pmr, cmr*)
Yao, Y.-S. *et al., J.O.C.*, 2008, **73**, 5221-5225 (*synth*)

Cassine C-183

12-(5-Hydroxy-6-methyl-2-piperidinyl)-2-dodecanone, 9CI. 3-Hydroxy-2-methyl-6-(11-oxododecyl)piperidine



(±)–*form*

$C_{18}H_{35}NO_2$ 297.48

(-)-*form* [5227-24-7]
Alkaloid from leaves of *Cassia excelsa* and *Cassia carnaval*, also *Prosopis ruscifolia, Prosopis alpataco* and *Prosopis sericantha* (Fabaceae). Mp 57-58°. $Bp_{0.001}$ 90°. $[\alpha]_D^{25}$ -0.6 (EtOH).

Hydrochloride: Mp 173-175°.

O-*(4-Hydroxy-3-methoxy*-E-*cinnamoyl):* **O-*Feruloylcassine***
[1002097-72-4]
$C_{28}H_{43}NO_5$ 473.651
Alkaloid from the unripe fruits of *Senna spectabilis*. Pale yellow oil. $[\alpha]_D^{20}$ +2.9 (c, 1 in $CHCl_3$). λ_{max} 236 (log ϵ 4.03); 326 (log ϵ 4.25) (MeOH).

N-*Me:* **N-*Methylcassine***
$C_{19}H_{37}NO_2$ 311.507
Alkaloid from *Prosopis* spp. (Fabaceae). Mp 110.5-111.5° (semisynthetic). $[\alpha]_D^{26}$ +6.5 (EtOH).

11′ξ-Alcohol: ***Carnavaline***. *5-Hydroxy-α,6-dimethyl-2-piperidineundecanol, 9CI. 3-Hydroxy-6-(11-hydroxydodecyl)-2-methylpiperidine*
[16049-25-5]
$C_{18}H_{37}NO_2$ 299.496
Alkaloid from *Cassia spectabilis* (Fabaceae). Mp 60.7-61.2°.

6-Epimer: ***6-Isocassine***
[64474-08-4]
$C_{18}H_{35}NO_2$ 297.48
Alkaloid from *Cassia spectabilis* leaves (Fabaceae). Cryst. (EtOAc) (as hydrochloride). Mp 123° (hydrochloride). $[\alpha]_D$ +1.5 (c, 1.22 in $CHCl_3$).

6-Epimer, O-*Ac:* O-*Acetyl-6-isocassine.* ***Spectamine B***
$C_{20}H_{37}NO_3$ 339.517
Alkaloid from *Cassia spectabilis.*

6-Epimer, O-*benzoyl:* O-*Benzoyl-6-isocassine.* ***Spectamine A***
$C_{25}H_{39}NO_3$ 401.588
Alkaloid from *Cassia spectabilis* and from the flowers of *Senna spectabilis.* Inhibitor of superoxide anion production. Cytotoxic agent. Pale yellow oil. $[\alpha]_D^{25}$ +2.6 (c, 0.46 in EtOH). λ_{max} 204 (log ϵ 5.2); 229 (log ϵ 5.4); 273 (log ϵ 4.5) (MeOH).

6-Epimer, 11′ξ-alcohol: ***6-Isocarnavaline***
[66512-85-4]
[66537-25-5]
$C_{18}H_{37}NO_2$ 299.496
Alkaloid from *Cassia spectabilis* (Fabaceae). Oil. Mp 123° (as hydrochloride). $[\alpha]_D$ -5.66 (c, 0.03 in $CHCl_3$).

(±)-*form* [57760-16-4]
Alkaloid from *Cassia excelsa* (Fabaceae). Mp 73-74°.

Highet, R.J. *et al., J.O.C.*, 1964, **29**, 471; 1966, **31**, 1275 (*isol, ir, pmr, struct, config*)
Rice, W.Y. *et al., J.O.C.*, 1966, **31**, 1010 (*struct, abs config*)
Lythgoe, D. *et al., Tet. Lett.*, 1967, 1133 (*Carnavaline*)
Fales, H.M. *et al., J.A.C.S.*, 1970, **92**, 1590 (*ms*)
Highet, R.J. *et al., Tet. Lett.*, 1970, 1803 (*ms*)
Christofidis, I. *et al., Tetrahedron*, 1977, **33**, 977; 3005 (*6-Isocassine, Isocarnavaline*)
Brown, E. *et al., Bull. Soc. Chim. Fr.*, 1981, 281 (*synth*)
Chiale, C.A. *et al., An. Asoc. Quim. Argent.*, 1982, **70**, 337 (*isol, deriv*)
Hasseberg, H.-A. *et al., Annalen*, 1989, 255 (*synth, ir, pmr, cmr*)
Momose, T. *et al., Tet. Lett.*, 1993, **34**, 5785 (*synth*)
Pahl, A. *et al., Tetrahedron*, 1997, **53**, 7255 (*Carnavaline, synth*)
Oetting, J. *et al., Tetrahedron: Asymmetry*, 1997, **8**, 477-484 (*synth*)
Kamo, T. *et al., Heterocycles*, 2003, **60**, 1303-1306 (*6-Isocassine, Spectamines A,B*)
Makabe, H. *et al., Org. Lett.*, 2003, **4**, 27-29 (*synth*)
Sriphong, L. *et al., Planta Med.*, 2003, **69**, 1054-1056 (*6-epimer benzoyl*)
Leverett, C.A. *et al., J.O.C.*, 2006, **71**, 8591-8601 (*synth*)
Herdeis, C. *et al., Org. Biomol. Chem.*, 2006, **4**, 524-529 (*synth*)
Viegas, C. *et al., J. Nat. Prod.*, 2007, **70**, 2026-2028 (*Feruloylcassine*)
Kim, G. *et al., Tet. Lett.*, 2007, **48**, 4481-4483 (*synth*)

Cassipoureamide A C-184

4-Hydroxy-N-*(2-hydroxyethyl)-1,2-dithiolane-3-carboxamide*



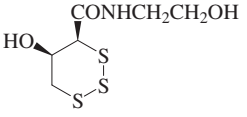
Relative Configuration

$C_6H_{11}NO_3S_2$ 209.29
Alkaloid from *Cassipourea guianensis.* Amorph. powder ($CHCl_3$/MeOH). Mp 105-109° Mp 42-46.5° (as di-Ac). $[\alpha]_D^{23}$ +173.9 (c, 0.89 in $CHCl_3$) (di-Ac). λ_{max} 244 (log ϵ 2.87); 280 (sh) (log ϵ 2.45); 320 (log ϵ 2.28) ($CHCl_3$) (di-Ac).

Ichimaru, M. *et al., J. Nat. Prod.*, 2000, **63**, 1675-1676

Cassipoureamide B C-185

5-Hydroxy-N-*(2-hydroxyethyl)-1,2,3-trithiane-4-carboxamide*



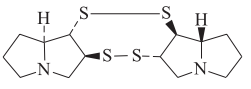
Relative Configuration

$C_6H_{11}NO_3S_3$ 241.356
Alkaloid from *Cassipourea guianensis.* Cryst. ($CHCl_3$/MeOH). Mp 109.5-113°. $[\alpha]_D^{23}$ -97 (c, 0.71 in MeOH). λ_{max} 206 (log ϵ 4.03); 223 (sh) (log ϵ 3.78); 267 (log ϵ 3.18) (MeOH).

Ichimaru, M. *et al., J. Nat. Prod.*, 2000, **63**, 1675-1676

Cassipourine C-186

*Dodecahydro-1*H,*6*H-*[1,2,5,6]tetrathiocino[3,4-*a:*8,7-*a′*]dipyrrolizine, 9CI. Cassipurine*
[14051-10-6]



Probable absolute configuration

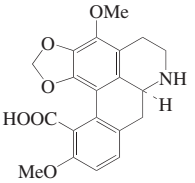
$C_{14}H_{22}N_2S_4$ 346.605
Alkaloid from *Cassipourea gummiflua* twigs and leaves (Rhizophoraceae). Needles (Me_2CO). Sol. $CHCl_3$. Mp 212°. $[\alpha]_D^{20}$ -11.8 (c, 1 in $CHCl_3$).

Methiodide (1:2):
Prisms (H_2O). Mp 258-260°.

Cooks, R.G. *et al., J.C.S.(C)*, 1967, 286 (*struct*)
Wright, W.G. *et al., J.C.S.(C)*, 1967, 283 (*isol*)
Gaffner, G. *et al., Acta Cryst. B*, 1969, **25**, 2114 (*cryst struct*)
Wróbel, J.T. *et al., Can. J. Chem.*, 1981, **59**, 1101 (*synth*)

Cassythic acid C-187

[1004981-48-9]



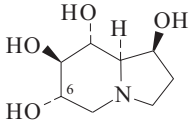
Absolute Configuration

$C_{20}H_{19}NO_6$ 369.373
Alkaloid from *Cassytha filiformis*. Brown syrup. $[\alpha]_D^{24}$ +105 (c, 1 in MeOH). λ_{max} 227 (log ϵ 4.31); 277 (log ϵ 4.06); 310 (sh) (log ϵ 3.63) (MeOH).

Tsai, T.-H. *et al., J. Nat. Prod.*, 2008, **71**, 289-291 (*isol, pmr, cmr*)

Castanospermine C-188

Octahydro-1,6,7,8-indolizinetetrol, 9CI. 1,6,7,8-Tetrahydroxyindolizidine
[79831-76-8]



$C_8H_{15}NO_4$ 189.211
Alkaloid from the seeds of *Castanospermum australe* and the pods of *Alexa leiopetala* (Fabaceae). Tentatively identified in *Alexa canaracunensis*, *Alexa cowanii*, *Alexa grandiflora*, *Alexa herminiana*, *Alexa imperatricis*, *Alexa leiopetala*, *Alexa superba* and *Alexa wachenheimii*. Potent inhibitor of α- and β-glucosidases and other carbohydrate processing enzymes. Potent dicot. phytotoxin. Shows anti-HIV activity and antiinflammatory props. Large cubic cryst. (EtOH aq.). Mp 212-215° (207-210°). $[\alpha]_D$ +80 (c, 0.93 in H_2O). Log P -2.25 (calc).

8-O-β-D-Glucopyranoside: [124378-36-5]
$C_{14}H_{25}NO_9$ 351.353
Alkaloid from the seeds of *Castanospermum australe*. $[\alpha]_D$ +44.1 (c, 0.65 in H_2O).

6-Butanoyl: 6-O-Butyrylcastanospermine. ***Celgosivir, INN.*** *MBI 3253. MDL 28574*
[121104-96-9]
$C_{12}H_{21}NO_5$ 259.302
α-Glucosidase inhibitor, shows anti-HIV activity, antiviral agent. Used for the treatment of hepatitis C. Cryst. solid. Mp 114-115°. Log P -0.34 (calc).

6-Butanoyl; hydrochloride: ***Celgosivir hydrochloride, USAN.*** *MDL 28574A*
[141117-12-6]

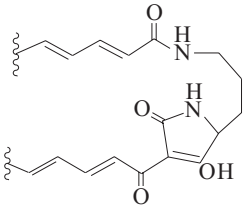
6-Epimer: ***6-Epicastanospermine***
[107244-34-8]
$C_8H_{15}NO_4$ 189.211
Minor alkaloid from the seeds of *Castanospermum australe* (Fabaceae). Potent inhibitor of amyloglucosidase (an exo-1,4-α-glucosidase) and a weak inhibitor of β-galactosidase (does not inhibit β-glucosidase or α-mannosidase). Solid. Mp 203-206° dec. $[\alpha]_D^{20}$ +2.8 (c, 1.0 in H_2O).

6-Epimer, 7-deoxy: ***7-Deoxy-6-epicastanospermine***
[129724-72-7]
$C_8H_{15}NO_3$ 173.211
Alkaloid from *Castanospermum australe*. Mod. inhibitor of amyloglucosidase and yeast α-glucosidase. Does not inhibit α-mannosidase. Oil. $[\alpha]_D^{26}$ +18.3 (c, 0.712 in MeOH).

6,7-Diepimer: ***6,7-Diepicastanospermine***
[130983-46-9]
$C_8H_{15}NO_4$ 189.211
Alkaloid from seeds of *Castanospermum australe* (Fabaceae). Moderately good inhibitor of amyloglucosidase but a relatively weak inhibitor of β-glucosidase. Oil. $[\alpha]_D^{27}$ +42.7 (c, 0.675 in MeOH).

Hohenschutz, L.D. *et al., Phytochemistry*, 1981, **20**, 811 (*isol, cryst struct, uv, pmr, cmr*)
Bernotas, R.C. *et al., Tet. Lett.*, 1984, **25**, 165 (*synth, abs config, bibl*)
Setoi, H. *et al., Tet. Lett.*, 1985, **26**, 4617 (*synth, abs config*)
Howard, A.S. *et al., Alkaloids (Academic Press)*, 1986, **28**, 287 (*rev, pharmacol*)
Molyneux, R.J. *et al., Arch. Biochem. Biophys.*, 1986, **251**, 450 (*epimer*)
Nash, R.J. *et al., CA*, 1986, **104**, 143181m (*rev*)
Hamana, H. *et al., J.O.C.*, 1987, **52**, 5492 (*Castanospermine, 6-Epicastanospermine, synth*)
Stevens, K.L. *et al., J. Chem. Ecol.*, 1988, **14**, 1467
Nash, R.J. *et al., Phytochemistry*, 1988, **27**, 1403 (*isol*)
Johnson, V.A. *et al., Antimicrob. Agents Chemother.*, 1989, **33**, 53 (*anti-HIV activity*)
Winchester, B.G. *et al., Biochem. J.*, 1990, **269**, 227 (*anti-HIV activity*)
Molyneux, R.J. *et al., J. Nat. Prod.*, 1990, **53**, 609 (*Deoxyepicastanospermine*)
Margolin, A.L. *et al., J.A.C.S.*, 1990, **112**, 2849 (*synth, 6-butanoyl, pmr, ms*)
Nash, R.J. *et al., Phytochemistry*, 1990, **29**, 1356 (*epimer*)
Anzeveno, P.B. *et al., Tet. Lett.*, 1990, **31**, 4321 (*synth*)
Bhide, R. *et al., Tet. Lett.*, 1990, **31**, 4827 (*synth*)
Molyneux, R.J. *et al., Biochemistry*, 1991, **30**, 9981 (*diepimer*)
Reymond, J.L. *et al., J.O.C.*, 1991, **56**, 2128 (*synth*)
Gerspacher, M. *et al., J.O.C.*, 1991, **56**, 3700 (*Castanospermine, 6-Epicastanospermine, synth*)
Willenborg, D.O. *et al., Immunol. Cell Biol.*, 1992, **70**, 369 (*pharmacol*)
Mulzer, J. *et al., J.O.C.*, 1992, **57**, 3194 (*synth*)
Burgess, K. *et al., Tetrahedron*, 1992, **48**, 4045 (*rev, synth, bibl*)
Grassberger, V. *et al., Annalen*, 1993, 379 (*synth*)
Pan, Y.T. *et al., Arch. Biochem. Biophys.*, 1993, **303**, 134 (*activity*)
Hempel, A. *et al., J. Med. Chem.*, 1993, **36**, 4082 (*cryst struct, abs config*)
Ina, H. *et al., J.O.C.*, 1993, **58**, 52 (*synth*)
Kim, N.-S. *et al., J.O.C.*, 1993, **58**, 7096 (*synth*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 561
Taylor, D.L. *et al., Antimicrob. Agents Chemother.*, 1994, **38**, 1780 (*6-butanoyl, pharmacol*)
Bartlett, M.R. *et al., Immunol. Cell Biol.*, 1994, **72**, 367 (*pharmacol*)
Kim, N.-S. *et al., Tet. Lett.*, 1994, **35**, 3489 (*synth, diepimer*)
Ferneaux, R.H. *et al., Tetrahedron*, 1994, **50**, 2131 (*synth, diepimer*)
Bridges, C.G. *et al., Glycobiology*, 1995, **5**, 243-247; 249-253 (*6-butanoyl, pharmacol*)
Kang, M.S. *et al., Glycobiology*, 1996, **6**, 209-216 (*6-butanoyl, metab*)
Kang, S.H. *et al., Chem. Comm.*, 1998, 1353-1354 (*synth*)
Izquierdo, I. *et al., Eur. J. Org. Chem.*, 1999, 1269-1274 (*1-Deoxycastanospermine*)
Bartnicka, E. *et al., Tetrahedron*, 1999, **55**, 2061-2076 (*synth*)
Batey, R.A. *et al., Tet. Lett.*, 2000, **41**, 9935-9938 (*synth, Deoxycastanospermine*)
Zhao, H. *et al., J.O.C.*, 2001, **66**, 1761-1767 (*synth*)
Kim, J.H. *et al., Synthesis*, 2003, 2473-2478 (*synth, 6-Epicastanospermine, ir, pmr, cmr*)
Somfai, P. *et al., Tetrahedron*, 2003, **59**, 1293-1299 (*synth*)
Zhang, H.-X. *et al., Tetrahedron*, 2003, **59**, 2015-2020 (*6-Epicastanospermine, synth*)
Kato, A. *et al., Tetrahedron: Asymmetry*, 2003, **14**, 325-331 (*8-glucoside*)
Whitby, K. *et al., Antiviral Chem. Chemother.*, 2004, **15**, 141-151 (*celgosivir, pharmacol*)
Sorbera, L.A. *et al., Drugs of the Future*, 2005, **30**, 545 (*celgosivir, rev*)
Zhao, Z. *et al., Tetrahedron*, 2005, **61**, 8888-8894 (*synth*)
Karanjule, N.S. *et al., J.O.C.*, 2006, **71**, 4667-4670 (*synth*)
Machan, T. *et al., Tetrahedron*, 2008, **64**, 2725-2732 (*synth*)

Catacandin C-189



Partial structure of Catacandin A

Isol. from *Lysobacter gummosus*. Possesses good anticandidal activity. Sol. MeOH, EtOAc, bases; poorly sol. H_2O, hexane. λ_{max} 260 (E1%/1cm 600); 335 (E1%/1cm 180) (MeOH) (Berdy). λ_{max} 269 (E1%/1cm 600); 357 (E1%/1cm 238); 375 (E1%/1cm 180) (HCl) (Berdy). λ_{max} 260 (E1%/1cm 760); 335 (E1%/1cm 180) (NaOH) (Berdy).

Catacandin A [100753-64-8]
$C_{29}H_{38}N_2O_6$ 510.629
Sol. MeOH, EtOAc, bases; poorly sol. H_2O, hexane. Main prod. λ_{max} 205 (ϵ 14000); 268 (ϵ 25500); 358 (ϵ 13500); 375 (ϵ 11500) (MeOH/HCl) (Derep). λ_{max} 257 (ϵ 33000); 340 (ϵ 8500) (MeOH/NaOH) (Derep). λ_{max} 204 (ϵ 17500); 258 (ϵ 30500); 343 (ϵ 8500) (MeOH) (Derep). λ_{max} 204 (ϵ 17500); 258 (ϵ 30500); 343 (ϵ 8500) (MeOH) (Berdy). λ_{max} 205 (ϵ 14000); 268 (ϵ 22500); 358 (ϵ 13500); 375 (ϵ 11500) (MeOH-HCl) (Berdy). λ_{max} 257 (ϵ 33000); 340 (ϵ 8500) (MeOH-NaOH) (Berdy). λ_{max} 269 (E1%/1cm 600); 357 (E1%/1cm 238); 375 (E1%/1cm 180) (HCl) (Berdy). λ_{max} 260 (E1%/1cm 760); 335 (E1%/1cm 180) (NaOH) (Berdy).

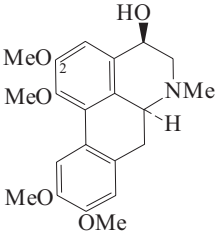
Catacandin B [100753-65-9]
$C_{29}H_{38}N_2O_6$ 510.629
Sol. MeOH, EtOAc; poorly sol. H_2O. Minor isoln. product isomeric with Catacandin A. λ_{max} 215 (ϵ 17500); 324 (ϵ 10500) (MeOH/HCl) (Derep). λ_{max} 236 (ϵ 15800); 317 (ϵ 7800) (MeOH/NaOH) (Derep). λ_{max} 205 (ϵ 16100); 236 (ϵ 15600); 320 (ϵ 7800) (MeOH) (Derep). λ_{max} 205 (ϵ 16100); 236 (ϵ 15600); 320 (ϵ 7800) (MeOH) (Berdy). λ_{max} 215 (ϵ

17500); 324 (ϵ 10500) (MeOH-HCl) (Berdy). λ_{max} 236 (ϵ 15800); 317 (ϵ 7800) (MeOH-NaOH) (Berdy).

Meyers, E. *et al., J. Antibiot.*, 1985, **38**, 1642 (*isol, props*)

Cataline C-190

5,6,6a,7-Tetrahydro-1,2,9,10-tetramethoxy-6-methyl-4H-dibenzo[de,g]quinolin-4-ol, 9CI. 4-Hydroxy-1,2,9,10-tetramethoxyaporphine
[38764-84-0]



$C_{21}H_{25}NO_5$ 371.432
Alkaloid from *Glaucium flavum* var. *vestitum* (Papaveraceae). Mp 183°. $[\alpha]_D$ +166 ($CHCl_3$).

N-*De-Me: Norcataline*
[63598-89-0]
Synthetic. Cryst. (EtOH). Mp 160-162°. $[\alpha]_D^{22}$ +106.7 (c, 1 in $CHCl_3$).

4-Epimer: Epicataline
[63598-92-5]
Synthetic. Mp 188-189°. $[\alpha]_D^{22}$ +97.3 (c, 1 in $CHCl_3$).

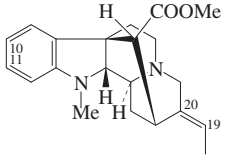
O^2-*De-Me:* ***2,4-Dihydroxy-1,9,10-trimethoxyaporphine. Srilankine***
[70509-78-3]
$C_{20}H_{23}NO_5$ 357.405
Alkaloid from *Alseodaphne semicarpifolia* (Lauraceae). $[\alpha]_D$ +122 (c, 0.18 in MeOH).

O^1-*De-Me,* N-*de-Me: 1,4-Dihydroxy-2,9,10-trimethoxynoraporphine.* ***4-Hydroxywilsonirine***
[107882-31-5]
$C_{19}H_{21}NO_5$ 343.379
Alkaloid from the bark of *Popowia pisocarpa* (Annonaceae). Amorph. $[\alpha]_D^{20}$ +60 (c, 0.33 in MeOH).

Ribas, I. *et al., Tet. Lett.*, 1972, 2033 (*uv, ir, pmr, ms, struct*)
Hartenstein, J. *et al., Angew. Chem., Int. Ed.*, 1977, **16**, 730 (*synth, pmr*)
Smolnycki, W.D. *et al., Tet. Lett.*, 1978, 4617 (*Srilankine*)
Castedo, L. *et al., Heterocycles*, 1982, **19**, 1591 (*pmr, cryst struct*)
Jossang, A. *et al., J. Nat. Prod.*, 1986, **49**, 1028 (*4-Hydroxywilsonirine*)

Cathafoline C-191

Methyl 1,2-dihydro-1-methylakuammilan-17-oate, 9CI
[50906-83-7]



Absolute Configuration

$C_{21}H_{26}N_2O_2$ 338.449
Alkaloid from *Alstonia quaternata* and *Catharanthus longifolius* (Apocynaceae). Mp 156°. $[\alpha]_D^{20}$ -40 (c, 0.34 in $CHCl_3$).

N^4-*Oxide:* ***Cathafoline*** $\mathbf{N^4}$***-oxide***
[154849-46-4]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from leaves of *Alstonia macrophylla* (Apocynaceae). Prisms (MeOH). Mp 145-155°. $[\alpha]_D^{23}$ -20.6 (c, 1.02 in MeOH).

19α,20α-Epoxide: ***Quaternoxine***
[57499-01-1]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from *Alstonia quaternata* and *Alstonia vitiensis* (Apocynaceae). Cryst. (Et_2O/MeOH). Mp 168°. $[\alpha]_D^{20}$ -34 (c, 0.4 in $CHCl_3$).

19ξ,20ξ-Epoxide: ***Raucubainine***
[84412-95-3]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from leaves of *Rauwolfia salicifolia* (Apocynaceae). $[\alpha]_D^{20}$ -7 ($CHCl_3$).

19ξ,20ξ-Epoxide, N^4*-Me:* ***4-Methylraucubainiinium(1+)***
[123789-22-0]
$C_{22}H_{29}N_2O_3^{\oplus}$ 369.483
Alkaloid from leaves of *Vinca minor* (Apocynaceae). Mp 228-230° dec. (as chloride). CAS Reg. No. refers to chloride.

10-Methoxy: ***10-Methoxycathafoline***
$C_{22}H_{28}N_2O_3$ 368.475
Alkaloid from *Alstonia macrophylla*. Pale yellow oil. $[\alpha]_D$ -57 (c, 0.08 in $CHCl_3$). λ_{max} 204 (log ϵ 4.23); 249 (log ϵ 3.74); 315 (log ϵ 3.88) (EtOH).

10-Methoxy, N^4*-oxide:* ***10-Methoxycathafoline*** $\mathbf{N^4}$***-oxide***
$C_{22}H_{28}N_2O_4$ 384.474
Alkaloid from the leaves of *Alstonia angustifolia* var. *latifolia*. Light yellow oil. $[\alpha]_D$ -32 (c, 0.14 in $CHCl_3$). λ_{max} 208 (log ϵ 4.16); 249 (log ϵ 3.79); 311 (log ϵ 3.37) (EtOH).

11-Methoxy: ***Cabucraline***
[53802-11-2]
$C_{22}H_{28}N_2O_3$ 368.475
Alkaloid from *Cabucala erythrocarpa*, *Cabucala torulosa* and *Alstonia vitiensis* (Apocynaceae). Cryst. (Me_2CO). Mp 148°. $[\alpha]_D^{20}$ -45 (c, 0.5 in $CHCl_3$).

11-Methoxy, 10-formyl: ***Cabucraline 10-carboxaldehyde***
[87596-49-4]
$C_{23}H_{28}N_2O_4$ 396.485
Alkaloid from *Alstonia plumosa* (Apocynaceae). $[\alpha]_D$ -33 (c, 0.5 in $CHCl_3$).

11-Methoxy, N^4*-oxide:* ***Cabucraline*** $\mathbf{N^4}$***-oxide***
[87596-48-3]
$C_{22}H_{28}N_2O_4$ 384.474
Alkaloid from root bark of *Alstonia plumosa* (Apocynaceae). $[\alpha]_D$ -37 (c, 0.37 in $CHCl_3$).

11-Methoxy, 19α,20α-epoxide: ***Caberine.*** *11-Methoxyquaternoxine*
[53802-10-1]
$C_{22}H_{28}N_2O_4$ 384.474
Alkaloid from *Alstonia plumosa* and from several *Cabucala* spp. from Madagascar (Apocynaceae).

11-Methoxy, 18-hydroxy: ***18-Hydroxycabucraline***
[132268-04-3]
$C_{22}H_{28}N_2O_4$ 384.474
Alkaloid from the stem bark of *Tonduzia pittieri* (*Alstonia pittieri*) (Apocynaceae). $[\alpha]_D$ -31 (c, 0.5 in $CHCl_3$).

Rasoanaivo, P. *et al., Tet. Lett.*, 1973, 1425 (*uv, ir, pmr, ms, struct*)
Douzoua, L. *et al., Phytochemistry*, 1974, **13**, 1994 (*isol, uv, ir, pmr, ms, Cabucraline*)
Mamatas-Kalamaras, S. *et al., Phytochemistry*, 1975, **14**, 1637; 1849 (*uv, ir, pmr, ms, struct, Quaternoxine*)
Das, B.C. *et al., J.O.C.*, 1977, **42**, 2785 (*cmr*)
Sierra, P. *et al., Coll. Czech. Chem. Comm.*, 1982, **47**, 2912 (*Raucubainine*)
Jacquier, M.J. *et al., Phytochemistry*, 1982, **21**, 2973 (*Cabucraline 10-carboxaldehyde, Cabucraline oxide, Caberine*)
Uhrin, D. *et al., J. Nat. Prod.*, 1989, **52**, 637 (*4-Methylraucubainiinium*)
Proksa, B. *et al., Planta Med.*, 1989, **55**, 188 (*4-Methylraucubainiinium*)
Morfaux, A.-M. *et al., Phytochemistry*, 1990, **29**, 3345 (*18-Hydroxycabucraline*)
Abe, F. *et al., Phytochemistry*, 1994, **35**, 249 (*oxide*)
Kam, T.-S. *et al., Phytochemistry*, 1999, **51**, 839-844; 2004, **65**, 603-608 (*10-Methoxycathafoline, 10-Methoxycathafoline* N^4*-oxide*)

Cathalanceine C-192

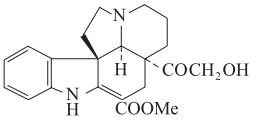
[1355-29-9]

Struct. unknown. Alkaloid from roots of *Catharanthus lanceus* (Apocynaceae). Cryst. (Me_2CO). Mp 188-190° dec. pK_a 4.5 (33% DMF aq.).

Blomster, R.N. *et al., J. Nat. Prod.*, 1964, **27**, 480-485 (*isol, uv, ir*)

Cathaphylline C-193

Methyl 2,3-didehydro-21-hydroxy-20-oxooaspidospermidine-3-carboxylate
[59444-63-2]



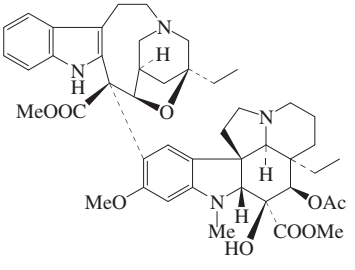
Absolute configuration

$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from *Catharanthus trichophyllus* (Apocynaceae). Noncryst. $[\alpha]_D^{23}$ -438 (c, 0.1 in $CHCl_3$).

Cordell, G.A. *et al., J. Pharm. Sci.*, 1976, **65**, 366 (*isol, ir, uv, ms, pmr, struct*)

Catharanthamine C-194

[78779-58-5]

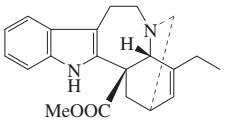


$C_{46}H_{56}N_4O_9$ 808.97
Alkaloid from *Catharanthus roseus* (Apocynaceae). Shows antitumour props. λ_{max} 213 (ϵ 5750); 220 (ϵ 7800); 223 (ϵ 5100); 265 (ϵ 2200); 277 (ϵ 16000); 295 (ϵ 1100) (MeOH) (Berdy).

El-Sayed, A. *et al., J. Nat. Prod.*, 1981, **44**, 289 (*isol, uv, ir, pmr, cmr, ms, struct*)

Catharanthine C-195

[2468-21-5]
[20395-98-6 (±)-form]



Absolute Configuration

$C_{21}H_{24}N_2O_2$ 336.433
Belongs to the opposite enantiomeric series to the other iboga alkaloids. Alkaloid from *Catharanthus ovalis* and other *Catharanthus* spp. and from *Catharanthus roseus* (Apocynaceae). Diuretic. Shows hypoglycaemic activity. Active against gram-positive bacteria and fungi. Mp 126-128°. $[\alpha]_D$ +29.8 ($CHCl_3$). Log P 3.44 (uncertain value) (calc). λ_{max} 226 ; 284 ; 292 (MeOH).

Sulfate (2:1): Mp 164-167° dec.

Neuss, N. *et al., Tet. Lett.*, 1961, 206-210 (*struct*)
Gorman, M. *et al., J.A.C.S.*, 1965, **87**, 93-99 (*pmr*)
Battersby, A.R. *et al., Chem. Comm.*, 1966, 810-812; 890-891 (*biosynth*)
Büchi, G. *et al., J.A.C.S.*, 1970, **92**, 999-1005 (*synth, ms*)
Bláha, K. *et al., Coll. Czech. Chem. Comm.*, 1973, **39**, 2258-2266 (*abs config*)
Kutney, J.P. *et al., Helv. Chim. Acta*, 1975, **58**, 1672-1689 (*synth*)
Wenkert, E. *et al., Helv. Chim. Acta*, 1976, **59**, 2437-2442 (*cmr*)
Hernandez, N.M.R. *et al., Rev. Cubana Farm.*, 1977, **11**, 249-255 (*activity*)
Imanishi, T. *et al., Chem. Pharm. Bull.*, 1982, **30**, 4052-4059 (*synth*)
Raucher, S. *et al., J.O.C.*, 1985, **50**, 3236-3237 (*synth*)
Szántay, C. *et al., Tetrahedron*, 1990, **46**, 1711-1732 (*synth*)
Reding, M.T. *et al., Org. Lett.*, 1999, **1**, 973-976 (*synth*)
Moisan, L. *et al., Angew. Chem., Int. Ed.*, 2006, **45**, 5334-5336 (*synth*)

Catharicine C-196

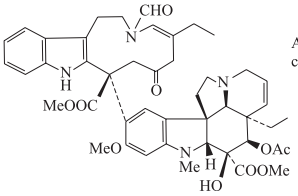
[1355-30-2]

$C_{46}H_{52}N_4O_{10}$ 820.938
Bisindole alkaloid. Struct. unknown. Alkaloid from *Catharanthus roseus* (Apocynaceae). Plates (Me_2CO). Mp 231-234° dec. $[\alpha]_D^{26}$ +34.8 (c, 1 in $CHCl_3$).

Svoboda, G.H. *et al., J. Pharm. Sci.*, 1962, **51**, 518-523 (*isol, uv, ir*)

Catharine C-197

[1355-31-3]



Absolute configuration

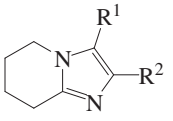
$C_{46}H_{54}N_4O_{10}$ 822.953
Minor alkaloid from *Catharanthus roseus, Catharanthus ovalis* and *Catharanthus longifolius* (Apocynaceae). Mp 271-275° dec. $[\alpha]_D$ -54.2 ($CHCl_3$). Could be an artifact of autoxidation.

▶ VS3630000

Rasoanaivo, P. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1974, **279**, 75 (*ir, pmr, cmr, ms, struct*)
Guilhelm, J. *et al., Acta Cryst. B*, 1976, **32**, 936 (*cryst struct*)
Kutney, J.P. *et al., Can. J. Chem.*, 1979, 1682 (*synth*)
Langlois, N. *et al., Chem. Comm.*, 1979, 582 (*synth*)
Kutney, J.P. *et al., Helv. Chim. Acta*, 1982, **65**, 2088 (*biosynth*)

Catharsitoxin A C-198

3-Ethyl-5,6,7,8-tetrahydro-2-methylimidazo[1,2-a]pyridine
[376587-10-9]



R^1 = -CH_2CH_3, R^2 = CH_3

$C_{10}H_{16}N_2$ 164.25
Isol. from the Chinese remedy Qiung laug prepd. from the beetle *Catharsius molossus.* Oil.

Suenaga, K. *et al., Tet. Lett.*, 2001, **42**, 7079-7081 (*isol, synth, pmr, cmr*)

Catharsitoxin B C-199

2-Ethyl-5,6,7,8-tetrahydro-3-methylimidazo[1,2-a]pyridine
[376587-11-0]
As Catharsitoxin A, C-198 with R^1 = CH_3, R^2 = CH_2CH_3
$C_{10}H_{16}N_2$ 164.25
Isol. from the Chinese remedy Qiung laug prepd. from the beetle *Catharsius molossus.* Oil.

Suenaga, K. *et al., Tet. Lett.*, 2001, **42**, 7079-7081 (*isol, pmr*)

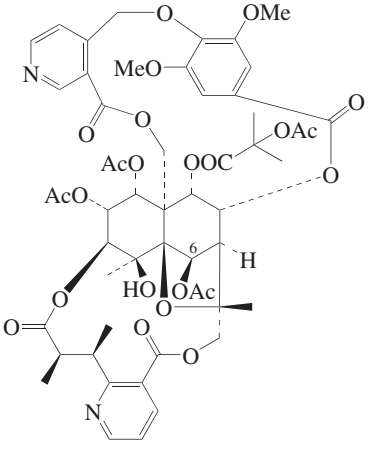
Catharsitoxin C C-200

5,6,7,8-Tetrahydro-3-isopropylimidazo[1,2-a]pyridine
[376587-12-1]
As Catharsitoxin A, C-198 with R^1 = -$CH(CH_3)_2$, R^2 = H
$C_{10}H_{16}N_2$ 164.25
Isol. from the Chinese remedy Qiung laug prepd. from the beetle *Catharsius molossus.* Oil.

Suenaga, K. *et al., Tet. Lett.*, 2001, **42**, 7079-7081 (*isol, pmr*)

Cathedulin E3 C-201

Cathedulin K11
[61230-22-6]



$C_{54}H_{60}N_2O_{23}$ 1105.068
Alkaloid from *Catha edulis* (Celastraceae). Cryst. (Et_2O/petrol). Mp 245-248°. $[\alpha]_D^{20}$ -44.8 (c, 0.27 in $CHCl_3$). λ_{max} 215 (ϵ 40750); 268 (ϵ 13010); 293 (sh) (ϵ 5890) (EtOH).

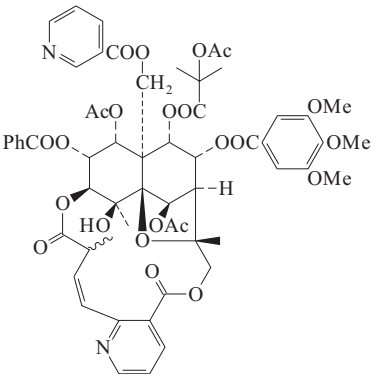
O^6-*De-Ac:* ***Cathedulin E4***
[61230-20-4]
$C_{52}H_{58}N_2O_{22}$ 1063.03
Alkaloid from *Catha edulis* (Celastraceae). Amorph. solid. $[\alpha]_D^{27}$ -37 (c, 0.56 in $CHCl_3$). λ_{max} 215 (ϵ 41000); 268 (ϵ 12040) (EtOH).

O^2-*De-Ac, 2-benzoyl:* ***Cathedulin K20***
[106982-89-2]
$C_{59}H_{62}N_2O_{23}$ 1167.138
Alkaloid from fresh young leaves and stems of *Catha edulis* (Celestraceae).

Baxter, R.L. *et al., J.C.S. Perkin 1*, 1979, 2965-2971; 2982-2989 (*Cathedulins E3-E4*)
Crombie, L. *et al., J.C.S. Perkin 1*, 1986, 531-534 (*Cathedulin K20*)

Cathedulin K17 C-202

[106999-78-4]



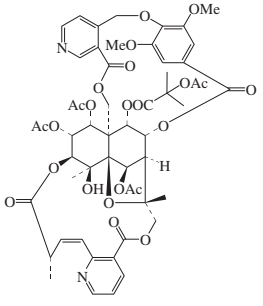
$C_{59}H_{62}N_2O_{23}$ 1167.138

CAS Name is incorrect. Alkaloid from fresh young leaves and stems of *Catha edulis* (Celestraceae). Cryst. solid.

Crombie, L. *et al., J.C.S. Perkin 1*, 1986, 531 (*isol, pmr, struct*)

Cathedulin K19 C-203

[106999-79-5]



Absolute Configuration

$C_{54}H_{58}N_2O_{23}$ 1103.052

Alkaloid from fresh young leaves and stems of *Catha edulis* (Celestraceae). Cryst. (MeOH). Mp 249-251°.

Crombie, L. *et al., J.C.S. Perkin 1*, 1986, 531 (*isol, pmr, cmr, struct*)

Kim, T.-S. *et al., Tet. Lett.*, 1993, **34**, 5535 (*config*)

Cathedulin Y7 C-204

[73298-55-2]

Struct. unknown. Alkaloid from Yemeni khat *Catha edulis* (Celastraceae). Obt. only in trace amt., structurally related to the other cathedulins. M^+958, conts. acetate, nicotinoate, gallate and evoninate residues.

Baxter, R.L. *et al., J.C.S. Perkin 1*, 1979, 2965-2971

Cathedulin Y9 C-205

[73298-56-3]

Struct. unknown. Trace alkaloid from Yemeni khat *Catha edulis* (Celastraceae). M^+900, conts. acetate, nicotinoate, gallate and evoninate residues.

Baxter, R.L. *et al., J.C.S. Perkin 1*, 1979, 2965-2971

Cathedulin Y10 C-206

[73298-58-5]

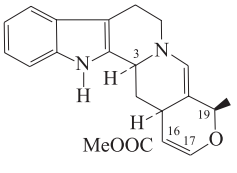
Struct. unknown. Trace alkaloid from Yemeni khat *Catha edulis* (Celastraceae). M^+980, conts. acetate, nicotinoate, gallate and everninate residues.

Baxter, R.L. *et al., J.C.S. Perkin 1*, 1979, 2965-2971

Cathenamine C-207

Dehydroajmalicine

[63661-74-5]



Absolute configuration

$C_{21}H_{22}N_2O_3$ 350.416

Alkaloid from *Guettarda eximia* (Apocynaceae). Key intermediate in the biosynthesis of Ajmalicine, A-212 and related alkaloids. $[\alpha]_D^{20}$ -52 (c, 1 in $CHCl_3$). Very reactive base, reduced by $NaBH_4$ to Tetrahydroalstonine in A-212. λ_{max} 228 ; 274 ; 280 ; 290 (sh) (EtOH).

17-Hydroxy, 16,17-dihydro: ***16,17-Dihydro-17-hydroxycathenamine***

$C_{21}H_{24}N_2O_4$ 368.432

Alkaloid from *Guettarda eximia* (Apocynaceae). Proposed intermed. in biosynth. of heteroyohimbine alkaloids. Inseparable mixt. of epimers. Labile, forms Cathenamine on standing in soln. λ_{max} 228 ; 274 ; 280 ; 290 (EtOH).

3,19-Diepimer: ***3-Iso-19-epicathenamine***

[75766-20-0]

$C_{21}H_{22}N_2O_3$ 350.416

Alkaloid from cell suspension cultures of *Catharanthus ovalis* (Apocynaceae).

Stöckigt, J. *et al., Chem. Comm.*, 1977, 164-166; 646-648 (*biosynth*)

Husson, H.P. *et al., Tet. Lett.*, 1977, 1889-1892 (*isol, uv, pmr, struct*)

Kan-Fan, C. *et al., Chem. Comm.*, 1978, 618-619 (*16,17-Dihydro-17-hydroxycathenamine*)

Rüffer, M. *et al., Chem. Comm.*, 1979, 1016-1018 (*biosynth*)

Stöckigt, J. *et al., Planta Med.*, 1980, **40**, 22-30 (*3-Iso-19-epicathenamine*)

Martin, S.F. *et al., J.A.C.S.*, 1988, **110**, 5925-5927 (*synth*)

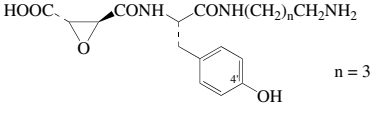
Lounasmaa, M. *et al., Heterocycles*, 1997, **45**, 779-786 (*synth*)

Cathestatin B C-208

PF 1126B. Antibiotic PF 1126B

[162112-42-7]

[169735-72-2 , 167818-23-7]



n = 3

$C_{17}H_{23}N_3O_6$ 365.385

Prod. by *Aspergillus terricola*, *Penicillium citrinum* and the sponge-derived *Microascus longirostris*. Inhibitor of cysteine protease. Amorph. solid. Stereochemical identity with PF 1126 antibiotics not certain.

4′-Deoxy: ***Cathestatin A***. *PF 1126A. Antibiotic PF 1126A*

[162112-41-6]

[167818-22-6 , 169735-71-1 , 169735-77-7 , 169735-75-5]

$C_{17}H_{23}N_3O_5$ 349.386

Prod. by *Aspergillus terricola*, *Microascus longirostris* and *Penicillium citrinum*. Inhibitor of cysteine protease. Amorph. solid. Sol. H_2O, MeOH.

Woo, J.-T. *et al., Biosci., Biotechnol., Biochem.*, 1995, **59**, 350-352 (*isol, pmr, cmr*)

Japan. Pat., 1995, 95 157 479; *CA*, **123**, 196747z (*PF 1126B*)

Yu, C.-M. *et al., J. Antibiot.*, 1996, **49**, 395-397 (*isol, pmr, cmr*)

Cathestatin C C-209

PF 1138B. Antibiotic PF 1138B

[176486-11-6]

[172940-60-2]

As Cathestatin B, C-208 with

n = 4

$C_{18}H_{25}N_3O_6$ 379.412

Prod. by *Chaetomium globosum* and the sponge-derived *Microascus longirostris*. Inhibitor of cysteine protease. Sol. H_2O. Stereochemical identity with PF 1138 antibiotics not certain.

4′-Deoxy: ***Antibiotic PF 1138A***. *PF 1138A*

[172940-59-9]

$C_{18}H_{25}N_3O_5$ 363.413

Prod. by *Chaetomium globosum*. Thiol protease inhibitor.

Japan. Pat., 1995, 95 252 245; *CA*, **124**, 117071u (*PF 1138*)

Yu, C.-M. *et al., J. Antibiot.*, 1996, **49**, 395 (*isol, pmr, cmr*)

Cathidine A C-210

[58573-03-8]

Struct. unknown. Alkaloid from *Catha edulis* (Celastraceae). Amorph. solid. Mp 73-75°. Closely related to 1,2,3,4,9,14-Hexahydroxydihydro-β-agarofuran. Anal. gave C 64.14, H 6.66, N 2.29, O 27.70%.

Cais, M. *et al., Tetrahedron*, 1975, **31**, 2727-2731

Cathidine B C-211

[58573-02-7]

Struct. unknown. Alkaloid from *Catha edulis* (Celastraceae). Mp 112-118° (softens at 107°).

Cais, M. *et al., Tetrahedron*, 1975, **31**, 2727-2731

Cathindine C-212

[1355-11-9]

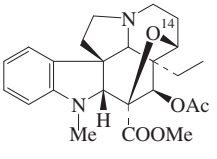
Struct. unknown. Alkaloid from roots of *Catharanthus roseus* (Apocynaceae). Cryst. (MeOH)(as sulfate). Mp 239-245° dec. (sulfate).

Svoboda, G.H. *et al., J. Nat. Prod.*, 1963, **26**, 141-153 (*isol, uv*)

Cathovaline C-213

Methyl 4-(acetyloxy)-3,6-epoxy-1-methylaspidospermidine-3-carboxylate, 9CI. Cathanneine

[35470-43-0]



Absolute Configuration

$C_{24}H_{30}N_2O_5$ 426.511

Alkaloid from *Catharanthus ovalis* and *Catharanthus lanceus* (Apocynaceae). Mp

88-90° (76-77°). $[\alpha]_D$ -73 (c, 0.5 in $CHCl_3$).

O-*De-Ac:* ***Deacetylcathovaline***
[56435-45-1]
$C_{22}H_{28}N_2O_4$ 384.474
Alkaloid from *Catharanthus ovalis* (Apocynaceae). Noncryst. $[\alpha]_D$ -88 (c, 0.52 in $CHCl_3$).

14ξ-Hydroxy: ***14-Hydroxycathovaline***
[68170-67-2]
$C_{24}H_{30}N_2O_6$ 442.511
Alkaloid from *Catharanthus ovalis* (Apocynaceae). Mp 133-134°. $[\alpha]_D$ -73 (c, 0.7 in $CHCl_3$).

Langlois, N. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1971, **273**, 994; 1972, **275**, 219 (*Cathovaline, 14-Hydroxycathovaline, isol, ms, pmr, struct*)
Aynilian, G.H. *et al., Tet. Lett.*, 1972, 89; 391 (*ir, uv, pmr, ms, struct, abs config*)
Diatta, L. *et al., Bull. Soc. Chim. Fr.*, 1975, 671 (*Deacetylcathovaline*)
Langlois, N. *et al., Phytochemistry*, 1979, **18**, 467 (*14-Hydroxycathovaline*)

Caulerpicin C-214

[11003-42-2]

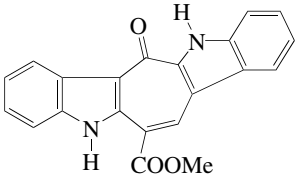
$C_{43}H_{87}NO_2$ 650.166

Consists of a mixt. of ceramides derived from 2-Amino-1,3-octadecanediol with $C_{18} \rightarrow C_{26}$ saturated fatty acids. Toxic principle, isol. from the green alga *Caulerpa racemosa* and other *Caulerpa* spp. Concentrates in crabs, shrimps and other organisms in the marine food chain. Cryst. Sol. MeOH, Et_2O; poorly sol. H_2O. Mp 95°.
► Toxic agent causing sensory numbness.

Doty, M.S. *et al., Nature (London)*, 1966, **211**, 990
Nielsen, P.G. *et al., Phytochemistry*, 1982, **21**, 1643 (*pmr, ms, struct*)

Caulersin C-215

[196803-51-7]

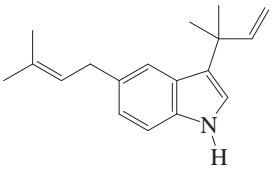


$C_{21}H_{14}N_2O_3$ 342.353
Alkaloid from the alga *Caulerpa serrulata*. Bright yellow cryst. (MeOH). Mp 269-270°. λ_{max} 206 (log ϵ 4.51); 220 (log ϵ 3.62); 265 (log ϵ 2.02); 273 (log ϵ 1.1); 311 (log ϵ 1.36) (EtOH).

Su, J.-Y. *et al., J. Nat. Prod.*, 1997, **60**, 1043-1044 (*isol, uv, ir, pmr, cmr, ms*)
Wahlström, N. *et al., Tetrahedron*, 2004, **60**, 2147-2153 (*synth, pmr, cmr*)
Miki, Y. *et al., Tet. Lett.*, 2006, **47**, 5215-5218 (*synth*)

Caulidine A C-216

*3-(1,1-Dimethyl-2-propenyl)-5-(3-methyl-2-butenyl)-1*H*-indole. 3-(1,1-Dimethyl-2-propenyl)-5-prenylindole*
[820965-41-1]

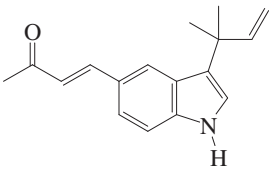


$C_{18}H_{23}N$ 253.386
Alkaloid from *Isolona cauliflora*. Yellow oil.

Nkunya, M.H.H. *et al., Nat. Prod. Res.*, 2004, **18**, 253-258 (*isol, pmr, cmr, ms*)

Caulidine B C-217

*3-(1,1-Dimethyl-2-propenyl)-5-(3-oxo-1-butenyl)-1*H*-indole*
[820965-42-2]

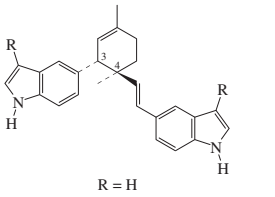


$C_{17}H_{19}NO$ 253.343
Alkaloid from *Isolona cauliflora*. Yellow oil.

Nkunya, M.H.H. *et al., Nat. Prod. Res.*, 2004, **18**, 253-258 (*isol, pmr, cmr, ms*)

Caulindole A C-218

[675103-47-6]



Relative Configuration

R = H

$C_{26}H_{26}N_2$ 366.505
Alkaloid from *Isolona cauliflora*. Yellow oil. $[\alpha]_D$ +13.9 (c, 0.17 in $CHCl_3$).

3-Epimer: ***Caulindole B***
[675103-48-7]
$C_{26}H_{26}N_2$ 366.505
Constit. of *Isolona cauliflora*. Yellow oil.

Makangara, J.J. *et al., Phytochemistry*, 2004, **65**, 227-232 (*isol, pmr, cmr*)

Caulindole C C-219

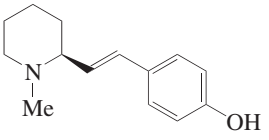
[675103-49-8]
As Caulindole A, C-218 with
R = $-C(CH_3)_2CH{=}CH_2$
$C_{36}H_{42}N_2$ 502.741
Alkaloid from *Isolona cauliflora*. Yellow gum.

3-Epimer: ***Caulindole D***
[675103-50-1]
$C_{36}H_{42}N_2$ 502.741
Alkaloid from *Isolona cauliflora*. Yellow gum.

Makangara, J.J. *et al., Phytochemistry*, 2004, **65**, 227-232 (*isol, pmr, cmr*)

Caulophyllumine B C-220

4-[2-(1-Methyl-2-piperidinyl)ethenyl]-phenol. 2-[2-(4-Hydroxyphenyl)ethenyl]-1-methylpiperidine



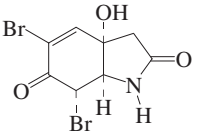
$C_{14}H_{19}NO$ 217.31

(S,E)-form [1009318-61-9]
Alkaloid from the roots of *Caulophyllum thalictroides* (blue cohosh). Brown powder. $[\alpha]_D^{28}$ -13.2 (c, 0.22 in MeOH). λ_{max} 265 (log ϵ 3.41) (MeOH).

Ali, Z. *et al., Phytochemistry*, 2008, **69**, 1037-1042 (*isol, pmr, cmr*)

Cavernicolin 1 C-221

[84590-04-5]



Absolute Configuration

$C_8H_7Br_2NO_3$ 324.956
Alkaloid from the sponges *Aplysina cavernicola* and *Suberea* aff. *praetensa*. λ_{max} 200 (sh) (MeOH/NaOH) (Derep). λ_{max} 257 (ϵ 8300) (MeOH) (Derep).

5-Debromo, 5-chloro: ***7-Bromo-5-chlorocavernicolin***
$C_8H_7BrClNO_3$ 280.505
Metab. from *Aplysina cavernicola*. Racemic. Isol. as a mixt. of C(7)-epimerising monoacetates.

7-Debromo: ***5-Bromocavernicolin***
$C_8H_8BrNO_3$ 246.06
Isol. from the sponge *Suberea* aff. *praetensa*.

5,7-Bisdebromo, 5-chloro: ***5-Chlorocavernicolin***
$C_8H_8ClNO_3$ 201.609
Alkaloid from *Aplysina cavernicola* and *Suberea* aff. *praetensa*. Nearly racemic.

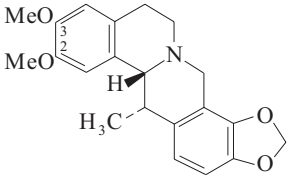
7-Epimer: ***Cavernicolin 2***
[84590-06-7]
$C_8H_7Br_2NO_3$ 324.956
Alkaloid from *Aplysina cavernicola* and *Suberea* aff. *praetensa*. λ_{max} 200 (sh) (MeOH/NaOH) (Derep). λ_{max} 257 (ϵ 8300) (MeOH) (Derep).

D'Ambrosio, M. *et al., Helv. Chim. Acta*, 1984, **67**, 1484-1492 (*isol, uv, pmr, cmr, ms, struct*)

Kijjoa, A. *et al., Z. Naturforsch., C*, 2002, **57**, 732-738 (*Suberea aff. praetensa alkaloids*)

Cavidine C-222

*6,6*a*,11,14-Tetrahydro-8,9-dimethoxy-6-methyl-12*H*-benzo[*a*]-1,3-benzodioxolo[4,5-*g*]quinolizine, 9CI. 2,3-Dimethoxy-13-methyl-9,10-(methylenedioxy)berbine, 8CI*



$C_{21}H_{23}NO_4$ 353.417

(+)-*form* [32728-75-9]
Alkaloid from *Corydalis meifolia* and *Corydalis saxicola*. Cryst. (C_6H_6). Mp 148-149°. $[\alpha]_D$ +323 (c, 0.13 in $CHCl_3$).

13-Epimer. ***Thalictrifoline***. *Thalictrofoline*
[30342-06-4]
$C_{21}H_{23}NO_4$ 353.417
Alkaloid from *Corydalis thalictrifolia*. Mp 155°. $[\alpha]_D$ +199 (c, 0.136 in $CHCl_3$). $[\alpha]_D$ +218 (c, 0.4 in MeOH).

(±)-*form* [30342-07-5]
Alkaloid from *Corydalis saxicola* and *Corydalis thalictrifolia*. Cryst. (MeOH). Mp 192°.

O^2-*De-Me:* ***Apocavidine***
[32728-76-0]
$C_{20}H_{21}NO_4$ 339.39
Alkaloid from *Corydalis tuberosa*. Cryst. + MeOH (MeOH). Mp 175°. Tenaciously solvated.

O^3-*De-Me:* ***Isoapocavidine***
$C_{20}H_{21}NO_4$ 339.39
Alkaloid from whole plants of *Dactylicapnos torulosa*. Powder. Mp 180-183°.

1-Nitro, O^2*-de-Me:* ***1-Nitroapocavidine***
$C_{20}H_{20}N_2O_6$ 384.388
Alkaloid from *Corydalis saxicola*. Amorph. yellow powder. Mp 229-231°. λ_{max} 280 (MeOH).

Manske, R.H.F. *et al., Can. J. Res., Sect. B*, 1943, **21**, 111; *CA*, **37**, 4738 (*Thalictrifoline*)
Yu, C.K. *et al., Can. J. Chem.*, 1970, **48**, 3673 (*isol, pmr, ms, uv*)
Ninomiya, I. *et al., J.C.S. Perkin 1*, 1975, 1791 (*synth, pmr*)
Hughes, D.W. *et al., Can. J. Chem.*, 1976, **54**, 2252 (*cmr*)
Iwasa, K. *et al., J.O.C.*, 1981, **46**, 4744-4750 (*synth, abs config*)
Iwasa, K. *et al., Tet. Lett.*, 1981, 2333 (*Thalictrifoline, synth, abs config*)
Pai, B.R. *et al., Indian J. Chem., Sect. B*, 1982, **21**, 607 (*synth*)
Bhakuni, D.S. *et al., Tetrahedron*, 1986, **42**, 675-680 (*biosynth*)
Rücker, G. *et al., Phytochemistry*, 1994, **36**, 519 (*Isoapocavidine*)
Li, H.L. *et al., Chin. Chem. Lett.*, 2005, **16**, 367-368 (*1-Nitroapocavidine*)
Li, W. *et al., Acta Cryst. E*, 2006, **62**, o3137-o3138 (*cryst struct*)
Cheng, X. *et al., Chem. Biodiversity*, 2008, **5**, 1335-1344 (*isol, pmr, cmr*)

Cavincidine C-223

Struct. unknown. Alkaloid from roots of *Catharanthus roseus* (Apocynaceae).

Sulfate: Mp 238-239° dec. pK_a 7.85 (33% DMF aq.).

Svoboda, G.H. *et al., J. Nat. Prod.*, 1963, **26**, 141-153 (*isol, uv, ir*)

Cavincine C-224

[1355-33-5]

$C_{20}H_{24}N_2O_2$ 324.422

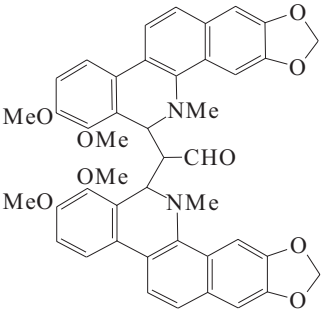
Struct. unknown. Alkaloid from *Catharanthus roseus* (Apocynaceae). Noncryst.

Sulfate:
Irregular plates (EtOH). Mp 275-277° dec. pK_a 6.9 (33% DMF aq.).

Svoboda, G.H. *et al., J. Nat. Prod.*, 1963, **26**, 141-153 (*isol, ir, uv*)

Caymandimerine C-225

[112899-83-9]



$C_{44}H_{38}N_2O_9$ 738.792
Alkaloid from the stem bark of a *Zanthoxylum* sp. collected in Grand Cayman (*Zanthoxylum spinosum* or *Zanthoxylum coriaceum*). λ_{max} 228 ; 283 ; 325 (MeOH).

Ng, K.M. *et al., Phytochemistry*, 1987, **26**, 3251-3254 (*isol, pmr, ms*)

Ceanothine A C-226

[1355-37-9]

$C_{30}H_{40}N_4O_4$ 520.67

Struct. unknown but appears to be identical with either Sanjoinine B in F-150 or *N*-Demethyladouetine Y in A-150. Alkaloid from the root bark of *Ceanothus americanus* (New Jersey tea) (Rhamnaceae). Needles (CH_2Cl_2/Et_2O). Mp 256-259°. $[\alpha]_D$ -256 (c, 0.5 in $CHCl_3$).

Warnhoff, E.W. *et al., Can. J. Chem.*, 1965, **43**, 2594-2602 (*isol, pmr*)
Warnhoff, E.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1970, **28**, 162 (*struct*)

Ceanothine C C-227

[18658-42-9]

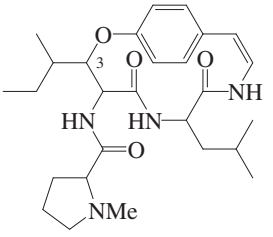
$C_{26}H_{38}N_4O_4$ 470.611

Struct. uncertain. Alkaloid from the root bark of *Ceanothus americanus* (New Jersey tea) (Rhamnaceae). Needles ($CHCl_3$/Et_2O). Mp 223-229°. $[\alpha]_D^{25}$ -368 (c, 1.01 in $CHCl_3$).

Warnhoff, E.W. *et al., Can. J. Chem.*, 1965, **43**, 2594-2602 (*isol, uv, ms, pmr*)
Fehlhaber, H.-W. *et al., Z. Anorg. Allg. Chem.*, 1968, **235**, 91 (*ms, struct*)
Servis, R.E. *et al., J.A.C.S.*, 1969, **91**, 5619 (*ms, struct*)

Ceanothine D C-228

[23926-97-8]

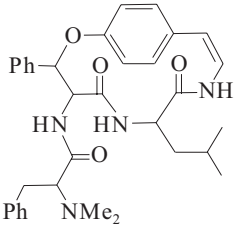


$C_{27}H_{40}N_4O_4$ 484.637
A drawing error in the paper gave an incorrect and biogenetically improbable structure (3-ethyl-3-methyl in place of 3-(1-methylpropyl)) which was registered in CAS. MF also incorrect. The struct. shown is as described in the text of the paper. Alkaloid from the root bark of *Ceanothus americanus* (New Jersey tea) (Rhamnaceae). Cryst. ($CHCl_3$/Et_2O). Mp 227-229°. $[\alpha]_D$ -347 ($CHCl_3$).

Servis, R.E. *et al., J.A.C.S.*, 1969, **91**, 5619-5624 (*isol, pmr, ms, struct*)

Ceanothine E C-229

α-(Dimethylamino)-N-*[7-(2-methylpropyl)-5,8-dioxo-3-phenyl-2-oxa-6,9-diazabicyclo[10.2.2]hexadeca-10,12,14,15-tetraen-4-yl]benzenepropanamide, 9CI*
[23926-98-9]

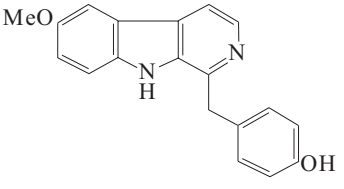


$C_{34}H_{40}N_4O_4$ 568.714
Alkaloid from the root bark of *Ceanothus americanus* (New Jersey tea) (Rhamaceae). Cryst. (CH_2Cl_2/Et_2O). Mp 238-239°. $[\alpha]_D$ -285 ($CHCl_3$).

Servis, R.E. *et al., J.A.C.S.*, 1969, **91**, 5619 (*isol, ms, struct*)

Ceciline C-230

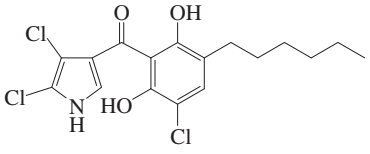
*4-[(6-Methoxy-9*H*-pyrido[3,4-*b*]indol-1-yl)methyl]phenol, 9CI. 4-(*p*-Hydroxybenzyl)-6-methoxy-β-carboline*
[76525-09-2]



$C_{19}H_{16}N_2O_2$ 304.348
Alkaloid from the trunk wood of *Aniba santalodora*. Cryst. (EtOH). Mp 224-228° dec.

Aguiar, L.M.G. *et al., Phytochemistry*, 1980, **19**, 1859-1860 (*isol, synth, uv, pmr, ms*)

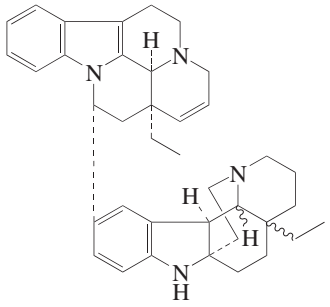
Celastramycin A **C-231**
2,3-Dichloro-4-(3-chloro-5-hexyl-2,6-dihydroxybenzoyl)pyrrole
[491600-94-3]



$C_{17}H_{18}Cl_3NO_3$ 390.692
Pyrrole antibiotic. Related to Antibiotic TAN 876B, A-1283. Prod. by *Streptomyces* sp. MaB-QuH-8 (DSM 14527). Antibacterial agent. Yellow wax. λ_{max} 222 ; 312 ; 355 (sh) (MeOH).

Pullen, C. *et al., Planta*, 2002, **216**, 162-167 (*isol, pmr, cmr*)

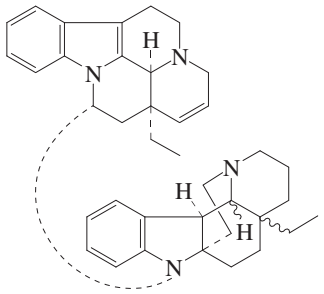
Celastromelidine **C-232**



$C_{38}H_{46}N_4$ 558.808
Alkaloid from *Melodinus celastroides* (Apocynaceae). $[\alpha]_D^{20}$ +117 (c, 1 in $CHCl_3$).

Mehri, H. *et al., J. Nat. Prod.*, 1991, **54**, 372 (*isol, struct*)

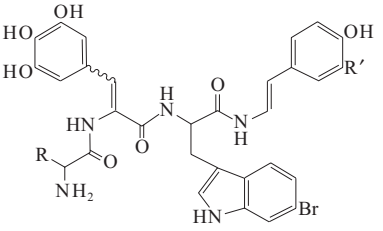
Celastromeline **C-233**
[135626-52-7]



$C_{38}H_{46}N_4$ 558.808
Alkaloid from *Melodinus celastroides* (Apocynaceae). $[\alpha]_D^{20}$ +190 (c, 1 in $CHCl_3$).

Mehri, H. *et al., J. Nat. Prod.*, 1991, **54**, 372 (*isol, struct*)

Celenamide A **C-234**
[74144-98-2]



R = $CH_2CH(CH_3)_2$, R′ = OH

$C_{34}H_{36}BrN_5O_8$ 722.591
Alkaloid from the sponge *Cliona celata*. $[\alpha]_D^{25}$ +40 (c, 1.1 in Me_2CO) (as hexa-Ac).

Stonard, R.J. *et al., J.O.C.*, 1980, **45**, 3687 (*isol, uv, ir, pmr, ms, struct*)

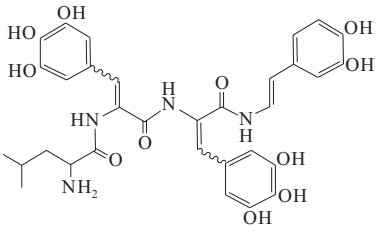
Celenamide B **C-235**
[74144-99-3]
As Celenamide A, C-234 with
R = $-CH(CH_3)_2$, R′ = OH
$C_{33}H_{34}BrN_5O_8$ 708.564
Metab. from the sponge *Cliona celata*. $[\alpha]_D^{25}$ +22 (c, 1.1 in Me_2CO) (as hexa-Ac). Isol. and elucidated as the Hexa-Ac deriv.

Stonard, R.J. *et al., J.O.C.*, 1980, **45**, 3687 (*isol, uv, ir, pmr, ms, struct*)

Celenamide C **C-236**
[75472-51-4]
As Celenamide A, C-234 with
R = $-CH_2CH(CH_3)_2$, R′ = H
$C_{34}H_{36}BrN_5O_7$ 706.592
Minor metab. from the sponge *Cliona celata*. $[\alpha]_D^{25}$ +14 (c, 0.30 in Me_2CO) (as penta-Ac). Isol. and elucidated as the Penta-Ac deriv.

Stonard, R.J. *et al., Can. J. Chem.*, 1980, **58**, 2121 (*isol, ir, pmr, ms, struct*)

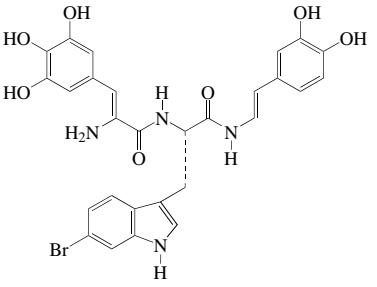
Celenamide D **C-237**
[75472-50-3]



$C_{32}H_{34}N_4O_{11}$ 650.641
Minor metab. from the sponge *Cliona celata*. $[\alpha]_D^{25}$ -25 (c, 0.54 in Me_2CO) (as nona-Ac). Isol. and elucidated as the Nona-Ac deriv.

Stonard, R.J. *et al., Can. J. Chem.*, 1980, **58**, 2121 (*isol, ir, pmr, ms, struct*)

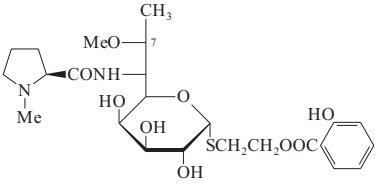
Celenamide E **C-238**
[202855-03-6]



$C_{28}H_{25}BrN_4O_7$ 609.432
Metab. of the sponge *Cliona chilensis*. Amorph. yellow solid (MeOH aq.). Mp 212-218° dec. $[\alpha]_D^{25}$ -25 (c, 0.25 in MeOH). λ_{max} 226 (log ϵ 4.5); 296 (log ϵ 4.17); 340 (log ϵ 4.3) (MeOH).

Palermo, J.A. *et al., J. Nat. Prod.*, 1998, **61**, 488-490 (*isol, uv, ir, pmr, cmr*)

Celesticetin **C-239**
[2520-21-0]



$C_{24}H_{36}N_2O_9S$ 528.622
Isol. from *Streptomyces caelestis* NRRL2418. Active against gram-positive organisms and plant pathogens. Sol. MeOH, butanol, $CHCl_3$, EtOAc, Me_2CO; poorly sol. H_2O, hexane, Et_2O. $[\alpha]_D^{24}$ +126.6 (c, 0.5 in $CHCl_3$). Amphoteric base related structurally to Lincomycin. λ_{max} 240 (ϵ 10200); 310 (ϵ 4490) (EtOH/HCl) (Derep). λ_{max} 245 (ϵ 6880); 338 (ϵ 4860) (EtOH/KOH) (Derep). λ_{max} 239 (ϵ 10100); 307 (ϵ 4440) (95% EtOH) (Derep). λ_{max} 239 (E1%/1cm 184); 307 (E1%/1cm 80.6) (EtOH) (Berdy). λ_{max} 248 (E1%/1cm 180); 341 (E1%/1cm 104) (EtOH-NaOH) (Berdy).

▶ LD_{50} (mus, ipr) 167 mg/kg. RH6125000

Oxalate: Mp 147-152°. $[\alpha]_D^{24}$ +106.6 (c, 0.5 in H_2O).

N-*De-Me:* **N-*Demethylcelesticetin***
[40736-31-0]
$C_{23}H_{34}N_2O_9S$ 514.596
Prod. by *Streptomyces caelestis* mutant (NRRL5481; NRRL2418). Active against gram-positive bacteria. Cryst. Sol. MeOH. $[\alpha]_D^{25}$ +112.5 (c, 1 in H_2O) (as hydrochloride). λ_{max} 238 ; 304 (MeOH) (Berdy). λ_{max} 241 ; 332 (NaOH) (Berdy).

O^7-*De-Me:* **O-*Demethylcelesticetin***
[39032-05-8]
$C_{23}H_{34}N_2O_9S$ 514.596
Produced by mutant *Streptomyces caelestis* NRRL5520. Shows antibiotic props. Sol. H_2O, MeOH, EtOH. $[\alpha]_D^{25}$

+115 (c, 0.85 in H_2O) (as hydrochloride). λ_{max} 240 (ϵ 10200); 310 (ϵ 4490) (EtOH/HCl) (Derep). λ_{max} 245 (ϵ 6880); 338 (ϵ 4860) (EtOH/KOH) (Derep). λ_{max} 239 (ϵ 10100); 307 (ϵ 4440) (95% EtOH) (Derep). λ_{max} 238 ; 304 (MeOH) (Berdy). λ_{max} 242 ; 352 (MeOH/NaOH) (Berdy).

N,O^7-*Di-de-Me:* **N,O-*Didemethylcelesticetin***
[40736-32-1]
$C_{22}H_{32}N_2O_9S$ 500.569
Prod. by *Streptomyces caelestis* mutant (NRRL5481). Active against gram-positive bacteria. Needles (as hydrochloride). Sol. H_2O, MeOH. $[\alpha]_D^{25}$ +122 (c, 1 in H_2O) (as hydrochloride). λ_{max} 238 (ϵ 8830); 303 (ϵ 3600) (MeOH/HCl) (Derep). λ_{max} 241 (ϵ 5710); 332 (ϵ 4250) (MeOH/NaOH) (Derep). λ_{max} 238 (ϵ 8830); 303 (ϵ 3600) (MeOH as hydrogen halide salt) (Derep).

ar-*Deoxy,* ar-*amino:* ***Celesticetin C***
[42715-02-6]
$C_{24}H_{37}N_3O_8S$ 527.638
Prod. by *Streptomyces caelestis* NRRL5320. Shows antibiotic props. Cryst. (as hydrochloride). Sol. H_2O, MeOH. $[\alpha]_D^{25}$ +123 (c, 1 in H_2O) (as hydrochloride). Contains a 2-aminobenzoyl residue in place of 2-hydroxybenzoyl. λ_{max} 228 (ϵ 9910); 270 (ϵ 843); 280 (sh) (ϵ 632) (0.5*N* HCl) (Derep). λ_{max} 242 (ϵ 6320); 321 (ϵ 2850) (0.5*N* NaOH) (Derep). λ_{max} 247 (ϵ 6480); 338 (ϵ 4480) (EtOH/acid salt) (Derep). λ_{max} 247 ; 338 (EtOH) (Berdy). λ_{max} 243 ; 328 (H_2O) (Berdy). λ_{max} 228 ; 270 (HCl) (Berdy).

De Boer, C. *et al., Antibiot. Annu.*, 1954, 831 (*isol*)
Hoecksema, H. *et al., Antibiot. Annu.*, 1954, 837 (*isol*)
Hoecksema, H. *et al., J.A.C.S.*, 1964, **86**, 4224; 1968, **90**, 755 (*struct*)
Argoudelis, A.D. *et al., J. Antibiot.*, 1972, **25**, 445; 1973, **26**, 7; 131; 1974, **27**, 642 (*isol, ms, deriv*)

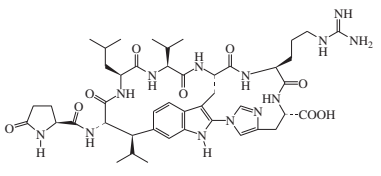
Celliamine C-240

[1398-49-8]
$C_{21}H_{35}NO_2$ 333.513
Alkaloid from the roots of *Helleborus viridis.* Respiratory stimulant, convulsant. Small needles (EtOH aq.). Mp 127-131° (unsharp). A misprint gives the analysis as H45. The figures given correspond to H35.

Keller, O. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1928, **266**, 545-572

Celogentin A C-241

[370089-19-3]



$C_{45}H_{63}N_{13}O_9$ 930.074
Related to Moroidin, M-702. Constit. of the seeds of *Celosia argentea.* Tubulin polymn. inhibitor, antimitotic agent. Solid. $[\alpha]_D^{23}$ -43 (c, 0.3 in MeOH aq.). λ_{max} 226 (log ϵ 4.3); 283 (log ϵ 3.8) (MeOH).

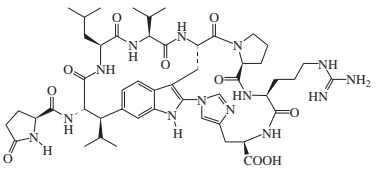
L-*Histidine amide:* ***Celogentin B***
[370089-21-7]
$C_{51}H_{70}N_{16}O_{10}$ 1067.215
Constit. of the seeds of *Celosia argentea.* Solid. $[\alpha]_D^{23}$ -32 (c, 0.5 in MeOH aq.). λ_{max} 225 (log ϵ 4.2); 282 (log ϵ 3.6) (MeOH).

L-*Lysyl-*L-*histidine amide:* ***Celogentin D***
[602308-60-1]
$C_{57}H_{82}N_{18}O_{11}$ 1195.389
Constit. of the seeds of *Celosia argentea.* Amorph. solid. $[\alpha]_D^{24}$ -33 (c, 0.4 in MeOH aq.). λ_{max} 226 (log ϵ 4.3); 283 (log ϵ 3.8) (MeOH).

Kobayashi, J. *et al., J.O.C.*, 2001, **66**, 6626-6633 (*Celogentins A,B*)
Suzuki, H. *et al., Tetrahedron*, 2003, **59**, 5307-5315 (*Celogentin D*)

Celogentin C C-242

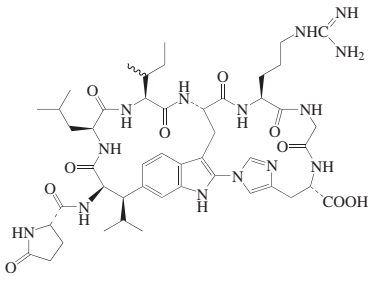
[370089-23-9]



$C_{50}H_{70}N_{14}O_{10}$ 1027.191
Constit. of the seeds of *Celosia argentea.* Tubulin polymerisation inhibitor. Antimitotic agent. Solid. $[\alpha]_D^{23}$ -54 (c, 0.5 in MeOH aq.). λ_{max} 226 (log ϵ 4.2); 283 (log ϵ 3.7) (MeOH).

Kobayashi, J. *et al., J.O.C.*, 2001, **66**, 6626-6633

Celogentin G C-243



Absolute Configuration

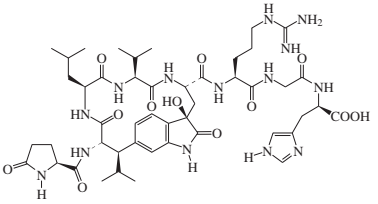
$C_{48}H_{68}N_{14}O_{10}$ 1001.153
Homologue of Moroidin, M-702. Constit. of the seeds of *Celosia argentea.* Tubulin polymerisation inhibitor. Amorph. solid. $[\alpha]_D^{22}$ -47 (c, 1 in MeOH aq.). λ_{max} 226 (log ϵ 4.2); 283 (log ϵ 3.7) (MeOH).

L-*Aspartic acid amide:* ***Celogentin H***
$C_{52}H_{73}N_{15}O_{13}$ 1116.241
Constit. of the seeds of *Celosia argentea.* Tubulin polymerisation inhibitor. Amorph. solid. $[\alpha]_D^{22}$ -40 (c, 0.5 in MeOH aq.). λ_{max} 225 (log ϵ 4.2); 282 (log ϵ 3.6) (MeOH).

L-*Arginine amide:* ***Celogentin J***
$C_{54}H_{80}N_{18}O_{11}$ 1157.34
Constit. of the seeds of *Celosia argentea.* Tubulin polymerisation inhibitor. Amorph. solid. $[\alpha]_D^{22}$ -38 (c, 0.4 in MeOH aq.). λ_{max} 225 (log ϵ 4.2); 282 (log ϵ 3.6) (MeOH).

Suzuki, H. *et al., Tetrahedron*, 2003, **59**, 5307-5315 (*isol, pmr, cmr, ms*)

Celogentin K C-244

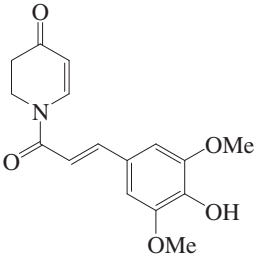


$C_{47}H_{68}N_{14}O_{12}$ 1021.141
Cyclic peptide. Related to Moroidin, M-702. Constit. of the seeds of *Celosia argentea.* Amorph. solid. $[\alpha]_D^{24}$ -51 (c, 0.5 in MeOH aq.). Struct. and MF given in ref. do not match. λ_{max} 268 (ϵ 1760) (MeOH).

Suzuki, H. *et al., Tetrahedron*, 2004, **60**, 2489-2495 (*isol, pmr, cmr*)

Cenocladamide C-245

N-*(4-Hydroxy-3,5-dimethoxycinnamoyl)-*Δ^2*-piperidin-4-one. 2,3-Dihydro-1-(4-hydroxy-3,5-dimethoxycinnamoyl)-4*H*-pyridin-4-one*

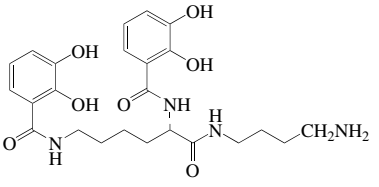


$C_{16}H_{17}NO_5$ 303.314
Alkaloid from the leaves of *Piper cenocladum.* Pale yellow oil. λ_{max} 220 (log ϵ 4.7); 300 (sh) (log ϵ 4.53); 350 (log ϵ 4.67); 660 (log ϵ 0.39) (MeOH).

Dodson, C.D. *et al., Phytochemistry*, 2000, **53**, 51-54 (*isol, pmr, cmr*)

Cepaciachelin C-246

[184028-23-7]

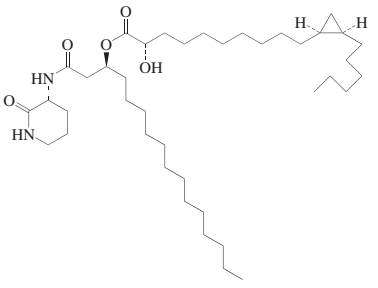


$C_{24}H_{32}N_4O_7$ 488.539
Isol. from *Burkholderia cepacia* (*Pseudomonas cepacia*). Siderophore.

Barelmann, I. *et al., Z. Naturforsch., C*, 1996, **51**, 627-630 (*isol, pmr*)

Cepaciamide A C-247

[173560-56-0]



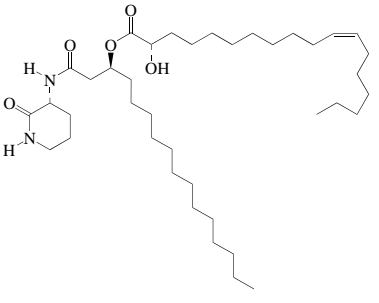
Absolute Configuration

$C_{40}H_{74}N_2O_5$ 663.035

Struct. revised in 1999. Isol. from *Pseudomonas cepacia* D-202. Fungitoxic agent. Mp 98-102°. $[\alpha]_D^{22}$ -28.5 (c, 1.08 in $CHCl_3$).

Jiao, Y. *et al., Tet. Lett.*, 1996, **37**, 1039-1042 (*isol*)
Toshima, H. *et al., Tet. Lett.*, 1999, **40**, 935-938; 939-942 (*synth, struct, ir, pmr, cmr*)
Toshima, H. *et al., Tetrahedron*, 1999, **55**, 5793-5808 (*synth*)

Cepaciamide B C-248



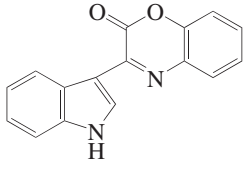
$C_{39}H_{72}N_2O_5$ 649.008

Isol. from *Pseudomonas cepacia* D-202. Fungitoxic agent. $[\alpha]_D^{21}$ -26.3 (c, 1.1 in $CHCl_3$).

Toshima, H. *et al., Tet. Lett.*, 1999, **40**, 935-938; 939-942 (*isol, synth, pmr, cmr, struct*)

Cephalandole A C-249

[5543-37-3]
[915396-11-1]



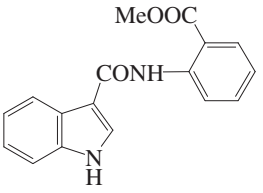
$C_{16}H_{10}N_2O_2$ 262.267

Structure revised in 2008. Alkaloid from *Cephalanceropsis gracilis*. Bright yellow cryst. Mp 236-237° (synthetic). λ_{max} 255 (log ϵ 3); 282 (log ϵ 2.9); 394 (log ϵ 3) (MeOH).

Wu, P.-L. *et al., J. Nat. Prod.*, 2006, **69**, 1467-1470 (*isol, pmr, cmr*)
Mason, J.J. *et al., J. Nat. Prod.*, 2008, **71**, 1447-1450 (*synth, struct*)

Cephalandole B C-250

[915315-44-5]



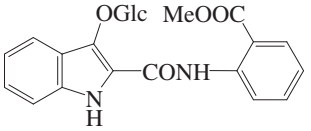
$C_{17}H_{14}N_2O_3$ 294.309

Alkaloid from *Cephalanceropsis gracilis*. Amorph. yellow powder. Mp 179.5-180° (synthetic). λ_{max} 263 (log ϵ 2.9); 347 (log ϵ 2.8) (MeOH).

Wu, P.-L. *et al., J. Nat. Prod.*, 2006, **69**, 1467-1470 (*isol, pmr, cmr*)
Mason, J.J. *et al., J. Nat. Prod.*, 2008, **71**, 1447-1450 (*synth*)

Cephalandole C C-251

[915396-12-2]



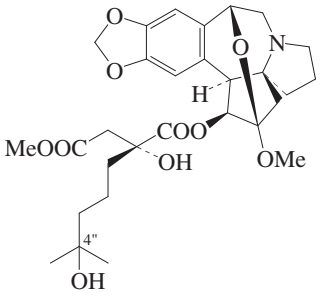
$C_{23}H_{24}N_2O_9$ 472.451

Alkaloid from *Cephalanceropsis gracilis*. Amorph. yellowish powder. $[\alpha]_D$ +39.1 (c, 0.07 in MeOH). λ_{max} 207 (log ϵ 4.2); 260 (log ϵ 3.5); 297 (log ϵ 3.4); 351 (log ϵ 3.3) (MeOH).

Wu, P.-L. *et al., J. Nat. Prod.*, 2006, **69**, 1467-1470 (*isol, pmr, cmr*)

Cephalezomine A C-252

[288300-70-9]



$C_{29}H_{39}NO_{10}$ 561.628

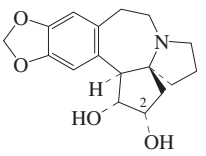
Ester of Drupacine, D-942. Alkaloid from *Cephalotaxus harringtonia* var. *nana*. Cytotoxic agent. Amorph. solid. $[\alpha]_D$ -42 (c, 0.9 in MeOH). λ_{max} 289 (ϵ 1900) (MeOH).

4″-Deoxy: ***Cephalezomine B***
[288300-72-1]
$C_{29}H_{39}NO_9$ 545.628
Alkaloid from *Cephalotaxus harringtonia* var. *nana*. Cytotoxic agent.
Amorph. solid. $[\alpha]_D$ -125 (c, 4.9 in MeOH). Homologue of Drupangtonine, D-943. λ_{max} 291 (ϵ 1400) (MeOH).

Morita, H. *et al., Tetrahedron*, 2000, **56**, 2929-2934

Cephalezomine G C-253

[160401-51-4]



Absolute Configuration

$C_{17}H_{21}NO_4$ 303.357

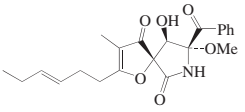
Alkaloid from the leaves of *Cephalotaxus harringtonia* var. *nana*. Amorph. solid. $[\alpha]_D$ -48 (c, 1.8 in MeOH). λ_{max} 212 (ϵ 4900); 239 (ϵ 2700); 290 (ϵ 2900) (MeOH).

2-Epimer: ***Cephalezomine H***
[462076-18-2]
$C_{17}H_{21}NO_4$ 303.357
Alkaloid from the leaves of *Cephalotaxus harringtonia* var. *nana*. Amorph. solid. $[\alpha]_D$ +58 (c, 0.9 in MeOH). λ_{max} 210 (ϵ 7500); 235 (ϵ 3100); 291 (ϵ 3100) (MeOH).

Isono, N. *et al., J.O.C.*, 1995, **60**, 115-119 (*synth, pmr, cmr*)
Morita, H. *et al., Tetrahedron*, 2002, **58**, 5489-5495 (*isol, pmr, cmr, abs config*)

Cephalimysin A C-254

[952305-75-8]



Absolute Configuration

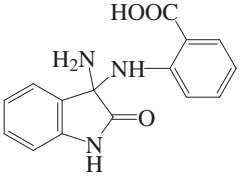
$C_{22}H_{25}NO_6$ 399.443

Prod. by a strain of *Aspergillus fumigatus* isol. from a marine fish. Cytotoxic agent. Pale yellow oil. $[\alpha]_D$ +3.5 (c, 0.11 in EtOH). λ_{max} 208 (log ϵ 3.88); 252 (log ϵ 3.95); 277 (log ϵ 3.74) (EtOH).

Yamada, T. *et al., Tet. Lett.*, 2007, **48**, 6294-6296 (*isol, pmr, cmr*)

Cephalinone A C-255

[915396-07-5]



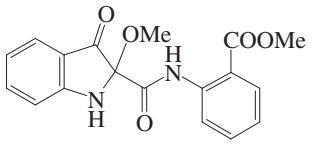
$C_{15}H_{13}N_3O_3$ 283.286

Alkaloid from *Cephalanceropsis gracilis*. Amorph. powder. $[\alpha]_D$ -7.6 (c, 0.18 in MeOH). λ_{max} 207 (log ϵ 3.8); 255 (log ϵ 3.2); 293 (log ϵ 3); 358 (log ϵ 2.7) (MeOH).

Wu, P.-L. *et al., J. Nat. Prod.*, 2006, **69**, 1467-1470 (*isol, pmr, cmr, ms*)

Cephalinone B C-256

[915396-08-6]

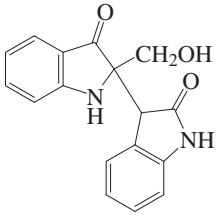


$C_{18}H_{16}N_2O_5$ 340.335
Alkaloid from *Cephalanceropsis gracilis*. Amorph. yellow powder. $[\alpha]_D$ -92.5 (c, 0.04 in $CHCl_3$). λ_{max} 263 (log ϵ 3.6); 315 (log ϵ 3.5); 385 (log ϵ 3.1) (MeOH).

Wu, P.-L. *et al., J. Nat. Prod.*, 2006, **69**, 1467-1470 (*isol, pmr, cmr, ms*)

Cephalinone C C-257

[915396-09-7]

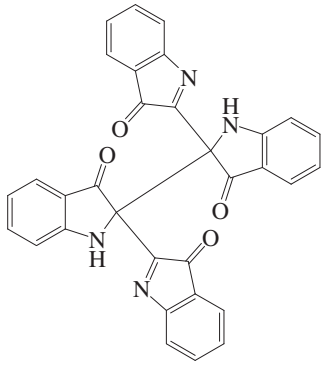


$C_{17}H_{14}N_2O_3$ 294.309
Alkaloid from *Cephalanceropsis gracilis*. Amorph. yellow powder. $[\alpha]_D$ -8.4 (c, 0.09 in $CHCl_3$). λ_{max} 265 (log ϵ 2.7); 314 (log ϵ 2.6) (MeOH).

Wu, P.-L. *et al., J. Nat. Prod.*, 2006, **69**, 1467-1470 (*isol, pmr, cmr, ms*)

Cephalinone D C-258

[915396-10-0]

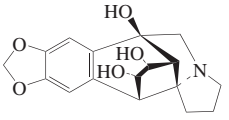


$C_{32}H_{18}N_4O_4$ 522.519
Alkaloid from *Cephalanceropsis gracilis*. Amorph. red powder. $[\alpha]_D$ -191.7 (c, 0.04 in MeOH). λ_{max} 228 (log ϵ 4); 274 (log ϵ 3.7); 308 (log ϵ 3.6); 424 (log ϵ 3.3); 546 (log ϵ 3.5) (MeOH).

Wu, P.-L. *et al., J. Nat. Prod.*, 2006, **69**, 1467-1470 (*isol, pmr, cmr*)

Cephalocyclidine A C-259

[421583-14-4]



Absolute Configuration

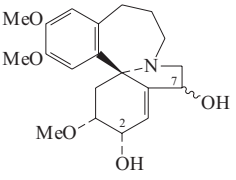
$C_{17}H_{19}NO_5$ 317.341
Alkaloid from the fruit of *Cephalotaxus harringtonia* var. *nana*. Plates (MeOH/C_6H_6) (as hydrochloride). Mp 205° dec. (hydrochloride). $[\alpha]_D$ -36 (c, 0.8 in MeOH). λ_{max} 241 (ϵ 1300); 293 (ϵ 1700) (MeOH).

Kobayashi, J. *et al., J.O.C.*, 2002, **67**, 2283-2286 (*isol, uv, cd, pmr, cmr, cryst struct*)

Cephalofortuneine C-260

1,6-Didehydro-3,15,16-trimethoxy-C-*homoerythrinan-2,7-diol, 9CI. Alkaloid CF 15*

[68156-55-8]



$C_{20}H_{27}NO_5$ 361.437
Minor alkaloid from *Cephalotaxus fortunei* (Cephalotaxaceae).

O^2-Et: ***2-O-Ethylcephalofortuneine***
[128387-09-7]
$C_{22}H_{31}NO_5$ 389.491
Alkaloid from *Cephalotaxus fortunei* (Cephalotaxaceae).

2-Epimer: ***2-Epicephalofortuneine***
[97805-96-4]
$C_{20}H_{27}NO_5$ 361.437
Alkaloid from *Cephalotaxus fortunei*. Component of San Jian Shan. Cryst. Mp 80-83°. $[\alpha]_D^{32}$ +12.1 (c, 0.15 in $CHCl_3$).

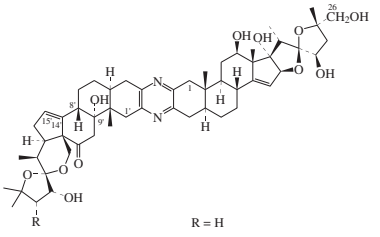
2-Epimer, O^2-Et: ***2-Epi-2-O-ethylcephalofortuneine***
[128309-01-3]
$C_{22}H_{31}NO_5$ 389.491
Alkaloid from *Cephalotaxus fortunei* (Cephalotaxaceae).

Ma, G. *et al., Huaxue Xuebao*, 1978, **36**, 129; 1989, **31**, 137; *CA*, **89**, 193837x; **113**, 74722k (*Cephalofortuneine, 2-O-Ethylcephalofortuneine*)

Lin, W. *et al., Yaoxue Xuebao*, 1985, **20**, 283-287 (*2-Epicephalofortuneine*)

Cephalostatin 2 C-261

[116199-48-5]



R = H

$C_{54}H_{74}N_2O_{11}$ 927.185
Disteroidal alkaloid from the hemichordate marine worm *Cephalodiscus gilchristi*. Powerful cell growth inhibitor. Needles (EtOAc/MeOH). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 350°. $[\alpha]_D$ +111 (c, 0.07 in MeOH). λ_{max} 290 (ϵ 13700); 308 (sh) (EtOH) (Derep).

14′β,15′β-Epoxide: ***Cephalostatin 4***
[116229-58-4]
$C_{54}H_{74}N_2O_{12}$ 943.185
Alkaloid from *Cephalodiscus gilchristi*. Powerful cell growth inhibitor. Solid. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 350°. $[\alpha]_D$ +89 (c, 0.11 in MeOH). λ_{max} 290 (ϵ 13700); 308 (sh) (EtOH) (Derep).

9′-Deoxy: ***Cephalostatin 1***
[112088-56-9]
$C_{54}H_{74}N_2O_{10}$ 911.186
Alkaloid from *Cephalodiscus gilchristi*. Powerful cell growth inhibitor. Needles (EtOAc/MeOH). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 326° dec. $[\alpha]_D$ +102 (c, 0.04 in MeOH). λ_{max} 290 (ϵ 13700); 308 (sh) (EtOH) (Derep). λ_{max} 289 (ϵ 15233) (EtOH) (Berdy).

9′-Deoxy, 8′-hydroxy, 9′,11′-didehydro, 14′α,15′α-epoxide: ***Cephalostatin 14***
[159602-64-9]
$C_{54}H_{72}N_2O_{12}$ 941.169
Constit. of *Cephalodiscus gilchristi*. Cell growth inhibitor. Amorph. powder. $[\alpha]_D$ +80.9 (c, 0.11 in MeOH). λ_{max} 230 (log ϵ 3.69); 288 (log ϵ 3.9); 305 (sh) (MeOH).

26-Deoxy: ***Cephalostatin 17***
[170591-44-3]
$C_{54}H_{74}N_2O_{10}$ 911.186
Constit. of *Cephalodiscus gilchristi*. Cell growth inhibitor. Amorph. solid. $[\alpha]_D$ +70 (c, 0.7 in MeOH). λ_{max} 288 (ϵ 15000); 305 (sh) (MeOH).

1α-Methoxy: ***Cephalostatin 10***
[153698-88-5]
$C_{55}H_{76}N_2O_{12}$ 957.212
Alkaloid from *Cephalodiscus gilchristi*. Powerful cell growth inhibitor. Mp > 300°. $[\alpha]_D$ +80 (c, 0.17 in MeOH). λ_{max} 289 (log ϵ 4.08); 304 (sh) (MeOH).

1α-Methoxy, 9′-deoxy: ***Cephalostatin 18***
[211050-18-9]
$C_{55}H_{76}N_2O_{11}$ 941.212
Alkaloid from *Cephalodiscus gilchristi*. Cell growth inhibitor. Amorph. solid. Mp > 300°. $[\alpha]_D^{25}$ +95 (c, 0.06 in MeOH). λ_{max} 288 (log ϵ 4.06); 308 (MeOH).

1′α-Methoxy: ***Cephalostatin 11***
[153698-87-4]
$C_{55}H_{76}N_2O_{12}$ 957.212
Alkaloid from *Cephalodiscus gilchristi*. Powerful cell growth inhibitor. Mp > 300°. $[\alpha]_D$ +75 (c, 0.13 in MeOH). λ_{max} 288 (log ϵ 3.96); 305 (sh) (MeOH).

1′α-Methoxy, 9′-deoxy: ***Cephalostatin 19***
[211050-19-0]
$C_{55}H_{76}N_2O_{11}$ 941.212
Alkaloid from *Cephalodiscus gilchristi*. Amorph. solid. Mp > 320°. $[\alpha]_D^{25}$ +67 (c, 0.05 in MeOH). λ_{max} 288 (log ϵ 3.99); 308 (MeOH).

Pettit, G.R. *et al., Chem. Comm.*, 1988, 865-867; 1440 (*Cephalostatins 2-4*)
Pettit, G.R. *et al., J.A.C.S.*, 1988, **110**, 2006 (*Cephalostatin 1*)
Pat. Coop. Treaty (WIPO), 1989, 89 08 655 (*Cephalostatins 1,2,3,4*)
Pettit, G.R. *et al., Can. J. Chem.*, 1994, **72**, 2260-2267 (*Cephalostatin 14*)
Pettit, G.R. *et al., J. Nat. Prod.*, 1994, **57**, 52; 1998, **61**, 955-958 (*Cephalostatins 10,11,18,19*)
Pettit, G.R. *et al., Bioorg. Med. Chem. Lett.*, 1995, **5**, 2027-2032 (*Cephalostatin 17*)
Pettit, G.R. *et al., J.O.C.*, 1995, **60**, 608-613 (*Cephalostatin 14*)

Cephalostatin 3 C-262

[116199-49-6]
As Cephalostatin 2, C-261 with
R = CH_3

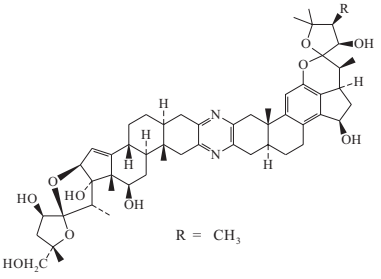
$C_{55}H_{76}N_2O_{11}$ 941.212
Disteroidal alkaloid from the hemichordate marine worm *Cephalodiscus gilchristi*. Powerful cell growth inhibitor. Shows antitumour activity. Needles (EtOAc/MeOH). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 350°. $[\alpha]_D$ +99 (c, 0.15 in MeOH). λ_{max} 290 (ϵ 13700); 308 (sh) (ϵ) (EtOH) (Derep).

9′-Deoxy, 8′-hydroxy, 9′,11′-didehydro, 14′α,15′α-epoxide: ***Cephalostatin 15***
[159602-65-0]
$C_{55}H_{74}N_2O_{12}$ 955.196
Constit. of *Cephalodiscus gilchristi*. Shows antitumour activity. Amorph. powder. Mp > 300°. $[\alpha]_D$ +71.5 (c, 0.34 in MeOH). λ_{max} 202 (log ϵ 4.25); 228 (sh) ; 288 (log ϵ 3.96); 305 (sh) (MeOH).

Pettit, G.R. *et al., Chem. Comm.*, 1988, 865-867 (*uv, ir, cmr, struct*)
Pat. Coop. Treaty (WIPO), 1989, 89 08 655 (*Cephalostatin 3*)
Pettit, G.R. *et al., Can. J. Chem.*, 1994, **72**, 2260-2267 (*Cephalostatin 15*)

Cephalostatin 5 C-263

[121071-11-2]



$C_{54}H_{72}N_2O_{10}$ 909.17
Disteroidal alkaloid from the Indian Ocean (South African) marine worm *Cephalodiscus gilchristi*. Possesses lymphocytic leukaemia (murine P388) cell growth inhibitory activity (less potent than cephalostatins 1-4). Mp 350°. $[\alpha]_D$ +100 (c, 0.02 in MeOH). λ_{max} 289 (ϵ 10000); 310 (sh) (MeOH) (Derep).

Pettit, G.R. *et al., Can. J. Chem.*, 1989, **67**, 1509-1513 (*isol, uv, struct*)

Cephalostatin 6 C-264

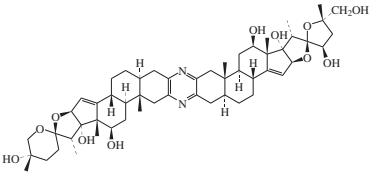
[121038-34-4]
As Cephalostatin 5, C-263 with
R = H

$C_{53}H_{70}N_2O_{10}$ 895.143
Disteroidal alkaloid from the Indian Ocean marine worm *Cephalodiscus gilchristi*. Possesses lymphocytic leukaemia (murine P388) cell growth inhibitory activity (less potent than cephalostatins 1-4). Mp 350°. $[\alpha]_D$ +100 (c, 0.01 in MeOH). λ_{max} 289 (ϵ 10000); 310 (sh) (ϵ) (MeOH) (Derep).

Pettit, G.R. *et al., Can. J. Chem.*, 1989, **67**, 1509-1513 (*isol, uv, pmr, cmr, struct*)

Cephalostatin 7 C-265

[138605-82-0]

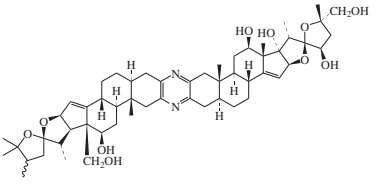


$C_{54}H_{76}N_2O_{11}$ 929.201
Constit. of *Cephalodiscus gilchristi*. Cytotoxic agent. Amorph. powder. Mp 315° dec. $[\alpha]_D$ +106 (c, 0.244 in MeOH). λ_{max} 286 (ϵ 17400) (MeOH).

Pettit, G.R. *et al., J.O.C.*, 1992, **57**, 429-431 (*isol, pmr, cmr*)
Jeong, J.U. *et al., J.A.C.S.*, 1999, **121**, 2071-2084 (*synth*)

Cephalostatin 8 C-266

[138605-83-1]

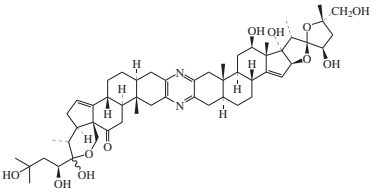


$C_{55}H_{78}N_2O_{10}$ 927.229
Constit. of *Cephalodiscus gilchristi*. Cytotoxic agent. Amorph. powder. Mp 313° (dec.). $[\alpha]_D$ +110 (c, 0.1 in MeOH). λ_{max} 286 (ϵ 20800); 310 (sh) (MeOH).

Pettit, G.R. *et al., J.O.C.*, 1992, **57**, 429-431 (*isol, pmr, cmr*)

Cephalostatin 9 C-267

[138628-96-3]

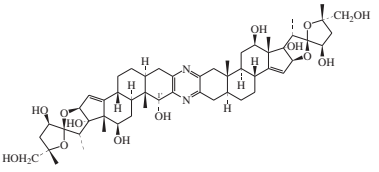


$C_{54}H_{76}N_2O_{11}$ 929.201
Constit. of *Cephalodiscus gilchristi*. Amorph. powder. Mp 307° (dec.). $[\alpha]_D$ +105 (c, 0.5 in MeOH). λ_{max} 286 (ϵ 18600); 310 (sh) (MeOH).

Pettit, G.R. *et al., J.O.C.*, 1992, **57**, 429-431 (*isol, pmr, cmr*)

Cephalostatin 13 C-268

[158371-97-2]



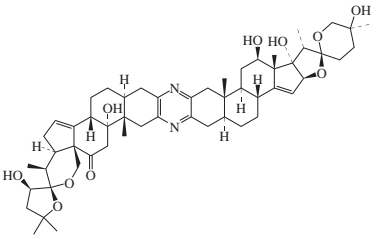
$C_{54}H_{76}N_2O_{13}$ 961.2
Alkaloid from the marine worm *Cephalodiscus gilchristi*. Antineoplastic agent. Amorph. solid. Mp > 300°. $[\alpha]_D^{20}$ +108.1 (c, 0.07 in MeOH). λ_{max} 287 (log ϵ 3.89); 308 (sh) (log ϵ 3.46) (MeOH).

1′-Deoxy: ***Cephalostatin 12***
[158371-96-1]
$C_{54}H_{76}N_2O_{12}$ 945.201
Alkaloid from *Cephalodiscus gilchristi*. Antineoplastic agent. Amorph. solid. Mp > 300°. $[\alpha]_D^{20}$ +157.5 (c, 0.4 in MeOH). λ_{max} 288 (log ϵ 4.16); 308 (sh) (log ϵ 3.89) (MeOH).

Pettit, G.R. *et al., Bioorg. Med. Chem. Lett.*, 1994, **4**, 1507-1512 (*isol, pmr, cmr, uv*)
Jeong, J.U. *et al., J.A.C.S.*, 1999, **121**, 2071-2084 (*synth*)

Cephalostatin 16 C-269

[170591-43-2]

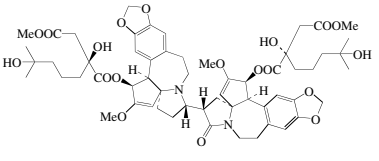


$C_{54}H_{74}N_2O_{10}$ 911.186
Alkaloid from the marine worm *Cephalodiscus gilchristi*. Antineoplastic agent. Amorph. powder. Mp > 300°. $[\alpha]_D$ +55 (c, 1.73 in MeOH). λ_{max} 288 (ϵ 11600); 305 (sh) (MeOH).

Pettit, G.R. *et al., Bioorg. Med. Chem. Lett.*, 1995, **5**, 2027-2032 (*isol, pmr, cmr*)

Cephalotaxidine C-270

[182889-14-1]



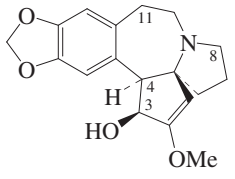
$C_{58}H_{74}N_2O_{19}$ 1103.225

Alkaloid from *Cephalotaxus harringtonia* var. *drupacea*. Amorph. solid. $[\alpha]_D$ -172 (c, 0.10 in MeOH). First example of a dimeric *Cephalotaxus* alkaloid. λ_{max} 291 (log ϵ 3.85) (MeOH). λ_{max} 291 (ϵ 7080) (MeOH) (Berdy).

Takano, I. *et al., Tet. Lett.*, 1996, **37**, 7053-7054 (*isol, uv, ir, pmr, cmr, struct*)

Cephalotaxine C-271

[83136-88-3]



(-)-*form*

$C_{18}H_{21}NO_4$ 315.368

(+)-*form*

Ac: ***(+)-Acetylcephalotaxine****. Alkaloid CF 5*
[69127-15-7]
$C_{20}H_{23}NO_5$ 357.405
Alkaloid from *Cephalotaxus fortunei* and *Cephalotaxus hainanensis* (Cephalotaxaceae). Mp 140°. $[\alpha]_D$ +102 ($CHCl_3$). $[\alpha]_D$ +130 ($CHCl_3$).

(-)-*form* [24316-19-6]
Alkaloid from *Cephalotaxus harringtonia* var. *harringtonia, Cephalotaxus harringtonia* var. *drupacea, Cephalotaxus fortunei, Cephalotaxus hainanensis, Cephalotaxus wilsoniana, Cephalotaxus sinensis* and *Cephalotaxus oliveri* (Cephalotaxaceae). Mp 132-133°. $[\alpha]_D^{25}$ -204 (c, 1.8 in $CHCl_3$). λ_{max} 238 (ϵ 3630); 290 (ϵ 3560) (EtOH) (Berdy).

Perchlorate: Mp 213-216° dec.

α-N-*Oxide:* ***Cephalotaxine α-N-oxide***
[48856-88-8]
$C_{18}H_{21}NO_5$ 331.368
Alkaloid from the fruit of *Cephalotaxus fortunei*. Amorph. solid. $[\alpha]_D^{21}$ -131 (c, 0.5 in $CHCl_3$).

β-N-*Oxide:* ***Cephalotaxine β-N-oxide***
[488856-87-7]
$C_{18}H_{21}NO_5$ 331.368
Alkaloid from the fruit of *Cephalotaxus fortunei*. Amorph. solid. $[\alpha]_D^{21}$ -221 (c, 0.5 in $CHCl_3$).

Ac: ***(-)-Acetylcephalotaxine***
[24274-60-0]
$C_{20}H_{23}NO_5$ 357.405
Alkaloid from *Cephalotaxus fortunei* and *Cephalotaxus wilsonia* (Cephalotaxaceae). Cryst. (Et_2O). Mp 140-142°. $[\alpha]_D^{25}$ -97 (c, 2.2 in $CHCl_3$).

O-*De-Me:* ***Demethylcephalotaxine***
[39707-71-6]
$C_{17}H_{19}NO_4$ 301.341
Alkaloid from *Cephalotaxus harringtonia* var. *drupacea* and *Cephalotaxus fortunei* (Cephalotaxaceae). Also obt. by mild acid hydrol. of Cephalotaxine, C-271. Cryst. (EtOH). Mp 109-111°. $[\alpha]_D^{25}$ -110 (c, 0.28 in $CHCl_3$). 2-Ketone.

3-Ketone: ***Cephalotaxinone***
[38750-57-1]
$C_{18}H_{19}NO_4$ 313.352
Alkaloid from *Cephalotaxus harringtonia* var. *harringtonia, Cephalotaxus fortunei* and *Cephalotaxus hainanensis* (Cephalotaxaceae). Cryst. (Et_2O). Mp 198-200° dec. $[\alpha]_D^{24}$ -146 (c, 0.63 in $CHCl_3$).

3,4-Didehydro, O-*de-Me, 3*-O-*β-D-glucopyranoside:* ***Cephalezomine J***
$C_{23}H_{27}NO_9$ 461.468
Alkaloid from the leaves of *Cephalotaxus harringtonia* var. *nana*. Amorph. solid. $[\alpha]_D$ +80 (c, 0.5 in MeOH). 2-Ketone. λ_{max} 209 (ϵ 8100); 235 (ϵ 4400); 250 (ϵ 3600); 293 (ϵ 2900); 312 (ϵ 2600) (MeOH).

4-Hydroxy: ***3-Hydroxycephalotaxine****. 4-Hydroxycephalotaxine*
[84567-08-8]
$C_{18}H_{21}NO_5$ 331.368
Alkaloid from *Cephalotaxus fortunei* (Cephalotaxaceae). Pale yellow cryst. (MeOH). Mp 135-137°. $[\alpha]_D^{27}$ +120 (c, 0.025 in MeOH). Stereochem. not defined.

11-Hydroxy: ***11-Hydroxycephalotaxine***
[49686-55-7]
$C_{18}H_{21}NO_5$ 331.368
Alkaloid from *Cephalotaxus harringtonia* var. *drupacea, Cephalotaxus fortunei* and *Cephalotaxus sinensis* (Cephalotaxaceae). Cryst. (MeOH). Mp 235-242° dec. $[\alpha]_D^{26}$ -139 (c, 0.56 in $CHCl_3$).

11β-Hydroxy, β-N-*oxide:* ***11β-Hydroxycephalotaxine β-N-oxide***
[488856-89-9]
$C_{18}H_{21}NO_6$ 347.367
Alkaloid from the fruit of *Cephalotaxus fortunei*. Amorph. solid. $[\alpha]_D^{21}$ -94 (c, 0.5 in $CHCl_3$).

8-Oxo: ***Cephalotaxinamide****. 8-Oxocephalotaxine*
[80797-04-2]
$C_{18}H_{19}NO_5$ 329.352
Alkaloid from *Cephalotaxus hainanensis* (Cephalotaxaceae). Mp 230°.

3-Epimer: ***Epicephalotaxine***
[39707-72-7]
$C_{18}H_{21}NO_4$ 315.368
Alkaloid from *Cephalotaxus fortunei* and *Cephalotaxus hainanensis* (Cephalotaxaceae). Mp 136-137°. $[\alpha]_D^{25}$ -150 (c, 0.8 in $CHCl_3$).

(±)-*form* [38848-21-4]
Synthetic. Cryst. (Et_2O). Mp 116-118°.

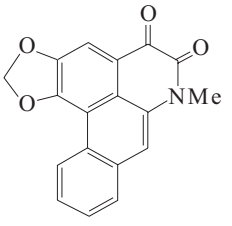
3-Ketone: [38848-26-9]
Synthetic. Cryst. (EtOAc). Mp 180-183° (178-180°).

8-Oxo: [114942-84-6]
Synthetic. Mp 230° dec Mp 258-259°.

Paudler, W.W. *et al., J.O.C.*, 1963, **28**, 2194-2197; 1973, **38**, 2110-2112 (*Cephalotaxine, Epicephalotaxine, Cephalotaxinone, Demethylcephalotaxine, isol, uv, ir, pmr*)
Powell, R.G. *et al., Tet. Lett.*, 1969, 4081-4084 (*pmr, struct*)
Abraham, D.J. *et al., Tet. Lett.*, 1969, 4085-4086 (*cryst struct*)
Powell, R.G. *et al., Phytochemistry*, 1972, **11**, 3317-3320 (*Acetylcephalotaxine, Cephalotaxinone*)
Powell, R.G. *et al., J.O.C.*, 1974, **39**, 676-680 (*11-Hydroxycephalotaxine*)
Arora, S.K. *et al., J.O.C.*, 1974, **39**, 1269-1271; 1976, **41**, 551-557 (*cryst struct, config*)
Weinreb, S.M. *et al., J.A.C.S.*, 1975, **97**, 2503-2506 (*Cephalotaxine, Cephalotaxinone, synth, uv, ir, pmr*)
Semmelhack, M.F. *et al., J.A.C.S.*, 1975, **97**, 2507-2516 (*Cephalotaxine, Cephalotaxinone, synth*)
Spencer, G.F. *et al., J. Chromatogr.*, 1976, **120**, 335-341 (*ms, glc*)
Ma, G.-E. *et al., Huaxue Xuebao*, 1977, **35**, 201-208; *CA*, **90**, 19013m (*Acetylcephalotaxine*)
Schwab, J.M. *et al., J.A.C.S.*, 1977, **99**, 2368-2371 (*biosynth*)
Weisleder, D. *et al., Org. Magn. Reson.*, 1980, **13**, 114-115 (*cmr*)
Xue, Z. *et al., Yaoxue Xuebao*, 1981, **16**, 752-756; *CA*, **96**, 82690u (*Cephalotaxinamide*)
Ma, G.-E. *et al., J. Nat. Prod.*, 1982, **45**, 585-589 (*4-Hydroxycephalotaxine*)
Yasuda, S. *et al., Chem. Pharm. Bull.*, 1988, **36**, 4229 (*synth, ir, pmr, Cephalotaxinamide*)
Kuehne, M.E. *et al., J.O.C.*, 1988, **53**, 3439-3450 (*Cephalotaxine, 8-Oxocephalotaxine, synth*)
Ishibashi, H. *et al., Chem. Comm.*, 1990, 1436-1437 (*synth*)
Burkholder, T.P. *et al., J.A.C.S.*, 1990, **112**, 9601-9613 (*synth*)
Fang, F.G. *et al., J.O.C.*, 1990, **55**, 831-838 (*synth*)
Ikeda, M. *et al., Chem. Pharm. Bull.*, 1993, **41**, 276-281 (*synth*)
Lin, X. *et al., J.A.C.S.*, 1994, **116**, 9791-9792 (*synth*)
Isono, N. *et al., J.O.C.*, 1995, **60**, 115-119 (*synth*)
Nagasaka, T. *et al., Tetrahedron: Asymmetry*, 1997, **8**, 191-194 (*synth*)
Ikeda, M. *et al., Chem. Pharm. Bull.*, 1999, **47**, 983-987 (*synth*)
Tietze, L.F. *et al., J.A.C.S.*, 1999, **121**, 10264-10269 (*synth*)
Koseki, Y. *et al., Org. Lett.*, 2002, **4**, 885-888 (*synth*)
Morita, H. *et al., Tetrahedron*, 2002, **58**, 5489-5495 (*Cephalezomine J*)
Bocar, M. *et al., J. Nat. Prod.*, 2003, **66**, 152-154 (*N-oxides*)
Planas, L. *et al., J.O.C.*, 2004, **69**, 3087-3092 (*synth*)
Liu, Q. *et al., J.O.C.*, 2007, **72**, 7352-7358 (*synth*)
Li, W.-D.Z. *et al., Org. Lett.*, 2007, **9**, 1211-1214 (*synth*)
Hameed, A. *et al., J.O.C.*, 2008, **73**, 8045-8048 (*synth*)
Taniguchi, T. *et al., Org. Lett.*, 2008, **10**, 4129-4131 (*synth*)

Cepharadione A C-272

*7-Methyl-5*H-*benzo[*g*]-1,3-benzodioxolo[6,5,4-*de*]quinoline-5,6(7*H*)-dione, 9CI*
[55610-01-0]



$C_{18}H_{11}NO_4$ 305.289
Alkaloid from *Stephania cepharantha*,

Stephania sasakii, *Piper sanctum*, *Piper auritum* (Veracruz pepper) and *Aristolochia indica*. Orange-yellow needles ($CHCl_3$/EtOH). Mp 340-342° dec.

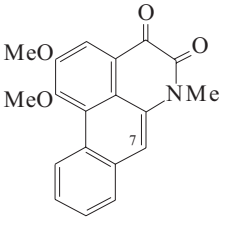
N-*De-Me:* ***Norcepharadione A***
[107882-42-8]
$C_{17}H_9NO_4$ 291.262
Alkaloid from the bark of *Oncodostigma monosperma*.

N-*De-Me,* N-*methoxy:* N-*Methoxynorcepharadione A*. ***Artabotrine***
[166833-81-4]
$C_{18}H_{11}NO_5$ 321.289
Alkaloid from the stem bark of *Artabotrys zeylanica*. Cytotoxic. Orange-yellow rods. Mp 287-289°. λ_{max} 220 (ϵ 20900); 235 (ϵ 22390); 280 (ϵ 5750); 300 (ϵ 9800); 310 (ϵ 11000) (MeOH) (Berdy).

Akasu, M. *et al., Tet. Lett.*, 1974, 3609 (*ir, uv, ms, pmr, struct*)
Hänsel, R. *et al., J. Nat. Prod.*, 1975, **38**, 529; *Phytochemistry*, 1976, **15**, 1323 (*isol, uv, ir, ms*)
Kunitomo, J. *et al., Yakugaku Zasshi*, 1981, **101**, 431; *CA*, **95**, 204236c (*isol*)
Achari, B. *et al., Heterocycles*, 1982, **19**, 1203 (*occur*)
Cavé, A. *et al., Plant. Med. Phytother.*, 1986, **20**, 251; *CA*, **106**, 172905x (*Norcepharadione A*)
Wijeratne, E.M.K. *et al., Tetrahedron*, 1995, **51**, 7877 (*Artabotrine*)
Ding, H.X. *et al., Chin. Chem. Lett.*, 2006, **17**, 5-8 (*Artabotrine, synth*)

Cepharadione B C-273

*1,2-Dimethoxy-6-methyl-4*H*-dibenzo[de,g]quinoline-4,5(6*H*)-dione, 9CI*
[55610-02-1]



$C_{19}H_{15}NO_4$ 321.332
Alkaloid from the callus tissue of *Stephania cepharantha* and the woody roots of *Piper auritum* (Veracruz pepper). Also detected in the woody roots of *Piper sanctum* (Menispermaceae, Piperaceae). Possible biogenetic intermediate of Aristololactams. Orange needles (EtOH). Mp 267-268° (255-262°, 263-264°).

N-*De-Me:* ***Norcepharadione B***
[57576-41-7]
$C_{18}H_{13}NO_4$ 307.305
Alkaloid from the callus tissue of *Stephania cepharantha* (Menispermaceae). Shows platelet aggregation inhibitory activity. Orange cryst. Mp 304-307° dec.

O^2-*De-Me:* ***Aristolodione***. *Piperadione*
[109771-09-7]
$C_{18}H_{13}NO_4$ 307.305
Alkaloid from the leaves and stems of *Aristolochia chinensis* and *Piper longum* (long pepper). Cryst. ($CHCl_3$/MeOH). Mp 273-276° dec.

O^2-*De-Me, Ac:*
Cryst. (C_6H_6/MeOH). Mp 244-248° dec.

O^2,N-*Di-de-Me: 2-Hydroxy-1-methoxy-4*H*-dibenzo[de,g]quinoline-4,5-dione, 9CI.* ***4,5-Dioxodehydroasimilobine***. *Noraristolodione*
[82644-81-3]
$C_{17}H_{11}NO_4$ 293.278
Alkaloid from the roots of *Aristolochia indica*. Red needles ($CHCl_3$/MeOH). Mp 310-312°. λ_{max} 246 (ϵ 50100); 292 (sh) (ϵ 13800); 305 (ϵ 18200); 318 (ϵ 19100); 459 (ϵ 17000) (EtOH).

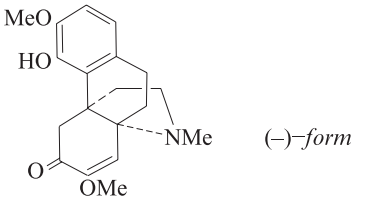
7-Chloro, N-*de-Me:* ***7-Chloro-6-demethylcepharadione B***
[149682-95-1]
$C_{18}H_{12}ClNO_4$ 341.75
Alkaloid from *Houttuynia cordata* (Yu Xing Cao) (Sauruaceae).

1-Demethoxy, O^2,N-*di-de-Me:* ***Demethoxy-4,5-dioxodehydroasimilobine***
[138690-43-4]
$C_{16}H_9NO_3$ 263.252
Alkaloid from *Monocyclanthus vignei*. Orange needles (MeOH). Mp 283-285°.

Akasu, M. *et al., Tet. Lett.*, 1974, 3609 (*uv, ir, pmr, ms, struct*)
Hänsel, R. *et al., J. Nat. Prod.*, 1975, **38**, 529 (*isol, uv, ir, pmr, ms*)
Akasu, M. *et al., Phytochemistry*, 1975, **14**, 1673 (*uv, ir, pmr, ms, struct, Norcepharadione B*)
Hänsel, R. *et al., Phytochemistry*, 1976, **15**, 1323 (*occur*)
Saá, J.M. *et al., Tet. Lett.*, 1976, 601 (*synth, uv, ir, ms*)
Kunitomo, J. *et al., Yakugaku Zasshi*, 1980, **100**, 337; *CA*, **93**, 95454h (*synth*)
Achari, B. *et al., Heterocycles*, 1982, **19**, 1203 (*Dioxodehydroasimilobine*)
Urzua, A. *et al., J. Nat. Prod.*, 1987, **50**, 305 (*Aristolodione*)
Desai, S.J. *et al., Phytochemistry*, 1988, **27**, 1511 (*Aristolodione*)
Achenbach, H. *et al., J. Nat. Prod.*, 1991, **54**, 1331 (*Demethoxydioxodehydroasimilobine*)
Atanes, N. *et al., J.O.C.*, 1991, **56**, 2984 (*synth, Cepharadione B, Norcepharadione B*)
Jong, T.T. *et al., J. Chin. Chem. Soc. (Taipei)*, 1993, **40**, 301; *CA*, **119**, 135624c (*7-Chloro-6-demethylcepharadione B*)
Suau, R. *et al., Tetrahedron*, 1996, **52**, 11307 (*synth*)
Chia, Y.-C. *et al., J. Nat. Prod.*, 2000, **63**, 1160-1163 (*activity*)

Cepharamine C-274

7,8-Didehydro-4-hydroxy-3,7-dimethoxy-17-methylhasubanan-6-one, 9CI



(–)–*form*

$C_{19}H_{23}NO_4$ 329.395

(-)-*form* [15444-26-5]
Alkaloid from *Stephania cepharantha* and *Stephania sasakii* (Menispermaceae). Mp 186-187°. $[\alpha]_D$ -248 ($CHCl_3$).

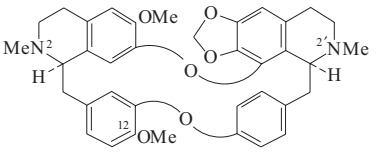
(±)-*form* [24048-61-1]
Synthetic. Oil.

Hydrobromide:
Flakes (Me_2CO). Mp 243-246° dec.

Tomita, M. *et al., Tet. Lett.*, 1966, 6229 (*uv, ir, pmr, struct*)
Inubushi, Y. *et al., Tet. Lett.*, 1969, 1611; *Chem. Pharm. Bull.*, 1971, **19**, 1820 (*synth, ir, pmr*)
Keely, S.L. *et al., Tetrahedron*, 1970, **26**, 4729 (*synth*)
Kametani, T. *et al., Chem. Ind. (London)*, 1972, 538 (*synth, ir, pmr*)
Schultz, A.G. *et al., J.A.C.S.*, 1998, **120**, 8259-8260 (*synth*)
Pihko, A.J. *et al., Tetrahedron*, 2005, **61**, 8769-8807 (*synth, rev*)

Cepharanthine C-275

6′,12′-Dimethoxy-2,2′-dimethyl-6,7-[methylenebis(oxy)]oxyacanthan, 9CI. 12-O-*Methylcepharanoline*
[481-49-2]



$C_{37}H_{38}N_2O_6$ 606.717
Alkaloid from the root tubers of *Stephania cepharantha* and *Stephania erecta*, and from the roots of *Stephania sasakii* and *Stephania epigeae* (Menispermaceae). Antihepatitic, radiopropective agent. Shows *in vitro* antineoplastic activity against HeLa cells. May potentiate the effects of other antineoplastic agents by restoring leucocyte count. Curarising agent. Shows antibacterial activity. Yellow amorph. powder. Mp 145-155°. $[\alpha]_D^{20}$ +277 ($CHCl_3$). Log P 8.19 (uncertain value) (calc).

▶ LD_{50} (mus, ipr) 125 mg/kg. FK0527000

Methiodide: Mp 268° (dec.).

$N^{2'}$-*β-Oxide:* ***Cepharanthine 2′-β-N-oxide***
$C_{37}H_{38}N_2O_7$ 622.716
Alkaloid from tuberous roots of *Stephania suberosa* (Menispermaceae). $[\alpha]_D$ +152 (c, 0.22 in MeOH).

N^2-*De-Me:* ***2-Norcepharanthine***
$C_{36}H_{36}N_2O_6$ 592.69
Alkaloid from tuberous roots of *Stephania suberosa* (Menispermaceae). $[\alpha]_D$ +318 (c, 0.25 in MeOH).

$N^{2'}$-*De-Me:* ***2′-Norcepharanthine***
[123854-64-8]
$C_{36}H_{36}N_2O_6$ 592.69
Alkaloid from the tubers of *Stephania pierrii* (Menispermaceae). $[\alpha]_D$ +206 (c, 0.24 in $CHCl_3$).

O^{12}-*De-Me:* ***Cepharanoline***
[27686-34-6]
$C_{36}H_{36}N_2O_6$ 592.69
Alkaloid from the root tubers of *Stephania cepharantha* (Menispermaceae). Mp 270° dec. $[\alpha]_D^{35}$ +319 ($CHCl_3$).

O^{12}-*de-Me,* N^2-*de-Me:* ***2-Norcepharanoline***

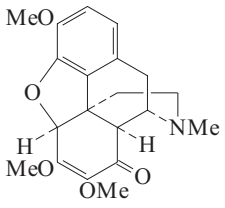
[123854-65-9]
$C_{35}H_{34}N_2O_6$ 578.663
Alkaloid from the tubers of *Stephania pierrii* (Menispermaceae). $[\alpha]_D$ +257 (c, 0.17 in $CHCl_3$).

1-Epimer, N^2*-de-Me:* ***2-Norisocepharanthine***
$C_{36}H_{36}N_2O_6$ 592.69
Minor alkaloid from the tubers of *Stephania pierrii* (Menispermaceae). $[\alpha]_D$ -84 (c, 0.25 in $CHCl_3$).

Kondo, H. *et al., Ber., B*, 1938, **71**, 2553 (*struct*)
Tomita, M. *et al., Pharm. Bull.*, 1954, **2**, 375 (*struct*)
Bick, I.R.C. *et al., J.C.S.*, 1961, 1896 (*pmr*)
Kunimoto, J. *et al., Yakugaku Zasshi*, 1962, **82**, 981; *CA*, **58**, 4613f (*abs config*)
Battersby, A.R. *et al., J.C.S.*, 1965, 2239 (*ord*)
Tomita, M. *et al., Tet. Lett.*, 1967, 1201 (*synth, pmr*)
Tomita, M. *et al., Yakugaku Zasshi*, 1969, **89**, 1678; *CA*, **72**, 107846u (*Cepharanoline*)
Kunimoto, J. *et al., Yakugaku Zasshi*, 1969, **89**, 1691; *CA*, **73**, 4072e (*isol*)
Baldas, J. *et al., J.C.S. Perkin 1*, 1972, 592 (*ms*)
Kuroda, H. *et al., Chem. Pharm. Bull.*, 1976, **24**, 2413-2420 (*activity*)
Patra, A. *et al., J. Nat. Prod.*, 1986, **49**, 424 (*derivs*)
Tantisewie, B. *et al., J. Nat. Prod.*, 1989, **52**, 846 (*2′-Norcepharanthine, 2-Norisocepharanthine, 2-Norcepharanoline*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, CCX550

Cephasamine C-276

[175617-21-7]

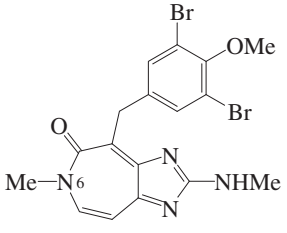


$C_{20}H_{23}NO_5$ 357.405
Alkaloid from tubers of *Stephania cepharantha*. Prisms (Et_2O). Mp 142-144°. $[\alpha]_D^{28}$ +105 (c, 0.34 in $CHCl_3$).

Kashiwaba, N. *et al., J. Nat. Prod.*, 1996, **59**, 476 (*isol, uv, ir, pmr, cmr, ms, cd, struct*)

Ceratamine A C-277

[634151-15-8]



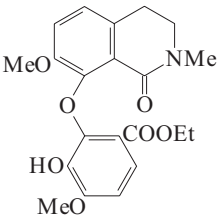
$C_{17}H_{16}Br_2N_4O_2$ 468.147
Alkaloid from the marine sponge *Pseudoceratina* sp. Antimitotic agent. Yellow cryst. (MeOH). Mp 236°.

N^6*-De-Me:* ***Ceratamine B***
[634151-16-9]
$C_{16}H_{14}Br_2N_4O_2$ 454.12
Alkaloid from a *Pseudoceratina* sp. Yellow cryst. (MeOH). Mp 242°.

Manzo, E. *et al., Org. Lett.*, 2003, **5**, 4591-4594 (*isol, pmr, cmr*)

Ceratocapnidine C-278

[132160-47-5]



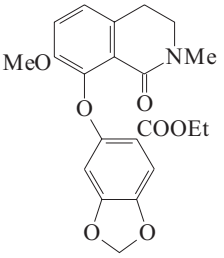
$C_{21}H_{23}NO_7$ 401.415
Alkaloid from *Ceratocapnos palaestinus* (Papaveraceae). Amorph.

Me ether: ***Ceratocapnine***
[132160-48-6]
$C_{22}H_{25}NO_7$ 415.442
Alkaloid from *Ceratocapnos palaestinus* (Papaveraceae). Amorph.

Herath, W.H.M.W. *et al., J. Nat. Prod.*, 1990, **53**, 1006 (*isol, struct*)

Ceratonicine C-279

Ethyl 6-[(1,2,3,4-tetrahydro-7-methoxy-2-methyl-1-oxo-8-isoquinolinyl)oxy]-1,3-benzodioxole-5-carboxylate, 9CI
[132182-10-6]

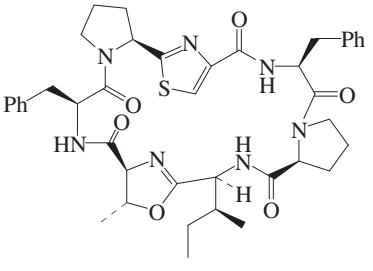


$C_{21}H_{21}NO_7$ 399.399
Alkaloid from *Ceratocapnos palaestinus* (Papaveraceae). Amorph.

Herath, W.H.M.W. *et al., J. Nat. Prod.*, 1990, **53**, 1006 (*isol, uv, ir, pmr, ms struct*)

Ceratospongamide C-280

[259794-28-0]



$C_{41}H_{49}N_7O_6S$ 767.947

Isol. as two stable conformational isomers. Isol. from the red alga *Ceratodictyon spongiosum* containing the symbiotic sponge *Sigmadocia symbiotica*. Anti-inflammatory agent.

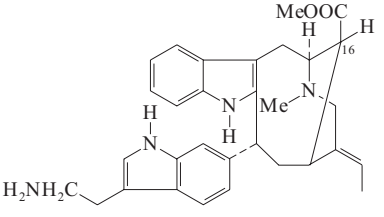
cis,cis-form
Amorph. solid. $[\alpha]_D$ -190 (c, 0.13 in $CHCl_3$). λ_{max} 246 (ϵ 11830) ($CHCl_3$).

trans,trans-form
Amorph. solid. $[\alpha]_D$ -39.2 (c, 0.52 in $CHCl_3$). λ_{max} 246 (ϵ 11270) ($CHCl_3$).

Tan, L.T. *et al., J.O.C.*, 2000, **65**, 419-425 (*isol, pmr, cmr*)
Yokokawa, F. *et al., Synlett*, 2001, 986-988 (*synth*)
Kutsumura, N. *et al., Bull. Chem. Soc. Jpn.*, 2002, **75**, 847-850 (*synth*)
Yokokawa, F. *et al., Tetrahedron*, 2002, **58**, 8127-8143 (*synth, conformn*)
Chen, Z. *et al., ARKIVOC*, 2003, **vii**, 268-285 (*synth*)
Doi, M. *et al., Acta Cryst. C*, 2003, **59**, 323-325 (*cryst struct*)

Ceridimine C-281

[102719-93-7]



$C_{31}H_{36}N_4O_2$ 496.651
Alkaloid from the bark of *Pagiantha cerifera* (preferred genus name *Tabernaemontana*) (Apocynaceae). Cryst. (CH_2Cl_2). Mp 173-175°. $[\alpha]_D^{20}$ -99 (c, 0.5 in EtOH).

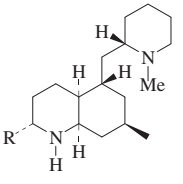
N-*De-Me:* ***Demethylceridimine***
[167696-88-0]
$C_{30}H_{34}N_4O_2$ 482.624
Alkaloid from stem bark of *Peschiera buchtieni* (Apocynaceae). $[\alpha]_D$ -167 (c, 1.3 in EtOH).

16-Hydroxymethyl: ***Hunteriatryptamine****. 16-Hydroxymethylceridimine*
[169626-40-8]
$C_{32}H_{38}N_4O_3$ 526.677
Alkaloid from leaves of *Hunteria zeylanica* (Apocynaceae). Amorph. powder.

Baudouin, G. *et al., Chem. Comm.*, 1986, 3 (*uv, ir, pmr, cmr, ms, struct*)
Subhadhirasakul, S. *et al., Heterocycles*, 1995, **41**, 2049 (*Hunteriatryptamine*)
Azoug, M. *et al., Phytochemistry*, 1995, **39**, 1223 (*Demethylceridimine*)

Cermizine A C-282

[760947-73-7]



R = CH_2COOH

$C_{19}H_{34}N_2O_2$ 322.49
Closely related to Phlegmarine, P-361. Alkaloid from *Lycopodium cernuum*. Amorph. solid. $[\alpha]_D^{27}$ +3 (c, 1 in MeOH).

Morita, H. *et al., Tetrahedron*, 2004, **60**, 7015-7023 (*isol, pmr, cmr*)

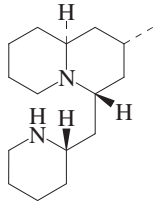
Cermizine B C-283

[760947-74-8]
As Cermizine A, C-282 with
R = H
$C_{17}H_{32}N_2$ 264.453
Alkaloid from *Lycopodium cernuum*. Amorph. solid. $[\alpha]_D^{27}$ -2 (c, 0.6 in MeOH).

Morita, H. *et al., Tetrahedron*, 2004, **60**, 7015-7023 (*isol, pmr, cmr*)

Cermizine D C-284

[760947-78-2]



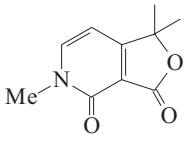
Relative Configuration

$C_{16}H_{30}N_2$ 250.426
Alkaloid from *Lycopodium cernuum*. Amorph. solid. $[\alpha]_D^{25}$ -33 (c, 0.6 in MeOH).

Morita, H. *et al., Tetrahedron*, 2004, **60**, 7015-7023 (*isol, pmr, cmr*)
Nishikawa, Y. *et al., Org. Lett.*, 2008, **10**, 1987-1990 (*synth*)

Cerpegin C-285

1,1,5-Trimethylfuro[3,4-c]pyridine-3,4(1H,5H)-dione, 9CI
[129748-28-3]

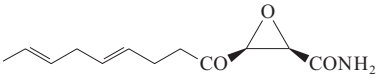


$C_{10}H_{11}NO_3$ 193.202
Alkaloid from *Ceropegia juncea*. Cryst. (MeOH/$CHCl_3$). Mp 268-270°. λ_{max} 207 (ϵ); 210 (ϵ); 216 (ϵ); 234 (ϵ); 316 (ϵ) (90% EtOH) (Derep).

Sivakumar, K. *et al., Acta Cryst. C*, 1990, **46**, 839 (*cryst struct*)
Adibatti, N.A. *et al., Phytochemistry*, 1991, **30**, 2449-2450 (*isol, uv, ir, pmr, cmr, ms*)
Kelly, T.R. *et al., J.O.C.*, 1992, **57**, 6657 (*synth*)
Guillier, F. *et al., Tet. Lett.*, 1992, **33**, 7355 (*synth*)
Matsuo, K. *et al., Chem. Pharm. Bull.*, 1995, **43**, 2091 (*synth*)
Hong, H. *et al., J.O.C.*, 1996, **61**, 391 (*synth*)
Villemin, D. *et al., Tet. Lett.*, 1996, **37**, 8733 (*synth*)
Matsuo, K. *et al., Heterocycles*, 1997, **45**, 1191 (*synth*)
Lazaar, J. *et al., Tet. Lett.*, 2005, **46**, 3811-3813 (*synth*)

Cerulenin C-286

3-(1-Oxo-4,7-nonadienyl)oxiranecarboxamide, 9CI. 2,3-Epoxy-4-oxo-7,10-dodecadienamide. Helicocerin



$C_{12}H_{17}NO_3$ 223.271
Antifungal antibiotic. Shows anti-HIV and antineoplastic activity. Inhibitor of the biosynth. of fatty acids and steroids. Sol. MeOH, Et_2O, CS_2, CCl_4; fairly sol. H_2O; poorly sol. hexane. Log P 0.73 (calc). λ_{max} 207 (MeOH) (Berdy).

▶ LD_{50} (mus, ivn) 154 mg/kg; LD_{50} (mus, scu) 245 mg/kg; LD_{50} (mus, orl) 547 mg/kg.

(+)-form [17397-89-6]
Prod. by *Cephalosporium caerulens* and *Helicoceras oryzae*. Needles (CCl_4 or C_6H_6). Mp 93°. $Bp_{0.00001}$ 120°. $[\alpha]_D^{16}$ +63 (c, 2 in MeOH). Pharmacol. active isomer.

▶ LD_{50} (mus, orl) 547 mg/kg; LD_{50} (mus, ipr) 211 mg/kg. JR1670000

Tetrahydro: [17397-90-9]
Mp 85.5-86.5°. $[\alpha]_D^{25}$ +43 (c, 0.25 in MeOH).

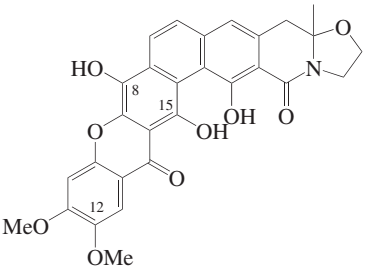
(-)-form [68926-46-5]
Tetrahydro: [68926-45-4]
Mp 84.5°. $[\alpha]_D^{20}$ -52 (c, 1.02 in MeOH).

(±)-form [62964-96-9]
Cryst. (C_6H_6/hexane). Mp 40-43°.

Sano, Y. *et al., J. Antibiot., Ser. A*, 1967, **20**, 344
Awaya, J. *et al., J. Antibiot.*, 1975, **28**, 824 (*nmr, biosynth*)
Boeckman, R.K. *et al., J.A.C.S.*, 1977, **99**, 2805 (*synth*)
Corey, E.J. *et al., Tet. Lett.*, 1977, 3847 (*synth*)
Thomas, E.W. *et al., CA*, 1978, **89**, 42956j (*synth*)
Pougny, J.R. *et al., Tet. Lett.*, 1978, 3301 (*struct, abs config*)
Omura, S. *et al., Methods Enzymol.*, 1981, **72**, 520 (*rev*)
Jakubowski, A.A. *et al., J.O.C.*, 1982, **47**, 1221 (*synth*)
Furukawa, J. *et al., Chem. Pharm. Bull.*, 1988, **36**, 1229 (*synth*)
Pal, R. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 1988, **85**, 9283 (*anti-HIV activity*)
Yoda, H. *et al., Tet. Lett.*, 1991, **32**, 6771 (*synth*)
Morisaki, N. *et al., Chem. Pharm. Bull.*, 1992, **40**, 2945; 2954 (*synth*)
Miller, M. *et al., J.O.C.*, 1993, **58**, 6779 (*synth, bibl*)
Kuhajda, F.P. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 1994, **91**, 6379 (*pharmacol*)
Kedar, T.E. *et al., J.O.C.*, 1996, **61**, 6121 (*synth, pmr, cmr*)
Mani, N.S. *et al., J.O.C.*, 1997, **62**, 636 (*synth*)
Renard, M. *et al., Tetrahedron*, 2001, **57**, 2597-2608 (*synth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, ECE500

Cervinomycin A_1 C-287

AM 5344A1. Antibiotic AM 5344A1
[82658-23-9]



$C_{29}H_{23}NO_9$ 529.502
Isol. from *Streptomyces cervinus* sp. nov. and from a *Micromonospora* sp. M39. Inhibits anaerobic bacteria and mycloplasma. Yellow powder. Fairly sol. MeOH, C_6H_6; poorly sol. Et_2O, H_2O, hexane. Mp 240° dec. $[\alpha]_D^{23}$ -92 (c, 0.05 in $CHCl_3$). λ_{max} 303 (ϵ 27300); 376 (ϵ 11600); 385 (ϵ 11300) ($CHCl_3$) (Derep).

▶ LD_{50} (mus, ipr) 50 mg/kg. FK8980000

8,15-Quinone: ***Cervinomycin A_2***. *AM 5344A_2. Antibiotic AM 5344A_2. Antibiotic 167B*
[82658-22-8]
$C_{29}H_{21}NO_9$ 527.486
From *Streptomyces cervinus* and also from a strain of *Amycolata autotrophica*. Inhibits anaerobic bacteria and mycoplasma. Reddish-orange powder. Sol. $CHCl_3$; fairly sol. MeOH, EtOAc, DMSO, $CHCl_3$, C_6H_6; poorly sol. Et_2O, hexane, H_2O. Mp 290° dec. $[\alpha]_D^{20}$ -214 (c, 0.25 in $CHCl_3$). Prob. identical with Antibiotic 4181A. λ_{max} 260 (ϵ 37900); 329 (ϵ 28800); 375 (sh) (ϵ 8380); 420 (ϵ 6590) ($CHCl_3$) (Derep).

▶ LD_{50} (mus, ipr) 50 mg/kg. FK8980100

8,15-Quinone, O^{12}*-de-Me:* ***De-O-methylcervinomycin A_2***. *Antibiotic 167A*
[113537-08-9]
$C_{28}H_{19}NO_9$ 513.459
Prod. by a strain of *Amycolata autotrophica*. Orange powder. Sol. $CHCl_3$; fairly sol. MeOH, Py, DMSO, EtOAc; poorly sol. EtOH, hexane, H_2O. Mp 250° dec. $[\alpha]_D^{23}$ -129 (c, 0.02 in $CHCl_3$). Prob. identical to Antibiotic 4181B, A-1121. λ_{max} 268 (E1%/1cm 642); 325 (E1%/1cm 528); 420 (E1%/1cm 119) ($CHCl_3$) (Berdy).

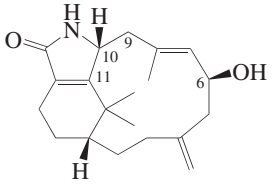
[83381-75-3 , 85897-53-6]

Eur. Pat., 1982, 54 801; *CA*, **97**, 180143 (*isol*)
Omura, S. *et al., J. Antibiot.*, 1982, **35**, 645-652 (*isol, uv, ir*)
Japan. Pat., 1983, 83 09 690; *CA*, **98**, 214134 (*isol*)
Nakagawa, A. *et al., J. Antibiot.*, 1987, **40**, 301-308 (*pmr, cmr, struct*)
Rao, A.V.R. *et al., Tet. Lett.*, 1988, **29**, 3991-3992; 1991, **32**, 5199-5202 (*synth*)
Kelly, T.R. *et al., J.A.C.S.*, 1989, **111**, 4522-4524 (*synth*)
Yadav, J.S. *et al., Pure Appl. Chem.*, 1993, **65**, 1349 (*rev, synth*)
Malkina, N.D. *et al., J. Antibiot.*, 1994, **47**, 342-348 (*167A, 167B*)

Mehta, G. *et al., Tetrahedron*, 1994, **50**, 11729-11742 (*synth*)

Cespitulactam D C-288

[1003840-01-4]



$C_{20}H_{29}NO_2$ 315.455
Constit. of *Cespitularia taeniata*.
Amorph. solid. $[\alpha]_D^{25}$ -52 (c, 0.08 in CH_2Cl_2). λ_{max} 226 (log ϵ 4.52) (MeOH).

N-*Me:* ***Cespitulactam H***
[1003840-05-8]
$C_{21}H_{31}NO_2$ 329.481
Constit. of *Cespitularia taeniata*.
Amorph. solid. $[\alpha]_D^{25}$ -112 (c, 0.7 in CH_2Cl_2). λ_{max} 228 (log ϵ 4.52) (MeOH).

N-*(2-Phenylethyl):* ***Cespitulactam A***
[870537-81-8]
$C_{28}H_{37}NO_2$ 419.606
Constit. of *Cespitularia taeniata*.
Amorph. powder. $[\alpha]_D$ -196 (c, 1 in CH_2Cl_2). λ_{max} 217 ; 230 ; 257 (MeOH).

N-*[2-(4-Hydroxyphenyl)ethyl]:* ***Cespitulactam C***
[870537-83-0]
$C_{28}H_{37}NO_3$ 435.605
Constit. of *Cespitularia taeniata*.
Amorph. powder. $[\alpha]_D^{25}$ -255 (c, 0.2 in CH_2Cl_2). λ_{max} 224 ; 279 (MeOH).

N-*[2-(1*H*-Indol-3-yl)ethyl]:* ***Cespitulactam J***
[1003840-07-0]
$C_{30}H_{38}N_2O_2$ 458.642
Constit. of *Cespitularia taeniata*.
Amorph. solid. $[\alpha]_D^{25}$ -119 (c, 1.1 in CH_2Cl_2). λ_{max} 221 (log ϵ 4.88); 274 (log ϵ 2.84) (MeOH).

6-Ac: ***Cespitulactam E***
[1003840-02-5]
$C_{22}H_{31}NO_3$ 357.492
Constit. of *Cespitularia taeniata*.
Amorph. solid. $[\alpha]_D^{25}$ -193 (c, 1.37 in CH_2Cl_2). λ_{max} 228 (log ϵ 5.11) (MeOH).

6-Ketone, N-*(2-phenylethyl):* ***Cespitulactam B***
[870537-82-9]
$C_{28}H_{35}NO_2$ 417.59
Constit. of *Cespitularia taeniata*.
Amorph. powder. $[\alpha]_D^{25}$ -110 (c, 0.05 in CH_2Cl_2).

10β-Hydroxy: ***Cespitulactam F***
[1003840-03-6]
$C_{20}H_{29}NO_3$ 331.454
Constit. of *Cespitularia taeniata*. Powder. $[\alpha]_D^{25}$ -156 (c, 1.27 in MeOH). λ_{max} 228 (log ϵ 4.48) (MeOH).

10β-Hydroxy, N-*Et:* ***Cespitulactam G***
[1003840-04-7]
$C_{22}H_{33}NO_3$ 359.508
Constit. of *Cespitularia taeniata*.
Amorph. solid. $[\alpha]_D^{25}$ -204 (c, 1.5 in CH_2Cl_2). λ_{max} 226 (log ϵ 4.61) (MeOH).

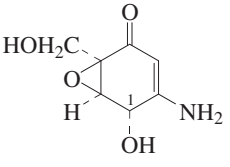
11-Hydroxy, 7ξ,8,11,12ξ-tetrahydro, 9,10-didehydro, 6-ketone: ***Cespitulactam I***
[1003840-06-9]
$C_{20}H_{29}NO_3$ 331.454
Constit. of *Cespitularia taeniata*.
Amorph. solid. $[\alpha]_D^{25}$ -3 (c, 0.2 in CH_2Cl_2).

Δ^{10}-Isomer, N-*[2-(4-hydroxyphenyl)ethyl]:* ***Cespitulactam K***
[1003840-08-1]
$C_{28}H_{37}NO_3$ 435.605
Constit. of *Cespitularia taeniata*.
Amorph. solid. $[\alpha]_D^{25}$ +53 (c, 0.75 in CH_2Cl_2). λ_{max} 229 (log ϵ 4.89); 274 (log ϵ 3.3) (MeOH).

Shen, Y.-C. *et al., Tet. Lett.*, 2005, **46**, 7893-7897 (*Cespitulactams A-C*)
Shen, Y.-C. *et al., J. Nat. Prod.*, 2007, **70**, 1961-1965 (*Cespitulactams D-K*)

Cetoniacytone B C-289

4-Amino-5-hydroxy-1-hydroxymethyl-7-oxabicyclo[4.1.0]hept-3-en-2-one, 9CI. 3-Amino-5,6-epoxy-4-hydroxy-6-hydroxymethyl-2-cyclohexen-1-one



$C_7H_9NO_4$ 171.152
The epoxyquinomicins are structurally unrelated to the quinomicins. Minor metab. of *Actinomyces* sp. Lu 9419 isol. from *Cetonia aureata*. Solid. λ_{max} 296 (ϵ 7510) (MeOH).

N-*Ac:* ***Cetoniacytone A***
$C_9H_{11}NO_5$ 213.19
Minor metab. of *Actinomyces* sp. Lu 9419 from *Cetonia aureata*. Cytotoxic agent. Solid. Mp 163°. λ_{max} 284 (ϵ 10500) (MeOH).

N-*(2-Hydroxybenzoyl):* ***Epoxyquinomicin C***
[200496-85-1]
$C_{14}H_{13}NO_6$ 291.26
Prod. by *Amycolatopsis* sp. MK299-95F4. Inhibitor of histidine decarboxylase. Powder. Sol. MeOH, Me_2CO, EtOAc; fairly sol. $CHCl_3$; poorly sol. hexane. Mp 168-172° dec. $[\alpha]_D^{25}$ +128 (c, 1 in MeOH). λ_{max} 297 (ϵ 17430) (MeOH). λ_{max} 236 ; 255 ; 325 (ϵ 8000); 370 (MeOH) (Berdy). λ_{max} 253 (ϵ 6700); 322 (ϵ 8500) (MeOH-HCl) (Berdy). λ_{max} 234 ; 257 ; 327 (ϵ 8300); 371 (MeOH-NaOH) (Berdy).
▶ LD_{50} (mus, ipr) 50 mg/kg.

N-*(3-Chloro-2-hydroxybenzoyl):* ***Epoxyquinomicin D***
[200496-86-2]
$C_{14}H_{12}ClNO_6$ 325.705
Prod. by *Amycolatopsis* sp. MK299-95F4. Powder. Sol. MeOH, Me_2CO, EtOAc; fairly sol. $CHCl_3$; poorly sol. hexane. Mp 163-168° dec. $[\alpha]_D^{25}$ +142 (c, 1 in MeOH). λ_{max} 299 (ϵ 17590) (MeOH). λ_{max} 253 (ϵ 6700); 326 (ϵ 6300) (MeOH) (Berdy). λ_{max} 252 (ϵ 5700); 327 (ϵ 6500) (MeOH-HCl) (Berdy). λ_{max} 235 (ϵ 9100); 259 ; 324 (ϵ 5800); 376 (MeOH-NaOH) (Berdy).

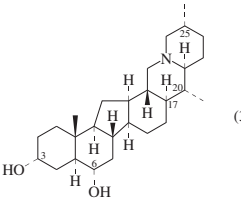
1-Ketone, N-*(2-hydroxybenzoyl):* ***Epoxyquinomicin B***
[175448-32-5]
$C_{14}H_{11}NO_6$ 289.244
Prod. by *Amycolatopsis* sp. MK299-95F4. Mod. active against gram-positive bacteria and *Pasteurella* sp. Pale yellow powder. Mp 178-184° dec. $[\alpha]_D^{25}$ +32.2 (c, 0.2 in MeOH). λ_{max} 253 (sh) (ϵ 5400); 326 (ϵ 6300) (MeOH).

1-Ketone, N-*(3-chloro-2-hydroxybenzoyl):* ***Epoxyquinomicin A***
[175448-31-4]
$C_{14}H_{10}ClNO_6$ 323.689
Prod. by *Amycolatopsis* sp. MK299-95F4. Mod. active against gram-positive bacteria and *Pasteurella* sp. Pale yellow powder. Mp 168-173° dec. $[\alpha]_D^{25}$ +44.6 (c, 0.5 in MeOH). λ_{max} 255 (sh) (ϵ 5900); 325 (ϵ 8000); 370 (sh) (ϵ 2700) (MeOH).

Matsumoto, T. *et al., J. Antibiot.*, 1997, **50**, 900-905; 906-911; 912-915 (*Epoxyquinomicins, isol, uv, ir, pmr, cmr, ms, activity*)
Matsumoto, T. *et al., J. Antibiot.*, 2000, **53**, 637-639 (*Epoxyquinomicins, activity*)
Nicolaou, K.C. *et al., Angew. Chem., Int. Ed.*, 2001, **40**, 207-210 (*Epoxyquinomycin B, synth*)
Schlörke, O. *et al., J. Antibiot.*, 2002, **55**, 635-642 (*Cetoniacytones*)
Mahmud, T. *et al., J. Nat. Prod.*, 2007, **70**, 1384-1391 (*rev, biosynth*)

3,6-Cevanediol C-290

3,6-Dihydroxycevanine



(3α,5α,6α,25α)-*form*

$C_{27}H_{45}NO_2$ 415.658
The stereochem. of the various natural stereoisomers requires clarification. In CAS, the 20α (20β*H*-) 25β- (25α*H*-) stereochemistries are assumed as part of the Cevane stereoparent.

(3α,5α,6α,25α)-*form*
Petilinine
[21851-16-1]
Alkaloid from *Petilium raddeana* (Liliaceae). Cryst. (MeOH). Mp 277-278°. $[\alpha]_D$ -9.6 (c, 1.25 in MeOH/$CHCl_3$ 1:1).
Hydrochloride: Mp 296-297°.

(3β,5α,6α,25α)-*form*
Petilidine
[22169-21-7]
Alkaloid from *Petilium raddeana* (Liliaceae). Mp 265-266°. $[\alpha]_D$ -15.5 (c, 1.2 in MeOH). There is also an alkaloid

Stenanzidinine, Mp 215-217°, $[\alpha]_D$ +5°, from *Rhinopetalum stenantherum* (Liliaceae) which appears to have been assigned the same struct. and stereochem. as Petilidine, but the paper is not clear and the Engl. translation appears to contain errors confusing it with Stenanzine and Stenanzidine.

Hydrochloride: [22169-22-8]
Mp 273-274°.

6-Ketone: 3-Hydroxy-6-cevanone. ***Puqiedinone****. Zhebeirine. 25-Epiebeiedinone*
[143120-47-2]
$C_{27}H_{43}NO_2$ 413.642
Alkaloid from bulbs of *Fritillaria puqiensis* and *Fritillaria thunbergii*. Exhibits antitussive and antitumour activity. Needles (C_6H_{12}/EtOH/Et_2NH). Mp 205-208°. $[\alpha]_D^{20}$ -62.3 (c, 0.2 in $CHCl_3$).

(3β,5α,6α,25β)-*form*
Edwardinine*. Eduardinine. Isoebeiedine*
[58116-31-7]
[128351-45-1]
Alkaloid from *Petilium eduardii* leaves. Cryst. (Me_2CO). Mp 255-257°. $[\alpha]_D$ +7.4 (c, 0.875 in $CHCl_3$).

6-Ketone: ***Edwardine****. Eduardine*
[25650-68-4]
$C_{27}H_{43}NO_2$ 413.642
Alkaloid from *Petilium eduardii* and *Fritillaria ebeiensis* var. *purpurea* (Liliaceae). Needles (hexane/Et_2NH/EtOH). Mp 102-105° (Ebeidinone) Mp 247-251° (Edwardine). $[\alpha]_D$ -53.02 (MeOH). $[\alpha]_D$ -62.2 (c, 0.89 in $CHCl_3$). Same struct assigned to Edwardine and Ebeidinone. Reported Mps are widely different.

(3β,5α,6β,25α)-*form*
Puqiedine
[924889-55-4]
Alkaloid from *Fritillaria puqiensis* bulbs. Cubes (Me_2CO. Mp 139-141°. $[\alpha]_D$ -38.4 (c, 0.1 in MeOH).

(3β,5α,6β,25β)-*form*
Ebeiedine*. Edpetilidine*
[25650-70-8]
Alkaloid from the bulbs of *Fritillaria ebeiensis* var. *purpurea*, *Fritillaria imperialis*, *Petilium eduardii* and *Rhinopetalum buchuricum* (Liliaceae). Needles (hexane/Et_2NH/EtOH). Mp 227-228°. $[\alpha]_D$ -48.2 (c, 2.23 in Py).

3-O-β-D-Glucopyranoside: ***Edpetinosine***
[207129-43-9]
$C_{33}H_{55}NO_7$ 577.8
Alkaloid from *Petilium eduardii*. Cryst. (Me_2CO/MeOH). Mp 174-176°.

Di-Ac: Mp 143.5-146.5°.

3-Ketone: ***Persinine***
[205586-14-7]
$C_{27}H_{43}NO_2$ 413.642
Alkaloid from *Fritillaria persica*.

(3β,5α,20β,25α)-*form*
6-Ketone: ***Dongbeirine***
[151003-95-1]
$C_{27}H_{43}NO_2$ 413.642
Alkaloid from bulbs of *Fritillaria thunbergii* (Liliaceae). Mp 151-153°. $[\alpha]_D^{15}$ -51.5 (c, 0.4 in MeOH).

(3β,5α,20β,25β)-*form*
6-Ketone: ***Dongbeinine***
[151003-96-2]
$C_{27}H_{43}NO_2$ 413.642
Alkaloid from bulbs of *Fritillaria thunbergii* (Liliaceae). Cryst. Mp 132-134°. $[\alpha]_D^{15}$ -50.5 (c, 0.5 in $CHCl_3$).

(3β,5α,6β,17β,25α)-*form*
Harepermine*. Persicanidine B*
[145307-25-1]
[105814-57-1]
Alkaloid from *Fritillaria persica*, *Fritillaria harelinii* and *Fritillaria imperialis*. Plates + $1H_2O$. Mp 167-169°. $[\alpha]_D^{23}$ -18 (c, 0.5 in $CHCl_3$). Stereochem. of Harepermine incorrectly shown in original ref. (1986).

3-O-β-D-Glucopyranoside: ***Harepermineside***
[144940-48-7]
[105814-58-2]
$C_{33}H_{55}NO_7$ 577.8
Alkaloid from *Fritillaria harelinii* and *Fritillaria persica*. Powder. Mp 168-170°. $[\alpha]_D$ -27 (c, 0.5 in MeOH).

(3β,5α,6β,17β,25β)-*form*
Hupehenine*. Delavine*
[98243-57-3]
[84048-44-2]
Alkaloid from *Fritillaria delavayi* and *Fritillaria hupehensis* (Liliaceae). Needles (MeOH). Mp 181-183°. $[\alpha]_D$ -20 (c, 0.5 in $CHCl_3$). Revision of originally assigned config.

3-O-β-D-Glucopyranoside: ***Hupeheninoside***
[98985-22-9]
$C_{33}H_{55}NO_7$ 577.8
Alkaloid from bulbs of *Fritillaria hupehensis* (Liliaceae). Cryst. Mp 241-244°. $[\alpha]_D^{20}$ -41 (c, 0.16 in MeOH).

3-Ketone: 6-Hydroxy-3-cevanone. ***Hupehenizine***
[103805-68-1]
$C_{27}H_{43}NO_2$ 413.642
Alkaloid from *Fritillaria hupehensis* (Liliaceae).

3-Ketone, 6-O-β-D-glucopyranoside: ***Yubeiside***
[157382-28-0]
Alkaloid from *Fritillaria yuminensis.*

6-Ketone: ***Hupehenirine****. Delavinone. Sinpeinine A. Yubeinine*
[96997-98-7]
$C_{27}H_{43}NO_2$ 413.642
Alkaloid from *Fritillaria delavayi*, *Fritillaria hupehensis* and *Fritillaria valujevii* (Liliaceae). Needles (MeOH). Mp 182-184°. $[\alpha]_D$ -54 (c, 0.5 in $CHCl_3$).

6-Ketone; hydrochloride: Mp 217-219°.

6-Ketone, 3-O-β-D-glucopyranoside: ***Yibeinoside A****. Hupehenizioside*
[98985-24-1]
$C_{33}H_{53}NO_7$ 575.784
Alkaloid from *Fritillaria pallidiflora* and from the bulbs of *Fritillaria lichuanensis*. Cryst. or needles ($CHCl_3$/MeOH). Mp 248-250° Mp 258-260°. $[\alpha]_D^{15}$ -59 (c, 0.1 in MeOH).

(3β,5α,17β,22β,25β)-*form*
6-Ketone: ***Chuanbeinone***
[103530-47-8]
$C_{27}H_{43}NO_2$ 413.642
Alkaloid from *Fritillaria delavayi* and *Fritillaria taipaiensis*. Needles (MeOH). Mp 149-152°. $[\alpha]_D$ -62.4 (c, 0.5 in $CHCl_3$).

6-Ketone, 3-O-β-D-glucopyranoside: ***Yibeinoside B***
[150134-44-4]
$C_{33}H_{53}NO_7$ 575.784
Alkaloid from *Fritillaria pallidiflora*. Cryst(MeOH). Mp 202-204°.

(3β,5α,6β,20β,25α)-*form*
Lichuanine
[934362-24-0]
Alkaloid from the bulbs of *Fritillaria lichuanensis*. Needles (EtOAc/Me_2CO). Mp 159-160°.

(3β,5α,6β,20β,25β)-*form*
N-*Oxide:* ***Lichuanisinine***
[934362-25-1]
$C_{27}H_{45}NO_3$ 431.657
Alkaloid from the bulbs of *Fritillaria lichuanensis*. Powder. Mp 148-151°.

(3β,5α,6β,20ξ,25ξ)-*form*
Stenanzidine
[94482-44-7]
Alkaloid from *Rhinopetalum stenantherum* (Liliaceae). Cryst. (MeOH/Me_2CO). Mp 277°. $[\alpha]_D$ -17 (c, 0.7 in EtOH). Stereochem. not clear, confusion in paper. See note under Petilidine above.

(3β,5α,6β,13α,17β,25α)-*form*
Persicanidine A
[139757-61-2]
Alkaloid from bulbs of *Fritillaria persica* (Liliaceae). Cyclic AMP phosphodiesterase inhibitor. Prisms (MeOH). Mp 208° dec. $[\alpha]_D$ -7.8 ($CHCl_3$).

(3β,5α,6β,17α,20β,25β)-*form*
Forticine
[471843-48-8]
Alkaloid from the bulbs of *Fritillaria imperialis*. Needles. Mp 221-223°. $[\alpha]_D^{23}$ -52 (c, 0.5 in $CHCl_3$).

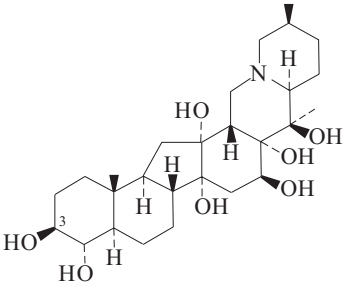
(3β,5α,6β,17β,20β,22β,25β)-*form*
Songbeinine*. Tortifoline*
[125354-97-4]
Alkaloid from bulbs of *Fritillaria unibracteata* and *Fritillaria tortifolia* (Liliaceae). Cubes (MeOH). Mp 206-208° (195-197°). $[\alpha]_D^{29}$ -240 (c, 0.01 in $CHCl_3$). $[\alpha]_D$ -41 (c, 1.07 in $CHCl_3$).

6-Ketone: ***Songbeinone***
[150133-32-7]
$C_{27}H_{43}NO_2$ 413.642
Alkaloid from bulbs of *Fritillaria unibracteata* (Liliaceae).

Nuriddinov, R.N. *et al., Khim. Prir. Soedin.*, 1967, **3**, 316-324; 1968, **4**, 261-262; 332-333; 1969, **5**, 333-334; *Chem. Nat. Compd. (Engl. Transl.)*, 1967, **3**, 267-273; 1968, **4**, 225-226; 282-283; 1969, **5**, 284-285 (*Petiline, Petilidine, Edpetilidine, Eduardine*)
Nabiev, A. *et al., Khim. Prir. Soedin.*, 1975, **11**, 535-536; *Chem. Nat. Compd. (Engl. Transl.)*, 1975, **11**, 570-571 (*Edwardinine*)
Moiseeva, G.P. *et al., Khim. Prir. Soedin.*, 1976, **12**, 630-632; *Chem. Nat. Compd. (Engl. Transl.)*, 1976, **12**, 563-565 (*Edwardine*)

Wu, J. *et al., Zhongcaoyao*, 1982, **13**, 339-342; 351; *CA*, **98**, 31403m (*Hupehenine*)
Samikov, K. *et al., Khim. Prir. Soedin.*, 1984, **20**, 341-344; 498-500; *Chem. Nat. Compd. (Engl. Transl.)*, 1984, **20**, 318-320; 470-471 (*Stenanzidine, Stenanzidinine*)
Liu, Q. *et al., Yaoxue Xuebao*, 1984, **19**, 894-898; *CA*, **103**, 19851v (*Sinpeinine A*)
Kaneko, K. *et al., Chem. Pharm. Bull.*, 1985, **33**, 2614-2617 (*Delavine, Delavinone*)
Wu, J. *et al., Yaoxue Xuebao*, 1985, **20**, 372-376; *CA*, **103**, 193124v (*Hupeheninoside*)
Min, Z. *et al., Phytochemistry*, 1986, **25**, 2008-2009 (*Harepermine, Hareperminoside*)
Kaneko, K. *et al., Tet. Lett.*, 1986, **27**, 2387-2390 (*Chuanbeinone*)
Wu, J. *et al., Zhongcaoyao*, 1986, **17**, 101-104; 1989, **20**, 530-532; *CA*, **105**, 111971; **113**, 74735 (*Hupehenirine, Hupehenizine, Hupehenine, Hupeheninoside*)
Lee, P. *et al., Chem. Pharm. Bull.*, 1988, **36**, 4316-4329 (*Ebeiedine, Ebeiedinone*)
Kitamura, Y. *et al., Chem. Pharm. Bull.*, 1989, **37**, 1514-1516 (*Tortifoline*)
Wu, J.Z. *et al., Yaoxue Xuebao*, 1989, **24**, 600-605; *CA*, **112**, 95497
Xu, D.M. *et al., Yaoxue Xuebao*, 1990, **25**, 795-797; 1993, **28**, 192-196 (*Yibeinosides*)
Yu, S. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 1990, **32**, 929-935; 1992, **34**, 945-949; *CA*, **116**, 55508r; **119**, 156233q (*Songbeinine, Songbeinone*)
Zhang, J. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 1991, **33**, 923-926; *CA*, **117**, 128151b (*Zhebeirine*)
Ori, K. *et al., Chem. Lett.*, 1992, 163-166 (*Persicanidine A*)
Ori, K. *et al., Phytochemistry*, 1992, **31**, 3605-3607 (*Persicanidine B*)
Jianxing, Z. *et al., Phytochemistry*, 1993, **33**, 946-947 (*Dongbeinine, Dongbeirine*)
Zhang, J.-X. *et al., Yaoxue Xuebao*, 1993, **35**, 963-967 (*Yubeinine, Yubeiside*)
Lin, G. *et al., J. Nat. Prod.*, 1995, **58**, 1662-1667 (*Puqiedinone*)
Shakirova, U.T. *et al., Khim. Prir. Soedin.*, 1997, **33**, 617-619; *Chem. Nat. Compd. (Engl. Transl.)*, 1997, **33**, 476-478 (*Edpetinosine*)
Bingol, F. *et al., CA*, 1998, **128**, 268255r (*Persinine*)
Atta-ur-Rahman, *et al., Chem. Pharm. Bull.*, 2002, **50**, 1013-1016 (*Forticine*)
Tsuda, Y. *et al., Nat. Prod. Res.*, 2004, **18**, 205-209 (*Harepermine*)
Pi, H.-F. *et al., J. Asian Nat. Prod. Res.*, 2006, **8**, 133-136; 253-257 (*Hupehenizioside, Lichuanine, Lichuanisinine*)
Jiang, Y. *et al., Steroids*, 2006, **71**, 843-848 (*Puqiedine*)
Zhang, Y.-H. *et al., Chin. J. Chem.*, 2007, **25**, 1728-1731 (*Zhebeirine*)

3,4,12,14,16,17,20-Cevaneheptol C-291



$C_{27}H_{45}NO_7$ 495.655

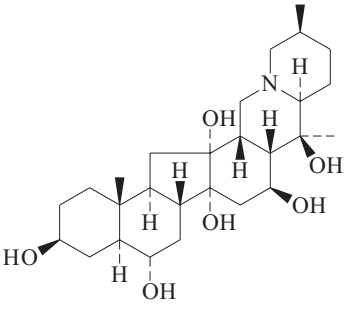
(3β,4α,5α,16β)-*form*
Sabine. *Neosabadine*
[6883-32-5]
Alkamine from seeds of *Schoenocaulon officinale* (Liliaceae). Shows hypotensive and brachycardic props. Mp 256-258° dec. $[\alpha]_D$ -33 (EtOH).

3-Ac: ***Sabadine***. *Sabatine*
[124-80-1]
$C_{29}H_{47}NO_8$ 537.692
Minor alkaloid from seeds of *Schoenocaulon officinale* (Liliaceae). Prisms (Et_2O). $[\alpha]_D^{25}$ -11 (c, 1.93 in EtOH). Softens at 170-190°, dec. above 200°.

3,4,16-Tri-Ac: Mp 221-222° dec. (sinters from 165°). $[\alpha]_D^{25}$ +9 (c, 1.14 in $CHCl_3$).

Kupchan, S.M. *et al., J. Med. Chem.*, 1962, **5**, 690-714 (*Sabine, Sabadine, isol, ir, ord, struct, pharmacol, bibl*)
Narayanan, C.R. *et al., Prog. Chem. Org. Nat. Prod.*, 1962, **20**, 354 (*Neosabadine*)

3,6,12,14,16,20-Cevanehexol C-292

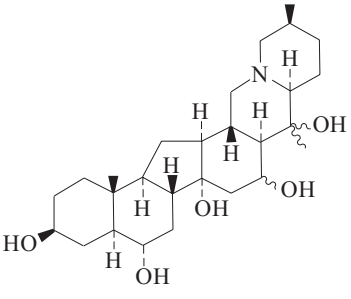


$C_{27}H_{45}NO_6$ 479.656

(3β,5α,6α,16β)-*form*
Pingpeimine B
[82851-52-3]
Alkaloid from *Fritillaria ussuriensis* (Liliaceae). Mp 255-257°. $[\alpha]_D$ +24.9 (c, 0.08 in MeOH).

Xu, D.M. *et al., Yaoxue Xuebao*, 1988, **23**, 902-905; *CA*, **111**, 74773 (*Pingpeimine B*)

3,6,14,16,20-Cevanepentol C-293

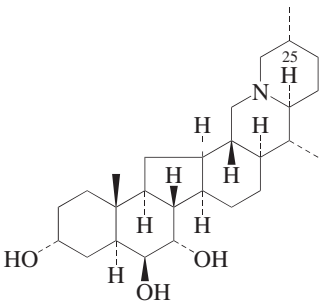


$C_{27}H_{45}NO_5$ 463.656

(3β,5α,6α,16ξ,20ξ)-*form*
Pingpeimine A
[82841-67-6]
Alkaloid from *Fritillaria ussuriensis* (Liliaceae).

Xu, D. *et al., Yaoxue Xuebao*, 1982, **17**, 355-359; *CA*, **97**, 107068h (*Pingpeimine A*)

3,6,7-Cevanetriol C-294

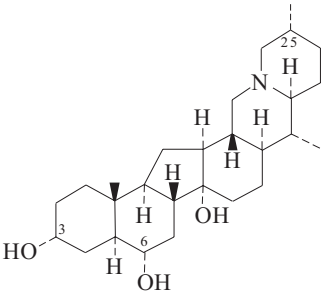


$C_{27}H_{45}NO_3$ 431.657

(3α,5α,6β,7α,25α)-*form*
3α-Puqiedin-7-ol
[923925-04-6]
Alkaloid from bulbs of *Fritillaria puqiensis*. Cubes (Me_2CO). Mp 267-269°. $[\alpha]_D^{20}$ -47.7 (c, 0.1 in MeOH).

Jiang, Y. *et al., Steroids*, 2006, **71**, 843-848 (*isol, pmr, cmr*)

3,6,14-Cevanetriol C-295



$C_{27}H_{45}NO_3$ 431.657
In CAS the (20α,25α)-configs. are assumed as part of the cevane stereoparent.

(3α,5α,6α,25α)-*form*
Korseveramine
[36506-67-9]
Alkaloid from *Korolkowia sewerzowii* (Liliaceae). Cryst. (MeOH). Mp 304-305°. $[\alpha]_D$ -14.63 (c, 0.823 in 10% AcOH aq.).

Hydrochloride: Mp 320-322°.

(3α,5α,6β,25α)-*form*
Korseveriline
[21851-05-8]
Alkaloid from bulbs of *Korolkowia sewerzowii* (Liliaceae). Mp 240-243°. $[\alpha]_D$ -15 (c, 0.8 in petrol).

3-Ac: ***Ceverine***. *Severine*†
[66408-50-2]
$C_{29}H_{47}NO_4$ 473.695
Alkaloid from above-ground parts of *Korolkowia sewerzowii* (Liliaceae). Mp 144-146°. $[\alpha]_D$ -20.9 (c, 0.43 in $CHCl_3$).

3-Ac, N-*oxide:* ***Ceverine* N-*oxide***. *Severine* N-*oxide*
[74119-88-3]
$C_{29}H_{47}NO_5$ 489.694
Alkaloid from *Korolkowia sewerzowii*

(Liliaceae). Cryst. (MeOH). Mp 255-257°. $[\alpha]_D$ 0.

6-Ketone: 3,14-Dihydroxy-6-cevanone. ***Korseverilinone***
[86630-13-9]
$C_{27}H_{43}NO_3$ 429.642
Alkaloid from *Korolkowia sewerzowii* (Liliaceae). Mp 222-223°. $[\alpha]_D$ -18.8 (c, 0.478 in $CHCl_3$).

(3β,5α,6β,25α)-*form*
Cevedine. *Sevedine*
[66512-88-7]
Alkaloid from *Korolkowia sewerzowii* (Liliaceae). Mp 212-214°. $[\alpha]_D$ -17.2 (c, 1.22 in $CHCl_3$).

N-*Oxide:* ***Cevedine* N-*oxide***. *Sevedine* N-*oxide*
[74119-89-4]
$C_{27}H_{45}NO_4$ 447.657
Alkaloid from *Korolkowia sewerzowii* (Liliaceae). Mp 241-243°. $[\alpha]_D$ -14 (c, 0.5 in EtOH).

6-Ac: ***Acetylsevedine***. *Acetylcevedine*
[104513-83-9]
$C_{29}H_{47}NO_4$ 473.695
Alkaloid from aerial parts of *Korolkowia sewerzowii* (Liliaceae). Mp 189° (foams). $[\alpha]_D$ -36.6 (c, 1.202 in EtOH).

3,6-Di-Ac: ***Diacetylcevedine***
[66512-89-8]
$C_{31}H_{49}NO_5$ 515.732
Alkaloid from *Korolkowia sewerzowii* (Liliaceae). Cryst. (Me_2CO/petrol). Mp 202-204°.

(3β,5α,6β,25β)-*form*
Sewertzidine. *Severtzidine*
[61950-74-1]
Alkaloid from above-ground parts of *Korolkowia sewerzowii* (Liliaceae). Cryst. (Me_2CO). Mp 244-245°. $[\alpha]_D$ -46.4 (c, 0.69 in $CHCl_3$).

(3β,5α,6α,25α)-*form*
Sevedamine. *6-Episevedine. Sewedamine*
[107657-48-7]
Alkaloid from aerial parts of *Korolkowia sewerzowii*. Cryst. (Me_2CO). Mp 256-258°. $[\alpha]_D$ +3.6 (c, 1.25 in EtOH).

Nuriddinov, R.N. *et al., Khim. Prir. Soedin.*, 1968, **4**, 258-259; 1971, **7**, 773-778; *Chem. Nat. Compd. (Engl. Transl.)*, 1968, **4**, 222-223; 1971, **7**, 746-750 (*Korseveriline, Korseveramine*)

Samikov, K. *et al., Khim. Prir. Soedin.*, 1976, **12**, 367-370; 1977, **13**, 673-675; 1979, **15**, 823-826; *Chem. Nat. Compd. (Engl. Transl.)*, 1976, **12**, 320-322; 1977, **13**, 559-560; 1979, **15**, 728-730 (*Sewertzidine, Cevedine, Ceverine oxide*)

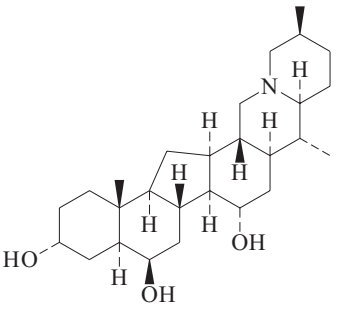
Abdullaeva, D.U. *et al., Khim. Prir. Soedin.*, 1977, **13**, 671-673; *Chem. Nat. Compd. (Engl. Transl.)*, 1977, **13**, 557-558 (*Ceverine*)

Samikov, K. *et al., Khim. Prir. Soedin.*, 1981, **17**, 529 (*Cevedine oxide*)

Kul'kova, V.V. *et al., Khim. Prir. Soedin.*, 1983, **19**, 72-74; 1986, **22**, 352-353; 1991, **27**, 440-441; *Chem. Nat. Compd. (Engl. Transl.)*, 1983, **19**, 68-69; 1986, **22**, 325-326; 1991, **27**, 384-385 (*Korseverilinone, Acetylcevedine, Diacetylcevedine*)

Samikov, K. *et al., Khim. Prir. Soedin.*, 1986, **22**, 622-624; *Chem. Nat. Compd. (Engl. Transl.)*, 1986, **22**, 585-586 (*Sevedamine*)

3,6,15-Cevanetriol C-296

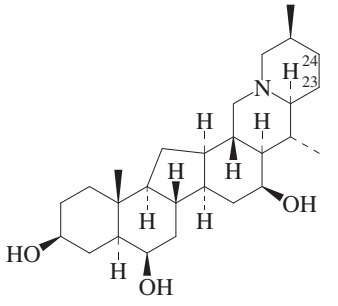


$C_{27}H_{45}NO_3$ 431.657

(3α,5α,6β,15α)-*form*
Edpetisinine
[62908-12-7]
Alkaloid from *Petilium eduardii* (Liliaceae). Mp 247-248°. $[\alpha]_D$ -45.6 (c, 0.71 in MeOH).

Nabiev, A. *et al., Khim. Prir. Soedin.*, 1976, **12**, 679; *Chem. Nat. Compd. (Engl. Transl.)*, 1976, **12**, 615

3,6,16-Cevanetriol C-297



$C_{27}H_{45}NO_3$ 431.657

(3β,5α,6β,25β)-*form*
Delafrine
[119766-89-1]
Alkaloid from bulbs of *Fritillaria delavayi* (Liliaceae). Powder. Mp 269-272°. $[\alpha]_D$ -39.9 (c, 0.50 in $CHCl_3$).

Tri-Ac: Mp 108-113°.

6-Ketone: 3,16-Dihydroxy-6-cevanone. ***Delafrinone***
[119766-92-6]
$C_{27}H_{43}NO_3$ 429.642
Alkaloid from bulbs of *Fritillaria delavayi* (Liliaceae). Needles (MeOH). Mp 134-136°. $[\alpha]_D$ -58.9 (c, 0.58 in $CHCl_3$).

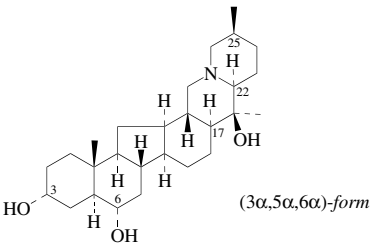
6-Ketone, di-Ac: Mp 138-140°.

23,24-Didehydro: Cev-23-ene-3,6,16-triol. 23,24-Didehydro-3,6,16-cevanetriol. ***Impericine***
[471843-45-5]
$C_{27}H_{43}NO_3$ 429.642
Alkaloid from the bulbs of *Fritillaria imperialis*. Needles. Mp 195-197° dec. $[\alpha]_D^{25}$ -28 (c, 0.5 in $CHCl_3$).

Kaneko, K. *et al., Chem. Pharm. Bull.*, 1988, **36**, 4700-4705 (*isol, ir, pmr, cmr, ms, struct*)

Atta-ur-Rahman, *et al., Chem. Pharm. Bull.*, 2002, **50**, 1013-1016 (*Impericine*)

3,6,20-Cevanetriol C-298



(3α,5α,6α)-*form*

$C_{27}H_{45}NO_3$ 431.657
Log P 3.66 (uncertain value) (calc).

(3α,5α,6α)-*form*
Isobaimonidine
[74184-79-5]
Minor alkaloid from *Fritillaria imperialis* (Liliaceae). Cryst. ($Me_2CO/CHCl_3$). Mp 238-239°. $[\alpha]_D^{22}$ -12 (c, 0.5 in $CHCl_3$). $[\alpha]_D$ -59.2 (c, 0.25 in $CHCl_3$).

(3α,5α,6β)-*form*
Baimonidine
[73650-52-9]
Alkaloid from *Fritillaria verticillata* (Liliaceae). Mp 179-181.5°. $[\alpha]_D$ -36.4 (c, 1 in $CHCl_3$).

(3β,5α,6α)-*form*
Verticine. *Peimine*
[23496-41-5]
Alkaloid from *Fritillaria roylei*; main alkaloid of *Fritillaria verticillata* var. *thunbergii* (Liliaceae). Antihypotensive agent. $[\alpha]_D^{16}$ -19.4 (EtOH). May be identical with Apoverticine. λ_{max} 215 (EtOH) (Berdy).

▶ Causes paralysis to respiratory system and sensory nerves.

Hydrochloride: Mp 310-312° dec. (291-294° dec.). $[\alpha]_D^{14}$ -18.5 (H_2O).

β-N-*Oxide:* ***Verticine* N-*oxide***. *Alkaloid F3*
[77410-34-5]
$C_{27}H_{45}NO_4$ 447.657
Isol. from the crude drug "Bai-mo" (sun-bleached lime-treated bulbs of *Fritillaria thunbergii*) (Liliaceae). Needles (EtOAc/hexane). Mp 283-288° dec. $[\alpha]_D$ +8.4 (c, 1.9 in MeOH).

3-O-*β*-D-*Glucopyranoside:* ***Peiminoside***
[123937-51-9]
$C_{33}H_{55}NO_8$ 593.799
Alkaloid from *Fritillaria verticillata* var. *thunbergii* (Liliaceae). Noncryst. Mp 195° (as penta-Ac). $[\alpha]_D^{20}$ -36 (c, 0.5 in EtOH) (penta-Ac).

3-Ac: ***3*-O-*Acetylverticine***
$C_{29}H_{47}NO_4$ 473.695
Alkaloid from the bulbs of *Fritillaria hupehensis*. Cryst. (EtOAc). Mp 193-194°. $[\alpha]_D^{20}$ -40 (c, 0.1 in MeOH).

6-Ketone: 3,20-Dihydroxy-6-cevanone. ***Verticinone***. *Peiminine. Raddeanine. Fritillarine*
[18059-10-4]
$C_{27}H_{43}NO_3$ 429.642
Alkaloid from bulbs of *Fritillaria thunbergii* and from *Fritillaria verticillata*, *Fritillaria ebeiensis* and *Fritillaria roylei* (Liliaceae). Local anaesthetic,

antihypotensive agent. Mp 212-213°. $[\alpha]_D$ -58.3 (EtOH). $[\alpha]_D^{13}$ -54.5 ($CHCl_3$). Log P 3.26 (uncertain value) (calc). λ_{max} 288 (EtOH) (Berdy).

6-Ketone, N-*oxide(β-):* ***Verticinone* N-*oxide***. *Alkaloid F4*
[77410-35-6]
$C_{27}H_{43}NO_4$ 445.641
Isol. from "Bai-mo" *Fritillaria thunbergii* (Liliaceae). Prisms (EtOAc/hexane). Mp 283-285° dec. $[\alpha]_D$ -54.5 (c, 1.8 in MeOH).

6-Ketone, 3-Ac: ***3*-O-*Acetylverticinone***
$C_{29}H_{45}NO_4$ 471.679
Alkaloid from the bulbs of *Fritillaria hupehensis*. Cryst. (EtOAc). Mp 113-114°. $[\alpha]_D^{20}$ -50.3 (c, 0.11 in MeOH).

(3β,5α,6α,22β)-*form*
Wanpeinine A
[107299-20-7]
Alkaloid from the Chinese drug Wan Bei Mu (bulbs of *Fritillaria anhuiensis*) (Liliaceae). Cryst. Mp 281-283° dec. $[\alpha]_D$ -8.7.

(3β,5α,6α,25α)-*form*
Zhebeinine
[135636-54-3]
Alkaloid from the bulbs of *Fritillaria thunbergii* (Liliaceae). Cryst. Mp 222-224°. $[\alpha]_D^{25}$ -21.3 (c, 0.5 in MeOH).

6-Ketone: ***Zhebeinone***
[144606-87-1]
$C_{27}H_{43}NO_3$ 429.642
Alkaloid from *Fritillaria thunbergii* (Liliaceae). Mp 181-183°. $[\alpha]_D$ -48.8 (c, 0.03 in $CHCl_3$).

(3β,5α,6α,13α,22β)-*form*
Siechuansine. *13-Epiwanpeinine A*
[147511-59-9]
Alkaloid from bulbs of *Fritillaria siechuanica*.

(3β,5α,6α,22β,25α)-*form*
3-O-*β*-D-*Glucopyranoside:* ***Zhebeininoside***
[152695-94-8]
$C_{33}H_{55}NO_8$ 593.799
Alkaloid from *Fritillaria thunbergii*. Mp 226-228°. $[\alpha]_D^{15}$ -48.5 (c, 0.3 in MeOH).

(3β,5α,6β)-*form*
Isoverticine
[23496-43-7]
Alkaloids from *Fritillaria verticillata* (Liliaceae). Mp 135-137°. $[\alpha]_D$ -45 (c, 1 in $CHCl_3$).

N-*Oxide(β-):* ***Isoverticine β*-N-*oxide***
[866572-25-0]
$C_{27}H_{45}NO_4$ 447.657
Alkaloid from the bulbs of *Fritillaria wabuensia*. Mp 207-210°.

(3β,5α,6β,25α)-*form*
Korselidine
[122405-29-2]
Alkaloid from aerial parts of *Korolkowia sewerzowii* (Liliaceae). Cryst. (Me_2CO). Mp 276-278°. $[\alpha]_D$ -53 (c, 0.3 in EtOH).

(3β,5α,6β,17β,25α)-*form*
Petine
[171236-02-5]
Alkaloid from bulbs of *Petilium eduardii*. Cryst. (hexane/Me_2CO). Mp 145-147°.

N-*Oxide:* ***Petine* N-*oxide***
[170557-06-9]
$C_{27}H_{45}NO_4$ 447.657
From bulbs of *Petilium eduardi*. Cryst. (Me_2CO). Mp 241-243°.

(3β,5α,17β)-*form*
6-Ketone: ***Sipeimine***. *Kashmirine. Imperialine*
[61825-98-7]
$C_{27}H_{43}NO_3$ 429.642
Alkaloid from *Fritillaria ussuriensis*, *Fritillaria meleagris*, *Fritillaria imperialis*, *Fritillaria raddeana*, *Petilium eduardii*, *Petilium raddeana*, the Chinese drug Si-pei-mu (*Fritillaria roylei*) and from *Rhinopetalum bucharicum* (Liliaceae). Smooth muscle relaxant. Transitory antihypertensive and anti-inflammatory agent. Mp 265-267° (262-265°). $[\alpha]_D$ -40.4 ($CHCl_3$). Log P 3.26 (uncertain value) (calc).

▶ FL5830000

6-Ketone, hydrochloride: [22267-72-7]
Mp 210-211°.

6-Ketone, N-*oxide:* ***Imperialine* N-*oxide***
[62565-72-4]
$C_{27}H_{43}NO_4$ 445.641
Alkaloid from *Petilium eduardii* and *Petilium raddeana* (Liliaceae). Mp 266-268°. $[\alpha]_D$ -48.2 (c, 0.68 in MeOH).

6-Ketone, 3-O-*β*-D-*glucopyranoside:* ***Edpetiline***
[32685-93-1]
[30497-28-0 (HCl salt)]
$C_{33}H_{53}NO_8$ 591.784
Alkaloid from *Petilium eduardii* (Liliaceae). Antiinflammatory agent. Mp 272-276°. $[\alpha]_D$ -59.9 (MeOH). Log P 0.97 (uncertain value) (calc).

6-Ketone, 3-Ac: Mp 183-185°.

3,6-Diketone: 20-Hydroxy-3,6-cevanedione. ***Sipeimone***. *Imperialone*
[61989-75-1]
$C_{27}H_{41}NO_3$ 427.626
Alkaloid from *Petilium eduardii* and *Petilium raddeana* (Liliaceae). Cryst. (Me_2CO). Mp 228-231°. $[\alpha]_D$ -31.7 (petrol).

(3β,5α,17β,22β)-*form*
6-Ketone, 3-O-*β*-D-*glucopyranoside:* ***Hupehemonoside***
[143120-88-1]
$C_{33}H_{53}NO_8$ 591.784
Alkaloid from *Fritillaria hupehensis*. Amorph. powder. Mp 206-208°. $[\alpha]_D^{27}$ -48.3 (c, 0.46 in MeOH).

Chu, T.T. *et al., Huaxue Xuebao*, 1956, **22**, 205; *CA*, **51**, 445d (*Sipeimone*)
Chu, T.T. *et al., CA*, 1959, **53**, 7503e (*Sipeimone, struct*)
Morimoto, H. *et al., Chem. Pharm. Bull.*, 1960, **8**, 302-307 (*Peiminoside*)
Ito, S. *et al., Chem. Pharm. Bull.*, 1961, **9**, 253-255; 1963, **11**, 1337-1340 (*Verticine*)
Shakirov, R. *et al., CA*, 1965, **63**, 3007f; 1966, **64**, 68046 (*Edpetiline*)
Nuriddinov, R.N. *et al., Khim. Prir. Soedin.*, 1967, **3**, 316-324; *Chem. Nat. Compd. (Engl. Transl.)*, 1967, **3**, 267-273 (*Imperialine*)
Ito, S. *et al., Tet. Lett.*, 1968, 5373-5375 (*Verticinone, cryst struct*)
Nabiev, A. *et al., Khim. Prir. Soedin.*, 1976, **12**, 676-677; *Chem. Nat. Compd. (Engl. Transl.)*, 1976, **12**, 612-613 (*Imperialine N-oxide*)
Chatterjee, A. *et al., Tet. Lett.*, 1976, 2903-2904 (*Imperialine, cryst struct*)
Ito, S. *et al., Tet. Lett.*, 1976, 3161-3164 (*Imperialine, cryst struct, bibl, cd*)
Kutney, J.P. *et al., J.A.C.S.*, 1977, **99**, 964-966 (*Verticine, synth*)
Saidkasymov, T. *et al., CA*, 1979, **90**, 16179j (*Imperialine, pharmacol*)
Kaneko, K. *et al., Tet. Lett.*, 1979, 3737-3740 (*Baimonidine, Isoverticine, cmr*)
Kaneko, K. *et al., Chem. Pharm. Bull.*, 1980, **28**, 1345-1346 (*Isobaimonidine*)
Kitajima, J. *et al., Heterocycles*, 1981, **15**, 791-796 (*Verticine N-oxide, Verticinone N-oxide*)
Nakhatov, I. *et al., Khim. Prir. Soedin.*, 1981, **5**, 616-619 (*Imperialone*)
Kettmann, V. *et al., Acta Cryst. B*, 1982, **38**, 978-980 (*Verticinone, cryst struct*)
Mašterová, I. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1982, **315**, 157-164 (*Isobaimonidine*)
Xu, D. *et al., CA*, 1982, **97**, 107068h (*isol*)
Kettman, V. *et al., Acta Cryst. C*, 1985, **41**, 392-394 (*Isobaimonidine, cryst struct*)
Li, Q. *et al., Yaoxue Xuebao*, 1986, **21**, 767-771; *CA*, **106**, 135231d (*Wanpeinine A*)
Samikov, K. *et al., Khim. Prir. Soedin.*, 1989, **25**, 34-36; *Chem. Nat. Compd. (Engl. Transl.)*, 1989, **25**, 28-30 (*Korselidine*)
Zhang, J.X. *et al., Yaoxue Xuebao*, 1991, **26**, 231-233; 1992, **27**, 472-475 (*Zhebeinine, Zhebeinone*)
Wu, J.Z. *et al., Yaoxue Xuebao*, 1991, **26**, 829-835 (*Hupehemonoside*)
Wang, F. *et al., Chin. Chem. Lett.*, 1992, **3**, 979-980 (*Siechuansine*)
Zhang, J. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 1993, **35**, 238-241 (*Zhebeininoside*)
Shekikova, U.T. *et al., Khim. Prir. Soedin.*, 1994, **30**, 524-528; *Chem. Nat. Compd. (Engl. Transl.)*, 1994, **30**, 483-486 (*Petine, Petine N-oxide*)
Zhang, A. *et al., Planta Med.*, 1998, **64**, 448-450 (*Isoverticine, Imperialine N-oxide, pmr, cmr, cryst struct*)
Jiang, R.-W. *et al., Acta Cryst. C*, 2001, **57**, 170-171 (*Imperialine, cryst struct*)
Chen, Q. *et al., Yaoxue Xuebao*, 2004, **39**, 348-350 (*Isoverticine N-oxide*)
Zhang, Y.-H. *et al., Chem. Biodiversity*, 2008, **5**, 259-266 (*3-Acetylverticine, 3-Acetylverticinone*)\

Cevanine C-299

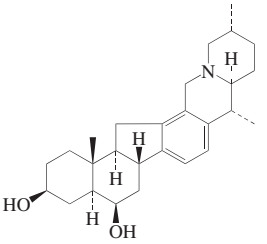
$C_{27}H_{44}N_2O_2$ 428.657

Struct. unknown. Steroidal alkaloid (prob. Cevane type). Alkaloid from corms of *Fritillaria imperialis* (Liliaceae). Mp 272-273°. $[\alpha]_D$ +49.

Suri, J.L. *et al., Indian J. Chem.*, 1969, **7**, 1057-1058 (*isol*)

12,14,16-Cevatriene-3,6-diol C-300

3,6-Dihydroxy-$\Delta^{12,14,16}$-cevanene

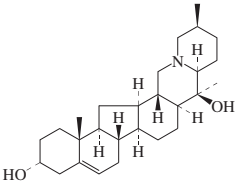


$C_{27}H_{39}NO_2$ 409.611

(3β,6β)-*form*
Heilonine
[128351-94-0]
Alkaloid from the Chinese herbal drug Ping-bei-mu (*Fritillaria ussuriensis*) (Liliaceae). Prisms (MeOH). Spar. sol. most org. solvs. Mp 284-286°.
Di-Ac: Mp 243-246°. $[\alpha]_D$ +34 (c, 1.05 in $CHCl_3$).
Kitamura, Y. *et al., Tetrahedron*, 1989, **45**, 7281-7286 (*isol, uv, ir, pmr, cmr, ms, cryst struct*)

Cev-5-ene-3,20-diol C-301

5,6-Didehydro-3,20-cevanediol



(3α,25β)-*form*

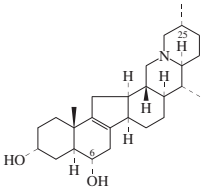
$C_{27}H_{43}NO_2$ 413.642

(3α,25β)-*form*
Fritillarizine
[76733-86-3]
Alkaloid from aerial parts of *Fritillaria verticillata* (Liliaceae). Mp 141.5-143°. $[\alpha]_D$ -18.6 (c, 1.0 in $CHCl_3$).

(3β,25β)-*form*
Veraflorizine
[70598-85-5]
Alkaloid from the rhizomes of *Veratrum grandiflorum* (Liliaceae). Mp 175-176°. $[\alpha]_D$ -91 (c, 1 in $CHCl_3$).
Kaneko, K. *et al., Tet. Lett.*, 1978, **19**, 4801-4804 (*Veraflorizine*)
Kaneko, K. *et al., Chem. Pharm. Bull.*, 1980, **28**, 3711-3713 (*Fritillarizine*)

Cev-8-ene-3,6-diol C-302

8,9-Didehydro-3,6-cevanediol



(3α,5α,6α,25α)*form*

$C_{27}H_{43}NO_2$ 413.642

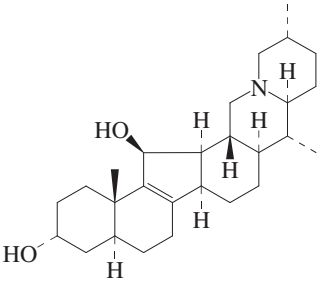
(3α,5α,6α,25α)-*form*
Korseverinine
[36506-64-6]
From *Korolkowia sewerzowii* (Liliaceae). Mp 320-322°. $[\alpha]_D$ +23 (c, 0.82 in 10% AcOH aq.).
6-Ketone: 3-Hydroxycev-8-en-6-one. ***Korseverine***
[22223-08-1]
$C_{27}H_{41}NO_2$ 411.626
Alkaloid from *Korolkowia sewerzowii* bulbs (Liliaceae). Cryst. (Me_2CO). Mp 167-168°. $[\alpha]_D$ +82.5 (c, 1.21 in MeOH).
6-Ketone, hydrobromide: Mp 292°.
6-Ketone, Ac: Mp 185-186°.

(3α,5α,6β,25α)-*form*
Korsidine
[61989-84-2]
Alkaloid from bulbs of *Korolkowia sewerzowii* (Liliaceae). Mp 316-318°. $[\alpha]_D$ 0 (c, 0.89 in AcOH aq.). Probable struct.

(3β,5α,6β,25β)-*form*
Korsinine
[22958-10-7]
Alkaloid from bulbs of *Korolkowia sewerzowii* (Liliaceae). Cryst. (Me_2CO). Mp 164-165°. $[\alpha]_D$ +105 (c, 0.77 in MeOH). Probable struct.
Nuriddinov, R.N. *et al., Khim. Prir. Soedin.*, 1968, **4**, 390-392; 1969, **5**, 61-62; 1971, **7**, 767-773; *Chem. Nat. Compd. (Engl. Transl.)*, 1968, **4**, 332-333; 1969, **5**, 54-55; 1971, **7**, 740-745 (*Korseverine, Korsinine, Korseverinine*)
Samikov, K. *et al., Khim. Prir. Soedin.*, 1976, **12**, 367-371; 780-783; *Chem. Nat. Compd. (Engl. Transl.)*, 1976, **12**, 320-322; 699-701 (*Korsidine, struct*)

Cev-8-ene-3,11-diol C-303

8,9-Didehydro-3,11-cevanediol, 9CI

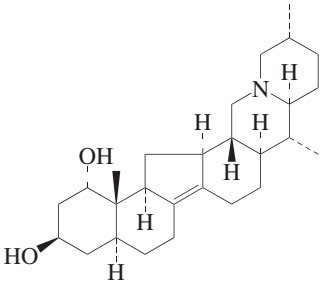


$C_{27}H_{43}NO_2$ 413.642

(3α,5α,11β,20α,25α)-*form*
Cordiline. *Kordiline*
[97745-01-2]
Alkaloid from *Korolkowia sewerzowii* epigeal parts (Liliaceae). Cryst. (Me_2CO). Mp 286-288°.
Kulkova, V.V. *et al., Khim. Prir. Soedin.*, 1985, **21**, 253-255; *Chem. Nat. Compd. (Engl. Transl.)*, 1985, **21**, 237-239 (*isol, ir, pmr, ms, struct*)

Cev-8(14)-ene-1,3-diol C-304

8,14-Didehydro-1,3-cevanediol, 9CI. 1,3-Dihydroxy-$\Delta^{8(14)}$-cevanene

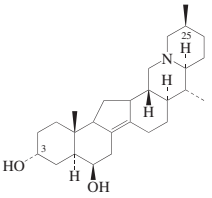


$C_{27}H_{43}NO_2$ 413.642

(1α,3β)-*form*
Korselimine
[122279-80-5]
Alkaloid from *Korolkowia sewerzowii* (Liliaceae). Mp 272-274°. $[\alpha]_D$ -75 (c, 0.12 in EtOH).
Samikov, K. *et al., Khim. Prir. Soedin.*, 1989, **25**, 44-46; *Chem. Nat. Compd. (Engl. Transl.)*, 1989, **25**, 37-39

Cev-8(14)-ene-3,6-diol C-305

8,14-Didehydro-3,6-cevanediol, 9CI



(3α,5α,6β,25β)-*form*

$C_{27}H_{43}NO_2$ 413.642

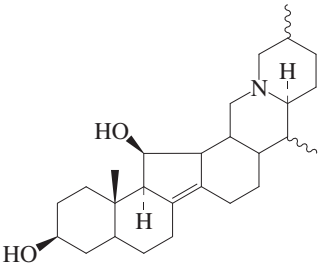
(3α,5α,6β,25β)-*form*
Seveline
[73307-46-7]
Alkaloid from *Korolkowia sewerzowii* (Liliaceae). Mp 145-147°. $[\alpha]_D$ -48.8 (c, 1.76 in EtOH/$CHCl_3$ 1:1).

(3β,5α,6β,25α)-*form*
Severzine
Alkaloid from *Korolkowia sewerzowii* (Liliaceae). Mp 202-204°. $[\alpha]_D$ -45.

(5α,6β,25β)-*form*
3-Ketone: Sevelinone
[73307-48-9]
Cryst. (Me_2CO). Mp 234-236°.
Samikov, K. *et al., Khim. Prir. Soedin.*, 1979, **15**, 529-532; *Chem. Nat. Compd. (Engl. Transl.)*, 1979, **15**, 459-461 (*Seveline, Sevelinone, Seveline*)
Samikov, K. *et al., Khim. Prir. Soedin.*, 1981, **17**, 252-253 (*Severzine*)

Cev-8(14)-ene-3,11-diol C-306

8,14-Didehydro-3,11-cevanediol



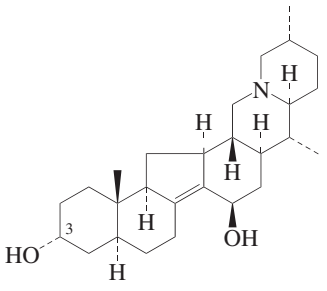
$C_{27}H_{43}NO_2$ 413.642

(3β,5α,11β, 20ξ,25ξ)-*form*
Stenanzamine
[94898-74-5]
Alkaloid from the aerial parts of *Rhinopetalum stenantherum* (Liliaceae). Amorph. $[\alpha]_D$ -22.3 (c, 0.05 in $CHCl_3$).
Samikov, K. *et al., Khim. Prir. Soedin.*, 1984, **20**, 341-344; 399-400; *Chem. Nat. Compd.*

(Engl. Transl.), 1984, **20**, 318-320; 379-380 (*isol, ir, pmr, ms, struct*)

Cev-8(14)-ene-3,15-diol C-307

8,14-Didehydro-3,15-cevanediol



(3α,5α,15β,25α)-*form*

$C_{27}H_{43}NO_2$ 413.642

(3α,5α,15β,25α)-*form*
Korseveridinine
[62959-88-0]
Alkaloid of *Korolkowia sewerzowii* (Liliaceae). Mp 282-284°. $[\alpha]_D$ -39.5 (c, 0.58 in $CHCl_3$/MeOH, 1:1).

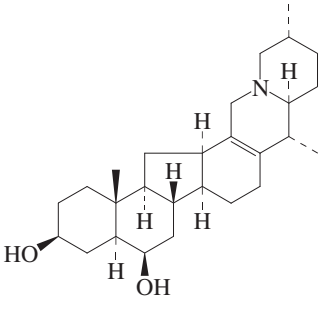
3-Ketone: Mp 122-124°.

(3β,5α,15β,25α)-*form*
Korseveridine
[20072-14-4]
From *Korolkowia sewerzowii* (Liliaceae). Cryst. (MeOH). Mp 290-292°. $[\alpha]_D$ -49.3 ($CHCl_3$).

Hydrochloride: Mp 326°.

Nuriddinov, R.N. *et al., Khim. Prir. Soedin.*, 1968, **4**, 101-106; *Chem. Nat. Compd. (Engl. Transl.)*, 1968, **4**, 86-89 (*Korseveridine*)
Abdullaeva, D.U. *et al., Khim. Prir. Soedin.*, 1976, **12**, 796-798; *Chem. Nat. Compd. (Engl. Transl.)*, 1976, **12**, 714-715 (*Korseveridinine, struct*)

Cev-13(17)-ene-3,6-diol C-308



$C_{27}H_{43}NO_2$ 413.642

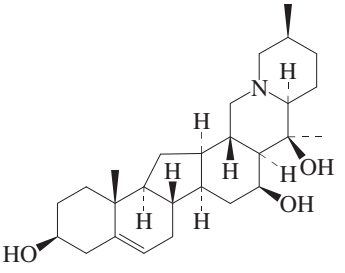
(3β,5α,6β,25α)-*form*
Ebeienine. *Ziebeimine*
[123116-14-3]
Alkaloid from the bulbs of *Fritillaria ebeiensis* var. *purpurea* (Liliaceae). Needles + $1H_2O$ (hexane/Et_2NH/EtOH). Mp 274.5-278.4°. $[\alpha]_D$ -2.9 (c, 0.5 in MeOH).

6-Ketone: 3-Hydroxycev-13(17)-en-6-one.
Ebeinone
[125409-58-7]
$C_{27}H_{41}NO_2$ 411.626
Alkaloid from bulbs of *Fritillaria imperialis* (Liliaceae). Exhibits anticholinergic activity. Brown amorph. solid. Mp 199°. $[\alpha]_D^{25}$ -30 (c, 0.1 in $CHCl_3$).

Lee, P. *et al., Chem. Pharm. Bull.*, 1988, **36**, 4316-4329 (*isol, ir, pmr, cmr, ms, cryst struct*)
Wu, J.Z. *et al., Yaoxue Xuebao*, 1989, **24**, 600-605; *CA*, **112**, 95497k (*isol*)
Atta-ur-Rahman, *et al., Planta Med.*, 1994, **60**, 377-379 (*Ebeinone*)
Zhang, Y.-H. *et al., Chin. J. Chem.*, 2007, **25**, 1728-1731 (*isol, pmr, cmr*)

Cev-5-ene-3,16,20-triol C-309

5,6-Didehydro-3,16,20-cevanetriol



$C_{27}H_{43}NO_3$ 429.642

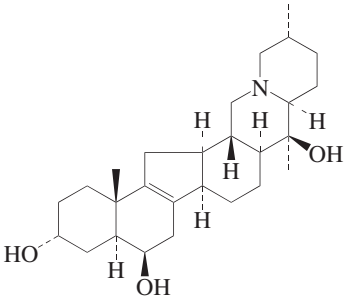
(3β,16β,25β)-*form*
Veramarine
[4565-85-9]
Alkaloid from *Veratrum album* ssp. *lobelianum, Veratrum oxysepalum* and *Veratrum nigrum* (Liliaceae). Cryst. (Me_2CO aq.) (prev. descr. as amorph.). $[\alpha]_D^{25}$ -77 (c, 0.7 in EtOH). $[\alpha]_D^{25}$ -112.7 (c, 0.22 in $CHCl_3$). Formerly assigned the 16α-config.

3-Ac: Mp 254-255°. $[\alpha]_D^{23}$ -74 (c, 0.44 in EtOH).

Tomko, J. *et al., Coll. Czech. Chem. Comm.*, 1965, **30**, 3320-3324 (*Veramarine*)
Kaneko, K. *et al., Coll. Czech. Chem. Comm.*, 1983, **48**, 2840-2843 (*Veramarine, cryst struct, cmr, pmr*)
Kuribayashi, T. *et al., Coll. Czech. Chem. Comm.*, 1983, **48**, 2840 (*cmr*)
Bondarenko, N.V. *et al., Khim. Prir. Soedin.*, 1984, **20**, 263; *Chem. Nat. Compd. (Engl. Transl.)*, 1984, **20**, 248-249 (*Veramarine, isol*)

Cev-8-ene-3,6,20-triol C-310

8,9-Didehydro-3,6,20-cevanetriol, 9CI



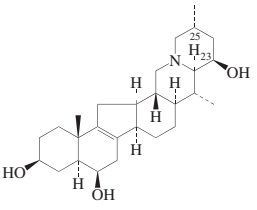
$C_{27}H_{43}NO_3$ 429.642

(3α,5α,6β,20β,25α)-*form*
Edpetisidine
[68676-58-4]
Alkaloid from *Petilium eduardii* (Liliaceae). Mp 257-259°. $[\alpha]_D$ -33.6 (c, 1.87 in MeOH). Probable struct.

Shakirov, R. *et al., Khim. Prir. Soedin.*, 1978, **14**, 416-417; *Chem. Nat. Compd. (Engl. Transl.)*, 1978, **14**, 357-358 (*ir, ms, pmr*)

Cev-8-ene-3,6,23-triol C-311

8,9-Didehydro-3,6,23-cevanetriol



Absolute Configuration

$C_{27}H_{43}NO_3$ 429.642

(3β,5α,6β)-*form*
Korsine
[20321-59-9]
Alkaloid from *Korolkowia sewerzowii* (Liliaceae). Mp 236-238°. $[\alpha]_D$ +87.9 (c, 0.1 in EtOH). Incorr. named as 3,11,23-triol in CAS.

Hydrochloride:
Cryst. (Me_2CO). Mp 301-303°.

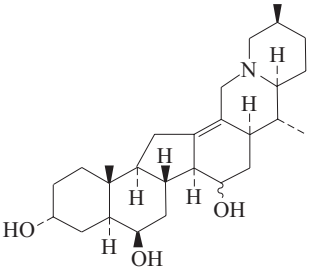
N-*Oxide:* ***Korsine* N-*oxide***
[105256-28-8]
$C_{27}H_{43}NO_4$ 445.641
Alkaloid from *Korolkowia sewerzowii* (Liliaceae). Cryst. (Me_2CO). Mp 257-259°. $[\alpha]_D$ -8 (c, 0.74 in EtOH).

23-Ac: ***Korsinamine***
[68231-27-6]
$C_{29}H_{45}NO_4$ 471.679
Alkaloid from *Korolkowia sewerzowii*. Mp 155-158°. $[\alpha]_D$ +68.2 (c, 1.202 in $CHCl_3$).

Nuriddinov, R.N. *et al., Khim. Prir. Soedin.*, 1968, **4**, 161-168; *Chem. Nat. Compd. (Engl. Transl.)*, 1968, **4**, 139-144 (*Korsine*)
Samikov, K. *et al., Khim. Prir. Soedin.*, 1978, **14**, 233-235; *Chem. Nat. Compd. (Engl. Transl.)*, 1978, **14**, 192-193 (*Korsinamine, ir, pmr, ms*)
Samikov, K. *et al., Khim. Prir. Soedin.*, 1986, **22**, 251; *Chem. Nat. Compd. (Engl. Transl.)*, 1986, **22**, 237 (*Korsine N-oxide*)

Cev-12-ene-3,6,15-triol C-312

12,13-Didehydro-3,6,15-cevanetriol



$C_{27}H_{43}NO_3$ 429.642

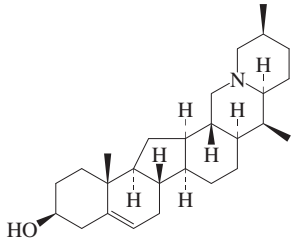
(3β,6β,15ξ)-*form*
Edpetisidinine
[73276-38-7]
Alkaloid from *Petilium eduardii* (Liliaceae). Cryst. (MeOH). Mp 263-265°. $[\alpha]_D$ -15.3 (c, 0.39 in MeOH/$CHCl_3$ 9:1).

Shakirov, P. *et al., Khim. Prir. Soedin.*, 1979,

15, 584; *Chem. Nat. Compd. (Engl. Transl.)*, 512 (*isol, ir, ms, pmr, struct*)

Cev-5-en-3-ol **C-313**

5,6-Didehydrocevan-3-ol, 9CI



$C_{27}H_{43}NO$ 397.643

(3β,20β)-*form*

Shinonomenine

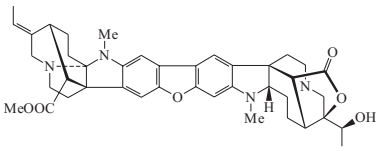
[70598-84-4]

Alkaloid from the rhizomes of *Veratrum grandiflorum* (Liliaceae). Mp 95-96°. $[\alpha]_D$ -90.7 (c, 0.33 in $CHCl_3$).

Kaneko, K. *et al., Tet. Lett.*, 1978, 4801-4804; 1979, 3737-3740 (*isol, cryst struct, pmr, ms, cmr*)

Ceylanicine **C-314**

[119400-91-8]



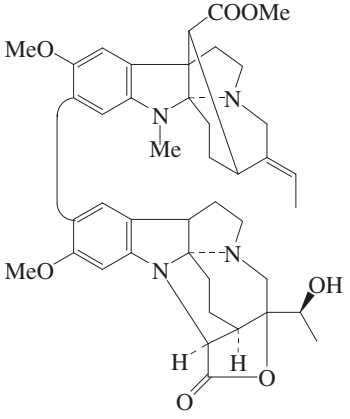
$C_{41}H_{48}N_4O_6$ 692.853

Related to Pelankine, P-172. Alkaloid from the stems of *Petchia ceylanica* (Apocynaceae). Light yellow amorph. solid. Mp 250° dec. $[\alpha]_D^{26}$ -98 (MeOH).

Atta-ur-Rahman, *et al., Heterocycles*, 1988, **27**, 2051 (*isol, uv, ir, pmr, cmr, ms, struct*)

Ceylanine **C-315**

[119420-11-0]



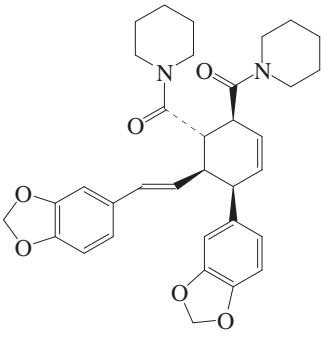
$C_{42}H_{50}N_4O_7$ 722.88

Alkaloid from the leaves of *Petchia ceylanica* (Apocynaceae). Pale pink amorph. solid. Mp 280° dec. $[\alpha]_D^{26}$ -124 (MeOH). Light sensitive.

Atta-ur-Rahman, *et al., Heterocycles*, 1988, **27**, 2051 (*isol, uv, ir, pmr, cmr, ms, struct*)

Chabamide **C-316**

[479068-69-4]



$C_{34}H_{38}N_2O_6$ 570.684

Dimer of 1-Piperoylpiperidine, P-467. Alkaloid from the stems of *Piper chaba* and roots of Piper nigrum (pepper). Antimalarial and antituberculosis agent. Pale yellow semi-solid. $[\alpha]_D^{31}$ +11.6 (c, 0.15 in $CHCl_3$). λ_{max} 278 ; 297 ; 317 (sh) (MeOH).

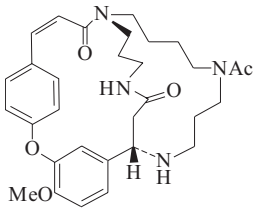
Rukachaisirikul, T. *et al., Planta Med.*, 2002, **68**, 850-853 (*isol, pmr, cmr*)

Wei, K. *et al., J.O.C.*, 2005, **70**, 1164-1176 (*isol*)

Chaenorhine **C-317**

20-Acetyl-5-methoxy-7-oxa-15,20,24,27-tetraazatetracyclo[13.9.6.2^{8,11}.1^{2,6}]tritriaconta-2,4,6(33),8,10,12,31-heptaene-14,26-dione, 9CI. Chenorrhine

[40135-65-7]



$C_{31}H_{40}N_4O_5$ 548.681

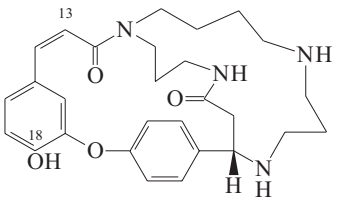
Alkaloid from *Chaenorhinum origanifolium* and *Chaenorhinum rubifolium* (Scrophulariaceae). Cryst. (MeOH). Mp 263-268° dec. $[\alpha]_D^{25}$ +46.7 (c, 1.5008 in $CHCl_3$/MeOH 9:1). pK_a 6.

Bernhard, H.O. *et al., Helv. Chim. Acta*, 1973, **56**, 1266 (*isol, uv, ord, cd, ir, pmr, ms, struct*)

Wasserman, H.H. *et al., J.A.C.S.*, 1983, **105**, 1697 (*synth*)

Chaenorpine **C-318**

[114622-14-9]



$C_{28}H_{36}N_4O_4$ 492.617

Alkaloid from *Chaenorhinum minus* (Scrophulariaceae). Cryst. (EtOH aq.)(as dihydrobromide). Mp 239-241° (dihydobromide). $[\alpha]_D^{22}$ +28.2 (c, 0.22 in H_2O) (dihydrobromide).

Me ether: ***18-O-Methylchaenorpine***

[120374-27-8]

$C_{29}H_{38}N_4O_4$ 506.644

Alkaloid from the roots of *Aphelandra tetragona* (Acanthaceae). Amorph. solid. $[\alpha]_D^{22}$ -74 (c, 0.10 in MeOH).

*13*E-*Isomer, Me ether:* ***Iso-18-O-methylchaenorpine***

[120396-81-8]

$C_{29}H_{38}N_4O_4$ 506.644

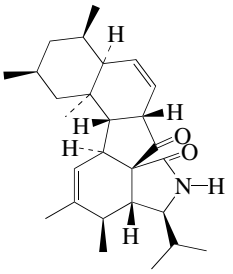
Alkaloid from the roots of *Aphelandra tetragona* (Acanthaceae). $[\alpha]_D^{22}$ +108.9 (c, 0.235 in MeOH).

Zhu, J. *et al., Helv. Chim. Acta*, 1988, **71**, 218 (*uv, ir, pmr, cmr, ms, cd, struct*)

Tawil, B.F. *et al., Helv. Chim. Acta*, 1989, **72**, 180 (*18-O-Methylchaenorpine, Iso-18-O-methylchaenorpine*)

Chaetochalasin A **C-319**

[216006-03-0]



$C_{27}H_{39}NO_2$ 409.611

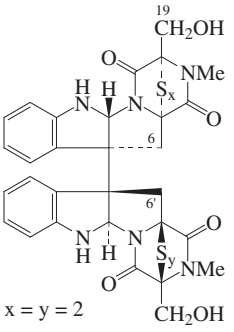
Prod. by *Chaetomium brasiliense*. Antibacterial and cytotoxic agent. Cryst. (MeOH). Mp 191-193°. $[\alpha]_D$ +271 (c, 0.27 in $CHCl_3$). λ_{max} 212 (ϵ 6200) (MeOH).

Oh, H. *et al., Tet. Lett.*, 1998, **39**, 7633-7636 (*isol, uv, ir, pmr, cmr, ms*)

Chaetocin **C-320**

Chetocin, 9CI

[28097-03-2]



Absolute Configuration

$C_{30}H_{28}N_6O_6S_4$ 696.852

Epithiodioxopiperazine antibiotic. Stereoisomeric with the series repre-

sented by Verticillin A, V-89. The original publication incorrectly shows the stereochem. of Chaetocin as a *meso*-form. The struct. has C_2-symmetry with the bridgehead *H*s *cis*- to the bond linking the two C_{15} residues. CAS numbering shown. Metab. of *Chaetomium minutum*, *Chaetomium thielavioideum and Farrowia* sp. Sol. Py, EtOAc, DMSO, MeOH; poorly sol. H_2O. $[\alpha]_D^{20}$ +379 (c, 1 in Py). λ_{max} 203 (ϵ 50100); 240 (sh) (ϵ 14100); 301 (ϵ 5370) (Ac_2O/MeOH) (Derep). λ_{max} 306 (ϵ 6030) (DMSO) (Derep).

▶ LD_{50} (mus, ipr) 1.7 mg/kg, LD_{50} (mus, orl) 1200 mg/kg. FM3032000

O,O′-*Di-Ac:* Mp 220-225° dec. $[\alpha]_D^{20}$ +679 (c, 1 in $CHCl_5$).

6S-*Hydroxy:* ***Melinacidin III***
[12794-84-2]
$C_{30}H_{28}N_6O_7S_4$ 712.851
Prod. by *Acrostalagmus cinnabarinus* var. *melinacidinus* NRRL3291 and the marine-derived *Corollospora pulchella*. Shows similar activity to Melinacidin II. Cryst. Sol. $CHCl_3$, DMF, DMSO; fairly sol. MeOH, EtOH, Me_2CO; poorly sol. H_2O, hexane. $[\alpha]_D^{25}$ +776 (c, 0.5 in $CHCl_3$). λ_{max} 241 (sh) (ϵ 15300); 300 (ϵ 5310) (MeOH) (Derep).

19-*Deoxy, 6 or 6′*S-*hydroxy:* ***Melinacidin II***
[12794-85-3]
$C_{30}H_{28}N_6O_6S_4$ 696.852
Prod. by *Acrostalagmus cinnabarinus* var. *melinacidinus* NRRL13291 and *Verticillium tererum*. Shows antibacterial and antitumour activity but is highly toxic. Cryst. Sol. $CHCl_3$, DMSO, DMF; fairly sol. MeOH, EtOH, Me_2CO; poorly sol. H_2O, hexane. $[\alpha]_D^{25}$ +726 (c, 0.5 in $CHCl_3$). λ_{max} 203 (ϵ 50100); 240 (sh) (ϵ 14100); 301 (ϵ 5370) (Ac_2O/MeOH) (Derep). λ_{max} 306 (ϵ 6030) (DMSO) (Derep). λ_{max} 300 (E1%/1cm 73) (MeOH) (Berdy).

6S,6′S-*Dihydroxy:* ***Melinacidin IV***
[37934-52-4]
$C_{30}H_{28}N_6O_8S_4$ 728.851
Prod. by *Acrostalagmus cinnabarinus* var. *melinacidinus* NRRL13291 and the marine-derived *Corollospora pulchella*. Shows similar activity to Melanicidin II. Cryst. $[\alpha]_D^{25}$ +718 (c, 0.5 in $CHCl_3$). λ_{max} 241 (sh) (ϵ 15300); 300 (ϵ 5310) (MeOH) (Derep).

▶ FM3036000

Hauser, D. *et al., Helv. Chim. Acta*, 1970, **53**, 1061-1073 (*isol, uv, cd, ir, pmr, ms, cryst struct*)
Argoudelis, A.D. *et al., J. Antibiot.*, 1972, **25**, 171-178; 1977, **30**, 468 (*Melinacidins*)
Nagarajan, R. *et al., J.A.C.S.*, 1973, **95**, 7212-7222 (*cd*)
Sekita, S. *et al., Chem. Pharm. Bull.*, 1980, **28**, 2428-2435 (*isol*)

Chaetocin B C-321

2,5-De(epidithio)-2,5-(epitrithio)chaetocin, 9CI. Chetocin B
[118101-82-9]
As Chaetocin, C-320 with
x = 3, y = 2
$C_{30}H_{28}N_6O_6S_5$ 728.918
Epithiodioxopiperazine antibiotic. Metab. of *Chaetomium virescens* ssp. *thielavioideum*. Cytotoxic. Active against gram-positive bacteria. Sol. MeOH. Mp 225° dec. (as di-Ac). $[\alpha]_D^{20}$ +673.2 (c, 0.079 in $CHCl_3$) (di-Ac). λ_{max} 209 ; 237 ; 299 (MeOH) (Berdy).

Saito, T. *et al., Chem. Pharm. Bull.*, 1988, **36**, 1942 (*isol, pmr, cmr, struct*)

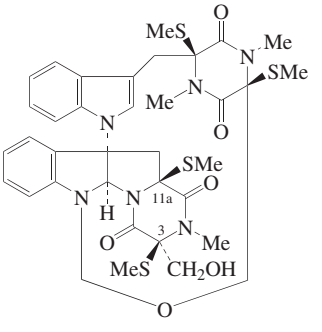
Chaetocin C C-322

Chetocin C
[118111-08-3]
As Chaetocin, C-320 with
x = y = 3
$C_{30}H_{28}N_6O_6S_6$ 760.984
Epithiodioxopiperazine antibiotic. Metab. of *Chaetomium virescens* ssp. *thielavioideum*. Cytotoxic, active against gram-positive bacteria. Sol. MeOH. Mp 232° dec. (as di-Ac). $[\alpha]_D^{20}$ +658.3 (c, 0.012 in $CHCl_3$) (di-Ac). λ_{max} 210 ; 238 ; 301 (MeOH) (Berdy).

Saito, T. *et al., Chem. Pharm. Bull.*, 1988, **36**, 1942 (*isol, pmr, cmr, struct*)

Chaetocochin A C-323

[912551-37-2]



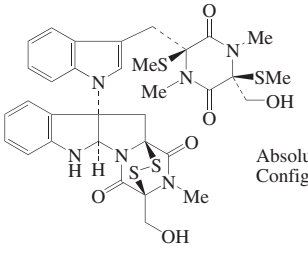
$C_{36}H_{42}N_6O_6S_4$ 783.028
Prod. by *Chaetomium cochliodes*. Amorph. powder. $[\alpha]_D^{20}$ +121.3 (c, 0.1 in MeOH). λ_{max} 205 (log ϵ 3.64); 220 (log ϵ 3.49); 287 (log ϵ 2.78); 297 (log ϵ 2.77) (MeOH).

3,11a-*Di*-S-*de-Me, 3,11*a-*disulfide:* ***Chaetocochin B***
[912551-38-3]
$C_{34}H_{36}N_6O_6S_4$ 752.959
Prod. by *Chaetomium cochliodes*. Amorph. powder. $[\alpha]_D^{20}$ +204 (c, 0.11 in $CHCl_3$).

Li, G.-Y. *et al., J. Nat. Prod.*, 2006, **69**, 1374-1376 (*isol, cd, pmr, cmr*)

Chaetocochin C C-324

[912551-39-4]



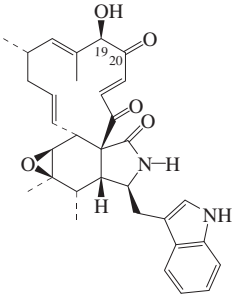
Absolute Configuration

$C_{33}H_{36}N_6O_6S_4$ 740.948
Prod. by *Chaetomium cochliodes*. Amorph. powder. $[\alpha]_D^{20}$ +206 (c, 0.1 in $CHCl_3$). λ_{max} 205 (log ϵ 3.67); 220 (log ϵ 3.56); 287 (log ϵ 2.85); 294 (log ϵ 2.85) (MeOH).

Li, G.Y. *et al., J. Nat. Prod.*, 2006, **69**, 1374-1376

Chaetoglobosin A C-325

[50335-03-0]



Absolute Configuration

$C_{32}H_{36}N_2O_5$ 528.647
Isoindole antibiotic. Metab. of *Chaetomium cochliodes*, *Chaetomium globosum* NRRL12718, *Chaetomium subaffine*, other *Chaetomium* spp., *Penicillium aurantiogriseum*, *Cylindrocladium floridanum* and *Ascotricha chartarum*. Cytotoxic to HeLa cells; fibrinolysis enhancer; mycotoxin; phytotoxin; microtubule protein assembly inhibitor; urokinase prodn. inducer. Pale yellow prisms (CH_2Cl_2). Sol. MeOH; poorly sol. H_2O. Mp 188° (168-170°). $[\alpha]_D$ -270 (MeOH). λ_{max} 222 (ϵ 36300); 273 (ϵ 6760); 281 (ϵ 6760); 291 (ϵ 5750) (MeOH) (Derep). λ_{max} 196 (ϵ 42700); 220 (ϵ 41600); 271 (ϵ 6600); 280 (ϵ 6600); 290 (ϵ 5360) (MeOH) (Berdy). λ_{max} 223 (ϵ 40740); 274 (ϵ 6610); 282 (ϵ 6607); 292 (ϵ 5370) (EtOH) (Berdy).

▶ Teratogen. HA5305000

O-*Ac:* ***19-O-Acetylchaetoglobosin A***
[50939-69-0]
$C_{34}H_{38}N_2O_6$ 570.684
Prod. by *Chaetomium globosum*. Mycotoxin. Yellow cryst. (C_6H_6). Poorly sol. hexane. Mp 223-225°. $[\alpha]_D^{20}$ -304 (c, 0.5 in $CHCl_3$). λ_{max} 196 (log ϵ 4.65); 220 (log ϵ 4.64); 271 (log ϵ 3.83); 280 (log ϵ 3.83); 289 (log ϵ 3.74) (EtOH).

20S-*Alcohol:* ***20-Dihydrochaetoglobosin A***. *TAN 1142*. *Antibiotic TAN 1142*
[149560-98-5]
[147527-33-1]
$C_{32}H_{38}N_2O_5$ 530.663
Prod. by *Chaetomium globosum* and *Chaetomium subaffine*.
Immunoregulator; mycotoxin. Cryst. ($CHCl_3$/Et_2O). Mp 145-147°. $[\alpha]_D$ -82.8 (MeOH). Stereochem. relationship between 20-Dihydrochaetoglobosin A and TAN 1142 not confirmed. λ_{max} 212 (log ϵ 4.71); 221 (log ϵ 4.8); 266 (log ϵ 3.93); 272 (log ϵ 3.92); 291 (log ϵ 3.82) (MeOH).

19-Deoxy: ***Prochaetoglobosin III***
[133613-78-2]
$C_{32}H_{36}N_2O_4$ 512.647
Metab. of *Chaetomium subaffine*. Pale yellow cryst. (MeOH aq.). Mp 137-139°. $[\alpha]_D$ -210.4 (c, 0.2 in MeOH). λ_{max} 221 (log ϵ 4.7); 280 (log ϵ 3.87); 290 (log ϵ 3.79) (MeOH).

19-Deoxy, 20ξ-alcohol: ***20-Dihydroprotochaetoglobosin III***
[149439-84-9]
$C_{32}H_{38}N_2O_4$ 514.663
Prod. by *Chaetomium subaffine*. Proposed biosynthetic intermed. to Chaetoglobosin A. Oil. $[\alpha]_D$ -60 (c, 0.06 in MeOH). λ_{max} 222 (log ϵ 4.63); 291 (log ϵ 3.72) (MeOh).

19-Deoxy, 20-deoxo: ***Prochaetoglobosin IV***
[137604-97-8]
$C_{32}H_{38}N_2O_3$ 498.664
Metab. of *Chaetomium subaffine*. Cryst. ($CHCl_3$). Mp 256-258°. $[\alpha]_D$ -54.5 (c, 0.02 in MeOH). λ_{max} 222 (log ϵ 4.45); 291 (log ϵ 3.67) (MeOH).

21,22-Dihydro: ***Penochalasin F***
[345642-82-2]
$C_{32}H_{38}N_2O_5$ 530.663
Prod. by a marine *Penicillium* sp. Cytotoxic. Oil. $[\alpha]_D$ -80 (c, 0.13 in $CHCl_3$). λ_{max} 220 (log ϵ 4.68); 240 (sh) (log ϵ 4.28); 280 (log ϵ 4.17); 291 (log ϵ 4.1) (EtOH).

21,22-Dihydro, 19-ketone: ***Chaetoglobosin C***
[50645-76-6]
$C_{32}H_{36}N_2O_5$ 528.647
Prod. by *Chaetomium cochliodes*, *Chaetomium globosum* NRRL12718 and other organisms. Cytotoxic to HeLa cells. Mycotoxin. Phycotoxin. Leaflets (Me_2CO). Sol. MeOH, Et_2O; poorly sol. H_2O. Mp 259-261°. $[\alpha]_D$ -30 (c, 0.1 in MeOH). λ_{max} 222 (ϵ 36300); 273 (ϵ 6760); 281 (ϵ 6760); 291 (ϵ 5750) (MeOH) (Derep). λ_{max} 220 (ϵ 47860); 248 (ϵ 9800); 281 (ϵ 6610); 290 (ϵ 5490) (EtOH) (Berdy).

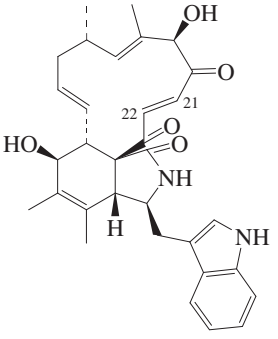
21,22-Dihydro, 19-ketone, 20β-alcohol: ***Chaetoglobosin F***
[55945-75-0]
$C_{32}H_{38}N_2O_5$ 530.663
Prod. by *Chaetomium cochliodes*, *Chaetomium subaffine* and *Chaetomium globosum* NRRL12718. Cytotoxic to HeLa cells; mycotoxin. Leaflets (C_6H_6). Sol. MeOH, Et_2O; poorly sol. H_2O. Mp 177-178°. $[\alpha]_D$ -69 (c, 0.10 in $CHCl_3$). λ_{max} 222 (ϵ 36300); 273 (ϵ 6760); 281 (ϵ 6760); 291 (ϵ 5750) (MeOH) (Derep). λ_{max} 222 ; 276 ; 283 ; 292 (EtOH) (Berdy).

19-Epimer, 21,22-dihydro: ***Penochalasin E***
[345642-81-1]
$C_{32}H_{38}N_2O_5$ 530.663
Prod. by a marine *Penicillium* sp. Cytotoxic. Oil. $[\alpha]_D$ +73 (c, 0.14 in $CHCl_3$). λ_{max} 221 (log ϵ 4.43); 241 (sh) (log ϵ 3.97); 280 (log ϵ 3.84); 291 (log ϵ 3.77) (EtOH).

Umeda, M. *et al., Experientia*, 1975, **31**, 435-438 (*isol*)
Silverton, J.V. *et al., Acta Cryst. B*, 1978, **34**, 588-593 (*cryst struct*)
Probst, A. *et al., Helv. Chim. Acta*, 1981, **64**, 2056-2064; 2065-2077 (*19-Ac*)
Sekita, S. *et al., Chem. Pharm. Bull.*, 1982, **30**, 1609-1617; 1618-1628; 1629-1638; 1983, **31**, 490-498 (*isol, uv, pmr, cmr, struct, Chaetoglobosin F*)
Oikawa, H. *et al., J.C.S. Perkin 1*, 1992, 2949-2953; 2955-2959 (*Prochaetoglobosins*)
Japan. Pat., 1992, 92 360 691; *CA*, **118**, 25339g (*TAN 1142*)
Oikawa, H. *et al., Biosci., Biotechnol., Biochem.*, 1993, **57**, 628-631 (*20-Dihydroprotochaetoglobosin II, 20-Dihydrochaetoglobosin A*)
Shinohara, C. *et al., J. Antibiot.*, 2000, **53**, 762-768 (*activity*)
Iwamoto, C. *et al., Tetrahedron*, 2001, **57**, 2997-3004 (*Penochalasins*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, CDG750

Chaetoglobosin B C-326

[50335-04-1]



$C_{32}H_{36}N_2O_5$ 528.647
Prod. by *Chaetomium cochliodes*, *Chaetomium rectum, Chaetomium mollipilum* and *Chaetomium globosum*. Cytotoxic to HeLa cells. Mycotoxin. Pale yellow needles (C_6H_6). Sol. MeOH; poorly sol. H_2O. Mp 186-187°. $[\alpha]_D$ -176 (c, 0.1 in MeOH). λ_{max} 222 (ϵ 36300); 273 (ϵ 6760); 281 (ϵ 6760); 291 (ϵ 5750) (MeOH) (Derep). λ_{max} 222 (ϵ 43650); 274 (ϵ 7940); 281 (ϵ 7950); 290 (ϵ 6760) (EtOH) (Berdy).

19-Ac: ***19-O-Acetylchaetoglobosin B***
[80375-18-4]
$C_{34}H_{38}N_2O_6$ 570.684
Prod. by *Chaetomium globosum* and a marine-derived *Acremonium* sp. (MST-MF588a). Mycotoxin. Yellow needles (C_6H_6). Poorly sol. hexane. Mp 154-157°. $[\alpha]_D^{20}$ -148 (c, 0.5 in $CHCl_3$). λ_{max} 221 (log ϵ 4.64); 272 (log ϵ 3.83); 279 (log ϵ 3.83); 289 (log ϵ 3.74) (EtOH).

21,22-Dihydro: ***Chaetoglobosin O***
[52645-09-7]
$C_{32}H_{38}N_2O_5$ 530.663
Prod. by *Cylindrocladium floridanum*. Phytotoxin. Mycotoxin. Oil. $[\alpha]_D$ -168 ($CHCl_3$).

21,22-Dihydro, 19-ketone: ***Chaetoglobosin G***
[65773-98-0]
$C_{32}H_{36}N_2O_5$ 528.647
Prod. by *Chaetomium cochliodes* and *Chaetomium subaffine* ATCC22132. Cytotoxic to HeLa cells. Mycotoxin. Leaflets (MeOH). Mp 251-253°. $[\alpha]_D$ +89 (c, 0.10 in MeOH). λ_{max} 222 (ϵ 36300); 273 (ϵ 6760); 281 (ϵ 6760); 291 (ϵ 5750) (MeOH) (Derep). λ_{max} 222 ; 275 ; 282 ; 291 (EtOH) (Berdy).

21,22-Dihydro, 19-ketone, 20β-alcohol: ***Chaetoglobosin E***
[55945-74-9]
$C_{32}H_{38}N_2O_5$ 530.663
Prod. by *Chaetomium cochliodes*, *Chaetomium subaffine* ATCC22132, *Chaetomium mollipilum* and *Chaetomium globosum*. Cytotoxic to HeLa cells. Needles (MeOH). Sol. MeOH, Et_2O; poorly sol. H_2O. Mp 279-280°. $[\alpha]_D$ +158 (c, 0.1 in MeOH). λ_{max} 222 (ϵ 36300); 273 (ϵ 6760); 281 (ϵ 6760); 291 (ϵ 5750) (MeOH) (Derep). λ_{max} 221 (ϵ 56200); 275 (ϵ 7080); 281 (ϵ 7080); 291 (ϵ 6800) (EtOH) (Berdy).

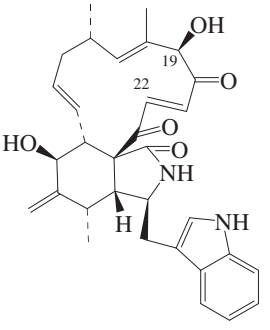
19-Deoxy: ***Prochaetoglobosin III***
[146426-37-1]
$C_{32}H_{36}N_2O_4$ 512.647
Metab. of *Chaetomium subaffine*. Pale yellow cryst. ($CHCl_3$). Mp 153-155°. $[\alpha]_D$ -15.3 (c, 0.06 in $CHCl_3$). λ_{max} 222 (log ϵ 4.43); 282 (log ϵ 3.66); 291 (log ϵ 3.6) (MeOH).

19-Epimer, 21,22-dihydro: ***Penochalasin H***
[345642-84-4]
$C_{32}H_{38}N_2O_5$ 530.663
Prod. by a marine *Penicillium* sp. Powder. Mp 180-182°. $[\alpha]_D$ -72.7 (c, 0.18 in $CHCl_3$). λ_{max} 220 (log ϵ 4.16); 243 (sh) (log ϵ 3.97); 281 (log ϵ 3.52); 290 (log ϵ 3.5) (EtOH).

Umeda, M. *et al., Experientia*, 1975, **31**, 435-438 (*Chaetomium globosum constits*)
Sekita, S. *et al., Chem. Pharm. Bull.*, 1980, **30**, 1609-1617; 1618-1628; 1629-1638 (*isol, ir, uv, pmr, ms, struct, Chaetoglobosins E,G*)
Probst, A. *et al., Helv. Chim. Acta*, 1981, **64**, 2056-2064 (*19-Ac*)
Oikawa, H. *et al., J.C.S. Perkin 1*, 1992, 2949-2953; 2955-2959 (*Prochaetoglobosin III*)
Ichihara, A. *et al., Biosci., Biotechnol., Biochem.*, 1996, **60**, 360-361 (*Chaetoglobosin O*)
Iwamoto, C. *et al., Tetrahedron*, 2001, **57**, 2997-3004 (*Penochalasin H*)

Chaetoglobosin D C-327

[55945-73-8]



$C_{32}H_{36}N_2O_5$ 528.647
Prod. by *Chaetomium cochliodes* and *Chaetomium globosum*. Cytotoxic. Pale yellow prisms (CH_2Cl_2). Sol. MeOH, Et_2O; poorly sol. H_2O. Mp 216°. $[\alpha]_D$ -269 (c, 0.1 in MeOH). λ_{max} 222 (ϵ 36300); 273 (ϵ 6760); 281 (ϵ 6760); 291 (ϵ 5750) (MeOH) (Derep). λ_{max} 221 (ϵ 43650); 273 (ϵ 9162); 281 (ϵ 9160); 290 (ϵ 7590) (EtOH) (Berdy).

19-Ac: ***19-O-Acetylchaetoglobosin D***
$C_{34}H_{38}N_2O_6$ 570.684
Prod. by *Chaetomium globosum* and a marine-derived *Acremonium* sp. (MST-MF558a). Yellow prisms ($CHCl_3$). Poorly sol. hexane. Mp 239-241°. $[\alpha]_D$ -176 (c, 0.5 in $CHCl_3$). λ_{max} 221 (log ϵ 4.64); 272 (log ϵ 3.83); 279 (log ϵ 3.83); 289 (log ϵ 3.74) (EtOH). λ_{max} 224 (ϵ 43600); 272 (ϵ 6760); 279 (ϵ 6760); 289 (ϵ 5500) (MeOH) (Berdy).

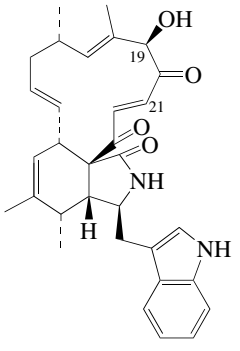
21,22-Dihydro, 19-ketone: ***Isochaetoglobosin D***
[83530-07-8]
$C_{32}H_{36}N_2O_5$ 528.647
Prod. by *Chaetomium globosum*. Mp 264-266° dec. $[\alpha]_D$ +41 (c, 0.1 in MeOH). λ_{max} 222 (log ϵ 4.53); 275 (log ϵ 3.82); 281 (log ϵ 3.82); 291 (log ϵ 3.76) (EtOH).

21,22-Dihydro, 19-ketone, 20β-alcohol: ***Chaetoglobosin F_{ex}***
[149457-95-4]
$C_{32}H_{38}N_2O_5$ 530.663
Prod. by *Chaetomium subaffine*. Cryst. Mp 151-153°. $[\alpha]_D$ +63.8 (c, 0.16 in MeOH). λ_{max} 221 (log ϵ 4.59); 274 (log ϵ 3.78); 283 (log ϵ 3.8); 291 (log ϵ 3.72) (MeOH).

Umeda, M. *et al., Experientia*, 1975, **31**, 435 (*isol*)
Probst, A. *et al., Helv. Chim. Acta*, 1981, **64**, 2056-2064 (*19-Ac*)
Sekita, S. *et al., Chem. Pharm. Bull.*, 1982, **30**, 1609; 1618; 1629 (*ir, uv, pmr, ms, struct*)
Oikawa, H. *et al., Biosci., Biotechnol., Biochem.*, 1993, **57**, 628-631 (*Chaetoglobosin Fex*)
Kanokmedhakul, S. *et al., Planta Med.*, 2002, **68**, 834-836 (*Isochaetoglobosin D*)

Chaetoglobosin J C-328

[65745-47-3]



$C_{32}H_{36}N_2O_4$ 512.647
Prod. by *Chaetomium cochliodes*, *Chaetomium globosum* and *Chaetomium subaffine*. Cytotoxic to HeLa cells. Pale yellow prisms. Mp 149-151°. $[\alpha]_D$ +41 (c, 0.1 in MeOH). λ_{max} 222 (ϵ 36300); 273 (ϵ 6760); 281 (ϵ 6760); 291 (ϵ 5750) (MeOH) (Derep). λ_{max} 224 ; 270 ; 280 ; 290 (EtOH) (Berdy).

6β,7β-Epoxide: see Chaetoglobosin A, C-325

21,22-Dihydro: ***Penochalasin G***
$C_{32}H_{38}N_2O_4$ 514.663
Prod. by a marine *Penicillium* sp. Cytotoxic. Powder. Mp 124-126°. $[\alpha]_D$ -143.6 (c, 0.19 in $CHCl_3$). λ_{max} 220 (log ϵ 4.42); 240 (sh) (log ϵ 3.82); 280 (log ϵ 3.8) (EtOH).

21,22-Dihydro, 19-ketone: ***Isochaetoglobosin J***
[146426-38-2]
$C_{32}H_{36}N_2O_4$ 512.647
Metab. of *Chaetomium subaffine*. Pale yellow cryst. ($CHCl_3$). Mp 117-119°. $[\alpha]_D$ -20 (c, 0.07 in MeOH). λ_{max} 221 (log ϵ 4.59); 291 (log ϵ 3.74) (MeOH).

19-Deoxy: ***Prochaetoglobosin II***
[133625-26-0]
$C_{32}H_{36}N_2O_3$ 496.648
Metab. of *Chaetomium subaffine*. Pale yellow cryst. (MeOH). Mp 187-189°. $[\alpha]_D$ -204.2 (c, 0.4 in MeOH). λ_{max} 221 (log ϵ 4.45); 273 (log ϵ 3.59) (MeOH).

19-Deoxy, 20ξ-alcohol: ***20-Dihydroprochaetoglobosin II***
[149439-83-8]
$C_{32}H_{38}N_2O_3$ 498.664
Metab. of *Chaetomium subaffine*. Proposed biosynth. intermediate of Chaetoglobosin A, C-325. Oil. $[\alpha]_D$ -68.6 (c, 0.07 in MeOH). λ_{max} 221 (log ϵ 4.34); 291 (log ϵ 3.38) (MeOH).

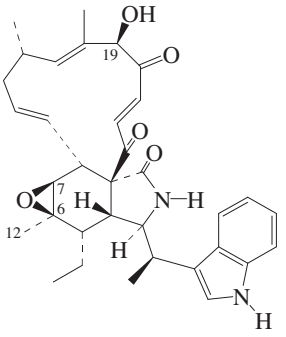
20-Deoxo: ***Chaetoglobosin T***
$C_{32}H_{38}N_2O_3$ 498.664
Prod. by *Chaetomium globosum*. Solid. $[\alpha]_D^{20}$ -80 (c, 0.1 in MeOH). λ_{max} 220 (log ϵ 4.39); 283 (log ϵ 3.58); 290 (log ϵ 3.54) (MeOH).

20-Deoxo, 19-deoxy: ***Prochaetoglobosin I***
[133613-77-1]
$C_{32}H_{38}N_2O_2$ 482.664
Metab. of *Chaetomium subaffine*. Cryst. (MeOH). Mp 214-216°. $[\alpha]_D$ -101.3 (c, 0.3 in MeOH). λ_{max} 223 (log ϵ 4.45); 291 (log ϵ 3.5) (MeOH).

Sekita, S. *et al., Chem. Pharm. Bull.*, 1982, **30**, 1609; 1618; 1629 (*isol, ir, uv, pmr, ms, struct*)
Oikawa, H. *et al., J.C.S. Perkin 1*, 1992, 2949; 2955 (*isol, uv, ir, pmr, cmr, ms, biosynth, derivs*)
Oikawa, H. *et al., Biosci., Biotechnol., Biochem.*, 1993, **57**, 628-631 (*20-Dihydroprochaetoglobosin II*)
Iwamoto, C. *et al., Tetrahedron*, 2001, **57**, 2997-3004 (*Penochalasin G*)
Jiao, W. *et al., J. Nat. Prod.*, 2004, **67**, 1722-1725 (*isol, pmr, cmr*)

Chaetoglobosin K C-329

[72509-61-6]



$C_{34}H_{40}N_2O_5$ 556.7
Cytochalasan antibiotic. Obt. from cultures of *Diplodia macrospora*. Plant growth inhibitor, toxic to chickens. Mycotoxin. Yellow prisms (Me_2CO). Mp 235-240° Mp 264-266°. λ_{max} 221 (ϵ 43700); 273 (ϵ 9120); 281 (ϵ 9120); 290 (ϵ 7590) (EtOH) (Derep). λ_{max} 219 (ϵ 44800) (EtOH) (Berdy).

▶ JF7954000

19-Ketone: ***Chaetoglobosin M***
[119212-28-1]
$C_{34}H_{38}N_2O_5$ 554.685
Isol. from *Diplodia macrospora* DM7. Mycotoxin. Sl. yellow gum. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. $[\alpha]_D^{22}$ -18.3 (c, 0.92 in CH_2Cl_2). λ_{max} 230 (ϵ 12300); 290 (ϵ 3980) (CH_2Cl_2) (Derep).

Deepoxy, 6,7-didehydro: ***Chaetoglobosin 540***
$C_{34}H_{40}N_2O_4$ 540.701
Prod. by a marine-derived *Phomopsis asparagi* incubated with Jaspamide, J-26. Pale yellow powder. $[\alpha]_D^{25}$ -118 (c, 0.009 in MeOH). λ_{max} 221 (log ϵ 4.43); 289 (log ϵ 3.36) (MeOH).

Deepoxy, 6,7-didehydro, 20β-alcohol: ***Chaetoglobosin 542***
$C_{34}H_{42}N_2O_4$ 542.717
Prod. by a marine-derived *Phomopsis asparagi* incubated with Jaspamide, J-26. Cytotoxic. Amorph. powder. $[\alpha]_D^{25}$ -44 (c, 0.01 in MeOH). λ_{max} 222 (log ϵ 4.21); 281 (log ϵ 3.43); 290 (log ϵ 3.35) (MeOH).

Deepoxy, 6,7-didehydro, 19-deoxy, 20-deoxo: ***Chaetoglobosin 510***
$C_{34}H_{42}N_2O_2$ 510.718
Prod. by a marine-derived *Phomopsis asparagi* incubated with Jaspamide, J-26. Amorph. powder. $[\alpha]_D^{25}$ -100 (c, 0.02 in MeOH). λ_{max} 222 (log ϵ 4.37); 281 (log ϵ 3.57); 290 (log ϵ 3.5) (MeOH).

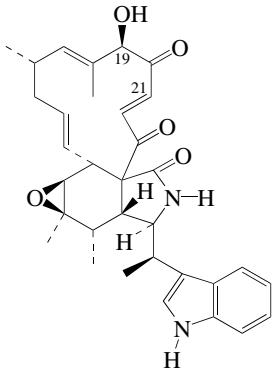
Deepoxy, 6,12-didehydro, 7β-hydroxy: ***Chaetoglobosin L***
[83481-23-6]
$C_{34}H_{40}N_2O_5$ 556.7
Obt. from cultures of *Diplodia macrospora*. Yellow gum. Not obt. completely pure.

Cutler, H.G. *et al., CA*, 1980, **92**, 141619 (*props*)

Cutler, H.G. *et al., J. Agric. Food Chem.*, 1980, **28**, 139 (*isol, cryst struct*)
Springer, J.P. *et al., Tet. Lett.*, 1980, **21**, 1905 (*cryst struct*)
Probst, A. *et al., Helv. Chim. Acta*, 1982, **65**, 1543 (*isol, pmr, struct*)
Cox, R.H. *et al., J. Agric. Food Chem.*, 1983, **31**, 405 (*pmr, cmr, use*)
Spoendlin, C. *et al., Helv. Chim. Acta*, 1988, **71**, 1881 (*deriv*)
Christian, O.E. *et al., J. Nat. Prod.*, 2005, **68**, 1592-1597 (*Chaetoglobosins 510,540,542*)

Chaetoglobosin P C-330

[191403-93-7]

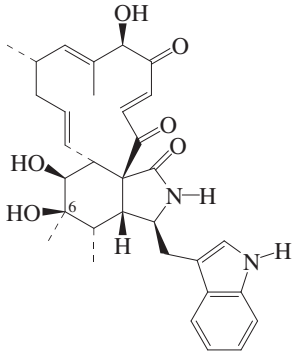


$C_{33}H_{38}N_2O_5$ 542.674
Isol. from the fungus *Discosia* sp. TCF 9535. Pale yellow gum.

19-Ketone, 21,22-dihydro: ***Chaetoglobosin N***
[156980-59-5]
$C_{33}H_{38}N_2O_5$ 542.674
Isol. from *Phomopsis leptostromiformis* on sweet corn (*Zea mays*). Mycotoxin. Mp 205°.

Cherton, J.C. *et al., Analusis*, 1994, **22**, 210-216; 217-221 (*deriv, isol, pmr, cmr*)
Donoso, R. *et al., Nat. Prod. Lett.*, 1997, **10**, 49-54 (*isol, pmr, cmr*)

Chaetoglobosin Q C-331

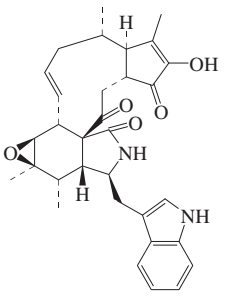


$C_{32}H_{38}N_2O_6$ 546.662
Prod. by *Chaetomium globosum*. Pale yellow solid. $[\alpha]_D^{20}$ -100 (c, 0.1 in MeOH). λ_{max} 217 (log ϵ 4.81); 289 (log ϵ 4.05) (MeOH).

6-Epimer: ***Chaetoglobosin R***
$C_{32}H_{38}N_2O_6$ 546.662
Prod. by *Chaetomium globosum*. Pale yellow solid. $[\alpha]_D^{20}$ -100 (c, 0.1 in MeOH). λ_{max} 220 (log ϵ 4.46); 282 (log ϵ 3.73) (MeOH).

Jiao, W. *et al., J. Nat. Prod.*, 2004, **67**, 1722-1725 (*isol, pmr, cmr*)

Chaetoglobosin U C-332

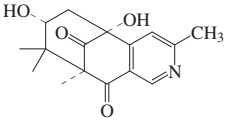


Absolute Configuration

$C_{32}H_{36}N_2O_5$ 528.647
Prod. by *Chaetomium globosum* IFB-E019. Cytotoxic. Pale yellow powder. Mp 167-168°. $[\alpha]_D^{20}$ -17 (c, 0.18 in $CHCl_3$). λ_{max} 222 (log ϵ 0.48); 281 (log ϵ 0.09) ($CHCl_3$).

Ding, G. *et al., J. Nat. Prod.*, 2006, **69**, 302-304 (*isol, pmr, cmr, ms*)

Chaetoindicin A C-333

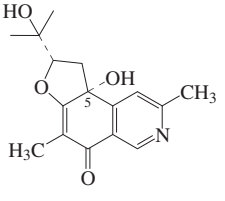


Relative Configuration

$C_{16}H_{19}NO_4$ 289.33
Prod. by *Chaetomium indicum*. Cryst. (MeOH). Mp 231-232°. $[\alpha]_D^{20}$ +8.5 (c, 0.1 in MeOH). λ_{max} 213 (log ϵ 4.29); 248 (log ϵ 4.2) (MeOH).

Li, G.-Y. *et al., Org. Lett.*, 2006, **8**, 3613-3615 (*isol, pmr, cmr, ms*)

Chaetoindicin B C-334



Relative Configuration

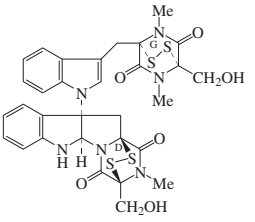
$C_{16}H_{19}NO_4$ 289.33
Prod. by *Chaetomium indicum*. Cryst. (MeOH). Mp 255-256°. $[\alpha]_D^{20}$ -7.5 (c, 0.1 in MeOH). λ_{max} 210 (log ϵ 4.36); 244 (log ϵ 4.2); 285 (log ϵ 3.92); 309 (log ϵ 3.96) (MeOH).

5-Epimer: ***Chaetoindicin C***
$C_{16}H_{19}NO_4$ 289.33
Prod. by *Chaetomium indicum*. Amorph. powder. $[\alpha]_D^{20}$ +9.6 (c, 0.1 in MeOH). λ_{max} 211 (log ϵ 4.35); 245 (log ϵ 4.21); 285 (log ϵ 3.91); 310 (log ϵ 3.95) (MeOH).

Li, G.-Y. *et al., Org. Lett.*, 2006, **8**, 3613-3615 (*isol, pmr, cmr, ms, cryst struct*)

Chaetomin C-335

Chetomin
[1403-36-7]



Absolute Configuration

$C_{31}H_{30}N_6O_6S_4$ 710.879
Metab. of *Chaetomium cochliodes*, *Chaetomium globosum*, *Chaetomium seminudum*, *Chaetomium subglobosum* and *Chaetomium teniussimum*. Antibacterial agent and immunosuppressant. Cytotoxic. Powder. Sol. Me_2CO, EtOAc, $CHCl_3$, C_6H_6, Py, dioxan; fairly sol. MeOH, EtOH, Et_2O; poorly sol. H_2O, hexane. Mp 218-220°. $[\alpha]_D^{25}$ +278 (c, 0.12 in $CHCl_3$). λ_{max} 276 (log ϵ 3.8); 287 (log ϵ 3.83); 295 (log ϵ 3.82) (EtOH).

▶ LD_{50} (rat, orl) 75 mg/kg. FM3038000

O,O′-Di-Ac: Mp 175-177°.

N-Me, O,O′-di-Ac: Mp 112-114°.

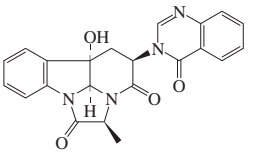
Ring D trithia homologue: ***Chetoseminudin A***
$C_{31}H_{30}N_6O_6S_5$ 742.945
Prod. by *Chaetomium seminudum* 72-S-204-1. Immunosuppressant. Amorph. solid. $[\alpha]_D^{24}$ +279 (c, 0.05 in $CHCl_3$). λ_{max} 277 (log ϵ 3.88); 285 (log ϵ 3.89); 295 (log ϵ 3.87) (EtOH).

Ring G trithia homologue: ***Chetomin B***. *Chaetomin B*
$C_{31}H_{30}N_6O_6S_5$ 742.945
Prod. by the marine-derived *Chaetomium* sp. Gö 100/9. Amorph. solid. Mp > 200°. $[\alpha]_D^{20}$ +270 (c, 0.1 in $CHCl_3$). λ_{max} 205 (sh) (log ϵ 4.18); 290 (log ϵ 3.53) (MeOH).

Safe, S. *et al., J.C.S. Perkin 1*, 1972, 472 (*isol, uv, pmr, cd, struct*)
McInnes, A.G. *et al., J.A.C.S.*, 1976, **98**, 6741 (*cmr, nmr, struct*)
Brewer, D. *et al., J.C.S. Perkin 1*, 1978, 1248 (*nmr*)
Jeu, W.C. *et al., Can. J. Microbiol.*, 1983, **29**, 1399 (*props*)
Fujimoto, H. *et al., J. Nat. Prod.*, 2004, **67**, 98-102; 526 (*isol, pmr, cmr, Chetoseminudin A*)
Schlörke, O. *et al., Dissertation*, Univ. of Göttingen, 2005, (*marine, isol*)
Cole, R.J. *et al., Handbook of Toxic Fungal Metabolites*, Academic Press, 1981, 601

Chaetominine C-336

[918659-56-0]



Absolute Configuration

$C_{22}H_{18}N_4O_4$ 402.409
Prod. by *Chaetomium* sp. IFB-E015. Cytotoxic. Cryst. (MeOH). Mp 161-163°. $[\alpha]_D^{20}$ -70 (c, 0.48 in MeOH). λ_{max} 205 (ϵ 38700); 225 (sh) (ϵ 28700) (MeOH).

Jiao, R.H. *et al., Org. Lett.*, 2006, **8**, 5709-5712 (*isol, cd, pmr, cmr, ms, cryst struct*)
Snider, B.B. *et al., Org. Lett.*, 2007, **9**, 4913-4915 (*synth*)
Toumi, M. *et al., Org. Lett.*, 2008, **10**, 5027-5030 (*synth*)

Chairamidine C-337

$C_{22}H_{26}N_2O_4$ 382.458
Struct. unknown. Alkaloid from the bark of *Remijia purdieana* (Rubiaceae). Amorph. powder + $1H_2O$. Mp 126-128° dec. (anhyd.). $[\alpha]_D^{15}$ +7.3 (c, 3 in EtOH).

Hesse, O. *et al., Annalen*, 1884, **225**, 211

Chairamine C-338

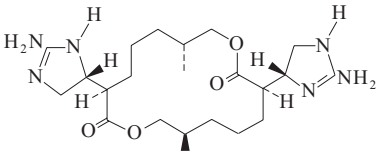
[1398-56-7]

$C_{22}H_{26}N_2O_4$ 382.458
Struct. unknown. Alkaloid from *Remijia purdieana* (Rubiaceae). Needles or prisms + $1H_2O$ (EtOH). Mp 140° (hydrate) Mp 233° (anhyd.). Resembles Mitragynine, M-657 and Corynantheine, C-689.

Hesse, O. *et al., Annalen*, 1884, **225**, 211
Raymond-Hamet, M. *et al., C. R. Hebd. Seances Acad. Sci.*, 1958, **247**, 1387-1389 (*uv*)

Chaksine C-339

[486-53-3]



$C_{22}H_{38}N_6O_4$ 450.58
Struct. revised in 1985 (formerly thought to be C_{11}). Conts. 2 tautomeric aminoimidazole systems. Alkaloid from the seeds, leaves and roots of *Cassia absus* (Fabaceae). Antiinflammatory agent. Active against gram-positive bacteria.
▶ LD_{50} (mus, scu) 80-120 mg/kg.
JG7526000

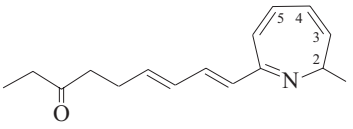
Hydrochloride (1:2):
Cryst. (MeOH). Mp 175°.

Dipicrate:
Cryst. (MeOH). Mp 236°.

Siddiqui, S. *et al., Proc. - Indian Acad. Sci., Sect. A*, 1935, **2**, 421; *CA*, **30**, 1799 (*isol*)
Gupta, K.C. *et al., Indian J. Med. Res.*, 1953, **41**, 459-460 (*activity*)
Wiesner, K. *et al., J.A.C.S.*, 1958, **80**, 1521 (*ir*)
Krishna Rao, R.V. *et al., J. Nat. Prod.*, 1979, **42**, 299 (*isol*)
Voelter, W. *et al., Angew. Chem., Int. Ed.*, 1985, **24**, 959 (*cryst struct, ir, abs config*)
Ahmad, V.U. *et al., Pak. J. Pharm. Sci.*, 1988, **1**, 5; *CA*, **109**, 129413k (*pmr, cmr*)

Chalciporone C-340

*2-Methyl-7-(7-oxo-1,3-nonadienyl)-2*H*-azepine*
[112448-74-5]



$C_{16}H_{21}NO$ 243.348
Pungent principle from fruit-bodies of the mushroom *Chalciporus piperatus*. Sl. yellow oil. Sol. MeOH, EtOAc, Et_2O; poorly sol. H_2O. $[\alpha]_D^{22}$ -452 (c, 1.3 in Et_2O). Spontaneously isomerises to Isochalciporone, e.g. in $CDCl_3$ soln. at r.t. λ_{max} 252 (ϵ 21000); 260 (sh) ; 270 (sh) ; 315 (sh) (EtOH) (Derep).

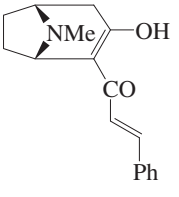
$\Delta^{2,3:4,5}$-Isomer: ***Isochalciporone****. 7-Methyl-2-(7-oxo-1,3-nonadienyl)-3*H*-azepine*
[112448-72-3]
$C_{16}H_{21}NO$ 243.348
Constit. of *Chalciporus piperatus*. Yellow oil. Sol. MeOH, Et_2O, EtOAc; poorly sol. H_2O. Nonpungent. λ_{max} 241 (ϵ 28000); 246 (sh) ; 292 (ϵ 14700); 328 (sh) (EtOH) (Derep).

*$\Delta^{2,3:4,5}$-Isomer, 12,13-didehydro: 7-Methyl-2-(7-oxo-1,3,5-nonatrienyl)-3*H*-azepine.* ***Dehydroisochalciporone***
$C_{16}H_{19}NO$ 241.332
Nonpungent constit. of *Chalciporus piperatus*. Intense yellow oil. Sol. MeOH, Et_2O, EtOAc; poorly sol. H_2O. λ_{max} 226 (ϵ 21800); 285 (sh) ; 338 (ϵ 23000) (EtOH) (Derep).

Sterner, O. *et al., Tetrahedron*, 1987, **43**, 1075 (*isol, uv, ir, pmr, cmr, ms, struct*)
Spiteller, P. *et al., J.A.C.S.*, 2001, **123**, 4837-4838 (*biosynth*)

Chalcostrobamine C-341

1-(3-Hydroxy-8-methyl-8-azabicyclo[3.2.1]oct-2-en-2-yl)-3-phenyl-2-propen-1-one, 9CI
[75638-72-1]

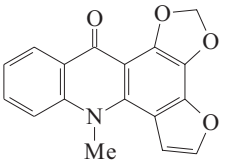


$C_{17}H_{19}NO_2$ 269.343
Enolised β-diketone. Alkaloid from the leaves of *Knightia strobilina* (Protaceae). Viscous liq. $[\alpha]_D^{20}$ +12 ($CHCl_3$) (natural). $[\alpha]_D$ +165 (c, 1.1 in $CHCl_3$) (92%ee) (synthetic).

Lounasmaa, M. *et al., Phytochemistry*, 1980, **19**, 953-955 (*uv, ir, pmr, ms, struct*)
Lounasmaa, M. *et al., J. Nat. Prod.*, 1983, **46**, 429 (*synth*)
Majewski, M. *et al., J.O.C.*, 1995, **60**, 5825-5830 (*synth, abs config*)

Chaloridone C-342

*7-Methyl-1,3-dioxolo[4,5-a]furo[2,3-c]acridin-12(7*H*)one, 9CI.* N*-Methyl-2,3-methylenedioxyfuro[2,3-c]acridone*
[114216-83-0]

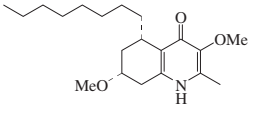


$C_{17}H_{11}NO_4$ 293.278
Alkaloid from the roots of *Ruta chalepensis*. λ_{max} 224 (log ϵ 4.4); 240 (log ϵ 4.5); 270 (log ϵ 4.8); 320 (log ϵ 4.4); 387 (log ϵ 3.8) (MeOH).

Ulubelen, A. *et al., Phytochemistry*, 1988, **27**, 650-651 (*isol, pmr, cmr, ms*)

Chamaedrone C-343

*5,6,7,8-Tetrahydro-3,7-dimethoxy-2-methyl-5-octyl-4(1*H*)-quinolinone*
[954378-11-1]

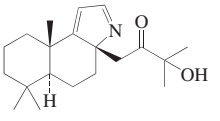


$C_{20}H_{33}NO_3$ 335.486
Related to Antidesmone, A-1325. Alkaloid from the roots of *Melochia chamaedrys*. Yellowish viscous oil. $[\alpha]_D^{25}$ -3.8 (c, 0.12 in $CHCl_3$).

Dias, G.O.C. *et al., Planta Med.*, 2007, **73**, 289-292 (*isol, pmr, cmr*)

Chamobtusine A C-344

[956377-80-3]

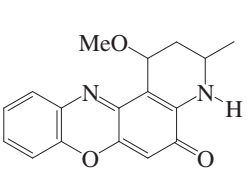


$C_{20}H_{31}NO_2$ 317.47
Alkaloid from *Chamaecyparis obtusa* cv. *tetragon*. Pale yellow cryst. (MeOH aq.). Mp 148-150°. $[\alpha]_D^{24}$ -220.1 (c, 0.24 in MeOH). λ_{max} 248 (log ϵ 2.48); 322 (log ϵ 1.87) (MeOH).

Zhang, Y.-M. *et al., Org. Lett.*, 2007, **9**, 4579-4581 (*isol, pmr, cmr, ms, cryst struct*)

Chandrananimycin C C-345

[664355-11-7]



$C_{17}H_{16}N_2O_3$ 296.325

Prod. by a marine bacteria *Actinomadura* sp. M045 and *Halomonas* sp. GWS-BW-H8hM. Antibiotic. Orange solid. λ_{max} 243 (log ϵ 4.49); 282 (log ϵ 4.19); 366 (log ϵ 4.16); 433 (log ϵ 4.2) (MeOH).

Maskey, R.P. *et al., J. Antibiot.*, 2003, **56**, 622-629 (*isol, ir, pmr, cmr*)
Bitzer, J. *et al., J. Antibiot.*, 2006, **59**, 86-92 (*isol, pmr, ms*)

Chandrine C-346

$C_{25}H_{30}N_2O_8$ 486.521

Struct. unknown. Alkaloid from roots of *Rauwolfia serpentina* (Apocynaceae). Antiarrhythmic agent. Light-brown needles or plates (1,2-dichloroethane or butanol). Mp 230-231°. Strong greenish-blue fluor. in soln.

Hydrochloride: Mp 185°.

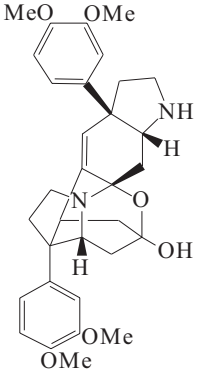
Nitrate: Mp 220-221°.

Picrate: Mp 180°.

Rakshit, B. *et al., Indian Pharm.*, 1954, **9**, 226-227; **10**, 84-88; *CA*, **49**, 4938; 10329a (*isol*)
MacLeod, D.P. *et al., Arch. Int. Pharmacodyn. Ther.*, 1962, **138**, 437-450; *CA*, **58**, 846c (*pharmacol*)

Channaine C-347

[1355-47-1]



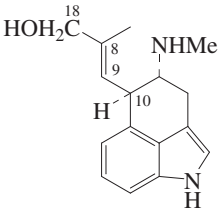
$C_{32}H_{38}N_2O_6$ 546.662

Alkaloid from *Sceletium tortuosum* and *Sceletium strictum* (Aïzoaceae). Mp 179-180°. Opt. inactive. Prob. an artifact derived from dimerisation of normesembrenone (following racemisation).

Abou-Donia, A. *et al., Chem. Comm.*, 1978, 1078 (*isol, cryst struct, bibl*)
Jeffs, P.W. *et al., Alkaloids (Academic Press)*, 1981, **19**, 18 (*rev*)

Chanoclavine I C-348

Chanoclavine



(-)-*form*

$C_{16}H_{20}N_2O$ 256.347

(-)-*form* [2390-99-0]

Alkaloid from *Claviceps purpurea* and from several spp. in the genera *Argyreia, Stictocardia, Rivea* and *Ipomoea* (Convolvulaceae). Prisms (Me_2CO or MeOH). Mp 220-222° dec. $[\alpha]_D^{20}$ -240 (c, 1.0 in Py).

O-*β-D-Fructofuranoside: Chanoclavine I fructoside*
[126432-33-5]
$C_{22}H_{30}N_2O_6$ 418.489
Alkaloid from submerged cultures of *Claviceps fusiformis* strain W1 supplemented with Chanoclavine I.

O-*[β-D-Fructofuranosyl-(2→1)-β-D-fructofuranoside]: Chanoclavine I fructosylfructoside*
[126432-34-6]
$C_{28}H_{40}N_2O_{11}$ 580.631
Alkaloid from submerged cultures of *Claviceps fusiformis* strain W1 supplemented with Chanoclavine I.

N-*Ac:*
Prisms (MeOH). Mp 226-228°. $[\alpha]_D^{20}$ -80 (c, 0.5 in Py).

O,N-*Di-Ac:*
Needles + $1C_6H_6$ (C_6H_6/petrol). Mp 174-175°. $[\alpha]_D^{20}$ -55 (c, 0.9 in Py).

N-*De-Me:* ***Norchanoclavine I***
[51743-69-2]
$C_{15}H_{18}N_2O$ 242.32
Naturally occurring ergot alkaloid.

*8*R*,9-Dihydro:* ***Dihydrochanoclavine I***
[29077-45-0]
$C_{16}H_{22}N_2O$ 258.363
Alkaloid from *Claviceps paspali* and from the sclerotia of two rye ergot strains.

*8*S*,9-Dihydro:* ***Isodihydrochanoclavine I***
[29077-44-9]
$C_{16}H_{22}N_2O$ 258.363
Alkaloid from *Claviceps paspali* and from the sclerotia of two rye ergot strains.

18-Aldehyde: ***Chanoclavine I aldehyde***
[25800-42-4]
$C_{16}H_{18}N_2O$ 254.331
Alkaloid from *Claviceps purpurea*. λ_{max} 223 ; 275 ; 283 ; 293 (petrol/EtOH).

18-Carboxylic acid: ***Chanoclavine I acid***
[25437-30-3]
$C_{16}H_{18}N_2O_2$ 270.33
Alkaloid from the seeds of *Ipomoea violacea* (Convolvulaceae). Cryst. (MeOH). Mp 245-247° dec.

(Z)-Isomer: ***Isochanoclavine I***
[1150-44-3]
$C_{16}H_{20}N_2O$ 256.347
Alkaloid from *Claviceps purpurea* (Convolvulaceae). Cryst. (Me_2CO or 2-propanol). Mp 181°. $[\alpha]_D^{20}$ -216 (c, 0.50 in Py).

10-Epimer: ***Chanoclavine II***
[1466-08-6]
$C_{16}H_{20}N_2O$ 256.347
Alkaloid from *Claviceps purpurea* and several *Argyreia*, *Stictocardia*, *Rivea* and *Ipomoea* spp. (Convolvulaceae). Prisms (Me_2CO). Mp 174°. $[\alpha]_D^{20}$ -332 (c, 0.50 in Py).

10-Epimer, hydrochloride:
Needles (EtOH). Mp 247°. $[\alpha]_D^{20}$ -271 (c, 0.5 in 50% EtOH aq.).

10-Epimer, N-*de-Me:* ***Norchanoclavine II***
[51704-40-6]
$C_{15}H_{18}N_2O$ 242.32
Trace alkaloid from *Claviceps* strain SD 58. Noncryst. λ_{max} 223 ; 274 ; 283 ; 294 (MeOH).

(±)-*form* [57550-19-3]

Synthetic. Mp 185-186° (sealed tube) Mp 194-195° dec.

N-*De-Me:*Synthetic. Mp 182-183°.

*18-Carboxylic acid:*Synthetic. Powder (EtOH aq.). Mp 289-290° dec.

(Z)-Isomer: [76109-09-6]
Synthetic. Mp 162-167° Mp 200-201° dec.

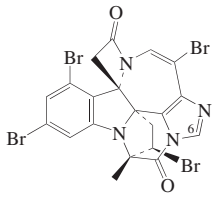
10-Epimer: ***(±)-Chanoclavine II***
[1150-43-2]
$C_{16}H_{20}N_2O$ 256.347
Alkaloid from *Claviceps purpurea*, several *Argyreia* spp. and *Ipomoea violacea* (Convolvulaceae). Cryst. ($CHCl_3$ or Me_2CO). Mp 179°.

10-Epimer, N-*de-Me:*Synthetic. Mp 208-210° dec.

Hofmann, A. *et al., Helv. Chim. Acta*, 1957, **40**, 1358-1373 (*isol, uv, ir, struct*)
Stauffacher, D. *et al., Helv. Chim. Acta*, 1964, **47**, 2186-2194 (*isol, ir, pmr, config, struct, Chanoclavine I, Chanoclavine II, Isochanoclavine I*)
Acklin, W. *et al., Chem. Comm.*, 1966, 799-800 (*stereochem, Isochanoclavine I*)
Voigt, R. *et al., Pharmazie*, 1970, **25**, 272 (*Dihydrochanoclavine I, Isodihydrochanoclavine I*)
Cassady, J.M. *et al., J. Nat. Prod.*, 1973, **36**, 390-396 (*Norchanoclavine II*)
Chao, J.-M. *et al., Phytochemistry*, 1973, **12**, 2435-2440 (*occur*)
Plieninger, H. *et al., Chem. Ber.*, 1976, **109**, 2140-2147 (*synth, pmr, ms*)
Floss, H.G. *et al., Tetrahedron*, 1976, **32**, 873-912 (*biosynth, rev, Norchanoclavine I*)
Choong, T.-C. *et al., Tet. Lett.*, 1977, 3137-3138 (*Chanoclavine I acid*)
Kozikowski, A.P. *et al., J.A.C.S.*, 1980, **102**, 4265-4267 (*synth*)
Natsume, M. *et al., Heterocycles*, 1981, **16**, 375-379 (*synth*)
Oppolzer, W. *et al., Tetrahedron*, 1983, **39**, 3695-3705 (*synth, Isochanoclavine I*)
Somei, M. *et al., Chem. Pharm. Bull.*, 1986, **34**, 948-950 (*synth*)
Kren, V. *et al., FEMS Microbiol. Lett.*, 1986, **37**, 31-34 (*Chanoclavine I aldehyde*)
Somei, M. *et al., Heterocycles*, 1987, **26**, 895-898; 1990, **31**, 1919-1921; 1997, **45**, 1263-1266 (*Chanoclavine I, Chanoclavine I acid, Chanoclavine II, Norchanoclavine II, synth*)
Kiguchi, T. *et al., Heterocycles*, 1989, **28**, 19-22 (*Isochanoclavine I, synth*)
Flieger, M. *et al., J. Nat. Prod.*, 1990, **53**, 171-175 (*fructofuranosides*)
Ninomiya, I. *et al., J.C.S. Perkin 1*, 1991, 3275-3285 (*synth, Chanoclavine I, Isochanoclavine I*)
Kardos, N. *et al., Tetrahedron: Asymmetry*, 1994, **5**, 1525-1533 (*synth*)
Yokoyama, Y. *et al., Tet. Lett.*, 1996, **37**, 9309-9312 (*synth*)
Yamada, F. *et al., Heterocycles*, 2007, **72**, 599-620 (*synth*)

Chartellamide A C-349

[111268-63-4]



Absolute Configuration

$C_{20}H_{12}Br_4N_4O_2$ 659.956

Alkaloid from the marine bryozoan *Chartella papyracea* and from *Flustra papyracea*. Sol. MeOH, EtOH; poorly sol. H_2O. λ_{max} 212 (log ϵ 4.28); 230 (log ϵ 4.41); 258 (log ϵ 4.03); 294 (log ϵ 3.76); 303 (log ϵ 3.74); 318 (log ϵ 3.53) (EtOH).

6-Bromo: ***Chartellamide B***

[111268-64-5]

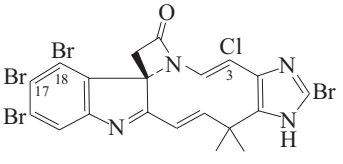
$C_{20}H_{11}Br_5N_4O_2$ 738.852

From *Chartella papyracea*. Sol. MeOH, EtOH; poorly sol. H_2O. λ_{max} 213 (log ϵ 3.7); 231 (log ϵ 3.81); 260 (log ϵ 3.46); 293 (log ϵ 3.19); 303 (log ϵ 3.15); 318 (log ϵ 2.85) (EtOH).

Anthoni, U. *et al., J.O.C.*, 1987, **52**, 5638-5639 (*isol, uv, ir, cd, pmr, cmr, ms, struct*)

Chartelline A C-350

[96845-55-5]



$C_{20}H_{13}Br_4ClN_4O$ 680.418

Alkaloid from the marine bryozoan *Chartella papyracea* and from *Flustra papyracea*. Cryst. (EtOAc). Sol. MeOH, $CHCl_3$. Mp 214-216° dec. $[\alpha]_D^{20}$ -421 (c, 0.038 in EtOH). Shows imidazole tautomerism in soln. λ_{max} 230 (ϵ 38900); 243 (ϵ 37200) (EtOH) (Derep). λ_{max} 230 (ϵ 38900) (MeOH) (Berdy).

17-Debromo: ***Chartelline B***

[110271-21-1]

$C_{20}H_{14}Br_3ClN_4O$ 601.521

Alkaloid from *Chartella papyracea* and *Flustra papyracea*. $[\alpha]_D^{20}$ -339.1 (c, 0.023 in EtOH). λ_{max} 225 (ϵ 27500); 235 (ϵ 26900) (EtOH) (Derep).

17,18-Didebromo: ***Chartelline C***

[110271-22-2]

$C_{20}H_{15}Br_2ClN_4O$ 522.625

Alkaloid from *Chartella papyracea* and *Flustra papyracea*. $[\alpha]_D^{20}$ -217.4 (c, 0.023 in EtOH). λ_{max} 227 (ϵ 25700); 234 (ϵ 25700) (EtOH) (Derep).

3-Dechloro, 3-methoxy: ***Methoxydechlorochartelline A***

[110271-23-3]

$C_{21}H_{16}Br_4N_4O_2$ 675.999

Alkaloidal artifact from *Chartella papyracea* and *Flustra papyracea*. $[\alpha]_D^{20}$ -196.3 (c, 0.055 in EtOH). λ_{max} 230 (ϵ 31622); 245 (ϵ 25700) (EtOH) (Berdy).

Chevolot, L. *et al., J.A.C.S.*, 1985, **107**, 4542-4543 (*isol, uv, ir, pmr, cmr, cryst struct*)

Anthoni, U. *et al., J.O.C.*, 1987, **52**, 4709-4712 (*derivs, isol*)

Baran, P.S. *et al., J.A.C.S.*, 2006, **128**, 14028-14029 (*Chartelline C, synth*)

Chatinine C-351

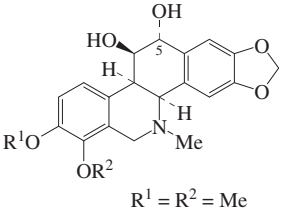
[1390-84-7]

Struct. unknown. Alkaloid from the roots of *Valeriana officinalis*. Mp 211-212° (as hydrochloride) Mp 97-98° (as picrate).

Goris, A. *et al., C. R. Hebd. Seances Acad. Sci.*, 1921, **172**, 1059-1061 (*isol*)

Chelamidine C-352

10-Hydroxyhomochelidonine



(+)-*form*

$R^1 = R^2 = Me$

$C_{21}H_{23}NO_6$ 385.416

(+)-form [134177-17-6]

Alkaloid from the roots of *Chelidonium majus* (Papaveraceae). Prisms ($CHCl_3$/EtOH). Mp 225-226°. $[\alpha]_D^{21}$ +123 (c, 0.50 in $CHCl_3$). λ_{max} 259 (log ϵ 3.3); 287 (log ϵ 3.9) (no solvent reported).

5-Deoxy: ***α-Homochelidonine****. Homochelidonine*

[476-33-5]

$C_{21}H_{23}NO_5$ 369.416

Alkaloid from the roots of *Chelidonium majus* (Papaveraceae). Pharmacol. said to resemble that of Chelidonine, C-357. Sol. MeOH, $CHCl_3$; fairly sol. Et_2O; poorly sol. H_2O. Mp 169-170° Mp 182° Mp 192-193.5°. $[\alpha]_D$ +116 ($CHCl_3$).

(±)-form [102419-38-5]

5-Deoxy: [70191-85-4]

Synthetic. Mp 170-171° Mp 192-193.5°.

Späth, E. *et al., Ber.*, 1931, **64**, 1123-1127 (*Homochelidonine, struct*)

Bersch, H.W. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1958, **291**, 491-492 (*Homochelidonine, ir, config*)

Slavík, J. *et al., Coll. Czech. Chem. Comm.*, 1965, **30**, 3697-3704 (*Chelamidine*)

Ninomiya, I. *et al., Heterocycles*, 1977, **7**, 137-141 (*Homochelidonine, synth*)

Hanaoka, M. *et al., Tet. Lett.*, 1985, **26**, 5163-5166 (*Homochelidonine, synth, pmr*)

Marek, R. *et al., Magn. Reson. Chem.*, 1999, **37**, 195-202 (*N-15 nmr*)

Yoshida, M. *et al., Tet. Lett.*, 2002, **43**, 6751-6753 (*Homochelidonine, synth*)

McManus, H.A. *et al., Angew. Chem., Int. Ed.*, 2007, **46**, 433-436 (*Homochelidonine, synth*)

Chelamine C-353

10-Hydroxychelidonine

As Chelamidine, C-352 with R^1, R^2 = $-CH_2-$

$C_{20}H_{19}NO_6$ 369.373

(+)-form [11028-61-8]

Alkaloid from the roots of *Chelidonium majus* (Papaveraceae), also from *Sarcocapnos enneaphylla* and *Sarcocapnos saetabensis* (Papaveraceae). Prisms (EtOH). Mp 203-204°. $[\alpha]_D^{20}$ +107 (c, 0.28 in $CHCl_3$).

O^{10}-Me: 10-Methoxychelidonine

$C_{21}H_{21}NO_6$ 383.4

This struct. was assigned to an alkaloid isol. from *C. majus* in 1924 but this has been shown to be a mixt. of Chelamine, Chelamidine, C-352 and Homochelidonine.

(±)-form [107651-17-2]

Synthetic. Mp 246-247°.

Slavík, J. *et al., Coll. Czech. Chem. Comm.*, 1965, **30**, 3697; 1977, **42**, 2686 (*isol, uv, ir, struct*)

Hanaoka, M. *et al., Chem. Lett.*, 1986, 739 (*synth, pmr, stereochem*)

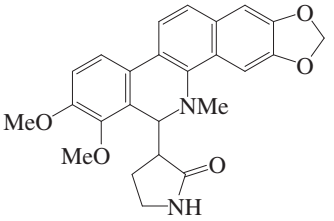
Tojo, E. *et al., Phytochemistry*, 1991, **30**, 1005 (*isol*)

Blanco, O. *et al., Phytochemistry*, 1991, **30**, 2071 (*isol*)

Slavík, J. *et al., Coll. Czech. Chem. Comm.*, 1994, **59**, 429 (*Methoxychelidonine*)

Chelelactam C-354

[112899-82-8]



$C_{25}H_{24}N_2O_5$ 432.475

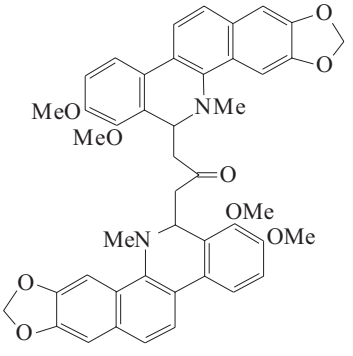
Alkaloid from the stem bark of a *Zanthoxylum* sp. collected in Grand Cayman (*Zanthoxylum spinosum* or *Zanthoxylum coriaceum*) (Rutaceae).

Ng, K.M. *et al., Phytochemistry*, 1987, **26**, 3251 (*isol, uv, ir, pmr, cmr, ms, struct*)

Chelerythridimerine C-355

13,13′-(2-Oxotrimethylene)bis[12,13-dihydrochelerythrine], 8CI. 1,3-Bis(8-hydrochelerythrinyl)acetone. 1,3-Bis(6-hydrochelerythrinyl)acetone. 1,3-Bis(11-hydrochelerythrinyl)acetone. Alkaloid A†

[23006-09-9]



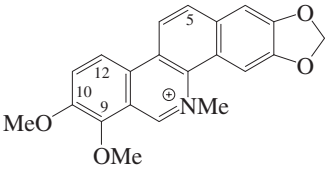
$C_{45}H_{40}N_2O_9$ 752.819
Minor alkaloid from *Bocconia arborea*, also obt. by the base-catalysed condensation of Chelerythrine and acetonedicarboxylic acid (Papaveraceae). Plates ($CHCl_3$/Me_2CO). Mp 304°.

N-*De-Me:* ***Toddalidimerine****. 1,3-(8-Hydrochelerythrinyl-8′-hydro-*N*-norchelerythrinyl)acetone*
[81421-65-0]
$C_{44}H_{38}N_2O_9$ 738.792
Alkaloid from the roots of *Toddalia asiatica* (Rutaceae). Cryst. (CH_2Cl_2/Et_2O). Mp 307°. $[\alpha]_D^{20}$ +60 (c, 2 in $CHCl_3$). Stereochem. and site of *N*-methylation unknown; may be the deriv. of a diastereoisomer of Chelerythridimerine.

MacLean, D.B. *et al., Can. J. Chem.*, 1969, **47**, 1951 (*ms, struct, synth*)
Sharma, P.N. *et al., Phytochemistry*, 1981, **20**, 2781 (*Toddalidimerine*)

Chelerythrine C-356

*1,2-Dimethoxy-12-methyl[1,3]benzodioxolo[5,6-*c*]phenanthridinium(1+), 9CI. 7,8-Dimethoxy-10-methyl-2′,3′-methylenedioxy-1,2-benzophenanthridinium(1+). Toddaline*
[34316-15-9]



$C_{21}H_{18}NO_4^{\oplus}$ 348.377
Several numbering systems have been used. Alkaloid from a wide variety of genera in the Papaveraceae (*Argemone, Bocconia, Chelidonium, Dicranostigma, Eschscholtzia, Glaucium, Hunnemannia, Hylomecon, Macleaya, Papaver, Platystemon, Sanguinaria, Stylomecon, Stylophorum*), Rutaceae (*Fagara, Toddalia, Zanthoxylum*), Papaveraceae (*Corydalis, Dicentra*), Sapindaceae (*Pteridophyllum*) and Hypecoaceae (*Hypecoum*). Potent cytotoxic agent functioning by DNA intercalation and uncoupling of oxidative phosphorylation. Inhibitor of rat liver aminotransferases. Antimicrobial and antiinflammatory agent recommended for use against oral infections. Temporary hypertensive agent in mice, rabbits and cats. Analgesic. Antineoplastic agent. Prolongs sleep. Antiparasitic, hepatotoxic. Log P 0.11 (uncertain value) (calc). λ_{max} 228 (ϵ 28200); 273 (ϵ 33900); 282 (ϵ 38900); 315 (sh) (ϵ 16200); 321 (ϵ 16600); 347 (sh) (ϵ 6200); 400 (ϵ 1400) (EtOH).

Chloride: [3895-92-9]
Cryst. + $1H_2O$ (dil. HCl). Mp 213-214° dec. (193°, 202-203°, 207°).

Picrate: Mp 236°.

N-*De-Me: 1,2-Dimethoxy[1,3]benzodioxolo[5,6-*c*]phenanthridine, 9CI.*
Norchelerythrine*. O-Methyldecarine. Des-*N*-methylchelerythrine*
[6900-99-8]
$C_{20}H_{15}NO_4$ 333.343
Alkaloid from *Argemone albiflora*, *Argemone mexicana*, *Argemone polyanthemos*, *Chelidonium japonicum*, *Toddalia aculeata*, *Toddalia asiatica*, *Zanthoxylum ailanthoides*, *Zanthoxylum arnottia num*, *Zanthoxylum cuspidatum*, *Zanthoxylum nitidum*, *Zanthoxylum bungeanum* and *Zanthoxylum ovalifolium* (Papaveraceae, Rutaceae). Needles (CH_2Cl_2/hexane or $CHCl_3$/MeOH). Mp 220-221° (211-213°, 215-216°, 217-221°). λ_{max} 211 (log ϵ 4.3); 243 (log ϵ 4.57); 256 (log ϵ 4.54); 276 (log ϵ 4.67); 289 (sh) (log ϵ 4.51); 324 (log ϵ 4.18); 338 (sh) (log ϵ 4); 363 (sh) (log ϵ 3.56); 385 (log ϵ 3.49) (EtOH).

O^9-*De-Me: NK 109*
[143201-31-4]
$C_{20}H_{16}NO_4^{\oplus}$ 334.351
DNA topoisomerase II inhibitor for the treatment of drug resistant cancer. Orange solid + $2H_2O$ (as sulfate). Mp 256° dec. (sulfate dihydrate). CAS no. refers to sulfate.

O^9-*De-Me,* N-*de-Me: 2-Methoxy[1,3]benzodioxolo[5,6-*c*]phenanthridin-1-ol, 9CI.* ***Isodecarine***
[66855-60-5]
$C_{19}H_{13}NO_4$ 319.316
Alkaloid from the root bark of *Zanthoxylum integrifoliolum*. Cryst. ($CHCl_3$). Mp 234° (225-227°). λ_{max} 243 (log ϵ 4.54); 257 (sh) (log ϵ 4.53); 275 (log ϵ 4.59); 320 (sh) (log ϵ 4.01); 380 (sh) (log ϵ 3.35) (MeOH).

O^{10}-*De-Me:* ***Fagaridine****. Isofagaridine*
[51059-64-4]
[149998-48-1]
$C_{20}H_{16}NO_4^{\oplus}$ 334.351
Alkaloid from roots or root bark of *Fagara xanthoxyloides*, *Fagara tessmannii*, *Fagara macrophylla* and *Zanthoxylum nitidum* (Rutaceae). Inhibitor of DNA topoisomerase I. Yellow needles (as chloride). Mp 231-233° (chloride). Struct. of Fagaridine revised in 1998. Prev. assigned as the 9-hydroxy-10-methoxy isomer. Isofagaridine, reported in 1993, was actually Fagaridine assigned correctly for the first time. λ_{max} 228 (log ϵ 4.55); 284 (log ϵ 4.65); 322 (sh) (log ϵ 4.14) (EtOH).

O^{10}-*De-Me,* N-*de-Me: 1-Methoxy[1,3]benzodioxolo[5,6-*c*]phenanthridin-2-ol, 9CI. 9-Methoxy-10-hydroxy-2,3-methylenedioxybenzophenanthridine.* ***Decarine***
[54354-62-0]
$C_{19}H_{13}NO_4$ 319.316
Alkaloid from the bark of *Zanthoxylum arnottianum* and *Zanthoxylum microcarpum*, and from the stem bark of *Zanthoxylum decaryi* and *Zanthoxylum viride* (Rutaceae). Orange needles ($CHCl_3$/MeOH or MeOH/HCl). Mp 248-251° (244-246°). λ_{max} 249 (log ϵ 4.54); 257 (log ϵ 4.55); 277 (log ϵ 4.67); 285 (sh) (log ϵ 4.52); 326 (log ϵ 4.2); 335 (sh) (log ϵ 4.11); 384 (log ϵ 3.46) (EtOH). λ_{max} 253 (log ϵ 4.31); 297 (log ϵ 4.37); 330 (log ϵ 4.06); 384 (log ϵ 3.46) (EtOH/NaOH).

O^{10}-*De-Me,* N-*de-Me,* O-*Ac:* ***Decarine acetate****. O-Acetyldecarine*
[54354-63-1]
$C_{21}H_{15}NO_5$ 361.353
Alkaloid from stem bark of a *Zanthoxylum* spp. (*Zanthoxylum spinosum* or *Zanthoxylum coriaceum*). Prisms (petrol). Mp 210-212°. λ_{max} 239 ; 266 ; 273 ; 286 ; 320 (MeOH). λ_{max} 259 ; 314 ; 341 (MeOH/NaOH).

*Di-*O*-de-Me: 1,2-Dihydroxy-12-methyl[1,3]benzodioxolo[5,6-*c*]phenanthridinium(1+), 9CI. 7,8-Dihydroxy-2,3-methylenedioxy-5-methylbenzo[*c*]phenanthridinium(1+). 9,10-Demethylenesanguinarine*
[70617-22-0]
$C_{19}H_{14}NO_4^{\oplus}$ 320.324
Alkaloid from *Macleaya* sp. (Papaveraceae). Mp 226-227° Mp 217.5-220° (as trifluoroacetate). Artifact of the isoln. process of Sanguinarine, S-56. CAS no. refers to trifluroacetate.

*Di-*O*-de-Me, 9,10-quinone: 9,10-Demethylene-9,10-dehydrosanguinarine*
[70617-24-2]
$C_{19}H_{12}NO_4^{\oplus}$ 318.308
Isol. from *Macleaya* sp. (Papaveraceae). Cryst. ($CHCl_3$)(as trifluoroacetate). Mp 183° (trifluoroacetate). Artifact of the isoln. procedure. CAS no. refers to trifluoroacetate.

12-Hydroxy: ***12-Hydroxychelerythrine***
[131984-75-3]
$C_{21}H_{18}NO_5^{\oplus}$ 364.377
Alkaloid from *Eschscholtzia californica* (Papaveraceae). Orange cryst. (MeOH/HCl) (as chloride). Mp 244-246° (chloride).

8-Methoxy, N-*de-Me: 1,2,13-Trimethoxy[1,3]benzodioxolo[5,6-*c*]phenanthridine.* ***8-Methoxynorchelerythrine***
$C_{21}H_{17}NO_5$ 363.369
Alkaloid from the roots of *Zanthoxylum nitidum*. Amorph. solid. Mp 213-224°.

8-Methoxy, O^9*-de-Me,* N-*de-Me: 2,13-Dimethoxy[1,3]benzodioxolo[5,6-*c*]phenanthridin-1-ol.* ***8-Methoxyisodecarine***
$C_{20}H_{15}NO_5$ 349.342
Alkaloid from the rhizomes of *Zanthoxylum nitidum*. Yellow powder. Mp 203-214°. λ_{max} 237 (log ϵ 4.4); 287 (log ϵ 4.49); 328 (sh) (log ϵ 4.35); 355 (log ϵ 3.92); 400 (log ϵ 3.07); 476 (log ϵ 3.12) (EtOH).

*12-Methoxy: 1,2,4-Trimethoxy-12-methyl[1,3]benzodioxolo[5,6-*c*]phenanthridinium(1+), 9CI.* ***Chelilutine***
[55950-32-8]
$C_{22}H_{20}NO_5^{\oplus}$ 378.404
Alkaloid from a variety of genera in

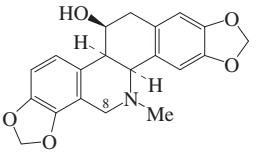
the Papaveraceae (*Chelidonium, Eschscholtzia, Glaucium, Hunnemannia, Hylomecon, Macleaya, Sanguinaria*) and Papaveraceae (*Dicentra*). Mp 197-198° (184-186°)(as chloride).

5-Ethoxy: 6-Ethoxy-1,2-dimethoxy-12-methyl[1,3]benzodioxolo[5,6-c]phenanthridinium(1+), 9CI. 12-Ethoxy-7,8-dimethoxy-5-methyl-2,3-methylenedioxybenzo[c]phenanthridinium(1+). ***5-Ethoxychelerythrine.*** *Alkaloid C*†
[79559-55-0]
$C_{23}H_{22}NO_5^{\oplus}$ 392.43
Alkaloid from *Zanthoxylum nitidum* (Rutaceae). Inhibits the growth of Ehrlich ascites tumours in mice.

Slavík, J. *et al., Coll. Czech. Chem. Comm.*, 1955, **20**, 21-26; 1960, **25**, 1667-1675; 1968, **33**, 1619-1623 (*isol, pmr, ms, Chelilutine*)
Bailey, A.S. *et al., J.C.S.*, 1956, 4535-4543 (*synth, uv*)
Govindachari, T.R. *et al., Indian J. Chem.*, 1967, **5**, 280 (*N-Norchelerythrine*)
Hruban, L. *et al., Coll. Czech. Chem. Comm.*, 1970, **35**, 3420-3444 (*uv, Chelilutine*)
Šmula, V. *et al., Can. J. Chem.*, 1972, **50**, 1544-1547 (*N-Norchelerythrine, synth*)
Haisová, K. *et al., Coll. Czech. Chem. Comm.*, 1973, **38**, 3312-3320 (*N-Norchelerythrine*)
Torto, F.G. *et al., Phytochemistry*, 1973, **12**, 2315-2317 (*uv, pmr, ms, ir, Fagaridine*)
Kessar, S.V. *et al., Indian J. Chem.*, 1974, **12**, 323 (*synth*)
Vaquette, J. *et al., Phytochemistry*, 1974, **13**, 1257-1259 (*Decarine, uv, ir, pmr, ms*)
Ishii, H. *et al., Chem. Pharm. Bull.*, 1977, **25**, 3120-3121; 1978, **26**, 864-873 (*Chelilutine, synth, struct*)
Lasskaya, O.E. *et al., Khim. Prir. Soedin.*, 1978, **14**, 764-767; *Chem. Nat. Compd. (Engl. Transl.)*, 1978, **14**, 650-652 (*9,10-Demethylenesanguinarine*)
Addae-Mensah, I *et al., Planta Med.*, 1979, **35**, 94 (*isol, Fagaridine*)
Wang, M.-H. *et al., Yaoxue Tongbao*, 1981, **16**, 48; *CA*, **95**, 192260r (*5-Ethoxychelerythrine*)
Šmidrkal, J. *et al., Coll. Czech. Chem. Comm.*, 1984, **49**, 1412-1420 (*synth*)
Krane, B.D. *et al., J. Nat. Prod.*, 1984, **47**, 1-43 (*rev, Isodecarine*)
Hanaoka, M. *et al., J.C.S. Perkin 1*, 1986, 2253-2256 (*synth, pmr*)
Ng, K.M. *et al., Phytochemistry*, 1987, **26**, 3251-3254 (*Decarine acetate*)
Hanaoka, M. *et al., Chem. Pharm. Bull.*, 1989, **37**, 857-858 (*Chelilutine, synth*)
Tanahashi, T. *et al., J. Nat. Prod.*, 1990, **53**, 579 (*12-Hydroxychelerythrine*)
Ishii, H. *et al., Chem. Pharm. Bull.*, 1992, **40**, 2002-2006 (*synth*)
Martin, G. *et al., J.O.C.*, 1992, **57**, 5907-5911 (*synth*)
Fang, S.-D. *et al., J.O.C.*, 1993, **58**, 5025-5027 (*Isofagaridine*)
Cho, W.J. *et al., Arch. Pharmacal Res.*, 1996, **19**, 240 (*synth, Isofagaridine*)
Kanzawa, F. *et al., Br. J. Cancer*, 1997, **76**, 571-581 (*NK 109*)
Harayama, T. *et al., Heterocycles*, 1998, **48**, 1989-1992; 2003, **59**, 293-301 (*Chelerythrine, Fagaridine, Decarine, synth*)
Nakanishi, T. *et al., J. Nat. Prod.*, 1998, **61**, 1263-1267; 1999, **62**, 864-867 (*Fagaridine, NK 109, synth, pmr, cmr, struct*)
Nakanishi, T. *et al., J.O.C.*, 1998, **63**, 4235-4239 (*NK 109*)
Marek, R. *et al., Magn. Reson. Chem.*, 1999, **37**, 195-202 (*N-15 nmr*)
Harayama, T. *et al., J.C.S. Perkin 1*, 2001, 523-528 (*N-Norchelerythrine, synth, bibl*)
Seckárová, P. *et al., Magn. Reson. Chem.*, 2002, **40**, 147-152 (*pmr, cmr*)
Martin, M.T. *et al., Fitoterapia*, 2005, **76**, 590-593 (*Norchelerythrine, Decarine, pmr, cmr*)
Chen, J.-J. *et al., Planta Med.*, 2005, **71**, 470-475 (*Isodecarine*)
Hu, J. *et al., Chem. Biodiversity*, 2006, **3**, 990-995 (*8-Methoxynorchelerythrine*)
Dvorák, Z. *et al., Heterocycles*, 2006, **68**, 2403-2422 (*rev*)
Styskala, J. *et al., Heterocycles*, 2007, **73**, 769-775 (*Isodecarine, synth*)
Cui, X.-G. *et al., Helv. Chim. Acta*, 2008, **91**, 155-158 (*8-Methoxyisodecarine*)

Chelidonine, 9CI C-357

Stylophorine. Diphylline



(+)-*form*

$C_{20}H_{19}NO_5$ 353.374
Diphylline was the racemate. Shows mod. *in vivo* cytotoxic activity vs. P388 leukaemia and Walker carcinosarcoma cells. Strong spasmolytic agent, smooth muscle antispasmodic and relaxant, hypotensive, cholagoguic and choleretic agent. Has been used against cholecystitis and hepatitis and as bile duct antiseptic. Has also been used, together with α-allocryptopine in treating exanthemas in infants. *C. majus* is a major European folk remedy against papillomas and warts. Log P 0.68 (uncertain value) (calc).

▶ Toxic, a CNS depressant.

(+)-*form* [476-32-4]
Alkaloid from the roots of *Chelidonium majus* and *Stylophorum diphyllum*, and the aerial parts of *Glaucium fimbrilligerum*. Chelidonine (with no stereochemical designation) has also been isol. from *Symphoricarpos albus, Dicranostigma franchetianum, Dicentra spectabilis,Hylomecon vernalis, Sarcocapnos enneaphylla* and *Glaucium vitellinum* (Papaveraceae, Caprifoliaceae). Mp 135-136°. $[\alpha]_D^{23}$ +115 (c, 0.5 in EtOH). λ_{max} 238 (log ϵ 3.96); 289 (log ϵ 3.9) (MeOH). λ_{max} 206 (log ϵ 4.85) (EtOH).

▶ FL9450000

N-*De-Me:* ***(+)-Norchelidonine.*** N-*Demethylchelidonine*
$C_{19}H_{17}NO_5$ 339.347
Alkaloid from *Chelidonium majus* (Papaveraceae). Amorph. $[\alpha]_D$ +74 (c, 0.07 in $CHCl_3$). $[\alpha]_D$ +92.5 (c, 0.08 in MeOH). Incorrectly indexed in CA. λ_{max} 238 (log ϵ 3.95); 289 (log ϵ 3.92) (MeOH).

Ac: Mp 173-174° (165-166°). $[\alpha]_D^{20}$ +110 (c, 0.93 in $CHCl_3$).

8-Oxo: ***Oxychelidonine***
$C_{20}H_{17}NO_6$ 367.357
Alkaloid from *Chelidonium majus* (Papaveraceae). Needles (AcOH or $CHCl_3$). Mp 285°. $[\alpha]_D$ +102.5 ($CHCl_3$/EtOH).

14-Epimer: ***14-Epichelidonine***
[136173-03-0]
$C_{20}H_{19}NO_5$ 353.374
Alkaloid from *Sarcocapnos saetabensis* (Papaveraceae). Prisms (EtOH). Mp 196°. λ_{max} 209 ; 240 ; 292 (EtOH).

(-)-*form*
Alkaloid from the roots and aboveground parts of *Glaucium flavum*, and from the above-ground parts of *Glaucium corniculatum* (Papaveraceae). Prisms (EtOH aq.). Mp 135-136°. $[\alpha]_D^{22}$ -112 (c, 0.2 in EtOH) (c, 0.5 in Py).

N-*De-Me:* ***(-)-Norchelidonine***
[6901-00-4]
$C_{19}H_{17}NO_5$ 339.347
Alkaloid from the roots and aboveground parts of *Glaucium flavum*, the roots of *Glaucium flavum* var. *vestitum*, and the above-ground parts of *Glaucium flavum* var. *fulvum* (Papaveraceae). Prisms ($CHCl_3$/EtOH). Mp 198-199°. $[\alpha]_D^{22}$ -112 (c, 0.40 in EtOH). $[\alpha]_D$ -100 (c, 0.50 in $CHCl_3$). λ_{max} 239 (log ϵ 3.86); 288 (log ϵ 3.91) (EtOH).

N-*De-Me,* N-*Ac:*
Cryst. (EtOH). Mp 195-196°.

N-*De-Me,* N,O-*di-Ac:* Mp 140-155° (efferv.). $[\alpha]_D^{22}$ -100 (c, 0.39 in $CHCl_3$).

(±)-*form*
Diphyllin†
[20267-87-2]
Alkaloid from the roots of *Stylophorum diphyllum* and *Chelidonium majus*, the aerial parts of *Glaucium corniculatum* ssp. *refractum*, and the above-ground parts of *Glaucium elegans* (Papaveraceae). Cryst. (EtOH or $CHCl_3$/EtOH). Mp 218-220° (215-216°). λ_{max} 236 (log ϵ 3.92); 288 (log ϵ 3.89) (94% EtOH).

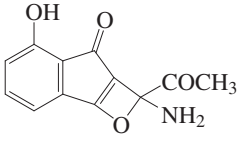
N-*De-Me:* [33458-80-9]
Synthetic. Mp 212-217°. λ_{max} 236 (log ϵ 3.92); 288 (log ϵ 3.89) (94% EtOH).

Gadamer, J. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1924, **262**, 578-589 (*Oxychelidonine, isol, struct*)
Manske, R.H.F. *et al., Can. J. Res., Sect. B*, 1942, **20**, 53-56 (*isol*)
Slavík, J. *et al., Coll. Czech. Chem. Comm.*, 1957, **22**, 279-285; 1959, **24**, 3601-3605; 1965, **30**, 3697-3704 (*Chelidonine, Norchelidonine, isol, uv, struct*)
Šantavý, F. *et al., Coll. Czech. Chem. Comm.*, 1960, **25**, 1344-1349 (*Norchelidonine, ir, struct, abs config*)
Snatzke, G. *et al., Tetrahedron*, 1970, **26**, 5013-5028 (*Norchelidonine, uv, cd, abs config*)
Battersby, A.R. *et al., J.C.S. Perkin 1*, 1975, 1147-1156 (*biosynth*)
Ghanbarpour, A. *et al., J. Nat. Prod.*, 1978, **41**, 472 (*isol, pmr, ms*)
Szaufer, M. *et al., Phytochemistry*, 1978, **17**, 1446-1447 (*isol, uv, pmr, ms*)
Takao, N. *et al., Tet. Lett.*, 1979, 495-496 (*cryst struct, abs config*)
Cushman, M. *et al., J.O.C.*, 1980, **45**, 5067-5073 (*synth, pmr*)
Oppolzer, W. *et al., Helv. Chim. Acta*, 1983, **66**, 1119-1128 (*Norchelidonine, synth, uv, ir, pmr, ms*)
Hanaoka, M. *et al., Chem. Lett.*, 1986, 739-742 (*synth*)

Blanco, O. *et al., Phytochemistry*, 1991, **30**, 2071-2074 (*14-Epichelidonine*)
Kadan, G. *et al., Planta Med.*, 1992, **58**, 477 (*(+)-Norchelidonine*)
Marek, R. *et al., Magn. Reson. Chem.*, 1999, **37**, 195-202 (*N-15 nmr*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, CDL000

Cheliensisamine C-358

*2-Acetyl-2-amino-4-hydroxyindeno[1,2-*b*]oxet-3(2*H*)-one, 9CI*
[337363-34-5]



$C_{12}H_9NO_4$ 231.207
Alkaloid from the bark of *Goniothalamus cheliensis*.

Gu, Z. *et al., CA*, 2001, **134**, 323467n (*isol*)

Cheliensisine C-359

[332378-20-8]

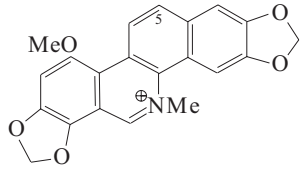


$C_{20}H_{20}N_2O_5$ 368.388
Alkaloid from *Goniothalamus cheliensis*.

Gu, Z. *et al., CA*, 2001, **134**, 277887z (*isol*)

Chelirubine C-360

*5-Methoxy-13-methyl[1,3]benzodioxolo[5,6-*c*]-1,3-dioxolo[4,5-*i*]phenanthridinium(1+), 9CI. Bocconine. 12-Methoxysanguinarine*
[18203-11-7]



$C_{21}H_{16}NO_5^{\oplus}$ 362.361
Several numbering systems have been used. Alkaloid from a wide variety of genera in the Papaveraceae (*Bocconia*, *Chelidonium*, *Dicranostigma*, *Eschscholtzia*, *Glaucium*, *Hunnemannia*, *Hylomecon*, *Hypecoum*, *Macleaya*, *Papaver*, *Platystemon*, *Sanguinaria*, *Stylophorum*) and the Papaveraceae (*Dicentra*). Purple needles (dil. HCl) (as chloride). Mp 299-302° dec. (282-283°) (chloride).

O-*De-Me:* ***12-Hydroxysanguinarine***
[131984-74-2]
$C_{20}H_{14}NO_5^{\oplus}$ 348.334
Alkaloid from *Eschscholtzia californica* (Papaveraceae). Dark red cryst. (MeOH/HCl aq.) (as chloride). Mp 230-231° dec. (chloride).

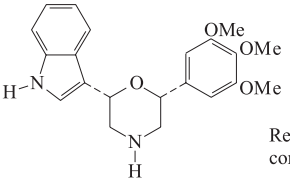
5-Hydroxy: ***5-Hydroxychelirubine***. *12-Hydroxychelirubine*
[132023-26-8]
$C_{21}H_{16}NO_6^{\oplus}$ 378.36
Alkaloid from *Eschscholtzia californica* (Papaveraceae). Pale red cryst. (MeOH/HCl) (as chloride). Mp 301-304° dec. (chloride). Turns colourless at *ca.* 200°.

*5-Methoxy: 5,7-Dimethoxy-13-methyl[1,3]benzodioxolo[5,6-*c*]-1,3-dioxolo[4,5-*i*]phenanthridinium(1+).* ***Macarpine***
[23594-80-1]
$C_{22}H_{18}NO_6^{\oplus}$ 392.387
Alkaloid from *Eschscholtzia douglasii*, *Eschscholtzia lobbii*, *Eschscholtzia glauca*, *Macleaya cordata*, *Macleaya microcarpa* and *Stylophorum diphyllum* (Papaveraceae). Cytotoxic. Red needles (dil. HCl) (as chloride). Mp 283-285° (chloride). Struct. revised in 1981.

Slavík, J. *et al., Coll. Czech. Chem. Comm.*, 1955, **20**, 198; 356; 1961, **26**, 1839; 2933; 1963, **28**, 2530; 1965, **30**, 887; 1967, **32**, 4420; 1968, **33**, 1619; 1972, **37**, 2804; 1976, **41**, 2429 (*Chelirubine, Macarpine, isol, pmr, uv, struct*)
Ishii, H. *et al., Chem. Pharm. Bull.*, 1978, **26**, 864 (*struct, synth, pmr*)
Takao, N. *et al., Helv. Chim. Acta*, 1983, **66**, 473 (*synth, biosynth*)
Hanaoka, M. *et al., Chem. Pharm. Bull.*, 1990, **38**, 3335 (*synth*)
Tanahashi, T. *et al., J. Nat. Prod.*, 1990, **53**, 579 (*5-Hydroxychelirubine, 5-Hydroxysanguinarine*)
Ishikawa, T. *et al., Tetrahedron*, 1995, **51**, 8447 (*Macarpine, synth*)
Dostal, J. *et al., Coll. Czech. Chem. Comm.*, 1998, **63**, 1045-1055 (*pmr, ms, struct*)
Marek, R. *et al., Magn. Reson. Chem.*, 1999, **37**, 195-202 (*N-15 nmr*)
Seckárová, P. *et al., Magn. Reson. Chem.*, 2002, **40**, 147-152 (*pmr, cmr*)

Chelonin A C-361

2-(3-Indolyl)-6-(3,4,5-trimethoxyphenyl)morpholine
[133985-26-9]



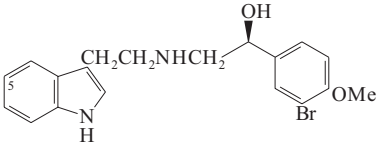
Relative configuration

$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from the marine sponge *Chelonaplysilla* sp. Possesses antiflammatory and antibacterial activities. Cryst. (MeOH). Mp 182°. $[\alpha]_D$ -11.7 (c, 0.32 in $CHCl_3$). λ_{max} 213 (ϵ 37100); 272 (ϵ 6300); 278 (ϵ 6400); 288 (ϵ 5100) (MeOH) (Derep).

Bobzin, S.C. *et al., J.O.C.*, 1991, **56**, 4403 (*isol, uv, ir, pmr, cmr, ms, struct*)
Somei, M. *et al., Heterocycles*, 1995, **41**, 5 (*synth*)

Chelonin B C-362

*3-Bromo-α-[[[2-(1*H*-indol-3-yl)ethyl]amino]methyl]-4-methoxybenzenemethanol, 9CI. 3-[2-[[2-(3-Bromo-4-methoxyphenyl)-2-hydroxyethyl]amino]ethyl]indole.* N*-(3-Bromo-β-hydroxy-4-methoxyphenethyl)tryptamine*
[133985-27-0]



$C_{19}H_{21}BrN_2O_2$ 389.291
λ_{max} 208 (ϵ 29000); 221 (ϵ 30600); 280 (ϵ 6400); 288 (sh) (MeOH) (Derep).

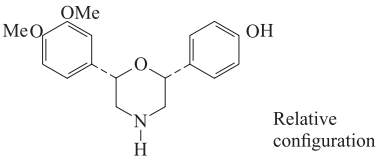
(S)-form
Alkaloid from the marine sponge *Chelonaplysilla* sp. Shows antibacterial activity. Solid. Mp 260° dec.

5-Bromo: ***Bromochelonin B***
[134004-59-4]
$C_{19}H_{20}Br_2N_2O_2$ 468.187
From the sponge *Chelonaplysilla* sp. and *Dendrilla* sp. Shows antibacterial activity. Gum. $[\alpha]_D$ +3.7 (c, 0.27 in DMSO). λ_{max} 208 (ϵ 29000); 221 (ϵ 30600); 279 (sh); 287 (ϵ 2500); 299 (sh) (DMSO) (Derep).

Bobzin, S.C. *et al., J.O.C.*, 1991, **56**, 4403-4407 (*isol, pmr, cmr, struct*)
Lawrence, N.J. *et al., Tet. Lett.*, 2001, **42**, 7671-7674 (*synth, abs config*)

Chelonin C C-363

4-[6-(3,4-Dimethoxyphenyl)-2-morphinolinyl]phenol, 9CI. 2-(4-Hydroxyphenyl)-6-(3,4-dimethoxyphenyl)morpholine
[133985-28-1]



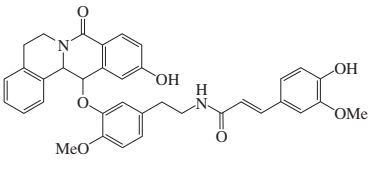
Relative configuration

$C_{18}H_{21}NO_4$ 315.368
Alkaloid from the marine sponge *Chelonaplysilla* sp. Solid. Mp 238° dec. $[\alpha]_D$ +5.8 (c, 0.53 in $CHCl_3$). λ_{max} 210 (ϵ 18200); 236 (ϵ 12900); 279 (ϵ 3800); 295 (sh) (MeOH/NaOH) (Derep). λ_{max} 208 (ϵ 15100); 227 (ϵ 13800); 277 (ϵ 3600) (MeOH) (Derep).

Bobzin, S.C. *et al., J.O.C.*, 1991, **56**, 4403 (*isol, uv, ir, pmr, cmr, ms, struct*)

Chenoalbicin C-364

[848478-85-3]

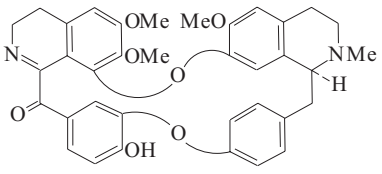


$C_{36}H_{34}N_2O_7$ 606.674
Alkaloid from the roots of *Chenopodium album*. Oil. Racemic. λ_{max} 196 (log ε 4.2); 227 (log ε 3.1); 283 (log ε 2.6) (MeOH).

Cutillo, F. *et al., Chem. Biodiversity*, 2004, **1**, 1579-1583 (*isol, pmr, cmr*)

Cheratamine C-365

[92664-88-5]

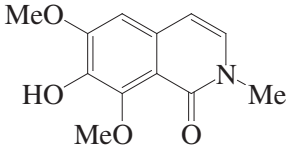


$C_{36}H_{34}N_2O_7$ 606.674
Alkaloid from the stems of *Cocculus pendulus* (Menispermaceae). $[\alpha]_D^{25}$ +190 (c, 0.33 in MeOH).

Hussain, S.F. *et al., Tetrahedron*, 1984, **40**, 2513 (*isol, uv, ir, pmr, ms, cd, struct*)

Cherianoine C-366

*7-Hydroxy-6,8-dimethoxy-2-methyl-1(2*H*)-isoquinolinone*



$C_{12}H_{13}NO_4$ 235.239
Alkaloid from *Annona cherimola*. Needles. Mp 122-124°. λ_{max} 220 (log ε 4.51); 260 (log ε 4.41); 270 (log ε 3.35); 330 (log ε 3.39) (MeOH).

Chen, C.Y. *et al., Phytochemistry*, 2001, **56**, 753-757

Cherimoline† C-367

[196958-70-0]

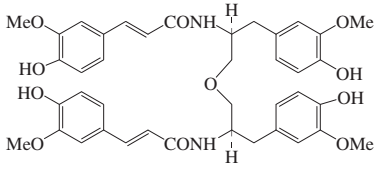
$C_{12}H_7NO_2$ 197.193

Struct. originally assigned has been shown to be incorrect. Alkaloid from the stems of *Annona cherimola*. Powder. Mp 203-205°.

Chen, C.-Y. *et al., Tet. Lett.*, 1997, **38**, 6247-6248 (*isol*)
Ajana, W. *et al., Tetrahedron*, 1998, **54**, 4405-4412

Cherinonaine C-368

[202589-82-0]

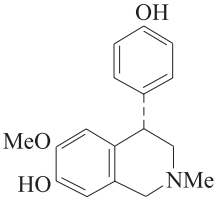


$C_{40}H_{44}N_2O_{11}$ 728.794
Alkaloid from the stems of *Annona cherimola*. Amorph. powder. Opt. inactive (*meso*-compd.). λ_{max} 220 ; 290 ; 317 (no solvent reported).

Chen, C.-Y. *et al., Tet. Lett.*, 1998, **39**, 407-410 (*isol, pmr, cmr, ms*)

Cherylline C-369

1,2,3,4-Tetrahydro-4-(4-hydroxyphenyl)-6-methoxy-2-methyl-7-isoquinolinol, 9CI. Crinine†



(*S*)–*form*

$C_{17}H_{19}NO_3$ 285.342

(*R*)-*form* [25515-34-8]
Synthetic. Mp 214-215°.
Di-Me ether:
Cryst. (Et_2O/petrol). Mp 87-89°. $[\alpha]_D^{24.9}$ +21.58 (c, 1.01 in MeOH).

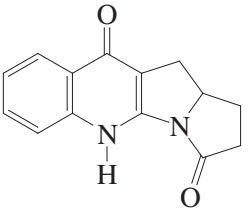
(*S*)-*form* [23367-61-5]
Alkaloid from *Crinum moorei* and *Crinum powellii* var. *alba* (Amaryllidaceae). Cryst. (Me_2CO). Mp 217-218° (213-214° dec.). $[\alpha]_D^{22}$ -89 (c, 0.60 in MeOH) (-69).
Hydrochloride:
Cryst. (Me_2CO). Mp 238-239°.
Di-Me ether:
Cryst. (Et_2O/petrol). Mp 87-88°. $[\alpha]_D^{24.9}$ -21.65 (c, 0.965 in MeOH).

(±)-*form* [26996-80-5]
Synthetic. Needles ($CHCl_3$ or $CHCl_3$/MeOH). Mp 216-218° (209-212°).
Hydrochloride:
Cryst. (EtOH/Et_2O). Mp 185° Mp 240-243° (double Mp).
Di-Me ether, hydrochloride:
Cryst. (MeOH/Et_2O). Mp 228-229°.

Boit, H.-G. *et al., Chem. Ber.*, 1954, **87**, 1704 (*isol*)
Brossi, A. *et al., J.O.C.*, 1970, **35**, 1100; 3559 (*isol, uv, ord, cd, struct, config, pmr, ms*)
Schwartz, M.A. *et al., J.O.C.*, 1971, **36**, 1827 (*synth, uv, ir, pmr, ms*)
Kametani, T. *et al., Tetrahedron*, 1975, **31**, 235 (*synth, ir, pmr, ms*)
Hart, D.J. *et al., J.A.C.S.*, 1978, **100**, 1548 (*synth, uv, ir, pmr, ms*)
Irie, H. *et al., Chem. Lett.*, 1980, 875 (*synth*)
Kessar, S.V. *et al., Chem. Comm.*, 1981, 1074 (*synth*)
Kametani, T. *et al., J.C.S. Perkin 1*, 1982, 2935 (*synth, pmr*)
Hara, H. *et al., Chem. Pharm. Bull.*, 1985, **33**, 3107 (*synth, ir, pmr*)
Katakawa, J. *et al., Chem. Pharm. Bull.*, 1988, **36**, 3928 (*synth*)
Couture, A. *et al., J.C.S. Perkin 1*, 1999, 789-794 (*synth*)
Ruchirawat, S. *et al., Heterocycles*, 2001, **55**, 635-640 (*synth*)
Lebrun, S. *et al., Org. Biomol. Chem.*, 2003, 1701-1706 (*synth*)

Chestnutamide C-370

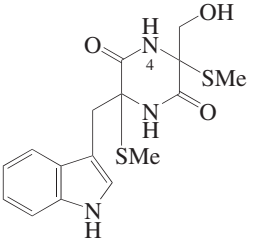
*11,11*a*-Dihydro-1*H*-pyrrolizino[3,2-*b*]quinoline-3,10(2*H*,5*H*)-dione, 9CI*
[359762-42-8]



$C_{14}H_{12}N_2O_2$
Alkaloid from the flowers of *Castanea mollissima*.

Wang, S. *et al., J. Asian Nat. Prod. Res.*, 2001, **3**, 89-93 (*isol*)

Chetoseminudin C C-371



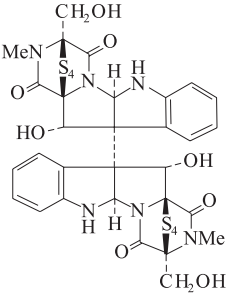
$C_{16}H_{19}N_3O_3S_2$ 365.476
Prod. by *Chaetomium seminudum* 72-S-204-1. Pale yellow solid. λ_{max} 274 (log ε 3.72); 281 (log ε 3.74); 290 (log ε 3.7) (EtOH).

N^4-*Me:* ***Chetoseminudin B***
$C_{17}H_{21}N_3O_3S_2$ 379.503
Prod. by *Chaetomium seminudum* 72-S-204-1. Pale yellow solid. $[\alpha]_D^{24}$ +40 (c, 0.34 in $CHCl_3$). λ_{max} 274 (log ε 3.73); 281 (log ε 3.76); 290 (log ε 3.69) (EtOH).

Fujimoto, H. *et al., J. Nat. Prod.*, 2004, **67**, 98-102; 526 (*Chetoseminudins*)

Chetracin A C-372

2,5:2′,5′-Dide(epidithio)-2,5:2′,5′-bis(epitetrathio)-6,6′-dihydroxychetocin, 9CI. Chaetracin A
[99615-92-6]



Absolute configuration

$C_{30}H_{28}N_6O_8S_8$ 857.115

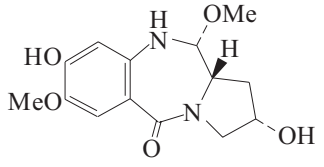
Diketopiperazine antibiotic. Prod. by *Chaetomium nigricolor* CBS-542.63/ ATCC 32394 (*Chaetomium abuense*) and *Chaetomium retardatum*. Mycotoxin. Shows strong cytotoxicity to HeLa cells. Active against gram-positive bacteria. Amorph. powder. Sol. MeOH, EtOAc; poorly sol. $CHCl_3$, H_2O, hexane. Mp 248-251° dec. $[\alpha]_D^{20}$ +723.5 (c, 0.0012 in $CHCl_3$). λ_{max} 242 (ϵ 21400); 306 (ϵ 5010) (EtOH) (Derep).

Tri-Ac:
Cryst. + $2H_2O$. Mp 260° dec. $[\alpha]_D^{20}$ +830 (c, 0.018 in $CHCl_3$).

Saito, T. *et al., Chem. Pharm. Bull.*, 1988, **36**, 1942-1956 (*isol, uv, ir, pmr, cmr, cd, cryst struct*)

Chicamycin A C-373

Antibiotic BBM 2040A. BBM 2040A
[89675-37-6]



$C_{14}H_{18}N_2O_5$ 294.307

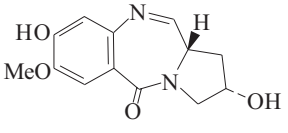
Anthramycin-type antibiotic. Isol. from *Streptomyces albus*. Possesses antitumour activity and weak activity against some gram-positive and acid-fast bacteria. Needles. Sol. MeOH, Py, butanol; fairly sol. EtOAc, H_2O, Me_2CO; poorly sol. $CHCl_3$, hexane. Mp 161-163° dec. $[\alpha]_D^{26}$ +350 (c, 0.5 in Py). λ_{max} 221 (ϵ 19200); 260 (sh) (ϵ 7900); 290 (sh) (ϵ 2800); 320 (ϵ 1200) (MeCN/HCl) (Derep). λ_{max} 230 (ϵ 18000); 254 (sh) (ϵ 15100); 287 (ϵ 14000); 317 (ϵ 10100) (MeCN/NaOH) (Derep). λ_{max} 223 (ϵ 23800); 232 (sh) (ϵ 21600); 258 (sh) (ϵ 7000); 322 (ϵ 3900) (MeCN) (Derep). λ_{max} 223 ; 237 ; 262 ; 317 (MeOH) (Berdy). λ_{max} 223 (ϵ 24900); 323 (ϵ 3900) (MeCN) (Berdy).

▶ LD_{50} (mus, ipr) 28 mg/kg. UY8534500

Konishi, M. *et al., J. Antibiot.*, 1984, **37**, 191; 200 (*isol, struct*)
Wong, H. *et al., J. Antibiot.*, 1984, **37**, 300
Wong, H. *et al., J. Med. Chem.*, 1985, **28**, 388 (*synth*)

Chicamycin B C-374

BBM 2040B. Antibiotic BBM 2040B
[89675-39-8]



$C_{13}H_{14}N_2O_4$ 262.265

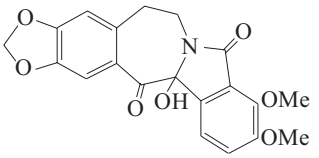
Anthramycin antibiotic. Isol. from *Streptomyces albus*. Active against tumours. Weakly inhibits gram-positive bacteria. Amorph. powder + $1H_2O$. Sol. MeOH, Py, butanol; fairly sol. Me_2CO, EtOAc, H_2O; poorly sol. $CHCl_3$, hexane. Mp 134-136° dec. $[\alpha]_D^{26}$ +552 (c, 0.5 in Py). Chicamycin A is not a natural product but the MeOH adduct of Chicamycin B. λ_{max} 222 (ϵ 16600); 260 (sh) (ϵ 7100); 290 (sh) (ϵ 2900); 323 (ϵ 1900) (CH_3CN/HCl) (Derep). λ_{max} 234 (ϵ 17900); 253 (ϵ 17300); 288 (ϵ 12600); 318 (ϵ 11300) (CH_3CN/NaOH) (Derep). λ_{max} 223 (ϵ 19400); 237 (ϵ 17800); 262 (ϵ 7400); 317 (ϵ 2900) (MeOH) (Derep). λ_{max} 223 ; 237 ; 262 ; 317 (MeOH) (Berdy). λ_{max} 232 (ϵ 20200); 318 (ϵ 3000) (MeCN) (Berdy).

▶ LD_{50} (mus, ipr) 57 mg/kg. UY8545500

Konishi, M. *et al., J. Antibiot.*, 1984, **37**, 191; 200 (*isol, uv, ir, pmr, cmr*)
Kaneko, T. *et al., J. Antibiot.*, 1984, **37**, 300 (*synth*)

Chilenine C-375

*12*b-*Hydroxy-9,10-dimethoxy-6*H-*1,3-dioxolo[4,5-*h*]isoindolo[1,2-*b*][3]benzazepine-8,13(5*H*,12*bH*)-dione, 9CI. 1,14-Dioxo-2-hydroxy-7,8-(methylenedioxy)-12,13-dimethoxyaporhoeadane*



$C_{20}H_{17}NO_7$ 383.357

(±)-*form* [71700-15-7]

Trace alkaloid from the stems and aboveground wood of *Berberis empetrifolia* (Berberidaceae). Prisms (MeOH). Mp 155° (114.5-116°).

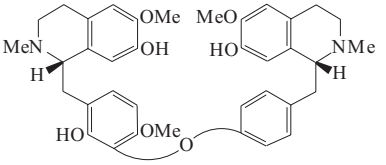
Me ether:
Prisms (MeOH). Mp 147-148°.

Deoxy: ***13-Deoxychilenine***
[95456-41-0]
$C_{20}H_{17}NO_6$ 367.357
Alkaloid from stems and twigs of *Berberis actinacantha* (Berberidaceae). Amorph.

Moniot, J.L. *et al., J.O.C.*, 1979, **44**, 4343 (*synth, ir, pmr*)
Fajardo, V. *et al., Tet. Lett.*, 1982, **23**, 39 (*isol, uv, ir, pmr, ms*)
Dorn, C.R. *et al., J.O.C.*, 1984, **49**, 2642 (*synth, ir, pmr, ms*)
Valencia, E. *et al., Tetrahedron*, 1984, **40**, 3957 (*13-Deoxychilenine*)
Fang, F.G. *et al., Tet. Lett.*, 1989, **30**, 2747 (*synth*)
Kessar, S.V. *et al., Indian J. Chem., Sect. B*, 1991, **30**, 299 (*synth, ir, pmr, ms*)
Ishibashi, H. *et al., Tet. Lett.*, 1995, **36**, 6733 (*synth*)
Yoda, H. *et al., Tet. Lett.*, 2002, **43**, 4667-4669 (*synth*)
Koseki, Y. *et al., Heterocycles*, 2003, **59**, 527-540 (*synth*)
Honda, T. *et al., Tet. Lett.*, 2005, **46**, 6823-6825 (*synth*)
Fuwa, H. *et al., Heterocycles*, 2008, **76**, 521-539 (*synth*)
Kim, G. *et al., Tet. Lett.*, 2008, **49**, 2391-2392 (*synth*)

Chillanamine C-376

[89412-84-0]

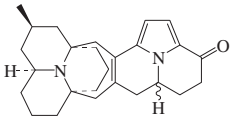


$C_{37}H_{42}N_2O_7$ 626.748
Alkaloid from *Berberis buxifolia* (Berberidaceae).

Leet, J.E. *et al., J. Nat. Prod.*, 1983, **46**, 908-912 (*isol, uv, cd, pmr, ms, struct*)

Chilocorine A C-377

Chilocorine
[154071-72-4]



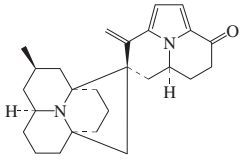
Relative Configuration

$C_{26}H_{34}N_2O$ 390.567
Alkaloid from the ladybird beetle *Chilocorus cacti*.

McCormick, K.D. *et al., Tetrahedron*, 1994, **50**, 2365-2372 (*isol, uv, pmr, cmr, ms, struct*)

Chilocorine B C-378

[166990-22-3]



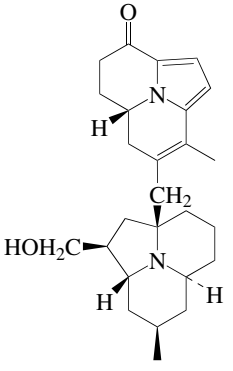
Relative Configuration

$C_{26}H_{34}N_2O$ 390.567
Alkaloid from the coccinellid beetle *Chilocorus cacti*. Cryst. (CH_2Cl_2/MeOH, 1:1). Mp not reported.

Shi, X. *et al., Tetrahedron*, 1995, **51**, 8711-8718 (*isol, pmr, cmr, ms, cryst struct*)

Chilocorine C C-379

[206443-44-9]



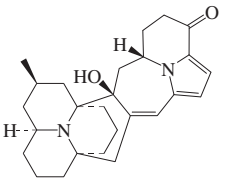
$C_{26}H_{36}N_2O_2$ 408.583

Config. shown is tentative. Alkaloid from the beetle *Chilocorus cacti*.

Huang, Q. *et al., J. Nat. Prod.*, 1998, **61**, 598-601 (*isol, pmr, cmr, cryst struct*)

Chilocorine D C-380

[479073-23-9]



Relative Configuration

$C_{26}H_{34}N_2O_2$ 406.567

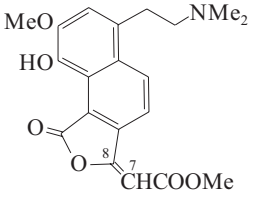
Alkaloid from the coccinellid beetle *Chilocorus renipustulatus*. Oil. $[\alpha]_D^{25}$ +43 (c, 0.14 in CH_2Cl_2). λ_{max} 204 (ϵ 15750) (no solvent reported).

Laurent, P. *et al., Tet. Lett.*, 2002, **43**, 7465-7467 (*isol, pmr, cmr*)

Chiloenine C-381

Methyl [6-[2-(dimethylamino)ethyl]-9-hydroxy-8-methoxy-1-oxonaphtho[1,2-c]furan-3(1H)-ylidene]acetate, 9CI

[88176-95-8]



$C_{20}H_{21}NO_6$ 371.389

A secoisoquinoline alkaloid. Alkaloid from *Berberis buxifolia* (whole plant, no leaves). Minor constit. of *Berberis actinacantha* (branches without leaves) (Berberidaceae). Yellow-orange amorph. solid.

7,8-Dihydro: ***Chiloenamine***

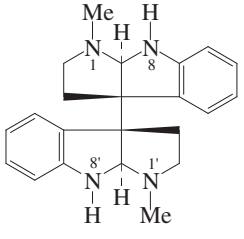
[88176-96-9]

$C_{20}H_{23}NO_6$ 373.405

Alkaloid from *Berberis actinacantha* and *Berberis buxifolia* (Berberidaceae). Amorph. yellow solid. Opt. inactive.

Shamma, M. *et al., Chem. Comm.*, 1983, 799 (*uv, ir, pmr, ms, struct*)

Chimonanthine C-382



(+)-*form*

$C_{22}H_{26}N_4$ 346.474

CAS numbering shown. Abs. configs. revised in 1999 and 2004.

(+)-form [85610-66-8]

Alkaloid from Colombian poison-dart frog *Phyllobates terribilis*. Also isol. from *Argostemma yappii*. Mp 171-172°. $[\alpha]_D^{25}$ +280 (MeOH). The isolate named as Isochimonanthine has been shown to be a 1:1 mixt. of the (+)- and *meso* -forms of Chimonanthine.

(-)-form [5545-89-1]

Alkaloid from *Chimonanthus fragrans*, *Psychotria forsteriana* and *Calycanthus floridus* (Carolina allspice) (Calycanthaceae). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 188-189°. $[\alpha]_D$ -329. λ_{max} 247 (ϵ 13600); 303 (ϵ 5600) (EtOH) (Berdy). λ_{max} 239 ; 294 (EtOH-HCl) (Berdy).

N-*Me:* ***Calycanthidine***

[5516-85-8]

$C_{23}H_{28}N_4$ 360.501

Alkaloid from the seeds of *Calycanthus floridus* (Carolina allspice) (Calycanthaceae). Mp 142°. $[\alpha]_D^{20}$ -317 (EtOH).

$N^{\delta},N^{\delta'}$-*Di-Me:* ***Folicanthine***

[6879-55-6]

$C_{24}H_{30}N_4$ 374.528

Alkaloid from *Calycanthus floridus* (Carolina allspice) and *Calycanthus occidentalis* (Californian allspice) (Calycanthaceae). Mp 118-119°. $Bp_{0.1}$ 150-170°. $[\alpha]_D$ -364 (EtOH).

$N^{\delta},N^{\delta'}$-*Di-Me, picrate:* Mp 179°.

$N^{\delta},N^{\delta'}$-*Di-Me,* N^{1}-*de-Me:* ***Chimonanthidine***

$C_{23}H_{28}N_4$ 360.501

Alkaloid from the seeds of *Chimonanthus praecox*. Amorph. powder. $[\alpha]_D^{20}$ -285 (c, 0.05 in EtOH). λ_{max} 208 ; 245 ; 300 (MeOH).

(±)-form [4147-36-8]

Synthetic. Mp 183-185°.

$N^{\delta},N^{\delta'}$-*Di-Me:*Synthetic. Mp 168-169°.

meso-form [4147-37-9]

Alkaloid from *Argostemma yappii*, *Calycanthus floridus* (Carolina allspice) and *Psychotria forsteriana*. Mp 199-202° (176°). λ_{max} 248 (ϵ 13800); 305 (ϵ 4900) (EtOH).

N-*De-Me:* **N-*Demethyl*-meso-*chimonanthine***

$C_{21}H_{24}N_4$ 332.447

Alkaloid from *Psychotria lyciiflora*. Amorph. powder. λ_{max} 245 (log ϵ 4); 303 (log ϵ 3.6) (EtOH).

Grant, I.J. *et al., Proc. Chem. Soc., London*, 1962, 148 (*Folicanthine, cryst struct*)

Hino, T. *et al., Tet. Lett.*, 1963, 1757-1760; 1978, 4913 (*Folicanthine, synth*)

Hendrikson, J.B. *et al., Tetrahedron*, 1964, **20**, 565-579 (*synth, ms, pmr*)

Grant, I.J. *et al., J.C.S.*, 1965, 5678-5696 (*cryst struct*)

O'Donovan, D.G. *et al., J.C.S.(C)*, 1966, 1570-1572 (*biosynth*)

Hall, E.S. *et al., Tetrahedron*, 1967, **23**, 4131-4141 (*meso-form, synth, isol, uv, ir, pmr, ms*)

Kirby, G.W. *et al., J.C.S.(C)*, 1969, 1916-1919 (*biosynth*)

Tokuyama, T. *et al., Tetrahedron*, 1983, **39**, 41-47 (*(±)-form, isol*)

Adjibade, Y. *et al., Phytochemistry*, 1992, **31**, 317-319 (*meso-form*)

Fang, C.L. *et al., J.A.C.S.*, 1994, **116**, 9480-9486 (*Folicanthine, synth*)

Verotta, L. *et al., J. Nat. Prod.*, 1998, **61**, 392-396 (*isol, pmr, cd*)

Jannic, V. *et al., J. Nat. Prod.*, 1999, **62**, 838-843 (*N-Demethyl-meso-chimonanthine*)

Overman, L.E. *et al., J.A.C.S.*, 1999, **121**, 7702-7703 (*synth, abs config*)

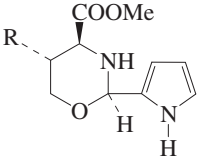
Takayama, H. *et al., Tetrahedron*, 2004, **60**, 893-900 (*Calycanthidine, abs config*)

Matsuda, Y. *et al., Heterocycles*, 2005, **65**, 1031-1033 (*Isochimonanthine*)

Movassaghi, M. *et al., Angew. Chem., Int. Ed.*, 2007, **47**, 3725-3728 (*synth*)

Chinese bittersweet alkaloid I C-383

Methyl tetrahydro-2-(1H-pyrrol-2-yl)-2H-1,3-oxazine-4-carboxylate



R = H

$C_{10}H_{14}N_2O_3$ 210.232

Alkaloid from the seeds of *Celastrus angulatus*. Oil. $[\alpha]_D^{20}$ -0.12 (c, 0.45 in $CHCl_3$). λ_{max} 240 ; 280 ($CHCl_3$).

Yin, W.-P. *et al., Phytochemistry*, 1999, **52**, 1731-1734

Chinese bittersweet alkaloid II C-384

Methyl tetrahydro-5-(2-methylheptyl)-2-(1H-pyrrol-2-yl)-2H-1,3-oxazine-4-carboxylate

As Chinese bittersweet alkaloid I, C-383 with

R = $-CH_2CH(CH_3)(CH_2)_4CH_3$(ξ-)

$C_{18}H_{30}N_2O_3$ 322.447

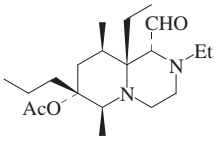
Alkaloid from the seeds of *Celastrus angulatus*. Yellowish liq. λ_{max} 240 ; 279 ($CHCl_3$).

Yin, W.-P. *et al., Phytochemistry*, 1999, **52**, 1731-1734

Chinese bittersweet alkaloid III C-385

7-Acetyloxy-2,9a-diethyloctahydro-6,9-dimethyl-7-propyl-2H-pyrido[1,2-a]pyrazine-1-carboxaldehyde

[396068-94-3]



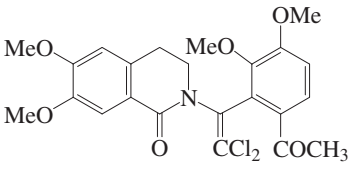
Relative Configuration

$C_{20}H_{36}N_2O_3$ 352.516

Alkaloid from the leaves of *Celastrus angulatus*. Yellow oil.

Yin, W.-P. *et al., J. Asian Nat. Prod. Res.*, 2001, **3**, 183-189 (*isol, pmr, cmr, ms*)

Chingazumianine C-386

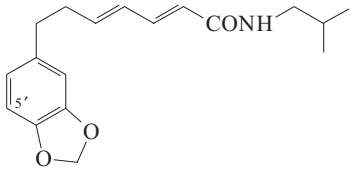


$C_{23}H_{23}Cl_2NO_6$ 480.343
Alkaloid from *Corydalis koidzumiana*. Needles ($CHCl_3$/MeOH). Mp 195-196°. λ_{max} 220 (log ϵ 4.57); 260 (log ϵ 4.33); 302 (log ϵ 4.2) (MeOH).

Chan, S.-C. *et al., Helv. Chim. Acta*, 2000, **83**, 2993-2999

Chingchengenamide A C-387

7-(1,3-Benzodioxol-5-yl)-N-*(2-methylpropyl)-2,4-heptadienamide, 9CI. 7-(3,4-Methylenedioxyphenyl)-2,4-heptadienoic acid isobutylamide*
[139906-29-9]



$C_{18}H_{23}NO_3$ 301.385
Isol. from the rhizomes of *Asarum chingchengense* (Aristolochiaceae) and from leaves and stems of *Piper falconeri* (Piperaceae). Exhibits significant insecticidal activity. Needles (Me_2CO/petrol). Mp 126-128°.

5′-Methoxy: ***Chingchengenamide B****. 7-(7-Methoxy-1,3-benzodioxol-5-yl)*-N-*(2-methylpropyl)-2,4-heptadienamide. 7-(3-Methoxy-4,5-methylenedioxyphenyl)-2,4-heptadienoic acid isobutylamide*
[139906-30-2]
$C_{19}H_{25}NO_4$ 331.411
Isol. from the rhizomes of *Asarum chingchengense* (Aristolochiaceae). Needles (Me_2CO/petrol). Mp 128.5-130°.

(Z,Z)-Isomer:
$C_{18}H_{23}NO_3$ 301.385
Alkaloid from *Piper hispidum*. Amorph. solid. λ_{max} 260 (MeOH).

Zhihui, D. *et al., Phytochemistry*, 1991, **30**, 3797 (*isol, uv, ir, pmr, cmr, ms, struct*)
Parmar, V.S. *et al., Indian J. Chem., Sect. B*, 1993, **32**, 392 (*isol, uv, ir, pmr, cmr, ms*)
Navickiene, H.M.D. *et al., Phytochemistry*, 2000, **55**, 621-626 (*Z,Z-isomer*)

Chinpeimine C-388

$C_{27}H_{43}NO_2$ 413.642

Steroidal alkaloid. Struct. unknown. Alkaloid from the Chinese drug Chin-peimu. Mp 247-248°. $[\alpha]_D$ -21.58 ($CHCl_3$). λ_{max} 288 nm.

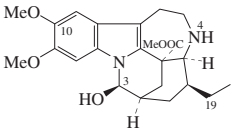
Chloroaurate: Mp 156-158°.

Ac: Mp 178°.

Chu, T.-T. *et al., CA*, 1951, **51**, 445

Chippiine C-389

[98776-12-6]



Absolute Configuration

$C_{23}H_{30}N_2O_5$ 414.5
Trace alkaloid from the root bark of *Tabernaemontana chippii* (Apocynaceae). Rather unstable and dec. slowly to 3-Hydroxyconopharyngine in C-620. λ_{max} 207 ; 228 ; 282 ; 301 ; 306 ; 310 (sh) (MeOH).

10,11-Bis(demethoxy): ***10,11-Demethoxychippiine***
[162229-96-1]
$C_{21}H_{26}N_2O_3$ 354.448
Minor alkaloid from bark of *Tabernaemontana markgrafiana* (Apocynaceae). Brown oil. $[\alpha]_D$ -26 (c, 0.02 in $CHCl_3$).

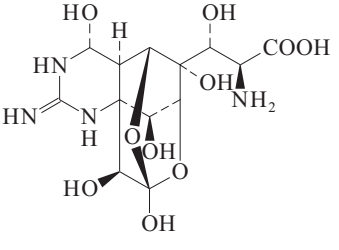
*3-Epimer, 10-demethoxy, 19*S*-hydroxy:* ***Dippinine A***
[223532-42-1]
$C_{22}H_{28}N_2O_5$ 400.474
Alkaloid from *Tabernaemontana corymbosa* leaves. Light yellow oil. $[\alpha]_D$ +19 (c, 0.67 in $CHCl_3$). λ_{max} 231 (log ϵ 4.27); 280 (log ϵ 3.67); 300 (log ϵ 3.61) (EtOH).

3-Epimer, bis(demethoxy), 19-oxo: ***Dippinine B***
[409063-45-2]
$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from the stems of *Tabernaemontana corymbosa*. Light yellow oil. $[\alpha]_D$ -54 (c, 0.06 in $CHCl_3$). λ_{max} 226 (log ϵ 4.18); 285 (log ϵ 3.65); 294 (log ϵ 3.61) (EtOH).

Van Beek, T.A. *et al., J. Nat. Prod.*, 1985, **48**, 400-423 (*Chippiine*)
Nielsen, H.B. *et al., Phytochemistry*, 1994, **37**, 1729-1735 (*10,11-Demethoxychippiine*)
Kam, T.-S. *et al., Heterocycles*, 2001, **55**, 2405-2412 (*Dippinines*)

Chiriquitoxin C-390

11-(Aminocarboxymethyl)tetrodotoxin, 9CI
[61132-15-8]



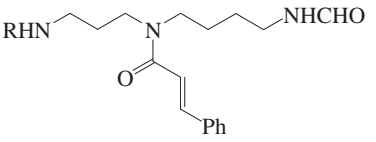
$C_{13}H_{20}N_4O_{10}$ 392.322
Toxin from skin and eggs of *Atelopus chiriquiensis*. Amorph. solid. Sol. H_2O. $[\alpha]_D^{22}$ -17.3 (c, 0.075 in AcOH aq.).

▶ FM6102600

Yotsu, M. *et al., Tet. Lett.*, 1990, **31**, 3187-3190 (*isol, pmr, cmr, struct*)

Chisitine 1 C-391

[771563-40-7]



R = MeSCO-

$C_{19}H_{27}N_3O_3S$ 377.507
Alkaloid from the leaves of *Chisocheton weinlandii*. Mp 89-90°.

Tzouros, M. *et al., Helv. Chim. Acta*, 2004, **87**, 1411-1425

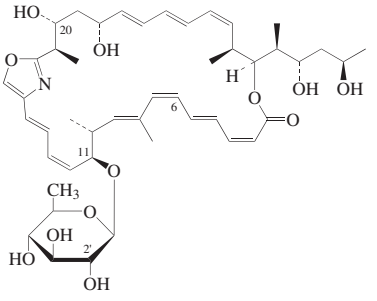
Chisitine 2 C-392

[771563-41-8]
As Chisitine 1, C-391 with
R = PhCO-
$C_{24}H_{29}N_3O_3$ 407.511
Alkaloid from the leaves of *Chisocheton weinlandii*. Mp 102-103°.

Tzouros, M. *et al., Helv. Chim. Acta*, 2004, **87**, 1411-1425

Chivosazole E C-393

[195881-74-4]



Absolute Configuration

$C_{46}H_{65}NO_{12}$ 824.019
Macrolide antibiotic. Prod. by *Sorangium cellulosum*. Cytotoxic agent. $[\alpha]_D^{22}$ -153.2 (c, 0.4 in MeOH). λ_{max} 265 (sh) ; 270 (log ϵ 4.98); 277 (sh) ; 332 (log ϵ 4.42) (MeOH).

3′-Me ether: ***Chivosazole D***
[195881-73-3]
$C_{47}H_{67}NO_{12}$ 838.046
Prod. by *Sorangium cellulosum*. Cytotoxic agent. $[\alpha]_D^{22}$ -144.3 (c, 0.5 in MeOH). λ_{max} 265 (sh) ; 270 (log ϵ 4.98); 277 (sh) ; 333 (log ϵ 4.42) (MeOH).

20-Me ether: ***Chivosazole C***
[195881-72-2]
$C_{47}H_{67}NO_{12}$ 838.046
Prod. by *Sorangium cellulosum*. Cytotoxic agent. $[\alpha]_D^{22}$ -86.4 (c, 1 in MeOH). λ_{max} 264 (sh) ; 270 (log ϵ 4.97); 276 (sh) ; 331 (log ϵ 4.39) (MeOH).

2′,3′-Di-Me ether: ***Chivosazole B***
[195881-71-1]
$C_{48}H_{69}NO_{12}$ 852.073
Prod. by *Sorangium cellulosum*. Cytotoxic agent. $[\alpha]_D^{22}$ -186.2 (c, 0.9 in MeOH). λ_{max} 264 (sh) ; 270 (log ϵ 5.12); 276 (sh) ; 334 (log ϵ 4.53)

(MeOH).

2′,3′,20-Tri-Me ether: ***Chivosazole A***
[169181-40-2]
$C_{49}H_{71}NO_{12}$ 866.099
Prod. by *Sorangium cellulosum*. Cytotoxic agent. Sol. Me_2CO, EtOAc, CH_2Cl_2, DMSO, MeOH; fairly sol. Et_2O; poorly sol. hexane, H_2O. $[\alpha]_D^{22}$ -113.6 (c, 0.7 in MeOH). λ_{max} 264 (sh) ; 270 (log ϵ 4.89); 276 (sh) ; 332 (log ϵ 4.3) (MeOH).

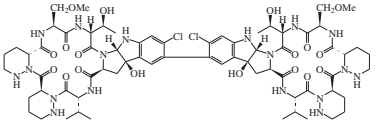
*2′,3′,20-Tri-Me ether, 6*E*-isomer:* ***Chivosazole A$_1$***
[195881-70-0]
$C_{49}H_{71}NO_{12}$ 866.099
Prod. by *Sorangium cellulosum*. Cytotoxic agent. $[\alpha]_D^{22}$ -158.1 (c, 0.4 in MeOH). λ_{max} 265 (sh) ; 271 (log ϵ 4.92); 277 (sh) ; 337 (log ϵ 4.49) (MeOH).

Aglycone, 20-Me ether: ***Chivosazole F***
[195881-75-5]
$C_{41}H_{57}NO_8$ 691.903
Prod. by *Sorangium cellulosum*. Cytotoxic agent. $[\alpha]_D^{22}$ -4.8 (c, 1 in MeOH). λ_{max} 270 (log ϵ 4.25); 277 (sh) ; 332 (log ϵ 4.25) (MeOH).

Irschik, H. *et al., J. Antibiot.*, 1995, **48**, 962-966 (*isol*)
Jansen, R. *et al., Liebigs Ann./Recl.*, 1997, 1725-1732 (*isol, uv, pmr, cmr, ms*)
Janssen, D. *et al., Angew. Chem., Int. Ed.*, 2007, **46**, 4898-4901 (*abs config*)

Chloptosin C-394

[258843-09-3]



Absolute Configuration

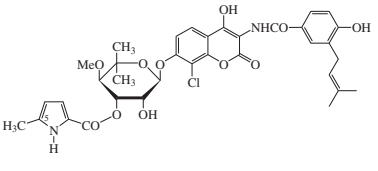
$C_{68}H_{94}Cl_2N_{18}O_{18}$ 1522.506

Dimeric cyclohexapeptide antibiotic. Similar to Himastatin. Prod. by *Streptomyces* sp. MK498-98F14. Apoptosis inducer. Active against gram-positive bacteria incl. MRSA. Cryst. (EtOAc/Me_2CO). $[\alpha]_D^{26}$ -16 (c, 0.25 in $CHCl_3$). Mp >260°. λ_{max} 213 (ϵ 98570); 256 (ϵ 23710); 299 (sh) (ϵ 7900) (MeOH).

Umezawa, K. *et al., J.O.C.*, 2000, **65**, 459-463 (*isol, ir, pmr, cmr, ms*)
Hong, W.X. *et al., Org. Lett.*, 2006, **8**, 4919-4922 (*partial synth, cryst struct*)

Chlorobiocin C-395

Clorobiocin. Antibiotic RP 18631. Antibiotic 2562A. RP 18631
[39868-96-7]



$C_{35}H_{37}ClN_2O_{11}$ 697.137

Coumermycin-type antibiotic. Prod. by *Streptomyces hygroscopicus*, *Streptomyces roseochromogenus* var. *oscitans*, *Streptomyces albocinerescens* and *Streptomyces griseovariabilis*. Active against gram-positive and -negative bacteria. Mp 204-206°. $[\alpha]_D^{20}$ -68 (c, 1.0 in EtOH). Log P 5.71 (calc). λ_{max} 275 (ϵ 30900); 307 (sh) (ϵ 14000); 337 (ϵ 30200) ($CHCl_3$) (Derep).

▶ LD_{50} (mus, orl) 2200 mg/kg. UX9377000

5-Demethyl: ***Antibiotic 2562B***
[75207-21-5]
$C_{34}H_{35}ClN_2O_{11}$ 683.11
From *Streptomyces griseovariabilis*. Active against gram-negative organisms. Sol. MeOH, $CHCl_3$, bases; poorly sol. H_2O, hexane, C_6H_6. Mp 218-220°. $[\alpha]_D^{18}$ -7.1 (c, 0.7 in EtOH). Log P 5.21 (calc). λ_{max} 225 (E1%/1cm 252); 263 (E1%/1cm 332); 308 (E1%/1cm 108) (EtOH) (Berdy).

Ninet, L. *et al., C. R. Hebd. Seances Acad. Sci.*, 1972, **275**, 455 (*isol*)
Dolak, J. *et al., J. Antibiot.*, 1973, **26**, 121 (*struct*)
Berger, J. *et al., J. Chromatogr. Libr.*, 1978, 15 (*rev*)
Gauze, G.F. *et al., Antibiotiki (Moscow)*, 1979, **24**, 643 (*deriv*)
Lysenkova, L.N. *et al., Antibiotiki (Moscow)*, 1980, **25**, 483
Sebek, O.K. *et al., J. Antibiot.*, 1984, **37**, 136
Eustáquio, A.S. *et al., Chem. Biol.*, 2003, **10**, 279-288 (*biosynth*)

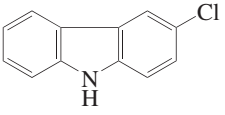
N-(4-Chlorobutyl)butanamide C-396

[329270-31-7]
$H_3CCH_2CH_2CONHCH_2CH_2CH_2CH_2Cl$
$C_8H_{16}ClNO$ 177.673
Alkaloid from *Aloe sabaea*. Oil.

Blitzke, T. *et al., Phytochemistry*, 2000, **55**, 979-982 (*isol*)
D'hooghe, M. *et al., Org. Prep. Proced. Int.*, 2003, **35**, 501-507 (*synth*)

3-Chloro-9*H*-carbazole, 9CI C-397

[2732-25-4]



$C_{12}H_8ClN$ 201.655
Isol. from bovine urine. Silvery cryst. (EtOH or AcOH). Mp 201-202°.

Picrate: Mp 142-143°.

N-*Ac:* [10336-16-0]
$C_{14}H_{10}ClNO$ 243.692
Needles (petrol) or plates (EtOH). Mp 124-125°.

N-*Benzoyl:* [189188-71-4]
$C_{19}H_{12}ClNO$ 305.763
Cryst. (EtOH). Mp 221-222°.

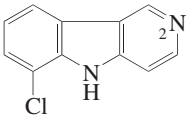
N-*Me:* [33268-90-5]
$C_{13}H_{10}ClN$ 215.681
Cryst. (hexane). Mp 40-42°.

N-*Ph:* [193686-61-2]
$C_{18}H_{12}ClN$ 277.752
Needles (EtOH). Mp 93-94°.

Ullmann, F. *et al., Annalen*, 1904, **332**, 82-104 (*synth*)
Buu-Hoi, N.P. *et al., Rec. Trav. Chim. (J. R. Neth. Chem. Soc.)*, 1954, **73**, 197-202 (*synth*)
Matevosyan, R.O. *et al., Zh. Obshch. Khim.*, 1960, **30**, 3186-3193; *J. Gen. Chem. USSR (Engl. Transl.)*, 1960, **33**, 3155-3160 (*synth*)
Lopatinskii, V.P. *et al., CA*, 1966, **64**, 19542 (*synth, derivs*)
Chen, H.J. *et al., J.A.C.S.*, 1971, **93**, 5102 (*uv, nmr*)
Akermark, B. *et al., J.O.C.*, 1975, **40**, 1365 (*synth, uv*)
Luk, K.-C. *et al., J. Nat. Prod.*, 1983, **46**, 852-861 (*isol*)
Dodsworth, D.J. *et al., J. Het. Chem.*, 1988, **25**, 167-171 (*cmr*)
Bonesi, S.M. *et al., J. Het. Chem.*, 1997, **34**, 877-889; 891-900; 2004, **41**, 161-171 (*synth, pmr, cmr, ms, derivs*)
Liu, Z. *et al., Tetrahedron*, 2007, **63**, 347-355 (*synth*)

6-Chloro-β-carboline C-398

*6-Chloro-9*H*-pyrido[3,4-*b*]indole, 9CI. 6-Chloronorharman*
[30684-46-9]



$C_{11}H_7ClN_2$ 202.642
Cryst. ($CHCl_3$). Mp 238-240° Mp 270-271°.

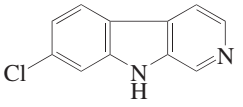
▶ Greater comutagenic activity with aromatic amines than that of β-Carboline, C-130.

N^2-*Me: 6-Chloro-2-methyl-β-carbolinium.* ***Nostocarboline***
$C_{12}H_{10}ClN_2^{\oplus}$ 217.677
Alkaloid from the freshwater cyanobacterium *Nostoc* 78-12A. Potent cholinesterase inhibitor. Bright yellow needles (MeOH) (as iodide). Mp > 215° (iodide). Counterion of natural compd. was not determined. λ_{max} 254 (log ϵ 3.68); 307 (log ϵ 3.46); 385 (log ϵ 2.81) (MeOH) (iodide).

Ho, B.-T. *et al., J. Pharm. Sci.*, 1970, **59**, 1445 (*synth*)
Nakano, K. *et al., Mutat. Res.*, 2000, **47**, 141-146 (*synth, comutagenicity, pmr, cmr*)
Ponce, M.A. *et al., J. Het. Chem.*, 2003, **40**, 419-426 (*synth, pmr, cmr, ms*)
Becher, P.G. *et al., J. Nat. Prod.*, 2005, **68**, 1793-1795 (*Nostocarboline*)

7-Chloro-β-carboline C-399

*7-Chloro-9*H*-pyrido[3,4-*b*]indole. 7-Chloronorharman*



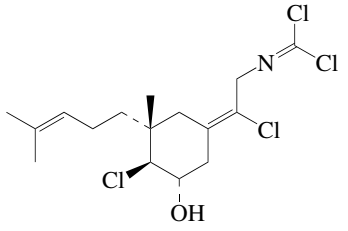
$C_{11}H_7ClN_2$ 202.642

N-*Me: 7-Chloro-9-methyl-β-carboline.* ***Bauerine A***
[156312-09-3]

$C_{12}H_9ClN_2$ 216.669
Alkaloid from the terrestrial blue-green alga *Dichothrix baueriana*. Exhibits antiviral activity. Needles (hexane/Me_2CO). Sol. MeOH, EtOAc; poorly sol. H_2O. Mp 109-110°. λ_{max} 246 (ϵ 38300); 281 (ϵ 8200); 292 (ϵ 12300); 345 (ϵ 4500); 359 (ϵ 5500) (MeOH) (Berdy).

Larsen, L.K. *et al., J. Nat. Prod.*, 1994, **57**, 419 (*isol, uv, pmr, cmr, struct*)
Dantale, S.W. *et al., Tetrahedron*, 2003, **59**, 5507-5514 (*Bauerine A, synth*)
Pohl, B. *et al., Synth. Commun.*, 2007, **37**, 1273-1280 (*Bauerine A, synth*)

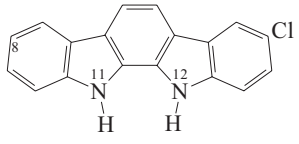
[2-Chloro-2-[4-chloro-5-hydroxy-3-methyl-3-(4-methyl-3-pentenyl)cyclohexylidene]ethyl]carbonimidic dichloride, 9CI C-400
6,14-Dichloro-5-hydroxy-3(14),9-axinyssadien-15-yl carbonimidic dichloride
[64789-88-4]



$C_{16}H_{23}Cl_4NO$ 387.175
Isol. from the sponge *Pseudaxinyssa pitys*. Oil. $[\alpha]_D^{20}$ +36 (c, 1.1 in $CHCl_3$).

Wratten, S.J. *et al., J.A.C.S.*, 1977, **99**, 7367-7368 (*isol, uv, pmr, cmr*)

3-Chloro-11,12-dihydroindolo[2,3-*a*]carbazole, 9CI C-401
Tjipanazole I
[139083-26-4]



$C_{18}H_{11}ClN_2$ 290.751
Minor alkaloid from the blue-green alga *Tolypothrix tjipanasensis*. λ_{max} 259 (ϵ 49600); 268 (ϵ 48500); 289 (ϵ 28400); 329 (ϵ 27200); 361 (ϵ 4430) (MeOH/$CHCl_3$) (Derep).

N^{11}-*β-D-Xylopyranosyl:* ***Tjipanazole F1***
[139083-23-1]
$C_{23}H_{19}ClN_2O_4$ 422.867
Minor alkaloid from *Tolypothrix tjipanasensis*. $[\alpha]_D$ +14.9 (c, 1.0 in $CHCl_3$/MeOH 1:1). Opt. rotn. refers to a mixt. with F2. λ_{max} 258 (ϵ 46200); 271 (ϵ 43300); 291 (ϵ 21200); 328 (ϵ 25700); 349 (ϵ 6810); 366 (ϵ 4690) (MeOH) (Derep).

N^{12}-*β-D-Xylopyranosyl:* ***Tjipanazole F2***
[139083-24-2]
$C_{23}H_{19}ClN_2O_4$ 422.867
Minor alkaloid from *Tolypothrix tjpanasensis*. λ_{max} 258 (ϵ 46200); 271 (ϵ 43300); 291 (ϵ 21200); 328 (ϵ 25700); 349 (ϵ 6810); 366 (ϵ 4690) (MeOH) (Derep).

N^{11}-*α-L-Rhamnopyrannosyl:* ***Tjipanazole C3***
[139083-17-3]
$C_{24}H_{21}ClN_2O_4$ 436.894
Minor constit. of *Tolypothrix tjipanasensis*. λ_{max} 258 (ϵ 46200); 271 (ϵ 43300); 291 (ϵ 21200); 328 (ϵ 25700); 349 (ϵ 6810); 366 (ϵ 4690) (MeOH) (Derep).

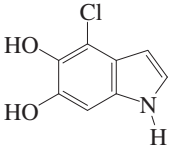
N^{12}-*α-L-Rhamnopyranosyl:* ***Tjipanazole C4***
[139083-18-4]
$C_{24}H_{21}ClN_2O_4$ 436.894
Minor constit. of *Tolypothrix tjipanasensis*. λ_{max} 258 (ϵ 46200); 271 (ϵ 43300); 291 (ϵ 21200); 328 (ϵ 25700); 349 (ϵ 6810); 366 (ϵ 4690) (MeOH) (Derep).

N^{11}-*(6-Deoxy-β-D-gulopyranosyl):* ***Tjipanazole C1***
[139083-15-1]
$C_{24}H_{21}ClN_2O_4$ 436.894
Minor alkaloid from blue-green alga *Tolypothrix tjipanasensis*. $[\alpha]_D$ +18.1 (c, 1.1 in $CHCl_3$). Opt. rotn. refers to a mixt. with other Tjipanazole C components. λ_{max} 258 (ϵ 46200); 271 (ϵ 43300); 291 (ϵ 21200); 328 (ϵ 25700); 349 (ϵ 6810); 366 (ϵ 4690) (MeOH) (Derep).

N^{12}-*(6-Deoxy-β-D-gulopyranosyl):* ***Tjipanazole C2***
[139083-16-2]
$C_{24}H_{21}ClN_2O_4$ 436.894
Minor constit. of *Tolypothrix tjipanasensis*. λ_{max} 258 (ϵ 46200); 271 (ϵ 43300); 291 (ϵ 21200); 328 (ϵ 25700); 349 (ϵ 6810); 366 (ϵ 4690) (MeOH) (Derep).

Bonjouklian, R. *et al., Tetrahedron*, 1991, **47**, 7739 (*isol, uv, pmr, struct*)
Kuethe, J.T. *et al., Org. Lett.*, 2003, **5**, 3721-3723 (*synth*)

4-Chloro-5,6-dihydroxy-1*H*-indole C-402
*4-Chloro-1*H*-indole-5,6-diol*



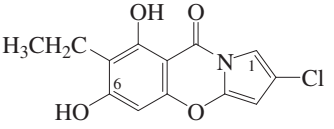
$C_8H_6ClNO_2$ 183.594

N-*Sulfonic acid: 4-Chloro-5,6-dihydroxy-1*H*-indole-1-sulfonic acid.* ***Ancorinolate C***
[473740-09-9]
$C_8H_6ClNO_5S$ 263.658
Alkaloid from the sponge *Ancorina* sp. Powder (as Na salt). λ_{max} 216 (log ϵ 4.14); 272 (log ϵ 3.78); 302 (log ϵ 3.64) (MeOH) (Na salt).

N,O^6-*Disulfo:* ***Ancorinolate A***
[473740-07-7]
$C_8H_6ClNO_8S_2$ 343.722
Alkaloid from the sponge *Ancorina* sp. Powder (as di-Na salt). λ_{max} 220 (log ϵ 4.31); 271 (log ϵ 3.86); 300 (log ϵ 3.56) (MeOH) (di-Na salt).

Meragelman, K.M. *et al., J.O.C.*, 2002, **67**, 6671-6677 (*Ancorinolates*)

2-Chloro-7-ethyl-6,8-dihydroxy-9*H*-pyrrolo[1,2-*b*][1,3]benzoxazin-9-one, 9CI C-403
[208707-45-3]



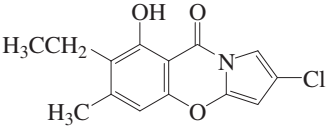
$C_{13}H_{10}ClNO_4$ 279.679
Prod. by *Streptomyces rimosus*. Powder. λ_{max} 245 ; 293 ; 336 (MeCN aq.).

*6-Me ether: 2-Chloro-7-ethyl-8-hydroxy-6-methoxy-9*H*-pyrrolo[1,2-*b*][1,3]benzoxazin-9-one, 9CI*
$C_{14}H_{12}ClNO_4$ 293.706
Prod. by *Streptomyces rimosus*. Powder. λ_{max} 248 ; 291 ; 341 (MeCN aq.).

*1-Chloro: 1,2-Dichloro-7-ethyl-6,8-dihydroxy-9*H*-pyrrolo[1,2-*b*][1,3]benzoxazin-9-one, 9CI*
[208707-49-7]
$C_{13}H_9Cl_2NO_4$ 314.124
Prod. by *Streptomyces rimosus*. Powder. λ_{max} 245 ; 293 ; 336 (MeCN aq.).

Pat. Coop. Treaty (WIPO), 1998, 98 25 931; *CA*, **129**, 52003e
Trew, S.J. *et al., J. Antibiot.*, 2000, **53**, 1-11 (*isol*)

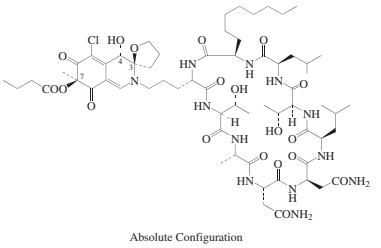
2-Chloro-7-ethyl-8-hydroxy-6-methyl-9*H*-pyrrolo[1,2-*b*][1,3]benzoxazin-9-one, 9CI C-404
[208707-51-1]



$C_{14}H_{12}ClNO_3$ 277.706
Prod. by *Streptomyces rimosus*.

Pat. Coop. Treaty (WIPO), 1998, 98 25 931; *CA*, **129**, 52003e

Chlorofusin C-405
[329363-06-6]



Absolute Configuration

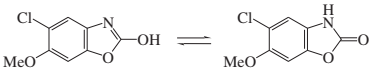
$C_{63}H_{99}ClN_{12}O_{19}$ 1363.997

Azaphilone-peptide antibiotic. Prod. by *Microdochium caespitosum*. p53-MDM2 antagonist. Yellow solid. λ_{max} 202 (ϵ 28910); 346 (ϵ 9890); 402 (ϵ 12870) (MeOH).

Duncan, S.J. *et al., J.A.C.S.*, 2001, **123**, 554-560 (*isol, pmr, cmr*)
Duncan, S.J. *et al., Tet. Lett.*, 2002, **43**, 1075-1078 (*biosynth*)
Woon, E.C.Y. *et al., J.O.C.*, 2007, **72**, 5146-5151 (*synth*)
Clark, R.C. *et al., J.A.C.S.*, 2008, **130**, 12355-12369 (*synth, abs config*)

5-Chloro-2-hydroxy-6-methoxybenzoxazole C-406

*5-Chloro-6-methoxy-2(3*H*)-benzoxazolone. 5-Chloro-6-methoxy-2-benzoxazolinone*

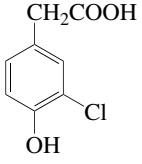


$C_8H_6ClNO_3$ 199.593
Isol. from *Zea mays*.

Kato-Noguchi, H. *et al., Phytochemistry*, 1998, **49**, 433-435

(3-Chloro-4-hydroxyphenyl)acetic acid C-407

3-Chloro-4-hydroxybenzeneacetic acid, 9CI
[33697-81-3]



$C_8H_7ClO_3$ 186.594
Prod. by the fungi *Marasmius palmivorus* and *Xylaria* sp. FRR 5657. Amorph. yellow solid. Mp 108-109°. λ_{max} 219 (log ϵ 3.66); 282 (log ϵ 3.31) (MeOH). λ_{max} 219 (log ϵ 3.68); 249 (log ϵ 3.72); 301 (log ϵ 3.47) (MeOH/NaOH).

Me ester: [57017-95-5]
$C_9H_9ClO_3$ 200.621
$Bp_{0.15}$ 106-108°.

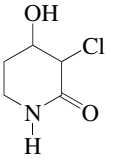
Amide: (3-Chloro-4-hydroxyphenyl)acetamide
$C_8H_8ClNO_2$ 185.609
Prod. by *Xylaria* sp. FRR 5657. Yellow cryst. Mp 160-162°. λ_{max} 205 (log ϵ 4.08); 231 (sh) (log ϵ 3.59); 282 (log ϵ 3.18) (MeOH). λ_{max} 206 (log ϵ 4.27); 248 (log ϵ 3.98); 299 (log ϵ 3.62) (MeOH/NaOH).

[94613-72-6 , 52803-46-0]

Kuchar, M. *et al., Coll. Czech. Chem. Comm.*, 1977, **42**, 1723-1735 (*synth, ester*)
D'Ambrosio, M. *et al., Helv. Chim. Acta*, 1984, **67**, 1484-1492 (*synth*)
Gribble, G.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1996, **68**, 201 (*occur*)
Davis, R.A. *et al., Tet. Lett.*, 2005, **46**, 919-921 (*Xylaria sp. FRR 5657 metabs*)

3-Chloro-4-hydroxy-2-piperidinone C-408

[174204-83-2]

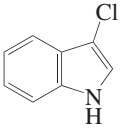


$C_5H_8ClNO_2$ 149.576
Alkaloid from *Piper hancei*.

Narui, T. *et al., Nat. Med. (Tokyo)*, 1995, **49**, 438-441 (*isol, struct*)

3-Chloro-1*H*-indole, 9CI C-409

[16863-96-0]



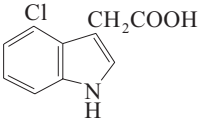
C_8H_6ClN 151.595
Principal odorous component of the marine hemichordate *Ptychodera flava laysanica*. Mp 95.5-96° dec.

N-*Benzoyl:*
$C_{15}H_{10}ClNO$ 255.703
Prism (EtOH). Mp 97-99°.

Pappalardo, G. *et al., Gazz. Chim. Ital.*, 1958, **88**, 1147-1169 (*synth, uv*)
Higa, T. *et al., Naturwissenschaften*, 1975, **62**, 395-396 (*isol*)
Brennan, M.P. *et al., Heterocycles*, 1986, **24**, 2879-2885 (*synth, ir, pmr, cmr*)

4-Chloro-1*H*-indole-3-acetic acid C-410

[2519-61-1]



$C_{10}H_8ClNO_2$ 209.631
Auxin from the seeds of *Pisum sativum* (pea) and isol. from *Pinus sylvestris* (Scotch pine). Cryst. (1,2-dichloroethane/EtOH). Mp 179-180°.

Me ester: [19077-78-2]
$C_{11}H_{10}ClNO_2$ 223.658
Auxin from the seeds of *Pisum sativum* (pea). Cryst (EtOAc/hexane). Mp 120-121°.

Hansch, C. *et al., J.A.C.S.*, 1951, **73**, 3518 (*synth*)
Marumo, S. *et al., Nature (London)*, 1968, **219**, 959 (*isol*)
Magnus, V. *et al., Phytochemistry*, 1997, **46**, 675-681 (*isol*)
Katayama, M. *et al., Biosci., Biotechnol., Biochem.*, 2000, **64**, 808-815 (*synth, ir, pmr, ms*)

Chloroiodoacetic acid, 9CI C-411

[53715-09-6]
ClCHICOOH
$C_2H_2ClIO_2$ 220.394

(+)-form
$[\alpha]_D$ +0.9 (H_2O).
NH_4 salt: $[\alpha]_D$ +23.5 (H_2O).

(±)-form
Constit. of *Asparagopsis taxiformis*. Leaflets. V. sol. H_2O, mod. sol. petrol. Mp 90°.

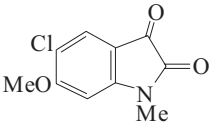
Phenyl ester:
$C_8H_6ClIO_2$ 296.491
Mp 110°.

Amide: Chloroiodoacetamide
[62872-35-9]
C_2H_3ClINO 219.409
Constit. of *Asparagopsis taxiformis*. Needles (H_2O or C_6H_6). Mp 140°.

Crompton, H. *et al., J.C.S.*, 1923, **123**, 576-577 (*synth*)
McMath, A.M. *et al., J.C.S.*, 1927, 537-543 (*synth, resoln*)
Seyferth, D. *et al., J. Organomet. Chem.*, 1974, **71**, 335-346 (*synth*)
Woolard, F.X. *et al., Tetrahedron*, 1976, **32**, 2843-2846 (*amide, isol*)
Woolard, F.X. *et al., Phytochemistry*, 1979, **18**, 617-620 (*isol*)

5-Chloro-6-methoxy-1-methyl-1*H*-indole-2,3-dione, 9CI C-412

5-Chloro-6-methoxy-1-methylisatin
[16979-73-0]

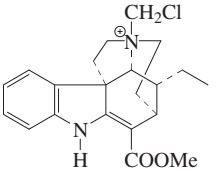


$C_{10}H_8ClNO_3$ 225.631
Metab. of *Micromonospora carbonaceae*. Deep red cryst. Mp 254-255°. λ_{max} 269 (ϵ 27700); 274 (ϵ 26800); 316 (ϵ 6700); 425 (ϵ 900) (MeOH) (Berdy).

Reimann, H. *et al., Chem. Ind. (London)*, 1967, 2173
Omote, Y. *et al., Bull. Chem. Soc. Jpn.*, 1969, **42**, 3016 (*synth*)

4-(Chloromethyl)-2,16-didehydro-16-(methoxycarbonyl)condyfolanium, 9CI C-413

[39020-70-7]



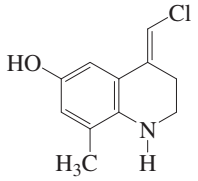
Absolute Configuration

$C_{21}H_{26}ClN_2O_2^{\oplus}$ 373.901
Doubtless an artifact. Alkaloid from *Craspidospermum verticillatum* (Apocynaceae). Mp 266-270° dec. (as chloride). $[\alpha]_D$ +507 (c, 1.1 in EtOH) (chloride). CAS no. refers to chloride.

Besselièvre, R. *et al., Bull. Soc. Chim. Fr.*, 1972, 1477 (*uv, pmr, struct*)

4-Chloromethylene-1,2,3,4-tetrahydro-8-methyl-6-quinolinol C-414

4-Chloromethylene-1,2,3,4-tetrahydro-6-hydroxy-8-methylquinoline



$C_{11}H_{12}ClNO$ 209.675

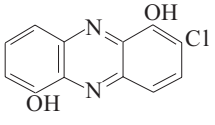
(*E*)-*form*

O-*(2,4-Di-*O*-methyl-β-D-xylopyranoside):* [501373-67-7]
$C_{18}H_{24}ClNO_5$ 369.844
Alkaloid from a Puerto Rican *Lyngbya majuscula*. Amorph. solid. $[\alpha]_D^{22}$ -20.8 (c, 0.12 in $CHCl_3$). λ_{max} 212 (log ε 4.58); 241 (log ε 4.29); 269 (log ε 3.9) (MeOH).

Nogle, L.M. *et al., J. Nat. Prod.*, 2003, **66**, 217-220 (*isol, pmr, cmr, ms*)

2-Chloro-1,6-phenazinediol, 9CI C-415

2-Chloro-1,6-dihydroxyphenazine
[93768-40-2]



$C_{12}H_7ClN_2O_2$ 246.652
Isol. from *Streptosporangium* sp. 1656. Shows a broad spectrum of antifungal activity*in vitro* against dermophytes and *Candida* spp. Reddish-purple cryst. (CH_2Cl_2). Mp 252° dec. λ_{max} 265 (ε 23000); 296 (ε 65000) (MeOH/NaOH) (Derep). λ_{max} 275 (ε 71200); 377 (ε 4950); 440 (ε 3400) (MeOH) (Derep).

▶ SG1579700

Patel, M. *et al., J. Antibiot.*, 1984, **37**, 943 (*isol, uv, ir, pmr, cmr*)

6-Chloro-2-quinoxalinecarboxylic acid C-416

[29821-63-4]

$C_9H_5ClN_2O_2$ 208.603
Cryst. (EtOH). Mp 223-224°.

Me ester: [29821-64-5]
$C_{10}H_7ClN_2O_2$ 222.63
Cryst. (CCl_4). Mp 147.5-148.5°.

Chloride:
$C_9H_4Cl_2N_2O$ 227.049
Mp 103-103.5°.

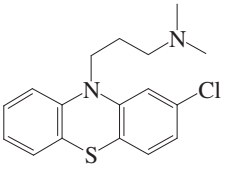
1,4-Dioxide: ***Antibiotic MSD 819***. *MSD 819*
[22587-15-1]
$C_9H_5ClN_2O_4$ 240.602
Isol. from *Streptomyces ambofaciens*. Shows a broad spectrum of activity against gram-positive and -negative bacteria. Bright yellow cryst. Sol. DMSO, DMF; fairly sol. H_2O, MeOH; poorly sol. butanol, hexane. Dec. on heating, no def. Mp. λ_{max} 244 (ε 22900); 259 (ε 23300); 366 (ε 12200); 383 (ε 12400) (pH 7 phosphate buffer) (Derep). λ_{max} 244 (E1%/1cm 950); 259 (E1%/1cm 966); 366 (E1%/1cm 505); 383 (E1%/1cm 515) (pH 7 buffer) (Berdy).

1,4-Dioxide, Me ester: [22587-18-4]
$C_{10}H_7ClN_2O_4$ 254.629
Yellow cryst. ($CHCl_3$/hexane). Mp 166-170°.

Stapley, E.O. *et al., Antimicrob. Agents Chemother.*, 1968, 249 (*isol*)
Miller, T.W. *et al., J. Antibiot.*, 1969, **22**, 293 (*isol*)
Moreno, H.R. *et al., J. Med. Chem.*, 1970, **13**, 1005 (*synth, uv*)

Chlorpromazine, BAN, INN, USAN C-417

*2-Chloro-*N,N*-dimethyl-10*H*-phenothiazine-10-propanamine, 9CI. 2-Chloro-10-(3-dimethylaminopropyl)phenothiazine, 8CI. Thorazine. Wintermin. Contomin. Chlordelazin. Fenactil. Aminazin. Many other names*
[50-53-3]



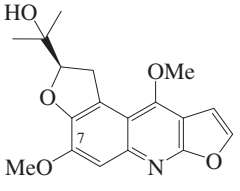
$C_{17}H_{19}ClN_2S$ 318.869
Claimed to be isol. from the Eastern folk medicine Mumiyo. Used in photometric detn. of Au(*III*). Tranquilliser, antiemetic. Used in treatment of schizophrenia. Oily liq. Insol. H_2O. $Bp_{0.8}$ 200-205°. Log P 5.29 (calc).

▶ Range of adverse effects from therapeutic usage reported: antimuscarinic effects; hypotension; extrapyramidal disorders; hypersensitivity reactions; reprod. effects; and skin reactions incl. phototoxic effects. Human and exp. teratogen. LD_{50} (rat, orl) 142 mg/kg. Can cause contact dermatitis. SN8925000

Khalikov, S.K. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2003, **39**, 22-25 (*isol*)

Choisyine C-418

1,2-Dihydro-4,10-dimethoxy-α,α-dimethyldifuro[2,3-b:3′,2′-f]quinoline-2-methanol, 9CI. Shuazine



(*R*)-*form*

$C_{18}H_{19}NO_5$ 329.352

(*R*)-*form*

7-Demethoxy: ***Demethoxychoisyine***. *Desmethoxychoisyine*
$C_{17}H_{17}NO_4$ 299.326
Alkaloid from the leaves of *Choisya ternata*. Cryst. (Me_2CO). Mp 184-186°. $[\alpha]_D$ -43.8 (c, 0.6 in $CHCl_3$) (64% ee).

(±)-*form* [18556-07-5]
Alkaloid from leaves of *Choisya ternata*. Needles (EtOH). Mp 189-190°.

Ac: Mp 231-232°.

Johns, S.R. *et al., Aust. J. Chem.*, 1967, **20**, 1975 (*isol, pmr, ms, struct*)
Grundon, M.F. *et al., J.C.S. Perkin 1*, 1974, 2181; 1975, 302 (*biosynth*)
Boyd, D.R. *et al., Org. Biomol. Chem.*, 2007, **5**, 2983-2991 (*abs config, Demethoxychoisyine*)

Choline C-419

*2-Hydroxy-*N,N,N*-trimethylethanaminium(1+), 9CI. (2-Hydroxyethyl)trimethylammonium. Amanitin†. Arachine. Araquine. Bilineurine. Sincalin. Sinkalin*
[62-49-7]
$Me_3N^{\oplus}CH_2CH_2OH$
$C_5H_{14}NO^{\oplus}$ 104.172
Occurs free and combined in many animal and vegetable prods., e.g. bile, brain, yolk of egg, hops, belladonna, strophanthus, and the seeds, leaves and stems of many other plants. Constit. of Lecithin. Acetylcholine precursor. Present free and as esters in the hypobranchial glands of molluscs. Lipotropic agent. Nutritional supplement.

▶ FZ9625000

Hydroxide: [123-41-1]
$C_5H_{15}NO_2$ 121.179
Syrup, cryst. with difficulty. V. sol. H_2O, EtOH; insol. Et_2O. Strong base, absorbs CO_2 from air. Forms cryst. addn. compds. with H_2PtCl_6 etc.

▶ GA4025500

Chloride: ***Choline chloride, INN***. *Biocolina. Hepacholine. Lipotril*
[67-48-1]
$C_5H_{14}ClNO$ 139.624
Lipotropic agent used to treat liver disorders. Deliquescent cryst.

▶ LD_{50} (rat, orl) 3400 mg/kg. KH2975000

Iodide: [17773-10-3]
$C_5H_{14}INO$ 231.076
Mp 272-274°.

Perchlorate: [17876-30-1]
$C_5H_{14}ClNO_5$ 203.622
Cryst. (EtOH). Mp 273°.

Dihydrogen citrate: Neurotropan
[77-91-8] Lipotropic agent. Granules. Mp 105-107.5°.

▶ GA2582000

Theophylline salt (1:1): Choline theophyllinate, BAN, INN. Cholinophylline. ***Oxtriphylline, USAN***. *Oxytrimethylline. Teperine*
[4499-40-5]
$C_8H_{20}NO_6P$ 257.223
Smooth muscle relaxant, bronchodilator and diuretic. Granules.

▶ LD_{50} (rat, orl) 600 mg/kg. GA7420000

Bitartrate: [87-67-2]
Hygroscopic solid. Mp 151-153°.

O-*Nitrate, perchlorate:* ***Nitricholine perchlorate, INN.*** *Choline perchlorate nitrate*
[7009-91-8]
$C_5H_{13}ClN_2O_7$ 248.62
Cholinergic agent. Mp 185-186°.

Sulfate (inner salt): N,N,N-*Trimethyl-2-(sulfooxy)ethanaminium hydroxide inner salt, 9CI. Cholinesulfuric acid*
[4858-96-2]
$C_5H_{13}NO_4S$ 183.228
Present in *Penicillium* spp., *Aspergillus sydowi, Porphyra umbilicalis, Ptilota pectinata* and *Dermatiscum thunbergii*. Cryst. Mp 300° dec.

Salt with 2-[4-(4-chlorobenzoyl)phenoxy]-2-methylpropanoic acid (1:1): ***Choline fenofibrate, INN.*** *ABT35*
[856676-23-8] Antihyperlipidaemic agent. Cryst. Mp 209-211°.

O-*Ac:* see Acetylcholine(1+), A-47

O-*Propanoyl:* ***Propionylcholine***
[5072-54-8]
[2494-55-5 , 2365-13-1]
$C_8H_{18}NO_2^{\oplus}$ 160.236
Isol. from *Viscum album* (Viscaceae).

O-*Butanoyl: Butyrylcholine*
[3922-86-9]
[2963-78-2 (chloride), 2494-56-6 (iodide)]
$C_9H_{20}NO_2^{\oplus}$ 174.263
Mp 108-111° (as chloride) Mp 93-94° (as iodide).

O-*(2-Methyl-2-propenoyl): Methacryloylcholine*
[39316-06-8 , 5039-78-1 (chloride)]
$C_9H_{18}NO_2^{\oplus}$ 172.247
Monomer. Polymers are used as coagulants in sewage treatment.

O-*(3-Methyl-2-butenoyl):* ***Senecioylcholine.*** *β,β-Dimethylacrylylcholine*
[20284-79-1]
$C_{10}H_{20}NO_2^{\oplus}$ 186.274
Alkaloid from the hypobranchial body of the marine snail *Thais floridana*. Also isol. in salt form from the gastropod *Mancinella keineri*. Sol. H_2O. Mp 160° (as iodide).

O-*Pentanoyl:*
[2963-75-9 (iodide)]
$C_{10}H_{22}NO_2^{\oplus}$ 188.289
Cryst. (as iodide). Mp 107-108° (iodide).

O-*Dodecanoyl:*
[25234-60-0 (chloride)]
$C_{17}H_{36}NO_2^{\oplus}$ 286.477
Mp 196° (as chloride).

O-*Tetradecanoyl:*
[4277-89-8 (chloride)]
$C_{19}H_{40}NO_2^{\oplus}$ 314.531
Mp 195° (as chloride).

O-*(2-Pentadecenoyl):* [116613-92-4]
$C_{20}H_{40}NO_2^{\oplus}$ 326.542
Constit. of toxic skin secretions of the trunkfish *Anoplocapros lenticularis*. *E*- and *Z*-isomers detected. Poss. artifact derived from homologue of Pahutoxin, P-12. Genus name incorr. given as Anoplacapros.

O-*(2-Hexadecenoyl):*
$C_{21}H_{42}NO_2^{\oplus}$ 340.568
Constit. of the toxic skin secretions of the trunkfish *Anoplocapros lenticularis*, *Aracana aurita*, *Aracana ornata*, *Lactoria fornasini*, *Ostracion cubicus*, *Rhinesomas reipublicae*, *Strophiurichthys inermis* and *Strophiurichthys robustus*. *E*- and *Z*-isomers detected. Poss. artifact.

O-*(2-Heptadecenoyl):*
$C_{22}H_{44}NO_2^{\oplus}$ 354.595
Constit. of the toxic skin secretions of the trunkfish *Anoplocapros lenticularis*, *Aracana ornata*, *Lactoria fornasini*, *Ostracion cubicus* and *Strophiurichthys robustus*. *E*- and *Z*-isomers detected. Poss. artifact.

O-*(2-Octadecenoyl):*
$C_{23}H_{46}NO_2^{\oplus}$ 368.622
Constit. of toxic skin secretions of the trunkfish *Anoplocapros lenticularis* and *Aracana ornata*. *E*- and *Z*-isomers detected. Poss. artifact.

O-*Benzoyl:*
[2964-09-2 , 17518-43-3 (iodide)]
$C_{12}H_{18}NO_2^{\oplus}$ 208.28
Cryst. (as iodide). Mp 247° (iodide). Chloride also known.

O-*(4-Hydroxybenzoyl):* ***(4-Hydroxybenzoyl)choline***
[5094-31-5]
$C_{12}H_{18}NO_3^{\oplus}$ 224.279
Alkaloid from white mustard (*Sinapis alba*).

O-*(3,4-Dimethoxybenzoyl):* ***Hesperaline***
[15797-38-3]
[95210-18-7]
$C_{14}H_{22}NO_4^{\oplus}$ 268.332
Alkaloid from seeds of damask violet (*Hesperis matronalis* Brassicaceae). Mp 182-183° (as iodide).

O-*(4-Hydroxy-3,5-dimethoxybenzoyl):* see Sinapine, S-308

O-*(3-Hydroxy-4-methoxycinnamoyl):* ***Isoferuloylcholine***
[28504-22-5]
$C_{15}H_{22}NO_4^{\oplus}$ 280.343
Isol. from seeds of *Sibara virginica*. Mp 152-153° (as chloride). λ_{max} 218 (ϵ 14200); 230 (sh) (ϵ 100000); 300 (sh) (ϵ 132000); 325 (ϵ 16000) (H_2O).

O-*(4-Hydroxy-3-methoxycinnamoyl):* ***Feruloylcholine***
[85927-25-9]
[22513-68-4 , 31545-00-3]
$C_{15}H_{22}NO_4^{\oplus}$ 280.343
Constit. of garlic mustard (*Alliaria officinalis*) and *Cleome pungens*. Mp 203-205° (as chloride). λ_{max} 236 (log ϵ 4.05); 334 (log ϵ 4.31) (no solvent reported).

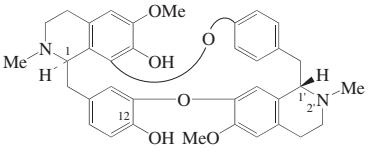
3-(4-Hydroxyphenyl)propanoyl: ***3-(4-Hydroxyphenyl)propanoylcholine***
$C_{14}H_{22}NO_3^{\oplus}$ 252.333
Constit. of the flowers of *Polyscias murrayi*. Amorph. solid. λ_{max} 218 (sh) (log ϵ 3.52); 279 (log ϵ 2.9) (EtOH).

[55357-38-5 , 23038-04-2 , 64681-08-9]

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 395D; **2**, 292B (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 616C; 859C (*nmr*)
Renshaw, R.R. *et al., J.A.C.S.*, 1910, **32**, 128 (*synth*)
Fourneau, E. *et al., Bull. Soc. Chim. Fr.*, 1914, **15**, 548 (*esters, synth*)
U.S. Pat., 1951, 2 575 611; *CA*, **46**, 1722g (*synth, Ferrocholinate*)
Coates, G.E. *et al., J.C.S.*, 1953, 2519
Tammelin, L.E. *et al., Acta Chem. Scand.*, 1956, **10**, 145-146 (*esters, synth*)
Parker, J.M. *et al., J. Pharmacol. Exp. Ther.*, 1956, **118**, 359 (*pharmacol, Oxtriphylline*)
Cornacchione, G. *et al., Boll. Chim. Farm.*, 1957, **96**, 335 (*Nitricholine perchlorate*)
Kyi, Z.-Y. *et al., Br. J. Pharmacol.*, 1957, **12**, 38 (*iodide, esters*)
Roth, F.E. *et al., J. Pharmacol. Exp. Ther.*, 1957, **121**, 487 (*pharmacol, Oxtriphylline*)
U.S. Pat., 1957, 2 776 287; *CA*, **51**, 8150 (*synth, Oxtriphylline*)
Whitaker, V.P. *et al., Biochem. J.*, 1959, **71**, 32-34 (*3-methyl-2-butenoyl*)
Org. Synth., Coll. Vol., 4, 1963, 84 (*O-benzoyl*)
Harper, S.H. *et al., Chem. Ind. (London)*, 1966, 419 (*sulfate*)
Gmelin, R. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1967, **300**, 176 (*Hesperaline*)
Fieser and Fieser's Reagents for Organic Synthesis, Wiley, 1967, **1**, 142 (*use*)
Bird, P.R. *et al., J.C.S.(C)*, 1967, 447 (*phosphate*)
Gmelin, R. *et al., Phytochemistry*, 1970, **9**, 667 (*isol, Isoferuloylcholine*)
Möhrle, H. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1973, **306**, 489 (*synth, Isoferuloylcholine*)
Byrn, S.R. *et al., J.O.C.*, 1976, **41**, 2283 (*conformn, ir, cryst struct*)
Baker, J.T. *et al., Tet. Lett.*, 1976, 1233-1234 (*Choline, Senecioylcholine, occur, molluscs*)
Zeisel, S.H. *et al., Annu. Rev. Nutr.*, 1981, **1**, 195 (*rev*)
Clausen, S. *et al., Phytochemistry*, 1982, **21**, 917 (*4-Hydroxybenzoylcholine*)
Larsen, L.M. *et al., Phytochemistry*, 1983, **22**, 219-222 (*Feruloylcholine*)
Stokr, J. *et al., Coll. Czech. Chem. Comm.*, 1987, **52**, 1256 (*iodide*)
Negwer, M. *et al., Organic-Chemical Drugs and their Synonyms, 6th edn., Akademie-Verlag*, 1987, 368 (*synonyms*)
Goldberg, A.S. *et al., Toxicon*, 1988, **26**, 651-663 (*alkenoyl derivs, occur*)
Kirk-Othmer Encycl. Chem. Technol., 4th edn., Wiley, 1991, **6**, 199 (*rev*)
Frydenvang, K. *et al., Acta Cryst. C*, 1992, **48**, 1343; 1994, **50**, 617 (*cryst struct*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 1037; 1317
Buchanan, M.S. *et al., Phytochemistry*, 2005, **66**, 481-485 (*3-4-Hydroxyphenylpropanoylcholine*)
U.S. Pat., 2005, 2005 148 594; *CA*, **143**, 103273 (*choline fenofibrate, synth, pharmacol*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, CMF000; CMF500; CMF750

Chondocurine C-420

Tubocurine. Chondrocurine



(+)-*form*

$C_{36}H_{38}N_2O_6$ 594.706
Diastereoisomeric with Curine, C-812.

(+)-*form* [477-58-7]
Alkaloid from the stem and bark of *Chondodendron tomentosum* and from the roots of *Cyclea madagascariensis* (Menispermaceae). Antiinflammatory props. Hepatoprotective in mice. Mp 232-234°. $[\alpha]_D^{24}$ +105 (c, 0.9 in Py). $[\alpha]_D^{18}$ +173 (c, 0.5 in $CHCl_3$). $[\alpha]_D^{24}$ +200 (c, 0.5 in 0.1*M* HCl). Log P 7.58 (uncertain value) (calc).

$N^{2'}$-*De-Me:* ***Nor-N^b-chondocurine***
[96738-71-5]
$C_{35}H_{36}N_2O_6$ 580.679
Alkaloid from Peruvian curare (Menispermaceae). Cryst. (EtOAc). Mp 159-161°. $[\alpha]_D^{20}$ -242 (c, 0.5 in $CHCl_3$).

N^2-*Me:* ***Tubocurarine***. *Tubarine*
[57-95-4]
$C_{37}H_{41}N_2O_6^{\oplus}$ 609.741
Quaternary alkaloid from Amazon curare (*Chondodendron tomentosum*) (Menispermaceae). The name Tubocurarine has been applied both to the C_{37} monoquaternary salts and to the C_{38} diquaternary (tetra-*N*-Me) salts.

N^2-*Me, chloride hydrochloride:* ***Tubocurarine chloride, BAN, INN, JAN, USAN***. *Amelizol. Many other names*
[57-94-3]
[6989-98-6 , 6533-76-2]
$C_{37}H_{42}Cl_2N_2O_6$ 681.654
Potassium (BK_{Ca}, SK_{Ca}) channel blocker. Acts as a nondepolarising muscle relaxant producing paralysis. Used mainly as an adjuvant to anaesthesia. Paralysis from therapeutic use is reversible. Overdose causes apnoea. Mp 274-275°. $[\alpha]_D^{22}$ +215 (H_2O).

▶ LD_{50} (rat, ims) 0.5 mg/kg. LD_{50} (mus, ivn) 0.13 mg/kg. Very toxic by intramuscular, intravenous, and other routes of administration. Powerful curarising poison. YO4025000

N^2-*Me, iodide hydroiodide:*
$C_{37}H_{42}I_2N_2O_6$ 864.558
Mp 263-265° dec. $[\alpha]_D^{23}$ +140 (H_2O).

N^2,$N^{2'}$-*Di-Me:* ***Chondocurarine***. *Chondrocurarine. Curarine*
[6880-94-0]
$C_{38}H_{44}N_2O_6^{2\oplus}$ 624.775
Quaternary alkaloid from the stem and bark *Cyclea tomentosum* (Menispermaceae).

N^2,$N^{2'}$-*Di-Me, dichloride:*
$C_{38}H_{44}Cl_2N_2O_6$ 695.681
Amorph. $[\alpha]_D^{23}$ +188 (c, 1.08 in H_2O). $[\alpha]_D^{23}$ +195 (c, 0.85 in MeOH).

N^2,$N^{2'}$-*Di-Me, diiodide:*
$C_{38}H_{44}I_2N_2O_6$ 878.584
Cryst. + 1$CHCl_3$ (MeOH/$CHCl_3$). Mp 277-280° dec. $[\alpha]_D^{23}$ +150 (c, 0.71 in H_2O). $[\alpha]_D^{23}$ +170 (c, 0.5 in MeOH).

O^{12}-*Me:* [601468-47-7]
$C_{37}H_{40}N_2O_6$ 608.733
Isol. from root of *Cissampelos mucronata*.

Di-Me ether, N^2,$N^{2'}$*di-Me, diiodide:* ***Metocurine iodide, USAN***. *Metubine iodide. Auxoperan. Curane B. Diamethine. Mecostrin*
[7601-55-0]
$C_{40}H_{48}I_2N_2O_6$ 906.638
Skeletal muscle relaxant. Mp 266°. $[\alpha]_D^{24}$ +160 (H_2O).

▶ LD_{50} (rat, ipr) 0.37 mg/kg. YO3700000

Di-Me ether, N^2,$N^{2'}$*di-Me, dichloride: Dimethyltubocurarinium chloride. Dimethyltubocurarine. Dimeberine chloride. Mecostrin chloride. Metocurine chloride. Many other names*
[33335-58-9]
$C_{40}H_{48}Cl_2N_2O_6$ 723.734
Synthetic. Intramuscular relaxant, anticholinergic agent. Mp 236° dec. $[\alpha]_D^{25}$ +195 (c, 0.5 in H_2O).

(-)-*form* [31503-97-6]
Alkaloid from the stems of *Chondodendron toxicoferum* (Menispermaceae) and roots of *Cissampelos mucronata*. Pure compd. could not be isol., phys. props. could not be determined.

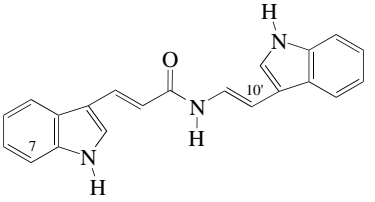
N^2-*Me:* ***(-)-Tubocurarine***
[22154-22-9]
$C_{37}H_{41}N_2O_6^{\oplus}$ 609.741
From *Chondodendron tomentosum* (Menispermaceae). Minute needles + 5H_2O (H_2O) (as chloride hydrochloride). Mp 275° dec. (chloride hydrochloride). $[\alpha]_{Hg}^{20}$ -258 (c, 0.38 in H_2O) (chloride hydrochloride) (anhyd.). This appears to have been isolated only once and is the abnormal enantiomer. Much less powerful pharmacologically than the (+)-form.

O^{12}-*Me:* ***Hayatidine***
[16543-77-4]
$C_{37}H_{40}N_2O_6$ 608.733
Alkaloid from the root and leaves of *Cissampelos pareira* (Menispermaceae). Mp 179-180°. $[\alpha]_D$ -109 (Py).
[22260-42-0]

Dutcher, J.D. *et al., J.A.C.S.*, 1946, **68**, 419-424; 1952, **74**, 2221-2225 (*isol, Chondocurine, Chondocurarine*)
Bick, I.R.C. *et al., J.C.S.*, 1953, 3893-3896; 1961, 1896-1903 (*struct, pmr*)
Boissier, J.R. *et al., J. Nat. Prod.*, 1965, **28**, 191 (*isol*)
Battersby, A.R. *et al., J.C.S.*, 1965, 2239-2247 (*ord*)
Bhatnagar, A.K. *et al., Experientia*, 1967, **23**, 242-243 (*Hayatidine*)
Cava, M.P. *et al., Phytochemistry*, 1969, **8**, 2341-2343 (*(-)-Tubocurine*)
Everett, A.J. *et al., Chem. Comm.*, 1970, 1020-1021 (*(+)-Tubocurarine, (+)-Chondocurine, struct*)
Baldas, J. *et al., J.C.S. Perkin 1*, 1972, 599-601 (*ms*)
Sobell, H.M. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 1972, **69**, 2212-2215 (*cryst struct*)
Hughes, R. *et al., Br. J. Anaesth.*, 1976, **48**, 969-974 (*Metocurine, pharmacol*)
Koike, L. *et al., J.O.C.*, 1981, **46**, 2385-2389 (*cmr*)
Lemli, J. *et al., Planta Med.*, 1985, 68-69 (*Nor-N^b-chondocurine*)
Kondo, Y. *et al., Int. J. Immunopharmacol.*, 1992, **14**, 1181-1186 (*pharmacol*)
Kondo, Y. *et al., Biochem. Pharmacol.*, 1993, **48**, 1861-1863; 1887-1892 (*pharmacol*)
Martindale, The Extra Pharmacopoeia, 32nd edn., Pharmaceutical Press, 1999, 1322
Tshibangu, J.N. *et al., Phytochem. Anal.*, 2003, **14**, 13-22 (*(+)-O^{12}-Me, isol, hplc*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, COF825; DUM000

Chondriamide A C-421

*3-(1*H*-Indol-3-yl)*-N-*[2-(1*H*-indol-3-yl)ethenyl]-2-propenamide, 9CI*
[142677-09-6]



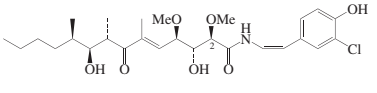
$C_{21}H_{17}N_3O$ 327.385
Alkaloid from the red alga *Chondria* sp. Cytotoxic. Shows antiviral activity. Anthelmintic agent. Yellow cryst. (MeOH aq.). Mp 193-194°. λ_{max} 208 (ε 27700); 226 (ε 31200); 278 (ε 12900); 364 (ε 26500) (MeOH) (Derep).

*(10'*Z*)-Isomer:* ***Chondriamide C***
[218774-24-4]
$C_{21}H_{17}N_3O$ 327.385
Alkaloid from *Chondria atropurpurea*. Anthelmintic agent. Yellow powder. Mp 230.5-232°. λ_{max} 208 (log ε 4.43); 275 (log ε 3.7); 358 (log ε 4.33) (MeOH).

7-Hydroxy: ***Chondriamide B***
[142677-10-9]
$C_{21}H_{17}N_3O_2$ 343.384
From *Chondria* sp. Cytotoxic. Shows mild antifungal activity. Yellow cryst. (MeOH aq.). Mp 208-209°. λ_{max} 208 (ε 27700); 226 (ε 31200); 278 (ε 12900); 364 (ε 26500) (MeOH) (Derep). λ_{max} 206 (ε 26154); 222 (ε 25134); 274 (ε 10923); 368 (ε 21846) (MeOH) (Berdy).

Palermo, J.A. *et al., Tet. Lett.*, 1992, **33**, 3097-3100 (*isol, uv, ir, pmr, cmr, ms, struct, Chondriamide B*)
Davyt, D. *et al., J. Nat. Prod.*, 1998, **61**, 1560-1563 (*Chondriamide C, isol, pmr, cmr*)
Wang, X. *et al., J.O.C.*, 2001, **66**, 8215-8221 (*synth*)

Chondrochloren A C-422



Absolute Configuration

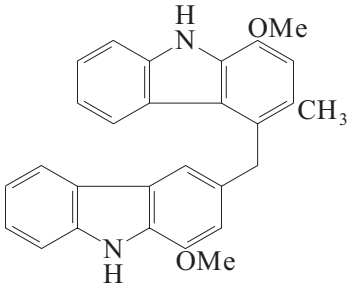
$C_{27}H_{40}ClNO_7$ 526.068
Prod. by *Chondromyces crocatus* strain Cm c5. Amorph. solid. $[\alpha]_D^{21}$ -82.4 (c, 0.9 in MeOH). λ_{max} 205 (log ε 4.47); 224 (log ε 4.47); 278 (log ε 4.38) (MeOH).

2-O-*De-Me, 2-Et ether:* ***Chondrochloren B***
$C_{28}H_{42}ClNO_7$ 540.095
Prod. by *Chondromyces crocatus* strain Cm c5. Amorph. solid. $[\alpha]_D^{21}$ -81.7 (c, 0.84 in MeOH). λ_{max} 204 (log ε 4.4); 224 (log ε 4.42); 278 (log ε 4.32) (MeOH).

Jansen, R. *et al., Eur. J. Org. Chem.*, 2003, 2684-2689 (*isol, pmr, cmr, ms*)

Chrestifoline A C-423

*1-Methoxy-4-[(1-methoxy-9*H*-carbazol-3-yl)methyl]-3-methyl-9*H*-carbazole, 9CI*
[129748-50-1]

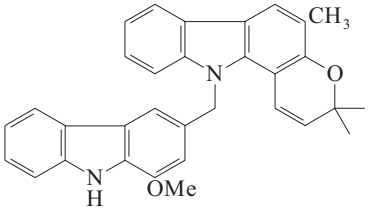


$C_{28}H_{24}N_2O_2$ 420.51
Alkaloid from the root bark of *Murraya euchrestifolia* (Rutaceae). Shows cytotoxic activity. Oil.

Ito, C. *et al., Chem. Pharm. Bull.*, 1990, **38**, 1143 (*isol, uv, ir, pmr, ms, struct*)
Itoigawa, M. *et al., J. Nat. Prod.*, 2000, **63**, 893-897 (*activity*)

Chrestifoline B C-424

*3,11-Dihydro-11-[(1-methoxy-9*H*-carbazol-3-yl)methyl]-3,3,5-trimethylpyrano[3,2-*a*]carbazole, 9CI*
[129748-51-2]

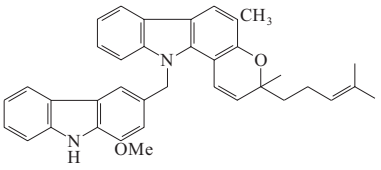


$C_{32}H_{28}N_2O_2$ 472.585
Alkaloid from the root bark of *Murraya euchrestifolia* (Rutaceae). Oil.

Ito, C. *et al., Chem. Pharm. Bull.*, 1990, **38**, 1143 (*isol, uv, ir, pmr, ms, struct*)

Chrestifoline C C-425

*3,11-Dihydro-11-[(1-methoxy-9*H*-carbazol-3-yl)methyl]-3,5-dimethyl-3-(4-methyl-3-pentenyl)pyrano[3,2-*a*]carbazole, 9CI*
[129748-52-3]

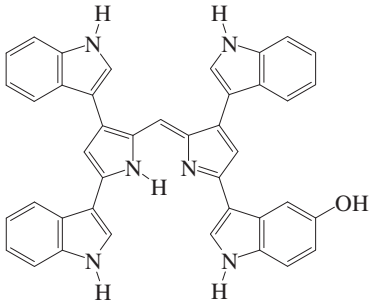


$C_{37}H_{36}N_2O_2$ 540.704
Alkaloid from the root bark of *Murraya euchrestifolia* (Rutaceae). Oil. $[\alpha]_D$ -5.6 (c, 0.054 in $CHCl_3$).

Ito, C. *et al., Chem. Pharm. Bull.*, 1990, **38**, 1143 (*isol, uv, ir, pmr, ms, struct*)

Chromoviridan C-426

[215675-75-5]



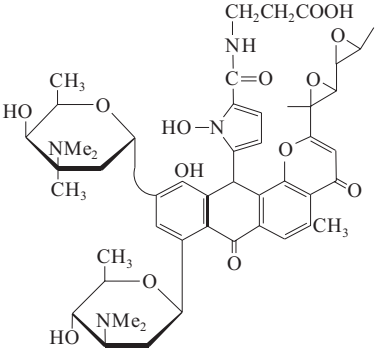
$C_{41}H_{28}N_6O$ 620.712
Prod. by *Chromobacterium violaceum*. Green pigment (Me_2CO/hexane). Mp >230°. λ_{max} 338 (ϵ 19300); 388 (ϵ 16600); 490 (ϵ 18400); 562 (ϵ 27800); 644 (ϵ 53000) (MeOH aq./pH 2).

Deoxy: ***Deoxychromoviridan***
[215675-77-7]
$C_{41}H_{28}N_6$ 604.712
Prod. by *Chromobacterium violaceum*. Green pigment (Me_2CO/hexane). Mp >230°. λ_{max} 489 (ϵ 13400); 641 (ϵ 59600) (MeOH aq./pH 2). λ_{max} 328 (ϵ 12610); 387 (ϵ 10580); 563 (ϵ 27600) (MeOH aq./pH 12).

Momen, A.Z.M.R. *et al., J.C.S. Perkin 1*, 1998, 3087-3092 (*isol, cmr, pmr, ms, ir, uv, deoxy*)

Chromoxymycin C-427

FR 900447. Antibiotic 900447
[101156-09-6]



$C_{49}H_{60}N_4O_{14}$ 929.031
Anthraquinone antibiotic related to Hedamycin. Prod. by *Streptomyces rubropurpureus* and *Streptomyces libani-rubropurpureus*. Active against gram-positive bacteria, leukaemia and melanoma. Yellow needles + $4H_2O$. Sol. MeOH; fairly sol. MeOH, Me_2CO; poorly sol. Et_2O, hexane, $CHCl_3$. Mp 85° dec. $[\alpha]_D^{23}$ +291 (c, 0.675 in H_2O). λ_{max} 272 (ϵ 37100); 330 (sh) (ϵ 7500) (H_2O/HCl) (Derep). λ_{max} 243 (ϵ 25500); 278 (ϵ 32500); 410 (ϵ 2900) (H_2O/NaOH) (Derep). λ_{max} 276 (ϵ 36200); 340 (sh) (ϵ 7400) (H_2O) (Derep).
▶ LD_{50} (mus, ivn) 1000 mg/kg. GB9140000
Kawai, Y. *et al., Tet. Lett.*, 1985, **26**, 3273 (*struct, nmr, ir*)
Hori, Y. *et al., J. Antibiot.*, 1986, **39**, 6; 12 (*isol, uv, ir, pmr, cmr*)

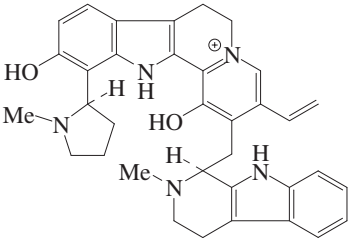
Chrycentrine C-428

$C_{18}H_{15}NO_5$ 325.32
Struct. unknown. Alkaloid from *Dicentra chrysantha*. Mp 216°.

Manske, R.H.F. *et al., Can. J. Res., Sect. B*, 1937, **15**, 274-277; *CA*, **31**, 6663[3]

Chrysopentamine C-429

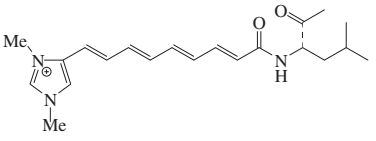
[688796-87-4]



$C_{35}H_{38}N_5O_2^{\oplus}$ 560.718
Related to Strychnopentamine, S-601. Alkaloid from the leaves of *Strychnos usambarensis*. Antiplasmodial agent. Amorph. orange powder (as chloride). λ_{max} 231 (log ϵ 3.37); 290 (log ϵ 2.92); 325 (log ϵ 2.67); 469 (log ϵ 3.12) (MeOH) (chloride).

Frédérich, M. *et al., Planta Med.*, 2004, **70**, 72-76 (*isol, uv, cd, pmr, cmr*)

Chrysophysarin A C-430



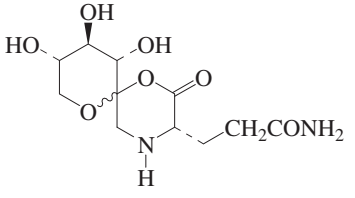
$C_{21}H_{30}N_3O_2^{\oplus}$ 356.487
Mesomeric imidazolium system.

(S)-form [262601-40-1]
Prod. by the slime mould *Physarum polycephalum*. Amorph. golden-yellow powder. λ_{max} 262 (log ϵ 0.4); 341 (log ϵ 1.28); 355 (log ϵ 1.55); 372 (log ϵ 1.15) (MeOH).

Eisenbarth, S. *et al., Tetrahedron*, 2000, **56**, 363-365

Chrysopine C-431

9,10,11-Trihydroxy-2-oxo-1,7-dioxa-4-azaspiro[5.5]undecane-3-propanamide, 9CI
[177031-46-8]

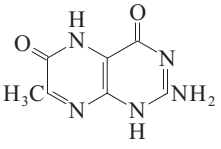


$C_{11}H_{18}N_2O_7$ 290.272
Isol. from *Agrobacterium tumefaciens*. Crown gall opine.

Vaudequin-Dransart, V. *et al., CA*, 1995, **123**, 29164a

Chrysopterin C-432

2-Amino-1,5-dihydro-7-methyl-4,6-pteridinedione, 9CI. 7-Methylxanthopterin
[492-10-4]

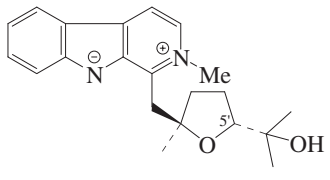


$C_7H_7N_5O_2$ 193.165
Pigment of wings of *Gonepteryx rhamni*. Yellow needles.

Schöpf, C. *et al., Annalen*, 1933, **507**, 266; 1936, **524**, 49
Tschesche, R. *et al., Chem. Ber.*, 1951, **84**, 641
Williams, V.P. *et al., J. Het. Chem.*, 1973, **10**, 827 (*ms*)

Chrysotricine C-433

[200884-09-9]



$C_{21}H_{26}N_2O_2$ 338.449
Alkaloid from *Hedyotis chrysotricha* (Rubiaceae). Yellow prisms (MeOH/AcOH). Mp 160-161°. $[\alpha]_D$ +26 (c, 0.05 in MeOH). λ_{max} 255 ; 309 ; 376 (MeOH).

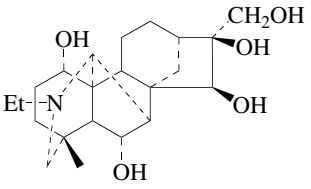
N-*De-Me (9H):* ***Cyclocapitelline***
$C_{20}H_{24}N_2O_2$ 324.422
Alkaloid from *Hedyotis capitellata*. Amorph. yellow solid. $[\alpha]_D$ +43 (c, 0.5 in $CHCl_3$). λ_{max} 242 (log ϵ 4.3); 289 (log ϵ 4.07); 338 (log ϵ 3.59) (EtOH).

5′-Epimer: ***Isochrysotricine***
[259821-82-4]
$C_{21}H_{26}N_2O_2$ 338.449
Alkaloid from *Hedyotis capitellata*. Amorph. yellow solid (as monohydrochloride). $[\alpha]_D$ -110 (c, 0.5 in MeOH) (monohydrochloride). λ_{max} 210 (log ϵ 4.13); 250 (log ϵ 4.05); 311 (log ϵ 3.95) (EtOH) (monohydrochloride).

5′-Epimer, N-*de-Me:* ***Isocyclocapitelline***
$C_{20}H_{24}N_2O_2$ 324.422
Alkaloid from *Hedyotis capitellata*. Yellow prisms (Me_2CO). Mp 199-200°. $[\alpha]_D$ -75 (c, 0.5 in $CHCl_3$). λ_{max} 242 (log ϵ 4.36); 290 (log ϵ 4.14); 339 (log ϵ 3.62) (EtOH).

Peng, J.-N. *et al., Phytochemistry*, 1997, **46**, 1119-1121 (*isol, uv, ir, pmr, cmr, ms*)
Phuong, N.M. *et al., Phytochemistry*, 1999, **52**, 1725-1729 (*Isochrysotricine, Cyclocapitelline, Isocyclocapitelline*)
Mahboobi, S. *et al., Monatsh. Chem.*, 2000, **131**, 383-392 (*synth, uv, pmr, cmr, cryst struct*)
Zhang, J.-X. *et al., Tet. Lett.*, 2000, **41**, 2211-2213 (*synth*)
Wang, G.X. *et al., Chin. Chem. Lett.*, 2001, **12**, 199-202 (*synth*)
Volz, F. *et al., Org. Biomol. Chem.*, 2007, **5**, 1519-1521 (*Isochrysotricine, Isocyclocapitelline, synth*)

Chuanfumine C-434



$C_{22}H_{35}NO_5$ 393.522
Alkaloid from roots of *Aconitum carmichaeli*.

Wei, X.-Y. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 1990, **2**, 57
Yunusov, M.S. *et al., Nat. Prod. Rep.*, 1993, **10**, 471 (*rev*)

Chuan-wu base A C-435

[1355-57-3]

$C_{23}H_{37}NO_6$ 423.548
Struct. unknown. Tertiary base with 2OH, 2OMe and one *N*-Et groups. Alkaloid from the Chinese drug Chuan-wu (*Aconitum carmichaeli*, Ranunculaceae). Mp 111°. $[\alpha]_D^{22}$ 0 ($CHCl_3$).

Ch'en, Y. *et al., Yaoxue Xuebao*, 1965, **12**, 435-439; *CA*, **63**, 16400c

Chuan-wu base B C-436

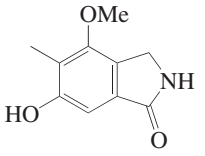
[1355-58-4]

$C_{32}H_{35}NO_4$ 497.633
Struct. unknown. Alkaloid from the Chinese drug Chuan-wu (*Aconitum carmichaeli*, Ranunculaceae). Mp 185°. $[\alpha]_D^{23.3}$ 0 ($CHCl_3$).

Ch'en, Y. *et al., Yaoxue Xuebao*, 1965, **12**, 435-439; *CA*, **63**, 16400c

Cichorine C-437

*2,3-Dihydro-6-hydroxy-4-methoxy-5-methyl-1*H*-isoindol-1-one, 9CI. 6-Hydroxy-4-methoxy-5-methylphthalimidine*
[114090-43-6]



$C_{10}H_{11}NO_3$ 193.202
Metab. of *Aspergillus silvaticus*. Also from *Alternaria cichorii*. Phytotoxin. Cryst. powder. Mp 217° subl. λ_{max} 212 (log ϵ 3.95); 252 (log ϵ 3.29); 295 (log ϵ 2.98) (EtOH).

O-*(3-Methyl-2-butenyl):* ***Zinnimidine***
[148717-77-5]
$C_{15}H_{19}NO_3$ 261.32
Metab. of *Alternaria cichorii* and *Alternaria porri*. Phytotoxin. Needles. Mp 136-138°. λ_{max} 213 (ϵ 53700); 252 (ϵ 10964); 292 (ϵ 4677) (MeOH) (Berdy).

O-*(3-Methyl-2-butenyl),* N-*(2-hydroxyethyl):* ***Porritoxin***
[143114-82-3]
$C_{17}H_{23}NO_4$ 305.373
Isol. from the fungi *Alternaria porri* and *Alternaria solani*. Phytotoxin. Inhibits lettuce seedling growth at 10ppm concentration. Needles. Mp 115-116°. Struct. revised in 2002. λ_{max} 215 (ϵ 53700); 255 (ϵ 11750); 292 (ϵ 4000) (MeOH) (Berdy).

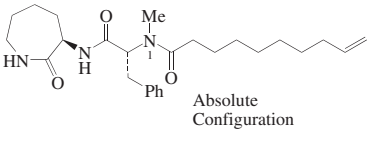
O-*(3-Methyl-2-butenyl),* N-*(2-sulfoethyl):* ***Porritoxinsulfonic acid***
$C_{17}H_{23}NO_7S$ 385.437
Isol. from *Alternaria porri*. Phytotoxin. Amorph. solid. Mp 199.5-201.7°. λ_{max} 218 (log ϵ 4.3); 254 (log ϵ 3.8); 289 (log ϵ 3.4) (MeOH).

O-*(4-Hydroxy-3-methyl-2Z-butenyl):* ***Z-Hydroxyzinnimidine***
$C_{15}H_{19}NO_4$ 277.319
Metab. of *Alternaria cichorii*. Solid ($CHCl_3$/MeOH, 1:1). Mp not reported.

Kawahara, N. *et al., Chem. Pharm. Bull.*, 1988, **36**, 398-400 (*Cichorine*)
Suemitsu, R. *et al., Phytochemistry*, 1992, **31**, 2325-2326; 1995, **38**, 495-497 (*Porritoxin, Zinnimidine*)
Stierle, A. *et al., Phytochemistry*, 1993, **32**, 1145-1149 (*Cichorine, Zinnimidine, Z-Hydroxyzinnimidine*)
Horiuchi, M. *et al., J. Nat. Prod.*, 2002, **65**, 1204-1205 (*Porritoxin, pmr, cmr, struct*)
Horiuchi, M. *et al., Biosci., Biotechnol., Biochem.*, 2003, **67**, 1580-1583 (*Porrritoxinsulfonic acid*)
Cornella, I. *et al., J.O.C.*, 2004, **69**, 2191-2193 (*Porritoxin, synth*)
Moreau, A. *et al., J.O.C.*, 2006, **71**, 3303-3305 (*Porritoxin, synth*)

Ciliatamide A C-438

[1008161-75-8]



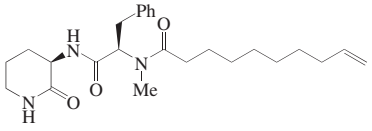
$C_{26}H_{39}N_3O_3$ 441.612
Constit. of *Aaptos ciliata*. Yellow oil. $[\alpha]_D^{20}$ +40 (c, 0.05 in MeOH). λ_{max} 206 (ϵ 29000) (MeOH).

N^1-*Deacyl,* N^1-*octanoyl:* ***Ciliatamide B***
[1008161-87-2]
$C_{24}H_{37}N_3O_3$ 415.575
Constit. of *Aaptos ciliata*. Yellow oil. $[\alpha]_D^{20}$ +55 (c, 0.1 in MeOH). λ_{max} 206 (ϵ 15000) (MeOH).

Nakao, Y. *et al., J. Nat. Prod.*, 2008, **71**, 469-472 (*isol, pmr, cmr*)
Lewis, J.A. *et al., Org. Lett.*, 2008, **10**, 4545-4548 (*synth, config*)

Ciliatamide C C-439

[1008161-89-4]

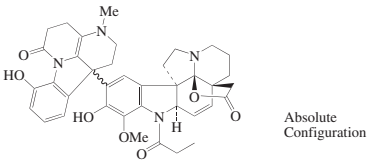


$C_{25}H_{37}N_3O_3$ 427.586
Constit. of *Aaptos ciliata*. Yellow oil. $[\alpha]_D^{26}$ +74 (c, 0.1 in MeOH). λ_{max} 203 (ϵ 13600) (MeOH).

Nakao, Y. *et al., J. Nat. Prod.*, 2008, **71**, 469-472 (*isol, pmr, cmr*)
Lewis, J.A. *et al., Org. Lett.*, 2008, **10**, 4545-4548 (*synth, config*)

Cimiciduphytine C-440

[138842-99-6]



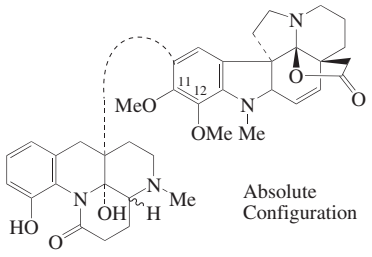
Absolute Configuration

$C_{38}H_{40}N_4O_7$ 664.757
Alkaloid from *Haplophyton cimicidum* (Apocynaceae). Small plates (EtOH). Mp 287-290° dec. λ_{max} 223 (ϵ 42000); 260 (ϵ 16000); 290 (ϵ 3000) (EtOH).

Adesomoju, A.A. *et al., Heterocycles*, 1991, **32**, 1461-1462 (*isol, uv, ir, ms, pmr, struct*)

Cimiciphytine C-441

[68353-31-1]



Absolute Configuration

$C_{37}H_{42}N_4O_7$ 654.761
Alkaloid from *Haplophyton cimicidum*. Prod. in low yield by redn. of Haplophytine, H-58 (Apocynaceae). Needles (EtOH). Mp 210-212°. $[\alpha]_D$ -146 (c, 0.1 in $CHCl_3$). λ_{max} 222 (ϵ 44000); 270 (ϵ 17400); 315 (ϵ 2300) (EtOH).

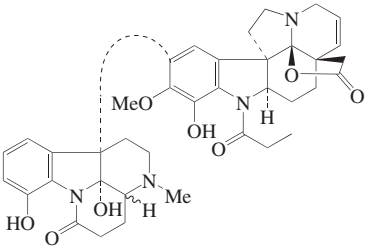
O^{11}-De-Me: ***Norcimiciphytine***
[68353-32-2]
$C_{36}H_{40}N_4O_7$ 640.735
Alkaloid from *Haplophyton cimicidum* (Apocynaceae). Mp 240° dec. $[\alpha]_D$ -115 (c, 0.086 in $CHCl_3$). λ_{max} 222 (ϵ 26750); 265 (ϵ 9604) (EtOH).

O^{12}-De-Me: ***Crooksiine***
[135574-52-6]
$C_{36}H_{40}N_4O_7$ 640.735
Alkaloid from *Haplophyton crooksii* (Apocynaceae). Possesses antiacetylcholinesterase activity. Mp 335° dec.

Lakshmikantham, M.V. *et al., Heterocycles*, 1978, **9**, 1009-1013 (*Cimiciphytine, Norcimiciphytine*)
Mroue, M. *et al., Phytochemistry*, 1991, **30**, 1741-1744 (*Crooksiine*)

Cimilophytine C-442

[86527-32-4]

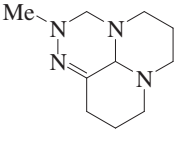


$C_{38}H_{42}N_4O_8$ 682.772
Alkaloid from *Haplophyton cimicidum*. Cryst. ($CHCl_3$/EtOH). Mp 325° dec. $[\alpha]_D^{20}$ -84.9 (EtOH). λ_{max} 228 (32800); 266 (15900); 300 (4000) (EtOH).

Adesomoju, A.A. *et al., J.O.C.*, 1983, **48**, 3015-3017 (*isol, uv, ir, pmr, cmr, ms, struct*)

Cinachyramine C-443

*2,5,6,8,9,9*b*-Hexahydro-2-methyl-3*H*,4*H*,7*H*-1,2,3*a*,6*a*-tetraazaphenalene, 9CI*
[879490-03-6]
[879490-05-8 (trifluoroacetate)]

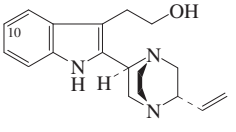


$C_{10}H_{18}N_4$ 194.279
Constit. of *Cinachyrella* sp. Oil (as trifluoroacetate salt).

Shimogawa, H. *et al., Tet. Lett.*, 2006, **47**, 1409-1411 (*isol, cd, pmr, cmr*)

Cinchonamine C-444

[482-28-0]



Absolute Configuration

$C_{19}H_{24}N_2O$ 296.411
Alkaloid from *Remijia purdieana* and *Cinchona pubescens* (Rubiaceae). Shows no antimalarial props. Mp 185-186°. $[\alpha]_D^{25}$ +128 (c, 0.3 in EtOH).

Nitrate: Mp 227° dec.

Methiodide: Mp 208-209°.

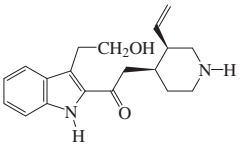
Aldehyde: Cinchonaminal
[29560-34-7]
$C_{19}H_{22}N_2O$ 294.396
Prob. intermed. in biosynth. of cinchona alkaloids. Not yet characterised as a nat. prod.

10-Methoxy: ***10-Methoxycinchonamine***
[83852-64-6]
$C_{20}H_{26}N_2O_2$ 326.438
Minor alkaloid from the leaves of *Cinchona ledgeriana* (Rubiaceae).

Arnaud, M. *et al., C. R. Hebd. Seances Acad. Sci.*, 1881, **93**, 593; 1883, **97**, 174 (*isol*)
Goutarel, R. *et al., Helv. Chim. Acta*, 1950, **33**, 150 (*ir, uv, struct*)
Wenkert, E. *et al., J.A.C.S.*, 1959, **81**, 1474 (*config*)
Sawa, Y.K. *et al., Tetrahedron*, 1970, **26**, 2923 (*config*)
Grethe, G. *et al., Helv. Chim. Acta*, 1976, **59**, 2268 (*synth, uv, ir, pmr, ms*)
Mulder-Krieger, T. *et al., Pharm. Weekbl., Sci. Ed.*, 1982, 91 (*cmr*)
Mulder-Krieger, T. *et al., Planta Med.*, 1982, **46**, 19; 1984, **50**, 17 (*10-Methoxycinchonamine*)

Cinchonaminone C-445

*2-(3-Ethenyl-4-piperidinyl)-1-[3-(2-hydroxyethyl)-1*H*-indol-2-yl]ethanone, 9CI*
[121053-50-7]



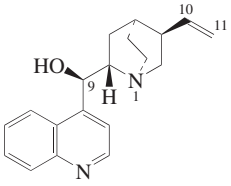
Absolute Configuration

$C_{19}H_{24}N_2O_2$ 312.411
Alkaloid from *Cinchona succirubra*. Monoamine oxidase inhibitor. Pale yellow powder + $1H_2O$. $[\alpha]_D^{22}$ +10 (c, 0.35 in EtOH). λ_{max} 237 (log ϵ 4.14); 312 (log ϵ 4.23) (EtOH).

Mitsui, N. *et al., Chem. Pharm. Bull.*, 1989, **37**, 363-366 (*isol, pmr, cmr, ms*)

Cinchonidine C-446

Cinchonan-9-ol, 9CI. α-Quinidine
[485-71-2]



Absolute Configuration

$C_{19}H_{22}N_2O$ 294.396
Stereoisomeric with Cinchonine, C-447. Alkaloid from *Cinchona tucujensis*, main base of *Cinchona succirubra*, present in many other *Cinchona* spp., also in *Remijia* spp., and the leaves of *Olea europaea* and *Ligustrum vulgare* (Rubiaceae, Oleaceae). Resolving agent, chiral cocatalyst. Antimalarial agent. Mp 210.5° (205°). $[\alpha]_D$ -110 (EtOH). λ_{max} 283 (ϵ 5190); 301 (ϵ 3940); 314 (ϵ 3000) (MeOH).
▶ LD_{50} (rat, ipr) 206 mg/kg. GD2975000

Hydrochloride (1:2): Mp 242°.

Hydroiodide: Mp 215-220°.

O-*Benzoyl:* Mp 208-211° (183°).

N^1-*Benzyl:* [69257-04-1]

$C_{26}H_{29}N_2O^{\oplus}$ 385.528
Chiral phase-transfer catalyst (as chloride). Mp 210° dec. (chloride). $[\alpha]_D^{20}$ -180 (c, 1.3 in H_2O) (chloride).

Ketone: ***Cinchonidinone****. Cinchonan-9-one. Cinchoninone*
[14509-68-3]
$C_{19}H_{20}N_2O$ 292.38
Shown to be a nat. prod. in *Cinchona ledgeriana* (Rubiaceae).

10,11-Dihydro: ***Hydrocinchonidine****. 10,11-Dihydrocinchonan-9-ol, 9CI. 10,11-Dihydrocinchonidine. Cinchamidine*
[485-64-3]
$C_{19}H_{24}N_2O$ 296.411
Minor base normally accompanying cinchonidine in *Cinchona* spp. (Rubiaceae). Antimalarial. Leaflets (EtOH). Mp 232° (229°). $[\alpha]_D$ -98.4 (EtOH).

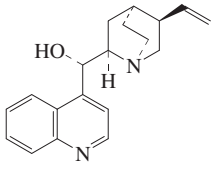
10,11-Dihydro; hydrochloride:
Prisms + $2H_2O$. V. sol. H_2O. Mp 202.3° (anhyd.). $[\alpha]_D$ -98.4.

[524-61-8 , 5948-98-1]

Goutarel, R. *et al., Helv. Chim. Acta*, 1950, **33**, 150-164 (*ir, uv*)
Lyle, G.G. *et al., Tetrahedron*, 1967, **23**, 3253-3263 (*config*)
Kamath, B.R. *et al., Indian J. Chem.*, 1968, **6**, 510-511 (*uv*)
Battersby, A.R. *et al., Chem. Comm.*, 1971, 30-31; 31-32 (*biosynth*)
Schneider, G. *et al., Planta Med.*, 1972, **22**, 109-116 (*isol*)
Moreland, C.G. *et al., J.O.C.*, 1974, **39**, 2413-2416 (*cmr*)
Oleksyn, B. *et al., Acta Cryst. B*, 1982, **38**, 1832-1834 (*cryst struct*)
Ihara, M. *et al., Chem. Comm.*, 1986, 573-574 (*synth, 10,11-dihydro*)
Bürgi, T. *et al., J.A.C.S.*, 1998, **120**, 12920-12926 (*pmr, conformn*)
Olsen, R.A. *et al., J.A.C.S.*, 2006, **128**, 15594-15595 (*pmr, conformn*)

Cinchonine C-447

Cinchonan-9-ol, 9CI
[118-10-5]



Absolute Configuration

$C_{19}H_{22}N_2O$ 294.396
Stereoisomeric with Cinchonidine, C-446. Alkaloid from *Cinchona officinalis* and all *Cinchona* spp. and from some *Remijia* spp., e.g. *Remijia pedunculata* and *Remijia purdieana*, and from the leaves of *Olea europaea* and *Ligustrum vulgare* (Rubiaceae, Oleaceae). Resolving agent, chiral cocatalyst. Used in precipitation and separation of W(*VI*) and as a 1% soln. in dil. HNO_3 for detn. of Bi. Antimalarial. Cryst. Mp 264° Mp 255°. $[\alpha]_D$ +229 (EtOH). Log P 2.64 (calc). λ_{max} 284 (ϵ 5270); 301 (ϵ 3860); 314 (ϵ 3020) (MeOH). λ_{max} 225 (log ϵ 3.9); 284 (sh) (log ϵ 3.2); 314 (sh) (log ϵ 4) (EtOH).
▶ LD_{50} (rat, ipr) 152 mg/kg. GD3500000
Hydrochloride: [5949-11-1]
[24302-67-8]
Mp 217-218°.
Sulfate: [5949-16-6]
Mp 206°.
▶ GD3800000
N-*Me:*
$C_{20}H_{25}N_2O^{\oplus}$ 309.43
Mp 269-270° (as iodide).
O-*Benzoyl:* Mp 106-107°.
N-*Benzyl:* [69221-14-3]
$C_{26}H_{29}N_2O^{\oplus}$ 385.528
Chiral phase transfer catalyst (as chloride). Mp 256° dec. (chloride).

10,11-Dihydro: ***Hydrocinchonine****. (9S)-10,11-Dihydrocinchonan-9-ol, 9CI. 10,11-Dihydrocinchonine. Cinchotine. ψ-Cinchonine. Pseudocinchonine. Cinchonifine*
[485-65-4]
$C_{19}H_{24}N_2O$ 296.411
Minor congener of Cinchonine from *Cinchona* spp., *Remijia* spp. and *Olea europaea* (Rubiaceae, Oleaceae). Antimalarial. Prisms. Mp 268-269°. $[\alpha]_D^{14}$ +204.5 (EtOH). Log P 3.12 (calc).

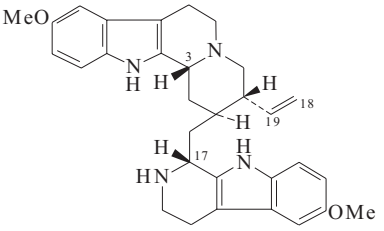
10,11-Dihydro; hydrochloride: Mp 220-221°.

N-*[4-(Trifluoromethyl)benzyl]:* N-*[4-(Trifluoromethyl)benzyl]cinchoninium*
[95088-20-3]
[205441-34-5]
$C_{27}H_{28}F_3N_2O^{\oplus}$ 453.526
Chiral phase transfer catalyst. Mp 245°. Comly. available as bromide.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 864C (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 439A (*nmr*)
Hesse, O. *et al., Ber.*, 1871, **4**, 818-820; 1883, **16**, 58-63 (*isol*)
Rabe, P. *et al., Ber.*, 1908, **41**, 62-70 (*struct*)
Potratz, A.H. *et al., Anal. Chem.*, 1949, **21**, 1276-1279 (*detn, Bi*)
Goutarel, R. *et al., Helv. Chim. Acta*, 1950, **33**, 150-164 (*ir, uv*)
Lyle, G.G. *et al., Tetrahedron*, 1967, **23**, 51; 3253-3263 (*uv, ord, config, pmr*)
Kamath, B.R. *et al., Indian J. Chem.*, 1968, **6**, 510-511 (*uv*)
Battersby, A.R. *et al., Chem. Comm.*, 1971, 30-31; 31-32 (*biosynth*)
Schneider, G. *et al., Planta Med.*, 1972, **22**, 109-116 (*isol, uv*)
Norwitz, G. *et al., Anal. Chim. Acta*, 1974, **69**, 59-68 (*use*)
Moreland, C.G. *et al., J.O.C.*, 1974, **39**, 2413-2416 (*cmr*)
Oleksyn, B. *et al., Acta Cryst. B*, 1979, **35**, 440-444 (*cryst struct*)
Ihara, M. *et al., Chem. Comm.*, 1986, 573-574 (*synth*)
Hughes, O.L. *et al., J.O.C.*, 1987, **52**, 4745-4752 (*trifluoromethylbenzyl bromide*)
Fieser and Fieser's Reagents for Organic Synthesis, Wiley, 1988, **13**, 264; 1989, **14**, 326-327; 1990, **15**, 340 (*trifluoromethylbenzyl bromide, use*)
Encyclopaedia of Reagents for Organic Synthesis, (ed. Paquette, L.A.), Wiley, 1995, **7**, 5156-5158 (*trifluoromethylbenzyl, bromide, use*)
Ruiz-Mesia, L. *et al., J. Agric. Food Chem.*, 2005, **53**, 1921-1926 (*isol, pmr, cmr, ms*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, CMP925

Cinchophyllamine C-448

3β,17β-Cinchophylline
[10438-16-1]
[1355-62-0]



$C_{31}H_{36}N_4O_2$ 496.651
CAS gives different systematic names to Cinchophyllamine and Cinchophylline, which is a general name for the various stereoisomers of this struct. Alkaloid from the leaves of *Cinchona ledgeriana* (Rubiaceae). Active against gram-positive bacteria. Mp 143-145°. $[\alpha]_D$ +8 (c, 0.7 in $CHCl_3$). λ_{max} 207 (log ϵ 4.31); 228 (log ϵ 4.38); 281 (log ϵ 3.93) (EtOH).
▶ RC1210000

18,19-Dihydro: ***18,19-Dihydrocinchophyllamine***
[10438-18-3]
$C_{31}H_{38}N_4O_2$ 498.667
Alkaloid from the leaves of *Cinchona ledgeriana* (Rubiaceae). Active against gram-positive bacteria. Noncryst.

3-Epimer: ***3-Epicinchophyllamine****. 17-Epiisocinchophyllamine. 3α,17β-Cinchophylline*
$C_{31}H_{36}N_4O_2$ 496.651
Alkaloid from the leaves of *Cinchona ledgeriana* (Rubiaceae). Active against gram-positive bacteria. Cryst. (CH_2Cl_2). Mp 159-160°. $[\alpha]_D$ +19 (c, 0.6 in $CHCl_3$). λ_{max} 228 (log ϵ 4.71); 282 (log ϵ 4.23); 296 (log ϵ 4.18); 308 (log ϵ 3.91) (EtOH).

3-Epimer, 4′,17-didehydro: ***Dehydroisocinchophyllamine****. 17,4′-Dehydro-3α-cinchophylline*
[77500-49-3]
$C_{31}H_{34}N_4O_2$ 494.635
Alkaloid from the leaves of *Cinchona ledgeriana* (Rubiaceae). Active against gram-positive bacteria. Noncryst. $[\alpha]_D$ +75.5 (c, 0.75 in $CHCl_3$). λ_{max} 216 (log ϵ 4.63); 297 (log ϵ 4.07); 309 (log ϵ 4.05) (EtOH).

3-Epimer, 4′,5′,6′,17-tetradehydro: ***Tetradehydroisocinchophyllamine****. 17,4′,5′,6′-Tetradehydro-3α-cinchophylline*
[77500-48-2]
$C_{31}H_{32}N_4O_2$ 492.619
Alkaloid from the leaves of *Cinchona ledgeriana* (Rubiaceae). Noncryst. $[\alpha]_D$ +15 (c, 0.36 in $CHCl_3$). λ_{max} 218 (log ϵ 4.52); 231 (log ϵ 4.6); 248 (sh) (log ϵ 4.3); 259 (sh) (log ϵ 4.15); 290 (log ϵ 4.14); 298 (log ϵ 4.25) (EtOH).

17-Epimer: ***17-Epicinchophyllamine****. 3β,17α-Cinchophylline*
[77646-14-1]
$C_{31}H_{36}N_4O_2$ 496.651
Alkaloid from the leaves of *Cinchona ledgeriana* (Rubiaceae). Active against

gram-positive bacteria. Noncryst. $[\alpha]_D$ -87.5 (c, 0.6 in $CHCl_3$). λ_{max} 227 (log ϵ 4.66); 282 (log ϵ 4.17); 296 (log ϵ 4.11); 308 (log ϵ 3.81) (EtOH).

3,17-Diepimer: ***Isocinchophyllamine****. 3α,17α-Cinchophylline. 3-Epi-17-epicinchophyllamine*
[10438-17-2]
$C_{31}H_{36}N_4O_2$ 496.651
Alkaloid from the leaves of *Cinchona ledgeriana* (Rubiaceae). Active against gram-positive bacteria. Cryst. (CH_2Cl_2). Mp 144°. $[\alpha]_D$ +7 (c, 0.6 in $CHCl_3$). λ_{max} 228 (log ϵ 4.74); 282 (log ϵ 4.26); 297 (log ϵ 4.2); 308 (log ϵ 3.96) (EtOH) (Berdy).

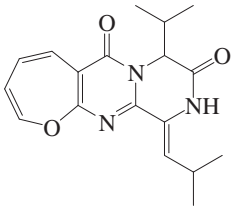
3,17-Diepimer, N-*Ac:* Mp 238°. $[\alpha]_D$ +121 (c, 0.35 in $CHCl_3$).

3,17-Diepimer, 18,19-dihydro: Mp 163°. $[\alpha]_D$ +21 (c, 0.35 in $CHCl_3$).

Potier, P. *et al., Bull. Soc. Chim. Fr.*, 1966, 2309-2319 (*Cinchophyllamine, Isocinchophyllamine, uv, ir, pmr, ms*)
Guilhelm, J. *et al., Acta Cryst. B*, 1974, **30**, 742-747 (*Isocinchophyllamine, cryst struct*)
Zeches, M. *et al., Phytochemistry*, 1980, **19**, 2451 (*Cinchona ledgeriana constits*)
Carou, C. *et al., Planta Med.*, 1988, **54**, 409-412 (*activity*)

Cinereain C-449

*10,11-Dihydro-8-(1-methylethyl)-11-(2-methylpropylidene)-6*H*-oxepino[2,3-*d*]pyrazino[1,2-*a*]pyrimidine-6,9(8*H*)-dione, 9CI*
[117013-51-1]

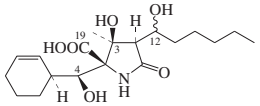


$C_{18}H_{21}N_3O_3$ 327.382
Isol. from *Botrytis cinerea* ATCC 64157 on sunflower seed. Plant growth regulator. Phytotoxin. Ruby-red cryst. (Me_2CO). Sol. MeOH, EtOAc; poorly sol. H_2O. Mp 201-203°. λ_{max} 238 (ϵ 10471); 276 (ϵ 8710); 371 (ϵ 1230) (EtOH) (Berdy).

Cutler, H.G. *et al., Agric. Biol. Chem.*, 1988, **52**, 1725-1733 (*isol, struct, props*)

Cinnabaramide D C-450

[744200-69-9]



Absolute Configuration

$C_{19}H_{31}NO_6$ 369.457
Related to Lactacystin, L-6 and Salinosporamide A, S-28. Prod. by *Streptomyces* sp. strain JS360. Needles. $[\alpha]_D$ 0. λ_{max} 202 (log ϵ 4.05) (MeOH).

(19→3)-Lactone: ***Cinnabaramide B***
[744200-67-7]
$C_{19}H_{29}NO_5$ 351.442
Prod. by *Streptomyces* sp. strain JS360. Amorph. solid. $[\alpha]_D$ -140 (c, 0.5 in MeOH). λ_{max} 201 (log ϵ 4.12); 225 (log ϵ 3.54) (MeOH).

12-Deoxy: ***Cinnabaramide E***
[744200-72-4]
$C_{19}H_{31}NO_5$ 353.458
Prod. by *Streptomyces* sp. strain JS360. Needles. $[\alpha]_D^{20}$ -23 (c, 0.1 in MeOH). λ_{max} 201 (log ϵ 4) (MeOH).

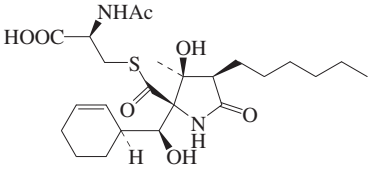
12-Deoxy, (19→3)-lactone: ***Cinnabaramide A***
[744200-66-6]
$C_{19}H_{29}NO_4$ 335.442
Prod. by *Streptomyces* sp. strain JS360. Cryst. $[\alpha]_D^{20}$ -93 (c, 0.5 in MeOH). λ_{max} 202 (log ϵ 4.24); 227 (log ϵ 3.68) (MeOH).

4,12-Dideoxy, (19→3)-lactone: ***Cinnabaramide C***
[744200-68-8]
$C_{19}H_{29}NO_3$ 319.443
Prod. by *Streptomyces* sp. strain JS360. Amorph. solid. $[\alpha]_D^{20}$ -80 (c, 0.5 in MeOH). λ_{max} 202 (log ϵ 4.19); 223 (log ϵ 3.76) (MeOH).

Stadler, M. *et al., J. Nat. Prod.*, 2007, **70**, 246-252 (*isol, pmr, cmr, cryst struct*)
Ma, G. *et al., Org. Lett.*, 2007, **9**, 2143-2146 (*synth*)

Cinnabaramide F C-451

[744215-21-2]



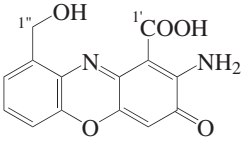
$C_{24}H_{38}N_2O_7S$ 498.639
Related to Lactacystin, L-6 and Salinosporamide A, S-28. Prod. by *Streptomyces* sp. strain JS360. Proteasome inhibitor. Amorph. solid. $[\alpha]_D^{20}$ +37 (c, 0.5 in MeOH). λ_{max} 202 (log ϵ 4.15); 234 (log ϵ 3.7) (MeOH).

Me ester: ***Cinnabaramide G***
[744215-22-3]
$C_{25}H_{40}N_2O_7S$ 512.666
Prod. by *Streptomyces* sp. strain JS360. Proteasome inhibitor. Amorph. solid. $[\alpha]_D^{20}$ +24 (c, 0.5 in MeOH). λ_{max} 202 (log ϵ 4.16); 230 (log ϵ 3.71) (MeOH).

Stadler, M. *et al., J. Nat. Prod.*, 2007, **70**, 246-252 (*isol, pmr, cmr*)

Cinnabarine C-452

*2-Amino-9-hydroxymethyl-3-oxo-3*H*-phenoxazine-1-carboxylic acid, 9CI. Polystictin*
[146-90-7]



$C_{14}H_{10}N_2O_5$ 286.243
Pigment of *Trametes cinnabarina, Coriolus sanguineus, Polystictus cinnabarinus* and *Pycnoporus sanguineus.* Active against *Staphylococcus aureus* and fungi. Orange-yellow cryst. or red needles (Py or $PhNO_2$/anisole). Mp 320° (300° dec.).

Me ester:
Orange cryst. Mp 252° dec.

O-*Ac:* **O-*Acetylcinnabarine***
[133076-09-2]
$C_{16}H_{12}N_2O_6$ 328.281
Isol. from *Pycnoporus sanguineus.* Red needles (Me_2CO/petrol). Mp 250-252° dec.

O-*Ac, Me ester:*
Orange cryst. Mp 234° dec.

N-*Me, Me ester:* [133056-32-3]
$C_{16}H_{14}N_2O_5$ 314.297
Isol. from *Pycnoporus sanguineus.* Red cryst. Mp 182° dec.

Me ether:
Red needles (Me_2CO aq. or EtOAc/petrol). Mp 183-185° Mp 200-202° dec. (variable).

*1″-Aldehyde: 2-Amino-9-formyl-3-oxo-3*H*-phenoxazine-1-carboxylic acid, 9CI*
[133056-33-4]
$C_{14}H_8N_2O_5$ 284.228
Isol. from *Pycnoporus sanguineus.* Mp 228° dec. (as Me ester). Isol. as Me ester.

*1″-Carboxylic acid: 2-Amino-3-oxo-3*H*-phenoxazine-1,9-dicarboxylic acid, 9CI.* ***Cinnabarinic acid****. Cinnabaric acid*
[606-59-7]
$C_{14}H_8N_2O_6$ 300.227
Minor constit. of *Pycnoporus sanguineus.* Major component of free pigment of red kangaroo (*Megaleia rufa*) hair. Dark brown cryst. (Py). Dec. >300° without melting.

*1′-Aldehyde, 1″-carboxylic acid: 2-Amino-1-formyl-3-oxo-3*H*-phenoxazine-9-carboxylic acid, 9CI.* ***Tramesanguin***
[34083-17-5]
$C_{14}H_8N_2O_5$ 284.228
Pigment from the fungus *Trametes cinnabarina.* Yellow (?) cryst. (Py). Dec. without melting >250°.

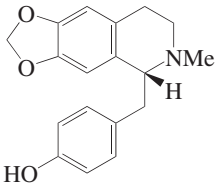
1′-Aldehyde, 1″-carboxylic acid, Me ester:
Orange cryst. (C_6H_6/$CHCl_3$). Mp 245-250°.

Gripenberg, J. *et al., Acta Chem. Scand.*, 1951, **5**, 590; 1957, **11**, 1485; 1958, **12**, 603 (*struct*)
Lemberg, R. *et al., Aust. J. Exp. Biol. Med. Sci.*, 1952, **30**, 271 (*isol*)
Cavill, G.W.K. *et al., Proc. Chem. Soc., London*, 1957, 346 (*isol, struct*)
Gripenberg, J. *et al., Acta Chem. Scand.*, 1963, **17**, 703 (*Tramesanguin*)
Subba Rao, P.V. *et al., Biochem. J.*, 1965, **95**, 628 (*synth, Cinnabarinic acid*)
Subba Rao, P.V. *et al., Arch. Biochem. Biophys.*, 1966, **115**, 27 (*biosynth, Cinnabarinic acid*)
Schäfer, W. *et al., Tet. Lett.*, 1968, 2161 (*synth*)
Schäfer, W. *et al., Tetrahedron*, 1972, **28**, 5261 (*uv*)
Prinz, W. *et al., Hoppe-Seyler's Z. Physiol. Chem.*, 1977, **358**, 1161 (*synth, Cinnabarinic acid*)
Achenbach, H. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1991, **324**, 3 (*derivs*)

Giurg, M. *et al., Synth. Commun.*, 2007, **37**, 1779-1789 (*Cinnabarinic acid, synth*)

Cinnamolaurine C-453

4-[(5,6,7,8-Tetrahydro-6-methyl-1,3-dioxolo[4,5-g]isoquinolin-5-yl)methyl]phenol, 9CI. 1,2,3,4-Tetrahydro-1-(4-hydroxybenzyl)-6,7-methylenedioxyisoquinoline



$C_{18}H_{19}NO_3$ 297.353

(*R*)-*form* [25866-03-9]
Alkaloid from the bark of an unidentified New Guinea *Cinnamomum* sp. (Lauraceae). Prisms (EtOH). Mp 212-213° dec. $[\alpha]_D^{25}$ -100 (c, 0.75 in EtOH). λ_{max} 287 (log ϵ 3.72) (no solvent reported).

Hydrochloride: Mp 230-233° dec.

N-*De-Me:* **Norcinnamolaurine**
[34168-00-8]
$C_{17}H_{17}NO_3$ 283.326
Alkaloid from the bark of an unidentified New Guinea *Cinnamomum* sp. (Lauraceae). Needles (EtOH). Mp 197-198°. $[\alpha]_D^{25}$ +55 (c, 0.4 in EtOH). λ_{max} 287 (log ϵ 3.78) (no solvent reported).

Me ether: **O-*Methylcinnamolaurine***
[108210-74-8]
$C_{19}H_{21}NO_3$ 311.38
Alkaloid from *Hedycarya angustifolia* (Monimiaceae). Gum. Opt. rotn. not recorded.

(*S*)-*form*

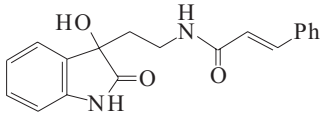
Me ether: ***Doryafranine***
[4727-86-0]
$C_{19}H_{21}NO_3$ 311.38
Major alkaloid from *Doryphora sassafras* (Monimiaceae). Plates (hexane). Mp 92-94°. $[\alpha]_D^{27}$ +41.5 (c, 2.12 in $CHCl_3$). Abs. config. not explicitly stated. May be identical with *O*-Methylcinnamolaurine.

Me ether, hydrochloride: Mp 195-197°.

Gharbo, S.A. *et al., J. Nat. Prod.*, 1965, **28**, 237-244 (*Doryafranine*)
Gellert, E. *et al., Aust. J. Chem.*, 1970, **23**, 2095-2099 (*R-form, Norcinnamolaurine, isol, uv, pmr, struct, synth*)
Marsaioli, A.J. *et al., Phytochemistry*, 1978, **17**, 1655-1658 (*cmr, Doryafranine*)
Gunawardana, Y.A.G.P. *et al., Heterocycles*, 1987, **26**, 447-456 (*O-Methylcinnamolaurine*)

3-[2-(Cinnamoylamino)ethyl]-3-hydroxy-2-indolinone C-454

N-*[2-(2,3-Dihydro-3-hydroxy-2-oxo-1H-indol-3-yl)ethyl]-3-phenyl-2-propenamide, 9CI*



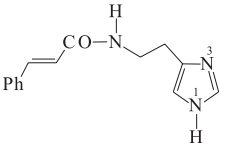
$C_{19}H_{18}N_2O_3$ 322.363

(±)-(*E*)-*form* [79087-89-1]
Alkaloid from the leaves of *Cinnamomum triplinervis* (Lauraceae). Cryst. (MeOH/C_6H_6). Mp 162-164°.

Ripperger, H. *et al., Phytochemistry*, 1981, **20**, 1453-1454 (*isol, uv, ir, pmr, cmr, ms, struct*)

N^{α}-Cinnamoylhistamine C-455

N-*[2-(1H-Imidazol-4-yl)ethyl]-3-phenyl-2-propenamide, 9CI*. N-*(2-Imidazol-4-ylethyl)cinnamamide, 8CI*



(*E*)–1*H*–*form*

$C_{14}H_{15}N_3O$ 241.292

(*E*)-1*H*-*form* [53813-77-7]
Alkaloid from *Acacia argentea* (formerly *Acacia leptostachya*), *Acacia polystacha*, *Acacia spirorbis*, *Acacia longifolia*, *Argyrodendron peralatum* (preferred genus name *Croton*), *Glochidion* sp. (probably *Glochidion philippicum*), *Dolichothele sphaerica* and *Lycium cestroides* leaves collected in autumn (Fabaceae, Euphorbiaceae, Solanaceae). Needles (H_2O). Mp 179-180.5°.

Hydrochloride: Mp 189-190° (187-189°).

Picrate: Mp 165-166°.

N^1-*Me:* **trans-N^{α}-*Cinnamoyl*-N^1-*methylhistamine***
[126661-93-6]
$C_{15}H_{17}N_3O$ 255.319
Isol. from *Lycium cestroides* (Solanaceae).

4″-Hydroxy, 3″-methoxy: (4-Hydroxy-3-methoxycinnamoyl)histamine. **N^{α}-*Feruloylhistamine***
$C_{15}H_{17}N_3O_3$ 287.318
Alkaloid from the roots of an *Ephedra* sp. (Ephedraceae). Shows weak hypotensive activity. Mp 160-162°.

(*Z*)-1*H*-*form* [95906-73-3]
Major alkaloid from the leaves of *Lycium cestroides* collected in autumn.

N^1-*Me:* **cis-N^{α}-*Cinnamoyl*-N^1-*methylhistamine***
[126661-92-5]
$C_{15}H_{17}N_3O$ 255.319
Isol. from *Lycium cestroides* (Solanaceae).

(*E*)-3*H*-*form*
Trace constit. of *Lycium cestroides* (Solanaceae). Intramolecularly H bonded; referred to as the 'quasibicyclic isomer'. Readily isomerised to the normal 1*H*-isomer.

(*Z*)-3*H*-*form*
Isol. from *Lycium cestroides* (Solanaceae).

Fitzgerald, J.S. *et al., Aust. J. Chem.*, 1964, **17**, 375 (*isol, pmr, ms, synth*)
Johns, S.R. *et al., Aust. J. Chem.*, 1967, **20**, 555; 1969, **22**, 1309 (*isol*)
Rosenberg, H. *et al., J. Nat. Prod.*, 1974, **37**, 313 (*biosynth*)
Repke, D.B. *et al., J. Nat. Prod.*, 1975, **38**, 101 (*isol, uv, pmr, ms*)
Poupat, C. *et al., Phytochemistry*, 1975, **14**, 1881 (*isol*)
Hikino, H. *et al., Planta Med.*, 1983, **48**, 108 (N-*Feruloylhistamine*)
Chiale, C.A. *et al., An. Asoc. Quim. Argent.*, 1984, **72**, 569; *CA*, **102**, 163700s (*Z-isomer*)
Chiale, C.A. *et al., Phytochemistry*, 1990, **29**, 688 (*3H-forms, derivs*)

N-Cinnamoylputrescine C-456

$H_2NCH_2CH_2CH_2CH_2NH$
$COCH{=}CHPh$

$C_{13}H_{18}N_2O$ 218.298

(*E*)-*form*

N′-*(2-Methylpropanoyl):* N^1-*Cinnamoyl*-N^4-*(2-methylpropanoyl)putrescine.* ***Secopiriferine***
[349642-86-0]
$C_{17}H_{24}N_2O_2$ 288.389
Alkaloid from *Aglaia gracilis*. Cryst. ($CHCl_3$). Mp 161-161.5°. λ_{max} 218 ; 274 (MeOH).

N′-*(2S-Methylbutanoyl):* N^1-*Cinnamoyl*-N^4-*(2-methylbutanoyl)putrescine.* ***Secoodorine***
[349642-87-1]
$C_{18}H_{26}N_2O_2$ 302.416
Alkaloid from *Aglaia gracilis*. Cryst. ($CHCl_3$). Mp 135-137° (natural) Mp 146.5-147° (synthetic). $[\alpha]_D^{20}$ +11 (c, 0.3 in $CHCl_3$). λ_{max} 218 ; 274 (MeOH).

N′-*Tigloyl:* ***Grandiamide B***. N^1-*Cinnamoyl*-N^4-*tigloylputrescine*
[279678-94-3]
$C_{18}H_{24}N_2O_2$ 300.4
Alkaloid from *Aglaia grandis*. Cryst. (hexane/EtOH). Mp 100.5-101.5°.

N′-*(3-Hydroxy-2ξ-methylpropanoyl):* ***Secoisopiriferinol***
$C_{17}H_{24}N_2O_3$ 304.388
Alkaloid from the leaves of *Aglaia spectabilis*. $[\alpha]_D^{20}$ +21 (c, 0.2 in MeOH). λ_{max} 216 (log ϵ 4.31); 222 (sh) (log ϵ 4.19); 276 (log ϵ 4.24) (MeOH aq.).

N′-*[3-(Methylthio)-2*E*-propenoyl]:* ***Secopyrrolotenin***
$C_{17}H_{22}N_2O_2S$ 318.439
Alkaloid from the leaves of *Aglaia tenuicaulis*. λ_{max} 217 (log ϵ 4.2); 221 (sh) (log ϵ 4.17); 274 (log ϵ 4.53) (MeOH aq.).

N′-*(4-Hydroxy-2ξ-methylbutanoyl):* ***Secoisoodorinol***
$C_{18}H_{26}N_2O_3$ 318.415
Alkaloid from the leaves of *Aglaia spectabilis*. Needles. Mp 131-132°. $[\alpha]_D^{20}$ +12 (c, 0.4 in MeOH). λ_{max} 216 (log ϵ 4.12); 222 (sh) (log ϵ 4.04); 274 (log ϵ 4.25) (MeOH aq.).

N′-*(4-Hydroxy-2-methyl-2*E*-butenoyl):* N^1-*Cinnamoyl*-N^4-*(4-hydroxytigloyl)putrescine. Aglairubine.* ***Dasyclamide***
[373644-07-6]
[218144-40-2]
$C_{18}H_{24}N_2O_3$ 316.399
Alkaloid from *Aglaia dasyclada* and *Aglaia rubiginosa*. Needles (MeOH). Mp 116-117°.

N′-*(3-Hydroxy-2-methylenebutanoyl):* ***Grandiamide C***
[279678-95-4]
$C_{18}H_{24}N_2O_3$ 316.399
Alkaloid from *Aglaia grandis*.
Amorph. powder. Mp 104.5-106.5° (synthetic). Probably racemic.

N′-*(3*R*,4-Dihydroxy-2-methylenebutanoyl):* ***Grandiamide D***
[955123-03-2]
$C_{18}H_{24}N_2O_4$ 332.399
Alkaloid from the leaves of *Aglaia gigantea*. Amorph. solid. $[\alpha]_D^{20}$ +200 (c, 0.47 in MeOH). λ_{max} 217 (ϵ 14950); 222 (ϵ 12290); 277 (ϵ 16610) (MeOH).

N′-*Benzoyl:* N-*[4-[(1-Oxo-3-phenyl-2-propenyl)amino]butyl]benzamide.* N-*Benzoyl*-N′-*cinnamoylputrescine.* ***Haplamidine****. Pyramidatine*
[64223-54-7]
$C_{20}H_{22}N_2O_2$ 322.406
Alkaloid from *Aglaia pyramidata* and *Haplophyllum latifolium*. Mp 139-140° Mp 173-174°. Haplamidine (to which lower Mp refers) was not specifically assigned the (*E*)-config., but is presumably identical with Pyramidatine.

4′′-Hydroxy: 4-Hydroxycinnamoylputrescine. ***4-Coumaroylputrescine***
[34136-53-3]
$C_{13}H_{18}N_2O_2$ 234.297
Alkaloid from *Pennisetum americanum* (pearl millet), *Triticum vulgare, Zea mays* (sweet corn), *Persea gratissima* (avocado), *Salix* sp., *Lycopersicon esculentum* (tomato), *Nicotiana tabacum* and a *Petunia* hybrid (Poaceae, Lauraceae, Salicaceae, Solanaceae). Faint yellow needles + $1H_2O$ (H_2O). Mp 182-183.5°.

4′′-Hydroxy, N′-*(4-hydroxybenzoyl):* ***Glochidiatusamide****. Glochidiatusin*
$C_{20}H_{22}N_2O_4$ 354.405
Alkaloid from *Thyrocarpus glochidiatus*. Cryst. Mp 280-282°. λ_{max} 228 ; 255 ; 292 ; 310 (MeOH).

3′′,4′′-Dihydroxy: N-*(4-Aminobutyl)-3-(3,4-dihydroxyphenyl)-2-propanamide.* N-*(3,4-Dihydroxycinnamoyl)-1,4-butanediamine. Caffeoylputrescine.* ***Paucine***
[29554-26-5]
[59862-95-2 , 26148-06-1]
$C_{13}H_{18}N_2O_3$ 250.297
Alkaloid from *Nicotiana tabacum*, *Pentaclethra macrophylla*, *Salix* sp., *Persea gratissima* and a *Petunia* hybrid (Solanaceae, Fabaceae, Salicaceae, Lauraceae). Also isol. from elicitor-treated cell suspension cultures and fungus-infected leaves of *Solanum tuberosum* (Solanaceae). Cryst. + $2H_2O$ (as hydrochloride). Mp 247-250° dec. (hydrochloride). λ_{max} 219 ; 235 ; 295 ; 320 (H_2).

3′′-Methoxy, 4′′-hydroxy: ***Subaphylline****. Feruloylputrescine*
[501-13-3]
$C_{14}H_{20}N_2O_3$ 264.324
Alkaloid from *Ananas comosus* (pineapple), *Pennisetum*, *Triticum, Gomphrena*, *Salix*, *Persea* and other spp. (Bromeliaceae, Poaceae, Amaranthaceae, Salicaceae, Lauraceae, Solanaceae, Rutaceae, Chenopodiaceae). Also isol. from elicitor-treated cell suspension cultures and fungus-infected leaves of *Solanum tuberum* (Solanaceae). Cryst. (C_6H_6 or MeOH). Mp 171.5-172°.

▶ GD6981000

3′′-Methoxy, 4′′-hydroxy, hydrochloride: Cryst. + $1H_2O$. Mp 151-152°.

3′′-Methoxy, 4′′-hydroxy, N′-*(4-hydroxybenzoyl):* **N-trans-*Feruloyl*-N′-*(4-hydroxybenzoyl)putrescine***
$C_{21}H_{24}N_2O_5$ 384.431
Alkaloid from the roots of *Paris verticillata*. Yellowish gum. λ_{max} 247 (log ϵ 3.63); 317 (log ϵ 3.45) (MeOH).

4′′-Methoxy, N,N′,N′-*tri-Me:* [29802-83-3]
Synthetic. Pale yellow viscous oil. Bp_3 239-243°.

3′′,5′′-Dimethoxy, 4′′-hydroxy: ***Sinapoylputrescine****.* N-*(3,4-Dihydroxy-5-methoxycinnamoyl)-1,4-butanediamine*
[70185-57-8]
$C_{15}H_{22}N_2O_4$ 294.35
Alkaloid from *Ananas comosus* (pineapple) and *Lilium* sp. (Bromeliaceae, Liliaceae).

(Z)-form

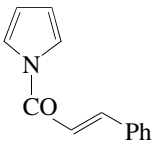
4′′-Hydroxy, N,N′,N′-*tri-Me:* N-*[4-(Dimethylamino)butyl]-3-(4-hydroxyphenyl)*-N-*methyl-2-propenamide.* N-*[4-(Dimethylamino)butyl]*-p-*hydroxy*-N-*methylcinnamamide.* N′-*(4-Hydroxycinnamoyl)*-N,N,N′-*trimethylputrescine*
[30891-99-7]
$C_{16}H_{24}N_2O_2$ 276.378
Alkaloid from the leaves of *Kniphofia flavovirens, Kniphofia foliosa* and *Kniphofia tuckii* (Liliaceae). Mp 60-65°.

4′′-Methoxy, N,N′,N′-*tri-Me:* **N,N,N′-*Trimethyl*-N′-*(4-methoxycinnamoyl)-putrescine***
[29802-82-2]
$C_{17}H_{26}N_2O_2$ 290.405
Alkaloid from *Kniphofia flavovirens, Kniphofia foliosa* and *Kniphofia tuckii* (Liliaceae). Oil. Bp_6 250-256° (bath).

Ryabinin, A.A. *et al., Dokl. Akad. Nauk SSSR*, 1949, **67**, 513-510; 1951, **76**, 689-692; *CA*, **44**, 1455h; **45**, 8479d (*Subaphylline*)
Wheaton, T.A. *et al., Nature (London)*, 1965, **206**, 620-621 (*Subaphylline*)
Ripperger, H. *et al., J. Prakt. Chem.*, 1970, **312**, 449-455 (*Kniphofia alkaloids*)
Hollerbach, A. *et al., Monatsh. Chem.*, 1970, **101**, 141-156 (*Paucine*)
Mizusaki, S. *et al., Phytochemistry*, 1971, **10**, 1347-1348 (*Paucine, 4-Coumaroylputrescine, Subaphylline, isol, synth*)
Buta, J.G. *et al., Phytochemistry*, 1972, **11**, 1188-1189 (*Paucine*)
Martin-Tanguy, J. *et al., C. R. Hebd. Seances Acad. Sci. Ser. D*, 1973, **276**, 1433-1435 (*Subaphylline, uv, synth*)
Mbadiwe, E.I. *et al., Phytochemistry*, 1973, **12**, 2546 (*Caffeoylputrescine*)
Cabanne, F. *et al., C. R. Hebd. Seances Acad. Sci. Ser. D*, 1976, **282**, 1959-1962 (*Paucine, uv*)
Nesmelova, E.F. *et al., Khim. Prir. Soedin.*, 1977, **13**, 427; *Chem. Nat. Compd. (Engl. Transl.)*, 1977, **13**, 365-366 (*Haplamidine*)
Martin-Tanguy, J. *et al., Phytochemistry*, 1978, **17**, 1927-1928 (*Paucine, Subaphylline, Sinapoylputresine, occur*)
Saifah, E. *et al., J. Nat. Prod.*, 1993, **56**, 473-477 (*Pyramidatine*)
Keller, H. *et al., Phytochemistry*, 1996, **42**, 389-396 (*Paucine, Subaphylline, isol, pmr*)
Inada, A. *et al., Phytochemistry*, 2000, **53**, 1091-1095 (*Grandiamides*)
Chaidir, *et al., J. Nat. Prod.*, 2001, **64**, 1216-1220 (*Dasyclamide*)
Greger, H. *et al., Phytochemistry*, 2001, **57**, 57-64 (*Secoodorine, Secopiriferine*)
Seger, C. *et al., Monatsh. Chem.*, 2002, **133**, 97-100 (*Aglairubine*)
Detterbeck, R. *et al., Tetrahedron*, 2002, **58**, 6887-6893 (*Aglaia bisamides, synth*)
Luo, Y. *et al., Nat. Prod. Res.*, 2006, **20**, 1063-1066 (*Glochidiatusamide*)
Duong, T.N. *et al., J. Nat. Prod.*, 2007, **70**, 1640-1643 (*Dasyclamide, Grandiamide D*)
Lee, K.H. *et al., Molecules*, 2008, **13**, 41-45 (*N-Feruloyl-N′-hydroxybenzoylputrescine*)
Greger, H. *et al., Phytochemistry*, 2008, **69**, 928-938 (*Secoisoodorinol, Secoisopiriferinol, Secopyrrolotenin*)

1-Cinnamoyl-1*H*-pyrrole C-457

*1-(1-Oxo-3-phenyl-2-propenyl)-1*H*-pyrrole, 9CI. Cinnamic acid pyrrolide*



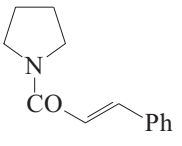
$C_{13}H_{11}NO$ 197.236

(E)-form [252248-89-8]
Alkaloid from *Piper argyrophyllum*. Needles (EtOAc/petrol). Mp 108°. λ_{max} 297 (MeOH).

Gupta, S. *et al., Indian J. Chem., Sect. B*, 1999, **38**, 823-827 (*isol, pmr, cmr*)

1-Cinnamoylpyrrolidine, 8CI C-458

1-(1-Oxo-3-phenyl-2-propenyl)pyrrolidine, 9CI. Cinnamic acid pyrrolidide
[19202-21-2]



$C_{13}H_{15}NO$ 201.268

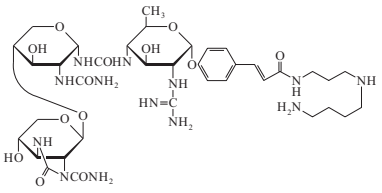
(E)-form [52438-21-8]
Alkaloid from the roots of *Piper methysticum* (kava) (Piperaceae). Needles (petrol). Mp 101-103° (94-95°).

Achenbach, H. *et al., Chem. Ber.*, 1970, **103**, 2535 (*isol, uv, ir, ms, synth, struct*)
Engel, P. *et al., Z. Kristallogr., Kristallgeom., Kristallphys., Kristallchem.*, 1974, **139**, 207 (*cryst struct*)
Huang, Y.Z. *et al., Tet. Lett.*, 1987, **28**, 2159 (*synth*)
Rajeswari, S. *et al., Tet. Lett.*, 1987, **28**, 5099 (*synth*)
Son, T. *et al., Bull. Chem. Soc. Jpn.*, 1988, **61**, 1251 (*synth*)
Lindsay, C.M. *et al., J.C.S. Perkin 1*, 1988, 569 (*synth*)
Ohta, A. *et al., Heterocycles*, 1991, **32**, 965 (*synth*)

Cinodine I, 9CI C-459

Glycocinnaspermicidin B. Antibiotic BM 123$_{\gamma 1}$. BM 123$_{\gamma 1}$. Antibiotic LL-BM 123$_{\gamma 1}$. LL-BM 123$_{\gamma 1}$

[60830-76-4]



$C_{37}H_{59}N_{13}O_{13}$ 893.952

Glycolipid antibiotic. Isol. from *Nocardia* spp. Active against gram-positive and -negative bacteria and exp. infections in mice. DNA gyrase inhibitor. Sol. H_2O; fairly sol. MeOH; poorly sol. Et_2O, hexane, butanol. λ_{max} 286 (ϵ 22500) (H_2O) (Derep). λ_{max} 286 (E1%/1cm 225) (MeOH) (Berdy).

▶ LD_{50} (mus, scu) 88 mg/kg. GE3753000

Hydrochloride: Cinodine hydrochloride. CL 98984

[68782-58-1]

Amorph. powder. $[\alpha]_D^{25}$ +55 (c, 0.8 in H_2O). Dec. at *ca.* 200°.

Tresner, H. *et al., J. Antibiot.*, 1978, **31**, 394-397 (*isol*)

Martin, J.H. *et al., J. Antibiot.*, 1978, **31**, 398-404 (*isol, props*)

Ellestad, G.A. *et al., J.A.C.S.*, 1978, **100**, 2515-2524 (*struct*)

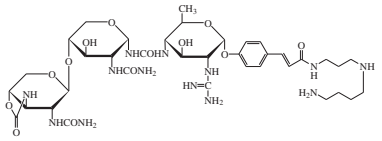
Chiu, S.H.L. *et al., J. Antibiot.*, 1984, **37**, 1000-1006; 1079-1081 (*biosynth, cmr*)

Osburne, M.S. *et al., Antimicrob. Agents Chemother.*, 1990, **34**, 1450-1452 (*activity*)

Cinodine II, 9CI C-460

LL-BM 123$_{\gamma 2}$. Antibiotic LL-BM 123$_{\gamma 2}$. BM 123γ_2. Antibiotic BM 123γ_2. Glycocinnaspermicidin C

[60830-75-3]



$C_{37}H_{59}N_{13}O_{13}$ 893.952

Glycolipid antibiotic. Isol. from *Nocardia* sp. Active against gram-positive and -negative bacteria and exp. infections in mice. Amorph. powder (as hydrochloride). Sol. H_2O; fairly sol. MeOH; poorly sol. butanol, hexane. Mp 200° dec. (hydrochloride). $[\alpha]_D^{25}$ +60 (c, 0.85 in H_2O). λ_{max} 286 (ϵ 22500) (H_2O) (Derep). λ_{max} 286 (E1%/1cm 220) (MeOH) (Berdy). λ_{max} 286 (E1%/1cm 220) (HCl) (Berdy). λ_{max} 286 (E1%/1cm 220) (NaOH) (Berdy).

▶ CB9626010

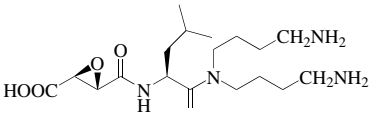
Ellestad, G.A. *et al., J.A.C.S.*, 1978, **100**, 2515 (*struct*)

U.S. Pat., 1979, 4 154 925; *CA*, **91**, 138848t (*manuf*)

Chiu, S.H.L. *et al., J. Antibiot.*, 1984, **37**, 1000; 1079 (*biosynth*)

Circinamide C-461

[190271-96-6]



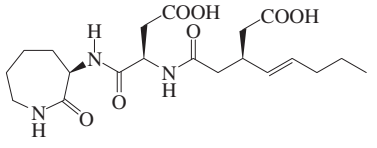
$C_{18}H_{34}N_4O_5$ 386.49

From the cyanobacterium *Anabaena circinalis* isol. from Lake Kasumigaura, Japan. Papain inhibitor. Cryst. Sol. MeOH. $[\alpha]_D^{20}$ +15.5 (c, 0.1 in MeOH). λ_{max} 250 (ϵ 530) (MeOH). λ_{max} 250 (ϵ 530) (MeOH) (Berdy).

Shin, H.J. *et al., Tetrahedron*, 1997, **53**, 5747-5754 (*isol, uv, pmr, cmr*)

Circinatin C-462

[133507-94-5]



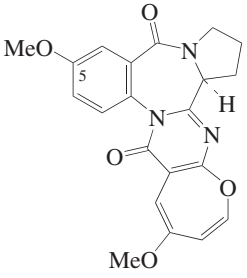
$C_{20}H_{31}N_3O_7$ 425.481

Metab. of the plant pathogenic fungus *Periconia circinata*. Cryst. (H_2O). Mp 165°. $[\alpha]_D$ +29 (c, 0.9 in H_2O).

Macko, V. *et al., Experientia*, 1990, **46**, 1206 (*isol*)

Macko, V. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 1992, **89**, 9574-9578 (*config*)

Circumdatin A C-463



$C_{21}H_{19}N_3O_5$ 393.398

Structure revised in 2008.

(S)-form [223130-52-7]

Prod. by *Aspergillus ochraceus* and the marine-derived *Aspergillus ostianus* 01F313. Orange-red solid. $[\alpha]_D^{22}$ -421 (c, 0.018 in EtOH). λ_{max} 238 (sh) (log ϵ 3.84); 290 (sh) (log ϵ 3.33); 357 (log ϵ 3.3) (EtOH).

5-Demethoxy: ***Circumdatin B***

[223130-57-2]

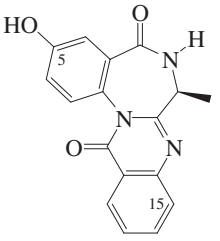
$C_{20}H_{17}N_3O_4$ 363.372

Prod. by *Aspergillus ochraceus* and *Aspergillus ostianus* 01F313. Orange-red solid. $[\alpha]_D^{22}$ -163 (c, 0.04 in EtOH). λ_{max} 284 (sh) (log ϵ 2.73); 358 (log ϵ 2.76) (EtOH).

Rahbaek, L. *et al., J.O.C.*, 1999, **64**, 1689-1692 (*isol, uv, cd, pmr, cmr*)

Ookura, R. *et al., J.O.C.*, 2008, **73**, 4245-4247 (*isol, pmr, cmr, cryst struct*)

Circumdatin C C-464



$C_{17}H_{13}N_3O_3$ 307.308

(S)-form [223130-61-8]

Prod. by a terrestrial strain of *Aspergillus ochraceus* and a marine-derived *Exophiala* sp. MFC353-1. Solid. $[\alpha]_D^{22}$ -75 (c, 0.16 in MeOH). λ_{max} 229 (log ϵ 4.31); 272 (log ϵ 3.85); 312 (log ϵ 3.5) (MeOH).

Deoxy: ***Circumdatin F***

[232922-23-5]

$C_{17}H_{13}N_3O_2$ 291.309

Prod. by a terrestrial strain of *Aspergillus ochraceus*. Solid. $[\alpha]_D$ -18.9 (c, 0.1 in MeOH).

Deoxy, 15-hydroxy: ***Circumdatin G***

[326597-48-2]

$C_{17}H_{13}N_3O_3$ 307.308

Prod. by a marine strain of *Aspergillus ochraceus* and a marine-derived *Exophiala* sp. MFC353-1. Powder. $[\alpha]_D$ -21.7 (c, 0.2 in MeOH). λ_{max} 215 (log ϵ 2.58); 235 (log ϵ 2.64); 276 (log ϵ 1.96); 278 (log ϵ 2.17); 327 (log ϵ 1.98) (MeOH).

Rahbaek, L. *et al., J. Nat. Prod.*, 1999, **62**, 904-905 (*Circumdatin F*)

Rahbaek, L. *et al., J.O.C.*, 1999, **64**, 1689-1692 (*Circumdatin C*)

Dai, J.-R. *et al., J. Nat. Prod.*, 2001, **64**, 125-126 (*Circumdatin G*)

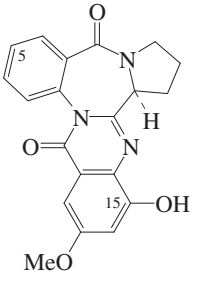
Witt, A. *et al., J.O.C.*, 2001, **66**, 2784-2788 (*synth*)

Snider, B. *et al., Tetrahedron*, 2001, **57**, 3301-3307 (*Circumdatin F, synth*)

Liu, J.-F. *et al., J.O.C.*, 2005, **70**, 10488-10493 (*Circumdatin F, synth*)

Zhang, D. *et al., J. Antibiot.*, 2008, **61**, 40-42 (*Exophiala constits*)

Circumdatin E C-465



$C_{20}H_{17}N_3O_4$ 363.372

(*S*)-*form* [232922-22-4]
Prod. by a terrestrial strain of *Aspergillus ochraceus* and the marine-derived *Aspergillus ostianus* 01F313. $[\alpha]_D^{22}$ -90 (c, 0.007 in MeOH). λ_{max} 244 (log ϵ 4); 339 (log ϵ 3.16) (MeOH).

15-Deoxy: ***Circumdatin H***
$C_{20}H_{17}N_3O_3$ 347.373
Prod. by *Aspergillus ochraceus* and *Aspergillus ostianus* 01F313. Amorph. solid. $[\alpha]_D$ -26.3 (c, 0.08 in MeOH). λ_{max} 230 (log ϵ 2.04); 276 (log ϵ 2.61); 329 (log ϵ 3.08) (MeOH).

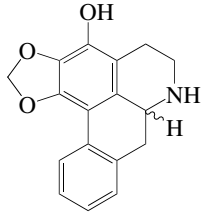
5-Methoxy: ***Circumdatin D***
[232922-21-3]
$C_{21}H_{19}N_3O_5$ 393.398
Prod. by *Aspergillus ochraceus* and *Aspergillus ostianus* 01F313. Solid. $[\alpha]_D^{22}$ -129 (c, 0.02 in MeOH). λ_{max} 247 (log ϵ 4.28); 285 (log ϵ 3.83); 339 (log ϵ 3.5) (MeOH).

5-Methoxy, 15-deoxy: ***Circumdatin J***
[1031388-27-8]
$C_{21}H_{19}N_3O_4$ 377.399
Prod. by a marine strain of *Aspergillus ostianus* 01F313. Amorph. solid. λ_{max} 287 (ϵ 17000); 330 (ϵ 7600); 343 (ϵ 6000) (EtOH).

Rahbaek, L. *et al., J. Nat. Prod.*, 1999, **62**, 904-905 (*Circumdatins D,E*)
López-Gresa, M.P. *et al., J. Antibiot.*, 2005, **58**, 416-419 (*Circumdatin H*)
Ookura, R. *et al., J.O.C.*, 2008, **73**, 4245-4247 (*Circumdatin J*)

Cissaglaberrimine C-466

3-Hydroxy-1,2-methylenedioxynoraporphine
[188845-73-0]



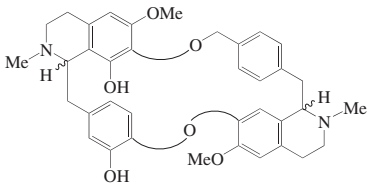
$C_{17}H_{15}NO_3$ 281.31

(ξ)-*form*
Alkaloid from leaves and stems of *Cissampelos glaberrima*. Red-brown amorph. powder. Mp 203-205° dec. λ_{max} 225 ; 242 ; 278 ; 300 (sh) (MeOH).

Barbosa-Filho, J.M. *et al., Phytochemistry*, 1997, **44**, 959-961 (*isol, pmr, cmr*)

Cissampentin C-467

[147451-90-9]

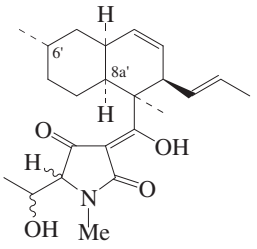


$C_{37}H_{40}N_2O_6$ 608.733

Alkaloid from *Cissampelos mucronata*, aerial parts of *Cissampelos fasciculata* and roots of *Cissampelos mucronata* (Menispermaceae). Exhibits significant activity as a repellent to the leafcutter ant, and limited antifungal activity. Yellow oil. $[\alpha]_D^{25}$ 0 (c, 0.002 in CH_2Cl_2).

Galinis, D.L. *et al., Tetrahedron*, 1993, **49**, 1337-1342 (*isol, pmr, cmr, ms, struct*)
Tshibangu, J.N. *et al., Phytochem. Anal.*, 2003, **14**, 13-22 (*isol, hplc*)

Cissetin C-468



$C_{23}H_{33}NO_4$ 387.518

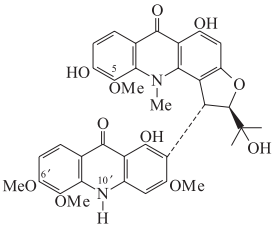
Tetramic acid deriv. Enolised triketone. Related to Equisetin, E-142. Prod. by the fungus OS 50185. Antibacterial agent. Powder. λ_{max} 200 ; 235 ; 291 (MeOH aq.).

6′,8a′-Diepimer, N*-de-Me:* ***Paecilosetin***
$C_{22}H_{31}NO_4$ 373.491
Prod. by *Paecilomyces farinosus*. Antibacterial agent. Pale yellow solid. $[\alpha]_D^{20}$ -398 (c, 0.1 in MeOH). λ_{max} 227 (log ϵ 3.95); 250 (log ϵ 3.91); 286 (log ϵ 4.08) (MeOH).

Boros, C. *et al., J. Antibiot.*, 2003, **56**, 862-865 (*Cissetin*)
Lang, G. *et al., J. Nat. Prod.*, 2005, **68**, 810-811 (*Paecilosetin*)

Citbismine B C-469

[169055-77-0]



Relative configuration

$C_{36}H_{34}N_2O_{11}$ 670.671
Alkaloid from roots of Marsh grapefruit (*Citrus paradisi*) and Hirado-buntan (*Citrus grandis*) (Rutaceae). Yellow cubes (Me_2CO). Mp 336-344°. $[\alpha]_D$ 0 ($CHCl_3$).

$N^{10'}$*-Me:* ***Citbismine C***
[169055-79-2]
$C_{37}H_{36}N_2O_{11}$ 684.698
From roots of *Citrus paradisi* (grapefruit) and *Citrus grandis* (pummelo). Yellow cubes (Me_2CO). Mp 314-326°. Opt. inactive.

$O^{6'}$*-De-Me,* $N^{10'}$*-Me:* ***Citbismine E***
[173429-82-8]
$C_{36}H_{34}N_2O_{11}$ 670.671
From roots of *Citrus paradisi* (grapefruit) and *Citrus grandis* (pummelo). Pale yellow oil. Opt. inactive.

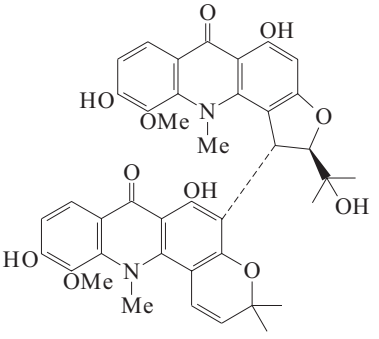
6-Deoxy, O^5*-de-Me:* ***Citbismine A***
[161068-61-7]
$C_{35}H_{32}N_2O_{10}$ 640.645
Alkaloid from roots of *Citrus paradisi* (Marsh grapefruit) and *Citrus grandis* (pummelo) (Rutaceae). Yellow cubes (DMSO). Mp 335-336°. $[\alpha]_D$ 0 (DMSO).

6-Deoxy, O^5*-de-Me,* $N^{10'}$*-Me:* ***Citbismine F***
$C_{36}H_{34}N_2O_{10}$ 654.672
Alkaloid from *Citrus paradisi* (Marsh grapefruit). Yellow cubes. Mp 330-341° (dec.). $[\alpha]_D$ 0 ($CHCl_3$). λ_{max} 222 (log ϵ 3.87); 266 (log ϵ 4.28); 275 (log ϵ 4.27); 334 (log ϵ 3.77); 390 (log ϵ 3.41) (EtOH).

Takemura, Y. *et al., Chem. Pharm. Bull.*, 1994, **42**, 1548; 1995, **43**, 1340 (*Citbismine A, Citbismine B, isol, uv, ir, pmr, cmr, ms, cryst struct*)
Ju-ichi, M. *et al., Heterocycles*, 1996, **42**, 237 (*Citbismine E*)
Takemura, Y. *et al., Heterocycles*, 1999, **51**, 851-855 (*Citbismine F*)

Citbismine D C-470

[173429-81-7]

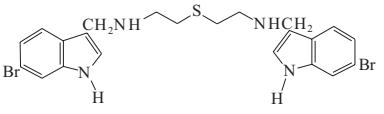


$C_{40}H_{38}N_2O_{11}$ 722.747
Alkaloid from roots of Marsh grapefruit (*Citrus paradisi*). Pale yellow oil. Opt. inactive.

Ju-ichi, M. *et al., Heterocycles*, 1996, **42**, 237 (*isol, uv, ir, pmr, ms, struct*)

Citorellamine C-471

[99102-23-5]



$C_{22}H_{24}Br_2N_4S$ 536.332
Initially considered to be a C_{11} monomer. Alkaloid from the tunicate *Polycitorella mariae*. Exhibits cytotoxicity and potent antimicrobial activity. Needles (MeOH). Mp 210° dec. λ_{max} 225 (ϵ 18000); 285 (ϵ 3000); 291 (ϵ 2800) (MeOH) (Derep).

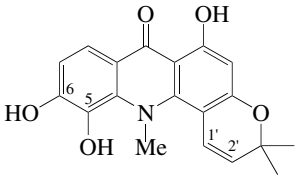
Roll, D.M. *et al., Tet. Lett.*, 1985, **26**, 4303-4306 (*uv, ir, pmr, cmr, ms*)

Moriarty, R.M. *et al., Tet. Lett.*, 1987, **28**, 749-752 (*pmr, cmr, ms, struct, synth*)

Citracridone III C-472

*3,12-Dihydro-6,10,11-trihydroxy-3,3,12-trimethyl-7*H*-pyrano[2,3-*c*]acridin-7-one, 9CI*

[139219-98-0]



$C_{19}H_{17}NO_5$ 339.347

Acridone numbering shown. Alkaloid from *Citrus yuko* (Rutaceae). Yellow cubes (CH_2Cl_2). Mp 135-140°.

5-Me ether: ***Citracridone I***

[81525-61-3]

$C_{20}H_{19}NO_5$ 353.374

Alkaloid from the root bark of *Citrus depressa, Citrus sinensis* var. *brasiliensis* (navel orange) and *Citrus grandis* f. *hakunikuyu* (Rutaceae). Orange plates (Me_2CO). Mp 275-278°.

5-Me ether, N*-de-Me:* ***Acrifoline***†. N*-Demethylcitracridone I*

[172335-13-6]

$C_{19}H_{17}NO_5$ 339.347

Alkaloid from root bark and stem bark of *Glycosmis citrifolia* (Rutaceae). Yellow amorph. powder.

6-Me ether: ***3,12-Dihydro-6,11-dihydroxy-10-methoxy-3,3,12-trimethyl-7H-pyrano[2,3-c]acridin-7-one, 9CI***. *2′,2′-Dimethyl(pyrano-5′,6′:3,4)-1,5-dihydroxy-6-methoxy-10-methylacridone*

[90846-44-9]

$C_{20}H_{19}NO_5$ 353.374

Alkaloid from the roots of *Citrus decumana* (pummelo) (Rutaceae). Cryst. (MeOH). Mp 260°.

5,6-Di-Me ether: ***Citracridone II***

[81525-62-4]

$C_{21}H_{21}NO_5$ 367.401

From *Citrus depressa* and *Citrus grandis* f. *hakunikuyu* root barks (Rutaceae). Yellow needles (Et_2O). Mp 161-163°.

*1′,2′-Dihydro, 1′,2′-dihydroxy (*trans-*), 5-Me ether:* ***Dihydroxycitracridone I***

[161043-20-5]

$C_{20}H_{21}NO_7$ 387.388

Alkaloid from roots of *Citrus paradisi* (Rutaceae). Yellow cubes. Mp 235-238°. $[\alpha]_D$ +107 (c, 0.056 in EtOH).

Wu, T.-S. *et al., Chem. Pharm. Bull.*, 1983, **31**, 895; 901 (*isol, uv, ir, pmr, ms, struct*)

Wu, T.-S. *et al., Phytochemistry*, 1983, **22**, 1493 (*isol*)

Basa, S.C. *et al., J. Nat. Prod.*, 1984, **47**, 325 (*6-Me ether*)

Ju-ichi, M. *et al., Heterocycles*, 1991, **32**, 1781 (*isol, pmr, cmr, struct*)

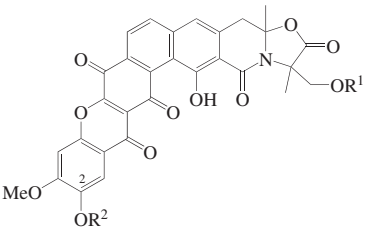
Takemura, Y. *et al., Heterocycles*, 1995, **41**, 187-190 (*Dihydroxycitracridone I*)

Ono, T. *et al., J. Nat. Prod.*, 1995, **58**, 1629-1631 (*Acrifoline*)

Citreamicin α C-473

LL-E19085α. Antibiotic LL-E19085α

[122535-63-1]



$R^1 = COCH_2CH(CH_3)_2$

$R^2 = CH_3$

$C_{36}H_{31}NO_{12}$ 669.64

Quinonoid antibiotic. Struct. revised in 1990. Prod. by *Micromonospora citrea* NRRL 18351. Feed additive. Active against gram-positive bacteria and anaerobes. Coccidiostatic agent. Sol. $CHCl_3$, Me_2CO, CH_2Cl_2; fairly sol. MeCN, EtOAc, MeOH, EtOH; poorly sol. H_2O, hexane. $[\alpha]_D^{26}$ -58 (c, 0.295 in $CHCl_3$). λ_{max} 223 (ϵ 42400); 255 (ϵ 38900); 320 (ϵ 32500); 384 (ϵ 9030); 410 (ϵ 6750) (MeCN) (Derep). λ_{max} 222 (ϵ 38200); 240 (ϵ 30100); 255 (ϵ 30100); 321 (ϵ 24500); 384 (ϵ 8050) (MeOH) (Berdy). λ_{max} 224 (ϵ 27700); 255 (ϵ 24900); 328 (ϵ 16400); 420 (ϵ 4230) (MeOH/HCl) (Berdy). λ_{max} 217 (ϵ 76100); 340 (ϵ 19100); 399 (ϵ 12900) (MeOH/NaOH) (Berdy).

O^2*-De-Me:* ***Citreamicin ξ***

[128969-89-1]

$C_{35}H_{29}NO_{12}$ 655.614

From *Micromonospora citrea* NRRL 18351. Feed additive. Sol. $CHCl_3$, CH_2Cl_2, Me_2CO; fairly sol. MeCN, EtOH, EtOAc, MeOH; poorly sol. H_2O, hexane. λ_{max} 223 (ϵ 42400); 255 (ϵ 38900); 320 (ϵ 32500); 384 (ϵ 9030); 410 (ϵ 6750) (MeCN) (Derep). λ_{max} 258 ; 324 ; 380 ; 420 (MeOH) (Berdy).

Maiese, W.M. *et al., J. Antibiot.*, 1989, **42**, 846-851 (*isol, props*)

Eur. Pat., 1990, 353381 (*LL-E 19085α*)

Carter, G.T. *et al., J. Antibiot.*, 1990, **43**, 504-512 (*isol, pmr, cmr, struct*)

Carter, G.T. *et al., J.C.S. Perkin 1*, 1991, 2215-2219 (*biosynth*)

Citreamicin β C-474

[128999-30-4]

As Citreamicin α, C-473 with

R^1 = –$COCH(CH_3)_2$, $R^2 = CH_3$

$C_{35}H_{29}NO_{12}$ 655.614

Quinone antibiotic. Prod. by *Micromonospora citrea*. Sol. $CHCl_3$, Me_2CO, CH_2Cl_2; fairly sol. MeCN, MeOH, EtOAc; poorly sol. H_2O, hexane. λ_{max} 223 (ϵ 42400); 255 (ϵ 38900); 320 (ϵ 32500); 384 (ϵ 9030); 410 (ϵ 6750) (MeCN) (Derep).

Carter, G.T. *et al., J. Antibiot.*, 1990, **43**, 504-512 (*isol, pmr, cmr, struct*)

Citreamicin γ C-475

[128999-31-5]

As Citreamicin α, C-473 with

R^1 = Ac, $R^2 = CH_3$

$C_{33}H_{25}NO_{12}$ 627.56

Prod. by *Micromonospora citrea*. No phys. props. reported. Sol. $CHCl_3$, Me_2CO, CH_2Cl_2; fairly sol. MeCN, MeOH, EtOAc, EtOH; poorly sol. H_2O, hexane. λ_{max} 223 (ϵ 42400); 255 (ϵ 38900); 320 (ϵ 32500); 384 (ϵ 9030); 410 (ϵ 6750) (MeCN) (Derep). λ_{max} 258 ; 325 ; 385 (MeOH) (Berdy).

Carter, G.T. *et al., J. Antibiot.*, 1990, **43**, 504-512 (*isol, pmr, cmr, struct*)

Citreamicin η C-476

[128969-88-0]

As Citreamicin α, C-473 with

R^1 = H, $R^2 = CH_3$

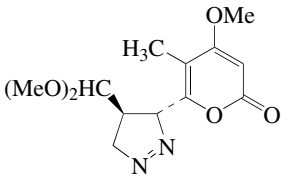
$C_{31}H_{23}NO_{11}$ 585.523

Quinone antibiotic. Prod. by *Micromonospora citrea*. Sol. $CHCl_3$, Me_2CO, CH_2Cl_2; fairly sol. MeCN, EtOAc, MeOH, EtOH; poorly sol. H_2O, hexane. $[\alpha]_D^{26}$ -63 (c, 0.19 in DMSO). λ_{max} 223 (ϵ 42000); 255 (ϵ 39000); 320 (ϵ 32000); 384 (ϵ 9030); 410 (MeCN) (Derep). λ_{max} 223 (ϵ 37800); 302 (ϵ 21750); 321 (ϵ 21700) (MeOH) (Berdy).

Carter, G.T. *et al., J. Antibiot.*, 1990, **43**, 504-512 (*isol, pmr, cmr, struct*)

Citreoazopyrone C-477

[190783-70-1]

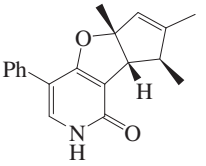


$C_{13}H_{18}N_2O_5$ 282.296

Metab. of a hybrid strain derived from *Penicillium citreo-viride*. Topoisomerase I inhibitor. Oil. Shows small negative opt. rotn.

Kosemura, S. *et al., Tet. Lett.*, 1997, **38**, 3025 (*isol, ir, pmr, cmr*)

Citridone A C-478



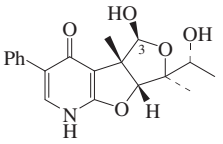
Relative Configuration

$C_{19}H_{19}NO_2$ 293.365

Prod. by *Penicillium* sp. FKI-1938. Potentiator of miconazole antifungal activity. Needles. Mp 172-175°. $[\alpha]_D^{25}$ -1.6 (c, 0.1 in MeOH). λ_{max} 205 (ϵ 9800); 246 (ϵ 10700) (MeOH).

Fukuda, T. *et al., J. Antibiot.*, 2005, **58**, 309-314; 315-321 (*isol, pmr, cmr, activity*)

Citridone B C-479



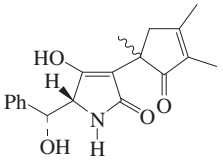
Relative Configuration

$C_{19}H_{21}NO_5$ 343.379
Prod. by *Penicillium* sp. FKI-1938. Potentiator of miconazole antifungal activity. Needles. Mp 168-170°. $[\alpha]_D^{25}$ +102.4 (c, 0.1 in MeOH). Isol. as a 3:2 mixt. with Citridone B′ to which data refers. λ_{max} 207 (ϵ 21000); 233 (ϵ 18900) (MeOH).

3-Epimer: ***Citridone B′***
$C_{19}H_{21}NO_5$ 343.379
Prod. by *Penicillium* sp. FKI-1938.

Fukuda, T. *et al., J. Antibiot.*, 2005, **58**, 309-314; 315-321 (*isol, pmr, cmr, activity*)

Citridone C C-480



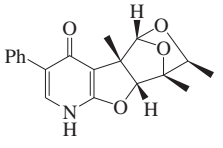
Relative Configuration

$C_{19}H_{21}NO_4$ 327.379
Prod. by *Penicillium* sp. FKI-1938. Potentiator of miconazole antifungal activity. Pale yellow amorph. solid. $[\alpha]_D^{25}$ -74.4 (c, 0.1 in MeOH). λ_{max} 203 (ϵ 16900); 233 (ϵ 11800) (MeOH).

Fukuda, T. *et al., J. Antibiot.*, 2005, **58**, 309-314; 315-321 (*isol, pmr, cmr, activity*)

Citridone D C-481

[929102-15-8]



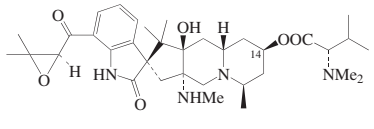
Relative Configuration

$C_{19}H_{19}NO_4$ 325.363
Prod. by *Penicillium* sp. FKI-1938. Potentiator of miconazole antifungal activity. Pale yellow powder. $[\alpha]_D^{25}$ +73.5 (c, 0.1 in MeOH). λ_{max} 203 (ϵ 24000); 232 (ϵ 17000) (MeOH).

Fukuda, T. *et al., Chem. Pharm. Bull.*, 2006, **54**, 1659-1661 (*isol, pmr, cmr*)

Citrinadin A C-482

[774233-49-7]



Absolute Configuration

$C_{35}H_{52}N_4O_6$ 624.819
Prod. by *Penicillium citrinum* (strain N-059) isol. from the alga *Actinotrichia fragilis*. Cytotoxic. Oil. $[\alpha]_D^{19}$ -17 (c, 0.4 in MeOH). λ_{max} 224 (ϵ 9000); 230 (sh) ; 249 (ϵ 9600); 265 (sh) ; 335 (ϵ 3100) (MeOH).

14-De(acyloxy): ***Citrinadin B***
[869803-70-3]
$C_{28}H_{39}N_3O_4$ 481.634
Prod. by *Penicillium citrinum* (strain N-059). Pale yellow solid. $[\alpha]_D^{20}$ +8 (c, 1 in MeOH). λ_{max} 203 (ϵ 12500); 223 (ϵ 7600); 248 (ϵ 9800); 333 (ϵ 3100) (MeOH).

Tsuda, M. *et al., Org. Lett.*, 2004, **6**, 3087-3089 (*isol, pmr, cmr*)
Mugishima, T. *et al., J.O.C.*, 2005, **70**, 9430-9435 (*abs config*)

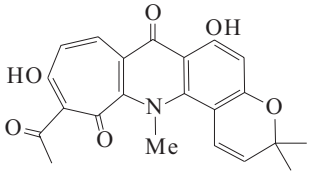
Citriodorol C-483

Struct. unknown. Alkaloid from *Eucalyptus citriodora*. Antibacterial agent. Brownish-yellow powder. Mp 115-117°. $[\alpha]_D^{28}$ +12.5 (c, 2 in MeOH).

Satwalekar, S.S. *et al., J. Indian Inst. Sci.*, 1957, **39**, 195-212; *CA*, **52**, 1548f

Citropone A C-484

[98496-33-4]

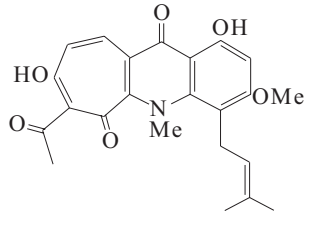


$C_{22}H_{19}NO_6$ 393.395
Alkaloid from the root bark of *Citrus grandis* f. *buntan* and *Citrus natsudaidai* (Rutaceae). Red needles (Me_2CO). Mp 280-282°. Citropone A and Citropone B, C-485 are the first examples of naturally occurring homoacridone alkaloids. λ_{max} 212 (ϵ 30900); 270 (ϵ 29500); 282 (sh) (ϵ 28800); 307 (sh) (ϵ 30200); 324 (ϵ 30900) (MeOH/NaOMe) (Derep). λ_{max} 215 (ϵ 18200); 230 (sh) (ϵ 17800); 272 (ϵ 24500); 287 (sh) (ϵ 24000); 330 (sh) (ϵ 12300); 410 (ϵ 6920) (MeOH) (Derep).

Ito, C. *et al., Chem. Pharm. Bull.*, 1990, **38**, 1881 (*isol, pmr, cmr, uv, cryst struct*)

Citropone B C-485

[98496-34-5]

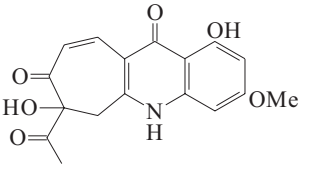


$C_{23}H_{23}NO_6$ 409.438
Alkaloid from the root bark of *Citrus grandis* f. *buntan* (Rutaceae). Orange needles (Me_2CO). Mp 192-194°. λ_{max} 210 (ϵ 40700); 252 (ϵ 22900); 325 (ϵ 30200) (MeOH/NaOMe) (Derep). λ_{max} 217 (ϵ 28800); 230 (sh) (ϵ 25700); 265 (ϵ 25700); 309 (ϵ 19500); 330 (sh) (ϵ 16600); 407 (ϵ 9770) (MeOH) (Derep).

Ito, C. *et al., Chem. Pharm. Bull.*, 1990, **38**, 1881 (*isol, uv, pmr, cmr, cryst struct*)

Citropone C C-486

7-Acetyl-6,7-dihydro-1,7-dihydroxy-3-methoxy-5H-cyclohepta[b]quinoline-8,11-dione, 9CI
[131815-28-6]

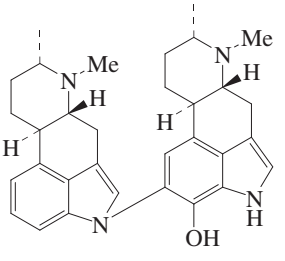


$C_{17}H_{15}NO_6$ 329.309
Alkaloid from the roots and stem bark of several hybrids of *Citrus* spp. (Rutaceae). Yellow prisms. Mp 198-200° dec. $[\alpha]_D$ +7.14 (c, 0.056 in $CHCl_3$). λ_{max} 206; 248; 283; 335; 341; 396 (MeOH) (Derep).

Ito, C. *et al., Chem. Pharm. Bull.*, 1990, **38**, 1881 (*isol, uv, pmr, cmr, struct*)

Cividiclavine C-487

6,6′,8,8′-Tetramethyl-1,13′-biergolin-14-ol, 9CI
[84826-93-7]

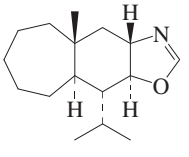


$C_{32}H_{38}N_4O$ 494.678
Prod. by *Penicillium citreo-viride.*

Vining, L.C. *et al., FEMS Symp.*, 1982, **13**, 243-251; *CA*, **98**, 103970u (*isol, struct*)

Cladioxazole C-488

[602297-42-7]



Relative Configuration

$C_{16}H_{27}NO$ 249.395
Alkaloid from the soft coral *Cladiella* sp. Oil.

Ata, A. *et al., Tet. Lett.*, 2003, **44**, 6951-6953 (*isol, pmr, cmr*)

Clathculine A C-489

$H_2C{=}CHCH_2CH_2CH{=}CHC{\equiv}C(CH_2)_9NMeCH_2CH_2NHMe$
$C_{21}H_{38}N_2$ 318.545

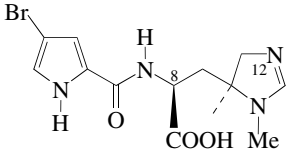
(Z)-form [300811-99-8]
Isol. from the sponge *Clathrina* aff. *reticulum*. Isol. as a mixt. with Clathculine B. λ_{max} 234 (ϵ 6300); 246 (ϵ 7600); 285 (ϵ 2800) (EtOH).

16,17-Dihydro: ***Clathculine B***
[300812-19-5]
$C_{21}H_{40}N_2$ 320.56
Isol. from *Clathrina* aff. *reticulum*.

Rudi, A. *et al., J. Nat. Prod.*, 2000, **63**, 1434-1436 (*isol, pmr, cmr, uv*)

Clathramide A C-490

[182888-51-3]



$C_{13}H_{17}BrN_4O_3$ 357.206
Neutral form shown. Exists as zwitterion with +ve charge distributed onto the two imidazole N's. Alkaloid from the Caribbean sponge *Agelas clathrodes*. Exhibits moderate antifungal activity. Amorph. solid. $[\alpha]_D^{25}$ -5 (c, 0.001 in MeOH). λ_{max} 208 (ϵ 14900); 230 (ϵ 13000); 265 (ϵ 10900) (MeCN).

N-*De-Me:* ***Clathramide C***
[200264-71-7]
$C_{12}H_{15}BrN_4O_3$ 343.18
Alkaloid from *Agelas dispar*. Amorph. solid. $[\alpha]_D^{25}$ -6 (c, 0.001 in MeOH). λ_{max} 208 (ϵ 14900); 230 (ϵ 13000); 265 (ϵ 10900) (MeCN).

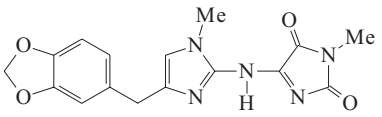
8-Epimer: ***Clathramide B***
[183072-78-8]
$C_{13}H_{17}BrN_4O_3$ 357.206
From *Agelas clathrodes*. Exhibits moderate antifungal actiivity. Amorph. solid. $[\alpha]_D^{25}$ +11 (c, 0.001 in MeOH). λ_{max} 208 ; 230 (ϵ 13000); 265 (ϵ 10900) (MeCN).

8-Epimer, N-*de-Me:* ***Clathramide D***
[200264-72-8]
$C_{12}H_{15}BrN_4O_3$ 343.18
Alkaloid from *Agelas dispar*. Serotonin receptor antagonist. λ_{max} 208 (ϵ 14900); 230 (ϵ 13000); 265 (ϵ 10900) (MeCN) (Berdy).

Cafieri, F. *et al., Tetrahedron*, 1996, **52**, 13713-13720 (*isol, uv, ir, pmr, cmr, struct*)
Cafieri, F. *et al., J. Nat. Prod.*, 1998, **61**, 122-125 (*isol, uv, ir, pmr, cmr, ms*)

Clathridine A C-491

[122759-55-1]



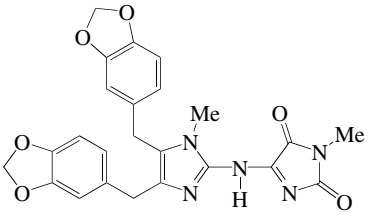
$C_{16}H_{15}N_5O_4$ 341.326
Metab. from the marine sponge *Clathrina clathrus* and the nudibranch *Notodoris gardineri*. Cryst. ($CHCl_3$). Fairly sol. MeOH; poorly sol. butanol, hexane. Mp 260-262° dec. λ_{max} 285 (ϵ 5400); 371 (ϵ 14700) (MeOH) (Derep). λ_{max} 284 ; 359 (MeOH/NaOH) (Berdy).

Zn complex: ***Clathridine Zn***
[122780-90-9]
$C_{32}H_{28}N_{10}O_8Zn$ 746.025
Metab. of *Clathrina clathrus* and a *Leucetta* sp. Yellow microcryst. (Et_2O/$CHCl_3$). Fairly sol. MeOH; poorly sol. butanol, hexane. Mp 158-160°. λ_{max} 285 (ϵ 9500); 361 (ϵ 22700); 372 (ϵ 22500); 399 (sh) (ϵ 13300) (MeOH) (Derep).

Ciminiello, P. *et al., Tetrahedron*, 1989, **45**, 3873-3878 (*isol, uv, ir, pmr, cmr, ms, struct*)
Ciminiello, P. *et al., Tetrahedron*, 1990, **46**, 4387-4392 (*Zn-Clathridine, cryst struct*)
Alvi, K.A. *et al., Tetrahedron*, 1993, **49**, 329-336 (*isol*)
Ohta, S. *et al., Tet. Lett.*, 2000, **41**, 4623-4627 (*synth*)

Clathridine B C-492

[146556-28-7]

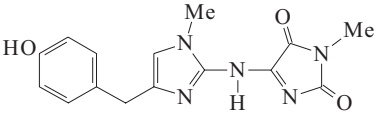


$C_{24}H_{21}N_5O_6$ 475.46
Metab. from the nudibranch *Notodoris gardineri*. Yellow oil. λ_{max} 285 ; 377 (MeOH).

Alvi, K.A. *et al., Tetrahedron*, 1993, **49**, 329 (*isol, uv, pmr, cmr, ms, struct*)

Clathridine C C-493

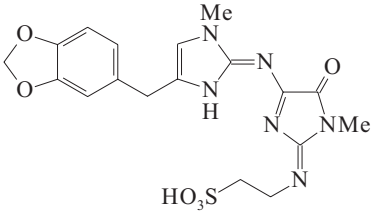
[152273-86-4]



$C_{15}H_{15}N_5O_3$ 313.315
Alkaloid from the sponge *Leucetta* sp. Weakly cytotoxic. Yellow plates (DMSO). Mp 255-257°. Related to Clathridine A, C-491.

Carroll, A.R. *et al., Aust. J. Chem.*, 1993, **46**, 1229 (*isol, uv, ir, pmr, cmr, ms, struct*)

Clathridine-9-*N*-(2-sulfoethyl)imine C-494

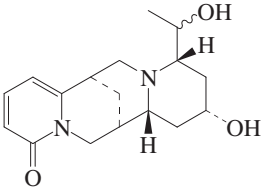


$C_{18}H_{20}N_6O_6S$ 448.459
Alkaloid from the marine sponge *Leucetta microraphis*. Yellow needles. Mp 275-277° dec. λ_{max} 232 (ϵ 9530); 278 (ϵ 8610); 382 (ϵ 13700) (MeOH) (Derep).

He, H.-Y. *et al., J.O.C.*, 1992, **57**, 2176-2178 (*isol, uv, ir, pmr, cmr, cryst struct*)

Clathrotropine C-495

[502686-87-5]

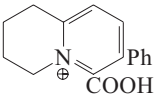


$C_{17}H_{24}N_2O_3$ 304.388
Alkaloid from the bark of *Clathrotropis glaucophylla*. Cryst. $[\alpha]_D^{23}$ -146 (c, 0.1 in EtOH). λ_{max} 205 (log ϵ 2.67); 234 (log ϵ 2.79); 309 (log ϵ 2.87) (MeOH).

Sagen, A.-L. *et al., Phytochemistry*, 2002, **61**, 975-978 (*isol, pmr, cmr, ms*)

Clathryimine A C-496

6-Carboxy-1,2,3,4-tetrahydro-7-phenylquinolizinium inner salt, 9CI
[175669-25-7]



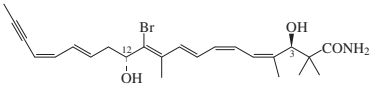
$C_{16}H_{16}NO_2^{\oplus}$ 254.308
Exists as zwitterion (COO^-). Alkaloid from the Indo-Pacific sponge *Clathria basilana*. Viscous amber oil. Readily decarboxylates to Clathyrimine B. λ_{max} 241 (ϵ 5500); 291 (ϵ 4500) (MeOH).

Decarboxy: 1,2,3,4-Tetrahydro-1-phenylquinolizinium(1+), 9CI. Clathryimine B
[175669-26-8]
$C_{15}H_{16}N^{\oplus}$ 210.298
Viscous brown oil. Counterion not specified.

Sperry, S. *et al., Tet. Lett.*, 1996, **37**, 2389-2390 (*isol, uv, ir, pmr, cmr, struct*)
Daab, J.C. *et al., Monatsh. Chem.*, 2003, **134**, 573-583 (*Clathryimine B, synth*)

Clathrynamide A C-497

11-Bromo-3,12-dihydroxy-2,2,4,10-tetramethyl-4,6,8,10,14,16-eicosahexaen-18-ynamide
[160638-12-0]



Absolute Configuration

$C_{24}H_{32}BrNO_3$ 462.426
Isol. from the marine sponges *Clathria* sp. and *Psammoclemma* sp. Antifungal agent. Pale yellow oil. $[\alpha]_D^{23}$ +149 (c, 0.022 in MeOH). λ_{max} 247 (ϵ 19500); 309 (ϵ 29500); 321 (ϵ 38000); 336 (ϵ 28800) (MeOH).

N-*(4-Hydroxy-1-methylpentyl)*: ***Clathrynamide B***
[152273-73-9]
$C_{30}H_{44}BrNO_4$ 562.586
Isol. from a *Clathria* sp. Gum. $[\alpha]_D^{25}$ +76 (c, 0.0033 in MeOH). λ_{max} 267 (ϵ 17400); 307 (ϵ 23400); 321 (ϵ 30200); 337 (ϵ 23400) (no solvent reported).

N-*(1-Methyl-4-oxopentyl)*: ***Clathrynamide C***
[152273-74-0]
$C_{30}H_{42}BrNO_4$ 560.57
Isol. from a *Clathria* sp. Gum. λ_{max} 268 (ϵ 25700); 307 (ϵ 36300); 321 (ϵ 38000); 337 (ϵ 29500) (no solvent reported).

Debromo: ***Debromoclathrynamide A***
[602306-79-6]
$C_{24}H_{33}NO_3$ 383.53
Isol. from a *Psammoclemma* sp. Pale yellow oil. $[\alpha]_D^{23}$ +159 (c, 0.02 in MeOH). λ_{max} 263 (sh) (log ϵ 4.4); 272 (log ϵ 4.42); 283 (log ϵ 4.36); 297 (log ϵ 4.53); 310 (log ϵ 4.64); 324 (log ϵ 4.54) (MeOH).

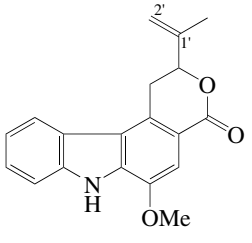
6E-*Isomer:* ***(6E)-Clathyrnamide A***
[603129-66-4]
$C_{24}H_{32}BrNO_3$ 462.426
Isol. from a *Psammoclemma* sp. Pale yellow oil. $[\alpha]_D^{23}$ -58 (c, 0.02 in MeOH). λ_{max} 268 (log ϵ 3.84); 294 (sh) (log ϵ 3.83); 308 (log ϵ 4.09); 322 (log ϵ 4.24); 338 (log ϵ 4.16) (MeOH).

(4E,6E)-Isomer, debromo: ***(4E,6E)-Debromoclathrynamide A***
[602302-49-8]
$C_{24}H_{33}NO_3$ 383.53
Isol. from a *Psammoclemma* sp. Pale yellow oil. $[\alpha]_D^{24}$ -80 (c, 0.004 in MeOH). λ_{max} 272 (log ϵ 4.02); 284 (log ϵ 3.99); 298 (log ϵ 4.11); 312 (log ϵ 4.22); 327 (log ϵ 4.15) (MeOH).

Ohta, S. *et al., Tet. Lett.*, 1993, **34**, 5935-5938 (*isol*)
Ojika, M. *et al., Biosci., Biotechnol., Biochem.*, 2003, **67**, 1568-1573 (*abs config, Psammoclemma constits*)

Clausamine B C-498

[205116-60-5]



$C_{19}H_{17}NO_3$ 307.348

(±)-form
Alkaloid from *Clausena anisata*. Oil. λ_{max} 205 ; 222 ; 237 ; 248 ; 269 ; 278 (sh) ; 310 (sh) ; 321 ; 334 (MeOH).

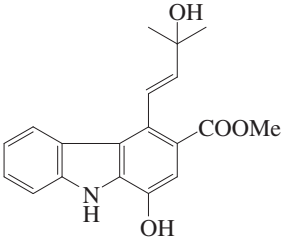
O-*De-Me:* ***Clausamine A***
[205116-59-2]
$C_{18}H_{15}NO_3$ 293.321
Alkaloid from *Clausena anisata*. Pale yellow powder. λ_{max} 204 ; 222 ; 238 ; 248 ; 269 ; 278 (sh) ; 310 (sh) ; 322 ; 335 (MeOH).

1′,2′-Dihydro, 1′-hydroxy: ***Clausamine C***
[205116-61-6]
$C_{19}H_{19}NO_4$ 325.363
Alkaloid from *Clausena anisata*. Pale yellow oil. λ_{max} 204 ; 223 ; 238 ; 249 ; 270 ; 278 (sh) ; 312 (sh) ; 322 ; 336 (MeOH).

Ito, C. *et al., Chem. Pharm. Bull.*, 1998, **46**, 344-346 (*Clausamines A - C*)
Lebold, T.P. *et al., Org. Lett.*, 2008, **10**, 997-1000 (*synth*)

Clausamine F C-499

[256222-02-3]



$C_{19}H_{19}NO_4$ 325.363
Alkaloid from *Clausena anisata*. Pale yellow oil. λ_{max} 223 ; 242 ; 272 ; 324 ; 341 (MeOH).

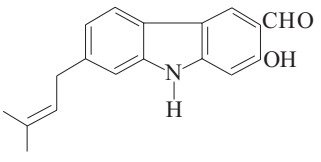
1-Me ether: ***Clausamine E***
[256222-01-2]
$C_{20}H_{21}NO_4$ 339.39
Alkaloid from *Clausena anisata*. Oil. λ_{max} 224 ; 239 ; 273 ; 322 ; 337 (MeOH).

3′-Hydroperoxide, 1-Me ether: ***Clausamine G***
[256222-03-4]
$C_{20}H_{21}NO_5$ 355.39
Alkaloid from *Clausena anisata*. Pale yellow oil. λ_{max} 223 ; 236 ; 270 ; 313 ; 321 ; 333 (MeOH).

Ito, C. *et al., J. Nat. Prod.*, 2000, **63**, 125-128 (*Clausamines E-G*)

Clausanitine C-500

2-Hydroxy-7-(3-methyl-2-butenyl)-9H-carbazole-3-carboxaldehyde, 9CI. 3-Formyl-2-hydroxy-7-prenylcarbazole
[58523-27-6]

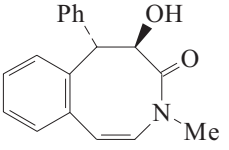


$C_{18}H_{17}NO_2$ 279.338
Alkaloid from the roots of *Clausena anisata* (Rutaceae). Silky yellow cryst. Mp 154-156°. Isomer of Heptaphylline, H-125.

Okorie, D.A. *et al., Phytochemistry*, 1975, **14**, 2720 (*isol, uv, ir, pmr, ms, struct*)

ζ-Clausenamide C-501

5,6-Dihydro-5-hydroxy-3-methyl-6-phenyl-3-benzazocin-4(3H)-one, 9CI
[136173-85-8]

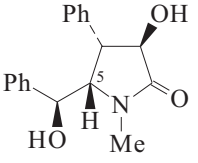


$C_{18}H_{17}NO_2$ 279.338
Alkaloid from *Clausena lansium* (wampee) (Rutaceae).

Yang, M. *et al., Chin. Chem. Lett.*, 1991, **2**, 291; *CA*, **115**, 155059 (*isol, struct*)
Yang, L. *et al., Org. Lett.*, 2007, **9**, 1387-1390 (*synth*)

Clausenamide C-502

3-Hydroxy-5-(hydroxyphenylmethyl)-1-methyl-4-phenyl-2-pyrrolidinone, 9CI. Lansimide 4†
[119616-14-7]



$C_{18}H_{19}NO_3$ 297.353
λ_{max} 257 (ϵ 500) (MeOH) (Berdy).

(±)-form [103541-15-7]
Isol. from the leaves of *Clausena lansium* (wampee) (Rutaceae). Needles. Mp 239-240°.

Di-Ac:
Cubes. Mp 165-167°.

1′-Me ether: ***Lansimide 3***†
[119518-25-1]
$C_{19}H_{21}NO_3$ 311.38
Constit. of *Clausena lansium* (wampee). Spasmolytic agent.

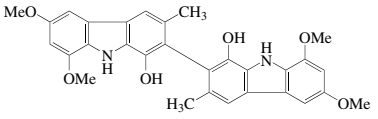
1′,5-Diepimer: ***Neoclausenamide***
[114528-82-4]
Isol. from *Clausena lansium* (wampee) (Rutaceae). Cubes. Mp 205-216°.

Lakshmi, V. *et al., Indian Drugs*, 1988, **26**, 105 (*Lansimides*)
Yang, M. *et al., Phytochemistry*, 1988, **27**, 445 (*isol, uv, ir, pmr, cmr, ms, cryst struct*)
Rao, E.C. *et al., Chin. Chem. Lett.*, 1994, **5**, 267-268 (*synth*)
Huang, D.F. *et al., Chin. Chem. Lett.*, 1994, **5**, 371-372 (*synth*)
Wang, J.-Q. *et al., J.C.S. Perkin 1*, 1996, 209-212 (*synth, cryst struct, Neoclausenamide*)
Cappi, M.W. *et al., Chem. Comm.*, 1998, 1159-1160 (*synth*)

Yang, L. *et al., Org. Lett.*, 2008, **10**, 2461-2464 (*synth*)

Clausenamine A C-503

*6,6′,8,8′-Tetramethoxy-3,3′-dimethyl-[2,2′-bi-9*H*-carbazole]-1,1′-diol. 2,2′-Bi(1-hydroxy-6,8-dimethoxy-3-methylcarbazole)*
[184427-49-4]

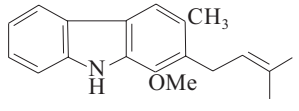


$C_{30}H_{28}N_2O_6$ 512.561
Alkaloid from stem bark of *Clausena excavata*. Shows antiplasmodial activity. Granules. Mp 278-280°. $[\alpha]_D^{21}$ +142.2 (c, 0.75 in $CHCl_3$). λ_{max} 218 (sh) ; 235 ; 257 (sh) ; 307 ; 343 (sh) (MeOH).

Wu, T.-S. *et al., Tet. Lett.*, 1996, **37**, 7819-7822 (*isol, uv, ir, pmr, cmr, ms, struct*)
Zhang, A. *et al., Bioorg. Med. Chem. Lett.*, 2000, **10**, 1021-1023 (*synth*)
Lin, G. *et al., Tetrahedron*, 2000, **56**, 7163-7171 (*synth, activity*)

Clausenapin C-504

*1-Methoxy-3-methyl-2-(3-methyl-2-butenyl)-9*H*-carbazole, 9CI*
[54313-57-4]

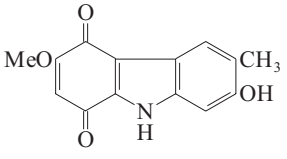


$C_{19}H_{21}NO$ 279.381
Alkaloid from the leaves of *Clausena heptaphylla* (Rutaceae). Cryst. (hexane). Mp 101°.

Joshi, B.S. *et al., Indian J. Chem.*, 1974, **12**, 437 (*synth*)
Bhattacharyya, P. *et al., Chem. Ind. (London)*, 1984, 301 (*isol, uv, ir, pmr*)

Clausenaquinone A C-505

*7-Hydroxy-3-methoxy-6-methyl-1*H*-carbazole-1,4-(9*H*)-dione, 9CI*
[159959-56-5]

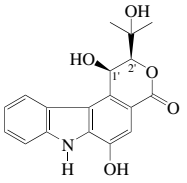


$C_{14}H_{11}NO_4$ 257.245
Alkaloid from stem bark of *Clausena excavata* (Rutaceae). Cytotoxic. Platelet aggregation inhibitor. Brown powder. Mp 290°. λ_{max} 200 ; 227 ; 265 ; 294 ; 320 ; 419 (MeOH) (Berdy).

Wu, T.-S. *et al., Bioorg. Med. Chem. Lett.*, 1994, **4**, 2395 (*isol, pmr, uv, activity*)

Clausevatine E C-506

[215377-69-8]



Relative Configuration

$C_{18}H_{17}NO_5$ 327.336
Alkaloid from the root bark of *Clausena excavata*. Yellowish granules. Mp 208-212°. $[\alpha]_D$ -92.4 (c, 0.05 in MeOH). λ_{max} 213 (sh) ; 222 ; 240 ; 251 ; 271 ; 282 ; 315 (sh) ; 325 ; 339 (MeOH).

1′-Epimer: ***Clausevatine F***
[215377-70-1]
$C_{18}H_{17}NO_5$ 327.336
Alkaloid from the root bark of *Clausena excavata*. Granules. Mp 162-164°. $[\alpha]_D$ -199 (c, 0.02 in MeOH). λ_{max} 202 ; 222 ; 241 ; 252 ; 271 ; 281 ; 314 (sh) ; 326 ; 339 (MeOH).

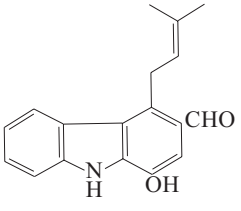
1′-Deoxy: ***Clausevatine D***
[215377-68-7]
$C_{18}H_{17}NO_4$ 311.337
Alkaloid from the root bark of *Clausena excavata*. Yellow granules. Mp 241-244°. $[\alpha]_D$ -5.7 (c, 0.93 in MeOH). λ_{max} 202 ; 223 ; 241 ; 251 ; 272 ; 278 (sh) ; 325 ; 340 (MeOH).

1′-Deoxy, 1′,2′-didehydro: ***Clausevatine G***
[215377-72-3]
$C_{18}H_{15}NO_4$ 309.321
Alkaloid from the root bark of *Clausena excavata*. Yellow granules. Mp >280°. λ_{max} 207 ; 223 ; 264 (sh) ; 274 ; 287 ; 338 ; 353 (MeOH).

Wu, T.-S. *et al., Chem. Pharm. Bull.*, 1998, **46**, 1459-1461 (*Clausevatines D-G*)
Lebold, T.P. *et al., Org. Lett.*, 2008, **10**, 997-1000 (*synth*)

Clausine D C-507

*1-Hydroxy-4-(3-methyl-2-butenyl)-9*H*-carbazole-3-carboxaldehyde. 3-Formyl-1-hydroxy-4-prenylcarbazole*
[142846-95-5]



$C_{18}H_{17}NO_2$ 279.338
Alkaloid from stem bark of *Clausena excavata* (Rutaceae). Exhibits significant antiplatelet aggregation activity. Brown powder. Mp 300°. λ_{max} 225 (ϵ 18600); 242 (ϵ 21400); 253 (sh) (ϵ 18600); 276 (ϵ 25100); 289 (ϵ 19100); 351 (ϵ 10000) (possibly MeOH, not reported) (Derep).

Me ether: ***Ekeberginine****. 1-Methoxy-4-(3-methyl-2-butenyl)-9*H*-carbazole-3-carboxaldehyde, 9CI. 3-Formyl-1-methoxy-4-prenylcarbazole*
[101242-43-7]
$C_{19}H_{19}NO_2$ 293.365
Alkaloid from the stem bark of *Ekebergia senegalensis* (Meliaceae). Mp 230-231°. Spectral data reported refer to the *N*-Me deriv.

Me ether, N-*Me:* Mp 155-157°.

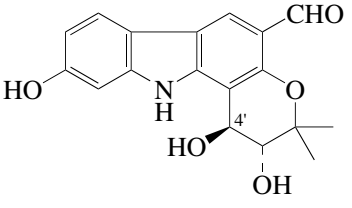
Carboxylic acid, Me ester: ***Clausine F***
[142846-96-6]
$C_{19}H_{19}NO_3$ 309.364
Alkaloid from the stem bark of *Clausena excavata* (Rutaceae). Exhibits significant antiplatelet aggregation activity. Powder. Mp 200-202°. λ_{max} (solvent not reported) (Derep). λ_{max} 225 (sh) (ϵ 20400); 244 (sh) (ϵ 28200); 251 (sh) (ϵ 28800); 269 (ϵ 38900); 313 (ϵ 7950); 323 (ϵ 7240); 340 (ϵ 5890) (possibly MeOH, not reported) (Derep).

Carboxylic acid, Me ether, Me ester: ***Clausamine D***
$C_{20}H_{21}NO_3$ 323.391
Alkaloid from *Clausena anisata*. Powder. λ_{max} 222 ; 240 ; 248 ; 256 ; 269 ; 310 ; 321 ; 335 (MeOH).

Lontsi, D. *et al., Tet. Lett.*, 1985, **26**, 4249-4252 (*Ekeberginine*)
Wu, T.-S. *et al., Chem. Pharm. Bull.*, 1992, **40**, 1069-1071 (*Clausines*)
Ito, C. *et al., J. Nat. Prod.*, 2000, **63**, 125-128 (*Clausamine D*)

Clausine W C-508

[192706-30-2]



Relative Configuration

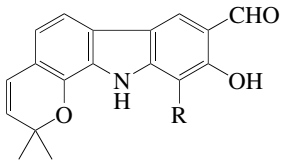
$C_{18}H_{17}NO_5$ 327.336
Alkaloid from the root bark of *Clausena excavata* (Rutaceae). Yellow cryst. (Me_2CO). Mp 178-179°. $[\alpha]_D$ -3.4 (c, 1 in MeOH). λ_{max} 202 (log ϵ 4.35); 224 (sh) (log ϵ 4.34); 237 (sh) (log ϵ 4.45); 243 (log ϵ 4.48); 250 (sh) (log ϵ 4.47); 287 (sh) (log ϵ 4.48); 301 (log ϵ 4.65); 349 (log ϵ 4.04) (MeOH).

4′-Deoxy: ***Clausine T***
[192706-49-3]
$C_{18}H_{17}NO_4$ 311.337
Alkaloid from *Clausena excavata* (Rutaceae). Yellowish cryst. (Me_2CO). Mp 155-158°. $[\alpha]_D$ -82.1 (c, 0.03 in MeOH). λ_{max} 202 ; 242 ; 249 ; 274 ; 285 (sh) ; 302 ; 345 (MeOH).

Wu, T.-S. *et al., Heterocycles*, 1997, **45**, 969-973 (*isol, uv, ir, pmr, cmr*)

Clauszoline A C-509

[185508-02-5]



R = -$CH_2CH{=}C(CH_3)_2$

$C_{23}H_{23}NO_3$ 361.44
Alkaloid from stem bark of *Clausena excavata*. Pale yellow powder. λ_{max} 204 ; 240 ; 265 ; 306 ; 375 (MeOH).

Ito, C. *et al., Chem. Pharm. Bull.*, 1996, **44**, 2231 (*isol, uv, ir, pmr, ms, struct*)

Clauszoline B C-510

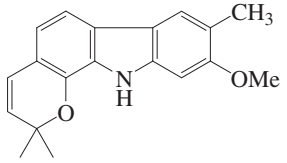
[185508-03-6]
As Clauszoline A, C-509 with
R = H

$C_{18}H_{15}NO_3$ 293.321
Alkaloid from stem bark of *Clausena excavata*. Yellow oil. λ_{max} 204 ; 242 ; 252 (sh) ; 264 ; 291 (sh) ; 304 ; 376 (sh) (MeOH).

Ito, C. *et al., Chem. Pharm. Bull.*, 1996, **44**, 2231 (*isol, uv, ir, pmr, ms, struct*)

Clauszoline H C-511

2,11-Dihydro-9-methoxy-2,2,8-trimethylpyrano[2,3-a]carbazole, 9CI
[187110-70-9]

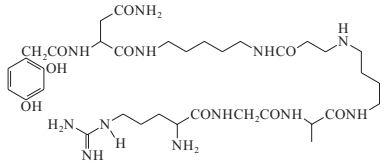


$C_{19}H_{19}NO_2$ 293.365
Alkaloid from *Clausena excavata*. Powder. λ_{max} 230 ; 258 ; 288 ; 310 ; 323 ; 348 ; 363 (MeOH).

Ito, C. *et al., Chem. Pharm. Bull.*, 1997, **45**, 48-52 (*isol, uv, pmr*)

Clavamine C-512

[129121-68-2]

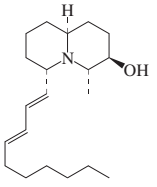


$C_{35}H_{60}N_{12}O_9$ 792.934
Isol. from the venom of the Joro spider *Nephila clavata*. Shows insecticidal props. $[\alpha]_D^{15}$ -12.6 (c, 0.94 in H_2O).

Yoshioka, M. *et al., Biog. Amines*, 1990, **7**, 375 (*isol*)
Teshima, T. *et al., Tetrahedron*, 1990, **46**, 3819 (*synth*)

Clavepictine B C-513

6-(1,3-Decadienyl)octahydro-4-methyl-2H-quinolizin-3-ol, 9CI
[132621-84-2]



Absolute Configuration

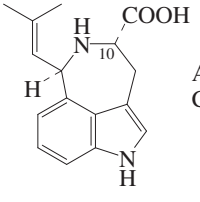
$C_{20}H_{35}NO$ 305.503
Alkaloid from the tunicate *Clavelina picta*. Cytotoxic agent. Cryst. Mp 70-72°. $[\alpha]_D$ +27.1 (c, 0.03 in CH_2Cl_2). λ_{max} 230 (ϵ 18000) (EtOH) (Derep).

O-*Ac:* ***Clavepictine A***
[132621-83-1]
$C_{22}H_{37}NO_2$ 347.54
Alkaloid from *Clavelina picta*. Cytotoxic agent. Oil. $[\alpha]_D$ -75.6 (c, 0.7 in CH_2Cl_2). λ_{max} 230 (ϵ 19000) (EtOH) (Derep).

Raub, M.F. *et al., J.A.C.S.*, 1991, **113**, 3178-3180 (*isol, struct*)
Toyooka, N. *et al., J.O.C.*, 1996, **61**, 4882-4883 (*synth*)
Ha, J.D. *et al., J.O.C.*, 1997, **62**, 4550-4551 (*synth*)
Ha, J.D. *et al., J.A.C.S.*, 1999, **121**, 10012-10020 (*synth*)
Toyooka, N. *et al., Tetrahedron*, 1999, **55**, 15209-15224 (*synth, abs config*)
Xu, S. *et al., Org. Lett.*, 2006, **8**, 3179-3182 (*synth*)

Clavicipitic acid I C-514

trans-*Clavicipitic acid*
[33062-26-9]



Absolute Configuration

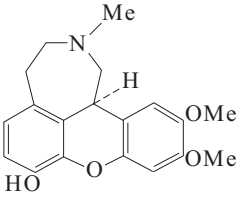
$C_{16}H_{18}N_2O_2$ 270.33
Prod. by *Claviceps* strain SD58 and by *Claviceps fusiformis* strain 139/2/IG. Plates (EtOH). Mp 264° (262° dec.). Isol. only as a mixt. with Clavicipitic acid II, approx. 1:1 from *C. fusiformis* and with Clavicipitic acid I predominating in the case of *C.* strain SD58.

10-Epimer: ***Clavicipitic acid II***. cis-*Clavicipitic acid*
[72690-85-8]
$C_{16}H_{18}N_2O_2$ 270.33
Prod. by *Claviceps fusiformis* and *Claviceps* strain SD58 (see above).

Robbers, J.E. *et al., Tet. Lett.*, 1969, 1857 (*isol, uv, ir, pmr, ms, biosynth*)
Bajwa, R.S. *et al., Phytochemistry*, 1975, **14**, 735 (*biosynth*)
King, G.S. *et al., J.C.S. Perkin 1*, 1977, 2099 (*isol, pmr, ms, cd, struct*)
Robbers, J.E. *et al., J.O.C.*, 1980, **45**, 1117 (*cryst struct, biosynth*)
Muratake, H. *et al., Heterocycles*, 1983, **20**, 1963 (*synth, ir, pmr*)
Kozikowski, A.P. *et al., J.O.C.*, 1984, **49**, 2310 (*synth, uv, ir, ms*)
Boyles, D.A. *et al., J.O.C.*, 1988, **53**, 5128 (*synth*)
Semmelhack, M.F. *et al., Tet. Lett.*, 1993, **34**, 5051 (*synth*)
Somei, M. *et al., Heterocycles*, 1994, **37**, 719 (*synth*)
Iwao, M. *et al., Tetrahedron*, 1997, **53**, 51 (*synth*)
Shinohara, H. *et al., Tetrahedron*, 1999, **55**, 10989-11000 (*synth*)
Yokoyama, Y. *et al., Eur. J. Org. Chem.*, 2004, 1244-1253 (*synth*)
Ku, J.-M. *et al., J.O.C.*, 2007, **72**, 8115-8118 (*synth*)

Clavizepine C-515

[142697-01-6 ((±)-form Me ether), 154968-81-7 ((±)-form)]

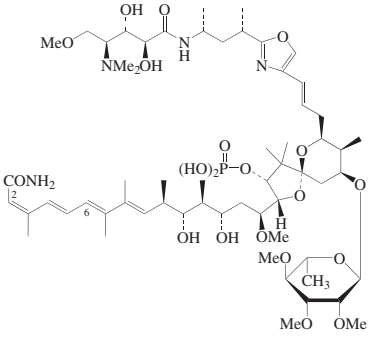


$C_{19}H_{21}NO_4$ 327.379
λ_{max} 209 (ϵ 40700); 262 (ϵ 6760); 306 (ϵ 6460) (MeOH/NaOH) (Derep). λ_{max} 207 (ϵ 25100); 250 (ϵ 2510); 295 (ϵ 4170) (MeOH) (Derep).

(*S*)-*form* [109305-77-3]
Isol. from *Corydalis claviculata* (Papaveraceae). Cryst. (MeOH). Mp 234-235°. $[\alpha]_D$ -40 (c, 0.05 in MeOH). The first naturally occurring dibenzopyranazepine alkaloid.

Boente, J.M. *et al., Tet. Lett.*, 1986, **27**, 4077 (*uv, pmr, cmr, ms, struct*)
Vásquez, R. *et al., Synlett*, 1994, 433 (*synth*)
Ishibashi, H. *et al., Tetrahedron*, 1994, **50**, 10215 (*synth*)
De la Fuente, M.C. *et al., J.O.C.*, 1996, **61**, 5818 (*synth*)

Clavosine A C-516



$C_{60}H_{101}N_4O_{20}P$ 1229.447
Isol. from the sponge *Myriastra clavosa*. Cytotoxic agent and inhibitor of protein phosphatases. Powder. $[\alpha]_D$ -5 (c, 0.36 in CH_2Cl_2). λ_{max} 228 (ϵ 20920); 332 (ϵ 23270) (MeOH).

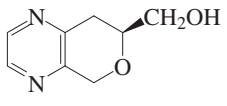
*(2*E*)-Isomer:* ***Clavosine B***
$C_{60}H_{101}N_4O_{20}P$ 1229.447
Isol. from *Myriastra clavosa*. Cytotoxic agent and inhibitor of protein phosphatases. Powder. $[\alpha]_D$ -3.2 (c, 0.62 in CH_2Cl_2). λ_{max} 228 (ϵ 18570); 328 (ϵ 23000) (MeOH).

*(2*E*,6*Z*)-Isomer:* ***Clavosine C***
$C_{60}H_{101}N_4O_{20}P$ 1229.447
Isol. from *Myriastra clavosa*. Cytotoxic agent and inhibitor of protein phosphatases. Powder. $[\alpha]_D$ -31.7 (c, 0.12 in CH_2Cl_2). λ_{max} 228 (ϵ 20300); 318 (ϵ 19960) (MeOH).

Fu, X. *et al., J.O.C.*, 1998, **63**, 7957-7963

Clavulazine C-517

*7,8-Dihydro-5*H*-pyrano[3,4-*b*]pyrazine-7-methanol, 9CI*
[220525-28-0]



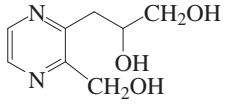
$C_8H_{10}N_2O_2$ 166.179

(S)-form
Alkaloid from the soft coral *Clavularia viridis*. Needles (EtOAc/hexane). Mp 101-102°. $[\alpha]_D$ -99.4 (c, 0.17 in $CHCl_3$). λ_{max} 272 (log ϵ 3.89); 277 (log ϵ 3.89); 310 (log ϵ 3.06) (EtOH).

Watanabe, K. *et al., Heterocycles*, 1998, **49**, 269-274 (*isol, pmr, cmr*)
Shen, Y.-C. *et al., J. Chin. Chem. Soc. (Taipei)*, 2004, **51**, 1421-1424 (*isol, pmr, cmr, ms*)
Kumar, S.P. *et al., Tet. Lett.*, 2006, **47**, 7149-7151 (*synth*)

Clavulazol A C-518

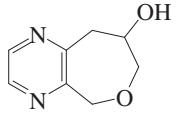
[851591-69-0]



$C_8H_{12}N_2O_3$ 184.194
Alkaloid from the soft coral *Clavularia viridis*. Amorph. solid. $[\alpha]_D^{25}$ -22.8 (c, 1 in MeOH). λ_{max} 277 (log ϵ 3.89); 311 (log ϵ 3.01) (no solvent reported).

Shen, Y.-C. *et al., J. Chin. Chem. Soc. (Taipei)*, 2004, **51**, 1421-1424 (*isol, pmr, cmr, ms*)

Clavulazol B C-519



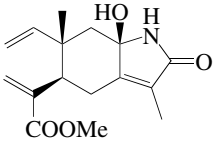
$C_8H_{10}N_2O_2$ 166.179

(-)-form [851591-70-3]
Alkaloid from the soft coral *Clavularia viridis*. Amorph. solid. $[\alpha]_D^{25}$ -58.9 (c, 1 in MeOH). λ_{max} 272 (log ϵ 3.88); 278 (log ϵ 3.86); 309 (log ϵ 3.29) (no solvent reported).

Shen, Y.-C. *et al., J. Chin. Chem. Soc. (Taipei)*, 2004, **51**, 1421-1424 (*isol, pmr, cmr, ms*)

Clavulinin C-520

[185559-59-5]

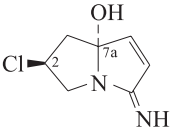


$C_{16}H_{21}NO_4$ 291.346
Constit. of *Clavularia inflata*. Needles. Mp 190-191°.

Su, J. *et al., Chin. Sci. Bull.*, 1996, **41**, 1877-1880; *CA*, **126**, 87252a (*isol, pmr, cmr*)

Clazamycin C-521

*2-Chloro-2,3-dihydro-5-imino-1*H*-pyrrolizin-7*a*(5*H*)-ol*



(2*S*,7a*R*)*–form*

$C_7H_9ClN_2O$ 172.614
Exists in aq. soln. as a mixt. of two epimers, Clazamycin A and B, the ratio of which is pH dependent.

(2S,7aR)-form
Clazamycin A
[71806-55-8]
Isol. from *Streptomyces* MF 990-BF4. Antibiotic with weak antibacterial activity, inhibits leukaemia L-1210 in mice. Cryst. (as hydrochloride). Sol. H_2O, MeOH. Mp 110° dec. (hydrochloride). $[\alpha]_D^{25}$ -56 (c, 1.0 in H_2O). λ_{max} 212 (ϵ 11800); 250 (ϵ 2600) (HCl SALT/H2O) (Derep). λ_{max} 212 (ϵ 11800); 250 (ϵ 2600) (H_2O) (Berdy).
▶ LD_{50} (mus, ivn) 50 - 100 mg/kg.

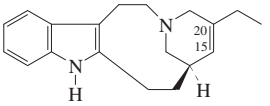
(2S,7aS)-form
Clazamycin B. *U 54702D. U 54703. Antibiotic 354. Antibiotic U 54702D. Antibiotic U 54703*
[71774-49-7]
Isol. from *Streptomyces* MF 990-BF4 and *Streptomyces puniceus doliceus*. Possesses weak antibacterial activity. Hygroscopic powder (as hydrochloride). $[\alpha]_D^{24}$ +96 (c, 1.0 in H_2O). λ_{max} 212 (ϵ 11800); 250 (ϵ 2600) (HCl SALT/H2O) (Derep).
▶ UY8427350

[69136-00-1 , 68859-24-5]

Horiuchi, Y. *et al., J. Antibiot.*, 1979, **32**, 762
Nakamura, H. *et al., J. Antibiot.*, 1979, **32**, 765 (*cryst struct*)
Dolak, L.A. *et al., J. Antibiot.*, 1980, **33**, 83 (*struct*)
Hori, M. *et al., J. Antibiot.*, 1984, **37**, 260 (*props*)
Buechter, D.D. *et al., J. Nat. Prod.*, 1987, **50**, 360

Cleavamine C-522

*5-Ethyl-1,4,7,8,9,10-hexahydro-2*H*-3,7-methanoazacycloundecino[5,4-*b*]indole, 9CI*



(*R*)*-form*

$C_{19}H_{24}N_2$ 280.412

(R)-form [1674-01-7]
Degradn. prod. of Catharanthine, C-195, Vinblastine, V-110 and Leurosine, L-162. Needles (MeOH). Mp 117-119°. $[\alpha]_D^{26}$ +73 ($CHCl_3$).

Methiodide:
Cryst. (MeOH/Et_2O/petrol). Mp 244-245° dec.

15,20-Dihydro: ***(+)-Dihydrocleavamine***
[1966-42-3]
$C_{19}H_{26}N_2$ 282.428
Alkaloid from *Pandaca boiteaui* (Apocynaceae). Mp 135°. $[\alpha]_D$ +68 ($CHCl_3$).

*15,20-Dihydro, 20*S*-hydroxy: (+)-Velbanamine*
[29951-44-8]
Fission prod. of Vinblastine, V-110 and Vincristine, V-128. $[\alpha]_D$ +56.2 ($CHCl_3$).

(S)-form [57550-18-2]
Obt. by dehydration of Capuronine, C-104. $[\alpha]_D^{20}$ -19 (c, 1 in $CHCl_3$).

15,20-Dihydro: ***(-)-Dihydrocleavamine***
[1805-75-0]
$C_{19}H_{26}N_2$ 282.428
Alkaloid from *Pandaca boiteaui* (Apocynaceae). Noncryst. $[\alpha]_D$ -87 ($CHCl_3$).

*15,20-Dihydro, 20*R*-hydroxy:* ***Velbanamine***
[62246-22-4]
[34964-89-1 , 19637-92-4 , 11034-65-4]
$C_{19}H_{26}N_2O$ 298.427
Trace alkaloid from leaves and twigs of *Tabernaemontana eglandulosa* (Apocynaceae). Mp 139-141° (125-130°) (synthetic). $[\alpha]_D$ -49.3 ($CHCl_3$).

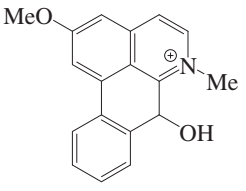
(±)-form [31679-35-3]
Mp 113-114.5°.

Camerman, N. *et al., Acta Cryst.*, 1964, **17**, 384 (*cryst struct*)
Kutney, J.P. *et al., Can. J. Chem.*, 1965, **43**, 1545 (*synth, uv, ir, pmr*)
Gorman, M. *et al., J.A.C.S.*, 1965, **87**, 93 (*synth*)
Büchi, G. *et al., J.A.C.S.*, 1968, **92**, 999 (*Velbanamine, synth, bibl*)
Kutney, J.P. *et al., Helv. Chim. Acta*, 1975, **58**, 1672 (*synth*)
Chardon-Loriaux, I. *et al., Tet. Lett.*, 1975, 1845 (*synth*)
Wenkert, E. *et al., Helv. Chim. Acta*, 1976, **59**, 2711 (*cmr*)
Wenkert, E. *et al., Heterocycles*, 1979, **12**, 1439 (*cmr*)
Takano, S. *et al., Tet. Lett.*, 1980, 3697 (*Velbanamine, synth*)
Imanishi, T. *et al., Chem. Pharm. Bull.*, 1981, **29**, 901; 1983, **31**, 1183 (*synth, uv, pmr, ms*)
Takano, S. *et al., Chem. Lett.*, 1982, 733 (*synth*)

Van Beek, T.A. *et al., Tetrahedron*, 1984, **40**, 737 (*Velbanamine, isol, uv, ms*)
Danieli, B. *et al., Tet. Lett.*, 2000, **41**, 3489-3492 (*synth, Dihydrocleavamine*)
Kanada, R.M. *et al., Tet. Lett.*, 2001, **42**, 7311-7313 (*Dihydrocleavamine, synth*)
Amat, M. *et al., Org. Lett.*, 2003, **5**, 3139-3142 (*Dihydrocleavamine, synth*)

Clemaine C-523

[171784-07-9]



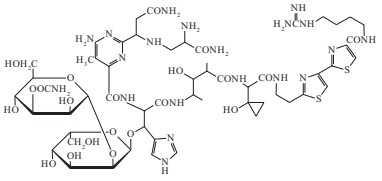
$C_{18}H_{16}NO_2^{\oplus}$ 278.33

Counterion not specified. Presumably exists as internal salt with ionised OH group. Quaternary alkaloid from *Clematis purpurea* var. *hybrida*. Pale yellow oil.

Sayed, H.M. *et al., Indian J. Chem., Sect. B*, 1995, **34**, 1111-1113

Cleomycin B_2 C-524

[76741-88-3]



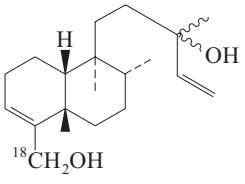
Peptide antibiotic. Isol. from *Streptomyces verticillus*. Active against gram-positive and -negative bacteria and tumours. Sol. H_2O. Occurs complexed with Cu. λ_{max} 244 ; 294 (MeOH) (Berdy).

Hydrochloride:
Pale-yellow amorph. powder. Mp 185-188° dec.

Cu complex:
Blue powder. Mp 197-201°.

Umezawa, H. *et al., J. Antibiot.*, 1980, **33**, 1079 (*struct, nmr*)

3,14-Clerodadiene-13,18-diol C-525



$C_{20}H_{34}O_2$ 306.487

(*ent*-5α,13ξ)-*form*
Sagittariol
[56497-92-8]
Constit. of *Sagittaria sagittifolia* (arrowhead). Cryst. (C_6H_6/hexane). Mp 109°. $[\alpha]_D$ +41 ($CHCl_3$).

18-(2-Pyrrolecarbonyl): ***Nakamurol D***
[174756-41-3]
$C_{25}H_{37}NO_3$ 399.572
Constit. of *Agelas nakamurai*. Pale yellow oil. Sol. MeOH, EtOAc, $CHCl_3$; poorly sol. H_2O. $[\alpha]_D^{25}$ -8.5 (c, 1.2 in $CHCl_3$).

13-Epimer: ***Deacetylrigidusol***
[329689-18-1]
$C_{20}H_{34}O_2$ 306.487
Constit. of *Haplopappus rigidus*. Gum. $[\alpha]_D^{24}$ -21.1 (c, 1.21 in $CHCl_3$).

13-Epimer, 18-Ac: ***Rigidusol***
[329688-58-6]
$C_{22}H_{36}O_3$ 348.525
Constit. of *Haplopappus rigidus*. Gum. $[\alpha]_D^{24}$ -31.8 (c, 0.11 in $CHCl_3$).

Sharma, S.C. *et al., Phytochemistry*, 1975, **14**, 1055; 1984, **23**, 1194 (*Sagittariol*)
Shoji, N. *et al., J. Nat. Prod.*, 1996, **59**, 448-450 (*Nakamurol D*)
Morales, G. *et al., Phytochemistry*, 2000, **55**, 863-866 (*Rigidusol, Deacetylrigidusol*)

Clinacoside C C-526

[212000-76-5]

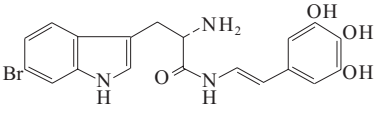
MeS(O)CH=CHCONHCH$_2$CH$_2$OGlc

$C_{12}H_{21}NO_8S$ 339.366

Constit. of *Clinacanthus nutans*. Oil. $[\alpha]_D^{21}$ +60 (c, 0.4 in Py). λ_{max} 252 (log ϵ 3.64) (MeOH).

Teshima, K.-I *et al., Phytochemistry*, 1998, **48**, 831-835 (*isol, pmr, cmr*)

Clionamide C-527



$C_{19}H_{18}BrN_3O_4$ 432.273

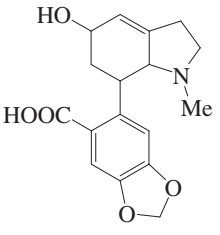
(*S*)-*form* [68835-91-6]
Major metab. from the sponge *Cliona celata*. Chelate forming. Unstable yellow powder. $[\alpha]_D$ +32.1 (c, 2.12 in MeOH). λ_{max} 227 (ϵ 31000); 291 (ϵ 11000); 296 (ϵ 12000); 311 (sh) (ϵ 9400) (MeOH) (Derep).

Tetra-Ac: ***Tetraacetylclionamide***
[68857-44-3]
$C_{27}H_{26}BrN_3O_8$ 600.422
Isol. from *Cliona celata*. Cryst. (THF/diisopropyl ether). Mp 209-211°. $[\alpha]_D$ +45 (c, 0.7 in Me_2CO).

Andersen, R.J. *et al., Can. J. Chem.*, 1979, **57**, 2325 (*isol, uv, ir, pmr, cmr, ms, struct*)
Stonard, R.J. *et al., J.O.C.*, 1980, **45**, 3687 (*isol, deriv*)

Cliviahaksine C-528

[85967-04-0]



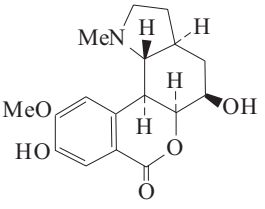
$C_{17}H_{19}NO_5$ 317.341
Alkaloid from *Clivia miniata* (Amaryllidaceae). Fine prisms (Me_2CO). Mp 160-165°. $[\alpha]_{Hg}^{20}$ -60 (c, 0.05 in $CHCl_3$).

O-*(2,6-Dimethyl-3-pyridinecarbonyl):* ***Cliviaaline***
[83482-59-1]
$C_{25}H_{26}N_2O_6$ 450.49
Trace alkaloid from *Clivia miniata* (Amaryllidaceae). Fine needles (Me_2CO). Mp 200-201°.

Döpke, W. *et al., Z. Chem.*, 1982, **22**, 310 (*Cliviaaline*)
Döpke, W. *et al., Z. Chem.*, 1983, **23**, 102 (*Cliviahaksine*)

Clivisyaline C-529

Cliviasyline (incorr.)
[79038-08-7]

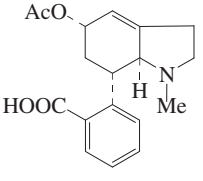


$C_{17}H_{21}NO_5$ 319.357
Alkaloid from *Clivia miniata* (Amaryllidaceae). Fine prisms (Me_2CO). Mp 140-145°. $[\alpha]_{Hg}^{24}$ +125 (c, 0.1 in $CHCl_3$).

Döpke, W. *et al., Z. Chem.*, 1981, **21**, 223-224 (*isol, uv, ir, pmr, ms, struct*)

Clivojuline C-530

[77410-45-8]



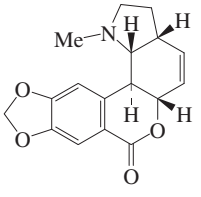
Absolute Configuration

$C_{18}H_{21}NO_4$ 315.368
Evidently a secolycorenine alkaloid. Alkaloid from *Clivia miniata* (Amaryllidaceae). Fine needles (Me_2CO). Mp 130-135° dec. $[\alpha]_{Hg}^{20}$ +25 (c, 0.1 in $CHCl_3$).

Döpke, W. *et al., Heterocycles*, 1981, **16**, 529 (*uv, pmr, ms, struct*)

Clivonidine C-531

[86667-23-4]



Absolute Configuration

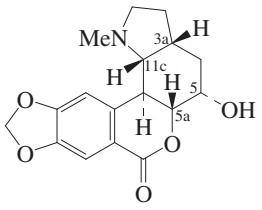
$C_{17}H_{17}NO_4$ 299.326
Alkaloid from the total herb of *Clivia miniata* (Amaryllidaceae). Platelets

(EtOH). Mp 238-239°.

Ali, A.A. *et al., J. Nat. Prod.*, 1983, **46**, 350-352 (*isol, uv, ir, pmr, ms, struct*)

Clivonine C-532

[477-16-7]



$C_{17}H_{19}NO_5$ 317.341
Alkaloid from the rhizomes of *Clivia miniata* (Amaryllidaceae). Prisms (EtOAc). Mp 199-200° (193-194°). $[\alpha]_D^{23}$ +41.24 (c, 1.11 in $CHCl_3$).

Hydrochloride:
Prisms (MeOH/Et_2O). Mp 282-287° dec.

Picrate: Mp 250-254° dec.

Ac: Mp 194-196°.

Propanoyl: ***Poetinatine***
[52657-07-5]
$C_{20}H_{23}NO_6$ 373.405
Alkaloid from *Narcissus poeticus* var. *ornatus* (Amaryllidaceae). Prisms (Me_2CO). Mp 212-213°. $[\alpha]_D$ +50 (c, 0.15 in $CHCl_3$).

O-*(3ξ-Hydroxybutanoyl):* ***Clivatine***
[1355-66-4]
$C_{21}H_{25}NO_7$ 403.431
Alkaloid from *Clivia miniata* (Amaryllidaceae). Mp 166-169° (159-161°). $[\alpha]_D^{25}$ +52 (c, 0.2 in $CHCl_3$).

O-*(3-Hydroxybutanoyl):* ***Nobilisitine B***
$C_{21}H_{25}NO_7$ 403.431
Alkaloid from *Clivia nobilis.* Needles (MeOH). Mp 205-207°. Epimer of Clivatine at the acyl side-chain. Config. not detd. λ_{max} 232 (log ϵ 4.21); 266 (log ϵ 3.66); 305 (log ϵ 3.65) (MeOH).

O-*(3-Oxobutanoyl):* ***Clivacetine***
[74730-02-2]
$C_{21}H_{23}NO_7$ 401.415
Alkaloid from *Clivia miniata* (Amaryllidaceae). Prisms (EtOAc). Mp 152-155°. $[\alpha]_D^{24}$ +53.8 (c, 0.67 in $CHCl_3$).

O-*(5-Ethoxycarbonyl-2,6-dimethyl-3-pyridinecarbonyl):* ***Cliviamartine***
[76983-01-2]
$C_{28}H_{30}N_2O_8$ 522.554
Alkaloid from *Clivia miniata* (Amaryllidaceae). Needles (Me_2CO). Mp 172-175°. $[\alpha]_{Hg}^{20}$ +45 (c, 0.2 in $CHCl_3$). Ester of Clivonine, C-532.

5a-*Epimer:* ***Cliviasine***
[19504-94-0]
Alkaloid from *Clivia miniata* (Amaryllidaceae). Mp 195-197°. Opt. rotn. not reported.

5a-*Epimer, perchlorate:* Mp 273-276°.

*5,5*a-*Diepimer:* ***Clividine***
[29073-38-9]
$C_{17}H_{19}NO_5$ 317.341
Alkaloid from *Clivia miniata*. Mp 195-197°. $[\alpha]_D^{22}$ -75 (c, 0.2 in $CHCl_3$).

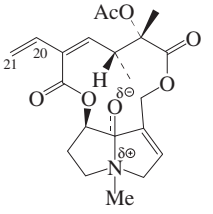
*3*a,*5*a-*Diepimer:* ***Nobilisine***
[115587-27-4]
$C_{17}H_{19}NO_5$ 317.341
Alkaloid from *Clivia nobilis* (Amaryllidaceae). Plates (MeOH). Mp 275-277°.

*3*a,*5,5*a,*11*c-*Tetraepimer:* ***Nobilisitine A***
$C_{17}H_{19}NO_5$ 317.341
Alkaloid from *Clivia nobilis.* Cryst. Mp 186-187°. λ_{max} 232 (log ϵ 4.28); 265 (log ϵ 3.67); 305 (log ϵ 3.71) (MeOH).

Briggs, C.K. *et al., J.A.C.S.*, 1956, **78**, 2899 (*isol*)
Boit, H.-G. *et al., Naturwissenschaften*, 1961, **48**, 603 (*Clivatine*)
Döpke, W. *et al., Tet. Lett.*, 1967, 451; 1970, 3245 (*Clivonine, Clividine, ir, pmr, cd, ms, struct*)
Döpke, W. *et al., Pharmazie*, 1970, **25**, 700 (*Cliviasine*)
Jeffs, P.W. *et al., Tetrahedron*, 1971, **27**, 5065 (*pmr, struct*)
Irie, H. *et al., Chem. Comm.*, 1973, 302 (*synth, Clividine*)
Döpke, W. *et al., Z. Chem.*, 1974, **14**, 57 (*Poetinatine*)
Kobayashi, S. *et al., Chem. Pharm. Bull.*, 1980, **28**, 1827 (*Clivonine, Clivacetine, Clivatine*)
Döpke, W. *et al., Z. Chem.*, 1980, **20**, 374 (*Cliviamartine*)
Jeffs, P.W. *et al., J. Nat. Prod.*, 1988, **51**, 549 (*Nobilisine*)
Wagner, J. *et al., Tetrahedron*, 1996, **52**, 6591 (*cd*)
Evidente, A. *et al., Phytochemistry*, 1999, **51**, 1151-1155 (*Nobilisitines*)

Clivorine C-533

[33979-15-6]



Absolute Configuration

$C_{21}H_{27}NO_7$ 405.447
Cyclic otonecine diester. Alkaloid from *Ligularia clivorum* and *Ligularia hodgsonii*. Cryst. + $1H_2O$ or solvated tetrahedra (EtOAc or Me_2CO). Mp 148-150°. $[\alpha]_D^{24}$ +79 (c, 0.713 in $CHCl_3$). $[\alpha]_D^{24}$ +49 (c, 0.713 in MeOH).

▶ VT5800000

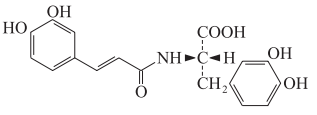
Picrate:
Yellow needles (EtOH). Mp 173-175°.

20,21-Dihydro, 20ξ-hydroxy: ***Hodgsonine***
[218143-68-1]
$C_{21}H_{29}NO_8$ 423.462
Alkaloid from *Ligularia hodgsonii*.

Klásek, A. *et al., Coll. Czech. Chem. Comm.*, 1967, **32**, 2512-2522 (*isol, uv, ir*)
Birnbaum, K.B. *et al., Acta Cryst. B*, 1972, **28**, 2825-2833 (*cryst struct, abs config*)
Hrbek, J. *et al., Coll. Czech. Chem. Comm.*, 1972, **37**, 3918-3935 (*cd*)
Logie, C.G. *et al., Phytochemistry*, 1994, **37**, 43-109 (*pmr*)
Lin, G. *et al., Rapid Commun. Mass Spectrom.*, 1998, **12**, 1445-1456 (*Hodgsonine*)
Lin, G. *et al., J. Nat. Prod.*, 2000, **63**, 857-863 (*isol, pmr, cmr*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, CMV950

Clovamide C-534

N-*[3-(3,4-Dihydroxyphenyl)-1-oxo-2-propenyl]-3-hydroxytyrosine, 9CI.* N-*(3,4-Dihydroxycinnamoyl)DOPA.* N-*Caffeoyl DOPA*



(*S,E*)*-form*

$C_{18}H_{17}NO_7$ 359.335

(S,E)-form [53755-02-5]
Isol. from *Trifolium pratense* (red clover) and from the bark of *Dalbergia melanoxylon*. Also from cocoa liquor *Theobroma cacao.* Natural antioxidant. Amorph. powder or oil. Mp 125-130°. $[\alpha]_D^{18}$ -30.9 (c, 0.5 in H_2O).

Tetra-Me ether, Me ester: [64803-83-4] Mp 152-153°. $[\alpha]_D^{22}$ +137 (c, 1 in $CHCl_3$).

(S,Z)-form [53755-03-6]
Isol. from *Trifolium pratense* (red clover) and from the bark of *Dalbergia melanoxylon*. Oil. $[\alpha]_D^{19}$ +28.7 (c, 0.57 in H_2O).

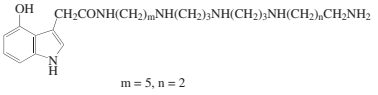
Tetra-Me ether, Me ester: [64803-85-6] Syrup. $[\alpha]_D^{16}$ +83 (c, 1 in $CHCl_3$).

[120094-83-9]

Yoshihara, T. *et al., Agric. Biol. Chem.*, 1974, **38**, 1107; 1977, **41**, 1679 (*isol*)
Van Heerden, F.R. *et al., Phytochemistry*, 1980, **19**, 2125 (*isol, cmr, synth*)
Robiot, G. *et al., J. Nat. Prod.*, 1988, **51**, 596 (*synth*)
Sanbongi, C. *et al., J. Agric. Food Chem.*, 1998, **46**, 454-457 (*S,E-form, isol cacao, hplc, pmr, cmr*)

CNS 2103 C-535

N-*[5-[[3-[[3-[(3-Aminopropyl)amino]-propyl]amino]propyl]amino]pentyl]-4-hydroxy-1*H*-indole-3-acetamide, 9CI*
[144923-45-5]



$C_{24}H_{42}N_6O_2$ 446.635
Alkaloid from the water spider *Dolomedes okefinokensis.* Ca channel antagonist. Powder.

McCormick, K.D. *et al., Tetrahedron*, 1993, **49**, 11155-11168 (*isol, uv, pmr, ms*)

CNS 2104 C-536

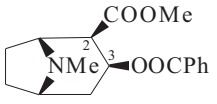
N-*[3-[[3-[[3-[(5-Aminopentyl)amino]-propyl]amino]propyl]amino]propyl]-4-hydroxy-1*H*-indole-3-acetamide, 9CI*
[144923-46-6]
As CNS 2103, C-535 with m = 3, n = 4

$C_{24}H_{42}N_6O_2$ 446.635
Minor alkaloid from the water spider *Dolomedes okefinokensis*. Ca channel antagonist. Powder.

Pat. Coop. Treaty (WIPO), 1992, 92 14 709; *CA*, **118**, 824b (*isol*)
McCormick, K.D. *et al., Tetrahedron*, 1993, **49**, 11155-11168 (*occur*)

Cocaine, BAN, USAN C-537

Methyl 3-(benzoyloxy)-8-methyl-8-azabicyclo[3.2.1]octane-2-carboxylate, 9CI. Benzoylecgonine methyl ester. Ecgonine methyl ester benzoate



$C_{17}H_{21}NO_4$ 303.357
α- and β-Cocaines are nonalkaloid struct. isomers. Adrenergic receptor antagonist. Potent CNS stimulant, bactericidal agent. Mydriatic agent. Topical anaesthetic. Drug of abuse. Log P 2.72 (calc).

(-)-*form* [50-36-2]
Principal alkaloid of *Erythroxylum* spp., esp. *Erythroxylum coca, Erythroxylum monogynum* (Erythroxylaceae). Prisms (EtOH). Mp 98°. $Bp_{0.1}$ 187-188°. $[\alpha]_D$ -16 ($CHCl_3$). $[\alpha]_D$ -30 (MeOH). Pharmacol. active enantiomer.

▶ Abuse can lead to habituation or addiction. Adverse human CNS effects include distorted perception, convulsions, general anaesthesia. Eye irritant. LD_{50} (mus, orl) 99 mg/kg. YM2800000

Hydrochloride: ***Cocaine hydrochloride, JAN, USAN***
[53-21-4]
Mp 200-202° (197°). $[\alpha]_D^{20}$ -71.9 (c, 2 in H_2O).

▶ Drug of abuse. Abuse can lead to habituation or addiction. LD_{50} (mus, orl) 96 mg/kg. Exp. reprod. and teratogenic effects. YM3050000

Nitrate:
Deliquescent cryst. + H_2O. Mp 58-63°.

(+)-Tartrate:
Prisms + H_2O. Mp 114-115°. $[\alpha]_D$ -41.2 (H_2O).

Picrate:
Yellow powder.

Methiodide: Mp 169°.

2-Epimer: ***Pseudococaine***. *ψ-Cocaine. Delcaine*
[478-73-9]
$C_{17}H_{21}NO_4$ 303.357
Minor alkaloid obt. prob. as an artifact by the ready base-cat. epimerisation of Cocaine during isol., e.g. from *Erythroxylum maxillense* (Erythroxylaceae). Prismatic cryst. Mp 46-47°.

2-Epimer, hydrochloride:
Elongated leaflets (EtOH). Mp 205-210°. $[\alpha]_D$ +43 (H_2O).

N-*De-Me: Norcocaine*
[18717-72-1]
$C_{16}H_{19}NO_4$ 289.33
Primary photoprod. of, and metab. prod. of cocaine. Shows strong physiol. activity comparable with that of Cocaine and is responsible for most of its toxicity *in vivo*. Mp 80-82°.

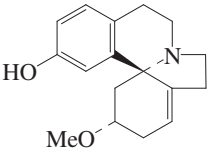
(+)-*form*
Synthetic. Mp 96-98°. $[\alpha]_D^{24}$ +15.5 (c, 1 in $CHCl_3$).

(±)-*form* [21206-60-0]
Mp 79-80°.

Willstätter, R. *et al., Annalen*, 1923, **434**, 111 (*synth, resoln*)
Kovács, O. *et al., Helv. Chim. Acta*, 1954, **37**, 892 (*config*)
Gabe, E.J. *et al., Acta Cryst.*, 1963, **16**, 796 (*cryst struct*)
Ashley, R. *et al., Cocaine, its History, Uses and Effects*, Warner Books, N.Y., 1975,
Wallace, G.J.E. *et al., Anal. Chem.*, 1976, **48**, 34 (*glc*)
Cocaine: Chem., Biol., Clin., Soc. Treat. Aspects, (Mule, S.J., Ed.), CRC Press, 1976,
Stenberg, V.I. *et al., J. Het. Chem.*, 1976, **13**, 363 (*synth, pmr, Norcocaine*)
Baker, J.K. *et al., J. Het. Chem.*, 1978, **15**, 165 (*cmr*)
Tufariello, J.J. *et al., J.A.C.S.*, 1979, **101**, 2435 (*synth, pmr*)
Hrynchuk, R.J. *et al., Can. J. Chem.*, 1983, **61**, 481 (*cryst struct*)
Muhtadi, F.J. *et al., Anal. Profiles Drug Subst.*, 1986, **15**, 151 (*rev, uv, ir, pmr, cmr, ms, anal*)
Lewin, A.H. *et al., J. Het. Chem.*, 1987, **24**, (*synth, bibl*)
Turner, C.E. *et al., Cocaine: An Annotated Bibliography*, Research Institute of Pharmaceutical Sciences, Mississippi, 1988, (*book*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 1006
Zhu, N. *et al., Acta Cryst. C*, 1994, **50**, 2067 (*cryst struct, Norcocaine*)
Fischman, M.W. *et al., Handb. Exp. Pharmacol.*, 1996, **118**, 159 (*rev, pharmacol, tox*)
Lin, R. *et al., J.O.C.*, 1998, **63**, 4069-4078 (*synth, bibl*)
Mans, D.M. *et al., Org. Lett.*, 2004, **6**, 3305-3308 (*synth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, CNE750; CNF000

Cocculine C-538

1,6-Didehydro-3-methoxyerythrinan-15-ol, 9CI
[27675-39-4]



$C_{17}H_{21}NO_2$ 271.358
Alkaloid from the leaves of *Cocculus laurifolius*, the fruit of *Cocculus carolinus* and the rhizomes of *Cocculus trilobus* (Menispermaceae). Hypotensive agent which acts *via* ganglionic blocking. Cryst. (Me_2CO). Mp 217-218°. $[\alpha]_D$ +271.1 (MeOH).

Hydrochloride: Mp 222-223°.

Nitrate: Mp 196-197°.

N-*Me:* ***Pachygonine***
[75667-86-6]
[75667-87-7]
$C_{18}H_{24}NO_2^{\oplus}$ 286.393
Alkaloid from the roots of *Pachygone ovata* (Menispermaceae). Needles (MeOH/EtOAc)(as hydroxide). Mp 265-267° dec.(hydroxide). $[\alpha]_D$ +196.6 (c, 4.7 in MeOH) (as hydroxide).

Me ether: ***Cocculidine***
[27675-40-7]
[78463-74-8]
$C_{18}H_{23}NO_2$ 285.385
Alkaloid from the leaves of *Cocculus laurifolius*. Hypotensive agent, ganglion blocker. Cryst. (petrol). Mp 93-95° (86-87°). $[\alpha]_D$ +250.9 ($CHCl_3$).

Me ether, N-*oxide:* ***Cocculidine* N-*oxide***
[206559-17-3]
$C_{18}H_{23}NO_3$ 301.385
Alkaloid from the leaves of *Cocculus laurifolius*.

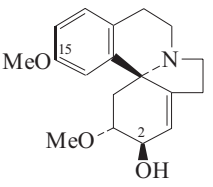
Me ether, N-*Me:*
$C_{19}H_{26}NO_2^{\oplus}$ 300.42
Mp 241-242° (as iodide).

O-*De-Me:* ***Coclafine***
[142713-49-3]
$C_{16}H_{19}NO_2$ 257.332
Alkaloid from leaves of *Cocculus laurifolius* (Menispermaceae). Cryst. (Me_2CO). Mp 264-266° (Me_2CO). $[\alpha]_D$ +255 (c, 0.15 in MeOH).

Yunusov, S. *et al., Zh. Obshch. Khim.*, 1950, **20**, 368; *CA*, **44**, 6582g (*isol*)
Yunusov, S. *et al., Khim. Prir. Soedin.*, 1970, **6**, 74; *Chem. Nat. Compd. (Engl. Transl.)*, 69 (*pmr, ms, struct*)
Razakov, R. *et al., Chem. Comm.*, 1974, 150 (*cryst struct, abs config*)
Razakov, R. *et al., Izv. Akad. Nauk SSSR, Ser. Khim.*, 1974, 218 (*Cocculidine*)
Elsohly, M.A. *et al., J. Pharm. Sci.*, 1976, **65**, 132 (*isol, uv, ir, pmr, ms*)
McPhail, A.T. *et al., Tet. Lett.*, 1976, 485 (*pmr*)
McPhail, A.T. *et al., J.C.S. Perkin 2*, 1977, 1156 (*cryst struct*)
Ju-ichi, M. *et al., Chem. Pharm. Bull.*, 1978, **26**, 563; 1981, **29**, 396 (*isol, synth, pmr, ms, ir*)
Bhakuni, D.S. *et al., J.C.S. Perkin 1*, 1978, 618 (*biosynth*)
Bhat, S.V. *et al., J. Nat. Prod.*, 1980, **43**, 588 (*Pachygonine, isol, uv, pmr, ms, struct*)
Madhusudanan, K.P. *et al., Indian J. Chem., Sect. B*, 1983, **22**, 907 (*ms*)
Ziyaev, R. *et al., Khim. Prir. Soedin.*, 1991, 84-86; *Chem. Nat. Compd. (Engl. Transl.)*, 73-74 (*Coclafine*)
Tsakadze, D. *et al., CA*, 1998, **128**, 306258d (*Cocculidine N-oxide*)

Cocculitine C-539

1,6-Didehydro-3,15-dimethoxyerythrinan-2-ol, 9CI
[64996-74-3]



$C_{18}H_{23}NO_3$ 301.385

Alkaloid from the leaves of *Cocculus laurifolius* (Menispermaceae). Cryst. (EtOAc). Mp 142-143°. $[\alpha]_D^{25}$ +93 (c, 0.4 in MeOH).

Ac:
Cryst. (EtOAc). Mp 135°.

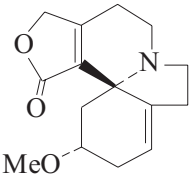
O^{15}-De-Me: ***Cocculitinine***
[77795-07-4]
$C_{17}H_{21}NO_3$ 287.358
Alkaloid from the leaves of *Cocculus laurifolius* (Menispermaceae).

2-Ketone: ***Cocculidinone***
[77795-06-3]
$C_{18}H_{21}NO_3$ 299.369
Alkaloid from the leaves of *Cocculus laurifolius* (Menispermaceae). Oil.

Singh, A.N. *et al., J. Nat. Prod.*, 1977, **40**, 322 (*isol, uv, ir, pmr, ms, struct*)
Bhakuni, D.S. *et al., Tetrahedron*, 1980, **36**, 3107 (*isol, ms, uv, ir, struct, derivs*)
Madhusudanan, K.P. *et al., Indian J. Chem., Sect. B*, 1983, **22**, 907 (*ms*)

Cocculolidine C-540

[13497-04-6]

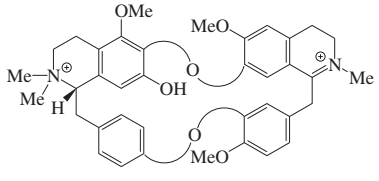


$C_{15}H_{19}NO_3$ 261.32
Alkaloid from leaves and rhizomes of *Cocculus trilobus* and the fruit of *Cocculus carolinus* (Menispermaceae). Has insecticidal properties. Antifeedant. Prismatic cryst. (CCl_4). Mp 144-146°. $[\alpha]_D^{25}$ +273 (c, 1 in $CHCl_3$).

Hydrochloride: Mp 247-251° dec.

Wada, K. *et al., Agric. Biol. Chem.*, 1967, **31**, 452; 1968, **32**, 1187 (*isol, uv, ir, pmr, ms, struct, stereochem*)
Wada, K. *et al., J. Agric. Food Chem.*, 1968, **16**, 471 (*isol*)
Elsohly, M.A. *et al., J. Pharm. Sci.*, 1976, **65**, 132 (*isol, uv, ir, pmr, ms*)
Ju-ichi, M. *et al., Yakugaku Zasshi*, 1978, **98**, 886 (*isol*)
Kawasaki, T. *et al., Tet. Lett.*, 2001, **42**, 8003-8006 (*synth*)

Coccuorbiculatine A C-541



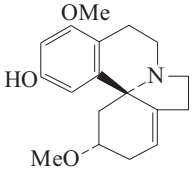
$C_{38}H_{42}N_2O_6^{2\oplus}$ 622.76

(*S*)-*form*
Quaternary alkaloid from the stems of *Cocculus orbiculatus*. Powder ($CHCl_3$/MeOH). $[\alpha]_D^{25}$ +110.2 (c, 0.3 in MeOH). Counterion not specified. λ_{max} 218 ; 228 ; 279 ; 304 (MeOH).

Chang, F.-R. *et al., J. Nat. Prod.*, 2005, **68**, 1056-1060 (*isol, pmr, cmr, ms*)

Coccutrine C-542

1,6-Didehydro-3,17-dimethoxyerythrinan-15-ol, 9CI
[59553-89-8]

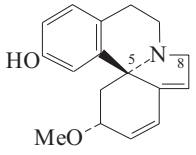


$C_{18}H_{23}NO_3$ 301.385
Alkaloid from the rhizomes of *Cocculus trilobus* (Menispermaceae). Needles. Mp 263-265°. $[\alpha]_D$ +232 (MeOH).

McPhail, A.T. *et al., Tet. Lett.*, 1976, 485 (*pmr, ms, struct*)
McPhail, A.T. *et al., J.C.S. Perkin 2*, 1977, 1156 (*cryst struct*)
Ju-ichi, M. *et al., Yakugaku Zasshi*, 1978, **98**, 886; *CA*, **89**, 215622c (*isol*)

Coccuvine C-543

1,2,6,7-Tetradehydro-3-methoxyerythrinan-15-ol, 9CI



$C_{17}H_{19}NO_2$ 269.343

Natural-*form* [61445-80-5]
Alkaloid from the leaves of *Cocculus laurifolius* (Menispermaceae). Mp 137-138°.

Me ether: ***Coccuvinine***. O-*Methylcoccuvine*
[64543-55-1]
$C_{18}H_{21}NO_2$ 283.369
Alkaloid from the leaves of *Cocculus laurifolius* (Menispermaceae). Needles (hexane). Mp 103-104°.

(±)-*form*

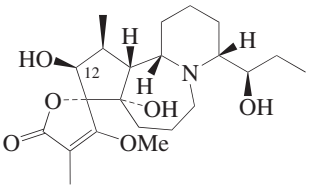
Me ether: [78463-73-7]
Synthetic. Oil.

Me ether, picrate:
Yellow prisms (EtOH). Mp 166-167°.

Singh, A.N. *et al., Experientia*, 1976, **32**, 1368 (*uv, ir, pmr, ms, struct, stereochem*)
Singh, A.N. *et al., Indian J. Chem., Sect. B*, 1977, **15**, 388 (*Coccuvinine*)
Bhakuni, D.S. *et al., Tetrahedron*, 1980, **36**, 2153; 3107 (*isol, biosynth, uv, ir, pmr, struct*)
Ju-ichi, M. *et al., Chem. Pharm. Bull.*, 1981, **29**, 396 (*Coccolinine, Coccuvinine, synth, ir, pmr, ms*)
Madhusudanan, K.P. *et al., Indian J. Chem., Sect. B*, 1983, **22**, 907 (*ms*)
Sano, T. *et al., Chem. Pharm. Bull.*, 1987, **65**, 94 (*synth*)

Cochinchistemonine C-544

[930775-40-9]



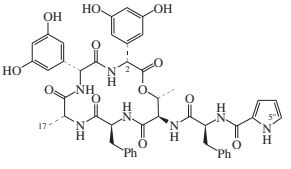
$C_{22}H_{35}NO_6$ 409.522
Alkaloid from the roots of *Stemona cochinchinensis*. Needles. Mp 176-180°. $[\alpha]_D^{20}$ +9 (c, 0.16 in $CHCl_3$). λ_{max} 232 (log ϵ 6.95) (MeOH).

12-Ketone: ***Cochinchistemoninone***
[949092-26-6]
$C_{22}H_{33}NO_6$ 407.506
Alkaloid from the roots of *Stemona cochinchinensis*. Yellow-brown gum. $[\alpha]_D^{20}$ +39 (c, 0.28 in MeOH). λ_{max} 229 (log ϵ 3.91) (MeOH).

Wang, Y.-Z. *et al., J. Nat. Prod.*, 2007, **70**, 1356-1359 (*Cochinchistemoninone*)
Lin, L.-G. *et al., Tet. Lett.*, 2007, **48**, 1559-1561 (*Cochinchistemonine*)

Cochinmicin I C-545

RP 59451. Antibiotic RP 59451
[143728-97-6]



Absolute Configuration

$C_{46}H_{47}N_7O_{12}$ 889.917
Depsipeptide antibiotic. Prod. by a *Microbispora* sp. Endothelin antagonist. $[\alpha]_D^{23}$ -10 (c, 0.1 in MeOH). Identity with RP 59451 not confirmed. λ_{max} 212 (ϵ 39600); 230 (sh) (ϵ 15300); 269 (ϵ 15600) (MeOH) (Derep).

5′′-Chloro: ***Cochinmicin III***
[143728-99-8]
$C_{46}H_{46}ClN_7O_{12}$ 924.362
Prod. by a *Microbispora* sp. ATCC55140. Endothelin antagonist. Antiasthmatic, antihypertensive and antiischemic agent. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. $[\alpha]_D^{23}$ -10 (c, 0.1 in MeOH). λ_{max} 213 (ϵ 44600); 230 (sh) (ϵ 19200); 275 (ϵ 20200) (MeOH) (Derep).

2-Epimer: ***Cochinmicin V***
[146876-02-0]
$C_{46}H_{47}N_7O_{12}$ 889.917
Prod. by a *Microbispora* sp. ATCC55140. Endothlin antagonist. Antihypertensive agent. $[\alpha]_D^{23}$ +20 (c, 0.1 in MeOH). λ_{max} 212 (ϵ 39600); 230 (sh) (ϵ 15300); 269 (ϵ 15600) (MeOH) (Derep).

2-Epimer, 5′′-chloro: ***Cochinmicin II***. *RP 55185. Antibiotic RP 55185*
[114919-77-6]

$C_{46}H_{46}ClN_7O_{12}$ 924.362
Prod. by a *Microbispora* sp. Endothelin antagonist. $[\alpha]_D^{23}$ +20 (c, 0.1 in MeOH). Identity with RP 55185 not confirmed. λ_{max} 213 (ϵ 44600); 230 (sh) (ϵ 19200); 275 (ϵ 20200) (MeOH) (Derep).

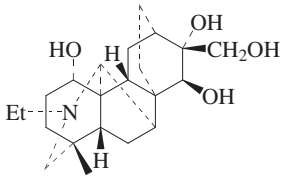
2-Epimer, 17-hydroxy, 5″-chloro: Cochinmicin IV
[146874-41-1]
$C_{46}H_{46}ClN_7O_{13}$ 940.361
Prod. by a *Microbispora* sp. ATCC55140. Endothelin antagonist. Antihypertensive agent. $[\alpha]_D^{23}$ +30 (c, 0.1 in MeOH). λ_{max} 213 (ϵ 44600); 230 (sh) (ϵ 19200); 275 (ϵ 20200) (MeOH) (Derep).

[143728-98-7]

Lam, Y.K.T. *et al., J. Antibiot.*, 1992, **45**, 1709; 1717; 1792 (*isol, pmr, cmr, struct, props*)

Cochlearenine C-546

[914475-10-8]

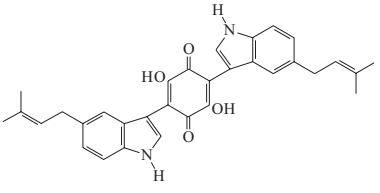


$C_{22}H_{35}NO_4$ 377.523
Alkaloid from *Aconitum cochleare* and *Delphinium linearilobum*. Antioxidant. Amorph. solid. $[\alpha]_D^{20}$ -35.5 (c, 0.5 in $CHCl_3$). λ_{max} 203 (log ϵ 4.2); 226 (sh) (log ϵ 3); 284 (log ϵ 2.5) (MeOH).

Kolak, U. *et al., Phytochemistry*, 2006, **67**, 2170-2175 (*isol, pmr, cmr, ms*)

Cochliodinol C-547

*2,5-Dihydroxy-3,6-bis[5-(3-methyl-2-butenyl)-1*H*-indol-3-yl]-2,5-cyclohexadiene-1,4-dione, 9CI*
[11051-88-0]



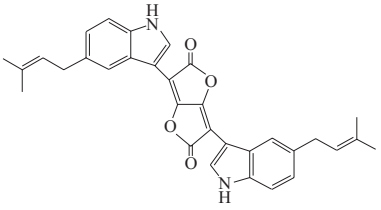
$C_{32}H_{30}N_2O_4$ 506.6
Benzoquinone antibiotic. Metab. of *Chaetomium globosum*, *Chaetomium cochliodes, Chaetomium elatum* and *Chaetomium abuense*. Possesses fungistatic and fungicidal activities. Purple cryst. Sol. MeOH, Et_2O; poorly sol. H_2O, hexane. Mp 213-215° (208° dec.). λ_{max} 278 (ϵ 31600); 484 (ϵ 3980) ($CHCl_3$) (Derep). λ_{max} 279 (ϵ 30900); 471 (ϵ 4470) (EtOH) (Derep). λ_{max} 278 (ϵ 30900); 471 (ϵ 3550) (MeOH) (Berdy). λ_{max} 278 (ϵ 31620); 484 (ϵ 3980) ($CHCl_3$) (Berdy). λ_{max} 282 (ϵ 26300); 470 (ϵ 3800) (EtOH) (Berdy).
► LD_{50} (mus, ipr) 200 mg/kg, LD_{50} (mus, ipr) 40.8 mg/kg, LD_{50} (mus, scu) 147 mg/kg, LD_{50} (mus, orl) 221 mg/kg.
DK3529000

Di-Me ether: Mp 208-210° dec.

Jerram, W.A. *et al., Can. J. Chem.*, 1975, **53**, 727 (*uv, ir, pmr, cmr, ms, struct*)
Jerram, W.A. *et al., Acta Cryst. B*, 1977, **33**, 293 (*cryst struct*)
Taylor, A. *et al., Phytochemistry*, 1978, **17**, 1045 (*biosynth*)
Brewer, D. *et al., Can. J. Microbiol.*, 1984, **30**, 1068 (*props*)
Hörcher, U. *et al., Annalen*, 1986, 1765 (*synth*)
Saito, T. *et al., Chem. Pharm. Bull.*, 1988, **36**, 1942 (*isol*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, CNF159

Cochliodinone C-548

*3,6-Bis[5-(3-methyl-2-butenyl)-1*H*-indol-3-yl]furo[3,2-*b*]furan-2,5-dione, 9CI*
[56489-12-4]



$C_{32}H_{28}N_2O_4$ 504.584
Metab. of *Chaetomium cochliodes* and *Chaetomium globosum*. Red-orange needles (toluene). Mp 275-276°. Shows orange fluor. in soln.

*Di-*N*-Ac:*
Yellow needles (Ac_2O). Mp 35°.

Brewer, D. *et al., Can. J. Microbiol.*, 1968, **14**, 861-866 (*isol*)
Jerram, W.A. *et al., Can. J. Chem.*, 1975, **53**, 727-737 (*synth, struct, pmr, cmr, uv*)

Coclamine C-549

$C_{19}H_{23}NO_3$ 313.396
Struct. unknown. Alkaloid from *Cocculus laurifolius*. Needles. Mp 140-142° Mp 237-240° (hydrobromide). $[\alpha]_D$ -245 (MeOH) (as hydrobromide).

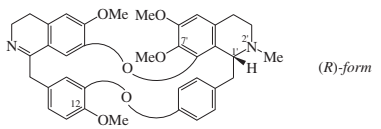
Tomita, M. *et al., Yakugaku Zasshi*, 1956, **76**, 1048-1050; *CA*, **51**, 1542i (*isol*)

Coclifoline C-550

$C_{19}H_{27}NO_3$ 317.427
Struct. unknown. Alkaloid from *Cocculus laurifolius*. Mp 158-159° (as picrate).

Tomita, M. *et al., Yakugaku Zasshi*, 1956, **76**, 1048-1050; *CA*, **51**, 1542i (*isol*)

Coclobine C-551



(*R*)-*form*

$C_{37}H_{38}N_2O_6$ 606.717
Alkaloid from *Cocculus trilobus* (Menispermaceae).

(*R*)-*form*

O$^{7'}$-*De-Me:* ***1,2-Dehydro-2-norlimacusine***
[103976-35-8]
$C_{36}H_{36}N_2O_6$ 592.69
Alkaloid from *Caryomene olivascens* (Menispermaceae). $[\alpha]_D$ -94 (c, 0.16 in MeOH).

(*S*)-*form*

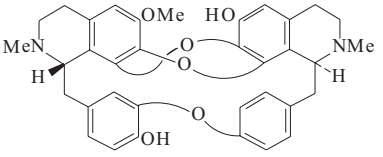
Alkaloid from *Cocculus trilobus* (Menispermaceae). Amorph. $[\alpha]_D^{20}$ +123 (c, 0.69 in $CHCl_3$).

O^{12}-*De-Me:* ***12-O-Demethylcoclobine***
$C_{36}H_{36}N_2O_6$ 592.69
Alkaloid from the stem bark of *Guatteria guianensis* (Annonaceae). $[\alpha]_D^{20}$ +220 (c, 0.25 in $CHCl_3$).

Ito, K. *et al., Yakugaku Zasshi*, 1969, **89**, 1163; *CA*, **71**, 124748k (*isol, uv, pmr, ms, struct*)
Lavault, M. *et al., Chem. Pharm. Bull.*, 1986, **34**, 1148 (*1,2-Dehydro-2-norlimacusine*)
Berthou, S. *et al., J. Nat. Prod.*, 1989, **52**, 95 (*12-O-Demethylcoclobine*)

Cocsulinine C-552

[54370-90-0]



$C_{35}H_{34}N_2O_6$ 578.663
Alkaloid from the leaves and stems of *Cocculus pendulus* (Menispermaceae). Antineoplastic agent. Cryst. ($CHCl_3$/MeOH). Mp 260-263°. $[\alpha]_D$ +312 (c, 0.50 in $CHCl_3$). Log P 7.89 (uncertain value) (calc).

Di-Ac: Mp 217°. $[\alpha]_D$ +225.9 (c, 0.47 in $CHCl_3$).

N-*De-Me:* **N-*Norcocsulinine***
$C_{34}H_{32}N_2O_6$ 564.637
Alkaloid from leaves and stems of *Cocculus pendulus* (Menispermaceae). Amorph. powder. Mp 250° dec. $[\alpha]_D$ +294. Site of demethylation unknown.

*Di-*N*-de-Me:* ***Cocsilinine****. 2,2′-Bisnorcocsulinine*
$C_{33}H_{30}N_2O_6$ 550.61
Alkaloid from leaves and stems of *Cocculus pendulus* (Menispermaceae). Amorph. powder. Mp 295° dec.

O$^{6'}$-*Me:* ***6′-O-Methylcocsulinine***
$C_{36}H_{36}N_2O_6$ 592.69
Alkaloid from leaves and stems of *Cocculus pendulus* (Menispermaceae). Mp 168-170°. $[\alpha]_D$ +307.

O$^{6'}$-*Me,* N$^{2'}$-*de-Me:* ***Pendine***
[59114-65-7]
$C_{35}H_{34}N_2O_6$ 578.663
Alkaloid from the leaves and stems of *Cocculus pendulus* (Menispermaceae). Cryst. (MeOH/Et_2O). Mp 170-171°. $[\alpha]_D$ +275 (c, 1.0 in $CHCl_3$).

O$^{6'}$-*Me,* N-*de-Me:* ***Cocsiline****. 6′-O-Methyl-*N*-norcocsulinine*
$C_{35}H_{34}N_2O_6$ 578.663
Alkaloid from leaves and stems of *Cocculus pendulus* (Menispermaceae). Amorph. powder. Mp 257° dec. $[\alpha]_D$ +297. Site of demethylation not determined but presumably N^2 as the props.

do not correspond with those of Pendine.

O^{12}-Me: N-*Methylgilletine*
Mp 156-157°. $[\alpha]_D^{30}$ +310 (c, 0.41 in $CHCl_3$).

O^{12}-Me, $N^{2'}$-de-Me: ***Gilletine****. Alkaloid TGL4*
[52038-20-7]
$C_{35}H_{34}N_2O_6$ 578.663
Alkaloid from the leaves of *Triclisia gilletii* (Menispermaceae). Rosettes of needles ($CHCl_3/Et_2O$). Mp 174-176°. $[\alpha]_D^{28}$ +294.3 (c, 0.56 in MeOH).

Di-Me ether: Obt. by methylation of Cocsulinine, Gilletine or Pendine. Cryst. (EtOAc/MeOH). Mp 145-146° Mp 173-175° Mp 201-203°. $[\alpha]_D$ +300 ($CHCl_3$) (193.0).

Di-Me ether, $N^{2'}$-De-Me: ***Pendilinine****. O-Methylpendine*
[142617-86-5]
$C_{36}H_{36}N_2O_6$ 592.69
Alkaloid from leaves and stems of *Cocculus pendulus* (Menispermaceae). Amorph. yellow powder. Mp 280° dec. $[\alpha]_D$ +253 ($CHCl_3$). $[\alpha]_D$ +286 ($CHCl_3$) (natural).

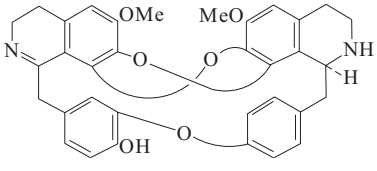
O^6-De-Me, $O^{6'}$-Me: ***Pendulinine***
[59114-69-1]
$C_{35}H_{34}N_2O_6$ 578.663
Alkaloid from the leaves and stems of *Cocculus pendulus* (Menispermaceae). Cryst. ($CHCl_3$/MeOH). Mp 272-273°. $[\alpha]_D$ +285 (c, 0.5 in $CHCl_3$).

O^6-De-Me, $O^{6'}$-Me, di-Ac: Mp 210-211°. $[\alpha]_D$ +203.3 ($CHCl_3$).

Stereoisomer, O^{12}-Me, $N^{2'}$-de-Me, N^2-oxide: ***Isogilletine*** **N-*oxide***
[77431-57-3]
$C_{35}H_{34}N_2O_7$ 594.663
Alkaloid from the leaves of *Triclisia gilletii* (Menispermaceae). Mp 218-220° dec. $[\alpha]_D^{29}$ +216 (c, 0.94 in $CHCl_3$/MeOH 9:1). Stereochem. unknown.

Joshi, P.P. *et al., Indian J. Chem.*, 1974, **12**, 517 (*Cocsulinine, uv, ir, pmr, ms, struct*)
Tackie, A.N. *et al., J. Nat. Prod.*, 1974, **37**, 1 (*Gilletine, isol*)
Bhakuni, D.S. *et al., Tetrahedron*, 1975, **31**, 2575 (*Pendine, Pendulinine, Cocsulinine*)
Dwuma-Badu, D. *et al., Heterocycles*, 1978, **9**, 995 (*Gilletine, uv, ir, pmr, ms, struct*)
Owusu, P.D. *et al., J. Nat. Prod.*, 1981, **44**, 61 (*Isogilletine N-oxide*)
Jain, S. *et al., Fitoterapia*, 1991, **62**, 391-395 (*6′-O-Methylcocsulinine, Cocsiline, N-Norcocsulinine, Cocsilinine, Pendine, Pendilinine, Pendulinine*)

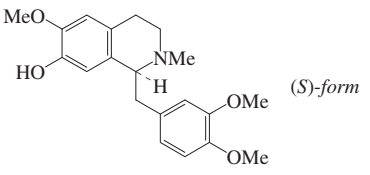
Cocsupendine C-553



$C_{34}H_{30}N_2O_6$ 562.621
Alkaloid from *Cocculus pendulus* (Menispermaceae). $[\alpha]_D$ +116.6 (MeOH).

Atta-ur-Rahman, *et al., Pure Appl. Chem.*, 1986, **58**, 663 (*uv, ir, pmr, ms, struct*)

Codamine C-554



(*S*)-*form*

$C_{20}H_{25}NO_4$ 343.422

(*R*)-*form* [21052-10-8]
Cryst. (petrol). Mp 127-128°. $[\alpha]_D^{17}$ -68.8 (c, 1 in EtOH).

Hydrochloride:
Cryst. ($CHCl_3/Et_2O$). Mp 120-125°. $[\alpha]_D^{18}$ -56 (c, 0.5 in H_2O).

Picrate:
Cryst. (2-propanol). Mp 147-149°. $[\alpha]_D^{24}$ -84.4 (c, 1 in $CHCl_3$).

Methiodide:
Cryst. (2-propanol). Mp 200-200.5°. $[\alpha]_D^{20}$ -100 (c, 1 in EtOH).

(*S*)-*form* [21040-59-5]
Minor constit. of opium, of *Bongardia chrysogonum*, *Guatteria chrysopetala* (Annonaceae), and *Argemone grandiflora*. Cryst. (petrol). Mp 126-127°. $[\alpha]_D^{15}$ +66.1 (c, 1 in EtOH).

Hydrochloride:
Cryst. ($CHCl_3/Et_2O$). Mp 123°. $[\alpha]_D^{18}$ +59 (c, 0.5 in H_2O). No CAS Reg No to CA 125.

Picrate: Mp 147-149°.

Methiodide:
Cryst. (2-propanol). Mp 200.5-201°. $[\alpha]_D$ +97.6 (c, 1 in EtOH).

N-*oxide(S-):* ***Codamine*** **cis-N-*oxide***
[112468-25-4]
$C_{20}H_{25}NO_5$ 359.421
Alkaloid from trunk bark of *Duguetia spixiana* (Annonaceae). Noncryst. $[\alpha]_D$ 0 (c, 0.16 in $CHCl_3$).

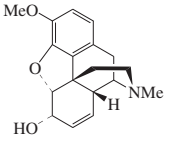
Me ether: see Laudanosine, L-69

(±)-*form* [5977-85-5]
Cryst. (petrol). Mp 106-108°.

Brockmann-Hanssen, E. *et al., J. Pharm. Sci.*, 1965, **54**, 1531 (*isol*)
Cassels, B.K. *et al., Tetrahedron*, Suppl. 8, 1966, 485-490 (*synth, resoln*)
Battersby, A.R. *et al., J.C.S.(C)*, 1968, 210-216 (*synth, resoln, O-benzyl*)
Benn, M.H. *et al., Phytochemistry*, 1972, **11**, 461-464 (*isol*)
Hoshino, O. *et al., Chem. Pharm. Bull.*, 1974, **22**, 1302-1306 (*pmr*)
Debourges, D. *et al., J. Nat. Prod.*, 1987, **50**, 664-673; 852-859 (*N-oxide*)

Codeine, BAN, USAN C-555

7,8-Didehydro-4,5-epoxy-3-methoxy-17-methylmorphinan-6-ol, 9CI. Methylmorphine. Codicept. Kodein. Tussipan
[76-57-3]



Absolute Configuration

$C_{18}H_{21}NO_3$ 299.369
Opium alkaloid (*Papaver somniferum*) (content ca. 1%), also obt. synthetically by methylation of Morphine, M-704 (Papaveraceae). Relatively nonaddictive analgesic. Antitussive agent. Possesses anaesthetic props. Prisms (Et_2O or C_6H_6), octahedra or rhombic prisms + H_2O (H_2O). Sol. EtOH, $CHCl_3$, Me_2CO; spar. sol. CCl_4, H_2O. Mp 155°. $[\alpha]_D$ -137.8 (EtOH). Log P 0.82 (uncertain value) (calc). Also used as complex with sulfonated styrene-divinylbenzene copolymer (Codeine polistirex, USAN).

▶ Human and exp. reprod. effects. Exp. teratogen. LD_{50} (rat, orl) 427 mg/kg. QD0893000

Hydrochloride: [1422-07-7]
Prisms + $2H_2O$ (H_2O). Mp 287° (as dihydrate). $[\alpha]_D^{22.5}$ -108.2 (H_2O).

▶ LD_{50} (rat, orl) 750 mg/kg. QD1050000

Sulfate salt: ***Codeine sulfate, USAN***
[6854-40-6]
[1420-53-7]
Needles + $3H_2O$. Component of Copavin.

Phosphate salt: ***Codeine phosphate, BAN, JAN, USAN****. Brochodine. Codeinfos. Codeisan. Codeophen. Codlin. Duraspan. Paveral. Sedantole. Solcodein. Vixaton*
[41444-62-6]
[52-28-8]
$C_{18}H_{21}NO_6P$ 378.341
Needles + $\frac{1}{2}H_2O$. Component of Proval and Migraleve.

Compd. with calcium bis(2-acetylsalicylate): Paxidine
[81648-77-3]

N-*Oxide:* ***Codeine*** **N-*oxide***. *Codeigene. Codeine aminoxyde. Genocodein*
[3688-65-1]
$C_{18}H_{21}NO_4$ 315.368
Alkaloid from *Papaver somniferum* (opium poppy) (Papaveraceae). Platelets (H_2O). Mp 231-232°.

▶ QD1260000

N-*Oxide; hydrochloride:*
Cryst. Mp 219-220°. $[\alpha]_D^{20}$ -105.8 (c, 2 in H_2O).

6-O-β-D-Glucuronopyranoside: [20736-11-2]
$C_{24}H_{29}NO_9$ 475.494
Mp 274-275° dec. (hemihydrate). $[\alpha]_D^{20}$ -224 (c, 1 in H_2O).

Ac: [6703-27-1]
Prisms (Et_2O). Mp 133.5°.

▶ LD_{50} (mus, scu) 99 mg/kg. QD0960000

6-Ketone: 7,8-Didehydro-4,5-epoxy-3-methoxy-17-methylmorphinan-6-one. ***Codeinone***
[467-13-0]
$C_{18}H_{19}NO_3$ 297.353
Naturally occurring alkaloid in *Papaver* spp. (Papaveraceae); precursor of Codeine and Morphine, M-704. Prisms (EtOAc). Mp 181.5-182.5°. $[\alpha]_D^{20}$ -205 (EtOH). Subl. under reduced pressure.

▶ LD_{50} (mus, scu) 11 mg/kg. QD2169000

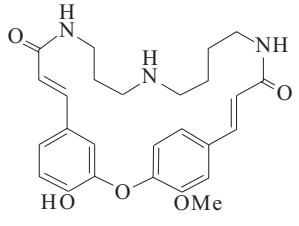
[6059-47-8 , 5913-76-8]

Findlay, S.P. *et al., J.A.C.S.*, 1950, **72**, 3247 (*Codeinone, synth*)
Bentley, K.W. *et al., Chemistry of the Morphine Alkaloids*, Oxford Univ. Press, 1954, 57-97 (*isol, props, uv, synth*)
Kartha, G. *et al., Acta Cryst.*, 1962, **15**, 326-333 (*cryst struct, abs config*)
Brochmann-Hanssen, E. *et al., J. Pharm. Sci.*, 1964, **53**, 1549-1550 (*glc, chromatog*)
Batterham, T.J. *et al., Aust. J. Chem.*, 1965, **18**, 1799-1806 (*pmr*)
Wheeler, D.M.S. *et al., J.A.C.S.*, 1967, **89**, 4494-4501 (*ms*)
DeAngelis, G.G. *et al., Tetrahedron*, 1969, **25**, 5099-5112 (*ord*)
Parker, H.I. *et al., J.A.C.S.*, 1972, **94**, 1276-1282 (*biosynth*)
Weller, D.D. *et al., J. Med. Chem.*, 1976, **19**, 1171-1175 (*synth*)
Carroll, F.I. *et al., J.O.C.*, 1976, **41**, 996-1001 (*cmr*)
Phillipson, J.D. *et al., Phytochemistry*, 1976, **15**, 1297-1301 (*oxide*)
Muhtadi, F.J. *et al., Anal. Profiles Drug Subst.*, 1981, **10**, 93 (*rev, phosphate*)
Whittle, B.J.R. *et al., Gut*, 1981, **22**, 798 (*Paxidine*)
Moos, W.H. *et al., J.O.C.*, 1983, **48**, 227-238 (*synth*)
White, J.D. *et al., Tetrahedron*, 1983, **39**, 2393-2397 (*synth, ir, pmr*)
Quiding, H. *et al., Eur. J. Clin. Pharmacol.*, 1986, **30**, 673 (*metab*)
Canfield, D.V. *et al., Acta Cryst. C*, 1987, **43**, 977-979 (*cryst struct*)
Ishida, T. *et al., Drug Metab. Dispos.*, 1991, **19**, 895 (*Codeinone, metab*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 1069
Nair, M.M. *et al., Spectrosc. Lett.*, 1997, **30**, 497-505 (*pmr, cmr*)
White, J.D. *et al., J.O.C.*, 1999, **64**, 7871-7884 (*synth*)
Rukhman, I. *et al., Tetrahedron*, 2001, **57**, 1083-1092 (*6-glucuronoside*)
Kolev, T. *et al., Acta Cryst. E*, 2006, **62**, 255-257 (*Codeinone, cryst struct*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, CNF500; CNG500; CNG675; CNF750; CNG750

Codonocarpine C-556

4-Hydroxy-26-methoxy-2-oxa-11,15,20-triazatricyclo[22.2.2.1^{3,7}]nonacosa-3,5,7(29),8,22,24,26,27-octaene-10,21-dione, 9CI

[33442-48-7]



$C_{26}H_{31}N_3O_5$ 465.548

Alkaloid from the bark of *Codonocarpus australis* (Gyrostemoniaceae). Pale-yellow rosettes of needles (MeOH). Mp 187° dec.

Hydrochloride:
Needles (HCl aq.). Mp 212-214°.

N,O-*Di-Ac:*
Cryst. (Me_2CO). Mp 169-171°.

N^{15}-*Me:* **N-*Methylcodonocarpine***
[38146-55-3]
$C_{27}H_{33}N_3O_5$ 479.575
Alkaloid from the bark of *Codonocarpus australis* (Gyrostemoniaceae). Pale-yellow needles (MeOH/C_6H_6). Mp 167-171° (164-166°). Opt. inactive. 15-Posn. (central *N*-atom) numbered acc. to CAS.

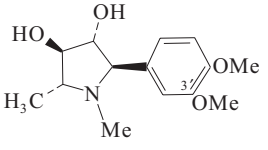
N^{15}-*Me,* O-*Ac:*
Cryst. (Me_2CO). Mp 177-179°.

Doskotch, R.W. *et al., Chem. Comm.*, 1971, 300 (*uv, ir, pmr, struct*)
Pilewski, N.A. *et al., J. Nat. Prod.*, 1972, **35**, 186 (*isol, uv, ir, deriv*)
Doskotch, R.W. *et al., Tetrahedron*, 1974, **30**, 3229; 3237 (*struct, synth, pmr*)
Humora, M.J. *et al., Tet. Lett.*, 1980, **21**, 3971 (*synth*)
Fujita, E. *et al., Pure Appl. Chem.*, 1981, **53**, 1141 (*synth*)
Nagao, Y. *et al., Heterocycles*, 1982, **17**, 537 (*synth*)

Codonopsine C-557

2-(3,4-Dimethoxyphenyl)-1,5-dimethyl-3,4-pyrrolidinediol, 9CI. 3,4-Dihydroxy-2-(3,4-dimethoxyphenyl)-1,5-dimethylpyrrolidine

[26989-20-8]



$C_{14}H_{21}NO_4$ 267.324

Related to Radicamine A, R-10. Alkaloid from the epigeal parts of *Codonopsis clematidea*. Shows hypotensive action in exptl. animals. Shows antibiotic activity. Cryst. (Me_2CO/MeOH). Mp 150-151°. $[\alpha]_D^{20}$ -16 (MeOH). Isomeric struct. originally assigned.

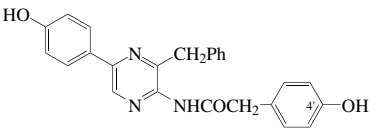
Methiodide:
Cryst. (MeOH). Mp 207-208°.

3′-Demethoxy: ***Codonopsinine****. 2-(4-Methoxyphenyl)-1,5-dimethyl-3,4-pyrrolidinediol, 9CI. 3,4-Dihydroxy-2-(4-methoxyphenyl)-1,5-dimethylpyrrolidine*
[32490-07-6]
$C_{13}H_{19}NO_3$ 237.298
Alkaloid from *Codonopsis clematidea* (Campanulaceae). Cryst. (MeOH). Mp 169-170°. $[\alpha]_D$ -8.8 (c, 0.1 in MeOH). MeO group originally thought to be in the *m*-posn. Several stereoisomers synthesised.

Matkhalikova, S.F. *et al., Khim. Prir. Soedin.*, 1969, **5**, 30; 606; 607; 1971, **7**, 210; *Chem. Nat. Compd. (Engl. Transl.)*, 1969, **5**, 24; 528; 530; 1971, **7**, 207 (*isol, ms, struct*)
Yagudaev, M.R. *et al., Khim. Prir. Soedin.*, 1972, **8**, 495; *Chem. Nat. Compd. (Engl. Transl.)*, 1972, **8**, 488 (*stereochem, pmr*)
Iida, H. *et al., J.O.C.*, 1987, **52**, 1956 (*synth, pmr, ms, abs config*)
Wang, C.-L.J. *et al., J.O.C.*, 1991, **56**, 4341 (*synth*)
Yoda, H. *et al., Tet. Lett.*, 1996, **37**, 5531 (*synth, Codonopsinine*)
Oliveira, D.F. *et al., Tet. Lett.*, 1999, **40**, 2083-2086 (*synth*)
Severino, E.A. *et al., Org. Lett.*, 2000, **2**, 3039 (*activity, synth*)
Goti, A. *et al., Org. Lett.*, 2003, **5**, 4235-4238 (*synth*)
Tashkhodzhaev, B. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2004, **4**, 618-619 (*cryst struct, abs config*)
Chandrasekhar, S. *et al., Tet. Lett.*, 2005, **46**, 3127-3129 (*Codonopsinine, synth*)
Reddy, J.S. *et al., J.O.C.*, 2007, **72**, 2224-2227 (*Codonopsinine, synth*)

Coelenteramide C-558

[50611-86-4]



$C_{25}H_{21}N_3O_3$ 411.459

The light-emitter in *Aequorea, Cavernularia obesa* and other bioluminescent coelenterates. Blue fluorescent compd.

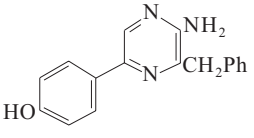
4′-Deoxy: Renilla *Oxyluciferin*
[50909-85-8]
[145022-31-7]
$C_{25}H_{21}N_3O_2$ 395.46
Chemiluminescent agent from *Renilla reniformis*.

Hori, K. *et al., Biochemistry*, 1973, **12**, 4463; 1975, **14**, 2371-2376 (Renilla *Oxyluciferin*)
Shimomura, O. *et al., Chem. Lett.*, 1975, 247 (*isol*)
Shimomura, O. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 1975, **72**, 1546 (*isol*)

Coelenteramine C-559

4-[(5-Amino-6-phenylmethyl)pyrazinyl]-phenol, 9CI. 2-Amino-3-benzyl-5-(4-hydroxyphenyl)pyrazine

[37156-84-6]



$C_{17}H_{15}N_3O$ 277.325

Isol. from jellyfish *Aequorea*. Luminescent agent. Yellow needles. Mp 217-219°.

N-*Ac:*
Yellow needles. Mp 199-200°.

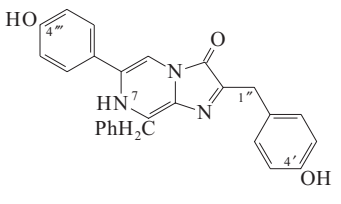
Shimonura, O. *et al., Biochemistry*, 1972, **11**, 1602
Kishi, Y. *et al., Tet. Lett.*, 1972, 2747 (*synth*)
Hori, K. *et al., Chem. Comm.*, 1973, 492

Coelenterazine C-560

6-(4-Hydroxyphenyl)-2-[(4-hydroxyphenyl)methyl]-8-(phenylmethyl)imidazo[1,2-a]pyrazin-3(7H)-one, 9CI.

Oplophorus *Luciferin*. Watasenia *Preluciferin*

[55779-48-1]



$C_{26}H_{21}N_3O_3$ 423.47
Bioluminescence factor isol. from various marine sources incl. *Aequorea victoria*. Yellow cryst. Mp 176-181° dec.

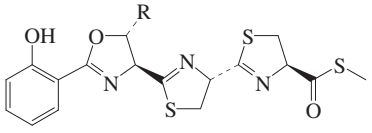
*4′,4‴-Di-*O*-sulfate:* **Watasenia *Luciferin***
[61369-27-5]
$C_{26}H_{21}N_3O_9S_2$ 583.599
Isol. from *Watasenia scintillans*.

*4′-Deoxy: 6-(4-Hydroxyphenyl)-2,8-bis(phenylmethyl)imidazo[1,2-*a*]pyrazin-3(7*H*)-one, 9CI.* **Renilla *Luciferin***
[50909-86-9]
$C_{26}H_{21}N_3O_2$ 407.471
Isol. from *Renilla reniformis* and other marine animals. Bioluminescence factor.

1″,7-Didehydro: ***Dehydrocoelenterazine***.
Watasenia *Dehydropreluciferin*
[62541-09-7]
$C_{26}H_{19}N_3O_3$ 421.454
Isol. from the liver of *Watasenia scintillans*. Bioluminescence factor. Dark red cryst. (Et_2O). Dec. at *ca*. 250°.

Inoue, S. *et al., Tet. Lett.*, 1976, **34**, 2971; 1977, 2685 (*Watasenia Luciferin, Coelenterazine*)
Inoue, S. *et al., Chem. Lett.*, 1977, 259 (*Dehydrocoelenterazine*)
Inoue, S. *et al., Chem. Lett.*, 1980, 299 (*synth*)
Shimomura, O. *et al., Comp. Biochem. Physiol., B: Comp. Biochem.*, 1980, 65; 435 (*occur*)
Teranishi, K. *et al., Bull. Chem. Soc. Jpn.*, 1990, **63**, 3132 (*synth, conformn*)
Kakoi, H. *et al., Phytochemistry*, 1998, **48**, 1669-1672 (*synth*)
Adamczyk, M. *et al., Org. Prep. Proced. Int.*, 2001, **33**, 477-485 (*synth, ir, pmr*)
Wu, C. *et al., Tetrahedron*, 2001, **57**, 9575-9583 (*biochem, bibl*)
Teranishi, K. *et al., Bioorg. Chem.*, 2007, **35**, 82-111 (*rev*)

Coelibactin C-561

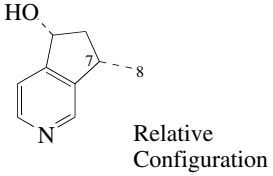


Partial struct. shown. Compd. predicted genomically to be prod. by *Streptomyces coelicolor* A3(2). Siderophore.

Bentley, S.D. *et al., Nature (London)*, 2002, **417**, 141-147 (*occur*)

Coelobillardierine C-562

*6,7-Dihydro-7-methyl-5*H*-2-pyrindin-5-ol, 9CI*
[119365-15-0]



Relative Configuration

$C_9H_{11}NO$ 149.192
Alkaloid from stems and leaves of *Coelospermum billardieri*. Mp 156°. $[\alpha]_D^{23}$ -9 (c, 0.7 in $CHCl_3$).

*Ketone: 6,7-Dihydro-7-methyl-5*H*-pyrindin-5-one, 9CI.* ***Coelosperminone***
[119308-94-0]
C_9H_9NO 147.176
Alkaloid from stems and leaves of *Coelospermum billardieri*. Oil. $[\alpha]_D^{23}$ +19 (c, 1 in $CHCl_3$).

*7,8-Didehydro: 6,7-Dihydro-7-methylene-5*H*-2-pyrindin-5-ol, 9CI.* ***7,8-Dehydrocoelobillardierine***
[119308-95-1]
C_9H_9NO 147.176
Alkaloid from stems and leaves of *Coelospermum billardieri*. Mp 140°. $[\alpha]_D^{23}$ +41 (c, 1 in $CHCl_3$).

Stereoisomer (?): ***Leptorhabine***
[55727-36-1]
$C_9H_{11}NO$ 149.192
Alkaloid from the above-ground parts of *Leptorhabdos parviflora* (Scrophulariaceae). Liq. $[\alpha]_D^{20}$ +10 (c, 1.015 in $CHCl_3$). Stereochem. undefined. The racemate has also been reported.

(±)-form

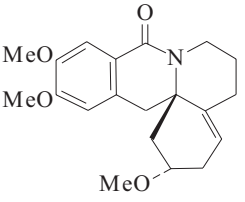
Ketone: Aucubinine B
[129893-31-8]
Microbial transformation prod.

*Ketone, 8-hydroxy: 6,7-Dihydro-7-(hydroxymethyl)-5*H*-2-pyrindin-5-one, 9CI. Aucubinine A*
[129722-96-9]
$C_9H_9NO_2$ 163.176
Microbial transformation prod.

Kadyrov, Kh.A. *et al., Khim. Prir. Soedin.*, 1974, **10**, 683; 1975, **11**, 269; *Chem. Nat. Compd. (Engl. Transl.)*, 1974, **10**, 711; 1975, **11**, 286 (*Leptorhabine*)
Lopez, J.L. *et al., J. Nat. Prod.*, 1988, **51**, 829 (*Coelobillardierine, Coelosperminone, Dehydrocoelobillardierine*)
Hattori, M. *et al., Phytother. Res.*, 1990, **4**, 66 (*Aucubinines*)
Baghdikian, B. *et al., Planta Med.*, 1999, **65**, 164-166 (*Aucubinine B*)
Yang, X.-X. *et al., Chin. J. Chem.*, 2003, **21**, 970-971 (*Aucubinine B, synth*)

Cohirsine C-563

[113807-36-6]



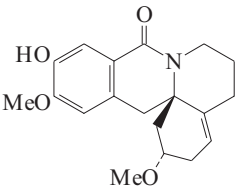
$C_{20}H_{25}NO_4$ 343.422
Alkaloid from *Cocculus hirsutus* (Menispermaceae). Gum. $[\alpha]_D^{26}$ +147 ($CHCl_3$).

O^2,*O*^{3}*-Di-de-Me:* ***Shaheenine***
[138704-13-9]
$C_{18}H_{21}NO_4$ 315.368
Alkaloid from *Cocculus hirsutus* (Menispermaceae). Gum. $[\alpha]_D^{25}$ +125 ($CHCl_3$).

Ahmad, V.U. *et al., Tetrahedron*, 1987, **43**, 5865 (*isol, uv, ir, pmr, cmr, ms, struct*)
Rasheed, T. *et al., Fitoterapia*, 1991, **62**, 157 (*Shaheenine*)

Cohirsinine C-564

*1,2,3,5,6,7-Hexahydro-11-hydroxy-2,12-dimethoxydibenzo[*b,i*]quinolizin-9(14*H*)-one, 9CI*
[135091-06-4]

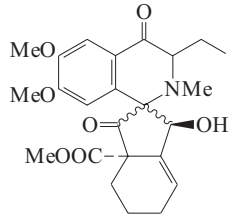


$C_{19}H_{23}NO_4$ 329.395
Alkaloid from *Cocculus hirsutus*. $[\alpha]_D^{25}$ +136 ($CHCl_3$). λ_{max} 213 ; 240 ; 303 (MeOH).

Ahmad, V.U. *et al., Phytochemistry*, 1991, **30**, 1350-1351 (*isol, pmr, cmr, ms*)

Cohirsitine C-565

[148717-82-2]

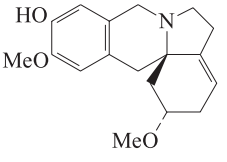


$C_{24}H_{29}NO_7$ 443.496
Alkaloid from aerial parts of *Cocculus hirsutus* (Menispermaceae). $[\alpha]_D^{27}$ +147 ($CHCl_3$).

Ahmad, V.U. *et al., Fitoterapia*, 1992, **63**, 308 (*isol, uv, ir, pmr, cmr, ms, struct*)

Cohirsitinine C-566

[142717-67-7]



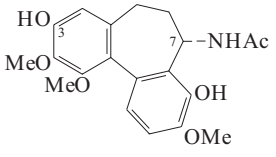
Relative configuration

$C_{18}H_{23}NO_3$ 301.385
A ring-contracted analogue of Cohirsinine, C-564. Alkaloid from whole plants of *Cocculus hirsutus* (Menispermaceae). Gum. $[\alpha]_D^{25}$ +51 ($CDCl_3$).

Ahmad, V.U. *et al., J. Nat. Prod.*, 1992, **55**, 237 (*isol, uv, ir, pmr, cmr, ms, struct*)

Colchibiphenyline C-567

N-*(6,7-Dihydro-4,9-dihydroxy-3,10,11-trimethoxy-5*H*-dibenzo[*a,c*]cyclohepten-5-yl)acetamide, 9CI*
[129724-65-8]



$C_{20}H_{23}NO_6$ 373.405

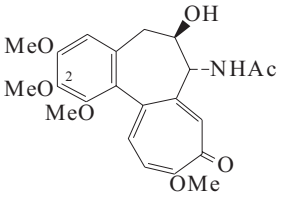
(*S*)-*form*
Alkaloid from *Colchicum ritchii* (Liliaceae). Amorph. $[\alpha]_D$ -25.5 (c, 0.094 in MeOH). Mixt. of conformers in soln.

O^3-*Me:* ***Androbiphenyline***
[126223-60-7]
$C_{21}H_{25}NO_6$ 387.432
Alkaloid from the bulbs of *Colchicum ritchii* and *Androcymbium palaestinum* (Liliaceae). Amorph. $[\alpha]_D$ -48 (c, 0.1 in MeOH).

Tojo, E. *et al., J. Nat. Prod.*, 1989, **52**, 1163 (*Androbiphenyline*)
Al-Tel, T.H. *et al., J. Nat. Prod.*, 1990, **53**, 623 (*isol, pmr, struct*)
Brecht, R. *et al., Liebigs Ann.lRecl.*, 1997, 2275-2279 (*synth, Androbiphenyline*)

Colchiciline C-568

6-Hydroxycolchicine
[61036-87-1]



$C_{22}H_{25}NO_7$ 415.442
Alkaloid from the seeds of *Colchicum latifolium, Colchicum doerfleri, Colchicum autumnale*, and *Colchicum visianii*; commercial samples of colchicine may contain colchiciline as a minor impurity (Liliaceae). Yellow cryst. (EtOAc). Mp 170-171° dec. $[\alpha]_D^{22}$ -121 (c, 1.93 in $CHCl_3$).

O-*Ac:*
Cryst. (EtOAc). Mp 150-151°.

N-*De-Ac,* N-*formyl:* ***Gloriosamine D***
[1006585-05-2]
$C_{21}H_{23}NO_7$ 401.415
Alkaloid from *Gloriosa rothschildiana*. Amorph. solid. $[\alpha]_D^{25}$ -95 (c, 0.06 in $CHCl_3$). λ_{max} 233 ; 244 ; 353 (EtOH).

N-*De-Ac,* N-*(hydroxyacetyl):* ***Gloriosamine C***
[1006585-04-1]
$C_{22}H_{25}NO_8$ 431.441
Alkaloid from *Gloriosa rothschildiana*. Amorph. solid. $[\alpha]_D^{24}$ -156 (c, 0.09 in $CHCl_3$). λ_{max} 245 ; 355 (EtOH).

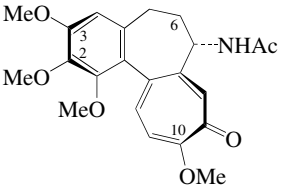
O^2-*De-Me:* ***2-Demethylcolchiciline***
[61036-88-2]
$C_{21}H_{23}NO_7$ 401.415
Alkaloid from the seeds of *Colchicum latifolium* (Liliaceae). Amorph. Tentative struct. based on colour reactions.

Isomer: ***Alkaloid CC 12***
[5083-61-4]
[1348-81-8]
$C_{22}H_{25}NO_7$ 415.442
Alkaloid from seeds of *Colchicum cornigerum* (Liliaceae) and *Colchicum latifolium*. Yellowish needles (Me_2CO). Mp 197-199°. $[\alpha]_D^{22}$ -45 (c, 0.242 in $CHCl_3$). $[\alpha]_D^{22}$ -83 (c, 0.51 in MeOH). A hydroxycolchicine of unknown regiochemistry.

Saleh, M. *et al., Coll. Czech. Chem. Comm.*, 1963, **28**, 3413-3423 (*Alkaloid CC 12*)
Cross, A.D. *et al., Coll. Czech. Chem. Comm.*, 1966, **31**, 374-378 (*Alkaloid CC 12, pmr*)
Potěšilová, H. *et al., Coll. Czech. Chem. Comm.*, 1976, **41**, 3146-3156; 1977, **42**, 1571-1580 (*Colchiciline, 2-Demethylcolchiciline, isol, uv, ir, pmr, cmr, ms, struct*)
Iorio, M.A. *et al., Heterocycles*, 1980, **14**, 625 (*isol, ms*)
Hrbek, J. *et al., Coll. Czech. Chem. Comm.*, 1982, **47**, 2258 (*cd*)
Kitajima, M. *et al., Tet. Lett.*, 2008, **49**, 257-260 (*Gloriosamines C,D*)

Colchicine, JAN, USAN C-569

Colchiceine methyl ether. Artrichine. Colchisol. Colsaloid. NSC 757. Many other names



(-)-*form*

$C_{22}H_{25}NO_6$ 399.443
Colchicine has one chiral centre (7*S*- in the natural enantiomer) and an axis of chirality. The barrier to interconversion of the atropisomers is approx. 23 kcal mol^{-1} which is too low to allow separate characterisation for colchicine itself, although isomers of various close relatives have been isolated, and de(acetamido)colchicine can be resolved. The abs. config. of the chiral axis is (*aR*) as shown (axial chirality), which was incorrectly described for some time as *S*- using an incorrect application of the Cahn-Ingold-Prelog rules. Log P -0.21 (uncertain value) (calc).

(+)-*form* [75520-89-7]
Synthetic. Cryst. (H_2O). Mp 139-141°. $[\alpha]_D$ +131 (c, 0.87 in $CHCl_3$).
▶ GH0705000

(-)-*form* [64-86-8]
Chief alkaloid from *Colchicum autumnale*, many other *Colchicum* spp., several *Merendera* spp., *Gloriosa superba* and others (Liliaceae). Functions by binding to tubulin and arresting cell division at metaphase. Also inhibits many cell transport systems. Antimitotic agent used to induce polyploidy in plant breeding and for studying cell division. Toxicity has precluded exploitation of these props. for antineoplastic use. Potential HIV inhibitor. Antiinflammatory agent. Used for relief of pain in acute gout. Sol. MeOH, C_6H_6, H_2O; fairly sol. Et_2O; poorly sol. hexane. Mp 155-157°. $[\alpha]_D$ -121 ($CHCl_3$). Log P -0.21 (uncertain value) (calc). Pharmacol. active isomer. λ_{max} 243 (ϵ 18600); 350 (ϵ 16700) (EtOH) (Berdy).
▶ Gastrointestinal effects when used therapeutically. Other adverse effects reported incl. a lethal dose of 7 mg in humans. Severe eye irritant. *Colchicum* spp. bulbs are freq. cause of accidental poisoning. Exp. reprod. and teratogenic effects. LD_{50} (mus, orl) 6 mg/kg; LD_{50} (mus, ipr) 2 mg/kg. GH0700000

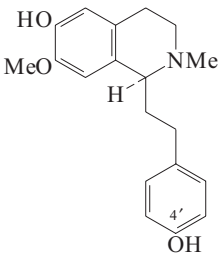
Tetrachloroaurate: Mp 209°.

(±)-*form* [54192-66-4]
Mp 277-279°.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 361C (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **2**, 1374C (*nmr*)
Dewar, M.J.S. *et al., Nature (London)*, 1945, **155**, 141 (*struct*)
King, M.V. *et al., Acta Cryst. B*, 1952, **5**, 437-440 (*cryst struct*)
Corrodi, H. *et al., Helv. Chim. Acta*, 1955, **38**, 2030-2033 (*abs config*)
Schreiber, J. *et al., Helv. Chim. Acta*, 1961, **44**, 540-597 (*synth, uv, ir*)
Wilson, J.M. *et al., Tetrahedron*, 1963, **19**, 2225-2231 (*ms*)
Ulubelen, A. *et al., Planta Med.*, 1978, **34**, 216-217 (*isol, uv, ir, pmr, ms*)
Hufford, C.D. *et al., Helv. Chim. Acta*, 1980, **63**, 50-56 (*cmr*)
Wyatt, D.K. *et al., Anal. Profiles Drug Subst.*, 1981, **10**, 139-182 (*ir, uv, pmr, cmr, anal*)
Rösner, M. *et al., J. Med. Chem.*, 1981, **24**, 257-261 (*(+)-form, synth*)
Evans, D.A. *et al., J.A.C.S.*, 1981, **103**, 5813-5821 (*synth*)
Capraro, H.-G. *et al., Alkaloids (Academic Press)*, 1984, **23**, 1-70 (*rev, pharmacol*)
Boger, D.L. *et al., J.O.C.*, 1985, **50**, 3425-3428 (*synth*)
Dumont, R. *et al., J.O.C.*, 1986, **51**, 2515-2521 (*synth*)
Brossi, A. *et al., Med. Res. Rev.*, 1988, **8**, 77-94 (*rev, props*)
Brossi, A. *et al., FEBS Lett.*, 1990, **262**, 5-7 (*cd, abs config*)
Lee, K.H. *et al., J. Nat. Prod.*, 1991, **54**, 632-637 (*anti-HIV activity*)
Muzaffar, A. *et al., Pharmacol. Ther.*, 1991, **49**, 105-109 (*rev*)
Levy, M. *et al., Pharmacotherapy (Carlisle, Mass.)*, 1991, **11**, 196; 1994, **12**, 171 (*pharmacol, tox, rev*)
Textbook of Adverse Drug Reactions, 4th edn., (ed. Davies, D.M.), Oxford University Press, 1991,
Banwell, M.G. *et al., J.C.S. Perkin 1*, 1992, 1415-1426 (*synth*)
Hood, R.L. *et al., J. Emergency Med.*, 1994, **12**, 171 (*tox, rev*)
Negwer, M. *et al., Organic-Chemical Drugs and their Synonyms, 7th edn., Akademie-Verlag*, 1994, 8951 (*synonyms*)
Maier, U.H. *et al., Tet. Lett.*, 1997, **38**, 7357-7360 (*biosynth*)
Battersby, A.R. *et al., J.C.S. Perkin 1*, 1998, 2979-2987; 2989-2994; 2995-3001; 3003-3009 (*biosynth, bibl*)
Le Hello, C. *et al., Alkaloids (Academic Press)*, 1999, **53**, (*rev, pharmacol*)
Berg, U. *et al., Helv. Chim. Acta*, 1999, **82**, 323-325 (*stereochem*)
Brossi, A. *et al., Helv. Chim. Acta*, 1999, **82**, 1223-1224 (*stereochem*)
Martindale, The Extra Pharmacopoeia, 32nd edn., Pharmaceutical Press, 1999, 393
Lee, J.C. *et al., Tetrahedron*, 2000, **56**, 10175-10184 (*synth, bibl*)
Graening, T. *et al., Angew. Chem., Int. Ed.*, 2004, **43**, 3230-3256 (*rev, synth*)
Graening, T. *et al., Org. Lett.*, 2005, **7**, 4317-4329 (*synth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, CNG830

Colchiethanamine C-570

1,2,3,4-Tetrahydro-1-[2-(4-hydroxyphenyl)ethyl]-7-methoxy-2-methyl-6-isoquinolinol, 9CI



$C_{19}H_{23}NO_3$ 313.396

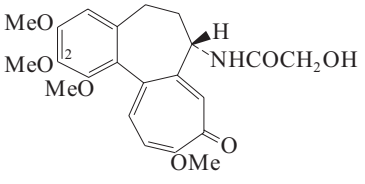
(*S*)-*form* [129724-55-6]
Alkaloid from the bulbs of *Colchicum szovitsii* (Liliaceae). $[\alpha]_D$ +10 (c, 0.2 in MeOH).

$O^{4'}$-*Me:* ***Colchiethine***
[129724-56-7]
$C_{20}H_{25}NO_3$ 327.422
Alkaloid from the bulbs of *Colchicum szovitsii* (Liliaceae). $[\alpha]_D$ +8 (c, 0.2 in MeOH).

Tojo, E. *et al., J. Nat. Prod.*, 1990, **53**, 634 (*isol, pmr, struct*)

Colchifoline C-571

[74515-40-5]



$C_{22}H_{25}NO_7$ 415.442
Minor alkaloid from commercial samples of Colchicine. Isol. from *Colchicum autumnale* and *Androcymbium gramineum*. Cryst. (EtOAc). Mp 151-152°. $[\alpha]_D^{22}$ -149 (c, 0.94 in $CHCl_3$).

▶ AC4010000

O^2-*De-Me:* ***2-Demethylcolchifoline***
[70553-72-9]
$C_{21}H_{23}NO_7$ 401.415
Isol. from the leaves of *Colchicum autumnale* (Liliaceae).

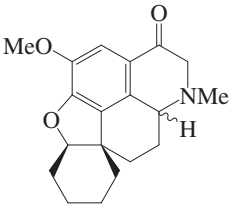
O^2-*De-Me,* O^2-*Ac:* ***2-Acetyl-2-demethylcolchifoline***
[70553-74-1]
$C_{23}H_{25}NO_8$ 443.452
Noncryst. $[\alpha]_D^{23}$ -112 (c, 0.52 in $CHCl_3$).

O^2-*De-Me, di-Ac:*
Cryst. (EtOAc). Mp 229-232°. $[\alpha]_D^{23}$ -109 (c, 0.68 in $CHCl_3$).

O^{10}-*De-Me: Colchifoleine*
[78517-64-3]
$C_{21}H_{23}NO_7$ 401.415
Cryst. (MeOH aq.). Mp 227-228°. $[\alpha]_D^{22}$ -254 (c, 0.65 in $CHCl_3$).

Sedmera, P. *et al., Heterocycles*, 1979, **12**, 337-342 (*2-Demethylcolchifoline*)
Iorio, M.A. *et al., Heterocycles*, 1980, **14**, 625-630 (*ms*)
Iorio, M.A. *et al., Can. J. Chem.*, 1981, **59**, 283-284 (*synth, pmr*)
Ellington, E. *et al., Biochem. Syst. Ecol.*, 2003, **31**, 715-722 (*isol*)

Colchilutine C-572

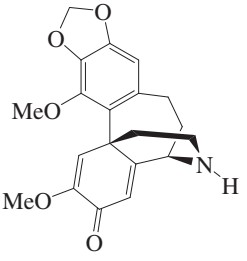


$C_{19}H_{23}NO_3$ 313.396
Alkaloid from *Colchicum luteum* (Liliaceae). Mp 190-191°. $[\alpha]_D$ -83 ($CHCl_3$).

Shakirov, R. *et al., Khim. Prir. Soedin.*, 1996, **32**, 410-512; *Chem. Nat. Compd. (Engl. Transl.)*, 1996, **32**, 386-512

Colchiritchine C-573

[111509-14-9]

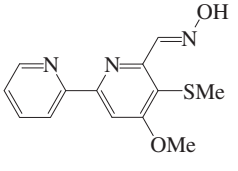


$C_{20}H_{21}NO_5$ 355.39
Alkaloid from *Colchicum ritchii*. Amorph. $[\alpha]_D$ +207 (c, 0.15 in MeOH). λ_{max} 213 (log ϵ 4.41); 241 (log ϵ 4.08); 279 (log ϵ 3.7) (MeOH).

Freyer, A.J. *et al., J. Nat. Prod.*, 1987, **50**, 684-689 (*isol, uv, ir, pmr, ms, struct*)

Collismycin C-574

4-Methoxy-5-(methylthio)-[2,2′-bipyridine]-6-carboxaldehyde oxime. SF 2738. Antibiotic SF 2738
[149759-19-3]



(*E*)-*form*

$C_{13}H_{13}N_3O_2S$ 275.331

(*E*)-*form*
Collismycin A. *SF 2738A. Antibiotic SF 2738A*
[158792-24-6]
Prod. by *Streptomyces* sp. MQ22 and *Streptomyces* sp. SF 2738. Inhibitor of dexamethasone-glucocorticoid receptor binding. Antimicrobial and antitumour agent. Cryst. Mp 174-176° (170-172° dec.). Similar to Caerulomycin, C-9. λ_{max} 244 (ϵ 26400) (MeOH) (Derep).

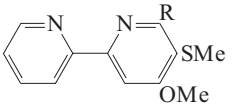
S-*Oxide:* ***Pyrisulfoxin A***. *BS 75A. Antibiotic BS 75A*
[187337-07-1]
$C_{13}H_{13}N_3O_3S$ 291.33
Prod. by *Streptomyces californicus* sp. BS75A. Antitumour agent. Powder or yellow powder. Mp 178-180°. λ_{max} 243 (ϵ 23500); 288 (ϵ 14500) (MeOH).

(*Z*)-*form*
Collismycin B. *SF 2738B. Antibiotic SF 2738B*
[158792-25-7]
Prod. by *Streptomyces* sp MQ22. Inhibitor of dexamethasone-glucocorticoid receptor binding. Cytotoxic agent. Cryst. Mp 148-159° dec. (140-142°). λ_{max} 244 (ϵ 26400) (MeOH) (Derep).

Japan. Pat., 1993, 93 78 322; *CA*, **119**, 135507 (*isol, pmr, cmr, ir, uv*)
Shindo, K. *et al., J. Antibiot.*, 1994, **47**, 1072-1074 (*isol*)
Gomi, S. *et al., J. Antibiot.*, 1994, **47**, 1385-1394 (*isol, pmr, cmr*)
Japan. Pat., 1997, 97 12 550; *CA*, **126**, 170489d (*BS 75A*)
Tsuge, N. *et al., J. Antibiot.*, 1999, **52**, 505-507 (*Pyrisulfoxin A*)
Stadler, M. *et al., Arch. Pharm. (Weinheim, Ger.)*, 2001, **334**, 143-147 (*isol, pmr*)

Collismycin C C-575

4-Methoxy-5-(methylthio)-[2,2′-bipyridine]-6-methanol. 6-Hydroxymethyl-4-methoxy-5-(methylthio)-2,2′-bipyridine. Antibiotic SF 2738C. SF 2738C
[161504-74-1]



R = CH_2OH

$C_{13}H_{14}N_2O_2S$ 262.332
Prod. by *Streptomyces* sp. SF 2738. Active against gram-positive and -negative bacteria, fungi and tumours. Powder. Sol. MeOH, EtOAc; poorly sol. H_2O. Mp 104-106°. Similar to Caerulomycin, C-9. λ_{max} 206 (E1%/1cm 720); 219 (E1%/1cm 719); 292 (E1%/1cm 538) (MeOH) (Berdy). λ_{max} 211 (E1%/1cm 646); 227 (E1%/1cm 583); 260 (E1%/1cm 544); 272 (E1%/1cm 492); 306 (E1%/1cm 470) (MeOH/HCl) (Berdy). λ_{max} 215 (E1%/1cm 1260); 291 (E1%/1cm 550) (MeOH/NaOH) (Berdy).

1′-Aldehyde, oxime: see Collismycin, C-574

Gomi, S. *et al., J. Antibiot.*, 1994, **47**, 1385-1394 (*isol, uv, ir, pmr, cmr, props*)

Collismycin D C-576

4-Methoxy-5-(methylthio)-[2,2′-bipyridine]-6-carbonitrile. 6-Cyano-4-methoxy-5-(methylthio)-2,2′-bipyridine. SF 2738D. Antibiotic SF 2738D
[161504-75-2]
As Collismycin C, C-575 with
R = –CN

$C_{13}H_{11}N_3OS$ 257.315
Prod. by *Streptomyces* sp. SF 2738. Active against gram-positive and -negative bacteria, fungi and tumours. Powder. Sol. MeOH, EtOAc; poorly sol. H_2O. Mp 123-125°. λ_{max} 206 (E1%/1cm 868); 236 (ϵ 1200); 288 (E1%/1cm 591) (MeOH) (Berdy).

S-*Oxide:* ***Pyrisulfoxin B***
$C_{13}H_{11}N_3O_2S$ 273.315
Prod. by *Streptomyces californicus*. Powder. Mp 163-165°. λ_{max} 243 (ϵ 17900); 288 (ϵ 12700) (MeOH).

Gomi, S. *et al., J. Antibiot.*, 1994, **47**, 1385-1394 (*isol, uv, ir, pmr, cmr, props*)
Tsuge, N. *et al., J. Antibiot.*, 1999, **52**, 505-507 (*Pyrisulfoxin B*)

Collismycin E C-577

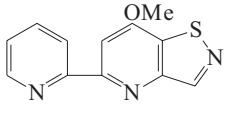
Antibiotic SF 2738E. SF 2738E
[161504-76-3]
As Collismycin C, C-575 with
R = $-CH_2NHAc$

$C_{15}H_{17}N_3O_2S$ 303.384
Prod. by *Streptomyces* sp. SF 2738. Active against gram-positive and -negative bacteria, fungi and tumours. Powder. Sol. MeOH, EtOAc; poorly sol. H_2O. Mp 123-125°. λ_{max} 206 (E1%/1cm 759); 287 (E1%/1cm 476) (MeOH) (Berdy).

Gomi, S. *et al., J. Antibiot.*, 1994, **47**, 1385-1394 (*isol, uv, ir, pmr, cmr, props*)

Collismycin F C-578

*7-Methoxy-5-(2-pyridinyl)isothiazolo[4,5-*b*]pyridine, 9CI. Antibiotic SF 2738F. SF 2738F*
[161504-77-4]

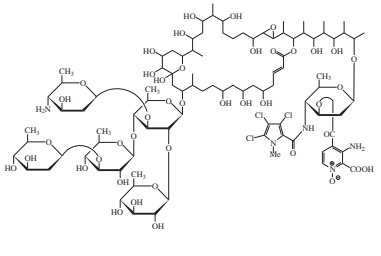


$C_{12}H_9N_3OS$ 243.289
Prod. by *Streptomyces* sp. SF 2738. Active against gram-positive and -negative bacteria, fungi and tumours. Powder. Sol. MeOH, EtOAc; poorly sol. H_2O. Mp 145-148°. λ_{max} 203 (E1%/1cm 472); 248 (E1%/1cm 930); 252 (E1%/1cm 925); 272 (E1%/1cm 572) (MeOH) (Berdy).

Gomi, S. *et al., J. Antibiot.*, 1994, **47**, 1385 (*isol, uv, ir, pmr, cmr, props*)

Colubricidin A C-579

[257939-57-4]



$C_{96}H_{154}Cl_3N_5O_{42}$ 2156.639
Macrolide antibiotic. Prod. by *Streptomyces* sp. LL-C13122. Active against gram-positive bacteria. Yellowish powder. $[\alpha]_D^{25}$ -7 (c, 0.5 in MeOH). λ_{max} 280 (sh) ; 375 (no solvent reported).

Kong, F. *et al., Tet. Lett.*, 1999, **40**, 9219-9223

Columellarine C-580

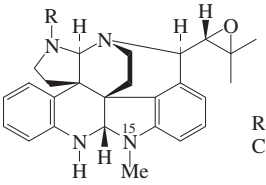
[11023-69-1]

$C_{21}H_{25}NO_4$ 355.433
Struct. unknown. No further work to 2001. Alkaloid from *Baeometra columellaris*. Mp 150-153°. $[\alpha]_D^{22}$ -201 (c, 0.937 in $CHCl_3$).

Pijewska, L. *et al., Coll. Czech. Chem. Comm.*, 1967, **32**, 158-170 (*isol, uv*)

Communesin A C-581

[148439-45-6]



Relative Configuration

R = $COCH_3$

$C_{28}H_{32}N_4O_2$ 456.586
Communesin alkaloids have been isol. from *Penicillium* spp. by two different groups of workers simultaneously, and various Communesin names have been given to different but closely similar compds. See also under Communesin B, C-582. Metab. from the mycelium of a strain of *Penicillium* sp. isol. from the marine alga *Enteromorpha intestinalis*. Also prod. by the terrestrial *Penicillium expansum* Link MK-57. Cytotoxic and insecticidal agent. Amorph. powder. Mp 194-196° Mp > 300°. $[\alpha]_D^{20}$ -174 (c, 1.34 in $CHCl_3$). λ_{max} 208 (ϵ 53700); 247 (ϵ 12300); 268 (ϵ 11500); 290 (sh) (ϵ 3980); 315 (ϵ 2880) (EtOH) (Derep).

N-*De-Me:* ***Communesin E***†. *Communesin D*†
[727416-58-2]
$C_{27}H_{30}N_4O_2$ 442.56
Prod. by *Penicillium expansum* Link MK-57. Insecticidal agent. Amorph. powder. Mp 250° dec. $[\alpha]_D^{20}$ -156 (c, 0.11 in $CHCl_3$). λ_{max} 243 (ϵ 9700) (MeOH).

21,22-Deepoxy, 21,22-didehydro: ***Communesin F***. *Communesin E*†
[727416-60-6]
$C_{28}H_{32}N_4O$ 440.587
Prod. by *Penicillium expansum* Link MK-57. Insecticidal agent. Amorph. powder. Mp 144-147°. $[\alpha]_D^{20}$ -264 (c, 0.34 in $CHCl_3$). λ_{max} 268 (ϵ 10900) (MeOH).

Numata, A. *et al., Tet. Lett.*, 1993, **34**, 2355-2358 (*isol, ir, pmr, cmr*)
Hayashi, H. *et al., Biosci., Biotechnol., Biochem.*, 2004, **68**, 753-756 (*isol, pmr, cmr, ms*)
Wigley, L.J. *et al., Phytochemistry*, 2006, **67**, 561-569 (*biosynth*)
May, J.A. *et al., Tetrahedron*, 2006, **62**, 5262-5271 (*biosynth, struct*)
Yang, J. *et al., J.A.C.S.*, 2007, **129**, 13794-13795 (*Communesin F, synth*)

Communesin B C-582

Nomofungin
[148439-46-7]
As Communesin A, C-581 with
R = $H_2C{=}CHCH{=}CHCH_2CO-$

$C_{32}H_{36}N_4O_2$ 508.662
Struct. of Nomofungin revised in 2003. See comment under Communesin A, C-581. Metab. from the mycelium of a strain of *Penicillium* sp. isol. from the marine alga *Enteromorpha intestinalis* and from the terrestrial *Penicillium expansum* Link MK-57. Isol. from an unidentified fungus from the bark of *Ficus microcarpa* (Nomofungin). Cytotoxic, mycotoxin and insecticide. Amorph. powder. Mp 165-170° (152-154°). $[\alpha]_D^{20}$ -74.9 (c, 1.5 in $CHCl_3$). $[\alpha]_D^{22}$ +8.7 (c, 0.2 in $CHCl_3$). λ_{max} 208 (ϵ 45700); 250 (sh) (ϵ 32400); 266 (ϵ 38900); 315 (ϵ 3090) (EtOH) (Derep).

N-*De-Me:* ***Communesin C***†
[648413-35-8]
$C_{31}H_{34}N_4O_2$ 494.635
Prod. by a *Penicillium* sp. isol. from the marine sponge *Axinella verrucosa*. $[\alpha]_D$ -30 (c, 0.04 in MeOH). λ_{max} 206 ; 271 (MeOH).

N-*De-Me,* N^{15}*-formyl:* ***Communesin D***†. *Communesin C*†
[648413-36-9]
$C_{32}H_{34}N_4O_3$ 522.646
Prod. by a *Penicillium* sp. isol. from *Axinella verrucosa* and by the terrestrial *Penicillium expansum* Link MK-57. Amorph. powder. Mp 190-195°. $[\alpha]_D$ +23.3 (c, 0.04 in MeOH). $[\alpha]_D^{20}$ +150 (c, 0.14 in $CHCl_3$). λ_{max} 206 ; 267 (MeOH).

Numata, A. *et al., Tet. Lett.*, 1993, **34**, 2355-2358 (*isol, pmr, cmr, struct*)
Ratnayake, A.S. *et al., J.O.C.*, 2001, **66**, 8717-8721; 2003, **68**, 1640 (*Nomofungin*)
May, J.A. *et al., Tet. Lett.*, 2003, **44**, 1203-1205 (*struct*)
Hayashi, H. *et al., Biosci., Biotechnol., Biochem.*, 2004, **68**, 753-756 (*isol, pmr, cmr, ms*)
Jadulco, R. *et al., J. Nat. Prod.*, 2004, **67**, 78-81 (*isol, pmr, cmr, ms*)
Wigley, L.J. *et al., Phytochemistry*, 2006, **67**, 561-569 (*biosynth*)
May, J.A. *et al., Tetrahedron*, 2006, **62**, 5262-5271 (*biosynth, struct*)

Communesin G C-583

[848950-21-0]
As Communesin A, C-581 with
R = $COCH_2CH_3$

$C_{29}H_{34}N_4O_2$ 470.613
Prod. by *Penicillium rivulum* (IBT 24420). Amorph. powder (MeCN aq.). Mp 162-166°. $[\alpha]_D^{25}$ -157 (c, 0.02 in MeOH). λ_{max} 207 (log ϵ 4.59); 248 (log ϵ 3.92); 268 (log ϵ 3.94); 316 (log ϵ 3.39) (MeOH).

Dalsgaard, P.W. *et al., J. Nat. Prod.*, 2005, **68**, 258-261 (*isol, cd, pmr, cmr*)

Communesin H C-584

[848950-22-1]

As Communesin A, C-581 with

R = $COCH_2CH_2CH_3$

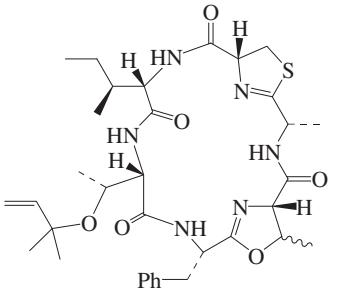
$C_{30}H_{36}N_4O_2$ 484.64

Prod. by *Penicillium rivulum* (IBT 24420). Amorph. powder (MeCN aq.). Mp 143-147°. $[\alpha]_D^{25}$ -167 (c, 0.02 in MeOH). λ_{max} 208 (log ϵ 4.68); 248 (log ϵ 4); 268 (log ϵ 4.02); 316 (log ϵ 3.48) (MeOH).

Dalsgaard, P.W. *et al., J. Nat. Prod.*, 2005, **68**, 258-261 (*isol, cd, pmr, cmr*)

Comoramide A C-585

[217449-19-9]



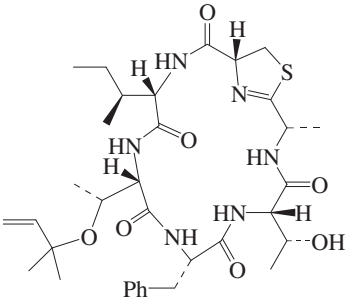
$C_{34}H_{48}N_6O_6S$ 668.856

Cyclic peptide alkaloid. Isol. from *Didemnum molle*. Cytotoxic agent. Amorph. powder. $[\alpha]_D$ +0.5 (c, 0.17 in MeOH).

Rudi, A. *et al., Tetrahedron*, 1998, **54**, 13203-13210 (*isol, pmr, cmr, ms*)

Comoramide B C-586

[217449-22-4]



$C_{34}H_{50}N_6O_7S$ 686.871

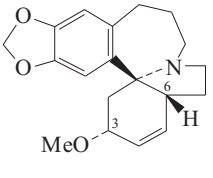
Cyclic peptide alkaloid. Isol. from *Didemnum molle*. Cytotoxic agent. Amorph. powder. $[\alpha]_D$ -100 (c, 0.05 in MeOH).

Rudi, A. *et al., Tetrahedron*, 1998, **54**, 13203-13210 (*isol, pmr, cmr, ms*)

Comosine C-587

3-Epi-6,7-dihydroschelhammeridine. 6,7-Dihydrohomoerythraline

[31689-96-0]



$C_{19}H_{23}NO_3$ 313.396

Config. revised in 1986. The name Comosine was proposed for this alkaloid in 1986. Alkaloid from the leaves of *Phelline comosa* (Phellinaceae). Noncryst. $[\alpha]_D$ +75 (c, 1.5 in $CHCl_3$).

Hydrochloride:

Cryst. ($MeOH/Et_2O$). Mp 260°. $[\alpha]_D$ +100 (c, 1.7 in EtOH).

3-Epimer: ***3-Epicomosine****. 6,7-Dihydroschelhammeridine. Alkaloid A†*

[21030-73-9]

$C_{19}H_{23}NO_3$ 313.396

Alkaloid from *Schelhammera pedunculata* (Liliaceae). Gum. $[\alpha]_D$ -100 (c, 0.37 in $CHCl_3$).

3-Epimer, picrate:

Yellow prisms (MeOH). Mp 188-189°.

Fitzgerald, J.S. *et al., Aust. J. Chem.*, 1969, **22**, 2187 (*isol, epimer*)

Johns, S.R. *et al., Aust. J. Chem.*, 1969, **22**, 2219 (*uv, pmr, ms, struct, epimer*)

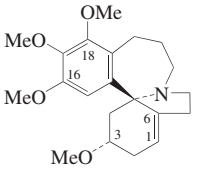
Langlois, N. *et al., Bull. Soc. Chim. Fr.*, 1970, 3535 (*isol, uv, ir, pmr, ms, struct*)

Tsuda, Y. *et al., Chem. Pharm. Bull.*, 1996, **44**, 515 (*synth, config*)

Comosivine C-588

O-*Methylathrocupressine. Alkaloid 5*

[31690-00-3]



Absolute Configuration

$C_{21}H_{29}NO_4$ 359.464

Alkaloid from *Phelline comosa*, *Athrotaxis cupressoides* and *Lagarostrobos colensoi* (*Dacrydium colensoi*). Cryst. (hexane). Mp 100-101°. $[\alpha]_D$ +91 (c, 1.5 in $CHCl_3$).

1α,6α-Epoxide: ***1,6-Epoxycomosivine***

[123064-73-3]

$C_{21}H_{29}NO_5$ 375.464

Alkaloid from the leaves of *Phelline comosa* var. *robusta* (Phellinaceae). Mp 136°. $[\alpha]_D$ +103 (c, 0.55 in $CHCl_3$).

O^3*-De-Me:* ***Robustivine***

[123064-72-2]

$C_{20}H_{27}NO_4$ 345.438

Alkaloid from the leaves of *Phelline comosa* var. *robusta* (Phellinaceae). Mp 234° (as hydrochloride). $[\alpha]_D$ +103.7 (c, 0.7 in $CHCl_3$).

O^3*-De-Me, 1α,6α-epoxide:* ***1,6-Epoxyrobustivine***

[749864-97-9]

$C_{20}H_{27}NO_5$ 361.437

Alkaloid from leaves of *Phelline comosa*. $[\alpha]_D$ +99 (c, 0.68 in $CHCl_3$). λ_{max} 207 (ϵ 35700); 283 (ϵ 1275) (EtOH).

O-*De-Me:* ***Holidinine***

[95066-36-7]

$C_{20}H_{27}NO_4$ 345.438

Trace alkaloid from the leaves of *Phelline* sp. aff. *Phelline lucida* (Phellinaceae) and *Lagarostrobos colensoi* (*Dacrydium colensoi*). Cryst. (Et_2O). Mp 164-165°. $[\alpha]_D$ +91 (c, 1.03 in $CHCl_3$). Posn. of OH not definitely establ.

O^{18}*-De-Me:* ***Athrocupressine***

[93888-46-1]

$C_{20}H_{27}NO_4$ 345.438

Alkaloid from the twigs and foliage of *Athrotaxis cupressoides* and *Athrotaxis selaginoides* (Taxodiaceae). Cryst. (Me_2CO). Mp 152-153°. $[\alpha]_D^{19}$ +102.2 (c, 0.43 in $CHCl_3$).

O^3,O^{16}*-Di-de-Me:* ***Robusticine***

[128508-54-3]

$C_{19}H_{25}NO_4$ 331.411

Minor alkaloid from leaves of *Phelline comosa* var. *robusta* (Phellinaceae). $[\alpha]_D$ +100 (c, 0.83 in $CHCl_3$).

O^{16},O^{18}*-Di-de-Me:* ***18-De-O-methylholinidine***

[749864-99-1]

$C_{19}H_{25}NO_4$ 331.411

Alkaloid from leaves of *Phelline comosa*. Mp 140°. $[\alpha]_D$ +111 (c, 0.54 in MeOH). λ_{max} 208 (ϵ 29600); 276 (ϵ 1242) (EtOH).

2α-Hydroxy: ***2-Hydroxycomosivine***

[138909-10-1]

$C_{21}H_{29}NO_5$ 375.464

Alkaloid from the heartwood of *Phelline comosa* (Phellinaceae). Dull white cryst. (EtOH). Mp 196-197°. $[\alpha]_D^{25}$ +93 (c, 1.5 in EtOH).

2α-Methoxy: ***2-Methoxycomosivine***

[155272-47-2]

$C_{22}H_{31}NO_5$ 389.491

Alkaloid from stems of *Dysoxylum lenticellare* (Meliaceae). Brown oil.

Langlois, N. *et al., Bull. Soc. Chim. Fr.*, 1970, 3535-3543 (*Comosivine*)

Langlois, N. *et al., Heterocycles*, 1984, **22**, 2453-2457; 1990, **30**, 659-664 (*Holidinine, Robusticine*)

Panichanun, S. *et al., Tetrahedron*, 1984, **40**, 2677-2684; 2685-2689 (*Comosivine*)

Pusset, J. *et al., Phytochemistry*, 1989, **28**, 1298-1300 (*Robustivine, 1,6-Epoxycomosivine, Holidinine*)

Aladesanmi, A.J. *et al., Phytochemistry*, 1991, **30**, 3497-3498; 1994, **35**, 1361-1362 (*2-Hydroxycomosivine, 2-Methoxycomosivine*)

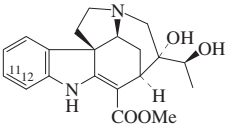
Bloor, S.J. *et al., Phytochemistry*, 1996, **41**, 801-802 (*Holidinine, Comosivine*)

Langlois, N. *et al., C. R. Chim.*, 2004, **7**, 51-55 (*1,6-Epoxyrobustivine, 18-De-O-methylholinidine*)

Compactinervine C-589

Methyl 2,16-didehydro-19,20-dihydroxycuran-17-oate, 9CI

[2270-73-7]



Absolute Configuration

$C_{20}H_{24}N_2O_4$ 356.421

Alkaloid from the bark of *Aspidosperma compactinervium*, also from stem bark of *Alstonia lanceolata* (Apocynaceae). Solvated needles (EtOH aq.). Mp 110-120° Mp 235-245° dec. (double Mp). $[\alpha]_D^{25}$ -515

(c, 0.55 in EtOH). $[\alpha]_D$ -640 (Py). λ_{max} 237 (log ϵ 3.97); 297 (log ϵ 3.95); 331 (log ϵ 4.15) (EtOH).

Hydrochloride:
Prisms ($MeOH/Me_2CO$). Mp 191-192° dec.

Picrate:
Yellow prisms (Me_2CO). Mp 219-220° dec.

O,O-*Di-Ac:* Mp 208° dec. $[\alpha]_D$ -623 ($CHCl_3$).

11-Methoxy: ***Alstovine****. 11-Methoxycompactinervine*
[57576-38-2]
$C_{21}H_{26}N_2O_5$ 386.447
Alkaloid from the trunk bark of *Alstonia vitiensis* (Apocynaceae). Shows antitumour activity. Fine needles (EtOH). Mp 168°. $[\alpha]_D^{20}$ -502 (c, 1.0 in EtOH). λ_{max} 261 (log ϵ 3.9); 307 (log ϵ 3.67); 331 (log ϵ 3.99) (EtOH).

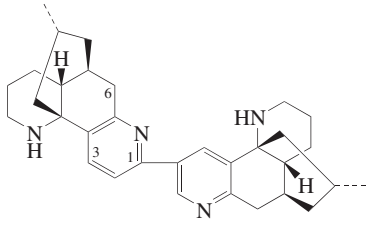
11-Methoxy, 19-ketone: ***Lagumidine***
[154849-52-2]
$C_{21}H_{24}N_2O_5$ 384.431
Alkaloid from leaves of *Alstonia macrophylla* (Apocynaceae). Solid. $[\alpha]_D^{26}$ -144.2 (c, 0.48 in MeOH).

12-Methoxy: ***12-Methoxycompactinervine***
[79659-68-0]
$C_{21}H_{26}N_2O_5$ 386.447
Alkaloid from the leaves of *Alstonia lenormandii* var. *minutifolia*, the stem bark of *Alstonia lenormandii* var. *lenormandii* and from *Alstonia lanceolata* (Apocynaceae). Cryst. (MeOH) or amorph. solid. Mp 155°. $[\alpha]_D$ -482 (c, 1 in $CHCl_3$) (-204). Struct. revised in 1986, formerly considered to be 10-methoxy. λ_{max} 235 ; 288 ; 337 (no solvent reported).

Djerassi, C. *et al., Experientia*, 1963, **19**, 467-469 (*isol, uv, pmr, struct, abs config*)
Gilbert, B. *et al., Tetrahedron*, 1965, **21**, 1141-1166 (*isol, uv, ord, struct*)
Mamatas-Kalamaras, S. *et al., Phytochemistry*, 1975, **14**, 1637-1639 (*Alstovine*)
Vercauteren, J. *et al., Phytochemistry*, 1981, **20**, 1411-1413 (*10-Methoxycompactinervine*)
Ravao, T. *et al., Phytochemistry*, 1982, **21**, 2160-2161 (*Alstovine, 11-Methoxycompactinervine*)
Verpoorte, R. *et al., Planta Med.*, 1983, **48**, 283 (*isol*)
Legseir, B. *et al., Phytochemistry*, 1986, **25**, 1735-1738 (*12-Methoxycompactinervine*)
Abe, F. *et al., Phytochemistry*, 1994, **35**, 249-252; 253-257 (*Lagumidine*)

Complanadine A C-590

[317802-77-0]



$C_{32}H_{42}N_4$ 482.711
Dimer of Lycodine, L-324. Alkaloid from *Lycopodium complanatum*. Cytotoxic. $[\alpha]_D^{24}$ +14 (c, 0.3 in MeOH). λ_{max} 251 (ϵ 12000); 290 (ϵ 14000) (no solvent reported).

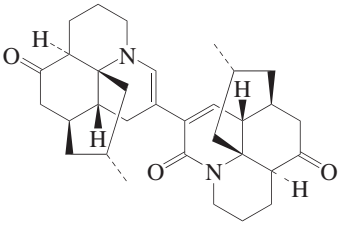
N,*1α,2,3-Tetrahydro:* ***Complanadine D***
[919769-28-1]
$C_{32}H_{46}N_4$ 486.742
Alkaloid from *Lycopodium complanatum*. Amorph. solid. $[\alpha]_D^{21}$ -32 (c, 1 in MeOH). λ_{max} 209 (ϵ 15100); 272 (ϵ 3900) (MeOH).

6-Oxo: ***Complanadine B***
[849096-84-0]
$C_{32}H_{40}N_4O$ 496.694
Alkaloid from *Lycopodium complanatum*. Amorph. solid. $[\alpha]_D^{24}$ -13 (c, 0.5 in MeOH). λ_{max} 211 (ϵ 8000); 268 (ϵ 12000) (MeOH).

Kobayashi, J. *et al., Tet. Lett.*, 2000, **41**, 9069-9073 (*Complanadine A*)
Morita, H. *et al., Tetrahedron*, 2005, **61**, 1955-1960 (*Complanadine B*)
Ishiuchi, K. *et al., Bioorg. Med. Chem.*, 2007, **15**, 413-417 (*Complanadine D*)

Complanadine C C-591

[919769-27-0]

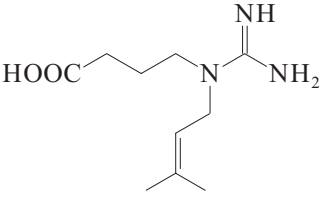


$C_{32}H_{42}N_2O_3$ 502.695
Alkaloid from *Lycopodium complanatum*. Amorph. solid. $[\alpha]_D^{22}$ -9 (c, 0.2 in MeOH). λ_{max} 223 (ϵ 4900); 347 (ϵ 1900) (MeOH).

Ishiuchi, K. *et al., Bioorg. Med. Chem.*, 2007, **15**, 413-417 (*isol, pmr, cmr*)

Complanatin† C-592

4-[(Aminoiminomethyl)(3-methyl-2-butenyl)amino]butanoic acid, 9CI. N-*(3-Carboxypropyl)*-N-*(3-methyl-2-butenyl)*-guanidine. *4-(*N^1*-Prenylguanido)butanoic acid*
[142287-95-4]

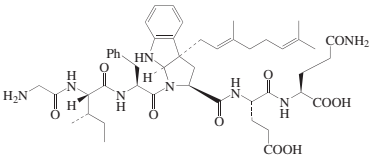


$C_{10}H_{19}N_3O_2$ 213.279
Isol. from seeds of *Astragalus complanatus* (Fabaceae).

Xue, Z. *et al., Chin. Chem. Lett.*, 1991, **2**, 691; *CA*, **117**, 44537u (*isol, cryst struct*)

$ComX_{RO-E-2}$ pheromone C-593

[863658-74-6]

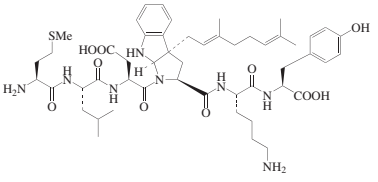


$C_{48}H_{66}N_8O_{10}$ 915.097
Isol. from *Bacillus subtilis* RO-E-2. Quorum-sensing peptide pheromone.

Okada, M. *et al., Nat. Chem. Biol.*, 2005, **1**, 23-24 (*isol, pmr, struct*)
Okada, M. *et al., Tetrahedron*, 2006, **62**, 8907-8918 (*synth*)

$ComX_{RO-H-1}$ pheromone C-594

[1010806-86-6]

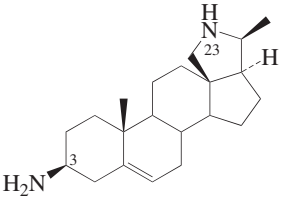


$C_{51}H_{74}N_8O_{10}S$ 991.259
Isol. from *Bacillus mojavensis* RO-H-1. Quorum-sensing peptide pheromone. Extremely acid labile.

Okada, M. *et al., Biosci., Biotechnol., Biochem.*, 2007, **71**, 1807-1810 (*isol, synth, ms, struct*)

Conarrhimine C-595

3-Amino-23-norcon-5-enine. 19,20-Epiminopregn-5-en-3-amine
[468-39-3]



$C_{21}H_{34}N_2$ 314.513
Minor alkaloid from the bark of *Holarrhena antidysenterica* (Apocynaceae). Cryst. (EtOH or by subl.). Mp 229-230°. $[\alpha]_D$ +31 (c, 1 in $CHCl_3$). Difficult to separate, forms a eutectic with Holarrhimine (See 3,20-Diaminopregn-5-en-18-ol, D-279).

N^3-*Me:* ***Conimine***
[468-41-7]
$C_{22}H_{36}N_2$ 328.54
Alkaloid from *Holarrhena antidysenterica* (Apocynaceae). Mp 130°. $[\alpha]_D$ -30 (EtOH).

N^3-*Me; hydrochloride:* Mp 318-320° dec.

N^3-*Me, picrate:* Mp 140-141°.

N^{23}-*Me:* ***Conamine****. Con-5-enin-3-amine*

[468-34-8]
$C_{22}H_{36}N_2$ 328.54
Alkaloid from *Holarrhena antidysenterica* (Apocynaceae). Mp 97.5-101.5°. $[\alpha]_D$ -21 ($CHCl_3$).

N^3,N^3-*Di-Me:* ***Conessimine***
[631-05-0]
$C_{23}H_{38}N_2$ 342.567
Minor alkaloid from *Holarrhena febrifuga* and *Holarrhena antidysenterica* (Apocynaceae). Mp 100° (88-92°). $[\alpha]_D$ -22.3 ($CHCl_3$).

N^3,N^3-*Di-Me; dihydrochloride:* Mp 342-344°.

N^3,N^{23}-*Di-Me:* ***Isoconessimine***. *Kurchine. Norconessine*
[468-36-0]
$C_{23}H_{38}N_2$ 342.567
Alkaloid from *Funtumia elastica*, *Holarrhena febrifuga*, *Holarrhena antidysenterica* and *Wrightia tomentosa*. Cryst. (Me_2CO), cryst. + $2H_2O$ (dioxan). Mp 92°. $Bp_{0.7}$ 238-240°. $[\alpha]_D$ +30 (c, 1 in EtOH).

N^3,N^{23}-*Di-Me; dihydrochloride:* [63550-88-9]
Mp 335°.

▶ GK7621150

N^3,N^3,N^{23}-*Tri-Me:* see Conessine, C-601

N^{23}-*Hydroxy,* N^3,N^3-*di-Me:* ***Regholarrhenine D***
[128718-00-3]
$C_{23}H_{38}N_2O$ 358.566
Alkaloid from stem bark of *Holarrhena antidysenterica* (Apocynaceae). Amorph. solid (EtOAc). Mp 255-257°.

5α,6-Dihydro, N^{23}-*Me,* N^3-*Ac:* ***Malouphyllamine***
[7050-49-9]
$C_{24}H_{40}N_2O$ 372.593
Alkaloid from the leaves of *Malouetia bequaertiana* (Apocynaceae). Mp 219-220°. $[\alpha]_D$ +42 ($CHCl_3$).

5α,6-Dihydro, N^3,N^{23}-*di-Me:* ***Dihydroisoconessimine***
[7050-30-8]
$C_{23}H_{40}N_2$ 344.582
Alkaloid from the bark of *Holarrhena antidysenterica* (Apocynaceae). Cryst. (Me_2CO). Mp 97-98.5°.

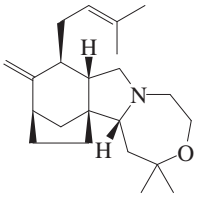
18-Oxo, N^3,N^3-*di-Me:* ***Antidysentericine***
[285550-89-2]
$C_{23}H_{36}N_2O$ 356.55
Constit. of *Holarrhena antidysenterica*. Cryst. Mp 118-119°. $[\alpha]_D^{22}$ -24.5 (c, 0.1 in $CHCl_3$). λ_{max} 222 (log ϵ 6.5) (MeOH).

3-Epimer, N^{23}-*Me:* ***3-Epiconamine***
[14152-35-3]
$C_{22}H_{36}N_2$ 328.54
Alkaloid from the bark of *Holarrhena antidysenterica*. Cryst. Mp 95-100°. $[\alpha]_D$ +27 (+11) (EtOH). Could not be recryst.

Haworth, R.D. *et al., J.C.S.*, 1932, 631-634; 1953, 1102-1109 (*Isoconessimine, Dihydroisoconessimine, isol*)
Siddiqui, S. *et al., J. Indian Chem. Soc.*, 1934, **9**, 283-291 (*Isoconessimine, Conimine, Conessimine*)
Tschesche, R. *et al., Chem. Ber.*, 1954, **87**, 1719-1725 (*Conessine, Conessimine, Conimine*)
Hora, J. *et al., Coll. Czech. Chem. Comm.*, 1961, **26**, 2217-2228 (*Conamine, synth*)
Janot, M.M. *et al., Bull. Soc. Chim. Fr.*, 1963, 641-646 (*Malouphyllamine*)
Lábler, L. *et al., Coll. Czech. Chem. Comm.*, 1963, **28**, 2015-2020 (*Conessimine, synth*)
Černy, V. *et al., Coll. Czech. Chem. Comm.*, 1964, **29**, 1591-1597 (*Conarrhimine, Dihydroisoconessimine, 3-Epiconamine*)
Dadoun, H. *et al., Ann. Pharm. Fr.*, 1973, **31**, 237-247 (*isol, Conessine, Isoconessimine, Conessimine*)
Bhutani, K.K. *et al., Phytochemistry*, 1990, **29**, 969-972 (*Regholarrhenine D*)
Siddiqui, B.S. *et al., Heterocycles*, 1995, **41**, 267-276 (*isol, ir, pmr, cmr, uv*)
Kumar, A. *et al., Fitoterapia*, 2000, **71**, 101-104 (*Antidysentericine*)
Zirihi, G.N. *et al., Bioorg. Med. Chem. Lett.*, 2005, **15**, 2637-2640 (*Conessine, Isoconessimine*)

Concavine C-596

[870474-81-0]



Relative Configuration

$C_{22}H_{35}NO$ 329.525
Prod. by *Clitocybe concava*. Oil. $[\alpha]_D$ +8.4 (c, 0.14 in MeOH).

Arnone, A. *et al., Tet. Lett.*, 2005, **46**, 8037-8039 (*isol, pmr, cmr*)

Conchairamidine C-597

$C_{22}H_{26}N_2O_4$ 382.458
Struct. unknown. Alkaloid from bark of *Remijia purdieana* (Rubiaceae). Oil; cryst. + $1H_2O$. Mp 114-115° (anhyd.). $[\alpha]_D^{15}$ -60 (c, 3 in EtOH).

Hesse, O. *et al., Annalen*, 1884, **225**, 211

Conchairamine C-598

$C_{22}H_{26}N_2O_4$ 382.458
Struct. unknown. Alkaloid from bark of *Remijia purdieana* (Rubiaceae). Thick prisms + $1H_2O$ + 1EtOH (Et_2OH). Mp 120° (anhyd.). $[\alpha]_D^{15}$ +68.4 (c, 2 in EtOH).

Hesse, O. *et al., Annalen*, 1884, **225**, 211

Concusconine C-599

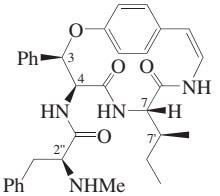
[1398-82-9]

$C_{23}H_{26}N_2O_4$ 394.469
Struct. unknown. Alkaloid from the bark of *Remijia purdieana* (Rubiaceae). Monoclinic needles + $1H_2O$ (EtOH). Mp 144° Mp 206-208° (double Mp). $[\alpha]_D^{15}$ +40.8 (c, 2 in EtOH). Conts. 2 OMe groups.

Hesse, O. *et al., Annalen*, 1884, **225**, 211
Howard, B.F. *et al., J. Soc. Chem. Ind., London*, 1909, **28**, 53-57

Condaline A C-600

α-(Methylamino)-N-*[7-(1-methylpropyl)-5,8-dioxo-3-phenyl-2-oxa-6,9-diazabicyclo[10.2.2]hexadeca-10,12,14,15-tetraen-4-yl]benzenepropanamide*
[497172-91-5]



Absolute Configuration

$C_{33}H_{38}N_4O_4$ 554.688
Stereochemistry of the various alkaloids requires clarification. The phys. props. reported for Condaline A are almost identical with those for the previously known Aralionine B below. Alkaloid from the root bark of *Condalia buxifolia*. Needles ($CHCl_3$/MeOH). Mp 115-116°. $[\alpha]_D^{25}$ -73 (c, 0.08 in MeOH).

3-Epimer: ***Scutianine M***
[872200-75-4]
$C_{33}H_{38}N_4O_4$ 554.688
Alkaloid from the root bark of *Scutia buxifolia*. Powder. Mp 257-259°. $[\alpha]_D^{25}$ +120 (c, 0.02 in $CHCl_3$).

7′-Epimer, 2′′-N-*Me:* ***Adouetine Y***
[19542-38-2]
$C_{34}H_{40}N_4O_4$ 568.714
Alkaloid from *Waltheria americana*, *Ceanothus americanus* and *Discaria americana*. Cryst. (MeOH or $CHCl_3$/Et_2O). Mp 292°. $[\alpha]_D$ -230 ($CHCl_3$/MeOH 9:1).

Stereoisomer (1), 2′′-N-*Me:* ***Scutianine L***
[202394-60-3]
$C_{34}H_{40}N_4O_4$ 568.714
Alkaloid from *Scutia buxifolia*. Cryst. (MeOH/diisopropyl ether). Mp 122-123°. $[\alpha]_D^{25}$ -72 (c, 2.4 in $CHCl_3$). Assigned (4*S*,7*S*)-config., with unknown C-3 and C-7′-configs.

Stereoisomer (2): ***Alkaloid AM 2***. *AM 2*
[151379-40-7]
$C_{33}H_{38}N_4O_4$ 554.688
Alkaloid from leaves and branches of *Antidesma montana* (Euphorbiaceae). Fine needles (MeOH). Mp 257-258°. No stereochem. determined. Reported Mp is identical with that of Scutianine M. Stated in 2006 review to be identical with Aralionine B, but this appears to be in error.

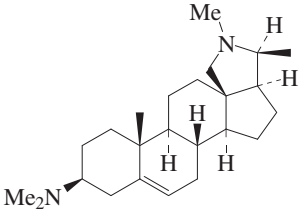
Stereoisomer (3): ***Aralionine B***
[29432-61-9]
$C_{33}H_{38}N_4O_4$ 554.688
Minor alkaloid from the leaves of *Araliorhamnus vaginatus* (Rhamnaceae) and from *Antidesma montana*. Needles (C_6H_6/petrol). Mp 103-105°. $[\alpha]_D^{20}$ -73 (c, 0.1 in MeOH). No stereochem. determined.

Païs, M. *et al., Bull. Soc. Chim. Fr.*, 1968, 1145-1148 (*Adouetine Y*)

Servis, R.E. *et al., J.A.C.S.*, 1969, **91**, 5619 (*Adouetine Y, isol, ms*)
Tschesche, R. *et al., Chem. Ber.*, 1970, **103**, 2501-2504 (*Aralionine B*)
Arbain, D. *et al., Phytochemistry*, 1993, **33**, 1263-1266 (*Alkaloid AM 2*)
Morel, A.F. *et al., Phytochemistry*, 1998, **47**, 125-129; 2002, **61**, 561-566; 2005, **66**, 2571-2576 (*Scutianine L, Condaline A, Scutianine M*)
Giacomelli, S.R. *et al., J. Nat. Prod.*, 2001, **64**, 997-999 (*Adouetine Y, isol*)

Conessine, INN C-601

N,N-*Dimethylcon-5-enin-3-amine. 3-(Dimethylamino)con-5-enine, 8CI. 3-Dimethylamino-5-conanene. Wrightine. Roquessine. Neriine*
[546-06-5]



$C_{24}H_{40}N_2$ 356.593
Alkaloid from *Holarrhena antidysenterica* and many other *Holarrhena* spp., from *Wrightia tomentosa* and from *Funtumia elastica* (Apocynaceae). Narcotic to frogs but not to mammals. Antibacterial, antineoplastic agent. Has local anaesthetic props. but causes local necrosis on injection. Shows strong antifungal activity. Mp 123-124°. $[\alpha]_D^{20}$ -1.9 ($CHCl_3$). $[\alpha]_D^{20}$ +25.3 (EtOH). Log P 5.29 (uncertain value) (calc). Source of 18-substd. pregnanes.

▶ GK7620000

Hydrochloride (1:2):
Cryst. + $1H_2O$. Mp 340°. $[\alpha]_D^{20}$ +9.3 (H_2O).

Hydrobromide (1:2): Norine
[5913-82-6] Formerly used to treat amoebic dysentery. Mp 340° dec. $[\alpha]_D^{20}$ +7 (c, 5 in H_2O).

▶ LD_{50} (mus, orl) 390 mg/kg. GK7620000

Dipicrate: Mp 222-224°.

5α,6-Dihydro: ***Dihydroconessine***
[33514-74-8]
$C_{24}H_{42}N_2$ 358.609
Isol. from the methylated alkaloid mixt. from *Holarrhena antidysenterica*; detected by ms and is prob. a minor alkaloid constit. (Apocynaceae).

7α-Hydroxy: ***7α-Hydroxyconessine***
[7347-55-9]
$C_{24}H_{40}N_2O$ 372.593
Minor alkaloid from *Holarrhena antidysenterica* (Apocynaceae). Mp 176-178°. $[\alpha]_D^{20}$ -61 (c, 0.95 in $CHCl_3$). The presence of 7β-Hydroxyconessine was also demonstrated chromatographically.

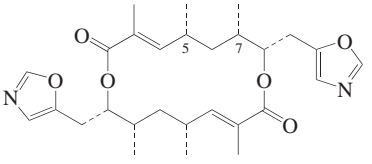
3-Epimer: ***Conkuressine****. Concuressine*
[14152-37-5]
$C_{24}H_{40}N_2$ 356.593
Alkaloid from the bark of *Holarrhena antidysenterica* (Apocynaceae). Mp 93-94° (86.5-87.5°). $[\alpha]_D$ +7 ($CHCl_3$). $[\alpha]_D$ +18 (EtOH).

3-Epimer, 5α,6-dihydro: ***Dihydroconkuressine****. Dihydroconcuressine*
[6869-90-5]
$C_{24}H_{42}N_2$ 358.609
Alkaloid from the bark of *Holarrhena antidysenterica*. Component of Zhi Xie Mu Pi. Needles (Me_2CO). Mp 93-94°. $[\alpha]_D^{21}$ +48 (c, 0.06 in $CHCl_3$).

Pyman, F.L. *et al., J.C.S.*, 1919, **115**, 163-166 (*isol*)
Stephenson, R.P. *et al., Br. J. Pharmacol.*, 1948, **3**, 237-245 (*pharmacol*)
Haworth, R.D. *et al., J.C.S.*, 1953, 1102-1109 (*uv, ir, struct*)
Tschesche, R. *et al., Chem. Ber.*, 1962, **95**, 1144-1154; 1964, **97**, 2316-2325 (*Conkuressine, 7α-Hydroxyconessine*)
Marshall, J.A. *et al., J.A.C.S.*, 1962, **84**, 1485-1486 (*synth*)
Stork, G. *et al., J.A.C.S.*, 1962, **84**, 2018-2020 (*synth*)
Barton, D.H.R. *et al., J.C.S.*, 1962, 622-631 (*synth*)
Labler, L. *et al., Coll. Czech. Chem. Comm.*, 1963, **28**, 2345-2355 (*Dihydroconkuressine*)
Wolters, B. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1964, **297**, 748-759 (*activity*)
Janot, M.M. *et al., Bull. Soc. Chim. Fr.*, 1964, 1566-1574 (*use*)
Johnson, W.S. *et al., Tetrahedron, Suppl.*, No. 8, 1966, 541-601 (*synth*)
De Lajudie, P. *et al., Eur. J. Med. Chem. (Chim. Ther.)*, 1970, **5**, 129-137 (*activity*)
Drake, A.F. *et al., Tetrahedron*, 1977, **33**, 937-949 (*cd*)
Martindale, The Extra Pharmacopoeia, 28th/29th edn., Pharmaceutical Press, 1982, 4772
Jiang, B. *et al., Angew. Chem., Int. Ed.*, 2004, **43**, 2543-2546 (*synth*)
Zirihi, G.N. *et al., Bioorg. Med. Chem. Lett.*, 2005, **15**, 2637-2640 (*isol, pmr, cmr*)
Lannang, A.M. *et al., Acta Cryst. E*, 2008, **63**, o4398 (*cryst struct*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, DOX000

Conglobatin C-602

[72263-05-9]



Absolute Configuration

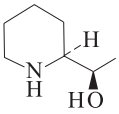
$C_{28}H_{38}N_2O_6$ 498.618
Dilactone antibiotic. Struct. revised in 1984. Prod. by *Streptomyces conglobatus* ATCC 31005. Shows some mmunosuppressant activity but in general weak biol. activity. Cryst. (Et_2O/hexane). Sol. MeOH, EtOAc, Et_2O; poorly sol. hexane, H_2O. Mp 125°. $[\alpha]_D$ -44 (c, 1 in $CHCl_3$). λ_{max} 214 (ϵ 43800) (EtOH) (Derep).

▶ JG7521800

Westley, J.W. *et al., J. Antibiot.*, 1979, **32**, 874-877 (*isol, cryst struct*)
Schregenberger, C. *et al., Tet. Lett.*, 1984, **25**, 5881-5884 (*synth*)

Conhydrine C-603

α-Ethyl-2-piperidinemethanol, 9CI. 2-(1-Hydroxypropyl)piperidine. 1-(2-Piperidinyl)-1-propanol. α-Conhydrine
[63401-12-7]



(+)–*form*

$C_8H_{17}NO$ 143.228

(+)-form [495-20-5]
Alkaloid from hemlock (*Conium maculatum*) (Apiaceae). Leaflets (Et_2O). Mp 121°. Bp_{720} 224.5°. $[\alpha]_D$ +10 (c, 10 in EtOH).

▶ Extremely poisonous. GK8000000

N-*Ac:*Bp_3 133-135°.

O,N-*Dibenzoyl:* Mp 133-134°. $[\alpha]_D$ -13 (c, 3 in $CHCl_3$).

N-*Me:*Bp_{11} 94-95°.

(-)-form [18209-37-5]
Synthetic. $[\alpha]_D$ -9.3 (95% EtOH).

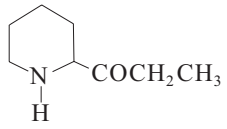
(±)-form [3238-62-8]
Synthetic. Mp 99-100°.

N-*Me; methiodide:* Mp 178-179°.

Wertheim, T. *et al., Annalen*, 1856, **100**, 328 (*isol*)
Chemnitus, F. *et al., J. Prakt. Chem.*, 1928, **118**, 25 (*isol*)
Galinovsky, F. *et al., Monatsh. Chem.*, 1948, **79**, 426 (*synth*)
Marion, L. *et al., Alkaloids (Academic Press)*, 1949, **1**, 218 (*rev*)
Hill, R.K. *et al., J.A.C.S.*, 1958, **80**, 1609 (*config*)
Govindachari, T.R. *et al., J.C.S.*, 1958, 1306 (*synth*)
Fodor, G. *et al., Can. J. Chem.*, 1969, **47**, 4393 (*abs config, pmr*)
Craig, J.C. *et al., Tetrahedron*, 1978, **34**, 501 (*cd*)
Stork, G. *et al., Tet. Lett.*, 1979, 771 (*synth*)
Shono, T. *et al., Tet. Lett.*, 1983, **24**, 4577 (*synth*)
Pilard, S. *et al., Tet. Lett.*, 1984, **25**, 1555 (*synth*)
Masaki, Y. *et al., Tet. Lett.*, 1989, **30**, 6395 (*synth*)
Agami, C. *et al., Tet. Lett.*, 2000, **41**, 4113-4116 (*synth*)
Enders, D. *et al., Tetrahedron: Asymmetry*, 2002, **13**, 285-291 (*synth*)
Kandula, S.V. *et al., Tet. Lett.*, 2003, **44**, 1957-1958 (*synth*)
Nagata, K. *et al., Heterocycles*, 2005, **66**, 107-109 (*synth*)
Pandey, S.K. *et al., Tet. Lett.*, 2005, **46**, 4091-4093 (*synth*)
Chang, M.-Y. *et al., Tetrahedron*, 2006, **62**, 10843-10848 (*synth*)
Voituriez, A. *et al., J.O.C.*, 2007, **72**, 5358-5361 (*synth*)
Rodriguez, D. *et al., Tet. Lett.*, 2008, **49**, 6866-6869 (*synth*)
Sax, N.I. *et al., Dangerous Properties of Industrial Materials, 5th edn., Van Nostrand Reinhold*, 1979, 514

Conhydrinone C-604

1-(2-Piperidinyl)-1-propanone, 9CI. 2-Propanoylpiperidine. 1′-Oxoconiine
[97073-23-9]



$C_8H_{15}NO$ 141.213

(±)-*form* [38726-76-0]
Alkaloid from *Conium maculatum* (hemlock) and *Semnostachya menglaensis* (preferred genus name *Strobilanthes*).

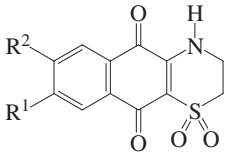
Hydrochloride: [38726-77-1]
Mp 249-250°.

Hydrobromide: [38726-78-2]
Mp 228-229°.

Leete, E. *et al., J.A.C.S.*, 1972, **94**, 5472 (*isol, struct, synth*)
Tressl, R. *et al., J. Agric. Food Chem.*, 1985, **33**, 924-928 (*occur*)
Naef, R. *et al., J. Agric. Food Chem.*, 2005, **53**, 9161-9164 (*isol, synth, pmr, cmr, ms*)

Conicaquinone A C-605

[519154-45-1]



$R^1 = -CH_2CH_2CH=C(CH_3)_2$, $R^2 = H$

$C_{18}H_{19}NO_4S$ 345.418
Alkaloid from the ascidian *Aplidium conicum*. Cytotoxic. λ_{max} 261 (ϵ 16600); 298 (ϵ 7400) (MeOH).

Aiello, A. *et al., Eur. J. Org. Chem.*, 2003, 898-900 (*isol, pmr, cmr*)

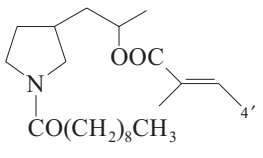
Conicaquinone B C-606

[519154-46-2]
As Conicaquinone A, C-605 with
$R^1 = H$, $R^2 = -CH_2CH_2CH=C(CH_3)_2$
$C_{18}H_{19}NO_4S$ 345.418
Isol. from the ascidian *Aplidium conicum*. Cytotoxic. λ_{max} 263 (ϵ 14700); 300 (ϵ 8050) (MeOH).

Aiello, A. *et al., Eur. J. Org. Chem.*, 2003, 898-900 (*isol, pmr, cmr*)

Conioidine A C-607

[154887-98-6]



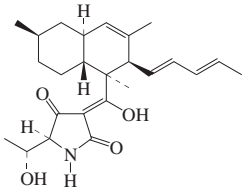
$C_{22}H_{39}NO_3$ 365.555

Alkaloid from *Chamaesaracha conioides* (Solanaceae). Exhibits DNA-specific KB cell cytotoxicity. Oil. $[\alpha]_D^{25}$ +48.2 (c, 0.2 in MeOH). λ_{max} 210 (ϵ 7400) (MeOH) (Berdy).

4′-Hydroxy: ***Conioidine B***
[154887-99-7]
$C_{22}H_{39}NO_4$ 381.554
Alkaloid from *Chamaesaracha conioides* (Solanaceae). Exhibits DNA-specific KB cell cytotoxicity. Oil. $[\alpha]_D^{25}$ +20.9 (c, 0.1 in MeOH). λ_{max} 211 (ϵ 7200) (MeOH) (Berdy).

Chan, G.W. *et al., J. Nat. Prod.*, 1993, **56**, 708 (*isol, uv, ir, pmr, cmr, ms, struct*)

Coniosetin C-608



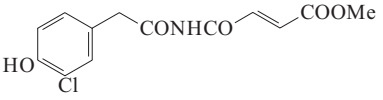
Absolute Configuration

$C_{25}H_{35}NO_4$ 413.556
Tetramic acid deriv. Related to Equisetin, E-142. Prod. by *Coniochaeta ellipsoidea* DSM 13856. Active against gram-positive bacteria and fungi. Powder. $[\alpha]_D^{23}$ -319 (c, 0.1 in MeOH). λ_{max} 232 (ϵ 19000); 287 (ϵ 5500) (MeOH).

Segeth, M.P. *et al., J. Antibiot.*, 2003, **56**, 114-122 (*isol, cd, uv, pmr, cmr, ms*)

Coniothyriomycin C-609

[141805-68-7]

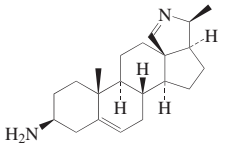


$C_{13}H_{12}ClNO_5$ 297.694
Metab. of the fungus *Coniothyrium* sp. Exhibits antifungal and herbicidal activities. Cryst. (Me_2CO). Sol. MeOH, Me_2CO; fairly sol. Et_2O, CH_2Cl_2; poorly sol. H_2O, hexane. Mp 153°. λ_{max} 208 (ϵ 4406); 280 (ϵ 3417) (MeOH) (Berdy).

Krohn, K. *et al., Annalen*, 1992, 787 (*isol, pmr, cmr*)

Conkurchine C-610

23-Norcona-5,18(22)-dienin-3-amine, 9CI. Irehline. Concurchine
[3792-62-9]



Absolute Configuration

$C_{21}H_{32}N_2$ 312.497

Alkaloid from *Holarrhena antidysenterica*, *Holarrhena febrifuga*, *Holarrhena crassifolia*, *Funtumia elastica*, *Wrightia tomentosa* and *Malouetia arborea* (Apocynaceae). Shows hypotensive and vasodilatory activity. Mp 151°. $[\alpha]_D$ -51 (c, 1 in $CHCl_3$).

N-*Formyl:* **N-*Formylconkurchine***. N-*Formylirehline*
[36132-43-1]
$C_{22}H_{32}N_2O$ 340.508
Alkaloid from the leaves of *Holarrhena crassifolia* (Apocynaceae). Cryst. (Me_2CO). Mp 247°. $[\alpha]_D$ -50 ($CHCl_3$).

N^3-*Me:* ***Conessidine***
[6877-20-9]
$C_{22}H_{34}N_2$ 326.524
Alkaloid from *Holarrhena antidysenterica*, some other *Holarrhena* spp. and from *Wrightia tomentosa* (Apocynaceae). Mp 123°. $[\alpha]_D^{18}$ -61 (c, 0.85 in $CHCl_3$).

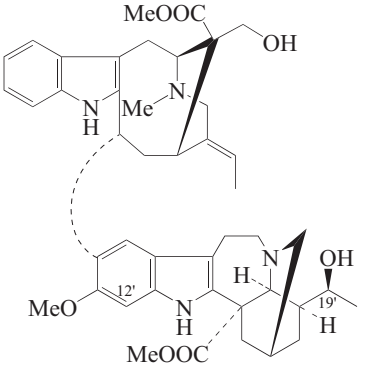
N^3-*Me, diperchlorate:* Mp 243° dec.

5α,6-Dihydro: 23-Norcon-18(22)-enin-3-amine. ***Wrightiamine A***
[640266-38-2]
$C_{21}H_{34}N_2$ 314.513
Alkaloid from the leaves of *Wrightia javanica*. Cytotoxic. Amorph. solid. $[\alpha]_D^{25}$ -14 (c, 0.2 in MeOH).

Tschesche, R. *et al., Chem. Ber.*, 1954, **87**, 1719-1725; 1956, **89**, 1288-1295 (*Conessidine*)
Janot, M.-M. *et al., Bull. Soc. Chim. Fr.*, 1964, 1555-1563; 1564-1566 (*Conessidine, isol, ir, pmr, struct*)
Sóti, F. *et al., Tet. Lett.*, 1967, **8**, 1437-1441 (*Conkurchine, isol*)
Einhorn, J. *et al., Phytochemistry*, 1972, **11**, 769-777 (*N-Formylconkurchine*)
Dadoun, H. *et al., Ann. Pharm. Fr.*, 1973, **31**, 237-247 (*Conessidine, Conkurchine, isol*)
Einhorn, J. *et al., Bull. Soc. Chim. Fr.*, 1973, 301-303 (*Conessidine, synth*)
Kawamoto, S. *et al., Chem. Pharm. Bull.*, 2003, **51**, 737-739 (*Wrightiamine A*)

Conodiparine A C-611

[213748-27-7]



$C_{44}H_{54}N_4O_7$ 750.933
Alkaloid from the leaves of *Tabernaemontana corymbosa*. Amorph. pale yellow powder. $[\alpha]_D$ -34 (c, 0.71 in $CHCl_3$).

λ_{max} 227 (log ϵ 4.92); 286 (log ϵ 4.32); 296 (log ϵ 4.35) (EtOH). λ_{max} 227 ; 286 ; 296 (MeOH) (Berdy).

N-*De-Me:* ***Conodiparine E***
[486444-25-1]
$C_{43}H_{52}N_4O_7$ 736.906
Alkaloid from the leaves of *Tabernaemontana corymbosa*. Amorph. pale yellow powder. $[\alpha]_D$ -101 (c, 0.07 in $CHCl_3$). λ_{max} 223 (log ϵ 4.23); 285 (log ϵ 3.64); 294 (log ϵ 3.66) (EtOH).

19′-Ketone: ***Conodiparine C***
[213748-29-9]
$C_{44}H_{52}N_4O_7$ 748.917
Alkaloid from the leaves of *Tabernaemontana corymbosa*. Amorph. pale yellow powder. $[\alpha]_D$ -27 (c, 0.5 in $CHCl_3$). λ_{max} 227 (log ϵ 4.63); 286 (log ϵ 4.02); 296 (log ϵ 4.05) (EtOH).

Kam, T.-S *et al., Bioorg. Med. Chem. Lett.*, 1998, **8**, 1693-1696 (*isol, uv, pmr, cmr*)
Kam, T.-S. *et al., J. Nat. Prod.*, 2003, **66**, 11-16 (*isol, pmr, cmr, ms*)

Conodiparine B C-612

[213748-28-8]
As Conodiparine A, C-611 with
C-3 to C-12′ linkage
$C_{44}H_{54}N_4O_7$ 750.933
Alkaloid from the leaves of *Tabernaemontana corymbosa*. MDR reversing agent. Amorph. pale yellow powder. $[\alpha]_D$ -64 (c, 0.93 in $CHCl_3$). λ_{max} 224 (log ϵ 4.9); 286 (log ϵ 4.32); 293 (log ϵ 4.3) (EtOH) (Berdy).

N-*De-Me:* ***Conodiparine F***
[486444-26-2]
$C_{43}H_{52}N_4O_7$ 736.906
Alkaloid from the leaves of *Tabernaemontana corymbosa*. Amorph. pale yellow powder. $[\alpha]_D$ -73 (c, 0.32 in $CHCl_3$). λ_{max} 224 (log ϵ 4.86); 286 (log ϵ 4.29); 294 (log ϵ 4.28) (EtOH).

11-O-*De-Me:* ***Cononitarine A***
[486444-29-5]
$C_{43}H_{52}N_4O_7$ 736.906
Alkaloid from the leaves of *Tabernaemontana corymbosa*. Pale yellow oil. $[\alpha]_D$ -52 (c, 0.11 in $CHCl_3$). λ_{max} 223 (log ϵ 4.78); 285 (log ϵ 4.19); 294 (log ϵ 4.25) (EtOH).

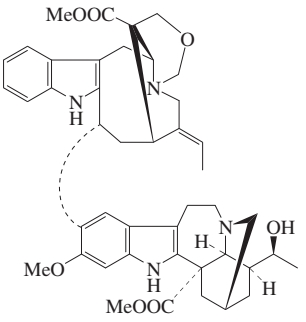
19-Ketone: ***Conodiparine D***
[213748-30-2]
$C_{44}H_{52}N_4O_7$ 748.917
Alkaloid from the leaves of *Tabernaemontana corymbosa*. Amorph. pale yellow powder. $[\alpha]_D$ -42 (c, 0.9 in $CHCl_3$). λ_{max} 224 (log ϵ 4.17); 286 (log ϵ 4.13); 296 (log ϵ 4.12) (EtOH).

19-Deoxy, 11-O-*de-Me:* ***Cononitarine B***
[486444-30-8]
$C_{43}H_{52}N_4O_6$ 720.907
Alkaloid from the leaves of *Tabernaemontana corymbosa*. Pale yellow oil. $[\alpha]_D$ -43 (c, 0.1 in $CHCl_3$). λ_{max} 223 (log ϵ 4.52); 285 (log ϵ 3.92); 294 (log ϵ 3.89) (EtOH).

Kam, T.-S. *et al., Bioorg. Med. Chem. Lett.*, 1998, **8**, 1693-1696 (*isol, uv, pmr, cmr*)
Kam, T.-S. *et al., J. Nat. Prod.*, 2003, **66**, 11-16 (*isol, pmr, cmr, ms*)

Conodirinine A C-613

[605674-08-6]



$C_{44}H_{52}N_4O_7$ 748.917
Related to Conodiparine A, C-611. Alkaloid from the leaves of *Tabernaemontana corymbosa*. Light yellowish oil. $[\alpha]_D$ -88 (c, 0.03 in $CHCl_3$). λ_{max} 222 (log ϵ 4.56); 287 (log ϵ 4); 294 (log ϵ 4.01) (EtOH).

Kam, T.-S. *et al., Helv. Chim. Acta*, 2003, **86**, 122-126 (*isol, pmr, cmr*)

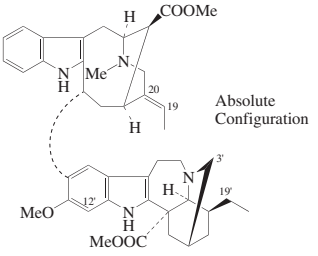
Conodirinine B C-614

[605674-09-7]
As Conodirinine A, C-613 with
C-3 to C-12′ linkage
$C_{44}H_{52}N_4O_7$ 748.917
Related to Conodiparine B, C-612. Alkaloid from the leaves of *Tabernaemontana corymbosa*. Light yellowish oil. $[\alpha]_D$ -60 (c, 0.23 in $CHCl_3$). λ_{max} 222 (log ϵ 4.62); 286 (log ϵ 4.05); 293 (log ϵ 4.03) (EtOH).

Kam, T.-S. *et al., Helv. Chim. Acta*, 2003, **86**, 122-126 (*isol, pmr, cmr*)

Conoduramine C-615

[2580-82-7]



$C_{43}H_{52}N_4O_5$ 704.908
Numbering systems vary, esp. which monomer is numbered with primes. Alkaloid from *Conopharyngia durissima*, *Tabernaemontana pachysyphon*, *Tabernaemontana chippii*, *Peschiera laeta*, *Gabunia odoratissima* (preferred genus name *Tabernaemontana*), *Tabernaemontana elegans*, *Tabernaemontana holstii* and *Tabernaemontana johnstonii*. Antineoplastic agent, shows cytotoxic activity vs. mouse lymphocyte P-388 and human nasopharynx KB cells. Also shows strong activity against gram-positive and weak activity against gram-negative bacteria. Leishmanicide. Needles (MeOH/Me_2CO). Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. Mp 215-217° dec. $[\alpha]_D^{22}$ -77.5 (c, 1 in $CHCl_3$). Log P 7.36 (uncertain value) (calc). λ_{max} 228 ; 285 ; 294 (MeOH) (Berdy).

N-*De-Me:* ***Gabunamine***. N-*Demethylconoduramine*
[66086-99-5]
$C_{42}H_{50}N_4O_5$ 690.881
Alkaloid from the stem bark of *Tabernaemontana johnstonii* (Apocynaceae). Shows cytotoxic activity against P-388 lymphocytic leukaemia and human nasopharynx KB cells.

O-*De-Me:* ***Demethylconoduramine***
[95066-49-2]
$C_{42}H_{50}N_4O_5$ 690.881
Minor alkaloid from *Tabernaemontana pachysiphon* stem bark and root bark (Apocynaceae). Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. λ_{max} 224 ; 286 ; 294 (MeOH) (Berdy). λ_{max} 285 ; 294 ; 323 (MeOH/NaOH) (Berdy).

19,20ξ-Epoxide: ***19,20-Epoxyconoduramine***
[66138-60-1]
$C_{43}H_{52}N_4O_6$ 720.907
Isol. from the stem bark of *Tabernaemontana johnstonii* (Apocynaceae).

19,20α-Dihydro: ***Tabernaelegantine B***
[58850-42-3]
$C_{43}H_{54}N_4O_5$ 706.923
Alkaloid from the root bark of *Tabernaemontana elegans* (Apocynaceae). Cryst. (Me_2CO). Mp 199°. $[\alpha]_D^{20}$ +14.4 ($CHCl_3$).

19,20β-Dihydro: ***Tabernaelegantine D***
[58865-84-2]
$C_{43}H_{54}N_4O_5$ 706.923
Alkaloid from root bark of *Tabernaemontana elegans* (Apocynaceae). Cryst. (MeOH). Mp 206°. $[\alpha]_D^{20}$ +11.3 ($CHCl_3$).

3′-Hydroxy: ***3′-Hydroxyconoduramine***
[93627-69-1]
$C_{43}H_{52}N_4O_6$ 720.907
A major alkaloid from the root bark of *Tabernaemontana chippii*. Isol. as epimeric mixt., 3′*R*:3′*Sca*. 2:1.

3′-Hydroxy, 19,20α-dihydro: ***3′-Hydroxytabernaelegantine B***
[103763-53-7]
$C_{43}H_{54}N_4O_6$ 722.923
Alkaloid from *Tabernaemontana elegans* (Apocynaceae). Mixt. of 3′-epimers.

*19′*R-*Hydroxy:* ***19′R-Hydroxyconoduramine***
[155637-19-7]
$C_{43}H_{52}N_4O_6$ 720.907
Alkaloid from leaves of *Tabernaemontana subglobosa* (Apocynaceae). Amorph. powder. $[\alpha]_D^{12}$ -78.5 (c, 1.0 in $CHCl_3$).

*19′*S-*Hydroxy:* ***19′S-Hydroxyconoduramine***
[602279-67-4]
$C_{43}H_{52}N_4O_6$ 720.907
Alkaloid from the leaves and stem bark of *Tabernaemontana corymbosa*. Light yellow oil. $[\alpha]_D$ -43 (c, 0.6 in $CHCl_3$).

λ_{max} 227 (log ϵ 4.22); 288 (log ϵ 3.62); 295 (log ϵ 3.64) (EtOH).

Demethoxy: ***Ervahanine B***
[80981-94-8]
$C_{42}H_{50}N_4O_4$ 674.881
Alkaloid from the roots of *Ervatamia hainanensis* (Apocynaceae). Amorph. $[\alpha]_D^{18}$ -123 (c, 0.95 in $CHCl_3$).

Demethoxy, 3′-hydroxy, N-*de-Me:* ***3′-Hydroxy-N^4-demethylervahanine B***
[99257-57-5]
$C_{41}H_{48}N_4O_5$ 676.854
Alkaloid from the stem bark of *Tabernaemontana dichotoma* (Apocynaceae). Active against gram-positive bacteria. Sol. MeOH, butanol, $CHCl_3$; poorly sol. H_2O, hexane. λ_{max} 232 (ϵ 47800); 288 (ϵ 15200) (EtOH) (Berdy).

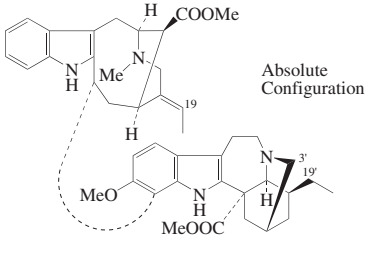
Demethoxy, 3′-oxo: ***Ervahaimine B***
[126398-89-8]
$C_{42}H_{48}N_4O_5$ 688.865
Minor alkaloid from roots of *Ervatamia hainanensis* (Apocynaceae).

*3′*S-*Cyano, 19,20α-dihydro:* ***Tabernaelegantinine D***
[72542-43-9]
$C_{44}H_{53}N_5O_5$ 731.933
Alkaloid from the root bark of *Tabernaemontana elegans* (Apocynaceae). Cryst. (MeOH). Mp 259° dec.

Renner, U. *et al., Helv. Chim. Acta*, 1959, **42**, 1572-1581 (*isol, uv, ir*)
Renner, U. *et al., Tet. Lett.*, 1964, 283-287 (*struct*)
Bombardelli, E. *et al., J.C.S. Perkin 1*, 1976, 1432 (*Tabernaelegantines B,D*)
Kingston, D.G.I. *et al., J. Pharm. Sci.*, 1978, **67**, 249-251 (*Gabunamine, 19′,20′-Epoxyconoduramine*)
Danieli, B. *et al., J.C.S. Perkin 1*, 1980, 601 (*Tabernaelegantinine D*)
Feng, X.-Z. *et al., J. Nat. Prod.*, 1981, **44**, 670-675; 1989, **52**, 928-933 (*Ervahanine B, Ervahaimine B*)
Van Beek, T.A. *et al., Phytochemistry*, 1984, **23**, 1771-1778 (*Demethylconoduramine*)
Van Beek, T.A. *et al., J. Nat. Prod.*, 1985, **48**, 400-423 (*3′-Hydroxyconoduramine*)
Perera, P. *et al., Phytochemistry*, 1985, **24**, 2097-2104 (*3′-Hydroxy-N^4-demethylervahanine B*)
Van der Heijden, R. *et al., Planta Med.*, 1986, 144 (*3′-Hydroxytabernaelegantine B*)
Takayama, H. *et al., Chem. Pharm. Bull.*, 1994, **42**, 280-284 (*19′R-Hydroxyconoduramine*)
Kam, T.-S. *et al., Phytochemistry*, 2003, **63**, 625-629 (*19′S-Hydroxyconoduramine*)

Conodurine C-616

[2665-57-8]



$C_{43}H_{52}N_4O_5$ 704.908

Numbering systems vary, esp. which ring system has primed locants. Alkaloid from *Conopharyngia durissima* (*Voacanga africana*), *Tabernaemontana pachysyphon*, *Tabernaemontana chippii*, *Peschiera laeta*, *Gabunia odoratissima* (preferred genus name *Tabernaemontana*) and *Tabernaemontana johnstonii*. Antineoplastic agent, shows cytotoxic activity vs. mouse lymphoctye P-388 and human nasopharynx KB cells. Also shows strong activity against gram-positive and weak activity against gram-negative bacteria. Antiparasitic agent. Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. Mp 222-225°. $[\alpha]_D$ -101 ($CHCl_3$). Log P 7.36 (uncertain value) (calc). λ_{max} 225 (log ϵ 4.78); 285 (log ϵ 4.19); 292 (log ϵ 4.16) (no solvent reported).

N-*De-Me:* ***Gabunine***. N-*Demethylconodurine*
[1357-30-8]
$C_{42}H_{50}N_4O_5$ 690.881
Alkaloid from *Gabunia odoratissima*, *Tabernaemontana von heurkii* and *Tabernaemontana holstii* (Apocynaceae). Shows cytotoxic activity *vs.* mouse P-388 carcinoma cells. Antiparasitic agent. Needles (MeOH or EtOH). Mp 244-246° dec. $[\alpha]_D^{20}$ -105 (c, 0.62 in $CHCl_3$). λ_{max} 226 ; 287 ; 295 (EtOH) (Berdy).

19,20α-Dihydro: ***Tabernaelegantine A***. *Alkaloid T*
[58850-41-2]
$C_{43}H_{54}N_4O_5$ 706.923
Alkaloid from the root bark of *Tabernaemontana elegans*, *Hazunta costata* and from *Hazunta modesta* (Apocynaceae). Cryst. (MeOH). Mp 231°. $[\alpha]_D$ -31.8 ($CHCl_3$). λ_{max} 224 (log ϵ 4.7); 285 (log ϵ 4.14); 293 (log ϵ 4.1) (EtOH).

*19,20α-Dihydro, 19′*R-*hydroxy:* ***19′R-Hydroxytabernaelegantine A***. *Alkaloid X*
[79555-02-5]
$C_{43}H_{54}N_4O_6$ 722.923
Alkaloid from the stem bark of *Hazunta costata* (Apocynaceae). Cryst. (MeOH). Mp 268°. $[\alpha]_D$ -33 (c, 1 in $CHCl_3$). λ_{max} 226 (ϵ 46650); 228 (ϵ 45725); 286 (ϵ 13000); 295 (ϵ 12500) (EtOH).

19,20β-Dihydro: ***Tabernaelegantine C***
[58865-83-1]
$C_{43}H_{54}N_4O_5$ 706.923
Alkaloid from root bark of *Tabernaemontana elegans* (Apocynaceae). Cryst. (MeOH). Mp 171°. $[\alpha]_D^{20}$ -36.8 ($CHCl_3$). λ_{max} 224 (log ϵ 4.76); 285 (log ϵ 4.18); 293 (log ϵ 4.16) (EtOH).

3′-Hydroxy: ***3′-Hydroxyconodurine***
[93627-70-4]
$C_{43}H_{52}N_4O_6$ 720.907
Major alkaloid from the root bark of *Tabernaemontana chippii* (Apocynaceae). Approx. equal mixt. of 3′-epimers.

3′-Oxo: ***3′-Oxoconodurine***
[64192-90-1]
$C_{43}H_{50}N_4O_6$ 718.891
Alkaloid from the roots of *Tabernaemontana holstii* (Apocynaceae). Mp 217-218°.

*19′*R-*Hydroxy:* ***19′R-Hydroxyconodurine***
[155637-18-6]
$C_{43}H_{52}N_4O_6$ 720.907
Alkaloid from leaves of *Tabernaemontana subglobosa* (Apocynaceae). Amorph. powder. $[\alpha]_D^{12}$ -96.5 (c, 1.0 in $CHCl_3$). λ_{max} 224 ; 285 ; 293 (EtOH).

*19′*S-*Hydroxy:* ***19′S-Hydroxyconodurine***
[602279-66-3]
$C_{43}H_{52}N_4O_6$ 720.907
Alkaloid from the leaves and stem bark of *Tabernaemontana corymbosa*. Light yellowish oil. $[\alpha]_D$ -69 (c, 0.12 in $CHCl_3$). λ_{max} 223 (log ϵ 4.84); 286 (log ϵ 4.28); 293 (log ϵ 4.27) (EtOH).

*19′*S-*Hydroxy,* N-*de-Me:* ***Conodurinine***
[603066-10-0]
$C_{42}H_{50}N_4O_6$ 706.88
Alkaloid from the stem bark of *Tabernaemontana corymbosa*. Light yellow oil. $[\alpha]_D$ -55 (c, 0.47 in $CHCl_3$). λ_{max} 224 (log ϵ 4.14); 286 (log ϵ 3.55); 293 (log ϵ 3.54) (EtOH).

Demethoxy: ***Ervahanine C***
[80981-95-9]
$C_{42}H_{50}N_4O_4$ 674.881
Alkaloid from the roots of *Ervatamia hainanensis* (Apocynaceae). Amorph. $[\alpha]_D^{18}$ -62 (c, 0.39 in $CHCl_3$).

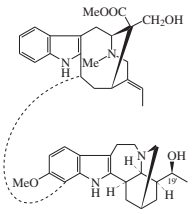
3′-Methoxy, 19,20β-dihydro: ***3′-Methoxytabernaelegantine C***
[103763-54-8]
$C_{44}H_{56}N_4O_6$ 736.95
Alkaloid from *Tabernaemontana elegans* (Apocynaceae).

16′-Decarbomethoxy, 3′-hydroxy: ***16′-Decarbomethoxy-3′-hydroxyconodurine***. *3′-Hydroxy-16′-decarbomethoxyconodurine*
[98798-63-1]
$C_{41}H_{50}N_4O_4$ 662.87
Trace alkaloid from *Tabernaemontana chippii* (Apocynaceae). Isol. as a mixt. of 3′*R*:3′*S* = 3:2.

Renner, U. *et al., Helv. Chim. Acta*, 1959, **42**, 1572-1581 (*isol, uv, ir*)
Renner, U. *et al., Tet. Lett.*, 1964, 283-287 (*pmr, struct*)
Cava, M.P. *et al., Tet. Lett.*, 1965, 931-935 (*Gabunine*)
Bombardelli, E. *et al., J.C.S. Perkin 1*, 1976, 1432-1438 (*Tabernaelegatine A*)
Kingston, D.G.I. *et al., J. Pharm. Sci.*, 1977, **66**, 1135-1138; 1978, **67**, 249-251 (*Gabunine, 3-Oxoconodurine*)
Bui, A.-M. *et al., Phytochemistry*, 1977, **16**, 703-706 (*Alkaloid X*)
Urrea, M. *et al., Bull. Soc. Chim. Fr.*, 1981, **Part 2**, 147-149 (*19′R-Hydroxytabernaelegantine A*)
Feng, X.-Z. *et al., J. Nat. Prod.*, 1981, **44**, 670-675 (*Ervahanine C*)
Van Beek, T.A. *et al., J. Nat. Prod.*, 1985, **48**, 400-423 (*3-Hydroxyconodurine, 3-Hydroxy-16-decarbomethoxyconodurine*)
van der Heijden, R. *et al., Planta Med.*, 1986, 144-147 (*3′-Methoxytabernaelegantine C*)
Takayama, H. *et al., Chem. Pharm. Bull.*, 1994, **42**, 280-284 (*19R-Hydroxyconodurine*)
Munoz, V. *et al., Planta Med.*, 1994, **60**, 455-459 (*isol, Gabunine, pharmacol*)
Medeiros, W.L.B. *et al., Magn. Reson. Chem.*, 1999, **37**, 676-681 (*pmr, cmr*)
Kam, T.-S. *et al., Phytochemistry*, 2003, **63**, 625-629 (*cmr, Conodurinine, 19S-Hydroxyconodurine*)

Conodutarine A C-617

[486444-27-3]



$C_{42}H_{52}N_4O_5$ 692.897

Alkaloid from the leaves of *Tabernaemontana corymbosa*. Pale yellow oil. $[\alpha]_D$ -51 (c, 0.18 in $CHCl_3$). λ_{max} 227 (log ϵ 4.85); 285 (log ϵ 4.26); 293 (log ϵ 4.25) (EtOH).

19′-Ketone: ***Conodutarine B***

[486444-28-4]

$C_{42}H_{50}N_4O_5$ 690.881

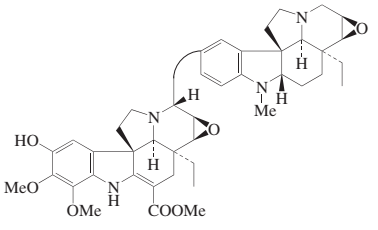
Alkaloid from the leaves of *Tabernaemontana corymbosa*. Pale yellow oil. $[\alpha]_D$ -45 (c, 0.14 in $CHCl_3$). λ_{max} 227 (log ϵ 4.87); 285 (log ϵ 4.31); 293 (log ϵ 4.28) (EtOH).

Kam, T.-S. *et al., J. Nat. Prod.*, 2003, **66**, 11-16 (*isol, pmr, cmr, ms*)

Conofoline C-618

Pedunculine†

[168922-21-2]



Relative Configuration

$C_{43}H_{52}N_4O_7$ 736.906

Pedunculine and Conofoline have not been compared but are probably identical. Mp uv and opt. rotn. refer to Conofoline. Alkaloid from leaves of *Ervatamia peduncularis* and *Tabernaemontana divaricata*. Purple amorph. solid. Mp 196-198°. $[\alpha]_D$ -97 (c, 0.725 in $CHCl_3$). V. difficult to crystallise. λ_{max} 205 (log ϵ 3.16); 230 (log ϵ 3.68); 313 (log ϵ 3.76); 339 (log ϵ 3.84) (EtOH).

Kam, T.-S. *et al., Phytochemistry*, 1995, **40**, 313-316 (*Conofoline*)

Zèches-Hanrot, M. *et al., Phytochemistry*, 1995, **40**, 587-591 (*Pedunculine*)

Chen, W. *et al., Z. Kristallogr. - New Cryst. Struct.*, 1998, **213**, 183-184 (*Conofoline, cryst struct*)

Conolline C-619

$C_{13}H_{20}N_2O$ 220.314

Prob. a lupine alkaloid. Struct. unknown. Alkaloid from *Ammodendron conollyi* (Fabaceae). Mp 192.5-193.5°. Cooccurs with Anagyrine, A-970; and piperidine alkaloids. Opt. inactive, contains no OH or OMe groups.

Hydrochloride: Mp 180-182°.

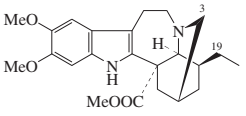
Hydroiodide: Mp 195-196°.

Perchlorate: Mp 197-198°.

Proskurnina, N.F. *et al., Zh. Obshch. Khim.*, 1949, **19**, 1396-1402; *J. Gen. Chem. USSR (Engl. Transl.)*, 1949, **19**, 1399

Conopharyngine† C-620

[76-98-2]



Absolute Configuration

$C_{23}H_{30}N_2O_4$ 398.501

Alkaloid from the stem and root bark of *Conopharyngia durissima* (Apocynaceae). Cryst. (Et_2O/petrol). Mp 141-143°. $[\alpha]_D^{25}$ -40.5 (c, 1 in $CHCl_3$). λ_{max} 225 (log ϵ 4.47); 304 (log ϵ 4.05) (no solvent reported).

▶ GL1400000

3-Hydroxy: ***3-Hydroxyconopharyngine***

[95066-50-5 , 93627-64-6 (*R-form*)]

$C_{23}H_{30}N_2O_5$ 414.5

Minor alkaloid from the root bark and stem bark of *Tabernaemontana pachysiphon* (Apocynaceae) and from *Tabernaemontana chippii* and *Tabernaemontana arborea*. Active against gram-positive bacteria. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Isol. as a mixt. of epimers to which the spectroscopic data refers. However Cabezas *et al* assigned the 3*R*-config. to their material from *T. arborea*. λ_{max} 223 ; 273 (sh) ; 302 ; 306 ; 311 (MeOH).

3-Oxo: ***3-Oxoconopharyngine****. 19-Oxoconopharyngine*

[20078-89-1]

$C_{23}H_{28}N_2O_5$ 412.485

Alkaloid from *Conopharyngia jollyana* (Apocynaceae). Cryst. (EtOAc). $[\alpha]_D^{20}$ -48 (c, 0.3 in $CHCl_3$). λ_{max} 225 (log ϵ 4.4); 304 (log ϵ 4.02) (EtOH).

*19*S*-Hydroxy:* ***19-Hydroxyconopharyngine***

[16790-93-5]

$C_{23}H_{30}N_2O_5$ 414.5

Alkaloid from bark of *Conopharyngia jollyana* and *Conopharyngia durissima*. Also from *Tabernaemontana crassa* and *Tabernaemontana divaricata* (Apocynaceae). Mp 124-126° (as Ac). $[\alpha]_D^{26}$ -36.4 (c, 1.62 in $CHCl_3$). λ_{max} 226 (log ϵ 4.42); 304 (log ϵ 3.93) (no solvent reported).

Renner, U. *et al., Helv. Chim. Acta*, 1959, **42**, 1572-1581 (*isol, uv, ir, struct*)

Hootele, C. *et al., Chimia*, 1967, **21**, 133-134; 1968, **22**, 245-246 (*19-Hydroxyconopharyngine, 3-Oxoconopharyngine*)

Cava, M.P. *et al., J.O.C.*, 1968, **33**, 3350-3352 (*19-Hydroxyconopharyngine*)

Van Beek, T.A. *et al., Phytochemistry*, 1984, **23**, 1771-1778 (*3-Hydroxyconopharyngine*)

Van Beek, T.A. *et al., J. Ethnopharmacol.*, 1985, **14**, 315-318 (*3-Hydroxyconopharyngine, activity*)

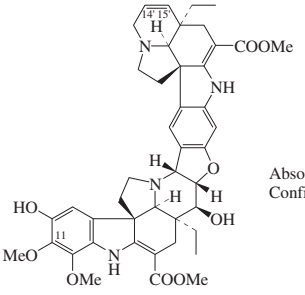
Van Beek, T.A. *et al., J. Nat. Prod.*, 1985, **48**, 400-423 (*3-Hydroxyconopharyngine*)

Cabezas, J. *et al., CA*, 1987, **107**, 4325 (*3R-Hydroxyconopharyngine*)

Federici, E. *et al., Planta Med.*, 2000, **66**, 93-95 (*isol, cmr*)

Conophyllidine C-621

[152406-44-5]



Absolute Configuration

$C_{44}H_{50}N_4O_9$ 778.9

Alkaloid from *Tabernaemontana divaricata* (single flower variety) (Apocynaceae). Farnesyl transferase inhibitor. Amorph.

▶ LD_{50} (mus, ipr) 32.3 mg/kg.

14′β,15′β-Epoxide: ***Conophylline****. Polyervine*

[142741-24-0]

$C_{44}H_{50}N_4O_{10}$ 794.9

Alkaloid from the leaves of *Tabernaemontana divaricata* (single flower variety) and twigs and leaves of *Tabernaemontana glandulosa* (Apocynaceae). Also isol. as Polyervine from leaves of *Ervatamia polyneura*. Light yellow prisms (EtOAc). Mp 181-184° Mp *ca.*° 200 dec. $[\alpha]_D$ -133 (c, 0.7 in $CHCl_3$). Conophylline and Polyervine have not been compared but are prob. identical.

14′,15′-Dihydro, 14′α,15′β-dihydroxy: ***Conophyllinine***

$C_{44}H_{52}N_4O_{11}$ 812.915

Alkaloid from the leaves of *Tabernaemontana divaricata* (double flower variety). Light yellowish oil. $[\alpha]_D$ -109 (c, 0.09 in $CHCl_3$). λ_{max} 204 (log ϵ 3.43); 239 (log ϵ 3.23); 311 (log ϵ 3.25); 334 (log ϵ 3.31) (EtOH).

Kam, T.-S. *et al., J. Nat. Prod.*, 1993, **56**, 1865 (*Conophyllidine, Conophylline, isol, uv, pmr, cmr, cryst struct*)

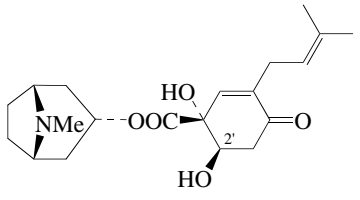
Achenbach, H. *et al., Phytochemistry*, 1994, **37**, 1737 (*Conophyllidine, Conophylline, isol, ir, cd*)

Clivio, P. *et al., Phytochemistry*, 1995, **40**, 953 (*Polyervine*)

Kam, T.S. *et al., Org. Biomol. Chem.*, 2003, **1**, 1292-1297 (*Conophyllinine*)

Consiculine C-622

[219829-73-9]



$C_{20}H_{29}NO_5$ 363.453

Alkaloid from the roots of *Convolvulus siculus*. λ_{max} 250 (MeOH aq.).

2′-Deoxy: ***Consabatine***
[219829-74-0]
$C_{20}H_{29}NO_4$ 347.453
Alkaloid from *Convolvulus sabatius* ssp. *mauritanicus* and *Merremia quinata*. λ_{max} 255 (MeOH aq.).

2′-Deoxy, 4′ξ-alcohol: 4′-Dihydroconsabatine
$C_{20}H_{31}NO_4$ 349.469
Alkaloid from *Merremia quinata*. Oil.

Jenett-Siems, K. *et al., Phytochemistry*, 1998, **49**, 1449-1451 (*Consiculine, Consabatine*)
Jenett-Siems, K. *et al., Phytochemistry*, 2005, **66**, 1448-1464 (*4′-Dihydroconsabatine*)

Consolidine† C-623

[1391-11-3]

$C_{33}H_{49}NO_9$ 603.751

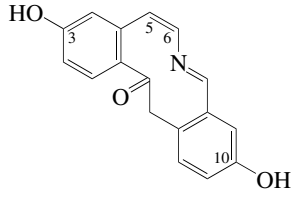
Struct. unknown. Alkaloid from *Delphinium consolida* (Ranunculaceae). Prismatic needles (MeOH). Mp 153-157° (rapid htg.). $[\alpha]_D^{23}$ +64 (c, 0.36 in MeOH).

Hydrochloride:
Wedge-shaped prisms (MeOH). Mp 240° (rapid htg.). $[\alpha]_D^{28}$ +33 (c, 0.589 in 90% MeOH aq.).

Marion, L. *et al., J.A.C.S.*, 1947, **69**, 2010-2014

Constrictosine C-624

3,10-Dihydroxydibenz[c,g]azecin-13(14H)-one, 9CI
[196086-14-3]



$C_{17}H_{13}NO_3$ 279.295
Alkaloid from *Aristolochia constricta* (Aristolochiaceae). Amorph. yellow solid. Mp 200-243°. λ_{max} 224 (log ϵ 3.1); 256 (log ϵ 3.24); 282 (log ϵ 4.06); 302 (log ϵ 3.86) (MeOH).

3-Me ether: ***3-O-Methylconstrictosine***
[195971-30-3]
$C_{18}H_{15}NO_3$ 293.321
Alkaloid from *Aristolochia constricta*. Amorph. yellow solid. Mp 215-239°. λ_{max} 224 (log ϵ 3.32); 256 (log ϵ 3.38); 282 (log ϵ 4.16); 302 (log ϵ 3.92) (MeOH).

Di-Me ether: ***3,10-Di-O-methylconstrictosine***
[195971-24-5]
$C_{19}H_{17}NO_3$ 307.348
Alkaloid from *Aristolochia constricta*. Amorph. yellow solid. Mp 189-195°. λ_{max} 224 (log ϵ 4.12); 256 (log ϵ 4.36); 282 (log ϵ 4.96); 302 (log ϵ 4.72) (MeOH).

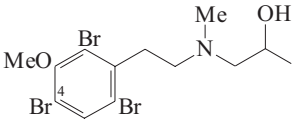
5,6-Dihydro: ***5,6-Dihydroconstrictosine***
[195971-28-9]
$C_{17}H_{15}NO_3$ 281.31
Alkaloid from *Aristolochia constricta*. Amorph. yellow solid. Mp 187-192°. λ_{max} 256 (log ϵ 2.36); 282 (log ϵ 3.28) (MeOH).

5,6-Dihydro, di-Me ether: ***5,6-Dihydro-3,10-di-O-methylconstrictosine***
[195971-26-7]
$C_{19}H_{19}NO_3$ 309.364
Alkaloid from *Aristolochia constricta*. Amorph. yellow solid. Mp 186-192°. λ_{max} 256 (log ϵ 4.4); 282 (log ϵ 4.82) (MeOH).

Rastrelli, L. *et al., J. Nat. Prod.*, 1997, **60**, 1065-1069 (*isol, uv, pmr, cmr*)

Convolutamine A C-625

[161099-50-9]



$C_{13}H_{18}Br_3NO_2$ 460.003
Alkaloid from the marine bryozoan *Amathia convoluta*. Exhibits cytotoxicity against murine P388 lymphocytic leukaemia. Oil. Racemic. λ_{max} 212 (ϵ 27900) (MeOH) (Berdy).

N-*De-Me:* ***Convolutamine C***
[161099-52-1]
$C_{12}H_{16}Br_3NO_2$ 445.976
From *Amathia convoluta*. Oil. Stereochem. unknown.

N-*De(2-hydroxypropyl):* ***Convolutamine F***
[243858-10-8]
$C_{10}H_{12}Br_3NO$ 401.923
Alkaloid from *Amathia convoluta*. Oil. $[\alpha]_D^{20}$ +24.3 (c, 0.4 in $CHCl_3$). λ_{max} 213 (ϵ 21800) (MeOH).

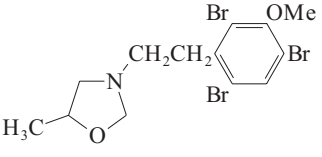
4-Debromo: ***Convolutamine B***
[161099-51-0]
$C_{13}H_{19}Br_2NO_2$ 381.107
From *Amathia convoluta*. Exhibits cytotoxicity against murine P388 lymphocytic leukaemia. Oil. Racemic. λ_{max} 211 (ϵ 20100) (MeOH) (Berdy).

4-Debromo, N-*de(2-hydroxypropyl):* ***Convolutamine G***
[243858-11-9]
$C_{10}H_{13}Br_2NO$ 323.027
Alkaloid from *Amathia convoluta*. Oil. λ_{max} 206 (ϵ 8910); 229 (ϵ 1930) (MeCN).

Zhang, H. *et al., Chem. Lett.*, 1994, 2271-2274 (*isol, uv, ir, pmr, cmr, ms, struct*)
Kamano, Y. *et al., Coll. Czech. Chem. Comm.*, 1999, **64**, 1147-1153 (*Convolutamines F,G*)
Hashima, H. *et al., Bioorg. Med. Chem.*, 2000, **8**, 1757-1766 (*synth*)

Convolutamine D C-626

[161099-53-2]

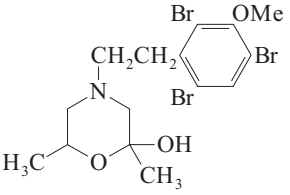


$C_{13}H_{16}Br_3NO_2$ 457.987
Alkaloid from the marine bryozoan *Amathia convoluta*. Exhibits cytotoxicity against murine P388 lymphocytic leukaemia. Oil.

Zhang, H. *et al., Chem. Lett.*, 1994, 2271-2274 (*isol, pmr, cmr, struct*)

Convolutamine E C-627

[161099-54-3]

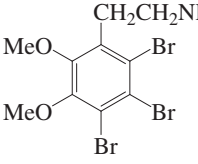


$C_{15}H_{20}Br_3NO_3$ 502.04
Alkaloid from the marine bryozoan *Amathia convoluta*. Oil.

Zhang, H. *et al., Chem. Lett.*, 1994, 2271 (*isol, pmr, cmr, struct*)

Convolutamine H C-628

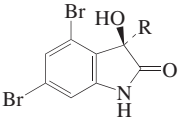
N-*Methyl-2-(2,3,4-tribromo-5,6-dimethoxyphenyl)ethylamine. 2,3,4-Tribromo-5,6-dimethoxy*-N-*methylbenzeneethanamine, 9CI*
[443355-92-8]



$C_{11}H_{14}Br_3NO_2$ 431.949
Alkaloid from the marine bryozoan *Amathia convoluta*. Pale yellow oil. λ_{max} 217 (log ϵ 4.4) (MeOH).

Narkowicz, C.K. *et al., J. Nat. Prod.*, 2002, **65**, 938-941 (*isol, pmr, cmr, ms*)

Convolutamydines C-629



Absolute Configuration

Convolutamydine A; R = CH_2COCH_3
B; R = CH_2CH_2Cl
C; R = CH_3
D; R = $CH{=}CH_2$
E; R = CH_2CH_2OH

Convolutamydine A
*4,6-Dibromo-1,3-dihydro-3-hydroxy-3-(2-oxopropyl)-2*H-*indol-2-one, 9CI*
[163564-85-0]
[184587-77-7]
$C_{11}H_9Br_2NO_3$ 363.005
Alkaloid from the marine bryozoan

Amathia convoluta. Cell differentiation and growth inhibitor. Amorph. solid (MeOH). Mp 190-195°. $[\alpha]_D^{26}$ +27.4 (c, 0.06 in MeOH) (natural). $[\alpha]_D^{20}$ +48.2 (c, 0.2 in MeOH) (synthetic). λ_{max} 224 (ϵ 21600); 262 (ϵ 5200); 291 (ϵ 3100) (MeOH) (Berdy).

Convolutamydine B

*4,6-Dibromo-3-(2-chloroethyl)-1,3-dihydro-3-hydroxy-2*H*-indol-2-one, 9CI*
[163564-86-1]

$C_{10}H_8Br_2ClNO_2$ 369.439

Alkaloid from the marine bryozoan *Amathia convoluta*. Amorph. solid (Me_2CO). Mp 225-227°. $[\alpha]_D^{25}$ +18.1 (c, 0.42 in MeOH).

Convolutamydine C

*4,6-Dibromo-1,3-dihydro-3-hydroxy-3-methyl-2*H*-indol-2-one, 9CI*
[163564-87-2]

$C_9H_7Br_2NO_2$ 320.968

Alkaloid from the marine bryozoan *Amathia convoluta*. Amorph. solid (Me_2CO). Mp 175-180°. $[\alpha]_D^{25}$ +32.4 (c, 0.03 in MeOH).

Convolutamydine D

*4,6-Dibromo-3-ethenyl-1,3-dihydro-3-hydroxy-2*H*-indol-2-one, 9CI*
[163564-94-1]

$C_{10}H_7Br_2NO_2$ 332.979

Alkaloid from the marine bryozoan *Amathia convoluta*. Cell differentiation and growth inhibitor. Amorph. solid. $[\alpha]_D^{26}$ +14 (c, 0.04 in MeOH). λ_{max} 220 (ϵ 7488); 290 (ϵ 1475) (MeOH) (Berdy).

Convolutamydine E

*4,6-Dibromo-1,3-dihydro-3-hydroxy-3-(2-hydroxyethyl)-2*H*-indol-2-one, 9CI*
[243858-13-1]

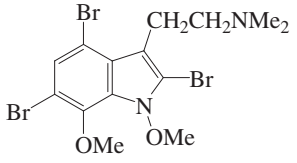
$C_{10}H_9Br_2NO_3$ 350.994

Alkaloid from the marine bryozoan *Amathia convoluta*. Oil. λ_{max} 223 (ϵ 16870); 298 (ϵ 850) (MeCN).

Kamano, Y. *et al., Tet. Lett.*, 1995, **36**, 2783-2784 (*Convolutamydine A, isol*)
Zhang, H. *et al., Tetrahedron*, 1995, **51**, 5523-5528 (*isol, uv, ir, pmr, cmr, cd, struct*)
Miah, S. *et al., J.C.S. Perkin 1*, 1997, 2405-2412 (*synth, Convolutamydine C*)
Kamano, Y. *et al., Coll. Czech. Chem. Comm.*, 1999, **64**, 1147-1163 (*Convolutamydine E*)
Jnaneshwara, G.K. *et al., Synth. Commun.*, 1999, **29**, 3627-3633 (*Convolutamydine A*)
Takayama, H. *et al., Tetrahedron*, 1999, **55**, 6841-6846 (*abs config*)
Kawasaki, T. *et al., Tetrahedron*, 2004, **60**, 3493-3503 (*synth*)
Nakamura, T. *et al., Org. Lett.*, 2006, **8**, 677-679 (*synth*)
Luppi, G. *et al., Tetrahedron*, 2006, **62**, 12017-12024 (*synth*)
Cravotto, G. *et al., Tetrahedron: Asymmetry*, 2006, **17**, 3070-3074; 2007, **18**, 298 (*Convolutamydine A, synth, abs config*)
Malkov, A.V. *et al., Org. Lett.*, 2007, **9**, 5473-5476 (*synth*)

Convolutindole A **C-630**

2,4,6-Tribromo-1,7-dimethoxy-N,N-*dimethyl-1*H*-indole-3-ethanamine. 2,4,6-Tribromo-3-(2-dimethylaminoethyl)-1,7-dimethoxyindole*
[443356-86-3]



$C_{14}H_{17}Br_3N_2O_2$ 485.013

Alkaloid from the marine bryozoan *Amathia convoluta*. Amorph. solid. Mp 61.5-62.5°. λ_{max} 235 (log ϵ 4.7); 289 (log ϵ 4.1); 305 (log ϵ 4) (MeOH).

Narkowicz, C.K. *et al., J. Nat. Prod.*, 2002, **65**, 938-941 (*isol, pmr, cmr, ms*)

Convolvicine **C-631**

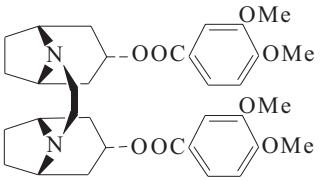
$C_{10}H_{16}N_2$ 164.25

Struct. unknown. Alkaloid from *Convolvulus pseudocantabricus*. Mp 200-202° (as dipicrate). Bp 250-260°.

Orekhov, A.P. *et al., Ber., B*, 1935, **68**, 814-819 (*isol*)

Convolvidine **C-632**

3,4-Dimethoxybenzoic acid 1,2-ethanediylbis(8-azabicyclo[3.2.1]octane-8,3-diyl) ester, 9CI
[50656-81-0]



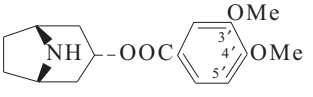
$C_{34}H_{44}N_2O_8$ 608.73

Alkaloid from *Convolvulus subhirsutus (Convolvulus pseudocantabricus)* and *Evolvulus sericeus* var. *holosericeus* (Convolvulaceae). Mp 192-193°. Artifact resulting from condensation of Convolvine, C-633 with $C_2H_4Cl_2$. Stated by Orechoff to be opt. active, but this must have been erroneous.

Orechoff, A. *et al., Ber.*, 1935, **68**, 814 (*isol*)
Yusunov, S.Yu. *et al., Dokl. Akad. Nauk SSSR*, 1958, **10**, 17; *CA*, **53**, 18391 (*struct*)
Consuelo Fonseca, L. *et al., CA*, 1973, **79**, 15798w (*isol*)

Convolvine **C-633**

8-Azabicyclo[3.2.1]oct-3-yl 3,4-dimethoxybenzoate, 9CI. Veratroylnortropine. 3α-Veratroyloxynortropane. 3α-(3,4-Dimethoxybenzoyloxy)nortropane
[537-30-4]



$C_{16}H_{21}NO_4$ 291.346

Alkaloid from *Convolvulus pseudocantabricus, Convolvulus erinaceus, Convolvulus lineatus, Convolvulus subhirsutus* and *Evolvulus sericeus* var. *holosericeus* (Convolvulaceae). Mp 114-115°. Opt. inactive (*meso*-).

Hydrochloride: Mp 260-261° dec.

N-*Formyl:* ***Confoline***. N-*Formylconvolvine*
[76971-33-0]
$C_{17}H_{21}NO_5$ 319.357
Alkaloid from roots of *Convolvulus subhirsutus* (Convolvulaceae). Cryst. (Me_2CO). Mp 140-141°.

N-*Ac:* ***Convolicine***. *3α-Veratroyloxy*-N-*acetylnortropane*
[72994-86-6]
$C_{18}H_{23}NO_5$ 333.383
Alkaloid from the epigeal parts of *Convolvulus krauseanus* (Convolvulaceae). Cryst. (Et_2O). Mp 144-145°.

N-*Me:* ***Convolamine***. *Veratroyltropine*
[500-56-1]
$C_{17}H_{23}NO_4$ 305.373
Alkaloid from *Convolvulus pseudocantabricus, Convolvulus lineatus* and *Convolvulus subhirsutus* (Convolvulaceae). Mp 114-115°.

N-*Me,* N-*oxide:* ***Convolamine* N-*oxide***
[97534-16-2]
$C_{17}H_{23}NO_5$ 321.372
Alkaloid from *Convolvulus krauseanus*. Cryst. Mp 118-119°.

N-*Isopropyl:* ***Convosine***
[107373-72-8]
$C_{19}H_{27}NO_4$ 333.427
Alkaloid from the roots of *Convolvulus subhirsutus* (Convolvulaceae). Cryst. (Me_2CO). Mp 103-104° (synthetic).

N-*Hydroxy:* ***Convoline***. *3α-Veratroyloxy*-N-*hydroxynortropane*
[89783-61-9]
$C_{16}H_{21}NO_5$ 307.346
Alkaloid from *Convolvulus krauseanus* (Convolvulaceae). Mp 184-185°.

O$^{4'}$-*De-Me:* ***Convolidine***. *3α-Vanilloyloxynortropane*
[63911-32-0]
$C_{15}H_{19}NO_4$ 277.319
Alkaloid from *Convolvulus krauseanus* (roots and epigeal parts) and from *Convolvulus subhirsutus* (Convolvulaceae). Cryst. (MeOH). Mp 214-215°.

O$^{4'}$-*De-Me,* N-*formyl:* ***Confolidine***
$C_{16}H_{19}NO_5$ 305.33
Alkaloid from *Convolvulus subhirsutus*. Mp 178-179°.

O$^{4'}$-*De-Me,* N-*Me:* ***Phyllalbine***. *Vanillyl tropate*
[4540-25-4]
$C_{16}H_{21}NO_4$ 291.346
Alkaloid from the roots of *Phyllanthus discoides*, above-ground parts of *Convolvulus krauseanus* and roots of *Convolvulus subhirsutus* (Euphorbiaceae, Convolvulaceae). Cryst. (MeOH). Mp 209-210°.

O$^{4'}$-*De-Me,* N-*Me, hydrochloride:* Cryst. (MeOH). Mp 254°.

O$^{4'}$-*De-Me,* N-*Me,* N-*oxide:* ***Phyllalbine* N-*oxide***

[954099-40-2]
$C_{16}H_{21}NO_5$ 307.346
Alkaloid from *Convolvulus subhirsutus*. Amorph. solid.

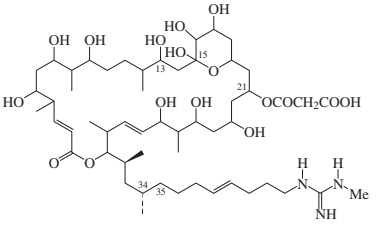
5′-Methoxy: ***3α-(3,4,5-Trimethoxybenzoyloxy)nortropane***
$C_{17}H_{23}NO_5$ 321.372
Alkaloid from the root bark of *Erythroxylum zambesiacum* (Erythroxylaceae). Plates (EtOH aq.) (as picrate). Mp 235° dec. (softens at 225°) (picrate).

5′-Methoxy, N-*Me:* ***Tropan-3α-yl 3,4,5-trimethoxybenzoate***. O-*(3,4,5-Trimethoxybenzoyl)tropine*
$C_{18}H_{25}NO_5$ 335.399
Alkaloid from root bark of *Erythroxylum monogynum* (Erythroxylaceae). Fine needles (EtOH) (as hydrobromide). Mp 212° dec. (hydrobromide).

Orechoff, A. *et al., Ber.*, 1935, **68**, 814 (*struct, Convolvine, Convolamine*)
Yunusov, S.Yu. *et al., Dokl. Akad. Nauk SSSR*, 1958, **10**, 17; *CA*, **53**, 18391
Parello, J. *et al., Bull. Soc. Chim. Fr.*, 1963, 2787 (*Phyllalbine*)
Israilov, I. *et al., CA*, 1965, **63**, 7346f (*isol, Convolvine, Convolamine*)
Consuela Fonseca, L. *et al., CA*, 1973, **79**, 15798w (*isol*)
Agar, J.T.H. *et al., J.C.S. Perkin 1*, 1976, 1550 (*Tropanyl trimethoxybenzoate*)
Aripova, S.F. *et al., Khim. Prir. Soedin.*, 1977, **13**, 290; 1979, **15**, 527; 1983, **19**, 749; 1985, **21**, 275; 1986, **22**, 618; *Chem. Nat. Compd. (Engl. Transl.)*, 1977, **13**, 255; 1979, **15**, 457; 1983, **19**, 712; 1985, **21**, 261; 1986, **22**, 581 (*Convolidine, Convolicine, Convoline, Convolamine N-oxide, Convosine*)
Sharova, S.F. *et al., Khim. Prir. Soedin.*, 1980, **16**, 672; *Chem. Nat. Compd. (Engl. Transl.)*, 1980, **16**, 487 (*Confoline, Phyllalbine*)
El-Iman, Y.M.A. *et al., Phytochemistry*, 1987, **26**, 2385 (*Trimethoxybenzoyloxynortropane*)
Razzakov, N.A. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2004, **40**, 54-55 (*Confolidine*)
Gapparov, A.M. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2007, **43**, 291-292 (*Phyllalbine N-oxide*)

Copiamycin C-634

Niphithricin A. Niphitricin 1. NSC 110326
[11078-23-2]



$C_{54}H_{95}N_3O_{17}$ 1058.354
Macrolide antibiotic. Isol. from *Streptomyces hygroscopicus* var. *chrystallogenes* and *Streptomyces violaceoniger*. Active against gram-positive bacteria and fungi. Shows synergistic activity with imidazole antifungals. Cryst. (MeOH). Mp 144° dec. $[\alpha]_D^{25.5}$ +14.4 (MeOH). Interconverts with Niphithricin B on standing in soln. Related to Niphimycin. λ_{max} 205 (ϵ 15850); 220 (ϵ 20600) (MeOH) (Derep).

▶ GL5300000

N-*De-Me:* ***Neocopiamycin A***
[89989-28-6]
$C_{53}H_{93}N_3O_{17}$ 1044.328
From *Streptomyces hygroscopicus* var. *chrystallogenes*. Antifungal, less toxic than Copiamycin. Hygroscopic powder. Sol. MeOH, butanol, Py, DMSO; poorly sol. H_2O, hexane, Me_2CO. Mp 134-137° dec. $[\alpha]_D^{25}$ +23 (c, 1 in MeOH). λ_{max} 205 (ϵ 15850); 220 (ϵ 20600) (MeOH) (Derep).

▶ LD_{50} (mus, ivn) 30-70 mg/kg; LD_{50} (mus, ipr) 1450-1550 mg/kg. GL5310000

21-O-*Demalonyl:* ***Demalonylcopiamycin***
[84959-52-4]
$C_{51}H_{93}N_3O_{14}$ 972.307
From *Streptomyces hygroscopicus* var. *chrystallogenes*. Sol. MeOH, C_6H_6; poorly sol. H_2O. λ_{max} 222 (E1%/1cm 1737) (EtOH) (Berdy).

15-Me ether, 21-O-*demalonyl:* ***Demalonylmethylcopiamycin***
[101923-21-1]
$C_{52}H_{95}N_3O_{14}$ 986.334
From *Streptomyces hygroscopicus* var. *chrystallogenes*. Prisms (MeOH aq.). Sol. MeOH, DMSO; poorly sol. $CHCl_3$, H_2O, hexane. Mp 140-143°. $[\alpha]_D$ +11 (MeOH). λ_{max} 215 (MeOH) (Berdy).

*34,35*E-*Didehydro:* ***Antibiotic TMC 34***. *TMC 34*
[170244-28-7]
$C_{54}H_{93}N_3O_{17}$ 1056.339
Prod. by a *Streptomyces* sp. Antifungal agent. Sol. DMSO, Py, MeOH, 1-propanol, EtOH; fairly sol. EtOAc, Me_2CO, $CHCl_3$; poorly sol. H_2O. Mp 146-148°. $[\alpha]_D^{20}$ +18 (c, 0.3 in MeOH). λ_{max} 205 (ϵ 17600) (MeOH) (Berdy).

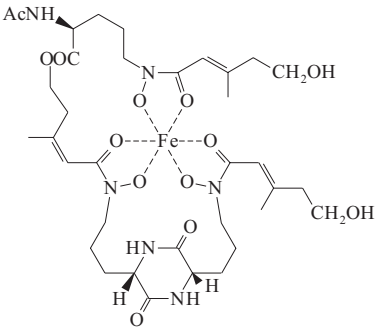
13-Deoxy: ***Neocopiamycin B***. *13-Deoxycopiamycin*
[113189-06-3]
$C_{54}H_{95}N_3O_{16}$ 1042.355
Prod. by *Streptomyces hygroscopicus* var. *crystallogenes*. Powder. Dec. at 124-126°.

[80450-11-9]

Arai, T. *et al., J. Antibiot., Ser. A*, 1965, **18**, 63 (*isol*)
Seigi, K. *et al., Appl. Microbiol.*, 1971, **21**, 986 (*props*)
Fiedler, H.P. *et al., J. Antibiot.*, 1981, **34**, 1107 (*isol*)
Uno, J. *et al., Antimicrob. Agents Chemother.*, 1983, **24**, 552-559 (*activity*)
Gassmann, P. *et al., Helv. Chim. Acta*, 1984, **67**, 696 (*struct*)
Arai, T. *et al., J. Antibiot.*, 1984, **37**, 103 (*isol, uv, ir, cmr*)
Takesako, K. *et al., J. Antibiot.*, 1985, **38**, 1363 (*derivs*)
Fukai, T. *et al., Heterocycles*, 1986, **24**, 3351; 1988, **27**, 2333 (*deriv, isol*)
Kohno, J. *et al., J. Antibiot.*, 1995, **48**, 1173 (*TMC 34*)
Fukai, T. *et al., J. Antibiot.*, 1999, **52**, 340-344 (*Neocopiamycin B*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, CNH800

Coprogen C-635

[31418-71-0]



$C_{35}H_{53}FeN_6O_{13}$ 821.683
Isol. from bacteria and fungi incl. *Neurospora crassa* and *Penicillium* spp. Siderophore. Microbiol. iron transport compd. Growth factor for coprophilic fungi. Phytotoxin. Red cryst. (EtOH). Sol. H_2O, MeOH. Mp 205° dec. λ_{max} 435 (ϵ 2809) (MeOH) (Berdy). λ_{max} 217 (ϵ 28840); 250 (ϵ 16600); 434 (ϵ 2820); 440 (ϵ 2951) (H_2O) (Berdy). λ_{max} 213 ; 254 ; 450 (EtOH aq.) (Berdy).

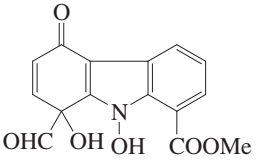
N-*De-Ac:* ***Coprogen B***
[12705-44-1]
$C_{33}H_{51}FeN_6O_{12}$ 779.646
From *Fusarium* spp., *Neurospora crassa* and other fungi. Siderophore. Sol. H_2O, MeOH. λ_{max} 220 ; 250 ; 440 (ϵ 2754) (H_2O) (Berdy).

[30315-65-2 , 81559-20-8 , 1391-13-5]

Hesseltine, C.W. *et al., J.A.C.S.*, 1952, **74**, 1362 (*isol*)
Pidacks, C. *et al., J.A.C.S.*, 1953, **75**, 6064 (*spectra*)
Fr. Pat., 1964, 1 355 923; *CA*, **62**, 5856 (*synth*)
Diekmann, H. *et al., Arch. Microbiol.*, 1970, **73**, 65 (*Coprogen B*)
Keller-Schierlein, W. *et al., Helv. Chim. Acta*, 1970, **53**, 2035 (*isol, struct*)
Dell, A. *et al., Biomed. Mass Spectrom.*, 1982, **9**, 158 (*ms*)
Wong, G.B. *et al., J.A.C.S.*, 1983, **105**, 810 (*isol, cd, config*)
Matzanke, B.F. *et al., Eur. J. Biochem.*, 1987, **162**, 643
Ohra, J. *et al., Biosci., Biotechnol., Biochem.*, 1995, **59**, 1782 (*isol*)

Coproverdine† C-636

*Methyl 1-formyl-4,9-dihydro-1,9-dihydroxy-4-oxo-1*H*-carbazole-8-carboxylate, 9CI. Methyl 8-formyl-8,9-dihydro-8,9-dihydroxy-5-oxo-5*H*-carbazole-1-carboxylate*
[437702-23-3]



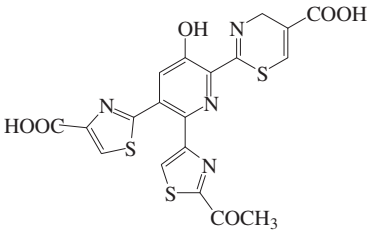
$C_{15}H_{11}NO_6$ 301.255
Alkaloid from a New Zealand tunicate. Antitumour agent. Yellow oil. $[\alpha]_D^{20}$ -8 (c,

0.36 in EtOH). λ_{max} 208 (ϵ 20000); 270 (ϵ 6700); 302 (ϵ 4800); 382 (ϵ 16000) (EtOH).

Urban, S. *et al., J. Nat. Prod.*, 2002, **65**, 1371-1373 (*isol, pmr, cmr, ms*)

Copsomycin C-637

[129898-72-2]



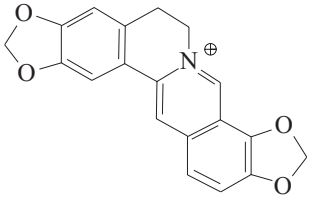
Thiazole peptide antibiotic. Related to Nosiheptide, N-319. Struct. of chromophore shown. Prod. by a *Streptomyces* sp. Active against gram-positive bacteria.

Alekseeva, L.E. *et al., Antibiot. Khimioter.*, 1990, **35**, 12-13 (*pmr, cmr*)

Coptisine C-638

6,7-Dihydrobis[1,3]benzodioxolo[5,6-a:4′,5′-g]quinolizinium, 9CI. 2,3:9,10-Bismethylenedioxyprotoberberine

[3486-66-6]



$C_{19}H_{14}NO_4^{\oplus}$ 320.324

Quaternary alkaloid from *Coptis japonica* (Ranunculaceae) and many other spp., mostly in the Papaveraceae. Antineoplastic agent. Antiinflammatory agent. Uterine contractant. λ_{max} 226 (ϵ 24550); 239 (ϵ 22400); 264 (ϵ 19500); 356 (ϵ 19950) (MeOH) (Berdy).

Hydroxide: [521-25-5]
Mp 216-218°.

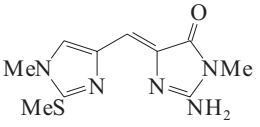
Chloride: [6020-18-4]
Orange needles. Mp 300° dec.

Iodide: [6020-84-4]
Mp 280°.

Späth, E. *et al., Ber.*, 1929, **62**, 1029 (*synth*)
Huang-Minlon, *et al., Ber.*, 1936, **69**, 1737 (*isol*)
Jewers, K. *et al., J.C.S. Perkin 2*, 1972, 1393 (*cmr*)
Pavelka, S. *et al., Coll. Czech. Chem. Comm.*, 1976, **41**, 3157 (*uv*)
Slavik, J. *et al., Coll. Czech. Chem. Comm.*, 1991, **56**, 1116 (*isol*)
Ghee, T.T. *et al., J. Nat. Prod.*, 1991, **54**, 143 (*isol*)
Marek, R. *et al., Magn. Reson. Chem.*, 1999, **37**, 195-202 (*N-15 nmr*)

Corallistine† C-639

[121098-71-3]



$C_{10}H_{13}N_5OS$ 251.312

Isol. from the New Caledonian sponge *Corallistes fulvodesmus*. Light yellow cryst. (MeOH). Mp 192° dec.

Debitus, C. *et al., Tet. Lett.*, 1989, **30**, 1535-1538 (*isol, uv, ir, pmr, cmr, cryst struct*)

Coranicine C-640

[1355-99-3]

$C_{16}H_{17}NO_4$ 287.315

Amaryllidaceae alkaloid. Struct. unknown. Isol. from the bulbs of *Ammocharis coranica, Crinum erubescens* and *Hippeastrum bifida* (Amaryllidaceae). Amorph. $[\alpha]_D^{21}$ +115 (c, 0.195 in EtOH). $[\alpha]_D^{21}$ +156 (c, 0.198 in $CHCl_3$).

Perchlorate:
Cryst. (Me_2CO). Mp 192-194° dec.

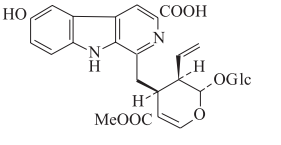
Methiodide:
Cryst. (MeOH aq.). Mp 245-247° dec.

Di-Ac:
Needles (Et_2O/petrol). Mp 118-119°. $[\alpha]_D^{21}$ +90 (c, 0.212 in EtOH). $[\alpha]_D^{21}$ +80 (c, 0.215 in $CHCl_3$).

Hauth, H. *et al., Helv. Chim. Acta*, 1962, **45**, 1307-1317 (*isol, uv, ir*)
Wildman, W.C. *et al., Pharmazie*, 1967, **22**, 725; *CA*, **69**, 19337m (*isol*)
Wildman, W.C. *et al., J.A.C.S.*, 1968, **90**, 6439-6446 (*ms*)
Wildman, W.C. *et al., J.O.C.*, 1968, **33**, 3749-3753 (*isol*)

Cordifoline C-641

[25455-00-9]



Absolute configuration

$C_{28}H_{30}N_2O_{12}$ 586.551

Alkaloid from the heartwood of *Adina cordifolia* (Rubiaceae). Noncryst. Mp 91-93° (as tetra-*O*-Ac, Me ester). $[\alpha]_D^{20}$ -144 (c, 0.11 in MeOH) (tetra-Ac, Me ester).

Deoxy: ***Deoxycordifoline***. *Desoxycordifoline*
[21451-50-3]
$C_{28}H_{30}N_2O_{11}$ 570.552
Alkaloid from the heartwood of *Adina cordifolia* and *Adina rubescens* (Rubiaceae). Cryst. (Me_2CO/MeOH). Mp 178-180°. $[\alpha]_D^{25}$ -212 (H_2O). Lacks the phenolic OH group. λ_{max} 239 (log ϵ 4.58); 268 (log ϵ 4.54); 336 (log ϵ 3.7); 349 (log ϵ 3.71) (EtOH).

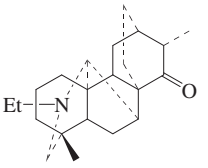
Deoxy, parent acid: ***Desoxycordifolinic acid***
[88839-94-5]
$C_{27}H_{28}N_2O_{11}$ 556.525
Alkaloid from the heartwood of *Nauclea diderrichii* (Rubiaceae). Brown rosettes + $1H_2O$ (MeCN aq.). Mp 206-208° dec. $[\alpha]_D$ -45.7 (c, 0.126 in MeOH).

Decarboxy: see Lyaloside, L-316

Brown, R.T. *et al., Chem. Comm.*, 1967, 453 (*isol, uv, pmr, ms*)
Merlini, L. *et al., Gazz. Chim. Ital.*, 1968, **98**, 974-977 (*Cordifoline, Deoxycordifoline, uv, pmr, ms*)
Brown, R.T. *et al., Phytochemistry*, 1978, **17**, 1686-1687 (*Cordifoline, Deoxycordifoline, isol, uv, ir, pmr, ms*)
Adeoye, A.O. *et al., Phytochemistry*, 1983, **22**, 2097-2098 (*Desoxycordifolinic acid*)
Brandt, V. *et al., Phytochemistry*, 1999, **51**, 1171-1176 (*Deoxycordifoline, uv, pmr, cmr, ms*)
Cardoso, C.L. *et al., J. Nat. Prod.*, 2004, **67**, 1882-1885 (*cmr*)

Cordizine C-642

[863203-35-4]



Absolute Configuration

$C_{22}H_{33}NO$ 327.509

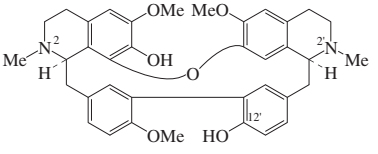
Alkaloid from *Delphinium corymbosum*. Cryst. (MeOH). Mp 122-124°.

Salimov, B.T. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2004, **40**, 579-581 (*isol, pmr, ms*)

Cordobine C-643

(-)-Antioquine

[121960-20-1]



Alkaloids covered by this entry (1*R*,1′*S*-) are enantiomeric with those in Rodiasine, R-114 (1*S*,1′*R*-) and diastereomeric with those in Guattaguianine, G-212 (*S,S*-). Cordobine is the enantiomer of (+)-Antioquine in R-114. Alkaloid from an unidentified *Cremastosperma* sp. and *Guatteria boliviana* (Annonaceae). Exhibits antiparasitic and cytotoxic activities. Amorph. $[\alpha]_D^{20}$ -170 (c, 0.2 in $CHCl_3$).

O$^{12'}$-Me: ***Monterine***
[121892-85-1]
$C_{38}H_{42}N_2O_6$ 622.76
Alkaloid from the stem bark of an unidentified *Cremastosperma* sp. (Annonaceae). Amorph. $[\alpha]_D^{20}$ -135 (c, 0.4 in $CHCl_3$).

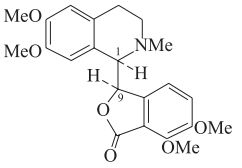
Di-Me ether: ***Granjine***
[121959-06-6]
$C_{39}H_{44}N_2O_6$ 636.786

Alkaloid from the stem bark of an unidentified *Cremastosperma* sp. (Annonaceae). Amorph. $[\alpha]_D^{20}$ -63 (c, 0.6 in $CHCl_3$).

Saez, J. *et al., Can. J. Chem.*, 1989, **67**, 275 (*isol, struct*)
Jossang, A. *et al., J.O.C.*, 1996, **61**, 3023 (*conformn*)
Mahiou, V. *et al., Phytochemistry*, 2000, **54**, 709-716 (*isol, cd, pmr, cmr, ms*)

Cordrastine C-644

6,7-Dimethoxy-3-(1,2,3,4-tetrahydro-6,7-dimethoxy-2-methyl-1-isoquinolinyl)-1(3H)-isobenzofuranone, 9CI



(1*R*,9*R*)–*form*

$C_{22}H_{25}NO_6$ 399.443
Poss. alkaloid from *Corydalis aurea* (Papaveraceae). Fine needles ($CHCl_3$/MeOH). Mp 196° (prev. darkening). Struct. not certain, stereochem. not detd. Cordrastine is, however, well characterised as a synthetic compd. and the Mp of the alkaloid corresponds with synthetic Cordrastine I.

(1*R*,9*R*)-*form*
(-)-Cordrastine I
[34408-08-7]
Synthetic. Cryst. ($CHCl_3$/MeOH or EtOH). Mp 196° (189-190°). $[\alpha]_D$ -99 (c, 1 in $CHCl_3$).

(1*R*,9*S*)-*form*
(-)-Cordrastine II
[34408-07-6]
Synthetic. Cryst. (Et_2O/petrol). Mp 90°. $[\alpha]_D$ -10 (c, 1.0 in $CHCl_3$).
Hydrobromide: Mp 212-213°. $[\alpha]_D$ +188 (c, 1 in MeOH).

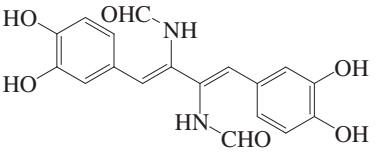
(1*RS*,9*RS*)-*form*
(±)-Cordrastine I
[51547-89-8]
Synthetic. Cryst. (MeOH). Mp 156-157°.

(1*RS*,9*SR*)-*form*
(±)-Cordrastine II
[51547-90-1]
Synthetic. Cryst. (MeOH). Mp 119°.
Picrate: Mp 208° (202°) dec.

Manske, R.H.F. *et al., Can. J. Res., Sect. B*, 1938, **16**, 81 (*isol*)
Haworth, W. *et al., J.C.S.*, 1950, 1777
Teitel, S. *et al., J.O.C.*, 1972, **37**, 1879 (*synth, pmr, cd, uv*)
Smula, V. *et al., Can. J. Chem.*, 1973, **51**, 3287 (*synth, ir, pmr*)
Kametani, T. *et al., J. Chem. Soc. Pak.*, 1976, 1221 (*synth*)
de Silva, S.O. *et al., Can. J. Chem.*, 1979, **57**, 1598 (*synth*)
Shono, T. *et al., J.O.C.*, 1983, **48**, 1621 (*synth*)
Orito, K. *et al., Heterocycles*, 1987, **26**, 3077 (*synth*)
Wasserman, H.H. *et al., Tet. Lett.*, 1989, **30**, 869 (*synth*)

Cordyformamide C-645

[930783-39-4]

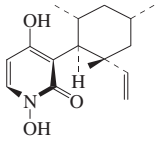


$C_{18}H_{16}N_2O_6$ 356.334
Related to Xanthocillin X, X-7 and Melanocin A, M-154. Isol. from *Cordyceps brunnearubra* BCC 1395. Antimalarial agent. Powder. λ_{max} 204 (log ε 4.49); 348 (log ε 4.46) (MeOH).

Isaka, M. *et al., J. Nat. Prod.*, 2007, **70**, 656-658 (*isol, pmr, cmr*)

Cordypyridone A C-646

3-(2-Ethenyl-2,4,6-trimethylcyclohexyl)-1,4-dihydroxy-2(1H)-pyridinone, 9CI. 8-Methylpyridoxatin



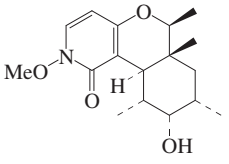
Absolute Configuration

$C_{16}H_{23}NO_3$ 277.363
Prod. by the fungi OS-F61800 and *Cordyceps nipponica*. Induces erythropoietin gene expression. Plates. Mp 261-263° dec. $[\alpha]_D^{25}$ -11 (c, 0.5 in MeOH). λ_{max} 216 (ε 34000); 289 (ε 6850) (MeOH).

Atropisomer: ***Cordypyridone B***
$C_{16}H_{23}NO_3$ 277.363
Prod. by *Cordyceps nipponica*. Prisms (Me_2CO). Mp 252-255° dec. $[\alpha]_D^{26}$ +164 (c, 0.14 in MeOH). λ_{max} 212 (log ε 4.54); 246 (log ε 3.61); 288 (log ε 3.72) (MeOH).

Cai, P. *et al., J. Nat. Prod.*, 1999, **62**, 397-399 (*isol, uv, ir, pmr, cmr, ms*)
Isaka, M. *et al., J.O.C.*, 2001, **66**, 4803-4808 (*isol, uv, ir, pmr, cmr, ms*)

Cordypyridone D C-647



Relative Configuration

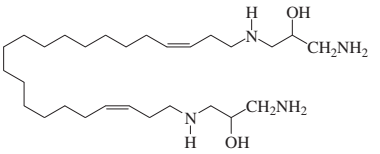
$C_{17}H_{25}NO_4$ 307.389
Similar to Fusaricide, F-225. Prod. by *Cordyceps nipponica*. Cryst. Mp 206-209° dec. $[\alpha]_D^{26}$ +249 (c, 0.14 in MeOH). λ_{max} 218 (log ε 4.47); 293 (log ε 3.75) (MeOH).

Deoxy: ***Cordypyridone C***
$C_{17}H_{25}NO_3$ 291.389
Prod. by *Cordyceps nipponica*. Cryst. Mp 150-151° dec. $[\alpha]_D^{24}$ +243 (c, 0.06 in MeOH). λ_{max} 218 (log ε 4.41); 292 (log ε 3.67) (MeOH).

Isaka, M. *et al., J.O.C.*, 2001, **66**, 4803-4808

Coriacenine A C-648

[182011-67-2]



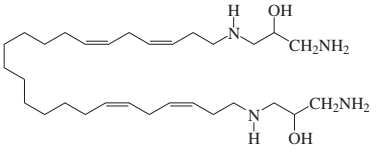
$C_{28}H_{58}N_4O_2$ 482.792
Alkaloid from the sponge *Clathrina coriacea*. Yellow oil (as per-Ac). $[\alpha]_D$ -6.1 (c, 0.24 in $CHCl_3$) (per-Ac).

Didehydro: ***Coriacenine B***
[182265-33-4]
$C_{28}H_{56}N_4O_2$ 480.776
Alkaloid from *Clathrina coriacea*. Yellow oil (as per-Ac). $[\alpha]_D$ -6.3 (c, 0.08 in $CHCl_3$) (per-Ac). Posn. of double bond not known, but is located between the other 2 double bonds.

Casapullo, A. *et al., J.O.C.*, 1996, **61**, 7415-7419

Coriacenine D C-649

[182011-68-3]



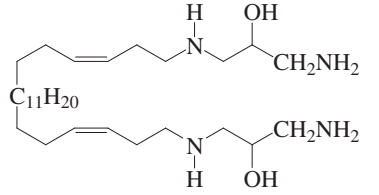
$C_{30}H_{58}N_4O_2$ 506.814
Alkaloid from the sponge *Clathrina coriacea*. Yellow oil (as per-Ac). $[\alpha]_D$ -10 (c, 0.36 in $CHCl_3$).

Dihydro: ***Coriacenine C***
[182149-41-3]
$C_{30}H_{60}N_4O_2$ 508.83
Alkaloid from *Clathrina coriacea*. Yellow oil (as per-Ac). $[\alpha]_D$ -6.2 (c, 0.16 in $CHCl_3$). Posn. of one double bond not determined.

Casapullo, A. *et al., J.O.C.*, 1996, **61**, 7415-7419

Coriacenine E C-650

[182149-43-5]

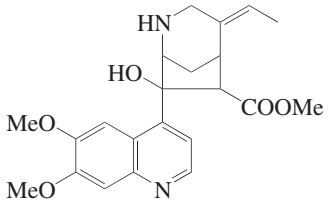


$C_{29}H_{58}N_4O_2$ 494.803
Posn. of one double bond not determined. Alkaloid from the sponge *Clathrina coriacea*. Yellow oil.

Casapullo, A. *et al., J.O.C.*, 1996, **61**, 7415-7419 (*isol, struct*)

Corialstonidine C-651

[155416-41-4]



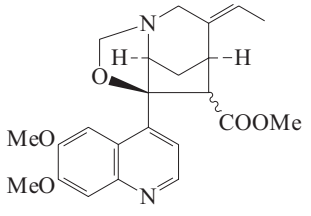
$C_{22}H_{26}N_2O_5$ 398.458

Stereochem. not reported but prob. the same as for Corialstonine, C-652. Alkaloid from *Alstonia coriacea*. Shows minor antimalarial activity (*ca*. 10% of quinine). No phys. props. reported.

Phillipson, J.D. *et al., J. Ethnopharmacol.*, 1993, **40**, 41-45 (*isol*)

Corialstonine C-652

[113145-60-1]



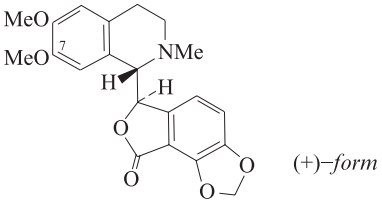
$C_{23}H_{26}N_2O_5$ 410.469

Alkaloid from the stem bark of *Alstonia coriacea* (Apocynaceae). Shows minor antimalarial activity (approx.10% that of quinine). Amorph. $[\alpha]_D$ +102 (c, 1 in $CHCl_3$).

Cherif, A. *et al., Phytochemistry*, 1989, **28**, 667-670 (*isol, uv, ir, pmr, cmr, ms, struct*)

Corlumine C-653

6-(1,2,3,4-Tetrahydro-6,7-dimethoxy-2-methyl-1-isoquinolinyl)furo[3,4-e]-1,3-benzodioxol-8(6H)-one, 9CI



(+)–*form*

$C_{21}H_{21}NO_6$ 383.4

Diastereoisomer of Adlumine, A-146.

(+)-*form* [485-51-8]

Alkaloid from *Corydalis scouleri, Corydalis govaniana, Corydalis nobilis, Corydalis severtzovii, Corydalis sibirica* and *Dicentra cucullaria* (Papaveraceae). GABA antagonist. Convulsive agent. Mp 162° (159°). $[\alpha]_D^{26}$ +77 (c, 1.13 in $CHCl_3$).

► GM3500000

O^7*-De-Me:* ***Corlumidine***

[25344-54-1]

$C_{20}H_{19}NO_6$ 369.373

Alkaloid from *Corydalis scouleri*. Cryst. ($CHCl_3$ or MeOH). Mp 236°. $[\alpha]_D^{23}$ +80 (c, 0.4 in $CHCl_3$).

Di-O-de-Me: ***Papraine***

[125263-86-7]

$C_{19}H_{17}NO_6$ 355.346

Alkaloid from whole plant of *Fumaria indica* (Papaveraceae). Amorph. solid. $[\alpha]_D^{24}$ +25.

(-)-*form* [79082-64-7]

Alkaloid from *Fumaria parviflora* (Papaveraceae). Mp 158-160° dec. (synthetic). $[\alpha]_D^{26}$ -73 (c, 1.32 in $CHCl_3$) (synthetic). Natural alkaloid obt. as an oil, characterised by CD.

(±)-*form* [64397-12-2]

Synthetic. Mp 175-176°.

[130480-92-1]

Manske, R.H.F. *et al., Can. J. Res., Sect. B*, 1936, **14**, 325; 347 (*isol, Corlumine, Corlumidine*)

Edwards, O.E. *et al., Can. J. Chem.*, 1961, **39**, 1801 (*isol, uv, ir, pmr*)

Safe, S. *et al., Can. J. Chem.*, 1964, **42**, 160 (*pmr, config*)

Bláha, K. *et al., Coll. Czech. Chem. Comm.*, 1964, **29**, 2328 (*isol*)

Yunusov, M.S. *et al., Khim. Prir. Soedin.*, 1968, **4**, 61; *Chem. Nat. Compd. (Engl. Transl.)*, 1968, **4**, 54 (*isol*)

Snatzke, G. *et al., Tetrahedron*, 1969, **25**, 5059 (*ord, abs config*)

Shamma, M. *et al., Tet. Lett.*, 1974, 2339 (*pmr, synth*)

Israilov, I.A. *et al., Khim. Prir. Soedin.*, 1975, **11**, 612; 811; 1978, **14**, 103; 465; *Chem. Nat. Compd. (Engl. Transl.)*, 1975, **11**, 642; 826; 1978, **14**, 82; 395 (*isol, cd*)

Hughes, D.W. *et al., Can. J. Chem.*, 1976, **54**, 2252 (*cmr*)

Nalliah, B.C. *et al., Can. J. Chem.*, 1979, **57**, 1546 (*synth*)

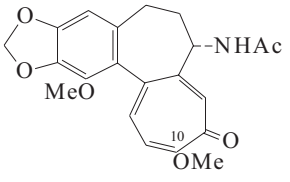
Blaskó, G. *et al., J. Nat. Prod.*, 1981, **44**, 475 (*isol*)

Huber, I.M.P. *et al., Helv. Chim. Acta*, 1987, **70**, 1944 (*synth, ir, pmr, cmr, ms*)

Atta-ur-Rahman, *et al., Heterocycles*, 1989, **29**, 1091 (*Papraine*)

Seger, C. *et al., Magn. Reson. Chem.*, 2004, **42**, 882-886 (*pmr, cmr*)

Cornigerine C-654



$C_{21}H_{21}NO_6$ 383.4

(*S*)-*form* [6877-25-4]

Alkaloid from *Colchicum cornigerum, Colchicum cilicicum, Iphigenia bechuanica, Iphigenia indica, Iphigenia pallida, Androcymbium melanthioides* and *Camptorrhiza strumosa*. Reported to exhibit similar biol. activity to Colchicine, C-569. Prisms (EtOAc/Et_2O). Sol. MeOH, $CHCl_3$. Mp 268-270°. $[\alpha]_D^{20}$ -150 (c, 0.631 in $CHCl_3$). $[\alpha]_D^{20}$ -233 (c, 0.728 in MeOH).

► AC8587000

O^{10}*-De-Me: Cornigereine*

Alkaline saponification prod. of Cornigerine. Yellow prisms (EtOAc or Me_2CO). Mp 168-170°. $[\alpha]_D^{22}$ -222 (c, 0.758 in $CHCl_3$). $[\alpha]_D^{22}$ -245 (c, 0.700 in MeOH).

4-Methoxy: ***Gloriosamine A***

[1006585-02-9]

$C_{22}H_{23}NO_7$ 413.426

Alkaloid from *Gloriosa rothschildiana*. Amorph. solid. $[\alpha]_D^{25}$ -35 (c, 0.1 in $CHCl_3$). λ_{max} 218 ; 235 ; 351 (EtOH).

4-Methoxy, N-*de-Ac,* N-*(hydroxyacetyl):* ***Gloriosamine B***

[1006585-03-0]

$C_{22}H_{23}NO_8$ 429.426

Alkaloid from *Gloriosa rothschildiana*. Amorph. solid. $[\alpha]_D^{25}$ -60 (c, 0.1 in $CHCl_3$). λ_{max} 219 ; 235 ; 351 (EtOH).

El-Hamidi, A. *et al., Coll. Czech. Chem. Comm.*, 1962, **27**, 2111 (*isol, uv, ir*)

Cross, A.D. *et al., Coll. Czech. Chem. Comm.*, 1964, **29**, 1187 (*pmr, ms*)

Kaul, J.L. *et al., Coll. Czech. Chem. Comm.*, 1964, **29**, 1689 (*isol*)

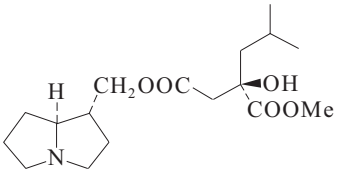
Rösner, M. *et al., J.O.C.*, 1981, **46**, 3686 (*struct, ir, pmr, synth*)

Potěšilová, H. *et al., Planta Med.*, 1985, 344 (*isol*)

Kitajima, M. *et al., Tet. Lett.*, 2008, **49**, 257-260 (*Gloriosamines A,B*)

Cornucervine C-655

[31948-48-8]

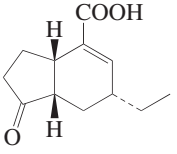


$C_{17}H_{29}NO_5$ 327.42

Ester of Trachelanthamidine in H-629. Alkaloid from *Phalaenopsis cornu-cervi* (Orchidaceae). Oil. $[\alpha]_D^{22}$ -4.3 (c, 1.6 in EtOH).

Brandänge, S. *et al., Acta Chem. Scand.*, 1971, **25**, 349; 1973, **27**, 3668 (*isol, struct, abs config*)

Coronafacic acid C-656



$C_{12}H_{16}O_3$ 208.257

(+)-*form* [62251-98-3]

The unatural racemic form also prepd. A component of Coronatine. Also isol. from *Pseudomonas coronofaciens* and *Pseudomonas syringae*. Prisms (diisopropyl ether). Mp 142-143°. $[\alpha]_D^{20}$ +119.1 (c, 3.3 in MeOH).

L-Serine amide: **N-*Coronafacoylserine***

$C_{15}H_{21}NO_5$ 295.335

Prod. by *Pseudomonas syringae*. Chlorosis inducer.

L-Threonine amide: **N-*Coronafacoyl-threonine***
$C_{16}H_{23}NO_5$ 309.361
Prod. by *Pseudomonas syringae*. Chlorosis inducer.

L-Isoleucine amide: **N-*Coronafacoylisoleucine***
[73344-10-2]
$C_{18}H_{27}NO_4$ 321.416
Prod. by *Pseudomonas syringae* var. *glycinea*. Chlorosis inducer. Intermediate in biosynth. of Coronatine. Powder. Mp 53-55°. $[\alpha]_D^{15}$ +44 (c, 2.25 in MeOH). λ_{max} 227 ; 265 ; 275 ; 294 ; 300 (MeOH) (Berdy).

L-Alloisoleucine amide: **N-*Coronafacoyl-alloisoleucine***
[99630-78-1]
$C_{18}H_{27}NO_4$ 321.416
Prod. by *Pseudomonas syringae* var. *glycinea*. Chlorosis inducer. Intermediate in Coronatine biosynth.

L-Valine amide: **N-*Coronafacoylvaline***
[91793-99-6]
$C_{17}H_{25}NO_4$ 307.389
Prod. by *Pseudomonas syringae*. Chlorosis inducer. λ_{max} 227 ; 265 ; 275 ; 294 ; 300 (MeOH) (Berdy).

*3*a-*Epimer:* [87335-74-8]
Prisms. Mp 142-143°. $[\alpha]_D^{20}$ -119 (c, 0.86 in MeOH).

*7*a-*Epimer:* [62251-99-4]
Formed in hydrol. of Coronatine. Mp 141-142°.

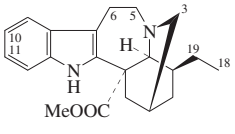
(±)-*form* [66322-23-4]
Mp 130-132°.

[92843-35-1]

Shiraishi, K. *et al., Agric. Biol. Chem.*, 1979, **43**, 1753-1757 (*amino acid amides, synth, bibl*)
Ohira, S. *et al., Bull. Chem. Soc. Jpn.*, 1984, **57**, 1902-1907 (*(±)-form, synth, resoln*)
Liu, H.J. *et al., Can. J. Chem.*, 1984, **62**, 1747-1750 (*(±)-form, synth*)
Mitchell, R.E. *et al., Phytochemistry*, 1984, **23**, 791-793; 1985, **24**, 2716-2717 (*amino acid amides, isol*)
Hoelder, S. *et al., Synlett*, 1996, 505-506 (*synth*)
Toshima, H. *et al., Biosci., Biotechnol., Biochem.*, 1997, **61**, 752-753 (*(+)-form, synth*)
Nara, S. *et al., Tetrahedron*, 1997, **53**, 9509-9524 (*(+)-form, synth*)
Mitchell, R.E. *et al., Phytochemistry*, 1998, **49**, 1579-1583 (*amides*)
Sono, M. *et al., Tet. Lett.*, 2000, **41**, 5115-5118 (*(+)-form, synth*)
Mehta, G. *et al., J.C.S. Perkin 1*, 2001, 1153-1161 (*(+)-form, synth*)
Moreau, B. *et al., J.O.C.*, 2007, **72**, 1235-1240 (*(±)-form, synth*)

Coronaridine C-657

Carbomethoxyibogamine
[467-77-6]



Absolute Configuration

$C_{21}H_{26}N_2O_2$ 338.449
Alkaloid from *Tabernaemontana coronaria* (*Ervatamia coronaria*), *Tabernaemontana divaricata*, *Tabernanthe iboga*, *Tabernanthe pubescens* and many other spp. in Apocynaceae. Noncryst. Mp 235° dec. (as hydrochloride). $[\alpha]_D^{25}$ -8.5 (c, 1 in MeOH) (hydrochloride). λ_{max} 244 (ϵ 35500); 284 (ϵ 7850); 292 (ϵ 6780) (MeOH). λ_{max} 225 ; 285 ; 293 (EtOH).

5,6-Didehydro: ***5,6-Dehydrocoronaridine***
[162229-93-8]
$C_{21}H_{24}N_2O_2$ 336.433
Alkaloid from bark of *Tabernaemontana markgrafiana* (Apocynaceae). Amorph. Unstable; dec. in $CHCl_3$.

*3*R-*Hydroxy:* ***Eglandine***. *3-Hydroxycoronaridine*
[53508-36-4]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from *Gabunia eglandulosa* (preferred genus name *Tabernaemontana*), *Tabernanthe iboga* and *Muntafara sessilifolia* (preferred genus name *Tabernaemontana*) (Apocynaceae). Shows strong antibiotic activity. Noncryst. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. $[\alpha]_D$ -57 ($CHCl_3$). Struct. revised in 1985 (originally described as 3,6-Oxidocoronaridine). Some isolates of 3-hydroxycoronaridine were of undetd. C3-config. but their props. were closely similar to those of Eglandine. λ_{max} 228 (log ϵ 4.41); 285 (log ϵ 3.9); 292 (log ϵ 3.86) (MeOH).

*3*R-*Methoxy:* ***3*R-*Methoxycoronaridine***
[162229-94-9]
$C_{22}H_{28}N_2O_3$ 368.475
Alkaloid from bark of *Tabernaemontana markgrafiana* (Apocynaceae). Amorph. light yellow solid. $[\alpha]_D$ -44 (c, 0.3 in $CHCl_3$).

*3*R-*Ethoxy:* ***3-Ethoxycoronaridine***
[74627-73-9]
$C_{23}H_{30}N_2O_3$ 382.502
Alkaloid from *Tabernanthe glandulosa* (Apocynaceae). $[\alpha]_D^{20}$ -59. 3-Config. undetd. but prob. *R*-. λ_{max} 225 (log ϵ 4.51); 286 (log ϵ 3.92); 292 (log ϵ 3.88) (no solvent reported).

18-Hydroxy: ***Albifloranine***
[77431-58-4]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from the stem bark of *Tabernaemontana albiflora* (Apocynaceae). Cryst. (MeOH). Mp 192-194°. $[\alpha]_D^{20}$ -210 (c, 1 in $CHCl_3$).

*19*R-*Hydroxy:* ***19-Epiheyneanine***
[57511-56-5]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from *Pandaca mocquerysii* var. *pendula* and the root bark of *Peschiera affinis* (Apocynaceae). Cryst. (cyclohexane). Mp 170-172°. $[\alpha]_D^{24}$ -46 ($CHCl_3$). λ_{max} 226 (ϵ 26900); 280 (ϵ 5500); 285 (ϵ 6200); 293 (ϵ 5300) (EtOH).

*19*S-*Hydroxy:* ***Heyneanine***
[4865-78-5]
[76129-69-6]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from *Ervatamia heyneana* (preferred genus name *Tabernaemontana*), *Tabernaemontana sananho*, *Conopharyngia jollyana* and *Pandaca* spp. (Apocynaceae). Shows mod. cytotoxicity *vs.* mouse P388 carcinoma cells. Mp 105-107° Mp 160-162° (dimorph.). $[\alpha]_D^{30}$ -19 (c, 0.8 in $CHCl_3$). λ_{max} 224 (log ϵ 4.71); 284 (log ϵ 4.33); 292 (log ϵ 4.27) (MeOH).

*3-Ethoxy, 19*R-*hydroxy:* ***3-Ethoxy-19-epiheyneanine***
[437764-35-7]
$C_{23}H_{30}N_2O_4$ 398.501
Alkaloid from *Tabernaemontana corymbosa*. Oil. Isol. as a 1:1 mixt. of 3*R*- and 3*S*-isomers. λ_{max} 225 (log ϵ 3.91); 285 (log ϵ 3.29); 292 (log ϵ 3.23) (EtOH).

*3-Ethoxy, 19*S-*hydroxy:* ***3-Ethoxyheyneanine***
[437764-34-6]
$C_{23}H_{30}N_2O_4$ 398.501
Alkaloid from *Tabernaemontana corymbosa*. Oil. Isol. as a 1:1 mixt. of 3*R*- and 3*S*-isomers. λ_{max} 225 (log ϵ 3.94); 285 (log ϵ 3.33); 292 (log ϵ 3.26) (EtOH).

*18,19*R-*Dihydroxy:* ***18,19*R-*Dihydroxycoronaridine***
[167696-84-6]
$C_{21}H_{26}N_2O_4$ 370.447
Alkaloid from stem bark of *Peschiera buchtieni* (Apocynaceae). $[\alpha]_D$ -6 (c, 0.3 in MeOH). λ_{max} 213 ; 228 (sh) ; 275 (sh) ; 285 ; 294 (MeOH).

3-Oxo: ***Eglandulosine***. *3-Oxocoronaridine*
[53508-33-1]
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from *Tabernanthe dichotoma, Gabunia eglandulosa* and *Muntafara sessilifolia* (Apocynaceae). Noncryst. $[\alpha]_D$ -71 ($CHCl_3$). Struct. revised in 1985; originally descr. as 6-Hydroxy-3-oxocoronaridine. An alkaloid given this struct. was earlier detected by ms in *Conopharyngia jollyana* (Hootele *et al*, 1968), but it is not clear that it is the same as Eglandulosine.

*3-Oxo, 19*R-*hydroxy:* ***3-Oxo-19-epiheyneanine***
[131670-18-3]
$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from the leaves and stem bark of *Ervatamia polyneura* (Apocynaceae). $[\alpha]_D$ -49 (c, 0.5 in $CHCl_3$).

*3-Oxo, 19*ξ-*hydroxy:* ***19-Hydroxy-3-oxocoronaridine***
$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid detected by ms in *Conopharyngia jollyana* (Apocynaceae).

5-Oxo: ***5-Oxocoronaridine***
[76129-70-9]
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from the root bark of *Tabernaemontana divaricata* (Apocynaceae). Mp 272-275°. $[\alpha]_D^{25}$ -10.7 (Py). λ_{max} 229 ; 285 ; 292 (MeOH).

6-Oxo: ***6-Oxocoronaridine***
[76129-71-0]
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from the root bark of *Tabernaemontana divaricata* (Apocynaceae).

Mp 262-267°. $[\alpha]_D^{25}$ -33.8 (MeOH). λ_{max} 218 ; 255 ; 260 (sh) ; 268 (sh) ; 335 (MeOH).

6-Oxo, 5-hydroxy: ***5-Hydroxy-6-oxocoronaridine***
[76129-72-1]
$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from the root bark of *Tabernaemontana divaricata* (Apocynaceae). Mp 285-288°. $[\alpha]_D^{25}$ +43.8 (Py). λ_{max} 215 ; 248 ; 263 (sh) ; 267 (sh) ; 310 (MeOH).

5,6-Dioxo: ***5,6-Dioxocoronaridine***
[909120-04-3]
$C_{21}H_{22}N_2O_4$ 366.416
Alkaloid from the roots of *Ervatamia hainanensis.*

10-Methoxy: see Voacangine, V-170

11-Methoxy: see Isovoacangine, I-344

10,11-Dimethoxy: see Conopharyngine, C-620

*3*S*-Cyano:* ***3S-Cyanocoronaridine***
[746642-97-7]
$C_{22}H_{25}N_3O_2$ 363.458
Alkaloid from the stem bark of *Tabernaemontana divaricata*. Cytotoxic. Light yellow oil. $[\alpha]_D$ -64 (c, 1.72 in $CHCl_3$). λ_{max} 225 (log ϵ 4.68); 276 (log ϵ 4.02); 285 (log ϵ 4.06); 293 (log ϵ 4.01) (EtOH).

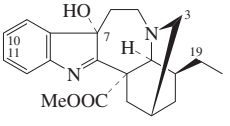
(±)-*form* [14853-22-6]

19-Hydroxy: ***(±)-19-Hydroxycoronaridine***
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from the root bark of *Tabernaemontana divaricata* (Apocynaceae). Mp 159°. Identity with (±)-Heyneanine not clearly establ. λ_{max} 230 ; 285 ; 294 (MeOH).

Gorman, M. *et al., J.A.C.S.*, 1960, **82**, 1142-1145 (*isol, struct*)
Govindachari, T.R. *et al., Tet. Lett.*, 1965, 3873-3878 (*Heyneanine, isol, uv, ir, pmr, ms, struct*)
Govindachari, T.R. *et al., Chem. Comm.*, 1966, 97 (*struct*)
Hirai, S. *et al., Chem. Comm.*, 1968, 1016-1017 (*synth, ir, uv*)
Hootele, C. *et al., Chimia*, 1968, **22**, 245-246 (*3-Oxocoronaridine, 19-Hydroxy-3-oxocoronaridine*)
Kutney, J.P. *et al., J.A.C.S.*, 1970, **92**, 1708-1712; 1973, **95**, 5407-5409 (*synth, cryst struct, config*)
Le Men, J. *et al., Bull. Soc. Chim. Fr.*, 1974, 1369-1372 (*Eglandine, Eglandulosine*)
Bláha, K. *et al., Coll. Czech. Chem. Comm.*, 1974, **39**, 2258-2266 (*abs config, bibl*)
Panas, J.M. *et al., Phytochemistry*, 1975, **14**, 1120-1122 (*Eglandulosine, isol, ms*)
De Bellefon, M. *et al., Phytochemistry*, 1975, **14**, 1649-1652 (*19-Epiheyneanine*)
Wenkert, E. *et al., Helv. Chim. Acta*, 1976, **59**, 2437 (*cmr*)
Matos, F.J.A. *et al., Phytochemistry*, 1976, **15**, 551-553 (*19-Epiheyneanine*)
Achenbach, H. *et al., Phytochemistry*, 1980, **19**, 716-717; 2185-2188 (*3-Ethoxycoronaridine*)
Rastogi, K. *et al., Phytochemistry*, 1980, **19**, 1209-1212 (*Tabernaemontana divaricata constits*)
Gunasekara, S.P. *et al., Phytochemistry*, 1980, **19**, 1213-1218 (*Coronaridine, Heyneanine, isol, activity*)
Kan, C. *et al., Planta Med.*, 1981, **41**, 72-74 (*Albifloranine*)
Le Men-Olivier, L. *et al., Bull. Soc. Chim. Fr.*, 1985, 94-97 (*Eglandine, struct, pmr, cmr*)
Okuyama, E. *et al., Chem. Pharm. Bull.*, 1992, **40**, 2075-2079 (*5-(2-Oxopropyl)coronaridine*)
Bornmann, W.G. *et al., J.O.C.*, 1992, **57**, 1752-1760 (*synth*)
Nielsen, H.B. *et al., Phytochemistry*, 1994, **37**, 1729-1735 (*5,6-Dehydrocoronaridine, 3R-Methoxycoronaridine*)
Azoug, M. *et al., Phytochemistry*, 1995, **39**, 1223-1228 (*18,19-Dihydroxycoronaridine*)
Bandarage, U.K. *et al., Tetrahedron*, 1999, **55**, 9405-9424 (*Albifloranine, synth*)
Kuehne, M.E. *et al., Tetrahedron*, 2001, **57**, 2085-2094 (*synth*)
Kam, T.-S. *et al., J. Nat. Prod.*, 2002, **65**, 669-672 (*3-Ethoxyheyneanine, 3-Ethoxy-19-epiheyneanine*)
Kam, T.-S. *et al., Chem. Biodiversity*, 2004, **1**, 646-656 (*3S-Cyanocoronaridine*)
Huang, J.P. *et al., Chin. Chem. Lett.*, 2006, **17**, 779-782 (*5,6-Dioxocoronaridine*)
Pereira, P.S. *et al., Quim. Nova*, 2008, **31**, 20-24 (*pmr, cmr*)

Coronaridine hydroxyindolenine C-658

[16671-16-2]



Absolute Configuration

$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from *Conopharyngia durissima*, from the root bark of *Tabernaemontana divaricata*, from bark of *Tabernaemontana markgrafiana* and roots of *Tabernaemontana quadrangularis* (Apocynaceae). Mp 113-117° (98-100°). $[\alpha]_D$ -8 (EtOH). $[\alpha]_D^{25}$ -16 (MeOH). λ_{max} 225 (log ϵ 4.45); 271 (log ϵ 3.79); 285 (log ϵ 3.95); 295 (log ϵ 3.92); 314 (sh) (log ϵ 3.48) (MeOH).

Hydrochloride:
Cryst. (MeOH/Me_2CO). Mp 278-279°.

*19*S*-Hydroxy:* ***Heyneanine hydroxyindolenine***
[80151-98-0]
$C_{21}H_{26}N_2O_4$ 370.447
Alkaloid from whole plant of *Ervatamia coronaria* var. *plena* (Apocynaceae). Amorph. powder. Epimeric 9-OH config. shown in the paper. λ_{max} 223 ; 282 (MeOH).

*10-Methoxy, 19*R*-hydroxy:* ***19-Epivoacristine hydroxyindolenine***
[18646-17-8]
$C_{22}H_{28}N_2O_5$ 400.474
Alkaloid from *Tabernaemontana calcarea*. Oil. $[\alpha]_D$ +6 (c, 0.36 in $CHCl_3$). λ_{max} 220 (log ϵ 3.92); 283 (log ϵ 4.12); 292 (log ϵ 3.76); 302 (log ϵ 3.62); 316 (log ϵ 3.51) (MeOH).

*10-Methoxy, 19*S*-hydroxy:* ***Voacristine hydroxyindolenine***
[15215-86-8]
$C_{22}H_{28}N_2O_5$ 400.474
Alkaloid from the root bark of *Ervatamia dichotoma* (Apocynaceae). Cryst. (C_6H_6/petrol). Mp 176-179° dec. $[\alpha]_D^{26}$ -22 (c, 0.51 in $CHCl_3$). 7-Config. unspecified. λ_{max} 230 (ϵ 12380); 268 (ϵ 4400); 291 (ϵ 4780); 300 (sh) (ϵ 4410); 314 (ϵ 3810) (EtOH).

10,11-Dimethoxy: ***Jollyanine***† *Conopharyngine hydroxyindolenine*
[16671-17-3]
$C_{23}H_{30}N_2O_5$ 414.5
Alkaloid from *Conopharyngia jollyana* and *Tabernaemontana cumminsii* (Apocynaceae). Cryst. (MeOH). Mp 161-163°. $[\alpha]_D^{22}$ -56 (c, 0.6 in $CHCl_3$). 7-Config. undefined. λ_{max} 217 (ϵ 13800); 238 (ϵ 13300); 300 (ϵ 4700) (no solvent reported).

10,11-Dimethoxy, 3-hydroxy: ***3-Hydroxyconopharyngine hydroxyindolenine***
[93627-66-8]
$C_{23}H_{30}N_2O_6$ 430.5
Trace alkaloid from the root bark of *Tabernaemontana chippii* (Apocynaceae). Mixt. of epimers. Ratio 3R:3S = 1:1. Probably an artifact. λ_{max} 232 ; 298 ; 306 (sh) ; 328 (sh) (MeOH).

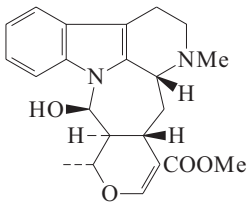
7-Epimer, 10-methoxy: ***Voacangine hydroxyindolenine***
[3464-63-9]
$C_{22}H_{28}N_2O_4$ 384.474
Alkaloid from *Voacanga africana, Tabernaemontana markgrafiana, Tabernaemontana quadrangularis* and *Peschiera campestris* (Apocynaceae). Shows mod.-weak cytotoxic activity. Cryst. (Et_2O) or amorph. yellow-green solid. Mp 135-137° (129-132°). $[\alpha]_D$ -26 (c, 1.1 in $CHCl_3$) (-18). λ_{max} 228 (log ϵ 4.44); 272 (log ϵ 3.78); 286 (log ϵ 3.79); 293 (log ϵ 3.78); 313 (sh) (log ϵ 3.68) (MeOH).

Hootele, C. *et al., Bull. Soc. Chim. Belg.*, 1967, **76**, 303-307 (*Jollyanine*)
Das, B.C. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1967, **264**, 1765-1767 (*isol, ir, uv, ms, struct*)
Schnoes, H.K. *et al., J.O.C.*, 1968, **33**, 1225-1227 (*Voacristine hydroxyindolenine*)
Thomas, D.W. *et al., Tetrahedron*, 1968, **24**, 4223-4231 (*Voacangine hydroxyindolenine*)
Hwang, B. *et al., J.O.C.*, 1969, **34**, 412-415 (*Voacristine hydroxyindolenine, synth*)
Crooks, P.A. *et al., J. Pharm. Pharmacol.*, 1970, **22**, 471-472 (*Jollyanine*)
Harmouche, A. *et al., Ann. Pharm. Fr.*, 1976, **34**, 31-35 (*pmr*)
Rastogi, K. *et al., Phytochemistry*, 1980, **19**, 1209-1212 (*isol, uv, ir, pmr, ms*)
Achenbach, H. *et al., Z. Naturforsch., B*, 1980, **35**, 219-225 (*Coronaridine hydroxyindolenine, Voacangine hydroxyindolenine, isol, uv, ir, ms, cd, abs config*)
Van Beek, T.A. *et al., J. Nat. Prod.*, 1985, **48**, 400-428 (*3-Hydroxyconopharyngine hydroxyindolenine*)
Gower, A.E. *et al., Phytochemistry*, 1986, **25**, 2908-2910 (*Voacangine hydroxyindolenine*)
Sharma, P. *et al., J. Nat. Prod.*, 1988, **51**, 528-531 (*Heyneanine hydroxyindolenine*)
Nielsen, H.B. *et al., Phytochemistry*, 1994, **37**, 1729-1735 (*Voacangine hydroxyindolenine*)
Madinaveitia, A. *et al., Helv. Chim. Acta*, 1998, **81**, 1645-1653 (*Voacangine hydroxyindolenine, abs config*)
Chaturvedula, V.S.P. *et al., J. Nat. Prod.*, 2003, **66**, 528-531 (*19-Epivoacristine hydroxyindolenine*)

Pereira, P.S. *et al., Quim. Nova*, 2008, **31**, 20-24 (*pmr, cmr*)

Correantine A C-659

[164178-50-1]



$C_{22}H_{26}N_2O_4$ 382.458
Alkaloid from leaves of *Psychotria correae* (*Cephaelis correae*) (Rubiaceae). Amorph. $[\alpha]_D^{21}$ +211 (c, 0.31 in MeOH).

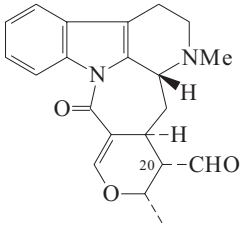
3-Epimer: ***3-Isocorreantine A***
$C_{22}H_{26}N_2O_4$ 382.458
Formed *in vitro* by enzymatic hydrol. of Dolichantoside in S-583.

Achenbach, H. *et al., Phytochemistry*, 1995, **38**, 1537 (*isol, uv, ir, pmr, cmr, ms, cd, struct*)

Gerasimenko, I. *et al., Eur. J. Biochem.*, 2002, **269**, 2204-2213 (*biosynth, 3-Isocorreantine A*)

Correantine B C-660

[164178-51-2]



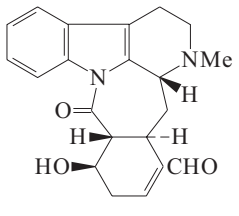
$C_{21}H_{22}N_2O_3$ 350.416
Alkaloid from leaves of *Psychotria correae* (*Cephaelis correae*) (Rubiaceae). Amorph. $[\alpha]_D^{21}$ -81 (c, 0.18 in MeOH).

20-Epimer: ***20-Epicorreantine B***
[164322-84-3]
$C_{21}H_{22}N_2O_3$ 350.416
Alkaloid from leaves of *Psychotria correae* (*Cephaelis correae*) (Rubiaceae). Amorph. $[\alpha]_D^{21}$ -102 (c, 0.10 in MeOH). Poss. artifact.

Achenbach, H. *et al., Phytochemistry*, 1995, **38**, 1537 (*isol, uv, ir, pmr, cmr, ms, cd, struct*)

Correantine C C-661

[164178-49-8]

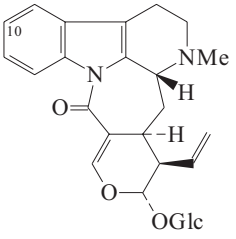


$C_{21}H_{22}N_2O_3$ 350.416
Alkaloid from leaves of *Psychotria correae* (*Cephaelis correae*) (Rubiaceae). Amorph. $[\alpha]_D^{21}$ -177 (c, 0.2 in MeOH).

Achenbach, H. *et al., Phytochemistry*, 1995, **38**, 1537 (*isol, uv, ir, pmr, cmr, ms, cd, struct*)

Correantoside C-662

[164178-48-7]



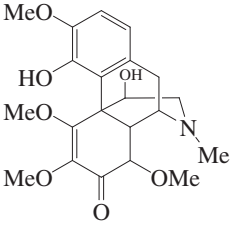
$C_{27}H_{32}N_2O_8$ 512.558
Alkaloid from leaves and roots of *Psychotria correae* (*Cephaelis correae*) (Rubiaceae). Amorph. $[\alpha]_D^{21}$ -83 (c, 0.32 in MeOH).

10-Hydroxy: ***10-Hydroxycorreantoside***
[164032-50-2]
$C_{27}H_{32}N_2O_9$ 528.558
Alkaloid from leaves of *Psychotria correae* (*Cephaelis correae*) (Rubiaceae). Amorph. $[\alpha]_D^{21}$ -43 (c, 0.11 in MeOH).

Achenbach, H. *et al., Phytochemistry*, 1995, **38**, 1537 (*isol, uv, ir, pmr, cmr, ms, cd, struct*)

Corsutine C-663

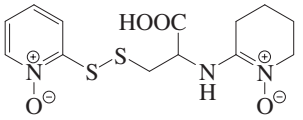
[866776-05-8]



$C_{21}H_{27}NO_7$ 405.447
Alkaloid from *Cocculus hirsutus*. λ_{max} 270 (MeOH).

Yadav, S.B. *et al., Indian J. Chem., Sect. B*, 2005, **44**, 212-214 (*isol, pmr, struct*)

Cortamidine oxide C-664

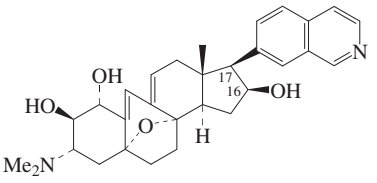


$C_{13}H_{17}N_3O_4S_2$ 343.427
Isol. from *Cortinarius* sp. $[\alpha]_D^{22}$ -10 (c, 0.03 in MeOH). Possible artifact. λ_{max} 190 ; 240 (MeOH).

Nicholas, G.M. *et al., J. Nat. Prod.*, 2001, **64**, 341-344

Cortistatin B C-665

[882976-96-7]



$C_{30}H_{36}N_2O_4$ 488.625
Alkaloid from the sponge *Corticium simplex*. Anti-angiogenic agent. $[\alpha]_D^{20}$ +15.6 (c, 0.27 in MeOH). λ_{max} 224 (ϵ 44400) (MeOH).

16-Ketone: ***Cortistatin C***
[882976-97-8]
$C_{30}H_{34}N_2O_4$ 486.61
Alkaloid from *Corticium simplex*. $[\alpha]_D^{20}$ -45 (c, 0.71 in MeOH). λ_{max} 222 (ϵ 49800) (MeOH).

17α-Hydroxy, 16-ketone: ***Cortistatin D***
[882976-98-9]
$C_{30}H_{34}N_2O_5$ 502.609
Alkaloid from *Corticium simplex*. $[\alpha]_D^{20}$ -37.1 (c, 0.45 in MeOH). λ_{max} 219 (ϵ 48900) (MeOH).

16-Deoxy: ***Cortistatin A***
[882976-95-6]
$C_{30}H_{36}N_2O_3$ 472.626
Alkaloid from *Corticium simplex*. $[\alpha]_D^{20}$ +30.1 (c, 0.56 in MeOH). λ_{max} 219 (ϵ 45600) (MeOH).

1,2,16-Trideoxy, 1,2-didehydro: ***Cortistatin J***
[944804-62-0]
$C_{30}H_{34}N_2O$ 438.611
Alkaloid from *Corticium simplex*. Exhibits cytostatic props. Powder. $[\alpha]_D^{20}$ -54 (c, 0.26 in $CHCl_3$). λ_{max} 223 (ϵ 46200); 269 (ϵ 3000); 280 (ϵ 8500); 293 (ϵ 21200) (MeOH).

Aoki, S. *et al., J.A.C.S.*, 2006, **128**, 3148-3149 (*isol, pmr, cmr, cryst struct*)

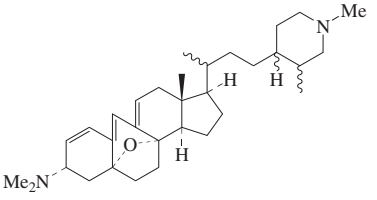
Aoki, S. *et al., Tet. Lett.*, 2007, **48**, 4485-4488 (*Cortistatin J*)

Shenvi, R.A. *et al., J.A.C.S.*, 2008, **130**, 7241-7243 (*Cortistatin A, synth*)

Lee, H.M. *et al., J.A.C.S.*, 2008, **130**, 16864-16866 (*Cortistatin A, synth*)

Cortistatine F C-666

[941271-08-5]

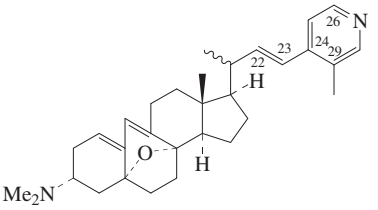


$C_{32}H_{50}N_2O$ 478.76
Isol. from the sponge *Corticium simplex*. Powder. $[\alpha]_D^{20}$ +142.7 (c, 0.2 in $CHCl_3$). λ_{max} 269 (ϵ 20900); 280 (ϵ 27800); 292 (ϵ 21700) (MeOH).

Watanabe, Y. *et al., Tetrahedron*, 2007, **63**, 4074-4079 (*isol, pmr, cmr*)

Cortistatine G C-667

[941271-09-6]



$C_{31}H_{42}N_2O$ 458.686
Isol. from the sponge *Corticium simplex*. Powder. $[\alpha]_D^{20}$ -52.7 (c, 0.88 in $CHCl_3$). λ_{max} 245 (ϵ 22600) (MeOH).

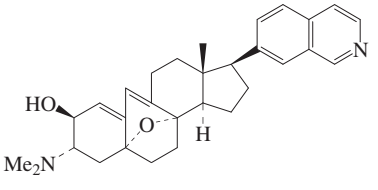
22,23-Dihydro: ***Cortistatine H***
[941271-10-9]
$C_{31}H_{44}N_2O$ 460.701
Isol. from *Corticium simplex*. Powder. $[\alpha]_D^{20}$ -57.8 (c, 0.34 in $CHCl_3$). λ_{max} 242 (ϵ 20200) (MeOH).

22,23,24ξ,25,26,27,28,29ξ-Octahydro, N-*Me:* ***Cortistatine E***
[941271-07-4]
$C_{32}H_{52}N_2O$ 480.776
Isol. from *Corticium simplex*. Powder. $[\alpha]_D^{20}$ -45 (c, 0.5 in $CHCl_3$). λ_{max} 242 (ϵ 22500) (MeOH).

Watanabe, Y. *et al., Tetrahedron*, 2007, **63**, 4074-4079 (*isol, pmr, cmr*)

Cortistatine L C-668

[944804-65-3]



$C_{30}H_{36}N_2O_2$ 456.627
Alkaloid from *Corticium simplex*. $[\alpha]_D^{20}$ -28.9 (c, 0.2 in $CHCl_3$). λ_{max} 224 (ϵ 55900) (MeOH).

2-Deoxy: ***Cortistatine K***
[944804-64-2]
$C_{30}H_{36}N_2O$ 440.627
Alkaloid from *Corticium simplex*.

Aoki, S. *et al., Tet. Lett.*, 2007, **48**, 4485-4488 (*isol, pmr, cmr, ms*)

Coruscine C-669

[1356-01-0]

$C_{18}H_{23}NO_5$ 333.383

Amaryllidaceae alkaloid. Struct. unknown. Isol. from the bulbs of *Nerine corusca* and *Brunsdonna tubergenii* (Amaryllidaceae). Prisms (Me_2CO). Mp 170°. $[\alpha]_D^{25}$ +70 (c, 0.5 in $CHCl_3$).

Hydroiodide:
Prisms (H_2O). Mp 179-180° dec.

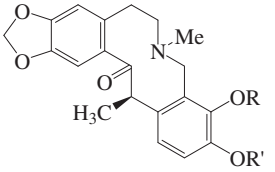
Methiodide:
Prisms (H_2O). Mp 311° dec.

Methyl perchlorate:
Rhombs (H_2O). Mp 278-280° dec.

Boit, H.-G. *et al., Chem. Ber.*, 1957, **90**, 369-373 (*isol, ir*)
Boit, H.-G. *et al., Naturwissenschaften*, 1960, **47**, 159 (*isol*)

Corycavamine C-670

*4,6,7,14-Tetrahydro-5,14-dimethyl-bis[1,3]benzodioxolo[4,5-c:5′,6′-g]azecin-13(5*H*)-one, 9CI. Corycavine*



(*R*)-*form*

RR' = —CH_2—

$C_{21}H_{21}NO_5$ 367.401
The name Corycavine was applied to the racemate.

(R)-form [521-85-7]
Alkaloid from root nodules of *Corydalis tuberosa* (Papaveraceae). Mp 148-149°. $[\alpha]_D^{20}$ +167 ($CHCl_3$).

(S)-form [144606-40-6]
Obt. by resoln. of the racemate. Needles. Mp 145-146°. $[\alpha]_D^{25}$ -170 (c, 1.3 in $CHCl_3$).

(±)-form [521-87-9]
Alkaloid from *Corydalis tuberosa, Corydalis incisa* and several other *Corydalis* spp. (Papaveraceae). Intermed. in biosynth. of Corynoline, C-692. Cardioactive agent. Plates (EtOH). Mp 221-222°.

Hydrochloride: Mp 219°.

Methiodide: Mp 220°.

Gardmer, J. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1902, **240**, 81 (*isol*)
Späth, E. *et al., Ber.*, 1927, **60**, 1892 (*struct*)
Kametani, T. *et al., Phytochemistry*, 1971, **10**, 1881 (*isol*)
Nonaka, G. *et al., Yakugaku Zasshi*, 1973, **93**, 87 (*isol*)
Takao, N. *et al., Chem. Pharm. Bull.*, 1976, **24**, 2859 (*biosynth*)
Iwasa, K. *et al., J.O.C.*, 1981, **46**, 4744 (*abs config*)
Kamigauchi, M. *et al., Helv. Chim. Acta*, 1987, **70**, 1482 (*cryst struct, pmr*)
Kamigauchi, M. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1992, **325**, 585 (*cd, abs config, resoln*)

Corycavidine C-671

*5,7,8,15-Tetrahydro-3,4-dimethoxy-6,15-dimethylbenzo[e][1,3]dioxolo[4,5-k][3]benzazecin-14(6*H*)-one, 9CI*
As Corycavamine, C-670 with R = R′ = Me

$C_{22}H_{25}NO_5$ 383.443

(+)-form [521-93-7]
Alkaloid from the root nodules of *Corydalis tuberosa* and the tubers of *Corydalis cava* (Papaveraceae). Prisms (MeOH). Mp 213-214°. $[\alpha]_D^{25}$ +200 (c, 0.24 in $CHCl_3$).

(±)-form [6018-34-4]
Alkaloid from the tubers of *Corydalis cava* (Papaveraceae). Cryst. (MeOH or $CHCl_3/Et_2O$). Mp 192-194°.

Methiodide:
Cryst. (Me_2CO). Mp 198°.

v. Bruchhausen, F. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1925, **263**, 570 (*struct*)
Govindachari, T.R. *et al., J. Sci. Ind. Res., Sect. B*, 1957, **16**, 506 (*synth, uv*)
Slavík, J. *et al., Coll. Czech. Chem. Comm.*, 1979, **44**, 2261 (*isol, uv, ir, ms*)

Corycidine C-672

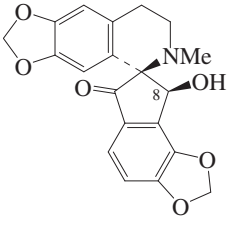
$C_{11}H_{11}NO_4$ 221.212

Struct. unknown. Alkaloid from *Corydalis stewartii* (Papaveraceae). Mp 290-291° dec.

Ikram, M. *et al., Pak. J. Sci. Ind. Res.*, 1966, **9**, 34-37; *CA*, **67**, 117031k

Corydaine C-673

*7,8-Dihydro-8′-hydroxy-6-methyl-spiro[1,3-dioloxo[4,5-g]isoquinoline-5(6*H*),7′-[7*H*]indeno[4,5-d][1,3]dioxol]-6′(8′*H*)-one, 9CI*



$C_{20}H_{17}NO_6$ 367.357

(+)-form [31456-80-1]
Alkaloid from *Corydalis paczoskii* and *Corydalis vaginans* (Papaveraceae). Cryst. (EtOH or Et_2O). Mp 184° Mp 189-189.5°. $[\alpha]_D^{22}$ +145 (c, 1.3 in $CHCl_3$). λ_{max} 236 (log ϵ 4.49); 290 (log ϵ 4.04); 314 (log ϵ 4.03) (EtOH).

8-Epimer: ***Sibiricine***
[24181-66-6]
$C_{20}H_{17}NO_6$ 367.357
Alkaloid from *Corydalis sibirica*, *Corydalis ledebouriana* and *Corydalis paniculigera* (Papaveraceae). Cryst. ($CHCl_3$/MeOH). Mp 225°. Opt. rotn. not recorded. λ_{max} 205 (log ϵ 4.8); 240 (log ϵ 3.94); 291 (log ϵ 3.91); 313 (sh) (log ϵ 3.99) (no solvent reported).

(±)-form [64397-09-7]
Synthetic. Cryst. (MeOH). Mp 127-129°.

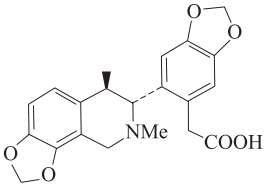
8-Epimer: [64397-10-0]
Synthetic. Cryst. (MeOH). Mp 223-225°.

Manske, R.H.F. *et al., Can. J. Chem.*, 1969, **47**, 3585-3588 (*Sibiricine, isol, ir, uv, pmr, struct*)
Baisheva, Kh.Sh. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1970, **6**, 465-467 (*isol, uv, ir, pmr, ms*)
Yu, C.K. *et al., Can. J. Chem.*, 1971, **49**, 3025-3037 (*Sibiricine, ms*)
Fesenko, D.A. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1971, **7**, 157-159 (*struct*)
Margvelashvili, N.N. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1976, **12**, 118-120 (*isol, uv, ir, pmr, ms*)
Nalliah, B.C. *et al., Can. J. Chem.*, 1977, **55**, 922-924; 1979, **57**, 1545-1549 (*Sibiricine, Corydaine, synth*)

McLean, S. *et al., Can. J. Chem.*, 1977, **55**, 924-925 (*synth*)
Hughes, D.W. *et al., Can. J. Chem.*, 1977, **55**, 3304-3311 (*Sibiricine, Corydaine, cmr*)
Nasirov, S.M. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1978, **14**, 640-645 (*Sibiricine, cryst struct*)
Hanaoka, M. *et al., Chem. Pharm. Bull.*, 1985, **33**, 2621-2623 (*Sibiricine, Corydaine, synth, ir, pmr*)
Kessar, S.V. *et al., Chem. Comm.*, 1994, 1327-1328 (*Sibiricine, Corydaine, synth*)

Corydalic acid C-674

[50802-23-8]



(+)–*form*

$C_{21}H_{21}NO_6$ 383.4

(+)-*form*
Liq. $[\alpha]_D$ +24.3 (c, 2.28 in $CHCl_3$).

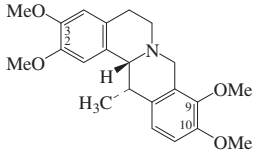
Me ester: ***Corydalic acid methyl ester***
$C_{22}H_{23}NO_6$ 397.427
Alkaloid from *Corydalis incisa* (Papaveraceae). Mp 140-141°. $[\alpha]_D$ +85.4 (c, 0.68 in $CHCl_3$).

(±)-*form*
Me ester: [88610-31-5]
Synthetic. Cryst. ($CHCl_3$/hexane). Mp 144-147°.

Nonaka, G. *et al., Chem. Pharm. Bull.*, 1973, **21**, 1020 (*ir, uv, ms, pmr, isol, struct*)
Yagi, A. *et al., Phytochemistry*, 1977, **16**, 1197 (*biosynth*)
Iwasa, K. *et al., Tet. Lett.*, 1981, 2333 (*abs config*)
Cushman, M. *et al., J.O.C.*, 1984, **49**, 1278 (*synth, pmr*)
Clark, R.D. *et al., J.O.C.*, 1989, **54**, 1174 (*synth*)
Kamigauchi, M. *et al., J.C.S. Perkin 2*, 1997, 631-636 (*pmr, cryst struct*)

Corydaline C-675

*5,8,13,13*a-*Tetrahydro-2,3,9,10-tetramethoxy-13-methyl-6*H-*dibenzo[*a,g*]quinolizine, 9CI. 2,3,9,10-Tetramethoxy-13-methylberbine, 8CI. Corydalis A*
[518-69-4]
[6018-35-5 ((±)-form)]



(+)-*form*

$C_{22}H_{27}NO_4$ 369.46
Alkaloid from *Corydalis tuberosa* and many other *Corydalis* spp. (Papaveraceae). Shows analgesic and antirheumatic props. . Prisms (EtOH). Mp 135°. $[\alpha]_D^{25}$ +235 (EtOH).
► LD_{50} (mus, ivn) 136 mg/kg.

O^2-*De-Me:* ***Isocorydalbine***
[22672-74-8]
[27313-92-4]
$C_{21}H_{25}NO_4$ 355.433
Alkaloid from *Corydalis cava* (Papaveraceae). Cryst. (EtOH). Mp 179-180°. $[\alpha]_D^{20}$ +299.8 (c, 1.04 in $CHCl_3$).

O^3-*De-Me:* ***Corybulbine***. *Corydalis G*
[518-77-4]
$C_{21}H_{25}NO_4$ 355.433
Alkaloid from the root nodules of *Corydalis tuberosa (cava)* and from a few other *Corydalis* spp. (Papaveraceae). Mp 242°. $[\alpha]_D$ +303.3 ($CHCl_3$). Has been confused with Corydalmine, C-677.

O^3-*De-Me, hydrochloride:* Mp 245-250°.

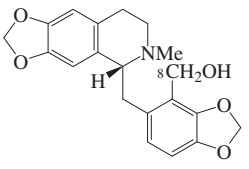
O^{10}-*De-Me:* ***Yuanhunine***
[104387-15-7]
$C_{21}H_{25}NO_4$ 355.433
Alkaloid from tubers of yuanhu (*Corydalis turtschaninovii* f. *yanhusuo*) (Papaveraceae). Cryst. Mp 166-168°. $[\alpha]_D^{23}$ +229.7 (c, 0.16 in EtOH).

O^3,O^{10}-*Di-de-Me:* ***Corydalidzine***
[50656-80-9]
[55955-26-5 ((±)-form)]
$C_{20}H_{23}NO_4$ 341.406
Alkaloid from *Corydalis koidzumiana* (Papaveraceae). Mp 209-210° (*in vacuo*). $[\alpha]_D^{23}$ +333 (MeOH).

Späth, E. *et al., Ber.*, 1925, **58**, 1274 (*Corybulbine, Isocorybulbine, struct*)
Manske, R.H.F. *et al., Can. J. Chem.*, 1956, **34**, 1 (*isol*)
Jeffs, P.W. *et al., Experientia*, 1965, **21**, 690 (*Isocorybulbine, abs config*)
Nakuto, S. *et al., Yakugaku Zasshi*, 1972, **92**, 1017 (*Isocorybulbine, synth*)
Tani, C. *et al., Chem. Pharm. Bull.*, 1975, **23**, 313 (*Corydalidzine*)
Hughes, D.W. *et al., Can. J. Chem.*, 1976, **54**, 2252 (*cmr*)
Takao, N. *et al., Chem. Pharm. Bull.*, 1976, **24**, 3185 (*Corybulbine, config, ir, pmr*)
Kametani, T. *et al., J.C.S. Perkin 1*, 1977, 1151 (*synth, pmr*)
Holland, H.L. *et al., Can. J. Chem.*, 1979, **56**, 1588-1597 (*biosynth*)
Iwasa, K. *et al., J.O.C.*, 1981, **46**, 4744 (*Isocorybulbine, Corybulbine, Corydalidzine, synth, abs config*)
Fu, X. *et al., Yaoxue Xuebao*, 1986, **21**, 447-453 (*Yuanhunine*)
Ribár, B. *et al., Acta Cryst. C*, 1992, **48**, 1864 (*cryst struct*)
Hanaoka, M. *et al., Chem. Pharm. Bull.*, 2000, **48**, 399-404 (*synth*)
Marek, R. *et al., Magn. Reson. Chem.*, 2002, **40**, 687-692 (*N-15 nmr*)

Corydalisol C-676

*5-[(5,6,7,8-Tetrahydro-6-methyl-1,3-dioxolo[4,5-*g*]isoquinolin-5-yl)methyl]-1,3-benzodioxole-4-methanol, 9CI. 1,2,3,4-Tetrahydro-1-(2-hydroxymethyl-3,4-methylenedioxybenzyl)-2-methyl-6,7-methylenedioxyisoquinoline*



(*R*)-*form*

$C_{20}H_{21}NO_5$ 355.39
Protoberberine-type numbering shown.

(R)-form [55934-47-9]
Alkaloid from *Corydalis incisa* (Papaveraceae). Prisms (MeOH). Mp 160-161°. $[\alpha]_D^{21}$ +21.4 (c, 0.28 in $CHCl_3$).

8-Aldehyde: ***Aobamine***
[59614-37-8]
$C_{20}H_{19}NO_5$ 353.374
Alkaloid from *Corydalis ochotensis* var. *raddeana* (Papaveraceae). Syrup. Unstable. No opt. rotn. reported, abs. config. not detd.; may correspond to (*S*)-Corydalisol.

8-Carboxylic acid: ***Coryximine***
[127460-61-1]
$C_{20}H_{19}NO_6$ 369.373
Alkaloid from bulbs of *Corydalis hsuchowensis* (Papaveraceae). Prisms ($CHCl_3$/MeOH). Mp 197-198°. $[\alpha]_D^{23}$ +147.7 (c, 0.5 in $CHCl_3$).

(S)-form [86688-04-2]
Alkaloid from *Hypecoum procumbens* (Hypecoaceae). $[\alpha]_D^{23}$ -18 (c, 0.11 in MeOH).

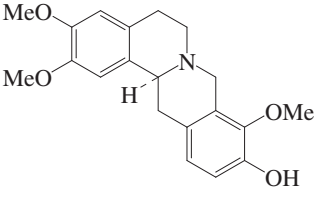
(±)-*form* [61665-07-4]
Synthetic. Mp 127-128° Mp 147-148°.

8-Aldehyde: [64598-67-0]
Synthetic. Cryst. (MeOH). Mp 168-168.5°.

Nonaka, G. *et al., Chem. Pharm. Bull.*, 1975, **23**, 294 (*uv, ir, pmr, ms, struct*)
Kametani, T. *et al., J.C.S. Perkin 1*, 1977, 390 (*isol, ir, pmr, ms, struct, Aobamine*)
Shamma, M. *et al., Tetrahedron*, 1978, **34**, 635 (*synth, ir, pmr, Corydalisol, Aobamine*)
Gözler, T. *et al., J. Nat. Prod.*, 1983, **46**, 414 (*isol, uv, ir, ms, cd, struct*)
Gözler, B. *et al., J.C.S. Perkin 1*, 1983, 2431 (*synth, uv, ir, pmr, ms*)
Iwasa, K. *et al., Chem. Pharm. Bull.*, 1985, **33**, 998 (*synth, ir, pmr, cmr*)
Rozwadowska, M.D. *et al., Tetrahedron*, 1988, **44**, 1221 (*synth, uv, ir, pmr, ms, Corydalisol, Aobamine*)
Zhou, J. *et al., Planta Med.*, 1991, **57**, 156 (*Coryximine*)
Chrzanowska, M. *et al., Pol. J. Chem. (Rocz. Chem.)*, 1998, **72**, 2399-2404 (*synth*)

Corydalmine C-677

*5,8,13,13*a-*Tetrahydro-2,3,9-trimethoxy-6*H-*dibenzo[*a,g*]quinolizin-10-ol, 9CI. Kikemanine. Cycemanine. Schefferine*



$C_{20}H_{23}NO_4$ 341.406
Kikemanine and Schefferine were until 1977 thought to have isomeric structs.

(S)-form [30413-84-4]
Alkaloid from *Corydalis pallida* and

Stephania glabra (Papaveraceae, Menispermaceae). Plates ($CHCl_3$/MeOH). Mp 177-178° (174-175°). $[\alpha]_D^{22}$ -303 (c, 1.14 in EtOH).

α-N-*Oxide:* ***Corydalmine* α-N-*oxide***
[250686-94-3]
$C_{20}H_{23}NO_5$ 357.405
Alkaloid from *Corydalis tashiroi*. Prisms ($CHCl_3$/MeOH). Mp 205-207°. $[\alpha]_D^{26}$ -28.2 (c, 0.31 in $CHCl_3$). λ_{max} 206 (log ϵ 4.71); 227 (sh) (log ϵ 4.1); 284 (log ϵ 3.71) (EtOH).

β-N-*Oxide:* ***Corydalmine* β-N-*oxide***
[250686-95-4]
$C_{20}H_{23}NO_5$ 357.405
Alkaloid from *Corydalis tashiroi*. Prisms ($CHCl_3$/MeOH). Mp 176-178°. $[\alpha]_D^{24}$ -75.3 (c, 0.22 in $CHCl_3$). λ_{max} 209 (log ϵ 4.58); 228 (sh) (log ϵ 4.17); 284 (log ϵ 3.74) (EtOH).

N-*Me:* **N-*Methylcorydalmine***
[81010-29-9]
$C_{21}H_{26}NO_4^{\oplus}$ 356.441
Quaternary alkaloid from *Stephania elegans* (Menispermaceae). Mp 190° (as chloride).

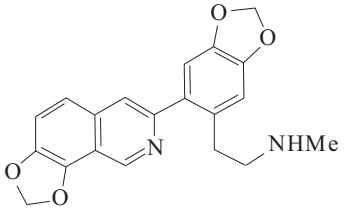
Me ether: see Tetrahydropalmatine, T-212

[95462-84-3]

Cava, M.P. *et al., J.O.C.*, 1968, **33**, 2785-2789 (*isol*)
Kametani, T. *et al., J.C.S.(C)*, 1970, 1060-1064 (*Kikemanine, isol, pmr, cd*)
Brochmann-Hanssen, E. *et al., J.O.C.*, 1977, **42**, 3588-3591 (*Schefferine, struct, bibl*)
Singh, R.S. *et al., J. Nat. Prod.*, 1981, **44**, 664-667 (N-*Methylcorydalmine*)
Ohiri, F.C. *et al., Planta Med.*, 1983, **49**, 162-164 (*pmr*)
Chen, J.-J. *et al., Planta Med.*, 1999, **65**, 643-647 (*N-oxides*)
Bianchi, D.A. *et al., Can. J. Chem.*, 2000, **78**, 1165-1169 (*synth*)
Blanchfield, J.T. *et al., Phytochemistry*, 2003, **63**, 711-720 (*isol, pmr, cmr*)

Corydamine C-678

[49870-84-0]



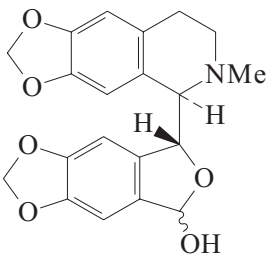
$C_{20}H_{18}N_2O_4$ 350.373
Alkaloid from *Corydalis incisa* (Papaveraceae). Mp 255-257° (235-239°) dec. (as hydrochloride). May form a mono- and a dihydrochloride.

N-*Formyl:* **N-*Formylcorydamine***
[50506-34-8]
$C_{21}H_{18}N_2O_5$ 378.384
Alkaloid from *Corydalis incisa* (Papaveraceae). Mp 159.5-160.5°.

Nonaka, G. *et al., Chem. Pharm. Bull.*, 1973, **21**, 1410 (*ir, uv, pmr, ms, struct*)
Takao, N. *et al., Chem. Pharm. Bull.*, 1973, **21**, 1587 (*ir, uv, pmr, ms, struct, isol, synth*)
Yagi, A. *et al., Phytochemistry*, 1977, **16**, 1197 (*biosynth*)
Seger, C. *et al., Magn. Reson. Chem.*, 2004, **42**, 882-886 (*pmr, cmr*)

Corydecumbine C-679

[154722-69-7]

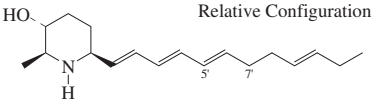


$C_{20}H_{19}NO_6$ 369.373
Alkaloid from tubers of *Corydalis decumbens* (Papaveraceae). Creamy-white cryst. Mp 214°. $[\alpha]_D$ -142.3 (c, 0.62 in $CHCl_3$).

Basnet, P. *et al., Heterocycles*, 1993, **36**, 2205 (*isol, pmr, cmr, struct*)

Corydendramine A C-680

6-(1,3,5,9-Dodecatetraenyl)-2-methyl-3-piperidinol
[291764-44-8]



$C_{18}H_{29}NO$ 275.433
Defence compd. isol. from the marine hydroid *Corydendrium parasiticum*. Pale yellow oil. $[\alpha]_D$ -24.3 (c, 0.17 in MeOH). λ_{max} 258 (ϵ 24200); 268 (ϵ 32700); 278 (ϵ 25600) (MeOH).

*7′,8′-Didehydro(*E-*), 5′,6′-dihydro: 6-(1,3,7,9-Dodecatetraenyl)-2-methyl-3-piperidinol.* ***Corydendramine B***
[291764-45-9]
$C_{18}H_{29}NO$ 275.433
Defence compd. isol. from *Corydendrium parasiticum*. Amorph. powder. $[\alpha]_D$ +83.7 (c, 0.08 in MeOH). λ_{max} 236 (ϵ 40400) (MeOH).

Lindquist, N. *et al., J. Nat. Prod.*, 2000, **63**, 1290-1291 (*Corydendramines A,B*)

Corydicine C-681

$C_{19}H_{17}NO_5$ 339.347
Struct. unknown. Alkaloid from *Corydalis stewartii* (Papaveraceae). Mp 181-184°.

Hydrochloride: Mp 244-245° dec.

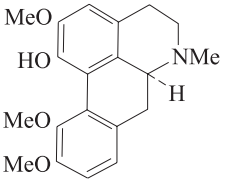
Picrate: Mp 268-270° dec.

Chloroplatinate: Mp 212-213° dec.

Ikram, M. *et al., Pak. J. Sci. Ind. Res.*, 1966, **9**, 34-37; *CA*, **67**, 117031k

Corydine C-682

1-Hydroxy-2,10,11-trimethoxyaporphine. Glaucentrine



(*S*)*-form*

$C_{20}H_{23}NO_4$ 341.406
Log P 2.69 (uncertain value) (calc).

(S)-form [476-69-7]
Alkaloid from *Corydalis tuberosa* and *Dicentra eximia* (Papaveraceae), also from the Annonaceae, Lauraceae, Liliaceae, Menispermaceae, Ranunculaceae, Rutaceae, Berberidaceae, Papaveraceae and Monimiaceae. Shows irritant and respiratory stimulant and CNS depressant activities plus some antineoplastic activity. Adrenolytic and weak cholinergic agent. Shows antimicrobial activity. Mp 149°. $[\alpha]_D^{25}$ +204 (c, 0.6 in EtOH). Pharmacol. active isomer.

▶ CE1057000

N-*Oxide:* ***Corydine* N-*oxide***
[74804-29-8]
$C_{20}H_{23}NO_5$ 357.405
Alkaloid from *Glaucium fimbrilligerum* (Papaveraceae).

N-*Me:* **N-*Methylcorydine***
[4668-04-6]
$C_{21}H_{26}NO_4^{\oplus}$ 356.441
Alkaloid from *Zanthoxylum nigrescens* (Rutaceae). Mp 190-200° dec. (as iodide). $[\alpha]_D^{28}$ +154 (c, 0.20 in 50% EtOH).

N-*De-Me: 1-Hydroxy-2,10,11-trimethoxynoraporphine.* ***Norcorydine***
[26931-78-2]
$C_{19}H_{21}NO_4$ 327.379
Alkaloid from *Annona squamosa* (sugar apple), *Popowia* sp. cf. *cyanocarpa*, *Stephania dinklagei*, *Laurelia philippiana*, *Glaucium fimbrilligerum* and *Xylopia danguyella* (Annonaceae, Menispermaceae, Monimiaceae, Papaveraceae). Shows antiplasmodial and antiamoebic activities. Noncryst. Mp 249-251° (as hydrochloride). $[\alpha]_D$ +156 (MeOH). $[\alpha]_D^{23}$ +190 (c, 0.2 in $CHCl_3$).

N-*De-Me,* N,O-*di-Ac:*
Amorph. $[\alpha]_D^{16}$ +266 (c, 0.76 in $CHCl_3$).

6a,*7-Didehydro:* ***Dehydrocorydine***
[74799-12-5]
$C_{20}H_{21}NO_4$ 339.39
Alkaloid from *Glaucium fimbrilligerum* (Papaveraceae). Amorph.

*4*R-*Hydroxy:* ***Glaufidine****. Glaufiridine*
[71609-80-8]
$C_{20}H_{23}NO_5$ 357.405
Alkaloid from *Glaucium fimbrilligerum* (Papaveraceae). $[\alpha]_D$ +182 (c, 0.4 in MeOH).

*4*S-*Hydroxy:* ***Epiglaufidine***
$C_{20}H_{23}NO_5$ 357.405

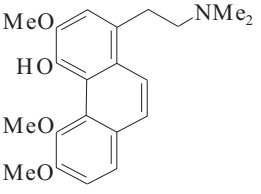
Alkaloid from *Glaucium fimbrilligerum* (Papaveraceae). $[\alpha]_D$ +198 (c, 0.5 in MeOH).

(±)-*form*

N-*De-Me:* [60661-35-0]
Alkaloid from the leaves of *Xylopia pancheri* (Annonaceae).

Go, J. *et al., Yakugaku Zasshi*, 1929, **49**, 801 (*isol*)
Shamma, M. *et al., Tet. Lett.*, 1965, 1509 (*synth, uv, struct*)
Johns, S.R. *et al., Aust. J. Chem.*, 1970, **23**, 363 (*Norcorydine*)
Bakuni, D.S. *et al., Phytochemistry*, 1972, **11**, 1819 (*isol, uv, ms*)
Shamma, M. *et al., Phytochemistry*, 1973, **12**, 1505 (*isol, pmr, uv, ms*)
Tackie, A.N. *et al., J. Nat. Prod.*, 1974, **37**, 6 (*Norcorydine*)
Nieto, M. *et al., Planta Med.*, 1976, **30**, 48 (±-*Norcorydine*)
Israelov, I.A. *et al., Khim. Prir. Soedin.*, 1979, **15**, 104 (*Glaufidine*)
Castedo, L. *et al., Heterocycles*, 1980, **14**, 1135 (*Dehydrocorydine*)
Karimova, S.U. *et al., Khim. Prir. Soedin.*, 1980, **16**, 224; 1983, **18**, 493; *Chem. Nat. Compd. (Engl. Transl.)*, 1980, **16**, 177 (*Isocorydine N-oxide, Dehydrocorydine, Glaufidine, Epiglaufidine*)
Hoquemiller, R. *et al., J. Nat. Prod.*, 1981, **44**, 551 (*Norcorydine, occur*)
Urzúa, A. *et al., Phytochemistry*, 1982, **21**, 773 (*Norcorydine, isol, ir, pmr, ms*)
Villar, A. *et al., Farm. Tijdschr. Belg.*, 1984, **61**, 300 (*activity*)
Guinaudeau, H. *et al., J. Nat. Prod.*, 1985, **48**, 646 (*Glaufidine, Epiglaufidine, config*)
Wright, C.W. *et al., J. Nat. Prod.*, 2000, **63**, 1638-1640 (*activity*)

Corydinemethine C-683

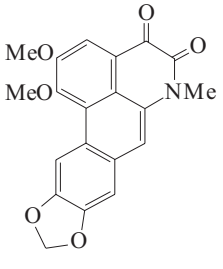


$C_{21}H_{25}NO_4$ 355.433
Alkaloid from *Berberis cretica* (whole plant) (Berberidaceae). Amorph.

Ross, S.A. *et al., J. Nat. Prod.*, 1986, **49**, 159 (*isol, uv, ir, pmr, ms, struct*)

Corydione C-684

*1,2-Dimethoxy-6-methyl-4*H-*benzo[*de*][1,3]benzodioxolo[5,6-*g*]quinoline-4,5(6*H*)-dione, 9CI. 4,5-Dioxodehydronantenine. Alkaloid Cm-4*
[72007-91-1]

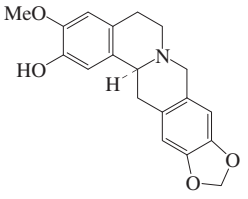


$C_{20}H_{15}NO_6$ 365.342
Alkaloid from *Corydalis bulbosa* and *Corydalis marshalliana*, and from the dried fruits of *Nandina domestica* (Papaveraceae, Nandinaceae). Red needles (EtOH or EtOH/Et_2O). Mp 273-275°.

Kunitomo, J. *et al., Shoyakugaku Zasshi*, 1979, **33**, 84; *CA*, **91**, 207404j (*isol, struct, synth, uv, ms*)
Kiryakov, H.G. *et al., Planta Med.*, 1980, **39**, 210; 1981, **41**, 298; **43**, 51 (*isol, uv, ir, pmr, ms*)
Kunitomo, J. *et al., Yakugaku Zasshi*, 1980, **100**, 337; *CA*, **93**, 95454h (*struct*)

Corygovanine C-685

*5,8,14,14a-Tetrahydro-3-methoxy-6*H-*benzo[*a*][1,3]benzodioxolo[5,6-*g*]quinolizin-2-ol, 9CI. Pseudocheilanthifoline*
[70031-37-7]



(*S*)-*form*

$C_{19}H_{19}NO_4$ 325.363

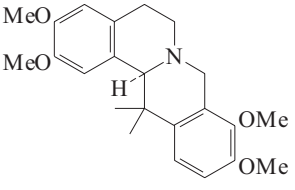
(*S*)-*form* [63729-95-3]
Alkaloid from the leaves and stems of *Corydalis govaniana* (Papaveraceae). Cryst. (MeOH). Mp 134-136°. $[\alpha]_D$ -368.2. λ_{max} 212 ; 232 (sh) ; 287 (MeOH). λ_{max} 215 ; 288 ; 294 (sh) (MeOH/NaOH).

(±)-*form*
Synthetic. Mp 138-140°.

Mehra, K. *et al., Indian J. Chem., Sect. B*, 1976, **14**, 844-888 (*isol, uv, ir, pmr, ms, struct, synth*)
Moulis, C. *et al., Org. Magn. Reson.*, 1978, **11**, 398-400 (*cmr*)

Corymotine C-686

*5,8,13,13a-Tetrahydro-2,3,9,10-tetramethoxy-13,13-dimethyl-6*H-*dibenzo[*a,g*]quinolizine, 9CI. Corybrachylobine*



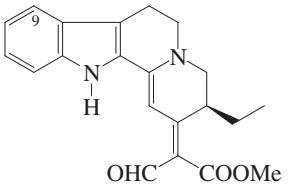
$C_{23}H_{29}NO_4$ 383.486

(*S*)-*form* [115569-75-0]
Alkaloid from the tubers of *Corydalis remota* and *Corydalissolida* ssp. *brachyloba* (Papaveraceae). Prisms (MeOH). Mp 148-149°. $[\alpha]_D^{25}$ -188 (c, 0.087 in $CHCl_3$).

Fu, X. *et al., J. Nat. Prod.*, 1988, **51**, 262 (*isol, uv, ir, pmr, cmr, ms, struct*)
Sener, B. *et al., J. Chem. Soc. Pak.*, 1991, **13**, 63; *CA*, **116**, 3548j

Corynantheidinaline C-687

[132922-57-7]



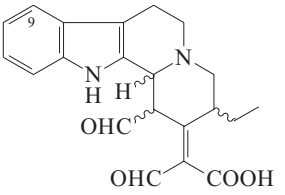
$C_{21}H_{22}N_2O_3$ 350.416
MF and struct. revised in 2001. Alkaloid from the v. young leaves of *Mitragyna speciosa* (Rubiaceae). Dark orange cryst. (EtOH). Mp 197-199° dec.

9-Methoxy: ***Mitragynaline***
[132943-52-3]
$C_{22}H_{24}N_2O_4$ 380.443
Alkaloid from the leaves of *Mitragyna speciosa* (Rubiaceae). Dark orange cryst. (EtOH). Mp 210-221° dec. $[\alpha]_D^{24}$ -4.3 (c, 0.34 in $CHCl_3$). Struct. revised in 2001. λ_{max} 224 (sh) (log ϵ 4.39); 264 (log ϵ 4.3); 348 (log ϵ 3.97); 456 (sh) (log ϵ 4.62); 486 (log ϵ 4.83) (MeOH).

Houghton, P.J. *et al., Phytochemistry*, 1991, **30**, 347-350 (*isol, uv, ir, pmr, cmr, ms, struct*)
Takayama, H. *et al., Tet. Lett.*, 2001, **42**, 1741-1743 (*pmr, cmr, struct*)
Takayama, H. *et al., Chem. Pharm. Bull.*, 2004, **52**, 916-928 (*rev*)

Corynantheidinalinic acid C-688

15,16-Didehydro-14,16-diformylcorynan-17-oic acid, 9CI
[133019-99-5]



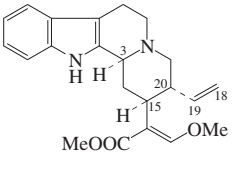
$C_{21}H_{22}N_2O_4$ 366.416
Alkaloid from the young leaves of *Mitragyna speciosa* (Rubiaceae). Dark yellow cryst. (EtOH). Mp 213-214° dec.

9-Methoxy: ***Mitragynalinic acid***
[132943-53-4]
$C_{22}H_{24}N_2O_5$ 396.442
Alkaloid from the young leaves of *Mitragyna speciosa* (Rubiaceae). Dark yellow cryst. (EtOH). Mp 221-224° dec.

Houghton, P.J. *et al., Phytochemistry*, 1991, **30**, 347 (*isol, ir, ms, pmr, cmr, struct*)

Corynantheine C-689

[18904-54-6]



Absolute Configuration

$C_{22}H_{26}N_2O_3$ 366.459
Alkaloid from the bark of *Pseudocinchona africana* (preferred genus name *Corynanthe*) and from *Mitragyna parvifolia*, *Rauwolfia canescens* and *Uncaria rhyncophylla*. Sympatholytic agent. Cryst. (EtOH aq.). Mp 164°. $[\alpha]_D^{20}$ +28.8 (c, 1 in MeOH). Occurs together with Dihydrocorynantheine which caused confusion in the early lit. First obt. pure in 1953.

▶ LD_{50} (mus, ivn) 35 mg/kg. VS3675000

Hydrochloride: Mp 167-188° (synthetic). $[\alpha]_D^{20}$ +37 (c, 0.14 in MeOH) (synthetic).

O^{17}-De-Me: ***Demethylcorynantheine***. *Alkaloid RMB 1*
[18786-21-5]
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from the stem bark of *Rauwolfia mombasiana* (Apocynaceae).

18,19-Dihydro: ***Dihydrocorynantheine***
[50439-68-4]
[4684-43-9]
$C_{22}H_{28}N_2O_3$ 368.475
Alkaloid from *Corynanthe yohimbe, Pseudocinchona africana, Cephalanthus occidentalis, Uncaria rhynchophylla, Uncaria callophylla* and *Uncaria gambier* (Apocynaceae, Rubiaceae). Cryst. (MeOH aq. or Et_2O). Mp 105°. $[\alpha]_D^{20}$ +36.2 (c, 0.123 in MeOH). λ_{max} 227 ; 283 ; 291 (EtOH).

▶ GN1038000

18,19-Dihydro, N^4-oxide: ***Dihydrocorynantheine* N-*oxide***
[55137-72-9]
$C_{22}H_{28}N_2O_4$ 384.474
Alkaloid from *Uncaria tomentosa* (Rubiaceae). No phys. props. reported.

18,19-Dihydro, O^{17}-de-Me: ***Demethyldihydrocorynantheine***. *Alkaloid RMB 7*
[5027-70-3]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from the stem bark of *Rauwolfia mombasiana* (Apocynaceae). Yellow amorph. powder. λ_{max} 226 ; 275 (sh) ; 293 (MeOH).

10-Hydroxy, 18,19-dihydro: ***Isogambirine***. *10-Hydroxydihydrocorynantheine*
[142934-41-6]
$C_{22}H_{28}N_2O_4$ 384.474
Alkaloid from leaves of *Uncaria callophylla* (Rubiaceae). λ_{max} 226 ; 240 ; 279 (EtOH).

3-Epimer: ***Hirsuteine***. *Δ^{18}-Hirsutine*
[35467-43-7]
$C_{22}H_{26}N_2O_3$ 366.459
Alkaloid from *Mitragyna parvifolia, Mitragyna hirsuta*, and from the genus *Uncaria* (Rubiaceae). Mp 92-94°.

▶ GN1039000

3-Epimer, 18,19-dihydro: ***Hirsutine***†
[7729-23-9]
$C_{22}H_{28}N_2O_3$ 368.475
Alkaloid from *Mitragyna hirsuta, Mitragyna parvifolia, Mitragyna stipulosa, Cephalanthus occidentalis*, and several *Uncaria* spp., e.g. *Uncaria rhynchophylla* (Rubiaceae). Ganglionic blocking agent showing long-lasting neuro blocking. Cryst. (Et_2O). Mp 101°. $[\alpha]_D^{23}$ +68.6 (c, 0.32 in $CHCl_3$). λ_{max} 226 (log ε 4.64); 282 (log ε 3.84); 290 (log ε 3.79) (EtOH).

▶ VS3660000

3-Epimer, 18,19-dihydro, N^4-oxide: ***Hirsutine* N-*oxide***
[55176-58-4]
$C_{22}H_{28}N_2O_4$ 384.474
Alkaloid from *Uncaria tomentosa* (Rubiaceae). No phys. props. reported.

20-Epimer, 18,19-dihydro: ***Corynantheidine***†
[23407-35-4]
$C_{22}H_{28}N_2O_3$ 368.475
Alkaloid from *Rauwolfia canescens, Pseudocinchona africana, Mitragyna speciosa* and several *Uncaria* spp. Antihypertensive, sympatholytic agent. Mp 117° (125°). $[\alpha]_D$ -171 (c, 1 in MeOH) (-142). λ_{max} 225 (log ε 4.59); 280 (log ε 3.93) (no solvent reported).

20-Epimer, 18,19-dihydro, hydrochloride: Mp 213° (hydrate). $[\alpha]_D^{15}$ -128 (MeOH).

20-Epimer, 18,19-dihydro, O-de-Me: ***Demethylcorynantheidine***. *Alkaloid RMB 5*
[71657-70-0]
$C_{21}H_{26}N_2O_3$ 354.448
Trace alkaloid from the stem bark of *Rauwolfia mombasiana* (Apocynaceae). Yellow amorph. powder. Probable struct.; insufficient material for full characterisation. λ_{max} 227 ; 275 (sh) ; 283 ; 291 (MeOH).

20-Epimer, 9-methoxy, 18,19-dihydro: see Mitragynine, M-657

3,20-Diepimer: ***Epiallocorynantheine***
[57820-49-2]
$C_{22}H_{26}N_2O_3$ 366.459
Alkaloid from *Uncaria attenuata* ssp. *bulusanensis* (Rubiaceae). λ_{max} 225 ; 245 (sh) ; 284 ; 291 (EtOH).

3,20-Diepimer, 18,19-dihydro: ***3-Isocorynantheidine***
[7729-22-8]
$C_{22}H_{28}N_2O_3$ 368.475
Alkaloid from *Mitragyna speciosa* and *Uncaria* spp.(Rubiaceae). Mp 221-222° (as perchlorate).

(±)-***form*** [25920-83-6]
Synthetic. Mp 225-226°.

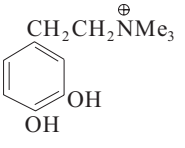
Hydrochloride:
Synthetic. Mp 176-179°.

*20-Epimer, 18,19-dihydro:*Synthetic. Noncryst., cryst. (as perchlorate). Mp 241-242° (perchlorate).

Janot, M.-M. *et al., Bull. Soc. Chim. Fr.*, 1949, 509-515 (*synth*)
Janot, M.-M. *et al., Helv. Chim. Acta*, 1951, **34**, 1207-1210 (*struct*)
Janot, M.-M. *et al., Bull. Soc. Chim. Fr.*, 1953, 1033-1038 (*Corynantheidine, uv, ir*)
Goutarel, R. *et al., Helv. Chim. Acta*, 1953, **43**, 337-340 (*purifn*)
Van Tamelen, E.E. *et al., J.A.C.S.*, 1957, **79**, 6426-6430; 1969, **91**, 7349-7359 (*synth, config, Dihydrocorynantheine*)
Bartlett, M.F. *et al., J.A.C.S.*, 1962, **84**, 622-630 (*Corynantheidine, config*)
Weisbach, J.A. *et al., Tet. Lett.*, 1965, 3457-3463 (*Corynantheidine, synth*)
Shellard, E.J. *et al., J. Pharm. Pharmacol.*, 1966, **18**, 553-555 (*Hirsutine, uv, ir, pmr, struct*)
Merlini, L. *et al., Tet. Lett.*, 1967, 1571-1574 (*Dihydrocorynantheine, isol*)
Lee, C.M. *et al., Tetrahedron*, 1967, **23**, 375-385 (*Dihydrocorynantheine, Corynantheidine, uv, cd, ord*)
Trager, W.F. *et al., Tetrahedron*, 1967, **23**, 1043-1047 (*Hirsutine, uv, ord, cd, abs config*)
Autrey, R.L. *et al., J.A.C.S.*, 1968, **90**, 4917-4923 (*synth, bibl*)
Szántay, C. *et al., Chem. Ber.*, 1969, **102**, 3963-3973 (*Corynantheidine, synth*)
Beckett, A.H. *et al., Tetrahedron*, 1969, **25**, 5961-5969 (*Corynantheidine, Hirsutine, Dihydrocorynantheine, ms*)
Shellard, E.J. *et al., Planta Med.*, 1972, **21**, 382-392; 1978, **34**, 253-263 (*Hirsuteine, 3-Isocorynantheidine*)
Phillipson, J.D. *et al., Phytochemistry*, 1973, **12**, 1507; 1975, **14**, 1855-1863 (*Hirsuteine, Epiallocorynantheine*)
Hemingway, S.R. *et al., J. Pharm. Pharmacol., Suppl.*, 1974, **26**, 113P (*Dihydrocorynantheine oxide, Hirsutine oxide*)
Phillipson, J.D. *et al., J. Chromatogr.*, 1975, **105**, 163-178 (*Hirsuteine, 3-Isocorynantheidine, tlc, glc, ms*)
Bárczai-Beke, M. *et al., Tetrahedron*, 1976, **32**, 1153-1159 (*Dihydrocorynantheine, synth, ir, bibl*)
Fujii, T. *et al., Heterocycles*, 1977, **7**, 149-153 (*Dihydrocorynantheine, synth*)
Sakai, S. *et al., Chem. Pharm. Bull.*, 1978, **26**, 2596-2598 (*Corynantheidine, synth, pmr*)
Iwu, M.M. *et al., Planta Med.*, 1979, **36**, 208-212 (*Demethylcorynantheine, Demethyldihydrocorynantheine, Demethylcorynantheidine*)
Le Xuan, P. *et al., Chromatographia*, 1980, **13**, 693-697 (*tlc*)
Brown, R.T. *et al., Chem. Comm.*, 1984, 847-848 (*Hirsutine, synth*)
Goh, S.H. *et al., Phytochemistry*, 1985, **24**, 880-881 (*Dihydrocorynantheine, isol, uv, ir, pmr, cmr, ms*)
Szantay, C. *et al., Alkaloids (Academic Press)*, 1986, **27**, 131-268 (*rev*)
Naito, T. *et al., Heterocycles*, 1987, **26**, 1739-1742 (*Hirsuteine, synth*)
Kam, T.-S. *et al., Phytochemistry*, 1992, **31**, 2031-2034 (*Isogambirine*)
Lounasmaa, M. *et al., Heterocycles*, 1998, **49**, 445-450 (*Hirsutine, 3-Isocorynantheidine, synth*)
Tietze, L.F. *et al., Angew. Chem., Int. Ed.*, 1999, **38**, 2045-2047 (*Hirsutine, Dihydrocorynantheine, synth*)
Yu, S. *et al., J.A.C.S.*, 2000, **122**, 7827-7828 (*Corynantheidine, synth*)
Staerk, D. *et al., Planta Med.*, 2000, **66**, 531-536 (*Corynantheidine, Corynantheine, Dihydrocorynantheine, isol, pmr, cmr*)
Merck Index, 13th edn., 2001, No. 2572 (*props, bibl*)
Deiters, A. *et al., J.O.C.*, 2006, **71**, 6547-6561 (*Hirsutine, synth*)

Coryneine C-690

3,4-Dihydroxy-N,N,N-*trimethylbenzenethanaminium(1+), 9CI. (3,4-Dihydroxyphenethyl)trimethylammonium, 8CI. Dopamine methosalt*
[7224-66-0]



$C_{11}H_{18}NO_2^{\oplus}$ 196.269

Alkaloid from *Stetsonia coryne, Desmodium triflorum, Aconitum carmichaeli, Fagara hyemalis* and *Alhagi pseudalhagi* (Cactaceae, Fabaceae, Ranunculaceae, Rutaceae). Sympathomimetic agent.

Chloride: [13075-92-8]
$C_{11}H_{18}ClNO_2$ 231.721
Mp 263° dec. (201°).

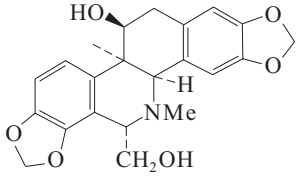
Iodide: [52336-53-5]
$C_{11}H_{18}INO_2$ 323.173
Mp 205°.

[55-61-8 , 458-39-9]

Barger, G. *et al., J.C.S.*, 1910, 2253 (*synth*)
Reti, L. *et al., CA*, 1935, **29**, 2961 (*isol*)
Buck, J.S. *et al., J.A.C.S.*, 1938, **60**, 1788 (*synth*)
Kuck, A.M. *et al., Phytochemistry*, 1967, **6**, 1541 (*isol*)
Agurell, S. *et al., J. Nat. Prod.*, 1971, **34**, 183 (*isol*)
Ghosal, S. *et al., J. Pharm. Sci.*, 1973, **62**, 1555 (*isol, uv, pmr*)
Barlow, R.B. *et al., Br. J. Pharmacol.*, 1976, **57**, 517; 1980, **69**, 597 (*Pharmacol*)
Konno, C. *et al., Planta Med.*, 1979, **35**, 150 (*isol*)

Corynolamine C-691

[67998-93-0]



$C_{22}H_{23}NO_6$ 397.427

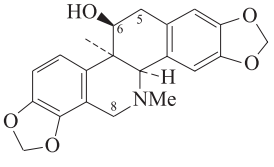
(±)-*form*
Alkaloid from *Corydalis incisa* (Papaveraceae). Prisms ($CHCl_3$/MeOH). Mp 198-199°.

Di-Ac:
Needles (MeOH/Me_2CO). Mp 191-192°.

Takao, N. *et al., Chem. Pharm. Bull.*, 1978, **26**, 1880; 1979, **27**, 2194 (*isol, uv, ir, pmr, cmr, ms, struct*)

Corynoline C-692

5b,6,7,12b,13,14-Hexahydro-5b,13-dimethyl[1,3]benzodioxolo[5,6-c]-1,3-dioxolo[4,5-i]phenanthridin-6-ol, 9CI



(+)–*form*

$C_{21}H_{21}NO_5$ 367.401

(+)-*form* [18797-79-0]
Alkaloid from *Corydalis incisa* and *Corydalis solida* ssp *tauricola*. Cell adhesion inhibitor. Shows antifungal activity. Cryst. (Me_2CO/Et_2O or MeOH/Et_2O). Mp 180-181° (178-179°). $[\alpha]_D^{23}$ +132 (c, 2.64 in $CHCl_3$) (+116.4).

O-*Sulfate:* ***Corynoline* O-*sulfate***
[74045-63-9]
$C_{21}H_{21}NO_8S$ 447.465
Alkaloid from *Corydalis incisa* (Papaveraceae). Prisms ($CHCl_3$/MeOH). Mp 253-254°. $[\alpha]_D^{23}$ +67 (c, 0.19 in MeOH).

5α-Hydroxy: ***5-Hydroxycorynoline***
$C_{21}H_{21}NO_6$ 383.4
Alkaloid from *Corydalis bulleyana* whole plants (Papaveraceae). Plates (MeOH). Mp 149-150°. $[\alpha]_D^{18}$ +98.6 (EtOH).

5α-Hydroxy, O-*formyl:* ***5-Formyloxycorynoline***
$C_{22}H_{21}NO_7$ 411.41
Alkaloid from *Corydalis bulleyana* whole plants (Papaveraceae). Prisms ($CHCl_3$/MeOH). Mp 209-211°. $[\alpha]_D^{20}$ +15 (MeOH).

8-Oxo: ***8-Oxocorynoline***
[55739-71-4]
$C_{21}H_{19}NO_6$ 381.384
Minor alkaloid from *Corydalis incisa* (Papaveraceae). Mp 295°.

8-Oxo, Ac: **O-*Acetyl-8-oxocorynoline*.** *8-Oxoacetylcorynoline*
[104513-81-7]
$C_{23}H_{21}NO_7$ 423.421
Alkaloid from whole plants of *Corydalis bulleyana*. Prisms ($CHCl_3$/MeOH). Mp 156-158°. $[\alpha]_D^{20}$ +92.1 (MeOH). λ_{max} 207 (log ϵ 4.51); 285 (log ϵ 3.75); 319 (log ϵ 3.56) (EtOH).

8,9-Didehydro, N-*de-Me,* O-*Ac:* ***Coryincine***
[255835-77-9]
$C_{22}H_{19}NO_6$ 393.395
Alkaloid from *Corydalis incisa*. Pale yellow powder. Mp 210-212°. $[\alpha]_D^{21}$ +186.7 (c, 0.3 in $CHCl_3$). λ_{max} 262 (log ϵ 4.18); 269 (log ϵ 4.17); 294 (log ϵ 4.07) ($CHCl_3$).

14-Epimer: ***Isocorynoline***. *14-Epicorynoline*
[51151-82-7]
$C_{21}H_{21}NO_5$ 367.401
Alkaloid from *Corydalis incisa* and from *Corydalis bungeana* (Papaveraceae). Needles (MeOH); prisms ($CHCl_3$/MeOH). Mp 234-235° (231-232°). $[\alpha]_D^{25}$ +125 (c, 0.12 in MeOH). $[\alpha]_D^{25}$ +136 (c, 0.26 in $CHCl_3$). Shown in one paper as the enantiomer (6-Epiisocorynoline) but the phys. props of the two isolates are in good agreement.

14-Epimer, Ac: ***Acetylisocorynoline***
[42881-67-4]
$C_{23}H_{23}NO_6$ 409.438
Alkaloid from *Corydalis incisa*. Needles (MeOH). Mp 210-211° (204-206°). $[\alpha]_D^{28}$ +62.8 (c, 0.33 in $CHCl_3$).

(-)-*form* [74163-86-3]
Alkaloid from *Corydalis taliensis*. Also obt. by resoln. of (±)-Corynoline (Papaveraceae). Mp 178-179°. $[\alpha]_D^{20}$ -116.4 (c, 2.5 in $CHCl_3$).

(±)-*form* [68035-45-0]
Alkaloid from *Corydalis incisa* and *Corydalis bungeana* (Papaveraceae). Cryst. (MeOH or Et_2O/MeOH). Mp 218-220° (216-217°).

Ac: ***Acetylcorynoline***
$C_{23}H_{23}NO_6$ 409.438
Alkaloid from *Corydalis incisa* (Papaveraceae). Shows antifungal activity. Plates (MeOH). Mp 159-160° (153-155°).

5α-Hydroxy: (±)-5-Hydroxycorynoline
[55739-69-0]
Minor alkaloid from *Corydalis incisa* (Papaveraceae). Prisms ($CHCl_3$/MeOH). Mp 245-246.5° (238-240°).

8-Oxo: [82950-95-6]
Synthetic. Mp 310-312°.

6-Epimer: ***6-Epicorynoline***
[51095-71-7]
$C_{21}H_{21}NO_5$ 367.401
Minor alkaloid from *Corydalis incisa* (Papaveraceae). Cryst. (MeOH or $CHCl_3$/MeOH). Mp 195-196.5° (182.5-183°).

13-Epimer: *6-Epiisocorynoline*
Synthetic. Mp 185-186° Mp 238-240°.

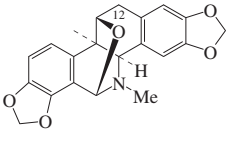
14-Epimer: [83607-67-4]
Synthetic. Cryst. (MeOH). Mp 174-176° (204-205°).

*14-Epimer, Ac:*Synthetic. Mp 178-180°.

Tani, C. *et al., Yakugaku Zasshi*, 1962, **82**, 594 (*Corynoline, Isocorynoline, isol*)
Takao, N. *et al., Chem. Pharm. Bull.*, 1963, **11**, 1306; 1973, **21**, 1096; 1976, **24**, 2859; 1978, **26**, 1880 (*Corynolin, Isocorynoline, isol, uv, ir, pmr, cmr, struct*)
Kametani, T. *et al., Phytochemistry*, 1971, **10**, 1881 (*Acetylcorynoline, Isocorynoline*)
Nonaka, G. *et al., Yakugaku Zasshi*, 1973, **93**, 87 (*Acetylcorynoline, Acetylisocorynoline*)
Nonaka, G. *et al., Chem. Pharm. Bull.*, 1975, **23**, 521 (*8-Oxocorynoline, 5-Hydroxycorynoline, 6-Epicorynoline*)
Takao, N. *et al., Chem. Pharm. Bull.*, 1976, **24**, 2859; 1978, **26**, 1880 (*isol, pmr, cmr, biosynth*)
Iwasa, K. *et al., Phytochemistry*, 1979, **18**, 1725 (*sulfate*)
Takao, N. *et al., Tetrahedron*, 1979, **35**, 1099; 1977 (*isol, resoln, abs config, cryst struct, ms*)
Ninomiya, I. *et al., J.C.S. Perkin 1*, 1980, 212 (*synth*)
Cushman, M. *et al., J.A.C.S.*, 1983, **105**, 2873 (*Corynoline, Isocorynoline, 8-Oxocorynoline, synth, ir, pmr, ms*)
Hong, H. *et al., Planta Med.*, 1986, 193 (*O-Acetyl-8-oxocorynoline, 5-Hydroxycorynoline, 5-Formyloxycorynoline*)
Zeng, W. *et al., Phytochemistry*, 1988, **27**, 599 (*13-Epicorynoline*)
Hanaoka, M. *et al., Tet. Lett.*, 1988, **29**, 6621 (*synth, pmr*)
Sener, B. *et al., Planta Med.*, 1990, **56**, 510 (*Tauricoline*)
Ma, W.G. *et al., Fitoterapia*, 1999, **70**, 258-265 (*activity, Coryincine*)
Kamigauchi, M. *et al., Bioorg. Med. Chem.*, 2005, **13**, 1867-1872 (*cryst struct, sar*)

Corynoloxine C-693

11-Deoxy-6,11-epoxy-13-methylchelidonine, 9CI
[31470-65-2]



Absolute Configuration

$C_{21}H_{19}NO_5$ 365.385
Alkaloid from *Corydalis incisa* (Papaveraceae). Needles ($CHCl_3$/MeOH). Mp 209-210°.

Picrate: Mp 188°.

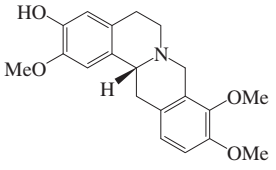
*12*R-*Hydroxy:* ***12*R-*Hydroxycorynoloxine***
[55739-73-6]
[55781-77-6]
$C_{21}H_{19}NO_6$ 381.384
Alkaloid from *Corydalis incisa*. Mp 216-218°. Racemate.

[152323-60-9]

Tani, C. *et al., Yakugaku Zasshi*, 1962, **82**, 594; *CA*, **57**, 4758f (*isol*)
Naruto, S. *et al., Tet. Lett.*, 1968, 1705 (*pmr*)
Takao, N. *et al., Chem. Pharm. Bull.*, 1971, **19**, 247 (*pmr, struct, synth*)
Kametani, T. *et al., Phytochemistry*, 1971, **10**, 1881 (*isol, ms*)
Kim, D.K. *et al., Arch. Pharmacal Res.*, 2000, **23**, 589-591 (*Corynoloxine, 12-Hydroxycorynoloxine*)

Corypalmine C-694

Tetrahydrojatrorrhizine. Discretinine
[13063-54-2]



(*R*)-*form*

$C_{20}H_{23}NO_4$ 341.406
Shows strong papaverine-like activity.

(*R*)-*form*
Alkaloid from *Corydalis cava* (Papaveraceae). Mp 235-236°. $[\alpha]_D^{16}$ +280 ($CHCl_3$).

N-*Me:* **N-*Methylcorypalmine***
[169218-54-6]
$C_{21}H_{26}NO_4^{\oplus}$ 356.441
Quaternary alkaloid from *Berberis iliensis*. Mp 230-231° (as iodide). $[\alpha]_D$ +127.3 (c, 0.14 in MeOH) (iodide).

(*S*)-*form* [6018-40-2]
Alkaloid from *Dicentra oregana* and several *Corydalis* spp. (Papaveraceae). Cryst. ($CHCl_3$/MeOH). Mp 230° (246°). $[\alpha]_D^{27}$ -274 (c, 0.2 in $CHCl_3$).

N-*Me* (cis-)*:* **α-*Hainanine***
[79523-84-5]
[79549-51-2]
$C_{21}H_{26}NO_4^{\oplus}$ 356.441
Quaternary alkaloid from *Cyclea hainanensis*.

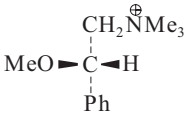
Me ether: see Tetrahydropalmatine, T-212

(±)-*form* [27313-86-6]
Synthetic. Mp 215-217° (207°).

Späth, E. *et al., Ber.*, 1923, **56**, 875 (*isol*)
Manske, R.H.F. *et al., Can. J. Res., Sect. B*, 1939, **17**, 51 (*isol*)
Govindachari, T.R. *et al., Chem. Ber.*, 1959, **92**, 1654 (*synth, ir*)
Zhang, X.X. *et al., CA*, 1981, **95**, 192262t (α-*Hainanine*)
Hussain, R.A. *et al., Heterocycles*, 1989, **29**, 2257 (*pmr, cmr*)
Karimov, A. *et al., Khim. Prir. Soedin.*, 1993, **29**, 83-84; *Chem. Nat. Compd. (Engl. Transl.)*, 1993, **29**, 69-70 (*N-Methylcorypalmine*)

Coryphanthine C-695

β-Methoxy-N,N,N-*trimethylbenzeneethanaminium, 9CI*
[85553-38-4]



$C_{12}H_{20}NO^{\oplus}$ 194.296

(*S*)-*form* [88147-90-4]
Quaternary alkaloid from *Coryphantha greenwoodii* (Cactaceae).

Chloride: [88147-92-6]
Hygroscopic needles (MeOH/Me_2CO). Mp 161-163° (sealed tube). $[\alpha]_D$ +62 (c, 2.3 in H_2O).

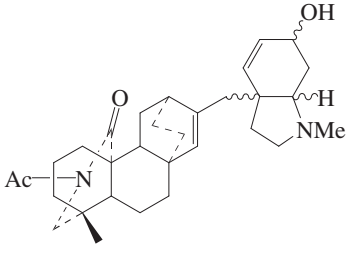
Iodide: [88147-91-5]
Mp 180-181°. $[\alpha]_D$ +12.2 (c, 2 in H_2O).

[88198-81-6 , 88147-93-7]

Meyer, B.N. *et al., J. Nat. Prod.*, 1983, **46**, 688 (*isol, struct, spectra, synth*)

Coryphidine C-696

Coriphidine
[359436-27-4]

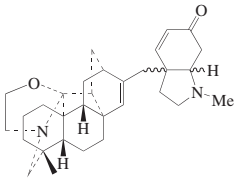


$C_{31}H_{44}N_2O_3$ 492.7
Alkaloid from *Aconitum koreanum* (Ranunculaceae). Cryst. (MeOH). Mp 247-249°. Species name given as coreanum in the ref. λ_{max} 205 (log ϵ 3.95) (EtOH).

Bessonova, I.A. *et al., Khim. Prir. Soedin.*, 1992, **28**, 243-246; *Chem. Nat. Compd. (Engl. Transl.)*, 1992, **28**, 209-212 (*isol, uv, ir, pmr, ms*)

Coryphine C-697

Corifine
[142735-24-8]



Absolute Configuration

$C_{31}H_{42}N_2O_2$ 474.685
Alkaloid from epigeal parts of *Aconitum koreanum* (Ranunculaceae). Mp 199-200°. $[\alpha]_D^{20}$ +150 (c, 0.4 in MeOH).

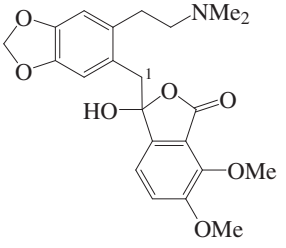
Species name spelt as coreanum in the ref.

Perchlorate:
Cryst. (EtOH aq. or MeOH). Mp 225-226°.

Yusipova, I.M. *et al., Khim. Prir. Soedin.*, 1991, 396-403; *Chem. Nat. Compd. (Engl. Transl.)*, 1991, **27**, 343-349 (*isol, pmr, cmr, ms, cryst struct*)

Coryrutine C-698

[104736-02-9]



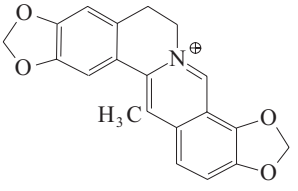
$C_{22}H_{25}NO_7$ 415.442
Coryrutine appears to be identical with *N*-Methylhydrasteine in N-35 in the lactol form, but this requires confirmation. Alkaloid from *Corydalis rutifolia* (Papaveraceae).

1-Oxo: ***Oxocoryrutine***
[156953-76-3]
$C_{22}H_{23}NO_8$ 429.426
Alkaloid from whole plants of *Dactylicapnos torulosa* (Papaveraceae). Powder. Mp 173-175°. $[\alpha]_D^{20}$ 0 (c, 1.0 in MeOH). Appears to be identical to *N*-Methyloxohydrasteine in N-35 drawn in the lactol form but this requires confirmation. λ_{max} 230 (sh) (log ϵ 4.89); 294 (log ϵ 4.67); 320 (sh) (log ϵ 4.61) (MeOH).

Şener, B. *et al., CA*, 1986, **105**, 206252d (*Coryrutine*)
Rücker, G. *et al., Phytochemistry*, 1994, **36**, 519-523 (*Oxocoryrutine*)

Corysamine C-699

6,7-Dihydro-13-methylbis[1,3]benzodioxolo[5,6-a:4′,5′-g]quinolizinium, 9CI. 13-Methylcoptisine
[30243-28-8]



$C_{20}H_{16}NO_4^{\oplus}$ 334.351
Alkaloid from *Corydalis incisa, Corydalis cava, Corydalis lutea, Meconopsis napaulensis, Papaver, Glaucium, Argemone, Eschscholtzia* and *Bocconia* spp. (Papaveraceae). Alcohol dehydrogenase inhibitor.

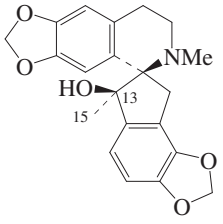
Chloride: [11028-77-6]
$C_{20}H_{16}ClNO_4$ 369.803
Trihydrate. Mp 230° (210-211°).

Iodide: [96422-46-7]
$C_{20}H_{16}INO_4$ 461.255
Mp 300°.

Tani, C. *et al., Yakugaku Zasshi*, 1962, **82**, 598; 748 (*isol, struct*)
Slavik, J. *et al., Coll. Czech. Chem. Comm.*, 1981, **46**, 2587; 1984, **49**, 704; 1318; 1985, **50**, 854; 2299 (*isol*)
Hanaoka, M. *et al., Chem. Comm.*, 1985, 1257 (*synth*)

Corystewartine C-700

[119777-72-9]

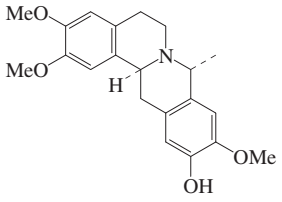


$C_{21}H_{21}NO_5$ 367.401
Alkaloid from the whole plant of *Corydalis stewartii* (Papaveraceae). $[\alpha]_D$ +82 (c, 0.12 in $CHCl_3$).

13-Deoxy, 13,15-didehydro: ***Ochotensidine***
[119777-71-8]
$C_{21}H_{19}NO_4$ 349.385
Alkaloid from the whole plant of *Corydalis stewartii* (Papaveraceae). $[\alpha]_D$ +44 (c, 0.13 in MeOH).

Hussain, S.F. *et al., J. Nat. Prod.*, 1988, **51**, 1136 (*isol, uv, pmr, ms, struct, cd*)

Corytenchirine C-701



(-)-*form*

$C_{21}H_{25}NO_4$ 355.433

(-)-*form* [56974-41-5]
Alkaloid from *Corydalis ochotensis* (Papaveraceae). Prisms (MeOH). Mp 246-247°. $[\alpha]_D^{24}$ -299 (c, 1.0 in $CHCl_3$).

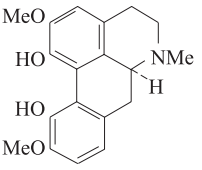
(+)-*form*
O^2-*De-Me:* ***Hemiargyrine***
$C_{20}H_{23}NO_4$ 341.406
Alkaloid from *Croton hemiargyreus.* Amorph. solid. Mp 164-166°. $[\alpha]_D$ +198 (c, 0.1 in MeOH). λ_{max} 207 ; 228 (sh) ; 287 (MeOH).

(±)-*form* [60594-54-9]
Synthetic. Prisms (MeOH). Mp 203-205°.

Lu, S.T. *et al., J.C.S. Perkin 1*, 1976, 63 (*uv, ms, pmr*)
Kametani, T. *et al., J.C.S. Perkin 1*, 1976, 1218 (*synth, ir, pmr*)
Amaral, A.C.F. *et al., Phytochemistry*, 1988, **47**, 1445-1447 (*Hemiargyrine, isol, uv, ir, pmr, cmr, ms*)

Corytuberine C-702

1,11-Dihydroxy-2,10-dimethoxyaporphine



(*S*)-*form*

$C_{19}H_{21}NO_4$ 327.379
Analeptic, antineoplastic agent. Respiratory stimulant, vagus depressant, increases salivation. Log P 2.42 (uncertain value) (calc). λ_{max} 208 (ϵ 31600); 226 (ϵ 25100); 276 (ϵ 5010); 318 (ϵ 5010) (EtOH/KOH) (Derep). λ_{max} 222 (ϵ 25100); 268 (ϵ 10000); 306 (ϵ 3160) (EtOH) (Derep).

(*S*)-*form* [517-56-6]
Alkaloid from a variety of genera in the Papaveraceae (*Corydalis, Dicentra, Glaucium, Papaver, Dicranostigma, Eschscholtzia*), Lauraceae (*Mezilaurus*) and Menispermaceae (*Stephania*). Mp 240°. $[\alpha]_D^{20}$ +286 (c, 0.1 in EtOH). Pharmacol. active isomer.

Di-Ac: Mp 72°.

N-*Me:* ***Magnoflorine****. Thalictrine. Esholine. Escholine. Corytuberine methosalt*
[2141-09-5]
$C_{20}H_{24}NO_4^{\oplus}$ 342.414
Alkaloid from *Magnolia obovata* (Magnoliaceae) and *Aquilegia hybrida* (Ranunculaceae), also from the Annonaceae, Berberidaceae, Euphorbiaceae, Menispermaceae, Papaveraceae, Rutaceae, Aristolochiaceae, and Rhamnaceae. Weak curarising and hypotensive agent. Shows antiyeast activity. Mp 248-249° (as iodide). $[\alpha]_D^{20}$ +193 (c, 0.20 in MeOH) (iodide). Iodide shows grinding-induced polymorphism. Many lit. references where Magnoflorine has supposedly been identified may be in error because of the similarity in props. to *N,N*-Dimethyllindcarpine in T-248. λ_{max} 227 (log ϵ 4.68); 275 (log ϵ 3.99); 315 (log ϵ 3.96) (H_2O) (iodide).

N-*De-Me: 1,11-Dihydroxy-2,10-dimethoxynoraporphine.* ***Muricinine***
$C_{18}H_{19}NO_4$ 313.352
Alkaloid from *Annona muricata* (soursop) (Annonaceae). Tentative struct., not well characterised.

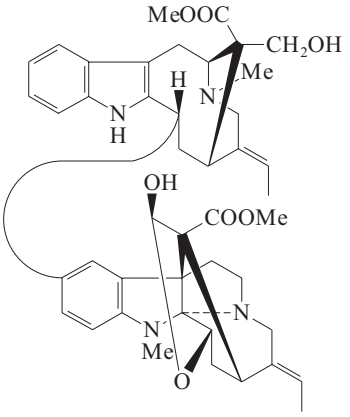
(±)-*form* [71630-07-4]
Mp 242°.

Hydrochloride: Mp 250° dec.

Dobbie, J.J. *et al., J.C.S.*, 1893, **63**, 485-488 (*isol*)
Gulland, J.M. *et al., J.C.S.*, 1928, 1834-1838 (*synth*)
Späth, E. *et al., Ber.*, 1931, **64**, 2038-2048 (*synth*)
Manske, R.H.F. *et al., Alkaloids (Academic Press)*, 1954, **4**, 142-143 (*Muricinine*)
Nakano, T. *et al., Chem. Pharm. Bull.*, 1954, **2**, 329-334 (*Magnoflorine*)
Tomita, M. *et al., Yakugaku Zasshi*, 1957, **77**, 157 (*Magnoflorine*)
Albonico, S.M. *et al., J.C.S.(C)*, 1966, 1340-1342 (*ord, abs config*)
Jackson, A.H. *et al., J.C.S.(C)*, 1966, 2222-2229 (*pmr*)
Slavic, J. *et al., Coll. Czech. Chem. Comm.*, 1973, **38**, 3514-3520 (*Esholine*)
Dominguez, X.A. *et al., Phytochemistry*, 1974, **13**, 680 (*Magnoflorine*)
Kametani, T. *et al., J.A.C.S.*, 1977, **99**, 3805-3808 (*synth*)
Ringdahl, B. *et al., J. Nat. Prod.*, 1981, **44**, 80-85 (*cd*)
Tsai, I.L. *et al., Kaohsiung J. Med. Sci.*, 1989, **5**, 132-145 (*Magnoflorine, activity*)
Hoard, M.S. *et al., Phytochemistry*, 1996, **43**, 1129-1133 (*Magnoflorine, polymorphism*)
Barbosa-Filho, J.M. *et al., Phytochemistry*, 1997, **44**, 959-961 (*Magnoflorine, isol, pmr, cmr*)
Marek, R. *et al., Magn. Reson. Chem.*, 1999, **37**, 195-202 (*Magnoflorine, N-15 nmr*)

Coryzeylamine C-703

[164176-11-8]

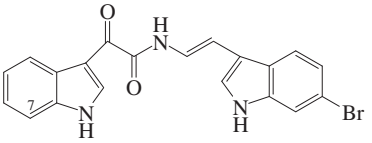


$C_{44}H_{52}N_4O_7$ 748.917
Alkaloid from leaves of *Hunteria zeylanica* (Apocynaceae). Amorph. powder. $[\alpha]_D^{25}$ -24 (c, 0.25 in MeOH).

Takayama, H. *et al., Chem. Pharm. Bull.*, 1994, **42**, 1957 (*isol, uv, pmr, cmr, struct*)

Coscinamide A C-704

[298196-72-2]



$C_{20}H_{14}BrN_3O_2$ 408.254
Isol. from the marine sponge *Coscinoderma* sp. Yellow solid. $[\alpha]_D$ -1.9 (c, 1.3 in MeOH). λ_{max} 207 (log ϵ 4.47); 256 (log ϵ 4.12); 335 (log ϵ 3.96) (MeOH).

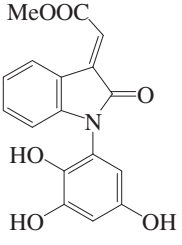
Debromo: ***Coscinamide B***
[298196-73-3]
$C_{20}H_{15}N_3O_2$ 329.357
Isol. from *Coscinoderma* sp. Orange solid. Mp 228-230° dec. $[\alpha]_D$ +23.6 (c, 0.83 in MeOH). λ_{max} 207 (log ϵ 4.53); 229 (log ϵ 4.29); 267 (log ϵ 4.26); 347 (log ϵ 4.17) (MeOH).

7-Hydroxy: ***Coscinamide C***
[298196-74-4]

$C_{20}H_{14}BrN_3O_3$ 424.253
Isol. from *Coscinoderma* sp. Yellow solid. $[\alpha]_D$ -9.9 (c, 0.14 in MeOH). λ_{max} 213 (log ϵ 4.09); 261 (log ϵ 3.77); 363 (log ϵ 3.6) (MeOH).

Bokesch, H.R. *et al., Tet. Lett.*, 2000, **41**, 6305-6308 (*Coscinamides, isol, pmr, cmr*)
Chakrabarty, M. *et al., Synthesis*, 2003, 2011-2014 (*Coscinamide B, synth*)

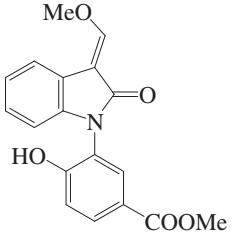
Costinone A C-705



$C_{17}H_{13}NO_6$ 327.293
Alkaloid from *Isatis costata*. Pale yellow cryst. (EtOH). Mp 207-208°. $[\alpha]_D$ +110 (c, 0.12 in MeOH). Opt. rotn. unaccounted for.

Fatima, I. *et al., Heterocycles*, 2006, **68**, 1421-1428 (*isol, pmr, cmr, ms*)

Costinone B C-706

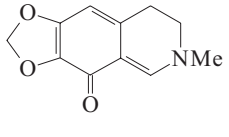


$C_{18}H_{15}NO_5$ 325.32
Alkaloid from *Isatis costata*. Pale yellow cryst. (EtOH). Mp 195-197°. $[\alpha]_D$ +99.7 (c, 0.12 in MeOH). λ_{max} 210 (log ϵ 4.47); 230 (log ϵ 4.1); 279 (log ϵ 2.5) (MeOH).

Fatima, I. *et al., Heterocycles*, 2006, **68**, 1421-1428 (*isol, pmr, cmr, ms*)

Cotarnoline C-707

7,8-Dihydro-4-hydroxy-6-methyl-1,3-dioxolo[4,5-g]isoquinolinium(1+), 9CI. 3,4-Dihydro-8-hydroxy-2-methyl-6,7-methylenedioxyisoquinolinium(1+)
[525-13-3]



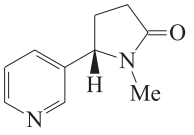
$C_{11}H_{11}NO_3$ 205.213
CAS name refers to iminium salt form. Alkaloid from *Papaver pseudo-orientale* and other *Papaver* spp. (Papaveraceae). Amorph. orange solid.

Hydrochloride: [33329-37-2]
Mp 263°. Exists as the colourless iminium salt.

Goeber, B. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1966, **299**, 196
Sariyar, G. *et al., J. Nat. Prod.*, 1990, **53**, 1302 (*isol, uv, ms, pmr*)

Cotinine, INN C-708

1-Methyl-5-(3-pyridinyl)-2-pyrrolidinone, 9CI
[75202-09-4]



(*S*)–*form*

$C_{10}H_{12}N_2O$ 176.218
Viscous oil. Bp_6 210-211°. Log P -0.47 (uncertain value) (calc).

(*S*)-*form* [486-56-6]
Alkaloid from leaf tobacco (*Nicotiana tabacum*), also detected in *Duboisia hopwoodii* (Solanaceae). Antidepressant. Nicotine metabolite, used as a biomarker for exposure to cigarette smoke. Shows behavioural effects in animals. Mp 40-43°. Bp 210-211° V. hygroscopic. Prob. artifact of autoxidn. of nicotine.
▶ LD_{50} (mus, orl) 1604 mg/kg. LD_{50} (mus, ipr) 930 mg/kg. GN1925500

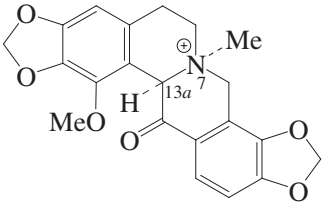
Fumarate (2:1): ***Cotinine fumarate, USAN***. *Scotine*
[5695-98-7]

Picrate: Mp 102-103°.

(±)-*form* [15569-85-4]
Synthetic. Yellow oil. Bp 210-211°.
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 294C (*nmr*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 1537C (*ir*)
Pinner, A. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1893, **231**, 378 (*synth*)
Frankenburg, W.G. *et al., J.A.C.S.*, 1957, **79**, 149 (*isol, struct, ir*)
Testa, B. *et al., Mol. Pharmacol.*, 1973, **9**, 10 (*conformn*)
Leete, E. *et al., J.O.C.*, 1976, **41**, 3438; 1978, **43**, 2860 (*synth, ms*)
Tsujino, Y. *et al., Agric. Biol. Chem.*, 1979, **43**, 871 (*synth*)
Acheson, R.M. *et al., J.C.S. Perkin 1*, 1980, **2**, 579 (*synth*)
Nishida, T. *et al., Org. Magn. Reson.*, 1980, **13**, 434 (*cmr*)
Luanratana, O. *et al., Phytochemistry*, 1982, **21**, 449 (*isol*)
Benowitz, N.L. *et al., Clin. Pharmacol. Ther. (St. Louis)*, 1983, **34**, 604 (*metab*)
Kyerematen, G.A. *et al., Life Sci.*, 1983, **32**, 551 (*metab*)
Moriarty, R.M. *et al., Tet. Lett.*, 1988, **29**, 6913 (*(±)-form, synth*)
Anderson, I.G. *et al., Analyst (London)*, 1991, **116**, 691 (*gc*)
Sato, T. *et al., Heterocycles*, 1992, **33**, 139 (*synth*)
Deutsch, J. *et al., J. Chromatogr.*, 1992, **579**, 93 (*gc-ms*)
McAdams, S.A. *et al., J. Chromatogr.*, 1993, **615**, 148 (*gc-ms*)
Keenan, R.M. *et al., Clin. Pharmacol. Ther. (St. Louis)*, 1994, **55**, 581 (*pharmacol*)
Sato, T. *et al., J.C.S. Perkin 1*, 1995, 1115 (*synth*)
Terry, A.V. *et al., CNS Drug Rev.*, 2005, **11**, 229-252 (*rev*)

Coulteroberbinone C-709

[246262-28-2]

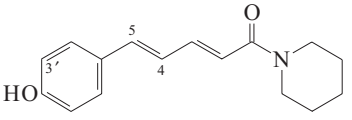


$C_{21}H_{20}NO_6^{\oplus}$ 382.392
Ref. config. only detd. Quaternary alkaloid from *Romneya coulteri*. Powder ($MeOH/CHCl_3/Et_2O$) (as chloride). Mp 212-213° (chloride). $[\alpha]_D$ -53 (c, 0.4 in MeOH) (chloride). λ_{max} 240 (log ϵ 4.19); 290 (log ϵ 3.95); 324 (log ϵ 3.75) (MeOH) (chloride).

Valpuesta, M. *et al., Phytochemistry*, 1999, **51**, 1157-1160 (*isol, uv, ir, pmr, cmr, ms*)

Coumaperine C-710

1-[5-(4-Hydroxyphenyl)-1-oxo-2,4-pentadienyl]piperidine, 9CI. N-*[5-(4-Hydroxyphenyl)-2,4-pentadienoyl]piperidine. 5-(4-Hydroxyphenyl)-2,4-pentadienoic acid piperidide*
[76733-91-0]



$C_{16}H_{19}NO_2$ 257.332
Isol. from the fruits of pepper (*Piper nigrum*) (Piperaceae). Cryst. (Me_2CO). Mp 199.5-200.5°.

Ac: [76733-93-2]
Needles (Et_2O). Mp 127-128°.

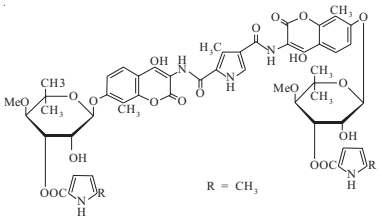
3′-Methoxy: ***Feruperine***
[77795-15-4]
$C_{17}H_{21}NO_3$ 287.358
Alkaloid from pepper (*Piper nigrum*) (Piperaceae). Antioxidant. Pale yellow needles (C_6H_6). Mp 159°.

3′-Methoxy, 4′,5′-dihydro: ***Dihydroferuperine***
[77795-17-6]
$C_{17}H_{23}NO_3$ 289.374
Alkaloid from pepper (*Piper nigrum*) (Piperaceae). Cryst. (petrol). Mp 78°.

Nakatani, N. *et al., Agric. Biol. Chem.*, 1980, **44**, 2831 (*isol, ms, uv, ir, pmr, struct, synth*)
Inatani, R. *et al., Agric. Biol. Chem.*, 1981, **45**, 667 (*Feruperine, Dihydroferuperine*)

Coumermycin A_1 C-711

Coumermycin, USAN. *Coumamycin, INN. Notomycin A_1. Sugordomycin D_{1a}. BU 620. NSC 107412. Antibiotic BU 620. Ro 5-4645/10*
[4434-05-3]
[87901-11-9 (Na salt)]



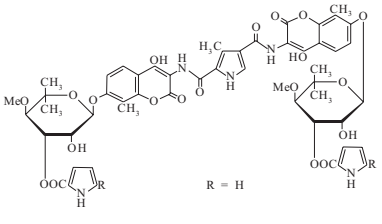
$C_{55}H_{59}N_5O_{20}$ 1110.093
Isol. from *Streptomyces rishiriensis* and other *Streptomyces* spp. Active against gram-positive and -negative bacteria and mycobacteria. Sol. MeOH, Me_2CO, THF, Py, bases, dioxan, DMF, EtOAc, butanol, EtOH; fairly sol. $CHCl_3$, C_6H_6; poorly sol. hexane, CCl_4, H_2O, acids. Mp 258-260° dec. $[\alpha]_D^{20}$ -141 (c, 1.0 in 75% Me_2CO aq.). Also used as Na salt (Coumermycin sodium, USAN). λ_{max} 280 (ϵ 44200); 345 (ϵ 44300) (EtOH/HCl) (Derep). λ_{max} 280 (ϵ 62200); 308 (ϵ 34200) (EtOH/NaOH) (Derep). λ_{max} 280 (ϵ 59400); 336 (ϵ 42200) (EtOH) (Derep).

▶ LD_{50} (mus, ivn) 25 mg/kg, LD_{50} (mus, ipr) 159 mg/kg, LD_{50} (mus, scu) 380 mg/kg, LD_{50} (mus, orl) 2000 mg/kg. UX9375000

Berger, J. *et al., Antimicrob. Agents Chemother.*, 1965, 778 (*synth*)
Kawaguchi, H. *et al., J. Antibiot., Ser. A*, 1965, **18**, 11 (*struct*)
Wick, A.E. *et al., Tetrahedron*, 1976, **32**, 2057 (*config*)
Berger, J. *et al., J. Chromatogr. Libr.*, 1978, **15**, 101 (*rev*)
Martindale, The Extra Pharmacopoeia, 28th/29th edn., Pharmaceutical Press, 1982, 19000
Neu, H.C. *et al., Antimicrob. Agents Chemother.*, 1984, **25**, 687 (*props*)
Claridge, C.A. *et al., Drugs Pharm. Sci.*, 1984, **22**, 413 (*rev*)
Olson, S.H. *et al., Tet. Lett.*, 2003, **44**, 61-63 (*synth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, CNV500

Coumermycin A_2 C-712

Notomycin A_2. Sugordomycin D_{1d}
[3130-60-7]



$C_{53}H_{55}N_5O_{20}$ 1082.039
Isol. from *Streptomyces rishiriensis* and other *Streptomyces* spp. Sol. MeOH, bases, EtOAc; fairly sol. $CHCl_3$, C_6H_6; poorly sol. hexane, H_2O. λ_{max} 267 (ϵ 50000); 340 (ϵ 42000) (EtOH) (Derep).

Berger, J. *et al., Antimicrob. Agents Chemother.*, 1965, 778 (*isol*)
Kawaguchi, H. *et al., J. Antibiot., Ser. A*, 1965, **18**, 220 (*struct*)
Berger, J. *et al., J. Chromatogr. Libr.*, 1978, **15**, 101 (*rev*)
Claridge, C.A. *et al., Drugs Pharm. Sci.*, 1984, **22**, 413 (*rev*)

Coumingaine C-713

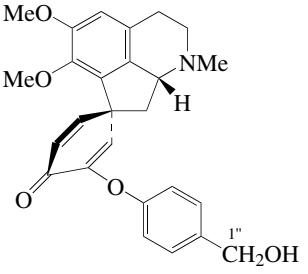
$C_{32}H_{51}NO_8$ 577.757
Struct. unknown. *Erythrophleum* alkaloid. Poorly descr. in the lit. Alkaloid from *Erythrophleum couminga* (Fabaceae). Cardiac stimulant showing digitalis-like activity. Local anaesthetic, hypertensive agent. Amorph.

▶ Toxic.

Chen, K.K. *et al., J. Am. Pharm. Assoc.*, 1938, **27**, 9-16

Coyhaiquine C-714

[85643-88-5]



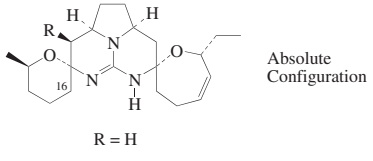
$C_{26}H_{27}NO_5$ 433.503
Alkaloid from *Berberis empetrifolia* (Berberidaceae). $[\alpha]_D^{25}$ +28 (c, 0.02 in MeOH). The first known oxidized proaporphine-benzylisoquinoline alkaloid.

1''-Aldehyde: ***Coyhaiquinine***
[101242-45-9]
$C_{26}H_{25}NO_5$ 431.487
Constit. of *Berberis empetrifolia*.

Fajardo, V. *et al., Chem. Comm.*, 1982, 1350 (*isol, uv, pmr, ms, cd, struct*)
Fajardo, V. *et al., Bol. Soc. Chil. Quim.*, 1985, **30**, 51; *CA*, **104**, 145455c (*Coyhaiquinine*)

Crambescidin 359 C-715

[259733-99-8]



$C_{21}H_{33}N_3O_2$ 359.511
Alkaloid from the sponge *Monanchora unguiculata*. Gum. $[\alpha]_{577}$ -9 (c, 0.18 in CH_2Cl_2).

*16*S*-Hydroxy:* ***16-Hydroxycrambescidin 359***
[956142-72-6]
$C_{21}H_{33}N_3O_3$ 375.51
Alkaloid from *Monanchora unguifera*. Cryst. $[\alpha]_D$ -3 (c, 0.1 in MeOH). λ_{max} 208 (ϵ 6334) (MeOH).

Braekman, J.C. *et al., J. Nat. Prod.*, 2000, **63**, 193-196 (*Crambescidin 359*)
Nagasawa, K. *et al., Org. Lett.*, 2002, **4**, 177-180 (*synth*)
Aron, Z.D. *et al., J.A.C.S.*, 2005, **127**, 3380-3390 (*synth*)
Hua, H.-M. *et al., Tetrahedron*, 2007, **63**, 11179-11188 (*16β-Hydroxycrambescidin 359*)
Moore, C.G. *et al., Tetrahedron*, 2007, **63**, 11771-11780 (*synth*)

Crambescidin 431 C-716

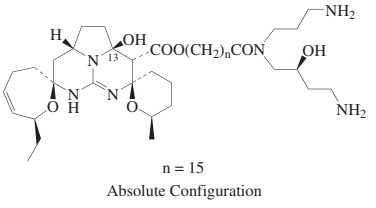
[259734-00-4]
As Crambescidin 359, C-715 with
R = -COOEt
$C_{24}H_{37}N_3O_4$ 431.574
Alkaloid from the sponge *Monanchora unguiculata*. Gum. $[\alpha]_{577}$ +12 (c, 0.19 in CH_2Cl_2).

Parent acid: ***Crambescidin acid***
[147664-30-0]
$C_{22}H_{33}N_3O_4$ 403.52
Alkaloid from *Monanchora unguiculata*. $[\alpha]_D^{25}$ -19 (c, 0.04 in MeOH). λ_{max} 231 (log ϵ 3.2); 268 (log ϵ 2.84) (MeOH).

Braekman, J.C. *et al., J. Nat. Prod.*, 2000, **63**, 193-196 (*Crambescidin 431*)
Meragelman, K.M. *et al., J. Nat. Prod.*, 2004, **67**, 1165-1167 (*Crambescidin acid*)
Aron, Z.D. *et al., J.A.C.S.*, 2005, **127**, 3380-3390 (*synth*)

Crambescidin 816 C-717

[135257-45-3]



$C_{45}H_{80}N_6O_7$ 817.163
Alkaloid from the sponges *Crambe crambe* and *Batzella* sp. Possesses antiviral and cytotoxic props. Ca antagonist, ichthyotoxin. Oil. $[\alpha]_D^{25}$ -20.14 (c, 0.4 in MeOH).

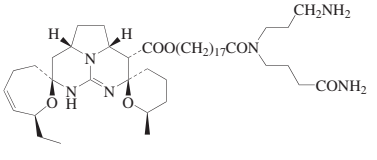
13-Deoxy: ***Crambescidin 800***
[135257-46-4]
$C_{45}H_{80}N_6O_6$ 801.164
From the sponges *Crambe crambe* and *Batzella* sp. Possesses antiviral and cytotoxic props. Ichthyotoxin. Oil.

13-Deoxy, 13,14,15-triepimer: ***Isocrambescidin 800***
[151121-78-7]
$C_{45}H_{80}N_6O_6$ 801.164
Alkaloid from *Crambe crambe*. Ichthyotoxin. Oil. $[\alpha]_D^{25}$ -48 (c, 0.53 in MeOH).

Jares-Erijman, E.A. *et al., J.O.C.*, 1991, **56**, 5712-5715; 1993, **58**, 4805-4808 (*isol, pmr, cmr, struct, derivs*)
Berlinck, R.G.S. *et al., J. Nat. Prod.*, 1993, **56**, 1007-1015 (*isol*)
Coffey, D.S. *et al., J.A.C.S.*, 1999, **121**, 6944-6945; 2000, **122**, 4893-4903; 4904-4914 (*synth, Isocrambescidin 800*)

Crambescidin 826 C-718

[628727-32-2]



$C_{47}H_{82}N_6O_6$ 827.201
Alkaloid from the sponge *Monanchora*

sp. Inhibitor of HIV-1 fusion. Glassy solid. $[\alpha]_D^{20}$ -7.7 (c, 0.09 in MeOH). λ_{max} 207 (log ϵ 4.04); 274 (log ϵ 3.24) (MeOH).

Chang, L.C. *et al., J. Nat. Prod.*, 2003, **66**, 1490-1494 (*isol, pmr, cmr*)

Crambescidin 830 **C-719**

[135257-47-5]
As Crambescidin 816, C-717 with
n = 16
$C_{46}H_{82}N_6O_7$ 831.19
Alkaloid from the sponge *Crambe crambe*. Possesses antiviral and cytotoxic props. Oil.

Jares-Erijman, E.A. *et al., J.O.C.*, 1991, **56**, 5712 (*isol, pmr, cmr, struct*)

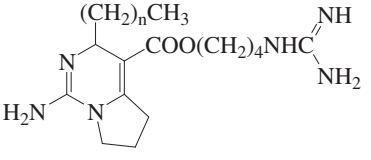
Crambescidin 844 **C-720**

[135283-73-7]
As Crambescidin 816, C-717 with
n = 17
$C_{47}H_{84}N_6O_7$ 845.217
Alkaloid from the sponge *Crambe crambe*. Possesses antiviral and cytotoxic props. Oil. $[\alpha]_D^{25}$ -10.32 (c, 0.19 in MeOH).

Jares-Erijman, E.A. *et al., J.O.C.*, 1991, **56**, 5712 (*isol, pmr, cmr, struct*)

Crambescin A† **C-721**

Crambine A
[132210-62-9]



n = 10

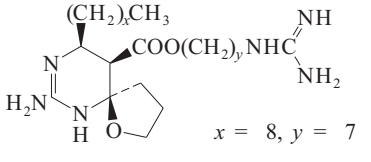
$C_{24}H_{44}N_6O_2$ 448.651
Major component of bis-guanidine complex where in addition *n* = 9, 11 and 12. Alkaloids from the marine sponge *Crambe crambe*. Glassy solid. $[\alpha]_D$ +2 (c, 0.7 in MeOH). λ_{max} 204 (ϵ 10600); 286 (ϵ 5500) (MeOH) (Derep).

Lower homologue (n = 4): ***Antibiotic Sch 575948***. *Sch 575948*
$C_{18}H_{32}N_6O_2$ 364.49
Isol. from the marine sponge *Ptilocaulis spiculifer*. Antibacterial agent.

Berlinck, R.G.S. *et al., Tet. Lett.*, 1990, **31**, 6531-6534 (*Crambine A, isol, pmr, struct*)
Yang, S.W. *et al., J. Antibiot.*, 2003, **56**, 970-972 (*Sch 575948*)

Crambescin B **C-722**

Crambine B
[132210-63-0]



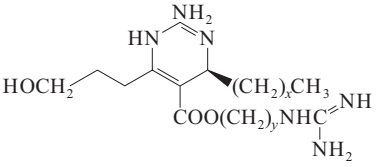
x = 8, y = 7

$C_{25}H_{48}N_6O_3$ 480.693
Major component of bis-guanidine complex where in addition *x* + *y* = 14, 16, 17. Struct. revised in 1993; originally descr. as having *x* = 10, *y* = 5. Alkaloids from the sponge *Crambe crambe*. Cytotoxic against L1210 murine leukaemia cells. Cell reaggregation inhibitor. Ichthyotoxin. Glassy solid. $[\alpha]_D$ +52 (c, 0.9 in MeOH).

Berlinck, R.G.S. *et al., Tet. Lett.*, 1990, **31**, 6531-6534 (*isol, pmr*)
Snider, B.B. *et al., J.O.C.*, 1992, **57**, 2526-2528 (*stereochem*)
Jares-Erijman, E.A. *et al., J. Nat. Prod.*, 1993, **56**, 2186-2188 (*struct*)

Crambescin C1 **C-723**

Crambine C1
[142605-06-9]



x = 8, y = 7

$C_{25}H_{48}N_6O_3$ 480.693
Major homologue of bis-guanidine complex where in addn. *x* + *y* = 14, 16 and 17. Struct revised in 1993; originally descr. as the compd. with *x* = 10, *y* = 5. Alkaloid from the Mediterranean sponge *Crambe crambe*. Ichthyotoxic agent. Glassy solid. Sol. MeOH, $CHCl_3$. $[\alpha]_{404}$ +13.7 (c, 0.8 in MeOH). λ_{max} 207 (ϵ 4600); 279 (ϵ 2200) (MeOH) (Derep).

Berlinck, R.G.S. *et al., J. Nat. Prod.*, 1992, **55**, 528-532 (*isol, uv, ir, pmr, cmr, cd*)
Jares-Erijman, E.A. *et al., J. Nat. Prod.*, 1993, **56**, 2186-2188 (*struct*)

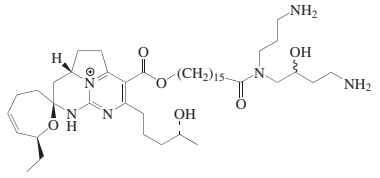
Crambescin C2 **C-724**

Crambine C2
[142605-07-0]
As Crambescin C1, C-723 with
x + y = 14
$C_{24}H_{46}N_6O_3$ 466.666
Originally descr. as the compd. with x = 10, y = 4, but this is doubtful in view of the revised struct. of Crambescin C1. Alkaloid from the sponge *Crambe crambe*. Ichthyotoxic agent. Glassy solid. Sol. MeOH, $CHCl_3$. $[\alpha]_D$ -30 (c, 0.2 in MeOH). λ_{max} 204 (ϵ 10600); 286 (ϵ 5500) (MeOH) (Derep). λ_{max} 203 (ϵ 6000); 281 (ϵ 2500) (MeOH) (Berdy).

Berlinck, R.G.S. *et al., J. Nat. Prod.*, 1992, **55**, 528-532 (*isol, uv, pmr*)
Jares-Erijman, E.A. *et al., J. Nat. Prod.*, 1993, **56**, 2186-2188 (*nomencl*)

Crambidine **C-725**

[151271-96-4]



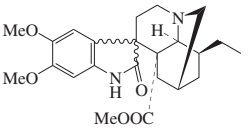
Absolute Configuration

$C_{45}H_{79}N_6O_6^{\oplus}$ 800.156
Alkaloid from the marine sponge *Crambe crambe*. Shows ichthyotoxic props. Glassy solid (as per-Ac, chloride).

Berlinck, R.G.S. *et al., J. Nat. Prod.*, 1993, **56**, 1007-1015 (*isol, uv, pmr, cmr*)
Overman, L.E. *et al., J.A.C.S.*, 2005, **127**, 15652-15658 (*synth, abs config*)

Crassanine **C-726**

Conopharyngine oxindole
[16790-92-4]



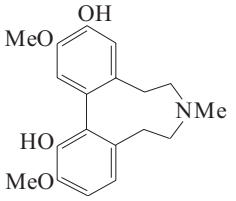
Relative Configuration

$C_{23}H_{30}N_2O_5$ 414.5
Minor alkaloid from *Tabernaemontana crassa* (Apocynaceae). Plates ($CHCl_3$). Mp 190-191°. $[\alpha]_D^{26}$ +21.4 (c, 0.013 in EtOH). λ_{max} 210 (log ϵ 4.37); 275 (log ϵ 3.68); 302 (log ϵ 3.55) (no solvent reported).

Cava, M.P. *et al., J.O.C.*, 1968, **33**, 3350-3552 (*isol, uv, ir, ms, pmr, struct*)

Crassifolazonine **C-727**

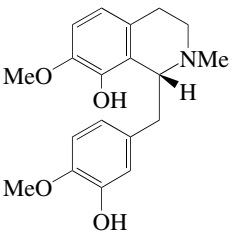
[96910-80-4]



$C_{19}H_{23}NO_4$ 329.395
Alkaloid from *Corydalis claviculata* (Papaveraceae). Cryst. (hexane/C_6H_6). Mp 160-162°. $[\alpha]_D^{20}$ -50 (c, 0.06 in $CHCl_3$).

Boente, J.M. *et al., Heterocycles*, 1985, **23**, 1069 (*uv, pmr, cmr, struct, synth*)

Crassifoline **C-728**



(*R*)-*form*

$C_{19}H_{23}NO_4$ 329.395

(*R*)-*form*

N-*Me:* ***Isotembetarine***
[186502-92-1]
$C_{20}H_{26}NO_4^{\oplus}$ 344.43
Quaternary alkaloid from roots of *Zanthoxylum nitidium*. Cryst. (Me_2CO/hexane) (as perchlorate). Mp 172° (perchlorate). $[\alpha]_D^{25}$ +3.5 (c, 0.43 in

MeOH).

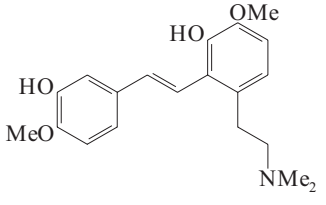
(*S*)-*form* [87098-80-4]
Alkaloid from *Sarcocapnos crassifolia* and *Corydalis claviculata* (Papaveraceae). Oil; cryst. (EtOH)(as perchlorate). Mp 228-230° (as perchlorate). $[\alpha]_D^{22}$ +37.6 (c, 0.1 in EtOH). The first 7,8,3′,4′-tetraoxygenated benzylisoquinoline from a natural source.

(±)-*form* [31278-84-9]
Synthetic. Needles (Et_2O/petrol). Mp 61-63°.

Jackson, A.H. *et al., J.C.S. Perkin 1*, 1974, 1911 (*synth, pmr*)
Boente, J.M. *et al., Tet. Lett.*, 1983, **24**, 2303 (*ir, pmr, ms*)
Guinaudeau, H. *et al., Heterocycles*, 1984, **22**, 107 (*isol*)
Blaschke, G. *et al., Phytochemistry*, 1985, **24**, 585 (*isol, uv, pmr, cmr, ms, cd, config*)
Moriyasu, M. *et al., J. Nat. Prod.*, 1997, **60**, 299 (*Isotembetarine*)
Rodrigues, J.A.R. *et al., J.O.C.*, 2004, **69**, 2920-2928 (*synth*)

Crassifoline methine C-729

3-[2-(Dimethylamino)ethyl]-2-[2-(3-hydroxy-4-methoxyphenyl)ethenyl]-6-methoxyphenol, 9CI. 2-(Dimethylaminoethyl)-3′,6-dihydroxy-4′,5-dimethoxystilbene
[133084-00-1]

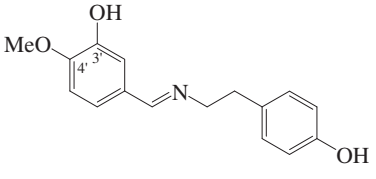


$C_{20}H_{25}NO_4$ 343.422
Alkaloid from *Corydalis claviculata* (Papaveraceae).

Allais, D.P. *et al., J. Nat. Prod.*, 1990, **53**, 1280 (*isol, struct*)

Craugsodine C-730

5-[[[2-(4-Hydroxyphenyl)ethyl]imino]-methyl]-2-methoxyphenol, 9CI. N-*(3-Hydroxy-4-methoxybenzylidene)-4′-hydroxyphenethylamine*
[102686-18-0]



$C_{16}H_{17}NO_3$ 271.315
Isol. from the flower-stem fluid of *Crinum augustum* (Amaryllidaceae). Possible direct precursor of Amaryllidaceae alkaloids. Light-brown solid. Mp 144-146°.

4′-O-*De-Me,* $O^{3'}$*-Me:* ***Isocraugsodine***
[116528-01-9]
[116528-00-8 , 116527-99-2]
$C_{16}H_{17}NO_3$ 271.315
Alkaloid from the fruits of *Crinum asiaticum* (Amaryllidaceae). Considered a direct biogenetic precursor of the Amaryllidaceae alkaloids. Orange-yellow needles (MeOH). Mp 220°. Exists as 3 isomers in soln. (*E*-form ⇔ quinone methide ⇔ *Z*-form).

Ghosal, S. *et al., J. Chem. Res., Synop.*, 1986, 28 (*Craugsodine*)
Ghosal, S. *et al., Phytochemistry*, 1988, **27**, 1849 (*Isocraugsodine*)

Creatine C-731

N-*(Aminoiminomethyl)*-N-*methylglycine, 9CI. Methylguanidinoacetic acid*
[57-00-1]
$HN{=}C(NH_2)NMeCH_2COOH$
$C_4H_9N_3O_2$ 131.134
Constit. of blood, muscle and other tissues. Prisms + $1H_2O$. Mod. sol. hot H_2O, spar. sol. EtOH, insol. Et_2O. Mp 303°.

Hydrate: [6020-87-7]
Mp 292° dec.

Hydrobromide: [15366-30-0]
Cryst. (EtOH/Et_2O). Mp 150-151°.

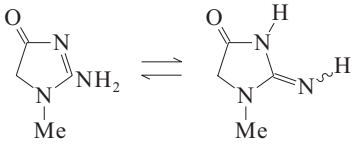
Picrate:
Needles (H_2O). Mp 218-220°.

N,N-*Di-Ac:*
$C_8H_{13}N_3O_4$ 215.208
Needles (EtOH). Mp 165°.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 785B (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 1280B (*nmr*)
Steudel, H. *et al., Hoppe-Seyler's Z. Physiol. Chem.*, 1921, **112**, 54 (*synth*)
King, H. *et al., J.C.S.*, 1930, 2374 (*synth*)
Yoshizaki, K. *et al., Biochim. Biophys. Acta*, 1981, **678**, 283 (*pmr*)
Tsuchiya, M. *et al., Int. J. Mass Spectrom. Ion Phys.*, 1983, **46**, 355 (*ms*)

Creatinine C-732

*2-Amino-1,5-dihydro-1-methyl-4*H-*imidazol-4-one, 9CI. 2-Amino-1-methyl-2-imidazolin-4-one*
[60-27-5]



$C_4H_7N_3O$ 113.119
Tautomeric: the amino and imino (2 stereoisomers) forms are of similar energy. Constit. of urine, muscle, etc. Metabolite of analytical importance in clinical chemistry, particularly as indicator of renal function. Rhombic prisms. Mp 305° dec. Forms stable addn. compd. with $ZnCl_2$. Undergoes ring-opening to Creatine, C-731 in alkaline soln. (Jaffé reaction).

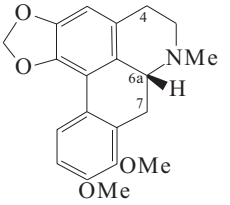
Picrate:
Needles. Mp 220-221°.

[62708-52-5]

Aldrich Library of NMR Spectra, 2nd edn., 1983, **2**, 489C (*nmr*)
Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 618A (*ir*)
Greenwald, I. *et al., J. Biol. Chem.*, 1929, **81**, 73 (*synth*)
King, H. *et al., J.C.S.*, 1930, 2377 (*synth*)
Org. Synth., Coll. Vol., 1, 1932, 172 (*synth*)
Kenyon, G.L. *et al., J.A.C.S.*, 1971, **93**, 5552 (*struct*)
Rowley, G.L. *et al., J. Het. Chem.*, 1972, **9**, 203 (*synth*)
Butler, A.R. *et al., J.C.S. Perkin 2*, 1985, 1465 (*cmr, tautom*)
Kotsyubynskyy, D. *et al., Magn. Reson. Chem.*, 2004, **42**, 1027-1036 (*pmr, N-15 nmr*)

Crebanine C-733

*6,7,7a,8-Tetrahydro-9,10-dimethoxy-7-methyl-5*H-*benzo[g]-1,3-benzodioxolo[6,5,4-de]quinoline, 9CI. 8,9-Dimethoxy-1,2-methylenedioxyaporphine*



$C_{20}H_{21}NO_4$ 339.39

(*R*)-*form* [25127-29-1]
Alkaloid from *Stephania capitata, Stephania sasakii* and *Stephania venosa* (Menispermaceae). Mp 115-118°. $[\alpha]_D$ -61 (c, 0.44 in $CHCl_3$).
▶ DE5376000

N-*Oxide:* ***Crebanine* N-*oxide***
[102719-85-7]
$C_{20}H_{21}NO_5$ 355.39
Alkaloid from *Stephania succifera* (Menispermaceae). Mp 132-134°. $[\alpha]_D$ -66.

N-*De-Me,* N-*methoxycarbonyl:* ***8,9-Dimethoxy-*N*-methoxycarbonyl-1,2-methylenedioxynoraporphine***
$C_{21}H_{21}NO_6$ 383.4
Alkaloid from the stems of *Fissistigma bracteolatum*. Powder. Mp 190-192°. $[\alpha]_D^{20}$ -265.2 (c, 0.01 in $CHCl_3$). λ_{max} 218 (log ϵ 4.47); 239 (log ϵ 4.09); 282 (log ϵ 4.24); 322 (log ϵ 3.56) (no solvent reported).

O^8-*De-Me,* N-*de-Me: 8-Hydroxy-9-methoxy-1,2-methylenedioxynoraporphine.* ***Norannuradhapurine***
[83694-79-5]
$C_{18}H_{17}NO_4$ 311.337
Alkaloid from the bark and leaves of *Polyalthia acuminata* (Annonaceae). Amorph. Annuradhapurine appears to be unknown.

O^9-*De-Me: 9-Hydroxy-8-methoxy-1,2-methylenedioxyaporphine.* ***Stesakine***
[77784-23-7]
Alkaloid from the stem and root of *Stephania sasakii* and the seeds of *Stephania cepharantha* (Menispermaceae). Mp 188-190°. $[\alpha]_D$ -78.7 ($CHCl_3$).

O^9-*De-Me,* O-*β-D-glucopyranoside:* ***Stesakine* O-*β-D*-glucopyranoside**

$C_{25}H_{29}NO_9$ 487.505
Alkaloid from the seeds of *Stephania cepharantha*. Amorph. powder. $[\alpha]_D^{27}$ -74.5 (c, 0.2 in MeOH).

*6*a,*7-Didehydro:* ***Dehydrocrebanine***
[77784-22-6]
$C_{20}H_{19}NO_4$ 337.374
Alkaloid from the stem and root of *Stephania sasakii* and from the seeds of *Stephania cepharantha*. Also present in *Stephania venosa* (Menispermaceae). Pale yellow needles (EtOH). Mp 152-153°.

▶ DE5378000

*6*a,*7-Didehydro,* O^9*-de-Me:* ***Dehydrostesakine***
[77784-24-8]
$C_{19}H_{17}NO_4$ 323.348
Alkaloid from the stem and roots of *Stephania sasakii* (Menispermaceae). Cryst. (Me_2CO). Mp 201-203°.

*4*S-*Hydroxy:* ***4-Hydroxycrebanine***
[79559-57-2]
$C_{20}H_{21}NO_5$ 355.39
Alkaloid from *Stephania sasakii* (Menispermaceae). Needles (Me_2CO). Mp 191-192°. $[\alpha]_D$ -90.2 (c, 0.266 in $CHCl_3$).

*7*R-*Hydroxy:* ***Sukhodianine***
[82413-17-0]
$C_{20}H_{21}NO_5$ 355.39
Alkaloid from tuberous roots of *Stephania venosa* (Menispermaceae). Amorph.

*7*R-*Hydroxy,* N-*oxide(β-):* ***Sukhodianine β-*N*-oxide***
[113145-65-6]
$C_{20}H_{21}NO_6$ 371.389
Alkaloid from the rhizomes of *Stephania venosa* (Menispermaceae). Amorph. $[\alpha]_D$ -13 (c, 0.07 in MeOH).

*7*R-*Acetoxy:* ***O-Acetylsukhodianine***
[98604-29-6]
$C_{22}H_{23}NO_6$ 397.427
Alkaloid from the leaves of *Stephania venosa* (Menispermaceae). $[\alpha]_D^{25}$ -68 (c, 0.06 in $CHCl_3$).

(±)-form
Synthetic. Stout needles (petrol). Mp 123-123.5°.

Hydroiodide:
Needles (MeOH). Mp 250° dec.

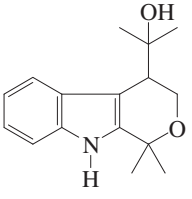
*4*R-*Hydroxy:*Synthetic. Cryst. (C_6H_6). Mp 195-196°.

*4*S-*Hydroxy:*Synthetic. Amorph.

Govindachari, T.R. *et al., J.C.S.*, 1958, 983 (*synth, uv, bibl*)
Kunitomo, J. *et al., Yakugaku Zasshi*, 1969, **89**, 1691; *CA*, **73**, 4072e (*isol*)
Kunitomo, J. *et al., Phytochemistry*, 1980, **19**, 2735 (*Dehydrocrebanine, Stesakine, Dehydrostesakine*)
Guinaudeau, H. *et al., Chem. Comm.*, 1981, 1118 (*Dehydrocrebanine*)
Kumimoto, J. *et al., Chem. Pharm. Bull.*, 1981, **29**, 2251 (*4-Hydroxycrebanine*)
Pharadai, K. *et al., Heterocycles*, 1981, **15**, 1067 (*cd, pmr, abs config*)
Kunimoto, J. *et al., Yakugaku Zasshi*, 1981, **101**, 951 (*Stesakine, Dehydrostesakine*)
Kunitomo, J. *et al., Heterocycles*, 1982, **19**, 1883 (*cd, ord, abs config*)
Guinaudeau, H. *et al., J. Nat. Prod.*, 1982, **45**, 355 (*Sukhodianine*)
Zarga, M.H.A. *et al., J. Nat. Prod.*, 1982, **45**, 471 (*Norannuradhapurine*)
Kunitomo, J. *et al., Chem. Pharm. Bull.*, 1985, **33**, 5245 (*synth, uv, ir, pmr, ms, 4-Hydroxycrebanine*)
Pharadai, K. *et al., J. Nat. Prod.*, 1985, **48**, 658 (*Acetylsukhodianine*)
Xue, Z. *et al., Yaoxue Xuebao*, 1986, **21**, 223; *CA*, **105**, 3560e (*Crebanine N-oxide*)
Charles, B. *et al., J. Nat. Prod.*, 1987, **50**, 1113 (*Sukhodianine β-N-oxide*)
Bartley, J.P. *et al., Phytochemistry*, 1994, **36**, 1327-1331 (*isol, pmr, cmr*)
Kashiwaba, N. *et al., J. Nat. Prod.*, 2000, **63**, 477-479 (*Stesakine glucoside*)
Deng, Y. *et al., Chin. Chem. Lett.*, 2002, **13**, 862-864 (*N-de-Me N-methoxycarbonyl*)
Blanchfield, J.T. *et al., Phytochemistry*, 2003, **63**, 711-720 (*isol, pmr, cmr*)

Crenulatine† C-734

[343782-11-6]

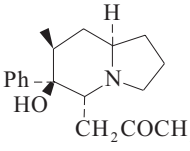


$C_{16}H_{21}NO_2$ 259.347
Alkaloid from stems of *Limonia crenulata*. Amorph. powder. $[\alpha]_D^{24}$ -12.5 (c, 0.7 in MeOH). λ_{max} 223 (log ϵ 4.54); 281 (log ϵ 3.87); 289 (log ϵ 3.79) (MeOH).

Niu, X.M. *et al., Chin. Chem. Lett.*, 2001, **12**, 243-244 (*isol, pmr, cmr*)
Niu, X.-M. *et al., J. Asian Nat. Prod. Res.*, 2001, **3**, 299-311 (*isol, pmr, cmr*)

Crepidamine C-735

1-(Octahydro-6-hydroxy-7-methyl-6-phenyl-5-indolizinyl)-2-propanone, 9CI
[50906-93-9]

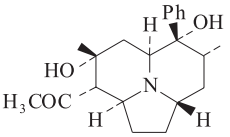


$C_{18}H_{25}NO_2$ 287.401
Alkaloid from *Dendrobium crepidatum* (Orchidaceae). Needles (Et_2O). Mp 107.5-109°. Opt. inact. (racemic).

Elander, M. *et al., Acta Chem. Scand.*, 1973, **27**, 1907 (*isol, uv, ord, ir, pmr, ms, struct*)

Crepidine C-736

*1-(Decahydro-4,6-dihydroxy-4,7-dimethyl-6-phenyl-1*H*-pyrrolo[2,1,5-*de*]quinolizin-3-yl)ethanone, 9CI*
[34443-74-8]



Relative configuration

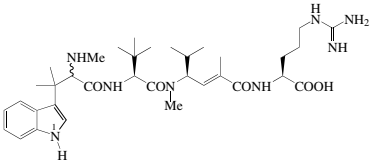
$C_{21}H_{29}NO_3$ 343.465
Alkaloid from *Dendrobium crepidatum* (Orchidaceae). Needles (EtOH). Mp 221-222°. $[\alpha]_D^{24}$ -82 (c, 0.43 in MeOH).

Methiodide: Mp 240-242° dec. $[\alpha]_D^{24}$ -17 (c, 1.04 in MeOH).

Kierkegaard, P. *et al., Acta Chem. Scand.*, 1970, **24**, 3757 (*cryst struct*)
Pilotti, A.-M. *et al., Acta Cryst. B*, 1971, **27**, 887 (*cryst struct*)
Elander, M. *et al., Acta Chem. Scand.*, 1973, **27**, 1907 (*isol, ir, uv, pmr, ms, ord*)

Criamide A C-737

[169181-26-4]



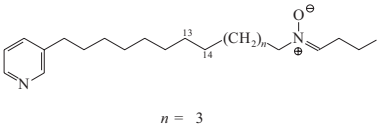
$C_{35}H_{56}N_8O_5$ 668.878
Peptide antibiotic. Isol. from the sponge *Cymbastela* sp. Cytotoxic agent. Microtubule formation inhibitor. Amorph. solid. Sol. MeOH. $[\alpha]_D$ +97 (c, 0.02 in MeOH). Related to Hemiasterlin, H-98.

N^1*-Me:* ***Criamide B***
[169181-27-5]
$C_{36}H_{58}N_8O_5$ 682.905
Isol. from *Cymbastela* sp. Cytotoxic agent. Amorph. solid. Sol. MeOH.

Coleman, J.E. *et al., Tetrahedron*, 1995, **51**, 10653-10662 (*isol, pmr, cmr*)

Cribrochalinamine oxide A C-738

[152273-70-6]



$C_{21}H_{36}N_2O$ 332.528
Alkaloid from the marine sponge *Cribrochalina* sp. Shows antifungal activity. Sol. MeOH, Et_2O; poorly sol. H_2O. λ_{max} 255 (ϵ 2100); 270 (ϵ 1900) (MeOH) (Derep).

Matsunaga, S. *et al., Tet. Lett.*, 1993, **34**, 5953 (*isol, uv, pmr, cmr, struct*)

Cribrochalinamine oxide B C-739

[152273-71-7]
As Cribrochalinamine oxide A, C-738 with

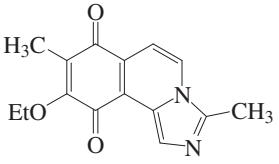
n = 5, $\Delta^{13,14}$(*Z*-)

$C_{23}H_{38}N_2O$ 358.566
Alkaloid from the marine sponge *Cribrochalina* sp. H_2O. λ_{max} 255 (ϵ 2100); 270 (ϵ 1900) (MeOH) (Derep). λ_{max} 255 (ϵ 1700); 271 (ϵ 1500) (MeOH) (Berdy).

Matsunaga, S. *et al., Tet. Lett.*, 1993, **34**, 5953 (*isol, uv, pmr, cmr, struct*)

Cribrostatin 6 C-740

[518056-45-6]



$C_{15}H_{14}N_2O_3$ 270.287

Isol. from the marine sponge *Cribrochalina* sp. Cancer cell growth inhibitor. Antibacterial agent. Dark blue needles (Me_2CO). Mp 169-171°. λ_{max} 203 (ϵ 26760); 266 (ϵ 24430); 323 (ϵ 5600); 552 (ϵ 1480) (no solvent reported).

Pettit, G.R. *et al., J. Nat. Prod.*, 2003, **66**, 544-547 (*isol, uv, pmr, cmr, ms, cryst struct*)

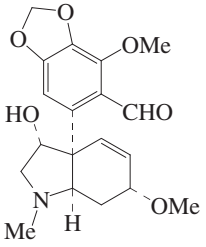
Nakahara, S. *et al., Heterocycles*, 2004, **63**, 2355-2362; 2006, **68**, 515-520 (*synth, pmr, cmr*)

Pettit, R.K. *et al., J. Med. Microbiol.*, 2004, **53**, 61-65 (*activity*)

Markey, M.D. *et al., J.O.C.*, 2008, **73**, 7441-7443 (*synth*)

Crinafolidine C-741

[106549-07-9]

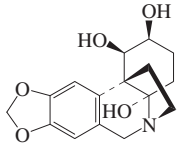


$C_{19}H_{23}NO_6$ 361.394

Alkaloid from the mature fruits of *Crinum latifolium* (Amaryllidaceae). Has antitumour props. Amorph. solid. Sol. MeOH, $CHCl_3$; poorly sol. H_2O.

Ghosal, S. *et al., J. Chem. Res., Synop.*, 1986, 312-313 (*isol, uv, ir, pmr, struct*)

Crinamabine C-742



Absolute Configuration

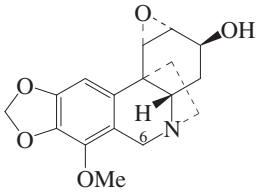
$C_{16}H_{19}NO_5$ 305.33

Alkaloid from the bulbs of *Crinum amabile*. Mp 235-238°. $[\alpha]_D^{25}$ +35 (c, 0.09 in MeOH). Dec. at 250°. λ_{max} 206 (log ϵ 4.08); 238 (sh) (log ϵ 3.21); 292 (log ϵ 3.25) (MeOH).

Pham, L.H. *et al., Phytochemistry*, 1998, **48**, 371-376 (*isol, cd, uv, ir, pmr, cmr, ms*)

Crinamidine C-743

Crinalbine. 1,2-Epoxypowelline



(+)-form

$C_{17}H_{19}NO_5$ 317.341

Crinalbine was the (+)-form and Crinamidine the (-)-form.

(+)-form

Alkaloid from *Crinum powellii* var. *album* (Amaryllidaceae). Mp 235-236° dec. $[\alpha]_D^{25}$ +23 (c, 0.2 in $CHCl_3$). One reference erroneously gives a -ve specific rotn.

(-)-form [6793-66-4]

Alkaloid from *Crinum powellii, Crinum moorei* and several other spp. in the Amaryllidaceae. Mp 235-236° dec. $[\alpha]_D^{23}$ -24 (c, 0.6 in $CHCl_3$).

Picrate: Mp 131-132°.

Me ether: ***Undulatine***†

[6882-09-3]

$C_{18}H_{21}NO_5$ 331.368

Alkaloid from *Nerine undulata* and other *Nerine* spp. (Amaryllidaceae). Mp 151-152°. $[\alpha]_D^{22}$ -46 (c, 0.5 in $CHCl_3$).

Me ether, perchlorate: Mp 229.5-230.5° dec.

6α-Hydroxy: ***6α-Hydroxycrinamidine***

$C_{17}H_{19}NO_6$ 333.34

Alkaloid from the bulbs of *Ammocharis tinneana*. Mp 254-256°. $[\alpha]_D^{20}$ +26 (c, 0.45 in MeOH). The 6-*OH* is *trans*- to the ethylene bridge (6*R*-).

6α-Hydroxy, O^3-Me: ***6-Hydroxyundulatine***

$C_{18}H_{21}NO_6$ 347.367

Alkaloid from the bulbs of *Ammocharis tinneana*. Mp 113-116°. $[\alpha]_D^{20}$ +8.4 (c, 0.53 in MeOH).

6ξ-Hydroxy: ***6-Hydroxycrinamidine***

$C_{17}H_{19}NO_6$ 333.34

Alkaloid from *Crinum latifolium*. Very probably identical to the 6α-epimer above.

1,2-Diepimer, 3-ketone: ***Tubispacine***

$C_{17}H_{17}NO_5$ 315.325

Alkaloid from the bulbs of *Zephyranthes tubispatha* (Amaryllidaceae). Fine prisms (Me_2CO). Mp 197-199°. $[\alpha]_D^{24}$ -145 (c, 0.3 in $CHCl_3$).

Boit, H.-G. *et al., Chem. Ber.*, 1954, **87**, 1704 (*isol*)

Warnhoff, E.W. *et al., J.A.C.S.*, 1960, **82**, 1472 (*Undulatine*)

Boit, H.-G. *et al., Naturwissenschaften*, 1960, **47**, 498 (*isol*)

Fales, H.M. *et al., J.O.C.*, 1961, **26**, 181 (*struct*)

Döpke, W. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1965, **298**, 704-708 (*Tubispacine*)

Zetta, L. *et al., J.C.S. Perkin 2*, 1973, 1180 (*cmr*)

Viladomat, F. *et al., Phytochemistry*, 1995, **40**, 961-965 (*Undulatine*)

Viladomat, F. *et al., Phytochemistry*, 1996, **43**, 1379 (*cmr*)

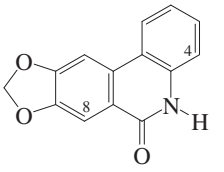
Vo, T.B.H. *et al., CA*, 1998, **128**, 292716n (*6-Hydroxycrinamidine*)

Machocho, A. *et al., Phytochemistry*, 1999, **51**, 1185-1191 (*6-Hydroxycrinamidine, 6-Hydroxyundulatine*)

Crinasiadine C-744

[1,3]Dioxolo[4,5-j]phenanthridin-6(5H)-one, 9CI. 8,9-Methylenedioxy-6-phenanthridone

[40141-86-4]



$C_{14}H_9NO_3$ 239.23

Alkaloid from the flowering bulbs of *Crinum asiaticum* (Amaryllidaceae). Exhibits bacteriostatic and tumour-inhibiting activity. Cryst. (DMF). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 333° (276-278° dec.). λ_{max} 248 (log ϵ 4.33); 252 (log ϵ 4.3); 268 (log ϵ 4.01); 285 (log ϵ 4.03); 298 (log ϵ 3.98); 309 (log ϵ 3.88); 324 (log ϵ 3.62); 338 (log ϵ 3.52) (MeOH).

N-*Me:* **N-*Methylcrinasiadine***

[40141-98-8]

$C_{15}H_{11}NO_3$ 253.257

Alkaloid from bulbs and leaves of *Lapiedra martinezii* (Amaryllidaceae). Yellow cryst. (Me_2CO). Mp 250-255° (244-245°). λ_{max} 240 (log ϵ 3.37); 284 (log ϵ 3.39); 294 (log ϵ 3.39); 300 (log ϵ 3.36); 315 (log ϵ 3.34); 340 (log ϵ 3.15) (MeOH).

N-*(3-Methoxycarbonylpropyl):* ***Phamine***

[167033-99-0]

$C_{19}H_{17}NO_5$ 339.347

Alkaloid from bulbs of *Hippeastrum equestre*. Needles (Me_2CO). Mp 142-143°.

4-Hydroxy: ***Arolycoricidine***

[39954-31-9]

$C_{14}H_9NO_4$ 255.229

Alkaloid from the bulbs of *Lycoris sanguinea* (Amaryllidaceae). Mp 295° dec. (281-283°). Prob. artifact of extraction.

4-Acetoxy:

Cryst. (DMF/MeOH). Mp 297-298°.

4-Methoxy: Mp 292-300° dec.

4,8-Dihydroxy: ***Narciprimine***. *Arolycoricidinol*

[28233-43-4]

$C_{14}H_9NO_5$ 271.229

Alkaloid from the bulbs of *Lycoris sanguinea* and *Narcissus* spp. (Amaryllidaceae). Small yellowish needles (AcOH or EtOH). Mp 300-320° dec. Artifact prod. from Narciclasine, N-37 during acid extraction. λ_{max} 233 (log ϵ 4.38); 257 (log ϵ 4.72); 274 (log ϵ 4.24); 295 (log ϵ 3.96); 322 (log ϵ 3.67); 337 (log ϵ 3.86); 353 (log ϵ 3.89) (EtOH).

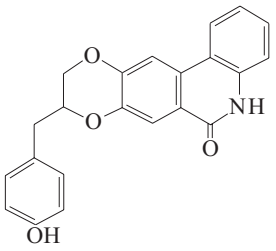
4,8-Dihydroxy, di-O-Ac:

Cryst. (MeOH). Mp 247°.

4,8-Dimethoxy:
Amorph. Mp 320°.

Okamoto, T. *et al., Chem. Pharm. Bull.*, 1968, **16**, 1860-1864 (*Narciprimine, synth*)
Piozzi, F. *et al., Tetrahedron*, 1968, **24**, 1119-1131 (*Narciprimine, isol, uv, ir, pmr*)
Mondon, A. *et al., Chem. Ber.*, 1970, **103**, 2729-2743; 1972, **105**, 3726-3747 (*Narciprimine, synth, uv, ir, pmr, ms*)
Takagi, S. *et al., Yakugaku Zasshi*, 1974, **94**, 617-622; *CA*, **81**, 74924y (*Narciprimine, Arolycoricidine, isol*)
Ghosal, S. *et al., J. Chem. Res., Synop.*, 1985, 100-101 (*isol, uv, ir, ms*)
Suau, R. *et al., Phytochemistry*, 1990, **29**, 1710-1712 (*N-Methylcrinasiadine*)
Banwell, M.G. *et al., Aust. J. Chem.*, 1994, **47**, 2235-2254 (*synth*)
Banwell, M.G. *et al., Chem. Comm.*, 1995, 2551-2553 (*N-Methylcrinasiadine, synth*)
Döpke, W. *et al., Planta Med.*, 1995, **61**, 564-566 (*Phamine*)
Shao, H.W. *et al., Chin. Chem. Lett.*, 1997, **8**, 493-496 (*synth*)

Crinasiatine C-745



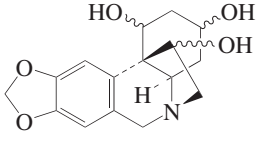
$C_{22}H_{17}NO_4$ 359.381

(±)-*form* [97682-69-4]
Alkaloid from the flowering bulbs of *Crinum asiaticum* (Amaryllidaceae). Exhibits bacteriostatic and tumour-inhibiting activity. Light brown powder. Sol. MeOH, EtOAc. Dec. at ca. 270° without melting. λ_{max} 233 ; 249 ; 264 ; 282 ; 295 ; 305 ; 335 (MeOH). λ_{max} 245 ; 251 ; 267 ; 294 ; 308 ; 324 ; 338 ; 345 (MeOH/NaOH).

O-*Ac:*
Prisms (MeOH/Me_2CO). Mp 245-248° dec.

Ghosal, S. *et al., J. Chem. Res., Synop.*, 1985, 100 (*isol, uv, ir, pmr, ms, struct*)

Crinatine† C-746



$C_{16}H_{19}NO_5$ 305.33

Not the same as Crinatine, C-747 but they are given the same CAS no.
Alkaloid isol. from *Crinum oliganthum*.

Trimino, Z. *et al., Rev. Cubana Quim.*, 1997, **9**, 119-122 (*Crinatine*)

Crinatine† C-747

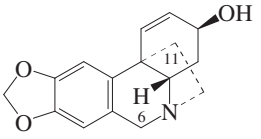
$C_{18}H_{21}NO_5$ 331.368

Amaryllidaceae alkaloid. Struct. unknown. No futher reports to 2007. Isol. from the bulbs of *Crinum natans* (Amaryllidaceae). Mp 262°.

Onyiriuka, O.S. *et al., Isr. J. Chem.*, 1978, **17**, 185-192 (*isol, ms*)

Crinine† C-748

Vittatine. Crinidine



(+)-*form*

$C_{16}H_{17}NO_3$ 271.315

(+)-*form* [510-69-0]
Alkaloid from *Hippeastrum vittatum* and a number of other spp. in the Amaryllidaceae. Shows weak analgesic activity in mice. Tachycardic agent in dogs. Mp 207-208°. $[\alpha]_D^{25}$ +26 (c, 0.5 in $CHCl_3$) (+38).
▶ Toxic, LD_{50} 10 mg/kg (dog).

Me ether: ***(+)-Buphanisine***
[124093-57-8]
$C_{17}H_{19}NO_3$ 285.342
Alkaloid from *Sternbergia sicula* (Amaryllidaceae). Amorph. $[\alpha]_D$ +18 (c, 2.1 in $CHCl_3$).

6-Hydroxy, O^3-Me: ***6-Hydroxy-(+)-buphanisine***
[80665-69-6]
[80665-70-9]
$C_{17}H_{19}NO_4$ 301.341
Alkaloid from the bulbs of *Pancratium sickenbergeri*. Amorph. yellow solid. $[\alpha]_D$ -6.2 (c, 0.77 in MeOH). Isol. as a mixt. of 6-epimers. λ_{max} 221 (log ϵ 2.04); 249 (log ϵ 0.67); 304 (log ϵ 1.09) (MeOH).

3-Epimer: ***Epicrinine***. *Epivittatine*
[25375-48-8]
Alkaloid from the bulbs of *Nerine bowdenii* and *Crinum erubescens* (Amaryllidaceae). Also isol. from *Boophone flava* bulbs (Amaryllidaceae). Cryst. ($CHCl_3$/Me_2CO or by subl.). Mp 209-210°. $[\alpha]_D^{22}$ +136. $[\alpha]_{436}^{22}$ +329 (c, 1.03 in $CHCl_3$).

3-Epimer, Me ether: ***Epibuphanisine***
[6835-79-6]
$C_{17}H_{19}NO_3$ 285.342
Alkaloid from the bulbs of *Ammocharis coranica* and *Boophone flava* (Amaryllidaceae). Prisms (Et_2O). Mp 123-125°. $[\alpha]_D^{21}$ +133 (c, 0.219 in EtOH). $[\alpha]_D^{21}$ +141 (c, 0.266 in $CHCl_3$).

3-Epimer, Me ether, perchlorate:
Prisms (Me_2CO). Mp 244-246° dec. $[\alpha]_D^{21}$ +88 (c, 0.211 in EtOH).

(-)-*form* [510-67-8]
Alkaloid from *Crinum moorei*, several other *Crinum* spp. and from several other spp. in the Amaryllidaceae. Mp 208-210°. $[\alpha]_D^{20}$ -23 (c, 0.5 in $CHCl_3$). λ_{max} 240 (log ϵ 3.52); 296 (log ϵ 3.72) (EtOH).

Perchlorate: Mp 135-137°.

Ac: ***Krepowine***
[93452-26-7]
$C_{18}H_{19}NO_4$ 313.352
Alkaloid from *Crinum powelli* var. *krelagei* and from the bulbs of *Crinum bulbispermum*. Mp 145-146° (138-139°). $[\alpha]_D^{20}$ +68 (c, 0.11 in EtOH).

Me ether: ***(-)-Buphanisine***
[468-22-4]
$C_{17}H_{19}NO_3$ 285.342
Alkaloid from the bulbs of *Boophone fischeri* (Amaryllidaceae). Prisms (Et_2O). Mp 122-124°. $[\alpha]_D^{20}$ -26 (c, 0.76 in EtOH).

3-Ketone: ***Oxocrinine***
[31106-06-6]
$C_{16}H_{15}NO_3$ 269.299
Alkaloid from the bulbs of *Crinum americanum*. Intermed. in the biosynth. of Amaryllidaceae alkaloids. Needles (MeOH). Mp 185-186°. $[\alpha]_D$ -24.6 (c, 1.0 in $CHCl_3$).

1,2-Dihydro: ***Elwesine***. *Crinan-3-ol. Dihydrocrinine*
[10438-97-8]
$C_{16}H_{19}NO_3$ 273.331
Alkaloid from the bulbs of *Galanthus elwesii* (Amaryllidaceae). Mp 218-219°. $[\alpha]_D^{25}$ -32 (c, 0.4 in $CHCl_3$). $[\alpha]_D$ -21 (c, 0.7 in $CHCl_3$) (synthetic).

1,2-Dihydro, Ac: Mp 149-150°.

1β,2β-Epoxide: ***Flexinine***
[509-88-6]
$C_{16}H_{17}NO_4$ 287.315
Alkaloid from the bulbs of *Nerine flexuosa*, *Crinum amabile* and *Crinum erubescens* (Amaryllidaceae). Long prisms (EtOH). Mp 232-234° (221-222°). $[\alpha]_D^{25}$ -12.7 (c, 0.82 in $CHCl_3$). Epoxide function is *cis*- to the bridge and *trans*- to the *OH*-group. λ_{max} 205 (log ϵ 4.27); 240 (sh) (log ϵ 3.49); 294 (log ϵ 3.64) (MeOH).

1β,2β-Epoxide, perchlorate:
Needles (H_2O). Mp 250° dec.

1β,2β-Epoxide, Ac:
Cryst. (MeOH). Mp 206-207°.

1β,2β-Epoxide, Me ether: ***Augustine***
[79659-60-2]
$C_{17}H_{19}NO_4$ 301.341
Alkaloid from leaves, bulbs and roots of *Crinum augustum*. Prisms (C_6H_6). Mp 174-176°. $[\alpha]_D^{21}$ -46.25 (c, 0.8 in EtOH). λ_{max} 205 (log ϵ 4.34); 239 (log ϵ 3.56); 295 (log ϵ 3.74) (MeOH).

6-Hydroxy: ***6-Hydroxycrinine***
[80665-68-5]
[80665-67-4]
$C_{16}H_{17}NO_4$ 287.315
Alkaloid from *Crinum augustum* (Amaryllidaceae). Prisms (MeOH). Mp 268-270°. $[\alpha]_D^{25}$ +13.58 (c, 0.5 in EtOH). Isol. as an inseparable mixt. of C6-epimers.

6-Hydroxy, O^3-Me: ***6-Hydroxy-(-)-buphanisine***
[80665-69-6 , 80665-70-9]
$C_{17}H_{19}NO_4$ 301.341
Isol. from *Crinum augustum* (Amaryllidaceae). Prisms (MeOH). Mp 126-128°. $[\alpha]_D^{25}$ +40.04 (c, 0.5 in EtOH). Insep. mixt. of 6-epimers.

3-Epimer:
Synthetic. Cryst. (Me_2CO). Mp 209-209.5°. $[\alpha]_D^{27}$ -142. $[\alpha]_{436}^{27}$ -343 (c, 1.03 in $CHCl_3$).

3-Epimer, Me ether:
Synthetic. Prisms (Et_2O). Mp 124-126°. $[\alpha]_D^{22}$ -139 (c, 0.168 in $CHCl_3$).

3-Epimer, 1,2-dihydro: Epielwesine [10279-81-9]
Synthetic. Prisms (Me_2CO aq.). Mp 101-103°. $[\alpha]_D$ -10.6 (c, 0.7 in $CHCl_3$). Was stated to be a minor alkaloid of *G. elwesii*, prob. incorrectly (Mp 187-188.5°, opt. inactive).

(±)-*form* [7679-55-2]
Synthetic. Mp 173-175°.

Me ether: [111958-06-6]
Synthetic. Cryst. (hexane). Mp 100-101.5°.

3-Ketone: [7700-86-9]
Synthetic. Powder (EtOAc). Mp 170-172°.

1,2-Dihydro: [33531-72-5]
Synthetic. Prisms (Me_2CO). Mp 227-230° (216-220°).

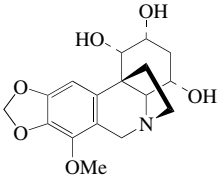
3-Epimer: Synthetic. Mp 239° (235.5-237°).

3-Epimer, 1,2-dihydro: [32209-87-3]
Synthetic. Cryst. (C_6H_6/cyclohexane). Mp 187-188.5° (182-184°).

Boit, H.G. *et al., Chem. Ber.*, 1954, **87**, 1704-1707; 1957, **90**, 369-373 (*(-)-form, Flexinine, isol*)
Renz, J. *et al., Helv. Chim. Acta*, 1955, **38**, 1209-1222 (*Buphanisine*)
Mason, L.H. *et al., J.A.C.S.*, 1955, **77**, 1253-1256 (*(-)-form, isol, uv*)
Wildman, W.C. *et al., J.A.C.S.*, 1956, **78**, 4180-4181; 1958, **80**, 2567-2575 (*Epicrinine, synth, struct*)
Fales, H.M. *et al., J.A.C.S.*, 1960, **82**, 3368-3375 (*Buphanisine, struct*)
Jeffs, P.W. *et al., J.C.S.*, 1960, 1090-1094 (*config, Buphanisine, Epicrinine*)
Fales, H.M. *et al., J.O.C.*, 1961, **26**, 181-193 (*Flexinine, struct*)
Boit, H.-G. *et al., Naturwissenschaften*, 1961, **48**, 406 (*Elwesine, Krepowine, isol, struct*)
Hauth, H. *et al., Helv. Chim. Acta*, 1962, **45**, 1307-1317 (*Epibuphanisine, isol, struct, synth*)
Duffield, A.M. *et al., J.A.C.S.*, 1965, **87**, 4902-4912 (*ms*)
Muxfeldt, H. *et al., J.A.C.S.*, 1966, **88**, 3670-3671 (*synth*)
Whitlock, H.W. *et al., J.A.C.S.*, 1967, **89**, 3600-3606 (*synth*)
Wildman, W.C. *et al., Pharmazie*, 1967, **22**, 725; *CA*, **69**, 19337m (*Epicrinine, Flexinine*)
Irie, H. *et al., J.C.S.(C)*, 1968, 1802-1804 (*Elwesine, Epicrinine, synth*)
DeAngelis, G.G. *et al., Tetrahedron*, 1968, **24**, 5469-5481 (*ord, cd*)
Kametani, T. *et al., Chem. Pharm. Bull.*, 1972, **20**, 1488-1491 (*Epicrinine, synth*)
Zetta, L. *et al., J.C.S. Perkin 2*, 1973, 1180-1184 (*cmr*)
Ali, A.A. *et al., Phytochemistry*, 1981, **20**, 1121-1123; 1731-1733; 1986, **25**, 2399-2401 (*Augustine, 6-Hydroxycrinine, 6-Hydroxybuphanisine, Oxocrinine*)
Frahm, A.W. *et al., Phytochemistry*, 1981, **20**, 1735-1738 (*Augustine, struct, pmr, cmr*)
Sanchez, I.H. *et al., J.A.C.S.*, 1983, **105**, 7640-7643 (*Oxocrinine, Elwesine, Epielwesine, synth*)
Kobayashi, S. *et al., Chem. Pharm. Bull.*, 1984, **32**, 3015-3022 (*isol, ir, pmr, Krepowine*)
Overman, L.E. *et al., Helv. Chim. Acta*, 1985, **68**, 745-749 (*synth*)
Martin, S.F. *et al., J.O.C.*, 1988, **53**, 3184-3190 (*synth, Buphanisine, pmr, cmr, ms*)
Pabuççuoglu, V. *et al., J. Nat. Prod.*, 1989, **52**, 785-791 (*(+)-Buphanisine*)
Ishibashi, H. *et al., J.O.C.*, 1991, **56**, 95-102 (*Elwesine, Epielwesine, synth*)
Burk, R.M. *et al., Heterocycles*, 1993, **35**, 205-225 (*Epielwesine, synth*)
Matsumura, Y. *et al., Tetrahedron*, 1993, **49**, 8503-8512 (*Elwesine, synth*)
Viladomat, F. *et al., Phytochemistry*, 1995, **40**, 307-311; 961-965 (*Crinine, Epicrinine, Buphanisine, Epibuphanisine*)
Wagner, J. *et al., Tetrahedron*, 1996, **52**, 6591-6600 (*cd*)
Pearson, W.H. *et al., J.O.C.*, 1998, **63**, 3607-3617 (*synth*)
Pham, L.H. *et al., Phytochemistry*, 1998, **48**, 371-376 (*Crinine, Augustine, Buphanisine, Flexinine*)
Machocho, A. *et al., Phytochemistry*, 1999, **51**, 1185-1191 (*Flexinine, isol, ir, cd, pmr, cmr, ms*)
Abou-Donia, A.H. *et al., Planta Med.*, 2002, **68**, 379-381 (*6-Hydroxy-(+)-buphanisine*)
Kodama, S. *et al., Tetrahedron*, 2004, **60**, 4901-4907 (*Epicrinine, Oxocrinine, synth*)
Bru, C. *et al., Tetrahedron*, 2006, **62**, 9043-9048 (*synth*)
Bohno, M. *et al., Tetrahedron*, 2007, **63**, 6977-6989 (*synth*)
Tam, N.T. *et al., J.O.C.*, 2008, **73**, 6258-6264 (*synth*)

Crinisine C-749

[161068-63-9]



$C_{17}H_{21}NO_6$ 335.356
Alkaloid from bulbs of *Crinum asiaticum* var. *sinicum*.

Tang, R.J. *et al., Chin. Chem. Lett.*, 1994, **5**, 855 (*isol*)
Lewis, J.R. *et al., Nat. Prod. Rep.*, 1996, **13**, 171

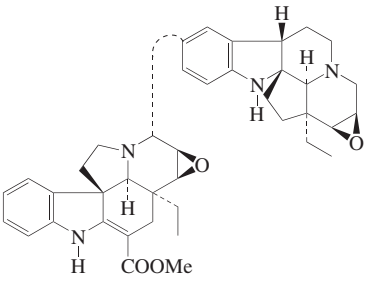
Crinosine C-750

$C_{17}H_{21}NO_4$ 303.357
Amaryllidaceae alkaloid. Struct. unknown. Isol. from an unidentified variety of *Crinum powellii* (Amaryllidaceae). Mp 195°. $[\alpha]_D^{21}$ +210 (c, 0.2 in EtOH).

Döpke, W. *et al., Pharmazie*, 1965, **20**, 586; *CA*, **63**, 18649g (*isol*)

Criophylline C-751

[52659-53-7]



Relative Configuration

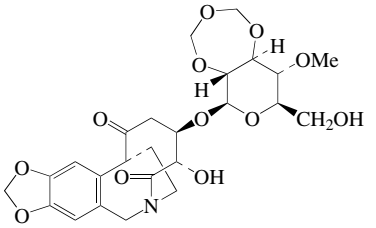
$C_{40}H_{46}N_4O_4$ 646.828
The position of the interunit link is not proven. Major alkaloid from the leaves of *Crioceras dipladeniiflorus* (Apocynaceae). Cryst. (Me_2CO or MeOH). Mp 276-279° dec. $[\alpha]_D$ -176 (c, 1.04 in $CHCl_3$). λ_{max} 214 (log ϵ 4.26); 228 (log ϵ 4.08); 257 (log ϵ 3.93); 299 (log ϵ 4.06); 327 (log ϵ 4.28) (EtOh).

De(methoxycarbony): Mp 260°. $[\alpha]_D$ -63 (c, 0.74 in $CHCl_3$).

Cavé, A. *et al., Tet. Lett.*, 1973, 5081 (*uv, pmr, cmr, struct*)
Bruneton, J. *et al., Phytochemistry*, 1974, **13**, 1963-1967 (*isol, uv, ms*)

Cripowellin A C-752

[196814-62-7]

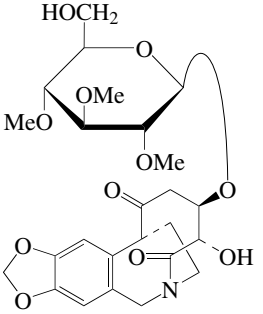


$C_{25}H_{31}NO_{12}$ 537.519
Alkaloid from the bulbs of *Crinum powelli*. Powerful insecticidal agent. Amorph. solid. $[\alpha]_D$ -44 (c, 1 in MeOH). λ_{max} 206 ; 292 (heptane/EtOH).

Velten, R. *et al., Tet. Lett.*, 1998, **39**, 1737-1740 (*isol, uv, ir, pmr, cmr, ms*)

Cripowellin B C-753

[196812-55-2]



$C_{25}H_{33}NO_{11}$ 523.536
Alkaloid from the bulbs of *Crinum powelli*. Powerful insecticidal agent. Amorph. solid. $[\alpha]_D^{20}$ -64 (c, 1 in MeOH). λ_{max} 206 ; 292 (heptane/EtOH).

Velten, R. *et al., Tet. Lett.*, 1998, **39**, 1737-1740 (*isol, uv, ir, pmr, cmr, ms*)

Crispanine C-754

Alkaloid NB
[1356-13-4]

$C_{18}H_{21}NO_5$ 331.368
Amaryllidaceae alkaloid. Struct. unknown. Isol. from *Nerine crispa* and *Nerine bowdenii* (Amaryllidaceae). Mp 139-141°. $[\alpha]_D^{24}$ +78 (c, 0.2 in $CHCl_3$).

Perchlorate: Mp 221° dec.

Picrate: Mp 201° dec.

Boit, H.-G. *et al., Naturwissenschaften*, 1960, **47**, 109; 1962, **49**, 469 (*isol, ir*)

Crispine† C-755

$C_{18}H_{23}NO_6$ 349.383

Amaryllidaceae alkaloid. Struct. unknown. Isol. from the bulbs of *Nerine undulata* (Amaryllidaceae). Cryst. (Me_2CO). Mp 275° dec. $[\alpha]_D^{22}$ -96 (c, 0.25 in $CHCl_3$).

Perchlorate:
Prisms. Mp 268-269° dec.

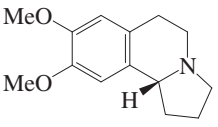
Picrate: Mp 258° dec.

Methoperchlorate:
Cryst. (H_2O). Mp 282-283° dec.

Boit, H.-G. *et al., Chem. Ber.*, 1956, **89**, 1129-1134 (*isol*)

Crispine A† C-756

*1,2,3,5,6,10*b-*Hexahydro-8,9-dimethoxypyrrolo[2,1*-a*]isoquinoline*



(*R*)-*form*

$C_{14}H_{19}NO_2$ 233.31

(*R*)-*form* [474304-16-0]

Alkaloid from *Carduus crispus*. Needles. Mp 87-89°. $[\alpha]_D^{25}$ +91 (MeOH).

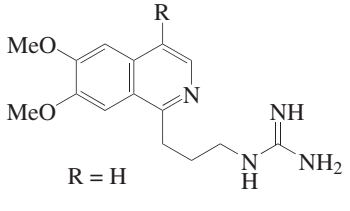
N,*5,6,10*b-*Tetradehydro: 2,3-Dihydro-8,9-dimethoxy-1*H-*pyrrolo[2,1*-a*]isoquinolinium. Carcrisine A*. ***Crispine B***
[474304-17-1]
$C_{14}H_{16}NO_2^{\oplus}$ 230.286
Quaternary alkaloid from *Carduus crispus*. Cytotoxic. Plates (as chloride). Mp 213-215° (206-208°)(chloride). λ_{max} 237 ; 260 ; 308 (MeOH) (chloride).

(±)-*form*
Cryst. (Et_2O/petrol). Mp 89°.

Orito, K. *et al., Heterocycles*, 1988, **27**, 2403-2412 (*synth, pmr*)
Zhang, Q. *et al., Tetrahedron*, 2002, **58**, 6795-6798 (*isol, pmr, cmr*)
Xie, W.D. *et al., Chin. Chem. Lett.*, 2004, **15**, 1057-1059 (*Carcrisine A*)
Meyer, N. *et al., Eur. J. Org. Chem.*, 2006, 3997-4002 (*synth*)
Allin, S.M. *et al., J.O.C.*, 2007, **72**, 8972-8975 (*synth*)
King, F.D. *et al., Tetrahedron*, 2007, **63**, 2053-2056 (*synth*)
Szawkalo, J. *et al., Tetrahedron: Asymmetry*, 2007, **18**, 406-413 (*synth, cryst struct, abs config*)

Crispine C C-757

Carcrisine B
[474304-18-2]



$C_{15}H_{20}N_4O_2$ 288.349

Alkaloid from *Carduus crispus*. Light yellow cryst. (MeOH). Mp 208-210°. λ_{max} 230 ; 266 ; 278 ; 312 ; 325 (MeOH).

Zhang, Q. *et al., Tetrahedron*, 2002, **58**, 6795-6798 (*isol, pmr, cmr, ms*)
Xie, W.D. *et al., Chin. Chem. Lett.*, 2004, **15**, 1057-1059 (*isol, pmr, cmr*)

Crispine D C-758

[474304-19-3]
As Crispine C, C-757 with
R = $-(CH_2)_4NHC(NH_2)=NH$

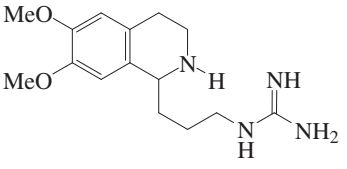
$C_{20}H_{31}N_7O_2$ 401.511

Alkaloid from *Carduus crispus*. Needles. Mp 107-110°.

Zhang, Q. *et al., Tetrahedron*, 2002, **58**, 6795-6798 (*isol, pmr, cmr*)

Crispine E C-759

[474304-20-6]

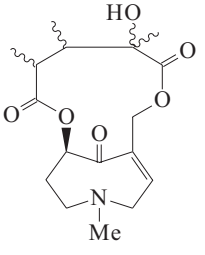


$C_{15}H_{24}N_4O_2$ 292.38

Alkaloid from *Carduus crispus*. Needles. Mp 130-133°.

Zhang, Q. *et al., Tetrahedron*, 2002, **58**, 6795-6798 (*isol, pmr, cmr*)
Czarnocki, S.J. *et al., Tetrahedron*, 2008, **64**, 3176-3182 (*synth*)

Croaegyptine C-760



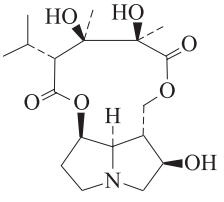
$C_{17}H_{25}NO_6$ 339.388

Isol. as an insep. mixt. with Crosemperine, C-769. Alkaloid from *Crotalaria aegyptiaca* (Fabaceae).

Roeder, E. *et al., Phytochemistry*, 1993, **34**, 1421

Croalbidine C-761

[41714-30-1]



Absolute configuration

$C_{18}H_{29}NO_7$ 371.43

Cyclic diester of the rare base croalbinecine (see 2,7-Dihydroxy-1-hydroxymethylpyrrolizidine, D-597) with (+)-trichodesmic acid. Alkaloid from *Crotalaria albida* (Fabaceae). Cryst. (EtOH or Py). Mp 208-209°.

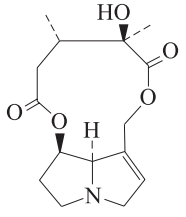
Hydrochloride: Mp 154-155°.

Picrate: Mp 224-225°.

Sawhney, R.S. *et al., Indian J. Chem.*, 1973, **11**, 88 (*isol*)
Sawhney, R.S. *et al., Aust. J. Chem.*, 1974, **27**, 1805 (*abs config*)

Crobarbatine C-762

12-Hydroxy-19,20-dinorcrotalanan-11,15-dione, 9CI
[49679-23-4]



Probable absolute configuration

$C_{15}H_{21}NO_5$ 295.335

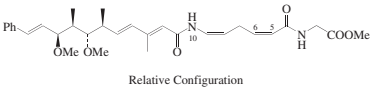
Cyclic ester of Retronecine in T-188 with crobarbatic acid (unique to this alkaloid). Stereochem. of the necic acid component is tentative. Alkaloid from *Crotalaria barbata* (Fabaceae). Cryst. (C_6H_6). Mp 142-143°.

Picrate: Mp 237°.

Puri, S.C. *et al., Experientia*, 1973, **29**, 390 (*isol, pmr, ms, struct*)
Huang, J. *et al., J.A.C.S.*, 1981, **103**, 861 (*synth*)
Jang, D.-P. *et al., Org. Lett.*, 2001, **3**, 983-985 (*Crobarbatic acid, synth*)

Crocacin A C-763

Methyl N-*[6-[(7,9-dimethoxy-3,6,8-trimethyl-1-oxo-11-phenyl-2,4,10-undecatrienyl)amino]-1-oxo-2,5-hexadienyl]glycinate, 9CI*
[157698-34-5]



Relative Configuration

$C_{31}H_{42}N_2O_6$ 538.683

Prod. by *Chondromyces crocatus*. Inhibits a wide spectrum of yeasts and molds and a few gram-positive bacteria. Sol. MeOH, $CHCl_3$, EtOAc, Me_2CO; fairly sol. Et_2O; poorly sol. hexane, H_2O. $[\alpha]_D$ +109.6 (c, 1 in MeOH). λ_{max} 213 ; 219 (sh) ; 254 (log ϵ 4.54); 261 ; 275 (sh) ; 282 (log ϵ 4.36); 291 (log ϵ 4.33); 298 (sh) (MeOH). λ_{max} 213 ; 254 (ϵ 38994); 261 ; 282 (ϵ 23014); 291 (ϵ 21429) (MeOH) (Berdy).

Parent acid: ***Crocacin B***
$C_{30}H_{40}N_2O_6$ 524.656
Prod. by *Chondromyces crocatus*. $[\alpha]_D^{22}$ +99 (c, 0.5 in MeOH). λ_{max} 254 (log ϵ 4.48); 266 ; 276 (sh) ; 283 (log ϵ 4.31); 293 ; 300 (sh) (MeOH).

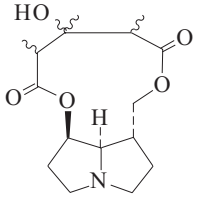
5,6-Dihydro: ***Crocacin D***
$C_{31}H_{44}N_2O_6$ 540.698
Prod. by *Chondromyces pediculatus*. $[\alpha]_D^{22}$ +109.6 (c, 0.6 in MeOH). λ_{max} 255 (log ϵ 4.55); 262 ; 276 ; 280 ; 290 (sh) (MeOH).

N^{10}*-De(aminoalkyl):* ***Crocacin C***
$C_{22}H_{31}NO_3$ 357.492
Prod. by *Chondromyces crocatus*. $[\alpha]_D^{22}$ +52.2 (c, 0.3 in MeOH). λ_{max} 254 (log ϵ 4.64); 266 ; 277 ; 284 ; 293 (sh) (MeOH).

Kunze, B. *et al., J. Antibiot.*, 1994, **47**, 881-886 (*isol, uv, ir, props*)
Ger. Pat., 1995, 4 324 672; *CA*, **122**, 237917e
Jansen, R. *et al., Eur. J. Org. Chem.*, 1999, 1085-1089 (*isol, uv, ir, pmr, cmr, ms*)
Dias, L.C. *et al., Org. Lett.*, 2001, **3**, 3951-3954 (*Crocacin C, synth*)
Chakraborty, T.K. *et al., Tetrahedron*, 2001, **57**, 9461-9467 (*Crocacin C, synth*)
Chakraborty, T.K. *et al., Tet. Lett.*, 2002, **43**, 2645-2648; 2003, **44**, 4989-4992 (*synth*)
Dias, L.C. *et al., J.O.C.*, 2005, **70**, 2225-2234 (*Crocacin D, synth*)
Yadav, J.S. *et al., Tet. Lett.*, 2007, **48**, 145-148 (*Crocacin C, synth*)
Sirasani, G. *et al., J.O.C.*, 2008, **73**, 6386-6388 (*Crocacin C, synth*)
De Oliveira, L.G. *et al., Quim. Nova*, 2008, **31**, 854-871 (*rev, synth*)
Feutrill, J.T. *et al., Tetrahedron*, 2008, **64**, 4880-4895 (*synth*)

Crocandine C-764

[72855-83-5]



$C_{16}H_{25}NO_5$ 311.377
Cyclic diester of Turneforcidine in T-188 with fulvinic acid. Alkaloid from the seeds of *Crotalaria candicans* (Fabaceae). Needles (MeOH). Mp 244-246°. $[\alpha]_D$ +130 (c, 1% in MeOH).

Stereoisomer: ***Isocrocandine***
[72903-70-9]
$C_{16}H_{25}NO_5$ 311.377
Alkaloid from seeds of *Crotalaria candicans* (Fabaceae). Cryst. (EtOAc). Mp 172-174°. $[\alpha]_D$ +36 (c, 1 in MeOH). Cyclic diester of Turneforcidine in T-188 with Chromaduric acid.

Siddiqi, M.A. *et al., Phytochemistry*, 1979, **18**, 1413 (*isol, ir, pmr, ms, struct*)

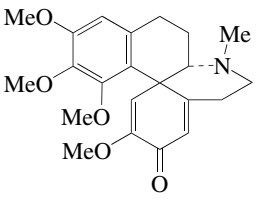
Croceocurine C-765

Struct. unknown
Prob. a strychnos-type alkaloid. Alkaloid from the bark of an unidentified South American plant (prob. Viburnaceae). Bright-orange. Forms a cryst. picrate (no Mp reported).

Meyer, H. *et al., Helv. Chim. Acta*, 1956, **39**, 1214-1218 (*isol, uv*)

Crociflorinine C-766

Krokiflorinine



$C_{22}H_{27}NO_5$ 385.459
Alkaloid from *Colchicum kesselringii*. Mp 209-210°. $[\alpha]_D$ -205.

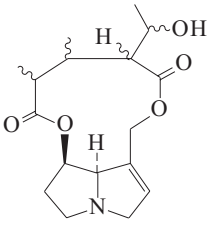
N-*Oxide:* ***Crociflorine***. *Krokiflorine*
$C_{22}H_{27}NO_6$ 401.458
Alkaloid from *Colchicum kesselringii*. Mp 229-230°. $[\alpha]_D$ -255 ($CHCl_3$).

Methiodide: Mp 230°.

Shakirov, R. *et al., Khim. Prir. Soedin.*, 1996, **32**, 410-512; 761-863; *Chem. Nat. Compd. (Engl. Transl.)*, 1996, **32**, 386-512; 737-858 (*rev*)

Cronaburmine C-767

14,19-Dihydro-12-(1-hydroxyethyl)-17,20-dinorcrotalanan-11,15-dione, 9CI
[71295-32-4]



$C_{17}H_{25}NO_5$ 323.388
Alkaloid from *Crotalaria nana* seeds (Fabaceae). Mp 133-134°. Hydrol. gives Retronecine in T-188 and cronaburmic acid (unique to this alkaloid).

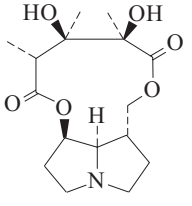
Hydrochloride: [71327-59-8]
Mp 250°.

Picrate: [71327-60-1]
Mp 233° dec.

Siddiqui, M.A. *et al., Indian J. Chem., Sect. B*, 1978, **16**, 1132 (*isol, ms, pmr, struct*)

Cropodine C-768

[83601-85-8]

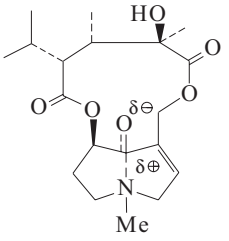


$C_{16}H_{25}NO_6$ 327.377
Cyclic diester of Turneforcidine with monocrotalic acid. Alkaloid from the pericarps of *Crotalaria candicans* (Fabaceae). Cryst. (Me_2CO). Mp 226-228°. $[\alpha]_D^{25}$ +70 (c, 0.4 in MeOH).

Haksar, C.N. *et al., Indian J. Chem., Sect. B*, 1982, **21**, 492 (*isol, ir, pmr, ms, struct*)

Crosemperine C-769

14,19-Dihydro-8,12-dihydroxy-4,19-dimethyl-11,15-dioxocrotalananium, 9CI
[30785-56-9]



$C_{19}H_{29}NO_6$ 367.441
Cyclic diester of Otonecine, O-136 with incanic acid, found formerly in Incanine in T-488. Alkaloid from *Crotalaria semperflorens* (Fabaceae). Mp 117-118°. $[\alpha]_D^{29}$ +45 ($CHCl_3$). $[\alpha]_D^{20}$ +2.2 (c, 1.5 in EtOH).

▶ Toxic, LD_{50} 32 mg/kg. GP9030800

Hydrochloride: Mp 180° dec.

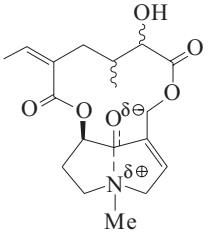
Methiodide: Mp 208-209° dec.

[15401-71-5]

Atal, C.K. *et al., Aust. J. Chem.*, 1967, **20**, 805 (*isol, pmr*)
Sharma, R.K. *et al., J. Med. Chem.*, 1968, **11**, 620 (*pharmacol, tox*)

Crotafoline C-770

12-Hydroxy-14-methyl-18-norsenecionan-8,11,16-trione, 9CI
[38494-87-0]

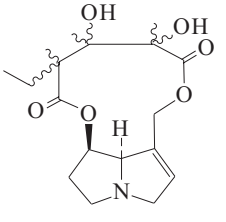


$C_{18}H_{25}NO_6$ 351.399
Otonecine cyclic diester. Alkaloid from *Crotalaria laburnifolia* (Fabaceae). Cryst. (Me_2CO). Mp 176-182° dec.

Crout, D.H.G. *et al., J.C.S. Perkin 1*, 1972, 1602 (*isol, pmr, ir, struct*)

Crotalarine C-771

14,19-Dihydro-12,13-dihydroxy-14-methylcrotalanan-11,15-dione, 9CI. Croburhine
[53937-97-6]



$C_{18}H_{27}NO_6$ 353.414

Cyclic ester of Retronecine in T-188 and Crotalaric acid. Alkaloid from *Crotalaria burhia* and *Crotalaria aegyptiaca* (Fabaceae). Cryst. (C_6H_6). Mp 167-168°. $[\alpha]_D^{18.5}$ -78 (c, 0.7 in EtOH). Evidence for the stereochem. of the necic acid portion is unconvincing. Crotalarine and Croburhine do not appear to have been compared but their props. are identical.

Hydrochloride:
Cryst. (EtOH/Et_2O). Mp 208-209°.

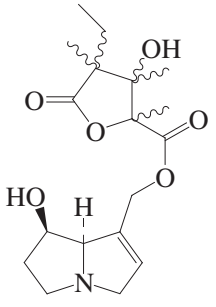
Methiodide:
Cryst. (MeOH/Et_2O). Mp 201-203°.

Picrate:
Cryst. (EtOH). Mp 240° dec.

Ali, M.A. *et al., Pak. J. Sci. Ind. Res.*, 1973, **16**, 227 (*isol, pmr, struct*)
Rao, P.G. *et al., Indian J. Chem.*, 1975, **13**, 835 (*isol, ms, pmr*)
Roeder, E. *et al., Phytochemistry*, 1993, **34**, 1421 (*isol, ir, pmr, cmr, ms, struct*)

Crotalarine lactone C-772

[152344-01-9]



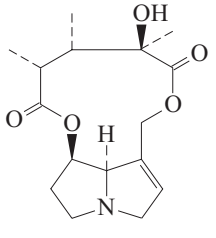
$C_{18}H_{27}NO_6$ 353.414

Alkaloid from *Crotalaria aegyptiaca* (Fabaceae). Powder. $[\alpha]_D^{18.5}$ -12.25 (c, 0.25 in EtOH).

Roeder, E. *et al., Phytochemistry*, 1993, **34**, 1421 (*isol, ir, pmr, cmr, ms, struct*)

Crotaleschenine C-773

[120154-95-2]



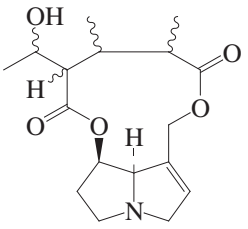
$C_{16}H_{23}NO_5$ 309.361

Erroneously identified as Crispatine when first isol. from the same source. Alkaloid from *Crotalaria leschenaultii* (Fabaceae). Mp 142-143°. $[\alpha]_D^{20}$ -44.5 (EtOH). Adopts 2 different conformns. in the solid state.

Smith, L.W. *et al., Aust. J. Chem.*, 1988, **41**, 429 (*pmr, cmr, ms, cryst struct*)

Crotananine C-774

[71295-28-8]



$C_{17}H_{25}NO_5$ 323.388

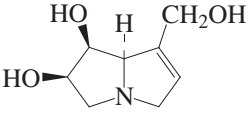
Struct. revised in 1993. Previously assigned a 12-membered macrocyclic diester struct. Alkaloid from *Crotalaria nana* (Fabaceae). Needles (EtOAc). Mp 174-175°. $[\alpha]_D^{23}$ -80 (c, 1.02 in MeOH).

Siddiqui, M.A. *et al., Phytochemistry*, 1978, **17**, 2143 (*isol, pmr, ms*)
Sharma, S.D. *et al., Cryst. Res. Technol.*, 1993, **28**, 945 (*cryst struct*)
Robins, D.J. *et al., Nat. Prod. Rep.*, 1995, **12**, 413

Crotanecine C-775

2,3,5,7a-Tetrahydro-7-(hydroxymethyl)-1H-pyrrolizine-1,2-diol, 9CI. 6,7-Dihydroxy-1-hydroxymethyl-1,2-dehydro-8α-pyrrolizidine

[5096-50-4]



Absolute Configuration

$C_8H_{13}NO_3$ 171.196

Necine base from Anacrotine, A-967 and Madurensine, M-36. Prisms (Et_2O/EtOH). Mp 202-203.5° (188-190°, 193-197°). $[\alpha]_D$ +34.5 (c, 0.055 in EtOH). Abs. config. derives from cryst. struct. studies of the alkaloids.

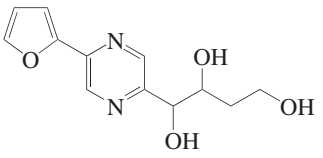
2-Epimer: ***Uspallatinecine***
[98303-06-1]
$C_8H_{13}NO_3$ 171.196
Necine base from Uspallatine in A-967. CAS numbering.

Atal, C.K. *et al., Tet. Lett.*, 1966, 537
Mattocks, A.R. *et al., J.C.S.(C)*, 1968, 325 (*synth*)
Yadav, V.K. *et al., Heterocycles*, 1984, **22**, 2735 (*synth*)
Pestchanker, M.J. *et al., Phytochemistry*, 1985, **24**, 1622-1624 (*Uspallatinecine*)
Buchanan, J.G. *et al., J.C.S. Perkin 1*, 1987, 2377 (*synth*)
Bennett, R.B. *et al., Tet. Lett.*, 1990, **31**, 5437 (*synth*)
Logie, C.G. *et al., Phytochemistry*, 1994, **37**, 43-109 (*pmr*)
Denmark, S.E. *et al., J.A.C.S.*, 1997, **119**, 125 (*synth*)

Crotonine† C-776

1-[5-(2-Furanyl)pyrazinyl]-1,2,4-butanetriol. 2-Furanyl-5-(1,2,4-trihydroxybutyl)pyrazine

[917370-00-4]



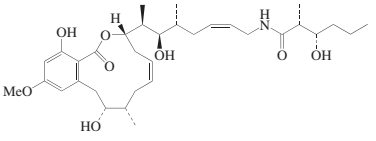
$C_{12}H_{14}N_2O_4$ 250.254

Alkaloid from the leaves of *Croton tiglium*. Analgesic agent. Yellow solid. $[\alpha]_D^{20}$ -6.8 (c, 0.25 in MeOH). λ_{max} 205 ; 280 ; 335 (MeOH).

Wu, X.-A. *et al., J. Asian Nat. Prod. Res.*, 2007, **9**, 437-441 (*isol, pmr, cmr, ms*)

Cruentaren A C-777

[533925-98-3]



Absolute Configuration

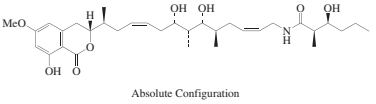
$C_{33}H_{51}NO_8$ 589.768

Prod. by *Byssovorax cruenta*. Antifungal agent. Cytotoxic. Amorph. solid. $[\alpha]_D^{22}$ -3.4 (c, 13.5 in MeOH). λ_{max} 216 (log ϵ 4.26); 265 (log ϵ 3.98); 302 (log ϵ 3.66); 346 (log ϵ 1.94) (MeOH).

Jundt, L. *et al., Eur. J. Org. Chem.*, 2006, 5036-5044 (*isol, pmr, cmr, cryst struct*)
Kunze, B. *et al., J. Antibiot.*, 2006, **59**, 664-668 (*isol, activity*)
Vintonyak, V.V. *et al., Angew. Chem., Int. Ed.*, 2007, **46**, 5209-5211 (*synth*)
Fürstner, A. *et al., Angew. Chem., Int. Ed.*, 2007, **46**, 9275-9278 (*synth*)

Cruentaren B C-778

[533925-99-4]



Absolute Configuration

$C_{33}H_{51}NO_8$ 589.768

Prod. by *Byssovorax cruenta*. Amorph. solid. $[\alpha]_D^{22}$ -9.1 (c, 6.6 in MeOH). λ_{max} 210 (log ϵ 4.36); 215 (log ϵ 4.38); 267 (log ϵ 4.14); 301 (log ϵ 3.77) (MeOH).

Jundt, L. *et al., Eur. J. Org. Chem.*, 2006, 5036-5044 (*isol, cd, pmr, cmr*)
Kunze, B. *et al., J. Antibiot.*, 2006, **59**, 664-668 (*isol*)
Chakraborty, T.K. *et al., J.O.C.*, 2008, **73**, 3578-3581 (*synth*)

Cruentine A† C-779

[1356-15-6]

$C_{18}H_{25}NO_5$ 335.399

Pyrrolizidine alkaloid. Struct. unknown.

Alkaloid from *Senecio cruentus* (Asteraceae). Mp 218-220°. $[\alpha]_D^{17.7}$ -94.1 ($CHCl_3$). On hydrol. gives retronecine and a necic acid, Mp 139-141°.

Methiodide: Mp 228-231°.

Picrate: Mp 185-187°.

Chu, Y.-L. *et al., Yaoxue Xuebao*, 1964, **11**, 168-173; *CA*, **61**, 1904d

Cruentine B C-780

[1356-16-7]

$C_{18}H_{25}NO_6$ 351.399

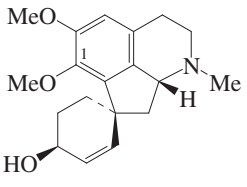
Pyrrolizidine alkaloid. Struct. unknown. Alkaloid from *Senecio cruentus* (Asteraceae). Mp 200-202°. $[\alpha]_D^{17.6}$ -63.4 ($CHCl_3$). Hydrol. gives retronecine and a necic acid, Mp 177-179°.

Picrate: Mp 170-172°.

Chu, Y.-L. *et al., Yaoxue Xuebao*, 1964, **11**, 168-173; *CA*, **61**, 1904d

Cryprochine C-781

[147127-62-6]



$C_{19}H_{25}NO_3$ 315.411

Diastereoisomeric with Amuroline, A-957. Alkaloid from stem bark of *Cryptocarya chinensis* (Lauraceae). Amorph. solid. $[\alpha]_D^{24}$ +40 (c, 0.48 in MeOH).

O^1-*De-Me:* ***1-O-Demethylcryprochine***. *1-Hydroxycryprochine*
$C_{18}H_{23}NO_3$ 301.385
Alkaloid from *Cryptocarya chinensis*. Needles (Me_2CO). Mp 117-119°. $[\alpha]_D$ +65.3 (c, 0.32 in $CHCl_3$). λ_{max} 227 (sh) (log ε 3.83); 288 (log ε 3.27) (MeOH).

4-Ketone: ***Isoamuronine***. *8,9-Dihydro-*N*-methylstepharine*
$C_{19}H_{23}NO_3$ 313.396
Alkaloid from *Cryptocarya chinensis*. Yellow powder. λ_{max} 250 (sh) (log ε 3.22); 286 (log ε 3.75) (MeOH).

4-Ketone, N*-de-Me:* N*-Demethylisaomuronine. 8,9-Dihydrostepharine*
$C_{18}H_{21}NO_3$ 299.369
Alkaloid from *Cryptocarya chinensis*. Needles (MeOH). $[\alpha]_D$ +141.4 (c, 0.005 in MeOH). λ_{max} 224 (log ε 3.64); 249 (sh) (log ε 3.45); 285 (log ε 3.15) (MeOH).

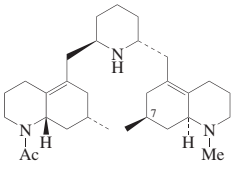
4-Ketone, O^1*-De-Me:* **N-*Methylcrotsparinine***
[23179-62-6]
$C_{18}H_{21}NO_3$ 299.369
Alkaloid from *Croton sparsiflorus* (Euphorbiaceae). Cryst. (EtOAc). Mp 160-161°. $[\alpha]_D$ +244 (c, 0.92 in $CHCl_3$).

4-Ketone, O^1*-de-Me,* N*-de-Me:* ***Crotsparinine***
[23179-61-5]
$C_{17}H_{19}NO_3$ 285.342
Alkaloid from *Croton sparsiflorus* (Euphorbiaceae). Cryst. (EtOAc). Mp 184-185°. $[\alpha]_D$ +215 (c, 2.37 in $CHCl_3$). λ_{max} 228 (log ε 4.28); 285 (log ε 3.1) (no solvent reported).

Bhakuni, D.S. *et al., Phytochemistry*, 1970, **9**, 2573-2580; 1974, **13**, 2767-2769 (*Crotsparinine, N-Methylcrotsparinine, isol, uv, ir, pmr, struct, biosynth*)
Casagrande, C. *et al., J.C.S. Perkin 1*, 1975, 1659-1663 (*stereochem*)
Colombo, A. *et al., J.C.S. Perkin 2*, 1976, 1218-1221 (*N-Me, cryst struct*)
Lee, S.-S. *et al., J. Nat. Prod.*, 1993, **56**, 227 (*Cryprochine, 1-O-Demethylcryprochine*)
Wu, T.S. *et al., J. Nat. Prod.*, 2001, **64**, 1404-1407 (*Isoamuronine, N-Demethylisoamuronine*)

Cryptadine A C-782

[959153-14-1]



Relative Configuration

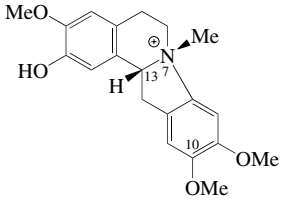
$C_{30}H_{49}N_3O$ 467.737
Alkaloid from *Lycopodium cryptomerinum*. Amorph. solid. $[\alpha]_D^{19}$ -50 (c, 0.8 in MeOH).

7-Epimer: ***Cryptadine B***
[959153-15-2]
$C_{30}H_{49}N_3O$ 467.737
Alkaloid from *Lycopodium cryptomerinum*. Amorph. solid. $[\alpha]_D^{20}$ -69 (c, 0.2 in MeOH).

Koyama, K. *et al., Bioorg. Med. Chem.*, 2007, **15**, 7803-7808 (*isol, cd, pmr, cmr*)

Cryptaustoline C-783

*5,6,12,12*a*-Tetrahydro-2-hydroxy-3,9,10-trimethoxy-7-methylindolo[2,1-*a*]isoquinolinium(1+), 9CI*



(-)-*form*

$C_{20}H_{24}NO_4^{\oplus}$ 342.414
Abs. config. revised in 1992.

(-)-*form* [26754-21-2]
Alkaloid from the bark of *Cryptocarya bowiei* and *Cryptocarya oubatchensis* (Lauraceae). λ_{max} 216 (log ε 4.72); 222 (sh) (log ε 4.21); 288 (log ε 4.03) (EtOH).

Chloride:
$C_{20}H_{24}ClNO_4$ 377.867
Amorph. $[\alpha]_D$ -150 (c, 0.45 in EtOH).

Iodide: [58939-31-4]
$C_{20}H_{24}INO_4$ 469.318
Prisms (MeOH). Mp 214° dec. $[\alpha]_D^{20}$ -151 (c, 0.4 in EtOH).

Me ether:
$C_{21}H_{26}NO_4^{\oplus}$ 356.441
Cryst. + $2H_2O$ (as iodide). Mp 153-155° (iodide). $[\alpha]_D^{20}$ -175 (c, 0.4 in EtOH).

O^9*-De-Me:* ***Litcubine***
[172924-22-0]
$C_{19}H_{22}NO_4^{\oplus}$ 328.387
Alkaloid from the roots of *Litsea cubeba* (mountain pepper). Amorph. solid (as perchlorate). $[\alpha]_D^{25.5}$ -111 (c, 1.0 in MeOH). Abs. config. incorrectly assigned in the paper, which ignores the 1992 revision of the abs. config. of Cryptaustoline. λ_{max} 233 (sh) (log ε 4.06); 287 (log ε 3.96) (MeOH). λ_{max} 249 (log ε 4.14); 304 (log ε 3.99) (MeOH + NaOH).

O^{10}*-De-Me:* ***Mangochinine***. *10-De-*O*-methylcryptaustoline*
[189686-29-1]
$C_{19}H_{22}NO_4^{\oplus}$ 328.387
Alkaloid from *Magnolia officinalis* and bark of *Manglietia chingii*. Light-grey needles ($EtOH/Et_2O$) (as hydroxide). Mp 162-164° (hydroxide). $[\alpha]_D$ -164 (c, 0.4 in MeOH) (hydroxide). λ_{max} 211 (log ε 4.27); 287 (log ε 3.83) (MeOH) (hydroxide).

O^9,O^{10}*-Di–de-Me:* ***Litcubinine***
[172924-24-2]
$C_{18}H_{20}NO_4^{\oplus}$ 314.36
Alkaloid from the roots of *Litsea cubeba* (mountain pepper). Amorph. solid (as perchlorate). $[\alpha]_D^{25.5}$ -144 (c, 0.5 in MeOH). Abs. config. incorrectly assigned, see above. λ_{max} 234 (sh) (log ε 4.03); 290 (log ε 3.99) (MeOH). λ_{max} 248 (log ε 4.1); 305 (log ε 4.08) (MeOH/NaOH).

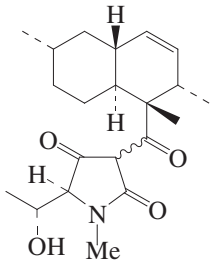
(±)-*form* [17138-35-1]
[17138-16-8]
Prisms + $^1/_2H_2O$ (EtOH aq.)(as iodide). Mp 260° (242-243°,254-255°)(iodide).

Me ether:
$C_{21}H_{26}NO_4^{\oplus}$ 356.441
Cryst. + $^1/_2H_2O$ (EtOH aq.)(as iodide). Mp 243-245° dec.(iodide).

Ewing, J. *et al., Aust. J. Chem.*, 1953, **6**, 78-85 (*isol, struct*)
Hughes, G.K. *et al., Aust. J. Chem.*, 1953, **6**, 315-317 (*synth*)
Kametani, T. *et al., J.C.S.(C)*, 1967, 2208-2212 (*synth, ms*)
Kametani, T. *et al., Chem. Pharm. Bull.*, 1968, **16**, 1498-1502; 1973, **21**, 766-769 (*synth, pmr, ms, struct*)
Ninomiya, I. *et al., Heterocycles*, 1977, **6**, 1855-1860 (*synth*)
Takano, S. *et al., Heterocycles*, 1987, **26**, 1483-1485; 1487-1489 (*synth*)
Leboeuf, M. *et al., Can. J. Chem.*, 1989, **67**, 947-952 (*isol, uv, pmr, ms*)
Yasuda, S. *et al., Chem. Pharm. Bull.*, 1989, **37**, 1682-1683 (*synth*)
Meyers, A.I. *et al., J.A.C.S.*, 1992, **114**, 8483-8489 (*abs config*)
Lee, S.S. *et al., J. Nat. Prod.*, 1996, **59**, 80-82 (*Litcubine, Litcubinine*)
Moriyasu, M. *et al., Nat. Med. (Tokyo)*, 1996, **50**, 413-416 (*10-Demethylcryptaustoline*)
Qiu, S.-X. *et al., Tet. Lett.*, 1998, **39**, 4167-4170 (*Magnochinine*)

Cryptocin C-784

[264913-57-7]



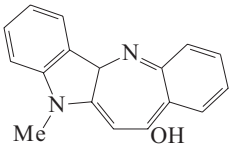
$C_{21}H_{31}NO_4$ 361.48

Tetramic acid deriv. Prod. by *Cryptosporiopsis* cf. *quercina*. Antimycotic agent. Cryst. (as Na salt). Dec. at 175-180° (Na salt).

Li, J.Y. *et al., Org. Lett.*, 2000, **2**, 767-770

Cryptoheptine C-785

[160568-17-2]



$C_{17}H_{14}N_2O$ 262.31

There are doubts about the proposed struct. Alkaloid from roots of *Cryptolepis sanguinolenta* (Asclepiadaceae). Exhibits antibacterial activity against gram-negative and gram-positive bacteria. Yellowish amorph. solid.

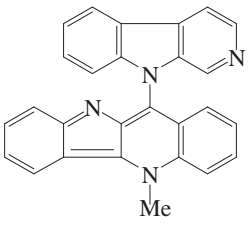
Paulo, A. *et al., J. Nat. Prod.*, 1995, **58**, 1485-1491 (*isol, uv, ir, pmr, cmr, ms, struct*)

Zhang, P. *et al., J. Nat. Prod.*, 2000, **63**, 643-645 (*struct*)

Cryptolepicarboline C-786

*5-Methyl-11-(9*H*-pyrido[3,4-*b*]indol-9-yl)-5*H*-quindoline, 9CI*

[171090-86-1]



$C_{27}H_{18}N_4$ 398.466

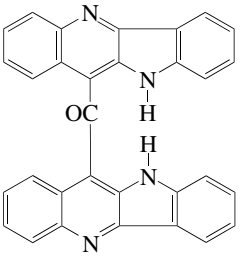
Alkaloid from roots of *Cryptolepis sanguinolenta*. Yellow amorph. solid. λ_{max} 225 (log ϵ 4.74); 275 (log ϵ 4.63); 282 (log ϵ 4.64); 308 (log ϵ 3.97); 341 (log ϵ 4); 357 (sh) (log ϵ 4.16); 373 (log ϵ 4.4); 394 (sh) (log ϵ 3.81); 450 (log ϵ 3.59) (MeOH).

Sharaf, M.H.M. *et al., Magn. Reson. Chem.*, 1995, **33**, 767 (*isol, uv, ir, pmr, cmr, ms, struct*)

Cryptomisrine C-787

*Di-10*H*-quindolin-11-ylmethanone, 9CI*

[158453-41-9]



$C_{31}H_{18}N_4O$ 462.509

Alkaloid from roots of *Cryptolepis sanguinolenta*. Orange residue. λ_{max} 227 (log ϵ 4.85); 273 (log ϵ 4.9); 348 (log ϵ 4.19); 368 (log ϵ 4.18); 459 (log ϵ 3.94) (MeOH).

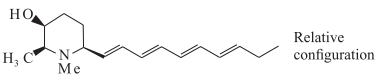
Sharaf, M.H.M. *et al., J. Het. Chem.*, 1996, **33**, 789-797 (*isol, uv, ir, pmr, cmr, struct*)

Arzel, E. *et al., Tetrahedron*, 1999, **55**, 12149-12156 (*synth, ir, pmr, cmr*)

Cryptophorine C-788

6-(1,3,5,7-Decatetraenyl)-1,2-dimethyl-3-piperidinol, 9CI

[56022-14-1]



$C_{17}H_{27}NO$ 261.406

Alkaloid from *Bathiorhamnus cryptophorus* (Rhamnaceae). Mp 116-118°. $[\alpha]_{578}$ -61 (c, 1 in $CHCl_3$).

Ac: Mp 103-104°.

7′,8′-Dihydro, Me ether: 6-(1,3,5-Decatrienyl)-3-methoxy-1,2-dimethylpiperidine

$C_{18}H_{31}NO$ 277.449

Alkaloid from *Microcos paniculata*. Insecticidal agent. Cryst. (CH_2Cl_2). Mp 52-53°. $[\alpha]_D^{22}$ +29.2. Relative config. determined. λ_{max} 268 (EtOH).

Bruneton, J. *et al., Tet. Lett.*, 1975, 739 (*isol, uv, pmr, ms, struct*)

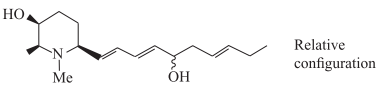
Bandara, K.A.N.P. *et al., Phytochemistry*, 2000, **54**, 29-32 (*Microcos alkaloid, isol*)

Nakatani, Y. *et al., Tetrahedron*, 2006, **62**, 160-165 (*Microcos alkaloid, synth*)

Cryptophorinine C-789

6-(5-Hydroxy-1,3,7-decatrienyl)-1,2-dimethyl-3-piperidinol, 9CI. 3-Hydroxy-6-(5-hydroxy-1,3,7-decatrienyl)-1,2-dimethylpiperidine

[56022-17-4]



$C_{17}H_{29}NO_2$ 279.422

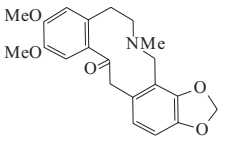
Minor alkaloid from leaves of *Bathiorhamnus cryptophorus* (Rhamnaceae). $[\alpha]_D$ -68 (c, 1.3 in $CHCl_3$).

Bruneton, J. *et al., Tet. Lett.*, 1975, 739 (*isol, ir, pmr, ms, struct*)

Cryptopine C-790

*4,6,7,13-Tetrahydro-9,10-dimethoxy-5-methylbenzo[*e*]1,3-dioxolo[4,5-*l*][2]benzazecin-12(5*H*)-one, 9CI. Cryptocavine. Thalisopyrine*

[482-74-6]



$C_{21}H_{23}NO_5$ 369.416

Alkaloid from a variety of genera in the Papaveraceae (*Corydalis, Dicentra*), Papaveraceae (*Argemone, Meconopsis, Papaver, Stylomecon*) and Ranunculaceae (*Thalictrum*). Possesses uterotonic props. Prisms (Py/EtOH). Mp 221-223°.

▶ Highly toxic. DF4935300

Perchlorate: Mp 226-228° .

Picrate: Mp 163°.

O^3*-De-Me: **Izmirine***

[89117-94-2]

$C_{20}H_{21}NO_5$ 355.39

Alkaloid from *Fumaria parviflora* (Papaveraceae).

*13-Oxo: **13-Oxocryptopine**. 14-Oxocryptopine*

[15215-66-4]

$C_{21}H_{21}NO_6$ 383.4

Alkaloid from *Papaver somniferum* (opium poppy) (Papaveraceae). Cryst. (Me_2CO). Mp 185-186°. The 13-(or14-) position is the methylene carbon adjoining the carbonyl group.

Haworth, R.D. *et al., J.C.S.*, 1926, 1769 (*synth*)

Dolejš, L. *et al., Coll. Czech. Chem. Comm.*, 1964, **29**, 2479 (*ms*)

Ma, J.C.N. *et al., Can. J. Chem.*, 1965, **43**, 1849 (*pmr*)

Hanuš, V. *et al., Coll. Czech. Chem. Comm.*, 1967, **32**, 1759 (*13-Oxocryptopine*)

Hruban, L. *et al., Coll. Czech. Chem. Comm.*, 1967, **32**, 3414 (*uv*)

Hall, S.R. *et al., Acta Cryst. B*, 1968, **24**, 346 (*cryst struct*)

Brochmann-Hanssen, E. *et al., Planta Med.*, 1970, **18**, 366 (*isol, deriv*)

Nakashima, T.T. *et al., Org. Magn. Reson.*, 1973, **5**, 9 (*cmr*)

Guinaudeau, H. *et al., J. Nat. Prod.*, 1983, **46**, 934 (*Izmirine*)

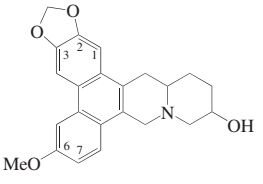
Seger, C. *et al., Magn. Reson. Chem.*, 2004, **42**, 882-886 (*pmr, cmr*)

Sax, N.I. *et al., Dangerous Properties of Industrial Materials, 5th edn., Van Nostrand Reinhold*, 1979, 522

Cryptopleuridine C-791

*11,12,13,14,14a,15-Hexahydro-6-methoxy-9*H*-1,3-dioxolo[6,7]phenanthro[9,10-*b*]quinolizin-12-ol, 9CI*

[27303-58-8]



Probable structure

$C_{23}H_{23}NO_4$ 377.439

The alternative structure with the methylenedioxy-group at positions 6 and 7 and the methoxy-group at position 3 could not be excluded. Alkaloid from the bark of *Cryptocarya pleurosperma* (Lauraceae). Needles (C_6H_6). Mp 196-197°. $[\alpha]_D$ +90 (c, 0.13 in $CHCl_3$).

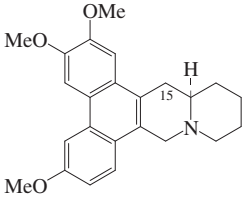
Ac:

Needles ($Me_2CO/CHCl_3$). Mp 268-269°. $[\alpha]_D$ +74 (c, 0.15 in $CHCl_3$).

Johns, S.R. *et al., Aust. J. Chem.*, 1970, **23**, 353 (*isol, uv, ir, pmr, ms, struct*)

Cryptopleurine C-792

11,12,13,14,14a,15-Hexahydro-2,3,6-trimethoxy-9H-phenanthro[9,10-b]quinolizine, 9CI



(*R*)-*form*

$C_{24}H_{27}NO_3$ 377.482

(*R*)-*form* [482-22-4]

Constit. of *Cryptocarya pleurosperma*, *Cryptocarya laevigata*, *Boehmeria cylindrica*, *Boehmeria platyphylla*, *Boehmeria candula*, *Boehmeria caudata* and *Cissus rheifolia* (Lauraceae, Urticaceae, Vitidaceae). Shows antiyeast activity, antiviral activity against Herpes virus, and potent cytotoxic action vs. human nasopharyngeal cell cultures. Highly active inhibitor of protein synthesis. Cryst. (C_6H_6). Mp 197-198°. $[\alpha]_D^{18}$ -106 (c, 1.52 in $CHCl_3$). pK_a 7.55 (70% MeOH aq.). Isol. from *B. cylindrica* and *B. platyphylla* as a partial racemate. λ_{max} 282 (MeOH) (Berdy).

Hydrochloride: Mp 262° dec.

Hydrobromide: Mp 258-260° dec.

*15*R-*Hydroxy:* ***15*R-*Hydroxycryptopleurine***

$C_{24}H_{27}NO_4$ 393.482

Alkaloid from the roots of *Boehmeria pannosa*. Yellow powder. Mp 201-203°. $[\alpha]_D^{22}$ -56.4 (c, 0.05 in MeOH). λ_{max} 262 (log ϵ 1.34) (MeOH).

(*S*)-*form* [87302-53-2]

Synthetic. Mp 196-197°. $[\alpha]_D^{23}$ +106 (c, 1.0 in $CHCl_3$).

(±)-*form* [23365-52-8]

Synthetic. Shows antifungal and antibacterial activity. Needles (Me_2CO). Mp 201-202°.

Gellert, E. *et al., Aust. J. Chem.*, 1954, **7**, 113; 1956, **9**, 489; 1978, **31**, 2095 (*isol, uv, ir, struct, ord, cd, abs config*)

Bradsher, C.K. *et al., J.A.C.S.*, 1957, **79**, 3287; 1958, **80**, 930 (*synth, uv*)

Marchini, P. *et al., Can. J. Chem.*, 1958, **36**, 581 (*synth, uv*)

Hart, N.K. *et al., Aust. J. Chem.*, 1968, **21**, 2579 (*isol*)

Farnsworth, N.R. *et al., Aust. J. Chem.*, 1969, **22**, 1805 (*isol, biochem*)

Paton, J.M. *et al., J.C.S.(C)*, 1969, 1309 (*synth, uv, ms*)

Johns, S.R. *et al., Aust. J. Chem.*, 1970, **23**, 353 (*pmr*)

Saxton, J.E. *et al., Alkaloids (London)*, 1971, **1**, 86 (*rev*)

Krmpotic, E. *et al., J. Pharm. Sci.*, 1972, **61**, 1508 (*pharmacol*)

Kotani, E. *et al., Tetrahedron*, 1974, **30**, 3027 (*synth, uv, ir, pmr, ms*)

Japan. Pat., 1975, 75 59 398; *CA*, **83**, 131809g (*synth*)

Herbert, R.B. *et al., Chem. Comm.*, 1978, 794 (*synth*)

Iida, H. *et al., Tet. Lett.*, 1981, **22**, 1913 (*synth*)

Söllhuber, M. *et al., Heterocycles*, 1982, **19**, 347 (*cmr*)

Cragg, J.E. *et al., J.C.S. Perkin 1*, 1982, 2487 (*synth*)

Al-Shamma, A. *et al., Phytochemistry*, 1982, **21**, 485 (*isol, pharmacol*)

Saifah, E. *et al., J. Nat. Prod.*, 1983, **46**, 353 (*isol*)

Bremmer, M.L. *et al., J.O.C.*, 1983, **48**, 3661 (*synth*)

Buckley, T.F. *et al., J.O.C.*, 1983, **48**, 4222 (*synth, uv, ir, pmr, ms*)

Iwao, M. *et al., Tetrahedron*, 1983, **39**, 1955 (*synth*)

Iida, H. *et al., J.O.C.*, 1984, **49**, 2412 (*synth, pmr, ms*)

Grieco, P.A. *et al., J.O.C.*, 1988, **53**, 3325 (*synth, ir, pmr*)

Suzuki, H. *et al., J.O.C.*, 1995, **60**, 6114 (*synth*)

Ciufolini, M.A. *et al., J.A.C.S.*, 1996, **118**, 12082 (*synth*)

Lebrun, S. *et al., Tetrahedron*, 1999, **55**, 2659-2670 (*synth*)

Kim, S. *et al., J.O.C.*, 2004, **69**, 3144-3149 (*synth*)

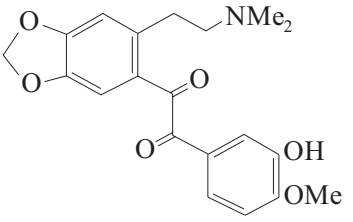
Fürstner, A. *et al., Chem. Eur. J.*, 2006, **12**, 7398-7410 (*synth*)

Cai, X.F. *et al., J. Nat. Prod.*, 2006, **69**, 1095-1097 (*15-Hydroxycryptopleurine*)

Cryptopleurospermine C-793

[6-[2-(Dimethylamino)ethyl]-1,3-benzodioxol-5-yl](3-hydroxy-4-methoxyphenyl)ethanedione, 9CI

[27263-58-7]



$C_{20}H_{21}NO_6$ 371.389

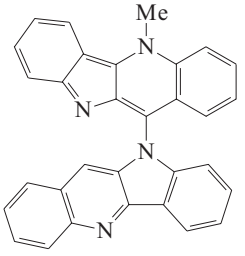
Alkaloid from the bark of *Cryptocarya pleurosperma* (Lauraceae). Needles (Me_2CO). Mp 188-190°.

Johns, S.R. *et al., Aust. J. Chem.*, 1970, **23**, 353 (*isol, uv, ir, pmr, ms, struct*)

Cryptoquindoline C-794

5-Methyl-11-(10H-quindolin-10-yl)-5H-quindoline, 9CI

[160568-18-3]



$C_{31}H_{20}N_4$ 448.526

Alkaloid from roots of *Cryptolepis sanguinolenta* (Asclepiadaceae). Active against gram-positive bacteria. Dark green or orange amorph. powder. Artifact.

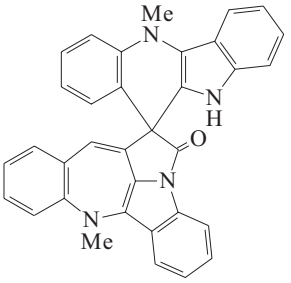
Paulo, A. *et al., J. Ethnopharmacol.*, 1994, **44**, 127-130 (*activity*)

Paulo, A. *et al., J. Nat. Prod.*, 1995, **58**, 1485 (*isol, uv, ir, ms, struct*)

Cimanga, K. *et al., Tet. Lett.*, 1996, **37**, 1703 (*pmr, cmr*)

Cryptospirolepine C-795

[154888-00-3]



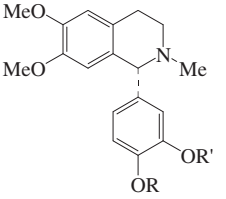
$C_{34}H_{24}N_4O$ 504.59

Alkaloid from roots of *Cryptolepis sanguinolenta* (Asclepiadaceae). Light brownish-pink cryst. (EtOH).

Tackie, A.N. *et al., J. Nat. Prod.*, 1993, **56**, 653 (*isol, uv, ir, pmr, cmr, ms, struct*)

Cryptostyline I C-796

1-(1,3-Benzodioxol-5-yl)-1,2,3,4-tetrahydro-6,7-dimethoxy-2-methylisoquinoline, 9CI. 1,2,3,4-Tetrahydro-6,7-dimethoxy-2-methyl-1-(3,4-methylenedioxyphenyl)isoquinoline



(*R*)-*form*

R,R' = $-CH_2-$

$C_{19}H_{21}NO_4$ 327.379

(*R*)-*form*
Alkaloid from *Cryptostylis erythroglossa* (Orchidaceae). Mp 101-102°. $[\alpha]_D^{22}$ -56 (c, 0.4 in $CHCl_3$).

Hydrobromide:
Cryst. (EtOH). Mp 239-240°. $[\alpha]_D$ -15.5 (MeOH).

(*S*)-*form* [22324-79-4]
Alkaloid from *Cryptostylis fulva* (Orchidaceae). Fine needles (Et_2O). Mp 101-102°. $[\alpha]_D$ +56 (c, 2.7 in $CHCl_3$).

Hydrobromide:
Cryst. (EtOH/Et_2O). Mp 239-240°. $[\alpha]_D$ +15.6 (MeOH).

(±)-*form* [20071-04-9]
Synthetic. Cryst. (Et_2O). Mp 117-118°.

(ξ)-*form*

1,2-Didehydro: ***1-(3,4-Methylenedioxyphenyl)-6,7-dimethoxy-2-methyl-3,4-dihydroisoquinolinium(1+)***
[52703-74-9 , 18780-58-0]
$C_{19}H_{20}NO_4^{\oplus}$ 326.371
Quaternary alkaloid from *Cryptostylis erythroglossa* (Orchidaceae). Mp 207-208° (as bromide).

1,2,3,4-Tetradehydro: ***6,7-Dimethoxy-2-methyl-1-(3,4-methylenedioxyphenyl)-isoquinolinium(1+)***
$C_{19}H_{18}NO_4^{\oplus}$ 324.355
Quaternary alkaloid from *Cryptostylis erythroglossa* (Orchidaceae). Amorph. solid (as chloride); cryst. (MeOH aq.) (as picrate). Mp 218-223° (picrate). CAS no. refers to chloride.

Leander, K. *et al., Acta Chem. Scand.*, 1969, **23**, 244; 1973, **27**, 710 (*isol, uv, pmr, ms, synth, cryst struct, didehydro*)
Brossi, A. *et al., Helv. Chim. Acta*, 1971, **54**, 1564 (*cd, ord, abs config, uv, pmr*)
Westin, L. *et al., Acta Chem. Scand.*, 1972, **26**, 2305 (*cryst struct, abs config*)
Agurell, S. *et al., Acta Chem. Scand., Ser. B*, 1974, **28**, 239-243; 1175-1179 (*isol, biosynth, tetradehydro*)
Venkov, A.P. *et al., Synthesis*, 1982, 486 (*synth*)
Ruchirawat, S. *et al., Synth. Commun.*, 2003, **33**, 621-625 (*synth, ir, pmr, cmr, ms*)

Cryptostyline II C-797

1-(3,4-Dimethoxyphenyl)-1,2,3,4-tetrahydro-6,7-dimethoxy-2-methylisoquinoline, 9CI
As Cryptostyline I, C-796 with R = R′ = Me
$C_{20}H_{25}NO_4$ 343.422

(*R*)-*form* [33755-92-9]
Alkaloid from *Cryptostylis erythroglossa* (Orchidaceae). Cryst. (Et_2O). Mp 116-117°. $[\alpha]_D^{22}$ -58 (c, 0.4 in $CHCl_3$).

Hydrobromide:
Cryst. (EtOH). Mp 230-231°. $[\alpha]_D$ -22 (MeOH).

5′-Methoxy: 1,2,3,4-Tetrahydro-6,7-dimethoxy-2-methyl-1-(3,4,5-trimethoxyphenyl)isoquinoline, 9CI. ***Cryptostyline III***
[33033-86-2]
$C_{21}H_{27}NO_5$ 373.448
Alkaloid from *Cryptostylis erythroglossa* (Orchidaceae). Mp 128-130° (124-125°). $[\alpha]_D^{22}$ -52 (c, 0.3 in $CHCl_3$). $[\alpha]_D$ -77.5 ($CHCl_3$).

5′-Methoxy, hydrobromide:
Cryst. (EtOH/Et_2O). Mp 245-246°. $[\alpha]_D$ -21.2 (MeOH).

(*S*)-*form* [22324-82-9]
Alkaloid from *Cryptostylis fulva* (Orchidaceae). Needles (Et_2O). Mp 117-118°. $[\alpha]_D^{25}$ +58 (c, 0.28 in $CHCl_3$).

Hydrobromide:
Cryst. (EtOH/Et_2O). Mp 230-231°. $[\alpha]_D$ +21.5 (MeOH).

5′-Methoxy: [22325-16-2]
Alkaloid from *Cryptostylis fulva* (Orchidaceae). Needles (Et_2O). Mp 126-129° (120-121°). $[\alpha]_D^{25}$ +51 (c, 0.15 in $CHCl_3$). $[\alpha]_D^{19}$ +73.8 (c, 0.454 in $CHCl_3$).

5′-Methoxy, hydrobromide:
Cryst. (EtOH). Mp 245-246°. $[\alpha]_D$ +21.7 (MeOH).

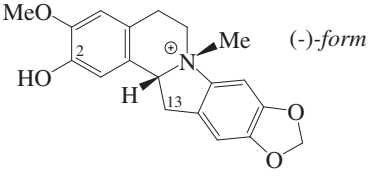
(±)-*form* [22329-48-2]
Synthetic. Cryst. + $1H_2O$ (MeOH aq.), needles (Et_2O). Mp 94° (monohydrate) Mp 103-104° (anhyd.).

5′-Methoxy: [22324-83-0]
Synthetic. Cryst. (Et_2O or EtOH). Mp 141-142° (137-138°).

Müller, A. *et al., Acta Chim. Acad. Sci. Hung.*, 1967, **52**, 261 (*synth, uv, ir*)
Leander, K. *et al., Acta Chem. Scand.*, 1969, **23**, 244; 1973, **27**, 710 (*isol, uv, pmr, ms, abs config, synth*)
Brossi, A. *et al., Helv. Chim. Acta*, 1971, **54**, 1564 (*cd, ord, abs config, synth, uv, pmr*)
Kametani, T. *et al., J. Het. Chem.*, 1973, **10**, 451 (*Cryptostyline III, synth, cd*)
Blount, J.F. *et al., Tetrahedron*, 1973, **29**, 31 (*synth, cd, abs config, cryst struct*)
Agurell, S. *et al., Acta Chem. Scand., Ser. B*, 1974, **28**, 239 (*isol*)
Venkov, A. *et al., Synthesis*, 1982, 486 (*synth*)
Ruchirawat, S. *et al., Synth. Commun.*, 2003, **33**, 621-625 (*synth, ir, pmr, cmr, ms, 5′-methoxy*)
Umetsu, K. *et al., Tet. Lett.*, 2008, **49**, 2722-2725 (*synth*)

Cryptowoline C-798

*5,6,13,13*a*-Tetrahydro-2-hydroxy-3-methoxy-7-methyl[1,3]dioxolo[5,6]indolo[2,1-*a*]isoquinolinium(1+), 9CI*



(-)-*form*

$C_{19}H_{20}NO_4^{\oplus}$ 326.371
Revised abs. shown, by analogy with the revised abs. config. of Cryptaustoline, C-783.

(-)-*form* [15583-51-4]
Alkaloid from the bark of *Cryptocarya bowiei* and *Cryptocarya phyllostemon* (Lauraceae). Antineoplastic agent.

Chloride:
$C_{19}H_{20}ClNO_4$ 361.824
Cryst. ($CHCl_3$). Mp 188-190°. $[\alpha]_D$ -200 (c, 1 in EtOH).

Iodide:
$C_{19}H_{20}INO_4$ 453.276
Off-white prisms (MeOH). Mp 245-246° dec. $[\alpha]_D^{20}$ -186 (c, 0.4 in EtOH).

Me ether:
$C_{20}H_{22}NO_4^{\oplus}$ 340.398
Prisms (H_2O)(as iodide). Mp 227° (iodide). $[\alpha]_D^{20}$ -179 (c, 0.4 in EtOH) (as iodide).

O-*De-Me,* O^2*-Me:* ***Cryptowolidine***
[122992-81-8]
$C_{19}H_{20}NO_4^{\oplus}$ 326.371
Alkaloid from the stem bark of *Cryptocarya phyllostemon* (Lauraceae). Amorph. (as chloride). Negative opt. rotn. Abs. config. not determined but prob. as shown following the revised abs. config. for Cryptowoline.

13β-Hydroxy: ***Cryptowolinol***
[122992-79-4]
$C_{19}H_{20}NO_5^{\oplus}$ 342.371
Alkaloid from *Cryptocarya oubatchensis* and *Cryptocarya phyllostemon* (Lauraceae). Cryst. (Me_2CO) (as chloride). Mp 218-220° (chloride). $[\alpha]_D$ -152 (c, 1 in EtOH). Revised abs. config. following the revised abs. config. fror Cryptowoline.

(±)-*form* [17233-95-3]

Chloride: [17138-17-9]
Synthetic. Cryst. + $^1/_3$ H_2O (EtOH aq.). Mp 255-257° dec.

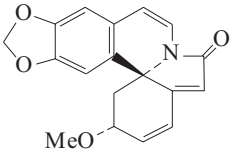
Iodide: [7695-55-8]
Synthetic. Mp 150-151° dec Mp 245-246° dec.

[123050-06-6 , 123050-05-5]

Ewing, J. *et al., Aust. J. Chem.*, 1953, **6**, 78-85 (*isol, struct*)
Kametani, T. *et al., J.C.S.(C)*, 1967, 2208-2212 (*synth, ms*)
Benington, F. *et al., J.O.C.*, 1967, **32**, 1050-1053 (*synth*)
Kametani, T. *et al., Chem. Pharm. Bull.*, 1973, **21**, 766-769 (*synth*)
Leboeuf, M. *et al., Can. J. Chem.*, 1989, **67**, 947-952 (*Cryptowolinol, Cryptowolidine*)

Crystamidine C-799

1,2,6,7,10,11-Hexadehydro-3-methoxy-15,16-[methylenebis(oxy)]erythrinan-8-one, 9CI. 10,11-Dehydro-8-oxoerythraline



$C_{18}H_{15}NO_4$ 309.321

(+)-*form* [58779-39-8]
Alkaloid from the leaves of *Erythrina crista-galli* and the seeds of *Erythrina brucei* (Fabaceae). Pale yellow oil. $[\alpha]_D^{23}$ +840 (c, 0.5 in $CHCl_3$). Possibly an artifact.

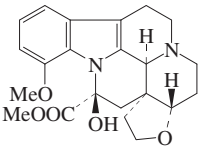
(±)-*form*
Synthetic. Gum.

Ito, K. *et al., Chem. Pharm. Bull.*, 1976, **24**, 52 (*isol, uv, ir, pmr, ms, struct*)

Tsuda, Y. *et al., Heterocycles*, 1984, **22**, 2255 (*synth, uv, ir, pmr*)
Dagne, E. *et al., Phytochemistry*, 1984, **23**, 449 (*isol*)
Tsuda, Y. *et al., Chem. Pharm. Bull.*, 1993, **41**, 965 (*synth*)

Cuanzine C-800

[53492-09-4]



Absolute Configuration

$C_{22}H_{26}N_2O_5$ 398.458

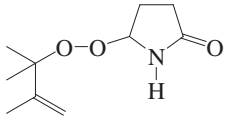
Stereochem. revised in 1990. Alkaloid from the root bark of *Voacanga chalotiana* (Apocynaceae). Cryst. (C_6H_6). Mp 196°. $[\alpha]_D^{22}$ -11 (c, 1 in $CHCl_3$). $[\alpha]_D$ +30 (c, 2 in Py).

▶ JW4791800

Bombardelli, E. *et al., Tetrahedron*, 1974, **30**, 4141 (*uv, ir, ms, pmr, cmr*)
Palmisano, G. *et al., J.O.C.*, 1990, **55**, 2182; 1991, **56**, 2380 (*pmr, cryst struct, synth*)
Ortuno, J.-C. *et al., Tet. Lett.*, 1991, **32**, 4491 (*synth*)
Sóti, F. *et al., Tetrahedron*, 1994, **50**, 8209 (*synth*)

Cucubalactam C-801

5-(1,1,2-Trimethylpropenylperoxy)-2-pyrrolidinone



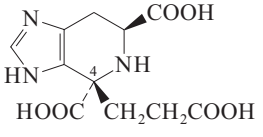
$C_{10}H_{17}NO_3$ 199.249

(±)-*form*
Constit. of *Cucubalus baccifer*. Amorph. powder ($CHCl_3$). Mp 32-33°.
Cheng, Y.-X. *et al., Heterocycles*, 2001, **55**, 1943-1949 (*isol, pmr, cmr*)

Cucumopine C-802

*4,6-Dicarboxy-4,5,6,7-tetrahydro-1*H*-imidazo[4,5-c]pyridine-4-propanoic acid, 9CI*

[110342-24-0]



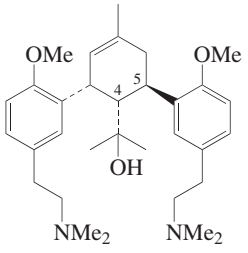
$C_{11}H_{13}N_3O_6$ 283.24

Isol. from grapevine crown gall tumours and carrot hairy-root cultures. Amorph. powder + $1H_2O$. Sol. H_2O. Mp 205-210° dec. $[\alpha]_D^{22}$ -33 (c, 0.37 in H_2O). λ_{max} 218 (ε 5900) (H_2O) (Berdy).

Tri-Me ester:
Amorph. $[\alpha]_D^{22}$ -50 (c, 0.71 in $CHCl_3$).

4-Epimer: ***Mikimopine***
[120293-52-9]
$C_{11}H_{13}N_3O_6$ 283.24
Alkaloid from hairy roots of tobacco induced by *Agrobacterium rhizogenes*. Amorph. powder. Sol. H_2O. $[\alpha]_D$ -98 (c, 0.48 in H_2O).
Davioud, E. *et al., Heterocycles*, 1988, **27**, 2423 (*isol, uv, ir, pmr, cmr, synth, struct*)
Isogai, A. *et al., Phytochemistry*, 1990, **29**, 3131 (*Mikimopine*)

Culantraraminol C-803



(-)-*form*

$C_{32}H_{48}N_2O_3$ 508.743

(-)-*form*
Alkaloid from *Zanthoxylum aviccenae*. Oil. $[\alpha]_D^{24}$ -112.2 (c, 0.25 in $CHCl_3$).

Hydrobromide:
Cryst. (EtOH/EtOAc). Mp 296-298°.

N-*Oxide:* ***Culantraraminol* N-*oxide***
$C_{32}H_{48}N_2O_4$ 524.742
Alkaloid from *Zanthoxylum aviccenae*. Oil. $[\alpha]_D^{25}$ -256.1 (c, 0.2 in $CHCl_3$). Isol. as a mixt. of the two possible *N*-oxide regioisomers.

7-Deoxy, 7,8-didehydro: ***Culantraramine***
[76129-63-0]
$C_{32}H_{46}N_2O_2$ 490.728
Alkaloid from *Zanthoxylum aviccenae*. Oil. $[\alpha]_D^{22}$ -196.7 (c, 1 in $CHCl_3$). Struct. revised in 1985.

7-Deoxy, 7,8-didehydro, N-*oxide:* ***Culantraramine* N-*oxide***
$C_{32}H_{46}N_2O_3$ 506.727
Alkaloid from *Zanthoxylum aviccenae*. Oil. $[\alpha]_D^{25}$ -200.8 (c, 0.5 in $CHCl_3$). Isol. as a mixt. of the two possible *N*-oxides.

(±)-*form* [103805-67-0]
Alkaloid from the leaves of *Zanthoxylum procerum* and *Zanthoxylum culantrillo* (Rutaceae). Noncryst.

7-Deoxy, 7,8-didehydro: [103823-32-1]
Alkaloid from the leaves of *Zanthoxylum culantrillo* and *Zanthoxylum procerum* (Rutaceae). Noncryst.

7-Deoxy, 7,8-didehydro, N,N′*-di-de-Me:* ***N,N′-Didemethylculantraramine***
[129743-94-8]
$C_{30}H_{42}N_2O_2$ 462.674
Alkaloid from the leaves of *Zanthoxylum coriaceum* (Rutaceae). Amorph.

(ξ)-*form*

4-Epimer, 7-deoxy, 7,8-didehydro: ***Isoculantraramine***
[76162-23-7]
$C_{32}H_{46}N_2O_2$ 490.728
Alkaloid from stems of *Zanthoxylum culantrillo*.

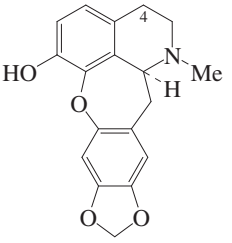
5-Epimer: ***5-Epiculantraraminol***
[103882-04-8]
$C_{32}H_{48}N_2O_3$ 508.743
Minor alkaloid from the leaves of *Zanthoxylum procerum* (Rutaceae). Noncryst. Opt. activity not measured.

4,5-Diepimer: ***Alloculantraraminol***
[103882-03-7]
$C_{32}H_{48}N_2O_3$ 508.743
Minor alkaloid from leaves of *Zanthoxylum procerum* (Rutaceae). Oil. Opt. activity not measured.

Swinehart, J.A. *et al., Phytochemistry*, 1980, **19**, 1219-1223 (*Culantraramine*)
Schroeder, D.R. *et al., Tetrahedron*, 1985, **41**, 4309-4320 (*isol, pmr, cmr, ms, struct, synth, epimers*)
Marcos, M. *et al., Phytochemistry*, 1990, **29**, 2315 (*Didemethylculantraramine*)
Miao, Z. *et al., Youji Huaxue*, 1993, **13**, 145-149 (*Isoculantraramine*)
Thuy, T.T. *et al., Phytochemistry*, 1999, **50**, 903-907 (*isol, N-oxides*)

Cularicine C-804

*2,3,13,13a-Tetrahydro-1-methyl-1*H*-[1,3]dioxolo[7,8][1]benzoxepino[2,3,4-ij]isoquinolin-6-ol, 9CI*



(*S*)-*form*

$C_{18}H_{17}NO_4$ 311.337

Biogenetic (benzylisoquinoline-type) numbering shown.

(*S*)-*form* [2271-08-1]
Alkaloid from *Corydalis claviculata* (Papaveraceae). Prisms (MeOH). Mp 185°. $[\alpha]_D^{22}$ +295 (c, 0.96 in $CHCl_3$).

N-*De-Me:* ***Norcularicine***
[89461-93-8]
$C_{17}H_{15}NO_4$ 297.31
Alkaloid from *Corydalis claviculata* (Papaveraceae). $[\alpha]_D^{25}$ +216 (c, 0.06 in MeOH).

Me ether: **O-*Methylcularicine***
[87578-91-4]
$C_{19}H_{19}NO_4$ 325.363
Alkaloid from *Corydalis claviculata* (Papaveraceae). Oil. $[\alpha]_D$ +283 (c, 0.3 in EtOH).

Me ether, hydrochloride:
Cryst. (MeOH). Mp 267°.

*4*R*-Hydroxy:* ***Corycularicine***
[133137-53-8]
$C_{18}H_{17}NO_5$ 327.336
Alkaloid from *Corydalis claviculata* (Papaveraceae). Amorph. $[\alpha]_D^{25}$ +136 (c, 0.11 in MeOH).

(±)-*form* [40705-18-8]
Synthetic. Cryst. (Et_2O). Mp 155-156°. Forms Me_2CO and MeOH solvates, Mp 81-82° and 95-96° resp.

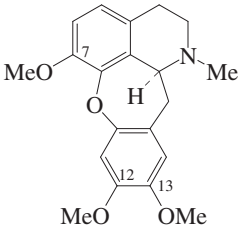
Hydrochloride:
Needles (MeOH/Et_2O). Mp 255-257° dec.

N-*De-Me:* Synthetic. Cryst. (MeOH). Mp 101°.

Manske, R.H.F. *et al., Can. J. Chem.*, 1965, **43**, 989 (*isol, struct*)
Kunitomo, J. *et al., Chem. Pharm. Bull.*, 1971, **19**, 2197 (*abs config*)
Noguchi, I. *et al., Can. J. Chem.*, 1975, **53**, 125 (*synth, ir, pmr, ms*)
Allais, D.P. *et al., J. Nat. Prod.*, 1983, **46**, 881; 1990, **53**, 1280 (*Norcularicine, Coryculericine*)
Blaschke, G. *et al., Z. Naturforsch., C*, 1983, **38**, 670 (*O-Methylcularicine*)
Blaschke, G. *et al., Phytochemistry*, 1985, **24**, 585 (*O-Methylcularicine*)

Cularine C-805

*2,3,12,12*a-*Tetrahydro-6,9,10-trimethoxy-1-methyl-1*H-*[1]benzoxepino[2,3,4*-ij*]-isoquinoline, 9CI*



(*S*)-*form*

$C_{20}H_{23}NO_4$ 341.406

Biogenetic (benzylisoquinoline-type) numbering shown.

(*R*)-*form*
Synthetic. Mp 113-114.5°. $[\alpha]_D$ -280 (c, 0.5 in MeOH).

N-*De-Me:* Obt. by resoln. of (±)-cularimine. Needles (Et_2O). Mp 101-102°. $[\alpha]_D$ -262.9 (c, 2.13 in MeOH).

(*S*)-*form* [479-39-0]
Alkaloid from *Corydalis claviculata, Dicentra cucullaria, Dicentra eximia, Dicentra formosa* and *Dicentra oregana* (Papaveraceae). Pharmacology of Cularine-group alkaloids little studied. Shows local anaesthetic and hypotensive activity. Cryst. (Et_2O or MeOH). Mp 115°. $[\alpha]_D^{25}$ +285 (c, 0.8 in MeOH).

Hydrochloride: Mp 207°.

N-α-*Oxide:* **cis-*Cularine* N-*oxide***
$C_{20}H_{23}NO_5$ 357.405
Alkaloid from *Ceratocapnos heterocarpa*. Amorph. powder. Mp 122-124°. $[\alpha]_D$ +202 (c, 0.081 in MeOH). λ_{max} 230 (sh) (log ε 4.09); 284 (log ε 3.74) (MeOH).

N-*Me:* **N-*Methylcularine***
[38852-37-8]
$C_{21}H_{26}NO_4^{\oplus}$ 356.441
Quaternary alkaloid from aerial parts of *Sarcocapnos baetica* ssp. *integrifolia* (Papaveraceae). Amorph. solid (as iodide). Mp 205° (iodide, synthetic). $[\alpha]_D$ +200 (c, 0.42 in MeOH). CAS no. refers to iodide.

N-*De-Me:* ***Cularimine**. Alkaloid F30*
[479-42-5]
$C_{19}H_{21}NO_4$ 327.379
Alkaloid from *Dicentra eximia* (Papaveraceae). Needles (Et_2O). Mp 101-102°. $[\alpha]_D$ +259.5 (c, 0.94 in MeOH).

N-*De-Me,* N-*benzoyl:*
Cryst. (MeOH/Et_2O). Mp 174°.

O^7-*De-Me:* ***Cularidine**. Alkaloid F10*
[5140-50-1]
$C_{19}H_{21}NO_4$ 327.379
Alkaloid from *Corydalis claviculata* and *Dicentra cucullaria* (Papaveraceae). Needles (MeOH/Et_2O). Mp 157°. $[\alpha]_D$ +292 (MeOH).

O^7-*De-Me, perchlorate:*
Cryst. (MeOH). Mp 297°.

O^7-*De-Me,* N-α-*oxide:* **cis-*Cularidine* N-*oxide***
[122555-12-8]
$C_{19}H_{21}NO_5$ 343.379
Alkaloid from *Ceratocapnos heterocarpa* (Papaveraceae). Amorph. solid. Mp 258-260°. $[\alpha]_D$ +240 (c, 0.075 in MeOH).

O^7-*De-Me,* N-β-*oxide:* **trans-*Cularidine* N-*oxide***
[122620-83-1]
$C_{19}H_{21}NO_5$ 343.379
Alkaloid from *Ceratocapnos heterocarpa* (Papaveraceae). Amorph. solid. Mp 200-202°. $[\alpha]_D$ +201 (c, 0.06 in MeOH).

O^7-*De-Me,* N-*de-Me:* ***Norcularidine***
[89240-43-7]
$C_{18}H_{19}NO_4$ 313.352
Alkaloid from *Corydalis claviculata* (Papaveraceae). Amorph. $[\alpha]_D^{25}$ +216 (c, 0.06 in MeOH).

O^{12}-*De-Me:* ***Celtine***
[91106-26-2]
$C_{19}H_{21}NO_4$ 327.379
Alkaloid from *Sarcocapnos enneaphylla* (Papaveraceae). Cryst. (EtOH). Mp 94-96°. $[\alpha]_D$ +181 (c, 0.08 in MeOH).

O^{13}-*De-Me:* ***Enneaphylline***
[104420-84-0]
Alkaloid from *Sarcocapnos crassifolia* and *Sarcocapnos enneaphylla* (Papaveraceae). Prisms (EtOH). Mp 205-207°. $[\alpha]_D^{25}$ +256 (c, 0.8 in EtOH). Abs. config. shown as (*S*-) but not explicitly assigned. Incorr. descr. as Cularine in one paper.

O^7,O^{12}-*Di-de-Me:* ***Celtisine***
[91106-25-1]
Alkaloid from *Sarcocapnos enneaphylla* (Papaveraceae). Cryst. (EtOH). Mp 158-160°. $[\alpha]_D$ +212 (c, 0.25 in MeOH).

O^7,O^{13}-*Di-de-Me:* ***Culacorine**. Breoganine*
[16209-79-3]
$C_{18}H_{19}NO_4$ 313.352
Alkaloid from *Corydalis claviculata* and *Sarcocapnos crassifolia* (Papaveraceae). Cryst. (EtOH). Mp 249-250°. $[\alpha]_D$ +278 (c, 0.057 in MeOH). $[\alpha]_D^{25}$ +188 (c, 0.08 in MeOH).

4R-*Hydroxy:* ***Limousamine***
[87853-59-6]
$C_{19}H_{21}NO_5$ 343.379
Alkaloid from *Corydalis claviculata* (Papaveraceae). $[\alpha]_D^{25}$ +185 (c, 0.074 in MeOH).

(±)-*form* [28111-18-4]
Synthetic. Mp 134-135° (119°, 113-114°).

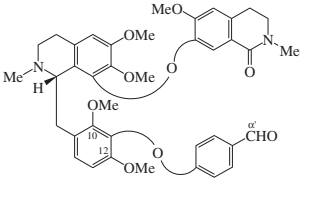
N-*Me:*
Cryst. + 1H_2O (MeOH/Et_2O). Mp 218°.

N-*De-Me:* [2512-67-6]
Synthetic. Mp 141-142°.

O^7-*De-Me:* [50453-79-7]
Synthetic. Needles (MeOH). Mp 201-203°.

Manske, R.H.F. *et al., Can. J. Res., Sect. B*, 1938, **16**, 81; 1940, **18**, 97 (*isol, Cularine, Cularidine*)
Manske, R.H.F. *et al., J.A.C.S.*, 1950, **72**, 55 (*struct, Cularine, Cularidine*)
Ohashi, M. *et al., J.A.C.S.*, 1963, **85**, 2807 (*ms*)
Kametani, T. *et al., J.C.S.*, 1963, 4289; 1964, 4142; 4146; 1965, 5565 (*synth, resoln, Cularine, Cularidine*)
Manske, R.H.F. *et al., Can. J. Chem.*, 1965, **43**, 989; 1966, **44**, 561 (*isol, struct, Cularidine*)
Bhacca, N.S. *et al., Tetrahedron*, 1966, **22**, 1467 (*uv, ord, pmr, abs config*)
Ishiwata, S. *et al., Chem. Pharm. Bull.*, 1970, **18**, 1850 (*synth, pmr*)
Kametani, T. *et al., J. Het. Chem.*, 1970, **7**, 339 (*synth, pmr, Cularidine*)
Kametani, T. *et al., Bioorg. Chem.*, 1971, **1**, 40 (*synth*)
Kametani, T. *et al., Chem. Comm.*, 1971, 352; 1972, 1072 (*biosynth, cryst struct, abs config*)
Kunitomo, J. *et al., Chem. Pharm. Bull.*, 1971, **19**, 2197 (*abs config*)
Iida, H. *et al., Chem. Pharm. Bull.*, 1973, **21**, 1001 (*synth, pmr, Cularidine*)
Jackson, A.H. *et al., J.C.S. Perkin 1*, 1974, 1911 (*synth, pmr, ms, Cularine, Cularidine*)
Hagaman, E.W. *et al., Org. Magn. Reson.*, 1976, **8**, 389 (*cmr*)
Shono, T. *et al., Tet. Lett.*, 1981, **22**, 2385 (*synth*)
Allais, D.P. *et al., Heterocycles*, 1983, **20**, 2055 (*Limousamine, isol, uv, pmr, ms, cd, struct*)
Allais, D.P. *et al., J. Nat. Prod.*, 1983, **46**, 881 (*Culacorine*)
Guinaudeau, H. *et al., Heterocycles*, 1984, **22**, 107 (*Norcularidine*)
Boente, J.M. *et al., Tet. Lett.*, 1984, **25**, 1829 (*Culacorine, Celtisine*)
De Lera, A.R. *et al., Heterocycles*, 1986, **24**, 2219 (*Limousamine, synth*)
Castedo, L. *et al., Heterocycles*, 1987, **26**, 29; 29 (*N-Methylcularine, Enneaphylline*)
Rodriguez de Lera, A. *et al., J. Het. Chem.*, 1987, **24**, 95 (*synth, Celtisine, Enneaphylline*)
De Sousa, J.D.F. *et al., J.A.C.S.*, 1994, **116**, 9745 (*synth*)
Suau, R. *et al., Heterocycles*, 1995, **41**, 2575 (*Cularidine N-oxides*)
García, A. *et al., Tetrahedron*, 1995, **51**, 8585 (*synth*)
Suau, R. *et al., Phytochemistry*, 1996, **43**, 1389 (*oxide*)
Rodrigues, J.A.R. *et al., J.O.C.*, 2004, **69**, 2920-2928 (*synth*)

Curacautine C-806



(*S*)-*form*

$C_{39}H_{42}N_2O_9$ 682.769

(*R*)-*form*

10-Demethoxy, O[12]-de-Me: ***Sindamine***
[84435-34-7]
$C_{37}H_{38}N_2O_8$ 638.716
Minor alkaloid from the roots of *Berberis lycium* (Berberidaceae). $[\alpha]_D^{25}$ +38 (c, 0.04 in MeOH) (as Ac).

10-Demethoxy, α′-carboxylic acid: ***Pycmanilline***
[115439-17-3]
$C_{38}H_{40}N_2O_9$ 668.742
Alkaloid from the roots and stems of *Pycnarrhena manillensis* (Menispermaceae). Also obt. by $KMnO_4$ oxidation of Phaeanthine, P-301. Mp 254-255°. $[\alpha]_D^{22}$ +33 (c, 0.61 in $CHCl_3$).

(*S*)-*form* [89412-86-2]
Alkaloid from *Berberis buxifolia* (Berberidaceae).

α′-Carboxylic acid, Me ester: ***Talcamine***
[89412-85-1]
$C_{40}H_{44}N_2O_{10}$ 712.795
Alkaloid from *Berberis buxifolia* (Berberidaceae). $[\alpha]_D^{25}$ -2 (c, 0.29 in MeOH).

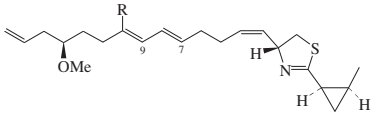
(ξ)-*form*

10-Demethoxy: ***Secoisotetrandrine***
[172924-26-4]
$C_{38}H_{40}N_2O_8$ 652.743
Alkaloid from leaves of *Laurelia sempervirens* (Peruvian nutmeg) (Monimiaceae). $[\alpha]_D^{20}$ +2.73 (c, 1.1 in $CHCl_3$). Abs. config. shown as *S*- in the lit., but apparently without evidence.

Leet, J.E. *et al., Heterocycles*, 1982, **19**, 2355-2360 (*Sindamine, isol, uv, cd, ir, pmr, ms, struct*)
Leet, J.E. *et al., J. Nat. Prod.*, 1983, **46**, 908-912 (*Curacautine, Talcamine, isol, uv, ir, ms, cd, struct*)
Regalado, J.C. *et al., Heterocycles*, 1987, **26**, 2573-2578 (*Pycmanilline, uv, ir, pmr, ms, cd, struct*)
Schmeda-Hirschmann, G. *et al., Phytochemistry*, 1996, **41**, 339-341 (*Secoisotetrandrine*)

Curacin A C-807

[155233-30-0]



$C_{23}H_{35}NOS$ 373.602
Isol. from the marine cyanobacterium *Lyngbya majuscula*. Antimitotic agent. Also possesses exceptional brine shrimp toxic and antiproliferative activities. Shows herbicidal props. Sol. MeOH, $CHCl_3$; fairly sol. hexane; poorly sol. H_2O. $[\alpha]_D$ +62 (c, 1.10 in $CHCl_3$) (a higher value of +86 was originally reported). Unstable when stored neat. λ_{max} 242 (hexane) (Berdy).

7Z-Isomer: ***Curacin B***
[157319-51-2]
$C_{23}H_{35}NOS$ 373.602
Isol. from the marine cyanobacterium *Lyngbya majuscula*. Antimitotic and antiinflammatory agent. Immunosuppressant. Possesses brine shrimp toxic and antiproliferative activities. $[\alpha]_D^{25}$ +62 (c, 0.84 in $CHCl_3$). λ_{max} 242 (ϵ 22000) (hexane) (Berdy).

9Z-Isomer: ***Curacin C***
[164454-35-7]
$C_{23}H_{35}NOS$ 373.602
From *Lyngbya majuscula*. Potent antimitotic agent. Sol. MeOH, $CHCl_3$. $[\alpha]_D^{25}$ +56 (c, 0.15 in $CHCl_3$). λ_{max} 242 (ϵ 25000) (MeOH) (Berdy).

Gerwick, W.H. *et al., J.O.C.*, 1994, **59**, 1243 (*isol, pmr, cmr, struct*)
U.S. Pat., 1994, 5 324 739; *CA*, **121**, 149068c (*isol, pmr*)
Yoo, H.D. *et al., J. Nat. Prod.*, 1995, **58**, 1961 (*Curacins B and C*)
Nagle, D.G. *et al., Tet. Lett.*, 1995, **36**, 1189 (*abs config*)
Wipf, P. *et al., J.O.C.*, 1996, **61**, 6556 (*synth*)
White, J.D. *et al., J.A.C.S.*, 1997, **119**, 103 (*synth, abs config*)
Hoemann, M.Z. *et al., Tetrahedron*, 1997, **53**, 11087 (*synth*)
Muir, J.C. *et al., Tet. Lett.*, 1998, **39**, 2861-2864 (*synth*)
Wipf, P. *et al., Curr. Pharm. Des.*, 2004, **10**, 1417-1437 (*rev*)

Curacin D C-808

[164454-36-8]
As Curacin A, C-807 with

R = H

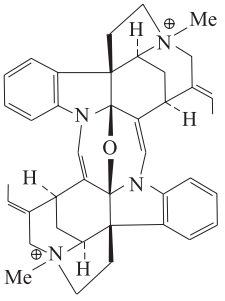
$C_{22}H_{33}NOS$ 359.575

Absolute configuration has not been confirmed. Isol. from *Lyngbya majuscula*. Antimitotic agent, tubulin polymerisation inhibitor. Pale yellow oil. $[\alpha]_D$ +33 (c, 0.14 in $CHCl_3$). The name Curacin D also refers to a semisynthetic stereoisomer of Curacin A. λ_{max} 224 (ϵ 9000) (hexane).

Marquez, B. *et al., Phytochemistry*, 1998, **49**, 2387-2389 (*isol, uv, ir, pmr, cmr, ms*)

C-Curarine C-809

18,18′-Dideoxy-2,2′-epoxytoxiferine I, 9CI. C-Curarine I
[7168-64-1]



Absolute configuration

$C_{40}H_{44}N_4O^{2\oplus}$ 596.814
Produced by photooxidation of *C*-Dihydrotoxiferine. Alkaloid from calabash curare, *Strychnos divaricans* and some other *Strychnos* spp. (Loganiaceae). Powerful curarising agent largely responsible for the paralytic effect of amazonian arrow poisons. Mp 308-309° (as dipicrate). $[\alpha]_D$ +72 (H_2O) (as dichloride). Blue col. with $Ce(SO_4)_2$, turning chrome green on standing.

▶ LD_{Lo} (mus, ivn) 0.05 mg/kg. V. toxic by intravenous route. GS3675000

Di-N-*de-Me:* ***Bisnor-C-curarine***
$C_{38}H_{38}N_4O$ 566.744
Minor alkaloid from *Strychnos dolichothyrsa* and from *Strychnos matopensis* and *Strychnos minfiensis* (Loganiaceae).

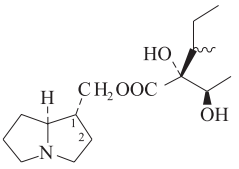
18-Hydroxy: ***C-Alkaloid G***
$C_{40}H_{44}N_4O_2^{2\oplus}$ 612.813
Alkaloid from calabash curare and *Strychnos solimoesana* (Loganiaceae). Mp 272° (as picrate). Blue col. with $Ce(SO_4)_2$, becoming green on standing.

18,18′-Dihydroxy: ***C-Alkaloid E***
$C_{40}H_{44}N_4O_3^{2\oplus}$ 628.813
Alkaloid from calabash curare, *Strychnos froesii, Strychnos solimoesana* and *Strychnos tomentosa* (Loganiaceae). Mp 285-286° (as picrate). Blue col. with $Ce(SO_4)_2$, becoming green on standing.

Wieland, H. *et al., Annalen*, 1938, **536**, 68; 1941, **547**, 140 (*isol*)
Schmid, H. *et al., Helv. Chim. Acta*, 1952, **35**, 1864; 1953, **36**, 102; 345 (*isol, synth*)
Bernauer, K. *et al., Helv. Chim. Acta*, 1957, **40**, 1999; 1958, **41**, 1202 (*synth*)
Zürcher, A. *et al., J.A.C.S.*, 1958, **80**, 1500 (*isol*)
Berlage, F. *et al., Helv. Chim. Acta*, 1959, **42**, 2650-2654 (*C-Alkaloid G*)
Nagyvàry, J. *et al., Tetrahedron*, 1961, **14**, 138 (*uv, ir, pmr, struct*)
Grdinic, M. *et al., J.A.C.S.*, 1964, **86**, 3357 (*pmr*)
Jones, N.D. *et al., Chem. Comm.*, 1972, 805 (*cryst struct*)
Verpoorte, R. *et al., Org. Magn. Reson.*, 1977, **9**, 567 (*cmr*)
Massiot, G. *et al., Phytochemistry*, 1988, **27**, 3293-3304 (*isol, cmr*)

Curassavine C-810

Trachelanthamidine curassavate
[68385-70-6]



Absolute configuration

$C_{16}H_{29}NO_4$ 299.409
Ester of trachelanthemidine with 2-hydroxy-2-(1-hydroxyethyl)-3-methylpentanoic (Curassavic acid, Homoviridifloric acid). Alkaloid from *Heliotropium curassavicum* (Boraginaceae). Pale-yellow gum. $[\alpha]_D$ +0.9 (c, 0.32 in EtOH).

N-*Oxide:* ***Curassavine N-oxide***
[68385-71-7]
$C_{16}H_{29}NO_5$ 315.409
Alkaloid from *Heliotropium curassavicum* (Boraginaceae). Mp 123-125° Mp 186-188° (dimorph.).

1-Epimer: ***Heliocurassavine***
[82398-74-1]
$C_{16}H_{29}NO_4$ 299.409

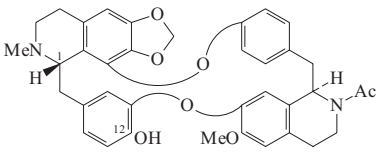
Minor alkaloid of *Heliotropium curassavicum* (Boraginaceae). Pale-yellow gum. $[\alpha]_D^{25}$ -14.9 (c, 0.0037 in $CHCl_3$).

1,2-Didehydro: ***Curassavinine****. (-)-Supinidine curassavate*
[84306-92-3]
$C_{16}H_{27}NO_4$ 297.394
Minor alkaloid from *Heliotropium curassavicum* (Boraginaceae). Gum. Probable struct. Ester of Supinidine, S-644. Obt. only as a mixt. with Coromandalinine and Heliovinine in A-669.

Subramanian, P.S. *et al., Aust. J. Chem.*, 1980, **33**, 1357 (*isol, ir, pmr, ms, struct*)
Mohanraj, S. *et al., Phytochemistry*, 1982, **21**, 1775 (*Heliocurassavine, Curassavinine*)

Curicycleatjine C-811

[131984-84-4]



$C_{37}H_{36}N_2O_7$ 620.701
Alkaloid from *Cyclea atjehensis* (Menispermaceae). Amorph. $[\alpha]_D$ -193 (c, 0.27 in $CHCl_3$). $[\alpha]_D$ -122 (c, 0.27 in MeOH).

12-Me ether: ***Curicycleatjenine***
[131984-83-3]
$C_{38}H_{38}N_2O_7$ 634.727
Alkaloid from *Cyclea atjehensis* (Menispermaceae). $[\alpha]_D$ -120 (c, 0.3 in $CHCl_3$). $[\alpha]_D$ -101 (c, 0.3 in MeOH).

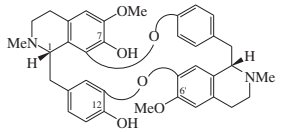
1-Epimer: ***Isocuricycleatjine***
[131984-86-6]
$C_{37}H_{36}N_2O_7$ 620.701
Alkaloid from *Cyclea atjehensis* (Menispermaceae). $[\alpha]_D$ -173 (c, 0.13 in $CHCl_3$). $[\alpha]_D$ -149 (c, 0.13 in MeOH).

1-Epimer, 12-Me ether: ***Isocuricycleatjenine***
[131984-85-5]
$C_{38}H_{38}N_2O_7$ 634.727
Alkaloid from *Cyclea atjehensis* (Menispermaceae). $[\alpha]_D$ -238 (c, 0.18 in $CHCl_3$). $[\alpha]_D$ -191 (c, 0.18 in MeOH).

Tantisewie, B. *et al., J. Nat. Prod.*, 1990, **53**, 553 (*isol, uv, cd, pmr, ms, struct*)

Curine C-812

Bebeerine. Pelosine



(+)-*form*

$C_{36}H_{38}N_2O_6$ 594.706
Diastereoisomeric with Chondocurine, C-420. Antimalarial agent. Shows muscle relaxant props. Log P 7.58 (uncertain value) (calc).

(+)-*form* [477-60-1]
Alkaloid from *Chondodendron candicans*, *Chondodendron microphyllum*, *Nectandra rodioei* and Radix pareirae bravae. Cryst. (MeOH). Mp 215°. $[\alpha]_{Hg}^{20}$ +345.7 (c, 0.4 in 1*M* HCl).

Hydrochloride (1:2): Mp 271° (259-260°).

O^{12}*-Me:* ***12-O-Methyl-(+)-curine***
[6879-67-0]
$C_{37}H_{40}N_2O_6$ 608.733
Alkaloid from the roots of *Cissampelos pareira* and the foliage of *Cyclea hainanensis* (Menispermaceae). Cryst. (MeOH/Py). Mp 164°. $[\alpha]_D$ +273 (c, 0.7 in $CHCl_3$).

O^{12}*-Me, picrate:* Mp 204-205°.

O^{12}*-Me, Ac:* Mp 204-205°.

O^{12}*-Me,* N^2,N$^{2'}$*-di-Me:* Mp 200° dec. (as diiodide).

Di-Me ether: Mp 115-120°. $[\alpha]_D$ +266 (c, 0.97 in $CHCl_3$).

Di-Me ether, N^2,N$^{2'}$*-di-Me:* Mp 245-250° dec. (as diiodide). $[\alpha]_D$ +139 (c, 0.44 in 1:9 EtOH aq.).

(-)-*form*
Chondodendrine*. Aristolochine*†
[436-05-5]
Alkaloid from *Aristolochia indica, Chondodendron platyphyllum, Chondodendron tomentosum, Chondodendron toxicoferum, Cissampelos pareira, Cissampelos mucronata, Isolona pilosa, Pleogyne cunninghamii*, Radix pareirae bravae, *Paracyclea ochiaiana, Cyclea barbata, Cyclea hainanensis*, *Stephania epigaeae* (Aristolochiaceae, Menispermaceae) and *Isolona ghesquierina*. Cryst. (MeOH). Mp 213-214° (C_6H_6 solvate 165-166°). $[\alpha]_D^{23}$ -284 (c, 0.34 in $CHCl_3$). $[\alpha]_D^{23}$ -331 (c, 0.4 in Py). $[\alpha]_D^{23}$ -286 (c, 0.4 in 0.1*M* HCl). More pharmacol. active isomer.

Hydrochloride (1:2): Mp 271-273° dec.

1:1 Complex with (-)-Tubocurine:
Toxicoferine
[12578-01-7]
$C_{72}H_{76}N_4O_{12}$ 1189.412
Isol. from stems of *Chondodendron toxicoferum* (Menispermaceae). Cryst. ($CHCl_3$/Me_2CO). Mp 286°. $[\alpha]_D$ -263 (1*M* HCl/EtOH). Behaves as a single compd.

N^2,N$^{2'}$*-Di-Me:* Mp 249-250° dec. $[\alpha]_D^{24}$ -135 (c, 1.18 in MeOH).

O^7*-Me:* ***Chondrofoline****. 7-O-Methyl-(-)-curine*
[31944-97-5]
$C_{37}H_{40}N_2O_6$ 608.733
Alkaloid from the leaves of *Chondodendron platyphyllum, Isolona ghesquierina* and *Uvaria ovata* (Menispermaceae, Annonaceae). Antiplasmodial agent. Plates ($CHCl_3$/Et_2O or Et_2O). Mp 136-140°. $[\alpha]_{Hg}^{20}$ -257 (c, 0.10 in 0.1*M* HCl). $[\alpha]_D^{20}$ -238 (c, 1.13 in $CHCl_3$). Struct. revised in 2000. λ_{max} 232 (log ϵ 4.57); 281 (log ϵ 3.97) (no solvent reported).

O^{12}*-Me:* ***12-O-Methyl-(-)-curine***
[59685-16-4]
$C_{37}H_{40}N_2O_6$ 608.733
Alkaloid from the stem bark of *Guatteria megalophylla* (Annonaceae). Mp 162-164°. $[\alpha]_D^{20}$ -303 (c, 0.63 in $CHCl_3$).

O^{12}*-Me, Ac:* Mp 214-215°.

Di-Me ether: **O,O-*Dimethyl-(-)-curine***. *Paraquileginine*
[1812-55-1]
$C_{38}H_{42}N_2O_6$ 622.76
Alkaloid from the stem bark of *Guatteria megalophylla* (Annonaceae). Mp 133-136° (116-121°).

O$^{6'}$*-De-Me:* ***Cycleacurine****. 6′-O-Demethyl-(-)-curine*
[38849-84-2]
$C_{35}H_{36}N_2O_6$ 580.679
Alkaloid from the roots of *Cyclea peltata* (Menispermaceae). Cryst. + $2H_2O$ (MeCN). Mp 205-208°. $[\alpha]_D^{25}$ -202 (c, 1.0 in MeOH).

O$^{6'}$*-De-Me; hydrobromide (1:2):*
Cryst. + $1H_2O$ (EtOH aq.). Mp 293-296°.

(±)-*form*
Hayatine
[26057-51-2]
Alkaloid from the roots and leaves of *Cissampelos pareira* and from the foliage of *Cyclea hainanensis* (Menispermaceae). Mp 298-303° dec.

Hydrochloride (1:2):
Prismatic rods (MeOH/Et_2O). Mp 286° dec.

Dipicrate: Mp 234-235° dec. (shrinks at 217-220°).

N,N′*-Di-Me:* ***Daijisong***
[26057-50-1]
$C_{38}H_{44}N_2O_6^{2\oplus}$ 624.775
Alkaloid from *Cissampelos pareira* (Menispermaceae). Muscle relaxant. Mp 281° dec. (synthetic) (as diiodide).

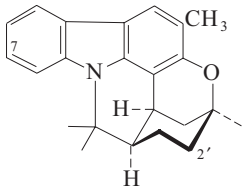
O^{12}*-Me:* ***Hayatinine***
[16595-09-8]
$C_{37}H_{40}N_2O_6$ 608.733
Alkaloid from the roots of *Cissampelos pareira* (Menispermaceae). Mp 231-232°.

Krishnaswamy, P.R. *et al., J. Indian Chem. Soc.*, 1935, **12**, 476-485; **14**, 39-41 (*Aristolochine*)
King, H. *et al., J.C.S.*, 1940, 737-746 (*isol, Chondrofoline*)
Dutcher, J.D. *et al., J.A.C.S.*, 1946, **68**, 419-424 (*isol*)
Anet, F.A.L. *et al., Aust. J. Sci. Res., Ser. A*, 1950, **3**, 346-349 (*isol*)
Bick, I.R.C. *et al., J.C.S.*, 1953, 3893-3896; 1960, 1896-1903; 2402-2407 (*isol, pmr, struct*)
Kidd, D.A.A. *et al., J.C.S.*, 1954, 669-677 (*struct*)
Bhattacharji, S. *et al., J. Sci. Ind. Res., Sect. B*, 1956, **15**, 363 (*Hayatine*)
Boissier, J.R. *et al., J. Nat. Prod.*, 1965, **28**, 191 (*Hayatine*)
Haynes, L.J. *et al., J.C.S.(C)*, 1966, 615-617 (*12-O-Methyl-(+)-curine*)
Milne, G.W.A. *et al., J.C.S.(C)*, 1966, 1966-1968 (*Hayatine*)
Govindachari, T.R. *et al., Indian J. Chem.*, 1967, **5**, 655 (*Chondodendrine*)
Bhatnagar, A.K. *et al., J.O.C.*, 1967, **32**, 819-820 (*Hayatine*)
Cava, M.P. *et al., Phytochemistry*, 1969, **8**, 2341 (*Curine, Toxicoferine, isol, struct*)
Baldas, J. *et al., J.C.S. Perkin 1*, 1972, 599-602 (*Curine, Chondrofoline, pmr, ms, struct*)
Chowdhury, A.R. *et al., Sci. Cult.*, 1972, **38**, 358-359; *CA*, **78**, 82058x (*Hayatine*)

Kupchan, S.M. *et al., J.O.C.*, 1973, **38**, 1846-1852 (*Cycleacurine*)
Hocquemiller, R. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1977, **285**, 447-450 (*isol*)
Panichpol, K. *et al., Phytochemistry*, 1977, **16**, 621-622 (*Chondrofoline*)
Chen, Z.-L. *et al., CA*, 1981, **94**, 127204r (*Daijisong*)
Koike, L. *et al., J.O.C.*, 1981, **46**, 2385-2389 (*Curine, Chondrofoline, pmr, cmr*)
Zhang, X.-X. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 1981, **23**, 216-224; *CA*, **95**, 192262t (*Hayatine*)
Felix, J.P. *et al., Biochemistry*, 1992, **31**, 11793-11800 (*Chondodendrine, pharmacol*)
Pedersen, S.E. *et al., J. Biol. Chem.*, 1995, **270**, 31141-31150 (*Chondodendrine, pharmacol*)
Martindale, The Extra Pharmacopoeia, 32nd edn., Pharmaceutical Press, 1999, 1322 (*Tubocurarine*)
Mambu, L. *et al., Planta Med.*, 2000, **66**, 537-540 (*isol, pmr, cmr, N-15 nmr*)
Tshibangu, J.N. *et al., Phytochem. Anal.*, 2003, **14**, 13-22 (*Chondodendrine, isol, hplc*)

Currayangine C-813

*9*a*,10,11,12,13,13*a*-Hexahydro-2,9,9,12-tetramethyl-1,12-epoxy-9*H*-indolo[3,2,1-*de*]phenanthridine, 9CI. Curryangine. Mahanimbidine. Murrayazoline*



$C_{23}H_{25}NO$ 331.457

(+)-*form*
Alkaloid from the root bark of *Murraya euchrestifolia* (Rutaceae). Needles (Me_2CO). Mp 276-278°. $[\alpha]_D^{25}$ +2.25 (c, 0.4 in $CHCl_3$).

2′-Hydroxy: ***Murrayazolinol***
[125287-09-4]
$C_{23}H_{25}NO_2$ 347.456
Minor alkaloid from the stem bark of *Murraya koenigii* (curryleaf tree) (Rutaceae). Mp 290°. The OH-config. does not appear to have been detd.

2′-Hydroxy, picrate: [125409-38-3]
Cryst. (C_6H_6). Mp 335°.

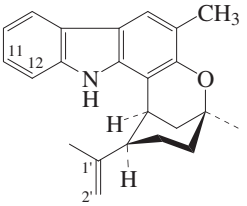
7-Hydroxy: ***Murrayamine E***
[172617-68-4]
$C_{23}H_{25}NO_2$ 347.456
Alkaloid from leaves of *Murraya euchrestifolia* (Rutaceae). Prisms (MeOH). Mp 275-276° dec. $[\alpha]_D$ +39.68 (c, 0.133 in $CHCl_3$).

(±)-*form* [25488-37-3]
Alkaloid from the leaves and stem bark of *Murraya koenigii* (curryleaf tree) and the leaves of *Murraya exotica* (Rutaceae). Also obt., together with Currayanine, by heating Mahanimbicine, M-46 at 200°. Cubes (C_6H_6). Mp 266° (260-262°).

Dutta, N.L. *et al., Indian J. Chem.*, 1969, **7**, 1061; 1168 (*synth, uv, pmr*)
Kureel, S.P. *et al., Tet. Lett.*, 1969, 3857 (*uv, ir, pmr, ms*)
Bordner, J. *et al., Experientia*, 1972, **28**, 1406 (*uv, cryst struct*)
Narasimhan, N.S. *et al., Indian J. Chem., Sect. B*, 1976, **14**, 430 (*synth, uv, ir, pmr*)
Bhattacharyya, P. *et al., J. Indian Chem. Soc.*, 1978, **55**, 308 (*uv, ir*)
Furukawa, H. *et al., Chem. Pharm. Bull.*, 1985, **33**, 4132 (*isol, uv, ir, pmr, ms*)
Bhattacharyya, L. *et al., J. Indian Chem. Soc.*, 1989, **66**, 140 (*Murrayazolinol*)
Wu, T.-S. *et al., Phytochemistry*, 1995, **40**, 1817 (*Murrayamine E*)
Ueno, A. *et al., Org. Lett.*, 2008, **10**, 1999-2002 (*synth*)

Currayanine C-814

*1,2,3,4,5,13-Hexahydro-5,7-dimethyl-2-(1-methylethenyl)-1,5-methanooxocino[3,2-*a*]carbazole, 9CI. Cyclomahanimbine. Murrayazolidine. Curryanine*
[25488-33-9]



$C_{23}H_{25}NO$ 331.457
Alkaloid from the leaves and stem bark of *Murraya koenigii* (curryleaf tree) (Rutaceae). Needles (hexane). Mp 137° Mp 146°. $[\alpha]_D$ 0 ($CHCl_3$). $[\alpha]_D^{30}$ +20 ($CHCl_3$). Probably an artifact. Obt. by brief acid or prolonged heat treatment of Mahanimbine. λ_{max} 242 (log ε 4.83); 256 (log ε 4.61); 305 (log ε 4.41); 330 (log ε 3.87) (MeOH).

N-*Me:* Mp 169-170°.

*1′,2′-Dihydro: 1,2,3,4,5,13-Hexahydro-5,7-dimethyl-2-(1-methylethyl)-1,5-methanooxocino[3,2-*a*]carbazole.* ***Exozoline***
[70561-79-4]
$C_{23}H_{27}NO$ 333.472
Alkaloid from the leaves of *Murraya exotica* (Rutaceae). Cryst. (C_6H_6/petrol). Mp 180-182° (136-137°,146°). The lower Mps. refer to semisynthetic dihydrocurrayanine. However it was reported that Exozoline and dihydrocurrayanine were identical. λ_{max} 242 (log ε 4.47); 256 (log ε 4.18); 306 (log ε 3.97) (EtOH).

1′,2′-Dihydro, 1′-hydroxy, stereoisomer: ***Murrayazolinine***
[49620-01-1]
$C_{23}H_{27}NO_2$ 349.472
Alkaloid from the stem bark of *Murraya koenigii* (curryleaf tree) and from *Murraya euchrestifolia*. Mp 184°. Stereochem. not detd. λ_{max} 240 (ε 3160); 253 (ε 1740); 258 (ε 1620); 304 (ε 1150) (EtOH).

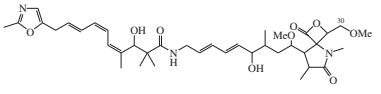
11-Hydroxy: ***Murrayamine D***
[172548-90-2]
$C_{23}H_{25}NO_2$ 347.456
Alkaloid from leaves of *Murraya euchrestifolia* (Rutaceae). Oil. λ_{max} 215 ; 239 ; 266 ; 315 ; 324 (MeOH).

12-Methoxy: ***Murrayamine H***
[183130-90-7]
$C_{24}H_{27}NO_2$ 361.483
Alkaloid from leaves of *Murraya euchrestifolia*. Syrup. λ_{max} 221 ; 241 ; 262 ; 303 ; 307 (MeOH).

Kureel, S.P. *et al., Tet. Lett.*, 1969, 3857-3862 (*Cyclomahanimbine, uv, ir, pmr, ms, struct*)
Chakraborty, D.P. *et al., Chem. Ind. (London)*, 1970, 593-594; 1973, 322-323; 1974, 260 (*Murrayazolidine, Murrayazolinine, uv, ir, pmr, struct, synth*)
Bandaranayake, W.M. *et al., J.C.S. Perkin 1*, 1974, 998-1007 (*Cyclomahanimbine, struct, pmr, synth*)
Narasimhan, N. *et al., Indian J. Chem., Sect. B*, 1976, **14**, 430-433 (*Currayanine, uv, ir, pmr, struct, synth*)
Ganguly, S.N. *et al., Phytochemistry*, 1978, **17**, 1816-1817 (*Exozoline*)
Reisch, J. *et al., Phytochemistry*, 1992, **31**, 2877-2879 (*Murrayazolidine, cryst struct*)
Wu, T.-S. *et al., Phytochemistry*, 1995, **40**, 1817-1819; 1996, **43**, 785-789 (*Murrayamine D, Murrayamine H, Murrayazolinine*)

Curromycin A C-815

[97412-76-5]



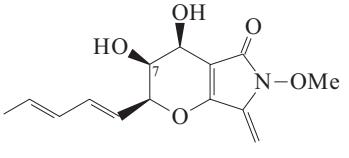
$C_{38}H_{55}N_3O_{10}$ 713.867
Isol. from *Streptomyces hygroscopicus*. Active against some kinds of gram-positive bacteria and shows cytotoxic props. It has a narrower antibacterial spectrum than Oxazolomycin, O-155 to which it is related. Yellow amorph. powder. Sol. MeOH, EtOAc. Mp 103-105°. $[\alpha]_D^{22}$ +39 (c, 0.115 in MeOH). λ_{max} 229 (ε 19800); 267 (sh) (ε 16300); 275 (ε 19800); 285 (sh) (ε 15100) (MeOH) (Derep). λ_{max} 228 ; 275 (MeOH) (Berdy).

30-Demethoxy: 30-Demethoxycurromycin A. ***Curromycin B.*** *IM 8443T. Antibiotic IM 8443T*
[97412-77-6]
$C_{37}H_{53}N_3O_9$ 683.84
From *Streptomyces hygroscopicus*. Activity resembles that of Curromycin A. Yellow amorph. powder. Mp 106-109°. $[\alpha]_D^{22}$ +35 (c, 0.1 in MeOH).

Ogura, M. *et al., Agric. Biol. Chem.*, 1985, **49**, 1909
Ogura, M. *et al., J. Antibiot.*, 1985, **38**, 669 (*isol, uv, ir, cmr, pmr, ms*)
Okabe, T. *et al., J. Antibiot.*, 1985, **38**, 964 (*isol*)

Curvupallide A C-816

[164269-18-5]



$C_{14}H_{17}NO_5$ 279.292
Alkaloid from the fungus *Curvularia pallescens*. Herbicide. Oil. λ_{max} 230 ; 262 (MeOH) (Berdy).

7-Epimer: ***Curvupallide B***
[164454-39-1]
$C_{14}H_{17}NO_5$ 279.292
From *Curvularia pallescens*. Herbicide. Oil. $[\alpha]_D^{27}$ -92.7 (c, 1.00 in MeOH).

7-Epimer, demethoxy: ***Curvupallide C***
[164269-19-6]
$C_{13}H_{15}NO_4$ 249.266
From *Curvularia pallescens*. Herbicide. Mp 168-170° dec.

Abraham, W.-R. *et al., Tetrahedron*, 1995, **51**, 4947-4952 (*isol, uv, ir, pmr, cmr, ms, struct*)

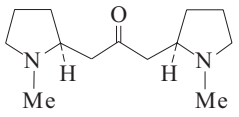
Cuscamidine C-817

Struct. unknown. Alkaloid from bark of *Cinchona pelletierana* (Rubiaceae). Amorph. Forms amorphous salts.

Hesse, O. *et al., Annalen*, 1880, **200**, 302

Cuscohygrine C-818

1,3-Bis(1-methyl-2-pyrrolidinyl)-2-propanone, 9CI. Cuskhygrine. Bellaradine. Hellaradine
[454-14-8]
[46727-05-3]



$C_{13}H_{24}N_2O$ 224.345

Stereochem. not fully established. Natural Cuscohygrine is either the *meso*-form (illus.) or a mixt. of *meso*- and (±)-forms. Like other related alkaloids it appears to racemise and epimerise readily. It is unknown in opt. active form but opt. active dihydrocuscohygrine (see Dihydrocuscohygrine, D-413) is known which suggests that the opt. active form may be present in the plant. The correct struct. was assigned by Liebermann in 1896 but for some years an incorrect alternative was put forward by Hess. Hellaradine appears to be a misprint in *CA* for Bellaradine. Alkaloid from *Atropa belladonna* (roots only), *Hyoscyamus niger*, *Datura* spp., *Erythroxylum coca* and other *Erythroxylum* spp., *Solanum*, *Cyphomandra*, *Margaranthus*, *Acnistus*, *Salpichroa*, *Scopolia*, *Solandra*, *Convolvulus*, *Mandragora*, *Anthocercis* and *Lycianthes* spp. (Solanaceae). Inhibitor of 2,4-dinitrofluorobenzene-induced hypersensitivity in mice. Several cuscohygrine-contg. plants are used in folk medicine as sedatives or narcotics. Oil; cryst. + $3\frac{1}{2}H_2O$. d_4^{16} 0.98. Mp 40-41° (hydrate). $n_D^{18.4}$ 1.4845.

Methiodide: Mp 244°.

Oxime: Mp 53-54°.

[72407-34-2]

Liebermann, C. *et al., Ber.*, 1889, **22**, 675; 1896, **29**, 2050 (*isol, struct*)
Späth, E. *et al., Monatsh. Chem.*, 1948, **79**, 119 (*synth*)
Rapoport, H. *et al., J.O.C.*, 1949, **14**, 664 (*synth, struct*)
Anet, E. *et al., Nature (London)*, 1949, **163**, 289 (*synth*)
Galinovsky, F. *et al., Monatsh. Chem.*, 1951, **82**, 551; 1953, **84**, 798 (*synth, stereochem, bibl*)
El-Olemy, M.M. *et al., J. Nat. Prod.*, 1966, **29**, 58 (*synth*)
O'Donovan, D.G. *et al., J.C.S. Perkin 1*, 1969, 223-226 (*biosynth*)
McGraw, B.A. *et al., Phytochemistry*, 1978, **17**, 257; 1979, **18**, 189 (*biosynth*)
Narasimhan, N.J. *et al., CA*, 1980, **92**, 42185u (*synth*)
Evans, W.C. *et al., Phytochemistry*, 1980, **19**, 2351 (*occur*)
Turner, C.E. *et al., Phytochemistry*, 1981, **20**, 1403 (*isol, stereochem, bibl*)
Leete, E. *et al., J.A.C.S.*, 1982, **104**, 1403 (*biosynth*)
Leete, E. *et al., Phytochemistry*, 1983, **22**, 699 (*biosynth*)
Ghani, A. *et al., Indian J. Pharm. Sci.*, 1985, **47**, 127; *CA*, **104**, 3308q (*occur*)
Stapper, C. *et al., J.O.C.*, 2002, **67**, 6456-6460 (*synth*)

Cusconidine C-819

Struct. unknown. Alkaloid from bark of *Cinchona pelletierana* (Rubiaceae). Amorph. Forms amorphous salts.

Hesse, O. *et al., Annalen*, 1880, **200**, 302

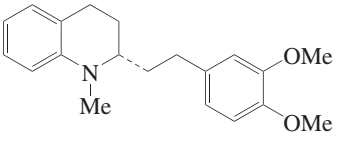
Cusconine C-820

$C_{23}H_{26}N_2O_4$ 394.469

Struct. unknown. Alkaloid from bark of *Cinchona pelletierana* (Rubiaceae). Leaflets + $2H_2O$ (Et_2O). Mp 110° (anhyd.). $[\alpha]_D^{15}$ -54.3 (c, 2 in EtOH). Cooccurs with Aricine, A-1423 and Cusconidine, C-819. Forms amorph. salts.

Hesse, O. *et al., Annalen*, 1877, **185**, 296

Cuspareine C-821



$C_{20}H_{25}NO_2$ 311.423

(S)-form
Alkaloid from the bark of *Galipea officinalis* (Rutaceae). Active against *Mycobacterium tuberculosis*. Mp 56°. $[\alpha]_D^{20}$ -20.4 (EtOH). λ_{max} 259 (log ε 4.02); 311 (log ε 3.43) ($CHCl_3$).

Methiodide: Mp 156°.

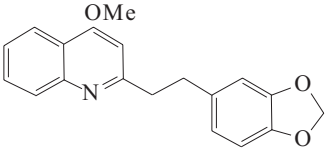
3′-O-De-Me: ***Galipeine***
$C_{19}H_{23}NO_2$ 297.396
Alkaloid from the bark of *Galipea officinalis*. Oil. $[\alpha]_D$ -13.6 ($CHCl_3$). λ_{max} 259 (log ε 3.75); 311 (log ε 3.32) ($CHCl_3$).

(±)-form
Mp 32-35°.

Schläger, J. *et al., Monatsh. Chem.*, 1950, **81**, 714 (*uv, struct, synth*)
Rakotoson, J.H. *et al., Planta Med.*, 1998, **64**, 762-763 (*isol, uv, pmr, cmr, ms*)
Jacquemond-Collet, I. *et al., Phytochemistry*, 1999, **51**, 1167-1169 (*Galipeine*)
Houghton, P.J. *et al., Planta Med.*, 1999, **65**, 250-254 (*isol, pmr, cmr, activity*)
O'Byrne, A. *et al., Tetrahedron*, 2008, **64**, 8067-8072 (*synth*)

Cusparine C-822

2-[2-(1,3-Benzodioxol-5-yl)ethyl]-4-methoxyquinoline, 9CI. 2-[2-(3,4-Methylenedioxyphenyl)ethyl]-4-methoxyquinoline
[529-92-0]



$C_{19}H_{17}NO_3$ 307.348
Alkaloid from bark of *Galipea officinalis* (Rutaceae). Antispasmodic agent. Active against *Mycobacterium tuberculosis*. Mp 91-92°. Log P 4.25 (calc).

Hydrochloride: Mp 189-191°.

Späth, E. *et al., Ber.*, 1924, **57**, 1243 (*synth*)
Fournet, A. *et al., Can. J. Chem.*, 1989, **67**, 2116-2118 (*isol, pmr*)
Houghton, P.J. *et al., Planta Med.*, 1999, **65**, 250-254 (*activity*)

Cyanamide, 9CI C-823

Carbamonitrile. Carbamic acid nitrile. Hydrogen cyanamide. Carbimide†. Carbodiimide†
[420-04-2]
$H_2NC{\equiv}N$ (C_s)
CH_2N_2 42.04

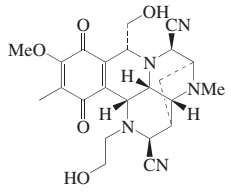
Behaves chemically as the diimide HN═C═NH. Manuf. from limestone, coke and N_2. Synth. from $CaCN_2$ + H_2O/H_2SO_4. Isol. from *Robinia pseudo-acacia*, *Vicia cracca* and *Vicia villosa*. Aldehyde dehydrogenase inhibitor. Shows herbicidal props. Reportedly in use as a weed killer, e.g. on tobacco plants. White cryst. (C_6H_6/Et_2O). Sol. H_2O, EtOH, Et_2O, $CHCl_3$, C_6H_6, Me_2CO. Mp 46°. Bp 260° dec. Bp_{19} 140°. pK_a -1.2 (H_2O). Steam-volatile; hydrol. by $H^{\oplus}$ or $OH^{\ominus}$ to urea. Converted by dil. $OH^{\ominus}$ into Cyanoguanidine. At 122°, trimerises to 1,3,5-Triazine-2,4,6-triamine.

▶ Fl. p. 141°. May dec. violently >50° in contact with H_2O, acids or alkalis. Max storage temp. 27° recommended. Eye, skin and mucous membrane irritant. Can cause dermatitis. LD_{50} (rat, orl) 125 mg/kg. Exp. reprod. effects. OES: long-term 2 mg m^{-3}.
GS5950000

Ruppert, I. *et al., Tet. Lett.*, 1977, 1987 (*cmr*)
Denner, L. *et al., Acta Cryst. C*, 1988, **44**, 1979 (*cryst struct*)
Kirk-Othmer Encycl. Chem. Technol., 4th edn., Wiley, 1991, **7**, 736 (*rev*)
Kamo, T. *et al., Biosci., Biotechnol., Biochem.*, 2006, **70**, 2310-2312 (*occur*)
Kamo, T. *et al., Phytochemistry*, 2008, **69**, 1166-1172 (*occur*)

Cyanocycline D C-824

[152104-53-5]



Absolute Configuration

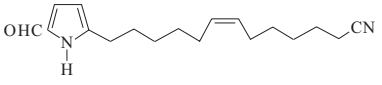
$C_{23}H_{27}N_5O_5$ 453.497

Artifact prod. from Cyanonaphthyridinomycin, C-830 during workup. Isol. from a cyanide-treated broth of *Streptomyces lusitanus*. Active against a variety of bacteria. Cryst. (EtOAc/hexane). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 112-114°. λ_{max} 204 ; 268 ; 370 (MeCN) (Berdy).

Gould, S.J. *et al., J. Nat. Prod.*, 1993, **56**, 1239-1245 (*isol, uv, ir, pmr, cmr, struct*)

5-(12-Cyano-6-dodecenyl)-2-pyrrolecarboxaldehyde C-825

*13-(5-Formyl-1*H*-pyrrol-2-yl)-7-tridecenenitrile, 9CI*



$C_{18}H_{26}N_2O$ 286.416

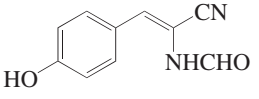
(*Z*)-*form* [75234-01-4]

Metab. of the marine sponge *Laxosuberites* sp.

Stierle, D.B. *et al., J.O.C.*, 1980, **45**, 4980 (*isol, uv, ir, pmr, cmr, ms, struct*)

N-[1-Cyano-2-(4-hydroxyphenyl)ethenyl]formamide, 9CI C-826

2-(Formamido)-3-(4-hydroxyphenyl)-2-propenenitrile



$C_{10}H_8N_2O_2$ 188.185

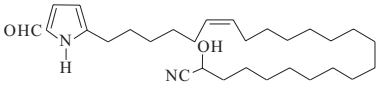
(*Z*)-*form* [957062-51-0]

Prod. by *Burkholderia mallei*. Cryst.

Brady, S.F. *et al., J.A.C.S.*, 2007, **129**, 12102-12103 (*isol, pmr, cryst struct*)

5-(23-Cyano-23-hydroxy-6-tricosenyl)-1*H*-pyrrole-2-carboxaldehyde C-827

*24-(5-Formyl-1*H*-pyrrol-2-yl)-2-hydroxy-18-tetracosenenitrile, 9CI*



$C_{29}H_{48}N_2O_2$ 456.71

(*Z*)-*form* [75234-02-5]

Metab. of the marine sponge *Laxosuberites* sp. Mp 38-40°. Unusually stable to normal isol. and storage procedures. λ_{max} 297 (ϵ 16100) (MeCN) (Derep).

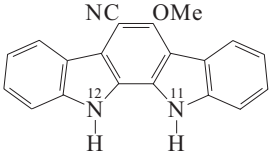
*23-Deoxy: 5-(23-Cyano-6-tricosenyl)-1*H*-pyrrole-2-carboxaldehyde*
[290817-49-1]
$C_{29}H_{48}N_2O$ 440.711
Isol. from the sponge *Mycale tenuispiculata*. Mp 56-58°. λ_{max} 297 (ϵ 15300) (MeCN).

Stierle, D.B. *et al., J.O.C.*, 1980, **45**, 4980-4982 (*isol, uv, ir, pmr, cmr, ms, struct*)

Venkatesham, U. *et al., J. Nat. Prod.*, 2000, **63**, 1318-1320 (*23-deoxy*)

5-Cyano-6-methoxyindolo[2,3-*a*]carbazole C-828

11,12-Dihydro-6-methoxyindolo[2,3-a]carbazole-5-carbonitrile, 9CI
[131926-78-8]



$C_{20}H_{13}N_3O$ 311.342

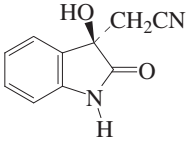
Isol. from the blue-green alga, *Nostoc sphaericum*. Shows varied cytotoxic activities. Amorph. λ_{max} 234 ; 252 ; 290 ; 348 ; 354 ; 372 (THF) (Berdy).

N^{11}*-Me:* ***5-Cyano-6-methoxy-11-methylindolo[2,3-a]carbazole***
[131926-77-7]
$C_{21}H_{15}N_3O$ 325.369
From *Nostoc sphaericum*. Cytotoxic. Amorph. Mp 230° dec. λ_{max} 234 (ϵ 25500); 252 (ϵ 28300); 290 (ϵ 66800); 338 (ϵ 15000); 354 (ϵ 10000); 372 (ϵ 11100) (THF) (Derep).

Knübel, G. *et al., J. Antibiot.*, 1990, **43**, 1236 (*isol, pmr, cmr*)

3-Cyanomethyl-3-hydroxyoxindole C-829

*2,3-Dihydro-3-hydroxy-2-oxo-1*H*-indole-3-acetonitrile, 9CI. 3-Cyanomethyl-3-hydroxy-1*H*-indol-2(3*H*)-one*



(*S*)-*form*

$C_{10}H_8N_2O_2$ 188.185

(*S*)-*form* [137761-24-1]

Alkaloid from *Brassica oleracea* (Brassicaceae) inoculated with *Pseudomonas cichorii*. $[\alpha]_D$ -37.1 (c, 0.21 in MeOH).

(±)-*form* [137761-25-2]

Mp 162-163°.

(ξ)-*form*

N-*β*-D-*Glucopyranosyl:* [872851-13-3]
$C_{16}H_{18}N_2O_7$ 350.327
Alkaloid from the seeds of *Rheum maximowiczii*. $[\alpha]_D^{21}$ +38.5 (c, 2.8 in MeOH).

Hallmann, G. *et al., Chem. Ber.*, 1962, **95**, 1138 (*synth*)

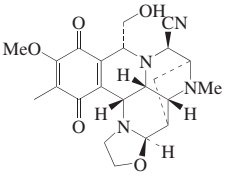
Monde, K. *et al., Phytochemistry*, 1991, **30**, 2915 (*isol, uv, ir, pmr, ms*)

Monde, K. *et al., Tet. Lett.*, 2003, **44**, 6017-6020 (*synth, cd, abs config*)

Komakine, N. *et al., Nat. Med. (Tokyo)*, 2005, **59**, 45-48 (*N-glucosyl*)

Cyanonaphthyridinomycin C-830

Cyanocycline A. Antibiotic 49A
[82423-05-0]



Absolute Configuration

$C_{22}H_{26}N_4O_5$ 426.471

Quinone-type antibiotic. Isol. from *Streptomyces flavogriseus*. DNA intercalator. Shows broad spectrum antimicrobial and antineoplastic activity. Stabilised and more active form of Naphthyridinomycin A, N-32. Orange-red needles. $[\alpha]_D$ +76 (c, 0.5 in MeOH). pK_a 6.6. Log P -0.77 (uncertain value) (calc). Browns at 163°. Dec. at 168-170°. λ_{max} 263 (ϵ 9460) (MeOH/HCl) (Derep). λ_{max} 283 (ϵ 10400) (MeOH/NaOH) (Derep). λ_{max} 268 (ϵ 11000) (MeOH) (Derep).

▶ LD_{50} (mus, ipr) 10 mg/kg. GS9693000

O-*De-Me: Cyanocycline F. Naphthocyanidine*
[82475-12-5]
$C_{21}H_{24}N_4O_5$ 412.444
Prod. semisynthetically from Antibiotic SF 1739, A-1254 or Cyanocycline A. Broad spectrum antibiotic with antineoplastic activity. Orange-red cryst. Mp 160°. $[\alpha]_D^{25}$ +61 (c, 1 in $CHCl_3$). $[\alpha]_D$ +76 (c, 0.5 in MeOH). Log P -1.03 (uncertain value) (calc). λ_{max} 270 (EtOH).

▶ LD_{50} (mus, ivn) 24 mg/kg. QL0527000

N-*De-Me:* ***Cyanocycline B***. N-*Demethylcyanocycline A*
[152053-14-0]
$C_{21}H_{24}N_4O_5$ 412.444
Isol. from a cyanide-treated broth of *Streptomyces lusitanus*. Active against a variety of bacteria. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. λ_{max} 210 ; 266 ; 375 (MeCN) (Berdy).

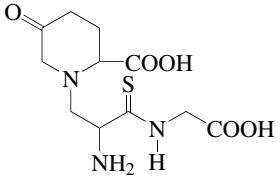
Hydroquinone: ***Cyanocycline C***
[152075-38-2]
$C_{22}H_{28}N_4O_5$ 428.487
Isol. from a cyanide-treated broth of *Streptomyces lusitanus*. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 98-100° (as di-Me ether).

[73051-89-5]

Japan. Pat., 1979, (*(Chugai)*)79 126 793; *CA*, **93**, 68655t (*isol*)
Zmijewski, M.J. *et al., J. Antibiot.*, 1982, **35**, 524-526 (*synth, props*)
Itoh, I. *et al., J. Antibiot.*, 1982, **35**, 642-644 (*isol*)
Hayashi, T. *et al., J. Antibiot.*, 1982, **35**, 771-777; 1983, **36**, 1228-1235 (*isol, ur, ir, pmr, props*)
Hayashi, T. *et al., J.C.S. Perkin 2*, 1983, 335-343 (*cryst struct*)
Fukuyama, T. *et al., J.A.C.S.*, 1987, **109**, 1587-1589 (*synth*)
Hill, G.C. *et al., J. Med. Chem.*, 1991, **34**, 2079-2088 (*DNA binding-conformn*)
Fukuyama, T. *et al., Adv. Heterocycl. Nat. Prod. Synth.*, 1992, **2**, 189-249 (*rev, synth*)
Gould, S.J. *et al., J. Nat. Prod.*, 1993, **56**, 1239-1245 (*Cyanocyclines B,C*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, COL125

Cycasthioamide C-831

3-(2-Carboxy-5-oxo-1-piperidinyl)thioalanylglycine, 9CI
[192801-72-2]

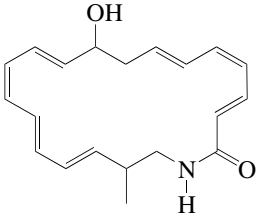


$C_{11}H_{17}N_3O_5S$ 303.338
Alkaloid from the seeds of *Cycas revoluta* (Cycadaceae). Amorph. powder.

Pan, M. *et al., Phytochemistry*, 1997, **45**, 517-519 (*isol, pmr, cmr*)

Cyclamenol C-832

10-Hydroxy-19-methylazacycloeicosa-3,5,7,11,13,15,17-heptaen-2-one, 9CI
[155645-45-7]

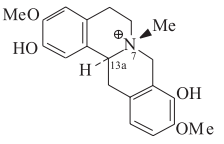


$C_{20}H_{25}NO_2$ 311.423
Prod. by *Streptomyces* sp. MHW 846. Myeloperoxydase inhibitor and anti-inflammatory agent. Yellow powder. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. $[\alpha]_D$ +3840 (DMF). λ_{max} 213 (ϵ 416); 276 (ϵ 2642); 285 (ϵ 3228) (MeOH) (Berdy). λ_{max} 228 (ϵ 294); 275 (ϵ 2262); 285 (ϵ 2812) (MeOH/HCl) (Berdy). λ_{max} 215 (ϵ 368); 276 (ϵ 2300); 285 (ϵ 2834) (MeOH/NaOH) (Berdy).

Ger. Pat., 1994, 4 231 289; *CA*, **121**, 7441v (*isol*)
Nazaré, M. *et al., Chem. Eur. J.*, 2001, **7**, 3363-3376 (*synth*)

Cyclanoline C-833

Cissamine. Cissampine



(7*R*,13a*S*)–*form*

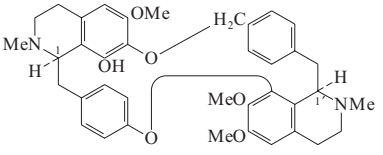
$C_{20}H_{24}NO_4^{\oplus}$ 342.414

(7*R*,13*aS*)-*form*
β-Cyclanoline
[63527-13-9]
Quaternary alkaloid from *Stephania tetrandra* and *Cissampelos pareira* (Menispermaceae).
Chloride: [63527-14-0]
Cryst. Mp 205°. $[\alpha]_D^{23}$ -150.3 (c, 0.1 in MeOH).

(7*S*,13*aS*)-*form*
α-Cyclanoline
Chloride: [17472-50-3]
Mp 215-220°. $[\alpha]_D^{26}$ -129 (c, 1.00 in $CHCl_3$).
▶ DR9848000
Iodide: [17472-51-4]
Mp 185° dec.

Answer, F. *et al., Experientia*, 1968, **24**, 999 (*uv, ms, pmr*)
Yoshikawa, K. *et al., Chem. Lett.*, 1975, 961 (*cmr*)
Martin, H.J. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1977, **310**, 314 (*isol, ms, uv*)
Marek, R. *et al., Magn. Reson. Chem.*, 2002, **40**, 687-692 (*N-15 nmr*)

Cycleaneonine C-834



(1*R*,1′*R*)–*form*

$C_{38}H_{42}N_2O_6$ 622.76

(1*R*,1′*R*)-*form* [151380-29-9]
Alkaloid from roots of *Cyclea sutchuenensis* (Menispermaceae). Cytotoxic. Amorph. powder. $[\alpha]_D^{26}$ -119 (c, 1.28 in $CHCl_3$). λ_{max} 211 (ϵ 72443); 275 (ϵ 5248) (MeOH) (Berdy).

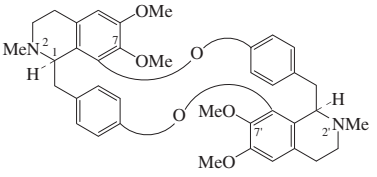
(1*R*,1′*S*)-*form*
Isocycleaneonine
[151380-30-2]
Alkaloid from roots of *Cyclea sutchuenensis* (Menispermaceae). Cytotoxic. Amorph. powder. $[\alpha]_D^{26}$ +5.1 (c, 0.12 in $CHCl_3$). λ_{max} 211 (ϵ 64545); 275 (ϵ 5495) (MeOH) (Berdy).

(1*S*,1′*S*)-*form* [116520-07-1]
Alkaloid from stems of *Cyclea racemosa* (Menispermaceae). Cytotoxic. Amorph. powder. Mp 96-97°. $[\alpha]_D$ +376.8 (c, 0.5 in $CHCl_3$). λ_{max} 204 (ϵ 83000); 275 (ϵ 4180) (EtOH) (Berdy).

Lai, S. *et al., Yaoxue Xuebao*, 1988, **23**, 356-360; *CA*, **109**, 125816w
Wang, X.-K. *et al., Phytochemistry*, 1993, **33**, 1249-1252 (*isol, uv, ir, pmr, ms, struct*)

Cycleanine C-835

Methylisochondodendrine. 7,7′-O,O-Dimethylisochondodendrine
[518-94-5]



$C_{38}H_{42}N_2O_6$ 622.76
Alkaloid from *Chondodendron tomentosum*, *Cissampelos insularis*, *Cissampelos pareira*, *Cleistopholis staudtii*, *Cyclea tonkinensis*, *Epinetrum cordifolium*, (preferred genus name *Albertisia*), *Epinetrum mangenotii*, *Epinetrum villosum*, *Heracleum wallichi*, *Limaciopsis loangensis*, *Paracyclea ochiaiana*, *Stephania capitata*, *Stephania cepharantha*, *Stephania rotunda*, *Stephania elegans*, *Synclisia scabrida* and others (Menispermaceae, Annonaceae, Apiaceae). Shows antiinflammatory and anaesthetic props. Curarising agent. Shows selective antiplasmodial activity. Cryst. (Et_2O). Mp 280° (268-271°). $[\alpha]_D^{22}$ -15.9 (c, 0.69 in $CHCl_3$). Log P 7.8 (uncertain value) (calc). λ_{max} 232 (sh) (log ϵ 4.87); 276 (log ϵ 3.89); 285 (sh) (log ϵ 3.83) (MeOH).

N^2-*Oxide:* *Cycleanine* N^2-*oxide*
[85805-55-6]
$C_{38}H_{42}N_2O_7$ 638.759
Alkaloid from the stems of *Synclisia scabrida* (Menispermaceae). $[\alpha]_D^{25}$ -7.6 (c, 0.38 in MeOH). The nmr spectra of two synthetic diastereoisomeric *N*-oxides were significantly different from those of the natural product which suggests that its struct. is incorr.

$N^{2'}$-*De-Me:* $N^{2'}$-*Desmethylcycleanine*
[83730-51-2]
$C_{37}H_{40}N_2O_6$ 608.733
Alkaloid from the rhizomes of *Stephania glabra* (Menispermaceae). Mp 102-103°. $[\alpha]_D^{32}$ -165 (c, 0.29 in $CHCl_3$).

O^7-*De-Me:* *Norcycleanine*
[478-63-7]
$C_{37}H_{40}N_2O_6$ 608.733
Alkaloid from *Chondodendron tomentosum, Cyclea insularis, Epinetrum cordifolium, Epinetrum mangenotii* and others (Menispermaceae). Needles (Me_2CO). Mp 245-246°. $[\alpha]_D^{24}$ -22.5 (c, 1 in EtOH).

O^7,$O^{7'}$-*Di-de-Me:* *Isochondodendrine*. *Isobebeerine. Isendryl. Isodendril.*
O^7,$O^{7'}$-*Didemethylcycleanine*
[477-62-3]
$C_{36}H_{38}N_2O_6$ 594.706

Alkaloid from *Chondodendron candicans, Chondodendron limaciifolium, Chondodendron microphyllum, Chondodendron platyphyllum, Chondodendron tomentosum, Chondodendron toxicoferum, Cissampelos mucronata, Cissampelos pareira, Cyclea barbata, Cyclea insularis, Cyclea madagascariensis, Cyclea peltata, Cyclea hainanensis, Cleistopholis staudtii, Epinetrum cordifolium, Epinetrum mangenotii, Epinetrum illosum, Guatteria megalophylla, Heracleum wallichi, Isolona pilosa, Paracyclea ochiaiana, Pleogyne cunninghamii, Sciadotenia toxifera, Stephania hernandifolia, Stephania elegans* and others (Menispermaceae, Annonaceae, Apiaceae). Antiplasmodial agent, sedative, antineoplastic agent. Mp 305° (288°, 275°) dec. $[\alpha]_D^{22}$ +120 (c, 0.24 in 0.1*M* HCl). $[\alpha]_D^{22}$ +50 (c, 0.965 in Py). $[\alpha]_D^{20}$ -29 (c, 1.3 in $CHCl_3$). $[\alpha]_D^{20}$ -31 (c, 0.33 in $CHCl_3$). Log P 7.32 (uncertain value) (calc). Exhibits anomalous solvent-dependent opt. activity. λ_{max} 211 (log ε 4.72); 231 (sh) (log ε 4.58); 278 (log ε 3.73); 285 (log ε 3.72) (EtOH).

▶ LD_{50} (mus, ipr) 1001 mg/kg. GT8815000

$O^7,O^{7'}$*-Di-de-Me, sulfate:* [32434-24-5]
Mp 291-292° dec. $[\alpha]_D$ +194 (c, 1.3 in 1*M* H_2SO_4 aq.). $[\alpha]_D$ +50 (c, 0.034 in 1*M* H_2SO_4 aq.). Opt. rotn. concn. dependent.

$O^7,O^{7'}$*-Di-de-Me,* $N^2,N^{2'}$*-di-Me:*
$C_{38}H_{44}N_2O_6^{2\oplus}$ 624.775
Mp 280° dec. (as diiodide). $[\alpha]_D^{24}$ +87 (c, 0.7 in H_2O).

3,4-Didehydro: ***3,4-Dehydrocycleanine***
[189354-09-4]
$C_{38}H_{40}N_2O_6$ 620.744
Alkaloid from *Stephania cepharantha*. Cryst. (Me_2CO). Mp 259-261° (dec.). $[\alpha]_D^{24}$ +79 (c, 0.65 in $CHCl_3$). λ_{max} 340 (log ε 3.97) (MeOH).

1-Epimer: see Sciadenine, S-148

(±)-*form* [10438-10-5]
Synthetic. Mp 222-225°.

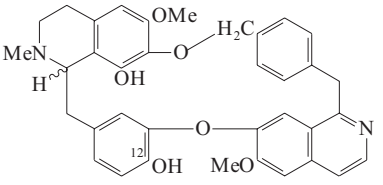
$N^2,N^{2'}$*-Di-de-Me: 2,2′-Dimethylcycleanium*
[75846-14-9]
$C_{40}H_{48}N_2O_6^{2\oplus}$ 652.829
Skeletal muscle relaxant. Antihypertensive agent. Used as dibromide, to which CAS no. refers.

▶ GT8820000

Dutcher, J.D. *et al., J.A.C.S.*, 1946, **68**, 419-424 (*Isochondodendrine, isol*)
Kidd, D.A.A. *et al., J.C.S.*, 1954, 669-677 (*struct*)
Jeffreys, J.A.D. *et al., J.C.S.*, 1956, 4451-4455 (*Isochondodendrine, struct, props*)
Kikuchi, T. *et al., Yakugaku Zasshi*, 1958, **78**, 1408-1412; 1959, **79**, 262-265; *CA*, **53**, 7219f; 13188d (*Norcycleanine*)
Bick, I.R.C. *et al., J.C.S.*, 1961, 1896-1903 (*pmr*)
Battersby, A.R. *et al., J.C.S.*, 1965, 2239-2247 (*ord*)
Debray, M. *et al., Ann. Pharm. Fr.*, 1966, **24**, 551-558; *CA*, **66**, 28942v (*Norcycleanine*)
Tomita, M. *et al., Chem. Pharm. Bull.*, 1968, **16**, 62-69 (*synth, pmr*)
Baldas, J. *et al., J.C.S. Perkin 1*, 1972, 599-601 (*ms*)
Dwuma-Badu, D. *et al., Phytochemistry*, 1975, **14**, 2520-2521 (*isol, uv, ir, pmr, ms, Isochondodendrine*)
Galeffi, C. *et al., Gazz. Chim. Ital.*, 1978, **108**, 97-100 (*Isochondodendrine, isol, pmr*)
Marsaioli, A.J. *et al., Phytochemistry*, 1978, **17**, 1655-1658 (*cmr*)
Scheinmann, F. *et al., Phytochemistry*, 1980, **19**, 1837-1840 (*isol, ir, pmr, cmr, ms, conformn*)
Singh, R.S. *et al., J. Nat. Prod.*, 1981, **44**, 664-667 (*Cycleanine, Isochondodendrine, isol, uv, ir, pmr, ms*)
Bhakuni, D.S. *et al., J. Nat. Prod.*, 1982, **45**, 407-411 (*N-Desmethylcycleanine*)
Ohiri, F.C. *et al., Planta Med.*, 1983, **47**, 87-89 (*Cycleanine* N^2*-oxide*)
Bhakuni, D.S. *et al., Tetrahedron*, 1983, **39**, 4003-4010 (*biosynth*)
Jin, G. *et al., Chin. Med. J. (Beijing, Engl. edn.)*, 1984, **97**, 877-884 (*rev, pharmacol, methobromide*)
Kashiwaba, N. *et al., Chem. Pharm. Bull.*, 1997, **45**, 470-475 (*3,4-Dehydrocycleanine*)
Kanyinda, B. *et al., J. Nat. Prod.*, 1997, **60**, 1121-1124 (*isol, pmr, cmr*)
Kashiwaba, N. *et al., J. Nat. Prod.*, 1998, **61**, 253-255 (*N-oxides, synth, pmr, cmr*)
Angerhoffer, C.K. *et al., J. Nat. Prod.*, 1999, **62**, 59-66 (*activity*)
Mambu, L. *et al., Planta Med.*, 2000, **66**, 537-540 (*isol, pmr, cmr, N-15 nmr, activity*)

Cycleatjehine C-836

[128582-52-5]



$C_{36}H_{34}N_2O_6$ 590.674

New subgroup of bisbenzylisoquinolines incorporating the unusual methyleneoxy bridge (see also Warifteine, W-9 and derivs.). Alkaloid from the leaves of *Cyclea atjehensis* (Menispermaceae). Shows selective antiplasmodial activity. Amorph. $[\alpha]_D$ +321 (c, 0.23 in $CHCl_3$). $[\alpha]_D$ +252 (c, 0.23 in MeOH).

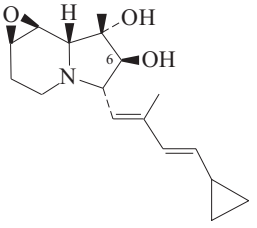
O^{12}*-Me:* ***Cycleatjehenine***
[128562-90-3]
$C_{37}H_{36}N_2O_6$ 604.701
Alkaloid from the leaves of *Cyclea atjehensis* (Menispermaceae). Shows selective antiplasmodial activity. Mp 218°. $[\alpha]_D$ +391 (c, 0.25 in $CHCl_3$). $[\alpha]_D$ +352 (c, 0.25 in MeOH).

Di-Me ether: $[\alpha]_D$ +272 (c, 0.11 in MeOH). $[\alpha]_D$ +266 (c, 0.175 in $CHCl_3$).

Tantisewie, B. *et al., Tetrahedron*, 1990, **46**, 325 (*isol, uv, pmr, ms, cd, struct*)
Parvez, M. *et al., Acta Cryst. C*, 1991, **47**, 448 (*cryst struct, Cycleatjehenine*)
Angerhoffer, C.K. *et al., J. Nat. Prod.*, 1999, **62**, 59-66 (*activity*)

Cyclizidine C-837

M 146791. Antibiotic M 146791. L 892-4. Antibiotic L 892-4
[84393-28-2]



$C_{17}H_{25}NO_3$ 291.389

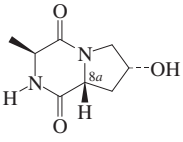
Indolizidine antibiotic. Prod. by *Streptomyces* sp. NCIB 11649. Shows immunostimulatory activity. Needles (EtOAc), cryst. (Et_2O). Sol. MeOH, EtOAc; poorly sol. H_2O. Mp 184° (176-178°). $[\alpha]_D^{23.5}$ -46.3 (c, 2 in MeOH). Log P 1.62 (calc). λ_{max} 251 (ε 28400) (EtOH) (Derep).

6-Ac: [84393-27-1]
Cryst. Mp 63-65°. $[\alpha]_D^{22.5}$ -83.6 (c, 2.0 in MeOH).

Freer, A.A. *et al., Chem. Comm.*, 1982, 1160 (*isol, struct*)
Leeper, F.J. *et al., Chem. Comm.*, 1987, 505 (*biosynth, pmr, cmr*)
Zhang, H. *et al., CA*, 1993, **119**, 67534w (*isol*)

Cyclo(alanyl-4-hydroxyproloyl) C-838

Hexahydro-7-hydroxy-3-methylpyrrolo[1,2-a]pyrazine-1,4-dione, 9CI



(3*S*,7*R*,8*aR*)-*form*

$C_8H_{12}N_2O_3$ 184.194

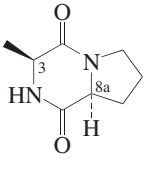
(3*S*,7*R*,8*aR*)-*form*
Prod. by a strain of *Ruegeria* sp. isol. from the sponge *Suberites domuncula*. Amorph. solid. $[\alpha]_D^{25}$ +17.8 (c, 0.001 in MeOH).

(3*S*,7*R*,8*aS*)-*form*
Prod. by a strain of *Ruegeria* sp. from *Suberites domuncula*. Also isol. from *Streptomyces fradiae*. Amorph. solid. $[\alpha]_D^{25}$ -4.2 (c, 0.002 in MeOH).

Hoffmeister, D. *et al., Chem. Biol.*, 2000, **7**, 821-831 (*isol*)
Mitova, M. *et al., J. Nat. Prod.*, 2004, **67**, 1178-1181 (*isol, pmr, cmr, ms*)

Cyclo(alanylprolyl) C-839

Hexahydro-3-methylpyrrolo[1,2-a]pyrazine-1,4-dione, 9CI



(3*S*,8*aS*)-*form*

$C_8H_{12}N_2O_2$ 168.195

(3*R*,8*aS*)-*form*
D,L-form. *(3*R-cis*)-form*
[36238-64-9]
Mp 139-142°.

(3*S*,8*aR*)-*form*
L,D-form. *(3*S-cis*)-form*
[19943-29-4]
From *Beauveria bassiana*. Mp 162-166°. $[\alpha]_D^{22}$ -85.

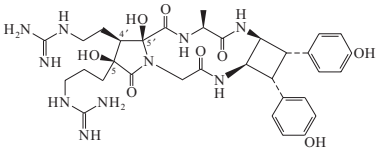
(3*S*,8*aS*)-*form*
L,L-form. *(3*S-trans*)-form*
[36357-32-1]
Isol. from cocoa, *Pestalotia palmarum*, *Panax notoginseng*, root of *Psammosilene tunicoides* and the Caribbean sponge *Tedania ignis*. Also prod. by *Streptomyces* spp. Metab. of *Pseudoalteromonas haloplanktis*, *Penicillium janthinellium* and *Cordyceps militaris*. Mp 153-156°. $[\alpha]_{Hg}^{20}$ -160 (c, 1 in EtOH).

[65556-33-4 , 19943-28-3]

Westley, J.W. *et al., Anal. Chem.*, 1968, **40**, 1888-1890 (*glc, chromatog, pmr*)
Siemion, I.Z. *et al., Org. Magn. Reson.*, 1971, **3**, 545-550 (*synth, pmr*)
Young, P.E. *et al., J.A.C.S.*, 1976, **98**, 5365-5371 (*synth, pmr, cmr*)
Siemion, I.Z. *et al., Org. Magn. Reson.*, 1976, **8**, 432-435 (*cmr*)
Izumiya, N. *et al., Pept. Chem.*, 1977, **15**, 49-54 (*pharmacol*)
Pancoska, P. *et al., Coll. Czech. Chem. Comm.*, 1979, **44**, 1296-1311 (*cd*)
Cotrait, M. *et al., Cryst. Struct. Commun.*, 1979, **8**, 819-822 (*cryst struct*)
Grove, J.F. *et al., Phytochemistry*, 1981, **20**, 815-816 (*3S,8aR-form, isol*)
Schmitz, F.J. *et al., J.O.C.*, 1983, **48**, 3941-3945 (*isol, pmr, ms*)
Langhammer, M. *et al., Fresenius' Z. Anal. Chem.*, 1986, **324**, 5-8 (*ms*)
Zhang, Y. *et al., Zhongguo Yaowu Huaxue Zazhi*, 2002, **12**, 208-209; *CA*, **139**, 210500 (*L,L-form, isol*)
Ma, X. *et al., Shenyang Yaoke Daxue Xuebao*, 2003, **20**, 255-257 (*L,L-form, isol*)
Stark, T. *et al., J. Agric. Food Chem.*, 2005, **53**, 7222-7231 (*isol, ms*)
Carls, K.L. *et al., J. Phys. Chem. A*, 2005, **109**, 5463-5470 (*cd*)
Mitova, M. *et al., Mar. Biotechnol.*, 2005, **7**, 523-531 (*L,L-form, isol*)

Cycloanchinopeptolide C C-840

[160433-76-1]

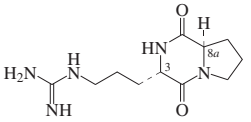


$C_{33}H_{44}N_{10}O_8$ 708.773
Stereochem. at C-5, C-4′, C-5 and around the cyclobutane ring is relative. Alkaloid from the Mediterranean marine sponge *Anchinoe tenacior*. $[\alpha]_D$ +18.6 (c, 0.5 in MeOH). λ_{max} 215 (ϵ 21000); 282 (ϵ 8080) (MeOH) (Berdy).

Casapullo, A. *et al., J. Nat. Prod.*, 1994, **57**, 1227 (*isol, uv, pmr, cmr, cd, struct*)

Cyclo(arginylprolyl) C-841

*3-[3-(Aminoiminomethyl)propyl]hexahydropyrrolo[1,2-*a*]pyrazine-1,4-dione. 3-(3-Guanidinylpropyl)hexahydropyrrolo[1,2-*a*]pyrazine-1,4-dione*



(3S,8aR)-form

$C_{11}H_{19}N_5O_2$ 253.303

(3*S*,8*aR*)-*form*
L-D-form. ***Antibiotic CI 4***. *CI 4*
[173524-51-1]
Prod. by the marine-derived *Pseudomonas* sp. Chitinase inhibitor. Powder. $[\alpha]_D^{29}$ +42 (c, 0.2 in H_2O).

(3*S*,8*aS*)-*form*
L-L-form. ***Verpacamide A***
[74838-83-8]
Isol. from *Axinella vaceleti*. $[\alpha]_D^{24}$ -69.2 (c, 0.4 in MeOH).

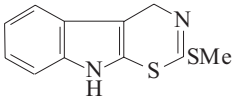
Monohydrochloride: [115181-61-8]
Mp 245-250°. $[\alpha]_D^{23}$ -72 (c, 1 in H_2O).

*8,8*a-*Didehydro:* ***Verpacamide B***
$C_{11}H_{17}N_5O_2$ 251.288
Isol. from *Axinella vaceleti*. Oil (as formate salt). $[\alpha]_D^{24}$ -5.7 (c, 0.32 in MeOH) (formate). Prob. config. is (3*S*-).

Ishibashi, N. *et al., Agric. Biol. Chem.*, 1988, **52**, 819-827 (*synth*)
Izumida, H. *et al., J. Antibiot.*, 1996, **49**, 76-80 (*Antibiotic CI 4*)
Vergne, C. *et al., Org. Lett.*, 2006, **8**, 2421-2424 (*Verpacamides*)

Cyclobrassinin C-842

*4,9-Dihydro-2-(methylthio)-1,3-thiazino[6,5-*b*]indole, 9CI*
[105748-58-1]



$C_{11}H_{10}N_2S_2$ 234.345
Isol. from Chinese cabbage (*Brassica campestris* ssp. *pekinensis*)(Brassicaceae) heads inoculated with *Pseudomonas cichorii*. Phytoalexin. Mp 136-137°. First report of the isol. of sulfur-containing phytoalexins (see also Brassinin, B-284). λ_{max} 204 (ϵ 24700); 227 (ϵ 34000); 284 (ϵ 7830); 294 (ϵ 8170) (MeOH) (Berdy). λ_{max} 220 (ϵ 19200); 270 (ϵ 13200) (EtOH) (Berdy).

S-*Oxide: 4,9-Dihydro-2-(methylsulfinyl)-1,3-thiazino[6,5-*b*]indole, 9CI*. ***Cyclobrassinin sulfoxide***
[128722-96-3]
$C_{11}H_{10}N_2OS_2$ 250.345
Isol. from leaves of brown mustard *Brassica juncea* (Brassicaceae). Phytoalexin. Pale yellow grains. Mp 188-190°.

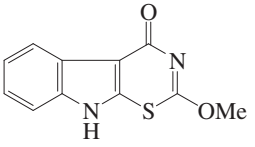
9-N-*Methoxy:* ***Sinalbin B***
$C_{12}H_{12}N_2OS_2$ 264.372
Isol. from *Sinapis alba* (white mustard). Phytoalexin. λ_{max} 231 (log ϵ 4.13); 275 (log ϵ 3.8) (CH_2Cl_2).

9-N-*Methoxy,* S-*oxide:* ***Sinalbin A***
Isol. from *Sinapis alba* (white mustard). Phytoalexin. λ_{max} 231 (log ϵ 4.33); 280 (log ϵ 3.96) (CH_2Cl_2).

Takasugi, M. *et al., Chem. Comm.*, 1986, 1077 (*isol, synth, struct*)
Devys, M. *et al., Phytochemistry*, 1990, **29**, 1087 (*isol, ir, pmr, ms, struct, oxide*)
Kutschy, P. *et al., Tetrahedron*, 1998, **54**, 3549-3566 (*synth*)
Pedras, M.S.C. *et al., Phytochemistry*, 2000, **53**, 161-176 (*rev*)
Pedras, M.S.C. *et al., Phytochemistry*, 2000, **55**, 213-216 (*Sinalbins*)

Cyclobrassinone C-843

*2-Methoxy-1,3-thiazino[6,5-*b*]indol-4(9*H*)-one, 9CI*
[156953-82-1]

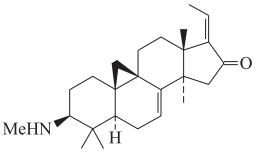


$C_{11}H_8N_2O_2S$ 232.262
The name Cyclobrassinone is misleading. Isol. from *Brassica oleracea* var. *gongylodes* (kohlrabi). Phytoalexin.

Gross, D. *et al., Z. Naturforsch., C*, 1994, **49**, 281-285 (*isol*)
Kutschy, P. *et al., Tetrahedron*, 2002, **58**, 9029-9039 (*synth*)

Cyclobuxaphylamine C-844

4,4,14-Trimethyl-3-(methylamino)-9,19-cyclopregna-7,17(20)-dien-16-one, 9CI



(E)-form

$C_{25}H_{37}NO$ 367.573

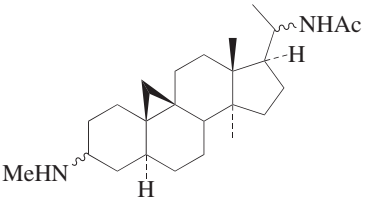
(*E*)-*form* [113762-74-6]
Alkaloid from the leaves of *Buxus papilosa* (Buxaceae). $[\alpha]_D$ -30 (c, 1.89 in $CHCl_3$).

(*Z*)-*form* [113762-75-7]
Alkaloid from the leaves of *Buxus papilosa* (Buxaceae). $[\alpha]_D$ -76 (c, 1.11 in $CHCl_3$).

Choudhary, M.I. *et al., Phytochemistry*, 1988, **27**, 271 (*isol, uv, ir, pmr, ms, struct*)

Cyclobuxargentine G C-845

[62874-53-7]



Probable structure

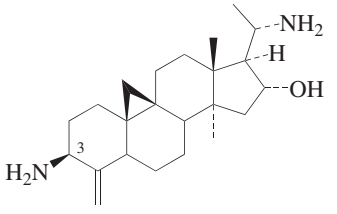
$C_{25}H_{42}N_2O$ 386.62

Rare Buxus alkaloid lacking a C-4 substit. Minor alkaloid from *Buxus sempervirens* var. *argentea* (Buxaceae). Cryst. ($MeOH/CH_2Cl_2$). Mp 283°. $[\alpha]_D^{23}$ -51 (c, 1.4 in $CHCl_3$).

Kuchkova, K.I. *et al., Chem. Zvesti*, 1976, **30**, 174-178; *CA*, **87**, 2362q (*isol, ir, ms, struct*)

Cyclobuxine I C-846

3,20-Diamino-4-methylene-14-methyl-9,19-cyclopregnan-16-ol, 9CI



$C_{23}H_{38}N_2O$ 358.566

The suffix letter in *Buxus* alkaloids systematically designates the *N*-subn. pattern. The parent compd., Cyclobuxine I, is unknown.

N^3,N^{20}-*Di-Me:* ***Cyclobuxine D***. *Cyclobuxine*
[2241-90-9]
$C_{25}H_{42}N_2O$ 386.62
Alkaloid from *Buxus sempervirens*, *Buxus hyrcana*, *Buxus wallichiana*, *Buxus microphylla* and *Buxus harlandi* (Buxaceae). Shows antiinflammatory and antihypertensive activity. Mp 245-247°. $[\alpha]_D^{23}$ +98 ($CHCl_3$).

▶ LD_{50} (mus, scu) 300 mg/kg. GZ0590020

N^3,N^{20}-*Di-Me; hydrobromide:* Mp 288-292° dec.

N^3,N^{20}-*Di-Me,* N^3,N^{20},O-*tri-Ac:* Mp 283-285° dec. $[\alpha]_D^{24}$ +10 ($CHCl_3$).

N^3,N^3,N^{20}-*Tri-Me:* ***Cyclobuxine B***
[5232-38-2]
$C_{26}H_{44}N_2O$ 400.646
Alkaloid from *Buxus sempervirens* (Buxaceae). Prisms (MeOH). Mp 230-233°. $[\alpha]_D^{25}$ +119 (c, 1.0 in $CHCl_3$).

N-*Tetra-Me: Cyclobuxine A*
Semisynthetic. Mp 204-205°. $[\alpha]_D^{25}$ +99 ($CHCl_3$).

4β,23-Dihydro: 3,20-Diamino-4,14-dimethyl-9,19-cyclopregnan-16-ol. Cyclobuxamine I

4β,23-Dihydro, N^{20}-*Me:* ***Cyclobuxamine H***. *Cyclobuxamine*
[6866-90-6]
$C_{24}H_{42}N_2O$ 374.609
Alkaloid from *Buxus sempervirens* and *Buxus balearica* (Buxaceae). HIV reverse transcriptase (HIV-rt) inhibitor. Mp 209-211° dec. $[\alpha]_D^{24}$ +67 (c, 1.08 in $CHCl_3$). $[\alpha]_D$ +30 ($CHCl_3$).

4β,23-Dihydro, N^{20}-*Me,* O,N^3,N^{20}-*tri-Ac:* Mp 261-263° dec.

4β,23-Dihydro, N-*tetra-Me: Cyclobuxamine A*
[58700-02-0]
Semisynthetic. Mp 217-218°. $[\alpha]_D^{24}$ +33 (c, 0.5 in $CHCl_3$).

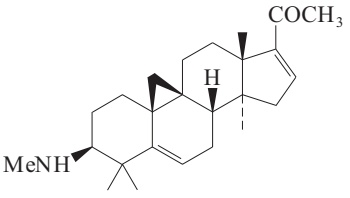
4β,23-Dihydro, 6,7-didehydro, N-*tetra-Me:* ***Cyclobullatine A***
[58672-78-9]
$C_{27}H_{46}N_2O$ 414.673
Alkaloid from *Buxus sempervirens* var. *bullata* (Buxaceae). Cryst. (Me_2CO). Mp 275°. $[\alpha]_D$ -99 (c, 0.46 in EtOH).

3-Epimer, N^3,N^{20}-*di-Me:* ***Pseudocyclobuxine D***
[54357-48-1]
$C_{25}H_{42}N_2O$ 386.62
Alkaloid from *Buxus sempervirens* (Buxaceae). Cryst. (EtOH). Mp 229-231°. $[\alpha]_D$ +89.6 ($CHCl_3$).

Schlittler, E. *et al., Helv. Chim. Acta*, 1949, **32**, 2209-2226; 2226-2240 (*Cyclobuxine D*)
Brown, K.S. *et al., J.A.C.S.*, 1964, **86**, 4414-4424; 4420-4433; 4424-4430 (*Cyclobuxines, Cyclobuxamines*)
Votický, Z. *et al., Chem. Zvesti*, 1969, **23**, 702-703 (*Cyclobuxine B*)
Burnell, R.H. *et al., Phytochemistry*, 1972, **11**, 1853-1854 (*Cyclobuxine D*)
Khodzhaev, B.U. *et al., Khim. Prir. Soedin.*, 1973, **9**, 755-760; *Chem. Nat. Compd. (Engl. Transl.)*, 1973, **9**, 723-726 (*Pseudocyclobuxine D*)
Votický, Z. *et al., Coll. Czech. Chem. Comm.*, 1975, **40**, 3055-3060; 1977, **42**, 541-547 (*Cyclobuxine D, Cyclobuxamine H, Cyclobullatine A*)
Abramson, D. *et al., Phytochemistry*, 1977, **16**, 1935-1937 (*biosynth*)
Saidkasimov, T. *et al., CA*, 1979, **91**, 235j (*pharmacol*)
Sun, H.D. *et al., J. Nat. Prod.*, 1996, **59**, 525-528 (*Cyclobuxine D, activity*)

Cyclobuxomicreinine C-847

[145194-13-4]

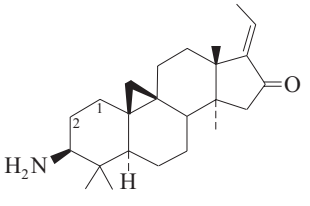


$C_{25}H_{37}NO$ 367.573
Alkaloid from leaves of *Buxus longifolia* (Buxaceae). Amorph. solid. $[\alpha]_D^{20}$ +40 ($CHCl_3$).

Atta-ur-Rahman, *et al., Phytochemistry*, 1992, **31**, 2933-2935 (*isol, uv, ir, pmr, ms, struct*)

Cyclobuxophylline O C-848

3-Amino-4,4,14-trimethyl-9,19-cyclopregn-17(20)-en-16-one, 9CI
[79205-49-5]



$C_{24}H_{37}NO$ 355.562
Alkaloid from *Buxus sempervirens* leaves (Buxaceae). Cryst. (Me_2CO). Mp 219-222°. $[\alpha]_D^{22}$ -61.5 (c, 1.1. in $CHCl_3$).

N-*Ethoxycarbonyl:* ***Buxene O***. *Buxene*
[24663-11-4]
$C_{27}H_{41}NO_3$ 427.626
Alkaloid from *Buxus sempervirens* (Buxaceae). Needles (Me_2CO). Mp 202-204°.

N-*Me: Buxenone. Buxenone M*. ***Cyclobuxophylline M***. *Cyclobuxophyllinine. Cyclobuxophyllinine M*
[1053-21-0]
$C_{25}H_{39}NO$ 369.589
Alkaloid from *Buxus microphylla* and *Buxus sempervirens* (Buxaceae). Needles (petrol). Mp 181-182° (174°). $[\alpha]_D$ -51 (c, 0.59 in $CHCl_3$). This alkaloid is called Cyclobuxophyllinine or Cyclobuxophyllinine M in the literature, but the systematic designation is Cyclobuxophylline M.

N-*Me,* N-*Ac:*
Needles (EtOH). Mp 234-235°. $[\alpha]_D$ -114 (c, 1.12 in $CHCl_3$).

N-*Me,* N-*benzoyl:* N-*Benzoylcyclobuxophylline M*. *Buxanine*. ***Buxanine M***
[16049-32-4]
$C_{32}H_{43}NO_2$ 473.697
Alkaloid from *Buxus sempervirens* (Buxaceae). Prisms (Me_2CO). Mp 196-199°. $[\alpha]_D$ -38 (c, 0.2 in $CHCl_3$).

N-*Me,* N-*ethoxycarbonyl:* **N-*Methylbuxene M***. N-*Methylbuxene*
[24663-12-5]
$C_{28}H_{43}NO_3$ 441.653
Minor alkaloid from *Buxus sempervirens* (Buxaceae). Mp 180-182°. $[\alpha]_D$ -104 ($CHCl_3$).

N,N-*Di-Me:* ***Cyclobuxophylline K***. *Cyclobuxophylline*
[10088-21-8]
$C_{26}H_{41}NO$ 383.616
Alkaloid from *Buxus microphylla* and *Buxus sempervirens*. Needles (Me_2CO or EtOH). Mp 194-196° Mp 201-203°. $[\alpha]_D$ -72 (c, 0.52 in $CHCl_3$) (-67). λ_{max} 244 (MeOH).

1,2-Didehydro, N-*Me:* ***Buxithienine M***
[79205-50-8]
$C_{25}H_{37}NO$ 367.573
Alkaloid from leaves of *Buxus sempervirens* var. *rotundifolia* (Buxaceae). Cryst. (Me_2CO/MeOH). Mp 166-169°. $[\alpha]_D^{22}$ -75.6 (c, 1.2 in $CHCl_3$).

3-Epimer, N-*Me:* ***Buxmicrophylline B***
[15626-25-2]
$C_{25}H_{39}NO$ 369.589
Alkaloid from *Buxus microphylla*. Needles. Mp 149-151°. λ_{max} 249 (log ϵ 2.77) (CCl_4).

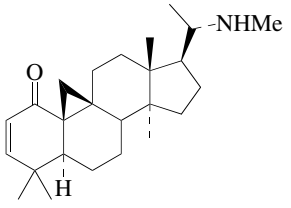
[11011-82-8]

Nakano, T. *et al., J.C.S.(C)*, 1966, 1412 (*Cyclobuxophylline K,M*)
Döpke, W. *et al., Pharmazie*, 1966, **21**, 643; 769
Döpke, W. *et al., Tet. Lett.*, 1969, 4423 (*Buxene O*)
Vassová, A. *et al., Pharmazie*, 1970, **25**, 363 (*N-Methylbuxene M*)
Kuchkova, K.I. *et al., Chem. Zvesti*, 1976, **30**, 174 (*isol*)
Huong, L. *et al., Coll. Czech. Chem. Comm.*, 1981, **46**, 1425 (*isol, ir, pmr*)
Desai, M.C. *et al., Tetrahedron*, 1981, **37**, 2935 (*synth*)

Du, J. *et al., J. Asian Nat. Prod. Res.*, 1999, **1**, 239-244 (*Buxmicrophylline B*)
Ata, A. *et al., Z. Naturforsch., C*, 2002, **57**, 21-28 (*Cyclobuxophylline K, isol, pmr*)
Liu, H.-F. *et al., Acta Cryst. E*, 2007, **63**, 2194-2195 (*Cyclobuxophylline M, cryst struct*)

Cyclobuxoviramine C-849

[123853-65-6]

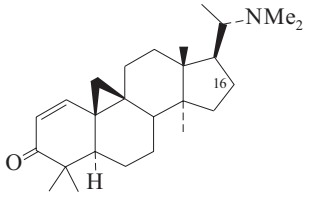


$C_{25}H_{39}NO$ 369.589
Alkaloid from the leaves of *Buxus papilosa*. $[\alpha]_D^{20}$ -35.

Atta-ur-Rahman, *et al., Phytochemistry*, 1989, **28**, 2848-2850 (*isol, pmr, cmr*)

Cyclobuxoviridine L C-850

20-(Dimethylamino)-4,4,14-trimethyl-9,19-cyclopregn-1-en-3-one, 9CI. Cyclobuxoviridine
[10088-20-7]



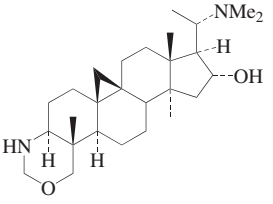
$C_{26}H_{41}NO$ 383.616
Alkaloid from *Buxus sempervirens*, *Buxus papilosa*, *Buxus hyrcana* and *Buxus microphylla* (Buxaceae). Plates (petrol). $[\alpha]_D^{23}$ -20 (-16) ($CHCl_3$). One report gives an opt. rotn. of +16°, presumably due to a misprint.

N-*De-Me:* ***Cyclobuxoviridine B***. *Cyclobuxoviricine*
[100477-90-5]
$C_{25}H_{39}NO$ 369.589
Alkaloid from leaves of *Buxus papilosa* and from *Buxus sempervirens* (Buxaceae). Amorph. solid. $[\alpha]_D^{10}$ -54 ($CHCl_3$). Originally isol. by Arigoni *et al.*, under the name Cyclobuxoviridine B, but details were unpubl. Later independently isol. and called Cyclobuxoviricine but with incomplete stereochem. and it is not clear if the two are identical. Phys. props. given refer to Cyclobuxoviricine.

Nakano, T. *et al., J.C.S.(C)*, 1966, 1412-1421 (*isol, uv, pmr, struct*)
Kuchkova, K.I. *et al., Chem. Zvesti*, 1976, **30**, 174-178; *CA*, **87**, 2362q (*isol, ms, pmr*)
Atta-ur-Rahman, *et al., Phytochemistry*, 1985, **24**, 3082-3083 (*Cyclobuxoviricine*)
Choudhary, M.I. *et al., J. Nat. Prod.*, 1987, **50**, 84-88 (*isol, uv, ir, pmr, ms*)

Cyclobuxoxazine C C-851

Cyclobuxoxazine
[3294-83-5]



$C_{27}H_{46}N_2O_2$ 430.673
C-4 config. revised in 1975. Minor alkaloid from *Buxus microphylla* and *Buxus wallichiana* (Buxaceae). Cryst. (EtOH). Mp 245-246° (234-236°). $[\alpha]_D$ +48 (EtOH). $[\alpha]_D$ +29 ($CHCl_3$).

N,O-*Di-Ac:*
Needles (Me_2CO/hexane). Mp 240°. $[\alpha]_D$ -35 ($CHCl_3$).

N-*Me:* ***Cyclobuxoxazine A***. N-*Methylcyclobuxoxazine*
[3676-46-8]
$C_{28}H_{48}N_2O_2$ 444.699
Alkaloid from *Buxus rolfei* (Buxaceae). Mp 197° Mp 201-202° (synthetic).

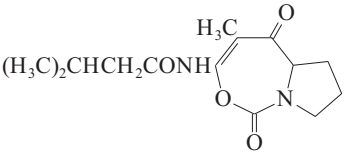
16-Deoxy, N-*Me:* ***Desoxycyclobuxoxazine A***
[34437-03-1]
$C_{28}H_{48}N_2O$ 428.7
Alkaloid from *Buxus sempervirens* (Buxaceae). Cryst. (MeOH). Mp 161-162°. $[\alpha]_D$ +56 (c, 0.2 in $CHCl_3$).

11-Oxo: ***Baleabuxoxazine C***. *Cycloxobuxoxazine C*
[14155-74-9]
$C_{27}H_{44}N_2O_3$ 444.656
Alkaloid from *Buxus balearica* (Buxaceae). Mp 292°. $[\alpha]_D$ +116 ($CHCl_3$).

Nakano, T. *et al., J.C.S.*, 1965, 4537-4542 (*isol, pmr, struct, synth*)
Khuong-Huu-Lainé, F. *et al., Bull. Soc. Chim. Fr.*, 1966, 1216-1221 (*Cyclobuxoxazine A*)
Khuong-Huu, F. *et al., Tetrahedron*, 1966, **22**, 3321-3327 (*Baleabuxoxazine C*)
Vassová, A. *et al., Pharmazie*, 1970, **25**, 363-365; *CA*, 1970, **73**, 127748n (*isol*)
Härtel, R. *et al., Tet. Lett.*, 1971, 2741-2742 (*Desoxycyclobuxoxazine A*)
Sangare, M. *et al., Tet. Lett.*, 1975, 1791-1794 (*cmr, config*)

Cyclocarbamide A C-852

*3-Methyl-*N-*(5*a,*6*a,*7,8-tetrahydro-4-methyl-1,5-dioxo-1*H,*5*H-*pyrrolo[1,2-*c*]*[1,3]*oxazepin-3-yl)butanamide, 9CI. 7,8,9,9*a-*Tetrahydro-3-[(3-methyl-1-oxobutyl)amino]-4-methyl-1*H,*5*H-*pyrrolo[1,2-*c*][1,3]*oxazepine-1,5-dione. Herbicidal substance 1328-2*
[102719-89-1]



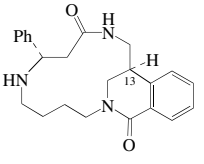
$C_{14}H_{20}N_2O_4$ 280.323
Prod. by *Streptoverticillium* sp. Herbicide, plant growth regulator. Prisms (EtOAc/hexane). Mp 109-110°. $[\alpha]_D$ -259 (c, 0.5 in MeOH). λ_{max} 282 (ϵ 10400); 328 (ϵ 12000) (MeOH/NaOH) (Derep). λ_{max} 274 (ϵ 9800) (MeOH) (Derep). λ_{max} 274 (MeOH/HCl) (Berdy).

N-*Hexanoyl analogue:* N-*(5*a,*6*a,*7,8-Tetrahydro-4-methyl-1,5-dioxo-1*H,*5*H-*pyrrolo[1,2-*c*]*[1,3]*oxazepin-3-yl)hexanamide, 9CI. 7,8,9,9*a-*Tetrahydro-3-[(1-oxohexyl)amino]-4-methyl-1*H,*5*H-*pyrrolo[1,2-*c*][1,3]*oxazepine-1,5-dione. **Cyclocarbamide B**. Herbicidal substance 1328-3*
[102719-90-4]
$C_{15}H_{22}N_2O_4$ 294.35
From *Streptoverticillium* sp. Herbicide, plant growth regulator. $[\alpha]_D$ -150 (c, 0.03 in MeOH). λ_{max} 282 (ϵ 10400); 328 (ϵ 12000) (MeOH/NaOH) (Derep). λ_{max} 274 (ϵ 9800) (MeOH) (Derep). λ_{max} 275 (MeOH/HCl) (Berdy).

Isogai, A. *et al., Tet. Lett.*, 1986, **27**, 1161 (*isol, ir, uv, cryst struct, pmr, cmr*)
Japan. Pat., 1987, 87 72 691; *CA*, **107**, 38125k (*isol*)

Cyclocelabenzine C-853

*4,5,6,7,8,9,12,13-Octahydro-8-phenyl-2,13-methano-2*H*-2,7,11-benzotriazacyclopentadecine-1,10(3*H,*11*H*)-dione, 9CI*
[70535-05-6]



Absolute Configuration

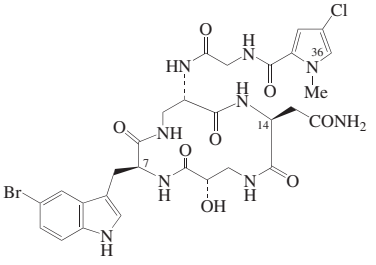
$C_{23}H_{27}N_3O_2$ 377.485
Alkaloid from *Maytenus mossambicensis* var. *mossambicensis* (Celastraceae). Mp 180-183°. $[\alpha]_D^{25}$ +30.2 (c, 0.83 in $CHCl_3$).

N-*Ac:* Mp 260-265°. $[\alpha]_D^{22}$ +22.1 (c, 0.362 in $CHCl_3$).

Wagner, H. *et al., Helv. Chim. Acta*, 1982, **65**, 739 (*isol, uv, ir, pmr, cmr, ms, struct*)
Schultz, K. *et al., Helv. Chim. Acta*, 1996, **79**, 1295 (*synth, cryst struct, abs config*)

Cyclocinamide A C-854

[194427-76-4]



Absolute Configuration

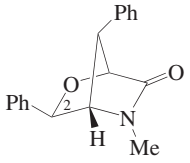
$C_{29}H_{33}BrClN_9O_8$ 750.992
Cyclic peptide antibiotic. Isol. from the sponge *Psammocinia* aff. *bulbosa*. Cytotoxic. Amorph. solid. $[\alpha]_D$ +29 (c, 0.1 in MeOH).

7,14-Diepimer, 36-chloro: ***Cyclocinamide B***
[936720-48-8]
$C_{29}H_{32}BrCl_2N_9O_8$ 785.437
Isol. from the sponge *Corticium* sp. $[\alpha]_D^{21}$ +9.6 (c, 0.033 in MeOH). λ_{max} 201 (log ϵ 3.53); 274 (log ϵ 2.43) (MeOH).

Clark, W.D. *et al., J.A.C.S.*, 1997, **119**, 9285-9286 (*isol, pmr, cmr*)
Grieco, P.A. *et al., Tet. Lett.*, 1998, **39**, 8925-8928 (*synth, abs config*)
Laird, D.W. *et al., J. Nat. Prod.*, 2007, **70**, 741-746 (*Cyclocinamide B*)
Rubio, B.K. *et al., J. Nat. Prod.*, 2008, **71**, 1475-1478 (*isol, abs config*)

Cycloclausenamide C-855

5-Methyl-3,7-diphenyl-2-oxo-5-azabicyclo[2.2.1]heptan-6-one, 9CI
[103541-16-8]



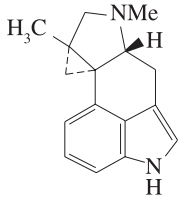
Absolute Configuration

$C_{18}H_{17}NO_2$ 279.338
Obt. as a pair of C-2 epimers. Isol. from the leaves of *Clausena lansium* (wampee). Prisms. Mp 164-166°. $[\alpha]_D^{24.5}$ -40 (c, 0.255 in MeOH).

Yang, M. *et al., Phytochemistry*, 1988, **27**, 445-450 (*isol, uv, ir, pmr, cmr, ms, cryst struct*)
Zhao, B. *et al., Yaoxue Xuebao*, 2001, **36**, 373-376 (*cryst struct, conformn*)

Cycloclavine C-856

[26057-57-8]



Absolute conguration

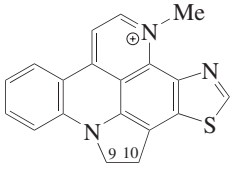
$C_{16}H_{18}N_2$ 238.332
Alkaloid from the seeds of *Ipomoea hildebrandtii*. Cryst. (MeOH or by subl.). Mp 165-166°. $[\alpha]_D^{20}$ +63 (c, 1 in $CHCl_3$). $[\alpha]_D^{20}$ +39 (c, 1 in Py).

Methiodide:
Cryst. (EtOH). Mp 246° dec. $[\alpha]_D^{20}$ +30 (c, 0.9 in 50% EtOH aq.).

Stauffacher, D. *et al., Tetrahedron*, 1969, **25**, 5879-5887 (*isol, uv, ir, pmr, cryst struct*)
Incze, M. *et al., Tetrahedron*, 2008, **64**, 2924-2929 (*synth*)

Cyclodercitine C-857

[125236-61-5]



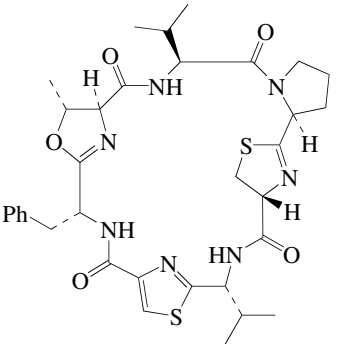
$C_{19}H_{14}N_3S^{\oplus}$ 316.406
Struct. revised in 1992. Related to *N*-Deacetylkuanoniamine D, D-93. Alkaloid from the marine sponges *Dercitus* sp. and *Stelletta* sp. Inhibits proliferation of P388 murine leukaemia cells *in vitro*. Blue powder (as chloride). Mp 298° (chloride). λ_{max} 245 (ϵ 13800); 307 (ϵ 16900); 361 (ϵ 3900) (MeOH) (Derep).

9,10-Didehydro, N*-de-Me:* ***Dehydronorcyclodercitine****. Nordehydrocyclodercitine*
[141224-24-0]
$C_{18}H_9N_3S$ 299.355
Isol. from the ascidian *Aplidium* cf. *cratiferum*. Yellow solid. λ_{max} 256 (log ϵ 4.37); 293 (log ϵ 4.11); 338 (log ϵ 3.63); 360 (log ϵ 3.67) (MeOH).

Gunawardana, G.P. *et al., Tet. Lett.*, 1989, **30**, 4359-4362 (*isol, uv, pmr, cmr*)
Gunawardana, G.P. *et al., J.O.C.*, 1992, **57**, 1523-1526 (*struct*)
Agrawal, M.S. *et al., Nat. Prod. Res.*, 2007, **21**, 782-786 (*Dehydronorcyclodercitine*)

Cyclodidemnamide C-858

[170894-38-9]

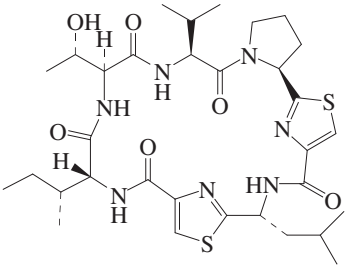


$C_{34}H_{43}N_7O_5S_2$ 693.89
Cyclic peptide antibiotic. Stereochem. revised in 1998. Isol. from *Didemnum molle*. Weak cytotoxic agent. Solid. Sol. MeOH. Mp 114-118°. $[\alpha]_D$ +128.8 (c, 2.6 in MeOH). λ_{max} 202 (log ϵ 4.46); 248 (log ϵ 4.04) (MeOH).

Toske, S.G. *et al., Tet. Lett.*, 1995, **36**, 8355-8358 (*isol, uv, ir, pmr, cmr*)
Norley, M.C. *et al., Tet. Lett.*, 1998, **39**, 3087-3090 (*synth, struct*)
Boden, C.D.J. *et al., J.C.S. Perkin 1*, 2000, 883-888 (*synth, struct*)

Cyclodidemnamide B C-859

[446821-87-0]

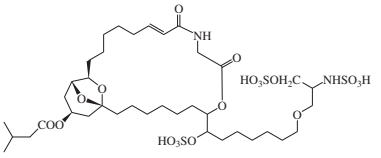


$C_{32}H_{47}N_7O_6S_2$ 689.899
Isol. from *Didemnum molle*. Amorph. solid. $[\alpha]_D$ +8.6 (c, 0.28 in $CHCl_3$).

Arrault, A. *et al., Tet. Lett.*, 2002, **43**, 4041-4044 (*isol, synth, pmr, cmr*)

Cyclodidemniserinol C-860

[276673-10-0]

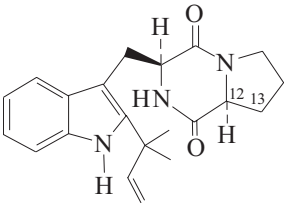


$C_{38}H_{66}N_2O_{19}S_3$ 951.139
Isol. from the ascidian *Didemnum guttatum*. HIV-1 integrase inhibitor. Oil (as tri-Na salt). $[\alpha]_D$ -26.6 (tri-Na salt). λ_{max} 210 (ϵ 4500) (MeOH).

Mitchell, S.S. *et al., Org. Lett.*, 2000, **2**, 1605-1607

Cyclo[2-(1,1-dimethyl-2-propenyl)tryptophyl]prolyl C-861

Deoxybrevianamide E
[34610-68-9]



$C_{21}H_{25}N_3O_2$ 351.447
Nomenclature confused; many different names possible. The name Deoxybrevianamide E is a misnomer. Isol. from *Aspergillus ustus* and *Penicillium italicum*. Redn. prod. of Brevianamide E, B-290. Powder (C_6H_6). $[\alpha]_D^{22}$ -59 (c, 1.2 in $CHCl_3$).

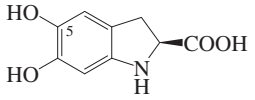
12,13-Didehydro: ***Cyclo(2,3-didehydroprolyl)[2-(1,1-dimethyl-2-propenyl)-tryptophyl]****. 12,13-Dehydroprolyl-2-(1,1-dimethylallyltryptophyl)diketopiperazine*
[41222-64-4]
$C_{21}H_{23}N_3O_2$ 349.432
Metab. of *Aspergillus ustus* and *Penicillium italicum*. Powder. $[\alpha]_D^{22}$ -38 (c, 1.3 in $CHCl_3$).

[53892-61-8]

Birch, A.J. *et al., Tetrahedron*, 1970, **26**, 2329 (*synth, uv, ir, pmr*)
Steyn, P.S. *et al., Tetrahedron*, 1973, **29**, 107 (*isol, deriv*)
Kametani, T. *et al., J.C.S. Perkin 1*, 1981, 959 (*synth, uv, ir, pmr*)
Ritchie, R. *et al., Tetrahedron*, 1981, **37**, 4295 (*synth, uv, ir, pmr*)
Schkeryantz, J.M. *et al., J.A.C.S.*, 1999, **121**, 11964-11975 (*synth*)
Cole, R.J. *et al., Handbook of Toxic Fungal Metabolites*, Academic Press, 1981, 453

Cyclodopa C-862

*2,3-Dihydro-5,6-dihydroxy-1*H*-indole-2-carboxylic acid, 9CI. Leucodopachrome*
[18791-20-3]



(*S*)-*form*

$C_9H_9NO_4$ 195.174

(*S*)-*form* [18766-67-1]
Degradn. prod. of Betanidin, B-110. Intermed. in formation of 2,3,5,6-Tetrahydro-5,6-dioxo-1*H*-indole-2-carboxylic acid from Levodopa in A-745. $[\alpha]_D^{25}$ -92 (c, 1.65 in 20% HCl).

5-O-*β*-D-*Glucopyranoside:* ***Cyclodopa glucoside***
[71242-23-4]
$C_{15}H_{19}NO_9$ 357.316
Constit. of red beet cabbage (*Beta vulgaris* var. *rubra*). Prob. intermed. in biosynth. of Betanidin, B-110. Mp 159.5-162.5°. $[\alpha]_D^{20.5}$ -110.7 (H_2O, pH 3). pK_{a1} 1.58; pK_{a2} 4.75; pK_{a3} 9.42.

Tri-Ac, Me ester: Mp 94-96° (after drying). $[\alpha]_D^{20}$ -61 (c, 1.03 in $CHCl_3$).

N-*(4-Hydroxy*-E-*cinnamoyl), 6*-O-*β*-D-*glucopyranoside:* ***Oleracein A***
[872100-54-4]
$C_{24}H_{25}NO_{11}$ 503.462
Alkaloid from *Portulaca oleracea* (purslane). Yellow powder. λ_{max} 304 (sh) (log ε 4.01); 336 (log ε 4.07) (MeOH).

N-*(4-Hydroxy-3-methoxy*-E-*cinnamoyl), 6*-O-*β*-D-*glucopyranoside:* ***Oleracein B***
[872100-55-5]
$C_{25}H_{27}NO_{12}$ 533.488
Alkaloid from *Portulaca oleracea* (purslane). Yellow powder.

N-*[4-(β*-D-*Glucopyranosyloxy)*-E-*cinnamoyl], 6*-O-*β*-D-*glucopyranoside:* ***Oleracein C***
[872100-56-6]
$C_{30}H_{35}NO_{16}$ 665.604
Alkaloid from *Portulaca oleracea* (purslane). Yellow powder. $[\alpha]_D^{26}$ -83.7 (c, 0.35 in H_2O). λ_{max} 306 (log ε 4.32); 335 (log ε 4.28) (MeOH).

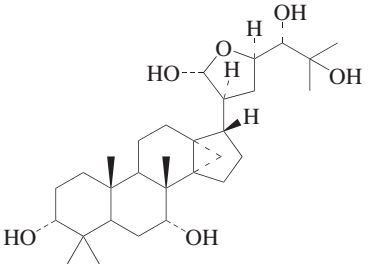
N-*[4-(β*-D-*Glucopyranosyloxy)-3-methoxy*-E-*cinnamoyl], 6*-O-*β*-D-*glucopyranoside:* ***Oleracein D***
[872100-57-7]
$C_{31}H_{37}NO_{17}$ 695.63
Alkaloid from *Portulaca oleracea* (purslane). Yellow powder. $[\alpha]_D^{26}$ +263.8 (c, 0.15 in H_2O). λ_{max} 239 (log ε 4.13); 295 (log ε 4.13); 335 (log ε 4.2) (H_2O).

(±)-*form*
Tri-Ac, Me ester: Mp 157.5-158.5°.

(ξ)-*form*
O^5,N,N-*Tri-Me:* [165329-95-3]
$C_{12}H_{15}NO_4$ 237.255
Metab. of the Caribbean sponge *Pseudoceratina crassa*. $[\alpha]_D^{25}$ -12 (c, 0.001 in MeOH). Zwitterion.

Wyler, H. *et al., Helv. Chim. Acta*, 1962, **45**, 638-640; 1968, **51**, 1476-1494 (*S-form, synth, isol, struct*)
Wyler, H. *et al., Helv. Chim. Acta*, 1984, **67**, 1348-1355 (*5-glucoside*)
Ciminiello, P. *et al., J. Nat. Prod.*, 1995, **58**, 689-696 (*tri-Me*)
Xiang, L. *et al., Phytochemistry*, 2005, **66**, 2595-2601 (*Oleraceins A-D*)

14,18-Cyclo-21,23-epoxyapotirucallane-3,7,21,24,25-pentol C-863



(3α,7α,21*R*,23*R*,24*S*)-*form*

$C_{30}H_{50}O_6$ 506.721

(3β,7α,21*R*,23*R*,24*S*)-*form*
21-Me ether, 3-O-*(2-methylaminobenzoyl):* [413615-73-3]
$C_{39}H_{59}NO_7$ 653.898
Constit. of *Raulinoa echinata*. Amorph. solid. Mp 144-145°. $[\alpha]_D^{25}$ +15.5 (c, 0.01 in CH_2Cl_2). λ_{max} 222 (log ε 4.16); 253 (log ε 3.78); 353 (log ε 3.64) (MeOH).

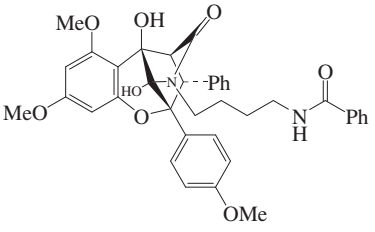
(3β,7α,21*S*,23*R*,24*S*)-*form*
21-Me ether, 3-O-*(2-methylaminobenzoyl):* [413614-52-5]
Constit. of *Raulinoa echinata*. Amorph. solid. Mp 218-220°. $[\alpha]_D^{25}$ +25.5 (c, 0.03 in CH_2Cl_2). λ_{max} 224 (log ε 4.01); 254 (log ε 3.6); 354 (log ε 3.44) (MeOH).

(3β,7α,21ξ,23*R*,24*S*)-*form*
3-O-*(2-Methylaminobenzoyl):* [413615-74-4]
$C_{38}H_{57}NO_7$ 639.871
Constit. of *Raulinoa echinata*. Amorph. solid. Mp 176-178°. $[\alpha]_D^{25}$ +13.1 (c, 0.01 in CH_2Cl_2). λ_{max} 222 (log ε 4.07); 254 (log ε 3.64); 354 (log ε 3.5) (MeOH).

Biavatti, M.W. *et al., J. Nat. Prod.*, 2002, **65**, 562-565 (*Raulinoa echinata constits*)

Cyclofoveoglin C-864

[948312-51-4]

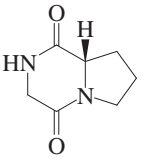


$C_{38}H_{38}N_2O_8$ 650.727
Alkaloid from the leaves of *Aglaia foveolata*. Pale yellow powder. $[\alpha]_D^{20}$ -51.7 (c, 0.41 in $CHCl_3$). λ_{max} 203 (log ε 4.74); 214 (sh) (log ε 4.64) (MeOH).

Salim, A.A. *et al., Tetrahedron*, 2007, **63**, 7926-7934 (*isol, pmr, cmr*)

Cyclo(glycylprolyl) C-865

*Hexahydropyrrolo[1,2-*a*]pyrazine-1,4-dione, 9CI. 3,6-Dioxohexahydropyrrolo[1,2-*a*]pyrazine (incorr.). Cyclo(prolylglycyl). 1,4-Diazabicyclo[4.3.0]nonane-2,5-dione*
[19179-12-5]



(*S*)-*form*

$C_7H_{10}N_2O_2$ 154.168

(*S*)-*form*
L-*form*
[3705-27-9]
Constit. of roasted cocoa nibs and coffee. Prod. by cultures of *Fusarium* spp. Isol. from the echinoderm *Luidia clathrata*. Constit. of *Pinellia pedatisecta*. Prod. by the marine bacteria *Ruegeria* sp. SDC-1 and *Pseudoalteromonas luteoviolacea*. Cryst. (MeOH/Me_2CO). Mp 216-218°. $[\alpha]_D^{20}$ -217.4 (c, 7.5 in H_2O).

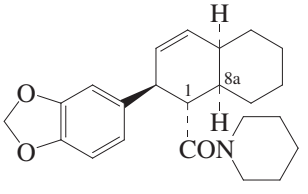
(±)-*form* [62057-47-0]
Cryst. ($MeOH/Me_2CO$). Mp 216-218°.

[96193-26-9]

Vičar, J. *et al., Coll. Czech. Chem. Comm.*, 1972, **37**, 4060; 1973, **38**, 1940; 1957 (*synth, ir, pmr, bibl*)
Blaha, K. *et al., Coll. Czech. Chem. Comm.*, 1972, **37**, 4660 (*synth*)
White, E.P. *et al., N.Z. J. Sci.*, 1972, **15**, 178; *CA*, **77**, 98731b (*isol*)
Blaha, K. *et al., Tet. Lett.*, 1972, 1437 (*synth*)
Pettit, G.R. *et al., Experientia*, 1973, **29**, 521 (*isol, ms, struct*)
Von Dreele, R.B. *et al., Acta Cryst. B*, 1975, **31**, 966 (*cryst struct*)
Johnstone, R.A.W. *et al., J.C.S. Perkin 2*, 1975, 1297 (*ms*)
Siemion, I.Z. *et al., Org. Magn. Reson.*, 1976, **8**, 432 (*cmr*)
Qin, W. *et al., Zhongcaoyao*, 1984, **15**, 490; *CA*, **102**, 109774f (*isol*)
de Costa, B.R. *et al., J. Med. Chem.*, 1993, **36**, 2311 (*synth, pmr*)
Jiang, Z. *et al., Nat. Prod. Lett.*, 2000, **14**, 435-440 (*isol, pmr, cmr*)
Mitova, M. *et al., J. Nat. Prod.*, 2004, **67**, 1178-1181 (*isol*)
Stark, T. *et al., J. Agric. Food Chem.*, 2005, **53**, 7222-7231 (*isol, ms*)

Cycloguineense A C-866

[486449-08-5]

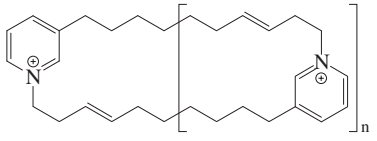


$C_{23}H_{29}NO_3$ 367.487
Alkaloid from *Piper guineense*.

*1,8*a-*Diepimer:* ***Cycloguineense B***
[486449-09-6]
$C_{23}H_{29}NO_3$ 367.487
Alkaloid from *Piper guineense*.

Adesina, S.K. *et al., Pharmazie*, 2003, **58**, 423-425 (*isol, ms*)

Cyclohaliclonamines C-867



Cyclohaliclonamide	A	n = 1
"	B	n = 2
"	C	n = 3
"	D	n = 4
"	E	n = 5

Alkaloids from the sponge *Haliclona* sp.

Cyclohaliclonamine A
$C_{30}H_{44}N_2^{2\oplus}$ 432.691

Cyclohaliclonamine B
$C_{45}H_{66}N_3^{3\oplus}$ 649.037

Cyclohaliclonamine C
$C_{60}H_{88}N_4^{4\oplus}$ 865.382

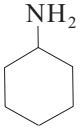
Cyclohaliclonamine D

Cyclohaliclonamine E

Teruya, T. *et al., J. Nat. Prod.*, 2006, **69**, 135-137 (*isol, pmr, cmr, ms*)

Cyclohexylamine C-868

Cyclohexanamine, 9CI. Aminocyclohexane. Hexahydroaniline
[108-91-8]



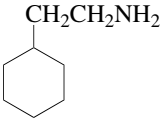
$C_6H_{13}N$ 99.175
Isol. from *Toddalia asiatica*. Gut microflora metabolite of Cyclohexylsulfamic acid. Corrosion inhibitor; food contaminant arising from its use as a boiler water additive. Liq. with strong amine odour. Misc. H_2O, org. solvs. d_{25}^{25} 0.87. Fp -18. Bp 134° Bp_{71} 65° Bp_{20} 36.4°. n_D^{25} 1.4565. Strong base. Forms azeotrope with H_2O contg. 55.8% H_2O, Bp 96.4°.

▶ Flammable, fl. p. 21/31°, autoignition temp. 260°. Vapour irritates eyes and respiratory tract. Liquid is corrosive to skin and eyes. Toxic by skin absorption causing gastrointestinal effects. LD_{50} (rat, orl) 156 mg/kg. LD_{50} (rbt, skn) 277 mg/kg. Exp. reprod. and teratogenic effects. OES: long-term 10 ppm (Sk). GX0700000

Tsai, I.-L. *et al., Phytochemistry*, 1998, **48**, 1377-1382 (*isol, pmr*)

2-Cyclohexylethylamine C-869

Cyclohexaneethanamine, 9CI. (2-Aminoethyl)cyclohexane
[4442-85-7]



$C_8H_{17}N$ 127.229
Alkaloid from *Acacia rigidula*. Bp 188-189° Bp_{25} 83-85°.

Hydrochloride: [5471-55-6]
Cryst. (EtOH aq.). Mp 258°.

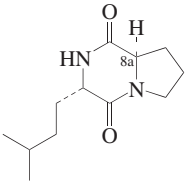
N-*Me:* N-*Methyl-2-cyclohexylethylamine*
[62141-38-2]
$C_9H_{19}N$ 141.256
Alkaloid from *Acacia rigidula*. Oil. Bp_7 71-72°.

N-*Me, hydrochloride:*
Cryst. (2-propanol/Et_2O). Mp 171-172°.

Zenitz, B.L. *et al., J.A.C.S.*, 1947, **69**, 1117-1121 (*synth*)
Kindler, K. *et al., Annalen*, 1948, **560**, 215-221; 1961, **644**, 23-30 (*synth*)
Wilson, K.R. *et al., J.O.C.*, 1959, **24**, 1046-1051 (*synth*)
Scheinbaum, M.L. *et al., J.O.C.*, 1970, **35**, 2785-2790 (*synth*)
New, J.S. *et al., Synthesis*, 1983, 388-389 (*synth, ir, pmr, cmr*)
Clement, B.A. *et al., Phytochemistry*, 1998, **49**, 1377-1380 (*isol*)

Cyclo(homoleucylprolyl) C-870

*Hexahydro-3-(3-methylbutyl)pyrrolo[1,2-*a*]pyrazine-1,4-dione, 9CI. Homoleucylprolyl anhydride*



(3*S*,8*aR*)-*form*

$C_{12}H_{20}N_2O_2$ 224.302

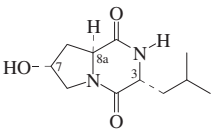
(3*S*,8*aR*)-*form* [62835-71-6]
Found in the sclerotia and saprophytic culture of ergot fungus *Claviceps purpurea*.

(3ξ,8*a*ξ)-*form* [118243-97-3]
Isol. from liquid cultures of *Alternaria alternata* and prod. by a *Streptomyces* sp.

Ohmomo, S. *et al., Nippon Nogei Kagaku Kaishi*, 1976, **50**, 543-546; *CA*, **86**, 190303x (*isol, Claviceps, synth*)
Stierle, A.C. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 1988, **85**, 8008-8011 (*isol, Alternaria*)

Cyclo(4-hydroxyprolylleucyl) C-871

*Hexahydro-7-hydroxy-3-(2-methylpropyl)pyrrolo[1,2-*a*]pyrazine-1,4-dione, 9CI. Hydroxyproline leucine anhydride*
[308368-99-2]



(3*R*,7*R*,8*aS*)-*form*

$C_{11}H_{18}N_2O_3$ 226.275

(3*R*,7*R*,8*aS*)-*form*
D-L-form
[208850-33-3]
Isol. from a marine bacterium associated with a *Palythoa* sp. Solid. $[\alpha]_D$ +14.7 (c, 0.34 in MeOH). λ_{max} 230 (MeOH).

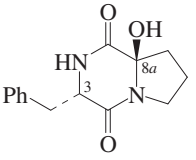
(3*S*,7*R*,8*aR*)-*form* [205648-55-1]
Metab. of the marine yeast *Aureobasidium pullulans* and two marine bacteria associated with the sponge *Ircinia variabilis*. Amorph. solid. $[\alpha]_D^{24}$ +40.5 (c, 1 in MeOH).

(3*S*,7*R*,8*aS*)-*form*
7-Hydroxygancidin W. *L-L*-form
[115006-86-5]
Isol. from rabbit skin tissue. Also from a marine bacterium associated with a *Palythoa* sp. and two marine bacteria associated with the sponge *Ircinia variabilis*. Plant growth regulator. Mp 178-179°. $[\alpha]_D^{28}$ -148.2 (c, 1 in H_2O). λ_{max} 232 (MeOH).

Ienaga, K. *et al., Tet. Lett.*, 1987, **28**, 1285-1286 (*3S,7R,8aS-form, isol, pmr, cmr, struct*)
Shigemori, H. *et al., J. Nat. Prod.*, 1998, **61**, 696-698 (*3S,7R,8aR-form, isol, ir, pmr, cmr*)
Cronan, J.M. *et al., Nat. Prod. Lett.*, 1998, **11**, 271-278 (*Palythoa sp, isol, uv, pmr, cmr*)
De Rosa, S. *et al., Biomol. Eng.*, 2003, **20**, 311-316 (*Ircinia variabilis constits*)
Mitova, M. *et al., Z. Naturforsch., C*, 2003, **58**, 740-745 (*Ircinia variabilis constit*)

Cyclo(2-hydroxyprolylphenylalanyl) C-872

*Hexahydro-8*a*-hydroxy-3-(phenylmethyl)pyrrolo[1,2-*a*]pyrazine-1,4-dione, 9CI*



(3*S*,8*aR*)-*form*

$C_{14}H_{16}N_2O_3$ 260.292

(3*S*,8*aR*)-*form*
D,L-form
Prod. by the marine-derived *Chromocleista* sp. strain R721. $[\alpha]_D^{25}$ -26.1 (c, 0.03 in MeOH). λ_{max} 198 (log ε 3.5); 257 (log ε 0.3) (MeOH).

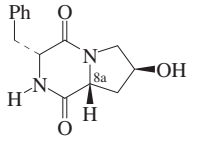
*8*a-*Deoxy, 8,8*a-*didehydro: 2,3,6,7-Tetrahydro-3-(phenylmethyl)pyrrolo[1,2-*a*]pyrazine-1,4-dione, 9CI*
$C_{14}H_{14}N_2O_2$ 242.277

Prod. by *Chromocleista* sp. strain R721. $[\alpha]_D^{25}$ -31.9 (c, 0.05 in MeOH). Dec. prod. of parent. λ_{max} 200 (log ϵ 3.7); 257 (log ϵ 0.5); 330 (log ϵ 0.2) (MeOH).

(3*S*,8*aS*)-*form*
L,L-form
Prod. by the marine-derived *Chromocleista* sp. strain R721. λ_{max} 200 (log ϵ 3.7); 257 (log ϵ 0.4) (MeOH).
Park, Y.C. *et al., J. Nat. Prod.*, 2006, **69**, 580-584 (*isol, pmr, cmr*)

Cyclo(4-hydroxyprolylphenylalanyl) C-873

Hexahydro-7-hydroxy-3-(phenylmethyl)-pyrrolo[1,2-a]pyrazine-1,4-dione, 9CI. 3-Benzylhexahydro-7-hydroxypyrrolo[1,2-a]pyrazine-1,4-dione



(3*R*,7*S*,8*aR*)-*form*

$C_{14}H_{16}N_2O_3$ 260.292

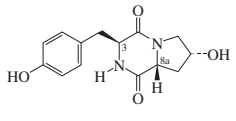
(3*R*,7*S*,8*aR*)-*form* [631922-77-5]
Prod. by the marine bacterial strains CF-20 and C-148 obt. from the mollusc *Pecten maximus.* Active against *Vibrio anguillarum*. $[\alpha]_D$ +7.3 (c, 0.02 in MeOH). Error in struct. diag. in ref.

(3*S*,7*R*,8*aR*)-*form* [205648-54-0]
Metab. of the marine yeast *Aureobasidium pullulans* and two strains of microorganism isol. from the marine sponge *Ircinia variabilis.* Amorph. solid. $[\alpha]_D^{24}$ +34.7 (c, 1 in MeOH). λ_{max} 208 (ϵ 28000); 281 (ϵ 2900) (MeOH).

(3*S*,7*R*,8*aS*)-*form* [118477-06-8]
Metab. of an undescr. Fijian marine sponge (Jaspidae), the marine bacterium *Pseudoalteromonas luteoviolacea* and two strains of microorganism isol. from the marine sponge *Ircinia variabilis.* Plant growth regulator. Viscous oil. $[\alpha]_D^{20}$ -6.7 (c, 0.016 in MeOH).
Adamczeski, M. *et al., J.A.C.S.*, 1989, **111**, 647-654 (*isol, ir, pmr, cmr, ms, struct, Jaspidae constit*)
Shigemori, H. *et al., J. Nat. Prod.*, 1998, **61**, 696-698 (*Aureobasidium pullulans constit*)
Cronan, J.M. *et al., Nat. Prod. Lett.*, 1998, **11**, 271-278 (*3S,7R,8aS-form, isol*)
Jiang, Z. *et al., Nat. Prod. Lett.*, 2000, **14**, 435-440 (*Pseudoalteromonas luteoviolacea constit*)
De Rosa, S. *et al., Biomol. Eng.*, 2003, **20**, 311-316 (*Ircinia variabilis constit*)
Fdhila, F. *et al., J. Nat. Prod.*, 2003, **66**, 1299-1301 (*3R,7S,8aR-form, isol*)

Cyclo(4-hydroxyprolyltyrosyl) C-874

Hexahydro-7-hydroxy-3-[(4-hydroxyphenyl)methyl]pyrrolo[1,2-a]pyrazine-1,4-dione, 9CI



(3*S*,7*R*,8*aR*)-*form*

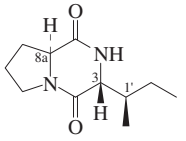
$C_{14}H_{16}N_2O_4$ 276.291

(3*S*,7*R*,8*aR*)-*form* [813461-20-0]
Prod. by a *Ruegeria* sp. isol. from the sponge *Suberites domuncula*. $[\alpha]_D$ +82.3 (c, 0.001 in MeOH).

(3*S*,7*R*,8*aS*)-*form* [813461-21-1]
Prod. by a *Ruegeria* sp. isol. from *Suberites domuncula*. $[\alpha]_D$ -10.4 (c, 0.003 in MeOH).
Mitova, M. *et al., Mar. Biotechnol.*, 2004, **6**, 95-103 (*isol*)

Cyclo(isoleucylprolyl) C-875

Hexahydro-3-(1-methylpropyl)pyrrolo[1,2-a]pyrazine-1,4-dione, 9CI
[58917-56-9]



(1′*R*,3*R*,8*aS*)-*form*

$C_{11}H_{18}N_2O_2$ 210.275

(1′*R*,3*R*,8*aS*)-*form*
L-D-allo-form
[61117-55-3]
Cryst. (hexane/Et_2O/Me_2CO). Mp 107-108°.

(1′*S*,3*R*,8*aS*)-*form*
L-D-form
[61117-54-2]
Cryst. (Me_2CO). Mp 143-145°.

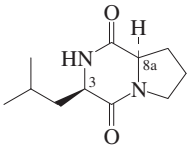
(1′*S*,3*S*,8*aR*)-*form* [162830-28-6]
Isol. from the sponge *Calyx* cf. *podatypa*. Amorph. powder. $[\alpha]_D^{23}$ +98 (c, 0.1 in EtOH). Config. of nat. prod. revised in 1998.

(1′*S*,3*S*,8*aS*)-*form* [57089-60-8]
Isol. from *Calyx* cf. *podatypa*. Prod. by marine-derived *Pseudomonas aeruginosa* and *Vibrio parahaemolyticus*. Constit. of *Schizandra chinensis*. Amorph. solid. $[\alpha]_D^{20}$ -173.5 (c, 0.16 in EtOH).

(1′ξ,3*R*,8*aR*)-*form* [631922-76-4]
Prod. by the marine bacterial strains CF-20 and C-148 isol. from cultures of the larvae of the mollusc *Pecten maximus.* Active against *Vibrio anguillarum*. $[\alpha]_D$ +168.1 (c, 0.13 in EtOH).
Bycroft, B.W. *et al., Chem. Comm.*, 1975, 988-989 (*synth*)
Young, P.E. *et al., J.A.C.S.*, 1976, **98**, 5358-5364; 5365-5371 (*synth, conformn*)
Suzuki, K. *et al., Chem. Pharm. Bull.*, 1981, **29**, 233-237 (*synth*)
Adamczeski, M. *et al., J. Nat. Prod.*, 1995, **58**, 201-208 (*isol, pmr, cmr*)
Jayatilake, G.S. *et al., J. Nat. Prod.*, 1996, **59**, 293-296 (*isol*)
Bull, S.D. *et al., J.C.S. Perkin 1*, 1998, 2313-2320 (*synth, pmr*)
Ginz, M. *et al., J. Agric. Food Chem.*, 2000, **48**, 3528-3532 (*isol, coffee*)
Fdhila, F. *et al., J. Nat. Prod.*, 2003, **66**, 1299-1301 (*isol, pmr, cmr*)
Stark, T. *et al., J. Agric. Food Chem.*, 2005, **53**, 7222-7231 (*1S,3S,8aS-form, isol, ms*)
Pedras, M.S.C. *et al., Z. Naturforsch., C*, 2005, **60**, 717-722 (*isol, synth, pmr, cmr*)

Cyclo(leucylprolyl) C-876

Hexahydro-3-(2-methylpropyl)pyrrolo[1,2a]pyrazine-1,4-dione. Prolylleucyldiketopiperazine. Gancidin W. Maculosin 6
[5654-86-4]



(3*R*,8*aR*)-*form*

$C_{11}H_{18}N_2O_2$ 210.275

(3*R*,8*aR*)-*form*
D,D-form
[162872-80-2]
Prod. by the marine bacterial strains CF-20 and C-148 obt. from molluscs. Amorph. solid. $[\alpha]_D$ +128.3 (c, 0.11 in EtOH).

(3*R*,8*aS*)-*form* [36238-67-2]
Cryst. Sol. MeOH, EtOAc. Mp 148-149° (119-122°). $[\alpha]_D^{31}$ -105.5 (c, 0.5 in EtOH).

(3*S*,8*aR*)-*form* [32510-93-3]
Isol. from the sponges *Calyx* cf. *podatypa* and *Stelletta clavosa*. Solid. $[\alpha]_D^{25}$ +35 (c, 0.11 in EtOH).

(3*S*,8*aS*)-*form*
L,L-form
[2873-36-1]
Prod. by *Streptomyces gancidicus*, *Nocardia restricta*, *Candida albicans*, *Guignardia laricina* and several *Ceratocystis* spp. Also from the sponges *Calyx* cf. *podatypa* and *Tedania ignis.* Shows antitumour and antifungal props. Phytotoxin associated with fungal diseases of trees. Cryst. Mp 168-172° (158-159°). $[\alpha]_D^{25}$ -133 (c, 1 in EtOH) (lit. gives a temp. range). $[\alpha]_D^{21}$ -144 (c, 0.5 in H_2O).
► LD_{50} (mus, ivn) 80 mg/kg. UY8708800

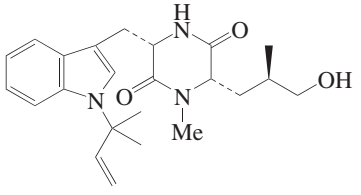
[43041-29-8 , 19943-30-7]

Kodaira, Y. *et al., Agric. Biol. Chem.*, 1961, **25**, 261
Nitecki, D.E. *et al., J.O.C.*, 1968, **33**, 864 (*synth*)
Siemion, I.Z. *et al., Org. Magn. Reson.*, 1971, **3**, 545 (*synth, nmr*)
Vicar, J. *et al., Coll. Czech. Chem. Comm.*, 1972, **37**, 4060; 1973, **38**, 1940 (*synth, ir, pmr*)
Karle, I.L. *et al., J.A.C.S.*, 1972, **94**, 81 (*cryst struct*)
Takahashi, K. *et al., Agric. Biol. Chem.*, 1974, **38**, 927
Bycroft, B.W. *et al., Chem. Comm.*, 1975, 988 (*synth*)
Davies, D.B. *et al., J.C.S. Perkin 2*, 1976, 187 (*conformn*)
Pancoska, P. *et al., Coll. Czech. Chem. Comm.*, 1977, **44**, 1296 (*cd*)
Jain, T.C. *et al., Heterocycles*, 1977, **7**, 341 (*isol, struct, uv, ms*)
Bjoerkman, S. *et al., J. Med. Chem.*, 1979, **22**, 931 (*synth*)
Suzuki, K. *et al., Chem. Pharm. Bull.*, 1981, **29**, 233 (*synth*)
Schmidtz, F.J. *et al., J.O.C.*, 1983, **48**, 3941 (*isol, ms, pmr, synth, bibl*)
Ayer, W.A. *et al., Can. J. Chem.*, 1986, **64**, 904 (*isol*)
Kricheldorf, H.R. *et al., Magn. Reson. Chem.*, 1986, **24**, 21 (*cmr*)

Adamczeski, M. *et al., J. Nat. Prod.*, 1995, **58**, 201 (*isol, pmr, cmr, bibl*)
Bull, S.D. *et al., J.C.S. Perkin 1*, 1998, 2313-2320 (*config, biosynth*)
Fdhila, F. *et al., J. Nat. Prod.*, 2003, **66**, 1299-1301 (*isol, pmr, cmr*)
Wegerski, C.J. *et al., Bioorg. Med. Chem.*, 2004, **12**, 5631-5637 (*isol*)
Stark, T. *et al., J. Agric. Food Chem.*, 2005, **53**, 7222-7231 (*L,L-form, isol, ms*)
Pedras, M.S.C. *et al., Z. Naturforsch., C*, 2005, **60**, 717-722 (*isol, synth, pmr, cmr*)
Li, Z. *et al., Biochem. Syst. Ecol.*, 2008, **36**, 230-234 (*isol, pmr, cmr*)

Cyclomarazine A C-877

[1019858-65-1]



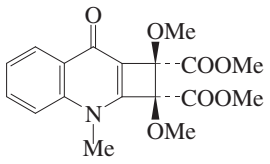
$C_{23}H_{31}N_3O_3$ 397.516

Related to Cyclo(leucyltryptophyl). Prod. by *Salinospora arenicola* CNS-205. Oil. $[\alpha]_D$ -9 (c, 0.19 in MeOH). λ_{max} 225 (log ϵ 3.7); 285 (log ϵ 3) (MeOH).

N-*De-Me:* ***Cyclomarazine B***
[1019858-66-2]
$C_{22}H_{29}N_3O_3$ 383.489
Prod. by *Salinospora arenicola* CNS-205. Oil. $[\alpha]_D$ -16 (c, 0.03 in MeOH). λ_{max} 224 (log ϵ 3.6); 284 (log ϵ 3) (MeOH).

Schultz, A.W. *et al., J.A.C.S.*, 2008, **130**, 4507-4516 (*isol, cd, pmr, cmr*)

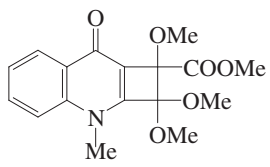
Cyclomegistine C-878



$C_{18}H_{19}NO_7$ 361.351
Alkaloid from the bark of *Sarcomelicope megistophylla*. Pale yellow cryst. (Me_2CO). Mp 146°. Opt. inactive. λ_{max} 318 (log ϵ 2.46); 332 (log ϵ 2.52) (MeOH).

Fokialakis, N. *et al., Tet. Lett.*, 2001, **42**, 5323-5325 (*isol, uv, pmr, cmr, cryst struct*)

Cyclomegistine B C-879



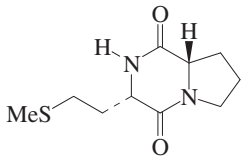
$C_{17}H_{19}NO_6$ 333.34

(ξ)-*form*
Alkaloid from the bark of *Sarcomelicope megistophylla*. λ_{max} 318 (log ϵ 2.49); 332 (log ϵ 2.55) (MeOH).

Mitaku, S. *et al., Fitoterapia*, 2007, **78**, 169-170 (*isol, pmr, cmr, ms*)

Cyclo(methionylprolyl) C-880

Hexahydro-3-[2-(methylthio)ethyl]pyrrolo[1,2-a]pyrazine-1,4-dione, 9CI. Cyclo(-prolylmethionyl)



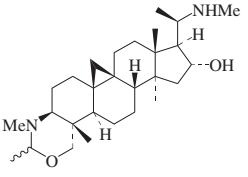
$C_{10}H_{16}N_2O_2S$ 228.315

(3S,8aS)-form
L-L-form
[53049-06-2]
Prod. by *Pseudomonas aeruginosa* isol. from an Antarctic sponge. Amorph. solid. $[\alpha]_D^{20}$ -82.2 (c, 0.14 in EtOH).

Padmanabhan, V.M. *et al., Acta Cryst. C*, 1987, **43**, 349-351 (*cryst struct*)
Jayatilake, G.S. *et al., J. Nat. Prod.*, 1996, **59**, 293-296 (*isol, synth, pmr, cmr*)

Cyclomethoxazine B C-881

[6908-24-3]



Absolute Configuration

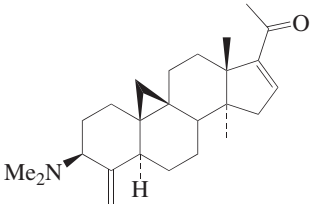
$C_{28}H_{48}N_2O_2$ 444.699
C-4 config. revised in 1975. Alkaloid from *Buxus rolfei* (Buxaceae). Mp 195°. $[\alpha]_D$ +54 (c, 1 in $CHCl_3$).

N^{20}-*Me:* ***Buxmicrophylline D***
[256236-37-0]
$C_{29}H_{50}N_2O_2$ 458.726
Alkaloid from *Buxus microphylla*. Needles. Mp 228-230°.

Khuong-Huu-Lainé, F. *et al., Bull. Soc. Chim. Fr.*, 1966, 1216-1221 (*isol, pmr, ms, struct*)
Sangare, M. *et al., Tet. Lett.*, 1975, 1791-1794 (*cmr, struct*)
Du, J. *et al., J. Asian Nat. Prod. Res.*, 1999, **1**, 239-244 (*Buxmicrophylline D*)

Cyclomicrobuxeine K C-882

3-(Dimethylamino)-14-methyl-4-methylene-9,19-cyclopregn-16-en-20-one, 9CI. Cyclomicrobuxeine. Anhydrobuxpiine
[4409-26-1]



$C_{25}H_{37}NO$ 367.573
Alkaloid from *Buxus microphylla* (Buxaceae). Needles (MeOH). Mp 141-142°. $[\alpha]_D$ +126 (c, 1.20 in $CHCl_3$). Possibly an artifact.

N-*De-Me:* ***Norcyclomicrobuxeine***
[14747-70-7]
$C_{24}H_{35}NO$ 353.547
Alkaloid from leaves of *Buxus papilosa* (Buxaceae). Amorph. $[\alpha]_D$ +34 (c, 1.90 in $CHCl_3$).

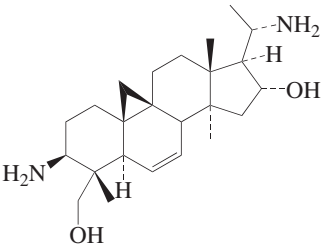
N-*De-Me,* N-*formyl:* **N-*Formylnorcyclomicrobuxeine***. N-*Formylcyclomicrobuxeine (incorr.)*
[112926-18-8]
$C_{25}H_{35}NO_2$ 381.557
Alkaloid from leaves of *Buxus papilosa* (Buxaceae). Amorph. $[\alpha]_D$ +16.

4β,23-Dihydro: 3-(Dimethylamino)-4,14-dimethyl-9,19-cyclopregn-16-en-20-one, 9CI. ***Cyclobuxomicreine K***. *Cyclobuxomicreine*
[7669-79-6]
$C_{25}H_{39}NO$ 369.589
Alkaloid from *Buxus microphylla* (Buxaceae). Needles (EtOH). Mp 195-197°. $[\alpha]_D$ +37 (c, 1.62 in $CHCl_3$). Possibly an artifact.

Nakano, T. *et al., J.C.S.(C)*, 1966, 1412-1421 (*Cyclomicrobuxeine K, Cyclobuxomicreine*)
Choudhary, M.I. *et al., J. Nat. Prod.*, 1987, **50**, 84-88 (*Norcyclomicrobuxeine*)
Atta-ur-Rahman, *et al., Planta Med.*, 1987, **53**, 496-497 (N-*Formylnorcyclomicrobuxeine*)

Cyclomicrophylline I C-883

3,20-Diamino-16-hydroxy-4,14-dimethyl-9,19-cyclopregn-6-ene-4-methanol, 9CI



$C_{24}H_{40}N_2O_2$ 388.592

The suffix letter in *Buxus* alkaloids systemically designates the *N*-subn. pattern. The parent compd., Cyclomicrophylline I, is unknown. C-4 configs. in this group of alkaloids revised in 1975. C-4 configs. reversed in 1975.

N^{20},N^{20}-*Di-Me,* N^3-*benzoyl:* ***3-Benzoylcyclomicrophylline F.*** *Buxidine F†. Buxidine. Buxizine*
[18050-99-2]
$C_{33}H_{48}N_2O_3$ 520.754
Alkaloid from *Buxus sempervirens* (Buxaceae). Needles (Me_2CO). Mp 154-157°. $[\alpha]_D^{24}$ +67.5 (c, 0.2 in $CHCl_3$). Mol. formula twice revised before struct. settled. Buxizine is a misprint. The name N^3-Benzoylcyclomicrophylline F is recommended to avoid confusion.

N^{20},N^{20}-*Di-Me,* N^3-*benzoyl,* O^{16}-*Ac:*

Buxandrine F. *Buxandrine. Semperviramidine*
[18051-00-8]
$C_{35}H_{50}N_2O_4$ 562.791
Alkaloid from *Buxus sempervirens* (Buxaceae). Needles (Me_2CO). Mp 289-290° dec. Mol. formula incorrectly given as $C_{35}H_{52}N_2O_4$ in one paper. Semperviramidine (amorph., $[\alpha]_D^{20}$ + 33°), is shown with the opposite C-4 config. but this appears to be incorrect which would make it identical with Buxandrine F. (See comment above).

N^3,N^3,N^{20}-*Tri-Me:* ***Cyclomicrophylline B***. *Cyclobaleabuxine*
[3556-11-4]
$C_{27}H_{46}N_2O_2$ 430.673
Alkaloid from *Buxus microphylla*, *Buxus balearica* and *Buxus malayana* (Buxaceae). Cryst. (EtOH). Mp 254° (251-252°). $[\alpha]_D$ -65 ($CHCl_3$).

N^3,N^3,N^{20}-*Tri-Me,* N^{20},O^{16}-*di-Ac:* Mp 202-203°. $[\alpha]_D$ -151 ($CHCl_3$).

N^3,N^{20},N^{20}-*Tri-Me:* ***Cyclomicrophylline C***
[3296-09-1]
$C_{27}H_{46}N_2O_2$ 430.673
Alkaloid from *Buxus microphylla* and *Buxus sempervirens* (Buxaceae). Mp 283-284°. $[\alpha]_D$ -40 ($CHCl_3$).

N^3,N^{20},N^{20}-*Tri-Me,* N^3-*benzoyl:* ***Cyclomicrosine***. N-*Benzoylcyclomicrophylline C. Cyclomicrosine C*
[10088-26-3]
$C_{34}H_{50}N_2O_3$ 534.781
Alkaloid from *Buxus microphylla* (Buxaceae). Needles (Me_2CO/hexane). Mp 282-284°. $[\alpha]_D$ -33 ($CHCl_3$).

N-*Tetra-Me:* ***Cyclomicrophylline A***
[2124-69-8]
$C_{28}H_{48}N_2O_2$ 444.699
Alkaloid from *Buxus microphylla*, *Buxus balearica*, *Buxus sempervirens* and *Buxus malayana* (Buxaceae). Mp 232-233°. $[\alpha]_D^{20}$ -40 ($CHCl_3$).

N-*Tetra-Me, 31-Ac:* ***31-Acetylcyclomicrophylline A***
[135626-68-5]
$C_{30}H_{50}N_2O_3$ 486.737
Alkaloid from *Buxus sempervirens* (Buxaceae). $[\alpha]_D$ -92 ($CHCl_3$).

N-*Tetra-Me,* O^{16}-*benzoyl:* ***Cyclomicrophyllidine A***
[3296-10-4]
$C_{35}H_{52}N_2O_3$ 548.807
Alkaloid from *Buxus microphylla* (Buxaceae). Amorph. $[\alpha]_D$ -160 ($CHCl_3$).

N-*Tetra-Me, dibenzoyl:*
Amorph. Mp 105-113°.

6,7-Dihydro: 3,20-Diamino-16-hydroxy-4,14-dimethyl-9,19-cyclopregnane-4-methanol. Dihydrocyclomicrophylline I

6,7-Dihydro, N^3,O^{16}-*di-Ac,* N^{20}-*formyl:* ***Cycloprotobuxinamine***
[188947-70-8]
$C_{29}H_{46}N_2O_5$ 502.693
Alkaloid from *Buxus microphylla* (Buxaceae).

6,7-Dihydro, N^{20},N^{20}-*di-Me:* ***Dihydrocyclomicrophylline F***. *Cyclobuxidine F*
[14155-69-2]
$C_{26}H_{46}N_2O_2$ 418.662
Alkaloid from *Buxus microphylla* (Buxaceae). Mp 260°. $[\alpha]_D$ +4.6 ($CHCl_3$).

6,7-Dihydro, N^{20},N^{20}-*di-Me,* N^3-*tigloyl,* O^{16}-*Ac:* ***Hyrcamine***
$C_{33}H_{54}N_2O_4$ 542.801
Alkaloid from the leaves of *Buxus hyrcana*. Amorph. solid. $[\alpha]_D^{24}$ +30 (c, 0.07 in $CHCl_3$). λ_{max} 202 (log ϵ 2.72) (MeOH).

6,7-Dihydro, N^{20},N^{20}-*di-Me,* N^3-*benzoyl:* ***Buxepidine***. N^3-*Benzoyldihydrocyclomicrophylline F*
[17934-60-0]
$C_{33}H_{50}N_2O_3$ 522.77
Alkaloid from *Buxus sempervirens* (Buxaceae). Mp 292-294° (278-279°). $[\alpha]_D$ -20 ($CHCl_3$). $[\alpha]_D$ +19.

6,7-Dihydro, N^3,N^{20},N^{20}-*tri-Me:* ***Dihydrocyclomicrophylline C***. *Cyclorolfeibuxine C*
$C_{27}H_{48}N_2O_2$ 432.688
Alkaloid from *Buxus rolfei* (Buxaceae). Cryst. (Me_2CO). Mp 256° Mp 265° (synth.). Methylation with HCHO gives Cyclobuxoxazine A.

6,7-Dihydro, N-*tetra-Me:* ***Dihydrocyclomicrophylline A***. *Cyclorolfeibuxine A*. N-*Methylcyclorolfeibuxine C*
[4003-53-6]
$C_{28}H_{50}N_2O_2$ 446.715
Alkaloid from *Buxus microphylla* (Buxaceae). Needles (MeOH). Mp 271-272° (266°). $[\alpha]_D$ +37 ($CHCl_3$).

6,7-Dihydro, N-*tetra-Me,* O^{16}-*benzoyl:* ***Dihydrocyclomicrophyllidine A***
[3668-22-2]
$C_{35}H_{54}N_2O_3$ 550.823
Alkaloid from *Buxus microphylla* (Buxaceae). Amorph. $[\alpha]_D$ -33 ($CHCl_3$).

6,7-Dihydro, 16-ketone: 3,20-Diamino-4-hydroxymethyl-4,14-dimethyl-9,19-cyclopregnan-16-one. Buxazidine I

6,7-Dihydro, 16-ketone, N^3,N^3,N^{20}-*tri-Me:* ***Buxazidine B***
[15208-57-8]
$C_{27}H_{46}N_2O_2$ 430.673
Alkaloid from *Buxus sempervirens* (Buxaceae). Needles (Me_2CO). Mp 234-236°. $[\alpha]_D$ -31 (c, 0.1 in $CHCl_3$). C-4 config. revised here from original assignment.

4-Epimer, N^{20},N^{20}-*di-Me,* N^3-*(2-methylpropanoyl):* ***Buxmicrophylline C***
[256236-36-9]
$C_{30}H_{50}N_2O_3$ 486.737
Alkaloid from *Buxus microphylla*. Needles. Mp 229-230°. C-4 stereo. in doubt.

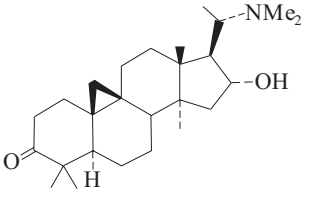
Stereoisomer, 6,7-dihydro, N-*tetra-Me:* ***Isodihydrocyclomicrophylline A***
$C_{28}H_{50}N_2O_2$ 446.715
Alkaloid from *Buxus simpervirens*. Cryst. (EtOH). Mp 215-217°. $[\alpha]_D$ -64.3 (c, 0.527 in $CHCl_3$). Uncertain struct. Suggested to be epimeric with Dihydrocyclomicrophylline A at C-4 and/or C-20. CAS No. not found.

[1355-00-6]

Herlem-Gaulier, D. *et al., Bull. Soc. Chim. Fr.*, 1965, 657-668 (*Cyclomicrophylline B, ir, ms, pmr, struct*)
Nakano, T. *et al., J.C.S.*, 1965, 4512-4537 (*Buxus microphylla constits*)
Khuong-Huu-Lainé, F. *et al., Bull. Soc. Chim. Fr.*, 1966, 758-762; 1216-1221 (*Cyclomicrophylline B, Dihydrocyclomicrophylline C, isol, ms, ir, pmr*)
Nakano, T. *et al., J.C.S.(C)*, 1966, 1412-1421 (*Cyclomicrosine*)
Döpke, W. *et al., Naturwissenschaften*, 1967, **54**, 200 (*Buxazidine B*)
Döpke, W. *et al., Tet. Lett.*, 1967, 4247-4249 (*Buxidine F, Buxandrine F*)
Sangare, M. *et al., Tet. Lett.*, 1975, 1791-1794 (*cmr, config*)
Atta-ur-Rahman, *et al., Phytochemistry*, 1988, **27**, 2367-2368; 1991, **30**, 1295-1298 (*31-Acetylcyclomicrophylline A, Buxandrine F*)
Khodzaev, B.U. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1994, **29**, 812-813 (*Isodihydrocyclomicrophylline A*)
Du, J. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 1996, **38**, 483-488; *CA*, **126**, 274768k (*Cycloprotobuxinamine*)
Du, J. *et al., J. Asian Nat. Prod. Res.*, 1999, **1**, 239-244 (*Buxmicrophylline C*)
Choudhary, M.I. *et al., Chem. Biodiversity*, 2006, **3**, 1039-1052 (*Hyrcamine*)

Cyclomicuranine L C-884

20-(Dimethylamino)-16-hydroxy-4,4,14-trimethyl-9,19-cyclopregnan-3-one, 9CI. Cyclomikuranine
[7671-39-8]



$C_{26}H_{43}NO_2$ 401.631
Alkaloid from *Buxus microphylla* and *Buxus sempervirens*. Plates (MeOH). Mp 209-211°. $[\alpha]_D^{20}$ -3 (c, 0.56 in EtOH).

N-*De-Me:* **N-*Demethylcyclomicuranine L***. N-*Demethylcyclomikuranine*
$C_{25}H_{41}NO_2$ 387.604
Alkaloid from the roots of *Buxus sempervirens*. $[\alpha]_D^{20}$ -23 (c, 0.26 in $CHCl_3$). λ_{max} 203 (MeOH).

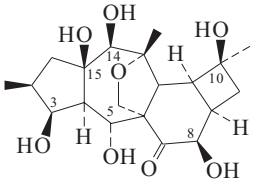
1,2-Didehydro: ***16-Hydroxycyclobuxoviridine L***. N^b-*Methylcycloxobuxoviricine*
$C_{26}H_{41}NO_2$ 399.615
Alkaloid from the leaves of *Buxus hyrcana*. Amorph. solid. $[\alpha]_D^{24}$ -53 (c, 0.06 in $CHCl_3$). λ_{max} 222 (log ϵ 4.2); 268 (log ϵ 3.6) (MeOH).

1,2-Didehydro, N-*de-Me:* ***Cycloxobuxoviricine***
[102092-24-0]
$C_{25}H_{39}NO_2$ 385.589
Alkaloid from the leaves of *Buxus papilosa* (Buxaceae). Amorph. powder. $[\alpha]_D^{26}$ -41.2 ($CHCl_3$).

Nakano, T. *et al., J.C.S.(C)*, 1966, 1412-1421 (*isol, struct, ir, uv, pmr, ord*)
Atta-ur-Rahman, *et al., J. Nat. Prod.*, 1986, **49**, 106 (*Cycloxobuxoviricine*)
Ata, A. *et al., Z. Naturforsch., C*, 2002, **57**, 21-28 (*N-de-Me*)

Choudhary, M.I. *et al., Chem. Biodiversity*, 2006, **3**, 1039-1052 (*N^b-Methylcycloxobuxoviricine*)

Cyclomyrsinol C-885



$C_{20}H_{30}O_8$ 398.452

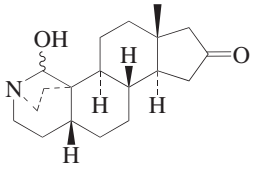
5,14-Bis(3-pyridinecarbonyl), 8-(2-methylpropanoyl), 3,10,15-tri-Ac: [213920-23-1]
$C_{42}H_{48}N_2O_{14}$ 804.846
Constit. of *Euphorbia seguieriana*. Cryst. Mp 255°. λ_{max} 230 (log ϵ 1.5); 255 (log ϵ 1.13); 260 (log ϵ 1.3) (EtOH).

8,14-Bis(3-pyridinecarbonyl), 3-propanoyl, 5,10,15-tri-Ac: [171864-16-7]
$C_{41}H_{46}N_2O_{14}$ 790.819
Constit. of *Euphorbia seguieriana*. $[\alpha]_D^{20}$ +12.5 (c, 0.2 in $CHCl_3$).

Jeske, F. *et al., Phytochemistry*, 1995, **40**, 1743 (*isol, pmr, cmr*)
Öksüz, S. *et al., J. Nat. Prod.*, 1998, **61**, 1198-1201 (*isol, pmr, cmr*)

Cycloneosamandione C-886

[3148-28-5]



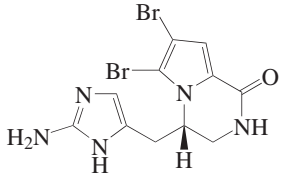
$C_{19}H_{29}NO_2$ 303.444
Alkaloid from skin glands of *Salamandra maculosa*. Mp 118-119°. $[\alpha]_D^{21}$ -207.6 (Me_2CO).

Hydrochloride: Mp 272-273°.

Picrate: Mp 225-226°.

Schöpf, C. *et al., Annalen*, 1960, **633**, 127-156 (*isol, ir, struct*)
Habermehl, G. *et al., Angew. Chem., Int. Ed.*, 1963, **2**, 157 (*struct*)
Oka, K. *et al., J.A.C.S.*, 1977, **99**, 3859-3860 (*synth, bibl*)

Cyclooroidin C-887



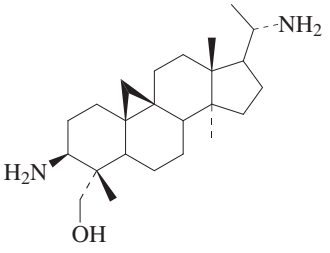
Absolute Configuration

$C_{11}H_{11}Br_2N_5O$ 389.049
Alkaloid from the sponge *Agelas oroides*. Pale yellow solid. $[\alpha]_D$ -12 (c, 0.02 in MeOH).

Fattorusso, E. *et al., Tet. Lett.*, 2000, **41**, 9917-9922 (*isol, pmr, cmr*)
Papeo, G. *et al., Tet. Lett.*, 2005, **46**, 8635-8638 (*synth*)
Patel, J. *et al., Tet. Lett.*, 2006, **47**, 5561-5563 (*synth*)

Cyclopapilosine I C-888

3,20-Diamino-4,14-dimethyl-9,19-cyclopregnane-4-methanol



$C_{24}H_{42}N_2O$ 374.609

The suffix letter in *Buxus* alkaloids systematically defines the *N*-subn. pattern. The parent compd., Cyclopapilosine I, is unknown.

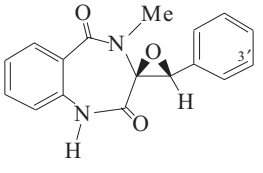
N^3,N^{20}*-Di-Me:* ***Cyclopapilosine D***
[51059-61-1]
$C_{26}H_{46}N_2O$ 402.662
Alkaloid from *Buxus papillosa* (Buxaceae). Cryst. (Me_2CO). Mp 233-235°. $[\alpha]_D^{25}$ +54 (c, 0.86 in $CHCl_3$).

N^3,N^{20},N^{20}*-Tri-Me,* N^3*-(4-hydroxy-3,5-dimethoxybenzoyl):* ***Buxakashmiramine***
[398477-70-8]
$C_{36}H_{56}N_2O_5$ 596.849
Alkaloid from *Buxus papillosa*. Amorph. powder. $[\alpha]_D^{25}$ -3 (c, 0.62 in $CHCl_3$). λ_{max} 211 (log ϵ 4.46); 260 (log ϵ 3.8) (MeOH).

Shamma, M. *et al., Phytochemistry*, 1973, **12**, 2051-2054 (*isol*)
Sangare, M. *et al., Tet. Lett.*, 1975, 1791-1794 (*struct*)
Atta-ur-Rahman, *et al., Phytochemistry*, 2001, **58**, 963-968 (*Buxakashmiramine*)

Cyclopenin C-889

*4-Methyl-3′-phenylspiro[3*H*-1,4-benzodiazepine-3,2′-oxirane]-2,5(1*H*,4*H*)-dione, 9CI*
[19553-26-5]



$C_{17}H_{14}N_2O_3$ 294.309

(-)-*form* [20007-87-8]
Metab. of *Penicillium cyclopium* and *Penicillium corymbiferum*. Needles (EtOAc/petrol). Sol. acids, bases, EtOH, MeOH; poorly sol. H_2O. Mp 183-184°. $[\alpha]_{Hg}^{20}$ -291 (c, 1.2 in MeOH). λ_{max} 211 (ϵ 37200); 290 (ϵ 2060) (MeOH) (Berdy).

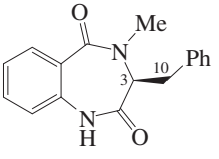
3′-Hydroxy: ***Cyclopenol***
[20007-85-6]
$C_{17}H_{14}N_2O_4$ 310.309
From *Penicillium cyclopium* and *Penicillium viridicatum*. Prisms (C_6H_6/EtOAc). Sol. MeOH, C_6H_6; poorly sol. H_2O. Mp 215° dec. $[\alpha]_{Hg}^{20}$ -309 (c, 1.3 in MeOH). λ_{max} 285 (ϵ 3740) (MeOH) (Berdy).

(±)-*form* [19357-57-4]
Mp 194-195°.

White, J.D. *et al., Tetrahedron*, 1970, **26**, 233 (*synth, bibl*)
Richter, H. *et al., Pharmazie*, 1974, **29**, 506 (*synth*)
Kirby, G.W. *et al., J.C.S. Perkin 1*, 1976, 1564 (*biosynth, bibl*)
Rhee, R.P. *et al., J.O.C.*, 1977, **42**, 3650 (*synth, bibl*)
Ohmomo, S. *et al., Agric. Biol. Chem.*, 1980, **44**, 1929 (*isol, pmr*)
Ishikura, M. *et al., J.O.C.*, 1982, **47**, 2456 (*synth, ir, pmr*)
Kusano, M. *et al., Biosci., Biotechnol., Biochem.*, 2000, **64**, 2559-2568 (*isol,uv,pmr,cmr,ms*)
Cole, R.J. *et al., Handbook of Toxic Fungal Metabolites*, Academic Press, 1981, 849; 853

Cyclopeptine C-890

*3,4-Dihydro-4-methyl-3-(phenylmethyl)-1*H*-1,4-benzodiazepine-2,5-dione, 9CI. 3-Benzyl-3,4-dihydro-4-methyl-1*H*-1,4-benzodiazepine-2,5-dione*



(*S*)-*form*

$C_{17}H_{16}N_2O_2$ 280.326

(*S*)-*form* [50886-63-0]
Prod. by *Penicillium cyclopium*, *Penicillium expansum* and *Penicillium puberulum*. Mp 95-98°.

3,10-Didehydro: ***Dehydrocyclopeptine***
[31965-37-4]
$C_{17}H_{14}N_2O_2$ 278.31
Prod. by *Penicillium cyclopium*, *Penicillium expansum* and *Penicillium puberulum*. Cryst. (MeOH). Mp 246-247.5°. Achiral.

*4′-Methoxy: 3,4-Dihydro-3-(4-methoxybenzyl)-4-methyl-1*H*-1,4-benzodiazepine-2,5-dione.* ***4′-Methoxycyclopeptine***
$C_{18}H_{18}N_2O_3$ 310.352
Prod. by *Penicillium* cf. *simplicissimum*. Amorph. solid. Mp 72-75°. $[\alpha]_D^{20}$ -90.2 (c, 0.1 in EtOH). Exists as 2 conformational isomers. λ_{max} 219 (ϵ 55000); 283 (ϵ 5900) (EtOH).

3,10-Epoxide: see Cyclopenin, C-889

(±)-*form* [65027-11-4]
Prisms (Me_2CO/hexane). Mp 100.5-103°.

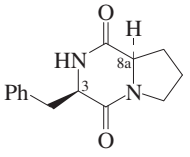
[19553-22-1 , 65002-54-2]

Framm, J. *et al., Eur. J. Biochem.*, 1973, **37**, 78 (*isol*)
El-Azzouny, A. *et al., Pharmazie*, 1977, **32**, 318 (*synth*)
Ishikura, M. *et al., J.O.C.*, 1982, **47**, 2456 (*synth*)

Gerlach, M. *et al., Phytochemistry*, 1985, **24**, 1935 (*synth*)
Solov'eva, T.F. *et al., Mikrobiologiya*, 1992, **61**, 395 (*isol*)
Kusano, M. *et al., Biosci., Biotechnol., Biochem.*, 2000, **64**, 2559-2568 (*4′-Methoxycyclopeptine*)

Cyclo(phenylalanylprolyl) C-891

Hexahydro-3-(phenylmethyl)pyrrolo[1,2-a]pyrazine-1,4-dione, 9CI. 3-Benzylhexahydropyrrolo[1,2-a]pyrazine-1,4-dione, 8CI. Phenylalanylproline anhydride
[14705-60-3]



(3*R*,8*aR*)-*form*

$C_{14}H_{16}N_2O_2$ 244.293

(3*R*,8*aR*)-*form*
D-D-form
[5654-85-3]
Prod. by the marine bacterial strains CF-20 and C-148 obt. from molluscs. Amorph. solid. $[\alpha]_D$ +88.7 (c, 0.22 in EtOH).

(3*R*,8*aS*)-*form* [26488-24-4]
Prod. by *Alternaria alternata* and *Streptomyces rochei*. Phytotoxic. Mp 150-153°. $[\alpha]_D^{25}$ -94.2 (c, 0.2 in H_2O).

(3*S*,8*aR*)-*form* [32021-26-4]
Isol. from the sponge *Calyx* cf. *podatypa*. Prod. by *Aspergillus flavipes*. Cryst. (EtOAc). Mp 150-151°. $[\alpha]_D^{20}$ +99 (c, 0.23 in H_2O).

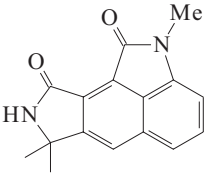
(3*S*,8*aS*)-*form*
L-L-form
[3705-26-8]
Prod. by *Alternaria alternata, Candida albicans*, *Penicillium bilaii* and *Rosellinia necatrix*. Isol. from the sponge *Stelletta clavosa*. Shows broad spectrum antibacterial and gastrointestinal cell maturation enhancing activity. Mp 133°. $[\alpha]_D$ -89 (c, 0.3 in H_2O).

[43041-16-3 , 43041-30-1 , 52645-32-6]

Ott, H. *et al., Tetrahedron*, 1963, **19**, 1675 (*synth*)
Lingappa, B.T. *et al., Science (Washington, D.C.)*, 1969, **163**, 192 (*isol*)
Poisel, H. *et al., Chem. Ber.*, 1973, **106**, 3408 (*synth*)
Vicar, J. *et al., Coll. Czech. Chem. Comm.*, 1973, **38**, 1940 (*synth, pmr*)
Ramani, R. *et al., Acta Cryst. B*, 1976, **32**, 1051 (*cryst struct*)
Young, P.E. *et al., J.A.C.S.*, 1976, **98**, 5365 (*pmr, cmr*)
Suzuki, K. *et al., Chem. Pharm. Bull.*, 1981, **29**, 233 (*synth*)
Mazza, F. *et al., Acta Cryst. C*, 1984, **40**, 1974 (*cryst struct*)
Sleeckx, J.J.M. *et al., Bull. Soc. Chim. Belg.*, 1985, **94**, 187 (*pmr, conformn*)
Stierle, A.C. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 1988, **85**, 8008 (*isol*)
Adamczeski, M. *et al., J. Nat. Prod.*, 1995, **38**, 201-208 (*isol, pmr, cmr*)
Bull, S.D. *et al., J.C.S. Perkin 1*, 1998, 2313-2320 (*config, biosynth*)
Graz, M. *et al., Pharmazie*, 1999, **54**, 772 (*activity*)
Fdhila, F. *et al., J. Nat. Prod.*, 2003, **66**, 1299-1301 (*isol, pmr, cmr*)
Wegerski, C.J. *et al., Bioorg. Med. Chem.*, 2004, **12**, 5631-5637 (*isol*)
Stark, T. *et al., J. Agric. Food Chem.*, 2005, **53**, 7222-7231 (*L,L-form, isol, ms*)
Tullberg, M. *et al., Tetrahedron*, 2006, **62**, 7484-7491 (*synth, pmr, cmr*)
Li, Z. *et al., Biochem. Syst. Ecol.*, 2008, **36**, 230-234 (*isol, pmr, cmr*)

Cyclopiamide C-892

*7,8-Dihydro-2,7,7-trimethyl-1*H*-isoindolo[4,5,6-cd]indole-1,9(2*H*)dione, 9CI*
[126382-02-3]

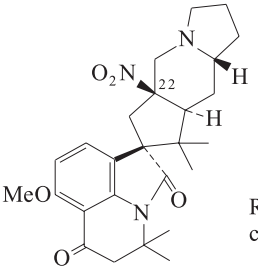


$C_{16}H_{14}N_2O_2$ 266.299
Metab. of *Penicillium cyclopium*. Mycotoxin. Pale yellow solid ($CHCl_3$/hexane). Sol. MeOH, Et_2O, $CHCl_3$; poorly sol. H_2O. Mp 157-158°. λ_{max} 225 (ε 8750); 240 (ε 7400); 268 (ε 10200); 341 (ε 828); 358 (ε 1090); 406 (ε 700) (MeOH) (Berdy).

Holzapfel, C.W. *et al., Phytochemistry*, 1990, **29**, 639 (*isol, uv, ir, pmr, cmr, ms, cryst struct*)

Cyclopiamine A C-893

[72361-74-1]



Relative configuration

$C_{26}H_{33}N_3O_5$ 467.564
Metab. of *Penicillium cyclopium* and *Penicillium urticae*. Noncryst.; cryst. (as hydrobromide). Mp 234-236° (hydrobromide). λ_{max} 230 (ε 15850); 261 (ε 10300); 344 (ε 5630) (MeOH) (Berdy).

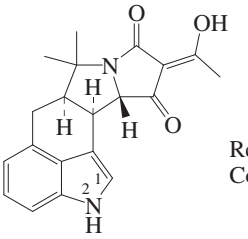
▶ Toxic.

22-Epimer: ***Cyclopiamine B***
[72401-58-2]
$C_{26}H_{33}N_3O_5$ 467.564
Metab. from *Penicillium cyclopium, Penicillium urticae* and *Aspergillus caespitosus*. Mp 245-246°. λ_{max} 232 (ε 16050); 260 (ε 10650); 345 (ε 5740) (MeOH) (Berdy).

Bond, R.F. *et al., J.C.S. Perkin 1*, 1979, 1751 (*isol, uv, cd, ir, pmr, ms, struct*)

α-Cyclopiazonic acid C-894

[18172-33-3]
[83136-88-3]



Relative Configuration

$C_{20}H_{20}N_2O_3$ 336.39
Enolised β-triketone. CAS numbering shown. Toxic alkaloid from *Penicillium cyclopium*, *Penicillium camemberti*, *Penicillium duclauxii* MF2831, *Aspergillus versicolor*, *Aspergillus flavus*, *Aspergillus oryzae* ATCC20235 and *Aspergillus tamarii* IAM1465. Antioxidant. Mycotoxin. Inhibits sarcoplasmic reticulum Ca^{2+}-ATPase and ATP-dependent Ca^{2+} transport. Pharmacol. tool for studying intracellular Ca^{2+} homeostasis. Exerts negative inotropic effects on adult myocardium. Mp 245-246°. $[\alpha]_D^{18}$ -74 (c, 1 in $CHCl_3$). λ_{max} 225 (ε 39800); 253 (ε 16600); 275 (sh) (ε 19100); 284 (ε 20400); 292 (sh) (ε 17400) (MeOH) (Derep). λ_{max} 224 (ε 32360); 282 (ε 17780); 290 (ε 14125) (MeOH) (Berdy). λ_{max} 223 (ε 39400); 281 (ε 19300) (EtOH) (Berdy). λ_{max} 222 (ε 40800); 252 (ε 16300); 281 (ε 19300) (EtOH/NaOH) (Berdy).

▶ Exp. reprod. and teratogenic effects. Tremorgenic toxin. Adverse effects incl. muscle incoordination, hypokinesia, convulsions ; LD_{50} (mus, ipr) 2.3 mg/kg. LD_{50} (rat, orl) 36 mg/kg. UY8587000

Hydrazone: Mp 189-190°.

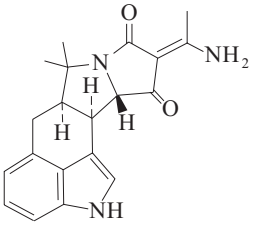
1-Hydroxy, 2-Me: ***Speradine A***
[566943-74-6]
$C_{21}H_{22}N_2O_4$ 366.416
Alkaloid from a marine-derived *Aspergillus tamarii*. Pale yellow solid. $[\alpha]_D^{18}$ -79 (c, 1 in $CHCl_3$). Exists in 1-oxo-2*NH*-form. λ_{max} 210 (ε 15000); 253 (ε 7700); 280 (ε 6400) (MeOH).

Holzapfel, C.W. *et al., Tetrahedron*, 1968, **24**, 2101-2119 (*isol, uv, ir, ms, pmr, cd, struct*)
Holzapfel, C.W. *et al., Phytochemistry*, 1971, **10**, 351-358 (*biosynth*)
Purchase, I.F.H. *et al., Toxicol. Appl. Pharmacol.*, 1971, **18**, 114-123 (*tox*)
Steyn, P.S. *et al., Chem. Comm.*, 1975, 465-466 (*biosynth*)
De Jesus, A.E. *et al., J.C.S. Perkin 1*, 1981, 3292-3294 (*biosynth*)
Chalmers, A.A. *et al., Chem. Comm.*, 1982, 1367-1368 (*biosynth*)
Pohland, A.E. *et al., Pure Appl. Chem.*, 1982, **54**, 2220-2284 (*uv, ir, pmr, ms, cd*)
Somei, M. *et al., Chem. Pharm. Bull.*, 1983, **31**, 2153-2156 (*synth*)
Kozikowski, A.P. *et al., J.A.C.S.*, 1984, **106**, 6873-6874 (*synth*)
Nishie, K. *et al., Food Chem. Toxicol.*, 1985, **23**, 831-839; 1069-1076 (*tox, metab*)
Muratake, H. *et al., Heterocycles*, 1985, **23**, 1111 (*synth*)

Norred, W.P. *et al., J. Agric. Food Chem.*, 1988, **36**, 113-116
Seidler, N.W. *et al., J. Biol. Chem.*, 1989, **264**, 17816-17823 (*pharmacol*)
Agata, N. *et al., Br. J. Pharmacol.*, 1993, **108**, 571-572 (*pharmacol*)
Bradburn, N. *et al., Phytochemistry*, 1994, **35**, 817 (*activity*)
Plenge-Tellechea, F. *et al., J. Biol. Chem.*, 1997, **272**, 2794-2800 (*pharmacol*)
Schwinger, R.H.G. *et al., J. Pharmacol. Exp. Ther.*, 1997, **283**, 286-292 (*pharmacol*)
Tsuda, M. *et al., Tetrahedron*, 2003, **59**, 3227-3230 (*Speradine A*)
Haskins, C.M. *et al., Chem. Comm.*, 2005, 3162-3164 (*synth*)
Cole, R.J. *et al., Handbook of Toxic Fungal Metabolites*, Academic Press, 1981, 497
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, CQD000

Cyclopiazonic acid imine C-895

[31008-94-3]



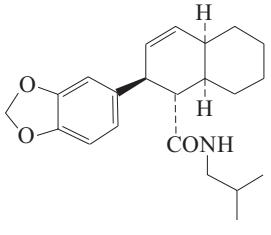
$C_{20}H_{21}N_3O_2$ 335.405

Isol. from *Penicillium cyclopium* and *Aspergillus versicolor*. Cryst. (MeOH). Mp 277-278°. $[\alpha]_D^{20}$ -11.1. Relatively nontoxic compared with cyclopiazonic acid. λ_{max} 224 (ϵ 33000); 293 (ϵ 22380) (MeOH) (Berdy).

Holzapfel, C.W. *et al., Tetrahedron*, 1970, **26**, 5239 (*isol, uv, ir, ms*)
Ohmomo, S. *et al., Nippon Nogei Kagaku Kaishi*, 1973, **47**, 57 (*isol, pmr*)
Riley, R.T. *et al., Toxicol. Appl. Pharmacol.*, 1992, **114**, 261-267 (*pharmacol*)
Cole, R.J. *et al., Handbook of Toxic Fungal Metabolites*, Academic Press, 1981, 501

Cyclopiperstachine C-896

*2-(1,3-Benzodioxol-5-yl)-1,2,4a,5,6,7,8,8a-octahydro-*N*-(2-methylpropyl)-1-naphthalenecarboxamide, 9CI*



$C_{22}H_{29}NO_3$ 355.476

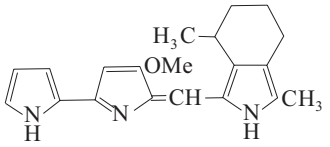
(±)-*form* [58514-07-1]

Alkaloid from *Piper trichostachyon* (Piperaceae). Needles (CH_2Cl_2/hexane). Mp 220°.

Joshi, B.S. *et al., Helv. Chim. Acta*, 1975, **58**, 2295 (*isol, uv, ir, pmr, ms, struct, synth*)

Cycloprodigiosin C-897

*4,5,6,7-Tetrahydro-3-[[3-methoxy-5-(1*H*-pyrrol-2-yl)-2*H*-pyrrol-2-ylidene]-methyl]-1,4-dimethyl-2*H*-isoindole, 9CI*
[86797-91-3]



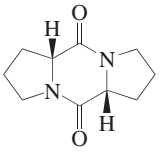
$C_{20}H_{23}N_3O$ 321.421

Pyrrole antibiotic. Revised struct. Minor red pigment from cultures of the aerobic marine bacterium *Alteromonas rubra*. Also isolated from *Pseudoalteromonas denitrificans* and *Beneckea gazogenes*. Shows antibacterial, antifungal, immunosuppressant, antiarteriosclerotic and antiosteoporotic activities. λ_{max} 216 (ϵ 8660); 275 (sh) (ϵ 6440); 296 (ϵ 12200); 371 (ϵ 7750); 382 (sh) (ϵ 7240); 510 (sh) (ϵ 54400); 541 (ϵ 132000) (EtOH, pH 2.9) (Derep). λ_{max} 226 (ϵ 10800); 289 (ϵ 9820); 337 (ϵ 7590); 471 (ϵ 41600); 539 (ϵ 17200) (EtOH, pH 7.4) (Derep). λ_{max} 257 (ϵ 7950); 281 (ϵ 9520); 336 (ϵ 7860); 469 (ϵ 42400) (EtOH,pH 11) (Derep). λ_{max} 544 (ϵ 110000) ($CHCl_3$/HCl) (Berdy).

Laatsch, H. *et al., Tet. Lett.*, 1983, **24**, 2701 (*isol, uv, pmr, ms, struct*)
Gerber, N.N. *et al., Tet. Lett.*, 1983, **24**, 2797 (*cmr, pmr*)
Wassermann, H.H. *et al., Tet. Lett.*, 1984, 1387 (*synth*)
Japan. Pat., 1998, 98 80 293; *CA*, **128**, 294012d (*isol, activity*)

Cyclo(prolylprolyl) C-898

*Octahydro-5*H*,10*H*-dipyrrolo[1,2-a:1′,2′-d]pyrazine-5,10-dione, 9CI. Prolylproline anhydride. Octahydropyrocoll*
[6708-06-1]



(5*aR*,10*aR*)-*form*

$C_{10}H_{14}N_2O_2$ 194.233

(5*aR*,10*aR*)-*form*

D-D-*form*
[53990-71-9]
Mp 141-143°. $[\alpha]_D^{30}$ +147.5 (c, 1 in H_2O).

(5*aR*,10*aS*)-*form*

L-D-*form*
[53990-72-0]
Mp 193-195°. Opt. inactive (*meso*-).

(5*aS*,10*aS*)-*form*

L-L-*form*
[19943-27-2]
Constit. of roasted cocoa nibs and roasted malt; also from the tubers of *Pinellia pedatisecta*. Prod. by *Aspergillus fumigatus* and *Pseudoalteromonas haloplanktis*. Mp 143-144°. $[\alpha]_D^{30}$ -149.5 (c, 1 in H_2O).

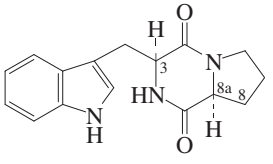
(5*aRS*,10*aRS*)-*form*

(±)-form
Cryst. (EtOH). Mp 149-150°.
[19943-26-1]

Rothe, M. *et al., Angew. Chem., Int. Ed.*, 1972, **11**, 293 (*synth*)
Eguchi, C. *et al., Bull. Chem. Soc. Jpn.*, 1974, **47**, 2277-2282 (*synth*)
Kralj, B. *et al., Biomed. Mass Spectrom.*, 1975, **2**, 215-218 (*synth, ms*)
Benedetti, E. *et al., Cryst. Struct. Commun.*, 1975, **4**, 641-645 (*cryst struct*)
Kricheldorf, H.R. *et al., Org. Magn. Reson.*, 1980, **13**, 52-58 (*synth, cmr, N-15 nmr*)
Ueda, T. *et al., Bull. Chem. Soc. Jpn.*, 1983, **56**, 568-572 (*synth*)
Qin, W. *et al., Zhongcaoyao*, 1984, **15**, 490-492; *CA*, **102**, 109774f (*isol*)
Valentine, B. *et al., Int. J. Pept. Protein Res.*, 1985, **25**, 56-68 (*O-17 nmr*)
Stark, T. *et al., J. Agric. Food Chem.*, 2005, **53**, 7222-7231 (*L,L-form, isol, ms*)
Furtado, N.A.J.C. *et al., J. Braz. Chem. Soc.*, 2005, **16**, 1448-1453 (*isol, pmr, cmr*)
Mitova, M. *et al., Mar. Biotechnol.*, 2005, **7**, 523-531 (*L,L-form, isol*)

Cyclo(prolyltryptophyl) C-899

*Hexahydro-3-(1*H*-indol-3-ylmethyl)pyrrolo[1,2-a]pyrazine-1,4-dione, 9CI. Cyclo(tryptophanylprolyl). Cyclo(tryptophylprolyl)*
[67889-75-2]



$C_{16}H_{17}N_3O_2$ 283.329

(3*R*,8*aS*)-*form*

D-L-*form*
[41222-71-3]
Cryst. (Me_2CO). Mp 204-206°. $[\alpha]_D^{22}$ -101 (c, 1.78 in AcOH).

(3*S*,8*aR*)-*form*

L-D-*form*
[73136-47-7]
Cryst. (Me_2CO/petrol). Mp 191-193°. $[\alpha]_D^{20}$ +120 (c, 1.3 in AcOH).

(3*S*,8*aS*)-*form*

L-L-*form*. ***Brevianamide F***
[38136-70-8]
Prod. by *Penicillium brevi-compactum*, *Penicillium piscarium* and *Alteromonas distincta* He169. Also prod. by a *Vibrio* sp. isol. from the sponge *Hyrtios altum*. Shows broad spectrum antibacterial and gastrointestinal cell maturation enhancing activity. Mp 173-175°. $[\alpha]_D^{24}$ -99 (c, 1.2 in AcOH). λ_{max} 220 (ϵ 11000); 276 (ϵ 1900); 281 (ϵ 2000); 290 (ϵ 1700) (MeOH) (Berdy).

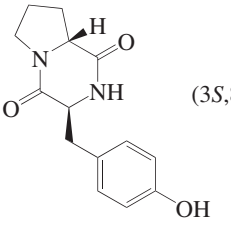
*8,8*a*-Didehydro: 12,13-Dehydroprolyltryptophyldiketopiperazine. Cyclo(dehydroprolyltryptophyl)*
[290348-28-6]
$C_{16}H_{15}N_3O_2$ 281.313

Prod. by *Penicillium piscarium*.

Birch, A.J. *et al., Tetrahedron*, 1972, **28**, 2999 (*isol, uv, ir, ms, pmr, synth*)
Steyn, P.S. *et al., Tetrahedron*, 1973, **29**, 107
Sammes, P.G. *et al., J.C.S. Perkin 1*, 1979, 3048 (*synth, bibl*)
Kobayashi, M. *et al., Chem. Pharm. Bull.*, 1994, **42**, 2449-2451 (*Vibrio, isol*)
Grant, G.D. *et al., J. Chem. Crystallogr.*, 1999, **29**, 435-447 (*cryst struct*)
Graz, M. *et al., Pharmazie*, 1999, **54**, 772 (*activity*)
Kozlovskii, A.G. *et al., Prikl. Biokhim. Mikrobiol.*, 2000, **36**, 317-321 (*isol*)
Williams, R.M. *et al., Chem. Pharm. Bull.*, 2002, **50**, 711-740 (*rev, synth, biosynth*)
Shabaan, M. *et al., Dissertation*, Univ. of Gottingen, 2004, (*Alteromonas, isol*)

Cyclo(prolyltyrosyl) C-900

Hexahydro-3-(4-hydroxybenzyl)pyrrolo[1,2-a]pyrazine-1,4-dione
[74345-23-6]



(3*S*,8a*R*)-*form*

$C_{14}H_{16}N_2O_3$ 260.292

(3*S*,8*aR*)-*form*
L,D-form
[61117-56-4]
Isol. from two strains of microorganisms isol. from the marine sponge *Ircinia variabilis* and the fungus *Aspergillus flavipes*. Cryst. (Et_2O/Me_2CO). Mp 218-220°.

(3*S*,8*aS*)-*form*
L,L-form. ***Maculosin 1***. *ML 1532II. A 19C. Antibiotic A 19C. Antibiotic ML 1532II*
[4549-02-4]
Prod. by *Alternaria alternata*, *Aspergillus flavipes*, *Streptomyces gelaticus*, *Streptomyces* sp. ML1532, *Fusarium nivale*, a fungal growth on *Zinnia elegans* and *Bacillus licheniformis*. Isol. from the sponges *Jaspis digonoxea* and *Tedania anhelans*, a marine-derived *Pseudomonas aeruginosa*, marine *Penicillium* sp., marine bacteria *Vibrio parahaemolyticus* and *Pseudoalteromonas haloplanktis* and pathogenic fungus *Pestalotia palmarum*. Present in coml. peptone. Cytotoxic. Inhibits SV-40 transformed cells and germination. Plant growth regulator. Possesses pesticidal props. Plates. Mp 152-154° (140°). $[\alpha]_D$ -148 (c, 1 in H_2O).

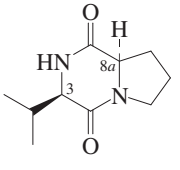
(3ξ,8aξ)-*form*
3′-Nitro: Hexahydro-3-[(4-hydroxy-3-nitrophenyl)methyl]pyrrolo[1,2-a]pyrazine-1,4-dione, 9CI. Cyclo(prolyl-3-nitrotyrosyl). ***Pyriculamide***
[134876-76-9]
[125034-08-4]

$C_{14}H_{15}N_3O_5$ 305.29
Isol. from *Pyricularia oryzae* and the marine-derived *Flavobacterium* sp. T436. Plant growth inhibitor. Bright yellow needles (Me_2CO). Mp 183-185° dec. $[\alpha]_D$ -84.4 (c, 0.66 in MeOH).

Tamura, S. *et al., Agric. Biol. Chem.*, 1964, **28**, 650-652 (*3S,8aS-form, isol*)
Tatsuno, T. *et al., Chem. Pharm. Bull.*, 1971, **19**, 1498-1500 (*3S,8aS-form, isol*)
Madison, V. *et al., J.A.C.S.*, 1976, **98**, 5365-5371 (*synth, cd, pmr, cmr*)
Kamikawa, T. *et al., Agric. Biol. Chem.*, 1980, **44**, 691-692 (*3S,8aS-form, isol*)
Munekata, M. *et al., Agric. Biol. Chem.*, 1981, **45**, 2613-2618 (*3S,8aS-form, isol*)
Sasaki, Y. *et al., Chem. Pharm. Bull.*, 1982, **30**, 4435-4443 (*3S,8aS-form, synth*)
Stierle, A.C. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 1988, **85**, 8008-8011 (*Maculosin 1*)
Boldyrev, A.A. *et al., Comp. Biochem. Physiol., B: Comp. Biochem.*, 1989, **94**, 237 (*Pyriculamide, pharmacol*)
Sviridov, S.I. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1990, **26**, 691-696 (*Pyriculamide*)
Bavykina, N.I. *et al., Zh. Obshch. Khim.*, 1990, **60**, 170-175; *J. Gen. Chem. USSR (Engl. Transl.)*, 1990, **60**, 148-152 (*Pyriculamide, synth*)
Milne, P.J. *et al., J. Crystallogr. Spectrosc. Res.*, 1992, **22**, 643-649 (*cryst struct, conformn*)
Barrow, C.J. *et al., J. Nat. Prod.*, 1994, **57**, 471-476 (*Aspergillus flavipes constit*)
Rudi, A. *et al., J. Nat. Prod.*, 1994, **57**, 829-836 (*isol, pmr, cmr*)
Jayatilake, G.S. *et al., J. Nat. Prod.*, 1996, **59**, 293-296 (*isol, pmr, cmr*)
De Rosa, S. *et al., Biomol. Eng.*, 2003, **20**, 311-316 (*Ircinia variabilis constit*)
Schuhmann, I. *et al., Dissertation*, Univ. of Göttingen, 2005, (*Pyriculamide, isol, marine*)
Mitova, M. *et al., Mar. Biotechnol.*, 2005, **7**, 523-531 (*L,L-form, isol*)

Cyclo(prolylvalyl) C-901

Hexahydro-3-(1-methylethyl)pyrrolo[1,2-a]pyrazine-1,4-dione, 9CI. Hexahydro-3-isopropylpyrrolo[1,2-a]pyrazine-1,4-dione. Prolylvaline anhydride. Maculosine 5. Antibiotic K 73. K 73
[5654-87-5]



(3*R*,8*aR*)-*form*

$C_{10}H_{16}N_2O_2$ 196.249
Diketopiperazine antibiotic.

(3*R*,8*aR*)-*form*
D-D-form
Prod. by the marine bacterial strains CF-20 and C-148 obt. from molluscs. Active against *Vibrio anguillarum*. $[\alpha]_D$ +120.1 (c, 0.1 in EtOH).

(3*R*,8*aS*)-*form*
D-L-form
[27483-18-7]
Cryst. (EtOAc/hexane). Mp 154-156°. $[\alpha]_D^{20}$ -96.4 (c, 0.25 in H_2O).

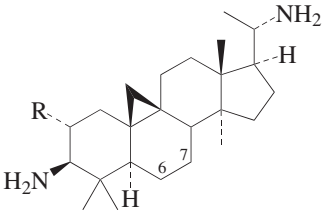
(3*S*,8*aR*)-*form*
L-D-form
[156617-55-9]
Prod. by *Aspergillus* sp. F70609 and *Aspergillus flavipes*. Specific β-glucosidase inhibitor. Cryst. (EtOAc/hexane). Mp 147-149°. $[\alpha]_D^{20}$ +88 (c, 1 in H_2O).

(3*S*,8*aS*)-*form*
L-L-form
[2854-40-2]
Prod. by *Aspergillus*, *Streptomyces*, *Oospora* spp. and *Pinellia pedatisecta*. Alkaloid from the Caribbean sponges *Calyx* cf. *podatypa* and *Tedania ignis*. Also from the alga *Scenedesmus* sp., the fungi *Rhizoctonia solani* and *Rosellinia necatrix*, and root of *Psammosilene tunicoides*. Shows antibiotic and phytotoxic props. Needles (butanol). Mp 189.5° (169-172°). $[\alpha]_D^{20}$ -157 (c, 1 in $CHCl_3$). $[\alpha]_D^{20}$ -180.5 (c, 1 in EtOH).

Luedemann, G. *et al., J.O.C.*, 1961, **26**, 4128-4130 (*isol*)
Siemion, I.Z. *et al., Org. Magn. Reson.*, 1971, **3**, 545-550 (*synth, nmr*)
Ogura, H. *et al., Chem. Pharm. Bull.*, 1975, **23**, 2474-2477 (*isol*)
Munekata, M. *et al., Agric. Biol. Chem.*, 1981, **45**, 2613-2618 (*isol*)
Schmidtz, F.J. *et al., J.O.C.*, 1983, **48**, 3941-3945 (*isol, pmr, ms, synth, bibl*)
Giralt, E. *et al., Synthesis*, 1985, 181-184 (*synth*)
Stierle, A.C. *et al., Experientia*, 1988, **44**, 1021 (*isol*)
Barrow, C.J. *et al., J. Nat. Prod.*, 1994, **57**, 471-476 (*L-D-form, isol*)
Adamczeski, M. *et al., J. Nat. Prod.*, 1995, **58**, 201-208 (*isol, pmr, cmr*)
Jayatilake, G.S. *et al., J. Nat. Prod.*, 1996, **59**, 293-296 (*isol, cmr*)
Bull, S.D. *et al., J.C.S. Perkin 1*, 1998, 2313-2320 (*configs, biosynth*)
Kwon, O.S. *et al., J. Antibiot.*, 2001, **54**, 179-181 (*L-D-form, isol, pmr, cmr*)
Fdhila, F. *et al., J. Nat. Prod.*, 2003, **66**, 1299-1301 (*isol, pmr, cmr*)
Ding, Z. *et al., Zhongguo Zhongyao Zazhi*, 2003, **28**, 337-339; *CA*, **142**, 215155 (*isol, pmr, cmr*)
Pedras, M.S.C. *et al., Z. Naturforsch., C*, 2005, **60**, 717-722 (*isol, synth, pmr, cmr*)

Cycloprotobuxine I C-902

4,4,14-Trimethyl-9,19-cyclopregnane-3,20-diamine, 9CI



R = H

$C_{24}H_{42}N_2$ 358.609
The suffix letter in *Buxus* alkaloids systematically designates the *N*-subn. pattern. The parent compd., Cycloprotobuxine I, is unknown. Log P 5.88 (uncertain value) (calc).

N^3,N^{20}-*Di-Me:* ***Cycloprotobuxine D***
[2255-38-1]
$C_{26}H_{46}N_2$ 386.663
Alkaloid from *Buxus balearica*, *Buxus harlandi* and *Buxus sempervirens* (Buxaceae). Cryst. (EtOH). Mp 140°. $[\alpha]_D$ +112 (c, 1 in $CHCl_3$).

N^3,N^{20}-*Di-Me,* N^{20}-*Ac:* **N-*Acetylcycloprotobuxine D***
[16974-77-9]
$C_{28}H_{48}N_2O$ 428.7
Alkaloid from *Buxus sempervirens* (Buxaceae). Mp 221-224°. $[\alpha]_D$ +53 ($CHCl_3$).

N^{20},N^{20}-*Di-Me:* ***Cycloprotobuxine F***
[36151-05-0]
$C_{26}H_{46}N_2$ 386.663
Alkaloid from *Buxus madagascarica* (Buxaceae). Has been used as a synthetic material for holothurinogenins. Needles (Me_2CO). Mp 163°. $[\alpha]_D$ +42 ($CHCl_3$).

N^3,N^{20},N^{20}-*Tri-Me:* ***Cycloprotobuxine C***
[1936-70-5]
$C_{27}H_{48}N_2$ 400.69
Alkaloid from *Buxus sempervirens*, *Buxus harlandi*, *Buxus microphylla* and other *Buxus* spp. (Buxaceae). Mp 212° (200-202°). $[\alpha]_D$ +76 (c, 1.09 in $CHCl_3$).

N^3,N^{20},N^{20}-*Tri-Me,* N^3-*Ac:* **N-*Acetylcycloprotobuxine C***
[16975-12-5]
$C_{29}H_{50}N_2O$ 442.727
Alkaloid from *Buxus sempervirens* (Buxaceae). Mp 222-235°.

N^3,N^{20},N^{20}-*Tri-Me,* N^3-*benzoyl:* **N-*Benzoylcycloprotobuxine C***
[16974-72-4]
$C_{34}H_{52}N_2O$ 504.798
Alkaloid from *Buxus sempervirens.* Cryst. (C_6H_6). Mp 231-233°. $[\alpha]_D^{26}$ +32 (c, 1.0 in $CHCl_3$).

N^3,N^3,N^{20},N^{20}-*Tetra-Me:* ***Cycloprotobuxine A***
[2278-38-8]
$C_{28}H_{50}N_2$ 414.716
Alkaloid from *Buxus sempervirens*, *Buxus microphylla*, *Buxus malayana* and *Buxus balearica* (Buxaceae). Plates (Me_2CO). Mp 207-208°. $[\alpha]_D$ +75 (c, 1 in $CHCl_3$) (+31).

▶ GZ0585000

6,7-Didehydro, N^3,N^{20},N^{20}-*tri-Me:* ***Cyclobuxupaline C***
[51059-60-0]
$C_{27}H_{46}N_2$ 398.674
Alkaloid from *Buxus papilosa* (Buxaceae). Cryst. (Me_2CO). Mp 111-113°. $[\alpha]_D^{25}$ -37 (c, 1.0 in $CHCl_3$).

6,7-Didehydro, N^3,N^{20},N^{20}-*tri-Me,* N^3-*benzoyl:* ***Buxeridine C****. Buxeridine*
[17337-35-8]
$C_{34}H_{50}N_2O$ 502.782
Alkaloid from *Buxus sempervirens* leaves (Buxaceae). Prisms (Me_2CO). Mp 208-210°. $[\alpha]_D$ +14 ($CHCl_3$). Struct. not certain.

20-Epimer, N^3,N^{20},N^{20}-*tri-Me,* N^3-*Ac:* ***Buxaline C***
[16975-11-4]
$C_{29}H_{50}N_2O$ 442.727
Alkaloid from *Buxus sempervirens* (Buxaceae). Mp 230-232°. $[\alpha]_D$ +29.41 ($CHCl_3$). Tentative struct.

3,20-Diepimer, N^3,N^{20},N^{20}-*tri-Me:* **l-*Cycloprotobuxine C***
[56687-61-7]
$C_{27}H_{48}N_2$ 400.69
Alkaloid from *Buxus sempervirens.* Mp 195-197°. $[\alpha]_D$ -62 (c, 0.25 in $CHCl_3$). Structure proof tenuous; (20*R*)-config. unprecedented.

Calame, J.P. *et al., Chimia*, 1964, **18**, 185 (*struct, Cycloprotobuxine D*)
Herlem-Gaulier, D. *et al., Bull. Soc. Chim. Fr.*, 1965, 657-668 (*isol, Cycloprotobuxine A, Cycloprotobuxine C*)
Nakano, T. *et al., J.C.S.*, 1965, 6688-6694 (*Cycloprotobuxine C, isol, pmr, struct*)
Nakano, T. *et al., J.C.S.(C)*, 1966, 1412-1421 (*isol, Cycloprotobuxine C*)
Khuong-Huu-Laine, F. *et al., Tetrahedron*, 1966, **22**, 3321-3327 (*isol, Cycloprotobuxine A, Cycloprotobuxine C, Cycloprotobuxine D*)
Döpke, W. *et al., Naturwissenschaften*, 1967, **54**, 200 (*Buxeridine C*)
Kupchan, S.M. *et al., Tetrahedron*, 1967, **23**, 4563-4586 (*isol, pmr, N-Acetylcycloprotobuxine D*)
Khuong-Huu, F. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1971, 558-560 (*Cycloprotobuxine* F)
Shamma, M. *et al., Phytochemistry*, 1973, **12**, 2051-2054 (*Cyclobuxupaline C*)
Khodzhaev, B.U. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1975, **11**, 281-282; 1976, **12**, 500-501 (*l-Cycloprotobuxine C*)
Khodzhaev, B.U. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1975, **11**, 795-797 (*Buxaline C*)
Sangare, M. *et al., Tet. Lett.*, 1975, 1791-1794 (*Cycloprotobuxine F, cmr*)
Singh, C. *et al., Tetrahedron*, 1977, **33**, 1053-1055 (*Cycloprotobuxine F, Cycloprotobuxine A, synth*)
Khodzaev, B.U. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2003, **39**, 52-53 (*N-Benzoylcycloprotobuxine C*)

Cycloprotobuxoline I C-903

3,20-Diamino-9,19-cyclopregnan-2-ol
As Cycloprotobuxine I, C-902 with R = OH

$C_{24}H_{42}N_2O$ 374.609

The suffix letter in *Buxus* alkaloids systematically designates the *N*-subn. pattern. The parent compd., Cycloprotobuxoline I, is unknown.

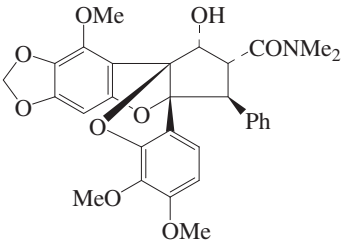
N^3,N^{20}-*Di-Me,* N^3-*benzoyl:* **N-*Benzoylcycloprotobuxoline D***
[16974-80-4]
$C_{33}H_{50}N_2O_2$ 506.77
Alkaloid from *Buxus sempervirens* (Buxaceae). Mp 236-238° dec. $[\alpha]_D^{26}$ +42 (c, 1.05 in $CHCl_3$).

N^3,N^{20},N^{20}-*Tri-Me,* N^3-*benzoyl,:* **N-*Benzoylcycloprotobuxoline C***
[16974-74-6]
$C_{34}H_{52}N_2O_2$ 520.797
Alkaloid from *Buxus sempervirens* (Buxaceae). Mp 252-255° dec. $[\alpha]_D^{27}$ +43 (c, 0.85 in $CHCl_3$).

Kupchan, S.M. *et al., Tetrahedron*, 1967, **23**, 4563

Cyclorocaglamide C-904

[496956-76-4]



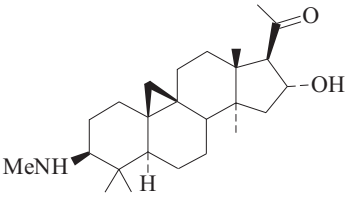
$C_{30}H_{29}NO_9$ 547.56

Flavogline compd. Constit. of the twigs of *Aglaia oligophylla*. Amorph. solid. $[\alpha]_D^{20}$ +180.5 (c, 1.25 in EtOH).

Bringmann, G. *et al., J. Nat. Prod.*, 2003, **66**, 80-85 (*isol, cd, pmr, cmr, ms*)

Cyclorolfeine C-905

16-Hydroxy-4,4,14-trimethyl-3-methylamino-9,19-cyclopregnan-20-one
[6908-25-4]



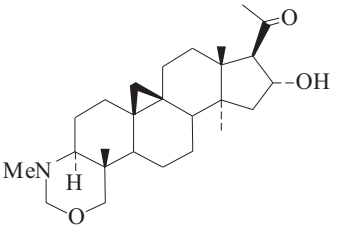
$C_{25}H_{41}NO_2$ 387.604
Alkaloid from *Buxus rolfei* (Buxaceae). Cryst. (Me_2CO). Mp 253°. $[\alpha]_D$ +119 (c, 1 in $CHCl_3$).

N-*Ac:*
Cryst. (Me_2CO). Mp 235°. $[\alpha]_D$ -34 (c, 1 in $CHCl_3$).

Khuong-Huu-Lainé, F. *et al., Bull. Soc. Chim. Fr.*, 1966, 1216-1221 (*isol, pmr, ms, ir, struct*)

Cyclorolfoxazine C-906

[7044-75-9]



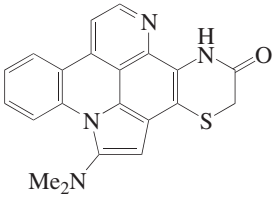
$C_{26}H_{41}NO_3$ 415.615

C-4 config. revised in 1975. Alkaloid from *Buxus rolfei* (Buxaceae). Cryst. (Me_2CO). Mp 239°. $[\alpha]_D$ +106 (c, 1 in $CHCl_3$).

Khuong-Huu-Lainé, F. *et al., Bull. Soc. Chim. Fr.*, 1966, 1216-1221 (*isol, ir, ms, pmr, struct*)
Sangare, M. *et al., Tet. Lett.*, 1975, 1791-1794 (*config*)

Cycloshermilamine D C-907

[272118-05-5]



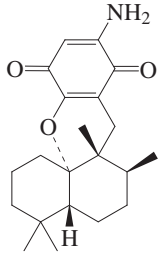
$C_{21}H_{16}N_4OS$ 372.45

Alkaloid from the tunicate *Cystodytes violatinctus*. Amorph. yellow powder. λ_{max} 208 (log ϵ 4.18); 215 (log ϵ 4.16); 262 (log ϵ 4.04); 299 (log ϵ 3.88); 391 (log ϵ 3.35); 480 (log ϵ 3.19) (MeOH).

Koren-Goldschlager, G. *et al., J. Nat. Prod.*, 2000, **63**, 830-831 (*isol, uv, pmr*)

Cyclosmenospongine C-908

[501691-51-6]



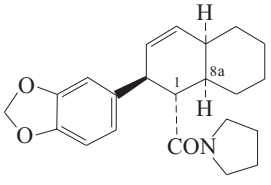
$C_{21}H_{29}NO_3$ 343.465

Isol. from the Australian sponge *Spongia* sp. Wine-coloured oil. $[\alpha]_D^{25}$ -18 (c, 0.12 in $CHCl_3$). λ_{max} 211 (log ϵ 3.01); 313 (log ϵ 2.84) (EtOH).

Utkina, N.K. *et al., J. Nat. Prod.*, 2003, **66**, 1263-1265 (*abs config*)
Utkina, N.K. *et al., Tet. Lett.*, 2003, **44**, 101-102 (*isol, pmr, cmr*)

Cyclostachine A C-909

1-[[2-(1,3-Benzodioxol-5-yl)-1,2,4a,5,6,7,8,8a-octahydro-1-naphthalenyl]carbonyl]pyrrolidine, 9CI



$C_{22}H_{27}NO_3$ 353.46

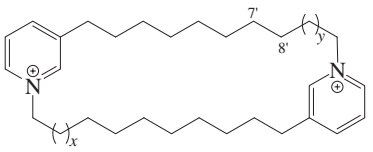
(±)-*form* [57110-32-4]

Alkaloid from the stems of *Piper trichostachyon* (Piperaceae). Cryst. (Et_2O/hexane). Mp 136-138°. λ_{max} 235 (ϵ 4460); 287 (ϵ 4170) (EtOH) (Berdy).

1,8a-Diepimer: ***Cyclostachine B***
[58514-08-2]
$C_{22}H_{27}NO_3$ 353.46
Alkaloid from *Piper trichostachyon* (Piperaceae). Needles (CH_2Cl_2/hexane). Mp 135-136°.

Joshi, B.S. *et al., Helv. Chim. Acta*, 1975, **58**, 2295 (*isol, uv, ir, pmr, cmr, ms, struct, synth*)

Cyclostellettamines C-910



Cyclostellettamine A, $x = 3, y = 3$
B, $x = 3, y = 4$
C, $x = 4, y = 4$
D, $x = 3, y = 5$
E, $x = 4, y = 5$
F, $x = 5, y = 5$
G, $x = 2, y = 3$
H, $x = 1, y = 3$
I, $x = 1, y = 4$
K, $x = 1, y = 5$
L, $x = 2, y = 5$

Muscarinic receptor binding inhibitors.

Cyclostellettamine A [156953-85-4]
$C_{34}H_{56}N_2$ 492.83
Alkaloid from the marine sponge *Stelletta maxima*. Sol. MeOH, butanol. λ_{max} 266 (MeOH) (Berdy).

Cyclostellettamine B [156953-87-6]
$C_{35}H_{58}N_2$ 506.857
From *Stelletta maxima*. Sol. MeOH, butanol. λ_{max} 268 (MeOH) (Berdy).

Cyclostellettamine C [156953-91-2]
[181212-11-3]
$C_{36}H_{60}N_2$ 520.883
From *Stelletta maxima*. Amorph. solid (EtOAc/hexane) (as bis(trifluoromethanesulfonate)). Sol. MeOH, butanol. Mp 123-124° (bis(trifluoromethanesulfonate)). λ_{max} 266 (ϵ 6320) (MeOH).

Cyclostellettamine D [156953-89-8]
$C_{36}H_{60}N_2$ 520.883
From *Stelletta maxima*. Sol. MeOH, butanol. λ_{max} 267 (MeOH) (Berdy).

7′,8′Z-Didehydro: ***Dehydrocyclostellettamine D***
[706784-72-7]
$C_{36}H_{58}N_2$ 518.868
Isol. from *Xestospongia* sp. Amorph. solid. CAS No. refers to trifluoroacetic acid salt.

Cyclostellettamine E [156953-93-4]
$C_{37}H_{62}N_2$ 534.91
From *Stelletta maxima*. Sol. MeOH, butanol. λ_{max} 268 (MeOH) (Berdy).

7′,8′Z-Didehydro: ***Dehydrocyclostellettamine E***
[706784-74-9]
$C_{37}H_{60}N_2$ 532.894
Isol. from a *Xestospongia* sp. Amorph. solid. CAS No. refers to trifluoroacetic acid salt. λ_{max} 204 (ϵ 19000); 215 (sh) (ϵ 9400); 269 (ϵ 8600); 274 (sh) (ϵ 7200) (MeOH).

Cyclostellettamine F [156953-95-6]
$C_{38}H_{64}N_2$ 548.937
From *Stelletta maxima*. Sol. MeOH, butanol. λ_{max} 267 (MeOH) (Berdy).

Cyclostellettamine G [708255-98-5]
$C_{33}H_{54}N_2$ 478.803
Isol. from a *Xestospongia* sp. and from *Pachychalina* sp. Amorph. solid. CAS No. refers to trifluoroacetic acid salt. λ_{max} 203 (ϵ 13000); 216 (sh) (ϵ 6400); 268 (ϵ 4700); 274 (sh) (ϵ 4000) (MeOH).

Cyclostellettamine H
$C_{32}H_{52}N_2$ 464.776
From *Pachychalina* sp.

Cyclostellettamine I
$C_{33}H_{54}N_2$ 478.803
From *Pachychalina* sp.

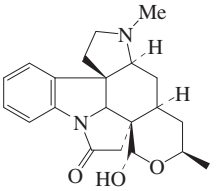
Cyclostellettamine K
$C_{34}H_{56}N_2$ 492.83
From *Pachychalina* sp.

Cyclostellettamine L
$C_{35}H_{58}N_2$ 506.857
From *Pachychalina* sp.

Fusetani, N. *et al., Tet. Lett.*, 1994, **35**, 3967-3970 (*Cyclostellettamines A-F, isol, uv, pmr, struct*)
Fusetani, N. *et al., Tetrahedron*, 1996, **52**, 10849-10860 (*synth, Cyclostellettamine C, pmr, cmr, uv*)
Wanner, M.J. *et al., Eur. J. Org. Chem.*, 1998, 889-895 (*synth*)
Matzanke, N. *et al., Org. Prep. Proced. Int.*, 1998, **30**, 3-51 (*rev*)
Baldwin, J.E. *et al., Tetrahedron*, 1998, **54**, 13655-13680 (*synth*)
Oku, N. *et al., Bioorg. Med. Chem. Lett.*, 2004, **14**, 2617-2620 (*Cyclostellettamine G, Dehydrocyclostellettamines*)
De Oliveira, J.H.H.L. *et al., J. Nat. Prod.*, 2004, **67**, 1685-1689 (*Cyclostellettamines G-L*)
Grube, A. *et al., Eur. J. Org. Chem.*, 2006, 1285-1295 (*Cyclostellettamine H, I, K, L, synth, ms*)
De Oliveira, J.H.H.L. *et al., Mar. Drugs*, 2006, **4**, 1-8 (*activity*)

Cyclostrychnine C-911

[141565-04-0]



Absolute Configuration

$C_{21}H_{26}N_2O_3$ 354.448

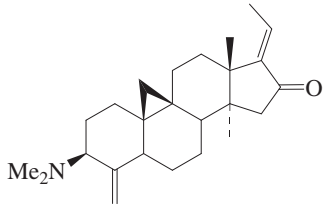
Stereochem. at two chiral centres not shown in the lit. It is prob. as shown here (and in CAS), by analogy with related alkaloids. Alkaloid from *Strychnos henningsii* (Loganiaceae). $[\alpha]_D$ -23 (c, 0.77 in $CHCl_3$). λ_{max} 207 ; 250 ; 280 ; 288 (MeOH).

Massiot, G. *et al., Phytochemistry*, 1991, **30**, 3449-3456 (*isol, uv, ir, pmr, cmr, ms, struct*)
Hayaoni, S. *et al., J.O.C.*, 2006, **71**, 5574-5585 (*synth, oxide, cryst struct*)

Cyclosuffrobuxine K C-912

3-(Dimethylamino)-14-methyl-4-methylene-9,19-cyclopregn-17(20)-en-16-one. Cyclosuffrobuxine

[7671-41-2]



$C_{25}H_{37}NO$ 367.573

Alkaloid from *Buxus microphylla* (Buxaceae). Needles (MeOH). Mp 167-172°. $[\alpha]_D$ -92 (c, 0.42 in $CHCl_3$). Possible artifact.

N-*De-Me:* ***Cyclosuffrobuxinine M***. *Cyclosuffrobuxinine*

[7759-55-9]

$C_{24}H_{35}NO$ 353.547

Alkaloid from *Buxus microphylla* (Buxaceae). Needles (Et_2O or petrol). Mp 144-149°. $[\alpha]_D$ -67 (c, 0.64 in $CHCl_3$). Note difference in nomenclature between this and its N-Me analogue (Cyclosuffrobuxinine vs. Cyclosuffrobuxine), which is presumably accidental. Poss. artifact resulting from deamination of a 20-amino compd. during isol.

4β,23-Dihydro: ***Cyclobuxosuffrine K***. *Cyclobuxosuffrine*

[10088-22-9]

$C_{25}H_{39}NO$ 369.589

Alkaloid from *Buxus microphylla* (Buxaceae). Needles (EtOH). Mp 201-204°. $[\alpha]_D$ -62 (c, 0.52 in $CHCl_3$). Poss. an artifact.

17Z-Isomer, N-*de-Me:* **trans-*Cyclosuffrobuxinine M***

[38774-68-4]

$C_{24}H_{35}NO$ 353.547

Alkaloid from *Buxus sempervirens* and *Buxus longifolia* (Buxaceae). $[\alpha]_D$ -47 ($CHCl_3$). Possible artifact.

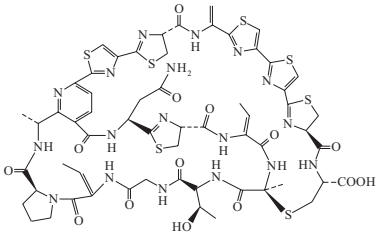
Nakano, T. *et al., J.C.S.(C)*, 1966, 1412-1421 (*Cyclosuffrobuxine K, Cyclosuffrobuxinine M*)

Votický, Z. *et al., Chem. Zvesti*, 1972, **26**, 376-380 (*trans-Cyclosuffrobuxinine M*)

Atta-ur-Rahman, *et al., J. Nat. Prod.*, 1997, **60**, 976-981 (*trans-Cyclosuffrobuxinine M*)

Cyclothiazomycin C-913

[133352-26-8]



$C_{59}H_{64}N_{18}O_{14}S_7$ 1473.729

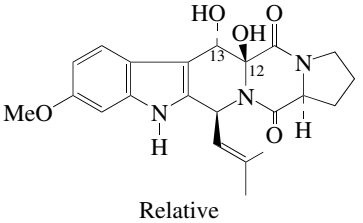
Cyclic peptide antibiotic. Prod. by a *Streptomyces* sp. Renin inhibitor. Light-brown amorph. powder. Sol. H_2O; fairly sol. MeOH, DMSO; poorly sol. Me_2CO, hexane. Mp 210° dec. $[\alpha]_D^{26}$ +46 (c, 0.69 in H_2O). λ_{max} 222 (ε 8700); 270 (ε 4100); 284 (sh); 300 (sh); 320 (sh) (MeOH) (Derep).

Aoki, M. *et al., J. Antibiot.*, 1991, **44**, 582 (*isol, pmr, cmr, ir, uv, props*)

Aoki, M. *et al., Tet. Lett.*, 1991, **32**, 217; 221 (*struct*)

Cyclotryprostatin A C-914

[111468-06-5]



Relative Configuration

$C_{22}H_{25}N_3O_5$ 411.457

Prod. by *Aspergillus fumigatus* BM939. Mammalian cell cycle inhibitor; microtubule polymerisation inhibitor. Pale yellow cryst. powder. Mp 180-185° dec. $[\alpha]_D^{23}$ +104.3 (c, 0.07 in $CHCl_3$). Closely related to Fumitremorgin C, F-190. λ_{max} 226 (ε 27660); 259 (ε 7230); 265 (sh) (ε 6860); 294 (ε 7070); 303 (sh) (ε 5510) (MeOH).

13-Me ether: ***Cyclotryprostatin B***

[184305-67-7]

$C_{23}H_{27}N_3O_5$ 425.483

From *Aspergillus fumigatus* BM939. Mammalian cell cycle inhibitor; microtubule polymerisation inhibitor. Pale yellow cryst. Mp 159-165° dec. $[\alpha]_D^{24}$ +95.7 (c, 0.36 in $CHCl_3$). λ_{max} 224 (ε 41690); 262 (ε 7180); 267 (ε 7180); 295 (ε 8290); 303 (sh) (ε 6590) (MeOH).

Demethoxy, 12-epimer: ***Cyclotryprostatin C***

[111427-97-5]

$C_{21}H_{23}N_3O_4$ 381.43

From *Aspergillus fumigatus* BM939. Mammalian cell cycle inhibitor; microtubule polymerisation inhibitor. Needles. Mp 221-223° dec. $[\alpha]_D^{25}$ +23.4 (c, 1.0 in $CHCl_3$). λ_{max} 224 (ε 19680); 272 (ε 6570); 280 (sh) (ε 6325); 290 (sh) (ε 5220) (MeOH).

Demethoxy, 12-epimer, 13-ketone: ***Cyclotryprostatin D***

[184305-68-8]

$C_{21}H_{21}N_3O_4$ 379.415

From *Aspergillus fumigatus* BM939. Mammalian cell cycle inhibitor. Pale yellow amorph. powder. $[\alpha]_D^{26}$ +88 (c, 0.10 in $CHCl_3$). λ_{max} 216 (ε 18290); 240 (sh) (ε 12320); 247 (ε 15310); 264 (ε 9720); 267 (sh) (ε 9570); 301 (ε 8550) (MeOH).

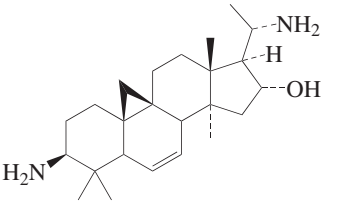
Cui, C.-B. *et al., Tetrahedron*, 1997, **53**, 59-72 (*isol, uv, ir, pmr, cmr, ms, struct*)

Kondoh, M. *et al., J. Antibiot.*, 1998, **51**, 801-804 (*activity*)

Afiyatullov, S.S. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2004, **40**, 615-617 (*isol, pmr, cmr*)

Cyclovirobuxeine I C-915

3,20-Diamino-4,4,14-trimethyl-9,19-cyclopregn-6-en-16-ol, 9CI



$C_{24}H_{40}N_2O$ 372.593

The suffix letter in *Buxus* alkaloids systematically designates the *N*-subn. pattern. The parent compd., Cyclovirobuxeine I, is unknown.

N^3,N^3,N^{20}-*Tri-Me:* ***Cyclovirobuxeine B***

[5672-25-3]

$C_{27}H_{46}N_2O$ 414.673

Alkaloid from *Buxus malayana* and *Buxus sempervirens* (Buxaceae). Mp 203° (198-200 dec.). $[\alpha]_D$ -75 (c, 1 in $CHCl_3$).

N^3,N^3,N^{20}-*Tri-Me,* N^{20}-*formyl:* **N-*Formylcyclovirobuxeine B***. N-*Formylcyclovirobuxine B (incorr.), 9CI*

[30416-90-1]

$C_{28}H_{46}N_2O_2$ 442.684

Alkaloid from *Buxus malayana* (Buxaceae). Cryst. (Me_2CO). Mp 290°. $[\alpha]_D$ -157. Mol. formula incorrectly given as $C_{28}H_{48}N_2O_2$ in the paper. Reported pmr spectrum shows olefinic protons.

N^3,N^3,N^{20}-*Tri-Me,* N,O-*Di-Ac:* Mp 172°. $[\alpha]_D$ -153 (c, 1 in $CHCl_3$).

N^3,N^3,N^{20}-*Tri-Me,* O-*tigloyl:* **O-*Tigloylcyclovirobuxeine B***

[16974-75-7]

$C_{32}H_{52}N_2O_2$ 496.775

Alkaloid from *Buxus sempervirens* (Buxaceae). Mp 178-183°. $[\alpha]_D^{27}$ -150 (c, 1.03 in $CHCl_3$).

N^3,N^3,N^{20}-*Tri-Me,* O-*(4-hydroxycinnamoyl):* ***Cyclomalayanine***. *Cyclomalayanine B*

$C_{36}H_{52}N_2O_3$ 560.818

Alkaloid from *Buxus malayana* (Buxaceae). Mp 170°. $[\alpha]_D$ -61 (c, 1 in $CHCl_3$).

N-*Tetra-Me:* ***Cyclovirobuxeine A***

[7727-91-5]

$C_{28}H_{48}N_2O$ 428.7

Alkaloid from *Buxus malayana* and *Buxus sempervirens* (Buxaceae). Needles or prisms (Me_2CO). Mp 220°. $[\alpha]_D$ -87 (c, 1.0 in $CHCl_3$).

Khuong-Huu-Lainé, F. *et al., Bull. Soc. Chim. Fr.*, 1966, 758-762 (*Cyclovirobuxeines A,B, isol, struct, pmr, ms*)

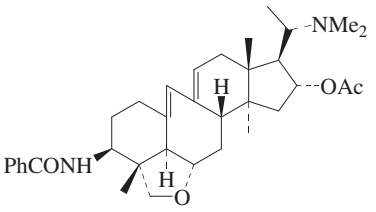
Kupchan, S.M. *et al., J.O.C.*, 1966, **31**, 608-610 (*isol, struct, Cyclovirobuxeine B*)

Khuong-Huu-Laine, F. *et al., Ann. Pharm. Fr.*, 1970, **28**, 211-222 (*N-Formylcyclovirobuxeine B, isol, ir, ms, pmr*)

Sangare, M. *et al., Tet. Lett.*, 1975, 1791-1794 (*cmr*)

Cyclovirobuxeine F C-916

[194852-52-3]



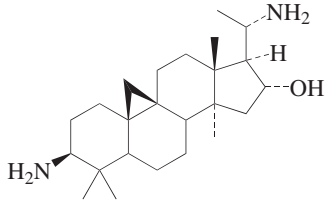
$C_{35}H_{48}N_2O_4$ 560.775

Alkaloid from the leaves of *Buxus longifolia* (Buxaceae). Amorph. solid. $[\alpha]_D^{22}$ +7 (c, 0.1 in $CHCl_3$). λ_{max} 230 (log ϵ 4.31); 238 (log ϵ 4.32); 246 (log ϵ 4.4); 254 (log ϵ 4.35) (MeOH).

Atta-ur-Rahman, *et al., J. Nat. Prod.*, 1997, **60**, 976-981 (*isol, uv, ir, pmr, cmr, ms*)

Cyclovirobuxine I C-917

3,20-Diamino-4,4,14-trimethyl-9,19-cyclopregnan-16-ol, 9CI



$C_{24}H_{42}N_2O$ 374.609

The suffix letter in *Buxus* alkaloids systematically designates the *N*-subn. pattern. The parent compd., Cyclovirobuxine I, is unknown.

N^3,N^{20}-*Di-Me:* ***Cyclovirobuxine D***. *Bebuxine*
[860-29-7]
$C_{26}H_{46}N_2O$ 402.662
Alkaloid from *Buxus wallichiana*, *Buxus sempervirens argentea*, *Buxus sempervirens* and *Buxus microphylla* (Buxaceae). Antiarrhythmic agent. Mp 205-210° Mp 221°.

N^3,N^{20}-*Di-Me,* N^3,N^{20},O-*tri-Ac:* Mp 231°.

N^3,N^{20}-*Di-Me,* O-*(3-hydroxy-4-methoxybenzoyl):* **O-*Vanilloylcyclovirobuxine D***
[31687-96-4]
$C_{34}H_{52}N_2O_4$ 552.796
Alkaloid from *Buxus malayana* (Buxaceae). Cryst. (EtOAc). Mp 210°. $[\alpha]_D$ 0 ($CHCl_3$). Incorr. referred to as *O*-Vanilloylcyclovirobuxeine D in the paper.

N^{20},N^{20}-*Di-Me:* ***Cyclovirobuxine F***
[100676-13-9]
$C_{26}H_{46}N_2O$ 402.662
Alkaloid from *Buxus sempervirens* (Buxaceae). Mp 224-226°. $[\alpha]_D$ +52.71 (c, 0.7 in $CHCl_3$).

N^3,N^{20},N^{20}-*Tri-Me:* ***Cyclovirobuxine C***
[30276-35-8]
$C_{27}H_{48}N_2O$ 416.689
Alkaloid from *Buxus malayana*, *Buxus microphylla* and *Buxus sempervirens* (Buxaceae). Mp 201°. $[\alpha]_D$ +65 ($CHCl_3$).

N^3,N^{20},N^{20}-*Tri-Me,* N^3-*Ac:* [30276-39-2]
Mp 216°. $[\alpha]_D$ -7 ($CHCl_3$).

N^3,N^3,N^{20},N^{20}-*Tetra-Me: Cyclovirobuxine A*. N,N′-*Dimethylcyclovirobuxine D*
Semisynthetic. Needles (Me_2CO). Mp 241-242°.

N^3-*Isopropylidene,* N^{20},N^{20}-*di-Me:* ***Buxmicrophylline A***
[188948-30-3]
$C_{29}H_{50}N_2O$ 442.727
Alkaloid from *Buxus microphylla* (Buxaceae). Mp 215-217°. $[\alpha]_D^{23}$ +53.1 (c, 0.73 in $CHCl_3$).

Me ether, N^3,N^{20}-*di-Me:* **O-*Methylcyclovirobuxine D***
[108195-58-0]
$C_{27}H_{48}N_2O$ 416.689
Alkaloid from *Buxus sempervirens* (Buxaceae). Cryst. (EtOH). Mp 231-233°. $[\alpha]_D$ +83.52 (c, 0.903 in $CHCl_3$).

1,2-Didehydro, N^3,N^3,N^{20}-*tri-Me:* ***Buxasamarine***
[194852-54-5]
$C_{27}H_{46}N_2O$ 414.673
Alkaloid from the leaves of *Buxus longifolia* (Buxaceae). Amorph. solid. $[\alpha]_D^{22}$ +23 (c, 0.1 in $CHCl_3$).

6,7-Didehydro: see Cyclovirobuxeine I, C-915

11-Oxo, N^{20},N^{20}-*di-Me,* N^3-*benzoyl: Buxarine F.* ***Buxarine***
[11011-80-6]
$C_{33}H_{48}N_2O_3$ 520.754
Struct. not certain. Alkaloid from *Buxus sempervirens* (Buxaceae). Prisms (Me_2CO). Mp 210-212°. $[\alpha]_D$ +98 ($CHCl_3$).

11-Oxo, N^{20},N^{20}-*di-Me,* N^3-*benzoyl, dihydrochloride:* Mp 257-260°.

3-Epimer, N-*tetra-Me:*Semisynthetic. Cryst. (Me_2CO). Mp 300°. $[\alpha]_D$ +50 (c, 2.22 in $CHCl_3$). Presumed 3α-epimer of Cyclovirobuxine A. Attempted interconversion was unsuccessful.

3-Epimer, 11,12-didehydro: 3,20-Diamino-4,4,14-trimethyl-9,19-cyclopregn-11-en-16-ol. Cyclokoreanine A
$C_{24}H_{40}N_2O$ 372.593
Unknown as nat. prod.

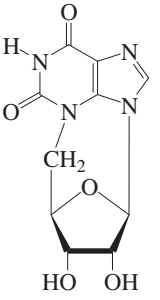
3-Epimer, 11,12-didehydro, N^3,N^3,N^{20}-*tri-Me:* ***Cyclokoreanine B***
[10413-97-5]
$C_{27}H_{46}N_2O$ 414.673
Alkaloid from *Buxus koreana* and *Buxus microphylla* var. *sinica* (Buxaceae). Mp 235-236°. $[\alpha]_D$ +109 (c, 1.65 in $CHCl_3$). Struct. not conclusively proven. Unusual 3α- config. for *Buxus* alkaloid.

3-Epimer, 11,12-didehydro, N-*tetra-Me:* N-*Methylcyclokoreanine B*
[10283-44-0]
$C_{28}H_{48}N_2O$ 428.7
Semisynthetic. Cryst. (Me_2CO). Mp 240-241°. $[\alpha]_D$ +92 (c, 0.85 in $CHCl_3$).

Nakano, T. *et al., J.C.S.(C)*, 1966, 1805-1810 (*synth, Cyclokoreanine B*)
Döpke, W. *et al., Pharmazie*, 1966, **21**, 643; *CA*, **66**, 65668f (*Buxarine F*)
Khuong-Huu, F. *et al., Ann. Pharm. Fr.*, 1970, **28**, 211-222 (*Buxus malayana constits*)
Vassová, A. *et al., Pharmazie*, 1970, **25**, 363-365; *CA*, 1970, **73**, 127748n (*Cyclovirobuxine D*)
Bauerová, O. *et al., Pharmazie*, 1973, **28**, 212-214 (*Cyclokoreanine B*)
Voticky, Z. *et al., Coll. Czech. Chem. Comm.*, 1975, **40**, 3055-3060 (*Cyclovirobuxine C*)
Abramson, D. *et al., Phytochemistry*, 1977, **16**, 1935-1937 (*biosynth*)
Khodzaev, B.U. *et al., Khim. Prir. Soedin.*, 1980, **16**, 130-131 (*Cyclovirobuxine D*)
Hu, S. *et al., CA*, 1981, **95**, 108438z (*pharmacol*)
Khodzhaev, B.U. *et al., Khim. Prir. Soedin.*, 1985, **21**, 718-719; 1986, **22**, 799; *Chem. Nat. Compd. (Engl. Transl.)*, 1985, **21**, 679-680; 1986, **22**, 743-744 (*Cyclovirobuxine F, O-Methylcyclovirobuxine-D*)
Du, J. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 1996, **38**, 483-488; *CA*, **126**, 274768k (*Buxmicrophylline A, cryst struct*)
Atta-ur-Rahman, *et al., J. Nat. Prod.*, 1997, **60**, 976-981 (*Buxasamarine*)
Liu, H.-F. *et al., Acta Cryst. E*, 2006, **62**, o4517-o4518 (*synth*)

3,5′-Cycloxanthosine C-918

[10380-93-5]



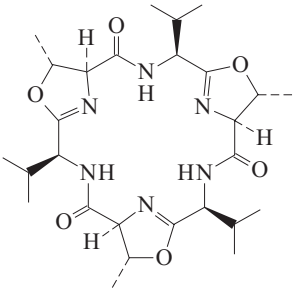
$C_{10}H_{10}N_4O_5$ 266.213

Alkaloid from the marine sponge *Erylus* sp. Cryst. (H_2O). Mp 310-314°. $[\alpha]_D$ -18 (c, 0.02 in DMSO). λ_{max} 236 (log ϵ 3.91); 266 (log ϵ 3.99) (H_2O).

Hampton, A. *et al., J.O.C.*, 1967, **32**, 1688-1691 (*synth*)
Chen, G.S. *et al., Nucleosides Nucleotides*, 2004, **23**, 347-359 (*synth*)
Capon, R.J. *et al., J. Nat. Prod.*, 2005, **68**, 1689-1691 (*isol, pmr, cmr, ms*)

Cycloxazoline C-919

Trisoxazoline. Westiellamide
[131998-54-4]

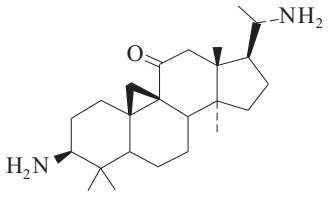


$C_{27}H_{42}N_6O_6$ 546.665
Isol. from the ascidian *Lissoclinum bistratum* and *Westiellopsis prolifica*. Cytotoxic. Amorph. $[\alpha]_D$ +30 (c, 0.1 in MeOH).

Prinsep, M.R. *et al., J. Nat. Prod.*, 1992, **55**, 140-142 (*isol, pmr, cmr, struct*)
Hambley, T.W. *et al., Tetrahedron*, 1992, **48**, 341-348 (*isol, pmr, cmr, struct*)
Wipf, P. *et al., Tetrahedron*, 2000, **56**, 9143-9150 (*synth*)

Cycloxobuxine I C-920

3,20-Diamino-4,4,14-trimethyl-9,19-cyclopregnan-11-one



$C_{24}H_{40}N_2O$ 372.593
The suffix letter in *Buxus* alkaloids unambiguously designates the *N*-subn. pattern. The parent compd., Cycloxobuxine I, is unknown.

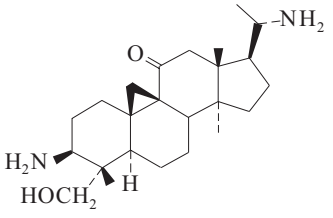
N^{20},N^{20}-*Di-Me,* N^3-*(2-methylpropanoyl):* **N^3-*Isobutyrylcycloxobuxine F*.** *Baleabuxine*
[2988-97-8]
$C_{30}H_{50}N_2O_2$ 470.737
Alkaloid from leaves of *Buxus balearica* (Buxaceae). Hemihydrate. Mp 258-259°. $[\alpha]_D$ +115 ($CHCl_3$).

N^{20},N^{20}-*Di-Me,* N^3-*benzoyl:* **N^3-*Benzoylcycloxobuxine F*.** *Buxatine*
[16974-67-7]
$C_{33}H_{48}N_2O_2$ 504.754
Alkaloid from *Buxus sempervirens* (Buxaceae). Needles (Me_2CO). Mp 214-217° dec. $[\alpha]_D^{24}$ +112 (c, 0.2 in $CHCl_3$) (+90).

Herlem-Gaulier, D. *et al., Bull. Soc. Chim. Fr.*, 1965, 657-668; 1966, 3478-3486 (*Baleabuxine*)
Döpke, W. *et al., Naturwissenschaften*, 1967, **54**, 249; *CA*, **67**, 82292s (*Buxatine*)
Kupchan, S.M. *et al., Tetrahedron*, 1967, **23**, 4563-4586 (N^3-*Benzoylcyclobuxine F, isol, pmr*)

Cycloxobuxoline I C-921

3,20-Diamino-28-hydroxy-4,4,14-trimethyl-9,19-cyclopregnan-11-one



$C_{24}H_{40}N_2O_2$ 388.592
In *Buxus* alkaloids the suffix letter unambiguously designates the subsn. pattern. The parent compd., Cycloxobuxoline I, is unknown.

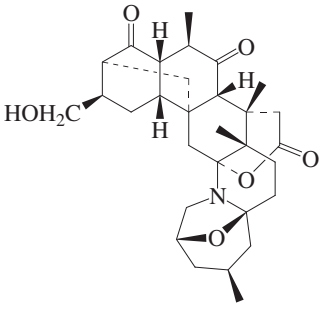
N^{20},N^{20}-*Di-Me,* N^3-*benzoyl:* **N-*Benzoylcycloxobuxoline F***
$C_{33}H_{48}N_2O_3$ 520.754
Alkaloid from *Buxus sempervirens* (Buxaceae). Cryst. (Me_2CO). Mp 255-256°. $[\alpha]_D^{27}$ +76 (c, 0.84 in $CHCl_3$).

N^{20},N^{20}-*Di-Me,* N^3-*benzoyl,* O-*Ac:* **N-*Benzoyl*-O-*acetylcycloxobuxoline F***
[16974-76-8]
$C_{35}H_{50}N_2O_4$ 562.791
Alkaloid from *Buxus sempervirens* (Buxaceae). Mp 216-218°. $[\alpha]_D^{29}$ +114 (c, 1.0 in $CHCl_3$).

Kupchan, S.M. *et al., Tetrahedron*, 1967, **23**, 4563 (*isol, pmr*)
Sangare, M. *et al., Tet. Lett.*, 1975, 1791 (*config*)

Cyclozoanthamine C-922

[159509-35-0]



$C_{30}H_{41}NO_6$ 511.657
The abs. config. is prob. as shown, by analogy with Norzoanthamine, N-317. Alkaloid from *Zoanthus* sp. Cytotoxic agent. Oil.

Japan. Pat., 1994, 94 199 867; *CA*, **122**, 9777d
Fukuzawa, S. *et al., Heterocycl. Commun.*, 1995, **1**, 207-214

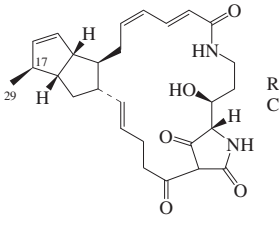
Cygnine C-923

$C_{19}H_{22}N_2O_3$ 326.394
Struct. unknown. MF given in abstract is $C_{10}H_{22}N_2O_3$ - this is prob. incorr. (see Cannon, J.R. *et al.*, *Aust. J. Chem*, 1982, **35**, 1497-1500). Alkaloid from *Gastrolobium calycinum* (Fabaceae).

Mann, E.A. *et al., Proc. R. Soc. London, B*, 1907, **79**, 485-491 (*isol*)

Cylindramide C-924

[147362-39-8]



$C_{27}H_{34}N_2O_5$ 466.576
Tetramic acid antibiotic. Shows enol tautomerism over the dioxopyrrolidinecarbonyl system. Isol. from the sponge *Halichondria cylindrata*. Cytotoxic agent. Wax. $[\alpha]_D^{25}$ +167 (c, 0.4 in MeOH). λ_{max} 265 (ϵ 22000) (MeOH).

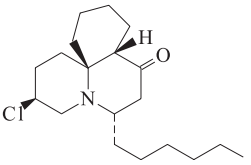
17,29-Didehydro, Mg salt (2:1): ***Geodin A***
$C_{54}H_{62}MgN_4O_{10}$ 951.41
Isol. from the sponge *Geodia* sp. Nematocide. Amorph. solid. Mp 173° dec. $[\alpha]_D^{20}$ +179 (c, 1 in DMSO). Stereochem. not fully determined. Mg coordinated to the dioxopyrrolidinecarbonyl chromophore with charge/bond delocalisation. λ_{max} 264 (ϵ 19100) (DMSO).

[153175-60-1]

Kanazawa, S. *et al., Tet. Lett.*, 1993, **34**, 1065-1068 (*isol, pmr, cmr*)
Capon, R.J. *et al., J. Nat. Prod.*, 1999, **62**, 1256-1259 (*Geodin A*)
Cramer, N. *et al., Chem. Eur. J.*, 2006, **12**, 2488-2503 (*synth, pmr, cmr*)
Hart, A.C. *et al., J.A.C.S.*, 2006, **128**, 1094-1095 (*synth*)

Cylindricine B C-925

[152273-68-2]

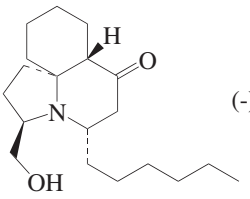


Relative configuration

$C_{19}H_{32}ClNO$ 325.921
Alkaloid from the ascidian *Clavelina cylindrica*. Light yellow oil.

Blackman, A.J. *et al., Tetrahedron*, 1993, **49**, 8645-8656 (*isol, pmr, cmr, ms, cryst struct*)
Liu, J.F. *et al., J.O.C.*, 1999, **64**, 8263-8266 (*synth*)

Cylindricine C C-926



(-)-*form*

$C_{19}H_{33}NO_2$ 307.475

(-)-*form* [156953-77-4]
Alkaloid from the ascidian *Clavelina cylindrica*. Light yellow oil.

1′-Ac: ***Cylindricine E***
[156953-79-6]
$C_{21}H_{35}NO_3$ 349.512
From *Clavelina cylindrica*. Light yellow oil.

Me ether: ***Cylindricine D***
[156953-78-5]
$C_{20}H_{35}NO_2$ 321.502

From *Clavelina cylindrica*. Light yellow oil.

1′-Deoxy, 1′-thiocyanato: ***Cylindricine F***
[156953-80-9]
$C_{20}H_{32}N_2OS$ 348.552
Alkaloid from the ascidian *Clavelina cylindrica*. Light yellow oil.

1′-Deoxy, 1′-chloro: ***Cylindricine A***
[152273-89-7]
$C_{19}H_{32}ClNO$ 325.921
Alkaloid from the ascidian *Clavelina cylindrica*. Light yellow oil.

7-Deoxo, 10-oxo, 8,9-didehydro, 1′-deoxy, 1′-chloro: ***Cylindricine K***
[164740-28-7]
$C_{19}H_{30}ClNO$ 323.905
Alkaloid from the ascidian *Clavelina cylindrica*. Light yellow oil.

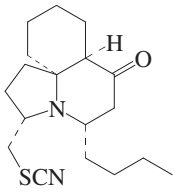
(+)-*form*

Deoxo: ***Lepadiformine A***
[155944-27-7]
$C_{19}H_{35}NO$ 293.492
Alkaloid from the ascidians *Clavelina lepadiformis* and *Clavelina moluccensis*. Exhibits moderate cytotoxicity. Oil. $[\alpha]_D^{28}$ -15 (c, 0.37 in MeOH) (synthetic). Struct. revised in 2002. λ_{max} 206 (log ϵ 2.74); 310 (log ϵ 1.56) (EtOH).

Blackman, A.J. *et al., Tetrahedron*, 1993, **49**, 8645-8656 (*Cylindricine A, isol, pmr, cmr, ms, cryst struct*)
Li, C. *et al., Aust. J. Chem.*, 1994, **47**, 1355-1361; 1995, **48**, 955-965 (*Cylindricines C-F and K*)
Biard, J.F. *et al., Tet. Lett.*, 1994, **35**, 2691-2694 (*Lepadiformine A*)
Snider, B.B. *et al., J.O.C.*, 1997, **62**, 5630-5633 (*Cylindricines, synth*)
Werner, K.M. *et al., J.O.C.*, 1999, **64**, 686-687 (*synth*)
Molander, G.A. *et al., J.O.C.*, 1999, **64**, 5183-5187 (*Cylindricine C, synth*)
Liu, J.F. *et al., J.O.C.*, 1999, **64**, 8263-8266 (*Cylindricine A, synth*)
Greshock, T.J. *et al., Org. Lett.*, 2001, **3**, 3511-3514 (*synth*)
Sun, P. *et al., J.O.C.*, 2002, **67**, 4337-4345 (*synth, abs config*)
Kibayashi, C. *et al., Bull. Chem. Soc. Jpn.*, 2003, **76**, 2059-2074 (*synth, abs config*)
Trost, B.M. *et al., Org. Lett.*, 2003, **5**, 4599-4602 (*synth*)
Canesi, S. *et al., Angew. Chem., Int. Ed.*, 2004, **43**, 4336-4338 (*synth*)
Arai, T. *et al., Tet. Lett.*, 2004, **45**, 5921-5924 (*synth*)
Abe, H. *et al., J.A.C.S.*, 2005, **127**, 1473-1480 (*synth, abs config*)
Wang, J. *et al., Heterocycles*, 2006, **70**, 423-459 (*synth*)
Sauviat, M.-P. *et al., J. Nat. Prod.*, 2006, **69**, 558-562 (*isol, pmr, cmr, activity*)
Lee, M. *et al., Org. Lett.*, 2006, **8**, 745-748 (*synth*)
Swidorski, J.J. *et al., Org. Lett.*, 2006, **8**, 777-780 (*synth, abs config, bibl*)
Šchär, P. *et al., Org. Lett.*, 2006, **8**, 1569-1571 (*synth*)
Caldwell, J.J. *et al., Angew. Chem., Int. Ed.*, 2007, **46**, 2631-2634 (*synth*)
Mihara, H. *et al., Heterocycles*, 2007, **72**, 421-438 (*Cylindricine C, synth*)
Lygo, B. *et al., Org. Biomol. Chem.*, 2008, **6**, 3085-3090 (*Lepadiformine A, synth*)
Flick, A.C. *et al., Org. Lett.*, 2008, **10**, 1871-1874 (*Cylindricine C, synth*)

Cylindricine G C-927

[156953-81-0]



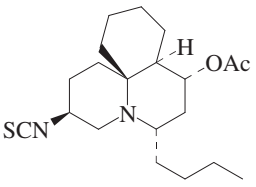
Relative Configuration

$C_{18}H_{28}N_2OS$ 320.498
Abs. config. not determined, but redrawn here to correspond with Lepadiformine A in C-926. Alkaloid from the ascidian *Clavelina cylindrica*. Light yellow oil.

Li, C. *et al., Aust. J. Chem.*, 1994, **47**, 1355-1361 (*isol, pmr, cmr, ms, struct*)

Cylindricine J C-928

[164740-27-6]

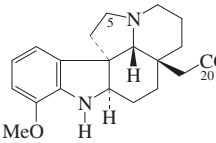


$C_{20}H_{32}N_2O_2S$ 364.551
Alkaloid from the ascidian *Clavelina cylindrica*. Oil.

Thiocyanate: [404850-27-7]
$C_{20}H_{32}N_2O_2S$ 364.551
Alkaloid from the stems of *Indigofera longeracemosa*. Cryst. (CH_2Cl_2/MeOH). Mp 181-182°. $[\alpha]_D$ -52.7 (c, 0.31 in $CHCl_3$). Has -SCN replacing -NCS. λ_{max} 218 (log ϵ 2.8); 229 (log ϵ 2.96); 247 (log ϵ 3.29); 258 (log ϵ 3.37) (MeOH).

Li, C. *et al., Aust. J. Chem.*, 1995, **48**, 955-965 (*isol, ir, pmr, cmr, ms*)
Thangadurai, D. *et al., Nat. Prod. Lett.*, 2001, **15**, 287-290 (*thiocyanate*)

Cylindrocarine C-929



(-)-*form*

$C_{21}H_{28}N_2O_3$ 356.464

(-)-*form* [22222-79-3]
Alkaloid from *Aspidosperma cylindrocarpon* (Apocynaceae). Mp 204-205°. $[\alpha]_D^{20}$ -280 (c, 0.0025 in MeOH).

N-*Formyl:* **N-*Formylcylindrocarine***
[22222-81-7]
$C_{22}H_{28}N_2O_4$ 384.474
Alkaloid from *Aspidosperma cylindrocarpon* (Apocynaceae). Mp 161-162°. $[\alpha]_D^{20}$ -140 (c, 0.01 in MeOH).

N-*Ac:* ***Cylindrocarpidine***
[6858-95-3]
$C_{23}H_{30}N_2O_4$ 398.501
Alkaloid from *Aspidosperma cylindrocarpon* (Apocynaceae). Mp 120-121.5°. $[\alpha]_D^{27}$ -122 (c, 0.72 in $CHCl_3$).

N-*Propanoyl:* ***Homocylindrocarpidine***
[17391-26-3]
$C_{24}H_{32}N_2O_4$ 412.528
Alkaloid from *Tabernaemontana amygdalaefolia* (Apocynaceae). $Bp_{0.001}$ 120°. $[\alpha]_D^{30}$ -82 (c, 1.7 in $CHCl_3$).

N-*Benzoyl:* **N^1-*Benzoylcylindrocarine***
[22222-82-8]
$C_{28}H_{32}N_2O_4$ 460.572
Alkaloid in *Aspidosperma cylindrocarpon* (Apocynaceae). Noncryst. $[\alpha]_D^{20}$ -131 (c, 0.075 in MeOH).

N-*Cinnamoyl:* ***Cylindrocarpine***
[6793-70-0]
[58581-12-7]
$C_{30}H_{34}N_2O_4$ 486.61
Alkaloid from *Aspidosperma cylindrocarpon* (Apocynaceae). Mp 168-169°. $[\alpha]_D^{21}$ -181 (c, 0.4 in $CHCl_3$).

N-*Me:* **N^1-*Methylcylindrocarine***
[22226-36-4]
$C_{22}H_{30}N_2O_3$ 370.491
Alkaloid from *Aspidosperma cylindrocarpon*. Noncryst. $[\alpha]_D^{20}$ -110 (c, 0.001 in MeOH).

5-Oxo, N-*Ac:* ***5-Oxocylindrocarpidine***. *10-Oxocylindrocarpidine*
[16531-05-8]
$C_{23}H_{28}N_2O_5$ 412.485
Alkaloid from *Tabernaemontana amygdalaefolia* (Apocynaceae). Mp 217-218° (213°). $[\alpha]_D^{30}$ -64 (c, 0.38 in $CHCl_3$) (-39).

Demethoxy, N^1-*Ac:* ***Demethoxycylindrocarpidine***. N-*Acetyldemethoxycylindrocarine*
[17391-27-4]
$C_{22}H_{28}N_2O_3$ 368.475
Alkaloid from *Tabernaemontana amygdalaefolia* (Apocynaceae). $Bp_{0.001}$ 120°. $[\alpha]_D^{30}$ -49 ($CHCl_3$).

20ξ-Hydroxy: ***20-Hydroxycylindrocarine***
[22222-83-9]
$C_{21}H_{28}N_2O_4$ 372.463
Alkaloid from *Aspidosperma cylindrocarpon* (Apocynaceae). Noncryst. $[\alpha]_D^{20}$ -300 (c, 0.004 in MeOH).

20ξ-Hydroxy, N-*formyl:* **N-*Formyl-20-hydroxycylindrocarine***
[22226-30-8]
$C_{22}H_{28}N_2O_5$ 400.474
Alkaloid from *Aspidosperma cylindrocarpon* (Apocynaceae). Noncryst. $[\alpha]_D^{20}$ -250 (c, 0.002 in MeOH).

20ξ-Hydroxy, N-*Ac:* **N-*Acetyl-20-hydroxycylindrocarine***
[22226-31-9]
$C_{23}H_{30}N_2O_5$ 414.5
Alkaloid from *Aspidosperma cylindrocarpon* (Apocynaceae). Cubes (MeOH). Mp 207-210°. $[\alpha]_D^{20}$ -400 (c, 0.005 in MeOH).

20ξ-Hydroxy, N-*benzoyl:* **N-*Benzoyl-20-hydroxycylindrocarine***
[23334-95-4]
$C_{28}H_{32}N_2O_5$ 476.571
Alkaloid from *Aspidosperma cylindrocarpon* (Apocynaceae). Cubes (MeOH).

$[\alpha]_D^{20}$ -150 (c, 0.013 in MeOH).

20ξ-Hydroxy, N-*cinnamoyl:* **N-*Cinnamoyl-20-hydroxycylindrocarine***
[22226-29-5]
$C_{30}H_{34}N_2O_5$ 502.609
Alkaloid from *Aspidosperma cylindrocarpon* (Apocynaceae). Needles (MeOH). Mp 123-124°. $[\alpha]_D^{20}$ -384 (c, 0.0042 in MeOH).

20ξ-Hydroxy, N-*(3-phenylpropanoyl):* **N-*Dihydrocinnamoyl-20-hydroxycylindrocarine***
[22344-67-8]
$C_{30}H_{36}N_2O_5$ 504.625
Alkaloid from *Aspidosperma cylindrocarpon* (Apocynaceae). Noncryst. $[\alpha]_D^{20}$ -278 (c, 0.0057 in MeOH).

(±)-*form* [58566-52-2]
Synthetic. Noncryst.

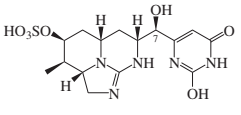
N-*Ac:* [58566-53-3]
Synthetic. Mp 178-179°.

Demethoxy, N^1-*Ac:* **(±)-*Demethoxycyclindrocarpidine***
Alkaloid from *Aspidosperma cylindrocarpon* (Apocynaceae). Needles. Mp 160-162°.

Achenbach, H. *et al., Tet. Lett.*, 1967, 1793 (*5-Oxocylindrocarpidine*)
Achenbach, H. *et al., Z. Naturforsch., B*, 1967, **22**, 955 (*derivs*)
Milborrow, B.V. *et al., J.C.S.(C)*, 1969, 417 (*isol, uv, ir, ms, pmr, struct, Cylindrocarine, 20-Hydroxycylindrocarine derivs, N-Acetyldemethoxycylindrocarine*)
Gebreyesus, T. *et al., J.C.S. Perkin 1*, 1972, 849 (*5-Oxocyclindrocarpidine*)
Lawson, G. *et al., Tetrahedron*, 1977, **33**, 1641 (*synth*)

Cylindrospermopsin C-930

[143545-90-8]



Absolute Configuration

$C_{15}H_{21}N_5O_7S$ 415.426
Exists as prototropic zwitterion. C-7 config. revised in 2001. Alkaloid from the cyanobacteria *Aphanizomenon ovalisporum*, *Cylindrospermopsis raciborskii* and *Umezikia natans*. Potent hepatotoxin, glutathione synthesis inhibitor. Off-white microcryst. $[\alpha]_D$ -31 (c, 0.1 in H_2O). λ_{max} 262 (ϵ 5800); 290 (sh) (ϵ 2100) (H_2O) (Derep).
► LD_{50} (mus, ipr) 0.2 mg/kg, LD_{50} (mus, ipr) 2.1 mg/kg.

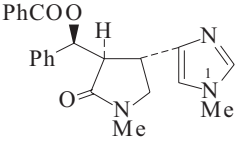
7-Deoxy: ***7-Deoxycylindrospermopsin***
[221554-69-4]
$C_{15}H_{21}N_5O_6S$ 399.427
Alkaloid from *Cylindrospermopsis raciborskii*.

7-Epimer: ***7-Epicylindrospermopsin***
[265652-18-4]
$C_{15}H_{21}N_5O_7S$ 415.426
Alkaloid from *Aphanizomenon ovalisporum*. Hepatotoxin. Amorph. solid. $[\alpha]_D^{25}$ -20.5 (c, 0.06 in H_2O).

Ohtani, I. *et al., J.A.C.S.*, 1992, **114**, 7941-7942 (*isol, uv, pmr, cmr, ms*)
Norris, R.L. *et al., Environ. Toxicol.*, 1999, **14**, 163-165 (*7-Deoxycylindrospermopsin*)
Banker, R. *et al., J. Nat. Prod.*, 2000, **63**, 387-389 (*7-epimer*)
Xie, C. *et al., J.A.C.S.*, 2000, **122**, 5018-5024 (*synth*)
Burgoyne, D.L. *et al., J.O.C.*, 2000, **65**, 152-156 (*biosynth*)
Heintzelman, G.R. *et al., J.A.C.S.*, 2002, **124**, 3939-3945 (*synth, abs config*)
White, J.D. *et al., J.O.C.*, 2005, **70**, 1963-1977 (*synth, abs config*)
Looper, R.E. *et al., Tetrahedron*, 2006, **62**, 4549-4562 (*synth, abs cofig*)
Mihali, T.K. *et al., Appl. Environ. Microbiol.*, 2008, **74**, 716-722 (*biosynth*)

Cynodine C-931

[50656-84-3]



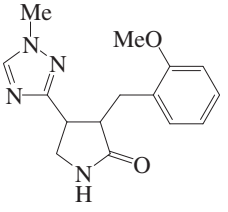
$C_{23}H_{23}N_3O_3$ 389.453
Alkaloid from the leaves of *Cynometra ananta*, and from the stem bark and seeds of *Cynometra hankei* (Fabaceae). Mp 155°. $[\alpha]_D$ +15.

N^1-*De-Me:* **N^1-*Demethylcynodine***
[81345-39-3]
$C_{22}H_{21}N_3O_3$ 375.426
Minor alkaloid from the stem bark of *Cynometra hankei*. Amorph. brown gum.

Khuong-Huu, F. *et al., Tet. Lett.*, 1973, 1757 (*struct*)
Waterman, P.G. *et al., Phytochemistry*, 1981, **20**, 2765 (*isol, uv, ir, pmr, ms, deriv*)

Cynolujine C-932

[85644-17-3]

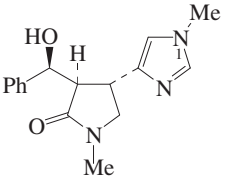


$C_{16}H_{19}N_3O_2$ 285.345
Major alkaloid from the leaves of *Cynometra lujae* (Fabaceae). Cryst. (Me_2CO). Mp 108°. $[\alpha]_D^{20}$ -6 (c, 1 in $CHCl_3$).

Tchissambou, L. *et al., Tetrahedron*, 1982, **38**, 2687 (*isol, ir, pmr, cmr, struct*)

Cynometrine C-933

[50656-83-2]



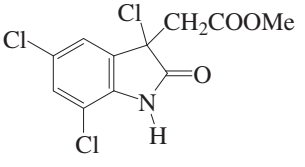
Absolute Configuration

$C_{16}H_{19}N_3O_2$ 285.345
Alkaloid from the leaves of *Cynometra ananta* and *Cynometra lujae*, and from the stem bark and seeds of *Cynometra hankei* (Fabaceae). Needles ($CHCl_3$). Mp 211°. $[\alpha]_D^{20}$ -27.1 (c, 0.1 in $CHCl_3$). λ_{max} 258 (ϵ 257); 264 (ϵ 214) (EtOH) (Derep).

N^1-*De-Me:* **N^1-*Demethylcynometrine***
[81345-38-2]
$C_{15}H_{17}N_3O_2$ 271.318
Alkaloid from the stem bark and seeds of *Cynometra hankei*. Needles ($CHCl_3$). Mp 204°. $[\alpha]_D^{20}$ -56.2 (c, 0.1 in $CHCl_3$).

Khuong-Huu, F. *et al., Tet. Lett.*, 1973, 1757-1760 (*uv, ir, pmr, cmr, ms, struct*)
Chiaroni, A. *et al., J. Chem. Res., Synop.*, 1981, 182; *J. Chem. Res., Miniprint*, 1981, 2116-2145 (*cryst struct, abs config*)
Waterman, P.G. *et al., Phytochemistry*, 1981, **20**, 2765-2767 (*isol, uv, ir, pmr, cmr, ms, N'-de-Me*)
Tchissambou, L. *et al., Tetrahedron*, 1982, **38**, 2687-2695 (*isol, cmr, synth*)
Fishwick, C.W.G. *et al., Tet. Lett.*, 1996, **37**, 3915-3918 (*synth*)

Cynthichlorine C-934



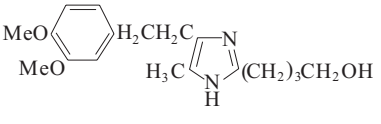
$C_{11}H_8Cl_3NO_3$ 308.547

(ξ)-*form*
Isol. from the tunicate *Cynthia savignyi*. Antifungal and antibacterial agent. Cytotoxic.

Abourriche, A. *et al., Farmaco*, 2003, **58**, 1351-1354 (*isol, pmr*)

Cypholophine C-935

*4-[2-(3,4-Dimethoxyphenyl)ethyl]-5-methyl-1*H*-imidazole-2-butanol, 9CI*
[26482-10-0]

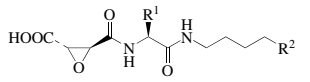


$C_{18}H_{26}N_2O_3$ 318.415
Major alkaloid from the leaves of *Cypholophus friesianus* (Urticaceae). Needles (Me_2CO or EtOAc). Mp 126-127°.

O-*Ac:* **O-*Acetylcypholophine***
[26482-11-1]
$C_{20}H_{28}N_2O_4$ 360.452
Minor alkaloid from the leaves of *Cypholophus friesianus* (Urticaceae). Gum.

Hart, N.K. *et al., Aust. J. Chem.*, 1971, **24**, 857 (*isol, uv, ir, ms, pmr, synth, struct, deriv*)

Aspergillus oryzae Cysteine protease inhibitors C-936



CPI 1 R^1 = 4-OH-$PhCH_2$, R^2 = -$NH(CH_2)_3NH_2$
CPI 2 R^1 = -$CH(CH_3)CH_2CH_3$, R^2 = NH_2
CPI 3 R^1 = -$CH(CH_3)CH_2CH_3$, R^2 = -CH_2NH_2
CPI 4 R^1 = -$CH(CH_3)CH_2CH_3$, R^2 = -$NH(CH_2)_3NH_2$
CPI 5 R^1 = -$PhCH_2$, R^2 = -$NH(CH_2)_3NH_2$

Tentative structs. assigned to CPI 1 and CPI 5. Prod. by *Aspergillus oryzae*. Cysteine protease inhibitors.

CPI 1

$C_{20}H_{30}N_4O_6$ 422.48
Shows antiallergic props. Syrup. Sol. H_2O, MeOH, DMSO. $[\alpha]_D^{25}$ +153.8 (c, 1 in H_2O). λ_{max} 198 (ϵ 69200); 219 (sh) (ϵ 33800); 274 (ϵ 3700); 280 (sh) (ϵ 3300) (H_2O). λ_{max} 198 (ϵ 69200); 219 ; 274 (ϵ 3700); 280 (H_2O) (Berdy).

CPI 2

$C_{14}H_{25}N_3O_5$ 315.369
Shows antiallergic props. Powder. Sol. H_2O, DMSO, MeOH. $[\alpha]_D^{25}$ +47 (c, 0.2 in H_2O). λ_{max} 198 (ϵ 23100) (H_2O).

CPI 3

$C_{15}H_{27}N_3O_5$ 329.395
Shows antiallergic props. Powder. Sol. H_2O, DMSO, MeOH. $[\alpha]_D^{25}$ +86.5 (c, 0.2 in H_2O). λ_{max} 201 (ϵ 28800) (H_2O).

CPI 4

Kojistatin A. Antibiotic 460A
[183069-12-7]
$C_{17}H_{32}N_4O_5$ 372.464
Syrup. $[\alpha]_D^{25}$ +57 (c, 0.2 in H_2O). λ_{max} 197 (ϵ 27000) (H_2O).

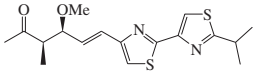
CPI 5

$C_{20}H_{30}N_4O_5$ 406.481
Syrup. Sol. H_2O, MeOH, DMSO. $[\alpha]_D^{25}$ +90.5 (c, 0.04 in H_2O). λ_{max} 196 (ϵ 65800); 204 (ϵ 60000); 251 (ϵ 812); 257 (ϵ 851) (H_2O). λ_{max} 196 (ϵ 65800); 204 (ϵ 60000); 251 (ϵ 812); 257 (ϵ 851); 267 (ϵ 696) (MeOH) (Berdy).

Sato, N. *et al., Biosci., Biotechnol., Biochem.*, 1996, **60**, 1747-1748 (*Kojistatin A*)
Yamada, T. *et al., Biosci., Biotechnol., Biochem.*, 1998, **62**, 907-914 (*isol, uv, ir, pmr, cmr*)

Cystothiazole E C-937

[214215-11-9]



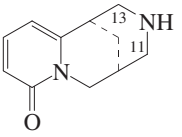
Absolute Configuration

$C_{17}H_{22}N_2O_2S_2$ 350.505
Prod. by *Cystobacter fuscus* strain AJ-13278. Antifungal agent. Oil. $[\alpha]_D^{24}$ +17.8 (c, 0.2 in $CHCl_3$). λ_{max} 220 (ϵ 23900); 247 (ϵ 21600); 311 (ϵ 11100) (MeOH).

Suzuki, Y. *et al., Tetrahedron*, 1998, **54**, 11399-11404 (*isol, uv, ir, pmr, ms*)
Bach, T. *et al., Chem. Eur. J.*, 2002, **8**, 5585-5592 (*synth*)
Takayama, H. *et al., Heterocycles*, 2007, **71**, 75-85 (*synth*)

Cytisine C-938

1,2,3,4,5,6-Hexahydro-1,5-methano-8H-pyrido[1,2-a][1,5]diazocin-8-one, 9CI. Baptitoxine. Citisine. Sophorine†. Ulexine. Cytiton. Tabex



(-)-*form*

$C_{11}H_{14}N_2O$ 190.244
Log P -0.94 (calc).

(-)-*form* [485-35-8]
Alkaloid from *Cytisus laburnum*, many other *Cytisus* spp., *Baptisia, Genista, Laburnum, Sophora, Thermopsis, Ammodendron, Anagyris* and *Euchresta* spp. (Fabaceae). Shows nicotine-like CNS activity. Antiinflammatory agent. Shows psychoactive props. Has been used as respiratory stimulant in the former USSR. Common cause of poisoning of humans and animals by *Cytisus laburnum*. Sol. H_2O, EtOH, C_6H_6; poorly sol. Et_2O, hexane. Mp 155° subl. $[\alpha]_D^{17}$ -119 (H_2O). Pharmacol. active isomer.

▶ Highly toxic. LD_{50} (mus, orl) 101 mg/kg ; LD_{50} (mus, ivn) 1.3 mg/kg. HA4025000

Hydrochloride: [6047-01-4]
Mp 218°.

▶ HA4200000

Perchlorate: Mp 270°.

N^b-*Oxide:* ***Cytisine* N-*oxide***. *12-Hydroxycytisine*
[138922-22-2]
$C_{11}H_{14}N_2O_2$ 206.244
Alkaloid from *Sophora exigua* (Fabaceae). Pale yellow needles. Mp 238° dec. $[\alpha]_D^{25}$ -209 (c, 0.11 in EtOH).

N-*Formyl:* **N-*Formylcytisine***
[53007-06-0]
$C_{12}H_{14}N_2O_2$ 218.255
Alkaloid from *Thermopsis chinensis, Sophora tomentosa, Echinosophora koreensis* and *Euchresta* spp. (Fabaceae). Mp 170-172°. $[\alpha]_D^{20}$ -233 (c, 0.43 in EtOH).

N-*Ac:* **N-*Acetylcytisine***
[6018-52-6]
$C_{13}H_{16}N_2O_2$ 232.282
Alkaloid from *Sophora tomentosa* and *Thermopsis alterniflora* (Fabaceae). Mp 210-213° (208°). $[\alpha]_D^{26}$ -208 (c, 0.182 in EtOH).

N-*Acetoxy:* **N-*Acetoxycytisine***
[145364-52-9]
$C_{13}H_{16}N_2O_3$ 248.281
Constit. of *Petteria ramentacea*.

N-*Me:* **N-*Methylcytisine***. *Caulophylline*
[486-86-2]
$C_{12}H_{16}N_2O$ 204.271
Alkaloid from *Cytisus laburnum, Genista* spp., *Leontice* spp., *Spartium junceum* and very many other spp. and genera in the Fabaceae. Prisms (EtOH). Mp 137°. $[\alpha]_D$ -221.6 (H_2O).

▶ HA4400000

N-*Et:* **N-*Ethylcytisine***
[83728-92-1]
$C_{13}H_{18}N_2O$ 218.298
Alkaloid from fresh flowers of *Euchresta koreensis* (Fabaceae). Needles (C_6H_6/hexane). Mp 112°. $[\alpha]_D^{27}$ -216.7 (c, 0.31 in EtOH).

N-*Acetamidomethyl:* **N-*(*N-*Acetylaminomethyl)cytisine***
$C_{14}H_{19}N_3O_2$ 261.323
Alkaloid from *Maackia hupehensis*. Oil. $[\alpha]_D^{23}$ -91 (c, 0.48 in EtOH).

N-*(2-Hydroxyethyl):* N-*(2-Hydroxyethyl)cytisine*
$C_{13}H_{18}N_2O_2$ 234.297
Alkaloid from above-ground parts of *Sophora alopecuroides* (Fabaceae). Mp 63-65°. $[\alpha]_D^{20}$ -187 (c, 0.725 in EtOH).

N-*(2-Chloroethyl): Alternidine*
[642-49-9]
$C_{13}H_{17}ClN_2O$ 252.743
Artifact derived from use of $ClCH_2CH_2Cl$ as solvent. Mp 105-107°. $[\alpha]_D$ -190.5.

N-*(3-Butenyl):* ***Rhombifoline***
[529-78-2]
$C_{15}H_{20}N_2O$ 244.336
Alkaloid from *Thermopsis rhombifolia, Thermopsis lanceolata, Ammodendron longiracemosum, Clathrotropis brachypetala, Sophora* spp., *Genista carinalis* and *Genista tinctoria* (Fabaceae). Yellowish oil. $Bp_{0.2}$ 120° (bath). $[\alpha]_D^{25}$ -232.4 (c, 2.13 in EtOH).

N-*(3-Butenyl), hydrochloride:* Mp 256-258° dec.

N-*(3-Butenyl), picrate:* Mp 226° dec.

N-*(3-Oxobutyl):* **N-*(3-Oxobutyl)cytisine***
[64408-08-8]
$C_{15}H_{20}N_2O_2$ 260.335
Alkaloid from aerial parts of *Euchresta koreensis* (Fabaceae). Plates (C_6H_6/petrol). Mp 118°. $[\alpha]_D^{21}$ -211.6 (c, 0.219 in EtOH).

▶ Toxic, LD_{50} (mus) 71 mg/kg.

N-*Methoxycarbonyl: 12-Methoxycarbonylcytisine*
[125109-97-9]
$C_{13}H_{16}N_2O_3$ 248.281
Constit. of *Leontice watereri* (Fabaceae) and *Petteria ramentacea*. Possible artifact.

N-*Ethoxycarbonyl: 12-Ethoxycarbonylcytisine*
[132216-16-1]
$C_{14}H_{18}N_2O_3$ 262.308
Constit. of *Laburnum watereri* and *Spartium junceum* (Fabaceae). Possible artifact.

N-*(Carboxymethyl):* see 12-Cytisineacetic acid, C-939

N-*(2-Oxo-1-pyrrolidinylmethyl):* N-*(2-Oxo-1-pyrrolidinylmethyl)cytisine*

$C_{16}H_{21}N_3O_2$ 287.361
Alkaloid from *Maackia hupehensis*. Cryst. ($CHCl_3$). Mp 169-170°. $[\alpha]_D^{23}$ -167 (c, 0.36 in EtOH).

11,12-Didehydro: ***11,12-Dehydrocytisine***
$C_{11}H_{12}N_2O$ 188.229
Constit. of *Petteria ramentacea*. Tentative struct.

12,13-Didehydro: ***12,13-Dehydrocytisine***
$C_{11}H_{12}N_2O$ 188.229
Constit. of *Petteria ramentacea*. Tentative struct.

11-Oxo: ***11-Oxocytisine***
$C_{11}H_{12}N_2O_2$ 204.228
Alkaloid from the leaves of *Sophora secundiflora* (Fabaceae). Needles (Et_2O/MeOH). Mp 272-275°. $[\alpha]_D^{12}$ +6.7 (c, 0.45 in EtOH).

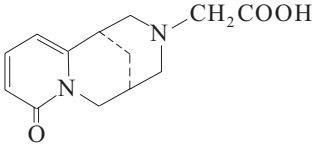
Tetrahydro: see Tetrahydrocytisine, T-149

(±)-*form*
Mp 147°.

Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 1324B (*nmr*)
Ing, H.R. *et al., J.C.S.*, 1931, 2195; 1932, 2778 (*isol, struct*)
Manske, R.H.F. *et al., Can. J. Res., Sect. B*, 1943, **21**, 144 (*Rhombifoline, isol*)
Cockburn, W.F. *et al., Can. J. Chem.*, 1952, **30**, 92 (*Cytisine, Rhombifoline, isol, struct*)
Bohlmann, F. *et al., Chem. Ber.*, 1956, **89**, 792; 1975, **108**, 1043 (*synth, ir, uv, cmr*)
Pakudina, Z.P. *et al., CA*, 1960, **54**, 6783 (*Alternidine*)
Shakirov, T.T. *et al., Khim. Prir. Soedin.*, 1970, **6**, 723; *Chem. Nat. Compd. (Engl. Transl.)*, 1970, **6**, 733 (*isol*)
Ishbaev, A.I. *et al., Khim. Prir. Soedin.*, 1972, **8**, 328; *Chem. Nat. Compd. (Engl. Transl.)*, 1972, **8**, 322 (*ord*)
Monakhova, T.E. *et al., Khim. Prir. Soedin.*, 1973, **9**, 59; *Chem. Nat. Compd. (Engl. Transl.)*, 1973, **9**, 52 (*N-(2-Hydroxyethyl)cytisine*)
Ohmiya, S. *et al., Phytochemistry*, 1974, **13**, 643; 1016 (*N-Formylcytisine, N-Acetylcytisine*)
Ruenitz, P.C. *et al., J. Het. Chem.*, 1977, **14**, 423 (*ms*)
Murakoshi, I. *et al., Phytochemistry*, 1977, **16**, 1460; 1982, **21**, 1470; 2385 (*isol, ms, pmr, synth, 3-Oxobutylcytisine, N-Ethylcytisine*)
Murakoshi, I. *et al., Phytochemistry*, 1986, **25**, 2000 (*11-Oxocytisine*)
Freer, A.A. *et al., Acta Cryst. C*, 1987, **43**, 1119 (*cryst struct*)
Greinwald, R. *et al., Phytochemistry*, 1990, **29**, 3553 (*12-Ethoxycarbonylcytisine*)
Greinwald, R. *et al., Z. Naturforsch., C*, 1990, **45**, 1085 (*12-Ethoxycarbonylcytisine*)
Gazaliev, A.M. *et al., Khim. Prir. Soedin.*, 1991, **27**, 301; *Chem. Nat. Compd. (Engl. Transl.)*, 1991, **27**, 259 (*rev, bibl*)
Takamatsu, S. *et al., Phytochemistry*, 1991, **30**, 3793 (*Cytisine N-oxide*)
Veen, G. *et al., Phytochemistry*, 1992, **31**, 3487 (*Dehydrocytisines, N-Acetoxycytisine, 12-Methoxycarbonylcytisine*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 12886
Wang, Y.-H. *et al., Chem. Pharm. Bull.*, 1999, **47**, 1308-1310 (*N-acetamidomethyl, N-2-oxopyrrolidinylmethyl*)
O'Neill, B.T. *et al., Org. Lett.*, 2000, **2**, 4201-4204 (*synth*)
Coe, J.W. *et al., Org. Lett.*, 2000, **2**, 4205-4208 (*synth*)
Botuha, C. *et al., Org. Biomol. Chem.*, 2004, **2**, 1825-1826 (*synth*)
Danieli, B. *et al., Org. Lett.*, 2004, **6**, 493-496 (*synth*)
Honda, T. *et al., J.O.C.*, 2005, **70**, 499-504 (*synth*)
Gray, D. *et al., Angew. Chem., Int. Ed.*, 2006, **45**, 2419-2423 (*synth*)
Stead, D. *et al., Tetrahedron*, 2007, **63**, 1885-1897 (*rev, synth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, CQL500; CQL750

12-Cytisineacetic acid C-939

1,5,6,8-Tetrahydro-8-oxo-1,5-methano-2H-pyrido[1,2-a][1,5]diazocine-3(4H)-acetic acid, 9CI
[72362-04-0]



$C_{13}H_{16}N_2O_3$ 248.281
Alkaloid from *Euchresta japonica* (Fabaceae). Cryst. (EtOH aq.). Mp 234-235° dec. $[\alpha]_D^{15}$ -200.1 (c, 0.34 in H_2O). Isol. as the Me and Et esters, which are almost certainly artifacts of methylation or ethylation.

Me ester: [72362-05-1]
$C_{14}H_{18}N_2O_3$ 262.308
Cryst. (hexane). Mp 107-109°. $[\alpha]_D^{15}$ -174.2 (c, 0.19 in EtOH).

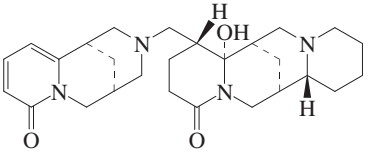
Et ester:
$C_{15}H_{20}N_2O_3$ 276.335
Oil.

Amide: ***12-Cytisineacetamide***
[138867-34-2]
$C_{13}H_{17}N_3O_2$ 247.296
Alkaloid from *Sophora exigua* (Fabaceae). Oil. $[\alpha]_D^{25}$ -204 (c, 0.17 in EtOH).

Ohmiya, S. *et al., Phytochemistry*, 1979, **18**, 649-650; 1985, **24**, 2707-2708 (*isol, ms, pmr, struct, synth*)
Ohmiya, S. *et al., Chem. Pharm. Bull.*, 1980, **28**, 546-551 (*isol*)
Takamatsu, S. *et al., Phytochemistry*, 1991, **30**, 3793-3795 (*amide*)

5-(12-Cytisinylmethyl)-6-hydroxylupanine C-940

12-(6-Hydroxy-5-lupaninylmethyl)cytisine
[278617-93-9]

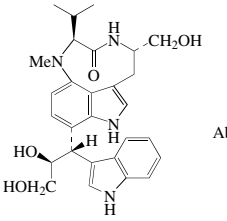


$C_{27}H_{38}N_4O_3$ 466.622
Alkaloid from *Maackia amurensis*. Oil. $[\alpha]_D^{23}$ -31.5 (c, 0.26 in EtOH).

Wang, Y.-H. *et al., Chem. Pharm. Bull.*, 2000, **48**, 641-645 (*isol, synth, pmr, cmr, ms*)

Cytoblastin C-941

[137109-42-3]



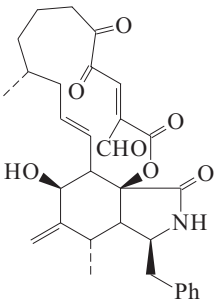
Absolute configuration

$C_{28}H_{34}N_4O_4$ 490.601
Lactam antibiotic. Prod. by *Streptoverticillium eurocidicum*. Immunomodulator. Tumour promoter. Powder. Sol. MeOH, DMSO; fairly sol. Me_2CO, $CHCl_3$, EtOAc; poorly sol. H_2O, hexane. Mp 177-182° dec. $[\alpha]_D^{21}$ -110 (c, 0.49 in MeOH). λ_{max} 202 (ε 114800); 225 (ε 91200); 283 (ε 21400); 290 (sh) (ε 16200); 300 (sh) (ε 16200) (MeOH) (Derep).

Kumagai, H. *et al., J. Antibiot.*, 1991, **44**, 1029 (*isol, pmr, cmr, struct*)
Moreno, O.A. *et al., J.A.C.S.*, 1996, **118**, 8180 (*synth, abs config*)
Moreno, O.A. *et al., Bioorg. Med. Chem.*, 1998, **6**, 1243-1254 (*synth, abs config*)

Cytochalasin V C-942

[144306-98-9]

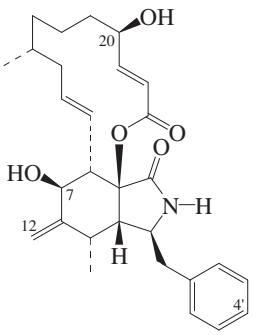


$C_{31}H_{35}NO_7$ 533.62
Metab. from *Phoma exigua* var. *heteromorpha*. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. $[\alpha]_D^{25}$ +26.9 (c, 0.66 in $CHCl_3$). λ_{max} 296 (ε 12880) (MeOH) (Berdy).

Evidente, A. *et al., Tetrahedron*, 1992, **48**, 6317 (*isol, uv, ir, pmr, cmr, ms, struct*)

Cytochalasin B C-943

Phomin
[14930-96-2]



$C_{29}H_{37}NO_5$ 479.615
Metab. of *Helminthosporium dematioideumPhoma exigua* var. *heteromorpha*, *Phoma semeniperda* and other toxigenic fungi. Antineoplastic agent. Has antibiotic props. Cytokinesis-blocking prop. used in micronucleus assays for detecting numerical and structural chromosome changes. Inhibits lipid droplet formation. Induces morphological changes on macrophages. Active against phytopathogenic fungi. Needles (Me_2CO). Mp 218-221°. $[\alpha]_D^{25}$ +83 (MeOH). Log P 2.54 (uncertain value) (calc). λ_{max} 213 (ϵ 26300); 219 (ϵ 20900); 258 (sh) (ϵ 490); 264 (sh) (ϵ 302); 267 (sh) (ϵ 209) (EtOH) (Derep).

▶ LD_{50} (rat, ipr) 11 mg/kg. Exp. teratogen. Mutagen. RO0205000

O^7-*Ac:* **7-O-*Acetylcytochalasin B***
$C_{31}H_{39}NO_6$ 521.652
Alkaloid from *Phoma exigua* var. *heteromorpha*. Active against phytopathogenic fungi. Toxic to brine shrimp. $[\alpha]_D^{25}$ -2.97 (c, 0.37 in $CHCl_3$).

Di-Ac:
Amorph. $[\alpha]_D$ +98 (EtOH).

20-Ketone: ***Cytochalasin A***. *Dehydrophomin*
[14110-64-6]
Metab. of *Helminthosporium dematioideum* and a *Phoma* sp. Shows antibiotic props. Blocks the process of cytokinesis in animal cells without interfering with cell division. Needles (Me_2CO). $[\alpha]_D$ +92 (EtOH). Log P 2.8 (uncertain value) (calc). λ_{max} 213 (ϵ 26300); 219 (ϵ 20900); 258 (sh) (ϵ 490); 264 (sh) (ϵ 302); 267 (sh) (ϵ 209) (EtOH) (Derep).

20-Ketone, Ac: Mp 176-181°. $[\alpha]_D$ +18 ($CHCl_3$).

2′-Hydroxy: ***Cytochalasin Z₄***
$C_{29}H_{37}NO_6$ 495.614
Prod. by *Phoma exigua* var. *heteromorpha*. Amorph. solid. λ_{max} 276 (log ϵ 3.13) (MeOH).

4′-Hydroxy: ***Cytochalasin Z₅***
$C_{29}H_{37}NO_6$ 495.614
Prod. by *Phoma exigua* var. *heteromorpha*. Amorph. solid. λ_{max} 278 (log ϵ 3.02) (MeOH).

20-Deoxy, 19ξ-hydroxy: ***Cytochalasin Z₃***
[450398-32-0]
$C_{29}H_{37}NO_5$ 479.615
Prod. by *Pyrenophora semeniperda*. Phytotoxin. Amorph. solid.

Δ^6-Isomer, 7-deoxy: ***Cytochalasin T***
[139687-54-0]
$C_{29}H_{37}NO_4$ 463.616
Metab. of *Phoma exigua* var. *heteromorpha*. Mycotoxin, toxic to brine shrimp. $[\alpha]_D^{25}$ -32 (c, 0.39 in $CHCl_3$).

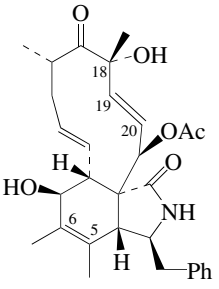
Δ^6-Isomer, 7-deoxy, 12-hydroxy: ***Cytochalasin Z₂***
[450398-31-9]
$C_{29}H_{37}NO_5$ 479.615
Prod. by *Pyrenophora semeniperda*. Amorph. solid.

Δ^6-Isomer, 7,20-dideoxy, 4′-hydroxy: ***Cytochalasin Z₁***
[450398-30-8]
$C_{29}H_{37}NO_4$ 463.616
Prod. by *Pyrenophora semeniperda*. Amorph. solid.

Aldrich Library of Infrared Spectra, 3rd edn., 1981, 1111B; 1111C (*ir*)
Aldridge, D.C. *et al., J.C.S.(C)*, 1967, 1667 (*isol, ir, uv, ms, nmr, struct*)
McLaughlin, G.M. *et al., Chem. Comm.*, 1970, 1398 (*cryst struct*)
Rothweiler, W. *et al., Helv. Chim. Acta*, 1970, **53**, 696 (*isol, struct, ir, uv, ms, nmr*)
Turner, W.B. *et al., Biochem. J.*, 1972, **127**, 1P (*rev*)
Graf, W. *et al., Helv. Chim. Acta*, 1974, **57**, 1801 (*cmr, biosynth*)
Masamune, S. *et al., J.A.C.S.*, 1977, **99**, 6756 (*synth*)
Stork, G. *et al., J.A.C.S.*, 1978, **100**, 7775 (*synth, ir, pmr*)
Kim, M.Y. *et al., J.O.C.*, 1981, **46**, 5383 (*synth*)
Pohland, A.E. *et al., Pure Appl. Chem.*, 1982, **54**, 2220 (*uv, ir, pmr, ms*)
Stork, G. *et al., J.A.C.S.*, 1983, **105**, 5510 (*synth*)
Ackermann, J. *et al., Helv. Chim. Acta*, 1984, **67**, 254 (*synth*)
Capasso, R. *et al., Phytochemistry*, 1991, **30**, 3945 (*7-Acetylcytochalasin B, Cytochalasin T*)
Ellard, S. *et al., Mutagenesis*, 1993, **8**, 317 (*use*)
Fenech, M. *et al., Mutat. Res.*, 1993, **285**, 35 (*micronucleus assay, rev*)
Obara, K. *et al., Eur. J. Pharmacol.*, 1994, **255**, 139 (*pharmacol*)
Evidente, A. *et al., Nat. Toxins*, 1998, **5**, 228-233; *CA*, **129**, 199012r (*activity*)
Namatame, I. *et al., J. Antibiot.*, 2000, **53**, 19-25 (*activity*)
Evidente, A. *et al., Phytochemistry*, 2002, **60**, 45-53 (*Cytochalasins Z*)
Evidente, A. *et al., J. Nat. Prod.*, 2003, **66**, 1540-1544 (*Cytochalasins Z_4,Z_5*)
Haidle, A.M. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 2004, **101**, 12048-12053 (*synth*)
Cole, R.J. *et al., Handbook of Toxic Fungal Metabolites*, Academic Press, 1981, 276; 281
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, CQM125

Cytochalasin C C-944

[22144-76-9]



$C_{30}H_{37}NO_6$ 507.625
Metab. of *Metarhizium anisopliae*, *Bipolaris neergaardii*, *Phoma herbarum* and *Hypoxylon terricola*. Shows antibiotic and cytotoxic props. similar to Cytochalasin B, C-943. Needles (Me_2CO). Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. Mp 260-264°. $[\alpha]_D^{28}$ -14.7 (c, 0.82 in dioxan). Log P 1.54 (uncertain value) (calc). λ_{max} 286 (ϵ 330) (MeOH) (Derep).

▶ HA5300500

O-*De-Ac:* ***Deacetylcytochalasin C***
$C_{28}H_{35}NO_5$ 465.588
Metab. of *Metarhizium anisopliae*. $[\alpha]_D^{25}$ +27.6 (c, 0.25 in EtOH).

5β,6β-Epoxide: ***Cytochalasin N***†
$C_{30}H_{37}NO_7$ 523.625
Metab. of *Hypoxylon terricola*. Hair-like needles (MeOH). Mp 272°. $[\alpha]_D^{23}$ -4 (c, 0.5 in MeOH).

5β,6β-Epoxide, O^7*-Ac:*
Rosettes of needles (cyclohexane/Me_2CO). Mp 187-192°.

19β,20β-Epoxide: ***19β,20β-Epoxycytochalasin C***
$C_{30}H_{37}NO_7$ 523.625
Metab. of *Xylaria hypoxylon*. $[\alpha]_D$ -300 (c, 0.04 in $CHCl_3$).

19,20-Epoxide: ***19,20-Epoxycytochalasin C***
$C_{30}H_{37}NO_7$ 523.625
Prod. by the fungus *Xylaria obovata*. $[\alpha]_D$ -6.8 (c, 0.25 in $CHCl_3$). The large difference in opt. rotations implies that this is not identical with the 19β,20β-epoxide from *X. obovata*.

19,20-Epoxide, O*-de-Ac:* ***Deacetyl-19,20-epoxycytochalasin C***
$C_{28}H_{35}NO_6$ 481.588
Prod. by *Xylaria obovata*. $[\alpha]_D$ +11.6 (c, 0.25 in $CHCl_3$).

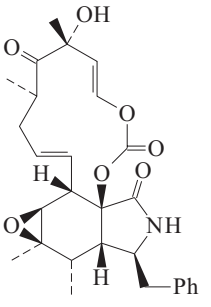
5β,6β:19β,20β-Diepoxide: ***19,20-Epoxycytochalasin N***
$C_{30}H_{37}NO_8$ 539.624
Metab. of *Xylaria hypoxylon*. $[\alpha]_D$ -55 (c, 0.04 in $CHCl_3$).

5β,6α-Dihydro, 7-ketone, O*-de-Ac:*
$C_{28}H_{35}NO_5$ 465.588
Metab. of *Metarhizium anisopliae*. $[\alpha]_D^{25}$ -29.5 (c, 0.2 in EtOH).

Aldrich Library of Infrared Spectra, 3rd edn., 1981, 1111D (*ir*)
Aldridge, D.C. *et al., J.C.S.(C)*, 1969, 923 (*isol, struct, nmr*)
Clark, D.A. *et al., Diss. Abstr. Int., B*, 1979, **40**, 243 (*synth*)
Edwards, R.L. *et al., J.C.S. Perkin 1*, 1989, 57 (*Cytochalasin N*)
Abate, D. *et al., Phytochemistry*, 1997, **44**, 1443 (*19,20-Epoxycytochalasin C, Deacetyl-19,20-epoxycytochalasin C*)
Espada, A. *et al., Tetrahedron*, 1997, **53**, 6485 (*epoxides*)
Fujii, Y. *et al., J. Nat. Prod.*, 2000, **63**, 132-135 (*Deacetylcytochalasin C*)
Cole, R.J. *et al., Handbook of Toxic Fungal Metabolites*, Academic Press, 1981, 294

Cytochalasin E C-945

[36011-19-5]



$C_{28}H_{33}NO_7$ 495.571

Metab. of *Rosellinia necatrix* and *Aspergillus clavatus*. Also from the marine-derived *Spicaria elegans*. Antibiotic and cytotoxic agent. Fibroblast inhibitor, lipid droplet formation inhibitor, cholesteryl ester synthesis inhibitor. Sol. MeOH, C_6H_6; fairly sol. hexane; poorly sol. H_2O. Mp 206-208° dec. $[\alpha]_D^{25}$ -25.6 (MeOH). Log P 1.25 (uncertain value) (calc). λ_{max} 252 (ϵ 5370); 257 (ϵ 6025); 263 (ϵ 3890) (MeOH) (Berdy).

▶ LD_{50} (rat, orl) 9.1 mg/kg; LD_{50} (rat, ipr) 2.6 mg/kg. Exp. teratogen. HA5360000

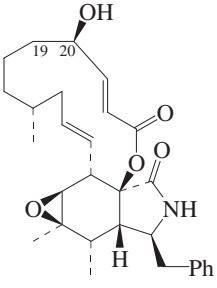
*4′-Methoxy: 4′-Methoxycytochalasin E. **Phenochalasin B**. Antibiotic Mer-WF 1726. Mer-WF 1726*
[207679-46-7]
$C_{29}H_{35}NO_8$ 525.597
Prod. by *Daldinia concentrica*, *Phomopsis* sp. FT-0211 and *Libertella* sp. Mer-WF 1726. Cytotoxic agent. Powder. Mp 130-132°. $[\alpha]_D^{22}$ -5.7 (c, 0.53 in MeOH). Contains a 4-methoxyphenyl group. λ_{max} 200 (ϵ 24500); 225 (ϵ 14400); 275 (ϵ 3200); 283 (ϵ 2900) (MeOH).

*4′-Hydroxy, 6,7-deepoxy, 6,7-didehydro: **Phenochalasin A***
$C_{28}H_{33}NO_7$ 495.571
Prod. by *Phomopsis* sp. FT-0211. Powder. Mp 143-145°. $[\alpha]_D^{22}$ -4.3 (c, 0.53 in MeOH). λ_{max} 200 (ϵ 27800); 225 (ϵ 10900); 285 (ϵ 3000); 300 (ϵ 2100) (MeOH).

Aldrich Library of Infrared Spectra, 3rd edn., 1981, 1111F (*ir*)
Aldridge, D.C. *et al., Chem. Comm.*, 1973, 551 (*struct, pmr, cmr*)
Büchi, G. *et al., J.A.C.S.*, 1973, **95**, 5423 (*struct, ms, ir, pmr, cryst struct*)
Kajimoto, T. *et al., Chem. Pharm. Bull.*, 1989, **37**, 2212 (*pmr, cmr*)
Japan. Pat., 1998, 98 114 776; *CA*, **129**, 15357c (*Mer-WF 1726*)
Tomoda, H. *et al., J. Antibiot.*, 1999, **52**, 851-856; 857-861 (*Phenochalasins*)
Quang, D.N. *et al., J. Nat. Prod.*, 2002, **65**, 1869-1874 (*Phenochalasin B, isol*)
Liu, R. *et al., J. Nat. Prod.*, 2006, **69**, 871-875 (*Spicaria constit, isol, pmr, cmr*)
Cole, R.J. *et al., Handbook of Toxic Fungal Metabolites*, Academic Press, 1981, 266
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, CQM250

Cytochalasin F C-946

[36084-18-1]



$C_{29}H_{37}NO_5$ 479.615
Minor metab. of *Helminthosporium dematioideum*, *Phoma exigua* and *Geniculosporium* sp. Exhibits algicidal props. Inhibits photosynthesis. Active against phytopathogenic fungi. Oil. $[\alpha]_D^{20}$ -52 (c, 0.5 in $CHCl_3$) (-33.1). Log P 2.84 (uncertain value) (calc). λ_{max} 213 (ϵ 26300); 219 (ϵ 20900); 258 (sh) (ϵ 490); 264 (sh) (ϵ 302); 267 (sh) (ϵ 209) (EtOH) (Derep).

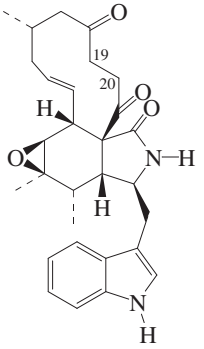
▶ LD_{50} (mus, ipr) 2.6 mg/kg. RO0206000

*20-Deoxy, 19ξ-hydroxy: **Cytochalasin Z$_6$***
$C_{29}H_{37}NO_5$ 479.615
Prod. by *Phoma exigua* var. *heteromorpha*. Amorph. solid.

Aldridge, D.C. *et al., Chem. Comm.*, 1972, 148; 1973, 551 (*isol, struct, pmr, cmr*)
Büchi, G. *et al., J.A.C.S.*, 1973, **95**, 5423 (*struct, ms, ir, pmr*)
Stork, G. *et al., J.A.C.S.*, 1983, **105**, 5510 (*synth*)
Capasso, R. *et al., Phytochemistry*, 1991, **37**, 3945-3950 (*isol*)
Evidente, A. *et al., Nat. Toxins*, 1998, **5**, 228-233; *CA*, **129**, 199012r (*activity*)
Koenig, G.M. *et al., J. Nat. Prod.*, 1999, **62**, 155-157 (*isol, pmr, cmr, activity*)
Evidente, A. *et al., J. Nat. Prod.*, 2003, **66**, 1540-1544 (*Cytochalasin Z$_6$*)
Cole, R.J. *et al., Handbook of Toxic Fungal Metabolites*, Academic Press, 1981, 286

Cytochalasin G C-947

[54874-57-6]



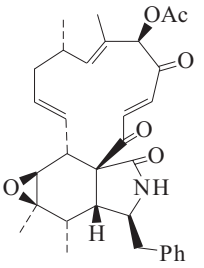
$C_{29}H_{34}N_2O_4$ 474.599
Prod. by an unidentified *Nigrosabulum* spp. and *Pseudeurotium zonatum*. Shows antibiotic and cytotoxic props. Needles (MeOH). Mp 255-257°. $[\alpha]_D^{24}$ -99 (c, 0.35 in MeOH). Log P 2.3 (uncertain value) (calc). λ_{max} 220 (log ϵ 4.98); 273 (log ϵ 4.32); 290 (log ϵ 4.27) (MeOH).

*19α,20α-Epoxy: **Cytochalasin Z***
[460352-11-8]
$C_{29}H_{32}N_2O_5$ 488.582
Prod. by *Pseudeurotium zonatum*. Solid. $[\alpha]_D^{20}$ -20 (c, 0.02 in MeOH). λ_{max} 220 (log ϵ 4.88); 273 (log ϵ 4.24); 290 (log ϵ 4.2) (MeOH).

Cameron, A.F. *et al., J.C.S. Perkin 2*, 1974, 1741-1744 (*isol, ir, uv, ms, pmr, cryst struct*)
Probst, A. *et al., Helv. Chim. Acta*, 1981, **64**, 2056 (*cmr*)
Dyke, H. *et al., J.C.S. Perkin 1*, 1989, 525 (*synth*)
Feng, Y. *et al., J. Nat. Prod.*, 2002, **65**, 1274-1277 (*Cytochalasin Z*)
Cole, R.J. *et al., Handbook of Toxic Fungal Metabolites*, Academic Press, 1981, 272

Cytochalasin K† C-948

[79648-72-9]

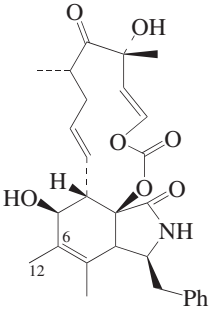


$C_{32}H_{37}NO_6$ 531.647
Not to be confused with Cytochalasin K, C-949. Prod. by *Chalara microspora*. Shows antibiotic and cytotoxic props. Causes inhibition of cell movement. Amorph. solid. $[\alpha]_D^{25}$ -177 (EtOH). λ_{max} 232 (ϵ 11300) (EtOH) (Derep). λ_{max} 232 (ϵ 11300) (EtOH) (Berdy).

Fex, T. *et al., Tet. Lett.*, 1981, 2703 (*isol, ir, uv, pmr, cmr*)

Cytochalasin K† C-949

[460085-82-9]
[81657-79-6]



$C_{28}H_{33}NO_7$ 495.571
Related to Cytochalasin E, C-945 and not to confused with Cytochalasin K, C-948. Prod. by *Aspergillus clavatus* MCR1181 and *Mycotypha* sp. UMF-006. Also isol. from the marine-derived *Spicaria elegans*. Mycotoxin. Shows antibiotic and cytotoxic props. Cryst. (hexane/Me_2CO). Sol. MeOH, C_6H_6; poorly sol. H_2O, hexane. Mp 246-248°. λ_{max} 257 (MeOH) (Berdy).

$\Delta^{6,12}$-Isomer: [460085-83-0]
$C_{28}H_{33}NO_7$ 495.571
Prod. by *Mycotypha* sp. UMF-006.

*4′-Methoxy: **Scoparasin A***
$C_{29}H_{35}NO_8$ 525.597
Prod. by *Eutypella scoparia* PSU-D44. Amorph. solid. $[\alpha]_D^{29}$ -52.7 (c, 0.17 in MeOH). Conts. *p*-methoxyphenyl residue. λ_{max} 224 (log ϵ 3.63); 276 (log ϵ 2.82); 283 (log ϵ 2.76) (MeOH).

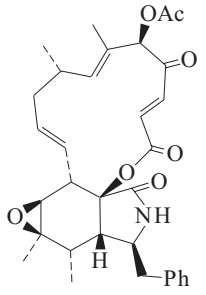
*4′-Methoxy, 5β,6β-dihydro, 6β-hydroxy: **Scoparasin B***
$C_{29}H_{37}NO_9$ 543.613
Prod. by *Eutypella scoparia* PSU-D44. Amorph. solid. $[\alpha]_D^{29}$ -52.7 (c, 0.17 in MeOH). λ_{max} 224 (log ϵ 3.63); 276 (log

ϵ 2.82); 283 (log ϵ 2.76) (MeOH).

Steyn, P.S. *et al., J.C.S. Perkin 1*, 1982, 541-544 (*isol, struct*)
Takamatsu, S. *et al., J. Antibiot.*, 2002, **55**, 585-592 (*$\Delta^{6,12}$-isomer*)
Pongcharoen, W. *et al., J. Nat. Prod.*, 2006, **69**, 856-858 (*Scoparasins*)
Liu, R. *et al., J. Nat. Prod.*, 2006, **69**, 871-875 (*isol, pmr, cmr*)

Cytochalasin L C-950

[79637-87-9]

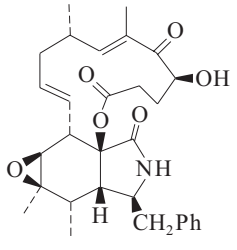


$C_{32}H_{37}NO_7$ 547.647
Prod. by *Chalara microspora*. Shows antibiotic and cytotoxic props. Amorph. solid. $[\alpha]_D^{25}$ -165 (EtOH).

Fex, T. *et al., Tet. Lett.*, 1981, 2703 (*isol, ir, uv, pmr, cmr*)

Cytochalasin M C-951

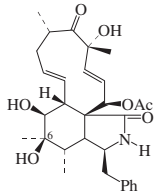
[79648-73-0]



$C_{30}H_{37}NO_6$ 507.625
Secondary metab. of the fungus *Chalara microspora*. Shows antibiotic and cytotoxic props. Cryst. (Me_2CO aq.). Mp 161-162°. $[\alpha]_D^{25}$ +18.7 (EtOH). λ_{max} 235 nm (EtOH). λ_{max} 235 (ϵ 11300) (EtOH) (Derep). λ_{max} 235 (ϵ 11300) (EtOH) (Berdy).

Albertsson, J. *et al., Acta Chem. Scand., Ser. B*, 1981, **35**, 707 (*cryst struct*)
Fex, T. *et al., Tet. Lett.*, 1981, **22**, 2703 (*isol*)

Cytochalasin O† C-952



Absolute Configuration

$C_{30}H_{39}NO_7$ 525.641
Metab. of the fungus *Hypoxylon terricola*. Needles (toluene/MeOH). Mp 258-265°. $[\alpha]_D^{23}$ -39.3 (c, 1.0 in MeOH).

6-Epimer: ***Cytochalasin P***†
$C_{30}H_{39}NO_7$ 525.641
Metab. of *Hypoxylon terricola*. Needles (Me_2CO/petrol). Mp 169-173°. $[\alpha]_D^{23}$ -35.8 (c, 1.0 in MeOH).

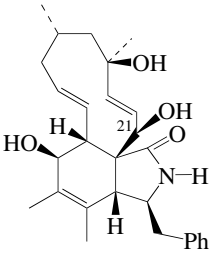
6,18-Diepimer, 17-deoxo: ***Cytochalasin P***†. *Cytochalasin P_{pho}*
[108050-27-7]
$C_{30}H_{41}NO_6$ 511.657
Prod. by *Phomopsis* sp. Cytotoxic mycotoxin. Cryst. ($CHCl_3$). Sol. MeOH, C_6H_6; poorly sol. H_2O. Mp 117-118°. $[\alpha]_D$ -116 (MeOH). λ_{max} 208 (ϵ 15200) (MeOH) (Berdy).

[119179-33-8]

Tomioka, T. *et al., Chem. Pharm. Bull.*, 1987, **35**, 902 (*Cytochalasin Ppho*)
Edwards, R.L. *et al., J.C.S. Perkin 1*, 1989, 57 (*isol, ir, pmr, cmr, struct*)
Merifield, E. *et al., J.C.S. Perkin 1*, 1999, 3269-3283 (*synth, config*)

Cytochalasin O† C-953

Cytochalasin O_{pho}
[108050-26-6]



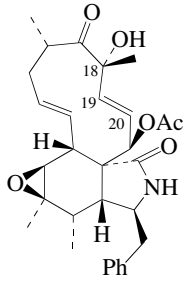
$C_{28}H_{37}NO_4$ 451.605
Prod. by *Phomopsis* sp. Cytotoxic mycotoxin. Needles (Me_2CO/hexane). Sol. MeOH, C_6H_6; poorly sol. H_2O. Mp 187-188°. $[\alpha]_D$ +59.6 (MeOH). λ_{max} 206 (ϵ 20800) (MeOH) (Berdy).

O^{21}-*Ac:* ***Cytochalasin N***†. *Cytochalasin N_{pho}*
[108050-28-8]
$C_{30}H_{39}NO_5$ 493.642
Prod. by *Phomopsis* sp. Cytotoxic mycotoxin. Powder (Me_2CO). Sol. MeOH, C_6H_6; poorly sol. H_2O. Mp 253-254°. $[\alpha]_D$ +85.4 (MeOH). λ_{max} 208 (ϵ 19800) (MeOH) (Berdy).

Tomioka, T. *et al., Chem. Pharm. Bull.*, 1987, **35**, 902 (*isol, struct*)

Cytochalasin Q C-954

[119143-44-1]



$C_{30}H_{37}NO_6$ 507.625
Metab. of the fungus *Hypoxylon terricola*. Fine silky needles + 1 Me_2CO (Me_2CO/petrol). Mp 145-147°. $[\alpha]_D^{23}$ -94.5 (c, 1.0 in $CHCl_3$) (solvate). Isomerises almost instantaneously to Cytochalasin C, C-944 at r.t. in the presence of a trace of acid.

13β,14β-Epoxide: ***Cytochalasin R***
[119144-87-5]
$C_{30}H_{37}NO_7$ 523.625
Metab. of the fungus *Hypoxylon terricola*. Glistening rods + 1MeCN (MeCN). Mp 159-167°. $[\alpha]_D^{23}$ -49.3 (c, 1.0 in MeCN) (solvate).

19β,20β-Epoxide: ***19,20-Epoxycytochalasin Q***
[156098-31-6]
$C_{30}H_{37}NO_7$ 523.625
Metab. of *Xylaria obovata* and other *Xylaria* spp. Cytotoxic agent. Shows antimalarial activity. Sol. MeOH, $CHCl_3$. Mp 266-268°. $[\alpha]_D$ -73 (c,1.1 in $CHCl_3$).

19β,20β-Epoxide, O-*de-Ac:* ***Deacetyl-19,20-epoxycytochalasin Q***. *C 5507. Antibiotic C 5507*
[156616-84-1]
[139441-74-0]
$C_{28}H_{35}NO_6$ 481.588
Metab. of *Xylaria obovata* and a bacterial eumycote sp. C5507. Cytotoxic agent, plant growth regulator. Mp 119-121°.

13β,14β:19β,20β-Diepoxide: ***19,20-Epoxycytochalasin R***
$C_{30}H_{37}NO_8$ 539.624
Metab. of *Xylaria hypoxylon*. $[\alpha]_D$ -60 (c, 0.05 in $CHCl_3$).

18-Deoxy, 19β,20β-epoxide: ***19,20-Epoxy-18-deoxycytochalasin Q***
$C_{30}H_{37}NO_6$ 507.625
Metab. of *Xylaria hypoxylon*. $[\alpha]_D$ -360 (c, 0.05 in $CHCl_3$).

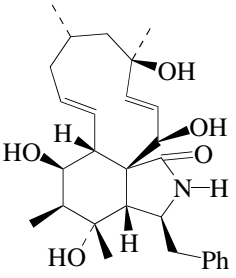
18-Deoxy, 19,20-epoxide: ***Xylobovatin***
[189371-38-8]
$C_{30}H_{37}NO_6$ 507.625
Isol. from the fungus *Xylaria obovata*. $[\alpha]_D^{27}$ +44.5 (c, 1.3 in MeOH). This is presumably a stereoisomer of the 19β,20β-epoxide (note very different opt. rotn.), but assigned same stereochem. in CA.

18-Deoxy, 13β,14β:19β,20β-diepoxide: ***18-Deoxy-19,20-epoxycytochalasin R***. *19,20-Epoxy-18-deoxycytochalasin R*
$C_{30}H_{37}NO_7$ 523.625
Metab. of *Xylaria hypoxylon*.

Edwards, R.L. *et al., J.C.S. Perkin 1*, 1989, 57-65 (*isol, ir, pmr, cmr, struct*)
Japan. Pat., 1991, 91 251 584; *CA*, **116**, 127016d (*Antibiotic C 5507*)
Dagne, E. *et al., Tetrahedron*, 1994, **50**, 5615-5620 (*Epoxycytochalisin Q*)
Abate, D. *et al., Phytochemistry*, 1997, **44**, 1443-1448 (*Xylobovatin*)
Espada, A. *et al., Tetrahedron*, 1997, **53**, 6485-6492 (*Xylaria hypoxylon constits*)
Isaka, M. *et al., Planta Med.*, 2000, **66**, 473-475 (*isol, activity*)

Cytochalasin S C-955

[121987-40-4]



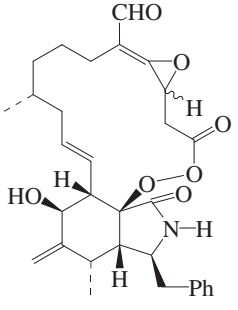
$C_{28}H_{39}NO_5$ 469.62

Prod. by *Phomopsis* sp. Powder (hexane/Me_2CO). Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. Mp 149-151°. $[\alpha]_D^{23}$ -62.9 (MeOH). λ_{max} 208 (ϵ 13370) (MeOH). λ_{max} 208 (ϵ 13370) (MeOH) (Berdy).

Izawa, Y. *et al., Tetrahedron*, 1989, **45**, 2323 (*isol, uv, ir, pmr, cmr, ms*)

Cytochalasin U† C-956

[144279-59-4]



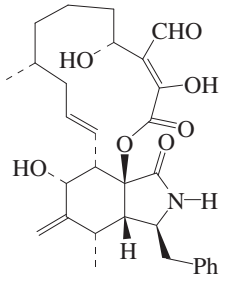
$C_{31}H_{37}NO_7$ 535.636

Metab. from *Phoma exigua* var. *heteromorpha*. $[\alpha]_D^{25}$ -71.7 (c, 0.75 in $CHCl_3$).

Evidente, A. *et al., Tetrahedron*, 1992, **48**, 6317-6324 (*isol, uv, ir, pmr, cmr, ms, struct*)

Cytochalasin W C-957

[177985-19-2]



$C_{30}H_{37}NO_7$ 523.625

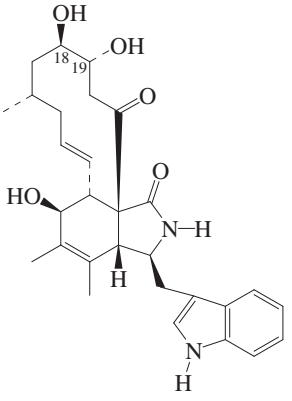
Enolised β,γ-dioxoaldehyde system. Prod. by *Phoma exigua* var. *heteromorpha*.

[177985-20-5]

Evidente, A. *et al., Nat. Toxins*, 1996, **4**, 53-57

Cytochalasin Y C-958

[460352-10-7]



$C_{29}H_{36}N_2O_5$ 492.614

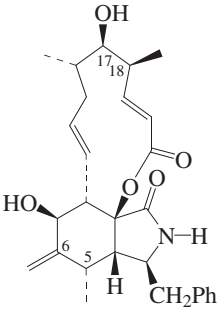
Isol. from *Pseudeurotium zonatum*. Solid. $[\alpha]_D^{20}$ +47.3 (c, 0.02 in MeOH). λ_{max} 220 (log ϵ 4.95); 273 (log ϵ 4.11); 290 (log ϵ 4.09) (MeOH).

19-Deoxy, 18-ketone: ***Cytochalasin X***
[460352-09-4]
$C_{29}H_{34}N_2O_4$ 474.599
Isol. from *Pseudeurotium zonatum*. Solid. $[\alpha]_D^{20}$ +13.2 (c, 0.02 in MeOH). λ_{max} 220 (log ϵ 4.94); 273 (log ϵ 4.22); 290 (log ϵ 4.18) (MeOH).

Feng, Y. *et al., J. Nat. Prod.*, 2002, **65**, 1274-1277 (*isol, ir, pmr, cmr*)

Cytochalasin Z_7 C-959

7,17-Dihydroxy-16,18-dimethyl-10-phenyl-22-oxa[12]cytochalasa-6(12),13,19-triene-1,21-dione



$C_{28}H_{35}NO_5$ 465.588

Metab. of the marine-derived fungus *Spicaria elegans*. Needles (MeOH). Mp 194-196°. $[\alpha]_D^{25}$ +58.3 (c, 0.08 in MeOH). λ_{max} 236 (log ϵ 3.31) (MeOH).

17-Deoxy, 18α-hydroxy:
$C_{28}H_{35}NO_5$ 465.588
Isol. from a *Daldinia* sp. Amorph. solid. $[\alpha]_D$ +67.8 (c, 0.27 in MeOH).

Δ^5-Isomer: ***Cytochalasin Z_8***
$C_{28}H_{35}NO_5$ 465.588
Metab. of the marine-derived fungus *Spicaria elegans*. Needles (MeOH). Mp 215-217°. $[\alpha]_D^{25}$ +68.2 (c, 0.08 in MeOH). λ_{max} 234 (log ϵ 3.47) (MeOH).

Δ^5-Isomer, 17-deoxy, 18α-hydroxy: ***Cytochalasin Z_9***
$C_{28}H_{35}NO_5$ 465.588
Isol. from *Spicaria elegans*. Needles (MeOH). Mp 252-254°. $[\alpha]_D^{25}$ +70.4 (c, 0.1 in MeOH). λ_{max} 231 (log ϵ 3.37) (MeOH).

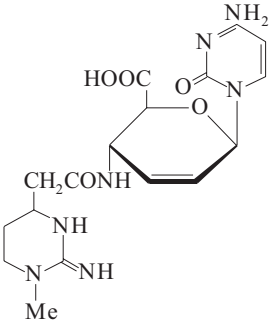
Buchanan, M.S. *et al., Phytochemistry*, 1996, **41**, 821-828 (*Daldinia constit*)

Liu, R. *et al., J. Nat. Prod.*, 2006, **69**, 871-875 (*isol, cd, pmr, cmr*)

Cytomycin C-960

Saitomycin

[2005-98-3]



$C_{17}H_{23}N_7O_5$ 405.413

Nucleoside-type antibiotic. Degradn. prod. of Blasticidin S by microbes such as *Pseudomonas marginalis*, *Pseudomonas ovalis*, *Streptomyces griseochromogenes and Fusarium oxysporum*. Shows antitumour activity. Sol. H_2O; fairly sol. MeOH; poorly sol. Me_2CO, hexane. Mp 237-239° dec. λ_{max} 266 (ϵ 7450) (pH 9) (Derep). λ_{max} 274 (ϵ 13600) (pH 3 H_2O) (Derep).

▶ LD_{50} (mus, ipr) 2000 mg/kg. HA5375000

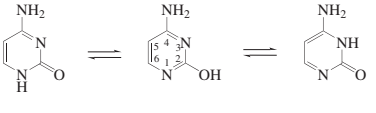
Otake, N. *et al., Agric. Biol. Chem.*, 1966, **30**, 132

Yamaguchi, I. *et al., Agric. Biol. Chem.*, 1972, **36**, 1719 (*isol*)

Cytosine C-961

4-Amino-2(1H)-pyrimidinone, 9CI. 4-Amino-2-hydroxypyrimidine

[71-30-7]



1H-form *OH-form* *3H-form*

$C_4H_5N_3O$ 111.103

1*H*-Form predominates. Constit. of DNA of plants and animals. Obt. from hydrol. of nucleic acids. Plates + $5H_2O$ (H_2O). Mp 320-325° dec. pK_{a1} 4.6; pK_{a2} 12.16 (25°).

▶ UW7350150

4-N-*Ac:* [14631-20-0]
$C_6H_7N_3O_2$ 153.14

Cryst. (AcOH). Mp 325° (dec.). Mp >300°.

4-N-*Me:* N-*Methylcytosine, 8CI. (4-Methylamino)-2(1*H*)-pyrimidinone*
[6220-47-9]
$C_5H_7N_3O$ 125.13
Cubes (Me_2CO aq.). Mp 270°.

1*H-form*

1-β-D-Arabinofuranosyl: see Cytosine arabinoside, C-962

1-β-L-Ribofuranosyl: L-Cytidine
[26524-60-7]
$C_9H_{13}N_3O_5$ 243.219
Cryst. (EtOH). Mp 207-208°. $[\alpha]_D^{20}$ -40 (c, 1.0 in H_2O). λ_{max} 229 (sh) (ϵ 6900); 271 (ϵ 8100) (H_2O).

1-α-D-Xylofuranosyl: [77172-20-4]
$C_9H_{13}N_3O_5$ 243.219
Cryst. (EtOH). Mp 264-266° dec.

1-β-D-Xylofuranosyl: [3530-56-1]
$C_9H_{13}N_3O_5$ 243.219
Cryst. (EtOH aq.). Mp 240-242°. $[\alpha]_D^{20}$ -20 (c, 0.75 in DMSO).

► UW7370800

1-N-*β-D-Glucuronopyranosyl:* ***Cytosylglucuronic acid***
[59862-05-4]
$C_{10}H_{13}N_3O_7$ 287.229
Metab. of *Streptomyces griseochromogenes.*

1-N-*(3-Deoxy-β-D-galacturonopyranosyl):*
$C_{10}H_{13}N_3O_6$ 271.229
Prod. by *Streptomyces griseochromogenes.* Solid.

*1-Me: 4-Amino-1-methyl-2(1*H*)-pyrimidinone, 9CI. 1-Methylcytosine*
[1122-47-0]
$C_5H_7N_3O$ 125.13
Cryst. (H_2O). Mp 260-265° Mp 300°.

OH-form

Me ether: 4-Amino-2-methoxypyrimidine, 8CI
[3289-47-2]
$C_5H_7N_3O$ 125.13
Cryst. (H_2O). Mp 170-171°. pK_a 5.3 (20°).

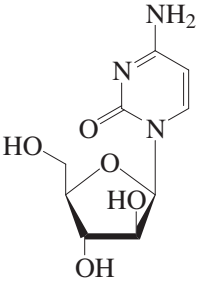
3*H-form*

*3-Me: 6-Amino-1-methyl-2(1*H*)-pyrimidinone, 9CI. 3-Methylcytosine*
[4776-08-3]
$C_5H_7N_3O$ 125.13
Yellow cryst. (EtOH aq.). Mp 213°.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 827C (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 383B (*nmr*)
Wheeler, H.L. *et al., Am. Chem. J.*, 1903, **29**, 429 (*4-N-Ac*)
Hilbert, G.E. *et al., J.A.C.S.*, 1935, **57**, 552 (*synth*)
Flynn, E.H. *et al., J.A.C.S.*, 1953, **75**, 5871 (*synth, 1-Me*)
Kenner, G.W. *et al., J.C.S.*, 1955, 855 (*synth, 1-Me*)
Kokko, J.P. *et al., J.A.C.S.*, 1962, **84**, 1042 (*pmr*)
Katritzky, A.R. *et al., J.C.S.*, 1963, 3046 (*synth, 3-Me*)
Barker, D.L. *et al., Acta Cryst.*, 1964, **17**, 1581 (*cryst struct*)
Matthews, F.S. *et al., Nature (London)*, 1964, **201**, 179 (*cryst struct, 1-Me*)
Rice, J.M. *et al., J.A.C.S.*, 1965, **87**, 4569 (*ms*)
Hill, J.A. *et al., J.C.S.*, 1965, 1515 (*synth*)
Sakai, T.T. *et al., J. Het. Chem.*, 1968, **5**, 849 (*synth, pmr, uv, 1-Me*)
David, S. *et al., Bull. Soc. Chim. Fr.*, 1969, 816 (*synth*)
Maehr, H. *et al., J. Het. Chem.*, 1972, **9**, 1389 (*synth, pmr, uv, 3-Me*)
Coletta, F. *et al., J. Magn. Reson.*, 1976, **22**, 453 (*cmr, pmr*)
Yamauchi, K. *et al., J.O.C.*, 1976, **41**, 3691 (*synth, 1-Me*)
Mandel, N.S. *et al., Acta Cryst. B*, 1977, **33**, 1079 (*cryst struct*)
Ward, A.D. *et al., J. Med. Chem.*, 1977, **20**, 88 (*4-N-Ac*)
Srikrishnan, T. *et al., Acta Cryst. B*, 1978, **34**, 1730 (*cryst struct, 3-Me*)
Angibeaud, P. *et al., Carbohydr. Res.*, 1980, **78**, 195 (*4-N-Ac, uv, pmr*)
Mathlouth, M. *et al., Carbohydr. Res.*, 1986, **146**, 1 (*ir, Raman*)
Gosselin, G. *et al., J. Med. Chem.*, 1986, **29**, 203 (*derivs*)
Guo, J. *et al., J.A.C.S.*, 1991, **113**, 5898-5899 (*Cytosylglucuronic acid*)
Okabe, M. *et al., J.O.C.*, 1991, **56**, 4392 (*4-N-Ac, pmr*)
Khutova, B.M. *et al., Khim. Geterotsikl. Soedin.*, 1991, 512 (*4-N-Ac*)
Gould, I.R. *et al., Spectrochim. Acta A*, 1992, **48**, 811 (*ir, tautom*)
Kwiatkowski, J.S. *et al., J. Phys. Chem.*, 1996, **100**, 941 (*ir, struct, tautom*)
Florian, J. *et al., J. Phys. Chem.*, 1996, **100**, 5578 (*ir, Raman, tautom*)
Zhang, Q. *et al., J. Nat. Prod.*, 1998, **61**, 648-651 (*galactouronoside*)
Moyroud, E. *et al., Tetrahedron*, 1999, **55**, 1277-1284 (*β-L-ribofuranosyl, pmr*)
Sivets, G.G. *et al., Synthesis*, 2002, 253-259 (*β-L-ribofuranosyl, uv*)

Cytosine arabinoside C-962

*4-Amino-1-arabinofuranosyl-2(1*H*)-pyrimidinone, 9CI. Arabinosylcytosine. 4-Amino-1-arabinofuranosyl-2-oxo-1,2-dihydropyrimidine. Arabinofuranosylcytosine. Cyclocide*



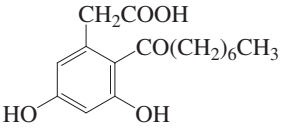
$C_9H_{13}N_3O_5$ 243.219

[116459-64-4]

Tougard, P. *et al., Acta Cryst. B*, 1974, **30**, 86 (*cryst struct*)
Hruska, F.E. *et al., Can. J. Chem.*, 1982, **60**, 3026 (*pmr, cmr*)
Creasey, W.A. *et al., Antibiotics (N.Y.)*, 1983, **6**, 12 (*rev*)
Takahashi, A. *et al., Chem. Pharm. Bull.*, 1992, **40**, 1313 (*isol, pmr*)

Cytosporone A C-963

3,5-Dihydroxy-2-(1-oxooctyl)benzeneacetic acid. 3,5-Dihydroxy-2-octanoylphenylacetic acid
[97902-31-3]



$C_{16}H_{22}O_5$ 294.347
Prod. by *Cytospora* sp., *Diaporthe* sp. and a *Phoma* sp. Cryst. Mp 130°. λ_{max} 219 ; 270 (MeCN).

Et ester: ***Cytosporone B***
$C_{18}H_{26}O_5$ 322.4
Prod. by *Cytospora* sp., *Diaporthe* sp. and *Dothiorella* sp. λ_{max} 219 ; 268 (MeCN).

*2′,3′,4′,5′-Tetradehydro(*E,E-*), Et ester:* ***Cytosporone F***
[1004540-64-0]
$C_{18}H_{22}O_5$ 318.369
Prod. by *Paraphaeosphaeria quadriseptata*. Pale brown oil. λ_{max} 208 (log ϵ 8.32); 288 (log ϵ 7.47) (EtOH).

*2′,3′,4′,5′*E*-Tetradehydro, 2′ξ,3′ξ-epoxide, Et ester:* ***Cytosporone I***
[1004540-67-3]
$C_{18}H_{22}O_6$ 334.368
Prod. by *Paraphaeosphaeria quadriseptata*. Amorph. solid. λ_{max} 201 (log ϵ 5.29); 217 (log ϵ 4.22); 277 (log ϵ 4.33); 309 (log ϵ 5.39) (EtOH).

6′ξ-Hydroxy, Et ester: ***Dothiorelone B***
[849758-67-4]
$C_{18}H_{26}O_6$ 338.4
Prod. by the mangrove fungus *Dothiorella* sp. Cytotoxic.

7′ξ-Hydroxy, Et ester: ***Dothiorelone A***
[849758-66-3]
$C_{18}H_{26}O_6$ 338.4
Prod. by *Dothiorella* sp. Cytotoxic.

*7′ξ-Hydroxy, 2′,3′,4′,5′-tetradehydro(*E,E-*), Et ester:* ***Cytosporone H***
[1004540-66-2]
$C_{18}H_{22}O_6$ 334.368
Prod. by *Paraphaeosphaeria quadriseptata*. Yellow oil. $[\alpha]_D^{25}$ -13 (c, 0.13 in MeOH). Abs. config. not clear from ref. λ_{max} 204 (log ϵ 5.23); 298 (log ϵ 5.09); 305 (log ϵ 5.55) (EtOH).

8′-Hydroxy, Et ester: ***Dothiorelone C***
[849758-68-5]
$C_{18}H_{26}O_6$ 338.4
Prod. by *Dothiorella* sp. Cytotoxic.

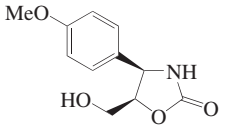
*8′-Hydroxy, 2′,3′,4′,5′-tetradehydro(*E,E-*), Et ester:* ***Cytosporone G***
[1004540-65-1]
$C_{18}H_{22}O_6$ 334.368
Prod. by *Paraphaeosphaeria quadriseptata*. Pale brown oil. λ_{max} 206 (log ϵ 7.44); 287 (log ϵ 7.58) (EtOH).

Voblikova, V.D. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1985, **21**, 362-365 (*isol*)
Brady, S.F. *et al., Org. Lett.*, 2000, **2**, 4043-4046 (*isol, pmr, cmr*)
Xu, Q. *et al., Acta Oceanol. Sin.*, 2004, **23**, 541-547; *CA*, **142**, 388784y (*Dothiorelones*)

Paranagama, P.A. *et al., J. Nat. Prod.*, 2007, **70**, 1939-1945 (*Cytosporones F-I*)
Singh, M.P. *et al., Mar. Drugs*, 2007, **5**, 71-84 (*isol, activity*)

Cytoxazone C-964

5-(Hydroxymethyl)-4-(4-methoxyphenyl)-2-oxazolidinone, 9CI
[220736-25-4]



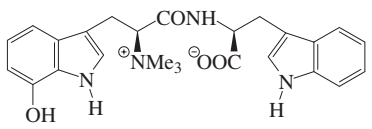
Absolute Configuration

$C_{11}H_{13}NO_4$ 223.228
Prod. by *Streptomyces* sp. RK95-31. Cytokine modulator. Immunostimulant. Cryst. Mp 118-121°. $[\alpha]_D^{23}$ -71 (c, 0.1 in MeOH). The other stereoisomers have been synthesised. λ_{max} 225 (ϵ 19600); 277 (ϵ 2710); 284 (sh) (ϵ 2300) (MeOH).

Kakeya, H. *et al., J. Antibiot.*, 1998, **51**, 1126-1128 (*isol, activity*)
Seki, M. *et al., Eur. J. Org. Chem.*, 1999, 2965-2967 (*synth*)
Kakeya, H. *et al., J.O.C.*, 1999, **64**, 1052-1053 (*uv, ir, cd, pmr, cmr, cryst struct*)
Hammerščak, Z. *et al., Synthesis*, 2001, 1989-1992 (*synth, stereoisomers*)
Madhan, A. *et al., Tetrahedron: Asymmetry*, 2001, **12**, 2009-2011 (*synth, pmr, cmr*)
Carter, P.C. *et al., Bioorg. Med. Chem. Lett.*, 2003, **13**, 1237-1239 (*synth, sar*)
Kumar, A.R. *et al., Synth. Commun.*, 2003, **33**, 2907-2916 (*synth, ir, pmr, cmr*)
Davies, S.G. *et al., Org. Biomol. Chem.*, 2004, **2**, 1549-1553 (*synth*)
Milicevic, S. *et al., Tet. Lett.*, 2004, **45**, 955-957 (*synth*)
Miyata, O. *et al., Tetrahedron*, 2004, **60**, 3893-3914 (*synth*)
Sugiyama, S. *et al., Tetrahedron: Asymmetry*, 2004, **15**, 3149-3153 (*synth, stereoisomers*)
Asano, M. *et al., Biosci., Biotechnol., Biochem.*, 2005, **69**, 145-148 (*synth*)
Giorgio, E. *et al., J.O.C.*, 2005, **70**, 6557-6563 (*ord, abs config*)
Tokic-Vujosevic, Z. *et al., Synth. Commun.*, 2005, **35**, 435-447 (*synth, epimer*)
Smitha, G. *et al., Synth. Commun.*, 2006, **36**, 1795-1800 (*epimer, synth, ir, pmr, cmr*)
Paraskar, A.S. *et al., Tetrahedron*, 2006, **62**, 5756-5762 (*synth*)
Kim, I.S. *et al., Tetrahedron*, 2006, **62**, 9349-9358 (*synth*)
Mishra, R.K. *et al., Org. Lett.*, 2007, **9**, 575-578 (*synth*)
Narina, S.V. *et al., Tet. Lett.*, 2007, **48**, 65-68 (*synth*)
Grajewska, A. *et al., Tetrahedron: Asymmetry*, 2007, **18**, 803-813 (*rev, synth*)
Pham, V.-T. *et al., Heterocycles*, 2008, **75**, 2817-2823 (*synth*)

Dactylamide A D-1

[398143-15-2]



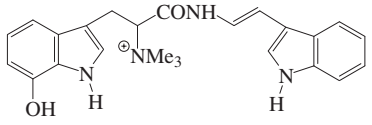
Absolute Configuration

$C_{25}H_{28}N_4O_4$ 448.521
Isol. from *Aplysia dactylomela*. Amorph. solid. Mp 204-210° dec. $[\alpha]_D^{20}$ +7 (c, 0.68 in MeOH aq.). λ_{max} 220 (log ϵ 4.34); 272 (log ϵ 3.56); 286 (log ϵ 3.53); 290 (log ϵ 3.45) (MeOH).

Appleton, D.R. *et al., Tetrahedron*, 2001, **57**, 10181-10189 (*isol, pmr, cmr, uv*)

Dactylamide B D-2

[398143-16-3]

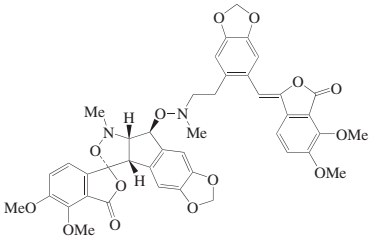


$C_{24}H_{27}N_4O_2^{\oplus}$ 403.503
Isol. from *Aplysia dactylomela*. Pale yellow solid. Mp 160-163° dec. $[\alpha]_D^{20}$ +160 (c, 0.4 in MeOH). Counterion not specified. λ_{max} 219 (log ϵ 4.44); 282 (log ϵ 3.85); 292 (log ϵ 3.83); 313 (log ϵ 3.85) (MeOH).

Appleton, D.R. *et al., Tetrahedron*, 2001, **57**, 10181-10189 (*isol, pmr, cmr, uv*)

Dactylicapnosine D-3

[168434-29-5]



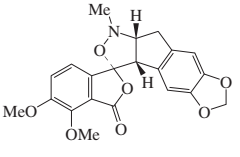
Relative Configuration

$C_{42}H_{38}N_2O_{14}$ 794.767
Alkaloid from *Dactylicapnos torulosa* (Papaveraceae). Mp 135-136°. $[\alpha]_D^{20}$ 0 (c, 0.3 in MeOH).

Zhang, G.-L. *et al., Phytochemistry*, 1995, **40**, 299 (*isol, uv, ir, pmr, cmr, ms, cryst struct*)

Dactylicapnosinine D-4

[168434-28-4]



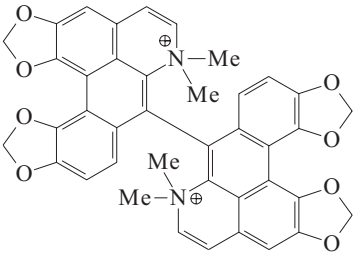
Relative Configuration

$C_{21}H_{19}NO_7$ 397.384
Alkaloid from *Dactylicapnos torulosa* (Papaveraceae). Needles ($CHCl_3$/EtOAc, 2:1). Mp 184.5-186°. $[\alpha]_D^{20}$ 0 (c, 0.1 in MeOH).

Zhang, G.-L. *et al., Phytochemistry*, 1995, **40**, 299 (*isol, uv, ir, pmr, cmr, ms, struct*)

Dactylidine D-5

[168434-27-3]

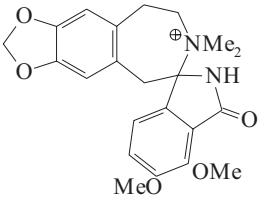


$C_{40}H_{30}N_2O_8^{2\oplus}$ 666.686
Alkaloid from *Dactylicapnos torulosa* (Papaveraceae). Orange powder (as dichloride). Mp 300° (dichloride).

Zhang, G.-L. *et al., Phytochemistry*, 1995, **40**, 299 (*isol, uv, ir, pmr, cmr, struct*)

Dactyline D-6

[168434-26-2]

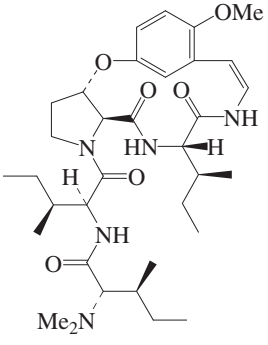


$C_{22}H_{25}N_2O_5^{\oplus}$ 397.45
Alkaloid from *Dactylicapnos torulosa* (Papaveraceae). Needles (MeOH) (as chloride). Mp 110° dec. (chloride). $[\alpha]_D^{20}$ 0 (c, 1.0 in MeOH) (chloride).

Zhang, G.-L. *et al., Phytochemistry*, 1995, **40**, 299 (*isol, uv, ir, pmr, cmr, ms, struct*)

Daechuine S3 D-7

[123089-20-3]

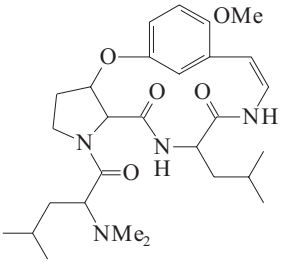


$C_{34}H_{53}N_5O_6$ 627.823
Alkaloid from the Daechu tree (*Zizyphus jujuba* var. *inermis*) and from *Paliurus ramossisimus*. Mp 192-194°. $[\alpha]_D^{30}$ -454 (c, 0.76 in MeOH).

Han, B.H. *et al., Pure Appl. Chem.*, 1989, **61**, 443-448
Lee, S.-S. *et al., Phytochemistry*, 2001, **58**, 1271-1276 (*isol, cd, uv, pmr, cmr, ms*)

Daechuine S7 D-8

[123089-22-5]

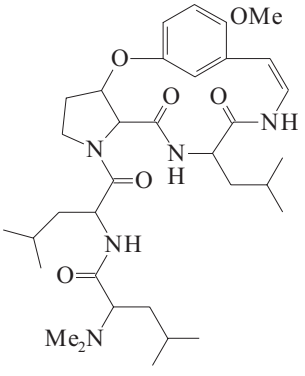


$C_{28}H_{42}N_4O_5$ 514.664
Alkaloid from the stem bark of the Daechu tree (*Zizyphus jujuba* var. *inermis*) (Rhamnaceae). Mp 158°. $[\alpha]_D$ -648.3.

Han, B.H. *et al., Pure Appl. Chem.*, 1989, **61**, 443

Daechuine S8-1 D-9

[123089-23-6]

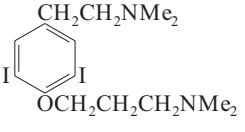


$C_{34}H_{53}N_5O_6$ 627.823
Alkaloid from the stem bark of the Daechu tree (*Zizyphus jujuba* var. *inermis*) (Rhamnaceae). Mp 185-188°. $[\alpha]_D$ -218.2.

Han, B.H. *et al., Pure Appl. Chem.*, 1989, **61**, 443

Dakaramine D-10

[173075-47-3]

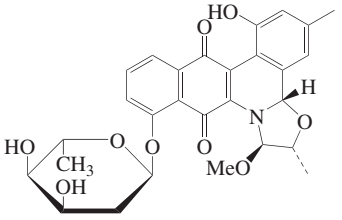


$C_{15}H_{24}I_2N_2O$ 502.176
Metab. from the Senegalese sponge *Ptilocaulis spiculifer*.

Diop, M. *et al., J. Nat. Prod.*, 1996, **59**, 271-272 (*isol, uv, ir, pmr, cmr, struct*)

Dalomycin T D-11

[879920-36-2]

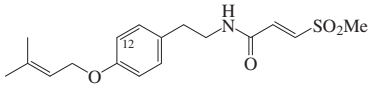


$C_{28}H_{29}NO_9$ 523.538
Metab. of *Streptomyces venezuelae* ISP 5230.

Syvitski, R.T. *et al., Org. Lett.*, 2006, **8**, 697-700 (*isol, pmr, cmr*)

Dambullin D-12

[160896-51-5]



$C_{17}H_{23}NO_4S$ 337.439
Alkaloid from leaves of *Glycosmis angustifolia* (Rutaceae). Mp 145-147°.

N-*Me:* ***Methyldambullin***
[160896-52-6]
$C_{18}H_{25}NO_4S$ 351.466
Alkaloid from leaves of *Glycosmis angustifolia*. Exhibits moderate antifungal activity. Mp 70-73°.

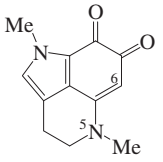
12-Hydroxy: ***Sakambullin***
$C_{17}H_{23}NO_5S$ 353.438
Alkaloid from *Glycosmis chlorosperma*. Cryst. (Et_2O). Mp 111-113°. λ_{max} 224 (sh) ; 275 (MeOH).

12-Methoxy: **O-*Methylsakambullin***. *Methoxydambullin*
$C_{18}H_{25}NO_5S$ 367.465
Alkaloid from *Glycosmis chlorosperma*. Cryst. (Et_2O). Mp 136-138°. λ_{max} 227 (sh) ; 275 (MeOH).

Greger, H. *et al., Phytochemistry*, 1994, **37**, 1305-1310 (*isol, uv, ir, pmr, cmr, ms, struct*)
Hinterberger, S. *et al., Tetrahedron*, 1998, **54**, 487-496 (*synth*)
Hofer, O. *et al., Phytochemistry*, 2000, **54**, 207-213 (*Sakambullin*)

Damirone A D-13

*1,3,4,5-Tetrahydro-1,5-dimethylpyrrolo[4,3,2-*de*]quinoline-7,8-dione, 9CI*
[138683-66-6]



$C_{12}H_{12}N_2O_2$ 216.239
Alkaloid from the sponges *Damiria* sp. and *Zyzzya* sp. Purple solid. Mp 240-242° dec. λ_{max} 242 (ϵ 12600); 347 (ϵ 10200); 518 (ϵ 912) (MeOH) (Derep). λ_{max} 214 (ϵ 9000); 245 (ϵ 21000); 347 (ϵ 7200); 516 (ϵ 500) (MeOH) (Derep).

N^1*-De-Me:* ***Damirone B***
[138683-67-7]
$C_{11}H_{10}N_2O_2$ 202.212
Alkaloid from the sponges *Damiria* sp. and *Zyzzya fuliginosa*. Purple solid. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 250°. λ_{max} 242 (ϵ 7080); 350 (ϵ 4470); 498 (ϵ 257) (MeOH) (Derep). λ_{max} 242 (ϵ 29500); 347 (ϵ 19500) (MeOH) (Berdy). λ_{max} 242 (ϵ 19000); 347 (ϵ 19300) (MeOH/NaOH) (Berdy). λ_{max} 243 ; 348 ; 492 (EtOH) (Berdy).

N^5*-De-Me:* ***6-Dechlorobatzelline C***
[138683-68-8]
$C_{11}H_{10}N_2O_2$ 202.212
Isol. from *Zyzzya fuliginosa*.

N^1,N^5*-Di-de-Me:* ***Damirone C***
[157669-64-2]
$C_{10}H_8N_2O_2$ 188.185
Alkaloid from the sponge *Zyzzya fuliginosa*. Red-brown solid.

N^1,N^5*-Di-de-Me,* N^1*-β-*D*-ribofuranosyl:* ***N^1-β-D-Ribofuranosyldamirone C***
$C_{15}H_{16}N_2O_6$ 320.301
Alkaloid from the sponge *Strongylodesma aliwaliensis*. Red amorph. solid. $[\alpha]_D^{14}$ +5 (c, 0.06 in MeOH). λ_{max} 246 (ϵ 14100); 334 (ϵ 7990); 526 (ϵ 650) (MeOH).

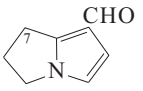
6-Bromo, N^5*-de-Me:* ***Makaluvone***
[146555-84-2]
$C_{11}H_9BrN_2O_2$ 281.108
Isol. from the sponge *Zyzzya fuliginosa*. Grey solid. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. λ_{max} 246 (ϵ 9800); 330 (ϵ 6300) (MeOH/NaOH) (Derep). λ_{max} 246 (ϵ 10100); 330 (ϵ 5500) (MeOH) (Derep).

6-Bromo, N^1,N^5*-di-de-Me: 6-Bromo-1,3,4,5-tetrahydropyrrolo[4,3,2-*de*]quinoline-7,8-dione, 9CI.* ***Makaluvamine O***
$C_{10}H_7BrN_2O_2$ 267.082
Alkaloid from the sponge *Smenospongia* sp. Purple solid. Mp 282-283° dec. λ_{max} 222 (log ϵ 3.81); 244 (log ϵ 3.28); 328 (log ϵ 2.94); 362 (sh) (log ϵ 2.86); 542 (log ϵ 2.06) (MeOH). λ_{max} 244 (log ϵ 4.01); 337 (log ϵ 3.75) (MeOH).

Stierle, D.B. *et al., J. Nat. Prod.*, 1991, **54**, 1131 (*isol, uv, ir, pmr, ms, struct, cmr*)
Baumann, C. *et al., Angew. Chem., Int. Ed.*, 1993, **105**, 1087 (*synth*)
Radisky, D.C. *et al., J.A.C.S.*, 1993, **115**, 1632 (*isol, Damirone B*)
Sadanandan, E.V. *et al., Tet. Lett.*, 1993, **34**, 2405 (*synth*)
Yamada, F. *et al., Heterocycles*, 1995, **41**, 1905 (*synth*)
Schmidt, E.W. *et al., J. Nat. Prod.*, 1995, **58**, 1861 (*Damirone C*)
Roue, N. *et al., J. Pharm. Belg.*, 1995, **50**, 94 (*synth*)
Peat, A.J. *et al., J.A.C.S.*, 1996, **118**, 1028 (*synth*)
Roberts, D. *et al., J.O.C.*, 1997, **62**, 568 (*synth*)
Hu, J.F. *et al., J. Nat. Prod.*, 2002, **65**, 476-480 (*Makaluvamine O*)
Tasdemir, D. *et al., Z. Naturforsch., C*, 2002, **57**, 914-922 (*Makaluvamine O*)
Keyzers, R.A. *et al., Tet. Lett.*, 2004, **45**, 9415-9418 (*N-Ribofuranosyldamirone C*)
Dijoux, M.-G. *et al., Bioorg. Med. Chem.*, 2005, **13**, 6035-6044 (*isol, cmr, activity*)

Danaidal D-14

*2,3-Dihydro-1*H*-pyrrolizine-7-carboxaldehyde, 9CI. 1-Formyl-6,7-dihydro-5*H*-pyrrolizine*
[27628-46-2]



C_8H_9NO 135.165
Isol. from hair pencil and wing scent organ secretions of the butterflies *Danaus affinis affinis*, *Utetheisa lotrix*, *Phragmatobia fuliginosa* and *Pyrrharctia isabella*. Cryst. solid. Mp 59-60°.

► UY7760000

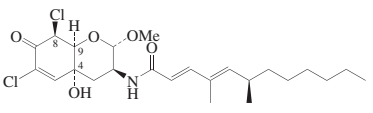
*7*R*-Hydroxy:* ***Hydroxydanaidal***. *2,3-Dihydro-1-hydroxy-1*H*-pyrrolizine-7-carboxaldehyde, 9CI. 1-Formyl-7-hydroxy-6,7-dihydro-5*H*-pyrrolizine*
[28379-58-0]
$C_8H_9NO_2$ 151.165
Found in butterflies *Danaus hamatus hamatus, Euploea tulliola tulliola* and *Euploea sylvester sylvester* and moths. $[\alpha]_D^{25}$ -140. Prod. in the butterfly from Heliotrine, H-95 with inversion of stereochem.

*7-Oxo: 2,3-Dihydro-1-oxo-1*H*-pyrrolizine-7-carboxaldehyde. 1-Formyl-6,7-dihydro-7-oxo-5*H*-pyrrolizine.* ***7-Oxodanaidal***
Alkaloid from the roots of *Ligularia cymbulifera*. Amorph. solid. $[\alpha]_D^{21}$ -7 (c, 0.7 in $CHCl_3$). Opt. rotn. unaccounted for. λ_{max} 270 (log ϵ 1.28); 306 (log ϵ 1.6) ($CHCl_3$).

Culvenor, C.C.J. *et al., Aust. J. Chem.*, 1970, **23**, 1869 (*synth*)
Edgar, J.A. *et al., Experientia*, 1971, **27**, 761; 1972, **28**, 627 (*isol*)
Pizzorno, M.T. *et al., Chem. Ind. (London)*, 1978, 349 (*synth*)
Schneider, D. *et al., Science (Washington, D.C.)*, 1982, **215**, 1264 (*isol*)
Komai, H. *et al., Agric. Biol. Chem.*, 1983, **47**, 157 (*isol*)
Bell, T.W. *et al., Experientia*, 1984, **40**, 713 (*abs config, Hydroxydanaidal*)
Röder, E. *et al., Annalen*, 1986, 1645 (*synth, ir, ms, pmr, cmr*)
Krasnoff, S.B. *et al., J. Chem. Ecol.*, 1987, **13**, 807
Liu, C.-M. *et al., Helv. Chim. Acta*, 2008, **91**, 308-316 (*7-Oxodanaidal*)

Dankastatin A D-15

[1011269-08-1]



Absolute Configuration

$C_{24}H_{35}Cl_2NO_5$ 488.45
Prod. by *Gymnascella dankaliensis* OUPS-N134. Cytotoxic. Powder. Mp 169-171°. $[\alpha]_D^{22}$ +114.4 (c, 0.18 in $CHCl_3$). λ_{max} 266 (log ϵ 4.45) (EtOH).

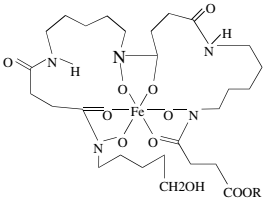
4,8,9-Triepimer, demethoxy: ***Dankastatin B***

[1011269-09-2]
$C_{23}H_{33}Cl_2NO_4$ 458.423
Prod. by *Gymnascella dankaliensis* OUPS-N134. Powder. Mp 90-92.5°. $[\alpha]_D^{22}$ -157.4 (c, 0.18 in $CHCl_3$). λ_{max} 265 (log ϵ 4.45) (EtOH).

Amagata, T. *et al., J. Nat. Prod.*, 2008, **71**, 340-345 (*isol, cd, pmr, cmr, ms*)

Danomycin D-16

[11005-96-2]



Danomycin A, R = $C_{12}H_{20}NO_7(OMe)(OOCNH_2)$
Danomycin B, R = $C_{12}H_{20}NO_7(OMe)(OH)$

Fe complex antibiotic containing a disaccharide of unknown struct. Contains two components. Prod. by *Streptomyces albaduncas*. Active against gram-positive bacteria and weakly against gram-negative bacteria and mycobacteria. Siderophore. Reddish-brown cryst. Sol. H_2O, phenol; fairly sol. MeOH, EtOH-H_2O; poorly sol. butanol, hexane. Mp 135-138° dec. λ_{max} 270 (E1%/1cm 48); 325 (E1%/1cm 12.6); 430 (E1%/1cm 15.6) (H_2O) (Berdy). λ_{max} 325 (E1%/1cm 18); 450 (E1%/1cm 13) (HCl) (Berdy). λ_{max} 325 (E1%/1cm 20); 420 (E1%/1cm 25) (NaOH) (Berdy).
► LD_{50} (mus, ivn) 3250 mg/kg. HB4777000

Danomycin B

$C_{42}H_{70}FeN_4O_{20}$ 1006.877
Sol. H_2O, MeOH. λ_{max} 420 (E1%/1cm 20) (H_2O) (Berdy).

Des-Ferri deriv.:
Beige powder. Mp 122-125° dec.

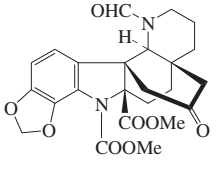
Aglycone: Danoxamine
[105031-30-9]
$C_{27}H_{46}FeN_5O_{11}$ 672.534
Red-brown powder. Mp *ca.*° 150 (dec.).

[104381-50-2 , 104673-04-3 , 105031-29-6]

Tsukiura, H. *et al., J. Antibiot., Ser. A*, 1964, **17**, 39 (*isol, props*)
Japan. Pat., 1965, 65 13 796; *CA*, **63**, 17092 (*isol, props*)
Huber, P. *et al., Helv. Chim. Acta*, 1986, **69**, 236 (*struct*)
Roosenberg, J.M. *et al., J.O.C.*, 2000, **65**, 4833-4838 (*Danoxamine, synth*)

Danuphylline D-17

[213478-78-5]



Absolute Configuration

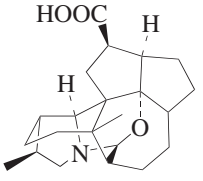
$C_{24}H_{26}N_2O_8$ 470.478
Alkaloid from the leaves of *Kopsia dasyrachis*. Amorph. $[\alpha]_D$ -30 (c, 0.07 in $CHCl_3$). λ_{max} 214 (log ϵ 3.95); 225 (log ϵ 4.13); 248 (log ϵ 3.66); 283 (log ϵ 3.03); 293 (log ϵ 2.99) (no solvent reported).

*De(methylenedioxy): **Danuphylline A***
$C_{23}H_{26}N_2O_6$ 426.468
Alkaloid from the leaves of *Kopsia officinalis*. Amorph. powder. $[\alpha]_D^{26}$ +28.9 (c, 0.36 in $CHCl_3$). λ_{max} 243 ; 279 ; 286 ($CHCl_3$).

Kam, T.S. *et al., Tet. Lett.*, 1998, **39**, 5823-5826 (*isol, uv, pmr, cmr*)
Suzuki, K. *et al., J. Antibiot.*, 1999, **52**, 460-465 (*activity*)
Kam, T.S. *et al., Phytochemistry*, 1999, **52**, 959-963 (*cryst struct*)
Kam, T.-S. *et al., Tetrahedron*, 1999, **55**, 1457-1468 (*synth*)
Zhou, H. *et al., Helv. Chim. Acta*, 2006, **89**, 515-519 (*Danuphylline A*)

Daphcalycic acid D-18

[666174-79-4]



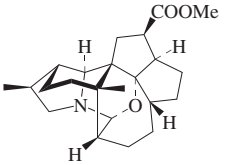
$C_{22}H_{31}NO_3$ 357.492
Alkaloid from the seeds of *Daphniphyllum calycinum*. Cryst. (MeOH). Mp 124-125°. $[\alpha]_D^{22}$ -33 (c, 0.3 in MeOH).

*6′-Ester with Geniposidic acid : **Daphcalycinosidine A***
[666174-77-2]
$C_{38}H_{51}NO_{12}$ 713.82
Alkaloid from the seeds of *Daphniphyllum calycinum*. Cryst. (MeOH). Mp 134-136°. $[\alpha]_D^{22}$ -16 (c, 0.6 in MeOH).

El Bitar, H. *et al., Tet. Lett.*, 2004, **45**, 515-518; 2027-2028 (*isol, pmr, cmr*)

Daphcalycine D-19

[496836-44-3]



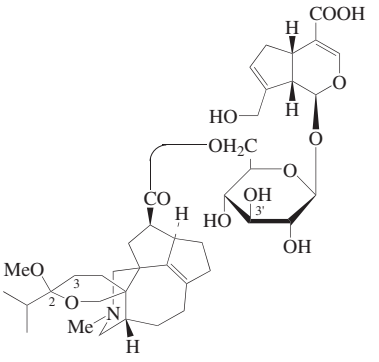
Relative Configuration

$C_{23}H_{33}NO_3$ 371.519
Alkaloid from the stem bark of *Daphniphyllum calycinum*. Cytotoxic. Amorph. solid. $[\alpha]_D$ -73 (c, 0.8 in MeOH). λ_{max} 210 (ϵ 2700) (MeOH).

Jossang, A. *et al., J.O.C.*, 2003, **68**, 300-304 (*isol, pmr, cmr*)

Daphcalycinosidine B D-20

[666174-78-3]



$C_{40}H_{57}NO_{13}$ 759.889
Alkaloid from the seeds of *Daphniphyllum calycinum*. Cryst. (MeOH). Mp 201-202°. $[\alpha]_D^{22}$ +6 (c, 0.3 in MeOH).

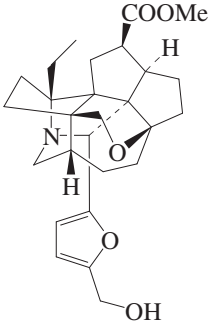
*Demethoxy, 2,3-didehydro: **Daphmacropodosidine B***
[944454-27-7]
$C_{39}H_{53}NO_{12}$ 727.847
Alkaloid from the fruit of *Daphniphyllum macropodum*. Amorph. powder (MeOH). Mp 196-200°. λ_{max} 309 (log ϵ 2.52); 378 (log ϵ 2.26) (MeOH).

*3′-Ester isomer: **Daphmacropodosidine A***
[944454-26-6]
$C_{40}H_{57}NO_{13}$ 759.889
Alkaloid from the fruit of *Daphniphyllum macropodum*. Cryst. (MeOH). Mp 176-178°. $[\alpha]_D^{29}$ -43.5 (c, 0.84 in MeOH). λ_{max} 307 (log ϵ 2.73); 374 (log ϵ 2.42) (MeOH).

El Bitar, H. *et al., Tet. Lett.*, 2004, **45**, 515-518; 2027-2028 (*Daphcalycinosidine B*)
Kong, N.-C. *et al., Helv. Chim. Acta*, 2007, **90**, 972-976 (*Daphmacropodosidines A,B*)

Daphlongeramine A D-21

[937719-93-2]

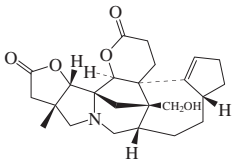


$C_{27}H_{35}NO_5$ 453.577
Alkaloid from the fruit of *Daphniphyllum longeracemosum*. Amorph. solid. $[\alpha]_D^{25}$ -39.4 (c, 0.14 in $CHCl_3$). λ_{max} 241 (log ϵ 3.56) (no solvent reported).

Li, C. *et al., Tet. Lett.*, 2007, **48**, 2737-2740 (*isol, pmr, cmr*)

Daphlongeranine A D-22

[944453-93-4]



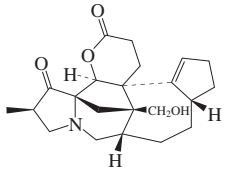
Relative Configuration

$C_{24}H_{31}NO_5$ 413.513
Alkaloid from the fruit of *Daphniphyllum longeracemosum*. Light yellow cryst. (petrol/Me_2CO). Mp 227-229°. $[\alpha]_D^{22}$ +142.7 (c, 0.16 in $CHCl_3$).

Li, C.-S. *et al., Org. Lett.*, 2007, **9**, 2509-2512 (*isol, pmr, cmr, cryst struct*)

Daphlongeranine B D-23

[944453-94-5]



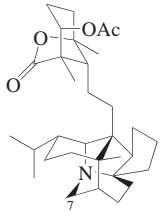
Relative Configuration

$C_{22}H_{29}NO_4$ 371.475
Alkaloid from the fruit of *Daphniphyllum longeracemosum*. Needles (petrol/Me_2CO). Mp 241-243°. $[\alpha]_D^{17}$ +47.2 (c, 0.41 in $CHCl_3$).

Li, C.-S. *et al., Org. Lett.*, 2007, **9**, 2509-2512 (*isol, pmr, cmr*)

Daphmacrine D-24

[19775-48-5]



Absolute Configuration

$C_{32}H_{49}NO_4$ 511.743
Alkaloid from *Daphniphyllum macropodum* (Daphniphyllaceae). Noncryst.

Hydrobromide:
Cryst. ($CHCl_3$/Me_2CO). Mp 300°. $[\alpha]_D$ +30.1 (c, 1.79 in MeOH).

Lactol: ***Daphmacropodine***
[39729-21-0]
$C_{32}H_{51}NO_4$ 513.759
Alkaloid from *Daphniphyllum macropodum* (Daphniphyllaceae). Mp 214-215°. $[\alpha]_D$ +4.9 (c, 1.11 in $CHCl_3$). The lactone carbonyl of Daphmacrine is reduced to OH (stereochem. undetermined).

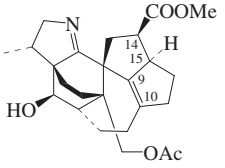
Lactol; hydrobromide:
Cryst. (Me_2CO). Mp 215-218°.

*7*S*-Hydroxy, lactol:* ***Calyciphylline M***
$C_{32}H_{51}NO_5$ 529.759
Alkaloid from *Daphniphyllum calycinum*. Amorph. solid. $[\alpha]_D^{17}$ +1.1 (c, 1 in $CHCl_3$).

Nakano, T. *et al., Chem. Comm.*, 1968, 600 (*isol, ir, pmr, ms, cryst struct*)
Gibbons, C.S. *et al., J.C.S.(B)*, 1969, 840 (*cryst struct*)
Yang, S.-P. *et al., Helv. Chim. Acta*, 2006, **89**, 2783-2788 (*Daphmacropodine*)
Mu, S.-Z. *et al., Chem. Biodiversity*, 2007, **4**, 129-138 (*Daphmacropodine*)
Saito, S. *et al., Tetrahedron*, 2008, **64**, 1901-1908 (*Calyciphylline M*)

Daphmanidine A D-25

[462117-89-1]



Absolute Configuration

$C_{25}H_{33}NO_5$ 427.539
Alkaloid from the leaves of *Daphniphyllum teijsmanii*. Cytotoxic. Amorph. solid. $[\alpha]_D$ -62 (c, 0.5 in MeOH). λ_{max} 283 (ε 2200) (MeOH).

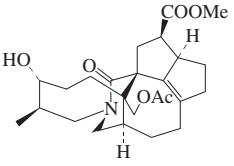
14,15-Didehydro: ***Daphmanidine E***
$C_{25}H_{31}NO_5$ 425.524
Alkaloid from the leaves of *Daphniphyllum teijsmannii*. Amorph. solid. $[\alpha]_D^{20}$ +11 (c, 0.5 in MeOH). λ_{max} 296 (ε 8200) (MeOH).

14,15-Didehydro, 9β,10β-epoxide: ***Daphmanidine F***
$C_{25}H_{31}NO_6$ 441.523
Alkaloid from the leaves of *Daphniphyllum teijsmannii*. Amorph. solid. $[\alpha]_D^{20}$ +25 (c, 1 in MeOH). λ_{max} 235 (ε 6200); 291 (ε 4200) (MeOH).

Kobayashi, J. *et al., J.O.C.*, 2002, **67**, 6546-6549 (*Daphmanidine A*)
Morita, H. *et al., J. Nat. Prod.*, 2006, **69**, 418-420 (*Daphmanidines E,F*)

Daphmanidine B D-26

[462117-90-4]

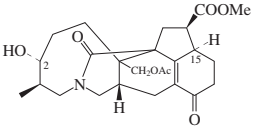


Absolute Configuration

$C_{25}H_{35}NO_6$ 445.555
Alkaloid from the leaves of *Daphniphyllum teijsmanii*. Cytotoxic. Amorph. solid. $[\alpha]_D$ -15 (c, 0.2 in MeOH).

Kobayashi, J. *et al., J.O.C.*, 2002, **67**, 6546-6549 (*isol, pmr, cmr*)

Daphmanidine C D-27



Relative Configuration

$C_{25}H_{33}NO_7$ 459.538
Alkaloid from the leaves of *Daphniphyllum teijsmanii*. Amorph. solid. $[\alpha]_D$ -15 (c, 0.1 in MeOH). λ_{max} 250 (ε 12000) (MeOH).

15-Hydroxy, 2-ketone: ***Daphmanidine D***
$C_{25}H_{31}NO_8$ 473.522
Alkaloid from the leaves of *Daphniphyllum teijsmanii*. Amorph. solid. $[\alpha]_D$ -18 (c, 0.3 in MeOH). λ_{max} 246 (ε 13000) (MeOH).

Morita, H. *et al., Org. Lett.*, 2005, **7**, 459-462 (*isol, pmr, cmr*)

Daphnarcine D-28

[1356-42-9]

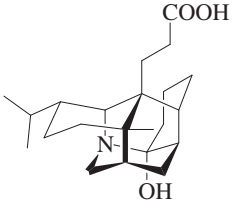
$C_{16}H_{17}NO_4$ 287.315
Amaryllidaceae alkaloid. Struct. unknown. Isol. from *Narcissus* sp. (Amaryllidaceae). Prisms (Me_2CO/MeOH). Mp 258-260° dec. $[\alpha]_D^{25}$ +40 (c, 0.1 in DMF).

Picrate: Mp 246° dec.

Boit, H.-G. *et al., Chem. Ber.*, 1957, **90**, 2197-2202 (*isol*)

Daphnezomine A D-29

[247078-42-8]



Absolute Configuration

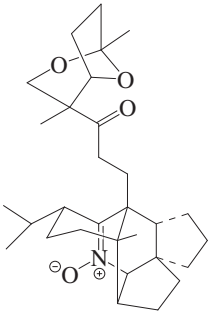
$C_{22}H_{35}NO_3$ 361.523
Zwitterionic. Alkaloid from *Daphniphyllum humile*. Needles. Mp 218-220°. $[\alpha]_D$ -30 (c, 0.1 in $CHCl_3$/MeOH).

Me ester: ***Daphnezomine B***
[247078-43-9]
$C_{23}H_{37}NO_3$ 375.55
Alkaloid from *Daphniphyllum humile*. Powder. $[\alpha]_D$ -31 (c, 0.3 in $CHCl_3$).

Morita, H. *et al., J.O.C.*, 1999, **64**, 7208-7212 (*isol, ir, pmr, cmr, cd, cryst struct*)

Daphnezomine C D-30

[251111-54-3]



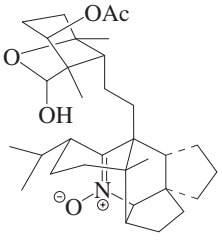
$C_{30}H_{45}NO_4$ 483.69
Alkaloid from *Daphniphyllum humile*.

Solid. $[\alpha]_D^{24}$ -94 (c, 0.3 in $CHCl_3$). λ_{max} 260 (ϵ 4500) (MeOH).

Morita, H. *et al., Tetrahedron*, 1999, **55**, 12549-12556

Daphnezomine D D-31

[251111-55-4]

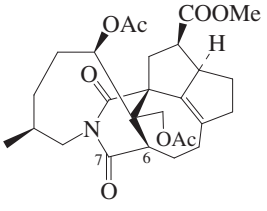


$C_{32}H_{49}NO_5$ 527.743
Alkaloid from *Daphniphyllum humile*. Solid. $[\alpha]_D^{24}$ -151 (c, 0.4 in $CHCl_3$). λ_{max} 260 (ϵ 7000) (MeOH).

Morita, H. *et al., Tetrahedron*, 1999, **55**, 12549-12556

Daphnezomine F D-32

[276255-94-8]



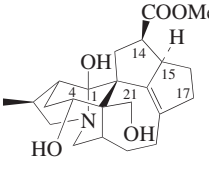
$C_{27}H_{35}NO_8$ 501.575
Alkaloid from *Daphniphyllum humile*. Solid. $[\alpha]_D$ -29 (c, 0.5 in $CHCl_3$). λ_{max} 215 (ϵ 3700); 260 (ϵ 700) (MeOH).

7-Deoxo, 6,7-didehydro: ***Daphnezomine G***
[276255-96-0]
$C_{27}H_{35}NO_7$ 485.576
Alkaloid from *Daphniphyllum humile*. Solid. $[\alpha]_D$ -93 (c, 0.4 in $CHCl_3$). λ_{max} 215 (ϵ 5600); 255 (ϵ 2000) (MeOH).

Morita, H. *et al., J.O.C.*, 2000, **65**, 3432-3442 (*synth, config, pmr, cmr, ms*)

Daphnezomine K D-33

[38966-00-6]



Absolute Configuration

$C_{23}H_{33}NO_5$ 403.517
Alkaloid from *Daphniphyllum humile*. Amorph. solid. $[\alpha]_D^{23}$ -15 (c, 0.3 in MeOH).

4,21-Di-Ac: ***Yuzurimine****. Macrodaphnidine*
[17819-76-0]
$C_{27}H_{37}NO_7$ 487.592
Alkaloid from the leaves and bark of *Daphniphyllum macropodum* and the fruits of *Daphniphyllum teijsmanni* (Daphniphyllaceae). Weak CNS depressant. Cryst. (Me_2CO/Et_2O). Mp 150-152°. $[\alpha]_D$ +8.3 (c, 1.3 in $CHCl_3$). pK_a 7.4 (80% MCS).

4,21-Di-Ac, hydrochloride:
Cryst. (Me_2CO/MeOH). Mp 231-234°.

14,15-Didehydro, 4,21-di-Ac: ***Daphtenidine D***
$C_{27}H_{35}NO_7$ 485.576
Alkaloid from the leaves of *Daphniphyllum teijsmanni*. Amorph. solid. $[\alpha]_D^{23}$ +36 (c, 1 in MeOH). λ_{max} 301 (ϵ 11060) (MeOH).

17-Oxo, 4,21-di-Ac: ***17-Oxoyuzurimine***
[949171-73-7]
$C_{27}H_{35}NO_8$ 501.575
Alkaloid from the leaves of *Daphniphyllum macropodum*. Oil. $[\alpha]_D^{23}$ +14 (c, 0.26 in $CHCl_3$). λ_{max} 248 (log ϵ 3.39) (MeOH).

Parent acid, 4,21-di-Ac: ***Macropodumine H***
[949172-78-5]
$C_{26}H_{35}NO_7$ 473.565
Alkaloid from the leaves of *Daphniphyllum macropodum*. Amorph. powder. $[\alpha]_D^{23}$ +14.5 (c, 0.47 in $CHCl_3$).

1-Deoxy, 4,21-di-Ac: ***Deoxyyuzurimine***
[38966-09-5]
$C_{27}H_{37}NO_6$ 471.592
Alkaloid from the leaves of *Daphniphyllum humile* (Daphniphyllaceae). Plates (cyclohexane). Mp 132-134°.

1-Deoxy, 4,21-di-Ac, N*-oxide:* ***Macrodaphnine***
[24148-90-1]
$C_{27}H_{37}NO_7$ 487.592
Alkaloid from *Daphniphyllum macropodum* (Daphniphyllaceae). Cryst. ($CHCl_3/Et_2O$). Mp 180-181.5°.

*1-Deoxy, 1(*N*)-dehydro, 21-Ac:* ***Daphnezomine J***
[276870-44-1]
$C_{25}H_{34}NO_5^{\oplus}$ 428.547
Quaternary alkaloid from *Daphniphyllum humile*. Amorph. solid. $[\alpha]_D^{23}$ -20 (c, 0.9 in MeOH). Counterion not specified.

4-Deoxy, 21-Ac: ***Yuzurimine E****. Daphniglaucine J*
[752252-76-9]
$C_{25}H_{35}NO_5$ 429.555
Alkaloid from the seeds of *Daphniphyllum calycinum* and the leaves of *Daphniphyllum glaucescens*. Amorph. solid. $[\alpha]_D^{22}$ -33 (c, 0.3 in MeOH). $[\alpha]_D^{24}$ -17 (c, 0.4 in MeOH).

21-Deoxy: ***Macrodaphniphyllamine****. Deacetylyuzurimine A*
[17807-72-6]
$C_{23}H_{33}NO_4$ 387.518
Alkaloid from *Daphniphyllum macropodum* and *Daphniphyllum yunnanense*. Cryst. ($CHCl_3$/hexane). Mp 152-153°. $[\alpha]_D$ -51.7 (c, 1.25 in $CHCl_3$).

21-Deoxy, hydrochloride:
Plates (MeOH/Et_2O). Mp 251-254° (sealed tube).

21-Deoxy, 4-Ac: ***Yuzurimine A***
[17232-64-3]
$C_{25}H_{35}NO_5$ 429.555
Minor alkaloid from the bark and leaves of *Daphniphyllum macropodum* (Daphniphyllaceae). Needles (MeOH/Et_2O) (as hydrochloride). Mp 249-242° (sealed tube) (hydrochloride). Lacks the primary acetoxy group.

1,4-Dideoxy: ***Yuzurimine B***
[17232-65-4]
$C_{23}H_{33}NO_3$ 371.519
Alkaloid from the leaves and bark of *Daphniphyllum macropodum* and the fruits of *Daphniphyllum teijsmanni* (Daphniphyllaceae). Cryst. (MeOH) (as hydrochloride). Mp 282-284.5° (sealed tube) (hydrochloride). λ_{max} 210 (ϵ 7230) (EtOH).

1,4-Dideoxy, 21-Ac: ***Macrodaphniphyllidine***
[26548-56-1]
$C_{25}H_{35}NO_4$ 413.556
Alkaloid from *Daphniphyllum macropodum* (Daphniphyllaceae). Cryst. (Me_2CO/MeOH) (as hydrobromide). Mp 305-306° (hydrobromide). $[\alpha]_D$ +3.9 (c, 1.11 in MeOH) (hydrobromide).

1,4-Dideoxy, 21-Ac, N*-oxide:* ***Daphniglaucine K***
[753450-67-8]
$C_{25}H_{35}NO_5$ 429.555
Alkaloid from the leaves of *Daphniphyllum glaucescens*. Amorph. solid. $[\alpha]_D^{24}$ -13 (c, 0.7 in MeOH).

1,4-Dideoxy, parent acid: ***Yuzurimic acid B***
[752252-77-0]
$C_{22}H_{31}NO_3$ 357.492
Alkaloid from the seeds of *Daphniphyllum calycinum*. Cryst. (MeOH). Mp 253-255°. $[\alpha]_D^{22}$ +11 (c, 0.3 in MeOH).

1,4-Dideoxy, 14,15-didehydro, N*-oxide:* ***Desacetyldaphnijsmine****. Deacetyldaphnijsmine*
[55855-03-3]
$C_{23}H_{31}NO_4$ 385.502
Minor alkaloid from the fruits of *Daphniphyllum teijsmanni* (Daphniphyllaceae). Cryst. (hexane/EtOAc). Mp *ca.*° 200 dec.

1,4-Dideoxy, 14,15-didehydro, 21-Ac, N*-oxide:* ***Daphnijsmine***
[55855-02-2]
$C_{25}H_{33}NO_5$ 427.539
Minor alkaloid from the fruits of *Daphniphyllum teijsmanni* (Daphniphyllaceae). Cryst. (hexane/EtOAc). Mp 205-207°.

1,21-Dideoxy: ***Yunnandaphnine B***
[917955-53-4]
$C_{23}H_{33}NO_3$ 371.519
Alkaloid from *Daphniphyllum yunnanense*. Powder. $[\alpha]_D^{25}$ +0.8 (c, 0.2 in $CHCl_3$).

4,21-Dideoxy: ***Yunnandaphnine A***
[917955-52-3]
$C_{23}H_{33}NO_3$ 371.519
Alkaloid from *Daphniphyllum yunnanense*. Powder. $[\alpha]_D^{25}$ -56 (c, 0.2 in $CHCl_3$).

4,21-Dideoxy, 14,15-didehydro: ***Calycinine A***
$C_{23}H_{31}NO_3$ 369.503

Alkaloid from *Daphniphyllum calycinum*. Mp 159-161°.

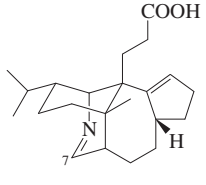
Trideoxy: ***Yunnandaphnine D***
[917955-55-6]
$C_{23}H_{33}NO_2$ 355.519
Alkaloid from *Daphniphyllum yunnanense*. Powder. $[\alpha]_D^{25}$ -45.2 (c, 0.21 in $CHCl_3$).

4-Epimer, 1,21-dideoxy: ***Yunnandaphnine C***
[917955-54-5]
$C_{23}H_{33}NO_3$ 371.519
Alkaloid from *Daphniphyllum yunnanense*. Powder. $[\alpha]_D^{25}$ -24 (c, 0.22 in $CHCl_3$).

Sakabe, N. *et al., Tet. Lett.*, 1966, **7**, 963-964 (*Yuzurimine, isol*)
Sakurai, H. *et al., Tet. Lett.*, 1966, **7**, 6309-6314; 1967, 2883-2888 (*Yuzurimine, Yuzurimine B, uv, ir, pmr, ms, cryst struct*)
Nakano, T. *et al., Tet. Lett.*, 1967, **8**, 4791-4797 (*Macrodaphnine, Macrodaphniphyllamine, Macrodaphniphyllidine*)
Sasaki, K. *et al., J.C.S.(B)*, 1971, 1565-1568 (*abs config*)
Niwa, H. *et al., Tet. Lett.*, 1972, **13**, 2697-2700 (*isol*)
Irikawa, H. *et al., Tetrahedron*, 1972, **28**, 3727-3738 (*Yuzurimine, Yuzurimine B, Deoxyyuzurimine*)
Yamamura, S. *et al., Tet. Lett.*, 1974, 2849-2852 (*Daphnijsmine, Deacetyldaphnijsmine*)
Toda, M. *et al., Tetrahedron*, 1974, **30**, 2683-2688 (*isol*)
Yamamura, S. *et al., Bull. Chem. Soc. Jpn.*, 1975, **48**, 2120-2123 (*cmr*)
Hao, X.-J. *et al., Yunnan Zhiwu Yanjiu*, 1993, **15**, 205-207 (*Calycinine A*)
Morita, H. *et al., Tetrahedron*, 2000, **56**, 2641-2646 (*Daphnezomines J-K*)
El Bitar, H. *et al., J. Nat. Prod.*, 2004, **67**, 1094-1099 (*Yuzurimine E, Yuzurimic acid B*)
Takatsu, H. *et al., Tetrahedron*, 2004, **60**, 6279-6284 (*Daphniglaucines*)
Di, Y.-T. *et al., J. Nat. Prod.*, 2006, **69**, 1745-1748 (*Yunnandaphnines A-D, Macrodaphniphyllamine*)
Kubota, T. *et al., Tetrahedron*, 2006, **62**, 4743-4748 (*Daphtenidine D*)
Li, Z.-Y. *et al., Helv. Chim. Acta*, 2007, **90**, 1353-1359 (*17-Oxoyuzurimine, Macropodumine H*)

Daphnezomine L D-34

[474535-58-5]



Absolute Configuration

$C_{22}H_{33}NO_2$ 343.508
Alkaloid from the stems of *Daphniphyllum humile*. Cytotoxic. Solid. $[\alpha]_D^{24}$ -137 (c, 0.1 in MeOH).

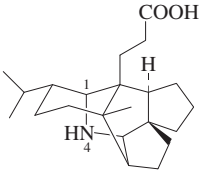
*7,*N*-Dihydro:* ***Paxdaphnidine B***
[676365-62-1]
$C_{22}H_{35}NO_2$ 345.524
Alkaloid from *Daphniphyllum paxianum*. Small needles (MeOH). Mp 121-122°. $[\alpha]_D^{20}$ -50.5 (c, 0.58 in MeOH). Exists as zwitterion.

*7,*N*-Dihydro, Me ester:* ***Calyciphylline K***
$C_{23}H_{37}NO_2$ 359.551
Alkaloid from *Daphniphyllum calycinum*. Amorph. solid. $[\alpha]_D^{19}$ -38.1 (c, 1 in $CHCl_3$).

Morita, H. *et al., Tetrahedron*, 2002, **58**, 6637-6641 (*Daphnezomine L*)
Zhan, Z.-J. *et al., J.O.C.*, 2004, **69**, 1726-1729 (*Paxdaphnidine B*)
Saito, S. *et al., Tetrahedron*, 2008, **64**, 1901-1908 (*Calyciphylline K*)

Daphnezomine M D-35

[474535-59-6]



Absolute Configuration

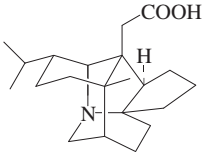
$C_{22}H_{35}NO_2$ 345.524
Alkaloid from the stems of *Daphniphyllum humile*. Solid. $[\alpha]_D^{24}$ -21 (c, 0.2 in MeOH).

1,4-Didehydro: ***Daphnezomine N***
[474535-60-9]
$C_{22}H_{33}NO_2$ 343.508
Alkaloid from the stems of *Daphniphyllum humile*. Cytotoxic. Solid. $[\alpha]_D^{24}$ -113 (c, 0.3 in MeOH).

Morita, H. *et al., Tetrahedron*, 2002, **58**, 6637-6641 (*isol, pmr, cmr*)

Daphnezomine O D-36

[474535-61-0]



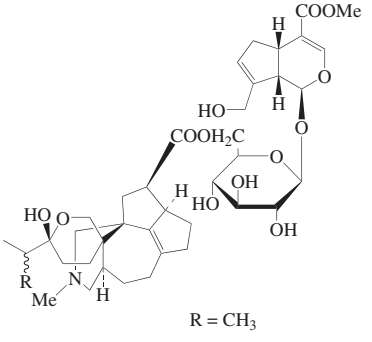
Absolute Configuration

$C_{21}H_{33}NO_2$ 331.497
Lower homologue of Methyl homodaphniphyllate. Alkaloid from the stems of *Daphniphyllum humile*. Solid. $[\alpha]_D^{24}$ -22 (c, 0.3 in MeOH).

Morita, H. *et al., Tetrahedron*, 2002, **58**, 6637-6641 (*isol, pmr, cmr*)

Daphnezomine P D-37

[572889-48-6]



R = CH_3

$C_{40}H_{57}NO_{13}$ 759.889
Alkaloid from the fruit of *Daphniphyllum humile*. Amorph. solid. $[\alpha]_D$ +10 (c, 1 in MeOH). λ_{max} 232 (ϵ 10000) (MeOH).

Parent acid: ***Caldaphnidine F***
[871261-45-9]
$C_{39}H_{55}NO_{13}$ 745.862
Alkaloid from *Daphniphyllum calycinum*. Amorph. powder. $[\alpha]_D^{20}$ +21 (c, 1 in H_2O).

Morita, H. *et al., Tetrahedron*, 2003, **59**, 3575-3579 (*Daphnezomine P*)
Zhan, Z.-J. *et al., Tetrahedron*, 2005, **61**, 11038-11045 (*Caldaphnidine F*)

Daphnezomine Q D-38

[572889-49-7]
As Daphnezomine P, D-37 with
R = H
$C_{39}H_{55}NO_{13}$ 745.862
Alkaloid from the fruit of *Daphniphyllum humile*. Amorph. solid. $[\alpha]_D$ +10 (c, 0.6 in MeOH). λ_{max} 233 (ϵ 10000) (MeOH).

Morita, H. *et al., Tetrahedron*, 2003, **59**, 3575-3579 (*isol, pmr, cmr*)

Daphnicadine D-39

[1356-43-0]

$C_{22}H_{27}NO_2$ 337.461
Struct. unknown. Alkaloid from the seeds of *Daphniphyllum calycinum* (Daphniphyllaceae). Rhombic cryst. Mp 285-287°.

Hydrobromide: Mp 217-219°.

Perchlorate: Mp 184-186°.

Tartrate: Mp 142-144°.

Fang, S.-T. *et al., Huaxue Xuebao*, 1964, **30**, 270-274; *CA*, **61**, 15035e (*isol*)

Daphnicaline D-40

[1356-44-1]

$C_{21}H_{29}NO_2$ 327.466
Struct. unknown. Alkaloid from the seeds of *Daphniphyllum calycinum* (Daphniphyllaceae). Syrup.

Hydrobromide:
Needles. Mp 314°.

Hydroiodide:
Prisms. Mp 316-318°.

Perchlorate:
Leaflets. Mp 304°.

Methiodide:
Needles. Mp 277-281°.

Fang, S.-T. *et al., Huaxue Xuebao*, 1964, **30**, 270-274; *CA*, **61**, 15035e (*isol*)

Daphnicamine D-41

[1356-45-2]

$C_{21}H_{31}NO_2$ 329.481
Struct. unknown. Alkaloid from the seeds of *Daphniphyllum calycinum* (Daphniphyllaceae). Needles + $2H_2O$ (MeOH). Mp 221-222°.

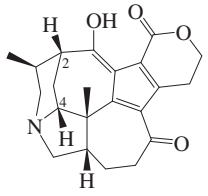
Perchlorate:
Needles. Mp 310-312°.

Methiodide:
Prisms. Mp 254-258°.

Fang, S.-T. *et al., Huaxue Xuebao*, 1964, **30**, 270-274; *CA*, **61**, 15035e (*isol*)

Daphnicyclidine A D-42

[385384-22-5]



Absolute Configuration

$C_{22}H_{25}NO_4$ 367.444
Alkaloid from the stems of *Daphniphyllum humile*. Cytotoxic. Amorph. solid.

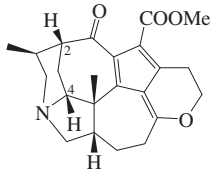
N,*4-Dehydro:* ***Daphnicyclidine B***
[384357-80-6]
$C_{22}H_{24}NO_4^{\oplus}$ 366.436
Quaternary alkaloid from the stems of *Daphniphyllum humile*. Cytotoxic. Amorph. solid.

2-Hydroxy: ***Daphnicyclidine C***
[385384-23-6]
$C_{22}H_{25}NO_5$ 383.443
Alkaloid from the stems of *Daphniphyllum humile*. Cytotoxic. Amorph. solid.

Kobayashi, J. *et al., J.A.C.S.*, 2001, **123**, 11402-11408 (*isol, uv, cd, pmr, cmr, cryst struct*)

Daphnicyclidine D D-43

[385384-24-7]



Absolute Configuration

$C_{23}H_{27}NO_4$ 381.471
Alkaloid from the stems of *Daphniphyllum humile*. Cytotoxic. Amorph. solid.

N,*4-Dehydro:* ***Daphnicyclidine E***
[385384-25-8]
$C_{23}H_{26}NO_4^{\oplus}$ 380.463
Quaternary alkaloid from the stems of *Daphniphyllum humile*. Cytotoxic. Amorph. solid.

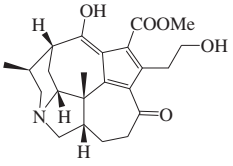
2-Hydroxy: ***Daphnicyclidine F***
[385384-26-9]
$C_{23}H_{27}NO_5$ 397.47
Alkaloid from the stems of *Daphniphyllum humile*. Cytotoxic. Amorph. solid.

De(methoxycarbonyl), 2-hydroxy: ***Daphnicyclidine G***
[385384-27-0]
$C_{21}H_{25}NO_3$ 339.433
Alkaloid from the stems of *Daphniphyllum humile*. Cytotoxic. Amorph. solid.

Kobayashi, J. *et al., J.A.C.S.*, 2001, **123**, 11402-11408 (*isol, uv, cd, pmr, cmr*)

Daphnicyclidine H D-44

[385384-29-2]



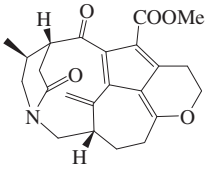
Absolute Configuration

$C_{23}H_{29}NO_5$ 399.486
Alkaloid from the stems of *Daphniphyllum humile*. Cytotoxic. Amorph. solid.

Kobayashi, J. *et al., J.A.C.S.*, 2001, **123**, 11402-11408 (*isol, uv, cd, pmr, cmr*)

Daphnicyclidine J D-45

[408306-44-5]



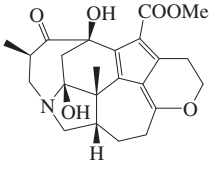
Absolute Configuration

$C_{23}H_{25}NO_5$ 395.454
Alkaloid from the stems of *Daphniphyllum humile*. Cytotoxic. Amorph. solid. $[\alpha]_D$ -15 (c, 0.3 in MeOH). λ_{max} 206 (ϵ 15600); 245 (ϵ 6100); 320 (ϵ 6300); 330 (ϵ 6200) (MeOH).

Morita, H. *et al., J.O.C.*, 2002, **67**, 2278-2282 (*isol, pmr, cmr*)

Daphnicyclidine K D-46

[408306-45-6]

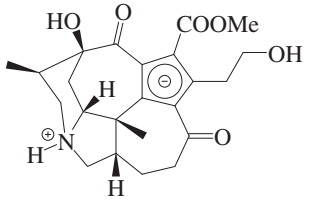


Relative Configuration

$C_{23}H_{27}NO_6$ 413.469
Alkaloid from the stems of *Daphniphyllum humile*. Cytotoxic. Amorph. solid. $[\alpha]_D$ -246 (c, 0.3 in MeOH). λ_{max} 245 (ϵ 9500); 320 (ϵ 11500) (MeOH).

Morita, H. *et al., J.O.C.*, 2002, **67**, 2278-2282 (*isol, pmr, cmr*)

Daphnicyclidine L D-47

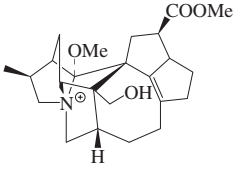


$C_{23}H_{29}NO_6$ 415.485
Zwitterionic. Closely related to Daphnicyclidine H, D-44. Alkaloid from the stem bark of *Daphniphyllum macropodum*. Brown cryst. ($CHCl_3$MeOH). Mp 235-238°. $[\alpha]_D^{20}$ -117.3 (c, 0.3 in DMSO).

Gan, X.-W. *et al., J. Nat. Prod.*, 2006, **69**, 1255-1259 (*isol, pmr, cmr, cryst struct*)

Daphniglaucine B D-48

[543701-04-8]



Relative Configuration

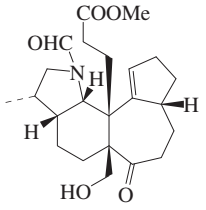
$C_{24}H_{34}NO_4$ 400.537
Alkaloid from the leaves of *Daphniphyllum glaucescens*. Cytotoxic. Solid. $[\alpha]_D$ -30 (c, 0.6 in MeOH).

Demethoxy: ***Daphniglaucine A***
[543701-03-7]
$C_{23}H_{32}NO_3$ 370.511
Alkaloid from the leaves of *Daphniphyllum glaucescens*. Solid. $[\alpha]_D$ -51 (c, 1 in MeOH).

Kobayashi, J. *et al., Org. Lett.*, 2003, **5**, 1733-1736 (*isol, pmr, cmr*)

Daphniglaucine C D-49

[692752-40-2]



Relative Configuration

$C_{23}H_{33}NO_5$ 403.517
Alkaloid from the leaves of *Daphniphyllum glaucescens*. Cytotoxic. Amorph. solid. $[\alpha]_D$ -14 (c, 0.7 in MeOH).

Parent acid: ***Daphnimacropodine B***
[949880-83-5]
$C_{22}H_{31}NO_5$ 389.491
Alkaloid from the fruit of *Daphniphyllum macropodum*. Amorph. powder. $[\alpha]_D^{20}$ -30.1 (c, 0.15 in MeOH).

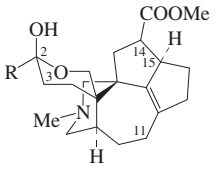
Parent acid, ϵ-lactone: ***Daphnimacropodine C***
[949880-84-6]
$C_{22}H_{29}NO_4$ 371.475
Alkaloid from the fruit of *Daphniphyllum macropodum*. Amorph. powder. $[\alpha]_D^{20}$ -49.4 (c, 0.3 in Me_2CO).

Morita, H. *et al., Tet. Lett.*, 2004, **45**, 901-904 (*Daphniglaucine C*)

Kong, N.-C. *et al., J. Nat. Prod.*, 2007, **70**, 1348-1351 (*Daphnimacropodines B,C*)

Daphnigraciline D-50

[57362-24-0]



R = -CH_2CH_3

$C_{23}H_{35}NO_4$ 389.534
Alkaloid from leaves and bark of *Daphniphyllum gracile* (Daphniphyllaceae). Cryst. (hexane/Et_2O). Mp 76-78°.

Me ether: ***Yuzurine***
[54370-35-3]
$C_{24}H_{37}NO_4$ 403.561
Alkaloid from the bark and leaves of *Daphniphyllum macropodum* and from the leaves of *Daphniphyllum gracile* (Daphniphyllaceae). Viscous liq.; pale-yellow needles (C_6H_6/MeOH)(as methiodide). Mp 229-230° dec. (methiodide).

14,15-Didehydro: ***Daphgraciline***
[73861-50-4]
$C_{23}H_{33}NO_4$ 387.518
Alkaloid from the bark of *Daphniphyllum gracile* (Daphniphyllaceae). Viscous liq.

11-Oxo: ***Oxodaphnigraciline***
[57426-46-7]
$C_{23}H_{33}NO_5$ 403.517
Alkaloid from the leaves of *Daphniphyllum gracile* (Daphniphyllaceae). Cryst. (hexane/Et_2O). Mp 107-109°.

*11*S*-Hydroxy, 14,15-didehydro:* ***Hydroxydaphgraciline***
[73861-52-6]
$C_{23}H_{33}NO_5$ 403.517
Alkaloid from the bark of *Daphniphyllum gracile* (Daphniphyllaceae). Viscous liq.

2-Deoxy, 2,3-didehydro: ***Dehydrodaphnigraciline***
[57362-27-3]
$C_{23}H_{33}NO_3$ 371.519
Alkaloid from the fruit of *Daphniphyllum oldhami*. Amorph. solid. $[\alpha]_D^{26}$ -52 (c, 0.62 in $CHCl_3$).

Parent acid, Me ether: ***Yuzuric acid***
$C_{23}H_{35}NO_4$ 389.534
Alkaloid from the fruit of *Daphniphyllum oldhamii*. Amorph. solid. $[\alpha]_D^{20}$ -23.6 (c, 0.6 in MeOH).

2-Epimer, 11-oxo: ***Epioxodaphnigraciline***
[57361-73-6]
$C_{23}H_{33}NO_5$ 403.517
Alkaloid from leaves of *Daphniphyllum gracile* (Daphniphyllaceae). Cryst. (hexane/Et_2O). Mp 102-104°.

Yamamura, S. *et al., Bull. Chem. Soc. Jpn.*, 1977, **50**, 1836-1840 (*Daphnigraciline, Oxodaphnigraciline, Epioxodaphnigraciline*)
Yamamura, S. *et al., Chem. Lett.*, 1980, 393-396 (*Daphgraciline, Hydroxydaphgraciline*)
Gan, L.-S. *et al., Helv. Chim. Acta*, 2007, **90**, 2395-2400 (*Yuzuric acid*)
Mu, S.-Z. *et al., J. Nat. Prod.*, 2008, **71**, 564-569 (*Dehydrodaphnigraciline*)

Daphnigracine D-51

O^3*-Demethyl-17-methylyuzurine, 9CI*
[57362-22-8]
As Daphnigraciline, D-50 with R = -$CH(CH_3)_2$
$C_{24}H_{37}NO_4$ 403.561
Alkaloid from the leaves of *Daphniphyllum gracile* (Daphniphyllaceae). Viscous liq.; cryst. (as methiodide). Mp 198-199° dec. (methiodide).

Me ether (?): ***Daphnezomine R***
[572889-50-0]
$C_{25}H_{39}NO_4$ 417.587
Alkaloid from the fruit of *Daphniphyllum humile*. Amorph. solid. $[\alpha]_D$ -14 (c, 1 in MeOH). Not interrelated with Daphnigracine. 15-Config. undefined, so could be a stereoisomer of the Me ether.

Me ether, parent acid: ***Daphnezomic acid***
$C_{24}H_{37}NO_4$ 403.561
Alkaloid from the fruit of *Daphniphyllum oldhamii*. Amorph. solid. $[\alpha]_D^{20}$ -24.9 (c, 0.45 in MeOH).

14,15-Didehydro: ***Daphgracine***
[73861-49-1]
$C_{24}H_{35}NO_4$ 401.545
Alkaloid from the bark of *Daphniphyllum gracile* (Daphniphyllaceae). Viscous liq.

2-Deoxy, 2,3-didehydro: ***Dehydrodaphnigracine***
$C_{24}H_{35}NO_3$ 385.545
Alkaloid from the fruit of *Daphniphyllum longeracemosum*. Pale yellow needles (as methiodide). Mp 243-245° dec. (methiodide).

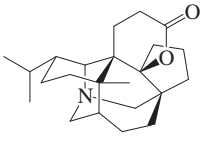
*11*R*-Hydroxy:* ***11-Hydroxydaphnigracine***
$C_{24}H_{37}NO_5$ 419.56
Alkaloid from the fruit of *Daphniphyllum longeracemosum*. Amorph. solid. $[\alpha]_D^{21}$ -13.7 (c, 0.81 in MeOH). Called 13-hydroxy in the lit.

11-Oxo: ***Oxodaphnigracine***
[57362-23-9]
$C_{24}H_{35}NO_5$ 417.544
Alkaloid from the leaves of *Daphniphyllum gracile*. Cryst. (hexane/Et_2O). Mp 116-117°.

Yamamura, S. *et al., Chem. Lett.*, 1975, 923; 1980, 393 (*Daphgracine, Daphnigracine*)
Yamamura, S. *et al., Bull. Chem. Soc. Jpn.*, 1977, **50**, 1836 (*Daphnigracine, Oxodaphnigracine*)
Morita, H. *et al., Tetrahedron*, 2003, **59**, 3575-3579 (*Daphnezomine R*)
Li, L. *et al., Helv. Chim. Acta*, 2006, **89**, 1457-1462 (*11-Hydroxydaphnigracine, Dehydrodaphnigracine*)
Gan, L.-S. *et al., Helv. Chim. Acta*, 2007, **90**, 2395-2400 (*Daphnezomic acid*)

Daphnilactone A D-52

[38210-98-9]
[111795-09-6 ((±)-form)]

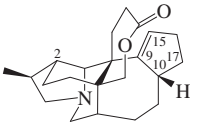


$C_{23}H_{35}NO_2$ 357.535
Minor alkaloid from the bark and leaves of *Daphniphyllum macropodum* (Daphniphyllaceae). Needles (C_6H_6/hexane). Mp 194.5-195.5°.

Sasaki, K. *et al., J.C.S. Perkin 2*, 1972, 1411 (*cmr, cryst struct*)
Sasaki, K. *et al., Tet. Lett.*, 1972, 1275 (*pmr*)
Toda, M. *et al., Tetrahedron*, 1972, **28**, 1477 (*isol, ir, pmr, ms*)
Ruggeri, R.B. *et al., J.A.C.S.*, 1989, **111**, 1530 (*synth*)
Heathcock, C.H. *et al., J.O.C.*, 1992, **57**, 2585 (*synth*)

Daphnilactone B D-53

[38826-56-1]



$C_{22}H_{31}NO_2$ 341.492
A major alkaloid from the fruits of *Daphniphyllum macropodum, Daphniphyllum teijsmanni* and *Daphniphyllum humile* (Daphniphyllaceae). Plates + ½ C_6H_6 (C_6H_6/hexane). Mp 92-94°.

N-*Oxide:* ***Daphnezomine I***. *Daphnilactone B* N-*oxide*
[276870-42-9]
$C_{22}H_{31}NO_3$ 357.492
Alkaloid from *Daphniphyllum humile*. Amorph. solid. $[\alpha]_D^{23}$ -22 (c, 0.6 in $CHCl_3$).

*10,17-Didehydro, 9*R*,15-dihydro:* ***Isodaphnilactone B***
[62074-39-9]
$C_{22}H_{31}NO_2$ 341.492
Alkaloid from the leaves of *Daphniphyllum humile* (Daphniphyllaceae). Viscous liq. Mp 196-198° (as methiodide).

Parent hydroxyacid: ***2-Deoxydaphnezomine S***
[59630-48-7]
$C_{22}H_{33}NO_3$ 359.508
Alkaloid from the fruits of *Daphniphyllum teijsmanni* (Daphniphyllaceae). Plates (Me_2CO aq.). Mp 247-248° dec. Exists as zwitterion.

Parent hydroxyacid, Me ester: ***Daphnimacropodine D***
[949880-85-7]
$C_{23}H_{35}NO_3$ 373.534
Alkaloid from the fruit of *Daphniphyllum macropodum*. Gum. $[\alpha]_D^{20}$ -22.5 (c, 0.2 in MeOH).

Parent hydroxyacid, amide: ***Macropodumine I***
[949172-79-6]
$C_{22}H_{34}N_2O_2$ 358.523
Alkaloid from the leaves of *Daphniphyllum macropodum*. Oil. $[\alpha]_D^{23}$ -22.1 (c, 0.38 in MeOH).

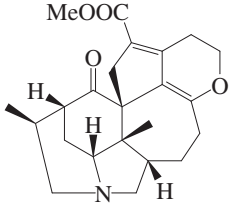
2-Hydroxy: ***Daphnezomine H***
[276870-41-8]
$C_{22}H_{31}NO_3$ 357.492
Alkaloid from *Daphniphyllum humile*. Amorph. solid. $[\alpha]_D^{23}$ -59 (c, 0.4 in $CHCl_3$).

2-Hydroxy, parent hydroxyacid: ***Daphnezomine S***
[572889-51-1]
$C_{22}H_{33}NO_4$ 375.507
Alkaloid from the fruit of *Daphniphyllum humile*. Amorph. solid. $[\alpha]_D$ -7 (c, 1 in MeOH). Zwitterionic.

Niwa, H. *et al., Tet. Lett.*, 1972, 2697-2700; 1973, 2129-2132 (*isol, ir, pmr, struct, biosynth*)
Sasaki, K. *et al., Acta Cryst. B*, 1973, **29**, 547-553 (*cryst struct*)
Toda, M. *et al., Tetrahedron*, 1974, **30**, 2683-2698 (*isol, ir, pmr, ms, struct*)
Yamamura, S. *et al., Bull. Chem. Soc. Jpn.*, 1976, **49**, 839 (*hydroxyacid*)
Yamamura, S. *et al., Chem. Lett.*, 1976, 1381 (*Isodaphnilactone B*)
Morita, H. *et al., Tetrahedron*, 2000, **56**, 2641-2646; 2003, **59**, 3575-3579 (*Daphnezomines*)
Li, Z.Y. *et al., Helv. Chim. Acta*, 2007, **90**, 1353-1359 (*Macropodumine I*)
Kong, N.C. *et al., J. Nat. Prod.*, 2007, **70**, 1348-1351 (*Daphnimacropodine D*)

Daphnilongeranine A D-54

[874201-05-5]

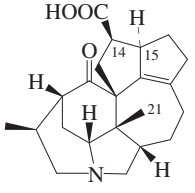


$C_{23}H_{29}NO_4$ 383.486
Alkaloid from *Daphniphyllum longeracemosum*. Gum. $[\alpha]_D^{20}$ -52 (c, 0.55 in $CHCl_3$). λ_{max} 291 (log ϵ 3.33) (MeOH).

Yang, S.-P. *et al., J. Nat. Prod.*, 2006, **69**, 79-82 (*isol, pmr, cmr*)

Daphnilongeranine C D-55

[750649-07-1]



Absolute Configuration

$C_{22}H_{29}NO_3$ 355.476
Alkaloid from *Daphniphyllum longeracemosum*. Amorph. powder. $[\alpha]_D^{20}$ -22 (c, 0.08 in MeOH). λ_{max} 213 (log ϵ 3.08) (MeOH).

Me ester: ***Daphniyunnine A***
$C_{23}H_{31}NO_3$ 369.503
Alkaloid from stems and leaves of *Daphniphyllum yunnanense*. Cryst. (Me_2CO). Mp 171-172°. $[\alpha]_D^{20}$ -130.5 (c, 0.11 in $CHCl_3$). λ_{max} 210 (log ϵ 3.96) (MeOH).

Me ester, N*-oxide:* ***Calyciphylline A***
[596799-30-3]
$C_{23}H_{31}NO_4$ 385.502
Alkaloid from the leaves of *Daphniphyllum calycinum*. Solid. $[\alpha]_D$ -51 (c, 1 in MeOH).

6′-Ester with Geniposidic acid: ***Daphcalycinosidine C***
[752252-75-8]
$C_{38}H_{49}NO_{12}$ 711.805
Alkaloid from the seeds of *Daphniphyllum calycinum*. Amorph. solid. $[\alpha]_D^{22}$ -15 (c, 0.6 in MeOH).

14,15-Didehydro, Me ester: ***Longistylumphylline A***
[857672-34-5]
$C_{23}H_{29}NO_3$ 367.487
Alkaloid from *Daphniphyllum longistylum*. Oil. $[\alpha]_D^{20}$ -78 (c, 0.8 in $CHCl_3$). λ_{max} 295 (log ϵ 4) (MeOH).

21-Hydroxy, Me ester: ***Daphniglaucine D***
[753450-62-3]
$C_{23}H_{31}NO_4$ 385.502
Alkaloid from the leaves of *Daphniphyllum glaucescens*. Amorph. solid. $[\alpha]_D^{24}$ -21 (c, 0.5 in MeOH).

21-Hydroxy, Me ester, N*-oxide:* ***Daphniglaucine G***
[753450-65-6]
$C_{23}H_{31}NO_5$ 401.502
Alkaloid from the leaves of *Daphniphyllum glaucescens*. Amorph. solid. $[\alpha]_D^{24}$ -40 (c, 0.5 in MeOH).

21-Acetoxy, Me ester, N*-oxide:* ***Daphniglaucine H***
[753450-66-7]
$C_{25}H_{33}NO_6$ 443.539
Alkaloid from the leaves of *Daphniphyllum glaucescens*. Amorph. solid. $[\alpha]_D^{24}$ -11 (c, 0.2 in MeOH).

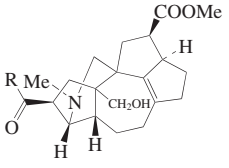
Conformational isomer, 21-hydroxy, Me ester, N*-oxide:* ***Daphniglaucine E***
[753450-63-4]
$C_{23}H_{31}NO_5$ 401.502
Alkaloid from the leaves of *Daphniphyllum glaucescens*. Amorph. solid. $[\alpha]_D^{24}$ -23 (c, 0.7 in MeOH).

Conformational isomer, 21-acetoxy, Me ester, N*-oxide:* ***Daphniglaucine F***
[753450-64-5]
$C_{25}H_{33}NO_6$ 443.539
Alkaloid from the leaves of *Daphniphyllum glaucescens*. Amorph. solid. $[\alpha]_D^{24}$ -18 (c, 0.2 in MeOH).

Morita, H. *et al., Org. Lett.*, 2003, **5**, 2895-2898 (*Calyciphylline A*)
El Bitar, H. *et al., J. Nat. Prod.*, 2004, **67**, 1094-1099 (*Daphcalycinosidine C*)
Takatsu, H. *et al., Tetrahedron*, 2004, **60**, 6279-6284 (*Daphniglaucines*)
Chen, X. *et al., Helv. Chim. Acta*, 2005, **88**, 854-860 (*Longistylumphylline A*)
Yang, S.P. *et al., J. Nat. Prod.*, 2006, **69**, 79-82 (*Daphnilongeranin C*)
Zhang, H. *et al., J. Nat. Prod.*, 2006, **69**, 553-557 (*Daphniyunnine A*)

Daphnilongerine D-56

[910453-13-3]



Relative Configuration

R = -$CH(CH_3)_2$

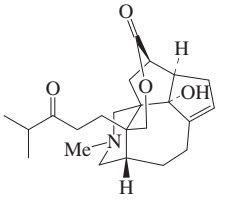
$C_{24}H_{35}NO_4$ 401.545
Alkaloid from the fruit of *Daphniphyllum longeracemosum*. Amorph. solid. $[\alpha]_D^{21}$ +65 (c, 1 in MeOH).

Lower homologue (R = CH_2CH_3*):* ***Daphnioldhanine K***
$C_{23}H_{33}NO_4$ 387.518
Alkaloid from the fruit of *Daphniphyllum oldhami*. Amorph. solid. $[\alpha]_D^{23}$ +32.2 (c, 0.45 in $CHCl_3$).

Li, L. *et al., Tet. Lett.*, 2006, **69**, 6259-6262 (*isol, pmr, cmr*)
Mu, S.-Z. *et al., J. Nat. Prod.*, 2008, **71**, 564-569 (*isol, pmr, cmr*)

Daphnilongertone D-57

[911101-75-2]



Relative Configuration

$C_{23}H_{33}NO_4$ 387.518
Alkaloid from the fruit of *Daphniphyllum longeracemosum*. Amorph. solid. $[\alpha]_D^{21}$ -18.1 (c, 0.82 in MeOH).

Li, L. *et al., Helv. Chim. Acta*, 2006, **89**, 1457-1462 (*isol, pmr, cmr*)

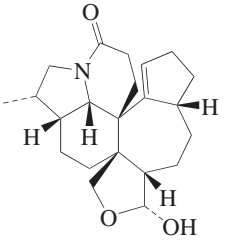
Daphnimacrine D-58

$C_{27}H_{41}NO_4$ 443.625
Struct. unknown. Alkaloid from the bark of *Daphniphyllum macropodum* (Daphniphyllaceae). Amorph. Mp 75-84°. No further reports, and not referred to in modern investigations of this sp.

Yagi, S. *et al., Arch. Int. Pharmacodyn. Ther.*, 1910, **20**, 117-130; *CA*, **4**, 1981 (*isol*)
Sakabe, N. *et al., Tet. Lett.*, 1966, **7**, 963-964 (*Daphniphyllum macropodum constits*)
Nakano, N. *et al., Tet. Lett.*, 1967, **8**, 4791-4797 (*Daphniphyllum macropodum constits*)

Daphnimacropodine A D-59

[949880-81-3]

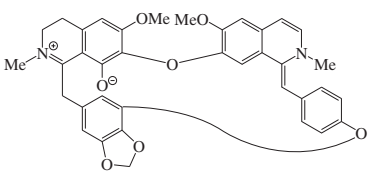


$C_{22}H_{31}NO_3$ 357.492
Alkaloid from the fruit of *Daphniphyllum macropodum*. Gum. $[\alpha]_D^{20}$ +50.5 (c, 1 in Me_2CO).

Kong, N.-C. *et al., J. Nat. Prod.*, 2007, **70**, 1348-1351 (*isol*)

Daphnine D-60

[80531-83-5]

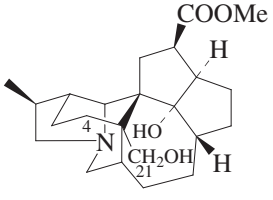


$C_{37}H_{32}N_2O_7$ 616.669
Alkaloid from the bark and leaves of *Daphnandra repandula* (Monimiaceae). Orange-yellow cryst. Unique 7,7′-ether link.

Guilhem, J. *et al., Chem. Comm.*, 1981, 1007 (*cryst struct*)
Howard, A.S. *et al., J. Chem. Res., Synop.*, 1993, 262 (*struct*)

Daphnioldhanine A D-61

[906647-30-1]



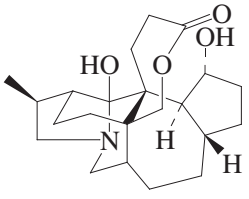
$C_{23}H_{35}NO_4$ 389.534
Alkaloid from *Daphniphyllum oldhami*. Cryst. (petrol/diethylamine). Mp 118°. $[\alpha]_D^{18}$ -30.2 (c, 1.07 in $CHCl_3$).

*4*R-*Hydroxy, 21-Ac:* ***Daphnioldhanine B***
[906647-31-2]
$C_{25}H_{37}NO_6$ 447.57
Alkaloid from *Daphniphyllum oldhami*. Needles (petrol/$CHCl_3$). Mp 204°. $[\alpha]_D^{17}$ -39.1 (c, 0.57 in $CHCl_3$).

Mu, S.-Z. *et al., J. Nat. Prod.*, 2006, **69**, 1065-1069 (*isol, pmr, cmr, cryst struct*)

Daphnioldhanine C D-62

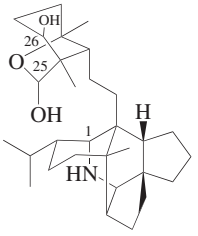
[906647-32-3]



$C_{22}H_{33}NO_4$ 375.507
Related to Daphnilactone B, D-53. Alkaloid from *Daphniphyllum oldhami*. Amorph. solid. $[\alpha]_D^{14}$ -20.3 (c, 0.85 in $CHCl_3$).

Mu, S.-Z. *et al., J. Nat. Prod.*, 2006, **69**, 1065-1069 (*isol, pmr, cmr*)

Daphnioldhanine F D-63



Relative Configuration

$C_{30}H_{49}NO_3$ 471.722

(+)-form

26-Ac: ***Daphnilongeridine***
[922522-15-4]
$C_{32}H_{51}NO_4$ 513.759
Alkaloid from *Daphniphyllum longeracemosum*. Amorph. powder. $[\alpha]_D^{24}$ +45 (c, 0.27 in MeOH).

(-)-form [952482-12-1]
Alkaloid from the roots of *Daphniphyllum oldhami*. Amorph. powder. $[\alpha]_D^{29}$ -48.6 (c, 0.6 in $CHCl_3$).

26-Ac: ***Daphnioldhanine G***
[952482-13-2]
$C_{32}H_{51}NO_4$ 513.759
Alkaloid from the roots of *Daphniphyllum oldhami*. Amorph. powder. $[\alpha]_D^{26}$ -52 (c, 0.34 in $CHCl_3$).

25-Ketone: ***Daphnioldhanine D***
[952482-10-9]
$C_{30}H_{47}NO_3$ 469.706
Alkaloid from the roots of *Daphniphyllum oldhami*. Amorph. powder. $[\alpha]_D^{26}$ -22.8 (c, 0.82 in $CHCl_3$).

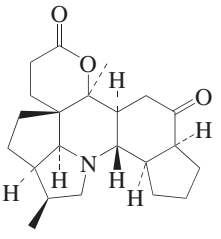
25-Ketone, 26-Ac: ***Daphnioldhanine E***
[952482-11-0]
$C_{32}H_{49}NO_4$ 511.743
Alkaloid from the roots of *Daphniphyllum oldhami*. Amorph. powder. $[\alpha]_D^{20}$ -16.1 (c, 0.83 in $CHCl_3$).

N,*1-Didehydro, 25-ketone, 26-Ac:* ***Daphnioldhanine I***
$C_{32}H_{47}NO_4$ 509.728
Alkaloid from the roots of *Daphniphyllum oldhami*. Amorph. powder. $[\alpha]_D^{21}$ -135.1 (c, 0.29 in $CHCl_3$).

Yang, S.-P. *et al., Helv. Chim. Acta*, 2006, **89**, 2783-2788 (*Daphnilongeridine*)
Mu, S.-Z. *et al., Chem. Biodiversity*, 2007, **4**, 129-138 (*Daphnioldhanines D-G*)
Mu, S.-Z. *et al., J. Nat. Prod.*, 2008, **71**, 564-569 (*Daphnioldhanine I*)

Daphnioldhanine J D-64

[1007392-49-5]

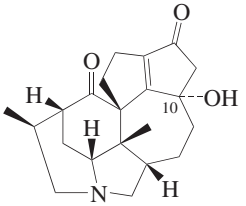


$C_{22}H_{31}NO_3$ 357.492
Alkaloid from the leaves of *Daphniphyllum oldhami*. Amorph. solid. $[\alpha]_D^{25}$ -5.6 (c, 0.15 in $CHCl_3$).

Mu, S.-Z. *et al., J. Nat. Prod.*, 2008, **71**, 564-569 (*isol, pmr, cmr*)

Daphnipaxianine A D-65

[956243-00-8]



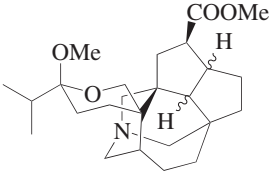
$C_{21}H_{27}NO_3$ 341.449
Alkaloid from *Daphniphyllum paxianum*. Cryst. (Me_2CO). Mp 175°. $[\alpha]_D^{22}$ -93.8 (c, 0.32 in $CHCl_3$). λ_{max} 208 (log ϵ 3.41); 243 (log ϵ 3.88) ($CHCl_3$).

10-Epimer: ***Daphnipaxianine B***
[956243-02-0]
$C_{21}H_{27}NO_3$ 341.449
Alkaloid from *Daphniphyllum paxianum*. Amorph. powder. $[\alpha]_D^{22}$ -99.7 (c, 0.3 in $CHCl_3$). λ_{max} 205 (log ϵ 3.48); 251 (log ϵ 3.81) ($CHCl_3$).

Mu, S.-Z. *et al., J. Nat. Prod.*, 2007, **70**, 1628-1631 (*isol, pmr, cmr, cryst struct*)

Daphnipaxianine D D-66

[956243-07-5]

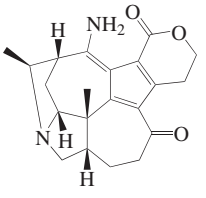


$C_{25}H_{39}NO_4$ 417.587
Alkaloid from *Daphniphyllum paxianum*. Amorph. solid. $[\alpha]_D^{25}$ -23 (c, 1 in MeOH).

Mu, S.-Z. *et al., J. Nat. Prod.*, 2007, **70**, 1628-1631 (*isol, pmr, cmr*)

Daphnipaxinine D-67

[693780-84-6]



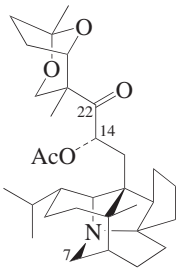
Absolute Configuration

$C_{21}H_{24}N_2O_3$ 352.432
Related to Daphnicyclidine A, D-42. Alkaloid from the stems of *Daphniphyllum paxianum*. Cryst. (Me_2CO). Mp 207° dec. $[\alpha]_D^{20}$ +148 (c, 0.28 in MeOH). λ_{max} 295 (log ϵ 4.46); 371 (log ϵ 4.27) (MeOH).

Yang, S.-P. *et al., Org. Lett.*, 2004, **6**, 1401-1404 (*isol, pmr, cmr, ms*)

Daphniphylline D-68

Daphniphyllamine
[15007-67-7]



Absolute Configuration

$C_{32}H_{49}NO_5$ 527.743
One of the main alkaloids from *Daphniphyllum macropodum* and *Daphniphyllum teijsmanni*. Also isol. from the bark of *Daphniphyllum gracile* and from the dried calyx and bract of *Hibiscus sabdariffa* (Daphniphyllaceae, Malvaceae). Non-cryst.; needles ($CHCl_3$/Et_2O) (as hydrochloride). Mp 238-240° (sealed tube) (hydrochloride).

N-*Oxide:* ***Daphnezomine E***. *Daphniphylline* N-*oxide*
[251111-56-5]
$C_{32}H_{49}NO_6$ 543.742
Alkaloid from *Daphniphyllum humile*. Solid. $[\alpha]_D^{24}$ +31 (c, 1.4 in $CHCl_3$).

O-*De-Ac:* ***Daphnilongeranine D***
[42521-95-9]
$C_{30}H_{47}NO_4$ 485.706
Alkaloid from *Daphniphyllum longeracemosum*. Amorph. powder. $[\alpha]_D^{20}$ +50 (c, 0.23 in MeOH). λ_{max} 202 (log ϵ 2.46) (MeOH).

O-*De-Ac, 14-ketone, 22ξ-alcohol:* ***Daphniphyllidine***
[50764-62-0]
$C_{30}H_{47}NO_4$ 485.706
Alkaloid from the leaves and bark of *Daphniphyllum macropodum* (Daphniphyllaceae). Mp 264° dec. (as methiodide). Isomer of Deacetyldaphniphylline.

7S-*Hydroxy:* ***Daphnioldhanine H***
$C_{32}H_{49}NO_6$ 543.742
Alkaloid from the leaves of *Daphniphyllum oldhami*. Amorph. powder. $[\alpha]_D^{23}$ +11.4 (c, 0.34 in $CHCl_3$).

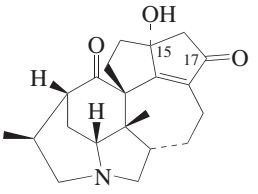
Deacetoxy: ***Codaphniphylline***. *Desacetoxydaphniphylline*
[14694-15-6]
$C_{30}H_{47}NO_3$ 469.706
Alkaloid from the bark of *Daphniphyllum macropodum* (Daphniphyllaceae). Cryst. ($CHCl_3$/Et_2O)(as hydrochloride). Mp 266-267° (sealed tube)(as hydrochloride). $[\alpha]_D$ +4.2 (c, 2.40 in $CHCl_3$).

Deacetoxy, 7S-hydroxy: ***Daphnimacropine***
[20249-89-2]
$C_{30}H_{47}NO_4$ 485.706
Alkaloid from the bark of *Daphniphyllum macropodum* (Daphniphyllaceae). Mp 306-307° (as methiodide).

Sakabe, N. *et al., Tet. Lett.*, 1966, 965-968 (*Daphniphylline, cryst struct*)
Kamijo, N. *et al., Tet. Lett.*, 1966, 2889-2892 (*Daphnimacropine, cryst struct*)
Nakano, T. *et al., Tet. Lett.*, 1967, 4791-4797 (*Daphniphylline*)
Irikawa, H. *et al., Tetrahedron*, 1968, **24**, 5691-5700 (*Daphniphylline, Codaphniphylline*)
Toda, M. *et al., Nippon Kagaku Zasshi*, 1970, **91**, 103; *CA*, **73**, 22137j (*Daphniphylline, Codaphniphylline, isol*)
Sasaki, K. *et al., J.C.S.(B)*, 1971, 1565-1568 (*Daphniphylline, abs config*)
Toda, M. *et al., Tet. Lett.*, 1973, 797-798 (*Daphniphyllidine*)
Suzuki, K.T. *et al., Tet. Lett.*, 1973, 799-802 (*Daphniphylline, Codaphniphylline, biosynth*)
Toda, M. *et al., Tetrahedron*, 1974, **30**, 2683-2688 (*Daphniphylline*)
Yamamura, S. *et al., Alkaloids (Academic Press)*, 1975, **15**, 41-81 (*rev*)
Yamamura, S. *et al., Chem. Lett.*, 1980, 393-396 (*Daphniphylline*)
Heathcock, C.H. *et al., J.O.C.*, 1995, **60**, 1120-1130 (*Codaphniphylline*)
Morita, H. *et al., Tetrahedron*, 1999, **55**, 12549-12556 (*Daphnezomine E*)
Yang, S.-P. *et al., J. Nat. Prod.*, 2006, **69**, 79-82 (*Daphnilongeranin D*)
Mu, S.-Z. *et al., J. Nat. Prod.*, 2008, **71**, 564-569 (*Daphnioldhanine H*)

Daphniyunnine D D-69

[881388-90-5]



$C_{21}H_{27}NO_3$ 341.449
Alkaloid from the stems and leaves of *Daphniphyllum yunnanense*. Cytotoxic. Amorph. powder. $[\alpha]_D^{20}$ -140 (c, 0.12 in $CHCl_3$). λ_{max} 213 (log ϵ 3.92); 230 (log ϵ 3.9) (MeOH).

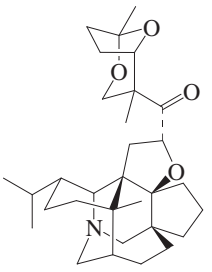
15-Deoxy: ***Daphnilongeranine B***
[874201-06-6]
$C_{21}H_{27}NO_2$ 325.45
Alkaloid from *Daphniphyllum longeracemosum*. Amorph. powder. $[\alpha]_D^{20}$ -159 (c, 0.1 in MeOH). λ_{max} 244 (log ϵ 3.32) (MeOH).

17-Deoxo: ***Daphnipaxianine C***
[956243-05-3]
$C_{21}H_{29}NO_2$ 327.466
Alkaloid from *Daphniphyllum paxianum*. Amorph. powder. $[\alpha]_D^{22}$ -153.2 (c, 0.26 in $CHCl_3$).

15-Epimer: ***Daphniyunnine E***
[881388-91-6]
$C_{21}H_{27}NO_3$ 341.449
Alkaloid from the stems and leaves of *Daphniphyllum yunnanense*. Amorph. powder. $[\alpha]_D^{20}$ -28.8 (c, 0.13 in $CHCl_3$). λ_{max} 245 (log ϵ 3.9) (MeOH).

Yang, S.-P. *et al., J. Nat. Prod.*, 2006, **69**, 79-82 (*Daphnilongeranine B*)
Zhang, H. *et al., J. Nat. Prod.*, 2006, **69**, 553-557 (*Daphniyunnines D,E*)
Mu, S.Z. *et al., J. Nat. Prod.*, 2007, **70**, 1628-1631 (*Daphnipaxianine C*)

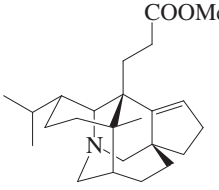
Daphtenidine A D-70



$C_{31}H_{47}NO_4$ 497.717
Alkaloid from the leaves of *Daphniphyllum teijsmannii*. Amorph. solid. $[\alpha]_D^{23}$ -3 (c, 0.1 in MeOH).

Kubota, T. *et al., Tetrahedron*, 2006, **62**, 4743-4748 (*isol, pmr, cmr*)

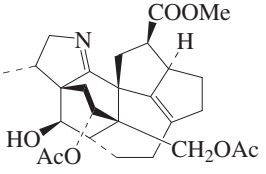
Daphtenidine B D-71



$C_{24}H_{37}NO_2$ 371.562
Alkaloid from the leaves of *Daphniphyllum teijsmannii*. Amorph. powder. $[\alpha]_D^{23}$ +97 (c, 0.1 in MeOH).

Kubota, T. *et al., Tetrahedron*, 2006, **62**, 4743-4748 (*isol, pmr, cmr*)

Daphtenidine C D-72

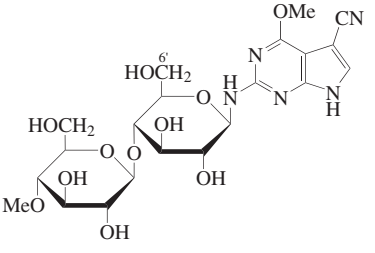


$C_{27}H_{35}NO_7$ 485.576
Alkaloid from the leaves of *Daphniphyllum teijsmannii*. Amorph. solid. $[\alpha]_D^{23}$ -106 (c, 1 in MeOH).

Kubota, T. *et al., Tetrahedron*, 2006, **62**, 4743-4748 (*isol, pmr, cmr*)

Dapiramicin B D-73

[90044-18-1]



$C_{21}H_{29}N_5O_{11}$ 527.487

Nucleoside antibiotic. Isol. from *Micromonospora* sp. SF-1917. Active against against sheath blight in rice plants; less effective than Dapiramicin A. Needles + $1H_2O$ (MeOH aq.). Sol. AcOH, DMF; fairly sol. MeOH, H_2O; poorly sol. Me_2CO, Et_2O, $CHCl_3$, EtOAc. Mp 241-243°. $[\alpha]_D^{20}$ -37.6 (c, 1 in 50% AcOH). λ_{max} 228 (ϵ 21700); 250 (ϵ 22500); 305 (ϵ 7670) (0.1*N* NaOH) (Derep). λ_{max} 227 (ϵ 42400); 290 (ϵ 7270) (H_2O) (Derep).

6′-Deoxy: ***Epidapiramicin A***
[90044-19-2]
$C_{21}H_{29}N_5O_{10}$ 511.488
Isol. from *Micromonospora* sp. Shows activity against sheath blight in rice plants. Less effective than Dapiramicin A. Needles. Mp 222-224°. $[\alpha]_D^{20}$ -14.4 (c, 1.0 in AcOH). Artifact. λ_{max} 228 (ϵ 47500); 292 (ϵ 8000) (H_2O).

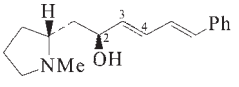
1′-Epimer, 6′-deoxy: ***Dapiramicin A***. *SF 1917. Antibiotic SF 1917*
[67298-15-1]
$C_{21}H_{29}N_5O_{10}$ 511.488
Isol. from *Micromonospora* sp. SF-1917. Effective against sheath blight in rice plants caused by *Rhizoctonia solani*. Needles. Sol. AcOH, DMF; fairly sol. MeOH, H_2O; poorly sol. Me_2CO, Et_2O, $CHCl_3$, EtOAc. Mp 220-222°. $[\alpha]_D^{20}$ +117 (c, 1.0 in MeOH). λ_{max} 228 (ϵ 21700); 250 (ϵ 22500); 305 (ϵ 7670) (0.1*N* NaOH) (Derep). λ_{max} 228 (ϵ 40200); 289 (ϵ 8640) (H_2O) (Derep).

▶ LD_{50} (mus, ivn) 400 200 mg/kg, LD_{50} (mus, ipr) 1000 500 mg/kg. UY9105600

Nishizawa, N. *et al., J. Antibiot.*, 1984, **37**, 1-5 (*isol, uv, ir, pmr, props*)

Ohno, H. *et al., Tet. Lett.*, 2006, **47**, 5747-5750 (*synth*)

Darlingianine D-74



(E,E)–form

$C_{17}H_{23}NO$ 257.375

Rel. config. only known.

(E,E)-form [65600-88-6]
Alkaloid from the upper stems and leaves of *Darlingia darlingiana* (Proteaceae). Straw-coloured rhombic cryst. (EtOH). Mp 93.5°. $[\alpha]_D^{19}$ +62 ($CHCl_3$).

Ac:
Cryst. (EtOH). Mp 82.5°.

Methiodide:
Cryst. (MeOH). Mp 123-126°.

3,4-Dihydro: ***Dihydrodarlingianine***
[73045-39-3]
$C_{17}H_{25}NO$ 259.391
Isol. from *Darlingia darlingiana* (Proteaceae). Straw-coloured cryst. (EtOH). Mp 72-74°. $[\alpha]_D^{19}$ +34 ($CHCl_3$).

Tetrahydro: ***Tetrahydrodarlingianine***
[73045-40-6]
$C_{17}H_{27}NO$ 261.406
Isol. from *Darlingia darlingiana* (Proteaceae). Noncryst. Mp 178-181° (as picrate). $[\alpha]_D^{19}$ +22 ($CHCl_3$).

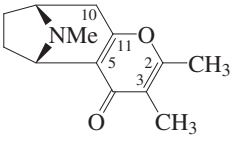
2-Ketone: ***Dehydrodarlingianine***
[73045-41-7]
$C_{17}H_{21}NO$ 255.359
Isol. from *Darlingia darlingiana* (Proteaceae). Pale-yellow plates (petrol). Mp 54-55°. $[\alpha]_D^{19}$ +53 ($CHCl_3$).

(E,Z)-form
Isodarlingianine
[73069-58-6]
Alkaloid from the upper stems and leaves of *Darlingia darlingiana* (Proteaceae). Straw-coloured cryst. (petrol). Mp 50-52°. $[\alpha]_D^{19}$ +47 ($CHCl_3$). Isomerises to Darlingianine when refluxed with iodine in xylene.

Bick, I.R.C. *et al., Aust. J. Chem.*, 1979, **32**, 2523 (*isol, uv, ir, pmr, cmr, ms, struct, derivs*)

Darlingine D-75

6,7,8,9-Tetrahydro-2,3,10-trimethylcyclohepta[b]pyran-5,8-imin-4(5H)-one, 9CI
[58471-10-6]



$C_{13}H_{17}NO_2$ 219.283

Authors' numbering shown. Alkaloid from the upper stems and leaves of *Darlingia darlingiana*, the leaves, stems and roots of *Darlingia ferruginea*, and from the upper leaves, flowers and flowering stems of *Bellendena montana* (Proteaceae). Needles (Et_2O). Mp 166-167°. $[\alpha]_D^{19}$ +104 ($CHCl_3$).

Hydrochloride: Mp 180-182°.

N-*Oxide:* ***Darlingine* N-*oxide***
$C_{13}H_{17}NO_3$ 235.282
Alkaloid from *Darlingia darlingiana*. $[\alpha]_D^{27}$ +16.8 (c, 0.67 in MeOH). λ_{max} 216 (log ϵ 4); 258 (log ϵ 4) (MeOH).

2,3-Dihydro: ***2,3-Dihydrodarlingine***
[72362-48-2]
[72401-76-4]
$C_{13}H_{19}NO_2$ 221.299
Alkaloid from the upper leaves, flowers and flowering stems of *Bellendena montana* (Proteaceae). Oil. Mp 191-194° (as picrate). $[\alpha]_D^{19}$ +68 ($CHCl_3$).

5,11-Dihydro: ***5,11-Dihydrodarlingine***
[73088-64-9] (picrate)
$C_{13}H_{19}NO_2$ 221.299
Alkaloid from the upper stems and leaves of *Darlingia darlingiana* (Proteaceae). Noncryst. Mp 165-168° (as picrate). $[\alpha]_D^{19}$ +37 ($CHCl_3$). CAS no. refers to picrate.

*10*R-*Hydroxy:* ***10-Hydroxydarlingine***
$C_{13}H_{17}NO_3$ 235.282
Alkaloid from *Triunia erythrocarpa* (Proteaceae). Solid. $[\alpha]_D^{27}$ +12 (c, 0.3 in $CHCl_3$). Ref. states C-10 config. as (*R*)- but shows diag. with (*S*)-config. λ_{max} 216 (log ϵ 4); 258 (log ϵ 4) (MeOH).

Bick, I.R.C. *et al., Aust. J. Chem.*, 1979, **32**, 1827-1840; 2523-2536; 2537-2543 (*isol, uv, ir, pmr, cmr, ms, struct, derivs*)

Lounasmaa, M. *et al., Planta Med.*, 1983, **48**, 56-58 (*synth, 2,3-Dihydrodarlingine*)

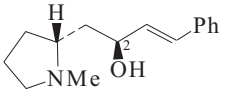
Majewski, M. *et al., J.O.C.*, 1995, **60**, 5825-5830 (*synth, abs config*)

Katavic, P.L. *et al., Phytochemistry*, 1999, **52**, 529-531 (*isol, pmr, cmr, N-oxide*)

Butler, M.S. *et al., J. Nat. Prod.*, 2000, **63**, 688-689 (*10-Hydroxydarlingine*)

Darlinine D-76

[73069-56-4]



$C_{15}H_{21}NO$ 231.337

Abs. config. not detd. Alkaloid from the upper stems and leaves of *Darlingia darlingiana* (Proteaceae). Straw-coloured cryst. (EtOH). Mp 59-61°. $[\alpha]_D^{19}$ +75 ($CHCl_3$).

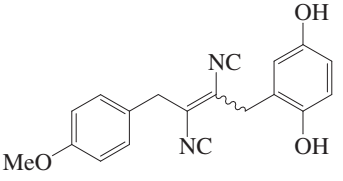
2-Epimer: ***Epidarlinine***
[73045-38-2]
$C_{15}H_{21}NO$ 231.337
Isol. from *Darlingia darlingiana* (Proteaceae). Straw-coloured cryst. (EtOH). Mp 66-68°. $[\alpha]_D^{19}$ +59 ($CHCl_3$).

2-Ketone: ***Dehydrodarlinine***
[73045-42-8]
$C_{15}H_{19}NO$ 229.321
Isol. from *Darlingia darlingiana* (Proteaceae). Pale-yellow plates (petrol). Mp 42-44°. $[\alpha]_D^{19}$ +64 ($CHCl_3$).

Bick, I.R.C. *et al., Aust. J. Chem.*, 1979, **32**, 2523 (*isol, uv, ir, pmr, ms, struct, derivs*)

Darlucin A D-77

[162341-15-3]



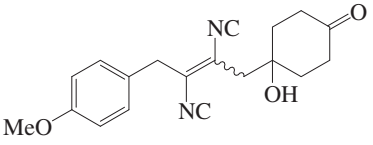
$C_{19}H_{16}N_2O_3$ 320.347

Prod. by *Sphaerellopsis filum* (preferred name *Eudarluca caricis*, also known as *Darluca filum*). Active against bacteria and fungi. Shows weak cytotoxic props. Oil. Similar to Xanthocillin X, X-7. λ_{max} 225 (ϵ 24500); 283 (ϵ 4570) (MeOH) (Derep). λ_{max} 225 (ϵ 24550); 283 (ϵ 4571) (MeOH) (Berdy).

Zapf, S. *et al., J. Antibiot.*, 1995, **48**, 36 (*isol, uv, ir, pmr, cmr, ms*)

Darlucin B D-78

[162341-16-4]



$C_{19}H_{20}N_2O_3$ 324.379

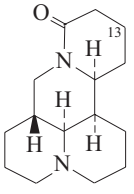
Prod. by *Sphaerellopsis filum* (preferred name *Eudarluca caricis*, also known as *Darluca filum*). Active against bacteria and fungi. Shows weak cytotoxic props. Oil. λ_{max} 226 (ϵ 12900); 275 (sh) (ϵ 3630) (MeOH) (Derep). λ_{max} 226 (ϵ 12882); 275 (ϵ 3630) (MeOH) (Berdy).

Zapf, S. *et al., J. Antibiot.*, 1995, **48**, 36 (*isol, uv, ir, pmr, cmr, ms*)

Darvasamine D-79

(5β,11α)-Matridin-11-one, 9CI. Tetrahydroneosophoramine

[36284-98-7]



$C_{15}H_{24}N_2O$ 248.367

Config. uncertain. Stereoisomer of Matrine, M-121, Sophoridine, S-380, Isomatrine, I-244 and Allomatrine, A-628. The phys. props. of the natural alkaloid Darvasamine do not coincide with the semisynthetic tetrahydroneosophoramine of known config. Alkaloid from *Leontice darvasica* and from tubers of *Gymnospermium alberti* (Leonticaceae). Cryst. (Et_2O). Mp 102° (natural) Mp 152-154° (synthetic). $[\alpha]_D^{20}$ -21 (c, 1.9 in EtOH) (synthetic).

Perchlorate:
Cryst. (Me_2CO). Mp 265° dec.

Methiodide:
Cryst. (Me_2CO). Mp 303-305° dec.

13ξ-Hydroxy: ***Albertamine***
[54383-31-2]
$C_{15}H_{24}N_2O_2$ 264.367
Alkaloid from epigeal parts of *Leontice albertii* (Leonticaceae). Mp 190-192°. $[\alpha]_D$ +11.4 (c, 0.4 in EtOH).

13-Hydroxy; perchlorate: Mp 119-120°.

13-Hydroxy, picrate:
Cryst. (EtOH). Mp 84-85°.

Zunnunzhanov, S. *et al., Khim. Prir. Soedin.*, 1971, **7**, 851; *Chem. Nat. Compd. (Engl. Transl.)*, 838 (*isol*)

Sadykov, B. *et al., Khim. Prir. Soedin.*, 1974, **10**, 377; *Chem. Nat. Compd. (Engl. Transl.)*, 374 (*Albertamine*)

Monakhova, T.E. *et al., Khim. Prir. Soedin.*, 1974, **10**, 472; *Chem. Nat. Compd. (Engl. Transl.)*, 477 (*synth*)

Ibragimov, B.T. *et al., Khim. Prir. Soedin.*, 1979, **15**, 588; *Chem. Nat. Compd. (Engl. Transl.)*, 517 (*cryst struct*)

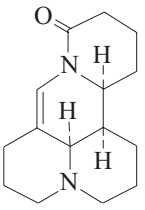
Kurbanov, M. *et al., CA*, 1982, **97**, 141727g (*isol*)

Ibragimov, B.T. *et al., Khim. Prir. Soedin.*, 1982, **18**, 71; *Chem. Nat. Compd. (Engl. Transl.)*, 66 (*rev*)

Darvasine D-80

5,17-Didehydromatridin-15-one, 9CI†. *5,17-Dehydroisomatrine*

[24533-37-7]



$C_{15}H_{22}N_2O$ 246.352

Stereoisomeric with Isoleontalbine, I-241 and Leontalbine, L-93. Abs. config. not well established. Alkaloid from epigeal parts of *Leontice darvasica*, also isol. from tubers of *Gymnospermium alberti* (Leonticaceae). Acicular cryst. Mp 145-146°.

Perchlorate: Mp 249-250°.

Picrate:
Cryst. (EtOH). Mp 231° dec.

Iskandarov, S. *et al., Khim. Prir. Soedin.*, 1969, **5**, 132; *Chem. Nat. Compd. (Engl. Transl.)*, 1969, **5**, 115 (*isol, struct*)

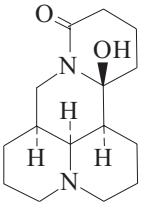
Zunnunzhanov, A. *et al., Khim. Prir. Soedin.*, 1974, **10**, 373; *Chem. Nat. Compd. (Engl. Transl.)*, 1974, **10**, 371 (*isol, struct, abs config*)

Kurbanov, M. *et al., CA*, 1982, **97**, 141727g (*isol*)

Darvasoline D-81

11-Hydroxymatridin-15-one, 9CI†. *11-Hydroxymatrine*

[52484-77-2]



$C_{15}H_{24}N_2O_2$ 264.367

Abs. config. not clear. Steroisomeric with Leontismine, L-99. Alkaloid from epigeal parts of *Leontice darvasica* (Leonticaceae). Cryst. (Et_2O). $[\alpha]_D$ +28.

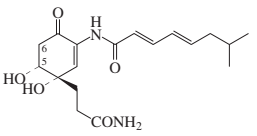
Perchlorate: Mp 235-237°.

Methiodide: Mp 247-249°.

Zunnunzhanov, A. *et al., Khim. Prir. Soedin.*, 1974, **10**, 115; *Chem. Nat. Compd. (Engl. Transl.)*, 131 (*isol, struct*)

Daryamide A D-82

[918785-41-8]



Absolute Configuration

$C_{18}H_{26}N_2O_5$ 350.414

Prod. by the marine-derived *Streptomyces* strain CNQ-085. Pale yellow powder. Mp 153-154°. $[\alpha]_D^{25}$ -6.9 (c, 0.25 in MeOH). λ_{max} 271 (log ϵ 4.22); 285 (log ϵ 4.23) (MeOH).

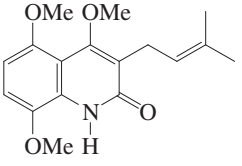
5-Deoxy, 5,6-didehydro: ***Daryamide B***
[918785-42-9]
$C_{18}H_{24}N_2O_4$ 332.399
Prod. by *Streptomyces* strain CNQ-085. Dark yellow oil. $[\alpha]_D^{25}$ -42.8 (c, 0.51 in MeOH). λ_{max} 278 (log ϵ 4.78) (MeOH).

5-Deoxy, 5,6-didehydro, N-*deacyl,* N-*(6-methyl-2*E*,4*E*-heptadienoyl):* ***Daryamide C***
[918785-43-0]
$C_{17}H_{22}N_2O_4$ 318.372
Prod. by *Streptomyces* strain CNQ-085. Dark yellow oil. $[\alpha]_D^{25}$ -17.4 (c, 0.075 in MeOH). λ_{max} 273 (log ϵ 4.19) (MeOH).

Asolkar, R.N. *et al., J. Nat. Prod.*, 2006, **69**, 1756-1759 (*isol, pmr, cmr*)

Dasycarine D-83

*4,5,8-Trimethoxy-3-(3-methyl-2-butenyl)-2(1*H*)-quinolinone. 4,5,8-Trimethoxy-3-prenyl-2(1*H*)-quinolone*



$C_{17}H_{21}NO_4$ 303.357

Alkaloid from *Dictamnus dasycarpus.* Needles (Me_2CO). Mp 172-173°.

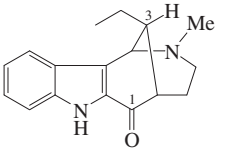
Chen, J. *et al., Chin. Chem. Lett.*, 2000, **11**, 707-708

Dasycarpidone D-84

Dasycarpidan-1-one, 9CI

[2825-08-3]

[18700-27-1 (±)-form]



Absolute Configuration

$C_{17}H_{20}N_2O$ 268.358

Alkaloid from the bark of *Aspidosperma dasycarpon* (Apocynaceae). Noncryst. $[\alpha]_D^{26}$ +64.7 (c, 1.02 in $CHCl_3$). λ_{max} 237

(log ϵ 4.15); 316 (log ϵ 4.29) (EtOH).

N-*De-Me:* **N-*Nordasycarpidone***. *De*-N-*methyldasycarpidone*
[3620-81-3]
$C_{16}H_{18}N_2O$ 254.331
Alkaloid from the bark of *Aspidosperma dasycarpon* (Apoycnaceae). Cryst. ($CHCl_3$). Mp 208-210°. λ_{max} 238 (log ϵ 4.15); 317 (log ϵ 4.23) (EtOH).

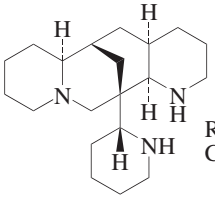
1β-Alcohol: ***Dasycarpidol***
[2744-46-9]
$C_{17}H_{22}N_2O$ 270.374
Alkaloid from the bark of *Aspidosperma dasycarpon* (Apocynaceae). Mp 118-122°. $[\alpha]_D^{27}$ -54 (c, 1.03 in EtOH). λ_{max} 220 (log ϵ 4.54); 282 (log ϵ 3.89); 290 (log ϵ 3.81) (EtOH).

3-Epimer: ***3-Epidasycarpidone***
[16530-89-5]
[18688-38-5 (±)-form]
$C_{17}H_{20}N_2O$ 268.358
Alkaloid from *Aspidosperma subincanum* (Apocynaceae). Noncryst.

Ohashi, M. *et al., Experientia*, 1964, **20**, 363-364 (*uv, struct, Dasycarpidol*)
Joule, J.A. *et al., J.C.S.*, 1964, 2777-2790 (*ms*)
Joule, J.A. *et al., Tetrahedron*, 1965, **21**, 1717-1734 (*Dasycarpidone, Nordasycarpidone, Dasycarpidol*)
Gaskell, A.J. *et al., Chem. Ind. (London)*, 1967, 1089-1090 (*config, epimer, pmr*)
Shamma, M. *et al., Tet. Lett.*, 1967, 2489-2492 (*Dasycarpidol, struct*)
Jackson, A. *et al., J.C.S.(C)*, 1969, 2738-2747 (*synth*)
Dolby, L.J. *et al., J.O.C.*, 1970, **35**, 3843-3845 (*synth*)
Kametani, T. *et al., J.O.C.*, 1971, **36**, 1291-1293 (*synth, uv, ir, pmr, ms, epimer*)
Bonjoch, J. *et al., Chem. Comm.*, 1991, 1687-1688 (*Dasycarpidone, Dasycarpidol, Nordasycarpidone, synth, cmr*)
Gràcia, J. *et al., J.O.C.*, 1994, **59**, 3939-3951 (*Dasycarpidone, Nordasycarpidone, Dasycarpidol, synth*)
Blechert, S. *et al., Synthesis*, 1995, 592-604 (*3-Epidasycarpidone, synth*)
Forns, P. *et al., Tetrahedron*, 1996, **52**, 3563-3574 (*epimer, synth*)
Sato, M. *et al., Chem. Comm.*, 1997, 765-766 (*synth, abs config*)
Uludag, N. *et al., J. Het. Chem.*, 2006, **43**, 585-591 (*synth, epimer*)

Dasycarpine D-85

[10550-82-0]



Relative Configuration

$C_{20}H_{35}N_3$ 317.517

Stereoisomeric with Templetine, T-68, Ormosanine, O-115 and Piptanthine, P-476. CAS gives an absolute config. but there does not seem to be any evidence in the lit. for this. Major alkaloid from *Ormosia dasycarpa* (Fabaceae). Oil. $Bp_{0.5}$ 160-165°. $[\alpha]_D^{20}$ +12.5 (c, 1.1 in EtOH).

Hydrochloride:
Needles + $1H_2O$ (EtOH/Et_2O or EtOAc). Mp 205-207° dec.

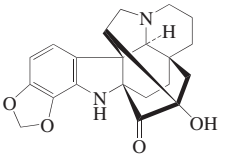
Perchlorate:
Needles + $3H_2O$ (EtOH/Et_2O). Mp 240° dec.

N-*Ac:*
Plates (EtOH). Mp 155-157°.

Clarke, R.T. *et al., J.C.S.*, 1960, 41-42; 1963, 535-539 (*isol*)
Deslongchamps, P. *et al., Can. J. Chem.*, 1966, **44**, 2539-2551 (*struct*)

Dasyrachine D-86

[237078-15-8]



Absolute Configuration

$C_{21}H_{22}N_2O_4$ 366.416
Alkaloid from *Kopsia dasyrachis*. $[\alpha]_D$ +17 (c, 0.06 in $CHCl_3$). λ_{max} 221 (log ϵ 4.34); 243 (log ϵ 3.93); 281 (log ϵ 3.06) (EtOH).

Kam, T.-S. *et al., Phytochemistry*, 1999, **51**, 159-169 (*isol, uv, pmr, cmr, ms*)

Daucine D-87

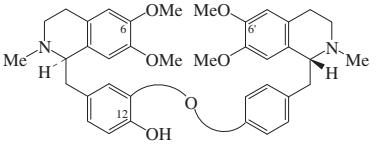
$C_{11}H_{18}N_2$ 178.277

Struct. unknown. Alkaloid from the leaves of *Daucus carota* (carrot) (Apiaceae). Oil. Bp 240-250°. $[\alpha]_D$ +7.74 (c, 0.645 in Et_2O).

Pictet, A. *et al., Ber.*, 1907, **40**, 3771 (*isol*)

Dauricine D-88

6,6′-Di-O-*methyldauricoline*
[524-17-4]



$C_{38}H_{44}N_2O_6$ 624.775

Alkaloids covered by this entry are enantiomeric with those covered by Thalibrine, T-309 (*S,S*-config.) and diastereoisomeric with those covered by Berbamunine, B-98 (1*R*,1′*S*-config.) and Grisabine, G-177 (1*S*,1′*R*-config.). Alkaloid from the rhizomes of *Menispermum dauricum*, the subterranean parts of *Menispermum canadense*, and from *Polyalthia nitidissima* (Menispermaceae, Annonaceae). Antiarrhythmic, antihypertensive agent. Shows antiinflammatory and anaesthetic props. Weak curarising agent. Platelet aggregation inhibitor. Mp 115°. $[\alpha]_D$ -139 (MeOH). Log P 6.67 (calc).

▶ LD_{50} (mus, orl) 1180 mg/kg; LD_{50} (mus, ipr) 185 mg/kg; LD_{50} (mus, ipr) 125-175 mg/kg. SM9490000

N,N′-*Di-Me:*
Needles (MeOH) (as diiodide). Mp 201° (diiodide). $[\alpha]_D^{20}$ -114 (c, 0.348 in H_2O).

N^2-*De-Me:* **N-*Demethyldauricine***
[146763-55-5]
$C_{37}H_{42}N_2O_6$ 610.749
Alkaloid from rhizomes of *Menispermum dauricum* (Menispermaceae).

$N^{2'}$-*De-Me:* **N′-*Demethyldauricine***
[34302-34-6]
$C_{37}H_{42}N_2O_6$ 610.749
Alkaloid from the rhizomes of *Menispermum canadense* (Menispermaceae). Unstable oil. $[\alpha]_D^{27}$ -98 (MeOH).

Me ether: **O-*Methyldauricine***
[2202-17-7]
$C_{39}H_{46}N_2O_6$ 638.802
Alkaloid from the bark of *Colubrina asiatica* and *Popowia* cf. *cyanocarpa* (Rhamnaceae, Annonaceae). Active against gram-positive bacteria. Shows activity against Walker 256 carcinosarcoma. Brittle foam. $[\alpha]_D$ -128 (c, 0.06 in MeOH).

▶ LD_{50} (mus, ipr) 125 mg/kg. NX5018450

Me ether, 2-N-*oxide:* **O-*Methyldauricine 2*-N-*oxide***
[107882-03-1]
$C_{39}H_{46}N_2O_7$ 654.802
Alkaloid from the bark and leaves of *Popowia pisocarpa* (Annonaceae). Amorph. $[\alpha]_D$ -138 (c, 0.5 in MeOH). Isol. as an inseparable mixt. with the 2′-*N*-oxide (ratio 10:7 or 7:10).

Me ether, 2′-N-*oxide:* **O-*Methyldauricine 2′*-N-*oxide***
[107882-02-0]
$C_{39}H_{46}N_2O_7$ 654.802
Alkaloid from the bark and leaves of *Popowia pisocarpa* (Annonaceae). Amorph.

O^6-*De-Me:* ***Dauricinoline***
[30984-80-6]
$C_{37}H_{42}N_2O_6$ 610.749
Alkaloid from rhizomes of *Menispermum dauricum* (Menispermaceae). Muscle relaxant. Amorph. powder. $[\alpha]_D^{21}$ -94.6 (MeOH).

O^6-*De-Me,* O^{12}-*Me:* ***Popidine***
[107882-00-8]
$C_{38}H_{44}N_2O_6$ 624.775
Alkaloid from the bark and leaves of *Popowia pisocarpa* (Annonaceae). Amorph.

$O^{6'}$-*De-Me:* ***Daurinoline***
[2831-75-6]
$C_{37}H_{42}N_2O_6$ 610.749
Alkaloid from the rhizomes of *Menispermum canadense* and *Menispermum dauricum* (Menispermaceae). Muscle relaxant. Mp 95-98°. $[\alpha]_D^{27}$ -114 (MeOH). λ_{max} 210 (ϵ 26400); 285 (ϵ 6750) (MeOH) (Berdy).

$O^{6'}$-*De-Me,* O^{12}-*Me:* ***Popisidine***
[107881-99-2]
$C_{38}H_{44}N_2O_6$ 624.775
Alkaloid from the bark and leaves of *Popowia pisocarpa* (Annonaceae). Amorph. $[\alpha]_D$ -128 (c, 1 in MeOH). Isol. as an inseparable mixt. with Popidine (approx. ratio 1:2).

O^7-*De-Me:* ***Daurisoline***
[70553-76-3]
$C_{37}H_{42}N_2O_6$ 610.749
Alkaloid from *Menispermum dauricum* (Menispermaceae). Muscle relaxant. Mp 96-102°. $[\alpha]_D^{20}$ -129 (c, 0.65 in MeOH). Log P 6.4 (calc).

▶ NX5995000

O^7-*De-Me,* $N^{2'}$-*de-Me:* ***Pampulhamine***. *2′*-N-*Nordaurisoline. 7′*-O-*Methylpedroamine*
[110300-71-5]
$C_{36}H_{40}N_2O_6$ 596.722
Alkaloid from the stems of *Abuta pahni* (Menispermaceae) and leaves of *Aristolochia gigantea* (Aristolochiaceae). $[\alpha]_D$ -58 (c, 0.18 in MeOH). Opt. rotn. refers to Pampulhamine.

O^7-*De-Me,* N,N′-*di-de-Me:* ***7′-O-Methyllindoldhamine***
[88524-57-6]
$C_{35}H_{38}N_2O_6$ 582.695
Alkaloid from *Polyalthia nitidissima* (Annonaceae). $[\alpha]_D$ +21 (c, 0.2 in MeOH).

O^7-*De-Me,* O^{12}-*Me:* ***7′-O-Methylcuspidaline***
[94410-10-3]
$C_{38}H_{44}N_2O_6$ 624.775
Alkaloid from the leaves of *Aristolochia elegans* (Aristolochiaceae). Amorph. powder. $[\alpha]_D$ -105 (c, 0.001 in $CHCl_3$).

O^7-*De-Me,* O^{12}-*Me,* $N^{2'}$-*de-Me:* ***Geraldoamine***. *7′,12-Di-*O-*methylpedroamine. 12-*O-*Methylpampulhamine*
[112523-89-4]
$C_{37}H_{42}N_2O_6$ 610.749
Alkaloid from leaves of *Aristolochia gigantea*. Amorph. powder. $[\alpha]_D$ -65 (c, 0.1 in MeOH).

$O^{7'}$-*De-Me:* ***Isodaurisoline***
[88524-56-5]
$C_{37}H_{42}N_2O_6$ 610.749
Alkaloid from *Polyalthia nitidissima* (Annonaceae). Mp 105-115°. $[\alpha]_D$ -150 (c, 0.6 in MeOH).

$O^{7'}$-*De-Me,* N,N′-*di-de-Me:* ***7-O-Methyllindoldhamine***
[88524-58-7]
$C_{35}H_{38}N_2O_6$ 582.695
Alkaloid from *Polyalthia nitidissima* (Annonaceae). $[\alpha]_D$ +21 (c, 0.2 in MeOH).

$O^{7'}$-*De-Me,* O^{12}-*Me:* ***Popisine***
[107882-17-7]
$C_{38}H_{44}N_2O_6$ 624.775
Alkaloid from the bark of *Popowia pisocarpa* (Annonaceae). Amorph. $[\alpha]_D$ -148 (c, 1 in MeOH).

O^6,$O^{6'}$-*Di-de-Me:* ***Dauricoline***
[29550-42-3]
$C_{36}H_{40}N_2O_6$ 596.722
Alkaloid from rhizomes of *Menispermum dauricum* (Menispermaceae). Muscle relaxant. Amorph. powder. $[\alpha]_D^{20}$ -105 (MeOH).

O^6,$O^{6'}$-*Di-de-Me,* O^{12}-*Me:* ***Popisonine***
[107882-01-9]
$C_{37}H_{42}N_2O_6$ 610.749
Alkaloid from the bark and leaves of *Popowia pisocarpa* (Annonaceae). Amorph. $[\alpha]_D$ -118 (c, 1 in MeOH).

O^6,$O^{7''}$-*Di-de-Me:* ***Dauricicoline***
[256642-22-5]
$C_{36}H_{40}N_2O_6$ 596.722
Alkaloid from the rhizomes of *Menispermum dauricum*.

O^6,$O^{7''}$-*Di-de-Me,* O^{12}-*Me:* ***Popisopine***
[107913-38-2]
$C_{37}H_{42}N_2O_6$ 610.749
Alkaloid from the bark of *Popowia pisocarpa* (Annonaceae). Amorph. $[\alpha]_D$ -119 (c, 1 in MeOH).

O^7,$O^{7''}$-*Di-de-Me:* ***Guattegaumerine***. *Dauriciline.* N,N′-*Dimethyllindoldhamine*
[21446-35-5]
$C_{36}H_{40}N_2O_6$ 596.722
Alkaloid from *Polyalthia nitidissima* and *Guatteria gaumeri* (Annonaceae). Also isol. from *Menispermum dauricum* (Menispermaceae). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. $[\alpha]_D$ -90 (c, 0.7 in $CHCl_3$).

O^7,$O^{7''}$-*Di-de-Me,* N^2-*de-Me:* ***2′-N-Methyllindoldhamine***
$C_{35}H_{38}N_2O_6$ 582.695
Alkaloid from the stems of *Abuta pahni* (Menispermaceae). $[\alpha]_D$ -47 (c, 0.17 in MeOH).

O^7,$O^{7''}$-*Di-de-Me,* $N^{2'}$-*de-Me:* ***Pedroamine***. *2-*N-*Methyllindoldhamine*
[110320-85-9]
$C_{35}H_{38}N_2O_6$ 582.695
Alkaloid from the stems of *Abuta pahni* (Menispermaceae) and leaves of *Aristolochia gigantea* (Aristolochiaceae). Amorph. powder. $[\alpha]_D$ -74 (c, 0.1 in MeOH). Enantiomer of Northalibroline, in T-309. Opt. rotn. refers to Pedroamine.

O^7,$O^{7''}$-*Di-de-Me,* N^2,$N^{2'}$-*di-de-Me:* ***Lindoldhamine***
[60342-37-2]
$C_{34}H_{36}N_2O_6$ 568.668
Alkaloid from the leaves of *Lindera oldhamii*, the stems of *Albertisia papuana*, and from *Polyalthia nitidissima* (Lauraceae, Menispermaceae, Annonaceae). Fine needles (EtOH/Me_2CO/$CHCl_3$). Mp 183-186°. $[\alpha]_D^{33}$ +35 (c, 1.0 in EtOH).

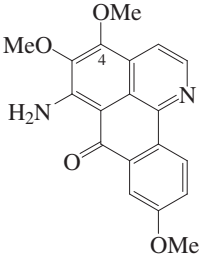
O^7,$O^{7''}$-*Di-de-Me,* O^{12}-*Me:* ***Cuspidaline***
[10410-53-4]
$C_{37}H_{42}N_2O_6$ 610.749
Alkaloid from *Limacia cuspidata* and *Limacia oblonga* (Menispermaceae). Oil. $[\alpha]_D$ -48 ($CHCl_3$).

O^7,$O^{7''}$-*Di-de-Me,* O^{12}-*Me,* N,N′-*di-de-Me:* ***Costaricine***. *12-*O-*Methyllindoldhamine*
[176772-29-5]
$C_{35}H_{38}N_2O_6$ 582.695
Alkaloid from trunk bark and roots of *Nectandra salicifolia*. Shows antiplasmodial activity. Yellow amorph. powder. $[\alpha]_D$ +46.4 (c, 0.248 in $CHCl_3$).

Manske, R.H.F. *et al., Can. J. Res., Sect. B*, 1943, **21**, 17 (*Dauricine, isol*)
Inubushi, Y. *et al., Yakugaku Zasshi*, 1952, **72**, 762; *CA*, **47**, 6430d (*Dauricine, struct*)
Tomita, M. *et al., Chem. Pharm. Bull.*, 1955, **3**, 449 (*O-Methyldauricine, synth*)
Manske, R.H.F. *et al., Chem. Pharm. Bull.*, 1965, **13**, 1476 (*Dauricine, pmr*)
Tomita, M. *et al., Yakugaku Zasshi*, 1965, **85**, 456; 1967, **87**, 793; 1560; 1970, **90**, 1178; 1182 (*Cuspidaline, Daurinoline, Dauricoline, Dauricinoline*)
Johns, S.R. *et al., Aust. J. Chem.*, 1970, **23**, 363 (*O-Methyldauricine, isol, pmr, ms, config*)
Tschesche, R. *et al., Phytochemistry*, 1970, **9**, 1683 (*O-Methyldauricine, isol, uv, ir, pmr, ms*)
Doskotch, R.W. *et al., J. Nat. Prod.*, 1971, **34**, 292 (*Demethyldauricine, Daurinoline*)
Baldas, J. *et al., J.C.S. Perkin 1*, 1972, 592 (*ms, derivs*)
Kuroda, H. *et al., Chem. Pharm. Bull.*, 1976, **24**, 2413-2420 (*Dauricine, activity*)
Lu, S.T. *et al., Heterocycles*, 1976, **4**, 1073 (*Lindoldhamine, uv, pmr, ms, struct*)
Zheng, X.W. *et al., CA*, 1979, **91**, 27216r (*Daurisoline*)
Jossang, A. *et al., Planta Med.*, 1983, **49**, 20 (*Dauricine, Lindoldhamine, O-Methyllindoldhamines, Isodaurisoline*)
Dehaussy, H. *et al., Planta Med.*, 1983, **49**, 25 (*Guattegaumerine*)
El-Sebakhy, N. *et al., Phytochemistry*, 1984, **23**, 2706 (*7′-O-Methylcuspidaline*)
Jossang, A. *et al., J. Nat. Prod.*, 1986, **49**, 1018 (*Dauricine oxides, Popisonine, Popisidine, Popidine, Popisopine, Popisine*)
Cortes, D. *et al., J. Nat. Prod.*, 1987, **50**, 910 (*Pedroamine, Pampulhamine, Geraldoamine*)
Duté, P. *et al., Phytochemistry*, 1987, **26**, 2136 (*N-Methyllindoldhamines, Nordaurisoline*)
Kong, R. *et al., Chin. J. Chem.*, 1991, **9**, 275; *CA*, **117**, 48977k (*Daurisoline, abs config*)
Pan, X.P. *et al., Yaoxue Xuebao*, 1991, **26**, 387; 1992, **27**, 788; *CA*, **115**, 131958; **118**, 165183e (*Daurilicine, N-Demethyldauricine*)
Zeng, G.Q. *et al., Yaoxue Xuebao*, 1993, **14**, 329 (*Dauricine, pharmacol*)
Böhlke, M. *et al., J. Nat. Prod.*, 1996, **59**, 576 (*Costaricine*)
Pan, X.P. *et al., CA*, 2000, **132**, 134721p (*Dauricicoline*)

Daurioxoisoporphine B D-89

*6-Amino-4,5,9-trimethoxy-7*H-*dibenzo[*de,h*]quinolin-7-one*



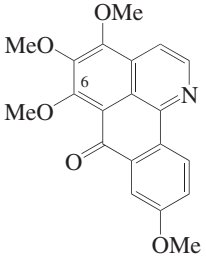
$C_{19}H_{16}N_2O_4$ 336.346
Alkaloid from the rhizomes of *Menispermum dauricum*. Cytotoxic agent. Amorph. yellow powder. λ_{max} 219 (log ϵ 2.8); 255 (log ϵ 3.2); 350 (log ϵ 4.5); 430 (log ϵ 2.6); 455 (log ϵ 4.1) (MeOH).

4-Demethoxy, N^6-*Me:* ***Daurioxoisoporphine C***
$C_{19}H_{16}N_2O_3$ 320.347
Alkaloid from the rhizomes of *Menispermum dauricum*. Amorph. yellow powder. λ_{max} 215 (log ϵ 4.32); 250 (log ϵ 3.42); 310 (log ϵ 2.43); 360 (log ϵ 2.42); 406 (log ϵ 3.34); 420 (log ϵ 4.33); 458 (log ϵ 3.43) (MeOH).

Yu, B.-W. *et al., J. Nat. Prod.*, 2001, **64**, 968-970

Dauriporphine D-90

*4,5,6,9-Tetramethoxy-7*H*-dibenzo[*de*,h*]-quinolin-7-one, 9CI. Bianfugenine*
[88142-60-3]



$C_{20}H_{17}NO_5$ 351.358
Alkaloid from the vines of *Menispermum dauricum* (Menispermaceae). Yellow needles (MeOH). Mp 167° (159-161.5°).

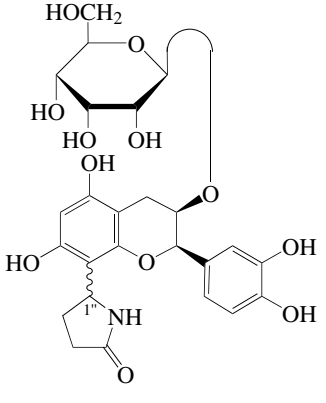
O^6*-De-Me:* ***Dauriporphinoline***
[100009-82-3]
$C_{19}H_{15}NO_5$ 337.331
Alkaloid from the rhizomes of *Menispermum dauricum* (Menispermaceae).

2,3-Dihydro: ***2,3-Dihydrodauriporphine***
$C_{20}H_{19}NO_5$ 353.374
Alkaloid from the roots of *Menispermum dauricum*. Yellow needles (hexane/EtOAc). Mp 141-142°. λ_{max} 219 (log ϵ 4.35); 271 (log ϵ 4.44); 329 (log ϵ 3.78) (no solvent reported).

Takani, M. *et al., Chem. Pharm. Bull.*, 1983, **31**, 3091 (*isol, uv, ir, pmr, ms, struct*)
Kunitomo, J. *et al., Chem. Pharm. Bull.*, 1985, **33**, 2778 (*synth, uv, ir, pmr, ms*)
Hou, C. *et al., Yaoxue Xuebao*, 1985, **20**, 112; *CA*, **103**, 3691g
Zhao, S. *et al., Zhongguo Yaoke Daxue Xuebao*, 1989, **20**, 312; *CA*, **113**, 55823c (*Dauriporphinoline*)
Sugimoto, Y. *et al., Phytochemistry*, 1999, **52**, 1431-1435 (*Dauriporphine, 2,3-Dihydrodauriporphine*)

Davallioside A D-91

[131747-15-4]



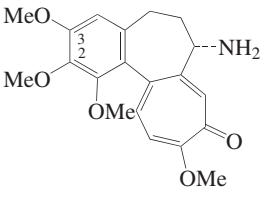
$C_{25}H_{29}NO_{12}$ 535.504
Constit. of the rhizomes of *Davallia mariesii*. Amorph. solid. $[\alpha]_D^{23}$ +10.2 (MeOH). λ_{max} 230 (sh) (log ϵ 4.37); 281 (log ϵ 3.79) (no solvent reported).

1″-Epimer: ***Davallioside B***
[131831-19-1]
$C_{25}H_{29}NO_{12}$ 535.504
Constit. of the rhizomes of *Davallia mariesii*. Amorph. solid. $[\alpha]_D^{23}$ -114.6 (MeOH).

Cui, C.-B. *et al., Chem. Pharm. Bull.*, 1990, **38**, 2620 (*isol, pmr, cmr*)

N-Deacetylcolchicine D-92

Desacetylcolchicine



(*S*)-*form*

$C_{20}H_{23}NO_5$ 357.405
See also refs. given under Colchicine, C-569.

(*S*)-*form* [3476-50-4]
[102419-91-0]
Alkaloid from *Kreysigia multiflora*. Antineoplastic agent. Cryst. (EtOAc). Mp 125-127°. $[\alpha]_D$ -148 (c, 1.1 in $CHCl_3$).

Tartrate: Cytostal. NSC 36354. NCI 1136. SKF 250
[49720-72-1]
[27963-65-1 , 3145-41-3 , 36191-19-2]
Mp 242-244° dec. $[\alpha]_D^{22}$ -176.2 (c, 0.9 in H_2O). λ_{max} 245 (log ϵ 4.53); 353 (log ϵ 4.36) (no solvent reported).

N-*Formyl:* ***Gloriosine***. N-*Deacetyl*-N-*formylcolchicine. Substance B*
[7411-12-3]
$C_{21}H_{23}NO_6$ 385.416
Alkaloid from *Androcymbium melanthioides*, *Bulbocodium vernum*, *Camptorrhiza strumosa*, *Colchicum autumnale* and several other *Colchicum* spp., *Gloriosa superba* and some other *Gloriosa* spp., *Iphigenia bechuanica*, *Iphigenia indica*, *Iphigenia pallida*, *Kreysigia multiflora*, *Littonia modesta*, *Merendera caucasica* and other *Merendera* spp., *Ornithoglossum glaucum*, *Ornithoglossum viride* and *Sandersonia aurantiaca* (Liliaceae). Pale yellow cryst. (EtOAc/Et_2O). Mp 264-267° dec. $[\alpha]_D^{22}$ -171.2 (c, 1.0863 in $CHCl_3$).

▶ GH0794000

N-*Ac:* see Colchicine, C-569

N-*Me:* ***Demecolcine, BAN, INN***. N-*Methyldeacetylcolchicine. Colchamine. Colcemid. Kolkamin. Omain. Santavy's Substance F. Ciba 12669A. NSC 3096. Alkaloid F*†
[477-30-5]
$C_{21}H_{25}NO_5$ 371.432
Alkaloid from *Colchicum speciosum*, several other *Colchicum* spp., *Merendera jolantae* (Liliaceae), *Merendera persica* and *Androcymbium melanthioides*. Antineoplastic and antimitotic agent. Antitubulin agent which induces apoptosis. Mp 186°. $[\alpha]_D^{23}$ -129 (c, 1.02 in $CHCl_3$). Log P 0.6 (calc). Colchicerine, Mp. 187-187.5° from *C. speciosum* was a 1:1 molecular complex of (*S*)-Demecolcine and (*S*)-Colchicine. λ_{max} 245 (ϵ 35500); 355 (ϵ 17400) (MeOH). λ_{max} 234 ; 350 (EtOH).

▶ LD_{50} (mus, orl) 25.5 mg/kg; LD_{50} (mus, ipr) 35 mg/kg. Exp. reprod. and teratogenic effects. Mutagenic props.
GH0800000

N-*Me,* N-*formyl:* **N-*Formyldemecolcine***. *Alkaloid CC 19*
[14686-61-4]
$C_{22}H_{25}NO_6$ 399.443
Alkaloid from the seeds of *Colchicum cornigerum* (Liliaceae). Pale yellow prisms (MeOH/Et_2O). $[\alpha]_D^{22}$ -189 (c, 1.0192 in $CHCl_3$). $[\alpha]_D^{22}$ -202 (c, 0.79 in EtOH).

▶ GH0795000

N-*Me,* N-*Ac:* N-*Methylcolchicine*
$C_{23}H_{27}NO_6$ 413.469
Mp 199-200° Mp 233-235° (double Mp).

N-*(3-Oxobutanoyl):* **N-*Deacetyl*-N-*3-oxobutyrylcolchicine***. N-*Acetoacetyl*-N-*deacetylcolchicine*
$C_{24}H_{27}NO_7$ 441.48
Minor alkaloid from the seeds of *Colchicum autumnale* (Liliaceae). Cryst. (EtOAc/Et_2O). Mp 222-223°. $[\alpha]_D^{25}$ -194 (c, 1.07 in $CHCl_3$).

N-*Me,* N-*ethoxycarbonyl:* **N-*Ethoxycarbonyldemecolcine***
$C_{24}H_{29}NO_7$ 443.496
Alkaloid from *Colchicum cilicicum* (Liliaceae).

N,N-*Di-Me:* **N-*Methyldemecolcine***. *Alkaloid CC 5*
[7336-44-9]
$C_{22}H_{27}NO_5$ 385.459
Alkaloid from seeds, leaves, stems and flowers of *Colchicum cornigerum* (Liliaceae) and *Kreysigia multiflora*. Pale yellow prisms (EtOAc/Et_2O). Mp 208-210° (205-208°). $[\alpha]_D^{22}$ -104 (c, 0.678 in $CHCl_3$). $[\alpha]_D^{20}$ -111 (c, 1.78 in $CHCl_3$).

▶ GH0792000

O^2*-De-Me,* N-*formyl:* **N-*Deacetyl-2-demethyl*-N-*formylcolchicine***
[57866-22-5]
$C_{20}H_{21}NO_6$ 371.389
Alkaloid from the leaves and flowers of *Colchicum autumnale* (Liliaceae). Noncryst. λ_{max} 243 (log ϵ 4.46); 355 (log ϵ 4.2) (EtOH). λ_{max} 247 (log ϵ 4.45); 290 (log ϵ 3.86); 356 (log ϵ 4.19) (EtOH/NaOH).

O^2*-De-Me,* N-*Ac:* ***2-Demethylcolchicine***. *2-Desmethylcolchicine. Alkaloid L5*†. *Alkaloid CC 6. Substance E$_1$*
[7336-36-9]
$C_{21}H_{23}NO_6$ 385.416
Alkaloid from *Androcymbium gramineum, Androcymbium melanthioides, Colchicum autumnale* and some other *Colchicum* spp., *Bulbocodium vernum, Gloriosa superba, Littonia modesta* and *Merendera robusta* (Liliaceae). Cryst. ($CHCl_3$). Mp 110-140° Mp 178-180° (double Mp). Does not occur in fresh plant extracts. Present only in dried

material, attached in an unknown manner to cell constits., and liberated enzymatically. λ_{max} 243 (log ϵ 4.46); 355 (log ϵ 4.2) (EtOH). λ_{max} 247 (log ϵ 4.45); 290 (sh) (log ϵ 3.86); 356 (log ϵ 4.19) (EtOH/NaOH).

▶ GH0880000

O^2-*De-Me,* N-*Me:* ***2-Demethyldemecolcine***. *Substance S. Alkaloid CC 7*
[7359-91-3]
$C_{20}H_{23}NO_5$ 357.405
Alkaloid from *Colchicum autumnale, Colchicum hierosolymnitanum, Colchicum speciosum, Colchicum latifolium*, other *Colchicum* spp., *Merendera persica*, *Merendera robusta* (Liliaceae) and *Androcymbium melanthioides.* Pale yellow plates (MeOH/Et_2O). Mp 136-138°. $[\alpha]_D^{22}$ -119 (c, 1.00 in $CHCl_3$). λ_{max} 241 (log ϵ 4.49); 355 (log ϵ 4.19) (EtOH). λ_{max} 244 (log ϵ 4.6); 287 (log ϵ 3.96); 355 (log ϵ 4.13) (EtOH/NaOH).

O^3-*De-Me: 3-Demethyl*-N-*deacetylcolchicine.* ***Substance U***
$C_{19}H_{21}NO_5$ 343.379
Alkaloid from the corms, seeds and flowers of *Colchicum autumnale* (Liliaceae). The phys. props. of the free base have not been reported.

O^3-*De-Me,* N-*formyl:* **N-*Deacetyl-3-demethyl*-N-*formylcolchicine***
[18172-26-4]
$C_{20}H_{21}NO_6$ 371.389
Alkaloid from the seeds of *Colchicum latifolium, Colchicum autumnale, Colchicum luteum*, also occurs in *Gloriosa superba* (Liliaceae). Cryst. (EtOAc). Mp 263-267°. $[\alpha]_D^{22}$ -180 (c, 0.30 in $CHCl_3$). λ_{max} 232 (log ϵ 4.48); 245 (sh) (log ϵ 4.44); 357 (log ϵ 4.19) (EtOH). λ_{max} 225 (log ϵ 4.52); 245 (log ϵ 4.51); 279 (log ϵ 3.99); 374 (log ϵ 4) (EtOH/NaOH).

O^3-*De-Me,* N-*Ac,* O^3-*α-D-glucopyranoside:* ***1′-Epicolchicoside***
[404866-95-1]
$C_{27}H_{33}NO_{11}$ 547.558
Alkaloid from the seeds of *Gloriosa superba*. Mp 188-190°. $[\alpha]_D^{25}$ -317 (c, 0.88 in H_2O). Not named in the lit. λ_{max} 243 (log ϵ 4.74); 355 (log ϵ 4.65) (MeOH).

O^3-*De-Me,* N-*Ac,* O^3-*β-D-glucopyranoside:* ***Colchicoside***
[477-29-2]
$C_{27}H_{33}NO_{11}$ 547.558
Alkaloid from seeds of *Colchicum autumnale* and *Gloriosa superba* (Liliaceae). Antiinflammatory agent. Cryst. (EtOH). Mp 192-195° Mp 216-218° (block). Log P -3.61 (uncertain value) (calc). λ_{max} 242 (ϵ 32200); 346 (ϵ 19400) (EtOH).

▶ GH0982000

O^3-*De-Me, N-Ac:* ***3-Demethylcolchicine***. *Substance C*
[7336-33-6]
$C_{21}H_{23}NO_6$ 385.416
Alkaloid from *Androcymbium gramineum, Androcymbium melanthioides, Colchicum autumnale* and several other *Colchicum* spp., *Bulbocodium vernum, Gloriosa superba* and some other *Gloriosa* spp., *Merendera caucasica* and other *Merendera* spp., *Littonia modesta, Ornithoglossum glaucum* var. *grandiflorum, Ornithoglossum viride* and *Sandersonia aurantiaca* (Liliaceae). Antineoplastic agent. Prisms ($CHCl_3$). Mp 176-182° (180-190 and 275-280°, double Mp). $[\alpha]_D^{22}$ -130.7 (c, 2.0118 in $CHCl_3$). Log P -0.45 (uncertain value) (calc). Does not occur in fresh plant extracts. Present only in dried material, attached in an unknown manner to cell constits., and liberated enzymatically. λ_{max} 243 (log ϵ 4.46); 355 (log ϵ 4.19) (EtOH). λ_{max} 251 (log ϵ 4.46); 286 (log ϵ 3.86); 340 (sh) (log ϵ 3.86); 395 (log ϵ 4.06) (EtOH/NaOH).

▶ GH0880500

O^3-*De-Me,* O^3,N-*di-Ac:*
Fine needles (EtOAc/Et_2O). Mp 227-228°. $[\alpha]_D^{20}$ -93 (c, 0.822 in $CHCl_3$).

O^3-*De-Me,* N-*Me:* ***3-Demethyldemecolcine***
[2034-50-6]
$C_{20}H_{23}NO_5$ 357.405
Alkaloid from the corms and leaves of *Colchicum cornigerum* (Liliaceae), other *Colchicum* spp. and *Androcymbium melanthioides.* Mp 220-222°. $[\alpha]_D^{22}$ -128 (c, 0.888 in $CHCl_3$). λ_{max} 244 (log ϵ 4.47); 356 (log ϵ 4.2) (EtOH). λ_{max} 235 (log ϵ 4.44); 250 (log ϵ 4.47); 291 (log ϵ 3.87); 318 (sh) (log ϵ 3.82); 394 (log ϵ 4.01) (EtOH/NaOH).

O^3-*De-Me,* N,N-*di-Me:* ***3-Demethyl*-N-*methyldemecolcine***
[929683-21-6]
$C_{21}H_{25}NO_5$ 371.432
Alkaloid from *Colchicum tauri.*

O^{10}-*De-Me:* N-*Deacetylcolchiceine. Desacetylcolchiceine*
[3482-37-9]
$C_{19}H_{21}NO_5$ 343.379
Alkaloid from the above-ground parts of *Merendera robusta* (Liliaceae). Cryst. + ½ H_2O (EtOH aq.). Mp 155° (151-153°). $[\alpha]_D$ -185 (c, 1 in $CHCl_3$).

▶ GH0960000

O^{10}-*De-Me,* N-*Ac:* ***Colchiceine***. *10-Demethylcolchicine*
[477-27-0]
$C_{21}H_{23}NO_6$ 385.416
Alkaloid from *Colchicum autumnale, Colchicum kesselringii, Colchicum luteum, Merendera robusta* and *Merendera jolantae* (Liliaceae). Used as 0.02*M* $CHCl_3$ soln. as an extractive indicator in the EDTA titration of Cu(*II*) (pH 4.5). Needles (EtOAc). Sol. $CHCl_3$. Mp 175-177°. $[\alpha]_D^{20}$ -256 (c, 1.005 in $CHCl_3$). λ_{max} 243 (log ϵ 4.47); 352 (log ϵ 4.24) (EtOH). λ_{max} 241 (log ϵ 4.49); 259 (sh) (log ϵ 4.4); 352 (log ϵ 4.24); 367 (sh) (log ϵ 4.29); 403 (log ϵ 4.04) (EtOH/NaOH).

▶ GH0520000

O^{10}-*De-Me,* O^{10},N-*di-Ac:* Mp 122-124°. $[\alpha]_D^{20}$ -260 (c, 0.759 in $CHCl_3$).

O^{10}-*De-Me,* N-*Me:* ***Demecolceine***. N-*Deacetyl*-N-*methylcolchiceine. Colchameine. Substance* T_a
[518-11-6]
$C_{20}H_{23}NO_5$ 357.405
Alkaloid from the corms of *Colchicum autumnale*, and from *Merendera robusta* and *Merendera jolantae* (Liliaceae). Yellow cryst. (MeOH). Mp 133-135°. $[\alpha]_D^{20}$ -211 (c, 0.72 in $CHCl_3$). $[\alpha]_D$ -228 (c, 1.24 in $CHCl_3$).

▶ GH0600000

1,2-Di-O-*de-Me,* N-*Ac:* ***1,2-Didemethylcolchicine***
[78231-83-1]
$C_{20}H_{21}NO_6$ 371.389
Alkaloid from seeds of *Gloriosa superba* (Liliaceae). Amorph. yellow solid. Mp 238°. $[\alpha]_D$ -148 (c, 0.167 in DMF).

2,3-Di-O-*de-Me:* **N-*Deacetyl-2,3-didemethylcolchicine***. *2,3-Didemethyl*-N-*deacetylcolchicine*
[57866-20-3]
$C_{18}H_{19}NO_5$ 329.352
Alkaloid from *Gloriosa superba* (Liliaceae). λ_{max} 245 ; 355 (log ϵ 4.15) (EtOH). λ_{max} 240 ; 258 ; 297 ; 356 (sh) ; 405 (EtOH/NaOH).

2,3-Di-O-*de-Me,* N-*Ac:* ***2,3-Didemethylcolchicine***
[57866-21-4]
$C_{20}H_{21}NO_6$ 371.389
Alkaloid from the seeds of *Colchicum latifolium* and from *Gloriosa superba* (Liliaceae). Amorph. Mp 205°. $[\alpha]_D$ -230 (c, 0.23 in MeOH).

2,3-Di-O-*de-Me,* N-*Me:* ***2,3-Didemethyldemecolcine***
$C_{19}H_{21}NO_5$ 343.379
Alkaloid from *Colchicum brachyphyllum*. Yellowish powder. $[\alpha]_D^{23}$ -90 (c, 0.1 in MeOH). λ_{max} 241 (ϵ 11800) (MeOH).

O^2,O^{10}-*Di-de-Me,* N-*Ac:* ***2-Demethylcolchiceine***
[33530-04-0]
$C_{20}H_{21}NO_6$ 371.389
Alkaloid from the corms of *Gloriosa superba* and epigeal parts of *Merendera robusta* (Liliaceae). Cryst. (EtOH). Mp 259-261°. $[\alpha]_D$ -230 (c, 2.1 in $CHCl_3$). λ_{max} 236 (log ϵ 4.78); 280 (sh) (log ϵ 4.1); 343 (log ϵ 4.49); 380 (log ϵ 4.35) (EtOH/NaOH).

O^3,O^{10}-*Di-de-Me,* N-*Ac:* ***3-Demethylcolchiceine***. *Alkaloid L5*†
[7336-34-7]
$C_{20}H_{21}NO_6$ 371.389
Alkaloid from *Colchicum luteum* and from the corms of *Gloriosa superba* (Liliaceae). Amorph. Mp 179-183°. λ_{max} 242 (log ϵ 4.71); 258 (log ϵ 4.64); 266 (log ϵ 4.49); 302 (log ϵ 3.94); 368 (log ϵ 4.46); 397 (log ϵ 4.45) (EtOH/NaOH).

O^3,O^{10}-*Di-de-Me, di-Ac:*
Cryst. (EtOAc/Et_2O). Mp 119-122°. $[\alpha]_D$ -170 (c, 0.64 in $CHCl_3$).

(±)-***form*** [102491-73-6]
Cryst. (MeOH/Et_2O). Mp 158-160°.

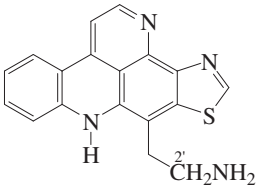
N-*Me:* [102491-77-0]
Cryst. (MeOH/Et_2O). Mp 178-179°.

O^{10}-*De-Me:* [73307-44-5]
Synthetic. Yellow cryst. (EtOH). Mp 244-246°.

Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **2**, 874A (*nmr*)
Šantavý, F. *et al., Coll. Czech. Chem. Comm.*, 1950, **15**, 552-569; 1953, **18**, 710-716; 1954, **19**, 141-152; 805-816; 1289-1301 (*Demethylcolchicines, isol, struct*)
Šantavý, F. *et al., Pharm. Acta Helv.*, 1950, **25**, 248 (*Demecolcine, isol*)
Kiselev, V.V. *et al., Dokl. Akad. Nauk SSSR, Ser. Khim.*, 1952, **87**, 227-228; *CA*, **48**, 695i (*Colchicerine*)
Šantavý, F. *et al., Helv. Chim. Acta*, 1953, **36**, 1319-1324; 1954, **37**, 18-34 (*struct, ir*)
Fabian, J. *et al., Bull. Soc. Chim. Fr.*, 1955, 1455-1463 (*Colchicoside*)
Corradi, H. *et al., Helv. Chim. Acta*, 1957, **40**, 193-199 (*Colchiceine, resoln*)
Santavý, F. *et al., Coll. Czech. Chem. Comm.*, 1959, **24**, 2237-2246 (*2-Demethyldemecolcine*)
Hrbek, J. *et al., Coll. Czech. Chem. Comm.*, 1962, **27**, 255-267 (*Gloriosine*)
Saleh, M. *et al., Coll. Czech. Chem. Comm.*, 1963, **28**, 3413-3423 (*N-Methyldemecolcine, 3-Demethyldemecolcine*)
Wilson, J.M. *et al., Tetrahedron*, 1963, **19**, 2225-2231 (*ms*)
Potěšilová, H. *et al., Coll. Czech. Chem. Comm.*, 1969, **34**, 2128-2133; 3540-3552 (*2,3-Didemethylcolchicine, N-Formyldemecolcine*)
Severini-Ricca, G. *et al., Gazz. Chim. Ital.*, 1969, **99**, 133-151 (*pmr*)
Chommadov, B.Ch. *et al., Khim. Prir. Soedin.*, 1970, **6**, 82-88; *Chem. Nat. Compd. (Engl. Transl.)*, 1970, **6**, 77-82 (*3-Demethylcolchiceine*)
Zweig, M.H. *et al., J. Pharmacol. Exp. Ther.*, 1972, **182**, 344-350 (*pharmacol*)
Turdikulov, K. *et al., Khim. Prir. Soedin.*, 1972, **8**, 247-248; *Chem. Nat. Compd. (Engl. Transl.)*, 1972, **8**, 247-248 (*N-Deacetylcolchicine, N-Deacetylcolchiceine, isol, uv*)
Kupchan, S.M. *et al., J. Nat. Prod.*, 1973, **36**, 338-340 (*3-Demethylcolchicine, isol, pmr, ms*)
Margulis, T.N. *et al., J.A.C.S.*, 1974, **96**, 899-902 (*Demecolcine, cryst struct*)
Thakur, R.S. *et al., Planta Med.*, 1975, **28**, 201-209 (*N-Deacetylcolchicine-2,3-didemethylcolchicine*)
Potesilová, H. *et al., Coll. Czech. Chem. Comm.*, 1976, **41**, 3146-3156 (*N-Deacetyl-3-demethyl-N-formylcolchicine, 2,3-Didemethylcolchicine*)
Silverton, J.V. *et al., Acta Cryst. B*, 1979, **35**, 2800-2803 (*Colchiceine, cryst struct*)
Capraro, H.-G. *et al., Helv. Chim. Acta*, 1979, **62**, 965-970 (*Demecolcine, !synth*)
Hufford, C.D. *et al., J. Pharm. Sci.*, 1979, **68**, 1239-1243 (*ir, pmr, cmr*)
Malichová, V. *et al., Planta Med.*, 1979, **36**, 119-127 (*Demethylcolchicines, N-deacetyl-3-demethyl-N-formylcolchicine*)
Hufford, C.D. *et al., Helv. Chim. Acta*, 1980, **63**, 50-56 (*cmr*)
Rösner, M. *et al., J. Med. Chem.*, 1981, **24**, 257-261 (*Colchiceine, Demethylcolchicines, synth*)
Evans, D.A. *et al., J.A.C.S.*, 1981, **103**, 5813-5821 (*Colchiceine, synth, ir, pmr*)
Rösner, M. *et al., J.O.C.*, 1981, **46**, 3686-3688 (*2,3-Didemethylcolchicine, synth*)
Hrbek, J. *et al., Coll. Czech. Chem. Comm.*, 1982, **47**, 2258-2279 (*cd*)
Martindale, The Extra Pharmacopoeia, 28th/29th edn., Pharmaceutical Press, 1982, 1829
Šantavý, F. *et al., Coll. Czech. Chem. Comm.*, 1983, **48**, 2989-2993 (N-*Deacetyl*-N-*3-oxobutyrylcolchicine*)
Kaushik, N.K. *et al., Microchem. J.*, 1985, **31**, 329-331 (*Colchiceine, detn, Cu*)
Dumont, R. *et al., J.O.C.*, 1986, **51**, 2515-2521 (*racemates, unnatural enantiomers, 2-demethyl derivs, synth*)
Yoshida, K. *et al., Agric. Biol. Chem.*, 1988, **52**, 593-594 (*Colchicoside, isol, ir, pmr, cmr, struct*)
Chommadov, B. *et al., Khim. Prir. Soedin.*, 1991, **27**, 67-71; *Chem. Nat. Compd. (Engl. Transl.)*, 1991, **27**, 58-61 (*2-Demethylcolchiceine*)
Chaudhuri, P.K. *et al., J. Nat. Prod.*, 1993, **56**, 1174-1176 (*1,2-Didemethylcolchicine*)
Sherwood, S.W. *et al., Exp. Cell Res.*, 1994, **215**, 373 (*Demecolcine, pharmacol*)
Lebeau, L. *et al., Synth. Commun.*, 1997, **27**, 293-296 (*synth, S-form*)
Suri, O.P. *et al., Nat. Prod. Lett.*, 2001, **15**, 217-219 (*1′-Epicolchicoside*)
Alali, F.Q. *et al., J. Nat. Prod.*, 2005, **68**, 173-178 (*2,3-Didemethyldemecolcine*)
Alali, F.Q. *et al., Nat. Prod. Commun.*, 2006, **1**, 95-99 (*3-Demethyl-N-methyldemecolcine*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, DAN300; ADE000; DAN375; MIW500

N-Deacetylkuanoniamine D D-93

[202932-14-7]



$C_{18}H_{14}N_4S$ 318.401
Alkaloid from the sponge *Oceanapia* sp. Cytotoxic agent. DNA intercalator. Amorph. orange powder. λ_{max} 201 (log ϵ 4.14); 239 (log ϵ 4.33); 264 (log ϵ 4.11); 295 (log ϵ 4.08); 304 (log ϵ 4.05); 342 (log ϵ 3.82); 355 (log ϵ 3.85) (MeOH). λ_{max} 201 (ϵ 13800); 223 (ϵ 26900); 295 (ϵ 12000); 342 (ϵ 6600); 365 (ϵ 3550) (MeOH) (Berdy).

N$^{2'}$-*Ac:* ***Kuanoniamine D***
[133401-13-5]
$C_{20}H_{16}N_4OS$ 360.439
Alkaloid from a tunicate and its mollusc predator *Chelynotus semperi*. Also isol. from a purple tunicate tentatively identified as *Cystodytes* sp. Topoisomerase II inhibitor, chelating agent., adenosine and GABA receptor binding agent; cytotoxic agent; insecticide, toxic to brine shrimp. Amorph. yellow powder ($CHCl_3$). Mp 300°. λ_{max} 206 (ϵ 14100); 240 (ϵ 16600); 270 (ϵ 11700); 306 (ϵ 18600); 360 (ϵ 5620); 526 (ϵ 2450) (MeOH/HCl) (Derep). λ_{max} 206 (ϵ 17400); 240 (ϵ 20900); 264 (ϵ 15800); 294 (sh); 344 (ϵ 7590); 358 (ϵ 7410); 452 (ϵ 2400) (MeOH) (Derep). λ_{max} 206 ; 240 ; 270 ; 360 ; 526 (MeOH/NaOH) (Berdy).

N$^{2'}$-*Propanoyl:* ***Kuanoniamine C****. Dercitamide*
[133401-12-4]
$C_{21}H_{18}N_4OS$ 374.465
Alkaloid from a tunicate and its mollusc predator *Chelynotus semperi*. Also isol. from a purple tunicate tentatively identified as *Cystodytes* sp. and from a deep water marine sponge *Stelletta* sp. Cytotoxic. Inhibits proliferation of P388 murine leukaemia cells in vitro. Also displays immunosuppressive activity. Amorph. yellow powder ($CHCl_3$). Mp 300° (192°). λ_{max} 206 (ϵ 14100); 240 (ϵ 16600); 270 (ϵ 11700); 306 (ϵ 18600); 360 (ϵ 5620); 526 (ϵ 2450) (MeOH/HCl) (Derep). λ_{max} 245 (ϵ 13800); 307 (ϵ 16900); 361 (ϵ 3900); 541 (ϵ 1800) (MeOH) (Derep). λ_{max} 206 (ϵ 17400); 240 (ϵ 20900); 264 (ϵ 15800); 294 (sh) ; 344 (ϵ 7590); 358 (ϵ 7410); 452 (ϵ 2400) (MeOH) (Derep).

N$^{2'}$-*(2-Methylpropanoyl):* ***Kuanoniamine E***
[445471-59-0]
$C_{22}H_{20}N_4OS$ 388.492
Alkaloid from a Singaporean ascidian. Yellow gum. λ_{max} 204 (log ϵ 4.27); 241 (log ϵ 4.52); 265 (log ϵ 4.3); 296 (sh) (log ϵ 3.97); 346 (log ϵ 4.07); 362 (log ϵ 4.08); 452 (log ϵ 3.67) (MeOH).

N$^{2'}$-*(2-Methylbutanoyl):* ***Kuanoniamine F***
[445471-61-4]
$C_{23}H_{22}N_4OS$ 402.519
Alkaloid from a Singaporean ascidian. Yellow gum. $[\alpha]_D$ +105 (c, 0.18 in MeOH). λ_{max} 206 (log ϵ 4.26); 242 (log ϵ 4.49); 262 (log ϵ 4.29); 296 (sh) (log ϵ 3.98); 346 (log ϵ 4.04); 363 (log ϵ 4.05); 455 (log ϵ 3.38) (MeOH).

N$^{2'}$-*(3-Methylbutanoyl):* ***Kuanoniamine B***
[133401-11-3]
$C_{23}H_{22}N_4OS$ 402.519
Alkaloid from a tunicate and its mollusc predator *Chelynotus semperi*. Cytotoxic agent. Amorph. yellow powder ($CHCl_3$). Mp 300°. λ_{max} 204 (ϵ 17400); 240 (ϵ 20900); 264 (ϵ 15100); 294 (sh) (ϵ 7760); 344 (ϵ 7410); 360 (ϵ 7410); 450 (ϵ 2750) (MeOH) (Derep).

N$^{2'}$-*(3-Methyl-2-butenoyl):* ***Dehydrokuanoniamine B***
[158734-24-8]
$C_{23}H_{20}N_4OS$ 400.503
Alkaloid from *Cystodytes* sp. Antitumour agent; DNA intercalator; topoisomerase II inhibitor. Orange solid. λ_{max} 237 (ϵ 50970); 261 (ϵ 30120); 344 (ϵ 16410); 359 (ϵ 16950); 452 (ϵ 6050) (MeOH).

N$^{2'}$-*Me:* ***Dercitamine***
[125236-60-4]
$C_{19}H_{16}N_4S$ 332.428
Alkaloid from *Stelletta* sp. Inhibits proliferation of P388 murine leukaemia cells *in vitro*. Also displays immunosuppressive activity. Orange solid. Mp 135°. Regiochem. revised in 1992. Genus name incorr. given as Stelleta. λ_{max} 245 (ϵ 13800); 307 (ϵ 16900); 361 (ϵ 3900) (MeOH) (Derep).

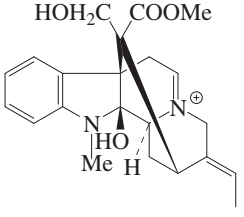
N$^{2'}$,N$^{2'}$-*Di-Me:* ***Nordercitin***
[125236-59-1]
$C_{20}H_{18}N_4S$ 346.455
Alkaloid from a deep water marine sponge *Stelletta* sp. Inhibits proliferation of P388 murine leukaemia cells *in vitro*. Also displays immunosuppres-

sive activity. Yellow solid. Mp 176°. λ_{max} 245 (ϵ 13800); 307 (ϵ 16900); 361 (ϵ 3900) (MeOH) (Derep).

Gunawardana, G.P. *et al., Tet. Lett.*, 1989, **30**, 4359-4362 (*Dercitamine, Nordercitin*)
Carroll, A.R. *et al., J.O.C.*, 1990, **55**, 4426-4431 (*Kuanoniamines A-D, isol, uv, ir, pmr, cmr, ms, struct*)
Bishop, M.J. *et al., J.A.C.S.*, 1992, **114**, 10081-10082 (*synth*)
Gunawardana, G.P. *et al., J.O.C.*, 1992, **57**, 1523-1526 (*Kuanoniamine D, Dercitamine, Nordercitin, struct*)
Eldredge, G.S. *et al., J. Med. Chem.*, 1994, **37**, 3819-3827 (*Dehydrokuoniamine B*)
Ciufolini, M.A. *et al., J.A.C.S.*, 1995, **117**, 12460-12469 (*synth*)
Eder, C. *et al., J. Nat. Prod.*, 1998, **61**, 301-305 (*Deacetylkuanoniamine D*)
Salomon, C.E. *et al., Mar. Biol. (Berlin)*, 2001, **139**, 313 (*biosynth*)
Nilar, *et al., J. Nat. Prod.*, 2002, **65**, 1198-1200 (*Kuanoniamines E-F*)
Sidebottom, N.P.J. *et al., J. Nat. Prod.*, 2002, **65**, 1198-1200 (*Kuanoniamine E,F*)

O-Deacetyl-1,2,4,5-tetrahydro-2-hydroxy-1-methylakuammilinium(1+) D-94

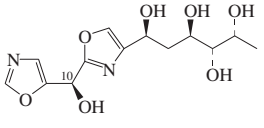
[870717-13-8 (chloride)]



$C_{22}H_{27}N_2O_4^{\oplus}$ 383.466
Quaternary alkaloid from the leaves of *Alstonia scholaris*. Powder (as chloride). Mp 229-232° (chloride). $[\alpha]_D^{18}$ -80.1 (c, 0.2 in $CHCl_3$) (chloride).

Zhou, H. *et al., Helv. Chim. Acta*, 2005, **88**, 2508-2512 (*isol, pmr, cmr*)

Deacylbengazole C D-95



Absolute Configuration

$C_{13}H_{18}N_2O_7$ 314.294

O^{10}-*Tridecanoyl:* ***Bengazole C***
[147512-35-4]
$C_{26}H_{42}N_2O_8$ 510.626
Isol. from a *Jaspis* sp. Anthelmintic agent. Oil. λ_{max} 217 (MeOH aq.).

O^{10}-*Tetradecanoyl:* ***Bengazole A***
[112549-08-3]
$C_{27}H_{44}N_2O_8$ 524.653
Isol. from a Jaspidae marine sponge from Fiji. Exhibits anthelminthic activity. Antifungal agent. Viscous oil. $[\alpha]_D^{20}$ +5 (c, 0.107 in MeOH). λ_{max} 209 (ϵ 1400) (MeOH) (Derep).

O^{10}-*(12-Methyltridecanoyl):* ***Bengazole D***
[147362-22-9]
$C_{27}H_{44}N_2O_8$ 524.653
Isol. from a *Jaspis* sp. Anthelmintic agent. Oil. λ_{max} 217 (MeOH aq.).

O^{10}-*Pentadecanoyl:* ***Bengazole E***
[147362-23-0]
$C_{28}H_{46}N_2O_8$ 538.68
Isol. from a *Jaspis* sp. Anthelmintic agent. Oil. λ_{max} 217 (MeOH aq.).

O^{10}-*(12-Methyltetradecanoyl):* ***Bengazole B$_1$***
[147391-82-0]
$C_{28}H_{46}N_2O_8$ 538.68
Isol. from a Great Barrier Reef sponge *Jaspis* sp. Inseparable 1:5 mixt. with Bengazole B.

O^{10}-*(13-Methyltetradecanoyl):* ***Bengazole B***
[112549-09-4]
$C_{28}H_{46}N_2O_8$ 538.68
Isol. from a Jaspidae marine sponge from Fiji and from an Australian *Jaspis* sp. (as an inseparable mixt. with Bengazole B1). Exhibits anthelminthic and antifungal activity. Viscous oil. $[\alpha]_D^{20}$ +4.7 (c, 0.024 in MeOH). λ_{max} 209 (ϵ 1400) (MeOH) (Derep).

O^{10}-*Hexadecanoyl:* ***Bengazole G***
[147362-24-1]
$C_{29}H_{48}N_2O_8$ 552.707
Isol. from a *Jaspis* sp. Anthelminthic agent. Oil. λ_{max} 217 (MeOH aq.).

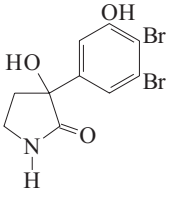
O^{10}-*(13-Methylpentadecanoyl):* ***Bengazole F***
[147391-83-1]
$C_{29}H_{48}N_2O_8$ 552.707
Isol. from a *Jaspis* sp. Anthelminthic agent. Oil. λ_{max} 217 (MeOH aq.).

10-Deoxy: see Bengazole Z, B-61

Adamczeski, M. *et al., J.A.C.S.*, 1988, **110**, 1598 (*isol, uv, ir, pmr, cmr, ms, struct*)
Molinski, T.F. *et al., J. Nat. Prod.*, 1993, **56**, 1 (*biochem*)
Searle, P.A. *et al., J.O.C.*, 1996, **61**, 4073-4079 (*abs config*)
Mulder, R.J. *et al., J.O.C.*, 1999, **64**, 4995-4998; 2000, **65**, 8126 (*synth*)
Chittari, P. *et al., Heterocycles*, 2003, **59**, 465-472 (*synth*)
Bull, J.A. *et al., Chem. Eur. J.*, 2007, **13**, 5515-5538 (*Bengazole A, B, synth*)

Deacylconvolutamide D-96

3-(3,4-Dibromo-5-hydroxyphenyl)-3-hydroxy-2-pyrrolidinone



$C_{10}H_9Br_2NO_3$ 350.994

N-*Tetradecanoyl:* ***Convolutamide A***
[158182-21-9]
$C_{24}H_{35}Br_2NO_4$ 561.353
Isol. from the marine bryozoan *Amathia convoluta*. Exhibits cytotoxicity against L1210 murine leukaemia and KB human epidermoid carcinoma cells. Amorph. solid. $[\alpha]_D^{20}$ -6 (c, 0.4 in $CHCl_3$). Opt. rotn. and biol. activity refer to a 1:1.7 insep. mixt. with Convolutamide B. λ_{max} 225 (ϵ 34000) (MeOH) (Berdy).

N-*(9Z-Hexadecenoyl):* ***Convolutamide B***
[158182-22-0]
$C_{26}H_{37}Br_2NO_4$ 587.391
From *Amathia convoluta*. See statement under Convolutamide A above.

N-*Hexadecanoyl:* ***Convolutamide C***
[158182-23-1]
$C_{26}H_{39}Br_2NO_4$ 589.406
From *Amathia convoluta*. Shows no cytotoxicity. Amorph. solid. $[\alpha]_D^{20}$ -5.1 (c, 0.4 in $CHCl_3$). Opt. rotn. refers to a 1.8:1 insep. mixt. with Convolutamide D.

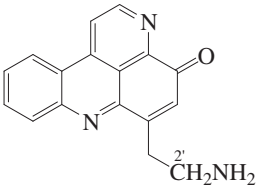
N-*(9Z-Octadecenoyl):* ***Convolutamide D***
[158182-24-2]
$C_{28}H_{41}Br_2NO_4$ 615.444
From *Amathia convoluta*. See statement under Convolutamide C above.

N-*Octadecanoyl:* ***Convolutamide E***
[158182-25-3]
$C_{28}H_{43}Br_2NO_4$ 617.46
From *Amathia convoluta*. Shows no cytotoxicity. Amorph. solid. $[\alpha]_D^{20}$ -25 (c, 0.1 in $CHCl_3$). Opt. rotn. refers to a 7.9:1 insep. mixt. with Convolutamide F.

N-*(8-Eicosenoyl):* ***Convolutamide F***
[158182-26-4]
$C_{30}H_{45}Br_2NO_4$ 643.498
From *Amathia convoluta*. See statement under Convolutamide E above. Geometry of side chain double bond not assigned.

Zhang, H. *et al., Tetrahedron*, 1994, **50**, 10201-10206 (*isol, uv, ir, pmr, cmr, ms, struct*)

Deacylcystodytin D-97



$C_{17}H_{13}N_3O$ 275.309

N$^{2'}$-*Ac:* ***Cystodytin J***
[158734-25-9]
$C_{19}H_{15}N_3O_2$ 317.346
Isol. from a *Cystodytes* sp. Cytotoxic agent. Inhibitor of topoisomerase II. DNA intercalator. Yellow solid. λ_{max} 218 (ϵ 12414); 277 (ϵ 6033); 300 (ϵ 7491); 318 (ϵ 8123); 359 (ϵ 1708); 382 (ϵ 1716); 538 (ϵ 1423) (MeOH) (Berdy).

N$^{2'}$-*(3-Methyl-2-butenoyl):* ***Cystodytin A***
[113321-71-4]
$C_{22}H_{19}N_3O_2$ 357.411
Isol. from *Cystodytes dellechiajei*. Topoisomerase II inhibitor. Calcium release agent. Yellow cryst. Sol. MeOH, toluene, $CHCl_3$; poorly sol. H_2O. Mp 181-183°. Inseparable mixt. with Cystodytin B. λ_{max} 214 (ϵ 37000); 274 (ϵ 30000); 384 (ϵ 11000) (MeOH) (De-

rep). λ_{max} 226 (ϵ 35000); 272 (ϵ 26000); 380 (ϵ 11500) (MeOH) (Derep).

N$^{2'}$*-(3-Hydroxy-3-methylbutanoyl):* ***Cystodytin C***
[113351-76-1]
$C_{22}H_{21}N_3O_3$ 375.426
Isol. from *Cystodytes dellechiajei*. Calcium release agent. Light yellow cryst. Sol. MeOH, $CHCl_3$, toluene; poorly sol. H_2O. Mp 257-259°. λ_{max} 214 (ϵ 37000); 274 (ϵ 30000); 384 (ϵ 11000) (MeOH) (Derep). λ_{max} 226 (ϵ 35000); 272 (ϵ 26000); 380 (ϵ 11500) (MeOH) (Derep). λ_{max} 228 (ϵ 29900); 272 (ϵ 29100); 380 (ϵ 11800) (MeOH) (Berdy).

N$^{2'}$*-Tigloyl:* ***Cystodytin B***
[113351-75-0]
$C_{22}H_{19}N_3O_2$ 357.411
Isol. from *Cystodytes dellechiajei*. Shows calcium release activity. Sol. MeOH, $CHCl_3$, toluene; poorly sol. H_2O. Obt. only in admixture with Cystodytin A. λ_{max} 214 (ϵ 37000); 274 (ϵ 30000); 384 (ϵ 11000) (MeOH) (Derep). λ_{max} 226 (ϵ 35000); 272 (ϵ 26000); 380 (ϵ 11500) (MeOH) (Derep).

1′-Hydroxy, N$^{2'}$*-(3-methyl-2-butenoyl):* ***Cystodytin D***
[141544-60-7]
$C_{22}H_{19}N_3O_3$ 373.41
Isol. from *Cystodytes dellechiajei*. Sol. MeOH; poorly sol. hexane, H_2O. λ_{max} 214 (ϵ 37000); 274 (ϵ 30000); 384 (ϵ 11000) (MeOH) (Derep). λ_{max} 226 (ϵ 35000); 272 (ϵ 26000); 380 (ϵ 11500) (MeOH) (Derep).

1′-Hydroxy, N$^{2'}$*-tigloyl:* ***Cystodytin E***
[141544-61-8]
$C_{22}H_{19}N_3O_3$ 373.41
Alkaloid from *Cystodytes dellechiajei*. λ_{max} 214 (ϵ 37000); 274 (ϵ 30000); 384 (ϵ 11000) (MeOH) (Derep). λ_{max} 226 (ϵ 35000); 272 (ϵ 26000); 380 (ϵ 11500) (MeOH) (Derep).

1′-(9-Octadecenoyloxy), N$^{2'}$*-(3-methyl-2-butenoyl):* ***Cystodytin H***
[141544-64-1]
$C_{40}H_{51}N_3O_4$ 637.861
Alkaloid from *Cystodytes dellechiajei*. Sol. MeOH; poorly sol. hexane, H_2O. λ_{max} 225 (ϵ 37000); 273 (ϵ 25000); 382 (ϵ 10000) (MeOH) (Derep).

1′-(9-Octadecenoyloxy), N$^{2'}$*-tigloyl:* ***Cystodytin I***
[141657-37-6]
$C_{40}H_{51}N_3O_4$ 637.861
Alkaloid from *Cystodytes dellechiajei*. λ_{max} 225 (ϵ 37000); 273 (ϵ 25000); 382 (ϵ 10000) (MeOH) (Derep).

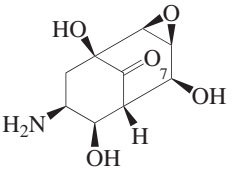
1′-Methoxy, N$^{2'}$*-Ac:* ***Cystodytin K***
[496909-76-3]
$C_{20}H_{17}N_3O_3$ 347.373
Isol. from *Lissoclinum notti*. Yellow solid. $[\alpha]_D^{20}$ -292 (c, 0.06 in MeOH). λ_{max} 207 (log ϵ 4.57); 272 (log ϵ 4.17); 382 (log ϵ 3.67) (MeOH/trifluoroacetate).

1′-Methoxy, N$^{2'}$*-(3-methyl-2-butenoyl):* ***Cystodytin F***
[141544-62-9]
$C_{23}H_{21}N_3O_3$ 387.437
Alkaloid from *Cystodytes dellechiajei*. Sol. MeOH; poorly sol. hexane, H_2O. λ_{max} 225 (ϵ 30000); 272 (ϵ 23000); 380 (ϵ 11000) (MeOH) (Derep).

1′-Methoxy, N$^{2'}$*-tigloyl:* ***Cystodytin G***
[141544-63-0]
$C_{23}H_{21}N_3O_3$ 387.437
Alkaloid from *Cystodytes dellechiajei*. λ_{max} 225 (ϵ 30000); 272 (ϵ 23000); 380 (ϵ 11000) (MeOH) (Derep).

Kobayashi, J. *et al., J.O.C.*, 1988, **53**, 1800-1804 (*Cystodytins A-C, isol, uv, ir, pmr, cmr, ms, struct*)
Kobayashi, J. *et al., J. Nat. Prod.*, 1991, **54**, 1634-1638 (*Cystodytins D-I*)
Ciufolini, M.A. *et al., J.A.C.S.*, 1991, **113**, 8016-8024 (*Cystodytins A,B, synth*)
Eldredge, G.S. *et al., J. Med. Chem.*, 1994, **37**, 3819-3827 (*Cystodytin J*)
Ciufolini, M.A. *et al., Tet. Lett.*, 1995, **36**, 4709-4712 (*Cystodytin A, synth*)
Appleton, D.R. *et al., Tetrahedron*, 2002, **58**, 9779-9783 (*Cystodytin K*)

Deacylisariotin D-98



$C_9H_{13}NO_5$ 215.205

N-*(2*E*-Decenoyl):* ***Isariotin D***
[952703-99-0]
$C_{19}H_{29}NO_6$ 367.441
Isol. from *Isaria tenuipes* BCC 7831. Amorph. solid. $[\alpha]_D^{27}$ -37 (c, 0.1 in MeOH). λ_{max} 212 (log ϵ 4.03) (MeOH).

N-*(7-Oxo-2*E*-dodecenoyl):* ***Isariotin C***
[952703-98-9]
$C_{21}H_{31}NO_7$ 409.478
Isol. from *Isaria tenuipes* BCC 7831. Amorph. solid. $[\alpha]_D^{27}$ -25 (c, 0.09 in MeOH). λ_{max} 211 (log ϵ 4.2) (MeOH).

N-*(12-Hydroxy-2*E*-dodecenoyl):* ***Isariotin A***
[952703-96-7]
$C_{21}H_{33}NO_7$ 411.494
Isol. from *Isaria tenuipes* BCC 7831. Amorph. solid. $[\alpha]_D^{27}$ -45 (c, 0.09 in MeOH). λ_{max} 213 (log ϵ 4.16) (MeOH).

N-*(11-Carboxy-2*E*-undecenoyl):* ***Isariotin B***
[952703-97-8]
$C_{21}H_{31}NO_8$ 425.478
Isol. from *Isaria tenuipes* BCC 7831. Amorph. solid. $[\alpha]_D^{26}$ -23 (c, 0.07 in MeOH). λ_{max} 211 (log ϵ 4.24) (MeOH).

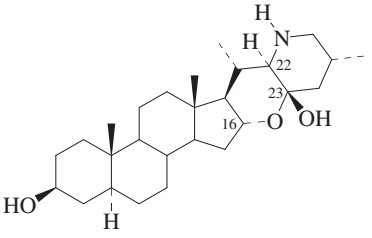
7-Me ether, N-*(2*E*-decenoyl):* ***Antibiotic TK 57-164B****. TK 57-164B*
[745050-51-5]
$C_{20}H_{31}NO_6$ 381.468
Isol. from *Isaria* sp. TK-57. Stereochem. not determined.

7-Me ether, N-*(2*E*-dodecenoyl):* ***Antibiotic TK 57-164A****. TK 57-164A*
[745050-50-4]
$C_{22}H_{35}NO_6$ 409.522
Isol. from *Isaria* sp. TK-57. Stereochem. not determined.

Pat. Coop. Treaty (WIPO), 2004, 04 74 269; *CA*, **141**, 224074 (*TK 57-164*)
Haritakun, R. *et al., J. Nat. Prod.*, 2007, **70**, 1478-1480 (*isol, pmr, cmr*)

3-Deamino-3-hydroxysolanocapsine D-99

16,23-Epoxy-16,28-secosolanidane-3,23-diol, 9CI. 3-Desamino-3-hydroxysolanocapsine
[35865-62-4]



$C_{27}H_{45}NO_3$ 431.657
Alkaloid from roots of *Solanum aculeatum* (Solanaceae). Needles (MeOH aq.). Mp 204°. $[\alpha]_D^{25}$ +20.1 (c, 1 in $CHCl_3$).

23-Me ether: ***Aculeamine***
[91377-17-2]
$C_{28}H_{47}NO_3$ 445.684
Alkaloid from roots of *Solanum aculeatum* (Solanaceae). Needles (MeOH aq.). Mp 205-207°. $[\alpha]_D^{24}$ +50.8 (c, 0.9 in $CHCl_3$).

23-Et ether: ***3-Deamino-22-O-ethyl-3-hydroxysolanocapsine****. 3-Desamino-22-O-ethyl-3-hydroxysolanocapsine*
[92070-74-1]
$C_{29}H_{49}NO_3$ 459.711
Isol. from roots of *Solanum aculeatum* (Solanaceae). Needles (Me_2CO aq.). Mp 183-185°. $[\alpha]_D^{23}$ +45.2 (c, 0.4 in $CHCl_3$). Artifact.

16,23,25-Triepimer: ***Solanocardinol****. Pimpifolidine*
[138665-46-0]
$C_{27}H_{45}NO_3$ 431.657
Alkaloid from *Lycopersicon pimpinellifolium* (currant tomato) and *Solanum neocardenasii* (Solanaceae). Cryst. (Me_2CO aq.). Mp 200-203°. $[\alpha]_D^{20}$ -1.9 (c, 1.05 in Py). Solanocardinol and Pimpifolidine not compared. Phys. props. refer to Pimpifolidine.

16,22,23,25-Tetraepimer: ***22-Isopimpifolidine***
[152322-51-5]
$C_{27}H_{45}NO_3$ 431.657
Alkaloid from roots of *Lycopersicon pimpinellifolium* (currant tomato). Needles (Me_2CO). Mp 200-204°. $[\alpha]_D^{20}$ -13.6 (c, 0.77 in Py).

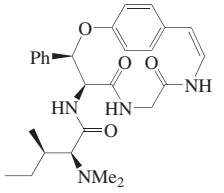
*16,22,23,25-Tetraepimer, 3-*O*-[β-D-glucopyranosyl-(1→2)-[β-D-xylopyranosyl-(1→3)]-β-D-glucopyranosyl-(1→4)-β-D-galactopyranoside]:* ***Lycoperoside***

H
[675828-28-1]
$C_{50}H_{83}NO_{22}$ 1050.199
Alkaloid from *Lycopersicon esculentum* (tomato). Amorph. powder. $[\alpha]_D^{20}$ -29.8 (c, 1.2 in MeOH).

Coll, F. *et al., Phytochemistry*, 1983, **22**, 2099-2100; 1984, **23**, 883-885 (*isol, pmr, cmr*)
Kubschabsky, L. *et al., CA*, 1984, **101**, 111265p (*cryst struct*)
Osman, S.F. *et al., Phytochemistry*, 1991, **30**, 3161-3163 (*Solanocardinol*)
Ripperger, H. *et al., Phytochemistry*, 1994, **35**, 813-815 (*Pimpifolidine, 22-Isopimpifolidine*)
Yahara, S. *et al., J. Nat. Prod.*, 2004, **67**, 500-502 (*Lycoperoside H*)

Debenzoylaralionine A D-100

Desbenzoylaralionine A
[21761-50-2]

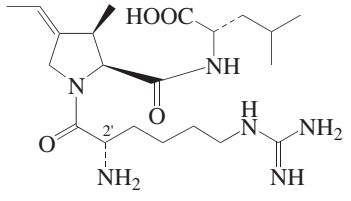


Absolute Configuration

$C_{27}H_{34}N_4O_4$ 478.59
Isol. from stem bark of *Araliorhamnus vaginatus*. Mp 101-104°. $[\alpha]_D^{20}$ +100 (c, 0.16 in MeOH).

Tschesche, R. *et al., Chem. Ber.*, 1969, **102**, 50-63 (*Debenzoylaralionine A*)
Gournelis, D.G. *et al., Prog. Chem. Org. Nat. Prod.*, 1998, **75**, 1 (*rev*)

N-Debenzoyllucentamycin A D-101



Absolute Configuration

$C_{21}H_{38}N_6O_4$ 438.569

$N^{2'}$-*(3-Methylbutanoyl):* ***Lucentamycin C***
[949009-88-5]
$C_{26}H_{46}N_6O_5$ 522.687
Prod. by *Nocardiopsis lucentensis* (strain CNR-712). Yellow oil. $[\alpha]_D^{25}$ -32 (c, 0.25 in MeOH). λ_{max} 206 (log ϵ 4.2); 217 (sh) (log ϵ 3.19) (MeOH).

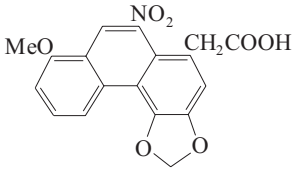
$N^{2'}$-*(3-Methyl-2-butenoyl):* ***Lucentamycin D***
[949009-89-6]
$C_{26}H_{44}N_6O_5$ 520.671
Prod. by *Nocardiopsis lucentensis* (strain CNR-712). Yellow oil. $[\alpha]_D^{25}$ -36 (c, 0.25 in MeOH). λ_{max} 206 (log ϵ 4.2); 217 (sh) (log ϵ 4) (MeOH).

$N^{2'}$-*Benzoyl:* ***Lucentamycin A***
[949009-86-3]
$C_{28}H_{42}N_6O_5$ 542.677
Prod. by the marine-derived *Nocardiopsis lucentensis* (strain CNR-712). Cytotoxic. Yellow oil. $[\alpha]_D^{25}$ -6.3 (c, 0.17 in MeOH). λ_{max} 206 (log ϵ 4.1); 217 (sh) (log ϵ 3.9); 300 (log ϵ 2.7) (MeOH).

Cho, J.Y. *et al., J. Nat. Prod.*, 2007, **70**, 1321-1328 (*isol, pmr, cmr*)

Debilic acid D-102

*8-Methoxy-6-nitrophenanthro[3,4-*d*]-1,3-dioxole-5-acetic acid, 9CI. 8-Methoxy-3,4-methylenedioxy-10-nitro-1-phenanthreneacetic acid*
[475-85-4]



$C_{18}H_{13}NO_7$ 355.303
Alkaloid from the roots of *Aristolochia debilis*. Also assumed to be present in the stems of *Aristolochia manshuriensis* (Aristolochiaceae). Yellow needles. Mp 300° dec Mp 350°.

Me ester: Mp 260°.

Ku, Y.-T. *et al., Kexue Tongbao (Chin. edn.)*, 1957, 761; *CA*, **53**, 12256g (*isol, struct*)
Tseng, K.-F. *et al., Yaoxue Xuebao*, 1958, **6**, 33; 316; *CA*, **53**, 15225a; **54**, 453i (*isol, struct*)
Ruecker, G. *et al., Planta Med.*, 1975, **27**, 68

2,8-Decadiene-4,6-diynoic acid D-103

Matricaria acid. Matricaric acid
$H_3CCH{=}CHC{\equiv}CC{\equiv}CCH{=}CHCOOH$
$C_{10}H_8O_2$ 160.172

(2E,8E)-form
Mp 173° dec.

Me ester: trans,trans-*Matricaria ester*
[820-96-2]
$C_{11}H_{10}O_2$ 174.199
Constit. of *Matricaria tenuifolia*, *Polyporus anthracophilus* and *Grindelia paludosa*. Mp 63°.

(2E,8Z)-form
Mp 83-90°.

Me ester: trans-*Matricaria ester*
[23180-59-8]
Constit. of *Matricaria inodora, Erigeron karwinskyanus* and *Amellus strigosus*. Mp 2°.

2-Methylpropylamide: N-*(2-Methylpropyl)-2,8-decadiene-4,6-diynamide. 2,8-Decadiene-4,6-diynoic acid isobutylamide*
[113235-92-0]
$C_{14}H_{17}NO$ 215.294
Isol. from underground parts of *Achillea wilhelmsii* (Asteraceae). Mp 85-89°.

3-Methylbutylamide: N-*(3-Methylbutyl)-2,8-decadiene-4,6-diynamide. 2,8-Decadiene-4,6-diynoic acid isopentylamide*
[113262-63-8]
$C_{15}H_{19}NO$ 229.321
Isol. from *Achillea wilhelmsii* (Asteraceae). Mp 88-91°.

2-Phenylethylamide: N-*(2-Phenylethyl)-2,8-decadiene-4,6-diynamide. 2,8-Decadiene-4,6-diynoic acid 2-phenylethylamide*
[113262-64-9]
$C_{18}H_{17}NO$ 263.338
Isol. from *Achillea wilhelmsii* (Asteraceae). Mp 108-111°.

(2Z,8E)-form
Me ester: [25019-41-4]
Constit. of *Solidago virgaurea* and *Erigeron* spp.

(2Z,8Z)-form [13030-78-9]
Isol. from fresh roots of *Anthemis rudolfiana*. Mp 98-99°. λ_{max} 246 ; 259 ; 315 ; 337 (MeOH) (Berdy).

Me ester: Matricaria ester
[928-36-9]
Constit. of *Matricaria inodora* and *Erigeron* spp. Widely distributed in the Asteraceae. Mp 37°.

(2ξ,8ξ)-form
2-Methylpropylamide, N-*Me:* N-*Methyl*-N-*(2-methylpropyl)-2,8-decadiene-4,6-diynamide*
[37064-13-4]
$C_{15}H_{19}NO$ 229.321
Isol. from the roots of *Anacyclus pyrethrum* (Asteraceae). Oil. λ_{max} 328, 306.5, 287 nm.

8,9-Epoxide: 8,9-Epoxy-2-decene-4,6-diynoic acid
$C_{10}H_8O_3$ 176.171
Isol. as Me ester from aerial parts of *Erigeron philadelphicus*. Oil (as Me ester).

Bruun, T. *et al., Acta Chem. Scand.*, 1951, **5**, 1244 (*synth*)
Sörensen, J.S. *et al., Acta Chem. Scand.*, 1952, **6**, 883; 1953, **7**, 1375; 1954, **8**, 26; 34 (*occur*)
Bu'Lock, J.D. *et al., J.C.S.*, 1957, 1607 (*isol, struct*)
Bell, I. *et al., J.C.S.*, 1958, 1313 (*synth*)
Bohlmann, F. *et al., Chem. Ber.*, 1963, **96**, 1485; 1964, **97**, 1193; 1965, **98**, 369; 1966, **99**, 1642; 2096; 1967, **100**, 611; 1982, **21**, 167 (*isol, pmr*)
Jente, R. *et al., Chem. Ber.*, 1972, **105**, 1694 (*isol, struct, uv, ms*)
Bohlmann, F. *et al., Phytochemistry*, 1982, **21**, 167 (*isol*)
Jakupovic, J. *et al., Phytochemistry*, 1986, **25**, 1223 (*epoxides*)
Greger, H. *et al., J. Nat. Prod.*, 1987, **50**, 1100 (*amides, isol, struct, ir, uv, ms, pmr, cmr*)

2,4-Decadienoic acid D-104

[92015-76-4]
$H_3C(CH_2)_4CH{=}CHCH{=}CHCOOH$
$C_{10}H_{16}O_2$ 168.235

(E,E)-form [30361-33-2]
Mp 49-50°. $Bp_{0.3}$ 121-124°.

2-Methylpropylamide: see 2,4-Decadienoic acid isobutylamide, D-106

2-Methylbutylamide: N-*(2-Methylbutyl)-2,4-decadienamide. 2,4-Decadienoic acid 2-methylbutylamide*
$C_{15}H_{27}NO$ 237.384

Alkaloid from *Piper sarmentosum*. Oil. $[\alpha]_D^{20}$ -5 (c, 0.12 in EtOH). λ_{max} 261 (no solvent reported).

3-Methylbutylamide: 2,4-Decadienoic acid isopentylamide
[78910-26-6]
$C_{15}H_{27}NO$ 237.384
Isol. from underground parts of *Achillea wilhelmsii* (Asteraceae). Mp 63-65°.

2-Phenylethylamide: 2,4-Decadienoic acid 2-phenylethylamide
[83170-20-1]
$C_{18}H_{25}NO$ 271.402
Isol. from underground parts of *Achillea wilhelmsii* (Asteraceae). Mp 96-98°.

Pyrrolidide: 1-(1-Oxo-2,4-decadienyl)-pyrrolidine, 9CI. 2,4-Decadienoic acid pyrrolidide. 1-(2,4-Decadienoyl)pyrrolidine. ***Sarmentine***
[78910-33-5]
$C_{14}H_{23}NO$ 221.342
Constit. of fruits of pepper (*Piper nigrum*) and cha-plu (*Piper sarmentosum*) (Piperaceae). Shows larvicidal activity. Oil.

Piperidide: 1-(1-Oxo-2,4-decadienyl)piperidine, 9CI. ***2,4-Decadienoic acid piperidide***
[42997-42-2]
$C_{15}H_{25}NO$ 235.369
Alkaloid from *Achillea nabelikii*, *Achillea sudetica* and other *Achillea* spp. (Asteraceae). Oil.

(4-Hydroxyphenyl)ethylamide: see *N*-(4-Hydroxyphenethyl)-2,4-decadienamide, H-668

(2*E*,4*Z*)-*form*
Phycodioic acid. Stillingic acid
[544-48-9]
Constit. of Stillingia oil. Also from *Phycomyces blakesleeanus*, *Streptomyces viridochromogenes* and *Agromyces* sp. Herbicide. $Bp_{0.5}$ 122°.

Amide: 2,4-Decadienamide. ***Amidenin***
[149764-39-6]
$C_{10}H_{17}NO$ 167.25
Isol. from *Amycolatopsis* sp. Plant-growth regulator. Needles. Mp 88-90°. λ_{max} 261 (ϵ 21900) (MeOH) (Derep).

Piperidide: ***Neopellitorine B***
[88855-36-1]
$C_{15}H_{25}NO$ 235.369
Alkaloid from *Artemisia dracunculus*. Yellow oil. Indexed as 4*E*-isomer in CA. λ_{max} 257 (MeOH).

Hofer, O. *et al., Tetrahedron*, 1986, **42**, 2707-2716 (*piperidide, cmr*)
Greger, H. *et al., J. Nat. Prod.*, 1987, **50**, 1100 (*2-phenylethylamide, isopentylamide*)
Likhitwitayawuid, K. *et al., Tetrahedron*, 1987, **43**, 3689 (*Sarmentine*)
Kiuchi, F. *et al., Chem. Pharm. Bull.*, 1988, **36**, 2452 (*pyrrolidide*)
Bari, S.S. *et al., J. Indian Chem. Soc.*, 1990, **67**, 995 (*synth, Sarmentine*)
Kanbe, K. *et al., Biosci., Biotechnol., Biochem.*, 1993, **57**, 1261 (*Amidenin*)
Strunz, G.M. *et al., Can. J. Chem.*, 1996, **74**, 419-432 (*piperidide, pyrrolidide, synth*)
Stoehr, J.R. *et al., Planta Med.*, 1999, **65**, 175-177 (*2-methylbutylamide*)
Saadali, B. *et al., Phytochemistry*, 2001, **58**, 1083-1086 (*Neopellitorine B*)

6,8-Decadienoic acid D-105

$H_3CCH{=}CHCH{=}CH(CH_2)_4COOH$

$C_{10}H_{16}O_2$ 168.235

(6*Z*,8*E*)-*form*

N-*(2-Methylpropyl)amide:* N-*(2-Methylpropyl)-6,8-decadienamide.* N-*Isobutyl-6,8-decadienamide.* ***Hydrospilanthol***
[94450-20-1]
$C_{14}H_{25}NO$ 223.358
Alkaloid from the flowers of *Acmella ciliata*.

Martin, R. *et al., Phytochemistry*, 1984, **23**, 1781-1783 (*Hydrospilanthol*)

2,4-Decadienoic acid isobutylamide D-106

Pellitorine. N-*(2-Methylpropyl)-2,4-decadienamide, 9CI.* N-*Isobutyl-2,4-decadienamide, 8CI. Pyretrin*
$H_3C(CH_2)_4CH{=}CHCH{=}CHCONHCH_2CH(CH_3)_2$

$C_{14}H_{25}NO$ 223.358

(*E*,*E*)-*form* [18836-52-7]
Constit. of *Fagara xanthoxyloides, Piper sylvaticum, Piper nepalense* and several other *Piper* spp., *Anacyclus pyrethrum, Achillea millefolium* (yarrow) and *Asiasarum heterotropoides* (Rutaceae, Piperaceae, Asteraceae, Aristolochiaceae). Produces intense formication and local anaesthesia of the mucous membranes. Insecticide. Needles (petrol). Mp 75° (69°) Mp 90-95°.
▶ Severe irritant.

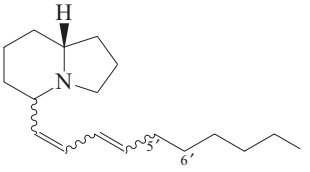
*6-Hydroxy: 6-Hydroxy-*N*-(2-methylpropyl)-2,4-decadienamide, 9CI. 6-Hydroxy-*N*-isobutyl-2,4-decadienamide.* ***6-Hydroxypellitorine***
[133640-43-4]
$C_{14}H_{25}NO_2$ 239.357
Constit. of *Anacyclus monanthos.*

(2*E*,4*Z*)-*form*
Alkaloid from *Artemisia dracunculus.* Yellow oil. λ_{max} 257 (MeOH).

Crombie, L. *et al., J.C.S.*, 1955, 1007 (*synth*)
Bowden, K. *et al., J.C.S.*, 1963, 3503 (*isol, uv, ir*)
Loder, J.W. *et al., Aust. J. Chem.*, 1969, **22**, 1531 (*isol, uv, ir, ms, synth*)
Banerji, A. *et al., Experientia*, 1974, **30**, 223 (*isol, struct*)
Mahanta, P.K. *et al., J. Pharm. Sci.*, 1974, **63**, 1160 (*isol, uv, ir*)
Dasgupta, S. *et al., Indian J. Chem., Sect. B*, 1979, **17**, 538 (*isol, uv, ir, pmr, ms*)
Ono, N. *et al., Chem. Lett.*, 1980, 1365 (*synth*)
Nokami, J. *et al., Tet. Lett.*, 1980, **21**, 4455 (*synth*)
Yasusa, I. *et al., Chem. Pharm. Bull.*, 1981, **29**, 564 (*isol, uv, ir, pmr, cmr, ms*)
Tamura, Y. *et al., Tet. Lett.*, 1981, **22**, 1343 (*synth*)
Sato, T. *et al., Tet. Lett.*, 1981, **22**, 2375 (*synth, ir, pmr*)
Bari, S.S. *et al., J. Indian Chem. Soc.*, 1990, **67**, 995 (*synth*)
Ahmed, A. *et al., Pharmazie*, 1990, **45**, 941 (*6-Hydroxypellitorine*)
Kaga, H. *et al., Synlett*, 1994, 607 (*synth*)
Strunz, G.M. *et al., Can. J. Chem.*, 1996, **74**, 419 (*synth*)
Abarbri, M. *et al., Synth. Commun.*, 1998, **28**, 239-249 (*synth, ir, pmr, cmr, ms*)
Saadali, B. *et al., Phytochemistry*, 2001, **58**, 1083-1086 (*2E,4Z-isomer*)
Ley, J.P *et al., Eur. J. Org. Chem.*, 2004, 5135-5140; 2005, 618 (*synth*)

5-(1,3-Decadienyl)octahydroindolizine D-107

5-(1,3-Decadienyl)indolizidine. ***Piclavine B***
[142609-25-4]



$C_{18}H_{31}N$ 261.45
Alkaloid from the tunicate *Clavelina picta*. Exhibits antimicrobial props. Oil. $[\alpha]_D$ +33.5 (c, 1 in CH_2Cl_2). Obt. as a mixt. of stereoisomers. λ_{max} 232 (ϵ 12500) (EtOH) (Derep). λ_{max} 232 (ϵ 12500) (MeOH) (Berdy).

5′,6′-Didehydro: 5-(1,3,5-Decatrienyl)-octahydroindolizine. 5-(1,3,5-Decatrienyl)indolizidine. ***Piclavine C***
[142609-26-5]
$C_{18}H_{29}N$ 259.434
Isol. from *Clavelina picta*. Exhibits antimicrobial props. Pale yellow oil. $[\alpha]_D$ +36 (c, 5 in CH_2Cl_2). Obt. as a mixt. of stereoisomers. λ_{max} 262 (ϵ 11800); 267 (ϵ 15000); 281 (ϵ 11800) (EtOH) (Derep). λ_{max} 262 (ϵ 11800); 267 (ϵ 15000); 281 (ϵ 11800) (MeOH) (Berdy).

Raub, M.F. *et al., Tet. Lett.*, 1992, **33**, 2257-2260 (*isol, struct*)

2,8-Decadien-6-ynoic acid D-108

$H_3CCH{=}CHC{\equiv}CCH_2CH_2CH{=}CHCOOH$

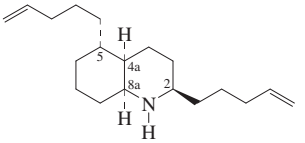
$C_{10}H_{12}O_2$ 164.204

(2*Z*,8*Z*)-*form*

2-Phenylethylamide: 2,8-Decadien-6-ynoic 2-phenylethylamide
[96917-23-6]
$C_{18}H_{21}NO$ 267.37
Constit. of *Salmea scandens.* Oil.

Bohlmann, F. *et al., Phytochemistry*, 1985, **24**, 595-596 (*isol*)

Decahydro-2,5-bis(4-pentenyl)quinoline D-109



(2*R**,4*aR**,5*S**,8*aS**)-*form*

$C_{19}H_{33}N$ 275.476

(2*R*,4*aR*,5*S*,8*aS*)-*form*
Dendrobates *Alkaloid 275B*
Alkaloid from skin extracts of *Dendrobates auratus*, *Dendrobates granuliferus* and *Dendrobates pumilio.*

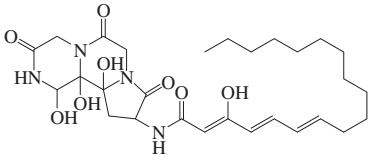
(2*R*,4*aS*,5*R*,8*aR*)-*form*
Dendrobates *Alkaloid 275B′*
Alkaloid from skin extracts of *Dendrobates* spp.

(2*R*,4*aS*,5*R*,8*aS*)-*form*
5*-epi-trans-*275B
Alkaloid from extracts of virgin queens of *Solenopsis azteca*.

(2*R*,4*aS*,5*S*,8*aR*)-*form*
5*-epi-cis-*275B′
Alkaloid from extracts of virgin queens of a myrmecine ant *Solenopsis azteca*.

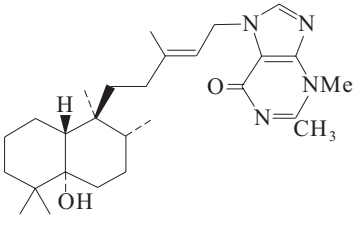
Spande, T.F. *et al., J. Nat. Prod.*, 1999, **62**, 5-21 (*pmr, cmr, occur*)
Toyooka, N. *et al., J.O.C.*, 2002, **67**, 6078-6081 (*synth*)

Decahydro-10-[(3-hydroxy-2,4,6-octadecatrienoyl)amino]-1,11*a*,11*b*-trihydroxy-2*H*-pyrazino[1,2-*a*]pyrrolo[2,1-*c*]pyrazine-3,6,9-trione **D-110**
[212070-43-4]



$C_{28}H_{42}N_4O_8$ 562.662
Enolised β-diketone. Prod. by *Sporormiella minimoides* MF 5867. Antifungal agent. Off-white solid. $[\alpha]_D^{20}$ +10 (c, 0.65 in MeOH). λ_{max} 283 (ϵ 9900) (MeOH).
U.S. Pat., 1998, 5 801 172; *CA*, **129**, 215776a

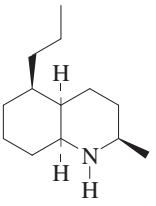
7-[5-(Decahydro-4*a*-hydroxy-1,2,5,5-tetramethyl-1-naphthalenyl)-3-methyl-2-pentenyl]-3,7-dihydro-2,3-dimethyl-6*H*-purin-6-one, 9CI **D-111**
[90162-26-8]



$C_{27}H_{42}N_4O_2$ 454.654
Isol. from the marine sponge *Agelas mauritiana*. Cryst. (C_6H_6) (as Ac). Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. Mp 95-98° (Ac). Seemingly an artifact; the struct. of the true sponge metab. is unknown. λ_{max} 221 (ϵ 9400); 267 (ϵ 3300); 344 (ϵ 200) (MeOH) (Berdy).

Nakatsu, T. *et al., Tet. Lett.*, 1984, **25**, 935 (*isol, uv, pmr, ms, cryst struct*)

Decahydro-2-methyl-5-propylquinoline **D-112**
2-Methyl-5-propyldecahydroquinoline

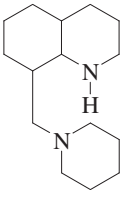


$C_{13}H_{25}N$ 195.347

(2*R*,4*aR*,5*R*,8*aS*)-*form*
Alkaloid 195J
[232613-57-9]
Alkaloid from the ant *Solenopsis picea*.

Jones, T.H. *et al., J. Chem. Ecol.*, 1999, **25**, 1179-1193

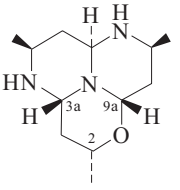
Decahydro-8-(1-piperidinylmethyl)isoquinoline **D-113**
Dihydroschoberine



$C_{15}H_{28}N_2$ 236.4
Alkaloid from the aerial parts of *Nitraria sibirica*. Cryst. (EtOH). Mp 251-252°.

Tulyaganov, T.S. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2001, **37**, 556-558 (*isol, pmr, ms*)

Decahydro-2,5,8-trimethyl-2*H*-1-oxa-4,7,9*b*-triazaphenalene, 9CI **D-114**
Base T
[54352-32-8]



$C_{12}H_{23}N_3O$ 225.333
Alkaloid from *Lycopodium thyoides*. Cryst. (hexane). Mp 101.5-102°. Opt. inactive. Transparent to uv. Poss. artifact, though it has been stated that the related compd. Dodecahydro-2,5,8-trimethyl-1,4,7,9*b*-tetraazaphenalene, D-888 is not.

Stereoisomer(?): Lycopodium *Alkaloid C*
[29066-78-2]
Cryst. + ½ H_2O. Mp 55-57°. There appears to be no evidence for isolation of this compd. The name is as reported in the CAS Index Guide.

[29066-78-2]

Braekman, J.C. *et al., Phytochemistry*, 1974, **13**, 2519

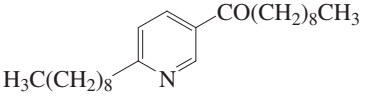
Decanoic acid **D-115**
Capric acid. Caprinic acid. Decylic acid. Decoic acid (obsol.). FEMA 2364
[334-48-5]
$H_3C(CH_2)_8COOH$
$C_{10}H_{20}O_2$ 172.267
Widespread in plant oils, esp. leaf oils and as glycerides in seed oils. Used in corrosion inhibitors and surfactants and in extraction-preconcentration of Pb. Salts (Na, K, Mg, Ca, Al) used as binders, emulsifiers and anticaking agents in food manuf. Needles. Sol. EtOH, Et_2O, Me_2CO, C_6H_6, $CHCl_3$, alkalis; poorly sol. H_2O. d_{40}^4 0.89. Mp 31.5°. Bp 268-270° Bp_{11} 148-150°. n_D^{40} 1.4288.
▶ Fl. p. >66°. Skin irritant. LD_{50} (mus, ivn) 129 mg/kg. HD9100000

2-Methylpropylamide: N-*(2-Methylpropyl)decanamide, 9CI*. ***Decanoic acid isobutylamide***
[73785-31-6]
$C_{14}H_{29}NO$ 227.389
Trace constit. of *Cissampelos glaberrima* roots. Solid (EtOAc). Unstable at r.t. Struct. based on ms data only.

[22620-93-5 , 1002-62-6 , 13747-30-3 , 13040-18-1 , 30673-38-2]

Rosario, S.L. *et al., Planta Med.*, 1996, **62**, 376 (*isobutylamide*)

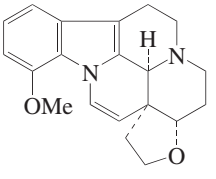
5-Decanoyl-2-nonylpyridine **D-116**
1-(6-Nonyl-3-pyridinyl)-1-decanone, 9CI
[149682-94-0]



$C_{24}H_{41}NO$ 359.594
Alkaloid from *Houttuynia cordata* (Yu Xing Cao).

Jong, T.T. *et al., J. Chin. Chem. Soc. (Taipei)*, 1993, **40**, 301-303 (*isol*)
Proebstle, A. *et al., Nat. Prod. Lett.*, 1994, **4**, 235-240 (*isol*)

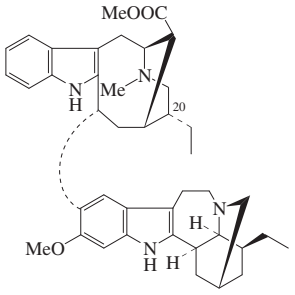
Decarbomethoxyapocuanzine **D-117**
[53492-10-7]



$C_{20}H_{22}N_2O_2$ 322.406
Alkaloid from the root bark of *Voacanga chalotiana* (Apocynaceae). Cryst. (EtOAc). Mp 196°. $[\alpha]_D^{22}$ -132 ($CHCl_3$).

Bombardelli, E. *et al., Experientia*, 1974, **30**, 979 (*uv, pmr, ms, struct*)
Sóti, F. *et al., Tetrahedron*, 1994, **50**, 8209 (*synth*)

16′-Decarbomethoxy-19,20-dihydroconoduramine D-118



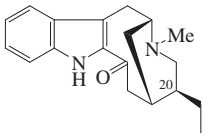
$C_{41}H_{52}N_4O_3$ 648.887
Alkaloid from *Ervatamia officinalis*. Indexed by CAS, apparently incorrectly, as 16′-Decarbomethoxy-19,20-dihydrovoacamine in T-8.

20-Epimer: ***16′-Decarbomethoxy-20-epi-19,20-dihydroconoduramine***
$C_{41}H_{52}N_4O_3$ 648.887
Alkaloid from *Ervatamia officinalis*. Possibly the same as 16′-Decarbomethoxy-19,20-dihydrovoacamine in T-8.

Huang, L. *et al., Zhongcaoyao*, 1997, **28**, 323-326; *CA*, **128**, 203013r (*isol*)

16-Decarbomethoxy-19,20-dihydrovobasine D-119

16-De(methoxycarbonyl)-19,20-dihydrovobasine, 8CI
[19779-70-5]



Absolute Configuration

$C_{19}H_{24}N_2O$ 296.411
Alkaloid from *Rauwolfia discolor* (Apocynaceae). Cryst. (MeOH). Mp 100-110°. $[\alpha]_D^{25}$ -20 (c, 1.5 in $CHCl_3$). λ_{max} 238 (ε 15170); 313 (ε 22330) (95% EtOH).

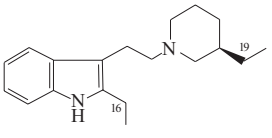
Methiodide: Mp 250°.

20-Epimer: ***16-Decarbomethoxy-20-epi-19,20-dihydrovobasine***. *20-Epi-16-decarbomethoxy-19,20-dihydrovobasine*
[203929-19-5]
$C_{19}H_{24}N_2O$ 296.411
Alkaloid from *Ervatamia officinalis*.

Combes, G. *et al., Phytochemistry*, 1968, **7**, 477-483 (*uv, ir, pmr, ms, struct*)
Huang, L. *et al., Zhongcaoyao*, 1997, **28**, 323-326; *CA*, **128**, 203013r (*20-epimer*)

Decarbomethoxytetrahydrosecodine D-120

2-Ethyl-3-[2-(3-ethylpiperidino)ethyl]indole, 9CI, 8CI
[20785-62-0]



(*R*)-*form*

$C_{19}H_{28}N_2$ 284.444

(*R*)-*form*
Alkaloid from the leaves of *Tabernaemontana cumminsii* and whole plants of *Haplophyton crooksii* (Apocynaceae). Also found in *Aspidosperma marcgravianum* and *Rhazya stricta* (Apocynaceae). Exhibits antiacetylcholinesterase activity. Oil or amorph. powder. $[\alpha]_D$ +90 ($CHCl_3$). Specific rotn. only reported for the *Rhazya stricta* alkaloid (+90) but abs. config. not assigned. However, synthetic (+)-enantiomer ($[\alpha]_D$ +11.8) has *R*-config.

Picrate: Mp 137-138°.

16-Oxo: ***Crooksidine***
[149301-48-4]
$C_{19}H_{26}N_2O$ 298.427
Alkaloid from whole plants of *Haplophyton crooksii* (Apocynaceae). Exhibits antiacetylcholinesterase activity. Glass. $[\alpha]_D$ +27.6 (c, 0.205 in $CHCl_3$) (natural). $[\alpha]_D^{31}$ +7.8 (c, 0.6 in $CHCl_3$) (synthetic).

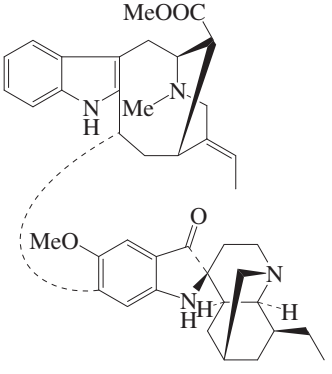
19-Oxo: ***19-Oxodecarbomethoxytetrahydrosecodine***
[88607-53-8]
$C_{19}H_{26}N_2O$ 298.427
Alkaloid from *Aspidosperma marcgravianum* (Apocynaceae). Amorph. Abs. config. not certain.

(*S*)-*form*
Synthetic. $[\alpha]_D^{22}$ -10.8 (c, 0.45 in $CHCl_3$).

Crooks, P.A. *et al., Chem. Comm.*, 1968, 1210 (*isol, uv, ms, synth, struct*)
Robert, G.M.T. *et al., J. Nat. Prod.*, 1983, **46**, 694 (*19-Oxodecarbomethoxytetrahydrosecodine*)
Atta-ur-Rahman, *et al., Phytochemistry*, 1991, **30**, 1285 (*isol, uv, ir, pmr, cmr, ms*)
Mroue, M.A. *et al., Phytochemistry*, 1993, **33**, 217 (*Crooksidine*)
Aclinou, P. *et al., Nat. Prod. Lett.*, 1994, **5**, 197 (*Crooksidine, synth*)
Palmisano, G. *et al., Tetrahedron: Asymmetry*, 1995, **6**, 1229 (*synth*)
Sakagami, H. *et al., Synlett*, 1996, 163 (*Crooksidine, synth, abs config*)
Amat, M. *et al., Tetrahedron: Asymmetry*, 1996, **7**, 3091 (*synth*)

16-Decarbomethoxyvoacamine pseudoindoxyl D-121

[139022-94-9]

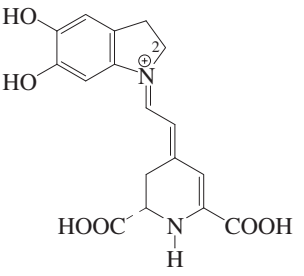


$C_{41}H_{50}N_4O_4$ 662.87
Alkaloid from leaves and root bark of *Ervatamia hirta* (Apocynaceae). $[\alpha]_D$ -14 (c, 0.5 in MeOH).

Clivio, P. *et al., Phytochemistry*, 1991, **30**, 3785 (*isol, uv, ir, pmr, cmr, ms, struct*)

2-Decarboxybetanidin D-122

2-Descarboxybetanidin



$C_{17}H_{17}N_2O_6^{\oplus}$ 345.331

5-O-*β*-*D*-*Glucopyranoside:* ***2-Decarboxybetanin***. *2-Descarboxybetanin*
$C_{23}H_{27}N_2O_{11}^{\oplus}$ 507.473
Constit. of *Beta vulgaris*.

5-O-*(6*-O-*Malonyl-β*-*D*-*glucopyranoside):* *2-Decarboxyphyllocactin. 2-Descarboxyphyllocactin*
$C_{26}H_{29}N_2O_{14}^{\oplus}$ 593.52
Constit. of *Beta vulgaris*.

Kobayashi, N. *et al., Phytochemistry*, 2001, **56**, 429-436 (*isol, pmr, ms*)
Wybraniec, S. *et al., Tet. Lett.*, 2006, **47**, 1725-1728 (*pmr, cmr*)

2,4,8-Decatrienoic acid D-123

$H_3CCH{=}CHCH_2CH_2CH{=}CHCH{=}CHCOOH$
$C_{10}H_{14}O_2$ 166.219

(2*E*,4*E*,8*Z*)-*form*
2-Methylpropylamide: **N-*Isobutyl-2,4,8-decatrienamide***. N-*(2-Methylpropyl)-2,4,8-decatrienamide, 9CI. 2,4,8-Decatrienoic acid isobutylamide*
[52657-13-3]
$C_{14}H_{23}NO$ 221.342
Alkaloid from the roots of *Achillea millefolium* (yarrow) (Asteraceae). Constit. of *Otanthus maritimus*. Oil.

Bohlmann, F. *et al., Chem. Ber.*, 1974, **107**, 1038-1043 (*isol, uv, ir, pmr, ms, struct*)

2,6,8-Decatrienoic acid D-124

$H_3CCH{=}CHCH{=}CHCH_2CH_2CH{=}CHCOOH$
$C_{10}H_{14}O_2$ 166.219
Powerful insecticide. Log P 3.15 (calc).

(2*E*,6*Z*,8*E*)-*form*
Spilanthic acid
[94450-21-2]
N-*(2-Methylpropyl)amide:* N-*(2-Methylpropyl)-2,6,8-decatrienamide, 9CI*. N-*Isobutyl-2,6,8-decatrienamide.* ***Affinine***†. *Spilanthol*
[25394-57-4]
$C_{14}H_{23}NO$ 221.342
Alkaloid from the roots of *Heliopsis*

longipes, *Spilanthes oleraceae* and *Spilanthes acmella*. Shows inhibiting activity against *Escherichia coli* and *Saccharomyces cerevisiae*. Pale-yellow viscous oil. Mp 23°. $Bp_{0.5}$ 165° $Bp_{0.001}$ 120-125°. n_D^{25} 1.5135. In the earlier lit. *H. longipes* was incorrectly identified as *Erigeron affinis*.

►HE1800000

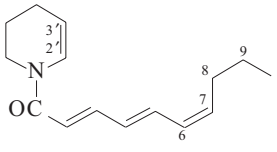
(all-E)-form

N-*(2-Methylpropyl)amide:* [76361-77-8]
Mp 91.5-92.5°. $Bp_{0.25}$ 145°.

Asano, M. *et al., Ber.*, 1932, **65**, 1602 (*isol*)
Gokhale, V.G. *et al., J. Indian Chem. Soc.*, 1945, **22**, 250 (*isol*)
Acree, F. *et al., J.O.C.*, 1945, **10**, 236; 449 (*isol, uv, struct*)
Jacobson, M. *et al., J.O.C.*, 1947, **12**, 731
Jacobson, M. *et al., J.A.C.S.*, 1955, **77**, 2461 (*synth*)
Jacobson, M. *et al., Chem. Ind. (London)*, 1957, 50 (*struct, synth*)
Crombie, L. *et al., J.C.S.*, 1963, 4970 (*ir, uv, synth*)
Correa, J. *et al., Org. Magn. Reson.*, 1971, **3**, 1 (*pmr*)
Yasuda, I. *et al., Chem. Pharm. Bull.*, 1980, **28**, 2251 (*isol, synth, pmr, cmr, ms*)
Martin, R. *et al., Phytochemistry*, 1984, **23**, 1781-1783 (*isol*)
Molina-Torres, J. *et al., J. Ethnopharmacol.*, 1999, **64**, 241-248 (*Affinine, activity*)

2,4,6-Decatrienoic acid dehydropiperidide D-125

1,2,3,4-Tetrahydro-1-(1-oxo-2,4,6-decatrienyl)pyridine, 9CI



$C_{15}H_{21}NO$ 231.337

(2E,4E,6Z)-form [43110-67-4]
Alkaloid from *Achillea nabelikii, Achillea millefolium* (yarrow) and *Achillea crithmifolia* (Asteraceae). Yellow cryst. (Et_2O/petrol). Mp 55°.

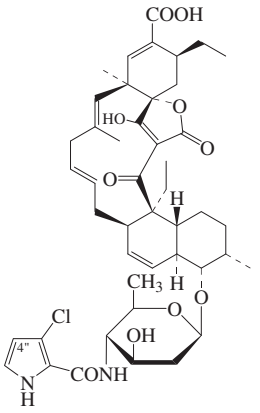
6,7-Dihydro: ***2,4-Decadienoic acid dehydropiperidide***
[81427-11-4]
$C_{15}H_{23}NO$ 233.353
Alkaloid from *Achillea crithmifolia* (Asteraceae). Gum.

8,9-Didehydro: ***2,4,6,8-Decatetraenoic acid dehydropiperidide***
[43110-68-5]
$C_{15}H_{19}NO$ 229.321
Alkaloid from *Achillea nabelikii* and *Achillea millefolium* (yarrow) (Asteraceae). Yellowish oil. Not. obt. completely pure.

[42997-42-2 , 42997-44-4]

Bohlmann, F. *et al., Chem. Ber.*, 1973, **106**, 1328 (*isol, uv, pmr, struct, synth*)
Greger, H. *et al., Phytochemistry*, 1981, **20**, 2579 (*isol, deriv*)
Strunz, G.M. *et al., Can. J. Chem.*, 1996, **74**, 419-432 (*synth, deriv*)

Decatromicin A D-126



$C_{45}H_{57}ClN_2O_{10}$ 821.405
Similar to Kijanimicin and Pyrrolosporin A, P-969. Prod. by *Actinomadura* sp. MK73-NF4. Active against gram-positive bacteria incl. MRSA. Powder. Mp 223-225° (dec.). $[\alpha]_D^{26}$ +2 (c, 1.3 in MeOH). λ_{max} 271 (log ϵ 4.47) (MeOH).

4''-Chloro: ***Decatromicin B***
$C_{45}H_{56}Cl_2N_2O_{10}$ 855.85
Prod. by *Actinomadura* sp. MK73-NF4. Active against gram-positive bacteria incl. MRSA. Powder. Mp 202-206° (dec.). $[\alpha]_D^{26}$ -9 (c, 1.3 in MeOH). λ_{max} 269 (log ϵ 4.46) (MeOH).

5''-Chloro: ***Antibiotic BE 45722A***. *BE 45722A*
[196402-69-4]
$C_{45}H_{56}Cl_2N_2O_{10}$ 855.85
Prod. by *Actinomadura* sp. A 45722. Antibacterial agent. Stereochem. not confirmed.

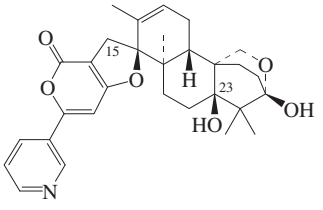
4'',5''-Dichloro: ***Antibiotic BE 45722B***. *BE 45722B*
[196402-70-7]
$C_{45}H_{55}Cl_3N_2O_{10}$ 890.295
Prod. by *Actinomadura* sp. A 45722. Antibacterial agent. Stereochem. not confirmed.

4'',5''-Dichloro, $N^{1''}$*-Me:* ***Antibiotic BE 45722C***. *BE 45722C*
[196402-71-8]
$C_{46}H_{57}Cl_3N_2O_{10}$ 904.322
Prod. by *Actinomadura* sp. A 45722. Antibacterial agent. Stereochem. not confirmed.

Japan. Pat., 1997, 97 227 587; *CA*, **127**, 261794m (*BE 45722*)
Momose, I. *et al., J. Antibiot.*, 1999, **52**, 781-786; 787-796

Decaturin A D-127

[509095-70-9]



$C_{30}H_{35}NO_6$ 505.61
Related to Oxalicine A, O-148. Prod. by *Penicillium decaturense*. Cryst. (MeCN aq.). Mp 160-162°. $[\alpha]_D$ +32 (c, 0.5 in CH_2Cl_2). λ_{max} 205 (ϵ 16000); 235 (ϵ 16000); 335 (ϵ 5800) (MeOH).

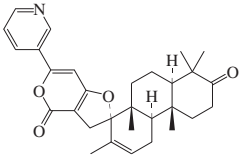
23-Deoxy: ***Decaturin C***
[849339-59-9]
$C_{30}H_{35}NO_5$ 489.61
Prod. by *Penicillium thiersii*. Cryst. Mp 171-174°. $[\alpha]_D$ +167 (c, 0.2 in CH_2Cl_2). λ_{max} 235 (ϵ 15000); 270 (ϵ 5900); 325 (ϵ 1600) (MeOH).

23-Deoxy, 15β-hydroxy: ***Decaturin B***
[509095-72-1]
$C_{30}H_{35}NO_6$ 505.61
Prod. by *Penicillium thiersii*. Antiinsectan. Cryst. (CH_2Cl_2). Mp 235-237°. $[\alpha]_D$ +124 (c, 0.2 in CH_2Cl_2). λ_{max} 233 (ϵ 19000); 270 (ϵ 7800); 317 (ϵ 5500) (MeOH).

Zhang, Y. *et al., Org. Lett.*, 2003, **5**, 773-776 (*isol, pmr, cmr, ms*)
Li, C. *et al., J. Nat. Prod.*, 2005, **68**, 319-322 (*Decaturin C*)

Decaturin D D-128

[849339-60-2]



Absolute Configuration

$C_{30}H_{35}NO_4$ 473.611
Related to Oxalicine A, O-148. Prod. by *Penicillium thiersii*. Antiinsectan. Oil. $[\alpha]_D$ +58 (c, 0.1 in CH_2Cl_2). λ_{max} 233 (ϵ 14000); 270 (ϵ 5100); 327 (ϵ 3100) (CH_2Cl_2).

Li, C. *et al., J. Nat. Prod.*, 2005, **68**, 319-322 (*isol, pmr, cmr, ms*)
Hosoe, S. *et al., Tet. Lett.*, 2006, **47**, 4425-4428 (*synth, abs config*)

2-Decene-4,6-diynoic acid D-129

Lachnophyllic acid
$H_3CCH_2CH_2C{\equiv}CC{\equiv}CCH{=}CHCOOH$
$C_{10}H_{10}O_2$ 162.188

(ξ)-form

N-*Methyl*-N-*(2-methylpropyl)amide:* N-*Methyl*-N-*(2-methylpropyl)-2-decene-4,6-diynamide*
[37064-12-3]
$C_{15}H_{21}NO$ 231.337
Isol. from the roots of *Anacyclus pyrethrum*. Oil. Stereochem. unspecified. λ_{max} 252 ; 264 ; 281 ; 299 (no solvent reported).

[114825-67-1 , 54497-59-5 , 114825-66-0]

Jente, R. *et al., Chem. Ber.*, 1972, **105**, 1694 (*Anacylus pyrethrum constit*)

2-Decene-6,8-diynoic acid, 9CI D-130

$H_3C{\equiv}CC{\equiv}CCH_2CH_2CH{=}CHCOOH$

$C_{10}H_{10}O_2$ 162.188

(*Z*)-*form*

2-Methylpropylamide: **N-*(2-Methylpropyl)-2-decene-6,8-diynamide, 9CI***. *2-Decene-6,8-diynoic acid isobutylamide*
[96602-66-3]
$C_{14}H_{19}NO$ 217.31
Isol. from the roots of *Spilanthes oleracea*. Oil.

2-Phenylethylamide: **N-*(2-Phenylethyl)-2-decene-6,8-diynamide***
[75872-73-0]
$C_{18}H_{19}NO$ 265.354
Isol. from *Spilanthes alba*. Oil.

*2-Phenylethenylamide, (*E-*):* **N-*(2-Phenylethenyl)-2-decene-6,8-diynamide***
[75872-76-3]
$C_{18}H_{17}NO$ 263.338
Isol. from *Spilanthes alba*. Oil.

*2-Phenylethenylamide, (*Z-*):* [75883-36-2]
Isol. from *Spilanthes alba*. Oil.

Bohlmann, F. *et al., Phytochemistry*, 1980, **19**, 1535; 1985, **24**, 595 (*isol, struct, ir, ms*)
Greger, H. *et al., Monatsh. Chem.*, 1985, **116**, 273 (*isol, struct, uv, ir, pmr, cmr*)

2-Decene-4,6,8-triynoic acid D-131

Dehydromatricaric acid
$H_3CC{\equiv}CC{\equiv}CC{\equiv}CCH{=}CHCOOH$

$C_{10}H_6O_2$ 158.156

(*E*)-*form* [7199-97-5]
Isol. from *Solidago virga-aurea*.

Me ester: Dehydromatricaria ester
[692-94-4]
$C_{11}H_8O_2$ 172.183
Occurs in *Matricaria inodora* and *Matricaria oreades* and many other Asteraceae spp. Also isol. from culture medium of *Pleurotus ulmarius*. Light-yellow cryst. (Et_2O/petrol). Mp 105-106°.

3-Methylbutylamide: 2-Decene-4,6,8-triynoic acid isopentylamide
[113235-91-9]
$C_{15}H_{17}NO$ 227.305
Isol. from the underground parts of *Achillea wilhelmsii* (Asteraceae). Cryst. Dec. to blue polymers on htg.

2-Phenylethylamide: N-*(2-Phenylethyl)-2-decene-4,6,8-triynamide. 2-Decene-4,6,8-triynoic acid 2-phenylethylamide*
[113235-93-1]
$C_{18}H_{15}NO$ 261.323
Isol. from the underground parts of *Achillea wilhelmsii* (Asteraceae). Cryst. Dec. to blue polymer on htg.

2-Methylpropylamide: ***Dehydromatricaric acid isobutylamide***
[37064-10-1]
$C_{14}H_{15}NO$ 213.279
Isol. from *Achillea spinulifolia, Achillea ptarmica, Achillea impatiens, Achillea sibirica*, *Anacyclus pyrethrum* and *Cladanthus arabicus*. Cryst. (CCl_4). Mp 133-139° Mp 144.5-145.5°
.

(*Z*)-*form* [23050-77-3]
Isol. from *Solidago virga-aurea*. Mp 150° dec.

Me ester: [2739-57-3]
Occurs in *Artemisia vulgaris* (mugwort) and many other Asteraceae. Light-yellow needles (petrol). Mp 114-115° (112°).

[43110-85-6 , 7329-73-9]

Stauholt, K. *et al., Acta Chem. Scand.*, 1950, **4**, 1567 (*isol*)
Christensen, P.K. *et al., Acta Chem. Scand.*, 1952, **6**, 602 (*synth*)
Sorensen, J.S. *et al., Acta Chem. Scand.*, 1954, **8**, 26 (*isol*)
Bell, I. *et al., J.C.S.*, 1958, 1313 (*synth, Me ester*)
Gardner, J.N. *et al., J.C.S.*, 1960, 691 (*isol*)
Bohlmann, F. *et al., Chem. Ber.*, 1962, **95**, 1742; 1973, **106**, 1328 (*isol, struct, synth*)
Hodge, P. *et al., J.C.S.(C)*, 1966, 1216 (*bibl*)
Karrer, W. *et al., Konstitution und Vorkommen der Organischen Pflanzenstoffe*, 2nd edn., Birkhäuser Verlag, 1972, no. 770
Kobayashi, A. *et al., Agric. Biol. Chem.*, 1975, **39**, 911 (*synth*)
Kawazu, K. *et al., Agric. Biol. Chem.*, 1977, **41**, 223
Greger, H. *et al., Phytochemistry*, 1978, **17**, 86; 1982, **21**, 1071 (*isol, struct*)
Bohlmann, F. *et al., Phytochemistry*, 1979, **18**, 1736; 1980, **19**, 841; 2655 (*isol*)
Greger, H. *et al., J. Nat. Prod.*, 1987, **50**, 1100 (*amides, isol, ir, uv, ms, pmr*)
Japan. Pat., 1991, 03 287532; *CA*, **116**, 181120w (*isol*)
Lu, T. *et al., Phytochemistry*, 1993, **32**, 1483 (*cryst struct*)
Taha, A.A. *et al., Phytochemistry*, 2000, **55**, 921-926 (*isol, pmr*)

2-Decenoic acid D-132

[3913-85-7]
$H_3C(CH_2)_6CH{=}CHCOOH$

$C_{10}H_{18}O_2$ 170.251

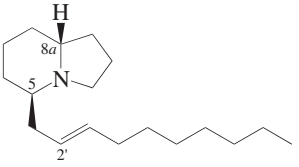
(*E*)-*form*
FEMA 3913
[334-49-6]
Constit. of essential oil of *Achasma walang* (preferred genus name *Etlingera*). Also occurs in pear, capsicum and black tea. Mosquito repellant. Comly. available flavour ingredient. Liq. or solid with fresh, sweet fruity-fatty odour. Mp 12°. Bp_{15} 165° $Bp_{4.5}$ 148-149°.

2-Methylpropylamide: N-*(2-Methylpropyl)-2-decenamide.* ***2-Decenoic acid isobutylamide***
[73785-32-7]
$C_{14}H_{27}NO$ 225.373
Trace constit. of *Cissampelos glaberrima* roots. Solid (EtOAc). Unstable at r.t. Struct. based on ms data only.

Rosario, S.L. *et al., Planta Med.*, 1996, **62**, 376 (*isobutylamide*)

5-(2-Decenyl)octahydroindolizine D-133

5-(2-Decenyl)indolizidine. ***Piclavine A***



(2'E,5R,8aR)-form

$C_{18}H_{33}N$ 263.465
Shows antimicrobial props. Oil. $[\alpha]_D$ +15 (c, 1 in CH_2Cl_2). Data given is for the mixt. of isomers.

(*2'E,5R,8aR*)-*form*
Piclavine A₁
[142609-24-3]
Isol. from the tunicate *Clavelina picta*. $[\alpha]_D^{26}$ -5.6 (c, 0.84 in CH_2Cl_2).

(*2'E,5R,8aS*)-*form*
Piclavine A₃
[142696-98-8]
From *Clavelina picta*. $[\alpha]_D^{26}$ -73.6 (c, 1.3 in CH_2Cl_2).

(*2'Z,5R,8aR*)-*form*
Piclavine A₂
[142696-99-9]
From *Clavelina picta*. $[\alpha]_D^{27}$ +4 (c, 0.21 in CH_2Cl_2).

(*2'Z,5R,8aS*)-*form*
Piclavine A₄
[142697-00-5]
From *Clavelina picta*. $[\alpha]_D^{27}$ -76.4 (c, 0.63 in CH_2Cl_2).

Raub, M.F. *et al., Tet. Lett.*, 1992, **33**, 2257-2260 (*isol, struct*)
Jefford, C.W. *et al., Helv. Chim. Acta*, 1995, **78**, 1511-1524 (*synth*)
Takahata, H. *et al., Bioorg. Med. Chem. Lett.*, 2000, **10**, 1799-1801 (*synth*)
McAlonan, H. *et al., Tet. Lett.*, 2000, **41**, 5411-5414 (*synth*)

N-(3-Decenyl)sulfamic acid D-134

$H_3C(CH_2)_5CH{=}CHCH_2CH_2NHSO_3H$

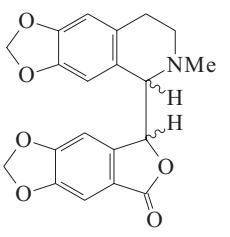
$C_{10}H_{21}NO_3S$ 235.347

(*Z*)-*form* [1040630-91-8]
Isol. from *Daphnia pulex*. Kairomone.

Yasumoto, K. *et al., Chem. Pharm. Bull.*, 2008, **56**, 133-136 (*isol, pmr, cmr*)

Decumbenine D-135

8-(5,6,7,8-Tetrahydro-6-methyl-1,3-dioxolo[4,5-g]isoquinolin-5-yl)furo[3,4-e]-1,3-benzodioxol-6(8H)-one, 9CI
[76733-83-0]

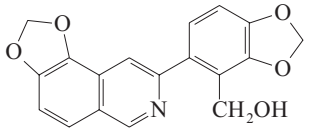


$C_{20}H_{17}NO_6$ 367.357
Alkaloid from *Corydalis decumbens* (Papaveraceae).

Chu, T.-Y. *et al., CA*, 1981, **94**, 109170x (*isol, uv, ir, pmr*)

Decumbenine B D-136

5-(1,3-Dioxolo[4,5-f]isoquinolin-8-yl)-1,3-benzadioxole-4-methanol, 9CI. 3-(2-Hydroxymethyl-3,4-methylenedioxyphenyl)-5,6-methylenedioxyisoquinoline
[164991-68-8]

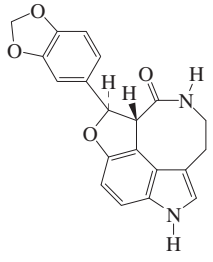


$C_{18}H_{13}NO_5$ 323.304
Alkaloid from roots of *Corydalis decumbens* (Papaveraceae). Needles (EtOAc/petrol). Mp 222-224°.

Zhang, J.-S. *et al., Phytochemistry*, 1995, **39**, 435 (*isol, uv, ir, pmr, cmr, ms, struct*)
Chiba, K. *et al., J.C.S. Perkin 1*, 1998, 2939-2942 (*synth*)
Xu, X.-Y. *et al., Tetrahedron*, 1998, **54**, 14179-14188 (*synth, pmr, cmr*)
Roesch, K.R. *et al., J.O.C.*, 2002, **67**, 86-94 (*synth*)
Wada, Y. *et al., Eur. J. Org. Chem.*, 2007, 4320-4327 (*synth*)

Decursivine D-137

[474780-76-2]



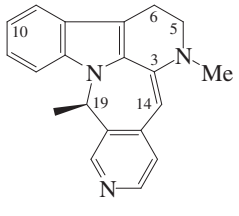
Relative Configuration

$C_{20}H_{16}N_2O_4$ 348.357
Similar to Serotobenine, S-252. Alkaloid from the leaves of *Rhaphidophora decursiva*. Antimalarial agent. Light yellow prisms (Me_2CO). $[\alpha]_D^{20}$ +299 (c, 0.02 in MeOH). λ_{max} 207 (log ϵ 4.61); 235 (log ϵ 4.08); 289 (log ϵ 3.2) (MeOH).

Zhang, H. *et al., Pharm. Biol.*, 2002, **40**, 221-224 (*isol, pmr, cmr, ms*)
Leduc, A.B. *et al., Eur. J. Org. Chem.*, 2007, 237-240 (*synth*)

Decussine D-138

1,2,3,8-Tetrahydro-1,8-dimethyl-1,7b,10-triazabenzo[5,6]cyclohepta[1,2,3-jk]fluorene, 9CI



$C_{20}H_{19}N_3$ 301.39

(R)-form [75375-52-9]
Alkaloid from stem bark of *Strychnos dale, Strychnos floribunda* and *Strychnos elaeocarpa* (Loganiaceae). Shows muscle-relaxant activity. Yellow prisms (MeOH). Mp 203-205°. Intense blue-green to yellow-green fluor. Brown col. with Ce(*IV*).

▶ XX8470000

*3α,14-Dihydro: **Mostueine**. 3,14-Dihydrodecussine*
[76328-62-6]
$C_{20}H_{21}N_3$ 303.406
Alkaloid from *Strychnos dale, Strychnos decussata* and *Mostuea brunonis* (Loganiaceae). Shows weak muscle-relaxant activity. Brown cryst. (EtOH). Mp 78-82°. $[\alpha]_D$ +196. Dehydrogenates to Decussine on storage. The Mp given refers to Dihydrodecussine and the opt. rotn. to Mostueine. Incorrect rel. config. originally assigned.

*5,6-Didehydro: **Rouhamine***
$C_{20}H_{17}N_3$ 299.374
Alkaloid from stem bark of *Strychnos decussata* and from *Strychnos floribunda* (Loganiaceae). Readily formed by dec. of Decussine, D-138. Yellow needles ($MeOH/Et_2O$). Mp 205-210°. Red. col. with Ce(*IV*).

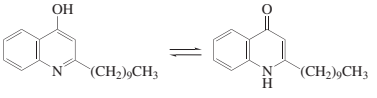
*10-Hydroxy, 3,14-dihydro: **10-Hydroxy-3,14-dihydrodecussine***
[79034-10-9]
$C_{20}H_{21}N_3O$ 319.405
Alkaloid from stem bark of *Strychnos decussata*. Pale brown solid.

[79082-57-8 , 87585-02-2 , 87585-01-1]

Onanga, M. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1980, 191 (*Mostueine, isol*)
Rolfsen, W.N.A. *et al., J. Nat. Prod.*, 1981, **44**, 415-421 (*3,14-Dihydrodecussine, 10-Hydroxy-3,34-dihydrodecussine*)
Verpoorte, R. *et al., Planta Med.*, 1981, **42**, 32-36 (*Rouhamine, isol, uv, ms, struct*)
McGee, L.R. *et al., Tet. Lett.*, 1984, **25**, 2115 (*synth*)
Rey, A.W. *et al., Can. J. Chem.*, 1992, **70**, 2922-2928 (*Mostueine, synth, abs config*)

2-Decyl-4-hydroxyquinoline D-139

2-Decyl-4(1H)-quinolinone. 2-Decyl-4-quinolinol, 9CI
[857758-85-1]



$C_{19}H_{27}NO$ 285.428
Metab. of *Pseudomonas aeruginosa*.

N-*Oxide: 2-Decyl-4(1H)-quinolinone* N-*oxide*
$C_{19}H_{27}NO_2$ 301.428
Metab. of *Pseudomonas aeruginosa*. No CAS no. found to 2007.

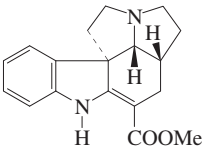
1′,2′-Didehydro(E-): 2-(1-Decenyl)-4(1H)-quinolinone. 2-(1-Decenyl)-4-hydroxyquinoline
$C_{19}H_{25}NO$ 283.413
Metab. of *Pseudomonas aeruginosa*. No CAS no. found to 2007.

1′,2′-Didehydro(Z-):
$C_{19}H_{25}NO$ 283.413
Metab. of *Pseudomonas aeruginosa*. No CAS no. found to 2007.

Lepine, F. *et al., J. Am. Soc. Mass Spectrom.*, 2004, **15**, 862-869 (*occur, oxide, 1′,2′-didehydro, ms*)

Deethylibophyllidine D-140

Methyl 2,3-didehydro-E,20,21-trinoraspidospermidine-3-carboxylate, 9CI
[74170-69-7]



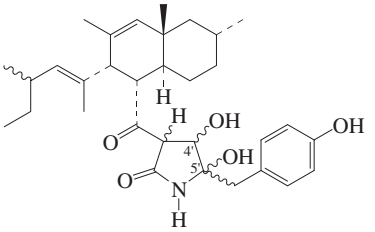
Absolute Configuration

$C_{18}H_{20}N_2O_2$ 296.368
Alkaloid from the bark of *Tabernaemontana albiflora* and from *Anacampta disticha*. Amorph. $[\alpha]_D$ +444 (c, 1 in $CHCl_3$). λ_{max} 226 (4.15); 295 (log ϵ 4.08); 326 (4.44) (EtOH).

[77080-77-4 (±)-form]

Kan, C. *et al., Tet. Lett.*, 1980, **21**, 55-58 (*ir, pmr, ms, struct*)
Kuehne, M.E. *et al., J.O.C.*, 1981, **46**, 2002-2009 (*synth, uv, ir, pmr, ms*)
Barsi, M.-C. *et al., Chem. Comm.*, 1985, 88-89 (*synth*)
Catena, J. *et al., Tet. Lett.*, 1994, **35**, 4433-4436 (*synth, cmr*)
Fernàndez, J.-C. *et al., Chem. Comm.*, 1995, 2317-2318 (*synth*)
Bonjoch, J. *et al., J.O.C.*, 1996, **61**, 7106-7115 (*synth*)

O-Deethyltalaroconvolutin C D-141



$C_{32}H_{45}NO_5$ 523.711
Parent compd. not isol.

*4′-Et ether: **Talaroconvolutin C***
$C_{34}H_{49}NO_5$ 551.765
Prod. by *Talaromyces convolutus*. Antifungal agent. Amorph. powder. $[\alpha]_D^{20}$ -56 (c, 0.03 in $CHCl_3$). Possible artifact. λ_{max} 224 (log ϵ 3.87); 262 (log ϵ 3.52) (cyclohexane).

*4′,5′-Isopropylidene: **Talaroconvolutin D***
$C_{35}H_{49}NO_5$ 563.776
Prod. by *Talaromyces convolutus*. Antifungal agent. Amorph. powder. $[\alpha]_D^{20}$ -34 (c, 0.04 in EtOH). Possible artifact. λ_{max} 226 (log ϵ 3.92); 276 (log ϵ 3.44); 326 (log ϵ 2.79) (EtOH).

Suzuki, S. *et al., J. Nat. Prod.*, 2000, **63**, 768-772

Deferoxamine, INN, USAN D-142

N′-[5-[[4-[[5-(Acetylhydroxyamino)-pentyl]amino]-1,4-dioxobutyl]hydroxyamino]pentyl]-N-*(5-aminopentyl)*-N-*hydroxybutanediamide, 9CI.*

Desferrioxamine, BAN. *Desferrin. NSC 527604*

[70-51-9]

$H_2N(CH_2)_5N(OH)COCH_2CH_2$-$CONH(CH_2)_5N(OH)COCH_2CH_2$-$CONH(CH_2)_5N(OH)Ac$

$C_{25}H_{48}N_6O_8$ 560.69

Isol. from *Streptomyces pilosus.* Used as 4m*M* aq. soln. for photometric detn. of V(*V*) (λ_{max} 480 nm, ϵ 3150, pH 1.3), Fe(*III*). Immunosuppressive agent. Siderophore. Shows anti-HIV and antineoplastic activity. Chelating agent for iron mobilisation with low oral toxicity; used in the treatment of β-thalassaemia and as an antidote to iron poisoning; also chelates aluminium, of interest with respect to treatment of Alzheimer's disease. Cryst. + $1H_2O$ (EtOH aq.). Sol. H_2O. Mp 138-140°. pK_{a1} 8.39; pK_{a2} 9.03; pK_{a3} 9.7; pK_{a4} 11 (20°, 0.1*M* $NaNO_3$).

► Long term treatment may cause visual and hearing disturbances. LD_{50} (mus, orl) 1340 mg/kg. UG5300000

Hydrochloride: ***Deferoxamine hydrochloride, USAN.*** *Ba 29837*

[1950-39-6]

Mp 172-175°.

Methanesulfonate: ***Desferrioxamine mesilate, BAN, JAN.*** *Desferal. Ba 33112. Ciba 33112*

[138-14-7]

Cryst. (EtOH aq.). Mp 148-149°.

► UG5310000

Bickel, H. *et al., Helv. Chim. Acta*, 1960, **43**, 2118; 2129; 1963, **46**, 1385 (*isol, synth*)

Prelog, V. *et al., Helv. Chim. Acta*, 1962, **45**, 631 (*synth*)

Bowern, N. *et al., Aust. J. Biol. Sci.*, 1984, **62**, 743-754 (*activity*)

Luterotti, S. *et al., Acta Pharm. Jugosl.*, 1986, **36**, 341; *CA*, **105**, 237518z (*detn, Fe*)

Luterotti, S. *et al., Analyst (London)*, 1986, **111**, 1163 (*detn, V*)

Bergeron, R.J. *et al., J.O.C.*, 1988, **53**, 3131 (*synth, bibl*)

Allain, P. *et al., Drugs of Today (Barcelona)*, Suppl.A, 1992, **28**, 89 (*rev*)

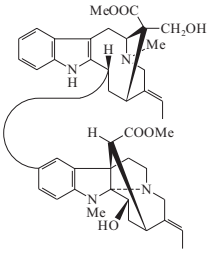
Hider, R.C. *et al., Chemistry of Iron*, (Silver, J, ed.) Blackie, 1993, 275 (*use*)

Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 676

Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, DAK200; DAK300

Deformylcoryzeylamine D-143

[164230-53-9]

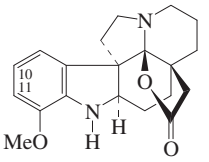


$C_{43}H_{52}N_4O_6$ 720.907

Alkaloid from leaves of *Hunteria zeylanica* (Apocynaceae). Amorph. powder. $[\alpha]_D^{25}$ -90.4 (c, 0.24 in MeOH).

Takayama, H. *et al., Chem. Pharm. Bull.*, 1994, **42**, 1957 (*isol, pmr, cmr, struct*)

N-Deformyldichotamine D-144



Absolute Configuration

$C_{20}H_{24}N_2O_3$ 340.421

Mp 197-198°.

N-*Formyl:* ***Dichotamine***

[6793-25-5]

$C_{21}H_{24}N_2O_4$ 368.432

Alkaloid from *Vallesia dichotoma* (Apocynaceae). Cryst. (EtOAc or MeOH aq.). Mp 262-263° dec. (254-257°). $[\alpha]_D$ -116 ($CHCl_3$).

O-De-Me, N-*Ac:* ***18-Oxohaplocidine***

$C_{21}H_{24}N_2O_4$ 368.432

Alkaloid from *Aspidosperma marcgravianum* (Apocynaceae). Amorph.

O-*De-Me,* N-*propanoyl:* ***Cimicine***

[7096-82-4]

$C_{22}H_{26}N_2O_4$ 382.458

Alkaloid from *Haplophyton cimicidum* (Apocynaceae). Cryst. (EtOH). Mp 229-231°. $[\alpha]_D$ +113 ($CHCl_3$).

11-Methoxy, O^{12}*-de-Me,* N-*propanoyl:* ***Cimicidine***

[7096-81-3]

$C_{23}H_{28}N_2O_5$ 412.485

Insecticidal alkaloid from *Haplophyton cimicidum* (Apocynaceae). Mp 268-270° dec. $[\alpha]_D^{25}$ +23 (c, 1 in $CHCl_3$).

11-Methoxy, O^{12}*-de-Me,* N-*propanoyl, hydrochloride:* Mp 247-249° dec.

10,11-Dimethoxy, N-*propanoyl:* ***18-Oxo-O-methylaspidoalbine***

$C_{25}H_{32}N_2O_6$ 456.538

Alkaloid from *Aspidosperma exalatum* (Apocynaceae). Cryst. (MeOH). Mp 184-185°. $[\alpha]_D^{31}$ +96 ($CHCl_3$).

10, 11-Dimethoxy, O^{12}*-de-Me,* N-*propanoyl:* ***18-Oxoaspidoalbine***

[11040-97-4]

$C_{24}H_{30}N_2O_6$ 442.511

Alkaloid from *Aspidosperma exalatum* (Apocynaceae). Cryst. (Me_2CO/hexane). Mp 208-209°.

Snyder, H.R. *et al., J.A.C.S.*, 1954, 4601 (*Cimicine, isol*)

Holker, J.S.E. *et al., J.O.C.*, 1959, **24**, 314 (*Dichotamine, isol, uv, ir*)

Brown, K.S. *et al., Tet. Lett.*, 1963, 1731 (*Dichotamine, uv, pmr, ms, struct*)

Brown, K.S. *et al., J.A.C.S.*, 1966, **88**, 4984 (*18-Oxoaspidoalbine, 18-Oxo-O-methylaspidoalbine*)

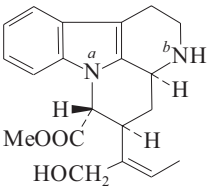
Cava, M.P. *et al., Can. J. Chem.*, 1973, **51**, 3102 (*Cimicine, Cimicidine*)

Robert, G.M.T. *et al., J. Nat. Prod.*, 1983, **46**, 694 (*18-Oxohaplocidine*)

Deformyltalbotinic acid methyl ester D-145

*Methyl 2,3,3*a*,4,5,6-hexahydro-5-[1-(hydroxymethyl)-1-propenyl]-1*H*-indolo[3,2,1-*de*][1,5]naphthyridine-6-carboxylate, 9CI*

[30809-33-7]



$C_{20}H_{24}N_2O_3$ 340.421

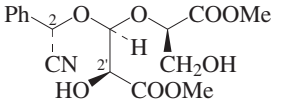
Alkaloid from the leaves of *Pleiocarpa talbotii* (Apocynaceae). Needles (MeOH/Et_2O). Mp 240° dec. $[\alpha]_D^{22}$ +111 (c, 0.181 in MeOH).

N^b,O-*Di-Ac:*

Cryst. (Et_2O/pentane). Mp 99-100°.

Pinar, M. *et al., Helv. Chim. Acta*, 1971, **54**, 15; 1973, **56**, 2719 (*isol, uv, ms, ir, pmr, struct, synth*)

Sambucus nigra Degraded cyanogenic glycosides D-146



$C_{16}H_{19}NO_8$ 353.328

Degraded cyanogenic glucoside. Isol. from *Sambucus nigra* (elderberry). $[\alpha]_D$ +15 (c, 0.6 in $CHCl_3$). λ_{max} 221 (ϵ 3150); 278 (ϵ 2170) (EtOH).

2-Epimer:

$C_{16}H_{19}NO_8$ 353.328

Isol. from *Sambucus nigra* (elderberry). $[\alpha]_D$ -21 (c, 0.3 in $CHCl_3$). λ_{max} 225 (ϵ 3160); 276 (ϵ 2190) (EtOH).

2′-Epimer:

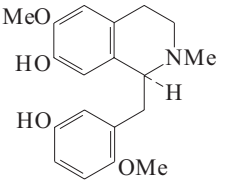
$C_{16}H_{19}NO_8$ 353.328

Isol. from *Sambucus nigra* (elderberry). $[\alpha]_D$ -3 (c, 0.5 in $CHCl_3$). λ_{max} 224 (ϵ 3130); 279 (ϵ 2130) (EtOH).

Della Greca, M. *et al., Tet. Lett.*, 2000, **41**, 6507-6510

Della Greca, M. *et al., Nat. Prod. Res.*, 2003, **17**, 177-181 (*synth*)

Dehassiline D-147



$C_{19}H_{23}NO_4$ 329.395

The synthetic prod. was shown to be different from the nat. prod. (1997). Nmr data suggests that the struct. needs to be re-examined (1998). Trivial name is based

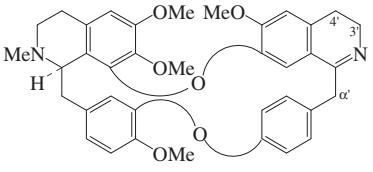
on an incorrect spelling (*Dehassia*) of the genus.

(*S*)-*form* [142717-64-4]
Alkaloid from bark of *Dehaasia kurzii* (Lauraceae). Amorph. solid. $[\alpha]_D^{27}$ +147.3 (c, 0.01*M* in $CHCl_3$).

Atta-ur-Rahman, *et al., Fitoterapia*, 1991, **62**, 261 (*isol, uv, ir, pmr, cmr, cd, struct*)
Takaba, K. *et al., Heterocycles*, 1997, **45**, 1111
Watanabe, A. *et al., Heterocycles*, 1998, **48**, 1623-1630 (*synth, pmr, cmr*)

Dehatrine D-148

1′,2′-Didehydro-2′-demethylpheanthine, 8CI



$C_{37}H_{38}N_2O_6$ 606.717

(*R*)-*form*
Alkaloid from the trunk of *Dehaasia triandra*. Also isol. from the Indonesian medicinal plant *Beilschmiedia madang* (Lauraceae). Shows antimalarial and antimicrobial props. Needles + $1H_2O$ (EtOH). Mp 158-160° (146-148°). $[\alpha]_D^{27}$ +27 (c, 1.0 in $CHCl_3$). Exists as a 1:1 mixt. of two rotamers in the solid state. λ_{max} 223 (ϵ 31600); 281 (ϵ 6310); 310 (ϵ 3160) (MeOH) (Derep).

(ξ)-*form*

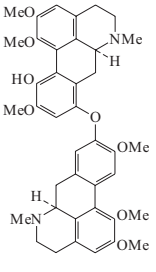
3′,4′-Didehydro: Fangchirine
Appears to be currently unknown as an alkaloid.

3′,4′-Didehydro, α′-oxo: ***Oxofangchirine***
[102516-53-0]
$C_{37}H_{34}N_2O_7$ 618.685
Alkaloid from the roots of *Stephania tetrandra* (Menispermaceae).

Inubushi, Y. *et al., J.C.S.(C)*, 1969, 1547 (*synth*)
Hu, T. *et al., Yaoxue Xuebao*, 1986, **21**, 29; *CA*, **104**, 221975q (*Oxofangchirine*)
Tsai, I.L. *et al., Kaohsiung J. Med. Sci.*, 1989, **5**, 131-145 (*activity*)
Lu, S.-T. *et al., Phytochemistry*, 1989, **28**, 615 (*isol, uv, ir, pmr, ms, struct*)
Kitagawa, I. *et al., Chem. Pharm. Bull.*, 1993, **41**, 997 (*isol, ir, pmr, cmr, cryst struct*)
Schiff, P.L. *et al., J. Nat. Prod.*, 1997, **60**, 934-953 (*pmr, cmr*)

Dehatriphine D-149

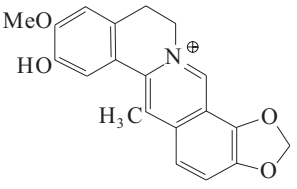
9-O-*(8-Isocorydinyl)*-N-*methyllauroteta-nine*
[173268-83-2]



$C_{40}H_{44}N_2O_8$ 680.796
The first ether-linked bisaporphine. Alkaloid from leaves of *Dehaasia triandra*. Amorph. powder. $[\alpha]_D^{23}$ +13 (c, 1.0 in MeOH).

Lee, S.-S. *et al., J. Nat. Prod.*, 1996, **59**, 55 (*isol, uv, ir, cd, pmr, cmr, ms, struct*)

Dehydroapocavidine D-150



$C_{20}H_{18}NO_4^{\oplus}$ 336.367
Quaternary alkaloid from *Corydalis cava*. Orange-yellow clusters (MeOH)(as iodide). Mp 300-308° dec. (iodide).

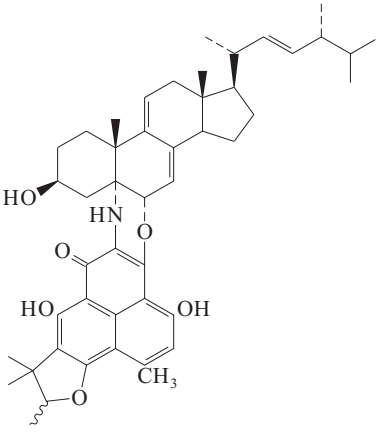
Me ether: ***Dehydrocavidine***
[57392-71-9]
$C_{21}H_{20}NO_4^{\oplus}$ 350.393
Quaternary alkaloid from *Corydalis saxicola* and *Corydalis meifolia*. Mp 273-275° (counterion not specified). λ_{max} 269 (log ϵ 4.39); 350 (log ϵ 4.33) (EtOH).

O^3*-De-Me, 2-Me ether:* ***Dehydroisoapocavidine***
$C_{20}H_{18}NO_4^{\oplus}$ 336.367
Alkaloid from *Corydalis saxicola*. Red needles (as hydroxide). Mp 281-283° dec. (hydroxide). λ_{max} 278 (log ϵ 4.31); 347 (log ϵ 3.69) (MeOH) (hydroxide).

Slavík, J. *et al., Coll. Czech. Chem. Comm.*, 1979, **44**, 2261 (*isol, uv, struct*)
Ke, M. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 1982, **24**, 289-291; *CA*, **97**, 13341n (*Dehydrocavidine*)
Bhakuni, D.S. *et al., J. Indian Chem. Soc.*, 1984, **61**, 1016 (*Dehydroapocavidine, Dehydrocavidine*)
Halbsguth, C. *et al., Planta Med.*, 2003, **69**, 305-309 (*isol*)
Li, H.-L. *et al., Chem. Biodiversity*, 2008, **5**, 777-783 (*Dehydroisoapocavidine*)
Cheng, X. *et al., Chem. Biodiversity*, 2008, **5**, 1335-1344 (*Dehydrocavidine*)

Dehydroazasirosterol D-151

[145401-26-9]

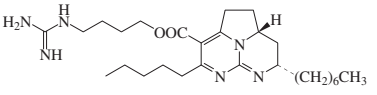


$C_{47}H_{59}NO_6$ 733.986
Metab. of a *Sirococcus* sp. Amorph. powder.

Ayer, W.A. *et al., Can. J. Chem.*, 1992, **70**, 1905 (*isol, pmr, cmr*)

Dehydrobatzelladine C D-152

[763082-99-1]

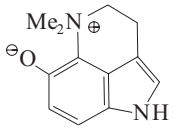


$C_{27}H_{46}N_6O_2$ 486.699
Alkaloid from the sponge *Monanchora arbuscula*. Pale brown gum. λ_{max} 206 (ϵ 8500); 258 (ϵ 7500); 303 (ϵ 1600) (MeOH).

Braekman, J.C. *et al., J. Nat. Prod.*, 2000, **63**, 193-196
Collins, S.K. *et al., Org. Lett.*, 2004, **6**, 1253-1255 (*synth*)

Dehydrobufotenine D-153

[17232-69-8]



$C_{12}H_{14}N_2O$ 202.255
Main constit. of the secretion of the toad *Bufo marinus* and from *Bufo bufo bufo*.
▶ Convulsant lethal dose (mus, scu) 6 mg/kg. UY9454800

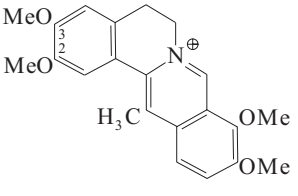
Hydrochloride: Mp 237-238° dec.

O-*Hydrogen sulfate inner salt:* ***Bufothionine***
[475-39-8]
$C_{12}H_{14}N_2O_4S$ 282.32
Constit. of the Japanese toad. Mp 250° dec.

Märki, F. *et al., J.A.C.S.*, 1961, **83**, 3341 (*uv, pmr, struct*)
Robinson, B. *et al., Proc. Chem. Soc., London*, 1961, 310 (*pmr, struct*)
Daly, J.W. *et al., Science (Washington, D.C.)*, 1967, **156**, 970 (*tox*)
Gannon, W.F. *et al., Tet. Lett.*, 1967, 1531 (*synth*)
Honda, K. *et al., Acta Cryst. C*, 1991, **47**, 1506 (*cryst struct, Bufothionine*)
Peat, A.J. *et al., J.A.C.S.*, 1996, **118**, 1028 (*synth*)

Dehydrocorydaline D-154

[30045-16-0]



$C_{22}H_{24}NO_4^{\oplus}$ 366.436
Quaternary alkaloid from *Corydalis*

ambigua and several other *Corydalis* spp. and from *Berberis floribunda* (Papaveraceae, Berberidaceae). Shows strong gastric antisecretory and antiulcer activity. Uterine contractant. Mp 237° (as nitrate).

► DR9868000

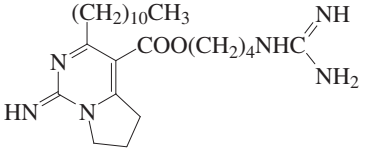
O^2-*De-Me:* ***13-Methylcolumbamine***
[137760-67-9]
$C_{21}H_{22}NO_4^{\oplus}$ 352.409
Alkaloid from *Corydalis solida* ssp. *brachyloba*.

O^3-*De-Me:* ***Dehydrocorybulbine***
[59870-72-3]
$C_{21}H_{22}NO_4^{\oplus}$ 352.409
Quaternary alkaloid from *Corydalis turtschanovii* f. *yahusuo*. Yellow solid (as chloride). Mp 188-190° (chloride).

Späth, E. *et al., Ber.*, 1921, **54**, 3074 (*struct*)
Koepfli, J.B. *et al., J.C.S.*, 1928, 2989 (*synth*)
Tani, C. *et al., Yakugaku Zasshi*, 1970, **90**, 407 (*Dehydrocorybulbine*)
Slavík, J. *et al., Coll. Czech. Chem. Comm.*, 1979, **44**, 2261 (*isol*)
Bhakuni, D.S. *et al., Alkaloids (Academic Press)*, 1986, **28**, 168 (*pharmacol*)
Sener, B. *et al., J. Chem. Soc. Pak.*, 1991, **13**, 63; *CA*, **116**, 3548j (*13-Methylcolumbamine*)

Dehydrocrambine A D-155

Dehydrocrambescin A
[628727-34-4]

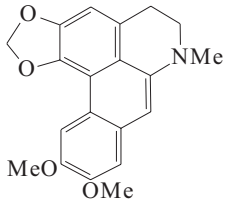


$C_{24}H_{42}N_6O_2$ 446.635
Alkaloid from the sponge *Monanchora* sp. Brown gum. $[\alpha]_D^{20}$ -12.1 (c, 0.09 in MeOH). λ_{max} 206 (log ϵ 3.83); 259 (log ϵ 3.53); 289 (log ϵ 3.18) (MeOH).

Chang, L.C. *et al., J. Nat. Prod.*, 2003, **66**, 1490-1494 (*isol, pmr, cmr*)

Dehydrodicentrine D-156

[19843-03-9]



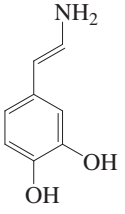
$C_{20}H_{19}NO_4$ 337.374
Alkaloid from *Ocotea macropoda, Cissampelos pareira, Stephania brachyandra* and *Glaucium vitellinum* (Lauraceae, Menispermaceae, Papaveraceae). Golden-yellow needles ($CHCl_3$). Mp 218°.

O^{10}-*De-Me:* ***Dehydrophanostenine***
[79642-39-0]
$C_{19}H_{17}NO_4$ 323.348
Alkaloid from *Stephania sasakii* (Menispermaceae). Mp 198-200°.

Cava, M.P. *et al., Tet. Lett.*, 1968, 2437 (*uv, pmr, struct*)
Dwuma-Badu, D. *et al., Phytochemistry*, 1975, **14**, 2520 (*isol, uv, ir, pmr, ms*)
Shafiee, A. *et al., J. Nat. Prod.*, 1978, **41**, 657; 1979, **42**, 174 (*isol*)
Kunimoto, J. *et al., Yakugaku Zasshi*, 1981, **101**, 431-436 (*Dehydrophanostenine*)
Castedo, L. *et al., An. Quim., Ser. C*, 1982, **78**, 103 (*cmr*)
Chen, Y. *et al., Zhongcaoyao*, 1982, **13**, 1; *CA*, **97**, 178723d (*isol*)

Dehydrodopamine D-157

2-(3,4-Dihydroxyphenyl)ethenamine. Didehydrodopamine



$C_8H_9NO_2$ 151.165

(*E*)-*form*

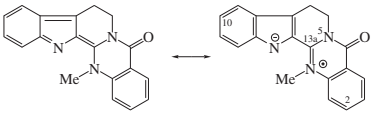
N-*Ac:* N-*[2-(3,4-Dihydroxyphenyl)ethenyl]acetamide, 9CI.* N-*Acetyl-1,2-didehydrodopamine.* N-*Acetyldehydrodopamine*
[83104-76-1]
$C_{10}H_{11}NO_3$ 193.202
Precursor in insect cuticular sclerotization. Cryst. (AcOH aq.). Mp 197-198°.

N-*β-Alanyl: 3-Amino*-N-*[2-(3,4-dihydroxyphenyl)ethenyl]propanamide, 9CI. 1,2-Didehydro*-N-*β-alanyldopamine.* N-*β-Alanyldehydrodopamine*
[158018-58-7]
$C_{11}H_{14}N_2O_3$ 222.243
Precursor in insect cuticular sclerotization. No phys. props. reported.

Ramamurthy, B. *et al., Synthesis*, 1987, 523 (*N-Ac, synth*)
Dali, H. *et al., Org. Prep. Proced. Int.*, 1988, **20**, 191-195 (*N-Ac, synth*)
Ricketts, D. *et al., J. Biol. Chem.*, 1994, **269**, 22217-22221 (N-*β-alanyl, synth, biochem*)

Dehydroevodiamine D-158

*5,7,8,13-Tetrahydro-14-methyl-5-oxoindolo[2′,3′:3,4]pyrido[2,1-*b*]quinazolinium hydroxide inner salt, 9CI. 13,13*b*-Dehydroevodiamine*
[67909-49-3]



$C_{19}H_{15}N_3O$ 301.347
CAS numbering shown. Alkaloid from the unripe fruit of *Evodia rutaecarpa* (Rutaceae). Mp 189°.

Hydrochloride:
Yellow cryst. + ¼H_2O. Mp 208-209°.

2-Methoxy:
$C_{20}H_{17}N_3O_2$ 331.373
Alkaloid from the stem bark of *Araliopsis tabouensis*. Amorph. yellow powder (as hydrochloride). Represented as the alternative $\Delta^{5(13a)}$ form. λ_{max} 212 (log ϵ 1.91); 284 (log ϵ 0.49); 362 (log ϵ 0.7); 376 (log ϵ 0.35) (MeOH) (hydrochloride).

10-Methoxy: ***Hortiamine****. 8,14-Dihydro-10-methoxy-14-methylindolo[2′,3′:3,4]pyrido[2,1-*b*]quinazolin-5(7*H*)-one, 9CI*
[477-40-7]
$C_{20}H_{17}N_3O_2$ 331.373
Alkaloid from the bark of *Hortia arborea* and *Hortia braziliana* (Rutaceae). Hypotensive agent. Red-orange needles (C_6H_6 or $CHCl_3/C_6H_6$). Mp 209° dec.

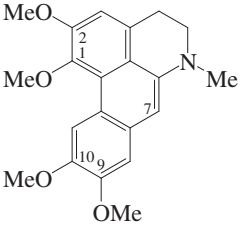
10-Methoxy; hydrochloride:
Cryst. + 1H_2O (EtOH aq.). Mp 243° dec. Sublimation at 230-270°/0.5 mm yields Hortiacine, H-361.

10-Methoxy; methiodide:
Cryst. (EtOH aq.). Mp 208-209°.

Pachter, I.J. *et al., J.A.C.S.*, 1960, **82**, 5187; 1961, **83**, 535 (*Hortiamine, isol, uv, struct, synth*)
Danieli, B. *et al., Heterocycles*, 1978, **9**, 803 (*synth*)
King, C.L. *et al., J. Nat. Prod.*, 1980, **43**, 577 (*isol, ir, pmr*)
Bergman, J. *et al., J.O.C.*, 1985, **50**, 1246 (*synth*)
Christopher, E. *et al., Helv. Chim. Acta*, 2003, **86**, 2914-2918 (*2-methoxy*)

Dehydroglaucine D-159

*5,6-Dihydro-1,2,9,10-tetramethoxy-6-methyl-4*H*-dibenzo[*de,g*]quinoline, 9CI*
[22212-26-6]



$C_{21}H_{23}NO_4$ 353.417
Alkaloid from *Glaucium flavum* (incl. varieties), heartwood and discoloured sapwood of *Liriodendron tulipifera* and *Thalictrum* sp. Antimicrobial agent. Pale yellow prisms (EtOH). Mp 133-134°. λ_{max} 264 (ϵ 47000); 293 (ϵ 17200); 341 (ϵ 10600) (EtOH).

N-*De-Me: 6*a*,7-Dehydronorglaucine*
[39945-38-5]
Synthetic. Cryst. (Et_2O/MeOH). Mp 180-183°.

O^1-*De-Me: Dehydrothaliporphine*
[41823-69-2]
Synthetic. Mp 157-160° dec.

O^2-*De-Me:* ***Dehydropredicentrine***
[91794-10-4]
$C_{20}H_{21}NO_4$ 339.39
Isol. from *Polyalthia cauliflora*. Cryst. (Me_2CO). Mp 198-199°. λ_{max} 215 (log

ϵ 4.14); 243 (sh) (log ϵ 4.28); 262 (log ϵ 4.49); 270 (sh) (log ϵ 4.45); 294 (sh) (log ϵ 4.04); 329 (log ϵ 3.89); 380 (sh) (log ϵ 3.31) (no solvent reported).

O^{10}-*De-Me: Dehydrolirioferine*
[75652-88-9]
Synthetic. Cryst. (EtOAc). Mp 140-142° dec. Unstable.

O^{1},O^{9}-*Di-de-Me:* ***Dehydroisoboldine***
[53729-86-5]
$C_{19}H_{19}NO_4$ 325.363
Alkaloid from *Nandina domestica* (Nandinaceae).

O^{2},O^{9}-*Di-de-Me:* ***Dehydroboldine***
[91599-23-4]
$C_{19}H_{19}NO_4$ 325.363
Isol. from *Peumus boldus* (boldo). Mp 178-179°. λ_{max} 263 (log ϵ 4.72); 327 (log ϵ 4.06) (EtOH).

7-Hydroxy: ***7-Hydroxydehydroglaucine***
[218629-68-6]
$C_{21}H_{23}NO_5$ 369.416
Alkaloid from *Annona purpurea* (soncoya). Antiplatelet aggregation agent. Green needles ($CHCl_3$). Mp 242-243°. λ_{max} 222 ; 260 ; 335 (EtOH).

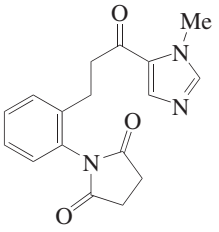
7-Hydroxy, 4,5-didehydro, N-*de-Me,* N-*formyl:* **N-*Formyl-4,5,6a,7-tetradehydro-7-hydroxyglaucine***
[959850-98-7]
$C_{21}H_{19}NO_6$ 381.384
Alkaloid from the bark of *Friesodielsia obovata*. Yellow cryst. Mp 198-200°. λ_{max} 217 ; 237 ; 283 ; 308 ; 319 (MeOH).

$\Delta^{6,6a}$-*Isomer,* N-*de-Me:* ***6,6a-Dehydronorglaucine***
[52309-70-3]
$C_{20}H_{21}NO_4$ 339.39
Alkaloid from *Glaucium flavum* (Papaveraceae). First member of a small subgroup of aporphine-type alkaloids with a conjugated azomethine group. λ_{max} 242 (sh) (ϵ 28300); 260 (ϵ 47200); 270 (ϵ 43400); 335 (ϵ 10800); 381 (ϵ 3330) (MeOH).

Kiryakov, H.G. *et al., Chem. Ind. (London)*, 1968, 1807-1808 (*uv, ir, pmr, struct*)
Cava, M.P. *et al., J.O.C.*, 1970, **35**, 175-179 (*synth, uv*)
Kunitomo, J. *et al., Yakugaku Zasshi*, 1974, **94**, 1149-1153; *CA*, **82**, 14024r (*Dehydroisoboldine*)
Hufford, C.D. *et al., J. Pharm. Sci.*, 1975, **64**, 789-792 (*isol, uv, pmr*)
Chen, C.-L. *et al., Phytochemistry*, 1976, **15**, 547-550; 1161-1167 (*isol, pmr, ms*)
Castedo, L. *et al., Heterocycles*, 1980, **14**, 1135-1138 (O^{1}-*de-Me,* O^{10}-*de-Me, synth*)
Castedo, L. *et al., An. Quim., Ser. C*, 1982, **78**, 103-107 (*7-Me, synth, cmr*)
Jossang, A. *et al., J. Nat. Prod.*, 1984, **47**, 504-513 (*Dehydropredicentrine*)
Urzua, A. *et al., J. Nat. Prod.*, 1984, **47**, 525-526 (*Dehydroboldine*)
Lenz, G.R. *et al., J.C.S. Perkin 1*, 1984, 1273-1277 (*6,6a-Dehydronorglaucine, synth*)
Gupta, S. *et al., Synth. Commun.*, 1989, **19**, 393-401 (*synth*)
Chang, F.-R. *et al., J. Nat. Prod.*, 1998, **61**, 1457-1461 (*7-Hydroxydehydroglaucine*)
Joseph, C.C. *et al., Nat. Prod. Res.*, 2007, **21**, 1009-1015 (*Formyltetradehydro-7-hydroxynorglaucine*)

Dehydroisolongistrobine D-160

[23507-01-9]



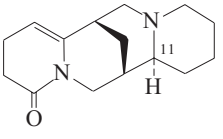
$C_{17}H_{17}N_3O_3$ 311.34
Alkaloid from the aerial parts of *Macrorungia longistrobus* (preferred genus name *Anisotes*) (Acanthaceae). Needles (Me_2CO/hexane). Mp 131°. λ_{max} 258 (ϵ 17350) (EtOH). λ_{max} 235 (ϵ 14350) (1% HCl/EtOH).

Dihydro: ***Isolongistrobine***
[23544-52-7]
$C_{17}H_{19}N_3O_3$ 313.355
Alkaloid from the aerial parts of *Macrorungia longistrobus* (preferred genus name *Anisotes*) (Acanthaceae). Yellowish needles (Me_2CO/hexane). Mp 134-139° (132-136°). A hydroxylactam having one of the maleimide carbonyl groups reduced to OH. λ_{max} 253 (ϵ 16750) (EtOH). λ_{max} 235 (ϵ 14400) (1% HCl/EtOH).

Arndt, R.R. *et al., Tetrahedron*, 1969, **25**, 2767-2799 (*Dehydroisolongistrobine, Isolongistrobine, isol, ir, uv, pmr, ms*)
Wuonola, M.A. *et al., Tetrahedron*, 1976, **32**, 1085-1095 (*Dehydroisolongistrobine, Isolongistrobine, struct, synth, ir, uv, pmr, ms*)

5,6-Dehydrolupanine D-161

5,6-Didehydrolupanine, 8CI. 2-Oxo-Δ^{5}*-dehydrosparteine. Alkaloid BNC 1*
[32101-29-4]



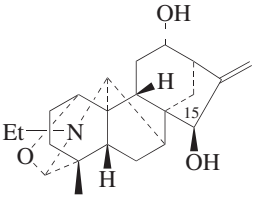
$C_{15}H_{22}N_2O$ 246.352
Alkaloid from *Lupinus densiflorus* and *Lupinus bicolor* ssp. *microphyllus* and from *Sophora secundiflora* seeds (mescal beans)(Fabaceae). Liq. Unstable to hydrol.

11-Epimer: ***5,6-Dehydro-α-isolupanine***
$C_{15}H_{22}N_2O$ 246.352
Alkaloid from *Lupinus bicolor* ssp. *microphyllus* (Fabaceae).

Cho, Y.D. *et al., Arch. Mass Spectral Data*, 1971, **2**, 328 (*ms*)
Cho, Y.D. *et al., Can. J. Chem.*, 1971, **49**, 265 (*isol, uv, ms, pmr, struct*)
Hatfield, G.M. *et al., J. Nat. Prod.*, 1977, **40**, 374; 1980, **43**, 164 (*isol*)
Kinghorn, A. *et al., Planta Med.*, 1980, **38**, 280 (*isol, ms*)

Dehydronapelline D-162

Dehydroluciculine
[110064-72-7]



$C_{22}H_{31}NO_3$ 357.492
Alkaloid from *Aconitum flavum, Aconitum japonicum* and *Aconitum yesoense* (Ranunculaceae). Mp 103.5-105°. $[\alpha]_D^{16}$ +78.3 (c, 0.48 in EtOH).

12-Ac: ***Subdesculine****. 12-Acetyldehydroluciculine*
[62517-45-7]
$C_{24}H_{33}NO_4$ 399.529
Alkaloid from the roots of *Aconitum japonicum* (Ranunculaceae). Mp 134-135° dec. (as perchlorate). $[\alpha]_D^{19}$ +7.3 (c, 0.3 in $CHCl_3$).

15-Ac: ***Dehydroluciduscline***
[99815-76-6]
$C_{24}H_{33}NO_4$ 399.529
Alkaloid from the roots of *Aconitum yesoense* var. *macroyesoense* (formerly known as *Aconitum luciduscul*um) (Ranunculaceae). Mp 186-189°. $[\alpha]_D^{11}$ +2.6 (c, 1.0 in EtOH). 15-Config. shown as α- in the paper, but Luciduscline, in N-30X, with which Dehydroluciduscline was correlated, has 15β-config.

Di-Ac: ***12-Acetyldehydroluciduscline***
[112579-73-4]
$C_{26}H_{35}NO_5$ 441.566
Alkaloid from the rhizomes of *Aconitum yesoense* var. *macroyesoense* (Ranunculaceae). Amorph. $[\alpha]_D$ +9.3 (c, 0.43 in EtOH).

N-*de-Et, 15-Ac:* **N-*Deethyldehydroluciduscline***
[99815-75-5]
$C_{22}H_{29}NO_4$ 371.475
Alkaloid from the roots of *Aconitum yesoense* var. *macroyesoense* (Ranunculaceae). Amorph. powder. $[\alpha]_D^{17}$ -9.6 (c, 0.27 in EtOH).

12-Ketone: ***Songoramine***
[23179-78-4]
$C_{22}H_{29}NO_3$ 355.476
Alkaloid from *Aconitum karakolicum* and roots of *Aconitum songoricum* (Ranunculaceae). Cryst. (Me_2CO). Mp 211-212°. $[\alpha]_D^{26}$ -44.2 (c, 0.27 in $CHCl_3$). λ_{max} 295 (log ϵ 2.6) (no solvent reported).

12-Ketone, 15-Ac: ***15-Acetylsongoramine***
[76971-23-8]
$C_{24}H_{31}NO_4$ 397.513
Alkaloid from roots of *Aconitum songoricum* (Ranunculaceae).

12-Ketone, N-*de-Et:* ***Norsongoramine****.* N-*Deethylsongoramine*
[78982-16-8]

$C_{20}H_{25}NO_3$ 327.422
Alkaloid from *Delphinium thamarae*. Cryst. (Me_2CO). Mp 286-288°.

12-Epimer: ***12-Epidehydronapelline***
[116197-11-6]
$C_{22}H_{31}NO_3$ 357.492
Alkaloid from above-ground parts of *Aconitum napellus* ssp. *castellanum* (Ranunculaceae) and from *Aconitum liangshanium*. Resin or amorph. solid. $[\alpha]_D$ +45 (c, 0.17 in EtOH). $[\alpha]_D^{23}$ +56.8 (c, 1.02 in $CHCl_3$).

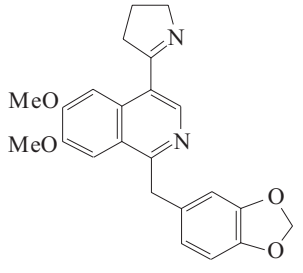
12-Epimer, 12-Ac: ***12-Epiacetyldehydronapelline***
[116171-99-4]
$C_{24}H_{33}NO_4$ 399.529
Alkaloid from above-ground parts of *Aconitum napellus* ssp. *castellanum* (Ranunculaceae). Resin. $[\alpha]_D$ +25 (c, 0.22 in EtOH).

12-Epimer, 15-Ac: ***12-Epidehydrolucidusculine***
[137121-73-4]
$C_{24}H_{33}NO_4$ 399.529
Alkaloid from *Aconitum liangshanium* (Ranunculaceae). Amorph. $[\alpha]_D^{23.5}$ -9.6 (c, 1.2 in $CHCl_3$).

Yusunov, M.S. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1970, **6**, 95-99 (*Songoramine*)
Zhamierashvili, M.G. *et al., CA*, 1972, **97**, 107014n (*15-Acetylsongoramine*)
Beshitaishvili, L.V. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1981, **17**, 156-157 (*Norsongoramine*)
Wada, K. *et al., Heterocycles*, 1985, **23**, 2473-2477 (*Dehydrolucidusculine, N-Deethyldehydrolucidusculine*)
Chen, Z. *et al., Heterocycles*, 1987, **26**, 1455-1460 (*Dehydronapelline*)
Bando, H. *et al., Heterocycles*, 1987, **26**, 2623-2637 (*12-Acetyldehydrolucidusculine*)
Bando, H. *et al., Chem. Pharm. Bull.*, 1988, **36**, 1604-1606 (*Subdesculine*)
De la Fuente, G. *et al., Heterocycles*, 1988, **27**, 1109-1113 (*12-Epidehydronapelline, 12-Epiacetyldehydronapelline*)
Takayama, H. *et al., Chem. Pharm. Bull.*, 1991, **39**, 1644-1646 (*12-Epidehydrolucidusculine*)
Csupor, D. *et al., Helv. Chim. Acta*, 2006, **89**, 2981-2986 (*Songoramine, synth*)

Dehydronormacrostomine D-163

Preininger alkaloid
[115107-84-1]

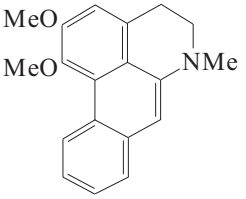


$C_{23}H_{22}N_2O_4$ 390.438
Alkaloid from *Papaver macrostomum* (Papaveraceae). Mp 193-195°.

Mnatsakanyan, V.A. *et al., Coll. Czech. Chem. Comm.*, 1977, **42**, 1421 (*isol, uv, ms, struct*)
Mahboobi, S. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1991, **324**, 275 (*synth*)

Dehydronuciferine D-164

[7630-74-2]



$C_{19}H_{19}NO_2$ 293.365
Alkaloid from the leaves of *Nelumbo nucifera* (East Indian lotus), *Colubrina faralaotra* ssp. *faralaotra* and *Colubrina faralaotra* subsp. *trichocarpa* (Nelumbonaceae, Rhamnaceae). Cryst. (EtOH). Mp 130-131°.

N-*De-Me:* ***Dehydronornuciferine***
[92664-95-4]
$C_{18}H_{17}NO_2$ 279.338
Alkaloid from the leaves of *Guatteria ouregou* (Annonaceae). Off-yellow flakes. Mp 149.5-150.5°.

N-*De-Me,* N-*formyl:* **N-*Demethyl*-N-*formyldehydronuciferine***
[111017-06-2]
$C_{19}H_{17}NO_3$ 307.348
Alkaloid from the drug Sinomeni Caulis et Rhizoma (root, root-stalk and stems of *Sinomenium acutum*) (Menispermaceae). Needles (MeOH). Mp 140.5°.

▶ Mutagen.

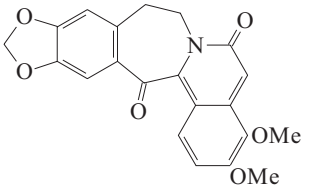
O^1-*De-Me:* ***Dehydrolirinidine***
$C_{18}H_{17}NO_2$ 279.338
Alkaloid from *Annona purpurea*. Antiplatelet aggregation agent. Green needles ($CHCl_3$). Mp 189-190°. λ_{max} 216 ; 253 ; 312 (EtOH).

O^2-*De-Me,* O^2-α-L-*rhamnopyranoside:* ***6a,7-Dehydrofloripavidine***
$C_{24}H_{27}NO_6$ 425.48
Alkaloid from the aerial parts of *Papaver fugax*. Amorph. solid. λ_{max} 251 ; 263 ; 320 ; 396 (MeOH).

Cava, M.P. *et al., J.O.C.*, 1970, **35**, 175 (*synth, uv*)
Kunitomo, J. *et al., Phytochemistry*, 1973, **12**, 699 (*occur*)
Guinaudeau, H. *et al., Planta Med.*, 1975, **27**, 304; 1976, **29**, 54; **30**, 201 (*isol*)
Castedo, L. *et al., An. Quim., Ser. C*, 1982, **78**, 103 (*cmr*)
Lenz, G.R. *et al., J.C.S. Perkin 1*, 1984, 1273 (*Dehydronornuciferine, synth, uv, ir, pmr, cmr*)
Cortes, D. *et al., J. Nat. Prod.*, 1986, **49**, 878 (*Dehydronornuciferine, isol*)
Nozaka, T. *et al., Chem. Pharm. Bull.*, 1987, **35**, 2844 (*N-Demethyl-N-formyldehydronuciferine*)
Atanes, N. *et al., J.O.C.*, 1991, **56**, 2984 (*synth, Dehydronornuciferine*)
Chang, F.R. *et al., J. Nat. Prod.*, 1998, **61**, 1457-1461 (*Dehydrolirinidine*)
Sari, A. *et al., Nat. Prod. Res.*, 2004, **18**, 265-268 (*6a,7-Dehydrofloripavidine*)

Dehydropuntarenine D-165

[141290-70-2]

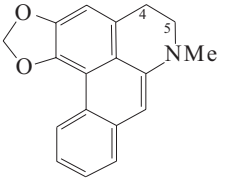


$C_{21}H_{17}NO_6$ 379.368
Alkaloid from roots of *Berberis actinacantha* (Berberidaceae).

Rahimizadeh, M. *et al., J. Sci., Islamic Repub. Iran*, 1990, **1**, 364; *CA*, **116**, 231903b

Dehydroroemerine D-166

Dehydroaporheine
[36285-03-7]



$C_{18}H_{15}NO_2$ 277.322
Alkaloid from *Nelumbo nucifera* (East India lotus), *Stephania sasakii, Stephania micrantha, Stephania kwangsiensis, Papaver glaucum, Papaver rhoeas* (corn poppy), *Papaver spicatum* var. *spicatum, Papaver spicatum* var. *luschanii, Liriodendron tulipifera, Colubrina faralaotra* ssp. *faralaotra* and *Colubrina faralaotra* ssp. *sinuata* (Nelumbonaceae, Menispermaceae, Papaveraceae, Magnoliaceae, Rhamnaceae). Mp 88-89°.

N-*De-Me:* ***Dehydroanonaine***
[41679-82-7]
$C_{17}H_{13}NO_2$ 263.295
Alkaloid from the leaves of *Nelumbo nucifera* (East India lotus) (Nelumbonaceae).

N-*De-Me,* N-*formyl:* **N-*Formyldehydroanonaine***
[165900-12-9]
$C_{18}H_{13}NO_3$ 291.306
Alkaloid from woody stems of *Telitoxicum krukovii* (Menispermaceae). Cryst. (hexane/EtOAc). Mp 185-186°.

N-*De-Me,* N-*Ac:* **N-*Acetyldehydroanonaine***
[132646-11-8]
$C_{19}H_{15}NO_3$ 305.332
Alkaloid from root bark of *Zanthoxylum simulans* (Szechuan pepper). Prisms (MeOH). Mp 151-153°.

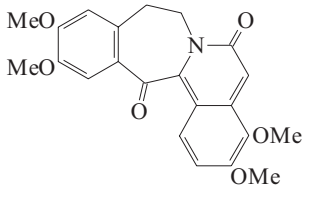
4,5-Didehydro: ***Didehydroroemerine****. Didehydroaporheine*
$C_{18}H_{13}NO_2$ 275.306
Alkaloid from *Papaver urbanianum* (Papaveraceae). Amorph.

Kunitomo, J. *et al., Phytochemistry*, 1973, **12**, 699 (*Dehydroanonaine*)
Preininger, V. *et al., Planta Med.*, 1973, **23**, 233 (*Didehydroroemerine*)

Guinaudeau, H. *et al., Planta Med.*, 1975, **27**, 304; 1976, **30**, 201 (*isol*)
Ziyaev, R. *et al., Khim. Prir. Soedin.*, 1977, **13**, 715; *Chem. Nat. Compd. (Engl. Transl.)*, 1977, **13**, 602 (*isol, uv, ms*)
Min, Z. *et al., Yaoxue Xuebao*, 1980, **15**, 532; *CA*, **94**, 117773m (*isol*)
Phillipson, J.D. *et al., J. Nat. Prod.*, 1981, **44**, 296 (*occur*)
Sariyar, G. *et al., Plant. Med. Phytother.*, 1981, **15**, 160; *CA*, **96**, 119030g (*isol*)
Kunitomo, J. *et al., Yakugaku Zasshi*, 1981, **101**, 431; *CA*, **95**, 204236c (*isol*)
Min, Z. *et al., Yaoxue Xuebao*, 1981, **16**, 557; *CA*, **97**, 3595m (*isol*)
Atanes, N. *et al., J.O.C.*, 1991, **41**, 1425 (*Dehydroanonaine, synth*)
Menachery, M.D. *et al., Heterocycles*, 1995, **41**, 1425 (*N-Formyldehydroanonaine*)
Chen, I.-S. *et al., Phytochemistry*, 1996, **42**, 217 (*N-Acetyldehydroanonaine*)

Dehydrosaulatine D-167

[141290-71-3]

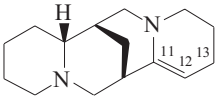


$C_{22}H_{21}NO_6$ 395.411
Alkaloid from roots of *Berberis actinacantha* (Berberidaceae).

Rahimizadeh, M. *et al., J. Sci., Islamic Repub. Iran*, 1990, **1**, 364; *CA*, **116**, 231903b

11,12-Dehydrosparteine D-168

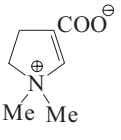
11,12-Didehydrosparteine. 5,6-Didehydro-α-isosparteine. 5,6-Dehydro-α-isosparteine
[2130-67-8]



$C_{15}H_{24}N_2$ 232.368
Alkaloid identified in stems of *Templetonia egena*, prob. also present in *Lupinus polyphyllus* and *Sarothamnus scoparius* (Fabaceae). Also (descr. as 5,6-didehydro-α-isosparteine) detected spectroscopically in *Acosmium panamense*. The alkaloid from *L. polyphyllus* was originally identified as the Δ^{12}-isomer but this is prob. erroneous.

Wink, M. *et al., Planta Med.*, 1981, **43**, 342-352 (*occur, ms*)
Balandrin, M.F. *et al., Heterocycles*, 1982, **19**, 1931-1934 (*5,6-Didehydro-α-isosparteine*)
Kinghorn, A.D. *et al., Phytochemistry*, 1982, **21**, 2269-2275 (*isol, ms, synth, bibl*)

2,3-Dehydro-β-stachydrine D-169

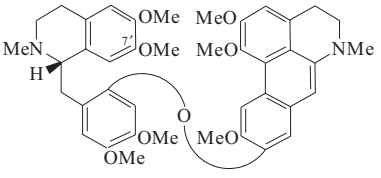


$C_7H_{11}NO_2$ 141.169
Isol. from the red alga *Pterocladia capillacea*. Off-white amorph. powder.

Sciuto, S. *et al., J. Nat. Prod.*, 1988, **51**, 322

Dehydrothalicarpine D-170

Thalictrucarpine
[7224-94-4]



$C_{41}H_{46}N_2O_8$ 694.823
Alkaloid from *Thalictrum minus* ssp. *elatum*, the roots of *Thalictrum dasycarpum* and the root bark of *Hernandia ovigera* (Ranunculaceae, Hernandiaceae). Cryst. (EtOAc, MeOH or MeOH/Et_2O). Mp 186-187°. $[\alpha]_D^{29}$ +55 (c, 0.44 in $CHCl_3$). Possibly an artifact prod. from Thalicarpine, T-312 by aerial oxidn.

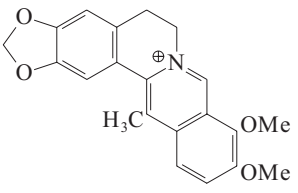
Methiodide (1:2):
Cryst. + $1H_2O$ (MeOH). Mp 167-171°.

O$^{7'}$*-De-Me:* ***Dehydrothalmelatine****. 6′-[(6*a*,7-Didehydro-1,2,10-trimethoxyaporphin-9-yl)oxy]codamine*
[16624-99-0]
$C_{40}H_{44}N_2O_8$ 680.796
Alkaloid from *Thalictrum minus* ssp. *elatum* and from the bark of *Hernandia peltata* (Ranunculaceae). Cryst. +1 H_2O (MeOH). Mp 126-128°. $[\alpha]_D^{19}$ +31.9 (c, 0.15 in $CHCl_3$). Poss. an artifact of aerial oxidn.

Dutschewska, H.B. *et al., Chem. Ind. (London)*, 1966, 770 (*uv, pmr, struct*)
Dutschewska, H.B. *et al., Chem. Ber.*, 1967, **100**, 3135 (*isol, struct, Dehydrothalicarpine,Dehydrothalmelatine*)
Kupchan, S.M. *et al., J.O.C.*, 1968, **33**, 1052 (*isol, uv, pmr, struct, synth*)
Cava, M.P. *et al., Tetrahedron*, 1972, **28**, 4299; *J.O.C.*, 1975, **40**, 3601 (*synth*)
Yang, T.-H. *et al., J. Chin. Chem. Soc. (Taipei)*, 1976, **23**, 29 (*isol*)
Chalandre, M.C. *et al., Can. J. Chem.*, 1986, **64**, 123 (*isol, deriv*)

Dehydrothalictricavine D-171

5,6-Dihydro-9,10-dimethoxy-13-methylbenzo[g]-1,3-benzodioxolo[5,6-a]quinolizinium, 9CI
[38691-92-8]



$C_{21}H_{20}NO_4^{\oplus}$ 350.393
Alkaloid from tubers of *Corydalis cava* and aerial parts of *Corydalis solida*.

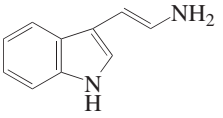
Chloride: [54260-72-9]
$C_{21}H_{20}ClNO_4$ 385.846
Yellow needles (H_2O). Mp 185-195° dec.

Iodide: [2220-12-4]
$C_{21}H_{20}INO_4$ 477.298
Yellow cryst. (MeOH). Mp 215-218°.

Pavelka, S. *et al., Coll. Czech. Chem. Comm.*, 1976, **41**, 3654 (*synth, uv, ir*)
Slavík, J. *et al., Coll. Czech. Chem. Comm.*, 1979, **44**, 2261; 1985, **50**, 2299 (*isol, uv*)

Dehydrotryptamine D-172

*2-(1*H*-Indol-3-yl)ethenamine. 3-(2-Aminovinyl)-1*H*-indole. Didehydrotryptamine*



$C_{10}H_{10}N_2$ 158.202

(E)-form

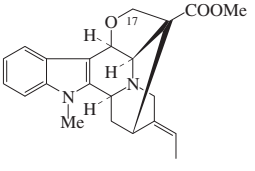
N^a*-Formyl:* N-*[2-(1*H*-Indol-3-yl)ethenyl]formamide. N-Formyldehydrotryptamine*
[957062-44-1]
$C_{11}H_{10}N_2O$ 186.213
Prod. by *Pseudomonas aeruginosa*. Not fully characterised.

N^a,N^a,N^a*-Tri-Me: 2-(1*H*-Indol-3-yl)-*N,N,N*-trimethylethenaminium.* ***Conicamine***
[648437-96-1]
$C_{13}H_{17}N_2^{\oplus}$ 201.291
Alkaloid from the tunicate *Aplidium conicum*. Histamine antagonist. Counterion not specified.

Aiello, A. *et al., Bioorg. Med. Chem. Lett.*, 2003, **13**, 4481-4483 (*Conicamine*)
Brady, S.F. *et al., J.A.C.S.*, 2007, **129**, 12102-12103 (*N-Formyldehydrotryptamine*)

Dehydrovoachalotine D-173

Methyl 6,17-epoxy-1-methylsarpagan-16-carboxylate, 9CI
[18783-45-4]



Absolute Configuration

$C_{22}H_{24}N_2O_3$ 364.443
Alkaloid from *Voacanga chalotiana* (Apocynaceae). Cryst. (C_6H_6). Mp 239-239.5°. $[\alpha]_D^{22}$ +124 (c, 0.9 in MeOH). pK_a 4.5 (80% MCS aq.). λ_{max} 225 (ϵ 44000); 283 (ϵ 7200); 290 (ϵ 6000) (no solvent reported).

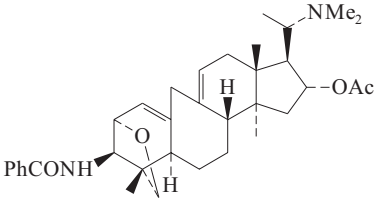
17ξ-Hydroxy: ***17-Hydroxydehydrovoachalotine***
[123225-55-8]
$C_{22}H_{24}N_2O_4$ 380.443
Alkaloid from the leaves and roots of *Alstonia undulata* (Apocynaceae). Amorph. $[\alpha]_D$ +93 (c, 0.5 in $CHCl_3$).

Tirions, G. *et al., Chimia*, 1968, **22**, 87-88 (*isol, uv, ir, pmr, ms, struct*)

Nouls, J.C. *et al., Tet. Lett.*, 1968, 2731-2734 (*pmr, config*)
Bombardelli, E. *et al., Phytochemistry*, 1976, **15**, 2021-2022 (*cmr*)
Morfaux, A.-M. *et al., C. R. Hebd. Seances Acad. Sci. Ser. 2*, 1989, **309**, 33-36 (*17-Hydroxydehydrovoachalotine*)

2-Dehydroxy-O^2-buxafuranamine D-174

[142674-56-4]

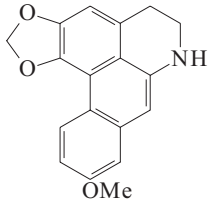


$C_{35}H_{48}N_2O_4$ 560.775
Alkaloid from leaves of *Buxus hildebrandtii* (Buxaceae). Amorph. solid. $[\alpha]_D^{20}$ +130 (c, 1.7 in $CHCl_3$).

Atta-ur-Rahman, *et al., Heterocycles*, 1992, **34**, 157-171 (*isol, uv, ir, pmr, ms, struct*)

Dehydroxylopine D-175

*6,7-Dihydro-10-methoxy-5*H*-benzo[g]-1,3-benzodioxolo[6,5,4-*de*]quinoline, 9CI. 9-Methoxydehydroanonaine*
[113425-60-8]



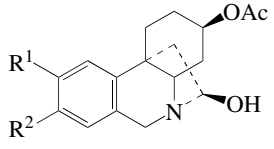
$C_{18}H_{15}NO_3$ 293.321
Alkaloid from *Xylopia vieillardi* (Annonaceae). Amorph.

N-*Me:* ***Dehydroisolaureline***
[65967-04-6]
$C_{19}H_{17}NO_3$ 307.348
Alkaloid from *Liriodendron tulipifera* (Magnoliaceae). Mp 143-145°.

Ziyaev, R. *et al., Khim. Prir. Soedin.*, 1977, **13**, 715; *Chem. Nat. Compd. (Engl. Transl.)*, 1977, **13**, 602 (*Dehydroisolaureline*)
Jossang, A. *et al., J. Nat. Prod.*, 1991, **54**, 466 (*Dehydroxylopine*)

Delagoenine D-176

[221001-70-3]



$R^1 = R^2 = OMe$

$C_{19}H_{25}NO_5$ 347.41
Alkaloid from the bulbs of *Crinum delagoense*. Mp 120-122°. $[\alpha]_D^{20}$ +34.2 (c, 0.48 in MeOH).

Nair, J.J. *et al., Phytochemistry*, 1998, **49**, 2539-2543 (*isol, ir, cd, pmr, cmr, ms*)

Delagoensine D-177

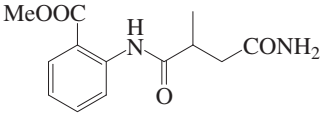
As Delagoenine, D-176 with R^1R^2 = -OCH_2O-

$C_{18}H_{21}NO_5$ 331.368
Alkaloid from the bulbs of *Crinum delagoense*. Mp 132-134°. $[\alpha]_D^{20}$ +28.2 (c, 0.47 in MeOH).

Nair, J.J. *et al., Phytochemistry*, 1998, **49**, 2539-2543 (*isol, ir, cd, pmr, cmr, ms*)

Delamide D-178

Methyl 2-[(4-amino-2-methyl-1,4-dioxobutyl)amino]benzoate, 9CI
[151805-38-8]

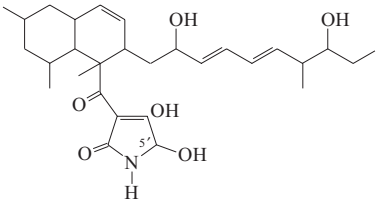


$C_{13}H_{16}N_2O_4$ 264.28
Alkaloid from *Delphinium omeiense*. Component of Fu Zi.

Zhang, C.Y. *et al., Fitoterapia*, 1993, **64**, 188-189

Delaminomycin A D-179

[149779-38-4]



$C_{29}H_{43}NO_6$ 501.662
Prod. by *Streptomyces albulus*. Immunomodulator. Active against gram-positive bacteria. Cell adhesion inhibitor, extracellular matrix receptor antagonist. Powder + $1H_2O$. Sol. MeOH, DMSO; poorly sol. hexane, H_2O, EtOAc. Related to Lydicamycin, L-353. λ_{max} 232 (ϵ 29000); 288 (ϵ 7110) (MeOH) (Derep). λ_{max} 232 (E1%/1cm 728); 288 (E1%/1cm 208) (MeOH) (Berdy).

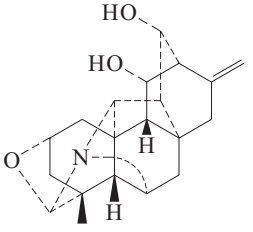
5′-Me ether: ***Delaminomycin B***
[149779-39-5]
$C_{30}H_{45}NO_6$ 515.689
Prod. by *Streptomyces albulus*. Immunomodulator. Active against gram-positive bacteria. Cell adhesion inhibitor, extracellular matrix receptor antagonist. Powder. Sol. MeOH, DMSO; poorly sol. EtOAc, hexane, H_2O. λ_{max} 232 (ϵ 29000); 288 (ϵ 7110) (MeOH) (Derep).

5′-Deoxy: ***Delaminomycin C***
[149779-40-8]
$C_{29}H_{43}NO_5$ 485.662
Prod. by *Streptomyces albulus*. Immunomodulator. Active against gram-positive bacteria. Cell adhesion inhibitor, extracellular matrix receptor antagonist. Powder. Sol. MeOH, DMSO; poorly sol. EtOAc, H_2O, hexane. λ_{max} 232 (ϵ 29000); 288 (ϵ 7110) (MeOH) (Derep).

Ueno, M. *et al., J. Antibiot.*, 1993, **46**, 719; 979; 1020; 1156; 1390 (*isol, pmr, cmr, struct, activity*)

Delatisine D-180

[141591-00-6]

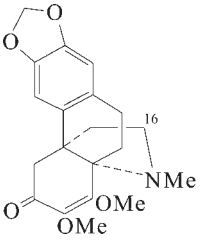


$C_{20}H_{25}NO_3$ 327.422
Alkaloid from the seeds of *Delphinium elatum* (Ranunculaceae). Cryst. (Me_2CO). Mp 274.5-276.5°. $[\alpha]_D^{26}$ +8.6 (c, 0.21 in $CHCl_3$).

Ross, S.A. *et al., Tetrahedron*, 1991, **47**, 9585-9598 (*isol, pmr, cmr, cryst struct*)

Delavaine D-181

Delavayine
[27989-72-6]



Absolute configuration

$C_{20}H_{23}NO_5$ 357.405

See also Delavaine A, D-182. Alkaloid from *Stephania delavayi* (Menispermaceae). Mp 149-150°. $[\alpha]_D$ -240 ($CHCl_3$).

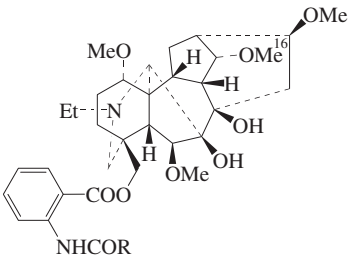
N-*De-Me:* **N-*Nordelavaine***
$C_{19}H_{21}NO_5$ 343.379
Alkaloid from the tuberous roots of *Stephania suberosa* (Menispermaceae). Amorph. $[\alpha]_D^{25}$ -187 (c, 0.61 in $CHCl_3$).

16-Oxo: ***16-Oxodelavaine***
[38146-56-6]
$C_{20}H_{21}NO_6$ 371.389
Alkaloid from *Stephania delavayi*. Mp 221-222°. $[\alpha]_D$ -180 ($CHCl_3$). Rel. config. only detd.

Fadeeva, I.I. *et al., Khim. Prir. Soedin.*, 1971, **7**, 784; *Chem. Nat. Compd. (Engl. Transl.)*, 1971, **7**, 756 (*isol, struct*)
Il'inskaya, T.N. *et al., Khim. Prir. Soedin.*, 1972, **8**, 129; *Chem. Nat. Compd. (Engl. Transl.)*, 1972, **8**, 134 (*isol, uv, ir, pmr, struct, deriv*)
Inubushi, Y. *et al., Alkaloids (Academic Press)*, 1977, **16**, 393 (*ir, pmr, struct*)
Patra, A. *et al., Phytochemistry*, 1987, **26**, 2391 (*N-Nordelavaine*)

Delavaine A† D-182

[109291-57-8]



R = $CH(CH_3)CH_2COOMe$

$C_{38}H_{54}N_2O_{11}$ 714.851

See also Delavaine B, D-183. Not to be confused with Delavaine, D-181. Alkaloid from the roots of *Delphinium delavayi* var. *pogonanthum*. Also isol. from *Delphinium tricorne* as Alkaloid B (a mixt. with Delavaine B, D-183). Amorph. $[\alpha]_D^{29}$ +39.4 (c, 0.8 in $CHCl_3$).

Et ester analogue: ***Gyalanine A***
[133744-29-3]
$C_{39}H_{56}N_2O_{11}$ 728.878
Alkaloid from the roots of *Delphinium gyalanum* (Ranunculaceae).

Butyl ester analogue: ***Potanidine A***
[161068-58-2]
$C_{41}H_{60}N_2O_{11}$ 756.932
Alkaloid from the roots of *Delphinium potaninii*. Amorph. powder. $[\alpha]_D^{10}$ +15.5 (c, 1 in MeOH).

16-Demethoxy: ***16-Demethoxydelavaine A***
$C_{37}H_{52}N_2O_{10}$ 684.825
Alkaloid from *Delphinium cuneatum*. Isol. as a mixt. with 16-Demethoxydelavaine B, in D-183.

Parent acid: ***Shawurensine***
[953392-29-5]
$C_{37}H_{52}N_2O_{11}$ 700.825
Alkaloid from the aerial parts of *Delphinium shawurense*. Amorph. solid.

Pelletier, S.W. *et al., Heterocycles*, 1986, **24**, 1853-1865 (*Delavaine A*)
Wang, F. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 1990, **32**, 733-736; *CA*, **114**, 203508 (*Gyalanine A*)
Pu, H. *et al., Yaoxue Xuebao*, 1994, **29**, 689-692; *CA*, **122**, 122898 (*Potanidine A*)
Khairitdinova, E.D. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2005, **41**, 572-574 (*16-Demethoxydelavaine A*)
Gu, D.Y. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2007, **43**, 298-301 (*Shawurensine*)

Delavaine B D-183

[109314-15-0]
As Delavaine A, D-182 with
R = $CH_2CH(CH_3)COOMe$
$C_{38}H_{54}N_2O_{11}$ 714.851

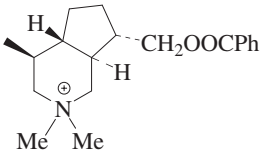
See also Delavaine A, D-182. Not to confused with Delavaine, D-181. Alkaloid from the roots of *Delphinium delavayi* var. *pogonanthum*. Also from *Delphinium tricorne* as a mixt. with Delavaine A, D-182. Amorph. $[\alpha]_D^{29}$ +31.7 (c, 0.8 in $CHCl_3$).

Et ester analogue: ***Gyalanine B***
[133744-30-6]
$C_{39}H_{56}N_2O_{11}$ 728.878
Alkaloid from the roots of *Delphinium gyalanum* (Ranunculaceae).

16-Demethoxy: ***16-Demethoxydelavaine B***
$C_{37}H_{52}N_2O_{10}$ 684.825
Alkaloid from *Delphinium cuneatum*. Isol. as a mixt. with 16-Demethoxydelavaine A, in D-182.

Pelletier, S.W. *et al., Heterocycles*, 1986, **24**, 1853-1865 (*Delavaine B*)
Wang, F. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 1990, **32**, 733-736; *CA*, **114**, 203508 (*Gyalanine B*)
Khairitdinova, E.D. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2005, **41**, 572-574 (*16-Demethoxydelavaine B*)

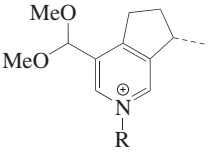
Delavayine A† D-184



$C_{19}H_{28}NO_2^{\oplus}$ 302.436
Alkaloid from *Incarvillea delavayi*. Antinociceptive agent. Yellow powder. $[\alpha]_D^{22}$ -5.1 (c, 0.9 in Py). Counterion not specified.

Nakamura, M. *et al., Phytochemistry*, 2000, **53**, 253-256

Delavayine B† D-185



R = $-CH(COO^{\ominus})CH_2Ph$

$C_{21}H_{25}NO_4$ 355.433
Alkaloid from *Incarvillea delavayi*. Off-white powder. $[\alpha]_D^{24}$ -6.5 (c, 1.8 in Py). Zwitterionic.

Nakamura, M. *et al., Chem. Pharm. Bull.*, 2000, **48**, 1826-1827

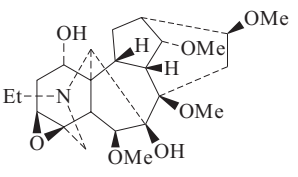
Delavayine C† D-186

As Delavayine B, D-185 with
R = $-(CH_2)_3COO^{\ominus}$
$C_{16}H_{23}NO_4$ 293.362
Alkaloid from *Incarvillea delavayi*. Off-white powder. $[\alpha]_D^{24}$ -72.3 (c, 0.5 in MeOH). Zwitterionic.

Nakamura, M. *et al., Chem. Pharm. Bull.*, 2000, **48**, 1826-1827

Delboxine D-187

[95066-32-3]



$C_{24}H_{37}NO_7$ 451.559
Alkaloid from the roots of *Delphinium bonvalotii*. Mp 200-202°. $[\alpha]_D^{18}$ +43.5 (c, 0.1 in $CHCl_3$).

O^8-De-Me: ***Tuguaconitine***
[93414-10-9]
$C_{23}H_{35}NO_7$ 437.532
Alkaloid from the roots of *Aconitum sibiricum*. Cryst. (EtOAc/Et_2O). Mp 197-199°.

O^{14}-De-Me: ***14-O-Demethyldelboxine***
$C_{23}H_{35}NO_7$ 437.532
Alkaloid from *Consolida orientalis*. Amorph. solid. $[\alpha]_D^{25}$ +43.3 (c, 0.5 in $CHCl_3$).

O^8,O^{14}-Di-de-Me: ***14-O-Demethyltuguaconitine***
$C_{22}H_{33}NO_7$ 423.505
Alkaloid from the roots of *Delphinium stapeliosum*. Cryst. (Me_2CO/Et_2O). Mp 208-210°. $[\alpha]_D^{20}$ +59.5 (c, 0.34 in $CHCl_3$).

O^8,O^{14}-Di-de-Me, 14-ketone: ***Hohenackeridine***
[194224-78-7]
$C_{22}H_{31}NO_7$ 421.489
Alkaloid from aerial parts of *Aconitella hohenackeri* (*Consolida hohenackeri*). Cryst. (hexane/EtOAc). Mp 224-225°. $[\alpha]_D$ +39.5 (c, 0.38 in MeOH).

O^6,O^8,O^{14}-Tri-de-Me, O^1-Me: ***Tiantaishansine***
[959843-30-2]
$C_{22}H_{33}NO_7$ 423.505
Alkaloid from the roots of *Delphinium tiantaishanense*. Amorph. powder. Mp 94-96°. $[\alpha]_D^{20}$ +35.4 (c, 0.84 in $CHCl_3$).

6-Demethoxy, 7-deoxy, O^8-de-Me: ***Monticamine***
[81047-05-4]
$C_{22}H_{33}NO_5$ 391.506
Alkaloid from *Aconitum monticola*. Cryst. (Et_2O/Me_2CO). Mp 163-164°. $[\alpha]_D$ +4.

6-Demethoxy, O^8-de-Me: ***Monticoline***
[81037-22-1]
$C_{22}H_{33}NO_6$ 407.506
Alkaloid from *Aconitum monticola* and from the aerial parts of budding *Aconitum karakolicum*. Cryst. (Me_2CO). Mp 166-167°. $[\alpha]_D$ +15 ($CHCl_3$).

6-Demethoxy, 9β-hydroxy, 7-deoxy, O^8-de-Me: ***Excelsine†***
[41645-62-9]
$C_{22}H_{33}NO_6$ 407.506
Alkaloid from the roots of *Aconitum excelsum*. Mp 103-105°.

6-Demethoxy, 9β-hydroxy, 7-deoxy, O^8-de-Me, 1-Ac: 1-Acetylexcelsine. ***Akiradine***
[142748-49-0]
$C_{24}H_{35}NO_7$ 449.543
Alkaloid from *Aconitum kirinense*. Cryst. (Et_2O). Mp 108-110°.

6-Demethoxy, 9β-hydroxy, 7-deoxy, O^8-de-Me, 8-Ac: ***8-Acetylexcelsine***
[142735-46-4]
$C_{24}H_{35}NO_7$ 449.543
Alkaloid from epigeal parts of *Aconitum kirinense*. Amorph.

6-Demethoxy, 9β-hydroxy, O^8-de-Me: ***Sinomontanine G***
[872977-65-6]
$C_{22}H_{33}NO_7$ 423.505
Alkaloid from the roots of *Aconitum sinomontanum*. $[\alpha]_D^{17}$ -32 (c, 0.5 in $CHCl_3$).

6-Epimer, 7-deoxy, O^8-de-Me: ***Kiritine***
[161068-75-3]
$C_{23}H_{35}NO_6$ 421.533
Alkaloid from *Aconitum kirinense*.

Nasirov, S.M. *et al., Khim. Prir. Soedin.*, 1976, **12**, 206; *Chem. Nat. Compd. (Engl. Transl.)*, 1976, **12**, 184 (*Excelsine, cryst struct*)
Ametova, E.F. *et al., Khim. Prir. Soedin.*, 1981, 446; *Chem. Nat. Compd. (Engl. Transl.)*, 345 (*Monticamine, Monticoline*)
Jiang, Q.P. *et al., Heterocycles*, 1985, **23**, 11 (*Delboxine*)
Chung, B.S. *et al., J. Nat. Prod.*, 1986, **49**, 1074-1077 (*Tuguaconitine*)
Nishanov, A.A. *et al., Khim. Prir. Soedin.*, 1991, 258; *Chem. Nat. Compd. (Engl. Transl.)*, 222 (*8-Acetylexcelsine*)
Feng, F. *et al., CA*, 1995, **122**, 128605f (*Kiritine*)
Almanza, G. *et al., Phytochemistry*, 1997, **45**, 1079 (*Hohenackeridine*)
Teshebaeva, U.T. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1999, **35**, 692 (*Akiradine*)
Shrestha, P.M. *et al., J. Nat. Prod.*, 2000, **63**, 2-5 (*14-Demethyltuguaconitine*)
Alva, A. *et al., Helv. Chim. Acta*, 2004, **87**, 2110-2119 (*14-Demethyldelboxine*)
Peng, C.-S. *et al., Youji Huaxue*, 2005, **25**, 1235-1239; *CA*, **144**, 103949n (*Sinomontanine G*)
Li, J. *et al., Molecules*, 2007, **12**, 353-360 (*Tiantaishansine*)
Kang, C.K. *et al., Arch. Pharmacal Res.*, 2008, **31**, 259-263 (*Tuguaconitine, cryst struct*)

Delflexine D-188

[11045-95-7]

$C_{24}H_{39}NO_6$ 437.575

Struct. unknown. Alkaloid from *Delphinium flexuosum* (Ranunculaceae). Mp 191-192°.

Brutko, L.I. *et al., Khim. Prir. Soedin.*, 1967, **3**, 21-23; *Chem. Nat. Compd. (Engl. Transl.)*, 1967, **3**, 16

Delfrenine D-189

[11045-96-8]

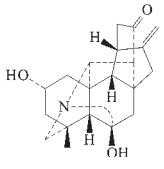
$C_{27}H_{31}NO_6$ 465.545

Struct. unknown. Alkaloid from *Delphinium freynii* (Ranunculaceae). Mp 246-247°. Unsaturated benzoate ester containing no methoxy or methylenedioxy groups. Saponification gives benzoic acid an amino acid characterised as its Me ester ($C_{21}H_{31}NO_6$).

Brutko, L.I. *et al., Khim. Prir. Soedin.*, 1967, **3**, 21-23; *Chem. Nat. Compd. (Engl. Transl.)*, 1967, **3**, 16

Delnudine, 9CI D-190

[26503-54-8]



Absolute configuration

$C_{20}H_{25}NO_3$ 327.422
Alkaloid from the seeds of *Delphinium denudatum* (Ranunculaceae). Mp 235-237°. pK_a 7.8 (MCS).

Birnbaum, K.B. *et al., Tet. Lett.*, 1969, 5245 (*cryst struct*)
Götz, M. *et al., Tet. Lett.*, 1969, 5335 (*isol, uv, ir, pmr*)
Birnbaum, K.B. *et al., Acta Cryst. B*, 1971, **27**, 1169 (*cryst struct*)

Delorine D-191

$C_{22}H_{29}NO_5$ 387.475

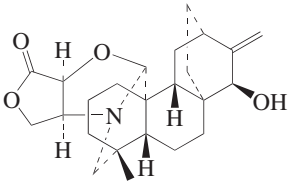
Struct. unknown. Alkaloid from the seeds of *Delphinium orientale* (Ranunculaceae). Mp 227-229°. $[\alpha]_D$ +54.7 (c, 2.34 in $CHCl_3$).

Hydrochloride: Mp 227-229°.

Platonova, T.F. *et al., Med. Promst. SSSR*, 1963, **17**, 19-20; *CA*, **59**, 6723g (*isol, uv*)

Delphatisine B D-192

[1003600-47-2]



$C_{24}H_{33}NO_4$ 399.529
Alkaloid from *Delphinium chrysotrichum*. Amorph. powder. $[\alpha]_D^{27}$ -2 (c, 1 in $CHCl_3$).

He, Y.Q. *et al., Chin. Chem. Lett.*, 2007, **18**, 545-547 (*isol, pmr, cmr*)

Delphoccine D-193

[1356-58-7]

Struct. unknown. Alkaloid contaminating samples of Deltaline (see Dictyocarpinine, in M-307) from *Delphinium occidentale* (Ranunculaceae). No other information recorded.

Carmack, M. *et al., J.A.C.S.*, 1958, **80**, 497

Delphoorine D-194

[11054-87-8]

$C_{20}H_{28}NO_6$ 378.444

Struct. unknown. Alkaloid from the seeds of *Delphinium orientale* (Ranunculaceae). Mp 276-278°.

Boyadzhieva, M. *et al., Farmatsiya (Sofia)*, 1968, **18**, 5-6; *CA*, **71**, 19513g

Delpyrine D-195

[11045-98-0]

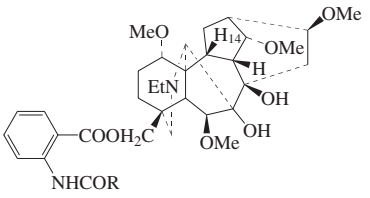
$C_{49}H_{82}N_2O_{17}$ 971.19

Struct. unknown. Alkaloid from *Delphinium pyramidatum* (Ranunculaceae). Amorph. Mp 76°. $[\alpha]_D$ +58. Contains 2 OH groups and saponifies to an uncharacterised acid and an amorph. base ($C_{46}H_{74}N_2O_5$).

Brutko, L.I. *et al., Khim. Prir. Soedin.*, 1967, **3**, 21-23; *Chem. Nat. Compd. (Engl. Transl.)*, 1967, **3**, 16

Delsemine D-196

[6887-42-9]



Delsemine A; R = $CH(CH_3)CH_2CONH_2$ (*S*-)
Delsemine B; R = $CH_2CH(CH_3)CONH_2$ (*S*-)

Artifacts. Formerly isol. as a pair of regioisomers, later characterised separately. Alkaloid from *Delphinium semibarbatum*, *Delphinium oreophilum*, *Delphinium tricorne*, *Delphinium formosum*, *Consolida ambigua* (*Delphinium ajacis*) and *Delphinium delavayi* var. *pogonanthum* (Ranunculaceae). Cryst. (70% EtOH).
▶AR5530000

Delsemine A [66878-11-3]
$C_{37}H_{53}N_3O_{10}$ 699.84
Amorph. solid. $[\alpha]_D^{30}$ +368 (c, 0.7 in $CHCl_3$).

O^{14}*-De-Me, 14-(2-methylpropanoyl):* ***Giraldine G***
[740816-09-5]
$C_{40}H_{57}N_3O_{11}$ 755.904
Alkaloid from the roots of *Delphinium giraldii*. Amorph. powder. Mp 108-110°. $[\alpha]_D^{20}$ +35.4 (c, 0.42 in $CHCl_3$).

O^{14}*-De-Me, 14-(2*S*-methylbutanoyl):* ***Giraldine H***
[740816-10-8]
$C_{41}H_{59}N_3O_{11}$ 769.931
Alkaloid from the roots of *Delphinium giraldii*. Amorph. powder. Mp 122-124°. $[\alpha]_D^{20}$ +34.6 (c, 0.35 in $CHCl_3$).

Delsemine B [66841-98-3]
$C_{37}H_{53}N_3O_{10}$ 699.84
Amorph. solid. $[\alpha]_D^{30}$ +28.2 (c, 0.6 in $CHCl_3$).

O^{14}*-De-Me:* ***Trifoliolasine B***
[740815-34-3]
$C_{36}H_{51}N_3O_{10}$ 685.813
Alkaloid from *Delphinium trifoliolatum*. Amorph. powder. Mp 103-105°. $[\alpha]_D^{20}$ +36.6 (c, 0.48 in $CHCl_3$).

O^{14}*-De-Me, 14-(2-methylpropanoyl):* ***Trifoliolasine C***
[740815-35-4]
$C_{40}H_{57}N_3O_{11}$ 755.904
Alkaloid from *Delphinium trifoliolatum*. Amorph. powder. Mp 117-118°. $[\alpha]_D^{20}$ +24 (c, 0.3 in $CHCl_3$).

Yunusov, S. *et al., Zh. Obshch. Khim.*, 1951, **21**, 967-973; *J. Gen. Chem. USSR (Engl. Transl.)*, 1951, **21**, 1059-1065; *CA*, **46**, 516 (*isol*)
Pelletier, S.W. *et al., Tet. Lett.*, 1977, 2735-2736 (*occur, struct*)
Pelletier, S.W. *et al., J.A.C.S.*, 1981, **103**, 6536-6538 (*config*)
Pelletier, S.W. *et al., Heterocycles*, 1986, **24**, 1853-1865 (*Delsemines A,B, isol, ir, pmr, cmr, ms, synth*)

Zhou, X.-L. *et al., Chem. Pharm. Bull.*, 2004, **52**, 381-383; 456-458 (*Trifoliolasines, Geraldines*)

Demanyl phosphate D-197

Phosphoric acid mono[2-(dimethylamino)ethyl] ester, 9CI. Mono-2-dimethylaminoethanol dihydrogen phosphate. Phosphoryldimethylaminoethanol. Phosphoryldimethylcholamine. Phosphoryldimethylethanolamine. PDMEA. Panclar. Pantos

[6909-62-2]

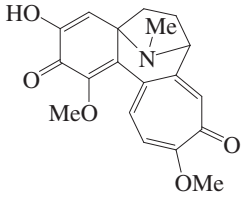
$Me_2NCH_2CH_2OP(O)(OH)_2$

$C_4H_{12}NO_4P$ 169.117

Isol. from a choline-requiring mutant of *Neurospora crassa*. Psychotonic agent. Cryst. + $1H_2O$ (EtOH). Mp 78-81° Mp 175-176° (anhyd.).

Cherbuliez, E. *et al., Helv. Chim. Acta*, 1956, **41**, 1168-1175 (*synth*)
Wolf, B. *et al., J. Biol. Chem.*, 1959, **234**, 1068-1071 (*synth, isol*)
Ansell, G.B. *et al., Biochem. J.*, 1966, **98**, 303-310 (*biochem*)
Taguchi, Y. *et al., J.O.C.*, 1975, **40**, 2310-2313 (*synth*)
Miyazaki, H. *et al., Chem. Pharm. Bull.*, 1976, **24**, 763-769 (*metab*)
Martindale, The Extra Pharmacopoeia, 28th/29th edn., Pharmaceutical Press, 1982, 12624
Andriamampandry, C. *et al., Biochem. J.*, 1989, **264**, 555-561 (*biochem*)

Demecolcinone D-198

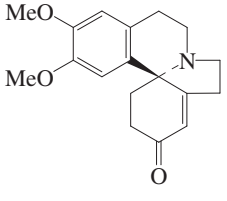


$C_{19}H_{19}NO_5$ 341.363

Alkaloid from *Colchicum brachyphyllum*. Yellowish powder. $[\alpha]_D^{23}$ +242 (c, 0.3 in MeOH). λ_{max} 232 (ϵ 18735) (MeOH).

Alali, F.Q. *et al., J. Nat. Prod.*, 2005, **68**, 173-178 (*isol, pmr, cmr*)

3-Demethoxyerythratidinone D-199



(+)-*form*

$C_{18}H_{21}NO_3$ 299.369

Unique *Erythrina* alkaloid lacking a 3-methoxy group.

(+)-*form* [41431-29-2]

Alkaloid from the leaves of *Erythrina lithosperma* (Fabaceae). Cryst. (C_6H_6/petrol). Mp 111-112°. $[\alpha]_D$ +325 (c, 0.249 in $CHCl_3$).

Picrate: Mp 200-202°.

(-)-*form*

$[\alpha]_D^{20}$ -236 (c, 0.8 in $CHCl_3$) (72% ee).

(±)-*form*

Synthetic. Mp 105-108° (101-102°).

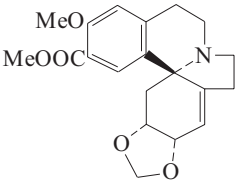
Picrate: Mp 250-252°.

Barton, D.H.R. *et al., J.C.S. Perkin 1*, 1973, 874 (*isol, uv, ir, pmr, ms, struct*)
Tanaka, H. *et al., Chem. Pharm. Bull.*, 1984, **32**, 1578 (*synth, ir, pmr, ms*)
Danishefsky, S.J. *et al., J.A.C.S.*, 1987, **109**, 917 (*synth*)
Irie, H. *et al., Heterocycles*, 1989, **29**, 1033 (*synth*)
Wasserman, H.H. *et al., J.O.C.*, 1989, **54**, 5843 (*synth*)
Ishibashi, H. *et al., Chem. Pharm. Bull.*, 1990, **38**, 907 (*synth, ir, pmr*)
Tsuda, Y. *et al., Chem. Pharm. Bull.*, 1990, **38**, 1462; 1994, **42**, 204 (*synth, ir, pmr*)
Hosoi, S. *et al., Chem. Pharm. Bull.*, 1992, **40**, 3115 (*synth*)
Cassayre, J. *et al., Tet. Lett.*, 1998, **39**, 8995-8998 (*synth*)
Allin, S.M. *et al., Tet. Lett.*, 2004, **45**, 5493-5496 (*synth*)
Wang, Q. *et al., Org. Lett.*, 2006, **8**, 601-604 (*synth*)
Gao, S. *et al., Org. Lett.*, 2006, **8**, 2373-2376 (*synth*)

3-Demethoxy-2,3-methylenedioxyerythroculine D-200

Methyl 1,6-didehydro-16-methoxy-2,3-[methylenebis(oxy)]erythrinan-15-carboxylate, 9CI

[89560-98-5]



$C_{20}H_{23}NO_5$ 357.405

Alkaloid from the leaves of *Hyperbaena columbica*. Cryst. (MeOH). Mp 94-97°. $[\alpha]_D^{25}$ +229 (c, 0.56 in $CHCl_3$). λ_{max} 215 (log ϵ 4.55); 238 (sh) (log ϵ 4.07); 305 (log ϵ 3.54) (EtOH).

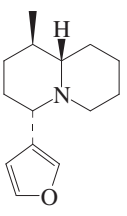
Parent acid, amide: 15-Amido-3-demethoxy-2,3-methylenedioxyerythroculine

$C_{19}H_{22}N_2O_4$ 342.394

Alkaloid from the leaves of *Hyperbaena valida*. Cryst. (CH_2Cl_2/MeOH). Mp 219-220°. $[\alpha]_D$ +228 (c, 0.1 in $CHCl_3$). λ_{max} 224 (log ϵ 4.95); 301 (log ϵ 4.61); 330 (log ϵ 4.1) (EtOH).

Ripperger, H. *et al., Phytochemistry*, 1983, **22**, 2603-2605 (*isol, ord, pmr, ms*)
Freyer, A.J. *et al., J. Nat. Prod.*, 2006, **69**, 1514-1516 (*amide*)

7-Demethyldeoxynupharidine D-201



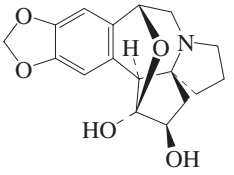
$C_{14}H_{21}NO$ 219.326

Alkaloid from the scent glands of *Castor fiber*. Oil. $[\alpha]_D^{20}$ -85 (c, 0.5 in $CHCl_3$).

Maurer, B. *et al., Helv. Chim. Acta*, 1976, **59**, 1169

Demethylneodrupacine D-202

[80791-43-1]



$C_{17}H_{19}NO_5$ 317.341

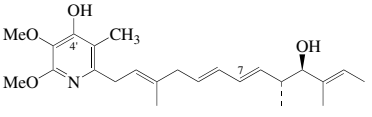
Alkaloid from *Cephalotaxus hainanensis* (Cephalotaxaceae). Mp 197-200°.

Xue, Z. *et al., Yaoxue Xuebao*, 1981, **16**, 752; *CA*, **96**, 82690u
Huang, L. *et al., Alkaloids (Academic Press)*, 1984, **23**, 157 (*rev*)

7-Demethylpiericidin A_1 D-203

SN 198D. Antibiotic SN 198D

[155148-30-4]



$C_{24}H_{35}NO_4$ 401.545

Prod. by *Streptomyces* sp. SN-198. Yellowish oil. Related to Piericidin, P-421.

*4′-O-α-L-Rhamnopyranoside: **7-Demethyl-4′-rhamnopiericidin A_1**. SN 198B. Antibiotic SN 198B*

[155148-29-1]

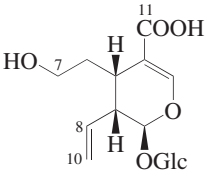
$C_{30}H_{45}NO_8$ 547.687

Prod. by *Streptomyces* sp. SN-198. Amorph. powder.

Kimura, K. *et al., J. Antibiot.*, 1996, **49**, 697 (*isol, pmr*)

Demethylsecologanol D-204

[872360-10-6]



$C_{16}H_{24}O_{10}$ 376.36

Constit. of *Ophiorrhiza liukiuensis*. Amorph. solid. $[\alpha]_D^{23}$ -108.3 (c, 0.06 in MeOH). λ_{max} 233 (MeOH).

Me ester: ***Secologanol***

[72463-81-1]

$C_{17}H_{26}O_{10}$ 390.386

Constit. of *Gentiana verna*.

7-O-(3-Pyridinecarbonyl), Me ester: ***Tripterospermumcin A***

[929642-20-6]

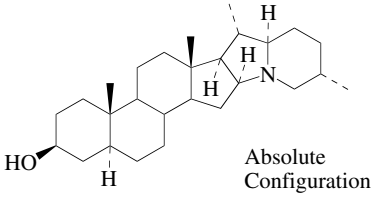
$C_{23}H_{29}NO_{11}$ 495.482
Constit. of *Tripterospermum chinense*. Amorph. powder. $[\alpha]_D^{20}$ -147.6 (c, 0.25 in MeOH). λ_{max} 227 (log ϵ 4.03) (MeOH).

7-Aldehyde, Me ester: ***Secologanin***. *Loniceroside*†
[19351-63-4]
$C_{17}H_{24}O_{10}$ 388.371
Constit. of *Strychnos nux-vomica*, *Lathraea clandestina* and *Lonicera morrowii*. Precursor of indole alkaloids. Oil. Sol. MeOH; poorly sol. hexane. $[\alpha]_D$ -96 (MeOH). λ_{max} 235 (ϵ 9100) (MeOH) (Berdy).

Battersby, A.R. *et al., J.C.S.(C)*, 1969, 1187 (*Secologanin, synth*)
Souzu, I. *et al., Tet. Lett.*, 1970, 191 (*Secologanin, isol*)
Guarnaccia, R. *et al., J.A.C.S.*, 1974, **96**, 7079 (*Secologanin, biosynth*)
Bisset, N.G. *et al., Phytochemistry*, 1974, **13**, 265 (*Secologanin, isol*)
Takeda, Y. *et al., Chem. Pharm. Bull.*, 1976, **24**, 79 (*biosynth*)
Nakane, M. *et al., J.O.C.*, 1980, **45**, 4233 (*Secologanin, synth*)
Brown, R.T. *et al., Chem. Comm.*, 1986, 1818 (*Secologanin, synth*)
Inoue, K. *et al., Phytochemistry*, 1989, **28**, 2971 (*biosynth*)
Yamamoto, H. *et al., Phytochemistry*, 2000, **53**, 7-12 (*biosynth*)
Zhu, K.-C. *et al., Helv. Chim. Acta*, 2007, **90**, 291-296 (*Tripterospermumcin A*)

Demissidine D-205

Solanidan-3-ol, 9CI. Solanine D. Dihydrosolanidine T
[474-08-8]



Absolute Configuration

$C_{27}H_{45}NO$ 399.659
Product of hydrol. of Demissine, obt. by hydrol. of many *Solanum* extracts (Solanaceae). Shows antifungal activity. Mp 219-220°. $[\alpha]_D^{18}$ +28 (MeOH).

► WF0193000

O-*[β-D-Glucopyranosyl-(1→2)-[β-D-xylopyranosyl-(1→3)]-β-D-glucopyranosyl-(1→4)-β-D-galactopyranoside]:* ***Demissine***
[6077-69-6]
$C_{50}H_{83}NO_{20}$ 1018.2
Alkaloid from *Solanum demissum*, *Solanum depexum*, *Solanum horovitzii*, *Solanum jamesii*, *Solanum polyadenium*, *Solanum punae*, *Solanum schreiteri*, *Solanum acaule*, *Solanum chacoense*, *Solanum commersonii*, *Solanum cartilobum*, *Solanum juzepczukii* and *Lycopersicon pimpinellifolium*. Cholinesterase inhibitor. Repellent to the Colorado beetle *Leptinotarsa decemlineata*. Mp 305-308° dec. $[\alpha]_D$ -20 (Py).

3-O-[β-D-Glucopyranosyl-(1→2)-[β-D-glucopyranosyl-(1→3)]-β-D-glucopyranosyl-(1→4)-β-D-galactopyranoside]: ***Commersonine***
[60776-42-3]
$C_{51}H_{85}NO_{21}$ 1048.227
Alkaloid from leaves of *Solanum chacoense* and *Solanum commersonii* (Solanaceae). Cryst. solid. Mp 230-232°. $[\alpha]_D^{25}$ -17 (Py).

Glycoside: ***β1-Demissine***
Isol. from a mutant of *Lycopersicon pimpinellifolium* (Solanaceae).

O-*Ac:* Mp 194°.

5,6-Didehydro, 3-O-[β-D-glucopyranosyl-(1→2)-[β-D-glucopyranosyl-(1→3)]-β-D-glucopyranosyl-(1→4)-β-D-galactopyranoside]: ***Dehydrocommersonine***
[65428-74-2]
$C_{51}H_{83}NO_{21}$ 1046.211
Alkaloid from root cultures of *Solanum chacoense* (Solanaceae).

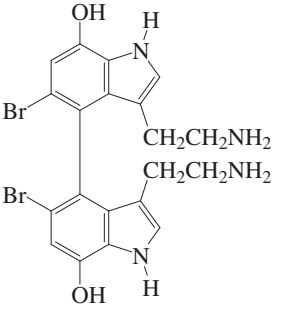
3-Epimer:
$C_{27}H_{45}NO$ 399.659
Alkaloid from *Solanum tuberosum* (potato). Needles (Me_2CO). Mp 215-217° (210-211°). $[\alpha]_D$ +31 ($CHCl_3$).

5-Epimer: ***3β-Allosolanidan-3-ol***. *5-Epidemissidine*
[78513-80-1]
$C_{27}H_{45}NO$ 399.659
Alkaloid from *Solanum tuberosum* (potato) (Solanaceae). Mp 219-220°. $[\alpha]_D$ +26 ($CHCl_3$).

Prelog, V. *et al., Helv. Chim. Acta*, 1944, **27**, 390 (*struct*)
Kuhn, R. *et al., Chem. Ber.*, 1947, **80**, 406; 1957, **90**, 203 (*Demissine*)
Aslanov, K.A. *et al., CA*, 1963, **59**, 6725f (*3-epimer, isol*)
Schreiber, K. *et al., Annalen*, 1964, **672**, 232-235 (*3-epimer, synth*)
Adam, C. *et al., Tetrahedron*, 1964, **20**, 1719 (*synth*)
Wolters, B. *et al., Planta Med.*, 1966, **14**, 1392-1401 (*activity*)
Höhne, E. *et al., Tetrahedron*, 1966, **22**, 673 (*cryst struct*)
Osman, S.F. *et al., Phytochemistry*, 1976, **15**, 1065 (*Commersonine*)
Radeglia, R. *et al., Tet. Lett.*, 1977, 903 (*cmr*)
Shakirov, R. *et al., Khim. Prir. Soedin.*, 1996, **32**, 244; *Chem. Nat. Compd. (Engl. Transl.)*, 1996, **32**, 234 (*Allosolanidanol*)

Dendridine A D-206

3,3′-Bis(2-aminoethyl)-5,5′-dibromo-4,4′-bi-1H-indole-7,7′-diol

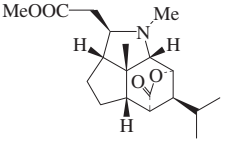


$C_{20}H_{20}Br_2N_4O_2$ 508.212
Isol. from the marine sponge *Dictyodendrilla* sp. Antibacterial and antifungal agent. Yellowish solid. λ_{max} 282 (ϵ 5700); 292 (ϵ 5800); 303 (ϵ 4000) (no solvent reported).

Tsuda, M. *et al., J. Nat. Prod.*, 2005, **68**, 1277-1278 (*isol*)

Dendrine D-207

Methyl 12-oxodendrobane-2-acetate, 9CI
[2651-57-2]



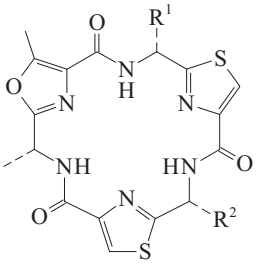
Absolute Configuration

$C_{19}H_{29}NO_4$ 335.442
Minor alkaloid from *Dendrobium nobile* (Orchidaceae). Mp 191-192°. $[\alpha]_D^{11}$ -114 (c, 0.85 in $CHCl_3$). $[\alpha]_D^{24}$ -81 (c, 0.14 in $CHCl_3$).

Inubushi, Y. *et al., Tet. Lett.*, 1965, 2723 (*ir, pmr, ms, struct*)
Granelli, I. *et al., Acta Chem. Scand.*, 1970, **24**, 1108 (*synth, abs config*)

Dendroamide A D-208

[176666-84-5]



R^1 = $CH(CH_3)_2$, R^2 = CH_3

$C_{21}H_{24}N_6O_4S_2$ 488.59
Isol. from the terrestrial blue-green alga *Stigonema dendroideum*. Exhibits multi-drug-resistance reversing activity. $[\alpha]_D$ +40.5 (c, 3.50 in CH_2Cl_2). Related to Bistratamide A, B-223. λ_{max} 224 (ϵ 28000) (MeOH). λ_{max} 244 (ϵ 28000) (MeOH) (Berdy).

Ogino, J. *et al., J. Nat. Prod.*, 1996, **59**, 581 (*isol, uv, ir, pmr, cmr, ms*)
Xia, Z. *et al., J.O.C.*, 2001, **66**, 3459-3466 (*synth*)
Bertram, A. *et al., Heterocycles*, 2002, **58**, 521-561 (*synth*)
You, S.-L. *et al., J.O.C.*, 2003, **68**, 9506-9509 (*synth*)
Yonezawa, Y. *et al., Heterocycles*, 2005, **65**, 95-105 (*synth*)
Matsumoto, T. *et al., Tetrahedron*, 2007, **63**, 8571-8575 (*synth*)

Dendroamide B D-209

[176666-85-6]
As Dendroamide A, D-208 with

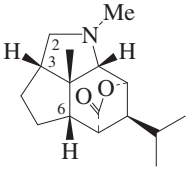
$R^1 = CH_3$, $R^2 = -CH_2^9CH_2SMe$
$C_{21}H_{24}N_6O_4S_3$ 520.656
Isol. from the terrestrial blue-green alga *Stigonema dendroideum*. $[\alpha]_D$ +44.5 (c, 1.53 in CH_2Cl_2). λ_{max} 224 (ϵ 31400) (MeOH).

S^9-*Oxide:* ***Dendroamide C***
[176666-86-7]
$C_{21}H_{24}N_6O_5S_3$ 536.656
From *Stigonema dendroideum*. $[\alpha]_D$ +26 (c, 3.75 in CH_2Cl_2). Mixt. of sulfoxide diastereoisomers. λ_{max} 224 (ϵ 30900) (MeOH) (Berdy).

Ogino, J. *et al., J. Nat. Prod.*, 1996, **59**, 581 (*isol, uv, ir, pmr, cmr, ms, struct*)

Dendrobine D-210

Dendroban-12-one, 9CI
[2115-91-5]
[30646-45-8 (±)-form]



Absolute Configuration

$C_{16}H_{25}NO_2$ 263.379
Numbering systems vary. Main alkaloid from *Dendrobium* spp., esp. *Dendrobium nobile* (Orchidaceae). Shows antipyretic, hypotensive and convulsant activity. Cryst. (Et_2O). Mp 134-136°. $[\alpha]_D^{14}$ -48.4 (c, 1.89 in MeOH).

N-*Oxide:* ***Dendrobine* N-*oxide***
[40072-57-9]
$C_{16}H_{25}NO_3$ 279.378
Alkaloid from *Dendrobium nobile* (Orchidaceae). Needles + $1H_2O$ (Me_2CO/Et_2O). Mp 160-180° dec. $[\alpha]_D^{23}$ -34 (c, 0.27 in MeOH).

N-*De-Me:* N-*Demethyldendrobine*. ***Mubironine B***
$C_{15}H_{23}NO_2$ 249.352
Alkaloid from *Dendrobium* Snowflake 'Red Star'. Solid. $[\alpha]_D^{23}$ -15 (c, 1.6 in MeOH).

N-*Me:* **N-*Methyldendrobine***
$C_{17}H_{28}NO_2^{\oplus}$ 278.414
Quaternary alkaloid from *Dendrobium nobile* (Orchidaceae). Prisms (Me_2CO); needles (Me_2CO/Et_2O)(as iodide). Mp 253° (235-238°,245-246°)(iodide).

N-*(3-Methyl-2-butenyl):* **N-*Isopentenyldendrobine***
[40072-62-6] (bromide)
$C_{21}H_{34}NO_2^{\oplus}$ 332.505
Quaternary alkaloid from *Dendrobium nobile* (Orchidaceae). Noncryst. (as bromide). $[\alpha]_D^{23}$ -33 (c, 1.4 in MeOH). CAS no. refers to bromide.

2ξ-Hydroxy: ***2-Hydroxydendrobine***
[29414-86-6]
$C_{16}H_{25}NO_3$ 279.378
Alkaloid from *Dendrobium findlayanum* (Orchidaceae). Cryst. (hexane). Mp 103-105°. $[\alpha]_D^{26}$ -45 (c, 0.73 in $CHCl_3$).

6-Hydroxy: ***Dendramine***
[7668-75-9]
$C_{16}H_{25}NO_3$ 279.378
Minor alkaloid from *Dendrobium nobile*. Also isol. from *Dendrobium hildebrandii* (Orchidaceae). Mp 186-188°. $[\alpha]_D$ -27 ($CHCl_3$).

2-Oxo (lactam): ***Mubironine A***. *2-Oxodendrobine*
$C_{16}H_{23}NO_3$ 277.363
Alkaloid from *Dendrobium* Snowflake 'Red Star'. Solid. $[\alpha]_D^{23}$ -9 (c, 0.4 in MeOH).

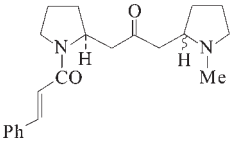
2-Oxo (lactam), 3-hydroxy: ***3-Hydroxy-2-oxodendrobine***
[99616-00-9]
$C_{16}H_{23}NO_4$ 293.362
Alkaloid from the fresh stems of *Dendrobium nobile* (Orchidaceae). Fine needles (Et_2O). Mp 210-211°. $[\alpha]_D^{20}$ -52.7 (c, 0.3 in EtOH).

[62624-23-1 8-Epimer]

Inubushi, Y. *et al., Chem. Ind. (London)*, 1964, 1689 (*abs config*)
Inubushi, Y. *et al., Chem. Pharm. Bull.*, 1964, **12**, 1175; 1966, **14**, 668 (*N-Methyldendrobine, 6-Hydroxydendrobine*)
Inubushi, Y. *et al., Tetrahedron*, 1964, **20**, 2007 (*ir, pmr, struct*)
Okamoto, T. *et al., Chem. Pharm. Bull.*, 1966, **14**, 676 (*Dendrobine, 6-Hydroxydendrobine, ms, pmr*)
Granelli, I. *et al., Acta Chem. Scand.*, 1970, **24**, 1209 (*isol, ir, pmr, ms, struct, 2-Hydroxydendrobine*)
Elander, M. *et al., Acta Chem. Scand.*, 1971, **25**, 717 (*cd*)
Hedman, K. *et al., Acta Chem. Scand.*, 1972, **26**, 3177 (*derivs, isol, ir, pmr, config, synth*)
Yamada, K. *et al., J.A.C.S.*, 1972, **94**, 8278 (*synth*)
Inubushi, Y. *et al., Chem. Pharm. Bull.*, 1974, **22**, 349 (*synth, ir, pmr*)
Kende, A.S. *et al., J.A.C.S.*, 1974, **96**, 4332 (*synth*)
Corbella, A. *et al., Chem. Comm.*, 1975, 288 (*biosynth*)
Suzuki, M. *et al., Chem. Lett.*, 1975, 611 (*synth, Dendrobine, 2-Hydroxydendrobine*)
Roush, W.R. *et al., J.A.C.S.*, 1978, **100**, 3599; 1980, **102**, 1390 (*synth, ir, pmr, ms*)
Wang, H. *et al., J. Nat. Prod.*, 1985, **48**, 796 (*3-Hydroxy-2-oxodendrobine*)
Martin, S.F. *et al., J.O.C.*, 1989, **54**, 265; 1991, **56**, 642 (*synth*)
Lee, C.H. *et al., J.A.C.S.*, 1992, **114**, 4089 (*synth*)
Mori, M. *et al., J.O.C.*, 1992, **57**, 3519 (*synth*)
Mori, M. *et al., Chem. Lett.*, 1993, 213 (*synth*)
Uesaka, N. *et al., J.O.C.*, 1994, **59**, 5633 (*synth*)
Sha, C.K. *et al., J.A.C.S.*, 1997, **119**, 4130 (*synth*)
Cassayre, J. *et al., J.A.C.S.*, 1999, **121**, 6072-6073 (*synth*)
Padwa, A. *et al., Org. Lett.*, 2000, **2**, 3233 (*activity, synth*)
Morita, H. *et al., Tetrahedron*, 2000, **56**, 5801-5805 (*Mubironines*)
Cassayre, J. *et al., J. Organomet. Chem.*, 2001, **624**, 316-326 (*synth, ir, pmr, cmr*)

Dendrochrysine D-211

2-[3-(1-Methyl-2-pyrrolidinyl)-2-oxopropyl]-1-(1-oxo-3-phenyl-2-propenyl)pyrrolidine, 9CI. N-*Cinnamoylnorcuskhygrine*
[51019-45-5]



(*E*)*-form* Absolute configuration

$C_{21}H_{28}N_2O_2$ 340.464

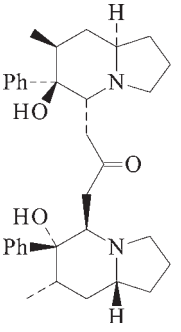
(*E*)-*form* [50347-38-1]
Alkaloid from *Dendrobium chrysanthum* (Orchidaceae). Viscous oil. $[\alpha]_D^{22}$ -11 (c, 0.81 in $CHCl_3$).

(*Z*)-*form* [50347-52-9]
Alkaloid from *Dendrobium chrysanthum*. Viscous oil. $[\alpha]_D^{22}$ -19 (c, 1.92 in $CHCl_3$).

Ekevåg, U. *et al., Acta Chem. Scand.*, 1973, **27**, 1982 (*isol, ir, uv, pmr, ms, cd, abs config, synth*)

Dendrocrepine D-212

1,3-Bis(octahydro-6-hydroxy-7-methyl-6-phenyl-5-indolizinyl)-2-propanone, 9CI
[51020-39-4]



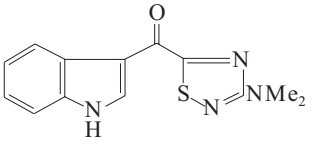
Relative configuration

$C_{33}H_{44}N_2O_3$ 516.722
Alkaloid from *Dendrobium crepidatum* (Orchidaceae). Needles (Et_2O). Mp 158-163° dec. Opt. inactive (racemic).

Elander, M. *et al., Acta Chem. Scand.*, 1973, **27**, 1907 (*isol, uv, ord, ir, pmr, ms, struct*)
Pilotti, A.M. *et al., Acta Cryst. B*, 1973, **29**, 1563 (*cryst struct*)
Leete, E. *et al., Tet. Lett.*, 1978, 5163 (*cmr*)

Dendrodoine D-213

[75351-10-9]



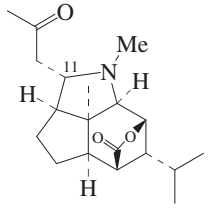
$C_{13}H_{12}N_4OS$ 272.33
Isol. from the marine tunicate *Dendrodoa grossularia*. Cytotoxic. Cryst. (EtOAc). Sol. Et_2O; poorly sol. H_2O. Mp 280-285° Mp 192-197° (as Ac). λ_{max} 250 (ϵ 15000);

270 (ϵ 12000); 300 (ϵ 8000) (MeOH) (Derep).

Heitz, S. *et al., Tet. Lett.*, 1980, **21**, 1457-1458 (*ir, pmr, ms, cryst struct*)
Hogan, I.T. *et al., Tetrahedron*, 1984, **40**, 681 (*synth, ir, pmr, cmr, ms*)

Dendronobilin A D-214

[572881-21-1]



Relative Configuration

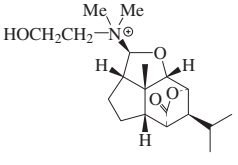
$C_{19}H_{29}NO_3$ 319.443

Related to Dendrobine, D-210. Alkaloid from the stems of *Dendrobium nobile*. Cryst. Mp 85-87°. $[\alpha]_D^{20}$ -69 (c, 0.1 in MeOH). Struct. not shown in ref. but confirmed by personal communication.

Liu, Q.F. *et al., Chin. Chem. Lett.*, 2003, **14**, 278-279 (*isol, pmr, cmr*)
Zhao, W.M. *et al., Personal Communication*,

Dendrowardine D-215

[50834-48-5]



Absolute Configuration

$C_{19}H_{32}NO_4^{\oplus}$ 338.466

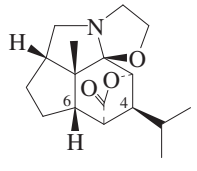
Quaternary alkaloid from *Dendrobium wardianum* (Orchidaceae). Cryst. (Me_2CO)(as chloride). Mp 168-172° (chloride). $[\alpha]_D^{25}$ -28 (c, 1.1 in MeOH) (chloride).

Blomqvist, L. *et al., Acta Chem. Scand.*, 1973, **27**, 1439 (*isol, ir, pmr, cd, struct*)

Dendroxine D-216

14,10-(Methyleneoxy)dendroban-12-one, 9CI

[7668-77-1]



Absolute Configuration

$C_{17}H_{25}NO_3$ 291.389

Minor alkaloid from *Dendrobium nobile* (Orchidaceae). Mp 114-115°. $[\alpha]_D$ -30.1 (EtOH). pK_a 4.5 (50% EtOH).

N-*(3-Methyl-2-butenyl):* **N-*Isopentenyldendroxine***
[34146-40-2]
$C_{22}H_{34}NO_3^{\oplus}$ 360.515
Quaternary alkaloid from *Dendrobium nobile, Dendrobium friedricksianum* and *Dendrobium hildebrandii* (Orchidaceae). Hygroscopic needles + 1EtOH (Me_2CO/Et_2O/EtOH)(as chloride). Mp 108-120° dec. (as chloride). $[\alpha]_D^{22}$ -48 (c, 0.54 in MeOH) (chloride). CAS no. refers to chloride.

4-Hydroxy: ***4-Hydroxydendroxine***
[38762-85-5]
$C_{17}H_{25}NO_4$ 307.389
Minor alkaloid from *Dendrobium nobile* (Orchidaceae). Plates + ½ H_2O. Mp 208-210°.

6-Hydroxy: ***6-Hydroxydendroxine***
$C_{17}H_{25}NO_4$ 307.389
Minor alkaloid from *Dendrobium nobile* (Orchidaceae). Amorph. $[\alpha]_D^{22}$ +26 (c, 0.71 in MeOH).

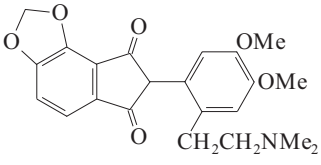
6-Hydroxy, N-*(3-methyl-2-butenyl):* ***6-Hydroxy*-N-*isopentenyldendroxine***
[34222-69-0]
$C_{22}H_{34}NO_4^{\oplus}$ 376.515
Quaternary alkaloid from *Dendrobium nobile, Dendrobium friedricksianum* and *Dendrobium hildebrandii* (Orchidaceae). Needles + 1EtOH (EtOH) (as chloride). Mp 144-156° dec. (chloride). $[\alpha]_D^{22}$ -30 (c, 0.51 in MeOH) (chloride). CAS no. refers to chloride.

Okamoto, T. *et al., Chem. Pharm. Bull.*, 1966, **14**, 672; 676 (*ir, pmr, ms, struct*)
Hedman, K. *et al., Acta Chem. Scand.*, 1971, **25**, 1142 (*derivs, isol, ir, pmr, struct*)
Okamoto, T. *et al., Chem. Pharm. Bull.*, 1972, **20**, 418 (*4-Hydroxydendroxine, ir, pmr, ms, struct*)

Densiflorine† D-217

*7-[2-[2-(Dimethylamino)ethyl]-4,5-dimethoxyphenyl]-6*H*-indeno[4,5-*d*]-1,3-dioxole-6,8(7*H*)-dione, 9CI*

[94607-90-6]



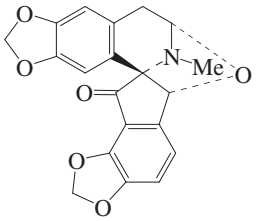
$C_{22}H_{23}NO_6$ 397.427

Alkaloid from *Fumaria densiflora* (Papaveraceae).

Sener, B. *et al., Int. J. Crude Drug Res.*, 1984, **22**, 79 (*isol, pmr, struct*)

Densiflorine† D-218

[88607-49-2]



$C_{20}H_{15}NO_6$ 365.342

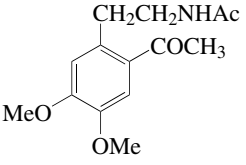
Alkaloid from the aerial parts of *Fumaria densiflora* (Papaveraceae). Cryst. (EtOH). Mp 249-251°.

Popova, M.E. *et al., Planta Med.*, 1983, **48**, 272 (*isol, uv, ir, pmr, cmr, ms, struct*)

Densinine D-219

N-*[2-(2-Acetyl-4,5-dimethoxyphenyl)ethyl]acetamide, 9CI*. N,*2-Diacetyl-4,5-dimethoxyphenethylamine*

[57621-03-1]



$C_{14}H_{19}NO_4$ 265.308

Alkaloid from the leaves of *Berberis densiflora*. Cryst. (EtOH or C_6H_6). Mp 128-129° (124-125°). λ_{max} 231 (ϵ 24100); 274 (ϵ 8750); 304 (ϵ 5500) (EtOH).

Org. Synth., 1977, **56**, 3-7 (*synth, uv, pmr*)
Orito, K. *et al., Heterocycles*, 1988, **27**, 2403-2412 (*synth, ir, pmr*)
Khamidov, I.I. *et al., Khim. Prir. Soedin.*, 1997, **33**, 420-423; *Chem. Nat. Compd. (Engl. Transl.)*, 1997, **33**, 323-325 (*isol, uv, ir, ms*)

Denudatidine D-220

[1356-67-8]

$C_{23}H_{35}NO_5$ 405.533

Struct. unknown. Alkaloid from the crude Indian drug Judwan (roots of *Delphinium denudatum*) (Ranunculaceae). Lustrous light brown prismatic cryst. (EtOH). Mp 273°. $[\alpha]_D^{21}$ +31.56 (EtOH).

Picrate:
Yellow micro-needles (MeOH). Mp 100°.

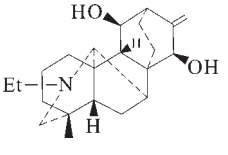
Reineckate:
Microprisms (Me_2CO). Mp 190°.

Singh, N. *et al., J. Pharm. Pharmacol.*, 1962, **14**, 288-293 (*isol*)

Denudatine D-221

16,17-Didehydro-21-ethyl-4-methyl-7,20-cycloatidane-11,15-diol, 9CI

[26166-37-0]



Absolute configuration

$C_{22}H_{33}NO_2$ 343.508

Alkaloid from the roots of *Delphinium denudatum*. Also isol. from *Aconitum jinyangense* (Ranunculaceae). Mp 248-249°. $[\alpha]_D^{21}$ +0.15 (EtOH).

▶ GT9330000

Hydroiodide:
Cryst. (60% EtOH). Mp 267-268°.

Picrate:
Yellow cryst. (MeOH). Mp 215°.

O^{15}-*Ac:* ***Jynosine***. *15-Acetyldenudatine*
[80665-71-0]

$C_{24}H_{35}NO_3$ 385.545
Alkaloid from *Aconitum jinyangense* (Ranunculaceae).

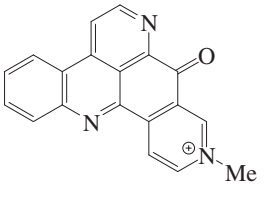
Di-Ac:
Microcryst. powder (abs. EtOH). Mp 128-130°.

11-Deoxy: ***Gymnandine***
[150036-84-3]
$C_{22}H_{33}NO$ 327.509
Alkaloid from aerial parts of *Aconitum gymnandrum* (Ranunculaceae).

Singh, N. *et al., J. Pharm. Pharmacol.*, 1962, **14**, 288 (*isol, uv, ir, struct*)
Götz, M. *et al., Tet. Lett.*, 1969, 4369 (*struct*)
Brisse, F. *et al., Tet. Lett.*, 1969, 4373 (*cryst struct*)
Wright, L.H. *et al., Chem. Comm.*, 1970, 359 (*cryst struct*)
Brisse, F. *et al., Acta Cryst. B*, 1971, **27**, 1047 (*cryst struct*)
Chen, D. *et al., Yaoxue Xuebao*, 1981, **16**, 748; *CA*, **96**, 65677c (*isol, struct, Jynosine*)
Ding, L.S. *et al., Yaoxue Xuebao*, 1993, **28**, 188; *CA*, **119**, 156207j (*Gymnandine*)
Batsuren, D. *et al., Heterocycles*, 1998, **49**, 327-341 (*isol, pmr, cmr*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, DAP875

Deoxyamphimedine D-222

*10-Methyl-8-oxo-8*H*-benzo[*b*]pyrido[4,3,2-*de*][1,8]phenanthrolinium. Deoxoamphimedine*
[340774-96-1]

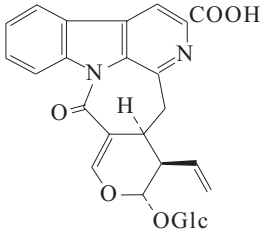


$C_{19}H_{12}N_3O^{\oplus}$ 298.323
Quaternary alkaloid from two *Xestospongia* spp. Cytotoxic. Yellow-brown amorph. solid. Counterion not specified. λ_{max} 206 (log ϵ 3.92); 244 (log ϵ 3.93); 294 (sh) (log ϵ 3.52); 388 (log ϵ 3.51); 478 (log ϵ 2.59) (MeOH).

Tasdemir, D. *et al., J.O.C.*, 2001, **66**, 3246-3248

Deoxycordifoline lactam D-223

[50764-63-1]

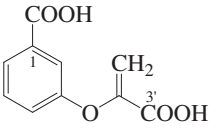


$C_{27}H_{26}N_2O_{10}$ 538.51
Alkaloid from the heartwood of *Adina rubescens* (Rubiaceae). Mp 165-168° (as tetra-Ac). $[\alpha]_D$ -135 (MeOH) (tetra-Ac).

Brown, R.T. *et al., Tet. Lett.*, 1973, 841 (*uv, ms, struct*)

Deoxydehydrochorismic acid D-224

3-(1-Carboxyvinyloxy)benzoic acid
[16929-37-6]



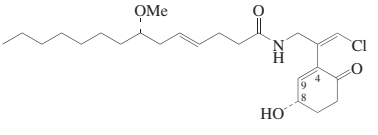
$C_{10}H_8O_5$ 208.17
Isol. from *Mycena crocata*. Cryst. (MeOH/Et_2O). Mp 180-181°. λ_{max} 288 (log ϵ 3) (MeOH).

1-Amide, 3′-Me ester: Methyl deoxydehydrochorismamide. ***Antibiotic NP 25301****. NP 25301*
$C_{11}H_{11}NO_4$ 221.212
Prod. by *Streptomyces* sp. UMA-044. Cell adhesion inhibitor. Amorph. solid ($CHCl_3$). Mp 95-97°. λ_{max} 238 ; 261 (sh) ; 284 (MeOH).

Ife, R.J. *et al., J.C.S. Perkin 1*, 1976, 1776-1783 (*synth*)
Buchanan, M.S. *et al., Z. Naturforsch., C*, 1999, **54**, 463-468 (*isol*)
Zhang, Q. *et al., J. Antibiot.*, 2003, **56**, 673-681 (*N 25301*)

Deoxymalyngamide C D-225

[96845-20-4]



$C_{24}H_{38}ClNO_4$ 440.021
Minor constit. of a shallow-water variety of the marine blue-green alga *Lyngbya majuscula*. Oil. $[\alpha]_D$ -23 (c, 6.6 in EtOH). λ_{max} 235 (ϵ 6300) (EtOH) (Derep).

4α,9α-Epoxide: ***Malyngamide C***
[70622-52-5]
$C_{24}H_{38}ClNO_5$ 456.021
Metab. of a shallow-water variety of the marine blue-green alga *Lyngbya majuscula*. Oil. $[\alpha]_D^{23.5}$ -19.6 (c, 1.4 in $CHCl_3$). $[\alpha]_D$ -27.4 (c, 5.8 in EtOH).

4α,9α-Epoxide, Ac: ***Malyngamide C acetate***
[96845-19-1]
$C_{26}H_{40}ClNO_6$ 498.058
Minor constit. of *Lyngbya majuscula*. Oil. $[\alpha]_D$ -32.4 (c, 1.4 in EtOH).

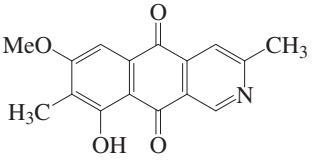
Deoxy: ***Malyngamide K****. Dideoxymalyngamide C*
[96845-21-5]
$C_{24}H_{38}ClNO_3$ 424.022
Isol. from *Lyngbya majuscula*. $[\alpha]_D$ -8.4 (c, 0.3 in $CHCl_3$). λ_{max} 223 (ϵ 8900) (MeOH).

Deoxy, 4α,9α-epoxide: ***8′-Deoxymalyngamide C***
[132362-43-7]
$C_{24}H_{38}ClNO_4$ 440.021
Isol. from a shallow-water variety of a blue-green alga, *Lyngbya* sp. Yellow oil. $[\alpha]_D^{20}$ +5.8 (c, 0.8 in $CHCl_3$). Erroneously named 8′-Deacetoxymalyngamide C in the paper based on an incorr. struct. shown for Malyngamide C.

Cardellina, J.H. *et al., Phytochemistry*, 1978, **17**, 2091-2095 (*isol, pmr, ms*)
Ainslie, R.D. *et al., J.O.C.*, 1985, **50**, 2859-2862 (*Malyngamide C, Malyngamide C acetate, Deoxymalyngamide C*)
Wright, A.D. *et al., J. Nat. Prod.*, 1990, **53**, 845-861 (*Deoxymalyngamide C*)
Wu, M. *et al., Tetrahedron*, 1997, **53**, 15983-15990 (*Malyngamide K*)

6-Deoxy-8-methylbostrycoidin D-226

9-Hydroxy-7-methoxy-3,8-dimethylbenz[g]isoquinoline-5,10-dione

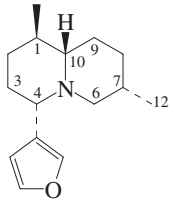


$C_{16}H_{13}NO_4$ 283.283
5-Deoxy-7-methyl acc. to alternative numbering. Isol. from cultures of spore-derived mycobionts of the lichen *Haematomma* sp. Yellow powder. Mp 149-153°. λ_{max} 246 (log ϵ 1.7); 286 (log ϵ 1.55); 325 (log ϵ 0.38); 420 (log ϵ 0.49) ($CHCl_3$).

Moriyasu, Y. *et al., Phytochemistry*, 2001, **58**, 239-241 (*isol, pmr, cmr, ms*)
Van, T.N. *et al., Tetrahedron*, 2005, **51**, 2295-2300 (*synth*)

Deoxynupharidine D-227

*4-(3-Furanyl)octahydro-1,7-dimethyl-2*H*-quinolizine*
[1143-54-0]



Absolute Configuration

$C_{15}H_{23}NO$ 233.353
Alkaloid from *Nuphar japonicum*, *Nuphar luteum* ssp. *variegatum*, *Nuphar pumila* and from the scent glands of the Canadian beaver *Castor fiber*. Mp 21-22°. Bp_8 112-115°. $[\alpha]_D$ -112.5.

Hydrochloride: Mp 262°.

Picrate: Mp 153°.

N-*Oxide(*R-*):* ***Nupharidine***
[468-89-3]
$C_{15}H_{23}NO_2$ 249.352
Alkaloid from *Nuphar japonicum* and *Nuphar pumila* (Nymphaeaceae). Mp 222°. $[\alpha]_D$ +14.5 (H_2O).

N-*Oxide, picrate:* Mp 176°.

3,4-Didehydro: ***Dehydrodeoxynupharidine***
$C_{15}H_{21}NO$ 231.337
Minor alkaloid from the roots of *Nuphar japonicum* (Nymphaeaceae). Unstable liq.; needles or prisms

(MeOH)(as perchlorate). Mp 159-161° (perchlorate). Bp_3 125° (bath). $[\alpha]_D^{29}$ +130.1 ($CHCl_3$) (perchlorate).

9,10-Didehydro: ***Nupharopumiline***
[63947-66-0]
$C_{15}H_{21}NO$ 231.337
Alkaloid from the rhizomes of *Nuphar pumila* (Nymphaeaceae). Cryst. (CCl_4). Mp 195-197°. $[\alpha]_D^{20}$ +27 ($CHCl_3$).

7-Hydroxy: ***Nupharolutine***
[38681-18-4]
$C_{15}H_{23}NO_2$ 249.352
Alkaloid from the rhizomes of *Nuphar luteum* (Nymphaeaceae). Cryst. ($MeOH/Me_2CO$). Mp 96-98°. $[\alpha]_D^{22}$ -105 ($CHCl_3$).

8α-Hydroxy: ***Isocastoramine***
[60125-06-6]
$C_{15}H_{23}NO_2$ 249.352
Alkaloid from the scent glands of the Canadian beaver *Castor fiber*. Needles (CH_2Cl_2/pentane). Mp 109°. $[\alpha]_D^{20}$ -124 (c, 1.0 in $CHCl_3$).

9ξ-Hydroxy: ***Nupharolidine***
[24181-81-5]
$C_{15}H_{23}NO_2$ 249.352
Alkaloid from the rhizomes of *Nuphar luteum* (Nymphaeaceae). Mp 110°. Stereochem. not certain.

9-Hydroxy, hydrochloride: Mp 240-245° dec.

12-Hydroxy: ***Castoramine***
[6874-86-8]
Main basic constit. from the scent glands of the Canadian beaver (*Castor fiber* and *Castor canadensis*). Mp 64.5-65.5°. $Bp_{0.08}$ 125-135°. $[\alpha]_D^{20}$ -80 (c, 1 in $CHCl_3$).

6ξ,7-Dihydroxy: ***Deoxynupharidine-6,7-diol***
$C_{15}H_{23}NO_3$ 265.352
Alkaloid detected in the rhizomes of *Nuphar luteum* subsp. *macrophyllum* (Nymphaeaceae). Sticky oil. Uncertain at present whether this alkaloid is a true plant metab. Dimerizes slowly to 6,7-Oxidodeoxynupharidine dimer, O-161 when stored neat at 0°.

1-Epimer: ***1-Epideoxynupharidine***
$C_{15}H_{23}NO$ 233.353
Alkaloid from the scent glands of *Castor fiber*. Oil. $[\alpha]_D^{20}$ -36 (c, 0.5 in $CHCl_3$).

7-Epimer: ***7-Epideoxynupharidine***
$C_{15}H_{23}NO$ 233.353
Alkaloid from the rhizomes of *Nuphar luteum* subsp. *variegatum, Nuphar pumila* (Nymphaeaceae) and the scent glands of *Castor fiber*. Oil. $[\alpha]_D^{25}$ -89 (c, 3.5 in 95% in EtOH). $[\alpha]_D^{20}$ -75 (c, 1.0 in $CHCl_3$).

7-Epimer, hydrochloride:
Cryst. ($MeOH/Et_2O$). Mp 255-258°. $[\alpha]_D^{25}$ -39.7 (c, 0.79 in 95% in EtOH).

7-Epimer, N*-oxide:* ***7-Epinupharidine***
[29487-76-1]
$C_{15}H_{23}NO_2$ 249.352
Alkaloid from the rhizomes of *Nuphar pumila* (Nymphaeaceae). Mp 199-202° (synthetic).

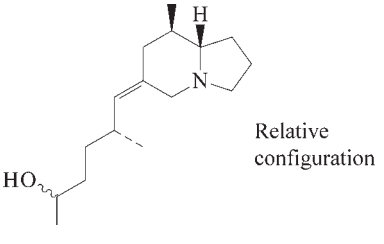
7-Epimer, 6ξ,7-dihydroxy: ***7-Epideoxynupharidine-6,7-diol***
$C_{15}H_{23}NO_3$ 265.352
Alkaloid detected in the rhizomes of *Nuphar luteum* ssp. *macrophyllum* (Nymphaeaceae). Mp 176-177°. $[\alpha]_D^{25}$ -64 (c, 0.5 in $CHCl_3$) (extrapolated; shows mutarotation). Uncertain at present whether this is a true plant metab.

1,7-Diepimer: ***1-Epi-7-epideoxynupharidine***
$C_{15}H_{23}NO$ 233.353
Alkaloid from the scent glands of *Castor fiber*. Oil. $[\alpha]_D^{20}$ -70 (c, 1.0 in $CHCl_3$).

Kotake, M. *et al., Annalen*, 1957, **606**, 148 (*struct*)
Valenta, Z. *et al., Tet. Lett.*, 1959, **No. 12**, 1 (*Castoramine, isol, ir, pmr, struct*)
Bohlmann, F. *et al., Chem. Ber.*, 1961, **94**, 3151 (*synth, ir*)
Bohlmann, F. *et al., Tetrahedron*, 1963, **19**, 195 (*Castoramine, synth*)
Arata, Y. *et al., Chem. Pharm. Bull.*, 1964, **12**, 1394; 1965, **13**, 907; 1968, **16**, 2074 (*Dehydrodeoxynupharidine*)
Achmatowicz, O. *et al., Tet. Lett.*, 1964, 927 (*ms*)
Wróbel, J.T. *et al., Pol. J. Chem. (Rocz. Chem.)*, 1969, **43**, 997 (*Nupharolidine*)
Oda, K. *et al., J.C.S.(B)*, 1970, 1450 (*cryst struct*)
Wong, C.F. *et al., J.O.C.*, 1970, **35**, 517 (*config*)
Wong, C.F. *et al., Phytochemistry*, 1970, **9**, 659 (*7-Epideoxynupharidine*)
LaLonde, R.T. *et al., J.A.C.S.*, 1971, **93**, 2501; 1972, **94**, 8522 (*7-Epinupharidine, diols*)
Wróbel, J.T. *et al., Can. J. Chem.*, 1972, **50**, 1831 (*Nupharolutine*)
Martin, T.I. *et al., Can. J. Chem.*, 1974, **52**, 2705 (*pmr*)
LaLonde, R.T. *et al., Can. J. Chem.*, 1975, **53**, 1714 (*cmr*)
Maurer, B. *et al., Helv. Chim. Acta*, 1976, **59**, 1169 (*Deoxynupharidine, Epideoxynupharidines, Castoramine, Isocastoramine*)
Yasuda, S. *et al., Heterocycles*, 1977, **6**, 391 (*Epideoxynupharidines, synth*)
Peura, P. *et al., Phytochemistry*, 1977, **16**, 1122 (*Nupharopumiline*)
Szychowski, J. *et al., Chem. Ind. (London)*, 1978, 273 (*synth*)
Hwang, Y.C. *et al., J.O.C.*, 1985, **50**, 2719 (*synth, pmr, cmr, ms*)
Miyazawa, M. *et al., J. Agric. Food Chem.*, 1998, **46**, 1059-1063 (*Nupharolutine, Castoramine, isol, pmr, cmr, ms*)
Moran, W.J. *et al., Org. Lett.*, 2003, **5**, 3427-3429 (*synth*)
Katoh, M. *et al., Heterocycles*, 2006, **69**, 193-216 (*synth*)

Deoxypumiliotoxin 251H D-228

*6-(Hexahydro-8-methyl-6(5*H*)-indolizinylidene)-5-methyl-2-hexanol, 9CI*
[164301-81-9]

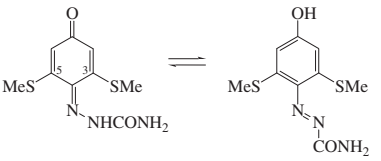


$C_{16}H_{29}NO$ 251.411
Trace alkaloid from skin extracts of the dendrobatid frog *Epipedobates tricolor*.

Jain, P. *et al., J. Nat. Prod.*, 1995, **58**, 100 (*isol, ir, pmr, ms, struct*)

Deoxyrubroflavin D-229

2-[4-Hydroxy-2,6-bis(methylthio)phenyl]diazenecarboxamide. 4-Hydroxy-2,6-bis(methylthio)phenyl-1-azoformamide. 2,6-Bis(methylthio)-1,4-benzoquinone 1-semicarbazone



$C_9H_{11}N_3O_2S_2$ 257.337
The parent compd. and its *S*-oxides show solv.-dependent tautomerism between semicarbazone and azophenol forms. Minor pigment from the pufball mushroom *Calvatia rubro-flava*. Red powder. Mp 168-169°. λ_{max} 212 (log ε 4.06); 232 (log ε 4.18); 253 (log ε 4.16); 278 (log ε 4.05); 310 (sh) (log ε 3.58); 387 (log ε 3.97) (MeOH).

*3-*S*-Oxide (*S*-):* ***Rubroflavin****. CC 3. Compound CC 3*
[169758-58-1]
$C_9H_{11}N_3O_3S_2$ 273.336
Isol. from *Calvatia craniformis*. Major pigment from *Calvatia rubro-flava*. Cytotoxic agent. Red needles (MeOH) or red needles + $1H_2O$. Mp 192-194° (184-185° dec.). $[\alpha]_D^{25}$ -1740 (c, 0.4 in Py). $[\alpha]_D^{22}$ -2180 (c, 0.07 in MeOH). λ_{max} 248 (log ε 4.27); 285 (log ε 4.28); 355 (log ε 4.1) (MeOH). λ_{max} 214 (log ε 4.01); 243 (log ε 3.92); 252 (log ε 3.59); 275 (log ε 3.65); 295 (log ε 3.61); 435 (log ε 4.03); 460 (sh) (log ε 3.97) (MeOH).

*3,3-*S*-Dioxide:* ***Craniformin***†*. CCU 18. Compound CCU 18*
[169758-57-0]
$C_9H_{11}N_3O_4S_2$ 289.336
Isol. from *Calvatia craniformis*. Cytotoxic agent. Red plates (MeOH). Mp 192-194°. The original authors used the name Craniformin for this dioxide, but Fugmann *et al* apply it to the trioxide below.

*3,5-*S*-Dioxide:* ***Oxyrubroflavin***
$C_9H_{11}N_3O_4S_2$ 289.336
Minor pigment from *Calvatia rubro-flava*. Amorph. orange-red solid. $[\alpha]_D$ -840 (c, 0.1 in MeOH). Isol. as a 1:1 mixt. of 5*R*- and 5*S*-diastereomers. Dec. at 200-210°. Prob. an artifact derived by non-enzymic oxidn. λ_{max} 197 (log ε 4.19); 245 (log ε 3.98); 280 (sh) (log ε 3.88); 352 (log ε 4.01); 455 (sh) (log ε 3.12) (MeOH).

*3*S*,5,5-*S*-Trioxide: Craniformin*†
$C_9H_{11}N_3O_5S_2$ 305.335
Isol. from *Calvatia rubro-flava*. Orange-red powder (synthetic). Mp 168-170°. $[\alpha]_D^{20}$ -1034 (MeOH). λ_{max} 198 (log ε 4.29); 253 (log ε 3.96); 258 (sh)

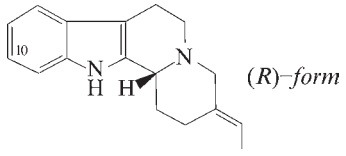
(log ϵ 3.77); 345 (log ϵ 3.96); 430 (log ϵ 3.67) (MeOH).

Takaishi, Y. *et al., Phytochemistry*, 1997, **45**, 997-1001 (*isol, uv, ir, pmr, cmr, ms*)

Fugmann, B. *et al., Eur. J. Org. Chem.*, 2001, 3097-3104 (*isol, uv, ir, cd, ms, pmr, cmr, abs config*)

Deplancheine D-230

*3-Ethylidene-1,2,3,4,6,7,12,12*b*-octahydroindolo[2,3-*a*]quinolizine, 9CI*



$C_{17}H_{20}N_2$ 252.358

A bisnor-corynanthe alkaloid. Abs. config. revised in 1986.

(*R*)-*form* [74559-69-6]

Alkaloid from *Alstonia deplanchei* (Apocynaceae). Cryst. (Et_2O). Mp 115°. $[\alpha]_D^{20}$ +56 (c, 1 in $CHCl_3$).

10-Methoxy: ***10-Methoxydeplancheine***
[80787-52-6]
$C_{18}H_{22}N_2O$ 282.385
Alkaloid from the leaves of *Alstonia lanceolifera* (Apocynaceae). Cryst. (Me_2CO). Mp 75°. $[\alpha]_D$ +33 (c, 0.9 in $CHCl_3$).

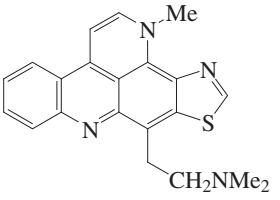
(*S*)-*form*
Synthetic. Cryst. (Et_2O/hexane). Mp 140.5-141.5°. $[\alpha]_D^{20}$ -52 (c, 1.0 in $CHCl_3$). $[\alpha]_D$ -64.9 (c, 1.0 in EtOH).

(±)-*form* [56491-03-3]
Synthetic. Cryst. (MeOH or Et_2O). Mp 140-142° Mp 161.5°.

Thielke, D. *et al., Chem. Ber.*, 1975, **108**, 1791 (*synth, uv, ir, pmr, ms*)
Besselièvre, R. *et al., Tet. Lett.*, 1980, **21**, 63 (*isol, synth*)
Ashcroft, W.R. *et al., Tet. Lett.*, 1980, **21**, 2341 (*synth*)
Hämeilä, M. *et al., Acta Chem. Scand., Ser. B*, 1981, **35**, 217 (*synth, ir, pmr, ms*)
Petitfrere-Auvray, N. *et al., Phytochemistry*, 1981, **20**, 1987 (*10-Methoxydeplancheine*)
Overman, L.E. *et al., J.O.C.*, 1982, **47**, 5297 (*synth, uv, ir, pmr, cmr*)
Calabi, L. *et al., Tet. Lett.*, 1982, **23**, 2139 (*synth*)
Lesma, G. *et al., J.C.S. Perkin 1*, 1984, 1593 (*synth*)
Meyers, A.I. *et al., J.O.C.*, 1986, **51**, 3108 (*synth, ir, pmr, cmr, abs config*)
Jokela, R. *et al., Planta Med.*, 1987, **53**, 386 (*synth, ir, pmr, cmr, ms*)
Mandal, S.B. *et al., J.O.C.*, 1988, **53**, 4236 (*synth*)
Fujii, T. *et al., Chem. Pharm. Bull.*, 1989, **37**, 2822 (*synth*)
Rosenmund, P. *et al., Annalen*, 1990, 233; 1992, 1321 (*synth*)
Sankar, P.J. *et al., Heterocycles*, 1991, **32**, 1109 (*synth*)
Itoh, T. *et al., Heterocycles*, 2001, **55**, 1165-1171 (*synth*)
Allin, S.M. *et al., J.O.C.*, 2005, **70**, 357-359 (*synth*)
Sydorenko, N. *et al., Org. Biomol. Chem.*, 2005, **3**, 2140-2144 (*synth*)
Chang, M.-Y. *et al., Tetrahedron*, 2005, **61**, 585-591 (*synth*)

Dercitine D-231

[115141-47-4]



$C_{21}H_{20}N_4S$ 360.482

Regiochemistry of the thiazole moiety revised in 1992. Alkaloid from a deep water marine sponge *Dercitus* sp. and *Stelletta* sp. Exhibits antitumour, antiviral and immunosuppressive activities. Hygroscopic deep violet powder. Mp 168°. λ_{max} 245 (ϵ 13800); 307 (ϵ 16900); 361 (ϵ 3900); 541 (ϵ 1800) (MeOH) (Derep). λ_{max} 234 (ϵ 13800); 245 (ϵ 14500); 307 (ϵ 19500); 354 (ϵ 4500); 515 (ϵ 3300) (MeOH/HCl) (Berdy). λ_{max} 238 (ϵ 12600); 261 (ϵ 11750); 293 (ϵ 14450); 405 (ϵ 6000); 527 (ϵ 2050); 558 (ϵ 1750); 610 (ϵ 1550) (MeOH/NaOH) (Berdy).

▶ UV1198950

Gunawardana, G.P. *et al., J.A.C.S.*, 1988, **110**, 4856 (*isol, pmr, cmr, ms*)
Burres, N.S. *et al., Cancer Res.*, 1989, **49**, 5267-5274 (*activity*)
Bishop, M.J. *et al., J.A.C.S.*, 1992, **114**, 10081 (*synth*)
Gunawardana, G.P. *et al., J.O.C.*, 1992, **57**, 1523 (*struct*)
Ciufolini, M.A. *et al., J.A.C.S.*, 1995, **117**, 12460 (*synth*)

Desdamethine D-232

U 11994. Antibiotic U 11994

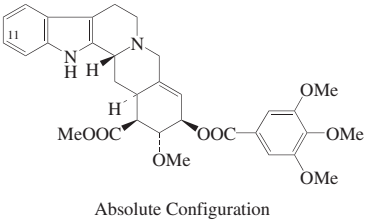
$C_8H_{14}N_2OS$ 186.277

Pyrrolidine antibiotic. Struct. unknown. Prod. by *Streptomyces caelestis* with Methionine. Mainly active against gram-positive bacteria. Sol. H_2O, DMF; fairly sol. MeOH; poorly sol. Et_2O, hexane.

Meyer, C.E. *et al., Antimicrob. Agents Chemother.*, 1965, 850 (*isol, ir*)

Deserpideine D-233

[2671-59-2]



Absolute Configuration

$C_{32}H_{36}N_2O_8$ 576.645

Alkaloid from *Rauwolfia nitida* (Apocynaceae). Antihypertensive agent, tranquilliser. Mp 149-152°. $[\alpha]_D^{25}$ -133 (c, 1 in Py). $[\alpha]_D^{25}$ -108 ($CHCl_3$). Log P 2.87 (calc).

Hydrochloride: [15215-04-0]
Cryst. (MeOH). Mp 277° dec. $[\alpha]_D^{25}$ -98.5 (c, 0.5 in $CHCl_3$).

11-Methoxy: ***Raujemidine****. 19-Dehydroreserpine*
[549-70-2]
$C_{33}H_{38}N_2O_9$ 606.671
Alkaloid from *Rauwolfia canescens (R. tetraphylla)* (Apocynaceae). Shows about half the antihypertensive activity of Reserpine, R-52; of no practical importance. Square plates + $1H_2O$ (MeOH). Mp 144-150°. $[\alpha]_D^{25}$ -88 ($CHCl_3$). pK_a 5.53 (40% MeOH aq.).

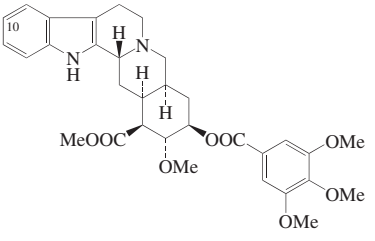
11-Methoxy; perchlorate: Mp 253-257°.

11-Methoxy, N^4*-oxide:* ***Raujemidine* N-oxide**
$C_{33}H_{38}N_2O_{10}$ 622.671
Alkaloid from *Rauwolfia canescens* (Apocynaceae). Mp 215-217°. Details unpubl. CAS no. not found to 2007.

Ulshafer, P.R. *et al., J.O.C.*, 1956, **21**, 923 (*isol, Raujemidine*)
Smith, E. *et al., J.A.C.S.*, 1967, **89**, 2469-2476 (*isol, struct*)

Deserpidine, BAN, INN D-234

11-Demethoxyreserpine. Canescine†*. Harmonyl. Raunormine. Recanescine. Reserpidine. Lilly 22641*
[131-01-1]



Absolute Configuration

$C_{32}H_{38}N_2O_8$ 578.661

Alkaloid from *Rauwolfia canescens* and several other *Rauwolfia* spp., *Tonduzia longifolia* and *Ochrosia vieillardii* (Apocynaceae). Antihypertensive, neuroleptic tranquilliser agent. Trimorphic. Mp 228-232° (220-222° dec.). $[\alpha]_D^{24}$ -137 ($CHCl_3$). $[\alpha]_D$ -118 (c, 1 in $CHCl_3$). Log P 3.35 (calc).

▶ Exp. reprod. effects. LD_{50} (mus, orl) 500 mg/kg. ZG0875000

Hydrochloride:
Cryst. + 1MeOH (MeOH). Mp 241-243° dec.

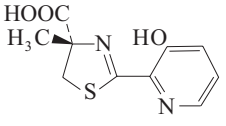
19,20-Didehydro: see Deserpideine, D-233

Schlittler, E. *et al., Experientia*, 1955, **11**, 64-65 (*isol*)
Carletti, A. *et al., Experientia*, 1955, **11**, 98-99 (*pharmacol*)
Jurg, A. *et al., J. Pharmacol. Exp. Ther.*, 1955, **114**, 10-13 (*pharmacol*)
Klohs, M.W. *et al., J.A.C.S.*, 1955, **77**, 4084-4087 (*isol, struct*)
Neuss, N. *et al., J.A.C.S.*, 1955, **77**, 4087-4090 (*isol, uv, ir, struct*)
Cronheim, G. *et al., Proc. Soc. Exp. Biol. Med.*, 1955, **89**, 21-23 (*pharmacol*)
Weichet, J. *et al., Coll. Czech. Chem. Comm.*, 1961, **26**, 1529-1536 (*synth*)
Ben-David, M. *et al., Arch. Int. Pharmacodyn. Ther.*, 1968, **171**, 274-284 (*pharmacol*)
Creveling, C.R. *et al., J. Med. Chem.*, 1968, **11**, 596-598 (*activity*)

Levin, R.H. *et al., J.O.C.*, 1973, **38**, 1983-1986 (*cmr*)
Timmins, P. *et al., Phytochemistry*, 1974, **13**, 1997 (*isol*)
Pantarotto, C. *et al., Adv. Mass Spectrom. Biochem. Med.*, 1977, **2**, 351 (*ms*)
Szantay, C. *et al., Heterocycles*, 1977, **7**, 155-160 (*synth*)
Sakai, S. *et al., Heterocycles*, 1978, **10**, 67-71 (*synth*)
Szantay, C. *et al., Annalen*, 1983, 1292-1309 (*synth*)
Miyata, O. *et al., Heterocycles*, 1984, **22**, 1041-1044 (*synth*)
Lounasmaa, M. *et al., Heterocycles*, 1985, **23**, 371-375 (*pmr*)
Naito, T. *et al., Chem. Pharm. Bull.*, 1989, **37**, 901-906 (*synth*)
Baxter, E.W. *et al., J.A.C.S.*, 1990, **112**, 7682-7692 (*synth*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 353
Varchi, G. *et al., J. Nat. Prod.*, 2005, **68**, 1629-1631 (*synth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, RDF000

Desferroferrithiocin D-235

4,5-Dihydro-2-(3-hydroxy-2-pyridinyl)-4-methyl-4-thiazolecarboxylic acid, 9CI. Desferrithiocin
[76045-30-2]



$C_{10}H_{10}N_2O_3S$ 238.267

(*S*)-*form*
Isol. from *Streptomyces antibioticus* as Fe complex. Mp 90-92°. $[\alpha]_D$ +30.1 (c, 1.01 in MeOH). λ_{max} 200 (ϵ 15150); 308 (ϵ 6200); 382 (ϵ 2140) (H_2O) (Berdy).

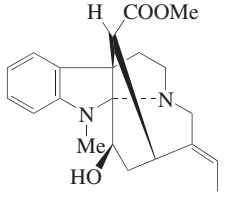
Fe complex: ***Ferrithiocin***
[76082-64-9]
Metab. of *Streptomyces antibioticus*. Dark red-brown powder. Mp 160° dec. $[\alpha]_D$ -578 (c, 0.0064 in H_2O).

[105635-69-6]

Naegeli, H.U. *et al., Helv. Chim. Acta*, 1980, **63**, 1400
Mulqueen, G.C. *et al., Tetrahedron*, 1993, **49**, 5359 (*synth*)
Bergeron, R.J. *et al., J. Med. Chem.*, 1994, **37**, 2889 (*metab*)

Desformocorymine D-236

Methyl 3-hydroxy-1-methyl-2,4(1H)-cyclo-3,4-secoakuammilan-17-oate, 9CI. Deformylcorymine
[21290-54-0]



Absolute Configuration

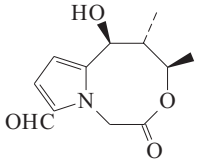
$C_{21}H_{26}N_2O_3$ 354.448

Alkaloid from *Hunteria eburnea*, *Hunteria elliotii* and *Hunteria zeylanica* (Apocynaceae). Also obt. from Corymine, in D-410 on treatment with KOH aq. Mp 170-171°. $[\alpha]_D^{24}$ -90 (EtOH).

Kiang, A.K. *et al., Proc. Chem. Soc., London*, 1962, 298
Kompiš, I. *et al., Coll. Czech. Chem. Comm.*, 1968, **33**, 4328 (*synth, uv, ir, ms, ord*)
Morfaux, A.M. *et al., Phytochemistry*, 1978, **17**, 167 (*isol*)
Subhadhirasakul, S. *et al., Chem. Pharm. Bull.*, 1994, **42**, 2645

Desmodimine D-237

[150036-83-2]

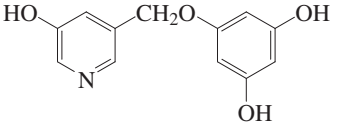


$C_{12}H_{15}NO_4$ 237.255
Alkaloid from aerial parts of *Desmodium styracifolium* (Fabaceae).

Yang, J.S. *et al., Yaoxue Xuebao*, 1993, **28**, 197; *CA*, **119**, 156209m

Desmotrichinine D-238

5-[(3,5-Dihydroxyphenoxy)methyl]-3-pyridinol
[691394-44-2]

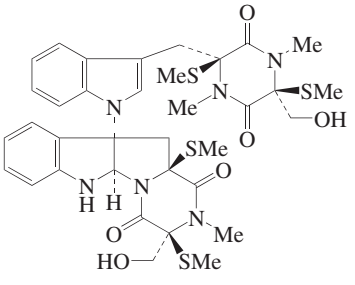


$C_{12}H_{11}NO_4$ 233.223
Alkaloid from the pseudobulb of *Desmotrichum fimbriatum* (preferred genus name *Flickingeria*). Yellow cryst. ($CHCl_3$/MeOH). Mp 195-198°. $[\alpha]_D^{20}$ +25 (c, 0.1 in MeOH). λ_{max} 276 (log ϵ 5.2); 335 (log ϵ 6.92); 418 (log ϵ 7.2) (MeOH).

Ali, A. *et al., Pharmazie*, 2003, **58**, 762-763 (*isol, pmr, cmr, ms*)

Dethiotetrakis(methylthio)-chetomin D-239

2,5:2′,5′-Dide(epidithio)-2,2′,5,5′-tetrakis(methylthio)chetomin, 9CI. Dethiotetra(methylthio)chetomin
[84260-71-9]

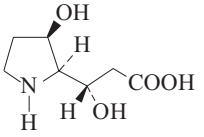


Absolute Configuration

$C_{35}H_{42}N_6O_6S_4$ 771.017
Prod. by *Chaetomium cochliodes* and *Chaetomium globosum*. Antimicrobial agent. Cryst. (MeOH). Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. Mp 191-193°. $[\alpha]_D$ +174 ($CHCl_3$). λ_{max} 212 (ϵ 72200); 288 (ϵ 10000); 296 (ϵ 10500) (MeOH) (Berdy).

Kikuchi, T. *et al., Chem. Pharm. Bull.*, 1982, **30**, 3846 (*isol, uv, ir, pmr, cmr, struct*)

Detoxinine D-240



$C_7H_{13}NO_4$ 175.184

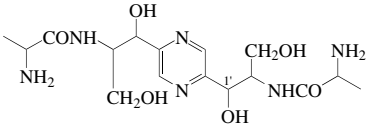
(-)-*form* [54963-44-9]
Structural component of Detoxin D_1. $[\alpha]_D^{23}$ -4.1 (c, 0.5 in H_2O).

(±)-*form*
Prisms. Mp 200° dec.

Haüsler, J. *et al., Annalen*, 1983, 982 (*synth*)
Ohfune, Y. *et al., Tet. Lett.*, 1984, **25**, 4133 (*synth*)
Ewing, W.R. *et al., Tetrahedron*, 1986, **42**, 2421 (*synth, ir, pmr*)
Li, W.-R. *et al., Heterocycles*, 1993, **36**, 359 (*rev*)
Flögel, O. *et al., Chem. Eur. J.*, 2003, **9**, 1405-1415 (*synth*)

Diabroticin A D-241

[154163-98-1]

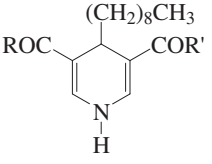


$C_{16}H_{28}N_6O_6$ 400.434
Isol. from *Bacillus subtilis*. Insecticide. $[\alpha]_D^{23}$ -6.7 (c, 2 in MeOH). λ_{max} 275 (no solvent reported).

1′-Deoxy: ***Diabroticin B***
[154163-96-9]
$C_{16}H_{28}N_6O_5$ 384.434
Isol. from *Bacillus subtilis*. Insecticide.

Stonard, R.J. *et al., ACS Symp. Ser.*, 1994, **551**, 25-36 (*isol, pmr, cmr, ms*)

3,5-Diacyl-1,4-dihydro-4-nonylpyridines D-242



3,5-Didecanoyl-1,4-dihydro-4-nonylpyridine
1,1′-(1,4-Dihydro-4-nonyl-3,5-pyridinediyl)bis[1-decanone], 9CI

[158528-00-8]
$C_{34}H_{61}NO_2$ 515.861
Alkaloid from *Houttuynia cordata* (Yu Xing Cao).

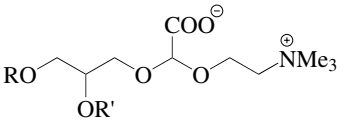
3-Decanoyl-5-dodecanoyl-1,4-dihydro-4-nonylpyridine
1-[1,4-Dihydro-4-nonyl-5-(1-oxodecyl)-3-pyridinyl]-1-dodecanone, 9CI
[158528-01-9]
$C_{36}H_{65}NO_2$ 543.915
Alkaloid from *Houttuynia cordata* (Yu Xing Cao).

3,5-Didodecanoyl-1,4-dihydro-4-nonylpyridine
1,1′-(1,4-Dihydro-4-nonyl-3,5-pyridinediyl)bis[1-dodecanone], 9CI
[158528-02-0]
$C_{38}H_{69}NO_2$ 571.969
Alkaloid from *Houttuynia cordata* (Yu Xing Cao).

Proebstle, A. *et al., Nat. Prod. Lett.*, 1994, **4**, 235-240

1,2-Diacylglyceryl-3-(*O*-carboxyhydroxymethyl)choline D-243

DGCC

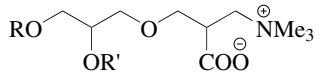


R and R′ are long chain acyl residues. Betaine lipid present in some plants and algae.

Kato, M. *et al., Phytochemistry*, 1996, **42**, 1341

1,2-Diacylglyceryl-*O*-2′-(hydroxymethyl)-*N,N,N*-trimethyl-β-alanine D-244

DGTA

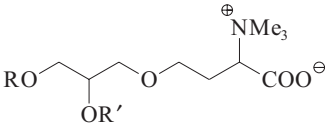


R and R′ are long chain acyl residues. Isol. from various marine algae.

Kato, M. *et al., Phytochemistry*, 1996, **42**, 1341
Vaskovsky, V.E. *et al., Phytochemistry*, 1996, **42**, 1347

4-*O*-(1,2-Diacylglyceryl)-*N,N,N*-trimethylhomoserine D-245

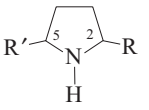
DGTS



R and R′ are long-chain acyl residues. Betaine lipid present in fungi, lichens, most ferns, some higher plants and green algae.

Sato, N. *et al., Phytochemistry*, 1984, **23**, 1625-1627 (*bibl*)
Dembitsky, V.M. *et al., Prog. Lipid Res.*, 1996, **35**, 1-51 (*rev*)
Kuenzler, K. *et al., Phytochemistry*, 1997, **46**, 883-892 (*occur*)
Vaskovsky, V.E. *et al., Phytochemistry*, 1998, **47**, 755-760 (*occur*)
Rozentsvet, O.A. *et al., Phytochemistry*, 2000, **54**, 401-407 (*occur*)

2,5-Dialkylpyrrolidines D-246



R, R′ = Alkyl groups, various dehydro analogues also found. Components of the defence secretions of the ants *Solenopsis* and *Monomorium* spp.

2-Ethyl-5-pentylpyrrolidine
$C_{11}H_{23}N$ 169.309

*1,2-Didehydro: 5-Ethyl-3,4-dihydro-2-pentyl-2*H*-pyrrole, 9CI.* ***2-Ethyl-5-pentyl-Δ¹-pyrroline***
[61772-94-9]
$C_{11}H_{21}N$ 167.294
From *Solenopsis punctaticeps.*

*1,5-Didehydro: 2-Ethyl-3,4-dihydro-5-pentyl-2*H*-pyrrole, 9CI.* ***5-Ethyl-2-pentyl-Δ¹-pyrroline***
[61772-95-0]
$C_{11}H_{21}N$ 167.294
From *Solenopsis punctaticeps.*

2-Ethyl-5-heptylpyrrolidine [61772-96-1]
$C_{13}H_{27}N$ 197.363
From *Solenopsis punctaticeps.*

1,2-Didehydro: ***2-Ethyl-5-heptyl-Δ¹-pyrroline***
$C_{13}H_{25}N$ 195.347
From *Solenopsis punctaticeps.*

*1,5-Didehydro: 2-Ethyl-5-heptyl-3,4-dihydro-2*H*-pyrrole, 9CI.* ***5-Ethyl-2-heptyl-Δ¹-pyrroline***
[61772-93-8]
$C_{13}H_{25}N$ 195.347
From *Solenopsis punctaticeps.*

2-Ethyl-5-undecylpyrrolidine
$C_{17}H_{35}N$ 253.47
Constit. of the venom of *Monomorium* sp.

2-Ethyl-5-(12-tridecenyl)pyrrolidine, 9CI
$C_{19}H_{37}N$ 279.508
Constit. of the venom of *Monomorium* sp.

2-Butyl-5-propylpyrrolidine
$C_{11}H_{23}N$ 169.309
Isol. from the venom of *Myrmicaria melanogaster*. Obt. as a mixt. of *cis*- and *trans*-isomers.

2-Butyl-5-pentylpyrrolidine
Dendrobates *Alkaloid 197B*
[19501-71-4]
$C_{13}H_{27}N$ 197.363
From *Solenopsis punctaticeps* and *Monomorium* sp. Also isol. from skin extracts of *Dendrobates histrionicus.*

2-Butyl-5-heptylpyrrolidine [61772-92-7]
$C_{15}H_{31}N$ 225.417
From *Solenopsis fugax*, *Solenopsis punctaticeps*, *Monomorium latinode* and cultures of *Streptomyces longispororuber*. The *S. longispororuber* isolate was the (2*R*,5*R*)-enantiomer.

N-*Me:* ***2-Butyl-5-heptyl-1-methylpyrrolidine, 9CI***
[83688-93-1]
$C_{16}H_{33}N$ 239.443
Venom from *Monomorium latinode.*

*1,5-Didehydro: 2-Butyl-5-heptyl-3,4-dihydro-2*H*-pyrrole, 9CI.* ***5-Butyl-2-heptyl-Δ¹-pyrroline***
[83688-87-3]
$C_{15}H_{29}N$ 223.401
Venom from *Monomorium latinode.*

2-Butyl-5-nonylpyrrolidine
8″,9″-Didehydro: ***2-Butyl-5-(8-nonenyl)-pyrrolidine***
[120091-01-2]
$C_{17}H_{33}N$ 251.454
From *Monomorium* sp.

2-Hexyl-5-pentylpyrrolidine [73427-38-0]
$C_{15}H_{31}N$ 225.417
From *Solenopsis molesta* and *Solenopsis texanas.*

5′,6′-Didehydro: ***2-(5-Hexenyl)-5-pentylpyrrolidine, 9CI***
[58623-41-9]
$C_{15}H_{29}N$ 223.401
Venom from *Monomorium pharaonis.*

2-Hexyl-5-nonylpyrrolidine [81943-71-7]
$C_{19}H_{39}N$ 281.524
From *Monomorium* spp.

5′,6′,8″,9″-Tetradehydro: ***2-(5-Hexenyl)-5-(8-nonenyl)pyrrolidine***
[81943-70-6]
$C_{19}H_{35}N$ 277.492
Component of venom from *Monomorium* sp. and from *Chelaner antarcticus.* The *C. antarcticus* isolate was shown to have the *trans*-config.

5′,6′,8″,9″-Tetradehydro, N-*Me:* ***2-(5-Hexenyl)-1-methyl-5-(8-nonenyl)pyrrolidine***
$C_{20}H_{37}N$ 291.519
Venom from *Monomorium* sp.

2-Heptyl-5-(5-hexenyl)pyrrolidine
$C_{17}H_{33}N$ 251.454
From *Monomorium* sp.

2-(5-Hexenyl)-5-nonylpyrrolidine [100594-88-5]
$C_{19}H_{37}N$ 279.508
From *Monomorium* sp.

N-*Me:* ***2-(5-Hexenyl)-1-methyl-5-nonylpyrrolidine***
$C_{20}H_{39}N$ 293.535
From *Monomorium* sp.

1,2,8″,9″-Tetradehydro: ***2-(5-Hexenyl)-5-(8-nonenyl)-Δ¹-pyrroline***
$C_{19}H_{33}N$ 275.476
From *Monomorium* sp.

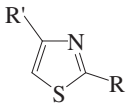
1,5,8″,9″-Tetradehydro: ***5-(5-Hexenyl)-2-(8-nonenyl)-Δ¹-pyrroline***
$C_{19}H_{33}N$ 275.476

From *Monomorium* sp.

[116558-88-4 , 116558-86-2 , 114640-33-4 , 114640-32-3 , 114640-29-8 , 114640-28-7 , 103833-64-3 , 103833-14-3 , 95018-46-5 , 95018-45-4 , 81943-78-4 , 131682-66-1 , 75372-27-9 , 71732-78-0 , 71732-77-9 , 75372-32-6]

Pedder, D.J. *et al., Tetrahedron*, 1976, **32**, 2275
Jones, T.H. *et al., Tet. Lett.*, 1979, 1031-1034 (*2-Hexyl-5-pentylpyrrolidine*)
Blum, M.S. *et al., Naturwissenschaften*, 1980, **67**, 144
Jones, T.H. *et al., J. Chem. Ecol.*, 1982, **8**, 285
Jones, T.H. *et al., Tetrahedron*, 1982, **38**, 1949-1958 (*rev*)
Attygalle, A.B. *et al., Chem. Soc. Rev.*, 1984, **13**, 245
Daly, J.W. *et al., J. Nat. Prod.*, 1986, **49**, 265 (*Alkaloid 197B*)
Jones, T.H. *et al., J.O.C.*, 1986, **51**, 2712
Jones, T.H. *et al., J. Chem. Ecol.*, 1988, **14**, 35 (*isol*)
Jones, T.H. *et al., J. Nat. Prod.*, 1990, **53**, 375 (*isol, pmr, cmr*)
Bäckvall, J.-E. *et al., J.O.C.*, 1990, **55**, 826 (*synth*)
Machinaga, N. *et al., J.O.C.*, 1991, **56**, 1386 (*synth*)
Bloch, R. *et al., Tetrahedron: Asymmetry*, 1994, **5**, 745-750 (*Alkaloid 197B, synth*)
Kumagai, K. *et al., J. Antibiot.*, 2000, **53**, 467-473 (*2-Butyl-5-heptylpyrrolidine*)
Davis, F.A. *et al., J.O.C.*, 2006, **71**, 2779-2786 (*Alkaloid 197B, synth*)
Jones, T.H. *et al., J. Nat. Prod.*, 2007, **70**, 160-168 (*2-Butyl-5-propylpyrrolidine*)

2,4-Dialkylthiazoles D-247



Maillard prods. present in cooked food volatiles.

2-Isopropyl-4-methylthiazole
4-Methyl-2-(1-methylethyl)thiazole, 9CI. FEMA 3555
[15679-13-7]
$C_7H_{11}NS$ 141.237
Present in durian (*Durio zibethinus*), red tomatoes, yeast extract and coriander seed oil. Liq. with camphorous, nutty odour. d_4^{20} 1.01. Bp_{10} 59-62°. n_D^{20} 1.4989.

4-Isopropyl-2-methylthiazole
2-Methyl-4-(1-methylethyl)thiazole, 9CI
[32272-52-9]
$C_7H_{11}NS$ 141.237

2,4-Diethylthiazole, 9CI [32272-49-4]
$C_7H_{11}NS$ 141.237

2-Butyl-4-methylthiazole, 9CI [76572-47-9]
$C_8H_{13}NS$ 155.263

4-Butyl-2-methylthiazole, 9CI [41981-69-5]
$C_8H_{13}NS$ 155.263

2-Ethyl-4-propylthiazole, 9CI [41981-67-3]
$C_8H_{13}NS$ 155.263
Liq. Mp 96° (as picrate). Bp_{15} 97.5-98°.

4-Ethyl-2-propylthiazole, 9CI [41981-68-4]
$C_8H_{13}NS$ 155.263

4-Methyl-2-pentylthiazole, 9CI [96693-92-4]
$C_9H_{15}NS$ 169.29

2,4-Dipropylthiazole, 9CI [41981-74-2]
$C_9H_{15}NS$ 169.29

2-Isopropyl-4-propylthiazole
2-(1-Methylethyl)-4-propylthiazole, 9CI
[87116-69-6]
$C_9H_{15}NS$ 169.29

4-Ethyl-2-pentylthiazole, 9CI [96693-88-8]
$C_{10}H_{17}NS$ 183.317

2-Butyl-4-propylthiazole, 9CI [96693-89-9]
$C_{10}H_{17}NS$ 183.317

4-Ethyl-2-hexylthiazole, 9CI [96693-85-5]
$C_{11}H_{19}NS$ 197.344

2-Pentyl-4-propylthiazole, 9CI [96693-86-6]
$C_{11}H_{19}NS$ 197.344

4-Ethyl-2-heptylthiazole, 9CI [96693-84-4]
$C_{12}H_{21}NS$ 211.371

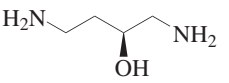
4-Ethyl-2-octylthiazole, 9CI [96693-83-3]
$C_{13}H_{23}NS$ 225.397

2-Octyl-4-propylthiazole, 9CI [96693-82-2]
$C_{14}H_{25}NS$ 239.424

Beraud, J. *et al., Bull. Soc. Chim. Fr.*, 1962, 2072-2074 (*synth*)
Asinger, F. *et al., Annalen*, 1964, **672**, 156-178 (*synth*)
Vincent, E.J. *et al., Bull. Soc. Chim. Fr.*, 1966, 3524-3530 (*pmr*)
Babadjamian, A. *et al., Bull. Soc. Chim. Fr.*, 1968, 4878-4880 (*synth*)
Roussel, C. *et al., Bull. Soc. Chim. Fr.*, 1971, 1087-1092 (*synth*)
Buttery, R.G. *et al., J. Agric. Food Chem.*, 1973, **21**, 488-490 (*synth, ms*)
Vitzthum, O.G. *et al., J. Food Sci.*, 1974, **39**, 1210-1215 (*occur, coffee*)
Haag, A. *et al., Org. Mass Spectrom.*, 1976, **11**, 511-524 (*ms*)
Loser, B. *et al., Food Technol. (Chicago)*, 1978, **32**, 60-70 (*tox*)
Ger. Pat., 1978, 2 804 077; *CA*, **76**, 163587s (*use*)
Ho, C.T. *et al., Lebensm.-Wiss. Technol.*, 1982, **15**, 340-342 (*glc, occur, tomato*)
Ho, C.T. *et al., J. Agric. Food Chem.*, 1983, **31**, 1384-1386 (*synth, ms, occur, peanut*)
Ho, C.T. *et al., J. Food Sci.*, 1983, **48**, 1570-1571 (*synth, props, ms*)
Ho, C.T. *et al., Perfum. Flavor.*, 1984, **9**, 15-18 (*synth, odour*)
Carlin, J.T. *et al., J. Am. Oil Chem. Soc.*, 1986, **63**, 1031-1036 (*occur*)
Lamparsky, D. *et al., Perfum. Flavor.*, 1988, **13**, 17-25 (*occur, coriander*)
Ames, J.M. *et al., Flavour Fragrance J.*, 1992, **7**, 89-103 (*occur, yeast*)
ACS Symp. Ser., 1995, 147-159 (*occur, yeast extract*)
Weenan, H. *et al., J. Agric. Food Chem.*, 1996, **44**, 3291-3293 (*glc, occur, durian*)
Elmore, J.S. *et al., J. Agric. Food Chem.*, 1997, **45**, 3595-3602 (*occur*)
Swaine, R.L. *et al., Perfum. Flavor.*, 1997, **22**, 57-58; **22(5)**, 60; 62; 64 (*occur*)

1,4-Diamino-2-butanol D-248

2-Hydroxyputrescine
[539-59-3]



(*S*)-*form*

$C_4H_{12}N_2O$ 104.152

(*R*)-*form*
[40894-78-8 (dihydrochloride)]
Mp 249-250° (as dihydrochloride). $[\alpha]_D^{25}$ -3.3 (c, 0.05 in H_2O) (dihydrochloride).

N,N′-*Di*-E-*cinnamoyl:* **N^1,N^4-*Di*-trans-*cinnamoyl-2-hydroxyputrescine***
[1003323-66-7]
$C_{22}H_{24}N_2O_3$ 364.443
Isol. from *Pholiota spumosa*. Cryst. $[\alpha]_D^{22}$ +3 (c, 0.5 in MeOH). λ_{max} 204 (ϵ 9200); 275 (ϵ 10600) (MeOH).

N,N′-*Di*-E-*cinnamoyl,* O-*(3S-hydroxy-3-methylglutaroyl): **Pholiotic acid***
[1003869-80-4]
$C_{28}H_{32}N_2O_7$ 508.57
Isol. from *Pholiota spumosa*. Waxy solid. $[\alpha]_D^{22}$ +18.5 (c, 0.4 in MeOH). λ_{max} 216 (ϵ 6800); 274 (ϵ 9000) (MeOH).

(*S*)-*form* [24177-21-7]
[26097-54-1 (dihydrochloride)]
Occurs in *Pseudomonas* spp. Mp 249-250° (as dihydrochloride). $[\alpha]_D^{25}$ +3.21 (c, 0.05 in H_2O) (dihydrochloride).

1-N-*(4-Hydroxycinnamoyl): **1-Coumaroyl-2-hydroxyputrescine***
[24177-22-8]
$C_{13}H_{18}N_2O_3$ 250.297
Alkaloid from *Triticum aestivum* (wheat) (Poaceae). Geom. of double bond not defined. λ_{max} 293 ; 316 (H_2O) (Berdy). λ_{max} 309 ; 363 (NaOH) (Berdy).

1-N-*(4-Hydroxy-3-methoxycinnamoyl): **1-Feruloyl-2-hydroxyputrescine***
[24177-48-8 , 24177-49-9]
$C_{14}H_{20}N_2O_4$ 280.323
Alkaloid from *Triticum aestivum* (wheat) (Poaceae). $[\alpha]_D^{24}$ -20 (c, 0.7 in $CHCl_3$) (as tri-Ac). Mixt. of *E*- and *Z*-forms.

(±)-*form* [13094-22-9]
Dihydrochloride: [6210-86-2]
Mp 231°.
Dipicrate: Mp 255° dec.

Macholan, L. *et al., Coll. Czech. Chem. Comm.*, 1965, **30**, 2074 (*synth*)
Stoessl, A. *et al., Tet. Lett.*, 1969, **10**, 2807-2810 (*1-Coumaroyl-2-hydroxyputrescine, 1-Feruloyl-2-hydroxyputrescine*)
Tobari, J. *et al., J. Biol. Chem.*, 1971, **246**, 1262-1265 (*S-form, isol, synth, spectra*)
Kullnig, R.K. *et al., J. Biol. Chem.*, 1973, **248**, 2487-2488 (*R-form, S-form, synth*)
Tice, C.M *et al., J.O.C.*, 1983, **48**, 5043-5048 (*1-Coumaroyl-2-hydroxyputrescine, synth*)
Clericuzio, M. *et al., Eur. J. Org. Chem.*, 2007, 5551-5559 (*dicinnamate, Pholiotic acid*)

1,12-Diamino-4,8-diazadodecane D-249

N-*[3-[(3-Aminopropyl)amino]propyl]-1,4-butanediamine, 9CI. 1,5,9,14-Tetraazatetradecane.* ***Thermospermine****. PA334*
[70862-11-2]
$H_2NCH_2CH_2CH_2^4NH(CH_2)_3NH(CH_2)_3CH_2NH_2$
$C_{10}H_{26}N_4$ 202.342
Prod. by *Acidothermus* spp., *Agrobacterium* sp. and other bacteria. Also isol. from *Vicia sativa* and from the venom of the spider *Hololena curta*, and occurs in *Halocynthia roretzi* and *Anthocidaris crassispina*.

N^4*-Me:* N-*[3-[(3-Aminopropyl)methylamino]propyl]-1,4-butanediamine, 9CI.* **N^4-*Methylthermospermine***
[142808-35-3]
$C_{11}H_{28}N_4$ 216.369
Alkaloid from various Fabaceae. No phys. props. reported.

N^4*-Hydroxy:* [864812-10-2]
$C_{10}H_{26}N_4O$ 218.342
Isol. from venom of the spider *Hololena curta*.

Ganem, B. *et al., Methods Enzymol.*, 1983, **94**, 416-418 (*synth*)
Samejima, K. *et al., Chem. Pharm. Bull.*, 1984, **32**, 3428-3435 (*synth*)
Hamana, K. *et al., FEMS Microbiol. Lett.*, 1990, **67**, 267-273; **71**, 71-76 (*occur*)
Hamana, K. *et al., Comp. Biochem. Physiol., B: Comp. Biochem.*, 1991, **100**, 59-62 (*occur*)
Hamana, K. *et al., J. Biochem. (Tokyo)*, 1991, **109**, 444-449 (*occur*)
Hamana, K. *et al., Phytochemistry*, 1991, **30**, 3319-3322; 1992, **31**, 1410-1412 (*occur, N^3-Me*)
Tzouros, M. *et al., Toxicon*, 2005, **46**, 350-354 (*Hololena curta constits*)

1,13-Diamino-4,9-diazatridecane D-250

1,5,10,15-Tetraazapentadecane. N^1*-(3-Aminopropyl)homospermidine*
[86812-44-4]
$H_2NCH_2(CH_2)_3NH(CH_2)_4NHCH_2CH_2CH_2NH_2$
$C_{11}H_{28}N_4$ 216.369
Constit. of the seeds of *Vicia sativa*. Also prod. by various bacteria incl. *Acidothermus* sp., *Agrobacterium* sp., *Thermoleophilum album* and *Thermoleophilum minutum*. Residue present in Glysperin A, G-131.

Samejima, K. *et al., Chem. Pharm. Bull.*, 1984, **32**, 3428-3435 (*synth*)
Hamana, K. *et al., Can. J. Microbiol.*, 1990, **36**, 567-572; 1991, **37**, 350-354 (*synth, biosynth*)
Hamana, K. *et al., Biochem. J.*, 1992, **284**, 741-747 (*Thermoleophilum constits*)

1,13-Diamino-5,9-diazatridecane D-251

N,N′′*-1,3-Propanediylbis[1,4-butanediamine]. 1,6,10,15-Tetraazapentadecane.* ***Canavalmine****. PA434*
[70862-15-6]
$H_2N(CH_2)_4NH(CH_2)_3NH(CH_2)_4NH_2$
$C_{11}H_{28}N_4$ 216.369
Isol. from the seeds of *Canavalia gladiata* (sword bean). Prod. by the thermophilic eubacteria *Bacillus schlegelii*, *Hydrogenobacter thermophilus*, *Thermoleophilum album* and *Thermoleophilum minutum*. Viscous oil. $Bp_{0.01}$ 135-140°.

[107886-53-3 , 107886-65-7]

Fujihara, S. *et al., Biochem. Biophys. Res. Commun.*, 1982, **107**, 403 (*isol, synth, ir*)
Aikens, D. *et al., Biophys. Chem.*, 1983, **17**, 67 (*cmr*)
Samejima, K. *et al., Chem. Pharm. Bull.*, 1984, **32**, 3428 (*synth*)
Hamana, K. *et al., Biochem. J.*, 1992, **284**, 741-747 (*thermophilic eubacteria constit*)
Schwesinger, R. *et al., Chem. Ber.*, 1994, **127**, 2435 (*synth, pmr*)

4,4′-Diaminodibutylamine, 8CI D-252

N-*(4-Aminobutyl)-1,4-butanediamine, 9CI. 1,9-Diamino-5-azanonane.* sym-*Homospermidine. 1,6,11-Triazaundecane*
[4427-76-3]
$H_2NCH_2(CH_2)_3NH(CH_2)_3CH_2NH_2$
$C_8H_{21}N_3$ 159.274
Constit. of *Santalum album* (sandalwood) and present in legume root nodules. Also isol. from organs of the Japanese newt and from roots of water hyacinth *Eichhornia crassipes*. Occurs in *Anthocidaris crassispina* and *Stichopus japonicus*. Prod. by the thermophilic eubacteria, *Hydrogenobacter thermophilus*. Oil.

Hydrochloride (1:2): Mp 283-285° dec.
Hydrochloride (1:3): [189340-78-1]
Cryst. (EtOH aq.).

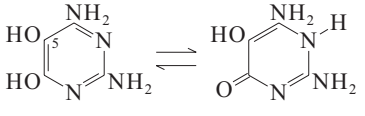
N-*Tetra-Me:* see Solamine, S-340

[138656-54-9]

Kuttan, R. *et al., Biochemistry*, 1971, **10**, 361-365 (*isol, synth*)
Yamamoto, S. *et al., Chem. Pharm. Bull.*, 1983, **31**, 3315-3318 (*isol*)
Hamana, K. *et al., Comp. Biochem. Physiol., B: Comp. Biochem.*, 1991, **100**, 59-62 (*occur*)
Hamana, K. *et al., Biochem. J.*, 1992, **284**, 741-747 (*thermophilic eubacteria constits*)
Ramaswamy, S. *et al., CA*, 1992, **116**, 55605v (*cryst struct*)
Bergeron, R.J. *et al., J. Med. Chem.*, 1997, **40**, 1475-1494 (*synth, pmr*)
Parker, L.L. *et al., Tetrahedron*, 2003, **59**, 10165-10171 (*synth, pmr, cmr*)

2,4-Diamino-5,6-dihydroxypyrimidine D-253

*2,6-Diamino-5-hydroxy-4(1*H*)-pyrimidinone, 9CI. 2,4-Diamino-5,6-pyrimidinediol. Divicine*
[60337-65-7]



$C_4H_6N_4O_2$ 142.117
Pale yellow microcryst. Mp 300° dec.

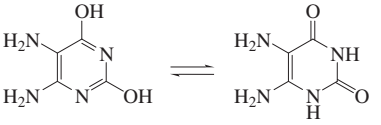
5-O-*Arabinopyranoside:* ***Charine***
[165171-52-8]
$C_9H_{14}N_4O_6$ 274.233
Alkaloid from the unripe fruit of *Momordica charantia* (bitter melon). Needles (MeOH). Mp 180-182°. λ_{max} 239 (no solvent reported).

5-O-*β*-D-*Glucopyranoside:* ***Vicine***†. *Vicioside*
[152-93-2]
$C_{10}H_{16}N_4O_7$ 304.259
Isol. from vetch (*Vicia sativa*), *Vicia faba* and other legumes. Mp 243-244° dec. $[\alpha]_D^{26}$ -11.7 (0.2*M* NaOH).

Bendich, A. *et al., Biochim. Biophys. Acta*, 1953, **12**, 462 (*isol, struct*)
Davoll, J. *et al., J.C.S.*, 1956, 2124 (*synth*)
Chesterfield, J.H. *et al., J.C.S.*, 1964, 1001 (*synth*)
Brown, E.G. *et al., Phytochemistry*, 1972, **11**, 3203
Dutta, P.K. *et al., Indian J. Chem., Sect. B*, 1981, **20**, 669 (*isol, pmr, cmr*)
Kunesch, N. *et al., Annalen*, 1994, 1059 (*synth, Vicine*)
El-Gengaihi, S. *et al., Pharmazie*, 1995, **50**, 361-362 (*Charine*)

4,5-Diamino-2,6-dihydroxypyrimidine D-254

*5,6-Diamino-2,4(1*H*,3*H*)-pyrimidinedione, 9CI. 5,6-Diamino-2,4-pyrimidinediol. 5,6-Diaminouracil*
[3240-72-0]



$C_4H_6N_4O_2$ 142.117
Two intermediate mono-*NH* tautomers also possible. Prod. by a riboflavin-free mutant of *Aspergillus nidulans*. Cryst. (as dihydrochloride).

1-Ph:
$C_{10}H_{10}N_4O_2$ 218.215
Yellow-brownish cryst. (Py aq.). Mp 232-233°.

Di-*NH-form*

1,3-Di-Me: [5440-00-6]
$C_6H_{10}N_4O_2$ 170.171
Used as 0.1*M* aq. soln. for photometric detn. of Co. Long needles (H_2O). Hydrol on standing; turns yellow. Mp 209° Mp 275° dec.

[32014-70-3 , 50996-16-2 , 50787-05-8]

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 812D (*ir*)
Aldrich Library of NMR Spectra, 2nd edn., 1983, **2**, 704D (*nmr*)
Org. Synth., Coll. Vol., 4, 1963, 247
Sadique, J. *et al., Naturwissenschaften*, 1966, **53**, 282 (*isol*)
Ruzička, E. *et al., Mikrochim. Acta*, 1968, 938 (*detn, Co*)
Khmelnitskii, R.A. *et al., CA*, 1974, **81**, 62685h (*ms, struct*)

3,3′-Diaminodipropylamine, 8CI D-255

N-*(3-Aminopropyl)-1,3-propanediamine, 9CI. Bis(3-aminopropyl)amine. Dipropylenetriamine. 1,7-Diamino-4-azaheptane. Iminobispropylamine. 1,5,9-Triazanonane. Norspermidine. Caldine*
[56-18-8]
$(H_2NCH_2CH_2CH_2)_2NH$
$C_6H_{17}N_3$ 131.22

Metab. of various plant spp. and bacteria, e.g. the thermophilic eubacteria *Thermoleophilum album*, *Thermoleophilum minutum*, *Hydrogenobacter thermophilus* and *Bacillus schlegelii*. Isol. from the green alga *Codium fragile*. Occurs in *Anthocidaris crassispina*, *Stichopus japonicus*, *Crassostrea gigas*, *Anthocynthia roretzi* and *Tapes philippinarum*. Colorimetric reagent for nitro compds. Crosslinking agent for epoxy resins. Liq. Sol. H_2O, polar org. solvs. d_{20}^{20} 0.93. Mp -14°. Bp 240° Bp_2 100°. n_D^{20} 1.4810.

▶ Skin and severe eye irritant. LD_{50} (rat, orl) 810 mg/kg. LD_{50} (skn, rbt) 110 mg/kg. JL9450000

Hydrochloride (1:3):
Cryst. (MeOH aq. or EtOH/Et_2O). Mp 270° (259°).

Tripicrate:
Cryst. (H_2O). Mp 226-227°.

$N^3,N^{3'}$-*Bis(2,3-dihydroxybenzoyl):*
[88381-35-5]
$C_{20}H_{25}N_3O_6$ 403.434
Isol. from *Vibrio fluvialis*. Siderophore. λ_{max} 248 (E1%/1cm 12.8); 316 (E1%/1cm 8.1) (MeOH) (Berdy).

N^1-*Me:* N-*(3-Aminopropyl)*-N-*methyl-1,3-propanediamine. 3,3′-Diamino*-N-*methylpropylamine.* N,N-*Bis(3-aminopropyl)methylamine*
[105-83-9]
$C_7H_{19}N_3$ 145.247
Monomer for polyamides and polyureas. Liq. Bp_{12} 112-114°.

▶ Skin and severe eye irritant. LD_{50} (rat, orl) 1540 mg/kg. JL9625000

$N^1,N^3,N^{3'}$-*Tri-Me:* N,N′-*Dimethyl*-N-*[3-(methylamino)propyl]-1,3-propanediamine.* N-*Methyl-3,3′-bis(methylamino)propylamine*
[123-70-6]
$C_9H_{23}N_3$ 173.301
No phys. props. reported.

$N^3,N^3,N^{3'},N^{3'}$-*Tetra-Me:* N′-*[3-(Dimethylamino)propyl]*-N,N-*dimethyl-1,3-propanediamine. 3,3′-Bis(dimethylamino)dipropylamine*
[6711-48-4]
$C_{10}H_{25}N_3$ 187.328
Mp -78°. Bp_{20} 128-131°. n_D^{20} 1.4490.

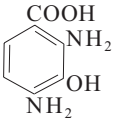
▶ JM1925000

N-*Penta-Me:* N-*[3-(Dimethylamino)propyl]*-N,N′,N′-*trimethyl-1,3-propanediamine, 9CI. 3,3′-Bis(dimethylamino)*-N-*methyldipropylamine, 8CI.*
N,N,N′,N′,N″-*Pentamethyldipropylenetriamine*
[3855-32-1]
$C_{11}H_{27}N_3$ 201.354
Catalyst for polyurethane foam production; auxiliary for lithiation reactions. Liq. Bp_{11} 100-102°.

[27708-70-9 , 72864-15-4]

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 309C; 310B (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 500B; 500C; 501A (*nmr*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 397A; 397B (*ir*)
Wiedeman, D.F. *et al., J.A.C.S.*, 1945, **67**, 1994-1996 (*synth*)
Terent'ev, A.P. *et al., Zh. Obshch. Khim.*, 1950, **20**, 1073-1078; *CA*, **44**, 9350a (*synth*)
Marxer, A. *et al., Helv. Chim. Acta*, 1951, **34**, 924-931 (*N-penta-Me*)
Israel, M. *et al., J. Med. Chem.*, 1964, **7**, 710-716 (*synth*)
Schrier, M. *et al., Mikrochim. Acta*, 1965, **53**, 1091-1097; 1967, **55**, 218-222 (*use*)
Ger. Pat., 1978, 2 739 353; *CA*, **89**, 111389r (*N-penta-Me*)
Bergeron, R.J. *et al., Synthesis*, 1981, 732-733 (*synth*)
Canadian Pat., 1982, 1 132 292; *CA*, **98**, 55043v (*N-penta-Me*)
Murahashi, S. *et al., J.A.C.S.*, 1983, **105**, 5002-5011 (*synth, pmr, ir*)
Dagnall, S.P. *et al., J.C.S. Perkin 2*, 1984, 435-440 (*cmr*)
Hamana, K. *et al., J. Biochem. (Tokyo)*, 1985, **97**, 1595-1601; 1991, **109**, 444-449 (*occur*)
Tanaka, Y. *et al., CA*, 1988, **109**, 232044q (*crosslinking*)
Carboni, B. *et al., Tet. Lett.*, 1988, **29**, 1279-1282 (*synth*)
Hamana, K. *et al., Comp. Biochem. Physiol., B: Comp. Biochem.*, 1991, **100**, 59-62 (*occur, hplc, gc*)
Hamana, K. *et al., Biochem. J.*, 1992, **284**, 741-747 (*thermophilic eubacteria constits*)
Yamamato, S. *et al., J. Biochem. (Tokyo)*, 1993, **113**, 538-544 (*bisdihydroxybenzoyl*)
Thurner, A. *et al., Synth. Commun.*, 1998, **28**, 443-449 (*N-penta-Me, use*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, AIX250; TDP750; BGU750

2,4-Diamino-3-hydroxybenzoic acid D-256

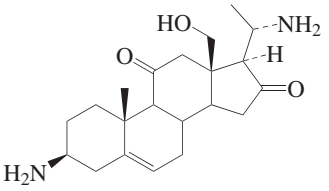


$C_7H_8N_2O_3$ 168.152

N^2,N^4-*Di-Me, Me ester:* ***Damascinine****. Methyl 3-hydroxy-2,4-bis(methylamino)benzoate, 9CI*
[28917-01-3]
$C_{10}H_{14}N_2O_3$ 210.232
Alkaloid from the seeds of *Nigella damascena* (Ranunculaceae). Mp 75-79°.

Doepke, W. *et al., Pharmazie*, 1970, **25**, 69 (*ir, pmr, ms*)

3,20-Diamino-18-hydroxypregn-5-ene-11,16-dione D-257



$C_{21}H_{32}N_2O_3$ 360.495
Tentative struct.

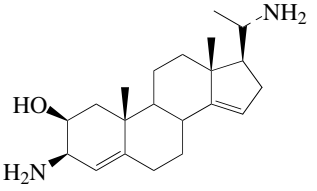
(3β,20*S*)-*form*
Holarricine*. 11,16-Dioxoholarrhimine*
[84294-76-8]
Alkaloid from the seeds of *Holarrhena antidysenterica* (Apocynaceae). Mp 350-351°. $[\alpha]_D^{27}$ -31 (EtOH).

N-*Tetra-Me:* Mp 192-193°.

N-*Tetra-Me,* O-*Ac:* Mp 265-266°.

Siddiqui, S. *et al., Pak. J. Sci. Ind. Res.*, 1981, **24**, 167

3,20-Diaminopregna-4,14-dien-2-ol D-258

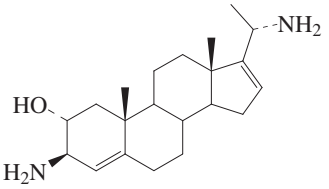


$C_{21}H_{34}N_2O$ 330.512

(2β,3β,20*S*)-*form*
N^{20},N^{20}-*Di-Me,* N^3-*(3-methyl-2-butenoyl):* ***Salignenamide B***
[208835-29-4]
$C_{28}H_{44}N_2O_2$ 440.668
Alkaloid from *Sarcococca saligna*. Gum. $[\alpha]_D^{30}$ +48 (c, 0.04 in MeOH). λ_{max} 215 (log ε 3.65); 224 (log ε 3.67); 228 (log ε 3.66) (MeOH).

Atta-ur-Rahman, *et al., Nat. Prod. Lett.*, 1998, **11**, 297-304 (*isol, uv, pmr, cmr, ms*)

3,20-Diaminopregna-4,16-dien-2-ol D-259

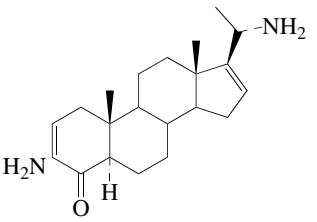


$C_{21}H_{34}N_2O$ 330.512

(2α,3β,20*S*)-*form*
N^{20},N^{20}-*Di-Me,* N^3-*tigloyl:* ***Salignenamide D***
[426814-98-4]
$C_{28}H_{44}N_2O_2$ 440.668
Alkaloid from *Sarcococca saligna*. Amorph. solid. $[\alpha]_D^{25}$ +8 (c, 0.3 in $CHCl_3$). λ_{max} 231 (log ε 3.63); 254 (log ε 3.66) (MeOH).

Atta-ur-Rahman, *et al., Helv. Chim. Acta*, 2002, **85**, 678-688 (*isol, ir, pmr, cmr*)

3,20-Diaminopregna-2,16-dien-4-one D-260



$C_{21}H_{32}N_2O$ 328.497

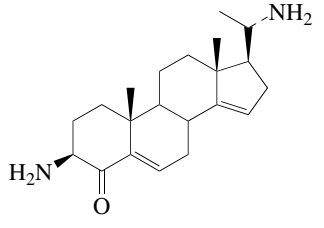
(5α,20*S*)-*form*

N^{20}, N^{20}-*di-Me*,N^3-*tigloyl: 16-Dehydrosarcovagine D.* ***Sarcovagenine C***
$C_{28}H_{42}N_2O_2$ 438.652
Alkaloid from the roots of *Sarcococca vagans* (Buxaceae). Cryst. Mp 160-161°. $[\alpha]_D^{25}$ +5.4 (c, 0.06 in $CHCl_3$).

16α,17α-Epoxide, N^{20}-*Me,* N^3-*tigloyl:* ***16,17-Epoxysarcovagenine D***
[497164-36-0]
$C_{27}H_{40}N_2O_3$ 440.625
Alkaloid from the leaves of *Sarcococca coriacea*. Amorph. yellow solid. $[\alpha]_D^{25}$ +24 (c, 0.12 in $CHCl_3$). λ_{max} 223 (log ϵ 5.2) (MeOH).

Zou, Z.-M. *et al., Phytochemistry*, 1997, **46**, 1091-1093 (*Sarcovagenine C*)
Kalauni, S.K. *et al., Chem. Pharm. Bull.*, 2002, **50**, 1423-1426 (*16,17-Epoxysarcovagenine D*)

3,20-Diaminopregna-5,14-dien-4-one D-261



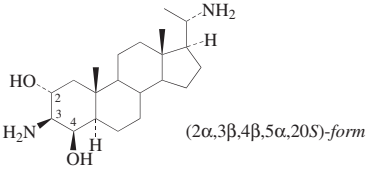
$C_{21}H_{32}N_2O$ 328.497

(3β,20*S*)-*form*

N^{20},N^{20}-*Di-Me,* N^3-*angeloyl:* ***Sarsalignenone***
[199922-56-0]
$C_{28}H_{42}N_2O_2$ 438.652
Alkaloid from *Sarcococca saligna* (Buxaceae). Powder. Mp 20°. $[\alpha]_D^{25}$ -113.6 (c, 0.1 in MeOH). Doubtful mp. given in ref. λ_{max} 237 (log ϵ 2.9); 257 (log ϵ 2.9) (MeOH).

Atta-ur-Rahman, *et al., Phytochemistry*, 1997, **46**, 771-775 (*isol, uv, ir, pmr, cmr, ms*)

3,20-Diaminopregnane-2,4-diol D-262



(2α,3β,4β,5α,20*S*)-*form*

$C_{21}H_{38}N_2O_2$ 350.543
CA gives incorrect names for Axillarines C-F.

(2α,3β,4β,5α,20*S*)-*form*

N^{20},N^{20}-*Di-Me,* N^3-*tigloyl, 4-Ac:* ***Sarcovagine B***
[192385-46-9]
$C_{30}H_{50}N_2O_4$ 502.736
Alkaloid from *Sarcococca vagans.* Cryst. + $^1/_3H_2O$. Mp 205-206°. $[\alpha]_D^{25}$ +19.6 (c, 0.06 in $CHCl_3$).

N^{20},N^{20}-*Di-Me,* N^3-*(3-methyl-2-butenoyl), 4-Ac:* ***Hookerianamide B***
[771533-16-5]
$C_{30}H_{50}N_2O_4$ 502.736
Alkaloid from *Sarcococca hookeriana*. Cryst. Mp 224-226°. $[\alpha]_D^{24}$ +19.2 (c, 0.05 in MeOH). λ_{max} 210 (log ϵ 4.8); 221 (log ϵ 4.4) (MeOH).

N^{20},N^{20}-*Di-Me,* N^3-*phthalimide, 4-Ac: 4-Acetoxy-20-(dimethylamino)-3-phthalimidopregnan-2-ol. 20-(Dimethylamino)-2-hydroxy-3-phthalimidopregnan-4-yl acetate*
[214402-22-9]
$C_{33}H_{46}N_2O_5$ 550.737
Alkaloid from *Pachysandra procumbens.* Needles. Mp 269°. $[\alpha]_D^{20}$ +48 (c, 0.03 in $CHCl_3$). λ_{max} 228 (log ϵ 4.19); 243 (log ϵ 3.94); 293 (log ϵ 3.33) (MeOH).

(2β,3β,4β,5α,20*S*)-*form*

N^{20},N^{20}-*Di-Me,* N^3-*tigloyl:* ***Sarcovagine A***
[192385-45-8]
$C_{28}H_{48}N_2O_3$ 460.699
Alkaloid from *Sarcococca vagans.* Cryst. + $1^1/_2$ H_2O. Mp 277-279°. $[\alpha]_D^{25}$ +21.2 (c, 0.11 in $CHCl_3$).

N^{20},N^{20}-*Di-Me,* N^3-*tigloyl, 4-Ac:* ***Axillarine F***
[128255-12-9]
$C_{30}H_{50}N_2O_4$ 502.736
Alkaloid from *Pachysandra axillaris* (Buxaceae). Cryst. Mp 241-244°. $[\alpha]_D^{22}$ +29.5 (c, 0.398 in $CHCl_3$).

N^{20},N^{20}-*Di-Me,* N^3-*benzoyl:* ***Axillarine E***
[128255-09-4]
$C_{30}H_{46}N_2O_3$ 482.705
Alkaloid from *Pachysandra axillaris* (Buxaceae). Cryst. Mp 285-290°.

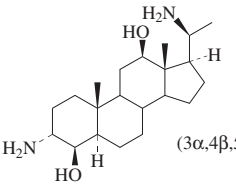
N^{20},N^{20}-*Di-Me,* N^3-*benzoyl, 4-Ac:* ***Axillarine C***
[128255-10-7]
$C_{32}H_{48}N_2O_4$ 524.742
Alkaloid from *Pachysandra axillaris* (Buxaceae). Cryst. Mp 272-274°. $[\alpha]_D^{22}$ +22.4 (c, 0.981 in $CHCl_3$).

N^{20},N^{20}-*Di-Me,* N^3-*benzoyl, 2,4-di-Ac:* ***Axillarine D***. *2,4-Diacetoxyepipachysamine D*
[128255-11-8]
$C_{34}H_{50}N_2O_5$ 566.779
Alkaloid from *Pachysandra axillaris* (Buxaceae) and *Sarcococca saligne.* Cryst. Mp 223-225°. $[\alpha]_D^{22}$ +11.6 (c, 0.433 in $CHCl_3$). $[\alpha]_D$ +83 (c, 0.05 in MeOH).

5α,6α-Epoxide, N^{20},N^{20}-*di-Me,* N^3-*tigloyl, 4-Ac:* ***Salignarine A***
[299203-53-5]
$C_{30}H_{48}N_2O_5$ 516.72
Alkaloid from *Sarcococca saligna*. Brown gum. $[\alpha]_D^{20}$ -60 (c, 0.1 in $CHCl_3$). λ_{max} 208 (log ϵ 2.4) (MeOH).

Chiu, M. *et al., J. Nat. Prod.*, 1992, **55**, 25-28 (*Axillarines C-F, struct*)
Yu, S.S. *et al., Chin. Chem. Lett.*, 1997, **8**, 511-514 (*Sarcovagines*)
Cheng, L.C. *et al., J. Nat. Prod.*, 1998, **61**, 1257-1262 (*phthalimido deriv*)
Atta-ur-Rahman, *et al., Nat. Prod. Lett.*, 1998, **11**, 297-304 (*Diacetoxyepipachysamine D*)
Atta-ur-Rahman, *et al., J. Nat. Prod.*, 2000, **63**, 1364-1368 (*Salignarine A*)
Choudhary, M.I. *et al., Helv. Chim. Acta*, 2004, **87**, 1099-1108 (*Hookerianamide B*)

3,20-Diaminopregnane-4,12-diol D-263



(3α,4β,5α,12β,20*S*)-*form*

$C_{21}H_{38}N_2O_2$ 350.543

(3α,4*β*,5α,12*β*,20*S*)-*form*

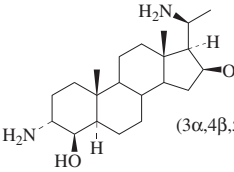
N^3,N^{20},N^{20}-*Tri-Me,* N^3-*benzoyl, 4-Ac:* ***Paxillarine B***. *12*β*-Hydroxypachysandrine A*
[145022-90-8]
$C_{33}H_{50}N_2O_4$ 538.769
Alkaloid from whole plants of *Pachysandra axillaris.* Prisms (Me_2CO/CH_2Cl_2). Mp 234-237°. $[\alpha]_D^{25}$ +65.2 (c, 0.357 in $CHCl_3$).

(3*β*,4*β*,5α,12*β*,20*S*)-*form*

N^3,N^{20},N^{20}-*Tri-Me,* N^3-*benzoyl, 4-Ac:* ***Axillarine B***
[128254-96-6]
$C_{33}H_{50}N_2O_4$ 538.769
Alkaloid from *Pachysandra axillaris.*

Qiu, M. *et al., CA*, 1990, **113**, 55838m (*Axillarine B*)
Qiu, M. *et al., Chem. Pharm. Bull.*, 1996, **44**, 2015-2019 (*Paxillarine B*)

3,20-Diaminopregnane-4,16-diol D-264



(3α,4β,5α,16β,20*S*)-*form*

$C_{21}H_{38}N_2O_2$ 350.543

(3α,4β,5α,16β,20*S*)-*form*

N^3,N^{20},N^{20}-*Tri-Me,* N^3-*benzoyl, 4-Ac:* ***Paxillarine A***. *16β-Hydroxypachysandrine A*
[145022-89-5]
$C_{33}H_{50}N_2O_4$ 538.769
Alkaloid from whole plants of *Pachysandra axillaris.* Prisms (Me_2CO). Mp 263-265°. $[\alpha]_D^{25}$ +77.7 (c, 0.515 in $CHCl_3$).

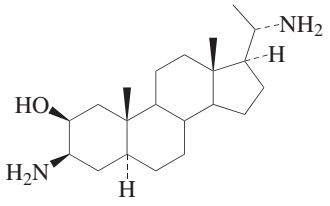
(3β,4β,5α,16β,20*S*)-*form*

N^3,N^{20},N^{20}-*Tri-Me,* N^3-*benzoyl, 4-Ac:* ***Axillarine A***
[128269-64-7]
$C_{33}H_{50}N_2O_4$ 538.769
Alkaloid from *Pachysandra axillaris.*

Qiu, M. *et al., CA*, 1990, **113**, 55838m

(*Axillarine A*)
Qiu, M. *et al., Chem. Pharm. Bull.*, 1996, **44**, 2015-2019 (*Paxillarine A*)

3,20-Diaminopregnan-2-ol D-265



$C_{21}H_{38}N_2O$ 334.544

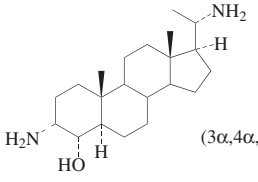
(2β,3β,5α,20*S*)-*form*
N^{20},N^{20}-*Di-Me,* N^3-*(3-methyl-2-butenoyl), 2-Ac:* ***Hookerianamide C***
[771533-17-6]
$C_{30}H_{50}N_2O_3$ 486.737
Alkaloid from *Sarcococca hookeriana*. Cholinesterase inhibitor. Cryst. Mp 240-242°. $[\alpha]_D^{24}$ -136 (c, 0.1 in MeOH). λ_{max} 220 (log ϵ 3.6) (MeOH).

N^{20},N^{20}-*Di-Me,* N^3-*benzoyl:* ***2-Hydroxyepipachysamine D***
[426814-99-5]
$C_{30}H_{46}N_2O_2$ 466.706
Alkaloid from *Sarcococca saligna*. Amorph. solid. $[\alpha]_D^{25}$ +52 (c, 0.21 in $CHCl_3$). λ_{max} 221 (log ϵ 2.7); 269 (log ϵ 3.78) (MeOH).

Atta-ur-Rahman, *et al., Helv. Chim. Acta*, 2002, **85**, 678-688 (*2-Hydroxyepipachysamine D*)
Choudhary, M.I. *et al., Helv. Chim. Acta*, 2004, **87**, 1099-1108 (*Hookerianamide C*)

3,20-Diaminopregnan-4-ol D-266

3,20-Diamino-4-hydroxypregnane



(3α,4α,5α,20*S*)-*form*

$C_{21}H_{38}N_2O$ 334.544

(3α,4α,5α,20*S*)-*form*
N^3,N^{20},N^{20}-*Tri-Me: 20-(Dimethylamino)-3-(methylamino)pregnan-4-ol, 9CI.* ***Pachysandrine C***
[6801-30-5]
$C_{24}H_{44}N_2O$ 376.624
Alkaloid from *Pachysandra terminalis* (Buxaceae). Mp 214-215°. $[\alpha]_D$ -38 ($CHCl_3$).

N^3,N^{20},N^{20}-*Tri-Me,* O-*(3-methyl-2-butenoyl):* ***Pachysandrine D***
[6911-18-8]
$C_{29}H_{50}N_2O_2$ 458.726
Alkaloid from *Pachysandra terminalis* (Buxaceae). Mp 184-185°. $[\alpha]_D$ +2 ($CHCl_3$).

(3α,4β,5α,20*S*)-*form*
N^{20},N^{20}-*Di-Me,* N^3-*benzoyl:* ***Epipachysandrine A***
[5874-19-1]
$C_{30}H_{46}N_2O_2$ 466.706
Minor alkaloid from *Pachysandra terminalis* (Buxaceae). Cryst. (Me_2CO/CH_2Cl_2). Mp 290-292°. $[\alpha]_D$ +12 (MeOH/$CHCl_3$ 1:1). Not epimeric with Pachysandrine A.

N^3,N^{20},N^{20}-*Tri-Me,* O^4-*benzoyl:* ***Pachysanaximine A***
[128255-15-2]
$C_{31}H_{48}N_2O_2$ 480.732
Alkaloid from *Pachysandra axillaris* (Buxaceae). Mp 195-196°. $[\alpha]_D^{22}$ +12.4 (c, 0.28 in $CHCl_3$).

N^3,N^{20},N^{20}-*Tri-Me,* N^3-*benzoyl,* O-*Ac:* ***Pachysandrine A***
[6879-28-3]
$C_{33}H_{50}N_2O_3$ 522.77
Alkaloid from *Pachysandra terminalis* (Buxaceae). Mp 235-236°. $[\alpha]_D^{13}$ +80 ($CHCl_3$).

▶ CU8702340

N^3,N^{20},N^{20}-*Tri-Me,* N^3-*(3-methyl-2-butenoyl):* **O-*Desacetylpachysandrine B*.** O-*Deacylpachysandrine B*
[15027-88-0]
$C_{29}H_{50}N_2O_2$ 458.726
Alkaloid from *Pachysandra terminalis* (Buxaceae). Mp 184-185° Mp 201-202°.

N^3,N^{20},N^{20}-*Tri-Me,* N^3-*(3-methyl-2-butenoyl),* O-*Ac:* ***Pachysandrine B***
[6879-29-4]
$C_{31}H_{52}N_2O_3$ 500.763
Alkaloid from *Pachysandra terminalis* (Buxaceae). Cryst. (Me_2CO/CH_2Cl_2). Mp 187-189°. $[\alpha]_D^{19}$ +93.4 ($CHCl_3$).

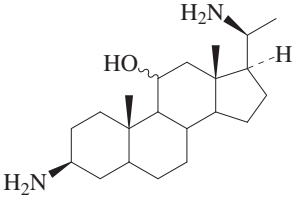
N^3,N^3,N^{20},N^{20}-*Tetra-Me: 3,20-Bis(dimethylamino)pregnan-4-ol.* **O,N-*Desacyl*-N-*methylpachysandrine A***
[15027-71-1]
$C_{25}H_{46}N_2O$ 390.651
Alkaloid from *Pachysandra terminalis* (Buxaceae). Mp 126-150°.

(3β,4β,5α,20*S*)-*form*
N^{20},N^{20}-*Di-Me,* N^3-*(3-methyl-2-butenoyl),* O-*Ac:* ***Vaganine A***
[144028-94-4]
$C_{30}H_{50}N_2O_3$ 486.737
Alkaloid from *Sarcococca vagans* (Buxaceae). $[\alpha]_D^{25}$ +119 (c, 0.2 in MeOH). λ_{max} 204 (log ϵ 3.8) (MeOH).

N^{20},N^{20}-*Di-Me,* N^3-*tigloyl,* O-*Ac:* ***Sarcovagine C***
[192385-48-1]
$C_{30}H_{50}N_2O_3$ 486.737
Alkaloid from *Sarcococca vagans.* Cryst. + ½ H_2O. Mp 192-194°. $[\alpha]_D^{13}$ -9 (c, 0.12 in $CHCl_3$).

Kikuchi, T. *et al., Tet. Lett.*, 1964, **5**, 1817-1823; 1969, **10**, 1679-1682 (*Pachysandra terminalis constits, synth*)
Tomita, M. *et al., Chem. Pharm. Bull.*, 1967, **15**, 193-207; 207-213; 577-581 (*Pachysandrines A-D, Epipachysandrine A*)
Shojiro, N. *et al., Yakugaku Zasshi*, 1967, **87**, 215-227; *CA*, **67**, 32888 (*Pachysandra terminalis constits*)
Kikuchi, T. *et al., Chem. Pharm. Bull.*, 1971, **19**, 1886-1892 (*Pachysandrines, Epipachysandrine A, synth*)
Qiu, M. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 1990, **32**, 626-630; *CA*, **114**, 118538g (*Pachysanaximine A*)
Qiu, M. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 1993, **35**, 885; *CA*, **121**, 78257a (*Vaganine A*)
Yu, S.S. *et al., Chin. Chem. Lett.*, 1997, **8**, 511-514 (*Sarcovagine C*)
Atta-ur-Rahman, *et al., Phytochemistry*, 1997, **46**, 771-775 (*Vaganine A*)

3,20-Diaminopregnan-11-ol D-267

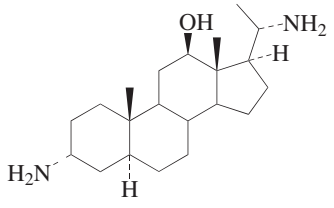


$C_{21}H_{38}N_2O$ 334.544

(3β,11ξ,20*S*)-*form*
N^{20},N^{20}-*Di-Me,* N^3-*(3-methyl-2-butenoyl):* ***11-Hydroxyepipachysamine E***
[312962-53-1]
$C_{28}H_{48}N_2O_2$ 444.699
Alkaloid from *Sarcococca brevifolia*. Amorph. solid. $[\alpha]_D$ -15 (c, 0.25 in $CHCl_3$). Sign of opt. rotation unclear in ref. λ_{max} 199 (EtOH).

Jayasinghe, U.L.B. *et al., Nat. Prod. Lett.*, 2000, **14**, 293-298

3,20-Diaminopregnan-12-ol D-268



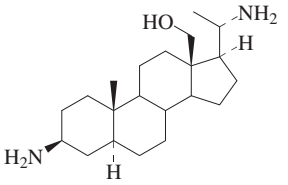
$C_{21}H_{38}N_2O$ 334.544

(3α,5α,12β,20*S*)-*form*
N^3,N^{20},N^{20}-*Tri-Me,* N^3-*(3-methyl-2-butenoyl):* [282726-64-1]
$C_{29}H_{50}N_2O_2$ 458.726
Alkaloid from *Pachysandra procumbens.* Needles. Mp 179°. $[\alpha]_D^{20}$ +61.4 (c, 0.04 in $CHCl_3$). λ_{max} 214 (log ϵ 4.35) (MeOH).

N^3,N^{20},N^{20}-*Tri-Me,* N^3-*benzoyl, 12-Ac:*
$C_{33}H_{50}N_2O_3$ 522.77
Alkaloid from *Pachysandra procumbens.* Needles. Mp 190°. $[\alpha]_D^{20}$ +35 (c, 0.16 in $CHCl_3$). No CAS no. found to 15CI. λ_{max} 218 (log ϵ 4.26); 242 (log ϵ 3.76) (MeOH).

Chang, L.C. *et al., Tetrahedron*, 2000, **56**, 3133-3138 (*N-3-methyl-2-butenoyl, N-benzoyl, isol, uv, ir, pmr, cmr, ms*)

3,20-Diaminopregnan-18-ol D-269



$C_{21}H_{38}N_2O$ 334.544

(3β,5α,20*S*)-*form*

N^{20},N^{20}-*Di-Me,* N^3-*Ac: 3-Acetamido-20-(dimethylamino)pregnan-18-ol.* ***Malouphyllinine.*** *Malouphyllinol*
[7050-52-4]
$C_{25}H_{44}N_2O_2$ 404.635
Alkaloid from *Malouetia bequaertiana* (Apocynaceae). Mp 257°. $[\alpha]_D$ -11 ($CHCl_3$).

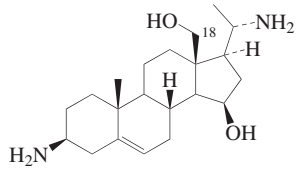
18-Aldehyde: 3,20-Diaminopregnan-18-al

18-Aldehyde, N^{20},N^{20}-*di-Me,* N^3-*Ac: 3-Acetamido-20-(dimethylamino)pregnan-18-al.* ***Malouphylline***
[7050-51-3]
$C_{25}H_{42}N_2O_2$ 402.619
Alkaloid from *Malouetia bequaertiana* leaves (Apocynaceae). Cryst. (Me_2CO). Mp 261°. $[\alpha]_D$ +32 ($CHCl_3$).

Janot, M.M. *et al., Bull. Soc. Chim. Fr.*, 1962, 648-651 (*Malouphylline*)

Khuong-Huu-Lainé, F. *et al., Ann. Pharm. Fr.*, 1965, 395-409 (*Malouphyllinine*)

3,20-Diaminopregn-5-ene-15,18-diol D-270



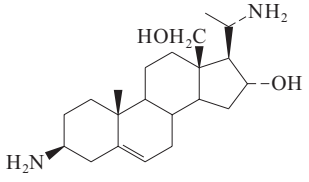
$C_{21}H_{36}N_2O_2$ 348.528

(3β,15β,20*S*)-*form*

N^3,N^{20},N^{20}-*Tri-Me, 18*-O-*(3,4-dimethyl-2-pentenoyl):* ***20-(Dimethylamino)-18-ikemaoyl-3-(methylamino)pregn-5-ene-15,18-diol.*** *3-(Methylamino)-15,18-dihydroxy-18-ikemaoyl-20-(dimethylamino)pregn-5-ene*
[91147-26-1]
$C_{31}H_{52}N_2O_3$ 500.763
Alkaloid from the stem bark of *Didymeles madagascariensis* (Didymelaceae). $[\alpha]_D$ +4 (c, 1.5 in $CHCl_3$).

Sánchez, V. *et al., Bull. Soc. Chim. Fr., Part II*, 1984, 71-76 (*isol, pmr, ms*)

3,20-Diaminopregn-5-ene-16,18-diol D-271



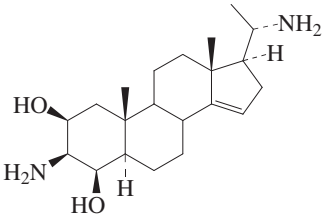
$C_{21}H_{36}N_2O_2$ 348.528

(3β,16α,20*S*)-*form*

N^3,N^{20},N^{20}-*Tri-Me:* ***20-(Dimethylamino)-3-(methylamino)pregn-5-ene-16,18-diol***
[113857-62-8]
$C_{24}H_{42}N_2O_2$ 390.608
Alkaloid from the root bark of *Didymeles perrieri* (Didymelaceae). $[\alpha]_D$ -2 (c, 0.68 in EtOH).

Sánchez, V. *et al., Bull. Soc. Chim. Fr.*, Part II, 1987, 877 (*isol, ir, pmr, cmr, ms, struct*)

3,20-Diaminopregn-14-ene-2,4-diol D-272



$C_{21}H_{36}N_2O_2$ 348.528

(2β,3β,4β,5α,20*S*)-*form*

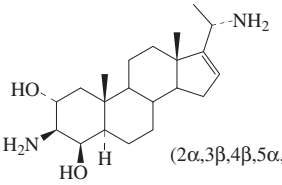
N^{20},N^{20}-*Di-Me,* N^3-*tigloyl:* ***Salonine A***
$C_{28}H_{46}N_2O_3$ 458.683
Alkaloid from *Sarcococca saligna*. Cholinesterase inhibitor. Yellow gum. $[\alpha]_D^{20}$ +60 (c, 0.03 in MeOH). λ_{max} 212 (log ϵ 2.66) (MeOH).

N^{20},N^{20}-*Di-Me,* N^3-*tigloyl, 4-Ac:* ***Salignenamide C***
[426814-97-3]
$C_{30}H_{48}N_2O_4$ 500.72
Alkaloid from *Sarcococca saligna*. Pale yellow gum. $[\alpha]_D^{25}$ +90 (c, 0.1 in $CHCl_3$). λ_{max} 209 (log ϵ 3.1) (MeOH).

Atta-ur-Rahman, *et al., Helv. Chim. Acta*, 2002, **85**, 678-688 (*Salignenamide C*)

Atta-ur-Rahman, *et al., Nat. Prod. Res.*, 2003, **17**, 235-241 (*Salonine A*)

3,20-Diaminopregn-16-ene-2,4-diol D-273



(2α,3β,4β,5α,20*S*)-*form*

$C_{21}H_{36}N_2O_2$ 348.528

(2α,3β,4β,5α,20*S*)-*form*

N^{20},N^{20}-*Di-Me,* N^3-*tigloyl, 4-Ac:* ***Sarcovagenine B***
[200868-70-8]
$C_{30}H_{48}N_2O_4$ 500.72
Alkaloid from the roots of *Sarcococca vagans* (Buxaceae). Cryst. Mp 283-284°. $[\alpha]_D^{25}$ +5.9 (c, 0.1 in $CHCl_3$).

(2β,3β,4β,5α,20*S*)-*form*

N^{20}-*Me,* N^3-*tigloyl, 2,4-di-Ac:* ***Nepapakistamine A***
[353228-47-4]
$C_{31}H_{48}N_2O_5$ 528.731
Alkaloid from *Sarcococca coriacea*. Cryst. ($CHCl_3$). Mp 162-163°. $[\alpha]_D^{23}$ +18.7 (c, 0.09 in $CHCl_3$). λ_{max} 203 (log ϵ 4.8) (MeOH).

N^{20},N^{20}-*Di-Me,* N^3-*tigloyl:* ***Sarcovagenine A***
[200868-69-5]
$C_{28}H_{46}N_2O_3$ 458.683
Alkaloid from the roots of *Sarcococca vagans* (Buxaceae). Cryst. Mp 260-261°. $[\alpha]_D^{25}$ +9.4 (c, 0.05 in $CHCl_3$).

N^{20},N^{20}-*Di-Me,* N^3-*(3-methyl-2-butenoyl):* ***Hookerianamide A***
[771533-15-4]
$C_{28}H_{46}N_2O_3$ 458.683
Alkaloid from *Sarcococca hookeriana*. Cholinesterase inhibitor. Cryst. Mp 212-214°. $[\alpha]_D^{24}$ -53 (c, 0.06 in MeOH).

16α,17α-Epoxide, N^{20}-*Me,* N^3-*tigloyl, 2,4-di-Ac:* ***16,17-Epoxynepapakistamine A***
[497162-05-7]
$C_{31}H_{48}N_2O_6$ 544.73
Alkaloid from the leaves of *Sarcococca coriacea*. Cryst. ($CHCl_3$). Mp 119-120°. $[\alpha]_D^{25}$ +14 (c, 0.07 in $CHCl_3$). λ_{max} 209 (log ϵ 5.3) (MeOH).

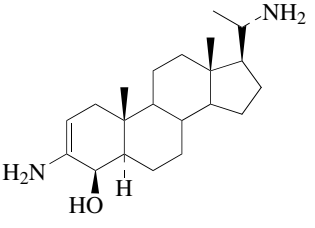
Zou, Z.-M. *et al., Phytochemistry*, 1997, **46**, 1091-1093 (*Sarcovagenines*)

Kalauni, S.K. *et al., J. Nat. Prod.*, 2001, **64**, 842-844 (*Nepapakistamine A*)

Kalauni, S.K. *et al., Chem. Pharm. Bull.*, 2002, **50**, 1423-1426 (*16,17-Epoxynepapakistamine A*)

Choudhary, M.I. *et al., Helv. Chim. Acta*, 2004, **87**, 1099-1108 (*Hookerianamide A*)

3,20-Diaminopregn-2-en-4-ol D-274



$C_{21}H_{36}N_2O$ 332.528

(4β,5α,20*S*)-*form*

N^{20},N^{20}-*Di-Me,* N^3-*(3-methyl-2-butenoyl):* ***Vaganine B***
[156430-95-4]
$C_{28}H_{46}N_2O_2$ 442.684
Alkaloid from *Sarcococca vagans* (Buxaceae).

N^{20},N^{20}-*Di-Me,* N^3-*(3-methyl-2-butenoyl), 4-Ac:* ***Vaganine C***
[156430-96-5]
$C_{30}H_{48}N_2O_3$ 484.721
From *Sarcococca vagans* (Buxaceae).

N^{20},N^{20}-*Di-Me,* N^3-*benzoyl:*
$C_{30}H_{44}N_2O_2$ 464.69
Alkaloid from *Pachysandra procumbens*. Needles. Mp 189°. $[\alpha]_D^{20}$ +40 (c, 0.06 in $CHCl_3$). λ_{max} 220 (log ϵ 3.66); 269 (log ϵ 3.43) (MeOH).

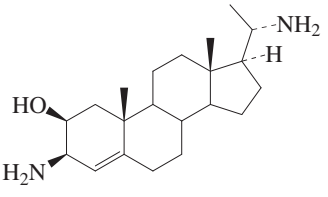
N^{20},N^{20}-*Di-Me,* N^3-*benzoyl, 4-Ac:*
$C_{32}H_{46}N_2O_3$ 506.727
Alkaloid from *Pachysandra procumbens.* Needles. Mp 179°. $[\alpha]_D^{20}$ +48.2 (c, 0.04 in $CHCl_3$). λ_{max} 224 (log ϵ 3.94); 264 (log ϵ 3.73) (MeOH).

4-Ketone, N^{20},N^{20}-*di-Me,* N^3-*tigloyl:* ***Sarcovagine D***
[192385-49-2]
$C_{28}H_{44}N_2O_2$ 440.668
Alkaloid from *Sarcococca vagans.* Mp 170-172°. $[\alpha]_D^{25}$ +39.5 (c, 0.07 in $CHCl_3$).

4-Ketone, N^{20},N^{20}-*di-Me,* N^3-*benzoyl:* ***Axillaridine A***
[128255-16-3]
$C_{30}H_{42}N_2O_2$ 462.674
Alkaloid from whole plants of *Pachysandra axillaris* (Buxaceae). Mp 223-224°. $[\alpha]_D^{22}$ +51.3 (c, 0.517 in $CHCl_3$).

Chiu, M.H. *et al., Phytochemistry*, 1992, **31**, 2571-2572 (*Axillaridine A*)
Qiu, M. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 1993, **35**, 885; *CA*, **121**, 78257a (*Vaganine B*)
Yu, S.S. *et al., Chin. Chem. Lett.*, 1997, **8**, 511-514 (*Sarcovagine D*)
Chang, L.C. *et al., J. Nat. Prod.*, 1998, **61**, 1257-1262 (*Pachysandra procumbens deriv*)
Chang, L.C. *et al., Tetrahedron*, 2000, **56**, 3133-3138 (*20-N-di-Me-3-N-benzoyl*)

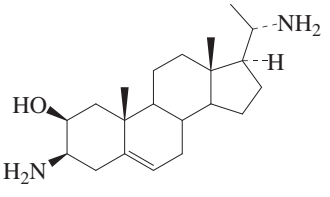
3,20-Diaminopregn-4-en-2-ol D-275



$C_{21}H_{36}N_2O$ 332.528

(2β,3β,20*S*)-*form*
N^{20},N^{20}-*Di-Me,* N^3-*tigloyl:* ***2-Hydroxysalignarine E***. *Warsine A*
[657411-70-6]
$C_{28}H_{46}N_2O_2$ 442.684
Alkaloid from *Sarcococca saligna.* Cholinesterase inhibitor. Yellow gum. $[\alpha]_D^{20}$ +38.9 (c, 0.3 in MeOH). λ_{max} 211 (log ϵ 1.32); 229 (log ϵ 2.76) (MeOH).
Zaheer-ul-Haq, *et al., Bioorg. Med. Chem. Lett.*, 2003, **13**, 4375-4380 (*isol*)
Atta-ur-Rahman, *et al., Helv. Chim. Acta*, 2004, **87**, 439-448 (*isol, pmr, cmr, ms*)

3,20-Diaminopregn-5-en-2-ol D-276



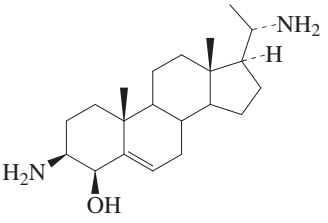
$C_{21}H_{36}N_2O$ 332.528

(2β,3β,20*S*)-*form*
N^{20},N^{20}-*Di-Me,* N^3-*tigloyl:* ***Salignarine B***
[299203-54-6]
$C_{28}H_{46}N_2O_2$ 442.684
Alkaloid from *Sarcococca saligna.* Amorph. powder. $[\alpha]_D^{20}$ +94 (c, 0.2 in $CHCl_3$). λ_{max} 212 (log ϵ 1.8) (MeOH).

N^{20},N^{20}-*Di-Me,* N^3-*(3-methyl-2-butenoyl):* ***Salignarine C***
[299203-55-7]
$C_{28}H_{46}N_2O_2$ 442.684
Alkaloid from *Sarcococca saligna.* Powder. $[\alpha]_D^{20}$ -12 (c, 0.2 in $CHCl_3$). λ_{max} 211 (log ϵ 1.9) (MeOH).

Atta-ur-Rahman, *et al., J. Nat. Prod.*, 2000, **63**, 1364-1368

3,20-Diaminopregn-5-en-4-ol D-277

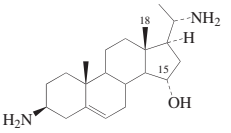


$C_{21}H_{36}N_2O$ 332.528

(3β,4β,20*S*)-*form*
N^{20},N^{20}-*Di-Me,* N^3-*tigloyl:* ***Salignarine F***
[657411-74-0]
$C_{28}H_{46}N_2O_2$ 442.684
Alkaloid from *Sarcococca saligna.* Cholinesterase inhibitor. Yellow gum. $[\alpha]_D^{20}$ -71 (c, 0.01 in MeOH). λ_{max} 203 (log ϵ 2.6) (MeOH).
Atta-ur-Rahman, *et al., Helv. Chim. Acta*, 2004, **87**, 439-448 (*isol, pmr, cmr, ms*)

3,20-Diaminopregn-5-en-15-ol D-278

3,20-Diamino-15-hydroxypregn-5-ene



(3β,15α,20*S*)-*form*

$C_{21}H_{36}N_2O$ 332.528

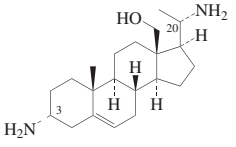
(3β,15α,20*S*)-*form*
N^{20},N^{20}-*Di-Me,* N^3-*Ac:* **N-*Acetyl-15α-hydroxyirehdiamine F.*** *15α-Hydroxy*-N-*acetylirehdiamine F*
[91147-23-8]
$C_{25}H_{42}N_2O_2$ 402.619
Alkaloid from the stem bark of *Didymeles madagascariensis* (Didymelaceae). Cryst. (Et_2O). Mp 266°. $[\alpha]_D$ -35 (c, 0.82 in $CHCl_3$).

(3β,15β,20*S*)-*form*
N^{20},N^{20}-*Di-Me,* N^3-*Ac:* **N-*Acetyl-15β-hydroxyirehdiamine F.*** *15β-Hydroxy*-N-*acetylirehdiamine F*
[91147-22-7]
$C_{25}H_{42}N_2O_2$ 402.619
Alkaloid from the stem bark of *Didymeles madagascariensis* (Didymelaceae). Cryst. (Et_2O). Mp 249-250°. $[\alpha]_D$ +91 (c, 1.14 in $CHCl_3$).

N^3,N^{20},N^{20}-*Tri-Me: 20-(Dimethylamino)-3-(methylamino)pregn-5-en-15-ol.* ***15β-Hydroxyirehdiamine H***
[91147-25-0]
$C_{24}H_{42}N_2O$ 374.609
Alkaloid from the stem bark of *Didymeles madagascariensis* (Didymelaceae). Cryst. (Me_2CO). Mp 206°. $[\alpha]_D$ +8 (c, 0.57 in $CHCl_3$).
Sánchez, V. *et al., Bull. Soc. Chim. Fr., Part II*, 1984, 71-76 (*Didymeles madagascariensis constits*)

3,20-Diaminopregn-5-en-18-ol D-279

3,20-Diamino-18-hydroxypregn-5-ene



(3α,20*S*)-*form*

$C_{21}H_{36}N_2O$ 332.528

(3α,20*S*)-*form*
Holarrhidine
[468-32-6]
Alkaloid from *Holarrhena antidysenterica* (Apocynaceae). Mp 180-181°. $[\alpha]_D$ -23 ($CHCl_3$).

(3β,20*S*)-*form*
Holarrhimine
[468-31-5]
Alkaloid from *Holarrhena antidysenterica*, *Holarrhena mitis* and *Holarrhena febrifuga* (Apocynaceae). Mp 183°. $[\alpha]_D$ -14 ($CHCl_3$).
Hydrochloride: Mp 345° dec. $[\alpha]_D^{25}$ -22.8 (MeOH).

N^3-*Me:* **N^3-*Methylholarrhimine***
[27741-48-6]
$C_{22}H_{38}N_2O$ 346.555
Alkaloid from *Holarrhena antidysenterica* (Apocynaceae). Mp 163-164° (160-163°). $[\alpha]_D$ -19 ($CHCl_3$).

N^{20}-*Me:* **N^{20}-*Methylholarrhimine***
[95221-60-6]
[124223-73-0 (hydrochloride)]
$C_{22}H_{38}N_2O$ 346.555
Alkaloid from *Holarrhena antidysenterica* (Apocynaceae). Mp 165-166°. $[\alpha]_D$ -19 ($CHCl_3$).

N^{20},N^{20}-*Di-Me,* N^3-*Ac:* ***5,6-Dehydromalouphyllinol***
[91147-24-9]
$C_{25}H_{42}N_2O_2$ 402.619
Alkaloid from the stem bark of *Didymeles* cf. *madagascariensis* (Didymelaceae), prev. obt. semisynthetically from Holarrhimine. Cryst. (Et_2O). Mp 244-245°. $[\alpha]_D$ -41 (c, 0.35 in $CHCl_3$).

N^3,N^3,N^{20},N^{20}-*Tetra-Me:* **N-*Tetramethylholarrhimine***. *Regholarrhenine F*
[10308-37-9]
$C_{25}H_{44}N_2O$ 388.635
Alkaloid from *Holarrhena antidysenterica* and *Malouetia tamaquarina* (Apocynaceae). Mp 233-235° (227-229°). $[\alpha]_D$ -35 (c, 1 in $CHCl_3$).

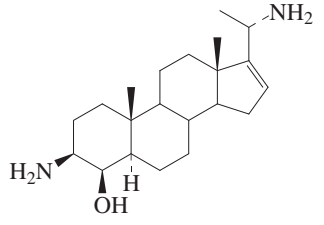
Regholarrhenine F (from *H. antidysenterica*, Mp 210-212°) appears identical with the prev. known *N*-Tetramethylholarrhimine.

N-*Tetra-Me; hydrochloride:* Mp 315-316° dec.

N^{20}-*Acetoxy:* ***Holadysenterine***
[949087-26-7]
$C_{23}H_{38}N_2O_3$ 390.565
Alkaloid from the stem bark of *Holarrhena antidysenterica*, Amorph. powder. Mp 218-220°. $[\alpha]_D^{25}$ -14.4 (c, 0.23 in MeOH).

Siddiqui, S. *et al., J. Indian Chem. Soc.*, 1932, **9**, 553-563 (*Holarrhimine*)
Cerný, V. *et al., Chem. Listy*, 1955, **49**, 723-730; 1389-1394; 1956, **50**, 1126-1133; 1957, **51**, 2351-2355; **52**, 2344-2350 (*Holarrhidine, Holarrhimine*)
Tschesche, R. *et al., Chem. Ber.*, 1958, **91**, 1504-1511 (N^3-*Methylholarrhimine,* N^{20}-*Methylholarrhimine, N-Tetramethylholarrhimine*)
Labler, L. *et al., Coll. Czech. Chem. Comm.*, 1959, **24**, 370-377; 378-383 (*Holarrhidine*)
Khuong-Huu, Q. *et al., Bull. Soc. Chim. Fr.*, 1965, 3035-3040 (*occur, bibl*)
Sóti, F. *et al., Tet. Lett.*, 1967, 1437-1441 (*N-Tetramethylholarrhimine*)
Dadoun, H. *et al., Ann. Pharm. Fr.*, 1973, **31**, 237-247 (*Holarrhimine*)
Sánchez, V. *et al., Bull. Soc. Chim. Fr.*, 1984, 71-76 (*5,6-Dehydromalouphyllinol*)
Bhutani, K.K. *et al., Phytochemistry*, 1990, **29**, 969-972 (*Regholarrhenine F*)
Kumar, N. *et al., Chem. Pharm. Bull.*, 2007, **55**, 912-914 (*Holadysenterine*)

3,20-Diaminopregn-16-en-4-ol D-280

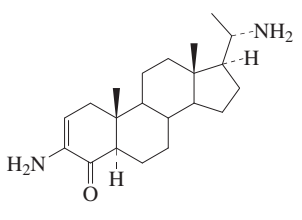


$C_{21}H_{36}N_2O$ 332.528

(3β,4β,5α,20*S*)-*form*
N^{20},N^{20}-*Di-Me,* N^3-*(3-methyl-2-butenoyl), 4-Ac:* ***Vaganine D***
[353228-46-3]
$C_{30}H_{48}N_2O_3$ 484.721
Alkaloid from *Sarcococca coriacea*. Amorph. solid ($CHCl_3$). Mp 220°. $[\alpha]_D^{23}$ -21.4 (c, 0.14 in $CHCl_3$). λ_{max} 206 (log ε 4.2) (MeOH).

Kalauni, S.K. *et al., J. Nat. Prod.*, 2001, **64**, 842-844 (*Vaganine D*)

3,20-Diaminopregn-2-en-4-one D-281



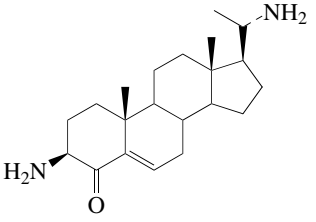
$C_{21}H_{34}N_2O$ 330.512

(5α,20*S*)-*form*
N^{20}-*Me,* N^3-*tigloyl:* ***Phulchowkiamide A***
[771500-78-8]
$C_{27}H_{42}N_2O_2$ 426.641
Alkaloid from *Sarcococca hookeriana*. Cholinesterase inhibitor. Gum. $[\alpha]_D^{24}$ +48 (c, 0.1 in MeOH). λ_{max} 230 (log ε 3.9) (MeOH).

N^{20},N^{20}-*Di-Me,* N^3-*formyl:* ***Hookerianamide H***
[957466-14-7]
$C_{24}H_{38}N_2O_2$ 386.576
Alkaloid from *Sarcococca hookeriana*. Amorph. solid. $[\alpha]_D^{25}$ +138 (c, 0.3 in MeOH). λ_{max} 224 (log ε 3.3); 252 (log ε 2.7) (MeOH).

Choudhary, M.I. *et al., Helv. Chim. Acta*, 2004, **87**, 1099-1108 (*Phulchowkiamide A*)
Devkota, K.P. *et al., Chem. Pharm. Bull.*, 2007, **55**, 1397-1401 (*Hookerianamide H*)

3,20-Diaminopregn-5-en-4-one D-282



$C_{21}H_{34}N_2O$ 330.512

(3β,20*S*)-*form*
N^{20}-*Me,* N^3-*(3-methyl-2-butenoyl):*
[218604-86-5]
$C_{27}H_{42}N_2O_2$ 426.641
Alkaloid from *Sarcococca brevifolia*. Amorph. solid. Mp 145-147°. $[\alpha]_D^{25}$ -8 (c, 0.29 in $CHCl_3$). λ_{max} 194 (log ε 4.11) (MeOH).

N^{20},N^{20}-*Di-Me,* N^3-*angeloyl: 3-(Angeloylamino)-20-(dimethylamino)-5-pregnen-4-one.* ***Sarsalignone***
[199922-55-9]
$C_{28}H_{44}N_2O_2$ 440.668
Alkaloid from *Sarcococca saligna* (Buxaceae). Powder. Mp 278°. $[\alpha]_D^{25}$ -106.4 (c, 0.1 in MeOH). λ_{max} 237 (log ε 2.9); 257 (log ε 2.9) (MeOH).

N^{20},N^{20}-*Di-Me,* N^3-*(3-methyl-2-butenoyl):* ***Epipachysamine E 5-en-4-one***
[218604-81-0]
$C_{28}H_{44}N_2O_2$ 440.668
Alkaloid from *Sarcococca brevifolia*. Amorph. solid. Mp 150-151°. $[\alpha]_D^{25}$ +6 (c, 0.2 in $CHCl_3$). Possible incorrect sign of opt. rotation. λ_{max} 194 (log ε 4.11) (MeOH).

Atta-ur-Rahman, *et al., Phytochemistry*, 1997, **46**, 771-775 (*isol, uv, ir, pmr, cmr, ms*)
Jayasinghe, U.L.B. *et al., Nat. Prod. Lett.*, 1998, **12**, 103-109 (*isol, struct*)

1,20-Diamino-4,8,12,16-tetraazaeicosane D-283

4,8,12,16-Tetraazaeicosane-1,20-diamine, 9CI. 1,5,7,13,17,22-Hexaazadocosane. ***Homocaldohexamine****. PA33334*
[133416-04-3]
$H_2N(CH_2)_3^4NH(CH_2)_3NH(CH_2)_3NH(CH_2)_3NH(CH_2)_4NH_2$
$C_{16}H_{40}N_6$ 316.532
Prod. by *Thermus thermophilus* HB8, *Marinithermus hydrothermalis* and other thermophilic spp. Isol. from the venom of the spider *Hololena curta*.

N^4-*Hydroxy:* [864812-17-9]
$C_{16}H_{40}N_6O$ 332.532
Isol. from venom of the spider *Hololena curta*.

Hamana, K. *et al., J. Biochem. (Tokyo)*, 1991, **109**, 444 (*isol*)
Tzouros, M. *et al., Toxicon*, 2005, **40**, 350-354 (*isol, N-hydroxy*)

1,20-Diamino-4,8,12,17-tetraazaeicosane D-284

4,8,12,17-Tetraazaeicosane-1,20-diamine, 9CI. 1,5,9,13,18,22-Hexaazadocosane. ***Thermohexamine****. PA33343*
[143085-73-8]
$H_2N(CH_2)_3^4NH(CH_2)_3NH(CH_2)_3NH(CH_2)_4NH(CH_2)_3NH_2$
$C_{16}H_{40}N_6$ 316.532
Isol. from the thermophilic bacterium *Bacillus schlegelii* and the venom of the spider *Hololena curta*.

N^1,N^{21}-*Di-Ac:* [864812-19-1]
$C_{20}H_{44}N_6O_2$ 400.607
Isol. from the venom of the spider *Hololena curta*.

4-N-*Hydroxy:* [864812-16-8]
$C_{16}H_{40}N_6O$ 332.532
Isol. from the venom of the spider *Hololena curta*.

Hamana, K. *et al., Biochem. J.*, 1992, **284**, 741-747 (*Bacillus schlegelii constit, isol, struct*)
Tzouros, M. *et al., Toxicon*, 2005, **46**, 350-354 (*Hololena curta constits*)

1,20-Diamino-4,8,13,17-tetraazaeicosane D-285

4,8,13,17-Tetraazaeicosane-1,20-diamine, 9CI. 1,5,9,14,18,22-Hexaazadocosane. ***Homothermohexamine***
[143085-74-9]
$H_2N(CH_2)_3NH(CH_2)_3NH(CH_2)_4NH(CH_2)_3NH(CH_2)_3NH_2$
$C_{16}H_{40}N_6$ 316.532
Prod. by a thermophilic bacterium *Bacillus schlegelii* and isol. from the venom of the spider *Agelenopsis aperta*.

Hamana, K. *et al., Biochem. J.*, 1992, **284**, 741-747
Hamana, K. *et al., Microbios*, 1993, **75**, 23-32 (*isol*)
Tzouros, M. *et al., Toxicon*, 2005, **46**, 350-354 (*isol*)

1,24-Diamino-5,10,15,20-tetraazatetracosane D-286

5,10,15,20-Tetraazatetracosane-1,24-diamine, 9CI. 1,6,11,16,21,26-Hexaazahexacosane. ***Homohexamine***
[104235-48-5]
$H_2NCH_2(CH_2)_3NH(CH_2)_4NH(CH_2)_4^{10}$-

$NH(CH_2)_4^5NH(CH_2)_3CH_2NH_2$

$C_{20}H_{48}N_6$ 372.639

Constit. of *Vicia sativa*.

N^5*-(4-Aminobutyl):* **N^5-(4-Aminobutyl)-homohexamine**

[139035-39-5]

$C_{24}H_{57}N_7$ 443.761

Constit. of *Vicia sativa*.

N^{10}*-(4-Aminobutyl):* **N^{10}-(4-Aminobutyl)homohexamine**

[139035-40-8]

$C_{24}H_{57}N_7$ 443.761

Constit. of *Vicia sativa*.

Hamana, K. *et al., Phytochemistry*, 1991, **30**, 3319-3322 (*occur*)

1,17-Diamino-4,9,13-triazaheptadecane D-287

1,5,10,14,19-Pentaazanonadecane. N′*-(3-Aminopropyl)canavalmine. PA3434*

[129225-31-6]

$H_2N(CH_2)_3NH(CH_2)_4NH(CH_2)_3NH(CH_2)_4NH_2$

$C_{14}H_{35}N_5$ 273.464

Constit. of *Canavalia gladiata* (sword bean).

Niitsu, M. *et al., Chem. Pharm. Bull.*, 1986, **34**, 1032-1038 (*synth, cmr*)

Matsuzaki, S. *et al., Phytochemistry*, 1990, **29**, 1311-1312 (*isol*)

1,16-Diamino-4,8,12-triazahexadecane D-288

N-*[3-[[3-[(3-Aminopropyl)amino]propyl]amino]propyl]-1,4-butanediamine, 9CI. 4,8,12-Triazahexadecane-1,16-diamine. 1,5,9,13,18-Pentaazaoctadecane.* ***Homocaldopentamine****. PA3334*

[84807-66-9]

$H_2N(CH_2)_3^4NH(CH_2)_3NH(CH_2)_3NH(CH_2)_4NH_2$

$C_{13}H_{33}N_5$ 259.437

Prod. by *Thermomicrobium roseum, Thermus thermophilus* and other thermophilic spp. Also isol. from venom of the spider *Hololena curta*. Cryst. (as pentahydrochloride).

N^4*-Hydroxy:* [864812-12-4]

$C_{13}H_{33}N_5O$ 275.437

Isol. from the venom of the spider *Hololena curta*.

[107886-58-8]

Oshima, T. *et al., J. Biochem. (Tokyo)*, 1983, **93**, 1455-1456 (*isol, struct*)

Niitsu, M. *et al., Chem. Pharm. Bull.*, 1986, **34**, 1032-1038 (*synth, cmr*)

Hamana, K. *et al., FEMS Microbiol. Lett.*, 1990, **68**, 27-30; 31-34 (*isol*)

Tzouros, M. *et al., Toxicon*, 2005, **46**, 350-354 (*isol, N-hydroxy*)

1,16-Diamino-4,8,13-triazahexadecane D-289

N-*(3-Aminopropyl)*-N′*-[3-[(3-aminopropyl)amino]propyl]-1,4-butanediamine, 9CI. 1,5,9,14,18-Pentaaazaoctadecane.* ***Thermopentamine****. PA3343*

[102203-44-1]

$H_2N(CH_2)_3^4NH(CH_2)_3NH(CH_2)_4NH(CH_2)_3NH_2$

$C_{13}H_{33}N_5$ 259.437

Prod. by *Bacillus schlegelii*, *Thermomicrobium roseum*, *Thermus thermophilus* and other thermophilic spp. Occurs in *Anthocidaris crassispina* and venom of the spider *Agelenopsis aperta*.

N^4*-Hydroxy:* [864812-11-3]

$C_{13}H_{33}N_5O$ 275.437

Isol. from venom of the spider *Hololena curta*.

[102203-43-0]

Niitsu, M. *et al., Chem. Pharm. Bull.*, 1986, **34**, 1032-1038 (*synth, cmr*)

Hamana, K. *et al., FEMS Microbiol. Lett.*, 1990, **68**, 27-30; 31-34 (*isol*)

Hamana, K. *et al., Comp. Biochem. Physiol., B: Comp. Biochem.*, 1991, **100**, 59-62 (*occur, hplc*)

Hamana, K. *et al., Biochem. J.*, 1992, **284**, 741-747 (*Bacillus schlegelii constit*)

Tzouros, M. *et al., Toxicon*, 2005, **46**, 350-354 (*isol, N-hydroxy*)

1,19-Diamino-6,11,16-triazanonadecane D-290

N-*(4-Aminobutyl)*-N′*-[4-[(4-aminobutyl)amino]butyl]-1,4-butanediamine, 9CI. 1,6,11,16,21-Pentaazadocosane.* ***Homopentamine***

[15518-43-1]

$H_2NCH_2(CH_2)_3^5NH(CH_2)_4^{10}NH(CH_2)_4^{15}NH(CH_2)_3CH_2NH_2$

$C_{16}H_{39}N_5$ 301.518

Constit. of *Vicia sativa*.

N^5*-(4-Aminobutyl):* **N^5-(4-Aminobutyl)-homopentamine**

[139035-36-2]

$C_{20}H_{48}N_6$ 372.639

Constit. of *Vicia sativa*.

N^{10}*-(4-Aminobutyl):* **N^{10}-(4-Aminobutyl)homopentamine**

[139035-37-3]

$C_{20}H_{48}N_6$ 372.639

Constit. of *Vicia sativa*.

N^5,N^{10}*-Bis(4-aminobutyl):* **N^5,N^{10}-Bis(4-aminobutyl)homopentamine**

[139035-41-9]

$C_{24}H_{57}N_7$ 443.761

Constit. of *Vicia sativa*.

N^5,N^{15}*-Bis(4-aminobutyl):* **N^5,N^{15}-Bis(4-aminobutyl)homopentamine**

[139035-42-0]

$C_{24}H_{57}N_7$ 443.761

Constit. of *Vicia sativa*.

[107886-48-6]

Niitsu, M. *et al., Chem. Pharm. Bull.*, 1986, **34**, 1032 (*synth, cmr*)

Hamana, K. *et al., Phytochemistry*, 1991, **30**, 3319 (*occur*)

1,18-Diamino-5,9,14-triazaoctadecane D-291

1,6,10,15,20-Pentaazaeicosane. N′*-(4-Aminobutyl)canavalmine. PA4344*

[129225-32-7]

$H_2N(CH_2)_4NH(CH_2)_3NH(CH_2)_4NH(CH_2)_4NH_2$

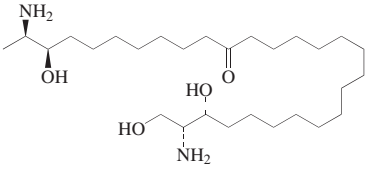
$C_{15}H_{37}N_5$ 287.491

Constit. of *Canavalia gladiata* (sword bean).

Niitsu, M. *et al., Chem. Pharm. Bull.*, 1986, **34**, 1032-1038 (*synth, cmr*)

Matsuzaki, S. *et al., Phytochemistry*, 1990, **29**, 1311-1312 (*isol*)

2,27-Diamino-3,26,28-trihydroxy-11-octacosanone D-292



(2*R*,3*R*,26*R*,27*R*)*-form*

$C_{28}H_{58}N_2O_4$ 486.777

(2*R*,3*R*,26*R*,27*R*)*-form*

Rhizochalinin C

26-O-*β*-*D*-*Galactopyranoside:* ***Rhizochalin C***

$C_{34}H_{68}N_2O_9$ 648.919

Constit. of *Rhizochalina incrustata*. Amorph. solid. $[\alpha]_D^{25}$ -14 (c, 0.09 in MeOH).

(2*R*,3*R*,26*R*,27*S*)*-form*

Oceanin

[276879-24-4]

Glass. $[\alpha]_D$ +14.7 (c, 0.3 in MeOH).

26-O-*β*-*D*-*Glucopyranoside:* ***Oceanapiside***

[251319-53-6]

$C_{34}H_{68}N_2O_9$ 648.919

Isol. from the sponge *Oceanapia phillipensis*. Antifungal agent. Amorph. solid. $[\alpha]_D$ -5.5 (c, 1.2 in MeOH). Struct. revised in 2007.

(2*S*,3*S*,26*R*,27*S*)*-form*

Calyxinin

[392688-08-3]

Gum. $[\alpha]_D$ -2.2 (c, 0.23 in MeOH).

28-O-*β*-*D*-*Glucopyranoside:* ***Calyxoside***

[392688-06-1]

$C_{34}H_{68}N_2O_9$ 648.919

Isol. from the sponge *Calyx* sp. Gel-like substance. $[\alpha]_D^{25}$ -15.8 (c, 0.32 in MeOH).

Nicholas, G.M. *et al., J. Nat. Prod.*, 1999, **62**, 1678-1681 (*Oceanapiside, isol*)

Nicholas, G.M. *et al., J.A.C.S.*, 2000, **122**, 4011-4019 (*abs config*)

Zhou, B.-N. *et al., Tetrahedron*, 2001, **57**, 9549-9554 (*Calyxoside*)

Makarieva, T.N. *et al., J. Nat. Prod.*, 2007, **70**, 1991-1998 (*Rhizochalin C, Oceanapiside, struct*)

Diatom polyamines D-293

$Me_2N(CH_2)_4NMe[CH_2CH_2CH_2NMe]_n(CH_2)_4NMe_2$ n = 8-20

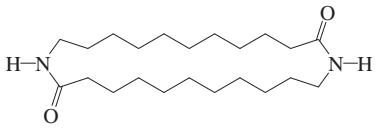
Isol. from the cell walls of diatoms such as *Cylindrotheca fusiformis* and *Nitzschia angularis*. Involved in the species-specific patterning of diatom biosilica.

Kröger, N. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 2000, **97**, 14133-14138 (*isol, struct*)

1,13-Diazacyclotetracosane-2,14-dione, 9CI D-294

Clausenlactam

[95264-91-8]



$C_{22}H_{42}N_2O_2$ 366.586

Constit. of the leaves of *Clausena excavata*.

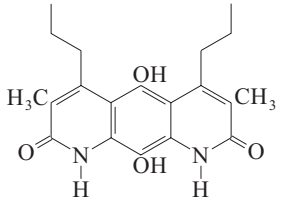
Bosch, I. *et al., Tet. Lett.*, 1993, **34**, 4671-4674 (*synth*)

Shang, L. *et al., CA*, 1994, **120**, 101930e (*isol*)

Diazaquinomycin B D-295

OM 704B. Antibiotic OM 704B

[87614-39-9]



$C_{20}H_{24}N_2O_4$ 356.421

Quinonoid antibiotic. Isol. as minor component from *Streptomyces* sp. OM-704. Active against gram-positive bacteria. Inhibits thymidylate synthase and mycoplasmas. Needles. Mp 300°. λ_{max} 277 (ϵ 20100); 310 (sh) (ϵ 14800); 325 (sh) (ϵ 11750); 356 (ϵ 6230); 373 (ϵ 6050) (MeOH).

Quinone: ***Diazaquinomycin A****. OM 704A. Antibiotic OM 704A*

[87614-40-2]

$C_{20}H_{22}N_2O_4$ 354.405

Isol. from *Streptomyces* sp. OM-704 and *Streptomyces* sp. GW48/1497. Active against gram-positive bacteria. Inhibits folate metabolism. Deep red needles. Fairly sol. MeOH, EtOAc, DMSO, dioxan, $CHCl_3$; poorly sol. H_2O, hexane, C_6H_6. Mp 291-295°. λ_{max} 250 (sh); 260 (sh); 278 (sh); 286 (ϵ 21700); 309 (ϵ 9760); 321 (ϵ 8950); 367 (ϵ 4130); 490 (ϵ 1150) (MeOH).

▶ LD_{50} (mus, ipr) 100 mg/kg. CB9517000

[84419-65-8]

Omura, S. *et al., J. Antibiot.*, 1982, **35**, 1425; 1985, **38**, 1016; 1025 (*isol, struct, props*)

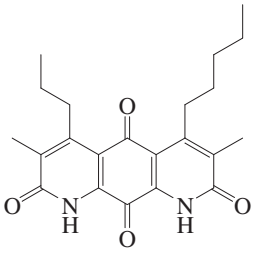
Japan. Pat., 1983, 83 205 497; *CA*, **100**, 119343 (*isol*)

Omura, S. *et al., Tet. Lett.*, 1983, **24**, 3643 (*isol, uv, pmr*)

Kelly, T.R. *et al., Tet. Lett.*, 1988, **29**, 3545 (*synth*)

Perez, J.M. *et al., Tetrahedron*, 2000, **56**, 4575-4583 (*synth*)

Diazaquinomycin C D-296



$C_{22}H_{26}N_2O_4$ 382.458

Prod. by *Streptomyces* sp. GW48/1497. Brick-red solid. λ_{max} 291 (log ϵ 4.49); 383 (log ϵ 3.72); 527 (log ϵ 3.32) (MeOH).

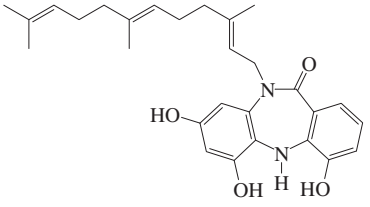
Maskey, R.P. *et al., Nat. Prod. Res.*, 2005, **19**, 137-142

Diazepinomicin D-297

*5,10-Dihydro-4,6,8-trihydroxy-10-(3,7,11-trimethyl-2,6,10-dodecatrienyl)-11*H*-dibenzo[*b,e*][1,4]diazepin-11-one, 9CI. Antibiotic BU 4664L. BU 4664L. ECO 4601*

[733035-26-2]

[179981-40-9 (BU 4664L)]



$C_{28}H_{34}N_2O_4$ 462.588

Structure of BU 4664L revised in 2005. Prod. by *Micromonospora* spp. (strain DPJ12, strain 046Eco-11 and strain M990-6). Antimicrobial, antiinflammatory and antitumour agent. 5-Lipoxygenase inhibitor. Mp 184-185° (BU 4664L). λ_{max} 212 ; 230 ; 298 (MeOH aq.). λ_{max} 211 (ϵ 65800) (MeOH). λ_{max} 208 (ϵ 44300); 553 (ϵ 9100) (MeOH/NaOH).

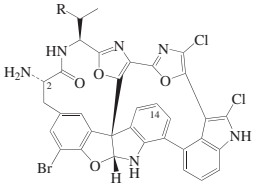
Charan, R.D. *et al., J. Nat. Prod.*, 2004, **67**, 1431-1433 (*isol, pmr, cmr, ms*)

Igarashi, Y. *et al., J. Antibiot.*, 2005, **58**, 350-352 (*BU 4664L*)

McAlpine, J.B. *et al., J. Nat. Prod.*, 2008, **71**, 1585-1590 (*biosynth*)

Diazonamide B D-298

[131703-15-6]



Absolute Configuration

R = CH_3

$C_{35}H_{25}BrCl_2N_6O_4$ 744.43

Struct. revised in 2001. Alkaloid from the marine ascidian *Diazona chinensis*. Cytotoxic. Amorph. λ_{max} 205 (ϵ 110000); 222 (ϵ 4700); 350 (sh) (MeOH/NaOH) (Derep). λ_{max} 215 (ϵ 21000); 281 (sh) ; 290 (ϵ 4900); 297 (sh) (MeOH) (Derep). λ_{max} 220 (ϵ 110000); 292 (ϵ 4700) (MeOH/NaOH) (Berdy).

Debromo, N^2*-(2*S*-hydroxy-3-methylbutanoyl):* ***Diazonamide A***

[131727-01-0]

$C_{40}H_{34}Cl_2N_6O_6$ 765.651

Alkaloid from *Diazona chinensis*. Cytotoxic. Glass. $[\alpha]_D$ -217.3 (c, 8.8 in MeOH). λ_{max} 204 (ϵ 101000); 296 (ϵ 4500); 350 (sh) (MeOH/NaOH) (Derep). λ_{max} 216 (ϵ 19200); 280 (sh) ; 290 (ϵ 5300); 298 (sh) (MeOH) (Derep).

Debromo, N^2*-(2*S*-amino-3-methylbutanoyl):* ***Diazonamide C***

[1021691-30-4]

$C_{40}H_{35}Cl_2N_7O_5$ 764.666

Alkaloid from a *Diazona* sp. Cytotoxic. Pale yellow solid. $[\alpha]_D^{25}$ -24.1 (c, 0.1 in MeOH).

Homologue (R = CH_2CH_3*), debromo:* ***Diazonamide E***

[1021691-36-0]

$C_{36}H_{28}Cl_2N_6O_4$ 679.56

Alkaloid from a *Diazona* sp. Cytotoxic. Pale yellow solid. $[\alpha]_D^{25}$ -56.8 (c, 0.02 in MeOH).

Homologue (R = CH_2CH_3*), debromo, 14-chloro:* ***Diazonamide D***

[1021691-33-7]

$C_{36}H_{27}Cl_3N_6O_4$ 714.005

Alkaloid from a *Diazona* sp. Cytotoxic. Pale yellow solid. $[\alpha]_D^{25}$ -33.5 (c, 0.1 in MeOH).

Lindquist, N. *et al., J.A.C.S.*, 1991, **113**, 2303-2304 (*isol, struct*)

Li, J. *et al., Angew. Chem., Int. Ed.*, 2001, **40**, 4770-4773 (*struct*)

Ritter, T. *et al., Angew. Chem., Int. Ed.*, 2002, **41**, 2489-2495 (*rev*)

Burgett, A.W.G. *et al., Angew. Chem., Int. Ed.*, 2003, **42**, 4961-4966 (*synth*)

Nicolaou, K.C. *et al., J.A.C.S.*, 2004, **126**, 12888-12896; 12897-12906; 15316 (*synth*)

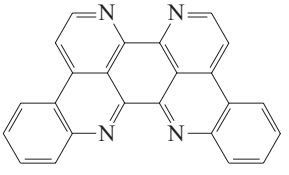
Lachia, M. *et al., Nat. Prod. Rep.*, 2008, **25**, 227-253 (*rev, synth*)

Fernández, R. *et al., Tet. Lett.*, 2008, **49**, 2283-2285 (*Diazonamides C-E*)

Dibenzo[*b,j*]dipyrido[4,3,2-*de*:2′,3′,4′-*gh*][1,10]phenanthroline, 9CI D-299

Eilatin

[120154-96-3]

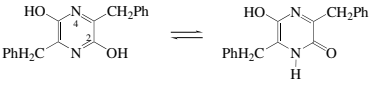


$C_{24}H_{12}N_4$ 356.386
Alkaloid from the Red Sea tunicate *Eudistoma* sp. and by *Cystodytes* sp. Topoisomerase inhibitor, Ni chelating agent. Bright yellow cryst. ($CHCl_3$/MeOH/H_2O). Mp 310°. λ_{max} 305 (ϵ 39800); 440 (ϵ 21500) (MeOH/HCl) (Derep). λ_{max} 242 (ϵ 48200); 286 (ϵ 36700); 363 (ϵ 11500); 388 (ϵ 21000); 408 (ϵ 30400); 434 (ϵ 27000) (MeOH) (Derep). λ_{max} 240 (ϵ 47600); 275 (ϵ 35400); 284 (ϵ 37700); 295 (ϵ 24800); 367 (ϵ 13200); 385 (ϵ 21700); 407 (ϵ 30500); 432 (ϵ 27100) (EtOH) (Berdy).

Rudi, A. *et al., Tet. Lett.*, 1988, **29**, 6655-6656 (*uv, ir, pmr, cmr, ms, cryst struct*)
Rudi, A. *et al., J.O.C.*, 1989, **54**, 5331-5337 (*isol, uv, ir, pmr, cmr, ms*)
Nakahara, S. *et al., Heterocycles*, 1993, **36**, 1139-1144 (*synth*)
Gellerman, G. *et al., Tet. Lett.*, 1993, **34**, 1827-1830 (*synth*)

3,6-Dibenzyl-2,5-dihydroxypyrazine D-300

3,6-Bis(phenylmethyl)-2,5-pyrazinediol. 3,6-Dibenzyl-5-hydroxy-2(1H)-pyrazinone



$C_{18}H_{16}N_2O_2$ 292.337

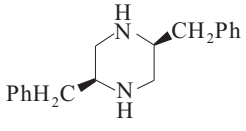
Mono-Me ether: 5-Methoxy-3,6-bis(phenylmethyl)-2(1H)-pyrazinone, 9CI. 2,5-Dibenzyl-3-hydroxy-6-methoxypyrazine
[132213-65-1]
$C_{19}H_{18}N_2O_2$ 306.363
Isol. from fruiting bodies of the mushroom *Albatrellus confluens* (edibility unknown). Promotes melanin synthesis by B16 melanoma cells. Needles. Mp 159-161°.

2-Me ether, N^4*-oxide: 5-Methoxy-3,6-bis(phenylmethyl)-2(1H)-pyrazinone 4-oxide, 9CI. 2,5-Dibenzyl-3-hydroxy-6-methoxypyrazine 1-oxide.* ***Emeheterone***
[117333-12-7]
$C_{19}H_{18}N_2O_3$ 322.363
Isol. from *Emericella heterothallica*. Needles (C_6H_6). Sol. MeOH, $CHCl_3$. Mp 215-217°. Struct. revised in 1990. λ_{max} 228 (ϵ 28200); 276 (ϵ 7000); 352 (ϵ 9800) (MeOH) (Berdy).

Kawahara, N. *et al., Phytochemistry*, 1988, **27**, 3022 (*isol, uv, ir, pmr, cmr, ms, Emeheterone*)
Ohta, A. *et al., Heterocycles*, 1990, **31**, 1655 (*synth, struct, Emeheterone*)
Kawagishi, H. *et al., Phytochemistry*, 1996, **42**, 547 (*isol, pmr, cmr, cryst struct, Me ether*)

2,5-Dibenzylpiperazine D-301

2,5-Bis(phenylmethyl)hexahydropyrazine



$C_{18}H_{22}N_2$ 266.385

(2S,5S)-form [79982-83-5]
Bp 130-134° approx. $[\alpha]_D^{20}$ -9.98 (c, 1.492 in EtOH).

Hydrochloride (1:2): [79982-84-6]
Cryst. (EtOH/Et_2O). $[\alpha]_D^{20}$ -29.65 (c, 2.705 in H_2O).

N,N′*-Di-Me:* ***2,5-Dibenzyl-1,4-dimethylpiperazine***
[81536-08-5]
$C_{20}H_{26}N_2$ 294.439
Alkaloid from the leaves of *Zanthoxylum arborescens* (Rutaceae). Cryst. (EtOAc). Mp 123-124.5°. $[\alpha]_D^{23}$ +118 (c, 0.054 in EtOH).

Nagel, U. *et al., Z. Naturforsch., B*, 1974, **36**, 578 (*synth*)
Grina, J.A. *et al., J.O.C.*, 1982, **47**, 2648 (*isol, uv, pmr, cmr, ms, struct, synth*)
Takeuchi, S. *et al., Heterocycles*, 1990, **31**, 2073 (*synth*)

N,N′-Dibenzylurea D-302

N,N′*-Bis(phenylmethyl)urea, 9CI*
[1466-67-7]
$PhCH_2NHCONHCH_2Ph$
$C_{15}H_{16}N_2O$ 240.304
Alkaloid from the roots of *Pentadiplandra brazzeana*. Needles (EtOH). Sol. EtOH, AcOH; insol. H_2O. Mp 172-173°.

4′′-Methoxy: N-*Benzyl*-N′*-(4-methoxybenzyl)urea*
[188911-54-8]
$C_{16}H_{18}N_2O_2$ 270.33
Alkaloid from the roots of *Pentadiplandra brazzeana*. Cryst. (hexane/EtOAc). Mp 127-129°. λ_{max} 201 (log ϵ 4.45); 223 (log ϵ 4.05); 275 (log ϵ 3.16); 282 (log ϵ 3.1) (MeOH).

4′′,4′′′-Dimethoxy: N,N′*-Bis(4-methoxybenzyl)urea.* N,N′*-Di(4-methoxybenzyl)urea*
[93731-94-3]
$C_{17}H_{20}N_2O_3$ 300.357
Alkaloid from *Pentadiplandra brazzeana*. Cryst. (hexane/EtOAc). Mp 171-173°.

Boivin, P.A. *et al., Can. J. Chem.*, 1954, **32**, 242-248 (*synth, ir*)
Wiley, R.H. *et al., J.A.C.S.*, 1954, **76**, 311 (*4′′,4′′′-dimethoxy, synth*)
Wolman, Y. *et al., J.O.C.*, 1962, **27**, 1902 (*synth*)
Argabright, P.A. *et al., J.O.C.*, 1967, **32**, 3261-3262 (*synth*)
Vorbrüggen, H. *et al., Chem. Ber.*, 1984, **117**, 1523-1541 (*synth*)
Atanassova, I.A. *et al., Synth. Commun.*, 1989, **19**, 147-153 (*synth, 4′′,4′′′-dimethoxy, ir*)
Leung, M.-K. *et al., J.O.C.*, 1996, **61**, 4175-4179 (*synth*)
Patonay, T. *et al., Synth. Commun.*, 1996, **26**, 4253 (*synth, ir, pmr*)
Tsopmo, A. *et al., J. Nat. Prod.*, 1999, **62**, 1435-1436 (*4′′-methoxy, 4′′,4′′′-dimethoxy, isol, pmr, cmr, ms*)
Hikita, T. *et al., Macromolecules*, 2002, **35**, 6202-6209 (*synth, ir, pmr, cmr*)
Perveen, S. *et al., Synth. Commun.*, 2005, **35**, 1663-1674 (*synth, ir, uv, pmr, ms*)
Mizuno, T. *et al., Synthesis*, 2006, 2825-2830 (*synth, ir, pmr, cmr, ms*)
Arturo, E. *et al., Synthesis*, 2007, 1096-1102 (*synth*)

Dibromoacetic acid, 9CI, 8CI D-303

[631-64-1]
$Br_2CHCOOH$
$C_2H_2Br_2O_2$ 217.845
Deliquescent cryst. Sol. EtOH, Et_2O. Mp 48°. Bp 232-234° dec. Bp_{15} 75°. pK_a 1.48 (25°).

Me ester: [6482-26-4]
$C_3H_4Br_2O_2$ 231.871
Bp 182-184°.

Et ester: [617-33-4]
$C_4H_6Br_2O_2$ 245.898
Constit. of *Asparagopsis armata*. Synthetic reagent. d_{20}^{20} 1.9. Bp 194° Bp_{74} 121°. n_D^{13} 1.5017.

Bromide:
C_2HBr_3O 280.741
Fuming liq. Bp 194°.

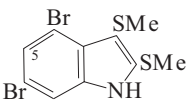
Amide: Dibromoacetamide
[598-70-9]
$C_2H_3Br_2NO$ 216.86
Constit. of *Asparagopsis taxiformis*. Mp 156°.

Nitrile: Dibromoacetonitrile. Dibromocyanomethane
[3252-43-5]
C_2HBr_2N 198.845
Used with aldehydes and ketones to prepare α-bromoesters. Bp_{24} 67-69°.

▶ AL8450000

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 509A; 849A (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 792B; 1367A (*nmr*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 807B (*ir*)
Genvresse, M.P. *et al., Bull. Soc. Chim. Fr.*, 1892, **7**, 364-366 (*synth*)
Org. Synth., Coll. Vol., 4, 1963, 254-256 (*nitrile*)
Parrot, J. *et al., Bull. Soc. Chim. Fr.*, 1964, 1063-1069 (*synth*)
Netherlands Pat., 1965, 6 401 521; *CA*, **64**, 3360 (*synth*)
Elvidge, J.A. *et al., J.C.S.(C)*, 1968, 2188-2198 (*use, nitrile*)
Fieser and Fieser's Reagents for Organic Synthesis, Wiley, 1969, **2**, 195; 1975, **5**, 186 (*use*)
Legris, C. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1974, **278**, 77-79 (*use, nitrile*)
Woolard, F.X. *et al., Tetrahedron*, 1976, **32**, 2843-2846 (*amide, isol*)
McConnell, O. *et al., Phytochemistry*, 1977, **16**, 367-374 (*Et ester, isol*)
Encyclopaedia of Reagents for Organic Synthesis, (ed. Paquette, L.A.), Wiley, 1995, **3**, 1543-1544 (*nitrile, use*)
Encyclopaedia of Reagents for Organic Synthesis, (ed. Paquette, L.A.), Wiley, 1995, **4**, 2423-2424 (*Et ester, use*)

4,6-Dibromo-2,3-bis(methylthio)-1*H*-indole D-304



$C_{10}H_9Br_2NS_2$ 367.128
Isol. from the red algae *Laurencia brongniartii* and *Laurencia grevilleana*. Mp 108.5-110°.

2-S-*Oxide: 4,6-Dibromo-2-(methylsulfinyl)-3-(methylthio)-1*H-*indole.* ***Itomanindole A***
[119340-95-3]
$C_{10}H_9Br_2NOS_2$ 383.127
Isol. from *Laurencia brongniartii*. Cryst. ($CHCl_3$). Mp 134-136°. $[\alpha]_D$ +8 (c, 1.56 in $CHCl_3$). Partial racemate.

3-S-*Oxide: 4,6-Dibromo-3-(methylsulfinyl)-2-(methylthio)-1*H-*indole.* ***Itomanindole B***
[119340-97-5]
$C_{10}H_9Br_2NOS_2$ 383.127
Isol. from *Laurencia brongniartii*. Cryst. ($CHCl_3$/MeOH). Mp 104-106°. $[\alpha]_D$ -38 (c, 0.33 in $CHCl_3$/MeOH 1:1). Partial racemate.

2,3-Di-S-*oxide: 4,6-Dibromo-2,3-bis(methylsulfinyl)-1*H-*indole*
$C_{10}H_9Br_2NO_2S_2$ 399.127
Isol. from *Laurencia brongniartii*. Mp 132-134°. λ_{max} 230 (log ϵ 4.4); 310 (log ϵ 4) (MeOH).

N-*Me, 2*-S-*oxide:* Mp 117.5-118.5°. $[\alpha]_D$ -6.9 (c, 0.54 in $CHCl_3$).

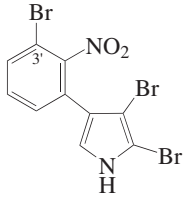
5-Bromo: ***4,5,6-Tribromo-2,3-bis(methylthio)-1H-indole***
[128351-86-0]
$C_{10}H_8Br_3NS_2$ 446.024
Isol. from *Laurencia brongniartii* and *Laurencia grevilleana*.

5-Bromo, 2-S-*oxide: 4,5,6-Tribromo-2-(methylsulfinyl)-3-(methylthio)-1*H-*indole*
$C_{10}H_8Br_3NOS_2$ 462.023
Isol. from *Laurencia brongniartii*. Mp 142-144°. λ_{max} 234 (log ϵ 4.6); 315 (log ϵ 4.2) (MeOH).

Christophersen, C. *et al., Alkaloids (Academic Press)*, 1985, **24**, 25
Tanaka, J. *et al., Tetrahedron*, 1989, **45**, 7301-7310 (*isol, pmr, cmr, cryst struct*)
El-Gamal, A.A. *et al., J. Nat. Prod.*, 2005, **68**, 815-817 (*isol, pmr, cmr, ms*)

2,3-Dibromo-4-(3-bromo-2-nitrophenyl)-1*H*-pyrrole, 9CI D-305

Bromonitrin B. *Bromopyrrolnitrin B*
[23305-91-1]



$C_{10}H_5Br_3N_2O_2$ 424.874
Pyrrole antibiotic. Isol. from *Pseudomonas pyrrolnitrica* + NH_4Br. Effective against *Trichophyton interdigitale* and *Penicillium chrysogenum*. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. λ_{max} 252 (EtOH) (Berdy).

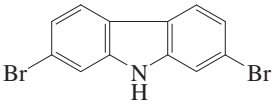
*2-Debromo: 3-Bromo-4-(3-bromo-2-nitrophenyl)-1*H-*pyrrole, 9CI.* ***Bromonitrin A.*** *Bromopyrrolnitrin A*
[23305-90-0]
$C_{10}H_6Br_2N_2O_2$ 345.978
Isol. from *Pseudomonas pyrrolnitrica* or *Pseudomonas acidula*, both with NH_4Br. Effective against *Trichophyton interdigitale* and *Penicillium chrysogenum*. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. λ_{max} 252 ; 275 (EtOH) (Berdy).

*3′-Debromo, 5′-bromo: 2,3-Dibromo-4-(5-bromo-2-nitrophenyl)-1*H-*pyrrole, 9CI.* ***Bromonitrin C.*** *Bromopyrrolnitrin C*
[32736-23-5]
$C_{10}H_5Br_3N_2O_2$ 424.874
Isol. from *Pseudomonas pyrrolnitrica* + NH_4Br. Effective against *Trichophyton interdigitale* and *Penicillium chrysogenum*. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. λ_{max} 252 ; 325 (EtOH) (Berdy).

Ajisaka, M. *et al., Agric. Biol. Chem.*, 1969, **33**, 294-295 (*Bromonitrins A-C, isol, struct*)
Japan. Pat., 1972, 72 14 916; *CA*, **77**, 60049x (*isol*)
Van Pee, K.H. *et al., J. Antibiot.*, 1983, **36**, 1735-1742 (*Bromonitrins A,B, biosynth, props*)

2,7-Dibromo-9*H*-carbazole, 9CI D-306

[136630-39-2]

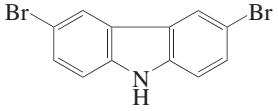


$C_{12}H_7Br_2N$ 325.002
Alkaloid from the cyanobacterium *Kyrtuthrix maculans.* Prisms (hexane/C_6H_6). Mp 198-203° Mp 236-238°.

Yamato, T. *et al., J.O.C.*, 1991, **56**, 6248-6250 (*synth, ir, pmr*)
Lee, S.-C. *et al., Phytochemistry*, 1999, **52**, 537-540 (*isol, ir, pmr, cmr, ms*)
Dierschke, F. *et al., Synthesis*, 2003, 2471-2472 (*synth, pmr, cmr*)

3,6-Dibromo-9*H*-carbazole, 9CI D-307

[6825-20-3]



$C_{12}H_7Br_2N$ 325.002
Alkaloid from the cyanobacterium *Kyrtuthrix maculans.* Prisms or needles (EtOH). Sol. $CHCl_3$, C_6H_6, spar. sol. petrol. Mp 212-213°.

N-*Benzoyl:*
$C_{19}H_{11}Br_2NO$ 429.11
Mp 213-214°.

N-*Me:* [58246-82-5]
$C_{13}H_9Br_2N$ 339.029
Plates. Mp 141°.

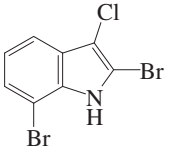
N-*Et:* [33255-13-9]
$C_{14}H_{11}Br_2N$ 353.056
Needles (EtOH). Mp 140-141°.

N-*Ph:* [57103-20-5]
$C_{18}H_{11}Br_2N$ 401.1
Needles (EtOH). Mp 66-67°.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 680B (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 162B (*nmr*)
McLintock, J. *et al., J.C.S.*, 1927, 1214 (*synth*)
Lopatinskii, V.P. *et al., CA*, 1966, **65**, 2203e (*synth*)
Smith, K. *et al., Tetrahedron*, 1992, **48**, 7479-7488 (*synth, pmr, cmr*)
Polivin, Y.N. *et al., Izv. Akad. Nauk, Ser. Khim.*, 1993, 234-235 (*synth*)
Park, M. *et al., Tetrahedron*, 1998, **54**, 12707-12714 (*N-Et, N-Ph, synth, pmr, cmr*)
Lee, S.-C. *et al., Phytochemistry*, 1999, **52**, 537-540 (*isol, pmr, cmr, ms*)
Bellon, M. *et al., Cryst. Growth Des.*, 2005, **5**, 1443-1450 (*synth, cryst struct*)
Ponce, M.B. *et al., Helv. Chim. Acta*, 2006, **89**, 1123-1139 (*N-Me, synth, pmr, ms*)

2,7-Dibromo-3-chloro-1*H*-indole, 9CI D-308

3-Chloro-2,7-dibromoindole
[68234-20-8]

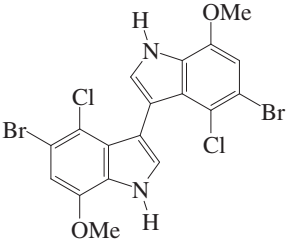


$C_8H_4Br_2ClN$ 309.387
Alkaloid from the marine red alga *Rhodophyllis membranacea*. Mp 86-87°.

Brennan, M.R. *et al., Tet. Lett.*, 1978, **19**, 1637-1640 (*isol, pmr, struct*)
Erickson, K.L. *et al., Synth. Commun.*, 1981, **11**, 253-259 (*synth, ir, pmr, ms*)

5,5′-Dibromo-4,4′-dichloro-7,7′-dimethoxy-3,3′-bi-1*H*-indole D-309

*3,3′-Bis(5-bromo-4-chloro-7-methoxy-1*H-*indole)*

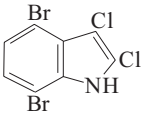


$C_{18}H_{12}Br_2Cl_2N_2O_2$ 519.018
Isol. from the green alga *Chaetomorpha basiretorsa*. Amorph. powder.

Shi, D.Y. *et al., Chin. Chem. Lett.*, 2005, **16**, 777-780 (*isol, pmr, cmr, ms*)

4,7-Dibromo-2,3-dichloro-1*H*-indole, 9CI D-310

[68234-22-0]

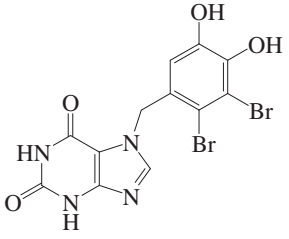


$C_8H_3Br_2Cl_2N$ 343.832
Alkaloid from the marine red alga *Rhodophyllis membranacea*. Mp 142.5-143°.

Brennan, M.R. *et al., Tet. Lett.*, 1978, 1637 (*isol, pmr, struct*)
Ohta, T. *et al., Heterocycles*, 1989, **29**, 1663 (*synth*)

7-(2,3-Dibromo-4,5-dihydroxybenzyl)-3,7-dihydro-1*H*-purine-2,6-dione D-311

[929006-57-5]

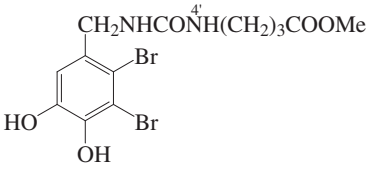


$C_{12}H_8Br_2N_4O_4$ 432.028
Isol. from *Rhodomela confervoides*.
Amorph. powder.

Ma, M. *et al., J. Nat. Prod.*, 2007, **70**, 337-341 (*isol, pmr, cmr, ms*)

***N*-(2,3-Dibromo-4,5-dihydroxybenzyl)-*N′*-(3-methoxycarbonylpropyl)urea** D-312

Methyl N′-(2,3-dibromo-4,5-dihydroxybenzyl) γ-ureidobutyrate



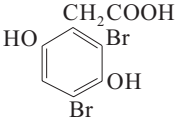
$C_{13}H_{16}Br_2N_2O_5$ 440.088
Constit. of *Rhodomela confervoides*.
Amorph. powder. Mp 155-158°.

N$^{4'}$-(2,3-Dibromo-4,5-dihydroxybenzyl): N,N′*-Bis(2,3-dibromo-4,5-dihydroxybenzyl)*-N-*(3-methoxycarbonylpropyl)urea*
$C_{20}H_{20}Br_4N_2O_7$ 720.003
Constit. of *Rhodomela confervoides*.
Brown gum.

Ma, M. *et al., J. Nat. Prod.*, 2006, **69**, 206-210 (*isol, pmr, cmr, ms*)

2,4-Dibromo-3,6-dihydroxyphenylacetic acid D-313

2,4-Dibromo-3,6-dihydroxybenzeneacetic acid, 9CI



$C_8H_6Br_2O_4$ 325.941

Amide: 2,4-Dibromo-3,6-dihydroxyphenylacetamide. 2,4-Dibromo-3,6-dihydroxybenzeneacetamide, 9CI
[55895-97-1]
$C_8H_7Br_2NO_3$ 324.956
Constit. of *Verongia aurea*. Sol. MeOH, Et_2O; poorly sol. H_2O. Mp 180-182°. λ_{max} 250 (ϵ 4000); 280 (ϵ 2900); 368 (ϵ 7200) (0.1*M* NaOH). λ_{max} 222 (ϵ 5400) (MeOH).

Krejcarek, G.E. *et al., Tet. Lett.*, 1975, 507 (*uv, ir, ms, cryst struct*)
Krohn, K. *et al., Tet. Lett.*, 1975, 4667 (*uv, nmr, synth*)

3,5-Dibromo-2,4-dihydroxyphenylacetic acid D-314

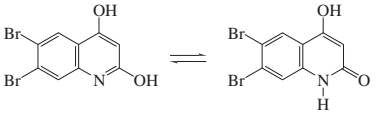
3,5-Dibromo-2,4-dihydroxybenzeneacetic acid, 9CI
[37677-03-5]
$C_8H_6Br_2O_4$ 325.941

4-Me ether, amide: 3,5-Dibromo-2-hydroxy-4-methoxyphenylacetamide
[28495-12-7]
$C_9H_9Br_2NO_3$ 338.983
Constit. of the sponges *Aplysina aerophoba*, *Aplysina thiona* and *Psammaplysilla purpurea*. Cryst. ($CHCl_3$). Mp 174-176° (166-167°). λ_{max} 250 (sh) (ϵ 1610); 290 (ϵ 2500); 314 (sh) (ϵ 450) (MeOH) (Derep).

Fatturusso, E. *et al., J.C.S. Perkin 1*, 1972, 16-18 (*synth*)
Chang, C.W.J. *et al., Tet. Lett.*, 1977, **18**, 4005-4007 (*synth*)
Kelecom, A. *et al., Ann. Acad. Bras. Cinc.*, 1979, **51**, 639 (*4-Me ether amide*)
Cruz, F. *et al., J. Nat. Prod.*, 1990, **53**, 543-548 (*4-Me ether, amide*)

6,7-Dibromo-2,4-dihydroxyquinoline D-315

*6,7-Dibromo-4-hydroxy-2(1*H*)-quinolinone, 9CI. 6,7-Dibromo-2,4-quinolinediol*
[376598-45-7]

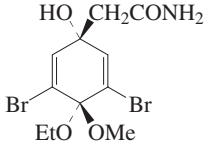


$C_9H_5Br_2NO_2$ 318.952
Isol. from the sponge *Hyrtios erecta*.
Yellow powder. λ_{max} 216 (ϵ 37400) (MeOH).

Aoki, S. *et al., Chem. Pharm. Bull.*, 2001, **49**, 1372-1374 (*isol, pmr, cmr*)

3,5-Dibromo-4-ethoxy-1-hydroxy-4-methoxy-2,5-cyclohexadien-1-acetamide D-316

[41841-34-3]



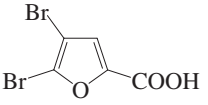
Relative Configuration

$C_{11}H_{15}Br_2NO_4$ 385.052
Related to Aplysinketal A, A-1353. Alkaloid from an *Aplysina* sp. and *Pseudoceratina purpurea*. Originally thought to be an artifact.

Andersen, R.J. *et al., Tet. Lett.*, 1973, **14**, 1175-1178 (*isol*)
Kijjoa, A. *et al., Z. Naturforsch., B*, 2005, **60**, 904-908 (*isol*)

4,5-Dibromo-2-furancarboxylic acid, 9CI D-317

4,5-Dibromo-2-furoic acid, 8CI. 4,5-Dibromopyromucic acid
[2434-03-9]



$C_5H_2Br_2O_3$ 269.877
Cryst. (H_2O). Mp 170.5-171.5°.

tert-*Butyl ester:* [54113-43-8]
$C_9H_{10}Br_2O_3$ 325.984
Syrup.

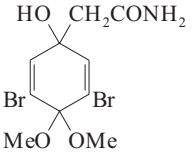
Amide: ***4,5-Dibromo-2-furancarboxamide***
$C_5H_3Br_2NO_2$ 268.892
Isol. from the marine sponge *Phakellia conulus* from the Andaman Islands.
Needles (MeOH aq.). Mp 142-143°.
λ_{max} 289 (ϵ 35000) (EtOH).

[54113-41-6 , 54113-42-7]

Divald, S. *et al., J.O.C.*, 1976, **41**, 2835-2846 (*synth, pmr*)
Sarma, N.S. *et al., Indian J. Chem., Sect. B*, 1990, **29**, 771-772 (*amide*)
Karminski-Zamola, G. *et al., Heterocycles*, 1994, **38**, 759-767 (*synth*)
Bury, P. *et al., Tetrahedron*, 1994, **50**, 8793-8808 (*synth, ir, pmr, ms*)
Muratake, H. *et al., Chem. Pharm. Bull.*, 1997, **45**, 799-806 (*tert-butyl ester*)

3,5-Dibromo-1-hydroxy-4,4-dimethoxy-2,5-cyclohexadiene-1-acetamide, 9CI D-318

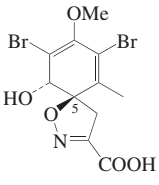
[24742-01-6]



$C_{10}H_{13}Br_2NO_4$ 371.025
Related to Aplysinketal A, A-1353. Isol. from the sponges *Aplysina* sp., *Verongia fistularis* and *Verongia cauliformis*. Prisms (EtOAc). Fairly sol. Et_2O, EtOAc. Mp 191°.

Sharma, G.M. *et al., J. Antibiot., Ser. A*, 1967, **20**, 200-203 (*isol*)
Sharma, G.M. *et al., J.O.C.*, 1970, **35**, 2823-2826 (*ir, pmr, struct*)
Toscano, R.A. *et al., Acta Cryst. C*, 1992, **48**, 2235-2237 (*cryst struct*)

7,9-Dibromo-10-hydroxy-8-methoxy-6-methyl-1-oxa-2-azaspiro[4.5]deca-2,6,8-triene-3-carboxylic acid D-319



$C_{11}H_{11}Br_2NO_5$ 397.02

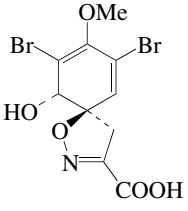
(5*R,10*S**)-*form***

Amide, N-*(2-carboxyethyl):* ***Purpuroceratic acid A***
[870071-25-3]
$C_{14}H_{16}Br_2N_2O_6$ 468.098
Alkaloid from *Pseudoceratina purpurea*. Gum. $[\alpha]_D^{20}$ -27.7 (c, 0.55 in MeOH).

Amide, N-*(3-carboxypropyl):* ***Purpuroceratic acid B***
[870071-26-4]
$C_{15}H_{18}Br_2N_2O_6$ 482.125
Alkaloid from *Pseudoceratina purpurea*.

Kijjoa, A. *et al., Z. Naturforsch., B*, 2005, **60**, 904-908 (*isol, pmr, cmr*)

7,9-Dibromo-10-hydroxy-8-methoxy-1-oxa-2-azaspiro[4.5]deca-2,6,8-triene-3-carboxylic acid, 9CI D-320



(5*R*,6*S*)-*form*

$C_{10}H_9Br_2NO_5$ 382.993

(5*R*,10*S*)-*form* [168480-66-8]
Isol. from the sponge *Pseudoceratina* sp. Antibacterial agent. λ_{max} 224 (ϵ 19000); 285 (ϵ 9400) (MeOH).

(5*S*,10*R*)-*form*

Me ester: [179798-47-1]
[160116-56-3]
$C_{11}H_{11}Br_2NO_5$ 397.02
Alkaloid from sponges *Aplysina archeri* and *Verongula* sp.

Amide: ***Purealidin R***
[167469-52-5]
$C_{10}H_{10}Br_2N_2O_4$ 382.008
Alkaloid from the Okinawan marine sponge *Psammaplysilla purea* and from the Caribbean sponge *Verongula* sp. Oil. $[\alpha]_D^{24}$ +86 (c, 0.19 in MeOH).

Amide, N-*(3-carboxypropyl):* [945408-72-0]
$C_{14}H_{16}Br_2N_2O_6$ 468.098
Alkaloid from *Aplysina fulva*. Amorph. solid. $[\alpha]_D^{23}$ +140 (c, 0.04 in MeOH). λ_{max} 223 (log ϵ 3.93); 281 (log ϵ 3.63) (MeOH).

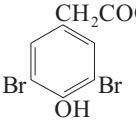
Amide, N-*[4-(methoxycarbonylamino)-2-oxobutyl]:* [223580-93-6]
$C_{16}H_{19}Br_2N_3O_7$ 525.15
Alkaloid from *Aplysina cauliformis*. λ_{max} 229 (ϵ 18500); 280 (ϵ 10600) (MeOH).

Amide, N-*[4-(methoxycarbonylamino)-3-oxobutyl]:* [223580-91-4]
$C_{16}H_{19}Br_2N_3O_7$ 525.15
Alkaloid from *Aplysina cauliformis*. λ_{max} 227 (ϵ 19000); 281 (ϵ 10500) (MeOH).

Ciminiello, P. *et al., J. Nat. Prod.*, 1994, **57**, 1564-1569 (*isol*)
Aiello, A. *et al., Biochem. Syst. Ecol.*, 1995, **23**, 377-381 (*isol*)
Kobayashi, J. *et al., Chem. Pharm. Bull.*, 1995, **43**, 403-407 (*isol, uv, cd, ir, pmr, cmr*)
Ciminiello, P. *et al., J. Nat. Prod.*, 1999, **62**, 590-593 (*Aplysina cauliformis constits*)
Rogers, E.W. *et al., J. Nat. Prod.*, 2007, **70**, 1191-1194 (*Aplysina fulva constit*)

(3,5-Dibromo-4-hydroxyphenyl)acetic acid D-321

3,5-Dibromo-4-hydroxybenzeneacetic acid, 9CI
[24744-58-9]



$C_8H_6Br_2O_3$ 309.942
Constit. of the red alga *Halopytis incurvus*. Cryst. (H_2O). Mp 195-196°.

Et ester: [24744-59-0]
$C_{10}H_{10}Br_2O_3$ 337.995
Cryst. (hexane). Mp 105°.

Amide: 3,5-Dibromo-4-hydroxyphenylacetamide
[17194-96-6]
$C_8H_7Br_2NO_2$ 308.957
Isol. from the sponges *Aplysina fistularis* and *Verongia archeri*. Antimicrobial agent. Mp 190-191°.

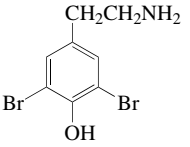
Nitrile: 3,5-Dibromo-4-hydroxybenzeneacetonitrile. 3,5-Dibromo-4-hydroxybenzyl cyanide. 2,6-Dibromo-4-(cyanomethyl)phenol
[73348-20-6]
$C_8H_5Br_2NO$ 290.942
Isol. from the sponge *Verongia aurea*. Antibacterial agent. Pale yellow solid. Mp 176.5°.

Me ether, nitrile: 3,5-Dibromo-4-methoxybenzeneacetonitrile. 3,5-Dibromo-4-methoxybenzyl cyanide. 2,6-Dibromo-4-(cyanomethyl)anisole
[55027-78-6]
$C_9H_7Br_2NO$ 304.968
Isol. from *Verongia aurea*. Antibacterial agent.

Sharma, G.M. *et al., J.O.C.*, 1970, **35**, 2823-2826 (*synth*)
Chantraine, J.M. *et al., Phytochemistry*, 1973, **12**, 1793-1796 (*isol*)
Yamada, Y. *et al., Chem. Lett.*, 1974, 1399-1400 (*synth, amide*)
Chib, J.S. *et al., J. Pharm. Sci.*, 1978, **67**, 264-265 (*isol, amide*)
Goo, Y.M. *et al., CA*, 1980, **92**, 169100t (*nitriles*)
D'Ambrosio, M. *et al., Helv. Chim. Acta*, 1984, **67**, 1484-1492 (*synth*)
Goo, Y.M. *et al., Arch. Pharmacal Res.*, 1985, **8**, 21-30 (*amide, isol*)
Boehlow, T.R. *et al., J.O.C.*, 2001, **66**, 3111-3118 (*nitrile, synth, ir, pmr, cmr*)
Nuñez, C.V. *et al., Biochem. Syst. Ecol.*, 2008, **36**, 283-296 (*amide, isol*)

2-(3,5-Dibromo-4-hydroxyphenyl)ethylamine D-322

4-(2-Aminoethyl)-2,6-dibromophenol, 9CI. 3,5-Dibromo-4-hydroxybenzeneethanamine. 3,5-Dibromotyramine
[134755-34-3]



$C_8H_9Br_2NO$ 294.973

N,N,N-*Tri-Me: 3,5-Dibromo-4-hydroxy*-N,N,N-*trimethylbenzeneethanaminium, 9CI. 3,5-Dibromo-4-hydroxyphenethyltrimethylammonium. 3,5-Dibromo*-N,N,N-*trimethyltyramine*
[73414-57-0]
$C_{11}H_{16}Br_2NO^{\oplus}$ 338.062
Isol. from the sponge *Verongia fistularis*. Dual adrenergic agent. Needles (MeOH) (? as chloride). Poorly sol. hexane. Mp 230° dec. (? chloride).

Me ether: (3,5-Dibromo-4-methoxyphenyl)ethylamine. 3,5-Dibromo-4-methoxybenzeneethanamine, 9CI
$C_9H_{11}Br_2NO$ 309
Alkaloid from a *Eudistoma* sp. Amorph. solid (as trifluoroacetate). λ_{max} 208 (log ϵ 4.9); 224 (log ϵ 4.3); 284 (log ϵ 3) (MeOH) (as trifluoroacetate).

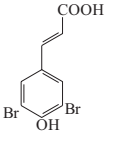
Me ether, N,N,N-*tri-Me: 3,5-Dibromo-4-methoxy*-N,N,N-*trimethylbenzeneethanaminium. 3,5-Dibromo*-N,N,N,O-*tetramethyltyramine*
[160116-58-5]
[160116-59-6]
$C_{12}H_{18}Br_2NO^{\oplus}$ 352.088
Metab. of the Caribbean sponge *Verongula* sp. and a *Pseudoceratina* sp. Amorph. solid (as trifluoroacetate). CAS no. refers to trifluoroacetate. λ_{max} 277 (ϵ 1260) (EtOH) (as trifluoroacetate).

[73414-58-1 , 13062-88-9]

Benington, F. *et al., J.O.C.*, 1958, **23**, 1979-1984 (*synth*)
Hollenbeak, K.H. *et al., CA*, 1980, **92**, 180749g (*isol*)
Ciminiello, P. *et al., J. Nat. Prod.*, 1994, **57**, 1564-1569 (*N,N,N,O-tetra-Me*)
Aiello, A. *et al., Biochem. Syst. Ecol.*, 1995, **23**, 377-381 (*N,N,N,O-tetra-Me*)
Van Wagoner, R.M. *et al., J. Nat. Prod.*, 1999, **62**, 794-797 (*isol, synth, uv, pmr, cmr, Me ether*)
Fu, X. *et al., J. Nat. Prod.*, 1999, **62**, 1072-1073 (*isol, pmr, cmr, N-tri-Me*)
Schoenfeld, R.C. *et al., Bioorg. Med. Chem. Lett.*, 2002, **12**, 823-825 (*synth*)

3-(3,5-Dibromo-4-hydroxyphenyl)-2-propenoic acid D-323

3,5-Dibromo-4-hydroxycinnamic acid
[119405-33-3]



$C_9H_6Br_2O_3$ 321.953

(*E*)-*form* [56926-78-4]
Mp 244°.

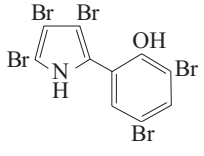
4-O-(3-Dimethylaminopropyl): 3,5-Dibromo-4-[3-(dimethylamino)propoxy]-cinnamic acid
[134276-56-5]
$C_{14}H_{17}Br_2NO_3$ 407.101
Isol. from the sponge *Pseudoceratina crassa*. Cryst. Mp 193-194° dec. λ_{max} 223 (ϵ 13700); 267 (ϵ 11000) (MeOH) (Berdy).
▶ Genotoxic.

4-O-(3-Dimethylaminopropyl), Et ester:
[134276-55-4]
$C_{16}H_{21}Br_2NO_3$ 435.155
Isol. from *Pseudoceratina crassa*. Antibacterial agent. Flakes. Mp 67°. λ_{max} 230 (ϵ 11200); 282 (ϵ 9500) (MeOH) (Berdy).
▶ Genotoxic.

Gupta, S.K. *et al., J. Indian Chem. Soc.*, 1988, **65**, 187 (*synth*)
Kassühlke, K.E. *et al., Tetrahedron*, 1991, **47**, 1809-1814 (*isol, synth, derivs*)

2-(3,5-Dibromo-2-hydroxyphenyl)-3,4,5-tribromopyrrole D-324

2,4-Dibromo-6-(3,4,5-tribromo-1H-pyrrol-2-yl)phenol, 9CI. ***Pentabromopseudilin***
[10245-81-5]



$C_{10}H_4Br_5NO$ 553.668

Pyrrole antibiotic. Isol. from the marine bacterium *Pseudomonas bromoutilis* and as the major metab. of yellow and off-white strains of *Chromobacterium*. Also from another *Chromobacterium* sp. and *Alteromonas luteo-violaceus*. Active against gram-positive bacteria. Inhibitor of esterases, aminopeptidases, elastase, urokinase and alkaline phosphatase. Cryst. (C_6H_6/hexane). Sol. Me_2CO, butanol, EtOAc, Et_2O; fairly sol. $CHCl_3$, MeOH; poorly sol. H_2O, hexane. Mp 130-170° dec. λ_{max} 286 ; 308 (MeOH) (Berdy). λ_{max} 284 ; 293 ; 355 (MeOH/NaOH) (Berdy).
▶ LD_{50} (mus, ivn) 25 - 75 mg/kg, LD_{50} (mus, scu) 250 - 350 mg/kg, LD_{50} (mus, ipr) 50 mg/kg.

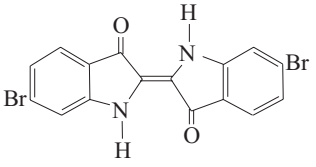
Me ether: Mp 124-125°.

Chloro analogue: 2,4-Dichloro-6-(2,3,4-trichloro-1H-pyrrol-5-yl)phenol. 2-(3,5-Dichloro-2-hydroxyphenyl)-3,4,5-trichloropyrrole. ***Pentachloropseudilin***. *A 15104Y. Antibiotic A 15104Y*
[69640-38-6]
$C_{10}H_4Cl_5NO$ 331.411
Prod. by *Actinoplanes* sp. ATCC33002. Cryst. (petrol). Sol. bases, $CHCl_3$, MeOH; poorly sol. H_2O, acids. Mp 126-130°. λ_{max} 284 ; 309 (EtOH). λ_{max} 282 (ϵ 9200); 310 (ϵ 7600) (MeOH) (Berdy). λ_{max} 330 (MeOH-NaOH) (Berdy).
▶ LD_{50} (mus, ipr) 5.33 mg/kg.

Burkholder, P.R. *et al., Appl. Microbiol.*, 1966, **14**, 649 (*isol, struct*)
Hanessian, S. *et al., J.A.C.S.*, 1966, **88**, 4509 (*synth, ms*)
Lovell, F.M. *et al., J.A.C.S.*, 1966, **88**, 4510 (*cryst struct*)
ApSimon, J.W. *et al., Chem. Ind. (London)*, 1973, 275 (*synth*)
Andersen, R.J. *et al., Mar. Biol. (Berlin)*, 1974, **27**, 281 (*isol, uv, pmr, ms*)
Cavalleri, B. *et al., Curr. Microbiol.*, 1978, **1**, 319-324 (*chloro analogue, isol*)
ApSimon, J.W. *et al., J.C.S. Perkin 1*, 1978, 1588-1594 (*chloro analogue, synth*)
Faulkner, D.J. *et al., Top. Antibiot. Chem.*, 1978, **2**, 9
Laatsch, H. *et al., Annalen*, 1989, 863 (*synth, bibl*)
Hanefeld, U. *et al., J.O.C.*, 1994, **59**, 3604 (*biosynth*)
Xu, Z. *et al., J.O.C.*, 1998, **63**, 5031-5041 (*synth*)

6,6′-Dibromoindigotin D-325

6-Bromo-2-(6-bromo-1,3-dihydro-3-oxo-2H-indol-2-ylidene)-1,2-dihydro-3H-indol-3-one, 9CI. 6,6′-Dibromoindigo. Tyrian purple. C.I. Natural Violet 1. CI 75800
[19201-53-7]



$C_{16}H_8Br_2N_2O_2$ 420.059
Isol. from molluscs *Murex trunculus*, *Purpura* spp., *Dicathais orbita*, *Mancinella keineri*, *Ptychodera flava laysanica* and others. Important dyestuff in ancient times, but has never been prod. commercially. Violet cryst. (1,2-dichlorobenzene). Mp > 300°.

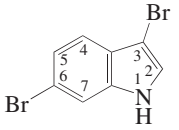
N,N′-Di-Ac: Mp 306°.

Monodebromo: 6-Bromoindigotin. 6-Bromoindigo
[139582-54-0]
$C_{16}H_9BrN_2O_2$ 341.163
Constit. of glandular secretions of *Murex trunculus*. Black solid with copper lustre (ethyl benzoate).

Sachs, F. *et al., Ber.*, 1904, **37**, 1861-1874 (*synth*)
Friedländer, P. *et al., Ber.*, 1909, **42**, 765-770 (*struct*)
Baker, J.T. *et al., Tet. Lett.*, 1968, 43-46 (*biosynth*)
Fouquet, H. *et al., Angew. Chem., Int. Ed.*, 1971, **10**, 816-817 (*rev*)
Higa, T. *et al., Heterocycles*, 1976, **4**, 227-230 (*isol*)
Süsse, P. *et al., Naturwissenschaften*, 1979, **66**, 110 (*cryst struct*)
Larsen, S. *et al., Acta Chem. Scand., Ser. A*, 1980, **34**, 171-176 (*cryst struct*)
Voss, G. *et al., Chem. Ber.*, 1989, **122**, 1199-1201 (*synth, ir, bibl*)
McGovern, P.E. *et al., Acc. Chem. Res.*, 1990, **23**, 152-158 (*rev*)
Wouters, J. *et al., J. Soc. Dyers Colour.*, 1991, **107**, 266-269 (*hplc*)
Kirk-Othmer Encycl. Chem. Technol., 4th edn., Wiley, 1991, **8**, 559 (*bibl*)
Michel, R.H. *et al., J. Soc. Dyers Colour.*, 1992, **108**, 145-150 (*occur, 6-debromo*)
Ghireti, F. *et al., Experientia*, 1994, **50**, 802-807 (*bibl*)
Koren, Z.C. *et al., Isr. J. Chem.*, 1995, **35**, 117-124 (*hplc*)
Clark, R.J.H. *et al., Nouv. J. Chim.*, 1999, **23**, 323-328 (*6-debromo, synth, ir*)
Cooksey, C.J. *et al., Molecules*, 2001, **6**, 736-739 (*rev*)
Imming, P. *et al., Synth. Commun.*, 2001, **31**, 3721-3727 (*synth*)
Tanoue, Y. *et al., The Fischer Indole Synthesis*, 2001, **67**, 726-729 (*synth*)

3,6-Dibromo-1*H*-indole, 9CI D-326

[74076-56-5]

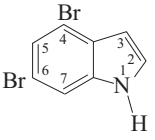


$C_8H_5Br_2N$ 274.942
Isol. from the ascidian *Distaplia regina*. Probable constit. of the hemichordates *Ptychodera flava* and *Glossobalanus* sp. Shows antibacterial activity. Oil. λ_{max} 224 (log ϵ 5.26); 282 (log ϵ 4.59); 293 (log ϵ 4.48) (hexane).

Higa, T. *et al., Comp. Biochem. Physiol., B: Comp. Biochem.*, 1980, **65**, 525-530 (*isol*)
Qureshi, A. *et al., Nat. Prod. Lett.*, 1999, **13**, 59-62 (*isol, pmr, cmr, activity*)

4,6-Dibromo-1*H*-indole, 9CI D-327

Glossobalol
[99910-50-6]



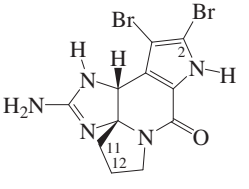
$C_8H_5Br_2N$ 274.942
Alkaloid from the acorn worm *Glossobalanus* sp. Mp 60-61°.

Ac:
$C_{10}H_7Br_2NO$ 316.979
Mp 108-108.5° (102-104°).

Higa, T. *et al., Experientia*, 1985, **41**, 1487 (*isol, ir, pmr, ms, struct*)
Martin, P. *et al., Tet. Lett.*, 1987, **28**, 1645 (*synth*)
Ohta, T. *et al., Heterocycles*, 1987, **26**, 2817 (*synth*)

Dibromoisophakellin D-328

Dibromocantharelline



(+)-*form*

$C_{11}H_{11}Br_2N_5O$ 389.049

(+)-*form* [101481-34-9]
Metab. from the New Caledonian sponge *Pseudaxinyssa cantharella*. Cryst. +

$2H_2O$ + 1MeOH (MeOH). Mp 260°. $[\alpha]_D^{20}$ +95 (c, 1.0 in MeOH).

2-Debromo: ***Monobromoisophakellin***
[425668-66-2]
$C_{11}H_{12}BrN_5O$ 310.153
Isol. from *Agelas* sp. λ_{max} 276 (log ϵ 3.84) (MeOH).

11α-Hydroxy, 12α-chloro: ***12-Chloro-11-hydroxydibromoisophakellin***
[389120-65-4]
$C_{11}H_{10}Br_2ClN_5O_2$ 439.493
Isol. from the sponge *Axinella brevistyla*. $[\alpha]_D^{23}$ +51 (c, 0.41 in MeOH). λ_{max} 207 (log ϵ 4.4); 242 (sh) (log ϵ 3.8) (MeOH).

(-)-*form* [104758-96-5]
Metab. from the marine sponge *Acanthella carteri*. Cryst. (MeOH) (as hydrochloride). Mp 275-277° (hydrochloride). $[\alpha]_D$ -101 (c, 0.56 in MeOH).

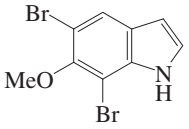
N^1*-Me:* ***Dibromo-N^1-methylisophakellin***.
N^1-*Methyldibromoisophakellin*
[373604-86-5]
$C_{12}H_{13}Br_2N_5O$ 403.076
Isol. from the sponge *Stylissa caribica*. λ_{max} 288 (log ϵ 3.92) (H_2O).

[105088-20-8]

De Nanteuil, G. *et al., Tetrahedron*, 1985, **41**, 6019-6033 (*isol, uv, ir, pmr, cmr, ms, cd, cryst struct, Dibromocantharelline, (+)-form*)
Fedoreyev, S.A. *et al., Tet. Lett.*, 1986, **27**, 3177-3180 (*uv, ir, pmr, cmr ms, cd, cryst struct, (-)-form*)
Assmann, M. *et al., J. Nat. Prod.*, 2001, **64**, 1345-1347 (*N-Me*)
Tsukamoto, S. *et al., J. Nat. Prod.*, 2001, **64**, 1576-1578 (*Chlorohydroxydibromoisophakellin*)
Wiese, K.J. *et al., Tet. Lett.*, 2002, **43**, 5135-5136 (*synth*)
Assmann, M. *et al., Z. Naturforsch., C*, 2002, **57**, 153-156 (*Monobromoisophakellin*)
Meyer, S.W. *et al., J. Nat. Prod.*, 2008, **71**, 1524-1529 (*pmr, cmr, N-15 nmr*)

5,7-Dibromo-6-methoxy-1*H*-indole, 9CI D-329

[58933-47-4]

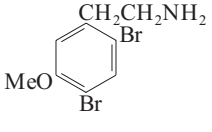


$C_9H_7Br_2NO$ 304.968
Alkaloid from the hemichordate *Ptychodera flava laysanica*.

Higa, T. *et al., Heterocycles*, 1976, **4**, 227-230 (*isol, pmr, struct*)

2-(2,4-Dibromo-5-methoxyphenyl)ethylamine D-330

2,4-Dibromo-5-methoxybenzeneethanamine, 9CI
[121135-06-6]

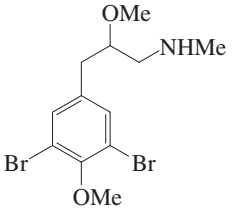


$C_9H_{11}Br_2NO$ 309
First report of a naturally occurring brominated β-phenylethylamine. Isol. from the bryozoan *Amathia wilsoni*. Possible biosynthetic precursor to the Amathamide alkaloids. Oil.

Blackman, A.J. *et al., J. Nat. Prod.*, 1989, **52**, 436-438 (*isol, ir, pmr, cmr, ms, struct*)

3-(3,5-Dibromo-4-methoxyphenyl)-2-methoxy-*N*-methylpropylamine D-331

*3,5-Dibromo-β,4-dimethoxy-*N*-methylbenzenepropanamine*



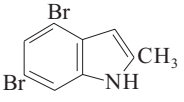
$C_{12}H_{17}Br_2NO_2$ 367.08

(ξ)-*form*
Isol. from a *Pachychalina* sp. $[\alpha]_D^{29}$ -6.4 (c, 0.001 in MeOH). λ_{max} 283 (log ϵ 4.09) (MeOH).

De Oliveira, M.F. *et al., Planta Med.*, 2006, **72**, 437-441 (*isol, pmr, cmr, ms*)

4,6-Dibromo-2-methyl-1*H*-indole, 9CI D-332

[99910-51-7]



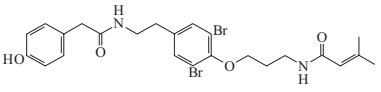
$C_9H_7Br_2N$ 288.969
Alkaloid from the acorn worm *Glossobalanus* sp. Mp 96-96.5°.

Ac:
$C_{11}H_9Br_2NO$ 331.006
Mp 146-146.5° (141-143.5°).

Higa, T. *et al., Experientia*, 1985, **41**, 1487 (*isol, ir, pmr, ms, struct*)
Ohta, T. *et al., Heterocycles*, 1987, **26**, 2817 (*synth*)

N-[2-[3,5-Dibromo-4-[3-[(3-methyl-1-oxo-2-butenyl)amino]propoxy]phenyl]ethyl]-4-hydroxybenzeneacetamide, 9CI D-333

1,3-Dibromo-5-[2-[(4-hydroxyphenyl)acetamido]ethyl]-2-[3-(3-methyl-2-butenamido)propoxy]benzene
[160666-52-4]



$C_{24}H_{28}Br_2N_2O_4$ 568.304
Metab. from the Caribbean sponge *Iotrochota birotulata*.

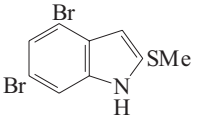
Monoiodo analogue: N-*[2-[3-Bromo-5-iodo-4-[3-[(3-methyl-1-oxo-2-butenyl)amino]propoxy]phenyl]ethyl]-4-hydroxybenzeneacetamide, 9CI*
[160666-53-5]
$C_{24}H_{28}BrIN_2O_4$ 615.305
Metab. from *Iotrochota birotulata*.

Diiodo analogue: N-*[2-[3,5-Diiodo-4-[3-[(3-methyl-1-oxo-2-butenyl)amino]-propoxy]phenyl]ethyl]-4-hydroxybenzeneacetamide, 9CI*
[160666-54-6]
$C_{24}H_{28}I_2N_2O_4$ 662.305
Metab. from *Iotrochota birotulata*.

Costantino, V. *et al., J. Nat. Prod.*, 1994, **57**, 1552 (*isol, ir, pmr, cmr, struct*)

4,6-Dibromo-2-methylthio-1*H*-indole D-334

[128351-88-2]

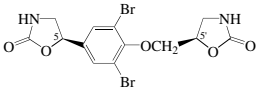


$C_9H_7Br_2NS$ 321.035
Alkaloid from the Okinawan red alga *Laurencia brongniartii*. Cryst. (hexane/CCl_4). Mp 59-61°.

Tanaka, J. *et al., Tetrahedron*, 1989, **45**, 7301 (*isol, ir, pmr, ms, struct*)

5-[3,5-Dibromo-4-[(2-oxo-5-oxazolidinyl)methoxy]phenyl]-2-oxazolidinone, 9CI D-335

[54448-72-5]



(*5R,5'R)-form*

$C_{13}H_{12}Br_2N_2O_5$ 436.056

(5*R*,5′*R*)-*form* [120442-03-7]
Isol. from sponge *Aplysina aerophoba*. Mp 220-222°. $[\alpha]_D$ -33 (c,1.1 in MeOH).

(5*R*,5′*S*)-*form*
Isol. from the sponges *Aplysina lacunosa* and *Verongula rigida* and ascidian *Clavelina oblonga*. Mp 220-222°. $[\alpha]_D$ -6.5 (c, 0.44 in MeOH). $[\alpha]_D^{24}$ -9.2 (c, 0.25 in MeOH).

(5*S*,5′*R*)-*form*
Isol. from the sponges *Aplysina fistularis* (*Verongia fistularis*) forma *fulva*, *Aplysina lacunosa* and *Aplysina cauliformis*. Mp 226-227° (222-225°). $[\alpha]_D^{20}$ +7.1 (c, 0.35 in MeOH).

2-Ac: [474670-22-9]
$C_{15}H_{14}Br_2N_2O_6$ 478.093
Isol. from *Suberea* aff. *praetensa*.

2,2′-Di-Ac: [474670-23-0]
$C_{17}H_{16}Br_2N_2O_7$ 520.131
Isol. from *Suberea* aff. *praetensa*.

(5*RS*,5′*SR*)-*form*
Isol. from the sponges *Aplysina cauliformis* and *Aplysina fistularis*. Mp 247-249°.

(5ξ,5′ξ)-*form*
O-*Ac:*

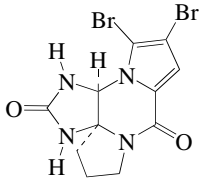
$C_{15}H_{14}Br_2N_2O_6$ 478.093
Isol. from *Suberea* aff. *praetensa* sponge. Derived from a hydroxyoxazolidine tautomer.

O,O-*Di-Ac:*
$C_{17}H_{16}Br_2N_2O_7$ 520.131
Isol. from a *Suberea* sponge. Derived from the bis(hydroxyoxazolidine) tautomer.

Borders, D.B. *et al., Tet. Lett.*, 1974, 2709-2712 (*isol, uv, ir, pmr, cmr, ms, struct*)
Gopichand, Y. *et al., Tet. Lett.*, 1979, 3921-3924 (*isol*)
Makarieva, T.N. *et al., Comp. Biochem. Physiol., B: Comp. Biochem.*, 1981, **68**, 481-484 (*occur*)
Norte, M. *et al., Tetrahedron*, 1988, **44**, 4973 (*5R,5′R-form, isol, cryst struct, abs config*)
Kijjoa, A. *et al., Z. Naturforsch., C*, 2002, **57**, 732-738 (*Suberea acetates*)
Kossuga, M.H. *et al., J. Nat. Prod.*, 2004, **67**, 1879-1881 (*Clavelina oblonga constit, isol, cmr*)
Rogers, E.W. *et al., J. Nat. Prod.*, 2005, **68**, 891-896 (*stereochem*)

Dibromophakellstatin D-336

[185750-71-4]



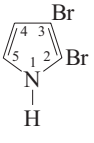
Absolute Configuration

$C_{11}H_{10}Br_2N_4O_2$ 390.034
Alkaloid from the Indian ocean sponge *Phakellia mauritiana*. Antineoplastic agent. Cryst. (toluene/MeOH). Mp 245° (dec.).

Pettit, G.R. *et al., J. Nat. Prod.*, 1997, **60**, 180-183 (*isol, pmr, cmr, ms, cryst struct*)
Wiese, K.J. *et al., Tet. Lett.*, 2002, **43**, 5135-5136 (*synth*)
Poullennec, K.G. *et al., J.A.C.S.*, 2003, **125**, 6344-6345 (*synth*)
Cheung, R. *et al., Org. Lett.*, 2004, **6**, 3881-3884 (*synth*)
Jacquot, D.E.N. *et al., Angew. Chem., Int. Ed.*, 2005, **44**, 2295-2298 (*synth*)
Feldman, K.S. *et al., Org. Lett.*, 2005, **7**, 929-931 (*synth*)
Zöllinger, M. *et al., J.O.C.*, 2006, **71**, 9431-9439 (*synth*)
Atodiresei, I. *et al., Chirality*, 2007, **19**, 542-549 (*electronic cd*)

2,3-Dibromo-1*H*-pyrrole, 9CI D-337

[69624-10-8]

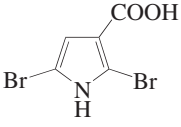


$C_4H_3Br_2N$ 224.882
Metab. from a marine sponge *Agelas* sp. Extremely unstable.

Audebert, P. *et al., Synth. Met.*, 1986, **15**, 9 (*ms, pmr*)
Tada, H. *et al., Chem. Lett.*, 1988, 803 (*isol, ir, pmr, cmr, ms*)

2,5-Dibromo-1*H*-pyrrole-3-carboxylic acid D-338

[270084-77-0]

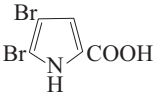


$C_5H_3Br_2NO_2$ 268.892
Isol. from *Spongia oblique.*

Xu, S.-H. *et al., Youji Huaxue*, 2000, **20**, 248-250; *CA*, **132**, 345562a (*isol*)

4,5-Dibromo-1*H*-pyrrole-2-carboxylic acid, 9CI D-339

[34649-21-3]



$C_5H_3Br_2NO_2$ 268.892
Constit. of the sponges *Agelas oroides*, *Agelas clathrodes*, *Agelas conifera* and *Agelas flabelliformis*. Possesses potent *in vitro* immunosuppressive activity. Feeding deterrent. Mp 148° subl.

Me ester: ***Methyl 4,5-dibromo-1*H*-pyrrole-2-carboxylate, 9CI***
[937-16-6]
$C_6H_5Br_2NO_2$ 282.919
Constit. of *Agelas oroides*, *Phakellia fusca* and a *Lissodendoryx* sp. Mp 161° (155°).

Amide: ***4,5-Dibromo-1*H*-pyrrole-2-carboxamide, 9CI***
[34649-20-2]
$C_5H_4Br_2N_2O$ 267.907
Constit. of *Acanthella carteri*, *Agelas mauritiana*, *Agelas oroides*, *Phakellia fusca* and *Pseudoceratina purpurea*. Larval metamorphosis-promoting compd. Feeding deterrent for ascidians. Mp 164-166°. λ_{max} 233 (ϵ 6200); 273 (ϵ 11800) (MeOH) (Berdy). λ_{max} 296 (ϵ 18800) (MeOH/NaOH) (Berdy).

(Methoxymethyl)amide: ***4,5-Dibromo-N²-methoxymethyl-1*H*-pyrrole-2-carboxamide***
[219782-98-6]
$C_7H_8Br_2N_2O_2$ 311.96
Isol. from the sponge *Homaxinella* sp.

Nitrile: ***4,5-Dibromo-1*H*-pyrrole-2-carbonitrile, 9CI***. *5-Cyano-2,3-dibromopyrrole*
[34649-19-9]
$C_5H_2Br_2N_2$ 249.892
Constit. of *Agelas oroides*. Mp 172-173°.

N-*Me:* ***4,5-Dibromo-1-methyl-1*H*-pyrrole-2-carboxylic acid, 9CI***
[66067-06-9]
$C_6H_5Br_2NO_2$ 282.919
Constit. of an unidentified orange marine sponge collected in the Marshall Islands. Cryst. ($CHCl_3$). Mp 153°.

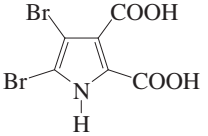
N-*Me, Me ester:* [1198-71-6]
$C_7H_7Br_2NO_2$ 296.946
Isol. from sponge *Agelas mauritiana*. Mp 87-90°. Poss. artifact.

N-*Et:* ***4,5-Dibromo-1-ethyl-1*H*-pyrrole-2-carboxylic acid***
[150314-24-2]
$C_7H_7Br_2NO_2$ 296.946
Isol. from a sponge *Axinella* sp. Cryst. Mp 141-143°. λ_{max} 205 (ϵ 10600); 239 (ϵ 8500); 275 (ϵ 12300) (MeOH).

N-*2-Propenyl:* ***1-Allyl-4,5-dibromo-1*H*-pyrrole-2-carboxylic acid***
[150314-25-3]
$C_8H_7Br_2NO_2$ 308.957
Isol. from a sponge *Axinella* sp. Amorph. cream-coloured solid. Mp 128-129°. λ_{max} 205 (ϵ 12800); 238 (ϵ 10600); 273 (ϵ 14000) (MeOH).

Rinkes, I.J. *et al., Rec. Trav. Chim. (J. R. Neth. Chem. Soc.)*, 1941, **60**, 303-308 (*ester, synth*)
Anderson, H.J. *et al., Can. J. Chem.*, 1965, **43**, 409-414 (*ester, synth*)
Hodge, P. *et al., J.C.S.*, 1965, 459-470 (*synth, uv, ir*)
Forenza, S. *et al., Chem. Comm.*, 1971, 1129-1130 (*Agelas oroides constits*)
Chevolot, L. *et al., Heterocycles*, 1977, **7**, 891-894 (*amide*)
Schmitz, F.J. *et al., J. Nat. Prod.*, 1985, **48**, 47-53 (*ester, isol, ir, pmr, cmr, ms*)
Utkina, N.K. *et al., Khim. Prir. Soedin.*, 1985, 578; *Chem. Nat. Compd. (Engl. Transl.)*, 1985, **21**, 547-548 (*isol*)
Fathi-Afshar, R. *et al., Can. J. Chem.*, 1988, **66**, 45-50 (*N-Me Me ester, isol, pmr, cmr*)
Gunasekera, S.P. *et al., J. Nat. Prod.*, 1989, **52**, 757-761 (*isol*)
Barrow, R.A. *et al., Nat. Prod. Lett.*, 1993, **1**, 243-250 (*isol, Axinella derivs*)
Tsukamoto, S. *et al., J. Nat. Prod.*, 1996, **59**, 501-503 (*amide, isol*)
Ponasik, J.A. *et al., Tet. Lett.*, 1996, **37**, 6041-6044 (*synth*)
Tsukamoto, S. *et al., Tetrahedron*, 1996, **52**, 8181-8186 (*amide, isol*)
Umeyama, A. *et al., J. Nat. Prod.*, 1998, **61**, 1433-1434 (*methoxymethylamide*)
Koenig, G.M. *et al., Planta Med.*, 1998, **64**, 443-447 (*isol, pmr, cmr*)
Tasdemir, D. *et al., Bioorg. Med. Chem.*, 2008, **15**, 6834-6845 (*isol, pmr, cmr*)

4,5-Dibromo-1*H*-pyrrole-2,3-dicarboxylic acid D-340



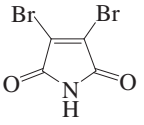
$C_6H_3Br_2NO_4$ 312.902

3-Nitrile, Me ester: 2,3-Dibromo-4-cyano-5-methoxycarbonylpyrrole
[866410-40-4]
$C_7H_4Br_2N_2O_2$ 307.929
Constit. of the sponge *Phakellia fusca*.

Xu, S. *et al., Tianran Chanwu Yanjiu Yu Kaifa*, 2003, **15**, 393-395; *CA*, **143**, 363646n (*isol*)

3,4-Dibromo-1*H*-pyrrole-2,5-dione, 9CI D-341

Dibromomaleimide
[1122-10-7]



$C_4HBr_2NO_2$ 254.865
Alkaloid from the sponge *Axinella brevistyla*. Antifungal and cytotoxic agent. Yellow needles (xylene or $CHCl_3$). Mp 230° (226°). λ_{max} 236 (log ϵ 4.1); 243 (log ϵ 4.1); 251 (sh) (log ϵ 3.9); 303 (log ϵ 3.1) (MeOH).

N-*Me: 3,4-Dibromo-1-methyl-1*H*-pyrrole-2,5-dione. 2,3-Dibromo*-N*-methylmaleimide*
[3005-27-4]
$C_5H_3Br_2NO_2$ 268.892
Pale yellow needles (H_2O). Mp 121° (114-116°).

N-*Et:*
$C_6H_5Br_2NO_2$ 282.919
Cryst. (EtOH). Mp 93-94°.

N-*Butyl:* [181864-30-2]
$C_8H_9Br_2NO_2$ 310.973
Cryst. (MeOH). Mp 75-77°.

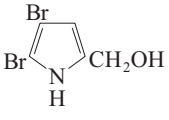
N-*Benzyl:* [91026-00-5]
$C_{11}H_7Br_2NO_2$ 344.99
Mp 117-117.5° (101-103°).

N-*Ph: 3,4-Dibromo-1-phenyl-1*H*-pyrrole-2,5-dione. 2,3-Dibromo*-N*-phenylmaleimide*
[65833-14-9]
$C_{10}H_5Br_2NO_2$ 330.963
Yellow solid. Mp 166-168°.

Khotinsky, E. *et al., Ber.*, 1904, **37**, 2798-2802 (*N-Me*)
Ruggli, P. *et al., Helv. Chim. Acta*, 1920, **3**, 493-514 (*synth*)
Elvidge, J.A. *et al., J.C.S.*, 1957, 2466-2472 (*synth*)
Martin, E.L. *et al., J.O.C.*, 1961, **26**, 2032-2037 (*N-Ph*)
Scharf, H.D. *et al., Chem. Ber.*, 1965, **98**, 764-780 (*N-Me, synth, ir, uv*)
Joyce, R.P. *et al., J.O.C.*, 1987, **52**, 1177-1185 (*N-benzyl*)
Chen, W. *et al., Acta Cryst. C*, 1997, **53**, 631-633 (*N-butyl, cryst struct*)
Choi, D.-S. *et al., J.O.C.*, 1998, **63**, 2646-2655 (*N-benzyl, N-Ph*)
Tsukamoto, S. *et al., J. Nat. Prod.*, 2001, **64**, 1576-1578 (*isol, uv, ir, pmr, cmr*)
Shorunov, S.V. *et al., Russ. J. Org. Chem. (Engl. Transl.)*, 2006, **42**, 1490-1497 (*N-butyl*)

4,5-Dibromo-1*H*-pyrrole-2-methanol D-342

2,3-Dibromo-5-hydroxymethylpyrrole



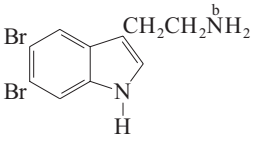
$C_5H_5Br_2NO$ 254.909

*Me ether: 2,3-Dibromo-5-(methoxymethyl)-1*H*-pyrrole, 9CI*
[115502-60-8]
$C_6H_7Br_2NO$ 268.935
Metab. from a marine sponge *Agelas* sp. Extremely unstable.

Tada, H. *et al., Chem. Lett.*, 1988, 803 (*isol, pmr, cmr, ms, struct*)

5,6-Dibromotryptamine D-343

*5,6-Dibromo-1*H*-indole-3-ethanamine, 9CI. 3-(2-Aminoethyl)-5,6-dibromoindole*
[41115-69-9]



$C_{10}H_{10}Br_2N_2$ 318.01
Alkaloid from the Caribbean sponge *Polyfibrospongia maynardii*. Shows *in vitro* but not *in vivo* activity against gram-negative as well as gram-positive bacteria. Mp 110-120°. λ_{max} 232 (ϵ 29200); 297 (ϵ 3700); 307 (ϵ 3300) (MeOH) (Berdy).

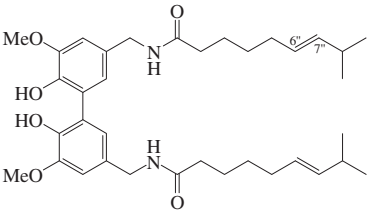
N^b-*Me:* ***5,6-Dibromo-N^b-methyltryptamine****. 5,6-Dibromo*-N*-methyl-1*H*-indole-3-ethanamine, 9CI*
[41115-68-8]
$C_{11}H_{12}Br_2N_2$ 332.037
Isol. from *Polyfibrospongia maynardii*. Shows *in vitro* but not *in vivo* activity against gram-negative as well as gram-positive bacteria. Mp 132-134°. λ_{max} 232 (ϵ 29200); 297 (ϵ 3700); 307 (ϵ 3300) (MeOH) (Berdy).

N^b,N^b-*Di-Me:* ***5,6-Dibromo-N^b,N^b-dimethyltryptamine****. 5,6-Dibromo*-N,N-*dimethyl-1*H*-indole-3-ethanamine, 9CI*
[72853-80-6]
$C_{12}H_{14}Br_2N_2$ 346.064
Constit. of the marine sponges *Smenospongia echina*, *Smenospongia aurea* and *Verongula gigantea*. Shows antimicrobial props. Cryst. (MeOH aq.). Sol. MeOH, EtOAc; poorly sol. H_2O. Mp 113-115°. λ_{max} 230 (ϵ 40100); 285 (ϵ 4900); 300 (ϵ 3300) (MeOH) (Derep). λ_{max} 207 (ϵ 9600); 232 (ϵ 30800); 291 (ϵ 6300) (EtOH) (Berdy).

Van Lear, G.E. *et al., Tet. Lett.*, 1973, 299-300 (*uv, pmr, ms, N^b-Me, struct*)
Djura, P. *et al., J.O.C.*, 1980, **45**, 1435-1441 (*5,6-Dibromo-N^b,N^b-dimethyltryptamine*)
Tymiak, A.A. *et al., Tetrahedron*, 1985, **41**, 1039-1047 (*5,6-Dibromo-N^b,N^b-dimethyltryptamine*)

5,5‴-Dicapsaicin D-344

[134386-10-0]



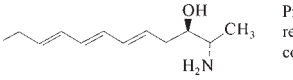
$C_{36}H_{52}N_2O_6$ 608.817
Oxidn. prod. of Capsaicin, C-100. Alkaloid from *Capsicum annuum* var. *annuum*. Antioxidant.

6″,7″-Dihydro: ***6″,7″-Dihydro-5,5‴-dicapsaicin***
$C_{36}H_{54}N_2O_6$ 610.832
Constit. of the fruit of *Capsicum annuum*. Antioxidant. Light yellow oil.

Bernal, M.A. *et al., J. Agric. Food Chem.*, 1996, **44**, 3085-3089 (*synth, ms*)
Henderson, D.E. *et al., J. Agric. Food Chem.*, 1999, **47**, 2563-2570 (*synth, ms*)
Ochi, T. *et al., J. Nat. Prod.*, 2003, **66**, 1094-1096 (*isol, pmr, cmr*)
Martinez-Juárez, V.M. *et al., J. Agric. Food Chem.*, 2004, **52**, 972-979 (*isol, pmr, cmr*)

Dicarprine C D-345

2-Amino-5,7,9-dodecatrien-3-ol
[67951-12-6]



$C_{12}H_{21}NO$ 195.304
Alkaloid from *Dicarpellum pronyensis* (preferred genus name *Salacia*)(Celastraceae). Noncryst.

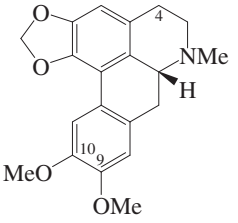
N-*Me:* ***Dicarprine B***
[67951-11-5]
$C_{13}H_{23}NO$ 209.331
Alkaloid from *Dicarpellum pronyensis* (Celastraceae). Noncryst.

O,N-*Di-Me:* ***Dicarprine A***
[67951-10-4]
$C_{14}H_{25}NO$ 223.358
Main alkaloid from *Dicarpellum pronyensis* (Celastraceae). Noncryst. Mp 119-120° as tartrate. $[\alpha]_D$ +11 (c, 1 in MeOH) (tartrate).

Adéoti, B. *et al., Phytochemistry*, 1978, **17**, 831 (*isol, uv, ms, pmr, struct*)

Dicentrine D-346

9,10-Dimethoxy-1,2-methylenedioxyaporphine. N,O-*Dimethylactinodaphnine. Eximine*†



(*R*)-*form*

$C_{20}H_{21}NO_4$ 339.39
Log P 2.86 (uncertain value) (calc).

(R)-form [28832-07-7]
Alkaloid from a Brazilian *Duguetia* sp. (Annonaceae). Shows antineoplastic activity. Mp 169°. $[\alpha]_D$ -53 (c, 1 in $CHCl_3$).

N-*De-Me:* ***(-)-Nordicentrine***
[151601-88-6]
$C_{19}H_{19}NO_4$ 325.363
Alkaloid from tubers of *Stephania pierrei* (Menispermaceae). Mp 248°

dec. $[\alpha]_D^{20}$ -34 (c, 0.2 in MeOH). λ_{max} 220 (ϵ 26300); 231 (ϵ 23440); 272 (ϵ 10715); 281 (ϵ 14790) (MeOH) (Berdy).

O^9-*De-Me:* ***(-)-Cassythicine***
[104641-05-6]
$C_{19}H_{19}NO_4$ 325.363
Alkaloid from the leaves of *Annona glabra* (Annonaceae) and from *Stephania epigeae*. Cryst. (MeOH). Mp 210-211°. $[\alpha]_D$ -61 (c, 0.58 in $CHCl_3$). λ_{max} 221 (ϵ 25700); 282 (ϵ 4677); 309 (ϵ 12580) (MeOH) (Berdy).

O^{10}-*De-Me: 10-Hydroxy-9-methoxy-1,2-methylenedioxyaporphine.* ***Phanostenine***
[25368-02-9]
$C_{19}H_{19}NO_4$ 325.363
Alkaloid from *Stephania sasakii* (Menispermaceae). Mp 126-128°. $[\alpha]_D$ -39 (c, 0.48 in $CHCl_3$). The CAS reg. no. refers to the (*S*)-enantiomer but the alkaloid prob. has the (*R*)-config. λ_{max} 234 (ϵ 14450); 273 (ϵ 19050); 318 (ϵ 3630) (MeOH) (Berdy).

(*S*)-*form* [517-66-8]
Alkaloid from a variety of genera in the Lauraceae (*Cassytha, Laurus, Lindera, Ocotea, Litsea*), Menispermaceae (*Cocculus, Cissampelos, Stephania*), and Papaveraceae (*Dicentra*, *Glaucium*). Shows sedative and analgesic props. Mp 168-169°. $[\alpha]_D$ +57 (c, 1 in EtOH). λ_{max} 281 (log ϵ 4.18); 305 (log ϵ 4.23) (95% EtOH).

▶ CE0455000

Hydrochloride: Mp 169°.

N-*Me:* **N-*Methyldicentrinium***
[209323-82-0]
$C_{21}H_{24}NO_4^{\oplus}$ 354.425
Alkaloid from *Dicentra peregrina*. Mp 224° (as iodide) (synthetic). Counterion not specified for natural compd.

N-*De-Me: 9,10-Dimethoxy-1,2-methylenedioxynoraporphine.* ***(+)-Nordicentrine***
[25394-59-6]
$C_{19}H_{19}NO_4$ 325.363
Alkaloid from the trunk and leaves of *Lindera oldhamii*, the leaves of *Litsea salicifolia*, and the stem bark of *Guatteria scandens* (Lauraceae, Annonaceae). Mp 254-255° dec. $[\alpha]_D^{31}$ +31 (c, 0.65 in MeOH).

O^9-*De-Me: 9-Hydroxy-10-methoxy-1,2-methylenedioxyaporphine.* ***Cassythicine.*** N-*Methylactinodaphnine*
[5890-28-8]
$C_{19}H_{19}NO_4$ 325.363
Alkaloid from *Cassytha melantha, Cassytha glabella, Cassytha americana* (*Cassytha filiformis*), *Hernandia cordigera, Laurus nobilis* (bay laurel), *Litsea kawakamii, Litsea laurifolia, Litsea glutinosa* var. *glabraria, Neolitsea sericea* and *Ocotea brachybotra* (Lauraceae, Hernandiaceae). Shows antimicrobial activity. Cryst. + 1$CHCl_3$ ($CHCl_3$). Mp 210-212°. $[\alpha]_D$ +62 (c, 0.43 in $CHCl_3$). λ_{max} 283 (log ϵ 4.23); 307 (log ϵ 4.27) (95% EtOH).

O^9-*De-Me,* N-*de-Me: 9-Hydroxy-10-methoxy-1,2-methylenedioxynoraporphine.* ***Actinodaphnine***
[517-69-1]
$C_{18}H_{17}NO_4$ 311.337
Alkaloid from a variety of genera in the Hernandiaceae (*Hernandia, Illigera*), Lauraceae (*Actinodaphne, Cassytha, Laurus, Litsea, Neolitsea*) and Annonaceae (*Guatteria*). Shows antimicrobial activity. Needles (EtOH). Mp 210-211°. $[\alpha]_D$ +39 (c, 1 in $CHCl_3$).

O^9-*De-Me,* N-*de-Me, hydrochloride:* Mp 280-281° dec. $[\alpha]_D^{20}$ +8.75 (H_2O).

O^9-*De-Me,* N-*de-Me,* N-*methoxycarbonyl:* ***Cathafiline.*** N-*Methoxycarbonylactinodaphnine*
[196099-31-7]
$C_{20}H_{19}NO_6$ 369.373
Alkaloid from *Cassytha filiformis* (Lauraceae). Amorph. brown solid ($CHCl_3$). Mp 118-120°. $[\alpha]_D$ +142.4 (c, 0.1 in $CHCl_3$). λ_{max} 236 ; 286 ; 305 (EtOH).

O^{10}-*De-Me,* N-*de-Me: 10-Hydroxy-9-methoxy-1,2-methylenedioxynoraporphine.* ***Litseferine.*** *Litseglutine A*
[60142-18-9]
$C_{18}H_{17}NO_4$ 311.337
Alkaloid from *Litsea glutinosa* and *Litsea sebiferea*. Cryst. (Py). Mp 258°. $[\alpha]_D^{24}$ +36.6 (c, 0.13 in MeOH). λ_{max} 218 ; 282 ; 306 (MeOH).

O^{10}-*De-Me,* N-*de-Me,* N,O-*di-Ac:* Powder. Mp 254°.

6a,7-Didehydro: see Dehydrodicentrine, D-156

*4*S-*Hydroxy:* ***4-Hydroxydicentrine***
[72170-12-8]
$C_{20}H_{21}NO_5$ 355.39
Alkaloid from leaves of *Ocotea minarum* (Lauraceae). Mp 210°. $[\alpha]_D$ +60 (c, 0.5 in $CHCl_3$).

7-Hydroxy: see Duguetine, D-948

(±)-*form* [26110-43-0]
Mp 178-179°.

Hydrochloride: Mp 263-265° dec.

N-*Me:* Mp 228-229° (as iodide).

O^9-*De-Me:* [38849-64-8]
Synthetic. Shows antimicrobial activity. Cryst. (MeOH). Mp 117° (111-113°).

O^9-*De-Me,* N-*de-Me:* [58072-86-9]
Synthetic. Brown needles (Me_2CO). Mp 195-198°.

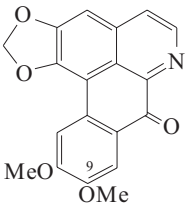
O^{10}-*De-Me:* Synthetic. Plates (MeOH). Mp 209-210°.

O^{10}-*De-Me, hydrochloride:* Needles (EtOH). Mp 255° dec.

Asahina, Y. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1909, **247**, 201-212 (*isol*)
Haworth, R.D. *et al., J.C.S.*, 1925, **127**, 2018-2023; 1926, **128**, 29 (*synth, resoln*)
Ghose, T.P. *et al., Helv. Chim. Acta*, 1934, **17**, 919-930 (*Actinodaphnine*)
Tomita, M. *et al., Yakugaku Zasshi*, 1957, **77**, 1011-1015; 1015-1018 (*Cassythicine, Phanostenine, synth*)
Craig, J.C. *et al., Tetrahedron*, 1965, **21**, 395-399 (*ord, uv*)
Johns, S.R. *et al., Aust. J. Chem.*, 1966, **19**, 2339-2345 (*Actinodaphnine, Cassythicine*)
Nakasato, T. *et al., Yakugaku Zasshi*, 1966, **86**, 129-134 (*Cassythicine*)
Cava, M.P. *et al., J.O.C.*, 1968, **33**, 2443-2446 (*Actinodaphnine, Cassythicine, uv*)
Kunimoto, J. *et al., Yakugaku Zasshi*, 1969, **89**, 1691-1695 (*Phanostenine*)
Yang, T.H. *et al., J. Chin. Chem. Soc. (Taipei)*, 1971, **18**, 133-136; *CA*, **77**, 16567r (*(-)-Cassythicine*)
Tewari, S. *et al., Phytochemistry*, 1972, **11**, 1149-1152 (*Cassythicine, isol, pmr, ms*)
Lu, S.T. *et al., Yakugaku Zasshi*, 1972, **92**, 910-917 (*isol, pmr, ir*)
Cava, M.P. *et al., Tetrahedron*, 1973, **29**, 2245-2249 (*synth*)
Premila, M.S. *et al., Indian J. Chem.*, 1975, **13**, 945-946 (*Actinodaphnine, synth*)
Sivakumaran, M. *et al., Indian J. Chem., Sect. B*, 1976, **14**, 150 (*Litseferine*)
Chen, I.S. *et al., J. Chin. Chem. Soc. (Taipei)*, 1977, **24**, 41-44; *CA*, **87**, 35908a (*(+)-Nordicentrine*)
O'Brien, J.P. *et al., Heterocycles*, 1978, **11**, 347-350 (*synth*)
Vecchietti, V. *et al., Farmaco, Ed. Sci.*, 1979, **34**, 829-840 (*4-Hydroxydicentrine*)
Rastogi, R.C. *et al., Phytochemistry*, 1980, **19**, 998-999 (*(+)-Nordicentrine*)
Ringdahl, B. *et al., J. Nat. Prod.*, 1981, **44**, 80-85 (*cd*)
Hocquemiller, R. *et al., J. Nat. Prod.*, 1983, **46**, 335 (*(+)-Nordicentrine*)
Hara, H. *et al., Chem. Pharm. Bull.*, 1986, **34**, 1946-1949 (*Dicentrine, Cassythicine, synth, pmr*)
Soicke, H. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1988, **321**, 149-152 (*(±)-Cassythicine*)
Tsai, I.L. *et al., Kaohsiung J. Med. Sci.*, 1989, **5**, 131-145 (*Actinodaphnine, activity*)
Likhitwitayawuid, K. *et al., J. Nat. Prod.*, 1993, **56**, 1468-1478 (*(-)-Nordicentrine, (-)-Cassythicine*)
Wu, Y.C. *et al., Phytochemistry*, 1997, **46**, 181-184 (*Cathafiline*)
Konishi, T. *et al., Nat. Med. (Tokyo)*, 1998, **52**, 47-53 (*N-Methyldicentrinium*)
Ma, W.G. *et al., Fitoterapia*, 2000, **71**, 527-534 (*cmr*)
Stévigny, C. *et al., Planta Med.*, 2002, **68**, 1042-1044 (*Actinodaphnine, pmr, cmr*)
Yang, J.-H. *et al., Helv. Chim. Acta*, 2005, **88**, 2523-2526 (*Litseglutine A*)

Dicentrinone D-347

Oxodicentrine
[16408-78-9]



$C_{19}H_{13}NO_5$ 335.315
Alkaloid from *Ocotea macropoda* and *Lindera oldhamii*, also from the genera *Guatteria* and *Glaucium* (Lauraceae, Annonaceae, Papaveraceae). Topoisomerase I inhibitor. Yellow needles ($CHCl_3$/EtOH). Mp 300° dec. λ_{max} 213 (log ϵ 4.59); 254 (log ϵ 4.75); 271 (log ϵ 4.47); 311 (log ϵ 4); 349 (log ϵ 4.04); 400 (log ϵ 3.97) (EtOH).

O^9-*De-Me:* ***Machigline***
[87264-30-0]
$C_{18}H_{11}NO_5$ 321.289
Alkaloid from leaves of *Machilus glaucescens* (Lauraceae). Red needles

(CHCl$_3$/MeOH). Mp 315° dec.

Cava, M.P. *et al., Tetrahedron*, 1971, **27**, 2639 (*isol, uv, ir, pmr*)
Lu, S.-T. *et al., Yakugaku Zasshi*, 1972, **92**, 910 (*isol*)
Talapatra, B. *et al., J. Indian Chem. Soc.*, 1982, **59**, 1364 (*Machigline*)
Wu, Y.C. *et al., Planta Med.*, 1989, **55**, 163-165 (*isol*)
Zhou, B.-N. *et al., J. Nat. Prod.*, 2000, **63**, 217-221 (*isol, pmr, cmr, activity*)

Dichloroacetic acid, 9CI **D-348**

Dichloroethanoic acid
[79-43-6]
$Cl_2CHCOOH$
$C_2H_2Cl_2O_2$ 128.942
Constit. of the red alga *Asparagopsis taxiformis*. Has fungicidal props. Corrosive liq. Misc. H_2O, EtOH. d_4^{20} 1.56. Mp 5-6° (11°). Bp 194° Bp_{20} 102°. n_D^{22} 1.4659.
▶ Fl. p. >66°. Corrosive and irritating to all tissues. LD_{50} (rbt, skn) 510 mg/kg.
AG6125000

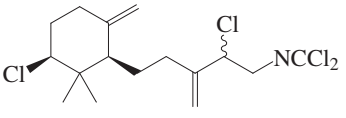
Amide: Dichloroacetamide
[683-72-7]
$C_2H_3Cl_2NO$ 127.957
Constit. of the red alga *Marginisporum aberrans*. Preservative. Shows antimicrobial props. Cryst. Mp 98°. Bp_{745} 234°. Steam-volatile, subl.
▶ AB6475000

[13425-80-4]

Org. Synth., Coll. Vol., 3, 1955, 260 (*amide*)
Ohta, K. *et al., Phytochemistry*, 1977, **16**, 1085-1086 (*amide, isol*)
Pellegata, R. *et al., Synthesis*, 1985, 517 (*amide*)

2,10-Dichloro-6,11-cyclo-3(15),7(14)-farnesadien-1-yl carbonimidic dichloride **D-349**

2-Chloro-5-(3-chloro-2,2-dimethyl-6-methylenecyclohexyl)-3-methylenepentyl carbonimidic dichloride
[321657-93-6]

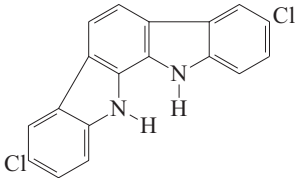


$C_{16}H_{23}Cl_4N$ 371.175
Constit. of *Stylotella aurantium*. Oil. $[\alpha]_D^{25}$ +4.5 (c, 0.2 in $CHCl_3$). λ_{max} 205 (log ε 3.6) (MeOH).

Musman, M. *et al., J. Nat. Prod.*, 2001, **64**, 111-113 (*isol, pmr, cmr*)

3,8-Dichloro-11,12-dihydroindolo[2,3-*a*]carbazole **D-350**

Tjipanazole D
[139083-25-3]



$C_{18}H_{10}Cl_2N_2$ 325.196
Alkaloid from blue-green alga *Tolypothrix tjipanasensis* and *Fischerella ambiguum*. λ_{max} 259 (ε 63100); 268 (sh) (ε 54100); 291 (ε 25500); 331 (ε 31000); 345 (sh) (ε 7300); 366 (ε 4030) (MeOH) (Derep).

N-*β-D-Xylopyranosyl:* ***Tjipanazole B***
[139083-21-9]
$C_{23}H_{18}Cl_2N_2O_4$ 457.312
Alkaloid from *Tolypothrix tjipanasensis*. $[\alpha]_D$ -4.9 (c, 1.03 in $CHCl_3$). $[\alpha]_D$ +10.5 (c, 0.95 in $CHCl_3$/MeOH 1:1). λ_{max} 261 (ε 61000); 294 (ε 23200); 333 (ε 31300); 354 (ε 7340); 371 (ε 4800) (MeOH) (Derep). λ_{max} 259 (ε 59400); 292 (ε 24800); 330 (ε 30400); 349 (ε 8140); 366 (ε 4850) (MeOH) (Berdy).

N-*(6-Deoxy-β-D-gulopyranosyl):* ***Tjipanazole A1***
[139083-13-9]
$C_{24}H_{20}Cl_2N_2O_4$ 471.338
Major alkaloid from the blue-green alga *Tolypothrix tjipanasensis*. Exhibits antifungal activity. $[\alpha]_D$ +9.1 (c, 1.0 in $CHCl_3$). λ_{max} 261 (ε 61000); 294 (ε 23200); 333 (ε 31300); 354 (ε 7340); 371 (ε 4800) (MeOH) (Derep).

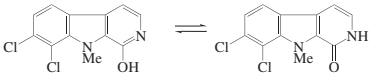
N-*α-L-Rhamnopyranosyl:* ***Tjipanazole A2***
[139083-14-0]
$C_{24}H_{20}Cl_2N_2O_4$ 471.338
From *Tolypothrix tjipanasensis*. Exhibits antifungal activity. $[\alpha]_D$ +25.12 (c, 1.0 in $CHCl_3$). λ_{max} 261 (ε 61000); 294 (ε 23200); 333 (ε 31300); 354 (ε 7340); 371 (ε 4800) (MeOH) (Derep).

N-*β-D-Glucopyranosyl:* ***Tjipanazole E***
[139083-22-0]
$C_{24}H_{20}Cl_2N_2O_5$ 487.338
Minor alkaloid from *Tolypothrix tjipanasensis*. $[\alpha]_D$ +63.8 (c, 1.0 in $CHCl_3$/MeOH 1:1). λ_{max} 261 (ε 61000); 294 (ε 23200); 333 (ε 31300); 354 (ε 7340); 371 (ε 4800) (MeOH) (Derep). λ_{max} 259 (ε 54400); 293 (ε 21700); 332 (ε 26900); 350 (ε 7360); 368 (ε 4460) (MeOH) (Berdy).

Bonjouklian, R. *et al., Tetrahedron*, 1991, **47**, 7739 (*isol, uv, pmr, cmr, struct*)
Kuethe, J.T. *et al., Org. Lett.*, 2003, **5**, 3721-3723 (*synth*)

7,8-Dichloro-1-hydroxy-9-methyl-β-carboline **D-351**

*7,8-Dichloro-9-methyl-9*H*-pyrido[3,4-b]indol-1-ol. 7,8-Dichloro-2,9-dihydro-9-methylpyrido[3,4-b]indol-1-one.* ***Bauerine C***
[156312-11-7]

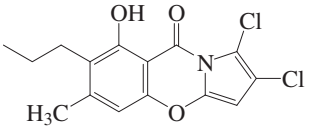


$C_{12}H_8Cl_2N_2O$ 267.113
Alkaloid from terrestrial blue-green alga *Dichothrix baueriana*. Solid (EtOH). Sol. MeOH, EtOAc; poorly sol. H_2O. Mp 254-258° dec. λ_{max} 250 (ε 43900); 290 (ε 4370); 301 (ε 2740); 334 (ε 4040); 347 (ε 6000); 362 (ε 4630) (MeOH) (Berdy).

Larsen, L.K. *et al., J. Nat. Prod.*, 1994, **57**, 419-421 (*isol, uv, pmr, cmr, struct*)
Pohl, B. *et al., Synth. Commun.*, 2007, **37**, 1273-1280 (*synth, pmr, cmr*)
Lingam, Y. *et al., Synth. Commun.*, 2007, **37**, 4313-4318 (*synth, pmr*)

1,2-Dichloro-8-hydroxy-6-methyl-7-propyl-9*H*-pyrrolo[1,2-*b*][1,3]benzoxazin-9-one, 9CI **D-352**

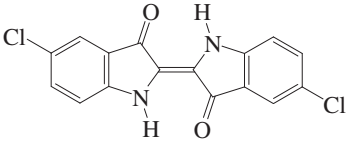
[208707-52-2]



$C_{15}H_{13}Cl_2NO_3$ 326.178
Prod. by *Streptomyces rimosus*.

Pat. Coop. Treaty (WIPO), 1998, 98 25 931; *CA*, **129**, 52003e

6,6′-Dichloroindigotin **D-353**



$C_{16}H_8Cl_2N_2O_2$ 331.157

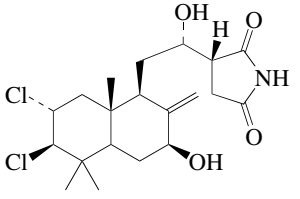
N-*(4-Amino-4,6-dideoxy-β-D-glucopyranosyl):* ***Akashin A***
[428516-77-2]
$C_{22}H_{19}Cl_2N_3O_5$ 476.315
Prod. by *Streptomyces* sp. GW 48/1497. Antitumour agent. $[\alpha]_D^{25}$ +2560 (c, 0.00125 in MeOH). Config. of sugar residue not detd. λ_{max} 241 (log ε 4.33); 290 (log ε 4.23); 619 (log ε 4.01) (MeOH).

N-*(4-Acetamido-4,6-dideoxy-β-D-glucopyranosyl):* ***Akashin B***
[428517-17-3]
$C_{24}H_{21}Cl_2N_3O_6$ 518.352
Prod. by *Streptomyces* sp. GW 48/1497. $[\alpha]_D^{25}$ +2840 (c, 0.0014 in MeOH). λ_{max} 244 (log ε 4.34); 291 (log ε 4.28); 618 (log ε 4.03) (MeOH).

Maskey, R.P. *et al., Angew. Chem., Int. Ed.*, 2002, **41**, 597-599 (*isol, uv, pmr, cmr, ms*)
Maskey, R.P. *et al., Nat. Prod. Res.*, 2005, **19**, 137-142 (*struct*)

Dichlorolissoclimide **D-354**

[138935-82-7]



$C_{20}H_{29}Cl_2NO_4$ 418.359
Constit. of tunicate *Lissoclinum voeltzkowi*. Tyrosine metab. and 5-aminolevu-

linic acid dehydrase inhibitor. Immunosuppressant. Mp 210°. $[\alpha]_D^{20}$ -20. $[\alpha]_D^{20}$ +30 (c, 0.2 in MeOH). No comment made on conflicting optical rotations. λ_{max} 242 (ϵ 76) (EtOH).

7-Ac: ***Haterumaimide A***
[335155-25-4]
$C_{22}H_{31}Cl_2NO_5$ 460.396
Isol. from a *Lissoclinum* sp. Cytotoxic agent. $[\alpha]_D^{29}$ +31.3 (c, 0.13 in MeOH).

3-Dechloro: ***Chlorolissoclimide***
[148717-91-3]
$C_{20}H_{30}ClNO_4$ 383.914
Constit. of *Lissoclinum voeltzkowi*. Highly cytotoxic. Glass.

3-Dechloro, 7-Ac: ***Haterumaimide N***
[913545-22-9]
$C_{22}H_{32}ClNO_5$ 425.951
Constit. of a *Lissoclinum* sp. Oil. $[\alpha]_D^{32}$ +59.7 (c, 0.79 in MeOH). λ_{max} 215 (log ϵ 3.6) (MeOH).

3-Dechloro, 12-deoxy: ***Haterumaimide P***
[913545-24-1]
$C_{20}H_{30}ClNO_3$ 367.915
Constit. of a *Lissoclinum* sp. Oil. $[\alpha]_D^{29}$ +68.8 (c, 0.11 in MeOH). λ_{max} 210 (log ϵ 3.6) (MeOH).

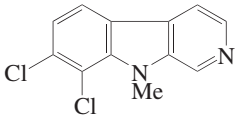
*3-Dechloro, 12-deoxy, 12,13-didehydro(*E*-), 7-Ac:* ***Haterumaimide O***
[913545-23-0]
$C_{22}H_{30}ClNO_4$ 407.936
Constit. of a *Lissoclinum* sp. Oil. $[\alpha]_D^{28}$ +16 (c, 0.08 in MeOH). λ_{max} 235 (log ϵ 3.9) (MeOH).

2,3-Didechloro: ***Haterumaimide Q***
[913545-25-2]
$C_{20}H_{31}NO_4$ 349.469
Constit. of a *Lissoclinum* sp. Oil. $[\alpha]_D^{28}$ +36 (c, 0.19 in $CHCl_3$). λ_{max} 204 (log ϵ 3.6) (MeOH).

Malochet-Grivois, C. *et al., Tet. Lett.*, 1991, **32**, 6701-6702 (*isol, pmr, cmr*)
Biard, J.-F. *et al., Nat. Prod. Lett.*, 1994, **4**, 43-50 (*Chlorolissoclimide*)
Toupet, L. *et al., J. Nat. Prod.*, 1996, **59**, 1203-1204 (*cryst struct*)
Uddin, M.J. *et al., Heterocycles*, 2001, **54**, 1039-1048 (*Haterumaimide A*)
Uddin, J. *et al., Bioorg. Med. Chem.*, 2006, **14**, 6954-6961 (*Haterumaimides N-Q*)

7,8-Dichloro-9-methyl-β-carboline D-355

*7,8-Dichloro-9-methylpyrido[3,4-*b*]indole.* ***Bauerine B***
[156312-10-6]

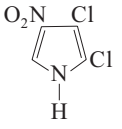


$C_{12}H_8Cl_2N_2$ 251.114
Alkaloid from terrestrial blue-green alga *Dichothrix baueriana*. Shows antiviral activity. Solid (MeOH/hexane). Sol. MeOH, EtOAc; poorly sol. H_2O. Mp 163-164°. λ_{max} 246 (ϵ 38300); 281 (ϵ 8200); 292 (ϵ 12300); 345 (ϵ 4500); 359 (ϵ 5500) (MeOH) (Berdy).

Larsen, L.K. *et al., J. Nat. Prod.*, 1994, **57**, 419-421 (*isol, uv, pmr, cmr, struct*)
Rocca, P. *et al., Synth. Commun.*, 1995, **25**, 2901-2908 (*synth*)
Pohl, B. *et al., Synth. Commun.*, 2007, **37**, 1273-1280 (*synth, pmr, cmr*)

2,3-Dichloro-4-nitro-1*H*-pyrrole, 9CI D-356

Pyrrolomycin A*. SF 2080A. Antibiotic SF 2080A*
[79763-01-2]



$C_4H_2Cl_2N_2O_2$ 180.977
Pyrrole antibiotic. Isol. from *Actinosporangium vitaminophilum*. Antifungal agent. Yellow cryst. (C_6H_6). Sol. MeOH, dioxan, Me_2CO; fairly sol. $CHCl_3$; poorly sol. H_2O, hexane. Mp 211-213°. Log P 2.16 (calc). λ_{max} 270 (ϵ 7830); 318 (ϵ 3020) (MeOH/HCl) (Derep). λ_{max} 323 (ϵ 11300) (MeOH/NaOH) (Derep). λ_{max} 268 (ϵ 7400); 269 (E1%/1cm 490); 318 (E1%/1cm 170); 320 (E1%/1cm 230); 323 (ϵ 11400) (MeOH) (Berdy).
▶ LD_{50} (mus, ipr) 10 - 30 mg/kg.
UX9459000

Fr. Pat., 1981, 2 472 611; *CA*, **96**, 4942
Ezaki, N. *et al., J. Antibiot.*, 1981, **34**, 1363-1365; 1569 (*isol, struct, synth, pharmacol*)
Ratnayake, A.S. *et al., J. Nat. Prod.*, 2008, **71**, 1923-1926 (*biosynth*)

1,15-Dichloro-1,14-pentadecadiene-3,12-diyn-8-amine D-357

8-Amino-1,15-dichloro-1,14-pentadecadiene-3,12-diyne
ClCH═CHC≡C$(CH_2)_3$CH(NH_2)($CH_2)_3$C≡CCH═CHCl
$C_{15}H_{19}Cl_2N$ 284.227

(1E,14E)-form
N-*Ac: 8-Acetamido-1,15-dichloro-1,14-pentadecadiene-3,12-diyne.* ***Taveuniamide H***
$C_{17}H_{21}Cl_2NO$ 326.264
Isol. from a mixed assemblage of *Lyngbya majuscula* and *Schizothrix* sp. λ_{max} 238 (ϵ 10300) (EtOH).

1-Chloro, N-*Ac: 8-Acetamido-1,1,15-trichloro-1,14-pentadecadiene-3,12-diyne.* ***Taveuniamide I***
$C_{17}H_{20}Cl_3NO$ 360.709
Isol. from a mixt. of *Lyngbya majuscula* and *Schizothrix* sp. $[\alpha]_D^{25}$ -2 (c, 0.4 in $CHCl_3$). λ_{max} 242 (ϵ 37500) (EtOH).

1-Chloro, 1,2,3,3,4,4-hexahydro, N-*Ac: 8-Acetamido-1,15,15-trichloro-1-pentadecen-3-yne.* ***Taveuniamide F***
$C_{17}H_{26}Cl_3NO$ 366.757
Isol. from a mixt. of *Lyngbya majuscula* and *Schizothrix* sp. $[\alpha]_D^{25}$ -5.2 (c, 0.4 in $CHCl_3$). λ_{max} 238 (ϵ 9100) (EtOH).

1,15-Dichloro, N-*Ac: 8-Acetamido-1,1,15,15-tetrachloro-1,14-pentadecadiene-3,12-diyne.* ***Taveuniamide J***
$C_{17}H_{19}Cl_4NO$ 395.154
Isol. from a mixt. of *Lyngbya majuscula* and *Schizothrix* sp. λ_{max} 244 (ϵ 37700) (EtOH).

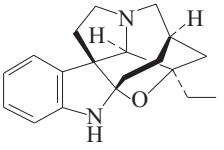
1,15-Dichloro, 1,2-dihydro, N-*Ac: 8-Acetamido-1,1,15,15-tetrachloro-1-pentadecen-3,12-diyne.* ***Taveuniamide G***
$C_{17}H_{21}Cl_4NO$ 397.17
Isol. from a mixt. of *Lyngbya majuscula* and *Schizothrix* sp. $[\alpha]_D^{25}$ +0.3 (c, 0.04 in $CHCl_3$). λ_{max} 244 (ϵ 21100) (EtOH).

(1E,14Z)-form
3Z,4-Dihydro, N-*Ac: 8-Acetamido-1,15-dichloro-1,3,14-pentadecatrien-12-yne.* ***Taveuniamide K***
$C_{17}H_{23}Cl_2NO$ 328.28
Isol. from a mixt. of *Lyngbya majuscula* and *Schizothrix* sp. $[\alpha]_D^{25}$ +2.4 (c, 0.1 in $CHCl_3$). λ_{max} 242 (ϵ 18200) (EtOH).

Williamson, R.T. *et al., Tetrahedron*, 2004, **60**, 7025-7033 (*isol, pmr, cmr*)

Dichomine D-358

[89647-74-5]

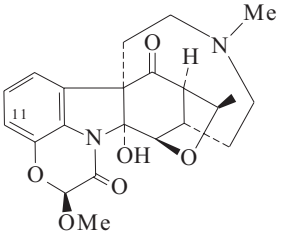


$C_{19}H_{24}N_2O$ 296.411
Unusual indole alkaloid. Can theoretically be derived from a Secodine precursor by Diels-Alder type cyclisation. The VX5400 classification given here is provisional. Alkaloid from the leaves of *Tabernaemontana dichotoma* and leaves and twigs of *Tabernaemontana eglandulosa* (Apocynaceae).

Perera, P. *et al., Planta Med.*, 1983, **49**, 232 (*uv, pmr, cmr, ms, cd, struct*)

Dichotine, 9CI D-359

[27530-76-3]



$C_{22}H_{26}N_2O_6$ 414.457
Related to Condylocarpan alkaloids but with an additional C_2 unit of unknown origin. Alkaloid from the bark of *Vallesia dichotoma* (Apocynaceae). Cryst. (Me_2CO). Mp 211-213°. $[\alpha]_D$ +88 ($CHCl_3$). pK_a 7.2 (MeCN).

Ac: [29474-87-1]
Cryst. (Me_2CO). Mp 247-248°.

11-Methoxy: ***11-Methoxydichotine***
[29537-51-7]

$C_{23}H_{28}N_2O_7$ 444.483
Alkaloid from *Vallesia dichotoma* bark (Apocynaceae). Cryst. (Me_2CO). Mp 120-121°. $[\alpha]_D$ +11 ($CHCl_3$). pK_a 7.2 (MeCN).

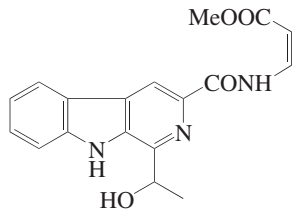
11-Methoxy, Ac: [29474-86-0]
Cryst. (Me_2CO). Mp 189-190°.

[27530-77-4]

Ling, N.C. *et al., J.A.C.S.*, 1970, **92**, 222; 6019 (*isol, uv, pmr, ms, struct*)

Dichotomide II D-360

[755036-57-8]



$C_{18}H_{17}N_3O_4$ 339.35
Alkaloid from the roots of *Stellaria dichotoma* var. *lanceolata*. Yellow powder. $[\alpha]_D^{19}$ +7.2 (c, 0.3 in $CHCl_3$). λ_{max} 226 (log ϵ 4.02); 284 (log ϵ 4.07); 324 (log ϵ 3.85) (MeOH).

Sun, B. *et al., J. Nat. Prod.*, 2004, **67**, 1464-1469 (*isol, pmr, cmr, ms*)
Omura, K. *et al., Chem. Pharm. Bull.*, 2008, **56**, 237-238 (*struct*)

Dichroidine D-361

$C_{18}H_{25}N_3O_3$ 331.414

Struct. unknown. Alkaloid from *Dichroa febrifuga* (Hydrangeaceae). Mp 213°.

Jang, C.S. *et al., Nature (London)*, 1948, **161**, 400-401

N,N′-Dicinnamoylputrescine D-362

$Ph^{3'}CH{=}^{2'}CHCO^{1}NH(CH_2)_4NHCOC$-4NHCOCH=CHPh

$C_{22}H_{24}N_2O_2$ 348.444

(E,E)-form
NSC 107212
[37946-56-8]
Prod. by the mushroom *Pholiota spumosa*. Cryst. (EtOAc/MeOH). Mp 249-253° (247-248°).

4‴,4⁗-Dihydroxy: N,N′*-1,4-Butanediyl-bis[3-(4-hydroxyphenyl)-2-propenamide], 9CI.* N,N′*-Bis(4-hydroxycinnamoyl)-1,4-butanediamine.* **N^1,N^4-*Di*-p-*coumaroylputrescine***
[37946-59-1]
$C_{22}H_{24}N_2O_4$ 380.443
Alkaloid from *Dianthus caryophyllus, Helianthus annuus* (sunflower), *Nicotiana tabacum, Pyrus communis* (pear), *Rubus idaeus* (raspberry) and *Vicia faba*. Also isol. from corn bran (*Zea mays*). Antioxidant. λ_{max} 220 ; 229 ; 294 ; 310 (MeOH).

3‴,3⁗,4‴,4⁗-Tetrahydroxy: N,N′*-Bis(3,4-dihydroxycinnamoyl)-1,4-butanediamine.* **N^1,N^4-*Dicaffeoylputrescine***
[60422-23-3]
$C_{22}H_{24}N_2O_6$ 412.441
Alkaloid from *Helianthus annuus* (sunflower), *Pyrus communis* (pear), *Nicotiana tabacum* and *Salix* spp.

3‴-Methoxy, 4‴,4⁗-dihydroxy: N^1-p-*Coumaroyl*-N^4-*feruloylputrescine*
[380302-96-5]
$C_{23}H_{26}N_2O_5$ 410.469
Isol. from corn bran (*Zea mays*). Powder. λ_{max} 220 ; 229 ; 294 ; 310 (MeOH).

3‴,3⁗-Dimethoxy, 4‴,4⁗-dihydroxy: N,N′*-Bis(4-hydroxy-3-methoxycinnamoyl)-1,4-butanediamine.* **N^1,N^4-*Diferuloylputrescine***. *Terrestribisamide*
[42369-86-8]
[91000-13-4]
$C_{24}H_{28}N_2O_6$ 440.495
Alkaloid from *Ananas comosus* (pineapple), *Triticum vulgare, Gomphrena globosa, Dianthus caryophyllus, Tribulus terrestris, Vicia faba, Lycopersicon esculentum* (tomato), *Nandina domestica*, *Petunia* sp. and *Nicotiana tabacum*. Also isol. from corn bran (*Zea mays*). Lipoxygenase inhibitor. Antioxidant. Mp 143-145°.

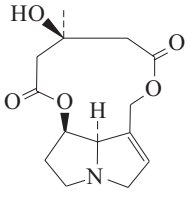
3‴,3⁗,5‴,5⁗-Tetramethoxy, 4‴,4⁗-dihydroxy: N,N′*-Bis(4-hydroxy-3,5-dimethoxycinnamoyl)-1,4-butanediamine.* **N^1,N^4-*Disinapoylputrescine***
[70185-58-9]
$C_{26}H_{32}N_2O_8$ 500.547
Alkaloid from *Lilium* sp.

2′,3′-Dihydro, N^1-*Ac:* N^1-*Acetyl*-N^2-*cinnamoyl*-N^1-*dihydrocinnamoylputrescine.* ***Edulimide***
[217481-11-3]
$C_{24}H_{28}N_2O_3$ 392.497
Alkaloid from *Aglaia edulis*. λ_{max} 282 (log ϵ 3.91) (MeOH).

Martin-Tanguy, J. *et al., C. R. Hebd. Seances Acad. Sci. Ser. D*, 1973, **276**, 1433-1435 (*Dicoumaroylputrescine, Diferuloylputrescine*)
Cabanne, F. *et al., C. R. Hebd. Seances Acad. Sci. Ser. D*, 1976, **282**, 1959-1962 (*Dicaffeoylputrescine*)
Martin-Tanguy, J. *et al., Phytochemistry*, 1978, **17**, 1927-1928 (*occur*)
Brader, G. *et al., J. Nat. Prod.*, 1998, **61**, 1482-1490 (*Edulimide*)
Wu, T.S. *et al., Phytochemistry*, 1999, **50**, 1411-1415 (*Terrestribisamide*)
Clericuzio, M. *et al., Croat. Chem. Acta*, 2004, **77**, 605-611 (*isol, cryst struct*)
Choi, S.W. *et al., J. Agric. Food Chem.*, 2007, **55**, 3920-3925 (*corn bran constits*)

Dicrotaline D-363

13-Hydroxy-17,19,20-trinorcrotalanan-11,15-dione, 9CI
[480-87-5]



$C_{14}H_{19}NO_5$ 281.308
Cyclic ester of Retronecine in T-188 with 3-Hydroxy-3-methylpentanedioic acid. Alkaloid from *Crotalaria dura* and *Crotalaria globifera* (Fabaceae). Mp 170° (dec.). Unstable.
▶ Carcinogenic.

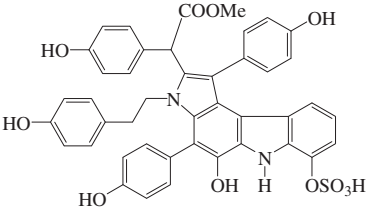
Hydrochloride: Mp 258-260°. Unstable.

Ac: ***Acetyldicrotaline***
[88205-13-4]
$C_{16}H_{21}NO_6$ 323.345
Minor alkaloid from leaves of *Crotalaria lachnosema* (Fabaceae).

Marais, J.S.C. *et al., CA*, 1945, **39**, 4116 (*isol*)
Adams, R. *et al., J.A.C.S.*, 1953, **75**, 2377 (*struct*)
Brown, K. *et al., J.C.S. Perkin 1*, 1982, 2079 (*synth*)
Niwa, H. *et al., Bull. Chem. Soc. Jpn.*, 1988, **61**, 3017 (*synth*)
Mattocks, A.R. *et al., Phytochemistry*, 1988, **27**, 3289 (*Acetyldicrotaline*)
Rycroft, D.S. *et al., Magn. Reson. Chem.*, (Spec. Issue), 1992, **30**, S42 (*pmr, cmr, config, Acetyldicrotaline*)
Sax, N.I. *et al., Dangerous Properties of Industrial Materials, 5th edn., Van Nostrand Reinhold*, 1979, 568

Dictyodendrine A D-364

[510709-68-9 (Na salt)]

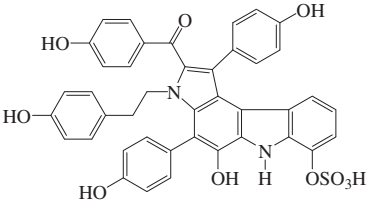


$C_{43}H_{34}N_2O_{11}S$ 786.814
Alkaloid from the sponge *Dictyodendrilla verongiformis*. Telomerase inhibitor. Amorph. red solid (as Na salt). $[\alpha]_D^{19}$ -4.6 (c, 0.01 in MeOH/0.3*M* $NaClO_4$) (Na salt). λ_{max} 208 (ϵ 55200); 227 (ϵ 56600); 328 (ϵ 18500); 480 (ϵ 3950) (MeOH).

Warabi, K. *et al., J.O.C.*, 2003, **68**, 2765-2770 (*isol, pmr, cmr, ms*)

Dictyodendrine B D-365

[510709-69-0 (Na salt)]



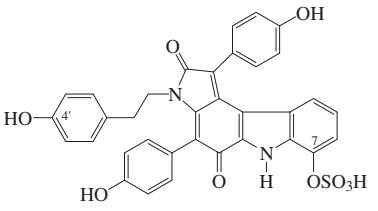
$C_{41}H_{30}N_2O_{10}S$ 742.761
Alkaloid from the sponge *Dictyodendrilla verongiformis*. Telomerase inhibitor. Amorph. yellow solid (as Na salt). λ_{max} 228 (ϵ 34700); 305 (sh) ; 397 (ϵ 9010) (MeOH) (Na salt).

Warabi, K. *et al., J.O.C.*, 2003, **68**, 2765-2770 (*isol, pmr, cmr, ms*)

Fürstner, A. *et al., J.A.C.S.*, 2006, **128**, 8087-8094 (*synth*)

Dictyodendrine C D-366

[510709-70-3 (Na salt)]



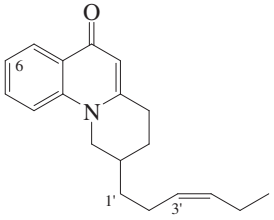
$C_{34}H_{24}N_2O_9S$ 636.638
Alkaloid from the sponge *Dictyodendrilla verongiformis*. Telomerase inhibitor. Greenish-yellow solid (as Na salt). λ_{max} 238 (ϵ 18300); 277 (ϵ 10500); 302 (ϵ 8600); 415 (ϵ 6540) (MeOH) (Na salt).

4′-O-sulfate: ***Dictyodendrine D***
[510709-71-4 (di-Na salt)]
$C_{34}H_{24}N_2O_{12}S_2$ 716.702
Alkaloid from *Dictyodendrilla verongiformis*. Telomerase inhibitor. Greenish-yellow solid (as Na salt). λ_{max} 243 (ϵ 12500); 276 (ϵ 6610); 305 (ϵ 6230); 353 (ϵ 5520); 416 (ϵ 4960) (MeOH) (Na salt).

Warabi, K. *et al., J.O.C.*, 2003, **68**, 2765-2770 (*isol, pmr, cmr, ms*)
Fürstner, A. *et al., J.A.C.S.*, 2006, **128**, 8087-8094 (*synth*)

Dictyolomide A D-367

*2-(3-Hexenyl)-1,2,3,4-tetrahydro-6*H*-pyrido[1,2-*a*]quinolin-6-one, 9CI*
[168434-18-2]



$C_{19}H_{23}NO$ 281.397
Alkaloid from stem bark of *Dictyoloma peruviana* (Rutaceae). Shows antileishmanial activity. $[\alpha]_D$ +21 (c, 0.6 in $CHCl_3$).

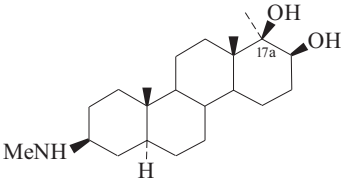
1′-Hydroxy, 3′,4′-dihydro: ***Dictyolomide B***
[168434-19-3]
$C_{19}H_{25}NO_2$ 299.412
Alkaloid from stem bark of *Dictyoloma peruviana* (Rutaceae). Shows antileishmanial activity. $[\alpha]_D$ +32 (c, 0.9 in $CHCl_3$).

6-Methoxy: ***6-Methoxydictyolomide A***
$C_{20}H_{25}NO_2$ 311.423
Alkaloid from the leaves of *Dictyoloma vandellianum*. Yellow powder. $[\alpha]_D$ +22 (c, 0.7 in $CHCl_3$). λ_{max} 240 ; 331 ; 347 (MeOH).

Lavaud, C. *et al., Phytochemistry*, 1995, **40**, 317-320 (*Dictyolomide A*)
Sartor, C.F.P. *et al., Phytochemistry*, 2003, **63**, 185-192 (*6-Methoxydictyolomide A*)

Dictyolucidine D-368

*17-Methyl-3-methylamino-D-homoandrostane-17,17*a*-diol*
[2328-79-2]



$C_{22}H_{39}NO_2$ 349.556
Alkaloid from *Dictyophleba lucida* (Apocynaceae). Cryst. (Et_2O). Mp 198°. $[\alpha]_D^{20}$ +30 ($CHCl_3$).

N-*Ac:*
Cryst. (Me_2CO). Mp 278°. $[\alpha]_D$ +9 ($CHCl_3$).

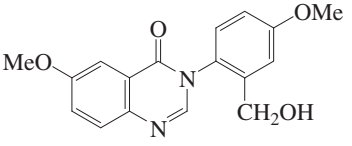
N-*Me:* ***Dictyolucidamine***
[2449-83-4]
$C_{23}H_{41}NO_2$ 363.582
Alkaloid from *Dictyophleba lucida* (Apocynaceae). Mp 205°. $[\alpha]_D$ +6 ($CHCl_3$).

N-*Me,* O-*Ac:*
Cryst. (EtOH). Mp 228-229°. $[\alpha]_D$ +30 ($CHCl_3$).

Janot, M.M. *et al., Bull. Soc. Chim. Fr.*, 1966, 3472 (*isol, struct, ir, pmr, ms, synth*)

Dictyoquinazole A D-369

*3-(2-Hydroxymethyl-4-methoxyphenyl)-6-methoxy-4(3*H*)-quinazolinone*
[477203-69-3]



$C_{17}H_{16}N_2O_4$ 312.324
Alkaloid from the edible mushroom *Dictyophora indusiata*. Neuroprotective agent. Pale yellow oil. λ_{max} 224 (log ϵ 3.9); 274 (log ϵ 3.43); 319 (log ϵ 2.78) (MeOH).

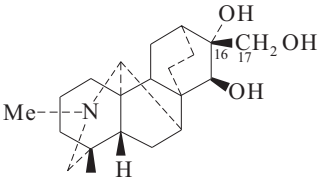
N^1*,2-Dihydro,* N^1*-formyl: 1-Formyl-2,3-dihydro-3-(2-hydroxymethyl-4-methoxyphenyl)-6-methoxy-4(1*H*)-quinazolinone.* ***Dictyoquinazole C***
[477203-71-7]
$C_{18}H_{18}N_2O_5$ 342.351
Alkaloid from *Dictyophora indusiata*. Pale yellow oil. $[\alpha]_D$ +60 (c, 0.03 in MeOH). Exists as a mixt. of rotamers. λ_{max} 228 (log ϵ 3.9); 319 (log ϵ 2.9) (MeOH).

4-Deoxo, N^1*,2-dihydro,* N^1*-formyl: 1-Formyl-1,2,3,4-tetrahydro-3-(2-hydroxymethyl-4-methoxyphenyl)-6-methoxyquinazoline.* ***Dictyoquinazole B***
[476488-21-8]
$C_{18}H_{20}N_2O_4$ 328.367
Alkaloid from *Dictyophora indusiata*. Pale yellow oil. $[\alpha]_D$ -80 (c, 0.05 in MeOH). Exists as a mixt. of rotamers. λ_{max} 206 (log ϵ 3.7); 239 (log ϵ 3.85); 290 (log ϵ 3.2) (MeOH).

Lee, I.-K. *et al., J. Nat. Prod.*, 2002, **65**, 1769-1772 (*isol, pmr, cmr*)
Oh, C.H. *et al., Synth. Commun.*, 2007, **37**, 3311-3317 (*synth, pmr, Dictyoquinazols B,C*)

Dictysine D-370

Dictyzine. Dictizine
[67256-05-7]



$C_{21}H_{33}NO_3$ 347.497
Alkaloid from *Delphinium dictyocarpum, Delphinium corymbosum* and *Delphinium brunonianum* (Ranunculaceae).

*15-*O*-(3,4-Dimethoxybenzoyl):* ***15-Veratroyldictysine***
[852446-99-2]
$C_{30}H_{41}NO_6$ 511.657
Alkaloid from *Aconitum variegatum*. Amorph. solid. $[\alpha]_D^{20}$ +79.6 (c, 0.72 in $CHCl_3$).

*15-*O*-(3,4-Dimethoxybenzoyl), 17-Ac:* ***17-Acetyl-15-veratroyldictysine***
[852381-88-5]
$C_{32}H_{43}NO_7$ 553.694
Alkaloid from *Aconitum variegatum*. Amorph. solid. $[\alpha]_D^{25}$ +69.1 (c, 0.81 in $CHCl_3$).

N-*De-Me,* N-*Et:* **N-*Ethyl*-N-*demethyldictysine***
[863192-72-7]
$C_{22}H_{35}NO_3$ 361.523
Alkaloid from *Delphinium corymbosum*. Unpubl. information (1999).

16,17-Methylene ether: ***Corumdizinine***
[863203-33-2]
$C_{22}H_{33}NO_3$ 359.508
Alkaloid from *Delphinium corymbosum* (Ranunculaceae). Cryst. (hexane). Mp 104-105°.

16,17-Methylene ether, N-*de-Me,* N-*Et:* ***Corumdizine***
[863203-31-0]
$C_{23}H_{35}NO_3$ 373.534
Alkaloid from *Delphinium corymbosum* (Ranunculaceae). Amorph.

*16,17-*O*-Isopropylidene:* ***Dictysine acetonide***
[82413-15-8]
$C_{24}H_{37}NO_3$ 387.561
Alkaloid from *Delphinium dictyocarpum* and *Delphinium corymbosum* (Ranunculaceae).

15-Ketone: ***15-Dehydrodictysine***
[74119-95-2]
$C_{21}H_{31}NO_3$ 345.481
Alkaloid from *Delphinium dictyocarpum* (Ranunculaceae). Mp 145° (as acetonide). $[\alpha]_D$ -58 ($CHCl_3$) (acetonide).

*19-Oxo, 15-*O*-(3,4-dimethoxybenzoyl), 17-Ac:* ***17-Acetyl-15-veratroyl-19-oxodictysine***
[852381-89-6]
$C_{32}H_{41}NO_8$ 567.678

Alkaloid from *Aconitum variegatum*. Amorph. solid. $[\alpha]_D^{25}$ +49.3 (c, 0.15 in $CHCl_3$).

Salimov, B.T. *et al., Khim. Prir. Soedin.*, 1979, **15**, 812-817; 1982, **18**, 86-91; 1985, **21**, 95-98; *Chem. Nat. Compd. (Engl. Transl.)*, 1979, **15**, 718-722; 1982, **18**, 81-85; 1985, **21**, 91-94 (*isol, struct*)

Dzhakhangirov, F.N. *et al., Dokl. Akad. Nauk SSSR*, 1982, 37-38; *CA*, **99**, 151861b (*pharmacol*)

Tashkhodzhaev, B. *et al., Khim. Prir. Soedin.*, 1982, **18**, 230-235; *Chem. Nat. Compd. (Engl. Transl.)*, 1982, **18**, 211-215 (*cryst struct*)

Deng, W. *et al., Heterocycles*, 1986, **24**, 869-872 (*occur*)

Joshi, B.S. *et al., Tetrahedron*, 1991, **47**, 4299-4316 (*pmr, cmr*)

Shakirov, R. *et al., Khim. Prir. Soedin.*, 1996, **32**, 410-512; *Chem. Nat. Compd. (Engl. Transl.)*, 1996, **32**, 386-512 (*Corumdizine, Corumdizinine*)

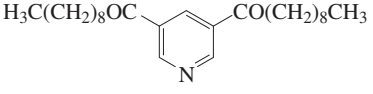
Shrestha, P.M. *et al., J. Nat. Prod.*, 2004, **67**, 1574-1576 (*pmr, cmr, ms*)

Diaz, J.G. *et al., Phytochemistry*, 2005, **66**, 837-846 (*Aconitum variegatum alkaloids*)

3,5-Didecanoylpyridine D-371

1,1′-(3,5-Pyridinediyl)bis-1-decanone, 9CI

[149682-93-9]



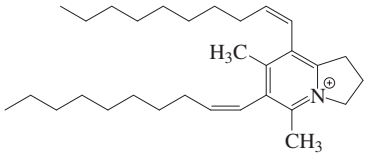
$C_{25}H_{41}NO_2$ 387.604

Alkaloid from *Houttuynia cordata* (Yu Xing Cao).

Jong, T.T. *et al., J. Chin. Chem. Soc. (Taipei)*, 1993, **40**, 301-303 (*isol*)

Proebstle, A. *et al., Nat. Prod. Lett.*, 1994, **4**, 235-240 (*isol*)

6,8-Di-1-decenyl-2,3-dihydro-5,7-dimethyl-1*H*-indolizinium D-372



$C_{30}H_{50}N^{\oplus}$ 424.732

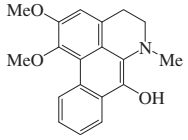
(Z,Z)-form

Quaternary alkaloid from the wood of *Aniba panurensis*. Antifungal agent. Yellow oil (as TFA salt). λ_{max} 284 (log ϵ 3.6) (MeOH) (as trifluoroacetate salt).

Klausmeyer, P. *et al., J. Nat. Prod.*, 2004, **67**, 1732-1735 (*isol, pmr, cmr, ms*)

6*a*,7-Didehydro-7-hydroxy-1,2-dimethoxyaporphine D-373

[252564-91-3]



$C_{19}H_{19}NO_3$ 309.364

Alkaloid from the stem bark of *Enantia chlorantha*. Brown powder (MeOH). Mp 258-260°.

N-*De-Me:* ***6a,7-Didehydro-7-hydroxy-1,2-dimethoxynoraporphine***

[252564-92-4]

$C_{18}H_{17}NO_3$ 295.337

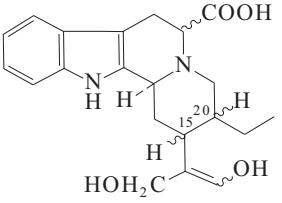
Alkaloid from the stem bark of *Enantia chlorantha*. Black powder (MeOH). Mp 256-257°.

Wafo, P. *et al., Fitoterapia*, 1999, **70**, 157-160 (*isol, pmr, cmr*)

16,17-Didehydro-17-hydroxy-16-(hydroxymethyl)corynan-5-carboxylic acid, 9CI D-374

RCNSI

[93597-92-3]



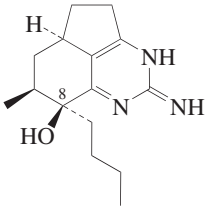
$C_{21}H_{26}N_2O_4$ 370.447

Tentative struct. Alkaloid from *Rauwolfia caffra* stem bark (Apocynaceae). Yellow amorph. powder. Unstable.

Nasser, A.M.A.G. *et al., J. Ethnopharmacol.*, 1984, **11**, 99; *CA*, **102**, 3224m (*isol, uv, ms, struct*)

1,3*a*-Didehydro-8-hydroxyptilocaulin D-375

[191353-14-7]



$C_{15}H_{23}N_3O$ 261.366

The name is not an accurate representation of the struct (cf. Ptilocaulin, P-773). Alkaloid from the sponges *Batzella* sp. and *Monanchora unguifera*. Antiplasmodial agent. Oil. $[\alpha]_D$ +39.3 (c, 0.28 in MeOH). λ_{max} 239 ; 246 ; 309 (MeOH).

8-Epimer:

$C_{15}H_{23}N_3O$ 261.366

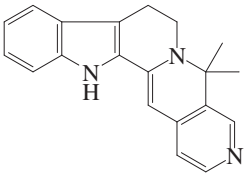
Alkaloid from *Monanchora unguifera*. Antiplasmodial agent. Isol. as a mixt. with its 8-epimer.

Patil, A.D. *et al., J. Nat. Prod.*, 1997, **60**, 704-707 (*isol, pmr, cmr*)

Hua, H.-M. *et al., Bioorg. Med. Chem.*, 2004, **12**, 6461-6464 (*isol, pmr, cmr*)

3,14-Didehydro-19-methylnormalindine D-376

[292159-40-1]



$C_{20}H_{19}N_3$ 301.39

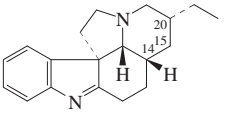
Alkaloid from *Ophiorrhiza kunstleri*. Yellow needles (EtOAc/petrol). Mp 128-130° dec. λ_{max} 217 (ϵ 18300); 254 (ϵ 7800); 368 (ϵ 16200) (MeOH).

Dachriyanus, *et al., Aust. J. Chem.*, 2000, **53**, 221-224

1,2-Didehydropseudoaspidospermidine D-377

1,2-Dehydro-ψ-aspidospermidine. Δ^1-Pseudoaspidospermidine. epi-*Δ^1-ψ-Aspidospermidine*

[90702-16-2]



Absolute Configuration

$C_{19}H_{24}N_2$ 280.412

A major alkaloid from leaves and twigs of *Tabernaemontana eglandulosa* and from *Pandaca boiteaui*. $[\alpha]_D^{20}$ +209 (c, 0.44 in $CHCl_3$). λ_{max} 221 ; 265 ; 270 ; 328 ; 345 (MeOH).

14,15-Didehydro: ***14,15-Anhydrocapuronidine***

[70031-39-9]

$C_{19}H_{22}N_2$ 278.396

Minor alkaloid from leaves and stem bark of *Capuronetta elegans* (preferred genus name *Tabernaemontana*) (Apocynaceae). Amorph. $[\alpha]_D^{20}$ -54 (c, 0.72 in $CHCl_3$). λ_{max} 222 (log ϵ 4.24); 262 (log ϵ 3.77) (EtOH).

14,15-Didehydro, 1,2ξ-dihydro: ***14,15-Anhydrodihydrocapuronidine***

[70031-40-2]

$C_{19}H_{24}N_2$ 280.412

Minor alkaloid from the leaves and stem bark of *Capuronetta elegans* (Apocynaceae). Amorph. $[\alpha]_D^{20}$ +40 (c, 1.12 in $CHCl_3$). λ_{max} 226 (log ϵ 3.86); 244 (log ϵ 3.74); 292 (log ϵ 3.44) (EtOH).

15α-Hydroxy: ***Capuronidine***

[57533-92-3]

$C_{19}H_{24}N_2O$ 296.411

Alkaloid from stem bark of *Capuronetta elegans* (Apocynaceae). Amorph. $[\alpha]_D^{20}$ +220 (c, 1 in $CHCl_3$). λ_{max} 220 (log ϵ 4.29); 260 (log ϵ 3.6) (EtOH).

20-Hydroxy: ***1,2-Didehydro-20-hydroxypseudoaspidospermidine****. 20-Hydroxy-1,2-dehydro-Ψ-aspidospermidine*

[90865-28-4]

$C_{19}H_{24}N_2O$ 296.411
Minor alkaloid from the leaves and twigs of *Tabernaemontana eglandulosa* (Apocynaceae). Oil.

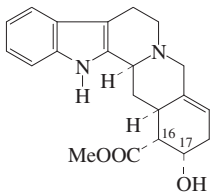
20-Epimer: 1,2-Didehydro-7-ethyl-20,21-dinoraspidospermidine. Δ^1-Pseudoaspidospermidine. Δ^1-ψ-Aspidospermidine
[56423-79-1]
$C_{19}H_{24}N_2$ 280.412
Alkaloid from *Tabernaemontana eglandulosa*, *Pandaca boiteaui* and *Pandaca eusepala* (Apocynaceae). Noncryst. $[\alpha]_D$ +153 ($CHCl_3$). λ_{max} 220 ; 258 ; 270 ; 290 (sh) (MeOH).

20-Epimer, dihydro: [26251-93-4]
Alkaloid from *Pandaca boiteaui*. Mp 89°. $[\alpha]_D$ +60 ($CHCl_3$).

Quirin, F. *et al., Phytochemistry*, 1975, **14**, 812-813 (*Δ^1-ψ-Aspidospermidine*)
Chardon-Loriaux, I. *et al., Tet. Lett.*, 1975, 1845-1848 (*Capuronidine*)
Chardon-Loriaux, I. *et al., Phytochemistry*, 1978, **17**, 1605-1608 (*Anhydrocapuronidine, Anhydrodihydrocapuronidine*)
Andriantsiferana, M. *et al., Phytochemistry*, 1979, **18**, 911-912 (*Pandaca boiteaui constits*)
Van Beek, T.A. *et al., Tetrahedron*, 1984, **40**, 737-748 (*Tabernaemontana eglandulosa constits*)

19,20-Didehydroyohimbine D-378

Methyl 19,20-didehydro-17-hydroxy-yohimban-16-carboxylate, 9CI. 19-Dehydroyohimbine
[95727-43-8]



Absolute Configuration

$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from *Aspidosperma pyricollum* (Apocynaceae). Mp 254° dec. $[\alpha]_D^{27}$ +106 (c, 0.53 in Py).

O-*Ac:* **O-*Acetyl-19,20-didehydroyohimbine*.** *19,20-Dehydro-*O*-acetylyohimbine*
[74713-13-6]
$C_{23}H_{26}N_2O_4$ 394.469
Alkaloid from leaves of *Alstonia angustifolia*. $[\alpha]_D$ +75 (c, 0.1 in MeOH). Config. at C-17 not detd. Could be the C-17 epimer, to which the CAS No. refers. λ_{max} 227 ; 283 ; 290 (MeOH).

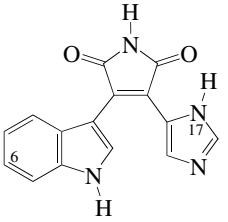
16-Epimer: ***19,20-Didehydro-α-yohimbine***. *19,20-Dehydro-α-yohimbine*
[60142-21-4]
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from the seeds of *Aspidosperma oblongum* and from *Rauwolfia obscura* (tentative stereochem.) (Apocynaceae). Amorph. $[\alpha]_D$ +90 (c, 0.64 in MeOH).

17-Epimer: ***19,20-Didehydro-β-yohimbine***. *19,20-Dehydro-β-yohimbine*
[4109-62-0]
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from seeds of *Aspidosperma oblongum* (Apocynaceae). Amorph. $[\alpha]_D$ -45 (c, 0.42 in Py).

Arndt, R.R. *et al., Experientia*, 1965, **21**, 566-568 (*isol, uv*)
Timmins, P. *et al., Phytochemistry*, 1976, **15**, 733-735 (*16-epimer, isol, uv*)
Robert, G.M.T. *et al., J. Nat. Prod.*, 1983, **46**, 708-722 (*isol, uv, ir, pmr, ms, cd, struct, epimers*)
Miyata, O. *et al., Heterocycles*, 1984, **22**, 2719-2722 (*synth*)
Ghedira, K. *et al., Phytochemistry*, 1988, **27**, 3955-3962 (*Ac, isol*)

Didemnimide A D-379

*3-(1*H*-Imidazol-4-yl)-4-(1*H*-indol-3-yl)-1*H*-pyrrole-2,5-dione, 9CI*
[186143-93-1]



$C_{15}H_{10}N_4O_2$ 278.27
Alkaloid from the Caribbean mangrove ascidian *Didemnum conchyliatum*. Potent fish feeding deterrent. Irregular orange needles (MeCN aq.). Mp 234-235°. λ_{max} 430 (ϵ 3000) (MeCN).

N^{15}-*Me:* ***Didemnimide E***
[219828-98-5]
$C_{16}H_{12}N_4O_2$ 292.296
From *Didemnum granulatum*. Amorph. orange solid.

N^{17}-*Me:* ***Didemnimide C***
[186144-21-8]
$C_{16}H_{12}N_4O_2$ 292.296
From *Didemnum conchyliatum*. Potent fish feeding deterrent. Dark orange needles (MeCN aq.). Mp > 300°. λ_{max} 420 (ϵ 5700) (MeCN).

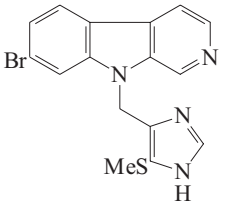
6-Bromo: ***Didemnimide B***
[186144-09-2]
$C_{15}H_9BrN_4O_2$ 357.166
From *Didemnum conchyliatum*. Potent fish feeding deterrent. Fine light orange needles (MeCN aq.). Mp > 300°. λ_{max} 420 (ϵ 4300) (MeCN).

6-Bromo, N^{17}-*Me:* ***Didemnimide D***
[186144-28-5]
$C_{16}H_{11}BrN_4O_2$ 371.193
From *Didemnum conchyliatum*. Potent fish feeding deterrent. Small dark orange needles (MeCN aq.). Mp >250° dec. More active than other Didemnimides. λ_{max} 416 (ϵ 4500) (MeCN).

Vervoort, H.C. *et al., J.O.C.*, 1997, **62**, 1486-1490 (*isol, uv, ir, pmr, cmr, ms, cryst struct*)
Berlinck, R.G.S *et al., J.O.C.*, 1998, **63**, 9850-9856 (*Didemnimide E*)
Terpin, A. *et al., Tetrahedron*, 1998, **54**, 1745-1752 (*Didemnimide C, synth*)
Piers, E. *et al., J.O.C.*, 2000, **65**, 530-535 (*Didemnimide C, synth*)
Fan, H. *et al., Chem. Rev.*, 2008, **108**, 264-287 (*rev*)

Didemnoline A D-380

*7-Bromo-9-[[4-(methylthio)-1*H*-imidazol-3-yl]methyl]-9*H*-pyrido[3,4-*b*]indole, 9CI*
[168434-22-8]



$C_{16}H_{13}BrN_4S$ 373.275
Alkaloid from the marine ascidian *Didemnum* sp. Exhibits moderate cytotoxicity toward human epidermoid carcinoma (KB) cells. Also shows antimicrobial activity. λ_{max} 240 (ϵ 38700); 290 (ϵ 13500); 358 (ϵ 5000) (MeOH) (Berdy).

S-*Oxide:* ***Didemnoline C***
[168434-23-9]
$C_{16}H_{13}BrN_4OS$ 389.275
From *Didemnum* sp. Cytotoxic. Shows antimicrobial activity. $[\alpha]_D^{25}$ +97.2 (c, 0.1 in DMSO). Isol. as a *ca.* 10:1 insep. mixt. with Didemnoline D. λ_{max} 239 (ϵ 37200); 290 (ϵ 14000); 358 (ϵ 4000) (MeOH) (Berdy). λ_{max} 243 ; 277 (ϵ 34000); 288 (ϵ 2400); 342 ; 352 (ϵ 4000) (EtOH) (Berdy).

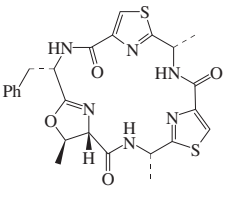
Debromo: ***Didemnoline B***
[168434-24-0]
$C_{16}H_{14}N_4S$ 294.379
From *Didemnum* sp. Moderately cytotoxic. λ_{max} 240 (ϵ 36800); 290 (ϵ 13500); 358 (ϵ 5000) (MeOH) (Berdy). λ_{max} 216 (ϵ 33000); 238 (ϵ 39800); 290 (ϵ 14100); 358 (ϵ 4900) (EtOH) (Berdy).

Debromo, S-*oxide:* ***Didemnoline D***
[168434-25-1]
$C_{16}H_{14}N_4OS$ 310.379
From *Didemnum* sp. Not obt. pure.

Schumacher, R.W. *et al., Tetrahedron*, 1995, **51**, 10125 (*isol, uv, ir, pmr, cmr, ms, struct*)
Schumacher, R.W. *et al., Tetrahedron*, 1999, **55**, 935-942 (*synth*)

Didmolamide A D-381

[528815-53-4]



Absolute Configuration

$C_{25}H_{26}N_6O_4S_2$ 538.65
Isol. from the ascidian *Didemnum molle*. Oil. $[\alpha]_D^{25}$ -35.7 (c, 0.6 in MeOH).

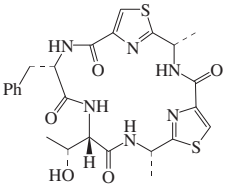
Stereoisomer (?): ***Banyascyclamide A***
[501903-99-7]
$C_{25}H_{26}N_6O_4S_2$ 538.65
Isol. from *Nostoc* sp. TAU strain IL-235. Amorph. solid. $[\alpha]_D^{25}$ -19.3 (c, 0.12 in MeOH). Stereochem. partly deter-

mined. May be identical with Didmolamide A. λ_{max} 218 (ϵ 17300); 238 (ϵ 17900) (MeOH).

Ploutno, A. *et al., Tetrahedron*, 2002, **58**, 9949-9957 (*Banyascyclamide A*)
Rudi, A. *et al., J. Nat. Prod.*, 2003, **66**, 575-577 (*Didmolamide A*)
You, S.-L. *et al., Tet. Lett.*, 2005, **46**, 2567-2570 (*synth*)

Didmolamide B D-382

[528815-55-6]



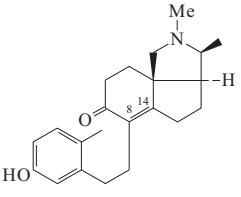
Absolute Configuration

$C_{25}H_{28}N_6O_5S_2$ 556.665
Isol. from the ascidian *Didemnum molle*. Oil. $[\alpha]_D^{25}$ -216 (c, 0.11 in MeOH).

Rudi, A. *et al., J. Nat. Prod.*, 2003, **66**, 575-577 (*isol, pmr, cmr, ms*)
You, S.-L. *et al., Tet. Lett.*, 2005, **46**, 2567-2570 (*synth*)
Bertram, A. *et al., Org. Biomol. Chem.*, 2007, **5**, 1541-1553 (*synth*)

Didymeline D-383

3-Hydroxy-9,10-seco-1,3,5,8(14)-conatetraen-9-one



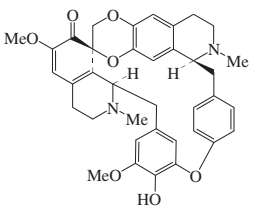
$C_{22}H_{29}NO_2$ 339.477
Secosteroid alkaloid. Alkaloid from the leaves of *Didymeles madagascariensis* (Didymelaceae). Cryst. (MeOH). Sol. H_2O. Mp 165°. $[\alpha]_D$ +60 (c, 0.43 in EtOH). λ_{max} 240 (ϵ 15400); 280 (ϵ 11100) (H_2O) (Berdy).

8,14-Dihydro: ***3-Hydroxy-9,10-seco-1,3,5-conatrien-9-one****. 3-Hydroxy-9-oxo-9,10-seco-1,3,5-conatriene*
$C_{22}H_{31}NO_2$ 341.492
Alkaloid from the leaves of *Didymeles madagascariensis* (Didymelaceae). $[\alpha]_D$ +100 (c, 0.08 in EtOH).

Sánchez, V. *et al., Bull. Soc. Chim. Fr., Part II*, 1987, 877 (*isol, uv, ir, pmr, cmr, ms, cd, cryst struct*)

Dielsine† D-384

[125581-66-0]

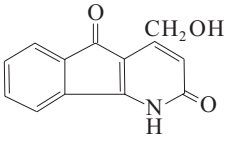


$C_{37}H_{38}N_2O_7$ 622.716
Alkaloid from bark of *Daphnandra dielsii* (Monimiaceae). Fine yellow needles + ½$CHCl_3$ ($CHCl_3$). Mp 185-190° dec. $[\alpha]_D^{27}$ +243 ($CHCl_3$/MeOH).

Critchett, C.D. *et al., Aust. J. Chem.*, 1989, **42**, 2043-2046 (*isol, uv, ir, pmr, ms, struct*)

Dielsinol D-385

*4-(Hydroxymethyl)-1*H*-indeno[1,2-b]pyridine-2,5-dione, 9CI*
[104669-01-4]



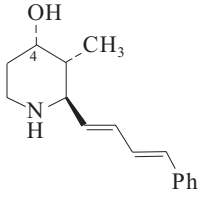
$C_{13}H_9NO_3$ 227.219
Isomeric struct. originally proposed. Alkaloid from the trunkwood of *Guatteria dielsiana* (Annonaceae). Yellow-greenish cryst. Mp 252-254°. λ_{max} 253 (log ϵ 4.26); 269 (sh) (log ϵ 4.11); 283 (log ϵ 4.03); 333 (log ϵ 3.77) (EtOH).

*Deoxy: 4-Methyl-1*H*-indeno[1,2-b]pyridine-2,5-dione, 9CI.* ***Dielsine†***
[104696-14-2]
$C_{13}H_9NO_2$ 211.22
Alkaloid from trunkwood of *Guatteria dielsiana* (Annonaceae). Yellow needles (Me_2CO or AcOH). Mp 254-256° natural Mp 325° synthetic. The struct. assigned to this alkaloid is erroneous but has not yet been corrected. Consequently, the struct. of dielsinol may also be in error. No further work to 2006. λ_{max} 243 (sh) (log ϵ 4.15); 256 (log ϵ 4.18); 262 (sh) (log ϵ 4.17); 272 (sh) (log ϵ 4.04); 282 (log ϵ 3.56); 341 (log ϵ 3.5) (EtOH) (natural). λ_{max} 231 (log ϵ 4.38); 249 (log ϵ 4.19); 291 (log ϵ 4.13); 301 (log ϵ 4.23); 334 (log ϵ 3.88); 349 (log ϵ 3.96); 425 (log ϵ 3.05) (EtOH) (synthetic).

Goulart, M.O.F. *et al., Phytochemistry*, 1986, **25**, 1691-1695 (*isol, uv, ir, pmr, ms*)
Tadić, D. *et al., Phytochemistry*, 1987, **26**, 1551-1552 (*struct*)
Bracher, F. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1992, **325**, 645-648 (*deoxy, synth*)

Dienomycin C D-386

3-Methyl-2-(4-phenyl-1,3-butadienyl)-4-piperidinol
[27542-56-9]



$C_{16}H_{21}NO$ 243.348
From *Streptomyces* strain MC67-Cl. Shows weak antibiotic activity against mycobacteria. Needles ($MeOH/Me_2CO$). Sol. MeOH, Me_2CO, EtOH, DMSO, $CHCl_3$; poorly sol. H_2O, Et_2O, C_6H_6, EtOAc. Mp 130-131°. $[\alpha]_D^{25}$ +72 (c, 1.5 in MeOH). λ_{max} 211 (ϵ 16000); 220 (ϵ 15000); 227 (ϵ 15000); 234 (ϵ 11000); 280 (sh) (ϵ 42000); 287 (ϵ 46000); 297 (sh) (ϵ 35000); 307 (sh) (ϵ 20000) (MeOH) (Derep). λ_{max} 211 (ϵ 16000); 220 (ϵ 15000); 227 (ϵ 15000); 234 (ϵ 12000); 287 (ϵ 50000) (MeOH) (Berdy).

▶ LD_{50} (mus, ipr) 45 mg/kg. TN7750000

Hydrochloride:
Cryst. (EtOAc/MeOH aq.). Mp 252-253°. $[\alpha]_D^{26}$ +65 (c, 1 in MeOH).

O-*Ac:* ***Dienomycin B***
[27542-55-8]
$C_{18}H_{23}NO_2$ 285.385
From *Streptomyces* strain MC67-Cl. Cryst. (EtOAc/MeOH). Sol. MeOH, DMSO, acids, $CHCl_3$, EtOH; fairly sol. H_2O; poorly sol. C_6H_6, Et_2O, EtOAc. λ_{max} 211 (ϵ 14800); 220 (ϵ 14700); 227 (ϵ 14700); 234 (ϵ 10500); 280 (sh) (ϵ 40900); 287 (ϵ 44100); 297 (sh) (ϵ 33600); 307 (sh) (ϵ 19600) (MeOH) (Derep). λ_{max} 210 (ϵ 14500); 218 (ϵ 14600); 226 (ϵ 14600); 232 (ϵ 10500); 287 (ϵ 42000) (MeOH) (Berdy).

▶ LD_{50} (mus, ipr) 360 mg/kg. TN7760000

O-*Ac; hydrochloride:*
Cryst. (EtOAc/MeOH aq.). Mp 280-281° (sealed tube). $[\alpha]_D^{20}$ +80 (c, 1 in MeOH).

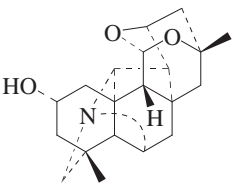
O-*(2-Methylpropanoyl):* ***Dienomycin A***
[27542-54-7]
$C_{20}H_{27}NO_2$ 313.439
From *Streptomyces* strain MC67-Cl. Cryst. (EtOAc/MeOH). Sol. MeOH, acids, EtOH, DMSO, $CHCl_3$; fairly sol. H_2O; poorly sol. C_6H_6, Et_2O, EtOAc. pK_a 8.8. λ_{max} 211 (ϵ 14800); 220 (ϵ 14700); 227 (ϵ 14700); 234 (ϵ 10500); 280 (sh) (ϵ 40900); 287 (ϵ 44100); 297 (sh) (ϵ 33600); 307 (sh) (ϵ 19600) (MeOH) (Derep). λ_{max} 211 (ϵ 14800); 220 (ϵ 14700); 227 (ϵ 14700); 234 (ϵ 10500); 287 (ϵ 44100) (MeOH) (Berdy).

▶ LD_{50} (mus, ipr) 90 mg/kg. NQ5430000

O-*2-Methylpropanoyl; hydrochloride:*
Cryst. (EtOAc/MeOH aq.). Mp 212-214°. $[\alpha]_D^{20}$ +85 (c, 1 in MeOH).

Umezawa, S. *et al., J. Antibiot., Ser. A*, 1970, **23**, 20; 28
Ripoche, I. *et al., Eur. J. Org. Chem.*, 1999, **37**, 1517-1521 (*synth, pmr, cmr, abs config*)
Comins, D.L. *et al., Tet. Lett.*, 1999, **40**, 217-218 (*synth*)

11,13:11,16-Diepoxy-16,17-dihydro-11,12-secohetisan-2-ol, 9CI D-387



$C_{20}H_{27}NO_3$ 329.438

2α-form [80249-79-2]
Alkaloid from *Aconitum hepterophyllum* and *Consolida glandulosa*. Insect antifeedant. Cryst. Mp 278-280°. $[\alpha]_D^{28}$ +9.1 (c, 1.4 in CH_2Cl_2).

Pelletier, S.W. *et al., Chem. Comm.*, 1981, 327-329 (*synth, pmr, cmr, cryst struct*)
González-Coloma, A. *et al., Chem. Biodiversity*, 2004, **1**, 1327-1335 (*isol, activity*)

Diethanolamine D-388

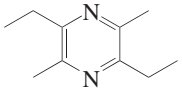
2,2′-Iminobisethanol, 9CI. Bis(2-hydroxyethyl)amine. 2,2′-Iminodiethanol. 2,2′-Dihydroxydiethylamine. Diolamine
[111-42-2]
$HOCH_2CH_2NHCH_2CH_2OH$
$C_4H_{11}NO_2$ 105.136
Manuf. by reaction of oxirane with ammonia. Isol. from *Senecio dunedin* and *Echinops exaltatus*. Industrial basic solv. Crosslinking agent for epoxy resins and polyurethanes. Base used in pharmaceuticals etc. Deliquescent prisms. V. sol. H_2O, EtOH, Me_2CO; insol. Et_2O, C_6H_6. Mp 28°. Bp 270° Bp_{10} 154-155°. pK_a 8.91 (25°,H_2O). Nonvolatile in steam. Strong base.

▶ Fl. p. 138° (oc), autoignition temp. 662°. Severe eye and mild skin irritant. LD_{50} (rat, orl) 710 mg/kg. OES: long-term 3ppm. KL2975000

Brown, L.S.R. *et al., J. Nat. Prod.*, 1986, **49**, 910-912 (*isol*)

2,5-Diethyl-3,6-dimethylpyrazine D-389

[18903-30-5]



$C_{10}H_{16}N_2$ 164.25
Isol. from an arctic marine bacterium. Liq. Bp 214-217° Bp_2 65°.

Octahydrate: Mp 48-50°.

Asinger, F. *et al., Monatsh. Chem.*, 1959, **90**, 402-416 (*synth*)
Baltes, W. *et al., J. Agric. Food Chem.*, 1987, **35**, 340-346 (*occur, coffee, ms*)
Rizzi, G.P. *et al., J. Agric. Food Chem.*, 1988, **36**, 349-352 (*synth, ms, pmr, uv*)
Silwar, R. *et al., Z. Lebensm.-Unters. -Forsch.*, 1992, **195**, 112-119 (*occur*)
Dickschat, J.S. *et al., Chem. Biodiversity*, 2005, **2**, 318-353 (*isol*)

2,6-Diethyl-3,5-dimethylpyrazine D-390

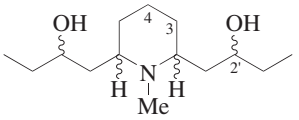
[18940-74-4]

$C_{10}H_{16}N_2$ 164.25
Isol. from an arctic marine bacterium. Characterised spectroscopically.

Baltes, W. *et al., J. Agric. Food Chem.*, 1987, **35**, 340-346 (*occur, coffee, ms*)
Rizzi, G.P. *et al., J. Agric. Food Chem.*, 1988, **36**, 349-352 (*occur, ms, uv*)
Silwar, R. *et al., Z. Lebensm.-Unters. -Forsch.*, 1992, **195**, 112-119 (*occur*)
Dickschat, J.S. *et al., Chem. Biodiversity*, 2005, **2**, 318-353 (*isol*)

8,10-Diethyllobelidiol D-391

α,α′-Diethyl-1-methyl-2,6-piperidinediethanol. 2,6-Bis(2-hydroxybutyl)-1-methylpiperidine
[110250-13-0]



$C_{14}H_{29}NO_2$ 243.389
The alkaloids covered by this entry are not stereochemically homologous as some are opt. active and some inactive. However, since the known information is fragmentary they are merged here and known data is noted. Abs. configs. are unknown. Minor alkaloid from *Lobelia inflata* (Campanulaceae). Opt. inactive.

Hexachloroplatinate: Mp 203-204° dec.

Picrate: [125826-49-5]
Needles (AcOH/Et_2O). Mp 138°.

Monoketone: ***8,10-Diethyllobelionol****. 2-(2-Hydroxybutyl)-1-methyl-6-(2-oxobutyl)piperidine. Alkaloid D2b*
[139406-22-7]
[90980-50-0 (HCl)]
$C_{14}H_{27}NO_2$ 241.373
Alkaloid from *Lobelia syphilitica* (Campanulaceae). Mp 120-121° (as hydrochloride). 2,6-*cis*-. Laevorotatory hydrochloride. The nat. alkaloid may be the *trans*-form (alkali used during isol.).

Monoketone, N-*de-Me:* ***8,10-Diethylnorlobelionol****. 2-(2-Hydroxybutyl)-6-(2-oxobutyl)piperidine. Alkaloid C1*
[803649-66-3]
[96932-55-7 (HCl)]
$C_{13}H_{25}NO_2$ 227.346
Alkaloid from *Lobelia syphilitica* (Campanulaceae). Mp 183-184° (as hydrochloride). 2,6-*cis*-. No opt. rotn. reported.

Diketone, N-*de-Me:* ***8,10-Diethylnorlobelidione****. 2,6-Bis(2-oxobutyl)piperidine. Alkaloid D1†*
[500545-69-7]
[700116-78-5 (HCl)]
$C_{13}H_{23}NO_2$ 225.33
Alkaloid from *Lobelia syphilitica* (Campanulaceae). Mp 183-184° (as hydrochloride). *cis*-. No opt. rotn. reported.

3,4-Didehydro: ***3,4-Dehydro-8,10-diethyllobelidiol****. Alkaloid C3. 1,2,5,6-Tetrahydro-2,6-bis(2-hydroxybutyl)-1-methylpyridine. 2,6-Bis(2-hydroxybutyl)-1-methyl-Δ³-piperideine. α,α′-Diethyl-1,2,5,6-tetrahydro-1-methyl-2,6-pyridinediethanol, 9CI*
[105694-50-6]
$C_{14}H_{27}NO_2$ 241.373
Alkaloid from *Lobelia syphilitica* and *Lobelia berlandieri* (Campanulaceae). Oil. Mp 128° (as hydrochloride). $[\alpha]_D^{25}$ -114 (EtOH). Both isolates 2,6-*trans*-, but the two isolates need not have the same stereochem.

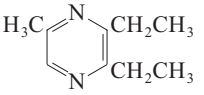
3,4-Didehydro, 2′-ketone: ***6-(2-Hydroxybutyl)-1-methyl-2-(2-oxobutyl)-Δ³-piperideine****. 1-[1,2,5,6-Tetrahydro-6-(2-hydroxybutyl)-1-methyl-2-pyridinyl]-2-butanone, 9CI. 1,2,5,6-Tetrahydro-6-(2-hydroxybutyl)-1-methyl-2-(2-oxobutyl)pyridine*
[105694-52-8]
$C_{14}H_{25}NO_2$ 239.357
Alkaloid from the toxic plant *Lobelia berlandieri* (Campanulaceae).

[4748-03-2 , 96998-45-7]

Schöpf, C. *et al., Annalen*, 1957, **608**, 88-127 (*3,4-dihydro, isol, struct, biosynth, nomencl*)
Tschesche, R. *et al., Chem. Ber.*, 1961, **94**, 3327-3336 (*Lobelia syphilitica constits*)
Williams, H.J. *et al., J. Agric. Food Chem.*, 1987, **35**, 19-22 (*3,4-didehydro 2′-ketone*)

2,3-Diethyl-5-methylpyrazine, 8CI D-392

FEMA 3336
[18138-04-0]

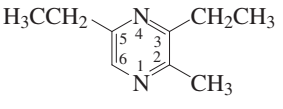


$C_9H_{14}N_2$ 150.223
Found in galbanum oil. Aroma constit. of many foods. Flavouring agent. Bp_{12} 79-80°. n_D^{20} 1.4980.

U.S. Pat., 1975, 3 924 015; *CA*, **84**, 164364g (*synth*)
Masuda, H. *et al., J. Agric. Food Chem.*, 1981, **29**, 944 (*occur*)
Mihara, S. *et al., J. Chromatogr.*, 1987, **402**, 309 (*glc*)
Encyclopedia of Food and Color Additives, (ed. Burdock, G.A.), CRC Press, 1997, 819-820 (*use, occur*)

3,5-Diethyl-2-methylpyrazine D-393

FEMA 3916
[18138-05-1]



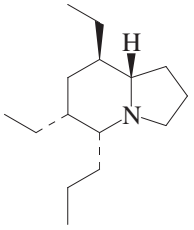
$C_9H_{14}N_2$ 150.223
Constit. of galbanum oil. Flavouring agent.

Kato, S. *et al., Agric. Biol. Chem.*, 1970, **34**, 1826 (*synth*)
Burrell, J.W.K. *et al., Chem. Ind. (London)*, 1970, 1409 (*isol*)
Shigematsu, H. *et al., Agric. Biol. Chem.*, 1972, **36**, 1631 (*synth*)
Fenaroli's Handbook of Flavor Ingredients, 3rd edn., (ed. Burdock, G.A.), CRC Press, 1995, 410

6,8-Diethyloctahydro-5-propyl-1*H*-indolizine, 9CI D-394

6,8-Diethyl-5-propylindolizidine. ***Indolizidine 223A***. Dendrobates *Alkaloid 223A*†

[185417-25-8]



$C_{15}H_{29}N$ 223.401

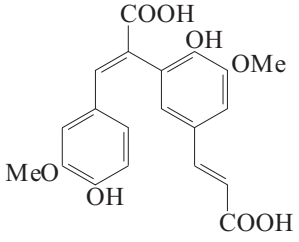
(5R,6R,8R,8aS)-form

Alkaloid from the skin extract of *Dendrobates pumilio*. Stereochem. revised in 2002.

Garraffo, H.M. *et al., J. Nat. Prod.*, 1997, **60**, 2-5 (*isol*)
Toyooka, N. *et al., Org. Lett.*, 2002, **4**, 1715-1717 (*synth, rel config*)
Pu, X. *et al., J.O.C.*, 2003, **68**, 4400-4405 (*synth*)
Davis, F.A. *et al., J.A.C.S.*, 2005, **127**, 8398-8407 (*synth*)
Zhu, W. *et al., Org. Lett.*, 2005, **7**, 705-708 (*synth*)

5,8′-Diferulic acid D-395

4,4′-Dihydroxy-3,5′-dimethoxy-α,3′-bicinnamic acid. 5,8′-Dehydrodiferulic acid



$C_{20}H_{18}O_8$ 386.357

Dehydrodimer of 3-(4-Hydroxy-3-methoxyphenyl)-2-propenoic acid.

(E,E)-form [160097-30-3]

Prod. by *Aspergillus unilateralis*. Constit. of the cell walls of various Poaceae. Fine cryst. Mp 160-165° dec.

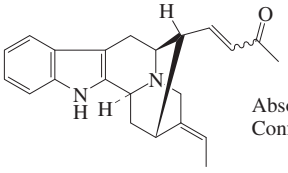
Bis[2-(4-hydroxyphenyl)ethylamide]:
$C_{36}H_{36}N_2O_8$ 624.689
Constit. of the leaves of *Aptenia cordifolia*. Amorph. powder. λ_{max} 246 (log ϵ 3.2); 315 (log ϵ 2.6); 336 (log ϵ 0.9) (MeOH).

Ralph, J. *et al., J.C.S. Perkin 1*, 1994, 3485-3498 (*isol, pmr, cmr, synth*)
Micard, V. *et al., Phytochemistry*, 1997, **44**, 1365-1368 (*isol*)
Rouau, X. *et al., Phytochemistry*, 2003, **63**, 899-903 (*isol*)
Capon, R.J. *et al., Org. Biomol. Chem.*, 2005, **3**, 123-129 (*isol*)
DellaGreca, M. *et al., Tetrahedron*, 2006, **62**, 2877-2882 (*bis-4-hydroxyphenethylamide*)

Difforine D-396

4-(17-Norsarpagan-16-yl)-3-buten-2-one, 9CI

[102719-87-9]



Absolute Configuration

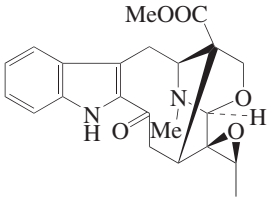
$C_{22}H_{24}N_2O$ 332.444

Alkaloid from the leaves of *Vinca difformis* (Apocynaceae). Cryst. (Et_2O). Mp 242-244°. λ_{max} 226 ; 272 ; 281 (sh) (EtOH).

Garnier, J. *et al., Planta Med.*, 1986, **52**, 66-67 (*isol, uv, ir, pmr, cmr, ms, struct*)

Difforlemenine D-397

[96681-59-3]



Absolute Configuration

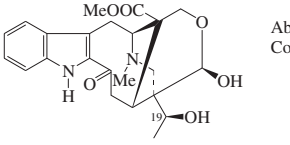
$C_{22}H_{24}N_2O_5$ 396.442

Struct. revised in 1994. Alkaloid from the leaves of *Vinca difformis* and from twigs and leaves of *Tabernaemontana glandulosa* (Apocynaceae). Cryst. (Me_2CO). Mp 238-240° (236-238°). $[\alpha]_D$ -47 (c, 0.52 in MeOH).

Garnier, J. *et al., Tet. Lett.*, 1985, **26**, 1513 (*uv, ir, pmr, ms*)
Achenbach, H. *et al., Phytochemistry*, 1994, **37**, 1737 (*isol, uv, ir, pmr, cmr, cd, ms, struct*)

Difforlemenitine D-398

[163181-61-1]



Absolute Configuration

$C_{22}H_{26}N_2O_6$ 414.457

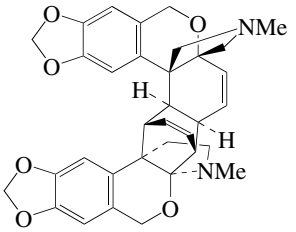
Alkaloid from twigs and leaves of *Tabernaemontana glandulosa* (Apocynaceae). Cryst. (Me_2CO). Mp 126-131°. $[\alpha]_D$ +0.2 (c, 0.42 in $CHCl_3$).

19-Epimer: ***19-Epidifforlemenitine***
[162289-00-1]
$C_{22}H_{26}N_2O_6$ 414.457
Alkaloid from twigs and leaves of *Tabernaemontana glandulosa* (Apocynaceae). Cryst. (Me_2CO). Mp 142-145°. $[\alpha]_D$ +2.3 (c, 0.83 in $CHCl_3$).

Achenbach, H. *et al., Phytochemistry*, 1994, **37**, 1737 (*isol, uv, ir, pmr, cmr, ms, cd, struct*)

Digracine D-399

[216444-10-9]



$C_{34}H_{34}N_2O_6$ 566.652

Alkaloid from *Galanthus gracilis*. Amorph. solid. $[\alpha]_D$ -74 (c, 0.17 in MeOH). λ_{max} 232 (sh) (log ϵ 4.29); 293 (log ϵ 3.99) (MeOH).

Noyan, S. *et al., Heterocycles*, 1998, **48**, 1777-1791 (*isol, uv, cd, ir, pmr, cmr, ms*)

1,4-Diguanidinobutane D-400

N,N‴-*1,4-Butanediylbisguanidine, 9CI.* ***Arcaine***

[544-05-8]
[36587-93-6 (sulfate)]

$HN{=}C(NH_2)NH(CH_2)_4NHC(NH_2){=}NH$

$C_6H_{16}N_6$ 172.233

Occurs in marine bivalve *Arca noae* and in *Panus tigrinus*. Also from the marine polychaete worm *Audouinia tentaculata*. Lowers blood sugar of mammals. Needles (as sulfate salt). Mp 291° dec. (sulfate).

Picrate:
Needles or fine powder. Mp 251-254° dec.

Kutscher, F. *et al., Hoppe-Seyler's Z. Physiol. Chem.*, 1931, **199**, 27; **203**, 132 (*isol*)
Sugino, K. *et al., Bull. Chem. Soc. Jpn.*, 1942, **17**, 126; *CA*, **41**, 4455 (*synth*)
Roche, J. *et al., C. R. Hebd. Seances Acad. Sci.*, 1965, **260**, 7023 (*isol*)
Boldt, A. *et al., Phytochemistry*, 1971, **10**, 731 (*biosynth*)
Thailambal, V.G. *et al., Acta Cryst. C*, 1985, **41**, 105 (*cryst struct*)

1,5-Diguanidinopentane D-401

N,N′-*1,5-Pentanediylbisguanidine, 9CI. 1,1′-Pentamethylenediguanidine, 8CI. Diamidinocadaverine.* ***Audouine***

[5070-04-2]

$HN{=}C(NH_2)NH(CH_2)_5NHC(NH_2){=}NH$

$C_7H_{18}N_6$ 186.259

Alkaloid in the polychaete worm *Audouinia tentaculata*. Pale-yellow oil. Sol. H_2O.

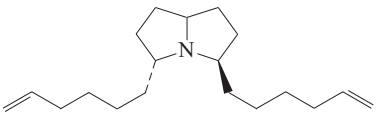
Sulfate:
Needles. Mp 317-318°.

Picrate:
Yellow needles. Mp 226-227°.

[52780-74-2 , 58585-48-1 , 14279-79-9 , 38142-20-0]

Roche, C. *et al., C. R. Hebd. Seances Acad. Sci.*, 1965, **260**, 7023
Robin, Y. *et al., Bull. Soc. Chim. Fr.*, 1967, 3965

3,5-Di-5-hexenylpyrrolizidine D-402

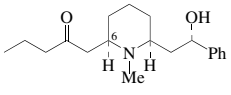


$C_{19}H_{33}N$ 275.476

(3*R,5*R**)-*form*** [120091-06-7]
Isol. from the venom of the ant *Monomorium smithii*.
Jones, T.H. *et al., J. Nat. Prod.*, 1990, **53**, 375 (*isol, pmr, cmr, struct*)

Dihomosedinone D-403

1-[6-(2-Hydroxy-2-phenylethyl)-1-methyl-2-piperidinyl]-2-pentanone, 9CI. 2-(2-Hydroxy-2-phenylethyl)-1-methyl-6-(2-oxopentyl)piperidine
[145774-75-0]



Absolute Configuration

$C_{19}H_{29}NO_2$ 303.444
Trace alkaloid from *Sedum acre* (Crassulaceae). Cryst. (hexane). Mp 67-68°. $[\alpha]_D^{20}$ -42 (c, 0.3 in $CHCl_3$).

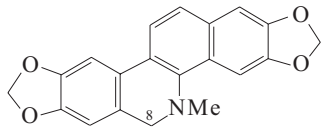
6-Epimer: ***6-Epidihomosedinone***
[145307-62-6]
$C_{19}H_{29}NO_2$ 303.444
Alkaloid from *Sedum acre*.

Stereoisomer (?): ***10-Phenyl-8-propyllobeliolone***. *8-Propyl-10-phenyllobeliolone*
[66976-95-2]
$C_{19}H_{29}NO_2$ 303.444
Alkaloid from *Sedum acre*. May be identical with Dihomosedinone, 6-Epidihomosedinone or a mixture.

Francis, L.P.S. *et al., Planta Med.*, 1977, **32**, 268 (*10-Phenyl-8-propyllobeliolone*)
Durant, A. *et al., Can. J. Chem.*, 1992, **70**, 2722 (*Dihomosedinone, 6-Epidihomosedinone*)

Dihydroavicine D-404

5,6-Dihydro-5-methyl-1,3-benzodioxolo[5,6-c][1,3]dioxolo[4,5-j]phenanthridine, 9CI
[34490-82-9]



$C_{20}H_{15}NO_4$ 333.343
Alkaloid from the roots of *Toddalia asiatica* and the root bark of *Zanthoxylum avicennae*. Also prod. (together with oxyavicine) by disproportionation of Avicine, A-1566, when the latter is liberated from its salts (Rutaceae). Prisms (EtOH or C_6H_6/Et_2O). Mp 212-213°.

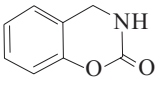
Hydrochloride: Mp 255-258° (vac., block).

8-Oxo: 5-Methyl-1,3-benzodioxolo[5,6-c][1,3]dioxolo[4,5-j]phenanthridin-6(5H)-one, 9CI. Oxyavicine
[7097-06-5]
$C_{20}H_{13}NO_5$ 347.326
Prod. by disproportionation of Avicine, A-1566 when it is liberated from its salts. Plates ($CHCl_3$/EtOH). Mp 278-283° (257-259° and 275-277°, double Mp).

Arthur, H.R. *et al., J.C.S.*, 1959, 4007 (*synth, uv*)
Gopinath, K.W. *et al., Tetrahedron*, 1961, **14**, 322 (*synth, deriv*)
Hruban, L. *et al., Coll. Czech. Chem. Comm.*, 1970, **35**, 3420 (*uv*)
Ishii, H. *et al., Tet. Lett.*, 1971, 2429 (*pmr*)
Fish, F. *et al., Phytochemistry*, 1975, **14**, 841 (*isol, ms*)
Ninomiya, I. *et al., J.C.S. Perkin 1*, 1975, 762 (*synth, ir, deriv*)
Sharma, P.N. *et al., Indian J. Chem., Sect. B*, 1979, **17**, 299 (*isol, ms*)

3,4-Dihydro-2*H*-1,3-benzoxazin-2-one, 9CI D-405

Luteanine†
[1125-85-5]

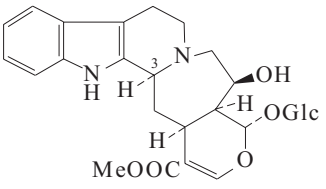


$C_8H_7NO_2$ 149.149
Alkaloid extracted from *Reseda lutea* (Resedaceae). Needles (H_2O). Mp 189-191°.

O'Sullivan, D.G. *et al., J.C.S.*, 1957, 2916-2920 (*ir*)
Hoover, F.W. *et al., J.O.C.*, 1963, **28**, 1825 (*synth*)
Nakhatov, I.K. *et al., Khim. Prir. Soedin.*, 1977, **13**, 424; *Chem. Nat. Compd. (Engl. Transl.)*, 1977, **13**, 362 (*isol, ir, pmr, ms, struct*)

Dihydrocadambine D-406

[54483-84-0]



$C_{27}H_{34}N_2O_{10}$ 546.573
Alkaloid from the heartwood of *Anthocephalus cadamba*, the leaves of *Nauclea latifolia* and from *Nauclea diderrichii* (Rubiaceae). Shows hypotensive activity in laboratory animals. Amorph. $[\alpha]_D^{25}$ -40 (MeOH).

▶ MT0588000

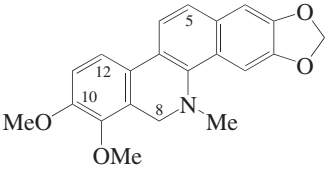
*Penta-*O-*Ac:* Mp 197-199°. $[\alpha]_D^{25}$ -135 (MeOH).

3-Epimer: ***3β-Dihydrocadambine***
[61989-80-8]
$C_{27}H_{34}N_2O_{10}$ 546.573
Alkaloid from the leaves of *Anthocephalus cadamba* (Rubiaceae).
Amorph. solid (as penta-Ac). $[\alpha]_D^{25}$ -69 ($CHCl_3$).

Brown, R.T. *et al., Tet. Lett.*, 1974, 1957; 1976, 2723 (*epimers, isol, struct*)
Dimitrienko, G.I. *et al., Tet. Lett.*, 1974, 1961 (*uv, ir, pmr, struct*)
Hotellier, F. *et al., Planta Med.*, 1979, **35**, 242 (*isol*)
Aisaka, K. *et al., Planta Med.*, 1985, 424

Dihydrochelerythrine D-407

12,13-Dihydro-1,2-dimethoxy-12-methyl[1,3]benzodioxolo[5,6-c]phenanthridine, 9CI. Toddalinine. Dihydrotoddaline
[6880-91-7]



$C_{21}H_{19}NO_4$ 349.385
Numbering systems vary. Alkaloid widely distributed in the Papaveraceae (e.g. *Argemone mexicana*, *Chelidonium majus*, *Glaucium flavum* var. *vestitum*, *Glaucium vitellinum*), Rutaceae (e.g. *Fagara chalybea*, *Fagara holstii*, *Fagara semiarticulatum*, *Fagara rubescens*, *Fagara macrophylla*, *Toddalia aculeata*, *Toddalia asiatica*, *Zanthoxylum tsihanimposa*, *Zanthoxylum senegalense*, *Zanthoxylum coriaceum*, *Zanthoxylum elephantiasis*) and Papaveraceae (*Corydalis ledebouriana*). Cryst. (EtOH, C_6H_6, or $CHCl_3$/MeOH). Mp 169-171° (161-162°, 164-165°). Probably an artifact. λ_{max} 230 (log ϵ 4.62); 282 (log ϵ 4.72); 325 (sh) (log ϵ 4.28) (MeOH).

5-Methoxy: ***5-Methoxydihydrochelerythrine***. *12-Methoxydihydrochelerythrine*†
$C_{22}H_{21}NO_5$ 379.412
Alkaloid from *Bocconia integrifolia* (Papaveraceae). V. pale yellow powder. Mp 173-174.5°. $[\alpha]_D^{20}$ -15 (c, 0.2 in $CHCl_3$). Numbering systems vary. λ_{max} 219 (log ϵ 4.68); 288 (log ϵ 4.7); 323 (log ϵ 4.24); 355 (sh) (EtOH).

8-Hydroxy: ***8-Hydroxydihydrochelerythrine***
[4070-42-2]
[55438-12-5 (Ac)]
$C_{21}H_{19}NO_5$ 365.385
Alkaloid from the roots of *Toddalia asiatica* (Rutaceae). Cryst. (CH_2Cl_2/Et_2O)(as Ac). Mp 145° (Ac).

8-Methoxy: 8-Methoxydihydrochelerythrine. ***Angoline***. *8-O-Methyldihydrochelerythrine. Alkaloid P61. Chelerythrine pseudomethanolate*
[21080-31-9]
$C_{22}H_{21}NO_5$ 379.412
Alkaloid from *Bocconia arborea*, *Toddalia asiatica*, *Hunnemannia fumariaefolia*, *Fagara angolensis*, *Fagara tessmannii*, *Fagara viridis*, *Fagara chalybea*, *Fagara leprieurii*, *Fagara macrophylla* and *Fagara xanthoxyloides* (Papaveraceae, Rutaceae). Cryst.

(CHCl$_3$/MeOH). Mp 210° (176°). $[\alpha]_D$ 0. Prob. artifact. λ_{max} 230 (ϵ 33000); 289 (ϵ 49300); 325 (ϵ 16000) (no solvent reported).

8-Methoxy, O^{10}*-de-Me:* ***9-Demethyl-8-methoxydihydrochelerythrine***
[126234-22-8]
$C_{21}H_{19}NO_5$ 365.385
Alkaloid from *Zanthoxylum nitidum* (Rutaceae). Assigned *R*-config.

8-Ethoxy: ***8-Ethoxydihydrochelerythrine****. Chelerythrine pseudoethanolate. Alkaloid A$_2$. Artarine*
[28974-35-8]
[125226-39-3]
$C_{23}H_{23}NO_5$ 393.438
Alkaloid from root bark of *Fagara xanthoxyloides* and *Fagara rubescens* and from roots of *Hunnemannia fumariaefolia* (Rutaceae, Papaveraceae). Cryst. (EtOH). Mp 200-202° Mp 239-242° (double Mp). $[\alpha]_D$ 0. λ_{max} 228 (log ϵ 4.53); 284 (log ϵ 4.67); 320 (sh) (log ϵ 4.18) (95% EtOH).

12-Methoxy: 12-Methoxydihydrochelerythrine†. ***Dihydrochelilutine***
[65427-95-4]
$C_{22}H_{21}NO_5$ 379.412
Minor alkaloid detected in the roots of *Chelidonium majus* (Papaveraceae). Cryst. (CHCl$_3$/MeOH). Mp 132-135° (block) Mp 136-137° (capillary). λ_{max} 230 (log ϵ 4.52); 280 (log ϵ 4.56); 325 (log ϵ 4.21) (MeOH).

8-Oxo: 1,2-Dimethoxy-12-methyl[1,3]benzodioxolo[5,6-c]phenanthridin-13(12H)-one. ***Oxychelerythrine****. 8-Oxochelerythrine*
[28342-33-8]
$C_{21}H_{17}NO_5$ 363.369
Alkaloid from *Zanthoxylum nitidum* and the bark of *Zanthoxylum arnottianum* (Rutaceae). Cryst. (MeOH). Mp 199-201°. λ_{max} 242 (ϵ 33900); 282 (sh) (ϵ 40800); 375 (ϵ 8500) (EtOH).

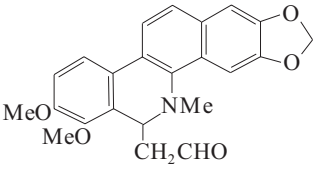
▶ FL9220000

8-Oxo, O^{10}*-de-Me: 2-Hydroxy-1-methoxy-12-methyl[1,3]benzodioxolo[5,6-c]phenanthridin-13(12H)-one.* ***9-Demethyloxychelerythrine***
$C_{20}H_{15}NO_5$ 349.342
Alkaloid from the root bark of *Zanthoxylum integrifoliolum*. Needles (CHCl$_3$/MeOH). Mp 224-226°. λ_{max} 207 (log ϵ 4.21); 240 (log ϵ 4.24); 280 (sh) (log ϵ 4.24); 287 (log ϵ 4.33); 327 (sh) (log ϵ 3.81); 375 (sh) (log ϵ 3.55) (EtOH).

Slavḱová, L. *et al., Chem. Listy*, 1955, **49**, 1546-1549; *CA*, **50**, 4990h (*isol*)
Govindachari, T.R. *et al., J.C.S.*, 1956, 769-771 (*isol, synth*)
Scheuer, P.J. *et al., J.O.C.*, 1962, **27**, 1472-1473 (*isol, synth*)
Torto, F.G. *et al., Tet. Lett.*, 1966, 181-183 (*8-ethoxy, uv, ir, pmr, struct*)
Desai, P.D. *et al., Indian J. Chem.*, 1967, **5**, 41-42 (*struct*)
Slávic, J. *et al., Coll. Czech. Chem. Comm.*, 1968, **33**, 1619-1623 (*ms*)
Fonzes, L. *et al., Phytochemistry*, 1968, **7**, 1889-1890 (*Angoline, uv, ir, pmr, ms*)
MacLean, D.B. *et al., Can. J. Chem.*, 1969, **47**, 1951-1956 (*pmr, struct, 8-methoxy*)
Onda, M. *et al., Chem. Pharm. Bull.*, 1970, **18**, 1435-1439 (*pmr*)
Dadson, B.A. *et al., J.C.S. Perkin 1*, 1976, 146-147 (*occur*)
Slavḱ, J. *et al., Coll. Czech. Chem. Comm.*, 1977, **42**, 2686-2693 (*Dihydrochelerythrine, Dihydrochelilutine, isol, uv, synth*)
Ishii, H. *et al., Yakugaku Zasshi*, 1977, **97**, 890; *CA*, **87**, 197250g (*Oxychelerythrine*)
Ishii, H. *et al., Chem. Pharm. Bull.*, 1978, **26**, 864-873 (*Dihydrochelilutine, struct*)
Sharma, P.N. *et al., Indian J. Chem., Sect. B*, 1979, **17**, 299-300 (*Angoline*)
Swinehart, J.A. *et al., Phytochemistry*, 1980, **19**, 1219-1223 (*isol*)
Khusainova, Kh.Sh. *et al., Khim. Prir. Soedin.*, 1981, **17**, 670; *CA*, **96**, 65673y (*isol*)
Sharma, P.N. *et al., Phytochemistry*, 1982, **21**, 252-253 (*8-hydroxy*)
Hanaoka, M. *et al., J.C.S. Perkin 1*, 1986, 2253-2256 (*synth*)
Chen, Y. *et al., Huaxue Xuebao*, 1989, **47**, 1048; *CA*, **112**, 175616 (*9-Demethyl-8-methoxydihydrochelerythrine*)
Chen, Y. *et al., Jiegou Huaxue*, 1989, **8**, 95-98; *CA*, **112**, 88707a (*Artarine, cryst struct*)
Oechslin, S.M. *et al., J. Nat. Prod.*, 1991, **54**, 519-524 (*12-Methoxydihydrochelerythrine*)
Marek, R. *et al., Magn. Reson. Chem.*, 1999, **37**, 195-202 (*N-15 nmr*)
Harayama, T. *et al., Synthesis*, 2001, 444-450 (*12-Methoxydihydrochelerythrine, synth*)
Watanabe, T. *et al., Org. Biomol. Chem.*, 2003, **1**, 3024-3032 (*12-Methoxydihydrochelerythrine, synth*)
Le, T.N. *et al., Chem. Pharm. Bull.*, 2005, **53**, 118-120 (*Oxychelerythrine, synth*)
Chen, J.-J. *et al., Planta Med.*, 2005, **71**, 470-475 (*9-Demethyl-8-oxychelerythrine*)

Dihydrochelerythrinyl-8-acetaldehyde D-408

12,13-Dihydro-1,2-dimethoxy-12-methyl[1,3]benzodioxolo[5,6-c]phenanthridine-13-acetaldehyde, 9CI. Alkaloid ZT$_2$
[51876-09-6]



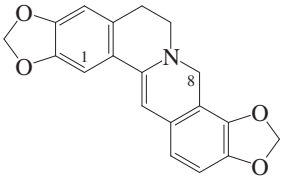
$C_{23}H_{21}NO_5$ 391.423
Various numbering schemes used. Probably an artifact. Alkaloid from the roots of *Glaucium flavum* var. *vestitum* and the bark of *Zanthoxylum tsihanimposa* (Papaveraceae, Rutaceae). Cryst. (CHCl$_3$/MeOH). Mp 206-210°. Opt. inactive.

2′-Carboxylic acid: ***8-Carboxymethyldihydrochelerythrine***
$C_{23}H_{21}NO_6$ 407.422
Alkaloid from the stem bark of a *Zanthoxylum* sp. collected in Grand Cayman (*Zanthoxylum spinosum* or *Zanthoxylum coriaceum*). Also reported to occur in *Zanthoxylum simulans* (Szechuan pepper) (Rutaceae).

Decaudain, N. *et al., Phytochemistry*, 1974, **13**, 505 (*uv, ir, pmr, struct*)
Castedo, L. *et al., Heterocycles*, 1981, **16**, 533 (*occur*)
Ng, K.M. *et al., Phytochemistry*, 1984, **26**, 3251 (*8-Carboxymethyldihydrochelerythrine*)

Dihydrocoptisine D-409

[53777-78-9]



$C_{19}H_{15}NO_4$ 321.332
Alkaloid from seeds of *Fumaria indica*. Large yellow prisms (Me$_2$CO). Mp 194-196° dec. (175-179°).

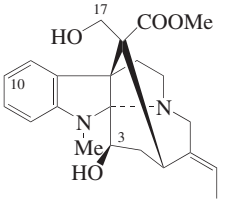
1,8ξ-Dihydroxy: ***1,8-Dihydroxy-2,3:9,10-bis(methylenedioxy)protoberberine***
$C_{19}H_{15}NO_6$ 353.331
Alkaloid from the roots of *Thalictrum delavayi*. Brownish powder. $[\alpha]_D^{20}$ +8.8 (c, 1.8 in CHCl$_3$). λ_{max} 214 ; 283 ; 378 (MeOH).

8-Oxo: ***2,3:9,10-Bis(methylenedioxy)-8-oxoprotoberberine****. 8-Oxocoptisine*
$C_{19}H_{13}NO_5$ 335.315
Alkaloid from *Coptis japonica* and *Thalictrum delavayi*. Yellow needles. Mp 282-284°. λ_{max} 224 ; 340 ; 377 ; 395 (sh) (MeOH).

Haworth, R.D. *et al., J.C.S.*, 1926, 1769 (*synth*)
Jeffs, P.W. *et al., J.O.C.*, 1975, **40**, 644 (*synth, pmr*)
Castedo, L. *et al., Heterocycles*, 1986, **24**, 5 (*synth*)
Tripathi, Y.C. *et al., Pharmazie*, 1987, **42**, 745 (*isol*)
Li, M. *et al., Planta Med.*, 2001, **67**, 189-190 (*Bis(methylenedioxy)oxoprotoberberine, Dihydroxybis(methylenedioxy)-protoberberine*)
Min, Y.D. *et al., Arch. Pharmacal Res.*, 2006, **29**, 757-761 (*8-Oxocoptisine*)

Dihydrocorymine D-410

Methyl 3,17-dihydroxy-1-methyl-2,4(1H)-cyclo-3,4-secoakuammilan-16-carboxylate, 9CI
[65725-01-1]



Absolute Configuration

$C_{22}H_{28}N_2O_4$ 384.474
Appears to be unknown as a nat. alkaloid. Mp 222°. $[\alpha]_D$ -151 (c, 1 in MeOH). λ_{max} 258 ; 315 (no solvent reported).

Di-Ac: [65758-40-9]
Noncryst. $[\alpha]_D$ -94 (c, 1 in CHCl$_3$).

17-Aldehyde, 17→3 hemiacetal: ***Corymine****. Corymine hemiacetal*

[6472-42-0]
$C_{22}H_{26}N_2O_4$ 382.458
Alkaloid from *Hunteria corymbosa*, *Hunteria umbellata* and *Hunteria eburnea* (Apocynaceae). Cryst. (propanol aq.). Mp 189-192° (182°). $[\alpha]_D^{18}$ +27 ($CHCl_3$). $[\alpha]_D^{18}$ +48 (solv. not given). 17*S*-config. λ_{max} 215 (log ε 4.25); 258 (log ε 4.04); 324 (log ε 3.65) (no solvent reported).

17-Aldehyde, hemiacetal, hydrobromide:
Cryst. (H_2O). Mp 210°.

17-Aldehyde, hemiacetal, O-*Ac:* **O-*Acetylcorymine***
$C_{24}H_{28}N_2O_5$ 424.496
Alkaloid from *Hunteria umbellata* (Apocynaceae). Cryst. (propanol). Mp 194-195°. $[\alpha]_D^{20}$ +0.4. The uv spectrum is identical to that reported for Corymine, which is unlikely. λ_{max} 215 (log ε 4.25); 258 (log ε 4.04); 324 (log ε 3.65) (no solvent reported).

17-Aldehyde, hemiacetal, N-*de-Me:* **N-*Demethylcorymine***
[162585-01-5]
$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from leaves of *Hunteria zeylanica* (Apocynaceae). Amorph. powder. $[\alpha]_D^{28}$ +12 (c, 1.25 in $CHCl_3$).

10-Methoxy, 3-deoxy: ***Cabuamine***
[55857-18-6]
$C_{23}H_{30}N_2O_4$ 398.501
Alkaloid from *Cabucala erythrocarpa* (Apocynaceae). Mp 245-248°. $[\alpha]_D$ -110 ($CHCl_3$). λ_{max} 252 ; 330 (MeOH).

3-Epimer: ***3-Epidihydrocorymine***
[65758-39-6]
$C_{22}H_{28}N_2O_4$ 384.474
Alkaloid from leaves of *Hunteria elliotii* and from *Hunteria congolana* (Apocynaceae). Needles (Me_2CO). Mp 148°. $[\alpha]_D$ -70 (c, 1 in MeOH). λ_{max} 213 ; 255 ; 315 (MeOH).

3-Epimer, N-*de-Me:* **N-*Demethylechitamine***. *Norechitamine*
[60048-88-6]
$C_{21}H_{26}N_2O_4$ 370.447
Alkaloid from the root bark of *Alstonia scholaris* (Apocynaceae). Off-white cryst. Mp 238-240°.

3-Epimer, N-*de-Me,* N-*oxide:* **N-*Demethylechitamine* N-*oxide***. *Norechitamine* N-*oxide*
[118957-11-2]
$C_{21}H_{26}N_2O_5$ 386.447
Alkaloid from the roots of *Winchia calophylla* (syn. *Alstonia pachycarra*) (Apocynaceae). Needles (MeOH). Mp 216-219°. $[\alpha]_D^{20}$ -60 (c, 0.46 in EtOH).

3-Epimer, N-*de-Me,* N^4-*Me:* ***Echitamine***. *Ditaine*
[6871-44-9]
[6878-36-0]
$C_{22}H_{29}N_2O_4^{\oplus}$ 385.482
Quaternary alkaloid from *Alstonia congensis*, *Alstonia scholaris*, *Alstonia angustiloba*, *Alstonia spectabilis*, *Alstonia verticillosa*, *Alstonia gilleti*, *Alstonia spatulata* and *Alstonia neriifolia* (Apocynaceae). DNA binding agent. Needles or short prisms (H_2O) (as chloride). Sol. H_2O, EtOH, Et_2O; poorly sol. hexane. Mp 274° dec. (chloride). $[\alpha]_D^{15}$ -58 (c, 1 in H_2O) (chloride). λ_{max} 235 (ε 8510); 295 (ε 3550) (MeOH).
▶ Highly toxic orally.

3-Epimer, 3-Ac: ***3-Epidihydrocorymine 3-acetate***
[69734-92-5]
$C_{24}H_{30}N_2O_5$ 426.511
Alkaloid from *Hunteria zeylanica* and *Hunteria congolana*. Cryst. (Et_2O). $[\alpha]_D$ -76 (c, 0.7 in $CHCl_3$). λ_{max} 213 (log ε 4.22); 253 (log ε 3.93); 308 (log ε 3.45) (MeOH).

3-Epimer, 17-Ac: ***3-Epidihydrocorymine 17-acetate***. O^{17}-*Acetyl-3-epidihydrocorymine*
[82570-78-3]
$C_{24}H_{30}N_2O_5$ 426.511
Alkaloid from *Hunteria zeylanica* (Apocynaceae). Mp 260°. $[\alpha]_D$ -76 (c, 0.7 in $CHCl_3$). λ_{max} 217 (log ε 4.33); 260 (log ε 4.35); 317 (log ε 3.88) (MeOH).

3-Epimer, 17-Ac, N-*de-Me:* ***17-O-Acetyl-N-demethylechitamine***
[123064-74-4]
$C_{23}H_{28}N_2O_5$ 412.485
Alkaloid from stem bark of *Alstonia glaucascens* (Apocynaceae). Amorph.

3-Epimer, 17-Ac, N-*de-Me,* N^4-*Me:* ***17-O-Acetylechitamine***
[132937-97-4]
$C_{24}H_{31}N_2O_5^{\oplus}$ 427.519
Alkaloid from the bark of *Alstonia scholaris* (Apocynaceae).

3-Epimer, di-Ac: ***Di-O-acetyl-3-epidihydrocorymine***
[69761-86-0]
$C_{26}H_{32}N_2O_6$ 468.549
Alkaloid from *Hunteria congolana* seeds (Apocynaceae). Mp 192°. $[\alpha]_D$ -48 (c, 0.5 in $CHCl_3$).

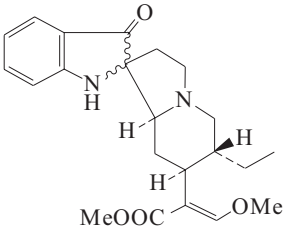
3-Epimer, parent acid, N-*de-Me,* N^4-*Me:* ***Echitaminic acid***
[7163-44-2]
$C_{21}H_{26}N_2O_4$ 370.447
Alkaloid from the bark of *Alstonia glaucescens* and *Alstonia scholaris*. Cryst. (MeOH). Mp 218-220°. $[\alpha]_D$ -42.3 (c, 0.11 in MeOH). Zwitterionic.

16-Epimer, 3-deoxy, N-*de-Me:* ***Vincophylline***
[958247-23-9]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from the stem bark of *Kopsia singapurensis*. Pale yellow oil. $[\alpha]_D^{25}$ +102 (c, 0.1 in $CHCl_3$). λ_{max} 206 (log ε 4.36); 241 (log ε 3.75); 296 (log ε 3.3) (EtOH).

Hamilton, J.A. *et al., J.C.S.*, 1962, 5061-5075 (*Echitamine, cryst struct*)
Kiang, A.K. *et al., Proc. Chem. Soc., London*, 1962, 298-300 (*Corymine, Dihydrocorymine, struct*)
Bevan, C.W.L. *et al., Chem. Ind. (London)*, 1965, 603-604 (*Corymine, cryst struct*)
Talapatra, S.K. *et al., J. Indian Chem. Soc.*, 1967, **44**, 639-640 (*Echitamine, isol*)
Bevan, C.W.L. *et al., Tetrahedron*, 1967, **23**, 3809 (*Corymine, Acetylcorymine, isol, pmr, ms, uv*)
Kompiš, I. *et al., Coll. Czech. Chem. Comm.*, 1968, **33**, 4328-4336 (*Corymine, ord*)
Roy, S.K. *et al., J. Indian Chem. Soc.*, 1968, **45**, 21-22 (*Echitamine, isol*)
Govindachari, T.R. *et al., J. Indian Chem. Soc.*, 1968, **45**, 945-957 (*Echitamine, rev, uv, ir*)
Douzoua, L. *et al., Phytochemistry*, 1974, **13**, 1994-1995 (*Cabuamine, isol, uv, ir, pmr, ms*)
Mansour, M. *et al., Phytochemistry*, 1974, **13**, 2861-2863 (*Cabuamine, struct, abs config*)
Morfaux, A.M. *et al., Phytochemistry*, 1978, **17**, 167 (*3-Epidihydrocorymine, isol, uv, ir, pmr, ms, struct*)
Vercauteren, J. *et al., Bull. Soc. Chim. Fr.*, Part 2, 1982, 291-296 (*3-Acetylepidihydrocorymine*)
Lavaud, C. *et al., Phytochemistry*, 1982, **21**, 445-447 (*17-Acetylepidihydrocorymine*)
Chen, W.M. *et al., Planta Med.*, 1988, **54**, 480-481 (*N-Demethylechitamine N-oxide*)
Yamauchi, T. *et al., Phytochemistry*, 1990, **29**, 3321-3325 (*17-Acetylechitamine*)
Subhadhirasakul, S. *et al., Chem. Pharm. Bull.*, 1994, **42**, 2645-2646 (*N-Demethylcorymine*)
Keawpradub, N. *et al., Phytochemistry*, 1994, **37**, 1745-1749 (*17-Acetyl-N-demethylechitamine, Echitaminic acid*)
Salim, A.A. *et al., J. Nat. Prod.*, 2004, **67**, 1591-1594 (*Echitaminic acid*)
Subramaniam, G. *et al., J. Nat. Prod.*, 2007, **70**, 1783-1789 (*Vincophylline*)
Sax, N.I. *et al., Dangerous Properties of Industrial Materials, 5th edn., Van Nostrand Reinhold*, 1979, 630

Dihydrocorynantheine pseudoindoxyl D-411

[57800-43-8]

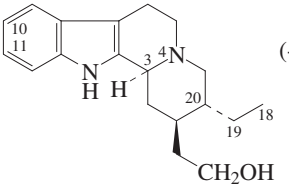


$C_{22}H_{28}N_2O_4$ 384.474
Alkaloid from *Uncaria attenuata* (Rubiaceae). Yellow.

Phillipson, J.D. *et al., Phytochemistry*, 1975, **14**, 1855 (*isol, ms, struct, synth*)

Dihydrocorynantheol D-412

[2270-72-6]
[23107-08-6 ((±)-form)]



(-)-*form*

$C_{19}H_{26}N_2O$ 298.427
Alkaloid from *Aspidosperma marcgravianum*, *Aspidosperma auriculatum*, *Amsonia tabernaemontana*, *Mitragyna parvifolia*, *Hunteria zeylanica*, *Ochrosia moorei*, *Rhazya stricta* and others (Apocynaceae, Rubiaceae). Shows

activity against gram-positive bacteria. Cryst. (MeOH aq.). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 185-186°. $[\alpha]_D^{27}$ -18 (c, 0.92 in $CHCl_3$). $[\alpha]_D^{23}$ -37 (c, 0.938 in Py). λ_{max} 226 (log ϵ 4.56); 281 (log ϵ 3.87); 290 (sh) (log ϵ 3.8) (EtOH).

N^4-*Oxide:* ***Dihydrocorynantheol* N-*oxide***
[52992-34-4]
$C_{19}H_{26}N_2O_2$ 314.427
Alkaloid from the leaves of *Mitragyna parvifolia* and the stem bark of *Aspidosperma marcgravianum* (Rubiaceae, Apocynaceae). Cream-coloured substance.

N^4-*Me:* ***Dihydrocorynantheol* N-*metho salt***
$C_{20}H_{29}N_2O^{\oplus}$ 313.462
Quaternary alkaloid from the root and stem bark of *Hunteria eburnea* (Apocynaceae). Cryst. (MeOH/Et_2O) (as chloride). Mp 272-273° dec. (296-297°) (chloride). $[\alpha]_D^{21}$ +63.3 (c,0.366 in 72.5% MeOH aq.). $[\alpha]_D$ +101 (solv. unspecified). CAS no. not found to 2001.

Ac: Mp 125-128°.

Ac; hydrochloride:
Yellow needles (MeOH/Et_2O). Mp 253-260° dec.

18,19-Didehydro: ***Corynantheol***
[23443-70-1]
$C_{19}H_{24}N_2O$ 296.411
Alkaloid from the stem bark and leaves of *Rauwolfia cumminsii* and from the leaves of *Rauwolfia mombasiana* (Apocynaceae). Cryst. (MeOH). Mp 212-213°. $[\alpha]_D$ -61 (Py).

18,19-Didehydro, aldehyde: ***Corynantheal***
[572-78-1]
$C_{19}H_{22}N_2O$ 294.396
Alkaloid from the leaves of *Rauwolfia cumminsii* (Apocynaceae). Cryst. (C_6H_6/CH_2Cl_2). Mp 226-229° (230° subl.). $[\alpha]_D$ -48.5 (Py).

19,20-Didehydro: see Geissoschizol, G-33

10-Hydroxy: ***10-Hydroxydihydrocorynantheol***
$C_{19}H_{26}N_2O_2$ 314.427
Alkaloid from the trunk bark of *Ochrosia moorei* (Apocynaceae). Needles + $^1/_4H_2O$ (50% MeOH aq.). Mp 225-226° dec. $[\alpha]_D^{23}$ +6.4 (c, 2.061 in EtOH). λ_{max} 224 ; 280 ; 298 (sh) ; 310 (sh) (EtOH). λ_{max} 277 ; 297 (sh) ; 307 (sh) ; 319 (sh) ; 343 (sh) (EtOH/NaOH).

10-Hydroxy, N^4*-β-Me:* ***Ochrosandwine***
[20361-97-1]
$C_{20}H_{29}N_2O_2^{\oplus}$ 329.461
Quaternary alkaloid from *Ochrosia sandwicensis* (Apocynaceae). Cryst. (H_2O or MeOH/C_6H_6) (as chloride). Mp 288-289° dec. (evac. tube) (chloride) Mp 261-262° (block) (chloride). λ_{max} 267 (sh) (log ϵ 3.87); 275 (log ϵ 3.92); 299 (log ϵ 3.65); 309 (sh) (log ϵ 3.58) (MeOH) (chloride).

10-Hydroxy, 18,19-didehydro, N^4*-α-Me:* ***10-Hydroxy-*N^b*-methylcorynantheol***
[116521-74-5]
$C_{20}H_{27}N_2O_2^{\oplus}$ 327.445
Quaternary alkaloid from the bark of *Strychnos usambarensis* (Loganiaceae).

*19*S*-Hydroxy:* ***19*S*-Hydroxydihydrocorynantheol***
[155310-31-9]
$C_{19}H_{26}N_2O_2$ 314.427
Minor alkaloid from roots of *Antirhea portoricensis* (Rubiaceae). $[\alpha]_D^{25}$ -3 (c, 0.6 in $CDCl_3$).

10-Methoxy: ***10-Methoxydihydrocorynantheol***. *Alkaloid AD-IV*
[15266-55-4]
$C_{20}H_{28}N_2O_2$ 328.453
Alkaloid from *Aspidosperma* sp. (No. 119070), *Aspidosperma discolor, Ochrosia confusa, Ochrosia moorei, Ochrosia oppositifolia, Neisosperma glomerata, Neisosperma kilneri* and others (Apocynaceae). Cryst. (Me_2CO, Me_2CO/Et_2O or MeOH). Mp 167-168° dec. $[\alpha]_D^{23}$ -1.4 (c, 1.48 in $CHCl_3$). $[\alpha]_D^{24}$ -16.3 (c, 1.55 in Py). λ_{max} 227 (log ϵ 4.38); 280 (log ϵ 3.86); 293 (sh) (log ϵ 3.82) (EtOH).

10-Methoxy, hydrochloride:
Cryst. (MeOH/Et_2O). Mp 256-261° dec.

10-Methoxy, picrate:
Cryst. (MeOH/Et_2O). Mp 145-147° dec.

10-Methoxy, N^4*-α-oxide:* ***10-Methoxydihydrocorynantheol 4α-*N*-oxide***
[77794-99-1]
$C_{20}H_{28}N_2O_3$ 344.453
Alkaloid from the trunk bark of *Ochrosia moorei* (Apocynaceae). λ_{max} 278 ; 295 (sh) ; 305 (sh) (EtOH).

10-Methoxy, N^4*-β-oxide:* ***10-Methoxydihydrocorynantheol 4β-*N*-oxide***
[77794-98-0]
$C_{20}H_{28}N_2O_3$ 344.453
Alkaloid from the trunk bark of *Ochrosia moorei* (Apocynaceae). λ_{max} 280 ; 294 (sh) ; 307 (sh) (EtOH).

10-Methoxy, 18,19-didehydro: ***10-Methoxycorynantheol***
[56053-12-4]
$C_{20}H_{26}N_2O_2$ 326.438
Alkaloid from leaves of *Ochrosia alyxioides* (Apocynaceae). Noncryst. $[\alpha]_D^{20}$ +5 (c, 0.2 in MeOH).

10-Methoxy, 18,19-didehydro, N^4*-α-Me:* ***10-Methoxycorynantheol α-*N*-metho salt***
[92446-38-3]
$C_{21}H_{29}N_2O_2^{\oplus}$ 341.472
Quaternary alkaloid from the bark of *Neisosperma glomerata* (Apocynaceae). Cryst. (MeOH) (as chloride). Mp 237° (chloride). $[\alpha]_D^{20}$ +45 (c, 1 in MeOH).

10-Methoxy, 18,19-didehydro, N^4*-β-Me:* ***10-Methoxycorynantheol β-*N*-metho salt***
[55322-92-4]
$C_{21}H_{29}N_2O_2^{\oplus}$ 341.472
Quaternary alkaloid from the bark of *Ochrosia nakaiana* (Apocynaceae).

11-Methoxy: ***Ochromianine***. *11-Methoxydihydrocorynantheol*
[55322-94-6]
[126783-55-9 ((±)-form)]
$C_{20}H_{28}N_2O_2$ 328.453
Alkaloid from the bark of *Ochrosia miana* (Apocynaceae). Mp 162-169° dec. (synthetic). $[\alpha]_D^{20}$ -15 (c, 1 in EtOH). $[\alpha]_D^{28}$ -28 (c, 1.00 in EtOH) (synthetic). λ_{max} 228 (ϵ 37100); 270 (ϵ 4840); 298 (ϵ 6180) (EtOH).

10,11-Dimethoxy: ***Ochropposinine***
[37687-31-3]
[107887-35-4 ((±)-form)]
$C_{21}H_{30}N_2O_3$ 358.48
Alkaloid from the bark of *Ochrosia oppositifolia, Ochrosia vieillardii* and *Ochrosia moorei* and from the bark and leaves of *Neisosperma glomerata* (Apocynaceae). Amorph. $[\alpha]_D^{20}$ -18 (c, 1 in $CHCl_3$). λ_{max} 227 (ϵ 28400); 282 (sh) (ϵ 5630); 299 (ϵ 9420); 303 (ϵ 9490); 309 (sh) (ϵ 8120) (EtOH).

3-Epimer, N^4*-β-Me:* ***Lercheine***. *3-Epidihydrocorynantheol* N-*methosalt*
[146075-41-4 (chloride)]
$C_{20}H_{29}N_2O^{\oplus}$ 313.462
Quaternary alkaloid from leaves of *Lerchea bracteata* (Rubiaceae). Mp 289-291° (as chloride). $[\alpha]_D^{23}$ +100 (c, 0.2 in MeOH) (chloride).

3-Epimer, 18,19-didehydro, stereoisomer: ***Normelinonine B***
[84024-87-3]
$C_{19}H_{24}N_2O$ 296.411
Alkaloid from the root bark of *Strychnos nux-vomica* (Loganiaceae). Stereochem. only partly known. λ_{max} 231 ; 273 ; 279 ; 281 ; 289 (MeOH).

3-Epimer, 18,19-didehydro, N^4*-Me, stereoisomer:* ***Melinonine B***
[6801-38-3]
$C_{20}H_{27}N_2O^{\oplus}$ 311.446
Quaternary alkaloid from the bark of *Strychnos melinoniana* (Loganiaceae). Needles (MeOH or H_2O) (as chloride). Mp 311° dec. (305-306°) (chloride). $[\alpha]_D^{21}$ -14.8 (c, 0.272 in 27.5% MeOH aq.) (chloride). Stereochem. only partly known.

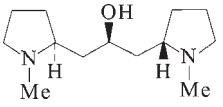
20-Epimer: ***Corynantheidol***
[483-27-2]
[4695-99-2 ((±)-form)]
$C_{19}H_{26}N_2O$ 298.427
Alkaloid from the leaves of *Mitragyna parvifolia* (Rubiaceae). Cryst. (CH_2Cl_2/petrol). Mp 183-186° dec. $[\alpha]_D^{22}$ -99.1 (c, 0.464 in Py).

Janot, M.M. *et al., Bull. Soc. Chim. Fr.*, 1951, 588-602 (*Corynantheal, synth, ir*)
Schlittler, E. *et al., Helv. Chim. Acta*, 1952, **35**, 29-45 (*Melinonine B, isol, uv*)
Van Tamelen, E.E. *et al., Chem. Ind. (London)*, 1956, 793 (*Corynantheal, stereochem*)
Vamvacas, C. *et al., Helv. Chim. Acta*, 1957, **40**, 1793-1808 (*Dihydrocorynantheol N-metho salt, Corynantheidol, Melinonine B*)
Gilbert, B. *et al., J.O.C.*, 1962, **27**, 4702-4704 (*Dihydrocorynantheol, isol, uv, ir*)
Bartlett, M.F. *et al., J.O.C.*, 1963, **28**, 1445-1449 (*Dihydrocorynantheol N-methosalt*)
Wenkert, E. *et al., J.A.C.S.*, 1965, **87**, 5461-5467 (*Corynantheidol, synth*)
Gilbert, B. *et al., Tetrahedron*, 1965, **21**, 1141-1166 (*10-Methoxydihydrocorynantheol, isol, uv, ir, ms*)
Jordan, W. *et al., Tetrahedron*, 1965, **21**, 3731-3740 (*Ochrosandwine, isol, uv, ir, pmr, struct*)

Dastoor, N.J. *et al., Helv. Chim. Acta*, 1967, **50**, 213-231 (*Dihydrocorynantheol, 10-Methoxydihydrocorynantheol, isol, uv, ir, pmr, ms, struct*)
Ziegler, F.E. *et al., Tet. Lett.*, 1969, 1097-1100 (*Dihydrocorynantheol, 3-Epidihydrocorynantheol N-metho salt, synth*)
Sawa, Y.K. *et al., Tetrahedron*, 1969, **25**, 5329-5337 (*10-Hydroxydihydrocorynantheol, Ochrosandwine, Dihydrocorynantheol, synth, uv, pmr, cd*)
Peube-Locou, N. *et al., Phytochemistry*, 1972, **11**, 2109-2111 (*Ochropposinine, uv, ir, pmr, ms, struct*)
Shellard, E.J. *et al., Planta Med.*, 1973, **24**, 13-17; 341-352; 1974, **25**, 172-174 (*Corynantheidol, Dihydrocorynantheol N-oxide, isol, uv, pmr, ms, ord, biosynth*)
Preaux, N. *et al., Phytochemistry*, 1974, **13**, 2607-2609 (*Ochromianine, uv, ir, pmr, struct*)
Sakai, S. *et al., Yakugaku Zasshi*, 1974, **94**, 1274; *CA*, **82**, 43633u (*10-Methoxycorynantheol β-N-methosalt*)
Djakouré, L.A. *et al., Tetrahedron*, 1975, **31**, 2247-2254 (*Corynantheol, Corynantheal, synth, ir, pmr, ms*)
Iwu, M.M. *et al., Planta Med.*, 1978, **33**, 232-236; 360-364 (*Corynantheol, Corynantheal, isol*)
Ahond, A. *et al., J. Nat. Prod.*, 1981, **44**, 193-199 (*Ochropposinine, 10-Hydroxydihydrocorynantheol, 10-Methoxydihydrocorynantheol N-oxides*)
Kametani, T. *et al., J.C.S. Perkin 1*, 1981, 3168-3175 (*synth, ir, ms*)
Başer, K.H.C. *et al., Phytochemistry*, 1982, **21**, 1423-1429 (*Normelinonine B*)
Imanishi, T. *et al., Chem. Pharm. Bull.*, 1983, **31**, 1551-1560 (*Corynantheidol, synth, ir, pmr, ms*)
Robert, G.M.T. *et al., J. Nat. Prod.*, 1983, **46**, 694-707 (*3,4,5,6-Tetradehydrodihydrocorynantheol*)
Brown, R.T. *et al., Chem. Comm.*, 1984, 847-848 (*synth*)
Seguin, E. *et al., J. Nat. Prod.*, 1984, **47**, 687-691 (*10-Methoxycorynantheol α-N-methosalt*)
Danieli, B. *et al., J.C.S. Perkin 1*, 1984, 1237-1240 (*synth, uv, ir, cmr, ms*)
Suzuki, T. *et al., Chem. Pharm. Bull.*, 1986, **34**, 1584-1588 (*synth*)
Atta-ur-Rahman, *et al., Planta Med.*, 1986, **52**, 73-74 (*cmr*)
Quetin-Leclercq, J. *et al., Phytochemistry*, 1988, **27**, 1923-1926 (*10-Hydroxy-N^b-methylcorynantheol*)
Boughandjioua, N. *et al., J. Nat. Prod.*, 1989, **52**, 1107-1112 (*10-Methoxycorynantheol*)
Fujii, T. *et al., Chem. Pharm. Bull.*, 1990, **38**, 1200-1204; 1991, **33**, 75-78 (*Ochromianine, Ochropposinine, synth, cd, struct, abs config*)
Lounasmaa, M. *et al., Heterocycles*, 1990, **31**, 1351-1358 (*Corynantheidol, synth*)
Ihara, M. *et al., J.C.S. Perkin 1*, 1990, 2771-2773 (*synth*)
Ohba, M. *et al., Heterocycles*, 1991, **32**, 319 (*synth*)
Beard, R.L. *et al., J.O.C.*, 1991, **56**, 2091-2096 (*Corynantheidol, synth*)
Arbain, D. *et al., J.C.S. Perkin 1*, 1992, 3039-3042 (*Lercheine*)
Diez, A. *et al., Tet. Lett.*, 1993, **34**, 733-736 (*synth*)
Weniger, B. *et al., J. Nat. Prod.*, 1994, **57**, 287-290 (*19S-Hydroxydihydrocorynantheol*)
Meittinen, J. *et al., Planta Med.*, 1996, **62**, 42-45 (*10-Methoxydihyrocorynantheol, 10-Methoxycorynantheol, synth*)
Tosaka, A. *et al., Heterocycles*, 2006, **70**, 153-159 (*synth*)
Deiters, A. *et al., J.O.C.*, 2006, **71**, 6547-6561 (*synth*)
Itoh, T. *et al., Org. Lett.*, 2006, **8**, 1533-1535 (*synth*)

Dihydrocuscohygrine D-413

1-Methyl-α-[(1-methyl-2-pyrrolidinyl)-methyl]-2-pyrrolidineethanol, 9CI. 1,3-Bis(1-methyl-2-pyrrolidinyl)-2-propanol
[80408-57-7]



Relative configuration

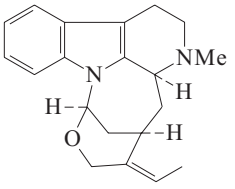
$C_{13}H_{26}N_2O$ 226.361
Alkaloid from leaves of *Erythroxylum coca* and other *Erythroxylum* spp. Yellow oil. $[\alpha]_D^{24}$ -105.5 (c, 1.67 in Me_2CO). The opt. activity of the nat. alkaloid fixes its rel. stereochem. as shown. It corresponds to the unknown opt. active form of cuscohygrine in C-818.

[58131-40-1 , 80408-55-5 , 80408-56-6 , 80366-09-2]

Turner, C.E. *et al., Phytochemistry*, 1981, **20**, 1403-1405 (*isol, synth, ir, pmr, ms*)
El-Imam, Y.M.A. *et al., Phytochemistry*, 1985, **24**, 2285-2289 (*occur*)
Stapper, C. *et al., J.O.C.*, 2002, **67**, 6456-6460 (*synth*)
Yamauchi, T. *et al., J.O.C.*, 2008, **73**, 9484-9487 (*synth, pmr, cmr*)

Dihydrocycloakagerine D-414

[113141-71-2]

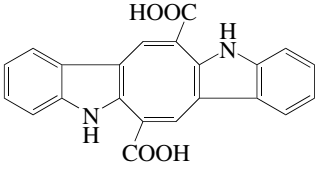


$C_{20}H_{24}N_2O$ 308.422
Alkaloid from the root bark and stem bark of *Strychnos johnsonii* (Loganiaceae). $[\alpha]_D$ -239 (c, 0.33 in MeOH).

Massiot, G. *et al., Phytochemistry*, 1987, **26**, 2839-2846 (*isol, uv, ir, pmr, cmr, ms, struct*)

5,12-Dihydrocycloocta[1,2-*b*:5,6-*b′*]diindole-6,13-dicarboxylic acid, 9CI D-415

Caulerpinic acid. *Caulerpin diacid*
[28056-19-1]



$C_{22}H_{14}N_2O_4$ 370.364
Struct. revised in 1978, formerly assigned as a dibenzophenazine. Alkaloid from the green alga *Caulerpa racemosa*. Dark brown cryst. Mp 256° subl.

Mono-Me ester: ***Monomethyl caulerpinate***
[137761-17-2]
$C_{23}H_{16}N_2O_4$ 384.39
Alkaloid from *Caulerpa racemosa*. Orange-yellow needles. Mp 158-161°.

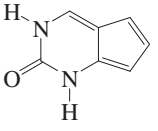
Di-Me ester: ***Caulerpin***
[26612-48-6]
$C_{24}H_{18}N_2O_4$ 398.417
Pigment from green algae *Caulerpa serrulata*, *Caulerpa racemosa*, *Caulerpa sertularioides*, *Caulerpa taxifolia*, *Caulerpa cuppresoides*, *Caulerpa scalpelliformis*, *Caloglossa leprieurii* and *Laurencia majuscula*. Plant growth regulator, phycotoxin, vermifuge. Red prisms or needles (Et_2O or Me_2CO). Fairly sol. Et_2O, Me_2CO; poorly sol. H_2O. Mp 317°. λ_{max} 222 (ε 50000); 270 (ε 27000); 292 (ε 29000); 317 (ε 35000) (MeOH) (Berdy).

▶ LD_{50} (mus, ivn) 200 - 400 mg/kg, LD_{50} (mus, orl) 2000 - 4000 mg/kg.

N,N′-Di-Me, di-Me ester: [65079-49-4]
Red needles ($CHCl_3$/petrol). Mp 262-263°.

Aguilar-Santos, S. *et al., J.C.S.(C)*, 1970, 842-843 (*isol, uv, ir, pmr, ms*)
Maiti, B.C. *et al., J. Chem. Res., Synop.*, 1978, 126-127; *J. Chem. Res., Miniprint*, 1978, 1683-1693 (*isol, ur, ir, pmr, ms, struct, synth*)
Schwede, J.G. *et al., Phytochemistry*, 1987, **26**, 155-158 (*occur, Caulerpin*)
Anjaneyulu, A.S.R. *et al., Phytochemistry*, 1991, **30**, 3041-3042 (*mono Me-ester*)
Govenkar, M.B. *et al., Phytochemistry*, 2000, **54**, 979-981 (*Caulerpin, isol, cmr*)

1,3-Dihydrocyclopentapyrimidin-2-one D-416

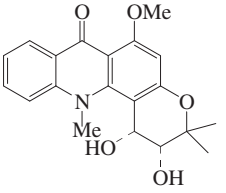


$C_7H_6N_2O$ 134.137
Tentative struct. Isol. from a sponge *Haliclona* sp. Shows antibiotic props. Mp 260-265°. No CAS no. assigned. No further work reported to 2001.

Stempien, M.F. *et al., CA*, 1977, **86**, 95905 (*isol, struct*)

1,2-Dihydro-1,2-dihydroxyacronycine D-417

*1,2,3,12-Tetrahydro-1,2-dihydroxy-6-methoxy-3,3,12-trimethyl-7*H*-pyrano[2,3-c]acridin-7-one, 9CI. 1,2-Dihydroxy-1,2-dihydroacronycine*



(1*R*,2*R*)-*form*

$C_{20}H_{21}NO_5$ 355.39

(1*R*,2*R*)-*form*
(-)-cis-*form*

[107882-25-7]
Alkaloid from the stem bark of *Sarcomelicope glauca* (Rutaceae). Needles (MeOH). Mp 232-234°. $[\alpha]_D^{20}$ -10 (c, 0.2 in MeOH) (natural). $[\alpha]_D$ -37.8 (c, 0.5 in MeOH) (synthetic).

N-*De-Me:* ***1,2-Dihydro-1,2-dihydroxy-N-demethylacronycine***
[110883-41-5]
$C_{19}H_{19}NO_5$ 341.363
Alkaloid from the leaves of *Sarcomelicope dogniensis* (Rutaceae). Yellow amorph. compd. $[\alpha]_D^{20}$ -2 (c, 0.25 in MeOH).

(1R*,2S*)-form
(-)-trans-*form*
[107882-15-5]
Alkaloid from the stem bark of *Sarcomelicope glauca* (Rutaceae). Noncryst. $[\alpha]_D^{20}$ -6 (c, 0.7 in MeOH). λ_{max} 230 (ϵ 8510); 269 (sh) (ϵ 16600); 276 (ϵ 20000); 298 (ϵ 5500); 320 (ϵ 3720); 384 (ϵ 3310) (MeOH) (Derep).

2-Deoxy, N-*de-Me:* **N-*Desmethyl-1,2-dihydro-1-hydroxyacronycine*.** *1-Hydroxy-1,2-dihydro*-N-*desmethylacronycine*
[110883-42-6]
$C_{19}H_{19}NO_4$ 325.363
Alkaloid from the leaves of *Sarcomelicope dogniensis* (Rutaceae). Light yellow prisms (MeOH). Mp 212-214°. $[\alpha]_D^{20}$ +4 (c, 0.25 in MeOH).

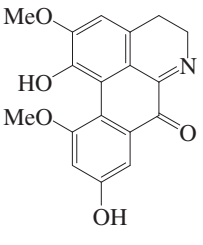
2-Deoxy, 1-ketone, N-*de-Me:* ***1-Oxo-1,2-dihydro-N-desmethylacronycine***
[110883-43-7]
$C_{19}H_{17}NO_4$ 323.348
Alkaloid from the leaves of *Sarcomelicope dogniensis* (Rutaceae). Yellow amorph. solid.

2-Deoxy, 1-ketone, N-*de-Me,* N-*hydroxy:* **N-*Demethyl-1,2-dihydro-N-hydroxy-1-oxoacronycine*.** *1-Oxo-1,2-dihydro*-N-*demethyl*-N-*hydroxyacronycine*
$C_{19}H_{17}NO_5$ 339.347
Alkaloid from leaves of *Sarcomelicope dogniensis.* Amorph. λ_{max} 211 (log ϵ 4.13); 257 (log ϵ 4.29); 278 (log ϵ 4.21); 306 (log ϵ 3.86); 381 (log ϵ 3.79) (MeOH).

Mitaku, S. *et al., J. Nat. Prod.*, 1986, **49**, 1091 (*isol, uv, ir, pmr, ms, struct*)
Mitaku, S. *et al., Heterocycles*, 1987, **26**, 2057-2063 (*derivs*)
Mitaku, S. *et al., Nat. Prod. Lett.*, 1995, **7**, 219 (*deriv*)
Costes, N. *et al., J. Nat. Prod.*, 1999, **62**, 490-492 (*synth, abs config*)

4,5-Dihydro-1,9-dihydroxy-2,11-dimethoxy-7-oxoaporphine D-418

*4,5-Dihydro-1,9-dihydroxy-2,11-dimethoxy-7*H-*dibenzo[*de,g*]quinolin-7-one*

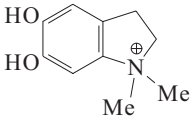


$C_{18}H_{15}NO_5$ 325.32
Alkaloid from the leaves and stems of *Miliusa cuneata*. Purple-black cryst. (MeOH). Mp >320°. λ_{max} 216 ; 282 ; 339 (MeOH).

Chen, B. *et al., Nat. Prod. Res.*, 2003, **17**, 397-402 (*isol, pmr, cmr, ms*)

2,3-Dihydro-5,6-dihydroxy-1,1-dimethylindolium(1+) D-419

[113679-36-0]

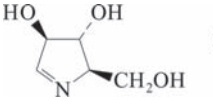


$C_{10}H_{14}NO_2^{\oplus}$ 180.226
Isol. from a deep water marine sponge *Dercitus* sp. Cryst. + $1H_2O$ (MeOH/$CHCl_3$) (as chloride). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 244° (chloride). CAS no. refers to chloride. λ_{max} 206 (ϵ 12200); 289 (ϵ 3700) (MeOH) (Berdy). λ_{max} 209 (ϵ 16500); 248 (ϵ 5800); 303 (ϵ 5100) (MeOH/NaOH) (Berdy).

Kohmoto, S. *et al., Experientia*, 1988, **44**, 85 (*isol, uv, ir, pmr, cmr, ms, struct*)

3,4-Dihydro-3,4-dihydroxy-2-(hydroxymethyl)-2*H*-pyrrole D-420

*3,4-Dihydro-2-(hydroxymethyl)-2*H-*pyrrole-3,4-diol, 9CI*



(2R,3R,4R)–form

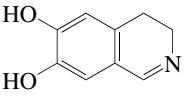
$C_5H_9NO_3$ 131.131

(2R,3R,4R)-form
Nectrisine. *FR 900483. Antibiotic FR 900483*
[108692-47-3]
Isol. from *Nectria lucida*. Hypoglycaemic and immunostimulant. Inhibits α–glucosidase and α-mannosidase. Powder. Mp 75° dec. $[\alpha]_D^{23}$ +22 (c, 0.55 in H_2O). λ_{max} 320 (ϵ 100) (H_2O) (Derep).

Japan. Pat., 1987, 87 36 355; *CA*, **107**, 5742 (*isol, props*)
Shibata, T. *et al., J. Antibiot.*, 1988, **41**, 296-301 (*isol, struct*)
Chen, S.-H. *et al., Tet. Lett.*, 1990, **31**, 2229-2232 (*synth*)
Kayakiri, H. *et al., Chem. Pharm. Bull.*, 1991, **39**, 2807-2812 (*pmr, cmr, synth*)
Kogoshi, N. *et al., Heterocycles*, 1998, **49**, 63-66 (*synth*)
Kim, Y.J. *et al., Tetrahedron*, 1999, **55**, 8353-8364 (*synth, activity*)
Bosco, M. *et al., Tet. Lett.*, 2001, **42**, 7949-7952 (*synth*)
Hulme, A.N. *et al., Tet. Lett.*, 2003, **44**, 7649-7653 (*synth*)
Merino, P. *et al., Eur. J. Org. Chem.*, 2008, 2929-2947 (*synth*)
Ribes, C. *et al., J.O.C.*, 2008, **73**, 7779-7782 (*synth*)

3,4-Dihydro-6,7-dihydroxyisoquinoline D-421

3,4-Dihydro-6,7-isoquinolinediol



$C_9H_9NO_2$ 163.176

6-Me ether, N-*Me: 3,4-Dihydro-7-hydroxy-6-methoxy-2-methylisoquinolinium(1+), 9CI.* ***Pycnarrhine.*** *1,2-Dehydrocorypalline*
[72142-82-6]
$C_{11}H_{14}NO_2^{\oplus}$ 192.237
Alkaloid from *Pycnarrhena longifolia*, *Corydalis ophiocarpa*, *Corydalis stricta*, *Arcangelisia flava* and *Xylopia vieillardi*.

6-Me ether, N-*Me, chloride:* [69734-98-1]
$C_{11}H_{14}ClNO_2$ 227.69
Glistening yellow platelets (MeOH/Me_2CO). Mp 187° (dec.)(sinters at 155°).

6-Me ether, N-*Me, iodide:* [21885-30-3]
$C_{11}H_{14}INO_2$ 319.142
Yellow cryst. (MeOH). Mp 216-218° (211-212.5°).

7-Me ether, N-*Me: 3,4-Dihydro-6-hydroxy-7-methoxy-2-methylisoquinolinium(1+), 9CI.* ***Isopycnarrhine***
[107882-22-4]
$C_{11}H_{14}NO_2^{\oplus}$ 192.237
Alkaloid from the bark of *Popowia pisocarpa* (Annonaceae). Oil. Prob. isol. as the internal salt with the phenolic OH group (≡ hydroxide).

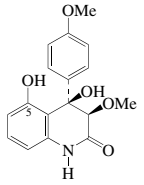
Di-Me ether: 3,4-Dihydro-6,7-dimethoxyisoquinoline, 9CI. ***Dehydroheliamine***
[3382-18-1]
$C_{11}H_{13}NO_2$ 191.229
Trace alkaloid from *Carnegiea gigantea* (Cactaceae). Cryst. (EtOH/Et_2O)(as hydrochloride). Mp 194-196° (hydrochloride).

Di-Me ether, N-*Me: 3,4-Dihydro-6,7-dimethoxy-2-methylisoquinolinium(1+)*
$C_{12}H_{16}NO_2^{\oplus}$ 206.264
Alkaloid from the roots of *Xylopia parviflora*. Cryst. (as perchlorate). Mp 184.5-187.5° (perchlorate). λ_{max} 248 (log ϵ 3.92); 309 (log ϵ 3.59); 361 (log ϵ 3.52) (MeOH) (perchlorate).

Akabori, S. *et al., Bull. Chem. Soc. Jpn.*, 1926, **1**, 125 (*Pycnarrhine, synth*)
Doskotch, R.W. *et al., Tetrahedron*, 1969, **25**, 469 (*Pycnarrhine, synth*)
Brossi, A. *et al., Org. Prep. Proced. Int.*, 1970, **2**, 281 (*Pycnarrhine, synth*)
Siwon, J. *et al., Phytochemistry*, 1981, **20**, 323 (*Pycnarrhine, isol, uv, pmr, cmr, ms, synth*)
Verpoorte, R. *et al., J. Nat. Prod.*, 1982, **45**, 582 (*Pycnarrhine, isol, uv, pmr, cmr, ms*)
Ordaz, C. *et al., Phytochemistry*, 1983, **22**, 2101 (*Dehydroheliamine*)
Jossang, A. *et al., J. Nat. Prod.*, 1986, **49**, 1028 (*Isopycnarrhine*)
Nishiyama, Y. *et al., Phytochemistry*, 2004, **65**, 939-944 (*di-Me ether N-Me*)

3,4-Dihydro-4,5-dihydroxy-3-methoxy-4-(4-methoxyphenyl)-2(1*H*)-quinolinone D-422

[184046-65-9]



Relative Configuration

$C_{17}H_{17}NO_5$ 315.325

Prod. by *Penicillium* sp. NTC-47 and *Penicillium* cf. *simplicissimum*. Insecticidal agent. Prisms (MeOH). Mp 208-210°. $[\alpha]_D^{20}$ -55 (c, 0.02 in MeOH). λ_{max} 225 (ϵ 35000); 280 (ϵ 7000); 296 (ϵ 8400).

*5-Deoxy: 3,4-Dihydro-4-hydroxy-3-methoxy-4-(4-methoxyphenyl)-2(1*H*)-quinolinone*
[183854-01-5]
$C_{17}H_{17}NO_4$ 299.326
Prod. by *Penicillium* sp. NTC-47, *Penicillium* cf. *simplicissimum* and the marine-derived *Penicillium janczewski*. Insecticidal agent. Needles (MeOH). Mp 76-79°. $[\alpha]_D^{20}$ -62 (c, 0.3 in MeOH). λ_{max} 229 (ϵ 11000); 254 (ϵ 6500); 281 (ϵ 2800) (MeOH).

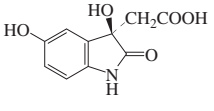
*5-Deoxy, O^3-de-Me: 3,4-Dihydro-3,4-dihydroxy-4-(4-methoxyphenyl)-2(1*H*)-quinolinone.* ***Yaequinolone A$_2$***
$C_{16}H_{15}NO_4$ 285.299
Prod. by *Penicillium* sp. FKI-2140 and the marine-derived *Penicillium janczewskii*. Insecticidal agent. Pale yellow powder. $[\alpha]_D^{15}$ -4.2 (c, 0.5 in MeOH). $[\alpha]_D^{23}$ -50.9 (c, 0.1 in EtOH). λ_{max} 208 (ϵ 43000); 227 (ϵ 18900); 250 (ϵ 11300); 283 (ϵ 5100) (EtOH).

3-Epimer, 5-deoxy, O^3-de-Me: ***Yaequinolone A$_1$***
$C_{16}H_{15}NO_4$ 285.299
Prod. by *Penicillium* sp. FKI-2140 and the marine-derived *Penicillium janczewskii*. Insecticidal agent. Pale yellow powder. $[\alpha]_D^{15}$ -12.9 (c, 0.7 in MeOH). $[\alpha]_D^{23}$ -32.2 (c, 0.1 in EtOH). λ_{max} 209 (ϵ 40800); 226 (ϵ 19200); 250 (ϵ 12700); 280 (ϵ 4600) (EtOH).

Hayashi, H. *et al., Biosci., Biotechnol., Biochem.*, 1997, **61**, 914-916 (*isol, uv, ir, pmr, cmr*)
Kusano, M. *et al., Biosci., Biotechnol., Biochem.*, 2000, **64**, 2559-2568 (*isol, uv, pmr, cmr, ms*)
He, J. *et al., J. Nat. Prod.*, 2005, **68**, 1397-1399 (*isol, pmr, cmr*)
Uchida, R. *et al., J. Antibiot.*, 2006, **59**, 646-651; 652-658 (*Yaequinolones*)

2,3-Dihydro-3,5-dihydroxy-2-oxo-1*H*-indole-3-acetic acid D-423

5-Hydroxydioxindole-3-acetic acid. 3,5-Dihydroxy-2-indolinone-3-acetic acid
[61935-03-3]



(*R*)-*form*

$C_{10}H_9NO_5$ 223.185

(*R*)-*form*

Constit. of rice bran. $[\alpha]_D^{21}$ +6 (c, 1 in MeOH).

5-O-β-D-Glucopyranoside: [218604-37-6]
$C_{16}H_{19}NO_{10}$ 385.327
Constit. of rice bran. Powder. $[\alpha]_D^{20}$ -25.8 (c, 0.2 in H_2O). λ_{max} 210 (ϵ 16400); 259 (ϵ 6600); 305 (ϵ 1200) (MeOH).

5-O-[β-D-Glucopyranosyl-(1→4)-β-D-glucopyranoside]: [218604-48-9]
$C_{22}H_{29}NO_{15}$ 547.469
Constit. of rice bran. Powder. $[\alpha]_D^{20}$ -30.7 (c, 0.3 in H_2O). λ_{max} 210 (ϵ 19000); 259 (ϵ 7400); 305 (ϵ 1300) (MeOH).

(*S*)-*form*

5-O-β-D-Glucopyranoside: [218604-43-4]
Constit. of rice bran. Powder. $[\alpha]_D^{20}$ -44.1 (c, 1.2 in H_2O). λ_{max} 210 (ϵ 16400); 259 (ϵ 6600); 305 (ϵ 1200) (MeOH).

5-O-[β-D-Glucopyranosyl-(1→4)-β-D-glucopyranoside]: [218604-54-7]
Constit. of rice bran. Powder. $[\alpha]_D^{20}$ -46.5 (c, 1.3 in H_2O). λ_{max} 210 (ϵ 19000); 259 (ϵ 7400); 305 (ϵ 1300) (MeOH).

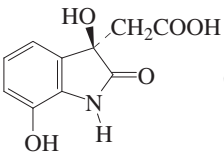
(±)-*form* [63389-29-7]
Pale yellow powder.

Me ester: [57061-18-4]
$C_{11}H_{11}NO_5$ 237.212
Constit. of rice bran. Needles. Mp 78-80°. Possibly an artifact.

Kinashi, H. *et al., Agric. Biol. Chem.*, 1976, **40**, 2465 (*isol*)
Suzuki, Y. *et al., Phytochemistry*, 1977, **16**, 635 (*isol*)
Tateishi, K. *et al., Biosci., Biotechnol., Biochem.*, 1998, **62**, 1870-1874 (*glycosides*)

2,3-Dihydro-3,7-dihydroxy-2-oxo-1*H*-indole-3-acetic acid D-424

3,7-Dihydroxy-2-indolinone-3-acetic acid



(*R*)-*form*

$C_{10}H_9NO_5$ 223.185

(*R*)-*form*

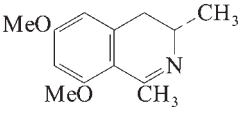
7-O-β-D-Glucopyranoside: ***Zeanoside C***
[120293-55-2]
$C_{16}H_{19}NO_{10}$ 385.327
Isol. from immature sweet corn kernels *Zea mays* (Poaceae). Fine cryst. (EtOH). Mp 162-163°. $[\alpha]_D^{19}$ -162.1 (c, 0.1 in H_2O).

(*S*)-*form*

7-O-β-D-Glucopyranoside: ***Zeanoside A***
[113202-68-9]
$C_{16}H_{19}NO_{10}$ 385.327
Isol. from sweet corn kernels *Zea mays* (Poaceae). Fine needles (EtOH). Mp 197-198°. $[\alpha]_D$ -36.8 (c, 0.1 in H_2O).

Tateishi, K. *et al., Agric. Biol. Chem.*, 1987, **51**, 3445-3447; 1988, **52**, 3231-3233; 1989, **53**, 2545-2551 (*isol, uv, ir, pmr, cmr, ms, struct*)

3,4-Dihydro-6,8-dimethoxy-1,3-dimethylisoquinoline, 9CI D-425



(*S*)−*form*

$C_{13}H_{17}NO_2$ 219.283

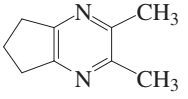
(*S*)-*form* [104292-08-2]
Alkaloid from bark of *Ancistrocladus tectorius* (Ancistrocladaceae). Mp 202° (197°)(as hydrobromide). $[\alpha]_D^{20}$ -141 (c, 1.0 in MeOH).

[104292-09-3]

Bringmann, G. *et al., Angew. Chem., Int. Ed.*, 1986, **25**, 913 (*synth*)
Montagnac, A. *et al., Phytochemistry*, 1995, **39**, 701 (*isol*)

6,7-Dihydro-2,3-dimethyl-5*H*-cyclopentapyrazine, 9CI D-426

FEMA 3917
[38917-63-4]



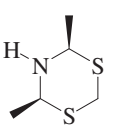
$C_9H_{12}N_2$ 148.207
Formed from cysteine and rhamnose under roasting conditions. Found in *Cyperus esculentus*. Mp 25-27°. Bp_{10} 102-104°.

N-*Oxide:* [61928-81-2]
$C_9H_{12}N_2O$ 164.207
Hygroscopic cryst. Mp 36-39°. $Bp_{0.001}$ 85°.

Flament, I. *et al., Helv. Chim. Acta*, 1973, **56**, 610-619; 1976, **59**, 2308-2313; 2314-2326 (*synth, occur, pmr, ms, 1-oxide*)
Pittet, A.O. *et al., J. Agric. Food Chem.*, 1974, **22**, 273-279 (*synth*)
Flament, I. *et al., Bull. Soc. Chim. Belg.*, 1979, **88**, 941-950 (*synth, pmr, ms*)
Silwar, R. *et al., Z. Lebensm.-Unters. -Forsch.*, 1992, **195**, 112-119 (*N-oxide*)
Cantelejo, M.J. *et al., J. Agric. Food Chem.*, 1997, **45**, 1853-1860 (*occur, Cyperus esculentus*)
Fenaroli's Handbook of Flavor Ingredients, 4th edn., (ed. Burdock, G.A.), CRC Press, 2001, 421 (*occur, use*)

Dihydro-4,6-dimethyl-4*H*-1,3,5-dithiazine D-427

[51647-36-0]
[82989-68-2]

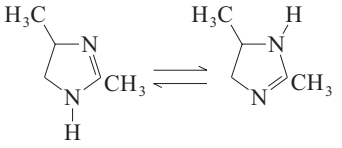


$C_5H_{11}NS_2$ 149.281

(3*R*,5*S*)-*form*
cis-*form*
[82989-67-1]
Constit. of *Acacia latescens*.
Kruse, H.P. *et al., Nahrung*, 1982, **26**, 369-376 (*occur*)
Peerzada, N. *et al., Sulfur Lett.*, 2000, **23**, 185-192 (*isol, synth*)

4,5-Dihydro-2,4(5)-dimethyl-1*H*-imidazole, 9CI D-428

2,4-Dimethyl-2-imidazoline, 8CI
[930-61-0]

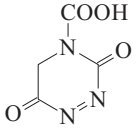


$C_5H_{10}N_2$ 98.147

(±)-*form*
Component of crosslinking agent for epoxy resins. Rubber vulcanisation accelerator.
Liq. Bp_{15} 107.5-108°. Irritant.
Picrate:
Solid. Mp 141-141.5°.

(ξ)-*form*
Volatile component of rainbow trout tissue.
[73006-98-1]
Ohashi, M. *et al., Org. Mass Spectrom.*, 1968, **1**, 703 (*ms*)
Hiatt, M.H. *et al., Anal. Chem.*, 1983, **55**, 506 (*isol, glc*)
Butler, R.N. *et al., J.C.S. Perkin 1*, 1989, 155 (*synth*)

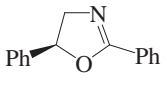
5,6-Dihydro-3,6-dioxo-1,2,4-triazine-4(3*H*)-carboxylic acid, 9CI D-429



$C_4H_3N_3O_4$ 157.085
Me ester: [118040-43-0]
$C_5H_5N_3O_4$ 171.112
Alkaloid from the seed coat of *Butea monosperma* (Fabaceae). Shows antifertility props.
Porwal, M. *et al., Natl. Acad. Sci. Lett. (India)*, 1988, **11**, 81; *CA*, **110**, 21066f (*isol*)

4,5-Dihydro-2,5-diphenyloxazole D-430

2,5-Diphenyl-2-oxazoline. ***Oxytriphine***
[22020-69-5]

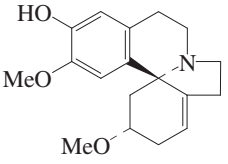


$C_{15}H_{13}NO$ 223.274

(*S*)-*form* [87443-39-8]
Alkaloid from aerial parts of *Oxytropis trichophysa*. Light yellow oil. Mp 38-40°. $[\alpha]_D$ +116 (c, 1.34 in $CHCl_3$). $[\alpha]_D$ +162.3 (c, 4.7 in $CHCl_3$) (synthetic). Confusion over abs. config. The isolation paper says the nat. prod. is *S*- but draws the *R*-form. CAS indexes it as *R*- but the opt. rotn. by comparison with synthetic material shows that it is *S*-.
Meyers, A.I. *et al., Tetrahedron*, 1983, **39**, 1991-1999 (*S-form, synth*)
Akhmedzhanova, V.I. *et al., Khim. Prir. Soedin.*, 1993, **29**, 873-876; *Chem. Nat. Compd. (Engl. Transl.)*, 1993, **29**, 778-780
Vorbruggen, H. *et al., Tetrahedron*, 1993, **49**, 9353-9372 (*synth, ir, pmr*)
Badiang, J.G. *et al., J.O.C.*, 1996, **61**, 2484-2487 (*synth*)
Minakata, S. *et al., Chem. Comm.*, 2007, 3279-3281 (*synth*)

Dihydroerysodine D-431

1,6-Didehydro-3,15-dimethoxyerythrinan-16-ol, 9CI
[7236-36-4]



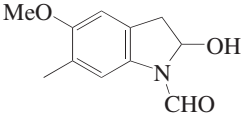
$C_{18}H_{23}NO_3$ 301.385
Alkaloid from *Cocculus laurifolius* (Menispermaceae). Needles (Me_2CO). Mp 208-209°. $[\alpha]_D$ +224.39 (MeOH).

Me ether: ***Dihydroerysotrine***
[63694-44-0]
Synthetic, not known as a natural alkaloid. Pale-yellow viscous oil; yellow microscopic needles (as picrate). Mp 165-167° (picrate).

O^{15}-De-Me, O^{16}-Me: 1,6-Didehydro-3,16-dimethoxyerythrinan-15-ol, 9CI. ***Dihydroerysovine***
[63694-43-9]
$C_{18}H_{23}NO_3$ 301.385
Alkaloid from the rhizomes of *Cocculus trilobus* (Menispermaceae). Oil. $[\alpha]_D$ +223 ($CHCl_3$).
Prelog, V. *et al., Helv. Chim. Acta*, 1949, **32**, 453; 1956, **39**, 498 (*synth, uv*)
Tomita, M. *et al., Chem. Pharm. Bull.*, 1956, **4**, 225 (*isol, uv, ir, struct*)
Millington, D.S. *et al., J.A.C.S.*, 1974, **96**, 1909 (*synth, pmr*)
Ju-ichi, M. *et al., Chem. Pharm. Bull.*, 1977, **25**, 533; 1978, **26**, 563 (*Dihydroerysodine, Dihydroerysovine, isol, ir, pmr, ms, struct, synth*)

2,3-Dihydro-1-formyl-2-hydroxy-5-methoxy-6-methyl-1*H*-indole D-432

*2,3-Dihydro-2-hydroxy-5-methoxy-6-methyl-1*H*-indole-1-carboxaldehyde. 1-Formyl-2-hydroxy-5-methoxy-6-methylindoline*

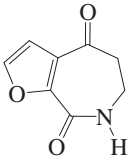


$C_{11}H_{13}NO_3$ 207.229
Alkaloid from *Corydalis saxicola*. Yellow cryst. Mp 188-190°. λ_{max} 262 (log ϵ 3.17) (MeOH).

*2-Deoxy: 2,3-Dihydro-1-formyl-5-methoxy-6-methyl-1*H*-indole. 2,3-Dihydro-5-methoxy-6-methyl-1*H*-indole-1-carboxaldehyde. 1-Formyl-5-methoxy-6-methylindoline*
$C_{11}H_{13}NO_2$ 191.229
Alkaloid from *Corydalis saxicola*. Yellow cryst. Mp 165-167°. λ_{max} 264 (log ϵ 3.29) (MeOH).
Li, H.-L. *et al., Chem. Biodiversity*, 2008, **5**, 777-783 (*isol, pmr, cmr, ms*)

6,7-Dihydro-4*H*-furo[2,3-*c*]azepine-4,8(5*H*)-dione D-433

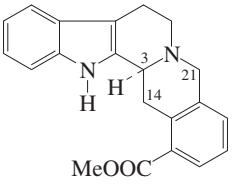
Fuscaine
[223678-23-7]



$C_8H_7NO_3$ 165.148
Isol. from the Chinese sponge *Phakellia fusca*. Cytotoxic.
Zeng, L.-M. *et al., CA*, 1999, **130**, 309248c

Dihydrogambirtannine D-434

Methyl 15,16,17,18,19,20-hexadehydroyohimban-16-carboxylate, 9CI



(*S*)-*form*

$C_{21}H_{20}N_2O_2$ 332.401

(*R*)-*form* [2447-63-4]
Synthetic. Cryst. + ½ EtOH (EtOH). Mp 174-176°. $[\alpha]_D^{25}$ +288 (Py).

(*S*)-*form* [25425-11-0]
Alkaloid from *Uncaria gambier* (Gambir tannin) (Rubiaceae). Soft yellow cryst. (Et_2O/hexane). Mp 163°. $[\alpha]_D^{20}$ -270 (c, 0.088 in $CHCl_3$).

De(methoxycarbonyl): ***Decarbomethoxydihydrogambirtannine****. 15,17,19-Yohimbatriene. Demethoxycarbonyldihydrogambirtannine*
[15026-41-2]
$C_{19}H_{18}N_2$ 274.365
Constit. of the leaves of *Ochrosia lifuana* and *Ochrosia miana*, and from fruits of *Strychnos usambarensis* (Apocynaceae, Loganiaceae). Mp 192-194° (racemate). $[\alpha]_D^{20}$ -254 (c, 1 in EtOH).

(±)-*form* [20361-83-5]
Synthetic. Cryst. (C_6H_6/hexane). Mp 155-160° Mp 176-178° (175°) (dimorph.).
Hydrochloride:

Cryst. (MeOH/Me_2CO). Mp 248-250° (244-245°) dec.

3,14-Didehydro: ***Gambirtannine***
[24987-88-0]
$C_{21}H_{18}N_2O_2$ 330.385
Alkaloid from *Uncaria gambier* (*Ourouparia gambier*) (Gambir tannin). Orange needles. Mp 150-153° dec. Readily dec. Prob. artifact of autoxidation, not detected in the fresh plant.

3,14-Didehydro, 21-oxo: ***Oxogambirtannine***. *Oxygambirtannine*
[18110-97-9]
$C_{21}H_{16}N_2O_3$ 344.369
Alkaloid from *Uncaria gambier* (Rubiaceae). Bright-yellow needles with yellow-green fluor. ($CHCl_3$/hexane). Cryst. (MeOH). Mp 208-209° Mp 228°.

De(methoxycarbonyl): [61825-78-3]
Pale yellow prisms or cream needles. Mp 191-194°.

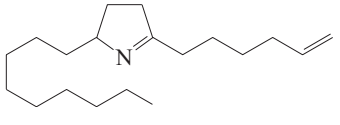
(ξ)-*form*

De(methoxycarbonyl), 15,16,17,18-tetrahydro: ***Demethoxycarbonyl-3,4,15,16,17,18-hexahydrogambirtannine***
[113122-69-3]
$C_{19}H_{22}N_2$ 278.396
Alkaloid from *Strychnos johnsonii*. $[\alpha]_D$ -138 (MeOH). λ_{max} 227 ; 274 ; 283 ; 290 (MeOH).

Smith, E. *et al., J.A.C.S.*, 1964, **86**, 2083-2084 (*R-form, synth*)
Taylor, W.I. *et al., C. R. Hebd. Seances Acad. Sci. Ser. D*, 1966, 1141-1143 (*Oxogambirtannine, isol*)
Merlini, L. *et al., Tetrahedron*, 1967, **23**, 3129-3145 (*Gambirtannine, Dihydrogambirtannine, Oxogambirtannine, isol, uv, ir, pmr, ms, struct, abs config*)
Wenkert, E. *et al., J.A.C.S.*, 1968, **90**, 5251-5256 (*synth*)
Beisler, J.A. *et al., Tetrahedron*, 1970, **26**, 1961-1965 (*synth, Oxogambirtannine*)
Puebe-Locou, N. *et al., Phytochemistry*, 1973, **12**, 199-200 (*Decarbomethoxydihydrogambirtannine*)
Irie, H. *et al., Chem. Comm.*, 1975, 63 (*Oxogambirtannine, synth*)
Ninomiya, I. *et al., J.C.S. Perkin 1*, 1976, 1865-1868 (*Decarbomethoxydihydrogambirtannine*)
Markaryan, E.A. *et al., CA*, 1977, **86**, 140317 (*synth*)
Kan-Fan, C. *et al., Tet. Lett.*, 1980, **21**, 1463-1466 (*S-form, synth*)
Chatterjee, A. *et al., Synthesis*, 1981, 818-820 (*synth, Decarbomethoxydihydrogambirtannine*)
Massiot, G. *et al., Phytochemistry*, 1987, **26**, 2839-2846 (*Demethoxycarbonylhexahydrogambirtannine*)
Cobas, A. *et al., J.O.C.*, 1992, **57**, 6765-6769 (*synth, Decarbomethoxydihydrogambirtannine*)

3,4-Dihydro-5-(5-hexenyl)-2-nonyl-2*H*-pyrrole D-435

2-(5-Hexenyl)-5-nonyl-Δ^1-pyrroline
[116902-76-2]

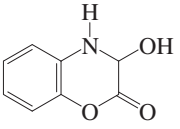


$C_{19}H_{35}N$ 277.492
Ant venom alkaloid from european *Monomorium* species. Exhibits a v. broad insecticidal action. $Bp_{0.1}$ 137°.

Bacos, D. *et al., Tet. Lett.*, 1988, **29**, 3061 (*isol, ir, pmr, cmr, ms, synth, struct*)

3,4-Dihydro-3-hydroxy-1,4-benzoxazin-2-one D-436

Acanthamine



$C_8H_7NO_3$ 165.148

(ξ)-*form*

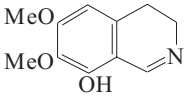
O-*β*-D-*Glucopyranoside:* ***Acanthaminoside***
$C_{14}H_{17}NO_8$ 327.29
Alkaloid from *Acanthus arboreus*. Needles (MeOH). Mp 213-214°. λ_{max} 250 ; 275 ; 283 (MeOH).

N-*Hydroxy: 3,4-Dihydro-3,4-dihydroxy-1,4-benzoxazin-2-one.* ***4-Hydroxyacanthamine***
$C_8H_7NO_4$ 181.148
Alkaloid from *Acanthus arboreus*. Yellow needles (MeOH). Mp 135°. λ_{max} 253 ; 279 ; 290 (MeOH).

Amer, M.E. *et al., J. Braz. Chem. Soc.*, 2004, **15**, 262-266 (*isol, pmr, cmr, ms*)

3,4-Dihydro-8-hydroxy-6,7-dimethoxyisoquinoline D-437

8-Hydroxy-6,7-dimethoxy-3,4-dihydroisoquinolinium inner salt

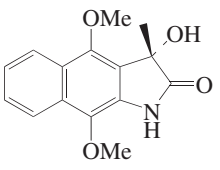


$C_{11}H_{13}NO_3$ 207.229
Alkaloid from *Lophophora williamsii* (Cactaceae). Mp 159-165°. Exists as inner salt.

N-*Me, inner salt: 3,4-Dihydro-8-hydroxy-6,7-dimethoxy-2-methylisoquinolinium inner salt*
$C_{12}H_{15}NO_3$ 221.255
Alkaloid from *Lophophora williamsii* (Cactaceae). Mp 95-104°.

Menachery, M.D. *et al., J. Nat. Prod.*, 1986, **49**, 745 (*uv, ir, pmr, rev*)

1,3-Dihydro-3-hydroxy-4,9-dimethoxy-3-methyl-2*H*-benz[*f*]indol-2-one D-438



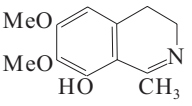
$C_{15}H_{15}NO_4$ 273.288

(*S*)-*form* [1040378-12-8]
Alkaloid from the roots of *Goniothalamus cheliensis*. Yellow powder. $[\alpha]_D^{25}$ -37.9 (c, 0.1 in MeOH).

Jiang, M.M. *et al., Chin. Chem. Lett.*, 2008, **19**, 302-304 (*isol, pmr, cmr*)

3,4-Dihydro-8-hydroxy-6,7-dimethoxy-1-methylisoquinoline D-439

3,4-Dihydro-6,7-dimethoxy-1-methyl-8-isoquinolinol, 9CI
[31241-40-4]

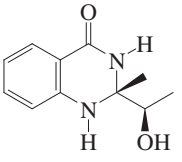


$C_{12}H_{15}NO_3$ 221.255
Alkaloid from *Lophophora williamsii* (Cactaceae). Cryst. (C_6H_6/$CHCl_3$). Mp 173-175°.

N-*Me, inner salt:* ***3,4-Dihydro-8-hydroxy-6,7-dimethoxy-1,2-dimethylisoquinolinium inner salt***
$C_{13}H_{17}NO_3$ 235.282
Alkaloid from *Lophophora williamsii* (Cactaceae).

Kapadia, G.J. *et al., J.A.C.S.*, 1970, **92**, 6943 (*synth, pmr, ms*)
Menachery, M.D. *et al., J. Nat. Prod.*, 1986, **49**, 745 (*uv, pmr, ms, rev*)

2,3-Dihydro-2-(1-hydroxyethyl)-2-methylquinazolin-4(1*H*)-one D-440



(1'*R**,2*R**)-*form*

$C_{11}H_{14}N_2O_2$ 206.244

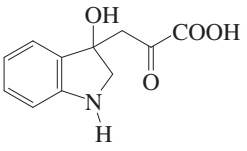
(1'*R*,2*R*)-*form*
Prod. by *Streptomyces* sp. GW23/1540. Amorph. solid. $[\alpha]_D^{20}$ -17.5 (c, 0.2 in MeOH). λ_{max} 253 (log ϵ 3.51); 350 (log ϵ 3.25) (MeOH).

(1'*R*,2*S*)-*form*
Prod. by *Streptomyces* sp. GW23/1540. Amorph. solid. $[\alpha]_D^{20}$ +47 (c, 0.2 in MeOH). λ_{max} 252 (log ϵ 3.61); 348 (log ϵ 3.33) (MeOH).

Maskey, R.P. *et al., J. Nat. Prod.*, 2004, **67**, 1131-1134 (*isol, pmr, cmr, ms*)

3-(2,3-Dihydro-3-hydroxy-1*H*-indol-3-yl)-2-oxopropanoic acid D-441

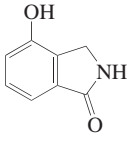
*2,3-Dihydro-3-hydroxy-α-oxo-1*H*-indole-3-propanoic acid*



$C_{11}H_{11}NO_4$ 221.212

(ξ)-*form*
Prod. by the marine-derived *Halomonas* sp. RK377. Amorph. solid.
Liang, L. *et al., Dissertation*, Univ. of Göttingen, 2003, (*isol, pmr, cmr, ms*)

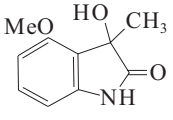
2,3-Dihydro-4-hydroxy-1*H*-isoindol-1-one, 9CI D-442
4-Hydroxyphthalimidine. 4-Hydroxy-1-isoindolinone
[366453-21-6]



$C_8H_7NO_2$ 149.149
Alkaloid from the antlion (larva of Myrmeleontidae sp.). Pale yellow needles (MeOH). Mp 271° dec.

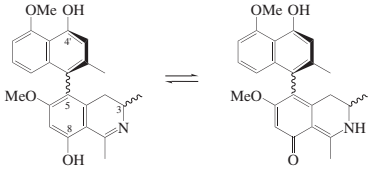
N-*(2-Hydroxyethyl): 2,3-Dihydro-4-hydroxy-2-(2-hydroxyethyl)-1*H*-isoindol-1-one. 4-Hydroxy-2-(2-hydroxyethyl)-1-isoindolinone*
[919079-22-4]
$C_{10}H_{11}NO_3$ 193.202
Alkaloid from the antlion. Needles (MeOH).
Nakatani, T. *et al., J. Nat. Med. (Tokyo)*, 2006, **60**, 261-263 (*isol, pmr, cmr, ms*)

1,3-Dihydro-3-hydroxy-4-methoxy-3-methyl-2*H*-indol-2-one, 9CI D-443
3-Hydroxy-4-methoxy-3-methyloxindole
[110011-50-2]



$C_{10}H_{11}NO_3$ 193.202
Alkaloid from the roots of *Capparis tomentosa* (Capparidaceae). Cryst. (EtOAc). Mp 230°.
Dekker, T.G. *et al., Phytochemistry*, 1987, **26**, 1845 (*isol, ir, pmr, cmr, ms, struct*)

3,4-Dihydro-5-(4-hydroxy-5-methoxy-2-methyl-1-naphthalenyl)-8-hydroxy-6-methoxy-1,3-dimethylisoquinoline D-444
*4-(3,4-Dihydro-8-hydroxy-6-methoxy-1,3-dimethylisoquinolin-5-yl)-8-methoxy-3-methyl-1-naphthalenol. 3,4-Dihydro-5-(4-hydroxy-5-methoxy-2-methyl-1-naphthalenyl)-6-methoxy-1,3-dimethyl-8(2*H*)-isoquinolinone*
[180342-44-3]

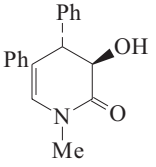


$C_{24}H_{25}NO_4$ 391.466
Inseparable mixt. of (3*S*,5*R*) and (3*S*,5*S*) atropisomers. Alkaloid from leaves and twigs of *Ancistrocladus tectorius*. $[\alpha]_D$ -90.3 (c, 0.39 in MeOH). Exists exclusively in the 8-oxo-form. λ_{max} 233 (log ε 4.6); 265 (log ε 3.7); 309 (log ε 3.9); 322 (log ε 3.9); 337 (log ε 3.9); 383 (log ε 4.3) (EtOH).

4′-Me ether: ***3,4-Dihydro-5-(4,5-dimethoxy-2-methyl-1-naphthalenyl)-8-hydroxy-6-methoxy-1,3-dimethylisoquinoline****. 3,4-Dihydro-5-(4,5-dimethoxy-2-methyl-1-naphthalenyl)-6-methoxy-1,3-dimethyl-8(2*H*)-isoquinolinone*
[180342-43-2]
$C_{25}H_{27}NO_4$ 405.493
From *Ancistrocladus tectorius*. $[\alpha]_D$ -5.8 (c, 0.24 in MeOH). Exists exclusively in the 8-oxo-form. λ_{max} 232 (log ε 4.4); 270 (log ε 3.6); 306 (log ε 3.8); 322 (log ε 3.8); 335 (log ε 3.8); 384 (log ε 4.2) (EtOH).

8-Me ether: ***3,4-Dihydro-5-(4-hydroxy-5-methoxy-2-methyl-1-naphthalenyl)-6,8-dimethoxy-1,3-dimethylisoquinoline***
[180342-42-1]
$C_{25}H_{27}NO_4$ 405.493
From *Ancistrocladus tectorius*. $[\alpha]_D$ +41.7 (c, 0.29 in MeOH). λ_{max} 227 (log ε 4.5); 280 (log ε 3.9); 309 (log ε 3.9); 322 (log ε 3.9); 337 (log ε 3.8) (EtOH).
Manfredi, K.P. *et al., J. Nat. Prod.*, 1996, **59**, 854-859 (*isol, uv, ir, pmr, cmr, cd, struct*)

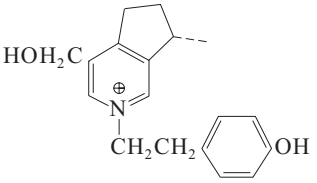
3,4-Dihydro-3-hydroxy-1-methyl-4,5-diphenyl-2(1*H*)-pyridinone, 9CI D-445



$C_{18}H_{17}NO_2$ 279.338

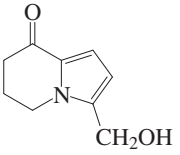
(3R,4S)-form
Homoclausenamide
[136112-76-0]
Alkaloid from *Clausena lansium* (wampee) (Rutaceae).
Yang, M. *et al., Chin. Chem. Lett.*, 1991, **2**, 291; *CA*, **115**, 155059t (*isol, struct*)
Yang, L. *et al., Org. Lett.*, 2008, **10**, 2461-2464 (*synth*)

6,7-Dihydro-4-(hydroxymethyl)-2-(*p*-hydroxyphenethyl)-7-methyl-5*H*-2-pyrindinium(1+) D-446
[15794-93-1]



$C_{18}H_{22}NO_2^{\oplus}$ 284.377
Minor alkaloid from the roots of *Valeriana officinalis* (valerian) (Valerianaceae). Mp 220-223° dec. (as chloride). $[\alpha]_D^{22}$ +19.3 (MeOH) (as trifluoroacetate).
Torssell, K. *et al., Acta Chem. Scand.*, 1967, **21**, 53 (*isol, ir, pmr, ms, struct*)

6,7-Dihydro-3-hydroxymethyl-8(5*H*)-indolizinone D-447
Polygonatine A
[400715-63-1]

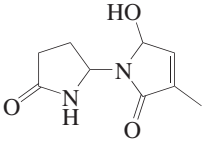


$C_9H_{11}NO_2$ 165.191
Alkaloid from the rhizomes of *Polygonatum sibiricum*. Needles (Me_2CO). Mp 101-103°. λ_{max} 206 (log ε 2.8); 298 (log ε 3.3) (no solvent reported).

*Et ether: 3-(Ethoxymethyl)-6,7-dihydro-8(5*H*)-indolizinone, 9CI.* ***Polygonatine B***
[215662-61-6]
$C_{11}H_{15}NO_2$ 193.245
Alkaloid from *Polygonatum kingianum* and *Polygonatum sibiricum*. Pale yellow syrup. λ_{max} 214 (log ε 3); 323 (log ε 3.2) (no solvent reported).

*Butyl ether: 3-(Butoxymethyl)-6,7-dihydro-8(5*H*)-indolizinone.* ***Kinganone***
[744198-33-2]
$C_{13}H_{19}NO_2$ 221.299
Alkaloid from the rhizomes of *Polygonatum kingianum*. Yellow oil.
Sun, L. *et al., CA*, 1999, **130**, 2168n (*Polygonatine B*)
Wang, Y.-F. *et al., Planta Med.*, 2003, **69**, 1066-1068 (*Kinganone*)
Sun, L.R. *et al., J. Asian Nat. Prod. Res.*, 2005, **7**, 127-130 (*Polygonatine A*)
Dinsmore, A. *et al., Org. Biomol. Chem.*, 2006, **4**, 1032-1037 (*synth*)

1,5-Dihydro-5-hydroxy-3-methyl-1-(5-oxo-2-pyrrolidinyl)-2*H*-pyrrol-2-one, 9CI D-448
5-Hydroxy-3-methyl-1-(2-oxo-5-pyrrolidinyl)-3-pyrrolin-2-one
[142750-27-4]



$C_9H_{12}N_2O_3$ 196.205
Alkaloid from bulbs of *Lilium candidum* (Liliaceae). Mp 176-178°.

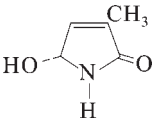
*Deoxy: 1,5-Dihydro-3-methyl-1-(5-oxo-2-pyrrolidinyl)-2*H*-pyrrol-2-one, 9CI. 3-Methyl-1-(2-oxo-5-pyrrolidinyl)-3-pyrrolin-2-one*
[114020-02-9]

$C_9H_{12}N_2O_2$ 180.206
Isol. from the petals of *Lilium candidum* (Liliaceae). Mp 167-169°.

Haladová, M. *et al., Coll. Czech. Chem. Comm.*, 1988, **53**, 157 (*deoxy*)
Eisenreichová, E. *et al., Phytochemistry*, 1992, **31**, 1084-1085 (*isol, pmr, ms, struct*)

1,5-Dihydro-5-hydroxy-3-methyl-2*H*-pyrrol-2-one, 9CI D-449

5-Hydroxy-3-methyl-3-pyrrolin-2-one. ***Jatropham***. *Jatrophine*†. *Lilidine*
[37772-60-4]



(R)−form

$C_5H_7NO_2$ 113.116
Log P -1.28 (uncertain value) (calc).

(*R*)-*form* [50656-76-3]
Alkaloid from epigeal parts of *Jatropha macrorhiza*, from bulbs of *Lilium hansonii* and the blooms of *Lilium martagon* (Euphorbiaceae, Liliaceae). Shows antineoplastic props. Marginally active against P-388 lymphocytic leukaemia. Cryst. ($MeCN$), needles ($CHCl_3$/MeOH). Sol. H_2O, butanol, Me_2CO, MeOH; fairly sol. EtOAc, $CHCl_3$; poorly sol. Et_2O, C_6H_6, hexane. Mp 131-132° (119-123°). $[\alpha]_{549}^{25}$ -62 (H_2O). $[\alpha]_D^{25}$ -76.2 (MeOH) (-26.3). λ_{max} 230 (ϵ 1150) (MeOH).

O-*β-D-Glucopyranoside:* [109028-41-3]
[109028-42-4 (tetra-Ac)]
$C_{11}H_{17}NO_7$ 275.258
Alkaloid from the bulbs of *Lilium hansonii*and *Lilium candidum* (Liliaceae). Needles ($CHCl_3$/MeOH). Sol. MeOH. Mp 183-185°. $[\alpha]_D$ -22 (c, 0.2 in MeOH).

O-*(6*-O-p-*Hydroxycinnamoyl-β-D-glucopyranoside): Jatropham 5-(6*-p-*coumaroylglucoside)*
[174205-03-9]
$C_{20}H_{23}NO_9$ 421.403
Alkaloid from fresh bulbs of *Lilium martagon*. Pale yellow amorph. solid. $[\alpha]_D^{29}$ -26.3 (c, 0.19 in MeOH).

O-*[β-D-Glucopyranosyl-(1→3)-β-D-glucopyranoside]:* [145042-03-1]
$C_{17}H_{27}NO_{12}$ 437.4
Alkaloid from bulbs of *Lilium hansonii* (Liliaceae). Amorph. powder. $[\alpha]_D^{29}$ -70 (c, 0.10 in MeOH).

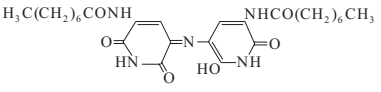
(±)-*form* [79703-33-6]
Cryst. (EtOAc/petrol). Mp 120-121° (115-118°) (108°).

Me ether: ***(±)-5-O-Methyljatropham***
[109050-99-9]
$C_6H_9NO_2$ 127.143
Alkaloid from the bulbs of *Lilium hansonii* (Liliaceae). Syrup. Possible artifact.

Wiedhopf, J.R.M. *et al., J. Pharm. Sci.*, 1973, **62**, 1206 (*isol, uv, ir, pmr*)
Farina, F. *et al., Synthesis*, 1973, 167 (*synth*)
Yakushijin, K. *et al., Heterocycles*, 1980, **14**, 1073; 1981, **16**, 1157 (*struct, synth, ir, uv, ms, pmr, cmr*)
Nagasaka, T. *et al., Heterocycles*, 1981, **16**, 1987 (*synth, ir, uv, pmr, cmr*)
Pinder, A.R. *et al., Alkaloids (London)*, 1982, **12**, 36 (*nomencl*)
Farina, F. *et al., Heterocycles*, 1984, **22**, 1733
Abdullaev, N.D. *et al., Khim. Prir. Soedin.*, 1987, **23**, 692; *Chem. Nat. Compd. (Engl. Transl.)*, 1987, **23**, 576 (*isol, pmr, cmr, struct*)
Shimomura, H. *et al., Phytochemistry*, 1987, **26**, 582 (*isol, uv, ir, pmr, cmr, cd, abs config, derivs*)
Ori, K. *et al., Phytochemistry*, 1992, **31**, 2769 (*glucosylglucoside*)
Dittami, J.P. *et al., Tet. Lett.*, 1995, **36**, 4201 (*synth*)
Mucaji, P. *et al., Coll. Czech. Chem. Comm.*, 1996, **61**, 1662-1664 (*5-glucoside*)
Satou, T. *et al., Phytochemistry*, 1996, **41**, 1225 (*coumaroylglucoside*)

N-[5-[(1,6-Dihydro-2-hydroxy-5-octanamido-6-oxo-3-pyridyl)imino]-1,2,5,6-tetrahydro-2,6-dioxo-3-pyridyl]octanamide, 8CI D-450

[16236-90-1]

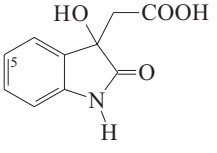


$C_{26}H_{37}N_5O_6$ 515.608
Pigment from *Pseudomonas lemmonieri*. Glistening bronze cryst. Fairly sol. AcOH, DMF; poorly sol. MeOH, acids, H_2O, hexane. Mp 288°. λ_{max} 627 nm (log ϵ 4.96) (DMSO). λ_{max} 595 ; 627 (DMSO) (Berdy). λ_{max} 635 (Py) (Berdy). λ_{max} 625 (DMF) (Berdy).

Knackmuss, H.J. *et al., Chem. Ber.*, 1967, **100**, 2537 (*synth, uv, ir, pmr*)

2,3-Dihydro-3-hydroxy-2-oxo-1*H*-indole-3-acetic acid, 9CI D-451

Dioxindole-3-acetic acid



$C_{10}H_9NO_4$ 207.185

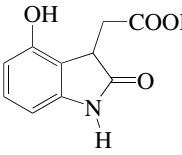
(ξ)-*form*

Me ester: ***Coixlactam B***
[205656-36-6]
$C_{11}H_{11}NO_4$ 221.212
Constit. of *Coix lachryma-jobi* var. *mayuen* (adlay bran), *Hibiscus moscheutos* and rice bran. Prob. intermed. in biosynth. of 2,6-Dihydroxy-4-quinolinecarboxylic acid, D-672 from 1*H*-Indole-3-acetic acid, I-81. Amorph. powder. λ_{max} 209 (ϵ 22500); 254 (ϵ 5080); 293 (ϵ 1380) (MeOH). λ_{max} 211 (ϵ 74700); 253 (ϵ 5110) (MeOH/NaOH aq.).

Kinashi, H. *et al., Agric. Biol. Chem.*, 1976, **40**, 2465-2470 (*isol, pmr, ms*)
Lee, M.-Y. *et al., Food Chem. Toxicol.*, 2008, **46**, 1933-1939 (*isol*)

2,3-Dihydro-4-hydroxy-2-oxo-1*H*-indole-3-acetic acid D-452

4-Hydroxyoxindole-3-acetic acid



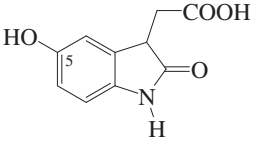
$C_{10}H_9NO_4$ 207.185

*Nitrile: 2,3-Dihydro-4-hydroxy-2-oxo-1*H*-indole-3-acetonitrile. 4-Hydroxyoxindole-3-acetonitrile*
$C_{10}H_8N_2O_2$ 188.185
Alkaloid from *Isatis indigotica*. Cryst. (EtOAc). Mp 150-152°.

Li, B. *et al., Yaoxue Xuebao*, 2000, **35**, 508-510

2,3-Dihydro-5-hydroxy-2-oxo-1*H*-indole-3-acetic acid, 9CI D-453

5-Hydroxyoxindole-3-acetic acid



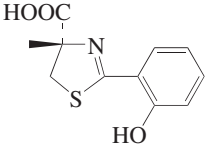
$C_{10}H_9NO_4$ 207.185

Me ester:
$C_{11}H_{11}NO_4$ 221.212
Isol. from rice bran. Amorph. powder.

Kinashi, H. *et al., Agric. Biol. Chem.*, 1976, **40**, 2465

4,5-Dihydro-2-(2-hydroxyphenyl)-4-methyl-4-thiazolecarboxylic acid, 9CI D-454

4-Methylaeruginoic acid



$C_{11}H_{11}NO_3S$ 237.279
Trivial name is misleading.

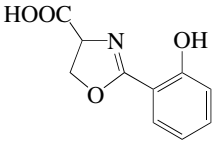
(*S*)-*form* [189820-27-7]
Prod. by *Streptomyces* sp. KCTC 9303. Cytotoxic agent. Yellow powder. Sol. MeOH, EtOAc, H_2O, Me_2CO; poorly sol. hexane, $CHCl_3$. λ_{max} 215 (ϵ 27900); 250 (ϵ 14250); 312 (ϵ 5378) (MeOH).

Ryoo, I.-J. *et al., J. Antibiot.*, 1997, **50**, 256-258 (*isol, uv, ir, cd, pmr, cmr*)
Bergeron, R.J. *et al., J. Med. Chem.*, 1999, **42**, 2432-2440 (*synth, abs config, cd*)
Martin, G.E. *et al., J. Nat. Prod.*, 2000, **63**, 543-585 (*N-15 nmr*)

4,5-Dihydro-2-(2-hydroxyphenyl)-4-oxazolecarboxylic acid, 9CI D-455

2-(2-Hydroxyphenyl)-2-oxazoline-4-carboxylic acid

[37592-62-4]



$C_{10}H_9NO_4$ 207.185

(-)-*form*

Me ester: [199173-66-5]

[37592-61-3 , 199540-89-1]

$C_{11}H_{11}NO_4$ 221.212

Prod. by *Actinomadura* sp. MJ502-77F8. $[\alpha]_D^{20}$ -50.1 (c, 1.5 in $CHCl_3$/MeOH). λ_{max} 238 ; 247 ; 253 (sh) ; 306 (MeOH).

(±)-*form*

Cryst. ($CHCl_3$). Mp 157-158°.

Me ester:

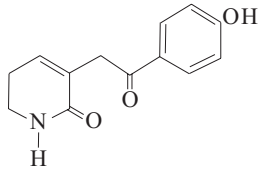
Needles (petrol). Mp 71-72°.

Black, D.St.C. *et al., Aust. J. Chem.*, 1972, **25**, 1797-1810 (*synth*)

Sasaki, T. *et al., J. Antibiot.*, 1997, **50**, 881-883 (*isol, uv, ir, pmr, cmr, activity*)

5,6-Dihydro-3-[2-(4-hydroxyphenyl)-2-oxoethyl]-2(1*H*)-pyridinone, 9CI D-456

[71886-38-9]



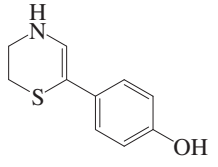
$C_{13}H_{13}NO_3$ 231.251

Isol. from an algae-infested Caribbean sponge *Halichondria melanodocia*. Cryst. ($CHCl_3$/MeOH). Mp 235-235.5°.

Gopichand, Y. *et al., J.O.C.*, 1979, **44**, 4995 (*isol, uv, ir, pmr, ms, struct*)

3,4-Dihydro-6-(4-hydroxyphenyl)-2*H*-1,4-thiazine D-457

*4-(3,4-Dihydro-2*H*-1,4-thiazin-6-yl)phenol, 9CI*



$C_{10}H_{11}NOS$ 193.269

S,S-*Dioxide: 4-(3,4-Dihydro-1,1-dioxido-2*H*-1,4-thiazin-6-yl)phenol, 9CI. 3,4-Dihydro-6-(4-hydroxyphenyl)-1,1-dioxo-2*H*-1,4-thiazine*

[154887-08-8]

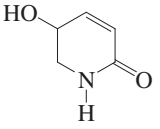
$C_{10}H_{11}NO_3S$ 225.268

Alkaloid from the sponge *Anchinoe tenacior*. λ_{max} 274 (ε 8100) (MeOH).

Casapullo, A. *et al., Tet. Lett.*, 1994, **35**, 2421-2422 (*isol, uv, pmr*)

5,6-Dihydro-5-hydroxy-2(1*H*)-pyridinone D-458

3,4-Dehydro-5-hydroxy-2-piperidone



$C_5H_7NO_2$ 113.116

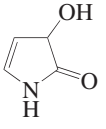
(+)-*form*

Alkaloid from *Piper sintenense*. Brownish oil. $[\alpha]_D$ +55.7 (c, 0.2 in MeOH). λ_{max} 209 (log ε 4.24); 247 (sh) (log ε 3.52) ($CHCl_3$).

Chen, J.-J. *et al., Helv. Chim. Acta*, 2003, **86**, 2058-2064 (*isol, pmr, cmr*)

1,3-Dihydro-3-hydroxy-2*H*-pyrrol-2-one, 9CI D-459

[79463-75-5]



$C_4H_5NO_2$ 99.089

Mp 98-100°.

O-*β*-D-*Glucopyranoside:* ***Pisatoside***

[18814-39-6]

$C_{10}H_{15}NO_7$ 261.231

Isol. from seedlings of *Pisum sativum* (peas). Mp 104-107°. $[\alpha]_D^{20}$ -49 (H_2O).

*Me ether: 1,3-Dihydro-3-methoxy-2*H*-pyrrol-2-one*

[40090-78-6]

$C_5H_7NO_2$ 113.116

Solid by subl. Mp 50-52°.

[18814-40-9]

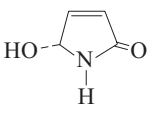
Kocourek, J. *et al., Arch. Biochem. Biophys.*, 1967, **121**, 531-532 (*isol, struct*)

Abramovitch, R.A. *et al., J.A.C.S.*, 1976, **98**, 1478-1486 (*Me ether*)

1,5-Dihydro-5-hydroxy-2*H*-pyrrol-2-one, 9CI D-460

Dihydromaleimide. *Isosuccinimide*

[34085-09-1]



$C_4H_5NO_2$ 99.089

No evidence for tautomerism from form shown.

(R)-form [87710-47-2]

Alkaloid from the shoots of dwarf pea (*Pisum sativum*) (Fabaceae). Prisms. Mp 103-105°. $[\alpha]_D^{23}$ -12.6.

O-*β*-D-*Glucopyranoside:* ***Dihydromaleimide β-D-glucoside.*** *Isosuccinimide β-D-glucoside*

[26696-59-3]

$C_{10}H_{15}NO_7$ 261.231

Alkaloid from *Pisum sativum* (peas) (Fabaceae). Prisms. Mp 185-188°. $[\alpha]_D^{22.5}$ -73.7. The identity (structural and stereochemical) of the various isolates of this glucoside is not certain. May be identical with Pisatoside, in D-459. No further information to 2007.

(±)-*form*

Cryst. (Me_2CO). Mp 102°.

*Me ether: 1,5-Dihydro-5-methoxy-2*H*-pyrrol-2-one, 9CI*

[34128-18-2]

$C_5H_7NO_2$ 113.116

Mp 38°. Bp_9 95°.

de Mayo, P. *et al., Chem. Ind. (London)*, 1962, 1576-1577 (*synth*)

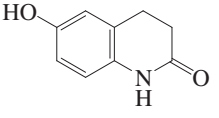
Liu, T.-Y. *et al., Plant Physiol.*, 1970, **45**, 424-428; *CA*, **73**, 41981w (*isol, glucoside*)

Farina, F. *et al., Synthesis*, 1973, 167-168 (*synth*)

Masuko, M. *et al., Phytochemistry*, 1983, **22**, 1278-1280 (*isol, uv, ir, pmr, cmr, cd, struct, glucoside, bibl*)

3,4-Dihydro-6-hydroxy-2(1*H*)-quinolinone, 9CI D-461

[54197-66-9]



$C_9H_9NO_2$ 163.176

Isol. from Ayurvedic processed commercial root tubers of *Aconitum ferox*. Solid.

Me ether: [54197-64-7]

$C_{10}H_{11}NO_2$ 177.202

Needles (hexane/EtOAc). Mp 144-146°.

Jones, G.H. *et al., J. Med. Chem.*, 1987, **30**, 295-303 (*Me ether, synth*)

Sakamoto, T. *et al., J. Het. Chem.*, 1988, **25**, 1279-1281 (*Me ether, synth, ir, pmr*)

Hanuman, J.B. *et al., Nat. Prod. Lett.*, 1993, **3**, 227-231 (*isol*)

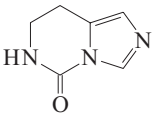
Iyobe, A. *et al., Chem. Pharm. Bull.*, 2001, **49**, 822-829 (*Me ether, synth, ir, pmr*)

Occhiato, E.G. *et al., J. Med. Chem.*, 2004, **47**, 3546-3560 (*synth, pmr*)

7,8-Dihydroimidazo[1,5-*c*]pyrimidin-5(6*H*)-one, 9CI D-462

5,6,7,8-Tetrahydro-5-oxoimidazo[1,5-c]pyrimidine. 5,6,7,8-Tetrahydroimidazo[1,5-c]pyrimidin-5-one

[14509-66-1]



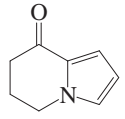
$C_6H_7N_3O$ 137.141
Metab. from the Caribbean sponge *Aplysina fistularis* f. *fulva*. Cryst. (EtOH). Mp 220-222°.

Methiodide: [51720-37-7]
Cryst. Mp 228-230° dec.

Mechoulam, R. *et al., Tetrahedron*, 1967, **23**, 239 (*synth, pmr, ir, use*)
Durant, C.G. *et al., J. Med. Chem.*, 1976, **19**, 923 (*synth*)
Jairam, R. *et al., J.O.C.*, 1992, **57**, 4136 (*synth*)
Ciminiello, P. *et al., J. Nat. Prod.*, 1994, **57**, 705 (*isol, pmr, cmr*)

6,7-Dihydro-8(5*H*)-indolizinone, 9CI D-463

[54906-44-4]

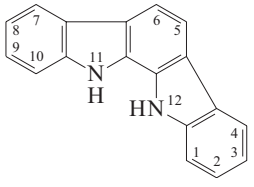


C_8H_9NO 135.165
Constit. of Virginia tobacco (*Nicotiana tabacum*). Mp 34°.

Wahlberg, I. *et al., Phytochemistry*, 1977, **16**, 1233-1235 (*isol*)
Bond, T.J. *et al., J.C.S. Perkin 1*, 1993, 2241-2242 (*synth*)
Barton, D.H.R. *et al., Tet. Lett.*, 1994, **35**, 9157-9158 (*synth*)
Dinsmore, A. *et al., Org. Biomol. Chem.*, 2006, **4**, 1032-1037 (*synth*)

11,12-Dihydroindolo[2,3-*a*]carbazole, 9CI D-464

*Indolo[2,3-*a*]carbazole*
[60511-85-5]



$C_{18}H_{12}N_2$ 256.306
Residue present in a number of microbial and marine alkaloids. Cryst. (EtOH). Mp 370°.

N-*Me:*
$C_{19}H_{14}N_2$ 270.333
Prisms (EtOH). Mp 244-245°.

N,N′-*Di-Me:*
$C_{20}H_{16}N_2$ 284.36
Needles (Me_2CO aq.). Mp 209°.

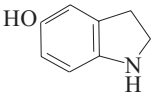
N-*(6-Deoxy-β-D-gulopyranosyl):* ***Tjipanazole G1***
$C_{24}H_{22}N_2O_4$ 402.449
Minor alkaloid from the blue-green alga *Tolypothrix tjipanasensis*. Protein kinase C activator. Exhibits antifungal activity. $[\alpha]_D$ +9.1 (c, 1.0 in $CHCl_3$). λ_{max} 256 (ε 35400); 270 (ε 32800); 287 (ε 18800); 324 (ε 20000); 343 (ε 5800); 359 (ε 4080) (MeOH) (Derep).

N-*α-L-Rhamnopyranosyl:* ***Tjipanazole G2***
$C_{24}H_{22}N_2O_4$ 402.449
Minor constit. of *Tolypothrix tjipanasensis*. λ_{max} 256 (ε 35400); 270 (ε 32800); 287 (ε 18800); 324 (ε 20000); 343 (ε 5800); 359 (ε 4080) (MeOH) (Derep).

Mann, F.G. *et al., J.C.S.*, 1958, 1525 (*synth, derivs*)
Hünig, S. *et al., Annalen*, 1976, 1090 (*uv*)
Bonjouklian, R. *et al., Tetrahedron*, 1991, **47**, 7739 (*Tjipanazoles*)

2,3-Dihydro-1*H*-indol-5-ol, 9CI D-465

*2,3-Dihydro-5-hydroxy-1*H*-indole. 5-Hydroxyindoline*
[172078-33-0]



C_8H_9NO 135.165
Alkaloid from *Phoebe chekiangensis* (Lauraceae).

Hydrochloride: [92818-38-7]
Off-white solid.

N-*Ac:* [4770-32-5]
$C_{10}H_{11}NO_2$ 177.202
Needles (EtOAc). Mp 249-250°.

*Me ether: 2,3-Dihydro-5-methoxy-1*H*-indole, 9CI. 5-Methoxyindoline*
[21857-45-4]
$C_9H_{11}NO$ 149.192
Oil.

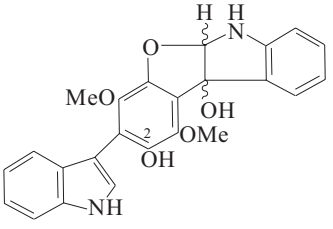
Benzyl ether: [92818-36-5]
$C_{15}H_{15}NO$ 225.29
Oil. Waxy solid at 0°.

Benzyl ether, hydrochloride: [92818-37-6]
Mp 188-190°.

Hunt, R.R. *et al., J.C.S.(C)*, 1966, 344-345 (*N-Ac*)
Young, T.E. *et al., J.O.C.*, 1984, **49**, 4833-4838 (*synth, pmr, cmr, ir*)
Hegde, V.R. *et al., Bioorg. Med. Chem. Lett.*, 1997, **7**, 1207-1212 (*isol, pmr, cmr*)
Gangjee, A. *et al., J. Med. Chem.*, 1997, **40**, 479-485 (*Me ether*)

5*a*,6-Dihydro-3-(1*H*-indol-3-yl)-1,4-dimethoxy-10*bH*-benzofuro[2,3-*b*]indole-2,10*b*-diol, 9CI D-466

[78279-83-1]

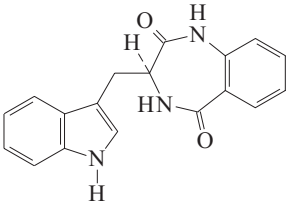


$C_{24}H_{20}N_2O_5$ 416.432
Metab. of *Aspergillus terreus* var. *africanus*. Brownish powder + ½ C_6H_6 (C_6H_6). Mp 131-140°. $[\alpha]_D^{21}$ +51.2 (c, 0.13 in dioxan).

O^2-*Me:* ***5a,6-Dihydro-3-(1H-indol-3-yl)-1,2,4-trimethoxy-10bH-benzofuro[2,3-b]indol-10b-ol, 9CI***
[78279-82-0]
$C_{25}H_{22}N_2O_5$ 430.459
Metab. of *Aspergillus terreus* var. *africanus*. Sl. brownish powder (CCl_4). Mp 134-138°. $[\alpha]_D^{18}$ +34.3 (c, 0.11 in EtOH).

Arai, K. *et al., Chem. Pharm. Bull.*, 1981, **29**, 1005 (*pmr, struct*)

3,4-Dihydro-3-(1*H*-indol-3-yl)methyl-1*H*-1,4-benzodiazepine-2,5-dione, 9CI D-467



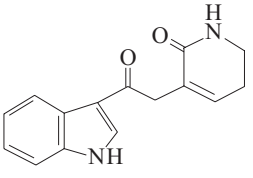
$C_{18}H_{15}N_3O_2$ 305.335

(S)-form [101409-14-7]
Isol. from *Aspergillus flavipes*. Solid. Mp 236-240°. $[\alpha]_D$ +138.8 (c, 0.5 in MeOH).

Barrow, C.J. *et al., J. Nat. Prod.*, 1994, **57**, 471 (*isol, uv, ir, pmr, cmr, cd, struct*)

5,6-Dihydro-3-[2-(1*H*-indol-3-yl)-2-oxoethyl]-2(1*H*)-pyridinone, 9CI D-468

[71886-40-3]

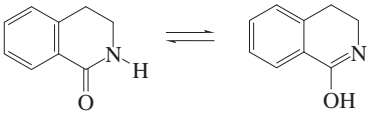


$C_{15}H_{14}N_2O_2$ 254.288
Isol. from an algae-infested Caribbean sponge *Halichondria melanodocia*. Cryst. ($MeOH/CHCl_3$). Mp 194-194.5°.

Gopichand, Y. *et al., J.O.C.*, 1979, **44**, 4995-4997 (*isol, uv, ir, pmr, ms*)
Johnson, A.-L. *et al., Tetrahedron*, 2006, **62**, 10815-10820 (*synth*)

3,4-Dihydro-1(2*H*)-isoquinolinone, 9CI D-469

3,4-Dihydroisocarbostyril. 1-Oxo-1,2,3,4-tetrahydroisoquinoline. 3,4-Dihydro-1-isoquinolinol. 3,4-Dihydro-1-hydroxyisoquinoline
[1196-38-9]



C_9H_9NO 147.176

NH-form predominates. Cryst. (MeOH aq.). Mp 58°. $Bp_{0.1}$ 125-127°.

NH-form

N-*Ac:* [74315-06-3]
$C_{11}H_{11}NO_2$ 189.213
Cryst. (EtOAc/hexane). Mp 97-98°.

N-*Benzoyl:* [75435-41-5]
$C_{16}H_{13}NO_2$ 251.284
Bp_2 210°.

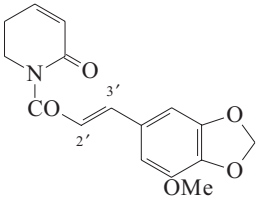
N-*Me:* [6772-65-2]
$C_{10}H_{11}NO$ 161.203
Liq. Bp_6 157° $Bp_{0.4}$ 118°.

N-*Hydroxy: 3,4-Dihydro-2-hydroxy-1(2*H*)-isoquinolinone, 9CI*
[116526-30-8]
$C_9H_9NO_2$ 163.176
Prod. by *Streptomyces griseus* 2002-104. Forms Fe chelates. Siderophore. Allergy inhibitor. Eubacterial growth promoter. λ_{max} 480 (H_2O+$FeCl_3$) (Berdy).

Schneider, W. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1958, **291**, 560-566 (*synth, N-Me*)
Davies, R.V. *et al., J.C.S. Perkin 1*, 1978, 180-184 (*synth, ir*)
Misra, R.N. *et al., Bioorg. Med. Chem. Lett.*, 1991, **1**, 295-298 (*synth, N-hydroxy*)
Graefe, U. *et al., J. Basic Microbiol.*, 1994, **35**, 351-355 (*isol, N-hydroxy*)
Norman, M.H. *et al., J. Med. Chem.*, 1994, **37**, 2552-2563 (*synth, pmr*)
Kawase, M. *et al., Chem. Pharm. Bull.*, 1997, **45**, 1248-1253 (*N-acyl derivs, ir, pmr, cmr*)
Koltunov, K. *et al., J.O.C.*, 2002, **67**, 8943-8951 (*synth, pmr, cmr*)
Cai, C. *et al., Synth. Commun.*, 2005, **35**, 349-356 (*synth, pmr*)

5,6-Dihydro-*N*-[3-(7-methoxy-1,3-benzodioxol-5-yl)-2-propenoyl]-2(1*H*)-pyridinone D-470

N-*(3-Methoxy-4,5-methylenedioxycinnamoyl)-*Δ^3*-pyridin-2-one. 5,6-Dihydro-1-(3-methoxy-4,5-methylenedioxycinnamoyl)-2(1*H*)-pyridinone*
[130263-11-5]



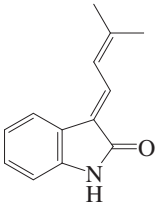
$C_{16}H_{15}NO_5$ 301.298
Alkaloid from the stems of *Piper arboreascens* (Piperaceae). Pale yellow needles (MeOH). Mp 157-158°. λ_{max} 225 (ϵ 57543); 341 (ϵ 52480) (MeOH) (Berdy).

2′,3′-Dihydro: ***5,6-Dihydro-1-[3-(7-methoxy-1,3-benzodioxol-5-yl)-1-oxopropyl]-2(1H)-pyridinone, 9CI***
[133034-10-3]
$C_{16}H_{17}NO_5$ 303.314
Alkaloid from the leaves of *Piper arborescens*. Cytotoxic. Needles. Mp 80-81°. λ_{max} 220 (ϵ 3240); 242 (ϵ 2100); 285 (ϵ 350) (MeOH) (Berdy).

Duh, C.-Y. *et al., J. Nat. Prod.*, 1990, **53**, 1575 (*isol, pmr, cmr, struct, deriv*)
Duh, C.-Y. *et al., Phytochemistry*, 1990, **29**, 2689 (*isol, uv, ir, pmr, cmr, ms, struct*)

1,3-Dihydro-3-(3-methyl-2-butenylidene)-2*H*-indol-2-one, 9CI D-471

3-(3-Methyl-2-butenylidene)-2-indolinone



(*E*)-*form*

$C_{13}H_{13}NO$ 199.252

(E)-form [67987-50-2]
Pigment from the rhizomes of *Cimicifuga dahurica* (Ranunculaceae). Yellow needles (hexane/EtOAc). Mp 200-203°.

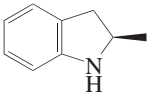
(Z)-form [67987-49-9]
Pigment from the rhizomes of *Cimicifuga dahurica* (Ranunculaceae). Yellow plates (hexane/EtOAc). Mp 213-214°.

6-Methoxy: 6-Methoxy-3-(3-methyl-2-butenylidene)-2-indolinone. ***Soulieotine***
$C_{14}H_{15}NO_2$ 229.278
Alkaloid from the rhizomes of *Souliea vaginata*. Red needles (MeOH). Mp 201-203°. $[\alpha]_D^{20}$ +1.4 (c, 0.07 in $CHCl_3$/MeOH). Text. in ref. incorrectly states *E*-config., but the struct. was drawn correctly. λ_{max} 210 (log ϵ 4.4); 262 (log ϵ 3.94); 282 (log ϵ 3.09) (MeOH).

Baba, K. *et al., Chem. Pharm. Bull.*, 1981, **29**, 2182 (*isol, uv, ir, pmr, cryst struct, synth*)
Zhou, L. *et al., Heterocycles*, 2005, **65**, 1409-1414 (*Soulieotine*)

2,3-Dihydro-2-methylindole, 9CI D-472

2-Methylindoline
[6872-06-6]



(*R*)-*form*

$C_9H_{11}N$ 133.193

▶NM1926350

(R)-form [22160-13-0]
Oil. $[\alpha]_D^{20}$ +11 (c, 2 in C_6H_6) (97.2% ee).

N-*Ac:*
$C_{11}H_{13}NO$ 175.23
Cryst. (petrol). Mp 89°. $[\alpha]_D$ +59.6 (EtOH).

N-*Benzoyl:*
$C_{16}H_{15}NO$ 237.301
Cryst. (EtOH aq.). Mp 119°. $[\alpha]_D$ +37 (EtOH).

(S)-form [22160-09-4]
Liq. with blue fluor. Bp 228-229°. $[\alpha]_D^{20}$ -16.3 (c, 0.5 in $CHCl_3$) (99% ee). $[\alpha]_D^{23}$ -11 (c, 0.11 in C_6H_6) (94% ee).

Hydrochloride:
Cryst. (C_6H_6). Mp 58°. $[\alpha]_D$ +1.7 (H_2O).

N-*Ac:*
Cryst. (petrol). Mp 89°. $[\alpha]_D$ -61.9 (EtOH).

N-*Benzoyl:*
Cryst. (EtOH). Mp 119°. $[\alpha]_D$ -37.1 (EtOH).

(±)-form [138380-84-4]
Constit. of the essential oil of *Nepeta nuda*. Bp 228-229° Bp_{20} 116-116.5°.

Picrate:
Yellow cryst. (C_6H_6). Mp 151°.

N-*Formyl: 2,3-Dihydro-2-methyl-1*H*-indole-1-carboxaldehyde, 9CI*. N-*Formyl-2-methylindoline*
[63378-52-9]
$C_{10}H_{11}NO$ 161.203
Needles (petrol). Mp 62-63°.

N-*Ac:*
Cryst. (petrol). Mp 55-56°.

N-*Benzoyl:*
Cryst. (EtOH). Mp 91.5°.

N-*Benzenesulfonyl:*
Cryst. (EtOH). Mp 90°.

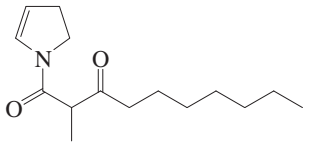
N-*Nitroso:*
$C_9H_{10}N_2O$ 162.191
Yellow cryst. (petrol). Mp 54-55°.

N-*Amino: 2,3-Dihydro-2-methyl-1*H*-indol-1-amine. 1-Amino-2,3-dihydro-2-methyl-1*H*-indole. 1-Amino-2-methylindoline*
[31529-46-1]
$C_9H_{12}N_2$ 148.207
Intermed. for synth. of Indapamide. Cryst. Mp 45°. Bp 255°. Unstable in air.

Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **2**, 655C (*nmr*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 1178D (*ir*)
Aldrich Library of Infrared Spectra, 3rd edn., 1981, 791G (*ir*)
Kost, A.N. *et al., Zh. Obshch. Khim.*, 1959, **29**, 3820-3824; *J. Gen. Chem. USSR (Engl. Transl.)*, 1959, **29**, 3782-3786 (*N-amine*)
Karger, B.L. *et al., Anal. Chem.*, 1967, **39**, 228-230 (*glc, resoln*)
von Koch-Pomeranz, U. *et al., Helv. Chim. Acta*, 1977, **60**, 768-797 (*synth*)
Kikugawa, Y. *et al., Chem. Pharm. Bull.*, 1978, **26**, 108-110 (*synth*)
Fanso-Free, S.N.Y. *et al., J.A.C.S.*, 1979, **101**, 1549-1553 (*N-15 nmr*)
Rogovik, V.M. *et al., Zh. Prikl. Khim. (Leningrad)*, 1981, **54**, 1356-1359 (*synth*)
Kikugawa, Y. *et al., Synthesis*, 1982, 785-787 (*synth, N-formyl, ir, pmr*)
De Pooter, H.L. *et al., Phytochemistry*, 1987, **26**, 2311-2314 (*occur*)
Tripathi, S.R. *et al., Indian J. Phys., B*, 1989, **63**, 240-244; 346-363 (*ir, Raman, uv*)
Peyrot, L. *et al., J. Het. Chem.*, 2001, **38**, 885-893 (*N-amino, ir, uv, pmr, cmr, ms*)
Krasnov, V.P. *et al., Tetrahedron: Asymmetry*, 2003, **14**, 1985-1988 (*resoln, R-form*)
Arp, F.O. *et al., J.A.C.S.*, 2006, **128**, 13368-13368; s1-s31 (*S-form, synth, N-Ac*)
Gotor-Fernández, V. *et al., Tetrahedron: Asymmetry*, 2006, **17**, 2558-2564 (*S-form, synth*)

2,3-Dihydro-1-(2-methyl-3-oxodecanoyl)pyrrole D-473

*1-(2,3-Dihydro-1*H*-pyrrol-1-yl)-2-methyl-1,3-decanedione.* N-*(2-Methyl-3-oxodecanoyl)-2-pyrroline*



$C_{15}H_{25}NO_2$ 251.368

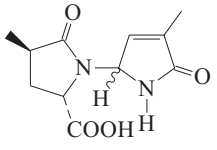
(+)-*form*

Prod. by *Penicillium brevicompactum*. Exhibits anti-juvenile hormone activity. $[\alpha]_D^{20}$ +27 (c, 0.07 in $CHCl_3$).

Moya, P. *et al., J.O.C.*, 1998, **63**, 8530-8535 (*isol, synth*)

1-(2,5-Dihydro-4-methyl-5-oxo-1*H*-pyrrol-2-yl)-4-methyl-5-oxoproline, 9CI D-474

1-(3-Methyl-2-oxo-5-pyrrolinyl)-4-methyl-5-oxo-2-pyrrolidinecarboxylic acid
[145042-04-2]



$C_{11}H_{14}N_2O_4$ 238.243

Alkaloid from bulbs of *Lilium hansonii* (Liliaceae). Syrup. $[\alpha]_D^{27}$ +40.9 (c, 0.43 in MeOH).

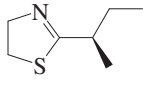
Me ester:

Syrup. $[\alpha]_D^{26}$ +40 (c, 0.30 in MeOH).

Ori, K. *et al., Phytochemistry*, 1992, **31**, 2767-2775 (*isol, ir, pmr, cmr, ms, struct*)

4,5-Dihydro-2-(1-methylpropyl)thiazole D-475

*2-*sec*-Butyl-2-thiazoline*
[56367-27-2]



(*R*)-*form*

$C_7H_{13}NS$ 143.252

(*R*)-*form*

Oil. Bp_{11} 69-71°. $[\alpha]_D^{22}$ -21.3 (c, 1 in $CHCl_3$) (91.6% ee).

(*S*)-*form*

Oil. Bp_8 61-63°. $[\alpha]_D^{22}$ +21.6 (c, 1 in $CHCl_3$) (92.6% ee).

(ξ)-*form*

Pheromone of the common mouse *Mus musculus*. Preorbital gland secretion of grey duiker *Sylvicapra grimmia*. Androgen-dependent substance eliciting male aggressive behaviour.

Fomum, Z.T. *et al., Tet. Lett.*, 1975, 1101 (*synth*)

Novotny, M. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 1985, **82**, 2059

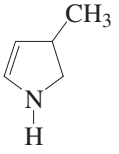
Harvey, S. *et al., J. Chem. Ecol.*, 1989, **15**, 2061

Burger, B.V. *et al., J. Chem. Ecol.*, 1990, **16**, 397

Tashiro, T. *et al., Eur. J. Org. Chem.*, 1999, 2167-2173 (*synth, ir, pmr, cmr*)

2,3-Dihydro-3-methyl-1*H*-pyrrole D-476

β-Methylpyrroline



C_5H_9N 83.133

(+)-*form*

Alkaloid from black pepper *Piper nigrum* (Piperaceae).

Hydrochloride:

V. hygroscopic, long needles. $[\alpha]_D$ +2.77 (c, 11.22 in H_2O).

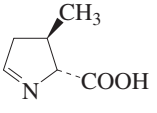
Picrate:

Yellow powder or prisms. Mp 165°.

Pictet, A. *et al., Helv. Chim. Acta*, 1927, **10**, 593-595 (*isol, struct*)

3,4-Dihydro-3-methyl-2*H*-pyrrole-2-carboxylic acid D-477

4-Methyl-1-pyrroline-5-carboxylic acid



$C_6H_9NO_2$ 127.143

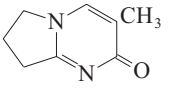
(2*R*,3*R*)-*form*

Residue present in Pyrrolysine. Oil (as Me ester). $[\alpha]_D^{20}$ +7.9 (c, 3.2 in $CHCl_3$) (Me ester).

Hao, B. *et al., Chem. Biol.*, 2004, **11**, 1317-1324 (*synth*)

7,8-Dihydro-3-methylpyrrolo[1,2-*a*]pyrimidin-2(6*H*)-one, 9CI D-478

[76884-47-4]



$C_8H_{10}N_2O$ 150.18

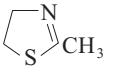
Alkaloid from the roots of *Glycyrrhiza uralensis* (Chinese licorice) (Fabaceae).

Ger. Pat., 1980, 3 017 625; *CA*, **94**, 121592 (*synth*)

Han, Y.N. *et al., Arch. Pharmacal Res.*, 1990, **13**, 103; *CA*, **113**, 227985 (*isol*)

4,5-Dihydro-2-methylthiazole, 9CI D-479

2-Methyl-2-thiazoline, 8CI
[2346-00-1]



C_4H_7NS 101.172

Sex pheromone of cockroach *Nauphoeta cinerea*. Also from various cooked foods. Reagent used in synth. of aldehydes. Pale yellow liq. Mp -101°. Bp 144.5-145°.

▶ XJ4261470

Picrate: [5243-50-5]

Yellow needles (EtOH). Mp 171-172°.

N-*Me: 4,5-Dihydro-2,3-dimethylthiazolium(1+)*

$C_5H_{10}NS^{\oplus}$ 116.207

Needles (EtOH) (as iodide). Mp 235-237° (iodide).

N-*Et: 3-Ethyl-4,5-dihydro-2-methylthiazolium(1+)*

[54654-71-6]

$C_6H_{12}NS^{\oplus}$ 130.234

Needles (MeOH/Me_2CO) (as iodide). Mp 191-193° (iodide). CAS no. refers to iodide.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 824A (*ir*)

Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 1333A (*nmr*)

Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 793C (*ir*)

Wenker, H. *et al., J.A.C.S.*, 1935, **57**, 1079 (*synth*)

Brooker, L.G.S. *et al., J.A.C.S.*, 1936, **58**, 662 (*N-Et, synth*)

Kuhn, R. *et al., Annalen*, 1954, **590**, 55 (*synth*)

Meyers, A.I. *et al., J.O.C.*, 1975, **40**, 2021 (*use*)

Suzuki, N. *et al., Bull. Chem. Soc. Jpn.*, 1976, **49**, 3155 (*synth, ir, pmr*)

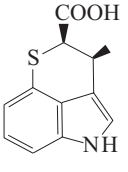
Mille, G. *et al., J. Mol. Struct.*, 1978, **50**, 247 (*ir, Raman*)

Chen, B.C. *et al., Helv. Chim. Acta*, 1983, **66**, 1537 (*N-15 nmr*)

Laduranty, J. *et al., Bull. Soc. Chim. Fr.*, 1989, 850 (*synth*)

Sirugue, D. *et al., J. Chem. Ecol.*, 1992, **18**, 2261 (*occur*)

3,5-Dihydro-3-methyl-2*H*-thiopyrano[4,3,2-*cd*]indole-2-carboxylic acid, 9CI D-480



(2*R*,3*S*)–*form*

$C_{12}H_{11}NO_2S$ 233.29

(2*R*,3*S*)-*form*

Chuangxinmycin. *Chuanghsinmycin*
[63339-68-4]

Isol. from *Streptomyces nigrifaciens* MK219. Active against gram-positive and -negative bacteria. Sol. MeOH, DMF, bases, Py, THF, dioxan, Et_2O, EtOH, Me_2CO; fairly sol. $CHCl_3$; poorly sol. hexane, H_2O, CCl_4, C_6H_6. Mp 186-

189°. $[\alpha]_D^{20}$ -29 (EtOH aq.). λ_{max} 228 (ε 36800); 285 (sh) (ε 12000); 295 (ε 12600); 306 (ε 12500) (MeOH).

► LD_{50} (mus, orl) 1770 mg/kg; LD_{50} (mus, ivn) 600 mg/kg; LD_{50} (mus, ipr) 875 mg/kg. XN3876900

Me ester: [83602-19-1]
Cryst. (CH_2Cl_2/petrol). Mp 145-146°.

(2*S*,3*R*)-*form* [114819-47-5]
Mp 181-184°.

(2*R*,3*R*)-*form* [115304-71-7]
Mp 120-125°. $[\alpha]_D^{20}$ -34 (EtOH aq.).

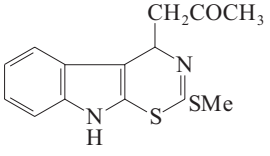
(2*S*,3*S*)-*form* [83602-20-4]
Mp 144-147°. $[\alpha]_D^{20}$ +54.5 (EtOH aq.).

[113531-66-1 , 119242-31-8 , 118918-28-8 , 65058-55-1]

Hsu, H.-C. *et al., CA*, 1980, **93**, 2678 (*cryst struct*)
Kozikowski, A.P. *et al., J.A.C.S.*, 1982, **104**, 7622-7626 (*synth, pmr, config*)
Japan. Pat., 1983, 83 76 098; *CA*, **99**, 156830
Murase, M. *et al., Chem. Pharm. Bull.*, 1987, **35**, 2656-2660 (*synth, bibl*)
Guo, X. *et al., Yaoxue Xuebao*, 1987, **22**, 671 (*synth, resoln*)
Murase, M. *et al., Heterocycles*, 1990, **30**, 905 (*synth*)
Dickens, M.J. *et al., J.C.S. Perkin 1*, 1992, 323 (*synth, bibl, cryst struct*)
Ishibashi, H. *et al., Chem. Pharm. Bull.*, 1994, **42**, 271 (*synth*)
Kato, K. *et al., Tet. Lett.*, 1997, **38**, 1805 (*synth*)
Kato, K. *et al., Tetrahedron*, 2001, **57**, 10055-10062 (*synth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, CML820 (*323*)

1-[4,9-Dihydro-2-(methylthio)-1,3-thiazino[6,5-*b*]indol-4-yl]-2-propanone, 9CI D-481

[113866-43-6]

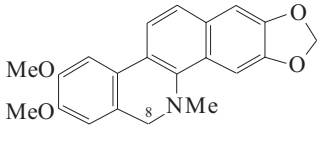


$C_{14}H_{14}N_2OS_2$ 290.409
Isol. from Chinese cabbage (*Brassica campestris* ssp. *pekinensis,* Brassicaceae) inoculated with the bacterium *Pseudomonas cichorii*. Amorph. solid. λ_{max} 202 (ε 18900); 227 (ε 28000); 282 (ε 6490); 294 (ε 6690) (MeOH) (Berdy).

Takasugi, M. *et al., Bull. Chem. Soc. Jpn.*, 1988, **61**, 285 (*isol, uv, ir, pmr, cmr, ms, struct*)

Dihydronitidine D-482

12,13-Dihydro-2,3-dimethoxy-12-methyl[1,3]benzodioxolo[5,6-c]phenanthridine, 9CI
[13063-06-4]



$C_{21}H_{19}NO_4$ 349.385
Several numbering schemes in use. Alkaloid from the roots of *Toddalia asiatica* and *Zanthoxylum nitidum*, and from the root bark of *Zanthoxylum myriacanthum* (Rutaceae). Prisms (EtOH). Mp 221-223° (208-211°, 216-217°). λ_{max} 228 (ε 42660); 278 (ε 36300); 310 (ε 20900) (MeOH) (Derep).

Hydrochloride:
Cryst. + $4H_2O$. Mp 215-216° (dec., vac.).

8-Oxo: 2,3-Dimethoxy-12-methyl[1,3]-benzodioxolo[5,6-c]phenanthridin-13(12H)-one. 8,9-Dimethoxy-2,3-methylenedioxybenzo[c]phenanthridin-6(5H)-one. ***Oxynitidine***
[548-31-2]
$C_{21}H_{17}NO_5$ 363.369
Alkaloid from the roots of *Zanthoxylum nitidum*, the wood of *Zanthoxylum inerme* (= *Fagara boninensis*), and the bark of *Zanthoxylum cuspidatum* and *Zanthoxylum ailanthoides* (Rutaceae). Antineoplastic agent. Needles (EtOH). Mp 284-285°. Log P 2.8 (calc). λ_{max} 251 (ε 38900); 277 (ε 52500); 288 (ε 64600); 320 (ε 15800); 333 (ε 15100); 367 (ε 4270) (EtOH) (Derep).

8-Oxo, O^{10}-de-Me: ***Oxyterihanine***
[95066-54-9]
$C_{20}H_{15}NO_5$ 349.342
Minor alkaloid from *Zanthoxylum nitidum* (*Fagara nitida*) (Rutaceae). Mp 300°.

8-Oxo, O^{11}-de-Me: Oxyisoterihanine
[111154-44-0]
Synthetic. Needles ($CHCl_3$/MeOH). Mp 300°.

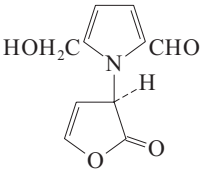
8ξ-Methoxy: ***7,8-Dihydro-8-methoxynitidine***
[41349-33-1]
$C_{22}H_{21}NO_5$ 379.412
Alkaloid from *Fagara macrophylla* and *Zanthoxylum nitidum*. Shows antineoplastic activity. Yellow prisms (MeOH). Mp 234-236°. $[\alpha]_D^{20}$ -8 (c, 0.01 in $CHCl_3$). Log P 4.32 (uncertain value) (calc). λ_{max} 235 (ε 19500); 270 (ε 34700); 292 (ε 32400); 328 (ε 25700) (MeOH) (Derep).

11-Demethoxy, 12-methoxy, 8-oxo: ***Turraeanthine B***
$C_{21}H_{17}NO_5$ 363.369
Alkaloid from the stem bark of *Turraeanthus africanus*. Brown cryst. (MeOH). Mp 270-272°.

Arthur, H.R. *et al., J.C.S.*, 1959, 1840; 4010 (*Dihydronitidine, Oxynitidine, isol, struct, synth, uv*)
Gopinath, K.W. *et al., J.C.S.*, 1959, 4012 (*synth, uv*)
Gopinath, K.W. *et al., Indian J. Chem.*, 1963, **1**, 99 (*Oxynitidine, synth*)
Hruban, L. *et al., Coll. Czech. Chem. Comm.*, 1970, **35**, 3420 (*uv*)
Torto, F.G. *et al., Phytochemistry*, 1970, **9**, 911 (*pmr, ms*)
Ishii, H. *et al., Tet. Lett.*, 1971, 2429 (*pmr*)
Ishii, H. *et al., Yakugaku Zasshi*, 1972, **92**, 118; 1976, **96**, 1458; 1983, **103**, 279; 1984, **104**, 1030 (*Oxynitidine, Oxyterihanine*)
Kametani, T. *et al., J. Het. Chem.*, 1973, **10**, 31 (*Oxynitidine, synth*)
Ninomiya, I. *et al., J.C.S. Perkin 1*, 1975, 762 (*synth*)
Waterman, P.G. *et al., Phytochemistry*, 1975, **14**, 2530 (*isol*)
Begley, W.J. *et al., J.C.S. Perkin 1*, 1977, 2324 (*Dihydronitidine, Oxynitidine, synth, pmr, ms*)
Sharma, P.N. *et al., Indian J. Chem., Sect. B*, 1979, **17**, 299 (*isol, uv, pmr*)
Huang, Z.-X. *et al., Huaxue Xuebao*, 1980, **38**, 535; *CA*, **94**, 99773e (*isol*)
Ishii, H. *et al., Chem. Pharm. Bull.*, 1987, **35**, 2717 (*Oxyterihanine, synth, ir, pmr*)
Hanaoka, M. *et al., Heterocycles*, 1987, **26**, 1499 (*Oxyterihanine, ir, pmr, synth*)
Wall, M.E. *et al., J. Nat. Prod.*, 1987, **50**, 1095 (*7,8-Dihydro-8-methoxynitidine*)
Clark, R.D. *et al., J.O.C.*, 1988, **53**, 2378; 5192 (*Oxynitidine, synth, pmr*)
De Moura, N.F. *et al., Phytochemistry*, 1997, **46**, 1443-1446 (*isol, pmr, cmr*)
Le, T.N. *et al., Chem. Pharm. Bull.*, 2006, **54**, 476-480 (*Oxynitidine, synth*)
Vardamides, J.C. *et al., Chem. Pharm. Bull.*, 2006, **54**, 1034-1036 (*Turraeanthine B*)
Le, T.N. *et al., Arch. Pharmacal Res.*, 2008, **31**, 6-9 (*Oxyterihanine, synth*)
Yang, G. *et al., Chem. Biodiversity*, 2008, **5**, 1718-1722 (*7,8-Dihydro-8-methoxynitidine*)

1-(2,3-Dihydro-2-oxo-3-furanyl)-5-(hydroxymethyl)-1*H*-pyrrole-2-carboxaldehyde, 9CI D-483

[112663-86-2]

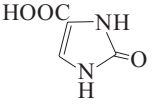


$C_{10}H_9NO_4$ 207.185
Constit. of the roots of *Pisum satum* seedlings. Cell cycle regulator.

Lynn, D.G. *et al., J.A.C.S.*, 1987, **109**, 5858 (*isol, props*)
Evans, L.S. *et al., Phytochemistry*, 1987, **26**, 2891 (*isol, props*)

2,3-Dihydro-2-oxo-1*H*-imidazole-4-carboxylic acid, 9CI D-484

2-Oxo-4-imidazolinecarboxylic acid. Glyoxalone-4-carboxylic acid
[39828-47-2]



$C_4H_4N_2O_3$ 128.087
Prod. from the venom of *Crotalus adamanteus*. Mp 251°. pK_a 3.37.

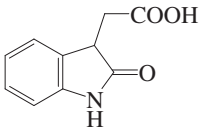
Et ester: [71123-17-6]
$C_6H_8N_2O_3$ 156.141
Plates (EtOH aq.). Mp 255°.

Otter, B.A. *et al., J.O.C.*, 1968, **33**, 3593 (*synth, spectra*)
Cooper, A.J.L. *et al., J. Biol. Chem.*, 1973, **248**, 8499 (*biosynth*)
Stanovnik, B. *et al., Heterocycles*, 1979, **12**, 761 (*synth*)

2,3-Dihydro-2-oxo-1*H*-indole-3-acetic acid, 9CI D-485

*2-Hydroxy-1*H*-indole-3-acetic acid. Oxindole-3-acetic acid. 2-(2-Oxo-3-indolinyl)acetic acid*

[2971-31-5]



$C_{10}H_9NO_3$ 191.186

No mention of stereoisomers in lit. Enantiomers presumably interconvert through the enol tautomer. Isol. from *Ribes rubrum*, *Brassica* spp. and *Helianthus annuus*. Prod. of catabolism of 1*H*-Indole-3-acetic acid, I-81 in *Zea mays* (sweetcorn). Needles (Me_2CO/C_6H_6). Mp 146°.

Me ester: [110425-83-7]
[61989-29-5]
$C_{11}H_{11}NO_3$ 205.213
Isol. from rice bran. Prob. intermed. in biosynth. of 2,6-Dihydroxy-4-quinolinecarboxylic acid, D-672 from 1*H*-Indole-3-acetic acid, I-81. Amorph. solid or cryst. (Me_2CO or MeOH). Mp 187-188° (171-173°). Dimorphic. Amorph. solid with lower mp obt. by rapid cooling of solns. and cryst. obt. by slow cooling.

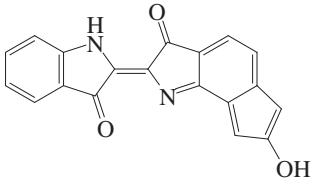
Et ester: [40940-16-7]
$C_{12}H_{13}NO_3$ 219.24
Cryst. (petrol). Mp 94-98°.

β-D-Glucopyranosyl ester: [945774-92-5]
$C_{16}H_{19}NO_8$ 353.328
Metab. of 1*H*-Indole-3-acetic acid, I-81 in *Arabidopsis* sp.

Julian, P.L. *et al., J.A.C.S.*, 1953, **75**, 5305-5309 (*synth*)
Hinman, R.L. *et al., J.O.C.*, 1964, **29**, 1206-1215 (*synth*)
Kinashi, H. *et al., Agric. Biol. Chem.*, 1976, **40**, 2465-2470 (*isol*)
Nonhebel, H.M. *et al., J. Biol. Chem.*, 1985, **260**, 12685-12689 (*biosynth*)
Takase, S. *et al., Tetrahedron*, 1986, **42**, 5879-5886 (*synth, ir, pmr*)
Lower, P. *et al., J.C.S. Perkin 1*, 1987, 753-757 (*synth, pmr*)
Rivera-Becerril, E. *et al., Heterocycles*, 2006, **68**, 1459-1466 (*Me ester, cryst struct*)
Kai, K. *et al., Phytochemistry*, 2007, **68**, 1651-1663 (*glucosyl ester*)

2-(1,3-Dihydro-3-oxo-2*H*-indol-2-ylidene)-7-hydroxycyclopent[*g*]indol-3(2*H*)-one D-486

[868837-50-7]



$C_{19}H_{10}N_2O_3$ 314.3

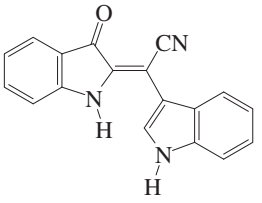
Isol. from *Escherichia coli* DH10B with inserted genes for toluene-4-monooxygenase.

McClay, K. *et al., Appl. Environ. Microbiol.*, 2005, **71**, 5476-5483 (*isol*)

α-(1,3-Dihydro-3-oxo-2*H*-indol-2-ylidene)-1*H*-indole-3-acetonitrile, 9CI D-487

2-[Cyano(3-indolyl)methylene]-3-indolone

[359013-25-5]

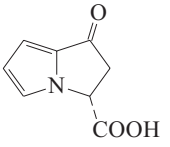


$C_{18}H_{11}N_3O$ 285.304
Alkaloid from the roots of *Isatis indigotica*. Purple needles. Mp 213-215°. λ_{max} 274 ; 505 (MeOH).

Chen, W.S. *et al., Chin. Chem. Lett.*, 2001, **12**, 501-502 (*isol, pmr, cmr*)

2,3-Dihydro-1-oxo-1*H*-pyrrolizine-3-carboxylic acid, 9CI D-488

4-Oxo-1-azabicyclo[3.3.0]octa-5,7-diene-2-carboxylic acid



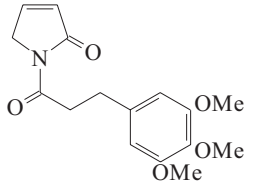
$C_8H_7NO_3$ 165.148
Metab. of *Streptomyces olivaceus*. Oil (as Me ester).

[80314-99-4 , 80314-96-1]

Box, S.J. *et al., Tet. Lett.*, 1981, **22**, 3293 (*isol, struct, synth*)

1,5-Dihydro-1-[1-oxo-3-(3,4,5-trimethoxyphenyl)propyl]-2*H*-pyrrol-2-one, 9CI D-489

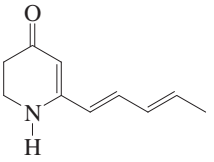
[124727-05-5]



$C_{16}H_{19}NO_5$ 305.33
Alkaloid from the aerial parts of *Piper demeraranum* (Piperaceae). Needles (petrol/Me_2CO). Mp 150-151°.

Maxwell, A. *et al., J. Nat. Prod.*, 1989, **52**, 891 (*isol, uv, ir, pmr, cmr, ms, struct*)

5,6-Dihydro-2-(1,3-pentadienyl)-4(1*H*)-pyridinone D-490



$C_{10}H_{13}NO$ 163.219

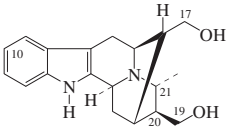
(E,E)-form
Streptazone D
Prod. by *Streptomyces* sp. FORM5. Yellow solid. Mp 105-109°. λ_{max} 288 (log ε 4.34); 361 (log ε 4.11) (MeOH).

Puder, C. *et al., J. Nat. Prod.*, 2000, **63**, 1258-1260

Dihydroperaksine D-491

19,20-Dihydro-21-methyl-18-norsarpagan-17,19-diol, 9CI. Dihydrovomifoline

[26263-40-1]



Absolute Configuration

$C_{19}H_{24}N_2O_2$ 312.411
Different numbering systems used. Alkaloid from leaves of *Rauwolfia caffra* (Apocynaceae). Prisms by subl. Mp 290-291° (part subl. at 280°). $[\alpha]_D^{21}$ +40.8 (c, 1 in Py). pK_a 7.75 (50% MeOH aq.).

17-Aldehyde, 17→19 hemiacetal: see Peraksine, P-241

19-Aldehyde, 17-Ac: **O-*Acetylpreperaksine*.** *Preperaksine* O-*acetate*
[73221-32-6]
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from the stem bark of *Rauwolfia volkensii*. Off-white powder. $[\alpha]_D^{20}$ +45 (c, 0.1 in $CHCl_3$). Stereochem. not determined. λ_{max} 226 (log ε 4.24); 283 (log ε 3.74); 290 (log ε 3.68) (MeOH).

20,21-Diepimer: ***20*R,*21*S-Dihydroperaksine***
[16100-84-8]
$C_{19}H_{24}N_2O_2$ 312.411
Alkaloid from hairy root cultures of *Rauwolfia serpentina*. Cryst. (MeOH). Mp 208-212°. Subl. 192. $[\alpha]_D^{25}$ +35.3 (c, 0.12 in Py). λ_{max} 225 (log ε 4.49); 279 (log ε 3.83); 289 (log ε 3.73) (MeOH).

20,21-Diepimer, 17-aldehyde: ***20*R,*21*S-Dihydroperaksin-17-al***
[451478-46-9]
$C_{19}H_{22}N_2O_2$ 310.395
Alkaloid from hairy root cultures of *Rauwolfia serpentina*. Powder. $[\alpha]_D^{25}$ +50 (c, 0.07 in MeOH). λ_{max} 224 (log ε 4.21); 279 (log ε 3.55); 289 (log ε 3.45) (MeOH).

20,21-Diepimer, 10-hydroxy: ***20*R,*21*S-Dihydro-10-hydroxyperaksine***
[451478-47-0]

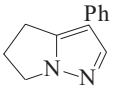
$C_{19}H_{24}N_2O_3$ 328.41
Alkaloid from hairy root cultures of *Rauwolfia serpentina*. Cryst. (MeOH). Mp 323-335°. $[\alpha]_D^{25}$ +42.6 (c, 0.15 in Py). λ_{max} 226 (log ε 4.14); 277 (log ε 3.71) (MeOH).

[11015-98-8]

Kiang, A.K. *et al., Tetrahedron*, 1966, **22**, 3293-3300 (*synth, ms*)
Akinloye, B.A. *et al., Planta Med.*, 1979, **37**, 361-366 (*O-Acetylpreperakine*)
Nasser, A.M.A.G. *et al., Phytochemistry*, 1983, **22**, 2297-2300 (*isol*)
Lounasmaa, M. *et al., J. Nat. Prod.*, 2000, **63**, 1456-1460 (*rev*)
Sheludko, Y. *et al., J. Nat. Prod.*, 2002, **65**, 1006-1010 (*20,21-diepimers*)

5,6-Dihydro-3-phenyl-4*H*-pyrrolo[1,2-*b*]pyrazole, 9CI D-492

Withasomnine. *Newbouldine*†
[10183-74-1]



$C_{12}H_{12}N_2$ 184.24
The struct. of Newbouldine (Mp 215-217°) isol. by Houghton *et al.* and claimed to be novel corresponds with that of Withasomnine. The large discrepancy in Mps is noteworthy. See also Newbouldine, N-185. Alkaloid from the roots of *Withania somnifera* (Solanaceae) and root bark of *Newbouldia laevis* (Bignoniaceae). Cryst. (petrol). Mp 117-118°.

Hydrochloride:
Hygroscopic cryst. Mp 115-117°.

Picrate:
Cryst. (H_2O). Mp 170-173°.

4′-Hydroxy: ***4′-Hydroxywithasomnine***
[155416-37-8]
$C_{12}H_{12}N_2O$ 200.24
Alkaloid from root bark of *Newbouldia laevis* (Bignoniaceae). Cryst. (Me_2CO). Mp 238-239°. Hydroxylated in the phenyl ring.

4′-Methoxy: ***4′-Methoxywithasomnine***
$C_{13}H_{14}N_2O$ 214.266
Alkaloid from the root bark of *Newbouldia laevis*. Methoxylated in the phenyl ring. λ_{max} 253 (log ε 4.33) (MeOH).

Schröter, H.-B. *et al., Tetrahedron*, 1966, **22**, 2895 (*isol, uv, ir, ms, pmr, struct*)
Morimoto, T. *et al., Tet. Lett.*, 1968, 5707 (*synth*)
Onaka, T. *et al., Tet. Lett.*, 1968, 5711 (*synth*)
O'Donovan, D.G. *et al., Tet. Lett.*, 1970, 3637 (*biosynth*)
Onaka, T. *et al., CA*, 1972, **77**, 48328e (*synth*)
Ranganathan, D. *et al., Synth. Commun.*, 1985, **15**, 259 (*synth, ir, pmr, ms*)
Guzmán-Pérez, A. *et al., Synth. Commun.*, 1991, **21**, 1667 (*synth*)
Adesanya, S.A. *et al., Phytochemistry*, 1994, **35**, 1053 (*4′-Hydroxywithasomnine*)
Houghton, P.J. *et al., Phytochemistry*, 1994, **35**, 1602
Kulinkovich, O. *et al., Tet. Lett.*, 1996, **37**, 1095 (*synth*)
Aladesanmi, A.J. *et al., Planta Med.*, 1998, **64**, 90-91 (*4′-Methoxywithasomnine*)

3,4-Dihydro-5-propanoyl-2*H*-pyrrole D-493

*1-(3,4-Dihydro-2*H*-pyrrol-5-yl)-1-propanone, 9CI. 2-Propionyl-1-pyrroline*
[133447-37-7]

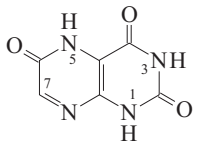


$C_7H_{11}NO$ 125.17
Formed by thermal treatment of proline and glucose mixtures. Constit. of freshly popped corn aroma. Bp_{70} 115°. Odour threshold 0.02 ng/L in air.

Schieberle, P. *et al., J. Agric. Food Chem.*, 1991, **39**, 1141-1144 (*detn, synth, pmr, ms*)
Hofman, T. *et al., J. Agric. Food Chem.*, 1998, **46**, 2721-2726 (*occur, ms*)
Fuganti, C. *et al., Tetrahedron*, 2007, **63**, 4762-4767 (*synth, pmr, cmr*)

1,5-Dihydro-2,4,6(3*H*)-pteridinetrione, 9CI D-494

*2,4,6(1*H*,3*H*,5*H*)-Pteridinetrione. 6-Oxolumazine*
[2577-35-7]



$C_6H_4N_4O_3$ 180.123
Isol. from honey bee (*Apis mellifera*).

1-Me: [50996-37-7]
$C_7H_6N_4O_3$ 194.149
Yellow-brown cryst. (H_2O). Mp 335-338° dec.

3-Me: [58947-87-8]
$C_7H_6N_4O_3$ 194.149
Yellow-brown cryst. Mp 350°.

7-Me:
$C_7H_6N_4O_3$ 194.149
Yellow-brown cryst. (H_2O). Mp 340°.

1,3-Di-Me: [61846-18-2]
$C_8H_8N_4O_3$ 208.176
Yellowish cryst. (H_2O). Mp 300°.

1,7-Di-Me:
$C_8H_8N_4O_3$ 208.176
Cryst. (H_2O). Mp 315° dec.

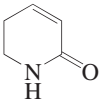
3,7-Di-Me:
$C_8H_8N_4O_3$ 208.176
Mp 340°.

1,3,5-Tri-Me:
$C_9H_{10}N_4O_3$ 222.203
Yellow needles (H_2O). Mp 180-181°.

Pfleiderer, W. *et al., Chem. Ber.*, 1957, **90**, 2604; 2617 (*synth*)
McNutt, W.S. *et al., Biochemistry*, 1962, **1**, 1161 (*metab*)
Dustmann, J.H. *et al., Hoppe-Seyler's Z. Physiol. Chem.*, 1971, **352**, 1599 (*isol*)

5,6-Dihydro-2(1*H*)-pyridinone D-495

*5,6-Dihydro-2(1*H*)-pyridone, 8CI. 3,4-Dehydro-2-piperidone. 5-Amino-2-pentenoic acid γ-lactam. 5,6-Dihydropyridin-2-ol*
[6052-73-9]

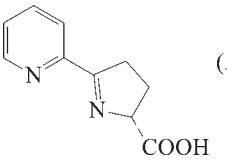


C_5H_7NO 97.116
Alkaloid from *Bunchosia pseudonitida* and *Piper sintenense*. Constit. of tobacco smoke. Cryst. (Et_2O/petrol). Mp 63-65°. λ_{max} 209 (log ε 4.24); 247 (sh) (log ε 3.52) (EtOH).

Schumacher, J.N. *et al., J. Agric. Food Chem.*, 1977, **25**, 310 (*occur*)
Boll, P.M. *et al., Tetrahedron*, 1984, **40**, 171 (*synth*)
Calle, A.A. *et al., CA*, 1986, **104**, 126581 (*isol*)
Hua, D.H. *et al., J.O.C.*, 1994, **59**, 5084 (*synth, pmr, cmr*)
Chen, J.-J. *et al., Helv. Chim. Acta*, 2003, **86**, 2058-2064 (*isol, pmr, cmr, ms*)
Simon, L. *et al., Helv. Chim. Acta*, 2005, **88**, 1682-1701 (*synth, ir, pmr, cmr*)

3,4-Dihydro-5-(2-pyridinyl)-2*H*-pyrrole-2-carboxylic acid D-496

2-(2-Pyridyl)-Δ¹-pyrroline-5-carboxylic acid. Proferrorosamine A. ***Pyrimine***
[26927-08-2]



(*R*)–*form*

$C_{10}H_{10}N_2O_2$ 190.201
Prod. by *Erwinia rhapontici* and *Pseudomonas roseus fluorescens*.

(*R*)-*form*

NH_4 salt: [100016-79-3]
$[\alpha]_D^{25}$ -37 (c, 4 in H_2O).

NH_4 salt; hydrochloride (1:2):
Needles (Me_2CO aq.). $[\alpha]_D^{24}$ -26 (c, 5 in 1*M* HCl). Sinters at 155°, dec. at 179°.

Fe complex (3:1): ***Neopurpuratin***
[80124-41-0]
$C_{30}H_{28}FeN_6O_6$ 624.435
Prod. by *Streptomyces propurpuratus*. Purple-red pigment. Sol. H_2O, EtOH, MeOH. λ_{max} 277 (E1%/1cm 388); 355 (E1%/1cm 60); 558 (E1%/1cm 168) (H_2O) (Berdy).

(*S*)-*form*
Prod. by *Pseudomonas* GH. Exists in this form >pH2.

Fe complex (3:1): ***Ferropyrimine***
Prod. by *Pseudomonas* GH. Purple-red pigment.

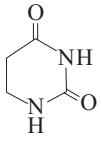
(±)-*form*

Fe complex (3:1): ***Ferrorosamine A***

[59568-22-8]
$C_{30}H_{28}FeN_6O_6$ 624.435
From *Erwinia rhapontici* and *Pseudomonas roseus fluorescens*. Red powder.
Shiman, R. *et al., Biochemistry*, 1965, **4**, 2233 (*isol, struct*)
Helbling, A.M. *et al., Helv. Chim. Acta*, 1976, **59**, 938 (*synth*)
Feistner, G. *et al., Curr. Microbiol.*, 1983, **8**, 239 (*isol*)
Handa, A. *et al., Agric. Biol. Chem.*, 1985, **49**, 2227 (*Neopurpuratin*)
Ohshima, M. *et al., J. Ferment. Technol.*, 1985, **63**, 79 (*Neopurpuratin*)
Vande Woestyne, M. *et al., Appl. Environ. Microbiol.*, 1991, **57**, 949 (*isol*)

Dihydro-2,4(1*H*,3*H*)-pyrimidinedione, 9CI D-497

Hydrouracil, 8CI. Dihydrouracil. Hexahydro-2,4-dioxopyrimidine
[504-07-4]

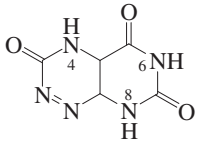


$C_4H_6N_2O_2$ 114.104
Component of transfer ribonucleic acid (tRNA). Cryst. (Me_2CO). Mp 275-276°.

1-Nitroso: [16813-36-8]
$C_4H_5N_3O_3$ 143.102
▶ Exp. carcinogen. LD_{50} (rat, ipr) 850 mg/kg. MX9280000
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 1319C (*nmr*)
Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 811B (*ir*)
Fischer, E. *et al., Ber.*, 1901, **34**, 3751 (*synth*)
Rohrer, D. *et al., Chem. Comm.*, 1968, 746 (*cryst struct*)
Elad, D. *et al., Chem. Comm.*, 1968, 879 (*synth*)
Takemoto, K. *et al., Chem. Lett.*, 1972, 767 (*synth*)
Sax, N.I. *et al., Dangerous Properties of Industrial Materials, 5th edn., Van Nostrand Reinhold*, 1979, 867
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, NJY000

4,8-Dihydropyrimido[5,4-*e*]-1,2,4-triazine-3,5,7(6*H*)-trione D-498

*4*H,*6*H,*8*H-*Pyrimido[5,4-*e*]*-as-*triazine-3,5,7-trione, 8CI. 3,5,7-Trihydroxypyrimido[5,4-*e*]*-as-*triazine*



$C_5H_3N_5O_3$ 181.11
Many tautomers possible.

*6,8-Di-Me: 2,8-Dihydro-6,8-dimethylpyrimido[5,4-*e*]-1,2,4-triazine-3,5,7(6*H*)-trione. Fervenulone*
[18969-83-0]
$C_7H_7N_5O_3$ 209.164
Mp 260-261° (anhyd.). Forms a monohydrate and a monoethanolate.
▶ UW7910000

*2,6,8-Tri-Me: 2,8-Dihydro-2,6,8-trimethylpyrimido[5,4-*e*]-1,2,4-triazine-3,5,7(6*H*)-trione. **2-Methylfervenulone**. Antibiotic MSD 92. Antibiotic 2096C. 2096C. MSD 92*
[22712-32-9]
$C_8H_9N_5O_3$ 223.191
Isol. from *Streptomyces* spp. Broad-spectrum antibiotic. Inhibitor of protein tyrosine phosphatase. Yellow plates (EtOH, H_2O or EtOAc). Sol. MeOH, Et_2O; fairly sol. H_2O; poorly sol. hexane. Mp 92-93° Mp 157-158° Mp 174-175° Mp 181-182° (tetramorph.). λ_{max} 240 (ε 19000); 280 (sh) (ε 1940); 415 (ε 3410) (H_2O) (Derep). λ_{max} 218 (ε 12100); 288 (ε 6530); 413 (ε 1004) (MeOH) (Derep). λ_{max} 238 ; 417 ($MeOH\text{-}THCONH_2$) (Berdy).
▶ LD_{50} (mus, ipr) 1.2 mg/kg. UW7960000

*4,6,8-Tri-Me: 4,8-Dihydro-4,6,8-trimethylpyrimido[5,4-*e*]-1,2,4-triazine-3,5,7(6*H*)-trione, 9CI. 4-Methylfervenulone*
[22712-42-1]
$C_8H_9N_5O_3$ 223.191
Shows antibiotic props. Pale yellow plates (EtOH). Mp 218-220°.
Miller, T.W. *et al., Antimicrob. Agents Chemother.*, 1963, 58-62 (*2-Methylfervenulone, isol*)
Taylor, E.C. *et al., J.O.C.*, 1975, **40**, 2321 (*synth, bibl*)
Ichiba, M. *et al., J.O.C.*, 1978, **43**, 469 (*synth, bibl*)
Wang, H. *et al., J. Nat. Prod.*, 2000, **63**, 1641-1646 (*2-Methylfervenulone, isol, pmr, cmr, N-15 nmr, activity*)

2,3-Dihydro-1*H*-pyrrole, 9CI D-499

2-Pyrroline, 8CI
[638-31-3]



C_4H_7N 69.106

N-*Ac:* [23105-58-0]
C_6H_9NO 111.143
Odorous constit. of cooked rice and of pandan rampeh (*Pandanus amaryllifolius*). Oil.

N-*Ph: 2,3-Dihydro-1-phenyl-1*H*-pyrrole. 1-Phenyl-2-pyrroline*
$C_{10}H_{11}N$ 145.204
Cryst. Mp 166-167.5°.

N-tert-*Butoxycarbonyl:*
$C_9H_{15}NO_2$ 169.223
Wittig, G. *et al., Annalen*, 1955, **594**, 1 (*N-Ph*)
Sato, S. *et al., CA*, 1969, **71**, 21828 (*deriv*)
Leblanc, R. *et al., Tet. Lett.*, 1969, 2441 (*deriv*)
Westheimer, F.H. *et al., J.O.C.*, 1971, **36**, 1570 (*deriv*)
Buttery, R.G. *et al., Chem. Ind. (London)*, 1983, 478 (*isol, deriv*)
Marais, W. *et al., Synth. Commun.*, 1998, **28**, 3681-3691 (*N-Ac, N-benzoyl*)
Org. Synth., 2008, **85**, 64-71 (*N-Boc*)

3,4-Dihydro-2*H*-pyrrole, 9CI D-500

1-Pyrroline. FEMA 3898
[5724-81-2]

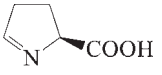


C_4H_7N 69.106
Male sex pheromone of Mediterranean fruit fly *Ceratitis capitata*. Present in clam and squid. Primary odour constit. of sperm. Stable in dil. soln., trimerises readily.

N-*Oxide:* [24423-88-9]
C_4H_7NO 85.105
Cyclic nitrone used in intramol. 1,3-dipolar cycloadditions. $Bp_{0.1}$ 74-76°.
Amoore, J.E. *et al., J. Chem. Ecol.*, 1975, **1**, 299
Poisel, H. *et al., Monatsh. Chem.*, 1978, **109**, 925 (*synth, pmr*)
Baker, R. *et al., Chem. Comm.*, 1985, 824
Bock, H. *et al., Chem. Ber.*, 1987, **120**, 1961 (*synth, pe, bibl*)
Guillemin, J.-C. *et al., Tetrahedron*, 1988, **44**, 4447 (*synth, pmr*)
Murahashi, S. *et al., J.O.C.*, 1990, **55**, 1736-1744 (*N-oxide, synth, ir, pmr*)
Encyclopaedia of Reagents for Organic Synthesis, (ed. Paquette, L.A.), Wiley, 1995, **6**, 4389-4390 (*N-oxide, use*)
Fenaroli's Handbook of Flavor Ingredients, 3rd edn., (ed. Burdock, G.A.), CRC Press, 1995, 1568

3,4-Dihydro-2*H*-pyrrole-2-carboxylic acid, 9CI D-501

1-Pyrroline-5-carboxylic acid, 8CI. 1,5-Didehydroproline
[2906-39-0]



(*S*)*–form*

$C_5H_7NO_2$ 113.116
Dimerises in solution. Cyclic anhydride of 2-Amino-5-oxopentanoic acid.

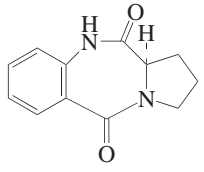
(*S*)-*form*
L-form
[64199-88-8]
Intermed. in biosynth. and biodegradn. of Proline.
Et ester: [172879-74-2]
$C_7H_{11}NO_2$ 141.169
$[\alpha]_D^{25}$ +14.1 (c, 8.5 in $CHCl_3$).

(±)-*form* [23141-14-2]
Cryst. (H_2O). Mp 140-142° dec.
Et ester: Liq. Bp_{17} 110°.
Vogel, H.J. *et al., J.A.C.S.*, 1952, **74**, 109-112 (*synth, bibl*)
Osugi, K. *et al., Yakugaku Zasshi*, 1958, **78**, 1332-1338; *CA*, **53**, 8109 (*synth, ester*)
Strecker, H.J. *et al., Methods Enzymol., Part B*, 1971, **17**, 254-258 (*synth*)

Mezl, V.A. *et al., Anal. Biochem.*, 1976, **74**, 430-440 (*synth*)
Smith, R.J. *et al., Anal. Biochem.*, 1977, **82**, 170-176 (*synth*)
De March, F. *et al., Chem. Comm.*, 1995, 2097-2098 (*Et ester, synth*)

2,3-Dihydro-1*H*-pyrrolo[2,1-*c*][1,4]benzodiazepine-5,11(10*H*,11*aH*)-dione, 9CI D-502

Cycloanthranilylproline



(*R*)-*form*

$C_{12}H_{12}N_2O_2$ 216.239

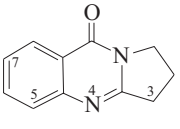
(*R*)-*form* [154802-75-2]
Prisms (EtOAc). Mp 221-222°. $[\alpha]_D^{25}$ -491 (c, 0.2 in $CHCl_3$).

(*S*)-*form* [18877-34-4]
Alkaloid from the roots of *Isatis indigotica*. Isol. from the myxomycete *Fuligo candida*. Cytotoxic. Cryst. (Me_2CO/hexane). Mp 229° (223-225°). $[\alpha]_D^{25}$ +567 (c, 1 in DMF). $[\alpha]_D^{20}$ +505 (c, 0.1 in MeOH).

Wright, W.B. *et al., J. Med. Chem.*, 1978, **21**, 1087 (*synth*)
Mori, M. *et al., Tetrahedron*, 1986, **42**, 3793-3806 (*synth, ir, pmr, cmr*)
Feigel, M. *et al., Z. Naturforsch., B*, 1990, **45**, 258-266 (*synth, pmr, cmr, cryst struct*)
Kamal, A. *et al., J.O.C.*, 1991, **56**, 2237 (*synth*)
Fryer, R.I. *et al., Med. Chem. Res.*, 1993, **3**, 183 (*R-form*)
Wu, X. *et al., Planta Med.*, 1997, **63**, 55-57 (*isol*)
Nakatani, S. *et al., Chem. Pharm. Bull.*, 2004, **52**, 368-370 (*isol, pmr, cmr*)
Tang, H. *et al., Eur. J. Org. Chem.*, 2008, 126-135 (*S-form, synth, pmr*)

2,3-Dihydropyrrolo[2,1-*b*]quinazolin-9(1*H*)-one, 9CI D-503

Deoxyvasicinone
[530-53-0]



$C_{11}H_{10}N_2O$ 186.213
Major alkaloid from the foliage of *Peganum nigellastrum*. Also present in *Mackinlaya macrosciadia*, the seeds and above-ground parts of *Peganum harmala* and the roots of *Adhatoda vasica* (Zygophyllaceae, Araliaceae, Acanthaceae). Claimed to show cholinergic activity. Needles (C_6H_6/petrol). Mp 110-111°. λ_{max} 206 (ϵ 32260); 224 (ϵ 34670); 256 (ϵ 9550); 302 (ϵ 4790); 313 (ϵ 3980) (MeOH) (Berdy).

N^4-*Oxide:* ***Deoxyvasicinone* N-*oxide***
[168781-18-8]
$C_{11}H_{10}N_2O_2$ 202.212
Alkaloid from above-ground parts of *Nitraria komarovii* (Zygophyllaceae). Cryst. (Me_2CO). Mp 152-153°.

*9ξ-Alcohol: 1,2,3,9-Tetrahydropyrrolo[2,1-*b*]quinazolin-9-ol.* ***Peganol****. 9-Hydroxydeoxypeganine*
[36101-54-9]
$C_{11}H_{12}N_2O$ 188.229
Alkaloid from *Peganum harmala* (Zygophyllaceae). Cryst. (MeOH). Mp 178-180°.

9ξ-Alcohol, N^{10}*-oxide:* ***Peganol* N-*oxide***
[335373-42-7]
$C_{11}H_{12}N_2O_2$ 204.228
Alkaloid from the aerial parts of *Nitraria komarovii*. Cryst. (EtOH). Mp 182-183°. λ_{max} 207 (log ϵ 4.08); 270 (log ϵ 3.62) (EtOH).

2,3-Didehydro, 9ξ-alcohol: ***9-Hydroxy-2,3-dehydrodeoxypeganine***
[119459-56-2]
$C_{11}H_{10}N_2O$ 186.213
Alkaloid from aerial parts of *Galium aparine* collected at the flowering period. Amorph. $[\alpha]_D$ -44.

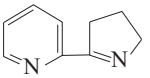
3-Hydroxy: see Vasicinone, V-38

5-Hydroxy: ***5-Hydroxydeoxyvasicinone****. 2,3-Dihydro-5-hydroxypyrrolo[2,1-*b*]quinazolin-9(1*H*)-one, 9CI*
[35214-95-0]
$C_{11}H_{10}N_2O_2$ 202.212
Metab. of *Klebsiella pneumoniae* var. *oxytoca*. Mp 158-160°. Solns. rapidly turn brown in light.

Petersen, S. *et al., Annalen*, 1959, **623**, 166 (*synth, 5-Hydroxydeoxyvasicinone*)
Chatterjee, A. *et al., Phytochemistry*, 1968, **7**, 307 (*isol, synth*)
Hart, N.K. *et al., Aust. J. Chem.*, 1971, **24**, 223 (*isol*)
Telezhenetskaya, M.V. *et al., Khim. Prir. Soedin.*, 1971, **7**, 849; *Chem. Nat. Compd. (Engl. Transl.)*, 1971, **7**, 835 (*Peganol*)
Onaka, T. *et al., Tet. Lett.*, 1971, 4387 (*synth, 5-Hydroxydeoxyvasicinone*)
Johne, S. *et al., J. Prakt. Chem.*, 1977, **319**, 919 (*synth, cmr*)
Mohr, N. *et al., Annalen*, 1981, 1515 (*isol, uv, ir, pmr, cmr, ms, struct, 5-Hydroxydeoxyvasicinone*)
Al-Shamma, A. *et al., J. Nat. Prod.*, 1981, **44**, 745 (*isol, uv, ir, pmr, ms*)
Johne, S. *et al., Alkaloids (Academic Press)*, 1986, **29**, 129 (*pharmacol, rev*)
Sener, B. *et al., Gazi Univ. Eczacilik Fak. Derg.*, 1988, **5**, 33 (*9-Hydroxy-2,3-dehydrodeoxypeganine*)
Tulyaganov, T.S. *et al., Khim. Prir. Soedin.*, 1993, **29**, 580; *Chem. Nat. Compd. (Engl. Transl.)*, 1993, **29**, 509; 2000, **36**, 76-78 (*Deoxyvasicinone N-oxide, Peganol N-oxide*)
Turgunov, K.K. *et al., Khim. Prir. Soedin.*, 1995, **31**, 849-854; *Chem. Nat. Compd. (Engl. Transl.)*, 1995, **31**, 714-718 (*cryst struct*)
Mhaske, S.B. *et al., J.O.C.*, 2002, **66**, 9038-9040 (*synth*)
Liu, J.-F. *et al., Org. Lett.*, 2005, **7**, 3363-3366 (*synth, pmr, cmr*)
Hamid, A. *et al., Tet. Lett.*, 2006, **47**, 1777-1781 (*synth*)
Bowman, W.R. *et al., Org. Biomol. Chem.*, 2007, **5**, 103-113 (*synth*)

2-(3,4-Dihydro-2*H*-pyrrol-5-yl)pyridine D-504

2-(1-Pyrrolin-2-yl)pyridine, 8CI. 2-(2-Pyridyl)-1-pyrroline. Apoferrorosamine
[4593-27-5]

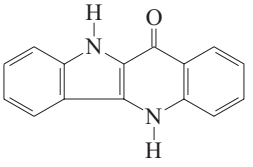


$C_9H_{10}N_2$ 146.191
Produced by dist. of Ferrorosamine, a red Fe pigment prod. by adding $Fe^{2\oplus}$ to cultures of *Bacillus roseus fluorescens*. Poorly sol. hexane. Mp 55-55.5°. $Bp_{0.3}$ 65°.

Pouteau-Thouvenot, M. *et al., Bull. Soc. Chim. Fr.*, 1965, 3238 (*synth*)
Stevens, R.V. *et al., J.A.C.S.*, 1968, **90**, 5576 (*synth*)

5,10-Dihydro-11*H*-quindolin-11-one, 9CI D-505

*5*H*,10*H*-Indolo[3,2-*b*]quinolin-11-one. Quindolinone*
[80289-15-2]



$C_{15}H_{10}N_2O$ 234.257
Minor alkaloid from *Cryptolepis sanguinolenta* (Asclepiadaceae). Cryst. + $1H_2O$ (EtOH). Mp >° 360.

Hydrochloride: [80289-16-3]
Yellow needles (MeOH). Mp >330°.

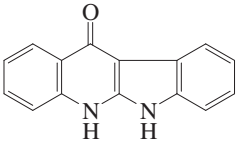
*5-Me: 5,10-Dihydro-5-methyl-11*H*-quindolin-11-one. Hydroxycryptolepine.* ***Cryptolepinone***
[160113-29-1]
[178884-07-6]
$C_{16}H_{12}N_2O$ 248.284
From roots of *Cryptolepis sanguinolenta* (Asclepiadaceae). Active against gram-positive bacteria. Anticomplementary agent. Yellowish amorph. solid. Artifact. Exhibits keto-enol tautomerism. λ_{max} 233 ; 272 ; 311 ; 326 ; 405 ; 471 (MeOH) (Berdy). λ_{max} 326 ; 346 ; 447 ; 487 (MeOH/HCl) (Berdy). λ_{max} 232 ; 272 ; 312 ; 326 ; 367 ; 406 ; 455 (MeOH/NaOH) (Berdy).

Görlitzer, K. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1981, **314**, 852-861 (*synth, ir, uv, pmr*)
Crouch, R.C. *et al., J. Het. Chem.*, 1995, **32**, 1077 (*pmr, cmr, N-15 nmr, struct*)
Paulo, A. *et al., J. Nat. Prod.*, 1995, **58**, 1485 (*Hydroxycryptolepine*)
Cimanga, K. *et al., Planta Med.*, 1996, **62**, 22-27 (*activity*)
Cooper, M.M. *et al., Tet. Lett.*, 1996, **37**, 4283-4286 (*Hydroxycryptolepine, synth*)
Sharaf, M.H.M *et al., J. Het. Chem.*, 1998, **35**, 1365-1369 (*Cryptolepinone, pmr, cmr, N-15 nmr*)
Martin, G.E. *et al., J. Nat. Prod.*, 1998, **61**, 555-559 (*Cryptolepinone*)
Fort, D.M. *et al., J. Nat. Prod.*, 1998, **61**, 1528-1530 (*Cryptolepinone, synth*)

Radl, S. *et al., J. Het. Chem.*, 2000, **37**, 855-862 (*synth, ir, uv, pmr*)

5,6-Dihydro-11*H*-quinindolin-11-one, 9CI **D-506**

*Quinindolin-11(5*H*)-one, 8CI. 5*H,*6*H*-Indolo[2,3-*b*]quinolin-11-one*
[13220-19-4]

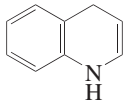


$C_{15}H_{10}N_2O$ 234.257
Alkaloid from the leaves of *Justicia betonica*. Amorph. pink powder. Mp 234° (possibly incorr.) Mp > 360°.

Kikumoto, R. *et al., Tetrahedron*, 1966, **22**, 3337-3343 (*synth, ir*)
Bergman, J. *et al., Tetrahedron*, 2003, **59**, 1033-1048 (*synth, ir, pmr, cmr*)
Subbaraju, G.V. *et al., J. Nat. Prod.*, 2004, **67**, 461-462 (*isol, pmr, cmr*)

1,4-Dihydroquinoline **D-507**

[50624-35-6]



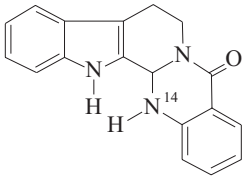
C_9H_9N 131.177
Plates (Et_2O/petrol). Mp 46-47°. Polymerises at r.t., rel. stable in Et_2O at -15° under N_2.

N-*Me: 1,4-Dihydro-1-methylquinoline*
$C_{10}H_{11}N$ 145.204
Prod. by a marine-derived *Pseudomonas aeruginosa*. Antibacterial agent (incl. MRSA). Yellow powder (EtOAc). Mp 280°. $[\alpha]_D^{25}$ -46.1 (MeOH). Opt. rotation unaccounted for, struct. therefore dubious.

Birch, A.J. *et al., Tet. Lett.*, 1974, 2395 (*synth, pmr, ir*)
Forrest, T.P. *et al., Can. J. Chem.*, 1985, **63**, 412 (*synth, pmr*)
Uzair, B. *et al., Nat. Prod. Res.*, 2006, **20**, 1326-1331 (*N-Me, isol, pmr, cmr*)

Dihydrorutaecarpine **D-508**

*8,13,13*b*,14-Tetrahydroindolo[2′,3′:3,4]pyrido[2,1-*b*]quinazolin-5(7*H*)-one, 9CI. 13*b*,14-Dihydrorutaecarpine*
[59863-00-2]



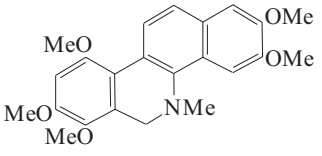
$C_{18}H_{15}N_3O$ 289.336
Alkaloid from the root bark of *Zanthoxylum flavum* and the ripe fruits of *Evodia rutaecarpa* (Rutaceae). Mp 168° Mp 214° Mp 226-228°. $[\alpha]_D^{28}$ -564 (c, 0.355 in DMF).

N^{14}-*Formyl: **14-Formyldihydrorutaecarpine**. 7,8,13,13*b*-Tetrahydro-5-oxoindolo[2′,3′:3,4]pyrido[2,1-*b*]quinazoline-14(5*H*)-carboxaldehyde, 9CI*
[68353-23-1]
$C_{19}H_{15}N_3O_2$ 317.346
Alkaloid from the ripe fruits of *Evodia rutaecarpa* (Rutaceae). Mp 285-287° (282-283°). $[\alpha]_D^{28}$ +260 (c, 0.535 in DMF).

Waterman, P.G. *et al., Phytochemistry*, 1976, **15**, 578 (*uv, ir, pmr, ms, struct*)
Kamikado, T. *et al., Agric. Biol. Chem.*, 1978, **42**, 1515
Bergman, J. *et al., J.O.C.*, 1985, **50**, 1246 (*synth*)

Dihydrosanguilutine **D-509**

5,6-Dihydro-5-methyl-2,3,7,8,10-pentamethoxybenzo[c]phenanthridine
[56296-86-7]

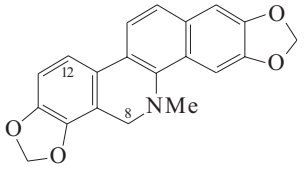


$C_{23}H_{25}NO_5$ 395.454
Struct. revised in 1978. Alkaloid from the roots of *Sanguinaria canadensis* (Papaveraceae). Cryst. ($CHCl_3$/MeOH). Mp 155-157° (154-155°).

Kim, D.K. *et al., Phytochemistry*, 1975, **14**, 834 (*occur, uv, pmr, ms*)
Slavík, J. *et al., Coll. Czech. Chem. Comm.*, 1977, **42**, 2686 (*synth, uv*)
Ishii, H. *et al., Chem. Pharm. Bull.*, 1978, **26**, 864 (*struct*)
Hanaoka, M. *et al., J.C.S. Perkin 1*, 1987, 677 (*synth, uv, pmr, ms*)

Dihydrosanguinarine **D-510**

*13,14-Dihydro-13-methyl[1,3]benzodioxolo[5,6-*c*]-1,3-dioxolo[4,5-*i*]phenanthridine, 9CI. 5,6-Dihydro-5-methyl-2,3:7,8-bis(methylenedioxy)benzo[c]phenanthridine*
[3606-45-9]



$C_{20}H_{15}NO_4$ 333.343
Several numbering systems have been used. Alkaloid from a wide variety of genera in the Papaveraceae (*Argemone*, *Bocconia*, *Chelidonium*, *Eschscholtzia*, *Glaucium*, *Hypecoum*, *Macleaya*, *Papaver*, *Romneya*), Papaveraceae (*Corydalis*, *Dicentra*), and Sapindaceae (*Pteridophyllum*). Cryst. ($CHCl_3$/MeOH or C_6H_6/EtOH). Mp 195-196° (188-189°, 191-193°).

*8-Hydroxy: **8-Hydroxydihydrosanguinarine***
$C_{20}H_{15}NO_5$ 349.342
Alkaloid from *Dactylicapnos torulosa* (Papaveraceae). Yellow powder. Mp 170° dec. $[\alpha]_D^{20}$ -9 (c, 0.4 in MeOH).

*8-Methoxy: **8-Methoxydihydrosanguinarine**. Sanguinarine pseudomethanolate*
[72401-54-8]
[49702-53-6]
$C_{21}H_{17}NO_5$ 363.369
Probably an artifact. Alkaloid from *Corydalis tashiroi*, *Fumaria indica* and *Hunnemannia fumariaefolia*. Mp 216-219° Mp 220-222°. $[\alpha]_D^{25}$ -232.5 (c, 0.13 in $CHCl_3$).

*8-Ethoxy: **Ethoxydihydrosanguinarine**. Sanguinarine pseudoethanolate*
[28342-31-6]
$C_{22}H_{19}NO_5$ 377.396
Alkaloid from the roots of *Hunnemannia fumariaefolia* (Papaveraceae). Mp 207-209°. Prob. artifact.

*12-Hydroxy: **12-Hydroxydihydrosanguinarine***
[131984-76-4]
$C_{20}H_{15}NO_5$ 349.342
Alkaloid from *Eschscholtzia californica* (Papaveraceae). Cryst. ($CHCl_3$/MeOH). Mp 208-211° dec.

*12-Methoxy: **Dihydrochelirubine**. Dihydrobocconine*
[28342-26-9]
$C_{21}H_{17}NO_5$ 363.369
Minor alkaloid from the roots of *Chelidonium majus* (Papaveraceae). Needles (MeOH). Mp 206-207° (198-199°).

*12-Methoxy, 5-hydroxy: **5-Hydroxydihydrochelirubine***
[131984-77-5]
$C_{21}H_{17}NO_6$ 379.368
Alkaloid from *Eschscholtzia californica* (Papaveraceae). Cryst. ($CHCl_3$/MeOH). Mp 219-221° dec.

*5,12-Dimethoxy: **Dihydromacarpine**. 5-Methoxydihydrochelirubine*
[77785-12-7]
$C_{22}H_{19}NO_6$ 393.395
Alkaloid from cell cultures of *Eschscholtzia californica* (Papaveraceae). Needles (Et_2O). Mp 178-179°.

*8-Oxo: 13-Methyl[1,3]benzodioxolo[5,6-*c*]-1,3-dioxolo[4,5-*i*]phenanthridin-14(13*H*)-one. 5-Methyl-2,3:7,8-bis(methylenedioxy)benzo[c]phenanthridin-6(5*H*)-one. **Oxosanguinarine**. Alkaloid C†. Oxysanguinarine*
[548-30-1]
$C_{20}H_{13}NO_5$ 347.326
Alkaloid from a wide variety of genera in the Papaveraceae (*Bocconia*, *Chelidonium*, *Dicranostigma*, *Eschscholtzia*, *Glaucium*, *Hypecoum*, *Macleaya*, *Papaver*, *Sanguinaria*), Papaveraceae (*Corydalis*, *Dicentra*, *Fumaria*), and Sapindaceae (*Pteridophyllum*). Mp 300-308° dec Mp 347-349° dec Mp 360-362° Mp 366-368°.

*8-Oxo, imide: **8-Iminosanguinarine***
[78118-34-0]
$C_{20}H_{14}N_2O_4$ 346.342
Alkaloid from the roots of *Glaucium flavum* var. *vestitum* (Papaveraceae).

Needles + $1H_2O$ (EtOH/$CHCl_3$). Mp 241-242°. Artifact.

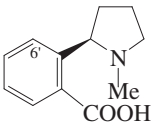
8-Oxo, N-*de-Me:* **N-*Demethyloxysanguinarine***
$C_{19}H_{11}NO_5$ 333.3
Alkaloid from the aerial parts of *Argemone mexicana*. Amorph. powder. λ_{max} 222 (log ϵ 4.02); 283 (log ϵ 3.36); 327 (log ϵ 4.13) (EtOH).

8-Oxo, 5,6-dihydro, N-*de-Me:* **N-*Demethyl-5,6-dihydrooxysanguinarine***
[65427-94-3]
$C_{19}H_{13}NO_5$ 335.315
Minor alkaloid from roots of *Chelidonium majus* (Papaveraceae). Yellow needles ($CHCl_3$/MeOH). Mp 304-306° (block).

8-Oxo, 12-methoxy: ***Oxychelirubine****. Oxybocconine*
[55950-31-7]
$C_{21}H_{15}NO_6$ 377.353
Alkaloid from the roots of *Glaucium flavum* var. *vestitum* (Papaveraceae). Pale yellow needles ($CHCl_3$/Me_2CO or $CHCl_3$/MeOH). Mp 307-308° (295-296°).

Manske, R.H.F. *et al., Can. J. Res., Sect. B*, 1943, **21**, 140 (*isol*)
Slavková, L. *et al., Coll. Czech. Chem. Comm.*, 1956, **21**, 211 (*isol*)
Dominguez, X.A. *et al., Can. J. Chem.*, 1965, **43**, 679 (*Oxosanguinarine*)
MacLean, D.B. *et al., Can. J. Chem.*, 1969, **47**, 1951 (*pmr, struct*)
Onda, M. *et al., Chem. Pharm. Bull.*, 1970, **18**, 1435 (*Dihydrosanguinarine, Oxychelirubine, synth, pmr*)
Ikuta, A. *et al., Phytochemistry*, 1974, **13**, 2175; 1976, **15**, 577 (*occur*)
Takao, N. *et al., Chem. Pharm. Bull.*, 1976, **24**, 2859 (*biosynth*)
Slavík, J. *et al., Coll. Czech. Chem. Comm.*, 1977, **42**, 2686 (*Dihydrochelirubine, N-Demethyl-5,6-dihydrooxysanguinarine*)
Ishii, H. *et al., Chem. Pharm. Bull.*, 1978, **26**, 864 (*Dihydrochelirubine, Oxychelirubine, occur, ir, pmr, struct*)
Mitscher, L.A. *et al., J. Nat. Prod.*, 1978, **41**, 145-150 (*8-Methoxydihydrosanguinarine, Ethoxydihydrosanguinarine*)
Shamma, M. *et al., J.O.C.*, 1978, **43**, 2852 (*Oxosanguinarine, synth, uv, ir*)
Pandey, V.B. *et al., Phytochemistry*, 1979, **18**, 695-696 (*8-Methoxydihydrosanguinarine, Oxosanguinarine*)
Takao, N. *et al., Heterocycles*, 1981, **16**, 221 (*Dihydromacarpine, synth*)
Castedo, L. *et al., Heterocycles*, 1981, **16**, 533 (*8-Iminosanguinarine, Oxychelirubine*)
Berlin, J. *et al., Z. Naturforsch., C*, 1983, **38**, 346 (*Dihydromacarpine*)
Smidrkal, J. *et al., Coll. Czech. Chem. Comm.*, 1984, **49**, 1412 (*Oxosanguinarine, synth*)
Hanaoka, M. *et al., Chem. Lett.*, 1986, 739 (*synth*)
Tanahashi, T. *et al., Tet. Lett.*, 1988, **29**, 5625 (*synth*)
Hanaoka, M. *et al., Chem. Pharm. Bull.*, 1990, **38**, 3335 (*Dihydromacarpine, synth*)
Tanahashi, T. *et al., J. Nat. Prod.*, 1990, **53**, 579 (*10-Hydroxydihydrosanguinarine, Dihydromacrocarpine, 12-Hydroxydihydrochelirubine*)
Williams, R.D. *et al., Phytochemistry*, 1993, **32**, 719-723 (*Oxosanguinarine, pmr*)
Zhang, G.-L. *et al., Phytochemistry*, 1995, **40**, 299 (*8-Hydroxydihydrosanguinarine*)
Marek, R. *et al., Magn. Reson. Chem.*, 1999, **37**, 195-202 (*N-15 nmr*)
Chang, Y.-C. *et al., Z. Naturforsch., C*, 2003, **58**, 521-526 (N-*Demethyloxysanguinarine*)
Le, T.N. *et al., Chem. Pharm. Bull.*, 2006, **54**, 476-480 (*Oxosanguinarine, synth*)

Dihydroshihunine D-511



(*R*)-*form*

$C_{12}H_{15}NO_2$ 205.256

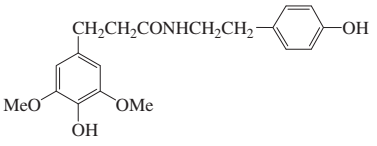
(*R*)-*form*
Epidihydroshihunine
Alkaloid from the fruits of *Rhoiptelea chiliantha*. Needles + 1/4 H_2O. Mp 221-223°. $[\alpha]_D^{25}$ -257.4 (c, 0.2 in $CHCl_3$).

6′-Methoxy: ***6′-Methoxyepidihydroshihunine***
$C_{13}H_{17}NO_3$ 235.282
Alkaloid from the fruits of *Rhoiptelea chiliantha*. Needles + 3/4 H_2O. Mp 178-180°. $[\alpha]_D^{15}$ -189.4 (c, 0.5 in $CHCl_3$).

(*S*)-*form* [83807-63-0]
Alkaloid from *Banisteriopsis caapi* (Malphigiaceae). Mp 187-189°. $[\alpha]_D^{25}$ +234.7 (c, 0.542 in $CHCl_3$).
Kawanishi, K. *et al., J. Nat. Prod.*, 1982, **45**, 637-639 (*isol, uv, ir, pmr, cmr, ms, struct, synth*)
Jiang, Z.H. *et al., Chem. Pharm. Bull.*, 2001, **49**, 737-740 (*Epidihydroshihunine, 6′-Methoxyepidihydroshihunine*)

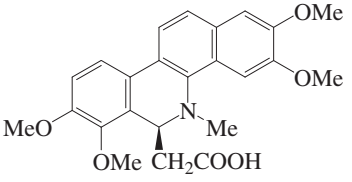
N-(Dihydrosinapoyl)tyramine D-512

*4-Hydroxy-*N*-[2-(4-hydroxyphenyl)ethyl]-3,5-dimethoxybenzenepropanamide, 9CI*



$C_{19}H_{23}NO_5$ 345.394
Constit. of the seeds of *Annona squamosa* (sugar apple). Wax.
Yang, Y.-L. *et al., Helv. Chim. Acta*, 2004, **87**, 1392-1399 (*isol, pmr, cmr, ms*)

5,6-Dihydro-2,3,7,8-tetramethoxy-5-methylbenzo[*c*]phenanthridine-6-acetic acid D-513

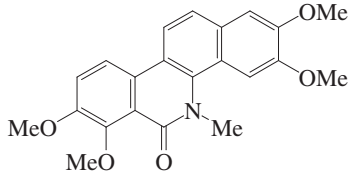


$C_{24}H_{25}NO_6$ 423.465

(*S*)-*form* [473267-10-6]
Alkaloid from the roots of *Corydalis flabellata*. Amorph. powder (MeOH/C_6H_6). Mp 240-241°. $[\alpha]_D^{20}$ +19.7 (c, 0.02 in MeOH). λ_{max} 227 (log ϵ 4.5); 280 (log ϵ 4.6); 323 (log ϵ 4.2) (MeOH).
Koul, S. *et al., Planta Med.*, 2002, **68**, 262-265 (*isol, pmr, cmr, ms*)

5,6-Dihydro-2,3,7,8-tetramethoxy-5-methylbenzo[*c*]phenanthridin-6-one D-514

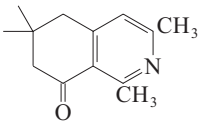
5,6-Dihydro-2,3,7,8-tetramethoxy-5-methyl-6-oxobenzo[c]phenanthridine



$C_{22}H_{21}NO_5$ 379.412
Alkaloid from the roots of *Corydalis flabellata*. Needles ($CHCl_3$/C_6H_6). Mp 190-191°. λ_{max} 235 (log ϵ 4.5); 288 (log ϵ 4.6); 335 (log ϵ 4.8) (MeOH).
Koul, S. *et al., Planta Med.*, 2002, **68**, 262-265 (*isol, pmr, cmr, ms*)

6,7-Dihydro-1,3,6,6-tetramethyl-8(5*H*)-isoquinolinone D-515

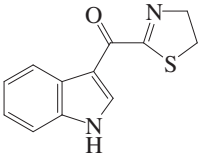
[55713-38-7]



$C_{13}H_{17}NO$ 203.283
Alkaloid from Burley tobacco (*Nicotiana tabacum*) isol. by glc. Mp 34-35°.
Demole, E. *et al., Helv. Chim. Acta*, 1975, **58**, 523 (*isol, ir, pmr, ms, synth*)
Swiss Pat., 1977, 585 523; *CA*, **86**, 16814a

3-(4,5-Dihydro-2-thiazolecarbonyl)-1*H*-indole D-516

*(4,5-Dihydro-2-thiazolyl)-1*H*-indole-3-ylmethanone, 9CI*
[244295-62-3]

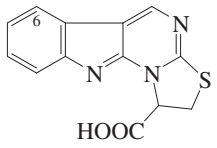


$C_{12}H_{10}N_2OS$ 230.29
Prod. by *Paracoccus* sp. Uv absorbent.
Japan. Pat., 1999, 99 269 175; *CA*, **131**, 242087z

1,2-Dihydrothiazolo[2′,3′:2,3]pyrimido[4,5-*b*]indole-1-carboxylic acid, 9CI D-517

Cabbage identification factor 1. CIF 1

[238757-90-9]



$C_{13}H_9N_3O_2S$ 271.299

Alkaloid found on the leaf surfaces of *Brassica oleracea* cv. *botrytis* (cauliflower). Oviposition stimulant for the cabbage root fly, *Delia radicum*.

Glycine amide: ***CIF 2***

[238757-91-0]

$C_{15}H_{12}N_4O_3S$ 328.351

Alkaloid found on the leaf surfaces of *Brassica oleracea* cv. *botrytis* (cauliflower). Oviposition stimulant for *Delia radicum*.

6-Methoxy: ***CIF 3***

[338799-24-9]

$C_{14}H_{11}N_3O_3S$ 301.325

Alkaloid from the roots of *Brassica napus* var. *napobrassica* (swede). Oviposition stimulant for *Delia radicum*. Incorrect position of methoxy given in CAS.

Hurter, J. *et al., Phytochemistry*, 1999, **51**, 377-382 (*isol, pmr, cmr, ms*)

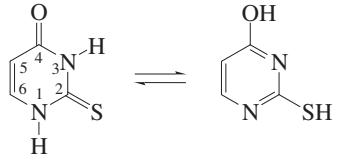
De Jong, R. *et al., Chemoecology*, 2000, **10**, 205-209 (*CIF 3*)

2,3-Dihydro-2-thioxo-4(1*H*)-pyrimidinone, 9CI D-518

2-Thiouracil. 4-Hydroxy-2-mercaptopyrimidine. Thiouracil. Deracil

[141-90-2]

[156-82-1]



$C_4H_4N_2OS$ 128.154

6 Tautomers theoretically possible; *NH*-form (illus.) prob. predominates. Present in *Escherichia coli* t-RNA. Used as 0.3% soln. in Me_2CO/HCl (pH 1) for photometric detn. of Pd(*II*) (λ_{max} 428 nm). Shows antibacterial and antiviral props. by alterations to protein synth. Formerly used as an antithyroid agent. Antidote for Hg poisoning. Prisms (H_2O or EtOH). Sol. Me_2CO, EtOH, H_2O. Mp 340° dec.

▶ Exp. carcinogen, human and exp. teratogen. LD_{50} (mus, orl) 3900 mg/kg. Possible human carcinogen (IARC 2B). YR1575000

Still, I.W.J. *et al., Can. J. Chem.*, 1978, **56**, 725 (*cmr*)

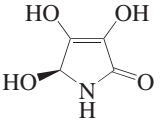
Hirota, K. *et al., J.O.C.*, 1978, **43**, 1193 (*synth*)

Katritzky, A.R. *et al., J.C.S. Perkin 2*, 1989, 1499; 1507; 1990, 871 (*pe, tautom, bibl*)

IARC Monog. (Web),

1,5-Dihydro-3,4,5-trihydroxy-2*H*-pyrrol-2-one D-519

2,3-Dihydroxydihydromaleimide



$C_4H_5NO_4$ 131.088

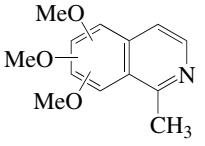
(*S*)-*form* [955008-77-2]

Alkaloid from the leaves of *Arum palaestinum*. Amorph. powder.

El-Desouky, S.K. *et al., Arch. Pharmacal Res.*, 2007, **30**, 927-931 (*isol, pmr, cmr, ms*)

3,4-Dihydro-*ar*-trimethoxy-1-methylisoquinoline D-520

[93474-23-8]



$C_{13}H_{17}NO_3$ 235.282

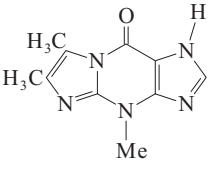
Alkaloid detected in *Pachycereus weberi* (Cactaceae) by tandem mass spectrom.

Roush, R.A. *et al., Anal. Chem.*, 1985, **57**, 109-114 (*occur*)

1,4-Dihydro-4,6,7-trimethyl-9*H*-imidazo[1,2-*a*]purin-9-one, 9CI D-521

7-Methylwye

[96881-39-9]



$C_{10}H_{11}N_5O$ 217.23

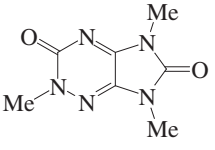
Found in tRNA of highly thermophilic archaebacteria. Monohydrate. Mp 300°.

Milloskey, J.A. *et al., Nucleic Acids Res.*, 1987, **15**, 683

Itaya, T. *et al., Chem. Pharm. Bull.*, 1989, **37**, 284; 1990, **38**, 2656 (*synth, pmr*)

2,7-Dihydro-2,5,7-trimethyl-5*H*-imidazo[4,5-*e*]-1,2,4-triazine-3,6-dione D-522

Antibiotic 2096D*. 2096D*



$C_7H_9N_5O_2$ 195.18

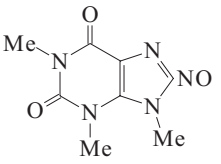
Prod. by *Streptomyces* sp. IM 2096. Pale yellow solid. Possible degradation prod.

Wang, H. *et al., J. Nat. Prod.*, 2000, **63**, 1641-1646

3,9-Dihydro-1,3,9-trimethyl-8-nitroso-1*H*-purine-2,6-dione, 9CI D-523

1,3,9-Trimethyl-8-nitrosoisoxanthine

[153534-80-6]



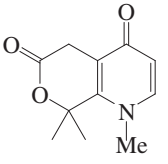
$C_8H_9N_5O_3$ 223.191

The first isoxanthine (isocaffeine) deriv. from a natural source. Isol. from the sea cucumber *Cucumaria frondosa*. Powder. Mp 273° dec.

Yayli, N. *et al., J. Nat. Prod.*, 1994, **57**, 84-89 (*isol, uv, ir, pmr, cmr, struct*)

5,8-Dihydro-1,8,8-trimethyl-1*H*-pyrano[3,4-*b*]pyridine-4,6-dione, 9CI D-524

[911366-95-5]



$C_{11}H_{13}NO_3$ 207.229

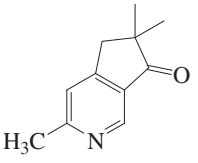
Alkaloid from the aerial parts of *Stapelia hirsuta*. Needles. Mp 178-180°. λ_{max} 234 ; 322 (MeOH).

Shabana, M. *et al., Turk. J. Chem.*, 2006, **30**, 89-92 (*isol, pmr, cmr, ms*)

5,6-Dihydro-3,6,6-trimethyl-7*H*-2-pyrindin-7-one, 9CI D-525

*5,6-Dihydro-3,6,6-trimethyl-7*H*-cyclopenta[c]pyridin-7-one, 9CI*

[55713-43-4]



$C_{11}H_{13}NO$ 175.23

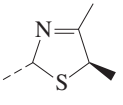
Alkaloid from Virginia tobacco (*Nicotiana tabacum*).

Wahlberg, I. *et al., Phytochemistry*, 1977, **16**, 1233-1235 (*isol*)

2,5-Dihydro-2,4,5-trimethylthiazole, 9CI D-526

2,4,5-Trimethyl-3-thiazoline, 8CI

[60633-24-1]



(2*R*,5*R*)–*form*

$C_6H_{11}NS$ 129.226

Constit. of the faeces of red fox (*Vulpes vulpes*). Flavour constit. of cooked meats. Bp_{12} 57°.

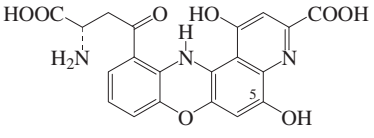
Picrate:
Cryst. (MeOH). Mp 117-118°.

[134281-37-1 , 134281-36-0]

Thiel, M. *et al., Annalen*, 1960, **638**, 174 (*synth*)
Mussinan, C.J. *et al., ACS Symp. Ser.*, 1976, **26**, 133 (*occur*)
Hwang, S.S. *et al., J. Agric. Food Chem.*, 1986, **34**, 538 (*synth, occur*)
Sullivan, T.P. *et al., J. Chem. Ecol.*, 1988, **14**, 363; 379 (*isol*)

Dihydroxanthommatin D-527

*α-Amino-3-carboxy-1,5-dihydroxy-γ-oxo-12*H*-pyrido[3,2-*a*]phenoxazine-11-butanoic acid, 9CI*
[25705-16-2]
[81624-03-5]



$C_{20}H_{15}N_3O_8$ 425.354

(*S*)-*form*
Found in eyes and skin of *Loligo vulgaris*, *Sepia officinalis* and other molluscs, also in heads of flies *Musca domestica* and bees *Apis mellifera*, and in lepidopteran wings and excreta. Red cryst. Mp >350°.

5-O-*Sulfate:* ***Ommatin D***
[28991-26-6]
$C_{20}H_{15}N_3O_{11}S$ 505.418
Occurs in lepidopteran wings and excreta. Isol. from the secretions of the butterfly *Vanessa urticae*. Red-brown powder.

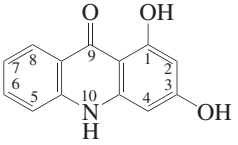
5-O-*β*-*D*-*Glucopyranoside:* ***Rhodommatin***
$C_{26}H_{25}N_3O_{13}$ 587.496
Occurs in lepidopteran wings and excreta. Isol. from the secretions of *Vanessa urticae*. Red cryst. Mp >350°.

[121727-27-3]

Butenandt, A. *et al., Annalen*, 1957, **607**, 207-214 (*Ommatin D*)
Butenandt, A. *et al., Hoppe-Seyler's Z. Physiol. Chem.*, 1960, **321**, 258-275 (*Ommatin D, Rhodommatin*)
Bolognese, A. *et al., J. Het. Chem.*, 1988, **25**, 1247-1250

1,3-Dihydroxyacridone D-528

*1,3-Dihydroxy-9(10*H*)-acridinone, 9CI*
[20324-10-1]



$C_{13}H_9NO_3$ 227.219
Yellow needles (Me_2CO/EtOH). Mp 345° dec. (355° dec., 370°).

3-Ac: [28333-05-3]
$C_{15}H_{11}NO_4$ 269.256
Yellow needles (Me_2CO/EtOAc). Mp 286-287°.

1,3-Di-Ac: [28333-04-2]
$C_{17}H_{13}NO_5$ 311.293
Buff prisms (Me_2CO/EtOAc). Mp 205-207°.

N-*Me:* ***1,3-Dihydroxy-10-methylacridone***
[28333-02-0]
$C_{14}H_{11}NO_3$ 241.246
Alkaloid from the roots of *Citrus tamurana* and *Citrus natsudaidai* (Rutaceae). Light yellow cubes (CH_2Cl_2). Mp 292.5-295° dec. (>295°).

1-Me ether, N-*Me: 3-Hydroxy-1-methoxy-10-methylacridone.* ***Tegerrardin A***
$C_{15}H_{13}NO_3$ 255.273
Alkaloid from the stem bark of *Teclea gerrardii*. Pale yellow powder. Mp 158-159°.

3-Me ether: ***1-Hydroxy-3-methoxyacridone***
[91998-87-7]
$C_{14}H_{11}NO_3$ 241.246
Alkaloid from the bark of *Fagara macrophylla*. Mp 300-301° (synthetic).

3-Me ether, N-*Me:* ***1-Hydroxy-3-methoxy-10-methylacridone***
[13161-83-6]
$C_{15}H_{13}NO_3$ 255.273
Alkaloid from the bark of *Esenbeckia litoralis*, the roots of *Glycosmis mauritiana* and *Ruta graveolens* (rue), and the root and stem bark of *Fagara leprieurii* and *Fagara rubescens* (Rutaceae). Yellow cryst. (EtOAc/petrol or EtOAc/C_6H_6). Mp 164-165° Mp 174-176°.

3-Me ether, N-*Me, 1-Ac:* ***1-Acetoxy-3-methoxy-10-methylacridone***
[75533-56-1]
$C_{17}H_{15}NO_4$ 297.31
Alkaloid from the bark of *Esenbeckia litoralis*. Cryst. (EtOAc/petrol). Mp 219-220°.

Di-Me ether: ***1,3-Dimethoxyacridone***
[27221-40-5]
$C_{15}H_{13}NO_3$ 255.273
Alkaloid from leaves of *Bauerella simplicifolia* (preferred genus name *Acronychia*) (Rutaceae). Cryst. (EtOAc), green cryst. (EtOH). Mp 256-257° Mp 286-287°.

Di-Me ether, N-*Me:* ***1,3-Dimethoxy-10-methylacridone***
[13082-10-5]
$C_{16}H_{15}NO_3$ 269.299
Alkaloid from *Bauerella simplicifolia* (preferred genus name *Acronychia*), *Diphasia angolensis*, *Oricia suaveolens*, *Teclea verdoorniana*, *Vepris pilosa*, *Vepris ampody* and *Acronychia baueri* (Rutaceae). Needles (EtOAc, $CHCl_3$/petrol or C_6H_6/cyclohexane). Mp 165°. λ_{max} 261 (log ϵ 4.66); 267 (log ϵ 4.67); 290 (log ϵ 4.15); 380 (log ϵ 3.94) (EtOH).

Di-Me ether, N-*Me, picrate:*
Yellow needles (MeOH). Mp 203-205°.

O^1-*(3-Methyl-2-butenyl),* N-*Me: 3-Hydroxy-10-methyl-1-prenyloxyacridone.* ***Tegerrardin B***
$C_{19}H_{19}NO_3$ 309.364
Alkaloid from the stem bark of *Teclea gerrardii*. Pale yellow gum.

O^3-*(3-Methyl-2-butenyl),* N-*Me: 1-Hydroxy-10-methyl-3-prenyloxyacridone.* ***Vebilocine***
[177857-30-6]
$C_{19}H_{19}NO_3$ 309.364
Alkaloid from the leaves of *Vepris bilocularis*. Yellow cryst. (Et_2O/petrol). Mp 145-147°.

Lamberton, J.A. *et al., Aust. J. Chem.*, 1953, **6**, 66-77 (*di-Me ether N-Me*)
Bowie, J.H. *et al., Aust. J. Chem.*, 1967, **20**, 1179-1193 (*ms*)
Hlubucek, J. *et al., Aust. J. Chem.*, 1970, **23**, 1881-1889 (*N-Me, 1,3-di-Me N-Me*)
Oh, C.S. *et al., J. Het. Chem.*, 1970, **7**, 261-267 (*N-Me*)
Kan-Fan, C. *et al., Phytochemistry*, 1970, **9**, 1283-1291 (*1,3-di-Me ether N-Me, isol*)
Fish, F. *et al., Phytochemistry*, 1971, **10**, 3322-3324 (*3-Me ether N-Me, isol, uv, ir*)
Scharlemann, W. *et al., Z. Naturforsch., B*, 1972, **27**, 806-808 (*3-Me ether N-Me, isol, uv*)
Bandaranayake, W.M. *et al., J.C.S. Perkin 1*, 1974, 998-1007 (*synth*)
Adams, J.H. *et al., J.C.S. Perkin 1*, 1976, 2089-2093 (*di-Me ether, synth, uv*)
Fish, F. *et al., Planta Med.*, 1978, **33**, 228-231 (*di-Me ether N-Me, isol*)
Begenthal, D. *et al., Phytochemistry*, 1979, **18**, 161-163 (*cmr*)
Tillequin, F. *et al., J. Nat. Prod.*, 1980, **43**, 498-502 (*1,3-di-Me ether, 1,3-di-Me ether N-Me*)
Dreyer, D.L. *et al., Phytochemistry*, 1980, **19**, 941-944 (*3-Me ether N-Me, 3-Me ether N-Me 1-Ac, di-Me ether N-Me, isol, uv, pmr, ms, synth*)
Ju-ichi, M. *et al., Heterocycles*, 1987, **26**, 1873 (*N-Me, isol, uv, ir, pmr, cmr, ms, struct, deriv*)
Bahar, M.H. *et al., Indian J. Chem., Sect. B*, 1987, **26**, 782-783 (*3-Me ether N-Me, synth, uv, ir, pmr, ms*)
Reisch, J. *et al., Annalen*, 1991, 685-689 (*N-Me, 3-Me ether N-Me, 1,3-di-Me ether N-Me, synth, ir, pmr, cmr*)
Brader, G. *et al., Phytochemistry*, 1996, **42**, 881-884 (*Vebilocine*)
Spatafora, C. *et al., Phytochem. Anal.*, 1997, **8**, 139-142 (*1-Hydroxy-3-methoxyacridone*)
Waffo, A.F.K. *et al., Phytochemistry*, 2007, **68**, 663-667 (*Tegerrardins A,B*)

1,7-Dihydroxyacridone D-529

*1,7-Dihydroxy-9(10*H*)-acridinone, 9CI*
[112649-95-3]

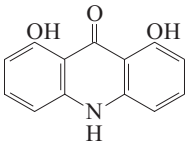
$C_{13}H_9NO_3$ 227.219
Alkaloid from the aerial parts of *Boronia lanceolata*. Amorph. yellow solid. Mp 278-285°. λ_{max} 240 (sh) ; 259 ; 267 ; 308 ; 323 ; 414 (MeOH).

N-*Me:* ***1,7-Dihydroxy-10-methylacridone***
[65582-55-0]
$C_{14}H_{11}NO_3$ 241.246
Constit. of roots of *Boenninghausenia albiflora* (Rutaceae). Yellow needles (Me_2CO). Mp 308° dec. λ_{max} 244 (sh) ; 262 ; 272 ; 314 (sh) ; 328 (sh) ; 410 (MeOH).

Rózsa, Z. *et al., Phytochemistry*, 1978, **17**, 169-170 (*N-Me, uv, pmr, ms*)
Bergenthal, D. *et al., Phytochemistry*, 1979, **18**, 161-163 (*N-Me, cmr*)
Ahsan, M. *et al., Phytochemistry*, 1993, **33**, 1507-1510 (*isol, pmr, cmr, ms*)

1,8-Dihydroxyacridone D-530

1,8-Dihydroxy-9(10H)-acridinone, 9CI
[151077-55-3]

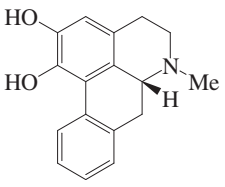


$C_{13}H_9NO_3$ 227.219
Alkaloid from aerial parts of *Boronia lanceolata* (Rutaceae). also from sp. aff. *Samadera bidwillii*. Yellow needles ($CHCl_3$/MeOH). Mp 250°. λ_{max} 251 ; 258 (sh) ; 310 (sh) ; 322 ; 408 ; 426 (MeOH).

N-*Me:* ***1,8-Dihydroxy-10-methylacridone***
[130897-51-7]
$C_{14}H_{11}NO_3$ 241.246
Alkaloid from aerial parts of *Boronia lanceolata* (Rutaceae). Yellow needles ($CHCl_3$/MeOH). Mp 235-237°. λ_{max} 251 ; 262 (sh) ; 320 ; 413 (MeOH).

Ahsan, M. *et al., Phytochemistry*, 1993, **33**, 1507 (*isol, uv, ir, pmr, cmr, ms, struct*)
Gibbons, S. *et al., Phytochemistry*, 1997, **44**, 1109 (*isol*)

1,2-Dihydroxyaporphine D-531



(*R*)-*form*

$C_{17}H_{17}NO_2$ 267.327

(*R*)-*form*

O^1-*Me: 2-Hydroxy-1-methoxyaporphine.* ***Floribundine.*** N-*Methylasimilobine.* O-*Nornuciferine*
[3153-55-7]
$C_{18}H_{19}NO_2$ 281.354
Alkaloid from *Nelumbo nucifera* (East India lotus) (Nelumbonaceae) and from several genera in the Annonaceae (*Asimina, Xylopia*), Menispermaceae (*Stephania*), Papaveraceae (*Papaver*) and Rhamnaceae (*Colubrina*). Active against gram-positive bacteria. Mp 195-196°. $[\alpha]_D^{20}$ -220 (c, 0.40 in $CHCl_3$). λ_{max} 231 (log ϵ 4.07); 272 (log ϵ 4); 314 (log ϵ 3.29) (no solvent reported).

O^1-*Me,* O-*β-D-glucopyranoside:* N-*Methylasimilobine glucoside*
[267886-73-7]
$C_{24}H_{29}NO_7$ 443.496
Alkaloid from the seeds of *Stephania cepharantha*. Amorph. powder. $[\alpha]_D^{27}$ -116.1 (c, 0.6 in MeOH).

O^1-*Me,* O-*α-L-rhamnopyranoside:* ***Floripavidine***
[62867-48-5]
$C_{24}H_{29}NO_6$ 427.496
Alkaloid from *Papaver floribundum* (*Papaver fugax*), *Papaver cylindricum*, *Papaver armeniacum* and *Papaver persicum* (*Papaver tauricola*) (Papaveraceae). Mp 241-242°. $[\alpha]_D$ -156 (c, 1.6 in MeOH). λ_{max} 273 (log ϵ 4.25); 310 (log ϵ 3.45) (no solvent reported).

O^1-*Me,* N-*de-Me: 2-Hydroxy-1-methoxynoraporphine.* ***Asimilobine***†
[6871-21-2]
$C_{17}H_{17}NO_2$ 267.327
Alkaloid from a wide variety of genera in the Annonaceae (*Anaxagorea*, *Annona*, *Asimina*, *Melodorum*, *Desmos*, *Guatteria*, *Hexalobus*, *Mitrella*, *Monanthotaxis*, *Popowia*, *Polyalthia*, *Schefferomitra*, *Xylopia*, *Uvaria*), Aristolochiaceae (*Aristolochia*), Magnoliaceae (*Liriodendron*, *Magnolia*), Monimiaceae (*Laurelia*), Nelumbonaceae (*Nelumbo*), Lauraceae (*Ocotea*) and Rhamnaceae (*Zizyphus*). Serotonin receptor antagonist. Shows antimicrobial activity. Mp 177-179°. $[\alpha]_D^{14}$ -213 (c, 0.64 in $CHCl_3$). λ_{max} 274 (log ϵ 4.21); 308 (log ϵ 3.51) (no solvent reported).

O^1-*Me,* N-*de-Me,* O-*β-D-glucopyranoside: Asimilobine 2-glucoside*
[151601-87-5]
$C_{23}H_{27}NO_7$ 429.469
Alkaloid from tubers of *Stephania pierrei* (Menispermaceae). Mp 158°. $[\alpha]_D^{20}$ -107 (c, 0.1 in MeOH).

O^1-*Me,* N-*de-Me,* N-*Ac:* **N-*Acetylasimilobine***
[60031-90-5]
$C_{19}H_{19}NO_3$ 309.364
Alkaloid from the heartwood and discoloured sapwood of *Liriodendron tulipifera* (Magnoliaceae). Needles ($CHCl_3$). Mp 281-283°. $[\alpha]_D^{25}$ -405 (c, 0.595 in Py).

O^1-*Me,* N-*de-Me,* N-*carbamoyl:* **N-*Carbamoylasimilobine***
[83459-47-6]
$C_{18}H_{18}N_2O_3$ 310.352
Alkaloid from the stem bark and root bark of *Hexalobus crispiflorus* (Annonaceae). Cryst. (MeOH). Mp 218° dec. $[\alpha]_D^{20}$ -373 (c, 0.06 in MeOH). λ_{max} 273 (log ϵ 4.08); 305 (log ϵ 3.43) (MeOH).

O^1-*Me,* N-*de-Me,* N-*methoxycarbonyl:* ***Romucosine A***
[356048-23-2]
$C_{19}H_{19}NO_4$ 325.363
Alkaloid from *Rollinia mucosa* (biriba). Amorph. brown powder. $[\alpha]_D^{25}$ -105 (c, 0.1 in $CHCl_3$). λ_{max} 237 (log ϵ 4.4); 285 (log ϵ 4.22); 307 (log ϵ 4.05) (MeOH).

O^1-*Me,* N-*de-Me,* N-*ethoxycarbonyl,* O-*glucopyranoside:* ***Kamaline***
[157207-94-8]
$C_{26}H_{31}NO_9$ 501.532
Alkaloid from whole plants of *Stephania venosa* (Menispermaceae). Cryst. (MeOH/$CHCl_3$). Mp 158-160°. $[\alpha]_D^{20}$ -285 (c, 0.107 in $CHCl_3$).

O^2-*Me:* [37082-15-8]
Synthetic. Mp 167-169°.

O^2-*Me, hydrochloride:*
Cryst. + ½ H_2O. Mp 220° dec.

O^2-*Me,* N-*de-Me: 1-Hydroxy-2-methoxynoraporphine.* ***(-)-Caaverine***
[6899-64-5]
$C_{17}H_{17}NO_2$ 267.327
Alkaloid from *Symplocos celastrinea* and *Ocotea glaziovii* (Symplocaceae, Lauraceae). Mp 208-210° dec. $[\alpha]_D^{25}$ -89 (c, 1 in MeOH). λ_{max} 272 (log ϵ 4.25); 310 (sh) (log ϵ 3.7) (no solvent reported).

▶ RB6009000

Di-Me ether: 1,2-Dimethoxyaporphine. ***Nuciferine.*** *Sanjoinine E*
[475-83-2]
$C_{19}H_{21}NO_2$ 295.38
Alkaloid from *Nelumbo lutea* (Nelumbonaceae) and *Colubrina faralaotra* (Rhamnaceae), also from the Araceae, Berberidaceae, Lauraceae, Menispermaceae, Papaveraceae, Magnoliaceae and Annonaceae. Inhibitor of adenylate cyclase. Shows strong sedative activity. Antispasmodic agent. Active against gram-positive bacteria. Mp 165.5°. $[\alpha]_D^{20}$ -164 (c, 1 in EtOH). λ_{max} 230 (ϵ 18300); 272 (ϵ 15400); 310 (ϵ 2100) (95% EtOH).

▶ LD_{50} (rat, orl) 280 mg/kg. CE0350000

Di-Me ether, hydrochloride: Mp 241° (*in vacuo*).

Di-Me ether, N-*Me:*
$C_{20}H_{24}NO_2^{\oplus}$ 310.415
Mp 177-178° (as iodide).

Di-Me ether, N-*de-Me: 1,2-Dimethoxynoraporphine.* **N-*Nornuciferine.*** N-*Demethylnuciferine.* N-*Desmethylnuciferine. Sanjoinine Ia. Daechualkaloid E*
[4846-19-9]
$C_{18}H_{19}NO_2$ 281.354
Alkaloid from *Nelumbo lutea* (Nelumbonaceae) and *Colubrina faralaotra* (Rhamnaceae), also from the Annonaceae, Magnoliaceae, Menispermaceae and Monimiaceae. Antispasmodic agent, serotonin receptor antagonist. Mp 128-129°. $[\alpha]_D^{25}$ -145 (c, 0.98 in EtOH). λ_{max} 230 (ϵ 20500); 272 (ϵ 16800); 310 (ϵ 2200) (95% EtOH).

Di-Me ether, N-*de-Me,* N-*formyl:* **N-*Formylnornuciferine***
[107633-68-1]
$C_{19}H_{19}NO_3$ 309.364
Alkaloid from the leaves of *Guatteria ouregou* (Annonaceae). Negative opt. rotn. λ_{max} 212 (log ϵ 4.48); 226 (sh) (log ϵ 4.32); 269 (log ϵ 4.26); 312 (sh) (log ϵ 3.74) (EtOH).

Di-Me ether, N-*de-Me,* N-*Ac:* **N-*Acetylnornuciferine***
[1942-03-6]
$C_{20}H_{21}NO_3$ 323.391
Alkaloid from the heartwood of *Liriodendron tulipifera* (Magnoliaceae). Cryst. (MeOH). Mp 229-230°. $[\alpha]_D^{25}$ -406 (c, 0.65 in $CHCl_3$).

6a,*7-Didehydro, di-Me ether:* see Dehydronuciferine, D-164

(*S*)-*form*

O^2-*Me: 1-Hydroxy-2-methoxyaporphine.* ***Lirinidine.*** N-*Methylcaaverine*
[54383-28-7]
$C_{18}H_{19}NO_2$ 281.354
Alkaloid from *Liriodendron tulipifera*, *Papaver persicum*, *Papaver tauricola*

and *Papaver armeniacum* (Magnoliaceae, Papaveraceae). Mp 214-215°. λ_{max} 271 (log ε 4.12); 312 (log ε 3.67) (no solvent reported).

O^2-*Me,* N-*de-Me:* ***(+)-Caaverine***
[54383-30-1]
$C_{17}H_{17}NO_2$ 267.327
Alkaloid from *Liriodendron tulipifera* (Magnoliaceae). $[\alpha]_D^{25}$ +95 (c, 0.12 in MeOH).

Di-Me ether, N-*de-Me:* [20454-22-2]
Alkaloid from *Liriodendron tulipifera*. $[\alpha]_D^{20}$ +140 (c, 0.18 in EtOH).

Di-Me ether, N-*de-Me,* N-*methoxycarbonyl:* **N-*Methoxycarbonyl*-N-*nornuciferine***
[356042-11-0]
$C_{20}H_{21}NO_4$ 339.39
Alkaloid from *Rollinia mucosa* (biriba). Amorph. powder. $[\alpha]_D^{25}$ +165 (c, 0.05 in $CHCl_3$). λ_{max} 235 (log ε 4.23); 285 (log ε 4.2); 307 (log ε 3.36) (MeOH).

3-Chloro, O^1-*Me,* N-*de-Me,* N-*methoxycarbonyl:* ***Romucosine B***
[356048-24-3]
$C_{19}H_{18}ClNO_4$ 359.808
Alkaloid from *Rollinia mucosa* (biriba). Amorph. powder. $[\alpha]_D^{25}$ +153 (c, 0.05 in $CHCl_3$). Opposite abs. config. to Romucosine A. λ_{max} 245 (log ε 4.43); 285 (log ε 4.25) (MeOH).

(±)-form

O^2-*Me:* [22222-86-2]
Alkaloid from the leaves of *Ocotea glaziovii* (Lauraceae). Cryst. (Et_2O/hexane). Mp 156°.

► CE1040000

O^2-*Me,* N-*Me:*
Prisms (MeOH/Et_2O). Mp 234-236° dec.

Di-Me ether, hydrochloride: [5868-18-8]
Mp 258° dec.

► CE0340000

Di-Me ether, N-*de-Me:* [54750-04-8]
Synthetic. Mp 124-125°.

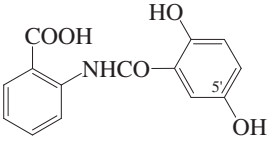
► RB5916300

O^1-*Me,* N-*de-Me, hydrochloride:* Mp 260-262°.

Di-Me ether, N-*de-Me,* N-*Ac:* [29424-85-9]
Synthetic. Rosettes (C_6H_6/hexane), needles (MeOH). Mp 232-233°.

Gulland, J.M. *et al., J.C.S.*, 1928, 581-591 (*Nuciferine, synth*)
Konvalova, R. *et al., Ber.*, 1935, **68**, 2277-2282 (*Floribundine, isol*)
Arthur, H.R. *et al., J.C.S.*, 1959, 2306 (*Nuciferine, isol*)
Tomita, M. *et al., Yakugaku Zasshi*, 1961, **81**, 469-473; 1965, **85**, 77-82 (*Floribundine, Asimilobine*)
Kupchan, S.M. *et al., Tetrahedron*, 1963, **19**, 227-232 (*N-Nornuciferine*)
Gilbert, B. *et al., J.A.C.S.*, 1964, **86**, 694-696 (*Lirinidine, Caaverine, synth, uv, pmr, ord*)
Tschesche, R. *et al., Tetrahedron*, 1964, **20**, 1435-1447 (*(-)-Caaverine*)
Kunimoto, J.I. *et al., Yakugaku Zasshi*, 1964, **84**, 1141-1142 (*Floribundine, Nuciferine, isol*)
Baxter, I. *et al., J.C.S.*, 1965, 4014-4024 (*N-Acetylnornuciferine*)
Johns, S.R. *et al., Aust. J. Chem.*, 1970, **23**, 363-368; 423-426 (*Asimilobine, N-Nornuciferine*)
Kupchan, S.M. *et al., J.O.C.*, 1971, **36**, 2413-2418 (*Nuciferine, synth, uv*)
Guinaudeau, H. *et al., Phytochemistry*, 1971, **10**, 1963-1966 (*Nuciferine, isol, ir, pmr, ms*)
Mitscher, L.A. *et al., J. Nat. Prod.*, 1972, **35**, 157-176 (*activity*)
Ziyaev, R. *et al., Khim. Prir. Soedin.*, 1973, **9**, 760-763; *Chem. Nat. Compd. (Engl. Transl.)*, 1973, **9**, 727-729 (*(+)-Caaverine, Lirinidine, isol, uv, ir, pmr, ms*)
Cassagrande, C. *et al., Farmaco, Ed. Sci.*, 1975, **30**, 479-480; *CA*, **83**, 93873p (*Caaverine, (±)-Lirinidine*)
Guinaudeau, H. *et al., J. Nat. Prod.*, 1975, **38**, 276-338 (*rev, Asimilobine*)
Guinaudeau, H. *et al., Planta Med.*, 1975, **27**, 304-318 (*Floribundine*)
Israelov, I.A. *et al., Khim. Prir. Soedin.*, 1976, **12**, 799-801; *Chem. Nat. Compd. (Engl. Transl.)*, 1976, **12**, 716-717 (*Floripavidine*)
Chen, C.L. *et al., Phytochemistry*, 1976, **15**, 1161-1167 (*N-Acetylasimilobine*)
Hufford, C.D. *et al., Phytochemistry*, 1976, **15**, 1169-1171 (*N-Acetylasimilobine, N-Acetylnornuciferine*)
Jackman, L.M. *et al., J. Nat. Prod.*, 1979, **42**, 437-449 (*cmr*)
Ringdahl, B. *et al., J. Nat. Prod.*, 1981, **44**, 80-85 (*cd*)
Phillipson, J.D. *et al., J. Nat. Prod.*, 1981, **44**, 296-307 (*Floripavidine*)
Phillipson, J.D. *et al., Planta Med.*, 1981, **41**, 105-118 (*Lirinidine, isol, uv, ms*)
Achenbach, H. *et al., Annalen*, 1982, 1623-1633 (*N-Carbamoylasimilobine*)
Cortes, D. *et al., J. Nat. Prod.*, 1986, **49**, 878-884 (*N-Formylnornuciferine*)
Villar, A. *et al., Planta Med.*, 1986, **57**, 556-557 (*activity*)
Simeon, S. *et al., Pharmazie*, 1989, **44**, 593-597 (*Asimilobine, N-Methylasimilobine, activity*)
Han, B.H. *et al., Pure Appl. Chem.*, 1989, **61**, 443 (*Nuciferine, N-Nornuciferine, isol*)
Ramana, M.M.V. *et al., Tet. Lett.*, 1996, **37**, 1671-1674 (*N-Nornuciferine, synth*)
Hasrat, J.A. *et al., Phytomedicine*, 1997, **4**, 133-140 (*activity, Nornuciferine, Asimilobine*)
Kashiwaba, N. *et al., J. Nat. Prod.*, 2000, **63**, 477-479 (*N-Methylasimilobine glucoside*)
Kuo, R.-Y. *et al., Phytochemistry*, 2001, **57**, 421-425 (*Romucosines, N-Methoxycarbonylnornuciferine*)
Lafrance, M. *et al., Eur. J. Org. Chem.*, 2007, 811-825 (*Nuciferine, synth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, NOE500

2-(2,5-Dihydroxybenzamido)benzoic acid D-532



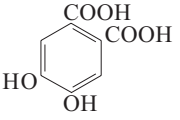
$C_{14}H_{11}NO_5$ 273.245

*Amide, 5′-*O*-β-D-allopyranoside:* [853234-82-9]
$C_{20}H_{22}N_2O_9$ 434.402
Alkaloid from *Rabdosia rubescens.*

Liu, J. *et al., CA*, 2005, **143**, 40889z (*Rabdosia rubescens amide*)

4,5-Dihydroxy-1,2-benzenedicarboxylic acid, 9CI D-533

4,5-Dihydroxyphthalic acid, 8CI. Catechol-4,5-dicarboxylic acid. Normetahemipinic acid
[63958-66-7]



$C_8H_6O_6$ 198.132
Degradn. prod. of humic acid. Prisms (H_2O). Mp 175° (→ anhydride).

Di-Me ester: [66323-03-3]
$C_{10}H_{10}O_6$ 226.185
Needles (petrol/EtOAc). Mp 141.5-142.5°.

Di-Et ester:
$C_{12}H_{14}O_6$ 254.239
Needles (H_2O). Mp 152°.

Dinitrile: 4,5-Dicyano-1,2-benzenediol
[300853-66-1]
$C_8H_4N_2O_2$ 160.132
Needles (H_2O). Mp 285°.

Mono-Me ether, imide, N-*Me: 6-Hydroxy-5-methoxy-2-methyl-1*H-*isoindole-1,3(2*H*)-dione. 6-Hydroxy-5-methoxy-*N-*methylphthalimide*
$C_{10}H_9NO_4$ 207.185
Alkaloid from the roots of *Menispermum dauricum*. Light yellow needles ($CHCl_3$). Mp 213-215°. λ_{max} 216 (log ε 3.04); 240 (log ε 3.49); 298 (log ε 0.62); 349 (log ε 0.54) (no solvent reported).

Di-Me ether: 4,5-Dimethoxy-1,2-benzenedicarboxylic acid. 4,5-Dimethoxyphthalic acid. Veratrole-4,5-dicarboxylic acid. Metahemipic acid. m-*Hemipinic acid*
[577-68-4]
$C_{10}H_{10}O_6$ 226.185
Degradn. prod. of many alkaloids. Isol. from poppy straw (*Papaver somniferum*). Needles (H_2O). Mp 174-175°.

Di-Me ether, di-Me ester: [17078-61-4]
$C_{12}H_{14}O_6$ 254.239
Constit. of soil humus. Mp 88-89°.

Di-Me ether, anhydride: 5,6-Dimethoxy-1,3-isobenzofurandione, 9CI. m-*Hepimic anhydride*
[4821-94-7]
$C_{10}H_8O_5$ 208.17
Cryst. (diisopropylether). Mp 175-176°.

*Di-Me ether, imide: 5,6-Dimethoxy-1*H-*isoindole-1,3(2*H*)-dione, 9CI.* m-*Hemipimide*
[4764-20-9]
$C_{10}H_9NO_4$ 207.185
Needles (C_6H_6). Mp 317-320°.

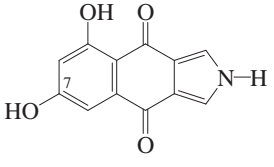
Di-Me ether, imide, N-*Me: 5,6-Dimethoxy-2-methyl-1*H-*isoindole-1,3(2*H*)-dione. 5,6-Dimethoxy-*N-*methylphthalimide*
[92288-92-1]
$C_{11}H_{11}NO_4$ 221.212
Isol. from the trunk bark of *Hernandia nymphaeifolia*. Prisms ($CHCl_3$/MeOH). Mp 149-151°.

Dibenzyl ether, dinitrile: [206995-45-1]
$C_{22}H_{16}N_2O_2$ 340.381
Needles (C_6H_6). Mp 183.5-184.5°.

Di-Ph ether, dinitrile: 4,5-Diphenoxy-1,2-dicyanobenzene
[147699-63-6]
$C_{20}H_{12}N_2O_2$ 312.327
Cryst. (MeOH). Mp 148-149°.

Bruck, O. *et al., Ber.*, 1901, **34**, 2741-2747 (*synth*)
Mason, F.A. *et al., J.C.S.*, 1914, **105**, 2013-2024 (*di-Me ether imide*)
Schmid, H. *et al., Helv. Chim. Acta*, 1945, **28**, 722-740 (*isol, di-Me ether*)
Ogner, G. *et al., Can. J. Chem.*, 1971, **49**, 1053-1063 (*di-Me ether di-Me ester, ir, ms*)
Anderson, D.R. *et al., J.O.C.*, 1978, **43**, 2726-2730 (*di-Me ester, di-Me ether imide, synth, ir, pmr*)
Chen, J.J. *et al., Phytochemistry*, 1996, **42**, 1479 (*5,6-Dimethoxy-N-methylphthalimide*)
Hu, M. *et al., J. Med. Chem.*, 1998, **41**, 1789-1802 (*dibenzyl ether dinitrile, synth, ir, pmr, ms*)
Cabezon, B. *et al., Eur. J. Org. Chem.*, 2000, 2767-2775 (*dinitrile*)
Drager, A.S. *et al., J.O.C.*, 2000, **65**, 2257-2260 (*di-Me ester, synth, pmr, cmr, ms*)
Plater, M.J. *et al., J.C.S. Perkin 1*, 2002, 91-96 (*di-Ph ether dinitrile, synth, uv, ir, pmr, cmr*)
Zhang, X. *et al., Phytochemistry*, 2004, **65**, 929-932 (*6-Hydroxy-5-methoxy-N-methylphthalimide*)

5,7-Dihydroxy-2*H*-benz[*b*]-isoindole-4,9-dione, 9CI D-534



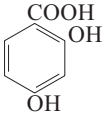
$C_{12}H_7NO_4$ 229.192

*7-Me ether: 5-Hydroxy-7-methoxy-2*H*-benz[*b*]isoindole-4,9-dione, 9CI. **Azamonosporascone***
$C_{13}H_9NO_4$ 243.218
Prod. by *Monosporascus cannonballus*. Yellow cryst. Mp 279-283°. λ_{max} 223 (log ε 3.92); 250 (log ε 3.84); 272 (log ε 3.85); 396 (log ε 3.94) (MeOH).

Stipanovic, R.D. *et al., J. Agric. Food Chem.*, 2004, **52**, 4109-4112; 4113-4120 (*isol, pmr, cmr, ms*)

2,4-Dihydroxybenzoic acid, 9CI D-535

β-Resorcylic acid, 8CI. Resorcinol-4-carboxylic acid. FEMA 3798
[89-86-1]



$C_7H_6O_4$ 154.122
Constit. of *Pterocarpus santalinus* and *Adenanthera pavonina*. Gives colour reaction with Fe; fluorescence reaction with B. Monomer for phenolic resins used as ion exchangers. Taste modifier in foods. Solid ($CHCl_3$). Mp 152° subl Mp 175° Mp 218-219° (213° rapid heat). pK_{a1} 3.11; pK_{a2} 8.55; pK_{a3} 14 (25°).

▶ Exp. teratogenic effects. VH3708050

Nitrile: 2,4-Dihydroxybenzonitrile. 4-Cyano-1,3-benzenediol. 4-Cyanoresorcinol
[64419-24-5]
$C_7H_5NO_2$ 135.122
Mp 175°.

*Nitrile, 2-*O*-β-D-glucopyranoside: **Amiroside***
[258277-63-3]
$C_{13}H_{15}NO_7$ 297.264
Constit. of *Veronica polita*.

Zaghloul, M.G. *et al., CA*, 2000, **132**, 148988t (*Amiroside*)

3,4-Dihydroxybenzoic acid D-536

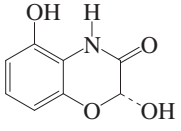
Protocatechuic acid, 8CI. Carbohydroquinonic acid. Catechol-4-carboxylic acid. Hypogallic acid
[99-50-3]
$C_7H_6O_4$ 154.122
Can be extracted from lignin. Isol. in free state from various higher plants, e.g. *Fagopyrum* and *Alnus* spp. and some *Allium* spp. Antioxidant, free radical scavenger, dietary chemopreventive agent (inhibits development of neoplasms in animal models), inhibits LDL oxidation, platelet aggregation inhibitor. Shows cytostatic activity. Needles + $1H_2O$ (H_2O). Mp 195-196° (anhyd.). pK_{a1} 4.49; pK_{a2} 8.64; pK_{a3} 1 (25°).

▶ UL0560000

3-Me ether, amide: 4-Hydroxy-3-methoxybenzamide
[19072-58-3]
[179951-61-2 (hydrochloride)]
$C_8H_9NO_3$ 167.164
Constit. of *Naravelia zeylanica*. Cryst. (EtOH aq.). Mp 179-182° (153-154°).

Jaroszewski, J.W. *et al., Nat. Prod. Rep.*, 2005, **19**, 291-294 (*4-Hydroxy-3-methoxybenzamide*)

2,5-Dihydroxy-2*H*-1,4-benzoxazin-3(4*H*)-one D-537



$C_8H_7NO_4$ 181.148

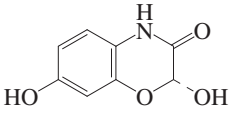
(R)-form

*2-*O*-β-D-Glucopyranoside:* [381722-83-4]
$C_{14}H_{17}NO_9$ 343.29
Constit. of *Acanthus ilicifolius*.
Amorph. powder. $[\alpha]_D^{26}$ +95 (c, 0.4 in DMSO).

Kanchanapoom, T. *et al., Phytochemistry*, 2001, **58**, 637-640 (*isol, pmr, cmr*)

2,7-Dihydroxy-2*H*-1,4-benzoxazin-3(4*H*)-one, 9CI D-538

[69804-59-7]



$C_8H_7NO_4$ 181.148

(R)-form

Identified in sweet corn extracts. Sol. MeOH, H_2O, $CHCl_3$. λ_{max} 254 ; 281 (MeOH) (Berdy). λ_{max} 253 ; 279 (H_2O) (Berdy).

*2-*O*-β-D-Glucopyranoside: DHBOA-Glc*
[28512-70-1]
$C_{14}H_{17}NO_9$ 343.29
Constit. of *Acanthus ilicifolius*, *Coix lachryma-jobi* (Job's tears) and *Lamium galeobdolon*. Cryst. (MeOH). Mp 267-269°. $[\alpha]_D^{24}$ +22.3 (c, 0.6 in Py). λ_{max} 263 (log ε 4); 286 (sh) (log ε 3.84) (EtOH).

*7-Me ether: 2-Hydroxy-7-methoxy-2*H*-1,4-benzoxazin-3(4*H*)-one. HMBOA*
[17359-53-4]
$C_9H_9NO_4$ 195.174
Constit. of *Coix lachryma-jobi* (Job's tears), wheat and sweet corn (*Zea mays*). Cryst. Mp 198-199.5° (179-181°). λ_{max} 258 (log ε 4.06); 286 (sh) (log ε 3.78) (EtOH).

*7-Me ether, 2-*O*-β-D-glucopyranoside: HMBOA-Glc*
[17622-26-3]
$C_{15}H_{19}NO_9$ 357.316
Constit. of the roots of *Coix lachryma-jobi* (Job's tears) and *Aphelandra* spp. Cryst. (MeOH). Mp 250-251° (230-235°). $[\alpha]_D^{20}$ +38.4 (MeOH). λ_{max} 205 (ε 12340); 259 (ε 9141); 282 (sh) (ε 7100) (MeOH).

*Di-Me ether: 2,7-Dimethoxy-2*H*-1,4-benzoxazin-3(4*H*)-one*
[131761-45-0]
$C_{10}H_{11}NO_4$ 209.201
Cryst. Mp 149-150°.

N-*Hydroxy,* O^7*-Me: 2,4-Dihydroxy-7-methoxy-2*H*-1,4-benzoxazin-3(4*H*)-one. DIMBOA*
[15893-52-4]
[147802-16-2 , 147802-15-1 , 157194-49-5]
$C_9H_9NO_5$ 211.174
Isol. from wheat, in which it is present mainly as glucoside. Appears to be a natural aphicide, insecticide and fungicide. Involved in the *in vivo* detoxification of herbicides, e.g. Simazine. Antialgal agent. Pink needles. Mp 168-169° (138°).

N-*Hydroxy,* O^7*-Me, 2-*O*-β-D-glucopyranoside: DIMBOA-Glc*
[113565-32-5]
[157241-65-1 , 18607-79-9]
$C_{15}H_{19}NO_{10}$ 373.316
Isol. from sweet corn (*Zea mays*) and *Aphelandra* spp. Needles (EtOH). Mp 262-263° dec.

N-*Methoxy, 7-Me ether: 2-Hydroxy-4,7-dimethoxy-2*H*-1,4-benzoxazin-3(4*H*)-one, 9CI. HDMBOA*
[149182-67-2]
$C_{10}H_{11}NO_5$ 225.201
Isol. from sweet corn (*Zea mays*).

N-*Methoxy, 7-Me ether. 2-*O*-β-D-glucopyranoside: HDMBOA-Glc*
[113565-33-6]
[29845-81-6]
$C_{16}H_{21}NO_{10}$ 387.343
Constit. of the roots of *Coix lachryma-joba* (Job's tears) and from wheat and

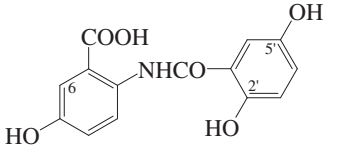
sweet corn (*Zea mays*). Pale yellow cryst. Mp 143-145°. $[\alpha]_D^{21}$ +22 (c, 0.25 in H_2O). λ_{max} 262 (log ϵ 3.97); 285 (sh) (log ϵ 3.84) (EtOH).

8-Methoxy, 7-Me ether, 2-O-β-D-glucopyranoside: [40246-09-1]
$C_{16}H_{21}NO_{10}$ 387.343
Isol. from sweet corn (*Zea mays*).

Wahlroos, O. *et al., Acta Chem. Scand.*, 1959, **13**, 1906 (*isol, struct*)
Reimann, J.E. *et al., Biochemistry*, 1964, **3**, 847 (*biosynth*)
Hofman, J. *et al., Tet. Lett.*, 1969, 5001 (*isol, uv, glucoside*)
Woodward, M.D. *et al., Plant Physiol.*, 1979, **63**, 9; *CA*, **90**, 147969q (*isol*)
Argandoña, V.H. *et al., Phytochemistry*, 1980, **19**, 1665; 1981, **20**, 673 (*isol*)
Nagao, T. *et al., Phytochemistry*, 1985, **24**, 2959-2962 (*isol, uv, pmr, abs config*)
Atkinson, J. *et al., J.O.C.*, 1991, **56**, 1788 (*deriv, synth, pmr, ms, ir*)
Bravo, H.R. *et al., J. Agric. Food Chem.*, 1996, **44**, 1569 (*DIMBOA, activity*)
Kluge, M. *et al., Tetrahedron*, 1996, **52**, 10389-10398 (*synth*)
Kluge, M. *et al., Carbohydr. Res.*, 1997, **298**, 147 (*synth*)
Glawischnig, E. *et al., Phytochemistry*, 1997, **45**, 715 (*biosynth*)
Larsen, E. *et al., J. Agric. Food Chem.*, 2000, **48**, 2556-2558 (***isol***)
Baumeler, A. *et al., Phytochemistry*, 2000, **53**, 213-222 (*HMBOA, HMBOA-Glc*)
Alipieva, K.I. *et al., Phytochemistry*, 2003, **64**, 1413-1417 (*DHBOA-Glc, cmr*)
Macías, F. *et al., J. Agric. Food Chem.*, 2006, **54**, 991-1000 (*DIMBOA, isol, uv, pmr, cmr*)

2-[2-(2,5-Dihydroxybenzoyl)amino]-5-hydroxybenzoic acid D-539

N-*(2,5-Dihydroxybenzoyl)-5-hydroxyanthranilic acid*



$C_{14}H_{11}NO_6$ 289.244

2′-O-β-D-Glucopyranoside: ***Yokonoside***
[53823-12-4]
[61377-88-6]
$C_{20}H_{21}NO_{11}$ 451.386
Isol. from the roots of *Aconitum japonicum*. Powder. Mp 205-210°.

2′-O-β-D-Glucopyranoside, Me ester:
$C_{21}H_{23}NO_{11}$ 465.413
Isol. from callus cultures of *Delphinium stephisagria*. Amorph. $[\alpha]_D^{25}$ -11.2 (c, 1.9 in MeOH). λ_{max} 215 (log ϵ 4.39); 237 (log ϵ 4); 280 (log ϵ 3.8); 319 (log ϵ 3.7) (MeOH).

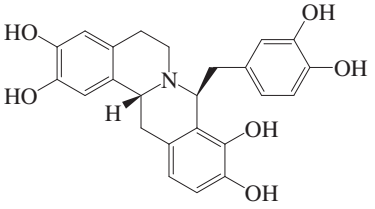
5′-Me ether, 2′-O-β-D-glucopyranoside, Me ester:
$C_{22}H_{25}NO_{11}$ 479.44
Isol. from callus cultures of *Delphinium staphisagria*. Amorph. solid. $[\alpha]_D^{25}$ -14.2 (c, 0.22 in MeOH). λ_{max} 216 (log ϵ 4.6); 241 (log ϵ 4.17); 281 (log ϵ 3.95); 322 (log ϵ 3.88) (MeOH).

5′-Deoxy, 2′-O-β-D-glucopyranoside, Me ester:
$C_{21}H_{23}NO_{10}$ 449.413
Isol. from callus cultures of *Delphinium staphisagria*. Amorph. $[\alpha]_D^{25}$ -22.9 (c, 0.25 in MeOH). λ_{max} 207 (log ϵ 4.31); 236 (log ϵ 4); 281 (log ϵ 3.82); 355 (log ϵ 3.5) (MeOH).

6-Methoxy, 2′-O-β-D-glucopyranoside, Me ester:
$C_{22}H_{25}NO_{12}$ 495.439
Isol. from callus cultures of *Delphinium staphisagria*. Amorph. solid. $[\alpha]_D^{25}$ -27.9 (c, 0.21 in MeOH). λ_{max} 213 (log ϵ 4.5); 240 (log ϵ 4); 305 (log ϵ 3.8) (MeOH).

Kosuge, T. *et al., Chem. Pharm. Bull.*, 1976, **24**, 176 (*Yokonoside*)
Naruta, S. *et al., Yakugaku Zasshi*, 1976, **96**, 945-957 (*Yokonoside, synth*)
Diaz, J.G. *et al., Phytochemistry*, 2005, **66**, 723-739 (*isol, pmr, cmr, ms*)

8-(3,4-Dihydroxybenzyl)-2,3,9,10-berbintetrol D-540

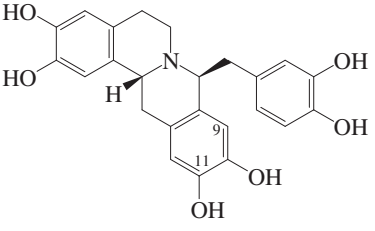


$C_{24}H_{23}NO_6$ 421.449

(8R,13aS)-form
Javaberine B
[387868-70-4]
Alkaloid from the roots of *Talinum paniculatum*. Powder (as hexa-Ac). $[\alpha]_D^{26}$ +8 (c, 0.8 in $CHCl_3$) (hexa-Ac). λ_{max} 268 (log ϵ 3.3) (MeOH) (hexa-Ac).

Shimoda, H. *et al., Heterocycles*, 2001, **55**, 2043-2050

8-(3,4-Dihydroxybenzyl)-2,3,10,11-berbintetrol D-541



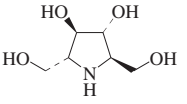
$C_{24}H_{23}NO_6$ 421.449

(8R,13aS)-form
Javaberine A
[387868-69-1]
Alkaloid from the roots of *Talinum paniculatum*. Powder (as hexa-Ac). $[\alpha]_D^{24}$ +5 (c, 0.9 in $CHCl_3$). λ_{max} 287 (log ϵ 3.9) (no solvent reported).

Shimoda, H. *et al., Heterocycles*, 2001, **55**, 2043-2050

3,4-Dihydroxy-2,5-bis(hydroxymethyl)pyrrolidine D-542

3,4-Dihydroxy-2,5-pyrrolidinedimethanol, 9CI
[59920-31-9]



(2R,3R,4R,5R)-form

$C_6H_{13}NO_4$ 163.173

(2R,3R,4R,5R)-form
2,5-Dideoxy-2,5-imino-D-mannitol
Alkaloid from *Albizia myriophylla*, *Baphia nitida*, *Connarus ferrugineus*, *Derris elliptica*, *Lonchocarpus sericeus* and *Stemona tuberosa*. Also isol. from a *Cylindrospermum* sp. Glycosidase inhibitor. Cryst. (EtOH/Me_2CO/EtOAc). Mp 115-117°. $[\alpha]_D^{20}$ +56.4 (c, 7 in H_2O).

3-O-β-D-Glucopyranoside: [865486-85-7]
$C_{12}H_{23}NO_9$ 325.315
Alkaloid from *Albizia myriophylla* and *Baphia nitida*. Powder. $[\alpha]_D$ +7.2 (c, 0.26 in H_2O).

1′-O-β-D-Fructofuranoside:
$C_{12}H_{23}NO_9$ 325.315
Alkaloid from the leaves of *Baphia nitida*. Powder. $[\alpha]_D$ -3.1 (c, 1.1 in H_2O).

(2R,3R,4R,5S)-form
2,5-Dideoxy-2,5-imino-D-glucitol
Alkaloid from the roots of *Stemona tuberosa*. Sl. yellow powder. Mp 139-142.5° (132-136°). $[\alpha]_D$ +26.1 (c, 0.84 in H_2O).

(2S,3R,4R,5S)-form
2,5-Dideoxy-2,5-imino-L-iditol, 9CI
[105015-44-9]
Mp 161-162°. $[\alpha]_D$ +14.3 (c, 0.93 in H_2O).

(2S,3R,4S,5S)-form
L-altro-form. 2,5-Dideoxy-2,5-imino-L-altritol
Yellow oil. C-3 and C-4 are pseudoasymmetric.

Hydrochloride: [152785-78-9]
Mp 191-192°. $[\alpha]_D^{22}$ -51 (c, 1.1 in H_2O).

(2RS,3RS,4SR,5SR)-form
allo-*form. 2,5-Dideoxy-2,5-iminoallitol*
[368424-96-8]
Hygroscopic gum. Obt. only in admixture with the D-*altro* isomer. Called D-*allo*- in the ref. although it is a meso-compd.

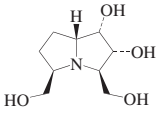
(2RS,3SR,4RS,5SR)-form
all-cis-*form. 2,5-Dideoxy-2,5-iminogalactitol*
Oil(?). Opt. inactive (*meso*-).

Welter, A. *et al., Phytochemistry*, 1976, **15**, 747 (*isol, ir, pmr, cmr, ms, struct*)
Lamotte-Brasseur, J. *et al., Acta Cryst. B*, 1977, **33**, 409 (*cryst struct*)
Fleet, G.W.J. *et al., Tet. Lett.*, 1985, **26**, 1469 (*synth, abs config*)
Shing, T.K.M. *et al., Chem. Comm.*, 1987, 262 (*synth*)
Hung, R.R. *et al., J.O.C.*, 1991, **56**, 3849 (*synth*)
Liu, K.K.C. *et al., J.O.C.*, 1991, **56**, 6280 (*synth*)

Zou, W. *et al., Carbohydr. Res.*, 1993, **242**, 311 (*synth*)
Legler, G. *et al., Carbohydr. Res.*, 1993, **250**, 67 (*synth*)
Wang, Y. *et al., Angew. Chem., Int. Ed.*, 1994, **33**, 1242 (*synth, cryst struct*)
Watson, A.A. *et al., Phytochemistry*, 1997, **46**, 255 (*isol, props*)
Huwe, C.M. *et al., Synthesis*, 1997, 61 (*synth, pmr, cmr,* L*-altro*)
Fechter, M.H. *et al., Carbohydr. Res.*, 1999, **319**, 55-62 (D*-galacto,* D*-altro,* L*-altro, allo, synth*)
Dondoni, A. *et al., J.O.C.*, 2002, **67**, 7203-7214 (*gluco, manno, altro, allo, synth, pmr*)
Wrodnigg, T.M. *et al., Monatsh. Chem.*, 2002, **133**, 393-426 (*rev, isol, synth, activity*)
Jüttner, F. *et al., J. Phycol.*, 2003, **39**, 26-32 (*Cylindrospermum, isol*)
Garcia, A.L.L. *et al., Tet. Lett.*, 2003, **44**, 1553-1557 (*all-*R*-form, synth*)
Asano, N. *et al., J. Nat. Prod.*, 2005, **68**, 1238-1242 (*isol, pmr, cmr*)
Trost, B.M. *et al., Chem. Eur. J.*, 2006, **12**, 6607-6620 (*all-*R*-form, synth*)
Merino, P. *et al., Eur. J. Org. Chem.*, 2008, 2929-2947 (*synth*)
Donohoe, T.J. *et al., Org. Biomol. Chem.*, 2008, **6**, 3896-3898 (*synth*)
Kato, A. *et al., Phytochemistry*, 2008, **69**, 1261-1265 (*1′-fructoside*)

1,2-Dihydroxy-3,5-bis (hydroxymethyl)-1*H*-pyrrolizidine D-543

*Hexahydro-1,2-dihydroxy-1*H*-pyrrolizine-3,5-dimethanol, 9CI*



(1*S*,2*R*,3*R*,5*R*,7*aR*)*-form*

$C_9H_{17}NO_4$ 203.238

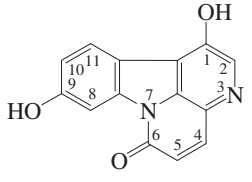
(1*S*,2*R*,3*R*,5*R*,7*aR*)*-form*
Hyacinthacine B$_1$
[240117-29-7]
Alkaloid from *Hyacinthoides non-scripta* and *Scilla campanulata*. $[\alpha]_D$ +41.3 (c, 1.04 in H_2O).

(1*S*,2*R*,3*R*,5*S*,7*aR*)*-form*
Hyacinthacine B$_2$
[240117-31-1]
Alkaloid from *Scilla campanulata*. $[\alpha]_D$ +41.3 (c, 0.36 in H_2O).

Kato, A. *et al., Carbohydr. Res.*, 1999, **316**, 95-103 (*isol, pmr, cmr*)
Sengoku, T. *et al., Tetrahedron*, 2008, **64**, 8052-8058 (*synth, abs config*)

1,9-Dihydroxycanthin-6-one D-544

*1,9-Dihydroxy-6*H*-indolo[3,2,1-*de*][1,5]-naphthyridin-6-one, 9CI*



$C_{14}H_8N_2O_3$ 252.229

9-Me ether: 1-Hydroxy-9-methoxy-canthin-6-one

$C_{15}H_{10}N_2O_3$ 266.256
Alkaloid from the roots of *Eurycoma longifolia*. Yellow powder (MeOH). Mp 235-237°. λ_{max} 274 (log ε 3.05); 283 (log ε 3.15); 358 (log ε 3.11); 374 (log ε 3.06) (MeOH).

Kuo, P.C. *et al., J. Nat. Prod.*, 2003, **66**, 1324-1327 (*1-Hydroxy-9-methoxycanthin-6-one*)

1,11-Dihydroxycanthin-6-one D-545

*1,11-Dihydroxy-6*H*-indolo[3,2,1-*de*][1,5]naphthyridin-6-one*

$C_{14}H_8N_2O_3$ 252.229

O^1*-Me:* ***11-Hydroxy-1-methoxycanthin-6-one***
[109521-83-7]
$C_{15}H_{10}N_2O_3$ 266.256
Alkaloid from the wood of *Brucea antidysenterica*. Cytotoxic. Yellow needles ($CHCl_3$/Et_2O). Sol. MeOH, Et_2O; poorly sol. H_2O. Mp 237-240° dec. λ_{max} 347 (ε 11220); 370 (ε 8130) (MeOH) (Berdy).

O^{11}*-Me: 1-Hydroxy-11-methoxy-6*H*-indolo[3,2,1-*de*][1,5]naphthyridin-6-one.* ***1-Hydroxy-11-methoxycanthin-6-one***
[97915-43-0]
$C_{15}H_{10}N_2O_3$ 266.256
Alkaloid from the root bark of *Brucea antidysenterica* (Simaroubaceae). Yellow needles ($CHCl_3$/Et_2O/hexane). Sol. MeOH, Et_2O; poorly sol. H_2O. Mp 220-223° dec. λ_{max} 244 (log ε 3.83); 275 (sh) (log ε 3.59); 282 (log ε 3.83); 320 (sh) (log ε 3.72); 348 (log ε 3.98); 362 (log ε 4.08); 380 (log ε 4.05) (no solvent reported). λ_{max} 282 (ε 6760); 348 (ε 9550); 362 (ε 12020); 380 (ε 11220) (MeOH) (Berdy).

*Di-Me ether: 1,11-Dimethoxy-6*H*-indolo[3,2,1-*de*][1,5]naphthyridin-6-one.* ***1,11-Dimethoxycanthin-6-one***
[103839-24-3]
$C_{16}H_{12}N_2O_3$ 280.282
Alkaloid from the stem of *Brucea antidysenterica* (Simaroubaceae). Yellow cryst. (MeOH/$CHCl_3$). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 217-220° dec. λ_{max} 253 (ε 8740); 271 (ε 8600); 280 (ε 8400); 355 (ε 16400) (EtOH) (Berdy).

Harris, A. *et al., Planta Med.*, 1985, **51**, 151-153 (*11-Me ether, isol, uv, pmr, ms, struct*)
Fukamiya, N. *et al., J. Nat. Prod.*, 1986, **49**, 428-434 (*di-Me ether, isol, uv, ir, pmr, cmr, ms, struct*)
Fukamiya, N. *et al., Planta Med.*, 1987, **53**, 140-143 (*mono-Me ethers*)

4,5-Dihydroxycanthin-6-one D-546

*4,5-Dihydroxy-6*H*-indolo[3,2,1-*de*][1,5]-naphthyridin-6-one, 9CI*

$C_{14}H_8N_2O_3$ 252.229

4-Me ether: ***5-Hydroxy-4-methoxy-canthin-6-one. Nigakinone***
[18110-86-6]
$C_{15}H_{10}N_2O_3$ 266.256
Alkaloid from the stems of *Picrasma ailanthoides*, the wood of *Picrasma excelsa* (Jamaican quassiawood) and the heartwood of *Picrasma quassioides* (Simaroubaceae). Active against gram-positive bacteria. Yellow needles (MeOH). Mp 223-224° dec.

4-Me ether, N*-oxide:* ***5-Hydroxy-4-methoxy-6-canthinone 3-*N*-oxide***
[129722-98-1]
$C_{15}H_{10}N_2O_4$ 282.255
Alkaloid from the wood of *Quassia amara* (Surinam quassia) (Simaroubaceae). Red-orange powder (EtOH). Mp 300°.

4-Me ether, Ac:
Needles (MeOH). Mp 194° dec.

5-Me ether: 4-Hydroxy-5-methoxy-canthin-6-one. ***Picrasidine Q***
[101219-61-8]
$C_{15}H_{10}N_2O_3$ 266.256
Alkaloid from the root wood of *Picrasma quassioides* and *Picrasma excelsa* and from cell suspension cultures of *Brucea javanica* (Simaroubaceae). Pale yellow needles ($CHCl_3$/MeOH). Mp 286-289°. The struct. originally reported was revised by Liu *et al* to 4-Hydroxy-3-methylcanthin-5,6-dione. X-ray anal. has shown that the struct. originally proposed was correct. The compd. isol. by Liu *et al* should be reassigned as 4,5-Dihydroxycanthin-6-one, D-546. λ_{max} 247 (log ε 4.24); 270 (sh) (log ε 3.97); 288 (log ε 3.98); 299 (sh) (log ε 3.95); 340 (sh) (log ε 3.82); 370 (sh) (log ε 3.85); 385 (log ε 3.98) (EtOH).

Di-Me ether: ***4,5-Dimethoxycanthin-6-one****. Methylnigakinone*
[18110-87-7]
$C_{16}H_{12}N_2O_3$ 280.282
Alkaloid from the stems and wood of *Picrasma ailanthoides*, the heartwood of *Picrasma quassioides* and trunk bark of *Odyendea gabonensis* (Simaroubaceae). Active against gram-positive bacteria. Pale yellow needles (MeOH). Mp 147.3-147.5°.

Di-Me ether, picrate:
Bright yellow prisms (EtOH). Mp 185-186° dec.

Inamoto, N. *et al., Bull. Chem. Soc. Jpn.*, 1961, **34**, 888-889 (*Methylnigakinone*)
Kondo, Y. *et al., Chem. Pharm. Bull.*, 1973, **21**, 837-839 (*Nigakinone, isol, pmr, struct*)
Wagner, H. *et al., Planta Med.*, 1979, **36**, 113-119 (*Nigakinone, isol*)
Yang, J.S. *et al., Yaoxue Xuebao*, 1979, **14**, 167-177 (*activity*)
Forgacs, P. *et al., Planta Med.*, 1982, **46**, 187-189 (*Methylnigakinone*)
Ohmoto, T. *et al., Chem. Pharm. Bull.*, 1985, **33**, 4901-4902 (*Picrasidine Q, isol, uv, ir, pmr, ms*)
Barbetti, P. *et al., Planta Med.*, 1990, **56**, 216-217 (*4-Me ether N-oxide*)
Li, H.Y. *et al., Chem. Pharm. Bull.*, 1993, **41**, 1807-1811 (*Picrasidine Q, cryst struct*)

5,9-Dihydroxycanthin-6-one D-547

*5,9-Dihydroxy-6*H*-indolo[3,2,1-*de*][1,5]-naphthyridin-6-one, 9CI*

$C_{14}H_8N_2O_3$ 252.229
λ_{max} 214 (sh) (log ε 3.8); 245 (log ε 3.4); 265 (sh) (log ε 3.29); 275 (log ε 3.41); 330 (log ε 3.15) (MeOH).

Di-Me ether: ***5,9-Dimethoxycanthin-6-one***
[155861-54-4]
$C_{16}H_{12}N_2O_3$ 280.282
Alkaloid from the bark of *Eurycoma longifolia* (Simaroubaceae). Needles.

Mp 300°.

Mitsunaga, K. *et al., Phytochemistry*, 1994, **35**, 799-802 (*isol, uv, ir, pmr, ms, struct*)

5,11-Dihydroxycanthin-6-one D-548

*5,11-Dihydroxy-6*H-*indolo[3,2,1-*de*][1,5]naphthyridin-6-one, 9CI*

$C_{14}H_8N_2O_3$ 252.229

Di-Me ether: ***5,11-Dimethoxycanthin-6-one***
[152592-77-3]
$C_{16}H_{12}N_2O_3$ 280.282
Alkaloid from cell suspension cultures of *Brucea javanica* (Simaroubaceae). λ_{max} 228 (log ϵ 3.88); 319 (log ϵ 3.55); 344 (sh) (log ϵ 3.5); 358 (log ϵ 3.21); 375 (log ϵ 3.69) (MeOH).

Cheng, K.C.S. *et al., J. Chin. Chem. Soc. (Taipei)*, 1993, **40**, 403-405; *CA*, **120**, 101909e

8,9-Dihydroxycanthin-6-one D-549

*8,9-Dihydroxy-6*H-*indolo[3,2,1-*de*][1,5]naphthyridin-6-one*

$C_{14}H_8N_2O_3$ 252.229

9-Me ether: ***8-Hydroxy-9-methoxycanthin-6-one***
[143257-71-0]
$C_{15}H_{10}N_2O_3$ 266.256
Alkaloid from the stem bark of *Picrolemma granatensis* (Simaroubaceae). Yellow needles. Mp 198-201°. λ_{max} 222 (log ϵ 3.78); 264 (log ϵ 3.45); 273 (log ϵ 3.42); 325 (log ϵ 3.38); 339 (log ϵ 3.38); 406 (log ϵ 2.85) (EtOH).

Rodrigues Fo, E. *et al., Phytochemistry*, 1992, **31**, 2499-2501 (*isol, uv, ir, pmr, cmr, ms, struct*)

9,10-Dihydroxycanthin-6-one D-550

*9,10-Dihydroxy-6*H-*indolo[3,2,1-*de*][1,5]naphthyridin-6-one, 9CI*

$C_{14}H_8N_2O_3$ 252.229

9-Me ether: ***10-Hydroxy-9-methoxycanthin-6-one***
[155861-52-2]
$C_{15}H_{10}N_2O_3$ 266.256
Alkaloid from the bark of *Eurycoma longifolia* (Simaroubaceae). Yellow needles. Mp 255-257°. λ_{max} 230 (sh) (log ϵ 3.02); 282 (log ϵ 3.17); 304 (sh) (log ϵ 2.63); 360 (log ϵ 2.75); 375 (log ϵ 2.73) (MeOH).

Di-Me ether: ***9,10-Dimethoxycanthin-6-one***
[155861-51-1]
$C_{16}H_{12}N_2O_3$ 280.282
Alkaloid from the bark of *Eurycoma longifolia* (Simaroubaceae). Yellow needles. Mp 213-215°. λ_{max} 232 (log ϵ 3.87); 270 (sh) (log ϵ 4.05); 280 (log ϵ 4.17); 300 (log ϵ 3.61); 310 (log ϵ 3.56); 359 (log ϵ 3.79); 375 (log ϵ 3.75) (MeOH).

Mitsunaga, K. *et al., Phytochemistry*, 1994, **35**, 799-802 (*isol, uv, ir, pmr, cmr, ms, struct*)

10,11-Dihydroxycanthin-6-one D-551

*10,11-Dihydroxy-6*H-*indolo[3,2,1-*de*][1,5]naphthyridin-6-one*

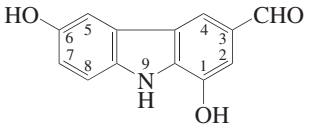
$C_{14}H_8N_2O_3$ 252.229

10-Me ether: ***11-Hydroxy-10-methoxycanthin-6-one***
[155861-53-3]
$C_{15}H_{10}N_2O_3$ 266.256
Alkaloid from the wood of *Eurycoma longifolia* (Simaroubaceae). Yellow needles. Mp 235-237°. λ_{max} 218 (log ϵ 4.02); 245 (log ϵ 3.57); 265 (log ϵ 3.33); 320 (log ϵ 3.24); 394 (log ϵ 3.24) (MeOH).

Mitsunaga, K. *et al., Phytochemistry*, 1994, **35**, 799-802 (*isol, uv, ir, pmr, ms, struct*)

1,6-Dihydroxy-9*H*-carbazole-3-carboxaldehyde D-552

3-Formyl-1,6-dihydroxycarbazole



$C_{13}H_9NO_3$ 227.219

*6-Me ether: 1-Hydroxy-6-methoxy-9*H-*carbazole-3-carboxaldehyde. 3-Formyl-1-hydroxy-6-methoxycarbazole.* ***Clausine I***
[182261-94-5]
$C_{14}H_{11}NO_3$ 241.246
Alkaloid from stem bark of *Clausena excavata*. Powder (Me_2CO). Mp 222-224°. λ_{max} 204 (log ϵ 4.24); 223 (log ϵ 4.14); 242 (log ϵ 4.14); 255 (log ϵ 4.09); 278 (log ϵ 4.23); 296 (log ϵ 4.17); 341 (log ϵ 3.85); 353 (log ϵ 3.86) (MeOH).

*Di-Me ether: 1,6-Dimethoxy-9*H-*carbazole-3-carboxaldehyde, 9CI. 3-Formyl-1,6-dimethoxy-9*H-*carbazole. 6-Methoxymurrayanine*
[132922-59-9]
$C_{15}H_{13}NO_3$ 255.273
Alkaloid from the roots of *Clausena lansium* (wampee) (Rutaceae). Prisms (Me_2CO/hexane). Mp 231-233°. λ_{max} 239 (log ϵ 4.35); 251 (sh) (log ϵ 4.2); 277 (log ϵ 4.4); 294 (log ϵ 4.36); 335 (log ϵ 3.85); 349 (log ϵ 3.85) (MeOH).

Li, W.-S. *et al., Phytochemistry*, 1991, **30**, 343-346 (*di-Me ether*)

Wu, T.-S. *et al., Phytochemistry*, 1996, **43**, 133-140 (*Clausine I*)

Bernal, P. *et al., Synthesis*, 2007, 1943-1948 (*di-Me ether, synth*)

1,7-Dihydroxy-9*H*-carbazole-3-carboxaldehyde D-553

*3-Formyl-1,7-dihydroxy-9*H-*carbazole*

$C_{13}H_9NO_3$ 227.219

*1-Me ether: 7-Hydroxy-1-methoxy-9*H-*carbazole-3-carboxaldehyde. 3-Formyl-7-hydroxy-1-methoxy-9*H-*carbazole.* ***Clausine Q***
$C_{14}H_{11}NO_3$ 241.246
Alkaloid from *Clausena excavata*. Brown powder (Me_2CO). Mp 85-87°. λ_{max} 201 ; 242 ; 252 (sh) ; 286 ; 297 (sh) ; 325 (sh) ; 338 (MeOH).

Wu, T.-S. *et al., Phytochemistry*, 1999, **52**, 523-527 (*isol, uv, pmr, ms*)

1,8-Dihydroxy-9*H*-carbazole-3-carboxaldehyde D-554

3-Formyl-1,8-dihydroxycarbazole

$C_{13}H_9NO_3$ 227.219

*Di-Me ether: 1,8-Dimethoxy-9*H-*carbazole-3-carboxaldehyde, 9CI. 3-Formyl-1,8-dimethoxycarbazole.* ***Clausenal***
[162857-93-4]
$C_{15}H_{13}NO_3$ 255.273
Alkaloid from leaves of *Clausena heptaphylla* (Rutaceae). Exhibits antimicrobial activity against both gram-positive and -negative bacteria. Antifungal. Needles (C_6H_6/petrol). Mp 198°. λ_{max} 231 (ϵ 28183); 257 (ϵ 12300); 261 (ϵ 12590); 327 (ϵ 5012) (EtOH) (Berdy).

Chakraborty, A. *et al., Phytochemistry*, 1995, **38**, 787

2,6-Dihydroxy-9*H*-carbazole-3-carboxaldehyde D-555

3-Formyl-2,6-dihydroxycarbazole

$C_{13}H_9NO_3$ 227.219

*6-Me ether: 2-Hydroxy-6-methoxy-9*H-*carbazole-3-carboxaldehyde. 3-Formyl-2-hydroxy-6-methoxycarbazole.* ***Lansine***
[74606-99-8]
$C_{14}H_{11}NO_3$ 241.246
Alkaloid from the leaves of *Clausena lansium* (wampee) and the stem bark of *Micromelum hirsutum*. Mp 225-226°. λ_{max} 233 ; 248 ; 309 ; 340 ; 368 (MeOH).

*Di-Me ether: 2,6-Dimethoxy-9*H-*carbazole-3-carboxaldehyde, 9CI. 3-Formyl-2,6-dimethoxycarbazole.* ***Glycozolidal***
[51971-09-6]
$C_{15}H_{13}NO_3$ 255.273
Alkaloid from the roots of *Glycosmis pentaphylla* (Rutaceae). Mp 185°.

Sharma, R.B. *et al., Chem. Ind. (London)*, 1980, 158 (*synth*)

Prakash, D. *et al., Indian J. Chem., Sect. B*, 1980, **19**, 1075-1076 (*Lansine, isol, uv, ir, pmr, ms, struct*)

Bhattacharyya, P. *et al., J. Nat. Prod.*, 1985, **48**, 465-466 (*di-Me ether*)

Ma, C. *et al., Planta Med.*, 2005, **71**, 261-267 (*Lansine, isol, cmr*)

2,7-Dihydroxy-9*H*-carbazole-3-carboxaldehyde, 9CI D-556

3-Formyl-2,7-dihydroxycarbazole. ***Clausine O***
[250259-35-9]
$C_{13}H_9NO_3$ 227.219
Alkaloid from *Clausena excavata*. Yellowish needles. Mp >280°. λ_{max} 200 ; 223 ; 240 ; 252 (sh) ; 291 (sh) ; 301 ; 321 (sh) ; 340 (MeOH).

*7-Me ether: 2-Hydroxy-7-methoxy-9*H-*carbazole-3-carboxaldehyde, 9CI. 3-Formyl-2-hydroxy-7-methoxycarbazole*
[119736-83-3]
$C_{14}H_{11}NO_3$ 241.246
Alkaloid from the root bark of *Clausena harmandiana* and root of *Murraya siamensis*. Cryst. (Me_2CO). Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. Mp 226-227°. λ_{max} 224

(ϵ 18200); 240 (ϵ 18200); 294 (sh) (ϵ 29510); 300 (ϵ 38000); 338 (ϵ 7760) (MeOH).

*Di-Me ether: 2,7-Dimethoxy-9*H*-carbazole-3-carboxaldehyde. 3-Formyl-2,7-dimethoxycarbazole*
[132160-50-0]
$C_{15}H_{13}NO_3$ 255.273
Alkaloid from the roots of *Murraya siamensis* and stem bark of *Clausena excavata*. Mp 219-220°.

Chaichantipyuth, C. *et al., J. Nat. Prod.*, 1988, **51**, 1285-1288 (*7-Me ether, isol, uv, ir, pmr, cmr, ms, struct*)
Ruangrungsi, N. *et al., J. Nat. Prod.*, 1990, **53**, 946-952 (*7-Me ether, di-Me ether, isol, pmr, cmr, struct*)
Wu, T.-S. *et al., Phytochemistry*, 1996, **43**, 133-140; 1999, **52**, 523-527 (*di-Me ether, Clausine O, isol, uv, ir, pmr, cmr, ms, struct*)
Ito, C. *et al., Chem. Pharm. Bull.*, 1997, **45**, 48-52 (*Clauszoline J*)
Yenjai, C. *et al., Planta Med.*, 2000, **66**, 277-281 (*activity, Clausine H*)
Kataeva, O. *et al., Org. Biomol. Chem.*, 2005, **3**, 3099-3101 (*synth*)

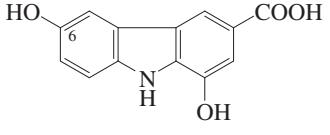
2,8-Dihydroxy-9*H*-carbazole-3-carboxaldehyde, 9CI D-557

6-Formyl-1,7-dihydroxycarbazole. ***Clauszoline M***
[187110-72-1]
$C_{13}H_9NO_3$ 227.219
Alkaloid from *Clausena excavata*. Pale yellow powder. λ_{max} 217 ; 240 ; 275 ; 290 ; 356 (MeOH).

*8-Me ether: 2-Hydroxy-8-methoxy-9*H*-carbazole-3-carboxaldehyde, 9CI. 6-Formyl-7-hydroxy-1-methoxycarbazole.* ***Clausine A***
[80054-00-8]
$C_{14}H_{11}NO_3$ 241.246
Alkaloid from stem bark of *Clausena excavata*. Yellowish needles (Me_2CO). Mp 184-186°. λ_{max} 202 (log ϵ 4.27); 218 (log ϵ 4.33); 241 (log ϵ 4.52); 268 (sh) (log ϵ 4.42); 275 (log ϵ 4.53); 288 (log ϵ 4.38); 352 (log ϵ 4.04) (MeOH).

Wu, T.-S. *et al., Phytochemistry*, 1996, **43**, 1427-1429 (*Clausine A*)
Ito, C. *et al., Chem. Pharm. Bull.*, 1997, **45**, 48-52 (*isol, uv, pmr*)

1,6-Dihydroxy-9*H*-carbazole-3-carboxylic acid D-558



$C_{13}H_9NO_4$ 243.218

6-Me ether, Me ester: 3-Carbomethoxy-1-hydroxy-6-methoxycarbazole. ***Clausine G***
[186002-62-0]
$C_{15}H_{13}NO_4$ 271.272
Alkaloid from stem bark of *Clausena excavata*. Granules (Me_2CO). Mp >280°. λ_{max} 224 ; 272 ; 282 ; 316 (sh) ; 353 (sh) (MeOH).

Wu, T,S, *et al., Phytochemistry*, 1996, **43**, 1427-1429 (*Clausine G*)

1,7-Dihydroxy-9*H*-carbazole-3-carboxylic acid D-559

$C_{13}H_9NO_4$ 243.218

*Me ester: 3-Carbomethoxy-1,7-dihydroxy-9*H*-carbazole.* ***Clausine R***
[250259-37-1]
$C_{14}H_{11}NO_4$ 257.245
Alkaloid from *Clausena excavata*. Yellowish needles (Me_2CO). Mp 178-181°. λ_{max} 214 ; 241 ; 252 ; 282 ; 320 (sh) ; 333 (MeOH).

Wu, T.S. *et al., Phytochemistry*, 1999, **52**, 523-527 (*isol, uv, pmr, ms*)

2,7-Dihydroxy-9*H*-carbazole-3-carboxylic acid D-560

$C_{13}H_9NO_4$ 243.218

7-Me ether, Me ester: ***Clausine TY***
[1011725-88-4]
$C_{15}H_{13}NO_4$ 271.272
Alkaloid from the stem bark of *Clausena excavata*. Cytotoxic. Brownish powder. Mp 220-222°.

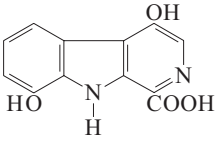
*Di-Me ether: 2,7-Dimethoxy-9*H*-carbazole-3-carboxylic acid.* ***Clausine K.*** *Clauszoline J*
[182261-96-7]
$C_{15}H_{13}NO_4$ 271.272
Alkaloid from stem bark of *Clausena excavata*. Brownish powder (Me_2CO). Mp 250-256°. λ_{max} 240 ; 276 ; 308 ; 318 (MeOH).

Di-Me ether, Me ester: ***Clausine H.*** *Clauszoline C*
[182261-90-1]
$C_{16}H_{15}NO_4$ 285.299
From stem bark of *Clausena excavata*. Shows antiplasmodial activity. Grey needles (Me_2CO). Mp 192-194°. λ_{max} 205 ; 222 ; 246 ; 282 ; 309 ; 320 ; 336 (sh) (MeOH).

Ito, C. *et al., Chem. Pharm. Bull.*, 1996, **44**, 2231-2235; 1997, **45**, 48-52 (*Clauszolines*)
Wu, T.S. *et al., Phytochemistry*, 1996, **43**, 133-140 (*Clausines H,K*)
Yenjai, C. *et al., Planta Med.*, 2000, **66**, 277-281 (*Clausine H: activity*)
Kataeva, O. *et al., Org. Biomol. Chem.*, 2005, **3**, 3099-3101 (*Clausines H,K, synth*)
Taufiq-Yap, Y.H. *et al., Nat. Prod. Res.*, 2007, **21**, 810-813 (*Clausine TY*)

4,8-Dihydroxy-β-carboline-1-carboxylic acid D-561

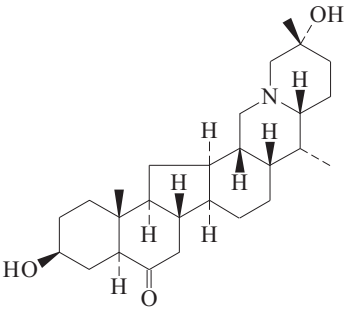
*4,8-Dihydroxypyrido[3,4-*b*]indole-1-carboxylic acid*



$C_{12}H_8N_2O_4$ 244.206
Di-Me ether, Me ester: ***1-Carbomethoxy-4,8-dimethoxy-β-carboline***
[123828-65-9]
$C_{15}H_{14}N_2O_4$ 286.287
Alkaloid from the leaves of *Ailanthus altissima* (Simaroubaceae). Pale-yellow needles. Mp 184-185°.

Souleles, C. *et al., Planta Med.*, 1989, **55**, 286 (*isol, uv, ir, pmr, ms, struct*)

3,25-Dihydroxycevan-6-one D-562

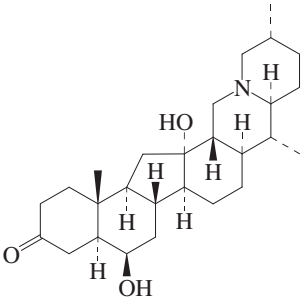


$C_{27}H_{43}NO_3$ 429.642

(3β,5α,17β,22β)-form Taipeienine. *Taipaienine*
[151183-22-1]
Alkaloid from bulbs of *Fritillaria taipeinsis* var. *ningrianensis* (Liliaceae). Needles (Me_2CO). Mp 120-122°. $[\alpha]_D^{28}$ +12.9 (c, 0.3 in MeOH).

Hu, C.H. *et al., Yaoxue Xuebao*, 1993, **28**, 516-521; *CA*, **119**, 245534f (*isol, struct*)
Feng, R. *et al., Chin. Chem. Lett.*, 1994, **5**, 383-384; *CA*, **121**, 153343f (*isol, ir, cmr, struct*)

6,12-Dihydroxycevan-3-one, 9CI D-563



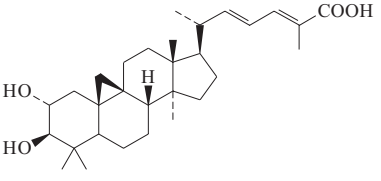
$C_{27}H_{43}NO_3$ 429.642

(5α,6β,25α)-form Sevedinine
[849802-77-3]
Alkaloid from the aerial parts of *Korolkowia severtzovii*. Cryst. (Me_2CO). Mp 233-235°. $[\alpha]_D$ -13.6 (c, 0.4 in $CHCl_3$).

Abdullaeva, D.U. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2004, **40**, 394-397 (*isol, pmr, cmr*)

2,3-Dihydroxycycloarta-22,24-dien-26-oic acid D-564

2,3-Dihydroxy-9,19-cyclolanost-22,24-dien-26-oic acid



$C_{30}H_{46}O_4$ 470.691

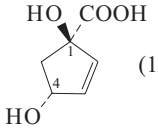
(2α,3β,22*E*,24*E*)-*form*

N-*(Tetrahydro-4,5-dimethyl-2-oxo-3-furanyl)amide, 3*-O-*[α-L-rhamnopyranosyl-(1→2)*-O-*β-D-glucopyranosyl-(1→2)-[α-L-rhamnopyranosyl-(1→4)]-β-D-glucopyranoside]:* ***Mussaendoside P***
[157536-45-3]
$C_{60}H_{95}NO_{23}$ 1198.403
Constit. of *Mussaenda pubescens*.
Amorph. powder. $[\alpha]_D^{15}$ +7 (c, 0.5 in Py). λ_{max} 265 (MeOH).

Zhao, W.M. *et al., Chin. Chem. Lett.*, 1994, **5**, 309

Zhao, W. *et al., J. Nat. Prod.*, 1994, **57**, 1613 (*isol, pmr, cmr*)

1,4-Dihydroxy-2-cyclopentene-1-carboxylic acid D-565



(1*R*,4*R*)–*form*

$C_6H_8O_4$ 144.127

(1*R*,4*R*)-*form*

Nitrile, 1-O-*β-D-glucopyranoside:* ***Volkenin****. Epitetraphyllin B*
[66575-40-4]
$C_{12}H_{17}NO_7$ 287.269
Isol. from *Adenia volkensii*. Syrup. $[\alpha]_D^{22}$ +27 (c, 0.7 in MeOH).

Nitrile, 1-O-*β-D-glucopyranoside, penta-Ac:* [115014-72-7]
Mp 124-124.5°. $[\alpha]_D^{22}$ +41.5 (c, 0.4 in MeOH).

(1*R*,4*S*)-*form*

Nitrile, 1-O-*β-D-glucopyranoside:* ***Taraktophyllin****. Epipassicoriacin*
[110115-55-4]
$C_{12}H_{17}NO_7$ 287.269
Isol. from *Taraktogenos heterophylla* (preferred genus name *Hydnocarpus*), *Hydnocarpus anthelmintica* and *Passiflora coriacea*. Syrup. $[\alpha]_D^{23}$ -75 (c, 1 in MeOH).

Nitrile, 1-O-*β-D-glucopyranoside, penta-Ac:* [110114-82-4]
Mp 126-127°. $[\alpha]_D^{23}$ -48 (c, 0.5 in MeOH).

Nitrile, 1-O-*[α-L-Rhamnopyranosyl-(1→6)-β-D-glucopyranoside]:* [117557-46-7]
$C_{18}H_{27}NO_{11}$ 433.411
Isol. from seeds of *Hydnocarpus pentandra*. Amorph. powder. $[\alpha]_D^{24}$ -84 (c, 0.5 in MeOH).

(1*S*,4*R*)-*form*

Nitrile, 1-O-*β-D-glucopyranoside:* ***Epivolkenin****. Passicoriacin*
[109905-56-8]
$C_{12}H_{17}NO_7$ 287.269
Isol. from *Taraktogenos heterophylla*, *Hydnocarpus anthelmintica* and *Passiflora coriacea*. Syrup. $[\alpha]_D^{23}$ +43 (c, 1 in MeOH).

Nitrile, 1-O-*β-D-glucopyranoside, penta-Ac:* [110037-31-5]
Mp 131-132°. $[\alpha]_D^{23}$ +23 (c, 0.5 in MeOH).

Nitrile, 1-O-*β-D-glucopyranoside, 4*-O-*(6-deoxy-β-D-gulopyranoside):* ***Passibiflorin***
[97564-61-9]
$C_{18}H_{27}NO_{11}$ 433.411
Isol. from *Passiflora biflora*. Noncryst. Mp 160-161° (as hexa-Ac). $[\alpha]_D^{20}$ -7 (c, 0.5 in MeOH). Rare occurrence of Antiarose (6-deoxygulose) residue.

Nitrile, 1-O-*β-D-glucopyranoside, 4*-O-*(2,6-dideoxy-β-D-*xylo*-hexopyranoside):* ***Passicapsin***
[82829-54-7]
$C_{18}H_{27}NO_{10}$ 417.412
Isol. from *Passiflora capsularis*. Cryst. (EtOAc). Mp 124-126° (116-119°). $[\alpha]_D^{24}$ +8 (c, 0.56 in MeOH). Rare occurrence of boivinose residue, not prev. encountered except in cardenolides.

Nitrile, 1-O-*β-D-glucopyranoside, 4*-O-*(6-deoxy-β-D-allopyranoside):* ***Passitrifasciatin***
[97564-60-8]
$C_{18}H_{27}NO_{11}$ 433.411
Isol. from *Passiflora trifasciata*. Noncryst. Mp 150-151° (as hepta-Ac). $[\alpha]_D^{22}$ +6.4 (c, 0.5 in MeOH). Revised struct. (1991).

Nitrile, 1-O-*[α-L-Rhamnopyranosyl-(1→6)-β-D-glucopyranoside]:*
117557-45-6
Isol. from seeds of *Hydnocarpus pentandra.*
Amorph. powder. $[\alpha]_D^{24}$ -4.4 (c, 0.6 in MeOH).

Amide: 1,4-Dihydroxy-2-cyclopentene-1-carboxamide
[133071-13-3]
$C_6H_9NO_3$ 143.142
Isol. from the leaves of *Lindackeria dentata*. Cryst. (MeOH aq.). Mp 143-144° (synthetic). $[\alpha]_D$ +120 (c, 0.13 in MeOH) (natural). $[\alpha]_D$ +275 (c, 0.2 in MeOH) (synthetic).

(1*S*,4*S*)-*form*

Nitrile, 1-O-*β-D-glucopyranoside:* ***Tetraphyllin B****. Barterin*
[34323-07-4]
Isol. from *Adenia*, *Barteria*, *Turnera* and *Tetrapathaea* (preferred genus name *Passiflora*) spp. Needles (MeOH/EtOAc). Mp 169-170°. $[\alpha]_D^{26}$ -75 (c, 0.5 in MeOH). $[\alpha]_D^{25}$ -35.6 (c, 1 in H_2O).

Nitrile, 1-O-*β-D-glucopyranoside, penta-Ac:* [115014-71-6]
Mp 114-115°. $[\alpha]_D^{21}$ -53.5 (c, 0.5 in MeOH).

Nitrile, 1-O-*β-D-glucopyranoside, 4*-O-*sulfate:* ***Tetraphyllin B sulfate***
[85758-30-1]
$C_{12}H_{17}NO_{10}S$ 367.333
Isol. from *Passiflora caerulea* (blue passion flower) and other *Passiflora* spp. Glassy syrup.

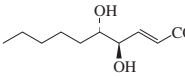
(1ξ,4ξ)-*form*

Nitrile, 1-O-*[β-D-rhamnopyranosyl-(1→6)-β-D-glucopyranoside], 4*-O-*sulfate:* ***Passicoccin***
[99694-22-1]
$C_{18}H_{27}NO_{14}S$ 513.476
Isol. from *Passiflora coccinea*.
Amorph. yellow solid. Unusual occurrence of D-rhamnose.

[121783-15-1 , 133576-30-4 , 99694-23-2 , 85799-11-7 , 109906-27-6 , 97564-59-5 , 85758-31-2]

Russell, G.B. *et al., Phytochemistry*, 1971, **10**, 1373-1377 (*Tetraphyllin B*)
Spencer, K.C. *et al., Planta Med.*, 1981, **43**, 175-178 (*Tetraphyllin B*)
Siegler, D.S. *et al., Phytochemistry*, 1982, **21**, 2277-2285 (*Tetraphyllin B sulfate*)
Spencer, K.C. *et al., Phytochemistry*, 1985, **24**, 2615-2617; 1987, **26**, 1661-1663 (*Passicoccin, Taraktophyllin, Epivolkenin*)
Jaroszewski, J.W. *et al., Acta Chem. Scand., Ser. B*, 1987, **41**, 410-421 (*Volkenin, Tetraphyllin B*)
Jaroszewski, J.W. *et al., Tetrahedron*, 1987, **43**, 2349-2354 (*Taraktophyllin, Epivolkenin*)
Jaroszewski, J.W. *et al., Planta Med.*, 1988, **54**, 333-357 (*rutinosides*)
Olafsdottir, E.S. *et al., Acta Chem. Scand.*, 1989, **43**, 51-55 (*Passibiflorin, Passicapsin*)
Olafsdottir, E.S. *et al., Phytochemistry*, 1989, **28**, 127-132; 1991, **30**, 867-869 (*Volkenin, Epivolkenin, Tetraphyllin B, Taraktophyllin, Passitrifasciatin*)
Seigler, D.S. *et al., Phytochemistry*, 1989, **28**, 931-932 (*Passicoriacin, Epicoriacin, Epitetraphyllin B*)
Olafsdottir, E.S. *et al., J.O.C.*, 1991, **56**, 2650-2655 (*amide, synth*)
Jaroszewski, J.W. *et al., J.O.C.*, 2004, **70**, 1001-1003 (*amide, isol*)

4,5-Dihydroxy-2-decenoic acid D-566



(2*E*,4*R**,5*S**)-*form*

$C_{10}H_{18}O_4$ 202.25

(2*E*,4*R,5*S**)-*form***

*2-Methylpropylamide: 4,5-Dihydroxy-*N*-(2-methylpropyl)-2-decenamide, 9CI.* N-*Isobutyl-4,5-dihydroxy-2-decenamide.* ***Sylvamide***
[83905-60-6]
$C_{14}H_{27}NO_3$ 257.372
Alkaloid from the seeds of *Piper sylvaticum* (Piperaceae). Plates (Me_2CO/petrol). Mp 143-144°. $[\alpha]_D^{21}$ -2 (EtOH).

(2*E*,4*RS*,5*RS*)-*form*

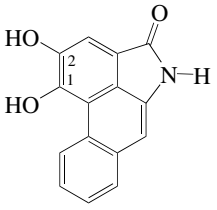
Piperidide: 1-(4,5-Dihydroxy-1-oxo-2-decenyl)piperidine. ***4,5-Dihydroxy-2-decenoic acid piperidide***
$C_{15}H_{27}NO_3$ 269.383
Alkaloid from the roots of *Piper nigrum* (pepper). Oil.

(2*E*,4*RS*,5*SR*)-*form*

Piperidide: Alkaloid from the roots of *Piper nigrum* (pepper). Oil.

Banerji, A. *et al., Phytochemistry*, 1982, **21**, 1321-1323; 1983, **22**, 1028-1030 (*Sylvamide*)
Wei, K. *et al., J. Nat. Prod.*, 2004, **67**, 1005-1009 (*piperidides*)

1,2-Dihydroxydibenz[*cd*,*f*]indol-4(5*H*)-one, 9CI D-567



$C_{15}H_9NO_3$ 251.241

CAS numbering shown. Alternative (phenanthrene) numbering frequently encountered, in which 1,2- are 4,3- respectively.

N-*Methoxy:* ***Piperumbellactam C***
$C_{16}H_{11}NO_4$ 281.267
Alkaloid from *Piper umbellatum* (pariparoba). Amorph. powder. λ_{max} 203 ; 226 ; 246 ; 279 ; 313 ; 378 (MeOH).

1-Me ether: ***Aristolactam A II***
[53948-07-5]
$C_{16}H_{11}NO_3$ 265.268
Alkaloid from the roots of *Aristolochia argentina* and *Aristolochia indica* (Aristolochiaceae). Cytotoxic. Shows platelet aggregation inhibitory activity. Cryst. (AcOH). Mp 271°.

1-Me ether, N-*methoxy:* ***Piperlactam S***
[188546-49-8]
$C_{17}H_{13}NO_4$ 295.294
Alkaloid from leaves and stems of *Piper puberulum*. Yellow needles. Mp 242-244°. A drawing error in CAS (vol 121) erroneously shows this to be identical with Sauristolactam. λ_{max} 195 ; 206 ; 232 ; 248 ; 274 ; 284 ; 315 ; 380 (MeOH).

*2-Me ether: 1-Hydroxy-2-methoxydibenz[*cd,f*]indol-4(5*H*)-one, 9CI.* ***Piperolactam A****. Aristolactam F I*
[112501-42-5]
$C_{16}H_{11}NO_3$ 265.268
Alkaloid from roots of *Piper longum* (long pepper), from *Piper attenuatum*, *Piper boehmerifolium*, *Piper hamiltonii* and *Pararistolochia flos-avis*. Shows platelet aggregation inhibitory activity. Cryst. (C_6H_6/MeOH). Mp 303-306° dec. (271-273°).

2-Me ether, N-*hydroxy:* N-*Hydroxypiperolactam A*. ***Piperumbellactam B***
Alkaloid from *Piper umbellatum* (pariparoba). Amorph. powder. λ_{max} 194 ; 203 ; 226 ; 247 ; 274 ; 280 ; 316 ; 378 (MeOH).

O^1,N-*Di-Me:* ***Sauristolactam***
[128533-02-8]
$C_{17}H_{13}NO_3$ 279.295
Alkaloid from *Saururus cernuus* (Saururaceae) and *Piper puberulum* (Piperaceae). Pale yellow prisms ($CHCl_3$/hexane). Mp 290°.

O^2,N-*Di-Me:* **N-*Methylpiperolactam A***
[144549-43-9]
$C_{17}H_{13}NO_3$ 279.295
Alkaloid from stems of *Piper ribesioides*. Amorph. solid. Mp 205-207°.

Di-Me ether: ***Aristolactam B II****. Cepharanone B. Alkaloid Y*
[53948-09-7]
$C_{17}H_{13}NO_3$ 279.295
Alkaloid from the roots of *Aristolochia argentina*, bark of *Schefferomitra subaequalis*, callus tissue of *Stephania cepharantha* and stem bark of *Goniothalamus velutinus*. Shows platelet aggregation inhibitory activity. Cryst. (MeOH or Me_2CO). Mp 264-265° (247-250°). λ_{max} 232 (log ϵ 4.68); 264 (log ϵ 4.61); 276 (log ϵ 4.67); 287 (log ϵ 4.66); 318 (log ϵ 4.03); 384 (log ϵ 4.01) (MeOH).

Di-Me ether, N-*hydroxy:* N-*Hydroxyaristolactam BII*. ***Piperumbellactam A***
$C_{17}H_{13}NO_4$ 295.294
Alkaloid from *Piper umbellatum* (pariparoba). Amorph. powder. λ_{max} 196 ; 209 ; 231 ; 242 ; 274 ; 283 ; 311 ; 379 (MeOH).

O,O,N-*Tri-Me:* ***Caldensine***
[74575-73-8]
$C_{18}H_{15}NO_3$ 293.321
Alkaloid from the roots of *Piper caldense*. Amorph. yellow solid.

*Methylene ether: Benzo[*f*]-1,3-benzodioxolo[6,5,4-*cd*]indol-5(6*H*)-one. 10-Amino-3,4-methylenedioxy-1-phenanthrenecarboxylic acid lactam.* ***Aristolactam II****. Cepharanone A*
[55610-00-9]
$C_{16}H_9NO_3$ 263.252
Alkaloid from the callus tissue of *Stephania cepharantha* and from *Aristolochia argentina*. Cytotoxic. Pale yellow amorph. solid (DMF). Mp 308-310° (297-298°). λ_{max} 215 ; 232 ; 265 ; 277 ; 288 ; 328 ; 341 ; 376 ; 393 (MeOH) (Berdy).

▶ DE5350000

Methylene ether, N-*β-D-glucopyranosyl:* ***Cepharanone A*** **N-*β-D-glucoside***
[139163-25-0]
$C_{22}H_{19}NO_8$ 425.394
Alkaloid from roots of *Aristolochia cinnabarina* (Aristolochiaceae). Yellow amorph. powder. $[\alpha]_D^{25}$ -3.54 (c, 0.22 in DMSO).

Methylene ether, N-*hydroxy:* N-*Hydroxyaristolactam II*
$C_{16}H_9NO_4$ 279.251
Alkaloid from *Piper umbellatum* (pariparoba).

Methylene ether, N-*methoxy:* N-*Methoxyaristolactam II*. ***Piperumbellactam D***
$C_{17}H_{11}NO_4$ 293.278
Alkaloid from *Piper umbellatum* (pariparoba). Amorph. powder. λ_{max} 197 ; 209 ; 231 ; 243 ; 276 ; 282 ; 311 ; 380 (MeOH).

Gellert, E. *et al., Aust. J. Chem.*, 1972, **25**, 2477 (*Aristolactam BII*)
Crohare, R. *et al., Phytochemistry*, 1974, **13**, 1957 (*Aristolactam AII*)
Akasu, M. *et al., Tet. Lett.*, 1974, 3609 (*uv, ir, pmr, ms, struct*)
Dyke, S.F. *et al., Phytochemistry*, 1978, **17**, 599 (*Aristolactam BII*)
Achari, B. *et al., Heterocycles*, 1982, **19**, 1203 (*occur*)
Priestap, H.A. *et al., Phytochemistry*, 1985, **24**, 849 (*isol, uv, ir, pmr, ms*)
Sun, N.J. *et al., J. Nat. Prod.*, ‘, 1987, **50**, 843 (*Piperolactam A*)
Desai, S.J. *et al., Phytochemistry*, 1988, **27**, 1511 (*Piperolactam A*)
Rao, K.V. *et al., J. Nat. Prod.*, 1990, **53**, 309 (*Sauristolactam*)
Ruangrungsi, N. *et al., Phytochemistry*, 1992, **31**, 2397 (*N-Methylpiperolactam A*)
Hong, L. *et al., Phytochemistry*, 1994, **37**, 237 (*Cepharanone A glucoside*)
Wang, E.C. *et al., Heterocycles*, 1996, **43**, 969 (*Aristolactam BII*)
Wu, Q. *et al., Phytochemistry*, 1997, **44**, 727 (*Piperlactam S*)
Couture, A. *et al., Synlett*, 1997, 1475-1477 (*synth*)
Wu, T.-S. *et al., Chem. Pharm. Bull.*, 2000, **48**, 1006-1009 (*activity*)
Chia, Y.-C. *et al., J. Nat. Prod.*, 2000, **63**, 1160-1163 (*isol, activity*)
Júnior, E.L.C. *et al., Pharm. Biol.*, 2003, **41**, 216-218 (*Caldensine*)
Tabopda, T.K. *et al., Phytochemistry*, 2008, **69**, 1726-1731 (*Piperumbellactams A-C*)

1,3-Dihydroxydibenz[*cd*,*f*]indol-4(5*H*)-one D-568

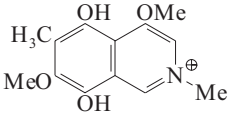
$C_{15}H_9NO_3$ 251.241

*Di-Me ether: 1,3-Dimethoxydibenz[*cd,f*]indol-4(5*H*)-one, 9CI. 10-Amino-2,4-dimethoxy-1-phenanthrenecarboxylic acid lactam*
[226953-00-0]
$C_{17}H_{13}NO_3$ 279.295
Alkaloid from the bark of *Goniothalamus griffithii*.

Hu, Z. *et al., Zhongcaoyao*, 1999, **30**, 81-83; *CA*, **131**, 29813b

5,8-Dihydroxy-4,7-dimethoxy-2,6-dimethylisoquinolinium(1+) D-569

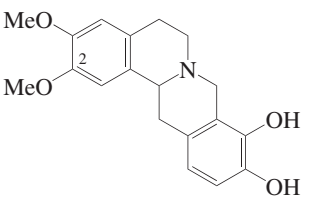
[113585-57-2]



$C_{13}H_{16}NO_4^{\oplus}$ 250.274
Isol. from *Myxococcus xanthus*. Red oil (as formate). CAS no. refers to formate. λ_{max} 267 (ϵ 17000); 341 (ϵ 4360); 425 (ϵ 5000) (MeOH/HCl).

Trowitzsch-Kienast, W. *et al., Annalen*, 1988, 483 (*isol, pmr, cmr, struct*)

9,10-Dihydroxy-2,3-dimethoxytetrahydroprotoberberine D-570



$C_{19}H_{21}NO_4$ 327.379

(ξ)-*form*

N-*Me:* ***Haitinosporine***
[214075-11-3]
$C_{20}H_{24}NO_4^{\oplus}$ 342.414
Quaternary alkaloid from *Tinospora hainanensis*. Component of Hai Nan Qing Niu Dan. Cryst. Mp 242-245° dec. Counterion not specified.

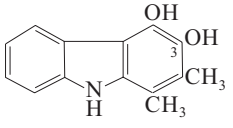
Di-Me ether: see Tetrahydropalmatine, T-212

O^2-*De-Me: 2,9,10-Trihydroxy-3-methoxytetrahydroprotoberberine*
[949933-14-6]
$C_{18}H_{19}NO_4$ 313.352
Alkaloid from *Corydalis saxicola*. Needles (MeOH). Mp 232-234° (182-184°). Two different melting points given in ref. λ_{max} 280 (MeOH).

Guo, Y. *et al., Yaoxue Xuebao*, 1998, **33**, 350-354 (*Haitinosporine*)
Li, H.-L. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2007, **43**, 173-175 (*Trihydroxymethoxytetrahydroprotoberberine*)

3,4-Dihydroxy-1,2-dimethylcarbazole D-571

*1,2-Dimethyl-9*H*-carbazole-3,4-diol*



$C_{14}H_{13}NO_2$ 227.262

*3-Me ether: 4-Hydroxy-3-methoxy-1,2-dimethylcarbazole. 3-Methoxy-1,2-dimethyl-9*H*-carbazol-4-ol, 9CI.* ***Carbazomycin B***
[75139-38-7]
$C_{15}H_{15}NO_2$ 241.289
From *Streptomyces* sp. H1051-MY-10 and *Streptoverticillium ehimense*. Enzyme Inhibitor, free radical scavenger. Active against phytopathogenic fungi and weakly active against gram-positive bacteria and yeasts. Pale yellow prisms (C_6H_6/hexane or EtOAc/hexane). Sol. MeOH, C_6H_6; fairly sol. CCl_4; poorly sol. H_2O. Mp 160-162°. λ_{max} 224 (ε 38000); 244 (ε 46800); 290 (ε 16100); 329 (ε 5300); 340 (ε 5800) (90% MeOH) (Derep).

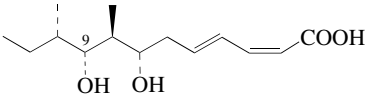
▶ FE6360000

*Di-Me ether: 3,4-Dimethoxy-1,2-dimethyl-9*H*-carbazole, 9CI.* ***Carbazomycin A***
[75139-39-8]
$C_{16}H_{17}NO_2$ 255.316
Isol. from *Streptoverticillium* sp. H1051-MY-10 and *Streptoverticillium ehimense*. Active against *Staphylococcus aureus*, weakly active against fungi and yeast. Pale-yellow needles (EtOAc/hexane), plates (CH_2Cl_2/hexane). Sol. MeOH, C_6H_6, CCl_4. Mp 51-52.5° (natural) Mp 143-146° (synthetic). λ_{max} 224 (ε 38000); 244 (ε 46800); 290 (ε 16100); 329 (ε 5300); 340 (ε 5800) (90% MeOH) (Derep). λ_{max} 242 (ε 51000); 273 (ε 36000); 293 (ε 20700); 327 (ε 4700); 340 (ε 4600) (MeOH) (Berdy).

▶ FE6206000

Sakano, K. *et al., J. Antibiot.*, 1980, **33**, 683; 961
Kaneda, M. *et al., Heterocycles*, 1981, **15**, 993 (*cryst struct, pmr, cmr*)
Yamasaka, K. *et al., J. Antibiot.*, 1983, **36**, 552 (*biosynth, cmr*)
Knoelker, H.-J. *et al., Chem. Comm.*, 1989, 1468 (*synth*)
Moody, C.J. *et al., J.C.S. Perkin 1*, 1989, 376; 2463 (*synth*)
Kaneda, M. *et al., J. Antibiot.*, 1990, **43**, 1623 (*biosynth*)
Knoelker, H.-J. *et al., Helv. Chim. Acta*, 1993, **76**, 2500 (*synth*)
Hibino, S. *et al., Heterocycles*, 1993, **35**, 441 (*synth*)
Clive, D.L.J. *et al., J.O.C.*, 1993, **58**, 2442 (*synth*)
Beccalli, E.M. *et al., Tetrahedron*, 1996, **52**, 3029 (*synth*)
Knoelker, H.-J. *et al., Tet. Lett.*, 1999, **40**, 6915-6918 (*synth*)
Crich, D. *et al., Tetrahedron*, 2004, **60**, 1513-1516 (*Carbazomycin B, synth*)

7,9-Dihydroxy-8,10-dimethyl-2,4-dodecadienoic acid D-572



$C_{14}H_{24}O_4$ 256.341

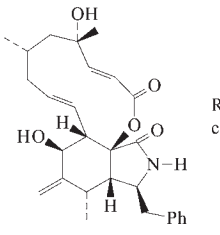
(2*Z*,4*E*,7*S*,8*S*,9*R*,10*S*)-*form*

*7-*O*-(*E*-Cinnamoyl), amide:* ***Basiliskamide B***
[474410-87-2]
$C_{23}H_{31}NO_4$ 385.502
Prod. by a marine *Bacillus laterosporus*. Solid. $[\alpha]_D^{25}$ -12 (MeOH). λ_{max} 262 (ε 43000) (MeOH).

*9-*O*-(*E*-Cinnamoyl), amide:* ***Basiliskamide A***. *Antibiotic TAN 1771B. TAN 1771B*
[170034-41-0]
[474410-77-0]
$C_{23}H_{31}NO_4$ 385.502
Prod. by a *Bacillus* sp. and a marine *Bacillus laterosporus*. Antifungal agent. Solid. $[\alpha]_D^{25}$ -78 (MeOH). λ_{max} 204 (ε 19400); 216 (ε 22700); 222 (ε 21600); 262 (ε 40000) (MeOH) (Berdy).

Japan. Pat., 1995, 206 797; *CA*, **123**, 306561u (*TAN 1771B*)
Barsby, T. *et al., J. Nat. Prod.*, 2002, **65**, 1447-1451 (*Basiliskamides*)
Lipomi, D.J. *et al., Org. Lett.*, 2004, **6**, 3533-3536 (*synth*)
Yadav, J.S. *et al., Tet. Lett.*, 2008, **49**, 5427-5430 (*synth*)

7,18-Dihydroxy-16,18-dimethyl-10-phenyl-22-oxa[12]cytochalasa-6(12),13,19-triene-1,21-dione D-573



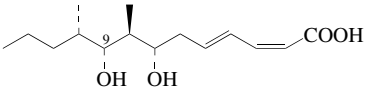
Relative configuration

$C_{28}H_{35}NO_5$ 465.588

Claimed to be first example of a 22-oxa[12]cytochalasan, but see Rosellichalasin, R-128. Metab. from an unidentified *Daldinia* fungus. Amorph. solid. $[\alpha]_D$ +67.8 (c, 0.27 in MeOH).

Buchanan, M.S. *et al., Phytochemistry*, 1996, **41**, 821 (*isol, pmr, cmr, ms, struct*)

7,9-Dihydroxy-8,10-dimethyl-2,4-tridecadienoic acid D-574



Absolute Configuration

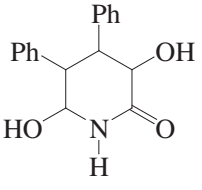
$C_{15}H_{26}O_4$ 270.368

(2*Z*,4*E*,7*S*,8*S*,9*R*,10*S*)-*form*

*9-*O*-Cinnamoyl(*E*-), amide:* ***Antibiotic YM 47522***. *YL 03709B-A. YM 47522. Antibiotic YL 03709B-A. TAN 1771A. Antibiotic TAN 1771A*
[171964-61-7]
[182698-42-6 , 170034-40-9]
$C_{24}H_{33}NO_4$ 399.529
Prod. by *Bacillus* sp. YL-03709B. Antifungal agent. Gum. $[\alpha]_D^{25}$ -106.1 (c, 0.3 in MeOH). λ_{max} 217 (ε 19000); 222 (ε 18000); 263 (ε 31000) (MeOH).

Japan. Pat., 1995, 95 206 797; *CA*, **123**, 306561u (*isol*)
Sugawara, T. *et al., J. Antibiot.*, 1996, **49**, 340-344; 345-348 (*isol, uv, ir, pmr, cmr, props*)
Ermolenko, M.S. *et al., Tet. Lett.*, 1996, **37**, 6711-6712 (*synth, abs config*)

3,6-Dihydroxy-4,5-diphenyl-2-piperidinone D-575



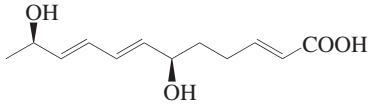
$C_{17}H_{17}NO_3$ 283.326

N-*Me: 3,6-Dihydroxy-1-methyl-4,5-diphenyl-2-piperidinone.* ***Lansamide 3***. *Lansimide 3*†
[211504-98-2]
$C_{18}H_{19}NO_3$ 297.353
Constit. of *Clausena lansium* (wampee). Spasmolytic agent. Needles. Mp 236-237°. Racemic. It appears that this is a struct. revision for the compound formerly assigned a pyrrolidinone struct. and isol. from a sp. referred to as *Clausena lansium*. However this is not clear from the paper.

N,O^6-*Di-Me: 3-Hydroxy-6-methoxy-1-methyl-4,5-diphenyl-2-piperidinone.* ***Lansamide 4***. *Lansimide 4*†
[211505-00-9]
$C_{19}H_{21}NO_3$ 311.38
Constit. of *Clausena lansium* (wampee). Spasmolytic agent. Needles. Mp

187-188°. Racemic.
Lakshmi, V. *et al., Indian J. Chem., Sect. B*, 1998, **37**, 422-424

6,11-Dihydroxy-2,7,9-dodecatrienoic acid D-576



(2*E*,6*RS*,7*E*,9*E*,11*RS*)-*form*

$C_{12}H_{18}O_4$ 226.272

(2*E*,6*RS*,7*E*,9*E*,11*RS*)-*form*
(2-Hydroxy-2-methylpropyl)amide: ***ZP-amide F***
$C_{16}H_{27}NO_4$ 297.394
Alkaloid from the pericarp of *Zanthoxylum piperitum*. Unstable syrup. λ_{max} 230 (log ε 5) (MeOH).

6-Ketone, (2-hydroxy-2-methylpropyl)amide: ***ZP-amide B***
$C_{16}H_{25}NO_4$ 295.378
Alkaloid from the pericarp of *Zanthoxylum piperitum*. Unstable syrup. λ_{max} 271 (log ε 4.66) (MeOH).

11-Ketone, (2-hydroxy-2-methylpropyl)amide: ***ZP-amide A***
$C_{16}H_{25}NO_4$ 295.378
Alkaloid from the pericarp of *Zanthoxylum piperitum*. Unstable syrup. λ_{max} 270 (log ε 4.63) (MeOH).

(2*E*,6*RS*,7*E*,9*E*,11*SR*)-*form*
(2-Hydroxy-2-methylpropyl)amide: ***ZP-amide E***
$C_{16}H_{27}NO_4$ 297.394
Alkaloid from the pericarp of *Zanthoxylum piperitum*. Unstable syrup. λ_{max} 230 (log ε 5.04) (MeOH).
Hatano, T. *et al., Phytochemistry*, 2004, **65**, 2599-2604 (*isol, pmr, cmr*)

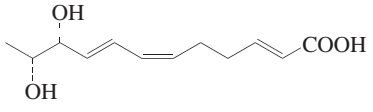
8,11-Dihydroxy-2,4,9-dodecatrienoic acid D-577

$H_3CCH(OH)CH{=}CH$
$CH(OH)CH_2CH_2CH{=}CHCH{=}$
$CHCOOH$

$C_{12}H_{18}O_4$ 226.272

(2*E*,4*E*,8ξ,9*E*,11ξ)-*form*
2-Methylpropylamide: 8,11-Dihydroxy-N-(2-methylpropyl)-2,4,9-dodecatrienamide
[1017577-33-1]
$C_{16}H_{27}NO_3$ 281.394
Alkaloid from *Spilanthescallimorpha*.
Li, G.-P. *et al., J. Integ. Plant Biol.*, 2007, **49**, 1608-1610 (*isol*)

10,11-Dihydroxy-2,6,8-dodecatrienoic acid D-578



(2*E*,6*Z*,8*E*,10*R**,11*R**)-*form*

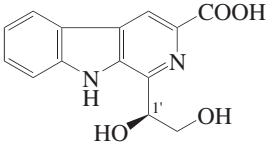
$C_{12}H_{18}O_4$ 226.272

(2*E*,6*Z*,8*E*,10*R*,11*R*)-*form*
(2-Hydroxy-2-methylpropyl)amide: ***ZP-amide D***
$C_{16}H_{27}NO_4$ 297.394
Alkaloid from the pericarp of *Zanthoxylum piperitum*. Unstable syrup. λ_{max} 230 (log ε 4.71) (MeOH).

(2*E*,6*Z*,8*E*,10*R*,11*S*)-*form*
(2-Hydroxy-2-methylpropyl)amide: ***ZP-amide C***
$C_{16}H_{27}NO_4$ 297.394
Alkaloid from the pericarp of *Zanthoxylum piperitum*. Unstable syrup. λ_{max} 233 (log ε 4.69) (MeOH).
Hatano, T. *et al., Phytochemistry*, 2004, **65**, 2599-2604 (*isol, pmr, cmr*)

1-(1,2-Dihydroxyethyl)-β-carboline-3-carboxylic acid D-579

*1-(1,2-Dihydroxyethyl)-9*H*-pyrido[3,4-b]indole-3-carboxylic acid, 9CI*



$C_{14}H_{12}N_2O_4$ 272.26

(*S*)-*form*
Dichotomine B
[755036-41-0]
Alkaloid from the roots of *Stellaria dichotoma* var. *lanceolata*. Yellow powder. $[\alpha]_D^{27}$ -19 (c, 1 in MeOH). λ_{max} 237 (log ε 3.91); 269 (log ε 4.04) (MeOH).

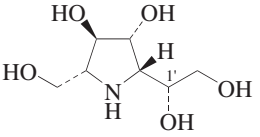
*1′-*O*-β-D-Glucopyranoside:* ***Glucodichotomine B***
$C_{20}H_{22}N_2O_9$ 434.402
Alkaloid from the roots of *Stellaria dichotoma* var. *lanceolata*. Yellow powder. $[\alpha]_D^{27}$ -28.2 (c, 0.2 in MeOH). λ_{max} 218 (log ε 4.3); 239 (log ε 4.35); 270 (log ε 4.51) (MeOH).

Me ester: ***Dichotomine C***†
[755036-45-4]
$C_{15}H_{14}N_2O_4$ 286.287
Alkaloid from the roots of *Stellaria dichotoma* var. *lanceolata*. Antiallergic agent. Yellow powder. $[\alpha]_D^{27}$ -16.6 (c, 0.5 in MeOH). λ_{max} 283 (log ε 3.56) (MeOH).

Butyl ester: ***Dichotomine D***†
[755036-50-1]
$C_{18}H_{20}N_2O_4$ 328.367
Alkaloid from the roots of *Stellaria dichotoma* var. *lanceolata*. Yellow powder. $[\alpha]_D^{27}$ -1.8 (c, 0.75 in $CHCl_3$). λ_{max} 283 (log ε 3.66) (MeOH).
Morikawa, T. *et al., Chem. Pharm. Bull.*, 2004, **52**, 1194-1199 (*Glucodichotomine B*)
Sun, B. *et al., J. Nat. Prod.*, 2004, **67**, 1464-1469 (*isol, ir, pmr, cmr, ms*)
Omura, K. *et al., Chem. Pharm. Bull.*, 2008, **56**, 237-238 (*Dichotomine C, synth*)

2-(1,2-Dihydroxyethyl)-3,4-dihydroxy-5-(hydroxymethyl)pyrrolidine D-580

3,4-Dihydroxy-α-(hydroxymethyl)-2,5-pyrrolidinedimethanol, 9CI. 2,5-Dideoxy-2,5-iminoheptitol



(1′*R*,2*S*,3*R*,4*R*,5*R*)-*form*

$C_7H_{15}NO_5$ 193.199

(1′*R*,2*S*,3*R*,4*R*,5*R*)-*form* [173142-29-5]
Amorph.

(1′*S*,2*R*,3*R*,4*R*,5*R*)-*form* [173142-30-8]
Amorph.

(1′*S*,2*R*,3*S*,4*R*,5*R*)-*form*
*2,5-Dideoxy-2,5-imino-D-*glycero-*D-talo-heptitol*
[146399-47-5]
Cryst. (MeOH/$CHCl_3$) (as hydrochloride). Mp 148-149° (hydrochloride). $[\alpha]_D^{20}$ +26.9 (c,1 in H_2O).

(1′*S*,2*S*,3*S*,4*S*,5*R*)-*form* [196494-58-3]
Oil. $[\alpha]_D^{22}$ -18.2 (c, 1 in H_2O).

(1′ξ,2*R*,3*R*,4*R*,5*R*)-*form*
2,5-Dideoxy-2,5-imino-glycero-*D*-manno-*heptitol*
[197390-30-0]
Alkaloid from *Hyacinthoides non-scripta*, *Hyacinthus orientalis* and *Scilla sibirica*. Inhibitor of β-glucosidases. $[\alpha]_D^{25}$ +31.5 (c, 0.4 in H_2O). C-1′ config. not determined.

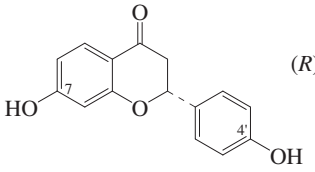
*2′-*O*-β-D-Xylopyranoside:* [240117-28-6]
$C_{12}H_{23}NO_9$ 325.315
Alkaloid from *Hyacinthoides non-scripta*, *Muscari armeniacum* and *Scilla campanulata*. $[\alpha]_D$ -8.7 (c, 0.94 in H_2O).

*2′-*O*-Apiofuranoside:* [197390-31-1]
$C_{12}H_{23}NO_9$ 325.315
Alkaloid from *Hyacinthoides non-scripta*. Not isol. pure.

(1′ξ,2*R*,3*S*,4*R*,5*S*)-*form*
2,5-Dideoxy-2,5-imino-glycero-*D*-galacto-*heptitol*
Alkaloid from the bulbs of *Scilla sibirica*. Syrup. $[\alpha]_D$ +33.6 (c, 0.19 in H_2O).
Myerscough, P.M. *et al., Tetrahedron*, 1992, **48**, 10177-10190 (*synth, pmr, cmr*)
Watson, A.A. *et al., Phytochemistry*, 1997, **46**, 255-259 (*isol, pmr, cmr*)
Lee, R.E. *et al., Tet. Lett.*, 1997, **38**, 6733-6736 (*synth, pmr*)
Asano, N. *et al., J. Nat. Prod.*, 1998, **61**, 625-628 (*isol*)
Kato, A. *et al., Carbohydr. Res.*, 1999, **316**, 95-103 (*2′-xyloside*)
Takebayashi, M. *et al., J.O.C.*, 1999, **64**, 5280-5291 (*synth, pmr*)
Yamashita, T. *et al., J. Nat. Prod.*, 2002, **65**, 1875-1881 (*Scilla sibirica alkaloids*)

4′,7-Dihydroxyflavanone D-581

*2,3-Dihydro-7-hydroxy-2-(4-hydroxyphenyl)-4*H*-1-benzopyran-4-one.* ***Liquiritigenin***



(*R*)-*form*

$C_{15}H_{12}O_4$ 256.257

Log P 2.35 (uncertain value) (calc).

(*S*)-*form* [578-86-9]

Isol. from *Centrolobium*, *Dalbergia*, *Medicago*, *Umtiza*, *Zollernia*, *Onobrychis*, *Myroxylon*, *Peltogyne*, *Glycyrrhiza*, *Cicer* and *Platymiscium* (all Fabaceae). Also in *Citrus*. Several glycosides, particularly the rutinoside and neohesperidoside, are important in influencing citrus fruit flavour. Antiinflammatory agent. Cryst. Mp 203-205°. $[\alpha]_D^{25}$ -36.2 (c, 0.09 in MeOH). Pharmacol. active isomer.

*4′-*O*-[1*H*-Indole-3-ylcarbonyl-(→5)-β-*D*-apiofuranosyl-(1→2)-β-*D*-glucopyranoside]:* ***Licorice glycoside E***

$C_{35}H_{35}NO_{14}$ 693.66

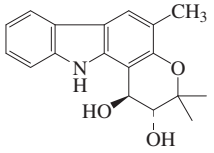
Constit. of *Glycyrrhiza uralensis* (Chinese licorice). Amorph. pale yellow powder. $[\alpha]_D$ -52.9 (c, 1 in MeOH). λ_{max} 206 (log ϵ 4.68); 223 (log ϵ 4.22); 280 (log ϵ 3.83); 285 (log ϵ 3.8) (MeOH).

[25826-69-1 , 32274-71-8]

Hatano, T. *et al., Phytochemistry*, 1998, **47**, 287-293 (*Licorice glycosides*)

Dihydroxygirinimbine D-582

[97400-67-4]



Relative Configuration

$C_{18}H_{19}NO_3$ 297.353

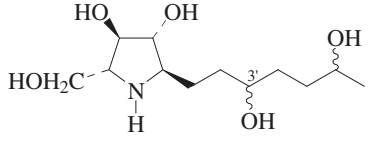
Alkaloid from the root bark of *Murraya euchrestifolia* (Rutaceae). Needles. Mp 189-190°. $[\alpha]_D$ -4 (MeOH).

Furukawa, H. *et al., Heterocycles*, 1985, **23**, 1391 (*uv, ir, pmr, struct*)

Knölker, H.J. *et al., Tet. Lett.*, 1996, **37**, 7947 (*synth*)

2-(3,6-Dihydroxyheptyl)-3,4-dihydroxy-5-hydroxymethylpyrrolidine D-583

2-(3,6-Dihydroxyheptyl)-5-hydroxymethyl-3,4-pyrrolidinediol, 9CI



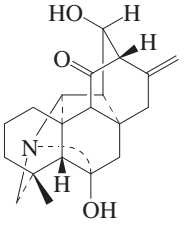
$C_{12}H_{25}NO_5$ 263.333

(2*R*,3*R*,3′ξ,4*R*,5*R*,6′ξ)-*form* [240117-27-5]

Alkaloid from *Hyacinthoides non-scripta* and *Scilla campanulata*. $[\alpha]_D$ +42.8 (c, 0.6 in H_2O).

Kato, A. *et al., Carbohydr. Res.*, 1999, **316**, 95-103

6,13-Dihydroxyhetisan-11-one D-584



(13*R*)-*form*

$C_{20}H_{25}NO_3$ 327.422

The C-13 configs. in these alkaloids are ambiguously drawn and described in the lit. Configs. given here are as given in CAS but these may not be reliable.

(13*R*)-*form*

Spirasine XIII

[115610-47-4]

Minor alkaloid from the roots of *Spiraea japonica* var. *fortunei* (Rosaceae). Cryst. (CH_2Cl_2). Mp 188-189°. $[\alpha]_D^{17}$ +25.7 (c, 0.93 in $CHCl_3$).

(13*S*)-*form*

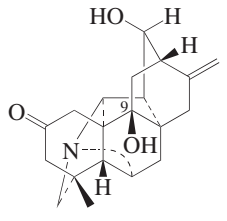
Spirasine XII

[115610-46-3]

Minor alkaloid from roots of *Spiraea japonica* (Rosaceae). Needles (CH_2Cl_2/MeOH). Mp 226-228°. $[\alpha]_D^{17}$ +17.9 (c, 1.2 in $CHCl_3$).

Sun, F. *et al., J. Nat. Prod.*, 1988, **51**, 50-53 (*isol, uv, ir, pmr, cmr, ms, cd, struct*)

9,13-Dihydroxyhetisan-2-one D-585



$C_{20}H_{25}NO_3$ 327.422

(13*S*)-*form*

9-Ac: ***Fissumine***

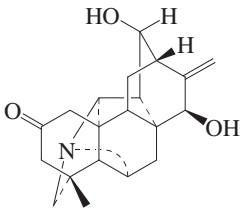
[152606-54-7]

$C_{22}H_{27}NO_4$ 369.46

Alkaloid from aerial parts of *Delphinium fissum* ssp. *anatolicum* (Ranunculaceae). Amorph. $[\alpha]_D^{20}$ -33.8 (c, 0.4 in $CHCl_3$).

Ulubelen, A. *et al., Phytochemistry*, 1993, **34**, 1165 (*isol, ir, pmr, cmr, ms, struct*)

13,15-Dihydroxyhetisan-2-one D-586



$C_{20}H_{25}NO_3$ 327.422

(13*R*,15β)-*form*

Venulusone

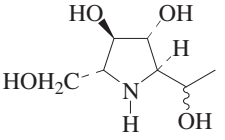
[145237-03-2]

Alkaloid from the aerial parts of *Delphinium venulosum* (Ranunculaceae). $[\alpha]_D^{22}$ +27.3 (c, 0.20 in MeOH).

Ulubelen, A. *et al., Phytochemistry*, 1992, **31**, 3239 (*isol, ir, pmr, cmr, ms, struct*)

3,4-Dihydroxy-2-(1-hydroxyethyl)-5-(hydroxymethyl)pyrrolidine D-587

3,4-Dihydroxy-α-methyl-2,5-pyrrolidinedimethanol



$C_7H_{15}NO_4$ 177.2

(1′ξ,2*R*,3*R*,4*R*,5*R*)-*form*

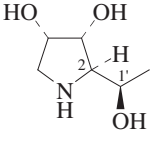
*2,5,7-Trideoxy-2,5-imino-*D*-glycero-*D*-manno-heptitol*

Alkaloid from the bulbs of *Scilla sibirica*. Inhibitor of β-galactosidase and β-glucosidase. Solid. $[\alpha]_D$ +22 (c, 0.39 in H_2O).

Yamashita, T. *et al., J. Nat. Prod.*, 2002, **65**, 1875-1881 (*isol, pmr, cmr*)

3,4-Dihydroxy-2-(1-hydroxyethyl)pyrrolidine D-588

2-(1-Hydroxyethyl)-3,4-pyrrolidinediol



$C_6H_{13}NO_3$ 147.174

(1′*R*,2*R*,3*R*,4*S*)-*form*

*3-*O*-[α-*D*-Glucuronopyranosyl-(1→2)-3,4-di-*O*-acetyl-α-*L*-arabinopyranosyl-(1→4)-3-*O*-methyl-α-*D*-glucopyranoside]:*

$C_{28}H_{45}NO_{20}$ 715.658

Isol. from the cyanobacterium *Anabaena* sp. Plates (EtOH aq.). Mp 211-213° dec. $[\alpha]_D^{26}$ +156.2 (c, 1 in MeOH aq.).

Thammana, S. *et al., J. Nat. Prod.*, 2006, **69**, 365-368 (*isol, pmr, cmr, cryst struct*)

3,4-Dihydroxy-3-hydroxymethylbutanoic acid D-589

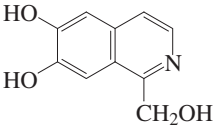
$(HOCH_2)_2C(OH)CH_2COOH$

$C_5H_{10}O_5$ 150.131

*Nitrile, 4-*O*-β-D-glucopyranoside (3*R*-):*
[148965-97-3]
[148966-04-5]
$C_{11}H_{19}NO_8$ 293.273
Constit. of barley (*Hordeum vulgare*).
Pourmohseni, H. *et al., Phytochemistry*, 1993, **33**, 295-297

6,7-Dihydroxy-1-hydroxymethylisoquinoline D-590

1-Hydroxymethyl-6,7-isoquinolinediol



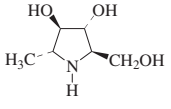
$C_{10}H_9NO_3$ 191.186

7-Me ether: 6-Hydroxy-7-methoxy-1-isoquinolinemethanol. 6-Hydroxy-1-hydroxymethyl-7-methoxyisoquinoline
[367947-68-0]
$C_{11}H_{11}NO_3$ 205.213
Alkaloid from the sponge *Haliclona* sp. Needles (EtOH). Mp 202-204°. λ_{max} 239 (log ϵ 4.35); 253 (sh) (log ϵ 3.87); 258 (log ϵ 3.73); 279 (log ϵ 3.56); 325 (log ϵ 3.32); 363 (log ϵ 3.31) (MeOH).

6,7-Di-Me ether, N*-oxide: 1-Hydroxymethyl-6,7-dimethoxyisoquinoline* N*-oxide*
$C_{12}H_{13}NO_4$ 235.239
Alkaloid from the seeds of *Calycotome villosa* ssp. *intermedia*. Mp 209-211°. λ_{max} 217 ; 259 ; 304 ; 338 ; 352 (MeOH).
Rashid, M.A. *et al., J. Nat. Prod.*, 2001, **64**, 1249-1250 (*7-Me ether, isol*)
Saito, N. *et al., Chem. Pharm. Bull.*, 2004, **52**, 282-286 (*7-Me ether, synth, pmr, cmr, ms*)
El Antri, A. *et al., Fitoterapia*, 2004, **75**, 774-778 (*6,7-di-Me ether N-oxide*)

3,4-Dihydroxy-2-(hydroxymethyl)-5-methylpyrrolidine D-591

2-(Hydroxymethyl)-5-methyl-3,4-pyrrolidinediol, 9CI



(2*R*,3*R*,4*R*,5*R*)-*form*

$C_6H_{13}NO_3$ 147.174

(2*R*,3*R*,4*R*,5*R*)-*form*
1,2,5-Trideoxy-2,5-imino-D-glucitol
[147060-64-8]
Alkaloid from seeds of *Angylocalyx pynaertii*. β-Mannosidase inhibitor. Wax. $[\alpha]_D^{23}$ +26.2 (c, 1.1 in MeOH) (natural). $[\alpha]_D^{23}$ +42.9 (c, 0.72 in MeOH) (synthetic).

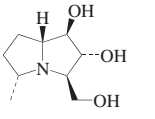
(2*R*,3*R*,4*S*,5*R*)-*form*
1,2,5-Trideoxy-2,5-imino-D-altritol
Alkaloid from the bark of *Angylocalyx pynaertii*. $[\alpha]_D$ +41.8 (c, 0.32 in H_2O).

(2*S*,3*R*,4*S*,5*R*)-*form*
2,5-Dideoxy-2,5-imino-D-fucitol. 1,2,5-Trideoxy-2,5-imino-D-galactitol
Alkaloid from the bark and pods of *Angylocalyx pynaertii*. $[\alpha]_D$ -11.1 (c, 0.28 in H_2O).

(2*S*,3*S*,4*S*,5*R*)-*form*
1,2,5-Trideoxy-2,5-imino-L-glucitol
Alkaloid from the bark and pods of *Angylocalyx pynaertii*. $[\alpha]_D$ +23.3 (c, 0.64 in H_2O).
Molyneux, R.J. *et al., J. Nat. Prod.*, 1993, **56**, 1356-1364 (*isol, synth, pmr, cmr, ms*)
Asano, N. *et al., Eur. J. Biochem.*, 2001, **268**, 35-41 (*isol, pmr, cmr*)
Yasuda, K. *et al., J. Nat. Prod.*, 2002, **65**, 198-202 (*isol, pmr, cmr*)
Merino, P. *et al., Eur. J. Org. Chem.*, 2008, 2929-2947 (*synth*)

1,2-Dihydroxy-3-hydroxymethyl-5-methyl-1*H*-pyrrolizidine D-592

*Hexahydro-3-hydroxymethyl-5-methyl-1*H*-pyrrolizine-1,2-diol, 9CI*



(1*R*,2*R*,3*R*,5*R*,7*aR*)-*form*

$C_9H_{17}NO_3$ 187.238

(1*R*,2*R*,3*R*,5*R*,7*aR*)-*form*
Hyacinthacine A₃
[268209-90-1]
Alkaloid from the bulbs of *Muscari armeniacum*. $[\alpha]_D$ +19.2 (c, 0.43 in H_2O).

(1*R*,2*S*,3*R*,5*R*,7*aR*)-*form*
Hyacinthacine A₅
[479348-16-8]
Alkaloid from the bulbs of *Scilla sibirica*. Powder. $[\alpha]_D$ -39.4 (c, 0.3 in H_2O).

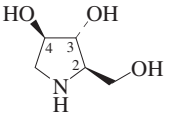
(1*S*,2*R*,3*R*,5*R*,7*aR*)-*form*
Hyacinthacine A₆
[479348-17-9]
Alkaloid from the bulbs of *Scilla sibirica*. Syrup. $[\alpha]_D$ +16.3 (c, 0.22 in H_2O).

(1*S*,2*R*,3*S*,5*S*,7*aR*)-*form*
Hyacinthacine A₄
[479348-15-7]
Alkaloid from the bulbs of *Scilla sibirica*. Syrup. $[\alpha]_D$ -49.5 (c, 0.48 in H_2O).

(1*S*,2*R*,3*R*,5*S*,7*aR*)-*form*
Hyacinthacine A₇
[479348-18-0]
Alkaloid from the bulbs of *Scilla sibirica*. Syrup. $[\alpha]_D$ -51.8 (c, 0.45 in H_2O).
Asano, N. *et al., Tetrahedron: Asymmetry*, 2000, **11**, 1-8 (*isol, pmr, cmr*)
Yamashita, T. *et al., J. Nat. Prod.*, 2002, **65**, 1875-1881 (*isol, pmr, cmr*)
Izquierdo, I. *et al., Eur. J. Org. Chem.*, 2007, 6078-6083 (*synth, abs config*)
Izquierdo, I. *et al., Tetrahedron*, 2008, **64**, 4613-4618 (*synth, abs config*)

3,4-Dihydroxy-2-(hydroxymethyl)pyrrolidine D-593

1,4-Dideoxy-1,4-iminopentitol, 11CI. 2-(Hydroxymethyl)-3,4-pyrrolidinediol, 12CI. DAB-1
[98632-49-6]



(2*R*,3*R*,4*R*)-*form*

$C_5H_{11}NO_3$ 133.147

(2*R*,3*R*,4*R*)-*form*
1,4-Dideoxy-1,4-imino-D-arabinitol
[100937-52-8]
Isol. from *Arachniodes standishii* and *Angylocalyx* spp. α-Glucosidase inhibitor. Hygroscopic oil. $[\alpha]_D^{20}$ +7.8 (c, 0.46 in H_2O).
Hydrochloride: [100991-92-2]
Cryst. (Me_2CO aq.) or solid (MeOH/Et_2O). Mp 113-115° (110-112°). $[\alpha]_D^{20}$ +37.9 (c, 0.53 in H_2O) (+31.1).
*1′-*O*-β-D-Glucopyranoside:* ***1,4-Dideoxy-1,4-imino-5-O-β-D-glucopyranosyl-D-arabinitol***
$C_{11}H_{21}NO_8$ 295.289
Alkaloid from the pods of *Angylocalyx pynaertii*. $[\alpha]_D$ +40.1 (c, 0.16 in H_2O).
*4-*O*-β-D-Glucopyranoside:*
$C_{11}H_{21}NO_8$ 295.289
Alkaloid from leaves of *Morus bombycis* (Moraceae). Powder. $[\alpha]_D$ -29.8 (c, 0.73 in H_2O).
N*-(2-Hydroxyethyl):* ***3,4-Dihydroxy-1-(2-hydroxyethyl)-2-(hydroxymethyl)-pyrrolidine***
$C_7H_{15}NO_4$ 177.2
Alkaloid from the pods of *Angylocalyx pynaertii*. $[\alpha]_D$ +54.7 (c, 0.38 in H_2O).
N*-(3-Amino-3-oxopropyl):* ***3,4-Dihydroxy-2-hydroxymethyl-1-pyrrolidinepropanamide***
$C_8H_{16}N_2O_4$ 204.225
Alkaloid from *Morus alba* (white mulberry). $[\alpha]_D$ -53.7 (c, 0.41 in H_2O).
N*[1],2,3,4-Tetrabenzyl: 2,3,5-Tri-*O*-benzyl-1,4-benzylimino-1,4-dideoxy-D-arabinitol*
$C_{33}H_{35}NO_3$ 493.644
$[\alpha]_D$ +25.8 (c, 2.0 in $CHCl_3$).

(2*R*,3*R*,4*S*)-*form*
1,4-Dideoxy-1,4-imino-D-ribitol
[105990-41-8]
Alkaloid from roots of *Morus alba* (white mulberry) (Moraceae). Solid. $[\alpha]_D$ +42 (c, 0.53 in H_2O).
Hydrochloride: [117781-12-1]
Cryst. Mp 128-132°. $[\alpha]_D^{20}$ +57.6 (c, 0.5 in H_2O).

(2*R*,3*S*,4*R*)-*form*
1,4-Dideoxy-1,4-imino-D-lyxitol
[100937-51-7] α-Galactosidase inhibitor. $[\alpha]_D^{20}$ -15.8 (c, 0.14 in H_2O).
Hydrochloride: [100991-93-3]
Cryst. Mp 159-161°. $[\alpha]_D^{20}$ +19.8 (c, 0.45 in H_2O).

(2*R*,3*S*,4*S*)-*form*
1,4-Dideoxy-1,4-imino-D-xylitol
[97058-12-3]
Alkaloid from the bark of *Angylocalyx pynaerti*.
Hydrochloride: [101399-04-6]
Cryst. (EtOH/Me_2CO). Mp 127-129°. $[\alpha]_D^{20}$ +9.8 (c, 0.6 in H_2O).

(2*S*,3*R*,4*R*)-*form*
1,4-Dideoxy-1,4-imino-L-xylitol. 2,5-Dideoxy-2,5-imino-D-xylitol
[105990-42-9]
Oil. $[\alpha]_D^{31}$ -4.1 (c, 1.0 in H_2O).
Hydrochloride: [114488-33-4]
Cryst. (EtOH/Me_2CO). Mp 128-129°. $[\alpha]_D$ -9.9 (c, 0.71 in H_2O).
N[1]*,2,3,4-Tetrabenzyl: 2,3,5-Tri*-O*-benzyl-1,4-benzylimino-1,4-dideoxy-L-xylitol*
[134307-35-0]
$C_{33}H_{35}NO_3$ 493.644
$[\alpha]_D$ +28.7 (c, 2.0 in $CHCl_3$). $[\alpha]_D^{22}$ +30.5 (c, 0.95 in $CHCl_3$).

(2*S*,3*R*,4*S*)-*form*
1,4-Dideoxy-1,4-imino-L-lyxitol
[129568-47-4]
Hydrochloride: [129568-48-5]
Cryst. Mp 155-156°. $[\alpha]_D^{20}$ -18.4 (c, 0.22 in H_2O).

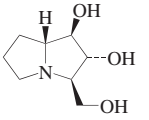
(2*S*,3*S*,4*R*)-*form*
1,4-Dideoxy-1,4-imino-L-ribitol
[105990-40-7]
Pale yellow solid. Mp 119-120°. $[\alpha]_D^{20}$ -53.9 (c, 0.6 in H_2O).
Hydrochloride: [117770-01-1]
Cryst. Mp 126-131°. $[\alpha]_D^{20}$ -59 (c, 0.59 in H_2O).

(2*S*,3*S*,4*S*)-*form*
1,4-Dideoxy-1,4-imino-L-arabinitol
[100937-53-9]
$[\alpha]_D^{20}$ -12 (c, 0.21 in MeOH).
Hydrochloride: [100991-91-1]
Cryst. (Me_2CO aq.). Mp 107-111°. $[\alpha]_D^{25}$ -34.6 (c, 0.37 in H_2O).

Furukawa, J. *et al., Phytochemistry*, 1985, **24**, 593 (*isol, pmr, cmr, ms, ord, config*)
Nash, R.J. *et al., Phytochemistry*, 1985, **24**, 1620 (*isol, pmr, cmr, ms, struct*)
Japan. Pat., 1986, 86 118 360 (*1,4-Dideoxy-1,4-imino-D-arabinitol*)
Fleet, G.W.J. *et al., Tetrahedron*, 1986, **42**, 5685; 1987, **43**, 3083; 1988, **44**, 2637; 2649 (*synth, ir, pmr*)
Setol, H. *et al., Chem. Pharm. Bull.*, 1987, **35**, 3995 (*synth, ir, pmr*)
Ikota, N. *et al., Chem. Pharm. Bull.*, 1989, **37**, 1087; 3399 (*synth*)
Wehmer, V. *et al., Angew. Chem., Int. Ed.*, 1990, **29**, 1169 (*synth*)
Duréault, A. *et al., J. Carbohydr. Chem.*, 1990, **9**, 121-123 (*2S,3R,4S-form, synth*)
Buchanan, J.G. *et al., J.C.S. Perkin 1*, 1990, 699 (*synth*)
Meng, Q. *et al., Helv. Chim. Acta*, 1991, **74**, 445-450 (*2S,3R,4R-form, tetrabenzyl, synth, pmr*)
Van der Klein, P.A.M. *et al., Synth. Commun.*, 1992, **22**, 1763 (*synth*)
Asano, N. *et al., Carbohydr. Res.*, 1994, **253**, 235; **259**, 243 (*1,4-Dideoxy-1,4-imino-2-O-β-D-glucopyranosyl-D-arabinitol, 1,4-Dideoxy-1,4-imino-D-ribitol*)
Griffart-Brunet, D. *et al., Tet. Lett.*, 1994, **35**, 2889 (*synth*)
Blanco, M.-J. *et al., J.O.C.*, 1996, **61**, 4748 (*2R,3S,4R-form, synth, ir, pmr, cmr*)
Huang, Y. *et al., J.O.C.*, 1997, **62**, 372-376 (*synth, pmr, ir, cmr*)
Watson, A.A. *et al., Phytochemistry*, 1997, **46**, 255 (*isol, props*)
Huwe, C.M. *et al., Synthesis*, 1997, 61 (*synth, pmr, cmr*)
Hulme, A.N. *et al., J.C.S. Perkin 1*, 2000, 1837-1841 (*2R,3R,4R-form, synth, pmr, cmr*)
Lee, B.W. *et al., Synthesis*, 2000, 1305-1309 (*2S,3R,4R-form*)
Asano, N. *et al., Eur. J. Biochem.*, 2001, **268**, 35-41 (*1,4-Dideoxy-1,4-imino-D-xylitol, isol*)
Asano, N. *et al., J. Agric. Food Chem.*, 2001, **49**, 4208-4213 (*N-propanamide*)
Lombardo, M. *et al., J.O.C.*, 2001, **66**, 1264-1268 (*1,4-Dideoxy-1,4-imino-L-arabinitol*)
Yasuda, K. *et al., J. Nat. Prod.*, 2002, **65**, 198-202 (*1,4-Dideoxy-1,4-imino-5-glucopyranosylarabinitol, 1-hydroxyethyl deriv*)
El-Ashry, E.H. *et al., Carbohydr. Res.*, 2003, **338**, 2265-2290 (*rev, synth*)
Ayad, T. *et al., Eur. J. Org. Chem.*, 2003, 2903-2910 (*1,4-dideoxy-1,4-imino-D-arabitinol*)
Koh, D.W. *et al., J. Med. Chem.*, 2003, **46**, 4322-4332 (*2R,3R,4S-form, synth, pmr, cmr*)
Dhavale, D.D. *et al., Org. Biomol. Chem.*, 2005, **3**, 3720-3726 (*2S,3R,4R-form*)
Lauritsen, A. *et al., Org. Biomol. Chem.*, 2006, **4**, 2898-2905 (*2R,3R,4R-form, 2S,3R,4R-form, synth, pmr, cmr, ms, tetrabenzyl*)
Kim, I.S. *et al., Org. Lett.*, 2006, **8**, 4101-4104 (*synth*)
Merino, P. *et al., Eur. J. Org. Chem.*, 2008, 2929-2947 (*synth*)

1,2-Dihydroxy-3-hydroxymethyl-1*H*-pyrrolizidine D-594

*Hexahydro-3-hydroxymethyl-1*H*-pyrrolizine-1,2-diol, 9CI*



(1*R*,2*R*,3*R*,7*aR*)-*form*

$C_8H_{15}NO_3$ 173.211

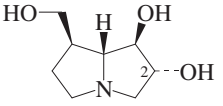
(1*R*,2*R*,3*R*,7*aR*)-*form*
Hyacinthacine A₂
[268209-89-8]
Alkaloid from *Muscari armeniacum*. $[\alpha]_D$ +20.1 (c, 0.44 in H_2O).

(1*S*,2*R*,3*R*,7*aR*)-*form*
Hyacinthacine A₁
[268209-88-7]
Alkaloid from *Muscari armeniacum*. Glycosidase inhibitor. $[\alpha]_D$ +38.2 (c, 0.23 in H_2O).

Asano, N. *et al., Tetrahedron: Asymmetry*, 2000, **11**, 1-8 (*isol, pmr, cmr*)
Cardona, F. *et al., Tet. Lett.*, 2003, **44**, 2315-2318 (*Hyacinthacine A₂, synth*)
Desvergnes, S. *et al., J.O.C.*, 2005, **70**, 1459-1462 (*Hyacinthacine A₂, synth*)
Donohoe, T.J. *et al., J.O.C.*, 2005, **70**, 7297-7304 (*Hyacinthacine A₁, synth*)
Chabaud, L. *et al., Org. Lett.*, 2005, **7**, 2587-2590 (*Hyacinthacine A₁, synth*)
Dewi-Wülfing, P. *et al., Eur. J. Org. Chem.*, 2006, 1852-1856 (*Hyacinthacine A₂, synth*)
Izquierdo, I. *et al., Eur. J. Org. Chem.*, 2007, 6078-6083 (*Hyacinthacine A₁, synth*)
Chandrasekhar, S. *et al., J.O.C.*, 2008, **73**, 7826-7828 (*Hyacinthacine A₁, synth*)
Reddy, P.V. *et al., Org. Biomol. Chem.*, 2008, **6**, 1170-1172 (*Hyacinthacine A₁, synth*)

1,2-Dihydroxy-7-hydroxymethylpyrrolizidine D-595

*Hexahydro-6,7-dihydroxy-1*H*-pyrrolizine-1-methanol. 7-Hydroxymethyl-1,2-pyrrolizidinediol*

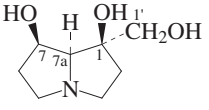


$C_8H_{15}NO_3$ 173.211

(1*R,2*R**,7*R**,7*aR**)-*form***
2-Angeloyl: ***6-Angeloyloxyplatynecine***
$C_{13}H_{21}NO_4$ 255.313
Alkaloid from *Senecio nemorensis*. Yellow oil.
Christov, V. *et al., Nat. Prod. Res.*, 2005, **19**, 389-392 (*isol, pmr, cmr, ms*)

1,7-Dihydroxy-1-hydroxymethylpyrrolizidine D-596

*1-Hydroxymethyl-1,7-pyrrolizidinediol. Hexahydro-1,7-dihydroxy-1*H*-pyrrolizine-1-methanol*



(1*S*,7*R*,7a*S*)-*form*

$C_8H_{15}NO_3$ 173.211

(1*S*,7*R*,7*aS*)-*form*
Helibractinecine
[156475-63-7]
Alkaloid from aerial parts of *Heliotropium bracteatum* (Boraginaceae). Gum. $[\alpha]_{Hg}^{20}$ -18.68 (c, 0.67 in EtOH).
O[1']*-Angeloyl:* ***Heliscabine***
$C_{13}H_{21}NO_4$ 255.313
Alkaloid from *Heliotropium scabrum* (Boraginaceae). Gum. $[\alpha]_D^{25}$ -19.5 (c, 0.1 in EtOH).

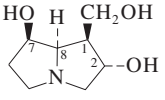
(1*R*,7*S*,7*aS*)-*form*
Helibracteatinecine
Necine base obt. by hydrol. of Helibracteatinine and Helibracteatine. Gum. $[\alpha]_{Hg}^{25}$ +12.1 (c, 0.6 in EtOH).
O[7]*-Angeloyl:* ***Helibracteatinine***
[169626-42-0]
$C_{13}H_{21}NO_4$ 255.313
From *Heliotropium bracteatum* (Boraginaceae). Pale yellow gum. $[\alpha]_{Hg}^{25}$ +10.85 (c, 0.64 in EtOH).
O[1']*-Angeloyl:* ***Helibracteatine***
[169869-88-9]
$C_{13}H_{21}NO_4$ 255.313
From *Heliotropium bracteatum* (Boraginaceae). Brown gum. $[\alpha]_{Hg}^{25}$ +3.64 (c, 0.33 in EtOH).

(1*R*,7*R*,7*aR*)-*form*

N-*Me,* O^{7},$O^{1'}$*-diangeloyl:* ***7,9-Diangeloyl-1-hydroxy-N-methylplatynecium(1+)***
[135574-54-8]
$C_{19}H_{30}NO_5^{\oplus}$ 352.45
Alkaloid from *Senecio integrifolius* var. *fauriri* (Asteraceae). Fine needles (Me_2CO/EtOAc) (as chloride). Mp 143° (chloride). $[\alpha]_D$ -60.6 (c, 1 in EtOH).
Roeder, E. *et al., Phytochemistry*, 1991, **30**, 1734 (*7,9-Diangeloyl-1-hydroxy-N-methylplatynecinium*)
Lakshmanan, A.J. *et al., Phytochemistry*, 1994, **36**, 245; 1995, **39**, 473; **40**, 291 (*Helibracteatine, Helibracteatinine*)

2,7-Dihydroxy-1-hydroxymethylpyrrolizidine D-597

*Hexahydro-7-(hydroxymethyl)-1*H*-pyrrolizine-1,6-diol, 9CI. 7-Hydroxymethyl-1,6-pyrrolizidinediol*



(1*S*,2*R*,7*R*,8*R*)*–form*

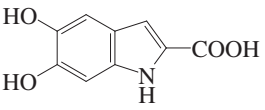
$C_8H_{15}NO_3$ 173.211

(1*S*,2*R*,7*R*,8*R*)*-form*
Rosmarinecine
[520-61-6]
Necine base from the alkaloid Rosmarinine, R-133. Stout prisms (Py). Mp 171-172°. $[\alpha]_D^{25}$ -118.5.
Picrate: Mp 175°.
Tri-Ac:
Needles (EtOH)(as picrate). Mp 138-139.5° (picrate).

(1*R*,2*S*,7*R*,8*R*)*-form*
Croalbinecine
[41690-66-8]
Necine base from the alkaloid Croalbidine, C-761. Gum.
Hydrochloride:
Cryst. (EtOH/Me_2CO). Mp 165-166°.
Picrate:
Cryst. (EtOAc/$CHCl_3$). Mp 155-156°.
O^{9}*-Angeloyl:* ***Helifoline***
[80787-56-0]
$C_{13}H_{21}NO_4$ 255.313
Alkaloid from *Heliotropium ovalifolium* (Boraginaceae). Cubes (Me_2CO). Mp 131-132°. $[\alpha]_D^{25}$ +25.4 (c, 0.0006 in EtOH).
Richardson, M.F. *et al., J.C.S.*, 1943, 452 (*synth, struct*)
Dry, L.J. *et al., J.C.S.*, 1955, 59 (*struct*)
Sawnhey, R.S. *et al., Indian J. Chem.*, 1973, **11**, 88 (*isol, pmr, ms*)
Sawnhey, R.S. *et al., Aust. J. Chem.*, 1974, **27**, 1805 (*struct, pmr*)
Mohanraj, S. *et al., Phytochemistry*, 1981, **20**, 1991 (*Helifoline*)
Rüeger, H. *et al., Heterocycles*, 1983, **20**, 1331 (*synth*)
Tatsuta, K. *et al., J.A.C.S.*, 1983, **105**, 3653 (*synth*)
Goti, A. *et al., Eur. J. Org. Chem.*, 2000, 3633-3645 (*synth*)
Ahn, J.-B. *et al., J.O.C.*, 2000, **65**, 9249-9251 (*synth*)
Goti, A. *et al., Org. Lett.*, 2001, **3**, 1367-1369 (*synth*)
Akai, S. *et al., Chem. Comm.*, 2005, 2369-2371 (*synth*)

5,6-Dihydroxy-1*H*-indole-2-carboxylic acid, 9CI D-598

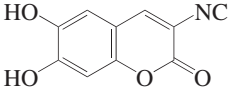
[4790-08-3]



$C_9H_7NO_4$ 193.159
Degradn. prod. of melanin. Likely precursor in biosynth. of eumelanins. Cryst. Mp 240°.
Et ester: [113370-04-0]
$C_{11}H_{11}NO_4$ 221.212
Yellow prisms (EtOH). Mp 172°.
*Di-Me ether: 5,6-Dimethoxy-1*H*-indole-2-carboxylic acid*
[88210-96-2]
$C_{11}H_{11}NO_4$ 221.212
Plates (C_6H_6). Mp 202-203° dec.
H_2SO_4 → orange soln.
Di-Me ether, Me ester: [28059-24-7]
$C_{12}H_{13}NO_4$ 235.239
Cryst. Mp 167-168°.
Perkin, W.H. *et al., J.C.S.*, 1926, 360
Raper, H.S. *et al., Biochem. J.*, 1927, **21**, 89
Oxford, A.E. *et al., J.C.S.*, 1927, 420
Benigni, J.D. *et al., J. Het. Chem.*, 1965, **2**, 387 (*synth, uv*)
d'Ischia, M. *et al., Tet. Lett.*, 1985, **26**, 2801 (*isol*)
Chioccara, F. *et al., Synth. Commun.*, 1987, **17**, 1815 (*synth*)
Palumbo, P. *et al., Tetrahedron*, 1987, **43**, 4203 (*biochem*)
Coowar, D. *et al., J. Med. Chem.*, 2004, **47**, 6270-6282 (*di-Me ether Me ester*)

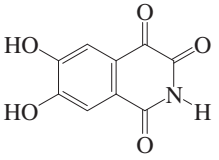
6,7-Dihydroxy-3-isocyano-2*H*-1-benzopyran-2-one D-599

6,7-Dihydroxy-3-isocyanocoumarin
[957062-50-9]



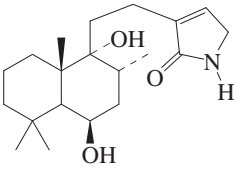
$C_{10}H_5NO_4$ 203.154
Prod. by *Pseudomonas aeruginosa*. Cryst.
Brady, S.F. *et al., J.A.C.S.*, 2007, **129**, 12101-12102

6,7-Dihydroxy-1,3,4(2*H*)-isoquinolinetrione D-600



$C_9H_5NO_5$ 207.142
Di-Me ether, N-*Me: 6,7-Dimethoxy-2-methyl-1,3,4(2*H*)-isoquinolinetrione*
$C_{12}H_{11}NO_5$ 249.223
Alkaloid from the roots of *Menispermum dauricum*. Yellow powder. Mp 185-189°. λ_{max} 211 (log ϵ 1.85); 228 (log ϵ 1.38); 256 (log ϵ 1.3); 363 (log ϵ 0.26) (no solvent reported).
Zhang, X. *et al., Phytochemistry*, 2004, **65**, 929-932 (*isol, pmr, cmr, ms*)

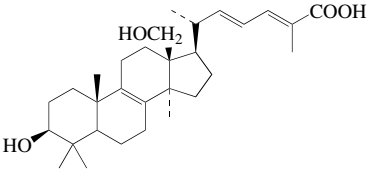
6,9-Dihydroxy-13-labdene-16,15-lactam D-601



$C_{20}H_{33}NO_3$ 335.486

(6β,8α,9β)*-form*
6-Ac: ***Vitexlactam A***
[459167-05-6]
$C_{22}H_{35}NO_4$ 377.523
Alkaloid from the fruit of *Vitex agnus-castus.* Cryst. Mp 207°. $[\alpha]_D^{24}$ -10.7 (c, 0.42 in $CHCl_3$).
Li, S.-H. *et al., Tet. Lett.*, 2002, **43**, 5131-5134 (*isol, pmr, cmr, ms, ir, cryst struct*)

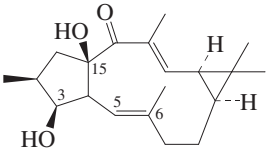
3,18-Dihydroxylanosta-8,22,24-trien-26-oic acid D-602



$C_{30}H_{46}O_4$ 470.691

(3β,22*E*,24*E*)*-form*
N-*(Tetrahydro-4,5-dimethyl-2-oxo-3-furanyl)amide, 3-*O*-[α-L-rhamnopyranosyl-(1→2)-β-D-glucopyranosyl-(1→2)-[α-L-rhamnopyranosyl-(1→4)]-β-D-glucopyranoside]:* ***Mussaendoside Q***
[161407-77-8]
$C_{60}H_{95}NO_{23}$ 1198.403
Constit. of *Mussaenda pubescens.* Amorph. powder. $[\alpha]_D^{14}$ +25 (c, 0.14 in $CHCl_3$).
Zhao, W. *et al., J. Nat. Prod.*, 1994, **57**, 1613-1618 (*isol, pmr, cmr*)

3,15-Dihydroxy-5,12-lathyradien-14-one D-603



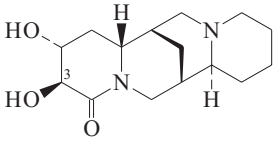
$C_{20}H_{30}O_3$ 318.455

(2β,3β,5*E*,12*E*,15β)-*form*

5α,6α-Epoxide, 3-(3-pyridinecarbonyl), 15-Ac: [88202-64-6]
$C_{28}H_{35}NO_6$ 481.588
Constit. of *Euphorbia characias.*

Seip, E.H. *et al., Phytochemistry*, 1983, **22**, 1791-1795 (*Euphorbia characias constits*)

3,4-Dihydroxylupanine D-604



$C_{15}H_{24}N_2O_3$ 280.366

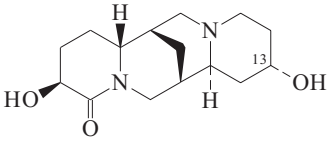
(3β,4α)-*form*

Lebeckianine
[125263-79-8]
Alkaloid from *Lebeckia* spp. (Fabaceae). Pale-brown oil. $[\alpha]_D^{18}$ +61 (c, 0.82 in $CHCl_3$).

4-Angeloyl: ***Sessilifoline***
[126381-87-1]
$C_{20}H_{30}N_2O_4$ 362.468
Alkaloid from *Pearsonia cajanifolia* ssp. *cryptantha* (Fabaceae). $[\alpha]_D^{22}$ -72 (c, 1.6 in $CHCl_3$).

Van Wyk, B.E. *et al., Biochem. Syst. Ecol.*, 1989, **17**, 225-229 (*Lebeckianine*)
Verdoorn, G.H. *et al., Phytochemistry*, 1990, **29**, 1297-1302 (*Sessilifoline*)

3,13-Dihydroxylupanine D-605



$C_{15}H_{24}N_2O_3$ 280.366

(3β,13α)-*form*

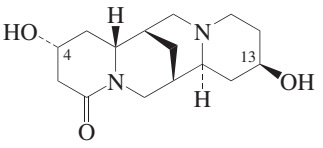
Alkaloid from the seeds of *Cytisus scoparius* (Fabaceae). Needles (CH_2Cl_2/hexane). Mp 194-196°. $[\alpha]_D^{15}$ -7.4 (c, 0.59 in EtOH).

13-Angeloyl: ***Cajanifoline***
[126381-86-0]
$C_{20}H_{30}N_2O_4$ 362.468
Alkaloid from *Pearsonia cajanifolia* ssp. *cryptantha* (Fabaceae). Mp 87-91°. $[\alpha]_D^{22}$ -11 (c, 1.4 in $CHCl_3$).

13-Tigloyl: ***3-Hydroxy-13-tigloyloxylupanine***
[156755-38-3]
$C_{20}H_{30}N_2O_4$ 362.468
Alkaloid from seedlings of *Cytisus scoparius* (Fabaceae). Amorph. solid. $[\alpha]_D$ -8.7 (c, 0.013 in MeOH).

Murakoshi, I. *et al., Phytochemistry*, 1986, **25**, 521 (*isol, pmr, cmr, ms, struct, abs config*)
Verdoorn, G.H. *et al., Phytochemistry*, 1990, **29**, 1297 (*Cajanifoline*)
Saito, K. *et al., Phytochemistry*, 1994, **36**, 309 (*3β-Hydroxy-13α-tigloyloxylupanine*)

4,13-Dihydroxylupanine D-606



(4α,13β)-*form*

$C_{15}H_{24}N_2O_3$ 280.366

(4α,13β)-*form*

O^{13}-*Me:* ***4-Hydroxy-13-methoxylupanine***
$C_{16}H_{26}N_2O_3$ 294.393
Minor alkaloid from bark of *Acosmium panamense.*

(4β,13α)-*form*

Minor alkaloid from the leaves of *Calpurnia aurea* ssp. *aurea* (Fabaceae).

O^{13}-*(2-Pyrrolecarbonyl):* ***Digittine***
[105798-93-4]
$C_{20}H_{27}N_3O_4$ 373.451
Minor alkaloid from the leaves of *Calpurnia aurea* ssp. *aurea* (Fabaceae).

(4ξ,13ξ)-*form* [81149-31-7]
Minor alkaloid from seeds of *Lupinus mutabilis* and seeds of *Sarothamnus scoparius* (Fabaceae). Tentative struct.

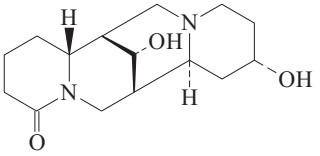
13-Angeloyl: ***13-(Angeloyloxy)-4-hydroxylupanine***
[86632-27-1]
$C_{20}H_{30}N_2O_4$ 362.468
Minor alkaloid from seeds of *Lupinus mutabilis* (Fabaceae).

O^{13}-*(3,4-Dimethoxybenzoyl):* ***Catalauverine***
$C_{24}H_{32}N_2O_6$ 444.527
Alkaloid from *Sarothamnus catalaunicus* (Fabaceae). Mp 154°. $[\alpha]_D^{25}$ +328 (c, 0.5 in MeOH). Tentative struct.

O^{13}-*(3,4,5-Trimethoxybenzoyl):* ***Catalaudesmine***
$C_{25}H_{34}N_2O_7$ 474.553
Alkaloid from *Sarothamnus catalaunicus* (Fabaceae). Mp 176°. $[\alpha]_D^{22}$ +320 (c, 0.3 in MeOH). Tentative struct.

Faugeras, G. *et al., An. Quim.*, 1972, **68**, 811 (*Catalauverine, Catalaudesmine*)
Wink, M. *et al., Planta Med.*, 1981, **43**, 342 (*occur, ms*)
Hatzold, T. *et al., J. Agric. Food Chem.*, 1983, **31**, 934 (*isol*)
Asres, K. *et al., Planta Med.*, 1986, 302 (*isol, ir, pmr, ms, cd, struct, Dihydroxylupanine,Digittine*)
Veitch, N.C. *et al., Phytochemistry*, 1997, **45**, 847 (*4-Hydroxy-13-methoxylupanine*)

8,13-Dihydroxylupanine D-607



$C_{15}H_{24}N_2O_3$ 280.366

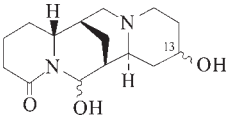
(8α,13α)-*form* [138680-23-6]
Alkaloid from *Pearsonia sessilifolia* ssp. *marginata* (Fabaceae). $[\alpha]_D^{22}$ +29 (c, 2.4 in $CHCl_3$).

13-Angeloyl: ***Cryptanthine***
[129349-79-7]
$C_{20}H_{30}N_2O_4$ 362.468
Alkaloid from *Pearsonia cajanifolia* ssp. *cryptantha* (Fabaceae). Mp 108-110°. $[\alpha]_D^{23}$ +117 (c, 1.4 in $CHCl_3$).

Verdoorn, G.H. *et al., Phytochemistry*, 1990, **29**, 1297 (*Cryptanthine*)
Verdoorn, G.H. *et al., Phytochemistry*, 1991, **30**, 3631 (*isol*)

10,13-Dihydroxylupanine D-608

[61166-47-0]



Relative configuration

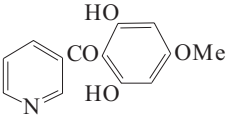
$C_{15}H_{24}N_2O_3$ 280.366
Alkaloid from *Cadia purpurea* and *Calpurnia aurea* (Fabaceae).

O^{13}-*(2-Pyrrolecarbonyl):* ***10-Hydroxy-13-(2-pyrrolecarbonyloxy)lupanine***
[61166-48-1]
$C_{20}H_{27}N_3O_4$ 373.451
Alkaloid from *Calpurnia purpurea*.

van Eijk, J.L. *et al., Tet. Lett.*, 1976, **17**, 2053-2054 (*isol, ms*)
Radema, M.H. *et al., Phytochemistry*, 1979, **18**, 2063-2064 (*isol*)

3-(2,6-Dihydroxy-4-methoxybenzoyl)pyridine D-609

(2,6-Dihydroxy-4-methoxyphenyl)-3-pyridinylmethanone, 9CI. ***Duckeine***
[55051-81-5]

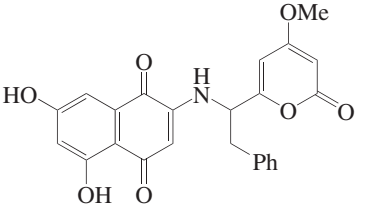


$C_{13}H_{11}NO_4$ 245.234
Alkaloid from the trunk wood of *Aniba duckei* (Lauraceae). Yellow cryst. (EtOH). Mp 243-245°.

Correa, D. de B. *et al., Phytochemistry*, 1975, **14**, 271 (*isol, uv, ir, pmr, ms, struct*)

5,7-Dihydroxy-2-[[1-(4-methoxy-2-oxo-2*H*-pyran-6-yl)-2-phenylethyl]amino]-1,4-naphthoquinone D-610

[1021857-44-2]



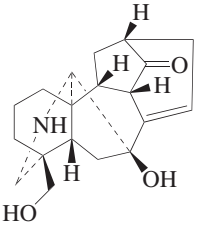
$C_{24}H_{19}NO_7$ 433.417
Prod. by a marine-based *Aspergillus niger*

EN-13. Amorph. red powder. Mp 118-120°. $[\alpha]_D^{25}$ +54.9 (c, 0.19 in $CHCl_3$). λ_{max} 203 (log ϵ 3.94); 239 (log ϵ 3.08); 266 (log ϵ 3.05); 477 (log ϵ 1.77) ($CHCl_3$).

Zhang, Y. *et al., Chin. Chem. Lett.*, 2007, **18**, 951-953 (*isol, pmr, cmr*)

7,18-Dihydroxy-4-methylaconit-8(15)-en-14-one D-611

7-Hydroxy-4-(hydroxymethyl)aconit-8(15)-en-14-one



$C_{19}H_{25}NO_3$ 315.411

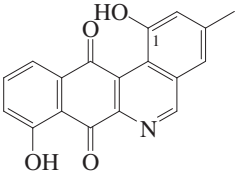
5β-*form*

O^7-*Me,* N-*Et, 18*-O-*(2-acetamidobenzoyl):* ***Talassicumine B***
[160791-10-6]
$C_{31}H_{38}N_2O_5$ 518.652
Alkaloid from roots of *Aconitum talassicum* (Ranunculaceae). Amorph. powder.

Yue, J. *et al., Phytochemistry*, 1994, **37**, 1467 (*isol, uv, ir, pmr, cmr, ms, struct*)

1,8-Dihydroxy-3-methylbenzo[*b*]phenanthridine-7,12-dione, 9CI D-612

[124903-84-0]



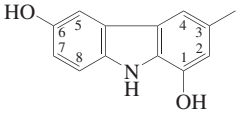
$C_{18}H_{11}NO_4$ 305.289
Prod. by *Streptomyces viridochromogenes.* Antitumour agent. Mp 234-235°.

1-O-*(2,3,6-Trideoxy-3-methylamino-α-D-*ribo*-hexopyranoside):* ***Phenanthroviridin***
[124903-83-9]
$C_{25}H_{24}N_2O_6$ 448.474
Prod. by *Streptomyces viridochromogenes.* Antitumour agent. Mp 196-198°. $[\alpha]_D^{20}$ +62 (c, 0.518 in MeOH).

Eur. Pat., 1989, 304 400; *CA*, **112**, 75295 (*isol*)
Gore, M.P. *et al., J.O.C.*, 1991, **56**, 2289 (*synth*)
De Frutos, O. *et al., Eur. J. Org. Chem.*, 2001, 163-171 (*synth*)

1,6-Dihydroxy-3-methyl-9*H*-carbazole D-613

*3-Methyl-9*H*-carbazole-1,6-diol*



$C_{13}H_{11}NO_2$ 213.235

*6-Me ether: 1-Hydroxy-6-methoxy-3-methyl-9*H*-carbazole.* ***Clausenol***†
[168434-21-7]
$C_{14}H_{13}NO_2$ 227.262
Alkaloid from stem bark of *Clausena anisata* (Rutaceae). Highly active against gram-positive and gram-negative bacteria and fungi. Cryst. (C_6H_6). Mp 139°. λ_{max} 228 (ϵ 20000); 253 (ϵ 23000); 303 (ϵ 10900); 356 (ϵ 4000) (EtOH) (Berdy).

6-Me ether, O-*Ac:* [168293-30-9]
$C_{16}H_{15}NO_3$ 269.299
Needles (C_6H_6/petrol). Mp 132°.

*Di-Me ether: 1,6-Dimethoxy-3-methyl-9*H*-carbazole.* ***Clausenine***
[168434-20-6]
$C_{15}H_{15}NO_2$ 241.289
From stem bark of *Clausena anisata* (Rutaceae). Shows low activity against gram-negative bacteria and fungi. Cryst. (C_6H_6/petrol). Mp 151°. λ_{max} 226 (ϵ 22000); 242 (ϵ 21000); 299 (ϵ 10000); 340 (ϵ 2760); 354 (ϵ 2630) (EtOH) (Berdy).

Chakraborty, A. *et al., Phytochemistry*, 1995, **40**, 295 (*Clausenol, Clausenine, isol, 6-Me ether Ac, uv, ir, pmr, cmr, synth, cryst struct*)
Bernal, P. *et al., Synthesis*, 2007, 1943-1948 (*Clausenine, synth*)

1,7-Dihydroxy-6-methyl-9*H*-carbazole D-614

*6-Methyl-9*H*-carbazole-1,7-diol*

$C_{13}H_{11}NO_2$ 213.235

*Di-Me ether: 1,7-Dimethoxy-6-methyl-9*H*-carbazole.* ***Clausine P***
[82463-77-2]
$C_{15}H_{15}NO_2$ 241.289
Alkaloid from *Clausena excavata*. Yellow oil. λ_{max} 212 ; 236 (sh) ; 239 ; 251 (sh) ; 261 (sh) ; 290 (sh) ; 298 ; 317 ; 330 (MeOH).

Wu, T.-S. *et al., Phytochemistry*, 1999, **52**, 523-527 (*di-Me ether, isol, uv, pmr, ms*)

2,3-Dihydroxy-6-methyl-9*H*-carbazole D-615

*6-Methyl-9*H*-carbazole-2,3-diol*

$C_{13}H_{11}NO_2$ 213.235

Methylene ether: 6-Methyl-2,3-methylenedioxycarbazole. ***Clausenalene***
[155961-89-0]
$C_{14}H_{11}NO_2$ 225.246
Alkaloid from the stem bark of *Clausena heptaphylla* (Rutaceae). Needles (C_6H_6/petrol). Mp 224-225° dec. λ_{max} 236 (ϵ 40000); 312 (ϵ 26200); 336 (ϵ 12000); 353 (ϵ 13800) (EtOH) (Berdy).

Bhattacharyya, P. *et al., Phytochemistry*, 1993, **33**, 248 (*isol, uv, ir, pmr, cmr, synth, struct*)

2,5-Dihydroxy-3-methyl-9*H*-carbazole D-616

*3-Methyl-9*H*-carbazole-2,5-diol, 9CI*

$C_{13}H_{11}NO_2$ 213.235

*5-Me ether: 2-Hydroxy-5-methoxy-3-methyl-9*H*-carbazole.* ***Carbalexin A***
[371159-83-0]
$C_{14}H_{13}NO_2$ 227.262
Stress metab. of *Glycosmis parviflora* and *Glycosmis pentaphylla*. Cryst. ($CHCl_3$). Mp 178-180°. λ_{max} 239 ; 293 ; 317 ; 330 (MeOH).

*Di-Me ether: 2,5-Dimethoxy-3-methyl-9*H*-carbazole.* ***Glybomine A***
$C_{15}H_{15}NO_2$ 241.289
Alkaloid from the stems of *Glycosmis arborea*. Oil. λ_{max} 209 ; 239 ; 264 (sh) ; 294 ; 316 ; 330 (MeOH).

Pacher, T. *et al., Phytochemistry*, 2001, **58**, 129-135 (*Carbalexin A*)
Ito, C. *et al., J. Nat. Prod.*, 2004, **67**, 1488-1491 (*Glybomine A*)

2,6-Dihydroxy-3-methyl-9*H*-carbazole D-617

*3-Methyl-9*H*-carbazole-2,6-diol*

$C_{13}H_{11}NO_2$ 213.235

*2-Me ether: 6-Hydroxy-2-methoxy-3-methyl-9*H*-carbazole.* ***Glycozolidol***
[58005-42-8]
$C_{14}H_{13}NO_2$ 227.262
Alkaloid from the roots of *Glycosmis pentaphylla* (Rutaceae). Active against *Staphylococcus aureus, Bacillus firmis, Agrobacterium numefasciens* and others. Cryst. ($CHCl_3$). Sol. MeOH, C_6H_6; poorly sol. H_2O. Mp 240°. λ_{max} 232 (ϵ 31500); 260 (ϵ 12580); 308 (ϵ 19500) (EtOH) (Berdy).

2-Me ether, O-*Ac:*
$C_{16}H_{15}NO_3$ 269.299
Cryst. (C_6H_6/petrol). Mp 194°.

*6-Me ether: 2-Hydroxy-6-methoxy-3-methyl-9*H*-carbazole.* ***Carbalexin C***
$C_{14}H_{13}NO_2$ 227.262
Stress metab. of *Glycosmis parviflora* and *Glycosmis pentaphylla*. Phytoalexin. Oil. λ_{max} 231 ; 263 (sh) ; 310 (MeOH).

*Di-Me ether: 2,6-Dimethoxy-3-methyl-9*H*-carbazole, 9CI.* ***Glycozolidine***
[29093-41-2]
$C_{15}H_{15}NO_2$ 241.289
Alkaloid from the root bark of *Glycosmis pentaphylla* and the roots of *Glycosmis mauritiana* (Rutaceae). Cryst. (C_6H_6/MeOH). Mp 166-167° (161-162°).

Islam, A. *et al., Chem. Comm.*, 1972, 537 (*synth, pmr*)
Anwer, F. *et al., Indian J. Chem.*, 1972, **10**, 959 (*struct*)
Rastogi, K. *et al., Phytochemistry*, 1980, **19**, 945 (*isol*)
Bhattacharyya, P. *et al., Phytochemistry*, 1985, **24**, 882 (*isol, uv, ir, pmr, ms, struct*)
Iwao, M. *et al., Heterocycles*, 1993, **36**, 1483 (*synth, Glycozolidine*)
Chakravarty, A.K. *et al., Phytochemistry*, 1999, **50**, 1263-1266 (*isol, pmr, cmr, Glycozolidine*)
Pacher, T. *et al., Phytochemistry*, 2001, **58**, 129-135 (*Carbalexin C*)

2,8-Dihydroxy-3-methyl-9*H*-carbazole D-618

*3-Methyl-9*H*-carbazole-2,8-diol*

$C_{13}H_{11}NO_2$ 213.235

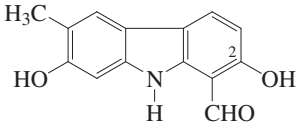
*8-Me ether: 2-Hydroxy-8-methoxy-3-methyl-9*H*-carbazole.* ***Carbalexin B***

[74059-97-5]
$C_{14}H_{13}NO_2$ 227.262
Stress metab. of *Glycosmis parviflora* and *Glycosmis pentaphylla*. Needles ($CHCl_3$). Mp 199-201° dec. λ_{max} 235 ; 239 (sh) ; 251 (sh) ; 299 ; 317 (sh) ; 330 (MeOH).

Mester, I. *et al., Annalen*, 1980, 241-245 (*synth, pmr, cmr*)
Pacher, T. *et al., Phytochemistry*, 2001, **58**, 129-135 (*isol*)

2,7-Dihydroxy-6-methyl-9*H*-carbazole-1-carboxaldehyde D-619

1-Formyl-2,7-dihydroxy-6-methylcarbazole



$C_{14}H_{11}NO_3$ 241.246

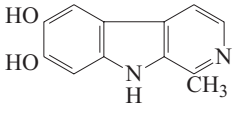
*2-Me ether: 7-Hydroxy-2-methoxy-6-methyl-9*H*-carbazole-1-carboxaldehyde. 1-Formyl-7-hydroxy-2-methoxy-6-methylcarbazole.* ***Murrayaline B***
[139726-42-4]
$C_{15}H_{13}NO_3$ 255.273
Alkaloid from the stem bark of *Murraya euchrestifolia*. Yellow prisms (Me_2CO). Mp 240-242°. λ_{max} 223 ; 259 (sh) ; 303 ; 380 (MeOH).

*Di-Me ether: 2,7-Dimethoxy-6-methyl-9*H*-carbazole-1-carboxaldehyde. 1-Formyl-2,7-dimethoxy-6-methylcarbazole.* ***Murrayaline A***. *Murrayaline*
[104778-01-0]
$C_{16}H_{15}NO_3$ 269.299
Alkaloid from the stem bark of *Murraya euchrestifolia* (Rutaceae). Pale-yellow prisms (Me_2CO). Mp 248-250°.

Furukawa, H. *et al., Chem. Pharm. Bull.*, 1986, **34**, 2672-2675 (*Murrayaline A*)
Ito, C. *et al., Chem. Pharm. Bull.*, 1991, **39**, 2525-2528 (*Murrayaline B*)

6,7-Dihydroxy-1-methyl-β-carboline D-620

*1-Methyl-9*H*-pyrido[3,4-*b*]indole-6,7-diol*



$C_{12}H_{10}N_2O_2$ 214.223

*Di-Me ether: 6,7-Dimethoxy-1-methyl-9*H*-pyrido[3,4-*b*]indole, 9CI. 6,7-Dimethoxy-1-methyl-β-carboline.* ***Roeharmine***
[131984-70-8]
$C_{14}H_{14}N_2O_2$ 242.277
Alkaloid from *Roemeria hybrida* (Papaveraceae).

1R,2,3,4-Tetrahydro, di-Me ether: 1,2,3,4-Tetrahydro-6,7-dimethoxy-1-methyl-β-carboline. ***1,2,3,4-Tetrahydroroeharmine***
[131984-71-9]
$C_{14}H_{18}N_2O_2$ 246.308
Alkaloid from *Roemeria hybrida* (Papaveraceae). $[\alpha]_D$ -4 (c, 0.1 in $CHCl_3$) (natural). $[\alpha]_D$ -18 (c, 1.04 in MeOH) (>98% op). Nat. prod. probably partially racemic.

Gözler, B. *et al., J. Nat. Prod.*, 1990, **53**, 740 (*isol, uv, ms, pmr, struct*)
Reddy, M.S. *et al., Tet. Lett.*, 1994, **35**, 5413 (*synth*)

7,8-Dihydroxy-1-methyl-β-carboline D-621

*1-Methyl-9*H*-pyrido[3,4-*b*]indole-7,8-diol*

$C_{12}H_{10}N_2O_2$ 214.223

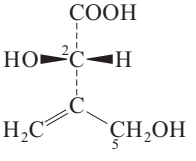
O^7-Me, 8-O-β-D-glucopyranoside: ***Ruine****. 8-Glucosyloxyharmine*
[32472-23-4]
$C_{19}H_{22}N_2O_7$ 390.392
Alkaloid from seedlings of *Peganum harmala* (Zygophyllaceae). Mp 227-229°.

3,4-Dihydro, O^7-Me, 8-O-β-D-Glucopyranoside: ***Dihydroruine***
[52898-19-8]
$C_{19}H_{24}N_2O_7$ 392.408
Alkaloid from callus cultures of *Peganum harmala* (Zygophyllaceae). Easily autoxidised to Ruine.

Nettleship, L. *et al., Phytochemistry*, 1971, **10**, 231 (*Ruine*)
McKenzie, E. *et al., Phytochemistry*, 1975, **14**, 273 (*Dihydroruine*)
Gohar, A. *et al., Mansoura J. Pharm. Sci.*, 1994, **10**, 109; *CA*, **121**, 251119t (*8-Glucosyloxyharmine*)

2,4-Dihydroxy-3-methylene-butanoic acid D-622

2-Hydroxy-3-hydroxymethyl-3-butenoic acid



$C_5H_8O_4$ 132.116

(S)-form

Nitrile: 2-Hydroxy-3-hydroxymethyl-3-butenenitrile, 9CI
[29768-67-0]
$C_5H_7NO_2$ 113.116
Constit. of *Cardiospermum halicacabum* and other Sapindaceae. Component of Jia Ku Gua.

Nitrile, 2-O-β-D-glucopyranoside: ***Cardiospermin***
[54525-10-9]
$C_{11}H_{17}NO_7$ 275.258
Isol. from *Cardiospermum hirsutum* and *Heterodendron oleaefolium*.

Nitrile, 2-O-β-D-glucopyranoside, 5-O-sulfate: Cardiospermin 5-sulfate
[78856-87-8]
$C_{11}H_{17}NO_{10}S$ 355.322
Isol. from *Cardiospermum grandiflorum*.

Nitrile, 5-(4-hydroxybenzoyl), 2-O-β-D-glucopyranoside: Cardiospermin 5-(4-hydroxybenzoate)
[60444-99-7]
$C_{18}H_{21}NO_9$ 395.365
Constit. of *Sorbaria arborea* and *Sorbaria sorbifolia* var. *stellipila*. Powder.

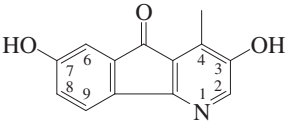
Nitrile, 5-(4-hydroxycinnamoyl), 2-O-β-D-glucopyranoside: Cardiospermin 5-p-coumarate
[79197-19-6]
$C_{20}H_{23}NO_9$ 421.403
Constit. of *Sorbaria arborea*.

[84976-22-7 , 73621-97-3]

Seigler, D.S. *et al., Phytochemistry*, 1974, **13**, 2330 (*isol*)
Huebel, W. *et al., Phytochemistry*, 1975, **14**, 2723 (*isol*)
Huebel, W. *et al., Tet. Lett.*, 1979, **45**, 4395 (*sulfate*)
Huebel, W. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1981, **314**, 609 (*cmr*)
Nahrstedt, A. *et al., Phytochemistry*, 1981, **20**, 1309-1310 (*Cardiospermin esters*)
Spitzer, V. *et al., Phytochemistry*, 1996, **42**, 1357-1360 (*isol, nitrile*)
Kim, D.K. *et al., Chem. Pharm. Bull.*, 2000, **48**, 1766-1767 (*5-4-hydroxybenzoate*)

3,7-Dihydroxy-4-methyl-5*H*-indeno[1,2-*b*]pyridin-5-one, 9CI D-623

2,7-Dihydroxy-1-methyl-4-azafluorenone. ***2,7-Dihydroxyonychine***
[161196-95-8]



$C_{13}H_9NO_3$ 227.219
Alkaloid from roots of *Piptostigma fugax* (Annonaceae). Orange cryst. Mp 300°.

*3-Me ether: 7-Hydroxy-3-methoxy-4-methyl-5*H*-indeno[1,2-*b*]pyridin-5-one, 9CI. 7-Hydroxy-2-methoxy-1-methyl-4-aza-9-fluorenone.* ***7-Hydroxy-2-methoxyonychine***
[161196-96-9]
$C_{14}H_{11}NO_3$ 241.246
Alkaloid from stem bark of *Piptostigma fugax* (Annonaceae). Yellow needles. Mp 300°.

Di-Me ether: [161196-94-7]
Orange needles. Mp 204-206°.

Achenbach, H. *et al., Phytochemistry*, 1995, **38**, 1037 (*isol, uv, ir, pmr, cmr, ms, struct*)

6,7-Dihydroxy-4-methyl-5*H*-indeno[1,2-*b*]pyridin-5-one D-624

7,8-Dihydroxy-1-methyl-4-azafluoren-9-one

$C_{13}H_9NO_3$ 227.219

*6-Me ether: 7-Hydroxy-6-methoxy-4-methyl-5*H*-indeno[1,2-*b*]pyridin-5-one, 9CI. 7-Hydroxy-8-methoxy-1-methyl-4-azafluoren-9-one.* ***Macondine***
[111316-31-5]
$C_{14}H_{11}NO_3$ 241.246
Alkaloid from the stem bark of

Oxandra cf. *major* (Annonaceae). Amorph.

6-Me ether, Ac: Mp 173°.

Arango, G.J. *et al., Phytochemistry*, 1987, **26**, 2093 (*isol, uv, ir, pmr, cmr, ms, struct*)

7,8-Dihydroxy-4-methyl-5*H*-indeno[1,2-*b*]pyridin-5-one D-625

6,7-Dihydroxy-1-methyl-4-aza-9-fluorenone. 6,7-Dihydroxyonychine

$C_{13}H_9NO_3$ 227.219

*7-Me ether: 8-Hydroxy-7-methoxy-1-methyl-5*H*-indeno[1,2-*b*]pyridin-5-one. 6-Hydroxy-7-methoxyonychine.* ***Oncodine***
[122890-42-0]
$C_{14}H_{11}NO_3$ 241.246
Alkaloid from the stem bark of *Oncodostigma monosperma* (Annonaceae). Orange-yellow needles (Me_2CO). Mp 187-188°. λ_{max} 213 (log ϵ 4); 226 (sh) (log ϵ 3.93); 255 (log ϵ 4.03); 316 (log ϵ 3.96); 369 (log ϵ 3.7) (EtOH/HCl). λ_{max} 226 (sh) (log ϵ 3.71); 253 (log ϵ 4.06); 268 (sh) (log ϵ 3.87); 324 (log ϵ 4); 370 (sh) (log ϵ 3.46); 480 (log ϵ 3.22) (EtOH/NaOH). λ_{max} 210 (log ϵ 3.95); 240 (sh) (log ϵ 3.96); 249 (log ϵ 4); 264 (sh) (log ϵ 4); 282 (log ϵ 4.03); 300 (log ϵ 3.96); 330 (log ϵ 3.42); 350 (sh) (log ϵ 3.28) (EtOH).

*8-Me ether: 7-Hydroxy-8-methoxy-1-methyl-5*H*-indeno[1,2-*b*]pyridin-5-one. 7-Hydroxy-6-methoxyonychine.* ***Isooncodine***
[122890-43-1]
$C_{14}H_{11}NO_3$ 241.246
Alkaloid from *Polyalthia longifolia* (Annonaceae). Yellow powder. λ_{max} 218 (log ϵ 3.45); 264 (log ϵ 3.78); 293 (log ϵ 3.39); 314 (log ϵ 3.3); 328 (log ϵ 3.28); 340 (sh) (log ϵ 3.12) (MeOH). λ_{max} 225 (log ϵ 3.46); 284 (log ϵ 3.58); 318 (log ϵ 3.56); 343 (log ϵ 3.28); 354 (log ϵ 3.23) (MeOH/NaOH).

*Di-Me ether: 7,8-Dimethoxy-4-methyl-5*H*-indeno[1,2-*b*]pyridin-5-one. 6,7-Dimethoxyonychine.* ***Polyfothine***
[122908-91-2]
$C_{15}H_{13}NO_3$ 255.273
Alkaloid from the bark of *Polyalthia longifolia* (Annonaceae). Yellow solid ($CHCl_3$/petrol) or pale yellow powder. Mp 188-190°. λ_{max} 220 (log ϵ 3.43); 268 (log ϵ 3.79); 293 (log ϵ 3.38); 314 (log ϵ 3.32); 328 (log ϵ 3.3) (MeOH).

Bou-Abdallah, E. *et al., J. Nat. Prod.*, 1989, **52**, 273-278 (*Oncodine, isol, Isooncodine, synth*)

Cassels, B.K. *et al., J. Nat. Prod.*, 1989, **52**, 420 (*cmr*)

Chakrabarty, M. *et al., Indian J. Chem., Sect. B*, 1990, **29**, 394 (*isol, struct*)

Wu, Y.-C. *et al., J. Nat. Prod.*, 1990, **53**, 1327-1331 (*Isooncodine, Polyfothine, isol*)

8,9-Dihydroxy-4-methyl-5*H*-indeno[1,2-*b*]pyridin-5-one, 9CI D-626

5,6-Dihydroxy-1-methyl-4-azafluorenone

$C_{13}H_9NO_3$ 227.219

*8-Me ether: 9-Hydroxy-8-methoxy-4-methyl-5*H*-indeno[1,2-*b*]pyridin-5-one, 9CI. 5-Hydroxy-6-methoxy-1-methyl-4-aza-9-fluorenone.* ***Isoursuline****. 5-Hydroxy-6-methoxyonychine*
[112368-57-7]
$C_{14}H_{11}NO_3$ 241.246
Alkaloid from *Polyalthia stenopetala, Unonopsis spectabilis* and *Oxandra xylopioides* (Annonaceae). Shows mild cytotoxic effect. Orange amorph. solid or yellowish prisms (petrol). Mp 140-142°. This struct. has been erroneously attributed to Oxylopine below.

8-Me ether, 9-Ac: [101899-50-7]
Pale yellow microcryst. Mp 195°.

*9-Me ether: 8-Hydroxy-9-methoxy-4-methyl-5*H*-indeno[1,2-*b*]pyridin-5-one, 9CI.* ***Ursuline****. Oxylopine*
[111316-34-8]
$C_{14}H_{11}NO_3$ 241.246
Alkaloid from *Unonopsis spectabilis*, stem bark of *Oncodostigma monosperma* and *Oxandra xylopioides*. Yellow needles (CH_2Cl_2) or amorph. solid. Mp 158-160°.

9-Me ether, 8-Ac:
Microcryst. Mp 175-177°.

Di-Me ether: [112368-58-8]
Yellow microcryst. Mp 144°.

*5-Alcohol, 8-Me ether: 8-Methoxy-4-methyl-5*H*-indeno[1,2-*b*]pyridine-5,9-diol. 5-Hydroxy-6-methoxy-1-methyl-4-azafluoren-9-ol.* ***Polylongine***
[122279-87-2]
$C_{14}H_{13}NO_3$ 243.262
Alkaloid from the leaves of *Polyalthia longifolia* (Annonaceae). Pale yellowish needles ($CHCl_3$). Mp 148-151°. $[\alpha]_D$ -1.6 (c, 0.1 in $CHCl_3$).

[101899-49-4]

Zhang, J. *et al., J. Nat. Prod.*, 1987, **50**, 800-806 (*isol, Isoursuline*)

Tadic, D. *et al., Heterocycles*, 1988, **27**, 407-421 (*8-Me ether, 9-Me ether, synth, pmr, uv, ms*)

Laprévote, O. *et al., J. Nat. Prod.*, 1988, **51**, 555-561 (*Unonopsis spectabilis constits*)

Wu, Y.-C. *et al., Heterocycles*, 1989, **29**, 463 (*Polylongine*)

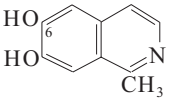
Koyama, J. *et al., Heterocycles*, 1989, **29**, 1649-1654 (*Ursuline, Isoursuline, synth*)

Guinaudeau, H. *et al., J. Nat. Prod.*, 1994, **57**, 1033 (*rev*)

Chen, C.-Y. *et al., J. Nat. Prod.*, 2000, **63**, 1475-1478 (*Isoursuline, activity*)

6,7-Dihydroxy-1-methylisoquinoline D-627

1-Methyl-6,7-isoquinolinediol



$C_{10}H_9NO_2$ 175.187

▶ NW8220000

6-Me ether: 6-Methoxy-1-methyl-7-isoquinolinol, 9CI. 7-Hydroxy-6-methoxy-1-methylisoquinoline
[4594-05-2]
$C_{11}H_{11}NO_2$ 189.213
Alkaloid from trunk bark of *Hernandia nymphaeifolia*. Needles ($CHCl_3$/MeOH). Mp 121-123°.

Di-Me ether: 6,7-Dimethoxy-1-methylisoquinoline, 9CI. ***Isosalsolidine****. Nigellimine*
[4594-02-9]
$C_{12}H_{13}NO_2$ 203.24
Alkaloid detected in *Pachycereus weberi* by tandem mass spectrom. Trace constit. in seeds of *Nigella sativa* (black cumin). Cryst. (Et_2O/EtOAc). Mp 118-119°.

Di-Me ether, N*-oxide:* ***Nigellimine*** **N-*oxide***
[96562-85-5]
$C_{12}H_{13}NO_3$ 219.24
Minor alkaloid from the seeds of *Nigella sativa* (black cumin). Amorph.

3,4-Dihydro, di-Me ether: 3,4-Dihydro-6,7-dimethoxy-1-methylisoquinoline. ***Dehydrosalsolidine***
$C_{12}H_{15}NO_2$ 205.256
Alkaloid from *Carnegiea gigantea*. Mp 201-202° (195-197°)(as hydrochloride).

1,2,3,4-Tetrahydro: see 1,2,3,4-Tetrahydro-6,7-dihydroxy-1-methylisoquinoline, T-162

Pummangura, S. *et al., J. Nat. Prod.*, 1982, **45**, 277 (*Dehydrosalsolidine*)

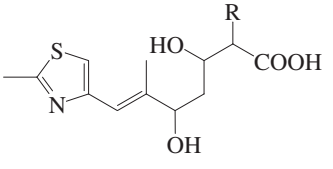
Roush, R.A. *et al., Anal. Chem.*, 1985, **57**, 109 (*Isosalsolidine, occur*)

Atta-ur-Rahman, *et al., Heterocycles*, 1985, **23**, 953 (*Nigellimine oxide*)

Atta-ur-Rahman, *et al., J. Nat. Prod.*, 1992, **55**, 676 (*Isosalsolidine*)

Chen, J.J. *et al., Phytochemistry*, 1996, **42**, 1479 (*6-Me ether*)

3,5-Dihydroxy-6-methyl-7-(2-methyl-4-thiazolyl)-6-heptenoic acid D-628



R = H

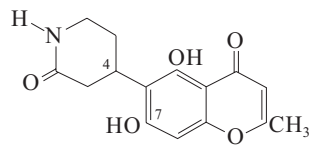
$C_{12}H_{17}NO_4S$ 271.337
Prod. by *Sorangium cellulosum*. Precursor of Epothilones. Amorph. solid. $[\alpha]_D^{22}$ +9 (c, 0.3 in MeOH). λ_{max} 210 (ϵ 15900); 248 (ϵ 12200) (MeOH).

Homologue (R = CH_3): ***3,5-Dihydroxy-2,6-dimethyl-7-(2-methyl-4-thiazolyl)-6-heptenoic acid***
$C_{13}H_{19}NO_4S$ 285.363
Prod. by *Sorangium cellulosum*. Precursor of Epothilones. Amorph. powder. $[\alpha]_D^{22}$ +2 (c, 0.6 in MeOH). λ_{max} 212 (ϵ 16000); 248 (ϵ 12100) (MeOH).

Hardt, I. *et al., J. Nat. Prod.*, 2001, **64**, 847-856

4-(5,7-Dihydroxy-2-methyl-4-oxo-4*H*-1-benzopyran-6-yl)-2-piperidinone, 9CI D-629

4-(5,7-Dihydroxy-2-methyl-6-chromanyl)-2-piperidone
[69735-30-4]



$C_{15}H_{15}NO_5$ 289.287
Alkaloid from root bark of *Schumanniophyton problematicum* (Rubiaceae). Cryst. (EtOH). Mp 300-303°.

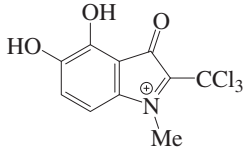
O^7-Me: [69735-32-6]
Mp 262-263°.

N-*Me:* ***4-(5,7-Dihydroxy-2-methyl-4-oxo-4H-1-benzopyran-6-yl)-1-methyl-2-piperidinone***
[69735-31-5]
$C_{16}H_{17}NO_5$ 303.314
Alkaloid from *Schumanniophyton problematicum* (Rubiaceae). Cryst. ($EtOH/C_6H_6$). Mp 309-313°.

Schlittler, E. *et al., Tet. Lett.*, 1978, 2911 (*isol, uv, ir, pmr, ms, struct*)

4,5-Dihydroxy-1-methyl-3-oxo-2-(trichloromethyl)-3*H*-indolium(1+) D-630

[942477-70-5]

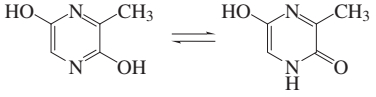


$C_{10}H_7Cl_3NO_3^{\oplus}$ 295.528
Alkaloid from the roots of *Zanthoxylum nitidum*. Yellow needles (MeOH) (as chloride). Possible artifact. λ_{max} 225 (log ϵ 3.73); 285 (log ϵ 3.55); 300 (log ϵ 3.68) (MeOH) (chloride).

Hu, J. *et al., Helv. Chim. Acta*, 2007, **90**, 720-722 (*isol, pmr, cmr*)

2,5-Dihydroxy-3-methylpyrazine D-631

5-Hydroxy-3-methyl-2(1H)-pyrazinone, 9CI. 3-Methyl-2,5-pyrazinediol. PB4
[102694-22-4]

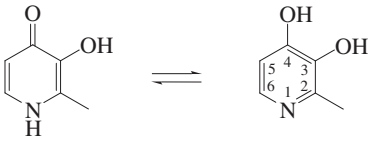


$C_5H_6N_2O_2$ 126.115
Isol. from rice inoculated with *Pseudallescheria boydii*. Inhibitor of monoamine oxidase.

Maebayashi, Y. *et al., CA*, 1986, **105**, 3147a (*isol*)

3,4-Dihydroxy-2-methylpyridine D-632

3-Hydroxy-2-methyl-4(1H)-pyridinone, 9CI. 2-Methyl-3,4-pyridinediol
[17184-19-9]



$C_6H_7NO_2$ 125.127
Prod. by *Streptomyces* sp. MJ 210. Cryst. (H_2O). Mp 285-288°.

Hydrochloride: [17184-18-8]
Prisms (EtOAc/MeOH). Mp 185°.

O^3-β-D-Glucopyranoside: ***Innovanamine***
[15266-34-9]
$C_{12}H_{17}NO_7$ 287.269
Isol. from leaves of *Evodiopanax innovans* (preferred genus name *Gamblea*). Prisms + $2H_2O$ (H_2O). Mp 116-118°. $[\alpha]_D^{25}$ -61.6 (c, 10 in H_2O).

O^3-Ac: 3-Acetoxy-2-methyl-4(1H)-pyridinone
[17184-20-2]
$C_8H_9NO_3$ 167.164
Cryst. (EtOAc). Mp 205-207°.

3-Me ether: 3-Methoxy-2-methyl-4(1H)-pyridinone, 9CI
[76015-11-7]
$C_7H_9NO_2$ 139.154
Cryst. (Me_2CO/MeOH). Mp 155-156°.

3-Benzyl ether: [61160-18-7]
$C_{13}H_{13}NO_2$ 215.251
Prisms (EtOH). Mp 162-163°.

NH-form

N-*Me:* ***Deferiprone, BAN, INN****. 3-Hydroxy-1,2-dimethyl-4(1H)-pyridinone, 9CI. Kelfer. CP 20*
[30652-11-0]
$C_7H_9NO_2$ 139.154
Chelating agent. Used in the treatment of thalassaemia. Metal poisoning antidote. Launched 1995 (India).
Cryst. ($MeOH/Et_2O$). Mp 260° dec.
Log P -0.67 (calc).

▶ UU7785940

N-*Me, hydrochloride:* [150630-21-0]
Powder ($EtOH/Et_2O$). Mp 189-190°.

N-*Benzyl:* [30652-22-3]
$C_{13}H_{13}NO_2$ 215.251
Solid (Et_2O/EtOAc). Mp 203-205°.

N-*Ph: 3-Hydroxy-2-methyl-1-phenyl-4(1H)-pyridinone, 9CI*
[49744-73-2] Used as soln. in 1,2-dichloroethane or dioxan for extraction sepn. of In, as 0.01*M* soln. in $CHCl_3$ for extraction-photometric detn. of V(*V*) (λ_{max} 625 nm, ϵ 5600 in $CHCl_3$): as 7m*M* soln. in $CHCl_3$ for extraction-sepn. of Ga, U and extraction-photometric detn. of Fe(*III*) (λ_{max} 470 nm, ϵ 6300 in $CHCl_3$) and W (λ_{max} 406 nm, ϵ 10600 in $CHCl_3$).
Cryst. pK_{a1} 3.02; pK_{a2} 9.56.

Di-*OH-form*

4-Me ether, N-*Me:* [181647-53-0]
$C_8H_{12}NO_2^{\oplus}$ 154.188
Solid (EtOAc) (as trifluoromethanesulfonate salt). Mp 105-106° (trifluoromethanesulfonate). CAS no. refers to the salt.

Dibenzyl ether: [127234-69-9]
$C_{20}H_{19}NO_2$ 305.376
Cryst. ($CHCl_3$/petrol). Mp 85-87°.

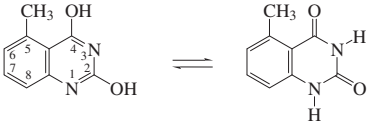
Dibenzyl ether, N-*oxide:* [127234-70-2]
$C_{20}H_{19}NO_3$ 321.375
Mp 127-129°.

[123742-61-0]

Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 721B (*nmr*)
Yasue, M. *et al., Chem. Pharm. Bull.*, 1966, **14**, 1443-1444 (*Innovanamine, isol*)
Tamhina, B. *et al., J. Inorg. Nucl. Chem.*, 1974, **36**, 1855-1857; 1976, **38**, 1505-1507 (*synth, N-Ph, detn, U*)
Harris, R.L.N. *et al., Aust. J. Chem.*, 1976, **29**, 1329-1334 (*synth*)
Tamhina, B. *et al., Microchem. J.*, 1977, **22**, 144-148 (*detn, W*)
Hwang, D.R. *et al., J. Pharm. Sci.*, 1980, **69**, 1074-1076 (*synth*)
Kontoghiorghes, G.J. *et al., Arzneim.-Forsch.*, 1987, **37**, 1099-1102 (*Deferiprone, pharmacol*)
Kontoghiorghes, G.J. *et al., Inorg. Chim. Acta*, 1987, **136**, L11-L12 (*synth*)
Nelson, W.O. *et al., Can. J. Chem.*, 1988, **66**, 123-131 (*Deferiprone, synth*)
Ishii, H. *et al., Bull. Chem. Soc. Jpn.*, 1989, **62**, 1817-1821 (*detn, In*)
Hider, R.C. *et al., J. Chem. Res., Synop.*, 1990, 316-317; *J. Chem. Res., Miniprint*, 1990, 2520-2555 (*Deferiprone, cryst struct*)
Bergeron, R.J. *et al., Blood*, 1992, **79**, 1882 (*Deferiprone, pharmacol*)
Dobbin, P.S. *et al., J. Med. Chem.*, 1993, **36**, 2448-2458 (*N-Me*)
Japan. Pat., 1993, 93 146 298; *CA*, **119**, 115500f (*isol*)
Rumbo, A. *et al., J.O.C.*, 1996, **61**, 6114-6120 (*N-Me, Me ether*)
Fox, R.C. *et al., Synth. Commun.*, 1999, **29**, 989-1001 (*N-Me*)
Piyamongkol, S. *et al., Tetrahedron*, 2001, **57**, 3479-3486 (*3-benzyl ether, 3,4-dibenzyl ether*)
Ma, Y. *et al., J. Med. Chem.*, 2004, 6349-6362 (*Me ether*)
Barral, K. *et al., J. Med. Chem.*, 2006, **49**, 43-50 (*benzyl ether*)

2,4-Dihydroxy-5-methylquinazoline D-633

5-Methyl-2,4(1H,3H)-quinazolinedione, 9CI. 5-Methyl-2,4-quinazolinediol
[52570-39-5]

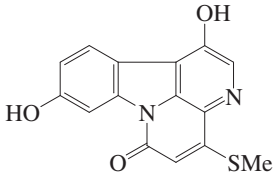


$C_9H_8N_2O_2$ 176.174
Prod. by *Streptomyces* sp. GW2/577. Mp 272-278°.

DeGraw, J.I. *et al., J. Med. Chem.*, 1974, **17**, 762-764 (*synth*)
Maskey, R.P. *et al., J. Nat. Prod.*, 2004, **67**, 1131-1134 (*isol, pmr, cmr, ms*)

1,9-Dihydroxy-4-(methylthio)canthin-6-one D-634

1,9-Dihydroxy-4-methylthio-6H-indolo[3,2,1-de][1,5]naphthyridin-6-one, 9CI



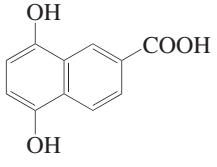
$C_{15}H_{10}N_2O_3S$ 298.322

S-*Oxide(S-):* ***Curtisin***
$C_{15}H_{10}N_2O_4S$ 314.321
Alkaloid from the mushroom *Boletus curtisii*. Pale yellow solid. $[\alpha]_D^{21}$ -149 (c, 0.08 in MeOH). Mp >340°. λ_{max} 239 (sh) (log ϵ 4.14); 257 (sh) (log ϵ 4.16); 303 (log ϵ 4.16); 416 (log ϵ 4.09) (MeOH).

Bröckelmann, M.G. *et al., Eur. J. Org. Chem.*, 2004, 4856-4863 (*isol, uv, cd, ir, pmr, cmr, ms*)

5,8-Dihydroxy-2-naphthalenecarboxylic acid D-635

5,8-Dihydroxy-2-naphthoic acid

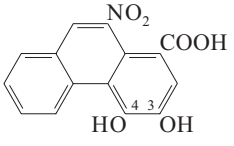


$C_{11}H_8O_4$ 204.182

Di-Me ether, amide: 5,8-Dimethoxy-2-naphthalenecarboxamide
[955367-98-3]
$C_{13}H_{13}NO_3$ 231.251
Prod. by *Streptoverticillium morookaense*.

Feng, N. *et al., Nat. Prod. Commun.*, 2007, **2**, 151-153 (*di-Me ether amide*)

3,4-Dihydroxy-10-nitro-1-phenanthrenecarboxylic acid D-636



$C_{15}H_9NO_6$ 299.239

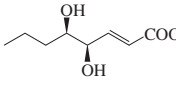
4-Me ether, Me ester: Methyl 3-hydroxy-4-methoxy-10-nitro-1-phenanthrenecarboxylate
[128397-29-5]
$C_{17}H_{13}NO_6$ 327.293
Alkaloid from the stems of *Aristolochia liukinensis* (Aristolochiaceae). Pale yellow needles ($CHCl_3$/MeOH). Mp 164-165°. λ_{max} 214 (ϵ 31600); 257 (ϵ 50100); 295 (ϵ 15800); 356 (ϵ 6310); 374 (ϵ 6310) (MeOH) (Derep).

Di-Me ether, Me ester: Methyl 3,4-dimethoxy-10-nitro-1-phenanthrenecarboxylate. ***Ariskanin A****. Aristolochic acid BII methyl ester*
[128397-31-9]
$C_{18}H_{15}NO_6$ 341.32
Constit. of *Aristolochia manshuriensis* and *Aristolochia kankauensis*. Cryst. (MeOH) or yellowish needles ($CHCl_3$). Mp 123-124°.

Methylene ether: see 3,4-Methylenedioxy-10-nitro-1-phenanthrenecarboxylic acid, M-447

Mizuno, M. *et al., J. Nat. Prod.*, 1990, **53**, 179 (*isol, uv, ir, pmr, cmr, ms, struct*)
Houghton, P.J. *et al., Phytochemistry*, 1991, **30**, 253 (*isol*)
Wu, T.S. *et al., Phytochemistry*, 1994, **36**, 1063
Lou, F.C. *et al., Yaoxue Xuebao*, 1995, **30**, 588; *CA*, **123**, 251411n (*Aristolochic acid BII*)

4,5-Dihydroxy-2-octenoic acid D-637



(4*RS*,5*RS*)-(*E*)-*form*

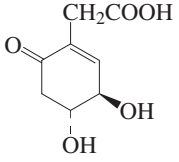
$C_8H_{14}O_4$ 174.196

(4RS,5RS)-(E)-form

(2-Methylpropyl)amide: 4,5-Dihydroxy-N-(2-methylpropyl)-2-octenamide. 4,5-Dihydroxy-N-isobutyl-2-octenamide
$C_{12}H_{23}NO_3$ 229.319
Alkaloid from the roots of *Piper nigrum* (pepper). Oil.

Wei, K. *et al., J. Nat. Prod.*, 2004, **67**, 1005-1009 (*isol, pmr, cmr*)

3,4-Dihydroxy-6-oxo-1-cyclohexene-1-acetic acid D-638



$C_8H_{10}O_5$ 186.164

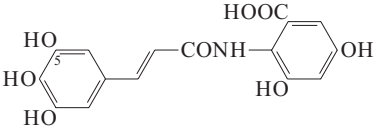
(3R*,4R*)-form

*(+)-*trans-*form*

Nitrile: 3,4-Dihydroxy-6-oxo-1-cyclohexene-1-acetonitrile
$C_8H_9NO_3$ 167.164
Constit. of the whole plant of *Aquilegia ecalcarata*. Needles. Mp 91-92°. $[\alpha]_D$ +27 (c, 0.2 in MeOH). λ_{max} 214 (MeOH).

Chen, S.-B. *et al., Planta Med.*, 2002, **68**, 554-556 (*isol, pmr, cmr, ms*)

3,5-Dihydroxy-2-[[1-oxo-3-(3,4,5-trihydroxyphenyl)-2-propenyl]-amino]benzoic acid, 9CI D-639



$C_{16}H_{13}NO_8$ 347.281

(E)-form

Miriamide
[153698-89-6]
Isol. from eggs of the large white cabbage butterfly *Pieris brassicae*. Host-marking pheromone.

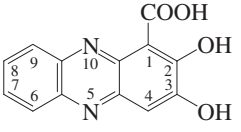
5-O-β-Glucopyranoside: ***Miriamide 5-glucoside***
[153566-00-8]
$C_{22}H_{23}NO_{13}$ 509.423
From eggs of *Pieris brassicae*. Host-marking pheromone.

5-Deoxy: ***5-Deoxymiriamide***
[153566-01-9]
$C_{16}H_{13}NO_7$ 331.281
From eggs of *Pieris brassicae*. Host-marking pheromone.

Blaakmeer, A. *et al., J. Nat. Prod.*, 1994, **57**, 90 (*isol, uv, pmr, cmr, struct, synth*)

2,3-Dihydroxy-1-phenazinecarboxylic acid D-640

[71670-84-3]



$C_{13}H_8N_2O_4$ 256.217
Isol. from *Pseudomonas aureofaciens*.

Römer, A. *et al., Tet. Lett.*, 1979, 509 (*uv, ir, pmr, struct*)

2,6-Dihydroxy-1-phenazinecarboxylic acid D-641

[79417-74-6]

$C_{13}H_8N_2O_4$ 256.217
Minor pigment from *Pseudomonas aureofaciens*.

Römer, A. *et al., Z. Naturforsch., B*, 1981, **36**, 1037 (*isol, uv, ir, pmr, ms, struct*)

2,9-Dihydroxy-1-phenazinecarboxylic acid D-642

[23448-75-1]

$C_{13}H_8N_2O_4$ 256.217
Phenazine antibiotic. Prod. by *Pseudomonas phenazinium* and *Pseudomonas fluorescens*. Mp 270°.

Di-Me ether, Me ester: [23448-74-0]
$C_{16}H_{14}N_2O_4$ 298.298
Mp 148-153°.

Gerber, N.N. *et al., J. Het. Chem.*, 1969, **6**, 297 (*isol*)
Byng, G.S. *et al., J. Gen. Microbiol.*, 1976, **97**, 57 (*isol*)

3,6-Dihydroxy-1-phenazinecarboxylic acid D-643

Phenacein
[94818-84-5]
$C_{13}H_8N_2O_4$ 256.217

Phenazine antibiotic. Prod. by *Streptomyces tanashiensis-zaomyceticus*. Angiotensin converting enzyme inhibitor. Shows weak antimicrobial activity. Hypotensive agent. Fine orange needles + ½ H_2O (MeOH aq.). Sol. DMF, bases; fairly sol. MeOH, AcOH, MeCN, $CHCl_3$; poorly sol. H_2O, hexane, acids. Mp 310°. λ_{max} 215; 268; 395; 466 (MeOH/HCl) (Derep). λ_{max} 212; 293; 420; 530 (MeOH/NaOH) (Derep). λ_{max} 218 (ϵ 5120); 268 (ϵ 21500); 385 (ϵ 2050); 460 (sh) (MeOH) (Derep).

Di-Me ether, Me ester:
$C_{16}H_{14}N_2O_4$ 298.298
Needles. Mp 181-182°.

Bush, K. *et al., J. Antibiot.*, 1984, **37**, 1308 (*isol, props*)
Liu, W.-C. *et al., J. Antibiot.*, 1984, **37**, 1313 (*struct, synth*)

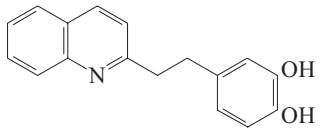
4,9-Dihydroxy-1,6-phenazinedicarboxylic acid D-644

$C_{14}H_8N_2O_6$ 300.227

Di-Me ester: ***Dimethyl 4,9-dihydroxy-1,6-phenazinedicarboxylate***
[66997-72-6]
$C_{16}H_{12}N_2O_6$ 328.281
Isol. from a strain of *Pseudomonas cepacia* ATCC 17460. Sol. MeOH, $CHCl_3$, C_6H_6, bases; poorly sol. H_2O, hexane. λ_{max} 276 ; 368 ; 448 (MeOH/HCl) (Berdy). λ_{max} 350 ; 365 ; 450 (MeOH).

Korth, H. *et al., J. Gen. Microbiol.*, 1978, **104**, 299-303 (*isol, uv, ir, pmr, struct*)

2-(3,4-Dihydroxyphenethyl)-quinoline D-645



$C_{17}H_{15}NO_2$ 265.311

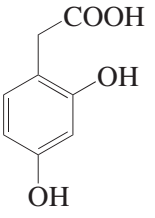
Di-Me ether: 2-[2-(3,4-Dimethoxyphenyl)ethyl]quinoline, 9CI. ***2-(3,4-Dimethoxyphenethyl)quinoline***
[95279-34-8]
$C_{19}H_{19}NO_2$ 293.365
Alkaloid from the stem bark of *Galipea longiflora* (Rutaceae). Amorph.

Methylene ether: 2-[2-(1,3-Benzodioxol-5-yl)ethyl]quinoline, 9CI. ***2-(3,4-Methylenedioxyphenethyl)quinoline***
[124902-95-0]
$C_{18}H_{15}NO_2$ 277.322
Alkaloid from *Galipea longiflora* and *Galipea bracteata* (Rutaceae). Shows molluscicidal and plant growth inhibitory activity. Cryst. (MeOH or MeOH aq.). Mp 68-70° (65°).

Fournet, A. *et al., Can. J. Chem.*, 1989, **67**, 2116 (*isol,uv, pmr, ms, struct*)
Vieira, P.C. *et al., Phytochemistry*, 1990, **29**, 813 (*isol, ir, pmr, cmr, ms, struct*)
Caron, S. *et al., J. Nat. Prod.*, 1993, **56**, 138 (*synth, pmr, cmr, ms*)

(2,4-Dihydroxyphenyl)acetic acid, 8CI D-646

2,4-Dihydroxybenzeneacetic acid
[614-82-4]



$C_8H_8O_4$ 168.149
Constit. of the venom of the spider *Nephila maculata*. Cryst. (C_6H_6/Et_2O). Mp 116-118°.

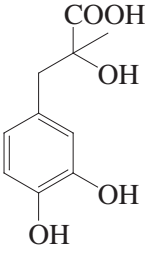
Nitrile: (2,4-Dihydroxyphenyl)acetonitrile. 4-(Cyanomethyl)-1,3-benzenediol
[57576-34-8]
$C_8H_7NO_2$ 149.149
Constit. of *Erica scoparia*. Cryst. Mp 130-131°.

Nitrile, 2-O-β-D-glucopyranoside: ***Ehretioside B***
[156368-84-2]
$C_{14}H_{17}NO_7$ 311.291
Constit. of *Ehretia philippinensis* and *Semiaquilegia adoxoides*. Needles (MeOH). Mp 201-202°. $[\alpha]_D^{28}$ -78.5 (c, 0.6 in MeOH).

Ballester, A. *et al., Phytochemistry*, 1975, **14**, 1667-1668 (*isol, synth, nitrile*)
Simpol, L.R. *et al., Phytochemistry*, 1994, **36**, 91 (*Ehretioside B*)
Su, Y.-F. *et al., J. Asian Nat. Prod. Res.*, 2005, **7**, 171-174 (*Ehretioside B*)

3-(3,4-Dihydroxyphenyl)-2-hydroxy-2-methylpropanoic acid D-647

α,3,4-Trihydroxy-α-methylbenzenepropanoic acid, 9CI



$C_{10}H_{12}O_5$ 212.202

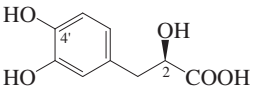
(ξ)-*form*

3′-Me ether, amide: 2-Hydroxy-3-(4-hydroxy-3-methoxyphenyl)-2-methylpropanamide
[214967-88-1]
$C_{11}H_{15}NO_4$ 225.244
Constit. of *Cordia macleodii*.

El-Sayed, N.H. *et al., Rev. Latinoam. Quim.*, 1998, **26**, 30-35

3-(3,4-Dihydroxyphenyl)-2-hydroxypropanoic acid D-648

α,3,4-Trihydroxybenzenepropanoic acid, 9CI. 3-(3,4-Dihydroxyphenyl)lactic acid. Danshensu. Danshensuan A
[23028-17-3]



(*R*)-*form*

$C_9H_{10}O_5$ 198.175

(*R*)-*form* [76822-21-4]
Constit. of Coptidis Rhizoma (root of *Coptis chinensis*) and *Salvia miltiorrhiza*. Coronary vasodilator. Prisms (EtOAc/C_6H_6). Mp 84-87°. $[\alpha]_D^{18}$ +10.8 (c, 3.7 in MeOH).

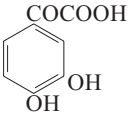
Amide: 2-Hydroxy-3-(3,4-dihydroxyphenyl)propanamide. 3-(3,4-Dihydroxyphenyl)lactamide
$C_9H_{11}NO_4$ 197.19
Alkaloid from the rhizomes of *Salvia miltiorrhiza*. Amorph. yellow powder. $[\alpha]_D^{20}$ +15.8 (c, 0.1 in MeOH). λ_{max} 208 (log ϵ 4.04); 280 (log ϵ 3.54) (MeOH).

[69339-96-4 , 67810-33-7 , 67920-52-9 , 42085-50-7 , 81075-52-7]

Choi, J.S. *et al., Fitoterapia*, 2001, **72**, 30-34 (*amide*)

2-(3,4-Dihydroxyphenyl)-2-oxoacetic acid D-649

3,4-Dihydroxy-α-oxobenzeneacetic acid, 9CI. (3,4-Dihydroxyphenyl)glyoxylic acid, 8CI. 3,4-Dihydroxybenzoylformic acid
[10118-81-7]



$C_8H_6O_5$ 182.132
Isol. from cultures of *Polyporus tumulosus*. Needles ($CHCl_3$/petrol), yellow needles + $1H_2O$ (AcOH/petrol). Mp 92° (colourless form) Mp 159° (yellow form).

3′-Me ether, amide: 2-(4-Hydroxy-3-methoxyphenyl)-2-oxoacetamide
$C_9H_9NO_4$ 195.174
Isol. from the heartwood of *Populus euphratica*. Amorph. yellow powder. Mp 105-107°. λ_{max} 203 ; 231 ; 289 ; 315 (MeOH).

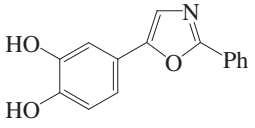
Di-Me ether: 3,4-Dimethoxy-α-oxobenzeneacetic acid. Veratroylformic acid
$C_{10}H_{10}O_5$ 210.186
Needles (C_6H_6). Mp 138-139°.

Di-Me ether, nitrile:
$C_{10}H_9NO_3$ 191.186
Needles (petrol). Mp 116-117°.

Barger, G. *et al., J.C.S.*, 1909, **95**, 552 (*synth*)
Kindler, K. *et al., Ber.*, 1943, **76**, 308 (*synth*)
Glennie, D.W. *et al., J.A.C.S.*, 1955, **77**, 2409 (*synth, spectra*)
Crowden, R.K. *et al., Aust. J. Chem.*, 1961, **14**, 475 (*isol*)

Luo, J.-R. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2008, **44**, 6-9 (*3′-Me ether amide*)

5-(3,4-Dihydroxyphenyl)-2-phenyloxazole D-650



$C_{15}H_{11}NO_3$ 253.257

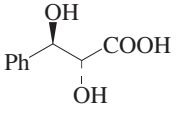
Di-Me ether: ***5-(3,4-Dimethoxyphenyl)-2-phenyloxazole****. Balsoxine*
[70216-32-9]
$C_{17}H_{15}NO_3$ 281.31
Alkaloid from *Amyris balsamifera* (Rutaceae). Sol. H_2O. Mp 99-100°.
▶ LD_{50} (mus, ivn) 5000 - 15000 mg/kg.

Methylene ether: 5-(1,3-Benzodioxol-5-yl)-2-phenyloxazole. ***5-(3,4-Methylenedioxyphenyl)-2-phenyloxazole. Texamine***
[115070-71-8]
$C_{16}H_{11}NO_3$ 265.268
Isol. from the roots of *Amyris texana* (Rutaceae). Cryst. (EtOAc/hexane). Mp 139-141°.

Burke, B. *et al., Heterocycles*, 1979, **12**, 349-351 (*Balsoxine*)
Huth, A. *et al., Annalen*, 1984, 641-648 (*synth*)
Dominguez, X.A. *et al., Heterocycles*, 1988, **27**, 35-38 (*Texamine, isol, uv, ir, pmr, cmr, ms*)
Sengupta, S. *et al., Indian J. Chem., Sect. B*, 2002, **41**, 854-855 (*Texamine, synth, pmr, cmr*)
Hodgetts, K.J. *et al., Org. Lett.*, 2002, **4**, 2905-2907 (*synth*)

2,3-Dihydroxy-3-phenylpropanoic acid, 9CI D-651

α,β-Dihydroxybenzenepropanoic acid, 9CI. 3-Phenylglyceric acid, 8CI. α,β-Dihydroxyhydrocinnamic acid
[5695-95-4]



(2*R*,3*R*)-*form*

$C_9H_{10}O_4$ 182.176

(2R,3R)-form
(-)-erythro-*form*
[70094-91-6]
Cryst. Mp 97-98°. $[\alpha]_D^{20}$ -25.6 (H_2O).

2-Phenylethylamide: ***Secodemethylclausenamide***
[140848-74-4]
[151670-53-0 , 151670-52-9 , 157366-45-5]
$C_{17}H_{19}NO_3$ 285.342
Alkaloid from *Clausena lansium* (wampee) (Rutaceae). Mp 151-152°. $[\alpha]_D^{28}$ +38 (c, 0.3 in MeOH). Abs. config. revised in 1994. λ_{max} 255 (log ε 2.6) (MeOH).

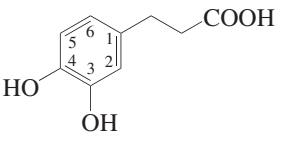
2-Phenylethylamide, N-*Me:* ***Secoclausenamide***
[140848-73-3]
[157332-69-9]
$C_{18}H_{21}NO_3$ 299.369
Alkaloid from *Clausena lansium* (wampee) (Rutaceae). Mp 145-147°. $[\alpha]_D^{22}$ -65.8 (c, 0.2 in $CHCl_3$). Abs. config. revised in 1994. λ_{max} 256 (log ε 2.8) (MeOH).

[65870-48-6 , 73610-80-7 , 60209-23-6 , 65870-46-4 , 65870-49-7]

Yang, M.H. *et al., Chin. Chem. Lett.*, 1991, **2**, 775-776 (*Secoclausenamides*)
Du, J.F. *et al., Chin. Chem. Lett.*, 1994, **5**, 179-180; 269-270 (*Secoclausenamides*)

3-(3,4-Dihydroxyphenyl)propanoic acid D-652

3,4-Dihydroxybenzenepropanoic acid, 9CI. 3,4-Dihydroxyhydrocinnamic acid, 8CI. Hydrocaffeic acid
[1078-61-1]



$C_9H_{10}O_4$ 182.176
Occurs in spores of *Lycopodium clavatum* and also in higher plants. Leaflets (H_2O). Mp 139°. pK_{a1} 4.56; pK_{a2} 9.36; pK_{a3} 11.6 (30°, 0.1*M* $NaClO_4$).
▶ MW5143500

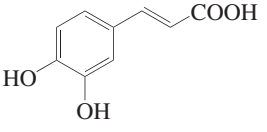
Di-Me ether, amide: 3-(3,4-Dimethoxyphenyl)propanamide
[14773-41-2]
$C_{11}H_{15}NO_3$ 209.244
Alkaloid from *Piper arboricola*. Needles (C_6H_6). Mp 120-121°.

Di-Me ether, 2-methylpropylamide: 3-(3,4-Dimethoxyphenyl)propanoic acid 2-methylpropylamide. 3,4-Dimethoxyhydrocinnamic isobutylamide
[210689-26-2]
$C_{15}H_{23}NO_3$ 265.352
Alkaloid from *Melicope melanophloia*.

He, Q. *et al., CA*, 1982, **97**, 11684e (*Di-Me ether amide*)
Latif, Z. *et al., Biochem. Syst. Ecol.*, 1998, **26**, 467-468 (*Di-Me ether isobutylamide*)

3-(3,4-Dihydroxyphenyl)-2-propenoic acid, 9CI D-653

3,4-Dihydroxycinnamic acid, 8CI. ***Caffeic acid***
[331-39-5]
[2316-26-9]



(*E*)-*form*

$C_9H_8O_4$ 180.16
Log P 0.82 (calc).
▶ GD8950000

(ξ)-form
Di-Me ether, 2-methylpropylamide: ***3,4-Dimethoxycinnamic acid isobutylamide****.* N-*(3,4-Dimethoxycinnamoyl)isobutylamide*
[102934-28-1]
$C_{15}H_{21}NO_3$ 263.336
Constit. of *Piper amalago*. Config. not determined.

[110993-57-2 (Na salt, ns), 342431-60-1 (K salt)]

Achenbach, H. *et al., Planta Med.*, 1986, **52**, 12-18 (*di-Me ether isobutylamide*)

3-(3,5-Dihydroxyphenyl)-2-propenoic acid, 9CI D-654

3,5-Dihydroxycinnamic acid, 8CI
[28374-93-8]
$C_9H_8O_4$ 180.16
Isol. from peach buds. Plant growth inhibitor. Needles (H_2O). Mp 245-246°.

Me ester, O-*β-D-glucopyranoside:*
$C_{16}H_{20}O_9$ 356.329
Constit. of the flowers of *Moricandia arvensis*. Powder. Mp 195-197°. $[\alpha]_D^{25}$ +100 (c, 0.2 in MeOH). λ_{max} 215 (log ε 3.9); 230 (log ε 3.1); 290 (log ε 4) (MeOH).

*3-Me ether, Me ester, 5-*O*-β-D-glucopyranoside:* ***Linusitamarin***
$C_{17}H_{22}O_9$ 370.355
Constit. of *Linum usitatissimum* (flax). Amorph. powder.

Di-Me ether: 3,5-Dimethoxycinnamic acid
[16909-11-8]
$C_{11}H_{12}O_4$ 208.213
Needles (H_2O). Mp 175-176°. pK_{a1} 4.36 (25°).

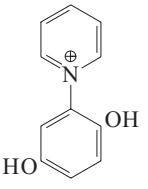
Di-Me ether, pyrrolidide: **N-*(3,5-Dimethoxycinnamoyl)pyrrolidine****. 3,5-Dimethoxycinnamic acid pyrrolidide*
[102934-29-2]
$C_{15}H_{19}NO_3$ 261.32
Alkaloid from *Piper amalago*.

*3-Me ether, 5-*O*-(4-*O*-methyl-β-D-glucopyranoside):* [934008-84-1]
$C_{17}H_{22}O_9$ 370.355
Isol. from *Cordyceps cicadae*. Amorph. powder. λ_{max} 216 (log ε 3.86); 225 (log ε 3.8); 281 (log ε 3.85); 308 (log ε 3.76) (MeOH).

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 184A (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **2**, 1057B (*nmr*)
Mauthner, F. *et al., J. Prakt. Chem.*, 1925, **110**, 126 (*synth*)
Altree-Williams, S. *et al., Aust. J. Plant Physiol.*, 1975, **2**, 105; *CA*, **83**, 40204 (*isol*)
Mukherjee, J. *et al., Indian J. Chem.*, 1975, **13**, 859 (*deriv*)
Achenbach, H. *et al., Planta Med.*, 1986, **52**, 12-18 (*pyrrolidide*)
Luyengi, L. *et al., J. Nat. Prod.*, 1993, **56**, 2012 (*Linusitamarin*)
Braham, H. *et al., J. Nat. Prod.*, 2005, **68**, 517-522 (*Me ester glucoside*)
Zhang, S.-W. *et al., Helv. Chim. Acta*, 2007, **90**, 404-410 (*3-Me ether 4-methylglucoside*)

N-(2,5-Dihydroxyphenyl)pyridinium(1+) D-655

[33354-74-4]

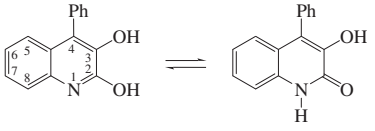


$C_{11}H_{10}NO_2^{\oplus}$ 188.205
Isol. from the leaves of *Punica granatum* (pomegranate). Needles (as chloride). Mp 193° (chloride, monohydrate). CAS no. refers to chloride.

Nawwar, M.A.M. *et al., Phytochemistry*, 1994, **37**, 1175-1177 (*isol, pmr, cmr*)
Schmidt, A. *et al., Nat. Prod. Res.*, 2005, **19**, 541-546 (*struct*)

2,3-Dihydroxy-4-phenylquinoline D-656

3-Hydroxy-4-phenyl-2(1H)-quinolinone. ***Viridicatin***
[129-24-8]



$C_{15}H_{11}NO_2$ 237.257
Isol. from *Penicillium viridicatum* and *Penicillium cyclopium*. Active against *Mycobacterium tuberculosis* at dilution 1:15,000. Needles (MeOH). Sol. bases; fairly sol. acids, MeOH, Et_2O; poorly sol. H_2O. Mp 268°. λ_{max} 224 (ϵ 37400); 240 (ϵ 18000); 298 (ϵ 7100); 310 (ϵ 7000); 320 (ϵ 9600); 332 (ϵ 8200) (EtOH) (Berdy). λ_{max} 228 (ϵ 28400); 253 (ϵ 16400); 295 (ϵ 7400); 334 (ϵ 12100); 344 (ϵ 13700) (EtOH-NaOH) (Berdy). λ_{max} 229 (ϵ 24000); 254 (ϵ 19000); 342 (ϵ 12800) (NaOH) (Berdy).

Ac:
$C_{17}H_{13}NO_3$ 279.295
Prisms (EtOH aq.). Mp 200-201°.

Me ether: 3-Methoxy-4-phenyl-2(1H)-quinolinone. **O-*Methylviridicatin***
$C_{16}H_{13}NO_2$ 251.284
Metab. of *Penicillium puberulum*. Prisms (MeOH). Mp 248-249°.

3′-Hydroxy: 3-Hydroxy-4-(3-hydroxyphenyl)-2(1H)-quinolinone, 9CI. ***Viridicatol***
$C_{15}H_{11}NO_3$ 253.257
From *Penicillium viridicatum*. Cryst. (EtOAc). Mp 280°. λ_{max} 226 ; 284 ; 316 ; 329 (MeOH) (Berdy).

Cunningham, K.G. *et al., Biochem. J.*, 1953, **53**, 328
Eistert, B. *et al., Z. Naturforsch., B*, 1962, **17**, 202 (*synth*)
Birkinshaw, J.H. *et al., Biochem. J.*, 1963, **89**, 196 (*deriv*)
Luckner, M. *et al., Tet. Lett.*, 1964, 1987 (*deriv*)
Rapoport, H. *et al., J.A.C.S.*, 1969, **91**, 6083
McCamish, M. *et al., Org. Mass Spectrom.*, 1970, **4**, 241 (*ms*)
Wilson, B.J. *et al., Microb. Toxins*, (Liegler, A. *et al* Eds.), *VI*, Academic Press, 1971, 510 (*rev*)
Cole, R.J. *et al., Handbook of Toxic Fungal Metabolites*, Academic Press, 1981, 834

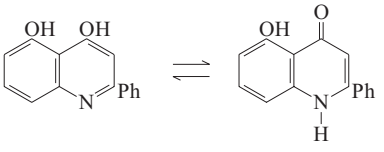
2,4-Dihydroxy-3-phenylquinoline D-657

4-Hydroxy-3-phenyl-2(1H)-quinolinone, 9CI
[14933-29-0]
$C_{15}H_{11}NO_2$ 237.257
Pale yellow solid.

NH-form
N-*Me: 4-Hydroxy-1-methyl-3-phenyl-2(1H)-quinolinone.* ***Arboricine***†
[519-66-4]
$C_{16}H_{13}NO_2$ 251.284
Alkaloid from the leaves of *Glycosmis arborea*. Cryst. Mp 226° (222°).
Chakravarti, D. *et al., J.C.S.*, 1953, 3337-3340 (*N-Me, isol*)
Bowman, R.E. *et al., J.C.S.*, 1959, 444-447 (*N-Me, synth*)
Stadlbauer, W. *et al., Monatsh. Chem.*, 1980, **111**, 1005-1013 (*N-Me, synth, pmr*)
Coppola, G.M. *et al., Synth. Commun.*, 1985, **15**, 135-139 (*N-Me, synth, cmr*)
Bezuglyi, P.A. *et al., Khim. Geterotsikl. Soedin.*, 1992, 522-524; *CA*, **117**, 251593z (*N-Me, synth*)
Klásek, A. *et al., J. Het. Chem.*, 2003, **40**, 747-752 (*N-Me, synth*)
Moon, B.S. *et al., Bioorg. Med. Chem.*, 2005, **13**, 4952-4959 (*synth, pmr, cmr*)

4,5-Dihydroxy-2-phenylquinoline D-658

5-Hydroxy-2-phenyl-4(1H)-quinolinone, 9CI. 2-Phenyl-4,5-quinolinediol



$C_{15}H_{11}NO_2$ 237.257

NH-form
N-*Me: 5-Hydroxy-1-methyl-2-phenyl-4(1H)-quinolinone*
[19843-07-3]
$C_{16}H_{13}NO_2$ 251.284
Minor alkaloid from leaves of *Lunasia quercifolia* (Rutaceae). Pale yellow needles (MeOH). Mp 174-176°.

5-Me ether: 4-Hydroxy-5-methoxy-2-phenylquinoline
$C_{16}H_{13}NO_2$ 251.284
Yellow needles (EtOAc). Mp 154-155°.

Hart, N.K. *et al., Aust. J. Chem.*, 1968, **21**, 1389 (*isol, pmr, ms, struct*)
Venturella, P. *et al., Gazz. Chim. Ital.*, 1970, **100**, 678 (*synth*)
Sato, S. *et al., J. Het. Chem.*, 1999, **36**, 1345-1347 (*5-Me ether*)

4,6-Dihydroxy-2-phenylquinoline D-659

6-Hydroxy-2-phenyl-4(1H)-quinolinone. 2-Phenyl-4,6-quinolinediol
[147197-84-0]
$C_{15}H_{11}NO_2$ 237.257
Red powder + 0.9 AcOH (AcOH). Mp 243-245°.

NH-form
O,N-*Di-Me: 6-Methoxy-1-methyl-2-phenyl-4(1H)-quinolinone, 9CI.* ***Eduline***
[6878-08-6]
$C_{17}H_{15}NO_2$ 265.311
Alkaloid from seeds of *Casimiroa edulis* (Mexican apple) and leaves of *Skimmia japonica* (Rutaceae). Plates (Me_2CO/Et_2O). Mp 187-188°.
O,N-*Di-Me, perchlorate:*
Needles (Me_2CO/Et_2O). Mp 250-252°.
O,N-*Di-Me, picrate:*
Golden-yellow plates (MeOH). Mp 225-227° dec.

OH-form
Di-Me ether: 4,6-Dimethoxy-2-phenylquinoline
[22680-65-5]
$C_{17}H_{15}NO_2$ 265.311
Mp 118°.
Dziewoński, K. *et al., CA*, 1935, **29**, 1092 (*synth*)
Kincl, F.A. *et al., J.C.S.*, 1956, 4163 (*isol, uv, Eduline*)
Beyerman, H.C. *et al., CA*, 1961, **55**, 10488b (*struct, synth, Eduline*)
Dreyer, D.L. *et al., J.O.C.*, 1968, **33**, 3577 (*isol, pmr, Eduline*)
Boyd, D.R. *et al., J.C.S.(C)*, 1970, 556 (*isol, pmr, ms, Eduline*)
Sato, S. *et al., J. Het. Chem.*, 1999, **36**, 1189-1193 (*synth, ir, pmr*)

4,7-Dihydroxy-2-phenylquinoline D-660

7-Hydroxy-2-phenyl-4(1H)-quinolinone. 2-Phenyl-4,7-quinolinediol
$C_{15}H_{11}NO_2$ 237.257
Mp 200-201°.

NH-form
7-Me ether, N-*Me: 7-Methoxy-1-methyl-2-phenyl-4(1H)-quinolinone.* ***Eduleine***
[483-51-2]
$C_{17}H_{15}NO_2$ 265.311
Alkaloid from the bark of *Lunasia quercifolia, Lunasia amara* and *Casimiroa edulis* (Mexican apple). Needles (EtOH). Mp 200-201°.

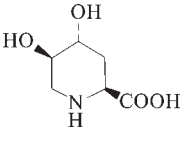
7-Me ether, N-*Me, hydrochloride:*
Needles (5% HCl). Mp 248.5° dec.

7-Me ether, N-*Me, picrate:*
Yellow needles (EtOH). Mp 220-220.5° (191-192°).

Johnstone, R. *et al., Aust. J. Chem.*, 1958, **11**, 562 (*isol, uv, ir, struct, synth*)
Sondheimer, F. *et al., J.O.C.*, 1958, **23**, 762 (*isol, ir, struct*)

4,5-Dihydroxy-2-piperidinecarboxylic acid D-661

4,5-Dihydroxypipecolic acid



(2S,4R,5R)-form

$C_6H_{11}NO_4$ 161.157

(2*S*,4*R*,5*R*)-*form* [59246-13-8]
Isol. from *Julbernardia paniculata*, *Julbernardia globifera* (Fabaceae) and *Brachystegia speciformis.*

4-Sulfate: 4,5-Dihydroxypipecolic acid 4-sulfate. ***Cribronic acid***
[552866-14-5]
$C_6H_{11}NO_7S$ 241.221
Isol. from the sponge *Cribrochalina olemda*. Glutamate receptor agonist. Fine needles (MeOH aq.). $[\alpha]_D^{18}$ -16.3 (c, 0.24 in H_2O).

(2*S*,4*R*,5*S*)-*form* [59284-78-5]
Constit. of *Calliandra haematocephala* and *Derris elliptica* (Fabaceae). Mp 239-243° dec. $[\alpha]_D^{20}$ -22.9 (c, 2 in H_2O).

(2*S*,4*S*,5*S*)-*form* [59246-14-9]
From *Calliandra haematocephala, Derris elliptica*, *Isoberlinia tomentosa* and *Isoberlinia angolensis* (Fabaceae). Cubes (as hydrochloride). Mp 195-196° (hydrochloride). $[\alpha]_D^{20}$ +24.4 (c, 0.64 in 2*M* HCl) (hydrochloride).

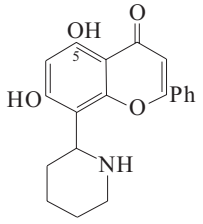
(2ξ,4ξ,5ξ)-*form*
N-*Me: 4,5-Dihydroxy-1-methyl-2-piperidinecarboxylic acid*. ***Glabrin***† [35024-30-7]
$C_7H_{13}NO_4$ 175.184
Isol. from seeds of *Pongamia glabra* (Fabaceae). Cryst. ($EtOH/H_2O/Et_2O$). Mp 290-292° dec. $[\alpha]_D^{20}$ -54.82 (5*M* HCl).

[126641-66-5 , 114297-04-0 , 63357-05-1 , 35024-31-8 , 38146-56-4 , 126643-94-5]

Kumar, P.S.J. *et al., Tet. Lett.*, 1971, 4451-4454 (*Glabrin*)
Evrard, G. *et al., Cryst. Struct. Commun.*, 1972, **1**, 215-217; 1974, **3**, 61-63 (*cryst struct*)
Marlier, M. *et al., Phytochemistry*, 1972, **11**, 2597-2599; 1976, **15**, 183-185 (*Calliandra haematocephala, Derris elliptica constits*)
Shewry, P.R. *et al., Phytochemistry*, 1976, **15**, 1981-1983 (*2S,4R,5R-form, isol, bibl*)
Bashyal, B.P. *et al., Tetrahedron*, 1987, **43**, 415-422; 423-430 (*synth, ir, pmr, ms*)
Thieme, M. *et al., Synthesis*, 2000, 2051-2059 (*synth, pmr*)
Sakai, R. *et al., J. Nat. Prod.*, 2003, **66**, 784-787 (*Cribronic acid*)

5,7-Dihydroxy-8-(2-piperidinyl)flavone D-662

N,O-*Bis(demethyl)buchenavianine* [91147-19-2]



$C_{20}H_{19}NO_4$ 337.374
Alkaloid from the fruits of *Buchenavia macrophylla* (Combretaceae). Cryst. ($CHCl_3$/MeOH). Mp 214-215°. λ_{max} 213 (ϵ 25100); 268 (ϵ 20300) (MeOH) (Berdy). λ_{max} 212 ; 271 ; 325 (MeOH-NaOH) (Berdy). λ_{max} 214 ; 267 ; 330 (MeOH-HCl) (Berdy).

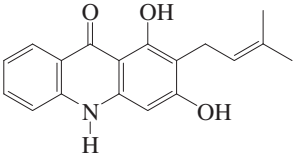
N-*Me:* **O-*Demethylbuchenavianine***
[91147-18-1]
$C_{21}H_{21}NO_4$ 351.401
Major alkaloid from the fruits of *Buchenavia macrophylla* and *Buchenavia capitata* (Combretaceae). Shows anti-HIV activity. Cryst. (MeOH). Mp 229-231°. $[\alpha]_D$ 0 (c, 1 in $CHCl_3$). $[\alpha]_D$ -31 (c, 0.54 in MeOH). Log P 2.88 (calc). λ_{max} 210 (ϵ 31400); 273 (ϵ 21800); 326 (ϵ 7100) (MeOH) (Berdy). λ_{max} 213 ; 275 ; 346 (MeOH-NaOH) (Berdy). λ_{max} 214 ; 269 ; 308 (MeOH-HCl) (Berdy).

5-Me ether: **N-*Demethylbuchenavianine***
[91147-17-0]
$C_{21}H_{21}NO_4$ 351.401
Alkaloid from the leaves of *Buchenavia macrophylla* (Combretaceae). Cryst. (MeOH). Mp 278-280°. $[\alpha]_D$ +9 (c, 0.7 in MeOH).

O^5,N-*Di-Me:* ***Buchenavianine***
[91147-16-9]
$C_{22}H_{23}NO_4$ 365.428
Major alkaloid from the leaves of *Buchenavia macrophylla*, also from *Buchenavia capitata*. Cryst. (MeOH). Mp 183-185°. $[\alpha]_D$ -4 (c, 2.09 in EtOH). λ_{max} 214 (ϵ 31400); 243 (ϵ 8500); 272 (ϵ 13500); 336 (ϵ 6290) (MeOH) (Berdy). λ_{max} 215 ; 240 ; 277 ; 361 (MeOH/NaOH) (Berdy). λ_{max} 214 ; 247 ; 269 ; 336 (MeOH/HCl) (Berdy).

Ahond, A. *et al., Bull. Soc. Chim. Fr.*, Part II, 1984, 41 (*isol, uv, ir, pmr, cmr, ms, struct, derivs*)
Beutler, J.A. *et al., J. Nat. Prod.*, 1992, **55**, 207 (*Buchenavianine, isol, activity*)

1,3-Dihydroxy-2-prenylacridone D-663



$C_{18}H_{17}NO_3$ 295.337

3-Me ether, N-*Me: 1-Hydroxy-3-methoxy-2-(3-methyl-2-butenyl)-10-methylacridone.* ***1-Hydroxy-3-methoxy-10-methyl-2-prenylacridone***
[75652-64-1]
$C_{20}H_{21}NO_3$ 323.391
Alkaloid from the roots of *Glycosmis mauritiana* (Rutaceae). Deep yellow needles. Mp 134-136°.

3-Me ether, N-*Me, 1-Ac:* Mp 115-116°.

Rastogi, K. *et al., Phytochemistry*, 1980, **19**, 945 (*isol, uv, ir, pmr, ms, struct*)

1,3-Dihydroxy-4-prenylacridone D-664

1,3-Dihydroxy-4-(3-methyl-2-butenyl)-9(10H)-acridinone
$C_{18}H_{17}NO_3$ 295.337

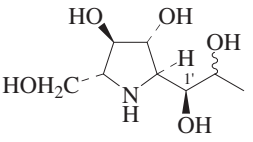
N-*Me: 1,3-Dihydroxy-10-methyl-4-(3-methyl-2-butenyl)-9(10H)-acridinone. 1,3-Dihydroxy-10-methyl-4-prenylacridone*
$C_{19}H_{19}NO_3$ 309.364
Alkaloid from the root and stem bark of *Glycosmis citrifolia* (Rutaceae). Orange needles (Me_2CO). Mp 168-169°.

3-Me ether, N-*Me:* **3-O-*Methylglycocitrine II***
[82354-37-8]
$C_{20}H_{21}NO_3$ 323.391
Alkaloid from the root and stem bark of *Glycosmis citrifolia* (Rutaceae). Orange needles (Me_2CO). Mp 134-135°.

Hlubucek, J. *et al., Aust. J. Chem.*, 1970, **23**, 1881 (*synth, ir, uv, pmr*)
Wu, T.-S. *et al., Heterocycles*, 1982, **19**, 1047 (*uv, ir, pmr, ms, struct*)
Wu, T.-S. *et al., J.C.S. Perkin 1*, 1983, 1681 (*isol, uv, ir, pmr, cmr, ms, struct, deriv*)
Anand, R.C. *et al., J.C.S. Perkin 1*, 1991, 2339 (*synth*)
Anand, R.C. *et al., Chem. Comm.*, 1996, 199 (*synth*)

2-(1,2-Dihydroxypropyl)-3,4-dihydroxy-5-(hydroxymethyl)-pyrrolidine D-665

2,5-Imino-1,3,4,6,7-octanepentol



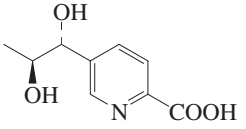
$C_8H_{17}NO_5$ 207.226

(1′*S*,2*R*,2′ξ,3*R*,4*R*,5*R*)-*form* [710948-62-2]
Alkaloid from the bulbs of *Scilla peruviana*. Syrup. $[\alpha]_D$ +13.3 (c, 1.23 in H_2O).

1′-Deoxy: 3,4-Dihydroxy-2-(hydroxymethyl)-5-(2-hydroxypropyl)pyrrolidine
[710948-61-1]
$C_8H_{17}NO_4$ 191.227
Alkaloid from the bulbs of *Scilla peruviana*. Syrup. $[\alpha]_D$ +40.8 (c, 0.54 in H_2O). Relative config. only determined.

Asano, N. *et al., J. Nat. Prod.*, 2004, **67**, 846-850 (*isol, pmr, cmr*)

5-(1,2-Dihydroxypropyl)-2-pyridinecarboxylic acid D-666



$C_9H_{11}NO_4$ 197.19

(1′*R*,2′*S*)-*form*
Antibiotic CJ 15335. CJ 15335
Amorph. powder. Config. shown as (1′*S*,2′*S*)-form in ref.

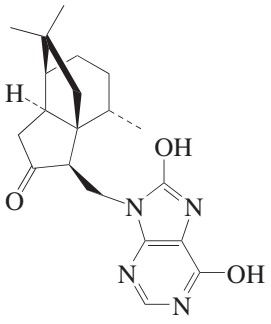
Me ester: ***Antibiotic CJ 14877***. *CJ 14877*
$C_{10}H_{13}NO_4$ 211.217
Prod. by *Marasmiellus* sp. CL21624. Cytokine prodn. inhibitor. Amorph. powder. $[\alpha]_D^{24}$ +20 (c, 0.13 in MeOH). λ_{max} 230 (ϵ 9500); 270 (ϵ 5800) (MeOH).

Me ester, 2′-Ac: ***Antibiotic CJ 14897***. *CJ 14897*
$C_{12}H_{15}NO_5$ 253.254
Prod. by *Marasmiellus* sp. CL21624. Cytokine prodn. inhibitor. Amorph. powder. $[\alpha]_D^{24}$ +27.1 (c, 0.17 in MeOH). λ_{max} 230 (ϵ 8200); 270 (ϵ 4400) (MeOH).

Ichikawa, K. *et al., J. Antibiot.*, 2001, **54**, 703-709 (*isol, uv, cd, pmr*)

6-(6,8-Dihydroxy-9-purinyl)-suberosanone D-667

[864514-59-0]

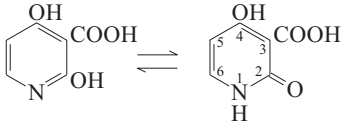


$C_{20}H_{26}N_4O_3$ 370.45
Alkaloid from *Subergorgia suberosa*. Powder. $[\alpha]_D^{20}$ +28 (c, 0.2 in $CHCl_3$). C-2 stereochem. revised in 2008. λ_{max} 212 ; 264 (MeOH).

Qi, S.-H. *et al., J. Nat. Prod.*, 2005, **68**, 1288-1289; 2008, **71**, 716-718 (*isol, pmr, cmr*)

2,4-Dihydroxy-3-pyridine-carboxylic acid D-668

1,2-Dihydro-4-hydroxy-2-oxo-3-pyridine-carboxylic acid. 2,4-Dihydroxynicotinic acid



$C_6H_5NO_4$ 155.11
Cryst. (H_2O). Mp 182° dec.

4-Me ether, nitrile: 1,2-Dihydro-4-methoxy-2-oxo-3-pyridinecarbonitrile. 3-Cyano-4-methoxy-2-pyridone. 3-Cyano-2-hydroxy-4-methoxypyridine. **N-*Demethylricinine***
[21642-98-8]
$C_7H_6N_2O_2$ 150.137
Alkaloid from *Ricinus communis*. Hepatoprotective agent. Pale yellow needles (MeOH). Mp 293-294°.

NH-form

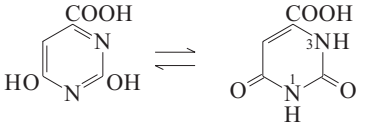
N-*Me, nitrile: 1,2-Dihydro-4-hydroxy-1-methyl-2-oxo-3-pyridinecarbonitrile, 9CI. 3-Cyano-4-hydroxy-1-methyl-2-pyridone.* ***Ricininic acid***. O-*Demethylricinine*
[520-78-5]
$C_7H_6N_2O_2$ 150.137
Alkaloid from *Ricinus communis*. Needles (H_2O). Mp 293-294°.

O^4,N-*Di-Me, nitrile:* see Ricinine, R-96

Schroeter, G. *et al., Ber.*, 1932, **65**, 432-445 (*synth, derivs*)
Skursky, L. *et al., J. Biol. Chem.*, 1969, **244**, 3238-3242 (*Me ether nitrile*)
Lee, H.J. *et al., Phytochemistry*, 1972, **11**, 965-973 (*Ricininic acid*)
Yano, S. *et al., Heterocycles*, 1993, **36**, 145-148 (*Me ether nitrile*)

2,6-Dihydroxy-4-pyrimidine-carboxylic acid D-669

1,2,3,6-Tetrahydro-2,6-dioxo-4-pyrimidinecarboxylic acid, 9CI. ***Orotic acid, BAN, INN****. Uracil-6-carboxylic acid. Vitamin B_{13}. Whey factor. Many other names*
[65-86-1]



$C_5H_4N_2O_4$ 156.098

Intermediate tautomers also possible. Exists as the dioxo tautomer in the cryst. state. Occurs in milk and other biol. systems. Key compd. involved in biosynth. of nucleic acid pyrimidine bases. Forms metal complexes. Used in photometric detn. of Zn. Salts used as dietary and mineral supplements. Shows bacteriostatic and cytostatic props. Uricosuric agent. Cryst. + $1H_2O$ (H_2O). Mp 322-325° Mp 345-346°. pK_{a1} 1.8; pK_{a2} 9.55 (25°). Log P -0.75 (calc). Also used as $Fe^{2\oplus}$ salt (Ferrous orotate, JAN).

▶ LD_{50} (mus, orl) 2000 mg/kg. RM3180000

Me ester: [6153-44-2]
$C_6H_6N_2O_4$ 170.124
Cryst. Mp 240-242° Mp 249°. pK_{a1} 7.93 (25°).

Et ester: [1747-53-1]
$C_7H_8N_2O_4$ 184.151
Cryst. (H_2O). Mp 207-208°.

Propyl ester: [4450-26-4]
$C_8H_{10}N_2O_4$ 198.178
Cryst. Mp 234-236°.

Isopropyl ester: [4450-03-7]
$C_8H_{10}N_2O_4$ 198.178
Cryst. Mp 217-218°.

Butyl ester: [22754-37-6]
$C_9H_{12}N_2O_4$ 212.205
Cryst. (H_2O). Mp 185-186° (182°).

Choline ester: Choline orotate. Cholergol. Rufai B
[24381-49-5]
$C_{10}H_{17}N_3O_5$ 259.261
Used in treatment of liver disorders.

Amide: Orotamide. 6-Carbamoyluracil
[769-97-1]
$C_5H_5N_3O_3$ 155.113
Cryst. + H_2O. Mp 373°.

Dimethylamide: Orotic acid dimethylamide. Orotonsan S
[3687-44-3]
$C_7H_9N_3O_3$ 183.166
Used to treat liver disorders. Cryst. (EtOH). Mp 249°.

Nitrile: 6-Cyanouracil
[79457-91-3]
$C_5H_3N_3O_2$ 137.098
Solid (EtOAc). Mp 260° dec.

NH-form

N^1-*Me: 1,2,3,6-Tetrahydro-1-methyl-2,6-dioxo-4-pyrimidinecarboxylic acid. 1-Methylorotic acid, 8CI*
[705-36-2]
$C_6H_6N_2O_4$ 170.124
Cryst. (H_2O). Mp 316-323° (>300°). pK_{a1} 1; pK_{a2} 10.52.

N^1-*Me, Me ester:* [24766-55-0]
$C_7H_8N_2O_4$ 184.151
Cryst. (MeOH). Mp 140-141° Mp 203-210°.

N^1-*Me, amide:* [55643-21-5]
$C_6H_7N_3O_3$ 169.14
Cryst. (H_2O). Mp 300°.

N^1-*Propyl:* [118738-50-4]
$C_8H_{10}N_2O_4$ 198.178
Cryst. (EtOH). Mp 233°.

N^1-*Benzyl:* [5971-86-8]
$C_{12}H_{10}N_2O_4$ 246.222
Cryst. (H_2O or EtOH). Mp 226-227.5° dec. (218-219° dec.).

N^1-*Ph:* [723-76-2]
$C_{11}H_8N_2O_4$ 232.195
Solid. Mp 288-290°.

N^3-*Me: 1,2,3,6-Tetrahydro-3-methyl-2,6-dioxo-4-pyrimidinecarboxylic acid*
[2013-90-3]
$C_6H_6N_2O_4$ 170.124
Cryst. (MeOH). Mp 257° (sealed tube).

N^3-*Et:* [31555-24-5]
$C_7H_8N_2O_4$ 184.151
Cryst. (MeOH). Mp 250-251° (sealed tube).

N^1,N^3-*Di-Me: 1,2,3,6-Tetrahydro-1,3-dimethyl-2,6-dioxo-4-pyrimidinecarboxylic acid*
[4116-38-5]
$C_7H_8N_2O_4$ 184.151
Cryst. or needles (Et_2O). Mp 153-154°.

N^1,N^3-*Di-Me, Me ester:* [4116-39-6]
$C_8H_{10}N_2O_4$ 198.178
Cryst. or needles (Et_2O). Mp 77-78°.

N^1,N^3-*Dibenzyl:*
$C_{19}H_{16}N_2O_4$ 336.346
Cryst. (EtOH aq.). Mp 194-196°.

N^1,N^3-*Di-Me, amide:* [2019-20-7]
$C_7H_9N_3O_3$ 183.166
Needles (MeOH). Mp 238-239°.

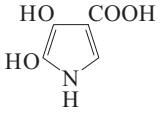
N^1,N^3-*Di-Me, nitrile: 6-Cyano-1,3-dimethyluracil*
[49846-86-8]
$C_7H_7N_3O_2$ 165.151
Needles (EtOH). Mp 168-170°.

[154-85-8 , 24598-73-0 , 5266-20-6 , 50887-69-9, 22454-86-0]

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 834A (*ir*)
Sadtler Standard C-13 NMR Spectra, 16598 (*cmr*)
Bachstez, M. *et al., Ber.*, 1931, **64**, 2683 (*1-Me*)
Nyc, J.F. *et al., J.A.C.S.*, 1947, **69**, 1382 (*synth*)
Deghenghi, R. *et al., Can. J. Chem.*, 1960, **38**, 1255 (*synth*)
Kokko, J.P. *et al., J.A.C.S.*, 1962, **84**, 1042 (*pmr*)
Japan. Pat., 1963, 63 23 180; *CA*, **60**, 2964f (*dimethylamide*)
Curran, W.V. *et al., J.O.C.*, 1966, **31**, 201 (*alkyl derivs, synth*)
Rambacher, P. *et al., Angew. Chem., Int. Ed.*, 1968, **7**, 383 (*synth*)

Takusagawa, F. *et al., Bull. Chem. Soc. Jpn.*, 1973, **46**, 2011 (*cryst struct*)
Senda, S. *et al., J.O.C.*, 1975, **40**, 353; 1979, **44**, 970 (*derivs, synth, 1-Me*)
Ivin, B.A. *et al., Zh. Org. Khim.*, 1976, **12**, 1836; *J. Org. Chem. USSR (Engl. Transl.)*, 1976, **12**, 1802 (*synth*)
Walther, H. *et al., Pharmazie*, 1979, **34**, 309 (*pharmacol*)
Cihak, A. *et al., Orotic Acid*, MTP: Lancaster, U.K., 1980, (*book*)
Falk, M. *et al., Pharmazie*, 1985, **40**, 377 (*rev, props*)
Ullmann's Encycl. Ind. Chem., 5th Ed., VCH, Weinheim, 1985, **A12**, 156 (*synth*)
Negwer, M. *et al., Organic-Chemical Drugs and their Synonyms, 6th edn., Akademie-Verlag*, 1987, 261
Mirzoyan, V.S. *et al., Khim. Geterotsikl. Soedin.*, 1990, 520; *Chem. Heterocycl. Compd. (Engl. Transl.)*, 1990, 446 (*ms*)
Párkányi, C. *et al., Struct. Chem.*, 1992, **3**, 277 (*uv*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 1396
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, OJV500

4,5-Dihydroxy-1*H*-pyrrole-3-carboxylic acid D-670

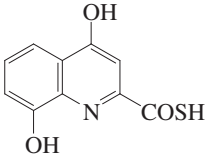


$C_5H_5NO_4$ 143.099

4-Me ether, Me ester: ***Methyl 5-hydroxy-4-methoxy-1H-pyrrole-3-carboxylate***
[128922-71-4]
$C_7H_9NO_4$ 171.152
Alkaloid from the stems of *Gnetum montanum* (Gnetaceae). Mp 204-206° (as hydrochloride).

Zhou, J. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 1989, **31**, 878-882; *CA*, **113**, 94757d (*isol, deriv*)

4,8-Dihydroxy-2-quinolinecarbothioic acid D-671



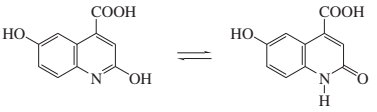
$C_{10}H_7NO_3S$ 221.236

4-Me ether: 8-Hydroxy-4-methoxy-2-quinolinecarbothioic acid
[76995-83-0]
$C_{11}H_9NO_3S$ 235.263
Prod. by *Pseudomonas fluorescens*. λ_{max} 218 (log ϵ 4.27); 268 (log ϵ 4.4); 355 (log ϵ 3.25); 417 (log ϵ 3.13) (MeOH).

Neuenhaus, W. *et al., Z. Naturforsch., B*, 1980, **35**, 1569-1571 (*isol, uv, synth*)

2,6-Dihydroxy-4-quinolinecarboxylic acid D-672

1,2-Dihydro-6-hydroxy-2-oxo-4-quinolinecarboxylic acid. 2,6-Dihydroxycinchoninic acid. β-Acid
[4363-99-9]



$C_{10}H_7NO_4$ 205.17
Mp 326° (browns at 300°).

Me ester: [66416-75-9]
$C_{11}H_9NO_4$ 219.196
Alkaloid from the aleurone layer of rice *Oryza sativa* cv. *heugjinmi*. Antioxidant. Pale yellow needles. Mp >320°. λ_{max} 242 (log ϵ 4.8); 280 (log ϵ 4.4); 382 (log ϵ 4.2) (MeOH).

Sahashi, Y. *et al., Biochem. Z.*, 1927, **189**, 208
Makino, K. *et al., Bull. Chem. Soc. Jpn.*, 1944, **19**, 95
Chung, H.S. *et al., J. Nat. Prod.*, 2001, **64**, 1579-1580 (*Me ester, isol*)

2,8-Dihydroxy-4-quinolinecarboxylic acid D-673

1,2-Dihydro-8-hydroxy-2-oxo-4-quinolinecarboxylic acid. 2,8-Dihydroxycinchoninic acid. 8-Hydroxy-2(1H)-quinolinone-4-carboxylic acid. ***Zeanic acid***
[30536-55-1]
$C_{10}H_7NO_4$ 205.17
Isol. from corn steep liquor. Growth regulator. Needles ($CHCl_3$/MeOH). Mp 340° dec.

O-*β*-D-*Glucopyranoside:* ***Zeanoside B***
[113202-67-8]
$C_{16}H_{17}NO_9$ 367.312
Isol. from immature corn kernels (*Zea mays*) (Poaceae). Sl. yellow needles. Mp 297-302°. $[\alpha]_D^{23}$ -69.4 (c, 0.1 in NH_4OH).

Me ether: 1,2-Dihydro-8-methoxy-2-oxo-4-quinolinecarboxylic acid. 2-Hydroxy-8-methoxy-4-quinolinecarboxylic acid
[37749-17-0]
$C_{11}H_9NO_4$ 219.196
Alkaloid from *Cynoglossum gansuense*. Yellowish powder. Mp 310° dec.

Matsushima, M. *et al., Agric. Biol. Chem.*, 1970, **34**, 1430
Fukumi, H. *et al., Yakugaku Zasshi*, 1974, **94**, 768
Tateishi, K. *et al., Agric. Biol. Chem.*, 1987, **51**, 3445 (*Zeanoside B*)
Shibata, H. *et al., Agric. Biol. Chem.*, 1989, **53**, 849; 2545 (*Zeanoside B*)
Jin, Y.-P. *et al., Helv. Chim. Acta*, 2007, **90**, 776-781 (*Me ether, isol*)

3,4-Dihydroxy-2-quinolinecarboxylic acid D-674

1,4-Dihydro-3-hydroxy-4-oxo-2-quinolinecarboxylic acid. 3,4-Dihydroxyquinaldinic acid. 3-Hydroxy-4(1H)-quinolinone-2-carboxylic acid
[33925-79-0]
$C_{10}H_7NO_4$ 205.17
Constit. of the Mediterranean sponge *Aplysinaaerophoba*. Mp 261-262° (253-254°) dec. λ_{max} 247 (ϵ 29100); 256 (ϵ 28800); 300 (ϵ 1740); 321 (ϵ 2110); 365 (ϵ 8580); 382 (ϵ 7580) (MeOH).

Coppini, D. *et al., Gazz. Chim. Ital.*, 1950, **80**, 36 (*synth*)
Fattorusso, E. *et al., Gazz. Chim. Ital.*, 1971, **101**, 104 (*isol, uv, ir, struct*)

4,6-Dihydroxy-2-quinolinecarboxylic acid D-675

1,4-Dihydro-6-hydroxy-4-oxo-2-quinolinecarboxylic acid, 9CI. 4,6-Dihydroxyquinaldinic acid. 6-Hydroxykynurenic acid
$C_{10}H_7NO_4$ 205.17
Alkaloid from tobacco *(Nicotiana tabacum), Thapsia villosa* and *Ginkgo biloba* (ginkgo). Appears to be widespread in the Solanaceae, also found in Scrophulariaceae, Lamiaceae and other families. Mp 287° dec.

6-Me ether: 1,4-Dihydro-6-methoxy-4-oxo-2-quinolinecarboxylic acid. 4-Hydroxy-6-methoxy-2-quinolinecarboxylic acid. ***6-Methoxykynurenic acid***
[52980-06-0]
$C_{11}H_9NO_4$ 219.196
Alkaloid from stems of *Ephedra pachyclada* ssp. *sinaica*. Cryst. (MeOH). Mp 298-300° dec. (294-295° dec.).

[52980-07-1 , 3778-29-8]

Macnicol, P.K. *et al., Biochem. J.*, 1968, **107**, 473 (*isol, struct, synth, ir, pmr, uv, occur*)
Hall, C.M. *et al., J. Med. Chem.*, 1974, **17**, 685 (*synth, 6-Methoxykynurenic acid*)
Mendez, J. *et al., Phytochemistry*, 1975, **14**, 1136 (*isol*)
Schennen, A. *et al., Planta Med.*, 1986, 235 (*isol, cmr*)
Starratt, A.N. *et al., Phytochemistry*, 1996, **42**, 1477 (*isol, 6-Methoxykynurenic acid*)

4,7-Dihydroxy-2-quinolinecarboxylic acid D-676

1,4-Dihydro-7-hydroxy-4-oxo-2-quinolinecarboxylic acid. 4,7-Dihydroxyquinaldinic acid
$C_{10}H_7NO_4$ 205.17

7-Me ether: 1,4-Dihydro-7-methoxy-4-oxo-2-quinolinecarboxylic acid, 9CI. 7-Methoxy-4-hydroxy-2-quinolinecarboxylic acid. ***Ephedralone***
[77474-33-0]
$C_{11}H_9NO_4$ 219.196
Alkaloid from *Ephedra alata* whole plant (Ephedraceae). Prisms (MeOH aq.). Mp 268°.

Nawwar, M.A.M. *et al., Phytochemistry*, 1985, **24**, 878-879 (*isol, uv, ir, pmr, cmr, ms, struct*)

4,8-Dihydroxy-2-quinolinecarboxylic acid D-677

1,4-Dihydro-8-hydroxy-4-oxo-2-quinolinecarboxylic acid. 4,8-Dihydroxyquinaldinic acid. ***Xanthurenic acid****. Xanthuric acid*
[59-00-7]
$C_{10}H_7NO_4$ 205.17
Metab. of tryptophan. Present in human urine as metab. of Kynurenine in cases of vitamin B_6 deficiency. Occurs as a moulting inhibitor in crustaceans. Constit. of *Trididemnum* sp. Yellow cryst.

(H_2O). Mp 286° (297°). Forms a monohydrate. λ_{max} 243 (ϵ 30000); 342 (ϵ 6500) (pH 6.95, H_2O).

▶ UZ9275000

8-O-*β*-*D*-*Glucopyranoside:* ***Cardinalic acid***†
[97451-32-6]
$C_{16}H_{17}NO_9$ 367.312
Tryptophan metab. of *Drosophila melanogaster*.

Me ester: [5934-38-3]
$C_{11}H_9NO_4$ 219.196
Yellow cryst. (MeOH). Mp 262°.

Dibenzoyl, Me ester:
$C_{25}H_{17}NO_6$ 427.412
Mp 171°.

4-Me ether: 8-Hydroxy-4-methoxy-2-quinolinecarboxylic acid, 9CI. ***Quinolobactin***
[28027-14-7]
$C_{11}H_9NO_4$ 219.196
Alkaloid from *Pseudomonas fluorescens*. Siderophore. Mp 248°. λ_{max} 211 (log ϵ 4.48); 249 (log ϵ 4.56); 315 (log ϵ 3.45); 348 (log ϵ 3.57) (MeOH).

8-Me ether: 4-Hydroxy-8-methoxy-2-quinolinecarboxylic acid
[2929-14-8]
$C_{11}H_9NO_4$ 219.196
Metab. of tryptophan. Isol. from human urine. Possible endogenous carcinogen in man. Mp 240-241°.

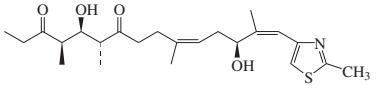
▶ Exp. carcinogen. UZ9550000

[121691-37-0]

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 870D (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 449B (*nmr*)
Mebane, A.D. *et al., J.A.C.S.*, 1951, **73**, 3520 (*synth, uv*)
Furst, A. *et al., J.O.C.*, 1951, **16**, 412-414 (*synth, uv*)
Price, J.M. *et al., J. Biol. Chem.*, 1956, **223**, 699-704 (*8-Me ether, isol, synth*)
Neuenhaus, W. *et al., Z. Naturforsch., B*, 1980, **35**, 1569-1571 (*Quinolobactin*)
Suzuki, M. *et al., Chem. Pharm. Bull.*, 1984, **32**, 2340-2343 (*8-Me ether, biochem*)
Ferre, J. *et al., J. Biol. Chem.*, 1985, **260**, 7509-7514; 1990, **265**, 7407-7412 (*Cardinalic acid*)
De Silva, E.D. *et al., Tet. Lett.*, 1992, **33**, 2917-2920 (*Trididemnum, isol*)
Okabe, N. *et al., Acta Cryst. C*, 1996, **52**, 663-665 (*cryst struct*)
Mossialos, D. *et al., Appl. Environ. Microbiol.*, 2000, **66**, 487-492 (*Quinolobactin*)
Moon, B. *et al., Tetrahedron*, 2000, **56**, 9057-9062 (*occur*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, DNC200; HLT500

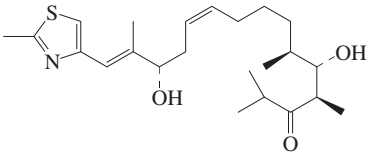
5,13-Dihydroxy-4,6,10,14-tetramethyl-15-(2-methyl-4-thiazolyl)-10,14-pentadecadiene-3,7-dione D-678

4-(3,11-Dihydroxy-2,6,10,12-tetramethyl-9,13-dioxo-1,5-pentadecadienyl)-2-methylthiazole



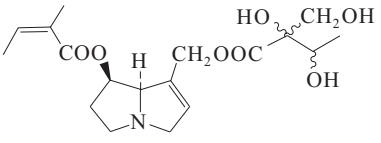
$C_{23}H_{35}NO_4S$ 421.6
Epothilone fragment. Isol. from recombinant *Myxococcus xanthus*. Yellow oil. $[\alpha]_D$ -6.8 (c, 0.026 in MeOH). λ_{max} 212 (ϵ 26700); 246 (ϵ 20000) (MeOH).
Starks, C.M. *et al., J. Nat. Prod.*, 2003, **66**, 1313-1317 (*isol, pmr, cmr*)

5,13-Dihydroxy-2,4,6,14-tetramethyl-15-(2-methyl-4-thiazolyl)-10,14-pentadecadien-3-one D-679



$C_{23}H_{37}NO_3S$ 407.616
Prod. by *Sorangium cellulosum*. Precursor of Epothilones. Amorph. solid. $[\alpha]_D^{22}$ -28 (c, 0.4 in MeOH). λ_{max} 211 (ϵ 16100); 247 (ϵ 12100) (MeOH).
Hardt, I. *et al., J. Nat. Prod.*, 2001, **64**, 847-856

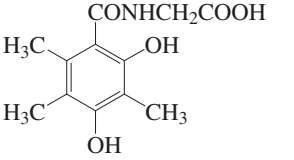
Dihydroxytriangularine D-680



$C_{18}H_{27}NO_7$ 369.414
Alkaloid from *Alkanna tinctoria* (Boraginaceae). $[\alpha]_D^{20}$ +14.7 ($CHCl_3$).
Röder, E. *et al., Phytochemistry*, 1984, **23**, 2125 (*isol, ir, ms, pmr, struct*)

N-(2,4-Dihydroxy-3,5,6-trimethylbenzoyl)glycine, 9CI D-681

Antibiotic USF 406C. *USF 406C*
[190782-86-6]



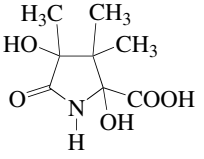
$C_{12}H_{15}NO_5$ 253.254
Prod. by *Mortierella* sp. USF-406. Antioxidant. Needles (hexane/EtOAc). Mp 192°. λ_{max} 207 (log ϵ 4.59); 258 (log ϵ 3.76) (MeOH).

Me ester: ***Antibiotic USF 406D***. *USF 406D*
[190782-87-7]
$C_{13}H_{17}NO_5$ 267.281
Prod. by *Mortierella* sp. USF-406. Antioxidant. Needles (hexane/EtOAc). Mp 162°.

Hirota, A. *et al., Biosci., Biotechnol., Biochem.*, 1997, **61**, 647-650 (*isol, struct*)

2,4-Dihydroxy-3,3,4-trimethyl-5-oxo-2-pyrrolidinecarboxylic acid D-682

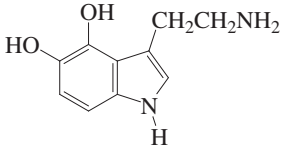
2,4-Dihydroxy-3,3,4-trimethyl-5-oxoproline, 9CI. 2,4-Dihydroxy-3,3,4-trimethylpyroglutamic acid
[143785-44-8]



$C_8H_{13}NO_5$ 203.194
Residue present in the lipopolysaccharide of *Vibrio anguillarum* V-123. On acid hydrol. of the polysaccharide, undergoes isom. to a lactone.
Eguchi, H. *et al., Carbohydr. Res.*, 1992, **231**, 147 (*struct, pmr, cmr*)

4,5-Dihydroxytryptamine D-683

*3-(2-Aminoethyl)-1*H*-indole-4,5-diol, 9CI*
[42241-03-2]



$C_{10}H_{12}N_2O_2$ 192.217

N^b-*Tricosanoyl:* ***4,5-Dihydroxy-N^b-tricosanoyltryptamine***
$C_{33}H_{56}N_2O_3$ 528.817
Constit. of the seeds of *Annona atemoya* (custard apple).

N^b-*Tetracosanoyl:* ***4,5-Dihydroxy-N^b-tetracosanoyltryptamine***. *4,5-Dihydroxy-N^b-lignoceroyltryptamine*
$C_{34}H_{58}N_2O_3$ 542.844
Constit. of the seeds of *Annona atemoya* (custard apple).

N^b-*Pentacosanoyl:* ***4,5-Dihydroxy-N^b-pentacosanoyltryptamine***
$C_{35}H_{60}N_2O_3$ 556.871
Constit. of the seeds of *Annona atemoya* (custard apple).

N^b-*Heptacosanoyl:* ***N^b-Heptacosanoyl-4,5-dihydroxytryptamine***
$C_{37}H_{64}N_2O_3$ 584.924
Constit. of the seeds of *Annona atemoya* (custard apple).

Wu, Y.-C. *et al., J. Nat. Prod.*, 2005, **68**, 406-408 (*N-Acyltryptamines*)

5,6-Dihydroxytryptamine D-684

*3-(2-Aminoethyl)-1*H*-indole-5,6-diol, 9CI*
[5090-36-8]
$C_{10}H_{12}N_2O_2$ 192.217
Mp 92-95° (as formate salt). Hygroscopic and unstable to light and air.

5-Me ether: 6-Hydroxy-5-methoxytryptamine
Off-white cryst. (EtOH/Et_2O) (as formate salt). Mp 207-208°.

5-Me ether, N^b*-Ac:* ***6-Hydroxymelatonin***
[2208-41-5]
$C_{13}H_{16}N_2O_3$ 248.281
Metab. of Melatonin in humans. Cryst. (EtOH/hexane). Mp 174-175°.

5-Me ether, N^b*-Ac, 6-sulfate:* [2208-40-4]
$C_{13}H_{16}N_2O_6S$ 328.345
Amorph. powder (EtOAc/hexane).

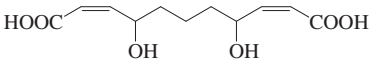
6-Me ether: 5-Hydroxy-6-methoxytryptamine
Mp 71-73° Mp 136-138° (dimorphic).

Dibenzyl ether:
Orange-red cryst. (EtOH aq.) (as picrate). Mp 183-185° dec.

Schlossberger, H.G. *et al., Annalen*, 1963, **662**, 132-138 (*synth*)
Benigni, J.D. *et al., J. Het. Chem.*, 1965, **2**, 387-392 (*synth, 5-Me ether, 6-Me ether, 6-Hydroxymelatonin*)
Leone, A.M. *et al., J. Pineal Res.*, 1988, **5**, 367-371 (*5-Me ether, N-Ac sulfate*)
Karam, O. *et al., Tet. Lett.*, 2003, **44**, 1511-1513 (*6-Hydroxymelatonin, synth, pmr*)

4,8-Dihydroxy-2,9-undecadienedioic acid D-685

3,7-Dihydroxy-1,8-nonadiene-1,9-dicarboxylic acid



$C_{11}H_{16}O_6$ 244.244

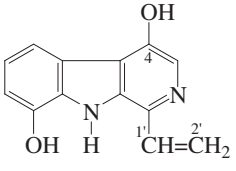
(2*Z*,4ξ,8ξ,9*Z*)-*form*

Diamide: 4,8-Dihydroxy-2,9-undecadienediamide
[382138-86-5]
$C_{11}H_{18}N_2O_4$ 242.274
Isol. from an unidentified marine actinomycete.

Smelcerovic, A.A. *et al., Hem. Ind.*, 2001, **55**, 399-401 (*isol*)

4,8-Dihydroxy-1-vinyl-β-carboline D-686

*1-Ethenyl-9*H*-pyrido[3,4-*b*]indole-4,8-diol, 9CI*



$C_{13}H_{10}N_2O_2$ 226.234

4-Me ether: 8-Hydroxy-4-methoxy-1-vinyl-β-carboline. ***Picrasidine I****. 8-Hydroxydehydrocrenatine*
[100234-59-1]
$C_{14}H_{12}N_2O_2$ 240.261
Alkaloid from the bark of *Picrasma quassioides* and *Picrasma javanica* (Simaroubaceae). Plates ($CHCl_3$/MeOH). Mp 240-241° dec. The alkaloid from *Picrasma javanica* was originally assigned the isomeric 5-hydroxy struct. and named 5-Hydroxydehydrocrenatine (Arbain *et al*, 1987).

4-Me ether, Ac:
Needles (Me_2CO). Mp 180-183°.

*Di-Me ether: 1-Ethenyl-4,8-dimethoxy-9*H*-pyrido[3,4-*b*]indole. 4,8-Dimethoxy-1-vinyl-β-carboline.* ***Dehydrocrenatidine****. Kumujian G*
[65236-62-6]
$C_{15}H_{14}N_2O_2$ 254.288
Alkaloid from root and bark of *Ailanthus malabarica* and heartwood of *Picrasma quassioides*. Brownish-yellow plates. Mp 157°.

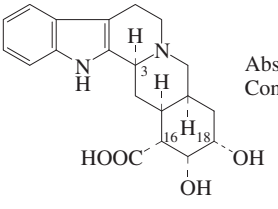
*1′,2′-Dihydro, 4-Me ether: 1-Ethyl-8-hydroxy-4-methoxy-β-carboline. 1-Ethyl-4-methoxy-9*H*-pyrido[3,4-*b*]indol-8-ol, 9CI.* ***Picrasidine J****. 8-Hydroxycrenatine*
[100234-62-6]
$C_{14}H_{14}N_2O_2$ 242.277
Alkaloid from the bark of *Picrasma quassioides* and *Picrasma javanica* (Simaroubaceae). Pale-yellow prisms ($CHCl_3$/MeOH). Mp 212-213°. Erroneously assigned the isomeric 5-hydroxy struct. when first isol. from *P. javanica* and named 5-Hydroxycrenatine.

1′,2′-Dihydro, 4-Me ether, Ac:
Needles (Me_2CO). Mp 193-195°.

*1′,2′-Dihydro, di-Me ether: 1-Ethyl-4,8-dimethoxy-9*H*-pyrido[3,4-*b*]indole. 1-Ethyl-4,8-dimethoxy-β-carboline.* ***Crenatidine***
[30467-79-9]
$C_{15}H_{16}N_2O_2$ 256.304
Alkaloid from the bark of *Picrasma crenata* and from the bark and roots of *Ailanthus malabarica*. Mp 157-158°.

Sanchez, E. *et al., Phytochemistry*, 1971, **10**, 2155 (*Crenatidine*)
Joshi, B.S. *et al., Heterocycles*, 1977, **7**, 193 (*Dehydrocrenatidine*)
Yang, J.S. *et al., Yaoxue Xuebao*, 1979, **14**, 167; *CA*, **92**, 72679a (*Kumujian G*)
Koike, K. *et al., Org. Magn. Reson.*, 1984, **22**, 471-473 (*cmr*)
Ohmoto, T. *et al., Chem. Pharm. Bull.*, 1985, **33**, 3356 (*isol, uv, ir, pmr, cmr, ms*)
Arbain, D. *et al., Aust. J. Chem.*, 1987, **40**, 1527; 1990, **43**, 433 (*isol, uv, ir, pmr, cmr, ms, cryst struct*)

17,18-Dihydroxyyohimban-16-carboxylic acid D-687



Absolute Configuration

$C_{20}H_{24}N_2O_4$ 356.421

Me ester: ***18-Hydroxyyohimbine***
[69862-18-6]
$C_{21}H_{26}N_2O_4$ 370.447
Alkaloid from *Rauwolfia cumminsii, Rauwolfia macrophylla, Rauwolfia mombasiana, Rauwolfia volkensii* and *Rauwolfia vomitoria* (probably) (Apocynaceae). A hydroxyyohimbine of undetd. struct. was isol. from *R. suaveolens*. The identification of all samples is not well established.

16-Epimer, Me ester: ***18-Hydroxy-α-yohimbine***
[74081-22-4]
$C_{21}H_{26}N_2O_4$ 370.447
Alkaloid from *Rauwolfia mombasiana* roots. Stereochem. tentative.

3,16,18-Triepimer, Me ester: ***18-Hydroxyepialloyohimbine****. 18-Hydroxyyohimbine (incorr.)*
[81703-06-2]
$C_{21}H_{26}N_2O_4$ 370.447
Alkaloid from *Rauwolfia nitida* root bark (Apocynaceae). Parent alcohol of the common ester alkaloids Reserpine, R-52, Deserpidine, D-234, etc.

3,16,18-Triepimer, O^{17}*-Me: Deserpidic acid. Deserpidinic acid. Recanescic acid. Canescic acid. Raunormic acid*
[439-67-8]
$C_{21}H_{26}N_2O_4$ 370.447
Mp 270-273° (245-249°).

3,16,18-Triepimer, O^{17}*-Me, Me ester:* ***Methyl deserpidate***
[54290-61-8]
$C_{22}H_{28}N_2O_4$ 384.474
Alkaloid from roots of *Rauwolfia obscura*, *Rauwolfia canescens* and *Rauwolfia volkensii* (Apocynaceae). Mp 271-276° (as nitrate). $[\alpha]_D^{24}$ -78 (c, 1 in Py) (nitrate).

*3,16,18-Triepimer, 17-*O*-(3,4,5-trimethoxybenzoyl), Me ester:* ***Isoraunescine***
[483-07-8]
$C_{31}H_{36}N_2O_8$ 564.634
Alkaloid from *Rauwolfia canescens*, also detected in *Rauwolfia ligustrina* (Apocynaceae). Cryst. (MeOH aq.). Mp 241-242°. $[\alpha]_D$ -70 (c, 1 in $CHCl_3$).

*3,16,18-Triepimer, 18-*O*-(3,4,5-trimethoxybenzoyl), Me ester:* ***Raunescine***†
[117-73-7]
$C_{31}H_{36}N_2O_8$ 564.634
Alkaloid from *Rauwolfia canescens* and *Rauwolfia tetraphylla*, also detected in *Rauwolfia ligustrina* (Apocynaceae). Cryst. (MeOH aq.). Mp 160-170° (monohydrate). $[\alpha]_D$ -74 (c, 1 in $CHCl_3$).

*3,16,18-Triepimer, 18-*O*-(3,4,5-trimethoxybenzoyl), Me ester, nitrate:* Mp 223-225°. $[\alpha]_D$ -80 (c, 1 in 5*M* AcOH).

3,16,18-Triepimer, O^{17}*-Me, 18-*O*-(3,4,5-trimethoxybenzoyl), Me ester:* see Deserpidine, D-234

Stereoisomer, O^{17}*-Me, 18-*O*-(2-acetamidobenzoyl), Me ester:* ***Desanthraserpidine***
[123690-06-2]
$C_{31}H_{35}N_3O_6$ 545.634
Alkaloid from *in vitro* hairy-root cultures of *Catharanthus trichophyllus.* Amorph. Tentative struct. No stereochem. determined.

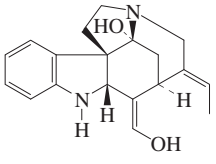
Stereoisomer, O^{17}*-Me, 18-*O*-(2-acetamido-4,5-dimethoxybenzoyl), Me ester:* ***Dimethoxydesanthraserpidine***
[123690-07-3]

$C_{33}H_{39}N_3O_8$ 605.686
Alkaloid from *in vitro* hairy-root cultures of *Catharanthus trichophyllus*. Amorph. Tentative struct. No stereochem. determined.

Hosansky, N. *et al., J. Am. Pharm. Assoc.*, 1955, **44**, 639-640 (*Raunescine, Isoraunescine, isol, uv*)
Klohs, M.W. *et al., J.A.C.S.*, 1955, **77**, 4084-4087 (*Methyl deserpidate, struct*)
Huebner, C.F. *et al., J.A.C.S.*, 1957, **79**, 250-251 (*Raunescine, Isoraunescine, struct*)
Van Tamelen, E.E. *et al., J.A.C.S.*, 1957, **79**, 5256-5262 (*Raunescine, Isoraunescine, struct*)
Majumdar, S.P. *et al., Phytochemistry*, 1973, **12**, 1167-1169 (*Rauwolfia suaveolens constit*)
Timmins, P. *et al., Phytochemistry*, 1974, **13**, 1997 (*Methyl deserpidate*)
Iwu, M.M. *et al., Phytochemistry*, 1978, **17**, 1651-1654 (*Me ester*)
Sabri, N.N. *et al., Phytochemistry*, 1978, **17**, 2023-2026 (*Me ester*)
Iwu, M.M. *et al., Planta Med.*, 1980, **38**, 260-263 (*isol, 18-Hydroxy-α-yohimbine*)
Amer, M.A. *et al., Phytochemistry*, 1981, **20**, 2569-2573 (*18-Hydroxyepialloyohimbine, Me ester*)
Szantay, C. *et al., Annalen*, 1983, 1278-1291 (*Me ester, Raunescine, Isoraunescine, synth*)
Davioud, E, *et al., Phytochemistry*, 1989, **28**, 1383-1387 (*Desanthraserpidine, Dimethoxydesanthraserpidine*)

3,17-Dihydroxyzenkerine D-688

16,17,19,20-Tetradehydrocuran-3,17-diol, 9CI



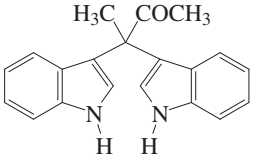
Absolute Configuration

$C_{19}H_{22}N_2O_2$ 310.395
Enolised aldehyde. Alkaloid from the leaves of *Strychnos pseudoquina*. Pale yellow gum.

Da Silva, M.A. *et al., Chem. Pharm. Bull.*, 2005, **53**, 881-885 (*isol, pmr, cmr*)

3,3-Di-1*H*-indol-3-yl-2-butanone D-689

[28926-40-1]

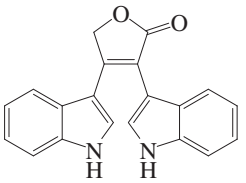


$C_{20}H_{18}N_2O$ 302.375
Isol. from the marine bacterium *Vibrio parahaemolyticus* Bio249. Pale yellow solid. Mp 197° (synthetic). λ_{max} 274 (sh) (log ε 2.91); 281 (log ε 2.94); 289 (log ε 2.89) (MeOH).

Zhungietu, G.I. *et al., CA*, 1970, **73**, 25230u (*synth*)
Veluri, R. *et al., J. Nat. Prod.*, 2003, **66**, 1520-1523 (*isol, pmr, cmr, ms*)

3,4-Di-1*H*-indol-3-yl-2(5*H*)-furanone, 9CI D-690

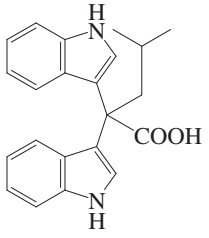
[244295-63-4]



$C_{20}H_{14}N_2O_2$ 314.343
Prod. by *Paracoccus* sp. UV absorbent.

Japan. Pat., 1999, 99 269 175; *CA*, **131**, 242087s

2,2-Di-1*H*-indol-3-yl-4-methylpentanoic acid D-691

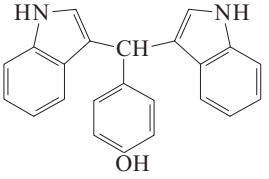


$C_{22}H_{22}N_2O_2$ 346.428
Isol. from *Escherichia coli* supplemented with indole.

Garbe, T.R. *et al., J. Nat. Prod.*, 2000, **63**, 596-598

4-[(Di-1*H*-indol-3-yl)methyl]-phenol, 9CI D-692

*7,7-Bis(3-indolyl)-*p*-cresol. 4-Hydroxyphenyldi-3-indolylmethane*
[151358-47-3]

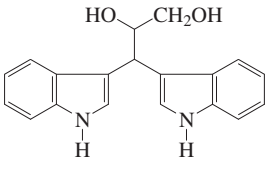


$C_{23}H_{18}N_2O$ 338.408
Isol. from a strain of the bacterium *Vibrio* sp. obtained from a marine sponge *Hyatella* sp. Exhibits antimicrobial activity. Gum. λ_{max} 224 (ε 52500); 282 (ε 11500) (MeOH) (Derep).

Oclarit, J.M. *et al., Nat. Prod. Lett.*, 1994, **4**, 309-312 (*isol, pmr, cmr, uv, ir*)

3,3-Di-1*H*-indol-3-yl-1,2-propanediol, 9CI D-693

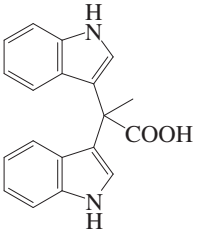
3,3-(2,3-Dihydroxypropyl)diindole
[4531-83-3]



$C_{19}H_{18}N_2O_2$ 306.363
Alkaloid from the clavicipitaceous fungus *Balansia epichloë* which parasitises on pasture grasses. Also prod. by *Streptomyces cerevisiae* mutants. Red cryst. Mp 90-91°. λ_{max} 221 (log ε 4.88); 275 (log ε 3.97); 282 (log ε 4.01); 291 (log ε 3.96) (MeOH).

Lingens, F. *et al., Biochim. Biophys. Acta*, 1967, **148**, 70-83 (*isol, ir, synth*)
Porter, J.K. *et al., J. Agric. Food Chem.*, 1977, **25**, 88-93 (*isol, uv, ir, pmr, ms, struct, synth*)

2,2-Di-1*H*-indol-3-ylpropanoic acid D-694



$C_{19}H_{16}N_2O_2$ 304.348
Isol. from *Escherichia coli* supplemented with indole. Orange-yellow powder. Mp 109-114°. Turns blue on standing. λ_{max} 222 (log ε 4.75); 281 (log ε 4.04); 290 (log ε 3.99); 388 (log ε 2.02); 479 (log ε 1.23) (MeOH).

Garbe, T.R. *et al., J. Nat. Prod.*, 2000, **63**, 596-598

Diiodoacetic acid D-695

[598-89-0]
$I_2CHCOOH$
$C_2H_2I_2O_2$ 311.846
Constit. of *Asparagopsis taxiformis*. Pale-yellow needles ($CHCl_3$). Mod. sol. H_2O. Mp 110-111°.

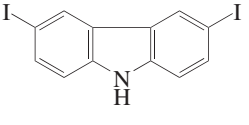
Amide: Diiodoacetamide
[5875-23-0]
$C_2H_3I_2NO$ 310.861
Constit. of *Asparagopsis taxiformis*. Cryst. (H_2O). Mp 201-202° dec. (softens at 198°).

[82665-91-6]

Clarke, L. *et al., J.A.C.S.*, 1914, **36**, 1899-1908 (*synth*)
Cobb, R.L. *et al., J.O.C.*, 1958, **23**, 1368-1405 (*synth*)
Woolard, F.X. *et al., Tetrahedron*, 1976, **32**, 2843-2846 (*amide, isol*)
Woolard, F.X. *et al., Phytochemistry*, 1979, **18**, 617-620 (*isol*)

3,6-Diiodo-9*H*-carbazole D-696

[57103-02-3]



$C_{12}H_7I_2N$ 419.003
Alkaloid from the cyanobacterium

Kyrtuthrix maculans. Leaflets (EtOH). Mp 202-204°.

N-*Ac:*
$C_{14}H_9I_2NO$ 461.04
Needles (EtOH or C_6H_6). Mp 224-225°.

N-*Me:* [90338-06-0]
$C_{13}H_9I_2N$ 433.03
Needles (hexane) or rods (Me_2CO). Mp 187° (181-182°).

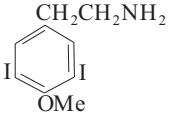
N-*Benzoyl:* [96853-15-5]
$C_{19}H_{13}I_2N$ 509.127
Needles (hexane). Mp 169-172°.

N-*Ph:* [57103-21-6]
$C_{18}H_{11}I_2N$ 495.101
Needles (hexane). Mp 179-180°.

Tucker, S.H. *et al., J.C.S.*, 1926, 546-553; 1927, 1214-1221 (*synth*)
Ambrose, J.F. *et al., J. Electrochem. Soc.*, 1975, **122**, 876-894 (*synth, 9-Ph*)
Beginn, C. *et al., Macromol. Chem. Phys.*, 1994, **195**, 2353-2370 (*synth, pmr, cmr*)
Lee, S.-C. *et al., Phytochemistry*, 1999, **52**, 537-540 (*isol, pmr, cmr, ms*)
Bonesi, S.M. *et al., J. Het. Chem.*, 2001, **38**, 77-87 (*synth, ir, pmr, cmr, ms*)
Monge, M.E. *et al., J. Het. Chem.*, 2002, **39**, 933-941 (*9-Me, 9-Ph, 9-benzyl*)
Filimonov, V.D. *et al., Zh. Org. Khim.*, 2003, **39**, 924-929; *Russ. J. Org. Chem. (Engl. Transl.)*, 2003, **39**, 875-880 (*synth, ms*)

(3,5-Diiodo-4-methoxyphenyl)ethylamine D-697

3,5-Diiodo-4-methoxybenzenethanamine
[89631-86-7]



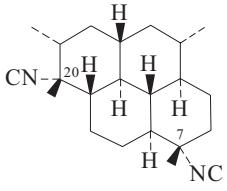
$C_9H_{11}I_2NO$ 403.001
Metab. of an unidentified didemnid tunicate. Isol. from the ascidian *Didemnum rubeum*. Mildly cytotoxic, antifungal. Cryst. (petrol). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 55-57°.

Hydrochloride:
Cryst. ($CHCl_3$). Mp 213-215°.

Jatzkewitz, H. *et al., Hoppe-Seyler's Z. Physiol. Chem.*, 1951, **287**, 43-46 (*synth*)
Sesin, D.F. *et al., Tet. Lett.*, 1984, **25**, 403-404 (*isol, pmr, cmr, synth*)
Ford, P.W. *et al., J. Nat. Prod.*, 1997, **60**, 1051-1053 (*isol*)

7,20-Diisocyanoisocyclo-amphilectane D-698

7,20-Diisocyanoadociane
[60197-58-2]



$C_{22}H_{32}N_2$ 324.508
Isol. from a sponge *Adocia* sp., from the Great Barrier reef and *Cymbastela hooperi*. Potent *in vitro* antimalarial activity. Shows antimycobacterial and cytotoxic activities. Cryst. (hexane). Mp 109-110°. $[\alpha]_D^{22}$ +47.4 (c, 0.7 in CH_2Cl_2).

7-Isothiocyanate: ***20-Isocyano-7-isothiocyanatoisocycloamphilectane***
[175861-78-6]
$C_{22}H_{32}N_2S$ 356.574
Constit. of *Cymbastela hooperi*. Shows antimycobacterial, antimalarial and cytotoxic activities. Oil. $[\alpha]_D^{25}$ +23.3 (c, 0.15 in $CHCl_3$). Has - NCS replacing - NC at C-7. λ_{max} 247 (ϵ 1250) (MeOH) (Berdy).

7-Isocyanate: ***7-Isocyanato-20-isocyano-isocycloamphilectane***
[175861-79-7]
$C_{22}H_{32}N_2O$ 340.508
Constit. of *Cymbastela hooperi*. Oil. $[\alpha]_D^{25}$ +36.1 (c, 0.75 in $CHCl_3$). Has - NCO replacing - NC at C-7.

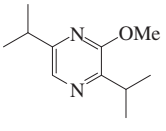
20-Isocyanate: ***20-Isocyanato-7-isocyanoisocycloamphilectane***. *20-Isocyanato-7-isocyanoadociane*
[175861-80-0]
$C_{22}H_{32}N_2O$ 340.508
Isol. from the tropical marine sponge *Cymbastela hooperi*. Shows potent *in vitro* antimalarial activity. Oil. $[\alpha]_D^{25}$ +37 (c, 0.58 in $CHCl_3$). Has - NCO replacing - NC at C-20.

[175861-77-5]

Baker, J.T. *et al., J.A.C.S.*, 1976, **98**, 4010 (*isol, cryst struct, pmr*)
Corey, E.J. *et al., J.A.C.S.*, 1987, **109**, 287-289 (*synth*)
Fookes, C.J.R. *et al., J.C.S. Perkin 1*, 1988, 1003 (*cryst struct, biosynth*)
Koenig, G.M. *et al., Magn. Reson. Chem.*, 1995, **33**, 694 (*pmr, cmr*)
Koenig, G.M. *et al., J.O.C.*, 1996, **61**, 3259-3267 (*isol, ir, pmr, cmr, uv, ms, bibl, activity*)
Koenig, G.M. *et al., Planta Med.*, 2000, **66**, 337-342 (*activity*)
Simpson, J.S. *et al., Org. Biomol. Chem.*, 2004, **2**, 939-948 (*biosynth*)
Fairweather, K.A. *et al., Org. Lett.*, 2006, **8**, 3395-3398 (*synth*)

2,5-Diisopropyl-3-methoxy-pyrazine D-699

3-Methoxy-2,5-bis(1-methylethyl)pyrazine, 9CI
[87386-79-6]

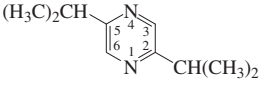


$C_{11}H_{18}N_2O$ 194.276
Prod. by *Chondromyces crocatus.*

Dickschat, J.S. *et al., Eur. J. Org. Chem.*, 2005, 4141-4153 (*isol, synth, pmr, cmr*)

2,5-Diisopropylpyrazine D-700

2,5-Bis(1-methylethyl)pyrazine, 9CI
[24294-83-5]



$C_{10}H_{16}N_2$ 164.25
Prod. by *Chondromyces crocatus* and *Paenibacillus polymyxa*. Also prod. by microorganisms living on rotting pineapple (*Ananas sativus*). Attractant of the pineapple beetle *Carpophilus humeralis.* $Bp_{0.001}$ 24-25.5°.

Zbiral, E. *et al., Annalen*, 1969, **727**, 231-233 (*synth*)
Ohta, A. *et al., Heterocycles*, 1977, **6**, 1881-1887 (*pmr*)
Matsuo, M. *et al., Org. Magn. Reson.*, 1980, **13**, 172-179 (*cmr*)
Zilkowski, B.W. *et al., J. Chem. Ecol.*, 1999, **25**, 229-252 (*isol, activity*)
Beck, H.C. *et al., FEMS Microbiol. Lett.*, 2003, **220**, 67-73 (*isol, pmr, cmr, ms*)
Schulz, S. *et al., Tetrahedron*, 2004, **60**, 3863-3872 (*isol, synth, pmr, cmr*)
Dickschat, J.S. *et al., Eur. J. Org. Chem.*, 2005, 5013-5018 (*isol, synth, pmr, cmr, ms*)

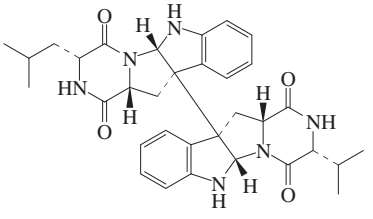
2,6-Diisopropylpyrazine D-701

2,6-Bis(1-methylethyl)pyrazine
[222048-85-3]
$C_{10}H_{16}N_2$ 164.25
Prod. by *Chondromyces crocatus.*

α-Hydroxy: 2-(1-Hydroxy-1-methylethyl)-6-isopropylpyrazine. α,α-Dimethyl-6-(1-methylethyl)pyrazine-methanol, 9CI
[870544-24-4]
$C_{10}H_{16}N_2O$ 180.249
Prod. by *Chondromyces crocatus.*

Schulz, S. *et al., Tetrahedron*, 2004, **60**, 3863-3872 (*isol, synth, pmr, cmr*)

Aspergillus niger Diketo-piperazine dimer D-702

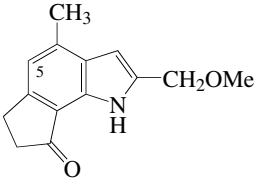


$C_{33}H_{38}N_6O_4$ 582.701
Similar to Antibiotic WIN 64745, A-1310. Prod. by *Aspergillus niger*. Powder. $[\alpha]_D$ +132 (c, 0.004 in MeOH). λ_{max} 240 ; 300 (MeCN aq.).

Ovenden, S.P.B. *et al., J. Nat. Prod.*, 2004, **67**, 2093-2095 (*isol, pmr, cmr*)

Dilemmaone A D-703

[205990-55-2]



$C_{14}H_{15}NO_2$ 229.278
Alkaloid probably from the sponge *Ectyonancora flabellata*. Off-white solid.

Mp 146-148°. Genus name freq. spelt Ectyonanchora. λ_{max} 250 (ϵ 8060); 310 (ϵ 4100) ($CHCl_3$).

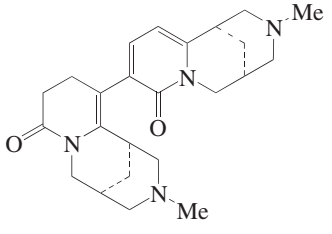
O-*De-Me:* ***Dilemmaone B***
[205990-56-3]
$C_{13}H_{13}NO_2$ 215.251
Alkaloid probably from *Ectyonancora flabellata*. Buff solid. Mp 168-170°. λ_{max} 250 (ϵ 8420); 310 (ϵ 4230) ($CHCl_3$).

5-Hydroxy: ***Dilemmaone C***
[205990-57-4]
$C_{14}H_{15}NO_3$ 245.277
Alkaloid probably from *Ectyonancora flabellata*. Pale yellow solid. Mp 187-190°. λ_{max} 250 (ϵ 7950); 310 (ϵ 12330) ($CHCl_3$).

Beukes, D.R. *et al., J. Nat. Prod.*, 1998, **61**, 699-701 (*isol, uv, ir, pmr, cmr, ms*)

Dimethamine D-704

*3-(3,4-Dihydro-12-methyl-5-cytisyl)-12-methylcytisine. 3′,4′-Dihydro-3,5′-bi(*N*-methylcytisine)*
[37551-60-3]



Absolute Configuration

$C_{24}H_{32}N_4O_2$ 408.542
Alkaloid from epigeal parts of *Thermopsis alterniflora* (Fabaceae). Cryst. (MeOH/Me_2CO). Sol. H_2O. Mp 216-217° dec. $[\alpha]_D$ +143 (c, 0.58 in MeOH).

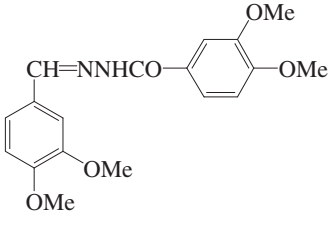
Hydrochloride (1:2): Mp 217-218°.

Dipicrate: Mp 218-219° dec.

Iskandarov, S. *et al., Khim. Prir. Soedin.*, 1972, **8**, 218; *Chem. Nat. Compd. (Engl. Transl.)*, 216 (*isol, ir, ms, pmr, struct*)

3,4-Dimethoxybenzaldehyde *N*-(3,4-dimethoxybenzoyl)hydrazone D-705

3,4-Dimethoxybenzoic acid [(3,4-dimethoxyphenyl)methylene]hydrazide, 9CI. 3,4-Dimethoxybenzoic acid 3,4-dimethoxybenzylidenehydrazide. Veratrylidenehydrazide
[102017-12-9]

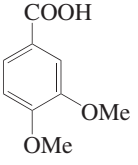


$C_{18}H_{20}N_2O_5$ 344.366
Constit. of the leaves of *Wedelia biflora*. Antifungal agent. Orange powder. Mp 140°. λ_{max} 320 (log ϵ 4.5); 368 (log ϵ 4.56); 376 (log ϵ 4.57) (no solvent reported).

Wilson, C.V. *et al., J.A.C.S.*, 1948, **70**, 1901-1903 (*synth*)
Miles, D.H. *et al., Phytochemistry*, 1993, **32**, 1427-1429 (*isol, pmr, ms*)

3,4-Dimethoxybenzoic acid D-706

Veratric acid. Protocatechuic acid dimethyl ether
[93-07-2]



$C_9H_{10}O_4$ 182.176
Isol. from *Verbascum thapsus*, *Schoenocaulon officinale*, *Lithospermum* sp., *Stephania abyssinica* and other plants. Widespread in glycosides and alkaloids in esterified form. Isol. from *Aristolochia cucurbitifolia* as the Na salt. Needles (H_2O or AcOH aq.), rhombs by subl. Mp 181-182°. pK_a 4.44 (25°).

▶ DG8598750

Me ester: [2150-38-1]
$C_{10}H_{12}O_4$ 196.202
Cryst. (EtOH aq.). Mp 59-60°. Bp 300° Bp_2 130-131°.

4-Chlorobutyl ester: 4-Chlorobutyl veratrate
[69788-75-6]
$C_{13}H_{17}ClO_4$ 272.728
Liq. $Bp_{0.5}$ 175-184°.

Chloride: [3535-37-3]
$C_9H_9ClO_3$ 200.621
Mp 71-73°. $Bp_{0.5}$ 124°.

Amide: [1521-41-1]
$C_9H_{11}NO_3$ 181.191
Cryst. (EtOH). Mp 164°.

▶ CV4367000

2-Methylpropylamide: **N-*Isobutyl-3,4-dimethoxybenzamide***. N-*(3,4-Dimethoxybenzoyl)isobutylamine*
[6302-41-6]
$C_{13}H_{19}NO_3$ 237.298
Alkaloid from *Piper amalago*. Mp 120-121°.

Anilide: [1522-67-4]
$C_{15}H_{15}NO_3$ 257.288
Cryst. (EtOH). Mp 154° Mp 162-163°. Mps 141-142 to 172-173 have been recorded.

Nitrile: 4-Cyano-1,2-dimethoxybenzene
[2024-83-1]
$C_9H_9NO_2$ 163.176
Mp 68-69°.

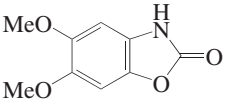
Anhydride: [24824-54-2]
$C_{18}H_{18}O_7$ 346.336
Cryst. (EtOAc or C_6H_6). Mp 124-125°.

[3943-77-9]

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 212A; 299C; 350C; 456D (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **2**, 1110B; 1259A; 1349A; 1532C (*nmr*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 1369A; 1418B (*ir*)
Matsmoto, K.U. *et al., Ber.*, 1878, **11**, 122-141 (*synth, Me ester*)
Meyer, H. *et al., Monatsh. Chem.*, 1901, **22**, 415-442 (*chloride, amide, synth*)
Allan, J. *et al., J.C.S.*, 1926, 2334-2336 (*anhydride, synth*)
Freudenberg, K. *et al., Ber.*, 1941, **74**, 1001-1002 (*Me ester, synth*)
Wittmer, F.B. *et al., J.O.C.*, 1945, **10**, 527 (*synth*)
Belg. Pat., 1962, 609 490; *CA*, **59**, 516h (*chlorobutyl ester, synth*)
Grammaticakis, P. *et al., Bull. Soc. Chim. Fr.*, 1964, 848-858 (*amide, synth*)
Locksley, H.D. *et al., J.C.S.(C)*, 1970, 392-398 (*chloride, synth*)
Wiegrebe, W. *et al., Helv. Chim. Acta*, 1976, **59**, 949 (*synth*)
de Pascual, T.J. *et al., An. Quim.*, 1978, **74**, 311 (*isol*)
Suzuki, H. *et al., Chem. Lett.*, 1983, 449-452 (*anilide, synth*)
Achenbach, H. *et al., Planta Med.*, 1986, **52**, 12-18 (*isobutylamide*)
Terada, S. *et al., Chem. Pharm. Bull.*, 1987, **35**, 2437-2442 (*2-methylpropylamide, synth, ir, pmr*)
Suzuki, H. *et al., Synthesis*, 1992, 641 (*nitrile*)
Wu, T.S. *et al., Chem. Pharm. Bull.*, 2000, **48**, 1006-1009 (*isol, Na salt*)
Daskiewicz, J.-B. *et al., J. Med. Chem.*, 2005, **48**, 2790-2804 (*anhydride*)

5,6-Dimethoxy-2(3*H*)-benzoxazolone, 9CI D-707

5,6-Dimethoxy-2-benzoxazolinone. ***Peristrophamide***
[57601-62-4]

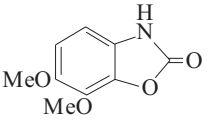


$C_9H_9NO_4$ 195.174
Alkaloid from *Peristrophe roxburghiana*. Mp 221-222°. λ_{max} 232 ; 291 (MeOH).

Qin, J.P. *et al., Yaoxue Xuebao*, 1999, **34**, 599-603; *CA*, **132**, 219502 (*isol, pmr, cmr*)

6,7-Dimethoxy-1(3*H*)-benzoxazolone D-708

2-Hydroxy-6,7-dimethoxybenzoxazole



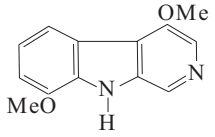
$C_9H_9NO_4$ 195.174
Constit. of the dried tissues of *Zea mays* (sweet corn). Amber cryst. (H_2O). Mp 180°.

4-Chloro: 4-Chloro-6,7-dimethoxy-2-benzoxazolinone
$C_9H_8ClNO_4$ 229.619
Isol. from light-grown sweet corn shoots (*Zea mays*). Auxin-inhibiting substance.

Klun, J.A. *et al., J. Agric. Food Chem.*, 1970, **18**, 663 (*isol, struct, synth*)

Anai, T. *et al., Phytochemistry*, 1996, **42**, 273-275 (*deriv*)

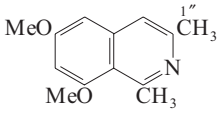
4,8-Dimethoxy-β-carboline **D-709**
*4,8-Dimethoxy-9*H*-pyrido[3,4-*b*]indole, 9CI.* ***Picrasidine P***
[99964-78-0]



$C_{13}H_{12}N_2O_2$ 228.25
Alkaloid from the root bark of *Picrasma quassioides* (Simaroubaceae). Needles (Me_2CO). Mp 198°.

Ohmoto, T. *et al., Chem. Pharm. Bull.*, 1985, **33**, 3847 (*isol, uv, ir, pmr, ms, struct*)

6,8-Dimethoxy-1,3-dimethylisoquinoline, 9CI **D-710**
[66178-59-4]



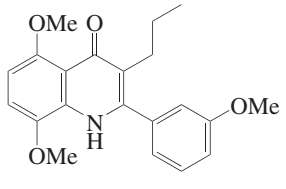
$C_{13}H_{15}NO_2$ 217.267
Alkaloid from bark of *Ancistrocladus tectorius* (Ancistrocladaceae). Needles (Et_2O or cyclohexane). Mp 91° (71-73°, 65-67°).

3,4-Dihydro: see 3,4-Dihydro-6,8-dimethoxy-1,3-dimethylisoquinoline, D-425

1″-Hydroxy: ***3-Hydroxymethyl-6,8-dimethoxy-1-methylisoquinoline***
[165816-68-2]
$C_{13}H_{15}NO_3$ 233.266
Alkaloid from bark of *Ancistrocladus tectorius* (Ancistrocladaceae). Cryst. ($MeOH/CH_2Cl_2$). Mp 164°.

Hirota, T. *et al., Chem. Pharm. Bull.*, 1978, **26**, 245 (*synth, pmr*)
Rizzacasa, M.A. *et al., Aust. J. Chem.*, 1990, **43**, 79 (*synth, pmr*)
Montagnac, A. *et al., Phytochemistry*, 1995, **39**, 701 (*isol, deriv*)

5,8-Dimethoxy-2-(3-methoxyphenyl)-3-propyl-4(1*H*)-quinolinone **D-711**
4-Hydroxy-5,8-dimethoxy-2-(3-methoxyphenyl)-3-propylquinoline
[1010070-87-7]

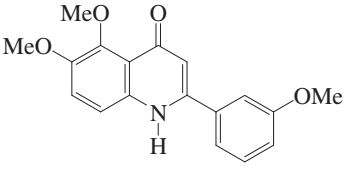


$C_{21}H_{23}NO_4$ 353.417
Alkaloid from the fruit of *Casimiroa edulis*. Cryst. ($CHCl_3$). Mp 130-131°. λ_{max} 267 (ϵ 22965); 304 (ϵ 12220); 330 (ϵ 9580) (EtOH).

*2′-Methoxy: 2-(2,3-Dimethoxyphenyl)-5,8-dimethoxy-3-propyl-4(1*H*)-quinolinone. 2-(2,3-Dimethoxyphenyl)-4-hydroxy-5,8-dimethoxy-3-propylquinoline*
[1010070-88-8]
[1048701-05-8]
$C_{22}H_{25}NO_5$ 383.443
Alkaloid from the fruit of *Casimiroa edulis*. Cryst. ($CHCl_3$). Mp 120-121°. λ_{max} 285 (ϵ 14450); 310 (ϵ 8145); 325 (ϵ 6595) (EtOH).

Awaad, A.S. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2007, **43**, 576-580 (*isol, pmr, cmr*)

5,6-Dimethoxy-2-(3-methoxyphenyl)-4(1*H*)-quinolinone, 9CI **D-712**
4-Hydroxy-5,6-dimethoxy-2-(3-methoxyphenyl)quinoline
[437659-23-9]



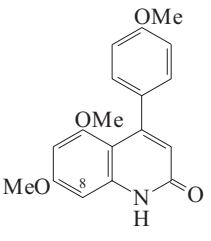
$C_{18}H_{17}NO_4$ 311.337
Alkaloid from the leaves of *Casimiroa edulis*. Amorph. powder. Mp 111-114°. λ_{max} 270 (ϵ 14300); 302 (ϵ 8140); 324 (ϵ 6590) (MeOH).

*4′-Methoxy: 2-(3,4-Dimethoxyphenyl)-5,6-dimethoxy-4(1*H*)-quinolinone, 9CI. 2-(3,4-Dimethoxyphenyl)-4-hydroxy-5,6-dimethoxyquinoline*
[437659-24-0]
$C_{19}H_{19}NO_5$ 341.363
Alkaloid from the leaves of *Casimiroa edulis*. Amorph. powder. Dec. >100°. λ_{max} 266 (ϵ 22960); 302 (ϵ 12215); 332 (ϵ 9580) (MeOH).

*2′,6′-Dimethoxy: 5,6-Dimethoxy-2-(2,3,6-trimethoxyphenyl)-4(1*H*)-quinolinone. 4-Hydroxy-5,6-dimethoxy-2-(2,3,6-trimethoxyphenyl)quinoline*
[437659-25-1]
$C_{20}H_{21}NO_6$ 371.389
Alkaloid from the fruit and leaves of *Casimiroa edulis*. Needles (hexane/EtOAc). Mp 156-157°. λ_{max} 250 (ϵ 11160); 256 (ϵ 11145); 328 (ϵ 5470) (MeOH).

Khaleel, A.E.M. *et al., Monatsh. Chem.*, 2002, **133**, 183-187 (*isol, pmr, cmr, ms*)
Awaad, A.S. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2007, **43**, 576-580 (*isol*)

5,7-Dimethoxy-4-(4-methoxyphenyl)-2(1*H*)-quinolinone, 9CI **D-713**
[132905-26-1]

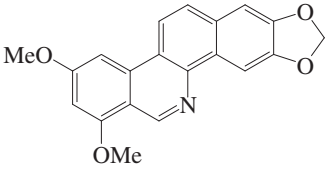


$C_{18}H_{17}NO_4$ 311.337
Alkaloid from the roots of *Chiococca alba* (Rubiaceae). Mp 300°.

8-Hydroxy: ***8-Hydroxy-5,7-dimethoxy-4-(4-methoxyphenyl)-2(1*H*)-quinolinone, 9CI***
[132905-27-2]
$C_{18}H_{17}NO_5$ 327.336
Alkaloid from the roots of *Chiococca alba* (Rubiaceae). Cryst. (CH_2Cl_2/EtOAc). Mp 237-239°.

El Abbadi, N. *et al., Planta Med.*, 1989, **55**, 603 (*isol*)
Kitahara, Y. *et al., Heterocycles*, 1990, **31**, 2085 (*synth, ir, uv, pmr, cmr*)

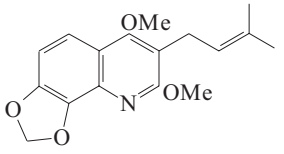
7,9-Dimethoxy-2,3-methylenedioxybenzo[*c*]phenanthridine **D-714**
[252894-93-2]



$C_{20}H_{15}NO_4$ 333.343
Alkaloid from the stem bark of *Zanthoxylum myriacanthum*. Cryst. ($CHCl_3$). Mp 217-219°.

Sukari, M.A. *et al., Fitoterapia*, 1999, **70**, 197-199 (*isol, ir, pmr, cmr*)

2,4-Dimethoxy-7,8-methylenedioxy-3-prenylquinoline **D-715**
*6,8-Dimethoxy-7-(3-methyl-2-butenyl)-1,3-dioxolo[4,5-*h*]quinoline, 9CI.* ***Isoptelepreninе***
[17232-49-4]



$C_{17}H_{19}NO_4$ 301.341
Alkaloid from stems of *Orixa japonica* (Rutaceae). Oil. $Bp_{0.05}$ 160-170° (bath).

*2′*R*,3′-Epoxide:* ***Preorixine***
[17232-51-8]
$C_{17}H_{19}NO_5$ 317.341
Alkaloid from stems of *Orixa japonica*. $[\alpha]_D^{25}$ -7.5 (c, 0.8 in $CHCl_3$).

2′,3′-Dihydroxy, 2′,3′-dihydro: see Orixine, O-113

Δ$^{3'}$-Isomer, 2′-hydroxy: 3-(2-Hydroxy-3-methyl-3-butenyl)-2,4-dimethoxy-7,8-methylenedioxyquinoline. ***Isoptelefolidine***
[156953-83-2]
$C_{17}H_{19}NO_5$ 317.341
Alkaloid from stems of *Orixa japonica* (Rutaceae). Oil. $[\alpha]_D^{27}$ +9.8 (c, 0.21 in $CHCl_3$).

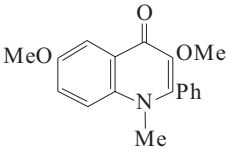
Bowman, R.M. *et al., J.C.S.(C)*, 1967, 2368 (*synth*)
Funayama, S. *et al., Phytochemistry*, 1994, **36**, 525 (*Isoptelepreninе, Isoptelefolidine*)

Funayama, S. *et al., Chem. Pharm. Bull.*, 1996, **44**, 1885-1889 (*Preorixine*)

3,6-Dimethoxy-1-methyl-2-phenyl-4(1*H*)-quinolinone, 9CI D-716

Japonine

[30426-61-0]



$C_{18}H_{17}NO_3$ 295.337

Alkaloid from the leaves of *Orixa japonica* (Rutaceae). Prisms (Et_2O/MeOH). Mp 143°.

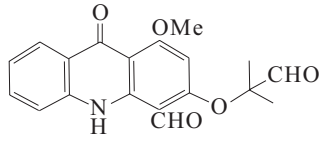
Hã-Huy-Kê, *et al., Phytochemistry*, 1970, **9**, 2199 (*isol, uv, ir, pmr, ms, struct*)

Venturella, P. *et al., Heterocycles*, 1976, **4**, 1089 (*synth*)

3-(1,1-Dimethoxy-2-oxo-ethoxy)-9,10-dihydro-1-methoxy-9-oxo-4-acridinecarboxaldehyde, 9CI D-717

1-Methoxy-3-(2-methylpropanal-2-oxy)acridin-9-one-4-carbaldehyde

[110883-40-4]



$C_{19}H_{17}NO_5$ 339.347

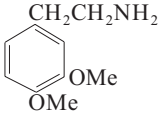
Alkaloid from the leaves of *Sarcomelicope dogniensis* (Rutaceae). Yellow amorph. solid.

Mitaku, S. *et al., Heterocycles*, 1987, **26**, 2057 (*uv, ir, pmr, struct*)

3,4-Dimethoxyphenethylamine, 8CI D-718

3,4-Dimethoxybenzeneethanamine, 9CI. ***Homoveratrylamine.*** *4-(β-Aminoethyl)-veratrole.* O,O-*Dimethyldopamine*

[120-20-7]



$C_{10}H_{15}NO_2$ 181.234

Isol. from *Desmodium tiliaefolium, Pachycereus pecten-aboriginum, Trichocereus peruvianus* and other *Trichocereus* spp., *Echinocereus merkeri* and mescal (*Lophophora williamsii*) (Fabaceae, Cactaceae). Cryst. (C_6H_6/petrol). Mp 124°. Bp_{15} 188°.

▶ SH2300000

Hydrochloride: [635-85-8]
Mp 154-155°.

▶ LD_{50} (rat, ipr) 146 mg/kg. SH3000000

N-*Formyl:* [14301-36-1]
$C_{11}H_{15}NO_3$ 209.244
Mp 40-42°. $Bp_{0.01}$ 170°.

N-*Ac:* **N-*Acetylhomoveratrylamine.*** N-*Acetyl-3,4-dimethoxyphenethylamine*
[6275-29-2]
$C_{12}H_{17}NO_3$ 223.271
Alkaloid from *Berberis sibirica* (Berberidaceae). Cryst. (C_6H_6). Mp 104-105°.

N-*(2-Hydroxy-5-methoxybenzoyl):* ***Taiwanamide A***
[1000991-96-7]
$C_{18}H_{21}NO_5$ 331.368
Alkaloid from the stems of *Piper taiwanense.* Needles (hexane). Mp 104-105°. λ_{max} 215 (log ϵ 4.81); 280 (log ϵ 4.1); 325 (log ϵ 4.15) (MeOH).

N-*(2,5-Dimethoxybenzoyl):* ***Taiwanamide B***
[1000991-97-8]
$C_{19}H_{23}NO_5$ 345.394
Alkaloid from the stems of *Piper taiwanense.* Oil. λ_{max} 217 (log ϵ 4.77); 281 (log ϵ 4.02); 314 (log ϵ 4.03) (MeOH).

N-*(3,4-Dimethoxy-*E*-cinnamoyl):* ***Rubemamine***
[121817-65-0]
$C_{21}H_{25}NO_5$ 371.432
Alkaloid from the stem bark of *Zanthoxylum rubescens* (Rutaceae). Mp 121-122°.

N-*Me:* ***3,4-Dimethoxy-*N*-methylphenethylamine***
[3490-06-0]
$C_{11}H_{17}NO_2$ 195.261
Isol. from *Pilosocereus guerreronis, Coryphantha* spp., *Echinocereus merkeri* and *Ariocarpus* spp. (Cactaceae). Oil. $Bp_{0.8}$ 120°.

N-*Me; hydrochloride:* [13078-76-7]
Cryst. (EtOH). Mp 134-135°.

▶ SH3237000

N-*Me,* N-*(3,4-dimethoxy-*E*-cinnamoyl):* ***Rubemamide***
[121817-66-1]
$C_{22}H_{27}NO_5$ 385.459
Alkaloid from the stem bark of *Zanthoxylum rubescens* (Rutaceae).

N,N-*Di-Me:* **N,N-*Dimethyl-3,4-dimethoxyphenethylamine***
[3490-05-9]
$C_{12}H_{19}NO_2$ 209.288
Alkaloid from *Echinocereus merkeri, Echinocereus cinerascens, Pilosocereus guerreronis* and *Ariocarpus scapharostrus* (Cactaceae). Mp 193-196° (as hydrochloride).

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 1292B (*ir*)

Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **2**, 619B; 619C; 620A (*nmr*)

Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 1175A (*ir*)

Org. Synth., Coll. Vol., 3, 1955, 720 (*synth*)

Viel, C. *et al., Bull. Soc. Chim. Fr.*, 1967, 431-440 (*synth*)

Agurell, S. *et al., J. Pharm. Sci.*, 1969, **58**, 1413-1414 (*isol, struct, ms, derivs*)

Ghosal, S. *et al., Phytochemistry*, 1973, **12**, 193-197 (*isol*)

Ranieri, R. *et al., J. Nat. Prod.*, 1976, **39**, 172-174 (*isol,* N-*Me*)

Bruhn, J.G. *et al., J. Nat. Prod.*, 1976, **39**, 175-177 (*isol*)

Lindgren, J.E. *et al., J. Nat. Prod.*, 1976, **39**, 464-466 (*isol, struct, derivs*)

Pardanani, J.H. *et al., J. Nat. Prod.*, 1977, **40**, 585-590 (*isol*)

Smith, T.A. *et al., Phytochemistry*, 1977, **16**, 9-18 (*rev, occur*)

Bruhn, J.G. *et al., Phytochemistry*, 1977, **16**, 622-623 (*isol, derivs*)

Kihara, M. *et al., Chem. Pharm. Bull.*, 1978, **26**, 155-160 (*synth*)

Mata, R. *et al., J. Pharm. Sci.*, 1980, **69**, 94 (*isol*)

Adesina, S.K. *et al., Phytochemistry*, 1989, **28**, 839 (*Rubemamine, Rubemamide*)

Karimov, A. *et al., Khim. Prir. Soedin.*, 1993, **29**, 424-428; *Chem. Nat. Compd. (Engl. Transl.)*, 1993, **29**, 361 (*N-Acetylhomoveratrylamine, isol*)

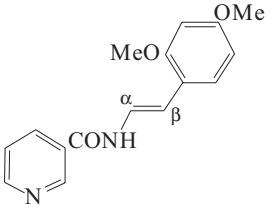
Org. Synth., 1999, **76**, 133-141 (N,N-*di-Me, synth, ir, pmr*)

Chen, I.-S. *et al., Fitoterapia*, 2007, **78**, 414-419 (*Taiwanamides A,B*)

Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, DOE200; DOI400

N-[2-(2,4-Dimethoxyphenyl)-ethenyl]-3-pyridinecarboxamide, 9CI D-719

N-*(2,4-Dimethoxystyryl)-3-pyridinecarboxamide*



$C_{16}H_{16}N_2O_3$ 284.314

(*E*)-*form* [69142-85-4]
Alkaloid from *Amyris plumieri* (Rutaceae). Mp 159-160°.

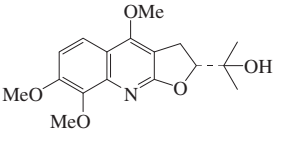
α,β-Dihydro: Mp 112-113°.

(*Z*)-*form* [95690-61-2]
Alkaloid from leaves and twigs of *Amyris plumieri* (Rutaceae). Pale-yellow plates (MeOH). Mp 124.5-125.5°.

Burke, B.A. *et al., Tet. Lett.*, 1978, 2723 (*isol, uv, ir, pmr, struct*)

Burke, B.A. *et al., Heterocycles*, 1985, **23**, 257 (*isol, uv, ir, pmr, struct*)

7,8-Dimethoxyplatydesmine D-720



(*R*)-*form*

$C_{17}H_{21}NO_5$ 319.357

(*R*)-*form* [142741-27-3]
Alkaloid from *Dictamnus dasycarpus* and *Dutaillyea baudouinii.* λ_{max} 230 ; 238 (sh) ; 262 ; 283 ; 307 ; 320 (EtOH).

(*S*)-*form*
Alkaloid from *Melicope semecarpifolia.* $[\alpha]_D^{23}$ -10.3 (c, 0.16 in $CHCl_3$).

N-*Me:* ***Veprisinium***
[79808-98-3]
$C_{18}H_{24}NO_5^{\oplus}$ 334.391

Quaternary alkaloid from the stem bark of *Vepris louisii* (Rutaceae). Shows antibacterial props. λ_{max} 205 (ϵ 24700); 222 (ϵ 46700); 255 (ϵ 49500); 327 (ϵ 15400) (MeOH) (Derep).

N-*Me, chloride:*
Amorph. powder. $[\alpha]_D^{21}$ -14.2 (c, 0.6 in MeOH).

N-*Me, perchlorate:*
Needles (MeOH/Et_2O). Mp 171-172°. $[\alpha]_D^{21}$ -11.8 (c, 0.60 in MeOH).

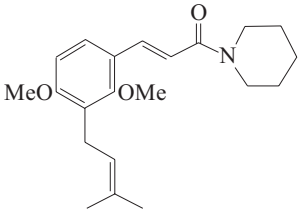
(ξ)-*form*
Alkaloid from *Melicope semecarpifolia*.

1′-Deoxy, 1′,2′-didehydro, N-*Me: 2,3-Dihydro-4,7,8-trimethoxy-9-methyl-2-(1-methylethenyl)furo[2,3-*b*]quinolinium, 9CI. **Isoptelefolonium***
[60593-03-5]
$C_{18}H_{22}NO_4^{\oplus}$ 316.376
Alkaloid from the leaves of *Ptelea trifoliata* (Rutaceae). Mp 146-148° (as perchlorate). $[\alpha]_D^{20}$ +9.83 (c, 0.006 in MeOH).

Rideau, M. *et al., Phytochemistry*, 1979, **18**, 155 (*Isoptelefolonium*)
Ayafor, J.F. *et al., Planta Med.*, 1982, **44**, 139-142 (*isol, uv, ir, pmr, ms, cd, struct*)
Muyard, F. *et al., Phytochemistry*, 1992, **31**, 1087-1089 (*isol, uv, ir, pmr, ms, struct*)
Wu, J.F. *et al., Chin. J. Phys. (Taipei)*, 1994, **46**, 447-455 (*isol*)
Chen, I.-S. *et al., J. Nat. Prod.*, 2001, **64**, 1143-1147 (*isol, pmr, cmr*)

(2,4-Dimethoxy-3-prenylcinnamoyl)piperidine D-721

1-[3-[2,4-Dimethoxy-3-(3-methyl-2-butenyl)phenyl]-1-oxo-2-propenyl]piperidine, 9CI. 2,4-Dimethoxy-3-(3-methyl-2-butenyl)cinnamic acid piperidide



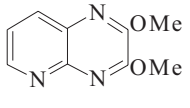
$C_{21}H_{29}NO_3$ 343.465

(*E*)-*form* [88053-60-5]
Alkaloid from the stemwood of *Excoecaria agallocha* (Euphorbiaceae). Oil.

Prakash, S. *et al., Phytochemistry*, 1983, **22**, 1836 (*isol, uv, ir, pmr, ms, struct, synth*)

2,3-Dimethoxypyrido[2,3-*b*]pyrazine, 9CI D-722

[103518-15-6]

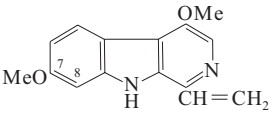


$C_9H_9N_3O_2$ 191.189
Isol. from the lipid extract of the springtail *Tetrodontophora bielanensis*. Needles. Mp 125-125.5°.

Budějinský, M. *et al., Coll. Czech. Chem. Comm.*, 1986, **51**, 956 (*isol, ms, pmr, struct*)

4,7-Dimethoxy-1-vinyl-β-carboline D-723

*1-Ethenyl-4,7-dimethoxy-9*H*-pyrido[3,4-*b*]indole*
[33867-64-0]



$C_{15}H_{14}N_2O_2$ 254.288
Alkaloid from *Perriera madagascariensis* (Simaroubaceae). Mp 145-147°. λ_{max} 226 (log ϵ 4.37); 255 (log ϵ 4.4); 284 (log ϵ 4.36); 311 (log ϵ 4.1); 351 (log ϵ 3.93) (no solvent reported).

Bourguignon-Zylber, N. *et al., Eur. J. Med. Chem. (Chim. Ther.)*, 1970, **5**, 396; *CA*, **75**, 31236j
Krebs, H.C. *et al., J. Nat. Prod.*, 1997, **60**, 1183-1185 (*isol, uv, pmr, cmr*)

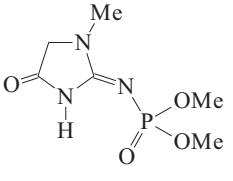
4,9-Dimethoxy-1-vinyl-β-carboline D-724

*1-Ethenyl-4,9-dimethoxy-9*H*-pyrido[3,4-*b*]indole, 9CI. **Picrasidine D***
[88142-62-5]
$C_{15}H_{14}N_2O_2$ 254.288
Alkaloid from the wood of *Picrasma quassioides* (Simaroubaceae). Needles (Me_2CO). Mp 191-192°.

Ohmoto, T. *et al., Chem. Pharm. Bull.*, 1983, **31**, 3198; 1984, **32**, 3579 (*isol, uv, ir, pmr, ms, struct, nomencl*)

Dimethyl N^2-creatininyl-phosphate D-725

[145644-08-2]



$C_6H_{12}N_3O_4P$ 221.152
Isol. from the sponge *Ulosa ruetzleri*. Mp 154-155°.

Van Wagenen, B.C. *et al., J.O.C.*, 1993, **58**, 335 (*isol, uv, ir, pmr, cmr, ms, cryst struct*)

Dimethylamine D-726

N-*Methylmethanamine, 9CI*
[124-40-3]
Me_2NH
C_2H_7N 45.084
Found in higher plants, fungi and bacteria. Rubber vulcanisation accelerator, tanning agent. Reagent used in the ms determination of the location of ethylenic bonds. Aminating agent in the manuf. of ion-exchange resins. Gas at r.t. V. sol. H_2O, sol. EtOH, Et_2O. d_4^0 0.68. Mp -96°. Bp 7°. pK_a 3.28 (25°).

► Extremely flammable, fl. p. -6°, autoignition temp. 400°. Eye, skin and respiratory tract irritant (gas or aq. solns.) Prolonged exposure can cause dermatitis and conjunctivitis. IP8750000

Hydrochloride: Dimethylammonium chloride
[506-59-2]
C_2H_8ClN 81.545
Volatile cryst. Sol. H_2O, EtOH, $CHCl_3$; insol. Et_2O. Mp 171°.

► IQ0220000

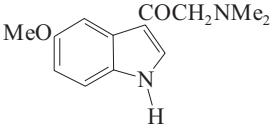
DMSO complex (1:1): Dimsulf
$C_4H_{13}NOS$ 123.219
Powerful absorbent for H_2S. Distillable liq.

[17000-01-0]

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 294B; 294C (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 470A (*nmr*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 378C (*ir*)
Werner, E.A. *et al., J.C.S.*, 1917, **111**, 850 (*synth*)
Ger. Pat., 1929, 468 895; *CA*, **23**, 846 (*synth*)
U.S. Pat., 1948, 2 456 599; *CA*, **43**, 3440g (*manuf*)
Gohlke, R.S. *et al., Acta Chim. Hung.*, 1962, **34**, 1281 (*ms*)
Suhr, H. *et al., Chem. Ber.*, 1963, **96**, 1720 (*pmr*)
Serban, S. *et al., Rev. Chim. (Bucharest)*, 1963, **14**, 451; *CA*, **60**, 5097b (*synth*)
Audier, H. *et al., Bull. Soc. Chim. Fr.*, 1964, 3034 (*use*)
Fieser and Fieser's Reagents for Organic Synthesis, Wiley, 1979, **7**, 119 (*use*)
Encyclopedia of Food and Color Additives, (ed. Burdock, G.A.), CRC Press, 1997, 846-847
Chemical Hazards of the Workplace, 2nd edn., (eds. Proctor, N.H. et al), J.B. Lippincott, 1988, 207
Ethel Browning's Toxicity and Metabolism of Industrial Solvents, 2nd edn., (ed. Snyder, R.), Elsevier, Volume 2, 1990, 73 (*tox*)
Bretherick, L. *et al., Handbook of Reactive Chemical Hazards, 4th edn., Butterworths*, 1990, 0887
Luxon, S.G. *et al., Hazards in the Chemical Laboratory, 5th edn., Royal Society of Chemistry*, 1992, 492
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, DOQ800; DOR000; DOR600

3-Dimethylaminoacetyl-5-methoxyindole D-727

*2-(Dimethylamino)-1-(5-methoxy-1*H*-indol-3-yl)ethanone, 9CI. 5-Methoxy-*N,N*-dimethyl-β-oxotryptamine*
[42883-65-8]

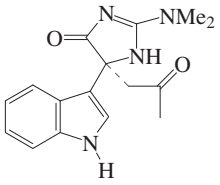


$C_{13}H_{16}N_2O_2$ 232.282
Alkaloid from the aerial parts of *Melicope leptococca* (Rutaceae).

Skaltsounis, A.L. *et al., J. Nat. Prod.*, 1983, **46**, 732-735 (*isol, uv, ir, pmr, ms, struct*)

2-(Dimethylamino)-1,5-dihydro-5-(1*H*-indol-3-yl)-5-(2-oxopropyl)-4*H*-imidazol-4-one, 9CI D-728

[205117-53-9]



$C_{16}H_{18}N_4O_2$ 298.344

Isol. from the marine tunicate *Dendrodoa grossularia*. Powder. Mp 265-266°. $[\alpha]_D$ -15 (c, 0.14 in MeOH).

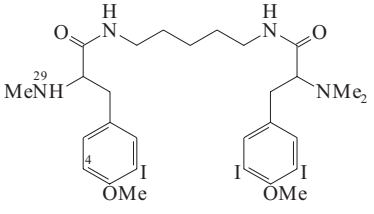
Loukaci, A. *et al., J. Nat. Prod.*, 1998, **61**, 519-522 (*isol, pmr, cmr*)

Hupp, C.D. *et al., Org. Lett.*, 2008, **10**, 3737-3739 (*synth, cryst struct*)

α-(Dimethylamino)-3,5-diiodo-*N*-[5-[[3-(3-iodo-4-methoxyphenyl)-2-(methylamino)-1-oxopropyl]-amino]pentyl]-4-methoxybenzenepropanamide, 9CI D-729

3-(3,5-Diiodo-4-methoxyphenyl)-2-dimethylamino-3′-(3-iodo-4-methoxyphenyl)-2′-methylamino-N,N′-*(1,5-pentanediyl)bispropanamide*

[149196-93-0]



$C_{28}H_{39}I_3N_4O_4$ 876.354

Alkaloid from the colonial ascidian *Aplidium* sp. Glutathione reductase inhibitor. Gum. $[\alpha]_D$ -0.74 (c, 0.24 in $CHCl_3$). λ_{max} 210 (ε 40000); 222 (ε 39000); 278 (ε 9200) (EtOH) (Berdy).

N^{29}-*Me:* ***3-(3,5-Diiodo-4-methoxyphenyl)-3′-(3-iodo-4-methoxyphenyl)-*N,N′*-(1,5-pentanediyl)bis[2-dimethylaminopropanamide]***

[149196-91-8]

$C_{29}H_{41}I_3N_4O_4$ 890.381

From *Aplidium* sp. Cytotoxic. Shows inhibition of glutathione reductase activity. Needles ($CHCl_3$/EtOAc). Mp 135-137°. $[\alpha]_D$ -0.23 (c, 0.51 in $CHCl_3$).

4-Iodo, N^{29}-*Me:* ***N,N′-(1,5-Pentanediyl)-bis[3-(3,5-diiodo-4-methoxyphenyl)-2-dimethylaminopropanamide]***

[149196-92-9]

$C_{29}H_{40}I_4N_4O_4$ 1016.277

From *Aplidium* sp. Cytotoxic. Shows inhibition of glutathione reductase activity. Needles ($CHCl_3$/EtOAc). Mp 114-116°. $[\alpha]_D$ -0.2 (c, 0.35 in $CHCl_3$). λ_{max} 207 (ε 32000); 275 (ε 8400) (EtOH) (Berdy).

Carroll, A.R. *et al., Aust. J. Chem.*, 1993, **46**, 825-832 (*isol, uv, ir, pmr, cmr, ms, struct*)

2-(Dimethylamino)ethanol D-730

Dimethyl-2-hydroxyethylamine. N-*Dimethylethanolamine.* ***Deanol, BAN.*** *Norcholine. Bimanol*

[108-01-0]

$Me_2NCH_2CH_2OH$

$C_4H_{11}NO$ 89.137

Isol. from a *Neurospora crassa* strain. Residue present in the alkaloids Cassaine in C-178 and Cassaidine, C-178. Choline precursor. CNS stimulant. Antidepressant. d_4^{20} 0.89. Bp 135°. Log P -0.58 (calc).

▶ Skin and eye irritant. Flammable, fl. p. 41° (oc), autoignition temp. 295°.

KK6125000

4-(Acetylamino)benzoate salt (1:1): Deaner. Diforene. Deanol acetamidobenzoate. Many other names

[3635-74-3]

Antidepressant. Cryst. (EtOH/EtOAc). Mp 159-161.5°.

▶ LD_{50} (mus, orl) 39.8 mg/kg. KK6300000

N-*Acetyl-L-glutamate salt (1:1): Deanol aceglumate, INN. Demanol aceglumate. Cleregil. Dardanin. Otrun. Risatarun. Rischiaril*

[3342-61-8]

Antidepressant.

▶ LZ9800000

Picrate: Mp 96-97°.

O-*Phosphate:*

$C_4H_{12}NO_4P$ 169.117

Isol from *Neurospora crassa*. Mp 175-176°.

Ac: [1421-89-2]

$C_6H_{13}NO_2$ 131.174

Bp_{80} 86-88°.

2-Propenoyl: [2439-35-2]

$C_7H_{13}NO_2$ 143.185

Bp_{12} 64°. n_D^{20} 1.4380.

▶ AS8578000

O-*Benzoyl: 2-(Dimethylamino)ethyl benzoate*

[2208-05-1]

$C_{11}H_{15}NO_2$ 193.245

d 1.01. Mp 144° (as hydrochloride). Bp_{20} 155-159° Bp_2 107-108°. n_D^{20} 1.5077.

O-*Cinnamoyl:* ***2-Dimethylaminoethyl cinnamate***

[4067-25-8]

[35241-68-0 , 35241-67-9]

$C_{13}H_{17}NO_2$ 219.283

Alkaloid from leaves of *Erythrophleum chlorostachys* (Fabaceae). Gum; cryst. (EtOH)(as hydrobromide). Mp 130° (as hydrobromide)(synthetic).

Me ether: 2-Methoxy-N,N-*dimethylethanamine, 9CI. 2-Methoxy*-N,N-*dimethylethylamine*

[3030-44-2]

$C_5H_{13}NO$ 103.164

Isol. from *Didemnum ligulum*. Bp_{757} 101°.

Et ether: 2-Ethoxy-N,N-*dimethylethanamine, 9CI*

[26311-17-1]

$C_6H_{15}NO$ 117.191

Liq. d_0^{20} 0.81. Mp 160-165° (as methiodide) Mp 119-121° (as picrate). Bp 121°.

[29870-28-8]

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 342A (*ir*)

Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 545A; 1073C (*nmr*)

Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 432A; 734A (*ir*)

Knorr, L. *et al., Ber.*, 1901, **34**, 3482 (*synth*)

Fränkel, S. *et al., Ber.*, 1918, **51**, 1660 (*synth, derivs*)

U.K. Pat., 1957, 879 259; *CA*, **56**, 14080 (*derivs*)

Schaetzle, E. *et al., Helv. Chim. Acta*, 1959, **42**, 1708 (*benzoyl*)

Wolf, B. *et al., J. Biol. Chem.*, 1959, **234**, 1068 (*phosphate*)

Fr. Pat., 1964, M2487; *CA*, **61**, 12085c (*deriv*)

Griffin, W.J. *et al., Phytochemistry*, 1971, **10**, 2793 (*cinnamoyl*)

Štokr, J. *et al., Coll. Czech. Chem. Comm.*, 1987, **52**, 1256 (*pmr, cmr, conformn*)

Negwer, M. *et al., Organic-Chemical Drugs and their Synonyms, 6th edn., Akademie-Verlag*, 1987, 244

Jaszay, Z.M. *et al., Synthesis*, 1989, 745 (*benzoyl*)

Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 1223

Kossuga, M.H. *et al., Quim. Nova*, 2007, **30**, 1194-1202 (*Me ether, isol, pmr, cmr*)

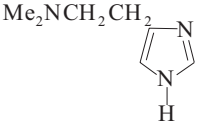
Luxon, S.G. *et al., Hazards in the Chemical Laboratory, 5th edn., Royal Society of Chemistry*, 1992, 493

Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, DOY800; DOZ000

4-[2-(Dimethylamino)-ethyl]imidazole, 8CI D-731

N,N-*Dimethyl-1*H-*imidazole-4-ethanamine, 9CI.* ***Nα,Nα-Dimethylhistamine.*** *Hippospongine*†

[673-46-1]



$C_7H_{13}N_3$ 139.2

The application of the name Hippospongine to this compound is tentative. Alkaloid from *Echinocereus blanckii*, *Echinocereus triglochidiatus*, *Echinocereus triglochidiatus neomexicanus*, *Casimiroa edulis* seeds (Cactaceae, Rutaceae), the sponges *Geodia gigas* and *Ianthella* sp., and from skin extracts of amphibians, e.g. *Leptodactylus pentadactylus labyrinthicus* and *Nyctimystes disrupta* and from basidiomycete *Coprinus comatus.*

▶ NI4840000

Hydrochloride (1:2): Mp 182-184°.

Dipicrate: Mp 229-230°.

Ackermann, D. *et al., Z. Biol. (Munich)*, 1924, **82**, 278 (*isol*)

Garforth, B. *et al., J.C.S.*, 1935, 489 (*synth*)

Huebner, C.F. *et al., J.A.C.S.*, 1949, **71**, 3942 (*synth*)

List, P.H. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1958, **291**, 502 (*isol*)

Major, R.T. *et al., J.O.C.*, 1958, **23**, 1564 (*isol*)

Ling, J.S.L. *et al., J. Pharmacol. Exp. Ther.*, 1958, **122**, 44A (*pharmacol*)

Erspamer, V. *et al., Experientia*, 1963, **19**, 346 (*occur*)

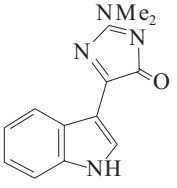
Ingle, P.H.B. *et al., J. Pharm. Pharmacol.*, 1963, **15**, 620 (*synth*)

Erspamer, V. *et al., Arch. Biochem. Biophys.*, 1964, **105**, 620 (*occur*)

German, V.F. *et al., J. Pharm. Sci.*, 1971, **60**, 495 (*isol, pmr, ms*)
Roseghini, M. *et al., Comp. Biochem. Physiol., C: Comp. Pharmacol.*, 1976, **54**, 31 (*occur*)
Roseghini, M. *et al., Z. Naturforsch., C*, 1976, **31**, 118 (*occur*)
Ferrigni, N.R. *et al., J. Ethnopharmacol.*, 1982, **5**, 359 (*isol*)
Wagner, H. *et al., Planta Med.*, 1982, **45**, 95 (*isol*)
Romero, M.L. *et al., J. Chromatogr.*, 1983, **281**, 245 (*hplc*)
Ferrigni, N.R. *et al., Rev. Latinoam. Quim.*, 1984, **14**, 131; *CA*, **101**, 23790a (*pmr, cmr*)

2-(Dimethylamino)-5-(1*H*-indol-3-yl)-4*H*-imidazol-4-one, 9CI D-732

[103590-22-3]



$C_{13}H_{12}N_4O$ 240.264

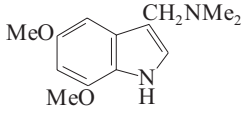
First report of a 4*H*-imidazol-4-one as a nat. prod. Isol. from the tunicate *Dendrodoa grossularia*. Orange needles (MeOH). Mp 356-358°. Sensitive to light in soln. λ_{max} 213 (ϵ 15300); 261 (ϵ 7140); 284 (ϵ 6010); 343 (ϵ 5120); 430 (ϵ 5360) (EtOH) (Derep).

Guyot, M. *et al., Tet. Lett.*, 1986, **27**, 2621-2622 (*isol, uv, ir, pmr, cmr, ms, struct, synth*)
Dalkafouki, A. *et al., Tet. Lett.*, 1991, **32**, 5325 (*synth*)

3-[(Dimethylamino)methyl]-5,7-dimethoxyindole D-733

5,7-Dimethoxy-N,N-*dimethyl-1*H-*indole-3-methanamine, 9CI. 5,7-Dimethoxygramine*

[24450-47-3]



$C_{13}H_{18}N_2O_2$ 234.297

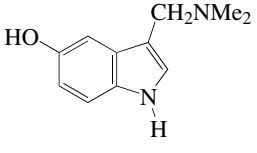
Alkaloid from the roots of *Phalaris aquatica* (Poaceae). Cryst. (C_6H_6/petrol or EtOH aq.). Mp 121-122° (119-120°).

Crohare, R. *et al., J. Het. Chem.*, 1970, **7**, 729 (*synth, pmr*)
Mulvena, D.P. *et al., Phytochemistry*, 1983, **22**, 2885 (*isol, pmr*)

3-[(Dimethylamino)methyl]-5-hydroxyindole D-734

*3-[(Dimethylamino)methyl]-1*H-*indol-5-ol, 9CI. 5-Hydroxygramine*

[83662-85-5]



$C_{11}H_{14}N_2O$ 190.244

Mp 198-199°.

Hydrochloride:
Polyhedra ($CHCl_3$). Sl. sol. H_2O, MeOH, EtOH; v. sol. Et_2O. Mp 198-199° (same value as reported for free base; possibly erroneous).

Me ether: 3-(Dimethylaminomethyl)-5-methoxyindole. 5-Methoxygramine
[16620-52-3]
$C_{12}H_{16}N_2O$ 204.271
Alkaloid detected in the roots of *Phalaris aquatica* (Gramineae). Needles (C_6H_6). Mp 128° (124-125°).

Me ether, picrate:
Amber prisms (C_6H_6/EtOH). Mp 168° (164-165°).

Et ether: 3-(Dimethylaminomethyl)-5-ethoxyindole
$C_{13}H_{18}N_2O$ 218.298
Needles (Me_2CO aq.). Mp 146°.

Et ether, hydrochloride:
Prisms (EtOH/Et_2O). Mp 150°.

Benzyl ether: [1453-97-0]
$C_{18}H_{20}N_2O$ 280.369
Cryst. (C_6H_6/hexane). Mp 138.5-139.5°. pK_a 16.9.

N-*Methoxy, Me ether: 1,5-Dimethoxy*-N,N-*dimethyl-1*H-*indole-3-methanamine.* ***3-[(Dimethylamino)methyl]-1,5-dimethoxyindole, 8CI****. 1,5-Dimethoxygramine*
[16620-50-1]
$C_{13}H_{18}N_2O_2$ 234.297
Major alkaloid from *Gymnacranthera paniculata* (Myristicaceae). Oil.

N-*Methoxy, Me ether, picrate:*
Red or golden-yellow cryst. (EtOH). Mp 154-155°.

ar,N-*Dimethoxy, Me ether:* ***3-(Dimethylaminomethyl)trimethoxyindole****.* ar-*Trimethoxygramine*
$C_{14}H_{20}N_2O_3$ 264.324
Minor alkaloid from *Gymnacranthera paniculata* (Myristicaceae). Not. obt. free of the major component. A 1,*ar,ar*-trimethoxy compd. of undetd. regiochemistry.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 662C (*Me ether, ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 134A (*Me ether, nmr*)
Davies, R.E. *et al., J.C.S.*, 1947, 191 (*Et ether*)
Bell, J.B. *et al., J.O.C.*, 1948, **13**, 547 (*Me ether, synth*)
Cook, J.W. *et al., J.C.S.*, 1951, 1203 (*Me ether*)
Ek, A. *et al., J.A.C.S.*, 1954, **76**, 5579 (*benzyl ether, ir*)
Troxler, F. *et al., Helv. Chim. Acta*, 1959, **42**, 2073 (*synth*)
Koo, J. *et al., J.O.C.*, 1959, **24**, 179 (*benzyl ether*)
Marchand, B. *et al., Chem. Ber.*, 1962, **95**, 577 (*synth*)
Johns, S.R. *et al., Aust. J. Chem.*, 1967, **20**, 1737-1742 (*1,5-Dimethoxygramine, Trimethoxygramine, Me ether, isol, uv, struct, synth, pmr, ms*)
Hojo, T. *et al., J. Chromatogr.*, 1982, **247**, 157 (*chromatog*)
Mulvena, D.P. *et al., Phytochemistry*, 1983, **22**, 2885 (*Me ether, occur*)

3-[(Dimethylamino)methyl]-7-hydroxyindole D-735

*3-[(Dimethylamino)methyl]-1*H-*indol-7-ol, 9CI. 7-Hydroxygramine*

$C_{11}H_{14}N_2O$ 190.244

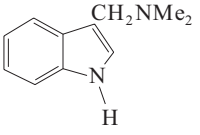
Me ether: 7-Methoxy-N,N-*dimethyl-1*H-*indole-3-methanamine, 9CI. 3-[(Dimethylamino)methyl]-7-methoxyindole.* ***7-Methoxygramine***
[46388-50-5]
$C_{12}H_{16}N_2O$ 204.271
Alkaloid from the roots of *Phalaris aquatica* (Poaceae). Cryst. (C_6H_6/petrol). Mp 107-109°.

Mulvena, D.P. *et al., Phytochemistry*, 1983, **22**, 2885 (*isol, pmr, struct*)

3-[(Dimethylamino)methyl]-indole D-736

N,N-*Dimethyl-1*H-*indole-3-methanamine, 9CI.* ***Gramine****. Donaxine. Doranine*

[87-52-5]



$C_{11}H_{14}N_2$ 174.245

Alkaloid from *Arundo donax*, *Phalaris arundinacea*, some *Lupinus* spp. and barley shoots. Also from *Acer saccharinum*, *Acer rubrum*, *Brassica oleracea* and *Desmodium pulchellum*. Antifouling agent, barnacle repellent. Mp 138-139°. pK_a 16 (25°,NH, aq. KOH).

▶ LD_{50} (mus, ipr) 122 mg/kg. NL7525000

Picrate: Mp 144-145°.

N-*Oxide:* ***Gramine* N-*oxide***
[17206-03-0]
$C_{11}H_{14}N_2O$ 190.244
Alkaloid from *Arundo donax* (Poaceae). Noncryst. Mp 122° (H_2O_2 solvate).

$N^{2'}$-*Me:* ***Gramine methosalt***
[5457-31-8]
$C_{12}H_{17}N_2^{\oplus}$ 189.28
Alkaloid from flowers of *Arundo donax* (Poaceae). Mp 168-169° (iodide). CAS no. refers to iodide.

N^{1}-*(1,1-Dimethyl-2-propenyl):* ***3-(Dimethylaminomethyl)-1-(1,1-dimethyl-2-propenyl)-1*H-*indole***
[150226-14-5]
$C_{16}H_{22}N_2$ 242.363
Prod. by *Penicillium daleae*. 5-HT receptor agonist, shows antimigraine props. Sol. MeOH. λ_{max} 223 (ϵ 12100); 273 (ϵ 4890); 279 (ϵ 5090); 289 (ϵ 4120) (MeOH) (Derep). λ_{max} 223 (ϵ 12100); 273 (ϵ 4890); 279 (ϵ 5090); 289 (ϵ 4120) (MeOH) (Berdy). λ_{max} 219 (E1%/1cm 500); 267 (E1%/1cm 118); 279 (E1%/1cm 114); 290 (E1%/1cm 93) (EtOH) (Berdy).

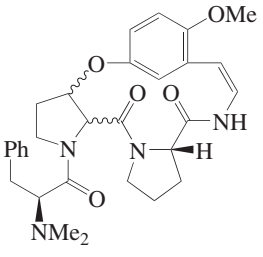
[6170-37-2]

Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 131B (*nmr*)
Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 660B (*ir*)

Kühn, H. *et al., Ber.*, 1937, **70**, 567 (*synth*)
Marion, L. *et al., J.A.C.S.*, 1951, **73**, 305 (*ir*)
Bild, N. *et al., Helv. Chim. Acta*, 1967, **50**, 1885 (*ms, oxide*)
Jamieson, W.D. *et al., Phytochemistry*, 1970, **9**, 2029 (*ms*)
Ghosal, S. *et al., Phytochemistry*, 1971, **10**, 2852 (*Gramine methosalt*)
Leete, E. *et al., Phytochemistry*, 1975, **14**, 471 (*biosynth*)
U.S. Pat., 1993, 5 233 050; *CA*, **119**, 179344 (*isol, deriv*)
Lam, Y.K.T. *et al., J. Antibiot.*, 1994, **47**, 724 (*isol, deriv*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, DYC000

1-[2-(Dimethylamino)-1-oxo-3-phenylpropyl]-2,3,3*a*,13*a*,14,15,16,18*a*-octahydro-8-methoxy-5,9-metheno-9*H*-dipyrrolo[3,2-*b*:1′,2′-*e*][1,5,8]oxadiazacyclopentadecine-13,18(1*H*,12*H*)-dione, 9CI D-737

[147471-64-5]



$C_{30}H_{36}N_4O_5$ 532.638

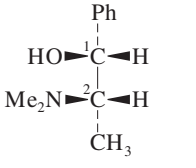
Alkaloid from flowers of *Sphaeranthus indicus* (Asteraceae). Mp 75°.

Chughtai, M.I.D. *et al., Sci. Int. (Lahore)*, 1992, **4**, 151; *CA*, **118**, 230141f (*isol*)

2-Dimethylamino-1-phenyl-1-propanol D-738

α-[1-(Dimethylamino)ethyl]benzenemethanol, 9CI

[17605-71-9]



(1*R*,2*S*)–*form*

$C_{11}H_{17}NO$ 179.261

See also references under 2-(Methylamino)-1-phenyl-1-propanol, M-386. Log P 1.3 (calc).

▶ DO4620000

(1*R*,2*S*)-*form*

(-)-erythro-*form*. **N-*Methylephedrine***. *Methylephedrine, BAN. Metheph. Methy-F*

[552-79-4]

Alkaloid from *Ephedra sinica* and *Ephedra vulgaris* (Ephedraceae). Analeptic. Needles (MeOH). Mp 87-88°. $[\alpha]_D$ -29.2 (MeOH).

Hydrochloride:

Tablets (EtOH). Sol. H_2O, EtOH; spar. sol. Me_2CO. Mp 188-189°. $[\alpha]_D$ -29.8 (H_2O).

Methiodide:

Tablets (EtOH). Mp 212-213°. $[\alpha]_D$ -21.8.

Picrate:

Cryst. (EtOH). Mp 144°.

(1*S*,2*S*)-*form*

(+)-threo-*form*. ***Methyl-ψ-ephedrine***. *Methylisoephedrine. Methylpseudoephedrine*

[51018-28-1]

Alkaloid from Ma Huang. Cryst. (petrol). Sol. most org. solvs.; spar. sol. H_2O. Mp 30°. $[\alpha]_D$ +48.1.

Methiodide:

Cryst. (EtOH). Mp 216-217°.

Picrate:

Cryst. (EtOH). Mp 152-153°.

(1*RS*,2*SR*)-*form*

(±)-erythro-*form*

Cryst. (petrol or MeOH). Mp 63.5-64.5°.

Hydrochloride: [18760-80-0]

Cryst. (Me_2CO). Mp 207-208°.

▶ LD_{50} (mus, orl) 758 mg/kg. DO5100000

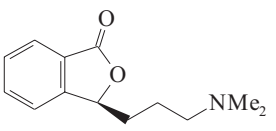
[1201-56-5 , 14222-20-9 , 21067-55-0 , 39263-91-7 , 62560-55-8 , 42151-56-4]

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 318D (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **2**, 579C; 580C (*nmr*)
Smith, S. *et al., J.C.S.*, 1927, 2056
Nagai, W.N. *et al., Annalen*, 1929, **470**, 157 (*synth*)
Leithe, W. *et al., Ber.*, 1932, **65**, 660
Smith, T.A. *et al., Phytochemistry*, 1977, **16**, 9 (*rev, occur*)
Shono, T. *et al., Tet. Lett.*, 1983, **24**, 4577 (*synth*)
Blagg, J. *et al., Chem. Comm.*, 1985, 653 (*synth*)
Miyano, S. *et al., J.O.C.*, 1985, **50**, 4350 (*resoln*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 1249
Encyclopaedia of Reagents for Organic Synthesis, (ed. Paquette, L.A.), Wiley, 1995, **5**, 3496-3501 (*use*)
Kim, H.K. *et al., Chem. Pharm. Bull.*, 2003, **51**, 1382-1385 (*pmr, anal*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, MJU750; MNN350

3-(3-Dimethylaminopropyl)-1(3*H*)-isobenzofuranone D-739

Pierardine. *3-(3-Dimethylaminopropyl)phthalide*

[24282-25-5]



$C_{13}H_{17}NO_2$ 219.283

(*S*)-*form*

Alkaloid from *Dendrobium pierardii* (Orchidaceae). Liq.; cryst. (as hydrochloride). Mp 185-186° (hydrochloride). $[\alpha]_D^{23}$ -69 (c, 1.2 in $CHCl_3$).

Elander, M. *et al., Acta Chem. Scand.*, 1969, **23**, 2177; 1971, **25**, 721 (*isol, spectra, struct, synth*)

N-[4-(Dimethylarsinoyl)butanoyl]aminoethylsulfonic acid D-740

N-*[4-(Dimethylarsinoyl)butanoyl]taurine*

[142732-42-1]

$Me_2As(O)CH_2CH_2CH_2CONHCH_2CH_2SO_3H$

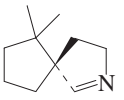
$C_8H_{18}AsNO_5S$ 315.221

Constit. of the kidney of *Tridacna maxima*. Needles. Mp 215-216°.

Francesconi, K.A. *et al., J.C.S. Perkin 1*, 1992, 1349 (*isol, synth*)

6,6-Dimethyl-2-azaspiro[4.4]non-1-ene D-741

Polyzonimine



$C_{10}H_{17}N$ 151.251

(*S*)-*form* [55811-47-7]

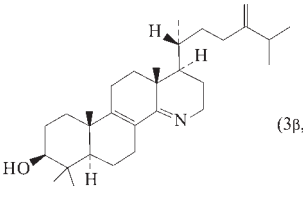
Occurs in defence secretion of the millipede *Polyzonium rosalbum*. Oil. Bp_{10} 81°. $[\alpha]_D^{20}$ +3.26 ($CHCl_3$).

Smolanoff, J. *et al., Science (Washington, D.C.)*, 1975, **188**, 734 (*isol, struct, pmr, synth*)
Sugahara, T. *et al., Chem. Comm.*, 1984, 214 (*synth*)
Takagi, Y. *et al., J. Braz. Chem. Soc.*, 2000, **11**, 578-583 (*synth, abs config*)
Mori, K. *et al., Tet. Lett.*, 2000, **41**, 6623-6625 (*synth*)

4,4-Dimethyl-15-azasterol D-742

4,4-Dimethyl-15-aza-D-*homoergosta-8,14,24(28)-trien-3-ol, 9CI*. Geotrichum *Alkaloid A 25822A. A 25822A. Antibiotic A 25822A*

[50686-99-2]



(3β,5α)–*form*

$C_{30}H_{49}NO$ 439.723

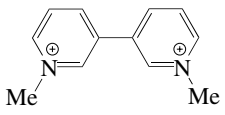
Steroidal alkaloid from cultures of *Geotrichum flavo-brunneum*. Also from *Calcarisporium thermophilum*. Antifungal agent. Sol. MeOH, $CHCl_3$; fairly sol. C_6H_6, CCl_4; poorly sol. H_2O, hexane. Mp 147° (133-136°). $[\alpha]_D^{25}$ -72 (c, 1.15 in MeOH). λ_{max} 240 (ϵ 12300); 270 (sh) (EtOH). λ_{max} 277 (13400) (EtOH/HCl).

Chamberlin, J.W. *et al., J. Antibiot.*, 1974, **27**, 992; 1975, **28**, 102 (*isol, pmr, uv, ir, struct*)
Dolle, R.E. *et al., Chem. Comm.*, 1988, 133 (*synth*)

Chrisp, P. *et al., Z. Naturforsch., C*, 1990, **45**, 179 (*isol*)

1,1′-Dimethyl-3,3′-bipyridinium(2+), 9CI D-743

N,N′-Dimethyl-3,3′-bipyridyl(2+). Metaquat
[41491-84-3]



$C_{12}H_{14}N_2^{2\oplus}$ 186.256
Quaternary alkaloid from an arrow poison of South-East Asia. Exhibits curare-like activity.

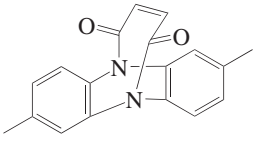
Diiodide: [63095-07-8]
$C_{12}H_{14}I_2N_2$ 440.065
Yellow cryst. Mp 300° (278-279° dec.).

Methosulfate(1:2): [118535-24-3]
$C_{14}H_{20}N_2O_8S_2$ 408.453
Cryst. (EtOH). Mp 186-190°.

Lukes, R. *et al., Chem. Listy*, 1958, **52**, 759-762 (*synth*)
Singh, S.K. *et al., Z. Naturforsch., B*, 1988, **43**, 778-784 (*synth*)
Solling, T.I. *et al., Acta Chem. Scand.*, 1998, **52**, 372-373 (*isol, synth, uv, pmr, cmr*)

2,7-Dimethyl-5,10-[2]butenophenazine-11,14-dione, 9CI D-744

[945539-89-9]

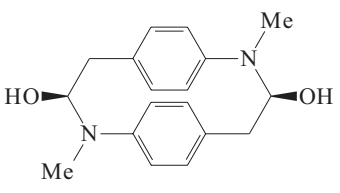


$C_{18}H_{14}N_2O_2$ 290.321
Prod. by a marine-derived *Bacillus* sp. Cytotoxic. Yellow needles (MeOH). Mp 186.7-187.4°. $[\alpha]_D^{25}$ -19.8 (c, 0.05 in $CHCl_3$). λ_{max} 240 (log ϵ 3.72); 281 (log ϵ 3.46); 289 (log ϵ 3.41); 348 (log ϵ 3.39); 364 (log ϵ 3.48); 384 (log ϵ 3.31) (MeOH).

Li, D. *et al., Arch. Pharmacal Res.*, 2007, **30**, 552-555 (*isol, pmr, cmr*)

2,9-Dimethyl-2,9-diazatricyclo[10.2.2.2^{5,8}]octadeca-5,7,12,14,15,17-hexaene-3,10-diol, 9CI D-745

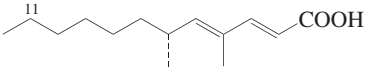
N,α′,N′,α-Cyclodi(4-methylaminobenzeneethanol)
[124190-18-7]



$C_{18}H_{22}N_2O_2$ 298.384
Alkaloid from peelings of *Citrus unshiu* (satsuma mandarin) (Rutaceae).

Matsubara, Y. *et al., CA*, 1990, **112**, 73757; **113**, 17474 (*isol, pmr, cmr, ms, struct*)

4,6-Dimethyl-2,4-dodecadienoic acid D-746



(2E,4E,6R)-form

$C_{14}H_{24}O_2$ 224.342

(2E,4E,6R)-form [152984-48-0]
Oil. $[\alpha]_D$ -63.9 (c, 2.1 in CH_2Cl_2).

Amide: 4,6-Dimethyl-2,4-dodecadienamide. ***Gymnamide***
$C_{14}H_{25}NO$ 223.358
Prod. by *Gymnascella dankaliensis* isol. from a *Halichondria* sp. Oil. $[\alpha]_D^{26}$ -47.6 (c, 0.76 in $CHCl_3$). λ_{max} 228 (sh) (log ϵ 3.71); 261 (log ϵ 4.24) (EtOH).

(2E,4E,6S)-form [138875-82-8]
Prod. by a *Phomopsis* sp. Oil. $[\alpha]_D$ +63.3 (c, 1 in CH_2Cl_2). λ_{max} 265 (no solvent reported).

11-Hydroxy: 11-Hydroxy-4,6-dimethyl-2,4-dodecadienoic acid
[253351-46-1]
$C_{14}H_{24}O_3$ 240.342
Prod. by a *Phomopsis* sp. Stereochem. not fully determined. λ_{max} 266 (no solvent reported).

Wipf, P. *et al., J.O.C.*, 1993, **58**, 7195-7203 (*synth, pmr, cmr*)
Wrigley, S.K. *et al., J. Antibiot.*, 1999, **52**, 862-872 (*isol, pmr, cmr*)
Gurjar, M.K. *et al., Heterocycles*, 2000, **53**, 143-149 (*synth*)
Amagata, T. *et al., J. Nat. Prod.*, 2006, **69**, 1384-1388 (*Gymnamide*)

Dimethylformamide, 9CI D-747

Formyldimethylamine. DMF
[68-12-2]
$HCONMe_2$
C_3H_7NO 73.094
Constit. of *Astragalus cibarius*. Manuf. by carbonylation of dimethylamine or by reaction between methyl formate and dimethylamine. Widely used aprotic solv. and reagent in org. synth. and chemical analysis. Liq. Misc. H_2O, EtOH, Et_2O, C_6H_6, $CHCl_3$. $d_4^{22.4}$ 0.95. Mp -61°. Bp 153° Bp_{39} 76°. $n_D^{22.4}$ 1.4294. Dielectric constant ϵ 36.71. Viscosity 0.802 cP.

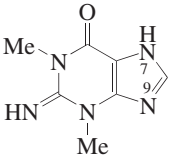
▶ Flammable, fl. p. 55°, autoignition temp. 440°. Possible human carcinogen. May increase skin absorption of other carcinogens. Skin and eye irritant. Symptoms of occup. exposure include anorexia, abdominal pain, nausea, headache, dizziness. Hepatotoxic. LD_{50} (rat, orl) 2800 mg/kg. Exp. reprod. and teratogenic effects. Reacts violently with many materials. OES: long-term 10 ppm; short-term 20 ppm (Sk). LQ2100000

[4472-41-7]

Stermitz, F.R. *et al., Phytochemistry*, 1972, **11**, 1117 (*occur*)

1,3-Dimethylguanine D-748

1,2,3,7-Tetrahydro-2-imino-1,3-dimethyl-6H-purin-6-one
[224801-13-2]



$C_7H_9N_5O$ 179.181
Isol. from the ascidian *Botrylloides leachi*. Solid. λ_{max} 201 (log ϵ 3.7); 263 (log ϵ 3.3) (MeOH).

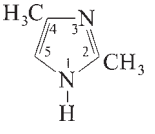
7H-form

7-N-Me: 1,2,3,7-Tetrahydro-2-imino-1,3,7-trimethyl-6H-purin-6-one. ***1,3,7-Trimethylguanine***
[110025-83-7]
$C_8H_{11}N_5O$ 193.208
Isol. from *Eudistoma maculosum* and *Latrunculia brevis*. Pale-yellow needles (MeOH/Et_2O). Mp 192-194°. λ_{max} 213 (ϵ 7900); 288 (ϵ 1600) (pH 13) (Derep). λ_{max} 264 (ϵ 2000) (pH 7) (Derep).

Perry, N.B. *et al., J. Nat. Prod.*, 1987, **50**, 307-308 (*1,3,7-Trimethylguanine*)
Lindsay, B.S. *et al., J. Nat. Prod.*, 1999, **62**, 638-639 (*isol, uv, pmr, cmr, ms*)
Berry, Y. *et al., Nat. Prod. Res.*, 2006, **20**, 479-483 (*1,3,7-Trimethylguanine*)

2,4(5)-Dimethylimidazole D-749

[930-62-1]



1H−form

$C_5H_8N_2$ 96.132
Probable artifact from the flowers of *Sophora flavescens*. Constit. of tobacco smoke. Cryst. Mp 92° (*in vacuo*). $Bp_{0.02}$ 118-120°. pK_a 8.36 (25°).

Hydrochloride: [70807-88-4]
Hygroscopic needles (EtOH/Et_2O). Mp 205°.

3H-form

3-Me: 1,2,5-Trimethyl-1H-imidazole
[1739-81-7]
$C_6H_{10}N_2$ 110.158
Yellow liq. Bp 220-240°.

3-Me; picrate: Mp 208-209°.

[126311-05-5 , 1689-36-7]

Grindley, R. *et al., J.C.S.*, 1927, 3134 (*3-Me*)
Weidenhagen, R. *et al., Ber.*, 1935, **68**, 1960 (*synth*)
Scheinbaum, M.L. *et al., Tet. Lett.*, 1971, 2205 (*synth*)
Casey, M. *et al., Chem. Comm.*, 1982, 714 (*synth*)
Murakoshi, I. *et al., Phytochemistry*, 1982, **21**, 2379 (*isol*)

Watanabe, T. *et al., J. Het. Chem.*, 1983, **20**, 1277 (*synth*)
Garcia, M.L.S. *et al., J.C.S. Perkin 2*, 1983, 1391 (*nqr*)
Lipshutz, B.H. *et al., J.O.C.*, 1983, **48**, 3745 (*synth*)

4,5-Dimethylimidazole D-750

[2302-39-8]

$C_5H_8N_2$ 96.132
Plates. Mp 120°. pK_a 8.28 (25°, 0.1*M* KCl). Several earlier syntheses have given the formate salt having the same Mp. (see D'Sa *et al*).

Hydrochloride: [53316-51-1]
Cryst. Mp 305° dec.

N-*Benzoyl:*
$C_{12}H_{12}N_2O$ 200.24
Plates (petrol). Mp 74-75°.

N-*Me: 1,4,5-Trimethyl-1*H*-imidazole*
[20185-22-2]
$C_6H_{10}N_2$ 110.158
Mp 46°. Bp_{13} 118°.

N-*Me, hydrochloride:*
Cryst. + $1H_2O$. Mp 80° (hydrate) Mp 199° (anhyd.).

N-*Me, methiodide:* Mp 158°.

N-*Me,* N′*-oxide:* [29982-09-0]
$C_6H_{10}N_2O$ 126.158
Cryst. (CH_2Cl_2/Et_2O). Mp 164-166°.

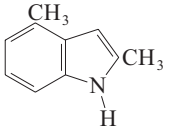
1,3-Dibenzyl: 1,3-Dibenzyl-4,5-dimethylimidazolium(1+). ***Lepidiline A***
[596093-98-0]
$C_{19}H_{21}N_2^{\oplus}$ 277.388
Alkaloid from the roots of *Lepidium meyenii* (maca). Needles (Me_2CO) (as chloride). Mp 231-233° (chloride). λ_{max} 200 (log ϵ 3.33); 258 (log ϵ 2.29); 278 (log ϵ 2.12) (MeOH (chloride)).

[86027-00-1]

Fargher, R.G. *et al., J.C.S.*, 1919, **115**, 217-260 (*synth*)
Weidenhagen, R. *et al., Ber.*, 1937, **70**, 570-583 (*synth*)
Beak, P. *et al., Tetrahedron*, 1969, **25**, 3287-3295 (*1-Me, synth, ir, uv, pmr*)
Wegner, K. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1974, **307**, 972-975 (*synth*)
Sattler, H.J. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1975, **308**, 795-798 (*1-Me, cmr*)
D'Sa, A. *et al., J. Het. Chem.*, 1991, **28**, 1819-1820 (*synth, pmr, cmr*)
Mloston, G. *et al., Helv. Chim. Acta*, 1998, **81**, 1585-1595 (*1-Me 3-oxide, synth, ir, pmr, cmr*)
Cui, B. *et al., J. Nat. Prod.*, 2003, **66**, 1101-1103 (*Lepidiline A, isol, pmr, cmr, cryst struct*)

2,4-Dimethyl-1*H*-indole, 9CI D-751

[10299-61-3]



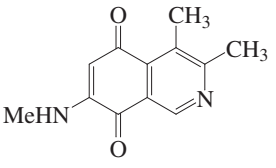
$C_{10}H_{11}N$ 145.204
Alkaloid from fruit bodies of the unpalatable mushrooms *Tricholoma sciodes* and *Tricholoma virgatum*. Liq. $Bp_{0.5}$ 94-96°. λ_{max} 223 (ϵ 19200); 268 (ϵ 4400); 271 (ϵ 4400); 273 (ϵ 4300); 278 (ϵ 2900) (EtOH).

Picrate:
Cryst. Mp 164.5°.

Marion, L. *et al., Can. J. Res., Sect. B*, 1947, **25**, 1 (*synth*)
Gassman, P.G. *et al., J.A.C.S.*, 1974, **96**, 5495 (*synth*)
McDonald, B.G. *et al., J.C.S. Perkin 1*, 1975, 1446 (*synth*)
Bard, R.R. *et al., J.O.C.*, 1980, **45**, 1546 (*synth*)
Garlaschelli, L. *et al., Tetrahedron*, 1994, **50**, 3571-3574 (*isol, uv, ir, pmr, cmr, ms*)
Söderberg, B.C. *et al., J.O.C.*, 1999, **64**, 9731-9734 (*synth*)

3,4-Dimethyl-7-(methylamino)-5,8-isoquinolinedione D-752

3,4-Dimethyl-7-(methylamino)-5,8-isoquinolinequinone

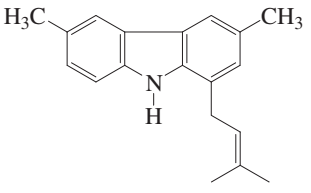


$C_{12}H_{12}N_2O_2$ 216.239
Prod. by the marine-derived *Streptomyces* sp. B1848. Red solid. λ_{max} 232 ; 273 ; 339 ; 447 (MeOH).

Shaaban, M. *et al., Dissertation*, Univ. of Göttingen, 2004, (*isol, pmr, cmr, ms*)

3,6-Dimethyl-1-(3-methyl-2-butenyl)-9*H*-carbazole D-753

*3,6-Dimethyl-1-prenyl-9*H*-carbazole*

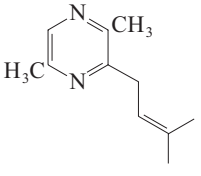


$C_{19}H_{21}N$ 263.382
Alkaloid from the root bark of *Murraya koenigii*. Cryst. (Me_2CO). Mp 168°. λ_{max} 223 (log ϵ 4.56); 235 (log ϵ 4.55); 242 (log ϵ 4.55); 253 (log ϵ 4.55); 275 (log ϵ 4.55); 327 (log ϵ 4.53); 341 (log ϵ 4.55); 357 (log ϵ 4.54); 381 (log ϵ 3.5) (EtOH).

Begum, N.A. *et al., J. Indian Chem. Soc.*, 2005, **82**, 165-171 (*isol, uv, pmr, cmr*)

2,5-Dimethyl-3-(3-methyl-2-butenyl)pyrazine, 9CI D-754

3-Isopentyl-2,5-dimethylpyrazine. 2,5-Dimethyl-3-prenylpyrazine



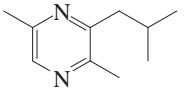
$C_{11}H_{16}N_2$ 176.261
Isol. from the ant *Iridomyrmex humilis*. Prod. by a marine bacterium.

2′,3′-Dihydro: 2,5-Dimethyl-3-(3-methylbutyl)pyrazine, 9CI
[18433-98-2]
$C_{11}H_{18}N_2$ 178.277
Isol. from the ants *Anochetus kempfi*, *Anochetus mayri*, *Mesoponera castanea* and *Mesoponera castaneicolor*. Prod. by various marine bacteria.

Cairll, G.W.K. *et al., Aust. J. Chem.*, 1974, **27**, 879
Fales, H.M. *et al., Tetrahedron*, 1988, **44**, 5045 (*deriv*)
Jones, T.H. *et al., J. Nat. Prod.*, 1999, **62**, 1343-1345 (*isol, deriv*)
Dickschat, J.S. *et al., Eur. J. Org. Chem.*, 2005, 4141-4153 (*marine isol*)
Dickschat, J.S. *et al., J. Chem. Ecol.*, 2005, **31**, 925-947 (*marine isol*)

2,5-Dimethyl-3-(2-methylbutyl)pyrazine D-755

[72668-36-1]

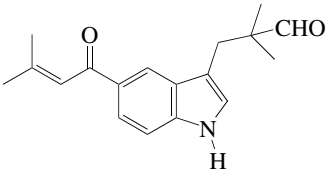


$C_{11}H_{18}N_2$ 178.277
Prod. by the marine bacterium *Sulfitobacter pontiacus*.

Dickschat, J.S. *et al., Eur. J. Org. Chem.*, 2005, 4141-4153 (*isol, synth, pmr, cmr, ms*)

α,α-Dimethyl-5-(3-methyl-1-oxo-2-butenyl)-1*H*-indole-3-propanal, 9CI D-756

*3-(2-Formyl-2-methylpropyl)-5-(3-methyl-1-oxo-2-butenyl)-1*H*-indole*
[170128-45-7]

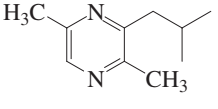


$C_{18}H_{21}NO_2$ 283.369
Alkaloid from stem bark of *Isolona maitlandii*. Oil. Poss. artifact. λ_{max} 215 (log ϵ 4.33); 267 (log ϵ 4.54); 310 (log ϵ 4.17) (MeOH).

Achenbach, H. *et al., Phytochemistry*, 1995, **40**, 967-973 (*isol, uv, ir, pmr, cmr, ms, struct*)

2,5-Dimethyl-3-(2-methylpropyl)pyrazine D-757

3-Isobutyl-2,5-dimethylpyrazine
[32736-94-0]



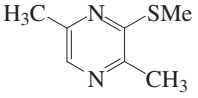
$C_{10}H_{16}N_2$ 164.25

Prod. by various marine bacteria.

Dickschat, J.S. *et al., Eur. J. Org. Chem.*, 2005, 4141-4153 (*isol, synth, pmr, cmr, ms*)

2,5-Dimethyl-3-(methylthio)-pyrazine D-758

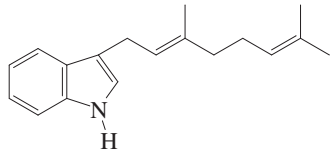
[59021-08-8]



$C_7H_{10}N_2S$ 154.235
Prod. by the marine bacterium *Sulfitobacter pontiacus*. Pale yellow liq.

Dickschat, J.S. *et al., Eur. J. Org. Chem.*, 2005, 4141-4153 (*isol, synth, pmr, cmr, ms*)

3-(3,7-Dimethyl-2,6-octadienyl)-1*H*-indole D-759



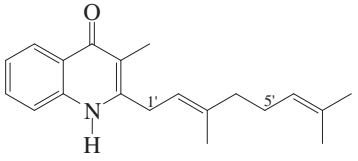
$C_{18}H_{23}N$ 253.386

(*E*)-*form*
3-Geranylindole
[102720-32-1]
Alkaloid from *Monodora angolensis*.

Mirand, C. *et al., Tet. Lett.*, 1985, **26**, 3985-3988 (*synth*)
Nkunya, M.H.H. *et al., Nat. Prod. Res.*, 2004, **18**, 253-258 (*isol*)

2-(3,7-Dimethyl-2,6-octadienyl)-3-methyl-4(1*H*)-quinolinone D-760

2-(3,7-Dimethyl-2,6-octadienyl)-3-methyl-4-quinolinol. 2-(3,7-Dimethyl-2,6-octadienyl)-4-hydroxy-3-methylquinoline



$C_{20}H_{25}NO$ 295.424

(*E*)-*form*
Antibiotic CJ 13136. *CJ 13136*
[189372-40-5]
Prod. by *Pseudonocardia* sp. CL38489. Active against *Helicobacter pylori*. Glass. Sol. MeOH, EtOAc, Me_2CO; poorly sol. H_2O. λ_{max} 213 (ϵ 25400); 242 (ϵ 26300); 322 (ϵ 9200); 335 (ϵ 9400) (MeOH).

N-*Me: 2-(3,7-Dimethyl-2,6-octadienyl)-1,3-dimethyl-4(1*H*)-quinolinone.* ***Antibiotic CJ 13217***. *CJ 13217*
[189372-43-8]
$C_{21}H_{27}NO$ 309.45
Prod. by *Pseudonocardia* sp. CL38489. Glass. Sol. MeOH, Me_2CO, EtOAc; poorly sol. H_2O. λ_{max} 213 (ϵ 16000); 247 (ϵ 15700); 331 (ϵ 6400); 344 (ϵ 7000) (MeOH).

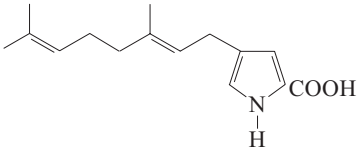
N-*(Methylthiomethyl): 2-(3,7-Dimethyl-2,6-octadienyl)-3-methyl-1-(methylthiomethyl)-4(1*H*)-quinolinone.* ***Antibiotic CJ 13536***. *CJ 13536*
[189372-45-0]
$C_{22}H_{29}NOS$ 355.543
Prod. by *Pseudonocardia* sp. CL38489. Glass. Sol. MeOH, EtOAc, Me_2CO; poorly sol. H_2O. λ_{max} 212 (ϵ 38100); 247 (ϵ 42800); 311 (ϵ 20600); 344 (ϵ 23900) (MeOH).

6′ξ,7′ξ-Epoxide, N-*Me:* ***Antibiotic CJ 13564***. *CJ 13564*
[189372-48-3]
$C_{21}H_{27}NO_2$ 325.45
Prod. by *Pseudonocardia* sp. CL38489. Glass. Sol. MeOH, Me_2CO, EtOAc; poorly sol. H_2O. $[\alpha]_D^{25}$ -17.5 (c, 0.04 in MeOH). λ_{max} 214 (ϵ 38200); 246 (ϵ 39700); 332 (ϵ 15700); 344 (ϵ 15800) (MeOH).

Dekker, K.A. *et al., J. Antibiot.*, 1998, **51**, 145-152 (*isol, uv, ir, pmr, cmr, ms*)

4-(3,7-Dimethyl-2,6-octadienyl)-1*H*-pyrrole-2-carboxylic acid, 9CI D-761

*4-Geranyl-1*H*-pyrrole-2-carboxylic acid.* ***Pyrrolostatin***. *EC 40. Antibiotic EC 40*
[144314-68-1]

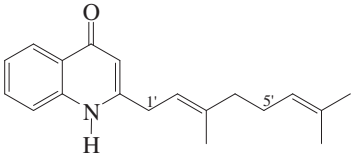


$C_{15}H_{21}NO_2$ 247.336
Prod. by *Streptomyces chrestomyceticus*. Lipid peroxidation inhibitor. Pale yellow powder. Mp 121-124° dec. λ_{max} 237 (ϵ 8500); 271 (ϵ 16100) (prob. MeOH, not reported) (Derep).

Japan. Pat., 1992, 92 95 069; *CA*, **117**, 210728d (*EC 40*)
Kato, S. *et al., J. Antibiot.*, 1993, **46**, 892 (*isol, pmr, cmr, struct, props*)
Fumoto, Y. *et al., J.O.C.*, 1999, **64**, 6518-6521 (*synth, pmr, cmr*)

2-(3,7-Dimethyl-2,6-octadienyl)-4(1*H*)-quinolinone D-762

2-(3,7-Dimethyl-2,6-octadienyl)-4-hydroxyquinoline



$C_{19}H_{23}NO$ 281.397

(*E*)-*form*
Antibiotic CJ 13565. *CJ 13565*
[189372-51-8]
Prod. by *Pseudonocardia* sp. CL38489. Active against *Helicobacter pylori*. Glass. Sol. MeOH, Me_2CO, EtOAc; poorly sol. H_2O. λ_{max} 213 (ϵ 37100); 238 (ϵ 34700); 316 (ϵ 13100); 328 (ϵ 12700) (MeOH). λ_{max} 213 (ϵ 37100); 238 (ϵ 34700); 316 (ϵ 13100); 328 (ϵ 12700) (MeOH) (Berdy).

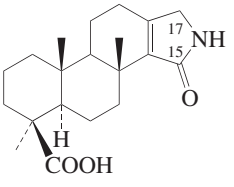
N-*Me: 2-(3,7-Dimethyl-2,6-octadienyl)-1-methyl-4(1*H*)-quinolinone.* ***Antibiotic CJ 13566***. *CJ 13566*
[189372-53-0]
$C_{20}H_{25}NO$ 295.424
Prod. by *Pseudonocardia* sp. CL38489. Glass. Sol. MeOH, Me_2CO, EtOAc; poorly sol. H_2O. λ_{max} 214 (ϵ 33400); 242 (ϵ 31500); 323 (ϵ 14200); 335 (ϵ 14700) (MeOH). λ_{max} 214 (ϵ 33400); 242 (ϵ 31500); 325 (ϵ 14200); 335 (ϵ 14700) (MeOH) (Berdy).

1′ξ-Hydroxy, N-*Me: 2-(1-Hydroxy-3,7-dimethyl-2,6-octadienyl)-1-methyl-4(1*H*)-quinolinone.* ***Antibiotic CJ 13567***. *CJ 13567*
[189372-55-2]
$C_{20}H_{25}NO_2$ 311.423
Prod. by *Pseudonocardia* sp. CL38489. Glass. Sol. MeOH, Me_2CO, EtOAc; poorly sol. H_2O. $[\alpha]_D^{25}$ +66.3 (c, 0.57 in MeOH). λ_{max} 214 (ϵ 38000); 243 (ϵ 37000); 324 (ϵ 16400); 337 (ϵ 17500) (MeOH). λ_{max} 214 (ϵ 38000); 243 (ϵ 37000); 324 (ϵ 16400) (MeOH) (Berdy).

$\Delta^{1'}$-Isomer, 3′ξ-hydroxy, N-*Me: 2-(3-Hydroxy-3,7-dimethyl-1,6-octadienyl)-1-methyl-4(1*H*)-quinolinone.* ***Antibiotic CJ 13568***. *CJ 13568*
[189372-57-4]
$C_{20}H_{25}NO_2$ 311.423
Prod. by *Pseudonocardia* sp. CL38489. Glass. Sol. MeOH, EtOAc, Me_2CO; poorly sol. H_2O. $[\alpha]_D^{25}$ -51.4 (c, 0.03 in MeOH). λ_{max} 219 (ϵ 23500); 252 (ϵ 38600); 330 (sh) ; 339 (ϵ 15200) (MeOH). λ_{max} 219 (ϵ 23500); 252 (ϵ 38600); 339 (ϵ 15200) (MeOH) (Berdy).

Dekker, K.A. *et al., J. Antibiot.*, 1998, **51**, 145-152 (*isol, uv, ir, pmr, cmr, ms*)

4,8-Dimethyl-15-oxo-16-aza-18-norandrost-13-ene-4-carboxylic acid D-763



$C_{20}H_{29}NO_3$ 331.454

(4β,5α)-*form*
N-*(2-Phenylethyl):* ***Haumanamide***
[141266-06-0]
$C_{28}H_{37}NO_3$ 435.605
Alkaloid from a *Spongia* sp. Cytotoxic agent. Powder. $[\alpha]_D$ -163.2 (c, 0.13 in $CHCl_3$). λ_{max} 250 (ϵ 340) (EtOH) (Derep).

N-*(2-Imidazol-5-ylethyl):* ***Spongolactam A***
$C_{25}H_{35}N_3O_3$ 425.57
Alkaloid from a *Spongia* sp. Powder. $[\alpha]_D^{25}$ -37 (c, 0.04 in MeOH). λ_{max} 208 (ε 16000); 238 (sh) (ε 3700) (MeOH).

N-*Carboxymethyl:* ***Spongolactam C***
$C_{22}H_{31}NO_5$ 389.491
Alkaloid from a *Spongia* sp. Powder. $[\alpha]_D^{27}$ -30 (c, 0.02 in MeOH). λ_{max} 215 (ε 13000); 243 (sh) (ε 3300) (MeOH).

Pham, A.T. *et al., Tet. Lett.*, 1992, **33**, 1147-1148 (*Haumanamide*)
Mori, D. *et al., J.O.C.*, 2007, **72**, 7190-7198 (*Spongolactams A,C*)

4,8-Dimethyl-17-oxo-16-aza-18-norandrost-13-ene-4-carboxylic acid D-764

$C_{20}H_{29}NO_3$ 331.454

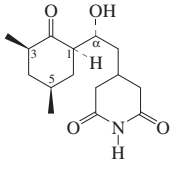
(4β,5α)-*form*

N-*(2-Imidazol-5-ylethyl):* ***Spongolactam B***
[952514-16-8]
$C_{25}H_{35}N_3O_3$ 425.57
Isol. from a *Spongia* sp. Powder. $[\alpha]_D^{25}$ -12 (c, 0.03 in MeOH). λ_{max} 208 (ε 13000); 238 (sh) (ε 3400) (MeOH).

Mori, D. *et al., J.O.C.*, 2007, **72**, 7190-7198 (*isol, pmr, cmr*)

4-[2-(3,5-Dimethyl-2-oxocyclohexyl)-2-hydroxyethyl]-2,6-piperidinedione, 9CI D-765

[17280-60-3]



(1*R*,3*R*,5*S*,α*R*)-*form*

$C_{15}H_{23}NO_4$ 281.351
Glutarimide antibiotic.

(1*R*,3*R*,5*S*,α*R*)-*form*
Isocycloheximide
[6746-42-5]
Isol. from *Streptomyces griseus.* Active against *Saccharomyces pastorianus.* Possesses 30% of Cycloheximide activity. Sol. H_2O, $CHCl_3$, MeOH; poorly sol. hexane. Mp 101-102°. $[\alpha]_D^{23}$ +36 (c, 10 in MeOH). λ_{max} 287 (MeOH) (Berdy).
▶ LD_{50} (mus, ipr) 500 mg/kg. MA4375100

(1*R*,3*R*,5*S*,α*S*)-*form*
α-Epiisocycloheximide. *Neoisocycloheximide*
[94799-82-3]
Isol. from Nongkang 101. Antifungal agent. Cryst. (EtOAc/Et_2O). Mp 130-131°.

(1*R*,3*S*,5*S*,α*R*)-*form*
Naramycin B
[642-81-9]
From *Streptomyces naraensis* and *Streptomyces griseus.* Active against fungi and yeasts. Possesses herbicidal props. Plates. Sol. MeOH, H_2O, $CHCl_3$; fairly sol. EtOAc; poorly sol. hexane. Mp 113°. $[\alpha]_D^{22}$ +55.8 (c, 5 in MeOH). λ_{max} 292 (ε 31) (MeOH) (Berdy).
▶ LD_{50} (mus, ipr) 70 mg/kg. QN4555000

(1*S*,3*S*,5*S*,α*R*)-*form*
Cycloheximide, USAN. *Cycloheximide, INN. Actidione. Acti-Aid. Naramycin. Naramycin A. NSC 185. U 4527*
[66-81-9]
From *Streptomyces griseus.* Antifungal agent. Active against leaf blight and rust diseases. Now superseded. Rodent repellent. Cryst. (H_2O). Mp 119.5-121°. $[\alpha]_D^{29}$ -33.8 (c, 1 in $CHCl_3$). pK_a 11.2. Log P -0.49 (calc). Unstable in alkali.
▶ Skin irritant. LD_{50} (mus, ipr) 100 mg/kg; LD_{50} (rat, orl) 2 mg/kg. Exp. reprod. and teratogenic effects. MA4375000

Ac: Mp 150.2°. $[\alpha]_D^{25}$ +24.6 (c, 3.7 in MeOH).

4-Nitrobenzoyl: Mp 215-220° dec.

α-Ketone: ***Dehydroactidione.*** *Dehydrocycloheximide*
[363-27-9]
$C_{15}H_{21}NO_4$ 279.335
From *Streptomyces noursei* and other *Streptomyces* spp. Cryst. (EtOH). Mp 178°. $[\alpha]_D^{20}$ -29.8 (c, 2 in dioxan).

1,6-Didehydro: ***Inactone***
$C_{15}H_{21}NO_4$ 279.335
From *Streptomyces griseus.* Needles. Sol. H_2O, MeOH, $CHCl_3$; fairly sol. C_6H_6. Mp 116°. $[\alpha]_D$ -55 (H_2O). Only 1.2% as biol. active as Cycloheximide. λ_{max} 331 (ε 70) (EtOH) (Berdy).

*3*R-*Hydroxy:* ***Streptovitacin C2***
[103957-20-6 , 103957-21-7]
$C_{15}H_{23}NO_5$ 297.35
Glutarimid-type antibiotic. Prod. by *Streptomyces griseus.* Shows antitumour activity. Cryst. Sol. MeOH, EtOAc, H_2O; fairly sol. $CHCl_3$, Et_2O; poorly sol. hexane. Mp 91-96°. λ_{max} 236 ; 263 (H_2O) (Berdy).

4ξ-Hydroxy: ***Streptovitacin B***
[634-50-4]
[11040-33-8]
$C_{15}H_{23}NO_5$ 297.35
Glutarimid-type antibiotic. Produced by *Streptomyces griseus.* Shows antitumour activity. Cryst. Sol. H_2O, EtOAc, MeOH; fairly sol. $CHCl_3$, Et_2O; poorly sol. hexane. Mp 124-128°. λ_{max} 232 ; 264 (H_2O) (Berdy).

4ξ-Hydroxy, di-Ac: Mp 155-158°.

*5*R-*Hydroxy:* ***Streptovitacin A.*** *5-Hydroxycycloheximide. Resactin. NSC 39147. U 9361. Antibiotic U 9361*
[523-86-4]
$C_{15}H_{23}NO_5$ 297.35
Glutarimid-type antibiotic. Produced by *Streptomyces griseus.* Egg-laying inhibitor of red spider mites in fruit tree pest control. Also used in aphid control. Shows antitumour activity. Cryst. Sol. H_2O, EtOAc, MeOH; fairly sol. $CHCl_3$, Et_2O; poorly sol. hexane. Mp 156-159°. λ_{max} 232 ; 244 ; 262 (H_2O) (Berdy).
▶ MA4900000

*5*R-*Acetoxy:* ***Streptovitacin E73.*** *SF 2441. Antibiotic SF 2441. 5-Acetoxycycloheximide. 4-Acetoxycycloheximide*
[2885-39-4]
$C_{17}H_{25}NO_6$ 339.388
Isol. from *Streptomyces albulus.* Cryst. Mp 140° Mp 165-168°. $[\alpha]_D^{25}$ -8.8 (c, 1 in MeOH).
▶ MA5075000

*5*R-*Acetoxy, α-Ac:*
Needles (CH_2Cl_2/Et_2O). Mp 177-178°.

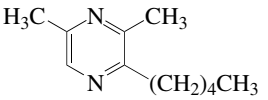
(1*R*,3*S*,5*S*,α*S*)-*form*
Mp 98.5-99.5°. $[\alpha]_D^{20}$ +74.7 (c, 0.55 in MeOH).

(1*S*,3*S*,5*S*,α*S*)-*form*
Mp 106-107°. $[\alpha]_D^{20}$ -23.5 (c, 2.5 in MeOH).

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 798C (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 1305C (*nmr*)
Whiffen, A.J. *et al., J.A.C.S.*, 1947, **69**, 474 (*isol*)
Kornfeld, E.C. *et al., J.A.C.S.*, 1949, **71**, 150 (*struct*)
Raul, R. *et al., Bull. Soc. Chim. Fr.*, 1955, 1316 (*isol*)
Eble, T.E. *et al., Antibiot. Annu.*, 1958, 535 (*Streptovitacins, purifn, props*)
Herr, R.R. *et al., J.A.C.S.*, 1959, **81**, 2595 (*Streptovitacins, struct*)
Rao, K.V. *et al., J.A.C.S.*, 1960, **82**, 1127; 1129 (*Streptovitacin E73*)
Suzuki, M. *et al., Chem. Pharm. Bull.*, 1963, **11**, 582; 589 (*synth*)
Starkovsky, N.A. *et al., Tet. Lett.*, 1964, 919 (*abs config*)
Rouzard, J. *et al., Bull. Soc. Chim. Fr.*, 1965, 2030 (*Streptovitacins, pmr, stereochem*)
Johnson, F. *et al., J.A.C.S.*, 1966, **88**, 149 (*synth*)
U.S. Pat., 1967, 3 305 554; *CA*, **66**, 98487z (*Streptovitacins, struct, manuf*)
Johnson, F. *et al., J.O.C.*, 1968, **33**, 904 (*Streptovitacin A, struct*)
Sayers, J. *et al., J.A.C.S.*, 1977, **99**, 3848 (*cryst struct*)
Jeffs, P.W. *et al., J.A.C.S.*, 1981, **103**, 6185 (*biosynth, cmr*)
Berg, D. *et al., Z. Naturforsch., C*, 1982, **37**, 1100 (*isol, props*)
Kudo, S. *et al., Agric. Biol. Chem.*, 1984, **48**, 2315; 2739; 1985, **49**, 2919 (*synth, stereochem, bibl*)
Jost, J.L. *et al., Drugs Pharm. Sci.*, 1984, **22**, 531 (*rev*)
Ye, D. *et al., CA*, 1985, **102**, 92566 (*isol*)
Dangerous Prop. Ind. Mater. Rep., 1989, **9**, 55 (*tox*)
Perry, N.B. *et al., Magn. Reson. Chem.*, 1989, **27**, 624 (*pmr, conformn*)
Kondo, H. *et al., Agric. Biol. Chem.*, 1990, **54**, 1531 (*Streptovitacins, synth*)
Pesticide Manual, 9th edn., 1991, No. 3600
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 1125
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, CPE750

3,5-Dimethyl-2-pentylpyrazine D-766

[50888-62-5]

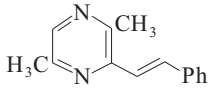


$C_{11}H_{18}N_2$ 178.277
Constit. of the glands of various ants incl. *Brachyponera* sp. and *Streblognathus* sp.

Longhurst, C. *et al., J. Insect Physiol.*, 1978, **24**, 833-837 (*isol*)
Jones, T.H. *et al., J. Chem. Ecol.*, 1998, **24**, 125-134 (*isol, ms*)

2,5-Dimethyl-3-(2-phenylethenyl)pyrazine, 9CI D-767

2,5-Dimethyl-3-styrylpyrazine



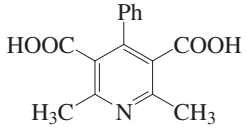
$C_{14}H_{14}N_2$ 210.278

(*E*)-*form* [54290-13-0]
Component of defence secretion of ant *Iridomyrmex humilis*. Oil. Bp_3 117-122°. Converts into (*Z*)-form on exposure to light.

(*Z*)-*form*
Component of the defence secretion of *Iridomyrmex humilis*. Oil. Bp_3 105-118°. Possible artifact.

Cavill, G.W.K. *et al., Aust. J. Chem.*, 1974, **27**, 879-889 (*isol, uv, pmr*)
Akita, Y. *et al., Chem. Pharm. Bull.*, 1986, **34**, 1447-1458 (*synth, (E)-form, pmr*)

2,6-Dimethyl-4-phenyl-3,5-pyridinedicarboxylic acid D-768



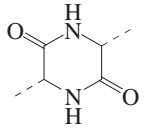
$C_{15}H_{13}NO_4$ 271.272

Di-Et ester:
$C_{19}H_{21}NO_4$ 327.379
Alkaloid from the rhizomes of *Jatropha elliptica*. Multidrug resistance reversal agent. Powder (hexane). Mp 60-61°.

Marquez, B. *et al., Phytochemistry*, 2005, **66**, 1804-1811 (*di-Et ester, isol, pmr, cmr, ms*)

3,6-Dimethyl-2,5-piperazinedione, 9CI D-769

Lactimide. Alanine cyclic anhydride. Cyclo(alanylalanyl). Alanine anhydride. Dialanine dianhydride. Dialanine anhydride
[5625-46-7]



(3*R*,6*R*)-*form*

$C_6H_{10}N_2O_2$ 142.157
► TL6380150

(3*R*,6*R*)-*form*
D-D-form. (-)-cis-*form*
N,N′-*Di-Ph:* [174390-96-6]
$C_{18}H_{18}N_2O_2$ 294.352
Prisms (toluene). Mp 188-189°. $[\alpha]_D^{20}$ -30.8.

(3*S*,6*S*)-*form*
L-L-form. (+)-cis-*form*
[5845-61-4]
Constit. of the roots of *Psammosilene tunicoides*. Cryst. (H_2O). Mp 272° (289°). $[\alpha]_D^{20}$ +29.1 (EtOH aq.). $[\alpha]_D^{25}$ +26.4 (c, 1.3 in H_2O).

N-*Me: 1,3,6-Trimethyl-2,5-piperazinedione*
[59042-86-3]
$C_7H_{12}N_2O_2$ 156.184
Mp 116-117°. $[\alpha]_D^{25}$ +63.7 (c, 3 in $CHCl_3$).

(3*R,6*R**)-*form***
N-*Me,* N′-E-*cinnamoyl: **Nigerazine A**. I 639A. Antibiotic I 639A*
[92008-50-9]
$C_{16}H_{22}N_2O$ 258.363
Prod. by *Aspergillus niger*. Inhibits plant root growth. Oil. Sol. MeOH, C_6H_6, Me_2CO, $CHCl_3$; fairly sol. H_2O. λ_{max} 280 (ε 21900) (MeOH) (Berdy).

(3*RS*,6*RS*)-*form*
(±)-cis-*form*
[72904-45-1]
Needles or leaflets. Sol. H_2O. Mp 279°.

(3*RS*,6*SR*)-*form*
trans-*form*
[35590-65-9]
Cryst. or plates (H_2O) (dimorph.). Opt. inactive (*meso*-).

N-*(2E,4E-Hexadienoyl): **Nigragilline***
[24779-38-2]
$C_{13}H_{22}N_2O$ 222.33
Alkaloid from *Aspergillus phoenicis* and other spp. in the *Aspergillus niger* group. Insecticide. Viscous liq. Sol. $CHCl_3$, Et_2O. Mp 179-179.5° (as picrate). $[\alpha]_D^{24}$ +107.4 (c, 2.5 in $CHCl_3$). λ_{max} 262 (ε 26200) (MeOH) (Berdy).

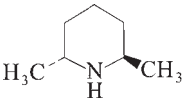
N-*Me,* N′-E-*cinnamoyl: 1,2,5-Trimethyl-4-(1-oxo-3-phenyl-2-propenyl)piperazine. 1-Cinnamoyl-2,4,5-trimethylpiperazine. **Nigerazine B**. I 639B. Antibiotic I 693B*
[85982-75-8]
[87980-22-1]
$C_{16}H_{22}N_2O$ 258.363
Prod. by *Aspergillus niger* and *Alternaria brassicae*. Shows plant growth inhibitory props. Oil. $[\alpha]_D^{19}$ +103.2 (c, 1.1 in MeOH). Not a *meso*-compd. owing to the differing N groups. Abs. config. not determined. λ_{max} 280 (MeOH).
► TM2483300

[23927-13-1]

Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 1249A (*nmr*)
Kopple, K.D. *et al., J.A.C.S.*, 1956, **78**, 6199 (*synth*)
Zahn, H. *et al., Annalen*, 1957, **605**, 212 (*synth*)
Augustin, M. *et al., Annalen*, 1967, **705**, 185 (*synth*)
Caesar, F. *et al., Pharm. Acta Helv.*, 1969, **44**, 676 (*Nigragilline*)
Sletton, E. *et al., J.A.C.S.*, 1970, **92**, 172 (*synth*)
Tul'chinski, V.M. *et al., Khim. Prir. Soedin.*, 1973, 779; *Chem. Nat. Compd. (Engl. Transl.)*, 1973, 745 (*ir*)
Hagler, A.T. *et al., J.A.C.S.*, 1974, **96**, 5327 (*cryst struct*)
Kralj, B. *et al., Biomed. Mass Spectrom.*, 1975, **2**, 215 (*ms*)
Kawabata, Y. *et al., Makromol. Chem.*, 1975, **176**, 2797 (*synth*)
Schöllkopf, V. *et al., Angew. Chem.*, 1979, **91**, 922 (*synth*)
Kricheldorf, H.R. *et al., Org. Magn. Reson.*, 1980, **13**, 52 (*cmr*)
Iwamoto, T. *et al., Agric. Biol. Chem.*, 1983, **47**, 739; 1985, **49**, 3323 (*Nigerazines*)
Japan. Pat., 1983, 83 146 289; *CA*, **100**, 4788u (*Nigerazines*)
Cheam, T.C. *et al., Spectrochim. Acta A*, 1988, **44**, 185 (*cryst struct, ir*)
Dahiya, J.S. *et al., Phytochemistry*, 1991, **30**, 2825-2828 (*Nigerazine B*)
Bazuik, V.A. *et al., Synthesis*, 1992, 449 (*synth*)
D'Angeli, F. *et al., J.O.C.*, 1996, **61**, 1252 (*N,N-Di-Ph synth, pmr, cryst struct*)
Ding, Z. *et al., Zhongcaoyao*, 2000, **31**, 803-805; *CA*, **134**, 323448 (*isol*)
Cole, R.J. *et al., Handbook of Toxic Fungal Metabolites*, Academic Press, 1981, 798 (*Nigragilline*)

2,6-Dimethylpiperidine D-770

Lupetidine, 8CI. ***Nanofin, INN***. *Nanophyn*
[504-03-0]



(2*R*,6*R*)−*form*

$C_7H_{15}N$ 113.202
Log P 1.59 (calc).
► Highly flammable, fl. p. 16°. OK5775000

(2*R*,6*R*)-*form* [14231-78-8]
Alkaloid from *Nanophyton erinaceum* (Chenopodiaceae). Ganglion blocking agent. Oil. $[\alpha]_D$ -43.02 (neat).

Hydrochloride: [5072-45-7]
Mp 243-244° Mp 280-282°. $[\alpha]_D^{22}$ +12.4 (c, 0.3 in EtOH).
► OK5785000

N-*Me: **1,2,6-Trimethylpiperidine***
$C_8H_{17}N$ 127.229
Obt. from *Nanophyton erinaceum* (Chenopodiaceae).

(2*S*,6*S*)-*form* [40250-84-8]
Oil. $[\alpha]_D$ +12.5 (c, 0.5 in EtOH).

(2*RS*,6*RS*)-*form*
(±)-trans-*form*
[10066-29-2]
Oil. Bp 136-138°.

Hydrochloride:
Cryst. (EtOAc/AcOH). Mp 236-238°.

Picrate: Mp 144-146°.

N-*Me:*Bp 154-155°.

N-*Me, picrate:* Mp 244-245°.

(2*RS*,6*SR*)-*form*
cis-*form*
[766-17-6]
Oil. Bp 127-128°. pK_a 11.07 (25°).

N-*Me:*Bp_{12} 50-55°. pK_a 10.49 (25°).

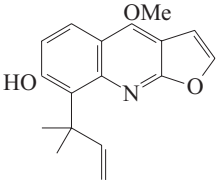
N-*Me, picrate:* Mp 225°.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 360C (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 568B (*nmr*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 451D (*ir*)

Marcuse, A. *et al., Ber.*, 1899, **32**, 2528 (*synth*)
Adkins, H. *et al., J.A.C.S.*, 1934, **56**, 2427 (*synth*)
Kuzovkov, A.D. *et al., Zh. Obshch. Khim.*, 1950, **20**, 1524 (*isol*)
U.S. Pat., 1957, 2 813 100; *CA*, **52**, 6414f (*synth*)
Vidal-Beretervide, K. *et al., J. Pharmacol. Exp. Ther.*, 1966, **152**, 181 (*pharmacol*)
Hill, R.K. *et al., J.O.C.*, 1966, **31**, 3451 (*abs config*)
Fieser and Fieser's Reagents for Organic Synthesis, Wiley, 1969, **2**, 156 (*use*)
Kawazoe, Y. *et al., Chem. Pharm. Bull.*, 1971, **19**, 429 (*synth, pmr*)
Lecomte, C. *et al., Cryst. Struct. Commun.*, 1975, **4**, 477 (*cryst struct*)
House, H.O. *et al., J.O.C.*, 1976, **41**, 863 (*synth, deriv*)
Duthaler, R.O. *et al., J.A.C.S.*, 1977, **99**, 8406 (*synth*)
Frazer, R.R. *et al., Tet. Lett.*, 1982, **23**, 4195 (*cmr*)
Erra-Balsells, R. *et al., Aust. J. Chem.*, 1988, **41**, 103 (*pmr, cmr, ms*)
Freville, S. *et al., Tetrahedron*, 1997, **53**, 8447 (*synth*)
Adamo, M.F.A. *et al., Synth. Commun.*, 1999, **29**, 1747-1756 (*2S,6S-form, synth*)

8-(1,1-Dimethyl-2-propenyl)-4-methoxyfuro[2,3-*b*]quinolin-7-ol, 9CI D-771

8-(1,1-Dimethylallyl)confusameline
[116987-98-5]

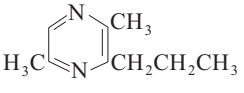


$C_{17}H_{17}NO_3$ 283.326
Alkaloid from the roots of *Haplophyllum glabrinum* (Rutaceae). Needles (Me_2CO). Mp 118-119°.

Rózsa, Zs. *et al., Phytochemistry*, 1988, **27**, 2369 (*isol, uv, pmr, ms, struct*)

2,5-Dimethyl-3-propylpyrazine, 9CI D-772

[18433-97-1]



$C_9H_{14}N_2$ 150.223
Minor component of secretion of the ant *Iridomyrmex humilis.*

Cavill, G.W.K. *et al., Aust. J. Chem.*, 1974, **27**, 879-889 (*occur*)

3,5-Dimethyl-2-propylpyrazine, 9CI D-773

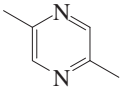
[32350-16-6]

$C_9H_{14}N_2$ 150.223
Volatile constit. of roasted coconut, cooked shrimp and roast beef. Present in cocoa. Characterised spectroscopically.

Flament, I. *et al., Helv. Chim. Acta*, 1971, **54**, 1911-1913 (*synth, ms, occur, beef*)
U.S. Pat., 1975, 3 881 025; *CA*, **78**, 109541p (*synth, ms*)
Jinap, S. *et al., J. Sci. Food Agric.*, 1998, **77**, 441-448 (*occur, cocoa*)

2,5-Dimethylpyrazine, 9CI D-774

FEMA 3272
[123-32-0]



$C_6H_8N_2$ 108.143
Component of urinary signalling pheromone in the tree shrew *Tupaia belangeri* and the pine vole *Microtus pinetorum*. Prod. by *Chondromyces crocatus.* Isol. from an arctic marine bacterium. Used as flavour additive and odorant in foods. Liq. or solid with potato chip flavour. Sol. H_2O, EtOH, Et_2O. Mp 15°. Bp 155°. pK_{a1} 1.85; pK_{a2} -4.6 (27°, H_2SO_4 aq.). pK_{a1} 1.99; pK_{a2} -4.42 (25°, H_2O). Steam-volatile. Odour threshold 1800 ppb in H_2O.

▶ Fl. p. 64° (oc). LD_{50} (rat, orl) 1020 mg/kg. UQ2800000

Picrate: Mp 157°.

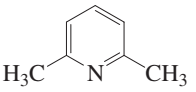
Mono-oxide: [6890-37-5]
$C_6H_8N_2O$ 124.142
Needles (C_6H_6). Mp 105-108°.
Subl.0.001 100.

1,4-Dioxide: [6890-38-6]
$C_6H_8N_2O_2$ 140.141
Needles ($CHCl_3$). Mp 280° dec.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 840D (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 398C (*nmr*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 1556C (*ir*)
Newbold, G.T. *et al., J.C.S.*, 1947, 1183-1185 (*1-oxide, 1,4-dioxide*)
Langdon, W.K. *et al., Ind. Eng. Chem. Prod. Res. Dev.*, 1964, **3**, 8 (*synth*)
Wilen, S.H. *et al., Chem. Ind. (London)*, 1969, **8**, 237 (*synth*)
Paudler, W.W. *et al., Org. Mass Spectrom.*, 1970, **4**, 513 (*ms*)
Paudler, W.W. *et al., Org. Magn. Reson.*, 1971, **3**, 217 (*nmr*)
Oertel, R.P. *et al., Anal. Chem.*, 1972, **44**, 1589 (*Raman*)
Bus, J. *et al., Rec. Trav. Chim. (J. R. Neth. Chem. Soc.)*, 1973, **92**, 123 (*ir*)
Gumbley, S.J. *et al., J. Het. Chem.*, 1985, **22**, 1143 (*props*)
von Stralendorff, F. *et al., J. Chem. Ecol.*, 1987, **13**, 655
Lewis, R.J. *et al., Food Additives Handbook*, Van Nostrand Reinhold International, New York, 1989, DTU600
Boyer, M.L. *et al., J. Chem. Ecol.*, 1989, **15**, 649
Eiermann, U. *et al., Chem. Ber.*, 1990, **123**, 523 (*uv*)
Encyclopedia of Food and Color Additives, (ed. Burdock, G.A.), CRC Press, 1997, 874 (*use, occur*)
Dickschat, J.S. *et al., Chem. Biodiversity*, 2005, **2**, 318-353 (*marine isol*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, DTU600

2,6-Dimethylpyridine, 9CI D-775

2,6-Lutidine, 8CI. FEMA 3540
[108-48-5]



C_7H_9N 107.155
Manuf. by reaction of acetone, formaldehyde and ammonia. Constit. of coal tar and shale oil. Present in tea. Flavouring agent. Intermed. for pharmaceuticals. Liq. Sol. EtOH, Et_2O, cold H_2O; less sol. hot H_2O. d^{20} 0.92. Mp -6°. Bp 139-141° (145.6-145.8°). n_D^{20} 1.4977. pK_a 6.6 (25°).

▶ Flammable, fl. p. 33°. Toxic. OK9700000

Hydrochloride: [15439-85-7]
Cryst. (EtOH). Mp 230-231° dec.

Picrate: [2798-38-1]
Yellow needles (EtOH). Mp 163-164°.

N-*Oxide: Ivin*
[1073-23-0]
C_7H_9NO 123.154
Liq. Bp_{18} 115-119°.

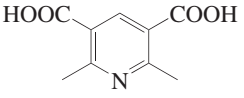
N-*Oxide; hydrochloride:* [6890-58-0]
Mp 219.5°.

[27175-64-0]

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 740B (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 252C (*nmr*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 1520B (*ir*)
Biddiscombe, D.P. *et al., J.C.S.*, 1954, 1957 (*synth, props*)
Červinka, O. *et al., Coll. Czech. Chem. Comm.*, 1962, **27**, 567 (*synth*)
Fieser and Fieser's Reagents for Organic Synthesis, Wiley, 1967, **1**, 626 (*use*)
Green, J.H.S. *et al., Spectrochim. Acta A*, 1970, **26**, 2139 (*ir, Raman*)
Hejda, Z. *et al., Coll. Czech. Chem. Comm.*, 1978, **43**, 3035 (*ms*)
Schuster, I.I. *et al., J.O.C.*, 1979, **44**, 2658 (*cmr*)
Bedford, G.R. *et al., Org. Magn. Reson.*, 1983, **21**, 637 (*pmr*)
Yajima, H. *et al., J. Phys. Chem.*, 1986, **90**, 2589 (*uv, fluorescence*)
Org. Synth., Coll. Vol., 6, 1988, 611
Fenaroli's Handbook of Flavor Ingredients, 3rd edn., (ed. Burdock, G.A.), CRC Press, 1995, **2**, 192
Encyclopedia of Food and Color Additives, (ed. Burdock, G.A.), CRC Press, 1997, 876-877
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, DTV089

2,6-Dimethyl-3,5-pyridinedicarboxylic acid, 9CI D-776

2,6-Dimethyldinicotinic acid. 2,6-Lutidine-3,5-dicarboxylic acid
[2602-36-0]



$C_9H_9NO_4$ 195.174
Spar. sol. EtOH, Et_2O, H_2O. Mp 316°.

Di-Me ester: [27525-74-2]
$C_{11}H_{13}NO_4$ 223.228

Cryst. (EtOH aq.). Mp 101-102° (Et_2O/pentane). $Bp_{1.3}$ 131°.

Et ester: [61258-25-1]
$C_{11}H_{13}NO_4$ 223.228
Needles (H_2O). Mp 131°.

Di-Et ester: [1149-24-2]
$C_{13}H_{17}NO_4$ 251.282
Alkaloid from the leaves of *Viburnum tinus*. Needles. Mp 73°. Bp 301-302° Bp_{16} 179-180°.

Hydrazide: Reagent for pptn. of Progesterone.

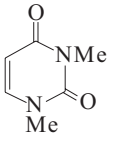
Dinitrile: 3,5-Dicyano-2,6-dimethylpyridine
[1656-95-7]
$C_9H_7N_3$ 157.174
Cryst. (EtOH aq.). Mp 119-120° (115-117°).

Dibenzamide: [55275-98-4]
$C_{21}H_{19}N_3O_2$ 345.4
Mp 292-294° (278-280°).

Aldrich Library of NMR Spectra, 2nd edn., 1983, **2**, 673B (*nmr*)
Aldrich Library of Infrared Spectra, 3rd edn., 1981, 1344E (*ir*)
Meyer, H. *et al., Monatsh. Chem.*, 1914, **35**, 208
Org. Synth., Coll. Vol., 2, 1943, 214-216 (*di-Et ester*)
Braude, E.A. *et al., J.C.S.*, 1960, 3249-3257 (*di-Me ester*)
Lukes, R. *et al., Coll. Czech. Chem. Comm.*, 1961, **26**, 1422-1428 (*dinitrile*)
Kurz, J.L. *et al., J.A.C.S.*, 1961, **83**, 584-588 (*di-Me ester, synth*)
Fieser and Fieser's Reagents for Organic Synthesis, Wiley, 1967, **1**, 626 (*hydrazide, use*)
Patzold, F. *et al., Synth. Commun.*, 1992, **22**, 281-288 (*di-Me ester, di-Et ester, dinitrile*)
Eynde, J.J.V. *et al., Tetrahedron*, 1995, **51**, 6511-6516 (*di-Et ester, bibl*)
Mohamed, M.A. *et al., Phytochemistry*, 2005, **66**, 2780-2786 (*di-Et ester, isol, pmr, cmr*)

1,3-Dimethyl-2,4(1*H*,3*H*)-pyrimidinedione, 9CI D-777

1,3-Dimethyl-2,6-dioxopyrimidine. 1,3-Dimethyluracil
[874-14-6]

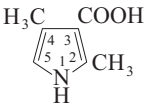


$C_6H_8N_2O_2$ 140.141
Pheromone of the ponerine ant *Megaponera foetens*. Prisms (Et_2O/EtOH). Mp 121-122°.

Yamauchi, K. *et al., J.C.S. Perkin 1*, 1973, 391-392 (*synth, ir, uv*)
De Member, J.R. *et al., J.A.C.S.*, 1975, **97**, 6240-6245 (*cmr*)
Harada, S. *et al., Tet. Lett.*, 1976, 2321-2322 (*synth*)
Banerjee, A. *et al., Acta Cryst. B*, 1977, **33**, 90-94 (*cryst struct*)
Stolarski, R. *et al., Z. Naturforsch., C*, 1977, **32**, 894-900 (*pmr, cmr*)
Iza, N. *et al., J. Mol. Struct.*, 1988, **175**, 31-36 (*uv, tautom*)
Janssen, E. *et al., J. Chem. Ecol.*, 1995, **21**, 1947-1955 (*isol*)
Rodriguez, J. *et al., Chem. Eur. J.*, 1999, **5**, 3549-3561 (*synth, pmr*)
Zajac, M.A. *et al., Synth. Commun.*, 2003, **33**, 3291-3297 (*synth*)

2,4-Dimethyl-1*H*-pyrrole-3-carboxylic acid D-778

[17106-13-7]



$C_7H_9NO_2$ 139.154
Mp 183° dec. pK_a 6.13.

Me ester: [52459-90-2]
$C_8H_{11}NO_2$ 153.18
Cryst. (MeOH aq.). Mp 105-106°.

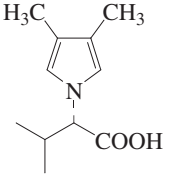
Et ester: [2199-51-1]
$C_9H_{13}NO_2$ 167.207
Mp 78-79°. Bp 291° Bp_{35} 181°.

α-L-Rhamnopyranosyl ester:
$C_{13}H_{19}NO_6$ 285.296
Prod. by *Streptomyces griseoviridis*. Mp 90° dec. $[\alpha]_D^{20}$ -22 (c, 0.1 in MeOH). λ_{max} 205 (log ε 4.1); 221 (log ε 3.81); 233 (log ε 3.88); 252 (log ε 3.62); 262 (log ε 3.64) (MeOH).

Knorr, L. *et al., Ber.*, 1902, **35**, 3007 (*synth*)
Clezy, P.S. *et al., Aust. J. Chem.*, 1975, **28**, 1589
Puzicha, G. *et al., J. Het. Chem.*, 1990, **27**, 2117 (*synth*)
Grond, S. *et al., Eur. J. Org. Chem.*, 2000, 929-937 (*rhamnosyl ester*)

2-(3,4-Dimethyl-1*H*-pyrrol-1-yl)-3-methylbutanoic acid D-779

*1-(1-Carboxy-2-methylpropyl)-3,4-dimethyl-1*H*-pyrrole. PP-Val*



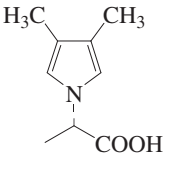
$C_{11}H_{17}NO_2$ 195.261

(*S*)-*form*
Constit. of mixed purees of onion and garlic (*Allium cepa* and *Allium sativum*). Needles. Mp 70-72°. $[\alpha]_D^{24}$ -6.5 (c, 0.2 in MeOH). λ_{max} 230 (ε 5200) (MeOH). λ_{max} 230 (ε 5900) (MeOH/HCl). λ_{max} 220 (ε 4900) (MeOH/NaOH).

Imai, S. *et al., J. Agric. Food Chem.*, 2006, **54**, 843-847 (*isol, uv, pmr, cmr*)

2-(3,4-Dimethyl-1*H*-pyrrol-1-yl)propanoic acid D-780

*1-(1-Carboxyethyl)-3,4-dimethyl-1*H*-pyrrole. PP-Ala*



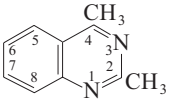
$C_9H_{13}NO_2$ 167.207

(*S*)-*form*
Constit. of mixed purees of onion and garlic (*Allium cepa* and *Allium sativum*). Needles. Mp 38-40°. $[\alpha]_D^{24}$ +22 (c, 0.2 in MeOH). λ_{max} 228 (ε 6300) (MeOH). λ_{max} 228 (ε 6300) (MeOH/HCl). λ_{max} 222 (ε 5600) (MeOH/NaOH).

Imai, S. *et al., J. Agric. Food Chem.*, 2006, **54**, 843-847 (*isol, uv, pmr, cmr*)

2,4-Dimethylquinazoline, 9CI D-781

[703-63-9]



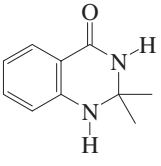
$C_{10}H_{10}N_2$ 158.202
Metab. of the bacterium *Pseudomonas aeruginosa*. Cryst. + $2H_2O$. Mp 72°. Bp_{713} 249°. pK_a 3.58 (20°).

Picrate:
Yellow cryst. (EtOH aq.). Mp 170° dec.

1-Oxide: [37920-81-3]
$C_{10}H_{10}N_2O$ 174.202
Mp 103°.

Bogert, M.T. *et al., J.A.C.S.*, 1924, **46**, 1932 (*synth*)
Kövendi, A. *et al., Chem. Ber.*, 1965, **98**, 1049 (*synth*)
Mann, S. *et al., Arch. Mikrobiol.*, 1967, **56**, 324
Batterham, T.J. *et al., J.C.S.(B)*, 1967, 892 (*ms*)
Kant, J. *et al., J. Het. Chem.*, 1985, **22**, 1313 (*synth*)

2,2-Dimethyl-4(1*H*,3*H*)-quinazolinone D-782

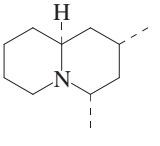


$C_{10}H_{12}N_2O$ 176.218
Prod. by *Cytophaga marinoflava* sp. AM13.1. Amorph. solid.

Shaaban, M. *et al., J. Nat. Prod.*, 2002, **65**, 1660-1663 (*isol*)
Shabaan, M. *et al., Dissertation*, Univ. of Göttingen, 2004, (*isol, pmr, ms*)

2,4-Dimethylquinolizidine D-783

*Octahydro-2,4-dimethyl-2*H*-quinolizine, 9CI*



$C_{11}H_{21}N$ 167.294

(2*R,4*S**,9*aS**)-*form***

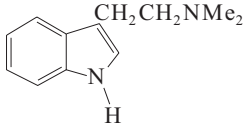
Cermizine C
[760947-75-9]
Alkaloid from *Lycopodium cernuum*. Amorph. solid. $[\alpha]_D^{25}$ +4 (c, 0.8 in MeOH).

Morita, H. *et al., Tetrahedron*, 2004, **60**, 7015-7023 (*isol, pmr, cmr*)
Snider, B.B. *et al., J.O.C.*, 2007, **72**, 1039-1042 (*synth*)

5-Dimethylsulfonio 2-amino-4-hydroxypentanoate **D-784**
(4-Amino-4-carboxy-2-hydroxybutyl)dimethylsulfonium hydroxide inner salt, 9CI
[117845-16-6]
$Me_2S^{\oplus}CH_2CH(OH)CH_2CH(NH_2)COO^{\ominus}$
$C_7H_{15}NO_3S$ 193.266
Isol. from the alga *Lophocladia lallemandi*.

Sciuto, S. *et al., J. Nat. Prod.*, 1988, **51**, 1017

***N,N*-Dimethyltryptamine** **D-785**
N,N-*Dimethyl-1*H-*indole-3-ethanamine, 9CI. 3-(2-Dimethylaminoethyl)indole.* ***Nigerine***. *DMT*
[61-50-7]



$C_{12}H_{16}N_2$ 188.272
Alkaloid from *Mimosa hostilis, Acacia* spp., *Arundo donax, Desmodium* spp., *Phalaris* spp., *Banisteriopsis argentea, Psychotria* spp., *Virola peruviana, Zanthoxylum* spp. and others (Fabaceae, Poaceae, Malphigiaceae, Rubiaceae, Myristicaceae, Rutaceae). Shows affinity for $5HT_{1D}$-receptor sites. Shows hallucinogenic props. Drug of abuse. Mp 48-49° (39-44°). Log P 1.82 (calc). λ_{max} 226 ; 275 (sh) ; 279 ; 284 ; 293 (EtOH).
► LD_{50} (mus, ipr) 47 mg/kg. NL7350000

Picrate:
Yellow (stable) or red (metastable) cryst. Mp 171-172°.

N^b-*Oxide:* **N,N-*Dimethyltryptamine* N-*oxide***
[948-19-6]
$C_{12}H_{16}N_2O$ 204.271
Alkaloid from *Desmodium pulchellum, Desmodium triflorum* and other *Desmodium* spp., also *Piptadenia peregrina* and *Piptadenia pulchellum* (Fabaceae). Hydrate. Mp 123-128°.

N^b-*Oxide, picrate:*
Cryst. (EtOH). Mp 178-183°.

N^b-*Me:* **N,N,N-*Trimethyltryptamine***
[17333-56-1]
$C_{13}H_{19}N_2^{\oplus}$ 203.307
Alkaloid from roots of *Zanthoxylum nitidium*. Isol. from the skin of the frog *Litoria moorei*. Mp 215-216° (as iodide).

N^b-*Chloromethyl:* **N-*Chloromethyl*-N,N-*dimethyltryptamine***
[941674-03-9]
$C_{13}H_{18}ClN_2^{\oplus}$ 237.751
Alkaloid from *Acacia confusa*. Amorph. solid. λ_{max} 217 (log ε 4.15); 280 (log ε 3.44); 290 (sh) (log ε 3.37) (MeOH).

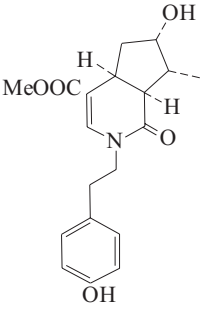
1-Methoxy: 1-Methoxy-N,N-*dimethyl-1*H-*indole-3-ethanamine. 3-[2-(Dimethylamino)ethyl]-1-methoxyindole. 1-Methoxy*-N,N-*dimethyltryptamine.* ***Lespedamine***
[4335-93-7]
$C_{13}H_{18}N_2O$ 218.298
Alkaloid from the leaves of *Lespedeza bicolor* var. *japonica* (Fabaceae). Oil. $Bp_{0.28}$ 113-114° $Bp_{0.08}$ 100-106°. λ_{max} 223 (log ε 4.49); 278 (log ε 3.66); 291 (log ε 3.68) (MeOH).

1-Methoxy, hydrochloride:
Needles (C_6H_6/MeOH). Mp 163-164° dec.

1-Methoxy, picrate:
Yellow prisms (MeOH). Mp 160-162° dec.

Fish, M.S. *et al., J.A.C.S.*, 1955, **77**, 5892-5895 (*isol, oxide*)
Hochstein, F.A. *et al., J.A.C.S.*, 1957, **79**, 5735-5736 (*isol*)
Pachter, I.J. *et al., J.O.C.*, 1959, **24**, 1285-1287 (*isol*)
Culvenor, C.C.J. *et al., Aust. J. Chem.*, 1964, **17**, 1301-1304 (*isol*)
Morimoto, H. *et al., Annalen*, 1965, **682**, 212-218 (*Lespedamine, isol, uv, ir, pmr, struct*)
Fitzgerald, J.S. *et al., Aust. J. Chem.*, 1965, **18**, 433-434 (*isol*)
Ghosal, S. *et al., J.O.C.*, 1966, **31**, 2284-2288 (*isol*)
Falkenberg, G. *et al., Acta Cryst. B*, 1972, **28**, 3075-3083 (*cryst struct*)
Couch, M.W. *et al., Anal. Biochem.*, 1972, **50**, 612-622 (*ms*)
Roseghini, M. *et al., Z. Naturforsch., C*, 1976, **31**, 118-120 (*Trimethyltryptamine*)
Acheson, R.M. *et al., J.C.S. Perkin 1*, 1978, 1117-1125 (*Lespedamine, synth*)
Grina, J.A. *et al., J.O.C.*, 1982, **47**, 2648-2651 (*isol, uv, pmr, cmr*)
Sitaram, B.R. *et al., Biochem. Pharmacol.*, 1987, **36**, 1509-1512 (*metab*)
Glennon, R.A. *et al., Drug Dev. Res.*, 1991, **22**, 25-36 (*sar*)
Strassman, R.J. *et al., Arch. Gen. Psychiatry*, 1994, **51**, 85-97; 98-108 (*pharmacol, human*)
Moriyasu, M. *et al., J. Nat. Prod.*, 1997, **60**, 299-301 (*Trimethyltryptamine*)
Somei, M. *et al., Chem. Pharm. Bull.*, 2001, **49**, 87-96 (*Lespedamine, synth*)
Buchanan, M.S. *et al., Magn. Reson. Chem.*, 2007, **45**, 359-361 (*pmr, cmr, N-chloromethyl*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, DPF600

Dinklageine† **D-786**
[91668-36-9]



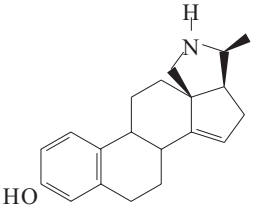
$C_{19}H_{23}NO_5$ 345.394
Alkaloid from the leaves of *Strychnos dinklagei* (Loganiaceae). Needles ($CHCl_3$). Mp 201-204°. $[\alpha]_D^{20}$ +60 (c, 1 in MeOH).

Skaltsounis, A.L. *et al., Tet. Lett.*, 1984, **25**, 2783-2786 (*uv, pmr, cmr, ms, struct, synth, abs config*)

Dinklageine† **D-787**
$C_{36}H_{38}N_2O_6$ 594.706
Bisbenzylisoquinoline alkaloid. Struct. unknown. Alkaloid from the root and stem of *Stephania dinklagei* (Menispermaceae). Mp 285°. $[\alpha]_D$ -24.4 ($CHCl_3$).

Paris, R.A. *et al., Ann. Pharm. Fr.*, 1955, **13**, 200-204; *CA*, **49**, 11959e (*isol*)

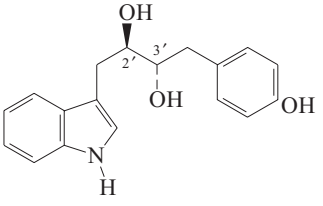
19,23-Dinorcona-1,3,5(10),14-tetraenin-3-ol **D-788**
3-Hydroxy-19-norcona-1,3,5(10),14-tetraene. 18,20-Imino-19-norpregna-1,3,5(10),14-tetraen-3-ol
[91147-31-8]



$C_{20}H_{25}NO$ 295.424
Alkaloid from the stem bark of *Didymeles* cf *madagascariensis* (Didymelaceae). No phys. props. reported. λ_{max} 282 ; 286 (sh) (no solvent reported).

Sánchez, V. *et al., Bull. Soc. Chim. Fr.*, Part II, 1984, 71-76 (*isol, ir, uv, pmr, cmr*)

Diolmycin A1 **D-789**
*1-(4-Hydroxyphenyl)-4-(1*H-*indol-3-yl)-2,3-butanediol, 9CI*
[150408-69-8]



$C_{18}H_{19}NO_3$ 297.353
Prod. by a *Streptomyces* sp. Anticoccidial agent. Powder. $[\alpha]_D^{25}$ -8 (c, 0.1 in MeOH). λ_{max} 222 (ε 33300); 280 (ε 5900); 290 (ε 4500) (MeOH) (Derep).

2′-Epimer: ***Diolmycin A2***
[150408-70-1]
$C_{18}H_{19}NO_3$ 297.353
Prod. by a *Streptomyces* sp. Anticoccidial agent. Powder. Sol. MeOH, EtOH, MeCN, DMSO; poorly sol. $CHCl_3$, hexane. $[\alpha]_D^{25}$ -12 (c, 0.1 in MeOH). λ_{max} 222 (ε 33300); 280 (ε

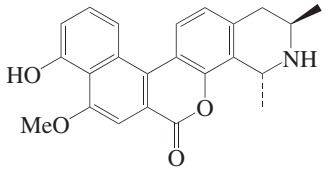
5900); 290 (ϵ 4500) (MeOH) (Derep).

[150407-38-8]

Tabata, N. *et al., J. Antibiot.*, 1993, **46**, 756-761; 762-769 (*isol, synth, pmr, cmr, props*)
Fernandes, R.A. *et al., Tetrahedron*, 2002, **58**, 1223-1227 (*synth, bibl*)

Dioncolactone A D-790

*1,2,3,4-Tetrahydro-9-hydroxy-8-methoxy-2,4-dimethyl-6*H-*naphtho[1′,2′:4,5]pyrano[3,2-*h*]isoquinolin-6-one, 9CI*
[135626-75-4]

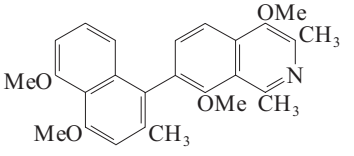


Absolute Configuration

$C_{23}H_{21}NO_4$ 375.423
Alkaloid from *Triphyophyllum peltatum* (Dioncophyllaceae). Yellow solid. $[\alpha]_D$ -64 (c, 0.26 in $CHCl_3$).

Bringmann, G. *et al., Phytochemistry*, 1991, **30**, 1691 (*isol, ir, pmr, ms, struct*)
Bringmann, G. *et al., Tetrahedron*, 1999, **55**, 423-432 (*synth*)

Dioncophyllacine A D-791



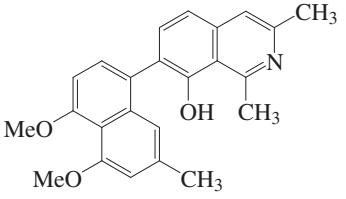
$C_{26}H_{27}NO_4$ 417.504

(±)-*form* [146471-70-7]
Alkaloid from leaves of *Triphyophyllum peltatum* (Dioncophyllaceae). Needles (MeOH). Mp 177-179°.

Bringmann, G. *et al., Phytochemistry*, 1992, **31**, 4015 (*isol, ir, pmr, ms, cryst struct*)

Dioncophylleine D D-792

[853579-15-4]



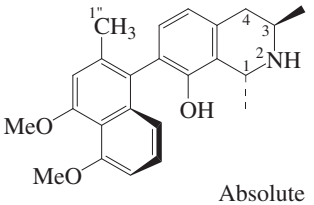
$C_{24}H_{23}NO_3$ 373.451

Unlike Dioncophylline A, D-793, the biaryl axis is not stereogenic at normal temperatures. Alkaloid from the leaves of *Ancistrocladus benomensis*. Amorph. solid (MeOH). Mp 212°. λ_{max} 231 (log ϵ 1.62); 315 (log ϵ 0.41); 375 (log ϵ 0.17) (MeOH).

Bringmann, G. *et al., J. Nat. Prod.*, 2005, **68**, 686-690 (*isol, pmr, cmr, ms*)

Dioncophylline A D-793

7-(4,5-Dimethoxy-2-methyl-1-naphthalenyl)-1,2,3,4-tetrahydro-1,3-dimethyl-8-isoquinolinol, 9CI. Triphyophylline
[60142-17-8]



Absolute Configuration

$C_{24}H_{27}NO_3$ 377.482
Alkaloid from *Dioncophyllum thollonii* and *Triphyophyllum peltatum*. Shows antifungal and molluscicidal props. Insect antifeedant and growth retardant. Yellow cryst. (Me_2CO). Mp 215°. $[\alpha]_D$ -14 (c, 1 in $CHCl_3$).

N-*Me:* **N-*Methyldioncophylline A***. N-*Methyltryphyophylline*
[135683-53-3]
[68727-49-1]
$C_{25}H_{29}NO_3$ 391.509
Alkaloid from *Dioncophyllum thollonii* and *Triphyophyllum peltatum*. Cryst. (Me_2CO). Mp 193° (185°). $[\alpha]_D$ +70 (c, 1 in $CHCl_3$).

Me ether: **O-*Methyldioncophylline A***. O-*Methyltryphyophylline*
$C_{25}H_{29}NO_3$ 391.509
Alkaloid from the stems of *Triphyophyllum peltatum*. Noncryst. $[\alpha]_D$ -30 (c, 1.2 in $CHCl_3$).

Me ether, N-*Ac:* Mp 177°. $[\alpha]_D$ +87 (c, 1.22 in $CHCl_3$).

O$^{5'}$-*De-Me:* ***5′*-O-*Demethyldioncophylline A***
[220436-87-3]
$C_{23}H_{25}NO_3$ 363.455
Alkaloid from the root bark of *Triphyophyllum peltatum*. Needles (MeOH). Mp 233°. $[\alpha]_D^{20}$ -11.1 (c, 0.01 in $CHCl_3$).

O$^{5'}$-*De-Me,* O^{8}-*Me:* ***5′*-O-*Demethyl-8*-O-*methyldioncophylline A***
[158705-45-4 , 158664-19-8]
$C_{24}H_{27}NO_3$ 377.482
Minor alkaloid from stem bark of *Triphyophyllum peltatum*. $[\alpha]_D^{20}$ +37.1 (c, 0.30 in $CHCl_3$).

1,2-Didehydro, Me ether: **O-*Methyl-1,2-didehydrotriphyophylline***
[64996-70-9]
$C_{25}H_{27}NO_3$ 389.493
Alkaloid from the stems of *Triphyophyllum peltatum*. Amorph. $[\alpha]_D$ 0 (solvent not specified).

1,2,3,4-Tetradehydro: Dioncophylleine A
[148810-30-4]
$C_{24}H_{23}NO_3$ 373.451
Semisynthetic.

1,2,3,4-Tetradehydro, Me ether: **O-*Methyltetradehydrotriphyophylline***
[68727-51-5]
$C_{25}H_{25}NO_3$ 387.477
Alkaloid from *Dioncophyllum thollonii* and *Triphyophyllum peltatum*. Cryst. (EtOH). Mp 166°. $[\alpha]_D$ 0 ($CHCl_3$).

1″-Hydroxy: 5′-O-*Methyldioncopeltine A*. ***Habropetaline A***
$C_{24}H_{27}NO_4$ 393.482
Alkaloid from *Habropetalum dawei* and *Triphyophyllum peltatum*. Antimalarial agent. Mp 225°. $[\alpha]_D^{25}$ -16.5 (c, 0.1 in MeOH).

1″-Hydroxy, O$^{5'}$*-de-Me: 1,2,3,4-Tetrahydro-7-[5-hydroxy-2-(hydroxymethyl)-4-methoxy-1-naphthalenyl]-1,3-dimethyl-8-isoquinolinol*. ***Dioncopeltine A***. *Triphyopeltine*
[60158-81-8]
$C_{23}H_{25}NO_4$ 379.455
Alkaloid from *Dioncophyllum thollonii* and *Triphyophyllum peltatum*. Cryst. (MeOH). Mp 241°. $[\alpha]_D$ -96 (c, 0.5 in Py).

3-Epimer: ***Isotriphyophylline***
[68780-11-0]
Minor alkaloid from *Triphyophyllum peltatum* and *Dioncophyllum thollonii*. Cryst. (Me_2CO). Mp 256°. $[\alpha]_D^{20}$ -22 (c, 1.2 in $CHCl_3$). Prob. abs. config.

Atropisomer: ***7-Epidioncophylline A***
[180324-35-0]
$C_{24}H_{27}NO_3$ 377.482
Alkaloid from *Ancistrocladus barteri*.

Atropisomer, N-*Me:* ***7-Epi*-N-*methyldioncophylline A***. N-*Methyl-7-epidioncophylline A*
[135683-54-4]
$C_{25}H_{29}NO_3$ 391.509
Alkaloid from *Ancistrocladus abbreviatus*. Cryst. (Me_2CO). Mp 230°. $[\alpha]_D^{25}$ -6 (c, 1.12 in $CHCl_3$).

Atropisomer, O$^{5'}$*-de-Me,* O^{8}*-Me:* ***5′*-O-*Demethyl-7-epi-8*-O-*methyldioncophylline A***. 5′-O-*Demethyl-8*-O-*methyl-7-epidioncophylline A*
$C_{24}H_{27}NO_3$ 377.482
Minor alkaloid from stem bark of *Triphyophyllum peltatum*. Amorph. powder. $[\alpha]_D^{20}$ -41.5 (c, 0.30 in $CHCl_3$).

Atropisomer, 1,2,3,4-tetradehydro: **ent-*Dioncophylleine A***
[853575-57-2]
$C_{24}H_{23}NO_3$ 373.451
Alkaloid from *Ancistrocladus benomensis*. Solid. Mp 265°.

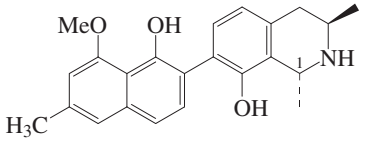
Atropisomer, 1,2,3,4-tetradehydro, O$^{5'}$*-de-Me:* ***5′*-O-*Demethyl*-ent-*dioncophylleine A***
[853575-58-3]
$C_{23}H_{21}NO_3$ 359.424
Alkaloid from *Ancistrocladus benomensis*.

Bruneton, J. *et al., Phytochemistry*, 1976, **15**, 817 (*Dioncophylline A, Dioncopeltine A*)
Lavault, M. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1977, **285**, 167; 1978, **287**, 129 (*derivs, uv, ir, pmr, struct, config*)

Bringmann, G. *et al., Phytochemistry*, 1981, **30**, 1691 (*Dioncopeltine A*)
Bringmann, G. *et al., Tet. Lett.*, 1984, **25**, 2537; 1990, **31**, 639; 643 (*O-Methyltetradehydrotriphyophylline*)
Bringmann, G. *et al., Acta Cryst. C*, 1991, **47**, 1703 (*cryst struct*)
Bringmann, G. *et al., Annalen*, 1991, 803 (*stereochem*)
Bringmann, G. *et al., Phytochemistry*, 1994, **36**, 1057; 1998, **49**, 1667-1673 (*5′-O-Demethyl-8-O-methyldioncophylline A, 5′-O-Demethyl-8-O-methyl-7-epi-dioncophylline A, 5′-Dimethyldioncophylline A*)
Bringmann, G. *et al., J. Nat. Prod.*, 1997, **60**, 342 (*props*)
Bringmann, G. *et al., Magn. Reson. Chem.*, 1997, **35**, 397-301 (*pmr, config*)
Bringmann, G. *et al., Phytochemistry*, 1997, **45**, 1283 (*cryst struct, abs config*)
Bringmann, G. *et al., Synthesis*, 1999, 525-558 (*rev, synth*)
Bringmann, G. *et al., Tetrahedron*, 1999, **55**, 423-432 (*synth*)
Bringmann, G. *et al., Phytochemistry*, 2003, **62**, 345-349 (*Habropetaline A*)
Bringmann, G. *et al., J. Nat. Prod.*, 2005, **68**, 686-690 (*ent-Dioncophylleines*)
Bringmann, G. *et al., Tetrahedron*, 2007, **63**, 1755-1761 (*biosynth*)

Dioncophylline B D-794

[140367-82-4]



$C_{23}H_{25}NO_3$ 363.455

Unlike Dioncophylline A, D-793, the biaryl axis is not stereogenic at normal temperatures. Alkaloid from the root bark of *Triphyophyllum peltatum* (Dioncophyllaceae). Antifungal agent, insecticide, antifeedant. Needles + ½MeOH. $[\alpha]_D^{20}$ -37.6 (c, 0.37 in $CHCl_3$).

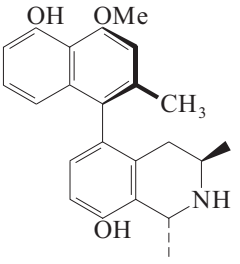
1-Epimer: ***1-Epidioncophylline B***
[216757-24-3]
[288846-61-7 (Dioncophylline D)]
$C_{23}H_{25}NO_3$ 363.455
Alkaloid from *Triphyophyllum peltatum*. Amorph. yellow solid (MeOH). Mp 234-236°. $[\alpha]_D^{25}$ +15.5 (c, 0.1 in EtOH). Struct. revised and renamed in 2000; formerly given the name Dioncophylline D.

1-Epimer, 8-Me ether: ***8-O-Methyl-1-epidioncophylline B***
$C_{24}H_{27}NO_3$ 377.482
Alkaloid from *Triphyophyllum peltatum*. Amorph. yellow solid (MeOH). Mp 228-232°. $[\alpha]_D^{25}$ +21 (c, 0.05 in $CHCl_3$). Struct. revised and renamed in 2000.

Bringmann, G. *et al., Phytochemistry*, 1991, **30**, 3845; 1998, **49**, 1151-1155; 2000, **54**, 337-346 (*isol, ir, pmr, cmr, struct*)
Bringmann, G. *et al., Synthesis*, 2000, 1843-1847 (*synth*)
Bringmann, G. *et al., Tetrahedron*, 2001, **57**, 1253-1259 (*synth*)

Dioncophylline C D-795

[146471-75-2]



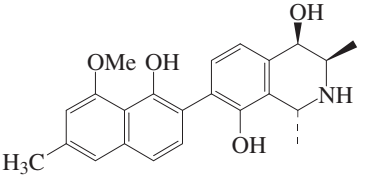
$C_{23}H_{25}NO_3$ 363.455

The biaryl axis is stereogenic (cf. Dioncophylline A, D-793). Alkaloid from root bark of *Triphyophyllum peltatum* (Dionchophyllaceae). Very potent antimalarial agent. Mp 246° dec. $[\alpha]_D^{20}$ +19.2 (c, 0.52 in $CHCl_3$).

Bringmann, G. *et al., Phytochemistry*, 1992, **31**, 4019 (*isol, ir, pmr, cd, ms, struct*)
Francois, G. *et al., J. Ethnopharmacol.*, 1995, **46**, 115-120 (*isol, activity*)
Francois, G. *et al., Ann. Trop. Med. Parasitol.*, 1996, **90**, 115-123 (*activity*)
Bringmann, G. *et al., Tetrahedron*, 1998, **54**, 497-512 (*synth*)

Dioncophyllinol B D-796

[207676-81-1]



$C_{23}H_{25}NO_4$ 379.455

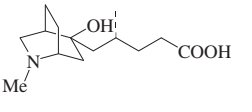
Alkaloid from the leaves of *Triphyophyllum peltatum*. Yellow solid. Mp 209°. $[\alpha]_D^{25}$ +17 (c, 0.05 in $CHCl_3$). Struct. of isolate revised in 2000. Prev. named Dioncophyllinol D.

8-Me ether: ***8-O-Methyldioncophyllinol B***
[288846-62-8]
$C_{24}H_{27}NO_4$ 393.482
Alkaloid from *Triphyophyllum peltatum*. Yellow solid. $[\alpha]_D^{25}$ -12.8 (c, 0.7 in $CHCl_3$).

Bringmann, G. *et al., Heterocycles*, 1998, **47**, 985-990 (*isol, ir, pmr, cmr*)
Bringmann, G. *et al., Phytochemistry*, 2000, **54**, 337-346 (*isol, struct*)

Dioscoretine D-797

[128637-87-6]



Absolute Configuration

$C_{13}H_{23}NO_3$ 241.33

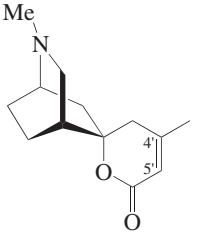
Alkaloid from the tubers of the famine food *Dioscorea dumetorum* (Dioscoreaceae). Hypoglycaemic principle.

▶ LD_{50} 580mg/kg (mice). CL5602600

Iwu, M.M. *et al., Planta Med.*, 1990, **56**, 119-120; 264-267 (*isol, cmr, struct, activity*)

Dioscorine D-798

2,4′-Dimethylspiro[2-azabicyclo[2.2.2]octane-5,2′-[2H]pyran]-6′(3′H)-one, 9CI
[3329-91-7]



Absolute Configuration

$C_{13}H_{19}NO_2$ 221.299

Alkaloid from the tubers of *Dioscorea hirsuta* and the wild yam *Dioscorea hispida* (Dioscoreaceae). Analeptic agent, CNS stimulant. Mp 43.5° (34-35°). $[\alpha]_D^{18}$ -35 (c, 3.4 in $CHCl_3$). Log P 0.76 (calc).

▶ LD_{50} (mus, ipr) 60 mg/kg. Exp. convulsant effects. JG5787500

Hydrochloride: Mp 210-211° dec.

Picrate: Mp 187° dec.

N-*Oxide:* ***Dioscorine* N-*oxide***
[171432-58-9 , 171595-79-2]
$C_{13}H_{19}NO_3$ 237.298
Alkaloid from *Dioscorea hispida* (Dioscoreaceae).

4′S,5′-Dihydro: ***Dihydrodioscorine***
[96552-66-8]
$C_{13}H_{21}NO_2$ 223.314
Alkaloid from the tubers of the famine food *Dioscorea dumetorum* and *Dioscorea sanziborensis* (Dioscoreaceae). Oil. Sol. H_2O. $[\alpha]_D^{18}$ -42.2 (c, 3.4 in $CHCl_3$). Dihydrodioscorine cannot be obt. by hydrogenation of Dioscorine. λ_{max} 208 (MeOH) (Berdy).

▶ Convulsive poison ; LD_{50} (mus, ipr) 0.65 mg/kg.

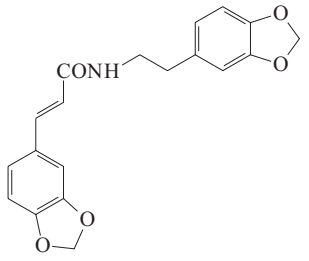
4′S,5′-Dihydro, hydrochloride: Mp 209°.

4′S,5′-Dihydro, picrate: Mp 189°.

Pinder, A.R. *et al., J.C.S.*, 1952, 2236 (*isol, uv, ir*)
Broadbent, J.L. *et al., Br. J. Pharmacol.*, 1958, **13**, 213 (*pharmacol*)
Bevan, C.W.L. *et al., Chem. Ind. (London)*, 1958, 103 (*Dihydrodioscorine, isol*)
Davies, W.A.M. *et al., Chem. Ind. (London)*, 1961, 1410 (*struct*)
Correia Alves, A. *et al., CA*, 1963, **59**, 6452d (*Dihydrodioscorine, isol*)
Beecham, A.F. *et al., Tet. Lett.*, 1969, 3745 (*config*)
Leete, E. *et al., Phytochemistry*, 1977, **16**, 1704 (*biosynth, cmr*)
Corley, D.G. *et al., Tet. Lett.*, 1985, **26**, 1615 (*Dihydrodioscorine, isol, struct, abs config*)
Goh, S.-H. *et al., Malays. J. Sci.*, 1994, **15**, 23; *CA*, **124**, 25562b (*Dioscorine N-oxide*)

Dioxamine D-799

*3-(1,3-Benzodioxol-5-yl)-*N*-[2-(1,3-benzodioxol-5-yl)ethyl]-2-propenamide, 9CI. 3,4-Methylenedioxycinnamic acid 3,4-methylenedioxyphenylethylamide*
[119060-89-8]



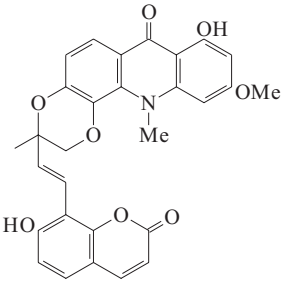
$C_{19}H_{17}NO_5$ 339.347
Alkaloid from the roots and pericarps of *Zanthoxylum rubescens* (Rutaceae). Powder. Mp 144-146°.

N-*Me:* ***Dioxamide***
[119060-88-7]
$C_{20}H_{19}NO_5$ 353.374
Alkaloid from roots and pericarps of *Zanthoxylum rubescens* (Rutaceae). Amorph.

Adesina, S.K. *et al., Pharmazie*, 1988, **43**, 517; *CA*, **110**, 92013x
Adesina, S.K. *et al., Phytochemistry*, 1989, **28**, 839 (*isol, uv, ir, pmr, cmr, ms, synth, struct*)

Dioxinoacrimarine A D-800

[158182-14-0]

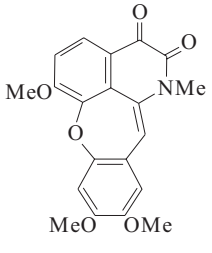


$C_{29}H_{23}NO_8$ 513.503
Alkaloid from roots of Yalaha [several hybrid seedlings resulting from a cross of Duncan grapefruit (*Citrus paradisi*) and Dancy tangerine (*Citrus tangerina*)] (Rutaceae). Yellow cubes (Me_2CO). Mp 179-181°. $[\alpha]_D$ +18 (c, 0.1 in $CHCl_3$).

Takemura, Y. *et al., Heterocycles*, 1994, **38**, 1937 (*isol, uv, ir, pmr, cmr, ms, struct*)

Dioxocularine D-801

[107602-50-6]

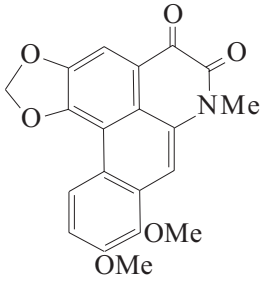


$C_{20}H_{17}NO_6$ 367.357
The trivial name is misleading (Cularine, C-805 is 1,α-dihydro). Trace alkaloid from *Corydalis claviculata* (Papaveraceae). Red cryst. (EtOH). Mp 212-214°.

Boente, J.M. *et al., Heterocycles*, 1986, **24**, 3359 (*uv, ir, pmr, cmr, ms, struct*)
García, A. *et al., Tetrahedron*, 1995, **51**, 8585 (*synth*)
Suau, R. *et al., Tet. Lett.*, 1996, **37**, 9357 (*synth*)

4,5-Dioxodehydrocrebanine D-802

*9,10-Dimethoxy-7-methyl-5*H*-benzo[g]-1,3-benzodioxolo[6,5,4-de]quinoline-5,6(7*H*)-dione, 9CI*
[77784-21-5]

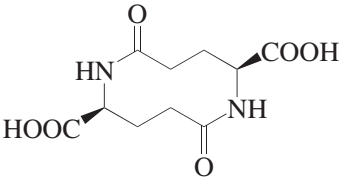


$C_{20}H_{15}NO_6$ 365.342
Alkaloid from the stem and root of *Stephania sasakii*. Also obt. by air oxidation of dehydrocrebanine in the presence of alkali (Menispermaceae). Orange needles (EtOH). Mp 278-280°.

Kunitomo, J. *et al., Phytochemistry*, 1980, **19**, 2735 (*isol, uv, ir, pmr, ms, struct, synth*)

5,10-Dioxo-1,6-diazacyclodecane-2,7-dicarboxylic acid D-803

γ-Cyclic diglutamic acid



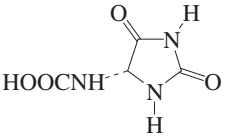
$C_{10}H_{14}N_2O_6$ 258.23

(S,S)-form [35009-41-7]
[869485-13-2 (di-Na salt)]
Isol. from the pupae of *Bombyx mori*. Also prod. by *Trichophyton mentagrophytes*. Powder (as di-Na salt). Mp 240° dec. (di-Na salt). $[\alpha]_D$ -13.8 (c, 1.7 in H_2O) (di-Na salt).

Wöllmann, H. *et al., Pharmazie*, 1977, **32**, 185-186 (*isol*)
Tanaka, R. *et al., Biosci., Biotechnol., Biochem.*, 2007, **71**, 3055-3062 (*isol, cd, pmr, cmr*)

4-(2,5-Dioxo-4-imidazolidinyl)carbamic acid D-804

5-Carboxyamino-2,4-imidazolidinedione



(*R*)-*form*

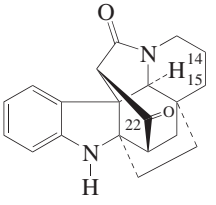
$C_4H_5N_3O_4$ 159.101

(R)-form [244172-47-2]
Constit. of *Cistanche deserticola*.
Amide: see Allantoin, A-625

Xu, Z. *et al., J. Chin. Pharm. Sci.*, 1999, **8**, 61-63 (*isol, cryst struct*)

10,22-Dioxokopsane D-805

Kopsan-10,22-dione, 9CI. 10-Oxokopsanone
[3703-90-0]



$C_{20}H_{20}N_2O_2$ 320.39
Alkaloid from the stem bark of *Pleiocarpa mutica* and from root bark of *Alstonia venenata* (Apocynaceae). Needles (MeOH), cryst. (EtOAc). Mp 307-308° (298°). $[\alpha]_D$ +123 (c, 0.635 in $CHCl_3$). $[\alpha]_D$ +156 (c, 0.32 in $CHCl_3$).

N-*Ac:*
Cryst. (EtOAc). Mp 254-255°.

N-*Me:* **N-*Methyl-10,22-dioxokopsane***
[3703-91-1]
$C_{21}H_{22}N_2O_2$ 334.417
Alkaloid from *Pleiocarpa mutica* (Apocynaceae). Cubes (MeOH). Mp 269°. $[\alpha]_D^{24}$ +74 (c, 0.61 in MeOH).

N-*Methoxycarbonyl:* **N-*Methoxycarbonyl-10,22-dioxokopsane***
[3901-67-5]
$C_{22}H_{22}N_2O_4$ 378.427
Alkaloid from *Pleiocarpa mutica* (Apocynaceae). Needles ($CHCl_3$/petrol). Mp 264-265°. $[\alpha]_D^{30}$ +110 (c, 1.31 in $CHCl_3$).

*22*R-*Alcohol:* ***Epikopsan-22-ol-10-lactam***. *Epikopsanol-10-lactam. 22-Hydroxy-10-kopsanone*
[6698-63-1]
[23495-95-6]
$C_{20}H_{22}N_2O_2$ 322.406
Alkaloid from *Aspidosperma duckei* and *Aspidosperma verbascifolium* (Apocynaceae). Mp 242-245° dec.

*22*R-*Alcohol,* N^a,O-*di-Ac:* Mp 285-287°. $[\alpha]_D^{24}$ +91.5 (c, 1.18 in $CHCl_3$).

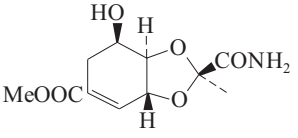
14,15-Didehydro: 14,15-Didehydro-10,22-dioxokopsane. ***Kopsorinine***
[768388-31-4]
$C_{20}H_{18}N_2O_2$ 318.374

Alkaloid from *Kopsia fruticosa*. Light yellow oil. $[\alpha]_D$ +14 (c, 0.35 in $CHCl_3$). λ_{max} 220 (log ϵ 4.49); 245 (log ϵ 3.95); 280 (log ϵ 3.39) (EtOH).

Achenbach, H. *et al., J.A.C.S.*, 1965, **87**, 4944-4950 (*Pleiocarpa mutica constits*)
Kump, C. *et al., Helv. Chim. Acta*, 1966, **49**, 1237-1243 (*synth, uv, ir, ms*)
Ferreira Filho, J.M. *et al., J.C.S.(C)*, 1966, 1260-1266 (*Epikopsanol-10-lactam*)
Braekman, J.C. *et al., Bull. Soc. Chim. Belg.*, 1969, **78**, 63-68 (*Aspidosperma verbascifolium constits*)
Chatterjee, A. *et al., Indian J. Chem., Sect. B*, 1979, **17**, 651 (*5,22-Dioxokopsane*)
Magnus, P. *et al., J.A.C.S.*, 1984, **106**, 2105-2114 (*synth, pmr*)
Kam, T.-S. *et al., Phytochemistry*, 2004, **65**, 2119-2122 (*Kopsorinine*)

Dioxolamycin D-806

[91432-46-1]



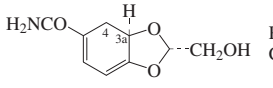
$C_{11}H_{15}NO_6$ 257.243
Isol. from *Streptomyces filamentosus.* Shows moderate cytostatic activity against L-1210 cells. Cryst. (EtOAc). Sol. MeOH, $CHCl_3$; poorly sol. C_6H_6, hexane, H_2O. Mp 214-215°. $[\alpha]_D^{25}$ -53.1 (c, 0.36 in MeOH). λ_{max} 218 (ϵ 8130) (MeOH) (Derep). λ_{max} 218 (E1%/1cm 316) (MeOH) (Berdy).

▶ LD_{50} (mus, ivn) 200 - 400 mg/kg. DF4912775

Zhu, B. *et al., J. Antibiot.*, 1984, **37**, 673 (*isol, uv, ir, pmr, cmr*)

Dioxolide A D-807

3a,4-Dihydro-2-hydroxymethyl-1,3-benzodioxole-5-carboxamide, 9CI
[176226-75-8]



$C_9H_{11}NO_4$ 197.19
Prod. by *Streptomyces tendae.* λ_{max} 308 (MeOH) (Berdy).

O-*Ac:* ***Dioxolide B***
[176226-76-9]
$C_{11}H_{13}NO_5$ 239.227
Prod. by *Streptomyces tendae.* λ_{max} 308 (MeOH) (Berdy).

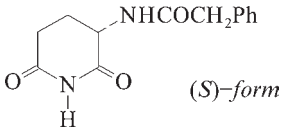
3a,4-Didehydro: ***Dehydrodioxolide A***
[176226-77-0]
$C_9H_9NO_4$ 195.174
Prod. by *Streptomyces tendae.* λ_{max} 258 ; 295 (MeOH). λ_{max} 258 ; 295 (MeOH) (Berdy).

3a,4-Didehydro, O-*Ac:* ***Dehydrodioxolide B***
[176226-78-1]
$C_{11}H_{11}NO_5$ 237.212
Prod. by *Streptomyces tendae.* λ_{max} 258 ; 295 (MeOH) (Berdy).

Blum, S. *et al., J. Basic Microbiol.*, 1996, **36**, 19-25 (*isol*)

N-(2,6-Dioxo-3-piperidinyl)-benzeneacetamide, 9CI D-808

*3-(*N*-Phenylacetylamino)piperidine-2,6-dione.* ***Antineoplaston A10***
[77658-84-5]



$C_{13}H_{14}N_2O_3$ 246.265

(***S*)-*form*** [91531-30-5]
Isol. from human urine and plasma. Antineoplastic agent. Inhibits human hepatocellular carcinoma *in vitro* and *in vivo* in combination with Diamminedichloroplatinum(*II*). Cryst. (MeOH).

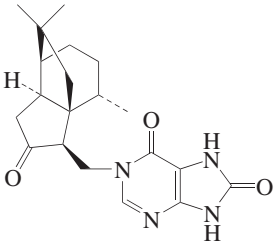
▶ LD_{50} (mus, ipr) 10.33 mg/kg.

[158930-26-8 , 108929-54-0]

Eur. Pat., 1983, 69 232; *CA*, **98**, 137623 (*synth, pharmacol*)
Burzynski, S.R. *et al., Drugs Exp. Clin. Res.*, 1984, **10**, 113; 1986, **12**, 11; 37; 57; 1987, **13**, 77 (*pharmacol*)
Xu, W. *et al., Yiyao Gongye*, 1988, **19**, 198; *CA*, **110**, 75258 (*synth*)
Tsuda, H. *et al., Jpn. J. Cancer Res.*, 1992, **83**, 527 (*pharmacol*)
Michalska, D. *et al., Spectrochim. Acta A*, 1993, **49**, 303 (*ir, Raman, bibl*)
Martindale, The Extra Pharmacopoeia, 31st edn., Pharmaceutical Press, 1996, 543

6-(6,8-Dioxo-1-purinyl)suberosanone D-809

[1015765-87-3]

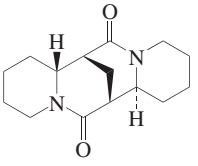


$C_{20}H_{26}N_4O_3$ 370.45
Alkaloid from *Subergorgia suberosa.* Powder. $[\alpha]_D^{20}$ +27.3 (c, 0.2 in $CHCl_3$). λ_{max} 212 ; 265 (MeOH).

Qi, S.-H. *et al., J. Nat. Prod.*, 2008, **71**, 716-718 (*isol, pmr, cmr*)

10,17-Dioxosparteine D-810

Alkaloid B3
[52717-73-4]

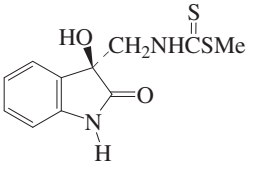


$C_{15}H_{22}N_2O_2$ 262.351
Alkaloid from *Lupinus hartwegii* whole plants (Fabaceae). Liq.

Anderson, J.N. *et al., J.O.C.*, 1976, **41**, 3441-3444 (*isol, struct, ms*)

Dioxybrassinin D-811

*Methyl [(2,3-dihydro-3-hydroxy-2-oxo-1*H*-indol-3-yl)methyl]carbamodithioate, 9CI. Dioxibrassinin*



$C_{11}H_{12}N_2O_2S_2$ 268.36

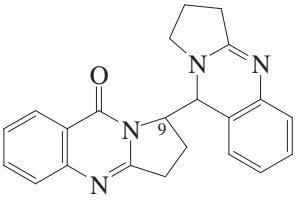
(***S*)-*form*** [133761-64-5]
Alkaloid from *Brassica oleracea* (Brassicaceae) inoculated with *Pseudomonas cichorii.* $[\alpha]_D$ -7.6 (c, 0.6 in MeOH).

(±)-*form* [137821-31-9]
Mp 164-166°.

Powell, R.G. *et al., Experientia*, 1991, **47**, 304 (*isol, pmr, cmr, ms, cryst struct*)
Monde, K. *et al., Phytochemistry*, 1991, **30**, 2915 (*isol, uv, ir, pmr, ms, struct, synth*)
Monde, K. *et al., Tet. Lett.*, 2003, **44**, 6017-6020 (*synth, cd, abs config*)

Dipegine D-812

*1′,2,2′,3,3′,9′-Hexahydro[1,9′-bipyrrolo[2,1-*b*]quinazolin]-9(1*H*)-one, 9CI*
[53416-72-1]

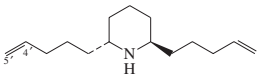


$C_{22}H_{20}N_4O$ 356.426
Alkaloid from *Peganum harmala* (Zygophyllaceae). Cryst. (Me_2CO). Mp 221-223°. The first known dimeric quinazoline alkaloid. λ_{max} 226 (log ϵ 4.48); 277 (log ϵ 4.14); 305 (log ϵ 4.05); 317 (log ϵ 3.89) (CCl_4).

9-Hydroxy: ***Dipeginol***
$C_{22}H_{20}N_4O_2$ 372.426
Alkaloid from *Peganum harmala.* Prisms (MeOH). Mp 243° dec. λ_{max} 225 (log ϵ 4.46); 276 (log ϵ 4.11); 303 (log ϵ 4.04); 317 (log ϵ 3.82) (CCl_4).

Zharekeev, B.K. *et al., Khim. Prir. Soedin.*, 1974, **10**, 264; *Chem. Nat. Compd. (Engl. Transl.)*, 1974, **10**, 282 (*uv, ir, cmr, ms, struct*)
Faskhutdinov, M.F. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2000, **36**, 602-605 (*Dipeginol*)

2,6-Di-4-pentenylpiperidine D-813



$C_{15}H_{27}N$ 221.385

(2*RS*,6*RS*)-*form*
(±)-trans-*form*
[127629-05-4]
Alkaloid from the venom of the ant *Monomorium delagoense*. Shows insecticidal props.

4′,5′-Dihydro: **trans-*2-(4-Pentenyl)-6-pentylpiperidine***
[127629-04-3]
$C_{15}H_{29}N$ 223.401
Alkaloid from *Monomorium delagoense*. Shows insecticidal and repellent props.

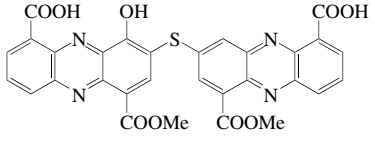
(2*RS*,6*SR*)-*form*
(±)-cis-*form*
[127629-03-2]
Alkaloid from *Monomorium delagoense*. Shows insecticidal and repellent props.

4′,5′-Dihydro: **cis-*2-(4-Pentenyl)-6-pentylpiperidine***
[127629-02-1]
$C_{15}H_{29}N$ 223.401
Alkaloid from *Monomorium delagoense*. Shows insecticidal and repellent props.

Jones, T.H. *et al., J. Nat. Prod.*, 1990, **53**, 429 (*isol, struct, synth*)

Diphenazithionin D-814

[185843-29-2]

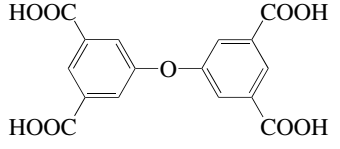


$C_{30}H_{18}N_4O_9S$ 610.56
Isol. from *Streptomyces griseus* ISP 5236. Antioxidant. Dark green powder. λ_{max} 260 ; 305 ; 375 ; 442 (no solvent reported).

Hosoya, Y. *et al., Tet. Lett.*, 1996, **37**, 9227 (*isol, uv, pmr, cmr, cryst struct*)

Diphenyl ether-3,3′,5,5′-tetracarboxylic acid D-815

5,5′-Oxybis-1,3-benzenedicarboxylic acid



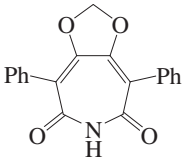
$C_{16}H_{10}O_9$ 346.25

3,3′-Diamide: 3,3′-Oxybis[5-(aminocarbonyl)benzoic acid]. 3,3′-Bis(aminocarbonyl)-5,5′-dicarboxydiphenyl ether
[177334-43-9]
$C_{16}H_{12}N_2O_7$ 344.28
Prod. by *Fusarium oxysporum*. Siderophore.

Wijesundera, R.L.C. *et al., CA*, 1996, **125**, 5167u

4,8-Diphenyl-5*H*-1,3-dioxolo[4,5-*d*]azepine-5,7(6*H*)-dione, 9CI D-816

Ustalic acid imide
[470696-80-1]

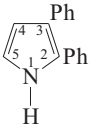


$C_{19}H_{13}NO_4$ 319.316
Isol. from *Tricholoma ustale*. Cryst. Mp 239-242°.

Sano, Y. *et al., Chem. Comm.*, 2002, 1384-1385 (*isol, pmr, cmr*)

2,3-Diphenyl-1*H*-pyrrole, 9CI D-817

[26093-30-1]



$C_{16}H_{13}N$ 219.285
Constit. of the stems of *Gnetum montanum*. Needles (EtOH aq.). Mp 127°.

N-*Me:*
$C_{17}H_{15}N$ 233.312
Cryst. Mp 96-96.5°.

N-*Benzyl:*
$C_{23}H_{19}N$ 309.41
Cryst. Mp 116-117°.

N-*Ph: 1,2,3-Triphenyl-1*H*-pyrrole*
[53646-86-9]
$C_{22}H_{17}N$ 295.383
Prisms (EtOAc/hexane). Mp 181-182°.

Severin, T. *et al., Chem. Ber.*, 1971, **104**, 2856-2863 (*synth*)
Zhou, J. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 1989, **31**, 878-882 (*isol, pmr, cmr*)
Katritzky, A.R. *et al., J.O.C.*, 1994, **59**, 4551-4555 (*synth, pmr, cmr*)
Di Santo, R. *et al., Synth. Commun.*, 1995, **25**, 795 (*synth*)
Katritzky, A.R. *et al., J. Het. Chem.*, 1997, **34**, 1379-1381 (*N-Ph*)
Romashin, Y.N. *et al., Chem. Comm.*, 1999, 447-448 (*N-Me, N-benzyl, synth, pmr*)

N,N′-Diphenylurea, 9CI D-818

Carbanilide
[102-07-8]
[26763-63-3]

PhNHCONHPh

$C_{13}H_{12}N_2O$ 212.251
Isol. from coconut milk (*Cocos nucifera*). Cytokinin. Needles (EtOAc); prisms. Mp 246-248° (239-240°). Bp 260°.

▶ FD9800000

Mono-N-*Ac:*
$C_{15}H_{14}N_2O_2$ 254.288
Mp 106°.

N-*Me:* N-*Methyl*-N,N′-*diphenylurea*
[612-01-1]
$C_{14}H_{14}N_2O$ 226.277
Cryst. (EtOH or xylene). Mp 106°. Bp 203-205° dec.

N,N′-*Di-Me:* N,N′-*Dimethyl*-N,N′-*diphenylurea. Centralite II*
[611-92-7]
$C_{15}H_{16}N_2O$ 240.304
Explosion regulator. Mp 122°.

▶ FE0600000

N-*Et:* N-*Ethyl*-N,N′-*diphenylurea*
[64544-71-4]
$C_{15}H_{16}N_2O$ 240.304
Prisms (EtOH). Mp 91°.

N-*Et,* N′-*Me:* N-*Ethyl*-N′-*methyl*-N,N′-*diphenylurea. Centralite III*
[4474-03-7]
$C_{16}H_{18}N_2O$ 254.331
Explosion regulator. Mp 58-59°.

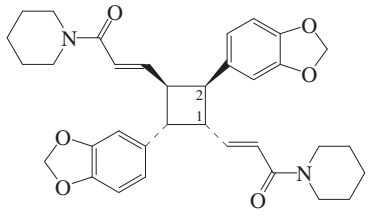
N,N′-*Di-Et:* N,N′-*Diethyl*-N,N′-*diphenylurea. Carbamite. Centralite I. Ethyl centralite*
[85-98-3]
$C_{17}H_{20}N_2O$ 268.358
Explosion regulator. Cryst. (EtOH). Mp 79° (72-73°). Bp 327°.

▶ Fl. p. 150°. FE0350000

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 387A (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **2**, 1418C; 1420C; 1421A (*nmr*)
Org. Synth., Coll. Vol., 1, 1932, 453-455 (*synth*)
Shantz, E.M. *et al., J.A.C.S.*, 1952, **74**, 6133-6135; 1955, **77**, 6351-6353 (*isol*)
Baker, J.W. *et al., J.C.S.*, 1957, 4652-4662 (*synth*)
Novacek, A. *et al., Coll. Czech. Chem. Comm.*, 1967, **32**, 1712-1718 (*synth*)
Deshapande, S.V. *et al., Acta Cryst. B*, 1968, **24**, 1396-1397 (*cryst struct*)
Knobler, Y. *et al., Isr. J. Chem.*, 1971, **9**, 165-175 (*synth*)
Norikov, E.G. *et al., Zh. Prikl. Spektrosk.*, 1971, **14**, 833 (*uv*)
Siti, M.P. *et al., J.O.C.*, 1979, **44**, 3017-3022 (*cmr, N-15 nmr*)
Ayyangar, N.R. *et al., Chem. Ind. (London)*, 1988, 599-600 (*synth, bibl, derivs*)
Laufer, D.A. *et al., Org. Prep. Proced. Int.*, 1989, **21**, 771-776 (*synth*)
Cooper, C.F. *et al., Synth. Commun.*, 1995, **25**, 2467-2474 (*synth*)
Jimenez Blanco, J.L. *et al., Synthesis*, 1999, 1907-1914 (*synth*)
Hikita, T. *et al., Macromolecules*, 2002, **35**, 6202-6209 (*synth, ir, pmr, cmr*)
Artamkina, G.A. *et al., Russ. J. Org. Chem. (Engl. Transl.)*, 2002, **38**, 538-545 (*synth, ir, pmr*)
Tran, K. *et al., Org. Prep. Proced. Int.*, 2004, **36**, 71-73 (*synth, ir, pmr, cmr*)
Perveen, S. *et al., Synth. Commun.*, 2005, **35**, 1663-1674 (*synth, ir, uv, pmr, ms*)
Mizuno, T. *et al., Synthesis*, 2007, 2825-2830; 3135-3140 (*synth, ir, pmr, cmr, ms*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, CBM250; DRB200; DJC400

Dipiperamide A D-819

[432041-19-5]



$C_{34}H_{38}N_2O_6$ 570.684

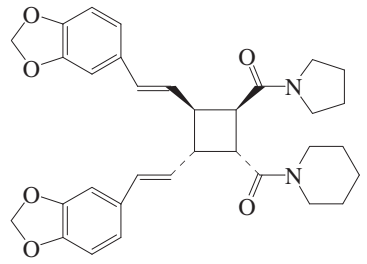
Stereochem. revised in 2005 to a *meso*-stereoisomer (centre of symmetry). Dipiperamide B was formerly assigned this stereochem. but now needs to be revised. Alkaloid from white pepper, *Piper nigrum*. Inhibitor of cytochrome P450 3A4 activity. Mp 175-176° (synthetic). λ_{max} 203 (log ϵ 4.9); 238 (sh) (log ϵ 4.4); 287 (log ϵ 4) (EtOH).

Diastereoisomer: ***Dipiperamide B***
[432041-20-8]
$C_{34}H_{38}N_2O_6$ 570.684
Alkaloid from white pepper, *Piper nigrum*. Racemic. λ_{max} 204 (log ϵ 4.8); 237 (sh) (log ϵ 4.4); 273 (sh) (log ϵ 4.3); 289 (sh) (log ϵ 4.2) (EtOH).

Tsukamoto, S. *et al., Tetrahedron*, 2002, **58**, 1667-1671 (*isol, pmr, cmr, ms*)
Takahashi, M. *et al., Tet. Lett.*, 2005, **46**, 57-50 (*synth, stereochem*)

Dipiperamide C D-820

[432041-21-9]

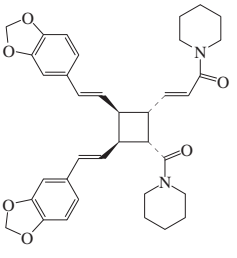


$C_{33}H_{36}N_2O_6$ 556.657
Alkaloid from white pepper, *Piper nigrum*. Inhibitor of cytochrome P450 3A4 activity. Racemic. λ_{max} 207 (log ϵ 4.6); 268 (log ϵ 4.3); 278 (sh) (log ϵ 4.2); 308 (log ϵ 4.1); 325 (sh) (log ϵ 3.8) (EtOH).

Tsukamoto, S. *et al., Tetrahedron*, 2002, **58**, 1667-1671 (*isol, pmr, cmr, ms*)

Dipiperamide D D-821

[500757-85-7]



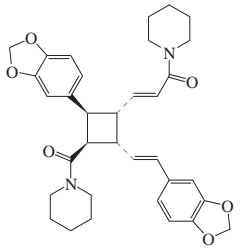
Relative Configuration

$C_{36}H_{40}N_2O_6$ 596.722
Alkaloid from white pepper, *Piper nigrum*. Inhibitor of cytochrome P450 3A4 activity. λ_{max} 209 (log ϵ 4.6); 266 (log ϵ 4.3) (EtOH).

Tsukamoto, S. *et al., Bioorg. Med. Chem.*, 2002, **10**, 2981-2985 (*isol, pmr, cmr*)

Dipiperamide E D-822

[500757-86-8]



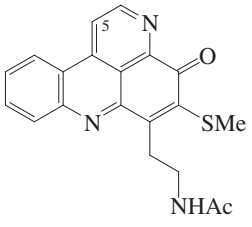
Relative Configuration

$C_{34}H_{38}N_2O_6$ 570.684
Alkaloid from white pepper, *Piper nigrum*. Inhibitor of cytochrome P450 3A4 activity. λ_{max} 206 (log ϵ 3.8); 242 (sh) (log ϵ 4.1); 266 (sh) (log ϵ 4); 289 (log ϵ 4.2) (EtOH).

Tsukamoto, S. *et al., Bioorg. Med. Chem.*, 2002, **10**, 2981-2985 (*isol, pmr, cmr*)

Diplamine D-823

[123794-30-9]



$C_{20}H_{17}N_3O_2S$ 363.439

Related to Deacylcystodytin, D-97. Alkaloid from the tunicate *Diplosoma* sp. Exhibits antitussive and antitumour activity. Burnt-orange solid. Mp 202-204° dec. λ_{max} 263 (ϵ 24900); 300 (ϵ 14700); 377 (ϵ 6000) (MeOH) (Derep).

N-*De-Ac,* N-*(3-methylbutanoyl):* ***Lissoclin A***
[158761-12-7]
$C_{23}H_{23}N_3O_2S$ 405.52
Alkaloid from the tropical ascidian *Lissoclinum* sp. and *Didemnum* sp. Orange needles (MeOH). Mp 202-204°. λ_{max} 263 (ϵ 28000); 300 (ϵ 17000); 383 (ϵ 6800); 450 (ϵ 4900) (MeOH) (Berdy).

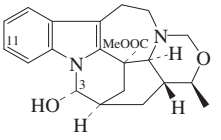
N-*De-Ac,* N-*tigloyl:* ***Lissoclin B****. (Demethylthio)cystodytin B*
[158761-13-8]
$C_{23}H_{21}N_3O_2S$ 403.504
Alkaloid from *Lissoclinum* sp. and *Didemnum* sp. Orange solid. λ_{max} 263 (ϵ 28000); 300 (ϵ 17000); 383 (ϵ 6800); 450 (ϵ 4900) (MeOH) (Berdy).

De(methylthio), 5-methylthio: ***Isodiplamine***
[496909-75-2]
$C_{20}H_{17}N_3O_2S$ 363.439
Alkaloid from *Lissoclinum notti*. Green solid. Mp 208-210°. λ_{max} 215 (log ϵ 4.68); 274 (log ϵ 4.16); 320 (log ϵ 4.01); 406 (log ϵ 4) (MeOH/TFA).

Charyulu, G.A. *et al., Tet. Lett.*, 1989, **30**, 4201-4202 (*isol, uv, ir, pmr, cmr, struct*)
Szczepankiewicz, B.G. *et al., J.O.C.*, 1994, **59**, 3512-3513 (*synth*)
Searle, P.A. *et al., J.O.C.*, 1994, **59**, 6600-6605 (*Lissoclins*)
Ciufolini, M.A. *et al., J.A.C.S.*, 1995, **117**, 12460 (*synth*)
Appleton, D.R. *et al., Tetrahedron*, 2002, **58**, 9779-9783 (*Isodiplamine*)

Dippinine C D-824

[223532-43-2]



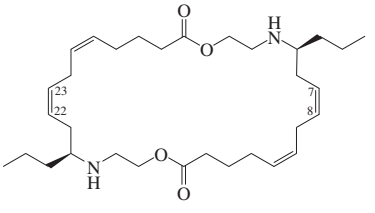
Absolute Configuration

$C_{22}H_{26}N_2O_4$ 382.458
Alkaloid from the stems of *Tabernaemontana corymbosa*. Light yellow oil. $[\alpha]_D$ +19 (c, 0.07 in $CHCl_3$). λ_{max} 228 (log ϵ 4.46); 285 (log ϵ 3.91); 294 (log ϵ 3.86) (EtOH).

11-Methoxy, 3-ketone: ***Dippinine D***
$C_{23}H_{26}N_2O_5$ 410.469
Alkaloid from the leaves of *Tabernaemontana corymbosa*. Light yellow oil. $[\alpha]_D$ -152 (c, 0.06 in $CHCl_3$). λ_{max} 235 (log ϵ 4.35); 280 (log ϵ 4.05); 290 (log ϵ 4.01) (EtOH).

Kam, T.-S. *et al., Heterocycles*, 1999, **51**, 345-348; 2001, **55**, 2405-2412 (*isol, uv, ir, pmr, cmr*)

5,20-Dipropyl-1,16-dioxa-4,19-diazacyclotriaconta-7,10,22,25-tetraene-15,30-dione D-825



$C_{32}H_{54}N_2O_4$ 530.79
Constit. of the pupal defensive secretions of the ladybird beetle *Subcoccinella vigintiquatuorpunctata* (*Subcoccinella* 24-*punctata*).

7,8-Dihydro: 5,20-Dipropyl-1,16-dioxa-4,19-diazacyclotriaconta-7,10,25-triene-15,30-dione
$C_{32}H_{56}N_2O_4$ 532.805
Isol. from *Subcoccinella vigintiquatuorpunctata*.

7,8,22,23-Tetrahydro: 5,20-Dipropyl-1,16-dioxa-4,19-diazacyclotriaconta-10,25-diene-15,30-dione
$C_{32}H_{58}N_2O_4$ 534.821

Isol. from *Subcoccinella vigintiquatuorpunctata*.

Schroeder, F.C. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 1998, **95**, 13387-13391
Gronquist, M.R. *et al., J.O.C.*, 2001, **66**, 1075-1081

Diptaline D-826

[11-(Methylsulfinyl)undecyl]urea, 9CI. Dipthaline
[94898-72-3]
$H_2NCONH(CH_2)_{11}SOMe$
$C_{13}H_{28}N_2O_2S$ 276.442
Alkaloid from the seeds of *Diptychocarpus strictus* (Brassicaceae). Oil. $[\alpha]_D$ -10.2 (MeOH).

Aripova, S.F. *et al., Khim. Prir. Soedin.*, 1984, 400; *Chem. Nat. Compd. (Engl. Transl.)*, 380 (*isol, ir, struct*)

Diptamine D-827

N-*(1-Methylethyl)*-N′-*[7-(methylsulfinyl)heptyl]urea, 9CI. Dipthamine*
[75069-56-6]
$(H_3C)_2CHNHCONH(CH_2)_7SOMe$
$C_{12}H_{26}N_2O_2S$ 262.416
Alkaloid from *Diptychocarpus strictus* (Brassicaceae). Cryst. Mp 87-89°. $[\alpha]_D$ -42 (MeOH).

Aripova, S.F. *et al., Khim. Prir. Soedin.*, 1983, **19**, 660; *Chem. Nat. Compd. (Engl. Transl.)*, 1983, **19**, 631 (*isol, ir, pmr, ms*)

Diptocarpaine D-828

[6-(Methylsulfinyl)hexyl]urea, 9CI. Dipthocarpaine
[58985-19-6]
$H_2NCONH(CH_2)_6SOMe$
$C_8H_{18}N_2O_2S$ 206.308
Alkaloid from *Diptychocarpus strictus* (Brassicaceae). Mp 124-125°. $[\alpha]_D$ -80.33 (EtOH).

N^2-*Isopropyl:* ***Diptocarpamine***. N-*(1-Methylethyl)*-N′-*[6-(methylsulfinyl)-hexyl]urea, 9CI. Dipthocarpamine*
[58985-20-9]
$C_{11}H_{24}N_2O_2S$ 248.389
Alkaloid from *Diptychocarpus strictus* (Brassicaceae). Mp 100-101°. $[\alpha]_D^{26}$ -58.21.

S-*Deoxo: [6-(Methylthio)hexyl]urea*. ***Deoxydiptocarpaine***. *Deoxydipthocarpaine*
[62580-21-6]
$C_8H_{18}N_2OS$ 190.309
Alkaloid from *Diptychocarpus strictus* (Brassicaceae). Cryst. (Me_2CO/MeOH). Mp 118-119°.

N^2-*Isopropyl,* S-*deoxo:* ***Deoxydiptocarpamine***. *Deoxydipthocarpamine.* N-*Isopropyl*-N′-*[6-(methylthio)hexyl]urea*
[62784-29-6]
$C_{11}H_{24}N_2OS$ 232.389
Alkaloid from *Diptychocarpus strictus.* Cryst. Mp 108-109°.

Aripova, S.F. *et al., Khim. Prir. Soedin.*, 1975, **11**, 762-765; 1976, **12**, 674-675; *Chem. Nat. Compd. (Engl. Transl.)*, 1975, **11**, 784-786; 1976, **12**, 609-610 (*isol, ir, pmr, ms, struct*)
Abdilalimov, O. *et al., Khim. Prir. Soedin.*, 1978, **14**, 535-536; *Chem. Nat. Compd. (Engl. Transl.)*, 1978, **14**, 463-464 (*Deoxydiptocarpaine*)
Abdilalimov, O. *et al., Khim. Prir. Soedin.*, 1980, **16**, 365-370; *Chem. Nat. Compd. (Engl. Transl.)*, 1980, **16**, 274-278 (*ms*)
Tolstikova, O.V. *et al., Khim. Prir. Soedin.*, 1989, **25**, 232-236; *Chem. Nat. Compd. (Engl. Transl.)*, 1989, **25**, 199-202 (*synth*)
Aripova, S.F. *et al., Khim. Prir. Soedin.*, 1996, **32**, 952-954; *Chem. Nat. Compd. (Engl. Transl.)*, 1996, **32**, 926-927 (*Deoxydiptocarpamine*)

Diptocarpidine D-829

N,N′-*Bis[6-(methylsulfinyl)hexyl]urea, 9CI. Dipthocarpidine*
[58985-21-0]
$MeSO(CH_2)_6NHCONH(CH_2)_6SOMe$
$C_{15}H_{32}N_2O_3S_2$ 352.561
Alkaloid from *Diptychocarpus strictus* (Brassicaceae). Mp 135-136°. $[\alpha]_D^{25}$ -70.5 (MeOH).

S-*Deoxy:* ***Diptocarpiline***. N-*[6-(Methylsulfinyl)hexyl]*-N′-*[6-(methylthio)hexyl]urea, 9CI*
[68231-35-6]
$C_{15}H_{32}N_2O_2S_2$ 336.562
Alkaloid from *Diptychocarpus strictus* (Brassicaceae). Mp 95-97°. $[\alpha]_D^{28}$ -53.2 (MeOH).

S,S′-*Dideoxy:* ***N,N′-Bis[6-(methylthio)-hexyl]urea, 9CI***. N,N′-*Di(6-methylthiohexyl)urea*
[68231-36-7]
$C_{15}H_{32}N_2OS_2$ 320.563
Alkaloid from *Diptychocarpus strictus* (Brassicaceae). Liq.

Aripova, S.F. *et al., Khim. Prir. Soedin.*, 1975, **11**, 762; *Chem. Nat. Compd. (Engl. Transl.)*, 1975, **11**, 784 (*isol*)
Abdilolimov, O. *et al., Khim. Prir. Soedin.*, 1978, **14**, 223; 1980, **16**, 363; *Chem. Nat. Compd. (Engl. Transl.)*, 1978, **14**, 183; 1980, **16**, 271 (*uv, ir, pmr, ms, struct, deriv*)

Diptocarpilidine D-830

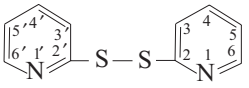
7-(Methylsulfinyl)heptanenitrile, 9CI. Dipthocarpilidine
[75272-86-5]
[139450-85-4]
$NC(CH_2)_6SOMe$
$C_8H_{15}NOS$ 173.279
Alkaloid from *Diptychocarpus strictus* (Brassicaceae). Antihypoxic agent. Oil. Bp_4 193-194°. $[\alpha]_D$ -49 ($CHCl_3$). λ_{max} 206 (log ϵ 3.15) (no solvent reported).

S-*Deoxo: 7-(Methylthio)heptanenitrile*
[75272-78-5]
$C_8H_{15}NS$ 157.279
Constit. of *Alyssum minimum* and *Wasabia japonica* (Japanese horseradish) and other conifers. Antifungal agent.

Aripova, S.F. *et al., Khim. Prir. Soedin.*, 1984, **20**, 84-86; *Chem. Nat. Compd. (Engl. Transl.)*, 1984, **20**, 79-81 (*isol, pmr, ms*)
Tolstikov, A.G. *et al., Khim. Prir. Soedin.*, 1991, **27**, 261-263; *Chem. Nat. Compd. (Engl. Transl.)*, 1991, **27**, 225-226 (*synth, cmr*)
Kumagai, H. *et al., Biosci., Biotechnol., Biochem.*, 1994, **58**, 2131-2135 (*deriv, isol*)
Pedras, M.S.C. *et al., Phytochemistry*, 1998, **49**, 1959-1965 (*isol, ir, pmr, cmr, ms*)

Di-2-pyridinyl disulfide D-831

2,2′-Dithiobispyridine, 9CI. 2,2′-Dipyridyl disulfide. Aldrithiol 2
[2127-03-9]



$C_{10}H_8N_2S_2$ 220.319
Reagent for peptide coupling and macrocyclic lactonisation of ω-hydroxy acids and selective reagent for detecting thiols. Used as a 1m*M* soln. in EtOH for photometric detn. of $S^{2\ominus}$. Cryst. (petrol). Sol. H_2O, EtOH, Me_2CO, C_6H_6. Mp 57-58°.

N,N′-*Dioxide:* ***Dipyrithione, BSI, INN, USAN***. *Omadine disulfide. Omadine-DS. OMDS*
[3696-28-4]
$C_{10}H_8N_2O_2S_2$ 252.317
Prod. by *Cortinarius* sp. Antibacterial, antifungal agent. Cryst. (MeOH). Mp 205-206° Mp 235-237°. Log P -2.31 (calc).

▶ Exp. reprod. and teratogenic effects. UT2965000

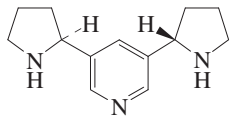
N,N′-*Dioxide, $MgSO_4$ complex:* ***Bispyrithione magsulfex, USAN***. *[2,2′-Dithiobis[pyridine] 1,1′-dioxide-O,O′,S][sulfato(2-)-O]magnesium, 9CI. Omadine MDS*
[67182-81-4]
$C_{10}H_8MgN_2O_6S_3$ 372.686
Antibacterial, antidandruff and antifungal agent.

[43143-11-9]

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 760B; 914D (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 283C (*nmr*)
Marckwald, W. *et al., Ber.*, 1900, **33**, 1556-1566 (*synth*)
Räth, C. *et al., Annalen*, 1931, **487**, 105-119 (*synth*)
Canadian Pat., 1954, (*(Dominion Rubber)*)501 851; *CA*, **50**, 6740 (*deriv*)
U.S. Pat., 1956, (*(Olin Mathieson)*)2 742 476; *CA*, **50**, 16877c (*deriv*)
Humphrey, R.E. *et al., Anal. Chem.*, 1971, **43**, 140-142 (*detn, $S^{2\ominus}$*)
Ger. Pat., 1973, (*(Olin Corp)*)2 248 880; *CA*, **79**, 45658 (*bispyrithione magsulfex*)
Corey, E.J. *et al., J.A.C.S.*, 1974, **96**, 5614-5616 (*use*)
Adams, M.D. *et al., Toxicol. Appl. Pharmacol.*, 1976, **36**, 523 (*bispyrithione magsulfex*)
Keats, N.G. *et al., J. Het. Chem.*, 1977, **14**, 231-233 (*ms*)
Grimshaw, C.E. *et al., J.A.C.S.*, 1979, **101**, 1521-1532 (*use*)
Fieser and Fieser's Reagents for Organic Synthesis, Wiley, 1980, **8**, 214 (*use*)

Mitoma, C. *et al., Fundam. Appl. Toxicol.*, 1983, **3**, 256 (*bispyrithione magsulfex, metab*)
Johnson, D.E. *et al., Fundam. Appl. Toxicol.*, 1984, **4**, 81 (*bispyrithione magsulfex*)
Kato, E. *et al., Chem. Pharm. Bull.*, 1986, **34**, 486-495 (*synth*)
Barton, D.H.R. *et al., Tetrahedron*, 1988, **44**, 7385-7392; 1991, **47**, 6127-6138 (*synth, pmr, cmr, dioxide*)
Pesticide Manual, 9th edn., 1991, No. 5325
Encyclopaedia of Reagents for Organic Synthesis, (ed. Paquette, L.A.), Wiley, 1995, **4**, 2277-2280 (*use*)
Stoyanov, S. *et al., J. Het. Chem.*, 1996, **33**, 927-931 (*uv*)
Martindale, The Extra Pharmacopoeia, 31st edn., Pharmaceutical Press, 1996, 1085
Bodige, S.G. *et al., Chem. Comm.*, 1997, 1669-1670 (*dioxide, cryst struct*)
Nicholas, G.M. *et al., J. Nat. Prod.*, 2001, **64**, 341-344 (*dioxide, isol*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, DXN300

3,5-Di-2-pyrrolidinylpyridine D-832



$C_{13}H_{19}N_3$ 217.313

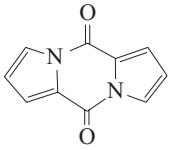
(*S,S*)-(?)-*form*

N,N′-*Di-Me: 3,5-Bis(1-methyl-2-pyrrolidinyl)pyridine*
$C_{15}H_{23}N_3$ 245.367
Alkaloid from the roots of *Nicotiana tabacum*.

Wei, X. *et al., Life Sci.*, 2005, **78**, 495-505 (*isol, synth, pmr, cmr, ms*)

5*H*,10*H*-Dipyrrolo[1,2-*a*:1′,2′-*d*]pyrazine-5,10-dione, 9CI D-833

Pyrocoll
[484-73-1]

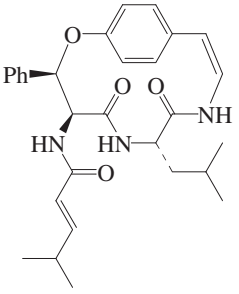


$C_{10}H_6N_2O_2$ 186.17
Obt. from gelatine. Prod. by the alkaliphilic *Streptomyces* sp. AK 409. Exhibits various antimicrobial activities. Plates (AcOH), cryst. (C_6H_6). Mp 272-273° (sealed tube). Gives 1*H*-Pyrrole-2-carboxylic acid, P-944 with KOH.

Ciamician, G. *et al., Monatsh. Chem.*, 1880, **1**, 279; *Ber.*, 1884, **17**, 105
Hale, W.J. *et al., J.A.C.S.*, 1916, **38**, 1065
Mold, J.D. *et al., Tob. Int.*, 1960, **4**, 130; *CA*, **54**, 25597
Johnson, A.W. *et al., J.C.S. Perkin 1*, 1972, 2681
Boatman, R.J. *et al., J.O.C.*, 1976, **41**, 3050
Dieter, A. *et al., J. Antibiot.*, 2003, **56**, 639-646 (*isol, synth, pmr, cmr, ms, activity*)

Discarene C D-834

[357641-18-0]

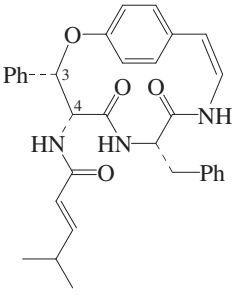


$C_{29}H_{35}N_3O_4$ 489.613
Not to be confused with Discarine C, D-837. Only relative config. at C-3/C-4 was determined. Alkaloid from the bark of *Discaria americana*. Powder. Mp 297° dec. $[\alpha]_D^{20}$ -51.7 (c, 0.2 in MeOH/$CHCl_3$).

Giacomelli, S.R. *et al., J. Nat. Prod.*, 2001, **64**, 997-999 (*isol, ir, pmr, cmr, struct*)

Discarene D D-835

[357641-20-4]

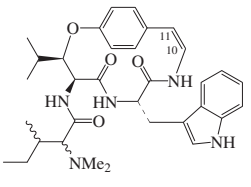


$C_{32}H_{33}N_3O_4$ 523.63
Not to be confused with Discarine D, D-838. Only rel. config. at C-3/C-4 was determined. C-7-Config. incorrectly given as *R*- in a 2006 review. Alkaloid from the bark of *Discaria americana*. Amorph. powder ($CHCl_3$). $[\alpha]_D^{25}$ -176 (c, 0.2 in MeOH/$CHCl_3$).

Giacomelli, S.R. *et al., J. Nat. Prod.*, 2001, **64**, 997-999 (*isol, pmr, cmr, struct*)
Giacomelli, S.R. *et al., Phytochemistry*, 2004, **95**, 933-937 (*occur*)

Discarine B D-836

[36211-11-7]



Absolute Configuration

$C_{33}H_{43}N_5O_4$ 573.734
Alkaloid from *Discaria longispina*, *Discaria americana*, *Discaria febrifuga*, *Ceanothus sanguineus*, and *Ceanothus integerrimus* (Rhamnaceae). Shows antibacterial props. Cryst. ($CHCl_3$/Et_2O). Mp 235-236°. $[\alpha]_D$ -172 (c, ca. 0.1 in $CHCl_3$).

N-*De-Me:* ***Discarine I***. N-*Demethyldiscarine B*
[105708-60-9]
$C_{32}H_{41}N_5O_4$ 559.707
Alkaloid from the root bark of *Discaria febrifuga* (Rhamnaceae). Mp 140°. $[\alpha]_D^{25}$ -149 (c, 0.1 in MeOH). May be identical with Homoamericine, in Texensine, T-300. λ_{max} 227 ; 270 ; 278 ; 289 (MeOH).

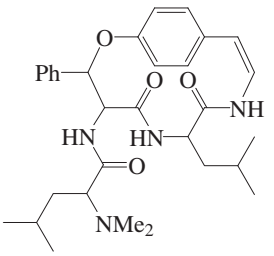
10,11-Dihydro:
Cryst. (MeOH aq.). Mp 263-263.5°.

10,11-Dihydro, 11-hydroxy: ***Discarine K***
[109175-41-9]
$C_{33}H_{45}N_5O_5$ 591.749
Alkaloid from the roots of *Discaria febrifuga* (Rhamnaceae). Mp 237°. $[\alpha]_D^{20}$ -62 (MeOH). No stereochem. determined.

González Sierra, M. *et al., Chem. Comm.*, 1972, 915-916 (*stereochem, pmr*)
Mascaretti, O.A. *et al., Phytochemistry*, 1972, **11**, 1133-1137 (*isol, uv, ir, pmr, ms, struct*)
Chang, C.-J. *et al., Phytochemistry*, 1974, **13**, 1273-1277 (*pmr*)
Lagarias, J.C. *et al., J. Nat. Prod.*, 1979, **42**, 220-227; 663-668 (*isol, ms*)
Païs, M. *et al., Phytochemistry*, 1979, **18**, 1869-1872 (*cmr*)
Hennig, P. *et al., Z. Naturforsch., B*, 1986, **41**, 1180-1185 (*Discarine I*)
Voelter, W. *et al., Z. Naturforsch., B*, 1987, **42**, 467 (*Discarine K*)
Giacomelli, S.R. *et al., Phytochemistry*, 2004, **65**, 933-937 (*occur*)

Discarine C D-837

[88607-21-0]



$C_{31}H_{42}N_4O_4$ 534.697
No stereochem. determined. Alkaloid from *Discaria americana* and *Discaria febrifuga* (Rhamnaceae). Phys. constants not recorded.

Digel, M. *et al., Hoppe-Seyler's Z. Physiol. Chem.*, 1983, **364**, 1641-1643 (*uv, ir, pmr, ms, struct*)
Giacomelli, S.R. *et al., J. Nat. Prod.*, 2001, **64**, 997-999 (*occur*)
Giacomelli, S.R. *et al., Phytochemistry*, 2004, **65**, 933-937 (*occur*)

Discarine D† D-838

[88644-36-4]
As Discarine C, D-837 with

R = –CH_2Ph

$C_{34}H_{40}N_4O_4$ 568.714

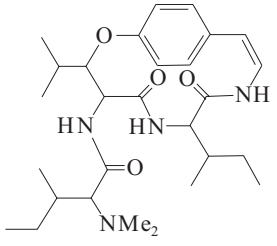
Stereochem. not determined. Alkaloid from the root bark of *Discaria americana* and *Discaria febrifuga* (Rhamnaceae). Mp 212°. $[\alpha]_D^{20}$ -148 (c, 0.1 in $CHCl_3$).

Stereoisomer: ***Crenatine A***†
[52801-20-4]
$C_{34}H_{40}N_4O_4$ 568.714
Alkaloid from *Discaria crenata* (Rhamnaceae). Mp 223°. $[\alpha]_D$ -292.58 ($CHCl_3$).

Silva, M. *et al., Phytochemistry*, 1974, **13**, 861-863 (*Crenatine A*)
Digel, M. *et al., Hoppe-Seyler's Z. Physiol. Chem.*, 1983, **364**, 1641-1643 (*Discarine D*)
Giacomelli, S.R. *et al., J. Nat. Prod.*, 2001, **64**, 997-999 (*occur*)

Discarine E D-839

[98263-18-4]

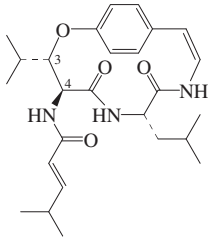


$C_{28}H_{44}N_4O_4$ 500.68
Alkaloid from the bark of *Discaria febrifuga* and from *Discaria longispina* (Rhamnaceae). Mp 270-273°. $[\alpha]_D^{25}$ +236 (c, 0.5 in AcOH).

Morel, A. *et al., Chimia*, 1985, **39**, 98 (*isol, ms, pmr, uv, struct*)
Machado, E.C. *et al., J. Nat. Prod.*, 1995, **58**, 548 (*isol, ir, pmr, cmr, ms*)

Discarine M D-840

[714249-70-4]



Absolute Configuration

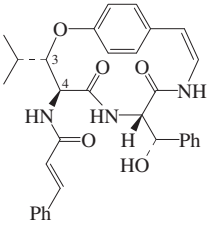
$C_{26}H_{37}N_3O_4$ 455.596
Only rel. config. of C-3/C-4 was determined. Alkaloid from the bark of *Discaria americana*. Amorph. powder. $[\alpha]_D^{20}$ -176.7 (c, 0.2 in MeOH/$CHCl_3$).

N-*Deacyl,* N-*(*E-*cinnamoyl):* ***Sanjoinenine***
[107446-80-0]
$C_{29}H_{35}N_3O_4$ 489.613
Alkaloid from the seeds of *Zizyphus vulgaris* var. *spinosus* and from *Zizyphus lotus*. Needles ($CHCl_3$/MeOH). Mp 281-282°. $[\alpha]_D$ -272.5 (c, 1.6 in Py). Gross. struct. only determined, may not be the same stereochem. as that of Discarine M. The *Z. lotus* isolate reported to be racemic. λ_{max} 224 (log ϵ 4.38); 281 (log ϵ 4.39) (MeOH).

Han, B.H. *et al., Phytochemistry*, 1990, **29**, 3315-3319 (*Sanjoinenine*)
Abu-Zarga, M. *et al., J. Nat. Prod.*, 1995, **58**, 504-511 (*(±-)-Sanjoinenine*)
Giacomelli, S.R. *et al., Phytochemistry*, 2004, **65**, 933-937 (*Discarine M*)

Discarine N D-841

[714249-71-5]



Absolute Configuration

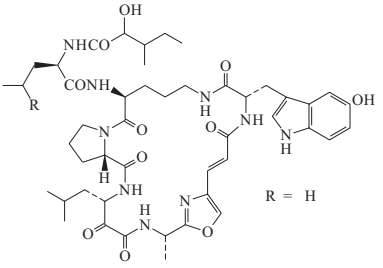
$C_{32}H_{33}N_3O_5$ 539.63
Only rel. config. of C-3/C-4 was determined. Alkaloid from the bark of *Discaria americana*. Powder. Mp 233-235°. $[\alpha]_D^{20}$ +98.1 (c, 0.09 in MeOH/$CHCl_3$).

Stereoisomer(?): ***Scutianene C***. *Scutianene D*
[55857-24-4]
$C_{32}H_{33}N_3O_5$ 539.63
Alkaloid from *Scutia buxifolia*. Cryst. (MeOH). Mp 232-234°. $[\alpha]_D$ +203 (c, 0.1 in $CHCl_3$/MeOH). No stereochem. determined. Not to be confused with Scutianine C, S-166. λ_{max} 207 (log ϵ 4.43); 218 (log ϵ 4.39); 275 (log ϵ 4.32) (no solvent reported).

Gonzalez, S. *et al., Phytochemistry*, 1974, **13**, 2865-2869 (*Scutianene C*)
Giacomelli, S.R. *et al., Phytochemistry*, 2004, **65**, 933-937 (*Discarine N*)
Morel, A.F. *et al., Phytochemistry*, 2005, **66**, 2571-2576 (*Scutianene D*)

Discobahamin A D-842

[155547-93-6]



$C_{47}H_{65}N_9O_{11}$ 932.084
Cyclic peptide antibiotic. Constit. of the marine sponge *Discodermia* sp. Antifungal agent. Pale yellow gum. Sol. MeOH. $[\alpha]_D^{24}$ -29 (c, 0.5 in MeOH). λ_{max} 203 (ϵ 1400); 220 (ϵ 10200); 267 (ϵ 6800); 305 (ϵ 1500) (MeOH) (Berdy).

Gunasekera, S.P. *et al., J. Nat. Prod.*, 1994, **57**, 79 (*isol, pmr, cmr*)

Discobahamin B D-843

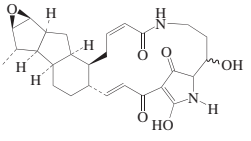
[155547-94-7]
As Discobahamin A, D-842 with
R = –CH_3

$C_{48}H_{67}N_9O_{11}$ 946.111
Cyclic peptide antibiotic. Constit. of the marine sponge *Discodermia* sp. Antifungal agent. Pale yellow gum. Sol. MeOH. $[\alpha]_D^{24}$ -31 (c, 0.1 in MeOH). λ_{max} 203 (ϵ 1400); 220 (ϵ 10200); 267 (ϵ 6800); 305 (ϵ 1500) (MeOH) (Berdy).

Gunasekera, S.P. *et al., J. Nat. Prod.*, 1994, **57**, 79 (*isol, pmr, cmr*)

Discodermide D-844

[134458-00-7]



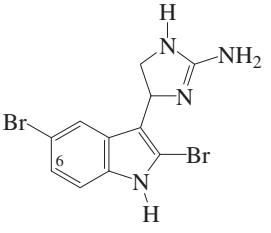
Relative Configuration

$C_{27}H_{34}N_2O_6$ 482.575
Tetramic acid deriv. Isol. from the sponge *Discodermia dissoluta*. Antifungal and antitumour agent. Mp *ca.*° 200 dec. $[\alpha]_D$ +97.5 (c, 0.2 in $CHCl_3$/MeOH). λ_{max} 238 (ϵ 16500); 313 (ϵ 9650) (MeOH).

Gunasekera, S.P. *et al., J.O.C.*, 1991, **56**, 4830-4833 (*isol, uv, pmr, cmr*)

Discodermindole D-845

[133523-28-1]



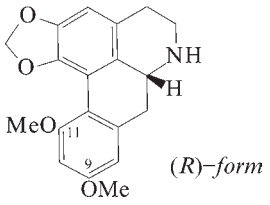
$C_{11}H_{10}Br_2N_4$ 358.035
Alkaloid from the sponge *Discodermia polydiscus*. Cytotoxic. Viscous oil. $[\alpha]_D^{20}$ -27 (c, 1 in MeOH). λ_{max} 224 (ϵ 34000); 282 (ϵ 5700); 292 (ϵ 6100); 300 (ϵ 5000) (MeOH) (Derep).

6-Hydroxy: ***6-Hydroxydiscodermindole***
$C_{11}H_{10}Br_2N_4O$ 374.034
Isol. from *Discodermia polydiscus*. $[\alpha]_D^{21}$ -41.6 (c, 0.1 in MeOH). λ_{max} 215 (log ϵ 4.34); 260 (log ϵ 3.94); 310 (log ϵ 4.79) (MeOH).

Sun, H.H. *et al., J.O.C.*, 1991, **56**, 4307-4308 (*isol, uv, ir, pmr, cmr, ms*)
Cohen, J. *et al., Pharm. Biol.*, 2004, **42**, 59-61 (*6-Hydroxydiscodermindole*)

Discoguattine D-846

*6,7,7*a,*8-Tetrahydro-10,12-dimethoxy-5*H-*benzo[*g*]-1,3-benzodioxolo[6,5,4-*de*]quinoline, 9CI. 9,11-Dimethoxy-1,2-methylenedioxynoraporphine.* O-*Methylcalycinine*



(*R*)–*form*

$C_{19}H_{19}NO_4$ 325.363

(*R*)-*form* [89368-38-7]

Alkaloid from the stem bark of *Guatteria discolor* (Annonaceae). Noncryst. Negative opt. rotn. in MeOH.

O^{9}-*De-Me:* ***Isocalycinine****. 9-Hydroxy-11-methoxy-1,2-methylenedioxynoraporphine*
[91174-09-3]
$C_{18}H_{17}NO_4$ 311.337
Alkaloid from the stem bark of *Guatteria discolor* (Annonaceae). Beige cryst. (MeOH). Mp 219°. $[\alpha]_D$ -147 (c, 0.53 in Py).

O^{11}-*De-Me:* ***Calycinine****. 6,7,7*a,*8-Tetrahydro-10-methoxy-5*H-*benzo[*g*]-1,3-benzodioxolo[6,5,4-*de*]quinolin-12-ol, 9CI. 11-Hydroxy-9-methoxy-1,2-methylenedioxynoraporphine. Fissoldine*
[70420-58-5]
$C_{18}H_{17}NO_4$ 311.337
Alkaloid from the leaves of *Duguetia calycina* and the leaves and stem bark of *Duguetia obovata*. Also isol. from *Fissistigma oldhamii* (Annonaceae). Cryst. (Et_2O). Mp 156°. $[\alpha]_D$ -145 (c, 0.53 in $CHCl_3$).

O^{11}-*De-Me; hydrobromide:*
Light-greyish needles (EtOH). Mp 276-277°. $[\alpha]_D^{25}$ -99.1 (c, 0.45 in EtOH).

O^{11}-*De-Me;* N,O-*Di-Ac:*
Noncryst. $[\alpha]_D$ -313 (c, 0.55 in $CHCl_3$).

O^{11}-*De-Me,* N-*Me:* **N-*Methylcalycinine****. 11-Hydroxy-9-methoxy-1,2-methylenedioxyaporphine*
[86537-66-8]
$C_{19}H_{19}NO_4$ 325.363
Trace alkaloid from the stem bark of *Duguetia obovata* (Annonaceae). Noncryst. Negative opt. rotn. in $CHCl_3$.

O^{11}-*De-Me,* N-*Me, 6-hydroxy:* see Spixianine, S-469

(*S*)-*form*

O^{11}-*De-Me:* ***Fissistigine A***
[83685-17-0]
$C_{18}H_{17}NO_4$ 311.337
Alkaloid from *Fissistigma oldhamii* (Annonaceae).

Lu, S.-T. *et al., Heterocycles*, 1983, **20**, 813 (*uv, ir, pmr, ms, struct, Calycinine*)

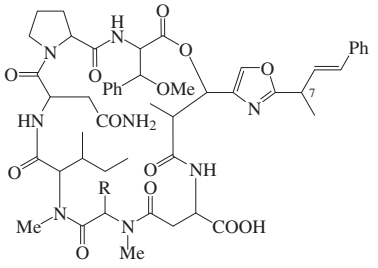
Roblot, F. *et al., J. Nat. Prod.*, 1983, **46**, 862 (*uv, ir, pmr, cmr, ms, struct, Discoguattine, Calycinine*)

Xu, C. *et al., Zhongcaoyao*, 1983, **14**, 148; *CA*, **99**, 19659n (*isol, uv, ir, pmr, ms, struct, Fissistigine A*)

Hocquemiller, R. *et al., J. Nat. Prod.*, 1984, **47**, 353 (*isol, uv, ir, pmr, ms, struct, Isocalycinine*)

Discokiolide A D-847

[141266-02-6]



R = -$CH(CH_3)_2$

$C_{53}H_{70}N_8O_{13}$ 1027.182

Depsipeptide antibiotic. Isol. from marine sponge *Discodermia kiiensis*. Cytotoxic agent. $[\alpha]_D^{25}$ -52.3 (c, 1 in MeOH) (as Me ester). λ_{max} 251 (ϵ 19500) (MeOH).

Tada, H. *et al., Chem. Lett.*, 1992, 431-434 (*isol, struct*)

Discokiolide B D-848

[141266-03-7]

As Discokiolide A, D-847 with

R = -$CH(CH_3)CH_2CH_3$

$C_{54}H_{72}N_8O_{13}$ 1041.209

Depsipeptide antibiotic. Isol. from the marine sponge *Discodermia kiiensis*. Cytotoxic. $[\alpha]_D^{25}$ -43.5 (c, 1 in MeOH) (as Me ester). λ_{max} 251 (ϵ 19500) (MeOH) (Derep).

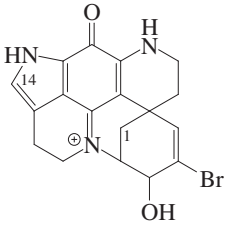
Δ^{7}*-Isomer:* ***Discokiolide D***
[141266-05-9]
$C_{54}H_{72}N_8O_{13}$ 1041.209
Isol. from *Discodermia kiiensis*. Cytotoxic. $[\alpha]_D^{25}$ -49.5 (c, 0.6 in MeOH) (as Me ester). λ_{max} 258 (ϵ 15900) (MeOH) (Derep).

Demethoxy: ***Discokiolide C***
[141266-04-8]
$C_{53}H_{70}N_8O_{12}$ 1011.182
Isol. from *Discodermia kiiensis*. Cytotoxic. $[\alpha]_D^{25}$ -28.7 (c, 0.6 in MeOH) (as Me ester). λ_{max} 252 (ϵ 18200) (MeOH) (Derep).

Tada, H. *et al., Chem. Lett.*, 1992, 431 (*isol, struct*)

Discorhabdin V D-849

[721395-09-1]



$C_{18}H_{17}BrN_3O_2^{\oplus}$ 387.255

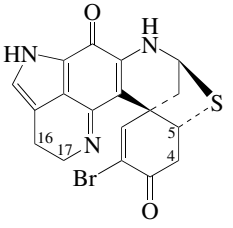
Alkaloid from the sponge *Tsitsikamma pedunculata*. Dark green solid (as trifluoroacetate salt).

14-Bromo, 1-hydroxy: ***14-Bromo-1-hydroxydiscorhabdin V***
[721395-38-6]
$C_{18}H_{16}Br_2N_3O_3^{\oplus}$ 482.151
Alkaloid from *Tsitsikamma flavus* and *Tsitsikamma pedunculata*. Brown solid (as trifluoroacetate salt).

Antunes, E.M. *et al., J. Nat. Prod.*, 2004, **67**, 1268-1276 (*isol, cd, pmr, cmr*)

Discorhabdin A D-850

Prianosin A
[112515-41-0]



$C_{18}H_{14}BrN_3O_2S$ 416.297

This group of alkaloids exist in nature in two enantiomeric forms, depending upon the location of their natural source. Closely related to Discorhabdin C, D-851. Alkaloid from the marine sponge *Prianos melanos* and *Latrunculia brevis*. Exhibits potent antineoplastic activity. Green solid (as hydrochloride). Mp 300°. $[\alpha]_D^{24}$ +248 (c, 0.19 in $CHCl_3$). $[\alpha]_D$ +400 (c, 0.05 in MeOH) (hydrochloride). λ_{max} 335 (ϵ 14000); 473 (ϵ 1000) (MeOH/KOH) (Derep). λ_{max} 248 (ϵ 29500); 353 (ϵ 11000); 430 (sh) ; 567 (ϵ 900) (MeOH) (Derep).

4,5-Didehydro: ***Discorhabdin B***
[115439-61-7]
$C_{18}H_{12}BrN_3O_2S$ 414.282
Isol. from a *Latrunculia* sp. Cytotoxic agent. Green solid (hydrochloride). Sol. DMSO; fairly sol. MeOH, H_2O. Mp > 360° (hydrochloride). $[\alpha]_D$ +400 (c, 0.2 in MeOH) (hydrochloride). λ_{max} 248 (ϵ 30600); 309 (ϵ 10800); 357 (ϵ 10600); 567 (ϵ 1100) (MeOH). λ_{max} 231 (ϵ 22500); 306 (ϵ 14700) (MeOH/NaOH) (Berdy).

16,17-Didehydro: ***Prianosin B***
[116302-35-3]
$C_{18}H_{12}BrN_3O_2S$ 414.282
Alkaloid from *Prianos melanos*. Cytotoxic agent. Red cryst. Sol. EtOAc, MeOH, $CHCl_3$; poorly sol. H_2O. Mp 250-251° dec. $[\alpha]_D^{30}$ +360 (c, 0.1 in $CHCl_3$). λ_{max} 228 (ϵ 17800); 263 (ϵ 15000); 410 (sh); 430 (ϵ 11200) (MeOH) (Derep).

4,5,16,17-Tetradehydro: ***Discorhabdin Q***
[224447-29-4]
$C_{18}H_{10}BrN_3O_2S$ 412.266
Alkaloid from the sponges *Latrunculia purpurea* and *Zyzzya* spp. Orange solid. $[\alpha]_D$ -452.4 (c, 0.004 in $CHCl_3$). $[\alpha]_D$ -904 (c, 0.01 in MeOH). λ_{max} 222 (ϵ 28200); 428 (ϵ 9900) (MeOH).

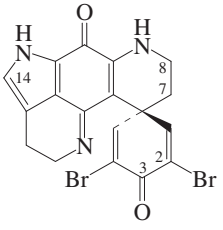
Debromo, 4,5-didehydro: ***Discorhabdin I***
[663597-85-1]
$C_{18}H_{13}N_3O_2S$ 335.386
Formerly given synonym Discorhabdin G which confuses it with Discorhabdin G in Discorhabdin C, D-851. Isol. from *Latrunculia* sp. Cytotoxic. Green solid (as trifluoroacetate salt). $[\alpha]_D$ +540 (c, 0.05 in MeOH) (as trifluoroacetate salt).

Debromo, 4,5-didehydro, 1ξ,2ξ-epoxide: ***Discorhabdin R***
[308355-78-4]
$C_{18}H_{13}N_3O_3S$ 351.385
Alkaloid from the sponges *Latrunculia* sp. and *Negombata* sp. Green solid. $[\alpha]_D^{20}$ +161 (c, 0.1 in MeOH). λ_{max} 202 (ϵ 7600); 255 (ϵ 9000); 262 (ϵ 9200); 287 (ϵ 5400); 326 (ϵ 3500); 368 (ϵ 3800); 567 (ϵ 600) (MeOH).

Kobayashi, J. *et al., Tet. Lett.*, 1987, **28**, 4939-4942 (*uv, ir, pmr, cmr, cryst struct, abs config*)
Cheng, J. *et al., J.O.C.*, 1988, **53**, 4621-4624 (*Prianosins*)
Perry, N.B. *et al., Tetrahedron*, 1988, **44**, 1727-1734 (*Discorhabdin B*)
Dijoux, M.-G. *et al., J. Nat. Prod.*, 1999, **62**, 636-637 (*Discorhabdin Q*)
Ford, J. *et al., J. Nat. Prod.*, 2000, **63**, 1527-1528 (*Discorhabdin R*)
Tohma, H. *et al., Angew. Chem., Int. Ed.*, 2002, **41**, 348-350 (*Discorhabdin A, synth*)
Tohma, H. *et al., J.A.C.S.*, 2003, **125**, 11235-11240 (*Discorhabdin A, synth*)
Reyes, F. *et al., J. Nat. Prod.*, 2004, **67**, 463-465 (*Discorhabdin I*)
Harayama, Y. *et al., Curr. Org. Chem.*, 2005, **9**, 1567-1588 (*rev, synth*)
Antunes, E.M. *et al., Nat. Prod. Rep.*, 2005, **22**, 62-72 (*rev*)
Grkovic, T. *et al., J.O.C.*, 2008, **73**, 9133-9136 (*isol, cd, pmr, cmr, abs config*)
Wada, Y. *et al., Tetrahedron*, 2009, **65**, 1059-1062 (*Prianosin B, synth*)

Discorhabdin C D-851

[105372-81-4]



$C_{18}H_{13}Br_2N_3O_2$ 463.128
Pigment from a sponge of the genus *Latrunculia*. Sol. DMSO; fairly sol. MeOH. Mp 360° (as hydrochloride). λ_{max} 245 (ϵ 28500); 351 (ϵ 10000); 545 (ϵ 500) (MeOH/HCl) (Derep). λ_{max} 337 (ϵ 13000); 481 (ϵ 1500) (MeOH/KOH) (Derep). λ_{max} 245 (ϵ 28500); 250 (ϵ 14600); 351 (ϵ 10000); 355 (ϵ 7700); 545 (ϵ 500) (MeOH) (Berdy).
▶ Highly cytotoxic; LD_{50} (mus, ipr) 2 mg/kg.

*13-*N*-Me:* ***Discorhabdin P***
[219566-63-9]
$C_{19}H_{15}Br_2N_3O_2$ 477.154
Isol. from a sponge of the *Batzella* sp. Cytotoxic agent. Mp >° 360 (blackens at 162°). λ_{max} 200 (log ϵ 4.26); 245 (log ϵ 4.28); 337 (log ϵ 4); 488 (log ϵ 3.49) (MeOH).

3-Alcohol: ***3-Dihydrodiscorhabdin C***
$C_{18}H_{15}Br_2N_3O_2$ 465.143
Isol. from *Tsitsikamma pedunculata*. Red solid (as trifluoroacetate). λ_{max} 239 (ϵ 23700); 351 (ϵ 6030); 551 (ϵ 740) (MeOH) (trifluoroacetate).

7,8-Didehydro, 3-alcohol: ***7,8-Didehydro-3-dihydrodiscorhabdin C***. *3-Dihydro-7,8-dehydrodiscorhabdin C*
[721395-08-0]
$C_{18}H_{13}Br_2N_3O_2$ 463.128
Isol. from the sponges *Tsitsikamma flavus* and *Tsitsikamma pedunculata*. Olive-green solid.

14-Bromo: ***14-Bromodiscorhabdin C***
[182928-53-6]
$C_{18}H_{12}Br_3N_3O_2$ 542.024
Isol. from the South African latrunculid sponge *Tsitsikamma pedunculata* and another sponge. Exhibits antimicrobial activity. λ_{max} 242 ; 317 ; 374 (MeOH) (Berdy).

14-Bromo, 3-alcohol: ***14-Bromo-3-dihydrodiscorhabdin C***
[182928-55-8]
$C_{18}H_{14}Br_3N_3O_2$ 544.04
Isol. from *Tsitsikamma flavus*, *Tsitsikamma pedunculata* and another sponge. Exhibits antimicrobial activity. λ_{max} 242 ; 317 ; 374 (MeOH) (Berdy).

14-Bromo, 7,8-didehydro, 3-alcohol: ***14-Bromo-7,8-didehydro-3-dihydrodiscorhabdin C***. *14-Bromo-3-dihydro-7,8-didehydrodiscorhabdin C*
[721395-37-5]
$C_{18}H_{12}Br_3N_3O_2$ 542.024
Isol. from *Tsitsikamma pedunculata*. Green solid.

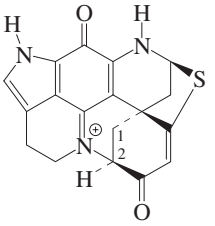
2-Debromo: ***Discorhabdin E***
[159308-95-9]
$C_{18}H_{14}BrN_3O_2$ 384.232
Alkaloid from the New Zealand sponge *Latrunculia* cf. *bocagei*. Red solid (as trifluoroacetate). λ_{max} 201 (ϵ 14500); 244 (ϵ 18000); 360 (ϵ 7300); 551 (ϵ 1000) (MeOH) (Berdy).

2-Debromo, 7,8-didehydro, 1,2-dihydro: ***Discorhabdin G***†
[172961-01-2]
$C_{18}H_{14}BrN_3O_2$ 384.232
Not to be confused with Discorhabdin G in Discorhabdin A, D-850. Alkaloid from the Antarctic sponge *Latrunculia apicalis*. Antimicrobial agent. Green pigment (as trifluoroacetate). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. $[\alpha]_D$ +27 (c, 0.063 in MeOH). λ_{max} 210 (ϵ 7500); 250 (ϵ 8100); 322 (ϵ 3200); 402 (ϵ 2300); 610 (ϵ 600) (MeOH).

Perry, N.B. *et al., J.O.C.*, 1986, **51**, 5476-5478 (*isol, uv, ir, pmr, cmr, ms, cryst struct*)
Nishiyama, S. *et al., Tet. Lett.*, 1991, **32**, 4151 (*synth*)
Kita, Y. *et al., J.A.C.S.*, 1992, **114**, 2175 (*synth*)
Copp, B.R. *et al., J.O.C.*, 1994, **59**, 8233-8238 (*Discorhabdin E*)
Tao, X.L. *et al., Tetrahedron*, 1994, **50**, 2017 (*synth*)
Yang, A. *et al., J. Nat. Prod.*, 1995, **58**, 1596-1599 (*Discorhabdin G*)
Sadanandan, E.V. *et al., J.O.C.*, 1995, **60**, 1800 (*synth*)
Hooper, G.J. *et al., Tet. Lett.*, 1996, **37**, 7135 (*14-Bromodiscorhabdin C, 14-Bromodihydrodiscorhabdin C*)
Roberts, D. *et al., J.O.C.*, 1997, **62**, 568 (*synth*)
Gunasekera, S.P. *et al., J. Nat. Prod.*, 1999, **62**, 173-175 (*Discorhabdin P*)
Aubart, K.M. *et al., J.O.C.*, 1999, **64**, 16-22 (*synth*)
Antunes, E.M. *et al., J. Nat. Prod.*, 2004, **67**, 1268-1276 (*14-Bromo-3-dihydro-7,8-didehydrodiscorhabdin C, 3-Dihydro-7,8-didehydrodiscorhabdin C*)
Harayama, Y. *et al., Curr. Org. Chem.*, 2005, **9**, 1567-1588 (*rev, synth*)

Discorhabdin D D-852

Prianosin D
[115384-95-7]



$C_{18}H_{14}N_3O_2S^{\oplus}$ 336.393
Alkaloid from the New Zealand sponge *Latrunculia brevis* and from the Okinawan marine sponge *Prianos melanos*. Exhibits significant *in vivo* antitumour and antineoplastic activity and antimicrobial action. Also induces $Ca^{2\oplus}$ release from sarcoplasmic reticulum. Green solid. Mp 300°. $[\alpha]_D^{26}$ +344 (c, 0.01 in MeOH). Unstable in soln. λ_{max} 250 (ϵ 18100); 284 (ϵ 11100); 325 (ϵ 6600); 392 (ϵ 6950) (MeOH) (Derep). λ_{max} 262 (ϵ 30900); 290 (ϵ 15500); 368 (ϵ 9550) (MeOH/KOH) (Derep). λ_{max} 248 (ϵ 22400); 281 (ϵ 14100); 320 (ϵ 8510); 395 (ϵ 8910); 584 (ϵ 692) (MeOH) (Derep).

*1*R*-Hydroxy:* ***Discorhabdin L***
[663597-84-0]
$C_{18}H_{14}N_3O_3S^{\oplus}$ 352.393
Alkaloid from *Latrunculia brevis*. Cytotoxic. Green solid (as TFA salt). Mp >250°. Blackens at 160° (TFA salt). Optically inactive at sodium D-line wavelength. λ_{max} 268 (log ϵ 3.75); 310 (sh) ; 352 (log ϵ 3.59); 550 (log ϵ 2.65) (MeOH) (TFA salt).

1ξ-Amino: ***1-Aminodiscorhabdin D***
[721395-40-0]
$C_{18}H_{15}N_4O_2S^{\oplus}$ 351.408
Isol. from *Latrunculia bellae*. Dark green solid.

1ξ-(Carboxymethylamino): ***Discorhabdin N***
[721395-10-4]
$C_{20}H_{17}N_4O_4S^{\oplus}$ 409.445
Isol. from *Latrunculia bellae*. Red-brown solid.

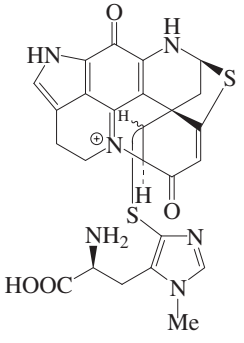
1ξ-Methoxy: ***1-Methoxydiscorhabdin D***
[721395-39-7]
$C_{19}H_{16}N_3O_3S^{\oplus}$ 366.42

Isol. from *Latrunculia bellae*. Brown solid.

Perry, N.B. *et al., J.O.C.*, 1988, **53**, 4127-4128 (*isol, uv, ir, pmr, cmr*)
Cheng, J.F. *et al., J.O.C.*, 1988, **53**, 4621-4624 (*isol, uv, ir, pmr, cmr, ms, cd*)
Kobayashi, J. *et al., Tet. Lett.*, 1991, **32**, 1227-1228 (*struct*)
Reyes, F. *et al., J. Nat. Prod.*, 2004, **67**, 463-465 (*Discorhabdin L*)
Antunes, E.M. *et al., J. Nat. Prod.*, 2004, **67**, 1268-1276 (*Discorhabdin N, 1-Aminodiscorhabdin D, 1-Methoxydiscorhabdin D*)
Antunes, E.M. *et al., Nat. Prod. Rep.*, 2005, **22**, 62-72 (*rev*)

Discorhabdin H D-853

[721395-11-5]

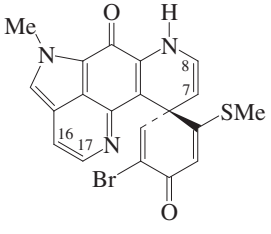


$C_{25}H_{23}N_6O_4S_2^{\oplus}$ 535.627
Alkaloid from the sponge *Strongylodesma algoensis*. Dark green solid.

Antunes, E.M. *et al., J. Nat. Prod.*, 2004, **67**, 1268-1276 (*isol, pmr, cmr*)

Discorhabdin T D-854

[649761-80-8]



$C_{20}H_{14}BrN_3O_2S$ 440.32
Isol. from the sponge *Batzella* sp. Cytotoxic. Dark orange solid. λ_{max} 225 (log ϵ 4.11); 245 (log ϵ 3.97); 305 (log ϵ 3.65); 412 (log ϵ 3.55); 432 (log ϵ 3.65) (MeOH).

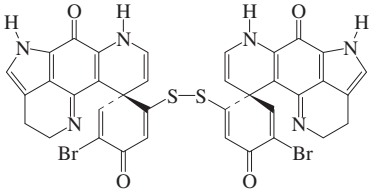
7,8-Dihydro: ***Discorhabdin S***
[649761-79-5]
$C_{20}H_{16}BrN_3O_2S$ 442.335
Isol. from a *Batzella* sp. Cytotoxic. Dark orange solid. λ_{max} 225 (log ϵ 4.54); 260 (log ϵ 4.27); 305 (log ϵ 4.04); 400 (log ϵ 3.94); 422 (log ϵ 4.14) (MeOH).

16,17-Dihydro: ***Discorhabdin U***
[649761-81-9]
[1078709-79-1 (±)-form]
$C_{20}H_{16}BrN_3O_2S$ 442.335
Isol. from a *Batzella* sp. Cytotoxic. Dark orange solid. λ_{max} 205 (log ϵ 4.42); 242 (log ϵ 4.22); 287 (log ϵ 4.01); 340 (log ϵ 3.95); 425 (log ϵ 3.12) (MeOH).

Gunasekera, S.P. *et al., J. Nat. Prod.*, 2003, **66**, 1615-1617 (*isol, pmr, cmr*)

Discorhabdin W D-855

[872199-41-2]

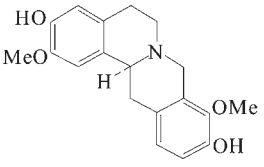


$C_{36}H_{22}Br_2N_6O_4S_2$ 826.548
Isol. from a New Zealand *Latrunculia* sp. $[\alpha]_D^{20}$ +220 (c, 0.05 in MeOH). λ_{max} 203 ; 241 ; 301 ; 444 (TFA/MeCN aq.).

Lang, G. *et al., J. Nat. Prod.*, 2005, **68**, 1796-1798 (*isol, pmr, cmr*)

Discretamine D-856

Aequaline



(*S*)*–form*

$C_{19}H_{21}NO_4$ 327.379

(S)-form [1356-73-6]
Alkaloid from *Xylopia discreta, Xylopia buxifolia, Desmos tiebaghiensis, Duguetia calycina, Schefferomitra subaequalis* and *Mitrella kentii* (Annonaceae). Cryst. ($CHCl_3$/MeOH). Mp 221-224° dec. (232° dec.). $[\alpha]_D^{23}$ -368 (c, 1.01 in Py). λ_{max} 212 (log ϵ 4.5); 225 (sh) (log ϵ 4.1); 284 (log ϵ 3.79) (EtOH).

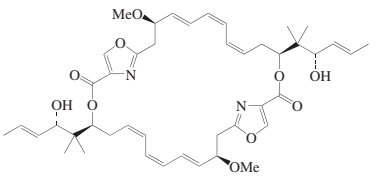
Di-Me ether: see Tetrahydropalmatine, T-212

(±)-form [55934-50-4]
Synthetic. Mp 208-212° dec.

Schmutz, J. *et al., Helv. Chim. Acta*, 1959, **42**, 335-343 (*isol, uv*)
Gellert, E. *et al., Aust. J. Chem.*, 1972, **25**, 2477-2482 (*isol, uv, ir, pmr, ms, struct*)
Ellis, J. *et al., Aust. J. Chem.*, 1972, **25**, 2735-2736 (*isol*)
Richter, W.J. *et al., Helv. Chim. Acta*, 1975, **58**, 209-211 (*ms, struct*)
Chiang, H.-C. *et al., J.O.C.*, 1977, **42**, 3190-3194 (*synth, pmr, ms*)
Brochmann-Hanssen, E. *et al., J.O.C.*, 1977, **42**, 3588-3591 (*struct*)
Hocquemiller, R. *et al., J. Nat. Prod.*, 1981, **44**, 551-556 (*occur*)
Leboeuf, M. *et al., J. Nat. Prod.*, 1982, **45**, 617-623 (*isol, uv, pmr, ms*)
Kaewamatawong, R. *et al., J. Nat. Med. (Tokyo)*, 2007, **61**, 349-350 (*isol, pmr, cmr*)

Disorazole C_1 D-857

[158181-52-3]



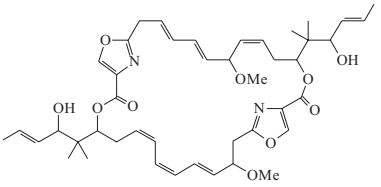
Absolute Configuration

$C_{44}H_{58}N_2O_{10}$ 774.95
Prod. by *Sorangium cellulosum*. Highly cytotoxic and active against fungi. Sol. MeOH, EtOAc; poorly sol. H_2O, hexane. $[\alpha]_D^{22}$ -124.8 (c, 0.6 in MeOH). λ_{max} 272 ; 351 (MeOH) (Berdy).

Jansen, R. *et al., Annalen*, 1994, 759 (*isol, uv, pmr, cmr*)
Hillier, M.C. *et al., Tet. Lett.*, 2000, **41**, 2821-2824 (*synth*)
Wipf, P. *et al., J.A.C.S.*, 2004, **126**, 15346-15347 (*synth*)

Disorazole C_2 D-858

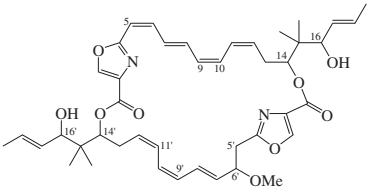
[158181-53-4]



$C_{44}H_{58}N_2O_{10}$ 774.95
Isol. from bacterium *Sorangium cellulosum*. Cytotoxic, fungicidal. $[\alpha]_D^{22}$ -140 (c, 0.1 in MeOH).

Jansen, R. *et al., Annalen*, 1994, 759 (*isol, uv, pmr, cmr, struct*)

Disorazole F_1 D-859



$C_{43}H_{54}N_2O_9$ 742.908
Gross stereochem. only publ. so far for most members of this series. See also Disorazole C_1, D-857 which is the member of the series for which stereochem. is best known. Prod. by *Sorangium cellulosum*. Cytotoxic, fungicidal. Sol. MeOH, EtOAc; poorly sol. H_2O, hexane. $[\alpha]_D^{22}$ +16 (c, 0.1 in MeOH). λ_{max} 254 ; 264 (sh) ; 271 (ϵ 49500); 282 ; 320 ; 339 (sh) (MeOH).

O-*De-Me:* ***Disorazole F_2***
$C_{42}H_{52}N_2O_9$ 728.881
From *Sorangium cellulosum*. Cytotoxic, fungicidal. Sol. MeOH; poorly

sol. H_2O, hexane. $[\alpha]_D^{22}$ -66.2 (c, 0.7 in MeOH). λ_{max} 263 (sh) ; 271 (ϵ 43650); 280 ; 338 (sh) ; 351 (ϵ 41000); 366 (sh) (MeOH).

*9*R,*10*R-*Epoxide:* ***Disorazole A_7***
$C_{43}H_{54}N_2O_{10}$ 758.907
From *Sorangium cellulosum*. Cytotoxic, fungicidal. Sol. MeOH; poorly sol. H_2O, hexane. $[\alpha]_D^{22}$ -211 (c, 0.4 in MeOH). λ_{max} 252 ; 266 (sh) ; 274 (ϵ 40830); 281 ; 298 ; 307 ; 311 (sh) (MeOH).

*9*R,*10*S-*Epoxide:* ***Disorazole A_1***
$C_{43}H_{54}N_2O_{10}$ 758.907
Major metab. from the bacterium *Sorangium cellulosum*. Cytotoxic and fungicidal agent. Mp 172°. $[\alpha]_D^{22}$ -77 (c, 0.75 in MeOH). Compds. of the Disorazole complex are inactive against yeasts and bacteria. λ_{max} 264 (sh); 272; 278 (sh); 305 (sh) (MeOH) (Derep). λ_{max} 251 ; 265 (sh) ; 272 (ϵ 55600); 298 ; 306 ; 321 (sh) (MeOH).

*9*R,*10*S-*Epoxide,* O-*de-Me:* ***Disorazole A_2***
$C_{42}H_{52}N_2O_{10}$ 744.88
From *Sorangium cellulosum*. Cytotoxic, fungicidal. $[\alpha]_D^{22}$ -95.3 (c, 0.8 in MeOH). λ_{max} 252 ; 264 (sh) ; 272 (ϵ 51400); 281 ; 298 ; 306 ; 321 (sh) (MeOH).

*9*R,*10*R:*9′*R,*10′*S-*Diepoxide:* ***Disorazole E_2***
$C_{43}H_{54}N_2O_{11}$ 774.906
From *Sorangium cellulosum*. Cytotoxic, fungicidal. Sol. MeOH; poorly sol. H_2O, hexane. $[\alpha]_D^{22}$ -220 (c, 0.5 in MeOH). λ_{max} 277 (sh) ; 288 (ϵ 27200); 297 ; 308 ; 312 (sh) (MeOH).

*9*R,*10*S:*9′*R,*10′*S-*Diepoxide:* ***Disorazole E_1***
$C_{43}H_{54}N_2O_{11}$ 774.906
From *Sorangium cellulosum*. Cytotoxic, fungicidal. Sol. MeOH, EtOAc; poorly sol. H_2O, hexane. Mp 194°. $[\alpha]_D^{22}$ +51.6 (c, 0.5 in MeOH). λ_{max} 291 (sh) ; 297 (ϵ 29000); 306 ; 321 (sh) (MeOH).

*9*R,*10*S:*11*R,*12*S-*Diepoxide:* ***Disorazole H***
$C_{43}H_{54}N_2O_{11}$ 774.906
From *Sorangium cellulosum*. Cytotoxic, fungicidal. Sol. MeOH, EtOAc; poorly sol. H_2O, hexane. $[\alpha]_D^{22}$ -64.4 (c, 0.3 in MeOH). λ_{max} 265 (sh) ; 273 (ϵ 46450); 282 ; 306 ; 321 (sh) (MeOH).

*9*R,*10*S-*Epoxide, 16′-ketone:* ***Disorazole I***
$C_{43}H_{52}N_2O_{10}$ 756.891
From *Sorangium cellulosum*. Cytotoxic, fungicidal. $[\alpha]_D^{22}$ -95.8 (c, 0.5 in MeOH). λ_{max} 254 ; 264 (sh) ; 272 (ϵ 51400); 281 ; 298 ; 306 ; 321 (sh) (MeOH).

9,10-Dihydroxy, 9,10-dihydro: ***Disorazole D_1***
$C_{43}H_{56}N_2O_{11}$ 776.922
From *Sorangium cellulosum*. Cytotoxic, fungicidal. Sol. MeOH; poorly sol. H_2O, hexane. $[\alpha]_D^{22}$ -103.6 (c, 0.6 in MeOH). λ_{max} 266 (sh) ; 272 (ϵ 42800); 282 ; 304 (sh) (MeOH).

9,10-Dihydroxy, 9,10-dihydro, O^{10}*-Me:* ***Disorazole D_4***
$C_{44}H_{58}N_2O_{11}$ 790.949
From *Sorangium cellulosum*. Cytotoxic, fungicidal. Sol. MeOH; poorly sol. H_2O, hexane. $[\alpha]_D^{22}$ +27.4 (c, 0.1 in MeOH). λ_{max} 264 (sh) ; 273 (ϵ 60400); 282 ; 302 (sh) (MeOH).

Epimer, 9,10-dihydroxy, 9,10-dihydro: ***Disorazole D_2***
$C_{43}H_{56}N_2O_{11}$ 776.922
From *Sorangium cellulosum*. Cytotoxic, fungicidal. Sol. MeOH; poorly sol. H_2O, hexane. $[\alpha]_D^{22}$ -67 (c, 0.6 in MeOH). Epimeric at C-9 and/or C-10. λ_{max} 252 ; 265 (sh) ; 272 (ϵ 105000); 281 ; 304 (sh) (MeOH).

Demethoxy, 9,10:9′,10′-diepoxide, 5′,6′Z-didehydro: ***Disorazole B_1***
[158252-69-8 , 158181-50-1]
$C_{42}H_{50}N_2O_{10}$ 742.864
Metab. from the bacterium *Sorangium cellulosum*. Cytotoxic, fungicidal. Sol. MeOH; poorly sol. H_2O, hexane. $[\alpha]_D^{22}$ +64.7 (c, 0.5 in MeOH/CH_2Cl_2, 1:1). λ_{max} 288 (ϵ 62661); 304 (MeOH) (Berdy).

*Demethoxy, 9′,10′-dihydroxy, 9,10-epoxide 5′,6′*Z*-didehydro, 9′,10′-dihydro:* ***Disorazole B_4***
[158181-51-2]
$C_{42}H_{52}N_2O_{11}$ 760.88
From *Sorangium cellulosum*. Cytotoxic, fungicidal. $[\alpha]_D^{22}$ -29.2 (c, 0.1 in MeOH).

*Demethoxy, 9,9′,10,10′-tetrahydroxy, 5′,6′*Z*-didehydro, 9,9′,10,10′-tetrahydro:* ***Disorazole B_2***
[158181-49-8]
$C_{42}H_{54}N_2O_{12}$ 778.895
From *Sorangium cellulosum*. Cytotoxic, fungicidal. Sol. MeOH; poorly sol. H_2O, hexane. $[\alpha]_D^{22}$ -91.7 (c, 0.6 in MeOH). λ_{max} 282 (ϵ 48417); 304 (MeOH) (Berdy).

*5*E-*Isomer, 9*R,*10*S-*epoxide:* ***Disorazole A_6***
$C_{43}H_{54}N_2O_{10}$ 758.907
From *Sorangium cellulosum*. Cytotoxic, fungicidal. Sol. MeOH; poorly sol. H_2O, hexane. $[\alpha]_D^{22}$ -436 (c, 0.1 in MeOH). λ_{max} 265 (sh) ; 274 ; 282 (ϵ 65160); 298 ; 307 ; 325 (sh) (MeOH).

*7*Z*-isomer, 9*R,*10*R:*9′*R,*10′*S-*diepoxide:* ***Disorazole E_3***
$C_{43}H_{54}N_2O_{11}$ 774.906
From *Sorangium cellulosum*. Sol. MeOH; poorly sol. H_2O, hexane. $[\alpha]_D^{22}$ +24.5 (c, 0.2 in MeOH). λ_{max} 278 ; 289 ; 297 (ϵ 45100); 307 ; 319 (sh) (MeOH).

*7′*Z*-Isomer, demethoxy, 9,10:9′,10′-diepoxide, 5′,6′Z-didehydro:* ***Disorazole B_3***
$C_{42}H_{50}N_2O_{10}$ 742.864
From *Sorangium cellulosum*. Cytotoxic, fungicidal. Sol. MeOH; poorly sol. H_2O, hexane. $[\alpha]_D^{22}$ -140 (c, 0.4 in MeOH). λ_{max} 289 (ϵ 59156); 308 (MeOH) (Berdy).

*9′*E-*Isomer, 9*R,*10*S-*epoxide:* ***Disorazole A_3***
$C_{43}H_{54}N_2O_{10}$ 758.907
From *Sorangium cellulosum*. Cytotoxic, fungicidal. Sol. MeOH; poorly sol. H_2O, hexane. $[\alpha]_D^{22}$ +81.3 (c, 0.1 in MeOH). λ_{max} 254 ; 266 (sh) ; 274 (ϵ 73800); 283 ; 298 ; 306 ; 322 (sh) (MeOH).

*11′*E-*Isomer, 9*R,*10*S-*epoxide:* ***Disorazole A_4***
$C_{43}H_{54}N_2O_{10}$ 758.907
From *Sorangium cellulosum*. Cytotoxic, fungicidal. Sol. MeOH; poorly sol. H_2O, hexane. $[\alpha]_D^{22}$ +181 (c, 0.1 in MeOH). λ_{max} 252 ; 263 (sh) ; 272 (ϵ 56400); 281 ; 298 ; 306 ; 321 (sh) (MeOH).

*11′*E-*Isomer, 9,10-dihydroxy, 9,10-dihydro:* ***Disorazole D_3***
$C_{43}H_{56}N_2O_{11}$ 776.922
From *Sorangium cellulosum*. Cytotoxic, fungicidal. Sol. MeOH; poorly sol. H_2O, hexane. $[\alpha]_D^{22}$ -16.7 (c, 0.15 in MeOH). λ_{max} 262 (sh) ; 271 (ϵ 59800); 286 ; 293 ; 304 (sh) (MeOH).

*9*E,*11*E-*Isomer:* ***Disorazole F_3***
$C_{43}H_{54}N_2O_9$ 742.908
From *Sorangium cellulosum*. Cytotoxic, fungicidal. Sol. MeOH; poorly sol. H_2O, hexane. $[\alpha]_D^{22}$ +29.2 (c, 0.1 in MeOH). λ_{max} 252 ; 264 (sh) ; 271 (ϵ 38500); 281 ; 320 (sh) ; 351 (ϵ 40500); 365 (sh) (MeOH).

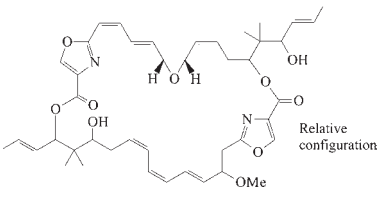
*9′*E,*11′*E-*Isomer, 9*R,*10*S-*epoxide:* ***Disorazole A_5***
$C_{43}H_{54}N_2O_{10}$ 758.907
From *Sorangium cellulosum*. Cytotoxic, fungicidal. Sol. MeOH; poorly sol. H_2O, hexane. $[\alpha]_D^{22}$ +21.5 (c, 0.5 in MeOH). λ_{max} 242 ; 252 ; 263 (sh) ; 271 (ϵ 53300); 280 ; 298 ; 305 ; 321 (sh) (MeOH).

*9′*E,*11′*E-*isomer, 10-methoxy, 9-hydroxy, 9,10-dihydro:* ***Disorazole D_5***
$C_{44}H_{58}N_2O_{11}$ 790.949
From *Sorangium cellulosum*. Cytotoxic, fungicidal. Sol. MeOH; poorly sol. H_2O, hexane. $[\alpha]_D^{22}$ +64.9 (c, 0.1 in MeOH). λ_{max} 252 ; 262 (sh) ; 270 (ϵ 75500); 280 (ϵ 58500); 300 (sh) (MeOH).

Jansen, R. *et al., Annalen*, 1994, 759 (*isol, uv, pmr, cmr, ms*)
Irschik, H. *et al., J. Antibiot.*, 1995, **48**, 31 (*isol, ir, props*)

Disorazole G_1 D-860

[158181-59-0]

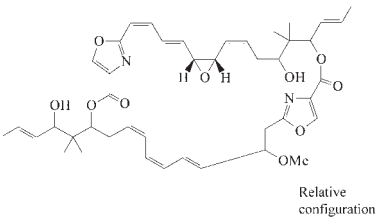


$C_{43}H_{54}N_2O_{10}$ 758.907
Metab. of bacterium *Sorangium cellulosum*. Cytotoxic, fungicidal. Sol. MeOH; poorly sol. H_2O, hexane. $[\alpha]_D^{22}$ +101 (c, 0.6 in MeOH). λ_{max} 274 (ϵ 57676); 282 ; 301 (MeOH) (Berdy).

Jansen, R. *et al., Annalen*, 1994, 759 (*isol, uv, pmr, cmr, struct*)

Disorazole G_2 D-861

[158181-60-3]

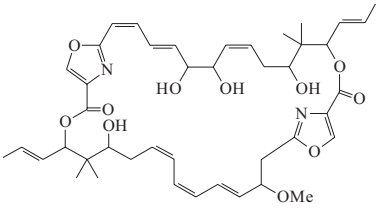


$C_{43}H_{54}N_2O_{10}$ 758.907
Prod. by bacterium *Sorangium cellulosum*. Cytotoxic, fungicidal. $[\alpha]_D^{22}$ -161 (c, 0.15 in MeOH).

Jansen, R. *et al., Annalen*, 1994, 759 (*isol, uv, pmr, cmr, struct*)

Disorazole G_3 D-862

[158181-61-4]

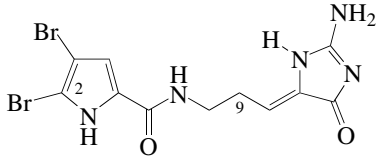


$C_{43}H_{56}N_2O_{11}$ 776.922
Isol. from bacterium *Sorangium cellulosum*. Cytotoxic, fungicidal. Sol. MeOH, EtOAc; poorly sol. H_2O, hexane. $[\alpha]_D^{22}$ -47.4 (c, 0.6 in MeOH). λ_{max} 252 ; 274 ; 282 (MeOH) (Berdy).

Jansen, R. *et al., Annalen*, 1994, 759 (*isol, uv, pmr, cmr, struct*)

Dispacamide A D-863

[177744-33-1]



$C_{11}H_{11}Br_2N_5O_2$ 405.048

Closely related to Tauroacidin A, T-39. Major alkaloid from the Caribbean sponges *Agelas dispar* and *Agelas clathrodes*. Exhibits remarkable antihistamine activity. Amorph. solid.

2-Debromo: ***Dispacamide B***. *2-Debromodispacamide A*
[177744-34-2]
$C_{11}H_{12}BrN_5O_2$ 326.152
Major alkaloid from the sponges *Agelas conifera* and *Agelas longissima*. Shows remarkable antihistamine activity.

9-Hydroxy: ***Dispacamide C***
[197448-22-9]
$C_{11}H_{11}Br_2N_5O_3$ 421.048
Alkaloid from *Agelas* spp. λ_{max} 227 (ϵ 11200); 272 (ϵ 12500) (MeOH).

2-Debromo, 9-hydroxy: ***Dispacamide D***. *Mukanadin A*
[197448-24-1]
$C_{11}H_{12}BrN_5O_3$ 342.152
Alkaloid from *Agelas* spp. and *Axinella verrucosa*.

2-Debromo, 9-methoxy: ***9-Methoxydispacamide B***. *9-O-Methylmukanadin A*
$C_{12}H_{14}BrN_5O_3$ 356.178
Isol. from *Axinella verrucosa*.

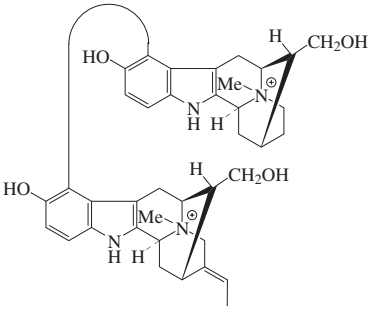
Bis(debromo): ***Debromodispacamide B***
$C_{11}H_{13}N_5O_2$ 247.256
Alkaloid from *Agelas mauritiana*.

Bis(debromo), 9-hydroxy: ***Debromodispacamide D***
$C_{11}H_{13}N_5O_3$ 263.255
Alkaloid from *Agelas mauritiana*. Racemic.

Cafieri, F. *et al., Tet. Lett.*, 1996, **37**, 3587-3590 (*isol, uv, ir, pmr, cmr*)
Cafieri, F. *et al., Bioorg. Med. Chem. Lett.*, 1997, **7**, 2283-2288 (*isol, pmr, cmr*)
Lindel, T. *et al., Tet. Lett.*, 1997, **38**, 8935-8938 (*synth*)
Uemoto, H. *et al., J. Nat. Prod.*, 1999, **62**, 1581-1583 (*Mukanadine A*)
Fresneda, P.M. *et al., Tet. Lett.*, 2001, **42**, 851-854 (*synth*)
Hoffmann, H. *et al., Synthesis*, 2003, 1753-1783 (*rev*)
Aiello, A. *et al., Bioorg. Med. Chem.*, 2006, **14**, 17-24 (*9-Methoxydispacamide B*)
Vergne, C. *et al., Org. Lett.*, 2008, **10**, 493-496 (*Debromodispacamides B,D*)

Dispegatrine D-864

10,10′,17,17′-Tetrahydroxy-4,4′-dimethyl-9,9′-bisarpaganium, 9CI
[102488-56-2]

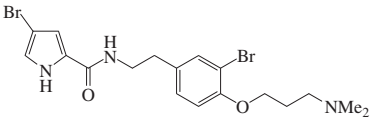


$C_{40}H_{48}N_4O_4^{2\oplus}$ 648.844
Alkaloid from the roots of *Rauwolfia verticillata* var. *hainanensis* (Apocynaceae). Has α-adrenergic blocking props. Cryst. $[\alpha]_D^{23}$ +230 (c, 0.1 in MeOH). Mp >280° dec.

Lin, M. *et al., Yaoxue Xuebao*, 1986, **21**, 114-118

Dispyrin D-865

[934995-58-1]

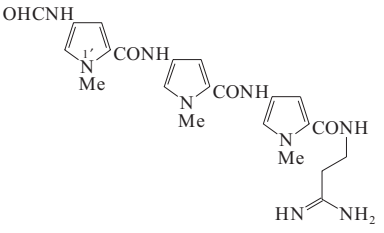


$C_{18}H_{23}Br_2N_3O_2$ 473.207
Alkaloid from *Agelas dispar*. λ_{max} 293 (log ϵ 2.4) (MeOH).

Piña, I.C. *et al., J. Nat. Prod.*, 2007, **70**, 613-617 (*isol, pmr, cmr, ms*)
Yoshida, M *et al., Chem. Pharm. Bull.*, 2008, **56**, 1362-1363 (*synth*)
Kennedy, J.P. *et al., J. Nat. Prod.*, 2008, **71**, 1783-1786 (*synth*)

Distamycin A D-866

Stallimycin, INN. *Herperal*. *Dst 3*. *FI 6426*. *Distamycin 3*
[636-47-5]



$C_{22}H_{27}N_9O_4$ 481.513

Peptide antibiotic. Closely related to Netropsin, N-180. Isol. from *Streptomyces distallicus* NRRL2886. Antiviral agent, used topically to treat herpes simplex infections. Sol. H_2O, MeOH; poorly sol. butanol, hexane. Mp 154-156°. Log P -1.45 (uncertain value) (calc). λ_{max} 237 (ϵ 30000); 302 (ϵ 37000) (EtOH) (as hydrogen halide salt) (Derep). λ_{max} 236 (E1%/1cm 591); 305 (E1%/1cm 723) (H_2O) (Berdy).

▶ LD_{50} (mus, ipr) 500 mg/kg; LD_{50} (mus, ivn) 75 mg/kg. WZ7108000

Hydrochloride: Stallimycin hydrochloride, USAN
[6576-51-8]
Cryst. (dil. HCl). Mp 186-189°.

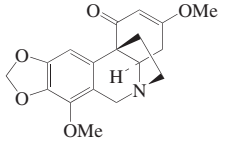
▶ LD_{50} (mus, ipr) 160 mg/kg. WZ7110000

$N^{1'}$-De-Me: 1-Nordistamycin A
[85407-06-3]
$C_{21}H_{25}N_9O_4$ 467.486
Synthetic analogue. Shows improved antiviral activity and similar toxicity to parent. Mp 150° (darkens).

Arcamone, F. *et al., Nature (London)*, 1964, **203**, 1064 (*isol, struct, synth*)
Arcamone, F. *et al., Gazz. Chim. Ital.*, 1967, **97**, 1097; 1110 (*isol, struct, uv, ir, nmr, synth*)
Hahn, F.E. *et al., Antibiotics*, (Corcoran, J.W. *et al*, Eds.), Springer, N.Y., 1975, **3**, 79 (*rev*)
Bialer, M. *et al., Tetrahedron*, 1978, **34**, 2389 (*pmr, ir, ms, synth*)
Grehn, L. *et al., J. Med. Chem.*, 1983, **26**, 1042 (*derivs*)

Bialer, M. *et al., Dev. Mol. Virol.*, 1984, **4**, 143 (*props, rev*)
Lown, J.W. *et al., J.O.C.*, 1985, **50**, 3774 (*synth, bibl*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 555
Boger, D.L. *et al., J.A.C.S.*, 2000, **122**, 6382-6384 (*synth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, DXG600; SLI300

Distichamine D-867



Relative Configuration

$C_{18}H_{19}NO_5$ 329.352

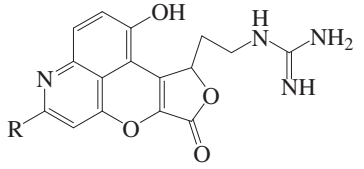
Alkaloid isol. from the bulbs of *Boophone disticha* (Amaryllidaceae).
Large prisms (Me_2CO). Mp 161-162°. $[\alpha]_D^{21}$ -56 (c, 0.478 in $CHCl_3$).

Methiodide:
Cryst. (MeOH). Mp 223-226° dec.

Hauth, H. *et al., Helv. Chim. Acta*, 1961, **44**, 491 (*isol, uv, ir*)
Steenkamp, P.A. *et al., Thesis*, Univ. of Johannesburg, 2005, (*struct*)

Distomadine A D-868

[549521-28-0]



R = H

$C_{16}H_{14}N_4O_4$ 326.311
Isol. from the ascidian *Pseudodistoma aureum*. Yellow powder. Mp 232° dec. $[\alpha]_D^{20}$ +47 (c, 0.3 in MeOH). Fluorescent.

Pearce, A.N. *et al., Tet. Lett.*, 2003, **44**, 3897-3899 (*isol, pmr, cmr*)

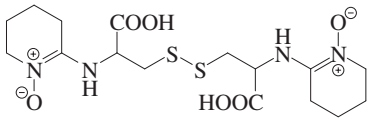
Distomadine B D-869

[549521-30-4]
As Distomadine A, D-868 with
R = COOH

$C_{17}H_{14}N_4O_6$ 370.321
Isol. from the ascidian *Pseudodistoma aureum*.

Pearce, A.N. *et al., Tet. Lett.*, 2003, **44**, 3897-3899 (*isol, pmr, cmr*)

Cortinarius Disulfide D-870

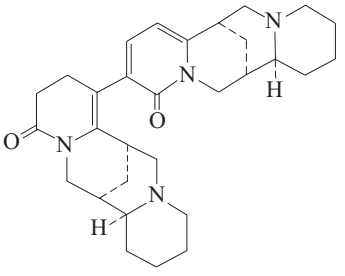


$C_{16}H_{26}N_4O_6S_2$ 434.537
Isol. from *Cortinarius* sp. Possible artifact.

Nicholas, G.M. *et al., J. Nat. Prod.*, 2001, **64**, 341-344 (*isol, pmr, cmr, ms*)

Dithermamine D-871

3′,4′-Dihydro-3,5′-bithermopsine
[38948-08-2]



$C_{30}H_{40}N_4O_2$ 488.672
Alkaloid from the above-ground parts of *Thermopsis lanceolata* (Fabaceae). Mp 235°. $[\alpha]_D$ +121.8 (c, 1.0 in $CHCl_3$). Dec. on dist. to Thermopsine, T-363.

Perchlorate: Mp 211-212°.

Picrate: Mp 203-204°.

Vinogradova, V.I. *et al., Khim. Prir. Soedin.*, 1971, **7**, 463; 1972, **8**, 87; *Chem. Nat. Compd. (Engl. Transl.)*, 82; 440 (*isol, ir, ms, struct*)

Dithiocolchicine D-872

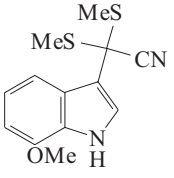
$C_{22}H_{25}NO_4S_2$ 431.576

Struct. unknown. Alkaloid from the seeds of *Colchicum autumnale* (Liliaceae). Yellow plates (MeOH). Mp 265-267°. $[\alpha]_D$ -366 (c, 1.00 in $CHCl_3$). Purification by chromatography gave a prod. with no carbonyl group and no reaction with conc. HCl. Material was never isolated again and is possibly an artifact.

Bellet, P. *et al., Ann. Pharm. Fr.*, 1955, **13**, 84-87; *CA*, **50**, 4107h (*isol*)

Dithyreanitrile D-873

7-Methoxy-α,α-bis(methylthio)-1H-indole-3-acetonitrile, 9CI
[128717-80-6]

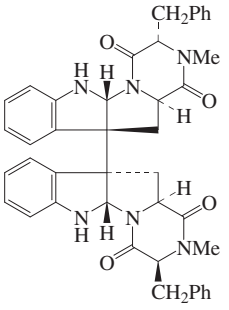


$C_{13}H_{14}N_2OS_2$ 278.398
Alkaloid from the seeds of *Dithryea wislizenii* (Brassicaceae). Insect antifeedant. Off-white cryst. Mp 135°.

Powell, R.G. *et al., Experientia*, 1991, **47**, 304 (*isol, pmr, cmr, ms, cryst struct*)
Mantus, E.K. *et al., Tet. Lett.*, 1993, **34**, 1085 (*synth*)

Ditryptophenaline D-874

[64947-43-9]



Absolute Configuration

$C_{42}H_{40}N_6O_4$ 692.816

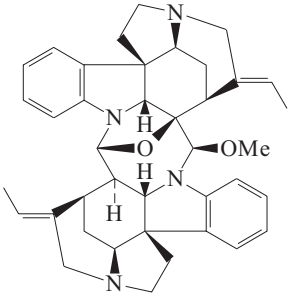
Diketopiperazine dimer. Prod. by *Aspergillus flavus* var. *columnaris* MRC1174. Inhibits Substance P binding. Tachykinin antagonist. Cryst. (CH_2Cl_2/MeOH). Mp 204-205°. $[\alpha]_D^{23.5}$ -330 (c, 52 in CH_2Cl_2). There is some uncertainty about the abs. config. of the nat. prod. The original isolate was reported to have a CD spectrum corresp. to the enantiomeric config., but this appears to have been a error in the publication. λ_{max} 244 (ϵ 15250); 303 (ϵ 6200) (EtOH).

N-*1′-(2-Phenylethenyl)*: ***1′-(2-Phenylethylene)ditryptophenaline***
[159355-77-8]
$C_{50}H_{46}N_6O_4$ 794.951
From *Aspergillus flavus* SC1661. Mp 183-186°. $[\alpha]_D$ -125 (c, 0.05 in $CHCl_3$). λ_{max} 221 (ϵ 33800); 244 (ϵ 11100); 324 (ϵ 14690); 338 (ϵ 14180) (MeOH) (Berdy).

Springer, J.P. *et al., Tet. Lett.*, 1977, 2403-2406 (*isol, struct*)
Maes, C.M. *et al., J.C.S. Perkin 1*, 1986, 861-866 (*isol, pmr, abs config*)
Barrow, C.J. *et al., J.O.C.*, 1993, **58**, 6016-6019 (*isol, activity*)
Barrow, C.J. *et al., J. Nat. Prod.*, 1994, **57**, 1239-1244 (*1′-(2-Phenylethylene)ditryptophenaline, activity*)
Overman, L.E. *et al., J.A.C.S.*, 2001, **123**, 9465-9467 (*synth*)
Movassaghi, M. *et al., Angew. Chem., Int. Ed.*, 2008, **47**, 1485-1487 (*synth*)

Divarine D-875

[158848-31-8]

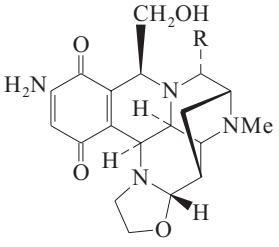


$C_{39}H_{44}N_4O_2$ 600.802
Alkaloid from *Strychnos divaricans* (Loganiaceae). Needles (MeOH/EtOAc). Mp 240-242° dec.

Mukherjee, R. *et al., Heterocycles*, 1994, **38**, 1965 (*isol, uv, pmr, cmr, struct*)

Dnacin A_1 D-876

Antibiotic C 14482A_1. C 14482A_1
[76828-83-6]



R = CN

$C_{20}H_{23}N_5O_4$ 397.433

The abs. config. is likely to be the opposite of that illus. See note under Naphthyridinomycin A, N-32. Isol. from *Nocardia* sp. C-14482 (N-1001) and *Actinosynnema pretiosum*. Phosphatase inhibitor, DNA biosynth. inhibitor. Dark red needles. Sol. $CHCl_3$, MeOH, DMSO; fairly sol. EtOH, EtOAc, H_2O, butanol; poorly sol. hexane. Mp 300° dec. $[\alpha]_D^{24.5}$ +150 (c, 0.05 in EtOH). λ_{max} 213 (ϵ 22300); 281 (ϵ 9000); 496 (ϵ 2100) (MeOH) (Derep). λ_{max} 214 (E1%/1cm 503); 281 (E1%/1cm 209); 498 (E1%/1cm 46) (EtOH) (Berdy). λ_{max} 213 ; 281 ; 496 (MeOH/NaOH) (Berdy).

► LD_{50} (mus, ivn) 5 mg/kg.

[69913-37-7]

Tanida, S. *et al., J. Antibiot.*, 1980, **33**, 1443 (*isol*)
Muroi, M. *et al., J. Antibiot.*, 1980, **33**, 1449 (*uv*)
Hida, T. *et al., J. Antibiot.*, 1994, **47**, 917 (*pmr, cmr, struct*)

Dnacin B_1 D-877

Antibiotic C 14482B_1. C 14482B_1
[76828-84-7]
As Dnacin A_1, D-876 with R = OH

$C_{19}H_{24}N_4O_5$ 388.422

Quinone antibiotic. Isol. from *Nocardia* sp. C-14482 (N-1001). Active against gram-positive and -negative bacteria and weakly active against fungi. Dark-red or reddish-brown needles. Mp 300° dec. $[\alpha]_D^{20}$ +50 (c, 0.06 in $CHCl_3$). Strain also prod. C 14482B_2 and C 14482B_3. λ_{max} 213 (ϵ 22300); 281 (ϵ 9000); 496 (ϵ 2100) (MeOH) (Derep).

► JQ5811000

[76050-36-7]

Tanida, S. *et al., J. Antibiot.*, 1980, **33**, 1443 (*isol*)
Muroi, M. *et al., J. Antibiot.*, 1980, **33**, 1449 (*uv*)
Tanide, S. *et al., Antimicrob. Agents Chemother.*, 1982, **22**, 735 (*props*)
Hida, T. *et al., J. Antibiot.*, 1994, **47**, 917 (*pmr, cmr, props*)

2,4,10-Docosatrienoic isobutylamide D-878

$H_3C(CH_2)_{10}CH{=}CH(CH_2)_4CH{=}CHCH{=}CHCONHCH_2CH(CH_3)_2$

$C_{26}H_{47}NO$ 389.663

(E,E,Z)-form
Filfiline
[62726-18-5]
Constit. of the fruits of *Piper officinarum* (Javanese long pepper). Has antifertility props. Cryst. (petrol). Mp 66-66.5°.

Gupta, O.P. *et al., Indian J. Chem., Sect. B*, 1976, **14**, 912 (*isol*)
Gupta, O.P. *et al., Indian J. Pharm. Sci.*, 1978, **40**, 113 (*use*)

6-Docosenoic acid, 9CI D-879

[116802-23-4]

$H_3C(CH_2)_{14}CH{=}CH(CH_2)_4COOH$

$C_{22}H_{42}O_2$ 338.573

(Z)-form [82683-06-5]
Amide: 6-Docosenamide
[145701-07-1]
$C_{22}H_{43}NO$ 337.588
Isol. from *Asimina parviflora*. Mp 42-44°.

[82683-25-8]

Ratnayake, S. *et al., J. Nat. Prod.*, 1992, **55**, 1462-1467 (*amide, isol*)

13-Docosenoic acid D-880

[25378-26-1]

$H_3C(CH_2)_7CH{=}CH(CH_2)_{11}COOH$

$C_{22}H_{42}O_2$ 338.573
Present in lipids of *Physalia physalis* (Portuguese-man-of-war). Antineoplastic agent. Log P 9.86 (uncertain value) (calc).

(E)-form
Brassidic acid
[506-33-2]
Cryst. (EtOH). Mp 61.5°. Bp_{30} 282° Bp_{10} 256°.

Me ester: [7439-44-3]
$C_{23}H_{44}O_2$ 352.599
Mp 34-35°.

Et ester: [116723-91-2]
$C_{24}H_{46}O_2$ 366.626
Mp 30.5°.

Nitrile:
$C_{22}H_{41}N$ 319.573
Mp 22°. Bp_{17} 257°.

Anhydride:
$C_{44}H_{82}O_3$ 659.13
Mp 64°.

(Z)-form
Erucic acid
[112-86-7]
[28929-01-3]
An important vegetable fatty acid, mainly confined to seed fats of the families Brassicaceae and Tropaeolaceae (e.g. rape, mustard and wallflower seeds). Occurs widely in marine organisms. Cryst. (MeCN). Mp 33.5°. Pharmacol. active isomer. Undergoes solid-state phase transitions.

Me ester: [1120-34-9]
Oil. Bp_5 221-222°. Ir ν 1744 cm^{-1}.

Et ester: [37910-77-3]
Bp_5 229-230°.

Chloride: [7459-29-2]
$C_{22}H_{41}ClO$ 357.018
Mp 14°.

Amide: 13-Docosenamide. Newtron S
[112-84-5]
$C_{22}H_{43}NO$ 337.588
Isol from the cerebrospinal fluid of humans, cats and rats. Antiblocking agent/lubricant for polymers. Sleep inducer. Mp 94° (65-66°).

Nitrile: [73170-89-5]
Bp 238-240°.

Anhydride: [103213-60-1]
Mp 47.5-48°.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 501D (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 784A; 1221C (*nmr*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 588C (*ir*)
Holde, D. *et al., Ber.*, 1923, **56**, 2052-2058 (*anhydrides*)
Org. Synth., Coll. Vol., 2, 1943, 258 (*synth*)
Bowman, R.E. *et al., J.C.S.*, 1950, 177 (*synth*)
Lakizo, V.I. *et al., CA*, 1968, **69**, 2475g (*synth*)
Niewiadomski, H. *et al., Przem. Chem.*, 1969, **48**, 659; *CA*, **72**, 78; 293 (*rev*)
Chang, S.P. *et al., J. Am. Oil Chem. Soc.*, 1972, **49**, 422 (*synth*)
Mitcham, D. *et al., J. Am. Oil Chem. Soc.*, 1973, **50**, 446 (*ir*)
Stillway, L.W. *et al., Comp. Biochem. Physiol., B: Comp. Biochem.*, 1976, **53**, 535-537 (*Physalia physalis constit*)
Barrette, J.P. *et al., J. Assoc. Off. Anal. Chem.*, 1976, **59**, 855 (*glc*)
Yamada, K. *et al., J.O.C.*, 1978, **43**, 2076 (*synth*)
Kaneko, F. *et al., Acta Cryst. C*, 1992, **48**, 1060; 1993, **49**, 1232 (*cryst struct, erucic acid*)
Painuly, P. *et al., J. Chromatogr.*, 1992, **590**, 139 (*purifn*)
Kling, M.R. *et al., J.C.S. Perkin 1*, 1993, 1183 (*synth, ir, ms*)
Lerner, R. *et al., Science (Washington, D.C.)*, 1995, **268**, 1506 (*isol, amide*)

3,5-Dodecadien-2-amine D-881

2-Amino-3,5-dodecadiene
$H_3C(CH_2)_5CH{=}CHCH{=}CHCH(NH_2)CH_3$

$C_{12}H_{23}N$ 181.32

(±)-(3E,5Z)-form [134387-52-3]
Constit. of the ascidian *Pseudodistoma novaezelandiae*. λ_{max} 233 (MeOH) (Berdy).

Perry, N.B. *et al., Aust. J. Chem.*, 1991, **44**, 627-633 (*isol, uv, pmr, cmr*)

2,4-Dodecadiene-8,10-diynoic acid, 9CI D-882

$H_3CC{\equiv}CC{\equiv}CCH_2CH_2CH{=}CHCH{=}CHCOOH$

$C_{12}H_{12}O_2$ 188.226

(2E,4E)-form
2-Methylpropylamide: [18679-23-7]
Isol. from *Achillea* sp. Cryst. (Et_2O/petrol). Mp 146°.

(2E,4Z)-form

2-Methylpropylamide: **N-*(2-Methylpropyl)-2,4-dodecadiene-8,10-diynamide, 9CI***. *2,4-Dodecadiene-8,10-diynoic acid isobutylamide.* N-*Isobutyl-2,4-dodecadiene-8,10-diynamide*
[113817-69-9]
$C_{16}H_{21}NO$ 243.348
Isol. from *Echinacea purpurea* and *Echinacea angustifolia* (Asteraceae). Cryst. (hexane). Mp 74°.

2-Methylbutylamide: **N-*(2-Methylbutyl)-2,4-dodecadiene-8,10-diynamide, 9CI***. *2,4-Dodecadiene-8,10-diynoic acid 2-methylbutylamide*
[117505-95-0]
$C_{17}H_{23}NO$ 257.375
Isol. from roots of *Echinacea purpurea* (Asteraceae). Oil.

(2*Z*,4*E*)-*form*

2-Methylpropylamide: [13894-70-7]
Isol. from *Echinacea purpurea*, *Echinacea angustifolia* and *Achillea* sp. Cryst. (petrol). Mp 86°. λ_{max} 258 (4.44) (MeOH).

[52997-50-9]

Bohlmann, F. *et al., Chem. Ber.*, 1966, **99**, 3197; 1967, **100**, 3861; 1973, **106**, 1328; 1974, **107**, 2120 (*isol, struct, synth, uv, pmr, ir*)
Bauer, R. *et al., Phytochemistry*, 1988, **27**, 2339; 1989, **28**, 505 (*isol, uv, ir, pmr, ms, struct*)
Chen, Y. *et al., J. Nat. Prod.*, 2005, **68**, 773-776 (*isol, pmr, cmr, ms*)
Kraus, G.A. *et al., Molecules*, 2006, **11**, 758-767 (*2Z,4E-isobutylamide, synth*)

2,4-Dodecadienoic acid D-883

$H_3C(CH_2)_6CH{=}CHCH{=}CHCOOH$
$C_{12}H_{20}O_2$ 196.289
Probable constit. of *Sebastiana lingustrina* seed oil.

(2*E*,4*E*)-*form* [24738-48-5]
Cryst. (petrol). Mp 49-51°.

Me ester: [24738-46-3]
$C_{13}H_{22}O_2$ 210.316
$Bp_{0.3}$ 106-108°.

2-Methylpropylamide: ***2,4-Dodecadienoic acid isobutylamide***
[24738-51-0]
$C_{16}H_{29}NO$ 251.411
Alkaloid from *Anacyclus pyrethrum* and *Leucocyclus formosus* (Asteraceae) (in admixture with homologues). Mp 89-90°.

Pyrrolidide: 2,4-Dodecadienoic acid pyrrolidide. 1-(2,4-Dodecadienoyl)pyrrolidine
[117137-69-6]
$C_{16}H_{27}NO$ 249.395
Constit. of pepper (*Piper nigrum*) (Piperaceae). Shows larvicidal activity. Not obt. completely pure.

Holman, R.T. *et al., J. Am. Oil Chem. Soc.*, 1955, **32**, 356 (*isol*)
Burden, R.S. *et al., J.C.S.(C)*, 1969, 2477 (*isol, synth*)
Greger, H. *et al., Phytochemistry*, 1981, **20**, 2579 (*isol, ms, struct*)
Kiuichi, F. *et al., Chem. Pharm. Bull.*, 1988, **36**, 2452 (*pyrrolidide*)
Abarbri, M. *et al., Synthesis*, 1996, 82 (*synth, ir, pmr, cmr, ms*)

2,8-Dodecadienoic acid D-884

$H_3C(CH_2)_2CH{=}CH(CH_2)_4CH{=}CHCOOH$
$C_{12}H_{20}O_2$ 196.289

(2*E*,8*E*)-*form*
Large plates. Mp 34-35°. $Bp_{0.8}$ 140°.

S-*Benzylthiouronium salt:*
Plates (EtOAc). Mp 159°.

2-Methylpropylamide:
Needles (petrol). Mp 53°.

(2*Z*,8*E*)-*form*
Bp_1 127-129°.

S-*Benzylthiouronium salt:*
Plates (EtOAc). Mp 148°.

2-Methylpropylamide: $Bp_{0.6}$ 154° $Bp_{0.03}$ 142°.

(2ξ,8ξ)-*form*

2-Methylpropylamide: N-*Isobutyl-2,8-dodecadienamide.* ***Herculin***
$C_{16}H_{29}NO$ 251.411
Isol. from *Zanthoxylum clava-herculis* (Hercules' club). Insecticide. Pungent needles (hexane). Mp 59-60°. Struct. doubtful.

Jacobson, M. *et al., J.A.C.S.*, 1948, **70**, 4234 (*isol, struct*)
Raphael, R.A. *et al., J.C.S.*, 1950, 115; 1951, 2693 (*synth*)
Crombie, L. *et al., J.C.S.*, 1952, 2997 (*synth, struct*)

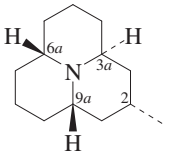
N-(3,6-Dodecadienyl)-sulfamic acid D-885

[1040630-93-0]
$H_3C(CH_2)_4CH{=}CHCH_2CH{=}CHCH_2CH_2NHSO_3H$
$C_{12}H_{23}NO_3S$ 261.385

(*Z*,*Z*)-*form*
Isol. from *Daphnia pulex*. Kairomone.

Yasumoto, K. *et al., Chem. Pharm. Bull.*, 2008, **56**, 133-136 (*isol, pmr*)

Dodecahydro-2-methylpyrido[2,1,6-*de*]quinolizine D-886



(2α,3a α,6a β,9a β)-(3a*S*,9a*S*)-*form*

$C_{13}H_{23}N$ 193.331

(2α,3a α,6a β,9a β)(3a S,9a S)-*form*
Hippodamine
[53990-36-6]
[59685-36-8 ((±)-form)]
Alkaloid from the defence secretion of the ladybugs *Hippodamia convergens*, *Hippodamia caseyi*, *Anisosticta 19-punctata* and *Chauliognathus pulchellus*. Oil. Small and solvent-dependent opt. rotn. which could not be reliably measured.

N-*Oxide:* ***Convergine***
[41701-36-4]
[59685-37-9 ((±)-form)]
$C_{13}H_{23}NO$ 209.331
Constit. of the defence secretion of *Hippodamia convergens* and *Hippodamia caseyi*. Oil; solid (as hydrochloride). Hydrochloride chars without melting above 215°.

(2α,3a β,6a α,9a β)-*form*
Precoccinelline
[38211-56-2]
Alkaloid from the defence secretion of the ladybugs *Coccinella transversoguttata*, *Coccinella septempunctata*, *Chauliognathus pulchellus* and *Hippodamia convergens*. Oil. Mp 195-197° (as picrate). Meso-stereoisomer.

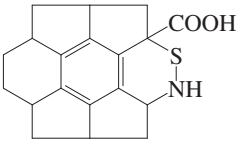
N-*Oxide:* ***Coccinelline***
[34290-97-6]
$C_{13}H_{23}NO$ 209.331
Constit. of the defence secretion of *Coccinella transversoguttata* and *Coccinella septempunctata*. Cryst. (Me_2CO). Mp 204° dec. Opt. inactive. Chars >215°.

(2α,3a β,6a β,9a β)-*form*
Myrrhine
[58207-39-9]
Alkaloid from the defence secretion of the ladybug *Myrrha octodecimguttata*. Noncryst. Meso-stereoisomer.

N-*Oxide:*
Needles (CH_2Cl_2). Dec. >150° without melting.

Karlsson, R. *et al., Chem. Comm.*, 1972, 626 (*Precoccinelline, cryst struct*)
Tursch, B. *et al., Tet. Lett.*, 1974, 409 (*Hippodamine, cryst struct, abs config*)
Tursch, B. *et al., Tetrahedron*, 1975, **31**, 1541 (*Myrrhine, Coccinelline, struct, biosynth*)
Ayer, W.A. *et al., Can. J. Chem.*, 1976, **54**, 473; 1494; 1807 (*Hippodamine, Myrrhine, Coccinelline, Precoccinelline, synth, isol, ir, pmr, ms, oxide*)
Stevens, R.V. *et al., J.A.C.S.*, 1979, **101**, 7032 (*Coccinelline, synth*)
Mueller, R.M. *et al., J.O.C.*, 1984, **49**, 2217 (*Hippodamine, Myrrhine, Precoccinelline, synth, ir, cmr, pmr, ms*)
Yue, C. *et al., Tetrahedron*, 1994, **50**, 3139 (*Precoccinelline, synth*)
Lebrun, B. *et al., Magn. Reson. Chem.*, 1999, **37**, 60-64 (*pmr, cmr*)
Laurent, P. *et al., Insect Biochem. Mol. Biol.*, 2002, **32**, 1017-1023 (*biosynth*)
Rejzek, M. *et al., Org. Biomol. Chem.*, 2005, **3**, 73-83 (*synth*)
Gerasyuto, A.I. *et al., Org. Lett.*, 2006, **8**, 4899-4902 (*synth*)

1,1*a*,2,4,4*a*,5,5*a*,6,6*a*,7,8,8*a*-Dodecahydro-2*aH*-3-thia-4-azacyclopenta[*mno*]pentaleno[2,1,6,5-*fghi*]-aceanthrylene-2*a*-carboxylic acid, 9CI D-887



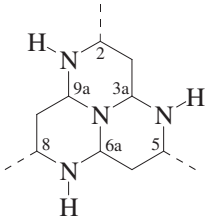
$C_{19}H_{19}NO_2S$ 325.431

3,5,8-Trimethyldecyl ester: [87055-59-2]
$C_{32}H_{45}NO_2S$ 507.779
Isol. from Darius crude oil.

Masohan, A. *et al., J. Indian Chem. Soc.*, 1983, **60**, 392-395 (*isol, struct*)

Dodecahydro-2,5,8-trimethyl-1,4,7,9*b*-tetraazaphenalene, 9CI D-888

Tricrotonyltetramine



(2α,3*a*α,5α,6*a*α,8α,9*a*α)-*form*

$C_{12}H_{24}N_4$ 224.348

(2α,3*a*α,5α,6*a*α,8α,9*a*α)-*form*
Bongardamine
[221677-44-7]
Alkaloid from *Bongardia chrysogonum*. Cryst. (Me_2CO). Mp 203°. $[\alpha]_D^{25}$ -7.7 (c, 0.3 in MeOH). λ_{max} 205 (log ϵ 2.57) (MeOH).

(2α,3*a*β,5α,6*a*β,8α,9*a*β)-*form*
Base A
[54352-30-6]
Alkaloid from *Lycopodium thyoides* and *Sophora alopecuroides* (Lycopodiaceae, Fabaceae), prev. known synthetically. Cryst. (Me_2CO). Mp 105° (101-103°). Opt. inactive. Said not to be an artifact by Monakhova *et al*, but other workers are uncertain.

Hydrate: Mp 95-96°.

Hydrochloride (1:2):
Cryst. (EtOH). Mp 289° dec.

Dipicrate: Mp 222-224°.

(2α,3*a*β,5α,6*a*β,8β,9*a*β)-*form*
***Base B*†**
[54352-31-7]
Isol. from *Lycopodium thyoides* (Lycopodiaceae). Mp 65°. Poss. artifact.

Delépine, M. *et al., C. R. Hebd. Seances Acad. Sci.*, 1943, **216**, 649; 785 (*synth*)
Manakhova, T.E. *et al., Khim. Prir. Soedin.*, 1974, **10**, 752; *Chem. Nat. Compd. (Engl. Transl.)*, 1974, **10**, 771 (*isol, pmr, ms, struct*)
Braekman, J.C. *et al., Phytochemistry*, 1974, **13**, 2519 (*isol, pmr, ms, struct*)
Atta-ur-Rahman, *et al., Phytochemistry*, 1999, **50**, 333-336 (*Bongardamine*)

Dodecanoic acid, 9CI D-889

Lauric acid. Laurostearic acid. FEMA 2614
[143-07-7]
$H_3C(CH_2)_{10}COOH$
$C_{12}H_{24}O_2$ 200.32

Occurs as glyceride in coconut oil and palm kernel oil. Widespread in plants, esp. in the Arecaceae and Lauraceae. Flavour ingredient, defoamer, lubricant. Cryst. (EtOH). d^{20} 0.88. Mp 44°. Bp_{100} 225° $Bp_{0.65}$ 141-142° (lit. gives a pressure range). pK_a 5.3 (20°).

▶ LD_{50} (rat, orl) 12000 mg/kg. OE9800000

Amide: Dodecanamide. Diamid Y
[1120-16-7]
$C_{12}H_{25}NO$ 199.336
Isol. from *Rhizoclonium hieroglyphicum*. Cryst. Mp 110°. $Bp_{12.5}$ 199-200°.

[37811-72-6 , 2224-49-9]

Dembitsky, V.M. *et al., Phytochemistry*, 2000, **54**, 965-967 (*isol, amide*)

2,4,6,8,10-Dodecapentaenedioic acid D-890

[6790-22-3]
HOOCCH=CHCH=CHCH=CHCH=CHCH=CHCOOH
$C_{12}H_{12}O_4$ 220.224

(all-*E*)-*form*
1-L-Aspartic acid-L-isoleucine diamide: ***Boletocrocin C***
$C_{22}H_{28}N_2O_8$ 448.472
Isol. from the fruit bodies of *Boletus laetissimus*.

(all-ξ)-*form*
Di-Me ester: [77185-99-0]
$C_{14}H_{16}O_4$ 248.278
Deep yellow prisms. Mp 224.5-225.5°. Subl. *ca.* 150.

Di-Et ester: [1441-60-7]
[6071-61-0]
$C_{16}H_{20}O_4$ 276.332
Mp 157.5-159.5°.

[101417-57-6]

Weedon, B.C.L. *et al., J.C.S.*, 1954, 4168-4174 (*ester, synth*)
Kucherov, V.F. *et al., CA*, 1961, **55**, 24560i (*ester, synth*)
Boschelli, D. *et al., Tet. Lett.*, 1985, **26**, 5239-5242 (*ester, synth*)
Kahner, L. *et al., Phytochemistry*, 1998, **49**, 1693-1697 (*Boletocrocin C*)

2,4,8,10-Dodecatetraenoic acid D-891

$H_3CCH=CHCH=CHCH_2CH_2CH=CHCH=CHCOOH$
$C_{12}H_{16}O_2$ 192.257

(2*E*,4*E*,8*E*,10*E*)-*form*
2-Methylpropylamide: [543-44-2]
[13894-71-8 (unspecified stereo)]
Mp 104-106°. Synthetic.

(2*E*,4*E*,8*E*,10*Z*)-*form*
2-Methylpropylamide: [75947-32-9]
$C_{16}H_{25}NO$ 247.38
Constit. of *Echinacea angustifolia*, *Echinacea purpurea* and *Spilanthes mauritiana*. Mp 78-79°. λ_{max} 260 (ϵ 30000) (EtOH).

(2*E*,4*E*,8*Z*,10*E*)-*form*
2-Methylpropylamide: [75917-90-7]
Constit. of *Acmella ciliata*, *Asarum forbesii*, *Echinacea angustifolia*, *Echinacea purpurea* and *Salmea scandens*.
Needles (hexane). Mp 63°.

2-Methylbutylamide: [99617-47-7]
$C_{17}H_{27}NO$ 261.406
Constit. of *Acmella ciliata*.

(2*E*,4*E*,8*Z*,10*Z*)-*form*
2-Methylpropylamide: [77448-63-6]
Constit. of *Echinacea angustifolia*, *Echinacea purpurea* and *Salmea scandens*.

(2*E*,4*Z*,8*Z*,10*E*)-*form*
2-Methylpropylamide: [99631-25-1]
Constit. of *Acmella ciliata*.

(2*E*,4*Z*,8*Z*,10*Z*)-*form*
2-Methylpropylamide: [851881-29-3]
Constit. of *Asarum forbesii*. Needles (hexane). Mp 63°. λ_{max} 236 ; 262 (MeOH).

Herz, W. *et al., Phytochemistry*, 1985, **24**, 173-174 (*Salmea scandens constits*)
Martin, R. *et al., Phytochemistry*, 1985, **24**, 2295-2300 (*Acmella ciliata constits*)
Jondiko, I.J.O. *et al., Phytochemistry*, 1986, **25**, 2289-2290 (*Spilanthes mauritiana constit*)
Bauer, R. *et al., Phytochemistry*, 1988, **27**, 2339-2342 (*Echinacea purpurea constits*)
Zhang, F. *et al., J. Asian Nat. Prod. Res.*, 2005, **7**, 1-5 (*Asarum forbesii constits*)
Matovic, N. *et al., Org. Biomol. Chem.*, 2007, **5**, 169-174 (*isol, synth, pmr, cmr*)

2,4,8,11-Dodecatetraenoic acid D-892

$H_2C=CHCH_2CH=CHCH_2CH_2CH=CHCH=CHCOOH$
$C_{12}H_{16}O_2$ 192.257

(2*E*,4*E*,8*Z*,11*E*)-*form*
2-Methylpropylamide: 2,4,8,11-Dodecatetraenoic acid isobutylamide
[117824-00-7]
$C_{16}H_{25}NO$ 247.38
Isol. from the aerial parts of *Brachyscome ciliocarpa* (Asteraceae). Oil. Genus name given as the alternative spelling Brachycome.

Zdero, C. *et al., Phytochemistry*, 1988, **27**, 2984 (*isol, ir, pmr, ms, struct*)

2,6,8,10-Dodecatetraenoic acid D-893

$H_3CCH=CHCH=CHCH=CHCH_2CH_2CH=CHCOOH$
$C_{12}H_{16}O_2$ 192.257

(*all-E*)-*form*
2-Methylpropylamide: ***β-Sanshool***
[10076-00-3]
Prod. by isomerisation of α-Sanshool. Constit. of *Zanthoxylum piperitum* (Japanese pepper tree). Insecticide. Cryst. (hexane). Mp 100-101°.

2-Hydroxy-2-methylpropylamide: ***Hydroxy-β-sanshool***
[97465-69-5]
$C_{16}H_{25}NO_2$ 263.379
Constit. of *Zanthoxylum bungeanum* and *Zanthoxylum piperitum* (Japanese pepper tree). Powder.

(2*E*,6*Z*,8*E*,10*E*)-*form* [18744-21-3]
Cryst. (hexane). Mp 93.5-95°. Material contaminated with some *all-E*-isomer.

2-Methylpropylamide: N-*Isobutyl-2,6,8,10-dodecatetraenamide.* ***α-Sanshool***. *Neoherculin*. *Echinacein*
[504-97-2]
$C_{16}H_{25}NO$ 247.38
Constit. of *Echinacea angustifolia* roots and *Zanthoxylum* spp. Insecticide. Cryst. (petrol). Mp 69° (61-63°). Unstable in air.

2-Hydroxy-2-methylpropylamide: ***Hydroxy-α-sanshool***
[83883-10-7]
[645-70-5 (Sanshoamide)]
$C_{16}H_{25}NO_2$ 263.379
Constit. of *Zanthoxylum piperitum* (Japanese pepper tree) and *Zanthoxylum planispinum* (Rutaceae). Unstable oil. Probably the major constit. of Sanshoamide isol. as a mixt. in 1951. λ_{max} 260 (ε 22400); 269 (ε 29200); 280 (ε 23200) (EtOH).

[119719-30-1]

Aihara, T. *et al., Yakugaku Zasshi*, 1951, **71**, 1112 (*Sanshoamide*)
Crombie, L. *et al., J.C.S.*, 1952, 2997; 1955, 995; 1957, 2760 (*isol, uv, ir, struct*)
Crombie, L. *et al., Nature (London)*, 1954, **174**, 833
Sonnet, P.E. *et al., J.O.C.*, 1969, **34**, 1147 (*synth, uv*)
Yasuda, I. *et al., Phytochemistry*, 1982, **21**, 1295 (*isol, pmr, cmr, ms, occur*)
Mizutani, K. *et al., Chem. Pharm. Bull.*, 1988, **36**, 2362 (*isol, ir, pmr, cmr*)
Nakamura, N. *et al., Chem. Pharm. Bull.*, 1988, **36**, 2647 (*ir*)

2,4,6-Dodecatrienoic acid D-894

$H_3C(CH_2)_4CH{=}CHCH{=}CHCH{=}CHCOOH$

$C_{12}H_{18}O_2$ 194.273

(2*E*,4*E*,6*E*)-*form*

Et ester: [80387-34-4]
$C_{14}H_{22}O_2$ 222.327
Oil.

Amide: [149764-42-1]
$C_{12}H_{19}NO$ 193.288
Isol. from an actinomycete *Amycolatopsis* sp. Herbicide. Sol. MeOH, hexane, Me_2CO, EtOAc, $CHCl_3$; fairly sol. H_2O. λ_{max} 296 (MeOH) (Berdy).

(2*E*,4*E*,6*Z*)-*form*
Constit. of the latex of *Euphorbia lathyris*.

Amide: [149764-40-9]
Isol. from an actinomycete *Amycolatopsis* sp. Herbicide. Sol. MeOH, Me_2CO, $CHCl_3$, EtOAc, hexane; fairly sol. H_2O. λ_{max} 297 (MeOH) (Berdy).

(2*Z*,4*E*,6*E*)-*form*
Constit. of the latex of *Euphorbia lathyris*. Isol. as Me ester.

[77761-51-4 , 77761-50-3]

Warnaar, F. *et al., Phytochemistry*, 1981, **20**, 89 (*isol, ms*)
Sakai, T. *et al., J.O.C.*, 1982, **47**, 1101 (*synth, ester, ir, pmr, cmr, ms*)
Japan. Pat., 1993, 05 977 86; *CA*, **119**, 133461y (*isol, amide*)

2,4,8-Dodecatrienoic acid D-895

$H_3CCH_2CH_2CH{=}CHCH_2CH_2CH{=}CHCH{=}CHCOOH$

$C_{12}H_{18}O_2$ 194.273

(2*E*,4*E*,8*Z*)-*form*

2-Methylpropylamide: 2,4,8-Dodecatrienoic acid isobutylamide
[117505-96-1]
$C_{16}H_{27}NO$ 249.395
Isol. from the roots of *Echinacea purpurea* (Asteraceae). Oil.

Bauer, R. *et al., Phytochemistry*, 1988, **27**, 2339 (*isol, uv, ir, pmr, ms, struct*)

2,4,10-Dodecatrien-8-ynoic acid D-896

$H_3CCH{=}CHC{\equiv}CCH_2CH_2CH{=}CHCH{=}CHCOOH$

$C_{12}H_{14}O_2$ 190.241

(2*E*,4*E*,10*E*)-*form*

2-Methylpropylamide: 2,4,10-Dodecatrien-8-ynoic acid isobutylamide
[113836-87-6]
$C_{16}H_{23}NO$ 245.364
Constit. of the roots of *Echinacea purpurea*. Oil. λ_{max} 232 ; 261 (MeCN aq.).

(2*E*,4*Z*,10*Z*)-*form*

2-Methylpropylamide: [120727-33-5]
$C_{16}H_{23}NO$ 245.364
Constit. of the roots of *Echinacea angustifolia*. Oil. λ_{max} 231 (sh) ; 261 (MeCN aq.).

(2*Z*,4*E*,10*Z*)-*form*

2-Methylpropylamide: Constit. of the roots of *Echinacea angustifolia*. Viscous oil. λ_{max} 257 (log ε 4.1) (MeOH).

Bauer, R. *et al., Phytochemistry*, 1988, **27**, 2339-2342; 1989, **28**, 505-508 (*isol, uv, ir, pmr, ms*)
Chen, Y. *et al., J. Nat. Prod.*, 2005, **68**, 773-776 (*isol, pmr, cmr, ms*)

2-Dodecene-8,10-diynoic acid, 9CI D-897

$H_3CC{\equiv}CC{\equiv}C(CH_2)_4CH{=}CHCOOH$

$C_{12}H_{14}O_2$ 190.241

(*E*)-*form*

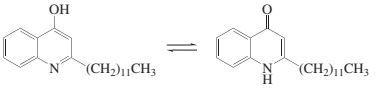
2-Methylpropylamide: N-*(2-Methylpropyl)-2-dodecene-8,10-diynamide, 9CI. 2-Dodecene-8,10-diynoic acid isobutylamide*
[120727-29-9]
$C_{16}H_{23}NO$ 245.364
Isol. from the roots of *Echinacea angustifolia*. Cryst. (hexane). Mp 104°. λ_{max} 211 (ε 10600) (MeCN aq.).

2-Methylbutylamide: **N-*(2-Methylbutyl)-2-dodecene-8,10-diynamide, 9CI***
[120727-31-3]
$C_{17}H_{25}NO$ 259.391
Isol. from the roots of *Echinacea angustifolia*. Oil.

Bauer, R. *et al., Phytochemistry*, 1989, **28**, 505-508 (*isol, pmr, ms*)
Wu, L. *et al., Phytochemistry*, 2004, **65**, 2477-2484 (*synth, occur*)

2-Dodecyl-4-hydroxyquinoline D-898

*2-Dodecyl-4(1*H*)-quinolinone. 2-Dodecyl-4-quinolinol, 9CI*
[80554-65-0]



$C_{21}H_{31}NO$ 313.482
Alkaloid from *Boronia ternata* var. *elongata* and *Ruta graveolens*. Metab. of *Pseudomonas aeruginosa*. Amorph. powder. Mp 70°. λ_{max} 215 (log ε 4.15); 239 (log ε 4.48); 321 (log ε 4.06); 334 (log ε 4.08) (MeOH).

N-*Oxide:* [161424-22-2]
$C_{21}H_{31}NO_2$ 329.481
Metab. of *Pseudomonas aeruginosa*.

*1′,2′-Didehydro(*E*-): 2-(1*E*-Dodecenyl)-4(1*H*)-quinolinone. 2-(1*E*-Dodecenyl)-4-hydroxyquinoline*
$C_{21}H_{29}NO$ 311.466
Metab. of *Pseudomonas aeruginosa*.

*1′,2′-Didehydro(*Z*-): 2-(1*Z*-Dodecenyl)-4(1*H*)-quinolinone. 2-(1*Z*-Dodecenyl)-4-hydroxyquinoline*
$C_{21}H_{29}NO$ 311.466
Metab. of *Pseudomonas aeruginosa*.

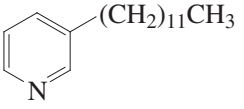
NH-form

N-*Me: 2-Dodecyl-1-methyl-4(1*H*)-quinolinone*
[182055-94-3]
$C_{22}H_{33}NO$ 327.509
Trace alkaloid from fruits of *Evodia rutaecarpa*. Cryst. Mp 75-76°. λ_{max} 212 (log ε 4.44); 238 (log ε 4.48); 321 (log ε 4.16); 333 (log ε 4.17) (EtOH).

Tang, Y.-Q. *et al., Phytochemistry*, 1996, **43**, 719-722 (*N-Me, isol, pmr, cmr, ms*)
Lepine, F. *et al., J. Am. Soc. Mass Spectrom.*, 2004, **15**, 862-869 (*occur, oxide, 1′,2′-didehydro*)
Agier, C. *et al., Nat. Prod. Res.*, 2007, **21**, 698-703 (*isol, pmr, cmr, ms*)

3-Dodecylpyridine D-899

[59652-37-8]

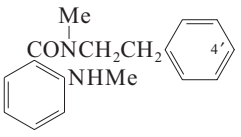


$C_{17}H_{29}N$ 247.423
Isol. from egg-tar. $Bp_{0.8}$ 141°. λ_{max} 258 ; 264 ; 271 (MeOH) (Berdy).

Tsuji, K. *et al., Yakugaku Zasshi*, 1976, **96**, 479-483; *CA*, **85**, 99075t (*isol, synth*)
Kozintsev, S.I. *et al., Dokl. Akad. Nauk BSSR*, 1990, **34**, 620-622; *CA*, **114**, 42514 (*synth*)

Doisuthine D-900

N-*Methylanthranilic acid* N-*methylphenethylamide*
[173867-26-0]



$C_{17}H_{20}N_2O$ 268.358
Alkaloid from leaves of *Glycosmis ovoidea*.

N^{amide}-*De-Me:* ***Glycoamide A***. N-*Methylanthranilic acid phenethylamide*
$C_{16}H_{18}N_2O$ 254.331
Alkaloid from *Glycosmis cochinchinensis*. Oil. λ_{max} 211 (log ϵ 4.43); 256 (log ϵ 4); 342 (log ϵ 3.65) (MeOH).

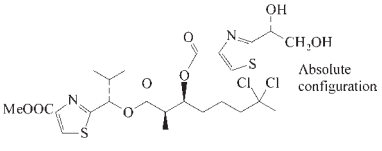
4′-Methoxy: ***Methoxydoisuthine***. N-*Methylanthranilic acid* N-*methyl-4-methoxyphenethylamide*
[173907-01-2]
$C_{18}H_{22}N_2O_2$ 298.384
From leaves of *Glycosmis ovoidea*.

4′-Methoxy, N^{amide}*-de-Me:* ***Glycoamide B***. N-*Methylanthranilic acid 4-methoxyphenethylamide*
$C_{17}H_{20}N_2O_2$ 284.357
Constit. of *Glycosmis cochinchinensis*. Oil. λ_{max} 219 ; 259 ; 279 ; 341 (MeOH).

Hofer, O. *et al., Annalen*, 1995, 1789 (*isol, uv, ir, pmr, cmr, ms, struct*)
Ito, C. *et al., Chem. Pharm. Bull.*, 1999, **47**, 1491-1493 (*Glycoamides*)

Dolabellin D-901

[165467-49-2]



$C_{24}H_{32}Cl_2N_2O_8S_2$ 611.563
Isol. from *Dolabella auricularia* and *Lyngbya majuscula*. Cytotoxic. Oil. Sol. MeOH, EtOAc; poorly sol. hexane. $[\alpha]_D^{28}$ -7.3 (c, 0.34 in $CHCl_3$). λ_{max} 204 (ϵ 29400); 236 (ϵ 14600) (MeOH).

Sone, H. *et al., J.O.C.*, 1995, **60**, 4774-4781 (*isol, synth uv, ir, pmr, cmr*)

Dolastatin 1 D-902

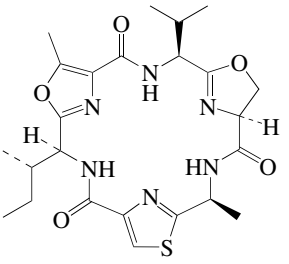
[79394-15-3]

Thiazole-peptide antibiotic. Struct. unknown. Isol. from *Dolabella auricularia* and *Aplysia pulmonica*. Cytotoxic agent. Powder. λ_{max} 218 (MeOH).

Pettit, G.R. *et al., J. Nat. Prod.*, 1981, **44**, 482-485

Dolastatin I D-903

[192800-84-3]



$C_{24}H_{32}N_6O_5S$ 516.62
Isol. from *Dolabella auricularia*. Cytotoxic agent. Amorph. powder. $[\alpha]_D^{30}$ -50 (c, 0.06 in $CHCl_3$). λ_{max} 198 (ϵ 27000); 220 (ϵ 20000) (MeCN).

Sone, H. *et al., Tetrahedron*, 1997, **53**, 8149-8154 (*isol, uv, ir, pmr, cmr*)
Kigoshi, H. *et al., Tetrahedron*, 1999, **55**, 12301-12308 (*synth*)

Dolastatin 2 D-904

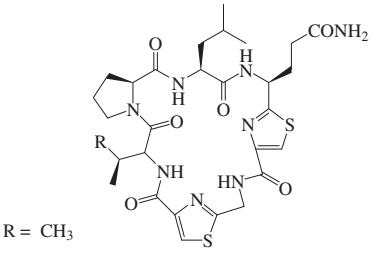
[79394-16-4]

Thiazole-peptide antibiotic. Struct. unknown. Isol. from *Dolabella auricularia* and *Aplysia pulmonica*. Cytotoxic agent. Powder. λ_{max} 217 (MeOH).

Pettit, G.R. *et al., J. Nat. Prod.*, 1981, **44**, 482-485

Dolastatin 3 D-905

[80387-90-2]



$C_{29}H_{40}N_8O_6S_2$ 660.817
Cyclic peptide antibiotic. Isol. from the Indian Ocean sea hare *Dolabella auricularia*, sponge *Aplysia pulmonica* and *Lyngbya majuscula*. Shows potent antineoplastic props. Inhibitor of HIV 1 integrase. Amorph. solid. Mp 133-137°. $[\alpha]_D^{26}$ -35.5 (c, 0.09 in MeOH). λ_{max} 206 (ϵ 13940); 208 ; 238 (ϵ 8960) (MeOH) (Berdy).

Homologue (R = -CH_2CH_3): ***Homodolastatin 3***
[261373-24-4]
$C_{30}H_{42}N_8O_6S_2$ 674.844
Isol. from *Lyngbya majuscula*. Amorph. solid. λ_{max} 240 (ϵ 7000) (MeOH).

Pettit, G.R. *et al., J. Nat. Prod.*, 1981, **44**, 482-485 (*isol*)
Pettit, G.R. *et al., J.A.C.S.*, 1982, **104**, 905-907; 1987, **109**, 7581-7582 (*uv, ir, pmr, cmr, ms, struct, bibl, synth*)
Schmidt, U. *et al., Angew. Chem., Int. Ed.*, 1984, **23**, 725-726 (*struct*)
Hamada, Y. *et al., Tet. Lett.*, 1984, **25**, 5303-5306 (*synth*)
Bredenkamp, M.W. *et al., Annalen*, 1990, 871-875 (*synth, conformn*)
Holzapfel, C.W. *et al., Tetrahedron*, 1990, **46**, 649-660 (*synth*)
Pettit, G.R. *et al., Tetrahedron*, 1993, **49**, 9151
Mitchell, S.S. *et al., J. Nat. Prod.*, 2000, **63**, 279-282 (*Homodolastatin 3*)

Dolastatin 4 D-906

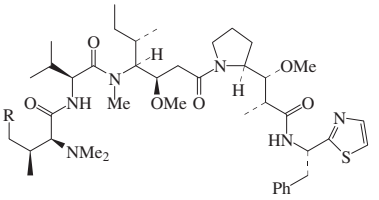
[79394-18-6]

Thiazole-peptide antibiotic. Struct. unknown. Isol. from *Dolabella auricularia* and *Aplysia pulmonica*. Cytotoxic agent. Powder.

Pettit, G.R. *et al., J. Nat. Prod.*, 1981, **44**, 482-485

Dolastatin 10 D-907

NSC 376128
[110417-88-4]



$C_{42}H_{68}N_6O_6S$ 785.102
Peptide antibiotic. Isol. from *Dolabella auricularia* and *Symploca* sp. VP642. Antitumour and antimitotic agent. Shows fungicidal activity. Tubulin polymerisation inhibitor. . Amorph. powder (MeOH/CH_2Cl_2). Sol. MeOH, $CHCl_3$. Mp 107-112°. $[\alpha]_D^{29}$ -68 (c, 0.01 in MeOH). λ_{max} 203 (log ϵ 4.39); 216 (ϵ 20200); 242 (ϵ 3610); 245 (log ϵ 3.63) (MeOH) (Derep).

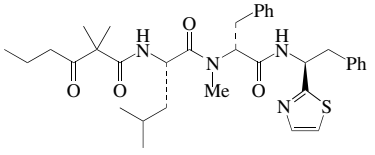
Homologue (R = CH_3): ***Symplostatin 1***
[212007-18-6]
$C_{43}H_{70}N_6O_6S$ 799.129
Isol. from the cyanobacterium S*ymploca hydnoides*. Antitumour agent. Microtubule assembly inhibitor. $[\alpha]_D$ -45 (c, 1.6 in MeOH). λ_{max} 209 (ϵ 20420); 245 (ϵ 5430) (MeOH).

Pettit, G.R. *et al., J.A.C.S.*, 1987, **109**, 6883-6885 (*isol, struct*)
Pettit, G.R. *et al., J.A.C.S.*, 1989, **111**, 5463-5465 (*synth, abs config*)
Shioiri, T. *et al., Tetrahedron*, 1993, **49**, 1913-1924 (*synth*)
Pettit, G.R. *et al., Tetrahedron*, 1993, **49**, 9151-9170 (*isol, bibl*)
Pettit, G.R. *et al., J.O.C.*, 1994, **59**, 6127-6130 (*synth, cryst struct*)
Roux, F. *et al., Tetrahedron*, 1994, **50**, 5345-5360 (*synth*)
Alattia, T. *et al., Tetrahedron*, 1995, **51**, 2593-2604 (*pmr, cmr, conformn*)
Pettit, G.R. *et al., J.C.S. Perkin 1*, 1996, 853-858; 859-863 (*synth*)
Pettit, R.K. *et al., Antimicrob. Agents Chemother.*, 1998, **42**, 2961-2965 (*Dolastatin 10, activity*)
Harrigan, G.G. *et al., J. Nat. Prod.*, 1998, **61**, 1075-1077 (*Symplostatin 1*)
Munro, M.H.G. *et al., J. Biotechnol.*, 1999, **70**, 15-25 (*rev*)

Vaishampayan, U. *et al., Clin. Cancer Res.*, 2000, **6**, 1293-1301; 4205-4208 (*pharmacol*)
Luesch, H. *et al., J. Nat. Prod.*, 2001, **64**, 907-910 (*isol, activity, Symplostatin 1*)
Hoffman, M.A. *et al., Gynecol. Oncol.*, 2003, **89**, 95-98 (*clin trial*)
Mooberry, S.L. *et al., Int. J. Cancer*, 2003, **104**, 512-521 (*Symplostatin 1, pharmacol*)

Dolastatin 18 D-908

[190181-65-8]

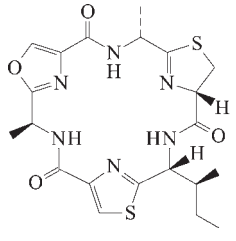


$C_{35}H_{46}N_4O_4S$ 618.839
Isol. from *Dolabella auricularia*. Cytotoxic agent. Powder. $[\alpha]_D$ -2.3 (c, 0.1 in MeOH).

Pettit, G.R. *et al., Bioorg. Med. Chem. Lett.*, 1997, **7**, 827-832 (*isol, pmr, cmr*)
Pettit, G.R. *et al., J.O.C.*, 2004, **69**, 4019-4022 (*synth*)

Dolastatin E D-909

[165967-00-0]



Absolute configuration

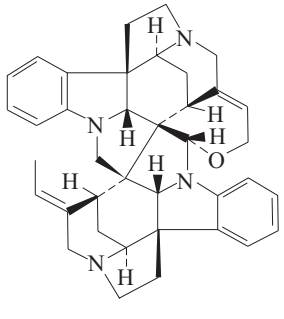
$C_{21}H_{26}N_6O_4S_2$ 490.606
Isol. from the sea hare *Dolabella auricularia*. Cytotoxic agent. Powder. $[\alpha]_D^{27}$ -22 (c, 0.2 in MeOH). λ_{max} 205 (ϵ 26600); 213 (sh) (ϵ 23800); 240 (sh) (ϵ 13800) (MeOH) (Derep).

[170720-11-3 , 170720-12-4]

Ojika, M. *et al., Tet. Lett.*, 1995, **36**, 5057-5058; 5059-5062 (*isol, synth, pmr, cmr, abs config*)

Dolichocurine D-910

17,18-Deepoxycaracurine II, 9CI
[69347-05-3]



$C_{38}H_{40}N_4O$ 568.76
Minor alkaloid from *Strychnos dolichothyrsa* (Loganiaceae). Mp 300° (as hydrochloride). Stereochem. not establ., that shown is probable by analogy with Caracurine II, C-111.

Verpoorte, R. *et al., Planta Med.*, 1982, **44**, 21-27 (*isol, ir, ms, pmr, struct*)

Dolichothine D-911

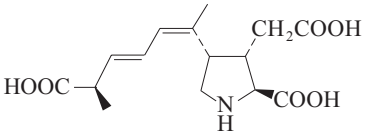
[69345-27-3]

Dimeric caracurine-type alkaloid cooccurring with Dolichocurine, D-910. Struct. unknown. Minor alkaloid from *Strychnos dolichothyrsa* (Loganiaceae).

Verpoorte, R. *et al., Planta Med.*, 1982, **44**, 21-27

Domoic acid D-912

2-Carboxy-4-(5-carboxy-1-methyl-1,3-hexadienyl)-3-pyrrolidineacetic acid, 9CI
[14277-97-5]



$C_{15}H_{21}NO_6$ 311.334
Constit. of the red algae *Chondria armata* and *Alsidium corallinum*. Also isol. from toxin contaminated edible mussels (*Mytilus edulis*) containing diatom *Nitzschia multiseries* (formerly *Nitzschia pungens*). Ionotropic glutamate (kainate) receptor agonist. Neurotoxin. Amnesic shellfish poison. Vermifuge, insecticide. Needles + $2H_2O$. Sol. H_2O, AcOH; fairly sol. MeOH, EtOH; poorly sol. Me_2CO, C_6H_6. Mp 213° dec. $[\alpha]_D^{12}$ -109.6 (H_2O). λ_{max} 242 (ϵ 24300) (H_2O at pH 2) (Derep). λ_{max} 242 (ϵ 26100) (H_2O pH 7) (Derep). λ_{max} 242 (ϵ 17500) (H_2O) (Berdy).

▶ Toxic, LD_{50} 10mg/kg (mice). UX9665100

(1′E)-Isomer: ***Isodomoic acid E***
[126872-96-6]
$C_{15}H_{21}NO_6$ 311.334
Isol. from mussel (*Mytilus edulis*). $[\alpha]_D^{25}$ -19.5 (H_2O).

(3′Z)-Isomer: ***Isodomoic acid D***
[101977-26-8]
$C_{15}H_{21}NO_6$ 311.334
Isol. from mussel (*Mytilus edulis*). $[\alpha]_D^{25}$ -72 (H_2O). λ_{max} 213 (ϵ 5030) (MeOH) (Berdy).

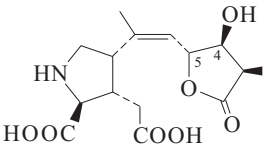
(1′E,3′Z)-Isomer: ***Isodomoic acid F***
[127761-30-2]
$C_{15}H_{21}NO_6$ 311.334
Isol. from mussel (*Mytilus edulis*). $[\alpha]_D^{25}$ -85 (H_2O).

5′-Epimer: ***5′-Epidomoic acid***
$C_{15}H_{21}NO_6$ 311.334
Isol. from mussel and contaminating microalga *Nitzschia pungens*. $[\alpha]_D^{24}$ -48.8 (c, 0.18 in H_2O). λ_{max} 242 (no solvent reported).

Daigo, K. *et al., Yakugaku Zasshi*, 1959, **79**, 350; 353; 356; 365; *CA*, **53**, 14218d (*isol, algae*)
Takemoto, T. *et al., Yakugaku Zasshi*, 1966, **86**, 874 (*pmr, struct*)
Impellizzeri, G. *et al., Phytochemistry*, 1975, **14**, 1549 (*isol, algae*)
Ohfune, Y. *et al., J.A.C.S.*, 1982, **104**, 3511-3513 (*synth, struct*)
Thibault, P. *et al., Biomed. Mass Spectrom.*, 1989, **18**, 373 (*ms*)
Wright, J.L.C. *et al., Can. J. Chem.*, 1989, **67**, 481; 1990, **68**, 22 (*Domoic acid, Isodomoic acids, isol, mussels*)
Falk, M. *et al., Can. J. Chem.*, 1989, **67**, 1421 (*uv*)
Tryphonas, L. *et al., Toxicol. Pathol.*, Pt. 2, 1990, **18**, 165 (*rev, tox*)
Walter, J.A. *et al., Can. J. Chem.*, 1992, **70**, 1156 (*pmr, cmr*)
Walter, J.A. *et al., Can. J. Chem.*, 1994, **72**, 430-436 (*5′-Epidomoic acid*)
Parsons, A.F. *et al., Tetrahedron*, 1996, **52**, 4149-4174 (*rev*)
Food Sci. Technol., Seafood and Freshwater Toxins, (ed. Botana, L.M.), Marcel Dekker, 2000, **103**, (*revs*)
Clayden, J. *et al., Tetrahedron*, 2005, **61**, 5713-5724 (*rev*)

Domoilactone A D-913

[101899-46-1]



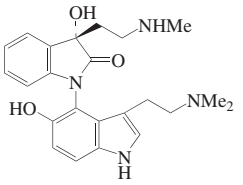
$C_{15}H_{21}NO_7$ 327.333
Isol. from the red alga *Chondria armata*. λ_{max} 200 (ϵ 5700) (MeOH) (Derep).

4,5-Diepimer: ***Domoilactone B***
[101977-27-9]
$C_{15}H_{21}NO_7$ 327.333
From *Chondria armata*. λ_{max} 200 (ϵ 5700) (MeOH) (Derep).

Maeda, M. *et al., Tet. Lett.*, 1987, **28**, 633 (*isol, struct*)

Donasine D-914

[1017237-81-8]

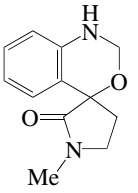


$C_{23}H_{28}N_4O_3$ 408.499
Alkaloid from the rhizomes of *Arundo donax*. Cryst. (CH_2Cl_2/MeOH). Mp 201-202°. λ_{max} 215 ; 278 (MeOH).

Jia, A.-L. *et al., J. Asian Nat. Prod. Res.*, 2008, **10**, 105-109 (*isol, pmr, cmr, cryst struct*)

Donaxanine D-915

[178493-90-8]



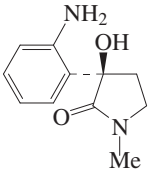
$C_{12}H_{14}N_2O_2$ 218.255

Alkaloid from *Arundo donax*, also obt. by condensation of Donaxaridine, D-916 with formaldehyde. Cryst. (Me_2CO). Mp 162-164°.

Khuzhaev, V.U. *et al., Khim. Prir. Soedin.*, 1995, **31**, 728-730; *Chem. Nat. Compd. (Engl. Transl.)*, 1995, **31**, 610-611 (*isol, ir, pmr, struct, synth*)

Donaxaridine D-916

[62209-18-1]



(*R*)-*form*

$C_{11}H_{14}N_2O_2$ 206.244

Struct. revised in 1995. A synthesis reported in 1997 was of the former struct. shown to be incorrect.

(*R*)-*form*

$N^{2'}$-*Me:* ***Chimonamidine***

$C_{12}H_{16}N_2O_2$ 220.271

Alkaloid from the seeds of *Chimonanthus praecox*. Amorph. powder. $[\alpha]_D^{19}$ -12.6 (c, 0.06 in EtOH) (nat.). $[\alpha]_D$ -178 (synthetic). Partial racemate. Obt. as a mixt. of enantiomers with *R*-isomer predominant. λ_{max} 202 ; 246 ; 300 (MeOH).

(*S*)-*form*

$N^{2'}$-*Me:* $[\alpha]_D$ +171.

(±)-*form*

Alkaloid from *Arundo donax* (Poaceae). Also formed by treatment of Donaxarine, D-917 with KOH. Mp 175-176°.

N-*Ac:* Mp 185-186°.

$N^{2'}$-*Me:*

Needles (EtOAc). Mp 213-215°.

Ubaidullaev, K.A. *et al., Khim. Prir. Soedin.*, 1976, **12**, 553; *Chem. Nat. Compd. (Engl. Transl.)*, 1976, **12**, 499 (*Donaxaridine, isol, uv, ir, pmr, ms*)

Khuzhaev, V.U. *et al., Khim. Prir. Soedin.*, 1995, **31**, 720-727; 1996, **32**, 217-220; *Chem. Nat. Compd. (Engl. Transl.)*, 1995, **31**, 604-609; 1996, **32**, 190-193 (*Donaxaridine, cryst struct, ms*)

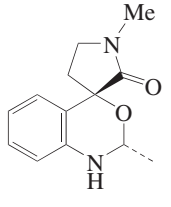
Khuzhaev, V.U. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2004, **40**, 516-517 (*isol, pmr, cmr*)

Takayama, H. *et al., Tetrahedron*, 2004, **60**, 893-900 (*Chimonamidine, isol, synth, pmr, cmr*)

Kawasaki, T. *et al., Tetrahedron*, 2004, **60**, 3493-3503 (*synth*)

Donaxarine D-917

[62209-19-2]



Relative Configuration

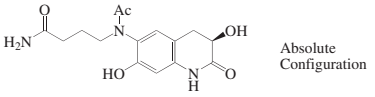
$C_{13}H_{16}N_2O_2$ 232.282

Struct. revised in 1995. Alkaloid from *Arundo donax* (Poaceae). Mp 218-220°. Opt. inactive.

Khuzhaev, V.U. *et al., Khim. Prir. Soedin.*, 1995, **31**, 720-727; 1996, **32**, 217-220; *Chem. Nat. Compd. (Engl. Transl.)*, 1995, **31**, 604-609; 1996, **32**, 190-193 (*cryst struct, ms*)

Donglingine D-918

[955938-88-2]



Absolute Configuration

$C_{15}H_{19}N_3O_5$ 321.332

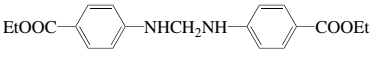
Alkaloid from the aerial parts of *Rabdosia rubescens*.

Feng, W.-S. *et al., Zhongguo Tianran Yaowu*, 2007, **5**, 92-95; *CA*, **147**, 498887v (*isol, pmr, cmr*)

Donine D-919

Diethyl 4,4′-(methylenediimino)bisbenzoate, 9CI

[74763-68-1]



$C_{19}H_{22}N_2O_4$ 342.394

Alkaloid from *Arundo donax* (Poaceae). Cryst. (MeOH). Mp 126-128° (natural) Mp 189° (synthetic). λ_{max} 201 (log ε 4.76); 246 (log ε 4.62) (no solvent reported).

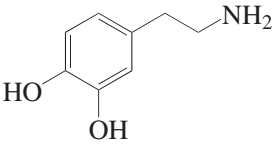
Giumanini, A.G. *et al., J. Phys. Chem.*, 1987, **329**, 1087-1103 (*synth, ir, pmr, ms*)

Khuzhaev, V.U. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1996, **32**, 194-197 (*isol, uv, pmr, cmr*)

Dopamine, BAN, INN D-920

4-(2-Aminoethyl)-1,2-benzenediol, 9CI. 2-(3,4-Dihydroxyphenyl)ethylamine. 3,4-Dihydroxyphenethylamine. Hydroxytyramine. Oxytyramine. Cardiosteril. Dopastat. Intropin. NSC 169105. ASL 279. Many other names

[51-61-6]



$C_8H_{11}NO_2$ 153.18

Occurs in animals, esp. in the brain and nervous system, and in several higher plants, such as broom (*Cytisus scoparius*), banana (*Musa sapientum*) and *Hermidium alipes* (preferred genus name *Mirabilis*), and in the marine alga *Monostroma fuscum*. Also isol. from marine animals (e.g. *Metridium* sp.). Adrenergic, sympathomimetic agent. Antihypotensive, cardiotonic, antiparkinsonian agent. Central neurotransmitter and precursor of noradrenaline. Log P 0.02 (calc). Autoxidises very readily as free base.

▶ LD_{50} (rat, ipr) 163 mg/kg. Exp. reprod. and teratogenic effects. UX1088000

Hydrochloride: ***Dopamine hydrochloride, JAN, USAN***

[62-31-7]

Mp 240-241° dec. (>220° dec.).

▶ LD_{50} (rat, ipr) 597 mg/kg. Exp. reprod. and teratogenic effects. UX1092000

Hydrobromide: [645-31-8]

Mp 218-220°.

▶ SH2290150

O^3-*β-D-Glucopyranoside: Dopamine 3-glucoside*

[50908-96-8]

$C_{14}H_{21}NO_7$ 315.322

Alkaloid from seeds of *Entada pursaetha* (Fabaceae). Semicryst. brown solid. $[\alpha]_D^{20}$ -62 (c, 2 in H_2O).

O^4-*β-D-Glucopyranoside: Dopamine 4-glucoside*

[50909-01-8]

$C_{14}H_{21}NO_7$ 315.322

Isol. from *Manduca sexta* and *Papilio xuthus*. Cryst. $[\alpha]_D^{20}$ -66 (c, 2 in H_2O).

N-*Ac:* N-*(3,4-Dihydroxyphenethyl)acetamide, 8CI*

[2494-12-4]

$C_{10}H_{13}NO_3$ 195.218

Constit. of the cast-off shells of the cicada, *Cryptotympana* sp. Precursor of sclerotised insect cuticle. No phys. props. reported. Mp 78-80°. Component of Zentai.

N-*Ac, 3*-O-*β-glucopyranoside:* [86512-21-2]

$C_{16}H_{23}NO_8$ 357.36

Isol. from insects *Mantis religiosa*, *Tenodera angustipennis, Manduca sexta* and *Statilia maculata*. No phys. props. reported.

N-*Ac, 4*-O-*β-D-glucopyranoside:* [29625-66-9]

$C_{16}H_{23}NO_8$ 357.36

Isol. from insects *Calliphora erythrocephala*, *Bombyx mori* and *Manduca sexta*.

N-*Carboxyacetyl, 3*-O-*β-D-glucopyranoside:* **N-*Malonyldopamine 3-glucoside***

[86502-98-9]

$C_{17}H_{23}NO_{10}$ 401.369

Isol. from *Hierodula patellifera* and *Tenodera angustipennis*. No phys. props. reported.

N-*[3-(Carboxyacetylamino)propanoyl], 3*-O-*β-D-glucopyranoside:* **N-*(N-Malonyl-β-alanyl)dopamine 3-glucoside***

[96735-98-7]

$C_{20}H_{28}N_2O_{11}$ 472.448

Isol. from *Hierodula patellifera* and *Tenodera angustipennis*. No phys. props. reported.

N-*(4-Hydroxy*-E-*cinnamoyl):* [103188-46-1]

$C_{17}H_{17}NO_4$ 299.326

Constit. of *Atraphaxis spinosa*.

N-*(3,4-Dihydroxy*-E-*cinnamoyl):* ***Caffedymine***
[103188-49-4]
[105955-00-8]
$C_{17}H_{17}NO_5$ 315.325
Constit. of *Theobroma cacao*, *Capsicum annuum* (bell pepper) and *Lycium chinense* (wolfberry). Cyclooxygenase inhibitor. No phys. props. reported.

N-*(4-Methoxy*-Z-*cinnamoyl):* N-*(4-Methoxycinnamoyl)dopamine.* ***Lyciumide A***
[245343-48-0]
$C_{18}H_{19}NO_4$ 313.352
Alkaloid from *Lycium barbarum*. Gum.

N-*(4-Hydroxy-3-methoxy*-E-*cinnamoyl):* N-trans-*Feruloyldopamine.* ***Tuberosine B***†
[142350-99-0]
$C_{18}H_{19}NO_5$ 329.352
Alkaloid from *Allium tuberosum* (Chinese chives) and *Atraphaxis spinosa*.

N-*Jasmonoyl:* **N-*Jasmonoyldopamine***
$C_{20}H_{27}NO_4$ 345.438
Constit. of the flowers of *Vicia faba*.

N-*Me:* see Epinine, E-98

N,N-*Di-Me: 4-[2-(Dimethylamino)ethyl]-1,2-benzenediol.* N,N-*Dimethyl-3,4-dihydroxyphenethylamine.* N,N-*Dimethyldopamine*
[21581-37-3]
[13075-91-7 , 50309-53-0]
$C_{10}H_{15}NO_2$ 181.234
Alkaloid from *Acacia rigidula*. Cryst. (EtOH). Mp 156°.

N-*Tri-Me:* see Coryneine, C-690

N-*Benzyl:*
$C_{15}H_{17}NO_2$ 243.305
Cryst. powder (EtOH/Et_2O) (as hydrochloride). Mp 87° Mp 180° (double Mp) (hydrochloride).

O^3-*Me:* see 4-Hydroxy-3-methoxyphenethylamine, H-566

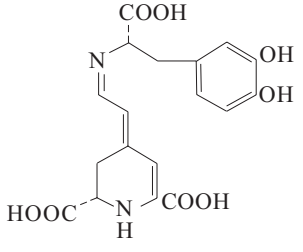
Di-Me ether: see 3,4-Dimethoxyphenethylamine, D-718

Dibenzyl ether: [1699-56-5]
$C_{22}H_{23}NO_2$ 333.429
Cryst. (EtOAc/EtOH) (as hydrochloride). Mp 133° (hydrochloride). CAS no. refers to hydrochloride.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 1294A; 1294B (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **2**, 622B; 622C (*nmr*)
Buck, J.S. *et al., J.A.C.S.*, 1931, **53**, 2192-2200 (*N-benzyl, N-benzyl O,O-di-Me*)
Forbes, E.J. *et al., J.C.S.*, 1955, 3926-3932 (*O,O-dibenzyl*)
Waalkes, T.P. *et al., Science (Washington, D.C.)*, 1958, **127**, 648-650 (*Musa sapientum constit*)
Karlson, P. *et al., Hoppe-Seyler's Z. Physiol. Chem.*, 1962, **327**, 86-94 (*N-Ac, N-Ac-4-glucoside, isol*)
Keppe, T. *et al., J. Med. Chem.*, 1965, **8**, 368-374 (*uv*)
Tocher, R.D. *et al., Can. J. Bot.*, 1966, **44**, 605-608 (*Monostroma fuscum constit*)
Seiler, N. *et al., Fresenius' Z. Anal. Chem.*, 1970, **252**, 127-136 (*ms, N-Ac*)
Lundström, J. *et al., Acta Chem. Scand.*, 1971, **25**, 3489-3499 (*biosynth*)
Milne, G.W. *et al., Anal. Chem.*, 1973, **45**, 1952-1954 (*ms*)
Larsen, P.O. *et al., Phytochemistry*, 1973, **12**, 2243-2247 (*synth, glucosides*)
Lambert, F. *et al., Org. Magn. Reson.*, 1975, **7**, 266-273 (*pmr*)
Lenicque, P.M. *et al., Comp. Biochem. Physiol., C: Comp. Pharmacol.*, 1977, **56**, 31-34 (*Metridium senile constit*)
Smith, T.A. *et al., Phytochemistry*, 1977, **16**, 9-18 (*occur, bibl*)
Scratchley, G.A. *et al., J. Chromatogr.*, 1979, **169**, 313-319 (*hplc*)
Carter, J.E. *et al., Anal. Profiles Drug Subst.*, 1982, **11**, 257-272 (*rev, uv, ir, pmr, cmr, ms, anal*)
Yago, M. *et al., Insect Biochem.*, 1984, **14**, 7-9; 487-489 (*N-malonyl-3-glucoside, N-malonyl-β-alanyl 3-glucoside*)
Quantitative Analysis of Catecholamines and Related Compounds, (ed. Krstulovic, A.M.), Ellis Horwood, 1986, (*book*)
Carey, R.M. *et al., Recent Prog. Horm. Res.*, 1986, **42**, 251-296 (*rev*)
Peripheral Actions of Dopamine, (eds. Bell, C. *et. al*), Macmillan, 1988, (*book*)
Eur. Pat., 1989, (*(Mitsui)*)333 522; *CA*, **112**, 138764w (***synth, pmr, N-Ac***)
Ishizaki, Y. *et al., Comp. Biochem. Physiol., B: Comp. Biochem.*, 1990, **97**, 563 (*isol, 4-glucoside*)
Mueller, D.D. *et al., Bioconjug. Chem.*, 1993, **4**, 47-53 (*pmr, cmr*)
Dopamine Receptors and Transporters, (ed. Niznik, H.B.), M. Dekker, 1994, (*book*)
Volin, P. *et al., J. Chromatogr., B*, 1994, **655**, 121-126 (*hplc*)
El-Gamal, A.A. *et al., Nat. Med. (Tokyo)*, 1994, **48**, 304-306; *CA*, **122**, 209765k (*N-cinnamoyl derivs*)
Negwer, M. *et al., Organic-Chemical Drugs and their Synonyms, 7th edn., Akademie-Verlag*, 1994, 1113 (*synonyms*)
CNS Neurotransmitters and Neuromodulators: Dopamine, (ed. Stone, T.W.), CRC Press, 1996, (*book*)
Martindale, The Extra Pharmacopoeia, 31st edn., Pharmaceutical Press, 1996, 1574
Hay, M. *et al., J. Chromatogr., B*, 1997, **703**, 15-23 (*hplc*)
Zou, C. *et al., Chin. Chem. Lett.*, 1999, **10**, 131-132 (*Lyciumide A*)
Noda, N. *et al., Chem. Pharm. Bull.*, 2000, **48**, 1749-1752 (*isol, N-Ac*)
Merck Index, 13th edn., 2001, No. 3455 (*bibl*)
Kramell, R. *et al., J. Nat. Prod.*, 2005, **68**, 1345-1349 (*N-Jasmonoyldopamine*)
Park, J.B. *et al., J. Agric. Food Chem.*, 2007, **55**, 2171-2175 (*caffedymine, biol, bibl*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, DYC400; DYC600

Dopaxanthin D-921

4-[[[1-Carboxy-2-(3,4-dihydroxyphenyl)ethyl]imino]ethylidene]-1,2,3,4-tetrahydro-2,6-pyridinedicarboxylic acid, 9CI
[71199-31-0]



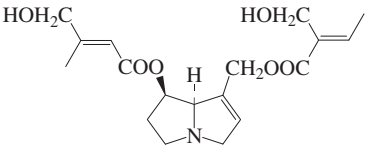
$C_{18}H_{18}N_2O_8$ 390.349

Isol. from *Glottiphyllum longum*. Also occurs in *Conophytum* spp., *Portulaca* spp. and in the Cactaceae. Intermed. in biosynth. of betacyanins from DOPA. Amorph. orange solid. λ_{max} 488 (ε 41800) (no solvent reported).

Impellizzeri, G. *et al., Phytochemistry*, 1973, **12**, 2293 (*isol*)
Wyler, H. *et al., Helv. Chim. Acta*, 1979, **62**, 1330-1339 (*synth, biosynth*)

Doriasenine D-922

[120091-13-6]



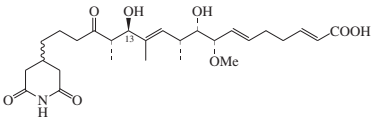
$C_{18}H_{25}NO_6$ 351.399

Diester of Retronecine in T-188. Alkaloid from *Senecio doria* (Asteraceae). Oil. $[\alpha]_D^{20}$ +6 (EtOH).

Röder, E. *et al., Phytochemistry*, 1988, **27**, 4000 (*isol, ir, pmr, cmr, ms, struct*)

Dorrigocin A D-923

[158446-29-8]



$C_{27}H_{41}NO_8$ 507.623

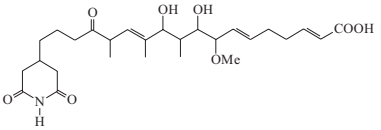
Glutarimide antibiotic. Prod. by *Streptomyces platensis* ssp. *rosaceus*. Strictly a shunt metab. of Isomigrastatin, I-245. Antifungal agent, yeast mating pheromone. Oil. Sol. MeOH, EtOAc; poorly sol. H_2O. $[\alpha]_D$ +91 (c, 0.1 in MeOH). λ_{max} 209 (ε 11000) (MeOH/NaOH). λ_{max} 205 (ε 9300) (MeOH).

13-Epimer: ***13-Epidorrigocin A***
$C_{27}H_{41}NO_8$ 507.623
Prod. by *Streptomyces platensis*. Strictly a shunt metab. of Isomigrastatin, I-245. $[\alpha]_D^{25}$ +14.6 (c, 0.13 in MeOH).

Karwowski, J.P. *et al., J. Antibiot.*, 1994, **47**, 862-869; 870-874; 875-880 (*isol, pmr, cmr*)
Ju, J. *et al., J.A.C.S.*, 2005, **127**, 1622-1623 (*biosynth*)

Dorrigocin B D-924

[158446-30-1]



$C_{27}H_{41}NO_8$ 507.623

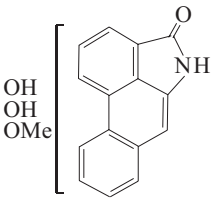
Glutarimide antibiotic. Prod. by *Streptomyces platensis* ssp. *rosaceus*. Strictly a shunt metab. of Isomigrastatin, I-245. Antifungal agent. Oil. Sol. MeOH, EtOAc; poorly sol. H_2O. $[\alpha]_D$ +16 (c,

0.3 in MeOH). λ_{max} 209 (ϵ 11000) (MeOH/NaOH). λ_{max} 205 (ϵ 9300) (MeOH).

Karwowski, J.P. *et al., J. Antibiot.*, 1994, **47**, 862-869; 870-874; 875-880 (*isol, pmr, cmr*)
Ju, J. *et al., J.A.C.S.*, 2005, **127**, 1622-1623 (*biosynth*)

Doryflavine D-925

[54140-26-0]



$C_{16}H_{11}NO_4$ 281.267
Alkaloid from the bark of *Doryphora sassafras* (Monimiaceae). Golden-yellow plates (MeOH). Mp 339°. For a tentative struct. see Mix, *et al*. λ_{max} 230 ; 251 ; 260 ; 277 ; 290 ; 320 ; 400 (MeOH) (Berdy). λ_{max} 244 ; 263 ; 295 ; 345 ; 430 (MeOH/NaOH) (Berdy).

Tri-Ac:
Needles (MeOH/EtOH). Mp 218-219°.

Di-Me ether: Mp 219-221°.

Chen, C.R. *et al., J. Nat. Prod.*, 1974, **37**, 493-500 (*isol, uv, ir, pmr, ms*)
Mix, D.B. *et al., J. Nat. Prod.*, 1982, **45**, 657-666 (*rev*)

Doryphorine D-926

[1399-14-0]

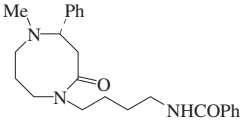
$C_{18}H_{21}NO_4$ 315.368

Struct. unknown. Alkaloid from the bark of *Doryphora sassafras* (Monimiaceae). Amorph. grey powder. Mp 115-117°.

Petrie, J.M. *et al., Proc. Linn. Soc. N.S.W.*, 1913, **37**, 139; *CA*, **7**, 2092

Dovyalicin A D-927

*1-[4-(Benzoylamino)butyl]hexahydro-5-methyl-4-phenyl-1,5-diazocin-2(1*H*)-one*
[597578-55-7]



Absolute Configuration

$C_{24}H_{31}N_3O_2$ 393.528
Alkaloid from *Dovyalis abyssinica* and *Dovyalis macrocalyx*. Gum. $[\alpha]_D^{25}$ -12.4 (c, 0.45 in $CHCl_3$).

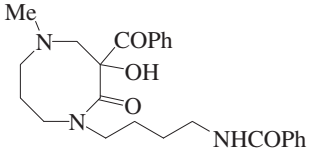
$N^{4'}$*-Debenzoyl,* $N^{4'}$*-Ac:* ***Dovyalicin B***
[597578-56-8]
$C_{19}H_{29}N_3O_2$ 331.457
Alkaloid from *Dovyalis abyssinica* and *Dovyalis macrocalyx*. Gum. $[\alpha]_D^{25}$ -23.5 (c, 0.39 in $CHCl_3$).

N^{5}*-De-Me:* ***Dovyalicin E***
[911697-89-7]
$C_{23}H_{29}N_3O_2$ 379.501
Alkaloid from *Dovyalis abyssinica*. Gum. $[\alpha]_D^{25}$ -11.7 (c, 0.42 in $CHCl_3$).

Staerk, D. *et al., Org. Lett.*, 2003, **5**, 2793-2796 (*isol, pmr, cmr*)
Rasmussen, B. *et al., J. Nat. Prod.*, 2006, **69**, 1300-1304 (*isol*)

Dovyalicin D D-928

[597578-58-0]



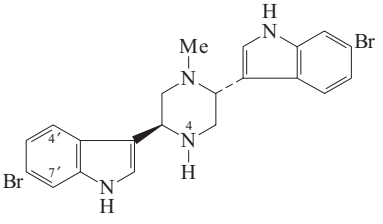
$C_{25}H_{31}N_3O_4$ 437.538
Alkaloid from *Dovyalis macrocalyx*. Gum. Racemic.

Deoxy: ***Dovyalicin C***
[597578-57-9]
$C_{25}H_{31}N_3O_3$ 421.538
Alkaloid from *Dovyalis macrocalyx*. Gum. $[\alpha]_D^{25}$ -1.1 (c, 0.79 in $CHCl_3$).

Staerk, D. *et al., Org. Lett.*, 2003, **5**, 2793-2796 (*Dovyalicins C-D, isol, pmr, cmr*)
Rasmussen, B. *et al., J. Nat. Prod.*, 2006, **69**, 1300-1304 (*Dovyalicin C, isol*)

Dragmacidin A D-929

*3,3′-(1-Methyl-2,5-piperazinediyl)bis[6-bromo-1*H*-indole], 9CI. 2,5-Bis(6-bromo-3-indolyl)-1-methylpiperazine*
[128364-31-8]



$C_{21}H_{20}Br_2N_4$ 488.224
Alkaloid from the marine sponges *Hexadella* sp., *Dragmacidon* spp., *Spongosorites* spp. and from tunicate *Didemnum candidum*. Cytotoxic. Shows antifungal, antiviral and antiinflammatory activity. Pale yellow powder.

N^{4}*-Me:* ***Dragmacidin B***
[128629-37-8]
$C_{22}H_{22}Br_2N_4$ 502.251
Alkaloid from the sponge *Hexadella* sp. Pale yellow powder.

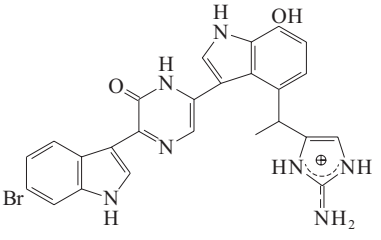
7′-Bromo, 4′-hydroxy: ***Dragmacidin***. *Biemnidin*
[114582-72-8]
$C_{21}H_{19}Br_3N_4O$ 583.119
Alkaloid from the deep-water sponge *Dragmacidon* sp. Cytotoxic agent. Powder. $[\alpha]_D^{20}$ -3 (c, 13.2 in Me_2CO). λ_{max} 220 (ϵ 52600); 275 (ϵ 11700); 286 (sh) (ϵ 10900); 293 (sh) (ϵ 10100) (MeOH) (Derep).

N-*De-Me: 3,3′-(2,5-Piperazinediyl)-bis[6-bromo-1*H*-indole]. 2,5-Bis(6-bromo-3-indolyl)piperazine.* ***Dragmacidin C***
[135048-54-3]
$C_{20}H_{18}Br_2N_4$ 474.197
Alkaloid from the marine tunicate *Didemnum candidum*. Opaque glass. $[\alpha]_D$ 0.

Eur. Pat., 1988, 284 337; *CA*, **111**, 50423 (*Biemnidin*)
Kohmoto, S. *et al., J.O.C.*, 1988, **53**, 3116-3118 (*isol, uv, ir, pmr, cmr, ms, struct*)
Morris, D.A. *et al., Tetrahedron*, 1990, **46**, 715-720 (*isol, pmr, struct*)
Fahy, E. *et al., J. Nat. Prod.*, 1991, **54**, 564-569 (*Dragmacidin C*)
Jiang, B. *et al., J.O.C.*, 1994, **59**, 6823-6827 (*Dragmacidin, synth*)
Whitlock, C.R. *et al., Tet. Lett.*, 1994, **35**, 371-374 (*Dragmacidin B, synth*)
Kawasaki, T. *et al., Org. Lett.*, 2000, **2**, 3027-3029 (*synth*)
Miyake, F.Y. *et al., Org. Lett.*, 2000, **2**, 3185-3187 (*Dragmacidin B, synth*)
Kawasaki, T. *et al., Tet. Lett.*, 2002, **43**, 4245-4248 (*Dragmacidin B, Dragmacidin C, synth*)
Garg, N.K. *et al., Tet. Lett.*, 2005, **46**, 2423-2426 (*Dragmacidin B, synth*)
Anstiss, M. *et al., Org. Biomol. Chem.*, 2006, **4**, 4135-4143 (*synth*)

Dragmacidin D D-930

[142979-34-8]

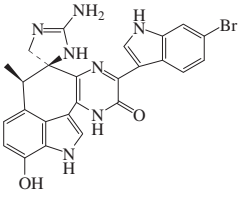


$C_{25}H_{21}BrN_7O_2^{\oplus}$ 531.391
Alkaloid from a deep-water marine sponge *Spongosorites* sp. Exhibits antimicrobial activity. Also inhibits the *in vitro* growth of P388 murine and A589 human lung tumour cell lines, and *in vitro* replication of feline leukaemia virus. Yellow solid. $[\alpha]_D$ +12 (c, 0.95 in EtOH). λ_{max} 213 (ϵ 43000); 270 (ϵ 14400); 383 (ϵ 20700) (EtOH) (Berdy). λ_{max} 214 (ϵ 54000); 280 (ϵ 16400); 452 (ϵ 19946) (EtOH-HCl) (Berdy).

Wright, A.E. *et al., J.O.C.*, 1992, **57**, 4772 (*isol, uv, pmr, cmr, struct*)
Capon, R.J. *et al., J. Nat. Prod.*, 2002, **61**, 660-662 (*isol, cmr*)
Garg, N.K. *et al., J.A.C.S.*, 2002, **124**, 13179-13184 (*synth*)

Dragmacidin E D-931

[206061-75-8]



Relative Configuration

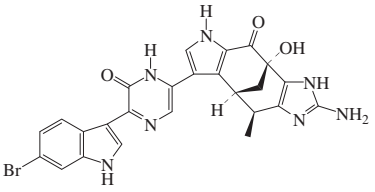
$C_{25}H_{20}BrN_7O_2$ 530.383
Tautomeric with the hydroxypyrazine form. Isol. from the sponge *Spongosorites*

sp. Inhibitor of serine-threonine protein phosphatases. Yellow solid. $[\alpha]_D$ -34 (c, 0.9 in EtOH). Fluorescent. λ_{max} 211 (ϵ 46200); 281 (ϵ 7530); 427 (ϵ 27700) (EtOH). λ_{max} 427 (ϵ 26400) (EtOH/HCl). λ_{max} 410 (ϵ 26100) (EtOH/NaOH).

Capon, R.J. *et al., J. Nat. Prod.*, 1998, **61**, 660-662 (*isol, uv, pmr, cmr*)

Dragmacidin F D-932

[239121-79-0]



$C_{25}H_{20}BrN_7O_3$ 546.382

Alkaloid from the sponge *Halicortex* sp. Antiviral agent. Pale yellow solid. Mp > 260°. $[\alpha]_D^{25}$ -159 (c, 0.4 in MeOH). λ_{max} 207 (ϵ 14000); 274 (ϵ 6460); 280 (ϵ 6430); 388 (ϵ 9600) (MeOH).

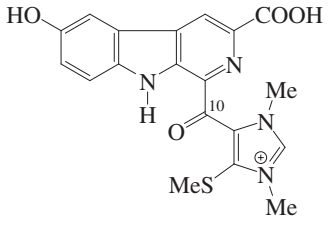
Cutignano, A. *et al., Tetrahedron*, 2000, **56**, 3743-3748 (*isol*)

Garg, N.K. *et al., J.A.C.S.*, 2004, **126**, 9552-9553; 2005, **127**, 5970-5978 (*synth*)

Dragmacidonamine A D-933

3-Carboxyhyrtiomanzamine

[835612-74-3]



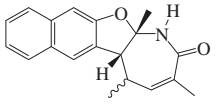
$C_{19}H_{17}N_4O_4S^{\oplus}$ 397.434

Counterion not specified. Charge is delocalised. Related to Hyrtiomanzamine, H-781. Alkaloid from the sponge *Dragmacidon* sp. Amorph. yellow solid. λ_{max} 221 ; 254 ; 317 (MeOH).

10-Deoxo: ***Dragmacidonamine B***
[835612-84-5]
$C_{19}H_{19}N_4O_3S^{\oplus}$ 383.45
Alkaloid from *Dragmacidon* sp. Brownish oil. λ_{max} 222 ; 242 ; 282 (MeOH).

Pedpradab, S. *et al., J. Nat. Prod.*, 2004, **67**, 2113-2116 (*isol*)

Drazepinone D-934



Relative Configuration

$C_{19}H_{19}NO_2$ 293.365

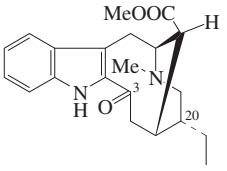
Prod. by *Drechslera siccans* isol. from the seeds of *Lolium perenne*. Phytotoxin. Oil. $[\alpha]_D$ +7.1 (c, 0.2 in $CHCl_3$). λ_{max} 215 (sh) ; 248 (log ϵ 4.05); 275 (sh) ; 310 (sh) (MeCN).

Evidente, A. *et al., Phytochemistry*, 2005, **66**, 715-721 (*isol, pmr, cmr, ms*)

Dregamine D-935

Methyl 19,20-dihydro-3-oxovobasan-17-oate, 9CI. Epitabernaemontanine

[2299-26-5]



Absolute Configuration

$C_{21}H_{26}N_2O_3$ 354.448

Alkaloid from *Voacanga drepei*, *Tabernaemontana elegans*, *Ervatamia coronaria*, *Ervatamia orientalis* and several other spp. in the Apocynaceae. Antiinflammatory agent. Shows weak local anaesthetic, convulsant and respiratory stimulant props. Cryst. (MeOH). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 106-108° Mp 137-141° Mp 181-183°. Log P 3.3 (calc). λ_{max} 237 ; 313 (MeOH) (Berdy).

▶ ZB1635000

Hydrochloride:
Cryst. (EtOH). Mp 249-250° (238-240°).

Methiodide:
Prisms (MeOH). Mp 215-217°. $[\alpha]_D^{23}$ -63.4 (MeOH).

*3*R-*Alcohol:* ***Dregaminol***
[56691-99-7]
$C_{21}H_{28}N_2O_3$ 356.464
Alkaloid from *Tabernaemontana elegans* (Apoycnaceae).

*3*R-*Alcohol, Me ether:* ***Dregaminol methyl ether***
[103763-52-6]
$C_{22}H_{30}N_2O_3$ 370.491
Alkaloid from *Tabernaemontana elegans* (Apocynaceae).

Parent acid: ***Dregaminic acid***
$C_{20}H_{24}N_2O_3$ 340.421
Alkaloid from the stems of *Ervatamia flabelliformis*. Powder (MeOH) (as Na salt). $[\alpha]_D^{25}$ +24.1 (c, 0.2 in EtOH) (Na salt). Isol. as Na salt, Sodium dregaminate.

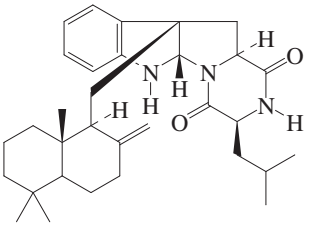
20-Epimer: ***Tabernaemontanine****. 20-Epidregamine*
[2134-98-7]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid present in *Ervatamia orientalis*, *Tabernaemontana* spp., *Voacanga globosa*, *Muntafara sessilifolia* (preferred genus name *Tabernaemontana*) and several other spp. in the Apocynaceae. Active against gram-positive bacteria. Cryst. (MeOH or Et_2O). Mp 216-218° (204-206°). $[\alpha]_D^{22}$ -58 (c, 1 in $CHCl_3$).

*20-Epimer, 3*R-*alcohol:* ***Tabernaemontaninol***
[56692-00-3]
$C_{21}H_{28}N_2O_3$ 356.464
Alkaloid from *Tabernaemontana elegans* whole plants (Apocynaceae).

Neuss, N. *et al., Experientia*, 1959, **15**, 414 (*isol, uv, ir*)
Renner, U. *et al., Helv. Chim. Acta*, 1963, **46**, 2186 (*struct*)
Ferrari, G. *et al., Phytochemistry*, 1971, **10**, 439 (*isol, ms, pmr*)
Bláha, K. *et al., Coll. Czech. Chem. Comm.*, 1973, **38**, 929 (*cd, abs config*)
Husson, A. *et al., Tetrahedron*, 1973, **29**, 3095 (*config*)
Knox, J.R. *et al., Aust. J. Chem.*, 1975, **28**, 1843 (*struct*)
Talapatra, B. *et al., Phytochemistry*, 1975, **14**, 1652 (*isol*)
Ahond, A. *et al., J.O.C.*, 1976, **41**, 1878 (*cmr*)
Hernandez, N.M.R. *et al., Rev. Cubana Farm.*, 1977, **11**, 249-255 (*activity*)
Kutney, J.P. *et al., J.A.C.S.*, 1978, **100**, 938 (*synth*)
Van der Heijden, R. *et al., Planta Med.*, 1986, 144 (*derivs*)
Liang, S. *et al., Helv. Chim. Acta*, 2008, **91**, 239-243 (*Sodium dregaminate*)

Drimentine A D-936

[204398-90-3]



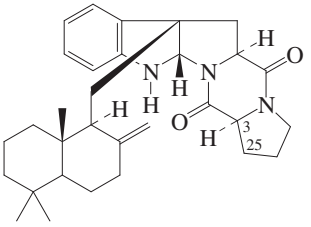
$C_{32}H_{45}N_3O_2$ 503.726

Prod. by Actinomycete strain MST-8651. Antibiotic. Cryst. Mp 130-132°. $[\alpha]_D^{25}$ -209.6 (c, 0.006 in $CHCl_3$). λ_{max} 240 (ϵ 9445); 297 (ϵ 4167) (EtOH).

Pat. Coop. Treaty (WIPO), 1998, 98 09 968; *CA*, **128**, 217535z (*isol, cd, pmr, cmr*)

Drimentine C D-937

[204398-92-5]



$C_{31}H_{41}N_3O_2$ 487.684

Prod. by Actinomycete strain MST-8651. Antibiotic. Cryst. Mp 108-110°. $[\alpha]_D^{25}$ -275.9 (c, 0.006 in $CHCl_3$). λ_{max} 240 (ϵ 6078); 297 (ϵ 2157) (EtOH).

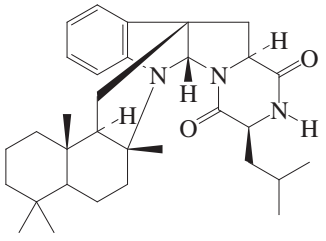
3,25-Didehydro: ***Drimentine B***
[204398-91-4]

$C_{31}H_{39}N_3O_2$ 485.668
Prod. by Actinomycete strain MST-8651. Antibiotic. Cryst. Mp 158-160°. $[\alpha]_D^{25}$ -195.2 (c, 0.007 in $CHCl_3$). λ_{max} 243 (ϵ 12420); 273 (sh) (ϵ 6667); 295 (sh) (ϵ 4091) (EtOH).

Pat. Coop. Treaty (WIPO), 1998, 98 09 968; *CA*, **128**, 217535z (*isol, cd, pmr, cmr*)

Drimentine D D-938

[204398-93-6]

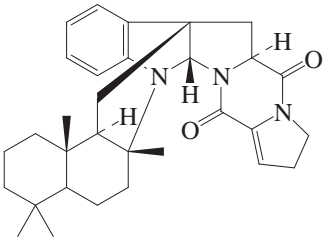


$C_{32}H_{45}N_3O_2$ 503.726
Prod. by Actinomycete strain MST-8651. Antibiotic. Cryst. Mp 141-145°. $[\alpha]_D^{25}$ -24.2 (c, 0.006 in $CHCl_3$). λ_{max} 235 (sh) (ϵ 3146); 273 (ϵ 1326); 280 (sh) (ϵ 1236) (EtOH).

Pat. Coop. Treaty (WIPO), 1998, 98 09 968; *CA*, **128**, 217535z (*isol, cd, pmr, cmr*)

Drimentine E D-939

[204398-94-7]

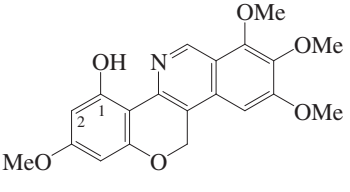


$C_{31}H_{39}N_3O_2$ 485.668
Prod. by Actinomycete strain MST-8651. Antibiotic. Cryst. Mp 260-262°. $[\alpha]_D^{25}$ +17.6 (c, 0.01 in $CHCl_3$). λ_{max} 226 (sh) (ϵ 8235); 268 (sh) (ϵ 5441) (EtOH).

Pat. Coop. Treaty (WIPO), 1998, 98 09 968; *CA*, **128**, 217535z (*isol, cd, pmr, cmr*)

Drimiopsine A† D-940

*2,7,8,9-Tetramethoxy-11*H*-[1]benzopyrano[4,3-c]isoquinolin-4-ol*
[1045704-45-7]



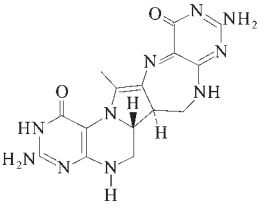
$C_{20}H_{19}NO_6$ 369.373
Alkaloid from *Drimiopsis barteri*.

1-Deoxy, 2-hydroxy: ***Drimiopsine B***†
[1045704-46-8]
$C_{20}H_{19}NO_6$ 369.373
Alkaloid from *Drimiopsis barteri*.

Ngamga, D. *et al., Nat. Prod. Commun.*, 2008, **3**, 769-777 (*isol, pmr, ms*)

Drosopterin D-941

[33466-46-5]



Relative configuration

$C_{15}H_{16}N_{10}O_2$ 368.357
Red eye pigment from *Drosophila melanogaster*. Red cryst. powder. Mp 350° dec. pK_{a1} 9.33; pK_{a2} 8.27; pK_{a3} 1.24; pK_{a4} 0.45 (20°,H_2O). Opt. active. All attempts to crystallise Drosopterin or its stereoisomers have been unsuccessful.

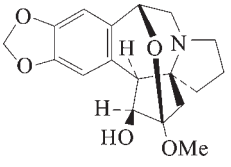
Stereoisomer: ***Neodrosopterin***
[56711-41-2]
$C_{15}H_{16}N_{10}O_2$ 368.357
Pigment from *Drosophila melanogaster*.

Enantiomer: ***Isodrosopterin***
[33466-47-6]
$C_{15}H_{16}N_{10}O_2$ 368.357
Pigment from *Drosophila melanogaster*.

Schlobach, H. *et al., Helv. Chim. Acta*, 1972, **55**, 2518-2525; 2525-2533; 2533-2540; 2541-2545 (*isol, uv, ord, cd, pmr, synth*)
Rokos, K. *et al., Chem. Ber.*, 1975, **108**, 2728-2736 (*Neodrosopterin*)
Theobald, N. *et al., Chem. Ber.*, 1978, **111**, 3385-3402 (*uv, pmr, cd, struct*)
Pfleiderer, W. *et al., J. Het. Chem.*, 1992, **29**, 583-605 (*rev*)

Drupacine D-942

[49686-57-9]



Absolute configuration

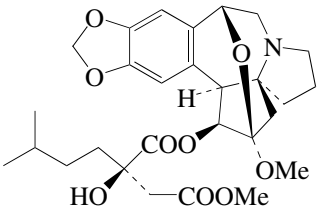
$C_{18}H_{21}NO_5$ 331.368
Alkaloid from *Cephalotaxus harringtonia* var. *drupacea, Cephalotaxus fortunei, Cephalotaxus hainanensis, Cephalotaxus wilsoniana* and *Cephalotaxus sinensis* (Cephalotaxaceae). Mp 70-72°. $[\alpha]_D^{30}$ -137 (c, 0.79 in $CHCl_3$).

[24268-97-1 , 125712-90-5]

Powell, R.G. *et al., J.O.C.*, 1974, **39**, 676 (*isol, uv, ir, ms, pmr, struct*)
Weisleder, D. *et al., Org. Magn. Reson.*, 1980, **13**, 114 (*cmr*)
Burkholder, T.P. *et al., J.A.C.S.*, 1990, **112**, 9601 (*synth*)

Drupangtonine D-943

[181133-84-6]



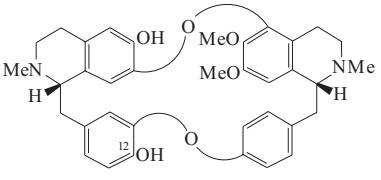
Absolute Configuration

$C_{28}H_{37}NO_9$ 531.602
Ester of Drupacine, D-942. Alkaloid from *Cephalotaxus harringtonia* var. *drupacea*. Strongly inhibits the growth of P-388 leukaemia cells. Oil. $[\alpha]_D$ -24 (c, 0.06 in MeOH). λ_{max} 291 (ϵ 3020) (MeOH) (Berdy).

Takano, I. *et al., Bioorg. Med. Chem. Lett.*, 1996, **6**, 1689 (*isol, uv, cd, pmr, cmr, struct*)

Dryadodaphnine D-944

6′,7′-Dimethoxy-2,2′-dimethylthalman-6,12-diol, 9CI
[22559-06-4]



$C_{36}H_{38}N_2O_6$ 594.706
The alkaloids covered by this entry (2*S*,2′*R*-) belong to the enantiomeric series compared with those covered by Lauberine, L-67 (2*R*,2′*S*-) and are diastereomeric with those covered by Thalmine, T-341 (*S,S*-). Alkaloid from the bark of *Dryadodaphne novoguineensis* (Monimiaceae). Foam. $[\alpha]_D$ +390 (MeOH).

O^{6}*-Me: 6-*O*-Methyldryadodaphnine.*
Thalifortine
[129785-17-7]
$C_{37}H_{40}N_2O_6$ 608.733
Alkaloid from the whole plant of *Thalictrum fortunei*. Mp 143-145°. $[\alpha]_D^{25}$ +271.4 (c, 0.37 in MeOH). λ_{max} 215 (log ϵ 4.61); 280 (log ϵ 3.91) (MeOH).

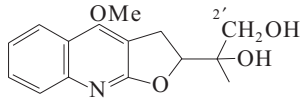
O^{12}*-Me: 12-*O*-Methyldryadodaphnine.*
Dryadine
[22559-05-3]
$C_{37}H_{40}N_2O_6$ 608.733
Alkaloid from the bark of *Dryadodaphne novoguineensis* (Monimiaceae). Needles ($CHCl_3$/MeOH). Mp 249-251° dec. $[\alpha]_D^{15}$ +486 (c, 1.5 in $CHCl_3$).

Baldas, J. *et al., Tet. Lett.*, 1968, 6315 (*pmr*)
Bick, I.R.C. *et al., J.C.S.(C)*, 1969, 1627 (*isol, uv, pmr, ord, ms, struct*)
Baldas, J. *et al., J.C.S. Perkin 1*, 1972, 597 (*ms*)

Wu, Z. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 1990, **32**, 210-214; *CA*, **113**, 168973 (*Thalifortine*)

Dubinidine D-945

*2-(2,3-Dihydro-4-methoxyfuro[2,3-*b*]quinolin-2-yl)-1,2-propanediol, 9CI*
[22964-77-8]



$C_{15}H_{17}NO_4$ 275.304
Alkaloid from *Haplophyllum dubium* leaves (Rutaceae). CNS depressant. Cryst. (Me_2CO). Mp 132-133°. $[\alpha]_D^{26.5}$ -62.95.

Hydrochloride: Mp 195-196°.

Picrate: Mp 155-156°.

2′-Ac: ***Dubinine***
[23092-72-0]
$C_{17}H_{19}NO_5$ 317.341
Alkaloid from the leaves of *Haplophyllum dubium* (Rutaceae). Cryst. (MeOH or EtOH). Mp 185-186°. $[\alpha]_D$ -73.1 (Me_2CO).

2′-Ac; hydrochloride: Mp 170-171°.

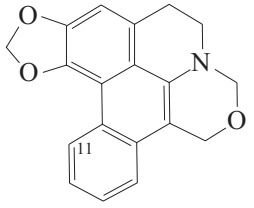
Di-Ac: Mp 108-109°.

2′-Deoxy: see Platydesmine, P-515

Yunusov, S.Y. *et al., Zh. Obshch. Khim.*, 1955, **25**, 2009; *CA*, **50**, 9435i (*isol*)
Bessonova, I.A. *et al., Khim. Prir. Soedin.*, 1969, **5**, 29; 1970, **6**, 446; *Chem. Nat. Compd. (Engl. Transl.)*, 1969, **5**, 22; 1970, **6**, 455 (*struct, ms*)
Grundon, M.F. *et al., Tet. Lett.*, 1971, 4727 (*synth, bibl*)

Duguenaine D-946

*9,10-Dihydro-5*H*,7*H*-benzo[f][1,3]dioxolo[6,7]isoquino[8,1,2-*hij*][3,1]benzoxazine, 9CI*
[80550-24-9]



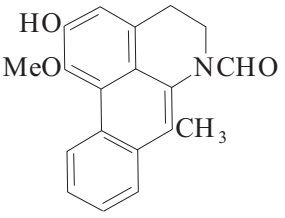
$C_{19}H_{15}NO_3$ 305.332
Modified aporphine alkaloid. Alkaloid from *Duguetia calycina* (Annonaceae). Cryst. (MeOH). Mp 167-170°.

11-Methoxy: ***Duguecalyne***
[80550-25-0]
$C_{20}H_{17}NO_4$ 335.359
Alkaloid from *Duguetia calycina* (Annonaceae). Cryst. (Me_2CO). Mp 202°.

Roblot, F. *et al., C. R. Hebd. Seances Acad. Sci., Ser.* 2, 1981, **293**, 373 (*uv, pmr, cmr, ms, struct*)
Lenz, G.R. *et al., J.C.S. Perkin 1*, 1984, 1273 (*synth, Duguenaine*)
Atanes, N. *et al., J.O.C.*, 1991, **56**, 2984 (*synth, Duguenaine*)

Duguespixine D-947

[96910-76-8]

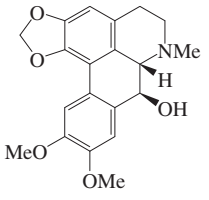


$C_{19}H_{17}NO_3$ 307.348
Doubts have been expressed regarding the struct. Alkaloid from the bark of *Duguetia spixiana* (Annonaceae). Amorph.

Debourges, D. *et al., J. Nat. Prod.*, 1985, **48**, 310; 1987, **50**, 664 (*isol, uv, ir, pmr, cmr, ms, struct*)
Atanes, N. *et al., Heterocycles*, 1987, **26**, 1183

Duguetine D-948

7-Hydroxy-1,2-methylenedioxy-9,10-dimethoxyaporphine. 7-Hydroxydicentrine
[31984-61-9]



Absolute Configuration

$C_{20}H_{21}NO_5$ 355.39
Alkaloid from an unidentified Brazilian *Duguetia* sp. (Annonaceae). Mp 149-150°. $[\alpha]_D$ -41 (c, 1 in EtOH).

7-Epimer: ***Dasymachaline***
[105814-54-8]
$C_{20}H_{21}NO_5$ 355.39
Alkaloid from the leaves of *Desmos dasymachalus*. Amorph. $[\alpha]_D^{26}$ -47 (c, 0.34 in $CHCl_3$). Rather unstable, dec. on standing.

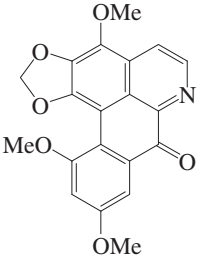
7-Epimer, α-N-*oxide:* ***Dasymachaline* α-N-*oxide***
[374106-25-9]
$C_{20}H_{21}NO_6$ 371.389
Alkaloid from the roots of *Desmos dasymachalus*. Trypanocidal agent.

7-Epimer, N-*de-Me:* **N-*Demethyldasymachaline*.** *7-Hydroxynordicentrine*
[209323-83-1]
$C_{19}H_{19}NO_5$ 341.363
Alkaloid from *Dicentra peregrina*.

Casagrande, C. *et al., Farmaco, Ed. Sci.*, 1970, **25**, 442; *CA*, **73**, 38472a (*Duguetine*)
Chan, K.C. *et al., Phytochemistry*, 1986, **25**, 1999 (*Dasymachaline*)
Konishi, T. *et al., Nat. Med. (Tokyo)*, 1998, **52**, 47-53 (*7-Hydroxynordicentrine*)
Asaruddin, M.R. *et al., Nat. Med. (Tokyo)*, 2001, **55**, 149-151 (*Dasymachaline N-oxide*)

Duguevalline D-949

*4,10,12-Trimethoxy-8*H*-benzo[g]benzodioxolo[6,5,4-*de*]quinolin-8-one, 9CI. 3,9,11-Trimethoxy-1,2-methylenedioxyoxoaporphine*
[853226-55-8]

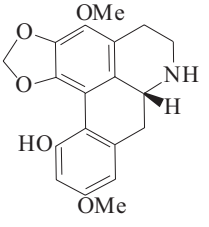


$C_{20}H_{15}NO_6$ 365.342
Alkaloid from the stem bark of *Duguetia vallicola* and stems of *Desmos chinensis*. Orange needles ($CHCl_3$). Mp 202-203° (198-200°). λ_{max} 205 (log ε 3.01); 214 (log ε 3.09); 223 (log ε 3.73); 289 (log ε 3.04); 385 (log ε 2.11) (MeOH).

Pérez, E. *et al., Lett. Org. Chem.*, 2004, **1**, 102-104 (*isol, pmr, cmr*)
Liu, X.-T. *et al., Zhongguo Tianran Yaowu*, 2004, **2**, 205-207; *CA*, **143**, 40886w (*isol, pmr, cmr*)

Duguevanine D-950

*6,7,7*a*,8-Tetrahydro-4,10-dimethoxy-5*H*-benzo[g]-1,3-benzodioxolo[6,5,4-*de*]quinolin-12-ol, 9CI. 11-Hydroxy-3,9-dimethoxy-1,2-methylenedioxynoraporphine*



$C_{19}H_{19}NO_5$ 341.363

(R)-form [89368-33-2]
A major alkaloid from the leaves and stem bark of *Duguetia obovata* (Annonaceae). Cryst. (Me_2CO). Mp 165°. $[\alpha]_D$ -127 (c, 0.45 in $CHCl_3$). $[\alpha]_D$ -175 (c, 1.62 in Py).

N-*Formyl:* **N-*Formylduguevanine***
[89368-32-1]
$C_{20}H_{19}NO_6$ 369.373
Minor alkaloid from the stem bark of *Duguetia obovata* (Annonaceae). Cryst. (Me_2CO). Mp 255°. $[\alpha]_D$ -358 (c, 0.47 in $CHCl_3$).

N,O-*Di-Ac:*
Cryst. (Me_2CO). Mp 221°. $[\alpha]_D$ -330 (c, 0.72 in $CHCl_3$).

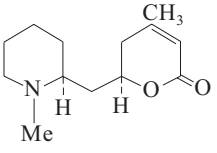
N-*Me:* **N-*Methylduguevanine***

[89368-34-3]
$C_{20}H_{21}NO_5$ 355.39
Minor alkaloid from the stem bark of *Duguetia obovata* (Annonaceae). Non-cryst. Negative opt. rotn. in $CHCl_3$.

Roblot, F. *et al., J. Nat. Prod.*, 1983, **46**, 862 (*isol, uv, ir, pmr, cmr, ms, struct*)

Dumetorine D-951

*5,6-Dihydro-4-methyl-6-[(1-methyl-2-piperidinyl)methyl]-2*H*-pyran-2-one, 9CI*
[96552-67-9]

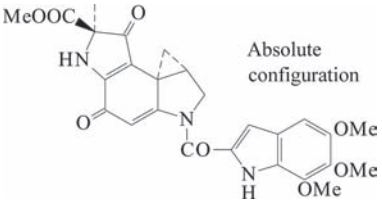


$C_{13}H_{21}NO_2$ 223.314
Alkaloid from the tubers of the famine food *Dioscorea dumetorum*. Oil. $[\alpha]_D^{28}$ +40 (c, 0.021 in $CHCl_3$).

Corley, D.G. *et al., Tet. Lett.*, 1985, **26**, 1615-1618 (*isol, pmr, cmr, abs config*)
Amarasekara, A.S. *et al., Tet. Lett.*, 1987, **28**, 3151-3154 (*synth*)
Rückert, A. *et al., Tet. Lett.*, 2006, **47**, 7977-7981 (*synth*)

Duocarmycin A D-952

DC 88A. Antibiotic DC 88A
[118292-34-5]



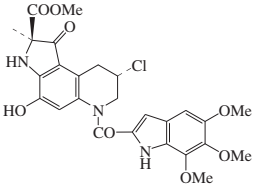
$C_{26}H_{25}N_3O_8$ 507.499
Isol. from *Streptomyces* sp. DO-88. Active against gram-positive and -negative bacteria and tumours. Yellow powder. Mp 147-148°. $[\alpha]_D^{22}$ +282 (c, 0.1 in MeOH). λ_{max} 215 (ε 50000); 298 (ε 22000); 333 (ε 27000); 430 (sh) (ε 3500) (0.01*N* HCl) (Derep). λ_{max} 215 (ε 53000); 257 (sh) (ε 24000); 325 (ε 30000); 455 (ε 4600) (0.01*N* NaOH) (Derep). λ_{max} 215 (ε 55000); 310 (ε 18000); 358 (ε 28000); 425 (ε 8000) (MeOH) (Derep).

▶ GZ2233200

Yasuzawa, T. *et al., Chem. Pharm. Bull.*, 1988, **36**, 3728 (*uv, ir, pmr, cmr*)
Takahashi, I. *et al., J. Antibiot.*, 1988, **41**, 1915 (*isol, struct*)
Fukuda, Y. *et al., Tet. Lett.*, 1990, **31**, 6699 (*synth*)
Fukuda, Y. *et al., Bioorg. Med. Chem. Lett.*, 1992, **2**, 755 (*synth*)
Nakatani, K. *et al., Pure Appl. Chem.*, 1994, **66**, 2255 (*rev, synth*)
Fukuda, Y. *et al., Tetrahedron*, 1994, **50**, 2793; 2809 (*synth*)
Boger, D.L. *et al., Acc. Chem. Res.*, 1995, **28**, 20 (*rev*)
Yasuzawa, T. *et al., Chem. Pharm. Bull.*, 1995, **43**, 378 (*isol, uv, ir, pmr, cmr, abs config*)
Boger, D.L. *et al., Chem. Rev.*, 1997, **97**, 787-828 (*rev, synth*)
Boger, D.L. *et al., J.A.C.S.*, 1997, **119**, 311 (*synth*)
Yamada, K. *et al., J.A.C.S.*, 2003, **125**, 6630-6631 (*synth*)

Duocarmycin C_1 D-953

Pyrindamycin B. DC 89A1. Antibiotic DC 89A1. SF 2582B. Antibiotic SF 2582B
[118292-35-6]



Absolute Configuration

$C_{26}H_{26}ClN_3O_8$ 543.959
Isol. from *Streptomyces* spp. Active against gram-positive and -negative bacteria and tumours. Orange or yellow powder. Mp 173-175° dec. $[\alpha]_D^{22}$ -128 (c, 0.2 in MeOH). λ_{max} 210 (ε 53800); 248 (sh) (ε 19500); 322 (ε 30600); 406 (ε 5380); 410 (sh) (MeOH) (Derep).

▶ UY9454200

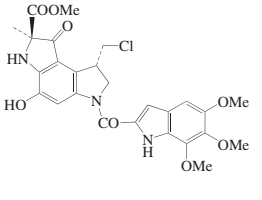
Bromo analogue: ***Duocarmycin B1****. DC 89B1. Antibiotic DC 89B1*
[124325-93-5]
$C_{26}H_{26}BrN_3O_8$ 588.411
Isol. from *Streptomyces* sp. DO-89. Active against gram-positive and -negative bacteria and tumours. Yellow powder. Sol. MeOH, EtOAc, $CHCl_3$, DMSO; poorly sol. H_2O, hexane. Mp 148-149°. $[\alpha]_D^{20}$ -113.5 (c, 0.2 in MeOH). λ_{max} 208 (ε 38000); 329 (ε 17800); 410 (ε 3200) (MeOH) (Derep).

▶ LD_{50} (mus, ivn) .37 mg/kg, LD_{50} (mus, ipr) 200 mg/kg.

Yasuzawa, T. *et al., Chem. Pharm. Bull.*, 1988, **36**, 3728 (*struct*)
Ichimura, M. *et al., J. Antibiot.*, 1988, **41**, 1285 (*isol*)
Ohba, K. *et al., J. Antibiot.*, 1988, **41**, 1515 (*isol, pmr, cmr, struct*)
Ogawa, T. *et al., J. Antibiot.*, 1989, **42**, 1299 (*Duocarmycin B1*)
Boger, D.L. *et al., Acc. Chem. Res.*, 1995, **28**, 20 (*rev*)
Yasuzawa, T. *et al., Chem. Pharm. Bull.*, 1995, **43**, 378 (*isol, pmr, cmr, ir, uv, abs config*)

Duocarmycin C_2 D-954

Pyrindamycin A. DC 89A2. Antibiotic DC 89A2. SF 2582A. Antibiotic SF 2582A
[118292-36-7]



Absolute Configuration

$C_{26}H_{26}ClN_3O_8$ 543.959
Isol. from *Streptomyces* spp. Active against gram-positive and -negative bacteria and tumours. Yellow needles. Mp 256-257° (235-237° dec.). $[\alpha]_D^{22}$ -51 (c, 0.2 in MeOH). λ_{max} 208 (ε 39600); 248 (sh) (ε 16000); 299 (ε 20000); 337 (ε 28000); 434 (ε 5000) (MeOH) (Derep).

▶ DF4936660

Bromo analogue: ***Duocarmycin B2***
[124325-94-6]
$C_{26}H_{26}BrN_3O_8$ 588.411
Prod. by *Streptomyces* sp. Antitumour agent. Orange cryst. Sol. MeOH, EtOAc, $CHCl_3$, DMSO; poorly sol. H_2O, hexane. Mp 214-215°. $[\alpha]_D^{20}$ -57.5 (c, 0.2 in MeOH). λ_{max} 208 (ε 45000); 248 (sh) (ε 19100); 298 (ε 20300); 337 (ε 31500); 434 (ε 4400) (MeOH) (Derep).

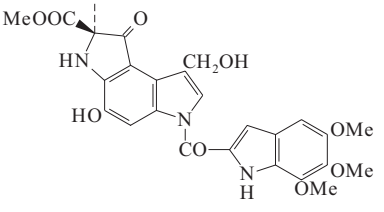
▶ LD_{50} (mus, ivn) .25 mg/kg.

Hydroxy analogue: ***Pyrindamycin C****. SF 2582C. Antibiotic SF 2582C*
[125600-37-5]
$C_{26}H_{27}N_3O_9$ 525.514
Prod. by *Streptomyces* sp. SF2582. Antitumour agent. Orange cryst. ($CHCl_3$/MeOH). Sol. Py, DMSO; fairly sol. MeOH; poorly sol. EtOAc, H_2O, $CHCl_3$, hexane. $[\alpha]_D$ -54 (MeOH). Has -OH replacing -Cl. λ_{max} 208 (ε 845); 297 (E1%/1cm 473); 336 (E1%/1cm 690); 432 (E1%/1cm 93) (MeOH) (Berdy).

[134233-13-9 , 130060-75-2 , 134233-12-8]

Yasuzawa, T. *et al., Chem. Pharm. Bull.*, 1988, **36**, 3728; 1995, **43**, 378 (*struct, uv, ir, pmr, cmr, abs config*)
Ohba, K. *et al., J. Antibiot.*, 1988, **41**, 1515 (*isol, pmr, cmr, struct*)
Ogawa, T. *et al., J. Antibiot.*, 1989, **42**, 1299 (*Duocarmycin B2*)
Ichimura, M. *et al., J. Antibiot.*, 1991, **44**, 1045 (*prodn*)
U.S. Pat., 1991, 4 994 578; *CA*, **116**, 19720v (*SF 2582*)
Boger, D.L. *et al., Acc. Chem. Res.*, 1995, **28**, 20 (*rev*)

Duocarmycin D D-955



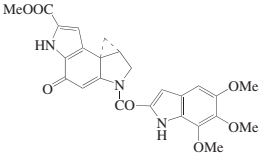
$C_{26}H_{25}N_3O_9$ 523.498

(R)-(?)-form [169181-35-5]
Isol. from *Streptomyces* sp. DO-89. Potent antitumour antibiotic. Yellow powder. $[\alpha]_D$ -10 (c, 0.2 in MeOH). λ_{max} 350 (ε 37000); 425 (ε 5000) (MeOH).

Yasuzawa, T. *et al., Chem. Pharm. Bull.*, 1995, **43**, 378 (*isol, uv, ir, pmr, cmr, struct*)

Duocarmycin SA D-956

DC 113. Antibiotic DC 113
[130288-24-3]



Absolute Configuration

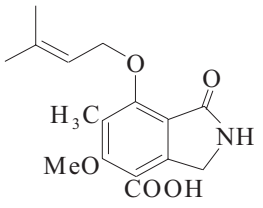
$C_{25}H_{23}N_3O_7$ 477.473
Prod. by *Streptomyces* sp. D0113. Exhibits antibacterial and antitumour activities. Pale yellow powder. Sol. MeOH, DMSO, EtOAc; poorly sol. H_2O, hexane. $[\alpha]_D^{24}$ +180 (c, 0.1 in MeOH). λ_{max} 235 (sh) (ϵ 21000); 316 (ϵ 16000); 367 (ϵ 27000) (MeOH) (Derep).

▶ LD_{50} (mus, ivn) 0.143 mg/kg.

Ichimura, M. *et al., J. Antibiot.*, 1990, **43**, 1037-1038 (*isol*)
Boger, D.L. *et al., J.A.C.S.*, 1992, **114**, 10056-10058; 1993, **115**, 9025-9036 (*synth*)
Boger, D.L. *et al., Acc. Chem. Res.*, 1995, **28**, 20-29 (*rev*)
Yasuzawa, T. *et al., Chem. Pharm. Bull.*, 1995, **43**, 378 (*isol, uv, ir, pmr, cmr, abs config*)
Muratake, H. *et al., Chem. Pharm. Bull.*, 1995, **43**, 1064-1066; 1998, **46**, 400-412; 559-571 (*synth, abs config*)
Boger, D.L. *et al., Chem. Rev.*, 1997, **97**, 787-828 (*rev, synth*)
Fukuda, Y. *et al., Tet. Lett.*, 1997, **38**, 7207-7208 (*synth*)
Yamada, K. *et al., J.A.C.S.*, 2003, **125**, 6630-6631 (*synth*)
Tichenor, M.S. *et al., J.A.C.S.*, 2006, **128**, 15683-15696 (*synth*)

Duricaulic acid D-957

2,3-Dihydro-5-methoxy-6-methyl-7-[(3-methyl-2-butenyl)oxy]-1-oxo-4(1H)-isoindolecarboxylic acid
[99307-44-5]

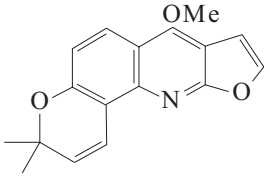


$C_{16}H_{19}NO_5$ 305.33
Isol. from *Aspergillus duricaulis*. Biologically inactive. Cryst. (Py/toluene). Mp 220° dec.

Achenbach, H. *et al., Z. Naturforsch., B*, 1985, **40**, 1219 (*isol, props*)

Dutadrupine D-958

[80151-78-6]

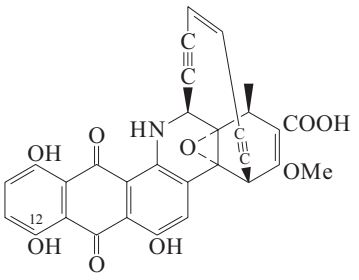


$C_{17}H_{15}NO_3$ 281.31
Alkaloid from the stem bark of *Dutaillyea drupacea* (Rutaceae). Needles ($CHCl_3$). Mp 107-109°.

Baudouin, G. *et al., J. Nat. Prod.*, 1981, **44**, 546 (*isol, uv, ir, pmr, ms, struct*)

Dynemicin A D-959

BU 3420T
[124412-57-3]



$C_{30}H_{19}NO_9$ 537.481
Anthraquinone antibiotic. Prod. by *Micromonospora chersina* and *Micromonospora globosa*. Possesses potent antibacterial activity. Also shows antineoplastic props. DNA cleaving agent. Violet powder. Sol. DMF, DMSO, dioxan; fairly sol. $CHCl_3$, EtOAc, MeOH; poorly sol. hexane, H_2O. Mp 208-210° dec. $[\alpha]_D^{24}$ +270 (c, 0.01 in DMF). λ_{max} 239 (ϵ 24900); 283 (sh) (ϵ 5400); 530 (sh) (ϵ 5400); 569 (ϵ 10800); 599 (ϵ 10100) (MeOH) (Derep). λ_{max} 239 (ϵ 24900); 240 (ϵ 8300); 395 (ϵ 2600); 568 (ϵ 4200); 569 (ϵ 10800); 597 (ϵ 4100); 599 (ϵ 10100) (MeOH) (Berdy). λ_{max} 239 (ϵ 8300); 394 (ϵ 4000); 563 (ϵ 3600); 600 (ϵ 3300) (MeOH-HCl) (Berdy). λ_{max} 216 (ϵ 15500); 264 (ϵ 23000); 394 (ϵ 3200); 597 (ϵ 10200); 641 (ϵ 10500) (MeOH-NaOH) (Berdy).

▶ KC9300000

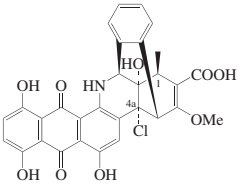
Aldehyde: ***Dynemicin C***
[143250-23-1]
$C_{30}H_{19}NO_8$ 521.482
Prod. by *Micromonospora chersina*. Antitumour agent. Purple powder. Sol. DMSO, dioxan, MeCN, DMF; fairly sol. MeOH, EtOAc; poorly sol. H_2O, hexane. λ_{max} 286 (ϵ 6800); 570 (ϵ 8200); 600 (ϵ 7800) (MeOH). λ_{max} 239 ; 290 ; 568 ; 598 (EtOH) (Berdy).

12-Deoxy: ***Deoxydynemicin A***
[130640-33-4]
$C_{30}H_{19}NO_8$ 521.482
From *Micromonospora globosa*. Highly active against gram-positive bacteria. Red-brown cryst. (DMF/$CHCl_3$). λ_{max} 234 (ϵ 12600); 257 (sh) (ϵ 10200); 291 (sh) (ϵ 5370); 393 (sh) (ϵ 1860); 507 (sh) (ϵ 3470); 544 (ϵ 4470); 587 (sh) (ϵ 3550) (MeOH) (Derep).

Konishi, M. *et al., J. Antibiot.*, 1989, **42**, 1449; 1991, **44**, 1300; 1306 (*isol, struct, props*)
Shiomi, K. *et al., J. Antibiot.*, 1990, **43**, 1000 (*Deoxydynemicin*)
Konishi, M. *et al., J.A.C.S.*, 1990, **112**, 3715 (*cryst struct*)
Nicolaou, K.C. *et al., Angew. Chem., Int. Ed.*, 1991, **30**, 1387 (*rev*)
Eur. Pat., 1992, 484 856; *CA*, **117**, 149440h (*Dynemicin C*)
Tokiwa, Y. *et al., J.A.C.S.*, 1992, **114**, 4107 (*biosynth*)
Myers, A.G. *et al., Chem. Biol.*, 1995, **2**, 33 (*synth, abs config*)
Danishefsky, S.J. *et al., J.O.C.*, 1996, **61**, 16 (*rev*)
Shair, M.D. *et al., J.A.C.S.*, 1997, **118**, 9509 (*synth*)
Myers, A.G. *et al., J.A.C.S.*, 1997, **119**, 6072 (*synth*)
Pihko, A.J. *et al., Tetrahedron*, 2005, **61**, 8769-8807 (*synth, rev*)

Dynemicin L D-960

[127032-74-0]



Absolute Configuration

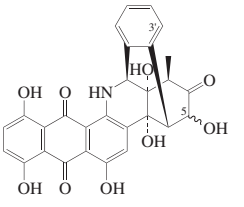
$C_{30}H_{22}ClNO_9$ 575.958
Prod. by *Micromonospora chersina* ATCC 53710. Potent antibacterial and cytotoxic agent. Blue amorph. powder. Sol. DMSO, dioxan; fairly sol. EtOAc, MeOH, EtOH; poorly sol. H_2O, hexane. Mp 222-225°. $[\alpha]_D^{27}$ -820 (c, 0.01 in MeOH). λ_{max} 242 (ϵ 47000); 450 (sh) ; 612 (ϵ 18900); 654 (ϵ 20500) (MeOH/NaOH) (Derep). λ_{max} 241 (ϵ 48100); 454 (ϵ 2400); 594 (ϵ 18000); 639 (ϵ 17900) (MeOH) (Derep). λ_{max} 241 (ϵ 47900); 453 (ϵ 1800); 594 (ϵ 17700); 637 (ϵ 17500) (MeOH/HCl).

4a-Dechloro, 4a-hydroxy: ***Dynemicin N***
[127003-55-8]
$C_{30}H_{23}NO_{10}$ 557.512
From *Micromonospora chersina* ATCC 53710. Blue amorph. powder. Sol. DMSO, dioxan; fairly sol. EtOAc, EtOH, MeOH; poorly sol. H_2O, hexane. Mp 253-256°. $[\alpha]_D^{27}$ -200 (c, 0.01 in MeOH). λ_{max} 241 (ϵ 53100); 452 (ϵ 4300); 592 (ϵ 24500); 639 (ϵ 25200) (MeOH) (Berdy). λ_{max} 243 (ϵ 56900); 450 (sh) ; 605 (ϵ 18300); 651 (ϵ 28300) (MeOH/NaOH) (Berdy). λ_{max} 241 (ϵ 52700); 452 (ϵ 3900); 592 (ϵ 24100) (MeOH/HCl) (Berdy).

Konishi, M. *et al., J. Antibiot.*, 1991, **44**, 1300-1305 (*isol, props, abs config*)

Dynemicin P D-961

[138370-13-5]



Absolute Configuration

$C_{28}H_{21}NO_9$ 515.475
Anthraquinone antibiotic. Prod. by *Micromonospora chersina*. Active against gram-positive bacteria. Cytotoxic. Blue powder. Sol. DMSO; fairly sol. MeOH, C_6H_6; poorly sol. H_2O. λ_{max} 210 (ϵ 18100); 241 (ϵ 30700); 333 (ϵ 2630); 556 (ϵ 13300); 632 (ϵ 14000) (MeOH) (Berdy).

5-Me ether: ***Dynemicin M***
[127003-54-7]

$C_{29}H_{23}NO_9$ 529.502
Prod. by *Micromonospora chersina*. Blue amorph. powder. Sol. DMSO, dioxan; fairly sol. EtOAc, MeOH, EtOH; poorly sol. H_2O, hexane. Mp 238-240°. $[\alpha]_D^{27}$ -2460 (c, 0.01 in MeOH). λ_{max} 243 (ϵ 44200); 450 (sh) ; 607 (ϵ 19200); 655 (ϵ 22400) (MeOH/NaOH) (Derep). λ_{max} 241 (ϵ 41700); 453 (ϵ 1500); 589 (ϵ 17000); 633 (ϵ 17200) (MeOH) (Derep). λ_{max} 241 (ϵ 41300); 453 (ϵ 1400); 589 (ϵ 16900); 638 (ϵ 17000) (MeOH/HCl) (Berdy).

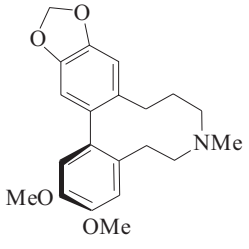
5-Oxo: ***Dynemicin Q***
[138370-14-6]
$C_{28}H_{19}NO_9$ 513.459
Prod. by *Micromonospora chersina*. Active against gram-positive bacteria. Cytotoxic. Blue powder. Sol. DMSO; fairly sol. MeOH, C_6H_6; poorly sol. H_2O. Exists in 4-enol form. λ_{max} 217 (ϵ 15900); 243 (ϵ 20800); 335 (ϵ 3070); 588 (ϵ 13600); 634 (ϵ 13700) (MeOH) (Derep).

3′-Hydroxy, 5-Me ether: ***Dynemicin O***
[138370-12-4]
$C_{29}H_{23}NO_{10}$ 545.501
From *Micromonospora chersina*. Active against gram-positive bacteria. Potent antibacterial and cytotoxic agent. Blue powder. Sol. DMSO; fairly sol. MeOH, C_6H_6; poorly sol. H_2O. λ_{max} 212 (ϵ 13800); 241 (ϵ 20600); 283 (ϵ 5900); 335 (ϵ 2360); 589 (ϵ 11600); 633 (ϵ 11500) (MeOH) (Derep).

Miyoshi-Saitoh, M. *et al., J. Antibiot.*, 1991, **44**, 1037-1044; 1300-1305 (*isol, pmr, cmr, cd, props*)

Dysazecine D-962

[85547-18-8]

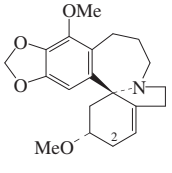


$C_{21}H_{25}NO_4$ 355.433
Minor alkaloid from the leaves of *Dysoxylum lenticellare* (Meliaceae). Cryst. (EtOH)(as picrate). Mp 217-219° (picrate).

Aladesanmi, A.J. *et al., J. Nat. Prod.*, 1983, **46**, 127 (*isol, uv, pmr, cmr, ms, cd, struct*)
Tanaka, H. *et al., Chem. Pharm. Bull.*, 1984, **32**, 2063 (*synth*)

Dyshomerythrine D-963

3-Epi-18-methoxyschelhammericine
[91897-64-2]



$C_{20}H_{25}NO_4$ 343.422
Alkaloid from the leaves of *Dysoxylum lenticellare* (Meliaceae) and *Lagarostrobos colensoi* (*Dacrydium colensoi*). $[\alpha]_D^{25}$ +84 (c, 0.1 in EtOH). Separated with difficulty from 3-Epischelhammerine in S-126. Spectroscopic data were recorded for enriched mixtures.

Picrate: Mp 115-118°.

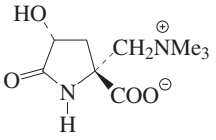
2α-Hydroxy: ***2-Hydroxydyshomerythrine***
[138909-11-2]
$C_{20}H_{25}NO_5$ 359.421
Alkaloid from heartwood of *Phelline comosa* (Phellinaceae). Cryst. Mp 188-190° dec. $[\alpha]_D^{25}$ +176 (c, 1.5 in EtOH).

2α-Methoxy: ***2-Methoxydyshomerythrine***. *3-Epi-2,18-dimethoxyschelhammericine*
[117610-39-6]
$C_{21}H_{27}NO_5$ 373.448
Alkaloid from stems of *Dysoxylum lenticellare* (Meliaceae). Brownish gum. $[\alpha]_D^{25}$ +76.

Aladesanmi, A.J. *et al., J. Chem. Res., Synop.*, 1984, 108-109; *J. Chem. Res., Miniprint*, 1984, 1001-1039 (*pmr, ms, uv, cryst struct*)
Aladesanmi, A.J. *et al., Tetrahedron*, 1988, **44**, 3749-3756 (*2α-Methoxydyshomerythrine*)
Aladesanmi, A.J. *et al., Phytochemistry*, 1991, **30**, 3497 (*2α-Hydroxydyshomerythrine*)
Bloor, S.J. *et al., Phytochemistry*, 1996, **41**, 801-802 (*isol*)

Dysibetaine D-964

[247166-12-7]



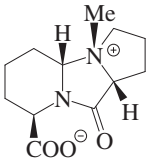
Relative Configuration

$C_9H_{16}N_2O_4$ 216.236
Isol. from the marine sponge *Dysidea herbacea*. $[\alpha]_D^{20}$ -7.3 (c, 0.26 in H_2O).

Sakai, R. *et al., Tet. Lett.*, 1999, **40**, 6941-6944 (*isol, pmr, cmr, cryst struct*)
Snider, B.B *et al., Org. Lett.*, 2001, **3**, 1761-1763 (*synth*)
Wardrop, D.J. *et al., Chem. Comm.*, 2004, 1230-1231 (*synth*)
Langlois, N. *et al., J.O.C.*, 2004, **69**, 7558-7564 (*synth*)
Isaacson, J. *et al., Org. Lett.*, 2008, **10**, 1461-1463 (*synth*)

Dysibetaine PP D-965

[673498-51-6]



Relative Configuration

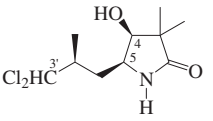
$C_{12}H_{18}N_2O_3$ 238.286
Isol. from the marine sponge *Dysidea herbacea*. Amorph. solid. $[\alpha]_D^{18}$ -70.3 (c, 0.24 in H_2O).

Sakai, R. *et al., J.O.C.*, 2004, **69**, 1180-1185 (*isol, pmr, cmr*)

Ijzendoorn, D.R. *et al., Org. Lett.*, 2006, **8**, 239-242 (*synth*)

Dysidamide C D-966

5-(3,3-Dichloro-2-methylpropyl)-4-hydroxy-3,3-dimethyl-2-pyrrolidinone, 9CI
[133738-40-6]



Absolute Configuration

$C_{10}H_{17}Cl_2NO_2$ 254.155
Constit. of the Red Sea sponge *Lamellodysidea herbacea*. Needles. $[\alpha]_D$ -41 (c, 1 in MeOH).

N-*(4,4-Dichloro-3-methylbutanoyl):* ***Dysidamide B***
[133738-39-3]
$C_{15}H_{23}Cl_4NO_3$ 407.162
Constit. of *Lamellodysidea herbacea*. $[\alpha]_D$ +6 (c, 0.16 in $CHCl_3$).

N-*(4,4,4-Trichloro-3ξ-methylbutanoyl):* ***Dysidamide E***
$C_{15}H_{22}Cl_5NO_3$ 441.607
Constit. of *Lamellodysidea herbacea*. Glass. $[\alpha]_D$ -3.5 (c, 0.3 in CH_2Cl_2).

3′-Chloro: ***Dysidamide F***
$C_{10}H_{16}Cl_3NO_2$ 288.6
Constit. of *Lamellodysidea herbacea*. Needles. Mp 171-172°. $[\alpha]_D$ -36 (c, 0.84 in CH_2Cl_2).

3′-Chloro, N-*(4,4-dichloro-3ξ-methylbutanoyl):* ***Dysidamide D***
$C_{15}H_{22}Cl_5NO_3$ 441.607
Constit. of *Lamellodysidea herbacea*. Glass. $[\alpha]_D$ -4 (c, 0.15 in CH_2Cl_2).

3′-Chloro, N-*(4,4,4-trichloro-3*S*-methylbutanoyl): 4-Hydroxy-3,3-dimethyl-1-(4,4,4-trichloro-3-methyl-1-oxobutyl)-5-(3,3,3-trichloro-2-methylpropyl)-2-pyrrolidinone, 9CI.* ***Dysidamide***
[117694-99-2]
$C_{15}H_{21}Cl_6NO_3$ 476.052
Alkaloid from the Red Sea sponge *Lamellodysidea herbacea*. Neurotoxin. Needles (petrol). Mp 133° (123-124°). $[\alpha]_D$ -16.1 (c, 2.76 in CH_2Cl_2).

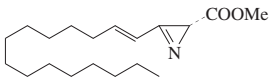
3′-Chloro, 4-ketone: ***Dysidamide G***
$C_{10}H_{14}Cl_3NO_2$ 286.584
Constit. of *Lamellodysidea herbacea*. Needles. Mp 109°. $[\alpha]_D$ -38.5 (c, 0.75 in CH_2Cl_2). Data refers to mixt. with 5-epimer.

3′-Chloro, 4-ketone, N-*(4,4,4-trichloro-3ξ-methylbutanoyl):* ***Dysidamide H***
$C_{15}H_{19}Cl_6NO_3$ 474.036
Constit. of *Lamellodysidea herbacea*. Glass. $[\alpha]_D$ -62.8 (c, 0.6 in CH_2Cl_2).

5-Epimer, 3′-chloro, 4-ketone: ***5-Epidysidamide G***
$C_{10}H_{14}Cl_3NO_2$ 286.584
Constit. of *Lamellodysidea herbacea*. Isol. as a mixt. with 5-epimer.

Carmely, S. *et al., Aust. J. Chem.*, 1990, **43**, 1881-1883 (*Dysidamide*)
Isaacs, S. *et al., J. Nat. Prod.*, 1991, **54**, 83-91 (*isol, pmr, cmr, ms*)
Sauleau, P. *et al., Tetrahedron*, 2005, **61**, 955-963 (*isol, pmr, cmr*)

Dysidazirine D-967



(*R,E*)-*form*

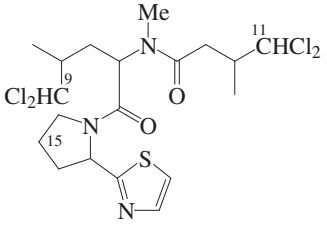
$C_{19}H_{33}NO_2$ 307.475

(*R,E*)-*form* [113507-74-7]
Isol. from Fijian marine sponge, *Dysidea fragilis*. Low melting solid. Sol. MeOH, $CHCl_3$. $[\alpha]_D$ -165 (c, 0.5 in MeOH). λ_{max} 222 (ϵ 16600) (MeOH) (Berdy).
► Cytotoxic.

(*S,E*)-*form* [163013-15-8]
From *Dysidea fragilis*. Oil. $[\alpha]_D$ +47.2 (c, 1.08 in $CHCl_3$). Erroneous MF in paper.

(*R,Z*)-*form* [172140-90-8]
Minor constit. of *Dysidea fragilis*. Oil. $[\alpha]_D^{22}$ -93.5 (c, 0.16 in $CHCl_3$).
Molinski, T.F. *et al., J.O.C.*, 1988, **53**, 2103 (*isol, uv, pmr, ms, abs config*)
Salomon, C.E. *et al., J. Nat. Prod.*, 1995, **58**, 1463 (*isol, uv, ir, pmr, cmr, ms, cd*)
Davis, F.A. *et al., J.A.C.S.*, 1995, **117**, 3651 (*synth*)
Skepper, C.K. *et al., Org. Lett.*, 2008, **10**, 5269-5271 (*synth*)

Dysideaproline A D-968



$C_{19}H_{27}Cl_4N_3O_2S$ 503.318
Similar to Dysidenin, D-972. Isol. from a *Dysidea* sp. Pale yellow oil. $[\alpha]_D^{23}$ +16.5 (c, 0.02 in MeOH). λ_{max} 213 (ϵ 8295); 239 (ϵ 4400) (MeOH).

N-*De-Me:* ***Dysideaproline C***
$C_{18}H_{25}Cl_4N_3O_2S$ 489.291
Isol. from a *Dysidea* sp. Pale yellow oil. $[\alpha]_D^{23}$ +23.5 (c, 0.02 in MeOH). λ_{max} 212 (ϵ 6210); 239 (ϵ 3920) (MeOH).

9-Dechloro: ***Dysideaproline F***
$C_{19}H_{28}Cl_3N_3O_2S$ 468.873
Isol. from a *Dysidea* sp. Pale yellow oil. $[\alpha]_D^{23}$ +18.8 (c, 0.02 in MeOH). λ_{max} 215 (ϵ 6040); 236 (ϵ 4135) (MeOH).

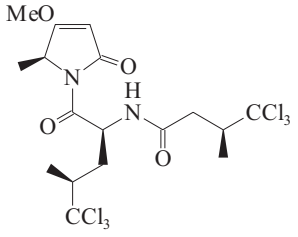
11-Dechloro: ***Dysideaproline D***
$C_{19}H_{28}Cl_3N_3O_2S$ 468.873
Isol. from a *Dysidea* sp. Pale yellow oil. $[\alpha]_D^{23}$ +28.8 (c, 0.02 in MeOH). λ_{max} 215 (ϵ 5800); 237 (ϵ 4095) (MeOH).

9,9-Bis(dechloro): ***Dysideaproline E***
$C_{19}H_{29}Cl_2N_3O_2S$ 434.428
Isol. from a *Dysidea* sp. Pale yellow oil. $[\alpha]_D^{23}$ +45.5 (c, 0.02 in MeOH). λ_{max} 214 (ϵ 5500); 235 (ϵ 4335) (MeOH).

15-Methyl: ***Dysideaproline B***
$C_{20}H_{29}Cl_4N_3O_2S$ 517.345
Isol. from a *Dysidea* sp. Pale yellow oil. $[\alpha]_D^{23}$ +37.5 (c, 0.02 in MeOH). λ_{max} 214 (ϵ 5885); 240 (ϵ 3270) (MeOH).
Harrigan, G.G. *et al., J. Nat. Prod.*, 2001, **64**, 1133-1138

Dysideapyrrolidone D-969

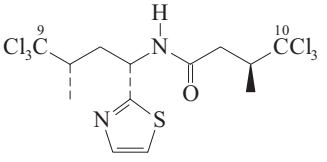
[151805-42-4]



$C_{17}H_{22}Cl_6N_2O_4$ 531.088
Isol. from the marine sponge *Dysidea herbacea* (Dictyoceratida). Feeding deterrent. Prisms. Mp 165-166°. $[\alpha]_D$ +16.6 (c, 0.4 in $CHCl_3$). λ_{max} 215 (ϵ 5100); 238 (ϵ 14000) ($CHCl_3$). λ_{max} 215 (ϵ 5100); 238 (ϵ 14000) (MeOH) (Berdy).
Unson, M.D. *et al., J.O.C.*, 1993, **58**, 6336 (*isol, uv, ir, pmr, cmr*)

Dysideathiazole D-970

4,4,4-Trichloro-3-methyl-N-*[4,4,4-trichloro-3-methyl-1-(2-thiazolyl)butyl]butanamide, 9CI*
[151805-43-5]



$C_{13}H_{16}Cl_6N_2OS$ 461.064
Isol. from the marine sponge *Dysidea herbacea* (Dictyoceratida). Feeding deterrent. Needles. Mp 176-177°. $[\alpha]_D$ -71.8 (c, 2 in $CHCl_3$). λ_{max} 202 (ϵ 6865); 241 (ϵ 5900) ($CHCl_3$). λ_{max} 202 (ϵ 6865); 241 (ϵ 5900) (MeOH) (Berdy).

N-*Me:* **N-*Methyldysideathiazole***
[151805-44-6]
$C_{14}H_{18}Cl_6N_2OS$ 475.091
Isol. from *Dysidea herbacea*. Feeding deterrent. Needles. Mp 96°. $[\alpha]_D$ -108.3 (c, 2 in $CHCl_3$). λ_{max} 205 (ϵ 6530); 243 (ϵ 4325) ($CHCl_3$). λ_{max} 205 (ϵ 6530); 243 (ϵ 4325) (MeOH) (Berdy).

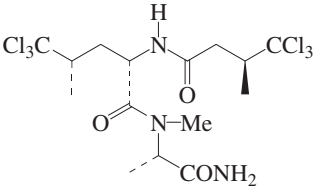
10-Dechloro: ***10-Dechlorodysideathiazole***
[151805-45-7]
$C_{13}H_{17}Cl_5N_2OS$ 426.62
Isol. from *Dysidea herbacea*. Feeding deterrent. Oil. $[\alpha]_D$ -57.5 (c, 0.6 in $CHCl_3$). λ_{max} 245 (ϵ 4040) ($CHCl_3$). λ_{max} 244 (ϵ 4040) (MeOH) (Berdy).

10-Dechloro, N-*Me:* ***10-Dechloro*-N-*methyldysideathiazole***
[151805-46-8]
$C_{14}H_{19}Cl_5N_2OS$ 440.646
Isol. from *Dysidea herbacea*. Feeding deterrent. Prisms. Mp 118-119°. $[\alpha]_D$ -98.9 (c, 0.5 in $CHCl_3$). λ_{max} 245 (ϵ 4040) ($CHCl_3$). λ_{max} 244 (ϵ 4040) (MeOH) (Berdy).

9,10-Bisdechloro, N-*Me:* ***9,10-Didechloro*-N-*methyldysideathiazole***
[151805-47-9]
$C_{14}H_{20}Cl_4N_2OS$ 406.202
Isol. from *Dysidea herbacea*. Feeding deterrent. Oil. $[\alpha]_D$ -79.9 (c, 3.2 in $CHCl_3$). λ_{max} 214 (ϵ 4270); 241 (ϵ 4880) ($CHCl_3$). λ_{max} 214 (ϵ 4270); 241 (ϵ 4880) (MeOH) (Berdy).

[151908-88-2]
Unson, M.D. *et al., J.O.C.*, 1993, **58**, 6336-6343 (*isol, uv, ir, pmr, cmr, cryst struct*)

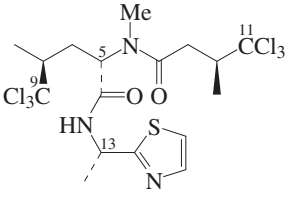
Dysidenamide D-971



$C_{15}H_{23}Cl_6N_3O_3$ 506.081
Isol. from *Lyngbya majuscula*. Amorph. solid. $[\alpha]_D$ -40.3 (c, 0.96 in CH_2Cl_2). Related to Dysidenin, D-972.
Jimenez, J.I. *et al., J. Nat. Prod.*, 2001, **64**, 200-203

Dysidenin D-972

5,5,5-Trichloro-4-methyl-2-[methyl(4,4,4-trichloro-3-methyl-1-oxobutyl)amino]-N-*[1-(2-thiazolyl)ethyl]pentanamide, 9CI*
[65647-65-6]



$C_{17}H_{23}Cl_6N_3O_2S$ 546.17
Metab. of the sponge *Dysidea herbacea* from the Great Barrier Reef; also isol. in small amt. from a specimen from the New Guinea coast. Shows antibiotic props. Ichthyotoxin. Iodine transport inhibitor. Needles (hexane). Sol. MeOH, $CHCl_3$. Mp 98-99°. $[\alpha]_D^{21}$ -98 (c, 0.5 in $CHCl_3$). λ_{max} 240 (ϵ 3980) (MeOH) (Derep).

N-*De-Me:* ***Nordysidenin***
[331970-05-9]
$C_{16}H_{21}Cl_6N_3O_2S$ 532.143
Isol. from *Lyngbya majuscula*. Amorph. solid. $[\alpha]_D$ -56.7 (c, 0.76 in CH_2Cl_2).

N-*De-Me,* N^{12}-*Me:* ***Pseudodysidenin***
[331970-03-7]
[383898-07-5]
$C_{17}H_{23}Cl_6N_3O_2S$ 546.17
Isol. from *Lyngbya majuscula*. Cryst. $[\alpha]_D$ -96.9 (c, 0.03 in $CHCl_3$).

5-Epimer: ***Isodysidenin***
[67528-34-1]
$C_{17}H_{23}Cl_6N_3O_2S$ 546.17
Toxic constit. of *Dysidea herbacea* from New Guinea. Ichthyotoxin. Iodine transport inhibitor. Amorph. solid. Sol. MeOH, $CHCl_3$. $[\alpha]_D^{22}$ +47 (c, 0.88 in $CHCl_3$). λ_{max} 240 (ϵ 3980) (MeOH) (Derep). λ_{max} 238 (ϵ 3311) (MeOH) (Berdy).

13-Epimer: ***Neodysidenin***
[294638-50-9]
$C_{17}H_{23}Cl_6N_3O_2S$ 546.17
Isol. from *Dysidea herbacea*. $[\alpha]_D$ -52.1 (c, 0.16 in $CHCl_3$). λ_{max} 241 (ϵ 4300) (MeOH).

13-Demethyl: ***13-Demethyldysidenin***
[81801-19-6]
$C_{16}H_{21}Cl_6N_3O_2S$ 532.143
From *Dysidea herbacea* (Great Barrier Reef). Gum. $[\alpha]_D^{20}$ -97 (c, 1.23 in $CHCl_3$). λ_{max} 240 (ϵ 3980) (MeOH) (Derep).

13-Demethyl, 5-epimer: ***13-Demethylisodysidenin***
[81754-76-9]
$C_{16}H_{21}Cl_6N_3O_2S$ 532.143
From *Dysidea herbacea* (Great Barrier Reef) and *Oscillatoria spongeliae*. Antihypertensive agent. Gum. $[\alpha]_D^{20}$ +52 (c, 2.6 in $CHCl_3$). λ_{max} 242 (ϵ 14000) (MeOH) (Berdy).

13-Demethyl, 5-epimer, 9-dechloro: ***9-Monodechloro-13-demethylisodysidenin***
[81754-77-0]
$C_{16}H_{22}Cl_5N_3O_2S$ 497.698
From *Dysidea herbacea* (Great Barrier Reef). Gum. $[\alpha]_D^{20}$ +69 (c, 0.27 in $CDCl_3$).

13-Demethyl, 5-epimer, 11-dechloro: ***11-Monodechloro-13-demethylisodysidenin***
[81747-68-4]
$C_{16}H_{22}Cl_5N_3O_2S$ 497.698
From *Dysidea herbacea* (Great Barrier Reef). Gum. $[\alpha]_D^{20}$ +85 (c, 1.04 in $CHCl_3$).

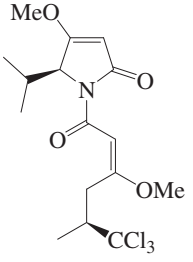
13-Demethyl, 5-epimer, 9,11-bisdechloro: ***9,11-Didechloro-13-demethylisodysidenin***
[189297-59-4]
$C_{16}H_{23}Cl_4N_3O_2S$ 463.253
From *Dysidea herbacea*. $[\alpha]_D$ +174 (c, 0.04 in $CHCl_3$).

13-Demethyl, 13-isopropyl: [383898-06-4]
$C_{19}H_{27}Cl_6N_3O_2S$ 574.223
From *Dysidea herbacea*.

Kazlauskas, R. *et al., Tet. Lett.*, 1977, 3183 (*isol, ms, ir, uv, pmr, cmr, struct*)
Charles, C. *et al., Tet. Lett.*, 1978, 1519 (*isol, ir, pmr, struct, Isodysidenin*)
Erickson, K.L. *et al., Aust. J. Chem.*, 1982, **35**, 31 (*derivs*)
Biskupiak, J.E. *et al., Tet. Lett.*, 1984, **25**, 2935 (*abs config*)
Dumdei, E.J. *et al., Aust. J. Chem.*, 1997, **50**, 139-144 (*isol, derivs, pmr, cmr, ms*)
MacMillan, J.B. *et al., Org. Lett.*, 2000, **2**, 2721-2723 (*Neodysidenin*)
Dumrongchai, N. *et al., ACGC Chem. Res. Commun.*, 2001, **13**, 17-22; *CA*, 2002, **136**, 67123n (*13-de-Me-13-isopropyl*)
Jimenez, J.I. *et al., J. Nat. Prod.*, 2001, **64**, 200-203 (*Nordysidenin, Pseudodysidenin*)

Dysidine† D-973

*1,5-Dihydro-4-methoxy-5-(1-methylethyl)-1-(6,6,6-trichloro-3-methoxy-5-methyl-1-oxo-2-hexenyl)-2*H*-pyrrol-2-one, 9CI*
[63079-71-0]



Absolute Configuration

$C_{16}H_{22}Cl_3NO_4$ 398.712
Constit. of the marine sponge *Dysidea herbacea* and prod. by *Streptomyces galilaeus* ATCC 31534. Shows antibiotic props. Needles (hexane). Sol. MeOH, acids, C_6H_6, DMSO, $CHCl_3$; poorly sol. H_2O, hexane. Mp 127-129°. $[\alpha]_D^{25}$ +141 (c, 1 in $CHCl_3$). λ_{max} 226 (ϵ 15850); 264 (ϵ 26920) (EtOH) (Derep). λ_{max} 228 (E1%/1cm 570); 258 (E1%/1cm 375); 288 (E1%/1cm 145); 433 (E1%/1cm 160) (MeOH) (Berdy). λ_{max} 239 (E1%/1cm 588); 288 (E1%/1cm 160); 315 (E1%/1cm 80); 525 (E1%/1cm 175) (MeOH/NaOH) (Berdy).
▶ LD_{50} (mus, ipr) 40 - 80 mg/kg.

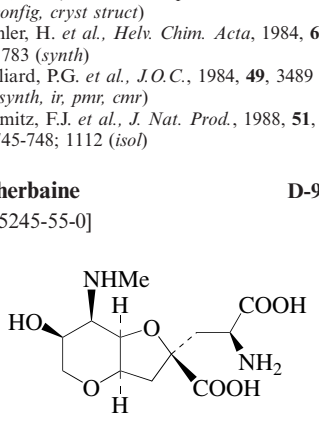
(-)-form
Synthetic. Needles (hexane). Mp 130°. $[\alpha]_D$ -139 (c, 0.3 in $CHCl_3$).

(ξ)-form
[91279-96-8]
Trace constit. of *Carteriospongia flabellifera*.

[91279-96-8]
Hofheinz, W. *et al., Helv. Chim. Acta*, 1977, **60**, 660 (*isol, uv, cd, ir, pmr, cmr, ms, abs config, cryst struct*)
Köhler, H. *et al., Helv. Chim. Acta*, 1984, **67**, 1783 (*synth*)
Williard, P.G. *et al., J.O.C.*, 1984, **49**, 3489 (*synth, ir, pmr, cmr*)
Schmitz, F.J. *et al., J. Nat. Prod.*, 1988, **51**, 745-748; 1112 (*isol*)

Dysiherbaine D-974

[185245-55-0]

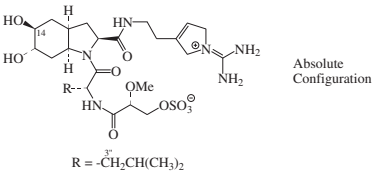


$C_{12}H_{20}N_2O_7$ 304.299
Zwitterionic amino acid. Isol. from the sponge *Dysidea herbacea*. Potent and subtype-selective agonist for ionotropic glutamate receptors. Neurotoxin. $[\alpha]_D^{26}$ -3.5 (c, 0.4 in H_2O).

Sakai, R. *et al., J.A.C.S.*, 1997, **119**, 4112 (*isol, ir, pmr, cmr*)
Masaki, H. *et al., J.A.C.S.*, 2000, **122**, 5216-5217 (*synth*)
Snider, B.B. *et al., Org. Lett.*, 2000, **2**, 635-638 (*synth*)
Sasaki, M. *et al., Tet. Lett.*, 2000, **41**, 3923-3926; 2007, **48**, 5697-5700 (*synth*)
Phillips, D. *et al., J.O.C.*, 2002, **67**, 3194-3201 (*synth*)
Takahashi, K. *et al., Chem. Comm.*, 2007, 4158-4160 (*synth*)

Dysinosin A D-975

[477708-72-8]



Absolute Configuration

$C_{26}H_{44}N_6O_{10}S$ 632.734
Isol. from an Australian sponge of the family Dysideidae. Inhibitor of Factor VIIa and thrombin. Amorph. solid.

*3″*R*-Chloro:* ***Chlorodysinosin A***
[548443-14-7]
$C_{26}H_{43}ClN_6O_{10}S$ 667.179
Isol. from a *Dysidea* sp. Potent inhibitor of thrombin, Factor VIIa and Factor Xa. Amorph. solid.

Carroll, A.R. *et al., J.A.C.S.*, 2002, **124**, 13340-13341 (*Dysinosin A, struct*)
Hanessian, S. *et al., J.A.C.S.*, 2002, **124**, 13342-13343 (*Dysinosin A, synth*)
Pat. Coop. Treaty (WIPO), 2003, 03 51 831; *CA*, **139**, 47155 (*Chlorodysinosin A*)
Hanessian, S. *et al., J.A.C.S.*, 2006, **128**, 10491-10495; 11727-11728 (*Chlorodysinosin A, synth*)

Dysinosin C D-976

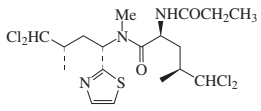
As Dysinosin A, D-975 with
R = $-CH(CH_3)_2$
$C_{25}H_{42}N_6O_{10}S$ 618.707
Isol. from the sponge *Lamellodysidea chlorea*. Inhibitor of factor VIa and thrombin. Amorph. solid. Stereochem. not confirmed. λ_{max} 202 (log ϵ 3.92) (MeOH).

O-*Desulfo:* ***Dysinosin D***
$C_{25}H_{42}N_6O_7$ 538.643
Isol. from *Lamellodysidea chlorea*. Amorph. solid.

14-O-α-D-*Glucopyranoside:* ***Dysinosin B***
$C_{31}H_{52}N_6O_{15}S$ 780.849
Isol. from *Lamellodysidea chlorea*. Amorph. solid. $[\alpha]_D^{25}$ +72 (c, 0.02 in MeOH). λ_{max} 203 (log ϵ 4.2) (MeOH).

Carroll, A.R. *et al., J. Nat. Prod.*, 2004, **67**, 1291-1294 (*isol, pmr, cmr*)

Dysithiazolamide D-977



Absolute Configuration

$C_{18}H_{27}Cl_4N_3O_2S$ 491.307

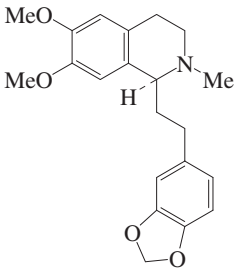
Isol. from an unidentified *Dysidea* sp. $[\alpha]_D$ -35 (c, 0.08 in CH_2Cl_2).

Ardá, A. *et al., Tetrahedron*, 2005, **61**, 10093-10098 (*isol, pmr, cmr*)

Ardá, A. *et al., Org. Lett.*, 2008, **10**, 2175-2178 (*synth*)

Dysoxyline D-978

1-[2-(1,3-Benzodioxol-5-yl)ethyl]-1,2,3,4-tetrahydro-6,7-dimethoxy-2-methylisoquinoline, 9CI. 1,2,3,4-Tetrahydro-6,7-dimethoxy-2-methyl-1-[2-(3,4-methylenedioxyphenyl)ethyl]isoquinoline



(*S*)-*form*

$C_{21}H_{25}NO_4$ 355.433

(*S*)-*form* [85547-16-6]

Alkaloid from the leaves of *Dysoxylum lenticellare* (Meliaceae). $[\alpha]_D^{25}$ +22 (c, 0.34 in EtOH). λ_{max} 230 (sh) (ϵ 13000); 286 (ϵ 7800) (EtOH).

Picrate: Mp 159-161°.

(±)-*form* [156558-41-7]

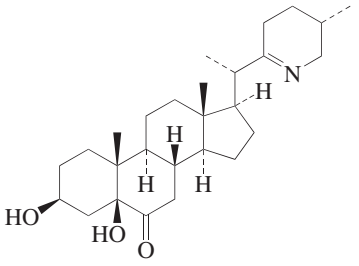
Synthetic. Prisms (EtOH). Mp 107-108°. λ_{max} 229 (log ϵ 4.06); 284 (log ϵ 3.88) (MeOH).

Aladesanmi, A.J. *et al., J. Nat. Prod.*, 1983, **46**, 127-131 (*isol, uv, pmr, ms, cmr, cd, struct*)

Nimgirawath, S. *et al., Aust. J. Chem.*, 1994, **47**, 957-962 (*synth*)

Ebeietinone E-1

[143114-79-8]



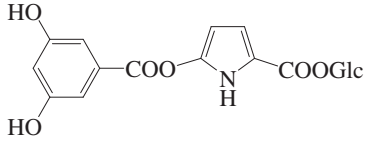
$C_{27}H_{43}NO_3$ 429.642

Alkaloid from bulbs of *Fritillaria ebeiensis* var. *purpurea* (Liliaceae). Needles (Me_2CO). Mp 199-203°. $[\alpha]_D$ -53.5 (c, 0.24 in $CHCl_3$).

Li, P. *et al., Phytochemistry*, 1992, **31**, 2190-2191 (*isol, ir, pmr, cmr, ms, struct*)

Ebracteolatinoside A E-2

[225921-25-5]



$C_{18}H_{19}NO_{11}$ 425.348

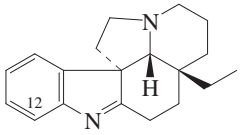
Struct. information obt. from CAS. Alkaloid from the roots of *Euphorbia ebracteolata*. Component of Yue Xian Da Ji.

Wang, W. *et al., Zhongcaoyao*, 1999, **30**, 1-3; *CA*, **131**, 2778g

Eburenine E-3

1,2-Didehydroaspidospermidine, 8CI. 1,2-Dehydroaspidospermidine

[19751-76-9]



(+)-*form*

$C_{19}H_{24}N_2$ 280.412

(+)-*form* [56245-51-3]

Alkaloid from *Amsonia tabernaemontana*, *Hunteria eburnea*, *Rhazya stricta*, *Vinca minor*, *Aspidosperma neblinae* and other *Aspidosperma* spp. (Apocynaceae). $Bp_{0.01}$ 150° approx. $[\alpha]_D^{20}$ +243 (EtOH).

N^b-*Oxide:* ***1,2-Dehydroaspidospermidine N-oxide***

[104736-04-1]

$C_{19}H_{24}N_2O$ 296.411

Alkaloid from the roots of *Rhazya stricta* (Apocynaceae). $[\alpha]_D$ +120 ($CHCl_3$).

12-Hydroxy: ***1,2-Didehydro-12-hydroxyaspidospermidine***. *12-Hydroxy-Δ^1-aspidospermidine*

[857349-22-5]

$C_{19}H_{24}N_2O$ 296.411

Alkaloid from *Schinopsis lorentzii*.

(-)-*form*

Alkaloid from *Pleiocarpa tubicina* (Apocynaceae). $Bp_{0.01}$ 140°. $[\alpha]_D^{23}$ -212 (EtOH).

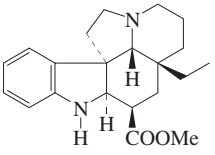
[65377-84-6]

Biemann, K. *et al., Tet. Lett.*, 1961, 484 (*isol, ms*)
Smith, G.F. *et al., J.C.S.*, 1963, 4002 (*uv, ir*)
Bycroft, B.W. *et al., Helv. Chim. Acta*, 1964, **47**, 1147 (*isol*)
Ban, Y. *et al., Tetrahedron*, 1983, **39**, 3657 (*synth*)
Atta-ur-Rahman, *et al., Phytochemistry*, 1986, **25**, 1779 (*N-oxide*)
Azzam, S.M. *et al., CA*, 2005, **143**, 112300k (*1,2-Didehydro-12-hydroxyaspidospermidine*)

Eburine E-4

Methyl aspidospermidine-3-carboxylate, 9CI

[19634-20-9]



Absolute Configuration

$C_{21}H_{28}N_2O_2$ 340.464

Alkaloid from *Hunteria eburnea* (Apocynaceae). Noncryst. $[\alpha]_D$ -18 ($CHCl_3$).

N-*Methoxycarbonyl:* ***Eburcine***

[19634-21-0]

$C_{23}H_{30}N_2O_4$ 398.501

From *Hunteria eburnea* (Apocynaceae). Noncryst. $[\alpha]_D$ -61 ($CHCl_3$).

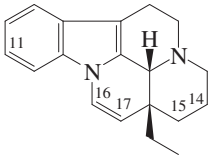
[104270-92-0 , 104270-93-1]

Olivier, L. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1970, **270**, 1667
Yoshida, K. *et al., Tetrahedron*, 1985, **41**, 5495 (*synth, Eburcine*)

Eburnamenine E-5

Vincamenine

[38199-30-3]



(+)-*form*

$C_{19}H_{22}N_2$ 278.396

(+)-*form* [517-30-6]

Alkaloid from *Hunteria eburnea*, *Vinca minor* and *Amsonia ciliata* (Apocynaceae). Amorph. $[\alpha]_D$ +183 ($CHCl_3$).

Picrate:

Cryst. (EtOH). Mp 186-196°. $[\alpha]_D^{25}$ +183 ($CHCl_3$).

Methiodide:

Cryst. (H_2O). Mp 274° dec.

16,17-Dihydro: ***Dihydroeburnamenine***. *Eburnan*

[47122-74-7]

$C_{19}H_{24}N_2$ 280.412

Alkaloid from roots and leaves of *Rhazya stricta* (Apocynaceae).

(-)-*form*

Synthetic. Pale-yellow amorph. powder. $[\alpha]_D$ -151 (c, 0.16 in $CHCl_3$).

14,15-Didehydro: ***Δ^{14}-Vincamenine***

[112219-48-4]

$C_{19}H_{20}N_2$ 276.38

Isol. from aerial parts of *Melodinus celastroides*. $[\alpha]_D^{22}$ -45 (c, 1 in $CHCl_3$). λ_{max} 226 (log ϵ 4.17); 262 (log ϵ 3.78); 302 (log ϵ 3.32); 312 (log ϵ 3.32) (EtOH).

11-Methoxy, 14,15-didehydro: ***11-Methoxy-Δ^{14}-vincamenine***

[90357-61-2]

$C_{20}H_{22}N_2O$ 306.407

Alkaloid from the stem bark and aerial parts of *Melodinus guillauminii* (Apocynaceae). The abs. config. is unusual for alkaloids lacking a C-16 COOMe group.

(±)-*form* [62960-98-9]

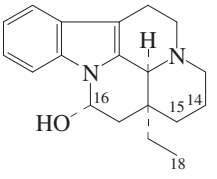
Alkaloid from *Vinca minor* (Apocynaceae). Amorph.

16,17-Dihydro: Mp 99-101°.

Bartlett, M.F. *et al., J.O.C.*, 1963, **28**, 2197-2199 (*struct, uv, cd*)
Trojánek, J. *et al., Chem. Ind. (London)*, 1965, 1261 (*struct*)
Bláha, K. *et al., Coll. Czech. Chem. Comm.*, 1968, **33**, 3833-3847 (*ord, abs config*)
Zèches, M. *et al., Phytochemistry*, 1984, **23**, 171-174 (*11-Methoxy-Δ^{14}-vincamenine*)
Takano, S. *et al., J.C.S. Perkin 1*, 1985, 305-309 (*synth, ir, pmr, ms*)
Baasou, S. *et al., Ann. Pharm. Fr.*, 1987, **45**, 49-56 (*Δ^{14}-Vincamenine*)
Atta-ur-Rahman, *et al., Phytochemistry*, 1991, **30**, 1285-1293 (*Dihydroeburnamenine*)

Eburnamine E-6

Pleiocarpinidine. Hunteriline. Vincanol. Torondel, INN. RGH4406



(+)-*form*

$C_{19}H_{24}N_2O$ 296.411

Both enantiomers are natural alkaloids. Eburnamine was the (-)-enantiomer and Vincanol the (+)-form. Many syntheses reported; only those appearing in the lit. since 1990 are given here.

(+)-*form* [19877-89-5]

Alkaloid from *Kopsia* spp. and *Melodinus celastroides*. Antihypertensive and cerebrotonic agent. Needles (EtOH). Mp 178-180°. $[\alpha]_D$ +96 (c, 0.10 in $CHCl_3$).

Me ether: [59630-36-3]

Mp 106°.

16-Ketone: ***Vinburnine, INN***. *Vincamone. (-)-Eburnamonine. Eburnal. Eburnoxine. Ebornoxin. Eubron. Luvenil. Monil.*

Scleramin. Tensiplex. CH 846. Cervoxan
[4880-88-0]
$C_{19}H_{22}N_2O$ 294.396
Alkaloid from *Vinca minor* and *Voacanga africana* (Apocynaceae). Drug for stimulation of muscle activity. Cerebrotonic. Mp 173-174°. $[\alpha]_D$ -102 ($CHCl_3$). Log P 3.77 (uncertain value) (calc). Note that the (-) enantiomer corresponds to (+)-Eburnamine and vice-versa. λ_{max} 242 (log ϵ 4.28); 268 (log ϵ 4); 294 (log ϵ 3.68); 301 (log ϵ 3.68) (MeOH). λ_{max} 241 (ϵ 19800); 295 (ϵ 10200); 303 (ϵ 4800) (EtOH).

▶ LD_{50} (mus, ipr) 265 mg/kg. YY8575570

14,15-Didehydro: ***Δ¹⁴-Vincanol****. 14,15-Didehydrovincanol*
[81781-82-0]
$C_{19}H_{22}N_2O$ 294.396
Alkaloid from *Voacanga africana*, *Melodinus insulae-pinorum* and *Melodinus celastroides*. λ_{max} 230 (log ϵ 3.99); 280 (log ϵ 3.39) (EtOH).

14,15-Didehydro, 16-ketone: ***Δ¹⁴-Vincamone****. 14,15-Didehydrovincamone*
[74075-57-3]
$C_{19}H_{20}N_2O$ 292.38
Alkaloid from *Voacanga africana* and *Melodinus celastroides*.

11-Methoxy, 16-ketone: ***11-Methoxyeburnamonine***
[4800-93-5]
$C_{20}H_{24}N_2O_2$ 324.422
Alkaloid from *Vinca minor* (Apocynaceae). Needles (Me_2CO). Mp 169-170°. $[\alpha]_D^{22}$ -107 (c, 0.15 in $CHCl_3$). λ_{max} 247 (log ϵ 4.33); 279 (log ϵ 4.07) (MeOH).

11-Methoxy, 14,15-didehydro: ***11-Methoxy-Δ¹⁴-vincanol***
[90357-62-3]
$C_{20}H_{24}N_2O_2$ 324.422
Alkaloid from the stem bark and aerial parts of *Melodinus guillauminii* (Apocynaceae). $[\alpha]_D$ +111 (c, 0.4 in $CHCl_3$).

16-Epimer: ***(-)-Isoeburnamine***
[19877-90-8]
$C_{19}H_{24}N_2O$ 296.411
Alkaloid from the roots of *Kopsia officinalis* (Apocyanaceae). Mp 216°. $[\alpha]_D$ -106 (c, 0.68 in $CHCl_3$).

16-Epimer, 14,15-didehydro, Me ether: ***16-Epi-O-methyl-Δ¹⁴-vincanol****. O-Methyl-16-epi-Δ¹⁴-vincanol*
[256387-86-7]
$C_{20}H_{24}N_2O$ 308.422
Alkaloid from *Voacanga africana* and *Melodinus celastroides*. λ_{max} 226 (log ϵ 3.95); 278 (log ϵ 3.39) (EtOH).

(-)-*form* [473-99-4]
Alkaloid from several genera in the Apocynaceae notably in *Hunteria eburnea*, *Vinca minor* and *Amsonia tabernaemontana*. Cryst. (EtOH). Mp 180-181°. $Bp_{0.01}$ 140° subl. $[\alpha]_D$ -98 ($CHCl_3$). λ_{max} 229 (ϵ 33800); 276 (sh) (ϵ 8400); 282 (ϵ 8100) (EtOH).

Me ether: **O-*Methyleburnamine***
[78184-82-4]
$C_{20}H_{26}N_2O$ 310.438
Alkaloid from *Haplophyton cimicidum* and bark of *Hunteria zeylanica* (Apocynaceae). Mp 181°. Drawn in one paper as *O*-Methylisoeburnamine.

Et ether: **O-*Ethyleburnamine***
[77123-12-7]
$C_{21}H_{28}N_2O$ 324.465
Alkaloid from the bark of *Hunteria zeylanica*, and from *Kopsia larutensis*. also obt. by cryst. of Eburnamine from EtOH (Apocynaceae). Cryst. (EtOH). Mp 116-117°. $[\alpha]_D$ -107 (c, 0.48 in $CHCl_3$). Poss. artifact. Descr. in the paper as *O*-Ethyleburnamine but drawn as *O*-Ethylisoeburnamine.

16-Ketone: ***Eburnamonine****. Huntericine*
[474-00-0]
$C_{19}H_{22}N_2O$ 294.396
Alkaloid from *Hunteria eburnea*, *Amsonia tabernaemontana*, *Vinca minor* and others in the Apocynaceae. Mp 183°. $[\alpha]_D^{26}$ +89 ($CHCl_3$).

16-Ketone, N⁴*-oxide:* ***Eburnamonine N⁴-oxide***
[71658-66-7]
$C_{19}H_{22}N_2O_2$ 310.395
Alkaloid from leaves of *Kopsia larutensis* (Apocynaceae). Mp 119-121°. $[\alpha]_D$ +56 (c, 0.35 in $CHCl_3$).

18-Hydroxy: ***Eburnaminol***
[138615-18-6]
$C_{19}H_{24}N_2O_2$ 312.411
Alkaloid from the bark and stems of *Kopsia larutensis* (Apocynaceae). Amorph. $[\alpha]_D$ -54 (c, 0.17 in $CHCl_3$). Revised struct.

*19*R*-Hydroxy:* ***19R-Hydroxyeburnamine***
[220054-52-4]
$C_{19}H_{24}N_2O_2$ 312.411
Alkaloid from *Kopsia dasyrachis*. Mp 246-248°. $[\alpha]_D$ +111 (c, 0.09 in $CHCl_3$). λ_{max} 201 (log ϵ 3.86); 229 (log ϵ 4.02); 283 (log ϵ 3.42); 291 (log ϵ 3.31) (EtOH).

19-Oxo: ***19-Oxoeburnamine***
[184870-19-7]
$C_{19}H_{22}N_2O_2$ 310.395
Alkaloid from stems of *Kopsia pauciflora*. Amorph. powder. $[\alpha]_D$ +83 (c, 0.058 in $CHCl_3$). λ_{max} 202 (log ϵ 3.81); 229 (log ϵ 4); 282 (log ϵ 3.39); 292 (log ϵ 3.25) (EtOH).

11,12-Dimethoxy, 16-ketone: ***Dimethoxyeburnamonine***
[19775-49-6]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from *Vinca minor* (Apocynaceae). Mp 220°.

16-Epimer: ***Isoeburnamine****. Hunteridine. 16-Epieburnamine*
[4201-84-7]
Alkaloid from *Hunteria eburnea*, *Hunteria zeylanica*, *Amsonia sinensis*, *Vinca minor*, *Kopsia larutensis* and *Haplophyton cimicidum* (Apocynaceae). Cryst. (MeOH). Mp 217-220°. $[\alpha]_D$ +111 ($CHCl_3$). λ_{max} 229 (log ϵ 4.54); 283 (log ϵ 3.92); 290 (log ϵ 3.82) (EtOH).

16-Epimer, Me ether: **O-*Methylisoeburnamine***
[78184-83-5]
$C_{20}H_{26}N_2O$ 310.438
Alkaloid from the bark of *Haplophyton zeylanica* (Apocynaceae). Not obt. free of *O*-Methyleburnamine. Referred to by the authors as *O*-Methylisoeburnamine but the struct. illus. in the paper apparently shows it to be *O*-Methyleburnamine.

16-Epimer, 14,15-didehydro: ***Δ¹⁴-Isoeburnamine****. 14,15-Didehydroisoeburnamine*
[5083-11-4]
$C_{19}H_{22}N_2O$ 294.396
Alkaloid from *Amsonia sinensis* (Apocynaceae). Cryst. Mp 175-176°. $[\alpha]_D^{28}$ +258.3 (c, 0.04 in $CHCl_3$).

*16-Epimer, 19*R*-hydroxy:* ***19R-Hydroxyisoeburnamine***
[220654-55-7]
$C_{19}H_{24}N_2O_2$ 312.411
Alkaloid from *Kopsia dasyrachis*. $[\alpha]_D$ -16 (c, 0.18 in $CHCl_3$). λ_{max} 203 (log ϵ 4.39); 229 (log ϵ 4.53); 282 (log ϵ 3.74); 292 (log ϵ 3.83) (EtOH).

(±)-*form* [2934-73-8]
Mp 178-181°.

16-Ketone: ***Vincanorine****. (±)-Eburnamonine*
[2580-88-3]
$C_{19}H_{22}N_2O$ 294.396
Alkaloid from *Vinca minor* (Apocynaceae). Cryst. (MeOH). Mp 203-204°.

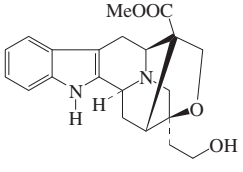
16-Ketone, perchlorate:
Cryst. (dioxan). Mp 243-245°.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 1066C (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 613B (*nmr*)
Plat, M. *et al., Bull. Soc. Chim. Fr.*, 1962, 1082-1088 (*ms*)
Cava, M.P. *et al., Chem. Ind. (London)*, 1963, 1242-1243 (*O-Methyleburnamine*)
Bartlett, M.F. *et al., J.O.C.*, 1963, **28**, 2197-2199 (*Eburnamine, Isoeburnamine, isol, uv, cd*)
Trojánek, J. *et al., Coll. Czech. Chem. Comm.*, 1964, **29**, 433-446 (*Eburnamonine, uv, ir, synth*)
Trojánek, J. *et al., Chem. Ind. (London)*, 1965, 1261 (*cd, uv*)
Mokrý, J. *et al., Coll. Czech. Chem. Comm.*, 1967, **32**, 2523-2531 (*(±)-Eburnamonine, Isoeburnamine, Eburnamine, isol, uv, ms*)
Bláha, K. *et al., Coll. Czech. Chem. Comm.*, 1968, **33**, 3833-3847 (*ord, abs config*)
Döpke, W. *et al., Pharmazie*, 1968, **23**, 99 (*Dimethoxyeburnamonine*)
Döpke, W. *et al., Tet. Lett.*, 1968, 1805-1806 (*11-Methoxyeburnamonine*)
Chiesi, V.A. *et al., Cryst. Struct. Commun.*, 1973, **2**, 599-603 (*Vincamone, cryst struct*)
De Angelis, L. *et al., Drugs of Today (Barcelona)*, 1978, **14**, 160-164 (*Eburnamonine, rev*)
Toth, G. *et al., J.C.S. Perkin 2*, 1980, 701-703; 1985, 1319-1322 (*cd, pmr, cmr*)
Arambewela, L.S.R. *et al., Phytochemistry*, 1981, **20**, 349-350 (*Me ether, Et ether*)
Rodier, N. *et al., Acta Cryst. B*, 1982, **38**, 863-867 (*14,15-Didehydrovincanol: cryst struct*)
Feng, X.Z. *et al., Planta Med.*, 1983, **48**, 280-282 (*(-)-Isoeburnamine*)
Feng, X.Z. *et al., J. Nat. Prod.*, 1984, **47**, 117-122 (*pmr*)
Zèches, M. *et al., Phytochemistry*, 1984, **23**, 171-174 (*11-Methoxy-Δ¹⁴-vincanol*)
Baassou, S. *et al., Ann. Pharm. Fr.*, 1987, **45**, 49-56 (*Melodinus celastroides constits*)
Sado, P.A. *et al., J. Chromatogr.*, 1988, **434**, 157-167 (*Vincamone, hplc*)
Node, M. *et al., J.O.C.*, 1990, **55**, 517 (*synth*)
Drago, F. *et al., Pharmacol., Biochem. Behav.*, 1990, **37**, 53 (*Eburnamonine, pharmacol*)
Awang, K. *et al., Phytochemistry*, 1991, **30**, 3164-3167 (*Eburnaminol*)

Liu, H.M. *et al., Planta Med.*, 1991, **57**, 566-568 (*Δ^{14}-Isoeburnamine, cryst struct*)
Karvinen, E. *et al., Heterocycles*, 1992, **34**, 1773-1782 (*(±)-Eburnamonine, synth*)
Kam, T.-S. *et al., Phytochemistry*, 1992, **31**, 2936-2938 (*Eburnamonine N-oxide*)
Lounasmaa, M. *et al., Heterocycles*, 1993, **36**, 751-760 (*synth, Eburnaminol*)
Kam, T.S. *et al., Phytochemistry*, 1993, **33**, 921-924 (*(-)-O-Ethyleburnamine, (+)-Isoeburnamine, isol, cryst struct, abs config, bibl*)
Kaufman, M.D. *et al., J.O.C.*, 1994, **59**, 7197-7198 (*(±)-Eburnamonine, synth*)
Palmisano, G. *et al., Tetrahedron*, 1994, **50**, 9487-9494 (*(-)-Eburnamonine, synth*)
Kam, T.-S. *et al., Phytochemistry*, 1996, **43**, 1385-1387; 1999, **51**, 159-169 (*19-Oxoeburnamine, 19-Hydroxyeburnamine*)
Schultz, A.G. *et al., J.O.C.*, 1997, **62**, 6855-6861 (*Eburnamonine, synth*)
Kam, T.S. *et al., Nat. Prod. Lett.*, 1998, **12**, 293-298 (*19-Hydroxyeburnamine, 19-Hydroxyisoeburnamine*)
Pegnyemb, D.E. *et al., Fitoterapia*, 1999, **70**, 446-448 (*Δ^{14}-Vincanol, 16-Epi-O-methyl-Δ^{14}-vincanol*)
Grieco, P.A. *et al., J.O.C.*, 1999, **64**, 7586-7593 (*(±)-Eburnamonine, synth, pmr, cmr*)
Martindale, The Extra Pharmacopoeia, 32nd edn., Pharmaceutical Press, 1999, 1644 (*Vincamone*)
Ghosh, A.K. *et al., J.O.C.*, 2000, **65**, 5433-5435 (*(±)-Eburnamonine, synth, pmr, cmr*)
Wee, A.G.H. *et al., J.O.C.*, 2002, **66**, 8935-8943 (*Eburnamonine, synth*)
Ho, T.-L. *et al., Helv. Chim. Acta*, 2005, **88**, 2764-2770 (*synth*)

Eburnaphylline E-7

Methyl 17,20-epoxy-19,20-dihydro-18-hydroxysarpagan-16-carboxylate, 9CI
[35594-10-6]



Absolute Configuration

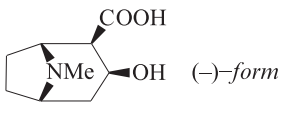
$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from the leaves of *Hunteria eburnea* (Apocynaceae). Mp 237°. $[\alpha]_D$ +15.4 (Py).

O-*Ac:*
Cryst. (Et_2O). Mp 215°. $[\alpha]_D$ +43 ($CHCl_3$).

Morfaux, A.-M. *et al., Bull. Soc. Chim. Fr.*, 1971, 3967-3973 (*ir, uv, ms, pmr, struct*)
Morfaux, A.M. *et al., Tet. Lett.*, 1973, 1939-1941 (*struct, abs config*)

Ecgonine E-8

3-Hydroxy-8-methyl-8-azabicyclo[3.2.1]octane-2-carboxylic acid, 9CI. 3-Hydroxytropane-2-carboxylic acid, 8CI



(–)–*form*

$C_9H_{15}NO_3$ 185.222
►Highly toxic by inhalation, allergen.

(-)-*form* [481-37-8]
Obt. by hydrol. of Cocaine, C-537. Mp 205°. $[\alpha]_D$ -45.4 (H_2O).

Me ester: ***Methylecgonine****. Ecgonine methyl ester*
[7143-09-1]
$C_{10}H_{17}NO_3$ 199.249
Minor alkaloid from *Erythroxylum coca* and other *Erythroxylum* spp. (Erythroxylaceae). Anaesthetic. Oil (synthetic). d_{20} 1.15. $Bp_{0.2}$ 84-88°. n_D^{20} 1.4890. Log P 0.13 (calc). Poorly characterised as a natural alkaloid.

Me ester, hydrochloride: [38969-40-3]
Mp 212° dec. (199-200°) (synthetic).

O-*Benzoyl:* ***Benzoylecgonine***
[519-09-5]
$C_{16}H_{19}NO_4$ 289.33
Alkaloid from *Erythroxylum* spp. Major metab. of Cocaine. Mp 195°. $[\alpha]_D$ -63.3 (H_2O).

O-*Benzoyl, Me ester:* see Cocaine, C-537

O-*(E-Cinnamoyl), Me ester:* ***Cinnamoylcocaine****. Cinnamoylecgonine methyl ester*
[521-67-5]
Alkaloid from *Erythroxylum coca* and *Erythroxylum monogynum*, first obt. synthetically (Erythroxylaceae). Does not show significant mydriatic or anaesthetic props. Mp 121°. The name Cinnamoylcocaine is somewhat misleading.

O-*(Z-Cinnamoyl), Me ester:* ***(Z)-Cinnamoylcocaine***
[50763-21-8]
$C_{19}H_{23}NO_4$ 329.395
Minor alkaloid from *Erythroxylum* spp., found in Cocaine samples (Erythroxylaceae).

O-*(2-Furancarbonyl), Me ester:* [188948-53-0]
$C_{15}H_{19}NO_5$ 293.319
Trace alkaloid of *Erythroxylum coca* (Erythroxylaceae).

O-*(3-Furancarbonyl), Me ester:* [188948-51-8]
$C_{15}H_{19}NO_5$ 293.319
Trace alkaloid of *Erythroxylum coca*.

O-*(2-Pyrrolecarbonyl), Me ester:*
[188948-54-1]
$C_{15}H_{20}N_2O_4$ 292.334
Trace alkaloid of *Erythroxylum coca* (Erythroxylaceae).

O-*(3-Pyridinecarbonyl), Me ester:* ***Nicotinoylecgonine methyl ester***
[188948-52-9]
$C_{16}H_{20}N_2O_4$ 304.345
Trace alkaloid of *Erythroxylum coca* (Erythroxylaceae).

2-Epimer, Me ester: ***Methylpseudoecgonine****. Pseudoecgonine methyl ester*
$C_{10}H_{17}NO_3$ 199.249
Alkaloid from *Datura stramonium*, *Merremia aegyptia* and *Merremia gemella*.

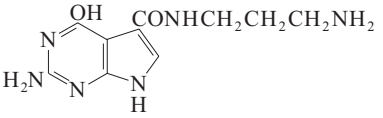
(±)-*form*
Mp 203° (anhyd.). α- and β-Ecgonines are synthetic struct. isomers.

[56053-46-4 , 56053-45-3]

Willstätter, R. *et al., Annalen*, 1923, **434**, 111 (*synth*)
Chopra, R.N. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1938, **276**, 340 (*isol, Cinnamoylcocaine*)
Hegnauer, R. *et al., Pharm. Acta Helv.*, 1960, **35**, 43; *CA*, **54**, 17791f (*ester*)
Bazilevskaya, G.I. *et al., Zh. Obshch. Khim.*, 1960, **30**, 2088; *CA*, **55**, 6511d (*synth, ester*)
Moore, J.M. *et al., J. Assoc. Off. Anal. Chem.*, 1973, **56**, 1199 (*Cinnamoylcocaines*)
Baker, J.K. *et al., J. Het. Chem.*, 1978, **15**, 165 (*cmr*)
Tufariello, J.J. *et al., J.A.C.S.*, 1979, **101**, 2435 (*synth, pmr*)
Moore, J.M. *et al., J. Forensic Sci.*, 1997, **42**, 246-255
Martinet, F. *et al., Synth. Commun.*, 1997, **27**, 3485-3490 (*Benzoylecgonine*)
Singh, S. *et al., Synth. Commun.*, 1997, **27**, 4003-4012 (*Methylecgonine*)
Jenett-Siems, K. *et al., Phytochemistry*, 2005, **66**, 1448-1464 (*Methylpseudoecgonine*)
Pedersoli, S. *et al., Spectrosc. Lett.*, 2008, **41**, 101-103 (*Benzoylecgonine, pmr, cmr*)
Sax, N.I. *et al., Dangerous Properties of Industrial Materials, 5th edn., Van Nostrand Reinhold*, 1979, 639

Echiguanine B E-9

*2-Amino-*N*-(3-aminopropyl)-4,7-dihydro-4-oxo-1*H*-pyrrolo[2,3-*d*]pyrimidine-5-carboxamide, 9CI*
[137319-26-7]

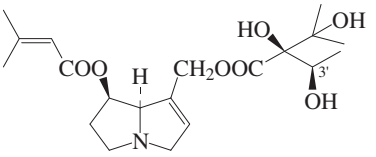


$C_{10}H_{14}N_6O_2$ 250.26
Prod. by *Streptomyces* sp. Phosphatidylinositol kinase inhibitor. Amorph. solid. Sol. H_2O, DMSO, MeOH; poorly sol. Me_2CO, $CHCl_3$, EtOAc, hexane. Dec. at 270-280°. λ_{max} 217 (ε 15200); 250 (sh) (ε 10400); 281 (ε 7160) (0.1*M* HCl) (Derep). λ_{max} 256 (ε 9630); 292 (ε 7160) (0.1*M* NaOH) (Derep). λ_{max} 220 (ε 14700); 227 (ε 14700); 252 (sh) (ε 9300); 296 (ε 8800) (H_2O) (Derep).

Nishioka, H. *et al., J. Nat. Prod.*, 1991, **54**, 1321 (*isol*)

Echihumiline E-10

[174285-73-5]



$C_{20}H_{31}NO_7$ 397.467
Alkaloid from *Echium humile* and *Echium vulgare*. Oil. $[\alpha]_D$ +10 (c, 0.1 in EtOH).

N-*Oxide:* ***Echihumiline* N-*oxide***
[176391-52-9]
$C_{20}H_{31}NO_8$ 413.467
Alkaloid from *Echium humile*. Gum.

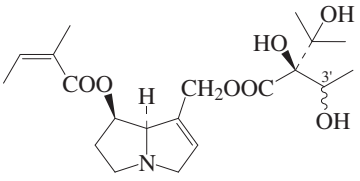
3′-Ac, N-*oxide:* ***3′-O-Acetylechihumiline* N-*oxide***
$C_{22}H_{33}NO_9$ 455.504
Alkaloid from *Onosma leptantha*. Oil. $[\alpha]_D^{25}$ +35 (c, 0.2 in MeOH).

El-Shazly, A. *et al., J. Nat. Prod.*, 1996, **59**, 310-313 (*occur*)

El-Shazly, A. *et al., Phytochemistry*, 1996, **42**, 225-230 (*isol, pmr, cmr, ms, struct*)
Kretsi, O. *et al., Helv. Chim. Acta*, 2003, **86**, 3136-3140 (*3′-Ac N-oxide*)

Echimidine E-11

[520-68-3]



$C_{20}H_{31}NO_7$ 397.467

Stereochem. at C-3′ not established. Alkaloid from *Echium plantagineum*, (Russian comfrey) and from *Symphytum orientale* and *Symphytum tuberosum* (Boraginaceae). Also from *Echium rauwolfii* and *Echium horridum*. Hepatotoxin. Shows antimicrobial activity. Glass or gum. $[\alpha]_D^{18}$ +13.4 (EtOH).

▶ EM9252420

Picrate:
Yellow needles (H_2O). Mp 142-143°.

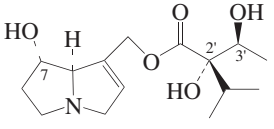
N-*Oxide:* ***Echimidine* N-*oxide***
[41093-89-4]
$C_{20}H_{31}NO_8$ 413.467
Alkaloid from *Symphytum caucasicum* and *Echium angustifolium*. Prisms (Me_2CO/MeOH). Mp 165° dec.

3′-Ac: ***3′-Acetylechimidine***
[78184-80-2]
$C_{22}H_{33}NO_8$ 439.505
Alkaloid from *Echium vulgare*. Oil. Stereochem. at C-3′ not established.

Culvenor, C.C.J. *et al., Aust. J. Chem.*, 1956, **9**, 512; 1965, **18**, 1605; 1980, **33**, 1105 (*isol, pmr*)
Ulubelen, A. *et al., Phytochemistry*, 1977, **16**, 499 (*isol*)
Culvenor, C.C.J. *et al., Experientia*, 1980, **36**, 377 (*tox*)
Huizing, H.J. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1985, **318**, 476 (*cmr*)
Sarg, T. *et al., Fitoterapia*, 1992, **63**, 466-468 (*isol, oxide*)
El-Shazly, A. *et al., J. Nat. Prod.*, 1996, **59**, 310-313 (*3′-Acetylechimidine*)
El-Shazly, A. *et al., Z. Naturforsch., C*, 1999, **54**, 295-300 (*isol, activity*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, EAC500

Echinatine† E-12

Echinitine
[480-83-1]



$C_{15}H_{25}NO_5$ 299.366

Ester of Heliotridine in T-188 with Viridifloric acid. Diastereoisomeric with Indicine, I-68 and Intermedine, I-160. Alkaloid from *Echium vulgare*, *Rindera echinata*, *Lithospermum canescens*, *Cynoglossum amabile*, *Cynoglossum creticum*, *Eupatorium maculatum*, *Eupatorium cannabinum* and others. Also from *Anchusa* spp., poss. as a stereoisomer (Boraginaceae, Asteraceae). Cryst. Mp 109-110°. $[\alpha]_D$ +12.8. Cryst. with difficulty, formerly obt. only as gum.

▶ EK7790000

Picrolonate: Mp 205-207° dec.

N-*Oxide:* ***Echinatine* N-*oxide***
[20267-93-0]
$C_{15}H_{25}NO_6$ 315.366
Alkaloid from *Lindelofia macrostyla* (Boraginaceae).

O^7-*Ac:* ***7-Acetylechinatine***
[56317-18-1]
$C_{17}H_{27}NO_6$ 341.403
Alkaloid from *Lindelofia spectabilis* (Boraginaceae).

7-O-*(3-Hydroxy-3-methylbutanoyl):* ***Canescenine***
$C_{20}H_{33}NO_7$ 399.483
Alkaloid from the aerial parts of *Lithospermum canescens.*

7-O-*(3-Hydroxy-3-methylbutanoyl), 3′-Ac:* ***Acetylcanescenine***
[612541-68-1]
$C_{22}H_{35}NO_8$ 441.52
Alkaloid from the aerial parts of *Lithospermum canescens.*

3′-O-*(4-Hydroxycinnamoyl):* ***Cynoglossamine***
[120193-39-7]
$C_{24}H_{31}NO_7$ 445.511
Alkaloid from *Cynoglossum creticum* (Boraginaceae). Gum. $[\alpha]_D^{27}$ -4.9 (c, 0.71 in $CHCl_3$).

3′-Epimer: ***Rinderine***
[6029-84-1]
$C_{15}H_{25}NO_5$ 299.366
Alkaloid from *Rindera baldschuanica* and *Eupatorium serotinum* (Boraginaceae, Asteraceae). Cryst. (Me_2CO). Mp 100-101°. $[\alpha]_D^{20}$ +24.6 (EtOH). Ester of Heliotridine in T-188 with Trachelanthic acid.

▶ VJ7600000

3′-Epimer, hydrochloride:
Cryst. (EtOH). Mp 152-153°.

3′-Epimer, hydrobromide:
Cryst. (Me_2CO/Et_2O). Mp 123-124°.

3′-Epimer, 7-Ac: ***7-O-Acetylrinderine***
$C_{17}H_{27}NO_6$ 341.403
Alkaloid from *Eupatorium fortunei* and Symphyti Radix (root of *Symphytum officinale*). Gum. $[\alpha]_D$ +15.9 (c, 0.1 in MeOH).

3′-Epimer, 7-O-*(3-hydroxy-3-methylbutanoyl):* ***Canescine*†**
[612820-62-9]
$C_{20}H_{33}NO_7$ 399.483
Alkaloid from the aerial parts of *Lithospermum canescens.*

3′-Epimer, 7-O-*(3-hydroxy-3-methylbutanoyl), 3′-Ac:* ***Acetylcanescine***
[612541-67-0]
$C_{22}H_{35}NO_8$ 441.52
Alkaloid from the aerial parts of *Lithospermum canescens.*

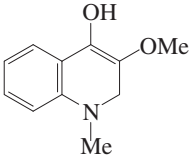
3′-Epimer, $O^{3'}$-*Me:* see Heliotrine, H-95

2′,3′-Diepimer: ***Isoechinatine***
$C_{15}H_{25}NO_5$ 299.366
Alkaloid from *Cynoglossum furcatum*. Pale yellow gum. $[\alpha]_D^{20}$ +4.2 (c, 0.6 in EtOH).

Men'shikov, G.P. *et al., CA*, 1955, **49**, 5496 (*isol, struct*)
Akramov, S.T. *et al., CA*, 1962, **57**, 16676; 1964, **61**, 11005 (*isol, struct, Rinderine*)
Culvenor, C.C.J. *et al., Aust. J. Chem.*, 1965, **18**, 1625-1637 (*pmr*)
Locock, R.A. *et al., J. Nat. Prod.*, 1966, **29**, 201-205 (*isol, Rinderine*)
Pedersen, G. *et al., Org. Mass Spectrom.*, 1970, **4**, 249-256 (*ms*)
Hrbek, J. *et al., Coll. Czech. Chem. Comm.*, 1972, **37**, 3918-3935 (*cd*)
Suri, O.P. *et al., Indian J. Chem.*, 1975, **13**, 505-507 (*7-Acetylechinatine*)
Pedersen, E. *et al., Phytochemistry*, 1975, **14**, 2086-2087 (*isol*)
Jones, A.J. *et al., Aust. J. Chem.*, 1982, **35**, 1173-1184 (*cmr*)
Sadykov, Yu.D. *et al., CA*, 1985, **102**, 218363s (*isol, oxide*)
Glinski, J.A. *et al., Tet. Lett.*, 1985, **26**, 2857-2860 (*synth*)
Gable, R.W. *et al., Acta Cryst. C*, 1988, **44**, 1478-1481 (*cryst struct*)
Asibal, C.F. *et al., J. Nat. Prod.*, 1989, **52**, 109-118 (*Cynoglossamine*)
Liu, K. *et al., Phytochemistry*, 1992, **31**, 2573-2574 (*7-O-Acetylrinderine*)
Logie, C.G. *et al., Phytochemistry*, 1994, **37**, 43-109 (*rev, pmr*)
Wiedenfeld, H. *et al., Z. Naturforsch., C*, 2003, **58**, 173-176 (*Canescine, Canescenine*)
Ravikumar, R. *et al., Indian J. Chem., Sect. B*, 2004, **43**, 406-409 (*Isoechinatine*)

Echinine† E-13

1,2-Dihydro-3-methoxy-1-methyl-4-quinolinol, 9CI. 1,2-Dihydro-4-hydroxy-3-methoxy-1-methylquinoline
[28789-22-2]



$C_{11}H_{13}NO_2$ 191.229

Alkaloid from the seeds of *Echinops ritro*. Component of Lou Lu. Oil.

Doepke, W. *et al., Pharmazie*, 1969, **24**, 782

Echinobetaine A E-14

$MeOCH_2CH(COO^{\ominus})CH_2N^{\oplus}Me_3$

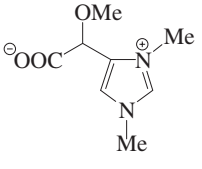
$C_8H_{17}NO_3$ 175.227

Isol. from the sponge *Echinodictyum* sp. Nematocide. $[\alpha]_D^{22}$ -49 (c, 0.6 in MeOH).

Capon, R.J. *et al., J. Nat. Prod.*, 2005, **68**, 179-182 (*isol, synth*)

Echinobetaine B E-15

*4-(Carboxymethoxymethyl)-1,3-dimethyl-1*H*-imidazolium hydroxide inner salt*



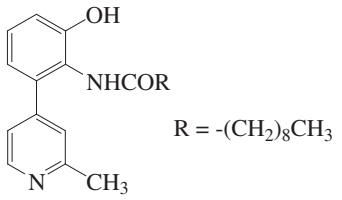
$C_8H_{12}N_2O_3$ 184.194

Positve charge delocalised over the two Ns. Isol. from the sponge *Echinodictyum* sp. Nematocidal agent. $[\alpha]_D$ +30 (c, 0.6 in MeOH) (as TFA salt). λ_{max} 214 (ϵ 2340) (MeOH) (TFA salt).

Capon, R.J. *et al., Org. Biomol. Chem.*, 2005, **3**, 118-122 (*isol, synth, pmr, cmr*)

Echinoclathrine A **E-16**

[223774-66-1]



$C_{22}H_{30}N_2O_2$ 354.491

Alkaloid from the Okinawan sponge *Echinoclathria* sp. Immunosuppressant. Amorph. solid (hexane/EtOAc). Mp 143-144°. λ_{max} 256 (ϵ 7500) (MeOH).

Kitamura, A. *et al., Tetrahedron*, 1999, **55**, 2487-2492 (*isol, uv, ir, pmr, cmr, ms*)

Echinoclathrine C **E-17**

[223775-02-8]

As Echinoclathrine A, E-16 with

R = $-(CH_2)_{11}CH_2SH$

$C_{25}H_{36}N_2O_2S$ 428.638

Alkaloid from the Okinawan sponge *Echinoclathria* sp. Amorph. solid (hexane/EtOAc). Mp 121-122°. λ_{max} 259 (ϵ 11700) (MeOH).

S-*Ac:* ***Echinoclathrine B***

[223774-86-5]

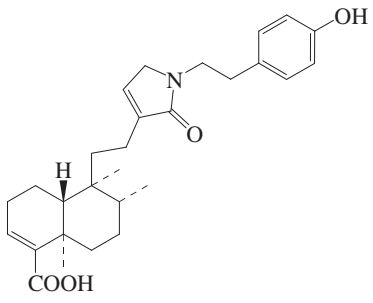
$C_{27}H_{38}N_2O_3S$ 470.675

Alkaloid from an *Echinoclathria* sp. Immunosuppressant. Amorph. solid (hexane/EtOAc). Mp 135-136°. λ_{max} 257 (ϵ 4200) (MeOH).

Kitamura, A. *et al., Tetrahedron*, 1999, **55**, 2487-2492 (*isol, uv, ir, pmr, cmr, ms*)

Echinophyllin A **E-18**

[276690-69-8]



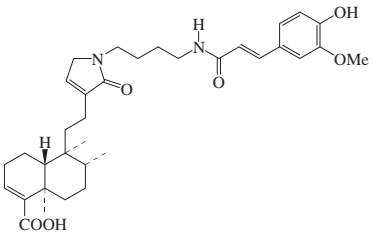
$C_{28}H_{37}NO_4$ 451.605

Constit. of *Echinodorus macrophyllus.* Amorph. solid. $[\alpha]_D^{23}$ -53.4 (c, 0.73 in MeOH).

Kobayashi, J. *et al., Tet. Lett.*, 2000, **41**, 2939-2943 (*isol, pmr, cmr*)

Echinophyllin B **E-19**

[276690-70-1]



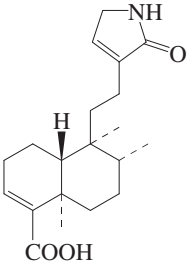
$C_{34}H_{46}N_2O_6$ 578.747

Constit. of *Echinodorus macrophyllus.* Amorph. solid. $[\alpha]_D^{23}$ -26.3 (c, 0.25 in MeOH).

Kobayashi, J. *et al., Tet. Lett.*, 2000, **41**, 2939-2943 (*isol, pmr, cmr*)

Echinophyllin C **E-20**

[310433-44-4]



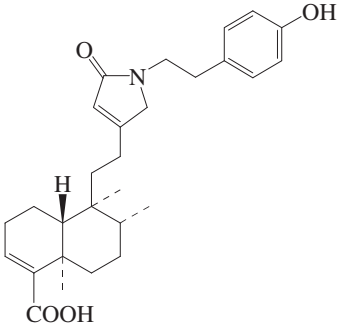
$C_{20}H_{29}NO_3$ 331.454

Constit. of *Echinodorus macrophyllus.* Amorph. solid. $[\alpha]_D^{23}$ -25.9 (c, 0.22 in MeOH). λ_{max} 213 (log ϵ 3.85) (MeOH).

Kobayashi, J. *et al., J. Nat. Prod.*, 2000, **63**, 1576-1579 (*isol, pmr, cmr*)

Echinophyllin D **E-21**

[310433-45-5]



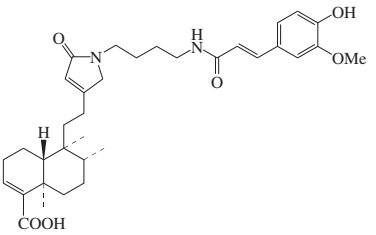
$C_{28}H_{37}NO_4$ 451.605

Constit. of *Echinodorus macrophyllus.* Amorph. solid. $[\alpha]_D^{23}$ -23.6 (c, 0.3 in EtOH). λ_{max} 213 (log ϵ 4.03); 280 (log ϵ 3.2) (MeOH).

Kobayashi, J. *et al., J. Nat. Prod.*, 2000, **63**, 1576-1579 (*isol, pmr, cmr*)

Echinophyllin E **E-22**

[310433-47-7]



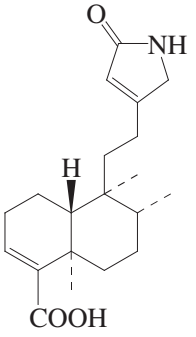
$C_{34}H_{46}N_2O_6$ 578.747

Constit. of *Echinodorus macrophyllus.* Amorph. solid. $[\alpha]_D^{23}$ -62.7 (c, 0.3 in EtOH). λ_{max} 210 (log ϵ 4.02); 291 (log ϵ 3.45); 316 (log ϵ 3.45) (MeOH).

Kobayashi, J. *et al., J. Nat. Prod.*, 2000, **63**, 1576-1579 (*isol, pmr, cmr*)

Echinophyllin F **E-23**

[310433-49-9]



$C_{20}H_{29}NO_3$ 331.454

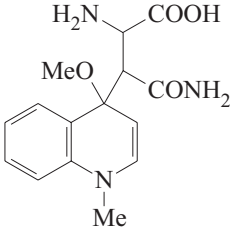
Constit. of *Echinodorus macrophyllus.* Amorph. solid. $[\alpha]_D^{23}$ -34.5 (c, 0.17 in MeOH). λ_{max} 213 (log ϵ 4.01) (MeOH).

Kobayashi, J. *et al., J. Nat. Prod.*, 2000, **63**, 1576-1579 (*isol, pmr, cmr*)

Echinoramine I **E-24**

α-Amino-β-(aminocarbonyl)-1,4-dihydro-4-methoxy-1-methyl-4-quinolinepropanoic acid, 9CI

[59669-20-4]



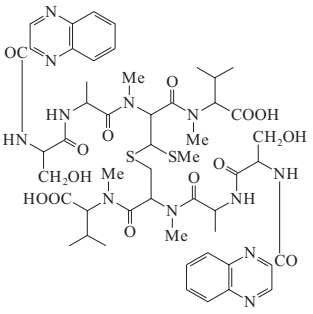
$C_{15}H_{19}N_3O_4$ 305.333

Alkaloid from *Echinops* spp.

Pham Thanh, Ky. *et al., Biochem. Physiol. Pflanz.*, 1976, **169**, 461 (*isol*)

Echinoserine E-25

[167324-03-0]



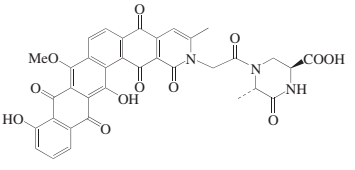
$C_{51}H_{68}N_{12}O_{14}S_2$ 1137.302

Non-cyclic form of Quinomycin A, Q-58 but not a biosynth. precursor. Prod. by *Streptomyces tendae*. Biol. less active than Quinomycin A, Q-58. λ_{max} 242 ; 320 (MeOH) (Berdy).

Blum, S. *et al., J. Antibiot.*, 1995, **48**, 619 (*isol, struct, props*)

Echinosporamicin E-26

[754983-47-6]



Relative Configuration

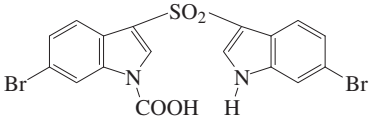
$C_{35}H_{25}N_3O_{12}$ 679.595

Prod. by *Micromonospora echinospora* ssp. *echinospora* LL-P175. Active against gram-positive bacteria incl. MRSA. Amorph. red powder. λ_{max} 248 ; 276 (sh) ; 325 ; 470 ; 490 (sh) (MeCN aq.).

He, H. *et al., Helv. Chim. Acta*, 2004, **87**, 1385-1391 (*isol, pmr, cmr*)

Echinosulfone A E-27

[246037-89-8]



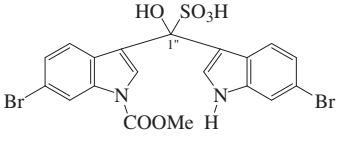
$C_{17}H_{10}Br_2N_2O_4S$ 498.151

Isol. from the sponge *Echinodictyum* sp. Orange oil. λ_{max} 221 (ϵ 42000); 250 (sh) (ϵ 14000); 280 (ϵ 17000); 320 (sh) (ϵ 9000) (MeOH).

Ovenden, S.P.B. *et al., J. Nat. Prod.*, 1999, **62**, 1246-1249 (*isol, ir, pmr, cmr, uv*)

Echinosulfonic acid C E-28

[246037-85-4]



$C_{19}H_{14}Br_2N_2O_6S$ 558.203

Isol. from the sponge *Echinodictyum* sp. Antibacterial agent. Orange oil. λ_{max} 222 (ϵ 47000); 276 (ϵ 8800) (MeOH).

1′′-Me ether: ***Echinosulfonic acid B***
[246037-60-5]
$C_{20}H_{16}Br_2N_2O_6S$ 572.23
Isol. from *Echinodictyum* sp. and *Psammoclemma* sp. Orange oil. λ_{max} 223 (ϵ 39000); 276 (ϵ 8000) (MeOH).

1′′-Et ether: ***Echinosulfonic acid A***
[246036-86-2]
$C_{21}H_{18}Br_2N_2O_6S$ 586.257
Isol. from *Echinodictyum* sp. Orange oil. λ_{max} 223 (ϵ 42000); 276 (ϵ 8000) (MeOH).

1′′-Deoxy: ***Echinosulfonic acid D***
$C_{19}H_{14}Br_2N_2O_5S$ 542.204
Isol. from the sponge *Psammoclemma* sp. Cytotoxic. Brown amorph. solid. λ_{max} 285 (MeCN/trifluoroacetic acid).

Ovenden, S.P.B. *et al., J. Nat. Prod.*, 1999, **62**, 1246-1249 (*isol, ir, pmr, cmr, uv*)

Rubnov, S. *et al., Nat. Prod. Res.*, 2005, **19**, 75-79; 2006, **20**, 517 (*Echinosulfonic acid D*)

Echinozolinone E-29

$C_{10}H_{10}N_2O_2$ 190.201

Struct. unknown. Originally considered as 3-(2-Hydroxyethyl)-4(3*H*)-quinazolinone but props. of authentic synthetic material differ from those reported for natural Echinozolinone. The isomeric struct., 1-(2-Hydroxyethyl)-4(1*H*)-quinazolinone has also been excluded by synthesis. Alkaloid from aerial parts of *Echinops echinatus* (Asteraceae). Pale-yellow needles ($CHCl_3$/MeOH). Mp 150°.

7-Hydroxy: ***7-Hydroxyechinozolinone***
[125386-83-6]
$C_{10}H_{10}N_2O_3$ 206.201
Minor alkaloid from flowers of *Echinops echinatus* (Asteraceae). Amorph. solid. Doubtful structural assignment (see statement under Echinozolinone above).

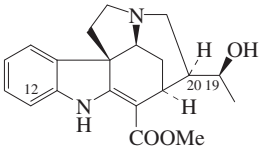
Chaudhuri, P.K. *et al., Phytochemistry*, 1987, **26**, 587-589

Reisch, J. *et al., J. Nat. Prod.*, 1989, **52**, 404-407

Chaudhuri, P.K. *et al., J. Nat. Prod.*, 1992, **55**, 249-250 (*7-Hydroxyechinozolinone*)

Echitamidine E-30

Methyl 2,16-didehydro-19-hydroxycuran-17-oate, 9CI. 19,20-Dihydro-19-hydroxyakuammicine
[38681-90-2]



(-)-*form*

$C_{20}H_{24}N_2O_3$ 340.421

Alkaloid from the bark of *Alstonia congensis*, also from *Alstonia angustiloba*, *Alstonia pneumatophora* and *Winchia calophylla*. Hypotensive agent. Plates (Et_2O). Mp 135° (softens at 122°).

Hydrochloride: Mp 179° dec.

Picrate: Mp 218-219°.

N^b-*Oxide:* ***Echitamidine N^b-oxide***
$C_{20}H_{24}N_2O_4$ 356.421
Alkaloid from stem bark of *Alstonia glaucescens* (Apocynaceae). Needles (EtOAc/MeOH). Mp 187-188°. $[\alpha]_D^{20}$ -475 (c, 0.17 in MeOH).

N^b-*Oxide, 19-*O-*β-D-glucopyranoside:* ***Echitamidine N^b-oxide 19-glucoside***
[761445-63-0]
$C_{26}H_{34}N_2O_9$ 518.563
Alkaloid from *Alstonia scholaris*. Amorph. light yellow powder. $[\alpha]_D^{25}$ -148.4 (c, 0.35 in MeOH). λ_{max} 246 (log ϵ 3.35); 293 (log ϵ 3.56) (MeOH).

N^a-*Formyl:* ***N^a-Formylechitamidine***
[90706-49-3]
$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from stem bark of *Alstonia boonei* (Apocynaceae). Cryst. (EtOAc/hexane). Mp 171-173°. $[\alpha]_D^{25}$ -163 (c, 0.8 in EtOH).

Parent acid, N^b-*Me:* ***17-Carboxy-N^b-methylechitamidine***
$C_{20}H_{25}N_2O_3^{\oplus}$ 341.429
Quaternary alkaloid from the stem bark of *Winchia calophylla*. Amorph. solid (as chloride). $[\alpha]_D^{20}$ -207 (c, 0.52 in H_2O) (chloride). λ_{max} 219 (log ϵ 3.92); 287 (log ϵ 3.81); 314 (log ϵ 3.71) (H_2O) (chloride).

12-Hydroxy, N^b-*Me:* ***N^b-Methylscholaricine***
[132923-07-0]
$C_{21}H_{27}N_2O_4^{\oplus}$ 371.455
Alkaloid from leaves of *Alstonia scholaris*. Solid. $[\alpha]_D^{26}$ -232.7 (c, 0.85 in MeOH). Counterion not specified.

12-Methoxy: ***Scholarine***
[90762-31-5]
[78897-55-9 ((±)-form)]
$C_{21}H_{26}N_2O_4$ 370.447
Alkaloid from *Alstonia scholaris* (Apocynaceae). Cryst. (C_6H_6/Me_2CO). Mp 70°. $[\alpha]_D^{20}$ -421.3 (EtOH). Scholarine was also reported as a racemate from the same plant (and from the same department) as a brown amorph. solid, Mp. 205-206°. This information appears unreliable. The uv spectrum for this amorphous material also differs considerably from that for semisynthetic (-)-Scholarine reported by Oguakwa. λ_{max} 212 (log ϵ 4.7); 240 (log ϵ 4.57); 288 (log ϵ 4.11); 334 (log ϵ 4.58) (no solvent reported) (synthetic material). λ_{max} 235 (log ϵ 3.98); 291 (log ϵ 3.7); 335 (log ϵ 4.05) (EtOH).

12-Methoxy, N^b-*oxide:* ***Scholarine N^b-oxide***
$C_{21}H_{26}N_2O_5$ 386.447
Alkaloid from the leaves of *Alstonia scholaris*. $[\alpha]_D$ -280 (c, 0.534 in $CHCl_3$). Strictly the name Scholarine has been applied to the racemate (see below). λ_{max} 232 (log ϵ 3.95); 284 (log ϵ 3.51); 334 (log ϵ 3.78) (EtOH).

12-Methoxy, N^a-*formyl:* ***N^a-Formyl-12-methoxyechitamidine***
[90706-51-7]

Alkaloid from stem bark of *Alstonia boonei* (Apocynaceae). Cryst. (EtOAc/hexane). Mp 185-186°. $[\alpha]_D^{25}$ -133.3 (c, 0.8 in EtOH).

12-Methoxy, parent acid, N^b*-Me:* ***17-Carboxy-12-methoxy-N^b-methylechitamidine***
$C_{21}H_{27}N_2O_4^{\oplus}$ 371.455
Quaternary alkaloid from the stem bark of *Winchia calophylla*. Amorph. solid (as chloride). $[\alpha]_D^{20}$ -133 (c, 0.46 in H_2O) (chloride). λ_{max} 208 (log ε 4.04); 280 (log ε 3.63); 318 (log ε 3.67) (H_2O) (chloride).

20-Epimer: ***19ξ-Hydroxy-19,20R-dihydroakuammicine***. *20-Epi-19ξ-echitamidine*
[90318-84-6]
$C_{20}H_{24}N_2O_3$ 340.421
Minor alkaloid from *Alstonia angustiloba, Alstonia pneumatophora*, *Alstonia glaucescens* and *Alstonia undulifolia* (Apocynaceae). Amorph. 19-Config. uncertain.

20-Epimer, N^b*-Me:* ***19-Epialstogustine***
[125249-28-7]
$C_{21}H_{27}N_2O_3^{\oplus}$ 355.456
Quaternary alkaloid from the stem bark of *Alstonia angustifolia* (Apocynaceae). Cryst. (1-propanol) (as chloride). Mp 249° (chloride). $[\alpha]_D^{22}$ -467 (c, 1.05 in MeOH).

20-Epimer, 12-hydroxy: ***Scholaricine***
[99694-90-3]
$C_{20}H_{24}N_2O_4$ 356.421
Alkaloid from the leaves of *Alstonia scholaris* (Apocynaceae). Mp 180° dec. $[\alpha]_D$ -200 ($CHCl_3$).

19,20-Diepimer: ***N^b-Demethylalstogustine***
[125276-63-3]
$C_{20}H_{24}N_2O_3$ 340.421
Alkaloid from the stem bark of *Alstonia angustifolia* and *Winchia calophylla*. Mp 161-163°. $[\alpha]_D^{22}$ -442.4 (c, 0.55 in EtOH).

19,20-Diepimer, N^b*-oxide:* ***N^b-Demethylalstogustine* N-*oxide***
[125205-50-7]
$C_{20}H_{24}N_2O_4$ 356.421
Alkaloid from the stem bark of *Alstonia angustifolia* (Apocynaceae). Mp 233.7-233.8°. $[\alpha]_D^{22}$ -429.3 (c, 0.73 in $CHCl_3$).

19,20-Diepimer, N^b*-Me:* ***Alstogustine***
[125227-44-3]
$C_{21}H_{27}N_2O_3^{\oplus}$ 355.456
Quaternary alkaloid from stem bark of *Alstonia angustifolia* (Apocynaceae). Cryst. (EtOH) (as chloride). Mp 231.2-231.7° (chloride). $[\alpha]_D^{22}$ -442 (c, 0.90 in MeOH).

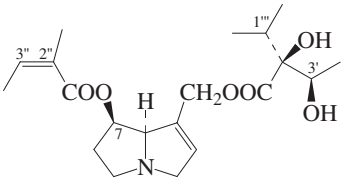
19,20-Diepimer, 12-hydroxy: ***19-Epischolaricine***
[132923-06-9]
$C_{20}H_{24}N_2O_4$ 356.421
Alkaloid from leaves of *Alstonia scholaris*. Prisms (MeOH). Mp 210-230°. $[\alpha]_D^{28}$ -322.4 (c, 0.17 in MeOH).

19,20-Diepimer, 12-methoxy: ***N^b-Demethyl-12-methoxyalstogustine***
$C_{21}H_{26}N_2O_4$ 370.447
Alkaloid from the stem bark of *Winchia calophylla*. Amorph. solid. $[\alpha]_D^{20}$ -442 (c, 0.48 in $CHCl_3$). λ_{max} 211 (log ε 4.27); 290 (log ε 3.75); 333 (log ε 4.18) (H_2O).

Goodson, J.A. *et al., J.C.S.*, 1932, 2626-2630 (*isol*)
Raymond-Hamet, M. *et al., C. R. Hebd. Seances Acad. Sci.*, 1951, **233**, 560-562 (*uv*)
Djerassi, C. *et al., Tet. Lett.*, 1962, **5**, 653-659 (*struct, ir, ms, pmr*)
Banerji, A. *et al., Phytochemistry*, 1981, **20**, 540-542 (*(±)-Scholarine*)
Oguakwa, J.U. *et al., Gazz. Chim. Ital.*, 1983, **113**, 533-535 (*Alstonia boonei constits*)
Banerji, J. *et al., Indian J. Chem., Sect. B*, 1984, **23**, 455 (*Scholarine*)
Zeches, M. *et al., Tet. Lett.*, 1984, **25**, 659-662 (*cmr, config, cryst struct*)
Atta-ur-Rahman, *et al., Phytochemistry*, 1985, **24**, 2771-2773 (*Scholaricine*)
Hu, W. *et al., Phytochemistry*, 1989, **28**, 1963-1966 (*Alstogustine, 19-Epialstogustine*)
Hu, W.-L. *et al., Planta Med.*, 1989, **55**, 463-464 (*N^b-Demethylalstogustine, N^b-Demethylalstogustine N-oxide*)
Yamauchi, T. *et al., Phytochemistry*, 1990, **29**, 3547-3552 (*19-Epischolaricine, N^b-Methylscholaricine*)
Keawpradub, N. *et al., Phytochemistry*, 1994, **37**, 1745-1749 (*oxide*)
Bonjoch, J. *et al., J.A.C.S.*, 1997, **119**, 7230-7240 (*synth*)
Kam, T.-S. *et al., Phytochemistry*, 1997, **45**, 1303-1305 (*Scholarine N^b-oxide*)
Salim, A.A. *et al., J. Nat. Prod.*, 2004, **67**, 1591-1594 (*N-oxide, N-oxide glucoside, N-Demethylalstogustine*)
Gan, L.-S. *et al., J. Nat. Prod.*, 2006, **69**, 18-22 (*Winchia calophylla alkaloids*)

Echiumine E-31

[633-16-9]



$C_{20}H_{31}NO_6$ 381.468
Alkaloid from *Echium plantagineum*, *Amsinckia intermedia*, *Cryptantha leiocarpa* and *Cryptantha clevelandii* (Boraginaceae). Cryst. (petrol) (also descr. as a brown gum). Mp 99-100°. $[\alpha]_D$ +14.4 (c, 2.02 in EtOH).

Picrate:
Cryst. (EtOH aq.). Mp 131-132°.

*2″*R*,3″*R*-Epoxide:* ***2″,3″-Epoxyechiumine***
[150072-70-1]
$C_{20}H_{31}NO_7$ 397.467
Alkaloid from *Cryptantha leiocarpa* and *Cryptantha clevelandii* (Boraginaceae). Brown gum.

*2″,3″-Dihydro, 2″*R*∗,3″*S*∗-dihydroxy:* **threo-*2″,3″-Dihydroxyechiumine***
[150072-69-8]
$C_{20}H_{33}NO_8$ 415.483
Alkaloid from *Cryptantha leiocarpa* and *Cryptantha clevelandii* (Boraginaceae). Brown gum.

*2″,3″-Dihydro, 2″*R*∗-hydroxy, 3″*S*∗-chloro:* **erythro-*3″-Chloro-2″-hydroxyechiumine***
[150044-60-3]
$C_{20}H_{32}ClNO_7$ 433.928
Alkaloid from *Cryptantha leiocarpa* and *Cryptantha clevelandii* (Boraginaceae). Brown gum.

*2″*E*-Isomer:* ***Myoscorpine***
[82535-76-0]
$C_{20}H_{31}NO_6$ 381.468
Alkaloid from aerial parts of *Myosotis scorpioides*. Isol. only as a mixt. with symphytine. Ester of retronecine with tiglic and trachelanthic acids.

*2″*E*-Isomer,* N*-oxide:* ***Myoscorpine* N-*oxide***
$C_{20}H_{31}NO_7$ 397.467
Alkaloid from *Echium pininana* (Boraginaceae). Gum. $[\alpha]_D$ +4.1 (c, 1 in EtOH).

*2″*E*-Isomer, 1‴-hydroxy:* ***Hydroxymyoscorpine***
[126642-92-0]
$C_{20}H_{31}NO_7$ 397.467
Alkaloid from roots of *Lithospermum erythrorhizon* (Boraginaceae). $[\alpha]_D$ +2.2 (c, 0.2 in EtOH).

7-Epimer: ***7-Angelylheliotridine trachelanthate***
$C_{20}H_{31}NO_6$ 381.468
Minor alkaloid from *Heliotropium supinum* (Boraginaceae). Diester of Heliosupine with angelic and trachelanthic acids. Obt. only as a mixt. with 7-Angelylheliotridine viridiflorate.

3′-Epimer: ***Symlandine***
[74410-74-5]
$C_{20}H_{31}NO_6$ 381.468
Alkaloid from leaves of *Symphytum* x *uplandicum* (hybrid of *Symphytum officinale* and *Symphytum asperum*) (Boraginaceae). Gum. $[\alpha]_D$ +4.4 (c,0.3 in $CHCl_3$).

*3′-Epimer, 2″*E*-isomer:* ***Symphytine***
[22571-95-5]
$C_{20}H_{31}NO_6$ 381.468
Alkaloid from dried roots of *Symphytum officinale* and from aerial parts of *Myosotis scorpioides* (Boraginaceae). Glass or oil. $[\alpha]_D^{24}$ +3.65 (c, 4.28 in EtOH).

▶ EM9252500

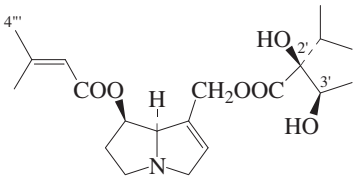
3′,7-Diepimer: ***7-Angelylheliotridine viridiflorate***. *7-Angelyl-9-viridiflorylheliotridine*
$C_{20}H_{31}NO_6$ 381.468
Minor alkaloid from *Heliotropium supinum* (Boraginaceae). Diester of Heliosupine with angelic and viridifloric acids. Obt. only as a mixt. with 7-Angelylheliotridine trachelanthate.

Culvenor, C.C.J. *et al., Aust. J. Chem.*, 1956, **9**, 512; 1959, **12**, 694; 1966, **19**, 1955; 1980, **33**, 1105 (*Echiumine, Symlandine*)
Furuya, T. *et al., Chem. Pharm. Bull.*, 1968, **16**, 2512 (*Symphytine*)
Šimánek, V. *et al., Coll. Czech. Chem. Comm.*, 1969, **34**, 1832 (*uv*)
Furuya, T. *et al., Phytochemistry*, 1971, **10**, 2217 (*Symphytine, isol*)
Resch, J. *et al., J. Nat. Prod.*, 1982, **45**, 358 (*Myoscorpine, Symphytine*)
Glinski, J.A. *et al., Tet. Lett.*, 1985, **26**, 2857 (*synth*)

Roeder, E. *et al., Phytochemistry*, 1990, **29**, 690; 1991, **30**, 3107 (*Hydroxymyoscorpine, Myoscorpine N-oxide*)
Stermitz, F.R. *et al., Phytochemistry*, 1993, **33**, 383 (*Epoxyechiumine, 2″,3″-Dihydroxyechiumine, 3″-Chloro-2″-hydroxyechiumine*)
Logie, C.G. *et al., Phytochemistry*, 1994, **37**, 43-109 (*rev, pmr*)
Kim, N.-C. *et al., J. Nat. Prod.*, 2001, **64**, 251-253 (*Symlandine, Symphytine, isol, pmr, cmr*)

Echiupinine E-32

[138590-57-5]



$C_{20}H_{31}NO_6$ 381.468
Alkaloid from *Echium pininana* (Boraginaceae). Gum. $[\alpha]_D$ -15 (c, 0.1 in EtOH).

N-*Oxide:* ***Echiupinine* N-*oxide***
[138590-58-6]
$C_{20}H_{31}NO_7$ 397.467
Alkaloid from *Echium pininana* (Boraginaceae). Gum. $[\alpha]_D$ -8.5 (c, 1 in EtOH).

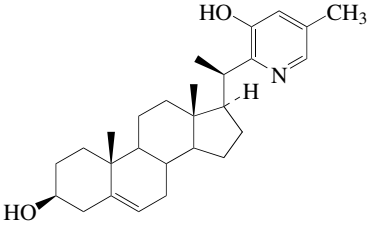
4‴-Hydroxy: ***Pycnanthine***†
[176391-55-2]
$C_{20}H_{31}NO_7$ 397.467
Alkaloid from *Echium humile*. Oil. $[\alpha]_D$ +4 (c, 0.1 in EtOH).

3′-Epimer: ***Symviridine***
[145774-76-1]
$C_{20}H_{31}NO_6$ 381.468
Alkaloid from roots of *Symphytum officinale*, *Symphytum asperum* and *Symphytum* x *uplandicum*. Gum. $[\alpha]_D$ -8 (c, 0.1 in EtOH).

Roeder, E. *et al., Phytochemistry*, 1991, **30**, 3107-3110; 1992, **31**, 4041-4042 (*Echiupinine, Symviridine*)
El-Shazly, A. *et al., Phytochemistry*, 1996, **42**, 225-230 (*Pycnanthine*)

Ecliptalbine E-33

[215805-00-8]

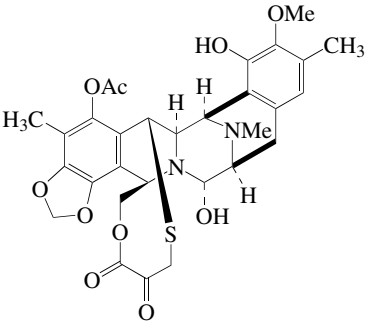


$C_{27}H_{39}NO_2$ 409.611
Alkaloid from *Solanum surinamense*. Powder (MeOH). Mp 275-278°. $[\alpha]_D^{26}$ -77 (c, 0.41 in MeOH). Original plant source incorrectly identified in 1998. λ_{max} 203 (log ϵ 4.1); 290 (log ϵ 3.8) (MeOH). λ_{max} 203 (ϵ 12600); 290 (ϵ 6300) (MeOH) (Berdy).

Abdel-Kader, M.S. *et al., J. Nat. Prod.*, 1998, **61**, 1202-1208; 2000, **63**, 1184 (*isol, uv, pmr, cmr, ms*)

Ecteinascidin 594 E-34

[184300-09-2]

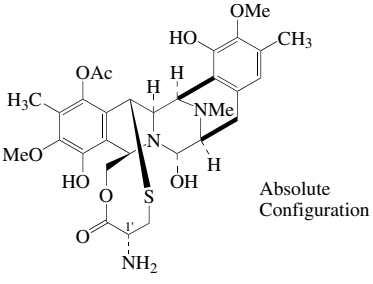


$C_{30}H_{32}N_2O_{10}S$ 612.656
Isol. from the Caribbean tunicate *Ecteinascidia turbinata*. Shows potent inhibition of DNA and RNA synth. and of RNA polymerase activity. Weakly cytotoxic against several cell lines. Light yellow solid. $[\alpha]_D^{22}$ -58 (c, 1.1 in MeOH). λ_{max} 207 (ϵ 60500); 230 (sh) (ϵ 11000); 287 (ϵ 2900) (MeOH).

Sakai, R. *et al., J.A.C.S.*, 1996, **118**, 9017-9023 (*isol, uv, pmr, cmr, ms, struct*)

Ecteinascidin 597 E-35

[184300-07-0]



Absolute Configuration

$C_{30}H_{37}N_3O_9S$ 615.703
Isol. from the Caribbean tunicate *Ecteinascidia turbinata*. Shows potent inhibition of DNA and RNA synthesis and of RNA polymerase activity. Weakly cytotoxic against several cell lines. Light brown solid. $[\alpha]_D^{25}$ -49 (c, 0.17 in MeOH). λ_{max} 207 (ϵ 46000); 230 (sh) (ϵ 15000); 278 (ϵ 3500); 285 (ϵ 3800) (no solvent reported). λ_{max} 207 (ϵ 46000); 278 (ϵ 3500); 285 (ϵ 3800) (MeOH) (Berdy).

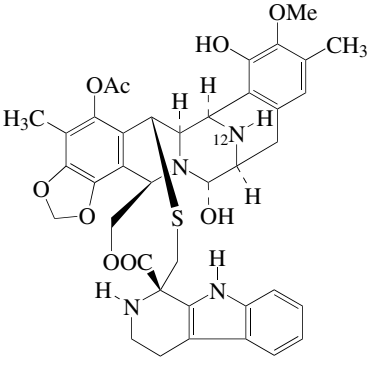
N-*De-Me:* ***Ecteinascidin 583***
[184300-08-1]
$C_{29}H_{35}N_3O_9S$ 601.676
From *Ecteinascidia turbinata*. Shows potent inhibition of DNA and RNA synthesis and of RNA polymerase activity. Weakly cytotoxic against several cell lines. Light yellow solid. $[\alpha]_D^{22}$ -47 (c, 0.14 in $CHCl_3$/MeOH, 6:1). λ_{max} 207 (ϵ 48000); 230 (sh) (ϵ 9200); 280 (ϵ 2100); 290 (ϵ 2300) (no solvent reported). λ_{max} 207 (ϵ 48000); 280 (ϵ 2100); 290 (ϵ 2300) (MeOH) (Berdy).

1′-Deamino, 1′-oxo: ***Ecteinascidin 596***
[184300-10-5]
$C_{30}H_{34}N_2O_{10}S$ 614.672
Trace constit. of *Ecteinascidia turbinata*. Observed only in a mixt. as a MeOH adduct. Tentative struct.

Sakai, R. *et al., J.A.C.S.*, 1996, **118**, 9017-9023 (*isol, uv, ir, cd, pmr, cmr, ms*)
Chen, J. *et al., Angew. Chem., Int. Ed.*, 2006, **45**, 8028-8032 (*synth*)

Ecteinascidin 722 E-36

[144285-84-7]



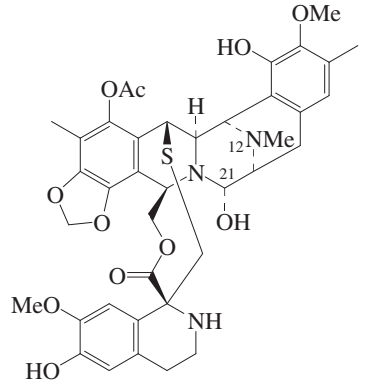
$C_{39}H_{40}N_4O_9S$ 740.832
Isol. from the tunicate *Ecteinascidia turbinata*. Cytotoxic agent. Yellow powder. Mp 160-164°. $[\alpha]_D$ -40 (c, 1.64 in $CHCl_3$).

N^{12}-*Me:* ***Ecteinascidin 736***
[144285-85-8]
$C_{40}H_{42}N_4O_9S$ 754.859
Isol. from *Ecteinascidia turbinata*. Cytotoxic agent. Fine needles (MeCN aq.). Mp 140-150° dec. $[\alpha]_D$ -76 (c, 0.5 in $CHCl_3$).

Pat. Coop. Treaty (WIPO), 1992, 92 09 607; *CA*, **117**, 205189z (*isol*)
Sakai, R. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 1992, **89**, 11456-11460 (*isol*)

Ecteinascidin 743 E-37

Trabectedin, INN, USAN*. Yondelis. ET 743. NSC 648766*
[114899-77-3]



$C_{39}H_{43}N_3O_{11}S$ 761.848
Alkaloid from the ascidian *Ecteinascidia*

turbinata. Antineoplastic agent. Investigated for treatment of a variety of human tumours incl. soft tissue sarcomas, osteosarcoma, melanoma and breast cancer. Mechanisms of action include inhibition of minor-groove-interacting transcription factors. Sol. MeOH, CH_2Cl_2, C_6H_6; poorly sol. hexane, H_2O. λ_{max} 203 (ϵ 62000); 240 (sh) (ϵ 9000); 288 (ϵ 6500) (0.1*N* HCl) (Derep). λ_{max} 235 (ϵ 38000); 252 (sh) (ϵ 9000); 295 (ϵ 6500) (0.1*N* KOH) (Derep). λ_{max} 202 (ϵ 81000); 240 (sh) (ϵ 15000); 287 (ϵ 6200) (MeOH) (Derep). λ_{max} 202 (ϵ 81000); 284 (ϵ 6600); 289 (ϵ 6400) (MeOH) (Berdy).

S-*Oxide:* ***Ecteinascidin 759B***
[114899-29-5]
$C_{39}H_{43}N_3O_{12}S$ 777.848
From *Ecteinascidia turbinata*. Antineoplastic agent. Struct. revised in 2002. Formerly thought to be an *N*-oxide.

N^{12}-*Oxide:* ***Ecteinascidin 759C***. *ET 759C*
[146663-68-5]
$C_{39}H_{43}N_3O_{12}S$ 777.848
From *Ecteinascidia turbinata*. Prisms (MeCN). Mp 150° dec. $[\alpha]_D^{25}$ -55 (c, 0.22 in $CHCl_3$).

N^{12}-*De-Me:* ***Ecteinascidin 729***
[114899-27-3]
$C_{38}H_{41}N_3O_{11}S$ 747.821
From tunicate *Ecteinascidia turbinata*. Antineoplastic agent, immunoregulator. Sol. MeOH, C_6H_6, CH_2Cl_2; poorly sol. hexane, H_2O. λ_{max} 203 (ϵ 62000); 240 (sh) (ϵ 9000); 288 (ϵ 6500) (0.1*N* HCl) (Derep). λ_{max} 235 (ϵ 38000); 252 (sh) (ϵ 9000); 295 (ϵ 6500) (0.1*N* KOH) (Derep). λ_{max} 202 (ϵ 81000); 240 (sh) (ϵ 15000); 287 (ϵ 6200) (MeOH) (Derep). λ_{max} 202 (ϵ 61000); 283 (ϵ 5000); 284 (ϵ 4700) (MeOH) (Berdy). λ_{max} 204 (ϵ 61000); 283 (ϵ 4800); 289 (ϵ 4300) (MeOH-HCl) (Berdy). λ_{max} 215 (ϵ 33800); 258 (ϵ 8200); 290 (ϵ 6400) (MeOH/NaOH) (Berdy).

21-Ketone: ***Ecteinascidin 759A***
[114899-30-8]
$C_{39}H_{41}N_3O_{11}S$ 759.832
From *Ecteinascidia turbinata*. Formerly thought to be an *N*-oxide.

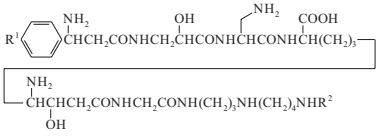
21-Deoxy: ***Ecteinascidin 745***
[114899-28-4]
$C_{39}H_{43}N_3O_{10}S$ 745.849
From *Ecteinascidia turbinata*. Antineoplastic agent, immunoregulator. Sol. MeOH, CH_2Cl_2, C_6H_6; poorly sol. hexane, H_2O. λ_{max} 202 (ϵ 52000); 281 (ϵ 5600); 287 (ϵ 5400) (MeOH) (Berdy). λ_{max} 204 (ϵ 51000); 281 (ϵ 5200); 287 (ϵ 5200) (MeOH/HCl) (Berdy). λ_{max} 215 (ϵ 36000); 254 (ϵ 8300); 290 (ϵ 5900); 298 (ϵ 5800) (MeOH/NaOH) (Berdy).

21-Deoxy, 21-cyano: ***Ecteinascidin 770***
[114899-80-8]
$C_{40}H_{42}N_4O_{10}S$ 770.859
From *Ecteinascidia turbinata* and *Ecteinascidia thurstoni*. Antineoplastic agent, immunoregulator. Prisms (MeOH). Sol. MeOH, CH_2Cl_2, C_6H_6; poorly sol. hexane, H_2O. Mp 216-218° dec. $[\alpha]_D^{24}$ -58.5 (c, 1 in $CHCl_3$). λ_{max} 216 (ϵ 66000); 234 (ϵ 55000); 240 (ϵ 58000); 263 (ϵ 25000); 299 (ϵ 22000); 329 (ϵ 3900); 342 (ϵ 3200) (MeOH) (Berdy). λ_{max} 216 (ϵ 71000); 234 (ϵ 57000); 240 (ϵ 58000); 263 (ϵ 29000); 299 (ϵ 24000); 329 (ϵ 5700); 342 (ϵ 4900) (MeOH/HCl) (Berdy). λ_{max} 216 (ϵ 57000); 234 (ϵ 57000); 240 (ϵ 58000); 263 (ϵ 28000); 299 (ϵ 22000); 329 (ϵ 4900); 342 (ϵ 3700) (MeOH/NaOH) (Berdy).

21-Deoxy, 21-cyano, S-*oxide:* ***Ecteinascidin 786***
[442851-31-2]
$C_{40}H_{42}N_4O_{11}S$ 786.858
From *Ecteinascidia thurstoni*. Prisms (MeOH). Mp 197-199° dec. $[\alpha]_D^{24}$ -156.9 (c, 0.6 in $CHCl_3$).

Wright, A.E. *et al., J.O.C.*, 1990, **55**, 4508 (*isol, struct*)
Rinehart, K.L. *et al., J.O.C.*, 1990, **55**, 4512-4515 (*isol, struct*)
Sakai, R. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 1992, **89**, 11456-11460 (*Ecteinascidin 759C*)
Kerr, R.G. *et al., J. Nat. Prod.*, 1995, **58**, 1618 (*biosynth*)
Jimeno, J.M. *et al., Drugs of the Future*, 1996, **21**, 1155-1165 (*rev*)
Sakai, R. *et al., J.A.C.S.*, 1996, **118**, 9017 (*cd, abs config*)
Corey, E.J. *et al., J.A.C.S.*, 1996, **118**, 9202 (*synth*)
Moore, B.M. *et al., J.A.C.S.*, 1997, **119**, 5475 (*drug-DNA adduct*)
Zewail-Foote, M. *et al., J. Med. Chem.*, 1999, **42**, 2493-2497 (*pharmacol*)
Saito, N. *et al., Chem. Pharm. Bull.*, 2000, **48**, 1549-4557 (*synth*)
Martinez, E.J. *et al., Org. Lett.*, 2000, **2**, 993-996 (*synth*)
Jin, S. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 2000, **97**, 6775-6779 (*pharmacol*)
Minuzzo, M. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 2000, **97**, 6780-6784 (*pharmacol*)
Jeedigunta, S. *et al., Tetrahedron*, 2000, **56**, 3303-3307 (*biosynth*)
Ryan, D.P. *et al., Clin. Cancer Res.*, 2001, **7**, 231-242 (*clin trial*)
Erba, E. *et al., Eur. J. Cancer*, 2001, **37**, 97-105 (*pharmacol*)
Zewail-Foote, M. *et al., J.A.C.S.*, 2001, **123**, 6485-6495 (*pharmacol*)
Cvetkovic, R.S. *et al., Drugs*, 2002, **62**, 1185-1192 (*rev*)
Suwanborirux, K. *et al., J. Nat. Prod.*, 2002, **65**, 935-937 (*Ecteinascidins 770, 786*)
Endo, A. *et al., J.A.C.S.*, 2002, **124**, 6552-6554 (*synth*)
Sainz-Diaz, C.I. *et al., Acta Cryst. C*, 2003, **59**, o197-o198 (*cryst struct*)
Nicolaou, K.C. *et al., Classics in Total Synthesis II: More Targets, Strategies, Methods*, Wiley-VCH, 2003, 109 (*rev, synth*)
Menchaca, R. *et al., J.O.C.*, 2003, **68**, 8859-8866 (*synth*)
Jimeno, J. *et al., Mar. Drugs*, 2004, **1**, 14-29 (*rev*)
Zheng, S. *et al., Angew. Chem., Int. Ed.*, 2006, **45**, 1754-1759 (*synth*)
Chen, J. *et al., J.A.C.S.*, 2006, **128**, 87-89 (*synth*)
Carter, N.J. *et al., Drugs*, 2007, **67**, 2257-2276 (*rev*)
Beumer, J.-H. *et al., Invest. New Drugs*, 2007, **25**, 1-7 (*pharmacol*)
Fishlock, D. *et al., J.O.C.*, 2008, **73**, 9594-9600 (*synth*)

Edeine E-38



A_1, R^1 = OH, R^2 = H
B_1, R^1 = OH, R^2 = $C(NH_2)=NH$
D, R^1 = R^2 = H
F, R^1 = H, R^2 = $C(NH_2)=NH$

Large peptide antibiotic. Several components have been isolated. Some strains producing one major component, others a mixt. Prod. from *Bacillus brevis* strains. Active against gram-positive and -negative bacteria, yeasts and fungi. Inhibits DNA and protein biosynth. by combining with nucleic acids.

Edeine A_1 [27656-72-0]
$C_{33}H_{58}N_{10}O_{10}$ 754.882
H_2O; fairly sol. MeOH; poorly sol. butanol, hexane. λ_{max} 240 (ϵ 5000); 290 (ϵ 4000) (MeOH/NaOH) (Derep). λ_{max} 270 (ϵ 3000) (MeOH/HCl) (Derep). λ_{max} 270 (H_2O) (Berdy). λ_{max} 270 (HCl) (Berdy). λ_{max} 240 ; 290 (NaOH) (Berdy).

Edeine B_1 [27656-73-1]
$C_{34}H_{60}N_{12}O_{10}$ 796.922
Sol. H_2O; poorly sol. butanol, hexane. λ_{max} 290 (ϵ 4000) (MeOH/NaOH) (Derep). λ_{max} 270 (ϵ 3000) (MeOH) (Derep). λ_{max} 270 (H_2O) (Berdy). λ_{max} 270 (HCl) (Berdy). λ_{max} 240 ; 290 (NaOH) (Berdy).

Edeine C [66524-52-5]
A minor component of undefined struct.

Edeine D [40627-96-1]
$C_{33}H_{58}N_{10}O_9$ 738.883
Sol. H_2O, MeOH; poorly sol. butanol, hexane. λ_{max} 240 (ϵ 5000); 290 (ϵ 4000) (MeOH/NaOH) (Derep). λ_{max} 270 (ϵ 3000) (MeOH/HCl) (Derep).

Decarboxy:
$C_{32}H_{58}N_{10}O_7$ 694.873
Shows similar activity to Edeine D.

Edeine E [66524-53-6]
A minor component of undefined struct.

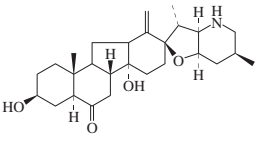
Edeine F [71750-64-6]
$C_{34}H_{60}N_{12}O_9$ 780.923
Also prepd. by amidation of Edeine D. Sol. H_2O; poorly sol. hexane, butanol. λ_{max} 290 (ϵ 4000) (MeOH/NaOH) (Derep). λ_{max} 270 (ϵ 3000) (MeOH) (Derep).

Borowski, E. *et al., Biochim. Biophys. Acta*, 1966, **130**, 560 (*isol*)
Borowski, E. *et al., Chemotherapy (Basel)*, 1967, **12**, 12 (*isol*)
Hettinger, T.P. *et al., Ann. N.Y. Acad. Sci.*, 1970, **171**, 1002 (*props*)
Hettinger, T.P. *et al., Biochemistry*, 1970, **9**, 1224 (*struct*)
Wojciechowska, H. *et al., Experientia*, 1972, **28**, 1423 (*isol, ms*)
Kurylo-Borowska, Z. *et al., Antibiotics*, (Corcoran, J.W., Ed.), Springer, N.Y., 1975, **3**, 129 (*rev*)

Polish Pat., 1977, 88 098; *CA*, **89**, 4528 (*isol*)
Laland, S.G. *et al., Bioact. Pept. Prod. Microorg.*, (Umezawa, H., Ed.), 1978, 7 (*biosynth*)
Wojciechowska, H. *et al., CA*, 1978, **92**, 111285 (*synth*)
Polish Pat., 1978, 99 496; *CA*, **91**, 193648 (*isol*)
Mazeroski, J. *et al., J. Antibiot.*, 1981, **34**, 28 (*props*)
Wojciechowska, H. *et al., J. Antibiot.*, 1983, **36**, 793 (*struct*)
Czerwinski, A. *et al., J. Antibiot.*, 1983, **36**, 1001 (*synth*)
Gumieniak, J. *et al., J. Antibiot.*, 1983, **36**, 1239 (*props*)
Kurylo-Borowska, Z. *et al., Methods Enzymol.*, 1983, **94**, 441 (*isol, rev*)
Wojciechowska, H. *et al., Int. J. Pept. Protein Res.*, 1985, **26**, 279 (*struct*)

Edpetine E-39

[27317-54-0]



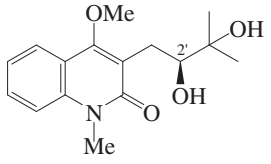
Absolute Configuration

$C_{27}H_{41}NO_4$ 443.625
Alkaloid from *Petilium eduardii* (Liliaceae). Cryst. (EtOH). Mp 314-315°.

Nuriddinov, R.N. *et al., Khim. Prir. Soedin.*, 1969, **5**, 603; *Chem. Nat. Compd. (Engl. Transl.)*, 1969, **5**, 523 (*ir, ms, pmr*)

Edulinine E-40

*3-(2,3-Dihydroxy-3-methylbutyl)-4-methoxy-1-methyl-2(1*H*)-quinolinone*
[13849-56-4]



$C_{16}H_{21}NO_4$ 291.346
Abs. config. revised in 2000.

(*S*)-*form* [27495-36-9]
Alkaloid from the bark of *Casimiroa edulis* (Mexican apple) (Rutaceae). Constituent of *Orixa japonica*. Muscle relaxant. Plates (EtOAc). Mp 140° (synthetic). $[\alpha]_D$ -32 ($CHCl_3$) (synthetic). The alkaloid is probably partly racemic. Lower Mps. around 114° have been reported for natural isolates.

2′-Ac: ***2′*-O-*Acetyledulinine***. *Acetoxyedulinine (incorr.)*
[207603-52-9]
$C_{18}H_{23}NO_5$ 333.383
Alkaloid from *Skimmia laureola*. Amorph. light brown solid. $[\alpha]_D^{29}$ -40 (c, 0.02 in $CHCl_3$). Synonym is misleading. λ_{max} 229 (log ϵ 4.55); 231 (log ϵ 4.57) (MeOH).

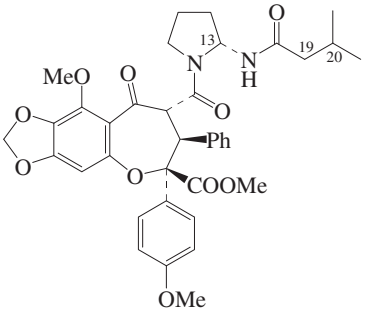
*3′-Deoxy, 2′-ketone: 4-Methoxy-1-methyl-3-(3-methyl-2-oxobutyl)-2(1*H*)-quinolinone, 9CI.* ***Orixiarine***.
Orijanone
[123613-75-2]
$C_{16}H_{19}NO_3$ 273.331
Alkaloid from *Orixa japonica* and *Skimmia laureola*. Needles (cyclohexane) (synthetic). Mp 80-81° (synthetic). λ_{max} 232 (log ϵ 4.24); 236 (log ϵ 4.25) (MeOH).

3′-Deoxy, 3′,4′-didehydro: ***Ptelefoliarine***
$C_{16}H_{19}NO_3$ 273.331
Alkaloid from *Skimmia laureola*. Light brown gum. $[\alpha]_D^{29}$ -8 (c, 0.12 in $CHCl_3$). λ_{max} 232 (log ϵ 4.39) (MeOH).

3′-Deoxy, 3′,4′-didehydro, Ac: ***O*-*Acetylptelefoliarine***. *Acetoxyptelefoliarine (incorr.)*
$C_{18}H_{21}NO_4$ 315.368
Alkaloid from *Skimmia laureola*. Amorph. light brown solid. $[\alpha]_D^{29}$ -8 (c, 0.13 in $CHCl_3$). λ_{max} 230 (log ϵ 4.16) (MeOH).

Iriarte, J. *et al., J.C.S.*, 1956, 4170-4173 (*isol, uv, ir, struct*)
Toube, T.P. *et al., Tetrahedron*, 1967, **23**, 2061 (*pmr, ms*)
Boyd, D.R. *et al., J.C.S.(C)*, 1970, 556 (*synth, struct*)
Naito, T. *et al., Chem. Pharm. Bull.*, 1983, **31**, 366 (*synth*)
Gaston, J.L. *et al., J.C.S. Perkin 1*, 1989, 905-908 (*Orixiarine, synth*)
Barr, S.A. *et al., Chem. Comm.*, 1994, 153 (*synth*)
Atta-ur-Rahman, *et al., J. Nat. Prod.*, 1998, **61**, 713-717 (*Orixiarine, Acetoxyedulinine, Ptelefoliarine, Acetoxyptelefoliarine*)
Boyd, D.R. *et al., J.C.S. Perkin 1*, 2000, 3379-3405 (*abs config*)
Noshita, T. *et al., Biosci., Biotechnol., Biochem.*, 2001, **65**, 710-713 (*Orixiarine*)
Kumar, R.N. *et al., Heterocycles*, 2002, **57**, 357-360 (*Orixiarine, synth*)
Funayama, S. *et al., CA*, **132**, 262617w (*isol, activity*)

Edulisone A E-41



$C_{37}H_{40}N_2O_{10}$ 672.73
Alkaloid from the bark of *Aglaia edulis*. Needles. Mp 215-218°. $[\alpha]_D^{20}$ +55 (c, 0.2 in $CHCl_3$). λ_{max} 208 (log ϵ 4.2); 278 (log ϵ 3.47); 329 (log ϵ 3.06) (EtOH).

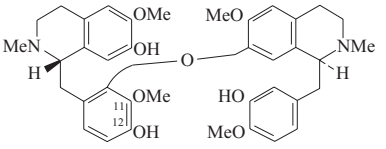
19,20-Didehydro: ***19,20-Dehydroedulisone A***. *19,20-Didehydroedulisone A*
$C_{37}H_{38}N_2O_{10}$ 670.715
Alkaloid from the bark of *Aglaia edulis*. Amorph. powder. $[\alpha]_D^{22}$ +95 (c, 0.2 in MeOH). λ_{max} 208 (log ϵ 4.88); 278 (log ϵ 4.09) (MeOH).

13-Epimer: ***Edulisone B***
$C_{37}H_{40}N_2O_{10}$ 672.73
Alkaloid from the bark of *Aglaia edulis*. Amorph. powder. $[\alpha]_D^{20}$ +48.5 (c, 0.2 in $CHCl_3$). λ_{max} 212 (log ϵ 4.31); 277 (log ϵ 3.72); 332 (log ϵ 3.33) (EtOH).

Kim, S. *et al., Tet. Lett.*, 2005, **46**, 9021-9024 (*isol, pmr, cmr, cryst struct*)
Kim, S. *et al., J. Nat. Prod.*, 2006, **69**, 1769-1775 (*19,20-Dehydroedulisone A*)

Efatine E-42

[104330-66-7]



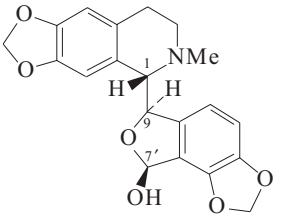
$C_{38}H_{44}N_2O_8$ 656.774
Alkaloid from the bark of *Hernandia peltata* (Hernandiaceae). Amorph. $[\alpha]_D$ +70 (c, 0.86 in $CHCl_3$).

O^{11}*-De-Me, O*^{12}*-Me:* ***Ambrimine***
[104330-67-8]
$C_{38}H_{44}N_2O_8$ 656.774
Alkaloid from the root bark of *Hernandia peltata* (Hernandiaceae). Amorph. $[\alpha]_D$ +128 (c, 0.78 in $CHCl_3$).

Chalandre, M.C. *et al., C. R. Hebd. Seances Acad. Sci., Ser. II*, 1985, **301**, 1185 (*uv, pmr, ms, struct*)
Chalandre, M.C. *et al., Can. J. Chem.*, 1986, **64**, 123 (*isol*)

Egenine E-43

*5,8-Dihydro-6-(5,6,7,8-tetrahydro-6-methyl-1,3-dioxolo[4,5-*g*]isoquinolin-5-yl)furo[3,4-*e*]-1,3-benzodioxol-8-ol, 9CI. Decumbensine*
[6883-44-9]



$C_{20}H_{19}NO_6$ 369.373
Decumbensine originally descr. (1988) as a benzylisoquinoline of MF $C_{19}H_{19}NO_5$. Alkaloid from aerial parts of *Fumaria vaillantii* and from *Corydalis decumbens* (Papaveraceae). Prob. biogenetic precursor of Bicuculline, B-119. Amorph. $[\alpha]_D^{23}$ +219 (c, 0.11 in $CHCl_3$). $[\alpha]_D^{20}$ +129 (c, 1.1 in $CHCl_3$). $[\alpha]_D^{23}$ +99 (c, 0.12 in MeOH).

7′,9-Dipimer: ***Corytensine***. *Epi-α-Decumbensine. Humosine A*
[11014-02-1]
$C_{20}H_{19}NO_6$ 369.373
Alkaloid from *Corydalis decumbens, Corydalis humosa, Corydalis ochotensis* and other *Corydalis* spp. (Papaveraceae). Prisms (Me_2CO). Mp 215-

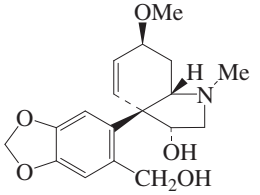
215.5°. $[\alpha]_D^{25}$ +168 (c, 0.5 in $CHCl_3$).

[131614-67-0 , 131614-66-9 , 131681-56-6 , 131681-55-5]

Gözler, B. *et al., Tetrahedron*, 1983, **39**, 577 (*isol, uv, pmr, struct*)
Wu, T.-S. *et al., Heterocycles*, 1988, **27**, 1565; 1990, **31**, 575 (*Corytensine*)
Zhang, J. *et al., J. Nat. Prod.*, 1988, **51**, 1245 (*isol, pmr, cmr*)
Rein, K.S. *et al., J.O.C.*, 1991, **56**, 1564 (*synth, bibl*)
Rozwadowska, M.D. *et al., Annalen*, 1991, 287 (*synth, abs config, struct, bibl*)
Kessar, S.V. *et al., Tet. Lett.*, 1991, **32**, 3221 (*synth*)

Egonine E-44

3-Epitazattadiol
[73060-68-1]



$C_{18}H_{23}NO_5$ 333.383
Alkaloid from bulbs of *Hippeastrum equestre*. Amorph. powder. $[\alpha]_D^{22}$ +86 (c, 1 in MeOH).

Kobayashi, S. *et al., Chem. Pharm. Bull.*, 1980, **28**, 2924-2932 (*synth*)
Pham, L.H. *et al., Phytochemistry*, 1999, **51**, 327-332 (*isol, cd, pmr, cmr, ms*)

2,4-Eicosadienoic acid, 9CI E-45

2,4-Icosadienoic acid
[32839-28-4 , 25448-01-5]

$H_3C(CH_2)_{14}CH{=}CHCH{=}CHCOOH$

$C_{20}H_{36}O_2$ 308.503

(*E*,*E*)-*form* [38225-16-0]

2-Methylpropylamide: N-*(2-Methylpropyl)-2,4-eicosadienamide, 9CI. 2,4-Eicosadienoic acid isobutylamide. 2,4-Icosadienoic acid isobutylamide.* **N-*Isobutyl-2,4-eicosadienamide***
[54794-71-7]
$C_{24}H_{45}NO$ 363.626
Alkaloid from the fruits of *Piper guineense* (Piperaceae). Cryst. (EtOAc). Mp 68° Mp 89-90°.

Piperidide: 1-(1-Oxo-2,4-eicosadienyl)piperidine, 9CI. **N-*(2,4-Eicosadienoyl)-piperidine***. *2,4-Eicosadienoic acid piperidide*
[74267-84-8]
$C_{25}H_{45}NO$ 375.637
Alkaloid from *Piper retrofractum* (Javanese long pepper). λ_{max} 265 (log ϵ 4.1) (MeOH).

Pyrrolidide: see Trichonine, T-491

[38306-23-9]

Vig, B. *et al., Indian J. Chem.*, 1972, **10**, 564; 1975, **13**, 1358-1359 (*synth*)
Okogun, J.I. *et al., J.C.S. Perkin 1*, 1974, 2195-2198 (*2-methylpropylamide, isol*)
Addae-Mensah, I. *et al., Phytochemistry*, 1977, **16**, 483-485 (*isol, ir, pmr, ms, struct, 2-methylpropylamide*)
Vig, B. *et al., J. Indian Chem. Soc.*, 1979, **56**, 935-937 (*synth, piperidide*)
Kikuzaka, H. *et al., Biosci., Biotechnol., Biochem.*, 1993, **57**, 1329-1333 (*isol, piperidide*)
Strunz, G.M. *et al., Can. J. Chem.*, 1996, **74**, 419-432 (*synth*)

2,14-Eicosadienoic acid E-46

$H_3C(CH_2)_4CH{=}CH(CH_2)_{10}CH{=}CHCOOH$

$C_{20}H_{36}O_2$ 308.503

(2*E*,14*Z*)-*form*

Piperidide: **N-*(2,14-Eicosadienoyl)piperidine***. *2,14-Eicosadienoic acid piperidide*
[151391-74-1]
$C_{25}H_{45}NO$ 375.637
Alkaloid from *Piper retrofractum* (Javanese long pepper). Oil. λ_{max} 212 (log ϵ 3.81) (MeOH).

Kikuzaki, H. *et al., Biosci., Biotechnol., Biochem.*, 1993, **57**, 1329-1333

4,5-Eicosanediamine E-47

4,5-Icosanediamine. 4,5-Diaminoeicosane. ***Necrosamine***
$H_3C(CH_2)_{14}CH(NH_2)CH(NH_2)CH_2$-$CH_2CH_3$

$C_{20}H_{44}N_2$ 312.581
Prod. in the phospholipid fraction of *Escherichia coli*. Cryst. (EtOH). Mp 225° approx.

Dihydrochloride:
Cryst. Mp 275° (dec.).

Dipicrate:
Cryst. (EtOH). Mp 159-161°.

Dibenzoyl:
Cryst. (EtOH aq.). Mp 72.5-73.5°.

Ikawa, M. *et al., J.A.C.S.*, 1953, **75**, 3439; 6314 (*struct, synth*)

5,8,11,14-Eicosatetraenoic acid E-48

5,8,11,14-Icosatetraenoic acid
[7771-44-0]
[27400-91-5]

$H_3C(CH_2)_4CH{=}CHCH_2CH{=}CHCH_2CH{=}CHCH_2CH{=}CH(CH_2)_3COOH$

$C_{20}H_{32}O_2$ 304.472

▶ JX3850000

(*all-Z*)-*form*
Arachidonic acid
[506-32-1]
[31152-45-1]
Constit. of many animal phospholipids, also of some ferns and mosses. Essential fatty acid. Precursor of Prostaglandin G_2 series prostaglandins. Mp -49.5°. Bp_1 163°.

▶ Potentially explosive. LD_{50} (mus, ivn) 33 mg/kg. CE6675000

Me ester: [2566-89-4]
$C_{21}H_{34}O_2$ 318.498
$Bp_{0.7}$ 194-196°.

Et ester: [1808-26-0]
$C_{22}H_{36}O_2$ 332.525
Liq. d^{20} 0.9. $Bp_{0.04}$ 121-122°. n_D^{20} 1.4719.

2-Aminoethyl ester: ***Virodhamine***. *O-Arachidonoyl ethanolamine*
[287937-12-6]
$C_{22}H_{37}NO_2$ 347.54
Found in rat brain and human hippocampus. Endocannabinoid. Cannabinoid (CB_1) receptor antagonist.

(2-Hydroxyethyl)amide: Arachidonylethanolamide. ***Anandamide***
[94421-68-8]
$C_{22}H_{37}NO_2$ 347.54
Isol. from porcine brain. Cannabinoid receptor ligand. Apoptosis inducer.

(4-Hydroxyphenyl)amide: N-*(4-Hydroxyphenyl)-5,8,11,14-eicosatetraenamide, 9CI.* N-*(4-Hydroxyphenyl)arachidonylamide. AM 404*
[183718-77-6]
$C_{26}H_{37}NO_2$ 395.584
Anandamide transport inhibitor.

20,20,20-Trifluoro: 20-Trifluoroarachidonic acid
[115178-89-7]
$C_{20}H_{29}F_3O_2$ 358.443
Used in studying physiological conditions of leukotriene B_4 synth.

[6610-25-9 , 77297-91-7]

Osbond, J.M. *et al., J.C.S.*, 1961, 2779 (*synth*)
Pyatnova, Yu.B. *et al., Zh. Obshch. Khim.*, 1963, **33**, 1120; *CA*, **59**, 9782b (*Et ester*)
Schlenk, H. *et al., J. Am. Oil Chem. Soc.*, 1965, **42**, 481 (*occur*)
Wagner, H. *et al., Naturwissenschaften*, 1965, **52**, 305 (*occur*)
Frost, D.J. *et al., Chem. Phys. Lipids*, 1975, **15**, 53 (*pmr*)
Fryer, R.I. *et al., J.O.C.*, 1975, **40**, 348 (*synth*)
Gunstone, F.D. *et al., Chem. Phys. Lipids*, 1976, **17**, 1 (*cmr*)
Corey, E.J. *et al., Tet. Lett.*, 1984, **25**, 2729 (*purifn*)
Tanaka, Y. *et al., Arch. Biochem. Biophys.*, 1988, **263**, 178 (*synth*)
Devane, W.A. *et al., Science (Washington, D.C.)*, 1992, **258**, 1946 (*Anandamide*)
Khanolkar, A.D. *et al., J. Med. Chem.*, 1996, **39**, 4515-4519 (*AM 404, synth, pmr*)
Gonzalez, S. *et al., Life Sci.*, 1999, **65**, 327-336 (*AM 404, pharmacol*)
Giuffrida, A. *et al., Eur. J. Pharmacol.*, 2000, **408**, 161-168 (*AM 404, pharmacol*)
Sarker, K.P. *et al., FEBS Lett.*, 2000, **472**, 39-44 (*Anandamide, activity*)
Beltramo, M. *et al., J. Neurosci.*, 2000, **20**, 3401-3407 (*AM 404, pharmacol*)
Porter, A.C. *et al., J. Pharmacol. Exp. Ther.*, 2002, **301**, 1020-1024 (*virodhamine, pharmacol*)
Anagnostopoulos, D. *et al., Bioorg. Med. Chem. Lett.*, 2005, **15**, 2766-2770 (*all-E-form, synth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, AQS750

2,4,8-Eicosatrienoic acid E-49

2,4,8-Icosatrienoic acid
[27070-56-0]

$H_3C(CH_2)_{10}CH{=}CHCH_2CH_2(CH{=}CH)_2COOH$

$C_{20}H_{34}O_2$ 306.487

(2*E*,4*E*,8*Z*)-*form*

2-Methylpropylamide: ***2,4,8-Eicosatrienoic acid isobutylamide****.* N-*Isobutyl-2,4,8-eicosatrienamide*
[64543-30-2]
$C_{24}H_{43}NO$ 361.61
Alkaloid from *Piper officinarum* (Javanese long pepper) (Piperaceae). Mp 67-67.5°.

Gupta, O.P. *et al., Phytochemistry*, 1977, **16**, 1436 (*uv, ir, pmr, ms, isol, struct*)

2,4,14-Eicosatrienoic acid E-50

2,4,14-Icosatrienoic acid
$H_3C(CH_2)_4CH{=}CH(CH_2)_8CH{=}CHCH{=}CHCOOH$
$C_{20}H_{34}O_2$ 306.487

(2*E*,4*E*,14*Z*)-*form*

2-Methylpropylamide: ***2,4,14-Eicosatrienoic acid isobutylamide****.* N-*Isobutyl-2,4,14-eicosatrienamide*
[151391-70-7]
$C_{24}H_{43}NO$ 361.61
Alkaloid from *Piper retrofractum* (Javanese long pepper). Oil. λ_{max} 264 (log ϵ 4.19) (MeOH).

Kikuzaki, H. *et al., Biosci., Biotechnol., Biochem.*, 1993, **57**, 1329-1333

2,4,16-Eicosatrienoic acid E-51

2,4,16-Icosatrienoic acid
[27070-56-0]
$H_3CCH_2CH_2CH{=}CH(CH_2)_{10}CH{=}CHCHcCHCOOH$
$C_{20}H_{34}O_2$ 306.487

(2*E*,4*E*,16*Z*)-*form*

Piperidide: ***Pipereicosalidine***
[145237-20-3]
$C_{25}H_{43}NO$ 373.621
Alkaloid from fruits of *Piper retrofractum* (Javanese long pepper) (Piperaceae). Oil.

Ahn, J.W. *et al., Phytochemistry*, 1992, **31**, 3609

8,11,14-Eicosatrienoic acid E-52

8,11,14-Icosatrienoic acid
[7324-41-6]
[27070-56-0]
$H_3C(CH_2)_4CH{=}CHCH_2CH{=}CHCH_2CH{=}CH(CH_2)_6COOH$
$C_{20}H_{34}O_2$ 306.487

(*all-Z*)-*form*

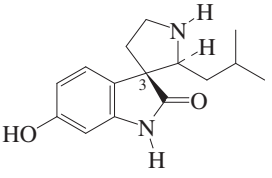
Dihomogammalinolenic acid. γ-Homolinolenic acid. Dihomo-γ-linolenic acid
[1783-84-2]
Minor component of animal phospholipids. Constit. of *Sargassum pallidum*. Metab. of Linoleic acid. Precursor of PG_1 series of prostaglandins. Intermediate for 8,9-Leukotriene C_3.

N-*(2-Hydroxyethyl)amide: Homo-γ-linolenylethanolamide*
[150314-34-4]
$C_{22}H_{39}NO_2$ 349.556
Isol. from porcine brain. Endogenous cannabinoid receptor agonist.

Struijk, C.B. *et al., Rec. Trav. Chim. (J. R. Neth. Chem. Soc.)*, 1966, **85**, 1241 (*synth*)
Hanus, L. *et al., J. Med. Chem.*, 1993, **36**, 3032-3034 (*amide deriv, synth, pharmacol*)
Pertwee, R. *et al., Eur. J. Pharmacol.*, 1994, **259**, 115-120; 1995, **287**, 145-152 (*amide deriv, pharmacol*)
Groza, N.V. *et al., Bioorg. Khim.*, 1998, **24**, 458-461 (*synth*)
Zhukova, N.V. *et al., Phytochemistry*, 1999, **50**, 1209-1211 (*isol*)

Elacomine E-53

Alkaloid I
[38739-23-0]
[176300-93-9]



$C_{15}H_{20}N_2O_2$ 260.335

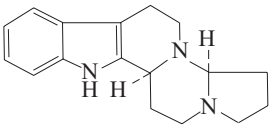
(±)-*form* [67008-94-0]
Alkaloid from the roots of *Elaeagnus commutata*. Subl. at *ca.* 150° or dec. at *ca.* 200° (sealed tube) depending on heating rate.

3-Epimer: ***Isoelacomine***
[176300-94-0]
$C_{15}H_{20}N_2O_2$ 260.335
Alkaloid from the roots of *Elaeagnus commutata*. Oil. Racemic.

James, M.N.G. *et al., Can. J. Chem.*, 1972, **50**, 2407 (*cryst struct*)
Pellegrini, C. *et al., Helv. Chim. Acta*, 1996, **79**, 151-168 (*synth*)
Miyake, F.Y. *et al., Org. Lett.*, 2004, **6**, 711-713 (*synth*)

Elaeocarpidine E-54

1,2,3,3a,5,6,11,11b,12,13-Decahydropyrrolo[2″,1″:2′,3′]pyrimido[1′,6′:1,2]pyrido[3,4-b]indole, 9CI. Eleocarpidine
[20069-07-2]

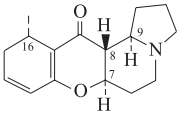


$C_{17}H_{21}N_3$ 267.373
Isol. in racemic form. Alkaloid from the leaves of *Elaeocarpus polydactylus*, *Elaeocarpus sphaericus* and *Elaeocarpus densiflorus* (*Elaeocarpus archboldianus*) (Elaeocarpaceae). Needles (EtOH). Mp 229-230°. $[\alpha]_D$ 0 ($CHCl_3$). λ_{max} 226 (ϵ 39800); 283 (ϵ 8000); 290 (sh) (ϵ 6750) (no solvent reported).

Johns, S.R. *et al., Aust. J. Chem.*, 1969, **22**, 801-806 (*isol, uv, ir, pmr, ms, struct*)
Harley-Mason, J. *et al., Chem. Comm.*, 1969, 281 (*synth*)
Gribble, G.W. *et al., J.O.C.*, 1970, **35**, 1944-1949 (*synth, ir, ms, pmr, config*)
Johns, S.R. *et al., Aust. J. Chem.*, 1971, **24**, 1679-1694 (*isol*)
Gribble, G.W. *et al., Synth. Commun.*, 1987, **17**, 377-383 (*synth*)
Chen, C.-K. *et al., J.A.C.S.*, 1988, **110**, 4829-4831 (*synth*)
Gribble, G.W. *et al., J.O.C.*, 1988, **53**, 3164-3170 (*synth*)
Diker, K. *et al., J. Nat. Prod.*, 1997, **60**, 791-793 (*synth, uv, ir, pmr, cmr*)

Elaeocarpiline E-55

15,16-Dihydroelaeocarpine, 9CI. Eleocarpiline



(7*R*,8*R*,9*R*,16*S*)–*form*

$C_{16}H_{21}NO_2$ 259.347

(7*R*,8*R*,9*R*,16*S*)-*form* [21104-44-9]
Alkaloid from the leaves of *Elaeocarpus dolichostylus* and *Elaeocarpus sphaericus* (Elaeocarpaceae). Plates (Me_2CO). Mp 165-166°. $[\alpha]_D$ +395 (c, 0.08 in $CHCl_3$).

(7*S*,8*S*,9*S*,16*S*)-*form*
Epielaeocarpiline
[28230-64-0]
Alkaloid from the leaves of *Elaeocarpus sphaericus* (Elaeocarpaceae). Cryst. (petrol). Mp 72-74°. $[\alpha]_D$ -396 (c, 0.06 in $CHCl_3$).

(7*R*,8*S*,9*S*,16*S*)-*form*
Isoelaeocarpiline
[21104-46-1]
Major alkaloid from the leaves of *Elaeocarpus sphaericus* and *Elaeocarpus dolichostylus* (Elaeocarpaceae). Cryst. (Me_2CO). Mp 146-147°. $[\alpha]_D$ -400 (c, 0.08 in $CHCl_3$).

(7*S*,8*R*,9*R*,16*S*)-*form*
Epiisoelaeocarpiline
[28230-63-9]
Alkaloid from the leaves of *Elaeocarpus sphaericus* (Elaeocarpaceae). Cryst. (petrol). Mp 98-101°. $[\alpha]_D$ +340 (c, 0.08 in $CHCl_3$).

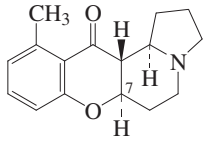
(7*R*,8*R*,9*S*,16*S*)-*form*
Alloelaeocarpiline
[28230-66-2]
Alkaloid from the leaves of *Elaeocarpus sphaericus* (Elaeocarpaceae). Cryst. (Me_2CO). Mp 131-134°. $[\alpha]_D$ -73 (c, 0.03 in $CHCl_3$) (ca. 90% pure). Not obt. pure, readily isom. to Isoelaeocarpiline. The cryst. material is an approx. 1:1 mixt. of 2 components.

(7*S*,8*S*,9*R*,16*S*)-*form*
Epialloelaeocarpiline
[28230-65-1]
Alkaloid from the leaves of *Elaeocarpus sphaericus* (Elaeocarpaceae). Cryst. (Me_2CO). Mp 136-137°. $[\alpha]_D$ +139 (c, 0.11 in $CHCl_3$). Readily isom. to Epiisoelaeocarpiline.

Johns, S.R. *et al., Aust. J. Chem.*, 1969, **22**, 793-800; 1971, **24**, 1679-1694 (*isol, uv, ord, pmr, ms, abs config*)
Katavic, P.L. *et al., J. Nat. Prod.*, 2006, **69**, 1295-1299 (*Isoelaeocarpiline, cd, pmr, cmr*)

Elaeocarpine E-56

*1,2,3,5,6,6*a,*12*a,*12*b-*Octahydro-11-methyl-12*H-*[1]*benzopyrano*[2,3-*g*]indolizin-12-one, 9CI. Eleocarpine*



(+)-*form*

$C_{16}H_{19}NO_2$ 257.332

(+)-*form* [30891-90-8]
Obt. by dehydrogenation of Elaeocarpiline, in E-55. $[\alpha]_D$ +206 ($CHCl_3$).

(-)-*form* [30891-91-9]
Obt. by dehydrogenation of Epielaeocarpiline, in E-55. $[\alpha]_D$ -210 ($CHCl_3$).

(±)-*form* [22964-80-3]
Alkaloid from the leaves of *Elaeocarpus polydactylus*, *Elaeocarpus sphaericus* and *Elaeocarpus ganitrus*. Cryst. (C_6H_6/hexane, Me_2CO or pentane). Mp 81-82°.

Hydrobromide:
Cryst. (EtOH aq. or H_2O). Mp 303-305° (290-292°).

7-Epimer: ***Isoelaiocarpine***. *Isoeleocarpine*
[23092-73-1]
$C_{16}H_{19}NO_2$ 257.332
Alkaloid from the leaves of *Elaeocarpus polydactylus*, *Elaeocarpus sphaericus* and *Elaeocarpus ganitrus*. Cryst. (Me_2CO or pentane). Mp 51-52° Mp 75-76°.

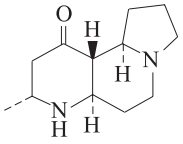
7-Epimer, hydrobromide: Mp 258°.

7-Epimer, picrate: Mp 245-247°.

Wunderlich, J.A. *et al., Acta Cryst. B*, 1969, **25**, 1436 (*cryst struct*)
Johns, S.R. *et al., Aust. J. Chem.*, 1969, **22**, 775; 1971, **24**, 1679 (*isol, uv, ir,pmr, ms, synth*)
Johns, S.R. *et al., Chem. Comm.*, 1970, 804 (*isol, uv, ir, pmr, ms, synth*)
Onaka, T. *et al., Tet. Lett.*, 1971, 4395 (*synth*)
Tanaka, T. *et al., Tetrahedron*, 1973, **29**, 1285 (*synth*)
Tufariello, J.J. *et al., J.A.C.S.*, 1979, **101**, 7114 (*synth*)
Ray, A.B. *et al., Phytochemistry*, 1979, **18**, 700 (*isol*)
Howard, A.S. *et al., Tet. Lett.*, 1980, **21**, 1373 (*synth*)
Katavic, P.L. *et al., J. Nat. Prod.*, 2007, **70**, 872-875 (*isol, pmr, cmr*)

Elaeokanidine A E-57

*Decahydro-3-methylpyrrolo[2,1-f][1,6]naphthyridin-1(2*H*)-one, 9CI. Eleokanidine A*
[33023-06-2]



Relative configuration

$C_{12}H_{20}N_2O$ 208.303
Alkaloid from the leaves of *Elaeocarpus kaniensis* (Elaeocarpaceae). Needles by subl. Mp 38-38.5°. $[\alpha]_D$ +9 (c, 1.0 in $CHCl_3$).

Dipicrate: Mp 153-155°.

Stereoisomer (1): ***Elaeokanidine B***. *Eleokanidine B*
[33963-69-8]
$C_{12}H_{20}N_2O$ 208.303
Alkaloid from the leaves of *Elaeocarpus kaniensis* (Elaeocarpaceae). Cryst. + $2H_2O$ by subl. Mp 93-94°. $[\alpha]_D$ 0 ($CHCl_3$).

Stereoisomer(1), dipicrate:
Yellow needles (EtOH). Mp 144-146°.

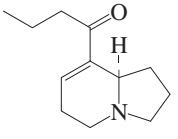
Stereoisomer (2): ***Elaeokanidine C***. *Eleokanidine C*
[33963-68-7]
$C_{12}H_{20}N_2O$ 208.303
Alkaloid from the leaves of *Elaeocarpus kaniensis* (Elaeocarpaceae). Cryst. + $2H_2O$ by subl. Mp 56-58°. $[\alpha]_D$ +1 (c, 0.7 in $CHCl_3$).

Stereoisomer (2), dipicrate:
Yellow needles (EtOH). Mp 212-215°.

Hart, N.K. *et al., Aust. J. Chem.*, 1972, **25**, 817 (*isol, ir, pmr, ms, struct*)

Elaeokanine A E-58

*1-(1,2,3,5,6,8*a*-Hexahydro-8-indolizinyl)-1-butanone, 9CI. 8-Butyryl-1,2,3,5,6,8*a*-hexahydroindolizine. Eleokanine A*



(*R*)-*form*

$C_{12}H_{19}NO$ 193.288

(*R*)-*form* [33023-01-7]
Alkaloid from the leaves of *Elaeocarpus kaniensis* (Elaeocarpaceae). Oil; yellow needles (EtOH)(as picrate). Mp 163-165° (picrate). $[\alpha]_D$ +13 (c, 0.9 in $CHCl_3$). $[\alpha]_D^{26}$ +63 (c, 0.93 in $CHCl_3$) (synthetic).

(*S*)-*form*
*1′-Alcohol (1′*S*-?): 1,2,3,5,6,8*a*-Hexahydro-α-propyl-8-indolizidinemethanol, 9CI.* ***Elaeokanine B***. *Eleokanine B*
[33023-02-8]
$C_{12}H_{21}NO$ 195.304
Minor alkaloid from the leaves of *Elaeocarpus kaniensis* (Elaeocarpaceae). Gum. $[\alpha]_D$ -76 (c, 0.4 in $CHCl_3$). The nat. alkaloid may be a mixture of diastereoisomers.

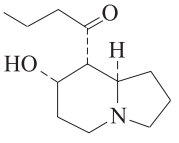
(±)-*form* [73971-21-8]
Synthetic. Oil. Mp 139.5-140.5° (134-136°)(as picrate).

*1′-Alcohol:*Synthetic. Oil.

Hart, N.K. *et al., Aust. J. Chem.*, 1972, **25**, 817 (*isol, uv, ir, pmr, ms, struct*)
Tufariello, J.J. *et al., Tet. Lett.*, 1979, 4445 (*synth, ir, pmr*)
Watanabe, T. *et al., Heterocycles*, 1980, **14**, 1433 (*synth, uv, ir, pmr, ms*)
Schmitthenner, H.F. *et al., J.O.C.*, 1980, **45**, 3372 (*synth*)
Howard, A.S. *et al., Tet. Lett.*, 1980, **21**, 1373 (*synth*)
Khatri, N.A. *et al., J.A.C.S.*, 1981, **103**, 6387 (*synth*)
Wijnberg, B.P. *et al., Tet. Lett.*, 1981, **22**, 5079 (*synth*)
Otomasu, H. *et al., Tetrahedron*, 1982, **38**, 2627 (*synth*)
Shono, T. *et al., J.O.C.*, 1984, **49**, 300 (*synth*)
Chamberlin, A.R. *et al., J.O.C.*, 1984, **49**, 1682 (*synth, ir, pmr, cmr, ms*)
Flitsch, W. *et al., Annalen*, 1987, 649 (*synth, ms*)
Flann, C. *et al., J.A.C.S.*, 1987, **109**, 6097 (*synth*)
Gribble, G.W. *et al., J.O.C.*, 1988, **53**, 3164 (*synth, ir, pmr, cmr, ms*)
Hua, D.H. *et al., J.O.C.*, 1990, **55**, 2128-2132 (*synth, abs config*)
Comins, D.L. *et al., J.A.C.S.*, 1991, **113**, 6672
Taber, D.F. *et al., J.O.C.*, 1991, **56**, 1287 (*synth*)
Arai, Y. *et al., Tetrahedron: Asymmetry*, 1992, **3**, 535 (*synth*)
Cordero, F.M. *et al., Tetrahedron*, 1993, **49**, 9867 (*synth*)
Arai, Y. *et al., J.C.S. Perkin 1*, 1994, 15 (*synth*)
Dieter, R.K. *et al., J.O.C.*, 2006, **71**, 5674-5678 (*synth*)

Elaeokanine C E-59

1-(Octahydro-7-hydroxy-8-indolizinyl)-1-butanone, 9CI. 8-Butyryl-7-hydroxyindolizidine. Eleokanine C



(–)–*form*

$C_{12}H_{21}NO_2$ 211.303

(+)-*form*
Synthetic. Oil. $[\alpha]_D^{26}$ +36.9 (c, 0.58 in $CHCl_3$). $[\alpha]_D^{23}$ +47 (c, 0.4 in $CHCl_3$).

(-)-*form* [33023-03-9]
Alkaloid from the leaves of *Elaeocarpus kaniensis* (Elaeocarpaceae). Gum. $[\alpha]_D$ -14 (c, 1.0 in $CHCl_3$).

Methiodide:
Prisms (Me_2CO/MeOH). Mp 203-205°. $[\alpha]_D$ -11 (c, 0.06 in MeOH).

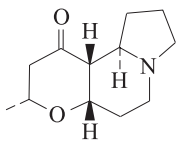
(±)-*form* [36451-37-3]
Synthetic. Mp 69-70°.

Methiodide:
Cryst. (Me_2CO + trace of MeOH). Mp 203-205°.

Hart, N.K. *et al., Aust. J. Chem.*, 1972, **25**, 817 (*isol, ir, pmr, ms, struct, synth*)
Tufariello, J.J. *et al., Tet. Lett.*, 1979, 4445 (*synth, ir, pmr*)
Watanabe, T. *et al., Heterocycles*, 1980, **14**, 1433 (*synth*)
Howard, A.S. *et al., Tet. Lett.*, 1980, **21**, 1373 (*synth*)
Otomasu, H. *et al., Tetrahedron*, 1982, **38**, 2677 (*synth*)
Shono, T. *et al., J.O.C.*, 1984, **49**, 300 (*synth*)
Flitsch, W. *et al., Annalen*, 1987, 649 (*synth, ms*)
Gribble, G.W. *et al., J.O.C.*, 1988, **53**, 3164 (*synth, ir, pmr, cmr, ms*)
Comins, D.L. *et al., J.A.C.S.*, 1991, **113**, 6672
Arai, Y. *et al., Tetrahedron: Asymmetry*, 1992, **3**, 535 (*synth*)
Arai, Y. *et al., J.C.S. Perkin 1*, 1994, 15 (*synth*)

Elaeokanine E E-60

*Decahydro-3-methyl-1*H*-pyrano[2,3-*g*]indolizin-1-one, 9CI. Eleokanine E*



Relative configuration

$C_{12}H_{19}NO_2$ 209.288

(+)-*form* [33023-05-1]
Alkaloid from the leaves of *Elaeocarpus kaniensis* (Elaeocarpaceae). Needles by subl. Mp 57-58.5°. $[\alpha]_D$ +35 (c, 0.9 in $CHCl_3$).

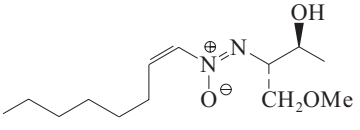
*4*a-*Epimer:* ***Elaeokanine D***. *Eleokanine D*
[33023-04-0]
$C_{12}H_{19}NO_2$ 209.288
Alkaloid from the leaves of *Elaeocarpus kaniensis* (Elaeocarpaceae). Needles by subl. Mp 76-78°. $[\alpha]_D$ +51 (c, 0.9 in $CHCl_3$). The 4*a* posn. (CA numbering) is adjacent to the pyran ring 0.

(±)-*form* [77699-01-5]
Synthetic. Noncryst.

Hart, N.K. *et al., Chem. Comm.*, 1971, 460 (*isol, ir, pmr, ms, struct*)
Hart, N.K. *et al., Aust. J. Chem.*, 1972, **25**, 817 (*isol, ir, pmr, ms, struct*)
Watanabe, T. *et al., Heterocycles*, 1981, **16**, 39 (*synth, ir, pmr, ms*)

Elaiomycin E-61

*4-Methoxy-3-(1-octenyl-*ONN*-azoxy)-2-butanol, 9CI. Antibiotic 1252*
[23315-05-1]



$C_{13}H_{26}N_2O_3$ 258.36
Azoxy config. (*Z*- or *trans*-) is tentative. Isol. from culture filtrates of *Streptomyces hepaticus* and *Streptomyces gelaticus*. Tuberculostatic antibiotic. Neutral yellow oil. Sol. MeOH, Et_2O; fairly sol. hexane; poorly sol. H_2O. $[\alpha]_D^{26}$ +38.4 (c, 2.8 in EtOH). λ_{max} 238 (ϵ 11000) (MeOH) (Derep). λ_{max} 256 (NaOH) (Berdy).
▶ Exp. carcinogen. LD_{50} (mus, scu) 63 mg/kg. LD_{50} (mus, ivn) 43.7 mg/kg.
EL5075000

Haskell, T. *et al., Antibiot. Chemother. (Washington, D.C.)*, 1954, **4**, 141-144 (*isol*)
Ehrlich, J. *et al., Antibiot. Chemother. (Washington, D.C.)*, 1954, **4**, 338-342 (*activity*)
U.K. Pat., 1955, 730 341; *CA*, **49**, 14279 (*synth*)
Stevens, C.L. *et al., J.A.C.S.*, 1956, **78**, 3229-3230 (*struct*)
McGahren, W.J. *et al., J.A.C.S.*, 1970, **92**, 1587-1590 (*cd*)
Moss, R.A. *et al., J.A.C.S.*, 1977, **99**, 1643-1645 (*synth*)
Parry, R.J. *et al., J.A.C.S.*, 1982, **104**, 339-340; 1984, **106**, 5764-5765 (*biosynth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, EAG000

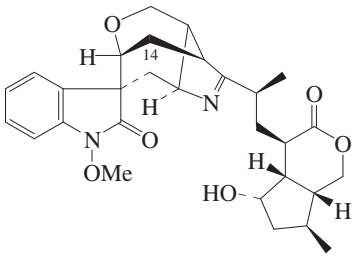
Elatrine E-62

$C_{40}H_{56}N_3O_6$ 674.899
Struct. unknown. Impossible mol. formula. Alkaloid from *Thalictrum minus* var. *elatum* (Ranunculaceae). Needles. Mp 180-183° dec. $[\alpha]_D^{26}$ +229 (EtOH).
Picrate: Mp 174-175° dec.
Picrolonate: Mp 178-182° dec.

Nakajima, T. *et al., Yakugaku Zasshi*, 1945, **65**, 422-424; *CA*, **48**, 330h

Elegansamine E-63

[120090-58-6]



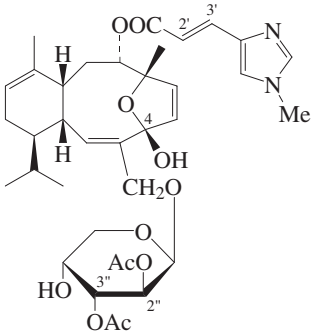
$C_{29}H_{36}N_2O_6$ 508.613
Minor alkaloid from the branches of *Gelsemium elegans*. Prisms (MeOH). Mp 172-173°.

*14*R-*Hydroxy:* ***14-Hydroxyelegansamine***
$C_{29}H_{36}N_2O_7$ 524.613
Alkaloid from *Gelsemium elegans*. Amorph. powder. $[\alpha]_D^{20}$ -90 (c, 0.12 in $CHCl_3$). λ_{max} 209 (log ϵ 4.49); 258 (log ϵ 3.87) (MeOH).

Ponglux, D. *et al., Tet. Lett.*, 1988, **29**, 5395-5396 (*Elegansamine, cryst struct*)
Xu, Y.-K. *et al., J. Nat. Prod.*, 2006, **69**, 1347-1350 (*14-Hydroxyelegansamine*)

Eleuthoside A† E-64

[180692-76-6]



$C_{36}H_{48}N_2O_{11}$ 684.782
Constit. of *Eleutherobia aurea*. Inhibits tubulin polym. induction. Shows strong cytotoxic and antitumour effects. Oil. $[\alpha]_D$ -9 (c, 0.2 in $CHCl_3$).

3″-De-Ac: ***Desmethyleleutherobin***. *Demethyleleutherobin*
[259670-83-2]
$C_{34}H_{46}N_2O_{10}$ 642.745
Constit. of *Erythropodium caribaeorum*.

4-Me ether, 2″-de-Ac: ***Isoeleutherobin A***
[259728-67-1]
$C_{35}H_{48}N_2O_{10}$ 656.772
Constit. of *Erythropodium caribaeorum*.

4-Me ether, 3″-de-Ac: ***Eleutherobin***
[174545-76-7]
$C_{35}H_{48}N_2O_{10}$ 656.772
Isol. from the soft coral *Eleutherobia* cf. *albiflora* and *Erythropodium caribaeorum*. Cytotoxin with microtubule stabilising props. Shows potent antitumour activity. Amorph. solid. $[\alpha]_D^{25}$ -49.3 (c, 3 in MeOH). λ_{max} 290 (log ϵ 3.82) (MeOH).

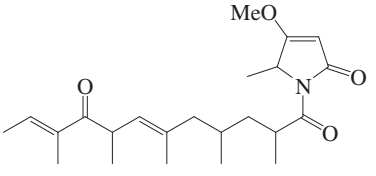
4-Me ether, 2″,3″-dide-Ac: ***Deacetyleleutherobin***
[213824-30-7]
$C_{33}H_{46}N_2O_9$ 614.734
Constit. of *Erythropodium caribaeorum*.

*2′*Z*-Isomer, 4-Me ether, 3″-de-Ac:* **Z-*Eleutherobin***
[259670-84-3]
$C_{35}H_{48}N_2O_{10}$ 656.772
Constit. of *Erythropodium caribaeorum*.

Schiff, P.B. *et al., Nature (London)*, 1979, **277**, 665-667 (*activity*)
U.S. Pat., 1995, 5 473 057; *CA*, **124**, 194297 (*Eleutherobin*)
Ketzinel, S. *et al., J. Nat. Prod.*, 1996, **59**, 873-875 (*Eleuthoside A*)
Lindel, T. *et al., J.A.C.S.*, 1997, **119**, 8744-8745 (*Eleutherobin*)
Long, B.H. *et al., Cancer Res.*, 1998, **58**, 1111-1117 (*Eleutherobin, activity*)
Bernardelli, P. *et al., Heterocycles*, 1998, **49**, 531-556 (*rev*)
Nicolaou, K.C. *et al., J.A.C.S.*, 1998, **120**, 8661-8673; 8674-8680 (*synth, activity*)
Gutteridge, C. E. *et al., J.A.C.S.*, 1999, **121**, 6563-6579 (*synth*)
Rayl, A.J.S. *et al., The Scientist*, 1999, **13**, 1-3 (*clinical*)
Roberge, M. *et al., Cancer Res.*, 2000, **60**, 5052-5058 (*activity*)
Cinel, B. *et al., Org. Lett.*, 2000, **2**, 257-260 (*Deacetyleleutherobin, Isoeleutherobin A, Desmethyleleutherobin, Z-Eleutherobin*)
Britton, R. *et al., Tet. Lett.*, 2001, **42**, 2953-2956 (*isol, biosynth*)
Castoldi, D. *et al., Angew. Chem., Int. Ed.*, 2005, **44**, 588-591 (*Eleutherobin, synth*)
Castoldi, D. *et al., Chem. Eur. J.*, 2006, **12**, 51-62 (*synth*)

Eliamide E-65

[215714-29-7]



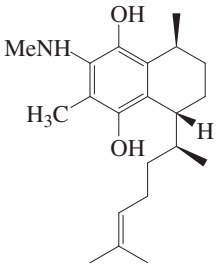
$C_{23}H_{35}NO_4$ 389.534
Prod. by *Sorangium cellulosum*. Exhibits cytostatic, nematocidal and antifungal activities. Oil. λ_{max} 223 (ϵ 19200); 234 (ϵ

19300) (MeOH).

Ger. Pat., 1998, 19 718 843; *CA*, **130**, 3107d

Elisabethamine E-66

[294202-41-8]



$C_{21}H_{33}NO_2$ 331.497

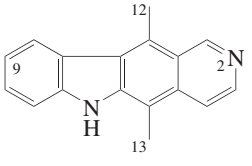
Alkaloid from *Pseudopterogorgia elisabethae*. Cytotoxic agent. Yellow gum. $[\alpha]_D^{20}$ +89. Synth. studies show that the assigned struct. is probably wrong. λ_{max} 292 (no solvent reported).

Ata, A. *et al., Tet. Lett.*, 2000, **41**, 5821-5825 (*isol, pmr, cmr*)
Dai, X. *et al., J.O.C.*, 2007, **72**, 1895-1900 (*synth*)

Ellipticine E-67

*5,11-Dimethyl-6*H*-pyrido[4,3-*b*]carbazole, 9CI. NSC 71795*

[519-23-3]



$C_{17}H_{14}N_2$ 246.311

Numbering systems vary. Systematic CAS numbering (shown) is now more usual. Alkaloid from *Ochrosia elliptica*, *Ochrosia moorei* and several other *Ochrosia* spp., *Senecio* sp., *Strychnos dinklagei*, *Aspidosperma subincanum*, *Bleekeria coccinea* and *Bleekeria vitiensis* (preferred genus name *Ochrosia*). Shows broad-spectrum antineoplastic activity. An intercalating agent, also shows antitrypanosomal activity. Cytochrome P-450 (CYPIA) inhibitor. Yellow needles (MeOH), orange rods or rosettes (AcOH or $CHCl_3$). Mp 311-315° dec. Log P 4.37 (calc). λ_{max} 224 (ϵ 30200); 237 (sh) (ϵ 26900); 245 (sh) (ϵ 21900); 275 (ϵ 57500); 285 (ϵ 75900); 293 (ϵ 70800); 331 (ϵ 7080); 346 (ϵ 5010); 380 (ϵ 3800); 400 (ϵ 3800) (EtOH) (Derep). λ_{max} 239 (ϵ 17000); 277 (ϵ 40700); 286 (ϵ 57500); 294 (ϵ 55000); 332 (ϵ 4460); 382 (ϵ 4080); 400 (ϵ 3400) (EtOH) (Berdy).

▶ LD_{50} (mus, orl) 178 mg/kg. LD_{50} (mus, ivn) 20 mg/kg Exp. adverse cardiovascular effects. Mutagen. UU8825000

N^2-*Oxide:* ***Ellipticine* N^2-*oxide***

[37687-33-5]

$C_{17}H_{14}N_2O$ 262.31

Alkaloid from *Ochrosia vieillardii*, *Ochrosia moorei* and *Strychnos dinklagei* (Apocynaceae, Loganiaceae). Noncryst.

N^2-*Me:* **N-*Methylellipticine***

$C_{18}H_{17}N_2^{\oplus}$ 261.346

Minor quaternary alkaloid from the bark of *Aspidosperma subincanum* (Apocynaceae). Mp 360° dec. (as iodide).

*8-Hydroxy: 8-Hydroxy-5,11-dimethylpyrido[4,3-*b*]carbazole. 8-Hydroxyellipticine*

[72236-82-9]

Minor metab. of ellipticine by *Aspergillus alliaceus*. Yellow prisms (MeOH/EtOAc). Mp 268-270° dec.

12-Hydroxy: ***12-Hydroxyellipticine***

[83329-79-7]

$C_{17}H_{14}N_2O$ 262.31

Alkaloid from the stem bark of *Strychnos dinklagei* (Loganiaceae). Noncryst. λ_{max} 309 (EtOH/HCl). λ_{max} 278 (sh) ; 289 ; 295 ; 315 (sh) (EtOH).

*8-Methoxy: 8-Methoxy-5,11-dimethylpyrido[4,3-*b*]carbazole. 8-Methoxyellipticine*

[5263-05-8]

$C_{18}H_{16}N_2O$ 276.337

Alkaloid isol. from leaves of *Ochrosia elliptica*. Yellow needles (EtOAc). Mp 280-285° dec.

9-Methoxy: see 9-Methoxyellipticine, M-252

3,4-Dihydro: ***3,4-Dihydroellipticine***

[37687-32-4]

$C_{17}H_{16}N_2$ 248.327

Alkaloid from *Aspidosperma subincanum*, *Ochrosia balansae*, *Ochrosia vieillardii*, *Ochrosia moorei*, *Strychnos dinklagei*, *Pterotaberna inconspicua*, *Hazunta modesta* and other *Hazunta* spp.(Apocynaceae, Loganiaceae). Cubes (MeOH). Mp 293-296° dec.

3,4-Dihydro, N^2-*Me:* ***3,4-Dihydro-2-methylellipticine***. N-*Methyl-3,4-dihydroellipticine*

$C_{18}H_{19}N_2^{\oplus}$ 263.361

Minor quaternary alkaloid from the bark of *Aspidosperma subincanum* (Apocynaceae). Bright yellow needles (Me_2CO aq.)(as picrate). Mp 296-306° dec. (as iodide) Mp 273-275° dec. (as picrate).

1,2,3,4-Tetrahydro: ***1,2,3,4-Tetrahydroellipticine***

[6538-51-8]

$C_{17}H_{18}N_2$ 250.343

Alkaloid from *Ochrosia balansae*, *Ochrosia vieillardii*, *Strychnos dinklagei* and *Pterotaberna inconspicua* (Apocynaceae, Loganiaceae).

1,2,3,4-Tetrahydro, N^2-*Me:* ***Tetrahydro-2-methylellipticine***. u-*Alkaloid B.* N-*Methyltetrahydroellipticine*

$C_{18}H_{20}N_2$ 264.369

Alkaloid from *Aspidosperma ulei* and *Aspidosperma subincanum* (Apocynaceae). Cryst. (MeOH). Mp 215-218° dec.

*13-Oxo: 11-Methyl-6*H*-pyrido[4,3-*b*]carbazole-5-carboxaldehyde.* ***13-Oxoellipticine***

[77251-57-1]

$C_{17}H_{12}N_2O$ 260.295

Alkaloid from the stem bark of *Strychnos dinklagei* (Loganiaceae). Yellow needles ($CHCl_3$). Mp 275-276°.

13-Oxo, N^2-*oxide:* ***13-Oxoellipticine* N^b-*oxide***

[83329-78-6]

$C_{17}H_{12}N_2O_2$ 276.294

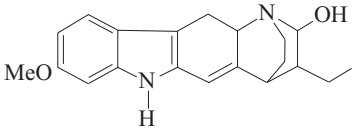
Alkaloid from the stem bark of *Strychnos dinklagei* (Loganiaceae). Noncryst.

Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 473A (*nmr*)
Schmutz, J. *et al., Helv. Chim. Acta*, 1958, **41**, 288 (*N-Methyltetrahydroellipticine*)
Goodwin, S. *et al., J.A.C.S.*, 1959, **81**, 1903-1908 (*8-Methoxyellipticine, isol, uv, ir, pmr*)
Woodward, R.B. *et al., J.A.C.S.*, 1959, **81**, 4434-4435 (*Ellipticine, synth, struct*)
Büchi, G. *et al., Tetrahedron*, 1961, **15**, 167 (*3,4-Dihydroellipticine, iso, struct, synth*)
Budzikiewicz, H. *et al., Structure Elucidation of Natural Products by Mass Spectrometry*, Holden-Day Inc., 1964, **1**, 53 (*ms*)
Loder, J.W. *et al., Aust. J. Chem.*, 1966, **19**, 1947 (*ms*)
Dalton, L.K. *et al., Aust. J. Chem.*, 1967, **20**, 2715 (*synth, pmr*)
Bruneton, J. *et al., Phytochemistry*, 1972, **11**, 3073-3075 (*Ellipticine N-oxide, 3,4-Dihydroellipticine, 1,2,3,4-Tetrahydroellipticine*)
Courseille, C. *et al., Acta Cryst. B*, 1974, **30**, 2628 (*cryst struct*)
Sainsbury, M. *et al., J.C.S. Perkin 1*, 1976, 1155 (*synth*)
Oikawa, Y. *et al., J.C.S. Perkin 1*, 1976, 1479 (*synth*)
Sainsbury, M. *et al., Synthesis*, 1977, 437 (*rev*)
Bergman, J. *et al., Tet. Lett.*, 1977, 4663 (*synth*)
Ahond, A. *et al., Tetrahedron*, 1978, **34**, 2385-2388 (*cmr*)
Kohn, K.W. *et al., Antibiotics (N.Y.)*, 1979, **5**, 195 (*rev, pharmacol*)
Joule, J.A. *et al., Chem. Comm.*, 1979, 642 (*synth, bibl*)
Michel, S. *et al., Tet. Lett.*, 1980, **21**, 4027 (*13-Oxoellipticine*)
Ahond, A. *et al., J. Nat. Prod.*, 1981, **44**, 193-199 (*Ellipticine N-oxide, 3,4-Dihydroellipticine*)
Dolman, D. *et al., Tet. Lett.*, 1981, **22**, 2119-2120 (*8-Methoxyellipticine, synth*)
Besselièvre, R. *et al., Tetrahedron, Suppl.*, 1981, 241 (*synth*)
Kano, S. *et al., Heterocycles*, 1982, **19**, 1673 (*synth*)
Michel, S. *et al., J. Nat. Prod.*, 1982, **45**, 489-494 (*12-Hydroxyellipticine, Ellipticine N-oxide, 13-Oxoellipticine, 13-Oxoellipticine N-oxide, 3,4-Dihydroellipticine, 1,2,3,4-Tetrahydroellipticine*)
Sainsbury, M. *et al., J.C.S. Perkin 1*, 1982, 587-590 (*8-Hydroxyellipticine, 8-Methoxyellipticine*)
Saulnier, M.G. *et al., J.O.C.*, 1982, **47**, 2810 (*synth*)
Sainsbury, M. *et al., Org. Magn. Reson.*, 1982, **18**, 117 (*cmr*)
Morfaux, A.M. *et al., Phytochemistry*, 1982, **21**, 1767-1769 (*3,4-Dihydroellipticine, 1,2,3,4-Tetrahydroellipticine, isol*)
Miller, R.B. *et al., J.O.C.*, 1983, **48**, 886 (*synth*)
Murakami, Y. *et al., Tet. Lett.*, 1983, **24**, 2189 (*synth*)
Saulnier, M.G. *et al., Tet. Lett.*, 1983, **24**, 3831 (*13-Oxoellipticine, synth, pmr*)

Garlich, J.R. *et al., Acta Cryst. C*, 1984, **40**, 1871 (*oxide, cryst struct*)
Gribble, G.W. *et al., J.O.C.*, 1984, **49**, 4518; 1992, **57**, 5891 (*synth*)
Weller, D.D. *et al., Tet. Lett.*, 1984, **25**, 2105 (*synth*)
Suffness, M. *et al., Alkaloids (Academic Press)*, 1985, **25**, 116 (*rev, pharmacol*)
Gansser, C. *et al., Farmaco, Ed. Sci.*, 1985, **40**, 459-476 (*8-Methoxyellipticine, synth*)
Obaza-Nutaitis, J.A. *et al., J. Nat. Prod.*, 1986, **49**, 449 (*13-Oxoellipticine, synth*)
Kansal, V.K. *et al., Tetrahedron*, 1986, **42**, 2389-2408 (***rev***)
May, C. *et al., J.C.S. Perkin 1*, 1988, 247 (*synth*)
Miller, R.B. *et al., Tet. Lett.*, 1989, **30**, 297 (*synth*)
Hibino, S. *et al., J. Het. Chem.*, 1990, **27**, 1751 (*synth*)
Yokoyama, Y. *et al., J.C.S. Perkin 1*, 1990, 1319 (*synth*)
Bäckvall, J.-E. *et al., J.O.C.*, 1990, **55**, 4528 (*synth*)
Davis, D.A. *et al., Tet. Lett.*, 1990, **31**, 1081 (*synth*)
Modi, S.P. *et al., Tetrahedron*, 1991, **47**, 6539-6548 (*12-Hydroxyellipticine, synth*)
Froelich-Ammon, S.J. *et al., J. Biol. Chem.*, 1995, **270**, 14998 (*pharmacol*)
Mustafin, A.G. *et al., Russ. Chem. Bull. (Engl. Transl.)*, 1999, **48**, 2121-2126 (*synth*)
Ishikura, M. *et al., Heterocycles*, 2000, **53**, 11-14 (*synth*)
Diaz, M. *et al., Eur. J. Org. Chem.*, 2001, 4543-4549 (*synth*)
Miki, Y. *et al., J.C.S. Perkin 1*, 2001, 2213-2216 (*synth*)
Ho, T.-L. *et al., Helv. Chim. Acta*, 2006, **89**, 111-116 (*synth, pmr, cmr*)
Liu, C.-Y. *et al., J.O.C.*, 2007, **72**, 7106-7115 (*synth*)
Dračínsky, M. *et al., Tet. Lett.*, 2007, **48**, 6893-6895 (*synth*)
Mal, D. *et al., Tetrahedron*, 2007, **63**, 3768-3781 (*Ellipticine, synth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, EAI850; HKH000

Elliptinine E-68

[523-16-0]

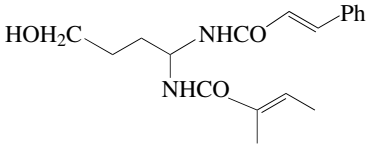


$C_{20}H_{24}N_2O_2$ 324.422

Proposed struct.; dubious. Alkaloid from *Ochrosia elliptica* (Apocynaceae). Cryst. ($MeOH/C_6H_6$). Mp 231-233°. $[\alpha]_D^{24}$ -255 (c, 0.2 in EtOH).

Goodwin, S. *et al., J.A.C.S.*, 1959, **81**, 1903-1908

Elliptinol† E-69



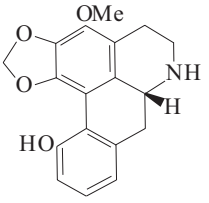
$C_{18}H_{24}N_2O_3$ 316.399

Alkaloid from *Aglaia elliptifolia*. Cytotoxic. Powder. Mp 162-163°. $[\alpha]_D^{22}$ +38.6 (c, 0.05 in $CHCl_3$). λ_{max} 283 (log ϵ 4.66) (MeOH).

Wang, S.-K. *et al., J. Nat. Prod.*, 2001, **64**, 92-94

Elmerrillicine E-70

6,7,7a,8-Tetrahydro-4-methoxy-5H-benzo[g]-1,3-benzodioxolo[6,5,4-de]quinolin-12-ol, 9CI. 11-Hydroxy-3-methoxy-1,2-methylenedioxynoraporphine



$C_{18}H_{17}NO_4$ 311.337

(R)-form [61619-35-0]

Alkaloid from the bark of *Elmerrillia papuana* (Magnoliaceae).

N-*Ac:*
Prisms (Et_2O). Mp 201-203°. $[\alpha]_D$ -474.

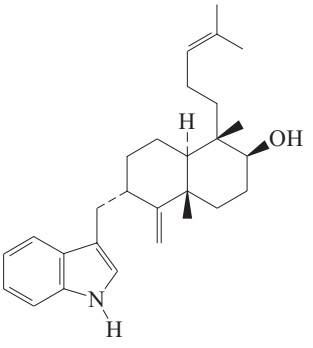
N,O-*Di-Ac:*
Prisms (Et_2O). Mp 210-212°. $[\alpha]_D$ -287.

N-*Me: 11-Hydroxy-3-methoxy-1,2-methylenedioxyaporphine.* **N-*Methylelmerrillicine***
[107882-27-9]
$C_{19}H_{19}NO_4$ 325.363
Alkaloid from the trunk bark of *Guatteria sagotiana* (Annonaceae). Amorph. $[\alpha]_D$ -73 (c, 0.26 in EtOH).

Cleaver, L. *et al., Aust. J. Chem.*, 1976, **29**, 2003 (*isol, uv, ir, pmr, ms, struct*)
Rasamizafy, S. *et al., J. Nat. Prod.*, 1986, **49**, 1078 (*isol, uv, pmr, ms, struct, deriv*)

Emeniveol E-71

[146001-22-1]



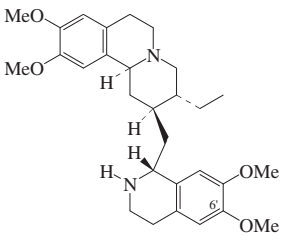
$C_{28}H_{39}NO$ 405.622

Alkaloid from *Emericella nivea*. Pollen growth inhibitor. Needles (MeOH). Mp 179°. $[\alpha]_D^{20}$ -91 (c, 1 in MeOH). λ_{max} 224 (ϵ 16600); 277 (sh) (ϵ 5620); 283 (ϵ 6170); 291 (ϵ 5620) (MeOH) (Derep).

Kimura, Y. *et al., Tet. Lett.*, 1992, **33**, 6987 (*isol, pmr, cmr, cryst struct*)

Emetine, BAN E-72

6′,7′,10,11-Tetramethoxyemetan, 9CI. Ipecine. Methylcephaleine. NSC 33669
[483-18-1]
[65910-27-2 ((±)-form)]



(-)-*form*

$C_{29}H_{40}N_2O_4$ 480.646

Alkaloid from *Alangium lamarckii*, *Alangium lonorchii*, *Cephaelis acuminata*, *Psychotria granadensis* and *Uragoga ipecachuana* (preferred genus name *Psychotria*) (Alangiaceae, Rubiaceae). The occurrence of Emetine in the common ivy, *Hedera helix* (Araliaceae) and in the roots of *Borreria verticillata* (Rubiaceae) remains unconfirmed. Inhibitor of RNA, DNA and protein synthesis. Orally-active emetic. Amoebicide, general parasiticide, shows antiviral, antineoplastic and antibacterial activity. Also shows neuromuscular and cardiovascular effects. *A. lamarckii* has been extensively used in Indian medicine and the biochemistry of Emetine has been comprehensively studied. Amorph. Mp 74° efferv. (sinters at 70°). $[\alpha]_D$ -46.55 (c, 1.16 in $CHCl_3$) (-50, -26). $[\alpha]_D$ -22 (EtOH). Log P 4.55 (calc).

▶ Severe skin and eye irritant. Adverse systemic effects by ingestion and intravenous routes. Cumulative poison. Cardiotoxic. Reported fatal dose approx. 2g. LD_{50} (rat, orl) 68 mg/kg.

Hydrochloride (1:2): ***Emetine hydrochloride, USAN.*** *Emetinal. Encol. Erketin. Hemometina*
[316-42-7]
Needles + $7H_2O$. Mp 255° dec. (sinters at 235°).

▶ Skin, eye and respiratory tract irritant. Local and cumulative systemic effects when used therapeutically. Cardiotoxic, nephrotoxic, hepatotoxic. LD_{50} (rat, orl) 0.012 mg/kg. LD_{50} (rat, ipr) 17 mg/kg. JY5250000

Hydrobromide (1:2):
Needles + $4H_2O$. Mp 250-260° (sinters at 245°).

Sulfate:
Needles + $7H_2O$. Mp 245° (sinters at 205°).

Camphorsulfonate salt: Canforemetina. Emetoplisc
[53625-86-8] Antiamoebic agent. Cryst. ($EtOH/Et_2O$). Mp 203-204° Mp 134-135°.

N-*Ac:*
Granules (Et_2O). Mp 97-99°.

O$^{6'}$-*De-Me:* ***Cephaeline.*** *Desmethylemetine. Dihydropsychotrine. Alangine B*
[483-17-0]
[5884-41-3 , 1353-93-1 (Alangine B)]
$C_{28}H_{38}N_2O_4$ 466.619

Alkaloid from *Alangium lamarckii*, *Alangium salviifolium*, *Psychotria granadensis*, *Psychotria ipecacuanha* and *Cephaelis acuminata*. Shows antitumour activity, inhibitor of RNA, DNA and protein biosynth. Emetic and expectorant. Antileishmanial and antimalarial agent. Sol. MeOH, $CHCl_3$, acids; fairly sol. Et_2O; poorly sol. H_2O, hexane. Mp 115-116° (104-107°; 110-111°). $[\alpha]_D^{25}$ -43.4 ($CHCl_3$). $[\alpha]_D$ -23.4 (c, 0.81 in $CHCl_3$). Log P 4.27 (calc).

O$^{6'}$-De-Me, hydrochloride: Mp 254-257°. $[\alpha]_D$ +21 (H_2O).

*O$^{6'}$-De-Me, 2′-*N*-(1-deoxy-β-D-fructopyranos-1-yl):* ***2′-N-(1-Deoxy-β-D-fructopyranos-1-yl)cephaeline***
[261515-32-6]
$C_{34}H_{48}N_2O_9$ 628.761
Alkaloid from *Cephaelis acuminata*. Amorph. powder. $[\alpha]_D^{26}$ -58 (c, 0.46 in $CHCl_3$). λ_{max} 209 (log ε 4.5); 223 (sh) (log ε 4.11); 285 (log ε 3.78) (MeOH).

O$^{6'}$-De-Me, O,N*-di-Ac:* Mp 116°.

O$^{6'}$-De-Me, N*-(methylaminocarbonyl):* ***Alangamide***
[24529-94-0]
$C_{30}H_{41}N_3O_5$ 523.671
Alkaloid from the seeds of *Alangium lamarckii*. Needles (EtOH aq. or Et_2O/EtOH). Mp 213°. $[\alpha]_D$ -45 (c, 0.82 in $CHCl_3$). Possible artifact.

O$^{6'}$-De-Me, N*-Me: Alamarckine*
[6793-51-7]
$C_{29}H_{40}N_2O_4$ 480.646
Semisynthetic; from *N*-methylation of the total crude alkaloids of *Alangium lamarckii* or of Cephaeline. Cryst. (MeOH). Mp 191-192°. $[\alpha]_D$ -50.5 (c, 1.4 in $CHCl_3$).

O$^{6'}$,O$^{7'}$-Di-de-Me: ***7′-O-Demethylcephaeline***
[261515-31-5]
$C_{27}H_{36}N_2O_4$ 452.592
Alkaloid from *Cephaelis acuminata*. Amorph. powder. $[\alpha]_D^{25}$ -3.4 (c, 0.56 in MeOH). λ_{max} 208 (log ε 4.54); 229 (sh) (log ε 4.08); 286 (log ε 3.81) (MeOH).

*O$^{6'}$,O^{9}-Di-de-Me: 9-*O*-Demethylcephaeline*
[82570-80-7]
Mp 147° (sinters at 124°). $[\alpha]_D^{12}$ -55 (c, 0.50 in $CHCl_3$).

O$^{6'}$,O^{10}-Di-de-Me: ***10-O-Demethylcephaeline***
[29700-91-2]
$C_{27}H_{36}N_2O_4$ 452.592
Alkaloid from *Alangium longiflorum* and *Cephaelis acuminata*. Cytotoxic. Mp 148° (sinters at 129-130°)(synthetic). $[\alpha]_D^{17}$ -53 (c, 0.50 in $CHCl_3$) (synthetic). λ_{max} 209 (log ε 4.5); 225 (sh) (log ε 4.11); 286 (log ε 3.83) (MeOH).

O$^{6'}$,O$^{7'}$-Di-de-Me: ***Demethylcephaeline***
[30901-62-3]
$C_{27}H_{36}N_2O_4$ 452.592
Alkaloid from the stem bark of *Alangium lamarckii*. Amorph. Mp 147-149°. $[\alpha]_D$ -53.5 ($CHCl_3$). This is probably identical with *O*^{10}-Demethylcephaleine above, but this is not yet confirmed (1999). Reported phys. props. identical. λ_{max} 211 (log ε 4.28); 225 (sh) (log ε 3.91); 286 (log ε 3.69) (EtOH). λ_{max} 213 (sh) (log ε 3.48); 227 (log ε 3.96); 247 (log ε 4.05); 301 (log ε 3.81) (EtOH/NaOH).

1′,2′-Didehydro: ***O-Methylpsychotrine***
[523-01-3]
$C_{29}H_{38}N_2O_4$ 478.63
Alkaloid from *Psychotria ipecacuanha*, *Psychotria granadensis* and *Cephaelis ipecacuana*. Mp 123-124°. $[\alpha]_D$ +43.2 (c, 1 in EtOH). λ_{max} 241 (ε 18800); 288 (ε 7244); 305 (ε 8320); 354 (ε 8130) (MeOH-HCl) (Berdy). λ_{max} 226 (ε 26900); 278 (ε 9120); 307 (ε 5760) (MeOH-NAOH) (Berdy).

▶ JY4376000

1′,2′-Didehydro, oxalate salt: Mp 161° dec. $[\alpha]_D$ +42 (c, 1.0 in H_2O).

1′,2′-Didehydro, O$^{6'}$-de-Me: ***Psychotrine***
[7633-29-6]
$C_{28}H_{36}N_2O_4$ 464.603
Alkaloid from the seeds, root bark and stem bark of *Alangium lamarckii*, the roots and branches of *Alangium salviifolium*, and from *Psychotria ipecacuanha* and *Cephaelis ipecacuana*. Shows cytotoxic activity. HIV reverse transcriptase inhibitor. Yellow prisms (Me_2CO aq.). Mp 138° (130-133°, 117-120°). $[\alpha]_D$ +80.2 (+75.50) (MeOH). $[\alpha]_D^{20}$ +68.4 (c, 1.0 in EtOH). λ_{max} 240 (ε 13900); 288 (ε 3700); 306 (ε 6250); 356 (ε 6800) (MeOH/HCl) (Berdy).

1′,2′-Didehydro, O$^{6'}$-de-Me, oxalate salt: Mp 131-145°. $[\alpha]_D$ +21.6 (H_2O).

1′,2′-Didehydro, O$^{6'}$,O^{9}-di-de-Me: ***9-Demethylpsychotrine***
[16531-03-6]
[73053-57-3]
$C_{27}H_{34}N_2O_4$ 450.577
Alkaloid from the root bark and stem bark of *Alangium lamarckii* (Alangiaceae). Dark-yellow granules (EtOH). Mp 166-168°. $[\alpha]_D$ +67.9 (c, 0.50 in MeOH).

1′,2′,3′,4′-Tetradehydro: ***Emetamine***
[483-19-2]
$C_{29}H_{36}N_2O_4$ 476.614
Alkaloid from *Psychotria granadensis* and *Psychotria ipecacuanha* (Rubiaceae). Needles (EtOAc). Mp 155-156°. $[\alpha]_D$ +12.3 (EtOH).

1′-Hydroxy, O$^{6'}$,O^{9}-di-de-Me: ***Klugine****. 1′-Hydroxy-9-*O*-demethylcephaeline*
$C_{27}H_{36}N_2O_5$ 468.592
Alkaloid from the stem bark of *Psychotria klugii*. Light brown cryst. ($MeCN/CH_2Cl_2$). Mp 288-290°. $[\alpha]_D$ -66 (c, 1 in MeOH). λ_{max} 208 (log ε 4.35); 244 (log ε 3.9); 315 (log ε 3.75); 328 (log ε 3.8); 450 (sh) (log ε 3.65) (MeOH).

8-Hydroxy, 1′,2′-didehydro, O$^{6'}$-de-Me: ***Alangicine***
[16531-04-7]
$C_{28}H_{36}N_2O_5$ 480.603
Alkaloid from the root bark of *Alangium lamarckii* (Alangiaceae). Pale-yellow granules (EtOH). Mp 147-148°. $[\alpha]_D$ +64.1 (c, 0.26 in MeOH).

6′-Demethoxy, 8′-hydroxy: ***Neocephaeline***
[261515-30-4]
$C_{28}H_{38}N_2O_4$ 466.619
Alkaloid from *Cephaelis acuminata*. Amorph. powder. $[\alpha]_D^{25}$ -87 (c, 1 in $CHCl_3$). λ_{max} 207 (log ε 4.76); 230 (sh) (log ε 4.12); 282 (log ε 3.71) (MeOH).

*6′-Demethoxy, 8′-hydroxy, 2′-*N*-(1-deoxy-β-D-fructopyranos-1-yl):* ***2′-N-(1-Deoxy-β-D-fructopyranos-1-yl)neocephaeline***
[261515-33-7]
$C_{34}H_{48}N_2O_9$ 628.761
Alkaloid from *Cephaelis acuminata*. Amorph. powder. $[\alpha]_D^{26}$ -50 (c, 0.18 in $CHCl_3$). λ_{max} 207 (log ε 4.62); 224 (sh) (log ε 4.05); 283 (log ε 3.55) (MeOH).

1′-Epimer, O$^{6'}$-de-Me: ***Isocephaeline***
[5884-45-7]
[17132-43-3]
$C_{28}H_{38}N_2O_4$ 466.619
Alkaloid from the seeds of *Alangium lamarckii* and *Cephaelis acuminata*. Cryst. (Et_2O). Mp 116° (shrinks from 108°). $[\alpha]_D^{20}$ -69.8 ($CHCl_3$).

1′-Epimer, O$^{6'}$,O$^{7'}$-di-de-Me: ***7′-O-Demethylisocephaeline***
$C_{27}H_{36}N_2O_4$ 452.592
Alkaloid from the stem bark of *Psychotria klugii*. Light brown cryst. ($MeCN/CH_2Cl_2$). Mp 214-216°. $[\alpha]_D$ -47 (c, 1 in MeOH). λ_{max} 204 (log ε 4.3); 242 (log ε 3.85); 282 (sh) (log ε 3.1); 305 (log ε 3.65); 316 (log ε 3.68); 460 (log ε 3.55) (MeOH).

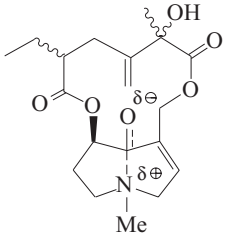
1′-Epimer, O$^{6'}$,O^{10}-di-de-Me: ***10-O-Demethylisocephaeline***
$C_{27}H_{36}N_2O_4$ 452.592
Alkaloid from the stem bark of *Alangium longiflorum*. Needles. Mp 114-116°. $[\alpha]_D^{30}$ -12.8 (c, 0.81 in MeOH).

Pyman, F.L. *et al., J.C.S.*, 1917, **111**, 419-446 (*Emetamine*)
Brossi, A. *et al., Helv. Chim. Acta*, 1959, **42**, 1515-1522 (*Emetine, synth, resoln*)
Van Tamelen, E.E. *et al., J.A.C.S.*, 1959, **81**, 507 (*Emetine, stereochem, bibl*)
Battersby, A.R. *et al., J.C.S.*, 1959, 1744-1748; 1748-1753; 2704-2711; 3512-3521; 1960, 717-725 (*Emetine, Cephaeline, Psychotrine, O-Methylpsychotrine, isol, config, synth*)
Openshaw, H.T. *et al., J.C.S.*, 1963, 1461-1471 (*synth*)
Pakrashi, S.C. *et al., Indian J. Chem.*, 1964, **2**, 379-380 (*Alangine B, Alamarckine*)
Budzikiewicz, H. *et al., Tetrahedron*, 1964, **20**, 399-408 (*Emetine, Psychotrine, Emetamine, isol, ms*)
Teitel, S. *et al., J.A.C.S.*, 1966, **88**, 4068-4071 (*Psychotrine, synth, uv, ir, pmr, ms*)
Szántay, C. *et al., J.O.C.*, 1966, **31**, 1447-1451 (*synth*)
Pakrashi, S.C. *et al., Tet. Lett.*, 1967, 2143-2146 (*Alangicine, 9-Demethylpsychotrine, uv, ir, ms*)
Battersby, A.R. *et al., Chem. Comm.*, 1968, 134-135 (*biosynth*)
Pakrashi, S.C. *et al., Indian J. Chem.*, 1969, **7**, 635-636 (*Alangamide*)
Pakrashi, S.C. *et al., Experientia*, 1970, **26**, 933-934 (*Demethylcephaeline*)
Garg, A.K. *et al., Phytochemistry*, 1972, **11**, 689-695 (*biosynth*)
Koch, M.C. *et al., J.O.C.*, 1975, **40**, 2836-2838 (*Emetine, cmr*)
Mahran, G.H. *et al., Planta Med.*, 1975, **27**, 127-132 (*Emetine, isol, uv, ir, pmr, ms*)

Nagakura, N. *et al., Chem. Comm.*, 1978, 896-898 (*biosynth*)
Takano, S. *et al., Heterocycles*, 1979, **12**, 765-770 (*synth*)
Schuij, C. *et al., J.C.S. Perkin 1*, 1979, 970-975 (*O-Methylpsychotrine*)
Kametani, T. *et al., J.C.S. Perkin 1*, 1979, 1211-1217 (*synth*)
Achari, B. *et al., Planta Med. (Suppl.)*, 1980, 5-7 (*Isocephaeline*)
Feyns, L.V. *et al., Anal. Profiles Drug Subst.*, 1981, **10**, 289-335 (*Emetine, rev, uv, ir, pmr, cmr, ms, anal*)
Fujii, T. *et al., Chem. Pharm. Bull.*, 1982, **30**, 598-609; 1983, **31**, 2583-2592; 1985, **33**, 144-151; 583 (*Psychotrine, Alangicine, uv, ms, pmr, cd, cmr, struct, synth*)
Fujii, T. *et al., Heterocycles*, 1982, **19**, 857-860 (*Demethylcephaelines*)
Fujii, T. *et al., Alkaloids (Academic Press)*, 1983, **22**, 31-50 (*bibl, pharmacol*)
Brown, R.T. *et al., Tet. Lett.*, 1984, **25**, 3127-3130 (*synth*)
Suffness, M. *et al., Alkaloids (Academic Press)*, 1985, **25**, 52-57 (*antitumour activity*)
Naito, T. *et al., Chem. Pharm. Bull.*, 1986, **34**, 3530-3533 (*synth*)
Hirai, Y. *et al., Chem. Pharm. Bull.*, 1988, **36**, 1343-1350 (*synth*)
Ihara, M. *et al., J.C.S. Perkin 1*, 1990, 1469-1476 (*synth*)
Guiles, J.W. *et al., J.O.C.*, 1991, **56**, 6873-6878 (*synth*)
Pan, S.J. *et al., Toxicology*, 1995, **97**, 93-104 (*tox*)
Ito, A. *et al., J. Nat. Prod.*, 1999, **62**, 1346-1348 (*isol, activity*)
Martindale, The Extra Pharmacopoeia, 32nd edn., Pharmaceutical Press, 1999, 582; 1062
Itoh, A. *et al., Phytochemistry*, 1999, **52**, 1169-1176 (*Emetine, Cephaeline, Isocephaeline, Neocephaeline, O-Demethylcephaelines, 2′-N-(1-deoxyfructopyranosyl)*)
Muhammed, I. *et al., J. Nat. Prod.*, 2003, **66**, 962-967 (*Klugine, 7′-O-Demethylisocephaeline*)
Tietze, L.F. *et al., Chem. Eur. J.*, 2004, **10**, 2722-2731 (*synth*)
Itoh, T. *et al., Org. Lett.*, 2006, **8**, 1295-1297 (*synth*)
Sakurai, N. *et al., Phytochemistry*, 2006, **67**, 894-897 (*10-O-Demethylisocephaeline*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, EAL500; EAN000

Emiline E-73

[36506-99-7]



$C_{19}H_{27}NO_6$ 365.425

Struct. revised in 1987. Alkaloid from *Emilia flammea* (Asteraceae). Needles (Et_2O). Mp 105-107° (103-105°). $[\alpha]_D^{20}$ -13.1 ($CHCl_3$). $[\alpha]_D^{22.5}$ -17.5 ($CHCl_3$).

▶ Carcinogenic.

Hydrochloride:
Needles (EtOH). Mp 248-251° (243-245°).

Picrate: Mp 245-247°.

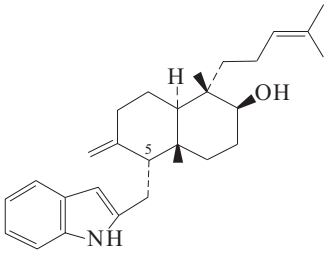
[36506-98-6 , 36506-81-7]

Tomczyk, H. *et al., CA*, 1972, **77**, 19848u (*isol*)
Barbour, R.H. *et al., Phytochemistry*, 1987, **26**, 2430 (*isol, ir, pmr, cmr, ms, struct*)
Sax, N.I. *et al., Dangerous Properties of Industrial Materials, 5th edn., Van Nostrand Reinhold*, 1979, 640

Emindole DA E-74

*Decahydro-5-(1*H*-indol-3-ylmethyl)-1,4*a*-dimethyl-6-methylene-1-(4-methyl-3-pentenyl)-2-naphthalenol, 9CI*

[110883-36-8]



$C_{28}H_{39}NO$ 405.622

Indolic diterpenoid antibiotic. Isol. from *Emericella desertorum* and *Emericella striata*. Mycotoxin. Prisms (C_6H_6/hexane). Sol. MeOH, Me_2CO; poorly sol. H_2O. Mp 146-147°. $[\alpha]_D$ -30.7 (c, 2.32 in MeOH). λ_{max} 224 (ϵ 16600); 277 (sh) (ϵ 5620); 283 (ϵ 6170); 291 (ϵ 5620) (MeOH) (Derep). λ_{max} 224 (ϵ 16600); 283 (ϵ 6150); 291 (ϵ 5610) (MeOH) (Berdy).

Ac:
Needles (hexane). Mp 142.5-143.5°.

5-Epimer: ***Emindole SA***
[110883-37-9]
$C_{28}H_{39}NO$ 405.622
From *Emericella desertorum* and *Emericella striata*. Amorph. powder. Mp 58-60°. $[\alpha]_D$ +32 (c, 0.79 in MeOH). λ_{max} 224 (ϵ 16600); 277 (sh) (ϵ 5620); 283 (ϵ 6170); 291 (ϵ 5620) (MeOH) (Derep).

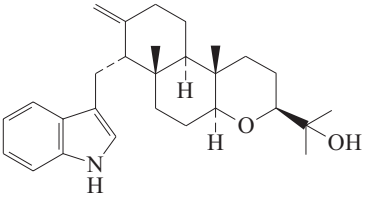
5-Epimer, Ac:
Leaflets +½H_2O (MeOH). Mp 102°.

Nozawa, K. *et al., Chem. Comm.*, 1987, 1157 (*isol, struct*)
Nozawa, K. *et al., J.C.S. Perkin 1*, 1988, 1689; 2155 (*isol, cmr, pmr, struct*)
Rainier, J.D. *et al., Tet. Lett.*, 2000, **41**, 9419-9423 (*synth, Emindole SA*)
Fueki, S. *et al., Org. Lett.*, 2004, **6**, 2697-2700 (*biosynth, Emindole DA*)

Emindole DB E-75

*Dodecahydro-7-(1*H*-indol-3-ylmethyl)-α,α,6a,10*b*-tetramethyl-8-methylene-1*H*-naphtho[2,1-*b*]pyran-3-methanol, 9CI*

[112900-03-5]



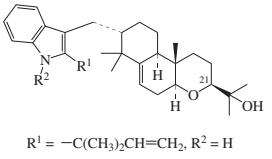
$C_{28}H_{39}NO_2$ 421.622

Metab. of *Emericella desertorum*. Prisms (C_6H_6/hexane). Mp 165.5-166.5°. $[\alpha]_D^{22}$ -86.3 (c, 0.48 in MeOH). λ_{max} 224 (ϵ 38000); 283 (ϵ 7760); 291 (ϵ 6920) (MeOH) (Berdy).

Nozawa, K. *et al., J.C.S. Perkin 1*, 1988, 1689 (*isol, cmr, struct*)

Emindole PA E-76

[158371-92-7]



Probable Absolute Configuration

$R^1 = -C(CH_3)_2CH{=}CH_2$, $R^2 = H$

$C_{33}H_{47}NO_2$ 489.74

Struct. revised in 2006. Isol. from *Emericella purpurea* IFO 30849. Mycotoxin; angiotensin II receptor antagonist. Amorph. powder.

21-Epimer: ***Emindole PC***
$C_{33}H_{47}NO_2$ 489.74
Isol. from *Emericella purpurea* IFO 30849. Cryst. (petrol). Mp 238-240°.

Hosoe, T. *et al., Chem. Pharm. Bull.*, 2006, **54**, 185-187 (*isol, pmr, cmr, ms*)

Emindole PB E-77

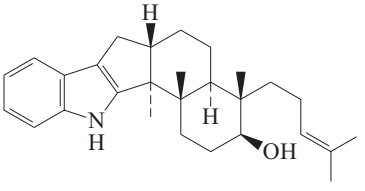
As Emindole PA, E-76 with R^1 = H, R^2 = $-C(CH_3)_2CH{=}CH_2$

$C_{33}H_{47}NO_2$ 489.74
Isol. from *Emericella purpurea* IFO 30849. Amorph. powder.

Hosoe, T. *et al., Chem. Pharm. Bull.*, 2006, **54**, 185-187 (*isol, pmr, cmr, ms*)

Emindole SB E-78

[112900-04-6]



$C_{28}H_{39}NO$ 405.622

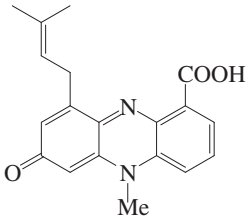
Abs. config. assumed to be as shown but not explicitly assigned. Prod. by *Emericella striata* and mangrove fugus No. dz17. Amorph. powder. Mp 58-60°. $[\alpha]_D^{15}$ +32 (c, 0.79 in MeOH).

O-*Ac:*
Leaflets + ½H_2O (MeOH). Mp 102°.

Nozawa, K. *et al., J.C.S. Perkin 1*, 1988, 2607-2610 (*isol, ir, pmr, cmr, ms*)
Huang, Z. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2007, **43**, 655-657 (*isol, pmr, cmr*)

Endophenazine B E-79

5-Methyl-9-(3-methyl-2-butenyl)-7-oxo-1(5H)-phenazinecarboxylic acid



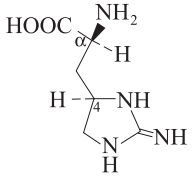
$C_{19}H_{18}N_2O_3$ 322.363

Prod. by various strains of the endosymbiotic *Streptomyces anulatus*. Active against gram-positive bacteria and some fungi. Violet solid. λ_{max} 236 (log ε 4.33); 283 (log ε 4.44); 374 (log ε 3.86); 516 (log ε 3.89); 545 (sh) (MeOH).

Gebhardt, K. *et al., J. Antibiot.*, 2002, **55**, 794-800; 801-806 (*isol, pmr, cmr, ms, activity*)

Enduracididine E-80

α,2-Diamino-4,5-dihydro-1H-imidazole-4-propanoic acid, 9CI



(α*S*,4*R*)–*form*

$C_6H_{12}N_4O_2$ 172.186

Contains tautomeric guanidino system. CAS name refers to aminoimidazole tautomer.

(α*S*,4*R*)-*form* [21209-39-2]

Isol. from seeds of *Lonchocarpus sericeus*. Component of Enduracidin A. Mp 235-236° (as hydrobromide).

N$^{\alpha}$-*(6-Bromo-1H-indol-3-ylcarbonyl)*: **N$^{\alpha}$-*(6-Bromo-1H-indol-3-ylcarbonyl)enduracididine***

$C_{15}H_{16}BrN_5O_3$ 394.227

Isol. from the ascidian *Leptoclinides dubius*. Sol. MeOH, butanol. $[\alpha]_D^{20}$ +16.5 (c, 0.8 in MeOH). λ_{max} 222 (log ε 2.98); 250 (log ε 2.63); 282 (log ε 2.39) (MeOH). λ_{max} 222 (ε 1122); 250 (ε 1350); 282 (ε 1288) (MeOH) (Berdy).

(α*R*,4*R*)-*form*

Alloenduracididine

[21380-32-5]

Component of Enduracidin A. Mp 249-252° (as hydrobromide).

Horii, S. *et al., J. Antibiot.*, 1968, **21**, 665-667 (*isol*)

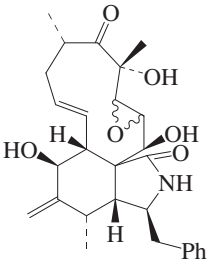
Tsuji, S. *et al., Chem. Lett.*, 1975, 1281-1284 (*synth*)

Fellows, L.E. *et al., Phytochemistry*, 1977, **16**, 1957-1959 (*isol, ms, ir, pmr, cmr*)

Garcia, A. *et al., J. Nat. Prod.*, 1996, **59**, 782-785 (*6-Bromoindolylcarbonylenduracididine*)

Engleromycin E-81

[77784-06-6]



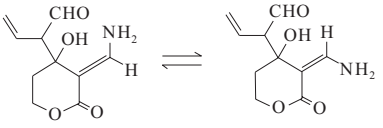
$C_{28}H_{35}NO_6$ 481.588

Prod. by *Engleromyces goetzei*. Shows antibiotic and cytotoxic props. Needles (EtOH aq.). Mp 226-228°. $[\alpha]_D^{25}$ +64 (EtOH).

Pedersen, E.J. *et al., Tet. Lett.*, 1980, **21**, 5079 (*isol, pmr, cmr, struct*)

Enicoflavine E-82

[56050-08-9]



$C_{10}H_{13}NO_4$ 211.217

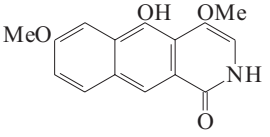
Alkaloid from *Enicostema hyssopifolium* (Gentianaceae). Unstable yellow liq. V. reactive, converted into Gentianine, G-59, Gentiocrucine, G-62, and other compds. on standing at r.t. for three weeks. Genus name given as Enicostemma.

Chaudhuri, R.K. *et al., Chem. Ind. (London)*, 1975, 127 (*uv, ir, pmr, ms, isol, struct*)

Enkleine E-83

5-Hydroxy-4,7-dimethoxybenz[g]isoquinolin-1(2H)-one, 9CI

[139682-16-9]



$C_{15}H_{13}NO_4$ 271.272

Alkaloid from roots of *Enkleia siamensis* (Thymelaeaceae). Needles. Mp 165-168°.

Boonyaratanakornkit, L. *et al., Planta Med.*, 1991, **57**, 582 (*isol, uv, ir, pmr, ms, struct*)

Entadamide A E-84

N-*(2-Hydroxyethyl)-3-(methylthio)-2-propenamide, 9CI*

MeSCH=CHCONHCH$_2$CH$_2$OH

$C_6H_{11}NO_2S$ 161.224

(*E*)-*form* [100477-88-1]

Constit. of *Clinacanthus siamensis* and *Entada phaseoloides*. Syrup.

S-*Oxide (*R-*)*: ***Entadamide C***

[121949-96-0]

$C_6H_{11}NO_3S$ 177.224

Constit. of *Clinacanthus siamensis* and *Entada phaseoloides*. Needles (Me_2CO). Mp 144-145°. $[\alpha]_D^{24}$ +186 (c, 0.13 in MeOH). The synthetic racemate has Mp 122-123° (Me_2CO).

O-*β-D-Glucopyranoside:* ***Entadamide A β-D-glucoside***

[138916-58-2]

$C_{12}H_{21}NO_7S$ 323.366

Constit. of the seeds of *Entada phaseoloides*. Pale brown syrup. $[\alpha]_D$ -12 (c, 0.05 in MeOH).

Ikegami, F. *et al., Chem. Pharm. Bull.*, 1985, **33**, 5153 (*isol, ir, cmr, pmr*)

Ikegami, F. *et al., Phytochemistry*, 1989, **28**, 881 (*Entadamide C*)

Dai, J. *et al., Phytochemistry*, 1991, **30**, 3749 (*glycoside*)

Tuntiwachwuttikul, P. *et al., Chem. Pharm. Bull.*, 2003, **51**, 1423-1425 (*isol*)

Entadamide B E-85

N-*(2-Hydroxyethyl)-3,3-bis(methylthio)-propanamide, 9CI*

[110225-60-0]

(MeS)$_2$CHCH$_2$CONHCH$_2$CH$_2$OH

$C_7H_{15}NO_2S_2$ 209.333

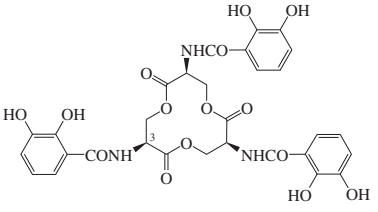
Isol. from the seeds of *Entada phaseoloides* (Fabaceae).

Ikegami, F. *et al., Phytochemistry*, 1987, **26**, 1525 (*isol, ir, pmr, cmr, ms, struct, synth*)

Enterobactin E-86

N,N′,N″-*(2,6,10-Trioxo-1,5,9-trioxacyclododecane-3,7,11-triyl)tris[2,3-dihydroxybenzamide], 9CI. Enterochelin*

[28384-96-5]



$C_{30}H_{27}N_3O_{15}$ 669.554

Isol. from *Salmonella typhimurium*, *Escherichia coli*, *Klebsiella pneumoniae*, *Klebsiella aerogenes*, *Enterobacter* sp. and *Shigella* sp. Catecholate siderophore, iron chelator. Sol. MeOH, Me_2CO, bases, DMSO; poorly sol. H_2O. Mp 202-203°. $[\alpha]_D$ +7.4 (EtOH). λ_{max} 316 (ε 4390) (EtOH) (Berdy).

Pollack, J.R. *et al., Biochem. Biophys. Res. Commun.*, 1970, **38**, 989-992 (*isol*)

Rogers, H.A. *et al., Biochim. Biophys. Acta*, 1977, **497**, 548-557 (*isol*)

Corey, E.J. *et al., Tet. Lett.*, 1977, **18**, 3919-3922 (*synth*)

Rastetter, W.H. *et al., J.O.C.*, 1981, **46**, 3579-3590 (*synth*)

Shanzer, A. *et al., Chem. Comm.*, 1983, 846-847 (*synth*)

Pecoraro, V. *et al., J.A.C.S.*, 1983, **105**, 4617-4623; 4623-4633 (*isol, props*)

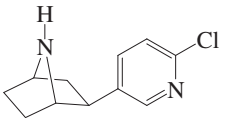
Tor, Y. *et al., J.A.C.S.*, 1992, **114**, 6661-6671 (*pmr, cd, bibl*)

Rogers, H.J. *et al., J.C.S. Perkin 1*, 1995, 3073-3075 (*synth, ir, pmr, cmr*)

Marinez, E.R. *et al., J.O.C.*, 1996, **61**, 3548-3550 (*synth*)

Epibatidine E-87

2-(6-Chloro-3-pyridinyl)-7-azabicyclo[2.2.1]heptane, 9CI



(+)-*form*

$C_{11}H_{13}ClN_2$ 208.69

Unique new class of alkaloids. Log P 1.02 (calc). λ_{max} 217; 270 (sh); 274 (ϵ 5300) (MeOH) (Derep).

(+)-*form* [140111-52-0]

Alkaloid from the skin extracts of the Ecuadoran poison frog *Epipedobates tricolor*. Neuronal nicotinic acetylcholine receptor agonist (most potent known to date). Also active at neuromuscular nicotinic receptors. Potent non-opioid analgesic (potency reported to be 200-500 times greater than that of morphine). Mp 56-57°. $[\alpha]_D^{23}$ +5 (c, 0.35 in $CHCl_3$). Data refer to synthetic material.

Hydrochloride: Mp 150° dec. $[\alpha]_D^{24}$ +34.7 (c, 0.36 in MeOH).

(-)-*form* [152378-30-8]

Needles. Mp 56-57° Mp 64°. $[\alpha]_D^{23}$ -5 (c, 0.35 in $CHCl_3$). Similar pharmacol. profile to (+)-form.

Hydrochloride: Mp 130° dec. $[\alpha]_D^{24}$ -33.7 (c, 0.16 in MeOH).

(±)-*form* [148152-66-3]

Synthetic. Mp 50-51°.

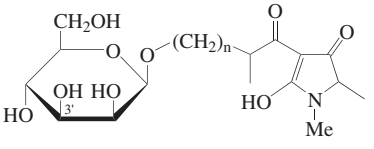
4-Epimer: [152377-48-5]

Yellow oil. Pharmacol. inactive.

Spande, T.F. *et al., J.A.C.S.*, 1992, **114**, 3475 (*isol, pmr, ms, struct*)
Corey, E.J. *et al., J.O.C.*, 1993, **58**, 5600 (*synth*)
Broka, C.A. *et al., Tet. Lett.*, 1993, **34**, 3251 (*synth*)
Huang, D.F. *et al., Tet. Lett.*, 1993, **34**, 4477 (*synth, resoln*)
Clayton, S.C. *et al., Tet. Lett.*, 1993, **34**, 7493 (*synth*)
Rupniak, N.M.J. *et al., Br. J. Pharmacol.*, 1994, **113**, 1487-1493 (*pharmacol*)
Ko, S.Y. *et al., Chem. Comm.*, 1994, 1775 (*synth*)
Okabe, K. *et al., Chem. Pharm. Bull.*, 1994, **42**, 1432 (*synth*)
Watt, A.P. *et al., J. Liq. Chromatogr.*, 1994, **17**, 1256 (*resoln*)
Fisher, M. *et al., J. Pharmacol. Exp. Ther.*, 1994, **270**, 702-707 (*pharmacol*)
Fletcher, S.R. *et al., J.O.C.*, 1994, **59**, 1771 (*synth, pmr, abs config*)
Senokuchi, K. *et al., Synlett*, 1994, 343 (*synth*)
Sestanj, K. *et al., Tet. Lett.*, 1994, **35**, 5417 (*synth*)
Albertini, E. *et al., Tet. Lett.*, 1994, **35**, 9297; 1997, **38**, 681-684 (*synth*)
Szantay, C. *et al., Alkaloids (Academic Press)*, 1995, **46**, 95-125 (*rev, synth*)
Bonhaus, D.W. *et al., J. Pharmacol. Exp. Ther.*, 1995, **272**, 1199-1203 (*pharmacol*)
Dehmlow, E.V. *et al., J. Prakt. Chem.*, 1995, **337**, 167 (*rev*)
Harnández, A. *et al., J.O.C.*, 1995, **60**, 2683 (*synth*)
Kotian, P.L. *et al., Synth. Commun.*, 1995, **25**, 63 (*synth, resoln*)
Sullivan, J.P. *et al., CNS Drug Rev.*, 1996, **2**, 21 (*rev*)
Chen, Z. *et al., Chem. Rev.*, 1996, **96**, 1179 (*rev, bibl*)
Sacaan, A.I. *et al., J. Pharmacol. Exp. Ther.*, 1996, **276**, 509-515 (*pharmacol*)
Bai, D. *et al., J.O.C.*, 1996, **61**, 4600 (*synth*)
Zhang, C. *et al., J.O.C.*, 1996, **61**, 7189 (*synth*)
Müller, C.E. *et al., Pharm. Unserer Zeit*, 1996, **25**, 85 (*rev*)
Xu, R. *et al., Tet. Lett.*, 1996, **37**, 1463 (*synth*)
Trost, B.M. *et al., Tet. Lett.*, 1996, **37**, 7485-7488 (*asym synth*)
Szántay, C. *et al., Tetrahedron*, 1996, **52**, 11053 (*synth, pmr, cmr*)
Ikeda, M. *et al., J.C.S. Perkin 1*, 1997, 3339-3344 (*synth, biol*)
Giblin, G.M.P. *et al., J.C.S. Perkin 1*, 1998, 3689-3697 (*synth*)
Aoyagi, S. *et al., J.O.C.*, 1998, **63**, 8397-8406 (*synth*)
Avenoza, A. *et al., Synthesis*, 1998, 1335-1338 (*synth*)
Jones, C.D. *et al., Tet. Lett.*, 1998, **39**, 1021-1022; 1023-1024 (*synth*)
Aoyagi, S. *et al., Tet. Lett.*, 1998, **39**, 4513-4516 (*synth*)
Zhang, C. *et al., J.C.S. Perkin 1*, 1999, 675-676 (*synth*)
Habermann, J. *et al., J.C.S. Perkin 1*, 1999, 1253-1255 (*synth*)
Barros, M.T. *et al., Tet. Lett.*, 1999, **40**, 557-560 (*synth*)
Hall, A. *et al., J.C.S. Perkin 1*, 2000, 329-343 (*synth*)
Cabanal-Duvillard, I. *et al., Tetrahedron*, 2000, **56**, 3763-3769 (*synth*)
Roy, B. *et al., Heterocycles*, 2001, **55**, 861-871 (*synth*)
Barros, M.T. *et al., J.C.S. Perkin 1*, 2001, 166-173 (*synth*)
Evans, D.A. *et al., Org. Lett.*, 2001, **3**, 3009-3012 (*synth*)
Olivio, H.F. *et al., Org. Prep. Proced. Int.*, 2002, **34**, 1-26 (*rev*)
Pandey, G. *et al., Tetrahedron*, 2002, **58**, 3525-3534 (*synth*)
Lee, C.-L.K. *et al., Org. Lett.*, 2005, **7**, 2965-2967 (*synth*)
Armstrong, A. *et al., J.O.C.*, 2007, **72**, 8019-8024 (*synth*)

Epicoccamide E-88

[606139-26-8]



n = 14

$C_{29}H_{51}NO_9$ 557.723

Tetramic acid deriv. Metab. of the fungus *Epicoccum purpurascens* derived from the jellyfish *Aurelia aurita*, and a terrestrial *Epicoccum* sp. Amorph. powder. $[\alpha]_D^{20}$ -10.3 (c, 0.1 in EtOH). λ_{max} 282 (ϵ 7940) (EtOH).

3′-Ac: ***Epicoccamide B***

[959855-22-2]

$C_{31}H_{53}NO_{10}$ 599.76

Prod. by a terrestrial *Epicoccum* sp. Oil. $[\alpha]_D^{25}$ -94 (c, 0.2 in MeOH). λ_{max} 224 ; 283 (MeOH).

6′-Ac: ***Epicoccamide C***

[959855-23-3]

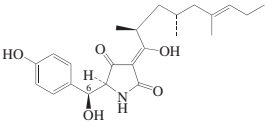
$C_{31}H_{53}NO_{10}$ 599.76

Prod. by a terrestrial *Epicoccum* sp. Oil. $[\alpha]_D^{25}$ -52.6 (c, 0.1 in MeOH). λ_{max} 224 ; 283 (MeOH).

Wright, A.D. *et al., Org. Biomol. Chem.*, 2003, **1**, 507-510 (*Epicoccamide*)
Wangun, H.V.K. *et al., J. Nat. Prod.*, 2007, **70**, 1800-1803 (*Epicoccamides B-C*)

Epicoccarine B E-89

[944339-71-3]



Relative Configuration

$C_{23}H_{31}NO_5$ 401.502

Tetramic acid deriv. Prod. by an *Epicoccum* sp. associated with *Pholiota squarrosa*. Red oil. $[\alpha]_D^{25}$ -179.9 (c, 0.1 in MeOH). λ_{max} 228 ; 280 (MeOH).

6-Deoxy: ***Epicoccarine A***

[944339-69-9]

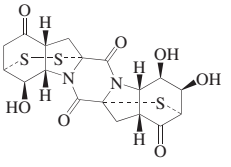
$C_{23}H_{31}NO_4$ 385.502

Prod. by an *Epicoccum* sp. associated with *Pholiota squarrosa*. Red oil. $[\alpha]_D^{25}$ -45.8 (c, 0.15 in MeOH). λ_{max} 228 ; 280 (MeOH).

Wangun, H.V.K. *et al., Org. Biomol. Chem.*, 2007, **5**, 1702-1705 (*isol, pmr, cmr, ms*)

Epicoccin B E-90

[952585-65-8]



Absolute Configuration

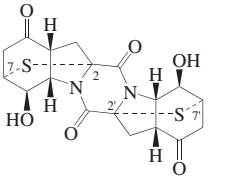
$C_{18}H_{18}N_2O_7S_3$ 470.547

Prod. by *Epicoccum nigrum* colonising a *Cordyceps* sp. Powder. $[\alpha]_D$ +111 (c, 0.04 in MeOH). λ_{max} 212 (ϵ 14600) (MeOH).

Zhang, Y. *et al., J. Nat. Prod.*, 2007, **70**, 1522-1525 (*isol, pmr, cmr*)

Epicoccin D E-91

[952585-67-0]



Absolute Configuration

$C_{18}H_{18}N_2O_6S_2$ 422.482

Prod. by *Epicoccum nigrum* colonising a *Cordyceps* sp. Powder. $[\alpha]_D$ +130 (c, 0.01 in MeOH). λ_{max} 206 (ϵ 14500) (MeOH).

2,7-Disulfide analogue: ***Epicoccin A***

[952585-64-7]

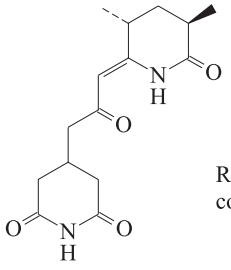
$C_{18}H_{18}N_2O_6S_3$ 454.548
Prod. by *Epicoccum nigrum*. Powder. $[\alpha]_D$ +365 (c, 0.06 in MeOH). λ_{max} 204 (ϵ 15100) (MeOH).

2,7:2′,7′-Bis(disulfide) analogue: ***Epicoccin C***
[952585-66-9]
$C_{18}H_{18}N_2O_6S_4$ 486.614
Prod. by *Epicoccum nigrum*. Powder. $[\alpha]_D$ +218 (c, 0.12 in MeOH). λ_{max} 204 (ϵ 13100) (MeOH).

Zhang, Y. *et al., J. Nat. Prod.*, 2007, **70**, 1522-1525 (*isol, pmr, cmr, cryst struct*)

Epiderstatin E-92

4-[3-(3,5-Dimethyl-6-oxo-2-piperidinylidene)-2-oxopropyl]-2,6-piperidinedione, 9CI
[126602-16-2]



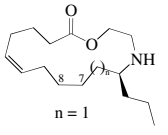
Relative configuration

$C_{15}H_{20}N_2O_4$ 292.334
Glutarimide antibiotic. Prod. by *Streptomyces pulveraceus* ssp. *epiderstagenes*. Inhibitor of mitogenic activity induced by epidermal growth factor. Powder. Sol. MeOH, $CHCl_3$, DMSO, EtOH; poorly sol. H_2O, hexane. Mp 185-187°. $[\alpha]_D^{21}$ +5.3 (c, 0.22 in MeOH). λ_{max} 295 (ϵ 16700) (MeOH) (Derep). λ_{max} (MeOH-HCl) (Berdy).

Osada, H. *et al., J. Antibiot.*, 1989, **42**, 1599; 1607 (*isol, struct, props*)
Sonoda, T. *et al., J. Antibiot.*, 1992, **45**, 1963 (*abs config*)
Ubukata, M. *et al., Nat. Prod. Lett.*, 1992, **1**, 149 (*synth*)
Dow, R.L. *et al., Tet. Lett.*, 1992, **33**, 309 (*synth, config*)
Ubukata, M. *et al., J. Antibiot.*, 1995, **48**, 1176 (*synth, pmr*)

Epilachnene E-93

5-Propyl-1-oxa-4-azacyclopentadec-10-en-15-one, 9CI. 11-Propyl-12-azacyclotetradec-5-en-14-olide
[147363-82-4]



Absolute configuration

$C_{16}H_{29}NO_2$ 267.411
Major alkaloid from the pupal defensive secretion of the Mexican bean beetle *Epilachna varivestis*. Syrup.

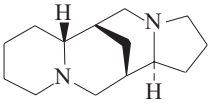
7,8-Didehydro(Z-): 5-Propyl-1-oxa-4-azacyclopentadeca-7,10-dien-15-one, 9CI. 11-Propyl-12-azacyclotetradeca-5,8-dien-14-olide. ***Epilachnadiene***
[147363-83-5]
$C_{16}H_{27}NO_2$ 265.395
Minor alkaloid from *Epilachna varivestis*.

Lower homologue (side chain): 5-Ethyl-1-oxa-4-azacyclopentadec-10-en-15-one, 9CI. 11-Ethyl-12-azacyclotetradec-5-en-14-olide. ***Norepilachnene***
[147363-86-8]
$C_{15}H_{27}NO_2$ 253.384
Trace alkaloid from *Epilachna varivestis*.

*Higher homologue (*n = *2): 5-Propyl-1-oxa-4-azacyclohexadec-11-en-16-one, 9CI. 12-Propyl-13-azacyclopentadec-5-en-15-olide.* ***Homoepilachnene***
[147363-84-6]
$C_{17}H_{31}NO_2$ 281.437
Trace alkaloid from *Epilachna varivestis*.

Attygalle, A.B. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 1993, **90**, 5204 (*isol, ir, ms, pmr, struct*)
Rao, B.V. *et al., Tet. Lett.*, 1996, **37**, 8613 (*synth*)
Fürstner, A. *et al., Synthesis*, 1997, 792-803 (*synth, pmr, cmr, ir, ms*)
Farmer, J.J. *et al., Tet. Lett.*, 1997, **38**, 2787 (*abs config*)
Attygalle, A.B. *et al., Tetrahedron*, 1999, **55**, 955-966 (*biosynth, ms*)

11-Epileontidane E-94

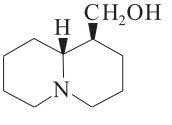


$C_{14}H_{24}N_2$ 220.357
Minor alkaloid from leaves and stems of *Maackia amurensis*, identified by ms (Fabaceae).

Kinghorn, A.D. *et al., Phytochemistry*, 1982, **21**, 2269

Epilupinine E-95

Isolupinine. Tetralupine
[486-71-5]



(+)–*form*

$C_{10}H_{19}NO$ 169.266
Diastereoisomeric with Octahydro-2*H*-quinolizine-1-methanol, O-58. Tetralupine was the racemate.

(+)-*form*
Alkaloid from leaves and seeds of *Lupinus cosentinii* (prev. designated *Lupinus pilosus, Lupinus varius* and *Lupinus digitatus*) (Fabaceae). Needles (petrol). Mp 77-78°. $[\alpha]_D$ +32 (EtOH). $[\alpha]_D$ +35 (H_2O).

Hydrochloride: Mp 172-173°. $[\alpha]_D$ +20.3 (H_2O).

Picrate: Mp 147-148°.

Methiodide: Mp 251-252°.

N-*Oxide:* ***Epilupinine* N-*oxide***
[38225-02-4]
$C_{10}H_{19}NO_2$ 185.266
Alkaloid from *Lupinus cosentinii* leaves and seeds (Fabaceae). Hygroscopic needles (MeOH/Me_2CO). Mp 212-215°.

Ac: ***Epilupinyl acetate****. Alkaloid LC1*
$C_{12}H_{21}NO_2$ 211.303
Alkaloid from leaves of *Lupinus cosentinii* (Fabaceae). $[\alpha]_D^{25}$ +33 (c, 1 in MeOH).

Ac, N-*oxide:* ***Epilupinyl acetate* N-*oxide****. Alkaloid LC8*
$C_{12}H_{21}NO_3$ 227.303
Cryst. + ½ H_2O (Me_2CO/cyclohexane). Mp 192°. $[\alpha]_D^{25}$ +14 (c, 1 in MeOH).

O-*(4-Hydroxy-*E*-cinnamoyl):* ***Epilupinyl trans-p-coumarate****. Alkaloid LC5*
$C_{19}H_{25}NO_3$ 315.411
Alkaloid from leaves of *Lupinus cosentinii* (Fabaceae). Off-white cryst. (Me_2CO/cyclohexane). Mp 165°.

O-*(4-Hydroxy-*Z*-cinnamoyl):* ***Epilupinine* cis-p-*coumarate***
$C_{19}H_{25}NO_3$ 315.411
Alkaloid from leaves of *Lupinus cosentinii* (Fabaceae). Off-white cryst. (Me_2CO/cyclohexane). Mp 144°.

O-*[α-L-Rhamnopyranosyl-(1→4)-4-hydroxy-*E*-cinnamoyl]:* ***Epilupinyl* trans-p-*rhamnosylcoumarate***
[71657-66-4]
$C_{25}H_{35}NO_7$ 461.554
Alkaloid from *Lupinus cosentinii* and *Lupinus hirsutus* (Fabaceae). Oil. $[\alpha]_D$ -76 (c, 0.62 in EtOH).

O-*[α-L-Rhamnopyranosyl-(1→4)-4-hydroxy-*Z*-cinnamoyl]:* ***Epilupinyl* cis-p-*rhamnosylcoumarate***
[71657-67-5]
$C_{25}H_{35}NO_7$ 461.554
Alkaloid from *Lupinus cosentinii* and *Lupinus hirsutus* (Fabaceae). Oil. $[\alpha]_D$ -52.8 (c, 0.99 in EtOH).

O-*(4-Acetoxy-*E*-cinnamoyl):* ***Epilupinyl* trans-p-*acetoxycinnamate***
[136396-57-1]
$C_{21}H_{27}NO_4$ 357.449
Alkaloid from *Lupinus hirsutus* (Fabaceae). Oil. $[\alpha]_D^{23}$ +20.5 (c, 0.12 in EtOH).

O-*(4-Hydroxy-3-methoxy-*E*-cinnamoyl):* ***Epilupinyl* trans-*ferulate****. Alkaloid LC4*
$C_{20}H_{27}NO_4$ 345.438
Alkaloid from leaves of *Lupinus cosentinii* (Fabaceae). Pale yellow cryst. (Me_2CO/cyclohexane). Mp 119°. $[\alpha]_D$ +35 (c, 1 in MeOH). Also present as rhamnoside (component of Alkaloid LC9).

O-*[α-L-Rhamnopyranosyl-(1→4)-4-hydroxy-3-methoxy-*E*-cinnamoyl]:* ***Epilupinyl rhamnosylferulate***
$C_{26}H_{37}NO_8$ 491.58
Alkaloid from aerial parts of *Lupinus hirsutus* and from *Lupinus varius* (Fabaceae). Amorph. solid. $[\alpha]_D$ -37.5 (c, 0.056 in EtOH). $[\alpha]_D$ -80 (c, 0.28 in EtOH). Isol. once as a mixt. of *E*- and *Z*-isomers (ratio = 1:5), later from *L. varius* as pure *E*-form. λ_{max} 230 ; 295 (MeOH).

(-)-*form*
Synthetic. $[\alpha]_D^{22}$ -24.09 (c, 0.22 in EtOH).

(±)-*form* [486-72-6]
Alkaloid from *Lupinus palmeri* (Fabaceae). Mp 83°.

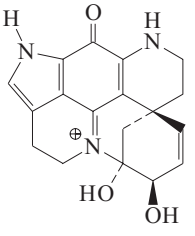
Picrate:
Yellow needles. Mp 145.5-147°.

Methiodide: Mp 251-253° (248°).

White, E.P. *et al., N.Z. J. Sci. Technol., Sect. B*, 1951, **33**, 50 (*isol*)
Crow, W.D. *et al., Aust. J. Chem.*, 1955, **8**, 136; 1957, **10**, 77 (*isol*)
Thomas, A.F. *et al., Can. J. Chem.*, 1955, **33**, 1290
Van Tamelen, E.E. *et al., J.A.C.S.*, 1960, **82**, 502 (*synth*)
Paszyc, S. *et al., Bull. Acad. Pol. Sci., Ser. Sci. Chim.*, 1970, **18**, 15 (*synth*)
Batra, V. *et al., Indian J. Chem., Sect. B*, 1976, **14**, 636 (*isol*)
Beck, A.B. *et al., J. Nat. Prod.*, 1979, **42**, 385 (*isol, esters, bibl, rhamnosylcoumarate*)
Okita, M. *et al., Heterocycles*, 1983, **20**, 401 (*synth*)
Bremmer, M.L. *et al., J.O.C.*, 1983, **48**, 3661 (*synth*)
Chamberlin, A.R. *et al., J.O.C.*, 1984, **49**, 1682 (*synth*)
Ihara, M. *et al., Heterocycles*, 1985, **23**, 1097 (*synth*)
Hiemstra, H. *et al., J.O.C.*, 1985, **50**, 4014 (*synth*)
Takahata, H. *et al., Chem. Pharm. Bull.*, 1986, **34**, 4523 (*synth*)
Grieco, P.A. *et al., J.O.C.*, 1988, **53**, 3325 (*synth, ir, pmr*)
Nagasaka, T. *et al., Heterocycles*, 1989, **29**, 1209 (*synth*)
Célérier, J.P. *et al., Tetrahedron*, 1989, **45**, 6161 (*synth*)
Takamatsu, S. *et al., Phytochemistry*, 1990, **29**, 3923 (*rhamnosylcoumarates*)
Takamatsu, S. *et al., J. Nat. Prod.*, 1991, **54**, 477 (*trans-p-acetylcoumarate, acetoxycoumarate*)
Hua, D.H. *et al., Synthesis*, 1991, 970 (*synth*)
Edstrom, E.D. *et al., Tet. Lett.*, 1991, **32**, 5709 (*synth*)
Gesson, J.P. *et al., Tet. Lett.*, 1992, **33**, 3633 (*synth*)
Pandey, G. *et al., Tet. Lett.*, 1992, **33**, 6533 (*synth*)
West, F.G. *et al., J.A.C.S.*, 1994, **116**, 8420 (*synth*)
Suzuki, H. *et al., Phytochemistry*, 1994, **37**, 591 (*rhamnosylferulate*)
Molander, G.A. *et al., J.O.C.*, 1996, **61**, 6040 (*synth*)
Mangeney, P. *et al., Tetrahedron*, 1998, **54**, 10349-10362 (*synth*)
Abdel-Halim, O.B. *et al., Phytochemistry*, 1999, **51**, 5-9; **52**, 965 (*rhamnosylferulate*)
Amorde, S.M. *et al., Org. Lett.*, 2005, **7**, 2031-2033 (*synth*)

Epinardine A E-96

[178822-54-3]

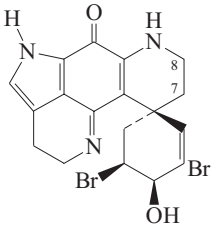


$C_{18}H_{18}N_3O_3^{\oplus}$ 324.358
Alkaloid from an unidentified deep-water green demosponge collected in the South Indian Ocean. Green powder (counterion unspecified). λ_{max} 245 (ε 9800); 367 (ε 6800); 570 (ε 740) (MeOH).

D'Ambrosio, M. *et al., Tetrahedron*, 1996, **52**, 8899 (*isol, uv, cd, pmr, cmr, struct*)

Epinardine B E-97

[178822-55-4]



$C_{18}H_{17}Br_2N_3O_2$ 467.159
Alkaloid from an unidentified deep-water green demosponge collected in the South Indian Ocean. Grey-green powder. λ_{max} 200 (ε 11600); 248 (ε 9300); 340 (ε 4050); 390 (ε 3130) (MeOH). λ_{max} 248 (ε 9300); 340 (ε 4050); 390 (ε 3130) (MeOH) (Berdy).

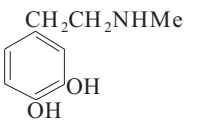
7,8-Didehydro: ***Epinardine C***
[178822-56-5]
$C_{18}H_{15}Br_2N_3O_2$ 465.143
Isol. from an unidentified deep-water demosponge. Strongly cytotoxic towards L1210 and doxorubicin-resistant L1210/DX murine lymphocytic leukaemia cells *in vitro*. Green powder. λ_{max} 210 (ε 11400); 250 (ε 5900); 290 (ε 4400); 370 (ε 3200); 535 (ε 374) (MeOH).

8α-Methoxy: ***Epinardine D***
[178822-57-6]
$C_{19}H_{19}Br_2N_3O_3$ 497.185
Isol. from an unidentified deep-water green demosponge. Green powder. Converted to Epinardin C on long standing in Me_2CO soln. λ_{max} 205 (ε 35000); 242 (ε 31000); 335 (ε 24000); 480 (ε 2000) (MeOH).

D'Ambrosio, M. *et al., Tetrahedron*, 1996, **52**, 8899 (*isol, uv, cd, pmr, cmr, struct*)

Epinine E-98

4-[2-(Methylamino)ethyl]-1,2-benzenediol, 9CI. 4-[2-(Methylamino)ethyl]pyrocatechol, 8CI. 4-(β-Methylaminoethyl)-catechol. N-*Methyl-2-(3,4-dihydroxyphenyl)ethylamine. Deoxyadrenaline. Desoxyepinephrine.* N-*Methyldopamine*
[501-15-5]



$C_9H_{13}NO_2$ 167.207
Alkaloid from *Cytisus scoparius, Vicia faba* and *Lophophora williamsii* (Fabaceae, Cactaceae). Active metab. of Ibopamine. Dopamine D_1- and D_2- agonist and α- and β-adrenoceptor agonist. Positive inotropic agent and vasodilator. Cryst. (EtOH). Mp 188-189°. Log P 0.16 (calc).

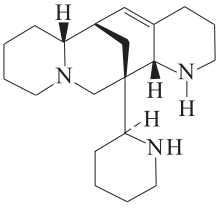
Hydrochloride: [62-32-8]
Prisms (H_2O). Mp 179-180°.
▶ LD_{50} (mus, ipr) 212 mg/kg. UX1925000

O$^{4'}$-Phosphate: N-*Methyldopamine 4-O-dihydrogen phosphate. Z 2055*
$C_9H_{14}NO_5P$ 247.187
Dopaminergic prodrug showing renal selectivity. Mp 175-178° (as hydrochloride).

Pyman, F.L. *et al., J.C.S.*, 1909, 95; 1266; 1610 (*synth*)
Buck, J.S. *et al., J.A.C.S.*, 1930, **52**, 4119 (*synth*)
Bretschneider, H. *et al., Monatsh. Chem.*, 1947, **76**, 335 (*synth*)
Dewhurst, W.G. *et al., Br. J. Pharmacol.*, 1965, **25**, 682 (*pharmacol*)
Path, P.N. *et al., J. Pharmacol. Exp. Ther.*, 1967, **155**, 1 (*pharmacol*)
Tocher, R.D. *et al., Phytochemistry*, 1972, **11**, 1161 (*isol*)
Borgman, R.J. *et al., J. Med. Chem.*, 1973, **16**, 630 (*synth*)
Giesecke, J. *et al., Acta Cryst. B*, 1976, **32**, 2337 (*cryst struct*)
Smith, T.A. *et al., Phytochemistry*, 1977, **16**, 9 (*rev, occur*)
Van Woerkens, L.J. *et al., Br. J. Pharmacol.*, 1992, **107**, 303 (*pharmacol*)
Boomsma, F. *et al., J. Chromatogr.*, 1992, **574**, 109 (*hplc*)
Schwinger, R.H.G. *et al., J. Pharmacol. Exp. Ther.*, 1993, **265**, 346 (*pharmacol*)
Ianelli, S. *et al., Acta Cryst. C*, 1995, **51**, 1338 (*cryst struct, phosphate*)
Daul, A. *et al., Naunyn-Schmiedeberg's Arch. Pharmacol.*, 1995, **352**, 429 (*pharmacol*)
Martindale, The Extra Pharmacopoeia, 31st edn., Pharmaceutical Press, 1996, 1578
Schwinger, R.H.G. *et al., Naunyn-Schmiedeberg's Arch. Pharmacol.*, 1996, **354**, 343 (*pharmacol*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, EAZ000

Epipodopetaline E-99

Amazonine. Alkaloid R6. Sweetinine



Relative configuration

$C_{20}H_{33}N_3$ 315.501
Identity of Amazonine with Epipodopetaline is tentative. Sweetinine was the racemate.

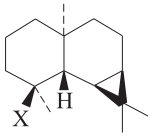
(-)-*form* [62624-21-9]
Alkaloid from *Podopetalum ormondii* (preferred genus name *Ormosia*) (Fabaceae). Mp 118-119°. $[\alpha]_D$ -3.2 (MeOH). Largely racemic. One isolate from *P. ormondii* was wholly racemic (see below).

(±)-*form* [1361-42-8]
Alkaloid from stem bark of *Sweetia elegans*, bark of *Sweetia panamensis* and *Podopetalum ormondii* (Fabaceae). Mp 174-175°.

Fitzgerald, T.J. *et al., J. Nat. Prod.*, 1964, **27**, 107-110 (*isol*)
Cheng, P.-T. *et al., Tet. Lett.*, 1976, **17**, 4245-4246 (*isol, struct*)
Mackay, M.F. *et al., Cryst. Struct. Commun.*, 1980, **9**, 805-809 (*cryst struct*)
McLean, S. *et al., Can. J. Chem.*, 1981, **59**, 34-37 (*isol, struct*)
Balandrin, M.F. *et al., J. Nat. Prod.*, 1981, **44**, 619-622 (*isol, uv, ir, pmr, ms, Sweetinine*)

Epipolasin A E-100

4-Isothiocyanatomaaliane



(+)–*form*

X = –NCS

$C_{16}H_{25}NS$ 263.446

(+)-*form* [97950-05-5]
Metab. of the sponge *Epipolasis kushimotoensis*. Cryst. $[\alpha]_D$ +7.6 (c, 1.0 in $CHCl_3$).

(-)-*form*
Metab. of the sponges *Acanthella pulcherrima* and *Axinyssa* sp. and the mollusc *Cadlina luteomarginata*. Oil. $[\alpha]_D$ -8 (c, 1.3 in $CHCl_3$).

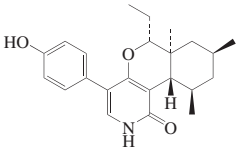
Formamide: ***4-Formylaminomaaliane***
[83631-20-3]
$C_{16}H_{27}NO$ 249.395
Metab. of an *Acanthella* sp. and *Cadlina luteomarginata*. Has -NHCHO replacing -NCS.

[83631-19-0]

Thompson, J.E. *et al., Tetrahedron*, 1982, **38**, 1865-1873 (*isol, pmr, ms*)
Tada, H. *et al., Chem. Pharm. Bull.*, 1985, **33**, 1941
Capon, R.J. *et al., Aust. J. Chem.*, 1988, **41**, 979 (*isol*)
Simpson, J.S. *et al., Aust. J. Chem.*, 1997, **50**, 1123-1127 (*isol, pmr, cmr, ms*)

Epipyridone E-101

[944339-73-5]



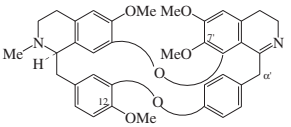
Relative Configuration

$C_{23}H_{29}NO_3$ 367.487
Related to Leporine A, L-112 and Fusaricide, F-225. Prod. by an *Epicoccum* sp. associated with *Pholiota squarrosa*. Red oil. $[\alpha]_D^{25}$ +123.3 (c, 0.06 in MeOH). λ_{max} 213 ; 250 (MeOH).

Wangun, H.V.K. *et al., Org. Biomol. Chem.*, 2007, **5**, 1702-1705 (*isol, pmr, cmr, ms*)

Epistephanine E-102

Aknadine



(*R*)-*form*

$C_{37}H_{38}N_2O_6$ 606.717
Not the epimer of 1,2,8-Trihydroxyaporphine, T-522.

(*R*)-*form* [549-08-6]
Alkaloid from *Stephania capitata*, the roots and terrestrial portion of *Stephania japonica* and from *Stephania hernandifolia* (Menispermaceae). Needles (C_6H_6/petrol). Mp 203-204° (133-134°). $[\alpha]_D^{10}$ +183.5 ($CHCl_3$). $[\alpha]_D^{25}$ +226 ($CHCl_3$). λ_{max} 233 (ϵ 34100); 282 (ϵ 14600) (EtOH).

O$^{7'}$-De-Me: ***3',4'-Dihydrostephasubine***
[115610-45-2]
$C_{36}H_{36}N_2O_6$ 592.69
Alkaloid from the stems of *Stephania hernandifolia*. Amorph. $[\alpha]_D^{25}$ +286 (MeOH). λ_{max} 216 ; 223 ; 283 (EtOH).

O^{12}-De-Me: ***Hypoepistephanine***. *Pseudoepistephanine*
[33116-41-5]
$C_{36}H_{36}N_2O_6$ 592.69
Alkaloid from roots and terrestrial parts of *Stephania japonica* (Menispermaceae). Mp 256-257°. $[\alpha]_D^{15.5}$ +183.8 ($CHCl_3$).

O^{12}-De-Me, N-*de-Me:* ***Guatteboline***
$C_{35}H_{34}N_2O_6$ 578.663
Alkaloid from the stem bark of *Guatteria boliviana*. Amorph. solid. $[\alpha]_D^{20}$ +138 (c, 0.8 in $CHCl_3$). λ_{max} 205 (log ϵ 4.85); 231 (sh) (log ϵ 4.56); 283 (log ϵ 4.21) (EtOH).

O$^{7'}$,O^{12}-Di-de-Me, N^2*-de-Me:* ***Pangkorimine***
[110360-01-5]
$C_{34}H_{32}N_2O_6$ 564.637
Alkaloid from *Albertisia* cf. *Albertisia papuana* (Menispermaceae). Exhibits antiparasitic and cytotoxic activities. $[\alpha]_D$ +65 (c, 0.05 in MeOH). λ_{max} 213 (log ϵ 4.64); 228 (log ϵ 4.48); 283 (log ϵ 4.26); 314 (log ϵ 3.8) (EtOH).

(*S*)-*form* [40039-47-2]
Alkaloid from the stems of *Anisocycla grandidieri* (Menispermaceae). Cryst. (MeOH). Mp 198-206°. $[\alpha]_D^{20}$ -216 (c, 1.94 in $CHCl_3$).

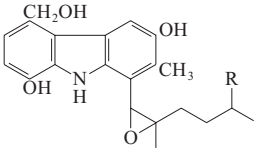
(ξ)-*form*

α'-Oxo: ***Oxoepistephanine***
$C_{37}H_{36}N_2O_7$ 620.701
Alkaloid from *Stephania hernandifolia* (Menispermaceae). Cryst. (MeOH/Et_2O). Mp 222-226° dec. $[\alpha]_D^{27}$ +272 ($CHCl_3$). No CAS Reg. no. to 14CI (2001).

Tanaka, K. *et al., Yakugaku Zasshi*, 1944, **64**, 27-35; *CA*, **45**, 5173d (*struct*)
Tomita, M. *et al., Pharm. Bull.*, 1954, **2**, 378-381 (*struct*)
Tomita, M. *et al., Yakugaku Zasshi*, 1963, **83**, 996-999; *CA*, **60**, 4201h (*isol*)
Barton, D.H.R. *et al., J.C.S.(C)*, 1966, 2313-2319 (*uv, pmr, ms, biosynth*)
Moza, B.K. *et al., Indian J. Chem.*, 1967, **5**, 281-282 (*Aknadine*)
Schlittler, E. *et al., Helv. Chim. Acta*, 1972, **55**, 2061-2064 (*(S)-form, isol, struct*)
Cava, M.P. *et al., Alkaloids (Academic Press)*, 1977, **16**, 279-280 (*Oxoepistephanine*)
Ray, A.B. *et al., Planta Med.*, 1979, **35**, 167-173 (*Epistephanine*)
Lavault, M. *et al., Can. J. Chem.*, 1987, **65**, 343-347 (*Pangkorimine*)
Patra, A. *et al., Phytochemistry*, 1988, **27**, 653-655 (*3',4'-Dihydrostephasubine*)
Mahiou, V. *et al., Phytochemistry*, 2000, **54**, 709-716 (*Guatteboline, Pangkorimine, activity*)
Chen, C.-K. *et al., Chin. Pharm. J. (Taipei)*, 2003, **55**, 35-47 (*Pangkorimine*)

Epocarbazolin A E-103

[146935-39-9]



R = CH_3

$C_{22}H_{27}NO_4$ 369.46
Prod. by *Streptomyces anulatus* T688-8. 5-Lipoxygenase inhibitor. Active against gram-positive bacteria. Pale yellow powder. Sol. MeOH, EtOAc, Me_2CO; fairly sol. $CHCl_3$; poorly sol. H_2O, hexane. Mp 100°. $[\alpha]_D^{26}$ +75 (c, 0.5 in MeOH). Unstable to light. λ_{max} 234 (ϵ 38000); 258 (ϵ 32500); 290 (sh) (ϵ 9000); 304 (ϵ 15200); 358 (ϵ 6900); 364 (sh) (ϵ 6800) (MeOH/NaOH) (Derep). λ_{max} 234 (ϵ 38600); 250 (sh) (ϵ 33900); 289 (sh) (ϵ 10200); 299 (ϵ 14800); 345 (ϵ 7100); 359 (ϵ 7500) (MeOH) (Derep).

Nihei, Y. *et al., J. Antibiot.*, 1993, **46**, 25-33 (*isol, pmr, cmr, struct, props*)
Knöll, J. *et al., Tet. Lett.*, 2006, **47**, 6079-6082 (*synth*)

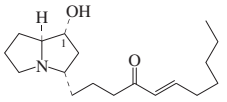
Epocarbazolin B E-104

[146935-40-2]
As Epocarbazolin A, E-103 with
R = $–CH_2CH_3$

$C_{23}H_{29}NO_4$ 383.486
Prod. by *Streptomyces anulatus* T688-8. 5-Lipoxygenase inhibitor. Active against gram-positive bacteria. Pale yellow powder. Sol. MeOH, EtOAc, Me_2CO; fairly sol. $CHCl_3$; poorly sol. H_2O, hexane. Mp 100°. $[\alpha]_D^{26}$ +78 (c, 0.5 in MeOH). Unstable to light. λ_{max} 234 (ϵ 38000); 258 (ϵ 32500); 290 (sh) (ϵ 9000); 304 (ϵ 15200); 358 (ϵ 6900); 364 (sh) (ϵ 6800) (MeOH/NaOH) (Derep). λ_{max} 234 (ϵ 38600); 250 (sh) (ϵ 33900); 289 (sh) (ϵ 10200); 299 (ϵ 14800); 345 (ϵ 7100); 359 (ϵ 7500) (MeOH) (Derep).

Nihei, Y. *et al., J. Antibiot.*, 1993, **46**, 25-33 (*isol, pmr, cmr, uv, struct, activity*)
Knöll, J. *et al., Tet. Lett.*, 2006, **47**, 6079-6082 (*synth*)

Epohelmin A E-105



Absolute Configuration

$C_{18}H_{31}NO_2$ 293.448

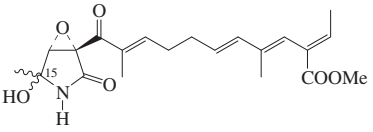
Struct. revised in 2005. Prev. assigned as an epoxide. Prod. by fungal strain FKI-0929. Lanosterol synthase inhibitor. Oil. $[\alpha]_D^{22}$ +22 (c, 0.14 in MeOH). λ_{max} 224 (ϵ 9300) (MeOH).

1-Epimer: ***Epohelmin B***
$C_{18}H_{31}NO_2$ 293.448
Prod. by fungal strain FKI-0929. Lanosterol synthase inhibitor. Oil. $[\alpha]_D^{22}$ +25 (c, 0.28 in MeOH). λ_{max} 224 (ϵ 11800) (MeOH).

Sakano, Y. *et al., J. Antibiot.*, 2004, **57**, 564-568 (*isol, pmr, cmr*)
Shibuya, M. *et al., J. Antibiot.*, 2005, **58**, 599-601 (*pmr, cmr, struct*)
Snider, B.B. *et al., Org. Lett.*, 2005, **7**, 4419-4422 (*synth, struct*)
Fürstner, A. *et al., Chem. Asian J.*, 2008, **3**, 310-318 (*Epohelmin B, synth*)

Epolactaene E-106

[167782-17-4]



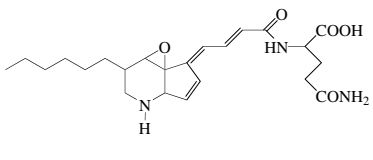
$C_{21}H_{27}NO_6$ 389.447

Nat. product is a diastereoisomeric mixture at C-15. Prod. by the marine fungus *Penicillium* sp. BM1689-P. Neuritogenic agent. Amorph. solid. Sol. MeOH, EtOH, DMSO; fairly sol. $CHCl_3$, EtOAc; poorly sol. H_2O, hexane. $[\alpha]_D^{26}$ +32 (c, 0.1 in MeOH). Similar to Fusarin C, F-227. λ_{max} 232 (ϵ 21800); 280 (ϵ 15600) (MeOH) (Berdy).

Kakeya, H. *et al., J. Antibiot.*, 1995, **48**, 733-735 (*isol, ir, uv, pmr, cmr*)
Kuramochi, K. *et al., Tet. Lett.*, 1999, **40**, 7371-7374 (*synth*)
Marumoto, S. *et al., Tetrahedron*, 1999, **55**, 7129-7144; 7145-7156 (*synth, abs config*)
Hayashi, Y. *et al., J.O.C.*, 2002, **67**, 9443-9448 (*synth*)

Epostatin E-107

[181372-99-6]



$C_{23}H_{33}N_3O_5$ 431.531

Prod. by *Streptomyces* sp. MJ995-OF5. Inhibitor of dipeptidyl peptidase II. Pale yellow powder. Mp 157-159° dec. $[\alpha]_D^{23}$ -174 (c, 0.1 in MeOH). λ_{max} 218 (sh) (log ϵ 3.54); 305 (log ϵ 4.43) (MeOH).

Akiyama, T. *et al., J. Antibiot.*, 1998, **51**, 253-260; 372-373 (*isol, uv, ir, pmr, cmr, ms*)

Epothilone A_1 E-108

[252917-29-6]
As Epothilone A, E-110 with
$R^1 = R^2 = H$, $R^3 = R^4 = CH_3$

$C_{25}H_{37}NO_6S$ 479.636

C-4 config. not determined. Prod. by *Sorangium cellulosum*. Amorph. solid. $[\alpha]_D^{22}$ -69 (c, 0.1 in MeOH). λ_{max} 208 (ϵ 19600); 247 (ϵ 13600) (MeOH).

4-Epimer: ***Epothilone A_2***
[252917-30-9]
$C_{25}H_{37}NO_6S$ 479.636
Prod. by *Sorangium cellulosum*. Amorph. solid. $[\alpha]_D^{22}$ -12 (c, 1 in MeOH). λ_{max} 210 (ϵ 15100); 248 (ϵ 15500) (MeOH).

Hardt, I. *et al., J. Nat. Prod.*, 2001, **64**, 847-856

Epothilone A_8 E-109

As Epothilone A, E-110 with
$R^1 = R^4 = H$, $R^2 = R^3 = CH_3$

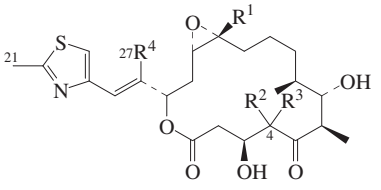
$C_{25}H_{37}NO_6S$ 479.636

Prod. by *Sorangium cellulosum*. Amorph. solid. $[\alpha]_D^{22}$ -76.2 (c, 1 in MeOH). λ_{max} 210 (ϵ 15300); 248 (ϵ 15500) (MeOH).

Hardt, I. *et al., J. Nat. Prod.*, 2001, **64**, 847-856

Epothilone A E-110

[152044-53-6]



$R^1 = H$, $R^2 = R^3 = R^4 = CH_3$

$C_{26}H_{39}NO_6S$ 493.663

Prod. by *Sorangium cellulosum*. Induces cellular microtubuli assembly and stabilisation by a Taxol™-like mechanism. Competes for same binding site on microtubules as Taxol™. Antiproliferative and potential anticancer agent. Antifungal and cytotoxic agent. Cryst. (EtOAc/toluene). Mp 95°. $[\alpha]_D^{21}$ -47.1 (c, 1 in MeOH). λ_{max} 211 (ϵ 17800); 249 (ϵ 12500) (MeOH).

21-Hydroxy: ***Epothilone E***
[201049-37-8]
$C_{26}H_{39}NO_7S$ 509.663
Prod. by *Sorangium cellulosum*. Antitumour agent. Amorph. solid. $[\alpha]_D^{22}$ -37.1 (c, 0.56 in MeOH). λ_{max} 212 (ϵ 17800); 247 (ϵ 13000) (MeOH).

27-Hydroxy: ***Epothilone A_9***
[252917-32-1]
$C_{26}H_{39}NO_7S$ 509.663
Prod. by *Sorangium cellulosum*. Amorph. solid. $[\alpha]_D^{22}$ -38 (c, 0.5 in MeOH). λ_{max} 211 (ϵ 15500); 253 (ϵ 14100) (MeOH).

Bollag, D.M. *et al., Cancer Res.*, 1995, **55**, 2325-2333 (*pharmacol*)
Hoefle, G. *et al., Angew. Chem., Int. Ed.*, 1996, **35**, 1567-1569 (*uv, cmr, pmr, cryst struct*)
Balog, A. *et al., Angew. Chem., Int. Ed.*, 1996, **35**, 2801-2803 (*synth*)
Victory, S.F. *et al., Bioorg. Med. Chem. Lett.*, 1996, 893-898 (*conformn*)
Gerth, K. *et al., J. Antibiot.*, 1996, **49**, 560-563 (*isol, ir, pmr*)
Yang, Z. *et al., Angew. Chem., Int. Ed.*, 1997, **36**, 166-168; 525-527 (*synth*)
Schinzer, D. *et al., Angew. Chem., Int. Ed.*, 1997, **36**, 523-524 (*synth*)
Wessjohann, L. *et al., Angew. Chem., Int. Ed.*, 1997, **36**, 715-718 (*rev*)
Su, D.-S. *et al., Angew. Chem., Int. Ed.*, 1997, **36**, 2093-2096 (*activity*)
Finlay, R. *et al., Chem. Ind. (London)*, 1997, 991-996 (*rev*)
Kowalski, R.J. *et al., J. Biol. Chem.*, 1997, **272**, 2534-2541 (*pharmacol*)
Meng, D. *et al., J.A.C.S.*, 1997, **119**, 2733-2734 (*synth*)
Nicolaou, K.C. *et al., J.A.C.S.*, 1997, **119**, 7960-7973; 7974-7991 (*synth*)
Meng, D. *et al., J.A.C.S.*, 1997, **119**, 10073-10092 (*synth*)
Nicolaou, K.C. *et al., Nature (London)*, 1997, **387**, 268-272 (*synth, bibl*)
Nicolaou, K.C. *et al., Angew. Chem., Int. Ed.*, 1998, **37**, 2015-2045 (*rev*)
Nicolaou, K.C. *et al., Bioorg. Med. Chem.*, 1999, **7**, 665-697 (*Epothilone E, synth*)
Schinzer, D. *et al., Chem. Eur. J.*, 1999, **5**, 2483-2491; 2492-2500 (*synth*)
Kalesse, M. *et al., Eur. J. Org. Chem.*, 1999, 2817-2823 (*synth*)
Taylor, R.E. *et al., J.O.C.*, 1999, **64**, 7224-7228 (*conformn*)
Gerth, K. *et al., J. Antibiot.*, 2000, **53**, 1373-1377 (*biosynth*)
Zhu, B. *et al., Eur. J. Org. Chem.*, 2001, 1701-1714 (*synth*)
Hardt, I. *et al., J. Nat. Prod.*, 2001, **64**, 847-856 (*Epothilone A_9*)
Bode, J.W. *et al., J.A.C.S.*, 2001, **123**, 6410-6424 (*synth*)
Hindupur, R.M. *et al., Tet. Lett.*, 2001, **42**, 7341-7344 (*synth*)
Liu, Z.-Y. *et al., Chem. Eur. J.*, 2002, **8**, 3747-3756 (*synth*)
Altmann, K.-H. *et al., Helv. Chim. Acta*, 2002, **85**, 4086-4110 (*12,13-trans isomer, synth, activity*)

Epothilone B E-111

Patupilone, INN. EPO 906
[152044-54-7]
As Epothilone A, E-110 with
$R^1 = R^2 = R^3 = R^4 = CH_3$

$C_{27}H_{41}NO_6S$ 507.69

Prod. by *Sorangium cellulosum*. Antifungal and cytotoxic agent. Induces cellular microtubuli assembly and stabilisation by a Taxol™-like mechanism. Competes for the same binding site on microtubules as Taxol™. Antiproliferative and potential anticancer agent. . Cryst. (EtOAc). Mp 93-94°. $[\alpha]_D^{21}$ -35 (c, 0.7 in MeOH). More potent in some cytotoxicity and antifungal assays than Epothilone A, E-110. λ_{max} 211 (ϵ 18600); 249 (ϵ 14100) (MeOH).

21-Hydroxy: ***Epothilone F***
[208518-52-9]
$C_{27}H_{41}NO_7S$ 523.689
Prod. by *Sorangium cellulosum*. Amorph. solid. $[\alpha]_D^{22}$ -27.4 (c, 0.46 in MeOH). λ_{max} 212 (ϵ 19100); 249 (ϵ

13800) (MeOH).

21-Methyl: ***Epothilone B_{10}***
[252917-33-2]
$C_{28}H_{43}NO_6S$ 521.717
Prod. by *Sorangium cellulosum*. Amorph. solid. $[\alpha]_D^{22}$ -27 (c, 0.15 in MeOH). λ_{max} 212 (ϵ 15800); 247 (ϵ 12500) (MeOH).

21-Amino: BMS 310705
[280578-49-6]
$C_{27}H_{42}N_2O_6S$ 522.705
Antineoplastic agent. Solid; characterised by pmr and ms.

Bollag, D.M. *et al., Cancer Res.*, 1995, **55**, 2325-2333 (*pharmacol*)
Hoefle, G. *et al., Angew. Chem., Int. Ed.*, 1996, **35**, 1567-1569 (*uv, pmr, cmr, cryst struct*)
Victory, S.F. *et al., Bioorg. Med. Chem. Lett.*, 1996, 893-898 (*conformn*)
Gerth, K. *et al., J. Antibiot.*, 1996, **49**, 560-563 (*isol*)
Wessjohann, L. *et al., Angew. Chem., Int. Ed.*, 1997, **36**, 715-718 (*rev*)
Su, D.-S. *et al., Angew. Chem., Int. Ed.*, 1997, **36**, 757-759 (*synth*)
Muehlradt, P.F. *et al., Cancer Res.*, 1997, **57**, 3344-3346 (*pharmacol*)
Finlay, R. *et al., Chem. Ind. (London)*, 1997, 991-996 (*rev*)
Kowalski, R.J. *et al., J. Biol. Chem.*, 1997, **272**, 2534-2541 (*pharmacol*)
Nicolaou, K. C. *et al., J.A.C.S.*, 1997, **119**, 7960-7973; 7974-7991 (*synth*)
Meng, D. *et al., J.A.C.S.*, 1997, **119**, 10073-10092 (*synth*)
Nicolaou, K.C. *et al., Nature (London)*, 1997, **387**, 268-272 (*synth, bibl*)
Nicolaou, K.C. *et al., Angew. Chem., Int. Ed.*, 1998, **37**, 2015-2045 (*rev*)
May, S.A. *et al., Chem. Comm.*, 1998, 1597-1598 (*synth*)
Mulzer, J. *et al., Tet. Lett.*, 1998, **39**, 8633-8636 (*synth*)
Nicolaou, K.C. *et al., Chem. Comm.*, 1999, 519-520 (*synth*)
Schinzer, D. *et al., Chem. Eur. J.*, 1999, **5**, 2483-2491; 2492-2500 (*synth*)
White, J.D. *et al., J.O.C.*, 1999, **64**, 684-685 (*synth, bibl*)
Taylor, R.E. *et al., J.O.C.*, 1999, **64**, 7224-7228 (*conformn*)
Nicolaou, K.C. *et al., Chem. Eur. J.*, 2000, **6**, 2783-2800 (*Epothilone B_{10}, synth*)
Gerth, K. *et al., J. Antibiot.*, 2000, **53**, 1373-1377 (*biosynth*)
Mulzer, J. *et al., J.O.C.*, 2000, **65**, 7456-7467 (*synth*)
Mulzer, J. *et al., Monatsh. Chem.*, 2000, **131**, 205-238 (*rev, synth*)
Pat. Coop. Treaty (WIPO), 2000, (*(Bristol-Myers Squibb)*)00 50 423; *CA*, **133**, 193030f (*BMS 310705, synth, pharmacol*)
Klaus, S. *et al., J. Nat. Prod.*, 2001, **64**, 847-856 (*Epothilone B_{10}*)
Hardt, I. *et al., J. Nat. Prod.*, 2001, **64**, 847-856 (*Epothilone F, isol, uv, ir, pmr, cmr, ms*)
White, J.D. *et al., J.A.C.S.*, 2001, **123**, 5407-5413 (*synth*)
Bode, J.W. *et al., J.O.C.*, 2001, **66**, 6410-6424 (*synth*)
Broker, L.E. *et al., Cancer Res.*, 2002, **62**, 4081-4088 (*pharmacol*)
Altaha, R. *et al., Curr. Pharm. Des.*, 2002, **8**, 1707-1712 (*rev*)
Uyar, D. *et al., Gynecol. Oncol.*, 2003, **91**, 173-178 (*BMS 310705, rev*)
Kolman, A. *et al., Curr. Opin. Invest. Drugs*, 2004, **5**, 1292-1297 (*BMS 310705, rev*)
Jung, J.-C. *et al., J.O.C.*, 2004, **69**, 9269-9284 (*synth*)
Rubin, E.H. *et al., J. Clin. Oncol.*, 2005, **23**, 9120-9129 (*clin trial*)
Larkin, J.M.G. *et al., Drugs of the Future*, 2007, **32**, 323 (*rev*)
Keck, G.E. *et al., J.O.C.*, 2008, **73**, 9675-9691 (*synth*)

Epothilone C_1 E-112

As Epothilone C, E-115 with
$R^1 = R^2 = H$, $R^3 = R^4 = R^5 = CH_3$

$C_{25}H_{37}NO_5S$ 463.637

C-4 config. not determined. Prod. by *Sorangium cellulosum*. Amorph. solid. $[\alpha]_D^{22}$ -114 (c, 10 in MeOH). λ_{max} 211 (ϵ 16500); 248 (ϵ 12500) (MeOH).

*12*E-*Isomer:* **trans-*Epothilone C_1***
$C_{25}H_{37}NO_5S$ 463.637
Prod. by *Sorangium cellulosum*. Amorph. solid. $[\alpha]_D^{22}$ -84 (c, 0.2 in MeOH). λ_{max} 211 (ϵ 17400); 248 (ϵ 12900) (MeOH).

4-Epimer: ***Epothilone C_2***
$C_{25}H_{37}NO_5S$ 463.637
Prod. by *Sorangium cellulosum*. Amorph. powder. $[\alpha]_D^{22}$ -11.6 (c, 10 in MeOH). λ_{max} 212 (ϵ 15500); 249 (ϵ 12100) (MeOH).

*4-Epimer, 12*E-*isomer:* **trans-*Epothilone C_2***
$C_{25}H_{37}NO_5S$ 463.637
Prod. by *Sorangium cellulosum*. Amorph. powder. $[\alpha]_D^{22}$ -3 (c, 1.5 in MeOH). λ_{max} 211 (ϵ 15800); 248 (ϵ 11900) (MeOH).

Hardt, I. *et al., J. Nat. Prod.*, 2001, **64**, 847-856

Epothilone C_3 E-113

As Epothilone C, E-115 with
$R^1 = R^4 = H$, $R^2 = R^3 = R^5 = CH_3$

$C_{25}H_{37}NO_5S$ 463.637
Prod. by *Sorangium cellulosum*. Amorph. solid. $[\alpha]_D^{22}$ -62.1 (c, 5 in MeOH). λ_{max} 212 (ϵ 16200); 248 (ϵ 12300) (MeOH).

Hardt, I. *et al., J. Nat. Prod.*, 2001, **64**, 847-856

Epothilone C_4 E-114

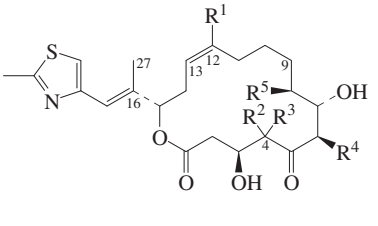
As Epothilone C, E-115 with
$R^1 = R^5 = H$, $R^2 = R^3 = R^4 = CH_3$

$C_{25}H_{37}NO_5S$ 463.637
Prod. by *Sorangium cellulosum*. Amorph. solid. $[\alpha]_D^{22}$ -75.6 (c, 1 in MeOH). λ_{max} 212 (ϵ 17200); 248 (ϵ 12500) (MeOH).

Hardt, I. *et al., J. Nat. Prod.*, 2001, **64**, 847-856

Epothilone C E-115

Deoxyepothilone A
[186692-73-9]



R^1= H, $R^2 = R^3 = R^4 = R^5 = CH_3$

$C_{26}H_{39}NO_5S$ 477.664
Prod. by *Sorangium cellulosum*. Antitumour agent. Amorph. solid. $[\alpha]_D^{22}$ -74.4 (c, 2 in MeOH). λ_{max} 213 (ϵ 16200); 248 (ϵ 12500) (MeOH).

*8,9-Didehydro(*E-*):* ***Epothilone C_5***
$C_{26}H_{37}NO_5S$ 475.648
Prod. by *Sorangium cellulosum*. Amorph. solid. $[\alpha]_D^{22}$ -158 (c, 0.5 in MeOH). λ_{max} 205 (ϵ 19500); 247 (ϵ 12700) (MeOH).

*10,11-Didehydro(*E-*):* ***Epothilone C_6***
$C_{26}H_{37}NO_5S$ 475.648
Prod. by *Sorangium cellulosum*. Amorph. solid. $[\alpha]_D^{22}$ -205.2 (c, 1 in MeOH). λ_{max} 218 (ϵ 24600); 237 (ϵ 28800) (MeOH).

14α-Hydroxy: ***Epothilone C_7***
$C_{26}H_{39}NO_6S$ 493.663
Prod. by *Sorangium cellulosum*. Amorph. solid. $[\alpha]_D^{22}$ -11 (c, 1 in MeOH). λ_{max} 203 (ϵ 18300); 247 (ϵ 12500) (MeOH).

27-Hydroxy: ***Epothilone C_9***
$C_{26}H_{39}NO_6S$ 493.663
Prod. by *Sorangium cellulosum*. Amorph. solid. $[\alpha]_D^{22}$ -93.4 (c, 1 in MeOH). λ_{max} 209 (ϵ 15200); 254 (ϵ 15700) (MeOH).

4-Demethyl, 9-oxo: ***4-Demethyl-9-ketoepothilone C***
[612057-52-0]
$C_{25}H_{35}NO_6S$ 477.621
Isol. from recombinant *Myxococcus xanthus*. Yellow oil. $[\alpha]_D$ -9.2 (c, 0.05 in MeOH). λ_{max} 212 (ϵ 25140); 248 (ϵ 20600) (MeOH).

16-Demethyl: ***Epothilone C_8***. *27-Norepothilone C*
$C_{25}H_{37}NO_5S$ 463.637
Prod. by *Sorangium cellulosum*. Amorph. solid. $[\alpha]_D^{22}$ -75.2 (c, 2.5 in MeOH). λ_{max} 210 (ϵ 16800); 248 (ϵ 17800) (MeOH).

Nicolaou, K.C. *et al., Angew. Chem., Int. Ed.*, 1997, **36**, 2097-2103; 1998, **37**, 84-87 (*synth, ir, pmr, cmr*)
Hardt, I. *et al., J. Nat. Prod.*, 2000, **64**, 847-856 (*isol, uv, ir, pmr, cmr, ms*)
Storer, R.I. *et al., Angew. Chem., Int. Ed.*, 2003, **42**, 2521-2525 (*synth*)
Starks, C.M. *et al., J. Nat. Prod.*, 2003, **66**, 1313-1317 (*4-Demethyl-9-ketoepothilone C*)

Epothilone D_1 E-116

As Epothilone C, E-115 with
$R^1 = R^3 = R^4 = R^5 = CH_3$, $R^2 = H$

$C_{26}H_{39}NO_5S$ 477.664

C-4 config. not determined. Prod. by *Sorangium cellulosum*. Amorph. solid. $[\alpha]_D^{22}$ -119 (c, 0.5 in MeOH). λ_{max} 208 (ϵ 18300); 249 (ϵ 11900) (MeOH).

4-Epimer: ***Epothilone D_2***
$C_{26}H_{39}NO_5S$ 477.664
Prod. by *Sorangium cellulosum*. Amorph. solid. $[\alpha]_D^{22}$ -12.5 (c, 1 in MeOH). λ_{max} 210 (ϵ 15400); 248 (ϵ 11200) (MeOH).

Hardt, I. *et al., J. Nat. Prod.*, 2001, **64**, 847-856

Epothilone D E-117

Deoxyepothilone B. NSC 703147. KOS 862
[189453-10-9]
As Epothilone C, E-115 with
$R^1 = R^2 = R^3 = R^4 = R^5 = CH_3$

$C_{27}H_{41}NO_5S$ 491.691
Prod. by *Myxococcus xanthus* and *Sorangium cellulosum*. Antitumour agent. . Cryst. (EtOH aq.). Mp 120-121°. $[\alpha]_D^{22}$ -61.3 (c, 2.5 in MeOH). λ_{max} 210 (ϵ 18400); 248 (ϵ 13200) (MeOH).

*8,9-Didehydro(*E-*):* ***Epothilone D_5***
$C_{27}H_{39}NO_5S$ 489.675
Prod. by *Sorangium cellulosum*. Amorph. solid. $[\alpha]_D^{22}$ -150 (c, 0.2 in MeOH). λ_{max} 205 (ϵ 23300); 248 (ϵ 13600) (MeOH).

*10,11-Didehydro(*E-*):* ***10,11-Didehydroepothilone D***
$C_{27}H_{39}NO_5S$ 489.675
Prod. by genetically modified *Myxococcus xanthus*. Cytotoxic. Oil. $[\alpha]_D$ -74 (c, 0.08 in MeOH).

9-Oxo: ***9-Oxoepothilone D***
[612057-56-4]
$C_{27}H_{39}NO_6S$ 505.674
Isol. from recombinant *Myxococcus xanthus*.

*9-Oxo, 10,11-didehydro(*E-*):* ***10,11-Didehydro-9-oxoepothilone D***
[612057-51-9]
$C_{27}H_{37}NO_6S$ 503.658
Isol. from recombinant *Myxococcus xanthus*. Yellow oil. $[\alpha]_D$ -84.2 (c, 0.005 in MeOH). λ_{max} 210 (ϵ 17500); 247 (ϵ 14900); 286 (ϵ 10600) (MeOH).

*4-Demethyl, 10,11-didehydro(*E-*):* ***10,11-Didehydro-4-demethylepothilone D***
[612057-49-5]
$C_{26}H_{37}NO_5S$ 475.648
Isol. from recombinant *Myxococcus xanthus*. Yellow oil. $[\alpha]_D$ -36.3 (c, 0.003 in MeOH). λ_{max} 213 (ϵ 22300); 242 (ϵ 27600) (MeOH).

4-Demethyl, 9-oxo, stereoisomer 1: ***4-Demethyl-9-oxoepothilone D(1)***
[612057-55-3]
$C_{26}H_{37}NO_6S$ 491.647
Isol. from recombinant *Myxococcus xanthus*. Yellow oil. $[\alpha]_D$ -79.8 (c, 0.015 in MeOH). Probably C-4 epimer of stereoisomer 2. λ_{max} 210 (ϵ 30200); 248 (ϵ 22500) (MeOH).

4-Demethyl, 9-oxo, stereoisomer 2: ***4-Demethyl-9-oxoepothilone D(2)***
[612057-55-3]
$C_{26}H_{37}NO_6S$ 491.647
Isol. from recombinant *Myxococcus xanthus*. Yellow oil. $[\alpha]_D$ +24.8 (c, 0.05 in MeOH). Probably C-4 epimer of stereoisomer 1. λ_{max} 212 (ϵ 25580); 248 (ϵ 19600) (MeOH).

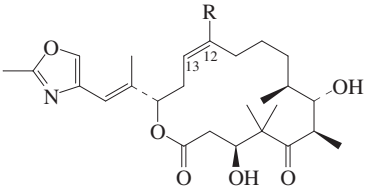
*6-Demethyl, 10,11-didehydro(*E-*):* ***10,11-Didehydro-6-demethylepothilone D***
[612057-50-8]
$C_{26}H_{37}NO_5S$ 475.648
Isol. from recombinant *Myxococcus xanthus*. Yellow oil. $[\alpha]_D$ -53.2 (c, 0.008 in MeOH). λ_{max} 215 (ϵ 24100); 240 (ϵ 34000) (MeOH).

$\Delta^{11,12}$-Isomer, 9-oxo: ***11,12-Didehydro-12,13-dihydro-9-oxoepothilone D***
$C_{27}H_{39}NO_6S$ 505.674
Prod. by genetically engineered *Myxococcus xanthus*.

8-Epimer, 9-oxo: ***8-Epi-9-oxoepothilone D***
$C_{27}H_{39}NO_6S$ 505.674
Prod. by genetically engineered *Myxococcus xanthus*.

Nicolaou, K.C. *et al., Angew. Chem., Int. Ed.*, 1997, **36**, 2097-2103; 1998, **37**, 84-87 (*synth, ir, pmr, cmr*)
Chou, T.-C. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 1998, **95**, 9642-9647 (*pharmacol*)
Mulzer, J. *et al., J.O.C.*, 2000, **65**, 7456-7467 (*synth*)
Hardt, I. *et al., J. Nat. Prod.*, 2001, **64**, 847-856 (*isol, uv, ir, pmr, cmr, ms*)
White, J.D. *et al., J.A.C.S.*, 2001, **123**, 5407-5413 (*synth*)
Arslanian, R.L. *et al., J. Nat. Prod.*, 2002, **65**, 570-572; 1061-1064 (*isol, Didehydroepothilone D*)
Starks, C.M. *et al., J. Nat. Prod.*, 2003, **66**, 1313-1317 (*Demethylepothilones*)
Kolman, A. *et al., Curr. Opin. Invest. Drugs*, 2004, **5**, 657-667 (*rev*)
Goodin, S. *et al., J. Clin. Oncol.*, 2004, **22**, 2015-2025 (*pharmacol*)
Jung, J.-C. *et al., J.O.C.*, 2004, **69**, 9269-9284 (*synth*)
Tang, L. *et al., J. Antibiot.*, 2005, **58**, 178-184 (*9-Oxoepothilones*)
Keck, G.E. *et al., J.O.C.*, 2008, **73**, 9675-9691 (*synth*)

Epothilone H_1 E-118



R = H

$C_{26}H_{39}NO_6$ 461.597
Prod. by *Sorangium cellulosum*. Amorph. solid. $[\alpha]_D^{22}$ -84 (c, 0.2 in MeOH). λ_{max} 203 (ϵ 19600); 237 (ϵ 12000) (MeOH).

12α,13α-Epoxide: ***Epothilone G_1***
$C_{26}H_{39}NO_7$ 477.597
Prod. by *Sorangium cellulosum*. Amorph. solid. $[\alpha]_D^{22}$ -39.7 (c, 1 in MeOH). λ_{max} 203 (ϵ 15200); 236 (ϵ 15100) (MeOH).

Hardt, I. *et al., J. Nat. Prod.*, 2001, **64**, 847-856

Epothilone H_2 E-119

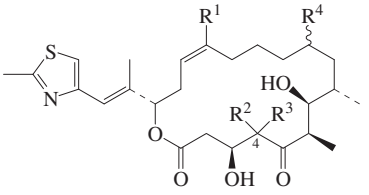
As Epothilone H_1, E-118 with
$R = CH_3$

$C_{27}H_{41}NO_6$ 475.624
Prod. by *Sorangium cellulosum*. Amorph. solid. $[\alpha]_D^{22}$ -44 (c, 0.25 in MeOH). λ_{max} 203 (ϵ 14500); 236 (ϵ 12200) (MeOH).

12α,13α-Epoxide: ***Epothilone G_2***
$C_{27}H_{41}NO_7$ 491.623
Prod. by *Sorangium cellulosum*. Amorph. solid. $[\alpha]_D^{22}$ -22.6 (c, 1 in MeOH). λ_{max} 202 (ϵ 21500); 236 (ϵ 14800) (MeOH).

Hardt, I. *et al., J. Nat. Prod.*, 2001, **64**, 847-856

Epothilone I_1 E-120



$R^1 = R^4 = H$, $R^2 = R^3 = CH_3$

$C_{28}H_{43}NO_5S$ 505.717
Prod. by *Sorangium cellulosum*. Amorph. solid. $[\alpha]_D^{22}$ -9 (c, 0.02 in MeOH). λ_{max} 203 (ϵ 19100); 244 (ϵ 12500) (MeOH).

Hardt, I. *et al., J. Nat. Prod.*, 2001, **64**, 847-856

Epothilone I_2 E-121

As Epothilone I_1, E-120 with
$R^1 = H$, $R^2 = R^3 = R^4 = CH_3$

$C_{29}H_{45}NO_5S$ 519.744
Prod. by *Sorangium cellulosum*. Amorph. solid. $[\alpha]_D^{22}$ -68.5 (c, 1 in MeOH). λ_{max} 210 (ϵ 12600); 249 (ϵ 9200) (MeOH).

Hardt, I. *et al., J. Nat. Prod.*, 2001, **64**, 847-856

Epothilone I_3 E-122

As Epothilone I_1, E-120 with
$R^1 = R^2 = R^3 = R^4 = CH_3$

$C_{30}H_{47}NO_5S$ 533.771
Prod. by *Sorangium cellulosum*. Amorph. solid. $[\alpha]_D^{22}$ -64 (c, 0.17 in MeOH). λ_{max} 203 (ϵ 15800); 249 (ϵ 9000) (MeOH).

Hardt, I. *et al., J. Nat. Prod.*, 2001, **64**, 847-856

Epothilone I_4 E-123

As Epothilone I_1, E-120 with
$R^1 = R^2 = H$, $R^3 = R^4 = CH_3$

$C_{28}H_{43}NO_5S$ 505.717
C-4 config. not determined. Prod. by *Sorangium cellulosum*. Amorph. solid. $[\alpha]_D^{22}$ -51 (c, 0.5 in MeOH). λ_{max} 211 (ϵ 13400); 250 (ϵ 9800) (MeOH).

Hardt, I. *et al., J. Nat. Prod.*, 2001, **64**, 847-856

Epothilone I_5 E-124

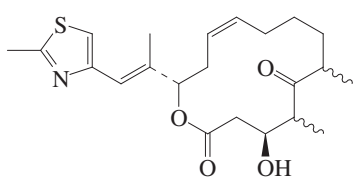
As Epothilone I_1, E-120 with
$R^1 = R^2 = R^4 = CH_3$, $R^3 = H$

$C_{29}H_{45}NO_5S$ 519.744
C-4 config. not determined. Prod. by *Sorangium cellulosum*. Amorph. solid. $[\alpha]_D^{22}$ -36 (c, 0.5 in MeOH). λ_{max} 208 (ϵ 14400); 249 (ϵ 9700) (MeOH).

4-Epimer: ***Epothilone I_6***
$C_{29}H_{45}NO_5S$ 519.744
Prod. by *Sorangium cellulosum*. Amorph. solid. $[\alpha]_D^{22}$ -40 (c, 0.35 in MeOH). λ_{max} 204 (ϵ 14600); 250 (ϵ 9000) (MeOH).

Hardt, I. *et al., J. Nat. Prod.*, 2001, **64**, 847-856

Epothilone K E-125

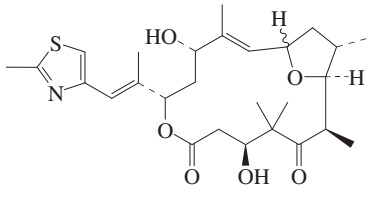


$C_{22}H_{31}NO_4S$ 405.557
Prod. by *Sorangium cellulosum*. Amorph. solid. $[\alpha]_D^{22}$ -7 (c, 0.08 in MeOH). λ_{max} 212 (ϵ 16700); 248 (ϵ 12500) (MeOH).

Hardt, I. *et al., J. Nat. Prod.*, 2001, **64**, 847-856

Epothilone tetrahydrofuran E-126

7,10-Epoxyepothilone

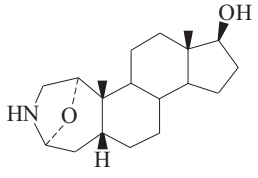


$C_{27}H_{39}NO_6S$ 505.674
Isol. from recombinant *Myxococcus xanthus*. Pale yellow oil. λ_{max} 210 (ϵ 19800); 247 (ϵ 13500) (MeOH).

Starks, C.M. *et al., J. Nat. Prod.*, 2003, **66**, 1313-1317 (*isol, pmr, cmr*)

1,4-Epoxy-3-aza-*A*-homoandrostan-17-ol, 9CI E-127

3-Aza-A-*homoandrostan-17-ol 1,4-epoxide*
[25484-32-6]

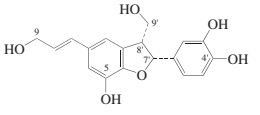


$C_{19}H_{31}NO_2$ 305.459
Alkaloid from the salamander *Cryptobranchus maximus*. Needles (Me_2CO/hexane). Mp 186° Mp 191-193°.

Hara, S. *et al., J.A.C.S.*, 1967, **89**, 1041-1042 (*synth*)
Oka, K. *et al., Tet. Lett.*, 1969, 1987-1990 (*synth*)
Japan. Pat., 1970, 70 18 663; *CA*, **73**, 56316g
Benn, M. *et al., Can. J. Chem.*, 1974, **52**, 2936-2940 (*synth, ms*)
Shimizu, Y. *et al., J.O.C.*, 1976, **41**, 1930-1934 (*synth*)

4,7′-Epoxy-3,8′-bilign-7-ene-3′,4′,5,9,9′-pentol E-128

4,7′-Epoxy-3′,4′,5,9,9′-pentahydroxy-3,8′-bilign-7-ene, 9CI



(7′R,8′R)-form

$C_{18}H_{18}O_6$ 330.337

(7′R*,8′S*)-form

9-Carboxylic acid, 3′,5-di-Me ether, 2-(4-hydroxyphenyl)ethylamide: ***Grossamide K***
[403647-07-4]
$C_{28}H_{29}NO_7$ 491.54
Constit. of the bark of *Hibiscus cannabinus*. Yellowish oil.

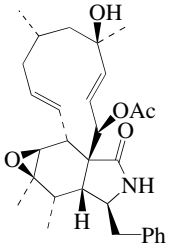
9,9′-Dicarboxylic acid, 3′,5-di-Me ether, bis[2-(4-hydroxyphenyl)ethylamide]: ***Tataramide B***
[187655-56-7]
$C_{36}H_{36}N_2O_8$ 624.689
Isol. from *Acorus tatarinowii*. Possesses *Z*-config.

[4263-87-0 , 150407-42-4 , 112835-77-5 , 28199-68-0 , 86363-02-2]

Wang, M.F. *et al., Chin. Chem. Lett.*, 1997, **8**, 35-36 (*Tataramide B*)
Seca, A.M.L. *et al., Phytochemistry*, 2001, **56**, 759-767; **58**, 1219-1223 (*Boehmenan K, Grossamide K*)

Epoxycytochalasin H E-129

[80618-96-8]



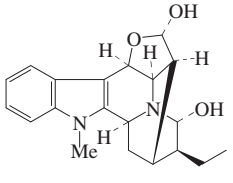
$C_{30}H_{39}NO_5$ 493.642
Prod. by *Phoma* sp. and *Phomopsis sojae*. Inhibits the growth of plants; toxic. Cryst. (Et_2O). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 134-136° (128°-130°). $[\alpha]_D^{30}$ -85.5 (c, 0.1 in $CHCl_3$). Not strictly the epoxide of Cytochalasin H in Z-37. λ_{max} 260 (MeOH) (Berdy).

O-*De-Ac:* ***Deacetylepoxycytochalasin H***
[80618-95-7]
$C_{28}H_{37}NO_4$ 451.605
Prod. by *Phomopsis sojae*. Plant growth inhibitor, toxic. Cryst. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 192-194°. $[\alpha]_D^{30}$ -49.1 (c, 0.19 in $CHCl_3$). λ_{max} 260 (MeOH) (Berdy).

Cole, R.J. *et al., J. Agric. Food Chem.*, 1982, **30**, 301
Kakeya, H. *et al., J. Nat. Prod.*, 1997, **60**, 669 (*isol*)

6,17-Epoxy-19,20-dihydro-1-methylsarpagan-17,21-diol, 9CI E-130

Alkaloid G†
[149507-99-3]

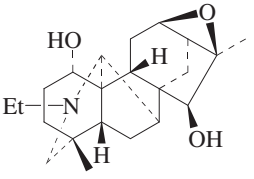


Absolute Configuration

$C_{20}H_{24}N_2O_3$ 340.421
Alkaloid from cell cultures of *Rauwolfia serpentina*. λ_{max} 224 ; 281 ; 290 (MeOH).

Endreb, S. *et al., Phytochemistry*, 1993, **32**, 725-730 (*isol, synth, pmr, cmr, cd*)
Li, J. *et al., J.A.C.S.*, 1999, **121**, 6998-7010 (*synth, ir, pmr, cmr*)
Yu, J. *et al., J.O.C.*, 2003, **68**, 5852-5859 (*synth*)

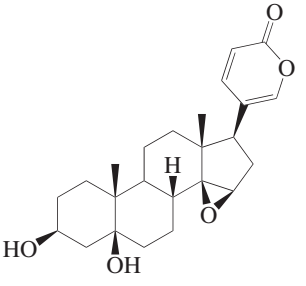
12,16-Epoxy-16,17-dihydronapelline E-131



$C_{22}H_{33}NO_3$ 359.508
Alkaloid from the roots of *Aconitum nagarum* var. *lasiandrum*. Cryst. (MeOH). Mp 232-233°. $[\alpha]_D^{20}$ -50 (c, 0.1 in $CHCl_3$).

Zhang, F. *et al., Planta Med.*, 2005, **71**, 1073-1076

14,15-Epoxy-3,5-dihydroxybufa-20,22-dienolide E-132



$C_{24}H_{32}O_5$ 400.514

(3β,5β,14β,15β)-form

Marinobufagin. *Bufagin*. *Marinobufogenin*
[470-42-8]
Constit. of *Bufo marinus*, *Bufo formosus* and Ch'an Su. Cryst. (Me_2CO/Et_2O). Mp 224-225°. $[\alpha]_D^{16}$ +10 (c, 2.6 in $CHCl_3$).

▶ EI2963000

O^3-*Sulfate:* ***Marinobufogenin O^3-sulfate***
[71595-47-6]
[72173-02-5 (NH_4 salt), 72173-03-6 (Na salt)]
$C_{24}H_{32}O_8S$ 480.578
Isol. from skin of *Bufo marinus*. Prisms. Mp 156-160° dec. $[\alpha]_D^{20}$ +7 (c, 0.37 in MeOH) (monohydrate). Isol. as NH_4 salt to which the data refers, also isol. as oily Na salt.

O^3-*(L-Argininylsuberoyl):* ***Marinobufotoxin***
[30685-91-7]
$C_{38}H_{56}N_4O_9$ 712.882
Component of the toxin of *Bufo ictericus* and *Bufo marinus*. Mp 174-

179°. $[\alpha]_D^{24}$ +24 ($CHCl_3$/MeOH 1:1). See note under Bufotoxin, B-394.

► OP9575000

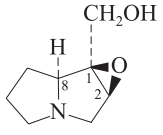
O^3-*(L-Glutaminylsuberoyl):* ***Marinobufagin 3-suberoylglutamine ester***
[75090-30-1]
$C_{37}H_{52}N_2O_{10}$ 684.825
Constit. of *Bufo americanus.* Cryst. (MeOH/Et_2O). Mp 166-170°. $[\alpha]_D$ +15.1 (c, 0.11 in MeOH).

O^3-*(L-Argininylpimeloyl):* ***Marinobufagin 3-pimeloylarginine ester***
[72103-58-3]
$C_{37}H_{54}N_4O_9$ 698.855
Constit. of *Bufo marinus.* Amorph. Mp 186-190°. $[\alpha]_D^{20}$ +22 (c, 0.23 in MeOH).

Schröter, H. *et al., Helv. Chim. Acta*, 1959, **42**, 1385-1394 (*isol*)
Gsell, L. *et al., Helv. Chim. Acta*, 1969, **52**, 551-568 (*pmr*)
Linde-Tempel, H. *et al., Helv. Chim. Acta*, 1970, **53**, 2188-2196 (*Marinobufotoxin*)
Porto, A.M. *et al., Experientia*, 1971, **27**, 506 (*biosynth*)
Pettit, G.R. *et al., J.O.C.*, 1974, **39**, 3003-3006 (*Marinobufotoxin, synth*)
Shimada, K. *et al., Chem. Pharm. Bull.*, 1979, **27**, 1881-1886; 1980, **28**, 1559-1562 (*isol, pmr, sulfates, esters*)

1,2-Epoxy-1-hydroxymethylpyrrolizidine E-133

*Hexahydro-6*bH-*oxireno[*a*]pyrrolizine-6*b-*methanol, 9CI. 1β,2β-Epoxyisoretronecanol, 8CI. 1-Hydroxymethyl-1,2-epoxypyrrolizidine*
[15211-03-7]



Relative configuration

$C_8H_{13}NO_2$ 155.196
Alkaloid from *Crotalaria trifoliastrum*, *Crotalaria aridicola*, *Crotalaria grantiana*, *Heliotropium ternatum*, *Heliotropium molle*, *Heliotropium angiospermum* (major alkaloid) and *Heliotropium subulatum* (major alkaloid) (Fabaceae, Boraginaceae). Large prisms (Me_2CO). Mp 66-67°. $[\alpha]_D^{20}$ -60.1 (c, 2.2 in EtOH). The alkaloid isol. from *H. subulatum* by Malik *et al* was originally named Subulacine *N*-oxide and assigned an erroneous struct.

Picrate:
Yellow needles (EtOH). Mp 173-174° (170-171°). $[\alpha]_D^{20}$ -8 (c, 4.97 in Me_2CO).

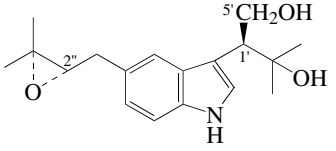
Me ether: ***1,2-Epoxy-1-methoxymethylpyrrolizidine****. 1-Methoxymethyl-1,2-epoxypyrrolizidine*
$C_9H_{15}NO_2$ 169.223
Alkaloid from *Crotalaria trifoliastrum* and *Crotalaria aridicola* (Fabaceae). $Bp_{0.1}$ 53°. $[\alpha]_D$ -63 (c, 1.08 in EtOH). pK_a 8.1.

Me ether, picrate:
Yellow needles (EtOH). Mp 166-168°. $[\alpha]_D^{18}$ -7.5 (c, 1.96 in Me_2CO).

Culvenor, C.C.J. *et al., Aust. J. Chem.*, 1963, **16**, 131; 1967, **20**, 757 (*isol, pmr, ms, struct*)
Birecka, H. *et al., Phytochemistry*, 1983, **22**, 1167 (*isol, ms*)
Smith, L.W. *et al., Phytochemistry*, 1984, **23**, 473 (*isol*)
Malik, A. *et al., Heterocycles*, 1988, **27**, 707
Winkler, T. *et al., Heterocycles*, 1988, **27**, 2331
Stermitz, F.R. *et al., Tet. Lett.*, 1988, **29**, 4943

5-(2,3-Epoxy-3-methylbutyl)-3-[2-hydroxy-1-(hydroxymethyl)-2-methylpropyl]-1*H*-indole E-134

*2-[5-[(3,3-Dimethyloxiranyl)methyl]-1*H*-indol-3-yl]-3-methyl-1,3-butanediol, 9CI*



$C_{18}H_{25}NO_3$ 303.4

(1′S,2″S)-form

5′-Hexadecanoyl: [165604-37-5]
$C_{34}H_{55}NO_4$ 541.813
Alkaloid from *Hexalobus crispiflorus.* Oil. $[\alpha]_D^{21}$ +30 (c, 1.4 in $CHCl_3$). λ_{max} 226 (log ε 4.6); 286 (log ε 3.9); 295 (log ε 3.9) (MeOH).

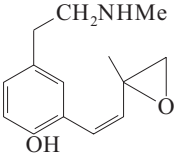
5′-(9,12-Octadecadienoyl)(Z,Z-): [93822-73-2]
$C_{36}H_{55}NO_4$ 565.835
Alkaloid from *Hexalobus crispiflorus.* Oil. $[\alpha]_D^{21}$ +27 (c, 1.4 in $CHCl_3$). λ_{max} 226 (log ε 4.6); 286 (log ε 3.9); 295 (sh) (MeOH).

5′-(9-Octadecenoyl)(Z-): [93822-72-1]
$C_{36}H_{57}NO_4$ 567.851
Alkaloid from *Hexalobus crispiflorus.* Oil. $[\alpha]_D^{21}$ +25 (c, 1.8 in $CHCl_3$). λ_{max} 226 (log ε 4.6); 286 (log ε 3.9); 295 (sh) (MeOH).

Achenbach, H. *et al., Annalen*, 1995, 1327-1337 (*isol, uv, ir, pmr, cmr, ms*)

1,2-Epoxy-2-methyl-4-(*N*-methyltyraminyl)-3-butene E-135

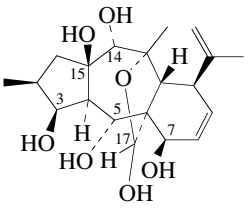
2-[3-(3,4-Epoxy-3-methyl-1-butenyl)-4-hydroxyphenyl]-N-*methylethylamine*
[129743-99-3]



$C_{14}H_{19}NO_2$ 233.31
Alkaloid from the leaves of *Zanthoxylum coriaceum* (Rutaceae). Oil. Opt. inactive.

Marcos, M. *et al., Phytochemistry*, 1990, **29**, 2315 (*isol, uv, ir, pmr, cmr, ms, struct*)

13,17-Epoxy-8,10(18)-myrsinadiene-3,5,7,14,15,17-hexol E-136



$C_{20}H_{30}O_7$ 382.453
17-Hydroxymyrsinol is a misleading name since 13,17-Epoxy-3,5,7,15-tetrahydroxy-8,10(18)-myrsinadien-14-one has a C-14 oxo group.

(2β,3β,5α,7β,13α,14α,15β,17S)-form

17-Hydroxydihydromyrsinol*. 17-Hydroxymyrsinol (incorr.)*

*14-*O*-(3-Pyridinecarbonyl), 7-benzoyl, 3-propanoyl, 5,15-di-Ac:* [213920-14-0]
$C_{40}H_{45}NO_{12}$ 731.795
Constit. of *Euphorbia seguieriana*. λ_{max} 221 (log ε 1.55); 258 (sh) ; 261 (log ε 0.72) (EtOH).

*3,14-Bis-*O*-(3-pyridinecarbonyl), 7-*O*-(2-methylpropanoyl), 5,15-di-Ac:* [213920-06-0]
$C_{40}H_{46}N_2O_{12}$ 746.81
Constit. of *Euphorbia seguieriana.* Cryst. Mp 205-207°. λ_{max} 220 (log ε 1.5); 258 (sh) ; 260 (log ε 0.7) (EtOH).

*3,14-Bis-*O*-(3-pyridinecarbonyl), 7-*O*-(2-methylpropanoyl), 5,15,17-tri-Ac:* [213920-10-6]
$C_{42}H_{48}N_2O_{13}$ 788.847
Constit. of *Euphorbia seguieriana*. λ_{max} 222 (log ε 1.55); 260 (log ε 0.73); 267 (sh) ; 281 (sh) (EtOH).

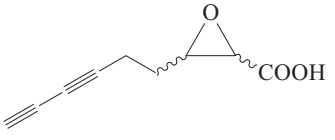
*3,14-Bis-*O*-(3-pyridinecarbonyl), 7-benzoyl, 5,15-di-Ac:* [213920-08-2]
$C_{43}H_{44}N_2O_{12}$ 780.827
Constit. of *Euphorbia seguieriana*. λ_{max} 221 (log ε 1.5); 251 (sh) ; 260 (log ε 0.73) (EtOH).

*3,7,14-Tris-*O*-(3-pyridinecarbonyl), 5,15-di-Ac:* [213920-19-5]
$C_{42}H_{43}N_3O_{12}$ 781.815
Constit. of *Euphorbia seguierana*. λ_{max} 222 (log ε 1.5); 258 (sh) ; 260 (log ε 0.7); 280 (sh) (EtOH).

Öksüz, S. *et al., J. Nat. Prod.*, 1998, **61**, 1198-1201 (*isol, pmr, cmr*)

2,3-Epoxy-6,8-nonadiynoic acid E-137

3-(3,5-Hexadiynyl)oxiranecarboxylic acid



$C_9H_8O_3$ 164.16

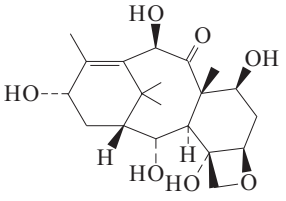
*2-Phenylethylamide: 3-(3,5-Hexadiynyl)-*N*-(2-phenylethyl)oxiranecarboxamide.*

2,3-Epoxy-6,8-nonadiynoic acid 2-phenylethylamide
[96917-25-8]
$C_{17}H_{17}NO_2$ 267.327
Isol. from *Acmella ciliata* and *Salmea scandens*. Oil.

*(Z)-2-Phenylethenylamide: 3-(3,5-Hexadiynyl)-*N*-(2-phenylethenyl)oxirane-carboxamide, 9CI. 1,2-Epoxy-6,8-nonadiynoic acid styrylamide*
[75872-78-5]
$C_{17}H_{15}NO_2$ 265.311
Isol. from *Spilanthes alba*. Oil.

Bohlmann, F. *et al., Phytochemistry*, 1980, **19**, 1535; 1985, **24**, 595 (*isol, struct, pmr, ir, ms*)
Martin, R. *et al., Phytochemistry*, 1985, **24**, 2295 (*isol, struct, pmr, ms*)

5,20-Epoxy-2,4,7,10,13-pentahydroxy-11-taxen-9-one E-138



$C_{20}H_{30}O_7$ 382.453

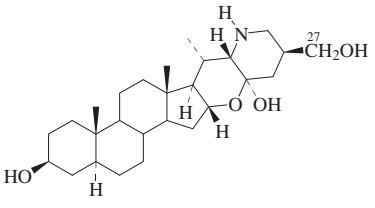
(2α,4α,5β,7β,10β,13α)-*form*

2-Benzoyl, 4,10-di-Ac: ***1-Dehydroxybaccatin III***
[132302-29-5]
$C_{31}H_{38}O_{10}$ 570.635
Constit. of *Taxus yunnanensis*. Needles (MeOH). Mp 169-171°. $[\alpha]_D^{23}$ -45.9 (c, 0.75 in $CHCl_3$).

*13-*O*-(3*S*-Benzoylamino-2*R*-hydroxy-3-phenylpropanoyl), 2-benzoyl, 4,10-di-Ac:* ***1-Deoxypaclitaxel****. 1-Deoxytaxol*
[198990-70-4]
$C_{47}H_{51}NO_{13}$ 837.919
Constit. of *Taxus mairei*. Amorph. powder. $[\alpha]_D^{22}$ -57 (c, 0.05 in $CHCl_3$).

Zhang, Z. *et al., Phytochemistry*, 1990, **29**, 3673-3675 (*1-Dehydroxybaccatin III*)
Shi, Q.-W. *et al., J. Nat. Prod.*, 2006, **69**, 280-283 (*1-Deoxypaclitaxel*)

16,23-Epoxy-16,28-secosolanidane-3,23,27-triol E-139



$C_{27}H_{45}NO_4$ 447.657

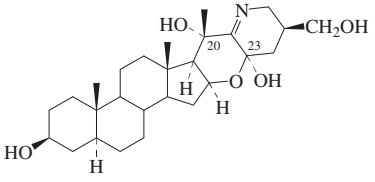
(3β,5α,22*S*,23*R*,25*S*)-*form*

Esculeogenin B
[854381-41-2]
Amorph. powder. $[\alpha]_D$ -96.2 (c, 0.05 in Py).

*3-*O*-[β-D-Glucopyranosyl-(1→2)-[β-D-xylopyranosyl-(1→3)]-β-D-glucopyranosyl-(1→4)-β-D-galactopyranoside], 27-*O*-β-D-glucopyranoside:* ***Esculeoside B***
[719294-52-7]
$C_{56}H_{93}NO_{28}$ 1228.341
Alkaloid from ripe tomatoes (*Lycopersicon esculentum*). Amorph. powder. $[\alpha]_D^{26}$ -49.2 (c, 0.6 in Py).

Fujiwara, Y. *et al., Tetrahedron*, 2004, **60**, 4915-4920 (*Esculeoside B*)
Yoshizaki, M. *et al., Chem. Pharm. Bull.*, 2005, **53**, 839-840 (*Esculeogenin B*)

16,23-Epoxy-16,28-secosolanid-22(28)-ene-3,20,23,27-tetrol E-140



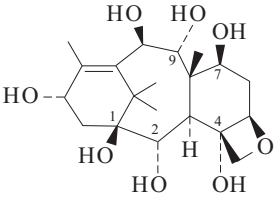
$C_{27}H_{43}NO_5$ 461.64

(3β,5α,20*S*,23*R*,25*S*)-*form*

*23-Me ether, 3-*O*-[β-D-glucopyranosyl-(1→2)-[β-D-xylopyranosyl-(1→3)]-β-D-glucopyranosyl-(1→4)-β-D-galactopyranoside], 27-*O*-β-D-glucopyranoside:* ***Esculeoside C***
[886225-73-6]
$C_{57}H_{93}NO_{29}$ 1256.351
Constit. of the ripe fruit of *Lycopersicon esculentum* var. *cerasiforme* (cherry tomato). Amorph. powder. $[\alpha]_D^{24}$ -56.7 (c, 0.9 in Py).

Ono, M. *et al., Chem. Pharm. Bull.*, 2006, **54**, 237-239 (*Esculeoside C*)

5,20-Epoxy-11-taxene-1,2,4,7,9,10,13-heptol E-141



$C_{20}H_{32}O_8$ 400.468

(1β,2α,5β,7β,9α,10β,13α)-*form*

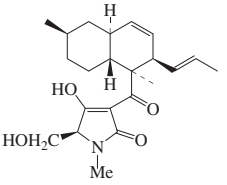
*10-Benzoyl, 13-(3-dimethylamino-3-phenylpropanoyl)(*R*-), 2,4,7,9-tetra-Ac:* ***Taxuspine N***
[175801-13-5]
$C_{46}H_{57}NO_{14}$ 847.955
Constit. of *Taxus cuspidata*. Amorph. solid. $[\alpha]_D^{25}$ -6 (c, 0.26 in $CHCl_3$). λ_{max} 278 (ε 4900) (MeOH) (Berdy).

9-Ketone, 2-benzoyl, 13-[2-hydroxy-3-(4-methylhexanoylamino)-3-phenylpropanoyl], 4,10-di-Ac: ***Taxuspinanane A***
[187740-00-7]
$C_{47}H_{59}NO_{14}$ 861.981
Constit. of *Taxus cuspidata* var. *nana*. Powder. $[\alpha]_D$ -40.2 (c, 0.37 in MeOH).

Kobayashi, J. *et al., Tetrahedron*, 1995, **51**, 5971-5978; 1996, **52**, 5391-5396 (*Taxuspines*)
Morita, H. *et al., J. Nat. Prod.*, 1997, **60**, 390-392 (*Taxuspinanane A*)
Buchta, M. *et al., Z. Kristallogr.*, 2006, **221**, 97-100 (*Taxuspinanane A, cryst struct*)

Equisetin E-142

[57749-43-6]



Absolute Configuration

$C_{22}H_{31}NO_4$ 373.491
Tetramic acid antibiotic. Enolised triketone. Isol. from *Fusarium equiseti* and *Fusarium heterosporum*. Inhibitor of HIV-1 integrase. Active against gram-positive organisms. Amorph. powder. Mp 65-66°. $[\alpha]_D^{22}$ -278 (c, 0.77 in $CHCl_3$) ((natural)). $[\alpha]_D^{22}$ -352 (c, 1 in $CHCl_3$). λ_{max} 234 (ε 5680); 294 (ε 8860) (EtOH/HCl) (Derep). λ_{max} 252 (ε 8210); 292 (ε 7400) (EtOH/NaOH) (Derep). λ_{max} 232 (ε 6900); 248 (ε 7500); 292 (ε 10000) (EtOH) (Derep).
▶ LD_{50} (mus, ipr) 63 mg/kg. KD7986000

N-De-Me: N*-Demethylequisetin*. ***Trichosetin***
$C_{21}H_{29}NO_4$ 359.464
Isol. from a co-culture of *Catharanthus roseus* and *Trichoderma harzianum*. Phytotoxin. Active against gram-positive bacteria. Pale orange amorph. solid. $[\alpha]_D^{27}$ -471.6 (c, 0.1 in MeOH). λ_{max} 204 (ε 15000); 252 (ε 5700); 288 (ε 10000) (MeOH).

U.S. Pat., 1974, 467 548; *CA*, **84**, 41985 (*isol*)
Vesonder, R.F. *et al., J. Antibiot.*, 1979, **32**, 759 (*nmr, ms, ir, uv, struct*)
Phillips, N.J. *et al., J.A.C.S.*, 1989, **111**, 8223 (*struct*)
Turos, E. *et al., J.A.C.S.*, 1989, **111**, 8231 (*synth*)
Singh, S.B. *et al., Tet. Lett.*, 1998, **39**, 2243-2246 (*isol, cmr*)
Hazuda, D. *et al., Antiviral Chem. Chemother.*, 1999, **10**, 63-70 (*isol, activity*)
Yuki, K. *et al., Tet. Lett.*, 2001, **42**, 2517-2519 (*synth*)
Marfori, E.C. *et al., Tetrahedron*, 2002, **58**, 6655-6658 (*Trichosetin, biosynth*)
Marfori, E.C. *et al., Z. Naturforsch., C*, 2002, **57**, 465-470 (*Trichosetin, isol, pmr, cmr*)
Marfori, E.C. *et al., Phytochemistry*, 2003, **62**, 715-721 (*Trichosetin, activity*)
Burke, L.T. *et al., Org. Biomol. Chem.*, 2005, **3**, 274-280 (*synth*)

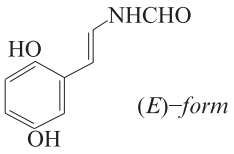
Equisetonine E-143

$C_{18}H_{31}N_3O_4$ 353.461
Struct. unknown. Alkaloid from *Equisetum palustre*. Mp 130-135° Mp 220° dec. (as hydrochloride).

Wöhlbier, W. *et al., Chem. Ber.*, 1950, **83**, 310-314
Eugster, C.H. *et al., Helv. Chim. Acta*, 1953, **36**, 1387-1400

Erbstatin E-144

N-*[2-(2,5-Dihydroxyphenyl)ethenyl]formamide. MH 435A. Antibiotic MH 435A*
[100827-28-9]



(*E*)–*form*

$C_9H_9NO_3$ 179.175
Isol. from *Streptomyces* sp. MH435-hF3. Epidermal growth factor-receptor; tyrosine kinase inhibitor; exhibits antimicrobial and antineoplastic props; angiogenesis inhibitor; DNA topoisomerase inhibitor; induces cell apoptosis; mitogenic response inhibitor. Yellow cryst. ($MeOH/CHCl_3$). Sol. MeOH, EtOH, Me_2CO, acids; fairly sol. $CHCl_3$, EtOAc; poorly sol. H_2O, hexane. Mp 78-82° Mp 150.5-152° (softens at 88-91°) (synthetic). Log P 0.62 (calc). λ_{max} 215 (ϵ 8200); 278 (ϵ 14900); 330 (ϵ 8100) (MeOH/HCl) (Derep). λ_{max} 208 (ϵ 10700) (MeOH/NaOH) (Derep). λ_{max} 215 (ϵ 8200); 278 (ϵ 14900); 286 (sh) ; 330 (ϵ 8100) (MeOH) (Derep).

▶ LD_{50} (mus, ipr) 200 mg/kg. KD9500000

1′,2′-Dihydro: N-*[2-(2,5-Dihydroxyphenyl)ethyl]formamide. MH 435B. Antibiotic MH 435B*
[108997-59-7]
$C_9H_{11}NO_3$ 181.191
From *Streptomyces* sp. MH 435-hF_3.

[108536-24-9]

Umezawa, H. *et al., J. Antibiot.*, 1986, **39**, 170; 314 (*isol, struct, props*)
Hangauer, D.G. *et al., Tet. Lett.*, 1986, **27**, 5799 (*synth, Z-form, pmr*)
Isshiki, K. *et al., J. Antibiot.*, 1987, **40**, 1207; 1209 (*synth, props*)
Dow, R.L. *et al., Tet. Lett.*, 1987, **28**, 2217 (*synth*)
Deshmukh, M.N. *et al., Synth. Commun.*, 1988, **18**, 1483 (*synth*)
Kleinschroth, J. *et al., Synthesis*, 1988, 970 (*synth*)
Ishibashi, H. *et al., Chem. Pharm. Bull.*, 1989, **37**, 2214 (*synth*)
Takekura, N. *et al., Int. J. Cancer*, 1991, **47**, 938 (*activity*)
Umezawa, K. *et al., Methods Enzymol.*, 1991, **201**, 379 (*activity*)
Hsu, C.Y. *et al., Biochem. Pharmacol.*, 1992, **43**, 2471 (*enzyme activity*)
Oikawa, T. *et al., J. Antibiot.*, 1993, **46**, 785
Markovits, J. *et al., Biochem. Pharmacol.*, 1994, **48**, 549 (*pharmacol*)

Ercine E-145

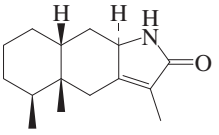
$C_{25}H_{28}N_2O_6$ 452.506
Struct. unknown. Alkaloid from the upper parts of *Vinca erecta* (Apocynaceae). Cryst. (C_6H_6). Mp 158-159°. $[\alpha]_D^{18}$ -121 (c, 1.4 in MeOH).

Hydrochloride:
Cryst. (H_2O). Mp 172-173°. $[\alpha]_D^{18}$ -108 (c, 1.4 in MeOH). $[\alpha]_D^{18}$ -116.6 (c, 0.2 in EtOH).

Koretskaya, N.I. *et al., Zh. Obshch. Khim.*, 1963, **33**, 2065-2066; *J. Gen. Chem. USSR (Engl. Transl.)*, 1963, **33**, 2010 (*isol, uv, ir*)

Eremophilene lactam E-146

[65012-44-4]

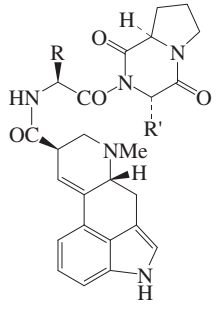


$C_{15}H_{23}NO$ 233.353
Alkaloid from the rhizomes of *Petasites hybridus* (Apocynaceae). Cryst. (C_6H_6 or C_6H_6/Me_2CO). Mp 215-218°. $[\alpha]_D^{22}$ +199.5 (c, 0.33 in MeOH).

Jizba, J. *et al., Coll. Czech. Chem. Comm.*, 1977, **42**, 2438 (*isol, uv, ir, pmr, ms, cd, struct*)

β,β-Ergoannam E-147

[97387-95-6]



Absolute Configuration

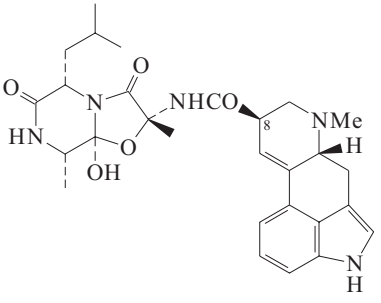
R = R' = -$CH(CH_3)CH_2CH_3$

$C_{33}H_{43}N_5O_4$ 573.734
Alkaloid from *Claviceps purpurea*.

Flieger, M. *et al., J. Nat. Prod.*, 1984, **47**, 970 (*isol, pmr, cmr, ms, struct*)

Ergobalansine E-148

[131985-45-0]



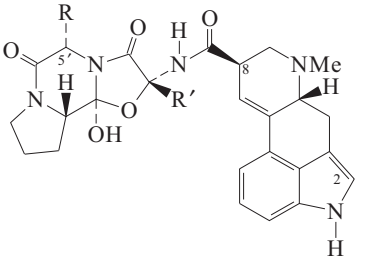
$C_{28}H_{35}N_5O_5$ 521.615
Alkaloid from *Cenchrus echinatus* infected with *Balansia obtecta*. Also prod. from cultures of *Balansia cyperi* and *Balansia obtecta*. Detected in seeds of *Ipomoea piurensis* (Convolvulaceae). Amorph.

8-Epimer: ***Ergobalansinine***
[132074-97-6]
$C_{28}H_{35}N_5O_5$ 521.615
Alkaloid from *Cenchrus echinatus* infected with *Balansia obtecta*. Also prod. from cultures of *Balansia cyperi* and *Balansia obtecta*. Isol. from seeds of *Ipomoea piurensis* (Convolvulaceae). Amorph.

Powell, R.G. *et al., J. Nat. Prod.*, 1990, **53**, 1272 (*isol, pmr, cmr, struct*)
Jennett-Siems, K. *et al., J. Nat. Prod.*, 1994, **57**, 1304 (*isol, pmr, ms*)

Ergobine E-149

[149537-27-9]



R = CH_2CH_3, R′ = CH_3

$C_{28}H_{33}N_5O_5$ 519.599
Alkaloid from submerged cultures of *Claviceps purpurea* strain 231 FI.

Crespi Perellino, N. *et al., J. Nat. Prod.*, 1993, **56**, 489-493 (*isol, pmr, ms, struct*)

Ergobutine E-150

[82564-35-0]
As Ergobine, E-149 with
R = R′ = -CH_2CH_3
$C_{29}H_{35}N_5O_5$ 533.626
Isol. from saprophytic cultures of *Claviceps purpurea* strain 231 F.I.

Bianchi, M.L. *et al., J. Nat. Prod.*, 1982, **45**, 191 (*isol, ms, struct*)

Ergobutyrine E-151

[82564-36-1]
As Ergobine, E-149 with
R = -CH_2CH_3, R′ = -$CH(CH_3)_2$
$C_{30}H_{37}N_5O_5$ 547.653
Isol. from saprophytic cultures of *Claviceps purpurea* strain 231 F.I.

Bianchi, M.L. *et al., J. Nat. Prod.*, 1982, **45**, 191 (*isol, ms, struct*)

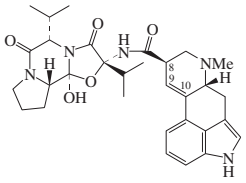
Ergocornam E-152

Lysergylvalylvalylproline lactam
[77477-94-2]
As β,β-Ergoannam, E-147 with
R = R′ = –$CH(CH_3)_2$
$C_{31}H_{39}N_5O_4$ 545.68
Alkaloid from field ergot. Mp 196-198°. $[\alpha]_D^{20}$ +57.8 (c, 0.5 in Py).

Flieger, M. *et al., J. Chromatogr.*, 1981, **207**, 139 (*isol*)
Stuchlík, J. *et al., Coll. Czech. Chem. Comm.*, 1982, **47**, 3312 (*isol, pmr, cmr, ms, struct*)

Ergocornine E-153

12′-Hydroxy-2′,5′-bis(1-methylethyl)ergotaman-3′,6′,18-trione, 9CI
[564-36-3]



Absolute Configuration

$C_{31}H_{39}N_5O_5$ 561.68
Alkaloid from ergot (*Claviceps purpurea*). Vasoconstrictor. Investigational tool for studying ovum implantation in mammals. Pharmacol. effects resemble those of Ergotamine, E-172 but is more toxic and little used clinically. Sol. Me_2CO, $CHCl_3$, EtOAc; fairly sol. EtOH; poorly sol. H_2O. Mp 182-184° dec. $[\alpha]_D^{20}$ -175 (c, 1 in $CHCl_3$). $[\alpha]_D$ -110 (c, 1 in Py). Log P 5.07 (uncertain value) (calc). Component of Ergotoxine. λ_{max} 311 (ϵ 8130) (MeOH) (Berdy).

▶ Exp. reprod. effects ; LD_{50} (rbt, ivn) 1.17 mg/kg. KE7630000

Me ether: ***12′-O-Methylergocornine***
[112767-18-7]
$C_{32}H_{41}N_5O_5$ 575.706
Alkaloid from *Claviceps purpurea*.

9,10α-Dihydro: Dihydroergocornine
[25447-65-8]
[5611-87-0]
Mp 185-187° dec. $[\alpha]_D^{20}$ -48 (c, 0.5 in Py).

8-Epimer: ***Ergocorninine***
[564-37-4]
$C_{31}H_{39}N_5O_5$ 561.68
Alkaloid from ergot. Prisms (MeOH). Mp 228° dec. $[\alpha]_D^{20}$ +409 (c, 1.0 in $CHCl_3$). $[\alpha]_D^{20}$ +500 (c, 1.0 in Py).

[8047-28-7 , 8006-25-5]

Stoll, A. *et al., Helv. Chim. Acta*, 1943, **26**, 2070-2081; 1951, **34**, 1544 (*struct*)
Stadler, P.A. *et al., Helv. Chim. Acta*, 1969, **52**, 1549 (*synth, config, uv, ir, pmr, epimer*)
Voigt, D. *et al., Pharmazie*, 1974, **29**, 697 (*ms*)
Wurst, M. *et al., J. Chromatogr.*, 1979, **174**, 401 (*hplc*)
Plattner, R.D. *et al., J. Agric. Food Chem.*, 1983, **31**, 785 (*ms*)
Crespi-Perellino, N. *et al., J. Nat. Prod.*, 1987, **50**, 1065 (*12′-O-Methylergocornine*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 1366
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, EDA600; EDC565; EDC575

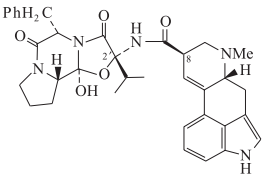
Ergocristam E-154

Lysergylvalylphenylalanylproline lactam
[50868-53-6]
As β,β-Ergoannam, E-147 with
R = $-CH(CH_3)_2$, R′ = $-CH_2Ph$
$C_{35}H_{39}N_5O_4$ 593.724
Alkaloid from *Claviceps purpurea*. Cryst. (C_6H_6 or CH_2Cl_2/Et_2O). Mp 234-236° dec. $[\alpha]_D^{20}$ +8 (c, 0.5 in $CHCl_3$). $[\alpha]_D$ +41 (c, 0.5 in Py).

Stütz, P. *et al., Experientia*, 1973, **29**, 936 (*isol, uv, ir, pmr, struct*)
Černý, A. *et al., Coll. Czech. Chem. Comm.*, 1976, **41**, 3415 (*isol, uv, ir, pmr, struct*)
Flieger, M. *et al., J. Chromatogr.*, 1981, **207**, 139 (*isol*)

Ergocristine E-155

12′-Hydroxy-2′-(1-methylethyl)-5′-(phenylmethyl)ergotaman-3′,6′,18-trione, 9CI
[511-08-0]



Absolute configuration

$C_{35}H_{39}N_5O_5$ 609.724
Alkaloid from ergot (*Claviceps purpurea*). Vasoconstrictor. Pharmacol. effects resemble those of Ergotamine, E-172 but is more toxic, therefore little used clinically. Mp 165-170°. $[\alpha]_D^{20}$ -173 (c, 0.7 in $CHCl_3$). $[\alpha]_D$ -101 (c, 0.8 in Py). Log P 5.56 (uncertain value) (calc). Component of Ergotoxine.

▶ KE1180000

9,10-Dihydro: ***Dihydroergocristine, BAN.*** *Many other names*
[17479-19-5]
$C_{35}H_{41}N_5O_5$ 611.739
Used in treatment of impaired mental function in the elderly. Peripheral and cerebral vasodilator. Log P 5.86 (uncertain value) (calc). Mainly used as a mix. with other dihydroergot alkaloids.

9,10-Dihydro; methanesulfonate: ***Dihydroergocristine mesilate, BAN***
[24730-10-7]

8-Epimer: ***Ergocristinine***
[511-07-9]
$C_{35}H_{39}N_5O_5$ 609.724
Alkaloid from ergot. Prisms (MeOH). Mp 226-227° dec. (214° dec.). $[\alpha]_D^{20}$ +370 (c, 0.4 in $CHCl_3$). $[\alpha]_D^{20}$ +471 (c, 0.35 in Py).

2′-Epimer: ***Aciergocristine***
[74081-45-1]
$C_{35}H_{39}N_5O_5$ 609.724
Minor ergot alkaloid occurring as artifact of isomerisation. Identified by hplc.

2′,8-Diepimer: ***Aciergocristinine***
[74081-46-2]
$C_{35}H_{39}N_5O_5$ 609.724
Minor ergot alkaloid occurring as artifact of epimerisation. Identified by hplc.

[8067-24-1 , 8006-25-5]

Stoll, A. *et al., Helv. Chim. Acta*, 1951, **34**, 1544 (*struct*)
Stadler, P.A. *et al., Helv. Chim. Acta*, 1969, **52**, 1549 (*synth, config, uv, ir, epimer*)
Voigt, D. *et al., Pharmazie*, 1974, **29**, 697 (*ms*)
Wurst, M. *et al., J. Chromatogr.*, 1979, **174**, 401 (*hplc*)
Szepesi, G. *et al., J. Chromatogr.*, 1980, **191**, 101 (*Aciergocristine, Aciergocristinine*)
Plattner, R.D. *et al., J. Agric. Food Chem.*, 1983, **31**, 785 (*ms*)
Coppi, G. *et al., Arzneim.-Forsch.*, 1992, **42**, 1381; 1391 (*Dihydroergocristine, rev*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 1366

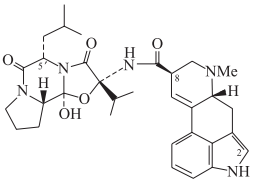
Ergocryptam E-156

Lysergylvalylleucylproline lactam
[77477-95-3]
As β,β-Ergoannam, E-147 with
R = $-CH(CH_3)_2$, R′ = $-CH_2CH(CH_3)_2$
$C_{32}H_{41}N_5O_4$ 559.707
Alkaloid from field ergot. Mp 108-110°. $[\alpha]_D^{20}$ +31.1 (c, 0.5 in Py).

Flieger, M. *et al., J. Chromatogr.*, 1981, **207**, 139 (*isol*)
Stuchlík, J. *et al., Coll. Czech. Chem. Comm.*, 1982, **47**, 3312 (*isol, pmr, cmr, ms, struct*)

α-Ergocryptine E-157

12′-Hydroxy-2′-(1-methylethyl)-5′-(2-methylpropyl)ergotaman-3′,6′,18-trione, 9CI. Ergocryptine. Ergokryptine. Ergomolline
[511-09-1]



Absolute configuration

$C_{32}H_{41}N_5O_5$ 575.706
Alkaloid from ergot (*Claviceps purpurea*). Pharmacol. effects resemble those of Ergotamine, E-172 but is more toxic and little used clinically. Mp 211-212° dec. (MeOH). $[\alpha]_D^{20}$ -120 (c, 1 in Py). $[\alpha]_D^{20}$ -198 (c, 1 in $CHCl_3$).

▶ LD_{50} (rbt, ivn) 0.95 mg/kg. KE1400000

Me ether: ***12′-O-Methyl-α-ergocryptine***
$C_{33}H_{43}N_5O_5$ 589.733
Alkaloid from *Claviceps purpurea*.

8-Hydroxy: ***8-Hydroxy-α-ergocryptine***
$C_{32}H_{41}N_5O_6$ 591.706
Alkaloid from sclerotia of *Claviceps purpurea*. Amorph.

2-Bromo: ***Bromocriptine, BAN, INN, USAN.*** *Bromocryptine. Axialit. Bagren. Bromergon. Parilac. Parlodel. Parodel. Pravidel. Umprel. CB 154. NSC 169774. Bromergocryptine. Many other names*
[25614-03-3]
$C_{32}H_{40}BrN_5O_5$ 654.602
Dopamine D_2-receptor agonist used for treatment of prolactinomas. Antiparkinsonian agent. Free radical scavenger antioxidant, prolactin inhibitor. Cryst. Mp 215-218° dec. $[\alpha]_D^{20}$ -195 (c, 1 in CH_2Cl_2). Log P 6.69 (uncertain value) (calc).

▶ Human and exp. teratogen. Exp. reprod. effects. LD_{50} (rat, ivn) 72 mg/kg. KE8250000

2-Bromo; methanesulfonate salt: ***Bromocriptine mesilate, JAN, USAN***
[22260-51-1]
Cryst. (2-butanone). Mp 192-196° dec. $[\alpha]_D^{20}$ +95 (c, 1 in MeOH/CH_2Cl_2).

▶ Adverse systemic effects reported when

used therapeutically (gastrointestinal, psychiatric, and cardiovascular). Exp. reprod. and teratogenic effects. LD_{50} (rat, ivn) 10.5 mg/kg. KE1595000

8-Epimer: α-Ergocryptinine
[511-10-4]
Formed when α-Ergocryptine is boiled with MeOH. Cryst. (EtOH). Mp 238° dec. $[\alpha]_D^{20}$ +405 (c, 0.5 in $CHCl_3$). $[\alpha]_D^{20}$ +485 (c, 0.5 in Py).

Schlientz, W. *et al., Pharm. Acta Helv.*, 1968, **43**, 497 (*isol, ir, pmr*)
Ger. Pat., 1969, 1 926 045; *CA*, **72**, 43969b (*deriv*)
Stadler, P.A. *et al., Helv. Chim. Acta*, 1969, **52**, 1549 (*synth, ir, uv, pmr*)
Voigt, D. *et al., Pharmazie*, 1974, **29**, 697 (*ms*)
Giron-Forest, D.A. *et al., Anal. Profiles Drug Subst.*, 1979, **8**, 47 (*rev, Bromocriptine, anal, synth*)
Mehta, A.E. *et al., Drugs*, 1979, **17**, 313 (*rev, Bromocriptine, pharmacol*)
Wurst, M. *et al., J. Chromatogr.*, 1979, **174**, 401 (*hplc*)
Thorner, M.O. *et al., Bromocriptine: A Clinical and Pharmacological Review*, Raven Press, N.Y., 1980, (*book*)
Rucman, R. *et al., Farmaco, Ed. Sci.*, 1983, **38**, 406 (*synth, Bromocriptine*)
Barbien, R.L. *et al., Fertil. Steril.*, 1983, **39**, 727 (*rev, Bromocriptine*)
Kanto, J. *et al., Int. J. Clin. Pharmacol., Ther. Toxicol.*, 1983, **21**, 135 (*Bromocriptine*)
Crespi-Perellino, N. *et al., J. Nat. Prod.*, 1987, **50**, 1065 (*12′-O-Methyl-α-ergocryptine*)
Yoshikawa, T. *et al., J. Neurochem.*, 1994, **62**, 1034 (*pharmacol*)
Negwer, M. *et al., Organic-Chemical Drugs and their Synonyms, 7th edn., Akademie-Verlag*, 1994, 11291 (*synonyms*)
Cvak, L. *et al., Phytochemistry*, 1997, **44**, 365 (*8-Hydroxy-α-ergocryptine*)
Martindale, The Extra Pharmacopoeia, 32nd edn., Pharmaceutical Press, 1999, No. 1132
Moldvai, I. *et al., J.O.C.*, 2004, **69**, 5993-6000 (*synth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, BNB250; EDB100; BNB325

β-Ergocryptine E-158

β-Ergokryptine
[20315-46-2]
As Ergobine, E-149 with
R = $-CH(CH_3)CH_2CH_3$ (*S*-), R′ = $-CH(CH_3)_2$

$C_{32}H_{41}N_5O_5$ 575.706
Alkaloid from ergot (*Claviceps purpurea*). Antimigraine agent. Plates (C_6H_6). Mp 173° dec. $[\alpha]_D^{20}$ -174 (c, 1.5 in $CHCl_3$). $[\alpha]_D^{20}$ -91 (c, 2.0 in Py).

► KE1590000

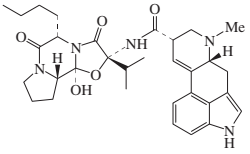
5′-Epimer: ***5′-Epiergocryptine***
$C_{32}H_{41}N_5O_5$ 575.706
Alkaloid from *Claviceps purpurea*.

8-Epimer: β-Ergocryptinine
[19467-61-9]
By action of alkali, acid or hot MeOH on β-Ergocryptine. Long needles (MeOH). Mp 220° dec. $[\alpha]_D^{20}$ +424 (c, 1.0 in $CHCl_3$). $[\alpha]_D^{20}$ +492 (c, 1.0 in Py).

Schlientz, W. *et al., Experientia*, 1967, **23**, 991 (*isol*)
Stadler, P.A. *et al., Helv. Chim. Acta*, 1969, **52**, 1549 (*synth, ir, uv, pmr*)
Flieger, M. *et al., J. Nat. Prod.*, 1984, **47**, 970 (*epimer*)

γ-Ergocryptinine E-159

γ-Ergokryptinine
[881650-40-4]



Absolute Configuration

$C_{32}H_{41}N_5O_5$ 575.706
Alkaloid from *Claviceps purpurea* CCM 8059.

Cvak, L. *et al., Amino Acids*, 2005, **29**, 145-150 (*isol, pmr, cmr, cryst struct*)

Ergogaline E-160

[157135-96-1]
As Ergobine, E-149 with
R = $-CH_2CH(CH_3)CH_2CH_3$ (*R*-), R′ = $-CH(CH_3)_2$

$C_{33}H_{43}N_5O_5$ 589.733
Alkaloid from *Claviceps purpurea*. Cryst. + $1H_2O$. Mp 182°.

Cvak, L. *et al., J.C.S. Perkin 2*, 1994, 1861-1865 (*isol, uv, ir, pmr, cmr, ms, cryst struct*)

Ergoheptine E-161

[62818-83-1]
As Ergobine, E-149 with
R = $-CH_2CH_2CH(CH_3)_2$, R′ = $-CH(CH_3)_2$

$C_{33}H_{43}N_5O_5$ 589.733
Alkaloid from ergot.

Ohmomo, S. *et al., Nippon Nogei Kagaku Kaishi*, 1976, **50**, 543; *CA*, **86**, 190303x (*struct*)

Ergohexine E-162

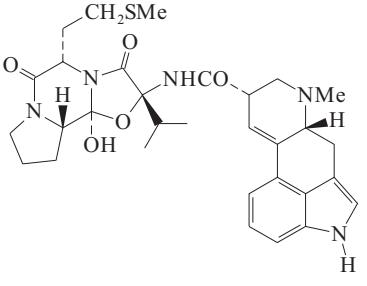
[62818-82-0]
As Ergobine, E-149 with
R = $-CH_2CH_2CH(CH_3)_2$, R′ = $-CH_3$

$C_{31}H_{39}N_5O_5$ 561.68
Alkaloid from ergot.

Ohmomo, S. *et al., Nippon Nogei Kagaku Kaishi*, 1976, **50**, 543; *CA*, **86**, 190303x (*struct*)

Ergoladinine E-163

[176391-56-3]

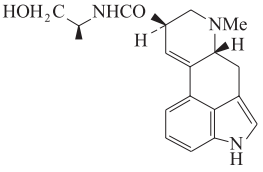


$C_{31}H_{39}N_5O_5S$ 593.746
The first sulfur-containing ergot alkaloid. Alkaloid from sclerotia of *Claviceps purpurea*. Cryst. (MeOH). Mp not reported.

Cvak, L. *et al., Phytochemistry*, 1996, **42**, 231 (*isol, pmr, cmr, ms, cryst struct*)

Ergometrine, BAN, INN E-164

*9,10-Didehydro-*N*-(2-hydroxy-1-methylethyl)-6-methylergoline-8-carboxamide, 9CI. Ergonovine. Ergotrate. Ergobasine. Ergotocin. Ergostetrine*



(+)–*form*

$C_{19}H_{23}N_3O_2$ 325.41
5HT receptor antagonist. Oxytocic agent used in childbirth. Shows little adrenolytic or CNS effect. Log P 1.03 (uncertain value) (calc).

(+)-form [60-79-7]
Alkaloid from ergot (*Claviceps purpurea*) and several spp. in the genera *Argyreia, Stictocardia, Rivea* and *Ipomoea* (Convolvulvaceae). 5-Hydroxytryptamine antagonist. Plates (EtOAc), needles (Me_2CO). Mp 162-163° dec Mp 212° dec. (dimorph.). Pharmacol. active isomer.

► Adverse systemic effects by intramuscular route. LD_{50} (mus, ivn) 144 mg/kg. KE5075000

Hydrochloride: Mp 245-246° dec. $[\alpha]_D^{25}$ +63 (H_2O).

Maleate salt: ***Ergonovine maleate, USAN****. Ergometrine maleate, JAN. Cornocentin. Ermetrine. Syntometrine. Many other names*
[129-51-1] Used in the prevention and treatment of postpartum haemorrhage. Mp 167° dec. $[\alpha]_D^{25}$ +48.

► Adverse effects reported when used therapeutically. LD_{50} (mus, ivn) 8.26 mg/kg. KE5250000

Picrate:
Red prisms or hydrated yellow needles. Mp 188-189° dec. (anhyd.) Mp 148° dec. (hydrated).

8-Epimer: ***Ergometrinine****. Ergobasinine. Ergonovinine*
[479-00-5]
$C_{19}H_{23}N_3O_2$ 325.41
Alkaloid from ergot and several *Argyreia*, *Stictocardia*, *Rivea* and *Ipomoea* spp. (Convolvulaceae). Prisms (Me_2CO). Mp 195-197° dec. $[\alpha]_D^{20}$ +414 (c, 0.45 in $CHCl_3$). $[\alpha]_D^{20}$ +328 (c, 0.7 in MeOH).

► KE5067000

8-Epimer, hydrochloride:
Needles + $1H_2O$. Mp 175-180° dec.

(-)-form
Obt. by partial synth. Mp 159-162° dec. $[\alpha]_D^{20}$ -89 (H_2O). Physiologically inactive.

8-Epimer: Synthetic. Prisms (Me_2CO).

Mp 196° dec. $[\alpha]_D^{20}$ -415 (c, 0.4 in $CHCl_3$).

[129-50-0]

Jacobs, W.A. *et al., Science (Washington, D.C.)*, 1935, **82**, 16 (*struct*)
Smith, S. *et al., J.C.S.*, 1936, 1166 (*epimer, isol*)
Stoll, A. *et al., Hoppe-Seyler's Z. Physiol. Chem.*, 1938, **251**, 155 (*epimer, synth*)
Stoll, A. *et al., Helv. Chim. Acta*, 1943, **26**, 922; 944 (*synth*)
Kornfeld, E.C. *et al., J.A.C.S.*, 1956, **78**, 3087 (*synth*)
Chao, J.-M. *et al., Phytochemistry*, 1973, **12**, 2435 (*occur*)
Bach, N.J. *et al., J.O.C.*, 1974, **39**, 1272 (*cmr*)
Reif, V.D. *et al., Anal. Profiles Drug Subst.*, 1982, **11**, 273 (*rev*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 1365
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, EDB500; LJL000

Ergonine E-165

[29537-61-9]
As Ergobine, E-149 with
R = $-CH(CH_3)_2$, R′ = $-CH_2CH_3$
$C_{30}H_{37}N_5O_5$ 547.653
Alkaloid from *Claviceps purpurea*. Prisms (EtOH/diisopropyl ether). Mp 207-208°. $[\alpha]_D^{20}$ -182 (c, 1 in $CHCl_3$). $[\alpha]_D^{20}$ -28.2 (c, 1 in Py).

Stütz, P. *et al., Helv. Chim. Acta*, 1970, **53**, 1278 (*synth, uv, ir, pmr*)
Brunner, R. *et al., Can. J. Chem.*, 1979, **57**, 1638 (*isol, uv, ir, pmr*)

β-Ergoptine E-166

[65756-55-0]
As Ergobine, E-149 with
R = $-CH(CH_3)CH_2CH_3$, R′ = $-CH_2CH_3$
$C_{31}H_{39}N_5O_5$ 561.68
Isol. from ergot *Claviceps purpurea*. Mp 201-203° dec. $[\alpha]_D^{20}$ -163 (c, 1.0 in $CHCl_3$).

▶ KE7100000

8-Epimer: β-Ergoptinine
[65794-73-2]
Synthetic. Mp 205-206° dec. $[\alpha]_D^{20}$ +421 (c, 0.5 in $CHCl_3$).

Stadler, P.A. *et al., Experientia*, 1977, **33**, 1552 (*β-Ergoptinine*)
Plattner, R.D. *et al., J. Agric. Food Chem.*, 1983, **31**, 785 (*ms*)
Porter, J.K. *et al., J. Agric. Food Chem.*, 1987, **35**, 359 (*isol*)

Ergoptine E-167

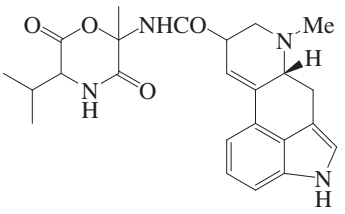
[29475-05-6]
As Ergobine, E-149 with
R = $-CH_2CH(CH_3)_2$, R′ = $-CH_2CH_3$
$C_{31}H_{39}N_5O_5$ 561.68
Alkaloid from *Claviceps purpurea*. Cryst. (Me_2CO aq.). Mp 198-199° (195-197° dec.). $[\alpha]_D^{20}$ -188 (c, 0.8 in $CHCl_3$).

▶ KE7050000

8-Epimer: ***Ergoptinine***
[29475-04-5]
$C_{31}H_{39}N_5O_5$ 561.68
Alkaloid from ergot *Claviceps purpurea*.

Stütz, P. *et al., Helv. Chim. Acta*, 1970, **53**, 1278 (*synth, uv, ir, pmr*)
Brunner, R. *et al., Can. J. Chem.*, 1979, **57**, 1638 (*isol, uv, ir, pmr*)
Stuchlik, J. *et al., esk. Farm.*, 1981, **30**, 201; *CA*, **95**, 146752e (*Ergoptinine*)

Ergosecalinine E-168



$C_{24}H_{28}N_4O_4$ 436.51
Tentative struct. Alkaloid from ergot (*Claviceps purpurea*). Prisms (EtOAc). Mp 217° dec. $[\alpha]_D^{18}$ +298 (c, 0.2 in $CHCl_3$). $[\alpha]_D^{18}$ +417 (c, 0.22 in Py). No CAS no 1967-2001 (8-14CI).

Abe, M. *et al., Bull. Agric. Chem. Soc. Jpn.*, 1959, **23**, 246-248; *CA*, **54**, 3482e (*isol*)
Abe, M. *et al., Nippon Nogei Kagaku Kaishi*, 1960, **34**, 580-584; *CA*, **59**, 3098e (*isol*)

Ergosine† E-169

[561-94-4]
As Ergobine, E-149 with
R = $-CH_2CH(CH_3)_2$, R′ = $-CH_3$
$C_{30}H_{37}N_5O_5$ 547.653
Alkaloid from ergot (*Claviceps purpurea*) and from the seeds of *Ipomoea argyrophylla*. Also present in *Argyreia mollis, Argyreia luzonensis, Argyreia obtusifolia, Argyreia ridleyi* and *Argyreia splendens* (Convolvulaceae). Prisms (EtOAc). Mp 228° dec. (220° dec.). $[\alpha]_D^{20}$ -161 (c, 1 in $CHCl_3$). $[\alpha]_D^{20}$ +16 (c, 1 in Me_2CO). Forms mol. compd. with ergosinine, Mp 200° dec.

▶ KE7200000

Hydrochloride:
Plates + $1Me_2CO$. Mp 235° dec.

Hydrobromide:
Needles + $1Me_2CO$. Mp 230° dec.

9,10α-Dihydro: ***Dihydroergosine***
$C_{30}H_{39}N_5O_5$ 549.669
Alkaloid from the sclerotia of *Sphacelia sorghi*. Prisms (EtOAc). Mp 212° dec. $[\alpha]_D^{20}$ +10.1 (c, 1.5 in $CHCl_3$). $[\alpha]_D^{20}$ -52 (c, 0.5 in Py).

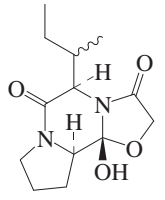
8-Epimer: ***Ergosinine****. Ergoclavinine*
[596-88-3]
$C_{30}H_{37}N_5O_5$ 547.653
Alkaloid from ergot (*Claviceps purpurea*) and the seeds of *Ipomoea argyrophylla*. Also present in *Argyreia mollis, Argyreia luzonensis, Argyreia obtusifolia, Argyreia ridleyi* and *Argyreia splendens* (Convolvulaceae). Prisms (EtOH, Me_2CO aq., C_6H_6 or EtOAc), needles + ½ MeOH (MeOH). Mp 228° dec. $[\alpha]_D^{20}$ +420 (c, 1 in $CHCl_3$). $[\alpha]_D^{20}$ +380 (c, 1 in Me_2CO).

8-Epimer, hydrochloride: Mp 206° dec.

Smith, S. *et al., J.C.S.*, 1937, 396 (*isol, epimer*)
Stoll, A. *et al., Helv. Chim. Acta*, 1943, **26**, 2070 (*Dihydroergosine*)
Stadler, P.A. *et al., Helv. Chim. Acta*, 1964, **47**, 1911 (*synth, epimer*)
Stauffacher, D. *et al., Helv. Chim. Acta*, 1965, **48**, 1379 (*isol, epimer*)
Mantle, P.G. *et al., Nature (London)*, 1968, **218**, 581 (*Dihydroergosine*)
Chao, J.-M. *et al., Phytochemistry*, 1973, **12**, 2435 (*occur*)

Ergosine† E-170

*Tetrahydro-10*b*-hydroxy-5-(1-methylpropyl)-8*H*-oxazolo[3,2-*a*]pyrrolo[2,1-*c*]pyrazine-3,6(2*H*,5*H*)-dione, 9CI*
[897363-33-6]



Absolute Configuration

$C_{13}H_{20}N_2O_4$ 268.312
Alkaloid from the leaves of *Ipomoea fistulosa*.

Shah, V.H. *et al., Chemistry (Rajkot, India)*, 2006, **3**, 8-10 (*isol*)

Ergostine E-171

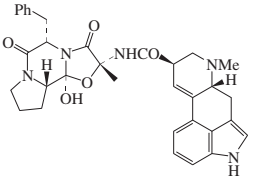
[2854-38-8]
As Ergobine, E-149 with
R = $-CH_2Ph$, R′ = $-CH_2CH_3$
$C_{34}H_{37}N_5O_5$ 595.697
Alkaloid from ergot (*Claviceps purpurea*). Prisms (EtOAc). Mp 204-208° dec. $[\alpha]_D^{20}$ -169 (c, 1.0 in $CHCl_3$).

8-Epimer: ***Ergostinine***
[3268-95-9]
$C_{34}H_{37}N_5O_5$ 595.697
Alkaloid from ergot (*Claviceps purpurea*). Prisms (MeOH or EtOH). Mp 215-216° dec. $[\alpha]_D^{20}$ +357 (c, 1.0 in $CHCl_3$). $[\alpha]_D^{20}$ +429 (c, 1.0 in Py).

Schlientz, W. *et al., Helv. Chim. Acta*, 1964, **47**, 1921 (*isol, ir, struct, synth, epimer*)

Ergotamine, BAN, INN E-172

12′-Hydroxy-2′-methyl-5′-(phenylmethyl)ergotaman-3′,6′,18-trione, 9CI
[113-15-5]



Absolute Configuration

$C_{33}H_{35}N_5O_5$ 581.67
Alkaloid from ergot (*Claviceps purpurea*). Vasoconstrictor used in migraine treatment, powerful uterine contractant. Adrenergic antagonist, inhibitor of vasomotor centres, haemostatic used in obstetrics. Mp 213-214° dec. $[\alpha]_D$ -160 ($CHCl_3$). Log P 4.63 (uncertain value) (calc).

▶ LD_{50} (mus, ipr) 62 mg/kg. KE7700000

Hydrochloride:
Plates (EtOH aq.). Mp 212°.

(+)-Tartrate (2:1): ***Ergotamine tartrate, JAN, USAN****. Ergomar. Gynergen. Ergostate. Many other names*
[379-79-3]
Mp 203° dec. $[\alpha]_D^{21}$ -135 (c, 0.4 in $CHCl_3$). Component of Cafergot.

▶ Adverse gastrointestinal and CNS effects when used therapeutically. Abuse can lead to addiction. Exp. reprod. and teratogenic effects. LD_{50} (rat, ivn) 80 mg/kg. KE8225000

N^1*-Me:* ***Metergotamine, INN****. 1-Methylergotamine, 8CI*
[22336-84-1]
$C_{34}H_{37}N_5O_5$ 595.697
Vasoconstrictor. Migraine therapeutic. Cryst. (CH_2Cl_2/MeOH). Mp 167-170° dec. $[\alpha]_D^{20}$ -163 (c, 0.5 in $CHCl_3$). Log P 5.1 (uncertain value) (calc).

Dihydro: ***Dihydroergotamine, BAN, INN***
[511-12-6]
$C_{33}H_{37}N_5O_5$ 583.686
Antiadrenergic agent, vasoconstrictor, antimigraine agent. Diminished oxytocic and vasoconstrictor effects *cf.* Ergotamine. Prisms (Me_2CO). Mp 239°. $[\alpha]_D^{20}$ -64 (c, 0.5 in Py). Log P 4.94 (uncertain value) (calc).

▶ LD_{50} (mus, scu) 80 mg/kg. II3675000

Dihydro; methanesulfonate: ***Dihydroergotamine mesylate, JAN, USAN****. Migranal. Many other names*
[6190-39-2]
Prisms (EtOH). Mp 230-235°.

▶ KE7920000

8-Hydroxy: ***8-Hydroxyergotamine***
[72170-28-6]
$C_{33}H_{35}N_5O_6$ 597.669
Alkaloid from ergot (*Claviceps purpurea*). Cryst. (EtOAc or $CHCl_3$). Mp 197°. $[\alpha]_D^{20}$ +14 (c, 1 in Py).

8-Epimer: ***Ergotaminine***
[639-81-6]
$C_{33}H_{35}N_5O_5$ 581.67
Constit. of ergot alkaloids (*Claviceps purpurea*). Vasoconstrictor, uterine contractant. Plates (EtOH). Much less sol. than ergotamine. Mp 252° dec. (241-243°). $[\alpha]_D^{20}$ +369 (c, 0.5 in $CHCl_3$). $[\alpha]_D^{20}$ +397 (c, 0.5 in Py). Dec. at 241-243°.

2′-Epimer: ***Aciergotamine***
[52949-35-6]
$C_{33}H_{35}N_5O_5$ 581.67
Minor ergot alkaloid occurring as artifact of epimerisation. Identified by hplc.

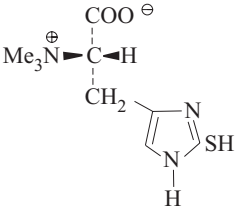
2′,8-Diepimer: ***Aciergotaminine***
[52919-20-7]
$C_{33}H_{35}N_5O_5$ 581.67
Minor ergot alkaloid occurring as artifact of epimerisation. Identified by hplc.

[56644-29-2 , 5989-77-5]

Smith, S. *et al., J.C.S.*, 1930, 1390 (*Ergotaminine*)
Stoll, A. *et al., Helv. Chim. Acta*, 1951, **34**, 1544 (*struct*)
Hofmann, A. *et al., Experientia*, 1961, **17**, 206
Hofmann, A. *et al., Helv. Chim. Acta*, 1963, **46**, 2306 (*synth, ir, uv, config*)
Ger. Pat., 1970, 2 017 560; *CA*, **74**, 42535 (*Metergotamine*)
Bassett, R.A. *et al., Biochem. J.*, 1973, **134**, 1 (*biosynth*)
Bach, N.J. *et al., J.O.C.*, 1974, **39**, 1272 (*cmr*)
Kreilgård, B. *et al., Anal. Profiles Drug Subst.*, 1977, **6**, 113 (*rev*)
Aellig, W.H. *et al., Int. J. Clin. Pharmacol. Biopharm.*, 1977, **15**, 106 (*Metergotamine*)
Krajiček, A. *et al., Coll. Czech. Chem. Comm.*, 1979, **44**, 2255 (*8-Hydroxyergotamine*)
Wurst, M. *et al., J. Chromatogr.*, 1979, **174**, 401 (*hplc*)
Scholten, A. *et al., J. Chromatogr.*, 1979, **176**, 349 (*Aciergotamine, Aciergotaminine*)
Pierri, L. *et al., J. Med. Chem.*, 1982, **25**, 937 (*conformn*)
Kanto, J. *et al., Int. J. Clin. Pharmacol., Ther. Toxicol.*, 1983, **21**, 135 (*rev, pharmacol, metab*)
Plattner, R.D. *et al., J. Agric. Food Chem.*, 1983, **31**, 785 (*ms*)
Clark, B.J. *et al., Discoveries Pharmacol.*, 1984, **2**, 3 (*rev, pharmacol, tox*)
Negwer, M. *et al., Organic-Chemical Drugs and their Synonyms, 6th edn., Akademie-Verlag*, 1987, 7985; 7989 (*synonyms*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 412; 414
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, DLK800; EDC000; EDC500

Ergothioneine E-173

*α-Carboxy-2,3-dihydro-*N,N,N*-trimethyl-2-thioxo-1*H*-imidazole-4-ethanaminium hydroxide inner salt, 9CI. 2-Mercaptohistidine trimethylbetaine. Thiolhistidine trimethylbetaine. Thioneine. Thiasine. Sympectothione*
[497-30-3]



$C_9H_{15}N_3O_2S$ 229.302
Present in blood, semen and various mammalian tissues, principally liver and kidneys. Also prod. by a variety of plants and microbes. Cryst. + $2H_2O$. Mp 290° dec. $[\alpha]_D^{20}$ +116.5 (H_2O).

S-*(2-Hydroxyethyl):* ***Sclerothionine***
[19833-41-1]
$C_{11}H_{19}N_3O_3S$ 273.355
Isol. from *Sclerotinia libertiana*. Rhombic prisms (EtOH/Me_2CO). Mp 218-223° dec. $[\alpha]_D^{24}$ +7.4 (c, 2 in H_2O).

S-*(2-Amino-2-carboxyethyl),* S-*oxide:*
[53252-98-5]
$C_{12}H_{20}N_4O_5S$ 332.38
Isol. from the fungi *Clitocybe acromelalga* and *Neurospora crassa*. Amorph. hygroscopic powder. Mp 188-190° dec. $[\alpha]_D^{24}$ +74.7 (c, 0.5 in H_2O).

Heath, H. *et al., J.C.S.*, 1951, 2215 (*synth*)
Genghof, D.S. *et al., J. Bacteriol.*, 1964, **87**, 852 (*biosynth*)
Crossland, J. *et al., Nature (London)*, 1964, **203**, 1388
Matsuo, M. *et al., Agric. Biol. Chem.*, 1967, **31**, 353; 1968, **32**, 605; 611 (*Sclerothionine*)
Ishikawa, Y. *et al., J. Biol. Chem.*, 1974, **249**, 4420 (*deriv*)
Sugihara, A. *et al., Acta Cryst. B*, 1976, **32**, 181 (*cryst struct*)
Motohashi, N. *et al., Chem. Pharm. Bull.*, 1976, **24**, 1737 (*nmr*)
Nicholson, J.R. *et al., Biochem. J.*, 1983, **211**, 605 (*pmr*)

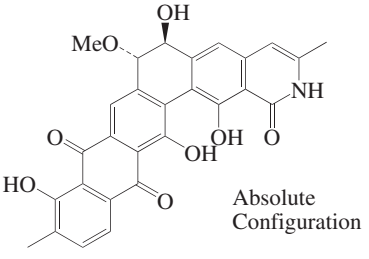
Ergovaline E-174

[2873-38-3]
As Ergobine, E-149 with
R = $-CH(CH_3)_2$, R′ = $-CH_3$
$C_{29}H_{35}N_5O_5$ 533.626
Alkaloid from *Claviceps purpurea*. Cryst. (EtOAc). Mp 207-208° dec. $[\alpha]_D^{20}$ -172 (c, 0.5 in $CHCl_3$).

Stadler, P.A. *et al., Helv. Chim. Acta*, 1964, **47**, 1911 (*synth, uv, ir*)
Brunner, R. *et al., Can. J. Chem.*, 1979, **57**, 1638 (*isol, uv, ir, pmr*)

Ericamycin E-175

[11052-01-0]

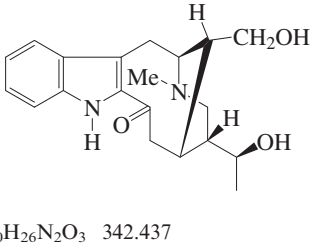


$C_{28}H_{21}NO_8$ 499.476
Prod. by *Streptomyces varius*. Shows antibiotic activity against gram-positive bacteria. Deep red cryst. Mp 260-265°. λ_{max} 249 (ϵ 39510); 323 (ϵ 15800); 345 (ϵ 13130); 364 (ϵ 12435); 487 (ϵ 14450) (MeOH).

Shimura, H. *et al., J. Antibiot., Ser. A*, 1966, **19**, 51 (*isol*)
U.S. Pat., 1974, 3 769 403; *CA*, **80**, 13653s
Kondo, S. *et al., J. Antibiot.*, 1998, **51**, 232-234 (*cd, uv, ir, pmr, cmr, struct*)

Erichsonine E-176

[102673-54-1]



$C_{20}H_{26}N_2O_3$ 342.437
Alkaloid from the stem bark of *Strychnos erichsonii* (Loganiaceae). Yellow prisms (MeOH). Mp 250° dec. $[\alpha]_D^{20}$ -166 (c, 1.0 in MeOH).

Di-O-*Ac:*

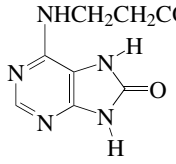
Cryst. (EtOH). Mp 210°. $[\alpha]_D^{20}$ -115 (c, 0.4 in MeOH).

N,O,O-*Tri-Ac:* Mp 133-135°. $[\alpha]_D^{20}$ -70 (c, 0.5 in $CHCl_3$).

Forgacs, P. *et al., Phytochemistry*, 1986, **25**, 969 (*isol, uv, ir, pmr, cmr, ms, cryst struct*)

Erinacean E-177

N-*(7,8-Dihydro-8-oxo*-H-*purin-6-yl)-β-alanine, 9CI*. N^6-*β-Alanyl-8-oxoadenine*
[161212-38-0]

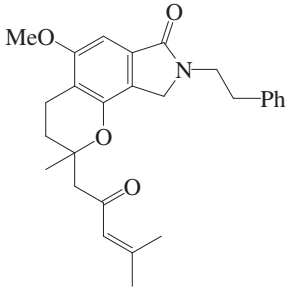


$C_8H_9N_5O_3$ 223.191
Isol. from the sponge *Isodictya erinacea*. Amorph. powder. λ_{max} 272 (ϵ 8444) (MeOH).

Moon, B. *et al., J. Nat. Prod.*, 1998, **61**, 116-118 (*isol*)

Erinacerin A E-178

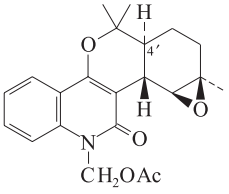
[870193-54-7]



$C_{27}H_{31}NO_4$ 433.546
Related to Stachybotrin A in S-490. Alkaloid from the mushroom *Hericium erinaceum* (lions mane). Oil. Racemic. λ_{max} 215 (log ϵ 4.6); 244 (log ϵ 4.2); 292 (log ϵ 3.4) (MeOH).

Yaoita, Y. *et al., Chem. Pharm. Bull.*, 2005, **53**, 1202-1203 (*isol, pmr, cmr*)

Erioaustralasine E-179



4′α–*form*
Relative configuration

$C_{22}H_{25}NO_5$ 383.443

4′α-form
trans-*Erioaustralasine*
[152517-75-4]
Alkaloid from aerial parts of *Eriostemon australasius* ssp. *banksii* (Rutaceae). Gum. $[\alpha]_D$ +130 (c, 0.96 in $CHCl_3$).

Deacetoxy: ***Deacetoxy*-trans-*erioaustralasine***
$C_{20}H_{23}NO_3$ 325.407
Alkaloid from *Halfordia kendack*. Needles (EtOAc). Mp 190-192°. $[\alpha]_D^{30}$ +244 (c, 0.24 in $CHCl_3$). λ_{max} 235 (log ϵ 3.84); 276 (log ϵ 3.68); 286 (log ϵ 3.68); 318 (log ϵ 3.65); 331 (log ϵ 3.55) (MeOH).

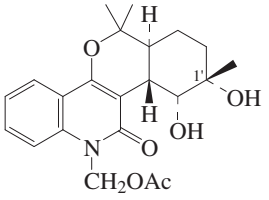
4′β-form
cis-*Erioaustralasine*
[152406-29-6]
Alkaloid from aerial parts of *Eriostemon australasius* ssp. *banksii* (Rutaceae). Cubes (EtOAc). Mp 144-146°. $[\alpha]_D$ +104 (c, 1.1 in $CHCl_3$).

da Cunha, E.V.L. *et al., Aust. J. Chem.*, 1993, **46**, 1507 (*isol, uv, ir, pmr, cmr, ms, cryst struct*)

Sultana, N. *et al., Phytochemistry*, 2001, **58**, 329-332 (*Deacetoxyerioaustralasine*)

Erioaustralasine hydrate E-180

[379689-36-8]



$C_{22}H_{27}NO_6$ 401.458
Alkaloid from *Halfordia kendack*. Amorph. λ_{max} 234 (log ϵ 4.17); 275 (log ϵ 3.98); 285 (log ϵ 3.99); 317 (log ϵ 3.9); 324 (log ϵ 3.77) (MeOH).

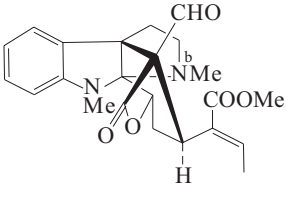
Deacetoxy: ***Deacetoxy*-trans-*erioaustralasine hydrate***
[379689-34-6]
$C_{20}H_{25}NO_4$ 343.422
Minor alkaloid from *Halfordia kendack*. Amorph. $[\alpha]_D^{30}$ +125 (c, 0.03 in $CHCl_3$). Has N-Me replacing N-CH_2OAc. λ_{max} 234 (log ϵ 3.55); 275 (log ϵ 3.31); 286 (log ϵ 3.32); 317 (log ϵ 3.29); 332 (log ϵ 3.18) (MeOH).

1′-Epimer, deacetoxy: ***Deacetoxy*-trans-*1′-epierioaustralasine hydrate***
[379689-37-9]
$C_{20}H_{25}NO_4$ 343.422
Minor alkaloid from *Halfordia kendack*. Amorph. λ_{max} 233 (log ϵ 3.93); 276 (log ϵ 3.45); 287 (log ϵ 3.46); 317 (log ϵ 3.44); 329 (log ϵ 3.34) (MeOH).

Sultana, N. *et al., Phytochemistry*, 2001, **58**, 329-332 (*isol, pmr, cmr, ms*)

Eripinal E-181

[69734-95-8]



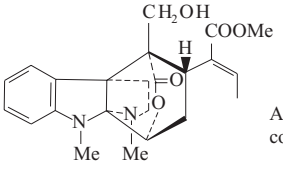
$C_{23}H_{26}N_2O_5$ 410.469
Prob. Akuammiline-related. Alkaloid from the leaves of *Hunteria congolana* (Apocynaceae). Cryst. (Me_2CO). Mp 165°. $[\alpha]_D$ -154 (c, 0.5 in $CHCl_3$).

N^b-*de-Me:* ***Noreripinal***
[69734-93-6]
$C_{22}H_{24}N_2O_5$ 396.442
Isol. from leaves of *Hunteria congolana* (Apocynaceae). Cryst. (Me_2CO). Mp 240-245°. $[\alpha]_D$ -98 (c, 0.96 in $CHCl_3$).

Vercauteren, J. *et al., Bull. Soc. Chim. Fr.*, *Part II*, 1982, 291

Eripine E-182

Methyl 21,23-deepoxy-23-hydroxyerinin-21-oate, 9CI
[20594-89-2]



Absolute configuration

$C_{23}H_{28}N_2O_5$ 412.485
Prob. akuammiline-related. Alkaloid from *Hunteria umbellata* leaves (Apocynaceae). Needles (MeOH/EtOAc). Mp 186°. $[\alpha]_D^{23}$ -188 (c, 0.44 in $CHCl_3$).

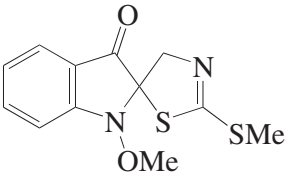
O-*Ac:*
Needles (MeOH). Mp 76°.

Morita, Y. *et al., Helv. Chim. Acta*, 1968, **51**, 1438 (*isol, uv, ir, pmr, ms, struct*)

Heatley, F. *et al., J.C.S. Perkin 2*, 1981, 725 (*struct*)

Erucalexin E-183

*2′-(Methylthio)spiro[2*H*-indole-2,5′(4′*H*)-thiazol]-3(1*H*)-one*



$C_{12}H_{12}N_2O_2S_2$ 280.371
Related to Spirobrassinin, S-426.

(+)-form
Constit. of the leaves of *Erucastrum gallicum*. Phytoalexin. $[\alpha]_D$ +73 (c, 0.09 in MeOH).

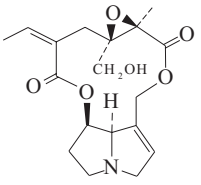
(±)-form
Orange solid. Mp 94-97°. λ_{max} 234 (log ϵ 4.6); 262 (log ϵ 4.1); 368 (log ϵ 3.4) (MeCN).

Pedras, M.S.C. *et al., Chem. Comm.*, 2006, 1848-1850 (*biosynth*)

Pedras, M.S.C. *et al., Org. Biomol. Chem.*, 2006, **4**, 691-701 (*isol, synth, pmr, cmr, ms*)

Erucifoline E-184

12,13-Epoxy-19-hydroxysenecionan-11,16-dione, 9CI. Alkaloid SC
[40158-95-0]



$C_{18}H_{23}NO_6$ 349.383

Cyclic retronecine diester. Alkaloid from *Senecio erucifolius*, *Senecio aegypticus*, *Senecio erraticus*, *Senecio jacobaea* and *Senecio persoonii* (Asteraceae). Cryst. (EtOAc/EtOH). Mp 195-197°. $[\alpha]_D^{22}$ -108 (c, 0.99 in $CHCl_3$).

N-*Oxide:* ***Erucifoline* N-*oxide***
$C_{18}H_{23}NO_7$ 365.382
Alkaloid from whole plants of *Senecio persoonii* (Asteraceae). Glassy solid. $[\alpha]_D^{20}$ -49 (c, 1 in EtOH).

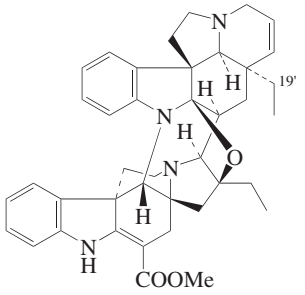
Ac: **O-*Acetylerucifoline***
[41310-60-5]
$C_{20}H_{25}NO_7$ 391.42
Constit. of leaves and inflorescences of *Senecio jacobacea*. Also present in inflorescences of *Senecio erucifolius* (Asteraceae). Needles. Mp 127-129°.

[40158-93-8 , 67494-13-7]

Schröter, H.-B. *et al., Coll. Czech. Chem. Comm.*, 1960, **25**, 472 (*isol*)
Hrbek, J. *et al., Coll. Czech. Chem. Comm.*, 1972, **37**, 3918 (*cd*)
Sedmera, P. *et al., Coll. Czech. Chem. Comm.*, 1972, **37**, 4112 (*isol, pmr, struct*)
Witte, L. *et al., Phytochemistry*, 1992, **31**, 559 (*O-Acetylerucifoline*)
Roeder, E. *et al., Phytochemistry*, 1993, **32**, 1051 (*oxide*)

Ervafolene E-185

[77784-39-5]



$C_{40}H_{44}N_4O_3$ 628.813

Aspidosperma-pseudoaspidosperma dimer. Alkaloid from the leaves of *Stenosolen heterophyllus* (preferred genus name *Tabernaemontana*) (Apocynaceae). Amorph. $[\alpha]_D^{20}$ +236 (c, 1 in MeOH).

14′β,15′β-Epoxide: ***Ervafoline, 9CI***
[70545-44-7]
$C_{40}H_{44}N_4O_4$ 644.812
Alkaloid from *Ervatamia pandacaqui* and the leaves of *Stenosolen heterophyllus* (preferred genus name *Tabernaemontana*) (Apocynaceae). Cryst. (Me_2CO). Mp 258°. $[\alpha]_D^{20}$ +279 (c, 1 in $CHCl_3$). λ_{max} 252 (log ϵ 3.86); 306 (log ϵ 3.95); 326 (log ϵ 4.03) (EtOH).

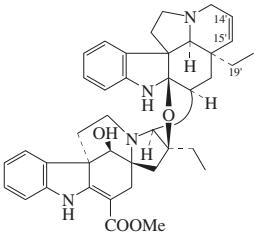
19′ξ-Hydroxy: ***19′-Hydroxyervafolene***
[77794-87-7]
$C_{40}H_{44}N_4O_4$ 644.812
Alkaloid from the leaves of *Stenosolen heterophyllus* (Apocynaceae). Cryst. (Me_2CO/hexane). Mp 248°. $[\alpha]_D^{20}$ +284 (c, 1 in $CHCl_3$).

19′ξ-Hydroxy, 14′β,15′β-epoxide: ***19′-Hydroxyervafoline***
[77784-40-8]
$C_{40}H_{44}N_4O_5$ 660.811
Alkaloid from the leaves of *Stenosolen heterophyllus* (Apocynaceae). Cryst. (MeOH). Mp 258°. $[\alpha]_D^{20}$ +247 (c, 1 in $CHCl_3$). λ_{max} 252 (log ϵ 3.86); 306 (log ϵ 3.95); 326 (log ϵ 4.03) (EtOH).

Henriques, A. *et al., J.O.C.*, 1982, **47**, 803-811 (*isol, pmr, ms, cryst struct*)

Ervafolidene E-186

[84716-74-5]



Absolute Configuration

$C_{40}H_{46}N_4O_4$ 646.828
Alkaloid from *Pandaca caducifolia* (Apocynaceae). Cryst. (Me_2CO). Mp 212°. $[\alpha]_D$ +56 (c, 1.5 in MeOH).

14′β,15′β-Epoxide: ***Ervafolidine***
[80293-76-1]
$C_{40}H_{46}N_4O_5$ 662.827
Alkaloid from the leaves of *Stenosolen heterophyllus* (preferred genus name *Tabernaemontana*) (Apocynaceae). Cryst. (Et_2O/hexane). Mp 240°. $[\alpha]_D^{20}$ +20 (c, 0.05 in $CHCl_3$).

19′R-Hydroxy, 14′β,15′β-epoxide: ***19′R-Hydroxyervafolidine***
[80293-77-2]
$C_{40}H_{46}N_4O_6$ 678.827
Alkaloid from the leaves of *Stenosolen heterophyllus* (Apocynaceae). Cryst. (Me_2CO). $[\alpha]_D^{20}$ +33 (c, 0.5 in Py).

3-Epimer: ***Epiervafolidene***
[84774-04-9]
$C_{40}H_{46}N_4O_4$ 646.828
Alkaloid from *Pandaca caducifolia* (Apocynaceae). Amorph. $[\alpha]_D$ +35 (c, 2 in MeOH).

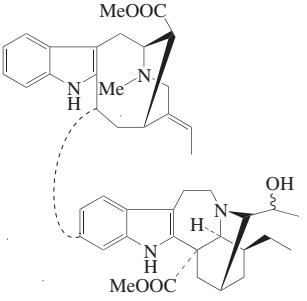
3-Epimer, 14′β,15′β-epoxide: ***3-Epiervafolidine***
[80338-95-0]
$C_{40}H_{46}N_4O_5$ 662.827
Alkaloid from the leaves of *Stenosolen heterophyllus* (Apocynaceae). Cryst. (MeOH). Mp 260°. $[\alpha]_D^{20}$ +52 (c, 0.5 in $CHCl_3$).

3-Epimer, 19′S-hydroxy, 14′β,15′β-epoxide: ***19′S-Hydroxy-3-epiervafolidine***
[80293-78-3]
$C_{40}H_{46}N_4O_6$ 678.827
Alkaloid from the leaves of *Stenosolen heterophyllus* (Apocynaceae). Cryst. (Me_2CO/Et_2O). Mp 260°. $[\alpha]_D^{20}$ +74 (c, 1 in Py).

Zeches, M. *et al., J. Nat. Prod.*, 1982, **45**, 707 (*Ervafolidene, Epiervafolidene*)
Henriques, A. *et al., J.O.C.*, 1982, **47**, 803 (*Ervafolidine, 3-Epiervafolidine, Hydroxyervafolidines*)

Ervahainamidine A E-187

[126398-90-1]

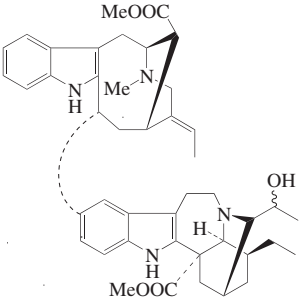


$C_{44}H_{54}N_4O_5$ 718.934
Minor alkaloid from the roots of *Ervatamia hainanensis* (Apocynaceae).

Feng, X.-Z. *et al., J. Nat. Prod.*, 1989, **52**, 928 (*isol, uv, pmr, ms, struct*)

Ervahainamidine B E-188

[126456-02-8]

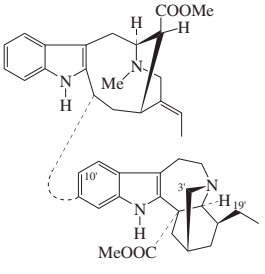


$C_{44}H_{54}N_4O_5$ 718.934
Minor alkaloid from the roots of *Ervatamia hainanensis* (Apocynaceae).

Feng, X.-Z. *et al., J. Nat. Prod.*, 1989, **52**, 928 (*isol, uv, ir, pmr, ms, struct*)

Ervahanine A E-189

Methyl 13-(17-methoxy-17-oxovobasan-3α-yl)ibogamine-18-carboxylate, 9CI
[80981-93-7]



Absolute Configuration

$C_{42}H_{50}N_4O_4$ 674.881
Alkaloid from the roots of *Ervatamia hainanensis* (Apocynaceae). Amorph. $[\alpha]_D^{18}$ -97 (c, 0.86 in $CHCl_3$).

19,20-Dihydro: ***19,20-Dihydroervahanine A***
[175478-70-3]
$C_{42}H_{52}N_4O_4$ 676.897
Alkaloid from the stems of *Ervatamia coronaria*.

3′-Hydroxy, N-*de-Me:* ***3′-Hydroxy-N^4-demethylervahanine A***
[99257-58-6]
$C_{41}H_{48}N_4O_5$ 676.854
Alkaloid from the stem bark of *Tabernaemontana dichotoma* (Apocynaceae). Mixt. of 3-epimers.

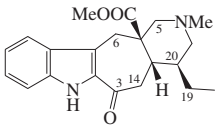
*19′*S-*Hydroxy:* ***19S-Hydroxyervahanine A***
$C_{42}H_{50}N_4O_5$ 690.881
Alkaloid from the leaves and stem bark of *Tabernaemontana corymbosa*. Light yellow oil. $[\alpha]_D$ -105 (c, 0.16 in $CHCl_3$). λ_{max} 228 (log ϵ 4.75); 287 (log ϵ 4.22); 294 (log ϵ 4.19) (EtOH).

10′-Methoxy, 3′-oxo: ***Conodusarine***
$C_{43}H_{50}N_4O_6$ 718.891
Alkaloid from the stem bark of *Tabernaemontana divaricata*. Light yellow oil. $[\alpha]_D$ +19 (c, 0.26 in $CHCl_3$). λ_{max} 223 (log ϵ 4.77); 286 (log ϵ 4.31); 295 (log ϵ 4.3); 312 (log ϵ 4.01) (EtOH).

Feng, X.-Z. *et al., J. Nat. Prod.*, 1981, **44**, 670 (*Ervahanine A*)
Perera, P. *et al., Phytochemistry*, 1985, **24**, 2097 (*3′-Hydroxy-N^4-demethylervahanine A*)
Henriques, A.T. *et al., J. Ethnopharmacol.*, 1996, **50**, 19-25 (*19,20-Dihydroervahanine A*)
Kam, T.-S. *et al., Phytochemistry*, 2003, **63**, 625-629 (*Ervahanine, cmr, 19S-Hydroxyervahanine A*)
Kam, T.S. *et al., Heterocycles*, 2004, **63**, 845-850 (*Conodusarine*)

Ervatamine E-190

Methyl 4-ethyl-2,3,4,4a,5,6,7,12-octahydro-2-methyl-6-oxopyrido[3′,4′:4,5]cyclohept[1,2-b]indole-12a(1H)-carboxylate, 9CI
[33257-13-5]



Absolute Configuration

$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from *Ervatamia orientalis* and *Ervatamia lifuana* (Apocynaceae). Na channel blocker in nerve fibres, local anaesthetic blocker. Prisms + 1MeOH (MeOH). Mp 92-98°. $[\alpha]_D$ -3.7 (c, 2.1 in $CHCl_3$).

Picrate:
Yellow plates (Me_2CO). Mp 236-237° dec.

Methiodide:
Yellow plates (MeOH/Et_2O). Mp 217-220° dec.

19,20-Didehydro: ***19,20-Didehydroervatamine.*** *19,20-Dehydroervatamine*
[33228-82-9]
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from *Ervatamia orientalis* (Apocynaceae). Prisms (Et_2O). Mp 198-200° dec. $[\alpha]_D$ +52 (c, 1.0 in $CHCl_3$).

19,20-Didehydro, N^1*-methoxy:* ***19,20-Didehydro-N^1-methoxyervatamine.*** N^1*-Methoxy-19,20-dehydroervatamine*
[130263-09-1]
$C_{22}H_{26}N_2O_4$ 382.458
Alkaloid from *Ervatamia malaccensis* (Apocynaceae). $[\alpha]_D$ -14 (c, 0.5 in $CHCl_3$).

5-Oxo, 19,20-didehydro: ***19,20-Didehydro-5-oxoervatamine.*** *19,20-Dehydro-5-oxoervatamine*
[147802-44-6]
$C_{21}H_{22}N_2O_4$ 366.416
Alkaloid from leaves of *Tabernaemontana corymbosa* (Apocynaceae).

3-Deoxo, 3,14-didehydro: ***Dehydroxyervataminol***
[923286-64-0]
$C_{21}H_{26}N_2O_2$ 338.449
Alkaloid from *Ervatamia divaricata*. Amorph. powder. $[\alpha]_D^{16}$ -61.5 (c, 0.28 in $CHCl_3$). λ_{max} 241 (log ϵ 4.26); 315 (log ϵ 4.07) (MeOH).

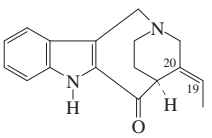
6α-Hydroxy, 19,20-didehydro: ***19,20-Didehydro-6-hydroxyervatamine.*** *19,20-Dehydro-6-hydroxyervatamine*
[923286-63-9]
$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from *Ervatamia divaricata*. Amorph. powder. $[\alpha]_D^{16}$ +167.3 (c, 0.15 in $CHCl_3$). λ_{max} 235 (log ϵ 4.04); 312 (log ϵ 4.18) (MeOH).

20-Epimer: ***20-Epiervatamine***
[33495-49-7]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from *Ervatamia orientalis* and *Ervatamia lifuana* (Apocynaceae). Prisms (Et_2O/petrol). Mp 185-187° dec. $[\alpha]_D$ -22 (c, 1.1 in $CHCl_3$).

Husson, A. *et al., Tetrahedron*, 1973, **29**, 3095 (*synth, cryst struct*)
Riche, C. *et al., Acta Cryst. B*, 1974, **30**, 610 (*cryst struct*)
Knox, J.R. *et al., Aust. J. Chem.*, 1975, **28**, 1813; 1825 (*Ervatamine, 20-Epiervatamine, Didehydroervatamine, isol, uv, ir, pmr, ms, struct*)
Clivio, P. *et al., Phytochemistry*, 1990, **29**, 2693 (*19,20-Didehydro-N^1-methoxyervatamine*)
Kam, T.-S. *et al., Phytochemistry*, 1993, **32**, 1357 (*19,20-Didehydro-5-oxoervatamine*)
Zhang, H. *et al., J. Nat. Prod.*, 2007, **70**, 54-59 (*19,20-Didehydro-6-hydroxyervatamine, Dehydroxyervataminol*)

Ervaticine E-191

Conolidine
[100414-81-1]



Absolute Configuration

$C_{17}H_{18}N_2O$ 266.342
Alkaloid from the leaves of *Ervatamia coronaria* and the stem bark of *Tabernaemontana divaricata*. Pale yellow amorph. solid or light yellow oil. $[\alpha]_D$ +120 ($CHCl_3$). λ_{max} 238 (log ϵ 4.15); 313 (log ϵ 4.22) (EtOH).

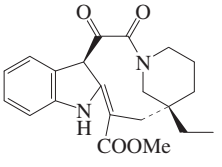
*19*R*,20*R*-Epoxide:* ***Conolobine A***
[748788-59-2]
$C_{17}H_{18}N_2O_2$ 282.341
Alkaloid from the stem bark of *Tabernaemontana divaricata*. Pale yellow oil. $[\alpha]_D$ +24 (c, 0.21 in $CHCl_3$). λ_{max} 239 (log ϵ 4.12); 313 (log ϵ 4.26) (EtOH).

*19*S*,20*S*-Epoxide:* ***Conolobine B***
[748788-65-0]
$C_{17}H_{18}N_2O_2$ 282.341
Alkaloid from the stem bark of *Tabernaemontana divaricata*. Pale yellow oil. $[\alpha]_D$ +159 (c, 0.06 in $CHCl_3$). λ_{max} 239 (log ϵ 4.11); 317 (log ϵ 4.14) (EtOH).

Atta-ur-Rahman, *et al., Heterocycles*, 1985, **23**, 2975-2978 (*Ervaticine*)
Kam, T.-S. *et al., Chem. Biodiversity*, 2004, **1**, 646-656 (*Conolidine, Conolobines A,B*)

Ervinidine E-192

*7-Ethyl-1,4,5,6,7,8,10,14*b*-octahydro-1,2-dioxo-2*H*-3,7-methanoazacycloundecino[5,4-*b*]indole-9-carboxylic acid methyl ester, 9CI*
[35989-12-9]



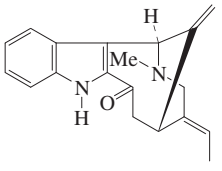
Relative Configuration

$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from *Vinca erecta* (Apocynaceae). Needles (MeOH). Mp 283-284° dec. $[\alpha]_D$ -17.3 ($CHCl_3$). λ_{max} 232 (log ϵ 3.92); 305 (log ϵ 3.93); 342 (log ϵ 4.1) (EtOH).

Malikov, V.M. *et al., Khim. Prir. Soedin.*, 1967, **3**, 142; 1971, **7**, 640-643; *Chem. Nat. Compd. (Engl. Transl.)*, 1967, **3**, 119-120; 1971, **7**, 619-621 (*isol, struct*)

Ervitsine E-193

4-Ethylidene-1,3,4,5,6,8-hexahydro-2-methyl-13-methylene-1,5-methanoazonino[4,3-b]indol-7(2H)-one, 9CI
[65617-99-4]



Absolute Configuration

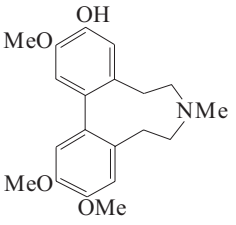
$C_{19}H_{20}N_2O$ 292.38
Alkaloid from the root bark of *Pandaca boiteaui* (Apocynaceae). Cryst. (MeOH). Mp 176-177°. $[\alpha]_D^{20}$ -160 (c, 1 in $CHCl_3$).

Andriantsiferana, M. *et al., Tet. Lett.*, 1977, 2587-2590 (*uv, pmr, cryst struct*)
Riche, C. *et al., Acta Cryst. B*, 1979, **35**, 2738-2740 (*cryst struct*)

Bennasar, M.-L. *et al., J.O.C.*, 1997, **62**, 3597-3609 (*synth*)

Erybidine E-194

*6,7,8,9-Tetrahydro-2,11,12-trimethoxy-7-methyl-5*H*-dibenz[*d,f*]azonin-3-ol, 9CI*
[34083-19-7]



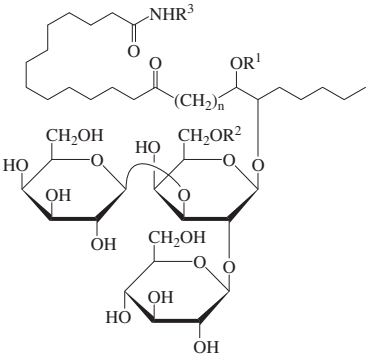
$C_{20}H_{25}NO_4$ 343.422
Alkaloid from the leaves of *Erythrina* x. *bidwillii, Erythrina herbacea, Erythrina arborescens, Erythrina orientalis* and *Erythrina crista-galli* (Fabaceae). Needles (EtOH). Mp 178-180°.

Me ether: Mp 139-140°.

Ito, K. *et al., Chem. Pharm. Bull.*, 1971, **19**, 1509; 1974, **22**, 2108; 1976, **24**, 52 (*isol, ir, uv, pmr, ms, struct, synth*)
Kupchan, S.M. *et al., J.O.C.*, 1976, **41**, 3210 (*synth*)

Erylusamine TA E-195

[178063-82-6]



R^1 = H, R^2 = Ac, R^3 = -$(CH_2)_5NMe_2$, n = 6

$C_{54}H_{100}N_2O_{20}$ 1097.385
Glycolipid. Isol. from the marine sponge *Erylus* cf. *lendenfeldi* (tentative identification). Oil. $[\alpha]_D^{25}$ +2.8 (c, 2.9 in MeOH).

Goobes, R. *et al., Tetrahedron*, 1996, **52**, 7921-7928 (*isol, ir, pmr, cmr*)

Erylusidine E-196

[178063-84-8]
As Erylusamine TA, E-195 with
R^1 = -$COCH_2CH(CH_3)_2$, R^2 = H, R^3 = -$(CH_2)_4NHC(NH_2)$=NH, n = 7

$C_{56}H_{104}N_4O_{20}$ 1153.452
Isol. from the marine sponge *Erylus* cf. *lendenfeldi* (tentative identification). Oil. $[\alpha]_D^{25}$ -4.1 (c, 4.7 in MeOH).

Goobes, R. *et al., Tetrahedron*, 1996, **52**, 7921-7928 (*isol, ir, pmr, cmr*)

Erylusine E-197

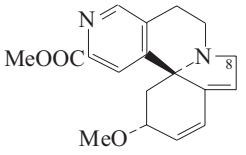
[178063-83-7]
As Erylusamine TA, E-195 with
R^1 = H, R^2 = Ac, R^3 = -$(CH_2)_3N(Me)(CH_2)_4NMe_2$, n = 6

$C_{57}H_{107}N_3O_{20}$ 1154.48
Glycolipid. Isol. from the marine sponge *Erylus* cf. *lendenfeldi* (tentative identification). Oil. $[\alpha]_D^{25}$ +1.9 (c, 4.3 in MeOH).

Goobes, R. *et al., Tetrahedron*, 1996, **52**, 7921-7928 (*isol, ir, pmr, cmr*)

Erymelanthine E-198

[88840-26-0]



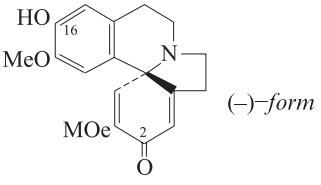
$C_{18}H_{20}N_2O_3$ 312.368
Alkaloid from the seeds of *Erythrina melanacantha* (Fabaceae). Mp 160-161°. $[\alpha]_D^{22}$ +87 (c, 0.11 in MeOH). First member of a new type of *Erythrina* alkaloid containing a 16-azaerythrinan skeleton.

8-Oxo: ***Melanacanthine****. 8-Oxoerymelanthine*
$C_{18}H_{18}N_2O_4$ 326.351
Alkaloid from *Erythrina melanacantha* (Fabaceae). Minimal structural proof.

De(methoxycarbonyl): ***Decarbomethoxyerymelanthine***
$C_{16}H_{18}N_2O$ 254.331
Alkaloid from seeds of *Erythrina variegata* (Fabaceae). Tentative identification by gc-ms.

Dagne, E. *et al., Tet. Lett.*, 1983, **24**, 5067 (*uv, ir, pmr, cmr, ms, struct*)
Jackson, A.H. *et al., Chem. Biol. Isoquinoline Alkaloids*, (Eds. Phillipson, J.D. *et al*), Springer, 1985, 62 (*Melanacanthine, Decarbomethoxyerymelanthine*)

Erysodienone E-199



(–)–*form*

$C_{18}H_{19}NO_4$ 313.352

(+)-*form*
Synthetic. $[\alpha]_D^{21}$ +25.1 (c, 0.9 in $CHCl_3$).

(-)-3-Bromocamphor-9-sulphonate: Mp 197-198° dec. $[\alpha]_D^{20}$ -43.5 (c, 1.4 in $CHCl_3$).

(-)-*form* [5531-67-9]
Alkaloid from *Erythrina lithosperma* and *Erythrina variegata* (Fabaceae). Intermediate in the biosynthesis of *Erythrina* alkaloids. $[\alpha]_D^{19}$ -27 (c, 0.8 in $CHCl_3$) (for synthetic material). Opt. rotn. of natural product (with presumed 5*S* chirality) not recorded.

(+)-3-Bromocamphor-9-sulphonate: Mp 203-204° dec. $[\alpha]_D^{20}$ +44.8 (c, 0.98 in $CHCl_3$).

2-Alcohol, O^{16}*-Me:* ***Erythrinitol****. Erythritol*†
[50719-80-7]
$C_{19}H_{23}NO_4$ 329.395
Alkaloid from flowers of *Erythrina variegata* (Fabaceae). Brown semisolid.

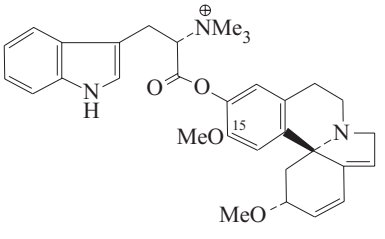
Deoxy: ***Coccudienone***
[77795-05-2]
$C_{18}H_{19}NO_3$ 297.353
Alkaloid from the leaves of *Cocculus laurifolius* (Menispermaceae). Amorph. powder.

(±)-*form* [13168-52-0]
Synthetic. Cryst. (EtOH). Mp 226-229° (224-227°).

Gervay, J.E. *et al., Chem. Comm.*, 1966, 142 (*synth, uv, ir, pmr*)
Mondon, A. *et al., Tet. Lett.*, 1966, 2557 (*synth, uv, ir, ms, pmr*)
Barton, D.H.R. *et al., J.C.S.(C)*, 1968, 1529 (*synth, ir*)
Ghosal, S. *et al., Aust. J. Chem.*, 1971, **24**, 2733 (*isol, ir, uv, ms, pmr*)
Ghosal, S. *et al., J. Pharm. Sci.*, 1972, **61**, 1274 (*isol, ir uv, ms, pmr*)
Barton, D.H.R. *et al., J.C.S. Perkin 1*, 1974, 2278 (*resoln, config, biosynth*)
Bhakuni, D.S. *et al., Tetrahedron*, 1980, **36**, 3107 (*Coccudienone*)
Hewgill, F.R. *et al., Aust. J. Chem.*, 1985, **38**, 537 (*synth*)
Chawla, H.M. *et al., Fitoterapia*, 1993, **64**, 15; 383 (*Erythrinitol*)
Rigby, J.H. *et al., Tet. Lett.*, 1999, **40**, 6887-6890 (*synth, abs config, Erythrinitol*)

Erysodinophorine E-200

[72611-99-5]
[72379-63-6]



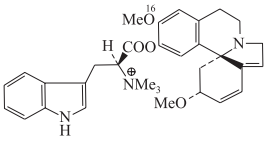
$C_{32}H_{38}N_3O_4^{\oplus}$ 528.67
Ester of Hypaphorine, H-764 with Erysodine in E-203. Alkaloid from the pods of *Erythrina arborescens* (Fabaceae). Brown syrupy liq. (as hydroxide).

O^{15}*-De-Me:* ***Erysopinophorine***
[73588-32-6]
[73606-99-2]
$C_{31}H_{36}N_3O_4^{\oplus}$ 514.643
Alkaloid from the pod walls of *Erythrina arborescens* (Fabaceae). Brown syrup (as hydroxide).

Tiwari, K.P. *et al., Phytochemistry*, 1979, **18**, 704 (*isol, uv, ir, pmr, ms, struct*)

Erysophorine E-201

[54773-83-0]
[54615-80-4]



Absolute configuration

$C_{32}H_{38}N_3O_4^{\oplus}$ 528.67

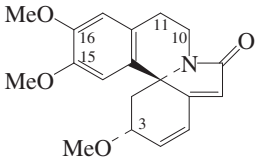
Ester of Hypaphorine, H-764 and Erysovine in E-203. Alkaloid from the seeds of *Erythrina arborescens* (Fabaceae). Brown microcryst. solid (Me_2CO/MeOH)(as chloride). Mp 260° dec. (chloride).

O[16]-De-Me: ***Isoerysopinophorine***
[74555-93-4]
[74555-94-5]
$C_{31}H_{36}N_3O_4^{\oplus}$ 514.643
Alkaloid from the seeds of *Erythrina arborescens* (Fabaceae). Brown syrupy liq. (as hydroxide). Hydrol. to Erysopine and Hypaphorine.

Ghosal, S. *et al., Phytochemistry*, 1974, **13**, 2603 (*isol, uv, pmr, ms, struct*)
Masood, M. *et al., Phytochemistry*, 1980, **19**, 490 (*isol, uv, ir, pmr, ms, struct, Isoerysopinophorine*)

Erysotramidine E-202

1,2,6,7-Tetradehydro-3,15,16-trimethoxyerythrinan-8-one, 9CI. 8-Oxoerysotrine
[52358-58-4]
[69111-35-9 ((±)-form)]



$C_{19}H_{21}NO_4$ 327.379
Alkaloid from *Erythrina arborescens* (Fabaceae). $[\alpha]_D^{23}$ +148.5 (c, 1.2 in $CHCl_3$) (synthetic).

O[16]-De-Me: ***8-Oxoerysodine***
$C_{18}H_{19}NO_4$ 313.352
Alkaloid from *Erythrina tahitensis* (Fabaceae). Minimal structural proof.

10,11-Didehydro: ***Erytharbine***
[52358-59-5]
$C_{19}H_{19}NO_4$ 325.363
Alkaloid from *Erythrina arborescens* (Fabaceae). Possibly an artifact.

15-Demethoxy: ***Isococcolinine***
[66835-08-3]
$C_{18}H_{19}NO_3$ 297.353
Alkaloid from flowers of *Erythrina variegata* (Fabaceae).

16-Demethoxy: ***Coccolinine****. 8-Oxococcuvinine.* O-*Methylcoccoline*
[60888-59-7]
[78463-71-5 ((±)-form)]
$C_{18}H_{19}NO_3$ 297.353
Alkaloid from the leaves of *Cocculus laurifolius* (Menispermaceae). Cryst. (MeOH). Mp 174-175°. Poss. an artifact. C-5 config. not firmly established.

16-Demethoxy, O[15]-de-Me: ***Coccoline****. 8-Oxococcuvine*
[60229-90-5]
$C_{17}H_{17}NO_3$ 283.326
Alkaloid from the leaves of *Cocculus laurifolius* (Menispermaceae). Cryst. (EtOAc). Mp 245-246°. $[\alpha]_D$ +233 (c, 1.08 in MeOH). Poss. an artifact. C-5 config. not firmly established.

15- or 16-Demethoxy: ***Erythromotidienone***
$C_{18}H_{19}NO_3$ 297.353
Alkaloid from *Erythrina variegata*. Needles (MeOH). Mp 172°. Posn. of aromatic methoxy group not determined. Presumably identical with either Coccolinine or Isococcolinine.

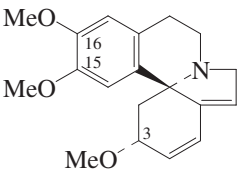
11β-Hydroxy: ***11β-Hydroxyerysotramidine***
$C_{19}H_{21}NO_5$ 343.379
Alkaloid from the flowers and pods of *Erythrina lysistemon*. Yellowish solid. $[\alpha]_D$ +100 (c, 0.14 in MeOH). λ_{max} 219 (log ϵ 2.98); 257 (log ϵ 3.52); 322 (log ϵ 2.49) (MeOH).

11β-Methoxy: ***11β-Methoxyerysotramidine***
$C_{20}H_{23}NO_5$ 357.405
Alkaloid from the flowers of *Erythrina lysistemon*. Brownish solid. $[\alpha]_D$ +60 (c, 0.11 in MeOH). λ_{max} 220 (log ϵ 2.96); 238 (log ϵ 3.28); 325 (log ϵ 1.58) (MeOH).

Ito, K. *et al., Yakugaku Zasshi*, 1973, **93**, 1611; 1617; *CA*, **80**, 48212z; 68387p (*isol, struct*)
Pande, H. *et al., Indian J. Chem., Sect. B*, 1976, **14**, 366 (*Coccolinine*)
Bhakuni, D.S. *et al., Phytochemistry*, 1976, **15**, 739 (*Coccoline, isol, uv, ir, pmr, ms, struct*)
Ito, K. *et al., Chem. Comm.*, 1978, 733 (*synth*)
Ju-Ichi, M. *et al., Chem. Pharm. Bull.*, 1978, **26**, 563 (*Isococcolinine, synth*)
Chawla, A.S. *et al., Org. Magn. Reson.*, 1983, **21**, 39 (*cmr*)
Jackson, A.H. *et al., Chem. Biol. Isoquinoline Alkaloids, Int. Symp., Phytochem. Soc. Eur., Abstr. Pap.*, 1985, 62 (*8-Oxoerysodine*)
Sano, T. *et al., Chem. Pharm. Bull.*, 1987, **35**, 94; 479 (*Erysotramidine, Coccolinine, synth, ir, pmr*)
Tsuda, Y. *et al., Chem. Pharm. Bull.*, 1991, **39**, 1365; 1993, **41**, 965; 2087 (*synth, Erysotramidine, Erytharbine*)
Sharma, S.K. *et al., Indian J. Heterocycl. Chem.*, 1992, **2**, 71; *CA*, **119**, 4929h (*Isococcolinine, synth*)
Sharma, S.K. *et al., J. Indian Chem. Soc.*, 1998, **75**, 833-837 (*Erythromotidienone*)
Lee, H.I. *et al., J.O.C.*, 2004, **69**, 8209-8218 (*Erysotramidine, synth*)
Juma, B.F. *et al., Phytochemistry*, 2004, **65**, 1397-1404 (*11-Hydroxyerysotramidine, 11-Methoxyerysotramidine*)
Blake, A.J. *et al., Synthesis*, 2005, 3287-3292 (*Erysotramidine, synth, ir, pmr, cnr, ms*)
Gao, S. *et al., Org. Lett.*, 2006, **8**, 2373-2376 (*Erysotramidine, synth*)

Erysotrine E-203

[27740-43-8]
[70681-68-4 ((-)-form)]



$C_{19}H_{23}NO_3$ 313.396
Alkaloid from a wide range of *Erythrina* spp. including *Erythrina abyssinica*, *Erythrina arborescens*, *Erythrina atitlanensis*, *Erythrina blakei*, *Erythrina caffra*, *Erythrina coralloides*, *Erythrina crista-galli*, *Erythrina flabelliformis*, *Erythrina folkersii*, *Erythrina fusca* (gallito), *Erythrina goldmanii,Erythrina guatemalensis*, *Erythrina herbacea*, *Erythrina lithosperma*, *Erythrina livingstoniana*, *Erythrina macrophylla*, *Erythrina mulungu*, *Erythrina oliviae*, *Erythrina poeppigiana*, *Erythrina senegalensis*, *Erythrina steyermarkii*, *Erythrina suberosa*, *Erythrina tajumulcensis*, *Erythrina variegata* and *Erythrina zeheri*. Competitive neuromuscular blocking agent. *E. suberosa* shows antitumour activity and this is ascribed to Erysotrine. Yellow cryst. (petrol).

Picrate: Mp 159-161°. $[\alpha]_D$ +142 (c, 0.122 in EtOH).

N-*Oxide:* ***Erysotrine* N-*oxide***
[80153-99-7]
$C_{19}H_{23}NO_4$ 329.395
Alkaloid from the flowers of *Erythrina mulungu* (Fabaceae). Oil. $[\alpha]_D^{25}$ +78.3 (c, 1 in EtOH).

O[3]-De-Me: ***Erythravine****. 1,2,6,7-Tetradehydro-15,16-dimethoxyerythrinan-3-ol*
[19373-79-6]
$C_{18}H_{21}NO_3$ 299.369
Alkaloid from the seeds of *Erythrina folkersii*. Also detected by glc-ms in the seeds of *Erythrina steyermarkii, Erythrina eggersii* and *Erythrina berteroana* (Fabaceae). Faintly yellow oil.

O[15]-De-Me: ***Erysovine***
[466-72-8]
$C_{18}H_{21}NO_3$ 299.369
Alkaloid from a wide range of *Erythrina* spp. (Fabaceae). Cryst. (EtOH). Mp 178-179.5° (167-169°, 175-176°). $[\alpha]_D$ +252 (c, 0.123 in EtOH).

O[15]-De-Me, O-*(carboxymethylsulfonyl):* ***Erysothiovine***
$C_{20}H_{23}NO_7S$ 421.47
Alkaloid from the seeds of *Erythrina glauca, Erythrina pallida* and *Erythrina poeppigiana* (Fabaceae). Shows curarising paralytic activity in frogs. Cryst. + $2H_2O$ (H_2O). Mp 187°. $[\alpha]_D^{25}$ +208 (c, 0.359 in EtOH). Hydrol. to Erysovine and sulfoacetic acid.

O[16]-De-Me: ***Erysodine****. 1,2,6,7-Tetradehydro-3,15-dimethoxyerythrinan-16-ol*
[7290-03-1]
$C_{18}H_{21}NO_3$ 299.369
Alkaloid from a wide range of *Erythrina* spp., including *Erythrina abyssinica, Erythrina americana, Erythrina arborescens, Erythrina berter-*

oana, Erythrina blakei, Erythrina chiriquensis, Erythrina costaricensis, Erythrina crista-galli, Erythrina cubensis, Erythrina decora, Erythrina excelsa, Erythrina falcata, Erythrina flabelliformis, Erythrina folkersii, Erythrina fusca (gallito), *Erythrina herbacea, Erythrina lithosperma, Erythrina macrophylla, Erythrina melanacantha, Erythrina merrilana, Erythrina milbraedii, Erythrina oreophila, Erythrina pallida, Erythrina poeppigiana, Erythrina salviiflora, Erythrina sandwicensis, Erythrina senegalensis, Erythrina stricta, Erythrina subumbrans, Erythrina variegata* and *Erythrina velutina* (Fabaceae). Cryst. (EtOH). Mp 204-205°. $[\alpha]_D^{27}$ +248 (c, 0.311 in EtOH). $[\alpha]_D^{20}$ +239 (c, 0.50 in $CHCl_3$). Erysocine was a complex of Erysodine with Erysovine.

O^{16}*-De-Me,* O-*β-D-glucopyranoside:* ***Glucoerysodine***
[509-49-9]
$C_{24}H_{31}NO_8$ 461.511
Alkaloid from *Erythrina abyssinica*, *Erythrina senegalensis* and *Erythrina lysistemon* (Fabaceae). Mp 135-137° Mp 166-168°. $[\alpha]_D$ +100.92 (c, 1.56 in $CHCl_3$). $[\alpha]_D$ +127 (H_2O).

O^{16}*-De-Me,* O-*α-L-rhamnopyranoside:* ***Rhamnoerysodine***
[133377-63-6]
$C_{24}H_{31}NO_7$ 445.511
Alkaloid from *Erythrina lysistemon* (Fabaceae). Gum. $[\alpha]_D$ +83 (c, 0.13 in $CHCl_3$).

O^{3},O^{15}*-Di-de-Me:* ***Erysoline****. 3-Desmethylerysovine*
[52358-61-9]
$C_{17}H_{19}NO_3$ 285.342
Alkaloid from the seeds of *Erythrina folkersii*. Also detected by glc-ms in the seeds of *Erythrina guatemalensis, Erythrina steyermarkii, Erythrina berteroana, Erythrina subumbrans, Erythrina lanata* and *Erythrina acanthocarpa* (Fabaceae). Broad Mp range.

O^{3},O^{16}*-Di-de-Me:* ***Erysonine****.* O^{3}*-Demethylerysodine*
[7290-05-3]
$C_{17}H_{19}NO_3$ 285.342
Alkaloid from the seeds of *Erythrina costaricensis* and *Erythrina lithosperma*, and from the trunk bark, root bark and seeds of *Erythrina variegata*. Also detected by glc-ms in the seeds of *Erythrina folkersii, Erythrina guatemalensis, Erythrina steyermarkii, Erythrina berteroana* and *Erythrina lanata* (Fabaceae). Cryst. (EtOH). Mp 241-243° dec. $[\alpha]_D^{25}$ +289 (0.5% HCl aq.).

O^{15},O^{16}*-Di-de-Me:* ***Erysopine***
[545-68-6]
$C_{17}H_{19}NO_3$ 285.342
Alkaloid from a wide variety of *Erythrina* spp. including *Erythrina abyssinica, Erythrina acanthocarpa, Erythrina arborescens, Erythrina berteroana, Erythrina chiriquensis, Erythrina costaricensis, Erythrina crista-galli, Erythrina cubensis, Erythrina decora, Erythrina dominguezii, Erythrina eggersii, Erythrina falcata, Erythrina flabelliformis, Erythrina folkersii, Erythrina fusca* (gallito), *Erythrina herbacea, Erythrina lithosperma, Erythrina macrophylla, Erythrina merrilana, Erythrina milbraedii, Erythrina oreophila, Erythrina pallida, Erythrina poeppigiana, Erythrina resupinata, Erythrina rubrinervia, Erythrina salviiflora, Erythrina sandwicensis, Erythrina enegalensis, Erythrina subumbrans, Erythrina variegata*, and many others (Fabaceae). Cryst. (EtOH). Mp 241-242°. $[\alpha]_D^{25}$ +265.2 (EtOH/glycerol). $[\alpha]_D^{25}$ +225 (morpholine). $[\alpha]_D^{25}$ +276 (HCl aq.).

O^{15},O^{16}*-Di-de-Me, 15-*O*-β-D-glucopyranoside:* ***15-Glucoerysopine***
[273409-71-5]
$C_{23}H_{29}NO_8$ 447.484
Alkaloid from the seeds of *Erythrina latissima*. Dark brown solid. Mp 150-152°. $[\alpha]_D$ +67.5 (c, 0.006 in MeOH). λ_{max} 206 (log ϵ 4.38); 222 (log ϵ 4.4); 279 (log ϵ 3.74) (MeOH).

O^{15},O^{16}*-Di-de-Me, 16-*O*-β-D-glucopyranoside:* ***16-Glucoerysopine***
[273409-70-4]
$C_{23}H_{29}NO_8$ 447.484
Alkaloid from the seeds of *Erythrina latissima*. Dark brown solid. Mp 158-160°. $[\alpha]_D$ +76.5 (c, 0.006 in MeOH). Authors' numbering scheme differs. λ_{max} 206 (log ϵ 4.38); 222 (log ϵ 4.4); 279 (log ϵ 3.74) (MeOH).

O^{15},O^{16}*-Di-de-Me,* O^{16}*-(carboxymethylsulfonyl):* ***Erysothiopine***
$C_{19}H_{21}NO_7S$ 407.443
Alkaloid from the seeds of *Erythrina glauca* (gallito). Shows curarising paralytic activity in frogs. Cryst. (H_2O). Mp 168-169°. $[\alpha]_D^{25}$ +193 (c, 0.183 in EtOH). Hydrol. to Erysopine and sulfoacetic acid.

10,11-Didehydro, O^{15}*-de-Me:* ***10,11-Dehydroerysovine***
$C_{18}H_{19}NO_3$ 297.353
Alkaloid detected by glc-ms in the seeds of *Erythrina latissima, Erythrina stricta* and *Erythrina lysistemon* (Fabaceae). Possibly an artifact produced by an elimination reaction from the corresponding 11-methoxy or 11-hydroxy alkaloid.

10,11-Didehydro, O^{16}*-de-Me:* ***10,11-Dehydroerysodine***
$C_{18}H_{19}NO_3$ 297.353
Alkaloid detected by glc-ms in the seeds of *Erythrina stricta, Erythrina lysistemon, Erythrina latissima* and *Erythrina caffra* (Fabaceae). Possibly an artifact produced by an elimination reaction from the corresponding 11-methoxy or 11-hydroxy alkaloid.

11-Hydroxy: see Erythrartine, E-206

8-Oxo: see Erysotramidine, E-202

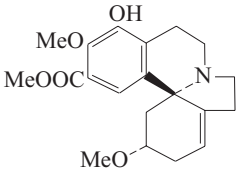
11-Oxo, 10β-hydroxy: ***10-Hydroxy-11-oxoerysotrine***
$C_{19}H_{21}NO_5$ 343.379
Alkaloid from the flowers of *Erythrina herbacea*. Amorph. powder. $[\alpha]_D$ +150 (c, 0.1 in MeOH). λ_{max} 204 (log ϵ 4.58); 242 (log ϵ 4.11); 283 (log ϵ 3.46) (MeOH).

10,11-Dioxo: ***10,11-Dioxoerysotrine***
$C_{19}H_{19}NO_5$ 341.363
Alkaloid from the seed pods of *Erythrina latissima*. Brown solid (Me_2CO). Mp 174-176°. $[\alpha]_D^{25}$ +167.5 (c, 0.1 in MeOH). λ_{max} 206 (log ϵ 4.38); 247 (log ϵ 4.17); 292 (sh) (log ϵ 3.62); 351 (log ϵ 3.54) (MeOH).

Folkers, K. *et al., J.A.C.S.*, 1940, **62**, 1677-1683; 1941, **63**, 15444-1549; 1942, **64**, 1892-1896; 1944, **66**, 1083 (*Erysodine, Erysovine, Erysopine, Erysonine, Erysothiovine, Erysothiopine, isol*)
Delofeu, V. *et al., J.O.C.*, 1947, **12**, 486-489 (*Erysodine, isol*)
Prelog, V. *et al., Helv. Chim. Acta*, 1949, **32**, 453-461; 1956, **39**, 498-504 (*Erysodine, Erysovine, Erysopine, struct*)
Lapière, C. *et al., J. Pharm. Belg.*, 1951, **6**, 71; *CA*, **45**, 9806c (*Glucoerysodine*)
Weiss, U. *et al., Experientia*, 1963, **19**, 108-112 (*Erysodine, Ersopine, ord, config*)
Mondon, A. *et al., Tet. Lett.*, 1966, 2557-2568 (*Erysonine, struct*)
Barton, D.H.R. *et al., J.C.S.(C)*, 1968, 1529-1537 (*struct, stereochem, biosynth*)
Boar, R.B. *et al., J.C.S.(B)*, 1970, 1591-1595 (*Erysodine, Erysopine, Erysovine, ms*)
Miana, G.A. *et al., J. Nat. Prod.*, 1972, **35**, 92 (*isol, uv, pmr, ms*)
Barton, D.H.R. *et al., J.C.S. Perkin 1*, 1973, 874-880 (*Erysodine*)
Hargreaves, R.T. *et al., J. Nat. Prod.*, 1974, **37**, 569-580 (*Erysodine, Erysovine, Erythravine, Erysopine, Erysonine, Erysoline, occur*)
Games, D.E. *et al., J. Nat. Prod.*, 1974, **37**, 581-588 (*Erysodine, Erysovine, Erythravine, Erysopine, Erysonine, occur*)
Millington, D.S. *et al., J.A.C.S.*, 1974, **96**, 1909-1917 (*Erythravine, Erysoline, Erysonine, occur*)
Ito, K. *et al., Chem. Pharm. Bull.*, 1976, **24**, 52-55 (*isol, uv, pmr, ms, Erysodine*)
Mondon, A. *et al., Chem. Ber.*, 1979, **112**, 1329-1347 (*synth, uv, ir, bibl*)
Sarragiotto, M.H. *et al., Can. J. Chem.*, 1981, **59**, 2771-2775 (*isol, uv, ir, pmr, cmr, ms, oxide*)
Jackson, A.H. *et al., Allertonia*, 1982, **3**, 39; *CA*, **98**, 50334f (*Erysonine, Erysopine, Erysovine, occur*)
Chawla, A.S. *et al., Org. Magn. Reson.*, 1983, **21**, 39-41 (*cmr*)
Sano, T. *et al., Chem. Pharm. Bull.*, 1987, **35**, 479-500 (*(±)-form, synth, ir, pmr*)
Tsuda, Y. *et al., Chem. Pharm. Bull.*, 1991, **39**, 1365-1373; 1993, **41**, 2087-2095 (*synth*)
Rigby, J.H. *et al., J.A.C.S.*, 1991, **113**, 8975-8976 (*(±)-form, synth*)
Wandji, J. *et al., Phytochemistry*, 1995, **39**, 677-681 (*Erysodine, Glucoerysodine*)
Toda, J. *et al., Chem. Pharm. Bull.*, 1998, **46**, 906-912 (*(±)-form, synth*)
Wanjala, C.C.W. *et al., J. Nat. Prod.*, 2000, **63**, 871-873 (*Glucoerysopines*)
Wanjala, C.C.W. *et al., Planta Med.*, 2002, **68**, 640-642 (*10,11-Dioxoerysotrine*)
Tanaka, H. *et al., J. Nat. Med. (Tokyo)*, 2008, **62**, 228-231 (*10-Hydroxy-11-oxoerysotrine*)

Erythlaurine E-204

Methyl 1,6-didehydro-17-hydroxy-3,16-dimethoxyerythrinan-15-carboxylate, 9CI
[77410-42-5]



$C_{20}H_{25}NO_5$ 359.421
Alkaloid from the leaves of *Cocculus laurifolius* (Menispermaceae). Oil. $[\alpha]_D$ +232 (EtOH).

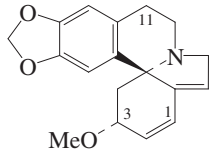
Deoxy: ***Erythroculine***
[22150-96-5]
$C_{20}H_{25}NO_4$ 343.422
Alkaloid from the leaves of *Cocculus laurifolius* and *Hyperbaena columbica* (Menispermaceae). Cryst. (Et_2O/pentane). Mp 79-82°. $[\alpha]_D^{25}$ +216 (c, 1.05 in $CHCl_3$).

Deoxy, parent acid, amide: ***Erythramide***
[77410-40-3]
$C_{19}H_{24}N_2O_3$ 328.41
Alkaloid from *Cocculus laurifolius* (Menispermaceae). Cubes. Mp 87-89°. $[\alpha]_D$ +262 (EtOH). Poss. an artifact arising from Erythroculine, from which it is obt. by NH_4OH treatment. However, it was shown that it was prob. not formed under the conditions used for isol.

Inubushi, Y. *et al., Chem. Pharm. Bull.*, 1970, **18**, 1951 (*Erythroculine*)
Ju-ichi, M. *et al., Heterocycles*, 1981, **16**, 555 (*Erythlaurine, Erythroculine, Erythramide, ir, pmr, ms, struct*)
Ripperger, H. *et al., Phytochemistry*, 1983, **22**, 2603 (*Erythroculine, isol, uv, ir, pmr, ms, ord*)

Erythraline E-205

1,2,6,7-Tetradehydro-3-methoxy-15,16-[methylenebis(oxy)]erythrinan, 9CI



$C_{18}H_{19}NO_3$ 297.353

(+)-*form* [466-77-3]
Alkaloid from a wide range of *Erythrina* spp. including *Erythrina abyssinica, Erythrina arborescens, Erythrina brucei, Erythrina barqueroana, Erythrina burana, Erythrina caffra, Erythrina coralloides, Erythrina crista-galli, Erythrina folkersii, Erythrina excelsa, Erythrina fusca, Erythrina glauca, Erythrina globocalyx, Erythrina guatemalensis, Erythrina huehuetenangensis, Erythrina lanceolata, Erythrina latissima, Erythrina lithosperma, Erythrina lysistemon, Erythrina macrophylla, Erythrina milbraedii, Erythrina oliviae, Erythrina perrieri, Erythrina senegalensis, Erythrina sigmoidea, Erythrina stricta, Erythrina steyermarkii, Erythrina tahitensis, Erythrina tajumulcensis, Erythrina variegata, Erythrina velutina, Erythrina vespertilio* and *Erythrina zeheri* (Fabaceae). Mp 120° (106-107°). $[\alpha]_D^{21.5}$ +228 (c, 1.35 in EtOH).

Hydrobromide: Mp 243°. $[\alpha]_D^{27}$ +216.6 (c, 0.500 in H_2O).

Hydroiodide: Mp 252° (245-245.5°). $[\alpha]_D$ +176 (c, 0.229 in H_2O).

O-*De-Me:* ***Erythrocarine***
[98899-98-0]
$C_{17}H_{17}NO_3$ 283.326
Alkaloid from the seeds of *Erythrina caribaea* (Fabaceae). Gum.

11α-Hydroxy: ***11-Epierythrinine***
[160604-69-3]
$C_{18}H_{19}NO_4$ 313.352
Alkaloid from *Erythrina caffra* (Fabaceae). Isol. as an insep. mixt. with Erythrinine.

11β-Hydroxy: ***Erythrinine***†
[29306-29-4]
$C_{18}H_{19}NO_4$ 313.352
See also Erythrinine, E-211. Alkaloid from the leaves of *Erythrina indica* (now classified as *Erythrina variegata*), *Erythrina* x *bidwillii, Erythrina crista-galli* and *Erythrina crista-galli* cv Manuba Deiko, the trunk bark of *Erythrina lithosperma*, the flowers of *Erythrina brucei*, and from *Erythrina* spp. of Singapore. Also detected by glc-ms in the seeds of *Erythrina stricta, Erythrina caffra, Erythrina vespertilio, Erythrina burana* and *Erythrina perrieri*, and in the leaves of *Erythrina macrophylla* (Fabaceae). Mp 202-204°. $[\alpha]_D^{22}$ +205 (c, 0.5 in $CHCl_3$). 11-Config. not certain.

11β-Methoxy: ***11-Methoxyerythraline***
[31686-06-3]
$C_{19}H_{21}NO_4$ 327.379
Alkaloid from the leaves of *Erythrina lysistemon*. Also detected by glc-ms in the seeds of *Erythrina caffra* and *Erythrina vespertilio* (?) (Fabaceae). Pale yellow gum. $[\alpha]_D^{25}$ +199 (c, 0.6 in $CHCl_3$). 11-Config. not certain.

11β-Methoxy, N-*oxide:* ***11β-Methoxyerythraline* N-*oxide***
$C_{19}H_{21}NO_5$ 343.379
Alkaloid from the flowers of *Erythrina crista-galli* (Fabaceae).

8-Oxo: ***8-Oxoerythraline***
[58779-40-1]
$C_{18}H_{17}NO_4$ 311.337
Alkaloid from the leaves of *Erythrina crista-galli* and the seeds of *Erythrina brucei* (Fabaceae). Oil. $[\alpha]_D$ +135 (c, 0.1 in $CHCl_3$). λ_{max} 205 (log ϵ 4.57); 248 (log ϵ 4.12); 294 (sh) (log ϵ 3.66) (MeOH).

8-Oxo, 1α,2α-epoxide: ***8-Oxoerythraline 1,2-epoxide***
$C_{18}H_{17}NO_5$ 327.336
Alkaloid from *Erythrina* x *bidwillii*. Oil. $[\alpha]_D$ +94 (c, 0.1 in $CHCl_3$). λ_{max} 205 (log ϵ 4.59); 289 (log ϵ 3.78) (EtOH).

8-Oxo, demethoxy: ***Erythrosotidienone***
$C_{17}H_{15}NO_3$ 281.31
Alkaloid from *Erythrina variegata*. Light brown semisolid.

8-Oxo, 11β-hydroxy: ***8-Oxoerythrinine***
[90686-27-4]
$C_{18}H_{17}NO_5$ 327.336
Alkaloid from the flowers of *Erythrina brucei* (Fabaceae). Pale-yellow oil. $[\alpha]_D$ +100 (c, 0.35 in $CHCl_3$).

8-Oxo, 11β-hydroxy, Ac: Mp 215-217° dec.

8-Oxo, 11β-methoxy: ***8-Oxo-11β-methoxyerythraline***
$C_{19}H_{19}NO_5$ 341.363
Alkaloid from *Erythrina lysistemon* (Fabaceae). Minimal structural proof.

11-Oxo: ***11-Oxoerythraline***
$C_{18}H_{17}NO_4$ 311.337
Alkaloid detected by glc-ms in the seeds of *Erythrina zeheri* (Fabaceae).

11-Oxo, 10β-hydroxy,: ***Erythbidine B***
[214349-99-2]
$C_{18}H_{17}NO_5$ 327.336
Alkaloid from *Erythrina* x *bidwillii*. Amorph. solid. $[\alpha]_D$ +148 (c, 0.1 in MeOH). λ_{max} 205 (log ϵ 4.52); 243 (log ϵ 4.04); 291 (log ϵ 3.54) (no solvent reported).

10,11-Dioxo: ***10,11-Dioxoerythraline***
$C_{18}H_{15}NO_5$ 325.32
Alkaloid from *Erythrina* x *bidwillii*. Amorph. solid. $[\alpha]_D$ +254 (c, 0.1 in $CHCl_3$). λ_{max} 204 (log ϵ 4.32); 247 (log ϵ 4.17); 292 (sh) (log ϵ 3.62); 351 (log ϵ 3.53) (MeOH).

(±)-*form* [81750-78-9]
Synthetic. Oil.

Picrate:
Brown prisms (EtOH). Mp 196-199° dec.

8-Oxo: [81750-77-8]
Synthetic. Oil.

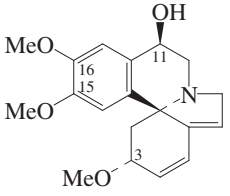
3-Epimer, 8-oxo:
Prisms (Et_2O/Me_2CO). Mp 161-165°.

Folkers, K. *et al., J.A.C.S.*, 1940, **62**, 436; 1673 (*isol, uv*)
Deulofeu, V. *et al., J.O.C.*, 1947, **12**, 486 (*isol*)
Prelog, V. *et al., Helv. Chim. Acta*, 1949, **32**, 453 (*isol, uv*)
Nowacki, W. *et al., Z. Kristallogr.*, 1958, **110**, 89; *CA*, **52**, 15185c (*cryst struct*)
Weiss, U. *et al., Experientia*, 1963, **19**, 108 (*ord*)
Barton, D.H.R. *et al., J.C.S.(C)*, 1970, 1213 (*biosynth*)
Letcher, R.M. *et al., J.C.S.(C)*, 1971, 652 (*11-Methoxyerythraline*)
Hargreaves, R.T. *et al., J. Nat. Prod.*, 1974, **37**, 569 (*occur*)
Games, D.E. *et al., J. Nat. Prod.*, 1974, **37**, 581 (*Erythrinine, 11-Methoxyerythraline, 11-Oxoerythraline, occur*)
Ito, K. *et al., Chem. Pharm. Bull.*, 1976, **24**, 52 (*Erythraline, Erythrinine, isol, uv, pmr, ms*)
Barakat, I. *et al., J. Nat. Prod.*, 1977, **40**, 471 (*occur*)
El-Olemy, M.M. *et al., J. Nat. Prod.*, 1978, **41**, 342 (*abs config*)
Jackson, A.H. *et al., Allertonia*, 1982, **3**, 39; *CA*, **98**, 50334f (*occur*)
Chawla, A.S. *et al., Org. Magn. Reson.*, 1983, **21**, 39 (*cmr*)
Dagne, E. *et al., Phytochemistry*, 1984, **23**, 449 (*Erythrinine, 8-Oxoerythrinine, isol, uv, ir, pmr, cmr, struct, synth*)

Mantle, P.G. *et al., Phytochemistry*, 1984, **23**, 1336 (*8-Oxoerythraline*)
Jackson, A.H. *et al., Chem. Biol. Isoquinoline Alkaloids*, (Eds. Phillipson, J.D. *et al*), Springer, 1985, 62 (*8-Oxo-11β-methoxyerythraline*)
Chawla, A.S. *et al., Phytochemistry*, 1985, **24**, 1821 (*Erythrocarine*)
Sano, T. *et al., Chem. Pharm. Bull.*, 1987, **35**, 479 (*synth, Erythraline, 8-Oxoerythraline*)
Chawla, A.S. *et al., J. Nat. Prod.*, 1987, **50**, 1146 (*11β-Methoxyerythraline N-oxide*)
Amer, M.E. *et al., CA*, 1993, **122**, 101566g (*11-Epierythrinine*)
Sharma, S.K. *et al., J. Indian Chem. Soc.*, 1998, **75**, 833-837 (*Erythrosotidienone*)
Tanaka, H. *et al., Phytochemistry*, 1998, **48**, 1461-1463 (*Erythbidine B*)
Tanaka, H. *et al., Heterocycles*, 1999, **51**, 2759-2764 (*10,11-Dioxoerythraline, 8-Oxoerythraline 1,2-epoxide*)
Shimizu, K. *et al., Org. Lett.*, 2003, **5**, 2323-2325 (*synth, erythrocarine*)

Erythrartine E-206

1,2,6,7-Tetradehydro-3,15,16-trimethoxyerythrinan-11-ol, 9CI. 11-Hydroxyerysotrine
[51666-26-3]



$C_{19}H_{23}NO_4$ 329.395
Alkaloid from the seeds of *Erythrina arborescens*, the leaves of *Erythrina herbacea*, the flowers of *Erythrina variegata* and *Erythrina mulungu*, and from *Erythrina* spp. of Singapore (Fabaceae). $[\alpha]_D^{25}$ +256 (c, 1.4 in $CHCl_3$).

N-*Oxide:* ***Erythrartine* N-*oxide***
[80153-97-5]
$C_{19}H_{23}NO_5$ 345.394
Alkaloid from the flowers of *Erythrina lysistemon* and *Erythrina mulungu*. Oil. $[\alpha]_D^{25}$ +88.57 (c, 1.4 in EtOH). λ_{max} 219 (log ϵ 2.9); 260 (log ϵ 3.61); 327 (log ϵ 2.31) (MeOH).

Ac: ***Erythrascine****. 11-Acetoxyerysotrine*
[39027-75-3]
$C_{21}H_{25}NO_5$ 371.432
Alkaloid from the seeds of *Erythrina arborescens* (Fabaceae). Cream-coloured needles (EtOH/Me_2CO). Mp 138-140°. $[\alpha]_D^{25}$ +152 (c, 0.51 in $CHCl_3$). Doubtful structural assignment. Synthetic compd. was oily, $[\alpha]_D$ +66°, and the pmr spectrum differed from that of the alkaloid.

O^{15}-De-Me: ***11-Hydroxyerysovine***
[54980-18-6]
$C_{18}H_{21}NO_4$ 315.368
Alkaloid detected by glc-ms in the seeds of *Erythrina stricta, Erythrina senegalensis, Erythrina livingstoniana* and *Erythrina lysistemon* (Fabaceae).

O^{16}-De-Me: ***11-Hydroxyerysodine***
[54980-17-5]
$C_{18}H_{21}NO_4$ 315.368
Alkaloid detected by glc-ms in the seeds of *Erythrina stricta, Erythrina lysistemon, Erythrina senegalensis, Erythrina livingstoniana* and *Erythrina latissima* (Fabaceae).

Me ether: ***Erythristemine****. 11-Methoxyersysotrine*
[28619-41-2]
$C_{20}H_{25}NO_4$ 343.422
Alkaloid from the leaves of *Erythrina lysistemon* and *Erythrina abyssinica* and from the seeds of *Erythrina arborescens* (Fabaceae). Pale yellow prisms (petrol). Mp 127-129°. $[\alpha]_D^{22}$ +189 (c, 0.4 in $CHCl_3$).

Me ether, picrate: Mp 145-150°.

Me ether, N-*oxide:* ***Erythristemine* N-*oxide***
[80153-98-6]
$C_{20}H_{25}NO_5$ 359.421
Alkaloid from flowers of *Erythrina* x *bidwillii* (Fabaceae). $[\alpha]_D^{25}$ -3.8 (c, 0.01 in $CHCl_3$).

Me ether, O^{15}-de-Me: ***11-Methoxyerysovine***
[54980-20-0]
$C_{19}H_{23}NO_4$ 329.395
Alkaloid detected by glc-ms in the seeds of *Erythrina abyssinica* and *Erythrina lysistemon* (Fabaceae).

Me ether, O^{15}-de-Me, O-*β-D-glucopyranoside:* ***11β-Methoxyglucoerysovine***
[133377-62-5]
$C_{25}H_{33}NO_9$ 491.537
Alkaloid from *Erythrina lysistemon* (Fabaceae). Gum.

Me ether, O^{16}-de-Me: ***11-Methoxyerysodine***
[54980-19-7]
$C_{19}H_{23}NO_4$ 329.395
Alkaloid detected by glc-ms in the seeds of *Erythrina lysistemon* (Fabaceae).

Me ether, O^{16}-de-Me, O-*β-D-glucopyranoside:* ***11β-Methoxyglucoerysodine***
[133377-61-4]
$C_{25}H_{33}NO_9$ 491.537
Alkaloid from *Erythrina lysistemon* (Fabaceae). Gum. $[\alpha]_D$ +73 (c, 0.42 in $CHCl_3$).

Me ether, O^{15},O^{16}-di-de-Me: ***11-Methoxyerysopine***
$C_{18}H_{21}NO_4$ 315.368
Alkaloid detected by glc-ms in the seeds of *Erythrina caffra* (Fabaceae).

11-Ketone, O^{15}-de-Me: ***11-Oxoerysovine***
[54980-14-2]
$C_{18}H_{19}NO_4$ 313.352
Alkaloid detected by glc-ms in the seeds of *Erythrina arborescens, Erythrina livingstoniana* and *Erythrina tahitensis* (Fabaceae).

11-Ketone, O^{16}-de-Me: ***11-Oxoerysodine***
[54980-13-1]
$C_{18}H_{19}NO_4$ 313.352
Alkaloid detected by glc-ms in the seeds of *Erythrina arborescens, Erythrina livingstoniana, Erythrina abyssinica* and *Erythrina tahitensis* (Fabaceae).

11-Ketone, O^{15},O^{16}-di-de-Me: ***11-Oxoerysopine***
[54980-15-3]
$C_{17}H_{17}NO_4$ 299.326
Alkaloid detected by glc-ms in the seeds of *Erythrina arborescens* and *Erythrina tahitensis* (Fabaceae).

11-Epimer: ***11-Epierythrartine***
$C_{19}H_{23}NO_4$ 329.395
Alkaloid from the flowers of *Erythrina mulungu*. Amorph. powder. $[\alpha]_D^{25}$ +8.8 (c, 1 in MeOH).

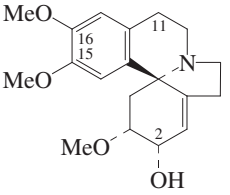
11-Epimer, N-*oxide:* ***11-Epierythrartine* N-*oxide***
$C_{19}H_{23}NO_5$ 345.394
Alkaloid from the flowers of *Erythrina lysistemon*. Yellowish oil. $[\alpha]_D$ +100 (c, 0.04 in MeOH). λ_{max} 220 (log ϵ 2.82); 240 (log ϵ 3.32); 338 (log ϵ 2.42) (MeOH).

11-Epimer, O^3-de-Me: ***11α-Hydroxyerythravine***
$C_{18}H_{21}NO_4$ 315.368
Alkaloid from the flowers of *Erythrina mulungu*. Amorph. powder. $[\alpha]_D^{25}$ +8.7 (c, 1 in MeOH). λ_{max} 234 (log ϵ 4.3); 283 (log ϵ 3.45) ($CHCl_3$).

Ghosal, S. *et al., Phytochemistry*, 1972, **11**, 2101-2103 (*Erythrascine, Erythristemine*)
Barton, D.H.R. *et al., J.C.S. Perkin 1*, 1973, 874-880 (*Erythristemine, cryst struct*)
Ito, K. *et al., Yakugaku Zasshi*, 1973, **93**, 1611-1616; 1617-1621; 1975, **95**, 358-362; *CA*, **80**, 48212z; 68387p; **82**, 167515b (*isol, struct*)
Hough, E. *et al., Acta Cryst. B*, 1976, **32**, 1154-1162 (*Erythrystemine, cryst struct, abs config*)
El-Olemy, M.M. *et al., J. Nat. Prod.*, 1978, **41**, 342-347 (*isol, abs config*)
Ahmad, V.U. *et al., J. Chem. Soc. Pak.*, 1979, **1**, 79-80 (*isol*)
Sarragiotto, M.H. *et al., Can. J. Chem.*, 1981, **59**, 2771-2775 (*isol, uv, ir, pmr, cmr, ms, Erythrartine N-oxide*)
Amer, M.E. *et al., J. Nat. Prod.*, 1991, **54**, 161-166 (*Erythrina lysistemon glycosides*)
Chawla, A.S. *et al., Phytochemistry*, 1992, **31**, 372-374 (*Erythristemine N-oxide*)
Isobe, K. *et al., Chem. Pharm. Bull.*, 1994, **42**, 197 (*synth, Ac*)
Juma, B.F. *et al., Phytochemistry*, 2004, **65**, 1397-1404 (*11-Epierythrartine N-oxide*)
Flausino, O. *et al., J. Nat. Prod.*, 2007, **70**, 48-53 (*11-Epierythrartine, 11α-Hydroxyerythravine*)

Erythratidine E-207

1,6-Didehydro-3,15,16-trimethoxyerythrinan-2-ol, 9CI
[41431-22-5]



$C_{19}H_{25}NO_4$ 331.411
Alkaloid from a wide range of *Erythrina* spp. including *Erythrina abyssinica, Erythrina arborescens, Erythrina barqueroana, Erythrina burana, Erythrina*

chiriquensis, Erythrina coralloides, Erythrina decora, Erythrina eggersii, Erythrina excelsa, Erythrina falcata, Erythrina goldmanii, Erythrina guatemalensis, Erythrina latissima, Erythrina livingstoniana, Erythrina macrophylla, Erythrina melanacantha, Erythrina oliviae, Erythrina oreophila, Erythrina perrieri, Erythrina poeppigiana, Erythrina rubrinervia, Erythrina salviiflora, Erythrina senegalensis, Erythrina sigmoidea, Erythrina steyermarkii, Erythrina tahitensis and *Erythrina variegata* (Fabaceae). Cryst. (EtOAc/petrol). Mp 120-120.5°. $[\alpha]_D$ +258 (c, 0.581 in $CHCl_3$). $[\alpha]_D$ +273 (c, 0.109 in EtOH).

Picrate:
Pale yellow plates (Me_2CO). Mp 222-224° (220-222°).

O^{15}*-De-Me:* ***Erysosalvine***
[52358-62-0]
$C_{18}H_{23}NO_4$ 317.384
Alkaloid from seeds of *Erythrina salviiflora*. Also detected in seeds of *Erythrina oliviae, Erythrina arborescens, Erythrina livingstoniana, Erythrina latissima, Erythrina tahitensis, Erythrina burana* and (possibly) *Erythrina melanacantha* (Fabaceae). Not obt. free of Erysotine. C-2 config. not detd., may not necessarily be as shown.

O^{16}*-De-Me:* ***Erysotine***
[26153-74-2]
$C_{18}H_{23}NO_4$ 317.384
Alkaloid from the seeds of *Erythrina salviiflora*. Also detected in seeds of *Erythrina eggersii, Erythrina decora, Erythrina oreophila, Erythrina variegata, Erythrina oliviae* and (possibly) *Erythrina melanacantha* (Fabaceae). Cryst. ($CHCl_3$/Et_2O). Mp 225-227°. C-2 config. not detd., may not correspond to that in Erysopitine.

O^{15},O^{16}*-Di-de-Me:* ***Erysopitine***
[38739-04-7]
$C_{17}H_{21}NO_4$ 303.357
Alkaloid from the trunk bark of *Erythrina variegata*. Mp 168-171°. $[\alpha]_D^{25}$ +148 (c, 0.52 in EtOH). 2-Config. uncertain.

2-Ketone: ***Erythratidinone***
[41758-74-1]
$C_{19}H_{23}NO_4$ 329.395
Alkaloid from the leaves of *Erythrina lithosperma*, also detected by glc-ms in leaves of *Erythrina poeppigiana* (Fabaceae). Cryst. (C_6H_6/petrol). Mp 119-120°. $[\alpha]_D$ +358 (c, 1.121 in $CHCl_3$).

2-Ketone, picrate: Mp 205-207°.

2-Ketone, O^{15}*-de-Me:* ***Erysosalvinone***
[52358-63-1]
$C_{18}H_{21}NO_4$ 315.368
Alkaloid detected in the seeds of *Erythrina salviiflora* (Fabaceae).

2-Ketone, O^{16}*-de-Me:* ***Erysotinone***
[7236-40-0]
$C_{18}H_{21}NO_4$ 315.368
Alkaloid from the seeds of *Erythrina salviiflora* (Fabaceae). Needles (Et_2O). Mp 177-179°. $[\alpha]_D^{25}$ +342 (c, 0.28 in EtOH).

2-Ketone, O^{15},O^{16}*-di-de-Me:* ***Erysoflorinone***
[52358-52-8]
$C_{17}H_{19}NO_4$ 301.341
Alkaloid detected by glc/ms in the seeds of *Erythrina salviiflora* and *Erythrina subumbrans* (Fabaceae).

11ξ-Hydroxy: ***11-Hydroxyerythratidine***
[84209-90-5]
$C_{19}H_{25}NO_5$ 347.41
Alkaloid detected by glc-ms in the leaves of *Erythrina poeppigiana* (Fabaceae).

11ξ-Hydroxy, O^{16}*-de-Me:* ***11-Hydroxyerysotine***
$C_{18}H_{23}NO_5$ 333.383
Alkaloid from *Erythrina berteroana* (Fabaceae). Minimal structural proof. The isomeric struct., 11-Hydroxyerysosalvine, cannot be excluded.

11ξ-Methoxy: ***11-Methoxyerythratidine***
[84214-98-2]
$C_{20}H_{27}NO_5$ 361.437
Alkaloid detected by glc-ms in the leaves of *Erythrina macrophylla* (Fabaceae).

11ξ-Hydroxy, 2-ketone, O^{16}*-de-Me:* ***11-Hydroxyerysotinone***
[84209-91-6]
$C_{18}H_{21}NO_5$ 331.368
Alkaloid detected by glc-ms in the leaves of *Erythrina macrophylla* (Fabaceae).

10,11-Dioxo, 2-ketone: ***10,11-Dioxoerythratidinone***
$C_{19}H_{19}NO_6$ 357.362
Alkaloid from the bark of *Erythrina subumbrans*. Pale yellow solid. $[\alpha]_D^{28}$ +16.3 (c, 0.16 in MeOH). λ_{max} 244 (log ϵ 3.81); 288 (log ϵ 3.54); 352 (log ϵ 3.33) (MeOH).

2-Epimer: ***2-Epierythratidine***
[41431-23-6]
$C_{19}H_{25}NO_4$ 331.411
Alkaloid from the bark of *Erythrina variegata*. Cryst. (EtOAc/petrol). Mp 67-68°. $[\alpha]_D$ +142 (c, 0.148 in $CHCl_3$).

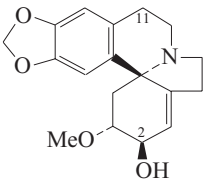
2-Epimer, 11ξ-hydroxy: ***11-Hydroxyepierythratidine***
[84209-89-2]
$C_{19}H_{25}NO_5$ 347.41
Alkaloid detected by glc-ms in the leaves of *Erythrina poeppigiana* (Fabaceae).

2-Epimer, 10,11-dioxo: ***10,11-Dioxo-2-epierythratidine****. 2-Epi-10,11-dioxoerythratidine*
$C_{19}H_{21}NO_6$ 359.378
Alkaloid from the bark of *Erythrina subumbrans*. Pale yellow solid. $[\alpha]_D^{31}$ +92.8 (c, 0.17 in MeOH). λ_{max} 246 (log ϵ 3.77); 291 (log ϵ 3.76); 352 (log ϵ 3.72) (MeOH).

Deulofeu, V. *et al., Chem. Ber.*, 1952, **85**, 620 (*isol*)
Mondon, A. *et al., Tet. Lett.*, 1966, 2557 (*Erysotinone*)
Ghosal, S. *et al., J. Pharm. Sci.*, 1972, **61**, 1274 (*Erysopitine*)
Barton, D.H.R. *et al., J.C.S. Perkin 1*, 1973, 874 (*Erythratidine, Erythratidinone, 2-Epierythratidine, uv, ir, pmr, ms, struct, synth, abs config*)
Hargreaves, R.T. *et al., J. Nat. Prod.*, 1974, **37**, 569 (*occur*)
Games, D.E. *et al., J. Nat. Prod.*, 1974, **37**, 581 (*occur*)
Millington, D.S. *et al., J.A.C.S.*, 1974, **96**, 1909 (*Erythratidine, Erysotinone, Erysopitine, Erysosalvine, Erysosalvinone, Erysotine, isol, uv, pmr, ms*)
Barakat, I. *et al., J. Nat. Prod.*, 1977, **40**, 471 (*occur*)
Jackson, A.H. *et al., Allertonia*, 1982, **3**, 39; 47; *CA*, **98**, 14354d; 50334f (*11-Hydroxyerythratidine, 11-Hydroxyepierythratidine, 11-Methoxyerythratidine, 11-Hydroxyerysotinone, Erysosalvinone*)
Chawla, A.S. *et al., J.C.S. Perkin 1*, 1982, 2903 (*11-Hydroxyerysotine*)
Chawla, A.S. *et al., Org. Magn. Reson.*, 1983, **21**, 39 (*cmr, Erysosalvinone*)
Chawla, A.S. *et al., Planta Med.*, 1988, **54**, 526 (*2-Epierythratidine*)
Hosoi, S. *et al., Chem. Pharm. Bull.*, 1996, **44**, 2342 (*synth*)
Hosoi, S. *et al., J.C.S. Perkin 1*, 2000, 1505-1511 (*synth*)
Rukachaisirikul, T. *et al., J. Nat. Prod.*, 2008, **71**, 156-158 (*Dioxoerythratidinone, Dioxoepierythratidine*)

Erythratine E-208

1,6-Didehydro-3-methoxy-15,16-[methylenebis(oxy)]erythrinan-2-ol, 9CI
[5550-20-9]



$C_{18}H_{21}NO_4$ 315.368
Alkaloid from the seeds of *Erythrina glauca* (gallito), *Erythrina arborescens* and *Erythrina crista-galli*, the pods and trunk bark of *Erythrina lithosperma*, and the leaves of *Erythrina abyssinica*. Also detected by glc-ms in the seeds of *Erythrina subumbrans*. Cryst. + 0.5 H_2O (EtOH). Mp 170°. $[\alpha]_D^{28}$ +145.5 (c, 0.371 in EtOH).

Hydrochloride:
Prisms (EtOH). Mp 250°. $[\alpha]_D$ +165.1 (c, 0.333 in H_2O).

Hydrobromide: Mp 241°. $[\alpha]_D^{25}$ +158.7 (c, 0.258 in H_2O).

2-Ketone: ***Erythratinone***
[5639-06-5]
$C_{18}H_{19}NO_4$ 313.352
Alkaloid from *Erythrina crista-galli* and from the trunk bark of *Erythrina lithosperma* (Fabaceae). Mp 136-137°. $[\alpha]_D^{22.5}$ +409 (c, 0.35 in EtOH).

11-Hydroxy: ***11-Hydroxyerythratine***
[84209-92-7]
$C_{18}H_{21}NO_5$ 331.368
Alkaloid detected by glc-ms in the leaves of *Erythrina macrophylla*. Also tentatively identified as a constit. of *Erythrina subumbrans* seeds (Fabaceae).

10,11-Dioxo: ***10,11-Dioxoerythratine***
$C_{18}H_{17}NO_6$ 343.335

Alkaloid from the bark of *Erythrina subumbrans*. Pale yellow solid. $[\alpha]_D^{31}$ +132.9 (c, 0.17 in MeOH). λ_{max} 219 (log ϵ 3.41); 249 (log ϵ 3.38); 289 (log ϵ 3.13); 352 (log ϵ 2.83) (MeOH).

2-Deoxy: ***Erythramine****. Dihydroerythraline*
[13268-79-6]
$C_{18}H_{21}NO_3$ 299.369
Alkaloid from the seeds of *Erythrina sandwicensis*, *Erythrina subumbrans*, *Erythrina crista-galli* and *Erythrina glauca*, and from the pods and trunk bark of *Erythrina lithosperma* (Fabaceae). Cryst. (Me_2CO). Mp 119.5-120.5° (103-104°). $[\alpha]_D^{21}$ +223 (c, 1.64 in EtOH).

2-Deoxy, hydrobromide:
Needles (EtOH). Mp 228°. $[\alpha]_D^{26}$ +203.2 (c, 0.500 in H_2O).

2-Deoxy, hydroiodide:
Yellow-orange needles (EtOH). Mp 249°. $[\alpha]_D^{25}$ +220 (c, 0.500 in H_2O).

11-Methoxy: ***11-Methoxyerythratine***
$C_{19}H_{23}NO_5$ 345.394
Alkaloid from the flowers of *Erythrina crista-galli* (Fabaceae). Incorrect struct. shown in paper; subsequently amended but again an erroneous struct. is depicted.

2-Epimer: ***2-Epierythratine***
[5550-21-0]
$C_{18}H_{21}NO_4$ 315.368
Trace alkaloid detected by glc-ms in the seeds of *Erythrina subumbrans*. Mp 147-150°. $[\alpha]_D^{24}$ +280 (c, 0.345 in EtOH). Physical data for this compd. refer to synthetic material.

2-Epimer, 11-hydroxy: ***11-Hydroxy*-epi-*erythratine***
$C_{18}H_{21}NO_5$ 331.368
Alkaloid tentatively identified by glc-ms as a constit. of *Erythrina subumbrans* seeds (Fabaceae).

Folkers, K. *et al., J.A.C.S.*, 1939, **61**, 1232; 3053; 1940, **62**, 436; 1673; 1942, **64**, 2146; 1951, **73**, 589 (*Erythratine, Erythramine, isol, uv, struct*)
Deulofeu, V. *et al., J.O.C.*, 1947, **12**, 486 (*Erythratine, Erythramine, isol*)
Prelog, V. *et al., Helv. Chim. Acta*, 1949, **32**, 453 (*Erythramine, synth, uv, struct*)
Barton, D.H.R. *et al., J.C.S.(C)*, 1968, 1529 (*Erythratine, Erythramine, 2-Epierythratine, Erythratinone, struct, stereochem, synth, biosynth*)
Boar, R.B. *et al., J.C.S.(B)*, 1970, 1591 (*ms, Erythratinone*)
Ghosh, D.K. *et al., Curr. Sci.*, 1972, **41**, 578 (*Erythramine, Erythratine, Erythratinone, isol, ms*)
Barton, D.H.R. *et al., J.C.S. Perkin 1*, 1973, 874 (*isol*)
Jackson, A.H. *et al., Allertonia*, 1982, **3**, 39; 47; *CA*, **98**, 14354d; 50334f (*occur, derivs*)
Chawla, A.S. *et al., J. Nat. Prod.*, 1987, **50**, 1146; 1988, **51**, 624 (*11-Methoxyerythratine*)
Rukachaisirikul, T. *et al., J. Nat. Prod.*, 2008, **71**, 156-158 (*10,11-Dioxoerythratine*)

Erythreidine E-209

$C_{17}H_{22}N_2O$ 270.374
Struct. unknown. Alkaloid from *Lycopodium erythraeum* (Lycopodiaceae).

MacLean, D.B. *et al., Alkaloids (Academic Press)*, 1985, **26**, 241

Erythreine E-210

$C_{17}H_{22}N_2O$ 270.374
Struct. unknown. Alkaloid from *Lycopodium erythraeum* (Lycopodiaceae).

Complex with Erythreidine, E-209: Isoerythreine
$C_{34}H_{44}N_4O_2$ 540.747
From *Lycopodium erythraeum*.

MacLean, D.B. *et al., Alkaloids (Academic Press)*, 1985, **26**, 241

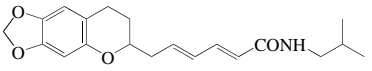
Erythrinine† E-211

$C_{30}H_{36}N_4O_5$ 532.638
Struct. unknown. Alkaloid from the seeds of *Erythrina lithosperma* (Fabaceae). Conts. 4 *O*-Me groups and one amide function. All *N* atoms are present in rings.

Tandon, S.P. *et al., Proc. Natl. Acad. Sci., India, Sect. A*, 1969, **39**, 263-264; *CA*, **73**, 77454r

Erythrococcamide A E-212

[207226-71-9]

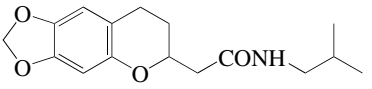


$C_{20}H_{25}NO_4$ 343.422
Alkaloid from *Dinosperma erythrococca*. Insecticidal agent. Needles (hexane/EtOAc). Mp 160-161°. $[\alpha]_D$ +133 (c, 0.01 in $CHCl_3$). λ_{max} 257 ; 310 (sh) (MeOH).

Latif, Z. *et al., J. Nat. Prod.*, 1998, **61**, 614-619 (*isol, uv, ir, pmr, cmr, ms*)

Erythrococcamide B E-213

[207226-73-1]

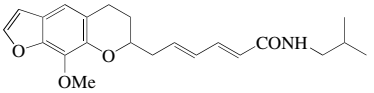


$C_{16}H_{21}NO_4$ 291.346
Alkaloid from *Dinosperma erythrococca*. Pale yellow solid. Mp 95°. $[\alpha]_D$ +73 (c, 0.001 in $CHCl_3$). λ_{max} 256 (MeOH).

Latif, Z. *et al., J. Nat. Prod.*, 1998, **61**, 614-619 (*isol, uv, ir, pmr, cmr, ms*)

Erythrococcamide C E-214

[207226-75-3]

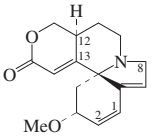


$C_{22}H_{27}NO_4$ 369.46
Alkaloid from *Dinosperma erythrococca*. Pale yellow wax. Mp 42°. $[\alpha]_D$ +185 (c, 0.001 in $CHCl_3$). λ_{max} 255 ; 260 ; 270 ; 295 (MeOH).

Latif, Z. *et al., J. Nat. Prod.*, 1998, **61**, 614-619 (*isol, uv, ir, pmr, cmr, ms*)

α-Erythroidine, 9CI E-215

*1,2,6,7-Tetradehydro-12,17-dihydro-3-methoxy-16(15*H*)-oxaerythrinan-15-one, 11CI*
[466-80-8]



Absolute configuration

$C_{16}H_{19}NO_3$ 273.331
Alkaloid from a range of *Erythrina* spp. including *Erythrina americana, Erythrina berteroana, Erythrina chiapasana, Erythrina coralloides, Erythrina globocalyx, Erythrina poeppigiana, Erythrina salviiflora* and *Erythrina standleyana* (Fabaceae). Needles (pentane). Mp 58-60°. $[\alpha]_D^{27}$ +136 (c, 0.5 in H_2O). Unstable.

Hydrochloride: Mp 227-228° dec. $[\alpha]_D^{32}$ +118 (c, 0.5 in H_2O).

Hydrobromide: Mp 220-222° dec.

Didehydro (?): ***Dehydro-α-erythroidine***
$C_{16}H_{17}NO_3$ 271.315
Alkaloid detected by glc-ms in the leaves of *Erythrina poeppigiana*. Struct. not clear from publ. data.

8-Oxo: ***8-Oxo-α-erythroidine***
[84209-93-8]
$C_{16}H_{17}NO_4$ 287.315
Alkaloid from *Erythrina berteroana* and *Erythrina poeppigiana*. Cryst. (Me_2CO). Mp 183°. $[\alpha]_D^{23}$ +164 (c, 0.1 in MeOH).

8-Oxo, 1α,2α-epoxide: ***8-Oxo-α-erythroidine 1,2-epoxide***
$C_{16}H_{17}NO_5$ 303.314
Alkaloid from the wood of *Erythrina poeppigiana*. Oil. $[\alpha]_D^{23}$ +211 (c, 0.1 in MeOH). λ_{max} 216 (log ϵ 4.23); 250 (sh) (log ϵ 3.69) (MeOH).

Δ^{12}-Isomer: ***β-Erythroidine****. 12,13-Didehydro-13,14-dihydro-α-erythroidine, 10CI, 9CI*
[466-81-9]
$C_{16}H_{19}NO_3$ 273.331
Alkaloid from a range of *Erythrina* spp. including *Erythrina americana, Erythrina arborescens, Erythrina berteroana, Erythrina chiapasana, Erythrina coralloides, Erythrina globocalyx, Erythrina lithosperma, Erythrina poeppigiana, Erythrina salviiflora* and *Erythrina standleyana* (Fabaceae). Neuromuscular and ganglionic blocking agent. Mp 99-100°. $[\alpha]_D^{28}$ +85 (c, 0.3 in H_2O).

▶ LD_{50} (mus, ipr) 24 mg/kg. KF3050000

Δ^{12}-Isomer, hydrochloride: Mp 228-231° dec. $[\alpha]_D^{27}$ +107 (c, 0.5 in H_2O).

Δ^{12}-Isomer, hydrobromide: Mp 222.5° dec.

Δ^{12}-Isomer, 8-oxo: ***8-Oxo-β-erythroidine***
[85198-99-8]
$C_{16}H_{17}NO_4$ 287.315
Alkaloid from the leaves of *Erythrina berteroana* (Fabaceae). Glass. $[\alpha]_D$ +32 (c, 0.156 in EtOH).

Δ^{12}-Isomer, 1,2,6,7-tetrahydro, 1,6-dide-

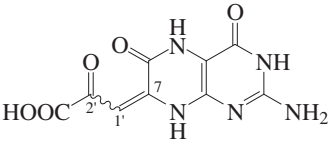
hydro: 12,13-Didehydro-2,7,13,14-tetrahydro-α-erythroidine
[23255-54-1]
$C_{16}H_{21}NO_3$ 275.347
Nicotinic receptor antagonist. Mp 80-82°.

Δ^{12}-Isomer, 1,2,6,7-tetrahydro, 1,6-didehydro, hydrobromide: [29734-68-7]
Cryst. (EtOH). Mp 231-232° dec. $[\alpha]_D^{30}$ +109 (c, 1.0 in H_2O).

Boekelheide, V. *et al., J.A.C.S.*, 1951, **73**, 2286-2289; 1953, **75**, 2550; 1958, **80**, 3905 (*α-Erythroidine, β-Erythroidine, struct*)
Weiss, U. *et al., Experientia*, 1963, **19**, 108; 660 (*β-Erythroidine, ord*)
Hanson, A.W. *et al., Proc. Chem. Soc., London*, 1963, 52 (*β-Erythroidine, cryst struct*)
Wenzinger, G.R. *et al., Proc. Chem. Soc., London*, 1963, 53 (*abs config*)
Leete, E. *et al., J.A.C.S.*, 1966, **88**, 4722 (*biosynth*)
Barton, D.H.R. *et al., J.C.S. Perkin 1*, 1973, 874; 1974, 346; 2278 (*isol, biosynth*)
Hargreaves, R.T. *et al., J. Nat. Prod.*, 1974, **37**, 569 (*occur*)
Aguilar, M.I. *et al., Phytochemistry*, 1981, **20**, 2061 (*isol, uv, ir, pmr*)
Jackson, A.H. *et al., Allertonia*, 1982, **3**, 39; *CA*, **98**, 50334f (*occur, Dehydro-α-erythroidine*)
Chawla, A.S. *et al., J.C.S. Perkin 1*, 1982, 2903 (*8-Oxo-α-erythroidine, 8-Oxo-β-erythroidine*)
Chawla, A.S. *et al., Org. Magn. Reson.*, 1983, **21**, 39 (*cmr*)
Damaj, M.I. *et al., Psychopharmacology (Berlin)*, 1995, **117**, 67-73 (*Didehydrotetrahydroerythroidine*)
Curzon, P. *et al., Brain Res.*, 1996, **714**, 185-191 (*Didehydrotetrahydroeryhroidine*)
Tanaka, H. *et al., Planta Med.*, 2001, **67**, 871-873 (*8-Oxo-α-erythroidine 1,2-epoxide*)
Fukumoto, H. *et al., Angew. Chem., Int. Ed.*, 2006, **45**, 2731-2734 (*β-Erythroidine, synth*)
He, Y. *et al., Org. Lett.*, 2006, **8**, 3689-3692 (*synth*)

Erythropterin E-216

3-(2-Amino-4,5,6,8-tetrahydro-4,6-dioxo-7(3H)-pteridinylidene)-2-oxopropanoic acid
[7449-03-8]



$C_9H_7N_5O_5$ 265.185
Pigment of wing scales of pierid butterflies. Constit. of human tubercle bacilli, *Mycobacterium lacticola* and *Ephestia kühnellia*. Red cryst. + $1H_2O$ (dil. HCl). Violet-blue fluor. Forms Lepidopterin, L-109 with NH_3.

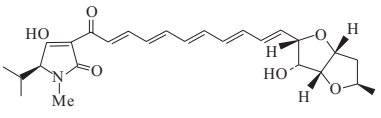
Sulfate salt:
Deep-red leaflets (H_2SO_4 aq.).

1′,7-Dihydro, 2′-alcohol: 2-Amino-3,4,5,6,7,8-hexahydro-α-hydroxy-4,6-dioxo-7-pteridinepropanoic acid. ***Ekapterin***
[29067-93-4]
$C_9H_{11}N_5O_5$ 269.216
Constit. of *Ephestia kühnellia*. Yellow microcryst. + $1H_2O$. $[\alpha]_D^{20}$ -144. Fluorescent.

Schöpf, C. *et al., Annalen*, 1936, **524**, 49 (*isol*)
Pfleiderer, W. *et al., Chem. Ber.*, 1962, **95**, 2195 (*struct*)
Viscontini, M. *et al., Helv. Chim. Acta*, 1962, **45**, 2479; 1963, **46**, 56 (*Ekapterin*)
Viscontini, M. *et al., Helv. Chim. Acta*, 1963, **46**, 51 (*synth*)
Pfleiderer, W. *et al., J. Het. Chem.*, 1992, **29**, 583 (*rev*)

Erythroskyrin E-217

[4987-27-3]



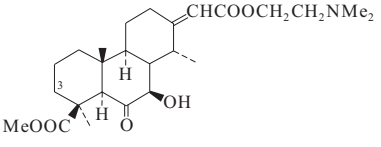
$C_{26}H_{33}NO_6$ 455.55
Mycotoxin prod. by *Penicillium islandicum*. Mycotoxin. Orange-red cryst. (EtOH). Sol. MeOH, Py, bases, AcOH; fairly sol. Et_2O; poorly sol. H_2O, hexane. Mp 130-133°. $[\alpha]_D$ +46.9 ($CHCl_3$). λ_{max} 260 (ϵ 13800); 392 (ϵ 60300) (EtOH/NaOH) (Derep). λ_{max} 260 (ϵ 8910); 409 (ϵ 28200) (EtOH) (Derep).

▶ LD_{50} (mus, ipr) 60 mg/kg. UY7600000

Howard, B.H. *et al., Biochem. J.*, 1954, **57**, 212 (*isol*)
Shoji, J. *et al., Chem. Pharm. Bull.*, 1965, **13**, 1240 (*isol, uv, ir, pmr, struct*)
Shibata, S. *et al., Chem. Pharm. Bull.*, 1966, **14**, 474 (*biosynth*)
Ueno, Y. *et al., Jpn. J. Exp. Med.*, 1975, **45**, 525 (*tox*)
Beutler, J.A. *et al., J. Nat. Prod.*, 1988, **51**, 562 (*abs config, pmr, cmr*)
Dixon, D.J. *et al., J.C.S. Perkin 1*, 1999, 839-841 (*synth*)
Cole, R.J. *et al., Handbook of Toxic Fungal Metabolites*, Academic Press, 1981, 688

Erythrosuamine E-218

[22149-20-8]



$C_{25}H_{39}NO_6$ 449.586
Alkaloid from the bark of *Erythrophleum guineense* (Fabaceae). Noncryst.

Hydrochloride:
Cryst. (EtOH/Et_2O). Mp 139-141°. $[\alpha]_D$ -67 (c, 0.9 in EtOH).

3β-Acetoxy, N-*de-Me:* ***3-Acetoxynorerythrosuamine***
[58189-26-7]
$C_{26}H_{39}NO_8$ 493.596
Alkaloid from the bark of *Erythrophleum chlorostachys* (Fabaceae). Antineoplastic agent. Log P 2.86 (calc). λ_{max} 223 (ϵ 11000) (EtOH) (Derep).

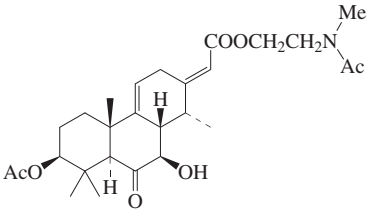
3β-Acetoxy, N-*de-Me; hydrochloride:* Mp 173-175°.

3β-Acetoxy, N-*de-Me;* N,O-*Di-Ac:* Mp 201°.

Thorell, A. *et al., Acta Chem. Scand.*, 1968, **22**, 2835 (*isol, ir, pmr, struct*)
Loder, J.W. *et al., Tet. Lett.*, 1975, 2497 (*deriv*)

Erythrosuavine E-219

[874460-56-7]

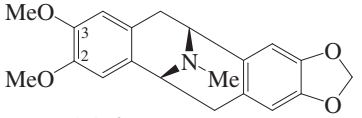


$C_{27}H_{39}NO_7$ 489.608
Alkaloid from the stem bark of *Erythrophleum suaveolens*. Cryst. (MeOH). Mp 173-174°.

Manfouo, R.N. *et al., Bull. Chem. Soc. Ethiop.*, 2005, **19**, 69-74 (*isol, pmr, cmr*)

Eschscholtzidine E-220

5,6,11,12-Tetrahydro-8,9-dimethoxy-14-methylbenzo[5,6]cycloocta[1,2-f]-1,3-benzodioxol-5,11-imine, 9CI. 2,3-Dimethoxy-8,9-methylenedioxypavinane. O-*Methylcaryachine*



(+)-*form*

$C_{20}H_{21}NO_4$ 339.39

(+)-*form*
Alkaloid from the bark of *Cryptocarya chinensis* (Lauraceae). Cryst. (H_2O)(as hydrochloride). Mp 178-180° (hydrochloride).

N-*Oxide:* ***Eschscholtzidine* N-*oxide***
$C_{20}H_{21}NO_5$ 355.39
Alkaloid from *Cryptocarya chinensis*. Needles (MeOH). Mp 193-194°. $[\alpha]_D$ +145.3 (c, 0.13 in MeOH). λ_{max} 225 (sh) (log ϵ 3.7); 290 (log ϵ 3.2) (MeOH).

O^3-*De-Me,* N-*oxide:* ***(+)-Isocaryachine* N-*oxide***
$C_{19}H_{19}NO_5$ 341.363
Alkaloid from *Cryptocarya chinensis*. Needles (Me_2CO). $[\alpha]_D$ +72.6 (c, 0.07 in MeOH). Mp >280°. λ_{max} 219 (log ϵ 3.7); 280 (log ϵ 3.2) (MeOH).

(-)-*form* [6451-67-8]
Alkaloid from *Eschscholtzia californica* and from the fruit and tops of *Thalictrum revolutum* (Papaveraceae, Ranunculaceae). Shows weak antibacterial activity. Amorph. $[\alpha]_D^{24}$ -194.2 (c, 1.56 in MeOH). λ_{max} 291 (ϵ 12000) (EtOH) (Berdy).

N-*Me:* ***Eschscholtzidine* N-*methosalt***
[74111-40-3]

[74111-41-4]
$C_{21}H_{24}NO_4^{\oplus}$ 354.425
Quaternary alkaloid from the fruit of *Thalictrum revolutum* (Ranunculaceae). Amorph. solid (as chloride). $[\alpha]_D^{20}$ -170 (c, 0.26 in MeOH) (chloride).

O^2-*De-Me: 2-Hydroxy-3-methoxy-8,9-methylenedioxypavinane.* ***Caryachine***
[37687-27-7]
$C_{19}H_{19}NO_4$ 325.363
Alkaloid from the leaves of *Cryptocarya chinensis* (Lauraceae). Cryst. (Me_2CO). Mp 174°. $[\alpha]_D^{21}$ -269.6 (c, 1.00 in EtOH).

O^2-*De-Me, hydrobromide:* Mp 295-296° dec.

O^2-*De-Me,* N-*oxide:* ***Caryachine* N-*oxide***
$C_{19}H_{19}NO_5$ 341.363
Alkaloid from *Cryptocarya chinensis.* Needles (Me_2CO). $[\alpha]_D$ -86.9 (c, 0.1 in MeOH). Mp >280°. λ_{max} 223 (sh) (log ϵ 3.7); 284 (log ϵ 3.2) (MeOH).

O^2-*De-Me,* N-*Me:* ***Caryachine* N-*methosalt***. N-*Methylcaryachinium*
[70494-78-9]
[70518-44-4]
$C_{20}H_{22}NO_4^{\oplus}$ 340.398
Quaternary alkaloid from the bark of *Cryptocarya chinensis* (Lauraceae). Cryst. (MeOH)(as iodide). Mp 174-175° (iodide). $[\alpha]_D^{24}$ -160 (c, 0.12 in MeOH).

O^3-*De-Me:* ***Isocaryachine***
[65634-33-5]
$C_{19}H_{19}NO_4$ 325.363
Alkaloid from *Cryptocarya chinensis.*

O^3-*De-Me,* N-*oxide:* ***Isocaryachine* N-*oxide***
$C_{19}H_{19}NO_5$ 341.363
Alkaloid from *Cryptocarya chinensis.* Needles (Me_2CO). $[\alpha]_D$ -245.1 (c, 0.11 in MeOH). Mp >280°. λ_{max} 223 (log ϵ 3.7); 293 (log ϵ 3.2) (MeOH).

O^3-*De-Me,* N-*oxide, stereoisomer:* ***Isocaryachine* N-*oxide B***
$C_{19}H_{19}NO_5$ 341.363
Alkaloid from *Cryptocarya chinensis.* Needles (Me_2CO). $[\alpha]_D$ -26.2 (c, 0.22 in MeOH). Mp >280°. λ_{max} 225 (log ϵ 3.6); 288 (log ϵ 3.3) (MeOH).

12-Hydroxy: ***12-Hydroxyeschscholtzidine***
$C_{20}H_{21}NO_5$ 355.39
Alkaloid from *Cryptocarya chinensis.* Needles (MeOH). Mp 201-202°. $[\alpha]_D$ -171.5 (c, 0.13 in MeOH). λ_{max} 225 (sh) (log ϵ 3.72); 288 (log ϵ 3.94) (MeOH).

(±)-*form* [52437-08-8]
Synthetic. Noncryst.

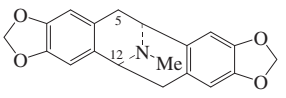
N-*Me:*
Cryst. (MeOH)(as iodide). Mp 305° (iodide).

O^2-*De-Me:* ***(±)-Caryachine***
[37686-77-4]
$C_{19}H_{19}NO_4$ 325.363
Alkaloid from the leaves of *Cryptocarya chinensis* (Lauraceae). Cryst. (EtOH). Mp 241-242°.

Manske, R.H.F. *et al., Can. J. Chem.*, 1966, **44**, 1259 (*uv, struct*)
Lu, S.-T. *et al., Yakugaku Zasshi*, 1966, **86**, 177; 296 (*Caryachine, Eschscholtzidine, isol, uv, pmr, struct*)
Tomita, M. *et al., Yakugaku Zasshi*, 1966, **86**, 414; *CA*, **65**, 5500e (*ms*)
Chan, R.P.K. *et al., Tetrahedron*, 1967, **23**, 4209 (*uv, ord, cd*)
Natarajan, S. *et al., Indian J. Chem.*, 1972, **10**, 451; 1974, **12**, 550 (*uv, pmr, ms, struct, synth*)
Premila, M.S. *et al., Indian J. Chem.*, 1973, **11**, 1084 (*synth, uv, pmr*)
Wu, J. *et al., J. Nat. Prod.*, 1977, **40**, 294 (*isol, pmr*)
Dyke, S.F. *et al., Tetrahedron*, 1978, **34**, 241 (*synth, uv, pmr, cd, ms*)
Chen, C.-H. *et al., J. Nat. Prod.*, 1979, **42**, 163 (*Caryachine N-methosalt*)
Wu, J. *et al., J. Nat. Prod.*, 1980, **43**, 270 (*isol, uv, cd, pmr, struct, deriv*)
Chang, W.T. *et al., Phytochemistry*, 1998, **48**, 119-124 (*Caryachine N-methosalt*)
Lin, F.W. *et al., Chem. Pharm. Bull.*, 2001, **49**, 1292-1294; 2002, **50**, 157-159 (*Caryachine oxides, Isocaryachine oxides*)
Wu, T.-S. *et al., J. Nat. Prod.*, 2001, **64**, 1404-1407 (*N-oxide, 12-hydroxy*)

Eschscholtzine E-221

5,6,12,13-Tetrahydro-15-methylcycloocta[1,2-f:5,6-f′]bis[1,3]benzodioxol-5,12-imine, 9CI. 2,3:8,9-Bis(methylenedioxy)pavinane. Californine. Crychine



(-)-*form*

$C_{19}H_{17}NO_4$ 323.348
Shows twofold rotational symmetry.

(-)-*form* [4040-75-9]
Alkaloid from *Eschscholtzia californica*, *Eschscholtzia douglasii*, *Eschscholtzia glauca* and *Cryptocarya chinensis* (Papaveraceae, Lauraceae). Cryst. (MeOH). Mp 128°. $[\alpha]_D^{15}$ -220.2 (c, 1.00 in EtOH) (202). $[\alpha]_D^{19}$ -240 (c, 0.50 in MeOH).

Hydrochloride:
Needles (MeOH/$CHCl_3$). Mp 244-246°.

Picrate: Mp 177°.

N-*Oxide:* ***Eschscholtzine* N-*oxide***
[106449-14-3]
$C_{19}H_{17}NO_5$ 339.347
Alkaloid from the petals of *Eschscholtzia californica* (Papaveraceae). Amorph. $[\alpha]_D^{22}$ -213.75 (c, 0.4 in $CHCl_3$).

N-*Me:* ***Californidine***. *Eschscholtzine* N-*methosalt*
[18830-99-4]
$C_{20}H_{20}NO_4^{\oplus}$ 338.382
Quaternary alkaloid from *Eschscholtzia californica*, *Eschscholtzia douglasii*, *Eschscholtzia glauca* and *Eschscholtzia oregana* (Papaveraceae).

N-*Me, iodide:* [17939-30-9]
Cryst. (MeOH). Mp 285-286°. $[\alpha]_D^{18}$ -212 (c, 0.5 in MeOH).

N-*Me, perchlorate:* [17939-31-0]
Cryst. (MeOH or H_2O). Mp 327-329°. $[\alpha]_D^{23}$ -219 (c, 0.10 in MeOH).

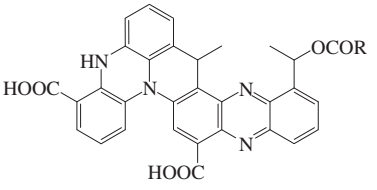
N-*De-Me:* **N-*Demethyleschscholtzine***. N-*Demethylcrychine*
$C_{18}H_{15}NO_4$ 309.321
Alkaloid from *Cryptocarya chinensis.* Yellow powder (Me_2CO). $[\alpha]_D$ -74.3 (c, 0.02 in MeOH). λ_{max} 221 (sh) (log ϵ 3.75); 294 (log ϵ 3.92) (MeOH).

12-Hydroxy: ***12-Hydroxyeschscholtzine***. *12-Hydroxycrychine*
Alkaloid from *Cryptocarya chinensis.* Needles (MeOH). Mp 173-174°. $[\alpha]_D$ -143 (c, 0.28 in MeOH). λ_{max} 230 (log ϵ 3.77); 294 (log ϵ 3.91) (MeOH).

5-Oxo: ***Eschscholtzinone***
[119060-95-6]
$C_{19}H_{15}NO_5$ 337.331
Alkaloid from *Roemeria refracta* (Papaveraceae). Amorph. $[\alpha]_D$ -122 (c, 0.18 in MeOH). The first ketonoic pavinoid.

(±)-*form* [65634-34-6]
Synthetic. Mp 223-225° (as picrolonate).
Gertig, H. *et al., Acta Pol. Pharm.*, 1965, **22**, 443; *CA*, **64**, 11547c (*isol, uv, ir, deriv*)
Manske, R.H.F. *et al., Can. J. Chem.*, 1965, **43**, 2180; 2183 (*isol, uv, pmr, ms, struct*)
Lu, S.-T. *et al., Yakugaku Zasshi*, 1966, **86**, 177; *CA*, **64**, 17653g (*isol, uv, ir, pmr*)
Tomita, M. *et al., Yakugaku Zasshi*, 1966, **86**, 414; *CA*, **65**, 5500e (*ms*)
Slavík, J. *et al., Coll. Czech. Chem. Comm.*, 1967, **32**, 4420; 1975, **40**, 1095 (*isol, uv, struct, deriv*)
Barker, A.C. *et al., J.C.S.(C)*, 1967, 1317 (*abs config, synth*)
Chan, R.P.K. *et al., Tetrahedron*, 1967, **23**, 4209 (*uv, ord, cd*)
Urzúa, A. *et al., J. Nat. Prod.*, 1986, **49**, 922 (*isol, uv, pmr, ms, cd, struct, oxide*)
Gözler, B. *et al., J. Nat. Prod.*, 1988, **51**, 760 (*Eschscholtzinone*)
Chang, W.-T. *et al., Phytochemistry*, 1998, **48**, 119-124 (*Eschscholtzinone*)
Marek, R. *et al., Magn. Reson. Chem.*, 1999, **37**, 195-202 (*N-15 nmr*)
Wu, T.-S. *et al., J. Nat. Prod.*, 2001, **64**, 1404-1407 (*12-Hydroxyeschscholtzine, N-Demethyleschscholtzine*)

Esmeraldine A E-222



R = mixt. of $C_{13}H_{27}$, –$(CH_2)_{10}CH(CH_3)CH_2CH_3$, –$(CH_2)_nCH(CH_3)_2$ (n = 12,13,14), $C_{15}H_{31}$, $C_{16}H_{33}$, $C_{17}H_{33}$, $C_{17}H_{31}$ plus other unidentified components. Mixt. of diastereoisomers. Isol. from *Streptomyces antibioticus* strain Tü 2706. Dark-green amorph. powder. Mp 121-155° dec. λ_{max} 201 (ϵ 43700); 257 (ϵ 51300); 345 (ϵ 11300); 400 (sh); 642 (ϵ 4730) (EtOH/HCl). λ_{max} 257 (ϵ 59000); 360 (ϵ 14200); 400 (sh); 591 (ϵ 7280) (EtOH/NaOH). λ_{max} 200 (ϵ 46200); 256 (ϵ 57500); 355 (ϵ 12700); 400 (sh); 608 (ϵ 3640) (EtOH).

Di-Me ester:
Blue-green powder ($CHCl_3$/hexane). Mp 65-73°.

Keller-Schierlein, W. *et al., Helv. Chim. Acta*, 1988, **71**, 2058 (*isol, uv, ir, pmr, struct*)
Van't Land, C.W. *et al., J.O.C.*, 1993, **58**, 6576 (*biosynth*)

Esmeraldine B E-223

*4-[1-[(2-Hydroxy-6-methylbenzoyl)oxy]ethyl]-6-methyl-6*H,*10*H-*pyrido[3,2-a:5,6,1-d′,e′]diphenazine-11,17-dicarboxylic acid, 9CI*
[119958-58-6]
As Esmeraldine A, E-222 with R = 2-Hydroxy-6-methylphenyl

$C_{38}H_{28}N_4O_7$ 652.662

Phenazine antibiotic. Isol. from *Streptomyces antibioticus* strain Tü 2706. Dark-green amorph. powder. Sol. MeOH, $CHCl_3$. Mp 300°. Mixt. of diastereoisomers. λ_{max} 206 (ϵ 61300); 258 (ϵ 59100); 293 (ϵ 9410); 342 (ϵ 13600); 400 (sh) (ϵ); 658 (ϵ 7120) (EtOH/HCl). λ_{max} 216 (sh) (ϵ); 258 (ϵ 59100); 306 (ϵ 13800); 350 (ϵ 17100); 400 (sh) (ϵ); 588 (ϵ 9400) (EtOH/NaOH). λ_{max} 206 (ϵ 61300); 256 (ϵ 65400); 301 (ϵ 9320); 352 (ϵ 14240); 400 (sh) (ϵ 10000); 689 (ϵ 4320) (EtOH).

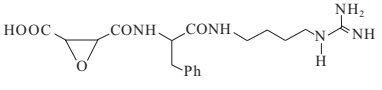
Di-Me ester: [119936-22-0]
Fine blue-green cryst. (Me_2CO/hexane). Mp 176-180°.

N,O-*Di-Ac:*
Red powder. Mp 300°.

Keller-Schierlein, W. *et al., Helv. Chim. Acta*, 1988, **71**, 2058 (*isol, uv, ir, pmr, cmr, ms, struct*)
Van't Land, C.W. *et al., J.O.C.*, 1993, **58**, 6576 (*biosynth*)

Estatin A E-224

[106455-06-5]



$C_{18}H_{25}N_5O_5$ 391.426

Peptide-type antibiotic. Isol. from *Myceliophthora thermophila*. Specifically inhibits thiol proteases and IgE antibodies. Needles + $1H_2O$. Sol. H_2O, DMSO, Py, AcOH; poorly sol. $CHCl_3$, EtOAc, C_6H_6, hexane. Mp 223-225° dec. $[\alpha]_D^{24}$ +41.8 (c, 0.6 in H_2O). λ_{max} 247 (ϵ 160); 252 (ϵ 180); 259 (ϵ 199); 264 (ϵ 160); 269 (ϵ 86) (H_2O) (Derep).

▶ RR0392000

p-*Hydroxybenzyl analogue:* ***Estatin B***
[106396-24-1]
$C_{18}H_{25}N_5O_6$ 407.425
From *Myceliophthora thermophila*. Similar properties to Estatin A. Needles + $1H_2O$. Sol. H_2O, Py, AcOH, DMSO; poorly sol. $CHCl_3$, EtOAc, hexane, C_6H_6. Mp 217-218° dec. $[\alpha]_D^{24}$ +46.8 (c, 0.2 in 0.1*M* HCl). λ_{max} 222 (ϵ 11200); 276 (ϵ 1560); 283 (ϵ 1290) (H_2O) (Derep).

▶ RR0391000

Eur. Pat., 1986, 196 189; *CA*, **106**, 67676 (*isol, synth*)
Yaginuma, S. *et al., J. Antibiot.*, 1989, **42**, 1362 (*isol, struct, props*)

1,2-Ethanediamine, 9CI E-225

Ethylenediamine, 8CI. 1,2-Diaminoethane
[107-15-3]
$H_2NCH_2CH_2NH_2$
$C_2H_8N_2$ 60.099
Solvent, emulsifier, rubber latex stabiliser, antifreeze component. Base with synthetic applications. Used in manuf. of chelating agents and fungicides. Li deriv. is alkene isomerisation and dehydrogenating agent. Pharmaceutical aid. Chelating agent; reagent for Cu(*I*). Comonomer in polyamides and polyurethanes. Clear, thick, strongly alkaline liq. with ammoniacal odour. Sol. EtOH, H_2O (with hydration); insol. C_6H_6; sl. sol. Et_2O. d_{20}^{20} 0.9. Mp 11°. Bp 118°. n_D^{20} 1.4565. pK_a 6.85. Steam-volatile. Forms compds. with metallic salts. Vp 10.7 mmHg (20°). Readily absorbs CO_2 from the air.

▶ Flammable, fl. p. 34°, autoignition temp. 385°. Reacts violently with many materials. Eye, skin and respiratory tract irritant. Conc. solns. corrosive. An allergen and sensitiser. LD_{50} (rat, orl) 500 mg/kg. Exp. reprod. effects. ACGIH TLV: long-term 10 ppm (Sk). KH8575000

Monohydrate: [6780-13-8]
Oil. Mp 10°. Bp 118°.

Hydrochloride (1:2): [333-18-6]
Monoclinic prisms. Insol. EtOH; sol. H_2O. Subl. without melting.

▶ LD_{50} (rat, orl) 500 mg/kg. KV3850000

Sulfate (1:1): [22029-36-3]
Cryst. (EtOH aq.).

Dipicrate: [1593-00-6]
Mp 233-235° dec.

N-*Ac:* N-*(2-Aminoethyl)acetamide, 9CI. 2-Acetamidoethylamine*
[1001-53-2]
$C_4H_{10}N_2O$ 102.136
Needles. V. sol. H_2O, EtOH; spar. sol. Et_2O. Mp 172°. Bp_{13} 148° Bp_5 125-130°.

N,N′-*Di-Ac:* N,N′-*1,2-Ethanediylbisacetamide, 9CI*
[871-78-3]
$C_6H_{12}N_2O_2$ 144.173
Mp 51°. Bp_3 128°.

N,N,N′,N′-*Tetra-Ac: Tetraacetylethylenediamine.* N,N′-*1,2-Ethanediylbis[N-acetylacetamide], 9CI.* N,N′-*Ethylenebis(diacetamide), 8CI*
[10543-57-4]
$C_{10}H_{16}N_2O_4$ 228.247
Comly. important bleach activator. Mp 149-150°.

N-*Dodecanoyl:* N-*(2-Aminoethyl)dodecanamide, 9CI*
[10138-02-0]
$C_{14}H_{30}N_2O$ 242.404
Cryst. (Et_2O). Mp 51-52°.

N,N′-*Didodecanoyl:* N,N′-*1,2-Ethanediylbisdodecanamide, 9CI*
[7003-56-7]
$C_{26}H_{52}N_2O_2$ 424.709
Cryst. (EtOH). Mp 162-164° (160°).

N,N′-*Didodecanoyl, picrate:*
Cryst. Mp 61.5°.

N,N′-*Dioctadecanoyl:* N,N′-*Dioctadecanoylethanediamine.* N,N′-*1,2-Ethanediylbis(octadecanamide), 9CI.* N,N′-*Ethylenebis(octadecanamide).* N,N′-*Distearoylethylenediamine. Acrawax C. Acrawax CT. Chemetron 100. Wax C*
[110-30-5]
$C_{38}H_{76}N_2O_2$ 593.031
Antifoaming agent used in polymer industry. Cryst. (EtOH aq.). Mp 149-149.5° (140-141°).

N,N′-*Di-9Z-octadecenoyl:* N,N′-*Dioleoylethylenediamine*
[110-31-6]
$C_{38}H_{72}N_2O_2$ 588.999
Cryst. (MeOH). Mp 114-115°.

N-tert-*Butyloxycarbonyl:* tert-*Butyl* N-*(2-aminoethyl)carbamate.* N-*Mono(*-tert-*butyloxycarbonyl)ethylenediamine*
[57260-73-8]
$C_7H_{16}N_2O_2$ 160.216
Oil. $Bp_{0.3}$ 79-80°. n_D^{20} 1.4505.

N-*Benzoyl:* N-*(2-Aminoethyl)benzamide*
[1009-17-2]
$C_9H_{12}N_2O$ 164.207
Bp_2 183-185°.

N,N′-*Dibenzoyl:* N,N′-*1,2-Ethanediylbisbenzamide*
[644-33-7]
$C_{16}H_{16}N_2O_2$ 268.315
Cryst. (EtOH). Mp 246-247°.

N,N′-*Bis(4-methylbenzenesulfonyl):*
[4403-78-5]
$C_{16}H_{20}N_2O_4S_2$ 368.477
Cryst. (EtOH). Mp 163-164°.

▶ XT5748000

N-*(4-Methoxy-*E*-cinnamoyl):* **N-*(4-Methoxycinnamoyl)ethylenediamine***
[208465-40-1]
$C_{12}H_{16}N_2O_2$ 220.271
Alkaloid from *Nicotiana glauca*.

N-*Me:* N-*Methyl-1,2-ethanediamine. 2-(Methylamino)ethylamine*
[109-81-9]
$C_3H_{10}N_2$ 74.125
Bp 115-116°.

▶ KV5250500

N-*Me; hydrochloride:* [64670-85-5]
Cryst. + H_2O (EtOH). Mp 130-132° dec.

N,N,N′-*Tri-Me:* [142-25-6]
$C_5H_{14}N_2$ 102.179
Bp 116-118°. n_D^{20} 1.4190.

N-*Et:* N-*Ethyl-1,2-ethanediamine. 2-Ethylaminoethylamine*
[110-72-5]
$C_4H_{12}N_2$ 88.152
Refractive oil. V. sol. H_2O. Bp 130°.

N-*Et; hydrochloride (1:2):* [75776-31-7]
Mp 173°.

N-*Et,* N′-*Me:* N-*Ethyl*-N′-*methyl-1,2-ethanediamine, 9CI.* N-*Ethyl*-N′-*methylethylenediamine, 9CI*
[111-37-5]
$C_5H_{14}N_2$ 102.179

Liq. which dec. in air. Misc. H_2O, Et_2O. Bp 130-133° (135°).

N-*Et,* N′-*Me; hydrochloride (1:2):* Cryst. (EtOH). Mp 217-218°.

N-*Et,* N′-*Me, dipicrate:* [22509-07-5] Cryst. (as monohydrate). Mp 175-177°.

N,N-*Di-Et:* N,N-*Diethyl-1,2-ethanediamine. 2-Diethylaminoethylamine* [100-36-7]
$C_6H_{16}N_2$ 116.206
Bp 145°. pK_{a1} 9.88; pK_{a2} 6.82 (H_2O).
▶ Skin and severe eye irritant. LD_{50} (rat, orl) 2830 mg/kg. KV3500000

N,N′-*Di-Et:* N,N′-*Diethyl-1,2-ethanediamine. 1,2-Bis(ethylamino)ethane* [111-74-0]
$C_6H_{16}N_2$ 116.206
d 1.43. Bp 151-152°. n_D^{20} 1.4326.

N,N′-*Di-Et; hydrochloride (1:2):* [52198-62-6]
Leaflets (EtOH). Mp 259-260° dec.

N,N-*Di-Et,* N′-*Me:* [104-79-0]
$C_7H_{18}N_2$ 130.233
Bp 157-160°.

N,N-*Di-Et,* N′,N′-*di-Me:* [123-10-4]
$C_8H_{20}N_2$ 144.259
Mp 207-208° (as hydrobromide). Bp 156-157°.

N,N′-*Di-Et,* N,N′-*di-Me:* [106-66-1]
$C_8H_{20}N_2$ 144.259
Comly. available. No phys. props. reported.

N,N,N′-*Tri-Et:* [105-04-4]
$C_8H_{20}N_2$ 144.259
Bp_{13} 54-55°.

N,N,N′,N′-*Tetra-Et:* N,N,N′,N′-*Tetraethylethanediamine, 9CI* [150-77-6]
$C_{10}H_{24}N_2$ 172.313
Bp 189-192° Bp_7 72°.

N,N,N′,N′-*Tetra-Et; hydrochloride (1:2):* [92422-58-7]
Mp 186-187°.

N,N,N′,N′-*Tetra-Et, dipicrate:* Mp 242-243°.

N-*Propyl:* [111-39-7]
$C_5H_{14}N_2$ 102.179
Bp 147-150°.

N-*Isopropyl:* [19522-67-9]
$C_5H_{14}N_2$ 102.179
Liq. d 0.82. Bp 137-138°. n_D^{20} 1.4369.

N,N-*Dipropyl:* [14165-22-1]
$C_8H_{20}N_2$ 144.259
d_{15}^{15} 0.83. Mp 192-193° (as picrate). Bp_{41} 96-98°. n_D^{23} 1.4384.

N,N-*Diisopropyl:* N,N-*Diisopropylethylenediamine* [121-05-1]
$C_8H_{20}N_2$ 144.259
Mp 207-209° (as dihydrobromide). Bp 178° $Bp_{3.5}$ 38°.

N,N′-*Diisopropyl:* [4013-94-9]
$C_8H_{20}N_2$ 144.259
Bp 169-171°. n_D^{20} 1.4289.

N,N,N′-*Triisopropyl:* [97-13-2]
$C_{11}H_{26}N_2$ 186.34
Mp 119-120° (as hydrochloride). Bp 201-203°.

N,N-*Bis(2-methylpropyl):* [14156-98-0]
$C_{10}H_{24}N_2$ 172.313
Bp 210°.

N,N-*Dibutyl:* [3529-09-7]
$C_{10}H_{24}N_2$ 172.313
Bp_{24} 114-117°. n_D^{20} 1.4430.

N,N′-*Dibutyl:* [4013-95-0]
$C_{10}H_{24}N_2$ 172.313
Bp_{40} 167°.

N,N′-*Di*-tert-*butyl:* [4062-60-6]
$C_{10}H_{24}N_2$ 172.313
Bp 193°.

N-*Benzyl:* [4152-09-4]
$C_9H_{14}N_2$ 150.223
Liq. Bp_{20} 162-165° $Bp_{0.1}$ 100°. n_D^{20} 1.5417. Forms complexes with metal ions with other ligands; ions include $Co^{2\oplus}$, $Cu^{2\oplus}$, $Ni^{2\oplus}$.

N-*Benzyl; hydrochloride (1:2):* [3303-16-0]
[65358-90-9]
Cryst. (EtOH). Mp 257-259°.

N-*Benzyl, dipicrate:* [86013-60-7]
Yellow cryst. (EtOH). Mp 222° dec.

N-*Benzyl,* N,N′-*di-Me:* [102-11-4]
$C_{11}H_{18}N_2$ 178.277
Bp_9 118-120°.

N,N′-*Dibenzyl,* N,N′-*di-Me:* [102-18-1]
$C_{18}H_{24}N_2$ 268.401
Oil. d_4^{19} 0.97. Bp_{10} 198°.

N-*Ph:* [1664-40-0]
$C_8H_{12}N_2$ 136.196
Oil. Misc. H_2O. Bp 262-264°.

N-*Ph; hydrochloride:* [126214-34-4]
Mp 199-200° (sinters at 190°).

N,N′-*Bis(2-methylphenyl):* [94-92-8]
$C_{16}H_{20}N_2$ 240.347
Mp 78°.

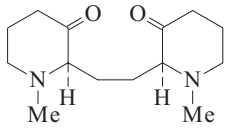
N-*Nitro:* [58130-90-8]
$C_2H_7N_3O_2$ 105.096
Isol. from *Agaricus silvaticus* (red staining mushroom). λ_{max} 228 (ϵ 7940) (no solvent reported) (pH6).

[20829-66-7 , 25723-52-8]

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 289C; 289D; 303A; 303B; 304A; 304B; 304D; 304C; 305B; 1271D (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 463B; 463C; 488B; 488C; 489A; 490A; 490B; 491A; 491C; 492A; 492C; 1234B; **2**, 573C (*nmr*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 374D; 387D; 388A; 388B; 389B; 389C; 390A-390C; 390D; 391B; 1165C; 1167C (*ir*)
Mills, W.S. *et al., J.C.S.*, 1900, **77**, 1021-1024 (*N,N′-ditolyl*)
Clarke, H.T. *et al., J.C.S.*, 1911, **99**, 1927-1937 (*dibenzyl dimethyl*)
Johnson, T.B. *et al., J.A.C.S.*, 1916, **38**, 2135-2145 (*N-Me, N,N′-di-Me, synth*)
v. Braun, J. *et al., Ber.*, 1918, **51**, 737-741 (*N,N′-di-Me, synth*)
Meyer, K.H. *et al., Ber., B*, 1921, **54**, 2274-2282 (*N,N-di-Et N′,N′-di-Me*)
Ing, H.R. *et al., J.C.S.*, 1926, 2348-2351 (*synth*)
Bailar, J.C. *et al., J.A.C.S.*, 1934, **56**, 955 (*synth*)
Chitwood, H.C. *et al., J.A.C.S.*, 1935, **57**, 2424-2426 (*N,N′-didodecanoyl*)
Bloom, M.S. *et al., J.A.C.S.*, 1945, **67**, 539-540 (*N,N′-di-Et, N,N′-dibutyl, N-Ph*)
Pearson, D.E. *et al., J.A.C.S.*, 1946, **68**, 1225-1229 (*N-isopropyl*)
Boon, W.R. *et al., J.C.S.*, 1947, 307-318 (*synth*)
Takase, S. *et al., Nippon Kagaku Kaishi*, 1948, **69**, 154-157; *CA*, **46**, 3951e (*N,N′-dioctadecanoyl*)
Hall, R.H. *et al., J.A.C.S.*, 1951, **73**, 2213-2218 (*N-nitro*)
Abe, K. *et al., Yakugaku Zasshi*, 1955, **75**, 153-159 (*N,N′-di-Me, N,N′-di-Et, synth*)
McKay, A.F. *et al., Can. J. Chem.*, 1956, **34**, 1567-1573 (*N,N-dibutyl, N,N-dipropyl*)
McKay, A.F. *et al., J.A.C.S.*, 1956, **78**, 486-488 (*N,N-diisopropyl, N,N-dibutyl, N,N-dipropyl*)
Agre, C.L. *et al., J.O.C.*, 1956, **21**, 561-564 (*N,N′-didodecanoyl*)
Fukuto, T.R. *et al., J.A.C.S.*, 1957, **79**, 6083-6085 (*tetra-Et*)
Epstein, P.F. *et al., J.O.C.*, 1959, **24**, 68-72 (*N,N′-dibutyls*)
Frost, A.E. *et al., J.O.C.*, 1959, **24**, 1581-1582 (*N-benzyl*)
U.S. Pat., 1960, 2 941 005; *CA*, **54**, 17890f (*N,N′-di-Et N,N′-di-Me*)
Jucker, E. *et al., Helv. Chim. Acta*, 1962, **45**, 2383-2402 (*N-benzyl N,N′-di-Me*)
Shepherd, R.G. *et al., J. Med. Chem.*, 1962, **5**, 823-835 (*N,N,N′-triisopropyl*)
Fieser and Fieser's Reagents for Organic Synthesis, Wiley, 1969, **2**, 239; 1974, **4**, 231 (*use*)
Pryde, E.H. *et al., J. Am. Oil Chem. Soc.*, 1969, **46**, 213-218 (*N,N′-di-9-octadecenoyl*)
Mariella, R.P. *et al., J.O.C.*, 1971, **36**, 735-737 (*synth, tetra-Ac*)
Jamet-Deleroix, S. *et al., Acta Cryst. B*, 1973, **29**, 977-980 (*cryst struct*)
Austin, G.R. *et al., Chem. Eng. (N.Y.)*, 29 April, 1974, **81**, 143-150 (*rev, manuf*)
Chilton, W.S. *et al., Phytochemistry*, 1975, **14**, 2291-2292 (*N-nitro, isol, ir, uv, synth*)
Butler, R.N. *et al., J.C.S. Perkin 1*, 1976, 386-389 (*Acrawax C*)
Ivin, K.J. *et al., Makromol. Chem.*, 1978, **179**, 591-599 (*synth, pmr*)
Nilsson, L. *et al., Acta Chem. Scand., Ser. B*, 1983, **37**, 929-933 (*synth*)
Newkome, G.R. *et al., J.O.C.*, 1983, **48**, 4848-4851 (*pmr, ms*)
Bjerrum, M.J. *et al., Inorg. Chem.*, 1986, **25**, 816-821 (*cmr*)
Houssin, R. *et al., Synthesis*, 1988, 259-261 (*N-tert-butyloxycarbonyl, synth, ir, pmr, ms*)
Bauermeister, S. *et al., Compr. Inorg. Chem.*, 1991, **69**, 811-816 (*N-benzyl*)
Encyclopedia of Food and Color Additives, (ed. Burdock, G.A.), CRC Press, 1997, 970
Morel, A.F. *et al., Planta Med.*, 1998, **64**, 284-285 (*4-methoxycinnamoyl*)
Martindale, The Extra Pharmacopoeia, 32nd edn., Pharmaceutical Press, 1999, 1577
Thalladi, V.R. *et al., Angew. Chem., Int. Ed.*, 2000, **39**, 918-922 (*cryst struct*)
Hanaoka, K. *et al., J.C.S. Perkin 2*, 2001, 1840-1843 (*N-tert-butyloxycarbonyl, synth, pmr, cmr*)
Ethel Browning's Toxicity and Metabolism of Industrial Solvents, 2nd edn., (ed. Snyder, R.), Elsevier, Volume 2, 1990, 102 (*tox, rev*)
Bretherick, L. *et al., Handbook of Reactive Chemical Hazards, 4th edn., Butterworths*, 1990, 0899
Luxon, S.G. *et al., Hazards in the Chemical Laboratory, 5th edn., Royal Society of Chemistry*, 1992, 376
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, DJI400; EIW000; DPK400; EEA500

2,2′-(1,2-Ethanediyl)bis[1-methyl-3-piperidinone], 9CI E-226

1,2-Bis(3-oxo-2-piperidyl)ethane



$C_{14}H_{24}N_2O_2$ 252.356

(RS,SR)-form

Hyalbidone

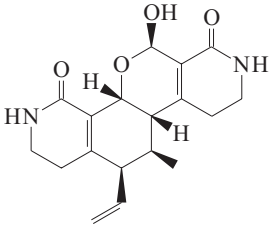
[138596-73-3]

Alkaloid from the hairy roots of *Hyoscyamus albus* (Solanaceae) transformed with *Agrobacterium rhizogenes*. Yellow oil. $[\alpha]_D^{28}$ -0.13 (c, 0.196 in $CHCl_3$). *meso*-. Small opt. rotn. must be due to impurities.

Sauerwein, M. *et al., Phytochemistry*, 1991, **30**, 2977 (*isol, uv, pmr, cmr, ms, struct*)

6-Ethenyl-3,4,4*b*,5,6,7,8,9,10*b*,12-decahydro-12-hydroxy-5-methyl-1*H*-pyrido[4′,3′:4,5]pyrano[3,2-*h*]isoquinoline-1,10(2*H*)-dione, 9CI E-227

[118984-42-2]

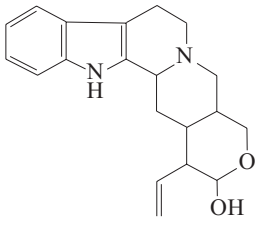


$C_{18}H_{22}N_2O_4$ 330.383

Alkaloid from the whole plant of *Schultesia guianensis* (Gentianaceae). Mp 192-193°.

Nóbrega, E.M. *et al., J. Nat. Prod.*, 1988, **51**, 962 (*isol, ir, pmr, ms, cryst struct*)

16-Ethenyloxayohimban-17-ol, 9CI E-228



$C_{20}H_{24}N_2O_2$ 324.422

Undefined stereochem.

O-*β*-D-*Glucopyranoside:* [62835-74-9]
$C_{26}H_{34}N_2O_7$ 486.564
Alkaloid from the leaves of *Strychnos decussata* (Loganiaceae). Mp 201°. $[\alpha]_D^{25}$ -134 (c, 0.6 in MeOH).

Petitjean, A. *et al., Phytochemistry*, 1977, **16**, 154-155 (*isol, uv, pmr, ms, struct*)

Ethesdanine E-229

U 20207. Antibiotic U 20207

$C_9H_{16}N_2O_5$ 232.236

Pyrrolidine antibiotic. Struct. unknown. Prod. by *Streptomyces caelestis* with S-Ethylcysteine. Mainly active against gram-positive bacteria. Sol. H_2O, butanol; poorly sol. $CHCl_3$, hexane.

▶ LD_{50} (mus, ipr) 60 mg/kg.

Hydrochloride: Mp 155-158°.

Meyer, C.E. *et al., Antimicrob. Agents Chemother.*, 1965, 850 (*isol, ir*)

***N*-Ethoxycarbonylprolinamide** E-230

Ethyl 2-(aminocarbonyl)-1-pyrrolidinecarboxylate, 9CI



$C_8H_{14}N_2O_3$ 186.21

(S)-form

L-form

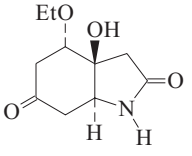
[62787-66-0]

Alkaloid from the leaves of *Arnica montana* (Asteraceae). Cryst. (Et_2O). Mp 103-103.5°. $[\alpha]_D^{20}$ -55.8 (c, 0.12 in MeOH).

Holub, M. *et al., Coll. Czech. Chem. Comm.*, 1971, **36**, 2189; 1977, **42**, 151 (*isol, struct, ord, cd, ms, pmr, synth*)

4-Ethoxyhexahydro-3*a*-hydroxy-1*H*-indole-2,6-dione, 9CI E-231

[116964-15-9]



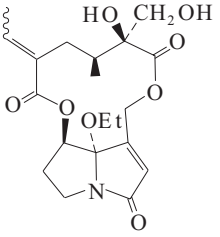
$C_{10}H_{15}NO_4$ 213.233

Isol. from *Senecio anonymus* (Asteraceae). Mp 170°. Possibly an artifact.

Zalkow, L.H. *et al., J. Nat. Prod.*, 1988, **51**, 690 (*isol, pmr, ms, cryst struct*)

8-Ethoxy-3-oxo-1,2-dehydroretrorsine E-232

[101029-56-5]



$C_{20}H_{27}NO_8$ 409.435

Alkaloid from the aerial parts of *Senecio grisebachii* (Asteraceae).

Hirschmann, S. *et al., Rev. Latinoam. Quim.*, 1985, **16**, 109; *CA*, **104**, 126516g

Ethylamine, 8CI E-233

Ethanamine, 9CI

[75-04-7]

$H_3CCH_2NH_2$

C_2H_7N 45.084

Manuf. by catalytic amination of ethanol with ammonia. Prod. by marine algae, *Clostridium* spp., *Candida albicans, Brevibacterium linens* and *Streptococcus lactis*. Used in manuf. of resins, rubber, herbicides, etc. Flammable gas with ammoniacal odour. Misc. EtOH, Et_2O, H_2O, salted out by NaOH. Fp -80. Bp 16.6°. pK_a 10.7.

▶ Extremely flammable, fl. p. <-18°, autoignition temp. 580°. Skin, respiratory tract and severe eye irritant. High vapour conc. may affect CNS. LD_{50} (rat, orl) 400 mg/kg. LD_{50} (rbt, skn) 390 mg/kg. OES: long-term 10 ppm. KH2100000

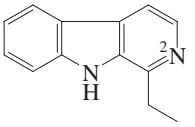
[16999-99-8]

Lerch, B. *et al., Z. Naturforsch., B*, 1966, **21**, 216 (*occur*)
Steiner, M. *et al., Planta*, 1968, **79**, 113 (*isol*)
Neurath, G.B. *et al., Food Cosmet. Toxicol.*, 1979, **15**, 275 (*isol*)

1-Ethyl-β-carboline E-234

*1-Ethyl-9*H*-pyrido[3,4-b]indole, 9CI*

[20127-61-1]



$C_{13}H_{12}N_2$ 196.251

Alkaloid from the roots of *Hannoa klaineana* (Simaroubaceae) and the bryozoan *Cribricellina cribraria*. Also from *Costaticella hastata*. Whitish-yellow needles (MeOH/$CHCl_3$). Mp 202-203° (synthetic) (194-195°).

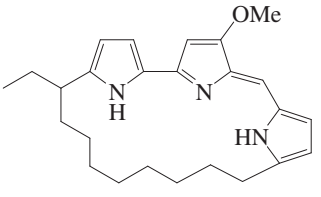
2-N-*Oxide:* ***1-Ethyl-β-carboline-2*N*-oxide***
[90686-26-3]
$C_{13}H_{12}N_2O$ 212.251
Alkaloid from the roots of *Hannoa klaineana* (Simaroubaceae). Whitish-yellow needles (MeOH/$CHCl_3$).

Lumonadio, L. *et al., Phytochemistry*, 1984, **23**, 453-455 (*isol, uv, ir, pmr, ms, struct*)
Blackman, A.J. *et al., J. Nat. Prod.*, 1987, **50**, 494-496 (*isol, Costaticella*)
Rocca, P. *et al., Tetrahedron*, 1993, **49**, 3325-3342 (*synth, cmr*)
Ivanov, I. *et al., Heterocycles*, 2005, **65**, 2483-2492 (*synth, pmr*)

Ethylcyclononylprodigiosin E-235

Antibiotic 610FF

[52589-17-0]



$C_{25}H_{33}N_3O$ 391.555

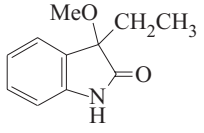
Pyrrole antibiotic. Prod. by *Actinomadura pelletieri*. Active against gram-positive bacteria. Yellow solid. Red in salt form. λ_{max} 550 ($CHCl_3$) (Berdy). λ_{max} 541 (EtOH-HCl) (Berdy).

Gerber, N.N. *et al., J. Het. Chem.*, 1973, **10**, 925; *Can. J. Microbiol.*, 1976, **22**, 658 (*isol, struct*)

3-Ethyl-1,3-dihydro-3-methoxy-2*H*-indol-2-one, 9CI E-236

3-Ethyl-3-methoxyoxindole

[66424-33-7]



$C_{11}H_{13}NO_2$ 191.229

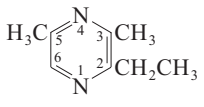
Isol. from *Streptomyces antibioticus*. Active against gram-positive bacteria. Mp 179°.

Westley, J.W. *et al., J. Antibiot.*, 1979, **32**, 100 (*isol*)

2-Ethyl-3,5-dimethylpyrazine E-237

FEMA 3150

[13925-07-0]



$C_8H_{12}N_2$ 136.196

Isol. from an arctic marine bacterium. Isol. from coffee aroma. Also present in raw asparagus, wheat bread, other breads, smoked fatty fish, roast chicken, roast beef, lamb and mutton liver, black tea, hydrolysed soy protein and other foods. Organoleptic agent. Flavouring agent. Bp_{19} 80-81° Bp_8 64-66°. n_D^{22} 1.4975.

► UQ3155000

Klein, B. *et al., J.A.C.S.*, 1951, **73**, 2949 (*synth*)
Goldman, I.M. *et al., Helv. Chim. Acta*, 1967, **50**, 694
Encyclopedia of Food and Color Additives, (ed. Burdock, G.A.), CRC Press, 1997, 968-969 (*use, occur*)
Dickschat, J.S. *et al., Chem. Biodiversity*, 2005, **2**, 318-353 (*isol*)

3-Ethyl-2,5-dimethylpyrazine E-238

[13360-65-1]

$C_8H_{12}N_2$ 136.196

Pheromone of various ant spp. Isol. from various marine bacteria and from coffee. Organoleptic agent with nutty roasted odour. Bp 180.5° Bp_{11} 72-73°. n_D^{24} 1.4945.

Goldman, I.M. *et al., Helv. Chim. Acta*, 1967, **50**, 694
Gelas, J. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1968, **266**, 625 (*synth, uv, ir, pmr*)
Ohta, A. *et al., Heterocycles*, 1987, **26**, 2449 (*synth*)
Buechi, G. *et al., J.O.C.*, 1991, **56**, 2605 (*synth*)
Dickschat, J.S. *et al., Chem. Biodiversity*, 2005, **2**, 318-353 (*isol*)
Dickschat, J.S. *et al., Eur. J. Org. Chem.*, 2005, 4141-4153 (*isol*)

5-Ethyl-2,3-dimethylpyrazine E-239

[15707-34-3]

$C_8H_{12}N_2$ 136.196

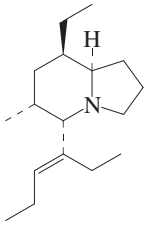
Constit. of Galbanum oil. Urinary signalling pheromone for tree shrew *Tupaia belangeri*. Liq. Bp_{14} 72°. n_D^{24} 1.4982.

Gelas, J. *et al., C. R. Hebd. Seances Acad. Sci.*, 1968, **266**, 625 (*synth*)
Rizzi, G.P. *et al., J.O.C.*, 1968, **33**, 1333 (*synth*)
Netherlands Pat., 1969, 68 121 899; *CA*, **71**, 61421 (*synth*)
Burrell, J.W.K. *et al., Chem. Ind. (London)*, 1970, 1409 (*isol*)
von Stralendorff, F. *et al., J. Chem. Ecol.*, 1987, **13**, 655

8-Ethyl-5-(1-ethyl-1-butenyl)octahydro-6-methylindolizine E-240

8-Ethyl-5-(1-ethyl-1-butenyl)-6-methylindolizidine. ***Indolizidine 249H***. Dendrobates *Alkaloid 249H*

[220624-30-6]

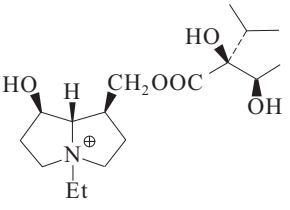


$C_{17}H_{31}N$ 249.439

Alkaloid from the skin extract of a Panamanian frog *Dendrobates pumilio*.

Tokuyama, T. *et al., Heterocycles*, 1998, **49**, 427-436

***N*-Ethylhastanecine trachelanthate** E-241

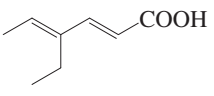


$C_{17}H_{32}NO_5^{\oplus}$ 330.444

Quaternary alkaloid from *Lindelofia macrostyla* (Boraginaceae). Mp 149-151° (as chloride). $[\alpha]_D$ +20.25 (MeOH). Alkaloid not named in the lit.

Tsyrul'nikova, L.G. *et al., Zh. Obshch. Khim.*, 1962, **32**, 2705-2709; *J. Gen. Chem. USSR (Engl. Transl.)*, 1962, **32**, 2663-2666 (*isol, struct*)
Aasen, A.J. *et al., J.O.C.*, 1969, **34**, 4137-4143 (*config*)

4-Ethyl-2,4-hexadienoic acid, 9CI E-242



$C_8H_{12}O_2$ 140.182

(E,E)-form [92454-23-4]

Amide: ***Antibiotic FR 900411***. *FR 900411* [92454-24-5]
$C_8H_{13}NO$ 139.197
Prod. by *Streptomyces griseosporus*. Cryst. (Et_2O). λ_{max} 260 (ε 20000) (no solvent reported).

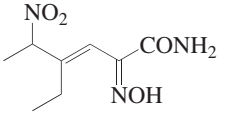
[152873-92-2]

Hino, M. *et al., Chem. Pharm. Bull.*, 1989, **37**, 2864-2866 (*amide, synth*)
Hino, M. *et al., J. Antibiot.*, 1989, **42**, 1578-1583; 1584-1588; 1589-1592 (*amide, isol, synth*)
Huh, K.T. *et al., J.O.C.*, 1993, **58**, 6956-6957 (*synth*)

4-Ethyl-2-(hydroxyimino)-5-nitro-3-hexenamide, 9CI E-243

4-Ethyl-5-nitro-2-oxo-3-hexenamide oxime. *FK409*. *FR 900409*

[92454-83-6]



$C_8H_{13}N_3O_4$ 215.208

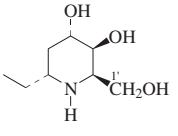
Prod. by *Streptomyces griseosporeus*. Platelet aggregation inhibitor. Nitric oxide releaser (in soln. pH 7.4). Coronary vasodilator. Hypotensive agent. Prisms (MeOH). Sol. MeOH; fairly sol. EtOAc, H_2O, $CHCl_3$. Mp 140° dec. $[\alpha]_D$ 0. λ_{max} 273 (ε 13500) (MeOH/NaOH) (Derep). λ_{max} 240 (sh) (ε 7000); 273 (ε 13500) (MeOH) (Derep).

[92454-60-9]

Hino, M. *et al., Chem. Pharm. Bull.*, 1989, **37**, 2864 (*isol, struct*)
Hino, M. *et al., J. Antibiot.*, 1989, **42**, 1578; 1584; 1589 (*isol, struct, props*)
Japan. Pat., 1991, (*(Fujisawa)*)03 240 763; *CA*, **116**, 143869q
Kita, Y. *et al., Br. J. Pharmacol.*, 1994, **113**, 385 (*pharmacol*)
Kita, Y. *et al., Eur. J. Pharmacol.*, 1994, **257**, 123 (*pharmacol*)
Hirasawa, Y. *et al., Eur. J. Pharmacol.*, 1995, **272**, 39 (*pharmacol*)

6-Ethyl-2-hydroxymethyl-3,4-piperidinediol, 9CI E-244

6-Ethyl-3,4-dihydroxy-2-hydroxymethylpiperidine



(2R,3S,4S,6R)-form

$C_8H_{17}NO_3$ 175.227

(2R,3S,4S,6R)-form

5-Deoxyadenophorine

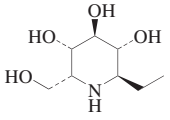
Constit. of the roots of *Adenophora* spp. Oil. $[\alpha]_D^{20}$ +52.3 (c, 0.38 in H_2O).

1′-O-β-D-Glucopyranoside: [262616-01-3]
$C_{14}H_{27}NO_8$ 337.369
Constit. of the roots of *Adenophora* spp. Oil. $[\alpha]_D^{20}$ +17.6 (c, 0.87 in H_2O).

(2*R*,3*R*,4*R*,6*R*)-*form*
1α-C-*Ethylfagomine*
Alkaloid from *Adenophora triphylla* var. *japonica*. Inhibits bovine liver β-galactosidase. $[\alpha]_D$ +45.7 (c, 0.71 in H_2O).
Ikeda, K. *et al., Carbohydr. Res.*, 2000, **323**, 73-80 (*isol, pmr, cmr*)
Asano, N. *et al., Phytochemistry*, 2000, **53**, 379-382 (*1-C-Ethylfagomine*)
Felpin, F.-X. *et al., J.O.C.*, 2004, **69**, 1497-1503 (*synth, pmr, cmr, abs config*)

2-Ethyl-6-hydroxymethyl-3,4,5-piperidinetriol E-245

2-Ethyl-3,4,5-trihydroxy-6-hydroxymethylpiperidine


(2*R*,3*R*,4*S*,5*S*,6*R*)-*form*

$C_8H_{17}NO_4$ 191.227

(2*R*,3*R*,4*S*,5*S*,6*R*)-*form*
Adenophorine
Alkaloid from the roots of *Adenophora* spp. $[\alpha]_D$ +59.7 (c, 1 in H_2O).
1″-O-β-D-Glucopyranoside:
$C_{14}H_{27}NO_9$ 353.369
Constit. of the roots of *Adenophora* spp. $[\alpha]_D$ +24.9 (c, 0.92 in H_2O).

(2*S*,3*R*,4*R*,5*R*,6*R*)-*form* [125711-56-0]
Alkaloid from the bulbs of *Scilla socialis*. Powder. $[\alpha]_D$ +5 (c, 0.19 in H_2O).
Ikeda, K. *et al., Carbohydr. Res.*, 2000, **323**, 73-80 (*isol*)
Pearson, M.S.M. *et al., Eur. J. Org. Chem.*, 2007, 4888-4894 (*synth*)
Kato, A. *et al., J. Nat. Prod.*, 2007, **70**, 993-997 (*isol, pmr, cmr*)

2-Ethyl-3-hydroxypyrazine E-246

*3-Ethyl-2(1*H*)-pyrazinone, 9CI. 3-Ethylpyrazinol, 8CI*
[25680-54-0]

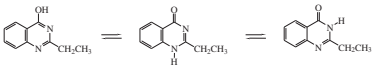


$C_6H_8N_2O$ 124.142
Cryst. (C_6H_6/pentane). Mp 105°.

OH-form
Me ether: 3-Ethyl-2-methoxypyrazine
[25680-58-4]
$C_7H_{10}N_2O$ 138.169
Occurs in potato. Bp_{20} 95-98°. FEMA 3280 is an isomeric mixt. of ethylmethoxypyrazines and methylmethoxypyrazines.
U.S. Pat., 1973, 3 772 039; *CA*, **80**, 58618a (*synth, Me ether, use*)
Nursten, H.E. *et al., J. Sci. Food Agric.*, 1974, **25**, 643-663 (*Me ether, occur, ms*)
Sala, C. *et al., J. Chromatogr., A*, 2000, **880**, 93-99 (*Me ether, occur*)
Fenaroli's Handbook of Flavor Ingredients, 4th edn., (ed. Burdock, G.A.), CRC Press, 2001, 563-564 (*FEMA 3280*)

2-Ethyl-4-hydroxyquinazoline E-247

*2-Ethyl-4(3*H*)-quinazolinone. 2-Ethyl-4-quinazolinol*



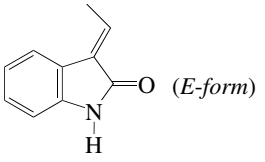
$C_{10}H_{10}N_2O$ 174.202

1H-form
N-*Me: 2-Ethyl-1-methyl-4(1*H*)-quinazolinone.* ***Homoglomerine***
[10553-04-5]
$C_{11}H_{12}N_2O$ 188.229
Alkaloid from the defensive secretion of the arthropod *Glomeris marginata*. Prisms (EtOAc). Mp 148-149°.

3H-form
N-*Amino: 3-Amino-2-ethyl-4(3*H*)-quinazolinone*
[50547-51-8]
$C_{10}H_{11}N_3O$ 189.216
Cryst. (EtOH). Mp 122-123° Mp 152-153°.
Chakravarti, D. *et al., Tetrahedron*, 1961, **16**, 224 (*synth, uv,ir*)
Schildknecht, H. *et al., Naturwissenschaften*, 1967, **54**, 196 (*Homoglomerine*)
Schildknecht, H. *et al., Tet. Lett.*, 1967, 1815 (*biosynth*)
Kametani, T. *et al., J.C.S. Perkin 1*, 1977, 2347 (*synth, pmr*)
Naik, N.R. *et al., J. Indian Chem. Soc.*, 1979, **56**, 708 (*synth, uv, ir*)
Soliman, R. *et al., Synthesis*, 1979, 803 (*N-amino*)
Bhattacharyya, J. *et al., Heterocycles*, 1980, **14**, 1469 (*cmr*)
Leiby, R.W. *et al., J.O.C.*, 1985, **50**, 2926 (*N-amino, pmr, ir*)

3-Ethylidene-1,3-dihydro-2*H*-indol-2-one, 9CI E-248

3-Ethylideneoxindole


(*E-form*)

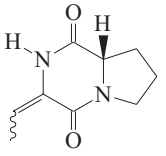
$C_{10}H_9NO$ 159.187

(*E*)-*form*
CG-SI-1
[58807-92-4]
Prod. by *Colletotrichum fragariae* and *Colletotrichum gloeosporoides*. Spore germination self-inhibitor. Yellow needles (C_6H_6). Mp 140-142°.

(*Z*)-*form*
CG-SI-2
[58807-93-5]
Prod. by *Colletotrichum fragariae* and *Colletotrichum gloesporioides*. Spore germination self-inhibitor. Yellow needles (C_6H_6). Mp 177-178° (173-174°).
Tacconi, G. *et al., J.C.S. Perkin 2*, 1976, 150-154 (*synth, ir, pmr, bibl*)
Nozoye, T. *et al., Chem. Pharm. Bull.*, 1983, **31**, 2986-2991 (*synth*)
Goehring, R.R. *et al., J.A.C.S.*, 1985, **107**, 435-443 (*synth, pmr*)
Ueno, T. *et al., Stud. Nat. Prod. Chem.*, 1991, **9**, 219-248 (*isol*)
Inoue, M. *et al., J. Chem. Ecol.*, 1996, **22**, 2111-2122 (*isol, struct*)

3-Ethylidenehexahydropyrrolo[1,2-*a*]pyrazine-1,4-dione, 9CI E-249

1,6-Propano-3-ethylidene-2,5-piperazinedione

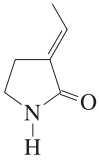


$C_9H_{12}N_2O_2$ 180.206

(*S*)-*form* [160706-82-1]
Isol. from cultured cells of *Aspidosperma quebracho-blanco* (quebracho) (Apocynaceae). Amorph. powder.
Aimi, N. *et al., Heterocycles*, 1994, **38**, 2411 (*isol, pmr, cmr, struct*)

3-Ethylidene-2-pyrrolidinone, 9CI E-250

[27428-45-1]


(*E*)-*form*

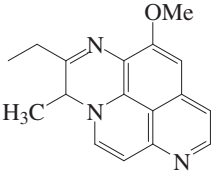
C_6H_9NO 111.143

(*E*)-*form*
Corydalactam. *Alkaloid P*
[930-94-9]
Constit. of *Corydalis pallida* (Papaveraceae). Needles (EtOAc). Mp 176-177.5°.

(*Z*)-*form*
Cryst. (petrol). Mp 98-99.5°.
Cummings, W.A. *et al., J.C.S.*, 1964, 4591 (*synth, uv*)
Kametani, T. *et al., J.C.S.(C)*, 1970, 1060; 1971, 999 (*isol, synth*)
Kaneko, H. *et al., Yakugaku Zasshi*, 1971, **91**, 101 (*isol*)
Warnhoff, H. *et al., Synthesis*, 1976, 331 (*synth*)

2-Ethyl-11-methoxy-3-methyl-3*H*-[1,6]naphthyridino[6,5,4-*def*]quinoxaline, 9CI E-251

[599173-39-4]



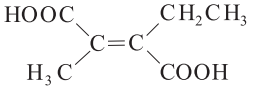
$C_{17}H_{17}N_3O$ 279.341

Alkaloid from a *Xestospongia* sp. Orange gum. λ_{max} 208 (ϵ 7400); 225 (ϵ 6590); 237 (ϵ 7390); 251 (ϵ 5550); 261 (ϵ 4400); 272 (ϵ 3470); 360 (ϵ 1970) (EtOH).

Calcul, L. *et al., Tetrahedron*, 2003, **59**, 6539-6544 (*isol, pmr, cmr*)

2-Ethyl-3-methyl-2-butenedioic acid, 9CI E-252

2-Pentene-2,3-dioic acid. dibasic-*Haematinic acid*



(*E*)–*form*

$C_7H_{10}O_4$ 158.154
pK_{a1} 3.2; pK_{a2} 6.1 (20°).

(*E*)-*form*
2-Ethyl-3-methylfumaric acid
[28098-80-8]
Mp 178-183°.

(*Z*)-*form*
2-Ethyl-3-methylmaleic acid
Exists in equilib. with the anhydride. Constit. of Turkish tobacco.

Di-Me ester: [41654-26-6]
$C_9H_{14}O_4$ 186.207
Bp 235°.

Anhydride:
$C_7H_8O_3$ 140.138
Bp 230°.

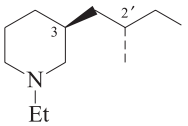
*Imide: 3-Ethyl-4-methyl-1*H*-pyrrole-2,5-dione, 9CI. 2-Ethyl-3-methylmaleimide*
[20189-42-8]
$C_7H_9NO_2$ 139.154
Constit. of tobacco. Isol. from sediments of Tokyo Bay. Degradn. prod. of Chlorophylls. Needles. Mp 72° (68°).

[57959-42-9 , 119581-55-4 , 84565-24-2]

Küster, W. *et al., Annalen*, 1906, **345**, 10 (*synth*)
Eberson, L. *et al., Acta Chem. Scand.*, 1964, **18**, 1276 (*struct*)
Brockmann, H. *et al., Chem. Ber.*, 1973, **106**, 803 (*synth*)
Chuman, T. *et al., Agric. Biol. Chem.*, 1977, **41**, 1021 (*occur*)
Gossauer, A. *et al., Annalen*, 1977, 664 (*synth*)
Girard, C. *et al., Tet. Lett.*, 1982, **23**, 3683 (*synth*)
Kozono, M. *et al., Biosci., Biotechnol., Biochem.*, 2002, **66**, 1844-1847 (*Imide, isol, synth, pmr, ms*)

1-Ethyl-3-(2-methylbutyl)piperidine, 9CI E-253

Stenusine
[54985-88-5]
[150447-27-1 (2′R,3S-form), 144301-03-1 (2′RS,3SR-form), 144301-02-0 (2′RS,3RS-form), 150447-26-0 (2′R,3R-form)]



(2′*S*,3*S*)–*form*

$C_{12}H_{25}N$ 183.336
Natural Stenusine is a mixt. of all four stereoisomers in species-specific ratios.

Alkaloid from the staphylinid beetles *Stenus* spp. Major component of the spreading (flotation) agent of the beetles.

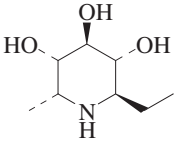
(2′*S*,3*S*)-*form* [150447-24-8]
Oil. $[\alpha]_{365}^{25}$ +34.4 (c, 0.27 in EtOH).

(2′*S*,3*R*)-*form* [150447-25-9]
$[\alpha]_{365}^{24}$ +68 (c, 0.52 in EtOH).

Schildknecht, H. *et al., J. Neurochem.*, 1975, **14**, 427 (*isol, ms, pmr, synth*)
Enders, D. *et al., J.O.C.*, 1993, **58**, 4881 (*synth, ir, pmr, cmr, ms*)
Micouin, L. *et al., Tet. Lett.*, 1994, **35**, 2529 (*synth*)
Heilporn, S. *et al., Nat. Prod. Lett.*, 1997, **10**, 193-200 (*synth*)
Gedig, T. *et al., Tetrahedron*, 2007, **63**, 2670-2674 (*synth*)
Lusebrink, I. *et al., J. Nat. Prod.*, 2008, **71**, 743-745 (*biosynth*)

2-Ethyl-6-methyl-3,4,5-piperidinetriol E-254

2-Ethyl-3,4,5-trihydroxy-6-methylpiperidine



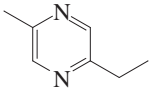
$C_8H_{17}NO_3$ 175.227

(2*R*,3*R*,4*R*,5*S*,6*R*)-*form*
1-Deoxyadenophorine
Constit. of the roots of *Adenophora* spp. $[\alpha]_D$ +67.8 (c, 0.83 in H_2O).

Ikeda, K. *et al., Carbohydr. Res.*, 2000, **323**, 73-80

2-Ethyl-5-methylpyrazine, 9CI, 8CI E-255

FEMA 3154
[13360-64-0]



Found in roast peanuts, roast filberts, cooked beef, cooked lamb, coffee beans, cocoa butter, roast barley and other foodstuffs. Prod. by various marine bacteria. Found in cocoa butter and other foodstuffs. Used in food flavouring. Bp_{56} 79-80°. n_D^{25} 1.4925. Odour threshold 100 ppb in H_2O.

Goldman, I.M. *et al., Helv. Chim. Acta*, 1967, **50**, 694
U.S. Pat., 1976, 3 952 026; *CA*, **71**, 90131m (*manuf, uses*)
Shibamoto, T. *et al., J. Agric. Food Chem.*, 1979, **27**, 1027 (*formn*)
Milic, B.L. *et al., Food Chem.*, 1984, **13**, 165 (*gc*)
Dickschat, J.S. *et al., Eur. J. Org. Chem.*, 2005, 4141-4153 (*isol*)

5-Ethyl-2-methylpyridine E-256

5-Ethyl-α-picoline. Aldehydecollidine. FEMA 3546
[104-90-5]
$C_8H_{11}N$ 121.182

Present in dry red beans, cocoa and tea. Solvent, proton acceptor, comly. available. Flavouring agent. Liq. Part misc. H_2O. d^0 0.94. Bp 178.3°. n_D^{20} 1.4978. pK_a 6.51 (20°). Steam-volatile.

▶ Violent reacn. with HNO_3. Severe skin and eye irritant. LD_{50} (rat, orl) 368 mg/kg; LD_{50} (rbt, skn) 1000 mg/kg. TJ6825000

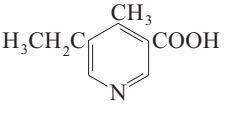
Picrate:
Yellow plates or needles (H_2O or EtOH aq.). Mp 164-165°.

N-*Oxide:* [768-44-5]
$C_8H_{11}NO$ 137.181

▶ Mod. toxic, skin irritant. TJ7000000

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 742D (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 256A (*nmr*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 1523A (*ir*)
Org. Synth., Coll. Vol., 4, 1963, 451 (*bibl*)
Fenaroli's Handbook of Flavor Ingredients, 3rd edn., (ed. Burdock, G.A.), CRC Press, 1995, **2**, 253
Encyclopedia of Food and Color Additives, (ed. Burdock, G.A.), CRC Press, 1997, 1015-1016
Bretherick, L. *et al., Handbook of Reactive Chemical Hazards, 4th edn., Butterworths*, 1990, 2801
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, EOS000

5-Ethyl-4-methyl-3-pyridinecarboxylic acid E-257



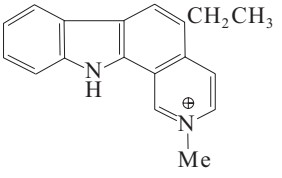
$C_9H_{11}NO_2$ 165.191

Me ester: ***Alkaloid LA 2***
[4695-97-0]
$C_{10}H_{13}NO_2$ 179.218
Alkaloid artifact generated by NH_3 and secoiridoid glucosides from ripe fruits of the common privet *Ligustrum vulgare* (Oleaceae). Needles (EtOAc/MeOH). Mp 23°.

Willems, M. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1987, **320**, 1245 (*isol, uv, ir, pmr, cmr, ms, struct*)

5-Ethyl-2-methyl-11*H*-pyrido[3,4-*a*]carbazolium(1+), 9CI E-258

[76787-84-3]



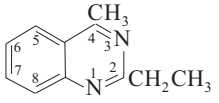
$C_{18}H_{17}N_2^{\oplus}$ 261.346
Anomalous indole alkaloid. Appears not to be derived from Tryptamine and Secologanin. Alkaloid from the bark of *Aspidosperma gilbertii* (Apocynaceae).

Mp 270° (as hydroxide). CAS no. refers to hydroxide.

Miranda, E.C. *et al., Chem. Ber.*, 1980, **113**, 3245 (*isol, uv, ir, pmr, ms, struct, synth*)

2-Ethyl-4-methylquinazoline E-259

[13535-90-5]



$C_{11}H_{12}N_2$ 172.229

Metab. of the bacterium *Pseudomonas aeruginosa*. Oil, which cryst. slowly on standing. Bp 259-260°.

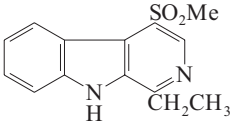
Picrate: Mp 100° dec.

Bischler, A. *et al., Ber.*, 1893, **26**, 1384 (*synth*)
Mann, S. *et al., Arch. Mikrobiol.*, 1967, **56**, 324

1-Ethyl-4-methylsulfonyl-β-carboline E-260

*1-Ethyl-4-(methylsulfonyl)-9*H*-pyrido[3,4-*b*]indole, 9CI*

[138683-70-2]



$C_{14}H_{14}N_2O_2S$ 274.343

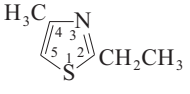
Alkaloid from the marine bryozoan *Cribricellina cribraria*. Pale green oil. λ_{max} 213 (ε 2690); 250 (ε 1950); 258 (ε 2090); 299 (ε 871); 304 (ε 1070); 350 (ε 417) (MeOH) (Derep).

Prinsep, M.R. *et al., J. Nat. Prod.*, 1991, **54**, 1068 (*isol, uv, ir, pmr, cmr, ms, struct*)

2-Ethyl-4-methylthiazole E-261

FEMA 3680

[15679-12-6]



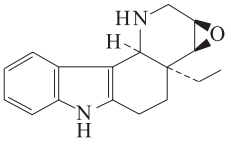
C_6H_9NS 127.21

Occurs in fennel *Foeniculum vulgare*. Liq. d_4^4 1.03. $Bp_{728.5}$ 160.6-161°. n_D^{20} 1.5059.

Benbadjamian, A. *et al., Bull. Soc. Chim. Fr.*, 1968, 4878 (*synth, pmr, ir, uv*)
Vitzthum, O.G. *et al., J. Food Sci.*, 1974, **39**, 1210 (*isol*)
Haag, A. *et al., Org. Mass Spectrom.*, 1976, **11**, 511 (*ms*)

1*b*-Ethyl-1*a*,1*b*,3,4,8*c*,9,10,10*a*-octahydro-2*H*-oxireno[4,5-*b*]pyrido[3,2-*c*]carbazole, 9CI E-262

[80249-75-8]



Relative configuration

$C_{17}H_{20}N_2O$ 268.358

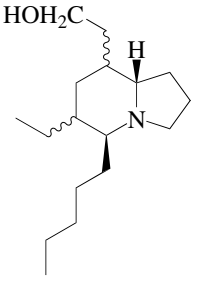
Biosynth. not certain. May be derived form Aspidospermidine, A-1498 by Grob elimination. Minor alkaloid from *Voacanga africana* (Apocynaceae). Cryst. (C_6H_6). Mp 233-235°. $[\alpha]_D$ +109 (c, 0.1 in $CHCl_3$).

Kunesch, N. *et al., Tet. Lett.*, 1981, **22**, 1981 (*uv, ir, ms, pmr, cmr, struct*)

6-Ethyloctahydro-5-pentyl-8-indolizineethanol E-263

6-Ethyl-8-(2-hydroxyethyl)-5-pentylindolizidine. **Dendrobates *Alkaloid 267J.*** *Indolizidine 267J*

[185417-28-1]



$C_{17}H_{33}NO$ 267.454

Tentative struct. and relative stereochem. Alkaloid from skin extracts of a Panamanian population of the frog *Dendrobates pumilio.*

Deoxy: 6,8-Diethyloctahydro-5-pentylindolizine. 6,8-Diethyl-5-pentylindolizidine. **Dendrobates *Alkaloid 251M.*** *Indolizidine 251M*

[185417-27-0]

$C_{17}H_{33}N$ 251.454

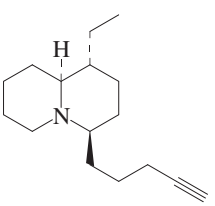
Alkaloid from skin extracts of *Dendrobates pumilio.* Tentative struct.

Garraffo, H.M. *et al., J. Nat. Prod.*, 1997, **60**, 2 (*isol, ms, ir*)

1-Ethyl-4-(4-pentynyl)quinolizidine E-264

*1-Ethyloctahydro-4-(4-pentynyl)-2*H*-quinolizine.* Dendrobates *Alkaloid 233A. Quinolizidine 233A*

[151805-15-1]



$C_{16}H_{27}N$ 233.396

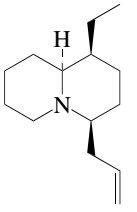
Alkaloid from the frog, *Mantella* spp.

Jain, P. *et al., J. Nat. Prod.*, 1996, **59**, 1174-1178 (*isol*)
Michel, P. *et al., J.O.C.*, 2000, **65**, 8908-8918 (*synth*)
Kinderman, S.S. *et al., J.A.C.S.*, 2004, **126**, 4100-4101 (*synth*)

1-Ethyl-4-(2-propenyl)quinolizidine E-265

*1-Ethyloctahydro-4-(2-propenyl)-2*H*-quinolizine, 9CI. 4-Allyl-1-ethylquinolizidine.* Dendrobates *Alkaloid 207I. Quinolizidine 207I*

[194344-58-6]
[194351-57-0]



Relative Configuration

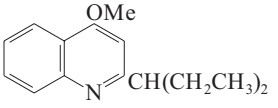
$C_{14}H_{25}N$ 207.358

Minor alkaloid from the frog *Dendrobates* spp. Mp 205-207° (as hydrochloride) (synthetic). $[\alpha]_D^{26}$ -97.9 (c, 0.5 in $CHCl_3$) (synthetic).

Toyooka, N. *et al., Tetrahedron*, 1997, **53**, 9553-9574 (*synth, ir, ms, pmr, cmr*)
Pearson, W.H. *et al., J.O.C.*, 1998, **63**, 9910-9918 (*synth*)
Michel, P. *et al., Chem. Comm.*, 1999, 2281-2282 (*synth*)
Michel, P. *et al., J.O.C.*, 2000, **65**, 8908-8918 (*synth*)

2-(1-Ethylpropyl)-4-methoxyquinoline, 9CI E-266

[126365-16-0]



$C_{15}H_{19}NO$ 229.321

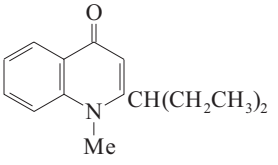
Alkaloid from roots of *Esenbeckia leiocarpa*. Cryst. (CH_2Cl_2/heptane). Mp 72-73° Mp 77.8-78.5° synthetic.

Delle Monache, F. *et al., Gazz. Chim. Ital.*, 1989, **119**, 435 (*isol, uv, pmr, cmr, ms, struct*)
Nakatsu, T. *et al., J. Nat. Prod.*, 1990, **53**, 1508 (*synth*)

2-(1-Ethylpropyl)-1-methyl-4(1*H*)-quinolinone E-267

Leiokinine B

[126365-17-1]



$C_{15}H_{19}NO$ 229.321

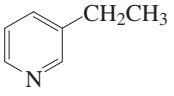
Alkaloid from the roots and leaves of *Esenbeckia leiocarpa* (Rutaceae). Shows antifeedant activity against *Pectinophora gossypiella*. Pale yellow prisms (Et_2O). Mp 137-140°.

Delle Monache, F. *et al., Gazz. Chim. Ital.*, 1989, **119**, 435 (*isol, uv, ir, pmr*)

Nakatsu, T. *et al., J. Nat. Prod.*, 1990, **53**, 1508 (*isol, pmr, cmr, struct, synth*)
Coppola, G.M. *et al., J. Het. Chem.*, 1992, **29**, 1873 (*synth*)

3-Ethylpyridine E-268

FEMA 3394
[536-78-7]



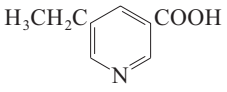
C_7H_9N 107.155
Found in black tea and raw fish. Flavouring ingredient. Liq. with a tobacco flavour. Sl. sol. H_2O, sol. EtOH, Et_2O. d^0 0.95. Bp 162-165°. n_D^{20} 1.5020. pK_a 5.56 (25°).

Picrate: Mp 128-130°.

N-*Oxide:* [14906-62-8]
C_7H_9NO 123.154
Bp_4 100°.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 735C (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 244C (*nmr*)
Mijajima, G. *et al., Chem. Pharm. Bull.*, 1972, **20**, 429 (*cmr*)
Ferles, M. *et al., Coll. Czech. Chem. Comm.*, 1973, **38**, 611 (*synth*)
Fenaroli's Handbook of Flavor Ingredients, 3rd edn., (ed. Burdock, G.A.), CRC Press, 1995, **2**, 266
Encyclopedia of Food and Color Additives, (ed. Burdock, G.A.), CRC Press, 1997, 1038
Bremner, D.H. *et al., Synth. Commun.*, 1997, **27**, 1535-1542 (*N-oxide*)

5-Ethyl-3-pyridinecarboxylic acid E-269



$C_8H_9NO_2$ 151.165

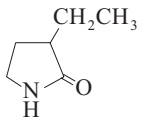
Me ester: ***Alkaloid LA 1***
[68686-58-8]
$C_9H_{11}NO_2$ 165.191
Alkaloid artifact generated by NH_3 and secoiridoid glucosides from ripe fruits of the common privet *Ligustrum vulgare* (Oleaceae). Needles (EtOAc/MeOH). Mp 8°.

Me ester, hydrochloride:
Cryst. (Et_2O). Mp 112°.

Willems, M. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1987, **320**, 1245 (*isol, uv, ir, pmr, cmr, ms, struct*)

3-Ethyl-2-pyrrolidinone, 9CI, 8CI E-270

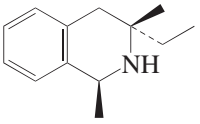
Alkaloid CP-P
[930-92-7]



$C_6H_{11}NO$ 113.159
Found in *Corydalis pallida*. Mp 38-39° Mp 43-44° Mp 47-48.5°. Hygroscopic.

Cummings, W.A.W. *et al., J.C.S.*, 1964, 4591 (*synth, uv*)
Kametani, T. *et al., J.C.S.(C)*, 1970, 1060 (*synth*)
Japan. Pat., 1973, 73 08 484; *CA*, **80**, 41035k
Reddy, P.A. *et al., J. Med. Chem.*, 1996, **39**, 1898-1906 (*synth, ir, pmr, cmr*)

3-Ethyl-1,2,3,4-tetrahydro-1,3-dimethylisoquinoline E-271



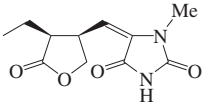
$C_{13}H_{19}N$ 189.3

(1*R,3*R**)-*form**
Hemiargine D
[710948-57-5]
Constit. of the leaves of *Croton hemiargyreus* var. *gymnodiscus.*

Lin, W.-H. *et al., J. Chin. Pharm. Sci.*, 2003, **12**, 117-122 (*isol*)

5-[(4-Ethyltetrahydro-5-oxo-3-furanyl)methylidene]-1-methyl-2,4-imidazolidinedione, 9CI E-272

4,6-Dehydro-1,2,4,5-tetrahydro-2,5-dioxo-pilocarpine
[876945-76-5]



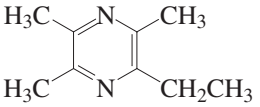
Absolute Configuration

$C_{11}H_{14}N_2O_4$ 238.243
Related to Pilocarpine, P-424. Alkaloid from the stems of *Pilocarpus grandiflorus.* Yellow oil. $[\alpha]_D^{25}$ +19.6 (c, 0.005 in $CHCl_3$). λ_{max} 242 (log ϵ 3.46); 284 (log ϵ 3.98) (MeOH).

De Souza, R.C. *et al., Z. Naturforsch., B*, 2005, **60**, 787-791 (*isol, pmr, cmr, ms*)

Ethyltrimethylpyrazine E-273

[17398-16-2]

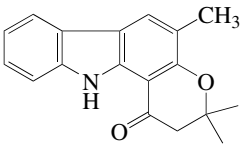


$C_9H_{14}N_2$ 150.223
Prod. by various marine bacteria.

Marion, J.P. *et al., Chimia*, 1967, **21**, 510-511; *CA*, **68**, 78249m (*synth*)
Dickschat, J.S. *et al., Chem. Biodiversity*, 2005, **2**, 318-353 (*isol*)
Dickschat, J.S. *et al., Eur. J. Org. Chem.*, 2005, 4141-4153 (*isol*)

Euchrestifoline E-274

[31231-34-2]

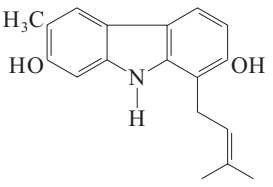


$C_{18}H_{17}NO_2$ 279.338
Alkaloid from leaves of *Murraya euchrestifolia*. Yellow needles (Et_2O). Mp 187-189°. λ_{max} 231 (log ϵ 4.53); 255 (sh) (log ϵ 3.85); 284 (log ϵ 4.15); 291 (log ϵ 4.16); 330 (sh) (log ϵ 3.52); 386 (log ϵ 3.8) (MeOH).

Wu, T.-S. *et al., Phytochemistry*, 1996, **43**, 785-789 (*isol, uv, ir, pmr, ms, struct*)

Euchrestine A E-275

*6-Methyl-1-(3-methyl-2-butenyl)-9*H*-carbazole-2,7-diol, 9CI. 2,7-Dihydroxy-6-methyl-1-prenylcarbazole*
[138842-70-3]



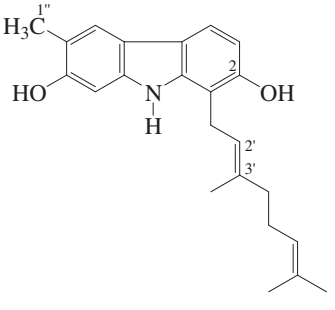
$C_{18}H_{19}NO_2$ 281.354
Alkaloid from the stem bark of *Murraya euchrestifolia* (Rutaceae). Oil. λ_{max} 213 ; 236 ; 265 ; 295 ; 313 ; 318 ; 329 (MeOH).

O^2-*Me: 7-Methoxy-3-methyl-8-(3-methyl-2-butenyl)-9*H*-carbazol-2-ol. 7-Hydroxy-2-methoxy-6-methyl-1-prenyl-carbazole.* ***Isomurrayafoline B***
[107903-15-1]
$C_{19}H_{21}NO_2$ 295.38
Alkaloid from the stem bark of *Murraya euchrestifolia* (Rutaceae). Shows cytotoxic activity. Prisms (Et_2O). Mp 158-161°. λ_{max} 213 ; 237 ; 264 ; 310 ; 330 (sh) (MeOH).

Ito, C. *et al., Chem. Pharm. Bull.*, 1987, **35**, 450-452; 1991, **39**, 1668-1671
Itoigawa, M. *et al., J. Nat. Prod.*, 2000, **63**, 893-897 (*Isomurrayafoline B, activity*)

Euchrestine C E-276

*1-Geranyl-2,7-dihydroxy-6-methylcarbazole. 1-(3,7-Dimethyl-2,6-octadienyl)-6-methyl-9*H*-carbazole-2,7-diol*
[138822-95-4]



$C_{23}H_{27}NO_2$ 349.472
Alkaloid from the stem bark of *Murraya euchrestifolia* (Rutaceae). Shows cytotoxic activity. Powder.

2-Me ether: ***Euchrestine B***
[138822-94-3]
$C_{24}H_{29}NO_2$ 363.499
Alkaloid from the stem bark of *Murraya euchrestifolia* (Rutaceae). Pale yellow oil.

7-Me ether: ***Murrayanol***†
[144525-81-5]
$C_{24}H_{29}NO_2$ 363.499
Alkaloid from seeds of *Murraya koenigii* (curry leaf tree) (Rutaceae). Cryst. (CH_2Cl_2/petrol). Mp 161°.

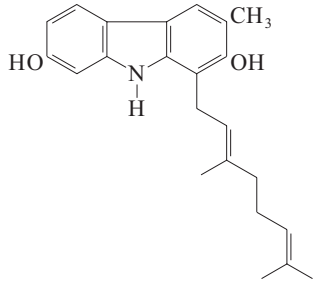
2′,3′-Epoxide: ***Euchrestine E***
[139726-46-8]
$C_{23}H_{27}NO_3$ 365.471
Alkaloid from the stem bark of *Murraya euchrestifolia* (Rutaceae). Pale brown oil. Obt. as a racemate.

1′′-Oxo, 2-Me ether: 6-Formyl-1-geranyl-7-hydroxy-2-methoxycarbazole. ***Murrayaline D***
[139726-44-6]
$C_{24}H_{27}NO_3$ 377.482
Alkaloid from the stem bark of *Murraya euchrestifolia*. Pale brown oil. λ_{max} 243 ; 255 (sh) ; 287 ; 330 ; 357 ; 364 ; 368 (MeOH).

Ito, C. *et al., Chem. Pharm. Bull.*, 1991, **39**, 1668-1671 (*isol, pmr, cmr, struct*)
Ito, C. *et al., Chem. Pharm. Bull.*, 1991, **39**, 2525-2528 (*Murrayaline D*)
Reisch, J. *et al., Phytochemistry*, 1992, **31**, 2877-2879 (*Murrayanol*)
Itoigawa, M. *et al., J. Nat. Prod.*, 2000, **63**, 893-897 (*activity*)

Euchrestine D E-277

*1-Geranyl-2,7-dihydroxy-3-methylcarbazole. 1-(3,7-Dimethyl-2,6-octadienyl)-3-methyl-9*H*-carbazole-2,7-diol, 9CI*
[138822-96-5]



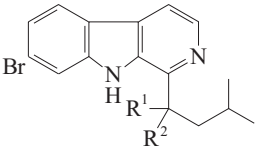
$C_{23}H_{27}NO_2$ 349.472
Alkaloid from the stem bark of *Murraya euchrestifolia* (Rutaceae). Shows cytotoxic activity. Pale yellow oil. λ_{max} 212 ; 238 ; 265 ; 312 ; 321 (sh) (MeOH).

7-Deoxy (?): ***Mahanimbilol***. *Mahanimbinol*
[77156-13-9]
$C_{23}H_{27}NO$ 333.472
Alkaloid from *Murraya koenigii* (curryleaf tree). Shows anti-HIV activity. Pale yellow oil. The struct. was first assigned to Mahanimbinol but Reisch *et al* assigned it to Mahanimbilol with different spectroscopic props. The struct. of Mahanimbinol is therefore currently unresolved. λ_{max} 244 (log ϵ 4.26); 260 (log ϵ 4.14); 296 (log ϵ 3.98); 325 (log ϵ 3.4); 339 (log ϵ 3.38) (EtOH).

Rao, A.V.R. *et al., Chem. Ind. (London)*, 1980, 697-698 (*Mahanimbinol*)
Ito, C. *et al., Chem. Pharm. Bull.*, 1991, **39**, 1668-1671 (*isol, pmr, cmr, struct*)
Reisch, J. *et al., Phytochemistry*, 1994, **36**, 1073-1076 (*Mahanimbilol*)
Meragelman, K.M. *et al., J. Nat. Prod.*, 2000, **63**, 427 (*Mahanimbilol, activity*)
Itoigawa, M. *et al., J. Nat. Prod.*, 2000, **63**, 893-897 (*activity*)

Eudistalbin A E-278

*7-Bromo-α-(2-methylpropyl)-9*H*-pyrido[3,4-*b*]indole-1-methanamine, 9CI*
[142755-07-5]



R^1 = H, R^2 = NH_2

$C_{16}H_{18}BrN_3$ 332.242
Alkaloid from the marine tunicate *Eudistoma album*. Exhibits cytotoxicity *in vitro* against KB human buccal carcinoma. Amorph. Sol. MeOH. $[\alpha]_D$ -10 (c, 0.1 in MeOH). λ_{max} 220 (sh) ; 240 (ϵ 45400); 290 (sh) ; 295 (ϵ 23200); 338 (ϵ 5790); 350 (ϵ 5790) (MeOH) (Derep). λ_{max} 240 (ϵ 45386); 295 (ϵ 23157); 338 (ϵ 5789); 350 (ϵ 5789) (MeOH) (Berdy).

Adesanya, S.A. *et al., J. Nat. Prod.*, 1992, **55**, 525-527 (*isol, uv, ir, pmr, cmr, ms, struct*)

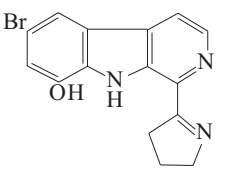
Eudistalbin B E-279

*1-(7-Bromo-9*H*-pyrido[3,4-*b*]-indol-1-yl)-3-methyl-1-butanone, 9CI*
[142755-08-6]
As Eudistalbin A, E-278 with R^1R^2 = O
$C_{16}H_{15}BrN_2O$ 331.211
Alkaloid from the marine tunicate *Eudistoma album*. Amorph. Sol. MeOH. λ_{max} 210 (sh) ; 224 (ϵ 28400); 245 (ϵ 11700); 285 (ϵ 14700); 310 (ϵ 8120); 376 (ϵ 4730) (MeOH) (Derep).

Adesanya, S.A. *et al., J. Nat. Prod.*, 1992, **55**, 525-527 (*isol, uv, ir, pmr, ms, struct*)

Eudistomidin A E-280

*6-Bromo-1-(3,4-dihydro-2*H*-pyrrol-5-yl)-9*H*-pyrido[3,4-*b*]indol-8-ol, 9CI*
[102673-53-0]

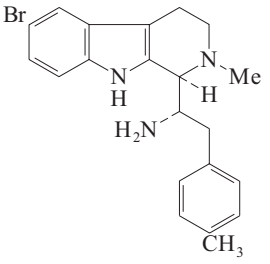


$C_{15}H_{12}BrN_3O$ 330.183
Alkaloid from the Okinawan tunicate *Eudistoma glaucus*. Calmodulin antagonist. Yellow solid. Mp 225-230° dec Mp 260-270° dec Mp 265-280° dec. λ_{max} 222 (ϵ 33000); 254 (ϵ 17000); 371 (ϵ 5500) (MeOH) (Derep).

Kobayashi, J. *et al., Tet. Lett.*, 1986, **27**, 1191-1194 (*isol, uv, ir, pmr, cmr, ms, struct*)
Murakami, Y. *et al., Tet. Lett.*, 1989, **30**, 2099-2100 (*synth*)

Eudistomidin B E-281

*6-Bromo-2,3,4,9-tetrahydro-2-methyl-α-[(4-methylphenyl)methyl]-1*H*-pyrido[3,4-*b*]indole-1-methanamine, 9CI*
[125443-66-5]

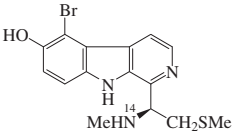


$C_{21}H_{24}BrN_3$ 398.345
Alkaloid from the marine tunicate *Eudistoma glaucus*. Cytotoxic. Activates rabbit heart muscle actomyosin ATPase. Yellow foam. Mp 81-83°. $[\alpha]_D^{22}$ -54 (c, 0.2 in MeOH). $[\alpha]_D$ -76.4 (c, 0.3 in $CHCl_3$). λ_{max} 231 (ϵ 26900); 291 (ϵ 6300) (MeOH) (Derep).

Kobayashi, J. *et al., J.O.C.*, 1990, **55**, 3666-3670 (*isol, pmr, cmr, struct*)

Eudistomidin C E-282

*5-Bromo-1-[1-(methylamino)-2-(methylthio)ethyl]-9*H*-pyrido[3,4-*b*]indol-6-ol, 9CI*
[125422-17-5]



Absolute Configuration

$C_{15}H_{16}BrN_3OS$ 366.281
Alkaloid from the marine tunicate *Eudistoma glaucus*. Cytotoxic. Exhibits calmodulin antagonistic activity. Yellow solid. Mp 120-122°. $[\alpha]_D^{22}$ +15.6 (c, 0.2 in MeOH). λ_{max} 218 (ϵ 21300); 236 (ϵ 23700); 253 (sh); 287 (sh); 298 (ϵ 13100); 368 (ϵ 3800) (MeOH) (Derep).

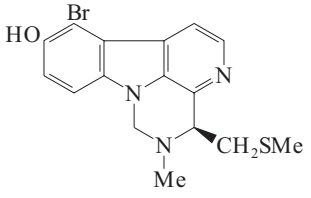
N^{14}*-Me:* ***N^{14}-Methyleudistomidin C***
[380614-19-7]
$C_{16}H_{18}BrN_3OS$ 380.308
Alkaloid from *Eudistoma gilboverde*. Cytotoxic. Yellowish gum. $[\alpha]_D$ +12.9 (c, 0.07 in MeOH). λ_{max} 216 (log ϵ 4.28); 234 (log ϵ 4.16); 252 (log ϵ 4.06); 287 (sh) (log ϵ 3.77); 298 (log ϵ 3.93); 369 (log ϵ 3.22) (EtOH).

Kobayashi, J. *et al., J.O.C.*, 1990, **55**, 3666-3670 (*isol, pmr, cmr, struct*)

Rashid, M.A. *et al., J. Nat. Prod.*, 2001, **64**, 1454-1456 (*N^{14}-Methyleudistomidin C*)

Eudistomidin F E-283

*7-Bromo-2,3-dihydro-2-methyl-3-[(methylthio)methyl]-1*H*-2,4,10*b*-triazafluoranthen-8-ol, 9CI*
[136094-36-5]



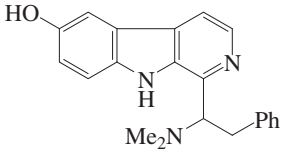
$C_{16}H_{16}BrN_3OS$ 378.292
Alkaloid from the marine tunicate *Eudistoma glaucus*. Amorph. $[\alpha]_D^{26}$ +16 (c, 0.1 in MeOH). Stereochem. not confirmed. λ_{max} 220 (ϵ 19000); 237 (ϵ 18000); 300 (ϵ 11000) (MeOH) (Derep). λ_{max} 218 (ϵ 18000); 237 (ϵ 17000); 300 (ϵ 10000) (MeOH) (Berdy).

S-*Oxide:* ***Eudistomidin E***
[136094-35-4]
$C_{16}H_{16}BrN_3O_2S$ 394.291
Alkaloid from the marine tunicate *Eudistoma glaucus*. Amorph. $[\alpha]_D^{24}$ +19 (c, 0.1 in MeOH). λ_{max} 220 (ϵ 19000); 237 (ϵ 18000); 300 (ϵ 11000) (MeOH) (Derep).

Murata, O. *et al., Tet. Lett.*, 1991, **32**, 3539-3542 (*isol, pmr, cmr, struct*)

Eudistomin X E-284

*1-(1-Dimethylamino-2-phenylethyl)-9*H*-pyrido[3,4-*b*]indol-6-ol*



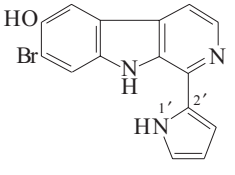
$C_{21}H_{21}N_3O$ 331.416

(ξ)-*form* [492463-46-4]
Alkaloid from the marine tunicate *Eudistoma* sp. Amorph. brown powder. $[\alpha]_D^{20}$ -7 (c, 0.49 in MeOH). λ_{max} 201 ; 234 ; 251 ; 298 ; 373 (MeOH).

Schupp, P. *et al., J. Nat. Prod.*, 2003, **66**, 272-275 (*isol, pmr, cmr, ms*)

Eudistomin A E-285

*7-Bromo-1-(1*H*-pyrrol-2-yl)-9*H*-pyrido[3,4-*b*]indol-6-ol, 9CI. 7-Bromo-6-hydroxy-1-(2-pyrrolyl)-β-carboline*
[88704-36-3]



$C_{15}H_{10}BrN_3O$ 328.167
Alkaloid from the Caribbean tunicate *Eudistoma olivaceum*. Mod. active against viruses, gram-positive bacteria and yeasts. Yellow oil. λ_{max} 210 (ϵ 17600); 229 (sh) ; 258 (ϵ 13600); 272 (sh) ; 285 (sh) ; 326 (ϵ 11600); 373 (ϵ 6400); 389 (sh) (MeOH) (Derep).

*Debromo: 1-(1*H*-Pyrrol-2-yl)-9*H*-pyrido[3,4-*b*]indol-6-ol, 9CI. 6-Hydroxy-1-(2-pyrrolyl)-β-carboline.* ***Eudistomin M***
[88704-39-6]
$C_{15}H_{11}N_3O$ 249.271
Alkaloid from the tunicate *Eudistoma olivaceum*. Antiviral agent. ATPase stimulant used as biochem. tool in study of muscular contraction. Yellow prisms ($CHCl_3$/MeOH). Mp 225-227° (synthetic). λ_{max} 210 (ϵ 24000); 231 (ϵ 16500); 253 (ϵ 18000); 266 (sh) (ϵ 12700); 276 (sh) (ϵ 9900); 289 (sh) (ϵ 6800); 321 (ϵ 17100); 371 (ϵ 9900); 384 (ϵ 9800) (MeOH) (Derep).

*$\Delta^{1'}$-Isomer, 3′,4′-dihydro: 7-Bromo-1-(3,4-dihydro-2*H*-pyrrol-5-yl)-9*H*-pyrido[3,4-*b*]indol-6-ol, 9CI.* ***Eudistomin P***
[88704-48-7]
$C_{15}H_{12}BrN_3O$ 330.183
Found in *Eudistoma olivaceum*. Modestly active against gram-positive bacteria and yeasts. Sol. MeOH, $CHCl_3$, toluene; poorly sol. H_2O. Mp 128-130°. λ_{max} 201 (sh) ; 216 (ϵ 28100); 249 (ϵ 11800); 300 (ϵ 13400); 318 (sh) ; 372 (ϵ 4600); 381 (ϵ 4800) (MeOH) (Derep). λ_{max} 216 (ϵ 28100); 249 (ϵ 11800); 300 (ϵ 10700); 372 (ϵ 4600); 381 (ϵ 4800) (hexane) (Berdy).

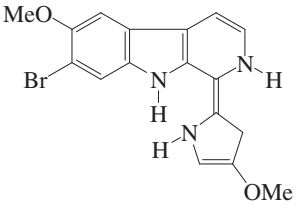
*$\Delta^{1'}$-Isomer, 3′,4′-dihydro, deoxy: 7-Bromo-1-(3,4-dihydro-2*H*-pyrrol-5-yl)-9*H*-pyrido[3,4-*b*]indole, 9CI.* ***Eudistomin G***
[88704-43-2]
$C_{15}H_{12}BrN_3$ 314.184
Found in *Eudistoma olivaceum*. Antiviral agent. Needles (CH_2Cl_2). Sol. MeOH, toluene, $CHCl_3$; poorly sol. H_2O. Mp 204-206°. λ_{max} 220 (ϵ 36900); 238 (ϵ 17600); 284 (ϵ 18200); 297 (sh) (ϵ 10400); 370 (ϵ 7900) (MeOH) (Derep). λ_{max} 203 (ϵ 19000); 219 (ϵ 21500); 250 (ϵ 10000); 282 (ϵ 11700); 299 (ϵ 8700); 307 (ϵ 8400); 346 (ϵ 5100); 362 (ϵ 7600) (hexane) (Berdy).

$\Delta^{1'}$-Isomer, 3′,4′-dihydro, debromo: 6-Hydroxy-1-(1-pyrrolin-2-yl)-β-carboline. ***Eudistomin Q***
[88704-49-8]
$C_{15}H_{13}N_3O$ 251.287
Found in *Eudistoma olivaceum*. Modestly active against gram-positive bacteria. Sol. MeOH, $CHCl_3$, toluene; poorly sol. H_2O. Mp 120-125°. λ_{max} 216 (ϵ 23500); 250 (ϵ 8700); 295 (ϵ 9600); 382 (ϵ 2900) (MeOH) (Derep). λ_{max} 214 (ϵ 19900); 288 (ϵ 8000); 348 (ϵ 2500); 362 (ϵ 2500) (hexane) (Berdy).

Kobayashi, J. *et al., J.A.C.S.*, 1984, **106**, 1526-1528 (*isol, pmr, struct*)
Rinehart, K.L. *et al., J.A.C.S.*, 1987, **109**, 3378-3387 (*isol, struct, props*)
Hino, T. *et al., Chem. Pharm. Bull.*, 1989, **37**, 2596-2600 (*Eudistomins M,P, synth*)
Wasserman, H.H. *et al., Tet. Lett.*, 1989, **30**, 7117-7120 (*Eudistomin M, synth*)
Ohizumi, Y. *et al., J. Pharmacol. Exp. Ther.*, 1998, **285**, 381-389 (*Eudistomin M, use*)

Eudistomin B E-286

[96426-92-5]

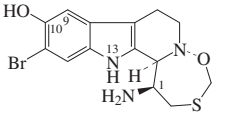


$C_{17}H_{16}BrN_3O_2$ 374.236
Alkaloid antibiotic. Found in the Caribbean tunicate *Eudistoma olivaceum*. Shows activity against viruses, bacteria and yeasts.

Rinehart, K.L. *et al., J.A.C.S.*, 1987, **109**, 3378-3387 (*isol, struct, props*)

Eudistomin C E-287

*1-Amino-11-bromo-1,2,7,8,13,13*b*-hexahydro[1,6,2]oxathiazepino[2′,3′:1,2]pyrido[3,4-*b*]indol-10-ol, 9CI*
[88704-50-1]



Absolute Configuration

$C_{14}H_{16}BrN_3O_2S$ 370.269
Stereochem. of N–O bond revised in 1987. CA numbering shown. Alkaloid from the Caribbean tunicate *Eudistoma olivaceum* and the New Zealand ascidian *Ritterella sigillinoides*. Potent antiviral agent. Pale-yellow oil. $[\alpha]_D^{25}$ -52 (c, 0.4 in MeOH). Eudistomins C, E, F, K and L are the most potent of the group. λ_{max} 226 (ϵ 23400); 287 (ϵ 8000) (MeOH) (Derep).

N-*Methoxycarbonyl:* ***Eudistomin F***
[96426-93-6]
$C_{16}H_{18}BrN_3O_4S$ 428.306
Found in *Eudistoma olivaceum*. Potent antiviral agent. Oil. Sol. MeOH, $CHCl_3$, toluene; poorly sol. H_2O, hexane. λ_{max} 226 (ϵ 23400); 287 (ϵ 8000) (MeOH) (Derep). λ_{max} 225 (ϵ 10800); 276 ; 287 (ϵ 4100) (MeOH) (Berdy).

Deoxy: ***Eudistomin K***
[88704-52-3]
$C_{14}H_{16}BrN_3OS$ 354.27
From *Eudistoma olivaceum* and from the New Zealand ascidian *Ritterella sigillinoides*. Potent antiviral agent. Oil. Sol. MeOH, toluene, $CHCl_3$; poorly sol. H_2O, hexane. $[\alpha]_D^{25}$ -102 (c, 0.2 in MeOH). λ_{max} 230 (ϵ 11900); 237 (sh); 284 (ϵ 3470); 293; 301 (EtOH) (Derep). λ_{max} 226 ; 229 (ϵ 17000); 284 (ϵ 4000); 287 (MeOH) (Berdy).

Deoxy, S*-oxide (α-):* ***Eudistomin K sulfoxide***
[115276-12-5]
$C_{14}H_{16}BrN_3O_2S$ 370.269
Isol. from *Ritterella sigillinoides.* Shows antiviral props. Light yellow oil. $[\alpha]_D^{25}$ -3.3 (c, 0.09 in MeOH). λ_{max} 230 (ϵ 11900); 237 (sh); 284 (ϵ 3470); 293; 301 (EtOH) (Derep). λ_{max} 229 (ϵ 11920); 284 (ϵ 3470) (MeOH) (Berdy).

Debromo, 9-bromo: ***Eudistomin E***
[88704-51-2]
$C_{14}H_{16}BrN_3O_2S$ 370.269
Alkaloid from the Caribbean tunicate *Eudistoma olivaceum*. Potent antiviral agent. Pale-yellow oil. Sol. MeOH, $CHCl_3$, toluene; poorly sol. H_2O, hexane. $[\alpha]_D^{25}$ -18 (c, 0.1 in MeOH). λ_{max} 226 (ϵ 23400); 287 (ϵ 8000) (MeOH) (Derep). λ_{max} 226 (ϵ 18600); 282 (ϵ 6700); 287 (MeOH) (Berdy).

*Debromo, 9-bromo, 1-*N*-Me:* N^{10}*-Methyleudistomin E.* ***Eudistomin V***†
[230636-55-2]
$C_{15}H_{18}BrN_3O_2S$ 384.296
Isol. from *Eudistoma olivaceum*. Not to be confused with Eudistomin V in E-288.

Deoxy, debromo: ***Debromoeudistomin K***
[110597-53-0]
$C_{14}H_{17}N_3OS$ 275.374
From *Ritterella sigillinoides.* Sol. MeOH, EtOAc, Me_2CO, C_6H_6; poorly sol. H_2O. $[\alpha]_D$ -58.3 (c, 0.06 in MeOH). λ_{max} 223 (ϵ 11500); 272 (ϵ 2900); 285 (ϵ 17270); 375 (ϵ 15870) (MeOH) (Berdy).

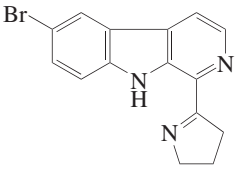
Deoxy, debromo, 10-bromo: ***Eudistomin L***
[88704-55-6]
$C_{14}H_{16}BrN_3OS$ 354.27
Alkaloid from the Caribbean tunicate *Eudistoma olivaceum*. Potent antiviral agent. Sol. MeOH, $CHCl_3$, toluene; poorly sol. H_2O, hexane. $[\alpha]_D^{25}$ -77 (c, 0.2 in MeOH). Stereochem. of N–O bond revised in 1987. λ_{max} 230 (ϵ 11900); 237 (sh); 284 (ϵ 3470); 293; 301 (EtOH) (Derep). λ_{max} 226 (ϵ 26600); 288 (ϵ 6100) (MeOH) (Berdy).

*Deoxy, debromo, 10-bromo, 1-*N*-Ac:* N*-Acetyleudistomin L*
[123492-40-0]
$C_{16}H_{18}BrN_3O_2S$ 396.307
Amorph. solid. Mp 193.5-195.5°.

Rinehart, K.L. *et al., J.A.C.S.*, 1984, **106**, 1524-1526; 1987, **109**, 3378-3387 (*isol, uv, pmr, struct, Eudistomins E,F,K*)
Eur. Pat., 1985, 133 000; *CA*, **102**, 226023 (*isol, props*)
Blunt, J.W. *et al., Tet. Lett.*, 1987, **28**, 1825-1826 (*Eudistomins F,K, pmr, cmr, stereochem*)
Lake, R.J. *et al., Tet. Lett.*, 1988, **29**, 2255-2256; 4971-4972 (*Eudsitomin K S-oxide, Eudistomin K, cryst struct, abs config*)
Lake, R.J. *et al., Aust. J. Chem.*, 1989, **42**, 1201-1206 (*Debromoeudistomin K*)
Still, I.W.J. *et al., Tet. Lett.*, 1989, **30**, 1041-1044 (*N-Acetyleudistomin L, synth, pmr, cmr, ms*)
Liu, J.-J. *et al., Heterocycles*, 1990, **31**, 229-231 (*Eudistomin F, synth*)
Ibanez-Calero, S. *et al., CA*, 1999, **131**, 100027f (*N-Methyleudistomin E*)
Liu, J.-J. *et al., J.C.S. Perkin 1*, 2000, 3477-3486; 3487-3494 (*Eudistomin C,E,F,K,L, synth*)
Yamashita, T. *et al., J.A.C.S.*, 2005, **66**, 15038-15039 (*synth*)
Yamagishi, H. *et al., Org. Lett.*, 2008, **10**, 2369-2372 (*Eudistomin C,E, synth*)

Eudistomin H E-288

*6-Bromo-1-(3,4-dihydro-2*H*-pyrrol-5-yl)-9*H*-pyrido[3,4-*b*]indole, 9CI. 6-Bromo-1-(1-pyrrolin-2-yl)-β-carboline*
[88704-44-3]



$C_{15}H_{12}BrN_3$ 314.184
Alkaloid from the Caribbean tunicate *Eudistoma olivaceum*. Shows mod. activity against yeasts and viruses. Powder. Sol. MeOH, $CHCl_3$, toluene; poorly sol. H_2O. Mp 140-142°. λ_{max} 220 (ϵ 36900); 238 (ϵ 17600); 284 (ϵ 18200); 297 (sh) (ϵ 10400); 370 (ϵ 7900) (MeOH) (Derep). λ_{max} 221 (ϵ 18300); 286 (ϵ 8300); 371 (ϵ 3000) (MeOH) (Berdy). λ_{max} 203 (ϵ 24700); 221 (ϵ 34200); 250 (ϵ 12400); 258 (ϵ 10000); 286 (ϵ 17000); 306 (ϵ 9400); 369 (ϵ 8400) (hexane) (Berdy).

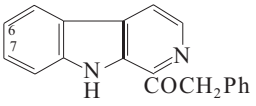
Debromo: ***Eudistomin I****. 1-(3,4-Dihydro-2*H*-pyrrol-5-yl)-9*H*-pyrido[3,4-*b*]indole, 9CI. 1-(1-Pyrrolin-2-yl)-β-carboline*
[88704-45-4]
$C_{15}H_{13}N_3$ 235.288
Found in *Eudistoma olivaceum*. Modestly active against gram-positive bacteria and viruses. Powder. Sol. MeOH, toluene, $CHCl_3$; poorly sol. H_2O. Mp 153-155°. λ_{max} 227 (ϵ 14500); 282 (ϵ 11300); 368 (ϵ 5700) (CH_2Cl_2) (Derep). λ_{max} 216 (ϵ 24400); 247 (ϵ 3500); 277 (ϵ 14100); 298 (ϵ 7800); 366 (ϵ 9200) (MeOH) (Derep). λ_{max} 215 (ϵ 13800); 238 (ϵ 8500); 280 (ϵ 7000); 368 (ϵ 2800) (MeOH) (Berdy). λ_{max} 217 (ϵ 23800); 249 (ϵ 6500); 256 (ϵ 6000); 279 (ϵ 10700); 293 (ϵ 4700); 365 (ϵ 7000) (hexane) (Berdy).

7-Bromo: ***Eudistomin V***†
[211427-62-2]
$C_{15}H_{11}Br_2N_3$ 393.08
Alkaloid from the tunicate *Pseudodistoma aureum*. Yellow gum. λ_{max} 224 (ϵ 30000); 290 (ϵ 16000); 311 (ϵ 11900); 371 (ϵ 6300) (MeOH).

Kobayashi, J. *et al., J.A.C.S.*, 1984, **106**, 1526-1528 (*Eudistomin I, isol, struct*)
Rinehart, K.L. *et al., J.A.C.S.*, 1987, **109**, 3378-3387 (*isol, struct, props, rev*)
Hino, T. *et al., Chem. Pharm. Bull.*, 1989, **37**, 2596-2600 (*Eudistomins H and I, synth*)
Van Wagenen, B.C. *et al., Tet. Lett.*, 1989, **30**, 3605-3608 (*Eudistomin I, synth*)
Wasserman, H.H. *et al., Tet. Lett.*, 1989, **30**, 7117-7120 (*Eudistomin I, synth*)
McNulty, J. *et al., J.C.S. Perkin 1*, 1994, 1329-1337 (*synth*)
Shen, G.Q. *et al., Tet. Lett.*, 1994, **35**, 1141-1144; 4923-4926 (*biosynth*)
Davis, R.A. *et al., J. Nat. Prod.*, 1998, **61**, 959-960 (*Eudistomin V*)

Eudistomin T E-289

*2-Phenyl-1-(9*H*-pyrido[3,4-*b*]indol-1-yl)ethanone, 9CI. 1-Phenylacetyl-β-carboline*
[108335-05-3]



$C_{19}H_{14}N_2O$ 286.332
Alkaloid from the marine tunicate *Eudistoma olivaceum*. Yellow cryst. (MeOH). Mp 160-161°. λ_{max} 227 (ϵ 24100); 280 (ϵ 56100); 380 (ϵ 7000) (no solvent reported) (Derep). λ_{max} 227 (ϵ 39900); 292 (ϵ 21400); 379 (ϵ 7600) (CH_2Cl_2) (Derep).

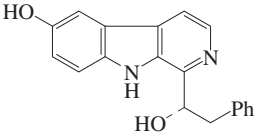
6-Bromo: ***Eudistomin S***
[108335-04-2]
$C_{19}H_{13}BrN_2O$ 365.228
Alkaloid from *Eudistoma olivaceum*. Yellow cryst. (MeOH). Mp 168°. λ_{max} 227 (ϵ 24100); 280 (ϵ 56100); 380 (ϵ 7000) (no solvent reported) (Derep). λ_{max} 227 (ϵ 39900); 292 (ϵ 21400); 379 (ϵ 7600) (CH_2Cl_2) (Derep).

7-Bromo: ***Eudistomin R***
[108335-03-1]
$C_{19}H_{13}BrN_2O$ 365.228
Alkaloid from *Eudistoma olivaceum*. λ_{max} 227 (ϵ 24100); 280 (ϵ 56100); 380 (ϵ 7000) (no solvent reported) (Derep). λ_{max} 227 (ϵ 39900); 292 (ϵ 21400); 379 (ϵ 7600) (CH_2Cl_2) (Derep).

Kinzer, K.F. *et al., Tet. Lett.*, 1987, **28**, 925-926 (*uv, ir, pmr, ms, struct*)
Still, I.W.J. *et al., Heterocycles*, 1989, **29**, 2057 (*synth, cmr, Eudistomins S and T*)
Wasserman, H.H. *et al., Tet. Lett.*, 1989, **30**, 7117 (*synth*)
Bracher, F. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1994, **327**, 121 (*synth*)
McNulty, J. *et al., J.C.S. Perkin 1*, 1994, 1329 (*synth*)
Rocca, P. *et al., Synth. Commun.*, 1995, **25**, 3373 (*synth*)
Molina, P. *et al., Tet. Lett.*, 1996, **37**, 9353 (*synth, Eudistomin S, Eudistomin T*)

Eudistomin W E-290

*1-(1-Hydroxy-2-phenylethyl)-9*H*-pyrido[3,4-*b*]indol-6-ol. 6-Hydroxy-α-phenylmethyl-9*H*-pyrido[3,4-*b*]indole-1-methanol, 9CI*



(*S*)*-form*

$C_{19}H_{16}N_2O_2$ 304.348

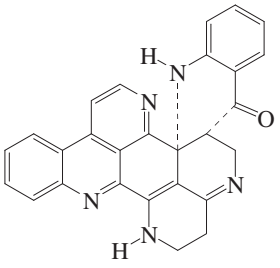
(S)-form [492463-95-3]
Alkaloid from the marine tunicate *Eudistoma* sp. Amorph. brown powder. $[\alpha]_D^{20}$

-23 (c, 0.24 in MeOH). λ_{max} 208 ; 234 ; 266 ; 308 ; 405 (MeOH).

Schupp, P. *et al., J. Nat. Prod.*, 2003, **66**, 272-275 (*isol, pmr, cmr, ms*)

Eudistone A **E-291**

[135340-00-0]



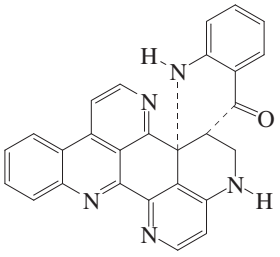
$C_{27}H_{19}N_5O$ 429.48

Alkaloid from the tunicate *Eudistoma* sp. Amorph. yellow powder. λ_{max} 210 (ϵ 44800); 238 (ϵ 48500); 260 (sh) (ϵ 24700); 323 (ϵ 15300); 338 (ϵ 15500); 359 (sh) (ϵ 13100); 395 (ϵ 10600) (MeOH) (Derep).

He, H.-Y. *et al., J.O.C.*, 1991, **56**, 5369-5371 (*isol, uv, ir, cd, pmr, cmr, struct*)

Eudistone B **E-292**

[135340-01-1]



$C_{27}H_{17}N_5O$ 427.464

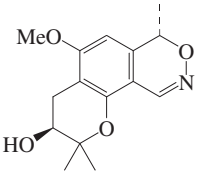
Alkaloid from the tunicate *Eudistoma* sp. Amorph. powder. $[\alpha]_D$ -177.8 (c, 0.036 in MeOH). λ_{max} 204 (ϵ 45700); 239 (ϵ 47400); 259 (ϵ 39600); 324 (ϵ 14700) (MeOH) (Derep).

He, H.-Y. *et al., J.O.C.*, 1991, **56**, 5369-5371 (*isol, uv, ir, cd, pmr, cmr, struct*)

Eugenine A **E-293**

2,3,4,7-Tetrahydro-5-methoxy-2,2,7-trimethylpyrano[2,3-f][2,3]benzoxazin-3-ol

[913329-95-0]



Absolute Configuration

$C_{15}H_{19}NO_4$ 277.319

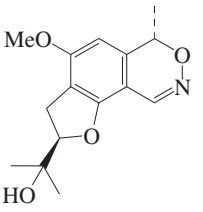
Alkaloid from the aerial parts of *Eugenia caryophyllus.*

Abdel-Kader, S.M. *et al., CA*, 2006, **145**, 451680r (*isol*)

Eugenine B **E-294**

3,6-Dihydro-4-methoxy-α,α,6-trimethyl-2H-furo[2,3-f][2,3]benzoxazine-2-methanol

[913329-96-1]



Absolute Configuration

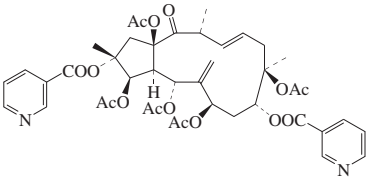
$C_{15}H_{19}NO_4$ 277.319

Alkaloid from the aerial parts of *Eugenia caryophyllus.*

Abdel-Kader, S.M. *et al., CA*, 2006, **145**, 451680r (*isol*)

Euphosalicin **E-295**

[330937-97-8]



$C_{42}H_{48}N_2O_{15}$ 820.846

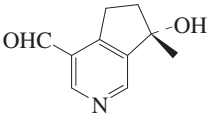
Constit. of *Euphorbia salicifolia*. Amorph. solid. $[\alpha]_D^{25}$ -101 (c, 0.12 in $CHCl_3$). λ_{max} 219 (log ϵ 3.94); 264 (log ϵ 3.38) (MeOH).

Hohmann, J. *et al., Tetrahedron*, 2001, **57**, 211-215 (*isol, pmr, cmr*)

Euphrosine **E-296**

6,7-Dihydro-7-hydroxy-7-methyl-5H-2-pyrindine-4-carboxaldehyde, 9CI

[126632-23-3]



Absolute Configuration

$C_{10}H_{11}NO_2$ 177.202

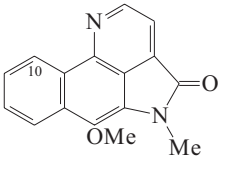
Alkaloid from *Orthocarpus luteus.* Pale yellow solid. $[\alpha]_D^{23}$ +3.3 (c, 0.21 in $CHCl_3$). λ_{max} 238 (log ϵ 3.4); 266 (log ϵ 2.9); 281 (log ϵ 2.8) (EtOH).

Boros, C.A. *et al., J. Nat. Prod.*, 1990, **53**, 72-80 (*isol, uv, pmr, cmr, ms, struct*)

Eupolauramine **E-297**

6-Methoxy-5-methylbenzo[h]pyrrolo[4,3,2-de]quinolin-4(5H)-one, 9CI. EL Base 2

[58856-98-7]



$C_{16}H_{12}N_2O_2$ 264.283

Alkaloid from the bark of *Eupomatia laurina* (Eupomatiaceae). Golden-yellow prisms (EtOH). Mp 189-190°.

O-*De-Me:*

Orange needles ($CHCl_3/Et_2O$). Mp 290° dec.

10-Hydroxy: ***Hydroxyeupolauramine****. EL Base 3*

[58856-99-8]

$C_{16}H_{12}N_2O_3$ 280.282

Alkaloid from the bark of *Eupomatia laurina* (Eupomatiaceae). Fine orange needles (EtOH). Mp 282-283°.

10-Hydroxy, Me ether:

Orange-yellow prisms (EtOH). Mp 213-215°.

Bowden, B.F. *et al., Aust. J. Chem.*, 1972, **25**, 2659; 1975, **28**, 2681 (*isol, uv, ir, pmr, ms*)
Bowden, B.F. *et al., J.C.S. Perkin 2*, 1976, 658 (*cryst struct*)
Levin, J.I. *et al., J.A.C.S.*, 1983, **105**, 1397 (*synth*)
Taylor, W.C. *et al., Aust. J. Chem.*, 1984, **37**, 1095-1104 (*biosynth, Hydroxyeupolauramine*)
Karuso, P. *et al., Aust. J. Chem.*, 1984, **37**, 1271 (*synth*)
Murakami, Y. *et al., Chem. Pharm. Bull.*, 1988, **36**, 3732 (*synth*)
Kikugawa, Y. *et al., Tet. Lett.*, 1988, **29**, 4297 (*synth*)
Wang, X. *et al., Tet. Lett.*, 1991, **32**, 4883 (*synth*)
Makosza, M. *et al., Heterocycles*, 1992, **33**, 585 (*synth*)
Goehring, R.R. *et al., Tet. Lett.*, 1992, **33**, 6045 (*synth*)
Hoarau, C. *et al., J.O.C.*, 2001, **66**, 8064-8069 (*synth*)

Euroline **E-298**

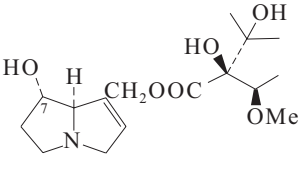
[11085-46-4]

Struct. unknown. Alkaloid from the roots of *Euonymus europaeus* (Celastraceae). Powder. Mp 66-68°.

Bishay, D.W. *et al., Herba Pol.*, 1971, **17**, 97-109; *CA*, **75**, 115894k

Europine **E-299**

[570-19-4]



$C_{16}H_{27}NO_6$ 329.392

Ester of Heliotridine in T-188 with Lasiocarpic acid. Alkaloid from *Heliotropium* spp. (Boraginaceae). Shows antifungal and insect antifeedant activity. Gum or glass. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. $[\alpha]_D$ +10.9 (c, 2.5 in EtOH). Abs. config. shown follows from that detd. crystallographically for Lasiocarpine, L-47.

▶ Highly toxic.

N-*Oxide:* ***Europine N-oxide***

[65582-53-8]

$C_{16}H_{27}NO_7$ 345.392

Alkaloid from *Heliotropium*

maris-mortui and *Heliotropium rotundifolium* (Boraginaceae). Shows antitumour activity. Mp 171-172°. $[\alpha]_D$ +27.

O^7-*Ac:* ***7-Acetyleuropine***
[123520-99-0]
$C_{18}H_{29}NO_7$ 371.43
Alkaloid from aerial parts of *Heliotropium bovei* (Boraginaceae). Gum. $[\alpha]_D$ +5.9 (c, 0.67 in EtOH).

5′-O-*Ac:* ***5′-Acetyleuropine***
[123520-98-9]
$C_{18}H_{29}NO_7$ 371.43
Alkaloid from *Heliotropium rotundifolium* (Boraginaceae). Gum. $[\alpha]_D^{24}$ +27.2 (c, 1.58 in $CHCl_3$).

O^7-*Angeloyl:* see Lasiocarpine, L-47

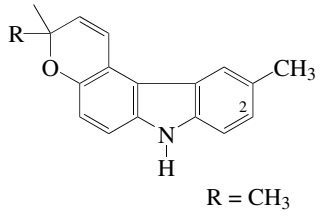
7-*Deoxy:* ***Ilamine***
$C_{16}H_{27}NO_5$ 313.393
Alkaloid from *Heliotropium crassifolium*. Light yellow oil. $[\alpha]_D^{24}$ +33.3 (c, 0.2 in EtOH).

7-*Deoxy,* N-*oxide:* ***Ilamine* N-*oxide***
$C_{16}H_{27}NO_6$ 329.392
Alkaloid from *Heliotropium crassifolium*. Light yellow oil. $[\alpha]_D^{24}$ +20 (c, 0.1 in EtOH).

Culvenor, C.C.J. *et al., Aust. J. Chem.*, 1954, **7**, 287 (*isol, struct*)
Crowley, H.C. *et al., CA*, 1957, **51**, 3925 (*isol*)
Culvenor, C.C.J. *et al., Aust. J. Chem.*, 1965, **18**, 1625 (*pmr*)
Zalkow, L.H. *et al., Phytochemistry*, 1978, **17**, 172 (*oxide*)
Jones, A.J. *et al., Aust. J. Chem.*, 1982, **35**, 1173 (*cmr*)
Asibal, C.F. *et al., J. Nat. Prod.*, 1989, **52**, 726 (*isol, ir, pmr, cmr, ms, struct, 5′-Acetyleuropine*)
Reina, M. *et al., Phytochemistry*, 1995, **38**, 355 (*7-Acetyleuropine*)
Farsam, H. *et al., Planta Med.*, 2000, **66**, 389-391 (*Ilamine, Ilamine oxide*)

Eustifoline A E-300

*3,7-Dihydro-3,3,10-trimethylpyrano[2,3-*c*]carbazole, 9CI. 5,6-Pyranoglycozoline. Glycomaurin*
[119157-65-2]



R = CH_3

$C_{18}H_{17}NO$ 263.338
Alkaloid from *Glycosmis mauritiana*, *Micromelum falcatum* and *Murraya euchrestifolia* (Rutaceae). Green-yellow needles ($CHCl_3$/petrol). Mp 195-196° (178°).

N-*Me:* [125287-16-3]
Pale green-yellow needles (EtOH). Mp 130-131°.

2-Hydroxy: 2-Hydroxyeustifoline A. ***Glycoborinine***
[233279-39-5]
$C_{18}H_{17}NO_2$ 279.338
Alkaloid from *Glycosmis arborea*. Cryst. (C_6H_6/MeOH). Mp 220-221°. λ_{max} 262 ; 269 ; 293 ; 335 (MeOH).

2-Methoxy: ***2-Methoxyeustifoline A***. *2-Methoxyglycomaurin*
[220789-48-0]
$C_{19}H_{19}NO_2$ 293.365
Alkaloid from *Glycosmis rupestris*. Needles. Mp 225-227°. λ_{max} 235 (log ϵ 0.54); 240 (log ϵ 0.48); 256 (log ϵ 5); 293 (log ϵ 0.58); 334 (0.79) (no solvent reported).

Kong, Y.C. *et al., Biochem. Syst. Ecol.*, 1988, **16**, 485-489 (*isol, uv, pmr, ms, struct*)
Kumar, V. *et al., Aust. J. Chem.*, 1989, **42**, 1375-1379 (*isol, uv, ir, pmr, ms, synth, struct*)
Ito, C. *et al., Chem. Pharm. Bull.*, 1990, **38**, 1548-1550 (*isol, pmr, cmr, struct*)
Rahmani, M. *et al., Planta Med.*, 1998, **64**, 780 (*2-Methoxyeustifoline A*)
Chakravarty, A.K. *et al., Phytochemistry*, 1999, **50**, 1263-1266 (*Glycoborinine*)
Lebold, T.P. *et al., Org. Lett.*, 2007, **9**, 1883-1886 (*synth*)

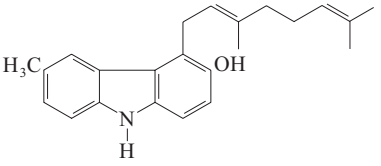
Eustifoline B E-301

*3,7-Dihydro-3,10-dimethyl-3-(4-methyl-3-pentenyl)pyrano[2,3-*c*]carbazole, 9CI*
[133740-40-6]
As Eustifoline A, E-300 with
R = $-CH_2CH_2CH{=}C(CH_3)_2$
$C_{23}H_{25}NO$ 331.457
Alkaloid from the root bark of *Murraya euchrestifolia* (Rutaceae). Oil.

Ito, C. *et al., Chem. Pharm. Bull.*, 1990, **38**, 1548 (*isol, pmr, cmr, struct*)
Lebold, T.P. *et al., Org. Lett.*, 2007, **9**, 1883-1886 (*synth*)

Eustifoline C E-302

*4-(3,7-Dimethyl-2,6-octadienyl)-6-methyl-9*H*-carbazol-3-ol, 9CI. 4-Geranyl-3-hydroxy-6-methylcarbazole*
[133740-41-7]

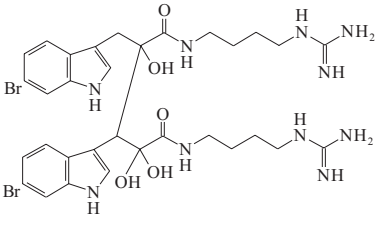


$C_{23}H_{27}NO$ 333.472
Alkaloid from the root bark of *Murraya euchrestifolia* (Rutaceae). Amorph. powder.

Ito, C. *et al., Chem. Pharm. Bull.*, 1990, **38**, 1548 (*isol, uv, ir, pmr, ms, struct*)
Lebold, T.P. *et al., Org. Lett.*, 2007, **9**, 1883-1886 (*synth*)

Eusynstyelamide E-303

[157878-21-2]

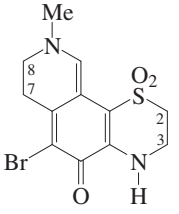


$C_{32}H_{42}Br_2N_{10}O_5$ 806.556
Highly modified tryptophan-arginine dipeptide dimer. Metab. from the ascidian *Eusynstyela misakiensis*.

Swersey, J.C. *et al., J. Nat. Prod.*, 1994, **57**, 842 (*isol, uv, ir, pmr, cmr, ms, struct*)

Euthyroideone A E-304

[219566-39-9]



$C_{12}H_{13}BrN_2O_3S$ 345.216
Alkaloid from the bryozoan *Euthyroides episcopalis*. Mp 245°. λ_{max} 202 (log ϵ 3.96); 242 (log ϵ 3.72); 383 (log ϵ 3.6); 452 (log ϵ 3.86) (MeOH).

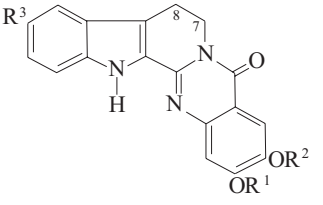
2,3-Didehydro: ***Euthyroideone B***
[219566-38-8]
$C_{12}H_{11}BrN_2O_3S$ 343.201
Alkaloid from *Euthyroides episcopalis*. Mp 244°. λ_{max} 208 (log ϵ 4.5); 310 (log ϵ 4.38); 436 (log ϵ 4.6) (MeOH).

7,8-Didehydro: ***Euthyroideone C***
[219566-40-2]
$C_{12}H_{11}BrN_2O_3S$ 343.201
Alkaloid from *Euthyroides episcopalis*. λ_{max} 203 (log ϵ 3.6); 280 (log ϵ 3.63); 391 (log ϵ 3.32) (MeOH).

Morris, B.D. *et al., J.O.C.*, 1998, **63**, 9545-9547

Euxylophoricine A E-305

*8,13-Dihydro-2,3-dimethoxyindolo[2′,3′:3,4]pyrido[2,1-*b*]quinazolin-5(7*H*)-one, 9CI*
[20999-50-2]



$R^1 = R^2$ = Me, R^3 = H

$C_{20}H_{17}N_3O_3$ 347.373
Minor alkaloid from the bark of *Euxylophora paraënsis* (Rutaceae). Needles ($CHCl_3$/MeOH). Mp 296-298°.

7,8-Didehydro: ***Euxylophoricine B***. *2,3-Dimethoxyindolo[2′,3′:3,4]pyrido[2,1-*b*]quinazolin-5(13*H*)-one, 9CI*
[20999-51-3]
$C_{20}H_{15}N_3O_3$ 345.357
Minor alkaloid from the bark of *Euxylophora paraënsis* (Rutaceae). Yellow prisms ($CHCl_3$/MeOH). Mp 310-312°.

Canonica, L. *et al., Tet. Lett.*, 1968, 4865 (*uv, ir, pmr, struct*)
Danieli, B. *et al., Phytochemistry*, 1972, **11**, 1833 (*synth*)
Danieli, B. *et al., Gazz. Chim. Ital.*, 1975, **105**, 45 (*synth*)
Kametani, T. *et al., J.C.S. Perkin 1*, 1977, 2347 (*synth*)
Bergman, J. *et al., J.O.C.*, 1985, **50**, 1246 (*synth, cmr*)
Hamid, A. *et al., Tet. Lett.*, 2006, **47**, 1777-1781 (*synth*)

Euxylophoricine C E-306

*5,15-Dihydro[1,3]dioxolo[4,5-*g*]indolo[2′,3′:3,4]pyrido[2,1-*b*]quinazolin-8(6*H*)-one, 9CI*
[38990-11-3]
As Euxylophoricine A, E-305 with R^1R^2 = –CH_2–, R^3 = H
$C_{19}H_{13}N_3O_3$ 331.33
Minor alkaloid from the bark of *Euxylophora paraënsis* (Rutaceae). Yellowish cryst. (EtOH). Mp 310-312°.

Danieli, B. *et al., Phytochemistry*, 1972, **11**, 1833 (*isol, uv, ir, pmr, ms, struct, synth*)
Kametani, T. *et al., J.C.S. Perkin 1*, 1977, 2347 (*synth*)
Bergman, J. *et al., J.O.C.*, 1985, **50**, 1246 (*synth, ir*)

Euxylophoricine D E-307

*8,13-Dihydro-2,3,10-trimethoxyindolo[2′,3′:3,4]pyrido[2,1-*b*]quinazolin-5(7*H*)-one, 9CI*
[51059-70-2]
As Euxylophoricine A, E-305 with R^1 = R^2 = Me, R^3 = OMe
$C_{21}H_{19}N_3O_4$ 377.399
Minor alkaloid from the bark of *Euxylophora paraënsis* (Rutaceae). Plates ($CHCl_3$). Mp 293-295°.

7,8-Didehydro: ***Euxylophoricine E****. 2,3,10-Trimethoxyindolo[2′,3′:3,4]pyrido[2,1-*b*]quinazolin-5(13*H*)-one, 9CI*
[51059-71-3]
$C_{21}H_{17}N_3O_4$ 375.383
Minor alkaloid from *Euxylophora paraënsis* bark (Rutaceae). Yellowish cryst. ($CHCl_3$). Mp 290°.

Danieli, B. *et al., Phytochemistry*, 1973, **12**, 2521 (*isol, uv, ir, pmr, ms, struct, synth*)
Bergman, J. *et al., J.O.C.*, 1985, **50**, 1246 (*synth, ir, cmr*)

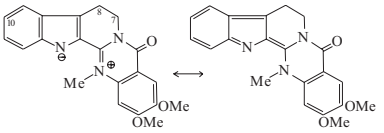
Euxylophoricine F E-308

*8,13-Dihydro-2-hydroxy-3-methoxyindolo[2′,3′:3,4]pyrido[2,1-*b*]quinazolin-5(7*H*)-one, 9CI*
[61017-57-0]
As Euxylophoricine A, E-305 with R^1 = H, R^2 = Me, R^3 = H
$C_{19}H_{15}N_3O_3$ 333.346
Alkaloid from the bark of *Euxylophora paraënsis* (Rutaceae). Pale-yellow needles (C_6H_6/petrol). Mp 226°.

Danieli, B. *et al., Phytochemistry*, 1976, **15**, 1095 (*isol, uv, ir, ms, struct, synth*)

Euxylophorine E-309

*8,14-Dihydro-2,3-dimethoxy-14-methylindolo[2′,3′:3,4]pyrido[2,1-*b*]quinazolin-5(7*H*)-one, 9CI*
[20999-49-9]



$C_{21}H_{19}N_3O_3$ 361.399
Alkaloid from the bark of *Euxylophora paraënsis* (Rutaceae). Orange-red needles (anhyd. C_6H_6). Mp 227-230°.

7,8-Didehydro: ***Euxylophorine B****. 2,3-Dimethoxy-14-methylindolo[2′,3′:3,4]pyrido[2,1-*b*]quinazolin-5(14*H*)-one, 9CI*
[38990-12-4]
$C_{21}H_{17}N_3O_3$ 359.384
Minor alkaloid from the bark of *Euxylophora paraënsis* (Rutaceae). Yellow-orange cryst. ($CHCl_3$). Mp 268-271° dec.

7,8-Didehydro; hydrochloride:
Yellow cryst. (MeOH + HCl). Mp 270-280° dec. Sublimation at 260-270°/0.01 mm gives Euxylophoricine B (q.v.).

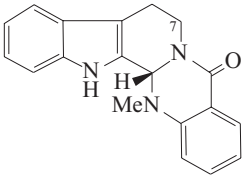
10-Methoxy: ***Euxylophorine C****. 5,7,8,13-Tetrahydro-2,3,10-trimethoxy-14-methyl-5-oxoindolo[2′,3′:3,4]pyrido[2,1-*b*]quinazolinium hydroxide inner salt, 9CI*
[50816-62-1]
$C_{22}H_{21}N_3O_4$ 391.426
Minor alkaloid from the bark of *Euxylophora paraënsis* (Rutaceae). Red needles (C_6H_6). Mp 207-209° dec.

10-Methoxy, 7,8-didehydro: ***Euxylophorine D***
[51059-69-9]
$C_{22}H_{19}N_3O_4$ 389.41
Minor alkaloid from the bark of *Euxylophora paraënsis* (Rutaceae). Yellow-orange needles (C_6H_6 or $CHCl_3$/diisopropyl ether). Mp 256-260° dec.

Canonica, L. *et al., Tet. Lett.*, 1968, 4865 (*uv, ir, pmr, synth*)
Danieli, B. *et al., Phytochemistry*, 1972, **11**, 1833 (*isol, uv, ir, pmr, ms, struct, synth, Euxylophorine B*)
Danieli, B. *et al., Phytochemistry*, 1973, **12**, 2521 (*isol, uv, ir, pmr, ms, struct, synth, Euxylophorine C, Euxylophorine D*)

Evodiamine E-310

*8,13,13*b*,14-Tetrahydro-14-methylindolo[2′,3′:3,4]pyrido[2,1-*b*]quinazolin-5(7*H*)-one, 9CI. Rhetsine*



$C_{19}H_{17}N_3O$ 303.363
Rhetsine was the racemate.

(S)-form [518-17-2]
A major component of the Chinese drug Wou-chou-yu (the dried fruit of *Evodia rutaecarpa*). Also present in *Araliopsis tabouensis* (Rutaceae, Araliaceae). Diuretic and diaphoretic agent. Shows bronchoconstrictive activity. Yellow leaflets (EtOH). Sol. Me_2CO; fairly sol. EtOH, $CHCl_3$, Et_2O; poorly sol. H_2O, C_6H_6, hexane. Mp 278°. $[\alpha]_D^{15}$ +352 (Me_2CO). λ_{max} 272 ; 280 ; 291 ; 335 (MeOH) (Berdy).

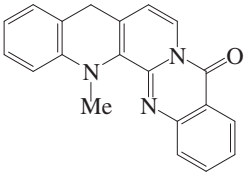
*7β-Carboxy: 5,7,8,13,13*b*,14-Hexahydro-14-methyl-5-oxoindolo[2′,3′:3,4]pyrido[2,1-*b*]quinazoline-7-carboxylic acid, 9CI. 7-****Carboxyevodiamine***
[69754-32-1]
$C_{20}H_{17}N_3O_3$ 347.373
Minor alkaloid from the fruits of *Evodia rutaecarpa* (Rutaceae). Amorph. solid (as Me ester). $[\alpha]_D^{20}$ +441 (c, 1 in $CHCl_3$) (Me ester).

(±)-form [518-18-3]
Alkaloid from the trunk bark of *Zanthoxylum rhetsa* (Rutaceae). Prisms (EtOH/EtOAc). Mp 275-277° (softens at 269°).

Chatterjee, A. *et al., Tetrahedron*, 1959, **7**, 257-261 (*isol*)
Gopinath, K.W. *et al., Tetrahedron*, 1960, **8**, 293-295 (*isol*)
Yamazaki, M. *et al., Tet. Lett.*, 1966, **7**, 3221-3224; 1967, **8**, 3317-3320 (*biosynth*)
Tamás, J. *et al., Acta Chim. Acad. Sci. Hung.*, 1976, **89**, 85-89 (*ms*)
Kametani, T. *et al., J.A.C.S.*, 1976, **98**, 6186-6188 (*synth, ir, uv, pmr, ms*)
Danieli, B. *et al., Heterocycles*, 1978, **9**, 803-806 (*synth*)
Danieli, B. *et al., Experientia*, 1979, **35**, 156 (*7-Carboxyevodiamine*)
Danieli, B. *et al., Chem. Comm.*, 1982, 1092-1093 (*synth, cd, abs config*)
Bergman, J. *et al., J.O.C.*, 1985, **50**, 1246-1255 (*synth*)
Kobayashi, Y. *et al., Planta Med.*, 2000, **66**, 526-530 (*activity*)
Nakayama, A. *et al., Heterocycles*, 2008, **76**, 861-865 (*synth*)

Evodiaxinine E-311

*9,14-Dihydro-14-methyl-5*H*-benzo[2,3][1,7]naphthyridino[8,7-*b*]quinazolin-5-one*
[918476-26-3]



$C_{20}H_{15}N_3O$ 313.358
Alkaloid from *Evodia rutaecarpa*.

Wang, Q. *et al., Zhongguo Yaoke Daxue Xuebao*, 2005, **36**, 520-522; *CA*, **146**, 118069r (*isol*)

Evoevoline **E-312**

Struct. unknown. Alkaloid from the leaves of *Euonymus europaeus* (Celastraceae). Needles (Et_2O). Mp 261-263°.

Bishay, D.W. *et al., Herba Pol.*, 1971, **17**, 233-241

Evoline **E-313**

[11085-47-5]

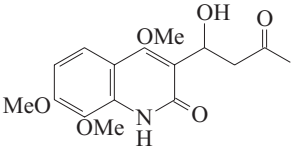
Struct. unknown. Alkaloid from the stems and roots of *Euonymus europaeus* (Celastraceae). Mp 261-263°.

Bishay, D.W. *et al., Herba Pol.*, 1971, **17**, 97-109; *CA*, **75**, 115894k

Evomeliaefolin **E-314**

*3-(1-Hydroxy-3-oxobutyl)-4,7,8-trimethoxy-2(1*H*)-quinolinone, 9CI*

[168146-20-1]



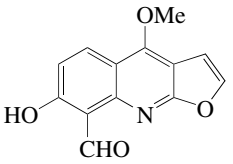
$C_{16}H_{19}NO_6$ 321.329

Alkaloid from heartwood of *Tetradium glabrifolium* (*Evodia meliaefolia*) (Rutaceae). Needles ($CHCl_3$/MeOH). Mp 226-228°. $[\alpha]_D$ -50 (c, 0.015 in MeOH).

Wu, T.-S. *et al., Phytochemistry*, 1995, **40**, 121 (*isol, uv, ir, pmr, ms, struct*)

Evomerrine **E-315**

*7-Hydroxy-4-methoxyfuro[2,3-*b*]quinoline-8-carboxaldehyde. 8-Formyl-7-hydroxy-4-methoxyfuro[2,3-*b*]quinoline. 8-Formyl-7-hydroxydictamnine. 8-Formyl-confusameline*



$C_{13}H_9NO_4$ 243.218

Alkaloid from leaves of *Melicope semecarpifolia* (Rutaceae). Needles ($CHCl_3$/MeOH). Mp 219-220°. λ_{max} 267 (log ε 4.16); 273 (log ε 4.14); 332 (log ε 3.83) (EtOH).

Tsai, I.L. *et al., Phytochemistry*, 1995, **40**, 1561-1562 (*isol*)

Evomine **E-316**

[12765-27-4]

Struct. unknown. Alkaloid from *Euonymus europaeus* (Celastraceae). Needles (Et_2O). Mp 232-235°.

Bishay, D.W. *et al., Herba Pol.*, 1971, **17**, 233-241

Evopine **E-317**

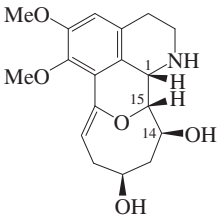
[11085-48-6]

Struct. unknown. Alkaloid from the roots of *Euonymus europaeus* (Celastraceae). Mp 222-225°.

Bishay, D.W. *et al., Herba Pol.*, 1971, **17**, 97-109; *CA*, **75**, 115894k

Excentricine **E-318**

[155416-29-8]



Absolute Configuration

$C_{18}H_{23}NO_5$ 333.383

Alkaloid from roots of *Stephania excentrica* (Menispermaceae). Needles (Me_2CO/MeOH). Mp 195-196°. $[\alpha]_D^{22}$ +261 (c, 0.03 in MeOH). λ_{max} 228 (log ε 4.31); 263 (log ε 4.02); 302 (log ε 3.23) (MeOH).

N-*Me:* **N-*Methylexcentricine***

[186541-61-7]

$C_{19}H_{25}NO_5$ 347.41

Alkaloid from roots of *Stephania excentrica*. Needles ($CHCl_3$). Mp 215-217°. $[\alpha]_D^{18}$ +266 (c, 0.02 in MeOH). λ_{max} 228 (log ε 4.42); 264 (log ε 4.02); 305 (log ε 3.51) (MeOH).

14-Deoxy, 14,15-didehydro: ***Stephalonganine A***

[908582-38-7]

$C_{18}H_{21}NO_4$ 315.368

Alkaloid from *Stephania longa*. Amorph. powder. $[\alpha]_D^{20}$ +157.5 (c, 0.12 in $CHCl_3$). λ_{max} 227 (log ε 4.38); 265 (log ε 4.03); 301 (log ε 3.46) (MeOH).

14-Deoxy, 14,15-didehydro, N-*Me:* ***Stephalonganine B***

[908582-39-8]

$C_{19}H_{23}NO_4$ 329.395

Alkaloid from *Stephania longa*. Amorph. powder. $[\alpha]_D^{20}$ +160 (c, 0.4 in $CHCl_3$).

1-Epimer, 14-deoxy, 14,15-didehydro: ***Stephalonganine C***

[908582-40-1]

$C_{18}H_{21}NO_4$ 315.368

Alkaloid from *Stephania longa*. Amorph. powder. $[\alpha]_D^{20}$ -155 (c, 0.08 in $CHCl_3$). λ_{max} 227 (log ε 4.3); 259 (log ε 4.03) (MeOH).

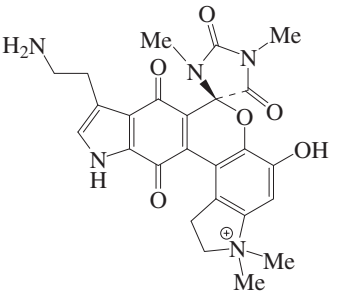
Deng, J.Z. *et al., Nat. Prod. Lett.*, 1993, **2**, 283-268 (*isol, struct*)

Kashiwaba, N. *et al., J. Nat. Prod.*, 1996, **59**, 803-805 (*abs config*)

Deng, J.Z. *et al., J. Nat. Prod.*, 1997, **60**, 294-295 (*N-Methylexcentricine*)

Zhang, H. *et al., Helv. Chim. Acta*, 2006, **89**, 1105-1109 (*Stephalonganines A-C*)

Exiguamine A **E-319**



$C_{25}H_{26}N_5O_6^{\oplus}$ 492.51

(±)-*form* [921223-01-0]

Constit. of *Neopetrosia exigua*. Deep red cryst. (MeOH) (as hydrochloride). λ_{max} 212 (log ε 3.44); 263 (log ε 3.08); 330 (log ε 2.79) (MeOH).

Brastianos, H.C. *et al., J.A.C.S.*, 2006, **128**, 16046-16047 (*isol, pmr, cmr, cryst struct*)

Eximidine **E-320**

$C_{20}H_{23}NO_4$ 341.406

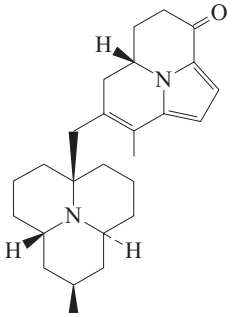
Struct. unknown. Possibly identical with Corydine, C-682. Alkaloid from *Dicentra eximia*. Mp 133°.

Manske, R.H.F. *et al., Can. J. Res.*, 1933, **8**, 592-599; *CA*, **27**, 5148

Exochomine **E-321**

[142796-25-6]

[142754-96-9]



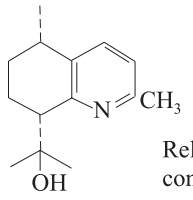
$C_{26}H_{36}N_2O$ 392.583

Alkaloid from the ladybird *Exochomus quadripustulatus*. Cryst. + $1H_2O$ (as hydrochloride). Mp 243-248° (hydrochloride). $[\alpha]_D$ +168 (c, 0.77 in $CHCl_3$).

Timmermans, M. *et al., Tet. Lett.*, 1992, **33**, 1281 (*isol, pmr, cmr, cryst struct*)

Fabianine F-1

[6871-51-8]



Relative configuration

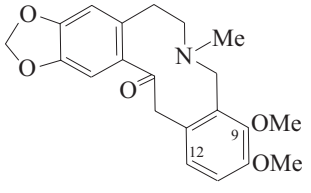
$C_{14}H_{21}NO$ 219.326
Alkaloid from *Fabiana imbricata* (Solanaceae). Oil. $Bp_{0.05}$ 74°. $[\alpha]_D$ 0.

Picrate:
Needles (EtOAc). Mp 114-116°.

Edwards, O.E. *et al., Can. J. Chem.*, 1962, **40**, 256 (*isol, uv, pmr, ir, struct*)
Sugita, T. *et al., Heterocycles*, 1986, **24**, 29 (*synth, ir, pmr*)
Schmed-Hirschmann, G. *et al., Phytochemistry* , 1994, **36**, 1439 (*isol, pmr, cmr*)

Fagarine I F-2

5,7,8,15-Tetrahydro-3,4-dimethoxy-6-methylbenzo[e][1,3]dioxolo[4,5-k][3]benzazecin-14(6H)-one, 9CI. Thalictrimine†. α-Fagarine. Allocryptopine. γ-Homochelidonine. β-Homochelidonine
[24240-04-8]
[485-91-6]



$C_{21}H_{23}NO_5$ 369.416
Alkaloid from a wide variety of genera in the Papaveraceae (*Argemone, Bocconia, Corydalis, Dactylicapnos, Eschscholtzia, Glaucium, Hunnemannia, Hylomecon, Macleaya, Meconopsis, Papaver, Sanguinaria, Stylomecon, Chelidonium*), Ranunculaceae (*Thalictrum*), Rutaceae (*Fagara, Zanthoxylum*) and Sapindaceae (*Pteridophyllum*). Antihypertensive agent, cardiac inhibitor, respiratory stimulant, muscle relaxant. Cryst. (EtOH, Me_2CO, C_6H_6, EtOAc/petrol or $CHCl_3$/petrol). Poorly sol. hexane. Mp 160-161° (anhyd.). Log P 2.73 (uncertain value) (calc).

Hydrochloride:
Cryst. + ½ H_2O. Mp 192-193°.

Picrate:
Yellow plates (abs. EtOH). Mp 208-209°.

O^9*-De-Me:* ***Hunnemannine***
[490-52-8]
$C_{20}H_{21}NO_5$ 355.39
Alkaloid from *Hunnemannia fumariaefolia* and *Argemone fruticosa* (Papaveraceae). Cryst. ($CHCl_3$/MeOH or 2-propanol).

O^{10}*-De-Me:* ***Thalictrisine****. Alkaloid AA2. Alkaloid ED. Thalictricine*
[22047-92-3]
$C_{20}H_{21}NO_5$ 355.39
Alkaloid from *Thalictrum simplex*, *Thalictrum amurense*, *Argemone albiflora*, *Eschscholtzia californica* and *Eschscholtzia douglasii* (Ranunculaceae, Papaveraceae). Cryst. (MeOH). Mp 261-263°.

O^{10}*-De-Me, hydrochloride:*
Cryst. (H_2O). Mp 235-238°.

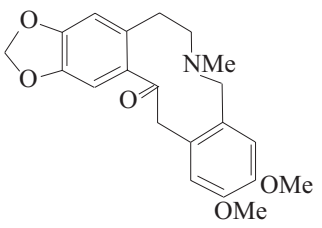
1-Methoxy: ***Oreonone****. 1-Methoxyallocryptopine*
[56743-52-3]
$C_{22}H_{25}NO_6$ 399.443
Alkaloid from *Papaver curviscapum* (Papaveraceae). Mp 213° (131°, 125-129°).

12-Methoxy: ***12-Methoxyallocryptopine***
$C_{22}H_{25}NO_6$ 399.443
Alkaloid from *Arctomecon* spp. (Papaveraceae).

Haworth, R.D. *et al., J.C.S.*, 1926, 445 (*synth*)
Manske, R.H.F. *et al., J.A.C.S.*, 1942, **64**, 1659 (*Hunnemannine*)
Deulofeu, V. *et al., J.O.C.*, 1947, **12**, 217 (*struct*)
Redemann, C.E. *et al., J.A.C.S.*, 1949, **71**, 1030 (*uv, struct*)
Dolejš, L. *et al., Coll. Czech. Chem. Comm.*, 1964, **29**, 2479 (*ms*)
Ma, J.C.N. *et al., Can. J. Chem.*, 1965, **43**, 1849 (*pmr*)
Slaviková, L. *et al., Coll. Czech. Chem. Comm.*, 1966, **31**, 1355 (*Hunnemannine, isol, uv, ir*)
Hruban, L. *et al., Coll. Czech. Chem. Comm.*, 1967, **32**, 3414 (*uv*)
Giacopello, D. *et al., Tetrahedron*, 1967, **23**, 3265 (*Hunnemannine, synth, uv, ir, pmr*)
Maturová, M. *et al., Planta Med.*, 1968, **17**, 121 (*Oreonone*)
Umarov, Kh.S. *et al., Khim. Prir. Soedin.*, 1970, **6**, 224; *Chem. Nat. Compd. (Engl. Transl.)*, 1970, **6**, 219 (*Thalictrisine*)
Haisková, K. *et al., Coll. Czech. Chem. Comm.*, 1973, **38**, 3312 (*Hunnemanine, isol, uv, ms*)
Teitel, S. *et al., Helv. Chim. Acta*, 1973, **56**, 553 (*synth*)
Nakashima, T.T. *et al., Org. Magn. Reson.*, 1973, **5**, 9 (*cmr*)
Vesely, Z. *et al., Coll. Czech. Chem. Comm.*, 1975, **40**, 1403 (*Oreonone, synth, uv, ir, ms*)
Battersby, A.R. *et al., J.C.S. Perkin 1*, 1975, 1147 (*biosynth*)
Hanaoka, M. *et al., Heterocycles*, 1976, **4**, 1685 (*synth*)
Iwasa, K. *et al., J.O.C.*, 1982, **47**, 4275 (*pmr, cmr*)
Sakai, T. *et al., Acta Cryst. C*, 1988, **44**, 838 (*cryst struct*)
Sariyar, G. *et al., Planta Med.*, 1989, **55**, 89 (*Oreonone, isol, uv, ir, pmr, ms*)
Raynie, D.E. *et al., Biochem. Syst. Ecol.*, 1990, **18**, 45 (*12-Methoxyallocryptopine*)
Marek, J. *et al., Coll. Czech. Chem. Comm.*, 1998, **63**, 416-424 (*cryst struct*)
Marek, R. *et al., Magn. Reson. Chem.*, 1999, **37**, 195-202 (*N-15 nmr*)

Fagarine II F-3

5,7,8,15-Tetrahydro-2,3-dimethoxy-6-methylbenzo[e][1,3]dioxolo[4,5-k][3]benzazecin-14(6H)-one, 9CI
[528-67-6]



$C_{21}H_{23}NO_5$ 369.416
Alkaloid from the leaves and twigs of *Fagara coco* (Rutaceae). Needles (EtOH, EtOAc or C_6H_6). Mp 200-202°.

Hydrochloride:
Cryst. + ½ H_2O (EtOH/Et_2O). Mp 200-202° dec., 215° dec. (rapid heating).

Picrate:
Yellow needles. Mp 214°.

Redemann, C.E. *et al., J.A.C.S.*, 1949, **71**, 1030 (*isol, uv*)
Comin, J. *et al., Tetrahedron*, 1959, **6**, 63 (*ir, struct*)
Giacopello, D. *et al., Tetrahedron*, 1964, **20**, 2971 (*synth, uv*)
Orito, K. *et al., Heterocycles*, 1980, **14**, 11 (*synth, pmr*)

Fagarine III F-4

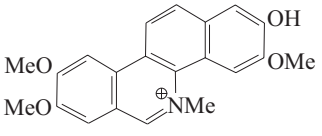
$C_{22}H_{26}NO_4$ 368.452
Struct. unknown. Prob. a protopine alkaloid. Trace alkaloid from *Fagara coco* (Rutaceae). Prisms (EtOH). Mp 181-183°. $[\alpha]_D^{27}$ -300 ($CHCl_3$).

Hydrochloride: Mp 232-234° dec.

Redemann, C.E. *et al., J.A.C.S.*, 1949, **71**, 1030-1034 (*isol, uv*)

Fagaronine F-5

2-Hydroxy-3,8,9-trimethoxy-5-methylbenzo[c]phenanthridinium(1+), 9CI
[52259-65-1]



$C_{21}H_{20}NO_4^{\oplus}$ 350.393
Alkaloid from the roots of *Fagara xanthoxyloides* (Rutaceae) and from *Zanthoxylum spinosum*. Antineoplastic agent. Inhibitor of RNA reverse transcriptase activity in oncogenic viruses; very active antileukaemic agent. Shows anti-HIV activity. An intercalating agent. Shows bactericidal props. Yellow needles (EtOAc/MeOH)(as chloride). Mp 202° (198-200°) Mp 260-261° (double Mp)(chloride). Log P -0.06 (uncertain value) (calc). λ_{max} 233 (ε

19500); 272 (ϵ 35480); 328 (ϵ 27500) (MeOH) (Berdy). λ_{max} 346 (NaOH) (Berdy).

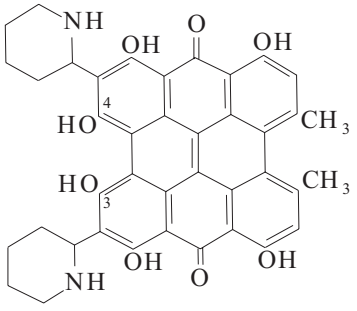
► DI9861000

Me ether, O-*de-Me:* ***Punctatine***†
[65522-91-0]
$C_{21}H_{20}NO_4^{\oplus}$ 350.393
Alkaloid from the stems and branches of *Zanthoxylum punctatum* (Rutaceae). Exact struct. not known.

Messmer, W.M. *et al., J. Pharm. Sci.*, 1972, **61**, 1858 (*ir, uv, ms, pmr, isol struct*)
Tin-Wa, M. *et al., J. Pharm. Sci.*, 1974, **63**, 1476 (*struct*)
Gillespie, J.P. *et al., J.O.C.*, 1974, **39**, 3239 (*synth*)
Sethi, V.S. *et al., Biochem. Biophys. Res. Commun.*, 1975, **63**, 1070 (*pharmacol*)
Stermitz, F.R. *et al., Phytochemistry*, 1977, **16**, 2003-2006 (*Punctatine*)
Phillips, S.D. *et al., J. Het. Chem.*, 1981, **18**, 223 (*rev*)
Ishii, H. *et al., Chem. Pharm. Bull.*, 1983, **31**, 2963 (*synth*)
Hanaoka, M. *et al., Chem. Pharm. Bull.*, 1987, **35**, 2348 (*synth, uv, ir, pmr, ms*)
Ishii, H. *et al., J.C.S. Perkin 1*, 1987, 671 (*synth, ir, pmr*)
Šmidrkal, J. *et al., Coll. Czech. Chem. Comm.*, 1988, **53**, 3184 (*synth, uv, pmr*)
Tan, G.T. *et al., J. Nat. Prod.*, 1991, **54**, 143 (*anti-HIV activity*)
Barret, Y. *et al., Phytother. Res.*, 1992, **6**, 59 (*rev*)
Lunch, M.A. *et al., Bull. Soc. Chim. Fr.*, 1994, **131**, 718 (*synth*)
Seckárová, P. *et al., Magn. Reson. Chem.*, 2002, **40**, 147-152 (*pmr, cmr*)

Fagopyrine F-6

*1,3,4,6,8,13-Hexahydroxy-10,11-dimethyl-2,5-di-2-piperidinylphenanthro[1,10,9,8-*opqra*]perylene-7,14-dione, 9CI*
[72393-03-4]
[72393-47-6 , 72393-46-5]

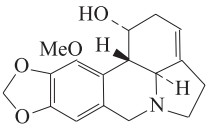


$C_{40}H_{34}N_2O_8$ 670.717
Photodynamic pigment of *Fagopyrum esculentum* (buckwheat) (Polygonaceae). Violet powder. Sol. Py, to give red solns. Free base not obt. in pure state. tetra-Ac and tetrabenzoyl derivs. obt. chromatographically pure.

Brockmann, H. *et al., Annalen*, 1952, **575**, 53 (*isol*)
Brockmann, H. *et al., Tet. Lett.*, 1979, 1575 (*uv, pmr, cmr, struct*)

Falcatine F-7

[568-23-0]



Absolute configuration

$C_{17}H_{19}NO_4$ 301.341
Alkaloid from the bulbs of *Nerine falcata* and *Nerine laticoma* (Amaryllidaceae). Prisms (Et_2O). Mp 127-128°. $[\alpha]_D^{22}$ -197.8 (c, 1.05 in $CHCl_3$). Unstable to air and light.

Hydrochloride: Mp 220-235° dec., 238-240° dec.

Ac:
Prisms (EtOH). Mp 201-202°.

Demethoxy: ***Caranine***
[477-12-3]
$C_{16}H_{17}NO_3$ 271.315
Alkaloid from *Amaryllis belladonna* and a large number of other spp. in the Amaryllidaceae. Weak analgesic, convulsant and hypotensive agent, acetylcholinesterase inhibitor. Mp 178-180°. $[\alpha]_D^{27}$ -197 (c, 2 in $CHCl_3$).

Demethoxy, perchlorate: Mp 260-270° dec.

Demethoxy, Ac: ***Belamarine****. Bellamarine. Acetylcaranine*
[14383-07-4]
$C_{18}H_{19}NO_4$ 313.352
Alkaloid from *Amaryllis belladonna* and some other spp. in the Amaryllidaceae. Cytotoxic to P388 sarcoma cells *in vitro*, shows no activity *in vivo*. Sol. MeOH, $CHCl_3$. Mp 184-185° (173-174°). $[\alpha]_D$ -177 (-81) ($CHCl_3$). λ_{max} 236 (ϵ 33200); 294 (ϵ 35100) (MeOH) (Berdy).

2ξ-Hydroxy: ***Amaryllidine***
$C_{17}H_{19}NO_5$ 317.341
Alkaloid from the bulbs of *Amaryllis belladonna* var. *purpurea major* (Amaryllidaceae). Cryst. (MeOH/Me_2CO). Mp 204°. $[\alpha]_D^{25}$ +64 (c, 0.16 in $CHCl_3$).

2ξ-Hydroxy; perchlorate: Mp 134-135°.

2ξ-Methoxy: ***Parkamine***
$C_{18}H_{21}NO_5$ 331.368
Alkaloid from bulbs of *Amaryllis parkeri* (Amaryllidaceae). Cryst. (MeOH/Me_2CO or MeOH). Mp 251-253° dec. $[\alpha]_D^{23}$ +69 (c, 0.25 in $CHCl_3$).

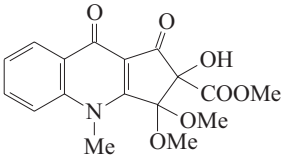
2ξ-Methoxy; perchlorate: Mp 245° dec.

2ξ-Methoxy, picrate: Mp 178° dec.

Wildman, W.C. *et al., J.A.C.S.*, 1955, **77**, 4807 (*isol*)
Boit, H.G. *et al., Chem. Ber.*, 1956, **89**, 2093; 1959, **92**, 2578 (*Parkamine, Amaryllidine*)
Warnhoff, E.W. *et al., J.A.C.S.*, 1957, **79**, 2192 (*Caranine*)
Takeda, K. *et al., J.A.C.S.*, 1958, **80**, 2562 (*Caranine, synth*)
Fales, H.M. *et al., J.A.C.S.*, 1958, **80**, 4395 (*struct*)
Torssell, K. *et al., Acta Chem. Scand.*, 1961, **15**, 947 (*struct*)
Benington, F. *et al., J.O.C.*, 1962, **27**, 142 (*struct*)
Kotera, K. *et al., Tet. Lett.*, 1966, 2009 (*Caranine, pmr, config*)
Kinstle, T.H. *et al., Tet. Lett.*, 1966, 4659 (*Caranine, ms*)

Fareanine F-8

[182261-47-8]

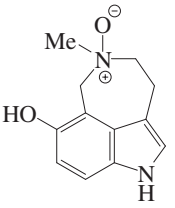


$C_{17}H_{17}NO_7$ 347.324
Alkaloid from leaves of *Medicosma fareana*. Gum. $[\alpha]_D$ -2 (c, 0.7 in $CHCl_3$). Appears to be a degradn. prod. of an acridone precursor. λ_{max} 305 (EtOH).

Habtemariam, S. *et al., Phytochemistry*, 1996, **43**, 291 (*isol, uv, ir, pmr, cmr, ms, struct*)

Fargesine F-9

*3,4,6,6-Tetrahydro-5-methyl-1*H*-azepino[5,4,3-*cd*]indol-7-ol* N^5*-oxide*

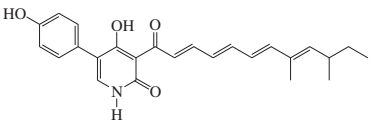


$C_{12}H_{14}N_2O_2$ 218.255
Alkaloid from *Evodia fargesii*. Amorph. powder. λ_{max} 218 ; 274 (MeOH).

Qu, S.-J. *et al., Planta Med.*, 2006, **72**, 264-266 (*isol, pmr, cmr, ms*)

Farinosone A F-10

*3-(8,10-Dimethyl-1-oxo-2,4,6,8-dodecatetraenyl)-4-hydroxy-5-(4-hydroxyphenyl)-2(1*H*)-pyridinone, 9CI*

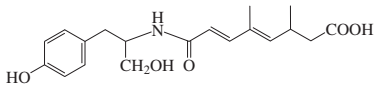


$C_{25}H_{27}NO_4$ 405.493
Similar to Tenellin, T-72. Prod. by *Paecilomyces farinosus* RCEF 0101. Neurotrophic agent. Bright yellow powder. $[\alpha]_D^{24}$ -27.2 (c, 0.15 in MeOH). λ_{max} 249 (log ϵ 4.24); 415 (log ϵ 4.34) (MeOH).

N-*Hydroxy:* ***Farinosone B***
$C_{25}H_{27}NO_5$ 421.492
Prod. by *Paecilomyces farinosus* RCEF 0101. Bright yellow powder. $[\alpha]_D^{24}$ -30 (c, 0.07 in MeOH). λ_{max} 257 (log ϵ 3.64); 416 (log ϵ 3.88) (MeOH).

Cheng, Y. *et al., J. Nat. Prod.*, 2004, **67**, 1854-1858 (*isol, pmr, cmr*)
Lang, G. *et al., J. Nat. Prod.*, 2005, **68**, 810-811 (*isol*)

Farinosone C F-11

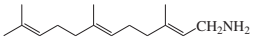


$C_{19}H_{25}NO_5$ 347.41
Prod. by *Paecilomyces farinosus* RCEF 0101. Neurotrophic agent. Amorph. powder. $[\alpha]_D^{24}$ -20 (c, 0.07 in MeOH). λ_{max} 266 (log ϵ 2.62) (MeOH).

Cheng, Y. *et al., J. Nat. Prod.*, 2004, **67**, 1854-1858 (*isol, pmr, cmr*)

2,6,10-Farnesatrien-1-amine F-12

3,7,11-Trimethyl-2,6,10-dodecatrien-1-amine, 9CI. 1-Amino-2,6,10-farnesatriene. ***Farnesylamine***
[6784-46-9]
[134963-96-5]



(2E,6E)-form

$C_{15}H_{27}N$ 221.385

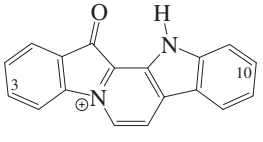
(2*E*,6*E*)-*form* [129121-59-1]
Alkaloid from the ant *Monomorium fieldi*. Oil. $Bp_{0.005}$ 120°.

(2*Z*,6*E*)-*form* [515846-16-9]
Alkaloid from the ant *Monomorium fieldi*.

Coppola, G.M. *et al., Synth. Commun.*, 1993, **23**, 535-541 (*synth, pmr, cmr*)
Patel, D.V. *et al., J. Med. Chem.*, 1995, **38**, 2906-2921 (*synth, pmr*)
Sen, S.E. *et al., Synthesis*, 1995, 756-758 (*synth, pmr, cmr*)
Jones, T.H. *et al., J. Nat. Prod.*, 2003, **66**, 325-326 (*isol, ms*)

Fascaplysin F-13

12,13-Dihydro-13-oxopyrido[1,2-a:3,4-b′]diindol-5-ium(1+), 9CI. NSC 622398
[114719-57-2]



$C_{18}H_{11}N_2O^{\oplus}$ 271.298
Pigment from the marine sponge *Fascaplysinopsis* sp. and from *Hyrtios erecta*, *Smenospongia* sp. and tunicate *Didemnum* sp. Exhibits antimicrobial and cytotoxic props. Inhibits HIV-1-rt and $p56^{LCK}$ tyrosine kinase. Shows antiplasmodial and antiviral activity. Red cryst. (MeOH or $CHCl_3$)(as chloride). Sol. MeOH, $CHCl_3$. Mp 232-235° (chloride). CAS no. refers to chloride. λ_{max} 210 (ϵ 30400); 237 (ϵ 6480); 274 (ϵ 5800); 332 (ϵ 5470); 398 (ϵ 2300); 427 (ϵ 2980); 453 (ϵ 2700) (MeOH/KOH) (Derep). λ_{max} 214 (ϵ 7000); 262 (ϵ 6400); 274 (ϵ 5450); 300 (ϵ 6800); 333 (ϵ 3560); 413 (ϵ 3100) (MeOH) (Derep).

Salt with Dehydroluffariellolide diacid: ***Fascaplysin A***. *NSC 660649*
[132911-49-0]
$C_{43}H_{48}N_2O_5$ 672.863
Alkaloid-sesterterpene salt from the sponge *Fascaplysinopsis reticulata*. Red oil.

Salt with 16-Oxodehydroluffarielolide diacid: ***Fascaplysin B***
[135091-13-3]
$C_{43}H_{46}N_2O_6$ 686.846
Alkaloid-sesterterpene salt from *Fascaplysinopsis reticulata*. No phys. props. reported.

3-Bromo: ***3-Bromofascaplysin***. *NSC 700409*
$C_{18}H_{10}BrN_2O^{\oplus}$ 350.194
Isol. from a *Didemnum* sp. and from *Fascaplysinopsis reticulata*. Red solid (as chloride).

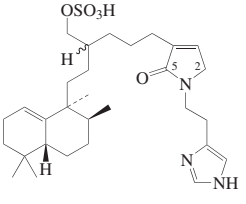
10-Bromo: ***10-Bromofascaplysin***
$C_{18}H_{10}BrN_2O^{\oplus}$ 350.194
Isol. from *Fascaplysinopsis reticulata*. Red solid (as chloride).

3,10-Dibromo: ***3,10-Dibromofascaplysin***
$C_{18}H_9Br_2N_2O^{\oplus}$ 429.09
Isol. from *Fascaplysinopsis reticulata*. Red solid (as chloride).

Roll, D.M. *et al., J.O.C.*, 1988, **53**, 3276-3278 (*isol, uv, ir, pmr, cmr, ms, cryst struct*)
Jimènez, C. *et al., J.O.C.*, 1991, **56**, 3403-3410 (*Fascaplysin A*)
Jimènez, C. *et al., Tet. Lett.*, 1991, **32**, 1843 (*Fascaplysin B*)
Gribble, G.W. *et al., J.O.C.*, 1992, **57**, 3636-3642 (*synth*)
Rocca, P. *et al., Tet. Lett.*, 1993, **34**, 7917-7918 (*synth*)
Molina, P. *et al., Tet. Lett.*, 1994, **35**, 8851-8854 (*synth*)
Radchenko, O.S. *et al., Tet. Lett.*, 1997, **38**, 5339-5342 (*synth*)
Kirsch, G. *et al., J. Nat. Prod.*, 2000, **63**, 825-829 (*isol, pmr, cmr, activity*)
Segraves, N.L. *et al., Tet. Lett.*, 2003, **44**, 3471-3475 (*3-Bromofascaplysin*)
Segraves, N.L. *et al., J. Nat. Prod.*, 2004, **67**, 783-792 (*occur, 10-Bromofascaplysin, 3,10-Dibromofascaplysin*)
Zhidkov, M.E. *et al., Tet. Lett.*, 2007, **48**, 7998-8000 (*Bromofascaplysins, synth*)

Fasciospongine A F-14

[945975-25-7]



Relative Configuration

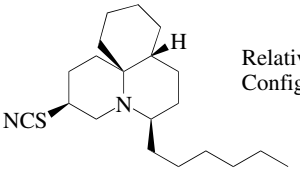
$C_{30}H_{47}N_3O_5S$ 561.784
Alkaloid from a *Fasciospongia* sp. Oil. $[\alpha]_D^{23}$ -51.5 (c, 0.26 in MeOH). λ_{max} 205 (log ϵ 4.28); 230 (sh) (MeOH).

5-Deoxo, 2-oxo: ***Fasciospongine B***
[945975-26-8]
$C_{30}H_{47}N_3O_5S$ 561.784
Isol. from a *Fasciospongia* sp. Oil. $[\alpha]_D$ -52.4 (c, 0.25 in MeOH). λ_{max} 205 (log ϵ 4.27); 230 (sh) (MeOH).

Yao, G. *et al., Org. Lett.*, 2007, **9**, 3037-3040 (*isol, pmr, cmr*)

Fasicularine F-15

[187618-62-8]



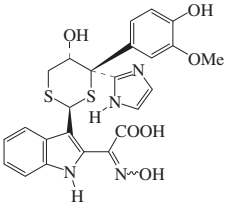
Relative Configuration

$C_{20}H_{34}N_2S$ 334.568
Alkaloid from the Micronesian ascidian *Nephteis fasicularis*. Shows selective activity against a DNA repair-deficient organism. Cytotoxic to Vero cells. Gum. Closely related to Cylindricine B, C-925.

Patil, A.D. *et al., Tet. Lett.*, 1997, **38**, 363 (*isol, ir, pmr, cmr, ms, struct*)
Maeng, J.-H. *et al., Org. Lett.*, 2002, **4**, 331-333 (*synth*)
Fenster, M.D.B. *et al., Chem. Eur. J.*, 2005, **11**, 639-649 (*synth*)
Abe, H. *et al., J.A.C.S.*, 2005, **127**, 1473-1480 (*synth*)

Fasmerianamine B F-16

[383191-03-5]



Relative Configuration

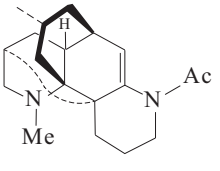
$C_{24}H_{22}N_4O_6S_2$ 526.593
Isol. from the ascidian *Hypsistozoa fasmeriana*. Brown gum. Related to 5-Hydroxy-4-(4-hydroxy-3-methoxyphenyl)-4-(2-imidazolyl)-1,2,3-trithiane, H-507.

Me ester: ***Fasmerianamine A***
[383191-02-4]
$C_{25}H_{24}N_4O_6S_2$ 540.62
Isol. from *Hypsistozoa fasmeriana*. Brown gum. $[\alpha]_D^{20}$ -17.5 (c, 0.4 in MeOH). Incorrect MF stated in ref. λ_{max} 206 (log ϵ 4.13); 283 (log ϵ 3.35); 311 (log ϵ 3.18) (MeOH).

Pearce, A.N. *et al., J.O.C.*, 2001, **66**, 8257-8259

Fastigiatine† F-17

[103805-65-8]



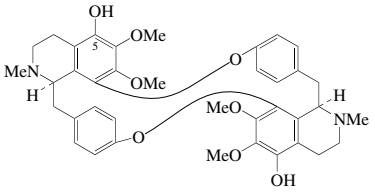
$C_{19}H_{28}N_2O$ 300.443
Minor alkaloid from *Lycopodium fastigiatum* (Lycopodiaceae). Cryst. (Et_2O). Mp 143-146°. $[\alpha]_D^{23}$ +289.9 (c, 1.36 in $CHCl_3$). Novel pentacyclic ring system.

N-*De-Me:* ***Des*-N-*methylfastigiatine***
$C_{18}H_{26}N_2O$ 286.416
From *Lycopodium fastigiatum* (Lycopodiaceae). Oil.

Gerard, R.V. *et al., Can. J. Chem.*, 1986, **64**, 943 (*isol, uv, ir, ms, pmr, cmr, cryst struct*)
Gerard, R.V. *et al., Phytochemistry*, 1986, **25**, 1143 (*Des-N-methylfastigiatine*)

Fastrine F-18

[198541-46-7]



$C_{38}H_{42}N_2O_8$ 654.758
Alkaloid from the roots of *Anisocycla jollyana* (Menispermaceae). Powder. $[\alpha]_D^{20}$ +49 (c, 0.01 in $CHCl_3$). λ_{max} 278 (log ϵ 3.6); 285 (log ϵ 3.7) (MeOH).

5-Deoxy: ***Jollyanine***†
[198541-45-6]
$C_{38}H_{42}N_2O_7$ 638.759
Alkaloid from the roots of *Anisocycla jollyana* (Menispermaceae). Powder. $[\alpha]_D^{20}$ -70 (c, 0.01 in $CHCl_3$). λ_{max} 276 (log ϵ 3.6); 284 (log ϵ 3.6) (MeOH).

Kanyinda, B. *et al., J. Nat. Prod.*, 1997, **60**, 1121-1124 (*isol, uv, ir, cd, pmr, cmr, ms*)

Fastudine F-19

[11050-43-4]

$C_{16}H_{21}NO_3$ 275.347

Tropane alkaloid. Struct. unknown. Alkaloid from *Datura fastuosa (Datura metel)* seeds (Solanaceae). Mp 98°. Ester ir 1710 cm^{-1}.

Kaleque, A. *et al., Sci. Res. (Dacca)*, 1966, **3**, 212-216; *CA*, **68**, 29909t (*isol*)

Fastunine F-20

[11050-44-5]

$C_{17}H_{23}NO_3$ 289.374

Tropane alkaloid. Struct. unknown. Alkaloid from *Datura fastuosa (Datura metel)* seeds (Solanaceae). Mp 88-90°. Ir ester 1728 cm^{-1}.

Khaleque, A. *et al., Sci. Res. (Dacca)*, 1966, **3**, 212-216; *CA*, **68**, 29909t (*isol*)

Fastusidine F-21

[58798-69-9]

Tropane alkaloid. Struct. unknown. Alkaloid from *Datura fastuosa (Datura metel)* seeds (Solanaceae). Ir ester 1723 cm^{-1}.

Picrate: Mp 161-162°.

Khaleque, M.A. *et al., Sci. Res. (Dacca)*, 1966, **3**, 212-216; *CA*, **68**, 29909t (*isol*)

Fastusine F-22

[11013-32-4]

$C_{15}H_{19}NO_2$ 245.321

Struct. unknown. Alkaloid from the seeds of *Datura metel* (*Datura fastuosa*) (Solanaceae). Mp 74-76°. $[\alpha]_D^{30}$ +55 (EtOH).

Picrate: Mp 209-211°.

Picrolonate: Mp 195-197°.

Khaleque, A. *et al., Sci. Res. (Dacca)*, 1955, **2**, 147-151; *CA*, **65**, 12246h

Fastusinine F-23

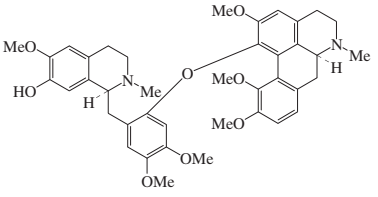
[11013-31-3]

Struct. unknown. Alkaloid from the seeds of *Datura metel* (*Datura fastuosa*) (Solanaceae). Semisolid.

Picrate: Mp 235°.

Khaleque, A. *et al., Sci. Res. (Dacca)*, 1955, **2**, 147-151; *CA*, **65**, 12246h

Fauridine F-24

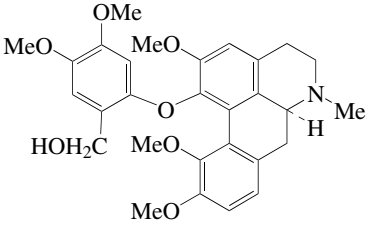


$C_{40}H_{46}N_2O_8$ 682.812
Alkaloid from *Thalictrum fauriei*. Amorph. solid. $[\alpha]_D^{24}$ +285.6 (c, 1.04 in MeOH). λ_{max} 222 (sh) (log ϵ 4.9); 272 (log ϵ 4.3); 290 (sh) (log ϵ 4.21); 311 (sh) (log ϵ 3.83) (MeOH).

Lee, S.-S. *et al., J. Nat. Prod.*, 1999, **62**, 803-810 (*isol, uv, ir, cd, pmr, cmr, ms*)

Faurine F-25

[178765-20-3]



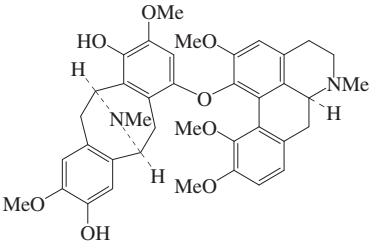
$C_{29}H_{33}NO_7$ 507.582
Alkaloid from whole plants of *Thalictrum fauriei*. Amorph. solid. $[\alpha]_D^{25}$ +155 (c, 0.8 in $CHCl_3$). λ_{max} 220 (log ϵ 5.06); 269 (log ϵ 4.85); 293 (sh) (log ϵ 4.63); 310 (sh) (log ϵ 4.43) (MeOH).

Ac:
Amorph. solid. $[\alpha]_D^{24}$ +251 (c, 0.54 in $CHCl_3$).

Me ether: **O-*Methylfaurine***
[178765-21-4]
$C_{30}H_{35}NO_7$ 521.609
From *Thalictrum fauriei*. Amorph. solid. $[\alpha]_D^{25}$ +244 (c, 1.2 in MeOH). λ_{max} 220 (log ϵ 4.56); 270 (log ϵ 4.34); 296 (sh) (log ϵ 4.12); 310 (sh) (log ϵ 3.9) (MeOH).

Lee, S.S. *et al., J. Nat. Prod.*, 1996, **59**, 738 (*isol, uv, ir, pmr, cmr, ms, cd, struct*)

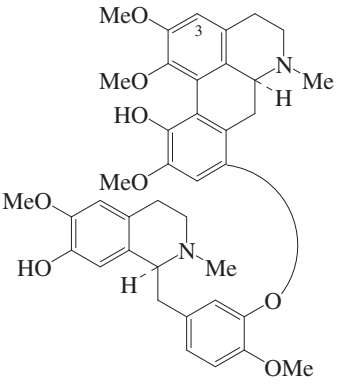
Fauripavine F-26



$C_{39}H_{42}N_2O_8$ 666.769
Alkaloid from *Thalictrum fauriei*. Amorph. off-white solid. $[\alpha]_D^{26}$ +67.8 (c, 0.9 in MeOH). λ_{max} 220 (sh) (log ϵ 4.96); 271 (log ϵ 4.44); 292 (sh) (log ϵ 4.29); 310 (sh) (log ϵ 3.86) (MeOH).

Lee, S.-S. *et al., J. Nat. Prod.*, 1999, **62**, 803-810 (*isol, uv, cd, ir, pmr, cmr, ms*)

Faurithaline F-27



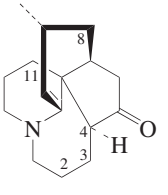
$C_{39}H_{44}N_2O_8$ 668.785
Alkaloid from *Thalictrum fauriei*. Amorph. solid. $[\alpha]_D^{25}$ +83.3 (c, 0.9 in MeOH). λ_{max} 220 (log ϵ 4.82); 268 (sh) (log ϵ 4.27); 273 (log ϵ 4.28); 307 (log ϵ 3.72) (MeOH).

3-Methoxy: ***3*-Methoxyfaurithaline***
$C_{40}H_{46}N_2O_9$ 698.811
Alkaloid from *Thalictrum fauriei*. Amorph. solid. $[\alpha]_D^{25}$ +66.6 (c, 0.78 in MeOH). λ_{max} 220 (sh) (log ϵ 4.81); 275 (log ϵ 4.3); 315 (sh) (log ϵ 3.54) (MeOH).

Lee, S.-S. *et al., J. Nat. Prod.*, 1999, **62**, 803-810 (*isol, uv, ir, cd, pmr, cmr, ms*)

Fawcettidine F-28

[14912-31-3]



$C_{16}H_{23}NO$ 245.364
Alkaloid from *Lycopodium fawcettii, Lycopodium alopecuroides* and *Lycopodium*

phlegmaria (Lycopodiaceae). Liq. $Bp_{0.1}$ 125°.

Picrate: Mp 222-223°.

Methiodide: Mp 224-226°.

5β-Alcohol: ***Epidihydrofawcettidine***
$C_{16}H_{25}NO$ 247.38
Alkaloid from *Lycopodium phlegmaria* (Lycopodiaceae). Mp 156-157°.

*8*S*-Hydroxy:* ***Anhydroaposerratinine***
[62023-85-2]
$C_{16}H_{23}NO_2$ 261.363
Alkaloid from *Lycopodium verticillatum* (Lycopodiaceae). Mp 151°. $[\alpha]_D$ +211 ($CHCl_3$).

*8*S*-Hydroxy, Ac:* Mp 144°.

*8*S*-Hydroxy, 3,4-didehydro:* ***Alolycopine***
[23185-50-4]
$C_{16}H_{21}NO_2$ 259.347
Alkaloid from *Lycopodium alopecuroides* (Lycopodiaceae). Cryst. (Et_2O). Mp 53-56°.

*8*S*-Hydroxy, 3,4-didehydro, Ac:*
Cryst. (Et_2O). Mp 180-182°.

*11*S*-Hydroxy:* ***11S-Hydroxyfawcettidine***
[942502-18-3]
$C_{16}H_{23}NO_2$ 261.363
Alkaloid from *Lycopodium serratum*. Amorph. solid. $[\alpha]_D^{23}$ +134.2 (c, 0.28 in $CHCl_3$).

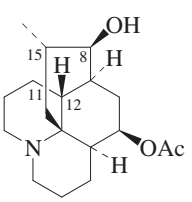
*2S,11*S*-Dihydroxy:* ***2S,11S-Dihydroxyfawcettidine***
[942502-19-4]
$C_{16}H_{23}NO_3$ 277.363
Alkaloid from *Lycopodium serratum*. Amorph. solid. $[\alpha]_D^{23}$ +84.7 (c, 0.2 in $CHCl_3$).

*8S,11*S*-Dihydroxy:* ***8S,11S-Dihydroxyfawcettidine***
[942502-20-7]
$C_{16}H_{23}NO_3$ 277.363
Alkaloid from *Lycopodium serratum*. Amorph. solid.

Burnell, R.H. *et al., J.C.S.*, 1959, 3091-3093 (*isol*)
Ayer, W.A. *et al., Can. J. Chem.*, 1969, **47**, 2449; 2457 (*Alolycopine*)
Ishii, H. *et al., Chem. Pharm. Bull.*, 1970, **18**, 1880 (*struct*)
Nyembo, L. *et al., Bull. Soc. Chim. Belg.*, 1976, **85**, 595; *CA*, **86**, 90108u (*Anhydroaposerratinine*)
Inubushi, Y. *et al., Yakugaku Zasshi*, 1982, **102**, 434 (*Epidihydrofawcettidine*)
Harayama, T. *et al., Heterocycles*, 1984, **22**, 1327 (*Epidihydrofawcettidine*)
Katakawa, K. *et al., J. Nat. Prod.*, 2007, **70**, 1024-1028 (*11-hydroxy, 2,11-dihydroxy, 8,11-dihydroxy*)
Kozak, J.A. *et al., Angew. Chem., Int. Ed.*, 2008, **47**, 4221-4223 (*synth*)

Fawcettiine F-29

β-Lofoline
[6899-87-2]



(-)-*form*

$C_{18}H_{29}NO_3$ 307.432
Alkaloid from *Lycopodium annotinum*, *Lycopodium clavatum*, *Lycopodium fawcettii*, *Lycopodium contiguum*, *Lycopodium magellanicum*, *Lycopodium saururus* and *Lycopodium thyoides* (Lycopodiaceae). Cryst. (Et_2O). Mp 166-167°. $[\alpha]_D$ -6 (c, 2.0 in EtOH).

Perchlorate:
Prisms (Me_2CO or H_2O). Mp 272-275°.

Methiodide:
Cryst. (MeOH). Mp 296-297° dec. (279-280°).

Ac: ***Acetylfawcettiine***
[52998-88-6]
$C_{20}H_{31}NO_4$ 349.469
Alkaloid from *Lycopodium fawcettii, Lycopodium clavatum, Lycopodium contiguum, Lycopodium magellanicum, Lycopodium saururus* and *Lycopodium thyoides* (Lycopodiaceae). Cryst. by subl. Mp 117°.

O-*De-Ac:* ***Deacetylfawcettiine***
[54307-46-9]
$C_{16}H_{27}NO_2$ 265.395
Alkaloid from *Lycopodium clavatum, Lycopodium fawcettii, Lycopodium contiguum, Lycopodium magellanicum* and *Lycopodium thyoides* (Lycopodiaceae). Needles (Me_2CO). Mp 203-204°.

O-*De-Ac, perchlorate:* Mp 224-227°.

O-*De-Ac, 5*-O-*(4-hydroxy-3-methoxy*-E-*cinnamoyl):* ***Lannotinidine C***
[851461-38-6]
$C_{26}H_{35}NO_5$ 441.566
Alkaloid from *Lycopodium annotinum*. Amorph. solid. $[\alpha]_D^{24}$ -5 (c, 1 in MeOH).

O-*De-Ac, 5-ketone:* ***Clavolonine***. *Alkaloid L34*
[466-62-6]
$C_{16}H_{25}NO_2$ 263.379
Alkaloid from a variety of *Lycopodium* spp. Mp 238°.

8-Ketone: ***Acetylannofoline***. *Obscurumine B*
[132143-35-2]
$C_{18}H_{27}NO_3$ 305.416
Alkaloid from *Lycopodium obscurum* var. *dendroideum* (Lycopodiaceae). Amorph. solid. $[\alpha]_D^{24}$ -63 (c, 0.5 in MeOH). Component of Alkaloid L17 which was a mixt. with Acetylacrifoline.

O-*De-Ac, 8-ketone:* ***Annofoline***
[664-23-3]
$C_{16}H_{25}NO_2$ 263.379
Alkaloid from *Lycopodium annotinum* (Lycopodiaceae). Cryst. (MeOH/Et_2O). Mp 156-157°. $[\alpha]_D$ -131 (c, 2 in EtOH).

O-*De-Ac, 8-ketone, perchlorate:*
Cryst. (MeOH/Et_2O). Mp 234-236°.

11,12-Didehydro, O-*de-Ac, 5*-O-*(4-hydroxy-3-methoxy*-E-*cinnamoyl):* ***Lannotinidine D***
[851461-39-7]
$C_{26}H_{33}NO_5$ 439.55
Alkaloid from *Lycopodium annotinum*. Amorph. solid. $[\alpha]_D^{24}$ -24 (c, 1 in MeOH).

7-Hydroxy, 5-ketone, O-*de-Ac: 7,8β-Dihydroxylycopodine.* ***Sauroine***
[777855-51-3]
$C_{16}H_{25}NO_3$ 279.378
Alkaloid from the aerial parts of *Huperzia saururus*. $[\alpha]_D^{22}$ +26.2 (c, 0.08 in MeOH).

8-Epimer(?): ***α-Lofoline***. *Lofoline*
[561-15-9]
$C_{18}H_{29}NO_3$ 307.432
Alkaloid from *Lycopodium annotinum* (Lycopodiaceae). Prisms (MeOH). Mp 211-212°. $[\alpha]_D$ -52 (c, 2 in EtOH). C-8 and C-15 configs. not fully clear from published data.

8-Epimer, methiodide:
Cryst. (MeOH/Me_2CO). Mp 266-267°.

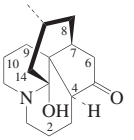
8-Epimer, Ac, 1:1 complex with Lycopodine, L-341: Alkaloid L9
$C_{36}H_{56}N_2O_5$ 596.849
Isol. from *Lycopodium annotinum* (Lycopodiaceae). Fine needles (Et_2O). Mp 122°.

8-Epimer, Ac: ***Acetyllofoline***
[102378-18-7]
$C_{20}H_{31}NO_4$ 349.469
Alkaloid from *Lycopodium annotinum* (Lycopodiaceae). Oil; cryst. (Me_2CO/Et_2O) (as perchlorate). Mp 272-273° dec. (perchlorate). Component of L9 in T-263. Alkaloid L31 was a mixt. of Acetyllofoline and 5,15-Oxidolycopodane, O-163.

Anet, F.A.L. *et al., Can. J. Chem.*, 1959, **37**, 1589-1596 (*Fawcettiine, Lofoline, Annofoline, isol, ir*)
Burnell, R.H. *et al., J.C.S.*, 1959, 3091-3093 (*Fawcettiine, Deacetylfawcettiine*)
Burnell, R.H. *et al., Can. J. Chem.*, 1960, **38**, 1927-1932 (*Acetylfawcettiine*)
Anet, F.A.L. *et al., Chem. Ind. (London)*, 1960, 1238-1239 (*Annofoline, pmr, struct*)
Burnell, R.H. *et al., Chem. Ind. (London)*, 1960, 1239-1240 (*Fawcettiine, struct, stereochem*)
Burnell, R.H. *et al., Tetrahedron*, 1961, **15**, 173-182 (*Clavolonine*)
Ayer, W.A. *et al., Can. J. Chem.*, 1964, **42**, 949-951 (*Acetyllofoline, Alkaloid L9*)
Ayer, W.A. *et al., Tet. Lett.*, 1964, 2959-2963 (*Annofoline, struct*)
Nakashima, T.T. *et al., Can. J. Chem.*, 1975, **53**, 1936-1942 (*Lofoline, Clavolonine, cmr*)
Wenkert, E. *et al., Chem. Comm.*, 1984, 714-715 (*Acetylfawcettiine, Deacetylfawcettiine, Clavolonine, Annofoline, synth*)
Ayer, W.A. *et al., Can. J. Chem.*, 1990, **68**, 1300-1304 (*Alkaloid L17, Alkaloid L31*)
Ortega, M.G. *et al., Tet. Lett.*, 2004, **45**, 7003-7005 (*Sauroine*)
Evans, D.A. *et al., Angew. Chem., Int. Ed.*, 2005, **44**, 6038-6042 (*Clavolonine, synth*)
Morita, H. *et al., Tetrahedron*, 2005, **61**, 1955-1960 (*Obscurumine B*)
Koyama, K. *et al., Tetrahedron*, 2005, **61**, 3681-3690 (*Lannotinidines C,D*)

Fawcettimine F-30

[15228-74-7]
[118892-07-2 ((±)-form), 103498-99-3 ((±)-form hydrobromide)]



Absolute Configuration

$C_{16}H_{25}NO_2$ 263.379

Shows ring-chain tautomerism; can exist either as the carbinolamine (shown) or as the aminoketone. Alkaloid from *Lycopodium fawcettii, Lycopodium clavatum* and *Lycopodium clavatum* var. *inflexum* (Lycopodiaceae).

Hydrochloride:
Cryst. (EtOH/Me_2CO). Mp 235° dec.

Perchlorate:
Cryst. (2-propanol/Me_2CO). Mp 225-226°.

6,7-Didehydro: ***Lycoposerramine C***
[481048-23-1]
$C_{16}H_{23}NO_2$ 261.363
Alkaloid from *Lycopodium serratum*. Prisms (EtOAc/hexane). Mp 164-165°. λ_{max} 229 ; 270 (EtOH).

9,10-Didehydro: ***Lycothunine***
[11052-60-1]
$C_{16}H_{23}NO_2$ 261.363
Alkaloid from *Lycopodium serratum* var. *serratum* f. *intermedium* (Lycopodiaceae).

*2*R*-Hydroxy, 9,10-didehydro: 2*R*-Hydroxylycothunine*
[942502-21-8]
$C_{16}H_{23}NO_3$ 277.363
Alkaloid from *Lycopodium serratum*. Amorph. powder.

*2*S*-Hydroxy:* ***Lycoposerramine P***
[481048-33-3]
$C_{16}H_{25}NO_3$ 279.378
Alkaloid from *Lycopodium serratum*. Amorph. powder.

4-Hydroxy: ***Alopecuridine***
[11049-78-8]
$C_{16}H_{25}NO_3$ 279.378
Alkaloid from *Lycopodium alopecuroides* and *Lycopodium sieboldii*. Cryst. (Me_2CO). Mp 171-172°.

*8*S*-Hydroxy, 9,10-didehydro:* ***8S-Hydroxylycothunine***
[942502-22-9]
$C_{16}H_{23}NO_3$ 277.363
Alkaloid from *Lycopodium serratum*. Amorph. solid. $[\alpha]_D^{21}$ +72.2 (c, 0.26 in $CHCl_3$).

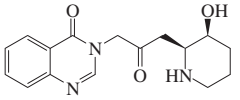
13-Deoxy, N*-oxide:* ***Lannotinidine B***
[851461-37-5]
$C_{16}H_{25}NO_2$ 263.379
Alkaloid from *Lycopodium annotinum*. Amorph. solid. $[\alpha]_D^{24}$ -62 (c, 1 in MeOH).

*13-Deoxy, 13,14-didehydro, 5*S*-alcohol:* ***Lycoposerramine Q***
[481048-37-7]
$C_{16}H_{25}NO$ 247.38
Alkaloid from *Lycopodium serratum*. Amorph. solid.

Burnell, R.H. *et al., Can. J. Chem.*, 1961, **39**, 1090-1093 (*isol, ir*)
Ayer, W.A. *et al., Can. J. Chem.*, 1968, **46**, 15-20 (*Alopecuridine*)
Ayer, W.A. *et al., Tet. Lett.*, 1973, 5045-5048 (*occur*)
Ayer, W.A. *et al., Tetrahedron*, 1974, **30**, 4213-4214 (*Alopecuridine*)
Harayama, T. *et al., Chem. Pharm. Bull.*, 1980, **28**, 2394-2402 (*synth*)
Inubushi, Y. *et al., Chem. Pharm. Bull.*, 1981, **29**, 3418-3421 (*Lycothunine, cryst struct*)
Heathcock, C.H. *et al., J.O.C.*, 1989, **54**, 1548-1562 (*synth, ir, pmr, cmr*)
Takayama, H. *et al., Tet. Lett.*, 2002, **43**, 8307-8311 (*cmr, Lycoposerramines*)
Hirasawa, Y. *et al., Org. Lett.*, 2003, **5**, 3991-3993 (*Alopecuridine, cryst struct*)
Koyama, K. *et al., Tetrahedron*, 2005, **61**, 3681-3690 (*Lannotinidine B*)
Linghu, X. *et al., Angew. Chem., Int. Ed.*, 2007, **46**, 7671-7673 (*synth*)
Katakawa, K. *et al., J. Nat. Prod.*, 2007, **70**, 1024-1028 (*Lycothunine, Hydroxylycothunines*)

Febrifugine† F-31

*3-[3-(3-Hydroxy-2-piperidinyl)-2-oxopropyl]-4(3*H*)-quinazolinone, 9CI. Dichroine B. β-Dichroine*



Absolute Configuration

$C_{16}H_{19}N_3O_3$ 301.344

Absolute config. revised in 1999 and again in 2003.

(+)-form [24159-07-7]
Alkaloid from the roots and leaves of the Chinese drug Ch'ang Shan (*Dichroa febrifuga*) and from *Hydrangea* spp. (Hydrangeaceae). Shows high degree of antimalarial activity (*ca.* 100 times as active as Quinine, Q-20) but use limited by toxicity. Also shows antipyretic and emetic activities; an effective coccidiostat. Various synthetic analogues show similar activities and much lower toxicity. Antineoplastic agent. Possesses schizonticide props. Needles (EtOH). Mp 139-140° Mp 154-156° (dimorph.). $[\alpha]_D^{25}$ +6 (c, 0.5 in $CHCl_3$) (c, 0.5 in EtOH). Log P -0.33 (calc). Pharmacol. active isomer.

Hydrochloride (1:2): Mp 220-222° dec.

Oxime: Mp 224-225° dec.

Semicarbazone: Mp 187-188° dec.

Bis(benzenesulfonyl): Mp 148-148.5°.

(±)-form [39037-90-6]
Synthetic. Mp 178.5-180.5°.

Hydrochloride (1:2): Mp 201-204° dec.

Hydrobromide:
Cryst. (EtOH). Mp 229-231°.

Koepfli, J.B. *et al., J.A.C.S.*, 1947, **69**, 1837; 1949, **71**, 1048 (*isol, uv*)
Kuehl, F.A. *et al., J.A.C.S.*, 1948, **70**, 2091 (*isol*)
Ablondi, F. *et al., J.O.C.*, 1952, **17**, 14 (*isol*)
Baker, B.R. *et al., J.O.C.*, 1955, **20**, 136 (*synth*)
Barringer, D.F. *et al., J.O.C.*, 1973, **38**, 1933; 1937 (*pmr, abs config*)
Johne, S. *et al., Alkaloids (Academic Press)*, 1986, **29**, 129 (*rev, pharmacol*)
Burgess, L.E. *et al., Tet. Lett.*, 1996, **37**, 3255 (*synth*)
Uesato, S. *et al., Chem. Pharm. Bull.*, 1998, **46**, 1-5 (*pmr, cmr, conformn*)
Murata, K. *et al., J. Nat. Prod.*, 1998, **61**, 729-733 (*isol, uv, ir, pmr, cmr, ms*)
Takaya, Y. *et al., J. Med. Chem.*, 1999, **42**, 3163-3166 (*isol*)
Kobayashi, S. *et al., J.O.C.*, 1999, **64**, 6833-6841 (*synth, abs config*)
Takeuchi, Y. *et al., Tetrahedron*, 2003, **59**, 1639-1646 (*synth, struct, bibl*)
Katoh, M. *et al., Heterocycles*, 2006, **67**, 189-204 (*synth*)

Fedamazine F-32

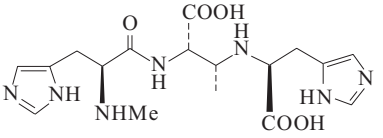
$C_{20}H_{21}N_2O^{\oplus}$ 305.399

Struct. unknown. Alkaloid from calabash curare (*Strychnos toxifera*) (Loganiaceae). Mp 233-235° (as picrate). Stable blue col. with $Ce(SO_4)_2$.

Asmis, H. *et al., Helv. Chim. Acta*, 1954, **37**, 1983-1992 (*isol, uv*)

Feldamycin F-33

N-*Methylhistidyl-β-[[1-carboxy-2-(1*H*-imidazol-4-yl)ethyl]amino]-α-aminobutanoic acid, 9CI. BMY 28565. U 48266. Antibiotic BMY 28565. Antibiotic U 48266*
[61230-27-1]



$C_{17}H_{25}N_7O_5$ 407.428

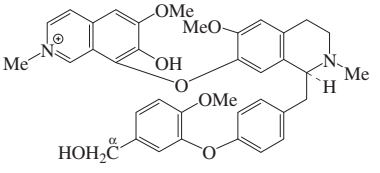
Peptide antibiotic. Prod. by *Streptomyces ficellus* and *Streptomyces calvus*. Active against gram-positive and -negative bacteria. Inhibits melanin synthesis. Amorph. solid. Sol. H_2O, EtOH, MeOH; poorly sol. Me_2CO, hexane. $[\alpha]_D^{25}$ -6.6 (c, 1 in H_2O).

► EK7910000

Argoudelis, A.D. *et al., J. Antibiot.*, 1976, **29**, 1007; 1117 (*isol*)
U.S. Pat., 1976, 3 969 515; *CA*, **85**, 141320
Reusser, F. *et al., Biochemistry*, 1977, **16**, 3406 (*props*)
Imae, K. *et al., J. Antibiot.*, 1991, **44**, 76 (*synth, abs config*)

Fenfangjine H F-34

[134227-37-5]



$C_{37}H_{39}N_2O_7^{\oplus}$ 623.724

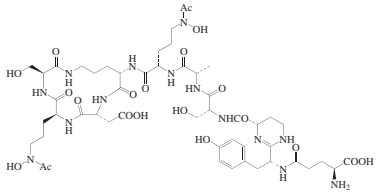
Alkaloid from the roots of *Stephania tetrandra*. Antihypertensive agent. Amorph. orange powder (as hydroxide). $[\alpha]_D^{27}$ -89.5 (c, 0.4 in MeOH) (hydroxide). CAS no. refers to hydroxide.

α-Aldehyde: ***Fenfangjine I***
[134242-53-8]
$C_{37}H_{37}N_2O_7^{\oplus}$ 621.709
Alkaloid from *Stephania tetrandra*. Antihypertensive agent. Amorph. orange powder (as hydroxide). $[\alpha]_D^{27}$ -46.5 (c, 0.3 in MeOH) (hydroxide). CAS no. refers to hydroxide.

Ogino, T. *et al., Heterocycles*, 1998, **48**, 311-317 (*isol, ir, pmr, cmr*)

Ferribactin G173 F-35

[535994-96-8]



$C_{50}H_{76}N_{14}O_{20}$ 1193.232

L-Glu incorr. drawn in ref. diag. Prod. by *Pseudomonas fluorescens* G173. Siderophore. Biosynthetic precursor of Pyoverdin G 173, P-853.

N^{Glu}-*Ac:* [535994-98-0]
$C_{52}H_{78}N_{14}O_{21}$ 1235.269
Prod. by *Pseudomonas fluorescens* G173.

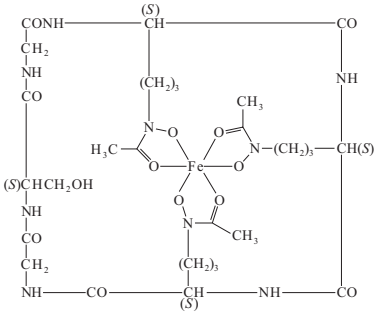
N^{Glu}-*Di-Ac:* [535994-99-1]
$C_{54}H_{80}N_{14}O_{22}$ 1277.307
Prod. by *Pseudomonas fluorescens* G173. Siderophore.

N^{Glu}-*Hydroxy:* [535994-97-9]
$C_{50}H_{76}N_{14}O_{21}$ 1209.232
Prod. by *Pseudomonas fluorescens* G173. Siderophore.

Fernandez, D.U. *et al., Z. Naturforsch., C*, 2003, **58**, 1-10 (*isol, pmr, ms, N^{Glu}-derivs*)

Ferricrocin, 9CI F-36

[23086-46-6]



$C_{28}H_{44}FeN_9O_{13}$ 770.555

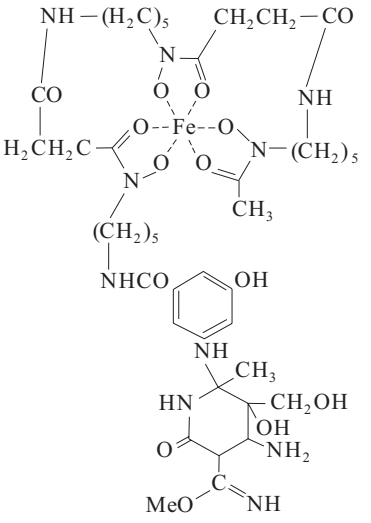
Secreted by *Aspergillus* spp. Principal siderophore from *Micromonospora gypseum*. Growth factor and iron transport compd. Phytotoxin. Orange-brown cryst. + $7H_2O$ (EtOH). Sol. MeOH, H_2O. Mp 250° dec. λ_{max} 430 nm (log ϵ 3.42). λ_{max} 422 (ϵ 2058); 430 (ϵ 2630) (H_2O) (Berdy).

[37279-99-5]

Keller-Schierlein, W. *et al., Helv. Chim. Acta*, 1963, **46**, 1907 (*ir, struct*)
Llinas, M. *et al., J. Mol. Biol.*, 1972, **68**, 265; 1976, **104**, 853 (*pmr, conformn, struct, cmr*)
Fiedler, H.P. *et al., J. Chromatogr.*, 1981, **209**, 103 (*hplc*)
Dell, A. *et al., Biomed. Mass Spectrom.*, 1982, **9**, 158 (*ms*)
Wong, G.B. *et al., J.A.C.S.*, 1983, **105**, 810 (*props*)
Barnes, C.L. *et al., Acta Cryst. C*, 1984, **40**, 922
Bentley, M.D. *et al., Biochemistry*, 1986, **25**, 1455 (*isol*)
Ohra, J. *et al., Biosci., Biotechnol., Biochem.*, 1995, **59**, 113; 1782 (*isol, cd, props*)

Ferrimycin A_1, 9CI F-37

[15319-50-3]



$C_{41}H_{65}FeN_{10}O_{14}$ 977.87

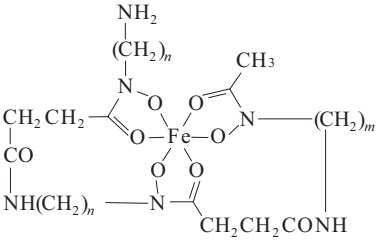
Produced by *Streptomyces griseoflavus* strain ETH 9578. Shows antibiotic props. Sol. H_2O, MeOH, DMF, phenol; fairly sol. AcOH, EtOH, 1-propanol, Py; poorly sol. butanol, hexane. Acyl deriv. of its competitive antagonist Ferrioxamine B, F-39. λ_{max} 229 (E1%/1cm 336); 319 (E1%/1cm 37); 428 (E1%/1cm 27.6) (H_2O) (Berdy).

Hydrochloride (1:2):
Amorph., hygroscopic solid. pK_{a1} 4.11; pK_{a2} 7.92; pK_{a3} 11.4 (2-methoxyethanol).

Bickel, H. *et al., Helv. Chim. Acta*, 1960, **43**, 2105 (*isol, ir*)
Bickel, H. *et al., Tetrahedron, Suppl.*, No. 8, 1966, 171 (*struct, ir, uv, nmr*)

Ferrioxamine A_2 F-38

[N′-[5-[[4-[[4-(Acetylhydroxyamino)-butyl]amino]-1,4-dioxobutyl]hydroxyamino]pentyl]-N-*(5-aminopentyl)*-N-*hydroxybutanediamidato(3-)]iron(*III*), 9CI*



m = 4, *n* = 5

$C_{24}H_{43}FeN_6O_8$ 599.486

Component of inhomogeneous Ferrioxamine A complex from *Streptomyces pilosus.* Iron-transport compd. Sol. H_2O, MeOH. pK_a 9.89 (2-methoxyethanol). λ_{max} 430 (ϵ 2238); 440 (H_2O) (Berdy).

N-*Ac:*
Amorph. brown-orange powder. Mp 146-147°.

Keller-Schierlein, W. *et al., Helv. Chim. Acta*, 1965, **48**, 710 (*ir, pmr, struct, synth*)

Ferrioxamine B F-39

[N′-[5-[[4-[[5-(Acetylhydroxyamino)-pentyl]amino]-1,4-dioxobutyl]hydroxyamino]pentyl]-N-*(5-aminopentyl)*-N-*hydroxybutanediamidato(3-)]iron. Ferrioxamine D*

[14836-73-8]

As Ferrioxamine A_2, F-38 with *m* = *n* = 5

$C_{25}H_{45}FeN_6O_8$ 613.513

Siderophore. Metab. of *Actinomyces* spp. Important Sideramine-type growth factor isol. from *Streptomyces pilosus.* Hygroscopic red-brown solid. Sol. H_2O, MeOH. pK_a 9.74 (2-methoxyethanol). λ_{max} 428 (ϵ 2800); 430 (ϵ 2510); 440 (H_2O) (Berdy).

N-*Ac:* ***Ferrioxamine D_1***
$C_{27}H_{47}FeN_6O_9$ 655.55
Growth factor. Sol. H_2O, MeOH. λ_{max} 430 (ϵ 2884) (H_2O) (Berdy).

Bickel, H. *et al., Helv. Chim. Acta*, 1960, **43**, 2118; 2129 (*isol, ir*)
Keller-Schierlein, W. *et al., Helv. Chim. Acta*, 1961, **44**, 709 (*ir, struct*)
Prelog, V. *et al., Helv. Chim. Acta*, 1962, **45**, 631 (*ir, synth*)
Bock, J.L. *et al., Biochim. Biophys. Acta*, 1972, **264**, 245 (*Mössbauer*)
Karrer, W. *et al., Konstitution und Vorkommen der Organischen Pflanzenstoffe*, 2nd edn., Birkhäuser Verlag, 1972, no. 3180
Leong, J. *et al., J.A.C.S.*, 1975, **97**, 293 (*struct, synth*)
Tufano, T.P. *et al., J.A.C.S.*, 1981, **103**, 6617 (*metal exch, uv*)
Hossain, M.B. *et al., Acta Cryst. C*, 1986, **42**, 1275 (*cryst struct*)

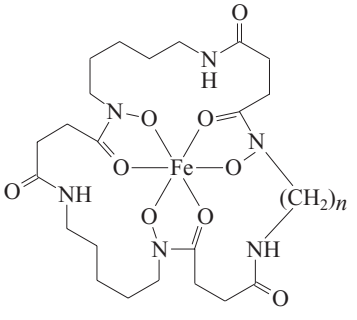
Ferrioxamine C F-40

Structure unknown but thought to be similar to Ferrioxamine B, F-39. Metab. of *Actinomyces* spp. Growth factor.

Bickel, H. *et al., Helv. Chim. Acta*, 1960, **43**, 2118 (*ir, isol*)

Ferrioxamine D_2 F-41

[29825-04-5]



n = 4

$C_{26}H_{43}FeN_6O_9$ 639.507

Isol. from *Streptomyces pilosus.* Cryst. (MeOH/Et_2O). Sol. H_2O, MeOH. Mp 220-223°.

Bickel, H. *et al., Helv. Chim. Acta*, 1960, **43**, 2118 (*isol*)

Keller-Schierlein, W. *et al., Helv. Chim. Acta*, 1965, **48**, 710 (*isol, pmr, struct*)

Ferrioxamine E F-42

Nocardamine ferric salt
[20008-20-2]
As Ferrioxamine D_2, F-41 with n = 5

$C_{27}H_{45}FeN_6O_9$ 653.534
Metab. of *Actinomyces* spp. Growth factor important in iron transport. Amorph. solid. Sol. H_2O, MeOH.

Bickel, H. *et al., Helv. Chim. Acta*, 1960, **43**, 2118 (*isol, ir*)
Keller-Schierlein, W. *et al., Helv. Chim. Acta*, 1961, **44**, 1981 (*ir, uv, struct*)
Van der Helm, D. *et al., J.A.C.S.*, 1976, **98**, 82 (*cryst struct*)

Ferrioxamine F F-43

Structure unknown but thought to be similar to Ferrioxamine B, F-39. Metab. of *Actinomyces* spp. Growth factor. pK_a 9.75 (2-methoxyethanol).

Bickel, H. *et al., Helv. Chim. Acta*, 1960, **43**, 2118 (*ir, isol*)

Ferrioxamine H F-44

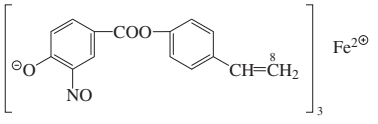
$[HOOCCH_2CH_2CONH(CH_2)_5N(OH)$-$COCH_2CH_2CONH(CH_2)_5$-$N(OH)Ac]Fe$

$C_{20}H_{36}FeN_4O_8$ 516.373
Minor component of the Sideramine complex of actinomycetes. Red amorph. powder.

Adapa, S. *et al., Helv. Chim. Acta*, 1982, **65**, 1818

Ferroverdin F-45

Ferroverdin A. Tris(4-ethenylphenyl 4-hydroxy-3-nitrosobenzoato-N,O*)ferrate(1-)*
[18904-95-5]
[26671-45-4]



$C_{45}H_{30}FeN_3O_{12}^{\ominus}$ 860.592
First formulated as $C_{30}H_{24}FeN_2O_8$. Later, ligand proved to be *p*-vinylphenyl ester of 3-nitroso-4-hydroxybenzoic acid. X-ray data (1969) show 3 ligands attached to Fe(II) centre. Pigment produced by a *Streptomyces* sp. when cultured in an Fe(III) containing medium. Inhibits cholesteryl ester transfer protein, weakly active against *Acholeplasma Iaidlawii*. Green powder. Insol. H_2O, C_6H_6, $CHCl_3$; spar. sol. EtOH, Et_2O, AcOH; Sol. MeOH, MeCN, EtOAc. $[\alpha]_D^{25}$ -41400 (c, 0.01 in MeOH). Readily reduced by H_2 in presence of Pd catalyst. λ_{max} 285 (ϵ 44000); 305 (sh) (ϵ 24000); 440 (ϵ 6000); 690 (ϵ 5300) (MeOH). λ_{max} 285 (ϵ 44000); 440 (ϵ 6000); 690 (ϵ 5300) (MeOH) (Berdy).

*8-Monohydroxy(*E-*): **Ferroverdin B**. Antibiotic WK 5344A. WK 5344A*
[259733-69-2]
[290304-15-3]
$C_{45}H_{30}FeN_3O_{13}^{\ominus}$ 876.591
Prod. by *Streptomyces* sp. WK-5344. Inhibitor of cholesteryl ester transfer protein. Green powder. $[\alpha]_D^{25}$ -3000 (c, 0.01 in MeOH). λ_{max} 285 (ϵ 44000); 305 (sh) (ϵ 24000); 440 (ϵ 6000); 690 (ϵ 5300) (MeOH).

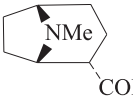
*8-Monocarboxy(*Z-*): **Ferroverdin C**. Antibiotic WK 5344B. WK 5344B*
$C_{46}H_{30}FeN_3O_{14}^{\ominus}$ 904.602
Prod. by *Streptomyces* sp. WK-5344. Inhibitor of cholesteryl ester transfer protein. Green powder. $[\alpha]_D^{25}$ -1000 (c, 0.01 in MeOH). λ_{max} 285 (ϵ 44000); 305 (sh) (ϵ 24000); 440 (ϵ 6000); 690 (ϵ 5300) (no solvent reported).

[52746-83-5]

Chain, E.B. *et al., Nature (London)*, 1955, **176**, 645 (*isol, uv*)
Ehrenberg, A. *et al., Nature (London)*, 1956, **178**, 379 (*magnetism*)
Ballio, A. *et al., Nature (London)*, 1962, **194**, 769 (*struct, ir, uv*)
Ballio, A. *et al., Proc. R. Soc. London, B*, 1963, **158**, 43 (*struct*)
Candeloro, S. *et al., Nature (London)*, 1969, **224**, 589 (*struct*)
Candeloro De Sanctif, S. *et al., Proc. R. Soc. London, B*, 1973, **184**, 121; 137 (*struct*)
Yang, C.C. *et al., J. Bacteriol.*, 1982, **149**, 381 (*biochem, use*)
Sveshnikova, M.A. *et al., Antibiotiki (Moscow)*, 1983, **28**, 28; *CA*, **99**, 209437m (*biochem, use*)
Tomoda, H. *et al., J. Antibiot.*, 1999, **52**, 1101-1107; 1108-1113 (*isol, uv, pmr, cmr, ms, activity*)

Ferrugine† F-46

(8-Methyl-8-azabicyclo[3.2.1]oct-2-yl)-phenylmethanone, 9CI. 2α-Benzoyltropane
[58471-11-7]



Absolute, configuration

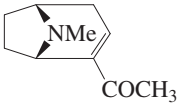
$C_{15}H_{19}NO$ 229.321
Alkaloid from the leaves, stems and roots of *Darlingia ferruginea* (Proteaceae). Rosettes (EtOH). Mp 101-102°. $[\alpha]_D^{19}$ +55 ($CHCl_3$).

Picrate: Mp 192-194°.

Bick, I.R.C. *et al., Aust. J. Chem.*, 1979, **32**, 2537 (*isol, uv, ir, pmr, ms, abs config*)
Ahmed, S. *et al., J.O.C.*, 2008, **73**, 8116-8119 (*synth*)

Ferruginine F-47

1-(8-Methyl-8-azabicyclo[3.2.1]oct-2-en-2-yl)ethanone, 9CI. 2-Acetyl-7-methyl-7-azabicyclo[3.2.1]oct-2-ene



(+)-*form*

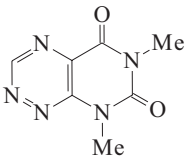
$C_{10}H_{15}NO$ 165.235

(+)-*form* [73069-63-3]
Alkaloid from *Darlingia ferruginea* (Proteaceae). Noncryst. $[\alpha]_D^{19}$ +37 ($CHCl_3$).
Picrate: Mp 161-163°.

(-)-*form* [64603-84-5]
Synthetic. Noncryst. $[\alpha]_D^{19}$ -37 ($CHCl_3$).
Hydrochloride: [64626-41-1]
Mp 161-163°. $[\alpha]_D$ -70 (c, 1 in MeOH).
Campbell, H.F. *et al., Can. J. Chem.*, 1977, **55**, 1372 (*synth*)
Bick, I.R.C. *et al., Aust. J. Chem.*, 1979, **32**, 2537 (*isol, uv, ir, pmr, ms, synth, struct*)
Davies, H.M.L. *et al., J.O.C.*, 1991, **56**, 5696; 1997, **62**, 1095 (*synth, ir, pmr, cmr, ms*)
Rigby, J.H. *et al., J.O.C.*, 1995, **60**, 7392 (*synth*)
Hernández, A.S. *et al., J.O.C.*, 1996, **61**, 314 (*synth*)
Gauthier, I. *et al., J.O.C.*, 1997, **62**, 6704-6705 (*synth*)
Ham, W.-H. *et al., Tet. Lett.*, 1997, **38**, 3247-3248 (*synth*)
Jonsson, S.Y. *et al., J.O.C.*, 2000, **65**, 8458-8464 (*synth*)
Piccardi, R. *et al., Eur. J. Org. Chem.*, 2007, 4752-4757 (*synth*)

Fervenulin F-48

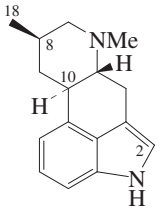
*6,8-Dimethylpyrimido[5,4-*e*]-1,2,4-triazine-5,7(6*H,*8*H*)-dione, 9CI. Planomycin. Pulanomycin. Antibiotic 10204-BII*
[483-57-8]



$C_7H_7N_5O_2$ 193.165
Isol. from *Streptomyces fervens* and *Streptomyces rubrireticuli*. Active against Gram-positive and -negative bacteria and possesses antineoplastic props. Yellow cryst. Mp 178-179°. Log P -0.82 (uncertain value) (calc). Known synthetically before isolation. λ_{max} 237 (ϵ 17000); 275 (ϵ 1950); 341 (ϵ 4250) (pH 1) (Derep). λ_{max} 230 (sh) (ϵ 4850); 275 (ϵ 1900) (pH 11) (Derep). λ_{max} 239 (ϵ 17400); 277 (ϵ 1860); 343 (ϵ 4570) (EtOH) (Derep).
► LD_{50} (mus, ipr) 11.2 mg/kg. UW7900000
Pfleiderer, W. *et al., Annalen*, 1958, **615**, 42 (*synth*)
Daves, G.D. *et al., J.O.C.*, 1961, **26**, 5256 (*isol, struct, uv, ir*)
Yoneda, F. *et al., J. Het. Chem.*, 1970, **7**, 1443 (*synth*)
Taylor, E.C. *et al., J.O.C.*, 1975, **40**, 2321 (*synth, nmr*)
Senda, S. *et al., J.A.C.S.*, 1977, **99**, 7358 (*synth*)
Ichiba, M. *et al., J.O.C.*, 1978, **43**, 469 (*synth, ir, uv, ms, nmr*)
CRC Handb. of Antibiotic Compounds, (eds. Bérdy, J. *et al*), CRC Press, Boca Raton, 1984, **5**, 198 (*props*)
Werner-Simon, S. *et al., J. Het. Chem.*, 1996, **33**, 949 (*synth, derivs*)
Koshino, H. *et al., Heterocycles*, 2000, **52**, 811-817 (*synth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, FBP300

Festuclavine F-49

Dihydroagroclavine
[569-26-6]



Absolute Configuration

$C_{16}H_{20}N_2$ 240.347
Alkaloid from *Claviceps purpurea*, *Claviceps gigantea*, *Aspergillus fumigatus*, *Penicillium roquefortii*, *Penicillium crustosum*, *Argyreia nervosa* and several other *Argyreia* spp., *Ipomoea hildebrandtii*, *Ipomoea violacea* and *Stictocardia tiliaefolia*. Mycotoxin, 5-HT receptor antagonist; active against gram-positive bacteria. Needles (MeOH). Sol. MeOH, $CHCl_3$. Mp 249-252° (242-243°). $[\alpha]_D^{20}$ -113 (c, 0.25 in Py). $[\alpha]_D^{14}$ -67.4 (c, 0.12 in $CHCl_3$). λ_{max} 224 (log ϵ 4.53); 276 (log ϵ 3.82); 281 (log ϵ 3.84) (EtOH).

▶ LD_{50} (mus, ipr) 45 mg/kg. KE6334000

2-Bromo: ***Pibocine A***. *2-Bromofestuclavin*
[102394-16-1]
$C_{16}H_{19}BrN_2$ 319.244
Alkaloid from the ascidian *Eudistoma* sp. Moderate cytotoxic agent. Mp 226-228°. $[\alpha]_D$ -36 (c, 0.14 in EtOH). λ_{max} 225 (ϵ 27400); 281 (ϵ 7000) (EtOH).

2-Bromo, N^1*-methoxy:* ***Pibocine B***
[388112-41-2]
$C_{17}H_{21}BrN_2O$ 349.27
Alkaloid from a *Eudistoma* sp. Cytotoxic. Thin cryst. (MeOH). Mp >358°. $[\alpha]_D$ -51 (c, 0.19 in EtOH). λ_{max} 231 (ϵ 4410); 283 (ϵ 2450) (MeOH).

18-Hydroxy: ***α-Dihydrolysergol***. *Dihydrolysergol*. *Dihydroelymoclavine*
[18051-16-6]
$C_{16}H_{20}N_2O$ 256.347
Alkaloid from *Claviceps gigantea*. Also present in the seeds of *Stictocardia campanulata* and *Ipomoea muelleri* (Convolvulaceae). 5-HT receptor antagonist, mycotoxin. Prisms (MeOH). Mp 283°. $[\alpha]_D^{20}$ -60 (c, 0.13 in EtOH). $[\alpha]_D$ -92 (c, 0.5 in Py). λ_{max} 224 (log ϵ 4.6); 282 (log ϵ 3.92); 292 (log ϵ 3.88) (EtOH).

8-Epimer: ***Pyroclavine***
[478-89-7]
$C_{16}H_{20}N_2$ 240.347
Prod. by *Claviceps purpurea* and *Claviceps gigantea*, also *Penicillium* sp. 5-HT receptor antagonist, mycotoxin. Mp 204°. $[\alpha]_D^{20}$ -90 (c, 0.2 in Py).

10-Epimer: ***Costaclavine***
[436-41-9]
$C_{16}H_{20}N_2$ 240.347
Alkaloid from *Claviceps purpurea* and *Penicillium chermesinum*. Mp 182-184°. $[\alpha]_D$ +44 (Py). λ_{max} 275 ; 283 ; 293 (no solvent reported).

8,10-Diepimer: Epicostaclavine
Mp 132-135°.

Abe, M. *et al., Bull. Agric. Chem. Soc. Jpn.*, 1956, **20**, 59-60; 1959, **33**, 1031-1036; *CA*, **51**, 11365c; **59**, 2878c (*Costaclavine, Pyroclavine, isol, struct*)
Spilsbury, J.F. *et al., J.C.S.*, 1961, 2085-2089 (*isol, uv*)
Agurell, S.L. *et al., Experientia*, 1964, **20**, 25-26 (*Costaclavine, isol, uv, ir*)
Agurell, S. *et al., Acta Pharm. Suec.*, 1965, **2**, 231-238 (*Pyroclavine, Festuclavine, α-Dihydrolysergol, isol*)
Semononsky, M. *et al., Coll. Czech. Chem. Comm.*, 1966, **31**, 577-582 (*α-Dihydrolysergol, synth*)
Chao, J.M. *et al., Phytochemistry*, 1973, **12**, 2435-2440 (*Festuclavine, occur*)
Bach, N.J. *et al., J.O.C.*, 1974, **39**, 1272-1276 (*pmr, cmr*)
Voigt, D. *et al., Pharmazie*, 1974, **29**, 697 (*ms*)
Ohmomo, S. *et al., Agric. Biol. Chem.*, 1975, **39**, 1333-1336 (*isol, uv, ir*)
Ninomiya, I. *et al., Chem. Comm.*, 1976, 624-626 (*Costaclavine, Pyroclavine, pmr*)
Křepelka, J. *et al., Coll. Czech. Chem. Comm.*, 1976, **41**, 1416-1418 (*synth*)
Lee, T.M. *et al., Planta Med.*, 1979, **35**, 247-252 (*α-Dihydrolysergol, isol*)
Cole, R.J. *et al., J. Agric. Food Chem.*, 1983, **31**, 655-657 (*isol*)
Oppolzer, W. *et al., Tetrahedron*, 1983, **39**, 3695 (*Costaclavine, synth, ir, pmr, ms*)
Eich, E. *et al., Arzneim.-Forsch.*, 1985, **35**, 1760-1762 (*Festuclavine, activity*)
Osanai, K. *et al., Chem. Pharm. Bull.*, 1999, **47**, 1587-1590 (*Costaclavine, synth*)
Makarieva, T.N. *et al., Tet. Lett.*, 1999, **40**, 1591-1594 (*Pibocine A*)
Makarieva, T.N. *et al., J. Nat. Prod.*, 2001, **64**, 1559-1561 (*Pibocine B, Festuclavine*)

Fibraminine F-50

[1357-05-7]

$C_{18}H_{19}NO_8$ 377.35

Struct. unknown. Compd. possesses 4 methoxy groups. Alkaloid from *Fibraurea tinctoria* (Menispermaceae). Yellowish prisms. Mp 192-193°. $[\alpha]_D^{15}$ +28.33 (c, 1 in $CHCl_3$).

Hydrobromide:
Yellowish needles. Mp 202-203°.

Chu, J.-H. *et al., Huaxue Xuebao*, 1962, **28**, 89-95; *CA*, **60**, 6887g

Fibranine F-51

[1357-06-8]

$C_{25}H_{29}NO_7$ 455.507

Struct. unknown. Compd. possesses 3 methoxy and 2 methylenedioxy groups. Alkaloid from *Fibraurea tinctoria* (Menispermaceae).

Hydrochloride:
Reddish prismatic needles + $1H_2O$. Mp 196-198°. $[\alpha]_D^{15}$ +273.3 (c, 1 in EtOH).

Hydroiodide:
Yellowish needles. Mp 217-218°.

Perchlorate:
Yellowish needles. Mp 273-274°.

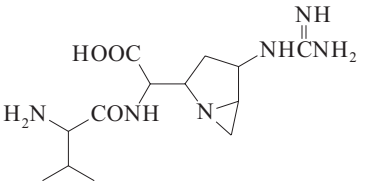
Picrate:
Reddish needles. Mp 212-213°.

Chloroaurate:
Greenish-yellow needles. Mp 185-186°.

Chu, J.-H. *et al., Huaxue Xuebao*, 1962, **28**, 89-95; *CA*, **60**, 6887g

Ficellomycin F-52

2-[4-[(Aminoiminomethyl)amino]-1-azabicyclo[3.1.0]hex-2-yl]-N-*valylglycine, 9CI. U 47929. Antibiotic U 47929*
[59458-27-4]



$C_{13}H_{24}N_6O_3$ 312.371

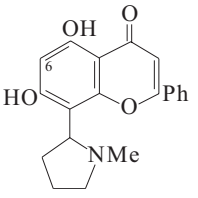
Dipeptide antibiotic. From *Streptomyces ficellus*. Animal feed additive. Active against gram-positive bacteria. Amorph. solid. Sol. H_2O, EtOH, MeOH; poorly sol. Me_2CO, hexane. $[\alpha]_D^{25}$ +39 (c, 1 in H_2O).

▶ LD_{50} (mus, ivn) 800 mg/kg; LD_{50} (mus, ipr) 800 mg/kg. LK3660000

Argoudelis, A.D. *et al., J. Antibiot.*, 1976, **29**, 1001 (*isol*)
U.S. Pat., 1976, 542 226; *CA*, **85**, 19047
U.S. Pat., 1976, 3 993 748; *CA*, **86**, 70105
Reusser, F. *et al., Biochemistry*, 1977, **16**, 3406 (*props*)
Kuo, M.-S. *et al., J. Antibiot.*, 1989, **42**, 357 (*pmr, cmr, struct*)

Ficine F-53

[2520-36-7]

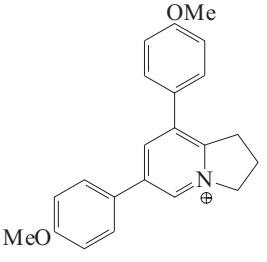


$C_{20}H_{19}NO_4$ 337.374
Alkaloid from *Ficus pantoniana* (Moraceae). Proteolytic agent. Shows vermicidal props. Mp 235°. Rearranges to a mixt. with Isoficine, I-233 (in which the pyrrolidinyl residue is at C6) in refluxing HCl.

Johns, S.R. *et al., Tet. Lett.*, 1965, 1987 (*uv, ir, pmr, ms, struct*)

Ficuseptine F-54

*2,3-Dihydro-6,8-bis(4-methoxyphenyl)-1*H-*indolizinium(1+), 9CI*
[132923-01-4]
[132923-50-3]

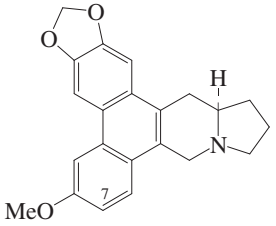


$C_{22}H_{22}NO_2^{\oplus}$ 332.421

Alkaloid from the leaves of *Ficus septica* (Moraceae). Shows antimicrobial activity. Cryst. (CH_2Cl_2/2-methoxy-2-methylpropane). Mp 186-187° dec. (as chloride). λ_{max} 244 (ϵ 7950); 284 (ϵ 15500); 336 (ϵ 4000) (MeOH) (Berdy).

Baumgartner, B. *et al., Phytochemistry*, 1990, **29**, 3327 (*isol, uv, ir, pmr, cmr, ms, struct*)
Bracher, F. *et al., Eur. J. Org. Chem.*, 2002, 2288-2291 (*synth*)

Ficuseptine C F-55



$C_{22}H_{21}NO_3$ 347.413

(R)-form

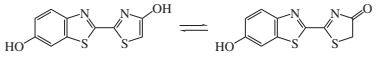
Alkaloid from the stems of *Ficus septica*. Gum. $[\alpha]_D^{25}$ -79.9 (c, 0.05 in MeOH). λ_{max} 257 (log ϵ 3.46); 282 (log ϵ 3.42); 340 (log ϵ 2.68) (MeOH).

7-Methoxy: ***Ficuseptine B***
$C_{23}H_{23}NO_4$ 377.439
Alkaloid from the stems of *Ficus septica*. Gum. $[\alpha]_D^{25}$ -95.6 (c, 0.1 in MeOH). λ_{max} 255 (log ϵ 3.8); 261 (log ϵ 3.91); 281 (log ϵ 2.59); 340 (log ϵ 3.24); 358 (log ϵ 3.18) (MeOH).

Damu, A.G. *et al., J. Nat. Prod.*, 2005, **68**, 1071-1075 (*isol, cd, pmr, ms*)
Fürstner, A. *et al., Chem. Eur. J.*, 2006, **12**, 7398-7410 (*synth*)

Firefly oxyluciferin F-56

*2-(6-Hydroxy-2-benzothiazolyl)-4(5*H*)-thiazolone, 9CI. 2-(4-Hydroxy-2-thiazolyl)-6-benzothiazolol, 9CI, 8CI. 4-Hydroxy-2-(6-hydroxy-2-benzothiazolyl)thiazole. 6-Hydroxy-2-(4-hydroxy-2-thiazolyl)benzothiazole.* Luciola *Oxyluciferin. Luciola oxyluciferin*
[17002-50-5]
[24963-17-5]



$C_{10}H_6N_2O_2S_2$ 250.302

Tautomeric. Prod. by fireflies, such as the Japanese firefly *Luciola cruciata*. Responsible for firefly luminescence. Orange-yellow powder + $^{H}/_{2}O$. Mp 169-171° dec. λ_{max} 371 (ϵ 18900) (MeOH).

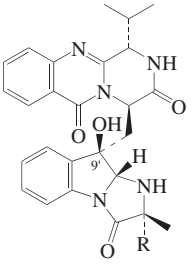
6-Ac: [38292-83-0]
Yellow cryst. (MeOH aq.).

Di-Ac: [38292-84-1]
Yellow leaflets (MeOH). Mp 178-181°.

Suzuki, N. *et al., Tetrahedron*, 1972, **28**, 4065-4074; 4075-4082 (*synth, ir, pmr, uv, ms, props, 6-Ac, di-Ac*)
White, E.H. *et al., J.A.C.S.*, 1980, **102**, 3199-3208 (*props*)
Suzuki, N. *et al., Heterocycles*, 1983, **20**, 1027-1030 (*props*)
Kirk-Othmer Encycl. Chem. Technol., 4th edn., Wiley, 1991, **15**, 540 (*props*)
Gandelman, O.A. *et al., J. Photochem. Photobiol., B*, 1993, **19**, 187-191 (*props*)
Esteves da Silva, J.C.G. *et al., Tet. Lett.*, 2001, **42**, 8173-8176 (*synth, pmr, cmr*)
Nakatani, N. *et al., J.A.C.S.*, 2007, **129**, 8756-8765 (*tautom, theory*)

Fiscalin A F-57

[149030-11-5]



Absolute Configuration

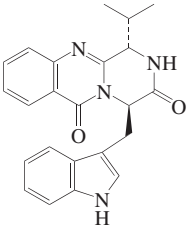
R = H

$C_{26}H_{27}N_5O_4$ 473.53
Prod. by the fungus *Neosartorya fischeri*. Substance P inhibitor. Neurokinin binding inhibitor. Cryst. ($MeOH/CH_2Cl_2$). Sol. MeOH, EtOAc; poorly sol. hexane. Mp 242-243°. $[\alpha]_D$ -169 (c, 0.5 in MeOH). λ_{max} 226 ; 278 ; 306 (prob. MeOH) (Derep).

Wong, S.-M. *et al., J. Antibiot.*, 1993, **46**, 545-553 (*isol, pmr, cmr, cryst struct, abs config*)

Fiscalin B F-58

[149008-35-5]



Absolute Configuration

$C_{23}H_{22}N_4O_2$ 386.452
Prod. by the fungi *Neosartorya fischeri* and *Corynascus setosus*. Substance P inhibitor, neurokinin binding inhibitor. Cryst. ($CHCl_3$/MeOH). Sol. MeOH, EtOAc; poorly sol. hexane. Mp 164.5-170.5°. $[\alpha]_D$ -124 (c, 0.02 in MeOH). λ_{max} 222 (ϵ 56000); 268 (ϵ 15000); 278 (ϵ 14000); 290 (ϵ 14500); 310 (ϵ 5000); 321 (sh) (ϵ 3500) (no solvent reported) (Derep). λ_{max} 220 (ϵ 44668); 273 (ϵ 11480); 290 (ϵ 8700); 305 (ϵ 3980); 318 (ϵ 2950) (MeOH) (Berdy).

Wong, S.-M. *et al., J. Antibiot.*, 1993, **46**, 545-553 (*isol, pmr, cmr, abs config*)
Fujimoto, H. *et al., Chem. Pharm. Bull.*, 1996, **44**, 1843-1848 (*isol, uv, pmr, cmr*)
Wang, H. *et al., J.O.C.*, 2000, **65**, 1022-1030 (*synth*)
Liu, J.-F. *et al., J.O.C.*, 2005, **70**, 6339-6345 (*synth*)

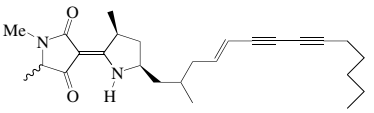
Fiscalin C F-59

[149008-36-6]
As Fiscalin A, F-57 with
R = CH_3
$C_{27}H_{29}N_5O_4$ 487.557
Prod. by the fungus *Neosartorya fischeri*. Substance P inhibitor. Neurokinin binding inhibitor. Amorph. solid. Sol. MeOH, EtOAc; poorly sol. hexane. λ_{max} 226 ; 278 ; 306 (prob. MeOH) (Derep).

Wong, S.-M. *et al., J. Antibiot.*, 1993, **46**, 545-553 (*isol, pmr, cmr, props, abs config*)

Fischerellin A F-60

[182227-56-1]



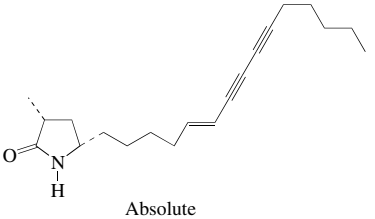
Relative Configuration

$C_{26}H_{36}N_2O_2$ 408.583
Isol. from the cyanobacterium *Fischerella muscicola*. Potent photosystem-II inhibitor. Exhibits antifungal and herbicidal activity. Powder. Unique struct.; unrelated to all other known cyanobacterial metabolites. λ_{max} 214 (log ϵ 53000); 229 (log ϵ 12000); 241 (log ϵ 16000); 253 (log ϵ 18000); 268 (log ϵ 20600); 284 (log ϵ 24000); 301 (log ϵ 22000) (no solvent reported).

Hagmann, L. *et al., Tet. Lett.*, 1996, **37**, 6539-6542 (*isol, uv, pmr, cmr, struct*)

Fischerellin B F-61

[186901-41-7]



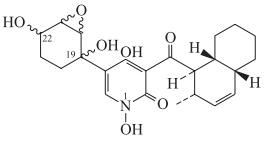
Absolute Configuration

$C_{20}H_{29}NO$ 299.455
Isol. from the cyanobacteria *Fischerella muscicola* and *Fischerella ambigua*. Yellowish solid. λ_{max} 240 ; 252 ; 267 ; 283 (MeOH).

Papke, U. *et al., Tet. Lett.*, 1997, **38**, 379 (*isol, uv, pmr, cmr, struct, abs config*)

Fischerin F-62

NFA Toxin
[134822-63-2]



Relative configuration

$C_{23}H_{29}NO_7$ 431.485

Struct. revised in1993. Metab. from the fungus *Neosartorya fischeri* var. *fischeri*. Pale yellow amorph. powder. Sol. MeOH, bases; poorly sol. acids. $[\alpha]_D^{26}$ -65 (c, 0.52 in $CHCl_3$). λ_{max} 213 (ϵ 13000); 233 (ϵ 7700); 290 (ϵ 4800); 343 (ϵ 3800) (MeOH) (Berdy).

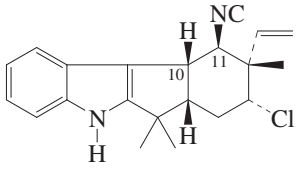
▶ Highly toxic, causes lethal peritonitis in mice.

Tri-Ac:
Needles (Me_2CO). Mp 121-123°. $[\alpha]_D^{22}$ -46 (c, 0.44 in $CHCl_3$).

Fujimoto, H. *et al., J. Nat. Prod.*, 1993, **56**, 1268 (*isol, uv, ir, pmr, cmr, struct*)

Fischerindole L F-63

[144398-55-0]



$C_{21}H_{23}ClN_2$ 338.879

The suffix letters for the Fischerindoles are allocated on the basis of analogy with structurally similar Hapalindoles, therefore not all suffix letters are known. Alkaloid from the terrestrial blue-green alga *Fischerella muscicola*. λ_{max} 220 (ϵ 38000); 278 (ϵ 6800); 290 (sh) (ϵ 5000) (MeOH) (Derep).

10,11-Didehydro: ***12-Epifischerindole I isonitrile***
[159189-08-9]
$C_{21}H_{21}ClN_2$ 336.863
Isol. from *Hapalosiphon welwitschii*.

10-Epimer: ***12-Epifischerindole G isonitrile***
[159249-50-0]
$C_{21}H_{23}ClN_2$ 338.879
Isol. from *Hapalosiphon welwitschii*. $[\alpha]_D$ +67 (c, 0.09 in CH_2Cl_2). λ_{max} 222 (ϵ 18600); 278 (ϵ 5880) (MeOH).

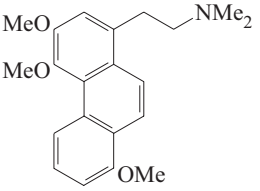
10-Epimer, dechloro: ***12-Epifischerindole U isonitrile***
[159189-06-7]
$C_{21}H_{24}N_2$ 304.434
Isol. from *Hapalosiphon welwitschii*. λ_{max} 226 (ϵ 17500); 278 (ϵ 5680) (MeOH).

10-Epimer, dechloro, isothiocyanate: ***12-Epifischerindole U isothiocyanate***
$C_{21}H_{24}N_2S$ 336.5
Isol. from *Hapalosiphon welwitschii*. $[\alpha]_D$ +231 (c, 0.03 in CH_2Cl_2). Has -NCS replacing -NC. λ_{max} 206 (sh) (ϵ 16300); 228 (ϵ 23000); 278 (ϵ 5240) (MeOH).

Park, A. *et al., Tet. Lett.*, 1992, **33**, 3257-3260 (*isol, uv, pmr, cmr, ms*)
Stratmann, K. *et al., J.A.C.S.*, 1994, **116**, 9935-9942 (*derivs*)
Richter, J.M. *et al., J.A.C.S.*, 2008, **130**, 17938-17954 (*synth*)

Fissicesine F-64

3,4,8-Trimethoxy-N,N-*dimethyl-1-phenanthreneethanamine, 9CI*
[129743-89-1]



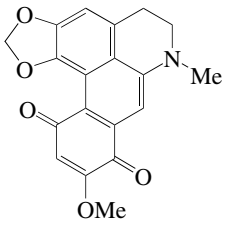
$C_{21}H_{25}NO_3$ 339.433
Alkaloid from the root bark of *Fissistigma glaucescens* (Annonaceae). Amorph. solid.

N-*Oxide:* ***Fissicesine* N-*oxide***
[129743-90-4]
$C_{21}H_{25}NO_4$ 355.433
Alkaloid from the root bark of *Fissistigma glaucescens* (Annonaceae). Yellowish oil.

Wu, Y.-C. *et al., Phytochemistry*, 1990, **29**, 2387 (*isol, uv, pmr, cmr, ms, struct*)

Fissilandione F-65

[216445-07-7]



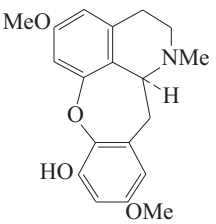
$C_{19}H_{15}NO_5$ 337.331
Alkaloid from *Fissistigma balansae*. Amorph. violet solid ($CHCl_3$). Mp 250-252°. λ_{max} 220 (log ϵ 4.4); 284 (sh) (log ϵ 4.07); 306 (log ϵ 4.15); 333 (log ϵ 3.96); 590 (log ϵ 3.3) (EtOH).

N-*De-Me:* ***Norfissilandione***
[216445-09-9]
$C_{18}H_{13}NO_5$ 323.304
Alkaloid from *Fissistigma balansae*. Amorph. violet solid ($CHCl_3$). Mp 258-261°. λ_{max} 218 (log ϵ 4.57); 283 (log ϵ 4.06); 300 (log ϵ 4.2); 335 (log ϵ 3.98); 591 (log ϵ 3.3) (EtOH).

Chia, Y.-C. *et al., J. Nat. Prod.*, 1998, **61**, 1430-1432 (*isol, uv, ir, pmr, cmr, ms*)

Fissistigine B F-66

*2,3,12,12a-Tetrahydro-5,10-dimethoxy-1-methyl-1*H-*[1]benzoxepino[2,3,4-*ij*]isoquinolin-8-ol, 9CI*
[83685-18-1]

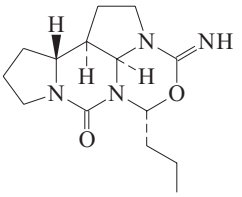


$C_{19}H_{21}NO_4$ 327.379
Alkaloid from *Fissistigma oldhamii* (Annonaceae).

Xu, C. *et al., Zhongyao Tongbao*, 1982, **7**, 30-31; *CA*, **97**, 212639t

Fissoldhimine F-67

[163634-04-6]

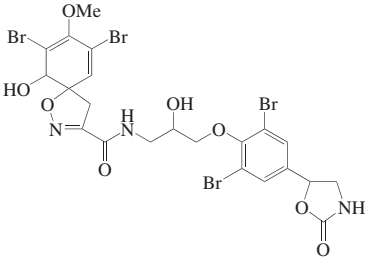


$C_{14}H_{22}N_4O_2$ 278.353
Alkaloid from stems of *Fissistigma oldhamii* (Annonaceae). Cryst. (MeOH). Mp 234-236°.

Wu, J.-B. *et al., Chem. Pharm. Bull.*, 1994, **42**, 2202 (*isol, pmr, cmr, cryst struct*)

Fistularin 1 F-68

[73622-20-5]



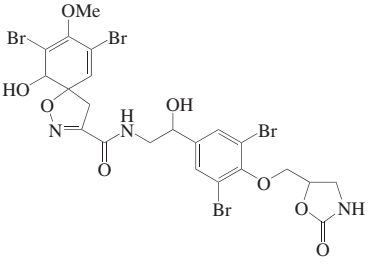
$C_{22}H_{21}Br_4N_3O_8$ 775.039
Metab. of the sponge *Aplysina fistularis* forma *fulva*. Amorph. solid. $[\alpha]_D$ +93.5 (c, 1.2 in MeOH). λ_{max} 230 (sh) (ϵ 15200); 284 (sh) (ϵ 5680) (MeOH) (Derep).

Di-O-*Ac:* Mp 168-171° dec. $[\alpha]_D$ +122.7 (c, 0.44 in $CHCl_3$).

Gopichand, Y. *et al., Tet. Lett.*, 1979, 3921 (*isol, uv, ir, pmr, struct*)

Fistularin 2 F-69

[73622-21-6]

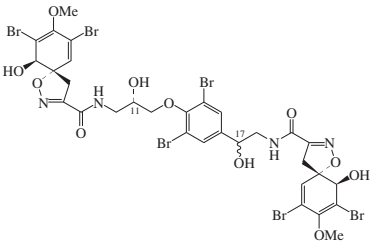


$C_{22}H_{21}Br_4N_3O_8$ 775.039
Metab. of the sponge *Aplysina fistularis* forma *fulva*.

Gopichand, Y. *et al., Tet. Lett.*, 1979, 3921 (*isol, pmr, struct*)

Fistularin 3 F-70

[73622-22-7]



$C_{31}H_{30}Br_6N_4O_{11}$ 1114.022

Complex stereochem. In view of the fact that C-17 configs. remain undetermined, the relationships shown in this entry are tentative. Some samples prev. descr. as Fistularin 3 were mixts. with its 11-epimer, and opt. rotn. is unable to distinguish these. Stereochem. variability occurs between individuals of the same sp. Metab. of the sponge *Aplysina fistularis* forma *fulva*, *Aplysina archeri*, *Agelas oroides*, *Pseudoceratina durissima*, *Verongula* sp., *Verongia aerophorba* and *Verongia cavernicola*. Inhibits the growth of feline leukaemia virus. Amorph. solid. $[\alpha]_D$ +104.2 (c, 1.67 in MeOH). λ_{max} 223 (sh) (ε 26545); 283 (sh) (ε 10387) (MeOH) (Derep).

Tetra-O-*Ac:* Mp 202-204° dec. $[\alpha]_D$ +149.4 (c, 1.32 in $CHCl_3$).

11-Ketone: ***11-Oxofistularin 3***. *11-Keto-fistularin 3*
[142755-09-7]
$C_{31}H_{28}Br_6N_4O_{11}$ 1112.006
Metab. of the sponge *Aplysina archeri*. Inhibits the growth of feline leukaemia virus. Pale yellow gum. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. $[\alpha]_D^{26}$ +130 (c, 0.1 in MeOH). λ_{max} 225 (ε 27000); 242 (ε 14000); 283 (ε 9900) (MeOH) (Berdy).

11-Deoxy: ***11-Deoxyfistularin 3***
[191112-19-3]
$C_{31}H_{30}Br_6N_4O_{10}$ 1098.023
Isol. from *Aplysina cavernicola* and *Aplysina fistularis insularis*. Cytotoxic agent. Powder. Mp 128-130°. $[\alpha]_D^{25}$ +194.2 (c, 4.12 in MeOH). λ_{max} 232 (ε 19000); 284 (ε 11000) (MeOH). λ_{max} 209 (ε 42000); 235 (ε 21600); 283 (ε 11200) (MeOH).

19-Deoxy: ***19-Deoxyfistularin 3***
[153209-11-1]
$C_{31}H_{30}Br_6N_4O_{10}$ 1098.023
Metab. from a new sp. of sponge of the family Aplysinellidae, order Verongida, from the Coral Sea. Powder. $[\alpha]_D^{20}$ +155 (c, 0.17 in Me_2CO). λ_{max} 206 (ε 60400); 235 (ε 22000); 283 (ε 10400) (MeOH) (Berdy).

19-Deoxy, 11-ketone: ***19-Deoxy-11-oxo-fistularin 3***
[153209-12-2]
$C_{31}H_{28}Br_6N_4O_{10}$ 1096.007
Metab. from a new sp. of sponge of the family Aplysinellidae, order Verongida, from the Coral Sea. Powder. $[\alpha]_D^{20}$ +136 (c, 0.2 in Me_2CO). λ_{max} 205 (ε 18500); 280 (ε 3400) (MeOH) (Berdy).

11,19-Dideoxy: ***11,19-Dideoxyfistularin 3***
[179523-38-7]
$C_{31}H_{30}Br_6N_4O_9$ 1082.023
Metab. of the verongid sponge *Pseudoceratina durissima* and from *Aplysina lacunosa* and *Verongia cavernicola*. Unstable yellow powder. $[\alpha]_D$ +98.5 (c, 0.1 in MeOH). λ_{max} 224 (ε 26000); 257 (ε 16000); 284 (ε 10400) (MeOH) (Berdy).

11-Epimer: ***11-Epifistularin 3***
$C_{31}H_{30}Br_6N_4O_{11}$ 1114.022
Metab. from the marine sponge *Agelas oroides*. Exhibits antibacterial activity and moderate cytotoxicity towards cultured breast cancer cells. Amorph. solid. $[\alpha]_D^{25}$ +65.2 (c, 1.04 in Me_2CO). λ_{max} 233 (ε 13500); 283 (ε 2650) (EtOH) (Berdy).

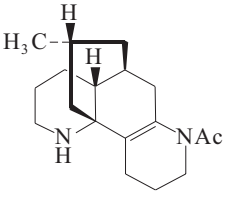
Stereoisomer: ***Isofistularin 3***
[87099-50-1]
$C_{31}H_{30}Br_6N_4O_{11}$ 1114.022
Isol. from *Verongia aerophoba* and *Aiolochroia crassa*. Cytotoxic agent. Shows antibiotic activity. Sol. Me_2CO, Et_2O. $[\alpha]_D$ +108 (c, 2.75 in MeOH). Isomeric at one or more chiral centres. Genus name often misspelt Ailochroia. λ_{max} 223 (sh) (ε 26545); 283 (sh) (ε 10387) (MeOH) (Derep).

Stereoisomer (2):
$C_{31}H_{30}Br_6N_4O_{11}$ 1114.022
Isol. from *Verongia aerophoba*. Pale yellow powder. Mp 128°. $[\alpha]_D^{25}$ +51.6 (c, 0.6 in MeOH).

Gopichand, Y. *et al., Tet. Lett.*, 1979, **20**, 3921-3924 (*isol, uv, ir, pmr, struct*)
Cimino, G. *et al., Tet. Lett.*, 1983, **24**, 3029-3032 (*isol, pmr, struct, Isofistularin*)
Kernan, M.R. *et al., J. Nat. Prod.*, 1990, **53**, 615-622 (*11,19-Dideoxyfistularin 3*)
Gunasekera, S.P. *et al., J. Nat. Prod.*, 1992, **55**, 509-512 (*11-Oxofistularin 3*)
König, G.M. *et al., Heterocycles*, 1993, **36**, 1351-1358 (*11-Epifistularin 3*)
Mancini, I. *et al., J.C.S. Perkin 1*, 1993, 3121-3125 (*19-Deoxyfistularin 3, 19-Deoxy-11-oxofistularin 3*)
Ciminiello, P. *et al., Tetrahedron*, 1997, **53**, 6565-6572 (*11-Deoxyfistularin 3*)
Compagnone, R.S. *et al., J. Nat. Prod.*, 1999, **62**, 1443-1444 (*11-Deoxyfistularin 3*)
Gao, H. *et al., Tetrahedron*, 1999, **55**, 9717-9726 (*isol, cd, pmr, cmr*)
Aydoğmuş, Z. *et al., Turk. J. Chem.*, 1999, **23**, 339-344 (*Isofistularin 3, isol, activity, stereoisomer 2*)
Rogers, E.W. *et al., J. Nat. Prod.*, 2005, **68**, 891-896 (*stereochem*)

Flabellidine F-71

Alkaloid L5†



$C_{18}H_{28}N_2O$ 288.432

Natural-*form* [6900-86-3]
Alkaloid from *Lycopodium flabelliforme*, *Lycopodium paniculatum*, *Lycopodium thyoides* and *Lycopodium complanatum* (Lycopodiaceae). Cryst. (Me_2CO)(as perchlorate). Mp 281-282° (perchlorate).

Ac:
Cryst. (Me_2CO/Et_2O). Mp 150-152°.

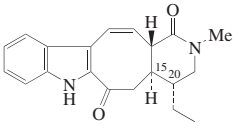
(±)-*form*

Ac:
Cryst. (Et_2O/Me_2CO). Mp 140°.

Manske, R.H.F. *et al., Can. J. Res., Sect. B*, 1942, **20**, 87 (*isol*)
Alam, S.N. *et al., Can. J. Chem.*, 1964, **42**, 2456 (*uv, ir, pmr, ms, struct*)
Braekman, J.C. *et al., Phytochemistry*, 1974, **13**, 2519 (*isol*)
Morales, G. *et al., Phytochemistry*, 1979, **18**, 1719 (*isol*)
Schumann, D. *et al., Annalen*, 1982, 2057 (*synth, pmr, cmr, deriv*)

Flabelliformide A F-72

[57567-16-5]



Relative Configuration

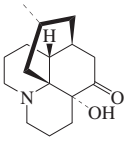
$C_{20}H_{22}N_2O_2$ 322.406
Alkaloid from the stems of *Ervatamia flabelliformis*. Needles (MeOH). Mp 264-265°. $[\alpha]_D^{25}$ -68.8 (c, 0.1 in EtOH).

15,20-Diepimer: ***Flabelliformide B***
[953423-34-2]
$C_{20}H_{22}N_2O_2$ 322.406
Alkaloid from the stems of *Ervatamia flabelliformis*. Powder. Mp 252-253°. $[\alpha]_D^{25}$ -23.3 (c, 0.1 in EtOH).

Liang, S. *et al., Helv. Chim. Acta*, 2007, **90**, 1467-1470 (*isol, pmr, cmr, ms, cryst struct*)

Flabelliformine† F-73

Dodecahydro-1-hydroxy-11-methyl-1,9-ethanobenzo[i]quinolizin-14-one, 13CI. 14-Hydroxy-15-methyllycopodan-5-one, 9CI. Clavatine
[7096-84-6]



Absolute Configuration

$C_{16}H_{25}NO_2$ 263.379
Identity of Clavatine and Flabelliformine not definitely establ. Alkaloid from *Lycopodium flabelliforme, Lycopodium clavatum* var. *megastachyon* and *Lycopodium lucidulum* (Lycopodiaceae). Mp 210-211° (change in cryst. form at 150°). $[\alpha]_D^{20}$ -365.7 (Me_2CO) (Clavatine). Forms a 1:1 mol. complex with Lycopodine. Mp 213-214°, isol. from *L. clavatum*.

Hydrobromide: Mp 337° dec.

Methiodide: Mp 335° dec. (317-318°).

1:1 Complex with Lycodoline, L-325:

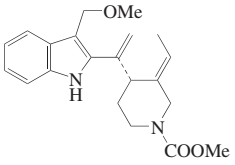
Clavatoxine
$C_{32}H_{50}N_2O_4$ 526.758
Isol. from *Lycopodium clavatum* (Lycopodiaceae). Needles (petrol). Mp 185-186°.

6α-Hydroxy: ***4,6α-Dihydroxylycopodine***.
6α-Hydroxyflabelliformine
[791588-39-1]
$C_{16}H_{25}NO_3$ 279.378
Alkaloid from *Huperzia serrata*. Amorph. powder. Mp>300° dec. $[\alpha]_D^{25}$ -56.8 (c, 0.16 in MeOH).

Achmatowicz, O. *et al., Pol. J. Chem. (Rocz. Chem.)*, 1938, **18**, 88-95 (*Clavatoxine, isol*)
Curcumelli-Rodostamo, M. *et al., Can. J. Chem.*, 1962, **40**, 1068-1070 (*isol, uv, ir, pmr, struct*)
Ayer, W.A. *et al., Can. J. Chem.*, 1962, **40**, 2088-2100; 1969, **47**, 449-455 (*isol*)
Achmatowicz, O. *et al., Bull. Acad. Pol. Sci., Ser. Sci. Chim.*, 1964, **12**, 311-313; *CA*, **61**, 13358f (*Clavatine, struct*)
Rodewald, W.J, *et al., Bull. Acad. Pol. Sci., Ser. Sci. Chim.*, 1967, **15**, 579-581; *CA*, **68**, 69166e (*Clavatoxine, struct*)
Nakashima, T.T. *et al., Can. J. Chem.*, 1975, **53**, 1936-1942 (*cmr*)
Tan, C.-H. *et al., Helv. Chim. Acta*, 2004, **87**, 1963-1967 (*4,6-Dihydroxylycopodine*)

Flabelliformine† F-74

[1020085-49-7]



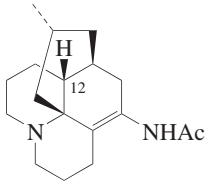
Absolute Configuration

$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from the stems of *Ervatamia flabelliformis*. Powder (MeOH). $[\alpha]_D^{25}$ -29 (c, 0.2 in EtOH).

Liang, S. *et al., Helv. Chim. Acta*, 2008, **91**, 239-243 (*isol, pmr, cmr, ms*)

Flabelline F-75

[6899-89-4]



Absolute Configuration

$C_{18}H_{28}N_2O$ 288.432
Alkaloid from *Lycopodium flabelliforme* (Lycopodiaceae). Mp 185-187.5°.

Perchlorate: Mp 280-282°.

Methiodide: Mp 281-282°.

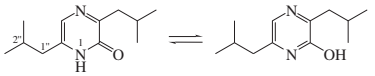
N-*De-Ac,* N-*oxalyl:* ***Huperzine G***
[220205-68-5]
$C_{18}H_{26}N_2O_3$ 318.415
Alkaloid from *Huperzia serrata*. Mp 285°.

12-Hydroxy: ***Lycoverticine***
[62023-86-3]
$C_{18}H_{28}N_2O_2$ 304.431
Alkaloid from *Lycopodium verticillatum* (Lycopodiaceae). Mp 222-225°. $[\alpha]_D$ -61 (EtOH).

Young, J.C.F. *et al., Can. J. Chem.*, 1963, **41**, 2731 (*isol, ir, pmr, struct*)
Alam, S.N. *et al., Can. J. Chem.*, 1964, **42**, 2456 (*ms*)
Nyembo, L. *et al., Bull. Soc. Chim. Belg.*, 1976, **85**, 595 (*Lycoverticine*)
Wang, B.-D. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 1998, **40**, 842-845 (*Huperzine G*)

Flavacol F-76

*3,6-Bis(2-methylpropyl)-2(1*H*)-pyrazinone, 9CI. 3,6-Diisobutyl-2(1*H*)-pyrazinone*
[495-98-7]



$C_{12}H_{20}N_2O$ 208.303
Metab. from *Aspergillus flavus* and *Aspergillus ochraceus*. Needles (EtOAc). Mp 149-150° Mp 144.5-147°. λ_{max} 229 (ϵ 4290); 325 (ϵ 4660) (EtOH).

1-Oxide: ***Neoaspergillic acid***
[2152-59-2]
$C_{12}H_{20}N_2O_2$ 224.302
Metab. of *Aspergillus sclerotiorum, Aspergillus flavus* and *Aspergillus ochraceus*. Shows antibiotic activity. Needles (MeOH aq.). Sol. MeOH, Et_2O, bases; poorly sol. H_2O, hexane. Mp 127.5-128.5°. λ_{max} 234 (ϵ 10557); 330 (ϵ 8143) (EtOH). λ_{max} 236 (ϵ 9150); 328 (ϵ 10500) (EtOH) (Berdy).
▶ LD_{50} (mus, ipr) 125 mg/kg.

1-Oxide, Fe complex: ***Ferrineoaspergillin***
[67269-53-8]
$C_{36}H_{57}FeN_6O_6$ 725.73
Pigment from *Aspergillus ochraceus, Aspergillus parasiticus, Aspergillus auricomus, Aspergillus melleus, Aspergillus sclerotiorum* and *Aspergillus sulphureus*. Red leaflets (Me_2CO aq.). Insol. H_2O. Mp 135-136° (129-133°). λ_{max} 227 ; 315 ; 410 (EtOH).

2''-Hydroxy: ***Deoxyneo-β-hydroxyaspergillic acid***. *6-(2-Hydroxy-2-methylpropyl)-3-(2-methylpropyl)-2(1*H*)-pyrazinone, 9CI*
[40034-14-8]
$C_{12}H_{20}N_2O_2$ 224.302
Metab. from *Aspergillus ochraceus*. Chelating agent. Needles (EtOAc or diisopropyl ether). Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. Mp 118-119.5° Mp 122.5-123° (Deoxyneo-β-hydroxyaspergillic acid). λ_{max} 230 (ϵ 5016); 326 (ϵ 5528) (EtOH).

NH-form

1,1''ξ-Dihydroxy: ***Neohydroxyaspergillic acid***
[72598-34-6]
$C_{12}H_{20}N_2O_3$ 240.302
Metab. of *Aspergillus sclerotiorum* and *Aspergillus flavus*. Exhibits antibiotic and antiphage activity. Light-yellow needles (MeOH aq.). Sol. MeOH, Et_2O, bases; poorly sol. H_2O, hexane. Mp 170-171° (164-166°). $[\alpha]_D^{25}$ -57 (c, 0.64 in EtOH). Dimorphic. λ_{max} 236 (ϵ 6450); 328 (ϵ 8350) (EtOH) (Berdy). λ_{max} 246 (ϵ 8000); 360 (ϵ 7550) (HCl) (Berdy).
▶ LD_{50} (mus, ipr) 125 mg/kg.

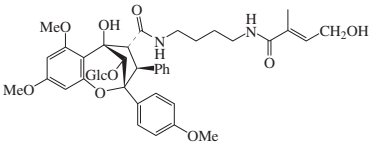
1,2''-Dihydroxy: ***β-Hydroxyneoaspergillic acid***
[62309-40-4]
$C_{12}H_{20}N_2O_3$ 240.302
Metab. of *Aspergillus ochraceus*. Amorph. solid (EtOAc). Mp 143-144°.

OH-form

Me ether: 3-Methoxy-2,5-bis(2-methylpropyl)pyrazine
[36329-97-2]
$C_{13}H_{22}N_2O$ 222.33
Prod. by *Chondromyces crocatus*.

Dunn, G. *et al., J.C.S.*, 1949, 2586 (*synth, struct*)
Weiss, U. *et al., Arch. Biochem. Biophys.*, 1958, **74**, 150 (*Neohydroxyaspergillic acid*)
Micetich, R.G. *et al., J.C.S.*, 1964, 1507 (*isol, derivs*)
Masaki, M. *et al., Tet. Lett.*, 1965, 4837 (*synth, uv, ir, deriv*)
Yamazaki, M. *et al., Chem. Pharm. Bull.*, 1972, **20**, 2274-2276 (*Aspergillus ochraceus, isol, uv, ir, pmr*)
Maebayashi, Y. *et al., Chem. Pharm. Bull.*, 1978, **26**, 1320 (*Ferrineoaspergillin*)
Ohta, A. *et al., Chem. Pharm. Bull.*, 1979, **27**, 1316; 1378 (*deriv, synth*)
Assante, G. *et al., J. Agric. Food Chem.*, 1981, **29**, 785 (*isol, uv, ir, ms, derivs*)
Okada, Y. *et al., Chem. Pharm. Bull.*, 1996, **44**, 2259-2262 (*synth*)
Dickschat, J.S. *et al., Eur. J. Org. Chem.*, 2005, 4141-4153 (*Me ether*)

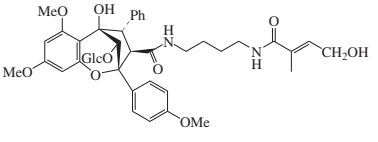
Aglaia dasyclada Flavagline compound 1 F-77



$C_{42}H_{52}N_2O_{14}$ 808.878
Alkaloid from *Aglaia dasyclada*. Amorph. $[\alpha]_D^{20}$ -22.4 (c, 1 in MeOH). Isomer of *Aglaia dasyclada* Flavagline compound 2, F-78.

Chaidir, *et al., J. Nat. Prod.*, 2001, **64**, 1216-1220

Aglaia dasyclada Flavagline compound 2 F-78



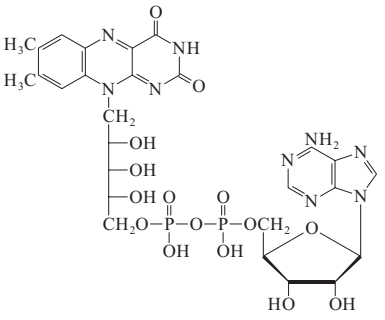
$C_{42}H_{52}N_2O_{14}$ 808.878
Alkaloid from *Aglaia dasyclada*. Amorph. $[\alpha]_D$ -28.2 (c, 0.04 in MeOH). Isomer of *Aglaia dasyclada* Flavagline compound 1, F-77.

Chaidir, *et al., J. Nat. Prod.*, 2001, **64**, 1216-1220 (*isol, pmr, cmr*)

Flavine adenine dinucleotide F-79

Riboflavin 5′-(trihydrogen diphosphate) 5′ → 5′-diester with adenosine, 9CI. Flavinat. Flavitan. Isoalloxazine adenine dinucleotide. FAD. Fademin. Flamitajin. Flanin F

[146-14-5]



$C_{27}H_{33}N_9O_{15}P_2$ 785.556

Isol. from various natural sources incl. the liver, heart, kidney, muscles and yeasts. Vitamin B_2 therapeutic agent. Prosthetic group of various flavoproteins incl. D-amino acid oxidase, fumaric hydrogenase, histaminase glucose oxidase and xanthine oxidase. Yellow microcryst. (H_2O). Light-sensitive.

► AU7470000

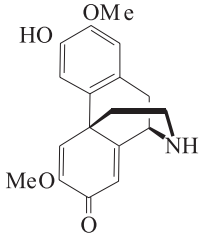
[1910-41-4 , 84366-81-4]

Christie, S.M.H. *et al., J.C.S.*, 1954, 46 (*synth*)
Moffatt, J.G. *et al., J.A.C.S.*, 1958, **80**, 3756 (*synth*)
Yagi, K. *et al., Biochem. Prep.*, 1959, **7**, 51 (*isol*)
Boyer, P.D. *et al., Enzymes*, Ed., Vol. 2, Academic Press, New York, 1960, (*rev*)
Kainosho, M. *et al., Biochemistry*, 1972, **11**, 741 (*pmr, P-31 nmr*)
Yagi, K. *et al., Biochemistry*, 1976, **15**, 2877 (*N-15 nmr*)
Yoshimura, J. *et al., Method. Chim.*, 1977, **11**, 76 (*rev*)
Holmgren, A. *et al., Experientia*, Suppl., 1980, **36**, 149 (*rev*)
Shimizu, S. *et al., Appl. Biochem. Biotechnol.*, 1983, **8**, 237 (*synth*)
Ulrich, E.L. *et al., Tet. Lett.*, 1983, **24**, 473 (*pmr*)
Otvos, J.D. *et al., Biochemistry*, 1986, **25**, 7220 (*P-31 nmr*)
Copeland, R.A. *et al., J. Phys. Chem.*, 1986, **90**, 6648 (*uv, Raman*)
Nielsen, P. *et al., Methods Enzymol.*, 1986, **122**, 209 (*rev, synth, props*)

Flavinine F-80

5,6,8,14-Tetradehydro-3-hydroxy-2,6-dimethoxymorphinan-7-one, 9CI

[19777-83-4]



(–)-*form*

$C_{18}H_{19}NO_4$ 313.352

(+)-*form*

N-*Me:* ***(+)-Flavinantine***

$C_{19}H_{21}NO_4$ 327.379

Alkaloid from *Roemeria refracta*. Amorph. $[\alpha]_D$ +13 (c, 0.13 in MeOH). $[\alpha]_D$ +30 (c, 0.1 in $CHCl_3$). λ_{max} 240 (log ϵ 4.12); 285 (log ϵ 3.81) (MeOH).

Me ether: **N-*Nor-2,3,6-trimethoxymorphinandien-7-one***

[149155-13-5]

$C_{19}H_{21}NO_4$ 327.379

Alkaloid from stems of *Fissistigma oldhamii* (Annonaceae). Amorph. pale yellow solid. Mp 126-128°. $[\alpha]_D^{25}$ 0 (c, 0.02 in $CHCl_3$).

Me ether, N-*Me:* **O-*Methylpallidine***. *Fissistigine C*

[27510-33-4]

[83685-19-2]

$C_{20}H_{23}NO_4$ 341.406

Alkaloid from leaves of *Ocotea acutangula*, *Ceratocapnos palaestinus* and the bark of *Fissistigma oldhamii* (Annonaceae). Needles (Et_2O) or amorph. Mp 118-120°. $[\alpha]_D^{20}$ +25.2 ($CHCl_3$) (+12). Struct. of Fissistigine C revised in 1985. The lower opt. rotn. refers to synthetic material (amorph.). λ_{max} 208 (log ϵ 4.49); 238 (log ϵ 4.19); 280 (log ϵ 3.82) (EtOH).

Me ether, N-*Me,* N-*oxide:* **O-*Methylpallidine* N-*oxide***

[122249-94-9]

$C_{20}H_{23}NO_5$ 357.405

Alkaloid from the whole plant of *Sarcocapnos enneaphylla* (Papaveraceae). Amorph. $[\alpha]_D$ +20 (c, 2.1 in $CHCl_3$). The first morphinandienone *N*-oxide.

O^2-*De-Me,* O^3-*Me:* ***Norpallidine***

[61774-73-0]

$C_{18}H_{19}NO_4$ 313.352

Alkaloid from *Fumaria vaillantii* (Papaveraceae). Cryst. ($CHCl_3$). Mp 102°. $[\alpha]_D^{23}$ -11 (MeOH).

O^2-*De-Me,* O^3-*Me,* N-*Me:* ***Pallidine***†

[25650-75-3]

$C_{19}H_{21}NO_4$ 327.379

Alkaloid from *Chasmanthera dependens*, *Corydalis pallida*, *Corydalis incisa*, *Corydalis koidzumiana*, *Desmos tiebaghiensis*, *Monodora crispata*, *Ocotea acutangula*, *Ocotea brachybotra*, *Rollinia mucosa*, *Thalictrum dioicum* and *Thalictrum faberi*. Pale yellow syrup. $[\alpha]_D^{18}$ -32 (c, 0.16 in EtOH). λ_{max} 210 (log ϵ 4.51); 240 (log ϵ 4.2); 286 (log ϵ 3.91) (EtOH).

O^2-*De-Me,* O^3-*Me,* N-*Me,* N-*oxide:* ***Pallidine* N-*oxide***

[937018-74-1]

$C_{19}H_{21}NO_5$ 343.379

Alkaloid from the leaves of *Neolitsea sericea* var. *aurata*.

(-)-*form*

Alkaloid from *Croton flavens* (Euphorbiaceae). Cryst. + Me_2CO (Me_2CO). Mp 130-132°. $[\alpha]_D^{16}$ -6 (EtOH).

N-*Me:* ***(-)-Flavinantine***

[19777-82-3]

$C_{19}H_{21}NO_4$ 327.379

Alkaloid from *Croton flavens* (Euphorbiaceae). Rods (EtOAc). Mp 130-132°. $[\alpha]_D^{23}$ -14.5 (c, 1.1 in EtOH).

Me ether, N-*Me:* ***Sebiferine***. O-*Methylflavinantine. Probovatine*

[23979-25-1]

$C_{20}H_{23}NO_4$ 341.406

From *Litsea sebiferea*, *Alseodaphne perakensis*, *Cocculus laurifolius*, *Duguetia obovata*, *Kolobopetalum auriculatum* and *Rhigiocarya racemifera*. Inhibitor of peristaltic reflex in guinea pig ileum. Shows morphine-like centrally-mediated antinociceptive activity. Mp 112-113°. $[\alpha]_D^{24}$ -13 (c, 0.1 in $CHCl_3$) (synthetic). Probovatine, isol. from *D. obovata* (1980) was assigned a different structure, making it the only member of the proposed group of neoproaporphine alkaloids. This assignment was erroneous and on reexamination Sebiferine was isol.

Me ether, N-*Me,* N-*oxide:* ***Sebiferine* N-*oxide***. O-*Methylflavinantine* N-*oxide*

[135357-27-6]

$C_{20}H_{23}NO_5$ 357.405

Alkaloid from *Alseodaphne perakensis* (Lauraceae). Pale yellow solid.

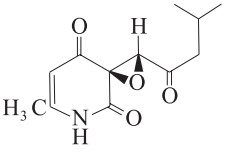
(±)-*form* [22324-01-2]

Cryst. (Me_2CO). Mp 138°.

Stuart, K.L. *et al., J.C.S.(C)*, 1969, 1681-1684 (*isol, struct, cd*)
Kotani, E. *et al., Tet. Lett.*, 1973, 4759-4761 (*synth*)
Shamma, M. *et al., Phytochemistry*, 1976, **15**, 1802-1803 (*Norpallidine*)
Kametani, T. *et al., J.A.C.S.*, 1977, **99**, 3805-3808 (*synth*)
Bhakuni, D.S. *et al., Tetrahedron*, 1979, **35**, 2365-2367 (*biosynth*)
Vecchietti, V. *et al., J.C.S. Perkin 1*, 1981, 578-581 (*O-Methylpallidine*)
Dubourg, P.A. *et al., Acta Cryst. B*, 1982, **38**, 1657 (*Sebiferine, cryst struct*)
Xu, C. *et al., Zhongyao Tongbao*, 1982, **7**, 30-31; *CA*, **97**, 212639t (*Fissistigine C*)
Chiaroni, A. *et al., Acta Cryst. C*, 1983, **39**, 1311-1312 (*cryst struct*)
Blaskó, G. *et al., J.O.C.*, 1984, **49**, 1439-1441 (*synth*)
Tojo, E. *et al., J. Nat. Prod.*, 1989, **52**, 415-416 (*O-Methylpallidine N-oxide*)
Gozler, B. *et al., J. Nat. Prod.*, 1990, **53**, 986-988 (*(+)-Flavinantine*)
Lajis, N.H. *et al., J. Nat. Prod.*, 1991, **54**, 612-614 (*Sebiferine oxide*)
Wu, J.B. *et al., Planta Med.*, 1993, **59**, 179-180 (*N-Nor-2,3,6-trimethoxymorphinandienone*)
Hara, H. *et al., Tetrahedron: Asymmetry*, 1995, **6**, 1683-1694 (*Sebiferine, synth*)
Lee, S.-S. *et al., J. Nat. Prod.*, 2007, **70**, 637-642 (*Pallidine N-oxide*)

Flavipucine F-81

6-Methyl-2-(3-methyl-1-oxobutyl)-1-oxa-5-azaspiro[2.5]oct-6-ene-4,8-dione, 9CI. Glutamicine. Glutamycin. FRT-B. Fruit rot toxin B



Relative configuration

$C_{12}H_{15}NO_4$ 237.255

λ_{max} (dec. slowly) (Derep). λ_{max} 330 (ϵ 5400) (95% EtOH) (Derep).

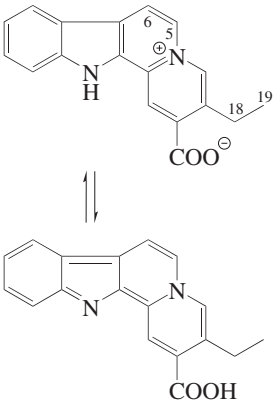
(-)-*form* [38473-18-6]
Prod. by *Aspergillus flavipes* and *Macrophoma* sp. Phytotoxin. Sol. MeOH, Et_2O; poorly sol. H_2O. Mp 130-131°. $[\alpha]_D^{21}$ -88 (c, 1 in EtOH). λ_{max} 326 (ϵ 7900) (MeOH) (Berdy). λ_{max} 330 (ϵ 5400) (EtOH) (Berdy).

(±)-*form* [61248-17-7]
Synthetic. Mp 153-155°.

Findlay, J.A. *et al., J.C.S. Perkin 1*, 1972, 2071 (*ir, uv, ms, pmr, struct*)
Girotra, N.N. *et al., Chem. Comm.*, 1976, 566 (*synth*)
Findlay, J.A. *et al., Synth. Commun.*, 1977, **7**, 149 (*synth*)
White, P.S. *et al., Can. J. Chem.*, 1978, **56**, 1904 (*cryst struct*)
Girotra, N.N. *et al., Heterocycles*, 1978, **9**, 417 (*synth*)
Sassa, T. *et al., Agric. Biol. Chem.*, 1983, **47**, 1155; 1417 (*isol, uv, ir, pmr*)
Wagner, C. *et al., Z. Naturforsch., C*, 1995, **50**, 358 (*isol, props*)

Flavocarpine F-82

*2-Carboxy-3-ethyl-12*H-*indolo[2,3-*a*]quinolizin-5-ium inner salt, 9CI*
[6879-51-2]



$C_{18}H_{14}N_2O_2$ 290.321
A nor-corynanthe alkaloid. Zwitterionic form predominates for the parent compd. Alkaloid from the stem bark of *Pleiocarpa mutica* (Apocynaceae). Cryst. (AcOH). Mp 307° dec. (evac. tube) Mp 323-325° dec. (synthetic). λ_{max} 223 (ϵ 40800); 242 (ϵ 48600); 250 (ϵ 51200); 291 (ϵ 23000); 351 (ϵ 23500); 389 (ϵ 22000) (EtOH).

Hydrochloride: Mp 301-302° dec.

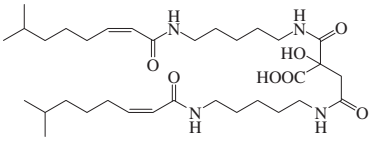
Me ester:
Red needles (EtOH). Mp 152-154°.

5,6-Dihydro: ***Dihydrovincarpine***
[62926-61-8]
$C_{18}H_{16}N_2O_2$ 292.337
Minor alkaloid from *Vinca major* var. *elegantissima* (Apocynaceae). Yellow needles (MeOH/$CHCl_3$). Mp 280° dec. λ_{max} 222 (sh) (log ϵ 4.22); 250 (sh) (log ϵ 3.77); 315 (log ϵ 3.81); 395 (log ϵ 3.73) (EtOH).

5,6-Dihydro, 18,19-didehydro: ***Vincarpine***
[62926-60-7]
$C_{18}H_{14}N_2O_2$ 290.321
Minor alkaloid from *Vinca major* var. *elegantissima* (Apocynaceae). Yellow needles (MeOH/$CHCl_3$). Mp 300° dec. λ_{max} 222 (sh) (log ϵ 4.22); 250 (sh) (log ϵ 3.77); 315 (log ϵ 3.81); 395 (log ϵ 3.73) (EtOH).

Büchi, G. *et al., J.A.C.S.*, 1962, **84**, 3393-3398 (*Flavocarpine, sol, uv, ir, ms, pmr, struct*)
Ali, E. *et al., Tet. Lett.*, 1976, **15**, 4887-4890 (*Vincarpine, Dihydrovincarpine*)
Gribble, G.W. *et al., Tet. Lett.*, 1987, **28**, 5259-5262 (*Flavocarpine, synth*)

Flavolipids F-83

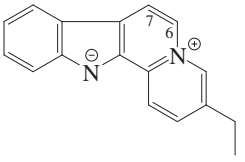


A complex of at least 37 components having different saturated or unsaturated amide groups. Struct. of major component is shown. Related to Aerobactin. Prod. by soil isolate *Flavobacterium* sp. strain MTN 11. Biosurfactants.

Bodour, A.A. *et al., Appl. Environ. Microbiol.*, 2004, **70**, 114-120 (*isol, pmr, cmr, ms*)

Flavopereirine F-84

*3-Ethyl-12*H-*indolo[2,3-*a*]quinolizin-5-ium, 9CI. Melinonine G*
[6784-38-9]



$C_{17}H_{14}N_2$ 246.311
A bisnor-corynanthe alkaloid. On biogenetic numbering, 6,7- are 5,6-respectively. Alkaloid from the bark of *Geissospermum laeve*, *Geissospermum vellosii*, *Strychnos melinoniana* and *Strychnos longicaudata* (Apocynaceae, Loganiaceae). Inhibits cancer cell DNA synthesis.

Perchlorate: Mp 317-318° dec. (301-305°).

Picrate: Mp 229.5-230.5°.

6,7-Dihydro: ***6,7-Dihydroflavopereirine***
[42281-83-4]
$C_{17}H_{16}N_2$ 248.327
Alkaloid from *Strychnos usambarensis* (Loganiaceae). Poorly sol. hexane. Mp 305-307° dec.

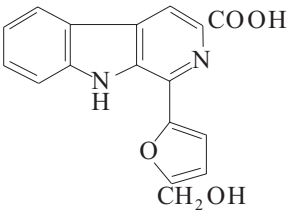
6,7-Dihydro; perchlorate: Mp 281-282°.

6,7-Dihydro; hydrobromide: Mp 317-320° dec.

Bejar, O. *et al., C. R. Hebd. Seances Acad. Sci.*, 1957, **244**, 2066 (*isol, struct*)
Bächli, E. *et al., Helv. Chim. Acta*, 1957, **40**, 1167 (*isol, uv, ir, struct*)
Angenot, L. *et al., Planta Med.*, 1973, **23**, 226 (*6,7-Dihydroflavopereirine*)
Massiot, G. *et al., Tetrahedron*, 1983, **39**, 3645 (*isol, uv*)
Giri, V.S. *et al., Heterocycles*, 1984, **22**, 233 (*synth, uv, ir, pmr*)
Ninomiya, I. *et al., J.C.S. Perkin 1*, 1984, 2035 (*synth*)
Gribble, G.W. *et al., Tet. Lett.*, 1987, **28**, 5259 (*synth, Flavopereirine, Dihydroflavopereirine*)
Sankar, P.J. *et al., Heterocycles*, 1991, **32**, 1109 (*synth*)
Fürstner, A. *et al., Tetrahedron*, 1995, **51**, 773 (*synth, Flavopereirine, Dihydroflavopereirine*)
Lounasmaa, M. *et al., Heterocycles*, 1996, **43**, 1365 (*synth, Flavopereirine, Dihydroflavopereirine*)
Manna, R.K. *et al., J. Chem. Res., Synop.*, 1999, 350-351 (*synth*)

Flazine F-85

*1-[5-(Hydroxymethyl)-2-furanyl]-9*H-*pyrido[3,4-*b*]indole-3-carboxylic acid, 9CI*
[100041-05-2]



$C_{17}H_{12}N_2O_4$ 308.293
Constit. of the seeds of *Brucea javanica*. Prod. by the marine bacterium strain Bio215. Cryst. (MeOH). Mp 231-233°. Fluorescent. λ_{max} 217 (log ϵ 4.87); 275 (log ϵ 4.85); 365 (log ϵ 3.02); 379 (log ϵ 3.11) (MeOH).

Me ester: ***Flazine methyl ester***
[104537-94-2]
$C_{18}H_{14}N_2O_4$ 322.32
Prod. by *Streptomyces* sp. K01-0031. Mp 199-200°.

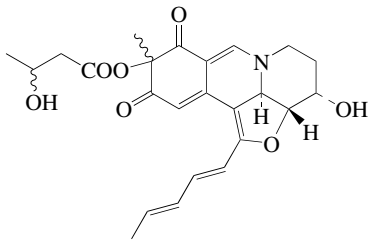
Me ether: ***Flazine methyl ether***. *O-Methylflazine*
[159898-11-0]
$C_{18}H_{14}N_2O_4$ 322.32
Alkaloid from freshly pressed juice of blackcurrant (*Ribes nigrum*). Mp 199-200°.

*De(hydroxymethyl): 1-(2-Furanyl)-*9H-*pyrido[3,4-*b*]indole-3-carboxylic acid.* ***Dehydroxymethylflazine***
[76135-36-9]
$C_{16}H_{10}N_2O_3$ 278.267
From blackcurrant (*Ribes nigrum*).

Nakatsuka, S. *et al., Tet. Lett.*, 1986, **27**, 3399-3402 (*isol, uv, ir, pmr, struct*)
Gessner, W.P. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1988, **321**, 95-98 (*synth, uv, pmr*)
Blech, S. *et al., Z. Naturforsch., C*, 1994, **49**, 540-544 (*Flazine methyl ether, Dihydroxymethylflazine*)
Su, B.-N. *et al., Planta Med.*, 2002, **68**, 730-733 (*isol, pmr, cmr, ms*)
Shabaan, M. *et al., Dissertation*, Univ. of Göttingen, 2004, (*marine, isol*)
Shiomi, K. *et al., J. Antibiot.*, 2005, **58**, 74-78 (*Me ester, isol*)

Fleephilone F-86

[183239-76-1]



$C_{24}H_{27}NO_7$ 441.48
Prod. by *Trichoderma harzianum*. Rev protein binding inhibitor. Yellow powder. Sol. MeOH, $CHCl_3$, CH_2Cl_2; poorly sol. H_2O, hexane. λ_{max} 209 (ϵ 2250); 229 (ϵ 1280); 286 (ϵ 710); 389 (ϵ 570) (MeOH).

Qian-Cutrone, J. *et al., J. Antibiot.*, 1996, **49**, 990 (*isol, uv, ir, pmr, cmr*)

Flexamine F-87

[1357-10-4]

$C_{17}H_{19}NO_5$ 317.341

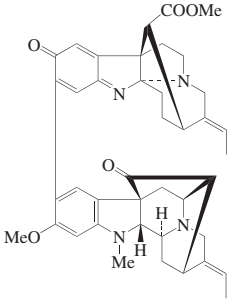
Amaryllidaceae alkaloid. Struct. unknown. Isol. from the bulbs of *Nerine flexuosa* (Amaryllidaceae). Mp 226-228° dec. $[\alpha]_D$ 0 (c, 0.2 in $CHCl_3$).

Methiodide: Mp 245° dec.

Boit, H.-G. *et al., Naturwissenschaften*, 1960, **47**, 109 (*isol*)

Flexicorine F-88

[80765-85-1]



Absolute Configuration

$C_{41}H_{44}N_4O_5$ 672.822
Alkaloid from the leaves of *Rauwolfia reflexa* (Apocynaceae). Amorph. red solid. Mp 360°. $[\alpha]_D^{25}$ -519.5 ($CHCl_3$).

Chatterjee, A. *et al., J.O.C.*, 1982, **47**, 1732-1734 (*cmr, struct*)

Flexine F-89

$C_{17}H_{19}NO_5$ 317.341

Amaryllidaceae alkaloid. Struct. unknown. Isol. from the bulbs of *Nerine flexuosa* (Amaryllidaceae). Cryst. (Me_2CO). Mp 212°. $[\alpha]_D^{25}$ +75 (c, 0.2 in $CHCl_3$).

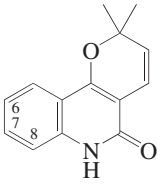
Perchlorate: Mp 242° dec.

Methiodide: Mp 221° dec.

Boit, H.-G. *et al., Naturwissenschaften*, 1960, **47**, 470-471 (*isol*)

Flindersine F-90

*2,6-Dihydro-2,2-dimethyl-5*H*-pyrano[3,2-*c*]quinolin-5-one, 9CI*
[523-64-8]



$C_{14}H_{13}NO_2$ 227.262
Alkaloid from *Flindersia australis*, *Fagara holtziana*, *Fagara cholybea*, *Haplophyllum perforatum* and several other spp. (Flindersiaceae, Rutaceae). Phytotoxic. Mp 195-196° dec. λ_{max} 235 ; 333 ; 350 ; 365 (MeOH) (Berdy).

N-*Me:* **N-*Methylflindersine***
[50333-13-6]
$C_{15}H_{15}NO_2$ 241.289
Alkaloid from *Fagara chalybea*, *Fagara holtziana*, *Melicope ptelefolia*, *Atalantia roxburghiana* and several other spp. (Rutaceae). Phytotoxin, insecticide, larvicide. Mp 83-85°. λ_{max} 226 (ϵ 83176); 274 (ϵ 13800); 318 (ϵ 13490) (MeOH) (Berdy).

N-*(Hydroxymethyl):* **N-*Hydroxymethylflindersine***
[96400-50-9]
$C_{15}H_{15}NO_3$ 257.288
Alkaloid from the stems and leaves of *Haplophyllum buxbaumii* (Rutaceae). Amorph. Possibly an artifact derived from Haplophylline during extraction.

N-*(Acetoxymethyl):* **N-*Acetoxymethylflindersine***
[149998-45-8]
$C_{17}H_{17}NO_4$ 299.326
Alkaloid from leaves of *Zanthoxylum simulans* (Szechuan pepper) (Rutaceae). Oil.

N-*(3-Methyl-2-butenoyloxymethyl):* ***Haplophylline***
[93710-20-4]
$C_{20}H_{21}NO_4$ 339.39
Alkaloid from the aerial parts of *Haplophyllum suaveolens* (Rutaceae). Amorph.

1′,2′-Dihydro, 1′ξ-hydroxy: ***3′,4′-Dihydro-4′-hydroxyflindersine****. 4′-Hydroxy-3′,4′-dihydroflindersine*
[100019-40-7]
$C_{14}H_{15}NO_3$ 245.277
Alkaloid from the leaves of *Geijera balansae* (Rutaceae). Prisms (EtOAc). Mp 208°. $[\alpha]_D^{20}$ -6 (c, 1 in $CHCl_3$).

1′,2′-Dihydro, 1′ξ-hydroxy, N-*Me:* ***2,3,4,6-Tetrahydro-4-hydroxy-2,2,6-trimethyl-5*H*-pyrano[3,2-*c*]quinolin-5-one***
[80357-90-0]
$C_{15}H_{17}NO_3$ 259.304
Alkaloid from the heartwood of *Euxylophora paraënsis* (Rutaceae). Pale yellow needles (MeOH). Mp 159-160°. $[\alpha]_D^{20}$ +5.45 (c, 0.4 in $CHCl_3$). Not interconverted with its *N*-de-Me deriv.

1′,2′-Dihydro, 2′ξ-hydroxy, N-*Me: 2,3,4,6-Tetrahydro-3-hydroxy-2,2,6-trimethyl-5*H*-pyrano[3,2-*c*]quinolin-5-one*
[928008-45-1]
$C_{15}H_{17}NO_3$ 259.304
Alkaloid from *Skimmia laureola*. Amorph. solid. $[\alpha]_D^{29}$ -57 (c, 0.14 in MeOH). λ_{max} 265 (log ϵ 2.67); 304 (log ϵ 3.84); 318 (log ϵ 3.86); 325 (log ϵ 3.74); 330 (log ϵ 3.76) (MeOH).

*1′,2′-Dihydro, 1′*R*,2′*S*-dihydroxy: 2,3,4,6-Tetrahydro-3,4-dihydroxy-2,2-dimethyl-5*H*-pyrano[3,2-*c*]quinolin-5-one.* ***3′,4′-Dihydroxy-3′,4′-dihydroflindersine***
[99964-48-4 , 100019-42-9 , 100019-41-8]
$C_{14}H_{15}NO_4$ 261.277
Alkaloid from the leaves of *Geijera balansae* (Rutaceae). Prisms (CH_2Cl_2). Mp 234-235°. $[\alpha]_D^{20}$ -2 (c, 0.5 in $CHCl_3$).

*1′,2′-Dihydro, 1′*R*∗,2′*S*∗-dihydroxy,* N-*Me:* ***Orixalone D***
$C_{15}H_{17}NO_4$ 275.304
Alkaloid from the stems of *Orixa japonica*. Oil. $[\alpha]_D^{24}$ +3.1 (c, 0.06 in MeOH). λ_{max} 230 ; 274 ; 284 ; 318 ; 332 (MeOH).

8-Hydroxy, N-*(acetoxymethyl):* ***Desmethylzanthophylline***
[65560-24-9]
$C_{17}H_{17}NO_5$ 315.325
Alkaloid from stems and branches of *Zanthoxylum monophyllum* (Rutaceae). Noncryst.

8-Hydroxy, 3,4-dihydro, N-*Me:* ***Ravesilone***
[94935-96-3]
$C_{15}H_{17}NO_3$ 259.304
Alkaloid from the leaves of *Ravenia spectabilis* (Rutaceae). Cryst. (EtOH/petrol). Mp 272°.

5-Methoxy: 5-Methoxyflindersine. ***Haplophytine A***
$C_{15}H_{15}NO_3$ 257.288
Alkaloid from *Haplophyllum acutifolium*. Powder. Mp 209-210.5°. λ_{max} 244 (log ϵ 7.92) ($CHCl_3$).

6-Methoxy: ***Haplamine****. 6-Methoxyflindersine*
[52617-31-9]
$C_{15}H_{15}NO_3$ 257.288
Alkaloid from above-ground parts of *Haplophyllum perforatum* (Rutaceae). Cryst. (MeOH). Mp 201-202°.

6-Methoxy, N-*Me:* **N-*Methylhaplamine****. 6-Methoxy*-N-*methylflindersine*
[129225-33-8]
$C_{16}H_{17}NO_3$ 271.315
Alkaloid from the aerial parts of an *Agathosma* sp. (Rutaceae). Yellow plates (Et_2O). Mp 136-138°.

6-Methoxy, 1′,2′-dihydro: ***Dihydrohaplamine***
[61929-96-2]
$C_{15}H_{17}NO_3$ 259.304
Alkaloid from *Haplophyllum perforatum*. Cryst. (Me_2CO). Mp 231-232°.

6-Methoxy, 8-hydroxy: ***8-Hydroxy-6-methoxyflindersine****. 7-Hydroxy-9-methoxyflindersine*
[155474-84-3]

$C_{15}H_{15}NO_4$ 273.288
Alkaloid from *Haplophyllum telephioides* (Rutaceae). Amorph.

7-Methoxy: ***7-Methoxyflindersine***
[177857-27-1]
$C_{15}H_{15}NO_3$ 257.288
Alkaloid from leaves of *Vepris bilocularis.* Cryst. (Et_2O/petrol). Mp 194-196°.

7-Methoxy, N-*Me:* ***7-Methoxy-N-methylflindersine***
$C_{16}H_{17}NO_3$ 271.315
Alkaloid from the stem bark of *Oricia renieri* (Rutaceae). Oil.

8-Methoxy: ***8-Methoxyflindersine***
[35989-00-5]
$C_{15}H_{15}NO_3$ 257.288
Alkaloid from *Myrtopsis macrocarpa* (Rutaceae). Needles (Et_2O). Mp 178°.

8-Methoxy, N-*Me:* ***Zanthobungeanine***
[64190-94-9]
$C_{16}H_{17}NO_3$ 271.315
Alkaloid from roots of *Zanthoxylum bungeanum* (Rutaceae). Cryst. (C_6H_6). Poorly sol. hexane. Mp 77-78°.

8-Methoxy, N-*(acetoxymethyl):* ***Zanthophylline***
[65560-23-8]
$C_{18}H_{19}NO_5$ 329.352
Alkaloid from stems and branches of *Zanthoxylum monophyllum* (Rutaceae). Cryst. (MeOH aq.). Mp 126-127°.

*8-Methoxy, 1′,2′-dihydro, 1′*R,*2′*R-*dihydroxy,* N-*Me:* ***Zanthodioline***
[198336-59-3]
[193978-31-3]
$C_{16}H_{19}NO_5$ 305.33
Alkaloid from the bark of *Zanthoxylum simulans* (Szechuan pepper) (Rutaceae). Amorph. solid. $[\alpha]_D^{23}$ -20 (c, 0.05 in $CHCl_3$). λ_{max} 218 (log ϵ 4.14); 234 (log ϵ 4.21); 254 (log ϵ 4.11); 270 (sh) (log ϵ 3.56); 280 (log ϵ 3.59); 327 (log ϵ 3.23) (EtOH).

6,7-Dimethoxy, N-*Me:* ***Oricine****. 6,7-Dimethoxy-*N-*methylflindersine*
[33798-66-2]
$C_{17}H_{19}NO_4$ 301.341
Alkaloid from the timber of *Oricia suaveolens* and the stem bark of *Oricia renieri* (Rutaceae). Cryst. (C_6H_6). Mp 150-155°.

7,8-Dimethoxy, N-*Me:* ***Veprisine****. 7,8-Dimethoxy-*N-*methylflindersine*
[76525-26-3]
$C_{17}H_{19}NO_4$ 301.341
Alkaloid from the stem bark of *Vepris louisii*, *Vepris stolzii* and *Oricia renieri* (Rutaceae). Needles (C_6H_6/hexane). Mp 89-90°.

*7,8-Dimethoxy, 1′,2′-dihydro, 1′*R,*2′*R-*dihydroxy,* N-*Me:* ***Araliopsinine***
[120481-37-0]
$C_{17}H_{21}NO_6$ 335.356
Details not publ. The struct. is that given by Grundon (1990). Alkaloid from stem bark of *Araliopsis tabouensis.*

7-(3-Methyl-2-butenyloxy): ***7-Prenyloxyflindersine***
[177857-28-2]
$C_{19}H_{21}NO_3$ 311.38
Alkaloid from leaves of *Vepris bilocularis.* Cryst. (Et_2O/petrol). Mp 165-167°.

7-(3-Methyl-2-butenyloxy), N-*Me:* ***N-Methyl-7-prenyloxyflindersine***
[177857-29-3]
$C_{20}H_{23}NO_3$ 325.407
Alkaloid from leaves of *Vepris bilocularis.* Oil.

8-(3-Methyl-2-butenyloxy), N-*Me:* ***8-(3,3-Dimethylallyloxy)-N-methylflindersine****.* N-*Methyl-8-prenyloxyflindersine*
[82504-12-9]
$C_{20}H_{23}NO_3$ 325.407
Alkaloid from the stem bark of *Vepris stolzii* (Rutaceae). Oil.

8-(3-Methyl-2-butenyloxy), 7-methoxy, N-*Me:* ***8-(3,3-Dimethylallyloxy)-7-methoxy-N-methylflindersine****. 7-Methoxy-*N-*methyl-8-prenyloxyflindersine*
[82504-13-0]
$C_{21}H_{25}NO_4$ 355.433
Alkaloid from the stem bark of *Vepris stolzii* (Rutaceae). Oil.

8-(2,3-Epoxy-3-methylbutoxy), 7-methoxy, N-*Me:* ***8-(2,3-Epoxy-3,3-dimethylallyloxy)-7-methoxy-N-methylflindersine***
[82504-14-1]
$C_{21}H_{25}NO_5$ 371.432
Alkaloid from the stem bark of *Vepris stolzii* (Rutaceae). Oil.

Brown, R.F.C. *et al., Aust. J. Chem.*, 1954, **7**, 348 (*isol, uv, struct*)
Robertson, A.V. *et al., Aust. J. Chem.*, 1963, **16**, 451 (*pmr*)
Lavie, D. *et al., Tetrahedron*, 1968, **24**, 3011 (*ms*)
Abe, M.O. *et al., Phytochemistry*, 1971, **10**, 1167 (*Oricine*)
Akhmedzhanova, V.I. *et al., Khim. Prir. Soedin.*, 1974, **10**, 109; *Chem. Nat. Compd. (Engl. Transl.)*, 1974, **10**, 121 (*Haplamine*)
Reisch, J. *et al., Phytochemistry*, 1975, **14**, 1678 (*isol*)
Hifnawy, M.S. *et al., Phytochemistry*, 1977, **16**, 1035 (*8-Methoxyflindersine*)
Stermitz, F.R. *et al., Phytochemistry*, 1977, **16**, 2003 (*Zanthophylline, Desmethylzanthophylline*)
Jurd, L. *et al., Aust. J. Chem.*, 1981, **34**, 1625 (*Tetrahydrohydroxytrimethylpyranoquinolinone*)
Khalid, S.A. *et al., Phytochemistry*, 1981, **20**, 2761 (*7-Methoxy-N-methylflindersine, Oricine, Veprisine*)
Ren, L. *et al., Yaoxue Xuebao*, 1981, **16**, 672; *CA*, **96**, 48974e (*isol, struct, Zanthobungeanine*)
Khalid, S.A. *et al., J. Nat. Prod.*, 1982, **45**, 343 (*Veprisine, Dimethylallyloxy-N-methylflindersine, Dimethylallyloxy-7-methoxy-N-methylflindersine, Epoxydimethylallyloxy-7-methoxy-N-methylflindersine*)
Ayafor, J.F. *et al., Phytochemistry*, 1982, **21**, 2733 (*Veprisine*)
Bhattacharyya, P. *et al., Phytochemistry*, 1984, **23**, 1825 (*Ravesilone*)
Ulubelen, A. *et al., Phytochemistry*, 1984, **23**, 2123; 1985, **24**, 372; 1994, **35**, 1600 (*Haplophylline, N-Hydroxymethylflindersine, 8-Hydroxy-6-methoxyflindersine*)
Ramesh, M. *et al., Tetrahedron*, 1984, **40**, 4041 (*synth, ir, pmr, Zanthobungeanine*)
Mitaku, S. *et al., J. Nat. Prod.*, 1985, **48**, 772 (*Hydroxydihydroflindersine, Dihydroxydihydroflindersine*)
Bellino, A. *et al., Heterocycles*, 1986, **24**, 1821 (*Ravesilone, synth*)
Bravo, P. *et al., Gazz. Chim. Ital.*, 1988, **118**, 507 (*Oricine, Zanthobungeanine, 8-Methoxyflindersine, N-Methylflindersine, 7-Methoxy-N-methylflindersine, synth*)
Ngadjui, B.T. *et al., Phytochemistry*, 1988, **27**, 2979 (*Araliopsinine*)
Grundon, M.F. *et al., Nat. Prod. Rep.*, 1990, **7**, 131 (*Araliopsinine*)
Campbell, W.E. *et al., Phytochemistry*, 1990, **29**, 1303 (*pmr, N-Methylhaplamine*)
Jackson, G.E. *et al., Spectrosc. Lett.*, 1990, **23**, 971 (*pmr, cmr, 8-Methoxyflindersine*)
Anand, R.C. *et al., Indian J. Chem., Sect. B*, 1991, **30**, 560; 604 (*synth, Flindersine, N-methylflindersine*)
Subramanian, M. *et al., Z. Naturforsch., B*, 1992, **47**, 1016 (*synth*)
Brader, G. *et al., Annalen*, 1993, 355 (*N-Acetoxymethylflindersine*)
Brader, G. *et al., Phytochemistry*, 1996, **42**, 881 (*7-Methoxyflindersine, 7-Prenyloxyflindersine, N-Methyl-7-prenyloxyflindersine*)
Watters, W.H. *et al., J. Chem. Res., Synop.*, 1997, 184-185 (*Zanthodioline, Veprisine, synth*)
Chen, I.S. *et al., Phytochemistry*, 1997, **46**, 525-529 (*Zanthodioline*)
Akhmedzhanova, V.I. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1999, **35**, 552-553 (*Dihydrohaplamine*)
Ali, M.S. *et al., Phytochemistry*, 2001, **57**, 1277-1280 (*Haplophytine A*)
Lee, Y.R. *et al., Synthesis*, 2001, 1851-1855 (*synth, ir, pmr, N-Methylflindersine*)
Ito, C. *et al., J. Nat. Prod.*, 2004, **67**, 1800-1803 (*Orixalone D*)
Atta-ur-Rahman, *et al., J. Enzyme Inhib. Med. Chem.*, 2006, **21**, 703-710 (*Skimmia laureola constit*)
Thangavel, D. *et al., J. Chem. Res.*, 2007, 124-126 (*synth*)
Wang, X. *et al., Synthesis*, 2007, 3044-3050 (*synth, ir, pmr, N-Methylflindersine, Orixalone D*)
Wang, X. *et al., Tet. Lett.*, 2007, **48**, 6275-6280 (*Orixalone D, synth*)

Floramultinine F-91

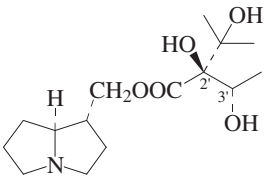
$C_{21}H_{27}NO_6$ 389.447

Struct. unknown. Compd. possesses 1 NMe and 2 methoxy groups. Alkaloid from the whole plant of *Kreysigia multiflora* (Liliaceae). Sol. H_2O. Mp 165°. $[\alpha]_D^{20}$ +118 (c, 0.17 in EtOH).

Badger, G.M. *et al., J.C.S.*, 1960, 445-447 (*isol, uv, ir*)

Floridimine F-92

[200067-96-5]



$C_{15}H_{27}NO_5$ 301.382

Ester of Trachelanthamidine in H-629 with Trachelanthic acid. Alkaloid from *Heliotropium floridum* (Boraginaceae). Oil.

3′-Ac: ***Floridine***
[200067-92-1]
$C_{17}H_{29}NO_6$ 343.419
Alkaloid from *Heliotropium floridum* (Boraginaceae). Oil. $[\alpha]_D$ -14.2 (c, 0.04 in EtOH).

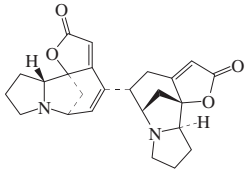
2′-Epimer: ***Floridinine***
[200067-94-3]
Alkaloid from *Heliotropium floridum* (Boraginaceae). Oil. $[\alpha]_D$ -8.3 (c, 0.1 in EtOH). Ester of Trachelanthamidine in H-629 with Viridifloric acid.

Stereoisomer: ***Macrotomine****. Makrotomine*
$C_{15}H_{27}NO_5$ 301.382
Alkaloid from *Macrotomia echioides* (Boraginaceae). Large prisms (Me_2CO). Mp 95-97°. $[\alpha]_D$ -6.9 (c, 7.58 in EtOH).

Stereoisomer, picrate:
Fine yellow needles (EtOH). Mp 130-132°.

Men'shikov, G.P. *et al., Zh. Obshch. Khim.*, 1952, **22**, 1457-1461; *J. Gen. Chem. USSR (Engl. Transl.)*, 1952, **22**, 1499-1502 (*Macrotomine*)
Denisova, S.I. *et al., Zh. Obshch. Khim.*, 1958, **28**, 1882-1885; *J. Gen. Chem. USSR (Engl. Transl.)*, 1958, **28**, 1925-1927 (*Macrotomine*)
Reina, M. *et al., Phytochemistry*, 1997, **46**, 845-853 (*Floridimine, Floridinine, Floridine*)

Flueggenine A F-93

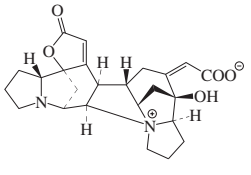


Absolute Configuration

$C_{24}H_{26}N_2O_4$ 406.48
Dimer of Norsecurinine, N-307. Alkaloid from the roots of *Flueggea virosa*. Amorph. powder. $[\alpha]_D^{20}$ -24 (c, 0.5 in MeOH). λ_{max} 212 (log ϵ 4.34); 260 (log ϵ 4.1) (MeOH).

Gan, L.-S. *et al., Org. Lett.*, 2006, **8**, 2285-2288 (*isol, pmr, cmr, ms*)

Flueggenine B F-94



Absolute Configuration

$C_{24}H_{28}N_2O_5$ 424.496
Alkaloid from the roots of *Flueggea virosa*. Amorph. powder. $[\alpha]_D^{20}$ -70 (c, 0.22 in MeOH). λ_{max} 213 (log ϵ 4.22) (MeOH).

Gan, L.-S. *et al., Org. Lett.*, 2006, **8**, 2285-2288 (*isol, pmr, cmr, ms*)

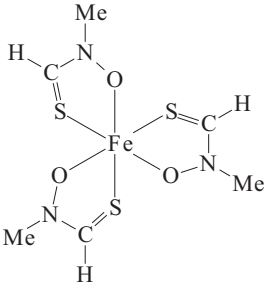
Fluggeine F-95

Flueggeine
$C_{10}H_{15}NO$ 165.235
Struct. unknown. Alkaloid from *Flueggea virosa*. Needles. Mp 228°.

Paris, R.A. *et al., Ann. Pharm. Fr.*, 1955, **13**, 245-249; *CA*, **49**, 16345f

Fluopsin B F-96

*Tris(*N*-hydroxy*-N*-methylmethanethioamidato*-O,S*)iron, 9CI. Fluopsin F*
[31323-26-9]

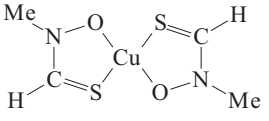


$C_6H_{12}FeN_3O_3S_3$ 326.224
Fe complex of Thioformin. Isol. from *Pseudomonas fluorescens*. Broad spectrum antibiotic with antifungal and antineoplastic props. Black prisms ($MeOH/CHCl_3$). Sol. EtOH, $CHCl_3$; fairly sol. EtOAc, C_6H_6, Et_2O, H_2O. Dec. on heating.
▶ LD_{50} (mus, ivn) 3 - 9 mg/kg, LD_{50} (mus, ipr) 30 - 50 mg/kg. NO8780000

Shirahata, K. *et al., J. Antibiot.*, 1970, **23**, 546 (*isol, struct*)
Mitchell, A.J. *et al., Aust. J. Chem.*, 1977, **30**, 2439 (*synth*)
Murray, K.S. *et al., Aust. J. Chem.*, 1978, **31**, 983 (*cryst struct*)
Leong, J. *et al., Inorg. Chem.*, 1978, **17**, 1886 (*ir, nmr, synth*)
Bell, S.J. *et al., Antimicrob. Agents Chemother.*, 1979, **15**, 384 (*props*)

Fluopsin C F-97

*Bis(*N*-hydroxy*-N*-methylmethanethioamidato*-O,S*)copper, 9CI. Bis(*N*-methylthioformohydroxamato)copper, 8CI. YC 73. Antibiotic YC 73. MRL 3120. Antibiotic MRL 3120*
[31323-25-8]



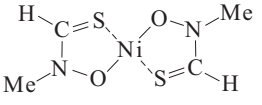
$C_4H_8CuN_2O_2S_2$ 243.797
Cu complex of Thioformin. Isol. from *Pseudomonas fluorescens*. Also prod. by *Pseudomonas aeruginosa*. Possesses antibacterial props. Dark-green cryst. (EtOH). Mp 199° dec. λ_{max} 231, 253, 267, 320 and 365 nm (MeOH). λ_{max} 230 (ϵ 13000); 252 (ϵ 12500); 266 (ϵ 14400); 319 (ϵ 7230); 364 (sh) (ϵ 3140) (MeOH) (Derep).
▶ LD_{50} (mus, ipr) 4.5 mg/kg. GL6490000

[67069-47-0]

Shirahata, K. *et al., J. Antibiot.*, 1970, **23**, 546; 1971, **24**, 140 (*isol, struct, synth, ir, nmr*)
Egawa, Y. *et al., J. Antibiot.*, 1971, **24**, 124 (*struct, synth*)
Taylor, D. *et al., Cryst. Struct. Commun.*, 1978, **7**, 237 (*cryst struct*)
Bell, S.J. *et al., Antimicrob. Agents Chemother.*, 1979, **15**, 384 (*props*)
Ko, H.-R. *et al., CA*, 1994, **121**, 152876 (*MRL 3120*)

Fluopsin N F-98

*Bis(*N*-hydroxy*-N*-methylmethanethioamidato*-O,S*)nickel, 9CI*
[31541-90-9]

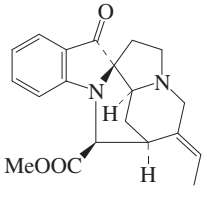


$C_4H_8N_2NiO_2S_2$ 238.941
Isol. from *Pseudomonas fluorescens*. Antibiotic props. resemble those of Fluopsin B, F-96. Purple cryst.

Japan. Pat., 1973, 73 10 554; *CA*, **80**, 35824w (*synth*)
Leong, J. *et al., Inorg. Chem.*, 1978, **17**, 1886 (*synth, nmr*)
Bell, S.J. *et al., Antimicrob. Agents Chemother.*, 1979, **15**, 384 (*props*)

Fluorocarpamine F-99

16-De(hydroxymethyl)-4-demethyl-16-(methoxycarbonyl)fluorocurine, 9CI
[2254-31-1]



Absolute Configuration

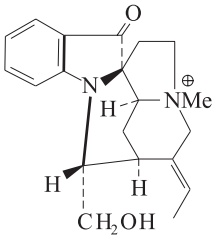
$C_{20}H_{22}N_2O_3$ 338.405
Alkaloid from *Alstonia plumosa*, *Alstonia angustifolia*, *Alstonia undulata*, *Tabernaemontana citrifolia*, *Hunteria zeylanica*, *Gonioma kamassi* and *Petchia ceylanica*. Amorph. λ_{max} 235 (log ϵ 4.05); 257 (log ϵ 3.64); 398 (log ϵ 3.13) (EtOH).

N^b*-Oxide:* ***Fluorocarpamine* N*-oxide***
[88746-90-1]
$C_{20}H_{22}N_2O_4$ 354.405
Alkaloid from *Catharanthus roseus* (Apocynaceae).

Kaschnitz, R. *et al., Monatsh. Chem.*, 1965, **96**, 909-921 (*isol, ms, uv, struct*)
Jacquier, M.J. *et al., Phytochemistry*, 1982, **21**, 2973-2977 (*isol*)
Atta-ur-Rahman, *et al., Planta Med.*, 1983, **49**, 124-125 (*oxide*)
Atta-ur-Rahman, *et al., Phytochemistry*, 1989, **28**, 3221-3225 (*isol, ir, uv, pmr, ms*)
Takayama, H. *et al., Heterocycles*, 1996, **42**, 87-92 (*abs config, cd*)

C-Fluorocurine F-100

Fluorocurine
[6879-92-1]



Absolute configuration

$C_{20}H_{25}N_2O_2^{\oplus}$ 325.43
Alkaloid from *Strychnos panamensis*, *Strychnos variabilis*, *Strychnos scheffleri* and *Strychnos melinoniana* (Loganiaceae).

▶ LN2800000

Iodide:
$C_{20}H_{25}IN_2O_2$ 452.334
Yellow cryst. or powder. Mp 138-140°. $[\alpha]_D$ +326 (c, 0.831 in MeOH). Intense carmine col. with Ce(IV).

Picrate: Mp 179°.

Schmid, H. *et al., Helv. Chim. Acta*, 1947, **30**, 2081; 1952, **35**, 1846; 1964, **47**, 878 (*isol, uv, pmr, struct*)
Wieland, T. *et al., Chem. Ber.*, 1952, **85**, 731 (*isol*)
Lee, F.G.H. *et al., Diss. Abstr. B*, 1967, **27**, 2297 (*synth*)
Angenot, L. *et al., Planta Med.*, 1981, **42**, 364-370; 371-374 (*isol, ir, pmr*)
Coune, C. *et al., J. Pharm. Belg.*, 1982, **37**, 189 (*cmr*)

ψ-Fluorocurine F-101

Pseudofluorocurine

$C_{20}H_{25}N_2O_2$ 325.43

Struct. unknown. Alkaloid from calabash curare (*Strychnos* spp.) (Loganiaceae). Mp 179° (as picrate). Closely similar to *C*-Fluorocurine, F-100; shows identical colour reacns. and UV spectrum but does not form an insol. iodide or *p*-nitrophenylhydrazone.

Meyer, H. *et al., Helv. Chim. Acta*, 1956, **39**, 1208-1213 (*isol, uv*)

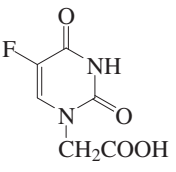
C-Fluorocurinine F-102

$C_{21}H_{29}N_2O_2^{\oplus}$ 341.472

Struct. unknown. Alkaloid from calabash curare (*Strychnos* spp.) (Loganiaceae). Yellow needles (2-pentanone)(as picrate). Mp 213° (picrate). Carmine col. with $Ce(SO_4)_2$, becoming wine-red on standing.

Schmid, H. *et al., Helv. Chim. Acta*, 1952, **35**, 1864-1879; 1953, **36**, 102-121

5-Fluoro-3,4-dihydro-2,4-dioxo-1(2*H*)-pyrimidineacetic acid F-103



$C_6H_5FN_2O_4$ 188.115

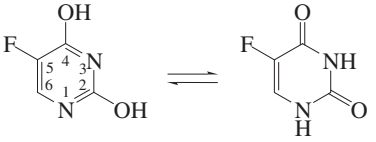
Me ester: 5-Fluoro-1-(methoxycarbonylmethyl)uracil
[56059-28-0]
$C_7H_7FN_2O_4$ 202.142
Isol. from the sponge *Phakellia fusca*. Needles (MeOH). Mp 178-179° (natural) Mp 185-186° (synthetic). λ_{max} 219 (ε 5725); 268 (ε 12813) (MeOH).

Hydrazide: [488713-02-6]
$C_6H_7FN_4O_3$ 202.145
Isol. from the sponge *Phakellia fusca*. Brown solid. Mp > 300°. λ_{max} 219 (ε 5763); 274 (ε 10909) (MeOH).

Tada, M. *et al., Bull. Chem. Soc. Jpn.*, 1975, **48**, 3427-3428 (*synth*)
Xu, X.-H. *et al., J. Nat. Prod.*, 2003, **66**, 285-288 (*isol*)

5-Fluoro-2,4-dihydroxypyrimidine F-104

5-Fluoro-2,4(1H,3H)-pyrimidinedione, 9CI. 5-Fluoro-2,4-pyrimidinediol. 5-Fluorouracil. ***Fluorouracil, BAN, INN, JAN, USAN****. Adrucil. Efudex. Fluoroplex. Fluracil. NSC 19893. Ro 2-9757. 5-FU*
[51-21-8]



$C_4H_3FN_2O_2$ 130.078

Dione form predominates. Two intermediate tautomers also possible. Isol. from the sponge *Phakellia fusca*. Reported from Chinese drug Mao Guo Yan Ming (roots of *Rabdosia lasiocarpus*). Antineoplastic agent. Used in combination with Adrenaline, A-152 in the treatment of genital warts (AccuSite). Cryst. (H_2O). Mp 282-283° dec. Log P -0.97 (calc).

▶ Skin and respiratory tract irritant. Gastrointestinal, bone marrow depression and other adverse systemic effects when used therapeutically. Exp. reprod. and teratogenic effects. LD_{50} (rat, orl) 230 mg/kg. YR0350000

Rudy, B.C. *et al., Anal. Profiles Drug Subst.*, 1973, **2**, 221 (*rev*)
Wasternack, C. *et al., Pharmazie*, 1987, **42**, 73 (*rev*)
Li, T.S.C. *et al., Chinese and Related North American Herbs*, CRC Press, 2002, 124 (*occur*)
Xu, X.-H. *et al., J. Nat. Prod.*, 2003, **66**, 285-288 (*Phakellia fusca uracils*)

Fluorosolimoesines F-105

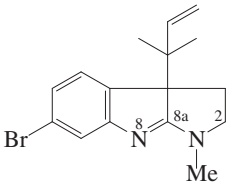
[1357-19-3 (IV), 1357-17-1 (II), 1357-16-0 (I), 1357-18-2 (III)]

Struct. unknown. Alkaloids from *Strychnos solimoesana* (Loganiaceae). Fluorosolimoesines I, II, III and IV identified, having different colour reacns. Give no colour with Ce(IV).

Marini-Bettolo, G.B. *et al., Gazz. Chim. Ital.*, 1956, **86**, 1148

Flustramine C F-106

[78127-86-3]



$C_{16}H_{19}BrN_2$ 319.243
Alkaloid from the marine bryozoan *Flustra foliacea*. Oil. λ_{max} 210 (sh) (ε 13000); 230 (ε 23000); 280 (ε 4600) (EtOH/HCl) (Derep). λ_{max} 210 (sh) (ε 10000); 232 (ε 27000); 290 (ε 9400); 307 (ε 4300) (EtOH) (Derep).

*8,8*a-*Dihydro:* ***Dihydroflustramine C***
[93930-02-0]
$C_{16}H_{21}BrN_2$ 321.259
Alkaloid from *Flustra foliacea*. Cryst. (Et_2O/petrol). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 82-84°. $[\alpha]_D^{25}$ -110 (c, 1.5 in CH_2Cl_2). λ_{max} 213 (ε 20000); 230 (ε 5600); 309 (ε 3400) (MeOH) (Berdy).

*8,8*a-*Dihydro,* N^1-*Oxide:* ***Dihydroflustramine C N-oxide***
[104387-11-3]
$C_{16}H_{21}BrN_2O$ 337.259
Minor metab. from *Flustra foliacea*. Oil. $[\alpha]_D^{25}$ -67.1 (c, 0.38 in CH_2Cl_2). Somewhat unstable. λ_{max} 226 (ε 2800); 283 (ε 2000) (MeOH) (Berdy).

*8,8*a-*Dihydro, 8-(3-methyl-2-butenyl):* ***Flustramine A***
[71239-64-0]
$C_{21}H_{29}BrN_2$ 389.377
Alkaloid from the marine bryozoan *Flustra foliacea*. Muscle relaxant. Liq. Sol. MeOH, C_6H_6, $CHCl_3$; fairly sol. hexane. $[\alpha]_D^{20}$ -76.9 (c, 6.6 in EtOH). *cis*-3*a*,8*a*-Ring junction. λ_{max} 219 (ε 21000); 253 (ε 7700); 305 (ε 3500) (EtOH/HCl) (Derep). λ_{max} 218 (ε 20000); 262 (ε 9200); 317 (ε 3500) (EtOH) (Derep).

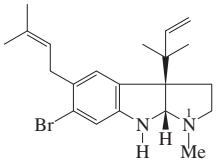
*8,8*a-*Dihydro, 2-oxo, 8-(3-methyl-2-butenyl):* ***Flustramide A***
[82534-44-9]
$C_{21}H_{27}BrN_2O$ 403.361
Alkaloid from the marine bryozoan *Flustra foliacea*. Oil. λ_{max} 216 (ε 18200); 260 (ε 7760); 310 (ε 3550) (EtOH) (Derep).

Carlé, J.S. *et al., J.A.C.S.*, 1979, **101**, 4012-4013 (*isol*)
Carlé, J.S. *et al., J.O.C.*, 1980, **45**, 1586-1589; 1981, **46**, 3440-3443 (*Flustramine A, Flustramine C, isol, uv, ir, pmr, ms, struct*)
Wulff, P. *et al., Comp. Biochem. Physiol., B: Comp. Biochem.*, 1982, **71**, 523-524 (*Flustramide A*)
Wright, J.L.C. *et al., J. Nat. Prod.*, 1984, **47**, 893-895 (*Dihydroflustramine* C)
Laycock, M.V. *et al., Can. J. Chem.*, 1986, **64**, 1312-1316 (*Dihydroflustramine* N^1-*oxide*)
Kawasaki, T. *et al., Tet. Lett.*, 1996, **37**, 7525-7528 (*synth, cmr*)
Morales-Rios, M.S. *et al., J.O.C.*, 1999, **64**, 1086-1087; 2001, **66**, 1186-1192 (*Flustramine*

A, Debromoflustramine A, Flustramide A, synth)
Morales-Rios, M.S. *et al., Magn. Reson. Chem.*, 2002, **40**, 677-682 (*Flustramine A, pmr, cmr, conformn*)
Morales-Rios, M.S. *et al., Tetrahedron*, 2002, **58**, 1479-1484 (*Dihydroflustramine C, synth*)
Lysek, N. *et al., Z. Naturforsch., C*, 2002, **57**, 1056-1061 (*Flustramine A, isol, pmr, cmr*)
Fuchs, J.R. *et al., Org. Lett.*, 2005, **7**, 677-680 (*synth*)
Lindel, T. *et al., Org. Lett.*, 2007, **9**, 283-286 (*synth*)
Kawasaki, T. *et al., J.O.C.*, 2008, **73**, 5959-5964 (*Flustramine A, Flustramide A, synth*)

Flustramine D F-107

[104387-12-4]



Relative Configuration

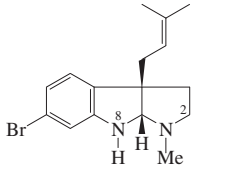
$C_{21}H_{29}BrN_2$ 389.377
Metab. from the marine bryozoan *Flustra foliacea*. Oil. $[\alpha]_D^{25}$ -86.5 (c, 1.03 in CH_2Cl_2). λ_{max} 231 (ϵ 7100); 292 (ϵ 3100) (MeOH) (Berdy).

N^{1}*-Oxide:* ***Flustramine D* N-*oxide***
[104387-13-5]
$C_{21}H_{29}BrN_2O$ 405.377
Trace metab. from *Flustra foliacea*. Oil. Unstable. λ_{max} 224 (ϵ 7100); 285 (ϵ 3100) (MeOH) (Berdy).

Laycock, M.V. *et al., Can. J. Chem.*, 1986, **64**, 1312-1316 (*isol, uv, ir, pmr, cmr, ms, struct, oxide*)

Flustramine E F-108

[158642-05-8]



Absolute Configuration

$C_{16}H_{21}BrN_2$ 321.259
Rel. stereochem. only detd. Alkaloid from the marine bryozoan *Flustra foliacea*. $[\alpha]_D^{20}$ -1136 (c, 0.0088 in EtOH). λ_{max} 210 ; 250 ; 308 (MeOH) (Berdy).

N^{8}*-(3-Methyl-2-butenyl):* ***Flustramine B***
[71239-65-1]
$C_{21}H_{29}BrN_2$ 389.377
Alkaloid from the marine bryozoan *Flustra foliacea*. Muscle relaxant. Sol. MeOH, C_6H_6, $CHCl_3$; fairly sol. hexane. λ_{max} 219 (ϵ 21000); 253 (ϵ 7700); 305 (ϵ 3500) (EtOH/HCl) (Derep). λ_{max} 218 (ϵ 20000); 262 (ϵ 9200); 317 (ϵ 3500) (EtOH) (Derep).

2-Oxo, N^{8}*-(3-methyl-2-butenyl):* ***Flustramide B***
[105708-75-6]
$C_{21}H_{27}BrN_2O$ 403.361
Minor alkaloid from *Flustra foliacea*. Oil. $[\alpha]_D^{20}$ -53.79 (EtOH). No stereochem. given. λ_{max} 216 (ϵ 18200); 260 (ϵ 7760); 310 (ϵ 3550) (EtOH) (Derep).

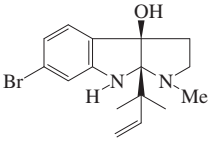
Debromo, N^{8}*-(3-methyl-2-butenyl):* ***Debromoflustramine B***
[158060-73-2]
$C_{21}H_{30}N_2$ 310.481
Trace alkaloid from *Flustra foliacea*. $[\alpha]_D^{20}$ -98.2 (c, 0.0153 in $CHCl_3$). (+)-form has been synthesised. λ_{max} 257 ; 308 (MeOH) (Berdy).

4′-Hydroxy, debromo: see Pseudophrynamine 258A, P-720

Carlé, J.S. *et al., J.A.C.S.*, 1979, **101**, 4012-4013 (*isol, Flustramine B*)
Carlé, J.S. *et al., J.O.C.*, 1980, **45**, 1586-1589 (*isol, uv, ir, pmr, ms, struct, Flustramine B*)
Hino, T. *et al., Chem. Pharm. Bull.*, 1983, **31**, 1806-1808 (*synth*)
Keil, P. *et al., Acta Chem. Scand., Ser. B*, 1986, **40**, 555-558 (*Flustramide B*)
Holst, P.B. *et al., J. Nat. Prod.*, 1994, **57**, 997-1000 (*Flustramine E, Debromoflustramine B*)
Bruncko, M. *et al., J.O.C.*, 1994, **59**, 5543-5549 (*Debromoflustramine B, synth*)
Somei, M. *et al., Heterocycles*, 1997, **45**, 2327-2330 (*synth, Debromoflustramine B*)
Morales-Rios, M.S. *et al., J.O.C.*, 1999, **64**, 1086-1087; 2001, **66**, 1186-1192 (*Flustramide B, Flustramine B, Debromoflustramine B, synth*)
Morales-Rios, M.S. *et al., Magn. Reson. Chem.*, 2002, **40**, 677-682 (*pmr, cmr, conformn*)
Morales-Rios, M.S. *et al., Tetrahedron*, 2002, **58**, 1479-1484 (*synth*)
Tan, G.H. *et al., Org. Lett.*, 2003, **5**, 1801-1803 (*synth*)
Kawasaki, T. *et al., Chem. Comm.*, 2006, 420-422 (*Flustramine B, Flustramide B, synth*)
Cardoso, A.S.P. *et al., Tetrahedron*, 2007, **63**, 10211-10225 (*Debromoflustramine B, synth*)

Flustraminol A F-109

[78127-88-5]



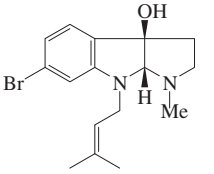
Relative Configuration

$C_{16}H_{21}BrN_2O$ 337.259
Alkaloid from the marine bryozoan *Flustra foliacea*. Brown oil. λ_{max} 215 (ϵ 18000); 234 (sh) (ϵ 8600); 246 (ϵ 5400); 306 (ϵ 2300) (EtOH/HCl) (Derep). λ_{max} 215 (ϵ 17000); 256 (ϵ 6500); 318 (ϵ 2300) (EtOH) (Derep).

Carlé, J.S. *et al., J.O.C.*, 1981, **46**, 3440-3443 (*isol, uv, ir, pmr, ms, struct*)

Flustraminol B F-110

[78127-89-6]



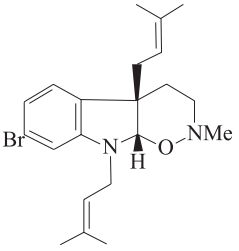
Relative Configuration

$C_{16}H_{21}BrN_2O$ 337.259
Alkaloid from the marine bryozoan *Flustra foliacea*. Brown oil. λ_{max} 220 (ϵ 17000); 240 (sh) (ϵ 6300); 298 (ϵ 2300) (EtOH/HCl) (Derep). λ_{max} 220 (ϵ 17000); 256 (ϵ 6300); 310 (ϵ 2300) (EtOH) (Derep).

Carlé, J.S. *et al., J.O.C.*, 1981, **46**, 3440-3443 (*isol, uv, ir, pmr, ms*)
Suárez-Castillo, O.R. *et al., Heterocycles*, 2007, **71**, 1539-1551 (*synth*)

Flustrarine B F-111

[105708-76-7]



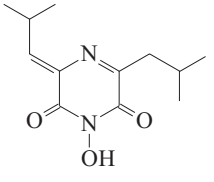
Relative configuration

$C_{21}H_{29}BrN_2O$ 405.377
Alkaloid from the marine bryozoan *Flustra foliacea*. Also obt. by H_2O_2 oxidn. of Flustramine E, F-108. $[\alpha]_D^{20}$ -180 (EtOH). Prob. struct. Nat. prod may be Flustramine B *N*-oxide. λ_{max} 216 (ϵ 18200); 260 (ϵ 7760); 310 (ϵ 3550) (EtOH) (Derep).

Keil, P. *et al., Acta Chem. Scand., Ser. B*, 1986, **40**, 555-558 (*isol, uv, ir, pmr, cmr, ms, struct, synth*)

Flutimide F-112

*1-Hydroxy-5-(2-methylpropyl)-3-(2-methylpropylidene)-2,6(1*H*,3*H*)-pyrazinedione*
[162666-34-4]

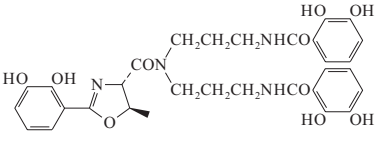


$C_{12}H_{18}N_2O_3$ 238.286
Isol. from the fungus *Delitschia confertaspora*. Endonuclease inhibitor of influenza virus. Antiviral agent. Gum. λ_{max} 270; 360 (sh) (MeOH) (Derep).

Hensens, O.D. *et al., Tet. Lett.*, 1995, **36**, 2005-2008 (*isol, uv, ir, struct*)
Tomassini, J.E. *et al., Antimicrob. Agents Chemother.*, 1996, **40**, 1189-1193 (*activity*)
Singh, S.B. *et al., J.O.C.*, 2001, **64**, 5504-5516 (*synth*)

Fluvibactin F-113

[103185-30-4]

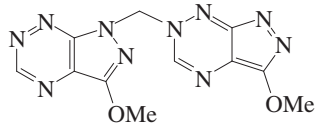


$C_{31}H_{34}N_4O_{10}$ 622.63
Isol. from *Vibrio fluvialis*. Siderophore. λ_{max} 248 (E1%/1cm 10.1); 314 (E1%/1cm 5.4) (MeOH) (Berdy).

Yamamoto, S. *et al., J. Biochem. (Tokyo)*, 1993, **113**, 538 (*isol, pmr, ms, struct*)

Fluviol D F-114

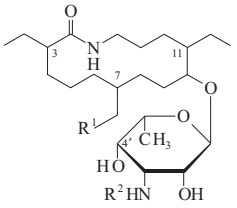
[195154-70-2]



$C_{11}H_{10}N_{10}O_2$ 314.266
Prod. by *Pseudomonas fluorescens*. Unstable. λ_{max} 237 ; 278 ; 374 ; 555 (EtOH).

Smirnov, V.V. *et al., FEMS Microbiol. Lett.*, 1997, **153**, 357-361

Fluvirucin B F-115



Fluvirucin B_1 $R_1 = R^2 = H$
Fluvirucin B_3 $R^1 = CH_3$, $R^2 = H$
Fluvirucin B_5 $R^1 = CH_3$, $R^2 = CONH\ CH_2CH_2PH$

Macrolactam antibiotic. Identity of the Flavirucins with the Sch antibiotics does not seem fully establ. There are some discrepancies in Mp's and they could be stereoisomeric. Prod. by an unidentified actinomycete. Antiviral agent.

Fluvirucin B_1

Sch 38516. Antibiotic Sch 38516
[137428-64-9]
$C_{24}H_{46}N_2O_5$ 442.638
Isol. from *Actinomadura vulgaris* ssp. *lanata*. Possesses antifungal props. Needles (MeOH). Mp 156-160° dec Mp 262-263°. $[\alpha]_D^{26}$ -6.7 (c, 0.5 in DMSO). No stereochem. assigned to Flavirucin B_1. Sch 38516 possesses 3*R*,7*S*,11*S*-config.

4′-Epimer: ***Antibiotic Sch 38513****. Sch 38513. Fluvirucin* B_2
$C_{24}H_{46}N_2O_5$ 442.638
Prod. by *Actinomadura* spp. Sol. MeOH, DMSO, butanol; fairly sol. EtOAc; poorly sol. H_2O.

Fluvirucin B_3

Sch 39185. Antibiotic Sch 39185
[137120-29-7]
$C_{25}H_{48}N_2O_5$ 456.665
Prod. by *Actinomadura vulgaris* ssp. *vulgaris*. Antifungal agent. Needles (MeOH). Mp 263-266° (216-220° dec.). $[\alpha]_D^{26}$ -5.8 (c, 0.5 in MeOH).

4′-Epimer: ***Antibiotic Sch 38518****. Sch 38518. Fluvirucin* B_2*. AB 85. Antibiotic AB 85*
[137120-28-6]
$C_{25}H_{48}N_2O_5$ 456.665
Prod. by *Actinomadura vulgaris* spp. *vulgaris*. Antifungal agent. Needles (MeOH). Mp 261-263° (220° dec.). $[\alpha]_D^{26}$ +9.7 (c, 0.5 in MeOH).

$N^{3'}$-[[2-(2-Phenylethyl)amino]carbonyl]: ***Fluvirucin*** B_5
[137120-14-0]
$C_{34}H_{57}N_3O_6$ 603.841
Prod. by *Microtetraspora* sp. Rods. Sol. MeOH, Py, EtOAc; poorly sol. H_2O, hexane. Mp 210° dec. λ_{max} 246 (ϵ 810); 252 (ϵ 810); 258 (ϵ 800); 264 (sh) (ϵ 680); 268 (sh) (ϵ 610) (MeOH) (Derep).

4′-Epimer, 2′-O-α-D-glucopyranosyl: ***Antibiotic Sch 42729****. Sch 42729*
[151284-51-4]
$C_{31}H_{58}N_2O_{10}$ 618.807
Prod. by a *Actinomadura sp.* Antifungal agent. Sol. MeOH, butanol, DMSO; fairly sol. EtOAc; poorly sol. H_2O.

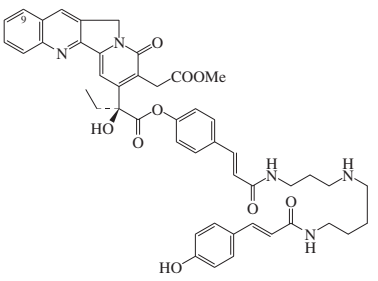
4′-Epimer, $N^{3'}$-[[2-(2-phenylethyl)amino]carbonyl]: ***Fluvirucin*** B_4
[137019-45-5]
$C_{34}H_{57}N_3O_6$ 603.841
Prod. by *Microtetraspora* sp. Needles. Sol. MeOH, Py, EtOAc; poorly sol. H_2O, hexane. Mp 245° dec. λ_{max} 246 (ϵ 810); 252 (ϵ 810); 258 (ϵ 800); 264 (sh) (ϵ 680); 268 (sh) (ϵ 610) (MeOH) (Derep).

4′-Epimer, 2′-O-[β-D-glucopyranosyl-(1→4)-α-D-glucopyranosyl]: ***Antibiotic Sch 42282****. Sch 42282*
$C_{37}H_{68}N_2O_{15}$ 780.949
Prod. by *Microtetraspora* sp. Antifungal agent. Sol. MeOH, butanol.

[135559-94-3 , 128563-23-5 , 135559-95-4]

Hegde, V.R. *et al., J.A.C.S.*, 1990, **112**, 6403-6405 (*Sch 38516, cryst struct*)
Naruse, N. *et al., J. Antibiot.*, 1991, **44**, 733-740; 741-755; 756-761; 940-948 (*Fluvirucins*)
Puar, M.S. *et al., Bioorg. Med. Chem. Lett.*, 1992, **2**, 575 (*biosynth*)
Hegde, V. *et al., J. Antibiot.*, 1992, **45**, 624-632; 1993, **46**, 1109-1115; 1998, **51**, 464-470 (*Sch antibiotics*)
Cooper, R. *et al., J. Antibiot.*, 1992, **45**, 633-638 (*isol, cmr, struct*)
Houri, A.F. *et al., J.A.C.S.*, 1995, **117**, 2943-2944 (*synth*)
Xu, Z. *et al., J.A.C.S.*, 1997, **119**, 10302-10316 (*synth*)

Foetidine I F-116



$C_{47}H_{49}N_5O_9$ 827.932

Erroneous mol. formula in paper.

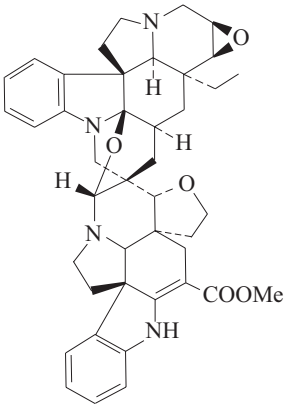
(S)-form [163167-81-5]
Alkaloid from trunk bark of *Mappia foetida* (Icacinaceae). Shows potent antiviral activity. Cryst. (Me_2CO/hexane). Mp 157-158° dec. $[\alpha]_D^{25}$ -37.9 (c, 0.31 in MeOH).

9-Methoxy: ***Foetidine II***
[173220-98-9]
$C_{48}H_{51}N_5O_{10}$ 857.958
Alkaloid from *Mappia foetida*. Antitumour and antiviral agent. Cryst. Mp 172-174°. $[\alpha]_D$ -44.6 (c, 0.35 in MeOH).

Eur. Pat., 1995, 685 481; *CA*, **124**, 141377u (*isol*)
Pirillo, A. *et al., J.C.S. Perkin 1*, 1995, 583-587 (*isol, pmr, cmr, struct*)

Folicangine F-117

[32340-00-4]

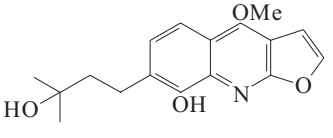


$C_{42}H_{46}N_4O_5$ 686.849
Alkaloid from leaves of *Voacanga africana* (Apocynaceae). Cryst. (MeOH). Mp 200° dec. $[\alpha]_D$ -271 ($CHCl_3$).

Kunesch, N. *et al., Bull. Soc. Chim. Fr.*, 1970, 4370 (*isol, uv, ir, pmr, ms*)
Rolland, Y. *et al., J.O.C.*, 1976, **41**, 3270 (*cmr*)
Kunesch, N. *et al., Helv. Chim. Acta*, 1977, **60**, 2854 (*struct*)

Folifinine F-118

8-Hydroxy-4-methoxy-α,α-dimethylfuro[2,3-b]-quinoline-7-propanol, 9CI. 8-Hydroxy-7-(3-hydroxy-3-methylbutyl)-4-methoxyfuro[2,3-b]quinoline
[22329-40-4]

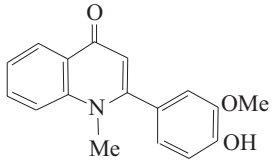


$C_{17}H_{19}NO_4$ 301.341
Alkaloid from aerial parts of *Haplophyllum foliosum* (Rutaceae). Cryst. (Me_2CO). Mp 181-182°.

Kurbanov, D. *et al., Khim. Prir. Soedin.*, 1968, **4**, 373; *Chem. Nat. Compd. (Engl. Transl.)*, 1968, **4**, 315

Folimidine F-119

2-(4-Hydroxy-3-methoxyphenyl)-1-methyl-4(1H)-quinolinone, 9CI
[40444-99-3]



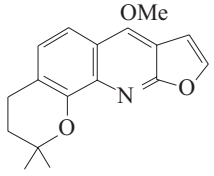
$C_{17}H_{15}NO_3$ 281.31
Alkaloid from *Haplophyllum foliosum* (Rutaceae). Cryst. (EtOH). Mp 247°.

Me ether:
Cryst. (Et_2O). Mp 186-187°.

Razzakova, D.M. *et al., Khim. Prir. Soedin.*, 1972, **8**, 755; *Chem. Nat. Compd. (Engl. Transl.)*, 1972, **8**, 737 (*ir, uv, pmr, ms*)

Foliminine F-120

[52617-28-4]



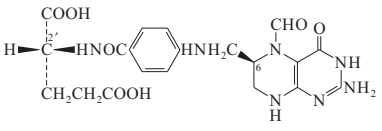
$C_{17}H_{17}NO_3$ 283.326
Probable struct. Alkaloid from the above-ground parts of *Haplophyllum foliosum* (Rutaceae). Cryst. (MeOH aq.). Mp 107-108°.

Hydrochloride:
Cryst. (EtOH). Mp 188°.

Bessonova, I.A. *et al., Khim. Prir. Soedin.*, 1974, **10**, 52; *Chem. Nat. Compd. (Engl. Transl.)*, 1974, **10**, 46 (*uv, ir, pmr, ms, isol, struct*)

Folinic acid F-121

N-*[4-[(2-Amino-5-formyl-1,4,5,6,7,8-hexahydro-4-oxo-6-pteridinyl)methyl]amino]benzoylglutamic acid, 9CI. 5-Formyl-5,6,7,8-tetrahydrofolic acid. Citrovorum factor. Leucovorin. Formylpteroylglutamic acid*
[58-05-9]



$C_{20}H_{23}N_7O_7$ 473.444
► WB2650000

(6S,2′S)-form
(-)-L-form
[68538-85-2]
Occurs in yeast, insects etc. Active form of folic acid in the body. Light yellow cryst. + $3H_2O$. Mp 248-250° dec. $[\alpha]_D^{25}$ +16.8 (aq. bicarbonate). This is the biologically active natural stereoisomer. The "(-)-L" description used in the biochemical literature is rather misleading.

Ca salt: ***Calcium levofolinate, INN.*** *Levoleucovorin calcium, USAN. Isovorin. CL 307782*
[80433-71-2]
$[\alpha]_D^{20}$ -15.1 (c, 1.82 in H_2O).

(6R,2′S)-form
(+)-L-form
$[\alpha]_D^{20}$ +28.3 (c, 3.53 in H_2O) (as Ca salt).

(6RS,2′S)-form
dl-*L-form*
Antidote to folic acid antagonists such as methotrexate e.g. in cancer chemotherapy. Cryst. Spar. sol. H_2O to give acid soln. which slowly decs. Mp 240-250° dec. pK_{a1} 3.2; pK_{a2} 4.8; pK_{a3} 10.4. This is the usual coml. form, consisting of a mixt. of diastereoisomers. Used as a Ca salt.

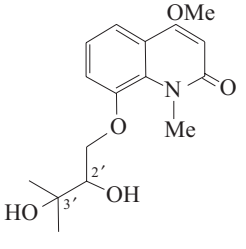
Ca salt: ***Leucovorin calcium, USAN.*** *Calcium folinate, BAN, INN. Lederfolin. Leucosar. Refolinon. Rescufolin. NSC 3590*
[41927-89-3]
[1492-18-8]
Yellowish powder + $5H_2O$. Sol. H_2O; insol. EtOH. $[\alpha]_D^{20}$ +14.26 (c, 3.42 in H_2O).

[6035-45-6]

Brockman, J.A. *et al., J.A.C.S.*, 1950, **72**, 4325 (*synth*)
Cosulich, D.B. *et al., J.A.C.S.*, 1952, **74**, 3252
Kas, J. *et al., J. Chromatogr.*, 1976, **124**, 53 (*chromatog*)
Pont, O. *et al., Anal. Profiles Drug Subst.*, 1979, **8**, 315 (*bibl*)
Khalifa, E. *et al., Helv. Chim. Acta*, 1980, **63**, 2554 (*synth*)
Feeney, J. *et al., J.C.S. Perkin 2*, 1980, 176 (*pmr, cmr*)
Kerr, D.J. *et al., Br. J. Cancer*, 1989, **60**, 807 (*pharmacol*)
Owens, J. *et al., J.C.S. Perkin 1*, 1993, 871 (*synth*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 1040

Foliosidine F-122

8-(2,3-Dihydroxy-3-methylbutoxy)-4-methoxy-1-methyl-2(1H)-quinolinone, 9CI. Pholiosidine
[2520-38-9]



$C_{16}H_{21}NO_5$ 307.346
Alkaloid from *Haplophyllum foliosum* (Rutaceae). Said to be pharmacologically active and to be introduced into USSR medical practice, but no details given. Mp 140-141°. $[\alpha]_D$ +41.6 (EtOH).

2′-Ac: ***Foliphorine***
[42907-17-5]
$C_{18}H_{23}NO_6$ 349.383
Alkaloid from *Haplophyllum foliosum*. Cryst. (hexane/petrol). Mp 83-84°.

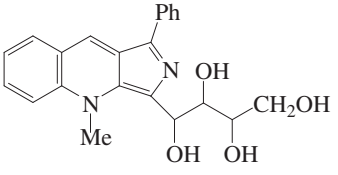
2′,3′-Isopropylidene: Foliosidine acetonide
$C_{19}H_{25}NO_5$ 347.41
Artifact isol. from *Haplophyllum foliosum*. Cryst. (petrol). Mp 119-120°.

O-*De-Me:* Mp 235-236°. $[\alpha]_D$ +50.4 (Py).

3′-Deoxy, 2′-ketone: 4-Methoxy-1-methyl-8-(3-methyl-2-oxobutoxy)-2(1H)-quinolinone, 9CI. ***Folidine***
[102719-91-5]
$C_{16}H_{19}NO_4$ 289.33
Alkaloid from aerial parts of *Haplophyllum foliosum* (Rutaceae). Cryst. (Me_2CO/petrol). Mp 148-149°.

Pastukhova, V.I. *et al., Dokl. Akad. Nauk SSSR*, 1964, **21**, 31; *CA*, **62**, 11864d (*ir*)
Yagudaev, M.R. *et al., Khim. Prir. Soedin.*, 1968, **4**, 201; *Chem. Nat. Compd. (Engl. Transl.)*, 1968, **4**, 174 (*pmr*)
Shakirov, T.T. *et al., Khim. Prir. Soedin.*, 1969, **5**, 385; *Chem. Nat. Compd. (Engl. Transl.)*, 1969, **5**, 385 (*isol, use*)
Tel'nov, V.A. *et al., Khim. Prir. Soedin.*, 1970, **6**, 724; *Chem. Nat. Compd. (Engl. Transl.)*, 1970, **6**, 735 (*acetonide*)
Akhmedzhanova, V.I. *et al., Khim. Prir. Soedin.*, 1985, **21**, 823; *Chem. Nat. Compd. (Engl. Transl.)*, 1985, **21**, 782 (*Folidine*)
Reisch, J. *et al., Monatsh. Chem.*, 1988, **119**, 1169 (*synth, pmr, ms, Folidine*)
Akhmedzhanova, V.I. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1999, **35**, 552-553 (*Foliphorine*)

Folipidine F-123

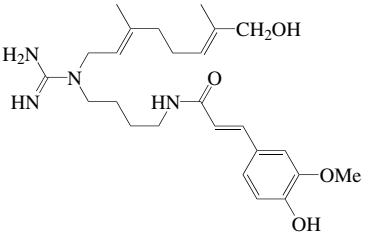


$C_{22}H_{22}N_2O_4$ 378.427
Alkaloid from the aerial parts of *Haplophyllum pedicellatum*. Cryst. (EtOH). Mp 242-243°. $[\alpha]_D$ -46 (c, 0.67 in Py). λ_{max} 230 ; 248 ; 278 ; 292 (sh) ; 305 (sh) ; 356 ; 370 (EtOH).

Akhmedzhanova, V.I. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2005, **41**, 60-64 (*isol, pmr, cmr, ms*)

Fontaineine F-124

[211690-64-1]



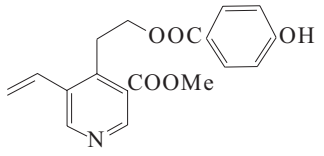
$C_{25}H_{38}N_4O_4$ 458.6

Alkaloid from *Fontainea pacheri* (Euphorbiaceae). Gum.

Lontsi, D. *et al., J. Nat. Prod.*, 1998, **61**, 953-954 (*isol, ir, pmr, cmr*)

Fontaphilline F-125

Methyl 5-ethenyl-4-[2-[(4-hydroxybenzoyl)oxy]ethyl]-3-pyridinecarboxylate, 9CI
[22667-62-5]

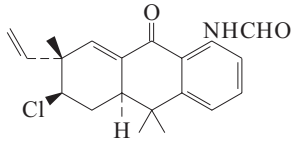


$C_{18}H_{17}NO_5$ 327.336
Alkaloid from leaves of *Fontanesia phillyreoides* (Oleaceae). Needles (MeOH aq.). Mp 80-81° Mp 121-122° (double Mp).

Budzikiewicz, H. *et al., Chem. Ber.*, 1967, **100**, 2798 (*ir, uv, pmr, ms, isol, struct*)

Fontonamide F-126

[109217-15-4]



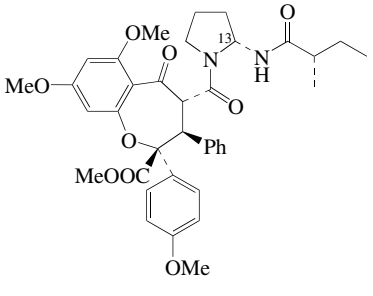
$C_{20}H_{22}ClNO_2$ 343.852
Apparently a seco-indole alkaloid which is a singlet oxygen oxidn. prod. of Hapalindole A, H-48. See also Hapalonamide G, H-52. Isol. from blue-green alga *Hapalosiphon fontinalis*. Mp 156-157°. $[\alpha]_D$ -141 (c, 0.21 in $CHCl_3$). λ_{max} 240 (ϵ 5680); 289 (ϵ 4770); 345 (ϵ 1630) (MeOH) (Derep).

Decloro: ***Dechlorofontonamide***
[123498-02-2]
$C_{20}H_{23}NO_2$ 309.407
Minor alkaloid from *Hapalosiphon fontinalis*. $[\alpha]_D$ -100 (c, 0.2 in $CHCl_3$).

Moore, R.E. *et al., J.O.C.*, 1987, **52**, 3773 (*isol, struct*)
Moore, R.E. *et al., Phytochemistry*, 1989, **28**, 1565 (*Dechlorofontonomide*)

Forbagline A F-127

[177262-35-0]

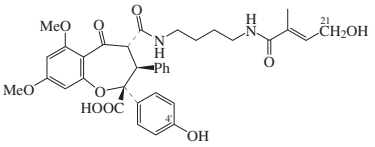


$C_{37}H_{42}N_2O_9$ 658.747
Alkaloid from *Aglaia forbesii*. Cryst. (MeOH). Mp 246°. $[\alpha]_D^{20}$ +58 (c, 1.2 in MeOH). λ_{max} 281 (log ϵ 3.94) (MeOH).

13-Epimer: ***Forbagline B***
[177468-87-0]
$C_{37}H_{42}N_2O_9$ 658.747
Alkaloid from *Aglaia forbesii*. Amorph. powder. $[\alpha]_D^{20}$ +76 (c, 0.2 in MeOH). λ_{max} 277 (log ϵ 4.26) (MeOH).

Dumontet, V. *et al., Tetrahedron*, 1996, **52**, 6931-6942 (*isol, uv, ir, pmr, cmr*)

Aglaia dasyclada Forbagline-like compound F-128

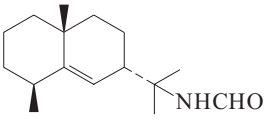


$C_{35}H_{38}N_2O_{10}$ 646.693
Related to Forbagline A, F-127. Alkaloid from *Aglaia dasyclada*. Amorph. $[\alpha]_D^{20}$ -11 (c, 0.1 in MeOH).

4′-Me ether, Me ester, 21-O-β-D-glucopyranoside:
$C_{43}H_{52}N_2O_{15}$ 836.888
Alkaloid from *Aglaia dasyclada*. Amorph. $[\alpha]_D^{20}$ -38.5 (c, 0.2 in MeOH).

Chaidir, *et al., J. Nat. Prod.*, 2001, **64**, 1216-1220 (*isol, pmr, cmr*)

11-Formamido-5-eudesmene F-129



$C_{16}H_{27}NO$ 249.395

(4β,7α,10β)-form
Constit. of *Axinella cannabina*. Oil.

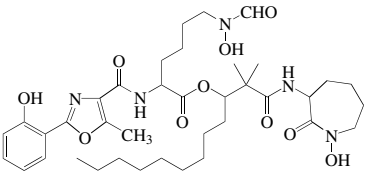
Isocyanide: ***11-Isocyanato-5-eudesmene***
$C_{16}H_{25}N$ 231.38
Constit. of *Axinella cannabina* and *Phakellia* sp. Oil. $[\alpha]_D$ -85.7 (c, 0.8 in $CHCl_3$). Has –NC replacing –NHCHO.

Isothiocyanate: ***11-Isothiocyanato-5-eudesmene***
[108639-31-2]
$C_{16}H_{25}NS$ 263.446
Constit. of *Axinella cannabina*, *Acanthella klethra* and *Cadlina luteomarginata*. Oil. $[\alpha]_D$ -89.7 (c, 0.8 in $CHCl_3$). Has –NCS replacing –NHCHO.

Ciminiello, P. *et al., Can. J. Chem.*, 1987, **65**, 518
Angerhofer, C.K. *et al., J. Nat. Prod.*, 1992, **55**, 1787 (*isothiocyanate, isol*)
Burgoyne, D.L. *et al., Tetrahedron*, 1993, **49**, 4503

Formobactin F-130

[181417-64-1]

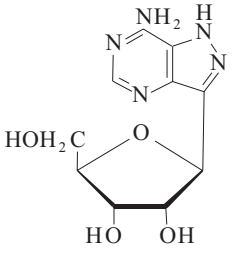


$C_{38}H_{57}N_5O_{10}$ 743.896
Prod. by a *Nocardia* sp. Siderophore. Free radical scavenger. Powder. Related to Nocobactin NA, N-267.

Murakami, Y. *et al., J. Antibiot.*, 1996, **49**, 839-845 (*isol, uv, ir, pmr, cmr, props*)

Formycin A F-131

1-C-(7-Amino-1H-pyrazolo[4,3-d]pyrimidin-3-yl)-1,4-anhydro-D-ribitol, 9CI. Formycin. NSC 102811. Antibiotic 4-215
[6742-12-7]



$C_{10}H_{13}N_5O_4$ 267.244
Nucleoside-type antibiotic. Prod. by *Nocardia interforma, Streptomyces lavendulae* and *Streptomyces gunmaensis*. Shows limited antibacterial activity but possesses antitumour and antiviral props. Insulinotropic agent. Adenosine transport inhibitor. Cryst. Sol. MeOH, H_2O, acids, bases; fairly sol. EtOH; poorly sol. Me_2CO, hexane. Mp 153-155°. $[\alpha]_D^{25}$ -39.3 (c, 0.5 in 0.1*M* HCl). pK_{a1} 4.4; pK_{a2} 9.7 (H_2O). λ_{max} 295 (ϵ 10700) (H_2O) (Derep). λ_{max} 294 (E1%/1cm 390) (H_2O) (Berdy). λ_{max} 234 (E1%/1cm 280); 295 (E1%/1cm 340) (HCl) (Berdy). λ_{max} 235 (E1%/1cm 500); 305 (E1%/1cm 260) (NaOH) (Berdy).
▶ LD_{50} (mus, orl) 1000 mg/kg; LD_{50} (mus, ivn) 250-350 mg/kg. UR0719000

4-Me: Mp 268-269°.

6-Me:
Dihydrate. Mp 231-232°.

7-N-Me: Mp 145° dec.

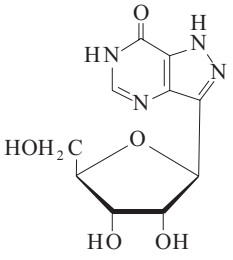
3′-Epimer: Xyloformycin
Synthetic. Shows no antiviral props. Cryst. Mp 138-140°. $[\alpha]_D$ -97.8 (c, 0.23 in H_2O).

Koyama, G. *et al., J. Antibiot., Ser. A*, 1965, **18**, 175 (*isol, ir, uv*)
Koyama, G. *et al., Tet. Lett.*, 1966, 597 (*ir, uv, pmr, cryst struct*)
Japan. Pat., 1967, 67 10 928; *CA*, **68**, 24552 (*isol*)
Japan. Pat., 1968, 68 6 996; *CA*, **69**, 34691 (*isol*)
Prusiner, P. *et al., Biochemistry*, 1973, **12**, 1196 (*cryst struct*)
Ochi, K. *et al., J. Antibiot.*, 1976, **29**, 638 (*biosynth*)

Chenon, M.-T. *et al., J.A.C.S.*, 1976, **98**, 4736 (*pmr, cmr*)
Kalvoda, L. *et al., Coll. Czech. Chem. Comm.*, 1978, **43**, 1431 (*synth*)
Lewis, A.F. *et al., J.A.C.S.*, 1980, **102**, 2817
Spiemulli, E.N. *et al., Cancer Treat. Rep.*, 1983, **67**, 267 (*pharmacol, tox*)
Buchanan, J.G. *et al., J.C.S. Perkin 1*, 1986, 1267 (*analogs*)
Cho, B.P. *et al., Nucleosides Nucleotides*, 1994, **13**, 481 (*pmr, cmr, tautom*)

Formycin B **F-132**

*1,4-Dihydro-3-β-D-ribofuranosyl-7*H*-pyrazolo[4,3-*d*]pyrimidin-7-one, 9CI. Laurusin. Ohyamycin. NSC 106486*
[13877-76-4]



$C_{10}H_{12}N_4O_5$ 268.229

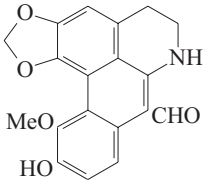
Nucleoside-type antibiotic. Prod. by *Nocardia interforma, Streptomyces lavendulae* and *Streptomyces roseochromogenesoyaensis*. Shows limited antibacterial activity; possesses antitumour and antiviral props. Nucleoside transporter substrate. Cryst. (H_2O). Mp 254-255°. $[\alpha]_D^{25}$ -52 (c, 0.5 in H_2O). pK_{a1} 8.8; pK_{a2} 10.4. λ_{max} 219 (ε 9330); 280 (ε 7880) (H_2O) (Derep).
► LD_{50} (mus, ivn) 1000 mg/kg. UR0800000

Hydrobromide:
Prisms + H_2O (H_2O). Mp 180-180.5°.

Aizawa, S. *et al., Agric. Biol. Chem.*, 1965, **29**, 375; 377 (*isol*)
Koyama, G. *et al., J. Antibiot., Ser. A*, 1965, **18**, 175 (*isol, ir, uv*)
Japan. Pat., 1966, 66 13 792; *CA*, **65**, 19272 (*isol*)
Koyama, G. *et al., Tet. Lett.*, 1966, 597 (*uv, ir, nmr, cryst struct*)
Acton, E.M. *et al., Chem. Comm.*, 1971, 986 (*synth, nmr*)
Koyama, G. *et al., Acta Cryst. B*, 1976, **32**, 813 (*cryst struct*)
Chenon, M.-T. *et al., J.A.C.S.*, 1976, **98**, 4736 (*pmr, cmr*)
Kalvoda, L. *et al., Coll. Czech. Chem. Comm.*, 1978, **43**, 1431 (*synth*)
Buchanan, J.G. *et al., J.C.S. Perkin 1*, 1984, 2367 (*synth*)
Plagemann, P.G. *et al., Biochim. Biophys. Acta*, 1990, **1022**, 93-102; 103-109; **1028**, 289-298 (*pharmacol*)

7-Formyldehydrohernangerine **F-133**

[178765-68-9]

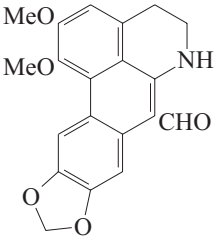


$C_{19}H_{15}NO_5$ 337.331
Alkaloid from trunk bark of *Hernandia nymphaeifolia*. Yellowish prisms ($CHCl_3$/MeOH). Mp 211-213°.

Chen, J.-J. *et al., Phytochemistry*, 1996, **42**, 1479 (*isol, uv, ir, pmr, ms, struct*)

7-Formyldehydronornantentine **F-134**

[169624-28-6]

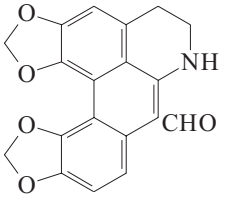


$C_{20}H_{17}NO_5$ 351.358
Alkaloid from trunk bark of *Hernandia sonora*. Yellowish prisms ($CHCl_3$/MeOH). Mp 213-214°.

Chen, I.-S. *et al., Phytochemistry*, 1995, **40**, 983 (*isol, uv, ir, pmr, ms, struct*)

7-Formyldehydroovigerine **F-135**

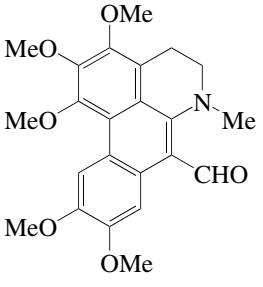
[169624-27-5]



$C_{19}H_{13}NO_5$ 335.315
Alkaloid from trunk bark of *Hernandia sonora*. Yellowish prisms ($CHCl_3$/MeOH). Mp 247-249°.

Chen, I.-S. *et al., Phytochemistry*, 1995, **40**, 983 (*isol, uv, ir, pmr, ms, struct*)

7-Formyldehydrothalicsimidine **F-136**

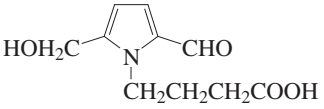


$C_{23}H_{25}NO_6$ 411.454
Alkaloid from *Annona purpurea* (soncoya). Yellow needles ($CHCl_3$). Mp 160-162°. λ_{max} 217 ; 268 ; 335 (sh) ; 432 (EtOH).

Chang, F.-R. *et al., Phytochemistry*, 1998, **49**, 2015-2018 (*isol, uv, ir, pmr*)

4-(2-Formyl-5-hydroxymethyl-1*H*-pyrrol-1-yl)butanoic acid **F-137**

*2-Formyl-5-hydroxymethyl-1*H*-pyrrole-1-butanoic acid, 9CI*
[142629-55-8]



$C_{10}H_{13}NO_4$ 211.217
Alkaloid from the processed roots of *Aconitum* sp. (Kako-bushi-matsu), the seeds of *Allium fistulosum* and the fruit of *Lycium chinense* (Chinese boxthorn). Hepatoprotectant. Amorph. solid. λ_{max} 292 (log ε 3.55) (EtOH).

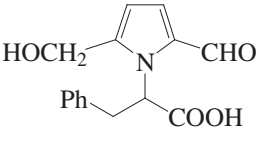
*Me ether: 2-Formyl-5-methoxymethyl-1*H*-pyrrole-1-butanoic acid*
$C_{11}H_{15}NO_4$ 225.244
Alkaloid from the fruit of *Lycium chinense* (Chinese boxthorn). Hepatoprotectant. λ_{max} 291 (log ε 3.76) (EtOH).

*Me ether, Me ester: Methyl 2-formyl-5-methoxymethyl-1*H*-pyrrole-1-butanoate*
$C_{12}H_{17}NO_4$ 239.271
Alkaloid from the fruit of *Lycium chinense* (Chinese boxthorn) and from the bulbs of *Bolbostemma paniculatum*. Yellow oil. λ_{max} 286 (log ε 3.39) (EtOH).

Matsui, M. *et al., Nat. Med. (Tokyo)*, 1998, **52**, 232-235 (*isol*)
Sang, S. *et al., J. Agric. Food Chem.*, 2002, **50**, 6318-6321 (*isol, pmr, cmr*)
Chin, Y.-W. *et al., Bioorg. Med. Chem. Lett.*, 2003, **13**, 79-81 (*isol, synth, pmr, cmr*)
Liu, W.-Y. *et al., J. Asian Nat. Prod. Res.*, 2003, **5**, 159-163 (*Me ether Me ester*)

2-(2-Formyl-5-hydroxymethyl-1*H*-pyrrol-1-yl)-3-phenylpropanoic acid **F-138**

*α-Benzyl-2-formyl-5-hydroxymethyl-1*H*-pyrrole-1-acetic acid*



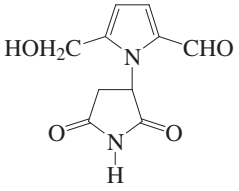
$C_{15}H_{15}NO_4$ 273.288

*Me ether, Me ester: Methyl 2-(2-formyl-5-methoxymethyl-1*H*-pyrrol-1-yl)-3-phenylpropanoate*
$C_{17}H_{19}NO_4$ 301.341
Constit. of the bulbs of *Bolbostemma paniculatum*. Yellow oil.

Liu, W.-Y. *et al., J. Asian Nat. Prod. Res.*, 2003, **5**, 159-163 (*isol, pmr, cmr, ms*)

3-(2-Formyl-5-hydroxymethyl-1*H*-pyrrol-1-yl)-2,5-pyrrolidinedione F-139

*2′,3′,4′,5′-Tetrahydro-5-hydroxymethyl-2′,5′-dioxo-1,3′-bi-1*H*-pyrrole-2-carboxaldehyde*



$C_{10}H_{10}N_2O_4$ 222.2

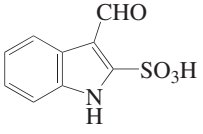
(-)-*form*

Constit. of the dried fruit of *Prunus domestica* (prunes). Powder. $[\alpha]_D^{25}$ -89.2 (c, 0.12 in MeOH). λ_{max} 259 (log ε 3.76); 294 (log ε 4.06) (MeOH).

Kayano, S. *et al., Biosci., Biotechnol., Biochem.*, 2004, **68**, 942-944 (*isol, pmr, cmr*)

3-Formyl-1*H*-indole-2-sulfonic acid F-140

[857351-59-8]



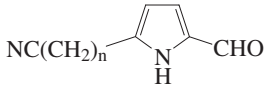
$C_9H_7NO_4S$ 225.225

Isol. from *Leptosphaeria maculans*. Intermed. in the detoxification pathways of 8*H*-Isothiazolo[5,4-*b*]indole, I-336 and its *N*-methoxy deriv. Sinalexin in I-336. Mp 300-305° dec. λ_{max} 212 (ε 17400); 244 (ε 9800); 304 (ε 7100) (MeOH).

Pedras, M.S.C. *et al., Org. Biomol. Chem.*, 2005, **3**, 2002-2007 (*isol, synth, pmr, cmr*)

5-Formyl-1*H*-pyrrole-2-alkanenitriles F-141

5-(ω-Cyanoalkyl)-2-pyrrolecarboxaldehydes



5-Formyl-1*H*-pyrrole-2-octadecanenitrile

*5-(17-Cyanoheptadecyl)-1*H*-pyrrole-2-carboxaldehyde. **Mycalenitrile 1***

[705973-45-1]

$C_{23}H_{38}N_2O$ 358.566

Alkaloid from the sponge *Mycale cecilia*. Oil. n = 17. λ_{max} 204 (ε 6025); 248 (ε 2540); 300 (ε 10125) (MeOH).

5-Formyl-1*H*-pyrrole-2-eicosanenitrile, 9CI

*5-(19-Cyanononadecyl)-1*H*-pyrrole-2-carboxaldehyde*

[233744-62-2]

$C_{25}H_{42}N_2O$ 386.62

Alkaloid from the sponges *Desmapsamma anchorata* and *Mycale microsigmatosa*. Antileishmanial agent. n = 19.

5-Formyl-1*H*-pyrrole-2-heneicosanenitrile

*5-(20-Cyanoeicosyl)-1*H*-pyrrole-2-carboxaldehyde. **Mycalenitrile 2***

[705973-46-2]

$C_{26}H_{44}N_2O$ 400.646

Alkaloid from the sponge *Mycale cecilia*. Oil. n = 20. λ_{max} 204 (ε 6030); 248 (ε 2710); 300 (ε 11790) (MeOH).

5-Formyl-1*H*-pyrrole-2-docosanenitrile

*5-(21-Cyanoheneicosyl)-1*H*-pyrrole-2-carboxaldehyde. **Mycalenitrile 3***

[705973-47-3]

$C_{27}H_{46}N_2O$ 414.673

Alkaloid from the sponge *Mycale cecilia*. Oil. n = 21. λ_{max} 203 (ε 5950); 248 (ε 2510); 300 (ε 10000) (MeOH).

Compagnone, R.S. *et al., Nat. Prod. Lett.*, 1999, **13**, 203-211 (*5-Formyl-1H-pyrrole-2-eicosanenitrile*)

Ortega, M.J. *et al., Tetrahedron*, 2004, **60**, 2517-2524 (*Mycalenitriles*)

5-Formyl-1*H*-pyrrole-2-carboxylic acid F-142

[7126-51-4]

$C_6H_5NO_3$ 139.11

Prod. in cultures of *Erwinia oxoidiae*. Cryst. (H_2O). Mp 202-203° (212-215° dec.).

Me ester: [1197-13-3]

$C_7H_7NO_3$ 153.137

Cryst. (petrol). Mp 92-93°.

Et ester: [7126-50-3]

$C_8H_9NO_3$ 167.164

Cryst. (petrol). Mp 75°. $Bp_{0.1}$ 96-100°.

1-Me, Me ester:

$C_8H_9NO_3$ 167.164

Cryst. (petrol). Mp 100-102°.

Reichstein, T. *et al., Helv. Chim. Acta*, 1930, **13**, 349 (*synth*)

Khan, M.K.A. *et al., Tetrahedron*, 1966, **22**, 2095 (*synth, ir, pmr*)

Muchowski, J.M. *et al., Tet. Lett.*, 1988, **29**, 777 (*synth*)

Wallace, D.M. *et al., J.O.C.*, 1993, **58**, 7245 (*Et ester*)

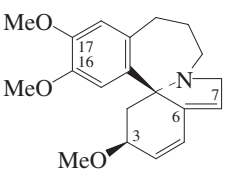
Campbell, S.E. *et al., J.C.S. Perkin 1*, 1997, 2195-2202 (*Et ester, synth, pmr, cmr*)

Hong, F. *et al., J.C.S. Perkin 1*, 1997, 2997-3003 (*Me ester, synth, pmr, cmr*)

Fortuneine F-143

1,2,6,7-Tetradehydro-3,15,16-trimethoxy-C-homoerythrinan, 9CI

[87340-25-8]



$C_{20}H_{25}NO_3$ 327.422

Alkaloid from the twigs and leaves of *Cephalotaxus fortunei*. Needles (Me_2CO). Mp 110°. $[\alpha]_D^{26}$ -121 (c, 0.2 in MeOH). C-6/C-7 configs. not known for Comosiline. λ_{max} 233 (log ε 4.05); 282 (sh) (log ε 3.37) (MeOH).

6β,7β-Epoxide: ***Wilsonine***

[39024-12-9]

$C_{20}H_{25}NO_4$ 343.422

Alkaloid from the twigs and leaves of *Cephalotaxus wilsoniana* and *Cephalotaxus fortunei*, the seeds of *Cephalotaxus harringtonia*, and from *Cephalotaxus sinensis* (Cephalotaxaceae). Cryst. (Et_2O). Poorly sol. hexane. Mp 150-151°. $[\alpha]_D$ -51.4 (c, 0.55 in $CHCl_3$). $[\alpha]_D$ -36 (c, 0.55 in EtOH). λ_{max} 233 (log ε 3.9); 281 (log ε 3.41) (EtOH).

3-Epimer: ***Epifortuneine***

[87340-26-9]

Alkaloid from *Cephalotaxus fortunei*. Pale yellow amorph. solid. $[\alpha]_D^{26}$ +134.4 (c, 0.06 in MeOH).

3-Epimer, 6β,7β-epoxide: ***3-Epiwilsonine***. *Alkaloid 7. Comosiline*

[39024-15-2]

[123163-73-5 (Comosiline)]

$C_{20}H_{25}NO_4$ 343.422

Alkaloid from the leaves of *Phelline comosa*, twigs and leaves of *Cephalotaxus wilsoniana* and *Cephalotaxus fortunei* and from *Cephalotaxus sinensis*. Also a minor constit. of the seed of *Cephalotaxus harringtonia* var. *drupacea* (Phellinaceae, Cephalotaxaceae). Cryst. (Et_2O). Mp 103-104°. $[\alpha]_D$ +60.7 (c, 0.55 in $CHCl_3$). $[\alpha]_D$ +75.8 (c, 0.52 in EtOH). λ_{max} 233 (log ε 3.92); 281 (log ε 3.44) (EtOH).

3-Epimer, 6β,7β-epoxide, O^{16}-de-Me: ***Robustiline***

[123050-84-0]

$C_{19}H_{23}NO_4$ 329.395

Alkaloid from leaves of *Phelline comosa* var. *robusta* (Phellinaceae). Mp 228°. $[\alpha]_D$ +71.2 (c, 0.48 in $CHCl_3$). λ_{max} 208 (ε 17900); 282 (ε 2000) (EtOH).

3-Epimer, 6β,7β-epoxide, O^{17}-de-Me: ***Isorobustiline***

[123011-99-4]

$C_{19}H_{23}NO_4$ 329.395

From leaves of *Phelline comosa* var. *robusta* (Phellinaceae). Mp 205°. $[\alpha]_D$ +69.7 (c, 0.46 in $CHCl_3$). λ_{max} 211 (ε 14250); 282 (ε 3350) (EtOH).

3-Epimer, 8-oxo, 6α,7α-epoxide: ***3-Epiwilsonione***

$C_{20}H_{23}NO_5$ 357.405

Alkaloid from *Cephalotaxus wilsoniana*. Cytotoxic. Powder. $[\alpha]_D^{28}$ +11 (c, 0.1 in $CHCl_3$). λ_{max} 206 (log ε 4.37); 225 (sh) (log ε 4.02); 280 (log ε 3.56) (MeOH).

Langlois, N. *et al., Bull. Soc. Chim. Fr.*, 1970, 3535-3543 (*Wilsonine, 3-Epiwilsonine*)

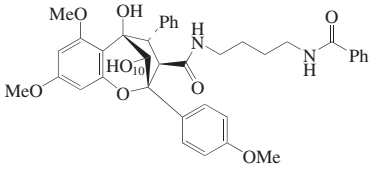
Powell, R.G. *et al., Phytochemistry*, 1972, **11**, 3317-3320 (*Wilsonine, 3-Epiwilsonine*)

Ma, G. *et al., Phytochemistry*, 1983, **22**, 251-253 (*Fortuneine, Wilsonine, isol, uv, ir, pmr, cmr, ms, struct*)

Pusset, J. *et al., Phytochemistry*, 1989, **28**, 1298-1300 (*Robustiline, Isorobustiline*)
Ma, G. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 1989, **31**, 137-140 (*Epifortuneine*)
Langlois, N. *et al., Heterocycles*, 1990, **30**, 659-664 (*Robustiline, struct*)
Du, J. *et al., CA*, 1999, **130**, 63637m (*Wilsonine, cryst struct, abs config*)
Wang, L.-W. *et al., J. Nat. Prod.*, 2004, **67**, 1182-1185 (*3-Epiwilsonione*)

Foveoglin A F-144

[948312-48-9]



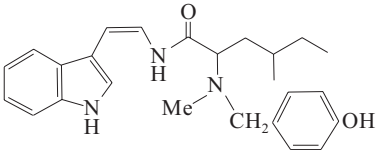
$C_{38}H_{40}N_2O_8$ 652.743
Alkaloid from the leaves of *Aglaia foveolata*. Cytotoxic. Amorph. powder. $[\alpha]_D^{20}$ -30 (c, 0.16 in $CHCl_3$). λ_{max} 203 (log ϵ 4.64); 213 (sh) (log ϵ 4.57) (MeOH).

10-Epimer: ***Foveoglin B***
[948312-49-0]
$C_{38}H_{40}N_2O_8$ 652.743
Alkaloid from the leaves of *Aglaia foveolata*. Amorph. powder. $[\alpha]_D^{20}$ +170 (c, 0.2 in $CHCl_3$). λ_{max} 203 (log ϵ 4.76); 214 (sh) (log ϵ 4.71) (MeOH).

Salim, A.A. *et al., Tetrahedron*, 2007, **63**, 7926-7934 (*isol*)

Fragilamide F-145

*2-[[(4-Hydroxyphenyl)methyl]methylamino]-*N*-[2-(1*H*-indol-3-yl)ethenyl]-4-methylhexanamide, 9CI*
[87168-33-0]

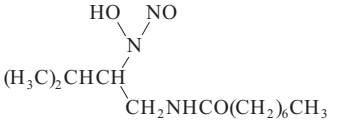


$C_{25}H_{31}N_3O_2$ 405.539
Alkaloid from the marine red alga *Martensia fragilis*. $[\alpha]_D$ -32 (c, 0.62 in MeOH). λ_{max} 229 (ϵ 15500); 280 (ϵ 10200) (EtOH) (Derep).

Kirkup, M.P. *et al., Tet. Lett.*, 1983, **24**, 2087 (*isol, uv, ir, pmr, cmr, ms, struct*)

Fragin, 8CI F-146

N-*[2-(Hydroxynitrosamino)-3-methylbutyl]octanamide, 8CI*
[17073-33-5]



$C_{13}H_{27}N_3O_3$ 273.375
λ_{max} 248 (ϵ 8000) (EtOH/NaOH) (Derep). λ_{max} 230 (ϵ 7000) (EtOH) (Derep).

▶ RG7957000

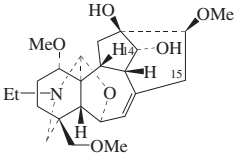
(-)-form
Prod. by *Pseudomonas fragi*. Phytotoxin. Possesses antifungal, antitumour and antiviral props. Plates (hexane). Sol. MeOH, Et_2O; fairly sol. hexane; poorly sol. H_2O, acids. Mp 80°. $[\alpha]_D^{25}$ -122 (c, 1.9 in EtOH). pK_a 6.4. λ_{max} 230 (ϵ 7000) (EtOH) (Berdy). λ_{max} 230 (ϵ 7000) (EtOH-HCl) (Berdy). λ_{max} 248 (ϵ 8000) (EtOH-NaOH) (Berdy).
▶ LD_{50} (mus, ivn) 80 mg/kg.

(±)-form
Cryst. (hexane). Mp 97°.

Tamura, S. *et al., Agric. Biol. Chem.*, 1967, **31**, 758; 996 (*synth*)
Murayama, A. *et al., Agric. Biol. Chem.*, 1969, **33**, 1599; 1970, **34**, 122; 130 (*isol, struct, synth*)

Francheline F-147

[799782-00-6]



Absolute Configuration

$C_{24}H_{37}NO_6$ 435.559
Unusual 6,12-epoxyaconitane structs. Alkaloid from the roots of *Aconitum nagarum* var. *lasiandrum*. Amorph. powder. Mp 86-88°. $[\alpha]_D^{20}$ -146.8 (c, 0.5 in $CHCl_3$).

14-Benzoyl: ***13-Hydroxyfranchetine***
[874986-10-4]
$C_{31}H_{41}NO_7$ 539.667
Alkaloid from the roots of *Aconitum nagarum*. Amorph. powder. Mp 97-98°. $[\alpha]_D^{25}$ -120 (c, 0.1 in $CHCl_3$).

13-Deoxy, 14-Ac: ***Vilmorisine***
[143109-03-9]
$C_{26}H_{39}NO_6$ 461.597
Alkaloid from roots of *Aconitum vilmorinianum* (Ranunculaceae). Struct. revised in 1997.

13-Deoxy, 14-benzoyl: ***Franchetine***†
[88661-42-1]
$C_{31}H_{41}NO_6$ 523.668
Alkaloid from roots of *Aconitum franchetii* (Ranunculaceae) and *Aconitum hemsleyanum* var. *pengshiese*. Struct. revised in 1997.

13-Deoxy, 14-cinnamoyl: ***Leueandine***
[664304-10-3]
$C_{33}H_{43}NO_6$ 549.706
Alkaloid from the roots of *Aconitum hemsleyanum* var. *leueanthus*. Amorph. powder. Mp 138-140°. $[\alpha]_D^{25}$ -71.4 (c, 0.5 in $CHCl_3$). Config. of cinnamoyl group not determined.

13-Deoxy, 3α-hydroxy, 14-benzoyl: ***3-Hydroxyfranchetine***
[1007889-95-3]
$C_{31}H_{41}NO_7$ 539.667
Alkaloid from the roots of *Aconitum hemsleyanum* var. *atropurpureum*. Amorph. powder. Mp 116-118°. $[\alpha]_D^{20}$ -76.7 (c, 0.3 in Me_2CO).

15α-Hydroxy, 14-benzoyl: ***Beiwudine***
[219314-07-5]
$C_{31}H_{41}NO_8$ 555.667
Alkaloid from the roots of *Aconitum kusnezoffii*. Amorph. powder.

Ding, L.S. *et al., Huaxue Xuebao*, 1992, **50**, 405; *CA*, **117**, 108100f (*Vilmorisine*)
Wang, F.-P. *et al., Phytochemistry*, 1997, **45**, 1539-1542 (*Franchetine*)
Wang, F.-P. *et al., J. Nat. Prod.*, 1998, **61**, 1555-1556 (*Beiwudine*)
Chen, D.-L. *et al., J. Asian Nat. Prod. Res.*, 2003, **5**, 209-213 (*Leueandine*)
Ji, H. *et al., Heterocycles*, 2004, **63**, 2363-2370 (*Francheline*)
Zhang, F. *et al., Chin. Chem. Lett.*, 2005, **16**, 1043-1046 (*13-Hydroxyfranchetine*)
Tang, P. *et al., Chin. Chem. Lett.*, 2007, **18**, 704-707 (*3-Hydroxyfranchetine*)

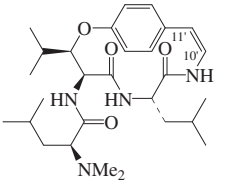
Franchetine† F-148

Pyrrolizidine alkaloid of unknown struct. Alkaloid from *Senecio franchetii* (Asteraceae). Cryst. (Et_2O). Mp 124-125°. Cooccurs with Sarracine *N*-Oxide in S-90.

Akramov, S.T. *et al., Khim. Prir. Soedin.*, 1967, **3**, 351; *Chem. Nat. Compd. (Engl. Transl.)*, 1967, **3**, 296-297 (*isol*)

Franganine F-149

Daechuine S4
[19526-08-0]



Absolute Configuration

$C_{28}H_{44}N_4O_4$ 500.68
Alkaloid from *Rhamnus frangula*, *Discaria americana*, *Discaria febrifuga*, *Euonymus europaeus*, *Melochia corchorifolia*, the Daechu tree (*Zizyphus jujuba* var. *inermis*) and *Zizyphus spina-christi*. Shows antibacterial, antifungal and sedative props. Needles (petrol). Mp 248°. $[\alpha]_D^{22}$ -302 (c, 0.1 in $CHCl_3$).

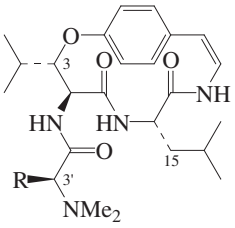
10′,11′-Dihydro, 11′-hydroxy: ***Discarine H***
[95689-32-0]
$C_{28}H_{46}N_4O_5$ 518.695
Alkaloid from the root bark of *Discaria febrifuga* (Rhamnaceae). Mp 232°. $[\alpha]_D^{20}$ -266 (MeOH).

Tschesche, R. *et al., Tet. Lett.*, 1968, 2993; 3817 (*isol, pmr, ms, struct*)
Bishay, D.W. *et al., Phytochemistry*, 1973, **12**, 693 (*uv, ir, ms*)
Herzog, R. *et al., Chem.-Ztg.*, 1984, **108**, 406 (*Discarine H*)
Han, B.H. *et al., Pure Appl. Chem.*, 1989, **61**, 443
Da Silva, U.F. *et al., Phytochem. Anal.*, 1996, **7**, 20-23 (*config*)

Tan, N.H. *et al., Chem. Rev.*, 2006, **106**, 840-895 (*bibl*)

Frangufoline F-150

Sanjoinine A. Daechuine S1
[19526-09-1]



R = $PhCH_2$—

$C_{31}H_{42}N_4O_4$ 534.697
Alkaloid from the leaves of *Rhamnus frangula*, *Euonymus europaeus*, *Ceanothus sanguineus*, *Melochia pyramidata*, *Melochia corchorifolia*, *Discaria febrifuga*, *Discaria longispina*, *Zizyphus mauritiana*, *Zizyphus lotus* and *Zizyphus nummularia*. Also isol. from Sanjoin (seeds of *Zizyphus vulgaris* var. *spinosus*) and from the stem bark of the Daechu tree (*Zizyphus jujuba* var. *inermis*) (Rhamnaceae, Celastraceae, Sterculiaceae). Shows strong sedative activity. Needles (EtOH aq. or CH_2Cl_2/MeOH/Et_2O). Mp 244° (234-236°). $[\alpha]_D^{22}$ -299 (c, 0.1 in $CHCl_3$). The *Z. lotus* isolate was stated to be racemic.

N-*De-Me:* ***Sanjoinine B***. N-*Demethylsanjoinine A*. N-*Demethylfrangufoline*
[107462-33-9]
$C_{30}H_{40}N_4O_4$ 520.67
Isol. from the seeds of *Zizyphus vulgaris* var. *spinosus*. Needles (MeOH). Mp 212-214°.

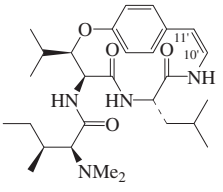
15ξ-Hydroxy: ***Sanjoinine F***
[107462-35-1]
$C_{31}H_{42}N_4O_5$ 550.697
Isol. from the seeds of *Zizyphus vulgaris* var. *spinosus* and from *Zizyphus lotus*. Needles (EtOAc). Mp 228-229°. $[\alpha]_D^{26}$ -215 (c, 0.28 in $CHCl_3$). The *Z. lotus* isolate stated to be racemic.

3′-Epimer: ***Sanjoinine Ah$_1$***
[107494-19-9]
$C_{31}H_{42}N_4O_4$ 534.697
Alkaloid from the seeds of *Zizyphus vulgaris spinosus*. Possible artifact.

Tschesche, R. *et al., Tet. Lett.*, 1968, 2993-2998; 3817-3818; 1972, 2609-2612 (*isol, pmr, ms, occur, struct*)
Mascaretti, O.A. *et al., Phytochemistry*, 1972, **11**, 1133-1137 (*isol*)
Bishay, D.W. *et al., Phytochemistry*, 1973, **12**, 693-698 (*uv, ir, pmr, ms*)
Merkuza, V.M. *et al., Phytochemistry*, 1974, **13**, 1279-1282 (*ir, ms*)
Tschesche, R. *et al., Tetrahedron*, 1975, **31**, 2944-2947 (*isol*)
Lagarias, J.C. *et al., J. Nat. Prod.*, 1979, **42**, 663-668 (*isol, ms*)
Medina, E. *et al., Annalen*, 1981, 538-545 (*isol, ir, pmr, ms*)
Han, B.H. *et al., Pure Appl. Chem.*, 1989, **61**, 443-448 (*Sanjoinine Ah$_1$*)
Han, B.H. *et al., Phytochemistry*, 1990, **29**, 3315-3319 (*Sanjoinines B,F*)
Abu-Zarga, M. *et al., J. Nat. Prod.*, 1995, **58**, 504-511 (*(±)-Frangufoline, (±)-Sanjoinine F*)
Xiao, D. *et al., Tet. Lett.*, 1998, **39**, 9631-9632 (*synth*)

Frangulanine F-151

2-(Dimethylamino)-3-methyl-N-*[3-(1-methylethyl)-7-(2-methylpropyl)-5,8-dioxo-2-oxa-6,9-diazabicyclo[10.2.2]hexadeca-10,12,14,15-tetraen-4-yl]pentanamide, 9CI. Ceanothamine A. Daechuine S2*
[25350-22-5]



Absolute Configuration

$C_{28}H_{44}N_4O_4$ 500.68
Alkaloid from *Rhamnus frangula*, *Zizyphus sativa*, *Ceanothus americanus*, *Hovenia dulcis*, *Hovenia tomentella*, *Zizyphus jujuba* var. *inermis*, *Euonymus europaeus* and *Discaria longispina*. Needles ($CHCl_3$/petrol, MeOH or CH_2Cl_2/EtOAc). Mp 276-279° (275-276°). $[\alpha]_D^{20}$ -288 (c, 0.1 in $CHCl_3$).

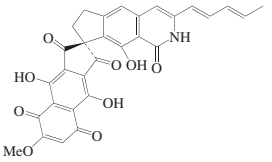
N-*De-Me:* ***Hovenine A***. N-*Demethylfrangulanine*
[52309-78-1]
$C_{27}H_{42}N_4O_4$ 486.653
Alkaloid from the root bark of *Hovenia dulcis* (raisin tree) and *Hovenia tomentella* (Rhamnaceae). Mp 215°. Opt. rotn. not reported.

10′,11′-Dihydro, 11′-hydroxy: ***Discarine L***
[165561-02-4]
$C_{28}H_{46}N_4O_5$ 518.695
Alkaloid from root bark of *Discaria febrifuga* (Rhamnaceae). Amorph. powder. $[\alpha]_D$ -30 (c, 0.5 in MeOH). Not interrelated with Frangulanine. Stereochem. may not correspond.

Warnhoff, E.W. *et al., Can. J. Chem.*, 1965, **43**, 2594 (*isol, uv, pmr, ms*)
Tschesche, R. *et al., Chem. Ber.*, 1967, **100**, 3937 (*isol, uv, cd, ir, pmr, ms, struct*)
González Sierra, M. *et al., Chem. Comm.*, 1972, 915 (*pmr, stereochem*)
Mascaretti, O.A. *et al., Phytochemistry*, 1972, **11**, 1133 (*isol, ir*)
Bishay, D.W. *et al., Phytochemistry*, 1973, **12**, 693 (*uv, ir, pmr, ms*)
Takai, M. *et al., Phytochemistry*, 1973, **12**, 2985 (*isol, ir, pmr, ms, deriv*)
Chang, C.-J. *et al., Phytochemistry*, 1974, **13**, 1273 (*pmr*)
Otsuka, H. *et al., Phytochemistry*, 1974, **13**, 2016 (*occur*)
Takai, M. *et al., Chem. Pharm. Bull.*, 1975, **23**, 2556; 1976, **24**, 2181 (*pmr, conformn, cryst struct*)
Haslinger, E. *et al., Tetrahedron*, 1978, **34**, 685 (*pmr, cmr, conformn*)
Han, B.H. *et al., Pure Appl. Chem.*, 1989, **61**, 443
Schmidt, U. *et al., Chem. Comm.*, 1991, 1002 (*synth*)
Morel, A.F. *et al., Phytochemistry*, 1995, **39**, 431-434 (*Discarine L*)

Fredericamycin A F-152

FCRC A48. NSC 305263. Antibiotic FCRC A48
[80455-68-1]



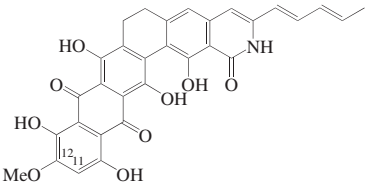
Absolute Configuration

$C_{30}H_{21}NO_9$ 539.497
Prod. by *Streptomyces griseus* ATCC49344. Antitumour agent. Thought to be a generator of free radicals causing DNA strand cleavage. Red powder. Sol. Py, AcOH, DMSO, DMF; fairly sol. MeOH; poorly sol. Me_2CO, H_2O, hexane. Mp 350° dec. Red in acid, blue-green in base. Non-mutagenic in Ames test. λ_{max} 253 (ε 50800); 304 (ε 23500); 317 (ε 20600); 358 (sh) (ε 22000); 392 (ε 20600); 505 (ε 10400) (MeOH/HCOOH) (Derep). λ_{max} 260 (ε 43459); 302 (ε 22991); 316 (ε 25152); 332 (ε 23323); 357 (ε 24044); 373 (ε 19971); 392 (ε 23711); 635 (ε 8033) (MeOH).

Pandey, R.C. *et al., J. Antibiot.*, 1981, **34**, 1389-1401 (*isol*)
Warnick-Pickle, D.J. *et al., J. Antibiot.*, 1981, **34**, 1402-1407 (*props*)
Misra, R. *et al., J.A.C.S.*, 1982, **104**, 4478-4479 (*cryst struct, pmr*)
Parker, K.A. *et al., Tet. Lett.*, 1986, **27**, 3835-3838 (*synth, bibl*)
Misra, R. *et al., J. Antibiot.*, 1987, **40**, 786-802; 1988, **41**, 976-981 (*pmr, cmr, ms, bibl, salts*)
Kelly, T.R. *et al., J.A.C.S.*, 1988, **110**, 6471-6480 (*synth, bibl*)
Saint-Jalmes, L. *et al., Bull. Soc. Chim. Fr.*, 1993, **130**, 447-449 (*synth*)
Rao, A.V.R. *et al., Heterocycles*, 1994, **37**, 1893-1912 (*synth*)
Wendt, J.A. *et al., J.A.C.S.*, 1994, **116**, 9921-9926 (*synth, bibl*)
Clive, D.L.J. *et al., J.A.C.S.*, 1994, **116**, 11275-11286 (*synth, bibl*)
Boger, D.L. *et al., J.A.C.S.*, 1995, **117**, 11839-11849 (*synth, cd, uv, pmr*)
Kita, Y. *et al., J.A.C.S.*, 2001, **123**, 3214-3222 (*synth, abs config, bibl*)
Sontag, B. *et al., J. Antibiot.*, 2004, **57**, 823-828 (*isol, uv, pmr, cmr*)
Akai, S. *et al., Chem. Eur. J.*, 2005, **11**, 6286-6297 (*synth*)
Chen, Y. *et al., J. Nat. Prod.*, 2008, **71**, 431-437 (*biosynth*)

Fredericamycin B F-153

[80450-64-2]



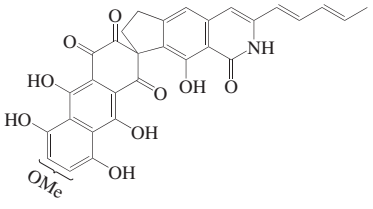
$C_{31}H_{23}NO_9$ 553.524

Position of methoxy uncertain, either C-11 or C-12. Prod. by *Streptomyces griseus* ATCC 49344. Weak antimicrobial agent. Black powder. Mp 350° dec. λ_{max} 260 ; 328 ; 348 ; 370 ; 387 ; 510 ; 548 ; 586 (MeCN aq. pH 6).

Pandey, R.C. *et al., J. Antibiot.*, 1981, **34**, 1389-1401; 1402-1407 (*isol, props*)
Sontag, B. *et al., J. Antibiot.*, 2004, **57**, 823-828 (*isol, uv, pmr, cmr*)
Chen, Y. *et al., J. Nat. Prod.*, 2008, **71**, 431-437 (*isol, biosynth*)

Fredericamycin E F-154

[1011723-58-2]



$C_{31}H_{23}NO_{10}$ 569.523

OMe position not certain. Prod. by *Streptomyces griseus* ATCC 49344. Cytotoxic. Dark red solid. $[\alpha]_D^{20}$ +8 (c, 0.05 in $CHCl_3$). λ_{max} 262 (log ϵ 3.75); 303 (log ϵ 3.57); 317 (log ϵ 3.63); 330 (log ϵ 3.63); 358 (log ϵ 3.56); 372 (log ϵ 3.58); 393 (log ϵ 3.45); 464 (log ϵ 3.36); 496 (log ϵ 3.41) ($CHCl_3$).

Chen, Y. *et al., J. Nat. Prod.*, 2008, **71**, 431-437 (*isol, uv, pmr, cmr*)

Fritilline A F-155

[1357-22-8]

$C_{27}H_{45}NO_3$ 431.657

Steroidal alkaloid. Struct. unknown. Alkaloid from *Fritillaria verticillata* (Liliaceae). Dehydrogenation gives Veranthridine.

Chu, T.-C. *et al., CA*, 1960, **54**, 22695

Fritilline B F-156

[1357-23-9]

$C_{27}H_{43}NO_3$ 429.642

Steroidal alkaloid. Struct. unknown. Alkaloid from *Fritillaria verticillata* (Liliaceae).

Chu, T.-C. *et al., CA*, 1960, **54**, 22695

Fritimine F-157

[664307-32-8]

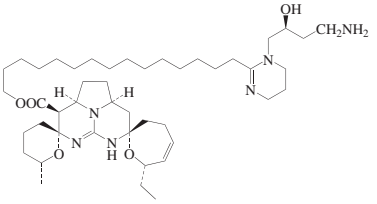
$C_{23}H_{37}NO_2$ 359.551

Struct. unknown. Alkaloid from *Fritillaria roylei* (Liliaceae). Smooth muscle relaxant, antihypertensive agent. Much referred to in Chinese herbal formulations. Mp 167°. $[\alpha]_D^{22}$ -50.

Chou, T.-Q. *et al., CA*, 1933, **27**, 3033

Fromiamycalin F-158

[163597-73-7]



$C_{45}H_{78}N_6O_5$ 783.148

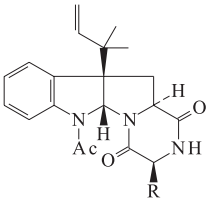
Alkaloid from the New Caledonian starfish *Fromia monilis*. Cytotoxic. $[\alpha]_D$ -12 (as hydrochloride).

Palagiano, E. *et al., Tetrahedron*, 1995, **51**, 3675-3682 (*isol, pmr, cmr, struct*)

Fructigenine A F-159

Puberuline

[127926-11-8]
[144606-96-2]



Absolute configuration

R = CH_2Ph

$C_{27}H_{29}N_3O_3$ 443.544

Prod. by *Penicillium fructigenum*, *Penicillium aurantiogriseum*, *Penicillium rugulosum*, *Penicillium puberulum* and *Penicillium piscarium*. Exhibits growth inhibitory activity against oat coleoptiles and L-5178Y cells. Solid. $[\alpha]_D$ -178 (c, 0.24 in $CHCl_3$). λ_{max} 246 (ϵ 12600); 276 (ϵ 2240); 285 (ϵ 1860) (EtOH) (Derep). λ_{max} 217 ; 250 (ϵ 9330); 298 (ϵ 12880) (MeOH) (Berdy).

N-*Ac:*
Needles (Et_2O/hexane). Mp 196-198°.

N-*De-Ac:* ***Puberuline A***†
[192183-17-8]
$C_{25}H_{27}N_3O_2$ 401.507
Prod. by *Penicillium rugulosum*.
Stereochem. not determined.

Arai, K. *et al., Chem. Pharm. Bull.*, 1989, **37**, 2937 (*isol, uv, ir, pmr, cmr, ms, struct*)
Boyes-Korkis, J.M. *et al., J. Nat. Prod.*, 1993, **56**, 1707 (*isol, ms*)
Solov'eva, T.F. *et al., Prikl. Biokhim. Mikrobiol.*, 1997, **33**, 66-69 (*Puberuline A*)
Kozlovskii, A.G. *et al., Prikl. Biokhim. Mikrobiol.*, 2000, **36**, 317-321 (*isol*)

Fructigenine B F-160

Verrucofortine. Verrucosine. Verrucozine

[113706-21-1]
[144525-64-4]

As Fructigenine A, F-159 with

R = $-^{1''}CH_2^{2''}CH(CH_3)_2$

$C_{24}H_{31}N_3O_3$ 409.527

Stereochem. of Verrucosine not confirmed. Alkaloid from *Penicillium fructigenum* and *Penicillium verrucosum* var. *cyclopium*. Solid. $[\alpha]_D$ -161.1 (c, 0.47 in $CHCl_3$). λ_{max} 247 (ϵ 9950); 277 (ϵ 1580); 285 (ϵ 1510) (EtOH) (Derep).

N-*De-Ac:* ***Brevicompanine B***
[215121-47-4]
$C_{22}H_{29}N_3O_2$ 367.49
Alkaloid from *Penicillium brevicompactum* and *Aspergillus janus* (IBT 22274). Plant growth regulator. Amorph. solid. Mp 79-82°. $[\alpha]_D^{20}$ -228.3 (c, 0.5 in EtOH). λ_{max} 208 ; 245 ; 300 (EtOH).

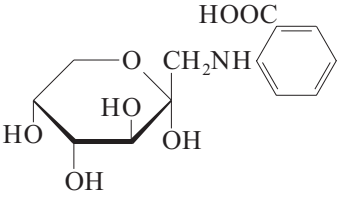
1″,2″-Didehydro: ***Dehydroverrucosine***
[151298-54-3]
$C_{24}H_{29}N_3O_3$ 407.511
Prod. by *Penicillium verrucosum* var. *cyclopium*.

3″-Hydroxy: ***Verrucosinol***. *Verrucozinol*
[151756-69-3]
$C_{24}H_{31}N_3O_4$ 425.527
Prod. by *Penicillium verrucosum* var. *cyclopium*.

Hodge, R.P. *et al., J. Nat. Prod.*, 1988, **51**, 66-73 (*isol, pmr, cmr*)
Arai, K. *et al., Chem. Pharm. Bull.*, 1989, **37**, 2937-2939 (*isol, uv, ir, pmr, cmr, ms*)
Solovyeva, T.F. *et al., Prikl. Biokhim. Mikrobiol.*, 1992, **28**, 880-888 (*Verrucosine, Verrucosinol, Dehydroverrucosine*)
Kusano, M. *et al., J.C.S. Perkin 1*, 1998, 2823-2826 (*Brevicompanine B*)
Matsumara, K. *et al., Heterocycles*, 2001, **54**, 727-733 (*Brevicompanine B, synth*)
Sprogoe, K. *et al., Tetrahedron*, 2005, **61**, 8718-8721 (*Brevicompanine B*)

2-(Fructosylamino)benzoic acid, 9CI F-161

1-(o-Carboxyanilino)-1-deoxyfructose



$C_{13}H_{17}NO_7$ 299.28

D-*form* [79896-08-5]

Isol. from a *Neurospora crassa* mutant. Patented for analgesic, hypoglycaemic, antitumour, etc. props.

4,6-O-Benzylidene:
Cryst. (Et_2O). Mp 192-194° dec. $[\alpha]_D^{23}$ -119.2 (Py).

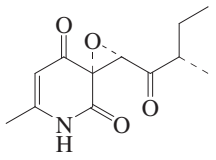
[79896-09-6]

Lingens, F. *et al., Hoppe-Seyler's Z. Physiol. Chem.*, 1960, **315**, 58; 1963, **333**, 190 (*isol, biosynth*)
Lingens, F. *et al., Annalen*, 1960, **630**, 84 (*synth*)

Fruit rot toxin A F-162

6-Methyl-2-(2-methyl-1-oxobutyl)-1-oxa-5-azaspiro[2.5]oct-6-ene-4,8-dione, 9CI. FRT-A

[87334-35-8]



$C_{12}H_{15}NO_4$ 237.255

Isol. from *Macrophoma* sp. Phytotoxic to apples. Needles (C_6H_6). Mp 134-135.5°. $[\alpha]_D^{18}$ +13 (EtOH). Isomer of Flavipucine, F-81.

Stereoisomer: ***Sapinopyridione***

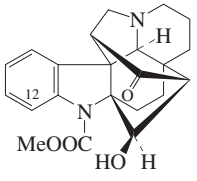
$C_{12}H_{15}NO_4$ 237.255

Prod. by *Sphaeropsis sapinea* strain D-55. Phytotoxin. Needles (CH_2Cl_2/hexane). Mp 133-135°. $[\alpha]_D^{25}$ -11.3 (c, 0.16 in EtOH). Probably the enantiomer of FRT-A. λ_{max} 320 (log ϵ 3.61) (MeCN).

Sassa, T. *et al., Agric. Biol. Chem.*, 1983, **47**, 1155-1157; 1417-1418 (*isol, uv, ir, pmr*)
Evidente, A. *et al., Phytochemistry*, 2006, **67**, 1019-1025 (*Sapinopyridione*)

Fruticosine F-163

[14058-43-6]



Absolute Configuration

$C_{22}H_{24}N_2O_4$ 380.443

Alkaloid from the leaves of *Kopsia fruticosa* (Apocynaceae). Cryst. (MeOH). Mp 225-226°. $[\alpha]_D^{20}$ -19 (c, 2.60 in $CHCl_3$). pK_{a1} 4.62 (80% 2-methoxyethanol aq.). pK_{a1} 4.78 (2-methoxyethanol).

Picrate:

Cryst. + $1C_6H_6$ (C_6H_6). Mp 158-164° dec.

Ac: [14058-53-8]

Cryst. (petrol). Mp 115-118°.

12-Methoxy, N-*de(methoxycarbonyl):* ***Jasminiflorine****. 1-Demethoxycarbonyl-12-methoxyfruticosine*

[114622-11-6]

$C_{21}H_{24}N_2O_3$ 352.432

Alkaloid from the leaves of *Kopsia jasminiflora* (Apocynaceae). Mp 230-233°. $[\alpha]_D$ -55.3 ($CHCl_3$). λ_{max} 210 (ϵ 31600); 245 (ϵ 6920); 291 (ϵ 2340) (EtOH) (Derep).

16-Epimer: ***Fruticosamine***

[14058-44-7]

$C_{22}H_{24}N_2O_4$ 380.443

Alkaloid from the leaves of *Kopsia fruticosa* (Apocynaceae). Cryst. (Et_2O/pentane), cryst. + ½ MeOH (MeOH). Mp 161-162° Mp 177-181° (MeOH solvate). $[\alpha]_D^{20}$ +43 (c, 2.73 in $CHCl_3$). pK_{a1} 4.04 (80% 2-methoxyethanol aq.). pK_{a1} 4.19 (2-methoxyethanol). Epimeric at the OH group.

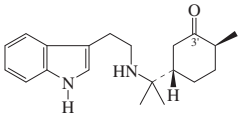
16-Epimer, picrate:

Cryst. (EtOH). Mp 209-213° dec.

Guggisberg, A. *et al., Helv. Chim. Acta*, 1963, **46**, 679; 1966, **49**, 2321 (*isol, synth, pmr, ms*)
Battersby, A.R. *et al., J.C.S.*, 1963, 22 (*isol, uv, ir, pmr, synth*)
Battersby, A.R. *et al., J.C.S.(C)*, 1967, 813 (*struct, pmr*)
Klyne, W. *et al., Helv. Chim. Acta*, 1968, **51**, 1169 (*ord, cd*)
Ruangrungsi, N. *et al., Tet. Lett.*, 1987, **28**, 3679 (*Jasminiflorine*)
Glover, R.P. *et al., Magn. Reson. Chem.*, 2005, **43**, 483-485 (*pmr, cmr, N-15 nmr*)

Fruticosonine F-164

[73326-88-2]



Relative Configuration

$C_{20}H_{28}N_2O$ 312.454

Biosynthetically related to the Aristotelia alkaloids. Alkaloid from *Aristotelia fruticosa* (Elaeocarpaceae). Cryst. (Et_2O). Mp 120-121°. $[\alpha]_D^{20}$ +45.7 (c, 0.5 in $CHCl_3$).

3′ξ-Alcohol: ***Fruticosoline***

[129350-17-0]

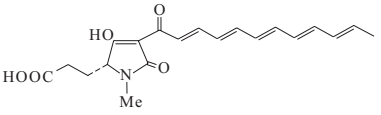
$C_{20}H_{30}N_2O$ 314.47

Alkaloid from *Aristotelia fruticosa* (Elaeocarpaceae). Amorph. $[\alpha]_D^{20}$ +69.5 (c, 0.4 in $CHCl_3$). λ_{max} 221 ; 282 ; 290 (MeOH).

Chaichit, N. *et al., Chem. Comm.*, 1979, 874-875 (*pmr, ms, synth, cryst struct*)
Hai, M.A. *et al., Indian J. Chem., Sect. B*, 1990, **29**, 586-587 (*Fruticosoline*)

Fuligorubin A F-165

[108343-55-1]



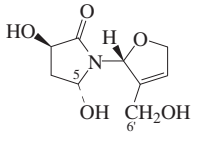
$C_{20}H_{23}NO_5$ 357.405

Tetramic acid deriv. Isol. from the slime mold *Fuligo septica* (Myxomycetes). Isol. from the sponge *Topsentia roquensis*. Prob. plays a role in slime mold phototaxis. Red cryst. + $2H_2O$. Mp 150° dec. λ_{max} 243 (ϵ 14454); 425 (ϵ 26900) (MeOH) (Berdy). λ_{max} 243 ; 377 (MeOH-NaOH) (Berdy).

Casser, I. *et al., Angew. Chem., Int. Ed.*, 1987, **26**, 586 (*isol, uv, ir, pmr, cmr, ms, cd, struct*)
Ley, S.V. *et al., Tetrahedron*, 1992, **48**, 1145 (*synth*)

Fulvanine A F-166

[132922-40-8]



Relative Configuration

$C_9H_{13}NO_5$ 215.205

Constit. of *Hemerocallis fulva* var. *kwanso*. Needles. Mp 118-119°. $[\alpha]_D$ -0.52 (c, 1 in MeOH).

5-Me ether: ***Fulvanine D***

[155944-19-7]

$C_{10}H_{15}NO_5$ 229.232

Constit. of *Hemerocallis fulva* var. *kwanso*. Powder. Mp 80-83°. $[\alpha]_D$ -0.3 (c, 1.4 in MeOH).

6′-Deoxy: ***Fulvanine B***

[132922-41-9]

$C_9H_{13}NO_4$ 199.206

Isol. from *Hemerocallis fulva* var. *kwanso*. Needles. Mp 132-133°. $[\alpha]_D$ -0.3 (c, 0.8 in MeOH).

6′-Deoxy, 5-Me ether: ***Fulvanine C***

[132922-42-0]

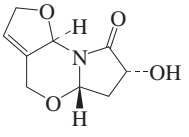
$C_{10}H_{15}NO_4$ 213.233

Constit. of *Hemerocallis fulva* var. *kwanso*. Amorph. powder.

Inoue, T. *et al., Chem. Pharm. Bull.*, 1990, **38**, 3187-3189; 1994, **42**, 154-155 (*isol, pmr, cmr*)

Fulvanine E F-167

[155944-20-0]



Relative Configuration

$C_9H_{11}NO_4$ 197.19

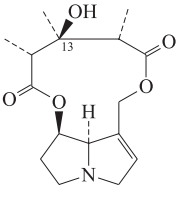
Constit. of *Hemerocallis fulva* var. *kwanso*. Needles (MeOH). Mp 210-212° dec. $[\alpha]_D$ +1.3 (c, 0.2 in MeOH).

Inoue, T. *et al., Chem. Pharm. Bull.*, 1994, **42**, 154-155

Fulvine F-168

14,19-Dihydro-13-hydroxy-20-norcrotalanan-11,15-dione, 9CI

[6029-87-4]



Absolute configuration

$C_{16}H_{23}NO_5$ 309.361

Alkaloid from *Crotalaria fulva, Crotalaria crispata, Crotalaria madurensis* and *Crotalaria paniculata* (Fabaceae). Shows antineoplastic props. Prisms (Me_2CO). Mp 212-213°. $[\alpha]_D^{20}$ -50.8 (c, 1 in $CHCl_3$). Log P -0.81 (uncertain value) (calc). Ester of Retronecine in T-188 with Fulvinic acid.

▶ Heptatotoxin, pneumotoxin, teratogen. RC1300000

Hydrochloride:

Prisms. Mp 285° dec.

Picrate:

Yellow needles. Mp 250° dec.

N-*Oxide:* ***Fulvine* N-*oxide***

$C_{16}H_{23}NO_6$ 325.361

Alkaloid from *Crotalaria fulva* (Fabaceae). Needles (Me_2CO). Mp 198° dec.

N-*Oxide, picrate:*
Yellow needles. Mp 185° dec.

13-Epimer. ***Crispatine****. Cryspatine*
[6029-88-5]
$C_{16}H_{23}NO_5$ 309.361
Alkaloid from *Crotalaria crispata* and *Crotalaria madurensis* (Fabaceae). Shows antineoplastic props. Needles (petrol). Mp 137-138°. $[\alpha]_D^{20}$ +40.7 (c, 1.94 in EtOH). Log P -0.81 (uncertain value) (calc). Ester of Retronecine in T-188 with Crispatic acid. An alkaloid of *C. leschenaultii*, previously reported as Crispatine has subsequently been shown to be Crotaleschenine, C-773.

▶ Heptatotoxin, exp. carcinogen.

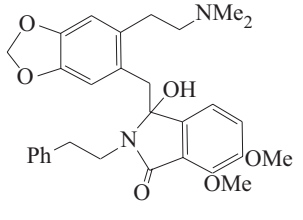
12-Epimer or 13,14-diepimer (1): [57129-98-3]
$C_{16}H_{23}NO_5$ 309.361
Alkaloid from *Crotalaria madurensis* (Fabaceae). Mp 242-243°. Ester of Retronecine in T-188 with Chromaduric acid.

12-Epimer or 13,14-diepimer (2): ***Isocromadurine***
[57495-69-9]
$C_{16}H_{23}NO_5$ 309.361
Alkaloid from *Crotalaria madurensis* (Fabaceae). Mp 135-136°. Ester of Retronecine in T-188 with Isochromaduric acid.

Culvenor, C.C.J. *et al., Aust. J. Chem.*, 1963, **16**, 239 (*isol, struct*)
Chalmers, A.H. *et al., J. Chromatogr.*, 1965, **20**, 270 (*tlc*)
Culvenor, C.C.J. *et al., J.C.S.(C)*, 1971, 3653 (*cd*)
Sussman, J.L. *et al., Acta Cryst. B*, 1973, **29**, 2918 (*cryst struct*)
Rashkes, Ya. *et al., Khim. Prir. Soedin.*, 1974, **10**, 40 (*ms*)
Rao, P.G. *et al., Experientia*, 1975, **31**, 878 (*Isocromadurine*)
Rao, P.G. *et al., Indian J. Chem.*, 1975, **13**, 870 (*Cromadurine*)
Mody, N.V. *et al., J. Nat. Prod.*, 1979, **42**, 417 (*cmr*)
Jones, A.J. *et al., Aust. J. Chem.*, 1982, **35**, 1173 (*cmr*)
Mackay, M.F. *et al., Acta Cryst. C*, 1984, **40**, 470 (*cryst struct, Crispatine*)
Vedejs, E. *et al., J.A.C.S.*, 1984, **106**, 3030 (*synth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, FOT000

Fumadensine F-169

[108906-89-4]

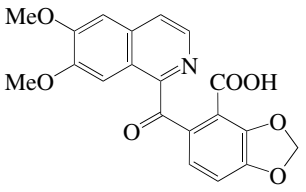


$C_{30}H_{34}N_2O_6$ 518.608
Alkaloid from *Fumaria densiflora* (Papaveraceae). Cryst. (MeOH). Mp 168-170°. Racemic.

Zarga, M.H.A. *et al., Phytochemistry*, 1987, **26**, 1233 (*isol, uv, ir, pmr, cmr, ms, struct, synth*)

Fumaflorine F-170

[180386-83-8]



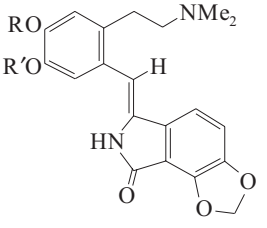
$C_{20}H_{15}NO_7$ 381.341
Alkaloid from *Fumaria densiflora* (Papaveraceae). Yellowish needles (MeOH). Mp 218-220°. λ_{max} 236 (log ϵ 4.69); 330 (log ϵ 3.98) (MeOH).

Me ester: [180386-82-7]
$C_{21}H_{17}NO_7$ 395.368
Alkaloid from aerial parts of *Fumaria demiflora*. Red needles (MeOH). Mp 184-186°. Prob. an artifact. λ_{max} 213 (log ϵ 4.62); 236 (log ϵ 4.54); 286 (sh) (log ϵ 4.02); 334 (log ϵ 4.07) (No solvent reported).

Táborská, E. *et al., Heterocycles*, 1997, **45**, 817-821 (*isol, uv, ir, pmr, cmr, ms, struct*)

Fumaramidine F-171

*6-[[2-[2-(Dimethylamino)ethyl]-4,5-dimethoxyphenyl]methylene]-6,7-dihydro-8*H*-1,3-dioxolo[4,5-*e*]isoindol-8-one, 9CI*
[76202-52-3]



R = R′ = Me

$C_{22}H_{24}N_2O_5$ 396.442
Alkaloid from *Fumaria parviflora*. Amorph.

Hussain, S.F. *et al., J. Nat. Prod.*, 1981, **44**, 169-178 (*isol, pmr, ms*)
Lamblin, M. *et al., Tetrahedron*, 2006, **62**, 2917-2921 (*synth*)

Fumaramine F-172

*6-[[6-[2-(Dimethylamino)ethyl]-1,3-benzodioxol-5-yl]methylene]-6,7-dihydro-8*H*-1,3-dioxolo[4,5-*e*]isoindol-8-one, 9CI. Adlumidiceine imide. Alkaloid F46*
As Fumaramidine, F-171 with
R,R′ = –CH_2–
$C_{21}H_{20}N_2O_5$ 380.399

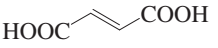
(E)-form [88728-13-6]
Alkaloid from aerial parts of *Fumaria vaillantii*. Poss. artifact.

(Z)-form [30341-99-2]
Alkaloid from *Fumaria parviflora*, *Fumaria vaillantii* and *Corydalis ochroleuca* (Papaveraceae). Yellow cryst. (EtOH). Mp 220-221°. May be an artifact of work-up.

Shamma, M. *et al., Chem. Comm.*, 1975, 89 (*struct, synth*)
Rodrigo, R.G.A. *et al., Can. J. Chem.*, 1976, **54**, 471 (*ir, pmr, ms*)
Hussain, S.F. *et al., J. Nat. Prod.*, 1981, **44**, 169 (*isol, pmr*)
Sener, B. *et al., Phytochemistry*, 1983, **22**, 2073 (*E-form*)

Fumaric acid, 8CI F-173

*(*E*)-2-Butenedioic acid, 9CI.* trans-*Ethylene-1,2-dicarboxylic acid. Paramaleic acid. Glaucic acid. Boletic acid. FEMA 2488. E297*
[110-17-8]
[7704-73-6]



$C_4H_4O_4$ 116.073
Geometrical isomer of Maleic acid. Manuf. by catalytic or thermal isomerisation of maleic anhydride or maleic acid. Occurs in many plants, e.g. *Fumaria officinalis*, *Boletus scaber*, *Fomes igniarius*. Produced by *Rhizopus nigricans*. Essential respiratory intermed. in plant and animal tissues. Used as di-Na salt for pptn. sepn. of Th from lanthanides. Used in manuf. of unsaturated polyester resins and as acidulant and flavouring agent in foods and pharmaceutical formulations. Used in systemic and topical treatment of psoriasis. Monoclinic, prismatic needles or leaflets (H_2O). Sol. EtOH; spar. sol. H_2O, Et_2O, Me_2CO; prac. insol. C_6H_6, $CHCl_3$. Mp 300-302° (sealed tube). pK_a 4.54 (25°). At 230° forms maleic anhydride.

▶ Skin and eye irritant. Nephrotoxic. LD_{50} (rat, orl) 10700 mg/kg. LS9625000

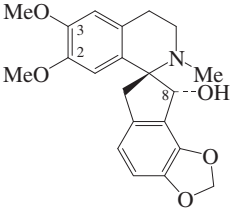
2-Methylpropylamide: 4-[(2-Methylpropyl)amino]-4-oxo-2-butenoic acid, 9CI. ***Fumaric acid isobutylamide***
[174204-82-1]
$C_8H_{13}NO_3$ 171.196
Alkaloid from *Piper hancei*.

[5873-57-4 , 6915-18-0 , 17013-01-3]

Narui, T. *et al., Nat. Med. (Tokyo)*, 1995, **49**, 438-441 (*isobutylamide*)

Fumaricine F-174

*3′,4′,6,8-Tetrahydro-6′,7′-dimethoxy-2′-methylspiro[7*H*-indeno[4,5-*d*]-1,3-dioxole-7,1′(2′*H*)-isoquinolin]-8-ol, 9CI*



(-)-*form*

$C_{21}H_{23}NO_5$ 369.416

(-)-*form*
Alkaloid F37
[24181-77-9]
Alkaloid from *Fumaria officinalis*, *Fumaria schrammii* and *Fumaria parviflora* (Papaveraceae). Prisms (MeOH). Mp 177°. $[\alpha]_D$ -31 (c, 0.97 in $CHCl_3$). Prob. identical with *O*-Methylfumarophycinol from Herba Fumariae Officinalis (Mollov *et al*). λ_{max} 207 (log ϵ 4.74); 235 (log ϵ 3.94); 288 (log ϵ 3.74) (EtOH).

Ac: **O-*Methylfumarophycine***
[36017-45-5]
$C_{23}H_{25}NO_6$ 411.454
Alkaloid from *Fumaria officinalis* and aerial parts of *Fumaria kralikii* (Papaveraceae). Cryst. (Et_2O/MeOH). Mp 124-127°. $[\alpha]_D^{22}$ -51 ($CHCl_3$). $[\alpha]_D^{22}$ -30 (c, 0.158 in MeOH). λ_{max} 208 (log ϵ 4.79); 232 (sh) (log ϵ 4.18); 285 (log ϵ 3.86) (MeOH).

O^2-*De-Me:* ***Fumaritine***
[24181-78-0]
$C_{20}H_{21}NO_5$ 355.39
Alkaloid from *Fumaria officinalis*, the roots of *Fumaria schleicheri* and the leaves of *Fumaria muralis* ssp. *boraei* (Papaveraceae). Needles (dry Et_2O). Mp 157°. Opt. rotn. not recorded.

O^2-*De-Me, hydrochloride:* Mp 224°.

O^2-*De-Me, hydrobromide:* Mp 219°.

O^2-*De-Me,* N-*oxide:* ***Fumaritine* N-*oxide***.
Alkaloid F_k-5
[60604-88-8]
$C_{20}H_{21}NO_6$ 371.389
Alkaloid from *Fumaria kralikii*, *Fumaria indica* and *Fumaria officinalis* (Papaveraceae). Cryst. (C_6H_6/MeOH). Mp 204°. $[\alpha]_D^{25}$ +49.2 (MeOH). λ_{max} 212 (log ϵ 4.29); 287 (log ϵ 3.42) (MeOH).

O^2-*De-Me, 8-Ac:* ***Fumarophycine***
[30833-08-0]
$C_{22}H_{23}NO_6$ 397.427
Alkaloid from *Fumaria officinalis*, the aerial parts of *Fumaria kralikii* and the leaves of *Fumaria muralis* ssp. *boraei* (Papaveraceae). Cryst. (MeOH). Mp 107-109°. $[\alpha]_D^{19}$ -67.5 (c, 1.0 in $CHCl_3$).

O^2-*De-Me,* N-*Me:* ***Fumaritine* N-*methosalt***
[82054-20-4]
$C_{21}H_{24}NO_5^{\oplus}$ 370.424
Tentatively identified as alkaloid in leaves of *Fumaria muralis* ssp. *boraei* (Papaveraceae). No phys. props. reported.

O^2-*De-Me,* N-*de-Me:* ***Norfumaritine***
[100016-58-8]
$C_{19}H_{19}NO_5$ 341.363
Alkaloid from leaves of *Fumaria kralikii* (Papaveraceae). Amorph. $[\alpha]_D^{25}$ -16 (c, 0.12 in $CHCl_3$). λ_{max} 238 (log ϵ 4.65); 240 (sh) (log ϵ 3.89); 287 (log ϵ 3.96) (MeOH).

Ketone: ***Parfumidine***
[31225-67-9]
$C_{21}H_{21}NO_5$ 367.401
Alkaloid from *Fumaria parviflora*, *Fumaria officinalis* and *Fumaria vaillantii* (Papaveraceae). Cryst. (MeOH, EtOH or Et_2O). Mp 171-172° (165-168°). $[\alpha]_D^{22}$ +33.3 (c, 0.5 in $CHCl_3$). λ_{max} 235 (log ϵ 4.46); 263 (log ϵ 4.14); 290 (sh) ; 360 (log ϵ 3.4) (no solvent reported).

Ketone, O^2-*de-Me:* ***Parfumine***. *Fumarilicine*
[28230-70-8]
[56297-73-5]
$C_{20}H_{19}NO_5$ 353.374
Alkaloid from *Fumaria kralikii*, *Fumaria parviflora*, *Fumaria rostellata*, *Fumaria vaillantii*, *Fumaria muralis* ssp. *boraei*, *Fumaria judaica*, *Fumaria schleicheri* and *Fumaria schrammii* (Papaveraceae). Cryst. (EtOH or $CHCl_3$). Mp 118-120° (111-112°). $[\alpha]_D^{23}$ +18 (c, 1.1 in $CHCl_3$). λ_{max} 202 (log ϵ 4.61); 234 (log ϵ 4.38); 261 (log ϵ 4.01); 355 (log ϵ 3.42) (MeOH).

Ketone, O^2-*de-Me,* O^2-*β-D-glucopyranoside:* ***Parviflorine***†
[75969-88-9]
$C_{26}H_{29}NO_{10}$ 515.516
Alkaloid from *Fumaria parviflora* (Papaveraceae). Yellow cryst. (MeOH). Mp 230-232°. $[\alpha]_D$ +1 (c, 0.0124 in MeOH). λ_{max} 233 (log ϵ 4.5); 260 (log ϵ 4.18); 288 (sh) (log ϵ 3.7); 352 (log ϵ 3.66) (MeOH).

Ketone, O^2-*de-Me,* O^2-*Ac:* Mp 198-199°.

Ketone, O^3-*de-Me:* ***Isoparfumine***
[107080-29-5]
$C_{20}H_{19}NO_5$ 353.374
Alkaloid from *Rupicapnos africana* (Papaveraceae). Cryst. (MeOH). Mp 206-208°. $[\alpha]_D^{25}$ +54 (c, 0.792 in $CHCl_3$). λ_{max} 210 (log ϵ 4.3); 234 (log ϵ 4.35); 260 (log ϵ 4.6); 293 (sh) ; 350 (log ϵ 3.47) (EtOH).

8-Deoxy, O^2-*de-Me,* N-*oxide:* ***Papracinine***
[145290-12-6]
$C_{20}H_{21}NO_5$ 355.39
Alkaloid from aerial parts of *Fumaria indica* (Papaveraceae). Amorph. solid. $[\alpha]_D$ +23 (MeOH). λ_{max} 200 (log ϵ 4.25); 220 (log ϵ 4.13); 291 (log ϵ 3.97); 318 (log ϵ 4.04) (MeOH).

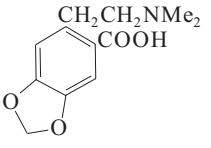
(±)-*form* [24869-02-1]
Synthetic. Prisms (EtOH/Et_2O). Mp 147.5-149°.

O^2-*De-Me:* [32420-39-6]
Synthetic. Prisms + $0.5H_2O$ (MeOH/Et_2O). Mp 193-194°.

Manske, R.H.F. *et al., Can. J. Res., Sect. B*, 1938, **16**, 438-444 (*isol*)
Platonova, T.F. *et al., J. Gen. Chem. USSR (Engl. Transl.)*, 1956, **26**, 181-186; *CA*, **50**, 13960a (*Fumaritine, isol*)
Mollov, N.M. *et al., Dokl. Bulg. Akad. Nauk*, 1967, **20**, 557-559; 1969, **189**, 1262; *CA*, **67**, 117013 (*Fumarophycine, O-Methylfumarophycine, Parfumidine*)
Saunders, J.K. *et al., Can. J. Chem.*, 1968, **46**, 2873-2875 (*uv, ir, struct*)
MacLean, D.B. *et al., Can. J. Chem.*, 1969, **47**, 3593-3599 (*Fumaricine, Fumaritine, pmr, ms, struct*)
Israilov, I.A. *et al., Dokl. Chem. (Engl. Transl.)*, 1969, **189**, 999-1000 (*Parfumine, isol, uv, ir, pmr, ms, struct*)
Kishimoto, T. *et al., J.C.S.(C)*, 1969, 2600-2602; 1971, 1644-1647 (*synth, ir, pmr, ms*)
Israilov, I.A. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1970, **6**, 518 (*Parfumidine*)
Castillo, M. *et al., Can. J. Chem.*, 1971, **49**, 139-142 (*Fumarophycine, O-Methylfumarophycine, pmr, ms, struct*)
Yu, C.K. *et al., Can. J. Chem.*, 1971, **49**, 3025-3037 (*ms*)
Kiryakov, Kh. *et al., Can. J. Chem.*, 1979, **57**, 53-56 (*Fumaritine, Fumaritine N-oxide, ir, pmr, cmr, ms*)
Nasirov, S.M. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1980, **16**, 55-60 (*Parfumine, cryst struct*)
Hussain, S.F. *et al., Tet. Lett.*, 1980, **21**, 1909-1912 (*Fumaritine, Parfumine, Parviflorine, pmr, cd, abs config*)
Hussain, S.F. *et al., J. Nat. Prod.*, 1981, **44**, 169-178 (*Parfumidine, Parviflorine, isol, pmr, ms, uv, cd, struct*)
Loukis, A. *et al., J. Pharm. Pharmacol., Suppl.*, 1981, **33**, 16P (*Fumaritine N-methosalt, Parfumine*)
Alimova, M. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1982, **18**, 608-609 (*isol*)
Gozler, B. *et al., J. Nat. Prod.*, 1983, **46**, 433-435 (*O-Methylfumarophycine*)
Colton, M.D. *et al., J. Nat. Prod.*, 1985, **48**, 846-847 (*Norfumaritine*)
Castedo, L. *et al., Heterocycles*, 1986, **24**, 2781-2784 (*Isoparfumine*)
Atta-ur-Rahman, *et al., Phytochemistry*, 1992, **31**, 2869-2872 (*Papracinine*)
Seger, C. *et al., Magn. Reson. Chem.*, 2004, **42**, 882-886 (*Fumarophycine, Parfumine, O-Methylfumarophycine, pmr, cmr*)

Fumariflorine F-175

6-[2-(Dimethylamino)ethyl]-1,3-benzodioxole-5-carboxylic acid, 9CI. 2-[2-(Dimethylamino)ethyl]-4,5-methylenedioxybenzoic acid
[76948-81-7]



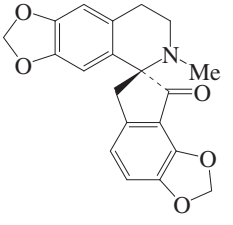
$C_{12}H_{15}NO_4$ 237.255
Alkaloid present in *Fumaria parviflora* dried extracts (Papaveraceae). Prob. a final metab. of the secophthalideisoquinoline alkaloids. Isol. as the Et ester.

Et ester: ***Fumariflorine ethyl ester***
[76202-50-1]
$C_{14}H_{19}NO_4$ 265.308
Alkaloid from *Fumaria parviflora* (Papaveraceae). Wax. Almost certainly an artifact of ethylation.

Hussain, S.F. *et al., Tet. Lett.*, 1980, **21**, 1693 (*isol, ms, ir, pmr, struct, synth*)

Fumariline F-176

7,8-Dihydro-6-methylspiro[1,3-dioxolo[4,5-g]isoquinoline-5(6H),7′-[7H]indeno[4,5-d][1,3]dioxol]-8′(6′H)-one, 9CI



(*S*)-*form*

$C_{20}H_{17}NO_5$ 351.358

CAS numbering shown.

(*S*)-*form* [20411-03-4]

Alkaloid from *Fumaria officinalis*, *Fumaria parviflora*, *Fumaria schrammii*, *Fumaria vaillantii*, the seeds of *Fumaria indica*, the leaves of *Fumaria muralis* var. *boraei*, and from the flowers and unripe fruit of *Fumaria rostellata* (Papaveraceae). Cryst. (MeOH or $CHCl_3$/MeOH), also descr. as oil. Mp 74-76° Mp 138° Mp 144°. $[\alpha]_D^{17}$ +82.5 (c, 0.6 in $CHCl_3$). $[\alpha]_D$ +138 (c, 1.05 in $CHCl_3$). $[\alpha]_D$ +96 (c, 1.0 in $CHCl_3$). λ_{max} 203 (log ϵ 4.6); 237 (log ϵ 4.31); 263 (log ϵ 4.05); 294 (log ϵ 3.66); 355 (log ϵ 3.51) (EtOH).

▶WH1306520

*(8*R*)-Alcohol:* ***Dihydrofumariline 1***

[87638-96-8]

$C_{20}H_{19}NO_5$ 353.374

Alkaloid from *Fumaria officinalis* (Papaveraceae). Mp 191-193°. No opt. rotn. reported.

*(8*S*)-Alcohol: Dihydrofumariline 2*. ***Capreoline***

[24181-80-4]

$C_{20}H_{19}NO_5$ 353.374

Synthetic. Alkaloid from *Fumaria capreolata* (Papaveraceae). Mp 135-137°. $[\alpha]_D$ +106 ($CHCl_3$).

8-Alcohol: ***Dihydrofumariline***

$C_{20}H_{19}NO_5$ 353.374

Alkaloid from *Fumaria schrammii* (Papaveraceae). Mp 184-187°. Config. not definitely detd., but appears to be identical with Dihydrofumariline 2, the discrepancy in Mps being due to dimorphism.

(±)-*form* [32420-40-9]

Synthetic. Prisms + $0.25H_2O$ (MeOH). Mp 217-220°.

*8-Alcohol:*Synthetic. Mp 198-199°.

[56082-99-6]

Saunders, J.K. *et al., Can. J. Chem.*, 1968, **46**, 2873-2875 (*uv, ir, pmr, struct*)

Manske, R.H.F. *et al., Can. J. Chem.*, 1969, **47**, 1103-1105 (*isol*)

MacLean, D.B. *et al., Can. J. Chem.*, 1969, **47**, 3593-3599 (*uv, ir, pmr, ms, struct*)

Kishimoto, T. *et al., J.C.S.(C)*, 1971, 1644-1647 (*synth, ir, pmr*)

Shamma, M. *et al., Chem. Comm.*, 1972, 310-311 (*abs config*)

Pandey, V.B. *et al., Phytochemistry*, 1979, **18**, 695-696 (*isol, uv, ir, pmr, ms*)

Popova, M.E. *et al., Planta Med.*, 1980, **40**, 156-160 (*Dihydrofumariline*)

Hussain, S.F. *et al., J. Nat. Prod.*, 1981, **44**, 169-178 (*isol, ir, pmr, ms*)

Mardirossian, Z. *et al., Phytochemistry*, 1983, **22**, 759-761 (*Dihydrofumarilines*)

Hanaoka, M. *et al., Tet. Lett.*, 1985, **26**, 917-920 (*Dihydrofumarilines, synth*)

Fumarinine F-177

$C_{16}H_{15}NO_4$ 285.299

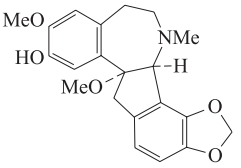
Struct. unknown. Alkaloid from roots of *Fumaria schleicheri* (Papaveraceae). Mp 189-190°. Conts. 1NMe gp.

Hydrochloride: Mp 255-257°.

Oxalate: Mp 213°.

Platonova, T.F. *et al., J. Gen. Chem. USSR (Engl. Transl.)*, 1956, **26**, 181-186; *CA*, **50**, 13960

Fumaritridine F-178



Absolute configuration

$C_{21}H_{23}NO_5$ 369.416

(+)-*form* [37646-04-1]

Alkaloid from *Fumaria rostellata* (Papaveraceae). Needles (EtOH). Mp 189-193° Mp 198-200°. $[\alpha]_D^{22}$ +18 (c, 1.0 in $CHCl_3$). Originally, this alkaloid was erroneously assigned a spirobenzylisoquinoline struct.

Me ether: ***Fumaritrine***

[38907-25-4]

$C_{22}H_{25}NO_5$ 383.443

Alkaloid from the Bulgarian medicinal herb "Herba Fumariae" (Papaveraceae). Needles (EtOH). Mp 153-155°. $[\alpha]_D^{25}$ +14.5 (c, 0.055 in $CHCl_3$).

(±)-*form*

*Me ether:*Synthetic. Mp 164.5-166°.

Mollov, N.M. *et al., Phytochemistry*, 1972, **11**, 2331 (*uv, pmr, ms*)

Blaskó, G. *et al., Tet. Lett.*, 1981, **22**, 3143 (*uv, pmr, synth, struct, abs config*)

Hanaoka, M. *et al., Tet. Lett.*, 1983, **24**, 3845 (*synth, pmr, Fumaritrine*)

Fumarizine F-179

[133740-04-2]

$C_{20}H_{21}NO_5$ 355.39

Was assigned the same struct. as Marshaline in L-80 but props. of synthetic material differ from those of the natural alkaloid. It is prob. a regiosomer. Alkaloid from *Fumaria indica* (Papaveraceae). Amorph. λ_{max} 240 ; 245 ; 285 (MeOH).

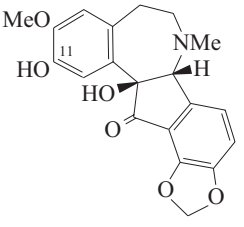
Atta-ur-Rahman, *et al., Fitoterapia*, 1989, **60**, 552-553 (*isol, uv, ir, pmr*)

Takaba, K. *et al., Yakugaku Zasshi*, 1997, **117**, 555-559

Fumarofine F-180

Fumarostelline. Alkaloid F38

[34114-84-6]



$C_{20}H_{19}NO_6$ 369.373

Alkaloid from *Fumaria officinalis* and *Fumaria microcarpa* (Papaveraceae).

Cryst. (dioxan/MeOH). Mp 256° (shrinking at 240-245°). Originally, this alkaloid was erroneously assigned a spirobenzylisoquinoline struct.

O^{11}*-Me:*

Cryst. (MeOH/Et_2O). Mp 245-246°.

Manske, R.H.F. *et al., Can. J. Res., Sect. B*, 1938, **16**, 438 (*isol*)

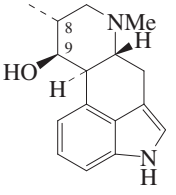
Yu, C.K. *et al., Can. J. Chem.*, 1971, **49**, 3020 (*uv, pmr, ms*)

Blaskó, G. *et al., Tet. Lett.*, 1981, **22**, 3135 (*struct*)

Hanaoka, M. *et al., Chem. Pharm. Bull.*, 1983, **31**, 2172 (*synth, ir, pmr*)

Fumigaclavine B F-181

6,8-Dimethylergolin-9-ol, 9CI



(-)-*form*

$C_{16}H_{20}N_2O$ 256.347

(-)-*form* [6879-93-2]

Alkaloid from *Aspergillus fumigatus* and *Rhizopus arrhizus.* Mycotoxin. Mp 244-245° Mp 265-267° (double Mp). $[\alpha]_D$ -6.3 (c, 1.2 in MeOH). λ_{max} 225 (log ϵ 4.49); 275 (log ϵ 3.79); 282 (log ϵ 3.82); 293 (log ϵ 3.72) (EtOH).

Methiodide:

Cryst. (EtOH/Et_2O). Mp 309-310° dec.

O-*Ac:* ***Fumigaclavine A***

[6879-59-0]

$C_{18}H_{22}N_2O_2$ 298.384

Alkaloid from *Aspergillus fumigatus* and *Aspergillus tamarii*. Mycotoxin. Needles (MeOH aq.). Mp 84-85°. $[\alpha]_{546}^{22}$ -56.7 (c, 1.5 in MeOH) (as hydrochloride).

▶KE6345400

O-*Ac; hydrochloride:*

Prisms (EtOH). Mp 304-305° dec. (inserted at 300°). $[\alpha]_{Hg}^{22}$ -56.7 (c, 1.5 in MeOH).

8,9-Diepimer: ***Isofumigaclavine B***. *Roquefortine B*

[58800-20-7]

$C_{16}H_{20}N_2O$ 256.347

Metab. from *Penicillium roquefortii* and *Penicillium crustosum*. Mp 278-282° dec. (222-224°). $[\alpha]_D^{15}$ -147 (c, 0.50 in Py). λ_{max} 224 (log ϵ 4.65); 275 (log ϵ 3.79); 282 (log ϵ 3.84); 294 (log ϵ 3.78) (EtOH).

8,9-Diepimer, O-*Ac:* ***Isofumigaclavine A***. *Roquefortine A*

[58800-19-4]

$C_{18}H_{22}N_2O_2$ 298.384

Metab. from *Penicillium roquefortii* and *Penicillium crustosum*. Cryst. (C_6H_6). Mp 190-193° (182° dec.). $[\alpha]_D^{22}$ -54.1 (c, 0.67 in $CHCl_3$). $[\alpha]_D^{15}$ -130 (c, 0.56 in Py). λ_{max} 226 (log ϵ 4.42); 271 (sh) (log ϵ 3.77); 283 (log ϵ 3.81); 293 (log ϵ 3.75) (95% EtOH).

(±)-*form*

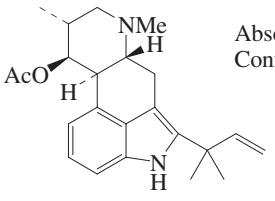
Synthetic. Mp 199-200° dec.

8,9-Diepimer: [98570-39-9]
Synthetic. Cryst. (MeOH). Mp 271-273° dec.

Spilsbury, J.F. *et al., J.C.S.*, 1961, 2085-2089 (*Fumigaclavine A, isol, uv, ir, struct*)
Bach, N.J. *et al., J.O.C.*, 1974, **39**, 1272-1276 (*pmr, cmr, config*)
Ohmono, S. *et al., Agric. Biol. Chem.*, 1975, **39**, 1333-1334 (*Isofumigaclavines, isol, uv, ir, pmr*)
Scott, P.M. *et al., J. Agric. Food Chem.*, 1976, **24**, 865-868 (*Isofumigaclavines, isol, uv, ms*)
Arnoux, B. *et al., J. Chem. Res., Synop.*, 1978, 210-211; 2829-2849 (*Isofumigaclavines, pmr, cmr, cryst struct, abs config*)
Cole, R.J. *et al., J. Agric. Food Chem.*, 1983, **31**, 655-657 (*Isofumigaclavines, isol*)
Kiguchi, T. *et al., Heterocycles*, 1985, **23**, 1925-1928 (*synth, pmr*)
Ninomiya, I. *et al., J.C.S. Perkin 1*, 1985, 941-948 (*Isofumigaclavines, synth, ir, pmr*)
Ninomiya, I. *et al., Chem. Pharm. Bull.*, 1991, **39**, 23-30 (*synth*)
Cole, R.J. *et al., Handbook of Toxic Fungal Metabolites*, Academic Press, 1981, 545; 553

Fumigaclavine C F-182

[62867-47-4]



Absolute Configuration

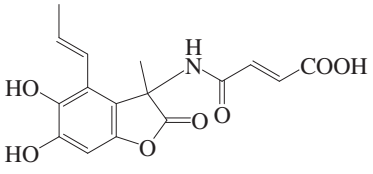
$C_{23}H_{30}N_2O_2$ 366.502
Alkaloid prod. by *Aspergillus fumigatus.* Mycotoxin. Needles (MeOH). Mp 194°.

► KE6345500

Cole, R.J. *et al., J. Agric. Food Chem.*, 1977, **25**, 826 (*isol, uv, ir, ms, pmr, cmr, cryst struct*)
Cole, R.J. *et al., Handbook of Toxic Fungal Metabolites*, Academic Press, 1981, 560

Fumimycin F-183

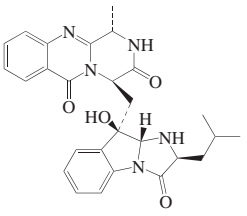
[942472-95-9]



$C_{16}H_{15}NO_7$ 333.297
Related to Sorbicillactone A, S-382. Prod. by *Aspergillus fumisynnematus* F746. Inhibitor of peptide deformylase. Antibacterial agent. Powder. $[\alpha]_D$ -11.9 (c, 0.26 in MeOH). λ_{max} 212 (log ϵ 4.38); 239 (log ϵ 4.26); 257 (log ϵ 4.13); 266 (log ϵ 3.98); 316 (log ϵ 3.46) (MeOH).

Kwon, Y.-J. *et al., Org. Lett.*, 2007, **9**, 2449-2451 (*isol, pmr, cmr*)

Fumiquinazoline I F-184



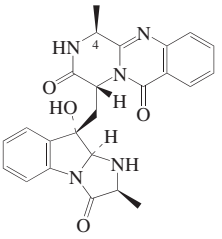
Absolute Configuration

$C_{27}H_{29}N_5O_4$ 487.557
Isol. from an *Acremonium* sp. obt. from the tunicate *Ecteinascidia turbinata*. Solid. Mp 116-120°. $[\alpha]_D$ -138 (c, 0.001 in $CHCl_3$). λ_{max} 224 (ϵ 63300); 230 (sh) (ϵ 57200); 255 (ϵ 26000); 266 (sh) (ϵ 21700); 277 (ϵ 17000); 304 (ϵ 5100) (MeOH).

Belofsky, G.N. *et al., Chem. Eur. J.*, 2000, **6**, 1355-1360 (*isol, uv, pmr, cmr*)
Snider, B.B. *et al., J.O.C.*, 2003, **68**, 545-563 (*synth*)

Fumiquinazoline A F-185

[140715-85-1]



Absolute Configuration

$C_{24}H_{23}N_5O_4$ 445.477
Prod. by *Aspergillus fumigatus* isol. from the gastrointestinal tract of the fish *Pseudolabrus japonicus.* Cytotoxic agent. Cryst. (CH_2Cl_2). Mp 178-182°. $[\alpha]_D^{33}$ -214.5 (c, 0.47 in $CHCl_3$). λ_{max} 208 (ϵ 37900); 226 (ϵ 30900); 233 (ϵ 27400); 256 (ϵ 14800); 265 (ϵ 13500); 277 (ϵ 10230); 305 (ϵ 3450); 327 (ϵ 2770) (MeOH) (Berdy).

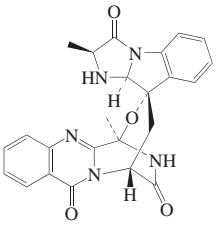
4-Methoxy: ***Fumiquinazoline E***
[140715-87-3]
$C_{25}H_{25}N_5O_5$ 475.503
Prod. by *Aspergillus fumigatus.* Cytotoxic agent. Pale yellow powder. Mp 168-172°. $[\alpha]_D$ -143.3 (c, 0.2 in $CHCl_3$). λ_{max} 210 (log ϵ 4.54); 226 (log ϵ 4.48); 233 (log ϵ 4.44); 256 (log ϵ 4.16); 278 (log ϵ 4.06); 304 (log ϵ 3.62); 317 (log ϵ 3.52) (EtOH).

4-Epimer: ***Fumiquinazoline B***
[140852-71-7]
$C_{24}H_{23}N_5O_4$ 445.477
From *Aspergillus fumigatus* in *Pseudolabrus japonicus.* Cytotoxic agent. Cryst. (Me_2CO). Mp 174-176°. $[\alpha]_D^{21}$ -196.7 (c, 0.38 in $CHCl_3$). λ_{max} 206 (ϵ 58500); 225 (ϵ 49200); 232 (ϵ 44700); 256 (ϵ 24000); 266 (ϵ 20900); 277 (ϵ 17300); 305 (ϵ 6150); 317 (ϵ 4800) (MeOH) (Berdy).

Numata, A. *et al., Tet. Lett.*, 1992, **33**, 1621-1624 (*isol, pmr, cmr, struct*)
Takahashi, C. *et al., J.C.S. Perkin 1*, 1995, 2345-2353 (*isol, uv, ir, pmr, cmr*)
Snider, B.B. *et al., J.O.C.*, 2003, **68**, 545-563 (*synth*)

Fumiquinazoline C F-186

[140924-01-2]



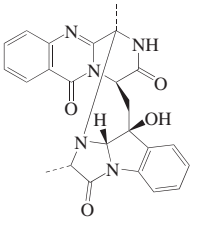
Absolute Configuration

$C_{24}H_{21}N_5O_4$ 443.461
Prod. by *Aspergillus fumigatus* isol. from the gastrointestinal tract of the fish *Pseudolabrus japonicus.* Cytotoxic agent. Cryst. + $1Me_2CO$ (Me_2CO). Mp 244-246°. $[\alpha]_D^{21}$ -193.7 (c, 0.31 in $CHCl_3$). λ_{max} 207 (ϵ 36300); 225 (ϵ 30200); 260 (ϵ 11480); 271 (ϵ 10470); 282 (ϵ 9550); 304 (ϵ 4074); 317 (ϵ 3160) (MeOH) (Berdy).

Numata, A. *et al., Tet. Lett.*, 1992, **33**, 1621-1624 (*isol, pmr, cryst struct*)
Takahashi, C. *et al., J.C.S. Perkin 1*, 1995, 2345-2353 (*isol, uv, ir, pmr, cd*)
Snider, B.B. *et al., J.O.C.*, 2003, **68**, 545-563 (*synth*)
Afiyatullov, S.S. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2005, **41**, 236-238 (*isol, cmr*)

Fumiquinazoline D F-187

[140715-86-2]



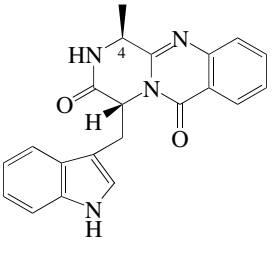
Absolute Configuration

$C_{24}H_{21}N_5O_4$ 443.461
Prod. by *Aspergillus fumigatus.* Cytotoxic agent. Prisms (Me_2CO). Mp 214-216°. $[\alpha]_D^{22}$ +86.2 (c, 0.15 in $CHCl_3$). λ_{max} 205 (log ϵ 4.3); 225 (log ϵ 4.26); 232 (log ϵ 4.24); 254 (log ϵ 3.91); 265 (log ϵ 3.84); 276 (log ϵ 3.77); 304 (log ϵ 3.43); 316 (log ϵ 3.54) (EtOH).

Takahashi, C. *et al., J.C.S. Perkin 1*, 1995, 2345-2353 (*isol, uv, ir, cd, pmr, cmr, cryst struct*)
Afiyatullov, S.S. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2005, **41**, 236-238 (*isol, cmr*)

Fumiquinazoline F F-188

[169626-35-1]



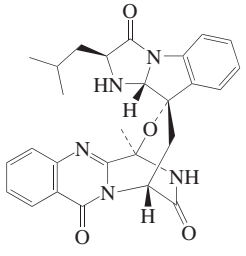
$C_{21}H_{18}N_4O_2$ 358.399
Prod. by a marine-derived *Aspergillus fumigatus*. Cytotoxic agent. Pale yellow powder. Mp 88-90°. $[\alpha]_D$ -411.2 (c, 1.4 in $CHCl_3$). λ_{max} 207 (log ϵ 4.71); 219 (log ϵ 4.73); 270 (log ϵ 4.13); 277 (log ϵ 4.13); 289 (log ϵ 3.99); 306 (log ϵ 3.78); 320 (log ϵ 3.66) (EtOH).

4-Epimer: ***Fumiquinazoline G***
[169869-87-8]
$C_{21}H_{18}N_4O_2$ 358.399
Prod. by a marine-derived *Aspergillus fumigatus*. Cytotoxic agent. Pale yellow powder. Mp 119-121°. $[\alpha]_D$ -462.8 (c, 0.6 in $CHCl_3$). λ_{max} 208 (log ϵ 4.61); 220 (log ϵ 4.67); 273 (log ϵ 4.14); 278 (log ϵ 4.13); 288 (log ϵ 4.01); 307 (log ϵ 3.66); 323 (log ϵ 3.49) (EtOH).

Takahashi, C. *et al., J.C.S. Perkin 1*, 1995, 2345-2353 (*isol, uv, ir, pmr, cmr*)
He, F. *et al., Synlett*, 1997, 483-484 (*synth*)
Wang, H. *et al., J.O.C.*, 2000, **65**, 1022-1030 (*synth*)
Snider, B.B. *et al., Tetrahedron*, 2001, **57**, 3301-3307 (*synth*)
Liu, J.-F. *et al., J.O.C.*, 2005, **70**, 6339-5345 (*synth*)

Fumiquinazoline H F-189

[278184-55-7]



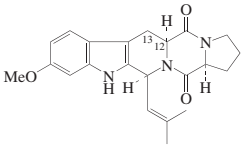
Absolute Configuration

$C_{27}H_{27}N_5O_4$ 485.541
Isol. from an *Acremonium* sp. obt. from the tunicate *Ecteinascidia turbinata*. Pale yellow solid. Mp 144-147°. $[\alpha]_D$ -59 (c. 0.001 in $CHCl_3$). λ_{max} 224 (ϵ 27700); 230 (sh) (ϵ 25800); 255 (ϵ 11500); 265 (ϵ 9700); 276 (ϵ 7600); 303 (ϵ 3000) (MeOH).

Belofsky, G.N. *et al., Chem. Eur. J.*, 2000, **6**, 1355-1360 (*isol, uv, pmr, cmr*)
Snider, B.B. *et al., J.O.C.*, 2003, **68**, 545-563 (*synth*)

Fumitremorgin C F-190

SM-Q
[118974-02-0]



Absolute Configuration

$C_{22}H_{25}N_3O_3$ 379.458
Struct. revised in 1988. Prod. by *Aspergillus fumigatus* and *Neosartorya fischeri*. Tremorgenic mycotoxin. Reverses of multidrug resistance in cels transfected with the breast cancer resistance protein. Cryst. (EtOAc). Mp 259.5-260.5° (synthetic). $[\alpha]_D^{28}$ -13 (c, 0.53 in MeOH). An early Mp of 125-130° was reported for natural material but this was prob. erroneous or for an impure sample. λ_{max} 224 ; 272 ; 294 (MeOH) (Berdy). λ_{max} 225 ; 273 ; 299 (EtOH) (Berdy).

Demethoxy: ***Demethoxyfumitremorgin C***
[111768-16-2]
[106211-91-0 (12β-isomer)]
$C_{21}H_{23}N_3O_2$ 349.432
Prod. by *Aspergillus fumigatus*. Cell cycle progression Inhibitor, mycotoxin. Pale yellow needles. Sol. MeOH. Mp 210-212°. $[\alpha]_D^{30}$ +8 (c, 0.2 in $CHCl_3$). λ_{max} 226 (ϵ 24950); 282 (ϵ 9000); 291 (sh) (ϵ 7450) (MeOH).

12,13-Didehydro, 12ξ,13ξ-epoxide: ***Epoxyfumitremorgin C***
$C_{22}H_{25}N_3O_4$ 395.457
From *Aspergillus fumigatus*. Tremorgenic mycotoxin.

12ξ,13ξ-Dihydroxy: ***12,13-Dihydroxyfumitremorgin C***
[111427-99-7]
$C_{22}H_{25}N_3O_5$ 411.457
From *Aspergillus fumigatus*. Tremorgenic mycotoxin. Yellow cryst. Mp 197-198°. $[\alpha]_D$ +18.4.

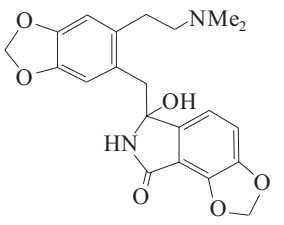
12-Epimer: [119066-64-7]
Synthetic. Pale yellow prisms (EtOH). Mp 240-247.5° dec. $[\alpha]_D^{28}$ +239 (c, 0.11 in MeOH).

[119066-69-2 , 119066-68-1 , 118974-03-1 , 119066-67-0]

Cole, R.J. *et al., J. Agric. Food Chem.*, 1977, **25**, 826-830 (*isol*)
Steyn, P.S. *et al., Prog. Chem. Org. Nat. Prod.*, 1985, **48**, 60 (*uv, pmr, cmr*)
Plate, R. *et al., J.O.C.*, 1987, **52**, 560-564 (*synth, uv, pmr, ms*)
O'Malley, G.J. *et al., Tet. Lett.*, 1987, **28**, 1131-1154 (*demethoxy, synth*)
Hermkens, P.H.H. *et al., Tetrahedron*, 1988, **44**, 1991-2000 (*synth, uv, pmr, ms*)
Bailey, P.D. *et al., Tet. Lett.*, 1989, **30**, 6421-6422; 2001, **42**, 113-115 (*demethoxy, synth*)
Hino, T. *et al., Tetrahedron*, 1989, **45**, 1941-1944 (*synth, uv, ir, pmr, cmr, ms*)
Abraham, W.R. *et al., Phytochemistry*, 1990, **29**, 1025-1026 (*12,13-Dihydroxyfumitremorgin C*)
Cui, C.-B. *et al., J. Antibiot.*, 1996, **49**, 527-534; 534-540 (*Demethoxyfumitremorgin C, abs config*)
Hino, T. *et al., Heterocycles*, 1997, **46**, 673-704 (*rev, synth*)
Rabindran, S.K. *et al., Cancer Res.*, 1998, **58**, 5850-5858 (*activity*)
Handbook of Secondary Fungal Metabolites, (ed. Cole, R.J. *et al*), Academic Press, 2003, **1**, 226
Afiyatullov, S.S. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2004, **40**, 615-617 (*12,13-Dihydroxyfumitremorgin C*)
Wang, F.-W. *et al., Acta Cryst. E*, 2006, **62**, o1375-o1377 (*cryst struct*)

Fumschleicherine F-191

*6-[[6-[2-(Dimethylamino)ethyl]-1,3-benzodioxol-5-yl]methyl]-6,7-dihydro-6-hydroxy-8*H*-1,3-dioxolo[4,5-*e*]isoindol-8-one, 9CI*
[77292-20-7]



$C_{21}H_{22}N_2O_6$ 398.415
Alkaloid from *Fumaria schleicheri* and *Fumaria schrammii* (Papaveraceae). Mp 224-226°. $[\alpha]_D^{20}$ +5.88 (DMSO).

Kiryakov, Kh. *et al., Dokl. Bulg. Akad. Nauk*, 1980, **33**, 1377; *CA*, **94**, 188644f (*isol, struct*)

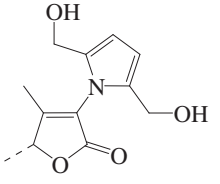
Fumvailine F-192

$C_{20}H_{19}NO_6$ 369.373
Struct. unknown. Alkaloid from *Fumaria vaillantii* (Papaveraceae). Cryst. (Me_2CO). Mp 180.5-181.5°. $[\alpha]_D$ -44. Nonphenolic, conts. 2 OMe groups.
Hydrochloride: Mp 212°.

Platonova, T.F. *et al., Zh. Obshch. Khim.*, 1956, **26**, 173-180; *CA*, **50**, 13960

Funebradiol F-193

*3-[2,5-Bis(hydroxymethyl)-1*H*-pyrrol-1-yl]-4,5-dimethyl-2(5*H*)-furanone, 9CI*
[133086-87-0]



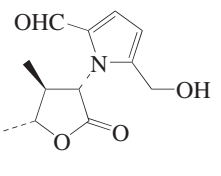
$C_{12}H_{15}NO_4$ 237.255

(R)-form
Alkaloid from the flowers of *Quararibea funebris* (Bombacaceae). Gum. $[\alpha]_D^{25}$ +8.6 (c, 0.3 in MeOH). λ_{max} 219 (ϵ 2190); 266 (ϵ 933) (MeOH) (Derep).

Zennie, T.M. *et al., J. Nat. Prod.*, 1990, **53**, 1611 (*isol, pmr, cmr, struct*)

Funebral F-194

[105708-56-3]



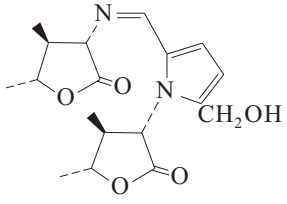
$C_{12}H_{15}NO_4$ 237.255

Alkaloid from the flowers of *Quararibea funebris* (Bombacaceae). $[\alpha]_D^{32}$ -19 (c, 0.05 in MeOH).

Zennie, T.M. *et al., J. Nat. Prod.*, 1986, **49**, 695-698 (*isol, uv, ir, pmr, cmr, ms, cd, struct*)
Yu, S.-X. *et al., Tet. Lett.*, 1995, **36**, 6205-6208 (*synth*)
Dong, Y. *et al., J.O.C.*, 1999, **64**, 2657-2666 (*synth, conformn*)
Tamura, O. *et al., J.O.C.*, 2004, **69**, 1475-1480 (*synth*)

Funebrine F-195

[90605-98-4]

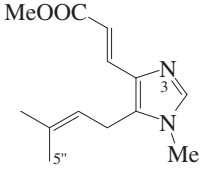


$C_{18}H_{24}N_2O_5$ 348.398
Alkaloid from the flowers of *Quararibea funebris* (Bombacaceae). Cryst. (cyclohexane/$CHCl_3$). Mp 232-233°. $[\alpha]_D^{22.5}$ -215 (c, 0.01 in DMSO). λ_{max} 265 (sh) (ϵ 20000); 293 (ϵ 30000) (DMSO) (Derep).

Raffauf, R.F. *et al., J.O.C.*, 1984, **49**, 2714 (*isol, uv, ir, pmr, ms, cryst struct*)
Zennie, T.M. *et al., J. Nat. Prod.*, 1986, **49**, 695 (*pmr*)
Dong, Y. *et al., J.O.C.*, 1999, **64**, 2657-2666 (*synth, conformn*)
Tamura, O. *et al., J.O.C.*, 2004, **69**, 1475-1480 (*synth*)

Fungerin F-196

Visoltricin
[185681-81-6]
[139874-44-5]



$C_{13}H_{18}N_2O_2$ 234.297
Alkaloid from *Fusarium tricinctum*, another *Fusarium* sp., *Metarhizium* sp. FKI-1079 and the marine *Microascus* sp. K14. Cytotoxic agent. Shows anticholinesterase and antifungal activities. Needles (hexane/EtOAc). Mp 93-95°. λ_{max} 300 (ϵ 28000) (MeOH).

N^1-*Me:* **N-*Methylvisoltricin***
[156524-19-5]
[142750-50-3]
$C_{14}H_{21}N_2O_2^{\oplus}$ 249.332
Quaternary alkaloid prod. by *Fusarium* sp. Acetylcholinesterase inhibitor. Powder (as iodide).

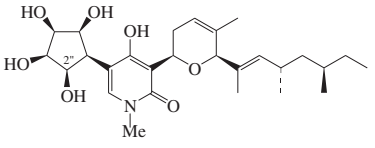
5″-Hydroxy: ***Hydroxyfungerin A***
$C_{13}H_{18}N_2O_3$ 250.297
Prod. by *Metarhizium* sp. FKI-1079. Pale yellow powder. λ_{max} 305 (ϵ 27000) (MeOH).

5″-Hydroxy, N-*de-Me, 3-Me (3*H-*form):* ***Hydroxyfungerin B***
$C_{13}H_{18}N_2O_3$ 250.297
Prod. by *Metarhizium* sp. FKI-1079. Pale yellow powder. λ_{max} 305 (ϵ 27200) (MeOH).

Marta, M. *et al., Acta Med. Rom.*, 1990, **28**, 343-346 (*N-Me*)
Visconti, A. *et al., J. Agric. Food Chem.*, 1994, **42**, 195-199 (*Visoltricin*)
Kato, Y. *et al., Biosci., Biotechnol., Biochem.*, 1996, **60**, 2081-2083 (*isol, uv, pmr, cmr, N-15 nmr*)
Benhida, R. *et al., Tet. Lett.*, 1998, **39**, 5963-5964 (*synth*)
Martin, G.E. *et al., J. Nat. Prod.*, 2000, **63**, 543-585 (*N-15 nmr*)
Rieder, J.M. *et al., Tet. Lett.*, 2002, **43**, 2375-2376 (*synth, struct*)
Koizumi, Y. *et al., J. Antibiot.*, 2004, **57**, 415-420 (*activity*)
Uchida, R. *et al., J. Antibiot.*, 2005, **58**, 804-809 (*Hydroxyfungerins*)

Funiculosin† F-197

SL 3238. Antibiotic SL 3238
[11055-06-4]



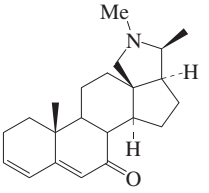
$C_{27}H_{41}NO_7$ 491.623
Identity with SL 3238 is probable. Related to Oxysporidinone, O-226 and Sambutoxin, S-48. Prod. by *Penicillium funiculosum* and *Penicillium purpurogenum*. Antiviral and antifungal agent. SL 3238 reported as active against gram-positive and -negative bacteria. Fine needles. Sol. MeOH, Me_2CO, butanol, EtOH; fairly sol. EtOAc, $CHCl_3$, Et_2O, C_6H_6; poorly sol. hexane, H_2O. Mp 165-166° (160-161°). $[\alpha]_D^{20}$ -102 (c, 0.47 in $CHCl_3$). Opt. rotn. refers to SL 3238. λ_{max} 290 (ϵ 5500) (MeOH) (Derep). λ_{max} 290 (ϵ 5500) (MeOH) (Berdy).
▶ LD_{50} (mus, ipr) 4 mg/kg. LT5270000

2″-Deoxy: ***Antibiotic AF 110***. *AF 110*
[146671-30-9]
$C_{27}H_{41}NO_6$ 475.624
Prod. by *Penicillium* sp. F-4209. Antifungal and antitumour agent. Yellow powder. Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. $[\alpha]_D$ -184 (MeOH). Stereochem. not determined. λ_{max} 213 (ϵ 34000); 290 (ϵ 6700) (MeOH). λ_{max} 213 (ϵ 34000); 290 (ϵ 6700) (MeOH) (Berdy).

Ando, K. *et al., J. Antibiot.*, 1969, **22**, 189-194; 1978, **31**, 533-538 (*isol, abs config, cryst struct*)
Ger. Pat., 1970, 2005976; *CA*, **73**, 108258m (*SL 3238*)
Japan. Pat., 1992, 92 321 684; *CA*, **118**, 167617y (*AF 110*)
Williams, D.R. *et al., Tet. Lett.*, 2000, **41**, 9397-9401 (*synth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, FPD000

Funtudienine F-198

3,5-Conadien-7-one



Absolute Configuration

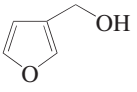
$C_{22}H_{31}NO$ 325.493
Alkaloid from bark of *Funtumia latifolia* (Apocynaceae). Amorph. $[\alpha]_D$ -247 (c, 2.5 in $CHCl_3$).

Oxime:
Cryst. (MeOH). Mp 190°. $[\alpha]_D$ -228 (c, 1.0 in $CHCl_3$).

Khuong-Huu, Q. *et al., Bull. Soc. Chim. Fr.*, 1964, 2169 (*isol, ir, uv, pmr, ms, struct, synth*)
Crabbé, P. *et al., Chem. Ind. (London)*, 1966, 158 (*ord*)

3-Furanmethanol, 9CI F-199

3-Furancarbinol. 3-Furfuryl alcohol. 3-(Hydroxymethyl)furan
[4412-91-3]



$C_5H_6O_2$ 98.101
Constit. of *Aloe arborescens*, *Eucommia ulmoides*, and *Stellaria aquatica*. Liq. d_4^{20} 1.14. Bp_{17} 79-80°. n_D^{20} 1.4842.

Phenylurethane:
Fine needles. Mp 102.5-105.6°.

O-*β-D-Glucopyranoside:* [86425-28-7]
$C_{11}H_{16}O_7$ 260.243
Isol. from seeds of *Vigna angularis* (azuki bean). Hygroscopic powder. $[\alpha]_D^{26}$ +40 (c, 1.1 in MeOH).

Benzoyl:
$C_{12}H_{10}O_3$ 202.209
$Bp_{0.75}$ 95-97°.

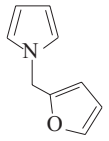
O-*(2-Pyrrolecarbonyl): 3-Furfuryl 2-pyrrolecarboxylate*
[119767-00-9]
$C_{10}H_9NO_3$ 191.186
Alkaloid from the roots of *Pseudostellaria heterophylla*. Oil.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 581D (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 18B (*nmr*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 1453B (*ir*)
Sherman, E. *et al., J.A.C.S.*, 1950, **72**, 2195 (*synth*)
Kitagawa, I. *et al., Chem. Pharm. Bull.*, 1983, **31**, 664 (*glucoside*)
Jurášek, A. *et al., Coll. Czech. Chem. Comm.*, 1985, **50**, 2077 (*synth*)
Reinecke, M.G. *et al., J. Nat. Prod.*, 1988, **51**, 1236; 1989, **52**, 375 (*pyrrole-2-carboxylate*)
Marstokk, K.M. *et al., Acta Chem. Scand.*, 1993, **47**, 849 (*microwave, struct*)
Bures, E. *et al., J.O.C.*, 1997, **62**, 8741-8749 (*synth, ir, pmr, cmr*)
Mace, L.H. *et al., Org. Biomol. Chem.*, 2006, **4**, 1020-1031 (*synth*)

1-(2-Furanylmethyl)-1*H*-pyrrole, 9CI F-200

N-*(2-Furfuryl)pyrrole. FEMA 3284*

[1438-94-4]



C_9H_9NO 147.176

Present in sandalwood oil (*Santalum album*). Flavour ingredient. Bp_1 77-79°. n_D^{21} 1.5317.

► LD_{50} (mus, orl) 380 mg/kg. UX9631000

Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 42B (*nmr*)

Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 1466A (*ir*)

Gianturco, M.A. *et al., Tetrahedron*, 1964, **20**, 1763; 2951 (*isol, ir, pmr, synth*)

Fenaroli's Handbook of Flavor Ingredients, 3rd edn., (ed. Burdock, G.A.), CRC Press, 1995, **2**, 290

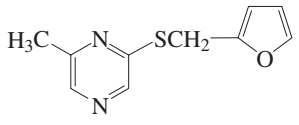
Encyclopedia of Food and Color Additives, (ed. Burdock, G.A.), CRC Press, 1997, 1149-1150

2-[(2-Furanylmethyl)thio]-6-methylpyrazine, 9CI F-201

6-Methyl-2-pyrazinyl 2-furfuryl sulfide. FEMA 3189

[59021-05-5]

[59303-07-0 , 59303-08-1 , 59303-09-2]



$C_{10}H_{10}N_2OS$ 206.268

The phys. props. given are for a mixt. of regioisomers (3-, 5- and 6-methylpyrazines), which are the coml. flavouring material FEMA 3189. Present in aroma of pumpkin seed oil. Present in pumpkin seed oil. Flavouring ingredient. Liq. with roasted coffee-like taste. d_4^{20} 1.22. Bp_{10} 153-156°. n_D^{20} 1.5970. Synthesised as a mixt. of regioisomers (2,3-, 2,5- and 2,6-) to which the phys. props. refer. The FEMA no. refers to this mixt.

U.S. Pat., 1976, 3 989 713; *CA*, **86**, 43556d (*synth, use*)

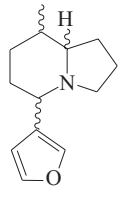
Buchbauer, G. *et al., Ernaehrung (Vienna)*, 1998, **22**, 246-249; *CA*, **129**, 135437a (*isol*)

Fenaroli's Handbook of Flavor Ingredients, 4th edn., (ed. Burdock, G.A.), CRC Press, 2001, 1122-1123 (*use, props*)

5-(3-Furanyl)octahydro-8-methylindolizine, 9CI F-202

5-(3-Furanyl)-8-methylindolizidine

[60161-29-7]



$C_{13}H_{19}NO$ 205.299

Closely related to the *Nuphar* alkaloids. Trace alkaloid from the scent glands of the Canadian beaver *Castor fiber*. Oil.

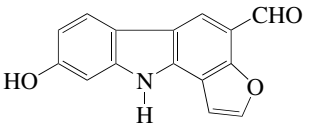
Maurer, B. *et al., Helv. Chim. Acta*, 1976, **59**, 1169 (*isol, ms, struct*)

Tufariello, J.F. *et al., Chem. Comm.*, 1987, 1138 (*synth*)

Furoclausine A F-203

*8-Hydroxy-10*H*-furo[3,2-*a*]carbazole-4-carboxaldehyde, 9CI*

[192706-50-6]



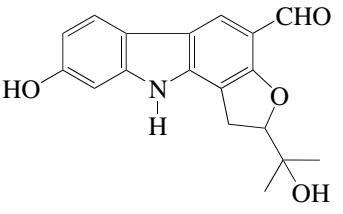
$C_{15}H_9NO_3$ 251.241

Alkaloid from the root bark of *Clausena excavata* (Rutaceae). Yellow oil. λ_{max} 221 ; 239 ; 288 (sh) ; 301 ; 345 (MeOH).

Wu, T.-S. *et al., Heterocycles*, 1997, **45**, 969-973 (*isol, uv, ir, pmr, cmr*)

Furoclausine B F-204

[192706-53-9]



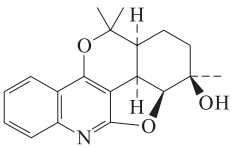
$C_{18}H_{17}NO_4$ 311.337

Alkaloid from the root bark of *Clausena excavata* (Rutaceae). Yellow oil. $[\alpha]_D$ -32.7 (c, 0.02 in MeOH). λ_{max} 202 ; 218 (sh) ; 231 (sh) ; 252 ; 275 (sh) ; 286 (sh) ; 301 ; 339 (MeOH).

Wu, T.-S. *et al., Heterocycles*, 1997, **45**, 969-973 (*isol, uv, ir, pmr*)

Furoerioaustralasine F-205

[152406-30-9]



Relative configuration

$C_{19}H_{21}NO_3$ 311.38

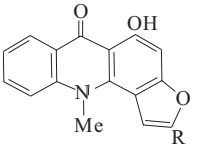
Minor alkaloid form aerial parts of *Eriostemon australasius* (Rutaceae). Oil. $[\alpha]_D$ -117 (c, 1.0 in $CHCl_3$).

da Cunha, E.V.L. *et al., Aust. J. Chem.*, 1993, **46**, 1507 (*isol, uv, ir, pmr, cmr, ms, struct*)

Furofoline F-206

*5-Hydroxy-11-methylfuro[2,3-*c*]acridin-6(11*H*)-one, 9CI. Furofoline I. Furacridone*

[62541-22-4]



R = H

$C_{16}H_{11}NO_3$ 265.268

Alkaloid from the roots of *Ruta graveolens* (rue) and the root and stem bark of *Glycosmis citrifolia* (Rutaceae). Yellow plates (Me_2CO). Mp 245-246°.

Reisch, J. *et al., Phytochemistry*, 1977, **16**, 151 (*isol*)

Reisch, J. *et al., Annalen*, 1981, 85 (*synth*)

Wu, T.-S. *et al., J.C.S. Perkin 1*, 1983, 1681 (*isol, uv, ir, pmr, ms, struct*)

Furofoline II F-207

*5-Hydroxy-2-(1-hydroxy-1-methylethyl)-11-methylfuro[2,3-*c*]acridin-6(11*H*)-one, 9CI*

[82644-80-2]

As Furofoline, F-206 with R = $-C(CH_3)_2OH$

$C_{19}H_{17}NO_4$ 323.348

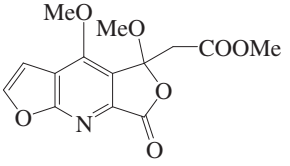
Alkaloid from the root and stem bark of *Glycosmis citrifolia* (Rutaceae). Yellow needles (Me_2CO). Mp 213-215°.

Wu, T.-S. *et al., Heterocycles*, 1982, **19**, 1227 (*isol, uv, ir, pmr, ms, struct*)

Wu, T.-S. *et al., J.C.S. Perkin 1*, 1983, 1681 (*isol, uv, ir, pmr, ms, struct*)

Furomegistine II F-208

[352280-28-5]



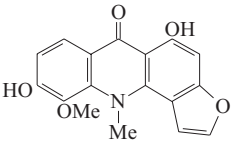
$C_{14}H_{13}NO_7$ 307.259

Alkaloid from the bark of *Sarcomelicope megistophylla*. Amorph. yellow solid. Racemic. λ_{max} 278 (log ϵ 2.66); 307 (sh) (MeOH).

Fokialakis, N. *et al., Phytochemistry*, 2001, **57**, 593-596

Furoparadine F-209

[161161-72-4]



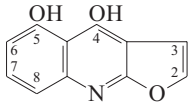
$C_{17}H_{13}NO_5$ 311.293

Alkaloid from roots of *Citrus paradisi* (grapefruit) (Rutaceae). Yellow oil.

Takemura, Y. *et al., Heterocycles*, 1995, **41**, 187 (*isol, uv, ir, pmr, cmr, ms, struct*)

Furo[2,3-*b*]quinoline-4,5-diol F-210

*4,5-Dihydroxyfuro[2,3-*b*]quinoline*



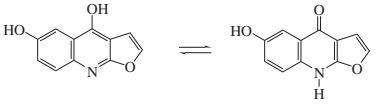
$C_{11}H_7NO_3$ 201.181

*Di-Me ether: 4,5-Dimethoxyfuro[2,3-*b*]quinoline.* ***5-Methoxydictamnine***
[119708-35-9]
$C_{13}H_{11}NO_3$ 229.235
Alkaloid from the roots of *Ruta chalepensis* var. *latifolia* (Rutaceae).

Ulubelen, A. *et al., Planta Med.*, 1988, **54**, 551 (*isol, uv, ir, pmr, ms, struct*)

Furo[2,3-*b*]quinoline-4,6-diol F-211

*4,6-Dihydroxyfuro[2,3-*b*]quinoline. 6-Hydroxyfuro[2,3-*b*]quinolin-4(9*H*)-one*



$C_{11}H_7NO_3$ 201.181

OH-form

*Di-Me ether: 4,6-Dimethoxyfuro[2,3-*b*]quinoline, 9CI.* ***Pteleine****. 6-Methoxydictamnine*
[2221-41-2]
$C_{13}H_{11}NO_3$ 229.235
Alkaloid from *Platydesma campanulata* and *Ptelea trifoliata*; tentatively identified in cells of *Ruta graveolens* (rue) grown in continuous light in liq. medium (Rutaceae). Shows antibacterial activity. Cubes (C_6H_6/petrol). Mp 134-135°. λ_{max} 237 (log ϵ 4.66); 250 (log ϵ 4.56); 295 (log ϵ 3.91); 306 (log ϵ 3.99); 334 (log ϵ 3.68); 348 (log ϵ 3.67) (no solvent reported).

▶ LV2708180

Di-Me ether, picrate:
Yellow needles (EtOH). Mp 195-196° dec.

Di-Me ether, picrolonate: Mp 200-202° dec.

NH-form

N-*Me: 6-Hydroxy-9-methylfuro[2,3-*b*]quinolin-4(9*H*)-one, 9CI.* ***Dictangustine A***
[221457-19-8]
$C_{12}H_9NO_3$ 215.208
Alkaloid from root bark of *Dictamnus angustifolius*. Yellowish powder (Me_2CO). Mp > 280°. λ_{max} 242 ; 255 ; 263 ; 348 ; 364 (MeOH).

6-Me ether, N-*Me: 6-Methoxy-9-methylfuro[2,3-*b*]quinolin-4(9*H*)-one, 9CI.* ***Isopteleine****. 6-Methoxyisodictamnine*
[2181-84-2]
$C_{13}H_{11}NO_3$ 229.235
Alkaloid from root and bark of *Platydesma campanulata* and *Dictamnus caucasicus* (Rutaceae). Cryst. (EtOH/Me_2CO). Mp 214-216° (207-209°). Turns pink on standing. λ_{max} 249 (log ϵ 6.1); 261 (log ϵ 4.91); 284 (sh) (log ϵ 4.81); 296 (log ϵ 4.99); 307 (log ϵ 5.04); 333 (log ϵ 4.74); 350 (log ϵ 4.68) (95%EtOH).

Werny, F. *et al., Tetrahedron*, 1963, **19**, 1293-1305 (*6-Methoxydictamnine, isol, uv, ir, struct, synth*)

Pai, B.R. *et al., Indian J. Chem.*, 1964, **2**, 491-492 (*6-Methoxydictamnine, synth, uv*)

Frolova, V.I. *et al., J. Gen. Chem. USSR (Engl. Transl.)*, 1964, **34**, 3542-3546 (*Pteleine, isol, struct*)

Kikvidze, I.M. *et al., Khim. Prir. Soedin.*, 1971, **7**, 675; *Chem. Nat. Compd. (Engl. Transl.)*, 1971, **7**, 659-660 (*Isopteleine*)

Steck, W. *et al., Phytochemistry*, 1971, **10**, 191-194 (*6-Methoxydictamnine, isol, uv, pmr*)

Sekiba, T. *et al., Bull. Chem. Soc. Jpn.*, 1973, **46**, 577-580 (*Pteleine, synth, uv*)

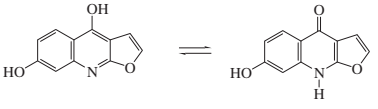
Narasimhan, N.S. *et al., Tetrahedron*, 1974, **30**, 4153-4157 (*Pteleine, synth, uv, ir, pmr*)

Wu, T.-S. *et al., Phytochemistry*, 1999, **50**, 509-512 (*Dictangustine A*)

El Sayed, K. *et al., J. Nat. Prod.*, 2000, **63**, 995-997 (*Pteleine, activity*)

Furo[2,3-*b*]quinoline-4,7-diol F-212

*4,7-Dihydroxyfuro[2,3-*b*]quinoline. 7-Hydroxyfuro[2,3-*b*]quinolin-4(9*H*)-one*



$C_{11}H_7NO_3$ 201.181

OH-form

*4-Me ether: 4-Methoxyfuro[2,3-*b*]quinolin-7-ol, 9CI.* ***Confusameline****. 7-O-Demethylevolitrine. 7-Hydroxydictamnine*
[20643-71-4]
$C_{12}H_9NO_3$ 215.208
Alkaloid from the leaves of *Evodia elleryana* and *Melicope confusa*, and from the aerial parts of *Melicope lasioneura* (Rutaceae). Pale yellow needles (MeOH). Mp 240-242°.

4-Me ether, 7-Ac:
Needles (EtOH). Mp 156-157°.

*Di-Me ether: 4,7-Dimethoxyfuro[2,3-*b*]quinoline, 9CI.* ***Evolitrine****. 7-Methoxydictamnine*
[523-66-0]
$C_{13}H_{11}NO_3$ 229.235
Alkaloid from *Evodia littoralis*, *Evodia lunu-ankenda*, *Phebalium nudum*, *Ruta montana*, *Melicope lasioneura*, *Acronychia laurifolia* and others. Cytotoxic agent. Rosettes of needles (petrol). Sol. MeOH, C_6H_6; poorly sol. H_2O. Mp 114-115°. λ_{max} 245 (ϵ 100000); 307 (ϵ 14150); 318 (ϵ 13500); 332 (ϵ 11720) (MeOH) (Berdy). λ_{max} 244 (ϵ 69700); 308 (ϵ 10250); 320 (ϵ 9800); 333 (ϵ 7980) (EtOH) (Berdy).

▶ LV2708190

Di-Me ether, hydrochloride:
Rods (EtOH/Et_2O). Mp 150-151° dec.

Di-Me ether, picrate:
Pale yellow needles (EtOH). Mp 201-202°.

*7-O-(3-Methyl-2-butenyl), 4-Me ether: 4-Methoxy-7-[(3-methyl-2-butenyl)oxy]furo[2,3-*b*]quinoline, 9CI. 4-Methoxy-7-prenyloxyfuro[2,3-*b*]quinoline.* ***Melineurine***
[85802-28-4]
$C_{17}H_{17}NO_3$ 283.326
Alkaloid from the aerial parts of *Melicope lasioneura* (Rutaceae). Small prisms (Et_2O). Mp 98-99°. λ_{max} 247 (ϵ 70800); 290 (sh) (ϵ 6610); 309 (ϵ 10500); 321 (ϵ 9550); 333 (sh) (ϵ 8320) (EtOH) (Derep).

7-O-(2ξ-Hydroxy-3-methyl-3-butenyl), 4-Me ether: ***Confusadine***
[479415-36-6]
$C_{17}H_{17}NO_4$ 299.326
Alkaloid from the leaves of *Melicope semecarpifolia*. Anti-platelet aggregation agent. Needles (MeOH). Mp 144-146°. $[\alpha]_D^{27}$ -22.4 (c, 0.11 in MeOH). λ_{max} 246 (log ϵ 4.83); 309 (log ϵ 4.03); 320 (log ϵ 4.05); 333 (sh) (log ϵ 3.95) (EtOH).

7-O-(2,3-Dihydroxy-3-methylbutyl), 4-Me ether: ***Evellerine***
[20547-76-6]
$C_{17}H_{19}NO_5$ 317.341
Alkaloid from leaves of *Evodia elleryana* (Rutaceae). Prisms (Me_2CO). Mp 149-150°. $[\alpha]_D$ +21 (c, 0.30 in $CHCl_3$). λ_{max} 247 (ϵ 70800); 290 (sh) (ϵ 6610); 309 (ϵ 10500); 321 (ϵ 9550); 333 (sh) (ϵ 8320) (EtOH) (Derep).

*7-O-(3-Chloro-2-hydroxy-3-methylbutyl), 4-Me ether: 7-(3-Chloro-2-hydroxy-3-methylbutoxy)-4-methoxyfuro[2,3-*b*]quinoline*
$C_{17}H_{18}ClNO_4$ 335.786
Constit. of the leaves of *Melicope bonwickii*. Pale yellow needles (MeOH). Mp 171-173°. λ_{max} 245 ($CHCl_3$).

*7-O-(3,7-Dimethyl-5-oxo-2*E*,6-octadienyl), 4-Me ether:* [1050284-42-8]
$C_{22}H_{23}NO_4$ 365.428
Alkaloid from the leaves of *Boniniaglabra*. Amorph. yellow solid.

*7-O-(3,7-Dimethyl-5-oxo-3*E*,6-octadienyl), 4-Me ether:* [1050284-41-7]
$C_{22}H_{23}NO_4$ 365.428
Alkaloid from the leaves of *Boniniaglabra*. Pale yellow cryst. Mp 150-153°.

*7-O-(3,7-Dimethyl-5-oxo-3*Z*,6-octadienyl), 4-Me ether:* [1050284-40-6]
$C_{22}H_{23}NO_4$ 365.428
Alkaloid from the leaves of *Boniniaglabra*. Amorph. yellow solid.

NH-form

7-Me ether, N-*Et: 9-Ethyl-7-methoxyfuro[2,3-*b*]quinolin-4(9*H*)-one, 9CI.* ***Taifine***
[79808-96-1]
$C_{14}H_{13}NO_3$ 243.262
Alkaloid from *Ruta chalepensis* (Rutaceae). Needles (petrol). Mp 110°. Doubtful structural assignment; spectral and physical props. of authentic synthetic material differ from those reported for natural Taifine.

7-Me ether, N-*(3-methyl-2-butenyl): 7-Methoxy-9-(3-methyl-2-butenyl)-furo[2,3-*b*]quinolin-4(9*H*)-one, 9CI. 7-*

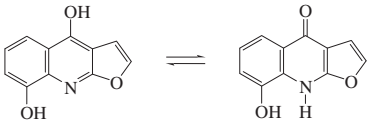
*Methoxy-9-prenylfuro[2,3-*b*]quinolin-4(9*H*)-one.* ***Acrophylline***
[18904-40-0]
$C_{17}H_{17}NO_3$ 283.326
Alkaloid from the leaves and bark of *Acronychia haplophylla* (Rutaceae). Cryst. (MeOH). Mp 119-120°.

7-Me ether, N-*(3-hydroxy-3-methylbutyl): 9-(3-Hydroxy-3-methylbutyl)-7-methoxyfuro[2,3-*b*]quinolin-4(9*H*)-one, 9CI.* ***Acrophyllidine***
[18813-64-4]
$C_{17}H_{19}NO_4$ 301.341
Alkaloid from the leaves of *Acronychia haplophylla* (Rutaceae). Also obt. by acid-catalysed hydration of Acrophylline. Needles (MeOH). Mp 176-177°.

Cooke, R.G. *et al., Aust. J. Chem.*, 1954, **7**, 273; 1958, **11**, 225 (*Evolitrine, isol, uv, struct, synth*)
Sato, T. *et al., Bull. Chem. Soc. Jpn.*, 1958, **31**, 161 (*Evolitrine, synth*)
Johns, S.R. *et al., Aust. J. Chem.*, 1968, **21**, 1897 (*Confusameline, Evellerine*)
Lahey, F.N. *et al., Aust. J. Chem.*, 1969, **22**, 447 (*Acrophylline, Acrophyllidine*)
Prabhakar, S. *et al., Indian J. Chem.*, 1970, **8**, 857 (*Acrophylline, synth, uv, ir, pmr*)
Yang, T.H. *et al., Yakugaku Zasshi*, 1971, **91**, 782; *CA*, **75**, 95382m (*4-Me ether, isol, struct*)
Narasimhan, N.S. *et al., Tetrahedron*, 1974, **30**, 4153 (*Evolitrine, synth, uv, ir, pmr*)
El-Tawil, B.A.H. *et al., Z. Naturforsch., B*, 1981, **36**, 1169 (*Taifine*)
Tillequin, F. *et al., J. Nat. Prod.*, 1982, **45**, 486; 1983, **46**, 132 (*Evellerine, Evolitrine, Melineurine*)
Kang, S.S. *et al., Arch. Pharmacal Res.*, 1986, **9**, 11; *CA*, **105**, 39390p (*4-Me ether, isol*)
Kuo, S.C. *et al., J. Nat. Prod.*, 1986, **49**, 48 (*Taifine*)
Rajamanickam, P. *et al., Indian J. Chem., Sect. B*, 1987, **26**, 910 (*Evolitrine, synth*)
Huang, A.-C. *et al., J. Nat. Prod.*, 1995, **58**, 117 (*Acrophylline, Acrophyllidine, synth, uv, ir, pmr, cmr, biochem*)
Cui, B. *et al., Phytochemistry*, 1999, **52**, 95-98 (*Evolitrine, activity*)
Chen, J.-J. *et al., Planta Med.*, 2002, **68**, 790-793 (*Confusadine*)
Lal, B. *et al., ARKIVOC*, 2005, **ii**, 77-97 (*Evolitrine, isol, synth*)
Komala, I. *et al., Nat. Prod. Res.*, 2006, **20**, 355-360 (*3-chloro-2-hydroxy-3-methylbutyl 4-Me ether*)
Inada, A. *et al., Chem. Pharm. Bull.*, 2008, **56**, 727-729 (*Boninia glabra constits*)

Furo[2,3-*b*]quinoline-4,8-diol F-213

*4,8-Dihydroxyfuro[2,3-*b*]quinoline. 8-Hydroxyfuro[2,3-*b*]quinolin-4(9*H*)-one*



$C_{11}H_7NO_3$ 201.181

OH-form

*4-Me ether: 4-Methoxyfuro[2,3-*b*]quinolin-8-ol, 9CI. 8-Hydroxy-4-methoxyfuro[2,3-*b*]quinoline. 8-Hydroxydictamnine.* ***Robustine***†
[2255-50-7]
$C_{12}H_9NO_3$ 215.208
Alkaloid from *Thamnosma montana, Dictamnus caucasicus, Haplophyllum robustum* and *Zanthoxylum* spp. (Rutaceae). Cryst. (EtOH or C_6H_6). Mp 147-148° (142-143°).

4-Me ether, hydrochloride:
Cryst. (EtOH). Mp 199-200°.

4-Me ether, picrate:
Cryst. (EtOH). Mp 179-180°.

*Di-Me ether: 4,8-Dimethoxyfuro[2,3-*b*]quinoline. 8-Methoxydictamnine.* ***γ-Fagarine***
[524-15-2]
$C_{13}H_{11}NO_3$ 229.235
Alkaloid from *Fagara coco, Aegle marmelos* (bael fruit) and *Haplophyllum* spp. (Rutaceae). Active against gram-positive bacteria and fungi. Pale yellow prisms (petrol). Poorly sol. hexane. Mp 142°. λ_{max} 203 ; 243 ; 310 ; 325 (MeOH) (Berdy). λ_{max} 244 (ε 56210); 290 (ε 5250); 311 (ε 6610); 327 (ε 5750); 340 (ε 4900) (EtOH) (Berdy).

▶ LV2708200

Di-Me ether, picrate:
Yellow cryst. (EtOH). Mp 177°.

*O^4-Et, O^8-Me: 4-Ethoxy-8-methoxyfuro[2,3-*b*]quinoline.* **O-*Ethylnor-γ-fagarine***
[105988-99-6]
$C_{14}H_{13}NO_3$ 243.262
Alkaloid from roots of *Dictamnus dasycarpus* (Rutaceae).

*8-O-(3-Methyl-2-butenyl), O^4-Me: 4-Methoxy-8-[(3-methyl-2-butenyl)oxy]furo[2,3-*b*]quinoline, 9CI. 4-Methoxy-8-prenyloxyfuro[2,3-*b*]quinoline.* ***Haplophydine****. Haplofidine. Haplophidine*
[55727-61-2]
$C_{17}H_{17}NO_3$ 283.326
Alkaloid from the above-ground parts of *Haplophyllum perforatum* (Rutaceae). Cryst. (EtOH). Mp 111-112°.

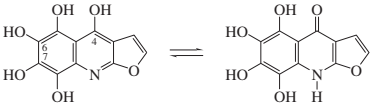
NH-form

8-Me ether, N-*Me: 8-Methoxy-9-methylfuro[2,3-*b*]quinolin-4(9*H*)-one.* ***Iso-γ-fagarine***
$C_{13}H_{11}NO_3$ 229.235
Alkaloid from root bark of *Dictamnus angustifolius.* Needles (Me_2CO). Mp 160-161°. λ_{max} 246 ; 255 ; 301 ; 322 ; 336 ; 350 (MeOH).

Fakhrutdinova, I.M. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1965, **1**, 83 (*isol, struct*)
Faizutdinova, Z.S. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1967, **3**, 218 (*ms*)
Collins, J.F. *et al., J.C.S. Perkin 1*, 1973, 94-97 (*synth*)
Abdullaeva, K.A. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1974, **10**, 713 (*Haplophydine*)
Narasimhan, N.S. *et al., Tetrahedron*, 1974, **30**, 4153-4157 (*synth, uv, ir, pmr*)
Chang, P.T.O. *et al., J. Nat. Prod.*, 1976, **39**, 134 (*isol, ir, uv, ms, pmr*)
Wolters, B. *et al., Planta Med.*, 1981, **43**, 166-174 (*γ-Fagarine, activity*)
Lin, T.P. *et al., CA*, 1987, **106**, 30033n (*4-Ethoxy-8-methoxyfuroquinoline*)
Wu, T.S. *et al., Phytochemistry*, 1999, **50**, 509-512 (*Iso-γ-fagarine*)
Chlouchi, A. *et al., Biochem. Syst. Ecol.*, 2006, **34**, 71-74 (*Robustine, pmr, cmr*)

Furo[2,3-*b*]quinoline-4,5,6,7,8-pentol F-214

*4,5,6,7,8-Pentahydroxyfuro[2,3-*b*]quinoline. 5,6,7,8-Tetrahydroxyfuro[2,3-*b*]quinolin-4(9*H*)-one*



$C_{11}H_7NO_6$ 249.179

OH-form

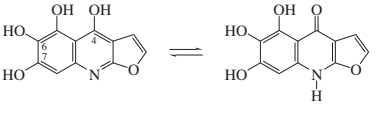
*6,7-Methylene, 4,5,8-tri-Me ether: 4,9,10-Trimethoxy-1,3-dioxolo[4,5-*g*]furo[2,3-*b*]quinoline. 4,5,8-Trimethoxy-6,7-methylenedioxyfuro[2,3-*b*]quinoline.* ***5,8-Dimethoxymaculine****. 5-Methoxyflindersiamine*
$C_{15}H_{13}NO_6$ 303.271
Alkaloid from the wood of *Vepris punctata*. Viscous oil. λ_{max} 242 (ε 20800); 258 (ε 44300); 330 (ε 12400); 350 (ε 6400) (MeOH).

*Penta-Me ether: 4,5,6,7,8-Pentamethoxyfuro[2,3-*b*]quinoline. 5-Methoxyhalfordinine. 6-Methoxyacronycidine. 5,6,7,8-Tetramethoxydictamnine*
$C_{16}H_{17}NO_6$ 319.313
Alkaloid from the wood of *Vepris punctata*. Viscous oil. λ_{max} 244 (ε 24500); 262 (ε 46000); 327 (ε 9100); 352 (ε 4200) (MeOH).

Chaturvedula, V.S.P. *et al., J. Nat. Prod.*, 2003, **66**, 532-534 (*isol, uv, pmr, cmr*)

Furo[2,3-*b*]quinoline-4,5,6,7-tetrol F-215

*4,5,6,7-Tetrahydroxyfuro[2,3-*b*]quinoline. 5,6,7-Trihydroxyfuro[2,3-*b*]quinolin-4(9*H*)-one*



$C_{11}H_7NO_5$ 233.18

OH-form

*Tetra-Me ether: 4,5,6,7-Tetramethoxyfuro[2,3-*b*]quinoline.* ***5,6,7-Trimethoxydictamnine***
[928849-55-2]
$C_{15}H_{15}NO_5$ 289.287
Alkaloid from the stem bark of a *Brombya* sp.

*6,7-Methylene, 4,5-di-Me ether: 9,10-Dimethoxy-1,3-dioxolo[4,5-*g*]furo[2,3-*b*]quinoline. 4,5-Dimethoxy-6,7-methylenedioxyfuro[2,3-*b*]quinoline.* ***5-Methoxymaculine***
$C_{14}H_{11}NO_5$ 273.245
Alkaloid from the wood of *Vepris punctata*. Viscous oil. λ_{max} 248 (log ε

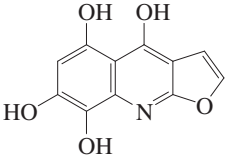
21410); 262 (log ϵ 46000); 332 (log ϵ 10000); 355 (log ϵ 4300) (MeOH).

Chaturvedula, V.S.P. *et al., J. Nat. Prod.*, 2003, **66**, 532-534 (*5-Methoxymaculine*)

Halstead, C.W. *et al., Nat. Prod. Commun.*, 2006, **1**, 351-356 (*5,6,7-Trimethoxydictamnine*)

Furo[2,3-*b*]quinoline-4,5,7,8-tetrol, 9CI F-216

*4,5,7,8-Tetrahydroxyfuro[2,3-*b*]quinoline*



$C_{11}H_7NO_5$ 233.18

► LV2796000

*Tetra-Me ether: 4,5,7,8-Tetramethoxyfuro[2,3-*b*]quinoline. 5,7,8-Trimethoxydictamnine.* ***Acronycidine***
[521-43-7]
$C_{15}H_{15}NO_5$ 289.287
Alkaloid from the bark of *Acronychia baueri* and *Melicope fareana* (Rutaceae). Needles or prisms (MeOH or EtOH). Mp 136-137.5°.

Tetra-Me ether, hydrochloride: Mp 120-121° dec.

Tetra-Me ether, picrate:
Yellow needles (MeOH). Mp 181.5-182.5°.

Lahey, F.N. *et al., Aust. J. Sci. Res., Ser. A*, 1950, **3**, 155 (*uv, struct, bibl*)

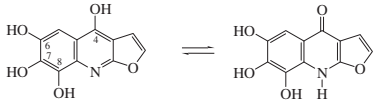
Batterman, T.J. *et al., Aust. J. Chem.*, 1965, **18**, 859 (*pmr*)

Prabhakar, S. *et al., Indian J. Chem.*, 1971, **9**, 191 (*synth, uv, ir*)

Sekiba, T. *et al., Bull. Chem. Soc. Jpn.*, 1974, **47**, 2895 (*synth, uv, ir, pmr*)

Furo[2,3-*b*]quinoline-4,6,7,8-tetrol F-217

*4,6,7,8-Tetrahydroxyfuro[2,3-*b*]quinoline. 6,7,8-Trihydroxyfuro[2,3-*b*]quinolin-4(9H)-one*



$C_{11}H_7NO_5$ 233.18

► JI4642000

OH-form

*Tetra-Me ether: 4,6,7,8-Tetramethoxyfuro[2,3-*b*]quinoline, 9CI.* ***Halfordinine***†. *6,7,8-Trimethoxydictamnine*
[26949-99-5]
$C_{15}H_{15}NO_5$ 289.287
Alkaloid from *Halfordia scleroxyla, Melicope perspicuinervia, Oricia suaveolens* and *Teclea verdoorniana* (Rutaceae). Needles (C_6H_6/petrol or MeOH). Mp 150-152°.

*6,7-Methylene, 4-Me ether: 9-Methoxy-1,3-dioxolo[4,5-*g*]furo[2,3-*b*]quinolin-4-ol, 9CI. 8-Hydroxy-4-methoxy-6,7-methylenedioxyfuro[2,3-*b*]quinoline.* ***Tecleine****. 8-Hydroxy-6,7-methylenedioxydictamnine*
[82202-82-2]
$C_{13}H_9NO_5$ 259.218
Alkaloid from the stem bark of *Teclea verdoorniana* (Rutaceae). Needles (EtOH). Mp 256-257°.

6,7-Methylene, 4-Me ether, Ac:
Plates (EtOAc). Mp 186-188°.

*6,7-Methylene, 4,8-di-Me ether: 4,9-Dimethoxy-1,3-dioxolo[4,5-*g*]furo[2,3-*b*]quinoline, 9CI. 4,8-Dimethoxy-6,7-methylenedioxyfuro[2,3-*b*]quinoline. 8-Methoxy-6,7-methylenedioxydictamnine.* ***Flindersiamine***
[522-06-5]
$C_{14}H_{11}NO_5$ 273.245
Alkaloid from *Flindersia collina, Flindersia maculosa, Araliopsis soyauxii*, and *Teclea verdoorniana* (Flindersiaceae, Rutaceae). Needles (MeOH). Mp 206-207°.

6,7-Methylene, 4,8-di-Me ether, picrate:
Yellow needles (1-propanol). Mp 200°.

*6,7-Methylene, 8-*O*-(3-methyl-2-butenyl), 4-Me ether: 4-Methoxy-6,7-methylenedioxy-8-prenyloxyfuro[2,3-*b*]quinoline.* ***Tecleamine***
[84658-45-7]
$C_{18}H_{17}NO_5$ 327.336
Alkaloid from the stem bark of *Teclea ouabanguiensis* (Rutaceae). Prisms (Et_2O/petrol). Mp 112-113°.

NH-form

6,7-Methylene, 8-Me ether, N*-Me: 4-Methoxy-5-methyl-1,3-dioxolo[4,5-*g*]furo[2,3-*b*]quinolin-9(5H)-one, 9CI.* ***Isoflindersiamine***
[1357-99-9]
$C_{14}H_{11}NO_5$ 273.245
Alkaloid from the leaves and twigs of *Helietta parvifolia* (Rutaceae). Also obt. by heating Furo[2,3-*b*]quinoline-4,6,7,8-tetrol, F-217 with MeI. Cryst. (MeOH or MeOH aq.). Mp 212-213° (209-211°).

Anet, F.A. *et al., Aust. J. Sci. Res., Ser. A*, 1952, **5**, 412 (*Flindersiamine, Isoflindersiamine*)

Brown, R.F.C. *et al., Aust. J. Chem.*, 1954, **7**, 181 (*Flindersiamine*)

Govindachari, T.R. *et al., Indian J. Chem.*, 1963, **1**, 348 (*synth*)

Clugston, D.M. *et al., Can. J. Chem.*, 1965, **43**, 2516 (*ms*)

Crow, W.D. *et al., Aust. J. Chem.*, 1968, **21**, 3075 (*Halfordinine*)

Murphy, S.T. *et al., Aust. J. Chem.*, 1974, **27**, 187 (*Halfordinine*)

Chang, P.T.O. *et al., J. Pharm. Sci.*, 1976, **65**, 561 (*Isoflindersiamine, isol, uv, ir, pmr, ms*)

Vaquette, J. *et al., Phytochemistry*, 1976, **15**, 743 (*Flindersiamine, isol, uv, ir, pmr, ms*)

Ayafor, J.F. *et al., J. Nat. Prod.*, 1982, **45**, 714 (*Tecleamine*)

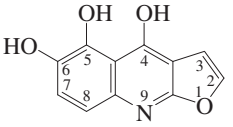
Ayafor, J.F. *et al., J.C.S. Perkin 1*, 1982, 909 (*Tecleine*)

Biavatti, M.W. *et al., J. Braz. Chem. Soc.*, 2002, **13**, 66-70 (*isol, cryst struct*)

Chaturvedula, V.S.P. *et al., J. Nat. Prod.*, 2003, **66**, 532-534 (*Flindersiamine, cmr*)

Furo[2,3-*b*]quinoline-4,5,6-triol, 9CI F-218

*4,5,6-Trihydroxyfuro[2,3-*b*]quinoline*



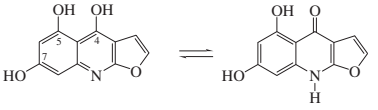
$C_{11}H_9NO_4$ 219.196

Tri-Me ether: ***4,5,6-Trimethoxyfuro[2,3-*b*]quinoline****. 5,6-Dimethoxydictamnine*
$C_{14}H_{13}NO_4$ 259.261
Alkaloid from the stems and leaves of *Haplophyllum buxbaumii* (Rutaceae). Amorph.

Ulubelen, A. *et al., Phytochemistry*, 1985, **24**, 372 (*isol, uv, ir, pmr, ms, struct*)

Furo[2,3-*b*]quinoline-4,5,7-triol F-219

*4,5,7-Trihydroxyfuro[2,3-*b*]quinoline. 5,7-Dihydroxyfuro[2,3-*b*]quinolin-4(9H)-one*



$C_{11}H_7NO_4$ 217.181

OH-form

Tri-Me ether: ***4,5,7-Trimethoxyfuro[2,3-*b*]quinoline****. 5,7-Dimethoxydictamnine*
[96400-49-6]
Alkaloid from the stems and leaves of *Haplophyllum buxbaumii* (Rutaceae). Amorph.

NH-form

5,7-Di-Me ether, N*-Me: 5,7-Dimethoxy-9-methylfuro[2,3-*b*]quinolin-4(9H)-one.* ***Glycarpine***
[71295-48-2]
$C_{14}H_{13}NO_4$ 259.261
Minor alkaloid from the leaves of *Glycosmis cyanocarpa* (Rutaceae). Cryst. (C_6H_6/petrol). Mp 170-171°. The proposed struct. has been questioned.

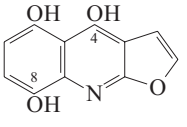
Sarkar, M. *et al., Phytochemistry*, 1978, **17**, 2145 (*Glycarpine*)

Kuo, S.C. *et al., J. Nat. Prod.*, 1984, **47**, 47

Ulubelen, A. *et al., Phytochemistry*, 1985, **24**, 372 (*tri-Me ether*)

Furo[2,3-*b*]quinoline-4,5,8-triol F-220

*4,5,8-Trihydroxyfuro[2,3-*b*]quinoline*



$C_{11}H_7NO_4$ 217.181

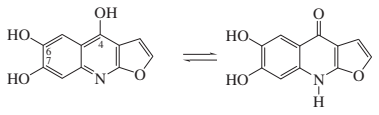
*4,8-Di-Me ether: 4,8-Dimethoxyfuro[2,3-*b*]quinolin-5-ol, 9CI.* ***5-Hydroxy-4,8-***

dimethoxyfuro[2,3-b]quinoline. *5-Hydroxy-8-methoxydictamnine*
[128508-21-4]
$C_{13}H_{11}NO_4$ 245.234
Alkaloid from *Alstonia mairei* (Apocynaceae).

Ye, J. *et al., Huaxue Xuebao*, 1989, **47**, 1012; *CA*, **113**, 74721j

Furo[2,3-*b*]quinoline-4,6,7-triol F-221

4,6,7-Trihydroxyfuro[2,3-b]quinoline. 6,7-Dihydroxyfuro[2,3-b]quinolin-4(9H)-one



$C_{11}H_7NO_4$ 217.181

OH-form

4,6-Di-Me ether: 4,6-Dimethoxyfuro[2,3-b]quinolin-7-ol. 7-Hydroxy-4,6-dimethoxyfuro[2,3-b]quinoline. ***Heliparvifoline****. 7-Hydroxy-6-methoxydictamnine*
[59442-99-8]
$C_{13}H_{11}NO_4$ 245.234
Alkaloid from the leaves and twigs of *Helietta parvifolia* and from the leaves of *Melicope confusa* (Rutaceae). Cryst. (MeOH). Mp 245-247°. The 7-Hydroxy-6-methoxydictamnine (Mp 229°) reported in 1981 from *Monnieria trifolia* appears to be identical with Delbine below. (J. Bhattacharyya *et al, Heterocycles*, 1981, **16**, 371; 1983,**20**, 1063).

4,7-Di-Me ether: 4,7-Dimethoxyfuro[2,3-b]quinolin-6-ol. 6-Hydroxy-4,7-dimethoxyfuro[2,3-b]quinoline. ***Delbine***†
[77145-73-4]
$C_{13}H_{11}NO_4$ 245.234
Alkaloid from the leaves of *Monnieria trifolia* (Rutaceae). Mp 229-231°. Genus name often given as Monniera.

Tri-Me ether: 4,6,7-Trimethoxyfuro[2,3-b]quinoline. ***Kokusaginine****. 6,7-Dimethoxydictamnine*
[484-08-2]
$C_{14}H_{13}NO_4$ 259.261
Alkaloid present in *Evodia* and *Orixa* spp. (Rutaceae) and in *Flindersia* spp., *Ruta graveolens*, *Acronychia pedunculata* and *Acronychia laurifolia*. Cytotoxic agent. Prisms (EtOH). Mp 171°. λ_{max} 245 (ϵ 67000); 252 (ϵ 5900); 308 (ϵ 12900); 321 (ϵ 13200); 335 (ϵ 9500) (EtOH) (Berdy).

► LV2798000

Tri-Me ether, hydrochloride: Mp 225° dec.

Tri-Me ether, picrate:
Yellow needles (EtOH). Mp 218°.

7-O-(3-Methyl-2-butenyl), 4,6-di-Me ether: 4,6-Dimethoxy-7-prenyloxyfuro[2,3-b]quinoline. ***Nobiline***†
[114216-84-1]
$C_{18}H_{19}NO_4$ 313.352
Alkaloid from the leaves and fruits of *Teclea nobilis* (Rutaceae). Mp 117-119°.

6-O-(3-Methyl-2-butenyl), 4,7-di-Me ether: 4,7-Dimethoxy-6-prenyloxyfuro[2,3-b]quinoline. ***Tecleanatalensine B***
$C_{18}H_{19}NO_4$ 313.352
Alkaloid from the leaves of *Teclea natalensis*. Pale yellow gum. λ_{max} 248 (log ϵ 4.4); 253 (log ϵ 4.4); 310 (log ϵ 3.7); 322 (log ϵ 3.7); 336 (log ϵ 3.7) (CH_2Cl_2).

7-O-(2ξ,3-Epoxy-3-methylbutyl), 4,6-di-Me ether: ***Isotecleoxine***
[651737-87-0]
$C_{18}H_{19}NO_5$ 329.352
Alkaloid from *Teclea nobilis*. Amorph. solid. $[\alpha]_D$ -13.3 (c, 0.06 in MeOH). λ_{max} 244 (log ϵ 3.41); 309 (log ϵ 4.05); 321 (log ϵ 4.02); 334 (log ϵ 4.11) (MeOH).

6-O-(2ξ,3-Epoxy-3-methylbutyl), 4,7-di-Me ether: ***Tecleoxine****. Tecleanatalensine A*
[651737-86-9]
$C_{18}H_{19}NO_5$ 329.352
Alkaloid from *Teclea natalensis* and *Teclea nobilis*. Needles (petrol). Mp 120-121°. $[\alpha]_D$ +11 (c, 0.19 in CH_2Cl_2). λ_{max} 246 (log ϵ 4.51); 253 (log ϵ 4.47); 310 (log ϵ 3.85); 322 (log ϵ 3.88); 334 (log ϵ 3.79) (CH_2Cl_2).

4-O-(2S,3-Dihydroxy-3-methylbutyl), 6,7-di-Me ether: ***1-[(6,7-Dimethoxyfuro[2,3-b]quinolin-4-yl)oxy]-3-methyl-2,3-butanediol***
$C_{18}H_{21}NO_6$ 347.367
Alkaloid from the aerial parts of *Clausena dunniana*. $[\alpha]_D^{24}$ -14.4 (c, 0.45 in MeOH). Config. drawn incorrectly in ref. λ_{max} 210 ; 244 ; 250 ; 293 ; 308 ; 321 ; 334 (MeOH).

6-O-(2ξ,3-Dihydroxy-3-methylbutyl), 4,7-di-Me ether: ***Montrifoline****. Nkolbisine*
[77145-74-5]
[95462-87-6]
$C_{18}H_{21}NO_6$ 347.367
Alkaloid from the stem bark of *Teclea verdoorniana* ((-)-form) and from the aerial parts of *Haplophyllum vulcanicum* ((+)-form). Nkolbisine is also present in the leaves of *Monnieria trifolia* and the stem bark of *Teclea ouabangiensis*, but the specific rotns. of the alkaloids from these two sources have not been recorded (Rutaceae). Needles. Mp 190-192°. $[\alpha]_D^{24}$ -16.5 (c, 2.0 in MeOH) ((-)-form). $[\alpha]_D^{25}$ +23 (c, 0.5 in MeOH) ((+)-form).

7-O-(2ξ,3-Dihydroxy-3-methylbutyl), 4,6-di-Me ether: ***Evolatine***
[524-90-3]
$C_{18}H_{21}NO_6$ 347.367
Alkaloid from *Evodia alata* (Rutaceae). Cryst. (Me_2CO). Mp 201-202°. $[\alpha]_D^{24}$ +17.5 (c, 0.3 in EtOH). The alkaloid reported as Evolatine in 1981 from *Monnieria trifolia* appears to be identical with Montrifoline (J. Bhattacharyya *et al, Heterocycles,*, 1981,**16**, 371; 1983, **20**, 1063).

6-O-(2ξ-Hydroxy-3-methoxy-3-methylbutyl), 4,7-di-Me ether: ***3′-O-Methylnkolbisine****. 3′-O-Methylmontrifoline*
[651737-88-1]
$C_{19}H_{23}NO_6$ 361.394
Alkaloid from *Teclea nobilis*. Needles. Mp 168-169°. $[\alpha]_D$ -2.8 (c, 0.04 in MeOH). λ_{max} 245 (log ϵ 3.26); 251 (log ϵ 3.25); 308 (log ϵ 3.98); 320 (log ϵ 3.97); 334 (log ϵ 4.11) (MeOH).

6-O-(3-Chloro-2ξ-hydroxy-3-methylbutyl), 4,7-di-Me ether: ***Chlorodesnkolbisine***
[651737-89-2]
$C_{18}H_{20}ClNO_5$ 365.812
Alkaloid from *Monnieria trifolia*. Light yellow powder. Racemic. This struct. was incorrectly assigned to a compd. from *Teclea nobilis* in 2003. λ_{max} 247 (log ϵ 4.57); 320 (log ϵ 4.03) (MeOH).

6,7-Methylene, 4-Me ether: 9-Methoxy-1,3-dioxolo[4,5-g]furo[2,3-b]quinoline. 4-Methoxy-6,7-methylenedioxyfuro[2,3-b]quinoline. 6,7-Methylenedioxydictamnine. ***Maculine***
[524-89-0]
$C_{13}H_9NO_4$ 243.218
Alkaloid from *Flindersia dissosperma* and *Flindersia maculosa* (Flindersiaceae). Needles (MeOH). Mp 196-197°.

► JI4644000

6,7-Methylene, 4-Me ether, hydrochloride: Mp 205-210° dec.

6,7-Methylene ether, 4-O-(2ξ,3-dihydroxy-3-methylbutyl): ***Maculosine***†
$C_{17}H_{17}NO_6$ 331.324
Alkaloid from *Flindersia maculosa* bark. Needles (EtOH). Mp 229-230°. $[\alpha]_D^{20}$ +36 (Py). Originally given the MF $C_{15}H_{15}NO_5$.

NH-form

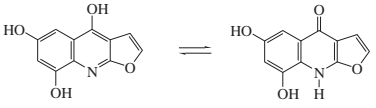
6,7-Methylene ether, N-Me: 5-Methyl-1,3-dioxolo[4,5-g]furo[2,3-b]quinolin-9(5H)-one. 6,7-Methylenedioxy-9-methylfuro[2,3-b]quinolin-9(5H)-one. ***Isomaculine***
[482-84-8]
$C_{13}H_9NO_4$ 243.218
Alkaloid from the root bark of *Esenbeckia pilocarpoides* (Asteraceae), also obt. by heating Maculine with MeI. Needles ($CHCl_3$). Mp 269° (237-239°).

Anet, F.A.L. *et al., Aust. J. Sci. Res., Ser. A*, 1952, **5**, 412 (*Kokusaginine*)
Brown, R.F.C. *et al., Aust. J. Chem.*, 1954, **7**, 181 (*Maculine, Maculosine*)
Gell, R.J. *et al., Aust. J. Chem.*, 1955, **8**, 114; 422 (*Evolatine, Maculine*)
Prager, R.H. *et al., Aust. J. Chem.*, 1960, **13**, 380 (*Maculosine, synth*)
Robertson, A.V. *et al., J.C.S.*, 1960, 2458 (*Evolatine, ir*)
Robertson, A.V. *et al., Aust. J. Chem.*, 1963, **16**, 450 (*pmr, derivs*)
Clugston, D.M. *et al., Can. J. Chem.*, 1965, **43**, 2516 (*ms, derivs*)
Mester, I. *et al., Phytochemistry*, 1971, **10**, 2205 (*synth, derivs*)
Chang, P.T.O. *et al., J. Pharm. Sci.*, 1976, **65**, 561 (*Heliparvifoline*)
Sekiba, T. *et al., Bull. Chem. Soc. Jpn.*, 1978, **51**, 325 (*synth, ir, pmr, derivs*)
Bhattacharyya, J. *et al., Heterocycles*, 1981, **16**, 371 (*Delbine, Montrifoline*)
Ranade, A.C. *et al., Indian J. Chem., Sect. B*, 1982, **21**, 528 (*Maculine, synth*)

Ayafor, J.F. *et al., J. Nat. Prod.*, 1982, **45**, 182; 714 (*Nkolbisine*)
Patra, A. *et al., Heterocycles*, 1984, **22**, 2821 (*Montrifoline*)
Bevalot, F. *et al., Planta Med.*, 1984, **50**, 522 (*Isomaculine*)
Kang, S.S. *et al., Arch. Pharmacal Res.*, 1986, **9**, 11; *CA*, **105**, 39390p (*Heliparvifoline, isol*)
Yenesew, A. *et al., Phytochemistry*, 1988, **27**, 651 (*Nobiline*)
Cui, B. *et al., Phytochemistry*, 1999, **52**, 95-98 (*Kokusaginine, activity*)
He, H.-P. *et al., Helv. Chim. Acta*, 2003, **86**, 3187-3193 (*Clausena dunniana ether*)
Al-Rehaily, A.J. *et al., Phytochemistry*, 2003, **64**, 1405-1411 (*Tecleoxine, Isotecleoxine, 3′-Methylnkolbisine, Nobiline*)
Nunes, F.M. *et al., Magn. Reson. Chem.*, 2005, **43**, 864-866 (*Maculine, pmr, cmr*)
Tarus, P.K. *et al., Phytochemistry*, 2005, **66**, 703-706 (*Tecleanatalensines A,B*)
Cao, S. *et al., Phytochemistry*, 2008, **69**, 553-557 (*Chlorodesnkolbisine, Nkolbisine*)

Furo[2,3-*b*]quinoline-4,6,8-triol F-222

*4,6,8-Trihydroxyfuro[2,3-*b*]quinoline. 6,8-Dihydroxyfuro[2,3-*b*]quinolin-4(9H)-one*



$C_{11}H_7NO_4$ 217.181

► LV2799000

OH-form

*Tri-Me ether: 4,6,8-Trimethoxyfuro[2,3-*b*]quinoline, 9CI.* ***Maculosidine****. 6,8-Dimethoxydictamnine*
[522-19-0]
$C_{14}H_{13}NO_4$ 259.261
Alkaloid from *Flindersia maculosa*, *Acronychia laurifolia* and *Eriostemon* spp. (Flindersiaceae, Rutaceae). Cytotoxic. Plates (EtOH). Mp 186°.

*8-O-(3-Methyl-2-butenyl), 4,6-di-Me ether: 4,6-Dimethoxy-8-(3-methyl-2-butenyloxy)furo[2,3-*b*]quinoline.* ***Tecleabine***
[651737-85-8]
$C_{18}H_{19}NO_4$ 313.352
Alkaloid from *Teclea nobilis*. Needles. Mp 107-108°. λ_{max} 248 (log ε 3.22); 295 (log ε 4.16); 307 (log ε 4.18); 339 (log ε 4.29); 353 (log ε 4.31) (MeOH).

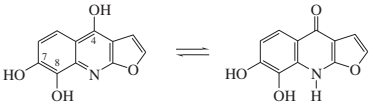
NH-form

6,8-Di-Me ether, N-*Me: 6,8-Dimethoxy-9-methylfuro[2,3-*b*]quinolin-4(9H)-one, 9CI.* ***Isomaculosidine***
[518-96-7]
$C_{14}H_{13}NO_4$ 259.261
Alkaloid from the roots of *Dictamnus albus* and *Dictamnus caucasicus* (Rutaceae). Also obt. by heating Furo[2,3-*b*]quinoline-4,6,8-triol, F-222 with MeI. Needles (EtOH, $CHCl_3$/hexane or C_6H_6). Mp 170-172° (167-168°).

Brown, R.F.C. *et al., Aust. J. Chem.*, 1954, **7**, 181 (*isol, uv, struct*)
Duffield, A.M. *et al., Aust. J. Chem.*, 1962, **15**, 812; 1963, **16**, 123 (*isol*)
Govindachari, T.R. *et al., Indian J. Chem.*, 1963, **1**, 17 (*synth*)
Clugston, D.M. *et al., Can. J. Chem.*, 1965, **43**, 2516 (*ms*)
Kikvidze, I.M. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1971, **7**, 659 (*Isomaculosidine*)
Sekiba, T. *et al., Bull. Chem. Soc. Jpn.*, 1973, **46**, 577 (*synth, uv*)
Storer, R. *et al., Tetrahedron*, 1973, **29**, 1217 (*Isomaculosidine*)
Xu, W.H. *et al., Huaxue Xuebao*, 1984, **42**, 899 (*Maculosidine, isol*)
Lin, T.P. *et al., J. Nat. Prod.*, 1987, **50**, 631 (*synth, uv, ir, pmr, cmr*)
Cui, B. *et al., Phytochemistry*, 1999, **52**, 95-98 (*Maculosidine, activity*)
Al-Rehaily, A.J. *et al., Phytochemistry*, 2003, **64**, 1405-1411 (*Tecleabine*)

Furo[2,3-*b*]quinoline-4,7,8-triol F-223

*4,7,8-Trihydroxyfuro[2,3-*b*]quinoline. 7,8-Dihydroxyfuro[2,3-*b*]quinolin-4(9H)-one*



$C_{11}H_7NO_4$ 217.181

OH-form

*4,7-Di-Me ether: 4,7-Dimethoxyfuro[2,3-*b*]quinolin-8-ol. 8-Hydroxy-4,7-dimethoxyfuro[2,3-*b*]quinoline.* ***Isohaplopine****. 8-Hydroxy-7-methoxydictamnine*
[62580-17-0]
$C_{13}H_{11}NO_4$ 245.234
Alkaloid from the leaves of *Zanthoxylum arborescens* and *Teclea simplicifolia* (Rutaceae). Cryst. (hexane/EtOAc), plates (Me_2CO/petrol). Mp 129-130° (121-123°).

*4,8-Di-Me ether: 7-Hydroxy-4,8-dimethoxyfuro[2,3-*b*]quinoline. 4,8-Dimethoxyfuro[2,3-*b*]quinolin-7-ol.* ***Haplopine****. 7-Hydroxy-8-methoxydictamnine*
[5876-17-5]
$C_{13}H_{11}NO_4$ 245.234
Alkaloid from *Haplophyllum robustum*, *Zanthoxylum cuspidatum*, *Monnieria trifolia* and *Melicope lasioneura* (Rutaceae). Mp 203-204°.

4,8-Di-Me ether, 7-O-β-D-glucopyranoside: ***Glycohaplopine****. Glucohaplopine*
[74201-15-3]
$C_{19}H_{21}NO_9$ 407.376
Alkaloid from the aerial parts of *Haplophyllum perforatum* (Rutaceae). Mp 217-218°. $[\alpha]_D$ -41 (c, 0.516 in Py).

4,8-Di-Me ether, 7-O-α-L-rhamnopyranoside: ***Glycoperine***
[55740-45-9]
$C_{19}H_{21}NO_8$ 391.377
Alkaloid from *Haplophyllum perforatum* (Rutaceae). Cryst. (MeOH). Mp 224-225°. $[\alpha]_D$ -66.3 (c, 2.32 in Py).

4,8-Di-Me ether, 7-O-(O-acetyl-α-L-rhamnopyranoside): ***Monoacetylglycoperine***
[67184-79-6]
$C_{21}H_{23}NO_9$ 433.414
Alkaloid from aerial parts of *Haplophyllum perforatum*. Mp 120-121°.

4,8-Di-Me ether, 7-O-(di-O-acetyl-α-L-rhamnopyranoside): ***Diacetylglycoperine***
$C_{23}H_{25}NO_{10}$ 475.451
Alkaloid from *Haplophyllum perforatum*.

4,8-Di-Me ether, 7-O-(tri-O-acetyl-α-L-rhamnopyranoside): ***Triacetylglycoperine***
[55740-46-0]
$C_{25}H_{27}NO_{11}$ 517.488
Alkaloid from *Haplophyllum perforatum*. Cryst. (C_6H_6/petrol). Mp 181-182°. $[\alpha]_D$ -91 (c, 0.4 in EtOH).

4,8-Di-Me ether, 7-O-[β-D-glucopyranosyl-(1→3)-α-L-rhamnopyranoside]: ***Haplosinine***
[115345-33-0]
$C_{25}H_{31}NO_{13}$ 553.519
Alkaloid from aerial parts of *Haplophyllum perforatum* (Rutaceae). Mp 227-228°. $[\alpha]_D^{25}$ -74 (c, 2.83 in Py).

4,8-Di-Me ether, 7-O-[β-D-glucopyranosyl-(1→3)-2-O-acetyl-α-L-rhamnopyranoside]: ***Haplosidine***
[115345-32-9]
$C_{27}H_{33}NO_{14}$ 595.556
Alkaloid from *Haplophyllum perforatum*. Mp 158-160°. $[\alpha]_D^{25}$ -77 (c, 2.66 in Py). λ_{max} 249 (log ε 4.87); 275 (sh) (log ε 3.25); 320 (log ε 3.85); 333 (log ε 3.77) (EtOH).

*Tri-Me ether: 4,7,8-Trimethoxyfuro[2,3-*b*]quinoline.* ***Skimmianine****. Chloroxylonine. Pentaphylline. 7,8-Dimethoxydictamnine. β-Fagarine*
[83-95-4]
$C_{14}H_{13}NO_4$ 259.261
Alkaloid from *Skimmia japonica*, *Haplophyllum tuberculum*, *Zanthoxylum ovalifolium*, *Zanthoxylum coco*, *Fagara coco*, *Fagara zanthoxyloides*, *Acronychia pedunculata*, *Acronychia laurifolia*, *Stauranthus perforatus* and many other spp., mostly in the Rutaceae. Spasmolytic agent. Shows pharmacol. props. similar to 2-(Methylamino)-1-phenyl-1-propanol, M-386. Mp 176-177°. Log P 2.99 (calc). λ_{max} 204 ; 249 ; 323 (MeOH) (Berdy). λ_{max} 250 (ε 76000); 319 (ε 7200); 332 (ε 16000) (EtOH) (Berdy).

► LV2800000

Tri-Me ether, perchlorate: Mp 210°.

Tri-Me ether, picrate: Mp 197°.

*4-Et, 7,8-di-Me ether: 4-Ethoxy-7,8-dimethoxyfuro[2,3-*b*]quinoline.* **O-*Ethyl*-norskimmianine**
[106006-02-4]
$C_{15}H_{15}NO_4$ 273.288
Alkaloid from roots of *Dictamnus dasycarpus* (Rutaceae).

4-O-(2ξ,3-Dihydroxy-3-methylbutyl), 7,8-di-Me ether: ***Nigdenine***
[95378-12-4]
$C_{18}H_{21}NO_6$ 347.367
Alkaloid from the aerial parts of *Haplophyllum vulcanicum* (Rutaceae).

Cryst. ($CHCl_3$/hexane). Mp 177-180°. $[\alpha]_D^{25}$ +5.3 (c, 0.3 in MeOH).

7-O-*(2,3-Epoxy-3-methylbutyl), 4,8-di-Me ether:* ***Anhydroevoxine***
[24099-25-0]
$C_{18}H_{19}NO_5$ 329.352
Alkaloid from the branch ends of *Evodia xanthoxyloides* and from *Haplophyllum ferganicum* and *Haplophyllum perforatum*. Cryst. (Et_2O/hexane). Mp 141-144°. $[\alpha]_D$ +13 ($CHCl_3$).

7-O-*(3-Methyl-2-oxobutyl), 4,8-di-Me ether:* ***Evoxoidine****. 7-(3-Methyl-2-oxobutoxy)-8-methoxydictamnine*
[572-24-7]
$C_{18}H_{19}NO_5$ 329.352
Alkaloid from *Evodia xanthoxyloides* (Rutaceae). Cryst. (EtOH). Mp 136-137°.

7-O-*(2*R*,3-Dihydroxy-3-methylbutyl), 4,8-di-Me ether: 7-(2,3-Dihydroxy-3-methylbutoxy)-8-methoxydictamnine.* ***Evoxine****. Haploperine. Haplophytine B*
[522-11-2]
$C_{18}H_{21}NO_6$ 347.367
Alkaloid from *Evodia xanthoxyloides*, *Monnieria trifolia* and several *Haplophyllum* spp. (Rutaceae). Mp 154-155°. $[\alpha]_D^{22}$ +14.6 (EtOH). $[\alpha]_D$ +63.6 (c, 0.33 in MeOH) (Haplophytine B).

7-O-*(2-Acetoxy-3-hydroxy-3-methylbutyl), 4,8-di-Me ether:* ***Evoxine acetate****. 2′-Acetylevoxine*
[40817-01-4]
[64397-07-5]
$C_{20}H_{23}NO_7$ 389.404
Alkaloid from *Haplophyllum hispanicum*, *Haplophyllum fergancum* and *Haplophyllum ramosissimum*. Cryst. (C_6H_6). Mp 168.5-169.5°.

7-O-*(2-Hydroxy-3-methoxy-3-methylbutyl), 4,8-di-Me ether:* ***Methylevoxine***
[56775-80-5]
$C_{19}H_{23}NO_6$ 361.394
Alkaloid from *Haplophyllum glabrinum*, *Haplophyllum perforatum* and *Haplophyllum obtusifolium*. Needles. Mp 55-56°. λ_{max} 251 (log ϵ 4.91); 322 (log ϵ 3.78); 334 (log ϵ 3.77) (no solvent reported).

7-O-*(2*R*-Hydroxy-3-ethoxy-3-methylbutyl), 4,8-di-Me ether:* ***Ethylevoxine***
[953812-17-4]
$C_{20}H_{25}NO_6$ 375.421
Alkaloid from the leaves of *Choisya ternata*. $[\alpha]_D$ -8.8 (c, 0.2 in $CHCl_3$) (as 2′-Ac).

7-O-*(3-Chloro-2*R*-hydroxy-3-methylbutyl), 4,8-di-Me ether:* ***Chlorodeoxyevoxine****. Chlorodesoxyevoxine*
[953812-19-6]
$C_{18}H_{20}ClNO_5$ 365.812
Alkaloid from the leaves of *Choisya ternata*. Cryst. (Me_2CO/hexane). Mp 137-138°. $[\alpha]_D$ +14.2 (c, 0.33 in EtOH).

7-O-*(3-Chloro-2*RS*-hydroxy-3-methylbutyl), 4,8-di-Me ether:* ***7-O-(3-Chloro-2-hydroxy-3-methylbutyl)haplopine***
$C_{18}H_{20}ClNO_5$ 365.812
Alkaloid from *Monnieria trifolia*. Light yellow powder. Racemic. λ_{max} 249 (log ϵ 4.68); 320 (log ϵ 3.97) (MeOH).

7-O-*(3-Methyl-2-butenyl), 4,8-di-Me ether: 4,8-Dimethoxy-7-[(3-methyl-2-butenyl)oxy]furo[2,3-*b*]quinoline. 7-Isopentenyloxy-γ-fagarine. 8-Methoxy-7-prenyloxydictamnine.* ***Haplopine prenyl ether***
[23417-92-7]
$C_{18}H_{19}NO_4$ 313.352
Alkaloid from *Ptelea aptera, Melicope lasioneura* and *Choisya ternata* (biosynth.) (Rutaceae). Cryst. (MeOH). Mp 101-103°.

7-O-*(2-Hydroxy-3-methyl-3-butenyl), 4,8-di-Me ether:* ***Evodine***†
[6989-38-4]
$C_{18}H_{19}NO_5$ 329.352
Alkaloid from the leaves of *Evodia xanthoxyloides* (Rutaceae). Mp 153-154°. $[\alpha]_D^{20}$ -3 (c, 1.0 in $CHCl_3$). Abs. config. not detd.

7-O-*(4-Hydroxy-3-methyl-2*Z*-butenyl), 4,8-di-Me ether:* ***Haplatine****. Myrtifoline*
[58480-57-2]
$C_{18}H_{19}NO_5$ 329.352
Alkaloid from *Haplophyllum latifolium* (Rutaceae) and *Haplophyllum myrtifolium*. Cryst. (C_6H_6). Mp 139-140°.

7-O-*(4-Acetoxy-3-methyl-2*Z*-butenyl), 4,8-di-Me ether:* ***Acetylhaplatine***
[58480-58-3]
$C_{20}H_{21}NO_6$ 371.389
Alkaloid from *Haplophyllum obtusifolium* (Rutaceae). Mp 87-88° (78-80°).

7-O-*(4-Chloro-3-methyl-2ξ-butenyl), 4,8-di-Me ether:* ***Haplobine***
[107783-37-9]
$C_{18}H_{18}ClNO_4$ 347.797
Alkaloid from the roots of *Haplophyllum obtusifolium* (Rutaceae). Cryst. (Me_2CO). Mp 151-153°.

8-O-*(3-Methyl-2-butenyl), 4,7-di-Me ether:* ***4,7-Dimethoxy-8-prenyloxyfuro[2,3-b]quinoline****. Isohaplopine prenyl ether. 7-Methoxy-8-(3-methyl-2-butenyloxy)dictamnine*
[81536-07-4]
$C_{18}H_{19}NO_4$ 313.352
Alkaloid from *Teclea simplicifolia* and *Zanthoxylum arborescens* (Rutaceae). Cryst. (EtOAc/hexane). Mp 120.5-121.5° (118-119°).

7-O-*(6,7-Dihydroxy-3,7-dimethyl-2-octenyl), 4,8-di-Me ether:* ***Haplotubine***
$C_{23}H_{29}NO_6$ 415.485
Alkaloid from *Haplophyllum tuberculatum*. Amorph. yellow powder. $[\alpha]_D^{22}$ -6 (c, 1.2 in CH_2Cl_2). λ_{max} 250 (log ϵ 4.87); 320 (log ϵ 3.9); 332 (log ϵ 3.88) (MeOH).

*7,8-Methylene, 4-Me ether: 6-Methoxy-1,3-dioxolo[4,5-*h*]furo[2,3-*b*]quinoline. 4-Methoxy-7,8-methylenedioxyfuro[2,3-*b*]quinoline.* ***Kokusagine****. 7,8-Methylenedioxydictamnine*
[482-32-6]
$C_{13}H_9NO_4$ 243.218
Alkaloid from the roots of *Orixa japonica* (Rutaceae). Needles. Mp 201° (192-193°).

7,8-Methylene, 4-Me ether, picrate: Mp 178° (157°).

NH-form

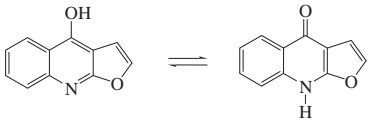
7,8-Di-Me ether, N-*Et: 9-Ethyl-7,8-dimethoxyfuro[2,3-*b*]quinolin-4(9*H*)-one.* ***8-Methoxytaifine***
[84323-10-4]
$C_{15}H_{15}NO_4$ 273.288
Alkaloid from *Ruta chalepensis* (Rutaceae). Needles (petrol). Mp 122-123°.

Delofeu, V. *et al., J.A.C.S.*, 1942, **64**, 2326-2338 (*isol, Skimmianine*)
Eastwood, F.W. *et al., Aust. J. Chem.*, 1954, **7**, 87-98 (*Evoxoidine, Evoxine*)
Terasaka, M. *et al., Chem. Pharm. Bull.*, 1954, **2**, 159 (*Kokusagine*)
Briggs, L.H. *et al., J.C.S.*, 1960, 2458-2460 (*ir, derivs*)
Prager, R.H. *et al., Aust. J. Chem.*, 1962, **15**, 301-304 (*Evodine*)
Sidyakin, G.P. *et al., Dokl. Akad. Nauk SSSR, Ser. Khim.*, 1962, **19**, 39-40; *CA*, **57**, 15170 (*Haplopine*)
Robertson, A.V. *et al., Aust. J. Chem.*, 1963, **16**, 451 (*pmr, Skimmianine, Evoxine*)
Pai, B.R. *et al., Indian J. Chem.*, 1964, **2**, 449 (*Kokusagine, synth*)
Clugston, D.M. *et al., Can. J. Chem.*, 1965, **43**, 2516-2521 (*ms, Skimmianine*)
Dreyer, D.L. *et al., Phytochemistry*, 1969, **8**, 1013 (*Haplopine prenyl ether*)
Dreyer, D.L. *et al., J.O.C.*, 1970, **35**, 2420-2422 (*Anhydroevoxine*)
Gonzalez, A.G. *et al., An. Quim.*, 1972, **68**, 1133-1138 (*Evoxine acetate*)
Akhmedzhanova, V.I. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1974, **10**, 706-707; 1975, **11**, 291 (*Glycoperine, Methylevoxine*)
Grundon, M.F. *et al., J.C.S. Perkin 1*, 1974, 2181-2184; 1975, 302-304 (*biosynth, Skimmianine, Evoxine*)
Nesmelova, E.F. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1975, **11**, 706-707 (*Haplatine*)
Abdullaeva, Kh.A. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1977, **13**, 363; 1978, **14**, 179-182; 1979, **15**, 782-783 (*acetylglycoperines, Glycohaplopine*)
Moulis, C. *et al., Planta Med.*, 1981, **42**, 400-402 (*isol, uv, pmr, ms, Evoxine, Haplopine*)
Bessonova, I.A. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1982, **18**, 505-506; **20**, 125 (*Anhydroevoxine, Acetylhaplatine*)
Tillequin, F. *et al., J. Nat. Prod.*, 1982, **45**, 486-488 (*Skimmianine, Haplopine, Haplopine prenyl ether*)
Grina, J.A. *et al., J.O.C.*, 1982, **47**, 2648-2651 (*Isohaplopine prenyl ether*)
Mohr, N. *et al., Phytochemistry*, 1982, **21**, 1838 (*8-Methoxytaifine*)
Patra, A. *et al., Heterocycles*, 1984, **22**, 2821 (*Nigdenine*)
Razakova, D.M. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1985, **21**, 259 (*Anhydroevoxine*)
Bessonova, I.A. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1986, **22**, 684-686 (*Haplobine*)
Liu, T.P. *et al., CA*, 1987, **106**, 30033n (*O-Ethylskimmianine*)
Razulova, Kh.A *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1987, **23**, 731-734; 1988, **24**, 82-84 (*Haplosinine, Haplosidine*)
Wondimu, A. *et al., Phytochemistry*, 1988, **27**, 959-960 (*Isohaplopine*)
Cox, O. *et al., Acta Cryst. C*, 1989, **45**, 1263-1265 (*cryst struct, Skimmianine*)
Jackson, G.E. *et al., Spectrosc. Lett.*, 1990, **23**, 971-982 (*pmr, cmr, Skimmianine*)
Chakravarty, A.K. *et al., Phytochemistry*, 1999, **50**, 1263-1266 (*isol, pmr, cmr, ms, Skimmianine*)

Al-Rehaily, A.J. *et al., Phytochemistry*, 2001, **57**, 597-602 (*Haplotubine*)
Ali, M.S. *et al., Phytochemistry*, 2001, **57**, 1277-1280 (*Haplophytine B, pmr, cmr, ms*)
Boyd, D.R. *et al., Chem. Comm.*, 2002, 3070-3071 (*Evoxine, abs config*)
Al-Rehaily, A.J. *et al., Phytochemistry*, 2003, **64**, 1405-1411 (*Haplopine prenyl ether, Anhydroevoxine*)
Tarus, P.K. *et al., Phytochemistry*, 2005, **66**, 703-706 (*Isohaplopine prenyl ether, cmr*)
Boyd, D.R. *et al., Org. Biomol. Chem.*, 2007, **5**, 2983-2991 (*Chlorodeoxyevoxine, Ethylevoxine*)
Cao, S. *et al., Phytochemistry*, 2008, **69**, 553-557 (*7-O-(Chlorohydroxymethylbutyl)haplopine*)

Furo[2,3-*b*]quinolin-4-ol, 9CI F-224

*4-Hydroxyfuro[2,3-*b*]quinoline. Furo[2,3-*b*]quinolin-4(9H)-one*



$C_{11}H_7NO_2$ 185.182

Picrate: Mp 164-165°.

OH-form

*Me ether: 4-Methoxyfuro[2,3-*b*]quinoline.* ***Dictamnine***
[484-29-7]
$C_{12}H_9NO_2$ 199.209
Alkaloid from *Dictamnus albus* and widely distributed in the family Rutaceae. Strong smooth muscle contractant. Active against gram-positive bacteria and fungi. Mp 132-133°.

*Et ether: 4-Ethoxyfuro[2,3-*b*]quinoline, 9CI.* **O-*Ethylnordictamnine***
[95874-16-1]
$C_{13}H_{11}NO_2$ 213.235
Alkaloid from roots of *Dictamnus dasycarpus* (Rutaceae).

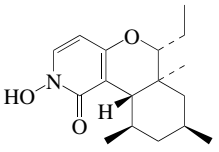
NH-form

N-*Me: 9-Methylfuro[2,3-*b*]quinolin-4(9H)-one.* ***Isodictamnine***
[484-74-2]
$C_{12}H_9NO_2$ 199.209
Alkaloid from trunk bark of *Helietta longifoliata* and root bark of *Dictamnus albus* (Rutaceae). Mp 186-187°.

Asahina, Y. *et al., Ber.*, 1930, **63**, 2045 (*Dictamnine, isol*)
Grundon, M.F. *et al., J.C.S.*, 1957, 2177 (*Dictamnine, ir, uv, synth*)
Robertson, A.V. *et al., Aust. J. Chem.*, 1963, **16**, 451 (*pmr*)
Clugston, D.M. *et al., Can. J. Chem.*, 1965, **43**, 2516 (*ms*)
Mammarella, C.A. *et al., An. Asoc. Quim. Argent.*, 1971, **59**, 239; *CA*, **76**, 43980f (*Isodictamnine*)
Collins, J.F. *et al., J.C.S. Perkin 1*, 1974, 2177 (*biosynth*)
Narasimhan, N.S. *et al., Tetrahedron*, 1974, **30**, 4153-4157 (*synth*)
Wolters, B. *et al., Planta Med.*, 1981, **43**, 166-174 (*activity*)
Lin, T.P. *et al., Hua Hsueh*, 1986, **44**, 96; 1987, **45**, 45; *CA*, **106**, 30033n; **111**, 229011n (*O-Ethylnordictamnine, Isodictamnine*)
Kuo, S.C. *et al., J. Het. Chem.*, 1991, **28**, 955 (*Isodictamnine, synth*)

Fusaricide F-225

[184031-21-8]



Relative Configuration

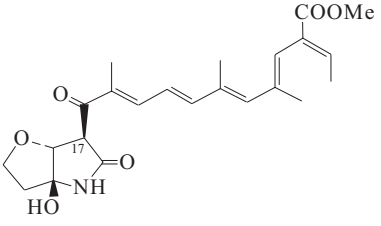
$C_{17}H_{25}NO_3$ 291.389

Related to Cordypyridone D, C-647. Isol. from a *Fusarium* sp. Cytotoxic. Shows antifungal activity. Cryst. Mp 208°. $[\alpha]_D$ +194 (c, 0.12 in $CHCl_3$). λ_{max} 218 (ϵ 25800); 295 (ϵ 4200) (MeOH).

McBrien, K.D. *et al., J. Nat. Prod.*, 1996, **59**, 1151 (*isol, ir, uv, pmr, cmr, cd, cryst struct*)
Snider, B.B. *et al., Synth. Commun.*, 2001, **31**, 2667-2679 (*synth*)

Fusarin A F-226

[100079-50-3]



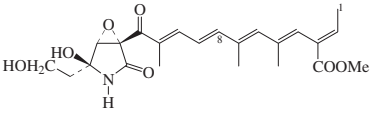
$C_{23}H_{29}NO_6$ 415.485
Metab. of *Fusarium moniliforme*. λ_{max} 358 (ϵ 32000) (MeOH) (Derep).

17α-Hydroxy: ***Fusarin D***
$C_{23}H_{29}NO_7$ 431.485
From *Fusarium moniliforme*. λ_{max} 358 (ϵ 32000) (MeOH) (Derep).

Gelderblom, W.C.A. *et al., Chem. Comm.*, 1984, 122-125 (*isol*)
Steyn, P.S. *et al., Chem. Comm.*, 1985, 1189-1191 (*biosynth*)

Fusarin C F-227

[79748-81-5]



$C_{23}H_{29}NO_7$ 431.485
Prod. by many *Fusarium* spp. in infected corn. Also isol. from *Gibberella fujikuroi* and *Nectria coccinea*. λ_{max} 358 (ϵ 32000) (MeOH) (Derep).

▶ Mutagenic (comparable to Aflatoxin B_1). YQ2831500

1-Hydroxy: ***Fusarin X***
[145569-98-8]
$C_{23}H_{29}NO_8$ 447.484
Prod. by *Fusarium moniliforme.*

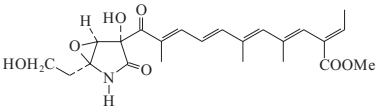
8Z-Isomer: [90987-21-6]
$C_{23}H_{29}NO_7$ 431.485
From *Gibberella fujikuroi* and *Nectria coccinea*. Cryst. (CH_2Cl_2). Mp 170-172° (synthetic). λ_{max} 350 (ϵ 25000) (MeOH) (Berdy).

6Z-Isomer: [194152-45-9]
$C_{23}H_{29}NO_7$ 431.485
Prod. by *Nectria coccinea*. Pale yellow oil.

Gelderblom, W.C.A. *et al., J. Agric. Food Chem.*, 1984, **32**, 1064 (*isol, struct*)
Gaddamidi, V. *et al., J. Agric. Food Chem.*, 1985, **33**, 652 (*cmr, conformn*)
Farber, J.M. *et al., J. Agric. Food Chem.*, 1986, **34**, 963 (*isol*)
Barrero, A.F. *et al., Phytochemistry*, 1991, **30**, 2259 (*isol*)
Lu, F.X. *et al., Chem. Res. Toxicol.*, 1993, **6**, 91-96; 97-101 (*Fusarin X*)
Eilbert, F. *et al., J. Antibiot.*, 1997, **50**, 443-445 (*6Z-isomer, 8Z-isomer*)

Fusarin F F-228

[139768-10-8]

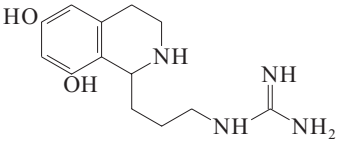


$C_{23}H_{29}NO_7$ 431.485
Isol. from *Fusarium moniliforme*. λ_{max} 293 ; 370 (ϵ 40200) (MeOH) (Berdy).

Savard, M.E. *et al., J. Nat. Prod.*, 1992, **55**, 64 (*isol, uv, ir, pmr, cmr, struct*)

Fuscusine F-229

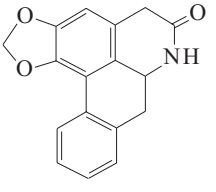
[3-(1,2,3,4-Tetrahydro-6,8-dihydroxy-1-isoquinolinyl)propyl]guanidine, 9CI
[155210-58-5]



$C_{13}H_{20}N_4O_2$ 264.327
Alkaloid from the body wall of the seastar *Perknaster fuscus antarcticus*. Ichthyotoxin. Oil. CAS no. refers to monohydrochloride. λ_{max} 278 (ϵ 2510) (MeOH) (Derep).

Harper, M.K. *et al., Nat. Prod. Lett.*, 1992, **1**, 71-74 (*isol, pmr, cmr, uv, ir*)

Fuseine F-230



$C_{17}H_{13}NO_3$ 279.295
Alkaloid from the trunk wood of *Fusaea longifolia* (Annonaceae). Mp 280° dec. (subl. at 180°). Abs. config. not determined, no opt. rotn. reported. λ_{max} 235 (log ϵ 4.48); 273 (log ϵ 4.55); 317 (log ϵ

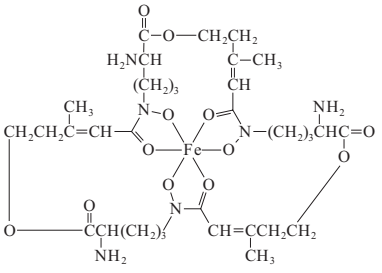
3.91) (EtOH).

Braz Filho, R. *et al., Phytochemistry*, 1976, **15**, 1187-1188 (*isol, uv, ir, pmr, ms, struct*)

Fusigen, 9CI F-231

Fusarinine C

[19624-79-4]



$C_{33}H_{51}FeN_6O_{12}$ 779.646

Isol. from *Fusarium cubense*, *Aspergillus nidulans* and *Penicillium chrysogenum*. Siderophore. Sol. H_2O, MeOH. λ_{max} 250 ; 439 (ϵ 3162) (H_2O) (Berdy).

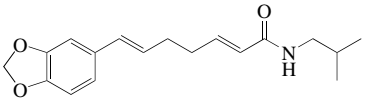
Dieckmann, H. *et al., Eur. J. Biochem.*, 1967, **3**, 213 (*isol, struct*)

Charlang, G. *et al., J. Bacteriol.*, 1982, **150**, 785 (*isol*)

Futoamide F-232

7-(1,3-Benzodioxol-5-yl)-N-*(2-methylpropyl)-2,6-heptadienamide, 9CI*. N-*[7-(3,4-Methylenedioxyphenyl)-2,6-heptadienoyl]isobutylamine*

[114092-54-5]



$C_{18}H_{23}NO_3$ 301.385

Related to 1-[7-(3,4-Methylenedioxyphenyl)-2,6-heptadienoyl]pyrrolidine, M-452.

(E,E)-form [23477-80-7]

Alkaloid from *Piper futokadsura*, *Piper longum* (long pepper) and *Piper hancei*. Cryst. (Me_2CO/hexane). Mp 128-130°.

Takahashi, S. *et al., Phytochemistry*, 1969, **8**, 321 (*isol*)

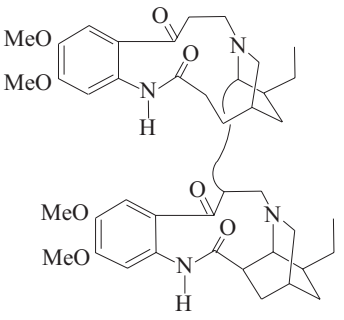
Vig, O.P. *et al., Indian J. Chem., Sect. B*, 1978, **16**, 458-460 (*synth*)

Blade, R.J. *et al., Tet. Lett.*, 1987, **28**, 3857-3860 (*synth*)

Li, S. *et al., Yaoxue Xuebao*, 1987, **22**, 196 (*isol*)

Das, B. *et al., Fitoterapia*, 1998, **69**, 548 (*isol, pmr, cmr*)

Gabonine G-1



$C_{42}H_{56}N_4O_8$ 744.926

Tentative struct. Prob. artifact arising from autoxidn. of Ibogaline in I-4. Alkaloid from numerous *Tabernanthe* spp. (Apocynaceae). Mp 223-226°. $[\alpha]_D^{24}$ +65 ($CHCl_3$).

Dickel, D.F. *et al., J.A.C.S.*, 1958, **80**, 123 (*isol*)
Taylor, W.I. *et al., J.O.C.*, 1965, **30**, 309 (*uv, pmr, struct*)

Galanthamidine G-2

$C_{18}H_{23}NO_5$ 333.383

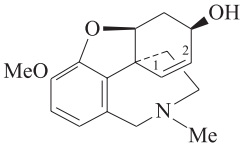
Amaryllidaceae alkaloid. Struct. unknown. Isol. from the roots of *Galanthus voronovii* (Amaryllidaceae). Cryst. (MeOH). Mp 211-213°. $[\alpha]_D$ -94.2 (c, 0.53 in MeOH).

Methiodide: Mp 219° dec.

Proskurnina, N.F. *et al., Zh. Obshch. Khim.*, 1956, **26**, 172-173; *J. Gen. Chem. USSR (Engl. Transl.)*, 1956, **26**, 179-180 (*isol*)

Galanthamine†, 9CI G-3

*4*a*,5,9,10,11,12-Hexahydro-3-methoxy-11-methyl-6*H*-benzofuro[3*a*,3,2-*ef*][2]-benzazepin-6-ol*



(–)–*form*

$C_{17}H_{21}NO_3$ 287.358

(+)-*form* [60384-53-4]
Synthetic. Mp 133-135°. $[\alpha]_D^{18}$ +126 (c, 0.083 in EtOH).

1,2-Dihydro, N-*de-Me:* ***Demethyldihydrogalanthamine***
$C_{16}H_{21}NO_3$ 275.347
Component of the quasi-racemic alkaloid Narcissamine isol. from *Narcissus pseudonarcissus* and *Amaryllis* spp., which was a quasiracemate of (+)-Demethyldihydrogalanthamine and N-Demethylgalanthamine (see below). Mp 77-87° (hydrate) Mp 134° (anhyd.).

1,2-Dihydro, N-*de-Me,* O,N-*di-Ac:* Cryst. (EtOH). Mp 177-179°.

3-Epimer: Synthetic. $[\alpha]_D$ +211 (c, 0.9 in EtOH).

(-)-*form*
Galantamine, BAN, INN, USAN. *Jilkon. Karantonin. Lycoremine. Lycorimine. Nevalina. Nivalin. Razadyne. Reminyl. NIH 7380*
[357-70-0]
Alkaloid from *Galanthus voronovii* and a very large number of other spp. in the Amaryllidaceae. Cholinesterase inhibitor. Analgesic. Investigated for treatment of Alzheimer's disease. Mp 127-129° (133-134°). $[\alpha]_D^{22}$ -122 (c, 0.60 in EtOH) (-132). pK_a 8.32. Log P 1.11 (uncertain value) (calc). Pharmacol. active isomer.

Hydrochloride: Mp 254-255° dec.

Hydrobromide: ***Galantamine hydrobromide, USAN***
[1953-04-4]
Mp 246-247° dec.
▶ LD_{50} (mus, orl) 19 mg/kg. DF8075000

Perchlorate: Mp 225-227° dec.

N-*Oxide:* ***Galanthamine* N-*oxide***
[134332-50-6]
$C_{17}H_{21}NO_4$ 303.357
Alkaloid from *Lycoris sanguinea* (Amaryllidaceae). Powder. $[\alpha]_D^{26}$ -122.9 (c, 0.38 in MeOH).

Ac: **O-*Acetylgalanthamine***
[25650-83-3]
$C_{19}H_{23}NO_4$ 329.395
Trace alkaloid present in bulbs of *Narcissus pseudonarcissus* ssp. *pseudonarcissus* cv. Carlton (Amaryllidaceae). Cryst. (EtOH). Mp 129°. $[\alpha]_D^{25}$ -61 (c, 1.3 in MeOH).

O-*(3*R*-Hydroxybutanoyl):* **O-*Methylleucotamine***
[82644-83-5]
$C_{21}H_{27}NO_5$ 373.448
Isol. from the leaves and bulbs of *Leucojum aestivum* (Amaryllidaceae). Oil. $[\alpha]_D^{24}$ -36 (c, 0.75 in $CHCl_3$). $[\alpha]_D^{24}$ -49.3 (c, 0.75 in EtOH).

N-*De-Me:* **N-*Demethylgalanthamine***
[41303-74-6]
$C_{16}H_{19}NO_3$ 273.331
Alkaloid from the bulbs of *Crinum asiaticum* var. *japonicum* (Amaryllidaceae). Component of the quasi-racemic alkaloid Narcissamine isol. from *Narcissus pseudonarcissus* and *Amaryllis* spp., which was a quasiracemate of Demethylgalanthamine and (+)-Demethyldihydrogalanthamine (see above). Cryst. (EtOAc). Mp 156-158°. $[\alpha]_D^{23}$ -62. $[\alpha]_{436}^{23}$ -146 (c, 0.28 in $CHCl_3$).

N-*De-Me,* N-*formyl:* **N-*Formylnorgalanthamine***
[109606-37-3]
$C_{17}H_{19}NO_4$ 301.341
Alkaloid from *Narcissus confusus* (Amaryllidaceae). Mp 190-192°. Incorr. called *N*-Formylgalanthamine in the lit.

N-*De-Me,* O,N-*di-Ac:* **O,N-*Diacetyl*-N-*demethylgalanthamine***
[61948-10-5]
$C_{20}H_{23}NO_5$ 357.405
Alkaloid from the fruit of *Crinum asiaticum* var. *japonicum*. Cryst. (EtOH). Mp 234-235°. *N*-Demethylgalanthamine may be the plant constit.

N-*De-Me,* O-*(3ξ-hydroxybutanoyl):* ***Leucovernine***
$C_{20}H_{25}NO_5$ 359.421
Alkaloid from the bulbs *Leucojum vernum*. Amorph. solid. $[\alpha]_D^{31}$ -42 (c, 1 in $CHCl_3$). λ_{max} 209 (log ϵ 3.62); 233 (sh) (log ϵ 3.14); 290 (log ϵ 2.67) (MeOH).

N-*De-Me,* O-*(3ξ-acetoxybutanoyl):* ***Acetylleucovernine***
$C_{22}H_{27}NO_6$ 401.458
Alkaloid from the bulbs of *Leucojum vernum*. Amorph. solid. λ_{max} 208 (log ϵ 3.67); 233 (sh) (log ϵ 3.21); 289 (log ϵ 2.69) (MeOH).

N-*De-Me,* N-*(2-propenyl):* **N-*Allylnorgalanthamine***
[112448-56-3]
$C_{19}H_{23}NO_3$ 313.396
Alkaloid from the bulbs of *Lycoris guangxiensis* and leaves of *Leucojum aestivum*. Oil. $[\alpha]_D^{20}$ -97 (c, 0.31 in MeOH).

Me ether: **O-*Methylgalanthamine***
$C_{18}H_{23}NO_3$ 301.385
Alkaloid from *Chlidanthus fragrans* (Amaryllidaceae). Oil.

Me ether, N-*Me:* Mp 272-273° (as iodide). $[\alpha]_D$ -90 (c, 1.0 in MeOH) (as iodide).

O-*De-Me:* ***Sanguinine***. O-*Demethylgalanthamine*
[60755-80-8]
$C_{16}H_{19}NO_3$ 273.331
Alkaloid from bulbs of *Lycoris sanguinea* var. *kiushiana* (Amaryllidaceae). Cryst. (EtOH/C_6H_6). Mp 210.5-213° dec. $[\alpha]_D^{27}$ -133 (c, 0.23 in EtOH).

O-*De-Me, perchlorate:* Mp 249-251° dec.

O-*De-Me,* N-*oxide:* ***Sanguinine* N-*oxide***
[134332-51-7]
$C_{16}H_{19}NO_4$ 289.33
Alkaloid from *Lycoris sanguinea* (Amaryllidaceae). Prisms (MeOH). Mp 191-195°. $[\alpha]_D^{25}$ -106.1 (c, 0.25 in MeOH).

O-*De-Me,* O^3-*Ac:* ***3*-O-*Acetylsanguinine***. *3*-O-*Acetyldemethylchlidanthine*
[125340-13-8]
$C_{18}H_{21}NO_4$ 315.368
Alkaloid from the bulbs of *Crinum kirkii* and *Haemanthus multiflorus.* Needles (MeOH). Mp 215-217°. $[\alpha]_D^{20}$ -45.8 (c, 0.5 in $CHCl_3$). Numbering systems differ.

O-*De-Me,* O^6-*Ac: P11012*
[164723-36-8]
[164723-74-4]
$C_{18}H_{21}NO_4$ 315.368
Acetylcholinesterase (ACE) inhibitor. CAS no. refers to hydrochloride.

O-*De-Me,* O^3-*(3*R*-hydroxybutanoyl):* ***Leucotamine***
[82644-82-4]
$C_{20}H_{25}NO_5$ 359.421
Alkaloid from leaves of *Leucojum aestivum* (Amaryllidaceae). Needles (C_6H_6). Mp 168-171°. $[\alpha]_D^{20}$ -52.6 (c, 0.74 in $CHCl_3$).

O-*De-Me,* O^3-*(3-hydroxybutanoyl),* N-*de-Me:* ***Norbutsanguinine***

[164854-60-8]
$C_{19}H_{23}NO_5$ 345.394
From bulbs of *Lycoris sanguinea* (Amaryllidaceae). Oil. $[\alpha]_D^{20}$ -26 (c, 0.1 in $CHCl_3$).

O-*De-Me,* O^6-*[(adamantan-1-yl)carbonyl]: P11149*
[164724-79-2]
[164724-95-2]
$C_{27}H_{33}NO_4$ 435.562
Acetylcholinesterase inhibitor. Candidate for the treatment of Alzheimer's disease. CAS no. refers to hydrochloride.

O-*De-Me,* O^3-*Me:* ***Chlidanthine***
[25650-85-5]
$C_{17}H_{21}NO_3$ 287.358
Alkaloid from *Chlidanthus fragrans*, *Haemanthus multiflorus* and *Hippeastrum aulicum* var. *robustum* (Amaryllidaceae). Mp 238-239°. $[\alpha]_D$ -140 (EtOH). The abs. config. is incorrectly given in CAS.

O-*De-Me,* O^3,N-*di-Me:* Mp 263-264° dec.

O,N-*Di-de-Me:* ***Norsanguinine***
[164854-59-5]
$C_{15}H_{17}NO_3$ 259.304
Alkaloid from bulbs of *Lycoris sanguinea* (Amaryllidaceae). Cryst. ($CHCl_3$/MeOH). Mp 142-144°. $[\alpha]_D^{20}$ -54 (c, 0.1 in MeOH).

3-Ketone: ***Narwedine****. Galanthaminne. Narvedine*
[510-77-0]
$C_{17}H_{19}NO_3$ 285.342
Alkaloid from *Narcissus cyclamineus*, some other *Narcissus* spp. and from *Galanthus nivalis* (Amaryllidaceae). Biosynth. precursor of Galanthamine. Cryst. (C_6H_6). Mp 189-192°. $[\alpha]_D$ +405 (c, 1.0 in $CHCl_3$).

3-Ketone, picrate: Mp 123°.

1,2-Dihydro: ***Lycoramine****. Pseudohomolycorine*
[21133-52-8]
$C_{17}H_{23}NO_3$ 289.374
Alkaloid from *Lycoris radiata*, *Crinum powellii*, and some other spp. in the Amaryllidaceae. Mp 120-121°. $[\alpha]_D^{27}$ -98 (EtOH).

1,2-Dihydro; perchlorate: Mp 138-139°.

1,2-Dihydro, N-*oxide:* ***Lycoramine* N-*oxide***
[134306-21-1]
$C_{17}H_{23}NO_4$ 305.373
Alkaloid from *Lycoris sanguinea* (Amaryllidaceae). Powder. $[\alpha]_D$ -91.8 (MeOH).

1,2-Dihydro, N-*de-Me:* **N-*Demethyllycoramine****.* N-*Demethyldihydrogalanthamine*
[41432-21-7]
[41303-53-1]
$C_{16}H_{21}NO_3$ 275.347
Alkaloid from the bulbs of *Hymenocallis rotata* (Amaryllidaceae). Prisms + $1H_2O$ (Me_2CO). Mp 123-124°. $[\alpha]_D^{29}$ -39.1 (c, 0.95 in $CHCl_3$).

1,2-Dihydro, O-*Ac:* ***Acetyllycoramine***
[53375-68-1]
$C_{19}H_{25}NO_4$ 331.411
Alkaloid from *Pancratium maritimum*. Needles (MeOH). Mp 93-95°. $[\alpha]_D^{22}$ -87 (c, 0.1 in MeOH).

1,2-Dihydro, O-*(3*S*-hydroxybutanoyl):* ***Pancritamine***
[243986-37-0]
$C_{21}H_{29}NO_5$ 375.464
Alkaloid from *Pancratium maritimum*. Oil. $[\alpha]_D^{22}$ -62.9 (c, 0.7 in MeOH).

1,2-Dihydro, O-*de-Me:* **O-*Demethyllycoramine****.* O-*Demethyldihydrogalanthamine*
[77754-93-9]
$C_{16}H_{21}NO_3$ 275.347
Alkaloid from the bulbs of *Lycoris radiata* (Amaryllidaceae). Prisms (C_6H_6/EtOH). Mp 204-207°.

3-Epimer: ***Epigalanthamine***
[1668-85-5]
$C_{17}H_{21}NO_3$ 287.358
Alkaloid from the bulbs of *Lycoris squamigera* (Amaryllidaceae). Mp 190°. $[\alpha]_D$ -222 (MeOH).

3-Epimer, N-*de-Me:* ***Epinorgalanthamine***
[156040-03-8]
$C_{16}H_{19}NO_3$ 273.331
Alkaloid from whole plants of *Narcissus leonensis* (Amaryllidaceae). Mp 150-152°. $[\alpha]_D^{25}$ -62 (c, 0.73 in $CHCl_3$).

3-Epimer, 1,2-dihydro, N-*de-Me:* ***Epinorlycoramine***
[156128-69-7]
$C_{16}H_{21}NO_3$ 275.347
Alkaloid from whole plants of *Narcissus leonensis* (Amaryllidaceae). $[\alpha]_D^{25}$ +79.1 (c, 0.51 in $CHCl_3$).

(±)-*form* [23173-12-8]
Synthetic. Mp 121-123° (117-118°).

Hydrochloride:
Cryst. + $\frac{1}{3}H_2O$ (EtOH). Mp 252-254°.

N-*De-Me,* O,N-*di-Ac:*
Cryst. (EtOAc). Mp 204-205°.

3-Ketone: [1668-86-6]
Synthetic or by racemisation of alkaloid. Also occurs naturally in *Narcissus kristalli* and *Ungernia victoris* (Amaryllidaceae). Mp 187-190°.

1,2-Dihydro: [18747-70-1]
Mp 98-99°.

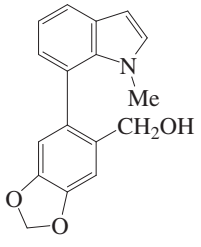
3-Epimer: [23173-13-9]
Synthetic. Needles (EtOH). Mp 199°.

3-Epimer, hydrochloride:
Cryst. (EtOH). Mp 268-269°.

Döpke, W. *et al., Chem. Ber.*, 1956, **89**, 1129-1134 (*Chlidanthine, isol*)
Koyabashi, S. *et al., Chem. Ind. (London)*, 1956, 177-178 (*struct*)
Boit, H.G. *et al., Chem. Ber.*, 1957, **90**, 2197-2202 (*Narwedine, isol, struct*)
Barton, D.H.R. *et al., J.C.S.*, 1962, 806-817 (*Narwedine, Epigalanthamine, struct, ir, synth*)
Laiho, S.M. *et al., J.A.C.S.*, 1964, **86**, 4434-4438 (*N-Demethylgalanthamine, Demethyldihydrogalanthamine, Narcissamine*)
Williams, D.J. *et al., Proc. Chem. Soc., London*, 1964, 357 (*cryst struct*)
Hung, S.H. *et al., Yaoxue Xuebao*, 1964, **11**, 1-14; *CA*, **61**, 3154e (*Epigalanthamine, isol*)
Abduazimov, K.A. *et al., Khim. Prir. Soedin.*, 1967, **3**, 64-65; *Chem. Nat. Compd. (Engl. Transl.)*, 1967, **3**, 54-55 (*Narwedine, isol*)
Kametani, T. *et al., J.C.S.(C)*, 1969, 2602-2605 (*Narwedine, synth, ir, pmr, ms*)
DeAngelis, G.G. *et al., Tet. Lett.*, 1969, 729-732 (*Epigalanthamine, ord, cd*)
Bhandarkar, J.G. *et al., J.C.S.(C)*, 1970, 1224-1227 (*Chlidanthine, uv, ir, pmr, ms, struct, biosynth*)
Kametani, T. *et al., J.O.C.*, 1971, **36**, 1295-1297 (*synth*)
Nogueiras, C. *et al., Tet. Lett.*, 1971, 3249-3250 (*O-Methylgalanthamine*)
Kametani, T. *et al., J. Het. Chem.*, 1973, **10**, 35-37 (*N-Demethyldihydrogalanthamine*)
Zetta, L. *et al., J.C.S. Perkin 2*, 1973, 1180-1184 (*cmr*)
Fuganti, C. *et al., Tet. Lett.*, 1974, 2261-2264 (*biosynth*)
Ochi, M. *et al., Bull. Chem. Soc. Jpn.*, 1976, **49**, 3363-3364 (*O,N-Diacetyl-N-demethylgalanthamine*)
Kobayashi, S. *et al., Chem. Pharm. Bull.*, 1976, **24**, 1537-1543; 2553-2555; 1980, **28**, 3433-3436; 1985, **33**, 5258-5263 (*Sanguinine, N-Demethylgalanthamine, O-Demethyllycoramine, Leucotamine, O-Methylleucotamine*)
Kametani, T. *et al., Heterocycles*, 1976, **4**, 1111-1114 (*resoln*)
Shimizu, K. *et al., Heterocycles*, 1977, **8**, 277-282 (*synth*)
Schultz, A.G. *et al., J.A.C.S.*, 1977, **99**, 8065-8067 (*Lycoramine, synth*)
Sánchez, I.H. *et al., J.O.C.*, 1984, **49**, 157-163 (*Lycoramine, synth*)
Westra, P. *et al., Br. J. Anaesth.*, 1986, **58**, 1303 (*pharmacol*)
Mikhailova, D. *et al., Pharmacology*, 1986, **32**, 301 (*pharmacol*)
Martin, S.F. *et al., Alkaloids (Academic Press)*, 1987, **30**, 251-376 (*rev*)
Kihara, M. *et al., Chem. Pharm. Bull.*, 1987, **35**, 1070-1075 (*N-Demethyllycoramine*)
Teneheva, J. *et al., J. Chromatogr.*, 1987, **421**, 396-400 (*hplc*)
Ackland, D.J. *et al., J.C.S. Perkin 1*, 1987, 2695-2700 (*Lycoramine, synth*)
Bastida, J. *et al., Phytochemistry*, 1987, **26**, 1519-1524; 1993, **34**, 1656-1658 (*N-Formylnorgalanthamine, Epinorlycoramine, Epinorgalanthamine*)
Li, H.-Y. *et al., Planta Med.*, 1987, **53**, 259-261 (*N-Allylnorgalanthamine*)
Szewczyk, J. *et al., J. Het. Chem.*, 1988, **25**, 1809-1811; 1995, **32**, 195-199 (*synth, ir, pmr, resoln, Epigalanthamine*)
Vlahov, R. *et al., Tetrahedron*, 1989, **45**, 3329-3345 (*Epigalanthamine, synth*)
Carroll, P. *et al., Bull. Soc. Chim. Fr.*, 1990, 769-780 (*ir, pmr, cmr, cryst struct*)
Kobayashi, S. *et al., Phytochemistry*, 1991, **30**, 675-677 (*N-oxides*)
Parker, K.A. *et al., J.O.C.*, 1992, **57**, 752-755 (*synth, Lycoramine*)
Ishizaki, M. *et al., J.O.C.*, 1993, **58**, 3877-3885 (*synth, Lycoramine*)
Shieh, W.-C. *et al., J.O.C.*, 1994, **59**, 5463-5465 (*Narwedine, synth, resoln, bibl*)
Eur. Pat., 1995, (*Hoechst-Roussel*)649 846; 653 427; *CA*, **123**, 56362v; 56364x (*P11012, P11149*)
Harvey, A. *et al., Pharmacol. Ther.*, 1995, **68**, 113-128 (*pharmacol, rev*)
Abdallah, O.M. *et al., Phytochemistry*, 1995, **39**, 477-478 (*Norsanguinine, Norbutsanguinine*)

Kreh, M. *et al., Phytochemistry*, 1995, **40**, 1303-1306 (*O-Acetylgalanthamine*)
Bores, G.M. *et al., J. Pharmacol. Exp. Ther.*, 1996, **277**, 728-738 (*pharmacol, P11149, P11012*)
Peeters, O.M. *et al., Acta Cryst. C*, 1997, **53**, 1284-1286 (*cryst struct, bromide*)
Eichhorn, J. *et al., Phytochemistry*, 1998, **49**, 1037-1047 (*biosynth, cmr*)
Youssef, D.T. *et al., Planta Med.*, 1998, **64**, 669-670 (*isol, pmr, cmr*)
Czollner, L. *et al., Tet. Lett.*, 1998, **39**, 2087-2088 (***synth***)
Martindale, The Extra Pharmacopoeia, 32nd edn., Pharmaceutical Press, 1999, 1393
Kuenburg, B. *et al., Org. Process Res. Dev.*, 1999, **3**, 425-431 (*Narwedine, synth, resoln*)
Youssef, D.T.A. *et al., Pharmazie*, 1999, **54**, 535-537 (*Pancritamine, Acetyllycoramine*)
Gras, E. *et al., Tet. Lett.*, 1999, **40**, 9243-9244 (*synth*)
Scott, L.J. *et al., Drugs*, 2000, **60**, 1095-1122 (*rev*)
Krikorian, D. *et al., Synth. Commun.*, 2000, **30**, 2833-2846 (*synth, ir, pmr, cmr*)
Node, M. *et al., Angew. Chem., Int. Ed.*, 2001, **40**, 3060-3062 (*Narwedine, synth*)
Guillou, C. *et al., Angew. Chem., Int. Ed.*, 2001, **40**, 4745-4746 (*synth*)
Linnemann, E. *et al., J. Labelled Compd. Radiopharm.*, 2001, **44**, 661-669 (*synth*)
Treu, M. *et al., Molecules*, 2001, **6**, M274 (*Norsanguinine, synth*)
Fan, C.-A. *et al., Org. Lett.*, 2004, **4691**, 4694 (*synth*)
Machocho, A.K. *et al., Phytochemistry*, 2004, **65**, 3143-3149 (*3-O-Acetylsanguinine*)
Forgo, P. *et al., J. Nat. Prod.*, 2005, **68**, 1588-1591 (*Leucovernine, Acetylleucovernine*)
Trost, B.M. *et al., J.A.C.S.*, 2005, **127**, 14785-14803 (*synth*)
Node, M. *et al., Chem. Pharm. Bull.*, 2006, **54**, 1662-1679 (*synth*)
Hu, X.-D. *et al., Org. Lett.*, 2006, **8**, 1823-1825 (*synth*)
Malachowski, W.P. *et al., J.O.C.*, 2007, **72**, 6792-6796 (*Lycoramine, synth*)
Satcharoen, V. *et al., Org. Lett.*, 2007, **9**, 1867-1869 (*synth*)
Tanimoto, H. *et al., Tet. Lett.*, 2007, **48**, 6267-6270 (*synth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, GBA000

Galanthindole G-4

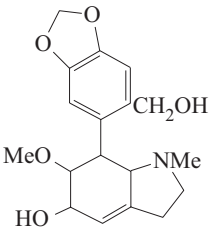


$C_{17}H_{15}NO_3$ 281.31
Alkaloid from *Galanthus plicatus* ssp. *byzantinus*. Amorph. solid. λ_{max} 220 (log ϵ 4.21); 290 (log ϵ 3.83); 298 (sh) (log ϵ 3.8) (MeOH).

Unver, N. *et al., Planta Med.*, 2003, **69**, 869-871 (*isol, pmr, cmr*)

Galanthusine G-5

[31278-95-2]

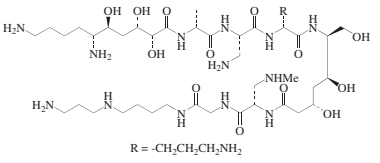


$C_{18}H_{23}NO_5$ 333.383
Alkaloid from *Galanthus caucasicus* (Amaryllidaceae). Cryst. (Me_2CO). Mp 118-119°. $[\alpha]_D^{30}$ -66.6 (c, 0.42 in EtOH).

Tsakadze, D.M. *et al., Khim. Prir. Soedin.*, 1970, **6**, 773; *Chem. Nat. Compd. (Engl. Transl.)*, 791

Galantin I G-6

D-Ornithinegalantin I
[78330-65-1]



$C_{41}H_{84}N_{14}O_{13}$ 981.201
Struct. revised in 1992. Isol. from *Bacillus pulvifaciens*. Active against gram-negative and -positive bacteria and acid fast bacteria. Sol. H_2O, MeOH; poorly sol. Me_2CO, hexane.
▶ LD_{50} (mus, ipr) 50 mg/kg. LW5965000

[55599-74-1]

Shoji, J. *et al., J. Antibiot.*, 1975, **28**, 122
Sakai, N. *et al., J.A.C.S.*, 1992, **114**, 998 (*synth, struct*)

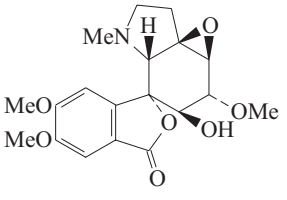
Galantin II G-7

D-Lysinegalantin I
[78330-64-0]
As Galantin I, G-6 with
R = $CH_2CH_2CH_2NH_2$
$C_{42}H_{86}N_{14}O_{13}$ 995.227
Prod. by *Bacillus pulvifaciens*. Powder. Sol. H_2O, EtOH, MeOH; poorly sol. Me_2CO, hexane.

Shoji, J. *et al., J. Antibiot.*, 1975, **28**, 122 (*isol*)
Sakai, N. *et al., J.A.C.S.*, 1992, **114**, 998 (*synth, struct*)

Galasine G-8

[167568-94-7]

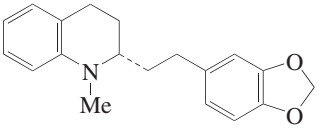


$C_{19}H_{23}NO_7$ 377.393
Alkaloid from whole plants of *Galanthus elwesii* (Amaryllidaceae). Prisms (MeOH). Mp 284.9-286.3°. Opt. rotn. not measured due to paucity of material.

Latvala, A. *et al., Phytochemistry*, 1995, **39**, 1229 (*isol, uv, ir, pmr, cmr, ms, cd, cryst struct*)

Galipinine G-9

2-[2-(1,3-Benzodioxol-5-yl)ethyl]-1,2,3,4-tetrahydro-1-methylquinoline. 1,2,3,4-Tetrahydro-2-(3,4-methylenedioxyphenethyl)-1-methylquinoline. Allocuspareine



$C_{19}H_{21}NO_2$ 295.38
Identical structs. assigned to Galipinine and Allocuspareine. Alkaloid from *Galipea officinalis*. Shows activity against *Mycobacterium tuberculosis*. Oil or pale yellow powder. $[\alpha]_D$ -33.4 (c, 0.005 in $CHCl_3$). λ_{max} 259 (log ϵ 3.98); 311 (log ϵ 4.41) ($CHCl_3$) (Galipinine). λ_{max} 204 ; 253 ; 290 ; 315 (MeOH) (Allocuspareine).

Rakotoson, J.H. *et al., Planta Med.*, 1998, **64**, 762-763 (*isol, uv, pmr, cmr, activity*)
Houghton, P.J. *et al., Planta Med.*, 1999, **65**, 250 (*Allocuspareine*)
O'Byrne, A. *et al., Tetrahedron*, 2008, **64**, 8067-8072 (*synth, abs config*)

Galipoidine G-10

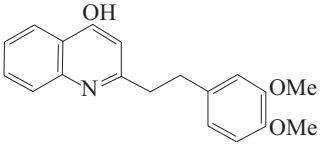
[1399-42-4]

$C_{19}H_{15}NO_4$ 321.332
Struct. unknown. Alkaloid from angostura bark (*Cusparia trifoliata*, preferred genus name *Angostura*) (Rutaceae). Needles (EtOH). Mp 233°.

Tröger, J. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1911, **249**, 174-208

Galipoline G-11

2-[2-(3,4-Dimethoxyphenyl)ethyl]-4-hydroxyquinoline



$C_{19}H_{19}NO_3$ 309.364
Alkaloid from the bark of angostura (*Galipea officinalis*) (Rutaceae). Cryst. (Et_2O). Mp 193°.

Me ether: ***Galipine***
[525-68-8]
$C_{20}H_{21}NO_3$ 323.391
Occurs in bark of *Galipea officinalis* (Rutaceae). Antispasmodic agent. Active against *Mycobacterium tuberculosis*. Cryst. (Et_2O). Mp 115-116°. Log P 4.35 (calc).

Me ether, hydrochloride: Mp 165°.

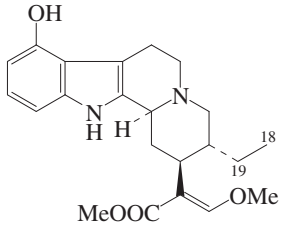
Me ether, picrate: Mp 194°.

Späth, E. *et al., Ber.*, 1924, **57**, 1687 (*isol, synth, Galipine*)

Späth, E. *et al., Monatsh. Chem.*, 1929, **52**, 129 (*isol, synth, Galipoline*)
Rakotoson, J.H. *et al., Planta Med.*, 1998, **64**, 762-763 (*isol, uv, pmr, cmr, Galipine*)
Houghton, P.J. *et al., Planta Med.*, 1999, **65**, 250-254 (*isol, pmr, cmr, Galipine, activity*)

Gambirine G-13

18,19-Dihydro-9-hydroxycorynantheine
[29472-77-3]



$C_{22}H_{28}N_2O_4$ 384.474
Alkaloid from the leaves of *Uncaria gambier, Uncaria callophylla* and *Neonauclea schlechteri* (Rubiaceae). Cryst. ($CHCl_3$/hexane). Mp 163-165° dec. $[\alpha]_D^{20}$ +28.6 (c, 0.077 in $CHCl_3$). λ_{max} 226 (ϵ 49800); 250 (sh) (ϵ 14650); 285 (ϵ 6050); 294 (ϵ 5550) (95% EtOH).

Me ether: ***Speciogynine***
[4697-67-0]
$C_{23}H_{30}N_2O_4$ 398.501
Alkaloid from *Mitragyna speciosa* (Rubiaceae). Cryst. (Et_2O). Mp 214°. $[\alpha]_D^{23.5}$ +28.4 (c, 0.26 in $CHCl_3$).

Me ether, picrate:
Orange-red rosettes (EtOH). Mp 224°.

18,19-Didehydro: ***Gambireine****. 9-Hydroxycorynantheine*
[142905-21-3]
$C_{22}H_{26}N_2O_4$ 382.458
Alkaloid from leaves of *Uncaria callophylla* (Rubiaceae). λ_{max} 227 ; 250 (sh) ; 286 ; 295 (EtOH).

18,19-Didehydro, Me ether: ***Paynantheine****. 9-Methoxycorynantheine*
[4697-66-9]
$C_{23}H_{28}N_2O_4$ 396.485
Alkaloid from the leaves of *Mitragyna speciosa* (Rubiaceae). Yellow solid. Mp 98° (softens). $[\alpha]_D^{23}$ -28.9 (c, 0.27 in $CHCl_3$). λ_{max} 227 (log ϵ 4.63); 272 (sh) (log ϵ 3.95); 283 (sh) (log ϵ 3.86); 292 (log ϵ 3.84) (EtOH).

18,19-Didehydro, Me ether, picrate:
Orange needles (EtOH). Mp 202°.

3-Epimer, 18,19-didehydro, Me ether: ***3-Isopaynantheine***
[22032-51-5]
$C_{23}H_{28}N_2O_4$ 396.485
Alkaloid from *Mitragyna speciosa* (Rubiaceae). No phys. props. recorded.

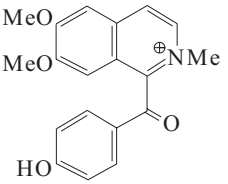
3,20-Diepimer, Me ether: ***Speciociliatine***
[14382-79-7]
$C_{23}H_{30}N_2O_4$ 398.501
Alkaloid from *Mitragyna speciosa*, also detected in *Uncaria* spp. (Rubiaceae). Antitussive, analgesic. Amorph. Mp 97-98°. $[\alpha]_D^{24}$ -21 (c, 0.24 in $CHCl_3$). Log P 3.93 (calc).

3,20-Diepimer, Me ether, methiodide:
Pale-cream microcryst. (EtOH). Mp 264°.

Beckett, A.H. *et al., J. Pharm. Pharmacol.*, 1965, **17**, 753-755 (*Paynantheine, uv, ir, pmr, struct*)
Beckett, A.H. *et al., Planta Med.*, 1966, **14**, 277-288 (*Speciociliatine, Speciogynine, isol, uv, ir, pmr, struct*)
Merlini, L. *et al., Tet. Lett.*, 1967, 1571-1574 (*isol, uv, ir, pmr, ms, cd, ord, struct, abs config*)
Lee, C.M. *et al., Tetrahedron*, 1967, **23**, 375-385 (*Speciogynine, Speciociliatine, ord, cd, pmr, ir, uv, abs config*)
Trager, W.F. *et al., Tetrahedron*, 1967, **23**, 1043-1047 (*Paynantheine, uv, ord, cd, abs config*)
Shellard, E.J. *et al., Planta Med.*, 1978, **34**, 253-263 (*3-Isopaynantheine*)
Goh, S.H. *et al., Phytochemistry*, 1985, **24**, 880-881 (*isol, uv, ir, pmr, cmr, ms*)
Kam, T.S. *et al., Phytochemistry*, 1992, **31**, 2031-2034 (*Gambireine*)
Takayama, H. *et al., Chem. Pharm. Bull.*, 2004, **52**, 916-928 (*rev*)
Kitajima, M. *et al., J. Nat. Med. (Tokyo)*, 2006, **60**, 28-35 (*Speciogynine, Speciociliatine, 3-Isopaynantheine, pmr, cmr*)

Gandharamine G-14

1-(4-Hydroxybenzoyl)-6,7-dimethoxy-2-methylisoquinolinium, 9CI
[81509-33-3]



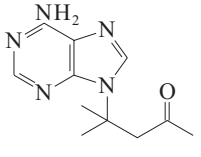
$C_{19}H_{18}NO_4^{\oplus}$ 324.355
Quaternary alkaloid from *Berberis balu-chistanica* and *Thalictrum fendleri* (Berberidaceae, Ranunculaceae). Amorph. solid (as chloride).

O^7,N-*Di-de-Me: 7-Hydroxy-1-(4-hydroxybenzoyl)-6-methoxyisoquinoline*
$C_{17}H_{13}NO_4$ 295.294
Alkaloid from the roots of *Menispermum dauricum*. Red needles. Mp 230-232°. λ_{max} 233 ; 252 ; 276 ; 297 ; 342 (no solvent reported).

Zarga, M.H.A. *et al., Heterocycles*, 1982, **18**, 63 (*uv, pmr, ms, struct, synth*)
Zhang, X. *et al., Phytochemistry*, 2004, **65**, 929-932 (*di-de-Me*)

Ganoderpurine G-15

*4-(6-Amino-9*H*-purin-9-yl)-4-methyl-2-pentanone, 9CI.* N^9*-(1,1-Dimethyl-3-oxobutyl)adenine*
[133086-82-5]

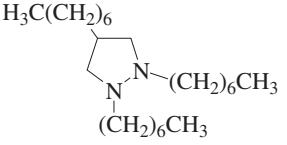


$C_{11}H_{15}N_5O$ 233.272
Alkaloid from the mycelium of *Ganoderma capense*. Mp 151-152°.

Yu, J.G. *et al., Yaoxue Xuebao*, 1990, **25**, 612; *CA*, **114**, 160668z

Garceine G-16

1,2,4-Triheptylpyrazolidine, 9CI. 1,2,4-Triheptyltetrahydropyrazole
[340829-54-1]

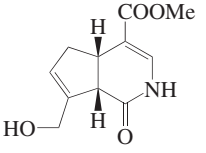


$C_{24}H_{50}N_2$ 366.672
Alkaloid from *Lotus garcinii*. Powder. Mp 60°.

Ali, M.S. *et al., Turk. J. Chem.*, 2001, **25**, 107-112 (*isol, pmr, cmr*)

Gardenamide A G-17

[214125-00-5]



Absolute Configuration

$C_{11}H_{13}NO_4$ 223.228
Constit. of *Gardenia jasminoides* and *Rothmannia urcelliformis*. Amorph. powder. $[\alpha]_D$ +404.4 (c, 0.25 in MeOH). λ_{max} 242 (log ϵ 4.07) (MeOH).

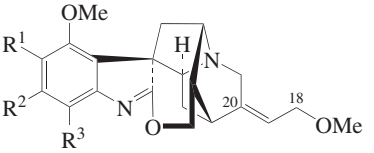
N-*(2-Hydroxyethyl):* **N-*(2-Hydroxyethyl)gardenamide A***
[284045-03-0]
$C_{13}H_{17}NO_5$ 267.281
Constit. of *Gardenia jasminoides* and other *Gardenia* spp. Amorph. powder. $[\alpha]_D^{26}$ +325 (c, 0.16 in MeOH).

N-*(3-Carboxypropyl):* [936548-28-6]
$C_{15}H_{19}NO_6$ 309.318
Constit. of *Gardenia volkensii*. Solid. Mp 84-86°.

Machida, K. *et al., Chem. Pharm. Bull.*, 1998, **46**, 1295-1300 (*isol, pmr, cmr*)
Machida, K. *et al., Chem. Pharm. Bull.*, 2000, **48**, 746-748 (*2-Hydroxyethylgardenamide A*)
Bringmann, G. *et al., Eur. J. Org. Chem.*, 2001, 1983-1987 (*isol, synth, cd, pmr, cmr, abs config*)
Juma, B.F. *et al., Nat. Prod. Res.*, 2007, **21**, 121-125 (*Gardenia volkensii constit*)

Gardfloramine, 9CI G-18

[56198-74-4]



R^1,R^2 = -OCH_2O- , R^3 = H

Absolute Configuration

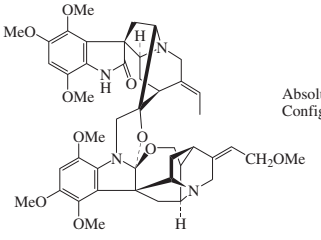
$C_{22}H_{24}N_2O_5$ 396.442
Alkaloid from *Gardneria multiflora* (Loganiaceae). Prisms + $^1/_2$ H_2O (Me_2CO). Mp 159-160°. $[\alpha]_D$ -248.

*18-Demethoxy, 19*E*-isomer:* ***(19E)-18-Demethoxygardfloramine***
[56198-75-5]
$C_{21}H_{22}N_2O_4$ 366.416
Alkaloid from *Gardneria multiflora* (Loganiaceae). Amorph.

Sakai, S. *et al., Tet. Lett.*, 1975, 715 (*uv, ir, pmr, ms*)
Sakai, S. *et al., Chem. Pharm. Bull.*, 1987, **35**, 453 (*cmr, cryst struct*)

Gardmultine G-19

[56197-32-1]



Absolute Configuration

$C_{45}H_{54}N_4O_{10}$ 810.942
Alkaloid from *Gardneria multiflora* (Loganiaceae). Cryst. + 0.5H_2O. Mp 283-285°.

Sakai, S. *et al., Tet. Lett.*, 1975, 719 (*uv, ir, pmr, ms, struct*)

Gardneramine G-20

[34274-91-4]
As Gardfloramine, G-18 with
$R^1 = R^3 = OMe$, $R^2 = H$
$C_{23}H_{28}N_2O_5$ 412.485
Alkaloid from *Gardneria nutans* (Loganiaceae). Prisms (Et_2O). Mp 134-135°. $[\alpha]_D$ -288.

► LX3090000

Cyanobromide: Mp 214°.

N^4-Oxide: ***Gardneramine N^4-oxide***
[64494-86-6]
$C_{23}H_{28}N_2O_6$ 428.484
Alkaloid from *Gardneria multiflora* (Loganiaceae).

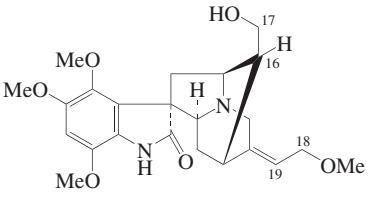
O^{18}-De-Me: ***O^{18}-Demethylgardneramine***
[32975-55-6]
$C_{22}H_{26}N_2O_5$ 398.458
Alkaloid from *Gardneria multiflora*.

*18-Demethoxy, 19*E*-isomer:* ***(19E)-18-Demethoxygardneramine***
[56246-54-9]
$C_{22}H_{26}N_2O_4$ 382.458
Alkaloid from *Gardneria multiflora* (Loganiaceae). Cryst. (Me_2CO). Mp 160-161.5°. $[\alpha]_D$ -147.

Aimi, N. *et al., Tet. Lett.*, 1971, 2061 (*cryst struct*)
Sakai, S. *et al., Chem. Pharm. Bull.*, 1975, **23**, 2805 (*uv, ir, pmr, ms, struct*)
Sakai, S. *et al., Tet. Lett.*, 1975, 715 (*uv, ir, pmr, config, struct, deriv*)
Aimi, N. *et al., Chem. Pharm. Bull.*, 1978, **26**, 3444 (*cmr*)

Gardneramine oxindole, 9CI G-21

[32975-50-1]



Absolute Configuration

$C_{23}H_{30}N_2O_6$ 430.5
Obt. by hydrol. of Gardneramine, G-20 with HCOOH aq. Foam.

O^{18}-De-Me: ***O^{18}-Demethylgardneramine oxindole, 9CI***. *Alkaloid M*
[64494-82-2]
$C_{22}H_{28}N_2O_6$ 416.473
Alkaloid from *Gardneria multiflora* (Loganiaceae).

17-Deoxy, 16,17-didehydro: ***16,17-Didehydro-17-deoxygardneramine oxindole, 9CI***
[64494-85-5]
$C_{23}H_{28}N_2O_5$ 412.485
Alkaloid from *Gardneria multiflora* (Loganiaceae).

16-Hydroxy: ***16-Hydroxygardneramine oxindole, 9CI***. *Alkaloid N*
[64530-48-9]
$C_{23}H_{30}N_2O_7$ 446.499
Alkaloid from *Gardneria multiflora* (Loganiaceae). Mp 115-119°. 19-Config. not detd.

18-Demethoxy, 16-hydroxy: ***Chitosenine***. *18-Demethoxy-16-hydroxygardneramine oxindole*
[56210-06-1]
$C_{22}H_{28}N_2O_6$ 416.473
Alkaloid from *Gardneria multiflora* (Loganiaceae). Amorph. Mp 173-174° (as hydrochloride). 19-Config. incorrectly given as *Z*- in CAS.

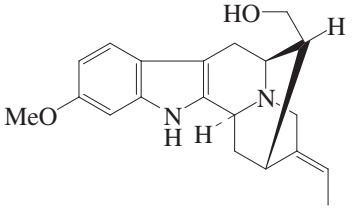
16-Epimer: ***16R-Gardneramine oxindole, 9CI***. *Alkaloid J*†
[64550-59-0]
$C_{23}H_{30}N_2O_6$ 430.5
Alkaloid from *Gardneria multiflora* (Loganiaceae). Mp 124-128°.

16-Epimer, O^{18}-de-Me: ***16R-O^{18}-Demethylgardneramine oxindole, 9CI***. *Alkaloid L*†
[64550-58-9]
$C_{22}H_{28}N_2O_6$ 416.473
Alkaloid from *Gardneria multiflora* (Loganiaceae). Mp 148-152°.

Shinichiro, S. *et al., Chem. Pharm. Bull.*, 1975, **23**, 2805-2817 (*synth, uv, ir, pmr, struct*)
Sakai, S. *et al., Tet. Lett.*, 1975, 715-718 (*Chitosenine, ir, uv, pmr, ms, struct, abs config*)
Sakai, S. *et al., Yakugaku Zasshi*, 1977, **97**, 399-409; *CA*, **88**, 23222e (*Gardneria multiflora constits*)
Aimi, N. *et al., Chem. Pharm. Bull.*, 1978, **26**, 3444-3449 (*Chitosenine, cmr, config*)

Gardnerine G-22

11-Methoxysarpagan-17-ol, 9CI
[23172-92-1]



$C_{20}H_{24}N_2O_2$ 324.422
Alkaloid from the roots and stems of *Gardneria nutans* (Apocynaceae). Shows ganglion-blocking activity. Mp 243-244°. $[\alpha]_D^{25}$ -29.4. pK_a 7.36. λ_{max} 229 (log ε 4.56); 269 (log ε 3.7); 298 (log ε 3.77) (MeOH).

► VQ5835500

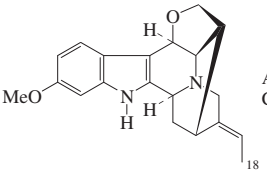
Ac:
Prisms (MeOH aq.). Mp 218-219°.

19,20ξ-Dihydro, 17-carboxylic acid, N^1-Me, Me ester: ***11-Methoxy-N-methyldihydropericyclivine***
[135574-53-7]
$C_{22}H_{28}N_2O_3$ 368.475
Alkaloid from *Tabernaemontana divaricata* (Apocynaceae). λ_{max} 235; 270; 292 (MeOH).

Sakai, S. *et al., Chem. Pharm. Bull.*, 1973, **21**, 1783-1798 (*uv, ir, pmr, ms, struct, abs config*)
Aimi, N. *et al., Chem. Pharm. Bull.*, 1978, **26**, 3444-3449 (*cmr*)
Arambewela, L.S.R. *et al., Phytochemistry*, 1991, **30**, 1740-1741 (*11-Methoxy-N-methyldihydropericyclivine*)
Zhou, H. *et al., Tet. Lett.*, 2005, **46**, 4219-4224 (*synth*)

Gardnutine G-23

6,17-Epoxy-11-methoxysarpagan, 9CI
[23172-98-7]



Absolute Configuration

$C_{20}H_{22}N_2O_2$ 322.406
Alkaloid from the roots and stems of *Gardneria nutans* (Loganiaceae). Shows ganglion-blocking activity. Mp 319-320°. $[\alpha]_D^{25}$ +30.3 (solvent not reported). pK_a 5.77.

18-Hydroxy: ***Hydroxygardnutine***
[23173-00-4]
$C_{20}H_{22}N_2O_3$ 338.405
Alkaloid from the roots and stem of *Gardneria nutans* (Loganiaceae).

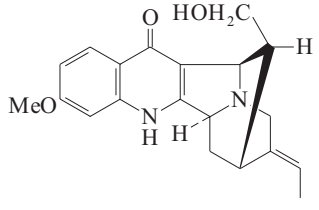
Shows ganglion-blocking activity. Mp 311-312°. $[\alpha]_D^{25}$ +36.2 (solvent not reported). pK_a 5.64.

Demethoxy, N^1*-Me:* ***16-Epidehydroaffinisine****. Dehydro-16-epiaffinisine*
[138989-36-3]
$C_{20}H_{22}N_2O$ 306.407
Alkaloid from leaves and root bark of *Ervatamia hirta* (Apocynaceae). $[\alpha]_D$ +58.8 (c, 0.25 in MeOH). λ_{max} 224 (log ϵ 4.37); 281 (log ϵ 3.65); 290 (sh) (log ϵ 3.58) (MeOH).

Sakai, S. *et al., Chem. Pharm. Bull.*, 1973, **21**, 1783-1798 (*Gardnutine, Hydroxygardnutine*)
Clivio, P. *et al., Phytochemistry*, 1991, **30**, 3785-3792 (*16-Epidehydroaffinisine*)
Yu, J. *et al., J.O.C.*, 2003, **68**, 5852-5859 (*16-Epidehydroaffinisine, synth*)
Zhou, H. *et al., Tet. Lett.*, 2005, **46**, 4219-4224 (*synth*)

Gardquinolone G-24

[156430-98-7]

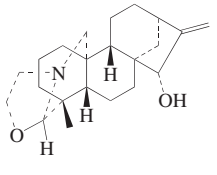


$C_{20}H_{22}N_2O_3$ 338.405
Prob. a ring-expanded indole alkaloid (sarpagine type). Alkaloid from leaves of *Gardneria nutans* (Loganiaceae). Powder (EtOAc). Mp 265-273° dec.

Takayama, H. *et al., J. Nat. Prod.*, 1994, **57**, 521-523 (*isol, uv, pmr, cmr, ms, cd, struct*)

Garryine, 9CI G-25

[561-51-3]



Absolute Configuration

$C_{22}H_{33}NO_2$ 343.508
Alkaloid from the bark of *Garrya veatchii* (Garryaceae). Mp 74-82° (hydrate). $[\alpha]_D^{28}$ -84 (c, 1.4 in EtOH).

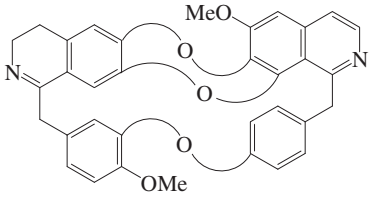
Hydrochloride: Mp 251-252° dec., 263-268°.

16α,17-Dihydro, 15-ketone: Isocuauchichicine
[467-93-6]
Cryst. (MeOH). Mp 134-136°. $[\alpha]_D$ -84 ($CHCl_3$). pK_a 8.1.

15-Epimer. Isogarryfoline. Isolaurifoline
[467-92-5]
Obt. by rearr. of Garryfoline in hot MeOH. Cryst. (Me_2CO or hexane). Mp 140-144°. $[\alpha]_D$ -57 ($CHCl_3$). pK_a 8.6.

Oneto, J.F. *et al., J. Am. Pharm. Assoc.*, 1946, **35**, 204-207 (*isol*)
Weisner, K. *et al., Can. J. Chem.*, 1952, **30**, 608-626 (*isol, struct, ir*)
Wiesner, K. *et al., J.A.C.S.*, 1954, **76**, 6068-6073 (*isol, struct, ir*)
Djerassi, C. *et al., J.A.C.S.*, 1955, **77**, 4801-4807; 6633 (*Garryine, Isogarryfoline, Isocuauchichicine, synth, ir, nomencl*)
Verbrueggen, H. *et al., J.A.C.S.*, 1962, **84**, 2990-2997 (*abs config*)
Masamune, S. *et al., J.A.C.S.*, 1964, **86**, 290-291 (*synth*)
Nagata, W. *et al., J.A.C.S.*, 1967, **89**, 1499-1504 (*synth*)
Pelletier, S.W. *et al., Tetrahedron*, 1968, **24**, 2019-2038 (*pmr*)
Pelletier, S.W. *et al., J.A.C.S.*, 1977, **99**, 284-286 (*Garryine, Isocuauchichicine, cmr*)
Mody, N.V. *et al., Tetrahedron*, 1978, **34**, 2421-2431 (*cmr*)
Pelletier, S.W. *et al., J. Nat. Prod.*, 1980, **43**, 41-71 (*rev*)
Pelletier, S.W. *et al., J.O.C.*, 1981, **46**, 1840-1846 (*cmr*)

Gasabiimine G-26

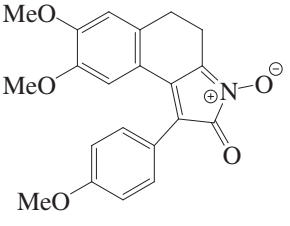


$C_{34}H_{26}N_2O_5$ 542.59
Alkaloid from the roots of *Triclisia sacleuxii*. λ_{max} 205 (log ϵ 4.61); 234 (log ϵ 4.47); 287 (log ϵ 4); 333 (log ϵ 3.59) (MeOH).

Murebwayire, S. *et al., Fitoterapia*, 2006, **77**, 615-617 (*isol, pmr, cmr*)

Gaultherialine A G-27

[956261-55-5]

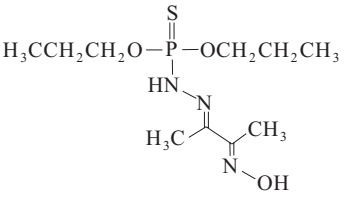


$C_{21}H_{19}NO_5$ 365.385
Alkaloid from *Gaultheria nummularioides*. Amorph. red powder. Mp 170-172°. λ_{max} 268 (log ϵ 3.71); 314 (log ϵ 4.03); 380 (log ϵ 3.96); 446 (log ϵ 3.75); 464 (log ϵ 3.76); 514 (log ϵ 3.73) ($CHCl_3$).

Yang, M.-F. *et al., J. Asian Nat. Prod. Res.*, 2007, **9**, 183-186 (*isol, pmr, cmr*)

GB4 Toxin G-28

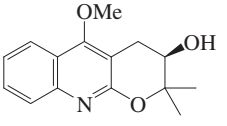
2-(1-Methyl-2-oxopropylidene)phosphorohydrazidothioate oxime
[82638-81-1]



$C_{10}H_{22}N_3O_3PS$ 295.342
Isol. from the Florida red tide dinoflagellate *Gymnodinium breve (Ptychodiscus brevis)*. Ichthyotoxin. Needles (C_6H_6). Mp 82-83°. λ_{max} 230 (solvent not reported) (Derep).

Alam, M. *et al., J.A.C.S.*, 1982, **104**, 5232 (*isol, cryst struct, ms, ir, pmr*)

Geibalansine G-29



(*R*)*-form*

$C_{15}H_{17}NO_3$ 259.304

(*R*)*-form* [316172-98-2]
Alkaloid from the stem bark of *Zanthoxylum hyemale*. Needles. Mp 181-182°. $[\alpha]_D^{25}$ -14 (c, 0.06 in MeOH).

8,9-Dimethoxy: [366490-63-3]
Alkaloid from *Melicope semecarpifolia*. $[\alpha]_D^{23}$ -18.6 (c, 0.06 in $CHCl_3$).

(*S*)*-form* [72855-84-6]
Alkaloid from the leaves of *Geijera balansae* (Rutaceae). Cryst. (MeOH/2-propanol). Mp 181-182°. $[\alpha]_D$ +12 (c, 0.86 in MeOH).

Ac: **O-*Acetylgeibalansine***
[72855-85-7]
$C_{17}H_{19}NO_4$ 301.341
Alkaloid from the leaves of *Geijera balansae* (Rutaceae). Amorph. $[\alpha]_D$ +58 (c, 1.2 in $CHCl_3$).

N-*Me:* N-*Methylgeibalansine.* ***Tabouensinium***
$C_{16}H_{20}NO_3^{\oplus}$ 274.339
Quaternary alkaloid from the stem bark of *Araliopsis tabouensis*. Powder (as chloride). Mp 136-137° (chloride). $[\alpha]_D$ -17.2 (c, 1.06 in DMSO) (chloride). λ_{max} 229 (log ϵ 4.86); 274 (log ϵ 4.19); 283 (log ϵ 4.16); 325 (log ϵ 4.17); 337 (log ϵ 4.03) (MeOH) (chloride).

8,9-Dimethoxy: ***8,9-Dimethoxygeibalansine***
[142741-29-5]
$C_{17}H_{21}NO_5$ 319.357
Alkaloid from stem bark of *Dutaillyea baudounii*. λ_{max} 243 ; 315 ; 327 (EtOH).

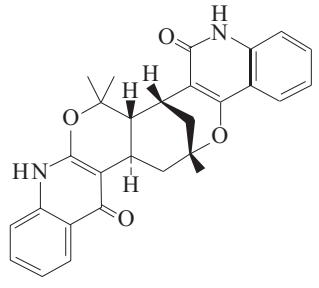
(±)*-form* [89575-83-7]
Synthetic. Cryst. (C_6H_6/EtOH). Mp 175-176°.

Ac: [89495-53-4]
Synthetic. Needles (C_6H_6). Mp 138-139°.

Bowman, R.M. *et al., J.C.S.(C)*, 1966, 1504 (*synth*)
Ahond, A. *et al., Phytochemistry*, 1979, **18**, 1415-1416 (*uv, ir, pmr, ms, struct, deriv*)
Ramesh, M. *et al., Heterocycles*, 1984, **22**, 125 (*synth, ir, pmr, deriv*)
Muyard, F. *et al., Phytochemistry*, 1992, **31**, 1087-1089 (*8,9-Dimethoxygeibalansine*)
Barr, S.A. *et al., Chem. Comm.*, 1994, 153 (*synth*)
Boyd, D.R. *et al., J.C.S. Perkin 1*, 2000, 3397-3405 (*synth, abs config*)
Chen, I.-S. *et al., J. Nat. Prod.*, 2001, **64**, 1143-1147 (*8,9-Dimethoxygeibalansine*)
De Moura, N.F. *et al., Planta Med.*, 2002, **68**, 534-538 (*R-form, isol, pmr, cmr*)
Wabo, H.K. *et al., Nat. Prod. Res.*, 2005, **19**, 591-595 (*Tabouensinium*)

Geijedimerine G-30

[99964-51-9]

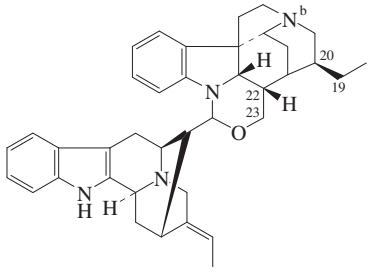


$C_{28}H_{26}N_2O_4$ 454.524
Alkaloid from the leaves of *Geijera balansae* (Rutaceae). Prisms (MeOH). Mp 205-207°. $[\alpha]_D^{25}$ 0 (c, 0.5 in EtOH).

Mitaku, S. *et al., J. Nat. Prod.*, 1985, **48**, 772 (*isol, uv, ir, pmr, ms, struct*)

Geissolosimine G-31

Alkaloid D_2



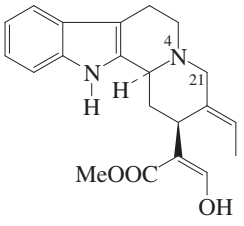
$C_{38}H_{44}N_4O$ 572.792
Alkaloid from the bark of *Geissospermum vellosii* (Apocynaceae). Cryst. + ½ H_2O (MeOH aq.). Mp 140° (133-135°). $[\alpha]_D^{25}$ +74 (c, 1.0 in EtOH).

*19,20*E*,22,23-Tetradehydro, N^b-oxide:* ***Divaricine***
[138683-55-3]
$C_{38}H_{40}N_4O_2$ 584.76
Alkaloid from the roots of *Strychnos divaricans* (Loganiaceae). Prisms (MeOH/EtOAc). Mp 280-282° dec. $[\alpha]_D^{22}$ +94 (c, 0.1 in EtOH).

Rapoport, H. *et al., J.A.C.S.*, 1958, **80**, 1601; *J.O.C.*, 1962, **27**, 2981 (*isol, uv, ir, pmr, struct, synth*)
Mukherjee, R. *et al., Heterocycles*, 1991, **32**, 985 (*Divaricine*)

Geissoschizine G-32

Alkaloid R1
[439-66-7]



$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from *Rhazya stricta*, *Bonafousia tetrastachya* (preferred genus name *Tabernaemontana*) and *Rauwolfia volkensii* (Apocynaceae) and hydrol. prod. from Geissospermine, G-35. Mp 194-196° (187°). $[\alpha]_D^{21}$ +115 (EtOH). $[\alpha]_D$ +72 ($CHCl_3$).

2,4-Dinitrophenylhydrazone; hydrochloride: Mp 198°.

Me ether: ***Geissoschizine methyl ether***
[60314-89-8]
$C_{22}H_{26}N_2O_3$ 366.459
Alkaloid from *Uncaria rhyncophylla* (Rubiaceae). Prisms (Me_2CO/hexane). Mp 190-192°. $[\alpha]_D^{27}$ +100 (c, 1 in MeOH).

N^4*,21-Dehydro:* ***4,21-Dehydrogeissoschizine***
[73385-56-5]
[73385-57-6]
$C_{21}H_{23}N_2O_3^{\oplus}$ 351.424
Main alkaloid from *Guettarda eximia* (Apocynaceae). Intermed. in the biosynth. of heteroyohimbine alkaloids. Hydrate (as chloride). Mp 250° dec. (chloride). Deprotonates to Cathenamine, C-207.

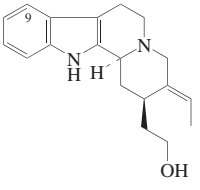
(Z)-Isomer:
Cryst. (MeOH). Mp 125-127°. $[\alpha]_D^{24}$ -13 (c, 0.247 in Py).

(±)-*form*
Cryst. (EtOH). Mp 189-190°.

Janot, M.-M. *et al., Tetrahedron*, 1961, **14**, 113 (*isol, struct*)
Yamada, K. *et al., Chem. Comm.*, 1974, 908 (*synth*)
Chatterjee, A. *et al., Bull. Chem. Soc. Jpn.*, 1976, **49**, 2000 (*uv, ir, pmr, ms*)
Hachmeister, B. *et al., Chem. Ber.*, 1976, **109**, 3825 (*synth*)
Rackur, G. *et al., Chem. Ber.*, 1976, **109**, 3837 (*conformn*)
Damak, M. *et al., Tet. Lett.*, 1976, 4731 (*pmr, cmr, config*)
Aimi, N. *et al., Chem. Pharm. Bull.*, 1977, **25**, 2067 (*deriv*)
Kan-Fan, C. *et al., Chem. Comm.*, 1979, 1015 (*4,21-Dehydrogeissoschizine*)
Rüffer, M. *et al., Chem. Comm.*, 1979, 1016 (*biosynth*)
Bohlmann, C. *et al., Annalen*, 1985, 1752 (*synth*)
Winterfeldt, E. *et al., Annalen*, 1986, 1262 (*Z-isomer*)
Martin, S.F. *et al., J.A.C.S.*, 1988, **110**, 5925 (*synth, bibl*)
Overman, L.E. *et al., J.A.C.S.*, 1989, **111**, 300 (*synth*)
Wenkert, E. *et al., J.O.C.*, 1989, **54**, 1166 (*synth*)
Takayama, H. *et al., Tet. Lett.*, 1992, **33**, 6831; 1997, **38**, 5307 (*pmr, cmr, struct, synth*)
Tirkkonen, B. *et al., Tetrahedron*, 1994, **50**, 3537 (*Z-isomer*)
Lounasmaa, M. *et al., Tetrahedron*, 1996, **52**, 6803 (*synth*)
Lounasmaa, M. *et al., Heterocycles*, 1999, **51**, 649-670 (*rev, conformn*)
Bennasar, M.-L. *et al., J.O.C.*, 1999, **64**, 9605-9612 (*synth*)
Martin, S.F. *et al., Org. Lett.*, 1999, **1**, 79-81 (*synth*)
Yu, S. *et al., J.A.C.S.*, 2000, **122**, 7827-7828 (*synth*)
Deiters, A. *et al., J.A.C.S.*, 2003, **125**, 4541-4550 (*synth*)
Ariffin, J. *et al., Heterocycles*, 2004, **63**, 663-670 (*pmr, cmr, conformn*)

Geissoschizol G-33

[439-69-0]



Absolute Configuration

$C_{19}H_{24}N_2O$ 296.411
Alkaloid from *Rauwolfia vomitoria, Aspidosperma oblongum, Peschiera laeta, Hunteria zeylanica, Ervatamia hainanensis, Tabernaemontana elegans* and others (Apocynaceae). Cryst. (MeOH/$CHCl_3$/heptane). Mp 216° (204°). $[\alpha]_D^{20}$ -70 (Py).

O-*Ac:* **O-*Acetylgeissoschizol***
[83378-14-7]
$C_{21}H_{26}N_2O_2$ 338.449
Alkaloid from stem bark of *Rauwolfia vomitoria* (Apocynaceae).

Aldehyde: ***Geissoschizal***
[41787-67-1]
$C_{19}H_{22}N_2O$ 294.396
Alkaloid in *Strychnos nux-vomica* (biosynth.) (Loganiaceae).

9-Methoxy: ***9-Methoxygeissoschizol***
$C_{20}H_{26}N_2O_2$ 326.438
Alkaloid from the bark of *Strychnos guianensis*. λ_{max} 210 (sh) (log ϵ 4.21); 224 (log ϵ 4.31); 269 (log ϵ 3.74); 292 (log ϵ 3.6) (MeOH).

9-Methoxy, N^b-Me: ***9-Methoxy-N^b-methylgeissoschizol***
$C_{21}H_{29}N_2O_2^{\oplus}$ 341.472
Quaternary alkaloid from *Strychnos guianensis*. Counterion not specified. λ_{max} 207 (log ϵ 4.25); 220 (log ϵ 4.32); 259 (log ϵ 3.74); 291 (log ϵ 3.52) (MeOH).

10-Hydroxy: ***10-Hydroxygeissoschizol***. *Huntabrine. Huntrabrine*
[6870-18-4]
$C_{19}H_{24}N_2O_2$ 312.411
Alkaloid from *Amsonia elliptica, Rauwolfia vomitoria* and *Ervatamia hainanensis* (Apocynaceae).

10-Hydroxy, N^b*-Me:* ***Huntrabrine* N-metho salt**
$C_{20}H_{27}N_2O_2^{\oplus}$ 327.445
Quaternary alkaloid from *Hunteria eburnea* and *Pleiocarpa mutica* (Apocynaceae). Cryst. (MeOH aq.)(as chloride). Mp 282-286° dec. (chloride). $[\alpha]_D^{26}$ +56 (c, 0.585 in H_2O).

10-Methoxy: ***10-Methoxygeissoschizol***. *19,20-Dehydro-10-methoxydihydrocorynantheol. Alkaloid AD-VI*
[15266-60-1]
$C_{20}H_{26}N_2O_2$ 326.438
Alkaloid from *Aspidosperma discolor, Aspidosperma oblongum, Aspidosperma marcgravianum, Rauwolfia vomitoria, Rauwolfia obscura* and *Neisosperma kilneri* (Apocynaceae). Cryst. (MeOH/Et_2O or Me_2CO/pentane). Mp 184-185° dec. (181-182.5°). $[\alpha]_D^{24}$ -64.5 (c, 0.916 in pentane) (-42).

10-Methoxy, N^b*-Me:* ***10-Methoxy-4-methylgeissoschizol***
[143257-73-2]
$C_{21}H_{29}N_2O_2^{\oplus}$ 341.472
Quaternary alkaloid from bark of *Aspidosperma pruinosum* (Apocynaceae). Mp 171-173°. $[\alpha]_D^{25}$ +36.04 (c, 1.0 in MeOH). Counterion not specified.

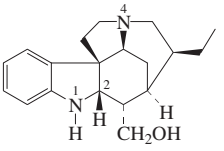
Z-*Isomer(?):* ***Isogeissoschizol***
$C_{19}H_{24}N_2O$ 296.411
Alkaloid from *Aspidosperma marcgravianum* (Apocynaceae). Amorph. $[\alpha]_D$ -26 (c, 0.32 in MeOH). Yellow-green col. with Ce(IV). λ_{max} 227 (log ϵ 4.67); 273 (log ϵ 3.72); 281 (log ϵ 3.81); 290 (log ϵ 3.57) (EtOH) (unchanged in acid or alkali).

Z-*Isomer(?), 10-methoxy:* ***10-Methoxyisogeissoschizol***
$C_{20}H_{26}N_2O_2$ 326.438
Alkaloid from *Aspidosperma marcgravianum* (Apocynaceae). Amorph. $[\alpha]_D$ +2 (c, 0.69 in MeOH). Yellow-green col. with Ce(IV). λ_{max} 229 (log ϵ 4.72); 284 (log ϵ 3.84); 294 (log ϵ 3.78); 308 (log ϵ 3.54) (EtOH) (unchanged in alkali).

Puisieux, F. *et al., C. R. Hebd. Seances Acad. Sci.*, 1959, **249**, 1369 (*synth*)
Rapoport, H. *et al., J.A.C.S.*, 1960, **82**, 4404 (*synth*)
Bartlett, M.F. *et al., J.O.C.*, 1963, **28**, 1445 (*Huntrabrine N-methosalt*)
Spiteller, G. *et al., Monatsh. Chem.*, 1963, **94**, 779 (*ms*)
Khan, Z.M. *et al., Helv. Chim. Acta*, 1965, **48**, 1957 (*Huntrabrine N-methosalt*)
Gilbert, B. *et al., Tetrahedron*, 1965, **21**, 1141 (*10-Methoxygeissoschizol*)
Dastoor, N.J. *et al., Helv. Chim. Acta*, 1967, **50**, 213 (*10-Methoxygeissoschizol*)
Heimberger, S.I. *et al., Chem. Comm.*, 1973, 217 (*Geissoschizal*)
Sakai, S. *et al., Yakugaku Zasshi*, 1973, **93**, 483 (*10-Hydroxygeissoschizol*)
Jahodar, L. *et al., Phytochemistry*, 1974, **13**, 2880 (*isol*)
Iwu, M.M. *et al., Planta Med.*, 1982, **45**, 105 (*Acetylgeissoschizol*)
Robert, G.M.T. *et al., J. Nat. Prod.*, 1983, **46**, 694-707 (*Isogeissoschizol, 10-Methoxyisogeissoschizol*)
Bohlmann, C. *et al., Annalen*, 1985, 1752 (*synth*)
Nunes, D.S. *et al., Phytochemistry*, 1992, **31**, 2507 (*10-Methoxy-4-methylgeissoschizol*)
Mavar-Manga, H. *et al., Phytochemistry*, 1996, **43**, 1125 (*9-Methoxygeissoschizol*)
Yu, S. *et al., J.A.C.S.*, 2000, **122**, 7827-7828 (*synth*)
Penelle, J. *et al., Phytochemistry*, 2000, **53**, 1057-1066 (*9-Methoxy-N-methylgeissoschizol*)
Ma, J. *et al., Org. Lett.*, 2007, **9**, 3491-3494 (*synth*)

Geissoschizoline G-34

16α-Curan-17-ol, 9CI. Pereirine
[18397-07-4]



Absolute Configuration

$C_{19}H_{26}N_2O$ 298.427
Alkaloid from *Geissospermum vellosii* and *Geissospermum sericeum*, identical with acid hydrol. prod. of Geissospermine, G-35 and therefore possible artifact (Apocynaceae). Mp 84-87° Mp 85-105° Mp 98-143°. $[\alpha]_D^{20}$ +8 (c, 4 in MeOH). Mp wide and variable owing to solvation.

Picrolonate:
Cryst. (EtOH). Mp 209-211°.

N^4*-Oxide:* ***Geissoschizoline* N^4*-oxide***
[402752-15-2]
$C_{19}H_{26}N_2O_2$ 314.427
Alkaloid from the bark of *Geissospermum sericeum*. $[\alpha]_D^{20}$ +31 (c, 0.64 in MeOH). λ_{max} 245 ; 300 (MeOH).

Di-Ac:
Cryst. (Me_2CO). Mp 196-197°.

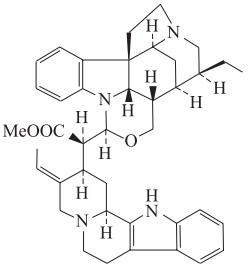
1,2-Didehydro: ***1,2-Didehydrogeissoschizoline***. *1,2-Dehydrogeissoschizoline*
[402752-17-4]
$C_{19}H_{24}N_2O$ 296.411
Alkaloid from the bark of *Geissospermum sericeum*.

[23365-75-5]

Bertho, A. *et al., Chem. Ber.*, 1958, **91**, 2581; 1961, **94**, 2737 (*isol, struct*)
Janot, M.M. *et al., Tetrahedron*, 1961, **14**, 113 (*isol, ir, uv, struct*)
Harley-Mason, J. *et al., Chem. Comm.*, 1969, 665; 1970, 812 (*synth*)
Steele, J.C.P. *et al., J. Nat. Prod.*, 2002, **65**, 85-88 (*isol, uv, pmr, cmr*)

Geissospermine G-35

[427-01-0]



Absolute configuration

$C_{40}H_{48}N_4O_3$ 632.844
Alkaloid from the bark of *Geissospermum vellosii*, *Geissospermum laeve*, *Geissospermum sericeum* and *Tabernaemontana laevis* (Apocynaceae). Mp 213-214° (sinters at 160°) (anhyd. 217-219° dec.). $[\alpha]_D^{20}$ -101 (c, 1 in EtOH). Hydrol. gives Geissoschizine, G-32.

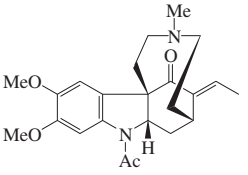
▶ GN1040000

Hydrochloride: Mp 148°.

Hesse, O. *et al., Ber.*, 1877, **10**, 2162 (*isol*)
Rapoport, H. *et al., J.A.C.S.*, 1960, **82**, 4404 (*uv, ir, struct*)
Janot, M.-M. *et al., Tetrahedron*, 1961, **14**, 113 (*struct*)
Schmid, H. *et al., Biochem. Physiol. Alkaloide, Int. Symp., 4th, 1969 (1972)*, 1972, 337; *CA*, **77**, 140397z (*synth*)
Chiaroni, A. *et al., Tet. Lett.*, 1976, 4729 (*cryst struct*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, GCG300

Geissovelline G-36

1-Acetyl-14,19-didehydro-10,11-dimethoxy-4-methyl-3,4-secocondyfolan-3-one, 9CI
[36954-68-4]



Relative Configuration

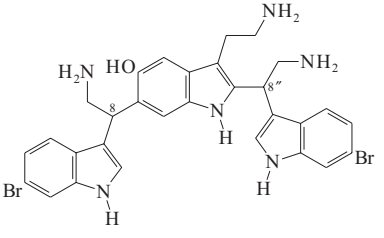
$C_{23}H_{30}N_2O_4$ 398.501
Alkaloid from the bark of *Geissospermum vellosii* (Apocynaceae). Cryst. ($CHCl_3$/Et_2O or EtOH). Mp 189-190°. $[\alpha]_D^{25}$ -125 (c, 1.15 in $CHCl_3$). pK_a 6.7 (50% EtOH aq.). CAS gives the abs. config. as shown, but it has not been definitely determined. λ_{max} 217 (ϵ 22600); 262 (ϵ 17500); 299 (ϵ 10500) (95% EtOH).

N-*De-Ac:*
Pale-yellow cryst. Mp 158-159.5°. $[\alpha]_D^{28}$ -6 (c, 1.07 in $CHCl_3$). pK_a 7 (50% EtOH aq.). λ_{max} 230 (ϵ 12500); 305 (ϵ 6260) (95% EtOH).

Moore, R.E. *et al., J.O.C.*, 1973, **38**, 215-230 (*isol, uv, ir, pmr, cmr, ms, struct*)

Gelliusine A G-37

[159903-67-0]



$C_{30}H_{30}Br_2N_6O$ 650.415
Alkaloid from a deep water New Caledonian marine sponge (*Gellius* or *Orina* sp.). Serotonin receptor agonist. Racemic. λ_{max} 226 (ϵ 52000); 285 (ϵ 15000) (MeOH).

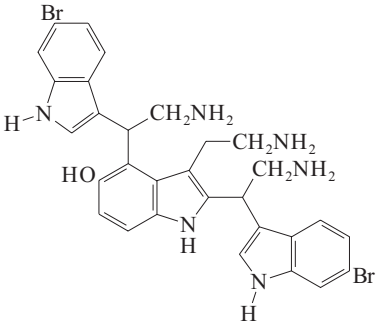
Diastereoisomer: ***Gelliusine B***
[159992-42-4]
$C_{30}H_{30}Br_2N_6O$ 650.415
From a deep water New Caledonian

marine sponge (*Gellius* or *Orina* sp.). Serotonin receptor agonist. Racemate with different rel. configs. at C-8 and C-8′′ from (±)-Gelliusine A. λ_{max} 226 (ϵ 52000); 285 (ϵ 15000) (MeOH) (Berdy).

Bifulco, G. *et al., J. Nat. Prod.*, 1994, **57**, 1294 (*isol, uv, pmr, cmr, struct*)

Gelliusine C G-38

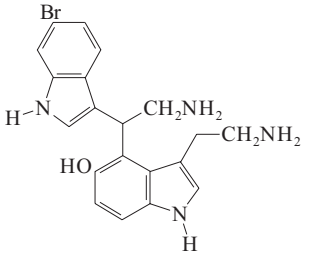
[171090-79-2]



$C_{30}H_{30}Br_2N_6O$ 650.415
Alkaloid from the deep-water New Caledonian marine sponge *Orina* sp. and from *Gellius* sp. Shows antiserotonin activity. Racemic. λ_{max} 230 (ϵ 35234); 284 (ϵ 13272) (MeOH) (Berdy).

Bifulco, G. *et al., J. Nat. Prod.*, 1995, **58**, 1254 (*isol, uv, pmr, cmr, struct*)

Gelliusine D G-39

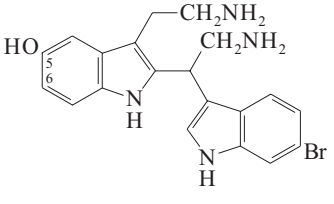


$C_{20}H_{21}BrN_4O$ 413.316

(±)-*form* [171090-80-5]
Alkaloid from the deep-water New Caledonian marine sponge *Orina* sp. and from *Gellius* sp. Shows antiserotonin activity. λ_{max} 230 (E1%/1cm 284) (MeOH) (Berdy).

Bifulco, G. *et al., J. Nat. Prod.*, 1995, **58**, 1254-1260 (*isol, pmr, cmr, struct*)

Gelliusine E G-40



$C_{20}H_{21}BrN_4O$ 413.316

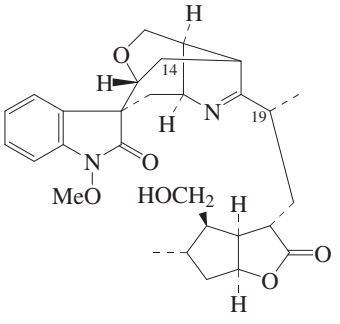
(±)-*form* [171090-81-6]
Alkaloid from the deep-water New Caledonian marine sponges *Orina* sp. and *Gellius* sp. Shows antiserotonin activity. Neuropeptide Y receptor agonist. Racemate with different rel. configs. at C-8 and C-8′′ from (±)-Gelliusine A. λ_{max} 230 ; 284 (MeOH) (Berdy).

5-Deoxy, 6-bromo: ***Gelliusine F***
[171090-82-7]
$C_{20}H_{20}Br_2N_4$ 476.213
From *Orina* sp. and *Gellius* sp. Antiserotonin agent, neuropeptide Y binding agent. λ_{max} 230 ; 284 (MeOH) (Berdy).

Bifulco, G. *et al., J. Nat. Prod.*, 1995, **58**, 1254-1260 (*isol, pmr, cmr, struct*)

Gelsamydine G-41

[120881-61-0]



$C_{29}H_{36}N_2O_6$ 508.613
Alkaloid from the whole plant of *Gelsemium elegans*. Needles. Mp 194-196°. $[\alpha]_D$ -126.9 (c, 0.26 in MeOH). λ_{max} 206 ; 257 (MeOH).

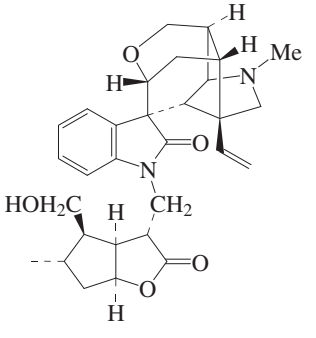
*14*R-*Hydroxy:* ***14α-Hydroxygelsamydine***
$C_{29}H_{36}N_2O_7$ 524.613
Alkaloid from *Gelsemium elegans*. Needles. $[\alpha]_D^{20}$ -71.5 (c, 0.07 in $CHCl_3$). λ_{max} 258 (log ϵ 4.66) (MeOH).

19-Epimer, 19-hydroxy: ***19α-Hydroxygelsamydine***
[181948-91-4]
$C_{29}H_{36}N_2O_7$ 524.613
Alkaloid from whole plant of *Gelsemium elegans*. Yellowish powder. $[\alpha]_D$ -75 (c, 0.01 in MeOH). λ_{max} 209 (log ϵ 4.29); 257 (log ϵ 3.67) (MeOH).

Lin, L.-Z. *et al., J.O.C.*, 1989, **54**, 3199-3202 (*isol, pmr, cmr, ms, cd, cryst struct*)
Lin, L.-Z. *et al., Phytochemistry*, 1996, **43**, 723-726 (*19α-Hydroxygelsamydine*)
Xu, Y.-K. *et al., J. Nat. Prod.*, 2006, **69**, 1347-1350 (*14-Hydroxygelsamydine*)

Gelsebanine G-42

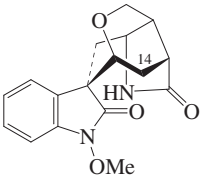
[911847-81-9]



$C_{30}H_{36}N_2O_5$ 504.625
Alkaloid from *Gelsemium elegans*. Amorph. powder. $[\alpha]_D^{20}$ -8 (c, 0.08 in $CHCl_3$). λ_{max} 255 (log ϵ 4.06); 287 (sh) ; 317 (log ϵ 3.08) (MeOH).

Xu, Y.-K. *et al., J. Nat. Prod.*, 2006, **69**, 1347-1350 (*isol, pmr, cmr, ms*)

Gelsedilam G-43



Absolute Configuration

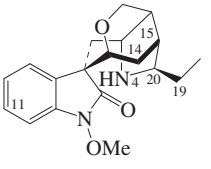
$C_{17}H_{18}N_2O_4$ 314.34
Related to Gelsedine, G-44. Alkaloid from the leaves of *Gelsemium elegans*. λ_{max} 209 (log ϵ 4.35); 257 (log ϵ 3.72) (MeOH).

*14*R-*Acetoxy:* ***14-Acetoxygelsedilam***
$C_{19}H_{20}N_2O_6$ 372.377
Alkaloid from the leaves of *Gelsemium elegans*. λ_{max} 210 (log ϵ 4.31); 257 (log ϵ 3.65) (MeOH).

Kogure, N. *et al., Org. Lett.*, 2006, **8**, 3085-3088 (*isol, cd, pmr, cmr, ms*)

Gelsedine, 9CI G-44

[7096-96-0]



Absolute Configuration

$C_{19}H_{24}N_2O_3$ 328.41
Alkaloid from *Gelsemium sempervirens*. Mp 172.6-174°. $[\alpha]_D^{25}$ -158 (c, 1.35 in $CHCl_3$).

Perchlorate: Mp 183°. $[\alpha]_D^{20}$ -96 (c, 0.73 in $CHCl_3$).

4,20-Didehydro: 4,20-Didehydrogelsedine. ***Gelsenicine****. Humantenmine*
[82354-38-9]
$C_{19}H_{22}N_2O_3$ 326.394
Alkaloid from roots of *Gelsemium elegans*. Exhibits analgesic activity. Mp 166-168°. $[\alpha]_D$ -147. λ_{max} 210 (log ϵ 4.38); 256 (log ϵ 3.84) (no solvent reported).

19-Oxo, 4,20-didehydro: ***19-Oxogelsenicine****. 4,20-Didehydro-19-oxogelsedine, 9CI*
[113900-77-9]
$C_{19}H_{20}N_2O_4$ 340.378
Alkaloid from leaves of *Gelsemium elegans*. Plates (Me_2CO). Mp 226-227°. λ_{max} 209 ; 256 ; 281 (MeOH).

*14*R-*Hydroxy:* ***14-Hydroxygelsedine***
[100482-87-9]
$C_{19}H_{24}N_2O_4$ 344.41
Alkaloid from stems of *Gelsemium sempervirens*. Needles. Mp 216-218°.

$[\alpha]_D^{25}$ -113 (c, 0.3 in MeOH). λ_{max} 216 (log ϵ 4.26); 260 (log ϵ 3.68) (MeOH).

*14*R-*Hydroxy, 4,20-didehydro: 4,20-Didehydro-14-hydroxygelsedine, 9CI.* ***14-Hydroxygelsenicine****. Humantenidine*
[114027-39-3]
[82375-28-8 (Humantenidine)]
$C_{19}H_{22}N_2O_4$ 342.394
Alkaloid from roots of *Gelsemium elegans*. Gum. $[\alpha]_D$ -123. λ_{max} 210 (log ϵ 4.38); 252 (log ϵ 3.98) (no solvent reported).

*14*R-*Hydroxy, 19-oxo, 4,20-didehydro:* ***14-Hydroxy-19-oxogelsenicine****. 14-Hydroxy-19-oxohumantenmine. 19-Oxohumantenidine*
$C_{19}H_{20}N_2O_5$ 356.377
Alkaloid from the leaves of *Gelsemium elegans*. Amorph. $[\alpha]_D^{19}$ -146.1 (c, 0.14 in $CHCl_3$). λ_{max} 213 (log ϵ 4.28); 256 (log ϵ 3.73) (MeOH).

*14*R,*15-Dihydroxy, 4,20-didehydro:* ***14,15-Dihydroxygelsenicine***
[557113-06-1]
$C_{19}H_{22}N_2O_5$ 358.393
Alkaloid from *Gelsemium elegans*. Amorph. solid. λ_{max} 212 (log ϵ 4.29); 258 (log ϵ 3.76) (MeOH).

*14*R-*Acetoxy, 4,20-didehydro:* ***14-Acetoxygelsenicine****. 14-*O*-Acetylhumantenidine*
$C_{21}H_{24}N_2O_5$ 384.431
Alkaloid from the leaves of *Gelsemium elegans*. Amorph. $[\alpha]_D^{19}$ -102.6 (c, 1.5 in $CHCl_3$). λ_{max} 213 (log ϵ 4.27); 258 (log ϵ 3.77) (MeOH).

*14*R-*Acetoxy, 15-hydroxy, 4,20-didehydro:* ***14-Acetoxy-15-hydroxygelsenicine****. 14-*O*-Acetyl-15-hydroxyhumantenidine*
$C_{21}H_{24}N_2O_6$ 400.43
Alkaloid from the leaves of *Gelsemium elegans*. Amorph. $[\alpha]_D^{19}$ -66.3 (c, 0.09 in $CHCl_3$). λ_{max} 212 (log ϵ 4.26); 258 (log ϵ 3.73) (MeOH).

11-Methoxy: ***Gelsemicine***
[6887-28-1]
$C_{20}H_{26}N_2O_4$ 358.436
Alkaloid from *Gelsemium sempervirens* and *Mostuea brunonis*. Respiratory stimulant. Prisms (Me_2CO). Mp 171-172°. $[\alpha]_D^{25}$ -142 (c, 0.945 in $CHCl_3$).

▶ Highly toxic. Causing death by respiratory paralysis. Most toxic of the *Gelsemium* alkaloids.

11-Methoxy; hydrochloride: Mp 140-142°.

11-Methoxy, 4,20-didehydro: 4,20-Didehydro-11-methoxygelsedine. ***4,20-Didehydrogelsemicine***
[76328-63-7]
$C_{20}H_{24}N_2O_4$ 356.421
Alkaloid from *Gelsemium sempervirens* and *Mostuea brunonis*. λ_{max} 214 ; 285 ; 295 (sh) (MeOH).

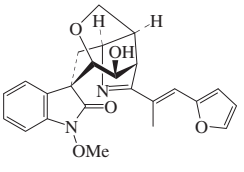
*11-Methoxy, 14*R-*hydroxy:* ***14-Hydroxygelsemicine****. Alkaloid C*†
[41478-09-5]
$C_{20}H_{26}N_2O_5$ 374.436
Alkaloid from *Gelsemium sempervirens* and *Mostuea brunonis*. Plates (Me_2CO).

*11-Methoxy, 14*R-*hydroxy, 4,20-didehydro: 14-Hydroxy-11-methoxygelsenicine. 4,20-Didehydro-14-hydroxygelsemicine. GS 2*
[677761-62-5]
$C_{20}H_{24}N_2O_5$ 372.42
Alkaloid from *Gelsemium sempervirens*. Amorph. λ_{max} 218 ; 286 ; 296 (sh) (MeOH).

*11-Methoxy, 14*R-*hydroxy, 19-oxo, 4,20-didehydro:* ***14-Hydroxy-11-methoxy-19-oxogelsenicine****. GS 1*
[677761-61-4]
$C_{20}H_{22}N_2O_6$ 386.404
Alkaloid from *Gelsemium sempervirens*. Amorph. solid. λ_{max} 218 ; 287 ; 295 (sh) (MeOH).

Forsyth, W.G.C. *et al., J.C.S.*, 1945, 579-582 (*Gelsemicine, isol*)
Schwarz, H. *et al., J.A.C.S.*, 1953, **75**, 4372 (*Gelsemicine, isol*)
Przybylska, M. *et al., Can. J. Chem.*, 1961, **39**, 2124-2127 (*Gelsemicine, cryst struct, ir*)
Wenkert, E. *et al., Experientia*, 1972, **28**, 377-379 (*cmr, ms*)
Wichtl, M. *et al., Monatsh. Chem.*, 1973, **104**, 87-98; *Ann. Chim. Farm.*, 1973, **104**, 99-104 (*ms, 14-Hydroxygelsemicine*)
Onanga, M. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1980, **291**, 191-193 (*uv, ir, pmr, cmr, ms, struct, Didehydrogelsemicine*)
Yang, J. *et al., Yaoxue Xuebao*, 1982, **17**, 119-120; 633-634; 1983, **18**, 104-112; 1984, **19**, 437-440; *CA*, **97**, 36099f; 212699n; **99**, 102248y; **103**, 3678h (*Humantenmine, Humantenidine*)
Schun, Y. *et al., J. Nat. Prod.*, 1985, **48**, 788-791 (*14-Hydroxygelsedine*)
Ponglux, D. *et al., Tet. Lett.*, 1988, **29**, 5395-5396 (*cmr*)
Ponglux, D. *et al., Tetrahedron*, 1988, **44**, 5075-5094 (*19-Oxogelsenicine*)
Kitajima, M. *et al., J.C.S. Perkin 1*, 1994, 1573-1578 (*Gelsemicine, synth*)
Takayama, H. *et al., J.O.C.*, 1994, **59**, 4381 (*Gelsedine, Gelsenicine, synth*)
Beyersbergen, W.G. *et al., J.O.C.*, 2000, **65**, 8317-8325 (*ent-Gelsedine, synth*)
Kitajima, M. *et al., Chem. Pharm. Bull.*, 2003, **51**, 1211-1214 (*GS1, GS2, 4,20-Didehydrogelsemicine*)
Kitajima, M. *et al., Org. Lett.*, 2003, **5**, 2075-2078 (*14,15-Dihydroxygelsenicine*)
Kitajima, M. *et al., J. Nat. Prod.*, 2006, **69**, 715-718; 2007, **70**, 142 (*14-Acetoxygelsenicine, 14-Acetoxy-15-hydroxygelsenicine, 14-Hydroxy-19-oxogelsenicine*)

Gelsefuranidine G-45

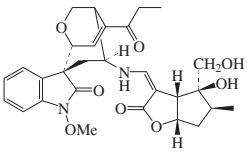


Absolute Configuration

$C_{24}H_{24}N_2O_5$ 420.464
Alkaloid from the leaves of *Gelsemium elegans*. λ_{max} 208 (log ϵ 4.21); 255 (sh) (log ϵ 3.67); 306 (log ϵ 4.14); 362 (sh) (log ϵ 2.77) (MeOH).

Kogure, N. *et al., Org. Lett.*, 2006, **8**, 3085-3088 (*isol, cd, pmr, cmr, ms*)

Gelseiridone G-46



Absolute Configuration

$C_{29}H_{34}N_2O_8$ 538.596
Highly modified indole alkaloid most closely related to the Gelsemium group. Alkaloid from the leaves of *Gelsemium elegans*. λ_{max} 205 (log ϵ 4.33); 288 (log ϵ 4.28) (MeOH).

Kogure, N. *et al., Org. Lett.*, 2006, **8**, 3085-3088 (*isol, cd, pmr, cmr, ms*)

Gelselegine G-47

20-(Hydroxymethyl)gelsedine, 9CI
[131653-76-4]
As Gelsedine, G-44 with
R = CH_2OH
$C_{20}H_{26}N_2O_4$ 358.436
Alkaloid from *Gelsemium elegans* (Loganiaceae). Prisms (MeOH). Mp 167-168°. $[\alpha]_D$ -30 (c, 0.02 in MeOH).

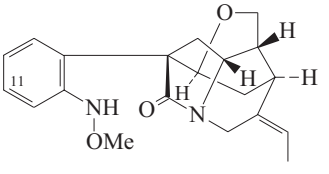
*19*R-*Hydroxy, 11-methoxy:* ***19R-Hydroxy-11-methoxygelselegine***
[131683-37-9]
$C_{21}H_{28}N_2O_6$ 404.462
Alkaloid from *Gelsemium elegans* (Loganiaceae). Prisms (MeOH). Mp 234-236°. $[\alpha]_D$ -110 (c, 0.02 in MeOH).

*14*R-*Acetoxy:* ***14-Acetoxygelselegine***
$C_{22}H_{28}N_2O_6$ 416.473
Alkaloid from the leaves of *Gelsemium elegans*. Amorph. $[\alpha]_D^{20}$ -62.1 (c, 1 in $CHCl_3$). λ_{max} 209 (log ϵ 4.23); 258 (log ϵ 3.6) (MeOH).

Lin, L.-Z. *et al., Phytochemistry*, 1990, **29**, 3013 (*isol, pmr, cmr, cryst struct*)
Takayama, H. *et al., J.O.C.*, 1994, **59**, 4381 (*synth*)
Takayama, H. *et al., Tetrahedron*, 1994, **50**, 11813 (*synth, 19-Hydroxy-11-methoxygelselegine*)
Kitajima, M. *et al., J. Nat. Prod.*, 2006, **69**, 715-718 (*14-Acetoxygelselegine*)

Gelsemamide G-48

[122297-34-1]



$C_{20}H_{24}N_2O_3$ 340.421
Novel N(1)-C(2) secoindole alkaloid. Alkaloid from *Gelsemium elegans* (Loganiaceae). Needles (Me_2CO). Mp 183-184°. $[\alpha]_D$ +228.3 (c, 0.046 in MeOH). λ_{max} 207 (ϵ 30200); 233 (ϵ 6610); 284 (ϵ 1950) (MeOH) (Derep).

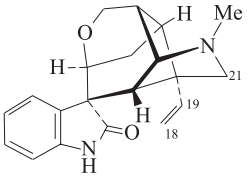
11-Methoxy: ***11-Methoxygelsemamide***
[122297-35-2]
$C_{21}H_{26}N_2O_4$ 370.447

Alkaloid from *Gelsemium elegans* (Loganiaceae). Needles (Me_2CO). Mp 140°. $[\alpha]_D$ +215.5 (c, 0.2 in MeOH). λ_{max} 207 (ϵ 30200); 233 (ϵ 6610); 284 (ϵ 1950) (MeOH) (Derep).

Lin, L.-Z. *et al., Tet. Lett.*, 1989, **30**, 1177 (*isol, uv, ir, pmr, cmr, ms, cd, cryst struct*)
Takayama, H. *et al., Tetrahedron*, 1994, **50**, 8363 (*synth, 11-Methoxygelsemamide*)

Gelsemine, 9CI G-49

[509-15-9]



Relative configuration

$C_{20}H_{22}N_2O_2$ 322.406
Alkaloid from *Gelsemium sempervirens, Gelsemium elegans* and *Mostuea stimulans* (Loganiaceae). Analgesic, CNS stimulant. Gelsemium Root has been used to treat trigeminal neuralgia and migraine. Also used in homoeopathic medicine. Mp 178°. $[\alpha]_D^{20}$ +17.8 (c, 2.03 in $CHCl_3$). Log P 0.48 (uncertain value) (calc).

▶ V. toxic. *G.* spp. have been freq. causes of human poisoning. LD_{50} (mus, ipr) 49 mg/kg. CNS depressant, can cause respiratory arrest. LX9100000

Hydrochloride: Mp 333° dec. (rapid heating). pK_a 9.79 (13°).

Hydrobromide:
Prisms (EtOH aq.). Mp 325° dec.

Picrate:
Yellow plates (MeOH). Mp 203°.

N^b-*Oxide (*R-*):* [119363-15-4]
Semisynthetic by oxidation of Gelsemine. Amorph. $[\alpha]_D^{25}$ +20.4 (c, 0.23 in MeOH).

N^b-*Oxide (*S-*):* ***Gelsemine* N-*oxide***
[113900-76-8]
$C_{20}H_{22}N_2O_3$ 338.405
Alkaloid from the leaves of *Gelsemium elegans* (Loganiaceae). Amorph. $[\alpha]_D^{25}$ -16.9 (c, 0.19 in MeOH).

21-Oxo: ***21-Oxogelsemine***
$C_{20}H_{20}N_2O_3$ 336.39
Alkaloid from *Gelsemium sempervirens* (Loganiaceae). Mp 148-150°.

*19*R-*Hydroxy, 18,19-dihydro:* ***19-Hydroxydihydrogelsemine****. 18,19-Dihydro-19-hydroxygelsemine, 9CI*
[134306-20-0]
$C_{20}H_{24}N_2O_3$ 340.421
Alkaloid from *Gelsemium elegans, Gelsemium rankinii* and *Gelsemium sempervirens* (Loganiaceae). Powder. Mp 230-232°. $[\alpha]_D$ -20 (c, 0.25 in MeOH).

N-*Methoxy:* ***Gelsevirine****.* N-*Methoxygelsemine. Alkaloid A*†
[38990-03-3]
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from *Gelsemium sempervirens* and *Gelsemium elegans* (Loganiaceae). Oil. Mp 245°. $[\alpha]_D$ -4.5.

N-*Methoxy, 21-oxo:* ***21-Oxogelsevirine***
[104386-95-0]
$C_{21}H_{22}N_2O_4$ 366.416
Alkaloid from stems of *Gelsemium rankinii* (Loganiaceae). Needles. Mp 226-228°. $[\alpha]_D^{25}$ -67 (c, 0.1 in MeOH).

N-*Methoxy, 19*R-*hydroxy, 18,19-dihydro:* ***19*R-*Hydroxydihydrogelsevirine***
[114027-49-5]
$C_{21}H_{26}N_2O_4$ 370.447
Alkaloid from the roots of *Gelsemium elegans* and other *Gelsemium* spp. (Loganiaceae). Needles. Mp 210-212°. $[\alpha]_D$ -34 (c, 0.1 in MeOH).

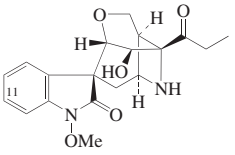
N-*Methoxy, 19*S-*hydroxy, 18,19-dihydro:* ***19*S-*Hydroxydihydrogelsevirine***
[113924-12-2]
$C_{21}H_{26}N_2O_4$ 370.447
Alkaloid from *Gelsemium elegans.* Amorph. $[\alpha]_D$ -68.

*19*R-*Acetoxy,* N-*methoxy, 18,19-dihydro:* ***19-Acetoxydihydrogelsevirine***
[134306-19-7]
$C_{23}H_{28}N_2O_5$ 412.485
Alkaloid from *Gelsemium* spp. (Loganiaceae). Cryst. (Me_2CO). Mp 187-189°. $[\alpha]_D$ -6.7 (c, 0.3 in MeOH).

Forsyth, W.G.C. *et al., J.C.S.*, 1945, 579 (*isol*)
Lovell, F.M. *et al., Tet. Lett.*, 1959, **No. 4**, 1 (*cryst struct*)
Conroy, H. *et al., Tet. Lett.*, 1959, **No. 4**, 6 (*ir, pmr, struct*)
Wenkert, E. *et al., Chem. Comm.*, 1970, 961 (*pmr, cmr*)
Wenkert, E. *et al., Experientia*, 1972, **28**, 377 (*pmr, cmr*)
Wichtl, M. *et al., Monatsh. Chem.*, 1973, **104**, 87 (*Gelsevirine*)
Nikiforov, A. *et al., Monatsh. Chem.*, 1974, **105**, 1292 (*21-Oxogelsemine*)
Nagakura, N. *et al., J.C.S. Perkin 1*, 1979, 2308 (*biosynth*)
Stöckigt, J. *et al., Tet. Lett.*, 1979, 2615 (*biosynth*)
Schun, Y. *et al., J. Nat. Prod.*, 1986, **49**, 483 (*21-Oxogelsevirine*)
Sakai, S. *et al., Chem. Pharm. Bull.*, 1987, **35**, 4668 (*pmr, cmr, struct*)
Ponglux, D. *et al., Tetrahedron*, 1988, **44**, 5075 (*isol, uv, ir, pmr, struct, oxide*)
Lin, L.-Z. *et al., Phytochemistry*, 1991, **30**, 679 (*19-Hydroxydihydrogelsemine, 19-Acetoxydihydrogelsevirine*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 1372
Takayama, H. *et al., Nat. Prod. Lett.*, 1993, **2**, 271 (*Gelsevirine, synth*)
Sheikh, Z. *et al., Chem. Comm.*, 1994, 763 (*synth*)
Dutton, J.K. *et al., Chem. Comm.*, 1994, 765 (*synth*)
Newcombe, N.J. *et al., Chem. Comm.*, 1994, 767 (*synth*)
Kuzmich, D. *et al., J.A.C.S.*, 1994, **116**, 6943 (*synth, 21-Oxogelsemine*)
Speckamp, W.N. *et al., Pure Appl. Chem.*, 1994, **66**, 2163 (*synth, Gelsemine, 21-Oxogelsemine*)
Fukuyama, T. *et al., J.A.C.S.*, 1996, **118**, 7426 (*synth*)
Atarashi, S. *et al., J.A.C.S.*, 1997, **119**, 6226 (*synth*)
Madin, A. *et al., Angew. Chem., Int. Ed.*, 1999, **38**, 2934-2936 (*synth*)
Ng, F.W. *et al., J.A.C.S.*, 2002, **124**, 9812-9824 (*synth*)
Lin, H. *et al., Angew. Chem., Int. Ed.*, 2003, **42**, 36-51 (*rev, synth*)
Han, H.-B. *et al., Acta Cryst. E*, 2007, **63**, o1369-o1371 (*Gelsevirine, cryst struct*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, GCK000

Gelsemoxonine G-50

[135626-64-1]



Absolute Configuration

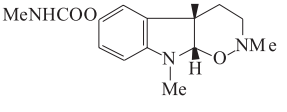
$C_{19}H_{22}N_2O_5$ 358.393
Structure revised in 2003. Alkaloid from *Gelsemium elegans.* Prisms (C_6H_6). Mp 171-172°. $[\alpha]_D^{22}$ -41.3 (c, 1 in MeOH). λ_{max} 209 (log ϵ 4.31); 257 (log ϵ 3.64) (MeOH).

11-Methoxy: ***11-Methoxygelsemoxonine****. GS 3*
[677761-63-6]
$C_{20}H_{24}N_2O_6$ 388.419
Alkaloid from *Gelsemium sempervirens.* Amorph. solid. λ_{max} 219 ; 286 ; 295 (sh) (MeOH).

Lin, L.-Z. *et al., Phytochemistry*, 1991, **30**, 1311-1315 (*isol, uv, ir, pmr, cmr, ms*)
Kitajima, M. *et al., Chem. Pharm. Bull.*, 2003, **51**, 1211-1214 (*11-Methoxygelsemoxonine*)
Kitajima, M. *et al., Org. Lett.*, 2003, **5**, 2075-2078 (*cd, pmr, cmr, cryst struct*)

Geneserine G-51

*2,3,4,4*a*,9,9*a-*Hexahydro-2,4*a*,9-trimethyl-1,2-oxazino[6,5-*b*]indol-6-ol methylcarbamate (ester), 9CI.* ***Eseridine, INN****. Eserine aminoxide. Eserine oxide. Physostigmine oxide*



(–)-*form*

$C_{15}H_{21}N_3O_3$ 291.349
Anticholinesterase agent used in gastrointestinal disorders and chronic dermatoses. Possesses purgative props.

(-)-*form* [25573-43-7]
Alkaloid from *Physostigma venenosum* (Fabaceae) also formed from Physostigmine, P-400 by oxidn. Mp 128-129°. $[\alpha]_D$ -175 (EtOH). Pharmacol. active isomer.

Picrate: Mp 175°.

Methiodide: Mp 215°.

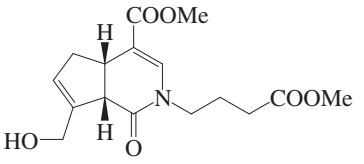
(±)-*form* [105816-13-5]
Synthetic. Oil.

Bild, N. *et al., Helv. Chim. Acta*, 1967, **50**, 1885-1892 (*ms*)
Hootele, C. *et al., Tet. Lett.*, 1969, 2713-2716 (*ir, ms, pmr, struct*)
Robinson, B. *et al., J.C.S.(C)*, 1970, 2077-2078 (*config*)
Shishido, K. *et al., J.C.S. Perkin 1*, 1987, 2491-2495 (*synth, ir, pmr, bibl*)
Wright, C. *et al., Tet. Lett.*, 1987, **28**, 6389-6390 (*synth*)

Yu, Q.-S. *et al., J. Nat. Prod.*, 1989, **52**, 332-336 (*pmr, struct*)
Bacchi, A. *et al., Acta Cryst. C*, 1994, **50**, 1126-1130 (*cryst struct*)
Node, M. *et al., Chem. Pharm. Bull.*, 1996, **44**, 715-719 (*synth, bibl*)

Genipamide G-52

[942914-13-8]

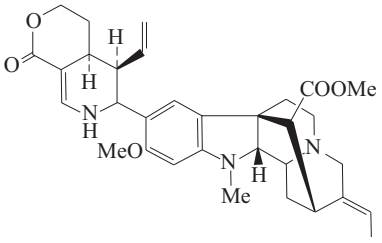


$C_{16}H_{21}NO_6$ 323.345
Constit. of *Genipa americana*. Syrup. $[\alpha]_D^{32}$ +207.7 (c, 1.4 in MeOH).

Ono, M. *et al., Chem. Pharm. Bull.*, 2007, **55**, 632-634 (*Genipamide*)

Gentiacraline G-53

[94444-36-7]

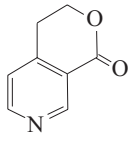


$C_{32}H_{39}N_3O_5$ 545.677
Alkaloid from the root bark of *Alstonia undulata* (Apocynaceae). $[\alpha]_D$ -332 (c, 0.27 in $CHCl_3$).

Guillaume, D. *et al., Phytochemistry*, 1984, **23**, 2407 (*isol, uv, ir, pmr, ms, struct*)

Gentianadine G-54

*3,4-Dihydro-1*H*-pyrano[3,4-*c*]pyridin-1-one, 9CI*
[6790-32-5]



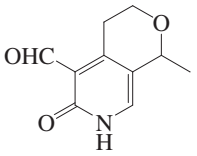
$C_8H_7NO_2$ 149.149
Alkaloid from *Gentiana turkastanorum, Gentiana olgae, Gentiana olivieri* and *Cephalaria* spp. (Gentianaceae, Dipsacaceae). Mp 77-78°.

Hydrochloride: Mp 196-197°.

Samatov, A. *et al., Khim. Prir. Soedin.*, 1967, **3**, 182; *Chem. Nat. Compd. (Engl. Transl.)*, 1967, **3**, 150 (*isol, ir*)
Akramov, S.T. *et al., Khim. Prir. Soedin.*, 1969, **5**, 14; 66; *Chem. Nat. Compd. (Engl. Transl.)*, 1969, **5**, 10; 59 (*pmr, ms*)
Dolby, J. *et al., Acta Chem. Scand.*, 1971, **25**, 735; 1972, **26**, 2469 (*synth*)

Gentianal G-55

*3,4,6,7-Tetrahydro-1-methyl-6-oxo-1*H*-pyrano[3,4-*c*]pyridine-5-carboxaldehyde, 9CI*
[53848-05-8]

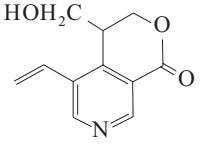


$C_{10}H_{11}NO_3$ 193.202
Alkaloid from gentiana (a Chinese medicinal herb). Mp 208-210°. $[\alpha]_D$ +0.8 (approx.).

Xue, Z. *et al., Kexue Tongbao (Chin. edn.)*, 1974, **19**, 378; *CA*, **82**, 13964k (*isol, uv, ir, pmr, struct*)

Gentianamine G-56

[22952-54-1]



$C_{11}H_{11}NO_3$ 205.213
Alkaloid from *Gentiana olivieri* and *Gentiana turkestanorum* (Gentianaceae). Mp 149-150°.

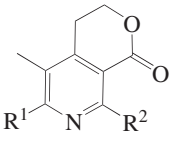
Picrate: Mp 146-147°.

Ac: Mp 96-97°.

Samatov, A. *et al., Khim. Prir. Soedin.*, 1967, **3**, 182; *Chem. Nat. Compd. (Engl. Transl.)*, 1967, **3**, 150 (*isol, uv, ir, ms*)
Akramov, S.F. *et al., Khim. Prir. Soedin.*, 1969, **5**, 14; *Chem. Nat. Compd. (Engl. Transl.)*, 1969, **5**, 10 (*pmr*)
Cordell, G.A. *et al., Alkaloids (Academic Press)*, 1977, **16**, 431 (*rev*)

Gentiananine G-57

*3,4-Dihydro-6(8)-methoxy-5,8(5,6)-dimethyl-1*H*-pyrano[3,4-*c*]pyridin-1-one*
[11075-48-2]



R^1, R^2 = CH_3, OMe

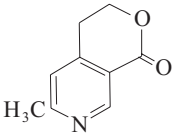
$C_{11}H_{13}NO_3$ 207.229
Exact struct. not determined. Alkaloid from *Gentiana* spp., *Pedicularis macrochila* and *Swertia* spp. Mp 380-382° (375-380° dec.). λ_{max} 219 (log ϵ 3.89); 265 (log ϵ 3.5) (no solvent reported).

Rakhmatullaev, T.U. *et al., Khim. Prir. Soedin.*, 1969, **5**, 32-36; 1971, **7**, 128; *Chem. Nat. Compd. (Engl. Transl.)*, 1969, **5**, 26-28; 1971, **7**, 123 (*isol, ms*)

Abdusamatov, A. *et al., Khim. Prir. Soedin.*, 1976, **12**, 122; *Chem. Nat. Compd. (Engl. Transl.)*, 1976, **12**, 116 (*isol, ir, pmr*)

Gentianidine G-58

[2202-12-2]

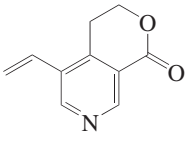


$C_9H_9NO_2$ 163.176
Alkaloid from *Gentiana asclepiadea*, *Gentiana macrophylla*, *Erythraea centaurium* (preferred genus name *Centaurium*), *Menyanthes trifoliata* and *Centaurium spicatum* (Gentianaceae, Menyanthaceae). Hypothermic, antihypertensive, antiinflammatory agent and muscle relaxant. Of low toxicity. Mp 131-132°. Log P 1.25 (calc).

Liang, H.-T. *et al., Yaoxue Xuebao*, 1964, **11**, 412; *CA*, **62**, 5309g (*isol, ir, uv, pmr, synth*)
Popov, S. *et al., Dokl. Bulg. Akad. Nauk*, 1968, **21**, 435; *CA*, **69**, 52368v (*ms*)
Marekov, N.L. *et al., Tetrahedron*, 1968, **24**, 1323 (*synth*)

Gentianine† G-59

*5-Ethenyl-3,4-dihydro-1*H*-pyrano[3,4-*c*]pyridin-1-one, 9CI. 4-(2-Hydroxyethyl)-5-vinylnicotinic lactone. Erythricine*
[439-89-4]



$C_{10}H_9NO_2$ 175.187
Alkaloid from *Gentiana kirilowi* and very many other *Gentiana* spp., from several *Swertia* spp. and several other genera in Gentianaceae. Also found in *Anthocleista procera*, *Strychnos angolensis* and other *Strychnos* spp. CNS stimulant, antihypertensive, antiinflammatory agent and muscle relaxant. Analgesic potentiator of low toxicity. Shows antipsychotic props. Mp 83°. Log P 1.48 (calc). The most widespread alkaloid of its group. λ_{max} 218 (ϵ 17500); 285 (ϵ 990) (no solvent reported).

▶ UQ1374500

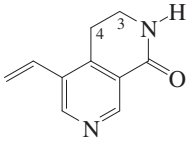
Hydrochloride: Mp 171-172° dec.

Picrate: Mp 123-124°.

Proskurnina, N.F. *et al., J. Gen. Chem. USSR (Engl. Transl.)*, 1944, **14**, 1148-1152; *CA*, **40**, 7213 (*isol, struct*)
Govindachari, T.R. *et al., J.C.S.*, 1957, 551-556; 2725-2726 (*isol, struct, uv, synth*)
Lavie, D. *et al., Chem. Ind. (London)*, 1963, 781-782 (*isol, uv, ir, pmr*)
Bailleul, F. *et al., Phytochemistry*, 1977, **16**, 723-726 (*cmr*)
Delaude, C. *et al., Bull. Soc. R. Sci. Liege*, 1997, **66**, 183-286 (*occur, Strychnos*)

Gentianine lactam G-60

5-Ethenyl-3,4-dihydro-2,7-naphthyridin-1(2H)-one, 9CI
[149155-04-4]



$C_{10}H_{10}N_2O$ 174.202

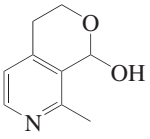
CAS numbering shown. Alkaloid from *Strychnos pungens*.

3,4-Didehydro: ***Dehydrogentianine lactam***
[189323-28-2]
$C_{10}H_8N_2O$ 172.186
Alkaloid from *Strychnos xantha*. λ_{max} 205 ; 258 ; 310 (MeOH).

Thépenier, P. *et al., Bull. Soc. R. Sci. Liege*, 1996, **65**, 379-382; 383-386 (*isol, ir, uv, pmr, cmr*)

Gentiatibetine G-61

Gentiotibetine
[26005-36-7]



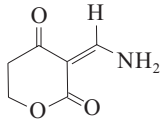
$C_9H_{11}NO_2$ 165.191
Alkaloid from *Gentiana asclepiadea, Gentiana lutea* (yellow gentian), *Gentiana olivieri, Gentiana punctata, Gentiana purpurea, Gentiana tibetica, Menyanthes trifoliata* (Gentianaceae, Menyanthaceae). Mp 161.5°. λ_{max} 263 (ϵ 270) (EtOH).

Me ether: ***Oliveridine***†
[29276-66-2]
$C_{10}H_{13}NO_2$ 179.218
Alkaloid from *Gentiana olivieri* (Gentianaceae). Cryst. (Me_2CO). Mp 260° dec.

Rulko, F. *et al., Pol. J. Chem. (Rocz. Chem.)*, 1967, **41**, 567-571 (*Gentiatibetine*)
Rakhmatullaev, T.U. *et al., Khim. Prir. Soedin.*, 1969, **5**, 608; *Chem. Nat. Compd. (Engl. Transl.)*, 1969, **5**, 531-532 (*Oliveridine*)

Gentiocrucine G-62

3-(Aminomethylene)dihydro-2H-pyran-2,4(3H)-dione, 9CI. Gentianaine
[58213-76-6]



$C_6H_7NO_3$ 141.126

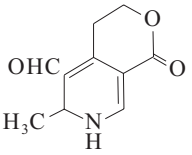
Consists of interconverting *E*- and *Z*-forms. Alkaloid from *Gentiana cruciata* and *Enicostema hyssopifolium* (Gentianaceae). Cryst. Mp 144-145°. Genus name given as Enicostemma.

[22108-77-6]

Popov, S. *et al., Chem. Ind. (London)*, 1969, 49 (*isol, pmr, ms, ir*)
Ghosal, S. *et al., Tet. Lett.*, 1974, 403 (*isol, struct, uv, ir, pmr, cmr, ms*)
Ganem, B. *et al., J.A.C.S.*, 1976, **98**, 224 (*synth*)

Gentioflavine G-63

[18058-50-9]



$C_{10}H_{11}NO_3$ 193.202
Alkaloid from *Gentiana asclepiadea* and many other *Gentiana* spp., *Erythraea centaurium* (preferred genus name *Centaurium*), and several *Swertia* spp. (Gentianaceae). Yellow prisms. Mp 218-220° dec.

Semicarbazone: Mp 221-223° dec.

Oxime: Mp 203-205° dec.

Marekov, N.L. *et al., Tetrahedron*, 1968, **24**, 1323 (*uv, ir, pmr, struct*)

Geotrichum alkaloid A 25822H G-64

Antibiotic A 25822H. A 25822H
[55466-14-3]

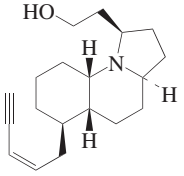
$C_{28}H_{43}NO_2$ 425.653

Struct. unknown. Minor metab. of *Geotrichum flavo-brunneum* NRRL 3862. Amorph. Sol. MeOH; poorly sol. H_2O. $[\alpha]_D^{25}$ +15 (c, 0.147 in MeOH). pK_a 6.9 (66% DMF). Strongly hygroscopic. λ_{max} 277 (ϵ 13400) (EtOH/HCl) (Derep). λ_{max} 240 (ϵ 12300); 270 (sh) (EtOH) (Derep). λ_{max} 235 (ϵ 10000) (EtOH) (Berdy). λ_{max} 270 (ϵ 8700) (EtOH-HCl) (Berdy).

Chamberlin, J.W. *et al., J. Antibiot.*, 1975, **28**, 102-111 (*isol, uv, ir, pmr*)
Gordee, R.S. *et al., J. Antibiot.*, 1975, **28**, 112-117 (*activity*)

Gephyrotoxin G-65

Histrionicotoxin D. Dendrobates *Alkaloid 287C*
[55893-12-4]
[75685-48-2 ((±)-form)]



Absolute Configuration

$C_{19}H_{29}NO$ 287.444

Abs. config. derived chemically, as shown above, is at variance with the crystallographic determination. Minor alkaloid from skin extracts of the neotropical poison-frog *Dendrobates histrionicus* (Dendrobatidae). Appears to be a weak muscarinic antagonist and acetylcholine antagonist. Mp 231-232° dec. $[\alpha]_D$ -51.5 (c, 1.0 in EtOH).

4′,5′-Dihydro: ***Dihydrogephyrotoxin***.
Dendrobates *Alkaloid 289B*
[63983-58-4 ((±)-form)]
$C_{19}H_{31}NO$ 289.46
Minor constit. in *Dendrobates histrionicus* (Dendrobatidae). Terminal triple bond reduced to double.

Tokuyama, T. *et al., Helv. Chim. Acta*, 1974, **57**, 2597-2604 (*isol, pmr, ms, uv, ir*)
Daly, J.W. *et al., Helv. Chim. Acta*, 1977, **60**, 1128-1140 (*isol, cryst struct, pmr, ms, deriv*)
Fujimoto, R. *et al., J.A.C.S.*, 1980, **102**, 7154-7176 (*synth*)
Hart, D.J. *et al., J.O.C.*, 1981, **46**, 3576-3578 (*synth*)
Fujimoto, R. *et al., Tet. Lett.*, 1981, **22**, 4197-4198 (*abs config*)
Hart, D.J. *et al., J.A.C.S.*, 1983, **105**, 1255-1263 (*synth*)
Daly, J.W. *et al., Alkaloids: Chem. Biol. Perspect.*, 1986, **4**, 110 (*rev, pharmacol*)
Pearson, W.H. *et al., J.O.C.*, 2000, **65**, 7158-7174 (*synth*)
Wei, L.-L. *et al., Angew. Chem., Int. Ed.*, 2001, **40**, 1516-1518 (*synth*)
Santarem, M. *et al., J.O.C.*, 2008, **73**, 6466-6469 (*synth*)

Geralbine G-66

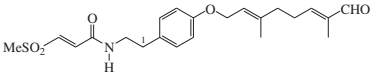
$C_{22}H_{33}NO_2$ 343.508

Steroidal alkaloid. Struct. unknown. Alkaloid from *Veratrum album* (Liliaceae). Plates (EtOAc/Et_2O), prisms (Me_2CO). Mp 221-223°. No measurable opt. rotn. in several solvs. Dec. slowly in soln. Ir shows *N*-Me and C═O groups.

Hydrochloride: Mp 270°.

Stoll, A. *et al., J.A.C.S.*, 1952, **74**, 4728-4729
Jaspersen-Schib, R. *et al., Pharm. Acta Helv.*, 1961, **36**, 461-471; *CA*, **56**, 1525h

Gerambullal G-67



$C_{22}H_{29}NO_5S$ 419.541

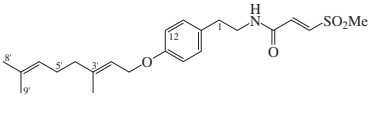
N-*Me:* ***Methylgerambullal***
$C_{23}H_{31}NO_5S$ 433.568
Isol. from leaves of *Glycosmis ovoidea*.

1-Hydroxy: ***β-Hydroxygerambullal***
$C_{22}H_{29}NO_6S$ 435.54
Alkaloid from *Glycosmis chlorosperma*. Oil. $[\alpha]_D^{20}$ +21 (c, 0.4 in $CHCl_3$). λ_{max} 227 ; 275 (sh) (MeOH).

Hofer, O. *et al., Annalen*, 1995, 1789-1794 (*Methylgerambullal*)
Hofer, O. *et al., Phytochemistry*, 2000, **54**, 207-213 (*β-Hydroxygerambullal*)

Gerambullin G-68

[160896-53-7]



$C_{22}H_{31}NO_4S$ 405.557
Alkaloid from leaves of *Glycosmis angustifolia* (Rutaceae). Mp 139-140°.
Authors' numbering system used.

N-*Me:* ***Methylgerambullin***
[160896-54-8]
$C_{23}H_{33}NO_4S$ 419.584
From leaves of *Glycosmis angustifolia*. Mp 82-85°.

5′-Oxo, N-*Me:* ***Methylgerambullone***
[160954-12-1]
$C_{23}H_{31}NO_5S$ 433.568
From leaves of *Glycosmis angustifolia*. Mp 128-130°.

5′-Oxo, $\Delta^{3',4'}$-isomer, N-*Me:* ***Methylisogerambullone***
[160954-13-2]
$C_{23}H_{31}NO_5S$ 433.568
From leaves of *Glycosmis angustifolia*. Oil.

1-Hydroxy: ***β-Hydroxygerambullin***
$C_{22}H_{31}NO_5S$ 421.557
Alkaloid from *Glycosmis chlorosperma*. Cryst. (Et_2O). Mp 126-128°. $[\alpha]_D^{20}$ +25 (c, 0.2 in $CHCl_3$). λ_{max} 224 ; 273 (sh) (MeOH).

8′-Hydroxy: ***Gerambullol***
$C_{22}H_{31}NO_5S$ 421.557
Alkaloid from *Glycosmis chlorosperma*. Cryst. (Et_2O). Mp 128-129°. λ_{max} 224 (sh) ; 275 (sh) (MeOH).

12-Hydroxy: ***Sakerine***
[173867-24-8]
$C_{22}H_{31}NO_5S$ 421.557
From leaves of *Glycosmis craibii*. Cryst. Mp 89-91°.

12-Hydroxy, 5′-oxo: ***Sakerone***
[173867-27-1]
$C_{22}H_{29}NO_6S$ 435.54
From leaves of *Glycosmis mauritiana*.

1,8′-Dihydroxy: ***β-Hydroxygerambullol***
$C_{22}H_{31}NO_6S$ 437.556
Alkaloid from *Glycosmis chlorosperma*. Cryst. (Et_2O). Mp 131-133°. $[\alpha]_D^{20}$ +38 (c, 0.2 in $CHCl_3$). λ_{max} 224 (sh) ; 273 (sh) (MeOH).

5′,12-Dihydroxy: ***Sakerol***
[173867-25-9]
$C_{22}H_{31}NO_6S$ 437.556
From leaves of *Glycosmis mauritiana*. Cryst. Mp 52-54°. $[\alpha]_D^{20}$ -74 (c, 0.035 in $CHCl_3$).

5′,12-Dihydroxy, 2′,3′-dihydro: ***Dihydroisosakerol***
[173906-99-5]
$C_{22}H_{33}NO_6S$ 439.572
From leaves of *Glycosmis craibii*. $[\alpha]_D^{20}$ -5.9 (c, 0.54 in $CHCl_3$).

6′,7′-Dihydroxy, 6′,7′-dihydro: ***Gerambullindiol***
[160896-55-9]
$C_{22}H_{33}NO_6S$ 439.572
From leaves of *Glycosmis angustifolia*. Mp 111-112°. $[\alpha]_{436}$ -6 (c, 0.1 in $CDCl_3$).

8′,12-Dihydroxy: ***Sakerinol A***
$C_{22}H_{31}NO_6S$ 437.556
Alkaloid from *Glycosmis chlorosperma*. Cryst. (Et_2O). Mp 133-135°. λ_{max} 225 (sh) ; 275 (MeOH).

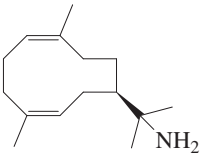
9′,12-Dihydroxy: ***Sakerinol B***
$C_{22}H_{31}NO_6S$ 437.556
Alkaloid from *Glycosmis* ex aff. *pseudoracemosa*. Cryst. (Et_2O). Mp 98-100°. λ_{max} 225 (sh) ; 275 (MeOH).

12-Methoxy, 8′-hydroxy: **O-*Methylsakerinol A*.** *Methoxygerambullol*
$C_{23}H_{33}NO_6S$ 451.583
Alkaloid from *Glycosmis chlorosperma*. Cryst. (Et_2O). Mp 125-127°. λ_{max} 227 (sh) ; 275 (MeOH).

Greger, H. *et al., Phytochemistry*, 1994, **37**, 1305-1310 (*isol, uv, ir, pmr, cmr, ms, struct*)
Hofer, O. *et al., Annalen*, 1995, 1789-1794 (*Sakerine, Sakerone, Sakerol, Dihydroisosakerol*)
Hinterberger, S. *et al., Tetrahedron*, 1998, **54**, 487-496 (*synth*)
Hofer, O. *et al., Phytochemistry*, 2000, **54**, 207-213 (*Glycosmis chlorosperma derivs*)

1(10),4-Germacradien-11-amine G-69

11-Amino-1(10),4-germacradiene



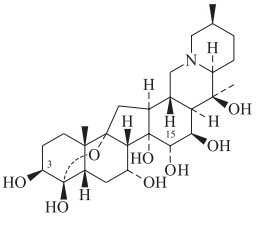
$C_{15}H_{27}N$ 221.385

(1(10)*Z*,4*Z*)-*form* [674817-51-7]
Constit. of *Axinyssa* n. sp. Oil. $[\alpha]_D^{25}$ +28 (c, 0.2 in $CHCl_3$).

Satitpatipan, V. *et al., J. Nat. Prod.*, 2004, **67**, 503-505 (*isol, pmr, cmr*)

Germine G-70

4,9-Epoxy-3,4,7,14,15,16,20-cevanheptol, 9CI
[508-65-6]



Absolute configuration

$C_{27}H_{43}NO_8$ 509.639
Alkaloid from *Veratrum viride* and other *Veratrum* spp. and *Zygadenus venenosus* (Liliaceae). Potent hypotensive agent with characteristic heart action, causing irregularity and prolongation of the beat. Also affects nerve impulses. Derivs. have been used to treat myasthenia gravis. Esters are hypotensive agents, with Germitrine being the most active of the nat. alkaloids. Many semisynthetic esters have also been evaluated. They show strong emetic activity with freq. an unacceptably narrow range of therapeutic usefulness. Mp 219-220°. $[\alpha]_D^{25}$ +5 (EtOH). Forms MeOH solvate which loses MeOH at 163-173°.

▶ LD_{50} (mus, ivn) 139 mg/kg. FL4725000

3,4,7,15,16-Penta-Ac: Mp 257-258° dec. $[\alpha]_D^{24}$ -88.8 (Py).

*3-*O-*(2*R*-2-Methylbutanoyl):* ***Protoveratridine***
[465-78-1]
$C_{32}H_{51}NO_9$ 593.756
Alkaloid from *Zygadenus venenosus*, *Veratrum album* and *Veratrum viride* (Liliaceae). Mp 272-273°. $[\alpha]_D^{22}$ -9 (c, 0.76 in Py).

*15-*O-*(2*R*-Methylbutanoyl):* ***2-Methylbutyrylgermine***
[42138-61-4]
$C_{32}H_{51}NO_9$ 593.756
Alkaloid from *Veratrum lobelianum* (Liliaceae). Mp 224-226°. $[\alpha]_D$ -21.5 (Py).

*15-*O-*(2*R*-Methylbutanoyl), 3-Ac:* ***Germidine***
[465-77-0]
$C_{34}H_{53}NO_{10}$ 635.793
Alkaloid from *Veratrum viride*, *Veratrum lobelianum* and *Veratrum nigrum* (Liliaceae). Insecticide against cockroaches. Moderate hypotensive agent. Mp 198-200° Mp 202-203° Mp 242-244° (double Mp). $[\alpha]_D$ +13 (c, 1.67 in $CHCl_3$).

▶ LD_{50} (mus, ipr) 10 mg/kg. FL4900000

*15-*O-*(2*R*-Methylbutanoyl), 7-Ac:* ***Neogermidine***. *Isogermidine*
[560-49-6]
$C_{34}H_{53}NO_{10}$ 635.793
Alkaloid from *Zygadenus venenosus* (Liliaceae). Mp 221-223°. $[\alpha]_D^{22}$ -60 (c, 2 in Py).

*15-*O-*(2*R*-Methylbutanoyl), 3,7-di-Ac:* ***Neogermitrine***
[508-66-7]
$C_{36}H_{55}NO_{11}$ 677.831
Alkaloid from *Veratrum viride* and *Zygadenus venenosus* (Liliaceae). Strong hypotensive agent. Mp 237-239° (230-231°). $[\alpha]_D^{23}$ -78 (c, 0.38 in Py).

▶ QP2625000

*16-*O-*(2*R*-Methylbutanoyl):* ***Verussurinine***
[135636-53-2]
$C_{32}H_{51}NO_9$ 593.756
Alkaloid from the rhizoma and roots of *Veratrum nigrum* var. *ussuriense* (Liliaceae). Amorph. $[\alpha]_D^{23}$ -28.4 (c, 0.48 in Py).

*3,15-Bis-*O-*(2-methylbutanoyl):* ***3,15-Bis(2-methylbutyryl)germine***
[175030-77-0]
$C_{37}H_{59}NO_{10}$ 677.874
Alkaloid from *Veratrum lobelianum*. Cryst. (C_6H_6). Mp 214-216°. $[\alpha]_D$ -25.15 (c, 0.676 in Py).

*3,15-Bis-*O-*(2-methylbutanoyl), 7-Ac:* ***Germinine***
$C_{39}H_{61}NO_{11}$ 719.911
Alkaloid from *Veratrum lobelianum*. Cryst. (Me_2CO/hexane). Mp 195-197°. Error in CAS.

*3-Angeloyl, 15-*O-*(2*R*-methylbutanoyl),*

7-Ac: ***Germanitrine***
[639-11-2]
$C_{39}H_{59}NO_{11}$ 717.895
Alkaloid from *Veratrum fimbriatum* (Liliaceae). Strong hypotensive agent. Mp 228-229°. $[\alpha]_D^{24}$ -61 (c, 1 in Py).

15-Angeloyl: ***15-Angeloylgermine***
[240802-94-2]
$C_{32}H_{49}NO_9$ 591.74
Alkaloid from *Veratrum taliense*. Needles (Me_2CO/C_6H_6). Mp 219-221°. $[\alpha]_D^{25}$ +5.5 (c, 0.43 in MeOH).

15-Angeloyl, 3-Ac: ***3-Acetyl-15-angeloylgermine***
[942293-83-6]
$C_{34}H_{51}NO_{10}$ 633.778
Alkaloid from the rhizomes of *Veratrum dahuricum*. Amorph. powder (Me_2CO). Mp 198-200°. $[\alpha]_D^{20}$ -8 (c, 0.09 in $CHCl_3$).

15-Angeloyl, 3,7-di-Ac: ***3,7-Diacetyl-15-angeloylgermine***
[942293-81-4]
$C_{36}H_{53}NO_{11}$ 675.815
Alkaloid from the rhizomes of *Veratrum dahuricum*. Amorph. powder (Me_2CO). Mp 231-233°. $[\alpha]_D^{20}$ +2.8 (c, 0.08 in $CHCl_3$).

3,15-Diangeloyl, 7-Ac: ***7-Acetyl-3,15-diangeloylgermine. Maackinine***
[122332-72-3]
$C_{39}H_{57}NO_{11}$ 715.879
Minor alkaloid from *Veratrum maackii* (Liliaceae). Prisms. Mp 218-221°. $[\alpha]_D$ +3.85 (c, 0.65 in $CHCl_3$).

O-*Angeloyl,* O-*tigloyl,* O-*Ac:* ***Germinitrine***
[465-76-9]
$C_{37}H_{57}NO_{11}$ 691.857
Alkaloid from *Veratrum fimbriatum* (Liliaceae). Hypotensive agent. Mp 175°. $[\alpha]_D^{24}$ -36 (c, 1.12 in Py).

3,15-Bis-O-*(2-methyl-2-butenoyl):* ***Stenophylline A***
[90541-57-4]
$C_{37}H_{55}NO_{10}$ 673.842
Alkaloid from *Veratrum stenophyllum* (Liliaceae). Exhibits hypotensive activity.

3-O-*(2-Hydroxy-2-methylbutanoyl), 15*-O-*(2-methylbutanoyl):* ***Neogermerine***
[134357-41-8]
$C_{37}H_{59}NO_{11}$ 693.873
Alkaloid from *Veratrum nigrum*. Same gross struct. as Germerine, stereochemical variation may occur in the acyl groups.

3-O-*(2*R*-Hydroxy-2-methylbutanoyl), 15*-O-*(2*R*-methylbutanoyl):* ***Germerine****. Veratensine*
[508-67-8]
$C_{37}H_{59}NO_{11}$ 693.873
Alkaloid from *Veratrum lobelianum*, *Veratrum oxysepalum*, *Veratrum album*, *Veratrum nigrum* and *Zygadenus* sp. Strong hypotensive agent. Mp 200-203°. $[\alpha]_D$ -7 (Py). λ_{max} 243 (ϵ 630) (MeOH) (Berdy).

3-O-*(2*R*-Hydroxy-2-methylbutanoyl), 15*-O-*(2*R*-methylbutanoyl), 7-Ac:* ***Germitrine***
[560-48-5]
$C_{39}H_{61}NO_{12}$ 735.91
Alkaloid from *Veratrum viride* (Liliaceae). V. strong hypotensive agent. Mp 197-199°. $[\alpha]_D^{25}$ +11 ($CHCl_3$).

▶ FL4800000

3-O-*(2*R*,3*R*-Dihydroxy-2-methylbutanoyl), 15*-O-*(2*R*-methylbutanoyl):* ***Germbudine***
[426-34-6]
$C_{37}H_{59}NO_{12}$ 709.873
Alkaloid from *Veratrum viride* (Liliaceae). Hypotensive agent. Mp 160-164° (157-159°). $[\alpha]_D^{24}$ -7 (c, 1 in Py). $[\alpha]_D$ +8.02.

3-O-*(2*R*,3*R*-Dihydroxy-2-methylbutanoyl), 15*-O-*(2*R*-methylbutanoyl), 7-Ac:* ***Germinalinine***
[58162-51-9]
$C_{39}H_{61}NO_{13}$ 751.91
Alkaloid from *Veratrum lobelianum* (Liliaceae). Mp 168-170°. $[\alpha]_D$ -52.1 (Py).

3-O-*(2*S*,3*R*-Dihydroxy-2-methylbutanoyl), 15*-O-*(2*R*-methylbutanoyl):* ***Neogermbudine***
[595-64-2]
$C_{37}H_{59}NO_{12}$ 709.873
Alkaloid from *Veratrum viride* (Liliaceae). Mp 149-152°. $[\alpha]_D^{25}$ -12 (c, 1 in Py).

3-O-*(2*S*-Acetoxy-3*R*-hydroxy-2-methylbutanoyl), 15*-O-*(2*R*-methylbutanoyl):* ***Germinaline***
[23211-84-9]
$C_{39}H_{61}NO_{13}$ 751.91
Alkaloid from *Veratrum lobelianum* (Liliaceae). Cryst. (C_6H_6), needles (Et_2O). Mp 138-140°, 156-158° (dimorph.). $[\alpha]_D$ +3.7 (c, 1.06 in $CHCl_3$). Incorrect struct. prev. proposed.

3-O-*(2*S*-Acetoxy-3*R*-hydroxy-2-methylbutanoyl), 15*-O-*(2*R*-methylbutanoyl), 7-Ac:* ***Germitetrine****. Germitetrine B*
[465-75-8]
$C_{41}H_{63}NO_{14}$ 793.947
Alkaloid from *Veratrum album* and *Veratrum lobelianum* (Liliaceae). Cryst. (Me_2CO aq.). Mp 233-234°. $[\alpha]_D^{25}$ -74 (c, 1 in Py). $[\alpha]_D$ -12 (c, 1.0 in $CHCl_3$).

3-O-*(3,4-Dimethoxybenzoyl):* ***3-Veratroylgermine***
[942293-82-5]
$C_{36}H_{51}NO_{11}$ 673.799
Alkaloid from the rhizomes of *Veratrum dahuricum*. Amorph. powder (MeOH). Mp 280-283°. $[\alpha]_D^{20}$ +13 (c, 0.08 in $CHCl_3$).

3-O-*(3,4-Dimethoxybenzoyl), 15*-O-*angeloyl:* ***15-Angeloyl-3-veratroylgermine***
[942293-84-7]
$C_{41}H_{57}NO_{12}$ 755.901
Alkaloid from the rhizomes of *Veratrum dahuricum*. Amorph. powder (Me_2CO). Mp 281-283°. $[\alpha]_D^{20}$ +18 (c, 0.08 in $CHCl_3$).

15-O-*(3,4-Dimethoxybenzoyl):* ***15-Veratroylgermine***
[33352-59-9]
$C_{36}H_{51}NO_{11}$ 673.799
Alkaloid from *Veratrum album* ssp. *lobelianum* (Liliaceae). Amorph.

15-O-*(3,4-Dimethoxybenzoyl), 3-Ac:* ***3-Acetyl-15-veratroylgermine***
[33352-58-8]
$C_{38}H_{53}NO_{12}$ 715.836
Alkaloid from *Veratrum album* ssp. *lobelianum* (Liliaceae). Amorph. $[\alpha]_D^{25}$ +6.6 ($CHCl_3$).

3-O-*(3,4-Dimethoxybenzoyl), 15*-O-*(2-methylbutanoyl):* ***Verabenzoamine***
[142735-72-6]
$C_{41}H_{59}NO_{12}$ 757.917
Alkaloid from *Veratrum nigrum* var. *ussuriense*. Amorph. solid. $[\alpha]_D^{23}$ +8.7 (c, 0.4 in $CHCl_3$). Struct. revised in 1998 (prev. assigned struct. now given to Verussurine).

3-O-*(3,4-Dimethoxybenzoyl), 15*-O-*(2-methylbutanoyl), 7-Ac:* ***Verussurine***
[214046-03-4]
$C_{43}H_{61}NO_{13}$ 799.954
Alkaloid from *Veratrum nigrum* var. *ussuriense* (Liliaceae). Amorph. powder. $[\alpha]_D^{23}$ +8 (c, 1 in $CHCl_3$).

1α-Acetoxy, 3-O-*(2ξ-hydroxy-2-methylbutanoyl), 15*-O-*(2-methylbutanoyl):* ***Neojerminalanine***
[182693-36-3]
$C_{39}H_{61}NO_{13}$ 751.91
Alkaloid from rhizomes of *Veratrum album*. Amorph. powder. $[\alpha]_D^{25}$ -44 (c, 0.05 in Py).

[36506-68-0]

Nash, H.A. *et al., J.A.C.S.*, 1953, **75**, 1942-1948 (*Germitetrine B*)
Kupchan, S.M. *et al., J.A.C.S.*, 1953, **75**, 4671-4672 (*Germitetrine B*)
Klohs, M.W. *et al., J.A.C.S.*, 1953, **75**, 4925-4927 (*Germanitrine, Germinitrine*)
Myers, G.S. *et al., J.A.C.S.*, 1955, **77**, 3348-3353; 1956, **78**, 1621-1624 (*Neogermidine, Germbudine*)
Kupchan, S.M. *et al., Chem. Ind. (London)*, 1958, **48**, 1594-1595 (*Germitetrine, struct*)
Kupchan, S.M. *et al., J. Am. Pharm. Assoc.*, 1959, **48**, 440-442 (*Germitetrine, Neogermbudine*)
Kupchan, S.M. *et al., J.A.C.S.*, 1959, **81**, 1913-1921; 1921-1924 (*struct, bibl*)
Tomko, J. *et al., Chem. Zvesti*, 1971, **25**, 69 (*15-Veratroylgermine, 3-Acetyl-15-veratroylgermine*)
Shakirov, R. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1972, **8**, 606-607; 1975, **11**, 566-567; 1983, **19**, 120-121 (*Germerine, Germinaline, Germinalinine*)
Carey, F.A. *et al., Org. Magn. Reson.*, 1980, **14**, 141-144 (*cmr*)
Liang, G. *et al., Yaoxue Xuebao*, 1984, **19**, 190-194; *CA*, **103**, 51156h (*Stenophylline A*)
Zhao, W. *et al., Chem. Pharm. Bull.*, 1989, **37**, 2920-2928; 1991, **39**, 549-554 (*Maackinine, Verussurinine*)
Han, X. *et al., Magn. Reson. Chem.*, 1991, **29**, 100-112 (*cmr, struct*)
Shakirov, R. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1995, **31**, 79-81 (*bis(2-methylbutanoyl)*)
Atta-ur-Rahman, *et al., Phytochemistry*, 1996, **43**, 907-911 (*Neojerminalanine*)
Shakirov, R. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1997, **33**, 479-480 (*Germinine*)
Tezuka, Y. *et al., J. Nat. Prod.*, 1998, **61**, 1397-1399 (*Verabenzoamine, Verussurine*)
Zhou, C.X. *et al., Planta Med.*, 1999, **65**, 480-482 (*15-Angeloylgermine*)
Tang, J. *et al., Helv. Chim. Acta*, 2007, **90**, 769-775 (*Veratrum dahuricum esters*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, EBL500

Gerrardamine G-71

[11013-56-2]

$C_8H_{15}NOS_2$ 205.345

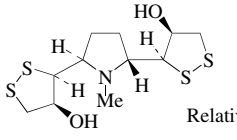
Struct. unknown. Alkaloid from *Cassipourea gerrardii* (Rhizophoraceae). Gum.

Wright, W.G. *et al., J.C.S.(C)*, 1967, 283-284 (*isol, ir*)

Gerrardine G-72

3,3′-(1-Methyl-2,5-pyrrolidinediyl)bis-1,2-dithiolan-4-ol, 9CI

[14022-19-6]



Relative Configuration

$C_{11}H_{19}NO_2S_4$ 325.541

Alkaloid from *Cassipourea gerrardii* and *Cassipourea guianensis* (Rhizophoraceae). Antifungal agent active against *Candida albicans*. Yellow orthorhombic cryst. Sol. MeOH, $CHCl_3$. Mp 180°. Cryst. from EtOH as solvate, Mp 90° and 178°. Cryst. from C_6H_6 as unstable solvate. λ_{max} 330 (ϵ 300) (MeOH) (Derep). λ_{max} 336 (MeOH) (Berdy).

Hydrochloride: Mp 207° dec. (180°). $[\alpha]_D^{23}$ -172 (c, 1 in H_2O). Sublimes at 195°.

1′-S-*Oxide:* [97094-26-3]
$C_{11}H_{19}NO_3S_4$ 341.54
Minor alkaloid from the bark of *Cassipourea guianensis* (Rhizophoraceae). Mp 183-185° dec. $[\alpha]_D^{24}$ +140.66 (c, 0.39 in $CHCl_3$). λ_{max} 247 (ϵ 3630); 330 (ϵ 148) ($CHCl_3$) (Derep).

1′,1″-S-*Dioxide:* [97094-27-4]
$C_{11}H_{19}NO_4S_4$ 357.539
Minor alkaloid from *Cassipourea guianensis* (Rhizophoraceae). Mp 190-193° dec. λ_{max} 247 (ϵ 6760) ($CHCl_3$) (Derep).

Wright, W.G. *et al., J.C.S.(C)*, 1967, 283; 284 (*isol, ir, ms, struct*)
Gafner, G. *et al., Acta Cryst. B*, 1971, **27**, 565 (*cryst struct*)
Kato, A. *et al., J. Nat. Prod.*, 1984, **47**, 706; 1985, **48**, 289-292 (*isol, pmr, cmr, oxides*)

Gerrardoline G-73

[11013-58-4]

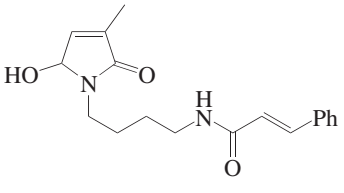
$C_8H_{15}NO_2S_2$ 221.344

Struct. unknown. Alkaloid from *Cassipourea gerrardii* (Rhizophoraceae). Noncryst. yellow solid. Mp 60°.

Wright, W.E. *et al., J.C.S.(C)*, 1967, 283-284 (*isol, ir*)

Gigantamide A G-74

[955381-63-2]



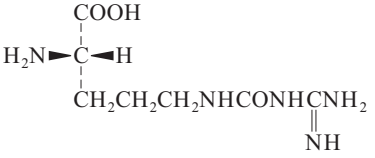
$C_{18}H_{22}N_2O_3$ 314.383

Alkaloid from the leaves of *Aglaia gigantea*. Amorph. solid. $[\alpha]_D^{20}$ -10 (c, 0.2 in MeOH). λ_{max} 217 (ϵ 15000); 275 (ϵ 13510) (MeOH).

Duong, T.N. *et al., J. Nat. Prod.*, 2007, **70**, 1640-1643 (*isol, pmr, cmr*)

Gigartinine G-75

N^5-*[[(Aminoiminomethyl)amino]carbonyl]ornithine, 9CI. 5-(3-Amidinoureido)-2-aminovaleric acid*



$C_7H_{15}N_5O_3$ 217.227

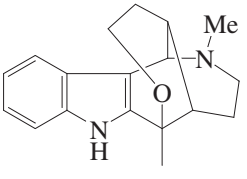
(S)-form [7536-90-5]
[7536-92-7 (nitrate)]
Constit. of many spp. of red algae, e.g. *Gymnogongrus flabelliformis, Gelidium amansii, Grateloupia livida, Grateloupia filicina, Polyopes polyideoides, Carpopeltis flabellata, Hypnea japonica* and *Gracilaria textorii*. Plates (EtOH)(as nitrate). Mp 197°. $[\alpha]_D^{22}$ +7.5 (c, 2.0 in H_2O).

Ito, K. *et al., Nature (London)*, 1966, **211**, 417 (*isol, uv, ir*)
Ito, K. *et al., CA*, 1968, **68**, 87527c; **69**, 93635y (*isol*)
Laycock, M.V. *et al., Can. J. Biochem.*, 1977, **55**, 27 (*isol, pmr, cmr*)
Wakamiya, T. *et al., Tetrahedron*, 1984, **40**, 235 (*isol*)

Gilbertine G-76

1,17-Epoxy-1-methyldasycarpidan, 9CI

[85769-42-2]



$C_{18}H_{22}N_2O$ 282.385

Alkaloid from the bark of *Aspidosperma gilbertii* (Apocynaceae). Mp 118-122°. $[\alpha]_D^{25}$ -149 ($CHCl_3$).

Miranda, E.C. *et al., Tet. Lett.*, 1982, **23**, 5395 (*ir, pmr, cmr, ms, struct*)
Jiricek, J. *et al., J.A.C.S.*, 2004, **126**, 3534-3538 (*synth*)

Gindaricine G-77

Hindaricine

[11075-74-4]

$C_{18}H_{19}NO_3$ 297.353

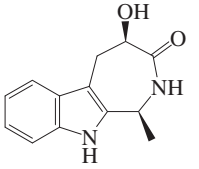
Struct. unknown. Hindaricine is a transliteration error of Gindaricine, via a Russian paper. Alkaloid from tubers of *Stephania glabra* (Menispermaceae). Cryst. (C_6H_6). Mp 193°. $[\alpha]_D$ +137 (EtOH). No further reports to 2007. Not obt. in further investigations of this species.

Hydrochloride: Mp 232°.

Picrate: Mp 150° dec.

Chaudhry, G.R. *et al., J. Sci. Ind. Res., Sect. B*, 1950, **9**, 79-83; *CA*, **45**, 824a (*isol*)
Cava, M.P. *et al., J.O.C.*, 1968, **33**, 2785-2789 (*Stephania glabra constits*)

Ginsenine G-78



Relative Configuration

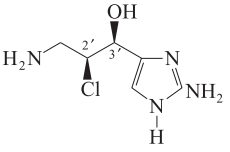
$C_{13}H_{14}N_2O_2$ 230.266

Alkaloid from the fruit of *Panax ginseng*. Powder. $[\alpha]_D^{20}$ -13.3 (c, 0.36 in MeOH). λ_{max} 221 (log ϵ 3.42); 272 (log ϵ 2.75); 278 (log ϵ 2.74); 289 (log ϵ 2.63) (MeOH).

Wang, J.-Y. *et al., J. Asian Nat. Prod. Res.*, 2006, **8**, 605-608 (*isol, pmr, cmr, ms*)

Giracodazole, INN G-79

2-Amino-α-(2-amino-1-chloroethyl)-1H-imidazole-4-methanol, 9CI. 4-Amino-1-(2-amino-4-imidazolyl)-2-chloro-1-butanol. ***Girolline****. NSC 627434. RP 49532*



(2′S3′S)–form

$C_6H_{11}ClN_4O$ 190.632

Protein synthesis inhibitor, antineoplastic agent. Sol. MeOH, EtOH.

(2′S,3′S)-form [135824-74-7]
Isol. from the sponge *Pseudaxinyssa cantharella*. Powder (as hydrochloride). $[\alpha]_D^{20}$ +7.9 (c, 0.84 in MeOH). Log P -2.03 (calc). CAS no. refers to hydrochloride.

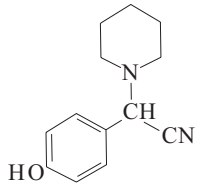
(2′RS,3′SR)-form [127909-96-0]
Mp 191-193° (hydrochloride).

[132618-95-2 , 117678-06-5 , 117678-08-7 , 110883-46-0]

Ahond, A. *et al., C. R. Hebd. Seances Acad. Sci. Ser. 2*, 1988, **307**, 145 (*isol*)
Bedoya Zurita, M. *et al., Tetrahedron*, 1989, **45**, 6713 (*synth, pmr*)
Chiaroni, A. *et al., C. R. Hebd. Seances Acad. Sci. Ser. 2*, 1991, **312**, 49 (*cryst struct, abs config*)
Commercon, A. *et al., Tet. Lett.*, 1991, **32**, 1419; 4905 (*synth, config*)
Colson, G. *et al., Biochem. Pharmacol.*, 1992, **43**, 1717 (*pharmacol*)
Ahond, A. *et al., Tetrahedron*, 1992, **48**, 4327 (*synth*)
Marchais, S. *et al., Tet. Lett.*, 1998, **39**, 8085-8088 (*synth*)

Girgensonine G-80

4-Hydroxy-α-(1-piperidinyl)benzeneacetonitrile. N-*Piperidyl*-p-*hydroxyphenylacetonitrile. Girgensohnine*
[486-30-6]



$C_{13}H_{16}N_2O$ 216.282
Alkaloid from green parts of *Girgensohnia oppositiflora* (Chenopodiaceae).
Cryst. (Et_2O or MeOH). Mp 147-148°.

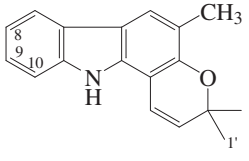
Hydrochloride: Mp 145-148°.

Picrolonate: Mp 192-194°.

Yurashevskii, N.K. *et al., J. Gen. Chem. USSR (Engl. Transl.)*, 1946, **16**, 141; *CA*, **40**, 6754 (*isol, struct, synth*)

Girinimbine G-81

3,11-Dihydro-3,3,5-trimethylpyrano[3,2-a]carbazole, 9CI
[23095-44-5]



$C_{18}H_{17}NO$ 263.338

CAS numbering shown. Alternative numbering frequently used in which the carbazole nucleus is numbered 1-9 and the pyran carbons 1′-5′. Alkaloid from the roots of *Murraya koenigii* (curry leaf tree) and *Clausena heptaphylla*, and from the stem bark of *Murraya exotica* (Rutaceae). Cryst. (cyclohexane, hexane or CH_2Cl_2/hexane). Mp 175°. λ_{max} 237 (log ε 4.76); 278 (log ε 4.53); 315 (log ε 3.88); 328 (log ε 4); 340 (log ε 4.03); 355 (log ε 3.98) (no solvent reported).

N-*Me:*
Cryst. (EtOH). Mp 150°.

8-Hydroxy: ***Koenine****. Kenine*
[28200-63-7]
$C_{18}H_{17}NO_2$ 279.338
Alkaloid from the leaves of *Murraya koenigii* (curryleaf tree) (Rutaceae). Cryst. (C_6H_6). Mp 250-252°. λ_{max} 230 (log ε 4.65); 236 (log ε 4.64); 296 (log ε 4.41); 335 (log ε 3.84); 356 (log ε 3.72) (MeOH).

8-Hydroxy, N-*Me:* Mp 148°.

8-Methoxy: ***Koenimbine****. Kenimbine*
[21087-98-9]
$C_{19}H_{19}NO_2$ 293.365
Alkaloid from leaves and fruits of *Murraya koenigii* (curryleaf tree) and from stem bark of *Murraya exotica* (Rutaceae). Cryst. (hexane or $CHCl_3$/hexane). Mp 194-195°. λ_{max} 230 (log ε 4.68); 240 (log ε 4.69); 300 (log ε 4.62); 340 (log ε 4.24); 360 (log ε 4.2) (MeOH).

9-Hydroxy: ***Murrayamine A****. Mukoenine C*
[134779-17-2]
$C_{18}H_{17}NO_2$ 279.338
Alkaloid from the leaves of *Murraya euchrestifolia* and roots of *Murraya koenigii* (curryleaf tree) (Rutaceae). Cytotoxic. Needles (Me_2CO). Mp 162-163°. Mukoenine C from *M. koenigii* descr. as an oil. λ_{max} 221 (ε 10450); 240 (ε 11750); 294 (ε 9100); 342 (ε 2240); 349 (ε 1600); 360 (ε 1620) (MeOH) (Berdy).

10-Methoxy: ***Mupamine***
[66003-49-4]
$C_{19}H_{19}NO_2$ 293.365
Alkaloid from the root bark of *Clausena anisata* (Rutaceae). Mp 151-152°. λ_{max} 238 (log ε 4.8); 263 (log ε 4.31); 272 (log ε 4.33); 282 (log ε 4.43); 315 (sh) (log ε 3.75); 330 (log ε 3.89); 342 (log ε 3.94); 357 (log ε 3.9) (MeOH).

1′-Acetoxy: ***Murrayamine K***
[175669-19-9]
$C_{20}H_{19}NO_3$ 321.375
Alkaloid from leaves of *Murraya euchrestifolia*. Needles (Me_2CO). Mp 127-128°. λ_{max} 237 ; 279 (sh) ; 288 ; 327 ; 344 ; 359 (MeOH).

9-Hydroxy, 1′-acetoxy: ***Murrayamine I***
[175669-18-8]
$C_{20}H_{19}NO_4$ 337.374
Alkaloid from leaves of *Murraya euchrestifolia*. Oil. λ_{max} 222 ; 240 ; 281 (sh) ; 295 ; 324 ; 360 (MeOH).

8-Methoxy, 9-hydroxy: ***Koenigine****. Kenigine*
[28513-33-9]
$C_{19}H_{19}NO_3$ 309.364
Alkaloid from the leaves of *Murraya koenigii* (curryleaf tree), and from the leaves and stems of *Micromelum zeylanicum* (Rutaceae). Cryst. (EtOH), needles (hexane/EtOH). Mp 183-185°. λ_{max} 243 (log ε 4.47); 260 (log ε 4.05); 275 (log ε 3.94); 290 (log ε 4.36); 300 (log ε 3.53); 344 (log ε 3.99); 357 (log ε 3.9) (MeOH).

8,9-Dimethoxy: ***Koenigicine****. Koenidine. Koenimbidine. Kenigicine. Kenidine. Kenimbidine*
[24123-92-0]
$C_{20}H_{21}NO_3$ 323.391
Alkaloid from the leaves of *Murraya koenigii* (curryleaf tree) (Rutaceae). Cryst. (EtOH). Mp 224-225°. Subl. at 210°/0.5 mm. λ_{max} 230 (log ε 4.68); 240 (log ε 4.69); 300 (log ε 4.62); 340 (log ε 4.24); 360 (log ε 4.2) (MeOH).

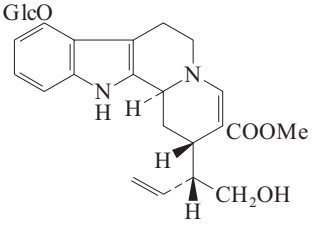
8,9-Dimethoxy, N-*Me:*
Cryst. (EtOH). Mp 190-191°.

8,10-Dimethoxy: ***Mukonicine***
[88607-43-6]
$C_{20}H_{21}NO_3$ 323.391
Alkaloid from the leaves of *Murraya koenigii* (curry leaf tree) (Rutaceae). Cryst. (C_6H_6/$CHCl_3$). Mp 233-234°. λ_{max} 226 (log ε 4.7); 240 (log ε 4.67); 300 (log ε 4.59); 342 (log ε 4.26) (EtOH).

Narasimhan, N.S. *et al., Tet. Lett.*, 1968, 5501-5504 (*Koenimbine, isol, uv, pmr, ms, struct*)
Dutta, N.L. *et al., Indian J. Chem.*, 1969, **7**, 307-308 (*uv, pmr, struct*)
Kureel, S.P. *et al., Chem. Ind. (London)*, 1970, 1262 (*Koenine, Koenimbine, Girinimbine, synth*)
Joshi, B.S. *et al., Tetrahedron*, 1970, **26**, 1475-1482 (*Girinimbine, Koenigine, Koenigicine, Koenine, Koenimbine, isol, uv, ir, pmr*)
Joshi, B.S. *et al., Phytochemistry*, 1972, **11**, 2065-2071 (*isol, uv, ir, pmr*)
Narasimhan, N.S. *et al., Indian J. Chem., Sect. B*, 1975, **13**, 993-999; 1976, **14**, 329-331 (*Koenine, Koenimbine, Koenigicine, Girinimbine, isol, uv, ir, pmr, ms, struct, synth*)
Oikawa, Y. *et al., Heterocycles*, 1976, **5**, 233-238 (*synth, ms*)
Mester, I. *et al., Annalen*, 1977, 1725-1729; 1980, 241-245 (*Mupamine, isol, ir, uv, pmr, ms, cmr, struct, synth*)
Mester, I. *et al., Z. Naturforsch., B*, 1979, **34**, 650-652 (*Mupamine, cmr*)
Sharma, R.B. *et al., Experientia*, 1980, **36**, 815 (*Koenigicine, synth*)
Sharma, R.B. *et al., Indian J. Chem., Sect. B*, 1981, **20**, 701-703 (*Mupamine, synth*)
Bowen, I.H. *et al., Phytochemistry*, 1982, **21**, 433-437 (*Koenigine, isol, ms*)
Mukherjee, M. *et al., Phytochemistry*, 1983, **22**, 2328-2329 (*Mukonicine*)
Wu, T.-S. *et al., Phytochemistry*, 1991, **30**, 1048-1051; 1996, **41**, 1433-1435 (*Murrayamine A, Murrayamine I, Murrayamine K*)
Ito, C. *et al., Chem. Pharm. Bull.*, 1993, **41**, 2096-2100 (*Mukoenine C*)
Knölker, H.J. *et al., Tet. Lett.*, 1996, **37**, 7947-7950 (*synth*)

Glabratine G-82

[142750-47-8]

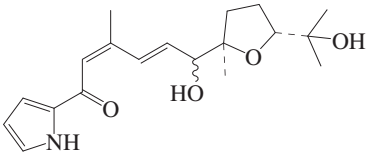


$C_{27}H_{34}N_2O_9$ 530.574
Alkaloid from *Cephalanthus occidentalis* and *Uncaria glabrata*. Needles (EtOH). Mp 265-267°. $[\alpha]_D^{25}$ +43.9 (c, 0.1 in MeOH). λ_{max} 225 (log ε 4.36); 296 (log ε 4.59) (MeOH).

Arbain, D. *et al., J.C.S. Perkin 1*, 1992, 665-666 (*isol, pmr, cmr*)
Zhang, Z. *et al., Planta Med.*, 2005, **71**, 355-361 (*isol, pmr, cmr*)

Glaciapyrrole A G-83

[853885-46-8]

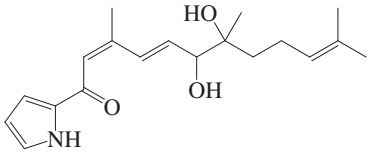


$C_{19}H_{27}NO_4$ 333.427
Metab. of a marine-sediment derived *Streptomyces* sp. Glass. $[\alpha]_D^{22}$ +16.8 (c, 0.02 in MeOH). λ_{max} 285 (sh) (ε 6700); 333 (ε 14400) (MeOH).

Macherla, V.R. *et al., J. Nat. Prod.*, 2005, **68**, 780-783 (*Glaciapyrrole A*)

Glaciapyrrole B G-84

[853885-48-0]

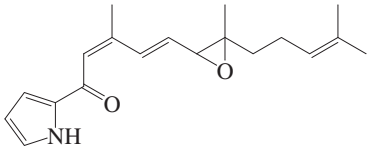


$C_{19}H_{27}NO_3$ 317.427
Metab. of a marine-sediment derived *Streptomyces* sp. Glass. λ_{max} 285 (sh) ; 335 (MeCN aq.).

Macherla, V.R. *et al., J. Nat. Prod.*, 2005, **68**, 780-783 (*Glaciapyrrole B*)

Glaciapyrrole C G-85

[853885-50-4]

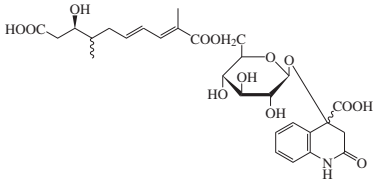


$C_{19}H_{25}NO_2$ 299.412
Constit. of a marine-sediment derived *Streptomyces* sp. Glass. λ_{max} 285 (sh) ; 335 (MeCN aq.).

Macherla, V.R. *et al., J. Nat. Prod.*, 2005, **68**, 780-783 (*Glaciapyrrole C*)

Glansreginin A G-86

Glansresinoside A
[860267-30-7]

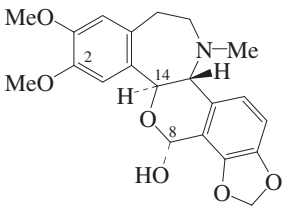


$C_{28}H_{35}NO_{13}$ 593.583
Constit. of the seeds of *Juglans regia*. Pale yellow powder + 1.5 H_2O. $[\alpha]_D^{23}$ -37.9 (c, 0.1 in MeOH). λ_{max} 265 (log ϵ 4.45) (MeOH).

Ito, H. *et al., J. Agric. Food Chem.*, 2007, **55**, 672-679 (*isol, cd, pmr, cmr, ms*)

Glaucamine G-87

2,3-Dimethoxy-16-methyl-10,11-[methylenebis(oxy)]rheadan-8-ol, 9CI. Alkaloid R-L
[2255-44-9]



$C_{21}H_{23}NO_6$ 385.416
Various numbering schemes in use. Alkaloid from *Papaver anomalum*, *Papaver fugax*, *Papaver glaucum*, *Papaver hybridum*, *Papaver nudicaule*, *Papaver rhoeas* (corn poppy) and *Papaver tauricola* (Papaveraceae). Plates ($CHCl_3$/EtOH). Mp 222-223°. $[\alpha]_D^{22}$ +298 (c, 0.25 in $CHCl_3$). λ_{max} 238 (log ϵ 4); 286 (log ϵ 3.8) (no solvent reported).

Hydrochloride: Mp 201-203°.

Me ether: ***Epiglaudine***. O-*Methylglaucamine. Glaupavine*
[18104-26-2]
$C_{22}H_{25}NO_6$ 399.443
Alkaloid from *Papaver glaucum* (as glaupavine) and *Papaver tauricola* (Papaveraceae). $[\alpha]_D^{22}$ +293 (c, 0.1 in $CHCl_3$). λ_{max} 237 (log ϵ 4.18); 287 (log ϵ 4.06) (MeOH).

Me ether, N-*de-Me:* ***Papaverrubine H***. *14-Epipapaverrubine B.* O-*Methylpapaverrubine C*
[25651-16-5]
$C_{21}H_{23}NO_6$ 385.416
Alkaloid from *Papaver anomalum* (Papaveraceae). Amorph. Mp 70-71°. $[\alpha]_D$ +308 ($CHCl_3$).

Et ether: O-*Ethylglaucamine*
[77658-93-6]
$C_{23}H_{27}NO_6$ 413.469
Isol. from *Papaver fugax* (Papaveraceae). Prob. an artifact.

O^2-*De-Me:* **N-*Methyl-14*-O-*demethylepiporphyroxine***. *Alkaloid A4*
[18361-67-6]
$C_{20}H_{21}NO_6$ 371.389
Alkaloid from *Papaver somniferum* (opium poppy) (Papaveraceae). Prisms (MeOH). Mp 217-218°. $[\alpha]_D^{20}$ +340 (c, 0.2 in MeOH).

O^2-*De-Me,* O^8-*Me,* N-*de-Me:* ***Papaverrubine C***. *Epiporphyroxine. 14-Epipapaverrubine D*
[22584-46-9]
$C_{20}H_{21}NO_6$ 371.389
Alkaloid from *Meconopsis betonicifolia*, *Papaver albiflorum* and other *Papaver* spp. (Papaveraceae). Prisms (C_6H_6/petrol). Mp 190-191.5°. $[\alpha]_D$ +283 ($CHCl_3$).

8-Epimer: ***Epiglaucamine***
[35321-05-2]
Semisynthetic (from Glaupavine and Glaucamine). Amorph. $[\alpha]_D^{21}$ +126 (c, 0.27 in $CHCl_3$).

8-Epimer, Me ether: ***Glaudine***. O,N-*Dimethylporphyroxine.* O,N-*Dimethylpapaverrubine D.* N-*Methylpapaverrubine B*
[5140-40-9]
$C_{22}H_{25}NO_6$ 399.443
Alkaloid from *Papaver armeniacum*, *Papaver fugax*, *Papaver glaucum*, *Papaver rhoeas*, *Papaver somniferum* and *Papaver tauricola* (Papaveraceae). Cryst. (heptane). Mp 103-105°. $[\alpha]_D^{24}$ +455 (c, 0.5 in $CHCl_3$). λ_{max} 237 (log ϵ 4.03); 287 (log ϵ 3.92) (MeOH).

8-Epimer, Me ether, hydrochloride: Mp 185-187°.

8-Epimer, Me ether, N-*de-Me:* ***Papaverrubine B***. O-*Methylporphyroxine.* O-*Methylpapaverrubine D.* N-*Demethylglaudine*
[5140-39-6]
$C_{21}H_{23}NO_6$ 385.416
Alkaloid from *Papaver alpinum*, *Papaver atlanticum*, *Papaver bracteatum*, *Papaver californicum*, *Papaver caucasicum*, *Papaver commutatum*, *Papaver dubium*, *Papaver feddei*, *Papaver fugax*, *Papaver glaucum*, *Papaver heldreichii*, *Papaver latericium*, *Papaver macrostomum*, *Papaver nudicaule*, *Papaver oreophilum*, *Papaver orientale*, *Papaver persicum*, *Papaver pilosum*, *Papaver polychaetum*, *Papaver rhoeas*, *Papaver rupifragum*, *Papaver setigerum*, *Papaver strigosum*, *Papaver triniaefolium* and *Papaver urbanianum* (Papaveraceae). Cryst. (MeOH). Mp 201-203°. $[\alpha]_D$ +398 ($CHCl_3$). λ_{max} 236 (log ϵ 4.06); 286 (log ϵ 3.86) (MeOH).

8-Epimer, O^2-*de-Me,* O^8-*Me:* **N-*Methylporphyroxine***. N-*Methylpapaverrubine D*
[18211-29-5]
$C_{21}H_{23}NO_6$ 385.416
May occur in *Papaver somniferum* (Papaveraceae).

8-Epimer, O^2-*de-Me,* O^8-*Me,* N-*de-Me:* ***Papaverrubine D***. *Porphyroxine*
[18104-24-0]
$C_{20}H_{21}NO_6$ 371.389
Alkaloid from *Meconopsis betonicifolia* and other *Meconopsis* spp., *Papaver albiflorum* and other *Papaver* spp. (Papaveraceae). Needles (MeOH). Mp 237-239° (234-236°). $[\alpha]_D$ +391 ($CHCl_3$). λ_{max} 232 (log ϵ 3.9); 287 (log ϵ 3.83) (MeOH).

8,14-Diepimer: ***Oreogenine***
[6598-99-8]
$C_{21}H_{23}NO_6$ 385.416
Alkaloid from *Papaver fugax*, *Papaver oreophilum* and *Papaver tauricola* (Papaveraceae). Mp 173-175° (as methiodide). Indefinite Mp.

8,14-Diepimer, Me ether: ***Oreodine***. N-*Methylpapaverrubine F*
[6516-48-9]
$C_{22}H_{25}NO_6$ 399.443
Alkaloid from *Papaver fugax*, *Papaver oreophilum*, *Papaver tauricola* and *Papaver trinaefolium* (Papaveraceae). Cryst. (Et_2O). Mp 184-186°. $[\alpha]_D^{22}$ +224 (c, 0.1 in $CHCl_3$). λ_{max} 237 (log ϵ 3.96); 289 (log ϵ 3.72) (no solvent reported).

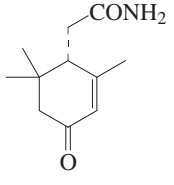
8,14-Diepimer, Me ether, N-*de-Me:* ***Papaverrubine F***. N-*Demethyloreodine*
[19914-48-8]
$C_{21}H_{23}NO_6$ 385.416
Alkaloid from *Papaver commutatum* and *Papaver oreophilum* (Papaveraceae). Needles (Me_2CO). Mp 223-225°. λ_{max} 237 (log ϵ 4.11); 287 (log ϵ 3.84) (MeOH).

8,14-Diepimer, Et ether: O-*Ethyloreogenine*
$C_{23}H_{27}NO_6$ 413.469
Isol. from *Papaver fugax* and *Papaver tauricola* (Papaveraceae). Prob. an artifact.

Pfeifer, S. *et al., Pharmazie*, 1964, **19**, 678; 724-786; 1965, **20**, 585-586; 1968, **23**, 82-98; 267-281; 1972, **27**, 48 (*Papaverrubines, Glaudine, Oreodine, Oreogenine, Epiglaudine*)
Pfeifer, S. *et al., Pharmazie*, 1964, **19**, 786; 1965, **20**, 585 (*Oreogenine*)
Slavík, J. *et al., Coll. Czech. Chem. Comm.*, 1965, **30**, 3687-3696 (*Epiglaudine, Glaudine, Glaupavine, isol, synth, uv*)
Pfeifer, S. *et al., J. Pharm. Pharmacol.*, 1966, **18**, 133-134 (*Papaverrubine D, struct*)
Cross, A.D. *et al., Pharmazie*, 1966, **21**, 181 (*Oreogenine, Oreodine, stereochem*)
Mann, I. *et al., Pharmazie*, 1966, **21**, 700 (*Papaverrubine F*)
Brochmann-Hanssen, E. *et al., J. Pharm. Sci.*, 1967, **56**, 1658 (*Papaverrubine D, Oreodine, isol, ord, cd, pmr, struct, config*)
Dolejš, L. *et al., Tetrahedron*, 1967, **23**, 2997-3005 (*Oreodine, Papaverrubines B,D, Glaudine, ms*)
Shamma, M. *et al., Chem. Comm.*, 1968, 212-214 (*Papaverrubines, Epiglaudine, Glaudine, stereochem*)
Brochmann-Hanssen, E. *et al., J. Pharm. Sci.*, 1968, **57**, 30-35 (*N-Methyl-14-O-demethylepiporphyroxine, Epiglaudine, Papaverrubine D, Glaudine, isol, uv, ir, pmr, struct*)
Slavíková, L. *et al., Coll. Czech. Chem. Comm.*, 1980, **45**, 761-763 (*Papaverrubines*)
Sariyar, G. *et al., Phytochemistry*, 1980, **19**, 2189-2192 (*Oreogenine, Oreodine, Ethyloreogenine, Epiglaudine, Glaudine, isol, pmr, ms*)
Phillipson, J.D. *et al., Planta Med.*, 1981, **41**, 105-118 (*Glaudine, Oreodine, Oreogenine, isol*)
Sariyar, G. *et al., Planta Med.*, 1983, **49**, 43-45 (*Oreogenine, isol*)

Glaucenamide G-88

2-(2,6,6-Trimethyl-4-oxo-2-cyclohexen-1-yl)acetamide
[330832-86-5]



$C_{11}H_{17}NO_2$ 195.261
Alkaloid from *Fissistigma glaucescens*. Prisms ($CHCl_3$). $[\alpha]_D^{24}$ -120 (c, 0.15 in $CHCl_3$). Mp >300°. λ_{max} 237 (log ϵ 3.99) (EtOH).

Lo, W.-L. *et al., J. Chin. Chem. Soc. (Taipei)*, 2000, **47**, 1251-1256

Glaucescine G-89

[11022-53-0]

$C_{19}H_{27}NO_3$ 317.427

Struct. unknown. Alkaloid from the bark of *Daphniphyllum glaucescens* (Daphniphyllaceae). Cryst. (Me_2CO). Mp 234-235° (vac. dec.). $[\alpha]_D^{20}$ +68.1 ($CHCl_3$).

Arthur, H.R. *et al., Phytochemistry*, 1965, **4**, 627-629 (*isol, ir*)

Glaucescinine G-90

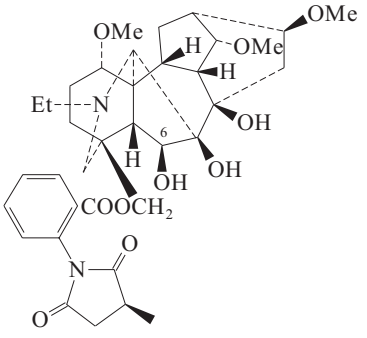
$C_{19}H_{27}NO_3$ 317.427

Struct. unknown. Alkaloid from the bark of *Daphniphyllum glaucescens* (Daphniphyllaceae). Cryst. (Me_2CO). Mp 248-250° (vac. dec.).

Arthur, H.R. *et al., Phytochemistry*, 1965, **4**, 627-629 (*isol*)

Glaudelsine G-91

[78018-32-3]



$C_{36}H_{48}N_2O_{10}$ 668.783
The abs. config. of the methylsuccinimide residue was shown to be (*S*)-, as illus., for methyllycaconitine and is prob. the same for all of these alkaloids. Alkaloid from the aerial parts of *Delphinium glaucescens* (Ranunculaceae). Amorph. solid. Mp 80-110°. $[\alpha]_D^{21}$ +36.1 (c, 0.97 in $CHCl_3$).

Perchlorate:
Amorph. solid (MeOH/Et_2O). Mp 203-213°.

O^6*-Me:* ***Methyllycaconitine****. Delartine. Delsemidine. Mellictine*
[21019-30-7]
$C_{37}H_{50}N_2O_{10}$ 682.809
Alkaloid from *Delphinium elatum, Delphinium dictyocarpum, Delphinium tricorne, Delphinium grandiflorum, Delphinium triste, Delphinium crassifolium, Delphinium elisabethae, Delphinium tamarae, Delphinium glaucescens, Consolida ambigua (Delphinium ajacis)* and others (Ranunculaceae). Nicotinic antagonist. Amorph. Mp 128°. $[\alpha]_D^{22}$ +49.1 (c, 2 in EtOH). λ_{max} 228 (log ϵ 4.13); 276 (log ϵ 3.43) (EtOH).

▶ AR5542000
O^6*-Me,* N*-de-Et:* **N-*Deethylmethyllycaconitine***
$C_{35}H_{46}N_2O_{10}$ 654.756
Alkaloid from *Aconitum cochleare*. $[\alpha]_D^{25}$ +35 (c, 0.25 in $CHCl_3$).

O^6*-Me,* N*-de-Et,* N*-formyl:* ***Potanisine B***
[187655-62-5]
$C_{36}H_{46}N_2O_{11}$ 682.766
Alkaloid from roots of *Delphinium potaninii*. Amorph. powder. $[\alpha]_D$ +28.3 (c, 0.92 in $CHCl_3$).

O^6,O^8*-Di-Me:* ***Potanisine F***
[664304-11-4]
$C_{38}H_{52}N_2O_{10}$ 696.836
Alkaloid from the roots of *Delphinium potaninii*. Amorph. powder. $[\alpha]_D^{10}$ -23.1 (c, 1 in $CHCl_3$).

O^8*-Et,* O^{14}*-de-Me,* O^6*-Me, 14-propanoyl:* ***Alpinine***†
$C_{41}H_{56}N_2O_{11}$ 752.9
Alkaloid from the leaves of *Delphinium alpinum*.

7,8-Methylene ether, O^6*-Me:* ***Elatine***
[26000-16-8]
$C_{38}H_{50}N_2O_{10}$ 694.82
Alkaloid from the above-ground parts of *Delphinium elatum* (Ranunculaceae). Cryst. (EtOH). Mp 233-235°. $[\alpha]_D$ +3.4 ($CHCl_3$).

▶ AR5554000
O^1*-De-Me,* O^6*-Me:* ***Grandiflorine***†*. Uraline*
[150044-88-5]
$C_{36}H_{48}N_2O_{10}$ 668.783
Alkaloid from *Delphinium glaucum, Delphinium uralense* and *Delphinium grandiflorum*. Amorph. solid. $[\alpha]_D^{23}$ +49.2 (c, 0.6 in $CHCl_3$).

O^{14}*-De-Me,* O^6*-Me:* ***14-Deacetylnudicauline****. 14-Deacetylandersoline*
[119347-24-9]
$C_{36}H_{48}N_2O_{10}$ 668.783
Alkaloid from epigeal parts of *Delphinium macrocentrum*, seeds of *Delphinium elatum* and aerial parts of *Delphinium andersonii* (Ranunculaceae). Amorph. off-white solid. $[\alpha]_D^{21}$ +40.7 (c, 0.9 in $CHCl_3$) (+24).

O^{14}*-De-Me,* O^6*-Me, 14-Ac:* ***Nudicauline****. Andersoline*
[99815-83-5]
$C_{38}H_{50}N_2O_{11}$ 710.82
Alkaloid from *Delphinium nudicaule*, seeds of *Delphinium elatum* and aerial parts of *Delphinium andersonii* (Ranunculaceae). Amorph.; cryst. (as hydroiodide). Mp 228-230° (hydroiodide). $[\alpha]_D$ +47 (c, 0.42 in $CHCl_3$).

O^{14}*-De-Me,* O^6*-Me,* O^{14}*-(2-methylpropanoyl):* ***14-Deacetyl-14-isobutyrylnudicauline***
[254876-71-6]
$C_{40}H_{54}N_2O_{11}$ 738.873
Alkaloid from the roots of *Delphinium stapeliosum*. Amorph. $[\alpha]_D^{20}$ +26.7 (c, 0.23 in $CHCl_3$).

O^{14}*-De-Me,* O^6*-Me,* O^{14}*-(2*R*-methylbutanoyl):* ***Elanine***
[129011-70-7]
$C_{41}H_{56}N_2O_{11}$ 752.9
Alkaloid from seeds of *Delphinium elatum* (Ranunculaceae). $[\alpha]_D$ +41.5 (c, 0.71 in $CHCl_3$).

O^{14}*-De-Me,* O^6*-Me, 14-benzoyl:* ***Ajacusine***
[66731-39-3]
$C_{43}H_{52}N_2O_{11}$ 772.891
Alkaloid from the seeds of *Consolida ambigua*, (formerly *Delphinium ajacis*) (Ranunculaceae). Cryst. (CH_2Cl_2/hexane). Mp 158-161° dec. $[\alpha]_D^{24}$ +65.2 (c, 0.98 in abs. EtOH).

O^{16}*-De-Me,* O^6*-Me:* ***Deacetylgeyerline***
[253328-44-8]
$C_{36}H_{48}N_2O_{10}$ 668.783
Alkaloid from *Delphinium nuttallianum*. Amorph. solid.

O^{16}*-De-Me,* O^6*-Me, 16-Ac:* ***Geyerline***
[213697-78-0]
$C_{38}H_{50}N_2O_{11}$ 710.82
Alkaloid from *Delphinium geyeri*.

Amorph. solid. $[\alpha]_D^{23}$ +32.3 (c, 0.3 in $CHCl_3$). λ_{max} 228 (log ϵ 4.05); 276 (log ϵ 3.41) (EtOH).

O^{14},O^{16}-Di-de-Me, O^6-Me, 16-Ac: ***Bearline***
[253337-82-5]
$C_{37}H_{48}N_2O_{11}$ 696.793
Alkaloid from *Delphinium nuttallianum*. Amorph. solid.

O^{14},O^{16}-Di-de-Me, O^6-Me, 14,16-di-Ac: ***14-Acetylbearline***
[253328-43-7]
$C_{39}H_{50}N_2O_{12}$ 738.83
Alkaloid from *Delphinium nuttallianum*. Amorph. solid.

14-Ketone, O^{14}-de-Me, O^6-Me: ***Barbinine***
[123497-99-4]
$C_{36}H_{46}N_2O_{10}$ 666.767
Alkaloid from aerial parts of *Delphinium barbeyi* (Ranunculaceae). Amorph. $[\alpha]_D^{26}$ +35.9 (c, 0.388 in $CHCl_3$).

14-Ketone, O^1,O^{14}-di-de-Me, O^6-Me: ***Grandifloricine***
[146471-87-6]
$C_{35}H_{44}N_2O_{10}$ 652.74
Alkaloid from aerial parts of *Delphinium grandiflorum* (Ranunculaceae).

19-Oxo, O^6-Me, N*-de-Et:* ***Zaliline***
[145237-02-1]
$C_{35}H_{44}N_2O_{11}$ 668.739
Alkaloid from seeds of *Delphinium zalil* (Ranunculaceae).

10-Hydroxy, O^6-Me: ***10-Hydroxymethyllycaconitine***
[532993-22-9]
$C_{37}H_{50}N_2O_{11}$ 698.809
Alkaloid from *Delphinium excelsum*. Amorph. $[\alpha]_D^{20}$ +51 ($CHCl_3$).

15β-Hydroxy, O^6,O^8-di-Me, N*-de-Et,* N*-formyl:* ***Potanisine E***
[182262-36-8]
$C_{37}H_{48}N_2O_{12}$ 712.792
From roots of *Delphinium potaninii*. Amorph. powder. $[\alpha]_D$ +13 (c, 0.10 in $CHCl_3$).

16-Demethoxy, O^6-Me: ***16-Demethoxymethyllycaconitine***
$C_{36}H_{48}N_2O_9$ 652.783
Alkaloid from the roots of *Delphinium cuneatum*.

Goodson, J.A. *et al., J.C.S.*, 1943, 139-141 (*Methyllycaconitine*)
Kuzovkov, A.D. *et al., J. Gen. Chem. USSR (Engl. Transl.)*, 1959, **29**, 2746-2749 (*Methyllycaconitine, Elatine*)
Pelletier, S.W. *et al., J. Nat. Prod.*, 1980, **43**, 395-406 (*Ajacusine*)
Pelletier, S.W. *et al., J.A.C.S.*, 1981, **103**, 6536-6538 (*config*)
Pelletier, S.W. *et al., J.O.C.*, 1981, **46**, 3284 (*isol, ir, pmr, cmr, ms, struct*)
Edwards, O.E. *et al., Can. J. Chem.*, 1982, **60**, 2661-2667 (*config*)
Kulanthaivel, P. *et al., Heterocycles*, 1985, **23**, 2515-2520 (*Nudicauline*)
Pelletier, S.W. *et al., Heterocycles*, 1987, **26**, 2835-2840 (*Elatine, synth, pmr, cmr*)
Pelletier, S.W. *et al., Heterocycles*, 1988, **27**, 2387-2393 (*14-Deacetylnudicauline*)
Benn, M.H. *et al., Phytochemistry*, 1989, **28**, 919-922 (*Deacetylnudicauline*)
Pelletier, S.W. *et al., Phytochemistry*, 1989, **28**, 1521-1523; 1990, **29**, 2381-2383 (*Barbinine, Elanine*)
Pelletier, S.W. *et al., Tetrahedron*, 1989, **45**, 1887-1892 (*Nudicauline, Deacetylnudicauline*)
Li, C. *et al., CA*, 1992, **118**, 143418h (*Grandifloricine*)
Sun, F. *et al., Phytochemistry*, 1992, **31**, 3247-3250 (*Zaliline*)
Coates, P.A. *et al., Tet. Lett.*, 1994, **35**, 8701-8704 (*abs config, Methyllycaconitine*)
Pu, H.-Y. *et al., Phytochemistry*, 1996, **43**, 287-290 (*Potanisine E*)
Pu, H. *et al., Planta Med.*, 1996, **62**, 462-464 (*Potanisine B*)
Manners, G.D. *et al., J. Nat. Prod.*, 1998, **61**, 1086-1089 (*Geyerline, Grandiflorine*)
Gardner, D.R. *et al., J. Agric. Food Chem.*, 1999, **47**, 5049-5058 (*Bearline, 14-Acetylbearline*)
Shrestha, P.M. *et al., J. Nat. Prod.*, 2000, **63**, 2-5; 2004, **67**, 1574-1576 (*Deacetylisobutyrylnudicauline, Deacetylnudicauline, Methyllycaconitine, Geyerline*)
Gardner, D.R. *et al., J. Nat. Prod.*, 2000, **63**, 1127-1130 (*Bearline, Acetylbearline, Deacetylgeyerline, isol, pmr, cmr, ms*)
Shen, X.-L. *et al., Chem. Pharm. Bull.*, 2002, **50**, 1265-1267 (*Elanine, cmr*)
Chen, D.-L. *et al., J. Asian Nat. Prod. Res.*, 2003, **5**, 209-213 (*Potanisine F*)
Batbayar, N. *et al., Phytochemistry*, 2003, **62**, 543-550 (*10-Hydroxymethyllycaconitine*)
Khairitdinova, E.D. *et al., Russ. Chem. Bull. (Engl. Transl.)*, 2003, **52**, 2078-2080 (*16-Demethoxymethyllycaconitine*)
Khairitdinova, E.D. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2005, **41**, 575-577 (*Alpinine*)
Tsyrlina, T.M. *et al., Russ. J. Bioorg. Chem. (Engl. Transl.)*, 2005, **31**, 383-386 (*Uraline*)
Meriçli, A.H. *et al., Helv. Chim. Acta*, 2006, **89**, 210-217 (*N-Deethylmethyllycaconitine, Methyllycaconitine*)

Glauflavine G-92

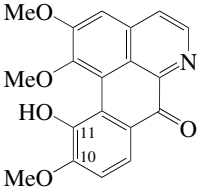
[11024-37-6 (iodide)]

Struct. unknown. Quaternary alkaloid from *Glaucium flavum* (Papaveraceae). Mp 216-217° (as iodide). $[\alpha]_D$ +45 (c, 1.0 in $CHCl_3$) (iodide).

Gertik, H. *et al., Diss. Pharm. Pharmacol.*, 1966, **18**, 375-380; *CA*, **66**, 17042

Glaunine G-93

*11-Hydroxy-1,2,10-trimethoxy-7*H*-dibenzo[*de,g*]quinolin-7-one, 9CI*
[57986-73-9]



$C_{19}H_{15}NO_5$ 337.331
Alkaloid from *Glaucium fimbrilligerum* (Papaveraceae).

O^1-De-Me, N*-Me, inner salt: 1,11-Dihydroxy-2,10-dimethoxy-6-methyl-7-oxo-7*H*-dibenzo[*de,g*]quinolinium.* ***Arosinine***
[73777-68-1]
$C_{19}H_{15}NO_5$ 337.331
Alkaloid from the roots of *Glaucium flavum* var. *vestitum* (Papaveraceae). Dark-green needles ($CHCl_3$/EtOH). Mp 302-305° dec.

O^1-De-Me, O^{11}-Me, N*-Me, innner salt:* ***Glaunidine****. Arosine*
[72032-70-3]
$C_{20}H_{17}NO_5$ 351.358
Alkaloid from *Glaucium flavum* var. *vestitum, Glaucium fimbrilligerum* and *Aconitum leucostomum* (Papaveraceae, Ranunculaceae). Dark-green prisms (EtOAc/$CHCl_3$). Mp 245-248° dec.

*O^{10}-De-Me, O^{11}-Me: 7-****Oxohernagine***
[172274-06-5]
$C_{19}H_{15}NO_5$ 337.331
Alkaloid from the stem bark of *Hernandia nymphaeifolia*. Shows antiplatelet aggregation activity. Orange prisms (MeOH). Mp 252-254°. λ_{max} 213 (log ϵ 4.52); 274 (log ϵ 4.42); 360 (log ϵ 3.96); 403 (log ϵ 3.92) (EtOH).

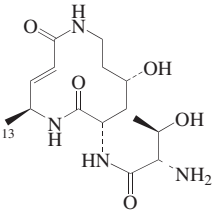
Israilov, I.A. *et al., Khim. Prir. Soedin.*, 1979, **15**, 415; *Chem. Nat. Compd. (Engl. Transl.)*, 1979, **15**, 367 (*Glaunine, Glaunidine, isol, uv, ir, pmr, struct*)
Castedo, L. *et al., Tet. Lett.*, 1979, 4589 (*Glaunidine, Arosinine*)
Karimova, S.U. *et al., Khim. Prir. Soedin.*, 1980, **16**, 224; *Chem. Nat. Compd. (Engl. Transl.)*, 1980, **16**, 177 (*isol*)
Zhamierashvili, M.G. *et al., Khim. Prir. Soedin.*, 1980, **16**, 805; *Chem. Nat. Compd. (Engl. Transl.)*, 1980, **16**, 576 (*Glaunidine, occur*)
Chen, J.-J. *et al., J. Nat. Prod.*, 1996, **59**, 156-158 (*7-Oxohernagine*)
Chen, J.J. *et al., Planta Med.*, 2000, **66**, 251-256 (*activity*)

Glenodinine G-95

Struct. unknown. Alkaloid isol. from the dinoflagellate *Peridinium polonicum*. Ichthyotoxin. λ_{max} 200 (MeOH).

Hashimoto, Y. *et al., Nippon Suisan Gakkaishi*, 1968, **34**, 528-534; *CA*, **72**, 76239s

Glidobactamine G-96



Absolute Configuration

$C_{15}H_{26}N_4O_5$ 342.394
Parent peptide moeity of the Glidobactins prod. by enzymic deacylation of Glidobactins in a *Pseudomonas* strain. Amorph. solid. $[\alpha]_D^{27}$ -157 (c, 0.5 in H_2O).

*N^{Thr}-(2*E*,4*E*-Decadienoyl):* ***Glidobactin F***
[119259-72-2]
$C_{25}H_{40}N_4O_6$ 492.614
Isol. from *Polyangium brachysporum*

K481-B101 ATCC 53080. Antitumour agent. Powder. Sol. MeOH, DMSO, butanol; fairly sol. $CHCl_3$, MeCN, EtOAc; poorly sol. H_2O, hexane. Mp 233° dec. λ_{max} 260 (ϵ 24200) (95% EtOH) (Derep).

N^{Thr}-*(9-Methyl-2*E*,4*E*-decadienoyl):* ***Cepafungin III***
[130743-09-8]
$C_{26}H_{42}N_4O_6$ 506.641
Prod. by a *Pseudomonas* sp. Exhibits activities against fungi, yeast and tumours. Powder. Sol. MeOH-H_2O, $CHCl_3$-MeOH, DMSO; fairly sol. MeOH; poorly sol. EtOAc, hexane. Mp 215-220°. $[\alpha]_D^{24}$ -110 (c, 0.155 in MeOH). λ_{max} 260 (ϵ 24200) (95% EtOH).

N^{Thr}-*(2*E*,4*E*-Dodecadienoyl):* ***Glidobactin A***. *Cepafungin II*
[108351-50-4]
$C_{27}H_{44}N_4O_6$ 520.668
Prod. by a *Pseudomonas* sp. and *Polyangium brachysporum*. Antitumour agent also active against fungi and yeasts. Needles + ½ H_2O (MeOH aq.). Mp 245-250° dec. (259-261°). $[\alpha]_D^{24}$ -127 (c, 0.283 in MeOH). $[\alpha]_D^{24}$ -111 (c, 0.5 in MeOH). λ_{max} 258 (ϵ 35500) (MeOH) (Derep).

▶JR1673000

N^{Thr}-*(7ξ-Hydroxy-2*E*,4*E*-dodecadienoyl):* ***Glidobactin E***
[119259-74-4]
$C_{27}H_{44}N_4O_7$ 536.667
Isol. from *Polyangium brachysporum* K481-B101. Antitumour agent. Powder. Sol. MeOH, butanol, DMSO; fairly sol. $CHCl_3$, MeCN, EtOAc; poorly sol. H_2O, hexane. Mp 195° dec. λ_{max} 258 (ϵ 35500) (MeOH).

N^{Thr}-*(10ξ-Hydroxy-2*E*,4*E*-dodecadienoyl):* ***Glidobactin D***
[119259-73-3]
$C_{27}H_{44}N_4O_7$ 536.667
Isol. from *Polyangium brachysporum* K481-B101. Antitumour agent. Powder. Sol. MeOH, DMSO, butanol; fairly sol. $CHCl_3$, MeCN, EtOAc; poorly sol. H_2O, hexane. Mp 204° dec. λ_{max} 258 (ϵ 35500) (MeOH).

N^{Thr}-*(11-Methyl-2*E*,4*E*-dodecadienoyl):* ***Cepafungin I***
[130743-08-7]
$C_{28}H_{46}N_4O_6$ 534.695
Prod. by a *Pseudomonas* sp. Exhibits activities against fungi, yeast and tumours. Powder + 1H_2O. Sol. MeOH-H_2O, DMSO, $CHCl_3$-MeOH; fairly sol. MeOH; poorly sol. EtOAc, hexane. Mp 235-240° dec. $[\alpha]_D^{24}$ -124 (c, 0.694 in MeOH). λ_{max} 260 (ϵ 32700) (EtOH).

N^{Thr}-*(2*E*,4*E*-Tetradecadienoyl):* ***Glidobactin C***
[108351-52-6]
$C_{29}H_{48}N_4O_6$ 548.721
Isol. from *Polyangium brachysporum* K481-B101. Antitumour agent also active against fungi and yeasts. Needles (MeOH). Sol. MeOH, DMSO, EtOH; fairly sol. EtOAc, MeCN, $CHCl_3$; poorly sol. H_2O, hexane. Mp 273-275°. $[\alpha]_D^{24}$ -104 (c, 0.5 in MeOH). λ_{max} 258 (ϵ 35500) (MeOH).

▶LD_{50} (mus, ipr) 25 mg/kg. XB7450000

N^{Thr}-*(2*E*,4*E*,8*Z*-Tetradecatrienoyl):* ***Glidobactin B***
[108351-51-5]
$C_{29}H_{46}N_4O_6$ 546.706
Prod. by *Polyangium brachysporum* K481-B101. Antitumour agent also active against fungi and yeasts. Powder + 1½ H_2O. Sol. MeOH, DMSO, EtOH; fairly sol. EtOAc, MeCN, $CHCl_3$; poorly sol. H_2O, hexane. Mp 232-234°. $[\alpha]_D^{24}$ -92 (c, 0.5 in MeOH). λ_{max} 258 (ϵ 35500) (MeOH) (Derep).

▶LD_{50} (mus, ipr) 8.1 mg/kg.

N^{Thr}-*(2*E*,4*E*,8*Z*,11*Z*-Tetradecatetraenoyl):* ***Glidobactin PF1***
[138087-92-0]
$C_{29}H_{44}N_4O_6$ 544.69
Prod. by *Polyangium brachysporum* K481-B101. Cytotoxic. Amorph. powder + 1H_2O. Sol. MeOH, butanol, DMSO; poorly sol. hexane, H_2O. Mp 194-196° (dec.). $[\alpha]_D^{24}$ -114 (c, 0.25 in MeOH). λ_{max} 261 (ϵ 34000) (MeOH). λ_{max} 261 (ϵ 34000) (MeOH) (Berdy).

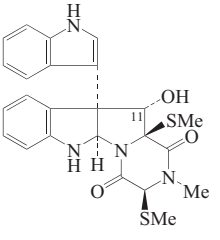
N^{Thr}-*Acyl (?):* ***Glidobactin H***
[119314-46-4]
Prod. by *Pseudomonas* sp. Mp 191° dec. Congener of undetermined struct., isol. only in v. low yield.

13-Hydroxy, N^{Thr}-*(2*E*,4*E*-dodecadienoyl):* ***Glidobactin G***
[119259-71-1]
$C_{27}H_{44}N_4O_7$ 536.667
Isol. from *Polyangium brachysporum* K481-B101. Antitumour agent. Powder. Mp 217° dec. λ_{max} 258 (ϵ 35500) (MeOH) (Derep).

Oka, M. *et al., J. Antibiot.*, 1988, **41**, 1331-1337; 1338-1350; 1351-1357; 1358-1365; 1812-1822; 1906-1909 (*Cepafungins, Glidobactins, isol, struct, synth*)
Numata, K. *et al., J. Antibiot.*, 1988, **41**, 1351-1357 (*Glidobactamine*)
U.S. Pat., 1988, 4777160 (*Glidobactins*)
Shoji, J. *et al., J. Antibiot.*, 1990, **43**, 783-787; 788-795 (*Cepafungins*)
Titus, J.A. *et al., J. Ind. Microbiol. Biotechnol.*, 1990, **6**, 215-218 (*manuf*)
Eur. Pat., 1991, 437 244; *CA*, **116**, 19730y (*Glidobactin PF1*)
Schmidt, U. *et al., Chem. Comm.*, 1992, 1687-1689 (*synth*)

Gliocladine A† G-97

Bionectin C
[749216-45-3]



Relative Configuration

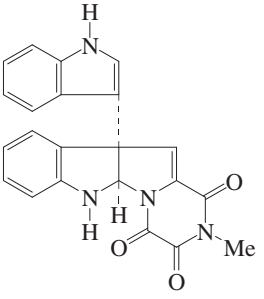
$C_{24}H_{24}N_4O_3S_2$ 480.611
Not to be confused with Gliocladine A in V-89. Identity with Bionectin C not confirmed. Prod. by *Gliocladium roseum* OUPS-N132 isol. from *Aplysia kurodai*. Also prod. by *Bionectra byssicola* F120. Cryst. (CH_2Cl_2/MeOH). Mp 174-176°. $[\alpha]_D^{16}$ +263 (c, 0.14 in $CHCl_3$). λ_{max} 242 (log ϵ 4.36); 283 (log ϵ 4.12); 291 (log ϵ 4.11) (EtOH).

11-Deoxy: ***Gliocladine B†***
[749216-46-4]
$C_{24}H_{24}N_4O_2S_2$ 464.611
Prod. by *Gliocladium roseum* OUPS-N132 from *Aplysia kurodai*. Cryst. (CH_2Cl_2/MeOH). Mp 145-148°. $[\alpha]_D^{16}$ +200 (c, 0.06 in $CHCl_3$). λ_{max} 283 (log ϵ 3.78); 292 (log ϵ 3.77) (EtOH).

Usami, Y. *et al., Heterocycles*, 2004, **63**, 1123-1129 (*Gliocladines A,B, isol, cd, pmr, cmr*)
Zheng, C.J. *et al., J. Nat. Prod.*, 2006, **69**, 1816-1819 (*Bionectin C, isol, pmr, cmr*)

Gliocladine C† G-98

[749216-47-5]

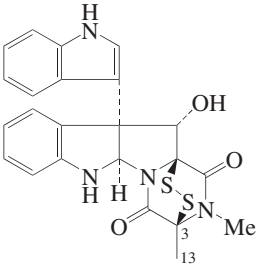


$C_{22}H_{16}N_4O_3$ 384.393
Not to be confused with Gliocladine C, G-99. Prod. by *Gliocladium roseum* OUPS-N132 isol. from *Aplysia kurodai*. Cytotoxic. Pale yellow powder (CH_2Cl_2/MeOH). Mp 180-183°. $[\alpha]_D^{16}$ +131.4 (c, 0.07 in $CHCl_3$). λ_{max} 242 (log ϵ 5.11); 283 (log ϵ 4.88); 292 (log ϵ 4.89) (EtOH).

Usami, Y. *et al., Heterocycles*, 2004, **63**, 1123-1129 (*isol, cd, pmr, cmr*)
Overman, L.E. *et al., Org. Lett.*, 2007, **9**, 339-341 (*synth*)

Gliocladine C† G-99

[871335-07-8]



$C_{23}H_{20}N_4O_3S_2$ 464.568
Not to be confused with Gliocladine C, G-98. Prod. by *Gliocladium roseum* 1A. Amorph. powder. $[\alpha]_D^{19}$ +512.6 (c, 0.33 in Py). λ_{max} 204 (log ϵ 0.94); 219 (log ϵ 0.93); 283 (log ϵ 0.16); 290 (log ϵ 0.15) (Py).

13-Hydroxy: ***Antibiotic T 988C****. T 988C*
$C_{23}H_{20}N_4O_4S_2$ 480.567
Prod. by *Tilachlidium* sp. (CANU-T988). Cytotoxic. Amorph. solid. $[\alpha]_D^{20}$ +277 (c, 0.0006 in MeOH). λ_{max} 210 (log ϵ 4.21); 234 (log ϵ 4.29); 282 (log ϵ 4.12); 354 (log ϵ 3.63) (MeOH).

Deoxy: ***Glioclatine***
[929616-13-7]
$C_{23}H_{20}N_4O_2S_2$ 448.569
Prod. by *Gliocladium roseum* YMF1.00133.

Trisulfide analogue: ***Gliocladine D***
[871335-08-9]
$C_{23}H_{20}N_4O_3S_3$ 496.634
Prod. by *Gliocladium roseum* 1A. Amorph. powder. $[\alpha]_D^{18}$ +604.1 (c, 0.47 in Py). λ_{max} 204 (log ϵ 0.54); 219 (log ϵ 0.64); 290 (log ϵ 0.11) (Py).

Trisulfide analogue, 13-hydroxy: ***Antibiotic T 988A****. T 988A*
$C_{23}H_{20}N_4O_4S_3$ 512.633
Prod. by *Tilachlidium* sp. (CANU-T988). Cytotoxic. Amorph. solid. $[\alpha]_D^{20}$ +366 (c, 0.002 in MeOH). λ_{max} 210 (log ϵ 4.07); 230 (log ϵ 4.16); 258 (log ϵ 4.19); 292 (log ϵ 4.16) (MeOH).

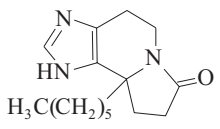
Tetrasulfide analogue: ***Gliocladine E***
[870480-90-3]
$C_{23}H_{20}N_4O_3S_4$ 528.7
Prod. by *Gliocladium roseum* 1A. Amorph. powder. $[\alpha]_D^{19}$ +562.6 (c, 0.43 in Py). λ_{max} 206 (log ϵ 0.64); 219 (log ϵ 0.74); 290 (log ϵ 0.17) (Py).

3-Demethyl: ***Bionectin A***
$C_{22}H_{18}N_4O_3S_2$ 450.541
Prod. by *Bionectra byssicola* F120. Antibacterial agent. Active against MRSA. Powder. $[\alpha]_D$ +584 (c, 0.2 in MeOH). λ_{max} 220 (log ϵ 4.54); 245 (sh) (log ϵ 4.06); 281 (log ϵ 3.81); 290 (log ϵ 3.79) (MeOH).

3-Demethyl, 3-(1-hydroxyethyl): ***Bionectin B***
$C_{24}H_{22}N_4O_4S_2$ 494.594
Prod. by *Bionectra byssicola* F120. Antibacterial agent. Active against MRSA. Powder. $[\alpha]_D$ +493 (c, 0.2 in MeOH). λ_{max} 219 (log ϵ 4.59); 246 (sh) (log ϵ 3.99); 282 (log ϵ 3.81); 291 (log ϵ 3.79) (MeOH).

Feng, Y. *et al., J. Nat. Prod.*, 2004, **67**, 2090-2092 (*T 988A, T 988C*)
Dong, J.-Y. *et al., J. Nat. Prod.*, 2005, **68**, 1510-1513 (*Gliocladines C,D,E*)
Dong, J.-Y. *et al., Chin. Chem. Lett.*, 2006, **17**, 922-924 (*Glioclatine*)
Zheng, C.-J. *et al., J. Nat. Prod.*, 2006, **69**, 1816-1819 (*Bionectins A,B*)

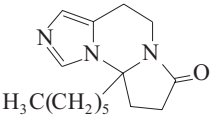
Glochidicine G-100



$C_{15}H_{23}N_3O$ 261.366

(±)-*form* [1386-87-4]
Alkaloid from the leaves of a *Glochidion* sp. (probably *Glochidion philippicum*) (Euphorbiaceae). Cryst. + ½ H_2O (Me_2CO). Mp 103-105°.
Johns, S.R. *et al., Aust. J. Chem.*, 1967, **20**, 555 (*isol, ir, ms, pmr, struct*)
Lee, Y.S. *et al., Heterocycles*, 1994, **37**, 303 (*synth, cmr*)

Glochidine G-101

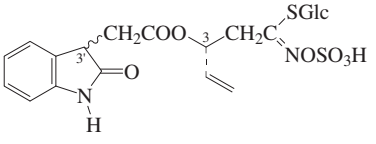


$C_{15}H_{23}N_3O$ 261.366

(±)-*form* [1386-83-0]
Alkaloid from the leaves of a *Glochidion* sp. (probably *Glochidion philippicum*)(Euphorbiaceae). Mp 65-67°.

Picrate:
Yellow prisms (EtOH). Mp 143-144°.
Johns, S.R. *et al., Aust. J. Chem.*, 1967, **20**, 555 (*isol, ir, ms, pmr, struct*)
Lee, Y.S. *et al., Heterocycles*, 1994, **37**, 303 (*synth, cmr*)

Glucoisatisin G-102



$C_{21}H_{26}N_2O_{12}S_2$ 562.575
Isol. from woad (*Isatis tinctoria*). Isol. as a mixture with C-3 epimer. λ_{max} 206 (log ϵ 4.29); 228 (log ϵ 3.9); 273 (log ϵ 3.23) (MeOH).

3-Epimer: ***Epiglucoisatisin***
$C_{21}H_{26}N_2O_{12}S_2$ 562.575
Isol. from *Isatis tinctoria*. Isol. as a mixture with C-3 epimer.

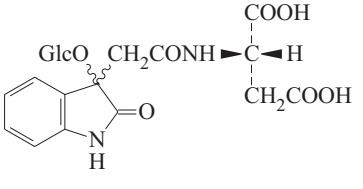
3′ξ-Hydroxy: ***3-Hydroxyglucoisatisin***
$C_{21}H_{26}N_2O_{13}S_2$ 578.574
Isol. from *Isatis tinctoria*. Isol. as a mixture with C-3 epimer. λ_{max} 210 (log ϵ 3.85); 235 (log ϵ 3.38); 247 (log ϵ 3.17); 289 (log ϵ 2.7) (MeOH).

3-Epimer, 3′ξ-hydroxy: ***3′-Hydroxyepiglucoisatisin***
$C_{21}H_{26}N_2O_{13}S_2$ 578.574
Isol. from *Isatis tinctoria*. Isol. as a mixture with C-3 epimer.

Frechard, A. *et al., Tet. Lett.*, 2001, **42**, 9015-9017

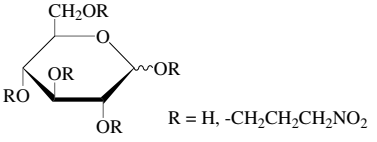
N-[[3-(β-D-Glucopyranosyloxy)-2,3-dihydro-2-oxo-1*H*-indol-3-yl]acetyl]aspartic acid, 9CI G-103

[99694-85-6]



$C_{20}H_{24}N_2O_{12}$ 484.416
Constit. of the seedlings of *Vicia faba*. Metab. of indolacetic acid. Powder.
Tsurumi, S. *et al., Plant Physiol.*, 1985, **79**, 667 (*isol*)

Glucose 3-nitropropanoates G-104



A group of toxic compds. which are esters of 1 mol. of glucose with 1, 2, 3 or 4 mols. of 3-Nitropropanoic Acid. The substitution pattern for the Endecaphyllins is unknown and they may be identical with the other compounds of known struct. listed.

6-*O*-(3-Nitropropanoyl)-α-D-glucopyranose
[59440-99-2]
$C_9H_{15}NO_9$ 281.219
Constit. of the aerial shoots of *Coronilla varia*.

6-*O*-(3-Nitropropanoyl)-β-D-glucopyranose
[59441-00-8]
$C_9H_{15}NO_9$ 281.219
Constit. of the aerial shoots of *Coronilla varia*.

1,6-Bis-*O*-(3-nitropropanoyl)-β-D-glucopyranose
Cibarian
[39797-90-5]
$C_{12}H_{18}N_2O_{12}$ 382.28
Isol. from *Lotus pedunculatus*, *Astragalus* spp. and *Coronilla varia*. Mp 123.5-124°.

2,3-Bis-*O*-(3-nitropropanoyl)-α-D-glucopyranose
6-O-*(2-Propenoyl): 6*-O-*Acryloyl-2,3-bis*-O-*(3-nitropropanoyl)-α-D-glucopyranose*
[913739-14-7]
$C_{15}H_{20}N_2O_{13}$ 436.329
Constit. of the roots of *Indigofera carlesii*.

2,6-Bis-*O*-(3-nitropropanoyl)-α-D-glucopyranose
Coronarian
[63505-68-0]
$C_{12}H_{18}N_2O_{12}$ 382.28
Isol. from *Lotus pedunculatus*, *Corynocarpus laevigatus*, *Coronilla* and *Indigofera* spp. Cryst. (Me_2CO/CCl_4). Mp 151-153°.

3,6-Bis-*O*-(3-nitropropanyl)-α-D-glucopyranose
Kirilowin G
Constit. of the roots of *Indigofera kirilowii*.
2-O-*(2-Propenoyl):* ***Kirilowin B****. 2*-O-*Acryloyl-3,6-bis*-O-*(3-nitropropanoyl)-α-D-glucopyranose*
[874363-53-8]

$C_{15}H_{20}N_2O_{13}$ 436.329
Constit. of the roots of *Indigofera carlesii* and *Indigofera kirilowii*. Needles (Me_2CO). Mp 221-222°. $[\alpha]_D$ +60.4 (c, 0.53 in Me_2CO).

Bis-*O*-(3-nitropropanoyl)-D-glucopyranose (5)
Endecaphyllin C₁
[90114-46-8]
$C_{12}H_{18}N_2O_{12}$ 382.28
Alkaloid from *Indigofera endecaphylla*. Mp 145-146.5°.

Bis-*O*-(3-nitropropanoyl)-D-glucopyranose (6)
Endecaphyllin D
[90114-46-8]
$C_{12}H_{18}N_2O_{12}$ 382.28
Alkaloid from *Indigofera endecaphylla*. Mp 145-146°.

Bis-*O*-(3-nitropropanoyl)-D-glucopyranose (7)
Endecaphyllin E
[90114-46-8]
$C_{12}H_{18}N_2O_{12}$ 382.28
Alkaloid from *Indigofera endecaphylla*. Mp 132-134°.

1,2,6-Tris-*O*-(3-nitropropanoyl)-α-D-glucopyranose
Coronillin
[63368-43-4]
$C_{15}H_{21}N_3O_{15}$ 483.342
Isol. from aerial parts of *Coronilla varia*. Cryst. (Me_2CO/CCl_4). Mp 112.5-114°.

1,2,6-Tris-*O*-(3-nitropropanoyl)-β-D-glucopyranose
Karakin. *Endecaphyllin A*
[1400-11-9]
$C_{15}H_{21}N_3O_{15}$ 483.342
Alkaloid from *Corynocarpus laevigata*, *Astragalus* spp., *Lotus pedunculatus* and others. Mp 124-125° (122°). $[\alpha]_D^{20}$ +4.5. Struct. revised in 1975. Identity of Karakin and Endecaphyllin A not certain. Gnanasunderam *et. al.* give the 1,4,6-triacyl struct. which is apparently in error (archaic struct. superseded by Harlow's reassignment).
► Toxic.

1,3,6-Tris-*O*-(3-nitropropanoyl)-β-D-glucopyranose [71454-29-0]
$C_{15}H_{21}N_3O_{15}$ 483.342
Alkaloid from *Astragalus canadensis* and *Corynocarpus laevigatus*.

1,4,6-Tris-*O*-(3-nitropropanoyl)-β-D-glucopyranose
Corynocarpin
[1391-18-0]
$C_{15}H_{21}N_3O_{15}$ 483.342
Alkaloid from *Astragalus canadensis* and *Corynocarpus laevigatus*. Cryst. (EtOAc/CCl_4). Mp 114.5-115°.

2,3,6-Tris-*O*-(3-nitropropanoyl)-α-D-glucopyranose
Corollin
[63461-31-4]
$C_{15}H_{21}N_3O_{15}$ 483.342
Constit. of crown vetch *Coronilla varia*. Mp 158.5-160°.

3,4,6-Tris-*O*-(3-nitropropanoyl)-α-D-glucopyranose [144549-44-0]
$C_{15}H_{21}N_3O_{15}$ 483.342
Alkaloid from *Corynocarpus laevigatus* and *Indigofera linnaei*.

2-O-(2-Propenoyl): ***Kirilowin A***. *2-O-Acryloyl-3,4,6-tris-O-(3-nitropropanoyl)-α-D-glucopyranose*
[874363-52-7]
$C_{18}H_{23}N_3O_{16}$ 537.39
Constit. of the roots of *Indigofera kirilowii*. Needles (Me_2CO). Mp 162-163°. $[\alpha]_D^{20}$ +71.2 (c, 0.17 in Me_2CO).

Tris-*O*-(3-nitropropanoyl)-D-glucose (7)
Endecaphyllin A₁
[97159-95-0]
$C_{15}H_{21}N_3O_{15}$ 483.342
Alkaloid from *Indigofera endecaphylla*. Mp 81-91°.

Tris-*O*-(3-nitropropanoyl)-D-glucose (8)
Endecaphyllin A₂
[97159-95-0]
$C_{15}H_{21}N_3O_{15}$ 483.342
Alkaloid from *Indigofera endecaphylla*. Mp 156-158.5°.

Tris-*O*-(3-nitropropanoyl)-D-glucose (9)
Endecaphyllin B
[97159-95-0]
$C_{15}H_{21}N_3O_{15}$ 483.342
Alkaloid from *Indigofera endecaphylla*. Mp 125-126.5°.

Tris-*O*-(3-nitropropanoyl)-D-glucose (10)
Endecaphyllin B₁
[97159-95-0]
$C_{15}H_{21}N_3O_{15}$ 483.342
Alkaloid from *Indigofera endecaphylla*. Mp 129-130°.

Tris-*O*-(3-nitropropanoyl)-D-glucose (11)
Endecaphyllin C
[97159-95-0]
$C_{15}H_{21}N_3O_{15}$ 483.342
Alkaloid from *Indigofera endecaphylla*. Mp 155-156°.

1,2,3,6-Tetrakis-*O*-(3-nitropropanoyl)-β-D-glucopyranose [155020-57-8]
$C_{18}H_{24}N_4O_{18}$ 584.404
Constit. of *Corynocarpus laevigatus*.

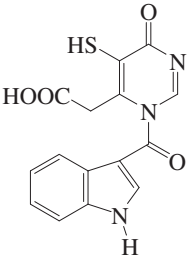
1,2,4,6-Tetrakis-*O*-(3-nitropropanoyl)-β-D-glucopyranose
Hiptagin. *Endecaphyllin X*
[19896-10-7]
$C_{18}H_{24}N_4O_{18}$ 584.404
Isol. from *Hiptage madablota*, *Lotus pedunculatus*, *Astragalus flexuosus* and *Indigofera endecaphylla*. Needles (EtOH aq.). Mp 110° (104-104.5°). $[\alpha]_D$ +3.5 (Me_2CO).

1,3,4,6-Tetrakis-*O*-(3-nitropropanoyl)-β-D-glucopyranose [155020-58-9]
$C_{18}H_{24}N_4O_{18}$ 584.404
Constit. of *Corynocarpus laevigatus*.

2,3,4,6-Tetrakis-*O*-(3-nitropropanoyl)-α-D-glucopyranose [122475-42-7]
$C_{18}H_{24}N_4O_{18}$ 584.404
Constit. of *Indigofera suffruticosa* and *Indigofera linnaei*. Cryst. (MeOH). Mp 139-141°.

Skey, W. *et al., Ber.*, 1873, **6**, 627 (*isol, Karakin*)
Finnegan, R.A. *et al., J. Pharm. Sci.*, 1965, **54**, 1136-1144; 1968, **57**, 353-354 (*Endecaphyllins, Hiptagin*)
Sternitz, F.R. *et al., Phytochemistry*, 1972, **11**, 3525-3527 (*Coronarian*)
Harlow, M.C. *et al., Phytochemistry*, 1975, **14**, 1421-1423 (*Hiptagin, Cibarian, Karakin*)
Williams, M.C. *et al., Phytochemistry*, 1975, **14**, 2306-2308 (*Hiptagin, Cibarian, Karakin*)
Moyer, B.G. *et al., Phytochemistry*, 1977, **16**, 375-377; 1979, **18**, 111-113 (*Coronarian, Corollin, Corynocarpin, Cibarian, Coronillin*)
Pfeffer, P.E. *et al., Carbohydr. Res.*, 1979, **73**, 1-8 (*cmr*)
Gnanasunderam, C. *et al., Phytochemistry*, 1986, **25**, 409-410 (*Hiptagin, Coronarian, Cibarian, Karakin*)
Garcez, W.S. *et al., Phytochemistry*, 1989, **28**, 1251-1252 (*2,3,4,6-isomer*)
Majak, W. *et al., Phytochemistry*, 1994, **35**, 901-903 (*isol*)
Su, Y.-F. *et al., J. Nat. Prod.*, 2005, **68**, 1785-1786 (*Kirilowin A,B*)
Zhang, X.-X. *et al., Fitoterapia*, 2006, **77**, 15-18 (*Acryloylbisnitropropanoylglucoses*)
Su, Y.-F. *et al., Fitoterapia*, 2008, **79**, 451-455 (*Kirilowin C-H*)

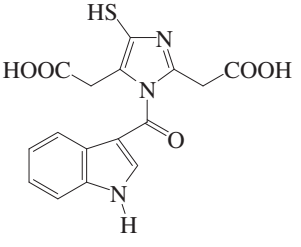
Glusun I G-105



$C_{15}H_{11}N_3O_4S$ 329.336
Prod. by the marine-derived *Halomonas* sp. RK377. Yellow solid. Mp 150° dec. λ_{max} 271 (log ϵ 3.31); 278 (log ϵ 3.32); 356 (log ϵ 3.35) (MeOH).

Liang, L. *et al., Dissertation*, Univ. of Göttingen, 2003, (*isol, uv, pmr, cmr, ms*)

Glusun II G-106

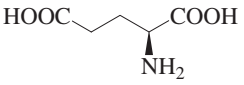


$C_{16}H_{13}N_3O_5S$ 359.362
Prod. by the marine-derived *Halomonas* sp. RK377. Orange solid. λ_{max} 272 (log ϵ 3.72); 365 (log ϵ 3.56) (MeOH).

Liang, L. *et al., Dissertation*, Univ. of Göttingen, 2003, (*isol, uv, pmr, cmr, ms*)

Glutamic acid G-107

2-Aminopentanedioic acid, 9CI. 2-Aminoglutaric acid. Glutaminic acid. Glu. E620. FEMA 3285
[6899-05-4]



(*S*)-*form*

$C_5H_9NO_4$ 147.13

(*R*)-*form*
D-*form*
[6893-26-1]
Component of bacterial cell proteins and peptidolipids. Leaflets (H_2O). Mp 213° dec. (rapid heating). $[\alpha]_D^{26}$ -12.9 (H_2O). $[\alpha]_D$ +31 (aq. HCl). Tasteless.

Hydrochloride: [617-61-8]
Prisms (HCl aq.). Mp 209° dec. $[\alpha]_D^{20}$ -24.5 (H_2O).

N-*(4-Aminobutyl):* N-*(4-Aminobutyl)-glutamic acid*. ***Rideopine***
[279688-93-6]
$C_9H_{18}N_2O_4$ 218.252
Prod. by crown gall tumours.

N-*Me:* N-*Methyl-D-glutamic acid*
[77481-28-8]
$C_6H_{11}NO_4$ 161.157
Isol. from the mollusc *Scapharca broughtonii*.

(*S*)-*form*
L-*form*
[56-86-0]
Since 1965 the main industrial source has been bacterial fermentation of carbohydrate sources such as molasses and corn starch hydrolysate in the presence of a nitrogen source such as ammonium salts or urea. Annual production approx. 350000t worldwide in 1988. Obt. from acid hydrol. of proteins. Seasoning additive in food manuf. (as Na, K and NH_4 salts). Intermed. in 2,5-Diaminopentanoic acid biosynth. Excitatory CNS transmitter. Dietary supplement, nutrient. Rhombic cryst. (EtOH aq.). Spar. sol. EtOH, H_2O (0.84 g/100g at 25°). Mp 224-225° (211-213°, 247-249°) dec. $[\alpha]_D^{25}$ +17 (c, 2 in H_2O). $[\alpha]_D^{25}$ +46.8 (c, 2 in 5*M* HCl). pK_{a1} 2.2; pK_{a2} 4.2; pK_{a3} 9.6 (25°,NH_2). Isoelectric point 3.24. Appetising taste.

▶ Human systemic effects by ingestion and intravenous routes. LZ9700000

Hydrochloride: [138-15-8] Dietary supplement, nutrient, flavouring agent and enhancer. Used in treatment of achlorhydria or hypochlorhydria. Mp 202° dec Mp 213° (rapid heating).

N-*(9Z,12Z-Octadecadienoyl):* ***N-(9,12-Octadecadienoyl)glutamic acid***. N-*Linoleoyl-L-glutamic acid*
[2601-92-5]
[103188-97-2]
$C_{23}H_{39}NO_5$ 409.565
Constit. of the oral secretions of the caterpillar *Spodoptera littoralis*. Mp 76-79°.

N-*(9Z,12Z,15Z-Octadecatrienoyl):* ***N-(9,12,15-Octadecatrienoyl)glutamic acid***. N-*Linolenoylglutamic acid*
[247150-66-9]
$C_{23}H_{37}NO_5$ 407.549
Constit. of the oral secretions of the caterpillar *Epirrita autumnata*.

N-*(4-Aminobutanoyl):* ***N-(4-Aminobutanoyl)glutamic acid***
[122910-12-7]
$C_9H_{16}N_2O_5$ 232.236
Isol. from the toxic mushroom *Clitocybe acromelalga*. Sol. H_2O. $[\alpha]_D^{26}$ +20.8 (c, 0.16 in H_2O) (synthetic).

▶ Convulsive poison.

N-*(4-Hydroxybenzoyl):* ***N-(4-Hydroxybenzoyl)glutamic acid***
[119843-02-6]
$C_{12}H_{13}NO_6$ 267.238
Constit. of *Anthoceros agrestis*.

N-*(3,4-Dihydroxybenzoyl):* ***N-(3,4-Dihydroxybenzoyl)glutamic acid***
[159623-11-7]
$C_{12}H_{13}NO_7$ 283.237
Constit. of *Anthoceros agrestis*.

N-*(4-Hydroxy-Z-cinnamoyl):* ***N-cis-(p-Coumaroyl)glutamic acid***
[159623-15-1]
$C_{14}H_{15}NO_6$ 293.276
Constit. of *Anthoceros agrestis*.

N-*(3-Hydroxy-4-methoxycinnamoyl)(E-):* ***N-trans-Isoferuloylglutamic acid***
[159623-13-9]
$C_{15}H_{17}NO_7$ 323.302
Constit. of *Anthoceros agrestis*.

N-*(3-Hydroxy-4-methoxycinnamoyl)(Z-):* ***N-cis-Isoferuloylglutamic acid***
[159623-14-0]
$C_{15}H_{17}NO_7$ 323.302
Constit. of *Anthoceros agrestis*.

N-*Me:* N-*Methyl-L-glutamic acid*
[6753-62-4]
$C_6H_{11}NO_4$ 161.157
Isol. from the mollusc *Scapharca broughtonii*. Hygroscopic solid (as hydrochloride). Mp 139-142° (hydrochloride). $[\alpha]_D^{25}$ +2.7 (c, 7.0 in H_2O).

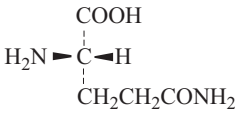
N-*(2-Pyridinylethyl):* [146500-72-3]
$C_{12}H_{16}N_2O_4$ 252.269
Isol. from the toxic mushroom *Clitocybe acromelalga*. Neurotoxic, shows depolarising activity. Mycotoxin. Sol. H_2O, MeOH; poorly sol. EtOAc, hexane. $[\alpha]_D^{25}$ +129 (c, 0.09 in H_2O). λ_{max} 260 (ε 2140) (H_2O) (Berdy).

[63663-21-8 , 7558-63-6 , 19285-83-7 , 24938-00-9 , 25683-11-8 , 997-42-2 , 11070-68-1 , 25513-46-6 , 21752-29-4 , 5996-22-5]

Jungermann, E. *et al., J.A.C.S.*, 1956, **78**, 172-174 (*N-dodecanoyl*)
Takahira, M. *et al., J. Am. Oil Chem. Soc.*, 1972, **49**, 157-161 (*N-dodecanoyl*)
Hilbig, S. *et al., Angew. Chem., Int. Ed.*, 1985, **24**, 1063 (*Xanthodermin*)
Yamano, K. *et al., Tetrahedron*, 1993, **49**, 2427 (*N-pyridinylethyl*)
Trennheuser, F. *et al., Phytochemistry*, 1994, **37**, 899-903 (*Anthoceros amides*)
Yamano, K. *et al., Z. Naturforsch., C*, 1994, **49**, 157 (*N-4-Aminobutanoylglutamic acid*)
Burger, K. *et al., Eur. J. Org. Chem.*, 2000, 199-204 (*N-Me*)
Tarui, A. *et al., Comp. Biochem. Physiol., B: Comp. Biochem.*, 2003, **134**, 79-84 (*N-Me Scapharca constits*)

Glutamine, 9CI, INN, USAN G-108

2,5-Diamino-5-oxopentanoic acid. Glutamic acid 5-amide. γ-Glutamine. Gln. Glumin. NSC 97925
[6899-04-3]



(*S*)−*form*

$C_5H_{10}N_2O_3$ 146.146
Log P -3.46 (calc.)

(*R*)-*form*
D-*form*
[5959-95-5]
Mp 186-188°. $[\alpha]_D^{20}$ -7.9 (c, 4 in H_2O).

(*S*)-*form*
L-*form*. ***Levoglutamide***. *Energlut. Glutaven. Iperphos. Memoril. Nutrestore. FEMA 3684. Many other names*
[56-85-9]
Widely distributed in plants, e.g. beetroot. Flavouring ingredient. Dietary supplement. Needles (EtOH aq.). Spar. sol. H_2O (3.6 g/100 g at 25°), EtOH. Mp 184-185° dec. $[\alpha]_D^{19}$ +9.2 (H_2O). $[\alpha]_D$ +46.5 (5*M* HCl). pK_{a1} 2.17; pK_{a2} 9.01 (25°, 0.1*M* KNO_3). Isoelectric point 5.65. Sweet taste.

▶ LD_{50} (rat, orl) 7500 mg/kg. Exp. reprod. effects (very large dose). MA2275100

Me ester: [32668-14-7]
$C_6H_{12}N_2O_3$ 160.172
Cryst. (MeOH/Et_2O) (as hydrochloride). Mp 142° (hydrochloride).

p-*Nitrobenzyl ester, hydrobromide:*
[14349-18-9]
Cryst. Mp 175°.

N^2-*(2-Nitrobenzenesulfenyl):* N^2-*[(2-Nitrophenyl)thio]-L-glutamine, 9CI*
[7685-73-6]
$C_{11}H_{13}N_3O_5S$ 299.307
Cryst. Mp 165° (158-160°). $[\alpha]_D$ -74.3 (c, 2 in DMF).

N^2-*Tetradecanoyl:* ***N^2-Tetradecanoylglutamine***. N^2-*Myristoylglutamine*
[100652-49-1]
$C_{19}H_{36}N_2O_4$ 356.504
Constit. of the oral secretions of various caterpillars incl. *Operophtera* sp. and *Spodoptera exigua*.

N^2-*(9Z-Tetradecenoyl):* ***N^2-(9-Tetradecenoyl)glutamine***. N^2-*Myristoleoylglutamine*
[247150-77-2]
$C_{19}H_{34}N_2O_4$ 354.489
Constit. of the oral secretions of various caterpillars incl. *Heliothis virescens* and *Spodoptera* sp.

N^2-*Hexadecanoyl:* ***N^2-Hexadecanoylglutamine***. N^2-*Palmitoylglutamine*
[58725-34-1]
$C_{21}H_{40}N_2O_4$ 384.558
Constit. of the oral secretions of various caterpillars incl. *Epirrita autumnata* and *Spodoptera* spp.

N^2-*(9Z-Hexadecenoyl):* ***N^2-(9-Hexadecenoyl)glutamine***. N^2-*Palmitoleoylglu-*

tamine
[247150-75-0]
$C_{21}H_{38}N_2O_4$ 382.542
Constit. of the oral secretions of various caterpillars incl. *Chloroclysta truncata* and *Spodoptera* spp.

N^2-*(9Z-Octadecenoyl):* **N^2-*(9-Octadecenoyl)glutamine***. N^2-*Oleoylglutamine*
[247150-73-8]
$C_{23}H_{42}N_2O_4$ 410.596
Constit. of the oral secretions of various caterpillars incl. *Operophtera* sp. and *Spodoptera* spp.

N^2-*(9Z,12Z-Octadecadienoyl):* **N^2-*(9,12-Octadecadienoyl)glutamine***. N^2-*Linoleoylglutamine*
[247150-70-5]
$C_{23}H_{40}N_2O_4$ 408.58
Constit. of the oral secretions of various caterpillars incl. *Heliothis virescens* and *Spodoptera* spp.

N^2-*(9Z,12Z,15Z-Octadecatrienoyl):* **N^2-*(9,12,15-Octadecatrienoyl)glutamine***. N^2-*Linolenoylglutamine*
[157598-98-6]
$C_{23}H_{38}N_2O_4$ 406.564
Constit. of the oral secretions of various caterpillars incl. *Epirrita autumnata* and *Spodoptera* spp.

N^2-*(15,16-Epoxy-9Z,12Z-octadecadienoyl):* **N^2-*(15,16-Epoxy-9,12-octadecadienoyl)glutamine***. N^2-*(15,16-Epoxylinoleoyl)glutamine*
$C_{23}H_{38}N_2O_5$ 422.564
Constit. of the oral secretions of the caterpillars *Spodoptera exigua* and *Spodoptera frugiperda*.

N^2-*(17ξ-Hydroxy-9Z,12Z-octadecadienoyl):* **N^2-*(17-Hydroxy-9,12-octadecadienoyl)glutamine***. N^2-*(17-Hydroxylinoleoyl)glutamine*
[247150-68-1]
$C_{23}H_{40}N_2O_5$ 424.579
Constit. of the oral secretions of various caterpillars incl. *Heliothis virescens* and *Spodoptera* spp.

N^2-*(15,16-Dihydroxy-9Z,12Z-octadecadienoyl):* **N^2-*(15,16-Dihydroxy-9,12-octadecadienoyl)glutamine***. N^2-*(15,16-Dihydroxylinoleoyl)glutamine*
$C_{23}H_{40}N_2O_6$ 440.579
Constit. of the oral secretions of the caterpillars *Spodoptera exigua* and *Spodoptera frugiperda*.

N-*(17*S*-Hydroxy-9Z,12Z,15Z-octadecatrienoyl):* N^2-*(17-Hydroxylinolenoyl)-glutamine*. ***Volicitin***
[191548-06-8]
[191547-98-5]
$C_{23}H_{38}N_2O_5$ 422.564
Isol. from the oral secretions of the caterpillars, *Helicoverpa armigera*, *Mythimna seperata* and *Spodoptera exigua*. Elicitor of plant volatiles. $[\alpha]_D^{21}$ +6.6 (c, 0.8 in MeOH).

N^2-*Carbamoyl, amide:* ***2-[(Aminocarbonyl)amino]pentanediamide, 9CI***. N^{α}-*Carbamoylglutamine amide*
[134958-17-1]
$C_6H_{12}N_4O_3$ 188.186
Isol. from *Ectothiorhodospira merismortui*. $[\alpha]_D^{20}$ +10.5 (c, 0.6 in DMSO).

N^5-*Isopropyl:* **N^5-*Isopropylglutamine***
[4311-12-0]
$C_8H_{16}N_2O_3$ 188.226
Isol. from seeds of *Lunaria annua*. Cryst. (EtOH aq.). $[\alpha]_D^{22}$ +7.1 (c, 1.7 in H_2O).

N^5-*(2-Hydroxyethyl):* N-*(γ-Glutamyl)ethanolamine, 8CI*
[2650-74-0]
$C_7H_{14}N_2O_4$ 190.199
Constit. of *Agaricus bisporus* (button mushroom), seeds of *Lunaria annua* and defence secretions of the beetle *Chrysolina coerulans*. Cryst. (EtOH aq.). Mp 188.5-191°. $[\alpha]_D^{19}$ +5.8 (c, 1.8 in H_2O).

N^5-*(4-Hydroxyphenyl):* ***γ-Glutaminyl-4-hydroxybenzene***
[30382-24-2]
$C_{11}H_{14}N_2O_4$ 238.243
Isol. from the gill tissue of the edible mushrooms *Agaricus bisporus* (button mushroom) and *Agaricus hortensis*. Neoplasm inhibitor. Sol. H_2O; fairly sol. MeOH. Mp 231.5° (225-226°). $[\alpha]_D$ +30 (1*M* HCl). λ_{max} 246 (H_2O) (Berdy). λ_{max} 246 (HCl) (Berdy). λ_{max} 260 (NaOH) (Berdy).

▶ LD_{50} (mus, ipr) 5000 mg/kg. MA2276400

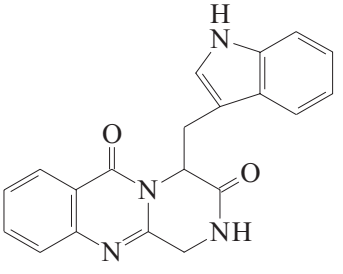
N^5-*(4-Methoxybenzyl):* **N^5-*(4-Methoxybenzyl)glutamine***
$C_{13}H_{18}N_2O_4$ 266.296
Constit. of the xylem sap of the roots of *Cucurbita maxima* x *Cucurbita moschata*. Amorph. solid. Mp 214-215° dec. $[\alpha]_D^{22}$ +23 (c, 0.1 in 1*M* HCl). λ_{max} 224 (log ϵ 4.1); 273 (log ϵ 3.2) (H_2O).

(±)-*form* [585-21-7]
Prisms (Me_2CO aq.). Mp 186° dec.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 782D (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 1278B (*nmr*)
Archibald, R.M. *et al., Chem. Rev.*, 1945, **37**, 161 (*rev, props*)
Lepp, A. *et al., Biochem. Prep.*, 1957, **5**, 79 (*synth*)
Jadot, J. *et al., Biochim. Biophys. Acta*, 1960, **43**, 322 (*deriv*)
Greenstein, J.P. *et al., Chemistry of the Amino Acids*, (Chapter 25), Wiley, N.Y., 1961, 1929 (*isol, synth*)
Kline, G.B. *et al., J.O.C.*, 1961, **26**, 1854 (*synth*)
Zervas, L. *et al., J.A.C.S.*, 1963, **85**, 3660-3666 (*2-nitrobenzenesulfenyl*)
Larsen, P.O. *et al., Acta Chem. Scand.*, 1965, **19**, 1071 (N^5-*Isopropylglutamine*)
Olesen Larsen, P. *et al., Acta Chem. Scand.*, 1967, **21**, 1592-1604 (N^5-*2-hydroxyethyl, isol, synth*)
Bak, B. *et al., J. Mol. Spectrosc.*, 1968, **26**, 78 (*pmr*)
Weaver, R.F. *et al., J. Biol. Chem.*, 1971, **246**, 2010 (*γ-Glutaminyl-4-hydroxybenzene*)
Koetzle, T.F. *et al., Acta Cryst. B*, 1973, **29**, 2571 (*cryst struct*)
Voelter, W. *et al., Monatsh. Chem.*, 1974, **105**, 1110 (*cmr*)
Synth. Prod. Util. Amino Acids, (Kaneko, T. *et al*, Ed.), Halsted Press, 1974, 109 (*synth*)
Lindberg, P. *et al., J.C.S. Perkin 1*, 1977, 684
London, R.E. *et al., J.A.C.S.*, 1978, **100**, 3723 (*cmr*)
Jaeger, P. *et al., N. Engl. J. Med.*, 1986, **315**, 1120 (*rev*)
Tachiki, T. *et al., Prog. Ind. Microbiol.*, 1986, **24**, 121 (*rev, synth*)
Yoshifuji, S. *et al., Chem. Pharm. Bull.*, 1987, **35**, 2994 (*synth*)
Negwer, M. *et al., Organic-Chemical Drugs and their Synonyms, 6th edn., Akademie-Verlag*, 1987, 328
Van Oycke, S. *et al., Bull. Soc. Chim. Belg.*, 1988, **97**, 297-311 (N^5-*2-hydroxyethyl, isol, synth*)
Lewis, R.J. *et al., Food Additives Handbook*, Van Nostrand Reinhold International, New York, 1989, GFO050
Galinski, E.A. *et al., Eur. J. Biochem.*, 1991, **198**, 593 (*N-Carbamoylglutamineamide*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 598
Suresh, S. *et al., Acta Cryst. C*, 1996, **52**, 1313 (*cryst struct,* DL*-form*)
Alborn, H.T. *et al., Science (Washington, D.C.)*, 1997, **276**, 945-949 (*Volicitin, isol*)
Pohnert, G. *et al., Chem. Comm.*, 1999, 1087-1088 (*Volicitin, synth*)
Inouye, Y. *et al., Phytochemistry*, 1999, **51**, 425-428 (N^5-*4-Methoxybenzylglutamine*)
Pohnert, G. *et al., Tetrahedron*, 1999, **55**, 11275-11280 (*caterpillar amides*)
Spiteller, D. *et al., Tet. Lett.*, 2001, **42**, 1483-1485 (*Volicitin, abs config*)
Itoh, S. *et al., Biosci., Biotechnol., Biochem.*, 2002, **66**, 1591-1596 (*Volicitin, synth*)
Mori, N. *et al., Biosci., Biotechnol., Biochem.*, 2003, **67**, 1168-1171 (*caterpillar amides*)
Spiteller, D. *et al., Tetrahedron*, 2003, **59**, 135-139 (*epoxyoctadecadienoyl, dihydroxyoctadecadienoyl derivs*)
Sawada, Y. *et al., Biosci., Biotechnol., Biochem.*, 2006, **70**, 2185-2190 (*Volicitin, isol, abs config*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, GFO050

Glyantrypine G-109

[142382-42-1]



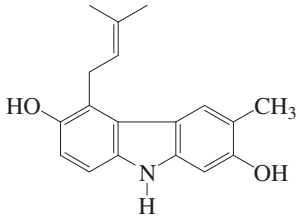
$C_{20}H_{16}N_4O_2$ 344.372
Incorrect MF given in the lit. Alkaloid from *Aspergillus clavatus*. Mycotoxin. Amorph. solid. λ_{max} 224 ; 270 (MeOH) (Berdy).

Penn, J. *et al., J.C.S. Perkin 1*, 1992, 1495-1496 (*isol, uv, pmr, cmr, ms, struct*)
Wang, H. *et al., J.O.C.*, 2000, **65**, 1022-1030 (*synth*)

Liu, J.-F. *et al., J.O.C.*, 2005, **70**, 6339-6345 (*synth*)

Glybomine C G-110

*3-Methyl-5-(3-methyl-2-butenyl)-9*H*-carbazole-2,6-diol. 2,6-Dihydroxy-3-methyl-5-prenyl-9*H*-carbazole*



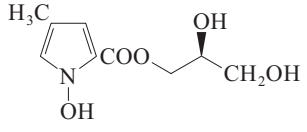
$C_{18}H_{19}NO_2$ 281.354
Alkaloid from the stems of *Glycosmis arborea*. Oil. λ_{max} 218 ; 237 ; 266 ; 309 ; 338 (MeOH).

*6-Me ether: 2-Hydroxy-6-methoxy-3-methyl-5-prenyl-9*H*-carbazole.* ***Glybomine B***
$C_{19}H_{21}NO_2$ 295.38
Alkaloid from the stems of *Glycosmis arborea*. Oil. λ_{max} 217 ; 239 ; 263 (sh) ; 307 ; 336 (MeOH).

Ito, C. *et al., J. Nat. Prod.*, 2004, **67**, 1488-1491 (*isol, pmr, cmr*)

Glycerinopyrin G-111

*2,3-Dihydroxypropyl 1-hydroxy-4-methyl-1*H*-pyrrole-2-carboxylate*
[129966-44-5]

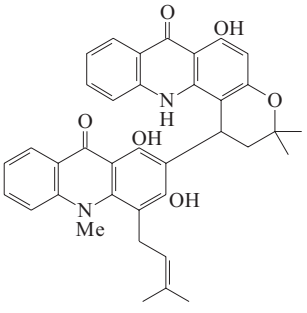


$C_9H_{13}NO_5$ 215.205
Metab. of *Streptomyces violaceus*. Cryst. powder. Sol. $CHCl_3$, DMSO, Me_2CO, THF, MeOH; fairly sol. H_2O; poorly sol. hexane. Mp 93-96°. $[\alpha]_D^{20}$ +7.11 (c, 1.25 in MeOH). λ_{max} 278 (ε 21200) (MeOH) (Berdy).

Schoenewolf, M. *et al., Angew. Chem., Int. Ed.*, 1991, **30**, 183 (*biosynth*)
Schoenewolf, M. *et al., Annalen*, 1991, 77 (*isol, pmr, cmr*)

Glycobismine A G-112

[91147-20-5]



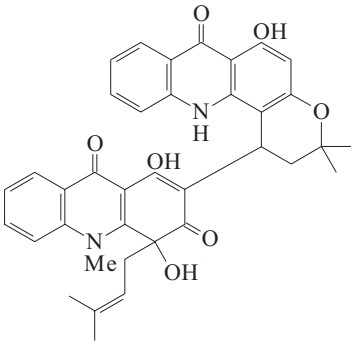
$C_{37}H_{34}N_2O_6$ 602.685

(±)-form
Alkaloid from the bark of *Glycosmis citrifolia* (Rutaceae). Shows *in vitro* antimalarial activity. Yellow needles. Mp 256-258°. The first naturally occurring C–C linked bisacridone alkaloid.

Furukawa, H. *et al., J.C.S. Perkin 1*, 1993, 471 (*uv, ir, pmr, cmr, ms, struct*)

Glycobismine B G-113

[148717-57-1]

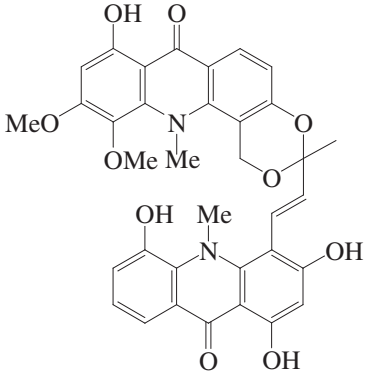


$C_{37}H_{34}N_2O_7$ 618.685
Alkaloid from root and stem bark of *Glycosmis citrifolia* (Rutaceae). Yellow oil. Racemic.

Diastereoisomer: ***Glycobismine C***
[148810-27-9]
$C_{37}H_{34}N_2O_7$ 618.685
Alkaloid from root and stem bark of *Glycosmis citrifolia* (Rutaceae). Yellow oil.

Furukawa, H. *et al., J.C.S. Perkin 1*, 1993, 471 (*isol, uv, ir, pmr, cmr, ms, struct*)

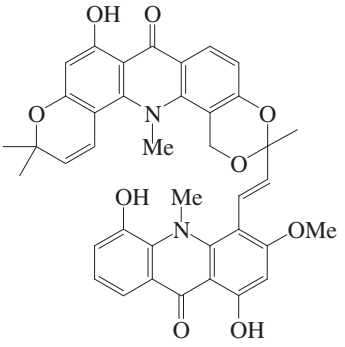
Glycobismine D G-114



$C_{35}H_{30}N_2O_{10}$ 638.629
Alkaloid from *Glycosmis citrifolia*. Yellow oil. Racemic. λ_{max} 202 (log ε 4.61); 225 (log ε 4.39); 265 (log ε 4.73); 294 (sh) (log ε 4.46); 335 (log ε 4.25); 405 (log ε 3.82) (MeOH).

Ito, C. *et al., Chem. Pharm. Bull.*, 2000, **48**, 65-70

Glycobismine E G-115

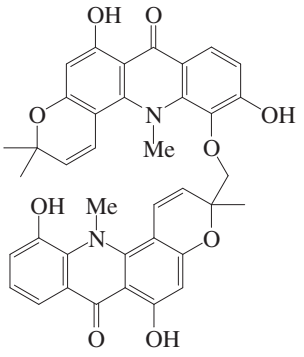


$C_{39}H_{34}N_2O_9$ 674.706
Alkaloid from *Glycosmis citrifolia*. Yellow oil. Racemic. λ_{max} 202 ; 211 ; 269 ; 292 (sh) ; 317 ; 340 ; 407 (MeOH).

O-*De-Me:* ***Glycobismine F***
$C_{38}H_{32}N_2O_9$ 660.679
Alkaloid from the roots of *Glycosmis citrifolia*. Yellow oil. Racemic. λ_{max} 270 ; 282 (sh) ; 316 (sh) ; 340 (sh) ; 406 (EtOH).

Ito, C. *et al., Chem. Pharm. Bull.*, 2000, **48**, 65-70 (*isol, pmr, cmr*)
Negi, N. *et al., Chem. Pharm. Bull.*, 2004, **52**, 362-364 (*Glycobismine F*)

Glycobismine G G-116

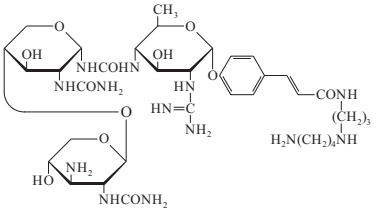


$C_{38}H_{32}N_2O_9$ 660.679
Alkaloid from the roots of *Glycosmis citrifolia*. Yellow oil. Racemic. λ_{max} 270 ; 284 (sh) ; 296 (sh) ; 344 (sh) ; 406 (MeOH).

Negi, N. *et al., Chem. Pharm. Bull.*, 2004, **52**, 362-364 (*isol, pmr, cmr, ms*)

Glycocinnaspermicidin A G-117

LL-BM 123β1. BM 123β1. Antibiotic BM 123β1. Antibiotic LL-BM 123β1
[62251-27-8]



$C_{36}H_{61}N_{13}O_{12}$ 867.958

Glycolipid antibiotic. Related to Cinodine I, C-459. Isol. from *Nocardia* spp. Active against gram-positive and -negative bacteria. Amorph. powder (as hydrochloride). Sol. H_2O; fairly sol. MeOH; poorly sol. Et_2O, hexane, butanol. $[\alpha]_D^{25}$ +67 (c, 1 in H_2O). Hydrochloride dec. at *ca*. 200°. λ_{max} 286 (E1%/1cm 200) (MeOH) (Berdy). λ_{max} 286 (E1%/1cm 260) (H_2O) (Berdy). λ_{max} 286 (HCl) (Berdy).

4′-O-Deglycosyl: ***Glycocinnaspermicidin D***

[99260-73-8]

$C_{30}H_{50}N_{10}O_9$ 694.787

Isol. from *Nocardia* sp. M9615-7F6. Possesses a broad antibacterial spectrum; also active against leukaemia L-1210 cells. Powder. Sol. H_2O; poorly sol. Me_2CO, hexane. Mp 300° dec. $[\alpha]_D^{18}$ +88 (c, 0.5 in H_2O). λ_{max} 218 (ϵ 13500); 287 (ϵ 21900) (H_2O) (Derep). λ_{max} 218 (ϵ 10750); 287 (ϵ 21900) (H_2O) (Berdy).

▶ LD_{50} (mus, ivn) 25 - 50 mg/kg.

UC6230000

Tresner, H. *et al., J. Antibiot.*, 1978, **31**, 394 (*isol*)

Martin, J.H. *et al., J. Antibiot.*, 1978, **31**, 398 (*isol*)

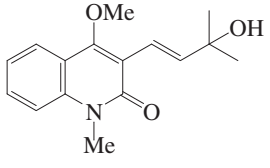
Ellestad, G.A. *et al., J.A.C.S.*, 1978, **100**, 2515 (*struct*)

Araki, K. *et al., Tet. Lett.*, 1982, **23**, 1705 (*synth*)

Dobashi, K. *et al., J. Antibiot.*, 1985, **38**, 1166 (*Glycocinnaspermicidin D*)

Nishiyama, T. *et al., Angew. Chem., Int. Ed.*, 2005, **44**, 4372-4375 (*Glycocinnaspermicidin D, synth*)

Glycocitlone A G-118



$C_{16}H_{19}NO_3$ 273.331

Alkaloid from *Glycosmis citrifolia*. Yellow oil. λ_{max} 230 (log ϵ 4.46); 286 (sh) (log ϵ 3.93); 296 (log ϵ 4.02); 309 (log ϵ 4) (MeOH).

3′-Deoxy, 3′,4′-didehydro: **N-*Methylschinifoline***

[149998-43-6]

$C_{16}H_{17}NO_2$ 255.316

Alkaloid from roots of *Zanthoxylum schinifolium* and *Zanthoxylum simulans* (Szechuan pepper) (Rutaceae). Oil.

3′-Deoxy, 3′,4′-didehydro, N*-de-Me: 4-Methoxy-3-(3-methyl-1,3-butadienyl)-2(1*H*)-quinolinone.* ***Schinifoline***†

[149998-56-1]

$C_{15}H_{15}NO_2$ 241.289

Alkaloid from roots of *Zanthoxylum schinifolium*, *Glycosmis cyanocarpa* and *Zanthoxylum simulans* (Szechuan pepper) (Rutaceae). Cryst. Mp 171-174° dec.

8-Hydroxy: ***Glycocitlone B***

$C_{16}H_{19}NO_4$ 289.33

Alkaloid from *Glycosmis citrifolia*. Amorph. yellow powder. λ_{max} 202 (log ϵ 4.41); 225 (log ϵ 4.25); 267 (log ϵ 4.21); 296 (log ϵ 4.23); 307 (log ϵ 4.25); 410 (log ϵ 3.3) (MeOH).

8-Methoxy: ***Glycocitlone C***

$C_{17}H_{21}NO_4$ 303.357

Alkaloid from *Glycosmis citrifolia*. Yellow oil. λ_{max} 230 (log ϵ 4.1); 258 (log ϵ 4.05); 307 (log ϵ 3.88); 321 (sh) (log ϵ 3.81); 350 (log ϵ 3.39) (MeOH).

Brader, G. *et al., Annalen*, 1993, 355 (*Schinifoline, N-Methylschinifoline*)

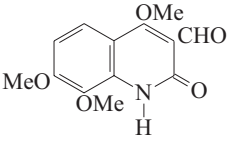
Wurz, G. *et al., Nat. Prod. Lett.*, 1993, **3**, 177 (*Schinifoline, isol*)

Ito, C. *et al., Chem. Pharm. Bull.*, 2000, **48**, 65-70 (*Glycocitlones*)

Glycocitridine G-119

1,2-Dihydro-4,7,8-trimethoxy-2-oxo-3-quinolinecarboxaldehyde, 9CI

[167504-57-6]

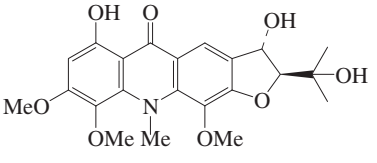


$C_{13}H_{13}NO_5$ 263.249

Alkaloid from leaves of *Glycosmis citrifolia* (Rutaceae). Needles. Mp 174-175°.

Wu, T.-S. *et al., Phytochemistry*, 1995, **39**, 1453 (*isol, uv, ir, pmr, ms, struct*)

Glycocitrine V G-120



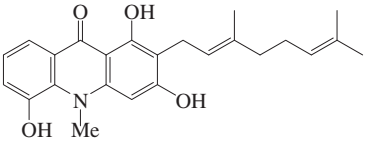
$C_{22}H_{25}NO_8$ 431.441

Alkaloid from *Glycosmis citrifolia*. Yellow oil. Racemic. λ_{max} 202 (log ϵ 4.22); 226 (sh) (log ϵ 4); 263 (log ϵ 4.27); 274 (log ϵ 4.28); 334 (log ϵ 3.84); 399 (log ϵ 3.4) (MeOH).

Ito, C. *et al., Chem. Pharm. Bull.*, 2000, **48**, 65-70

Glycocitrine III G-121

*2-(3,7-Dimethyl-2,6-octadienyl)-1,3,5-trihydroxy-10-methyl-9(10*H*)-acridinone. 2-Geranyl-1,3,5-trihydroxy-1-methylacridone*

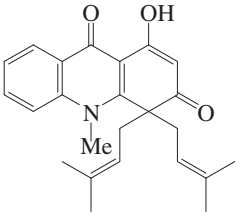


$C_{24}H_{27}NO_4$ 393.482

Alkaloid from the stems of *Glycosmis pentaphylla*. Yellow oil. λ_{max} 214 ; 228 ; 255 ; 267 ; 284 ; 308 (sh) ; 336 (sh) ; 401 (MeOH).

Ito, C. *et al., Chem. Pharm. Bull.*, 1999, **47**, 1579-1581

Glycocitrine VI G-122



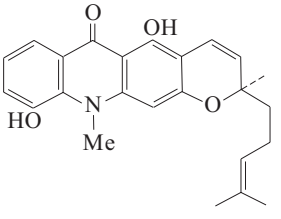
$C_{24}H_{27}NO_3$ 377.482

Alkaloid from *Glycosmis citrifolia*. Yellow oil. λ_{max} 203 ; 229 ; 286 ; 296 ; 340 (MeOH).

Ito, C. *et al., Chem. Pharm. Bull.*, 2000, **48**, 65-70

Glycofoline G-123

*2,11-Dihydro-5,10-dihydroxy-2,11-dimethyl-2-(4-methyl-3-pentenyl)-6*H*-pyrano[3,2-*b*]acridin-6-one*



$C_{24}H_{25}NO_4$ 391.466

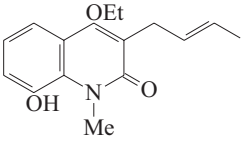
(R)-form [82513-80-2]

Alkaloid from the root and stem bark of *Glycosmis citrifolia* (Rutaceae). Orange needles (Et_2O). Mp 216-218°. $[\alpha]_D$ -15.1 (c, 1.0 in $CHCl_3$).

Wu, T.-S. *et al., Heterocycles*, 1982, **19**, 825; *J.C.S. Perkin 1*, 1983, 1681 (*isol, uv, ir, pmr, cmr, ms, cd, struct*)

Glycolone† G-124

*3-(2-Butenyl)-4-ethoxy-8-hydroxy-1-methyl-2(1*H*)-quinolinone*



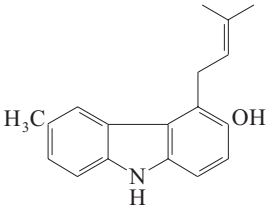
$C_{16}H_{19}NO_3$ 273.331

Note exceptional opportunities for confusion with Glycolone in T-583. Alkaloid from the root bark of *Glycosmis pentaphylla* (Rutaceae). Fine pale-yellow needles (CCl_4/cyclohexane). Mp 160-162°.

Sinha, S.K.P. *et al., Indian J. Chem., Sect. B*, 1988, **27**, 460 (*isol, uv, ir, pmr, struct*)

Glycomaurrol G-125

*6-Methyl-4-(3-methyl-2-butenyl)-9*H*-carbazol-3-ol, 9CI. 3-Hydroxy-6-methyl-4-prenylcarbazole*
[125287-18-5]

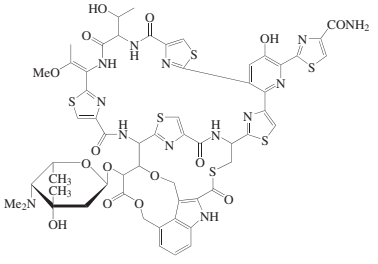


$C_{18}H_{19}NO$ 265.354
Alkaloid from the stem bark of *Glycosmis mauritiana* (Rutaceae). Pale-yellow needles (MeOH). Mp 149-150°.

Kumar, V. *et al., Aust. J. Chem.*, 1989, **42**, 1375 (*isol, uv, ir, pmr, cmr, ms, struct*)
Lebold, T.P. *et al., Org. Lett.*, 2007, **9**, 1883-1886 (*synth*)

Glycothiohexide α G-126

LL-14E605α. Antibiotic LL-14E605α
[158446-31-2]



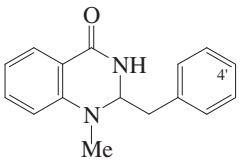
$C_{58}H_{57}N_{13}O_{15}S_6$ 1368.562
Cyclic depsipeptide antibiotic. Prod. by *Sebekia benihana* LL-14E605. Active against gram-positive bacteria. Sol. CH_2Cl_2-MeOH; fairly sol. MeOH; poorly sol. Me_2CO, H_2O, hexane. Related to Antibiotic S 54832A, A-1237 and Nosiheptide, N-319. λ_{max} 302 (ε 24900); 352 (ε 19200); 370 (ε 16000) (MeOH/HCl). λ_{max} 295 (ε 28800); 400 (ε 15300) (MeOH/NaOH). λ_{max} 302 (ε 27000); 370 (ε 11900); 400 (ε 8400) (MeOH).

Stereoisomer: ***Glycothiohexide β****. LL-E605β. Antibiotic LL-E605β*
$C_{58}H_{57}N_{13}O_{15}S_6$ 1368.562
Prod. by *Sebekia benihana* LL-14E605.

Steinberg, D.A. *et al., J. Antibiot.*, 1994, **47**, 887-893; 894-900; 901-908 (*isol, pmr, cmr, struct*)
U.S. Pat., 1995, 5 451 581; *CA*, **124**, 143742h (*Glycothiohexide β*)

Glycozolone A G-127

*2-Benzyl-2,3-dihydro-1-methyl-4(1*H*)-quinazolinone. Glycozoline A*



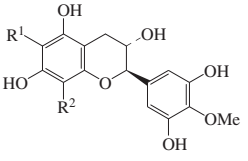
$C_{16}H_{16}N_2O$ 252.315

(±)-*form* [26750-21-0]
Alkaloid from leaves of *Glycosmis cochinchinensis*. Oil (nat.); cryst. ($CHCl_3$/EtOH)(synthetic). Mp 199-200° (synthetic). λ_{max} 205 (log ε 4.25); 226 (log ε 4.3); 262 (log ε 3.6); 355 (log ε 3.22) (MeOH).

*4′-Methoxy: 2,3-Dihydro-2-(4-methoxybenzyl)-1-methyl-4(1*H*)-quinazolinone. **Glycozolone B**. Glycozoline B*
[252234-33-6]
$C_{17}H_{18}N_2O_2$ 282.341
Alkaloid from leaves of *Glycosmis cochinchinensis*. Oil. λ_{max} 203 (log ε 4.4); 226 (log ε 4.37); 266 (log ε 3.75); 319 (log ε 3.41); 367 (log ε 3.3) (MeOH).

Chakravarti, D. *et al., J.C.S.*, 1953, 3337-3340 (*synth*)
Ito, C. *et al., Chem. Pharm. Bull.*, 1999, **47**, 1491-1493 (*isol, ir, pmr, cmr*)

Glymontanine A G-128



Absolute Configuration

R^1 = H, R^2 = $-CH_2NHCOSMe$

$C_{19}H_{21}NO_8S$ 423.443
Constit. of the aerial parts of *Glycosmis montana*. Powder. $[\alpha]_D^{23}$ -18.4 (c, 0.45 in MeOH).

Wang, J. *et al., Tet. Lett.*, 2005, **46**, 169-172 (*isol, cd, pmr, cmr*)

Glymontanine B G-129

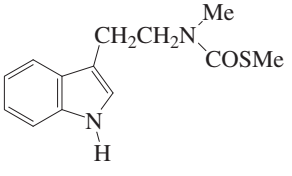
As Glymontanine A, G-128 with
R^1 = $-CH_2NHCOSMe$, R^2 = H

$C_{19}H_{21}NO_8S$ 423.443
Constit. of the aerial parts of *Glycosmis montana*. Powder. $[\alpha]_D^{23}$ -13.3 (c, 0.25 in MeOH).

Wang, J. *et al., Tet. Lett.*, 2005, **46**, 169-172 (*isol, cd, pmr, cmr*)

Glypetelotine G-130

S-*Methyl [2-(1*H*-indol-3-yl)ethyl]-methylcarbamothioate*
[259821-95-9]

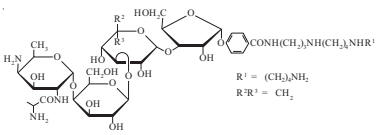


$C_{13}H_{16}N_2OS$ 248.348
Alkaloid from the leaves of *Glycosmis petelotii*. Cryst. (petrol/EtOAc). Mp 92.3°. λ_{max} 203 (log ε 5.3); 222 (log ε 4.66); 282 (log ε 3.88); 290 (log ε 3.8) (EtOH).

Cuong, N.M. *et al., Phytochemistry*, 1999, **52**, 1711-1714

Glysperin A G-131

BU 2349A. Antibiotic BU 2349A
[78213-56-6]



$C_{44}H_{75}N_7O_{18}$ 990.113
Glycoside antibiotic. Isol. from *Bacillus cereus*. Active against gram-negative and -positive bacteria. Inhibitor of reverse transcriptase. Sol. H_2O; fairly sol. MeOH, DMF, DMSO, EtOH; poorly sol. Me_2CO, hexane. λ_{max} 247 (E1%/1cm 131) (H_2O) (Berdy). λ_{max} 247 (HCl) (Berdy). λ_{max} 247 (NaOH aq.) (Berdy).
▶ LD_{50} (mus, ivn) 35 mg/kg, LD_{50} (mus, ims) 285 mg/kg. MD4787000

Kawaguchi, H. *et al., J. Antibiot.*, 1981, **34**, 381 (*isol*)
Tsuno, T. *et al., J. Antibiot.*, 1981, **34**, 390 (*struct*)

Glysperin B G-132

BU 2349B. Antibiotic BU 2349B
[78213-55-5]
As Glysperin A, G-131 with
R^1 = H, R^2R^3 = CH_2

$C_{40}H_{66}N_6O_{18}$ 918.991
Glycoside antibiotic. Isol. from *Bacillus cereus*. Active against gram-positive and -negative bacteria. Reverse transcriptase inhibitor. Amorph. powder (as carbonate salt). Sol. H_2O; fairly sol. MeOH, EtOH; poorly sol. Me_2CO, hexane. Mp 166° dec. (carbonate). $[\alpha]_D^{25}$ +132 (c, 0.5 in H_2O) (carbonate). λ_{max} 247 (E1%/1cm 148) (H_2O) (Berdy). λ_{max} 247 (HCl) (Berdy). λ_{max} 247 (NaOH aq.) (Berdy).

Kawaguchi, H. *et al., J. Antibiot.*, 1981, **34**, 381 (*isol*)
Tsuno, T. *et al., J. Antibiot.*, 1981, **34**, 390 (*struct*)

Glysperin C G-133

BU 2349C. Antibiotic BU 2349C
[78213-54-4]
As Glysperin A, G-131 with
R^1 = $(CH_2)_4NH_2$, R^2 = CH_2OH, R^3 = H

$C_{44}H_{77}N_7O_{19}$ 1008.128
Glycoside antibiotic. Isol. from *Bacillus cereus*. Reverse transcriptase inhibitor. Amorph. powder (as carbonate salt). Sol. H_2O; fairly sol. MeOH, EtOH, DMF, DMSO; poorly sol. butanol, hexane. Mp 140-145° (carbonate). $[\alpha]_D^{25}$ +157 (c, 0.5 in H_2O) (carbonate). λ_{max} 247 (E1%/1cm 133) (H_2O) (Berdy). λ_{max} 247 (HCl) (Berdy). λ_{max} 247 (NaOH aq.) (Berdy).

Kawaguchi, H. *et al., J. Antibiot.*, 1981, **34**, 381 (*isol*)
Tsuno, T. *et al., J. Antibiot.*, 1981, **34**, 390 (*struct*)

Gnidine G-134

$C_{29}H_{51}N_3$ 441.742
Struct. unknown. Alkaloid from *Lycopodium gnidioides* (Lycopodiaceae).

MacLean, D.B. *et al., Alkaloids (Academic Press)*, 1985, **26**, 241

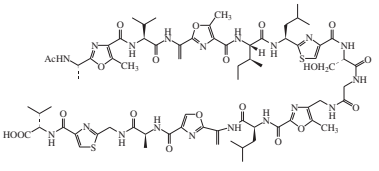
Gnidinine G-135

$C_{29}H_{51}N_3O$ 457.741

Struct. unknown. Alkaloid from *Lycopodium gnidioides* (Lycopodiaceae).

MacLean, D.B. *et al., Alkaloids (Academic Press)*, 1985, **26**, 241

Goadsporin G-136



$C_{72}H_{97}N_{19}O_{20}S_2$ 1612.806

Prod. by *Streptomyces* sp. TP-A0584. Promotes secondary metab. and morphogenesis in streptomycetes. Powder. Mp 172-174°. $[\alpha]_D^{22}$ -21 (c, 1 in MeOH). λ_{max} 204 (log ϵ 4.93); 226 (log ϵ 4.91) (MeOH).

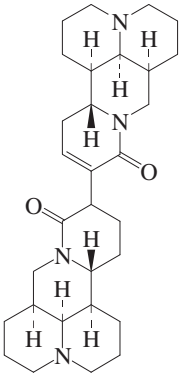
Onaka, H. *et al., J. Antibiot.*, 2001, **54**, 1036-1044; 1045-1053 (*isol, uv, pmr, cmr, ms, activity*)

Fujii, K. *et al., Tetrahedron*, 2002, **58**, 6873-6879 (*abs config*)

Goebeline G-137

13,14-Didehydro-[14,14′-bimatridine]-15,15′-dione, 9CI. Gebeline

[25908-93-4]



$C_{30}H_{44}N_4O_2$ 492.703

Dimeric matrine alkaloid; dimer of Sophocarpine, S-371. Artifact formed in thermal treatment of matrine alkaloids. Mp 231° (228-230°). $[\alpha]_D$ -13.2 (EtOH).

Hydroiodide:

Cryst. (H_2O). Mp 361-362°.

Perchlorate:

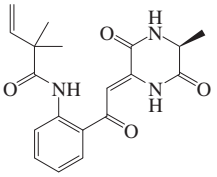
Cryst. (MeOH). Mp 315-316°.

Pakanaev, Ya.I. *et al., Zh. Obshch. Khim.*, 1961, **31**, 2428; *J. Gen. Chem. USSR (Engl. Transl.)*, 1961, **31**, 2263 (*isol*)

Iskandarov, S. *et al., Khim. Prir. Soedin.*, 1972, **8**, 347-350; *Chem. Nat. Compd. (Engl. Transl.)*, 1972, **8**, 340-343 (*ms, struct*)

Sadykov, B. *et al., Khim. Prir. Soedin.*, 1975, **11**, 606-610; *Chem. Nat. Compd. (Engl. Transl.)*, 1975, **11**, 635-638 (*synth, ir*)

Golmaenone G-138



Absolute Configuration

$C_{19}H_{21}N_3O_4$ 355.393

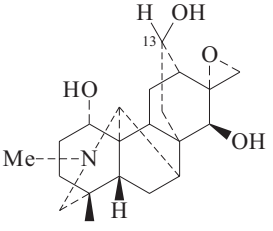
Alkaloid from the marine fungus *Aspergillus* (culture MFA 212). Radical scavenger and uv protectant. Yellow cryst. ($CHCl_3$). Mp 160-161°. $[\alpha]_D$ +7.1 (c, 0.4 in $CHCl_3$). CAS no. not found CA 141. λ_{max} 222 (log ϵ 1.8); 247 (log ϵ 2); 327 (log ϵ 1.9); 368 (log ϵ 1.7) ($CHCl_3$).

Li, Y. *et al., Chem. Pharm. Bull.*, 2004, **52**, 375-376 (*isol, cd, pmr, cmr*)

Gomandonine G-139

16,17-Epoxy-4,21-dimethyl-7,20-cycloatidane-1,13,15-triol, 9CI

[110382-21-3]



$C_{21}H_{31}NO_4$ 361.48

Alkaloid from the roots of *Aconitum subcuneatum* (Ranunculaceae). Cryst. (MeOH). Mp 248-249°. $[\alpha]_D^{12}$ -42.5 (c, 0.12 in MeOH).

13-Ac: ***13-Acetylgomandonine***

[120122-19-2]

$C_{23}H_{33}NO_5$ 403.517

Minor alkaloid from *Aconitum delphinifolium* (Ranunculaceae). Amorph. solid.

1,13-Di-Ac: ***Yesoxine***

[112561-70-3]

$C_{25}H_{35}NO_6$ 445.555

Alkaloid from rhizomes of *Aconitum yesoense* var. *macroyesoense* (Ranunculaceae). Mp 184° dec. $[\alpha]_D$ -37.5 (c, 0.32 in EtOH).

Sakai, S. *et al., Chem. Pharm. Bull.*, 1987, **35**, 2615 (*ir, pmr, cmr, ms, cryst struct*)

Bando, H. *et al., Heterocycles*, 1987, **26**, 2623 (*Yesoxine*)

Kulathaivel, P. *et al., Phytochemistry*, 1988, **27**, 3998 (*13-Acetylgomandonine*)

Gongrine G-140

4-[[[(Aminoiminomethyl)amino]carbonyl]amino]butanoic acid, 9CI. γ-(Guanylureido)butanoic acid. 1-Amidino-3-(3-carboxypropyl)urea. γ-(Amidinoureido)-butyric acid

[5998-99-2]

$HN{=}C(NH_2)NHCONH(CH_2)_3COOH$

$C_6H_{12}N_4O_3$ 188.186

Isol. from red algae *Gymnogongrus flabelliformis* and *Grateloupia filicina*.

Prisms (H_2O). Mp 208-209° dec.

Picrate: [21808-08-2]

Yellow needles. Mp 208-210° dec. Sinters at ca. 196°.

Ito, K. *et al., Agric. Biol. Chem.*, 1965, **29**, 832; 1969, **33**, 237 (*isol, synth*)

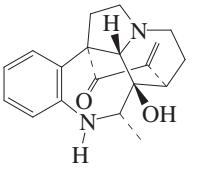
Frankel, M. *et al., J.C.S.(C)*, 1967, 2698 (*synth*)

Wakamiya, T. *et al., Tetrahedron*, 1984, **40**, 235 (*isol, bibl*)

Goniomine G-141

1,2,5,6,6a,7,8,12c-Octahydro-6a-hydroxy-7-methyl-14-methylene-4H-6,12b-ethanoindolizino[8,1-cd][1]benzazepin-13-one, 9CI

[74503-97-2]



Absolute Configuration

$C_{19}H_{22}N_2O_2$ 310.395

A rearranged condylocarpan. Alkaloid from *Gonioma malagasy* (Apocynaceae). Cryst. (MeOH). Mp 223°. $[\alpha]_D^{20}$ -270 (c, 0.5 in $CHCl_3$).

Dihydro: [74503-99-4]

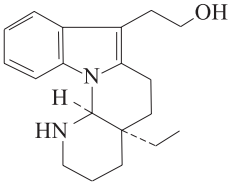
Cryst. (EtOH). Mp 228°.

Chiaroni, A. *et al., J.A.C.S.*, 1980, **102**, 5920 (*ir, uv, cmr, pmr, ms, cryst struct*)

Goniomitine G-142

1,2,3,4,4a,5,6,12a-Octahydroindolo[1,2-a][1,8]naphthyridine-7-ethanol, 9CI

[109794-95-8]



Absolute configuration

$C_{19}H_{26}N_2O$ 298.427

Highly rearranged indole alkaloid related to the Aspidosperma group. Alkaloid from the root bark of *Gonioma malagasy*. Cryst. (Et_2O/MeOH). Mp 150°. $[\alpha]_D^{20}$ -80 (c, 0.9 in $CHCl_3$).

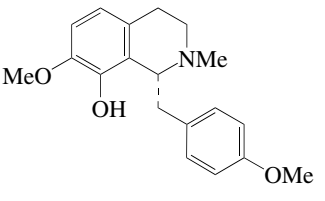
Randriambola, L. *et al., Tet. Lett.*, 1987, **28**, 2123-2126 (*uv, ir, pmr, cmr, ms*)

Takano, S. *et al., Chem. Comm.*, 1991, 462-464 (*synth, abs config*)

Morales, C.L. *et al., Org. Lett.*, 2008, **10**, 157-159 (*synth*)

Gorchacoine G-143

Gortschakoine



$C_{19}H_{23}NO_3$ 313.396

(*R*)-*form* [16336-17-7]
Alkaloid from *Corydalis gortschakovii*. Noncryst. $[\alpha]_D$ -40 (c, 0.3 in MeOH).

N-*De-Me:* ***Magnococline***. *Norgorchacoine* [34955-66-3]
$C_{18}H_{21}NO_3$ 299.369
Alkaloid from *Magnolia coco* and *Monodora junodii*.

N-*Me:* ***Petaline*** [7354-32-7]
$C_{20}H_{26}NO_3^{\oplus}$ 328.43
Quaternary alkaloid from *Leontice leontopetalum*. CNS Depressant, shows antiacetylcholine activity. Mp 140-143° (as chloride). $[\alpha]_D^{20}$ +11.3.

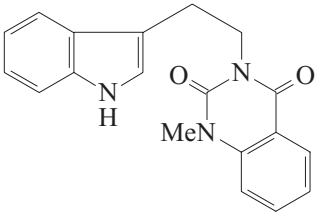
Me ether: ***Bonzakaline*** [221000-68-6]
$C_{20}H_{25}NO_3$ 327.422
Alkaloid from *Bongardia chrysogonum*. Amorph. light green solid. $[\alpha]_D^{22}$ -40 (c, 0.3 in MeOH). λ_{max} 204 (log ϵ 4.26); 227 (log ϵ 3.85); 278 (log ϵ 3.29); 414 (log ϵ 2.05) (MeOH).

(±)-*form* [28090-91-7]
N-*Me:* [5890-48-2]
Synthetic. Mp 134-138° (Me_2CO solvate)(as iodide).

McShefferty, J. *et al., J. Pharm. Pharmacol.*, 1956, **8**, 1117 (*isol, Petaline*)
Cymerman-Craig, J. *et al., Tetrahedron*, 1966, **22**, 1335 (*uv, ord, config, Petaline*)
McCorkindale, N.J. *et al., Tetrahedron*, 1969, **25**, 5475 (*synth*)
Grethe, G. *et al., Helv. Chim. Acta*, 1970, **53**, 874 (*synth*)
Yang, T.-H. *et al., J. Chin. Chem. Soc. (Taipei)*, 1971, **18**, 91-93 (*Magnococline*)
Uff, B.C. *et al., J.C.S. Perkin 1*, 1972, 479 (*synth*)
Irgashev, T. *et al., Khim. Prir. Soedin.*, 1977, **13**, 127; *Chem. Nat. Compd. (Engl. Transl.)*, 1977, **13**, 118 (*uv, ir, pmr, ms, struct*)
Atta-ur-Rahman, *et al., Nat. Prod. Lett.*, 1998, **12**, 161-173 (*Bonzakaline*)
Nishiyama, Y. *et al., Nat. Med. (Tokyo)*, 2000, **54**, 338-341 (*Norgorchacoine*)

Goshuyuamide II G-144

3-[2-(1H-Indol-3-yl)ethyl]-1-methyl-2,4(1H,3H)-quinazolinedione, 9CI. Gosuiamide II
[95274-42-3]

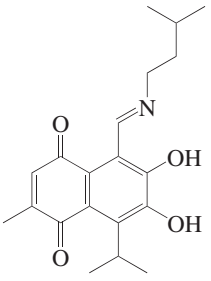


$C_{19}H_{17}N_3O_2$ 319.362
Alkaloid from the fruits of *Evodia rutaecarpa* (Rutaceae). Prisms (EtOH). Mp 216-218°.

Bergman, J. *et al., J.O.C.*, 1985, **50**, 1246-1255 (*synth, ir*)
Shoji, N. *et al., J. Nat. Prod.*, 1989, **52**, 1160-1162 (*isol, ir, pmr, cmr*)

Gossyrubilone G-145

6,7-Dihydroxy-2-methyl-5-[[(3-methylbutyl)imino]methyl]-8-(1-methylethyl)-1,4-naphthalenedione. 6,7-Dihydroxy-5-(isobutyliminomethyl)-8-isopropyl-2-methyl-1,4-naphthoquinone
[69734-70-9]

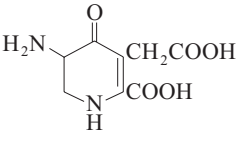


$C_{20}H_{25}NO_4$ 343.422
Isol. from terminal leaves of *Gossypium hirsutum* (cotton) (Malvaceae). Red cryst. Mp 140-142°.

Bell, A.A. *et al., Phytochemistry*, 1978, **17**, 1297 (*isol, uv, ir, pmr, ms*)

Gostatin G-146

5-Amino-2-carboxy-1,4,5,6-tetrahydro-4-oxo-3-pyridineacetic acid, 9CI
[78416-84-9]

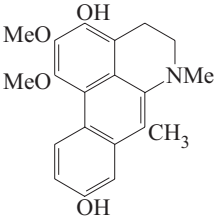


$C_8H_{10}N_2O_5$ 214.177
Isol. from *Streptomyces sumanensis*. Phytotoxin. Aspartate aminotransferase inhibitor. Cryst. + $1H_2O$. Sol. H_2O, DMSO; fairly sol. MeOH; poorly sol. Me_2CO, hexane. $[\alpha]_D^{16}$ -117 (c, 1 in 2*M* NH_4OH). No def. Mp. λ_{max} 331 (ϵ 11000) (H_2O) (Berdy).

Nishino, T. *et al., Agric. Biol. Chem.*, 1983, **47**, 1531; 1961 (*isol, props*)

Goudotianine G-147

5,6-Dihydro-1,2-dimethoxy-6,7-dimethyl-4H-dibenzo[de,g]quinoline-3,9-diol, 9CI. 3,9-Dihydroxy-1,2-dimethoxy-7-methyldehydroaporphine
[121985-88-4]

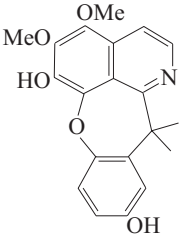


$C_{20}H_{21}NO_4$ 339.39
Revised struct. (1,3-dimethoxy struct. originally assigned). Alkaloid from the leaves and bark of *Guatteria goudotiana* (Annonaceae). Cryst. ($CHCl_3$) or amorph. Mp 186-188° (synthetic).

Castedo, L. *et al., J. Het. Chem.*, 1988, **25**, 1561 (*synth, ir, uv, pmr, ms, struct*)
Guinaudeau, H. *et al., J. Nat. Prod.*, 1988, **51**, 389; 438 (*uv, pmr, ms*)
Castedo, L. *et al., Phytochemistry*, 1991, **30**, 2781 (*isol*)

Gouregine G-148

4,5-Dimethoxy-12,12-dimethyl-12H-[1]benzoxepino[2,3,4-ij]isoquinoline-6,10-diol, 9CI
[85769-39-7]



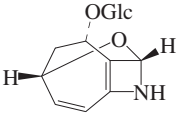
$C_{20}H_{19}NO_5$ 353.374
Alkaloid from *Guatteria ouregou* (Annonaceae). Cryst. (MeOH). Mp 112-114°. First member of a new class of cularine-related alkaloids, the α-*gem*-dimethyltetradehydrocularines.

Di-Ac:
$C_{24}H_{23}NO_7$ 437.448
Cryst. (MeOH). Mp 129-131°.

Leboeuf, M. *et al., Tetrahedron*, 1982, **38**, 2889 (*pmr, cmr, ms, cryst struct*)

Gracicleistanthoside G-149

[912851-04-8]



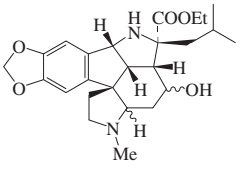
Relative Configuration

$C_{14}H_{19}NO_7$ 313.307
Alkaloid from the roots of *Cleistanthus gracilis*. Viscous brown gum. $[\alpha]_D^{25}$ -35.7 (c, 0.7 in MeOH).

Pinho, P.M. *et al., Phytochemistry*, 2006, **67**, 1789-1792 (*isol, pmr, cmr*)

Gracilamine G-150

[879561-55-4]



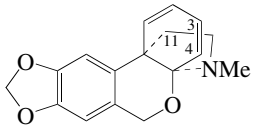
Relative Configuration

$C_{25}H_{34}N_2O_5$ 442.554
Alkaloid from *Galanthus gracilis*. Amorph. solid. $[\alpha]_D$ +21.8 (c, 0.13 in MeOH). λ_{max} 234 (sh) (log ϵ 4.01); 268 (log ϵ 3.37); 295 (log ϵ 3.71) (MeOH).

Unver, N. *et al., Turk. J. Chem.*, 2005, **29**, 547-553 (*isol, cd, pmr, cmr*)

Graciline† G-151

[216444-04-1]



$C_{17}H_{17}NO_3$ 283.326
Alkaloid from *Galanthus gracilis*. Amorph. solid. $[\alpha]_D$ +521 (c, 0.17 in MeOH). λ_{max} 248 (sh) (log ϵ 3.89); 290 (log ϵ 3.76) (MeOH).

*3,4-Dihydro, 3*R*-hydroxy:* ***3-Epi-3,4-dihydro-3-hydroxygraciline***
$C_{17}H_{19}NO_4$ 301.341
Alkaloid from *Galanthus gracilis*. Amorph. solid. $[\alpha]_D$ +110.6 (c, 0.15 in MeOH). λ_{max} 215 (log ϵ 3.81); 233 (sh) (log ϵ 3.56); 292 (log ϵ 3.62) (MeOH).

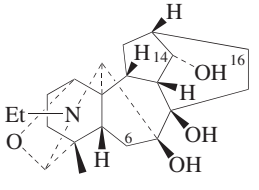
*3,4-Dihydro, 3*S*-hydroxy:* ***3,4-Dihydro-3-hydroxygraciline***
[216444-08-5]
$C_{17}H_{19}NO_4$ 301.341
Alkaloid from *Galanthus gracilis*. Amorph. solid. $[\alpha]_D$ +138 (c, 0.11 in MeOH). λ_{max} 230 (sh) (log ϵ 4.08); 290 (log ϵ 3.71) (MeOH).

*11*S*-Acetoxy:* ***11-Acetoxygraciline***
[216444-06-3]
$C_{19}H_{19}NO_5$ 341.363
Alkaloid from *Galanthus plicatus* ssp. *byzantinus*. Amorph. solid. $[\alpha]_D$ +198 (c, 0.17 in MeOH). λ_{max} 252 (sh) (log ϵ 3.95); 288 (log ϵ 3.69) (MeOH).

Noyan, S. *et al., Heterocycles*, 1998, **48**, 1777-1791 (*isol, uv, cd, ir, pmr, cmr, ms*)
Unver, N. *et al., Heterocycles*, 2001, **55**, 641-652 (*3-Epidihydrohydroxygraciline*)

Graciline† G-152

1,19-Epoxy-20-ethyl-4-methylaconitane-7,8,14-triol, 9CI
[90475-66-4]



$C_{21}H_{31}NO_4$ 361.48
Alkaloid from *Delphinium gracile* (Ranunculaceae). Mp 98-100°.

8-Cinnamoyl: ***8-O-Cinnamoylgraciline***
[151563-64-3]
$C_{30}H_{37}NO_5$ 491.626
Alkaloid from above-ground parts of *Delphinium cossonianum* (Ranunculaceae). Amorph. $[\alpha]_D$ +10.4 (c, 0.41 in $CHCl_3$).

7-Deoxy: ***Dehydrocardiopetaline***
[151563-63-2]
$C_{21}H_{31}NO_3$ 345.481
Alkaloid from above-ground parts of *Delphinium cossonianum* (Ranunculaceae). Amorph. $[\alpha]_D$ +17.8 (c, 0.80 in $CHCl_3$).

16β-Methoxy: ***Pentagydine***
[86630-38-8]
$C_{22}H_{33}NO_5$ 391.506
Minor alkaloid from *Delphinium pentagynum* (Ranunculaceae). Mp 130-131°.

16β-Methoxy, 6β-hydroxy, 7,8-methylene, 14-Me ether: ***Laxicyminine***
[1008106-60-2]
$C_{24}H_{35}NO_6$ 433.544
Alkaloid from *Delphinium laxicymosum* var. *pilostachyum*. Needles. $[\alpha]_D^{20}$ -1 (c, 0.65 in $CHCl_3$).

16β-Methoxy, 5,6β-dihydroxy, 7,8-methylene, 14-Me ether: ***Laxicymine***
[1008106-58-8]
$C_{24}H_{35}NO_7$ 449.543
Alkaloid from *Delphinium laxicymosum* var. *pilostachyum*. Cryst. Mp 192-193°. $[\alpha]_D^{20}$ +4.7 (c, 0.5 in $CHCl_3$).

16β-Methoxy, 7-deoxy: ***Karakanine***
[50656-90-1]
$C_{22}H_{33}NO_4$ 375.507
Alkaloid from aerial parts of *Aconitum karacolicum* (Ranunculaceae). Cryst. (Me_2CO). Mp 193-195°.

16β-Methoxy, 6β-acetoxy, 7-deoxy, O^8*-Me:* ***Dehydrobicoloridine***
[167868-58-8]
$C_{25}H_{37}NO_6$ 447.57
Alkaloid from epigeal parts of *Delphinium peregrinum* var. *elongatum* (Ranunculaceae). Amorph. $[\alpha]_D$ +29.1 (c, 0.15 in $CHCl_3$).

6α,16β-Dimethoxy, 7-deoxy: ***Pentagynine***
[84306-91-2]
$C_{23}H_{35}NO_5$ 405.533
Alkaloid from *Delphinium pentagynum* (Ranunculaceae). Mp 198-201°. $[\alpha]_D$ +72 (c, 0.12 in EtOH).

6β,16β-Dimethoxy: ***Gadesine***
[70420-60-9]
$C_{23}H_{35}NO_6$ 421.533
Alkaloid from *Delphinium pentagynum* (Ranunculaceae). Mp 174-177°. $[\alpha]_D$ +76 (c, 0.27 in EtOH).

6β,16β-Dimethoxy, 14-Ac: ***14-Acetylgadesine***
[70420-61-0]
$C_{25}H_{37}NO_7$ 463.57
Alkaloid from *Delphinium pentagynum* (Ranunculaceae). Resin.

6β,16β-Dimethoxy, 14-benzoyl: ***14-Benzoylgadesine***
[103976-33-6]
$C_{30}H_{39}NO_7$ 525.641
Alkaloid from *Delphinium cardiopetalum* (Ranunculaceae). Resin.

6β,16β-Dimethoxy, 10β-hydroxy, 14-benzoyl: ***Gadeline***
[103956-40-7]
$C_{30}H_{39}NO_8$ 541.64
Alkaloid from *Delphinium pentagynum* (Ranunculaceae). Resin.

6β,16β-Dimethoxy, 18-hydroxy: ***1-O,19-Didehydrotakaosamine***
$C_{23}H_{35}NO_7$ 437.532
Alkaloid from *Consolida orientalis*. Amorph. solid. $[\alpha]_D^{25}$ +55.2 (c, 0.65 in $CHCl_3$).

6β,16β-Dimethoxy, 18-hydroxy, O^{14}*-Me:* ***18-Hydroxy-14-O-methylgadesine***
[81362-18-7]
$C_{24}H_{37}NO_7$ 451.559
Minor alkaloid from *Consolida orientalis* (Ranunculaceae). Mp 110-114°. $[\alpha]_D^{25}$ +50 (c,0.8 in $CHCl_3$).

16β,18-Dimethoxy: ***Nevadensine***
[100447-59-4]
$C_{23}H_{35}NO_6$ 421.533
Minor alkaloid from the aerial parts of *Aconitum nevadense* (Ranunculaceae). Resin.

16β,18-Dimethoxy, 7-deoxy: ***Nevadenine***
[100458-94-4]
$C_{23}H_{35}NO_5$ 405.533
Minor alkaloid from the aerial parts of *Aconitum nevadense* (Ranunculaceae). Resin.

6β,16β,18-Trimethoxy: ***18-Methoxygadesine***
[85649-35-0]
$C_{24}H_{37}NO_7$ 451.559
Minor alkaloid from *Consolida orientalis* (Ranunculaceae). Mp 180-184°.

6β,16β,18-Trimethoxy, O^8*-Me:* ***Dehydrodeltatsine***
$C_{25}H_{39}NO_7$ 465.586
Alkaloid from the aerial parts of *Consolida orientalis*. Amorph. solid. $[\alpha]_D^{25}$ +20 (c, 0.1 in $CHCl_3$).

6β,16β,18-Trimethoxy, O^{14}*-Me:* ***Dehydrodelsoline***
[58111-41-4]
$C_{25}H_{39}NO_7$ 465.586
Alkaloid from above-ground parts of *Aconitum vulparia* ssp. *neapolitanum* (Ranunculaceae). Cryst. (EtOAc/hexane). Mp 200-203°. $[\alpha]_D$ +50.5 (c, 0.77 in $CHCl_3$).

6β,16β,18-Trimethoxy, 7,8-methylene ether: ***Campylocine***
[960201-79-0]
$C_{25}H_{37}NO_7$ 463.57
Alkaloid from *Delphinium campylocentrum*.

6β,16β,18-Trimethoxy, 14-ketone: ***Yesoensine***
[131652-37-4]
$C_{24}H_{35}NO_7$ 449.543
Alkaloid from *Aconitum yesoense* var. *macroyesoense* (Ranunculaceae). Amorph. powder. $[\alpha]_D^{21}$ +39.4 (c, 1.67 in $CHCl_3$).

6β,16β,18-Trimethoxy, 7-deoxy: ***Delstaphinine***
[111537-46-3]
$C_{24}H_{37}NO_6$ 435.559
Alkaloid from the seeds of *Delphinium staphisagria* (Ranunculaceae). Amorph. $[\alpha]_D^{28}$ +47.7 (c, 1.1 in $CHCl_3$).

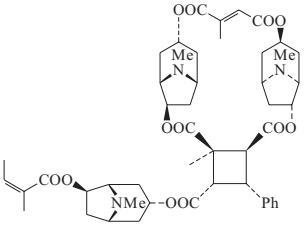
6β,16β,18-Trimethoxy, 7-deoxy, di-Ac: ***Delstaphidine***
[112515-34-1]
$C_{28}H_{41}NO_8$ 519.634
Alkaloid from the seeds of *Delphinium staphisagria* (Ranunculaceae). Mp 192.5-194.5°. $[\alpha]_D^{25}$ +27.4 (c, 0.27 in $CHCl_3$).

González, A.G. *et al., Tet. Lett.*, 1979, 79; 1981, **22**, 4843; 1983, **24**, 959 (*Gadesine, 18-Hydroxy-14-O-methylgadesine, Pentagydine, ir, pmr, ms, cryst struct*)

González, A.G. *et al., Phytochemistry*, 1982, **21**, 1781 (*Pentagynine*)
González, A.G. *et al., Heterocycles*, 1983, **20**, 409; 1984, **22**, 667; 1985, **23**, 2979; 1986, **24**, 1513 (*18-Methoxygadesine, 14-Benzoylgadesine, Gadeline, Graciline, Nevadensine, Nevadenine, 14-Acetylgadesine*)
Ross, S.A. *et al., Heterocycles*, 1987, **26**, 2895 (*Delstaphidine*)
Pelletier, S.W. *et al., J. Nat. Prod.*, 1987, **50**, 381 (*Delstaphinine*)
Wada, K. *et al., Heterocycles*, 1990, **31**, 1081 (*Yesoensine*)
Sultankhodzhaev, M.N. *et al., Khim. Prir. Soedin.*, 1993, **29**, 62; *Chem. Nat. Compd. (Engl. Transl.)*, 1993, **29**, 51 (*Karakanine*)
De la Fuente, G. *et al., Phytochemistry*, 1993, **34**, 553; 1994, **37**, 271; 1995, **39**, 1459 (*Dehydrocardiopetaline, 8-Cinnamoylgraciline, Dehydrodelsoline, Dehydrobicoloridine*)
Alva, A. *et al., Chem. Pharm. Bull.*, 2004, **52**, 530-534 (*Dehydrodeltatsine, 18-Hydroxy-14-O-methylgadesine*)
Alva, A. *et al., Helv. Chim. Acta*, 2004, **87**, 2110-2119 (*Didehydrotakaosamine*)
Tang, P. *et al., Chin. Chem. Lett.*, 2007, **18**, 700-703 (*Laxicymine, Laxicyminine*)
Yan, L.P. *et al., Youji Huaxue*, 2007, **27**, 976-980; *CA*, **27**, 74053r (*Campylocine*)

Grahamine† G-153

[125685-27-0]



$C_{48}H_{61}N_3O_{12}$ 872.023
Alkaloid from *Schizanthus grahamii* (Solanaceae). Oil. $[\alpha]_D^{20}$ +6.21 ($CHCl_3$).

Hartmann, R. *et al., Angew. Chem., Int. Ed.*, 1990, **29**, 385 (*isol, pmr, cmr, struct*)

Graminifoline G-154

Gramminifoline

$C_{18}H_{23}NO_5$ 333.383

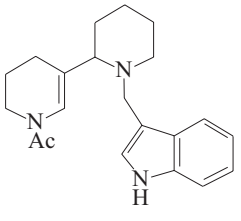
Pyrrolizidine alkaloid. Struct. unknown. Minor alkaloid from *Senecio graminifolius* (Asteraceae). Mp 236°.

De Waal, H.L. *et al., CA*, 1941, **35**, 5194[9]; 1942, **36**, 6308[8]

Gramodendrine G-155

*1-Acetyl-1,2,3,4-tetrahydro-5-[1-(1*H*-indol-3-ylmethyl)-2-piperidinyl]pyridine, 9CI*

[83905-67-3]

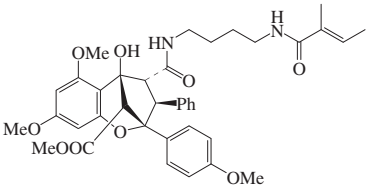


$C_{21}H_{27}N_3O$ 337.464

Alkaloid from the above-ground parts of *Lupinus arbustus* ssp. *calcaratus* (Fabaceae).

Keller, W.J. *et al., Phytochemistry*, 1982, **21**, 1415 (*isol, uv, ir, pmr, cmr, ms, struct, synth*)

Grandiamide A G-156

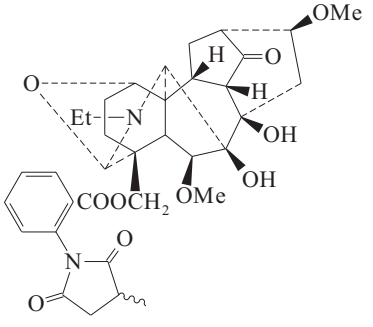


$C_{38}H_{44}N_2O_9$ 672.774
Constit. of the leaves of *Aglaia grandis*. Amorph. powder. $[\alpha]_D^{25}$ -108.8 (c, 0.25 in $CHCl_3$).

Inada, A. *et al., Phytochemistry*, 2000, **53**, 1091-1095

Grandifloritine G-157

[146471-88-7]

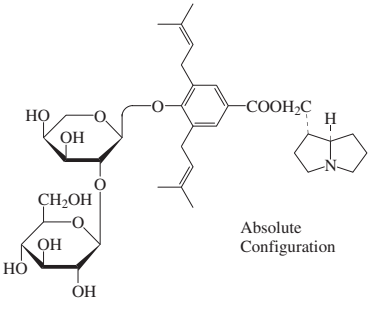


$C_{35}H_{42}N_2O_{10}$ 650.724
Alkaloid from aerial parts of *Delphinium grandiflorum* (Ranunculaceae). $[\alpha]_D^{30}$ +38 (c, 0.07 in $CHCl_3$).

Li, C. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 1992, **34**, 466-469; *CA*, **118**, 143418h (*isol, pmr, cmr, ms*)

Grandifoline† G-158

[34426-04-5]



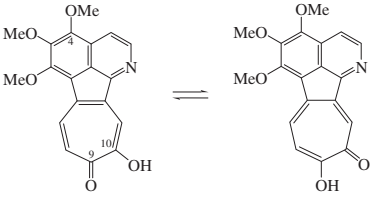
$C_{36}H_{53}NO_{12}$ 691.814
Alkaloid from *Malaxis grandifolia* (Orchidaceae). Amorph. $[\alpha]_D^{23}$ -7 (c, 0.69 in EtOH). Hydrol. → Laburnine in H-629.

Lindström, B. *et al., Acta Chem. Scand.*, 1971, **25**, 1900 (*isol, struct*)

Grandirubrine G-159

*10-Hydroxy-4,5,6-trimethoxy-9*H*-azuleno[1,2,3-*ij*]isoquinolin-9-one, 9CI*

[74631-22-4]



$C_{19}H_{15}NO_5$ 337.331
Rearranged troponoid aporphine. CAS numbering shown. Alkaloid from *Abuta grandifolia* and *Cissampelos pareira* (Menispermaceae). Reddish-brown needles ($CHCl_3$/EtOH). Mp 201-203°. λ_{max} 232 (ϵ 91200); 254 (ϵ 61700); 274 (sh) (ϵ 45700); 296 (ϵ 38000); 312 (sh) (ϵ 28800); 343 (sh) (ϵ 32400); 363 (ϵ 52500); 384 (ϵ 25700); 400 (ϵ 15500); 480 (ϵ 7940) (95% EtOH) (Derep). λ_{max} 218 (ϵ 14600); 250 (ϵ 16600); 262 (ϵ 15700); 264 (ϵ 15500); 298 (ϵ 9800); 300 (ϵ 9700); 363 (ϵ 16900); 570 (ϵ 3400) (EtOH) (Berdy).

O[9]-*Me: 4,5,6,9-Tetramethoxy-10*H*-azuleno[1,2,3-*ij*]isoquinolin-10-one.* ***Imerubrine***
[58189-33-6]
$C_{20}H_{17}NO_5$ 351.358
Alkaloid from the stems of *Abuta imene* and *Abuta rufescens* (Menispermaceae). Orange-red needles (MeOH/Et_2O). Mp 183-185°.

O[10]-*Me:* ***Isoimerubrine***
[74684-11-0]
$C_{20}H_{17}NO_5$ 351.358
Alkaloid from *Cissampelos pareira* (Menispermaceae). Reddish-brown needles. Mp 183-185°. λ_{max} 218 (ϵ 9200); 257 (ϵ 11200); 304 (ϵ 3500); 362 (ϵ 17700); 414 (ϵ 3400); 480 (ϵ 1200) (EtOH) (Berdy).

4-Demethoxy: ***Pareirubrine B***
[152845-78-8]
$C_{18}H_{13}NO_4$ 307.305
Alkaloid from *Cissampelos pareira* (Menispermaceae). Exhibits antileukaemic activity. Reddish-brown needles. Mp 290° dec. λ_{max} 274 (ϵ 25200); 294 (ϵ 21000); 364 (ϵ 20200); 420 (ϵ 3800); 472 (ϵ 7700) (EtOH) (Derep). λ_{max} 252 (ϵ 22900); 300 (ϵ 13200); 364 (ϵ 24600); 394 (ϵ 9300); 416 (ϵ 6900); 520 (ϵ 1500) (EtOH) (Berdy).

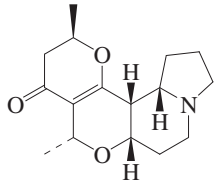
4-Demethoxy, 10-deoxy: ***Pareitropone***
$C_{18}H_{13}NO_3$ 291.306
Alkaloid from roots of *Cissampelos pareira* (Menispermaceae). Shows potent cytotoxic activity.

11-Methoxy: ***Pareirubrine A***
[147044-68-6]
$C_{20}H_{17}NO_6$ 367.357

Alkaloid from *Cissampelos pareira* (Menispermaceae). Exhibits antileukaemic activity. Reddish-brown needles (MeOH). Mp 168-170°. Exists as the 10-oxo tautomer in the cryst. state but as a tautomeric mixt. in soln. λ_{max} 274 (ϵ 25200); 294 (ϵ 21000); 364 (ϵ 20200); 420 (ϵ 3800); 472 (ϵ 7700) (EtOH) (Derep). λ_{max} 217 (ϵ 2900); 274 (ϵ 25200); 294 (ϵ 21000); 364 (ϵ 20200); 420 (ϵ 3800); 472 (ϵ 7700) (EtOH) (Berdy).

Cava, M.P. *et al., Tetrahedron*, 1975, **31**, 1667 (*Imerubrine, isol, uv, ir, pmr*)
Silverton, J.V. *et al., J.A.C.S.*, 1977, **99**, 6708 (*Imerubrine, cryst struct*)
Menachery, M.D. *et al., Heterocycles*, 1980, **14**, 943 (*Grandirubrine*)
Morita, H. *et al., Chem. Lett.*, 1993, 339 (*Pareirubrine A, isol, uv, pmr, cmr, cryst struct*)
Morita, H. *et al., Chem. Pharm. Bull.*, 1993, **41**, 1418; 1478 (*Isoimerubrine, Pareirubrine B*)
Banwell, M.G. *et al., Heterocycles*, 1994, **39**, 205 (*synth*)
Morita, H. *et al., Bioorg. Med. Chem. Lett.*, 1995, **5**, 597 (*Pareitropone*)
Boger, D.L. *et al., J.A.C.S.*, 1995, **117**, 12452 (*synth*)
Lee, J.C. *et al., J.A.C.S.*, 2001, **123**, 3243-3246 (*synth*)
Feldman, K.S. *et al., J.O.C.*, 2002, **67**, 8528-8537 (*Pareitropone, synth*)

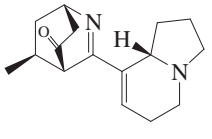
Grandisine A G-160



$C_{16}H_{23}NO_3$ 277.363
Alkaloid from the leaves of *Elaeocarpus grandis*. Yellow gum. $[\alpha]_D$ +38.6 (c, 0.1 in CH_2Cl_2). λ_{max} 270 (log ϵ 2.1) (MeOH).

Carroll, A. *et al., J.O.C.*, 2005, **70**, 1889-1892 (*isol, pmr, cmr*)
Maloney, D.J. *et al., Angew. Chem., Int. Ed.*, 2007, **46**, 7789-7792 (*synth*)
Maloney, D.J. *et al., Heterocycles*, 2007, **72**, 167-174 (*synth*)

Grandisine B G-161

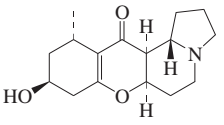


$C_{16}H_{22}N_2O$ 258.363
Alkaloid from the leaves of *Elaeocarpus grandis*. Yellow gum. $[\alpha]_D$ +11 (c, 0.1 in CH_2Cl_2). λ_{max} 275 (log ϵ 2.9) (MeOH).

Carroll, A. *et al., J.O.C.*, 2005, **70**, 1889-1892 (*isol, pmr, cmr*)

Grandisine C G-162

[911682-66-1]



Absolute Configuration

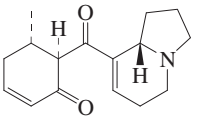
$C_{16}H_{23}NO_3$ 277.363
Alkaloid from the leaves of *Elaeocarpus grandis*. Yellow gum. $[\alpha]_D^{22}$ -59.2 (c, 0.15 in MeOH). λ_{max} 204 (log ϵ 3.39); 273 (log ϵ 3.56) (MeOH).

Stereoisomer: ***Rudrakine***
[72361-62-7]
$C_{16}H_{23}NO_3$ 277.363
Alkaloid from the leaves of *Elaeocarpus ganitrus*. Needles (MeOH). Mp 159-160°. Stereochem. not determined. λ_{max} 272 (ϵ 7300) (MeOH).

Ray, A.B. *et al., Phytochemistry*, 1979, **18**, 700-701 (*Rudrakine*)
Katavic, P.L. *et al., J. Nat. Prod.*, 2006, **69**, 1295-1299 (*Grandisine C*)

Grandisine D G-163

[911682-67-2]



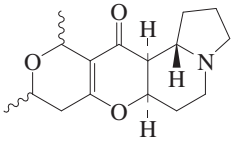
Absolute Configuration

$C_{16}H_{21}NO_2$ 259.347
Alkaloid from the leaves of *Elaeocarpus grandis*. Yellow gum (as trifluoroacetate salt). $[\alpha]_D^{23}$ +34.6 (c, 0.09 in MeOH) (trifluoroacetate). λ_{max} 222 (log ϵ 3.28); 267 (log ϵ 2.8); 325 (log ϵ 2.43) (MeOH) (trifluoroacetate).

Katavic, P.L. *et al., J. Nat. Prod.*, 2006, **69**, 1295-1299 (*isol, pmr, cmr, ms*)

Grandisine E G-164

[911682-68-3]

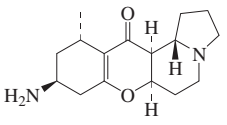


$C_{16}H_{23}NO_3$ 277.363
Alkaloid from the leaves of *Elaeocarpus grandis*. Gum. λ_{max} 272 (log ϵ 1.14) (MeOH).

Katavic, P.L. *et al., J. Nat. Prod.*, 2006, **69**, 1295-1299 (*isol, pmr, cmr, ms*)

Grandisine F G-165

[911682-69-4]



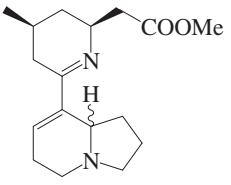
Absolute Configuration

$C_{16}H_{24}N_2O_2$ 276.378
Alkaloid from the leaves of *Elaeocarpus grandis*. Yellow gum. $[\alpha]_D^{23}$ -22.4 (c, 0.09 in MeOH). λ_{max} 202 (log ϵ 3.2); 274 (log ϵ 3.5) (MeOH).

Katavic, P.L. *et al., J. Nat. Prod.*, 2006, **69**, 1295-1299 (*isol, pmr, cmr, ms*)

Grandisine G G-166

[911682-70-7]

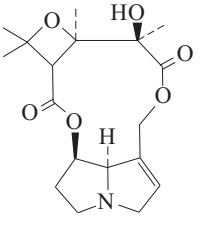


$C_{17}H_{26}N_2O_2$ 290.405
Alkaloid from the leaves of *Elaeocarpus grandis*. Yellow gum (as trifluoroacetate salt). λ_{max} 209 (log ϵ 3.39); 271 (log ϵ 3.08); 308 (log ϵ 3) (MeOH) (trifluoroacetate).

Katavic, P.L. *et al., J. Nat. Prod.*, 2006, **69**, 1295-1299 (*isol, pmr, cmr*)

Grantaline G-167

[83482-61-5]

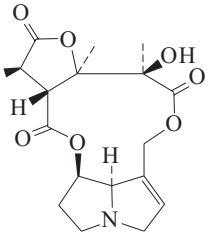


$C_{18}H_{25}NO_6$ 351.399
Alkaloid from *Crotalaria virgulata* subsp. *grantiana* and from the seeds of *Crotalaria globifera* (Fabaceae). Cryst. (Me_2CO aq.), prisms (EtOH). Mp 219.5-220°. $[\alpha]_D^{18}$ +33 (c, 0.065 in $CHCl_3$). $[\alpha]_D^{20}$ +100.9 (c, 0.8 in EtOH).

Jones, A.J. *et al., Aust. J. Chem.*, 1982, **35**, 1173 (*isol, cmr, struct*)
Mackay, M.F. *et al., Acta Cryst. C*, 1983, **39**, 1227 (*cryst struct*)
Brown, K. *et al., Phytochemistry*, 1984, **23**, 457 (*isol, ir, ms, pmr*)
Smith, L.W. *et al., Phytochemistry*, 1984, **23**, 473 (*isol, ir, pmr, ms*)

Grantianine G-168

[633-10-3]

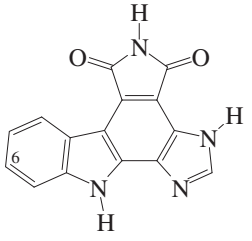


$C_{18}H_{23}NO_7$ 365.382
Alkaloid from *Crotalaria virgulata* ssp. *grantiana (Crotalaria grantiana)* and *Crotalaria globifera* (Fabaceae). Mp 223-224° (204-205°, 209-209.5°). $[\alpha]_D^{27}$ +50.6 (+44.4) ($CHCl_3$).

Adams, R. *et al., J.A.C.S.*, 1956, **78**, 4458 (*struct*)
Brown, K. *et al., Phytochemistry*, 1984, **23**, 457 (*isol, pmr, ms, cmr*)
Smith, L.W. *et al., Phytochemistry*, 1984, **23**, 473 (*isol, pmr*)
Stoeckli-Evans, H. *et al., Acta Cryst. C*, 1984, **40**, 1445 (*cryst struct*)

Granulatimide G-169

*1*H-*Imidazo[4,5-*a*]pyrrolo[3,4-*c*]carbazole-4,6(5*H*,11*H*)-dione, 9CI*
[219828-99-6]



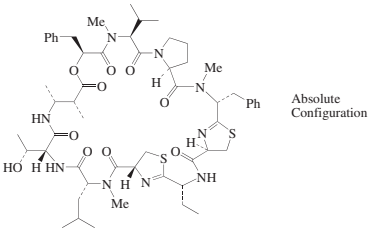
$C_{15}H_8N_4O_2$ 276.254
Alkaloid from the ascidian *Didemnum granulatum*. G2 specific cell cycle checkpoint inhibitor. Yellow solid.

6-Bromo: ***6-Bromogranulatimide***
[330846-92-9]
$C_{15}H_7BrN_4O_2$ 355.15
Alkaloid from *Didemnum granulatum*. Amorph. yellow solid. λ_{max} 236 ; 282 ; 308 ; 386 (MeOH).

Berlinck, R.G.S. *et al., J.O.C.*, 1998, **63**, 9850-9856 (*isol, synth, pmr, cmr, activity*)
Britton, R. *et al., J. Nat. Prod.*, 2001, **64**, 254-255 (*6-Bromogranulatimide, isol, pmr, cmr*)
Yoshida, T. *et al., Chem. Pharm. Bull.*, 2002, **50**, 872-876; 2003, **51**, 209-214 (*synth*)

Grassypeptolide G-170

[1010433-25-6]

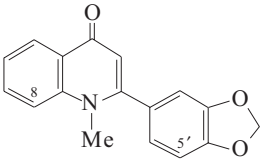


$C_{56}H_{79}N_9O_{10}S_2$ 1102.426
Isol. from *Lyngbya confervoides*. Cytotoxic. Amorph. solid. $[\alpha]_D^{20}$ +76 (c, 0.1 in CH_2Cl_2). λ_{max} 230 (log ϵ 2.2); 260 (log ϵ 1.95); 330 (log ϵ 1.37) (CH_2Cl_2).

Kwan, J.C. *et al., Org. Lett.*, 2008, **10**, 789-792 (*isol, pmr, cmr, ms*)

Graveoline G-171

*2-(1,3-Benzodioxol-5-yl)-1-methyl-4(1*H*)-quinolinone, 9CI. 1-Methyl-2-(3,4-methylenedioxyphenyl)-4(1*H*)-quinolinone. Rutamine. Foliosine*
[485-61-0]



$C_{17}H_{13}NO_3$ 279.295
Alkaloid from *Ruta graveolens* (rue), *Ruta bracteosa* and *Haplophyllum* spp. (Rutaceae). Needles (EtOH). Mp 186-187° Mp 205-205.5° (dimorph.). Rutamine was the metastable lower-melting modification.

N-*De-Me: 2-(3,4-Methylenedioxyphenyl)-4(1*H*)-quinolinone.* ***Norgraveoline***
[74054-38-9]
Alkaloid from the aerial parts of *Haplophyllum dubium* (Rutaceae). Mp 288-290° (246-248°).

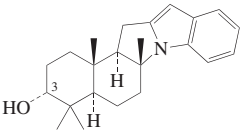
*5′-Hydroxy: 2-(3-Hydroxy-4,5-methylenedioxyphenyl)-1-methyl-4(1*H*)-quinolinone.* ***3′-Hydroxygraveoline***
[107316-96-1]
$C_{17}H_{13}NO_4$ 295.294
Alkaloid from the aerial parts of *Ruta chalepensis* (Rutaceae). Amorph. Incorrect name in CA.

*5′-Methoxy: 2-(3-Methoxy-4,5-methylenedioxyphenyl)-1-methyl-4(1*H*)-quinolinone.* ***3′-Methoxygraveoline***
[173180-39-7]
$C_{18}H_{15}NO_4$ 309.321
Alkaloid from trunk bark of *Esenbeckia almawillia* (Rutaceae). Amorph. solid (EtOAc). Mp 193-194°. Numbering systems vary.

*5′,8-Dimethoxy: 8-Methoxy-2-(3-methoxy-4,5-methylenedioxyphenyl)-1-methyl-4(1*H*)-quinolinone.* ***3′,8-Dimethoxygraveoline***
[173180-40-0]
$C_{19}H_{17}NO_5$ 339.347
Alkaloid from trunk bark of *Esenbeckia almawillia* (Rutaceae). Amorph. solid (MeOH). Mp 201-203°. Numbering systems vary.

Arthur, H.R. *et al., Aust. J. Chem.*, 1960, **13**, 510-513 (*isol, uv, ir, pmr, struct*)
Arthur, H.R. *et al., J.C.S.*, 1961, 4360-4361 (*synth*)
Schneider, G. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1967, **300**, 953-954 (*Rutamine*)
Reisch, J. *et al., Naturwissenschaften*, 1967, **54**, 200 (*synth*)
Razakova, D.M. *et al., Khim. Prir. Soedin.*, 1979, **15**, 810-812; *Chem. Nat. Compd. (Engl. Transl.)*, 1979, **15**, 716 (*Norgravoline*)
Kasahara, A. *et al., Chem. Ind. (London)*, 1981, 121 (*synth, Norgraveoline*)
Ulubelen, A. *et al., Phytochemistry*, 1986, **25**, 2692-2693 (*3′-Hydroxygraveoline*)
Koyama, J. *et al., Chem. Express*, 1992, **7**, 321-324 (*synth*)
Oliviera, F.M. *et al., Phytochemistry*, 1996, **41**, 647-649 (*3′-Methoxygraveoline, 3′,8-Dimethoxygraveoline*)
Annunziata, R. *et al., Synth. Commun.*, 1996, **26**, 495-501 (*synth*)
Koyama, J. *et al., Chem. Pharm. Bull.*, 1999, **47**, 1038-1039 (*synth, ir, pmr*)

3-Greenwayodendrinol G-172



3α-form

$C_{23}H_{31}NO$ 337.504

3α-form [85027-87-8]
Alkaloid from the stem bark of *Greenwayodendron suaveolens* (*Polyalthia suaveolens*). Gum.

3β-form
Polyavolensinol
[76525-23-0]
Alkaloid from the stem bark of *Greenwayodendron suaveolens* (*Polyalthia suaveolens*). Long needles (petrol/$CHCl_3$). Mp 167-169°. $[\alpha]_D^{27}$ +11 (c, 0.56 in $CHCl_3$) (+6.2).

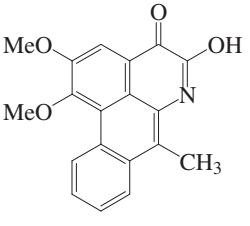
Ac: ***Polyavolensin***
[76525-22-9]
$C_{25}H_{33}NO_2$ 379.541
Alkaloid from the stem bark of *Greenwayodendron suaveolens* (*Polyalthia suaveolens*). Plates (EtOAc/petrol). Mp 211-214°. $[\alpha]_D^{25}$ -1.2 (c, 0.5 in $CHCl_3$) (-3.8).

3-Ketone: ***Polyavolensinone****. 3-Greenwayodendrinone*
[76525-24-1]
$C_{23}H_{29}NO$ 335.488
Alkaloid from the stem bark of *Greenwayodendron suaveolens* (Annonaceae). Needles (EtOAc/petrol). Mp 191-194°. $[\alpha]_D^{25}$ +46.8 (c, 0.64 in $CHCl_3$).

Okorie, D.A. *et al., Tetrahedron*, 1980, **36**, 2005 (*Polyavolensin, Polyavolensinone*)
Hasan, C.M. *et al., J.C.S. Perkin 1*, 1982, 2807-2812 (*Greenwayodendrinols, isol, uv, ms, ir, pmr, cmr, cryst struct*)
Falshaw, C.P. *et al., Tetrahedron*, 1982, **38**, 2311 (*Polyavolensin, cryst struct*)

Griffinine G-173

*5-Hydroxy-1,2-dimethoxy-7-methyl-4*H*-dibenzo[*de,g*]quinolin-4-one*



$C_{19}H_{15}NO_4$ 321.332

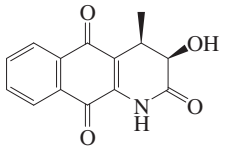
Apparently a separately isolable tautomer of Griffithdione, G-175. Alkaloid from the stems of *Goniothalamus griffithii*. Orange needles or powder. Mp >250°. λ_{max} 215 (log ϵ 1.51); 240 (log ϵ 1.63); 305 (log ϵ 0.68); 317 (log ϵ 0.69); 449 (log ϵ 0.57) (MeOH).

Mu, Q. *et al., Planta Med.*, 2003, **69**, 826-830 (*isol, pmr, cmr, ms*)

Griffithazanone A G-174

Griffiazanone A

[240122-30-9]



Absolute Configuration

$C_{14}H_{11}NO_4$ 257.245

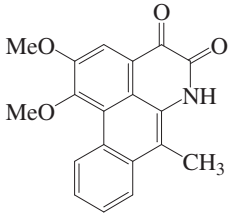
Alkaloid from the roots of *Goniothalamus griffithii*. Yellow needles (Me_2CO). Mp 208-210°. $[\alpha]_D^{25}$ +146 (c, 0.06 in $CHCl_3$). λ_{max} 203 (log ϵ 4.07); 218 (log ϵ 4); 255 (log ϵ 4.29); 286 (log ϵ 3.99); 335 (log ϵ 3.36) ($CHCl_3$).

Zhang, Y.J. *et al., J. Nat. Prod.*, 1999, **62**, 1050-1052

Griffithdione G-175

*1,2-Dimethoxy-7-methyl-4*H*-dibenzo[de,g]quinoline-4,5(6*H*)-dione*

[240122-31-0]



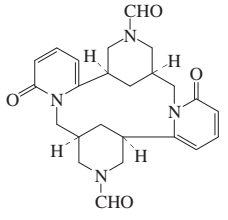
$C_{19}H_{15}NO_4$ 321.332

Alkaloid from the roots of *Goniothalamus griffithii*. Orange needles ($CHCl_3$). Mp 216-218°. λ_{max} 244 (log ϵ 4.49); 295 (log ϵ 4.02); 307 (log ϵ 4.14); 330 (log ϵ 4.13); 460 (log ϵ 3.98) ($CHCl_3$).

Zhang, Y.-J. *et al., J. Nat. Prod.*, 1999, **62**, 1050-1052 (*isol, uv, ir, pmr, cmr, ms*)

Griffithine G-176

[140367-81-3]



Relative Configuration

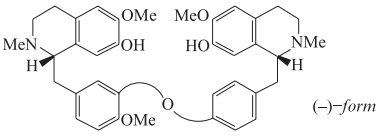
$C_{24}H_{28}N_4O_4$ 436.51

Alkaloid from leafy shoots of *Sophora griffithii* (Fabaceae). Cream-coloured solid. $[\alpha]_D$ +217 (c, 0.03 in MeOH).

Atta-ur-Rahman, *et al., Magn. Reson. Chem.*, 1991, **29**, 1077-1083 (*isol, uv, ir, pmr, cmr, ms, struct*)

Grisabine G-177

[62057-36-7]



(–)–*form*

$C_{37}H_{42}N_2O_6$ 610.749

Alkaloids covered by this entry are enantiomeric with those covered by Berbamunine, B-98 (1*R*,1′*S*-config.) and diastereomeric with those covered by Dauricine, D-88 (*R,R*-config.) and Thalibrine, T-309 (*S,S*-config.). Alkaloid from the stems of *Abuta grisebachii* (Menispermaceae) and *Xylomalos monospora*. Mp 148-149°. $[\alpha]_D$ -60.2 (c, 0.5 in $CHCl_3$).

Di-Me ether: **O,O-*Dimethylgrisabine***

[13565-64-5]

$C_{39}H_{46}N_2O_6$ 638.802

Alkaloid from the leaves of *Phaeanthus vietnamensis* (Annonaceae). Exhibits antibacterial activity. Amorph. solid. $[\alpha]_D^{26}$ -26 (c, 0.19 in $CHCl_3$).

O^{12}*-De-Me:* ***Magnoline***. *Grisabutine*

[6859-66-1]

$C_{36}H_{40}N_2O_6$ 596.722

Alkaloid from the stems of *Abuta grisebachii* (Menispermaceae) and leaves of *Magnolia fuscata* (Magnoliaceae). Cryst. (MeOH or EtOH). Mp 178-179° Mp 192-193°. $[\alpha]_D$ -50 (c, 0.5 in $CHCl_3$). Enantiomer of Berbamunine, B-98.

O^{12}*-De-Me, O*$^{7'}$*-Me:* ***(-)-Temuconine***

[126589-93-3]

$C_{37}H_{42}N_2O_6$ 610.749

Alkaloid from *Aristolochia elegans* (Aristolochiaceae). Amorph. $[\alpha]_D$ -99.8 (c, 2.4 in MeOH). Enantiomer of Temuconine in B-98.

O^{12}*-De-Me, O*^{7}*,O*$^{7'}$*-di-Me:*

[935751-39-6 (hydrochloride)]

$C_{38}H_{44}N_2O_6$ 624.775

Alkaloid from the stem bark of *Xylomalos monospora*.

Proskurina, N. *et al., Bull. Soc. Chim. Fr.*, 1938, **5**, 1357 (*Magnoline, isol*)

Proskurina, N. *et al., J. Gen. Chem. USSR (Engl. Transl.)*, 1940, **10**, 707; *CA*, **35**, 2520 (*Magnoline, struct*)

Ahmed, R. *et al., J.O.C.*, 1977, **42**, 2271 (*Grisabine, Magnoline, isol, uv, ir, pmr, ms, struct*)

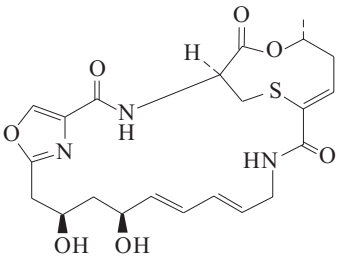
El-Sebakhy, N. *et al., J. Nat. Prod.*, 1989, **52**, 1374 (*(-)-Temuconine*)

Sedmera, P. *et al., Heterocycles*, 1990, **30**, 205 (*O,O-Dimethylgrisabine*)

Ngamga, D. *et al., Nat. Prod. Commun.*, 2006, **1**, 619-622 (*Xylomalos constit*)

Griseoviridin G-178

[53216-90-3]



$C_{22}H_{27}N_3O_7S$ 477.537

Modified cyclic peptide antibiotic. prod. by *Streptomyces griseusStreptomyces griseoviridis*. Antibiotic active against gram-positive bacteria. Cryst. (MeOH) (polymorphic). Sol. MeOH, EtOH, Py; fairly sol. H_2O, butanol; poorly sol. EtOAc, hexane. Mp 161-163° dec., 194-200°, 230-240°. $[\alpha]_D^{27}$ -237 (c, 0.5 in MeOH). λ_{max} 221 (ϵ 41500); 278 (sh) (ϵ 1500) (MeOH) (Derep). λ_{max} 221 (E1%/1cm 870) (MeOH) (Berdy). λ_{max} 220 (ϵ 44000) (EtOH) (Berdy).

▶ LD_{50} (mus, ivn) 75 mg/kg, LD_{50} (mus, ipr) 100 mg/kg, LD_{50} (mus, scu) 100 mg/kg. ME4200000

Hydrochloride:

Needles (Et_2O/MeOH). Dec. ⩾ 170°.

Di-Ac:

Cryst. (MeOH). Mp 136-140° dec. $[\alpha]_D^{27}$ -230 (c, 0.44 in MeOH).

Ames, D.E. *et al., J.C.S.*, 1955, 4260 (*isol, ir, uv*)

Fallona, M.C. *et al., Can. J. Chem.*, 1964, **42**, 371; 394 (*ir, uv, nmr*)

Birnbaum, G.I. *et al., J.A.C.S.*, 1976, **98**, 1926 (*cryst struct*)

Bycroft, B.W. *et al., J.C.S. Perkin 1*, 1976, 1996; 1977, 2464 (*cmr, pmr, ms, ir, cryst struct, conformn*)

Meyers, A.I. *et al., Pure Appl. Chem.*, 1982, **54**, 2537 (*synth*)

Nikaido, M.M. *et al., Diss. Abstr. Int., B*, 1983, 146 (*synth*)

Jayaraman, G. *et al., Biochim. Biophys. Acta*, 1994, **1201**, 149 (*pmr, struct*)

Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, GKC000

Grisonomycin G-179

Antibiotic A 10073. A 10073

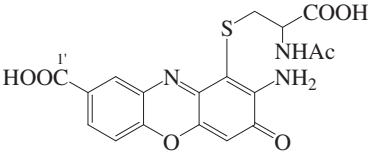
Related to Ferrimycin A_1, F-37. Prod. by *Streptomyces griseus* sp. A10073. Siderophore. Antibacterial agent. Yellow powder. Sol. H_2O, phenol; poorly sol. butanol, hexane. λ_{max} 280 (E1%/1cm 82); 425 (E1%/1cm 16.4) (H_2O) (Berdy).

Ger. Pat., 1959, 1 070 782; *CA*, **55**, 21475f

Grixazone B G-180

SM 43. Antibiotic SM 43. Umycin B

[116511-06-9]



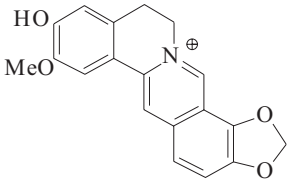
$C_{18}H_{15}N_3O_7S$ 417.398
Prod. by *Streptomyces* sp. DSM 3813 and by *Streptomyces griseus* under phosphate depletion. Anthelmintic. Lipoxygenase inhibitor.

1′-Aldehyde: ***Grixazone A***
$C_{18}H_{15}N_3O_6S$ 401.399
Prod. by *Streptomyces griseus* under phosphate depletion. λ_{max} 270 (ϵ 17100); 414 (ϵ 14800); 436 (ϵ 15200) (DMSO).

Eur. Pat., 1988, 260 486; *CA*, **109**, 142586p (*isol*)
Ohnishi, Y. *et al., J. Antibiot.*, 2004, **57**, 218-223 (*isol, pmr, cmr*)
Horinouchi, S. *et al., Biosci., Biotechnol., Biochem.*, 2007, **71**, 283-299 (*rev, biosynth*)
Suzuki, H. *et al., J. Antibiot.*, 2007, **60**, 380-387 (*biosynth*)

Groenlandicine G-181

11,12-Dihydro-9-hydroxy-8-methoxybenzo[a]-1,3-benzodioxolo[4,5-g]quinolizinium, 9CI. Dehydrochelanthifoline. Tetradehydrochelanthifoline. Alkaloid B†
[38691-95-1]



$C_{19}H_{16}NO_4^{\oplus}$ 322.34
Originally considered to be $C_{21}H_{16}NO_6^{\oplus}$. Alkaloid from *Coptis groenlandica*, other *Coptis* spp., *Corydalis saxicola* and cultures of *Nandina domestica*. Orange needles (as chloride). Mp 270-275° dec.

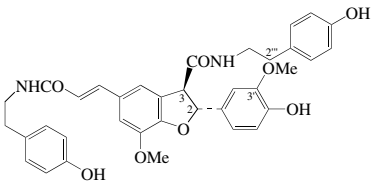
Me ether: 11,12-Dihydro-8,9-dimethoxybenzo[a]-1,3-benzodioxolo[4,5-g]quinolizinium, 9CI. ***Epiberberine***
[6873-09-2]
$C_{20}H_{18}NO_4^{\oplus}$ 336.367
Alkaloid from *Berberis floribunda*, *Coptis chinensis*, *Coptis trifolia* and *Nandina domestica*. Orange cryst. ($CHCl_3$/MeOH)(as chloride). Mp 260° dec. (chloride). λ_{max} 227 ; 245 ; 268 ; 361 (EtOH).

[41451-54-1]

Chatterjee, D.R. *et al., J. Indian Chem. Soc.*, 1951, **28**, 225-228 (*isol, Epiberberine*)
Cooper, S.F. *et al., Planta Med.*, 1970, **19**, 23; 1972, **21**, 313 (*isol, uv, ir, pmr*)
Jewers, K. *et al., J.C.S. Perkin 2*, 1972, 1393 (*pmr, struct*)
Suguna, H. *et al., Coll. Czech. Chem. Comm.*, 1976, **41**, 1219 (*struct*)
Pai, B.R. *et al., Indian J. Chem., Sect. B*, 1982, **21**, 607-611 (*synth, Epiberberine*)
Ikuta, A. *et al., J. Nat. Prod.*, 1984, **47**, 189-190 (*isol, Epiberberine*)
Ikuta, A. *et al., Phytochemistry*, 1988, **27**, 2143-2145 (*isol, Epiberberine*)
Mizuno, M. *et al., Phytochemistry*, 1992, **31**, 717-719 (*isol, Epiberberine*)
Cheng, X. *et al., Chem. Biodiversity*, 2008, **5**, 1335-1344 (*isol, pmr, cmr*)

Grossamide G-182

[80510-06-1]



$C_{36}H_{36}N_2O_8$ 624.689
Isol. from *Cannabis sativa* and *Capsicum annuum* var. *grossum* and *Hibiscus cannabinus*. Protease inhibitor. Cryst. (MeOH/$CHCl_3$/cyclohexane). Mp 174-175° (133-135°).

3′-O-De-Me: ***Demethylgrossamide***
[170171-94-5]
$C_{35}H_{34}N_2O_8$ 610.662
Isol. from seeds of *Xylopia aethiopica*. Amorph. powder.

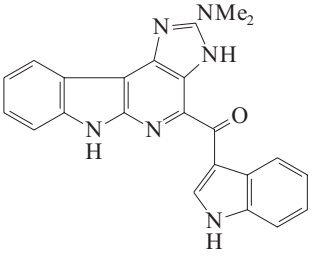
2-Epimer: ***Tribulusamide A***
[218622-84-5]
$C_{36}H_{36}N_2O_8$ 624.689
Alkaloid from the fruit of *Tribulus terrestris*. Hepatoprotective agent. Amorph. solid. $[\alpha]_D^{25}$ -10.9 (c, 0.1 in MeOH). λ_{max} 220 (log ϵ 4.22); 287 (log ϵ 4.01); 340 (log ϵ 4.07) (MeOH).

2-Epimer, 2‴-oxo: ***Tribulusamide B***
[218622-86-7]
$C_{36}H_{34}N_2O_9$ 638.673
Alkaloid from the fruit of *Tribulus terrestris*. Hepatoprotective agent. Amorph. solid. $[\alpha]_D^{25}$ -4.9 (c, 0.2 in MeOH). λ_{max} 220 (log ϵ 4.38); 285 (log ϵ 4.32); 320 (log ϵ 4.18) (MeOH).

Yoshihara, T. *et al., Agric. Biol. Chem.*, 1981, **45**, 2593; 1983, **47**, 217 (*isol, synth, struct*)
Sakakibara, I. *et al., Phytochemistry*, 1991, **30**, 3013-3016 (*isol*)
Lajide, L. *et al., Phytochemistry*, 1995, **40**, 1105-1112 (*Demethylgrossamide*)
Li, J.-X. *et al., Planta Med.*, 1998, **64**, 628-631 (*Tribulusamides*)
Seca, A.M.L. *et al., Phytochemistry*, 2001, **58**, 1219-1223 (*isol, pmr, cmr*)

Grossularine 1 G-183

[94935-97-4]



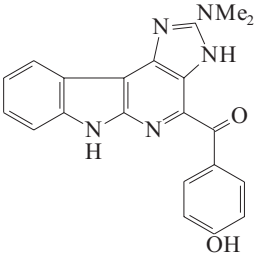
$C_{23}H_{18}N_6O$ 394.435
Struct. revised in 1989. First examples of a naturally occurring α-carboline (see also Grossularine 2, G-184). Cmr assignments revised in 1996. Isol. from the tunicate *Dendrodoa grossularia*. Exhibits marked cytotoxicity toward murine and human tumour cells. Amorph. yellow powder. Mp 350°. λ_{max} 202 ; 235 ; 264 (sh) ; 340 ; 360 (EtOH) (Derep).

N,N-*Di-de-Me:* **N,N-*Didemethylgrossularine 1***
[175170-89-5]
$C_{21}H_{14}N_6O$ 366.381
Alkaloid from the ascidian *Polycarpa aurata*. Yellow needles (MeOH/Me_2CO). Mp 333-335°.

Moquin, C. *et al., Tet. Lett.*, 1984, **25**, 5047-5048 (*isol, ms*)
Moquin-Pattey, C. *et al., Tetrahedron*, 1989, **45**, 3445-3450 (*isol, uv, ms, struct*)
Abas, S.A. *et al., J.O.C.*, 1996, **61**, 2709-2712 (*N,N-Didemethylgrossularine 1*)
Loukaci, A. *et al., Magn. Reson. Chem.*, 1996, **34**, 143-145 (*pmr, cmr*)
Molina, P. *et al., Tetrahedron*, 1998, **54**, 9623-9638 (*synth*)
Miyake, F.Y. *et al., Angew. Chem., Int. Ed.*, 2005, **44**, 3280-3282 (*synth*)

Grossularine 2 G-184

[102488-58-4]

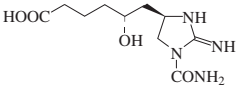


$C_{21}H_{17}N_5O_2$ 371.398
Cmr spectral assignments revised in 1996. Isol. from the tunicate *Dendrodoa grossularia*. Exhibits marked cytotoxicity toward murine and human tumour cells. Cryst. (THF/MeOH). Mp 281-283°. λ_{max} 235; 255; 340; 360 (EtOH) (Derep).

Moquin-Pattey, C. *et al., Tetrahedron*, 1989, **45**, 3445 (*isol, pmr, cmr, ms, struct*)
Loukaci, A. *et al., Magn. Reson. Chem.*, 1996, **34**, 143 (*pmr, cmr*)
Molina, P. *et al., Tetrahedron*, 1998, **54**, 9623-9638 (*synth*)

Guadinomic acid G-185

K01-0509B. Antibiotic K01-0509B
[919521-26-9]

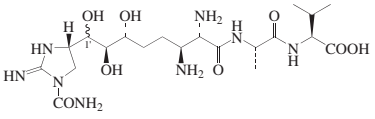


$C_{10}H_{18}N_4O_4$ 258.277
Prod. by *Streptomyces* sp. K01-0509. Selective inhibitor of type III secretion system. $[\alpha]_D^{25}$ +31.9 (c, 0.1 in MeOH).

Tsuchiya, S. *et al., Org. Lett.*, 2006, **8**, 5577-5580 (*synth, pmr, cmr, abs config*)
Iwatsuki, M. *et al., J. Antibiot.*, 2008, **61**, 230-236 (*isol, pmr, cmr*)

Guadinomine A G-186

[948018-04-0]



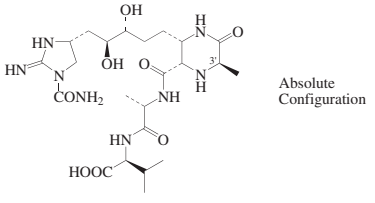
$C_{20}H_{38}N_8O_8$ 518.569
Prod. by *Streptomyces* sp. K01-0509. Bacterial type III secretion system inhibitor.

1′-Deoxy: ***Guadinomine B***
[948018-05-1]
$C_{20}H_{38}N_8O_7$ 502.57
Prod. by *Streptomyces* sp. K01-0509.

Hirose, T. *et al., Chem. Eur. J.*, 2008, **14**, 8220-8238 (*Guadinomine B, synth*)
Iwatsuki, M. *et al., J. Antibiot.*, 2008, **61**, 222-229; 230-236 (*isol, pmr, cmr*)

Guadinomine C_1 G-187

[1033827-71-2]



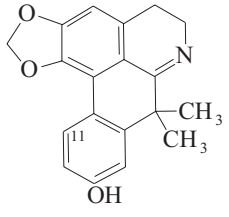
$C_{23}H_{40}N_8O_8$ 556.618
Prod. by *Streptomyces* sp. K01-0509.

3′-Epimer: ***Guadinomine C_2***
[1033827-72-3]
$C_{23}H_{40}N_8O_8$ 556.618
Prod. by *Streptomyces* sp. K01-0509.

Hirose, T. *et al., Chem. Eur. J.*, 2008, **14**, 8220-8238 (*Guadinomine C_2, synth, abs config*)
Iwatsuki, M. *et al., J. Antibiot.*, 2008, **61**, 222-229; 230-236 (*isol, pmr, cmr*)

Guadiscidine G-188

*6,8-Dihydro-8,8-dimethyl-5*H*-benzo[*g*]-1,3-benzodioxolo[6,5,4-*de*]quinolin-10-ol, 9CI*
[91174-10-6]



$C_{19}H_{17}NO_3$ 307.348
Alkaloid from the stem bark of *Guatteria discolor*. Cryst. (MeOH). Mp 269-270°.

Me ether: ***Guadiscine****. 9*-O*-Methylguadiscidine*
[84679-87-8]
$C_{20}H_{19}NO_3$ 321.375
Alkaloid from the stem bark of *Guatteria discolor*. Amorph.

4,5-Didehydro, Me ether: ***4,5-Didehydroguadiscine***
$C_{20}H_{17}NO_3$ 319.359
Alkaloid from the stems and roots of *Hornschuchia obliqua*. Brown amorph. powder.

Deoxy: ***Demethoxyguadiscine****. Deoxyguadiscidine*
$C_{19}H_{17}NO_2$ 291.349
Alkaloid from the stems and roots of *Hornschuchia obliqua*. Brown amorph. powder.

11-Methoxy, Me ether: ***Guadiscoline***
[84679-86-7]
$C_{21}H_{21}NO_4$ 351.401
Alkaloid from the stem bark of *Guatteria discolor*. Noncryst.

Hocquemiller, R. *et al., J. Nat. Prod.*, 1984, **47**, 353-362 (*isol, uv, ir, pmr, ms*)
Fechine, I.M. *et al., Fitoterapia*, 2003, **74**, 29-33 (*Demethoxyguadiscine, 4,5-Didehydroguadiscine*)

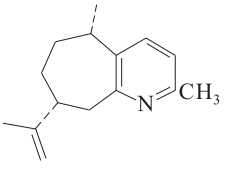
C-Guaianine G-189

Struct. unknown
$C_{21}H_{25}N_2O^{\oplus}$ 321.441
MF is tentative. May be $C_{20}H_{25}N_2\oplus$. Alkaloid from calabash curare (*Strychnos* spp.) (Loganiaceae). Mp 305° (as picrate). Blue-viol. col. with $Ce(SO_4)_2$. Props. similar to those of *C*-Curarine, C-809.

Giesbrecht, E. *et al., Helv. Chim. Acta*, 1954, **37**, 1974-1982

Guaipyridine G-190

*6,7,8,9-Tetrahydro-2,5-dimethyl-8-(1-methylethenyl)-5*H*-cyclohepta[*b*]pyridine, 9CI. Epiguaipyridine*
[41447-48-7]



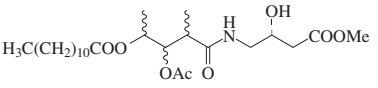
$C_{15}H_{21}N$ 215.338
Originally considered to have *trans*-config. and therefore named Epiguaipyridine. Alkaloid from the essential oil of *Pogostemon patchouly* (Lamiaceae). Liq. $[\alpha]_D^{25.5}$ -34.5 (c, 2.69 in C_6H_6).

5-Epimer, 1′,2′-dihydro, 1′-hydroxy: ***Canonodine***
$C_{15}H_{23}NO$ 233.353
Alkaloid from the fruit of *Cananga odorata*. Cytotoxic. Yellow oil. $[\alpha]_D^{25}$ -76.2 (c, 0.06 in $CHCl_3$). λ_{max} 204 (log ϵ 4.15); 222 (sh) (log ϵ 4.01); 270 (log ϵ 3.92) (EtOH).

Büchi, G. *et al., J.A.C.S.*, 1966, **88**, 3109 (*isol, ir, pmr*)
Van der Gen, A. *et al., Rec. Trav. Chim. (J. R. Neth. Chem. Soc.)*, 1972, **91**, 1433 (*synth, config, pmr*)
Hsieh, T.-J. *et al., J. Nat. Prod.*, 2001, **64**, 616-619 (*Cananodine*)
Craig, D. *et al., Eur. J. Org. Chem.*, 2006, 3558-3561 (*synth*)

Guamamide G-191

[657401-19-9]

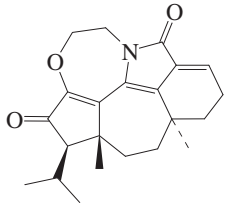


$C_{25}H_{45}NO_8$ 487.632
Alkaloid from a *Symploca* sp. Cytotoxic. Amorph. powder. $[\alpha]_D^{21}$ +6 (c, 0.4 in MeOH). λ_{max} 201 (log ϵ 3.71) (MeOH).

Williams, P.G. *et al., J. Nat. Prod.*, 2004, **67**, 49-53 (*isol, pmr, cmr*)

Guanacastepene D G-192

[378781-31-8]

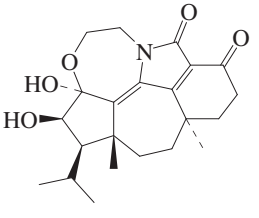


$C_{22}H_{27}NO_3$ 353.46
Metab. of fungus CR115.

Brady, S.F. *et al., J.A.C.S.*, 2001, **123**, 9900-9901 (*Guanacastepene D, cryst struct*)

Guanacastepene H G-193

[378781-63-6]



$C_{22}H_{29}NO_5$ 387.475
Metab. of fungus CR115.

Brady, S.F. *et al., J.A.C.S.*, 2001, **123**, 9900-9901 (*Guanacastepene H, cryst struct*)

Guan-fu base C G-194

[1394-51-0]

$C_{22}H_{33}NO_2$ 343.508

Struct. unknown. Alkaloid from the Chinese herbal drug Guan-Bai-Fu-Tzu (*Aconitum koreanum*) (Ranunculaceae). Mp 150°. $[\alpha]_D^{16.4}$ -21.2 (EtOH).

Hydrobromide: Mp 235°.

Nitrate: Mp 222°.

Di-Ac; hydrochloride: Mp 222.5-224°.

Kao, H.-C. *et al., Yaoxue Xuebao*, 1966, **13**, 186-194; *CA*, **65**, 3922g (*isol*)

Guan-fu base D G-195

[59113-42-7]

$C_{24}H_{35}NO_3$ 385.545

Struct. unknown. Alkaloid from the Chinese herbal drug Guan-Bai-Fu-Tzu (*Aconitum koreanum*) (Ranunculaceae).

Nitrate: [1394-52-1]
Mp 210-211°.

Kao, H.-C. *et al., Yaoxue Xuebao*, 1966, **13**, 186-194; *CA*, **65**, 3922g (*isol*)

Guan-fu base E G-196

[59113-41-6]

$C_{29}H_{43}NO_7$ 517.661

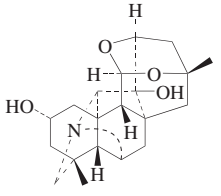
Struct. unknown. Alkaloid from the Chinese herbal drug Guan-Bai-Fu-Tzu (*Aconitum koreanum*) (Ranunculaceae).

Perchlorate: [1394-53-2]
Mp 272°.

Kao, H.-C. *et al., Yaoxue Xuebao*, 1966, **13**, 186-194; *CA*, **65**, 3922g (*isol*)

Guan-fu base K G-197

[497831-34-2]



Absolute Configuration

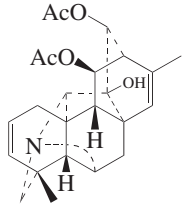
$C_{20}H_{27}NO_4$ 345.438

Alkaloid from the roots of *Aconitum coreanum*.

Yang, C. *et al., Zhongcaoyao*, 2002, **33**, 201-203; *CA*, **138**, 166611

Guan-fu base S G-198

[1037700-00-7]



$C_{24}H_{29}NO_5$ 411.497

Alkaloid from the roots of *Aconitumcoreanum*. Powder. Mp 182-184°. $[\alpha]_D^{25}$ +16.5 (c, 1 in $CHCl_3$).

Yang, C.-H. *et al., Helv. Chim. Acta*, 2008, **91**, 759-765 (*isol*)

Guanidine, 9CI G-199

Carbamidine. Iminourea. Aminoformamidine. Aminomethanamidine. Carbamamidine

[113-00-8]

$HN{=}C(NH_2)_2$

CH_5N_3 59.071

Shows degenerate imino⇔amino tautomerism; only one set of monosubstd. derivs. obtainable. Anion is symmetrical. Occurs widely, e.g. first isol. from vetch seedlings (*Vicia sativa*). Organic base used to form extractable ion-pairs with anionic complexes. Enhances acetylcholine release from nerve endings. Used to treat botulism and other muscle weakness states. Deliquescent cryst. mass. Sol. H_2O, EtOH, acids aq. solns. Mp 50°. pK_{a1} 13.59; pK_{a2} -11 (25°). Strong base, absorbs CO_2 from air.

▶ LD_{50} (mus, ipr) 350 mg/kg. ME7750000

Hydrochloride: [50-01-1]
Hygroscopic powder. Mp 183°.

▶ MF4300000

Carbonate salt (2:1): [593-85-1]
[100224-74-6 , 3425-08-9]
Mp 197°.

▶ FG1750000

Sulfate (2:1): [594-14-9]
[1184-68-5]
Mp 290-293° dec.

Acetate salt: [34771-62-5]
Mp 229-230°.

Nitrate salt: [506-93-4]
Mp 214°.

▶ May explode during prepn. MF4350000

Phosphate salt: [1763-07-1]
[5423-22-3 , 38848-02-1 , 5423-23-4]
Fertiliser. Fireproofing agent for textiles.

Picrate: Mp 333°.

N-*Benzenesulfonyl:* Mp 212°.

N-*Ac:* [5699-40-1]
$C_3H_7N_3O$ 101.108
Mp 145°.

N-*Benzoyl:*
$C_8H_9N_3O$ 163.179
Cryst. (EtOH). Mp 160°.

N,N′-*Di-Ac:*
$C_5H_9N_3O_2$ 143.145
Mp 176-177°.

N,N′,N″-*Tri-Ac:*
$C_7H_{11}N_3O_3$ 185.182
Needles (Me_2CO). Mp 110-112°.

N-tert-*Butyloxycarbonyl:* [219511-71-4]
$C_6H_{13}N_3O_2$ 159.188
Cryst. Mp 165° dec.

N-*Benzyloxycarbonyl:* [16706-54-0]
$C_9H_{11}N_3O_2$ 193.205
Mp 140-142°.

N-*Isopropyl:* [42771-39-1]
$C_4H_{11}N_3$ 101.151
Gel.

N,N,N′,N′-*Tetra-Ph:* N,N,N′,N′-*Tetraphenylguanidine, 9CI*
[632-88-2]
$C_{25}H_{21}N_3$ 363.461
Cryst. (petrol). Mp 130-131°.

N,N,N′,N′-*Tetra-Ph,* N″-*benzoyl:*
$C_{32}H_{25}N_3O$ 467.569
Cryst. (EtOH). Mp 142-144°.

[5150-56-1 , 19227-70-4 , 19244-98-5 , 10308-84-6 , 52470-25-4 , 25215-10-5 , 5423-23-4 , 10199-21-0 , 50979-18-5]

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 818A; 818C; 818B (*ir*)

Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 1329C (*nmr*)

Weith, W. *et al., Ber.*, 1874, **7**, 843 (*tetraphenyl*)

Johnson, T.B. *et al., J.A.C.S.*, 1912, **34**, 164 (*tetraphenyl*)

Org. Synth., Coll. Vol., 1, 1932, 302 (*synth*)

Ger. Pat., 1935, 614 818; *CA*, **29**, 8239 (*phosphate*)

Welcher, R.J. *et al., Organic Analytical Reagents*, Van Nostrand, New York, 1947, **2**, 388 (*use*)

Watt, G.W. *et al., Ind. Eng. Chem.*, 1954, **46**, 2599 (*synth*)

Beynon, J.H. *et al., Org. Mass Spectrom.*, 1968, **1**, 169 (*ms*)

Hart, N.K. *et al., Aust. J. Chem.*, 1970, **23**, 1679 (*synth, deriv*)

Corral, R.A. *et al., Chem. Comm.*, 1970, 556 (*synth, deriv*)

Ghosh, P. *et al., Technology*, 1972, **9**, 65-67; *CA*, **79**, 18019d (*phosphate*)

U.S. Pat., 1974, 3 811 992; *CA*, **81**, 93341x (*phosphate, use*)

Ullmanns Encykl. Tech. Chem., 4. Aufl., 1976, (*rev*)

Kirk-Othmer Encycl. Chem. Technol., 3rd edn., Wiley, 1978, 514 (*rev*)

Smith, R.L. *et al., J.A.C.S.*, 1979, **101**, 191 (*cmr*)

Fritsche-Lang, W. *et al., Chem. Ber.*, 1985, **118**, 2044 (*purifn*)

Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 1116

Katrusiak, A. *et al., Acta Cryst. C*, 1994, **50**, 1161 (*cryst struct, nitrate*)

Encyclopaedia of Reagents for Organic Synthesis, (ed. Paquette, L.A.), Wiley, 1995, **4**, 2626-2630 (*use*)

Zhang, Q. *et al., J. Med. Chem.*, 2005, **48**, 6472-6481 (*N-isopropyl*)

Goebel, M. *et al., Chem. Comm.*, 2007, 3180-3181 (*cryst struct*)

Schmuck, C. *et al., Eur. J. Org. Chem.*, 2008, 324-329 (*N-BOC, N-benzyloxycarbonyl*)

Bretherick, L. *et al., Handbook of Reactive Chemical Hazards, 4th edn., Butterworths*, 1990, 0483

Luxon, S.G. *et al., Hazards in the Chemical Laboratory, 5th edn., Royal Society of Chemistry*, 1992, 651

Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, GKW000; GKY000; GLC000; GLA000; GLB300

Guanidinoacetic acid G-200

N-*(Aminoiminomethyl)glycine, 9CI. Glycocyamine.* N-*Guanylglycine. [(Aminoiminomethyl)amino]acetic acid. Guanidineacetic acid. (Carboxymethyl)-guanidine*

[352-97-6]

$HN{=}C(NH_2)NHCH_2COOH$

$C_3H_7N_3O_2$ 117.107

Occurs in the sea anemone *Anthopleura japonica* and other spp. Has cardiotonic props. Plates (H_2O). Mp 280-284° dec. pK_a 2.82 (25°).

Hydrochloride: [14901-20-3]
Plates (conc. HCl). Mp 200° dec.

N-*Me:* see Creatine, C-731

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 820D (*ir*)

Aldrich Library of NMR Spectra, 2nd edn., 1983, **1**, 680B (*nmr*)

Walter, W. *et al., Angew. Chem.*, 1955, **67**, 275 (*synth*)

Org. Synth., Coll. Vol., 3, 1955, 440 (*synth*)

Fasold, H. *et al., Biochem. Z.*, 1961, **335**, 86 (*synth*)
Cramer, F. *et al., Chem. Ber.*, 1962, **95**, 1670 (*synth*)
Pant, R. *et al., Hoppe-Seyler's Z. Physiol. Chem.*, 1964, **335**, 272 (*synth*)

4-Guanidinobutanoic acid G-201

4-[(Aminoiminomethyl)amino]butanoic acid, 9CI. GGBA
[463-00-3]
HN=C(NH$_2$)NHCH$_2$CH$_2$CH$_2$COOH
$C_5H_{11}N_3O_2$ 145.161
Occurs in plants and animals, e.g. *Pinus* spp., *Lunaria annua*, sea anemone *Anthopleura japonica*, green alga *Enteromorpha intestinalis*. Found in soybean, tea and *Citrus* spp. Depressive neurotransmitter, displays similarities to 4-Aminobutanoic acid, A-715. Cryst. + 2H$_2$O (H$_2$O).
▶ Toxic to chick embryos.

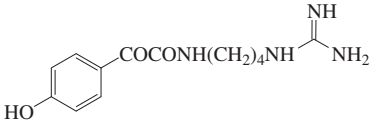
Hydrochloride: [13890-14-7]
Mp 184°.

Amide: 4-Guanidinobutyramide. ***Tiformin, INN.*** *Tyformin, BAN*
[4210-97-3]
$C_5H_{12}N_4O$ 144.176
Oral hypoglycaemic agent. Log P -2.9 (calc).

Amide; hydrochloride: HL 523. Augmentin†
[23256-39-5]
Cryst. (MeOH). Mp 108°.

Robin, Y. *et al., Bull. Soc. Chim. Biol.*, 1953, **35**, 285 (*biosynth*)
Irreverre, F. *et al., Nature (London)*, 1957, **80**, 704 (*occur*)
Makisumi, S. *et al., J. Biochem. (Tokyo)*, 1961, **49**, 284 (*isol*)
Pant, R. *et al., Hoppe-Seyler's Z. Physiol. Chem.*, 1964, **335**, 272 (*synth*)
Reinbothe, H. *et al., Phytochemistry*, 1964, **3**, 327 (*biosynth*)
Tomita, K. *et al., Bull. Chem. Soc. Jpn.*, 1972, **45**, 3628 (*cryst struct*)
Martindale, The Extra Pharmacopoeia, 28th/29th edn., Pharmaceutical Press, 1982, 13387
Okabe, N. *et al., Chem. Pharm. Bull.*, 1995, **43**, 1992 (*cryst struct*)

N-(4-Guanidinobutyl)-2-(4-hydroxyphenyl)-2-oxoacetamide G-202



$C_{13}H_{18}N_4O_3$ 278.31
Isol. from the hydroid *Campanularia* sp. Oil. λ_{max} 209 (log ϵ 3.84); 295 (log ϵ 3.89) (MeOH).

Houssen, W.E. *et al., J. Nat. Prod.*, 2005, **68**, 453-455

2-Guanidinoethanesulfinic acid, 8CI G-203

2-[(Aminoiminomethyl)amino]ethanesulfinic acid, 9CI. ***Hypotaurocyamine***
[1119-54-6]
[35365-99-2]
HN=C(NH$_2$)NHCH$_2$CH$_2$SO$_2$H
$C_3H_9N_3O_2S$ 151.189
Isol. from *Agelas* spp., *Arenicola marina* and *Phascolosoma* spp. Mp 187-188°.

Phosphate: 2-[[Imino(phosphonoamino)-methyl]amino]ethanesulfinic acid, 9CI. 2-(3-Phosphonoguanidino)ethanesulfinic acid, 8CI. Hypotaurocyanamine-phosphoric acid
[4378-69-2]
$C_3H_{10}N_3O_5PS$ 231.169
Isol. from marine annelids.

Robin, Y. *et al., Biochim. Biophys. Acta*, 1962, **63**, 481 (*isol*)
Desvages, G. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1968, **267**, 1868 (*synth*)
Berthou, J. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1972, **274**, 157 (*cryst struct*)

2-Guanidinoethanesulfonic acid G-204

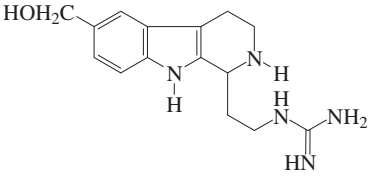
2-[(Aminoiminomethyl)amino]ethanesulfonic acid, 9CI. N-*Amidinotaurine, 8CI.* ***Taurocyamine****. Guanidinotaurine*
[543-18-0]
HN=C(NH$_2$)^{1}NHCH$_2$CH$_2$SO$_3$H
$C_3H_9N_3O_3S$ 167.188
Isol. from urine. Antistaphylococcal, antifibrinolytic. Cryst. (EtOH/Me$_2$CO). Mp 226-228° Mp 264°.

N^1-*Me:* ***Halichondriasulfonic acid***
$C_4H_{11}N_3O_3S$ 181.215
Isol. from *Halichondria rugosa*. Anti-HIV-1 agent. Needles.

Schram, E. *et al., Bull. Soc. Chim. Biol.*, 1957, **39**, 561 (*isol*)
Fujii, A. *et al., J. Med. Chem.*, 1975, **18**, 502 (*synth, pharmacol*)
Jin, Y. *et al., Nat. Prod. Res.*, 2006, **20**, 1129-1135 (*Halichondriasulfonic acid*)

1-(2-Guanidinoethyl)-1,2,3,4-tetrahydro-6-hydroxymethyl-β-carboline G-205

*1-(2-Guanidinoethyl)-2,3,4,9-tetrahydro-1*H*-pyrido[3,4-*b*]indole-6-methanol*



$C_{15}H_{21}N_5O$ 287.364
Alkaloid from the web of the spider *Nephila clavipes*.

Marques, M.R. *et al., Chem. Biodiversity*, 2005, **2**, 525-534 (*isol, hplc, ms*)

4-Guanidino-3-hydroxybutanoic acid G-206

4-[(Aminoiminomethyl)amino]-3-hydroxybutanoic acid, 9CI
[7010-89-1]
HN=C(NH$_2$)NHCH$_2$CH(OH)CH$_2$-COOH
$C_5H_{11}N_3O_3$ 161.16
Occurs in the sea anemone *Anthopleura japonica*. Cryst. (H$_2$O). Mp 260° dec.

Robin, Y. *et al., Bull. Soc. Chim. Biol.*, 1953, **35**, 285 (*biosynth*)
Makisumi, S. *et al., J. Biochem. (Tokyo)*, 1961, **49**, 284 (*isol*)
Japan. Pat., 1963, 63 2 860; *CA*, **59**, 11263 (*synth*)

5-Guanidino-2-oxopentanoic acid G-207

5-[(Aminoiminomethyl)amino]-2-oxopentanoic acid, 9CI. α-Keto-δ-guanidinovaleric acid
[3715-10-4]
HN=C(NH$_2$)NHCH$_2$CH$_2$CH$_2$CO-COOH
$C_6H_{11}N_3O_3$ 173.171
Occurs in insects and marine invertebrates. Also found in *Phlox decussata* and *Picea glauca*. Cryst. + 1H$_2$O (H$_2$O). Mp 250°. Darkens at 221°.

2,4-Dinitrophenylhydrazone: Mp 250°. Darkens at 218°.

Robin, Y. *et al., Biochim. Biophys. Acta*, 1953, **11**, 403 (*isol*)
Brandner, G. *et al., Acta Chem. Scand.*, 1964, **18**, 574 (*isol*)
Biellmann, J.F. *et al., Bioorg. Chem.*, 1977, **6**, 89 (*synth*)
Cooper, A.J.L. *et al., J. Biol. Chem.*, 1978, **253**, 5407 (*synth*)

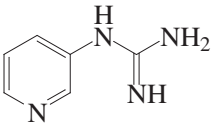
3-Guanidinopropanoic acid G-208

N-*(Aminoiminomethyl)-β-alanine, 9CI.* N-*Amidino-β-alanine, 8CI. Guanidinepropionic acid*
[353-09-3]
HN=C(NH$_2$)NHCH$_2$CH$_2$COOH
$C_4H_9N_3O_2$ 131.134
Occurs in the sea anemone *Anthopleura japonica*. Cryst. (EtOH aq.). Mp 209-211°.

Mourgue, M. *et al., Bull. Soc. Chim. Fr.*, 1948, 181 (*synth*)
Makisumi, S. *et al., J. Biochem. (Tokyo)*, 1961, **49**, 284 (*isol*)
Steward, E.G. *et al., Acta Cryst. B*, 1974, **30**, 813 (*cryst struct*)

3-Guanidinylpyridine G-209

3-Pyridinylguanidine, 9CI, 8CI. ***Pyraxinine***
[67087-03-0]

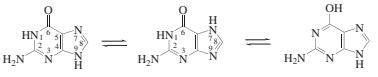


$C_6H_8N_4$ 136.156
Isol. from the New Caledonian marine sponge *Cymbastela cantharella*. Amorph. solid. λ_{max} 203 (ϵ 2300); 231 (ϵ 1900); 260 (sh) (ϵ 1100) (EtOH). λ_{max} 215 (ϵ 2800); 243 (ϵ 2000); 277 (ϵ 900) (EtOH/NaOH aq).

Al Mourabit, A. *et al., J. Nat. Prod.*, 1997, **60**, 290-291 (*isol, synth, uv, ir, pmr, cmr*)

Guanine G-210

*2-Amino-1,7-dihydro-6*H*-purin-6-one, 9CI. 2-Aminohypoxanthine. 2-Amino-6-hydroxypurine. 2-Amino-6-purinol. C.I. Natural White 1*
[73-40-5]



1,9-Dihydro-*form* 1,7-Dihydro-*form*

$C_5H_5N_5O$ 151.127
Occurs widely in animals and plants. Component of nucleic acids. Cryst. Mp 300°.

▶ MF8260000

Hydrochloride: [635-39-2]
[18602-14-7]
Needles + $2H_2O$ (dil. HCl).

2-N-*Ac:* [19962-37-9]
$C_7H_7N_5O_2$ 193.165
Cryst. (EtOH aq.). Mp 350°.

2-N-*Benzoyl:* [21323-87-5]
$C_{12}H_9N_5O_2$ 255.235
Cryst. (EtOH aq.). Mp 315-340°.

2-N-*Me:* N^2*-Methylguanine. 6-Hydroxy-2-methylaminopurine. 2-(Methylamino)hypoxanthine*
[10030-78-1]
$C_6H_7N_5O$ 165.154
Occurs in human urine and as a component of yeast nucleic acid. Cryst. + $1H_2O$ (H_2O). Mp 200° dec Mp 288° (as picrate). $[\alpha]_D^{20}$ -34.6 (c, 1.01 in DMSO/EtOH 1:1).

2-N,N-*Di-Me:* N^2,N^2*-Dimethylguanine. 2-Dimethylamino-6-hydroxypurine*
[1445-15-4]
$C_7H_9N_5O$ 179.181
Isol. from RNA of various plants. λ_{max} 235 (ϵ 6900); 258 (ϵ 14500); 290 (sh) (ϵ 6300) (H_2O).

7-Oxide: Guanine N^7*-oxide. 7-Hydroxyguanine. Antibiotic 3780*
[5227-68-9]
$C_5H_5N_5O_2$ 167.127
Isol. from culture broths of *Streptomyces* spp. Antitumour, antimicrobial and antiviral agent. Brownish cryst. + $^1/_3H_2O$. Mp 300°. λ_{max} 251 (ϵ 4510) (pH 1) (Derep). λ_{max} 234 (ϵ 13760); 291 (ϵ 3940) (H_2O) (Derep).

▶ LD_{50} (mus, ipr) 53 mg/kg. MF8585000

1-Amino:
$C_5H_6N_6O$ 166.142
Needles (as hydrochloride). Mp 215-218°. pK_{a1} 3.6; pK_{a2} 10.5.

3-Amino:
$C_5H_6N_6O$ 166.142
Mp 250° (as hydrochloride). pK_{a1} 4.2; pK_{a2} 9.8.

7-Amino:
$C_5H_6N_6O$ 166.142
Monohydrate (as hydrochloride). Mp 200-203° (hydrochloride). pK_{a1} 3.5; pK_{a2} 9.6.

9-Amino:
$C_5H_6N_6O$ 166.142
Needles (1*M* HCl). Mp 250°. pK_{a1} 2.7; pK_{a2} 9.7.

1,7-Dihydro-*form*

1-Me: see 1-Methylguanine, M-467

1,7-Di-Me: see 1-Methylguanine, M-467

*7-Benzyl: 2-Amino-1,7-dihydro-7-(phenylmethyl)-6*H*-purin-6-one, 9CI*
[182005-51-2 (dihydrochloride)]
$C_{12}H_{11}N_5O$ 241.252
Mp 285° dec. (dihydrochloride).

7-Benzyl, 2-N-*Ac:* [17495-10-2]
$C_{14}H_{13}N_5O_2$ 283.289
Mp 241°.

7-Benzyl, 2-N-*benzoyl:* [182005-36-3]
$C_{19}H_{15}N_5O_2$ 345.36
Mp 265-267°.

7-β-D-Xylofuranosyl: [99436-41-6]
$C_{10}H_{13}N_5O_5$ 283.243
Cryst. (H_2O). Mp 262-264°. $[\alpha]_D^{20}$ -33.3 (c, 0.57 in DMSO).

1,9-Dihydro-*form*

Cryst. (H_2O).

2-N*, 9-Di-Ac:* [3056-33-5]
$C_9H_9N_5O_3$ 235.202
Mp 285°.

9-α-D-Xylofuranosyl: [27462-38-0]
$C_{10}H_{13}N_5O_5$ 283.243
Mp 186° dec. (260-261°). $[\alpha]_D^{20}$ -17.1 (c, 0.76 in DMSO).

9-β-D-Xylofuranosyl: [27462-39-1]
$C_{10}H_{13}N_5O_5$ 283.243
Cryst. (H_2O). Mp 236-240°. $[\alpha]_D^{20}$ -68.1 (c, 0.72 in DMSO).

▶ MF8610000

1,9-Di-Me: see 1-Methylguanine, M-467

7,9-Dihydro-*form*

Imidazolium betaine form

7,9-Di-Me: see Herbipoline, H-143

OH-form

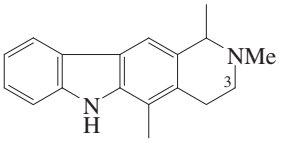
*Et ether: 6-Ethoxy-1*H*-purin-2-amine, 9CI. 2-Amino-6-ethoxypurine. 6-O-Ethylguanine*
[51866-19-4]
$C_7H_9N_5O$ 179.181
Cryst. (H_2O). Mp 293° dec.

Cyclohexylmethyl ether: O^6*-Cyclohexylmethylguanine. NU 2058*
[161058-83-9]
$C_{12}H_{17}N_5O$ 247.299
Cyclin-dependent kinase inhibitor. Solid. Mp 202-204°.

Aldrich Library of NMR Spectra, 2nd edn., 1983, **2**, 593A (*nmr*)
Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 716B (*ir*)
Balsiger, R.W. *et al., J.O.C.*, 1960, **25**, 1573-1575 (*Et ether*)
Gerster, J.F. *et al., J.O.C.*, 1966, **31**, 3258 (*synth, derivs*)
Rice, J.M. *et al., J.A.C.S.*, 1967, **89**, 2719 (*ms*)
Thewalt, U. *et al., Acta Cryst. B*, 1971, **27**, 2358 (*cryst struct*)
Lister, J.H. *et al., Chem. Heterocycl. Compd.*, (ed. Weissberger, A. *et al*), 1971, (*rev*)
Lee, W.W. *et al., J.O.C.*, 1971, **36**, 842 (*synth*)
Sekiya, M. *et al., Chem. Pharm. Bull.*, 1976, **24**, 1331 (*synth*)
Yamazaki, A. *et al., Nucleic Acids Res.*, 1976, **3**, 251 (*synth*)
Dimitrijevich, S.D. *et al., J.O.C.*, 1979, **44**, 400 (*deriv, synth*)
McGee, D.P.C. *et al., Can. J. Chem.*, 1986, **64**, 1885 (*deriv, synth, uv, pmr, cmr*)
Mathlouth, M. *et al., Carbohydr. Res.*, 1986, **146**, 15 (*ir, Raman*)
Gosselin, G. *et al., J. Med. Chem.*, 1986, **29**, 203 (*derivs*)
Nohara, F. *et al., Tet. Lett.*, 1987, **28**, 1287 (*7-oxide, bibl*)
Kohda, K. *et al., Tetrahedron*, 1989, **45**, 6367 (*aminoguanines*)
Maixner, J. *et al., Acta Cryst. C*, 1991, **47**, 2474 (*cryst struct, hydrochloride*)
Yamagata, Y. *et al., Acta Cryst. C*, 1992, **48**, 318 (*cryst struct, 1-amino, 7-amino, 9-amino*)
Ogawa, K. *et al., Chem. Pharm. Bull.*, 1992, **40**, 343 (*7-oxide*)
Arris, C.E. *et al., J. Med. Chem.*, 2000, **43**, 2797-2804; 2002, **45**, 3381-3393 (*NU 2058, synth, pharmacol*)
Guille, K. *et al., Acta Cryst. C*, 2006, **62**, o515-o517 (*cryst struct*)
Torii, T. *et al., Tetrahedron*, 2006, **62**, 5709-5716 (*7-benzyl derivs*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, GLI000

Guatambuine G-211

*2,3,4,6-Tetrahydro-1,2,5-trimethyl-1*H*-pyrido[4,3-*b*]carbazole, 9CI.* u-*Alkaloid C*



$C_{18}H_{20}N_2$ 264.369
Antineoplastic agent. Log P 4.72 (calc).

(+)-*form* [2744-45-8]
Alkaloid from *Aspidosperma australe* and some other *Aspidosperma* spp. (Apocynaceae). Mp 245-248°. $[\alpha]_D^{29}$ +112 (c, 0.49 in Py). Pharmacol. active isomer. λ_{max} 240 (ϵ 41300); 250 (ϵ 31300); 262 (ϵ 22700); 299 (ϵ 19300); 330 (ϵ 4300) (EtOH).

(-)-*form*
Alkaloid from root bark of *Aspidosperma australe* (Apocynaceae). Mp 247-248°. $[\alpha]_D^{26}$ -106 (Py). λ_{max} 240 (ϵ 41000); 250 (ϵ 31000); 262 (ϵ 22200); 299 (ϵ 19200) (EtOH).

(±)-*form* [11046-16-5]
Alkaloid from aerial bark of *Aspidosperma australe* (Apocynaceae). Mp 224-225°.

Methiodide: Mp 299-301°.

(ξ)-*form*
N-*De-Me: 2,3,4,6-Tetrahydro-1,5-dimethyl-1*H*-pyrido[4,3-*b*]carbazole, 9CI. **Janetine**. Tetrahydroolivacine*
[69754-02-5]
$C_{17}H_{18}N_2$ 250.343
Alkaloid from *Ervatamia coronaria* and *Stenosolen heterophyllus* (pre-

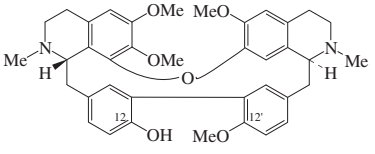
ferred genus name *Tabernaemontana*) (Apocynaceae). Abs. config. not detd., no opt. rotn. reported. May correspond with (+), (-) or (±)-Guatambuine.

3-Hydroxy, N-*de-Me:* ***3-Hydroxytetrahydroolivacine***
[167696-87-9]
$C_{17}H_{18}N_2O$ 266.342
Alkaloid from stem bark of *Peschiera buchtieni* (Apocyanaceae). $[\alpha]_D$ +8 (c, 0.3 in EtOH).

Schmutz, J. *et al., Helv. Chim. Acta*, 1957, **40**, 1189-1200; 1958, **41**, 288-294 (*isol, uv, ir*)
Ondetti, M.A. *et al., Tetrahedron*, 1961, **15**, 160-166 (*isol, uv, struct*)
Besselièvre, R. *et al., Tet. Lett.*, 1976, 1873-1876 (*synth*)
Gomez Gonzalez, C. *et al., CA*, 1979, **90**, 138069u (*Janetine*)
Kutney, J.P. *et al., Can. J. Chem.*, 1982, **60**, 2426-2430 (*synth*)
Kan, C. *et al., J. Nat. Prod.*, 1984, **47**, 478-481 (*Janetine*)
Azoug, M. *et al., Phytochemistry*, 1995, **39**, 1223-1228 (*3-Hydroxytetrahydroolivacine*)
Bennasar, M.-L. *et al., J.O.C.*, 2006, **71**, 1746-1749 (*synth*)
De Simone, C.H. *et al., Z. Kristallogr. - New Cryst. Struct.*, 2006, **221**, 233-234 (*(+)-form, cryst struct*)

Guattaguianine G-212

[116127-41-4]



$C_{38}H_{42}N_2O_6$ 622.76
Alkaloids in this entry (*S,S*-config.) are epimeric with those under Cordobine, C-643 (1*R*,1′*S*-) and Rodiasine, R-114 (1*S*,1′*R*-). Semisynthetic, by methylation of 2′-Norguattaguianine. $[\alpha]_D$ +40 (c, 0.09 in $CHCl_3$).

N$^{2'}$-*De-Me:* ***2′-Norguattaguianine***
[116127-42-5]
$C_{37}H_{40}N_2O_6$ 608.733
Alkaloid from the stem bark of *Guatteria guianensis* (Annonaceae). $[\alpha]_D$ +18 (c, 0.12 in $CHCl_3$).

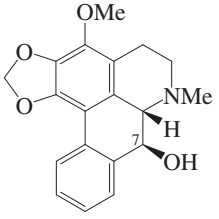
Di-N-*de-Me:* ***2,2′-Bisnorguattaguianine***
[116064-71-2]
$C_{36}H_{38}N_2O_6$ 594.706
Alkaloid from the stem bark of *Guatteria guianensis* (Annonaceae). $[\alpha]_D$ +40 (c, 0.8 in $CHCl_3$).

O$^{12'}$-*De-Me,* O^{12}-*Me,* N-*De-Me (?):* ***Dirosine***
[1356-72-5]
$C_{37}H_{40}N_2O_6$ 608.733
Alkaloid from the bark of *Ocotea rodiaei* (Lauraceae). Cryst. + 1½ H_2O (as hydrochloride). Mp 303° hydrochloride. $[\alpha]_D$ +97 (c, 1.0 in H_2O). Shown to be a stereoisomer of an *N*-Demethylrodiasine (see Rodiasine, R-114). Assigned here tentatively to the *S,S*-series on the basis of its opt. rotn.

Hearst, P.J. *et al., J.O.C.*, 1964, **29**, 466-470 (*Dirosine*)
Berthou, S. *et al., Tetrahedron*, 1998, **44**, 2193-2201 (*Guattaguianine, Norguattaguianines*)

Guatterine G-213

[3912-56-9]



$C_{19}H_{19}NO_4$ 325.363
Alkaloid from *Guatteria psilopus, Pachypodanthium confine* and *Polyalthia suaveolens* (Annonaceae). Needles (Me_2CO aq.). Mp 146-148°. $[\alpha]_D^{20}$ -57.1 ($CHCl_3$).

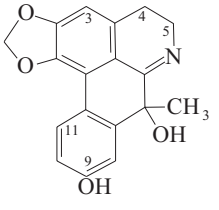
N-*Oxide:* ***Guatterine* N-*oxide***
[62951-76-2]
$C_{19}H_{19}NO_5$ 341.363
Alkaloid from *Polyalthia confine* (Annonaceae). Mp 196°. $[\alpha]_D$ -43 (c, 0.8 in $CHCl_3$).

7-Epimer, N-*de-Me:* ***Artabonatine B***
[247244-63-9]
$C_{18}H_{17}NO_4$ 311.337
Alkaloid from fresh unripe fruit of *Artabotrys uncinatus.* Amorph. yellow powder. $[\alpha]_D^{24}$ -121.5 (c, 0.8 in $CHCl_3$). Only rel. config. determined. λ_{max} 214 (log ϵ 4.25); 256 (log ϵ 4.18); 295 (log ϵ 3.86); 325 (log ϵ 3.56) (EtOH).

Harris, W.M. *et al., J.O.C.*, 1965, **30**, 432 (*isol, uv, pmr, ir, struct*)
Bévalot, F. *et al., Ann. Pharm. Fr.*, 1977, **35**, 65; *CA*, **86**, 185953e (*oxide*)
Cavé, A. *et al., Planta Med.*, 1978, **33**, 243 (*isol*)
Hsieh, T.-J. *et al., J. Nat. Prod.*, 1999, **62**, 1192-1193 (*Artabonatine B*)

Guattescidine G-214

[82404-36-2]



$C_{18}H_{15}NO_4$ 309.321
Alkaloid from the stem bark of *Guatteria scandens* (Annonaceae). Amorph. $[\alpha]_D$ -165 (c, 0.6 in $CHCl_3$). Prob. has (*S*)-config.

O^9-*Me:* ***Guattescine****. 9*-O-*Methylguattescidine*
[82404-37-3]
$C_{19}H_{17}NO_4$ 323.348
Alkaloid from the stem bark of *Guatteria scandens* (Annonaceae). Yellow cryst. (MeOH). Mp 160°. $[\alpha]_D$ +26 (c, 0.87 in $CHCl_3$). Prob. has (*R*)-config.

O^9-*Me, Ac:*
Cryst. (MeOH). Mp 153°. $[\alpha]_D$ +163 (c, 0.5 in $CHCl_3$).

4,5-Didehydro, O^9-*Me:* ***Dehydroguattescine***
[96997-99-8]
$C_{19}H_{15}NO_4$ 321.332
Alkaloid from the stem bark of *Guatteria schomburgkiana* (Annonaceae).

3-Methoxy: ***3-Methoxyguattescidine***
[158018-13-4]
$C_{19}H_{17}NO_5$ 339.347
Alkaloid from stem bark of *Guatteria foliosa* (Annonaceae). Amorph. $[\alpha]_D$ +37 (c, 0.23 in MeOH).

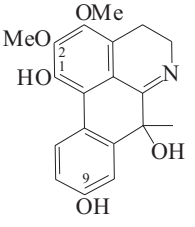
11-Methoxy: ***Guacolidine***
[91174-12-8]
$C_{19}H_{17}NO_5$ 339.347
Alkaloid from the stem bark of *Guatteria discolor* (Annonaceae). Yellow needles (CH_2Cl_2). Mp 122°. $[\alpha]_D$ +4 (c, 0.78 in MeOH).

11-Methoxy, O^9-*Me:* ***Guacoline****. 9*-O-*Methylguacolidine*
[91174-11-7]
$C_{20}H_{19}NO_5$ 353.374
Alkaloid from the stem bark of *Guatteria discolor* (Annonaceae). Noncryst. $[\alpha]_D$ -37 (c, 1.08 in MeOH).

Hocquemiller, R. *et al., Tetrahedron*, 1982, **38**, 911 (*Guattescidine, Guattescine, isol, uv, pmr, ms, cmr, ir*)
Hocquemiller, R. *et al., J. Nat. Prod.*, 1983, **46**, 335 (*Guacoline, Guacolidine, isol, uv, ir, pmr, ms, cmr, synth*)
Chiaroni, A. *et al., Tetrahedron*, 1983, **39**, 2163 (*pmr, cmr, struct, Guattescidine, Guattescine*)
Hocquemiller, R. *et al., J. Nat. Prod.*, 1984, **47**, 353 (*isol, uv, ir, pmr, cmr, ms, struct, Guacolidine, Guacoline*)
Cortes, D. *et al., J. Nat. Prod.*, 1985, **48**, 254 (*Dehydroguattescine*)
Mahiou, V. *et al., J. Nat. Prod.*, 1994, **57**, 890 (*3-Methoxyguattescidine*)
Atanes, N. *et al., Tetrahedron*, 1994, **50**, 11257 (*Guacoline, synth*)

Guattouregidine G-215

[84391-85-5]



$C_{19}H_{19}NO_5$ 341.363
Alkaloid from the stem bark of *Guatteria ouregou* (Annonaceae). Amorph. $[\alpha]_D$ -31 (c, 0.17 in EtOH).

O^9-*Me:* ***Guattouregine****. 9*-O-*Methylguattouregidine*
[84391-84-4]
$C_{20}H_{21}NO_5$ 355.39
Alkaloid from the stem bark of *Guatteria ouregou* (Annonaceae). Noncryst.

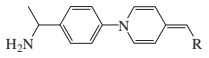
$[\alpha]_D$ -69 (c, 0.10 in EtOH).

O^2-*De-Me,* O^1-*Me:* ***Isoguattouregidine***
$C_{19}H_{19}NO_5$ 341.363
Alkaloid from *Guatteria melosma* (Annonaceae). λ_{max} 216 (log ϵ 4.3); 235 (sh) (log ϵ 4.12); 268 (log ϵ 4.47); 308 (log ϵ 3.93); 355 (log ϵ 3.89) (no solvent reported).

Leboeuf, M. *et al., C. R. Hebd. Seances Acad. Sci., Ser.* 2, 1982, **295**, 191-194 (*Guattouregine, isol, uv, ir, pmr, cmr, ms, struct*)
Leboeuf, M. *et al., Planta Med.*, 1983, **48**, 234-245 (*isol, uv, ir, pmr, cmr, ms, struct*)
Guinaudeau, H. *et al., J. Nat. Prod.*, 1988, **51**, 389-474 (*Isoguattouregidine*)

Guayulamine A G-216

[447457-74-1]



$C_{18}H_{24}N_2$ 268.401
Alkaloid from the derubberised resin of the hybrid *Parthenium argentatum* x *Parthenium tomentosa*. Oil. Racemate. λ_{max} 286 (no solvent reported).

Maatooq, G.T. *et al., Z. Naturforsch., C*, 2002, **57**, 211-215 (*isol, pmr, cmr, ms*)

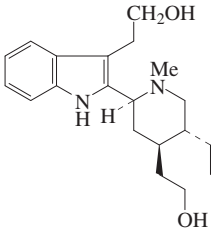
Guayulamine B G-217

[447457-75-2]
As Guayulamine A, G-216 with
R = $CH_2CH_2CH(CH_3)_2$
$C_{19}H_{26}N_2$ 282.428
Alkaloid from the derubberised resin of the hybrid *Parthenium argentatum* x *Parthenium tomentosa*. Oil. Racemate. λ_{max} 289 (no solvent reported).

Maatooq, G.T. *et al., Z. Naturforsch., C*, 2002, **57**, 211-215 (*isol, pmr, cmr, ms*)

Guettardine G-218

[91897-59-5]



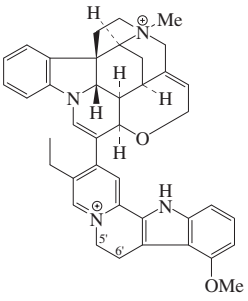
Absolute Configuration

$C_{20}H_{30}N_2O_2$ 330.469
Alkaloid from the bark of *Guettarda heterosepala* (Rubiaceae). Amorph. solid. $[\alpha]_D^{20}$ -10 (c, 1 in EtOH). Possible biogenetic intermed. in the formn. of Corynanthe-Cinchona alkaloids. λ_{max} 226 (log ϵ 4.54); 277 (log ϵ 3.89); 284 (log ϵ 3.91); 292 (log ϵ 3.85) (EtOH).

Brillanceau, M.H. *et al., Tet. Lett.*, 1984, **25**, 2767-2770 (*uv, pmr, cmr, ms, struct*)
Diez, A. *et al., Tetrahedron*, 1990, **46**, 4393-4406 (*synth*)

Guiaflavine G-219

[229011-55-6]



Absolute Configuration

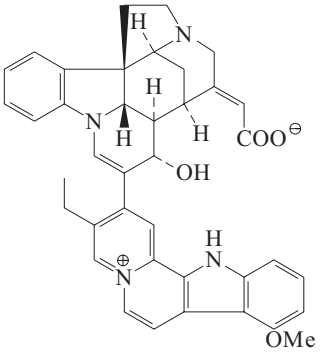
$C_{40}H_{42}N_4O_2^{2\oplus}$ 610.797
Quaternary alkaloid from the stem bark of *Strychnos guianensis*. Amorph. yellow-brown solid. Counterion not specified. λ_{max} 208 (log ϵ 4.32); 252 (log ϵ 4.07); 321 (log ϵ 3.93); 433 (log ϵ 3.99) (MeOH).

5′,6′-Didehydro: ***5′,6′-Dehydroguiaflavine***
$C_{40}H_{40}N_4O_2^{2\oplus}$ 608.782
Quaternary alkaloid from *Strychnos guianensis*. Orange-brown powder. Counterion not specified. CAS no. not found 14CI. λ_{max} 207 (log ϵ 4.49); 257 (log ϵ 4.35); 432 (log ϵ 4.11) (MeOH).

Penelle, J. *et al., J. Nat. Prod.*, 1999, **62**, 898-900 (*isol, uv, ir, pmr, cmr, ms*)
Penelle, J. *et al., Phytochemistry*, 2001, **58**, 619-626 (*Dehydroguiaflavine*)

Guianensine G-220

[171828-69-6]



$C_{39}H_{36}N_4O_4$ 624.738
Zwitterion. Isol. from the stem bark of *Strychnos guianensis* (Loganiaceae). Orange powder.

Quetin-Leclercq, J. *et al., Phytochemistry*, 1995, **40**, 1557 (*isol, uv, ir, pmr, cmr, ms, struct*)

Guillauminiine G-221

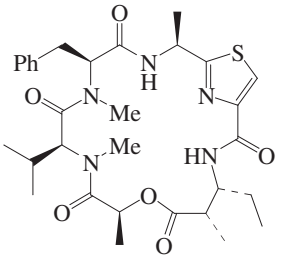
[90599-29-4]

$C_{40}H_{48}N_4O_2$ 616.845
Struct. unknown. Bisindole alkaloid. Trace alkaloid from the stem bark and aerial parts of *Melodinus guillauminii* (Apocynaceae). $[\alpha]_D$ +186 (c, 1 in $CHCl_3$).

Zeches, M. *et al., Phytochemistry*, 1984, **23**, 171-174 (*isol, uv, ir, pmr, ms*)

Guineamide A G-222

[560082-02-2]

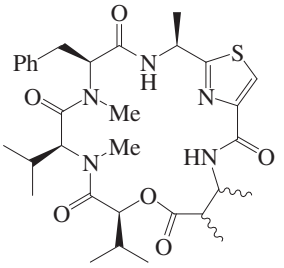


$C_{31}H_{43}N_5O_6S$ 613.777
Isol. from *Lyngbya majuscula*. Oil. $[\alpha]_D^{26}$ -8 (c, 0.1 in $CHCl_3$). λ_{max} 214 (ϵ 14400) (MeOH).

Tan, L.T. *et al., J. Nat. Prod.*, 2003, **66**, 764-771 (*isol, pmr, cmr*)

Guineamide B G-223

[560082-04-4]

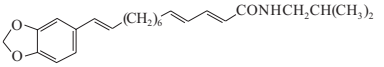


$C_{32}H_{45}N_5O_6S$ 627.803
Isol. from *Lyngbya majuscula*. Amorph. solid. $[\alpha]_D$ -5 (c, 0.17 in $CHCl_3$). λ_{max} 213 (ϵ 24900) (EtOH).

Tan, L.T. *et al., J. Nat. Prod.*, 2003, **66**, 764-771 (*isol, pmr, cmr*)

Guineensine G-224

*13-(1,3-Benzodioxol-5-yl)-*N*-(2-methylpropyl)-2,4,12-tridecatrienamide, 9CI. 13-(3,4-Methylenedioxyphenyl)-2,4,12-tridecatrienoic acid isobutylamide*



$C_{24}H_{33}NO_3$ 383.53

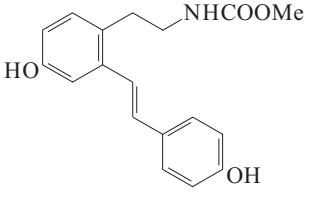
(E,E,E)-form [55038-30-7]
Alkaloid from the fruits of *Piper guineense* and *Piper nigrum*, and the roots of *Piper attenuatum* (Piperaceae). ACAT inhibitor. Cryst. (C_6H_6/petrol). Mp 113-115°.

*3-Methylbutylamide analogue: 13-(1,3-Benzodioxol-5-yl)-*N*-(3-methylbutyl)-2,4,12-tridecatrienamide, 9CI.* ***Pipwaqarine***
$C_{25}H_{35}NO_3$ 397.556
Alkaloid from the fruit of *Piper nigrum* (black pepper). Insecticide. Needles (EtOAc/petrol). Mp 110-112°. λ_{max} 269 (ϵ 37800); 312 (ϵ 3800) (MeOH).

Okogun, J.I. *et al., J.C.S. Perkin 1*, 1974, 2195 (*isol, uv, ir, pmr, ms, struct*)
Dasgupta, S. *et al., Indian J. Chem., Sect. B*, 1979, **17**, 538 (*isol, uv, ir, pmr, ms*)
Okwute, S.K. *et al., Tetrahedron*, 1984, **40**, 2541 (*synth*)
Jacobs, H. *et al., J. Indian Chem. Soc.*, 1999, **76**, 713-717 (*isol, pmr, cmr*)
Park, I.-K. *et al., J. Agric. Food Chem.*, 2002, **50**, 1866-1870 (*isol, pmr, cmr*)
Siddiqui, B.S. *et al., Nat. Prod. Res.*, 2005, **19**, 143-150 (*Pipwaqarine*)

Gusanlung C G-225

Methyl [2-[4-hydroxy-2-[2-(4-hydroxyphenyl)ethenyl]phenyl]ethyl]carbamate, 9CI
[165134-18-9]



$C_{18}H_{19}NO_4$ 313.352
Alkaloid from stems of *Arcangelisia gusanlung* (Menispermaceae). Yellow needles. Mp 104-105°. Genus name erroneously given as Acangelisia.

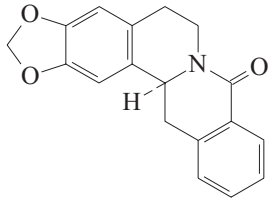
Di-Ac: [164920-60-9]
Mp 155-156°.

Di-Me ether: [164920-61-0]
Fine needles (MeOH). Mp 126-127°.

Zhang, J.-S. *et al., Phytochemistry*, 1995, **39**, 439 (*isol, uv, ir, pmr, cmr, ms, struct*)

Gusanlung D G-226

*5,6,13,13*a*-Tetrahydro-8*H*-benzo[g]-1,3-benzodioxolo[5,6-*a*]quinolizin-8-one, 9CI*



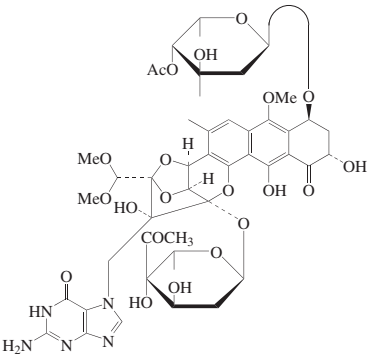
$C_{18}H_{15}NO_3$ 293.321

(*S*)-*form* [165306-67-2]
Alkaloid from stems of *Arcangelisia gusanlung*. Needles. Mp 250-251°. $[\alpha]_D^{20}$ -345 (c, 0.018 in $CHCl_3$). Genus name erroneously given as Acangelisia. λ_{max} 222 ; 273 ; 294 ; 320 (MeOH).

Zhang, J.-S. *et al., Phytochemistry*, 1995, **39**, 439-442 (*isol, pmr, cmr*)
Chang, J.-K. *et al., Tetrahedron*, 2008, **64**, 3483-3487 (*synth*)

Gutingimycin G-227

[690998-82-4]



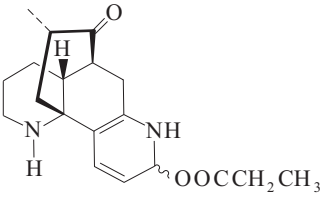
Absolute Configuration

$C_{47}H_{57}N_5O_{21}$ 1027.988
Closely related to Trioxacarcin A. Prod. by a marine streptomycete (isolate B8652). Yellow solid. $[\alpha]_D^{20}$ -56.5 (c, 0.5 in $CHCl_3$). λ_{max} 269 (log ϵ 5.53); 399 (log ϵ 4.96) (MeOH).

Maskey, R.P. *et al., Angew. Chem., Int. Ed.*, 2004, **43**, 1281-1283 (*isol, pmr, cmr*)

Gymnamine G-228

1,8-Dihydro-1-(1-oxopropyl)lycodin-8-one
[38948-15-1]



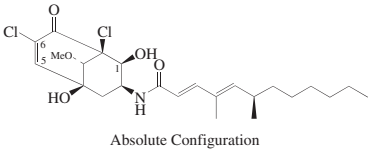
$C_{19}H_{26}N_2O_3$ 330.426
Alkaloid from leaves of *Gymnema sylvestre* (Asclepiadaceae). Noncryst. solid. Mp 60-70°. First lycopodane-type alkaloid from outside the Lycopodiaceae.

Picrate:
Fine needles. Mp 260°.

Rao, G.S. *et al., Chem. Ind. (London)*, 1972, 537 (*isol, ms, struct*)

Gymnastatin F G-229

[229334-19-4]



Absolute Configuration

$C_{24}H_{35}Cl_2NO_5$ 488.45
Prod. by *Gymnascella dankaliensis* isol. from a *Halichondria* sp. Powder. $[\alpha]_D^{26}$ -77.7 (c, 0.16 in $CHCl_3$). λ_{max} 263 (log ϵ 4.25) (EtOH).

Demethoxy: ***Gymnastatin R***
$C_{23}H_{33}Cl_2NO_4$ 458.423
Prod. by *Gymnascella dankaliensis* isol. from a *Halichondria* sp. Powder. Mp 79-82°. $[\alpha]_D^{24}$ -104.5 (c, 0.48 in EtOH). λ_{max} 264 (log ϵ 4.47) (EtOH).

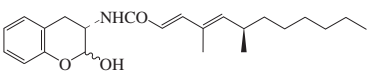
6-Dechloro, 5β,6β-epoxide, O*-de-Me:* ***Gymnastatin G***
[229334-20-7]
$C_{23}H_{34}ClNO_6$ 455.977
Prod. by *Gymnascella dankaliensis* isol. from a *Halichondria* sp. Powder. $[\alpha]_D$ -53.1 (c, 1.5 in $CHCl_3$). λ_{max} 266 (log ϵ 4.63) (EtOH).

1-Epimer: ***Gymnastatin Q***
$C_{24}H_{35}Cl_2NO_5$ 488.45
Prod. by *Gymnascella dankaliensis* isol. from a *Halichondria* sp. Powder. Mp 105-108°. $[\alpha]_D^{23}$ -34.3 (c, 0.26 in $CHCl_3$). λ_{max} 264 (log ϵ 4.45) (EtOH).

Amagata, T. *et al., J. Nat. Prod.*, 2006, **69**, 1384-1388 (*Gymnastatins F,G*)
Amagata, T. *et al., J. Nat. Prod.*, 2008, **71**, 340-345 (*Gymnastatins Q,R*)

Gymnastatin L G-230

[234757-11-0]

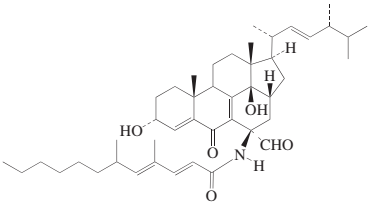


$C_{23}H_{33}NO_3$ 371.519
Metab. of *Gymnascella dankaliensis* isol. from the sponge *Halichondria japonica*.

Amagata, T. *et al., CA*, 1999, **131**, 129789s (*isol*)

Gymnasterone A G-231

[209169-57-3]

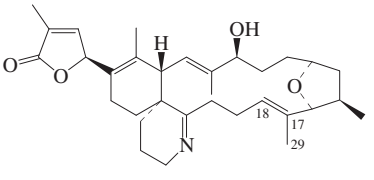


$C_{45}H_{67}NO_5$ 702.028
Constit. of *Gymnascella dankaliensis* isol from the sponge *Halichondria japonica*. Pale yellow oil. $[\alpha]_D$ -110.7 (c, 1.44 in $CHCl_3$). λ_{max} 270 (log ϵ 4.22) (EtOH). λ_{max} 270 (ϵ 16600) (MeOH) (Berdy).

Amagata, T. *et al., Tet. Lett.*, 1998, **39**, 3773-3774 (*isol, pmr, cmr*)
Amagata, T. *et al., J. Nat. Prod.*, 2007, **70**, 1731-1740 (*stereochem*)

Gymnodimine G-232

[173792-58-0]



$C_{32}H_{45}NO_4$ 507.712
Isol. from New Zealand oysters (*Tiostrea chilensis*) and the dinoflagellate *Gymnodinium* cf. *mikimotoi*. Shows potent ichthyotoxicity. Amorph. solid. $[\alpha]_D^{25}$ -10.4 (c, 0.13 in MeOH).

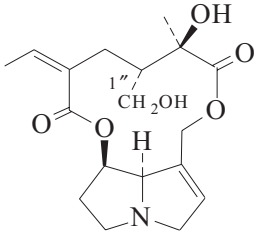
*$\Delta^{17,29}$-Isomer, 18*R*-hydroxy:* ***Gymnodimine C***
[586959-19-5]
$C_{32}H_{45}NO_5$ 523.711
Prod. by *Karenia selliformis* (formerly *Gymnodinium selliforme*).

*$\Delta^{17,29}$-Isomer, 18*S*-hydroxy:* ***Gymnodimine B***
[266998-21-4]
$C_{32}H_{45}NO_5$ 523.711
Isol. from *Karenia selliformis* (formerly *Gymnodinium selliforme*).

Seki, T. *et al., Tet. Lett.*, 1995, **36**, 7093-7096 (*isol, pmr, cmr, struct*)
Stewart, M. *et al., Tet. Lett.*, 1997, **38**, 4889-4890 (*cryst struct, abs config*)
Miles, C.O. *et al., J. Agric. Food Chem.*, 2000, **48**, 1373-1376; 2003, **51**, 4838-4840 (*Gymnodimines B,C*)

Gynuramine G-233

[85611-43-4]



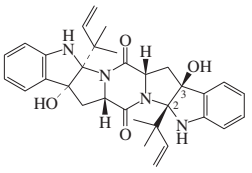
$C_{18}H_{25}NO_6$ 351.399
Retronecine cyclic diester. Alkaloid from *Gynura scandens* (Asteraceae). Mp 202-204°. $[\alpha]_D^{20}$ -16 ($CHCl_3$).

1″-Ac: ***Acetylgynuramine***
[85547-34-8]
$C_{20}H_{27}NO_7$ 393.436
Alkaloid from *Gynura scandens* (Asteraceae). Mp 153-155°. $[\alpha]_D^{20}$ -33 ($CHCl_3$).

Wiedenfeld, H. *et al., Phytochemistry*, 1982, **21**, 2767 (*isol, ir, pmr, cmr, ms, struct, deriv*)
Wiedenfeld, H. *et al., Phytochemistry*, 1983, **22**, 2065 (*cryst struct, deriv*)

Gypsetin G-234

[155114-38-8]



Absolute Configuration

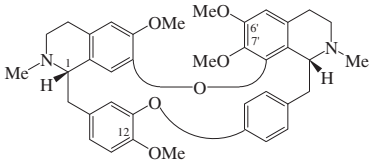
$C_{32}H_{36}N_4O_4$ 540.661
Prod. by *Nannizzia gypsea* var. *incurvata* IFO 9228/IMI 86518. Acyl-CoA:cholesterol acyltransferase inhibitor and cytotoxic agent. Needles ($CHCl_3$/MeOH). Mp 162°. $[\alpha]_D$ -116.9 (c, 0.14 in $CHCl_3$). λ_{max} 205 (ϵ 58900); 237 (ϵ 14900); 296 (ϵ 4430) (MeOH).

2,3-Diepimer: ***Fellutanine D***
$C_{32}H_{36}N_4O_4$ 540.661
Prod. by *Penicillium fellutanum*. Microcryst. ($CHCl_3$/hexane). Mp 198-201°. $[\alpha]_D^{20}$ -383 (c, 0.1 in MeOH). Struct. subject of erratum in 2001. λ_{max} 214 (log ϵ 4.1); 244 (log ϵ 3.2); 297 (log ϵ 3.53) (MeOH).

Shinohara, C. *et al., J. Antibiot.*, 1994, **47**, 163-167 (*isol, uv, ir, activity*)
Nuber, B. *et al., J. Antibiot.*, 1994, **47**, 168-172 (*pmr, cmr, cryst struct*)
Schkeryantz, J.M. *et al., J.A.C.S.*, 1999, **121**, 11964-11975 (*synth*)
Kozlovsky, A.G. *et al., J. Nat. Prod.*, 2000, **63**, 698-700; 2001, **64**, 553 (*Fellutanine D*)

Gyrolidine G-235

[39020-36-5]



$C_{38}H_{42}N_2O_6$ 622.76
These alkaloids have (1*S*,1′*R*)-config. (Shamma-Moniot convention) and are enantiomeric with those given under Obaberine, O-1. The older CAS numbering puts the primes on the opposite rings. Alkaloid from *Gyrocarpus americanus* (Hernandiaceae). Amorph. $[\alpha]_D$ -115 (c, 1.1 in $CHCl_3$). λ_{max} 261 (log ϵ 4.23); 282 (log ϵ 4.12) (MeOH).

O$^{6′}$-De-Me: ***Gyrocarpine***
[102487-16-1]
$C_{37}H_{40}N_2O_6$ 608.733
Alkaloid from the stem bark of *Gyrocarpus americanus* (Hernandiaceae). Cryst. (MeOH/Et_2O). Mp 192°. $[\alpha]_D$ -239 (c, 1 in $CHCl_3$). λ_{max} 239 (sh) (log ϵ 4.34); 284 (log ϵ 3.87) (MeOH).

O$^{7′}$,O^{12}-Di-de-Me: ***Macolidine***
[66288-77-5]
$C_{36}H_{38}N_2O_6$ 594.706
Alkaloid from *Abuta grisebachii* (Menispermaceae). Mp 179-181°. $[\alpha]_D^{20}$ -320 ($CHCl_3$).

O$^{7′}$,O^{12}-Di-de-Me, N$^{2′}$-Me: ***Macoline***
[66216-59-9]
[66216-60-2]
$C_{37}H_{41}N_2O_6^{\oplus}$ 609.741
Alkaloid from *Abuta grisebachii* (Menispermaceae). Mp 255-259° (as chloride hydrochloride). $[\alpha]_D^{20}$ -60.6 (MeOH) (chloride hydrochloride).

Galeffi, C. *et al., Farmaco, Ed. Sci.*, 1977, **32**, 853; *CA*, **89**, 6465q (*Macoline, Macolidine*)
Chalandre, M.C. *et al., J. Nat. Prod.*, 1986, **49**, 101-105 (*Gyrolidine, Gyrocarpine*)

Gyromitrin G-236

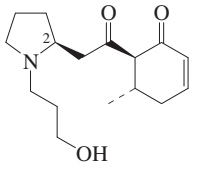
Ethylidenemethylhydrazinecarboxaldehyde, 9CI. N′-*Ethylidene*-N-*formyl*-N-*methylhydrazine. Acetaldehyde* N-*formyl*-N-*methylhydrazone*
[16568-02-8]
$H_3CCH{=}NNMeCHO$
$C_4H_8N_2O$ 100.12
Toxin from the fungi *Gyromitra esculenta* and *Helvella gigas*. Freq. cause of mushroom poisoning. Unstable cryst. Mp 19.5° (5°).

▶ Toxic, carcinogenic. Toxicity varies greatly between individuals. LQ8500000

List, P.H. *et al., Tet. Lett.*, 1967, 1893 (*isol*)
Zinner, G. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1971, **304**, 706 (*synth*)
Pyysalo, H. *et al., Acta Chem. Scand., Ser. B*, 1976, **30**, 235; 792 (*isol, ms*)
Zelenin, K.N. *et al., Zh. Org. Khim.*, 1978, **14**, 490 (*pmr, conformn*)
Meier-Bratschi, A. *et al., J. Agric. Food Chem.*, 1983, **31**, 1117 (*synth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, AAH000

Habbemine A H-1

[937023-27-3]



Relative Configuration

$C_{16}H_{25}NO_3$ 279.378

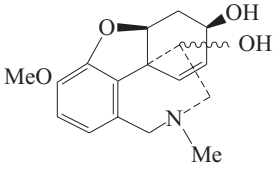
Tautomeric. Alkaloid from the leaves of *Elaeocarpus habbemensis*. Yellow gum (as hydrochloride). $[\alpha]_D^{23}$ +13.7 (c, 0.13 in MeOH). Isol. as a 1:1 mixt. with Habbemine B to which the data refers. λ_{max} 227 (log ϵ 3.35); 270 (log ϵ 2.85); 339 (log ϵ 2.7) (MeOH).

2-Epimer: ***Habbemine B***
[937023-28-4]
$C_{16}H_{25}NO_3$ 279.378
Alkaloid from the leaves of *Elaeocarpus habbemensis*. Isol. as a 1:1 mixt. with Habbemine A.

Katavic, P.L. *et al., J. Nat. Prod.*, 2007, **70**, 866-868 (*isol, pmr, cmr, ms*)

Habranthine H-2

[21502-30-7]



$C_{17}H_{21}NO_4$ 303.357
Alkaloid from *Habranthus brachyandrus* (*Hippeastrum brachyandrum*) (Amaryllidaceae). Mp 198-199°. $[\alpha]_D^{25}$ -320.

Wildman, W.C. *et al., Tet. Lett.*, 1968, 4573 (*ir, pmr, ms, struct*)

Hachijodines H-3



Hachijodine A	R = -$(CH_2)_{12}$NHOMe
B	R = -$(CH_2)_9CH(CH_3)CH_2CH_2$NHOMe
C	R = -$(CH_2)_{10}CH(CH_3)CH_2$NHOMe
D	R = -$CH_2CH(CH_3)(CH_2)_{10}$NHOMe
E	R = -$(CH_2)_{13}$NMeOH
F	R = -$(CH_2)_4C{\equiv}C(CH_2)_8$NMeOH
G	R = -$(CH_2)_4C{\equiv}CCH{=}CH(CH_2)_8$NMeOH
Cribochaline B	R = -$(CH_2)_{11}CH(CH_3)CH_2$NHOMe

Alkaloids from either *Amphimedon* sp. or *Xestospongia* sp. Cytotoxic agents.

Hachijodine A [265114-90-7]
$C_{18}H_{32}N_2O$ 292.464
From a *Xestospongia* sp. λ_{max} 260 (ϵ 3300) (MeOH).

Hachijodine B [265114-91-8]
$C_{19}H_{34}N_2O$ 306.49
From a *Xestospongia* sp. λ_{max} 260 (ϵ 3300) (MeOH).

Hachijodine C
Cribochaline A
[265114-92-9]
$C_{19}H_{34}N_2O$ 306.49
Isol. from the sponges *Xestospongia* sp. and *Cribrochalina* sp. $[\alpha]_D^{24}$ -1 (c, 0.2 in MeOH). Related to Niphatesine C, N-225. λ_{max} 260 (ϵ 3200) (MeOH). λ_{max} 210 (ϵ 5630); 262 (ϵ 4530); 269 (ϵ 3330) (MeOH).

Hachijodine D [265114-93-0]
$C_{19}H_{34}N_2O$ 306.49
From a *Xestospongia* sp. λ_{max} 260 (ϵ 3200) (MeOH).

N^{12}-*β*-*D*-*Glucopyranosyl:* ***Amphimedoside D***
$C_{25}H_{44}N_2O_6$ 468.632
Alkaloid from an *Amphimedon* sp.

Hachijodine E [265114-94-1]
$C_{19}H_{34}N_2O$ 306.49
From an *Amphimedon* sp.

Hachijodine F [265114-95-2]
$C_{20}H_{32}N_2O$ 316.486
From an *Amphimedon* sp.

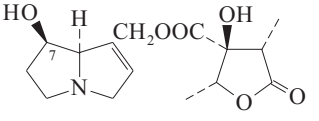
Hachijodine G [265114-96-3]
$C_{22}H_{34}N_2O$ 342.523
From an *Amphimedon* sp.

Cribochaline B
$C_{20}H_{36}N_2O$ 320.517
Isol. from the sponge *Cribrochalina* sp.

Tsukamoto, S. *et al., J. Nat. Prod.*, 2000, **63**, 682-684 (*isol, pmr, Hachijodines B-G*)
Nicholas, G.M. *et al., Tetrahedron*, 2000, **56**, 2921-2927 (*Cribochalines A,B*)
Goundry, W.R.F. *et al., Tetrahedron*, 2003, **59**, 1719-1729 (*Hachijodines F,G, synth*)
Romeril, S.P. *et al., Tet. Lett.*, 2004, **45**, 3273-3277 (*Hachijodine B, synth*)
Takekawa, Y. *et al., J. Nat. Prod.*, 2006, **69**, 1503-1505 (*Amphimedoside D*)

Hackelidine H-4

[122222-01-9]



$C_{15}H_{21}NO_6$ 311.334
Alkaloid from *Hackelia californica* (Boraginaceae).

7-Ac: ***Longitubine****. 7-Acetylhackelidine*
[121817-17-2]
$C_{17}H_{23}NO_7$ 353.371
Alkaloid from *Hackelia californica* (Boraginaceae).

7-Angeloyl: Latifoline†
[6029-86-3]
$C_{20}H_{27}NO_7$ 393.436
Diester of retronecine with angelic and latifolic acids. Alkaloid from *Cynoglossum latifolium* and *Hackelia floribunda* (Boraginaceae). Long needles (petrol). Mp 102-103°. $[\alpha]_D^{24}$ +57 (c, 1.99 in EtOH).

7-Angeloyl, picrate: Mp 173-174°.

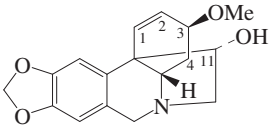
7-Angeloyl, N*-oxide:* ***Latifoline* N-*oxide***
[98752-06-8]
$C_{20}H_{27}NO_8$ 409.435
Alkaloid from *Hackelia floribunda* (Boraginaceae). Oil. $[\alpha]_D^{25}$ +29.1 (c, 1.10 in EtOH).

Stereoisomer, 7-angeloyl: ***Neolatifoline***
[121916-88-9]
$C_{20}H_{27}NO_7$ 393.436
Alkaloid from *Hackelia longituba*. Gum (impure). $[\alpha]_D$ +48 (EtOH)(impure).

Crowley, H.C. *et al., Aust. J. Chem.*, 1962, **15**, 139 (*Latifoline*)
Matsumoto, T. *et al., Chem. Lett.*, 1973, 773 (*Latifoline, abs config*)
Hagglund, K.M. *et al., J. Nat. Prod.*, 1985, **48**, 638 (*Latifoline, isol, pmr, cmr, Latifoline N-oxide*)
Roitman, J.N. *et al., Aust. J. Chem.*, 1988, **41**, 1827 (*Neolatifoline*)
Stermitz, F.R. *et al., Tet. Lett.*, 1989, **30**, 7153 (*Hackelidine*)
Li, Y. *et al., Huaxue Xuebao*, 1990, **48**, 415; *CA*, **113**, 168971t (*Hackelidine*)
Culvenor, C.C.J. *et al., Aust. J. Chem.*, 1992, **45**, 451 (*Latifoline, cryst struct, abs config*)
Drutu, I. *et al., J.O.C.*, 2001, **66**, 7025-7029 (*Latifoline, synth*)

Haemanthamine H-5

Natalensine. 3-Epicrinamine. Hemanthamine
[466-75-1]



(+)-*form*

$C_{17}H_{19}NO_4$ 301.341
Alkaloid from *Haemanthus puniceus* x *katherinae* and a v. large number of spp. in the Amaryllidaceae. Mp 203-203.5°. $[\alpha]_D^{25}$ +19.7 (c, 3.8 in MeOH). $[\alpha]_D^{25}$ +33 (c, 1.25 in $CHCl_3$). λ_{max} 240 (ϵ 3220); 297 (ϵ 5200) (EtOH).

Picrate: Mp 221°.

Ac: ***11*-O-*Acetylhaemanthamine***
$C_{19}H_{21}NO_5$ 343.379
Alkaloid from *Narcissus bujei*. Mp 92-96°. $[\alpha]_D^{22}$ -9.1 (c, 0.55 in MeOH).

Ac; perchlorate: Mp 209°.

O-*De-Me:* O-*Demethylhaemanthamine.* ***11-Hydroxyvittatine***
[23610-70-0]
$C_{16}H_{17}NO_4$ 287.315
Alkaloid from *Galanthus plicatus* ssp. *byzantinus*, *Hippeastrum equestre*, *Hippeastrum puniceum* and *Pancratium maritimum*. Mp 248-250°. $[\alpha]_D^{25}$ +35 (c, 0.1 in MeOH).

1,2-Dihydro: ***Dihydrohaemanthamine***
$C_{17}H_{21}NO_4$ 303.357
Alkaloid from *Crinum powellii* var. *harlemense* (Amaryllidaceae). Cryst. (Me_2CO). Mp 226°. $[\alpha]_D^{24}$ +78 (c, 0.2 in $CHCl_3$).

1,2-Dihydro, picrate:
Cryst. (MeOH). Mp 210°.

1,2-Dihydro, O-*(2-hydroxybutyl):* ***Narcimarkine***

[77809-91-7]
$C_{21}H_{29}NO_5$ 375.464
Alkaloid from bulbs of *Narcissus poetrius* (Amaryllidaceae). Fine needles (Me_2CO). Mp 110°. Stereochem. not well defined.

4α-Hydroxy: ***Albiflomanthine***
[156408-70-7]
$C_{17}H_{19}NO_5$ 317.341
Alkaloid from bulbs of *Haemanthus albiflos* (Amaryllidaceae). Amorph. solid. $[\alpha]_D^{20}$ +31 (c, 0.05 in EtOH).

6-Hydroxy: see Haemanthidine, H-6

3-Epimer: ***Crinamine***
[639-41-8]
$C_{17}H_{19}NO_4$ 301.341
Alkaloid from *Crinum asiaticum*, many other *Crinum* spp. and several other spp. in the Amaryllidaceae such as *Narcissus tazetta*, *Crinum asiaticum*, *Brunsvigia josephinae*, *Pancratium foetidum*. Powerful transient hypotensive agent in dogs. Respiratory depressant, antineoplastic agent. Active against gram-positive bacteria, shows antimalarial props. Mp 198-199°. $[\alpha]_D^{28}$ +157 (c, 1.65 in $CHCl_3$). λ_{max} 237 (ϵ 3400); 297 (ϵ 3120) (EtOH) (Berdy).
▶ LD_{50} (dog) 10 mg/kg.

3-Epimer, perchlorate: Mp 201-201.5° dec.

3-Epimer, picrate: Mp 273-274° dec.

3-Epimer, O-*de-Me:* ***Hamayne****. Demethylcrinamine. Bulbispermine*
[61948-11-6]
$C_{16}H_{17}NO_4$ 287.315
12-Config. is *R*-. Alkaloid from *Crinum asiaticum* var. *japonicum*, *Crinum bulbispermum*, *Crinum latifolium*, *Crinum zeylanicum*, *Crinum jogus*, *Crinum asiaticum-japonicum* and *Brunsvigia radulosa* (Amaryllidaceae). Shows antimalarial props. Plates + 2/3 H_2O (Me_2CO), cryst. (Me_2CO or MeOH/EtOAc). Mp 83-84° Mp 130-132° (dimorph. ?). $[\alpha]_D^{20}$ +106.7 (c, 1.02 in MeOH). $[\alpha]_D^{18}$ +78.2 (c, 1.1 in EtOH).

3-Epimer, O-*de-Me, picrate:*
Cryst. (Me_2CO). Mp 205-208°.

3-Epimer, O-*de-Me, 3-Ac:* ***3-O-Acetylhamayne***
$C_{18}H_{19}NO_5$ 329.352
Isol. from the bulbs of *Crinum latifolium* and *Crinum zeylanicum* (Amaryllidaceae). Prisms (C_6H_6). Mp 115-116° (112-114°). $[\alpha]_D^{20}$ +126 (c, 0.5 in $CHCl_3$).

3-Epimer, O-*de-Me, di-Ac:* Mp 77.5-78° Mp 119-121°.

3-Epimer, O-*de-Me, 11-*O-*(3-hydroxybutanoyl):* ***11-O-(3-Hydroxybutanoyl)-hamayne***
[946570-69-0]
$C_{20}H_{23}NO_6$ 373.405
Alkaloid from *Galanthus nivalis.*

3-Epimer, O-*de-Me, 11-*O-*(3-hydroxybutanoyl), 3-*O-*(2*E*-butenoyl):* ***3-O-(2E-Butenoyl)-11-O-(3-hydroxybutanoyl)-hamayne***
[946570-71-4]
$C_{24}H_{27}NO_7$ 441.48
Alkaloid from *Galanthus nivalis.*

3-Epimer, O-*de-Me, 3,11-bis-*O-*(3-hydroxybutanoyl):* ***3,11-Bis-O-(3-hydroxybutanoyl)hamayne***
[946570-70-3]
$C_{24}H_{29}NO_8$ 459.495
Alkaloid from *Galanthus nivalis.*

3-Epimer, O-*de-Me, 3-*O-*[3-(3-hydroxybutanoyloxy)butanoyl], 11-*O-*(3-hydroxybutanoyl):* ***3,3′,11-Tris-O-(3-hydroxybutanoyl)hamayne***
[946572-18-5]
$C_{28}H_{35}NO_{10}$ 545.585
Alkaloid from *Galanthus nivalis.*

3-Epimer, O-*de-Me, 3-*O-*[4-(2-aminoethyl)phenyl]:* ***3-[4-(2-Aminoethyl)-phenoxy]bulbispermine***
$C_{24}H_{26}N_2O_4$ 406.48
Alkaloid from *Crinum moorei.* Amorph. $[\alpha]_D^{29}$ +53.3 (c, 0.04 in $CHCl_3$).

11-Epimer: ***11-Epihaemanthamine***
[1472-76-0]
$C_{17}H_{19}NO_4$ 301.341
Alkaloid from *Haemanthus katherinae.* Prisms (Me_2CO). Mp 205°. $[\alpha]_D$ -24 (c, 0.2 in $CHCl_3$).

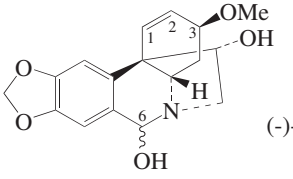
11-Epimer, O-*de-Me:* ***1,2-Didehydro-3,11-dihydroxycrinane****. 3,11-Dihydroxy-1,2-dehydrocrinane*
[151003-81-5]
$C_{16}H_{17}NO_4$ 287.315
Alkaloid from the bulbs of *Pancratium maritimum*. Cryst. ($CHCl_3$). Mp 128°. $[\alpha]_D^{26}$ -28 (c, 0.04 in MeOH).

3,11-Diepimer, O-*de-Me, 3-Ac:* ***Yemenine A***
$C_{18}H_{19}NO_5$ 329.352
Alkaloid from the bulbs of *Crinum yemense.* Powder. $[\alpha]_D^{25}$ +61.7 (c, 0.5 in $CHCl_3$). λ_{max} 243 (log ϵ 3.56); 292 (log ϵ 3.8) (MeOH).

Mason, L.H. *et al., J.A.C.S.*, 1955, **77**, 1253 (*Crinamine, isol, uv*)
Wildman, W.C. *et al., J.A.C.S.*, 1958, **80**, 6465 (*Crinamine, struct*)
Fales, H.M. *et al., J.A.C.S.*, 1960, **82**, 197; 3368 (*uv, ir, struct, abs config*)
Döpke, W. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1962, **295**, 868; *CA*, **58**, 11415g (*Dihydrohaemanthamine*)
Duffield, A.M. *et al., J.A.C.S.*, 1965, **87**, 4902 (*ms*)
Haugwitz, R.D. *et al., J.C.S.*, 1965, 2001 (*pmr*)
Clardy, J. *et al., J.A.C.S.*, 1970, **92**, 6337 (*cryst struct*)
Battersby, A.R. *et al., Chem. Comm.*, 1971, 183 (*biosynth*)
Kirby, G.W. *et al., Chem. Comm.*, 1971, 187; 415 (*biosynth*)
Tsuda, Y. *et al., Chem. Comm.*, 1971, 1555 (*synth*)
Nogueiras, C. *et al., Tet. Lett.*, 1971, 2743 (*11-Epihaemanthamine*)
Ochi, M. *et al., Bull. Chem. Soc. Jpn.*, 1976, **49**, 3363 (*Hamayne, uv, ir, pmr, struct*)
Isobe, K. *et al., Tet. Lett.*, 1976, 2331 (*Crinamine, synth*)
Roques, R. *et al., Acta Cryst. B*, 1977, **33**, 3696 (*Crinamine, cryst struct*)
Onyiriuka, O.S. *et al., Isr. J. Chem.*, 1978, **17**, 185 (*Crinamine, ms*)
Döpke, W. *et al., Z. Chem.*, 1981, **21**, 71 (*Narcimarkine*)
Kobayashi, S. *et al., Chem. Pharm. Bull.*, 1984, **32**, 3015 (*Hamayne, 3-Acetylhamayne, isol, ir, pmr, ms, ord*)
Tsuda, Y. *et al., Chem. Pharm. Bull.*, 1984, **32**, 3023 (*Hamayne, 3-Acetylhamayne, isol, ir, pmr*)
Ali, A.A. *et al., Planta Med.*, 1984, **50**, 424 (*Hamayne, uv, ir, pmr, cmr, ms, cd, struct*)
Amigó, J.M. *et al., Acta Cryst. C*, 1988, **44**, 1497 (*cryst struct*)
Adesanya, S.A. *et al., Int. J. Pharmacogn.*, 1992, **30**, 303-307 (*Crinamine, activity*)
Baudouin, G. *et al., Heterocycles*, 1994, **38**, 965 (*Albiflomanthine*)
Sener, B. *et al., J. Chem. Soc. Pak.*, 1994, **16**, 275-279 (*3,11-Dihydroxy-1,2-dehydrocrinane*)
Viladomat, F. *et al., Phytochemistry*, 1994, **35**, 809-812 (*Hamayne, 3-Acetylhamayne*)
Wagner, J. *et al., Tetrahedron*, 1996, **52**, 6591-6600 (*isol, cd*)
Nishimata, T. *et al., J.O.C.*, 1998, **63**, 7586-7587 (*Crinamine, synth*)
Labrana, J. *et al., Phytochemistry*, 1999, **50**, 183-188 (*11-Acetylhaemanthamine*)
Elgorashi, E.E. *et al., Phytochemistry*, 2001, **56**, 637-640 (*Aminoethylphenoxybulbispermine*)
Unver, N. *et al., Planta Med.*, 2003, **69**, 869-871 (*11-Hydroxyvittatine*)
Abdel-Halim, O.B. *et al., J. Nat. Prod.*, 2004, **67**, 1119-1124 (*Yemenine A*)
Zhang, F.-M. *et al., Tetrahedron*, 2006, **62**, 9446-9455 (*Crinamine, synth*)
Berkov, S. *et al., Phytochemistry*, 2007, **68**, 1791-1798 (*3-Hydroxybutanoylhamaynes*)
Bohno, M. *et al., Tetrahedron*, 2007, **63**, 6977-6989 (*synth*)
Tam, N.T. *et al., J.O.C.*, 2008, **73**, 6258-6264 (*Crinamine, synth*)

Haemanthidine H-6

Pancratine. Hemanthidine
[466-73-9]



(-)-*form*

$C_{17}H_{19}NO_5$ 317.341
Exists in soln. as a mixt. of C-6 epimers. Alkaloid from *Haemanthus puniceus* x *katherinae*, other *Haemanthus* spp. and many other spp. in the Amaryllidaceae. Mp 189-190° (hemihydrate). $[\alpha]_D^{22}$ -41 (c, 1 in $CHCl_3$).

Picrate: Mp 208° dec.

Di-Ac: Mp 200-205° dec.

O^6*-Me:* ***6-O-Methylhaemanthidine***
[120293-53-0]
$C_{18}H_{21}NO_5$ 331.368
Alkaloid from bulbs of *Pancratium maritimum* (Amaryllidaceae). Cryst. (Me_2CO). Mp 110-112°. $[\alpha]_D$ -43 (c, 0.46 in $CHCl_3$).

1,2-Dihydro: ***Hippawine***
[639-37-2]
$C_{17}H_{21}NO_5$ 319.357

Isol. from the *Hippeastrum* hybrid "Queen of the Whites" (Amaryllidaceae). Cryst. (Me_2CO). Mp 203°. $[\alpha]_D^{25}$ 0 (c, 0.2 in $CHCl_3$).

1,2-Dihydro, picrate: Mp 152° dec.

1,2-Dihydro, di-Ac: Mp 168° dec.

3-Epimer: ***6-Hydroxycrinamine****. 3-Epihaemanthidine*
[545-66-4]
$C_{17}H_{19}NO_5$ 317.341
Alkaloid from *Haemanthus natalensis* and from several *Crinum* spp. (Amaryllidaceae). Antitumour agent mod. active against Rauscher leukaemia virus. Mp 140° (hydrate) Mp 211° (anhyd.). $[\alpha]_D^{25}$ +46 (c, 1 in $CHCl_3$). Exists in soln. as a mixt. of C-6 epimers. The 6*S*-epimer occurs in the crystal. λ_{max} 240 (ϵ 3500); 294 (ϵ 4600) (EtOH) (Berdy).

3-Epimer, methiodide: Mp 174°. $[\alpha]_D^{23}$ +57 (c, 1 in EtOH).

3-Epimer, di-Ac: Mp 182-184°.

3-Epimer, O^6*-Me:* ***6-Methoxycrinamine***
[93452-25-6]
$C_{18}H_{21}NO_5$ 331.368
Alkaloid from the bulbs of *Crinum zeylanicum* (Amaryllidaceae). Oil; yellow needles (EtOAc)(as picrate). Mp 205-207° (picrate).

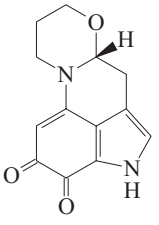
3-Epimer, O*-de-Me:* ***Yemenine C***
$C_{16}H_{17}NO_5$ 303.314
Alkaloid from the bulbs of *Crinum yemense*. Fine needles (MeOH). Mp 152-154°. $[\alpha]_D^{25}$ -14 (c, 0.2 in MeOH). Exists as a mixt. of C-6 epimers. λ_{max} 241 (log ϵ 3.58); 293 (log ϵ 3.7) (MeOH).

3,11-Diepimer, O*-de-Me:* ***Yemenine B***
$C_{16}H_{17}NO_5$ 303.314
Alkaloid from the bulbs of *Crinum yemense*. Powder. $[\alpha]_D^{25}$ +92 (c, 0.2 in MeOH). Exists in soln. as a mixt. of C-6 epimers. λ_{max} 243 (log ϵ 3.56); 292 (log ϵ 3.68) (MeOH).

Boit, H.-G. *et al., Chem. Ber.*, 1954, **87**, 1339-1342 (*isol*)
Uyeo, S. *et al., J.A.C.S.*, 1958, 2590-2591 (*struct*)
Goosen, J. *et al., J.C.S.*, 1960, 1088-1089 (*6-Hydroxycrinamine*)
Boit, H.-G. *et al., Naturwissenschaften*, 1960, **47**, 470 (*Hippawine*)
Duffield, A.M. *et al., J.A.C.S.*, 1965, **87**, 4902-4912 (*ms*)
King, R.W. *et al., J.A.C.S.*, 1965, **87**, 4912-4917 (*pmr, config*)
Haugwitz, R.D. *et al., J.C.S.*, 1965, 2001-2009 (*pmr, bibl*)
Karle, J. *et al., J.A.C.S.*, 1967, **89**, 6510-6514 (*6-Hydroxycrinamine, cryst struct*)
Tsuda, Y. *et al., Tet. Lett.*, 1972, 3153-3156 (*synth*)
Hendrickson, J.B. *et al., J.A.C.S.*, 1974, **96**, 7781-7789 (*synth*)
Isobe, K. *et al., Tet. Lett.*, 1976, 2331-2334 (*6-Hydroxycrinamine, synth*)
Tsuda, Y. *et al., Chem. Pharm. Bull.*, 1984, **32**, 3023-3027 (*6-Methoxycrinamine*)
Martin, S.F. *et al., J.A.C.S.*, 1984, **106**, 6431-6433 (*synth*)
Vázquez Tato, M.P. *et al., Heterocycles*, 1988, **27**, 2833-2838 (*6-O-Methylhaemanthidine*)
Ishibashi, H. *et al., J.O.C.*, 1993, **58**, 2360-2368 (*synth*)
Viladomat, F. *et al., Phytochemistry*, 1996, **43**, 1379-1384 (*6-Hydroxycrinamine, pmr, cmr*)
Wagner, J. *et al., Tetrahedron*, 1996, **52**, 6591-6600 (*cd*)
Nishimata, T. *et al., J.O.C.*, 1998, **63**, 7586-7587 (*synth*)
Baldwin, S.W. *et al., Org. Lett.*, 2000, **2**, 99-102 (*synth*)
Hohmann, J. *et al., Planta Med.*, 2002, **68**, 454-456 (*isol, pmr, cmr*)
Abdel-Halim, O.B. *et al., J. Nat. Prod.*, 2004, **67**, 1119-1124 (*Yemenines*)
Zhang, F.-M. *et al., Tetrahedron*, 2006, **62**, 9446-9455 (*synth*)

Haematopodin H-7

[151964-21-5]

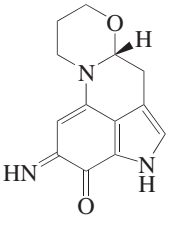


$C_{13}H_{12}N_2O_3$ 244.249
Alkaloid from the mushroom *Mycena haematopus* (blood mycena). Black cryst. +1 H_2O (CH_2Cl_2/MeOH). Sol. MeOH, $CHCl_3$. $[\alpha]_D^{23}$ +571 (c, 0.14 in MeOH). Mp >350°. Artifact formed during workup. λ_{max} 208 (ϵ 9900); 242 (ϵ 18600); 344 (ϵ 10700); 514 (ϵ 890) (MeOH).

Baumann, C. *et al., Angew. Chem., Int. Ed.*, 1993, **32**, 1087-1089 (*isol, uv, ir, pmr, cmr, cd, cryst struct*)
Hopmann, C. *et al., Annalen*, 1996, 1117-1120 (*synth*)

Haematopodin B H-8

[1032121-80-4]

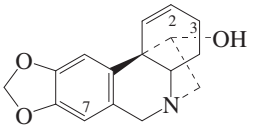


$C_{13}H_{13}N_3O_2$ 243.265
Alkaloid from *Mycena haematopus* (blood mycena). Red solid. $[\alpha]_D^{25}$ +490 (c, 0.001 in H_2O). λ_{max} 242 (log ϵ 4.32); 357 (log ϵ 4.06); 507 (log ϵ 3.37) (H_2O).

Peters, S. *et al., Eur. J. Org. Chem.*, 2008, 319-323 (*isol, cd, pmr, cmr, ms*)

Haemultine H-9

α-Demethoxyhaemanthamine



$C_{16}H_{17}NO_3$ 271.315
The struct α-Demethoxyhaemanthamine (illus.) which has been synthesised, was suggested for Haemultine. Since the synthetic and natural alkaloids differ, it has since been proposed that Haemultine was a mixt. with the Δ^2-isomer (see below). Alkaloid from the bulbs of *Haemanthus multiflorus* (Amaryllidaceae). Prisms (Me_2CO). Mp 174-175° (nat.) Mp 195-195.5° (synthetic). $[\alpha]_D^{25}$ +10 (c, 0.19 in $CHCl_3$) (synthetic).

Hydroiodide: Mp 102° (nat.) Mp 140-150° (hydrate) (synthetic).

Picrate:
Prisms (H_2O). Mp 208-210° dec. (nat.) Mp 260-264° (synthetic).

7-Methoxy, stereoisomer: ***7-Methoxycrinan-11-ol***
[117091-34-6]
$C_{17}H_{21}NO_4$ 303.357
Minor alkaloid from rhizomes of *Crinum americanum*. Stereochem. undetermined. May be identical with Fiancine below.

ar-*Methoxy:* ***Fiancine***
$C_{17}H_{19}NO_4$ 301.341
Isol. from bulbs of *Narcissus tazetta* and *Hippeastrum aulicum* var. *robustum* (Amaryllidaceae). Mp 239-241° dec. $[\alpha]_D$ +75 (c, 0.2 in $CHCl_3$). Tentative struct.

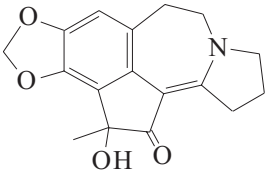
ar-*Methoxy, picrate:* Mp 223-225° dec.

Δ^2-Isomer: β-Demethoxyhaemanthamine
$C_{16}H_{17}NO_3$ 271.315
Synthetic. Prisms (Me_2CO). Mp 201-202°. $[\alpha]_D^{24}$ +199 (c, 0.17 in $CHCl_3$).

Boit, H.-G. *et al., Chem. Ber.*, 1956, **89**, 2462-2465; 1958, **91**, 1965-1967 (*Haemultine, Fiancine, isol*)
Boit, H.-G. *et al., Naturwissenschaften*, 1958, **45**, 262-263; 1960, **47**, 109 (*isol*)
Fales, H.M. *et al., J.O.C.*, 1961, **26**, 1617-1621 (*synth, uv, struct*)
Trimino, Z. *et al., Rev. Cubana Quim.*, 1987, **3**, 67; *CA*, **109**, 187251s (*7-Methoxycrinan-11-ol*)

Hainanensine H-10

[79233-02-6]

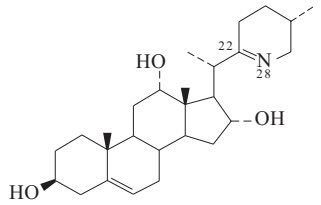


$C_{17}H_{17}NO_4$ 299.326
Alkaloid from *Cephalotaxus hainanensis* (Cephalotaxaceae). Possesses antitumour props. Poorly sol. hexane. Mp 240-244°. $[\alpha]_D$ 0 (MeOH).

Sun, N.-C. *et al., Yaoxue Tongbao*, 1980, **15**, 39; *CA*, **95**, 175614s (*isol, uv, ir, pmr, ms, struct*)
Sun, N.-J. *et al., Yaoxue Xuebao*, 1981, **16**, 24; *CA*, **95**, 175622t (*isol, struct*)
Huang, L. *et al., Alkaloids (Academic Press)*, 1984, **23**, 157 (*rev*)

Hakurirodine H-11

16,28-Secosolanida-5,22(28)-diene-3,12,16-triol, 9CI
[56857-49-9]



$C_{27}H_{43}NO_3$ 429.642
Isol. from *Veratrum grandiflorum* (Liliaceae). Key intermed. in biosynth. of Rubijervine, R-144. Needles (Me_2CO). Mp 194-197°. $[\alpha]_D^{19}$ -163 (c, 0.71 in $CHCl_3$). Undergoes acetylation with ring-opening to give a tetraacetyl deriv.

*22*R,*28-Dihydro:* ***Baikeine***
[38636-84-9]
$C_{27}H_{45}NO_3$ 431.657
Alkaloid from *Veratrum grandiflorum* (Liliaceae). Mp 153-153.5°. $[\alpha]_D$ -97.9 ($CHCl_3$). pK_a 9.65.

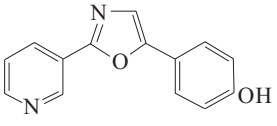
*22*R,*28-Dihydro,* N-*Ac:* Mp 141-143°. $[\alpha]_D$ -63.3.

*22*R,*28-Dihydro, 3-Ac:* ***Baikeidine***
[38636-85-0]
$C_{29}H_{47}NO_4$ 473.695
Alkaloid from *Veratrum grandiflorum* (Liliaceae). Not obt. pure.

Itô, S. *et al., Tet. Lett.*, 1972, 2961 (*isol, ms, pmr, Baikeine*)
Kaneko, K. *et al., Phytochemistry*, 1975, **14**, 1295 (*isol, ms, ir, uv, pmr, struct*)

Halfordinol H-12

4-[2-(3-Pyridinyl-5-oxazolyl)]phenol, 9CI. 5-(4-Hydroxyphenyl)-2-(3-pyridyl)oxazole. Aegelenine
[4210-82-6]



$C_{14}H_{10}N_2O_2$ 238.245
Alkaloid from bark of *Halfordia scleroxyla* (Rutaceae). Fine cream needles. Mp 255-256°.

Ac: Mp 167-180°.

Me ether: 3-[5-(4-Methoxyphenyl)-2-oxazolyl]pyridine, 9CI. ***Methylhalfordinol****. 2-(3-Pyridyl)-5-(4-methoxyphenyl)oxazole*
[33864-03-8]
$C_{15}H_{12}N_2O_2$ 252.272
Alkaloid from aerial parts of *Triphasia trifolia* (limeberry), ripe fruits of *Aegle marmelos* (bael fruit) and the leaves and stems of *Micromelum zeylanicum* (Rutaceae). Needles (C_6H_6/petrol or EtOH). Mp 100-101° (98-99°).

O-*(3-Methyl-2-butenyl):* **O-*Isopentenylhalfordinol***. *3-[5-[4-[(3-Methyl-2-butenyl)oxy]phenyl]-2-oxazolyl]pyridine, 9CI.* O-*(3,3-Dimethylallyl)halfordinol.*
O-*Prenylhalfordinol*
[17190-80-6]
$C_{19}H_{18}N_2O_2$ 306.363
Alkaloid from *Aeglopsis chevalieri, Aegle marmelos* (bael fruit), *Amyris plumieri* and *Amyris texana* (Rutaceae). Cryst. (EtOAc/hexane). Mp 118-119° (109-111°).

O-*(3-Methyl-3-butenyl):* **O-*(3-Methyl-3-butenyl)halfordinol***
[17190-81-7]
$C_{19}H_{18}N_2O_2$ 306.363
Alkaloid from *Aeglopsis chevalieri* (Rutaceae). Obt. only in admixture with the isomeric *O*-Isopentenylhalfordinol. Alkaloid not named in the paper.

O-*(2,3-Dihydroxy-3-methylbutyl):* ***Halfordine***†
[21059-65-4]
$C_{19}H_{20}N_2O_4$ 340.378
Alkaloid from bark of *Halfordia scleroxyla* (Rutaceae). Cream needles (MeOH). Mp 163-164°.

O-*(2,3-Dihydroxy-3-methylbutyl),* N-*Me:* **N-*Methylhalfordinium***
$C_{20}H_{23}N_2O_4^{\oplus}$ 355.413
Quaternary alkaloid from the bark of *Halfordia scleroxyla* (Rutaceae). Fine yellow needles (EtOAc/MeOH)(as chloride). Mp 235° dec. (chloride). Methylated on the pyridine nitrogen.

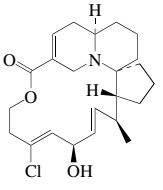
O-*(3-Methyl-2-oxobutyl):* ***Halfordinone***
[21144-32-1]
$C_{19}H_{18}N_2O_3$ 322.363
Alkaloid from bark of *Halfordia scleroxyla* (Rutaceae). Needles (Me_2CO/petrol). Mp 132-133°.

O-*(3,7-Dimethyl-2,6-octadienyl)* (E-*):* **O-*Geranylhalfordinol***
[89764-17-0]
$C_{24}H_{26}N_2O_2$ 374.482
Alkaloid from aerial parts of *Amyris plumicri* (Rutaceae).

Crow, W.D. *et al., Aust. J. Chem.*, 1964, **17**, 119; 1965, **18**, 1433 (*ir, ms, pmr, isol, struct*)
Dreyer, D.L. *et al., J.O.C.*, 1968, **33**, 3658 (*derivs*)
Onaka, T. *et al., Tet. Lett.*, 1971, 4393 (*synth*)
Manandhar, M.D. *et al., Phytochemistry*, 1978, **17**, 1814 (*derivs*)
Burke, B.A. *et al., Tet. Lett.*, 1978, 2723 (*deriv*)
Sharma, B.R. *et al., Planta Med.*, 1981, **43**, 102 (*Methylhalfordinol*)
Bowen, I.H. *et al., Phytochemistry*, 1982, **21**, 433 (*Methylhalfordinol*)
Philip, S. *et al., Heterocycles*, 1984, **22**, 9 (*O-Geranylhalfordinol*)
Velez, H. *et al., Rev. Cubana Quim.*, 1986, **2**, 22; *CA*, **109**, 20246g (*Methylhalfordinol*)
Dominguez, X.A. *et al., Heterocycles*, 1988, **27**, 35 (*derivs*)
Molina, P. *et al., Heterocycles*, 1993, **36**, 2255 (*synth, Methylhalfordinol*)

Halichlorine H-13

[178176-75-5]



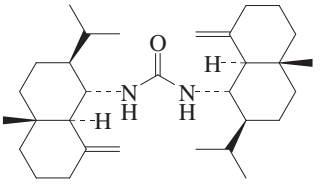
Absolute configuration

$C_{23}H_{32}ClNO_3$ 405.963
Alkaloid from the marine sponge *Halichondria okadai*. Shows antiinflammatory, antimetastatic and immunosuppressive props. Mp 183.5-185.5°. $[\alpha]_D$ +240.7 (c, 0.54 in MeOH).

Kuramoto, M. *et al., Tet. Lett.*, 1996, **37**, 3867-3870 (*isol, ir, pmr, cmr, struct*)
Arimoto, H. *et al., Tet. Lett.*, 1998, **39**, 861-862 (*abs config*)
Trauner, D. *et al., Angew. Chem., Int. Ed.*, 1999, **38**, 3542-3545 (*synth*)
Matsumura, Y. *et al., Org. Lett.*, 2004, **6**, 965-968 (*synth*)
Zhang, H.-L. *et al., J.O.C.*, 2005, **70**, 4954-4961 (*synth*)
Andrade, R.B. *et al., Org. Lett.*, 2005, **7**, 5733-5735 (*synth*)

Halichonadin A H-14

[847605-76-9]

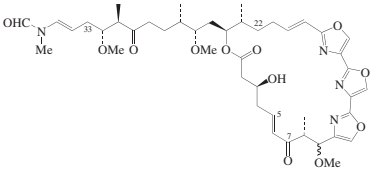


$C_{31}H_{52}N_2O$ 468.765
Constit. of a *Halichondria* sp. Cryst. Mp 114-116°. $[\alpha]_D^{24}$ -30 (c, 1 in $CHCl_3$).

Ishiyama, H. *et al., Tetrahedron*, 2005, **61**, 1101-1105 (*isol, pmr, cmr*)

Halichondramide H-15

[113275-14-2]



$C_{44}H_{60}N_4O_{12}$ 836.978
Macrolide antibiotic. Related to Kabiramide C in K-2. Prod. by sponge *Halichondria* sp., *Haliclona* sp. and *Polycitorella* sp. Antifungal agent, insecticide, toxic to sea urchins. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 66-68°. $[\alpha]_D$ -100.7 (c, 0.42 in MeOH). λ_{max} 232 (ϵ 23400) (MeOH) (Derep).

5,6-Dihydro: ***Dihydrohalichondramide***
[116302-29-5]
$C_{44}H_{62}N_4O_{12}$ 838.993
Isol. from *Halichondria* sp. and *Hexabranchus sanguineus*. Glass. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. $[\alpha]_D$ -69.7 (c, 1.68 in MeOH). λ_{max} 247 (ϵ 32000) (MeOH) (Berdy). λ_{max} 245 (ϵ 26800) (EtOH) (Berdy).

*5,6-Dihydro, 7*R*-alcohol:* ***Tetrahydrohalichondramide***
[116302-33-1]
$C_{44}H_{64}N_4O_{12}$ 841.009
Isol. from *Halichondria* sp. Glass. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. $[\alpha]_D$ -27 (c, 0.54 in MeOH). λ_{max} 247 (ϵ

34000) (MeOH) (Berdy).

*5*S-*Hydroxy, 5,6-dihydro:* ***Jaspisamide A***
[149420-76-8]
$C_{44}H_{62}N_4O_{13}$ 854.993
Isol. from the Okinawan marine sponge *Jaspis* sp. Cytotoxic. Solid. $[\alpha]_D^{17}$ -51 (c, 0.13 in MeOH). λ_{max} 244 (ϵ 24000) (MeOH) (Berdy).

*22*S-*Hydroxy:* ***Jaspisamide B***
[149420-77-9]
$C_{44}H_{60}N_4O_{13}$ 852.977
Isol. from *Jaspis* sp. Cytotoxic. Solid. $[\alpha]_D^{20}$ -112 (c, 0.19 in MeOH). λ_{max} 230 (ϵ 36000) (MeOH) (Berdy).

*5*S-*Amino, 5,6-dihydro:* ***Halishigamide A***
$C_{44}H_{63}N_5O_{12}$ 854.008
Metab. from the Okinawan marine sponge *Halichondria* sp. Cytotoxic. Antifungal agent. Amorph. solid. $[\alpha]_D^{25}$ +38 (c, 0.51 in MeOH). λ_{max} 263 (ϵ 15000) (MeOH).

5Z-Isomer. ***Isohalichondramide***
[116302-30-8]
$C_{44}H_{60}N_4O_{12}$ 836.978
Minor prod. from *Halichondria* sp. Ichthyotoxin, feeding deterrent and spongicide. Oil. Sol. MeOH, $CHCl_3$; poorly sol. H_2O.

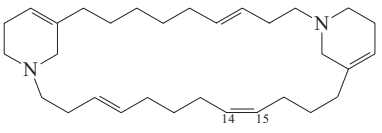
*33*R-*Methyl:* ***Jaspisamide C***
[149420-78-0]
$C_{45}H_{62}N_4O_{12}$ 851.004
Isol. from *Jaspis* sp. Cytotoxic. Solid. $[\alpha]_D^{19}$ -76 (c, 0.37 in MeOH). λ_{max} 230 (ϵ 32000) (MeOH) (Berdy).

*33*R-*Methyl, 5,6-dihydro:* ***33-Methyldihydrohalichondramide****. Dihydrojaspisamide*
[119147-13-6]
$C_{45}H_{64}N_4O_{12}$ 853.02
Isol. from the egg masses of *Hexabranchus* sp. Cytotoxic. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. $[\alpha]_D^{23}$ -53 (c, 0.5 in $CHCl_3$). λ_{max} 242 (ϵ 24600) (MeOH).

Kernan, M.R. *et al., J.O.C.*, 1988, **53**, 5014-5020 (*isol, pmr, cmr*)
Matsunaga, S. *et al., J.O.C.*, 1989, **54**, 1360-1363 (*33-Methyldihydrohalichondramide*)
Kobayashi, J. *et al., J. Nat. Prod.*, 1993, **56**, 787-791 (*Jaspisamides A,B,C*)
Kobayashi, J. *et al., J. Nat. Prod.*, 1997, **60**, 150-154 (*Halishigamide*)

Haliclamine B H-16

[126622-63-7]

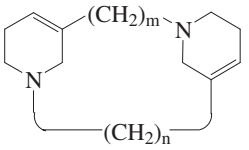


$C_{31}H_{50}N_2$ 450.749
Alkaloid from an unidentified marine sponge of the genus *Haliclona*. Cytotoxic agent. Oil.

14,15-Dihydro: ***Haliclamine A***
[126622-64-8]
$C_{31}H_{52}N_2$ 452.765
Alkaloid from *Haliclona* sp. Oil.

Fusetani, N. *et al., Tet. Lett.*, 1989, **30**, 6891-6894 (*isol, ir, pmr, cmr, ms, struct*)
Morimoto, Y. *et al., Tetrahedron*, 1998, **54**, 12197-12214 (*synth*)
Baldwin, J.E. *et al., Tet. Lett.*, 2000, **41**, 733-736 (*synth*)
Michelliza, S. *et al., J.O.C.*, 2002, **67**, 6474-6478 (*Haliclamine A, synth*)

Haliclamine C H-17



m = 9, n = 11

$C_{30}H_{54}N_2$ 442.77
Alkaloid from the Arctic sponge *Haliclona viscosa*. CAS no. not found in CA 142.

Volk, C.A. *et al., Eur. J. Org. Chem.*, 2004, 3154-3158 (*isol, pmr, cmr, ms*)

Haliclamine D H-18

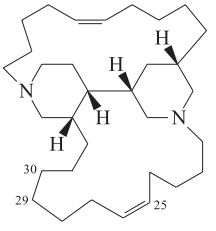
As Haliclamine C, H-17 with
m = 10, n = 11

$C_{31}H_{56}N_2$ 456.797
Alkaloid from the Arctic sponge *Haliclona viscosa*. CAS no. not found in CA 142.

Volk, C.A. *et al., Eur. J. Org. Chem.*, 2004, 3154-3158 (*isol, pmr, cmr, ms*)

Haliclonacyclamine A H-19

[179733-14-3]



Relative configuration

$C_{32}H_{56}N_2$ 468.808
Alkaloid from the tropical marine sponge *Haliclona* sp. Exhibits pronounced cytotoxic, antibacterial and antifungal activity. Needles. Mp 149-150°. $[\alpha]_D$ -3.4 (c, 1.21 in CH_2Cl_2).

Methiodide (1:2):
Yellow needles (MeOH/EtOAc). Mp 196-197° dec.

15,16-Dihydro: ***Haliclonacyclamine C***
$C_{32}H_{58}N_2$ 470.824
From *Haliclona* sp. Gum. $[\alpha]_D$ +4.8 (c, 0.3 in CH_2Cl_2).

25,26-Dihydro, 27,28-didehydro: ***Haliclonacyclamine B***
[179733-15-4]
$C_{32}H_{56}N_2$ 468.808
From *Haliclona* sp. Exhibits pronounced cytotoxic, antibacterial and antifungal activity. Needles. Mp 145-146°. $[\alpha]_D$ +3.4 (c, 0.55 in CH_2Cl_2). Struct. revised in 1998.

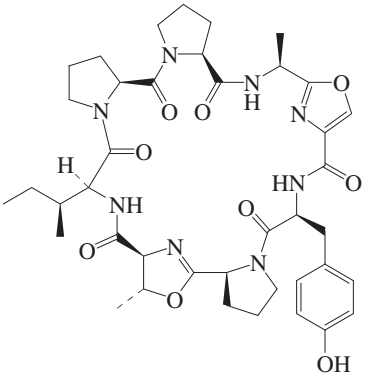
25,26-Dihydro, 29,30-didehydro, methiodide (1:2):
Yellow needles (MeOH/EtOAc). Mp 170-175° dec.

15,16,25,26-Tetrahydro, 27,28-didehydro: ***Haliclonacyclamine D***
$C_{32}H_{58}N_2$ 470.824
From *Haliclona* sp. Gum. $[\alpha]_D$ +16.1 (c, 0.3 in CH_2Cl_2).

Charan, R.D. *et al., Tetrahedron*, 1996, **52**, 9111 (*isol, pmr, cmr, cryst struct*)
Clark, R.J. *et al., Tetrahedron*, 1998, **54**, 8811-8826 (*isol, pmr, cmr, cryst struct*)

Haliclonamide B H-20

[248270-62-4]



$C_{40}H_{52}N_8O_9$ 788.899
Isol. from the marine sponge *Haliclona* sp. $[\alpha]_D^{24}$ -1.01.

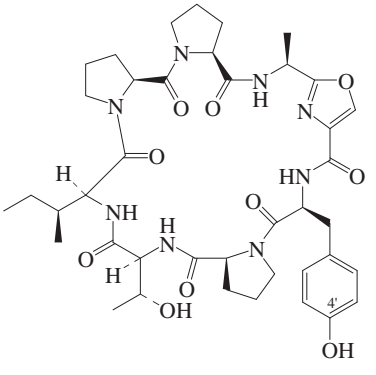
O-*(3-Methyl-2-butenyl):* ***Haliclonamide A***
[350593-22-5]
$C_{45}H_{60}N_8O_9$ 857.017
Isol. from a *Haliclona* sp. $[\alpha]_D^{24}$ -0.23.

O-*(2-Hydroxy-3-methyl-3-butenyl):* ***Haliclonamide C***
[489446-55-1]
$C_{45}H_{60}N_8O_{10}$ 873.017
Isol. from a *Haliclona* sp.

Guan, L.L. *et al., Biochem. Biophys. Res. Commun.*, 2001, **283**, 976-981 (*isol, ir, pmr, cmr*)
Sera, Y. *et al., Mar. Biotechnol.*, 2002, **4**, 441-446 (*isol*)

Haliclonamide D H-21

[489446-56-2]



$C_{40}H_{54}N_8O_{10}$ 806.914

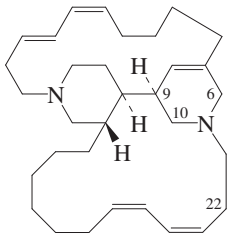
Isol. from a *Haliclona* sp.

4′-O-*(3-Methyl-2-butenyl):* ***Haliclonamide E***
[489446-57-3]
$C_{45}H_{62}N_8O_{10}$ 875.032
Isol. from a *Haliclona* sp.

Sera, Y. *et al., Mar. Biotechnol.*, 2002, **4**, 441-446 (*isol*)

Halicyclamine A H-22

[156280-95-4]



$C_{32}H_{50}N_2$ 462.76
Alkaloid from the marine sponges *Amphimedon* sp. and *Haliclona* sp. Cytotoxic. Yellowish solid. $[\alpha]_D$ -7.3 (c, 0.72 in CH_2Cl_2). $[\alpha]_D^{25}$ -24 (c, 0.1 in MeOH). λ_{max} 236 (MeOH).

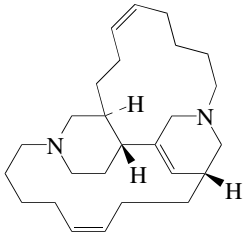
*6,9,10,*N-*Dehydro:* ***Tetradehydrohalicyclamine A***
$C_{32}H_{47}N_2^{\oplus}$ 459.737
Quaternary alkaloid from *Amphimedon* sp. Cytotoxic. Amorph. solid (as TFA salt). $[\alpha]_D^{25}$ -14.7 (c, 0.1 in MeOH) (TFA salt). λ_{max} 232 ; 273 (MeOH) (TFA salt).

22ξ-Hydroxy: ***22-Hydroxyhalicyclamine A***
$C_{32}H_{50}N_2O$ 478.76
Alkaloid from *Amphimedon* sp. Amorph. solid. $[\alpha]_D^{25}$ +21 (c, 0.1 in MeOH). λ_{max} 234 ; 273 (MeOH).

Jaspars, M. *et al., J.O.C.*, 1994, **59**, 3253-3255 (*isol, ir, pmr, cmr, ms*)
Matzanke, N. *et al., Org. Prep. Proced. Int.*, 1998, **30**, 3-51 (*rev*)
Matsunaga, S. *et al., J. Nat. Prod.*, 2004, **67**, 1758-1760 (*isol, pmr, cmr*)

Halicyclamine B H-23

[185559-26-6]



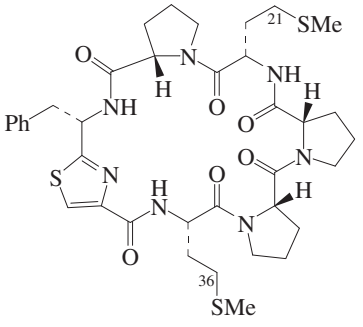
Relative Configuration

$C_{26}H_{42}N_2$ 382.631
Alkaloid from the marine sponge *Xestospongia* sp. $[\alpha]_D$ -143.5.

Harrison, B. *et al., Tet. Lett.*, 1996, **37**, 9151 (*isol, pmr, cmr, cryst struct*)

Haligramide A H-24

[282096-24-6]



$C_{37}H_{49}N_7O_6S_3$ 784.035
Isol. from the sponge *Haliclona nigra*. Amorph. powder. $[\alpha]_D$ -36.5 (c, 0.1 in MeOH). λ_{max} 206 (log ϵ 4.35); 242 (log ϵ 4.11); 254 (log ϵ 4.15); 260 (log ϵ 3.99) (EtOH).

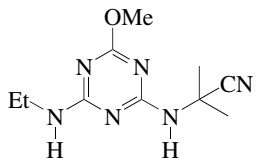
36-S-*Oxide:* ***Haligramide B***
[282096-25-7]
$C_{37}H_{49}N_7O_7S_3$ 800.035
Isol. from *Haliclona nigra*. Amorph. powder. $[\alpha]_D$ -32.5 (c, 0.09 in MeOH). λ_{max} 206 (log ϵ 4.26); 240 (log ϵ 3.63) (EtOH).

*21,36-*S,S-*Dioxide:* ***Waiakeamide***
[179667-64-2]
$C_{37}H_{49}N_7O_8S_3$ 816.034
Cyclic hexapeptide. Isol. from the sponge *Ircinia dendroides* and a Palauan *Haliclona* sp. Amorph. solid. $[\alpha]_D$ -54 (c, 0.5 in MeOH). λ_{max} 206 (ϵ 13000); 239 (ϵ 4400) (MeOH).

*21,21,36-*S,S,S-*Trioxide:* ***Waiakeamide 21-sulfone***
[518315-43-0]
$C_{37}H_{49}N_7O_9S_3$ 832.034
Isol. from a Palauan *Haliclona* sp. Amorph. solid. $[\alpha]_D^{26}$ -108 (c, 0.16 in $CHCl_3$).

Mau, C.M.S. *et al., J.O.C.*, 1996, **61**, 6302-6304 (*Waiakeamide*)
Rashid, M.A. *et al., J. Nat. Prod.*, 2000, **63**, 956-959 (*Haligramides A,B*)
Fujii, K. *et al., Tetrahedron*, 2002, **58**, 6873-6879 (*Waiakeamide, abs config*)
Sera, Y. *et al., J. Nat. Prod.*, 2003, **66**, 719-721 (*Waiakeamide, Waiakeamide 21-sulfone*)

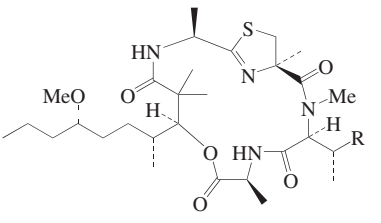
Halimedin H-25



$C_{10}H_{16}N_6O$ 236.276
First example of a naturally occurring 1,3,5-triazine. Alkaloid from the alga *Halimeda xishaensis*. Cryst. Mp 164-165°.

Su, J.-Y. *et al., Phytochemistry*, 1998, **48**, 583-584 (*isol, ir, pmr, cmr, ms, cryst struct*)

Halipeptin A H-26



R = -CH_2CH_2OH
Absolute Configuration

$C_{31}H_{54}N_4O_7S$ 626.856
Struct. revised in 2002. MF originally given as $C_{31}H_{54}N_4O_9$. Isol. from the sponge *Haliclona* sp. Potent antiinflammatory agent. Amorph. solid. $[\alpha]_D$ -16.6 (c, 0.03 in $CHCl_3$).

O-*De-Me:* ***Halipeptin B***
$C_{30}H_{52}N_4O_7S$ 612.829
Isol. from *Haliclona* sp. Amorph. solid. $[\alpha]_D$ -22.7 (c, 0.002 in $CHCl_3$).

5′-Deoxy: ***Halipeptin D***
[866555-47-7]
$C_{31}H_{54}N_4O_6S$ 610.857
Isol. from the sponge *Leiosella* cf. *arenifibrosa*. Viscous oil. $[\alpha]_D^{25}$ -26 (c, 0.2 in $CHCl_3$).

Randazzo, A. *et al., J.A.C.S.*, 2001, **123**, 10870-10876 (*isol, pmr, cmr, N-15 nmr*)
Monica, C.D. *et al., Tet. Lett.*, 2002, **43**, 5707-5710 (*struct*)
Nicolaou, K.C. *et al., Chem. Eur. J.*, 2005, **11**, 6197-6211 (*Halipeptin D*)
Yu, S. *et al., Chem. Eur. J.*, 2006, **12**, 6572-6584 (*synth*)
Nicolaou, K.C. *et al., J.A.C.S.*, 2006, **128**, 4460-4470 (*synth*)
Hara, S. *et al., Tet. Lett.*, 2006, **47**, 1081-1085 (*synth*)

Halipeptin C H-27

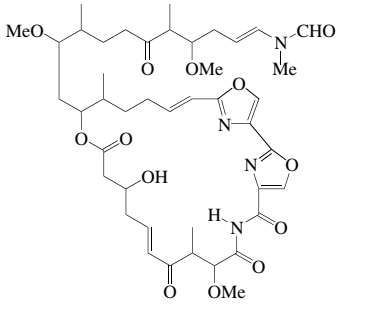
As Halipeptin A, H-26 with
R = CH_3

$C_{30}H_{52}N_4O_6S$ 596.83
Isol. from the sponge *Haliclona* sp. Amorph. solid. $[\alpha]_D$ -30 (c, 0.3 in $CHCl_3$).

Monica, C.D. *et al., Tet. Lett.*, 2002, **43**, 5707-5710 (*isol, pmr, cmr*)
Yu, S. *et al., Chem. Eur. J.*, 2006, **12**, 6572-6584 (*synth*)

Halishigamide B H-28

[185847-12-5]



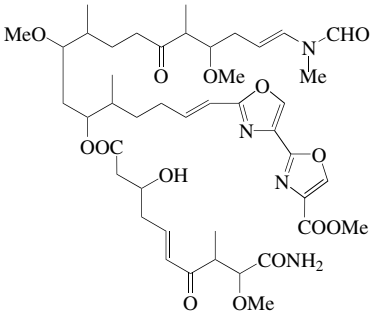
$C_{43}H_{60}N_4O_{13}$ 840.966
Metab. from the Okinawan marine sponge

Halichondria sp. Exhibits weak cytotoxicity and modest antifungal activity. Amorph. solid. $[\alpha]_D^{25}$ -72 (c, 0.06 in MeOH). λ_{max} 231 (ϵ 66000); 260 (sh) (MeOH).

Kobayashi, J. *et al., J. Nat. Prod.*, 1997, **60**, 150-154 (*isol, uv, ir, pmr, cmr, struct*)

Halishigamide C H-29

[185847-13-6]



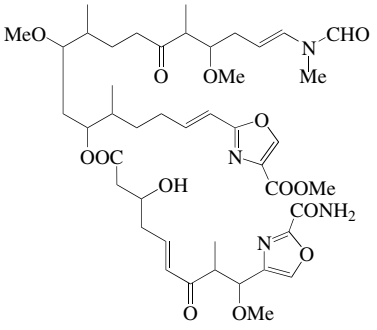
$C_{44}H_{64}N_4O_{14}$ 873.008

Metab. from the Okinawan marine sponge *Halichondria* sp. Exhibits weak cytotoxicity and modest antifungal activity. Amorph. solid. $[\alpha]_D^{27}$ -70 (c, 0.12 in $CHCl_3$). λ_{max} 231 (ϵ 56000) (MeOH).

Kobayashi, J. *et al., J. Nat. Prod.*, 1997, **60**, 150-154 (*isol, uv, ir, pmr, cmr, struct*)

Halishigamide D H-30

[185847-14-7]



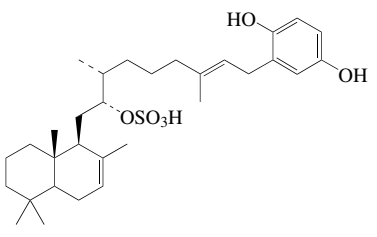
$C_{44}H_{64}N_4O_{14}$ 873.008

Metab. from the Okinawan marine sponge *Halichondria* sp. Exhibits weak cytotoxicity and modest antifungal activity. Amorph. solid. $[\alpha]_D^{25}$ -88 (c, 0.03 in MeOH). λ_{max} 235 (ϵ 15000) (MeOH).

Kobayashi, J. *et al., J. Nat. Prod.*, 1997, **60**, 150-154 (*isol, uv, ir, pmr, cmr, struct*)

Halisulfate 1 H-31

[116302-38-6]



$C_{31}H_{48}O_6S$ 548.783

Constit. of a sponge (Halichondriidae). Active against gram-positive bacteria and *Candida albicans*. Phospholipase A2 and serine protease inhibitor. Needles. $[\alpha]_D$ -27.3 (c, 0.01 in MeOH).

1,7,9-Trimethylguaninium salt: [201667-10-9]

$C_{39}H_{59}N_5O_7S$ 741.99

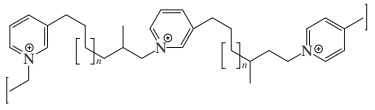
Isol. from the sponge *Coscinoderma mathewsi*. Cryst. Mp 165-170°. λ_{max} 260 (log ϵ 4.04); 287 (log ϵ 3.96) (MeOH).

Kernan, M.R. *et al., J.O.C.*, 1988, **53**, 4574-4578 (*isol, pmr, cmr, activity*)

Kimura, J. *et al., J. Nat. Prod.*, 1998, **61**, 248-250; 862 (*trimethylguaninium salt*)

Singh, M. *et al., Planta Med.*, 1999, **65**, 2-8 (*rev*)

Halitoxin H-32



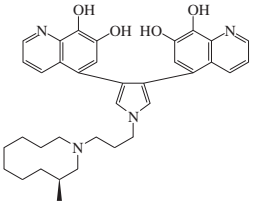
Toxin from the sponges *Haliclona rubens*, *Haliclona viridis*, *Haliclona erina*, *Amphimedon compressa* and *Amphimedon viridis*. Neurotoxin. Haemolytic, ichthyotoxic and antimitotic agent. Neuromuscular blocker. λ_{max} 267 ; 273 (EtOH).

▶ LD_{50} (mus, ipr) 2-5 mg/kg.

[54990-72-6]

Schmitz, F.J. *et al., J.O.C.*, 1978, **43**, 3916-3922 (*isol, uv, pmr, cmr*)

Halitulin H-33



Absolute Configuration

$C_{35}H_{40}N_4O_4$ 580.725

(S)-form [221367-90-4]

Alkaloid from the marine sponge *Haliclona tulearensis*. Cytotoxic agent. Orange foaming oil. $[\alpha]_D$ +7.5 (c, 2.8 in MeOH). λ_{max} 212 (ϵ 29200); 252 (ϵ 31600); 364 (ϵ 4400) (MeOH). λ_{max} 214 (ϵ 24700); 264 (ϵ 14800); 350 (ϵ 4650) (MeOH/NaOH) (Berdy).

Kashman, Y. *et al., Tet. Lett.*, 1999, **40**, 997-1000 (*isol, uv, ir, pmr, cmr, ms*)

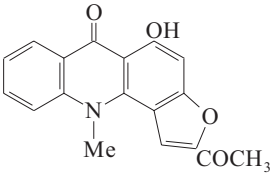
Banwell, M.G. *et al., J.C.S. Perkin 1*, 2002, 1340-1343 (*synth, struct*)

Heinrich, M.R. *et al., Tetrahedron*, 2003, **59**, 9239-9247 (*synth, abs config*)

Hallacridone H-34

2-Acetyl-5-hydroxy-11-methylfuro[2,3-c]acridin-6(11H)-one, 9CI

[109897-77-0]



$C_{18}H_{13}NO_4$ 307.305

Struct. revised in 1989. Minor alkaloid from *Ruta graveolens* (rue) tissue cultures (Rutaceae). Yellow needles ($CHCl_3$). Mp 295-298°.

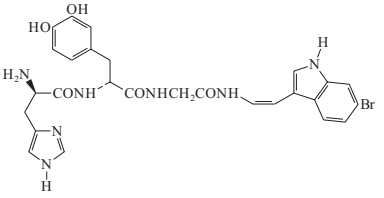
Baumert, A. *et al., Pharmazie*, 1987, **42**, 67; *CA*, **107**, 93537w

Baumert, A. *et al., Fitoterapia*, 1988, **59**, 83; *CA*, **109**, 226730u

Reisch, J. *et al., J.C.S. Perkin 1*, 1989, 1047 (*synth, ir, struct*)

Halocyamine A H-35

[122548-03-2]



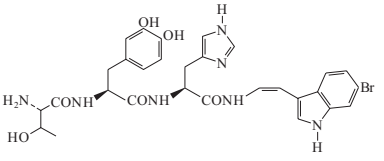
$C_{27}H_{28}BrN_7O_5$ 610.466

Oligopeptide antibiotic. Isol. from the haemocytes of the ascidian *Halocynthia roretzi*. Active against several bacteria and yeasts. Sol. MeOH, Me_2CO. $[\alpha]_D^{26}$ +5.2 (c, 0.5 in MeOH).

Azumi, K. *et al., Biochemistry*, 1990, **29**, 159-165 (*isol*)

Halocyamine B H-36

[122548-04-3]



$C_{29}H_{32}BrN_7O_6$ 654.519

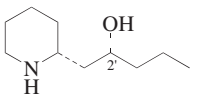
Oligopeptide antibiotic. Isol. from the haemocytes of the ascidian *Halocynthia roretzi*. Active against several bacteria and yeasts. Sol. MeOH, Me_2CO. $[\alpha]_D^{25}$ +63.1 (c, 0.5 in MeOH). λ_{max} 203 (E1%/1cm 785); 232 (E1%/1cm 428); 282 (E1%/1cm 276) (MeOH) (Berdy).

Azumi, K. *et al., Biochemistry*, 1990, **29**, 159-165 (*isol*)

Halosaline H-37

α-Propyl-2-piperidineethanol, 9CI. 2-(2-Hydroxypentyl)piperidine

[171019-32-2 (2*S*,2′*S*-form)]



(2*R*,2'*R*)-*form*

$C_{10}H_{21}NO$ 171.282

(2*R*,2'*R*)-*form* [26648-71-5]
Alkaloid from *Haloxylon salicornicum*. $[\alpha]_D$ +3.3 (c, 1 in $CHCl_3$). $[\alpha]_D$ -19.5 (c, 0.6 in EtOH).

Ketone: 1-(2-Piperidinyl)-2-pentanone. 2-(2-Oxopentyl)piperidine. ***Haloxynine***
[157070-30-9]
[157070-29-6 (*S*-form)]
$C_{10}H_{19}NO$ 169.266
Alkaloid from *Haloxylon salicornicum*. $[\alpha]_D^{22}$ -21 (c, 1.8 in $CHCl_3$).

(2*S*,2'*R*)-*form* [274923-10-3]
Alkaloid from *Andrachne aspera*. Mp 32°. $[\alpha]_D^{22}$ -8 (c, 3.7 in MeOH).

(2ξ,2'ξ)-*form*

N-*Me:* ***1-(*N*-Methyl-2-piperidinyl)-2-pentanol***. *2-(2-Hydroxypentyl)-*N*-methylpiperidine*
[145224-71-1]
$C_{11}H_{23}NO$ 185.309
Alkaloid from leaves of *Sedum lancerottense*. Identified by gc-ms.

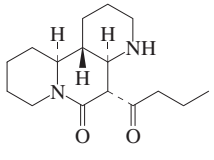
Ketone: [91016-37-4]
$C_{10}H_{19}NO$ 169.266
Alkaloid from leaves of *Sedum brissemoreti* and *Sedum lancerottense*.

Ketone, N-*Me:* ***1-(*N*-Methyl-2-piperidinyl)-2-pentanone***. N-*Methyl-2-(2-oxopentyl)piperidine*
[145224-70-0]
$C_{11}H_{21}NO$ 183.293
Alkaloid from leaves of *Sedum fusiforme*, *Sedum lancerottense*, *Sedum nudum*, and from whole plants of *Pratia nummularia*. Identified by gc-ms.

Michel, K.H. *et al., Acta Pharm. Suec.*, 1967, **4**, 97-116 (*isol, synth*)
Michel, K.H. *et al., Acta Chem. Scand.*, 1969, **23**, 3479 (*abs config*)
Craig, J.C. *et al., Tetrahedron*, 1978, **34**, 501 (*ord, abs config*)
Stevens, J.F. *et al., Phytochemistry*, 1992, **31**, 3917-3924 (*derivs*)
Louis, C. *et al., Can. J. Chem.*, 1994, **72**, 1347-1350 (*synth*)
Ho, L.K. *et al., Planta Med.*, 1995, **61**, 567 (*deriv*)
Stragies, R. *et al., Tetrahedron*, 1999, **55**, 8179-8188 (*synth*)
Mill, S. *et al., J. Nat. Prod.*, 2000, **63**, 762-764 (*isol, synth*)
Lesma, G. *et al., Tetrahedron*, 2004, **60**, 6437-6442 (*synth*)
El-Shazly, A.M. *et al., Pharmazie*, 2005, **60**, 949-952 (*Haloxynine*)

Haloxine H-38

*Dodecahydro-5-(1-oxobutyl)-6*H*-pyrido[2,1-f][1,6]naphthyridin-6-one, 9CI*
[16812-86-5]



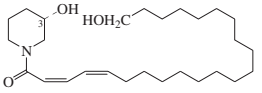
Relative Configuration

$C_{16}H_{26}N_2O_2$ 278.394
Alkaloid from *Haloxylon salicornicum*. Cryst. (as hydrochloride). Mp 193.5-196° (hydrochloride).

Michel, K.H. *et al., Acta Pharm. Suec.*, 1967, **4**, 97-116 (*isol, struct*)
Nilsson, B. *et al., Acta Chem. Scand., Ser. B*, 1968, **24**, 252-258 (*cryst struct*)

Haloxyline B H-39

3-Hydroxy-1-(22-hydroxy-2,4-docosadienoyl)piperidine



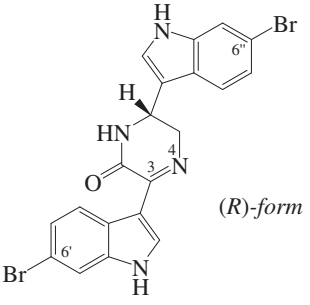
Absolute Configuration

$C_{27}H_{49}NO_3$ 435.689
Alkaloid from *Haloxylon salicornicum*. Cryst. Mp 142-143°. $[\alpha]_D^{20}$ -21.5 (c, 1 in $CHCl_3$). λ_{max} 262 (log ϵ 4) (MeOH).

3-Deoxy: 1-(22-Hydroxy-2,4-docosadienoyl)piperidine. ***Haloxyline A***
$C_{27}H_{49}NO_2$ 419.69
Alkaloid from *Haloxylon salicornicum*. Cryst. Mp 161-162°. λ_{max} 262 (log ϵ 3.92) (MeOH).

Ferheen, S. *et al., Chem. Pharm. Bull.*, 2005, **53**, 570-572 (*isol, pmr, cmr, ms*)

Hamacanthin A H-40



(*R*)-*form*

$C_{20}H_{14}Br_2N_4O$ 486.165
Abs. configs. not certain. Hamacanthin A itself has now been shown to have *S*-config. but the minor congeners appear to be *R*-.

(*R*)-*form* [354538-21-9]

*3*R*,4-Dihydro:* **cis-*3,4-Dihydrohamacanthin A***
[264624-42-2]
$C_{20}H_{16}Br_2N_4O$ 488.181
Alkaloid from the sponge *Rhaphisia lacazei*. $[\alpha]_D^{25}$ +8.1 (c, 0.2 in MeOH). Abs. config. not confirmed.

*3*S*,4-Dihydro:* **trans-*3,4-Dihydrohamacanthin A***
[264624-43-3]
Alkaloid from *Rhaphisia lacazei* and *Spongosorites* sp. $[\alpha]_D^{23}$ +16 (c, 1.1 in MeOH).

6'-Debromo: ***(*R*)-6'-Debromohamacanthin A***
$C_{12}H_{15}BrN_4O$ 311.181
Alkaloid from the sponge *Spongosorites* sp. Amorph. yellow powder. $[\alpha]_D^{23}$ -91 (c, 0.2 in MeOH).

*6'-Debromo, 3*S*,4-dihydro:* **trans-*6'-Debromo-3,4-dihydrohamacanthin A***
[264624-44-4]
$C_{20}H_{17}BrN_4O$ 409.285
Alkaloid from *Rhaphisia lacazei* and *Spongosorites* sp. Yellow powder. $[\alpha]_D^{25}$ +31 (c, 0.38 in MeOH).

6''-Debromo: ***(*R*)-6''-Debromohamacanthin A***
$C_{12}H_{15}BrN_4O$ 311.181
Alkaloid from the sponge *Spongosorites* sp. Amorph. yellow powder. $[\alpha]_D^{23}$ -76 (c, 0.05 in MeOH).

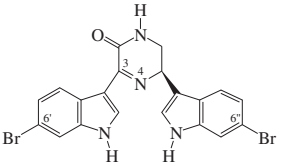
*6''-Debromo, 3*S*,4-dihydro:* **trans-*6''-Debromo-3,4-dihydrohamacanthin A***
[264624-45-5]
$C_{20}H_{17}BrN_4O$ 409.285
Alkaloid from *Rhaphisia lacazei* and *Spongosorites* sp. Yellow powder. $[\alpha]_D^{25}$ +34 (c, 0.15 in MeOH).

(*S*)-*form* [160098-92-0]
Alkaloid from *Hamacantha* sp. and *Spongosorites* sp. Shows antimicrobial activity. Pale yellow powder. $[\alpha]_D^{24}$ +84 (c, 0.1 in MeOH). λ_{max} 219 (ϵ 76500); 280 (ϵ 20600); 325 (ϵ 13300) (MeOH).

*Bis(debromo): (*S*)-6',6''-Didebromohamacanthin A*
$C_{20}H_{16}N_4O$ 328.373
Alkaloid from *Spongosorites* sp. Amorph. yellow powder. $[\alpha]_D^{25}$ +59 (c, 0.72 in MeOH). λ_{max} 221 (log ϵ 4.17); 268 (log ϵ 3.92); 330 (log ϵ 3.73) (MeOH).

Gunasekera, S.P. *et al., J. Nat. Prod.*, 1994, **57**, 1437-1441 (*isol, uv, ir, pmr, cmr, ms, struct*)
Casapullo, A. *et al., J. Nat. Prod.*, 2000, **63**, 447-451 (*3,4-Dihydrohamacanthins*)
Jiang, B. *et al., J.O.C.*, 2001, **66**, 4865-4869; 7560 (*synth, abs config*)
Miyake, F.Y. *et al., Org. Lett.*, 2002, **4**, 941-943 (*synth*)
Bao, B. *et al., J. Nat. Prod.*, 2005, **68**, 711-715 (*isol, pmr, cmr, abs config*)
Garg, N.K. *et al., Tet. Lett.*, 2005, **46**, 2423-2426 (*3,4-Dihydrohamacanthins, synth*)
Kouko, T. *et al., Tetrahedron*, 2005, **61**, 2309-2318 (*synth*)
Bao, B. *et al., J. Nat. Prod.*, 2007, **70**, 2-8 (*Didebromohamacanthin A*)
Guinchard, X. *et al., Org. Lett.*, 2007, **9**, 3761-3764 (*synth*)

Hamacanthin B H-41



(*R*)-*form*

$C_{20}H_{14}Br_2N_4O$ 486.165

(*R*)-*form*

*3*S*,4-Dihydro:* **cis-*3,4-Dihydrohamacanthin B***
[264624-39-7]
$C_{20}H_{16}Br_2N_4O$ 488.181
Alkaloid from the sponges *Rhaphisia lacazei* and *Spongosorites* sp. Amorph. yellow powder. $[\alpha]_D^{21}$ +101 (c, 0.8 in

MeOH).

6′-Debromo: ***(R)-6′-Debromohamacanthin B***
$C_{20}H_{15}BrN_4O$ 407.269
Alkaloid from *Spongosorites* sp. Amorph. yellow powder. $[\alpha]_D^{25}$ -288 (c, 0.4 in MeOH). λ_{max} 227 (log ϵ 4.03); 267 (log ϵ 3.95); 329 (log ϵ 3.84) (MeOH).

6′-Debromo, 3S,4-dihydro: **cis-*6′-Debromo-3,4-dihydrohamacanthin B***
[264624-40-0]
$C_{20}H_{17}BrN_4O$ 409.285
Alkaloid from *Rhaphisia lacazei* and *Spongosorites* sp. Yellow powder. $[\alpha]_D^{25}$ +80 (c, 0.25 in MeOH).

6′′-Debromo: ***(R)-6′′-Debromohamacanthin B***
$C_{20}H_{15}BrN_4O$ 407.269
Alkaloid from *Spongosorites* sp. Amorph. yellow powder. $[\alpha]_D^{25}$ -83 (c, 0.5 in MeOH). λ_{max} 230 (log ϵ 4.06); 277 (log ϵ 3.98); 322 (log ϵ 3.78) (MeOH).

6′′-Debromo, 3S,4-dihydro: **cis-*6′′-Debromo-3,4-dihydrohamacanthin B***
[264624-41-1]
$C_{20}H_{17}BrN_4O$ 409.285
Alkaloid from *Rhaphisia lacazei* and *Spongosorites* sp. Yellow powder. $[\alpha]_D^{25}$ +105 (c, 0.2 in MeOH).

Bis(debromo): ***(R)-6′,6′′-Didebromohamacanthin B***
$C_{20}H_{16}N_4O$ 328.373
Alkaloid from *Spongosorites* sp. Amorph. yellow powder. $[\alpha]_D^{25}$ -288 (c, 0.4 in MeOH). λ_{max} 227 (log ϵ 4.03); 267 (log ϵ 3.95); 329 (log ϵ 3.84) (MeOH).

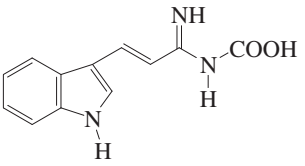
Bis(debromo), 3S,4-dihydro: ***6′,6′′-Didebromo-3,4-dihydrohamacanthin B***
$C_{20}H_{18}N_4O$ 330.388
Alkaloid from *Spongosorites* sp.

(*S*)-*form* [160098-93-1]
Alkaloid from a deep-water marine sponge *Hamacantha* sp. Shows significant antimicrobial activity. Pale yellow powder. $[\alpha]_D^{24}$ +172 (c, 0.1 in MeOH). λ_{max} 219 (ϵ 76500); 280 (ϵ 20600); 325 (ϵ 13300) (MeOH) (Berdy).

6′-Debromo: ***6′-Debromohamacanthin B***
$C_{20}H_{15}BrN_4O$ 407.269
Alkaloid from the sponge *Spongosorites* sp. Amorph. yellow solid. Mp 210-212°. $[\alpha]_D^{25}$ -100 (c, 0.2 in MeOH). λ_{max} 217 (log ϵ 4); 224 (log ϵ 3.94); 274 (log ϵ 3.46); 328 (log ϵ 3.7) (no solvent reported).

Gunasekera, S.P. *et al., J. Nat. Prod.*, 1994, **57**, 1437-1441 (*isol, uv, ir, pmr, cmr, ms, struct*)
Casapullo, A. *et al., J. Nat. Prod.*, 2000, **63**, 447-451 (*3,4-Dihydrohamacanthins*)
Jiang, B. *et al., J.O.C.*, 2002, **67**, 1396-1398 (*synth*)
Miyake, F.Y. *et al., Org. Lett.*, 2002, **4**, 941-943 (*synth*)
Oh, K.-B. *et al., Bioorg. Med. Chem. Lett.*, 2005, **15**, 4927-4931 (*6′-Debromohamacanthin B*)
Kouko, T. *et al., Tetrahedron*, 2005, **61**, 2309-2318 (*synth*)
Bao, B. *et al., J. Nat. Prod.*, 2007, **70**, 2-8 (*R-form derivs*)
Higuchi, K. *et al., Synthesis*, 2007, 669-674 (*3,4-dihydro*)

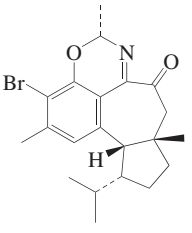
Hamigeramide H-42



$C_{12}H_{11}N_3O_2$ 229.238
Alkaloid from the sponge *Hamigera hamigera*. Pale yellow powder. λ_{max} 228 ; 346 (MeOH).

Hassan, W. *et al., Mar. Drugs*, 2004, **2**, 88-100 (*isol, pmr, cmr, ms*)

Hamigeran D H-43
[255882-09-8]

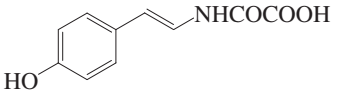


Absolute Configuration

$C_{21}H_{26}BrNO_2$ 404.346
Isol. from the sponge *Hamigera tarangaensis*. Cytotoxic agent. Pale yellow solid. $[\alpha]_D^{25}$ -47.1 (c, 0.21 in CH_2Cl_2).

Wellington, K.D. *et al., J. Nat. Prod.*, 2000, **63**, 79-85 (*isol, pmr, cmr*)
Cambie, R.C. *et al., Acta Cryst. C*, 2001, **57**, 958-960 (*cryst struct*)

Hamigeroxalamic acid H-44
[2-(4-Hydroxyphenyl)vinyl]oxamic acid



$C_{10}H_9NO_4$ 207.185
Alkaloid from the sponge *Hamigera hamigera*. Pale yellow powder. λ_{max} 248 ; 320 (MeOH).

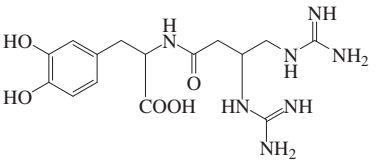
Imine: [2-(4-Hydroxyphenyl)vinylamino]iminoacetic acid. ***Hamigeramine***†
$C_{10}H_{10}N_2O_3$ 206.201
Alkaloid from the sponge *Hamigera hamigera*. Pale yellow powder. λ_{max} 227 ; 324 (MeOH).

Hassan, W. *et al., Mar. Drugs*, 2004, **2**, 88-100 (*isol, pmr, cmr, ms*)

Hanadamine H-45
$C_{21}H_{24}N_2O_4$ 368.432
Struct. unknown. Alkaloid from *Uncaria kawakamii* (Rubiaceae). Mp 187°.

Kondo, H. *et al., Yakugaku Zasshi*, 1932, **52**, 528-531; *CA*, **27**, 1345

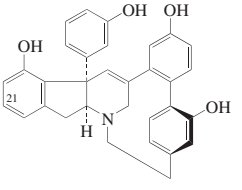
Hanasanagin H-46
N-*(3,4-Diguanidinobutanoyl)dopa*



$C_{15}H_{23}N_7O_5$ 381.391
Constit. of the mushroom *Isaria japonica*. Antioxidant. Pale yellow oil.

Sakakura, A. *et al., Tet. Lett.*, 2005, **46**, 9057-9059 (*isol, pmr, cmr*)

Haouamine A H-47
[496962-05-1]



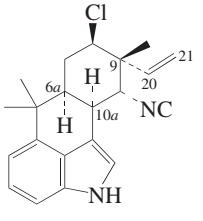
Absolute Configuration

$C_{32}H_{27}NO_4$ 489.57
Alkaloid from the ascidian *Aplidium haouarianum*. Cytotoxic. Solid. $[\alpha]_D^{29}$ -52 (c, 0.4 in MeOH). Dec. at 170°. λ_{max} 205 (ϵ 62000); 275 (ϵ 11000) (MeOH).

21-Hydroxy: ***Haouamine B***
[496962-06-2]
$C_{32}H_{27}NO_5$ 505.569
Alkaloid from *Aplidium haouarianum*. Solid (as penta-Ac). $[\alpha]_D^{26}$ -27.1 (c, 0.14 in $CHCl_3$) (penta-Ac). λ_{max} 204 (ϵ 48100); 238 (ϵ 20300) (MeOH) (penta-Ac).

Garrido, L. *et al., J.O.C.*, 2003, **68**, 293-299 (*isol, pmr, cmr, cryst struct*)
Jeong, J.H. *et al., Org. Lett.*, 2006, **8**, 2309-2312 (*synth*)
Gravel, E. *et al., Chem. Comm.*, 2007, 719-721 (*synth*)
Burns, N.Z. *et al., Angew. Chem., Int. Ed.*, 2008, **47**, 205-208 (*synth, abs config, biosynth*)
Belostotskii, A.M. *et al., J.O.C.*, 2008, **73**, 5723-5731 (*conformn*)

Hapalindole A H-48
8-Chloro-9-ethenyl-2,6,6a,7,8,9,10,10a-octahydro-10-isocyano-6,6,9-trimethylnaphth[1,2,3-cd]indole, 9CI
[92219-95-9]



Absolute Configuration

$C_{21}H_{23}ClN_2$ 338.879
Numbering systems vary. Isol. from the blue-green alga *Hapalosiphon fontinalis*.

Algicide. Antibacterial and antimycotic agent. Yellow plates (CH_2Cl_2/heptane). Sol. MeOH, butanol, $CHCl_3$; poorly sol. H_2O, hexane. Mp 160-167° dec. $[\alpha]_D^{25}$ -78 (c, 1.2 in CH_2Cl_2). λ_{max} 222 (ϵ 38000); 280 (ϵ 7000); 291 (ϵ 5800) (MeOH) (Derep).

20,21-Epoxide: ***Hapalindole N***
[106865-65-0]
$C_{21}H_{23}ClN_2O$ 354.878
From *Hapalosiphon fontinalis* ATCC 39964. Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. $[\alpha]_D^{25}$ -31.5 (c, 1.7 in $CHCl_3$). Config. at C-20 not known. λ_{max} 220 (ϵ 34000); 273 (ϵ 5700); 280 (ϵ 5800); 290 (ϵ 4500) (MeOH) (Derep).

*6*a*,10*a*-Didehydro:* ***Hapalindole K***
[106865-63-8]
$C_{21}H_{21}ClN_2$ 336.863
From *Hapalosiphon fontinalis* ATCC 39964. Thick yellow plates (CH_2Cl_2/heptane). Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. Mp 110-240° dec. $[\alpha]_D^{25}$ -12.5 (c, 1.8 in $CHCl_3$). λ_{max} 226 (ϵ 19300); 301 (ϵ 9600) (MeOH) (Derep).

*10,10*a*-Didehydro:* ***Hapalindole I***
[101968-76-7]
$C_{21}H_{21}ClN_2$ 336.863
From *Hapalosiphon fontinalis*. Mp 180° dec. $[\alpha]_D^{25}$ -12 (c, 0.2 in CH_2Cl_2). λ_{max} 224 (ϵ 25800); 240 (sh) (ϵ 13000); 274 (ϵ 6700); 322 (ϵ 13400) (MeOH) (Derep). λ_{max} 222 ; 224 (ϵ 25800); 274 (ϵ 6700); 280 ; 291 ; 322 (ϵ 13900) (MeOH) (Berdy).

Isothiocyanate: ***Hapalindole B***
[92219-96-0]
$C_{21}H_{23}ClN_2S$ 370.945
Isol. from *Hapalosiphon fontinalis*. Algicide. Antibacterial and antimycotic agent. Oil. Sol. MeOH, $CHCl_3$, butanol; poorly sol. H_2O, hexane. $[\alpha]_D^{25}$ -194 (c, 5.1 in CH_2Cl_2). Has -NCS replacing -NC. λ_{max} 222 (ϵ 38000); 280 (ϵ 7000); 291 (ϵ 5700) (MeOH) (Derep).

*10*a*β-Hydroxy:* ***Hapalindole V. 10-Hydroxyhapalindole G***
[106865-68-3]
$C_{21}H_{23}ClN_2O$ 354.878
From *Hapalosiphon fontinalis* ATCC 39964. No phys. props. reported. Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. λ_{max} 220 (ϵ 34000); 273 (ϵ 5700); 280 (ϵ 5800); 290 (ϵ 4500) (MeOH) (Derep).

Dechloro: ***Hapalindole J***
[106928-26-1]
$C_{21}H_{24}N_2$ 304.434
From *Hapalosiphon fontinalis* ATCC 39964. Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. $[\alpha]_D^{25}$ +54.4 (c, 0.9 in $CHCl_3$). λ_{max} 222 (ϵ 38700); 280 (ϵ 7000); 291 (ϵ 5700) (MeOH) (Derep).

Dechloro, isothiocyanate: ***Hapalindole M***
[106865-64-9]
$C_{21}H_{24}N_2S$ 336.5
From *Hapalosiphon fontinalis* ATCC 39964. Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. $[\alpha]_D^{25}$ -83.1 (c, 1.8 in $CHCl_3$). λ_{max} 223 (ϵ 40000); 281 (ϵ 7300); 291 (ϵ 5900) (MeOH) (Derep).

Dechloro, 8β-hydroxy, isothiocyanate: ***Hapalindole O***
[106865-66-1]
$C_{21}H_{24}N_2OS$ 352.499
From *Hapalosiphon fontinalis* ATCC 39964. Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. $[\alpha]_D^{25}$ -106 (c, 2.4 in $CHCl_3$). λ_{max} 222 (ϵ 38000); 279 (ϵ 7000); 290 (ϵ 5700) (MeOH) (Derep).

*6*a*-Epimer:* ***Hapalindole H***
[101968-75-6]
$C_{21}H_{23}ClN_2$ 338.879
From *Hapalosiphon fontinalis*. Mp 190-193°. $[\alpha]_D^{25}$ +152 (c, 4.1 in CH_2Cl_2). λ_{max} 222 (ϵ 38700); 280 (ϵ 7000); 291 (ϵ 5700) (MeOH) (Derep).

9-Epimer: ***Hapalindole L***
[106928-27-2]
$C_{21}H_{23}ClN_2$ 338.879
From *Hapalosiphon fontinalis* ATCC 39964. Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. $[\alpha]_D^{25}$ -74 (c, 1.1 in $CHCl_3$). λ_{max} 222 (ϵ 38000); 280 (ϵ 7000); 291 (ϵ 5800) (MeOH) (Derep).

9-Epimer, dechloro: ***12-Epihapalindole J***
[955020-01-6]
$C_{21}H_{24}N_2$ 304.434
Isol. from *Fischerella* ATCC 43239. Insecticide. Amorph. solid. λ_{max} 221 ; 281 (MeOH).

*10*a*-Epimer:* ***Hapalindole G***
[102045-13-6]
$C_{21}H_{23}ClN_2$ 338.879
From *Hapalosiphon fontinalis*. Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. Mp 185° dec. $[\alpha]_D^{25}$ -43.9 (c, 0.28 in CH_2Cl_2). λ_{max} 222 (ϵ 38000); 280 (ϵ 7000); 291 (ϵ 5800) (MeOH) (Derep).

*10*a*-Epimer, dechloro:* ***Hapalindole U***
[106928-30-7]
$C_{21}H_{24}N_2$ 304.434
From *Hapalosiphon fontinalis* ATCC 39964. Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. $[\alpha]_D^{25}$ +12 (c, 0.6 in CH_2Cl_2). λ_{max} 222 (ϵ 38700); 280 (ϵ 7000); 291 (ϵ 5700) (MeOH) (Derep). λ_{max} 222 ; 282 ; 291 (MeOH) (Berdy).

?-Epimer, 20,21-epoxide: ***Hapalindole P***
[106928-28-3]
$C_{21}H_{23}ClN_2O$ 354.878
From *Hapalosiphon fontinalis* ATCC 39964. Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. $[\alpha]_D$ -16.3 (c, 0.8 in $CHCl_3$). λ_{max} 220 (ϵ 34000); 273 (ϵ 5700); 280 (ϵ 5800); 290 (ϵ 4500) (MeOH) (Derep). λ_{max} 222 ; 280 ; 291 (MeOH) (Berdy).

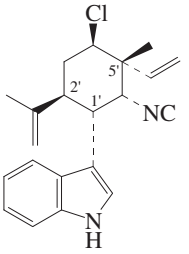
*6*a*,9-Diepimer:* ***12-Epihapalindole H***
[174063-68-4]
$C_{21}H_{24}ClN_2$ 339.887
Alkaloid from *Fischerella ambigua* and *Hapalosiphon laingii*. Sol. MeOH. Mp 187-189°. $[\alpha]_D$ +217.3 (c, 0.16 in CH_2Cl_2). λ_{max} 221 (ϵ 28140); 282 (ϵ 5150); 291 (sh) (ϵ 4130) (MeOH).

*9,10*a*-Diepimer:* ***12-Epihapalindole G***
[173241-59-3]
$C_{21}H_{23}ClN_2$ 338.879
Isol. from *Hapalosiphon laingii*. Sol. MeOH. λ_{max} 222 (ϵ 37220); 280 (ϵ 8200); 291 (sh) (ϵ 6640) (MeOH).

Moore, R.E. *et al., J.A.C.S.*, 1984, **106**, 6456-6457 (*isol, uv, ir, pmr, cmr, Hapalindole B*)
Moore, R.E. *et al., J.O.C.*, 1987, **52**, 1036-1043 (*isol, ir, pmr, cmr, cryst struct*)
Muratake, H. *et al., Tetrahedron*, 1990, **46**, 6331-6342; 6351-6360 (*Hapalindoles H,J,M,U, synth*)
Sakagami, M. *et al., Chem. Pharm. Bull.*, 1994, **42**, 1393-1398 (*Hapalindole O, synth*)
Fukuyama, T. *et al., J.A.C.S.*, 1994, **116**, 3125-3126 (*Hapalindole G, synth*)
Klein, D. *et al., J. Nat. Prod.*, 1995, **58**, 1781-1785 (*12-Epihapalindoles G,H*)
Becher, P.G. *et al., Phytochemistry*, 2007, **68**, 2493-2497 (*12-Epihapalindole J*)

Hapalindole E H-49

[101968-73-4]



$C_{21}H_{23}ClN_2$ 338.879
Isol. from freshwater cyanobacterium *Hapalosiphon fontinalis*. Sol. MeOH, butanol, $CHCl_3$; poorly sol. H_2O, hexane. Mp 88-90°. $[\alpha]_D^{25}$ +25.2 (c, 3.1 in CH_2Cl_2). λ_{max} 222 (ϵ 38000); 280 (ϵ 7000); 291 (ϵ 5800) (MeOH) (Derep).

Isothiocyanate: ***Hapalindole F***
[101968-74-5]
$C_{21}H_{23}ClN_2S$ 370.945
From *Hapalosiphon fontinalis*. Mp 176-179°. $[\alpha]_D^{25}$ +93.2 (c, 0.22 in CH_2Cl_2). Has -NCS replacing -NC. λ_{max} 222 (ϵ 38000); 280 (ϵ 7000); 291 (ϵ 5700) (MeOH) (Derep).

Dechloro: ***Hapalindole C***
[101968-71-2]
$C_{21}H_{24}N_2$ 304.434
Rel. config. illus. Isol. from cyanobacterium *Hapalosiphon fontinalis*. Sol. MeOH, butanol, $CHCl_3$; poorly sol. H_2O, hexane. Mp 138-143°. $[\alpha]_D^{25}$ +76.5 (c, 0.41 in CH_2Cl_2). λ_{max} 222 (ϵ 38700); 280 (ϵ 7000); 291 (ϵ 5700) (MeOH) (Derep).

Dechloro, isothiocyanate: ***Hapalindole D***
[101968-72-3]
$C_{21}H_{24}N_2S$ 336.5
Isol. from *Hapalosiphon fontinalis*. Yellow-orange prisms (CH_2Cl_2). Mp 105-107°. $[\alpha]_D$ +239 (c, 3.1 in CH_2Cl_2). λ_{max} 223 (ϵ 40000); 281 (ϵ 7300); 291 (ϵ 5900) (MeOH) (Derep).

5′-Epimer: ***12-Epihapalindole E***
[159249-51-1]
$C_{21}H_{23}ClN_2$ 338.879
Alkaloid from *Hapalosiphon wel-*

witschii, *Hapalosiphon laingii* and *Westiella intricata*. Ichthyotoxic. $[\alpha]_D$ +42.9 (c, 0.3 in CH_2Cl_2). λ_{max} 221 (ϵ 28400); 282 (ϵ 5000); 290 (ϵ 4480) (MeOH) (Berdy).

5′-Epimer, isothiocyanate: ***12-Epihapalindole F isothiocyanate***
[159249-53-3]
$C_{21}H_{23}ClN_2S$ 370.945
Alkaloid from *Hapalosiphon welwitschii*. $[\alpha]_D$ +102 (c, 0.5 in CH_2Cl_2). Authors' numbering and nomenclature.

5′-Epimer, dechloro: ***12-Epihapalindole C***
[159249-52-2]
$C_{21}H_{24}N_2$ 304.434
Alkaloid from *Hapalosiphon welwitschii*, *Westiella intricata* and *Hapalosiphon laingii*. Ichthyotoxic. $[\alpha]_D$ +10.4 (c, 0.54 in CH_2Cl_2). λ_{max} 219 (ϵ 18000); 282 (ϵ 4800) (MeOH) (Berdy). λ_{max} 222 (ϵ 26900); 283 (ϵ 4460); 290 (ϵ 4060) (EtOH) (Berdy).

5′-Epimer, dechloro, isothiocyanate: ***12-Epihapalindole D isothiocyanate***
[159249-54-4]
$C_{21}H_{24}N_2S$ 336.5
Alkaloid from the *Hapalosiphon welwitschii*.

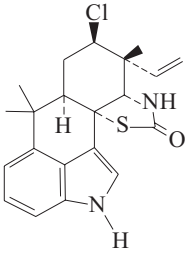
1′,2′-Diepimer, dechloro, isothiocyanate: ***Hapalindole Q***
[106928-29-4]
$C_{21}H_{24}N_2S$ 336.5
From *Hapalosiphon fontinalis*. Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. $[\alpha]_D^{25}$ +24.1 (c, 1.1 in CH_2Cl_2). λ_{max} 223 (ϵ 40000); 281 (ϵ 7300); 291 (ϵ 5900) (MeOH) (Derep).

1′,2′,5′-Triepimer, dechloro: ***12-Epihapalindole Q***
[173241-60-6]
$C_{21}H_{24}N_2$ 304.434
Alkaloid from *Hapalosiphon laingii*. Ichthyotoxic. Sol. MeOH. λ_{max} 222 (ϵ 24160); 283 (ϵ 4850); 291 (sh) (ϵ 4300) (MeOH).

Moore, R.E. *et al., J.O.C.*, 1987, **52**, 1036 (*Hapalindoles, isol, pmr, cmr, struct, Hapalindole D, cryst struct*)
Stratmann, K. *et al., J.A.C.S.*, 1994, **116**, 9935 (*12-Epihapalindole isonitriles, 12-Epihapalindole E isothiocyanates*)
Klein, D. *et al., J. Nat. Prod.*, 1995, **58**, 1781-1785 (*12-Epihapalindole Q isonitrile*)
Kinsman, A.C. *et al., J.A.C.S.*, 2003, **125**, 14120-14125 (*Hapalindole Q, synth*)
Richter, J.M. *et al., J.A.C.S.*, 2008, **130**, 17938-17954 (*Hapalindole Q, synth*)

Hapalindole T H-50

[106865-67-2]

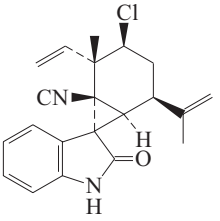


$C_{21}H_{23}ClN_2OS$ 386.944
Isol. from the blue-green alga *Hapalosiphon fontinalis* ATCC39964. Antibacterial and antimycotic agent. Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. $[\alpha]_D^{25}$ -137 (c, 1.5 in CH_2Cl_2). λ_{max} 222 (ϵ 35400); 283 (ϵ 7100) (MeOH) (Derep).

Moore, R.E. *et al., J.O.C.*, 1987, **52**, 1036 (*isol, uv, ir, pmr, cmr, struct*)

Hapalindolinone A H-51

3-Chloro-2-ethenyl-1-isocyano-2-methyl-5-(1-methylethenyl)spiro[bicyclo[4.1.0]-heptane-7,3′-[3H]indol]-2′(1′H)-one, 9CI
[109151-56-6]



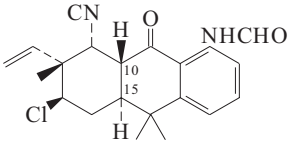
$C_{21}H_{21}ClN_2O$ 352.862
Isol. from a cultured cyanobacterium and from *Fischerella* sp. and *Hapalosiphon laingii*. Adenylate cyclase inhibitor, vasopressin antagonist and ichthyotoxin. Cryst. Mp 92-96° dec. $[\alpha]_D^{25}$ -30. Related to Hapalindole A, H-48. λ_{max} 217 (ϵ 77000); 253 (ϵ 3200); 300 (sh) (ϵ 1500) (no solvent specified) (Derep). λ_{max} 223 (ϵ 24380); 261 (ϵ 4620) (MeOH) (Berdy).

Dechloro: ***Hapalindolinone B***
[109151-57-7]
$C_{21}H_{22}N_2O$ 318.418
Isol. from a cultured cyanobacterium and from *Fischerella* sp. Adenylate cyclase inhibitor. Oil. λ_{max} 217 (ϵ 77000); 253 (ϵ 3200); 300 (sh) (ϵ 1500) (MeOH) (Derep). λ_{max} 223 (ϵ 24600); 261 (ϵ 4570) (MeOH) (Berdy).

Schwartz, R.E. *et al., J.O.C.*, 1987, **52**, 3704 (*isol, ir, pmr, cmr, cryst struct*)

Hapalonamide G H-52

[109281-38-1]



$C_{21}H_{23}ClN_2O_2$ 370.878
Author's numbering shown. See also Fontonamide, F-126. Minor alkaloid from the blue-green alga *Hapalosiphon fontinalis*. Also obt. by oxidn. of Hapalindole A, H-48.

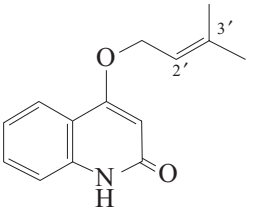
10β-Hydroxy: ***Hapalonamide V***
[123498-01-1]
$C_{21}H_{23}ClN_2O_3$ 386.877
Minor alkaloid from *Hapalosiphon fontinalis*.

10,15-Diepimer, dechloro: ***Hapalonamide H***
[123498-00-0]
$C_{21}H_{24}N_2O_2$ 336.433
Minor alkaloid from *Hapalosiphon fontinalis*. $[\alpha]_D$ +13.7 (c, 0.15 in $CHCl_3$).

Moore, R.E. *et al., J.O.C.*, 1987, **52**, 3773 (*synth, pmr*)
Moore, R.E. *et al., Phytochemistry*, 1989, **28**, 1565 (*isol*)

Haplafine H-53

4-[(3-Methyl-2-butenyl)oxy]-2(1H)-quinolinone, 9CI. 4-Prenyloxy-2-quinolone. Haplaphine
[54357-78-7]



$C_{14}H_{15}NO_2$ 229.278
Alkaloid from the aerial parts of flowering *Haplophyllum perforatum* (Rutaceae). Cryst. (Me_2CO). Mp 159-160°.

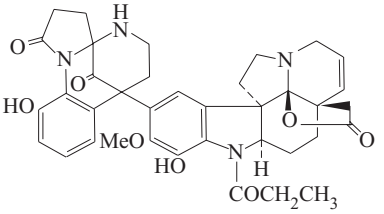
N-*Me:* ***Ravenine***
[20105-22-0]
$C_{15}H_{17}NO_2$ 243.305
Alkaloid from *Ravenia spectabilis* (Rutaceae). Mp 120-121°.

N-*Me, 2′,3′-Dihydroxy:* ***4-(2,3-Dihydroxy-3-methylbutoxy)-1-methyl-2(1H)-quinolinone***
[80357-89-7]
$C_{15}H_{19}NO_4$ 277.319
Alkaloid from the heartwood of *Euxylophora paraensis* (Rutaceae). Needles (C_6H_6). Mp 94°. $[\alpha]_D^{20}$ +31.8 (c, 0.9 in $CHCl_3$).

Paul, B.D. *et al., Indian J. Chem.*, 1969, **7**, 678 (*Ravenine*)
Jurd, L. *et al., Aust. J. Chem.*, 1981, **34**, 1625 (*deriv*)
Bessonova, I.A. *et al., Khim. Prir. Soedin.*, 1986, **22**, 654; *Chem. Nat. Compd. (Engl. Transl.)*, 619 (*isol, ir, pmr, struct*)

Haplocidiphytine H-54

[87553-37-5]

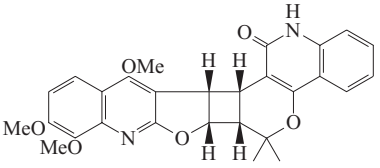


$C_{37}H_{38}N_4O_8$ 666.729
No stereochem. reported for non-aspidosperma part, which presumably shows tautom. with a canthinone struct. (cf. Haplophytine, H-58). Alkaloid from *Haplophyton cimicidum* (Apocynaceae). Small needles (EtOH). Mp 334° dec. $[\alpha]_D^{20}$ +91.5 (c, 0.55 in $CHCl_3$). λ_{max} 235 (ϵ 32900); 265 (ϵ 20900); 290 (sh) (ϵ 7000) (EtOH).

Adesomoju, A.A. *et al., Heterocycles*, 1983, **20**, 1511-1517 (*uv, ir, pmr, cmr, ms, struct*)

Haplodimerine H-55

[120931-43-3]



$C_{28}H_{26}N_2O_6$ 486.523

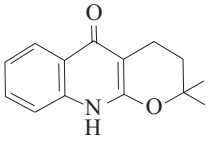
Dimer of Skimmianine and Flindersine. Alkaloid from the fruit of *Haplophyllum foliosum* (Rutaceae). Prisms (EtOH). Mp 292-293°. Optically inactive.

Tashkhodzhaev, B. *et al., Khim. Prir. Soedin.*, 1988, **24**, 838; *Chem. Nat. Compd. (Engl. Transl.)*, 714 (*isol, struct, uv, ir, nmr, ms, cryst struct*)

Haplofoline H-56

*2,3,4,10-Tetrahydro-2,2-dimethyl-5*H*-pyrano[2,3-*b*]quinolin-5-one, 9CI. Khaplofoline*

[6431-83-0]



$C_{14}H_{15}NO_2$ 229.278

The names Khaplofoline and Haplofoline are equivalent transliterations from the Russian. Alkaloid from *Haplophyllum foliosum* (Rutaceae). Prisms (EtOAc). Mp 272-274°.

Hydrochloride: Mp 78-80°.

N-*Ac:*
Cryst. (EtOH). Mp 155-156°.

N-*Me:* **N-*Methylkhaplofoline***
[6391-67-9]
$C_{15}H_{17}NO_2$ 243.305
Alkaloid from the stem bark of *Almeidea guyanensis* (Rutaceae). Needles (Et_2O). Mp 119-120°.

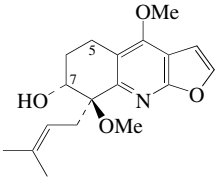
N-*(3-Methyl-2-butenyl):* ***Haplobucharine***. N-*Prenylhaplofoline*
[58969-44-1]
$C_{19}H_{23}NO_2$ 297.396
Alkaloid from *Haplophyllum bucharicum* (Rutaceae). Cryst. (EtOAc). Mp 126°.

Fakhrutdinova, I.M. *et al., Uzb. Khim. Zh.*, 1963, **7**, 41; *CA*, **59**, 15331 (*isol, struct*)
Bowman, R.M. *et al., J.C.S.(C)*, 1966, 1084 (*ir, uv, pmr, synth*)
Nesmelova, E.F. *et al., Khim. Prir. Soedin.*, 1975, **11**, 815; *Chem. Nat. Compd. (Engl. Transl.)*, 1975, **11**, 831 (*Haplobucharine*)
Hammerum, S. *et al., Acta Chem. Scand., Ser. B*, 1977, **31**, 31 (*ms*)
Moulis, C. *et al., Phytochemistry*, 1983, **22**, 2095 (*deriv*)
Bravo, P. *et al., Gazz. Chim. Ital.*, 1988, **118**, 507 (*synth, Khaplofoline, N-Methylkhaplofoline*)
Subramanian, M. *et al., Z. Naturforsch., B*, 1992, **47**, 1016 (*synth*)
Sekar, M. *et al., J. Nat. Prod.*, 1998, **61**, 294-296 (*synth*)
Thangavel, D. *et al., J. Chem. Res.*, 2007, 124-126 (*synth*)

Haplophyllidine H-57

*5,6,7,8-Tetrahydro-4,8-dimethoxy-8-(3-methyl-2-butenyl)furo[2,3-*b*]quinolin-7-ol, 9CI*

[18063-21-3]



Relative Configuration

$C_{18}H_{23}NO_4$ 317.384

Alkaloid from the seeds of *Haplophyllum perforatum* and roots of *Haplophyllum glabrinum* (Rutaceae). Strong CNS depressant, hypnotic synergist. Mp 110-111°. $[\alpha]_D^{20}$ -24 (-16) (1.477 in Me_2CO).

Ac: ***Acetylhaplophyllidine***
[23107-57-5]
$C_{20}H_{25}NO_5$ 359.421
Constit. of *Almeidea coerulea*. Cryst. (MeOH). Mp 147-148°.

5,6-Didehydro: ***Perfaminole***
[116987-99-6]
$C_{18}H_{21}NO_4$ 315.368
Alkaloid from roots of *Haplophyllum glabrinum*. Mod. unstable. Stereochem. not determined but assumed to be the same as Haplophyllidine. λ_{max} 252 ; 327 (broad) (MeOH).

*2′,3′-Dihydro, 3′-hydroxy: 5,6,7,8-Tetrahydro-7-hydroxy-4,8-dimethoxy-α,α-dimethylfuro[2,3-*b*]quinoline-8-propanol. **Perforine***
[18063-20-2]
$C_{18}H_{25}NO_5$ 335.399
Alkaloid from *Haplophyllum perforatum* (Rutaceae). Cryst. (MeOH). Mp 182-183°. $[\alpha]_D^{20}$ +14.56 (c, 1.579 in MeOH). $[\alpha]_D$ +14.31 (c, 0.304 in $CHCl_3$).

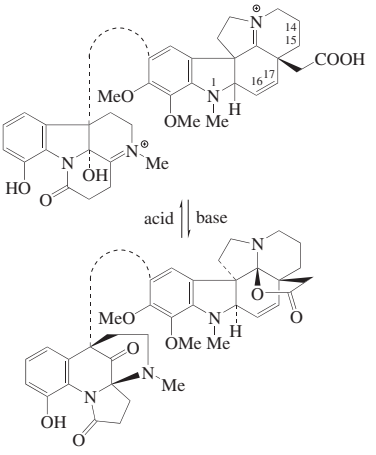
$\Delta^{1',2'}$-Isomer, 3′-hydroxy, 7-Ac:
$C_{20}H_{25}NO_6$ 375.421
Alkaloid from the leaves of *Almeidea rubra*. Powder. $[\alpha]_D^{25}$ -8.7 (c, 0.15 in CH_2Cl_2).

7-Epimer: ***Dihydroperfaminole***
[117065-23-3]
$C_{18}H_{23}NO_4$ 317.384
Alkaloid from roots of *Haplophyllum glabrinum*. Trivial name is confusing. λ_{max} 262 ; 278 (sh) ; 288 (sh) (MeOH).

Shakirov, T.T. *et al., Dokl. Akad. Nauk SSSR*, No. 9, 1960, 40; *CA*, **56**, 11646a (*isol*)
Faizutdinova, Z.S. *et al., Khim. Prir. Soedin.*, 1967, **3**, 356; 1968, **4**, 360; 1969, **5**, 273; *Chem. Nat. Compd. (Engl. Transl.)*, 1967, **3**, 302; 1968, **4**, 304; 1969, **5**, 231 (*Haplophyllidine, Acetylhaplophyllidine, Perforine*)
Grundon, M.F. *et al., Alkaloids (Academic Press)*, 1979, **17**, 105 (*rev*)
Rózsa, Zs. *et al., Phytochemistry*, 1988, **27**, 2369 (*Perfaminole, Dihydroperfaminole*)
Santos, C.S. *et al., J. Braz. Chem. Soc.*, 1998, **9**, 39-42; *CA*, **129**, 79124g (*Acetylhaplophyllidine, pmr, cmr*)
Ambrozin, A.R.P. *et al., J. Braz. Chem. Soc.*, 2005, **16**, 434-439 (*Almeidea rubra alkaloid*)

Haplophytine H-58

[16625-20-0]



$C_{37}H_{40}N_4O_7$ 652.746

Alkaloid from *Haplophyton cimicidum* (Apocynaceae). Shows insecticidal props. Mp 300-302° dec. (darkens from 260°, 288-292° dec.). $[\alpha]_D^{25}$ +109 (c, 1.3 in $CHCl_3$). λ_{max} 230 (ϵ 48000); 265 (ϵ 14300); 326 (ϵ 5000) (EtOH/NaOH) (Derep). λ_{max} 220 (ϵ 48500); 265 (ϵ 14300); 305 (ϵ 4500) (EtOH) (Derep).

Hydrobromide (1:2): Mp 200-206° dec.

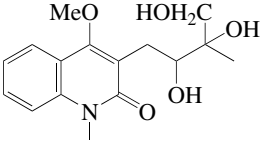
Me ether: Mp 288-291° dec. (280°).

16,17-Dihydro, 14,15-didehydro, N^1*-de-Me:* ***Norisohaplophytine***
[87553-35-3]
$C_{36}H_{38}N_4O_7$ 638.719
Alkaloid from *Haplophyton cimicidum* (Apocynaceae). Small needles (EtOH). Mp 291° dec. $[\alpha]_D^{20}$ +111.8 (c, 0.543 in $CHCl_3$). λ_{max} 230 (ϵ 15100); 255 (ϵ 11000); 290 (ϵ 5900) (EtOH).

Rae, I.D. *et al., J.A.C.S.*, 1967, **89**, 3061-3062 (*uv, ir, pmr, ms, cryst struct*)
Yates, P. *et al., J.A.C.S.*, 1973, **95**, 7842-7850 (*isol, uv, ir, pmr, cmr, struct*)
Cheng, P.-T. *et al., Can. J. Chem.*, 1976, **54**, 726-732 (*cryst struct*)
Adesomoju, A.A. *et al., Heterocycles*, 1983, **20**, 1511-1517 (*Norisohaplophytine*)

Haplosamine H-59

[169306-07-4]



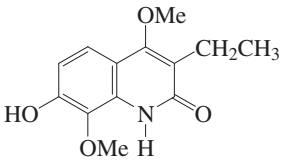
$C_{16}H_{21}NO_5$ 307.346

Alkaloid from aerial parts of *Haplophyllum perforatum*; also obt. by hydrol. of Dubinidine, D-945. Mp 132-133°. λ_{max} 229 (log ϵ 5.18); 244 (sh) (log ϵ 4.72); 265 (log ϵ 4.39); 274 (log ϵ 4.49); 284 (log ϵ 4.4); 312 (log ϵ 4.32); 326 (log ϵ 4.42); 340 (log ϵ 4.29) (no solvent reported).

Rasulova, Kh.A. *et al., Khim. Prir. Soedin.*, 1995, **31**, 586; *Chem. Nat. Compd. (Engl. Transl.)*, 1995, **31**, 487

Haplosine H-60

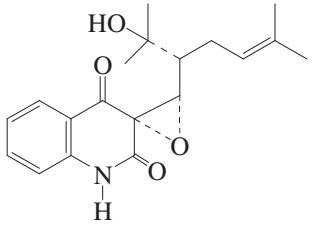
*3-Ethyl-7-hydroxy-4,8-dimethoxy-2(1*H*)-quinolinone, 9CI. 3-Ethyl-2,7-dihydroxy-4,8-dimethoxyquinoline*



$C_{13}H_{15}NO_4$ 249.266
Alkaloid from *Haplophyllum perforatum*. Cryst. (C_6H_6/EtOAc). Mp 155-156°. λ_{max} 217 (log ϵ 4.57); 252 (log ϵ 4.24); 322 (log ϵ 4.24); 344 (log ϵ 4.22) (EtOH).

Rasulova, K.A. *et al., Khim. Prir. Soedin.*, 1992, **28**, 249; *Chem. Nat. Compd. (Engl. Transl.)*, 1992, **28**, 214-216 (*isol*)

Haplotubinone H-61

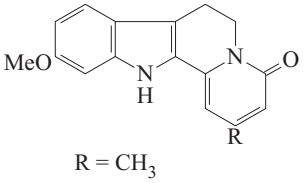


$C_{19}H_{23}NO_4$ 329.395
Alkaloid from *Haplophyllum tuberculatum*. Cryst. (petrol). Mp 177-178°. Racemic. λ_{max} 237 (log ϵ 4.4); 262 (sh) (log ϵ 3.5); 352 (log ϵ 3.7) (MeOH).

Al-Rehaily, A.J. *et al., Phytochemistry*, 2001, **57**, 597-602

Harmalacinine H-62

*7,12-Dihydro-10-methoxy-2-methylindolo[2,3-*a*]quinolizin-4(6*H*)one, 9CI*
[122279-86-1]



R = CH_3

$C_{17}H_{16}N_2O_2$ 280.326
A truncated indole alkaloid, original skeleton uncertain. Prob. not secologanin-derived. Alkaloid from the seeds of *Peganum harmala* (Zygophyllaceae). Amorph.

Siddiqui, S. *et al., Heterocycles*, 1989, **29**, 521 (*isol, uv, ir, pmr, cmr, ms, struct*)

Harmalanine H-63

*7,12-Dihydro-10-methoxyindolo[2,3*a*]quinolizin-4(6*H*)-one, 9CI*
[116988-01-3]
As Harmalacinine, H-62 with R = H

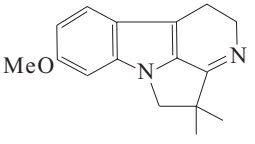
$C_{16}H_{14}N_2O_2$ 266.299
Truncated indole alkaloid, original skeleton uncertain. Prob.not secologanin-derived. Alkaloid from the seeds of *Peganum harmala* (Zygophyllaceae). Rods ($CHCl_3$). Mp 108-110°.

O-*De-Me:* Mp 179°.

Siddiqui, S. *et al., Heterocycles*, 1988, **27**, 1401 (*isol, uv, ir, pmr, cmr, ms, struct*)

Harmalidine H-64

*1,2,4,5-Tetrahydro-8-methoxy-4,4-dimethylbenzo[*b*]pyrido[2,3,4-*gh*]pyrrolizine, 9CI*
[109794-97-0]



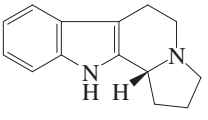
$C_{16}H_{18}N_2O$ 254.331
Alkaloid from the seeds of *Peganum harmala* (Zygophyllaceae). Yellow rods (MeOH). Mp 150-152°. λ_{max} 205 ; 215 ; 260 ; 340 ; 375 (MeOH).

O-*De-Me:* [109794-99-2]
Mp 210-212°.

Siddiqui, S. *et al., Phytochemistry*, 1987, **26**, 1548 (*isol, uv, ir, pmr, cmr, ms, struct*)

Harmicine H-65

*2,3,5,6,11,11*b*-Hexahydro-1*H*-indolizino[8,7-*b*]indole, 9CI*



$C_{14}H_{16}N_2$ 212.294

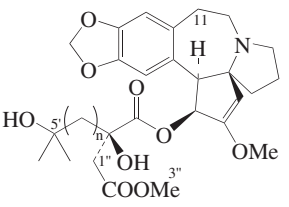
(*R*)-*form* [202258-15-9]
Alkaloid from the leaves of *Kopsia griffithii*. $[\alpha]_D$ +119 (c, 0.09 in $CHCl_3$). Abs. config. revised in 2004. λ_{max} 225 (log ϵ 3.98); 281 (log ϵ 3.3); 292 (log ϵ 3.18) (EtOH).

(±)-*form*
Mp 174-175°.

Kam, T.-S. *et al., Phytochemistry*, 1998, **47**, 145-147 (*isol, uv, pmr, cmr, ms*)
Itoh, T. *et al., Heterocycles*, 2004, **63**, 655-661 (*synth, abs config*)
Knölker, H.J. *et al., Synlett*, 2004, 1767-1768 (*synth*)
King, F.D. *et al., J. Het. Chem.*, 2007, **44**, 1459-1463 (*synth, pmr, cmr*)
Lim, S.-H. *et al., J. Nat. Prod.*, 2007, **70**, 1380-1383 (*isol, pmr*)
Allin, S.M. *et al., Tet. Lett.*, 2007, **48**, 5669-5671 (*synth*)
Szawkalo, J. *et al., Tetrahedron: Asymmetry*, 2007, **18**, 406-413 (*synth, abs config*)

Harringtonine H-66

Cephalotaxine 4-methyl 2-hydroxy-2-(3-hydroxy-3-methylbutyl)butanedioate (ester), 9CI
[26833-85-2]



n = 2

$C_{28}H_{37}NO_9$ 531.602
Alkaloid from *Cephalotaxus harringtonia* var. *harringtonia, Cephalotaxus fortunei, Cephalotaxus hainanensis, Cephalotaxus sinensis* and *Cephalotaxus oliveri* (Cephalotaxaceae). Protein and DNA biosynthesis inhibitor. Shows antineoplastic activity, especially against murine lymphocytic leukaemias. More active than Vincristine against mouse leukaemias and melanomas. Has been used clinically against acute myelocytic leukaemia. Mp 73-75°. $[\alpha]_D$ -104.6 (c, 1.0 in $CHCl_3$). Log P 0.52 (uncertain value) (calc). λ_{max} 261 (ϵ 724); 290 (ϵ 4570) (EtOH) (Derep).

▶ LD_{50} (mus, ipr) 4.17 mg/kg. Exp. adverse systemic effects (G.I. tract, heart, haematopoietic organs). FK0250000

Parent acid: ***3″-Des*-O-*methylharringtonine***. *5′-Des*-O-*methylharringtonine*
$C_{27}H_{35}NO_9$ 517.575
Alkaloid from leaves and stems of *Cephalotaxus harringtonia* var. *drupacea*. Amorph. solid. $[\alpha]_D$ -113 (c, 0.43 in DMSO). λ_{max} 289 (ϵ 3630) (MeOH) (Berdy).

*1″*S*-Hydroxy, parent acid:* ***1″*S*-Hydroxy-3″-des*-O-*methylharringtonine***. *3′*S*-Hydroxy-5′-des*-O-*methylharringtonine*
[182325-74-2]
$C_{27}H_{35}NO_{10}$ 533.574
From leaves and stems of *Cephalotaxus harringtonia* var. *drupacea*. Amorph. solid. $[\alpha]_D$ -91 (c, 1.00 in DMSO). λ_{max} 288 (ϵ 3311) (MeOH) (Berdy).

5′-Deoxy: ***Deoxyharringtonine***
[36804-95-2]
$C_{28}H_{37}NO_8$ 515.602
Alkaloid from *Cephalotaxus harringtonia* var. *harringtonia* and *Cephalotaxus hainanensis* (Cephalotaxaceae). Shows antineoplastic props. Noncryst. $[\alpha]_D$ -125.4 (c, 1.76 in $CHCl_3$). Log P 2.73 (uncertain value) (calc). λ_{max} 273 (ϵ 12590) (EtOH) (Derep). λ_{max} 290 (ϵ 14570) (EtOH) (Berdy).

▶ FK0279000

5′-Deoxy, parent acid: ***Deoxyharringtonic acid***
[85623-76-3]
$C_{27}H_{35}NO_8$ 501.575
Alkaloid from *Cephalotaxus hainanensis* (Cephalotaxaceae). Mp 219-220°. λ_{max} 291 (ϵ 2290) (MeOH) (Berdy).

5′-Deoxy, 11β-hydroxy: ***11β-Hydroxy-***

deoxyharringtonine
$C_{28}H_{37}NO_9$ 531.602
Isol. from *Cephalotaxus harringtonia* var. *drupacea*. Shows antileukaemic activity against P-388 cells. Oil. $[\alpha]_D^{25}$ -77 (c, 0.085 in MeOH). λ_{max} 290 (log ϵ 3.3) (MeOH).

Homologue (n = 1), 5′-deoxy: ***Nordeoxyharringtonine***
$C_{27}H_{35}NO_8$ 501.575
Alkaloid from leaves and stems of *Cephalotaxus harringtonia* var. *drupacea*. Cytotoxic against P-388 leukaemia. Pale yellowish oil. $[\alpha]_D$ -90 (c, 0.07 in MeOH). λ_{max} 291 (log ϵ 3.36) (MeOH).

Homologue (n = 3): ***Homoharringtonine***. ***Omacetaxine mepesuccinate, INN, USAN***. *Ceflatonin®. CGX 635. NSC 141633*
[26833-87-4]
$C_{29}H_{39}NO_9$ 545.628
Alkaloid from *Cephalotaxus harringtonia* var. *harringtonia, Cephalotaxus harringtonia* var. *drupacea, Cephalotaxus fortunei, Cephalotaxus hainanensis* and *Cephalotaxus sinensis* (Cephalotaxaceae). Shows antitumour activity comparable with that of Harringtonine. Has been used clinically against acute myelocytic leukaemia. Mp 144-146°. $[\alpha]_D$ -119 (c, 0.96 in $CHCl_3$). Log P 1.05 (uncertain value) (calc). λ_{max} 261 (ϵ 724); 290 (ϵ 4570) (EtOH) (Derep).

▶ Adverse systemic effects when used therapeutically. LD_{50} (mus, orl) 7.456 mg/kg.
FK0260000

Homologue (n = 3), parent acid: ***3″-Des-O-methylhomoharringtonine***. *5′-Des-O-methylhomoharringtonine*
[98599-84-9]
$C_{28}H_{37}NO_9$ 531.602
From leaves and stems of *Cephalotaxus harringtonia* var. *drupacea*. Amorph. solid. $[\alpha]_D$ -172 (c, 0.50 in MeOH).

Homologue (n = 3), 1″S-hydroxy: ***Cephalezomine E***
$C_{29}H_{39}NO_{10}$ 561.628
Alkaloid from *Cephalotaxus harringtonia* var. *nana*. Cytotoxic agent. Amorph. solid. $[\alpha]_D$ -131 (c, 2.9 in MeOH). λ_{max} 291 (ϵ 2100) (MeOH).

Homologue (n = 3), 5′-deoxy: ***Homodeoxyharringtonine***. *Deoxyhomoharringtonine*
[64543-63-1]
$C_{29}H_{39}NO_8$ 529.629
Alkaloid isol. from leaves and stems of *Cephalotaxus harringtonia* var. *drupacea*, also detected by glc/ms in callus cultures of *Cephalotaxus harringtonia* (Cephalotaxaceae). Cytotoxic against P-388 leukaemia. Pale yellowish oil. $[\alpha]_D$ -122 (c,1 in MeOH). λ_{max} 291 (log ϵ 3.55) (MeOH).

Homologue (n = 3), 5′-deoxy, 1″S-hydroxy: ***Cephalezomine F***
$C_{29}H_{39}NO_9$ 545.628
Alkaloid from *Cephalotaxus harringtonia* var. *nana*. Cytotoxic agent. Amorph. solid. $[\alpha]_D$ -61 (c, 0.2 in MeOH). λ_{max} 291 (ϵ 1800) (MeOH).

Homologue (n = 3), 5′-deoxy, 11α-hydroxy: ***11α-Hydroxyhomodeoxyharringtonine***
$C_{29}H_{39}NO_9$ 545.628
Alkaloid from *Cephalotaxus harringtonia* var. *drupacea*. Shows antileukaemic activity against P-388 cells. Oil. $[\alpha]_D^{25}$ -115 (c, 0.07 in MeOH). λ_{max} 290 (log ϵ 3.5) (MeOH).

Homologue (n = 3), 5′-deoxy, 11β-hydroxy: ***11β-Hydroxyhomodeoxyharringtonine***
$C_{29}H_{39}NO_9$ 545.628
Alkaloid from *Cephalotaxus harringtonia* var. *drupacea*. Shows antileukaemic activity against P-388 cells. Oil. $[\alpha]_D^{25}$ -153 (c, 0.10 in MeOH). λ_{max} 290 (log ϵ 3.53) (MeOH).

Homologue (n = 3), 5′-epimer, 6′-hydroxy(1): ***Cephalezomine K***
$C_{29}H_{39}NO_{10}$ 561.628
Alkaloid from the leaves of *Cephalotaxus harringtonia* var. *nana*. Amorph. solid. $[\alpha]_D$ -99 (c, 0.6 in MeOH). Epimeric with Cephalezomine L at C-6′. λ_{max} 210 (ϵ 5800); 240 (ϵ 2300); 289 (ϵ 2100) (no solvent reported).

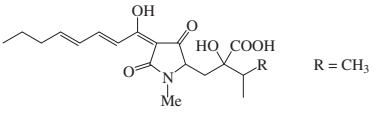
Homologue (n = 3), 5′-epimer, 6′-hydroxy(2): ***Cephalezomine L***
$C_{29}H_{39}NO_{10}$ 561.628
Alkaloid from the leaves of *Cephalotaxus harringtonia* var. *nana*. Amorph. solid. $[\alpha]_D$ -93 (c, 1 in MeOH). Epimeric with Cephalezomine K at C-6′. λ_{max} 215 (ϵ 4700); 240 (ϵ 2700); 289 (ϵ 2400) (MeOH).

Homologue (n = 4), 5′-deoxy: ***Bishomodeoxyharringtonine***
$C_{30}H_{41}NO_8$ 543.656
Alkaloid from leaves and stems of *Cephalotaxus harringtonia* var. *drupacea*. Cytotoxic against P-388 leukaemia cells. Pale yellowish oil. $[\alpha]_D$ -74 (c, 0.27 in $CHCl_3$). λ_{max} 293 (log ϵ 3.5) ($CHCl_3$). λ_{max} 293 (ϵ 3162) (MeOH) (Berdy).

Powell, R.G. *et al., Tet. Lett.*, 1970, 815 (*pmr, struct*)
Mikolajczak, K.L. *et al., Tetrahedron*, 1972, **28**, 1995 (*uv, ms, pmr, struct*)
Spencer, G.F. *et al., J. Chromatogr.*, 1976, **120**, 335 (*ms, glc*)
Delfel, N.E. *et al., Phytochemistry*, 1977, **16**, 1595 (*Homodeoxyharringtonine*)
Mikolajczak, K.L. *et al., J.O.C.*, 1978, **43**, 4762 (*synth*)
Kelly, T.R. *et al., J.O.C.*, 1979, **44**, 63 (*synth*)
Smith, C.R. *et al., Med. Chem. (Academic Press)*, 1980, **16**, 391 (*rev*)
Weisleder, D. *et al., Org. Magn. Reson.*, 1980, **13**, 114 (*cmr*)
Xue, Z. *et al., Yaoxue Xuebao*, 1981, **16**, 752; *CA*, **96**, 82690u (*Deoxyharringtonic acid*)
Hiranuma, S. *et al., J.O.C.*, 1983, **48**, 5321 (*synth, Homoharringtonine*)
Cheng, J. *et al., Yaoxue Xuebao*, 1984, **19**, 178; *CA*, **103**, 160738 (*synth*)
Suffness, M. *et al., Alkaloids (Academic Press)*, 1985, **25**, 63 (*bioactivity*)
Bao, G. *et al., Zhongguo Yixue Kexueyuan Xuebao*, 1988, **10**, 283; *CA*, **110**, 95588 (*cryst struct, Harringtonine, Homoharringtonine*)
Shen, C. *et al., Huaxue Xuebao*, 1990, **48**, 185; *CA*, **113**, 115639 (*cd*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 482
Takano, I. *et al., J. Nat. Prod.*, 1996, **59**, 965; 1192 (*Nordeoxy, Homodeoxy, Bishomodeoxy, 11-Hydroxydeoxy, 11-Hydroxyhomodeoxy*)
Takano, I. *et al., Phytochemistry*, 1996, **43**, 299 (*isol, derivs*)
Morita, H. *et al., Tetrahedron*, 2000, **56**, 2929-2934; 2002, **58**, 5489-5495 (*Cephalezomines*)
Marin, D. *et al., Cancer (Philadelphia)*, 2005, **103**, 1850-1855 (*homoharringtonine, clin trial*)
Eckelberger, J.D. *et al., J.A.C.S.*, 2006, **128**, 10370-10371 (*Deoxyharringtonine, synth*)
Tang, R. *et al., Mol. Cancer Ther.*, 2006, **5**, 723-731 (*homoharringtonine, pharmacol*)
Quintas-Cardama, A. *et al., Cancer (Philadelphia)*, 2007, **109**, 248-255; 2625 (*homoharringtonine, clin trial*)
Lou, Y.J. *et al., Leuk. Lymphoma*, 2007, **48**, 1400-1406 (*homoharringtonine, pharmacol*)
Quintas-Cardama, A. *et al., IDrugs*, 2008, **11**, 356-372 (*homoharringtonine, rev*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, HGI575

Harzianic acid H-67

α-Hydroxy-4-(1-hydroxy-2,4-octadienylidene)-1-methyl-α-(1-methylethyl)-3,5-dioxo-2-pyrrolidinepropanoic acid, 9CI
[157148-06-6]



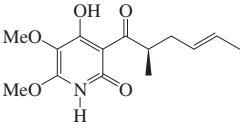
$C_{19}H_{27}NO_6$ 365.425
Prod. by *Trichoderma harzianum* SY-307. Antimicrobial agent. Orange powder. Sol. MeOH, Me_2CO, MeCN, EtOAc; poorly sol. toluene, hexane. $[\alpha]_D^{25}$ +19.6 (c, 1 in MeOH). λ_{max} 263 (ϵ 14100); 287 (ϵ 15500); 337 (ϵ 16600) (MeOH/NaOH) (Derep). λ_{max} 244 (ϵ 11000); 299 (sh) (ϵ 10500); 343 (sh) (ϵ 23400); 359 (ϵ 27500); 376 (sh) (ϵ 23400); 398 (sh) (ϵ 10500) (MeOH) (Derep).

N-*De-Me:* **N-*Demethylharzianic acid***
$C_{18}H_{25}NO_6$ 351.399
Prod. by fungus strain F-1531. Orange powder. λ_{max} 231 ; 292 ; 350 (MeOH).

Homologue (R = CH_2CH_3): ***Homoharzianic acid***
$C_{20}H_{29}NO_6$ 379.452
Prod. by fungus strain F-1531. Orange powder. λ_{max} 243 ; 290 ; 344 (MeOH).

Sawa, R. *et al., J. Antibiot.*, 1994, **47**, 731-732 (*isol, uv, pmr, cmr*)
Kawada, M. *et al., J. Antibiot.*, 2004, **57**, 235-237 (*F-1531 constits*)

Harzianopyridone H-68



(*R*)-*form*

$C_{14}H_{19}NO_5$ 281.308

(R)-form
Metab. of *Trichoderma harzianum*

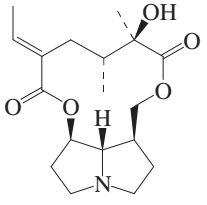
ATCC64870. Sol. MeOH, EtOAc; poorly sol. H_2O. Mp 77-78°. $[\alpha]_D^{22}$ -12.3 (c, 1 in MeOH). λ_{max} 237 (ϵ 11500); 271 (ϵ 790); 321 (ϵ 6400) (MeOH) (Berdy). λ_{max} 243 ; 267 ; 331 (EtOH) (Berdy).

(±)-*form* [126637-69-2]
From *Trichoderma harzianum*. Antifungal agent. Needles (EtOAC/petrol). Mp 125°.

Dickinson, J.M. *et al., J.C.S. Perkin 1*, 1989, 1885 (*isol, struct, biosynth*)
Cutler, H.G. *et al., Agric. Biol. Chem.*, 1991, **55**, 2629 (*isol, pmr, cmr, props*)
Trecourt, F. *et al., J. Het. Chem.*, 1995, **32**, 1117 (*synth*)

Hastacine H-69

[20361-77-7]

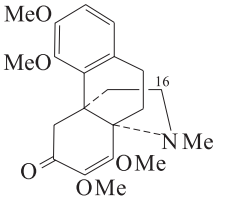


$C_{18}H_{27}NO_5$ 337.415
Stereoisomeric with Platyphylline, P-516. Alkaloid from *Cacalia hastata* and *Cacalia robusta* (Asteraceae). Shows spasmolytic props. Cryst. (EtOH). Mp 170-171°. $[\alpha]_D^{20}$ -72.3.

Aasen, A.J. *et al., J.O.C.*, 1969, **34**, 12; 4137-4143 (*struct, pmr*)
Witte, L. *et al., Phytochemistry*, 1993, **32**, 187-196 (*ms, struct*)
Konovalov, V.S. *et al., Zh. Obshch. Khim.*, 1993, **15**, 328; *CA*, **40**, 3760 (*isol*)

Hasubanonine H-70

7,8-Didehydro-3,4,7,8-tetramethoxy-17-methylhasubanan-6-one, 9CI. O-*Methylaknadinine*
[1805-85-2]
[30333-82-5 ((±)-form)]



Absolute configuration

$C_{21}H_{27}NO_5$ 373.448
Alkaloid from *Stephania japonica*, *Stephania japonica* var. *australis* and *Stephania elegans* (Menispermaceae). Mp 116-117°. $[\alpha]_D^{27}$ -214 (c, 2.0 in MeOH).

Hydrochloride:
Needles ($CHCl_3/Et_2O$). Mp 210-211°. $[\alpha]_D^{28}$ -133 (c, 1.14 in MeOH).

N-*Me:*
Prisms (MeOH/Et_2O or MeOH aq.)(as iodide). Mp 178° (171-173°)(iodide). $[\alpha]_D^{27}$ -61 (c, 0.28 in MeOH) (as iodide).

N-*De-Me:* Mp 222.5° (as hydrobromide). $[\alpha]_D^{26}$ -105 (c, 0.12 in MeOH) (as hydrobromide).

O^3-*De-Me:* ***Homostephanoline***. O^3-*Demethylhasubanonine*
[2689-15-8]
$C_{20}H_{25}NO_5$ 359.421
Alkaloid from *Stephania japonica* (Menispermaceae). Mp 233°. $[\alpha]_D$ -247.8 ($CHCl_3$).

O^4-*De-Me: 7,8-Didehydro-4-hydroxy-3,7,8-trimethoxy-17-methylhasubanan-6-one, 9CI*. ***Aknadinine***. *Hernandoline. 4-Demethylhasubanonine*
[24148-86-5]
$C_{20}H_{25}NO_5$ 359.421
Alkaloid from the roots and rhizomes of *Stephania hernandifolia* and the leaves, stems and roots of *Stephania elegans*, also present in *Stephania sasakii* and *Stephania sutchuenensis* (Menispermaceae). Fine flakes by subl. Mp 70°. $[\alpha]_D^{29}$ -283 (c, 0.1 in EtOH). Subl. at 120-130°/0.2 mm.

O^4-*De-Me,* N-*de-Me:* ***Aknadicine***. *4-Demethylnorhasubanonine*
[24148-89-8]
$C_{19}H_{23}NO_5$ 345.394
Alkaloid from the roots and rhizomes of *Stephania hernandifolia* (Menispermaceae). Plates (MeOH). Mp 156°. $[\alpha]_D^{27}$ -200 (c, 0.55 in EtOH).

O^4-*De-Me, 1,1′-dimer:* ***Bisaknadinine***
[73461-15-1]
$C_{40}H_{48}N_2O_{10}$ 716.827
Alkaloid from the stem and root of *Stephania sasakii* (Menispermaceae). Cryst. + $1Me_2CO$ (Me_2CO). Mp 198-200°. $[\alpha]_D$ -253.3 ($CHCl_3$). The first known dimeric hasubanan alkaloid.

6ξ-Alcohol, O^4*-de-Me: 7,8-Didehydro-3,7,8-trimethoxy-17-methylhasubanan-4,6-diol*. ***Hernandolinol***
[30452-61-0]
$C_{20}H_{27}NO_5$ 361.437
Alkaloid from *Stephania hernandifolia* (Menispermaceae). $[\alpha]_D$ -97.9 (EtOH).

16-Oxo: ***16-Oxohasubanonine***. *7,8-Didehydro-3,4,7,8-tetramethoxy-17-methylhasubanan-6,16-dione, 9CI*
[51804-70-7]
[30333-89-2 ((±)-form)]
$C_{21}H_{25}NO_6$ 387.432
Minor alkaloid from the stems and rhizomes of *Stephania japonica* (Menispermaceae). Prisms (C_6H_6/Et_2O). Mp 161°. $[\alpha]_D^{23}$ -105.2 (c, 0.5 in $CHCl_3$).

16-Oxo, O^4*-de-Me:* ***Aknadilactam***. *4-Demethyl-16-oxohasubanonine*
[24191-97-7]
$C_{20}H_{23}NO_6$ 373.405
Alkaloid from *Stephania sasakii* (Menispermaceae). Amorph. $[\alpha]_D$ -212 ($CHCl_3$).

1-Nitro, O^4*-de-Me:* ***1-Nitroaknadinine***
[154739-06-7]
$C_{20}H_{24}N_2O_7$ 404.419
Alkaloid from roots of *Stephania sutchuenensis* (Menispermaceae). Yellow needles (Me_2CO). Mp 206° dec. $[\alpha]_D$ -186.7 (c, 0.523 in EtOH).

6-Epimer, 6ξ-alcohol, O^4*-de-Me:* ***Epihernandolinol***
[81027-39-6]
$C_{20}H_{27}NO_5$ 361.437
Alkaloid from the leaves, stems and roots of *Stephania elegans* (Menispermaceae). Oil. $[\alpha]_D^{27}$ -16 (c, 1.08 in EtOH).

Kondo, H. *et al., Yakugaku Zasshi*, 1928, **48**, 1141; *CA*, **23**, 2979 (*Homostephanoline, isol*)
Kondo, H. *et al., CA*, 1953, **47**, 5951f (*isol*)
Tomita, M. *et al., Tet. Lett.*, 1964, 2937; 1965, 1019 (*pmr, struct, ms*)
Ibuka, T. *et al., Chem. Pharm. Bull.*, 1967, **15**, 1809; 1939; 1974, **22**, 782 (*Aknadinine, Homostephanoline, Aknadilactam, 16-Oxohasubanonine, struct, synth*)
Kupchan, S.M. *et al., J.O.C.*, 1968, **33**, 4529 (*synth*)
Kunimoto, J. *et al., Tet. Lett.*, 1969, 3287 (*Aknadilactam, uv, ir, pmr, struct*)
Fadeeva, I.I. *et al., Khim. Prir. Soedin.*, 1970, **6**, 492; *Chem. Nat. Compd. (Engl. Transl.)*, 1970, **6**, 516 (*Hernandolinol, isol, struct*)
Moza, B.K. *et al., Tetrahedron*, 1970, **26**, 427 (*Aknadinine, Aknadicine, isol, uv, ir, pmr, struct*)
Watanabe, Y. *et al., Phytochemistry*, 1975, **14**, 2675 (*isol, ms, 16-Oxohasubanonine*)
Matsui, M. *et al., Phytochemistry*, 1979, **18**, 1087 (*isol*)
Kunimoto, J. *et al., Heterocycles*, 1980, **14**, 175; 1981, **16**, 351 (*Bisaknadinine, cryst struct, config*)
Kunimoto, J. *et al., Phytochemistry*, 1980, **19**, 2735 (*Bisaknadinine, uv, ord, cd, ir, pmr, ms, synth*)
Singh, R.S. *et al., J. Nat. Prod.*, 1981, **44**, 664 (*Hasubanonine, Aknadinine, Hernandolinol, Epihernandolinol, isol, uv, ir, pmr, ms, struct, synth*)
Battersby, A.R. *et al., J.C.S. Perkin 1*, 1981, 2016; 2030 (*biosynth*)
Wang, X.-K. *et al., Phytochemistry*, 1994, **35**, 263 (*1-Nitroaknadinine*)
Jones, S.B. *et al., Org. Lett.*, 2006, **8**, 3757-3760 (*synth*)

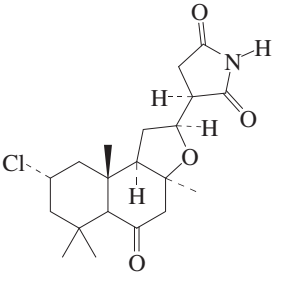
Hasunohanin H-71

$C_{31}H_{36}N_2O_5$ 516.636
Struct. unknown. Alkaloid from *Stephania japonica*. Mp 102-103° Mp 267-268° (as hydrochloride). $[\alpha]_D$ -83 ($CHCl_3$).

Kondo, H. *et al., Yakugaku Zasshi*, 1928, **48**, 163; 1938, **58**, 46

Haterumaimide I H-72

[368421-37-8]

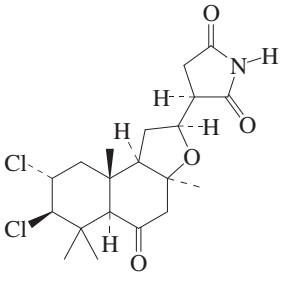


$C_{20}H_{28}ClNO_4$ 381.898
Constit. of a *Lissoclinum* sp. Oil. $[\alpha]_D^{32}$ +62 (c, 0.77 in MeOH). λ_{max} 210 (log ϵ 3.56) (MeOH).

Uddin, M.J. *et al., J. Nat. Prod.*, 2001, **64**, 1169-1173 (*isol, pmr, cmr*)

Haterumaimide C H-73

[338949-10-3]

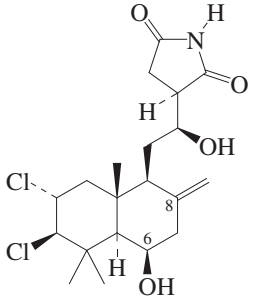


$C_{20}H_{27}Cl_2NO_4$ 416.343
Isol. from a *Lissoclinum* sp. Cytotoxic.
$[\alpha]_D^{28}$ +66.6 (c, 0.06 in MeOH).

Uddin, M.J. *et al., Heterocycles*, 2001, **54**, 1039-1048 (*isol, pmr, cmr*)

Haterumaimide E H-74

[338949-12-5]



$C_{20}H_{29}Cl_2NO_4$ 418.359
Isol. from a *Lissoclinum* sp. Cytotoxic.
$[\alpha]_D^{29}$ +29.6 (c, 0.16 in MeOH).

6-Ketone: ***Haterumaimide B***
[338949-09-0]
$C_{20}H_{27}Cl_2NO_4$ 416.343
Isol. from a *Lissoclinum* sp. Cytotoxic.
$[\alpha]_D^{33}$ +32.6 (c, 0.48 in MeOH).

Δ^7-Isomer, 6-ketone: ***Haterumaimide D***
[338949-11-4]
$C_{20}H_{27}Cl_2NO_4$ 416.343
Isol. from a *Lissoclinum* sp. Cytotoxic.
$[\alpha]_D^{29}$ -27.7 (c, 0.16 in MeOH).

2-Dechloro, 6-ketone: ***Haterumaimide M***
[735278-27-0]
$C_{20}H_{28}ClNO_4$ 381.898
Constit. of *Pleurobranchus albiguttatus.*
Amorph. solid. $[\alpha]_D$ +14.4 (c, 0.36 in CH_2Cl_2).

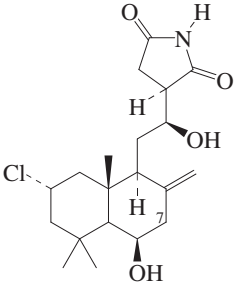
2-Dechloro, Δ^7-isomer, 6-ketone: ***Haterumaimide L***
[735278-28-1]
$C_{20}H_{28}ClNO_4$ 381.898
Constit. of *Pleurobranchus albiguttatus* and *Pleurobranchus forskalii*. Amorph. solid. $[\alpha]_D$ -7.2 (c, 0.43 in CH_2Cl_2).

3-Dechloro, 3β-hydroxy: ***3-Hydroxychlorolissoclimide***
[733753-15-6]
$C_{20}H_{30}ClNO_5$ 399.913
Constit. of *Pleurobranchus albiguttatus.*
Amorph. solid.

Uddin, M.J. *et al., Heterocycles*, 2001, **54**, 1039-1048 (*isol, pmr, cmr*)
Fu, X. *et al., J. Nat. Prod.*, 2004, **67**, 1415-1418 (*Haterumaimides L-M, 3-Hydroxychlorolissoclimide*)

Haterumaimide F H-75

[368421-34-5]



$C_{20}H_{30}ClNO_4$ 383.914
Constit. of a *Lissoclinum* sp. Oil. $[\alpha]_D^{29}$ +53.7 (c, 0.35 in MeOH). λ_{max} 210 (log ϵ 3.57) (MeOH).

6-Ketone: ***Haterumaimide G***
[368421-35-6]
$C_{20}H_{28}ClNO_4$ 381.898
Constit. of a *Lissoclinum* sp. Oil. $[\alpha]_D^{29}$ +63.5 (c, 0.58 in MeOH). λ_{max} 207 (log ϵ 3.56) (MeOH).

6-Deoxy, 18-hydroxy: ***Haterumaimide J***
[479249-29-1]
$C_{20}H_{30}ClNO_4$ 383.914
Isol. from a *Lissoclinum* sp. Cytotoxic agent. Oil. $[\alpha]_D^{29}$ +68 (c, 0.92 in MeOH). λ_{max} 210 (ϵ 3800) (MeOH).

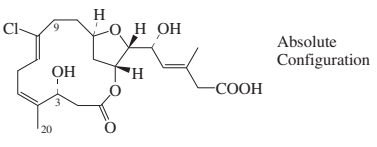
6-Deoxy, 18-acetoxy: ***Haterumaimide K***
[479249-30-4]
$C_{22}H_{32}ClNO_5$ 425.951
Isol. from a *Lissoclinum* sp. Cytotoxic. $[\alpha]_D^{29}$ +59.6 (c, 0.19 in MeOH). λ_{max} 210 (ϵ 3600) (MeOH).

Δ^7-Isomer, 6-ketone: ***Haterumaimide H***
[368421-36-7]
$C_{20}H_{28}ClNO_4$ 381.898
Constit. of a *Lissoclinum* sp. Oil. $[\alpha]_D^{32}$ +47.6 (c, 0.31 in MeOH). λ_{max} 205 (log ϵ 3.7); 238 (log ϵ 3.9) (MeOH).

Uddin, M.J. *et al., J. Nat. Prod.*, 2001, **64**, 1169-1173 (*isol, pmr, cmr*)
Uddin, M.J. *et al., Chem. Lett.*, 2002, 1028-1029 (*Haterumamides J,K*)

Haterumalide NE H-76

Haterumalide E
[245342-52-3]



$C_{21}H_{29}ClO_7$ 428.909

Macrolide antibiotic. Isol. from an *Ircinia* sp. and prod. by *Serratia plymuthica* A153. Cytotoxic agent. Oil.

3-Ac: ***Haterumalide NA***. *Haterumalide A. Oocydin A. FR 177391. Antibiotic FR 177391*
[245342-48-7]
[260362-86-5 , 288581-04-4]
$C_{23}H_{31}ClO_8$ 470.946
Isol. from an *Ircinia* sp., prod. by *Serratia marcescens*, *Serratia liquefaciens* FR 177391 and *Serratia plymuthica* A153. Cytotoxic, antihyperlipidaemic and anti-oomycetic agent. Powder. Mp 106-108°. $[\alpha]_D^{26}$ -3 (c, 0.05 in MeOH). $[\alpha]_D$ +18.2 (MeOH). $[\alpha]_D$ +32 (c, 0.85 in MeOH). Stereochemical identity of the various isolates has not been demonstrated.

3-Ac, butyl ester: ***Haterumalide NB***
[245342-49-8]
$C_{27}H_{39}ClO_8$ 527.053
Isol. from an *Ircinia* sp. Cytotoxic agent. Oil.

3-Ac, (2-methylene-3-oxobutyl) ester: ***Haterumalide B***
[245122-93-4]
$C_{28}H_{37}ClO_9$ 553.048
Isol. from a *Lissoclinum* sp., prod. by *Serratia plymuthica* A153. Cytotoxic agent. Oil. $[\alpha]_D$ 0 ($CHCl_3$). λ_{max} 206 (ϵ 12000) (MeOH).

3-Ac, (2-sulfoethyl)amide: ***Biselide D***. *Taurohaterumalide NA*
[862167-80-4]
$C_{25}H_{36}ClNO_{10}S$ 578.079
Alkaloid from a *Didemnum* sp. Oil.

δ-Lactone, 3-Ac: ***Haterumalide X***
[343573-61-5]
$C_{23}H_{29}ClO_7$ 452.931
Prod. by *Serratia plymuthica* A153. Cytotoxic agent.

*9*R*-Hydroxy, 3-Ac:* ***Haterumalide ND***
[245342-51-2]
$C_{23}H_{31}ClO_9$ 486.945
Isol. from an *Ircinia* sp. Cytotoxic agent. Oil.

*9*R*-Hydroxy, 3-Ac, butyl ester:* ***Haterumalide NC***
[245342-50-1]
$C_{27}H_{39}ClO_9$ 543.052
Isol. from an *Ircinia* sp. Cytotoxic agent. Oil.

20-Hydroxy, 3-Ac: ***Biselide C***
[862167-78-0]
$C_{23}H_{31}ClO_9$ 486.945
Constit. of a *Didemnum* sp. Cytotoxic. Oil.

20-Acetoxy, 3-Ac: ***Biselide A***
[786712-66-1]
$C_{25}H_{33}ClO_{10}$ 528.982
Constit. of a *Didemnum* sp. Oil.

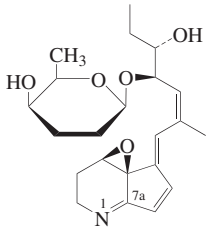
20-Acetoxy, 3-Ac, (2-methylene-3-oxobutyl) ester: ***Biselide B***
[786712-67-2]
$C_{30}H_{39}ClO_{11}$ 611.084
Constit. of a *Didemnum* sp. Oil.

Strobel, G. *et al., Microbiology (Reading, U.K.)*, 1999, **145**, 3557-3564 (*Oocydin A*)
Ueda, K. *et al., Tet. Lett.*, 1999, **40**, 6305-6308; 6309-6312 (*isol, pmr, cmr*)
Pat. Coop. Treaty (WIPO), 2001, 40442; *CA*, **135**, 32806q (*Haterumalide X*)
Kigoshi, H. *et al., Org. Lett.*, 2003, **5**, 957-960 (*synth, abs config*)
Gu, Y. *et al., Org. Lett.*, 2003, **5**, 4385-4388 (*synth*)

Teruya, T. *et al., Chem. Lett.*, 2004, **33**, 1184-1185 (*Biselide A*)
Sato, B. *et al., J. Antibiot.*, 2005, **58**, 634-639; 640-647; 648-653; 654-662 (*FR 177391*)
Hoye, T.R. *et al., J.A.C.S.*, 2005, **127**, 6950-6951 (*Haterumalide NA, synth*)
Teruya, T. *et al., Tetrahedron*, 2005, **61**, 6561-6567 (*Biselides*)
Roulland, E. *et al., Angew. Chem., Int. Ed.*, 2008, **47**, 3762-3765 (*synth*)
Schomaker, J.M. *et al., J.A.C.S.*, 2008, **130**, 12228-12229 (*Haterumalide NA, NC, synth*)

Hatomamicin H-77

YL 0358M-A. Antibiotic YL 0358M-A
[116290-93-8]



Relative Configuration

$C_{22}H_{31}NO_5$ 389.491

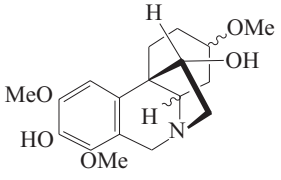
Numbering given here corresponds with that of Abikoviromycin, A-14. Alkaloid antibiotic from the culture filtrate of *Saccharopolyspora griseopurpurea*. Exhibits weak antimicrobial activity against gram-positive organisms. Also displays cytotoxic activity against lymphoid leukaemia L1210 and leukaemia P388. Pale yellowish prisms (MeCN). Sol. MeOH, Me_2CO, EtOAc, MeCN, $CHCl_3$; fairly sol. C_6H_6; poorly sol. H_2O. Mp 93°. $[\alpha]_D^{25}$ +88 (c, 1 in MeOH). Labile in soln. but stable in cryst. form. λ_{max} 297 (ϵ 14200); 320 (sh) (ϵ 13600) (MeOH) (Derep). λ_{max} 300 (EtOH) (Berdy).

*1,7*a-*Dihydro:* ***Antibiotic YL 0358M-B****. YL 0358M-B*
[118973-61-8]
$C_{22}H_{33}NO_5$ 391.506
Prod. by *Saccharomyces griseopurpurea*. Powder. λ_{max} 285 (MeOH).

Japan. Pat., 1988, (*Yamanouchi*)88 122 686; *CA*, **110**, 93563p (*isol*)
Imai, H. *et al., J. Antibiot.*, 1989, **42**, 1043-1048 (*isol, uv, ir, pmr, cmr, cryst struct*)

Havanine† H-78

[72755-23-8]

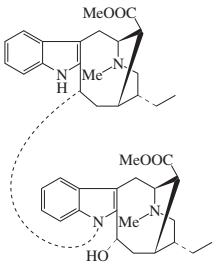


$C_{18}H_{25}NO_5$ 335.399
Alkaloid from *Hymenocallis arenicola* (Amaryllidaceae). Prisms (Me_2CO). Mp 135-137°.

Döpke, W. *et al., Z. Chem.*, 1979, **19**, 377 (*uv, ir, pmr, ms, struct*)

Hazuntamine H-79

[155885-77-1]

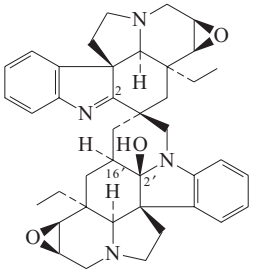


$C_{42}H_{54}N_4O_5$ 694.912
Alkaloid from root bark of *Hazunta modesta* var. *methuenii* subvar. *methuenii* (Apocynaceae). Cryst. (MeOH). Mp 254°. $[\alpha]_D^{20}$ -88 (c, 0.7 in Py).

Bui, A.-M. *et al., Heterocycles*, 1994, **38**, 1025 (*isol, uv, ir, pmr, cmr, ms, struct*)

Hazuntiphyllidine, 9CI H-80

[137760-56-6]



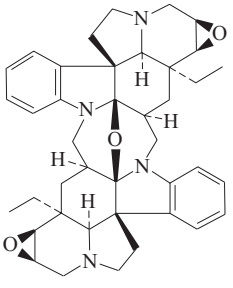
$C_{40}H_{46}N_4O_3$ 630.828
Exists as two different forms depending on solvent. Struct. shown is the 2,2′-ring-opened form found in DMSO-d_6. Alkaloid from *Hazunta modesta* var. *modesta* subvar. *divaricata* (Apocynaceae). Cryst. (MeOH). Mp 300°. $[\alpha]_D^{22}$ -28 (c, 0.66 in $CHCl_3$).

2′-Deoxy, 2′,16′-didehydro: ***Anhydrohazuntiphyllidine***
[137760-45-3]
$C_{40}H_{44}N_4O_2$ 612.813
Alkaloid from *Hazunta modesta* var. *modesta* subvar. *divaricata* (Apocynaceae). Cryst. (hexane). Mp 260°. $[\alpha]_D^{22}$ -175 (c, 0.57 in $CHCl_3$).

Bui, A.-M. *et al., J. Nat. Prod.*, 1991, **54**, 514 (*isol, uv, ir, pmr, cmr, struct*)

Hazuntiphylline, 9CI H-81

[103590-56-3]

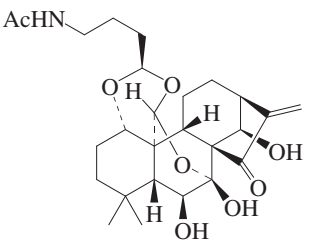


$C_{40}H_{46}N_4O_3$ 630.828
Alkaloid from the leaves of *Hazunta modesta* var. *modesta* subvar. *divaricata* (Apocynaceae). Amorph. solid. $[\alpha]_D^{20}$ +14 (c, 1 in $CHCl_3$).

Bui, A.-M. *et al., J. Nat. Prod.*, 1986, **49**, 321 (*isol, uv, ir, pmr, cmr, ms, struct*)

Hebeirubescensin A H-82

[887333-23-5]

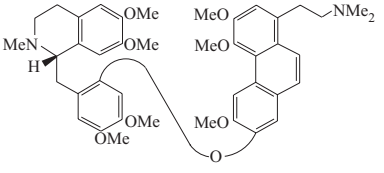


$C_{26}H_{37}NO_8$ 491.58
Constit. of *Isodon rubescens*. Amorph. powder. $[\alpha]_D^{19}$ -23.2 (c, 0.12 in MeOH).

Huang, S.-X. *et al., Tetrahedron*, 2006, **62**, 4941-4947 (*Hebeirubescensin A*)

Hebridamine H-83

[102487-24-1]

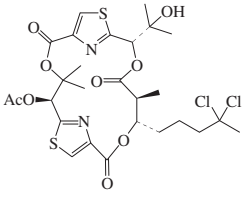


$C_{42}H_{50}N_2O_8$ 710.866
First example of a benzylisoquinoline-phenanthrene dimer. Alkaloid from the bark of *Hernandia peltata* (Hernandiaceae). Positive opt. rotn.

Chalandre, M.C. *et al., Can. J. Chem.*, 1986, **64**, 123 (*isol, uv, pmr, ms, struct*)

Hectochlorin H-84

[122628-43-8]



Absolute Configuration

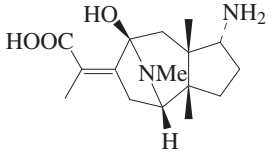
$C_{27}H_{34}Cl_2N_2O_9S_2$ 665.611
Isol. from *Bursatella leachii* and *Lyngbya majuscula*. Promoter of actin polym. Antifungal and cytotoxic agent. Pale yellow solid. $[\alpha]_D^{25}$ -8.7 (c, 1.04 in MeOH).

O-*De-Ac:* ***Deacetylhectochlorin***
$C_{25}H_{32}Cl_2N_2O_8S_2$ 623.574
Isol. from the sea hare *Bursatella leachii*. Potent stimulator of actin assembly. Cytotoxic. Amorph. solid. $[\alpha]_D^{20}$ -26 (c, 0.1 in MeOH).

Marquez, B.L. *et al., J. Nat. Prod.*, 2002, **65**, 866-871 (*isol, ir, pmr, cmr, cryst struct*)
Cetusic, J.R.P. *et al., Org. Lett.*, 2002, **4**, 1307-1310 (*synth*)
Suntornchashwej, S. *et al., J. Nat. Prod.*, 2005, **68**, 951-955 (*isol, pmr, cmr*)
Ramaswamy, A.V. *et al., J. Nat. Prod.*, 2007, **70**, 1977-1986 (*biosynth*)

Hederacine A H-85

[616888-47-2]



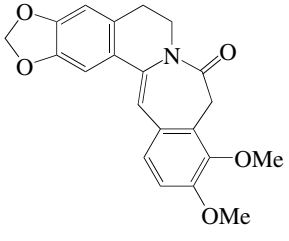
$C_{16}H_{26}N_2O_3$ 294.393
Alkaloid from the aerial parts of *Glechoma hederaceae*. Amorph. yellow solid. λ_{max} 232 (log ϵ 4) (MeOH).

γ-Lactone: ***Hederacine B***
[616888-48-3]
$C_{16}H_{24}N_2O_2$ 276.378
Alkaloid from the aerial parts of *Glechoma hederaceae*. Amorph. yellow solid. λ_{max} 233 (log ϵ 3.98) (MeOH).

Kumarasamy, Y. *et al., Tetrahedron*, 2003, **59**, 6403-6407 (*isol, pmr, cmr, ms*)

Hediamine H-86

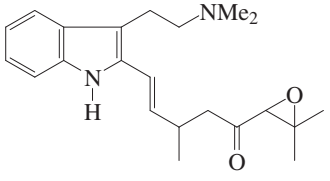
[183162-31-4]



$C_{21}H_{19}NO_5$ 365.385
First known C-homoprotoberberine. Alkaloid from roots of *Berberis actinacantha*.

Rahimizadeh, M. *et al., J. Sci., Islamic Repub. Iran*, 1996, **7**, 172; *CA*, **125**, 323013a

Hedyocapitelline H-87

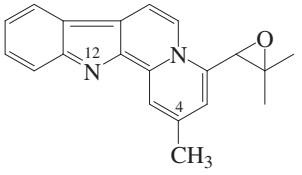


$C_{22}H_{30}N_2O_2$ 354.491
Alkaloid from *Hedyotis capitellata* var. *mollis*. $[\alpha]_D$ -5 (c, 1 in $CHCl_3$). λ_{max} 209 (log ϵ 4.15); 270 (log ϵ 3.53); 316 (log ϵ 4.16) (EtOH).

Phuong, N.M. *et al., Planta Med.*, 1999, **65**, 761-762

Hedyocapitine H-88

4-(3,3-Dimethyloxiranyl)-2-methylindolo[2,3-a]quinolizine, 9CI



$C_{20}H_{18}N_2O$ 302.375
Claimed to exist in tautomeric equilib. with the 4-methylene-12*H*-form.

(ξ)-*form* [257905-18-3]
Alkaloid from *Hedyotis capitellata* var. *mollis*. $[\alpha]_D$ +4 (c, 1 in $CHCl_3$). λ_{max} 236 (log ϵ 4.12); 271 (log ϵ 3.65); 339 (log ϵ 4) (EtOH).

Phuong, N.M. *et al., Planta Med.*, 1999, **65**, 761-762

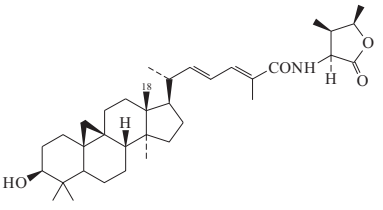
Heimine H-89

[1357-41-1]
Struct. unknown
$C_{26}H_{29}NO_5$ 435.519
Prob. a Lythraceae alkaloid (cf. Decaline in V-86). Alkaloid from *Heimia salicifolia* (Lythraceae). Mp 247.5-249°. $[\alpha]_D$ +43 ($CHCl_3$).

Blomster, R.N. *et al., J. Nat. Prod.*, 1964, **27**, 15-24 (*isol, uv, ir*)

Heinsiagenin A H-90

[126594-31-8]



$C_{36}H_{55}NO_4$ 565.835
Sapogenin from *Heinsia crinata*. Cryst. Mp 166-168°. $[\alpha]_D$ +138 (c, 1 in $CHCl_3$).

3-O-β-D-Xylopyranoside: ***Mussaendoside B***
[136133-06-7]
$C_{41}H_{63}NO_8$ 697.951
Constit. of *Mussaenda pubescens*. Cryst. Mp 194-197°. $[\alpha]_D$ +33.4 (c, 0.26 in MeOH). λ_{max} 265 (ϵ 5648) (MeOH).

3-O-β-D-Glucopyranoside: ***Mussaendoside A***
[136133-05-6]
$C_{42}H_{65}NO_9$ 727.977
Constit. of *Mussaenda pubescens*. Cryst. Mp 175-177°. $[\alpha]_D$ +60.2 (c, 0.44 in MeOH). λ_{max} 265 (ϵ 18633) (MeOH).

3-O-[β-D-Glucopyranosyl-(1→2)-β-D-xylopyranoside]: ***Mussaendoside C***
[136133-07-8]
$C_{47}H_{73}NO_{13}$ 860.093
Constit. of *Mussaenda pubescens*. Cryst. Mp 186-189°. $[\alpha]_D$ +23 (c, 0.83 in MeOH). λ_{max} 265 (ϵ 49135) (MeOH).

3-O-[β-D-Glucopyranosyl-(1→2)-β-D-glucopyranoside]: ***Mussaendoside D***
[178402-86-3]
$C_{48}H_{75}NO_{14}$ 890.119
Constit. of *Mussaenda pubescens*. Amorph. powder. $[\alpha]_D^{24}$ +30.2 (c, 0.54 in MeOH).

3-O-[α-L-Rhamnopyranosyl-(1→2)-β-D-glucopyranosyl-(1→2)-β-D-glucopyranoside]: [158754-08-6]
$C_{54}H_{85}NO_{18}$ 1036.261
Constit. of *Heinsia crinata*. Cryst. (as per-Ac). Mp 105-107° (per-Ac). $[\alpha]_D^{18}$ +21.43 (c, 0.12 in $CHCl_3$) (per-Ac).

3-O-[β-D-Glucopyranosyl-(1→6)-β-D-glucopyranosyl-(1→2)-β-D-glucopyranoside]: ***Mussaendoside E***
[178402-87-4]
$C_{54}H_{85}NO_{19}$ 1052.261
Constit. of *Mussaenda pubescens*. Amorph. powder. $[\alpha]_D^{24}$ -1.4 (c, 0.03 in MeOH).

3-O-[α-L-Rhamnopyranosyl-(1→2)-β-D-glucopyranosyl-(1→2)-[α-L-rhamnopyranosyl-(1→4)]-β-D-xylopyranoside]: ***Mussaendoside M***
[136864-53-4]
$C_{59}H_{93}NO_{21}$ 1152.378
Constit. of *Mussaenda pubescens*. Amorph. powder. Mp 178°. $[\alpha]_D$ +20.79 (c, 4.33 in MeOH). λ_{max} 270 (MeOH).

3-O-[α-L-Rhamnopyranosyl-(1→2)-β-D-glucopyranosyl-(1→2)-[α-L-rhamnopyranosyl-(1→4)]-β-D-glucopyranoside]: ***Mussaendoside O***
[157536-44-2]
$C_{60}H_{95}NO_{22}$ 1182.404
Constit. of *Mussaenda pubescens*. Amorph. powder. $[\alpha]_D^{15}$ +2.4 (c, 0.06 in Py). λ_{max} 265 (MeOH).

3-O-[β-D-Glucopyranosyl-(1→2)-β-D-glucopyranosyl-(1→2)-[α-L-rhamnopyranosyl-(1→4)]-β-D-glucopyranoside]: ***Mussaendoside F***
[176108-51-3]
$C_{60}H_{95}NO_{23}$ 1198.403
Constit. of *Mussaenda pubescens*. Amorph. powder. $[\alpha]_D^{30}$ -3.2 (c, 0.12 in Py). λ_{max} 265 (MeOH).

3-O-[α-L-Rhamnopyranosyl-(1→2)-[β-D-glucopyranosyl-(1→6)]-β-D-glucopyranosyl-(1→2)-[α-L-rhamnopyranosyl-(1→4)]-β-D-xylopyranoside]: ***Mussaendoside N***
[145396-78-7]
$C_{65}H_{103}NO_{26}$ 1314.52
Constit. of *Mussaenda pubescens*. Amorph. powder. Mp 194°. $[\alpha]_D$ +19.6 (c, 3.5 in MeOH). λ_{max} 268 (MeOH).

3-O-[α-L-Rhamnopyranosyl-(1→2)-[β-D-glucopyranosyl-(1→6)]-β-D-glucopyranosyl-(1→2)-[α-L-rhamnopyranosyl-(1→4)]-β-D-glucopyranoside]: ***Mussaendoside G***
[178468-01-4]
$C_{66}H_{105}NO_{27}$ 1344.546
Constit. of *Mussaenda pubescens*. Amorph. powder. $[\alpha]_D^{24}$ +13.6 (c, 0.09 in MeOH).

3-O-[β-D-Glucopyranosyl-(1→2)-β-D-glucopyranosyl-(1→6)-[α-L-rhamno-

pyranosyl-(1→2)]-β-D-glucopyranosyl-(1→2)-β-D-glucopyranoside]:
[158754-07-5]
$C_{66}H_{105}NO_{28}$ 1360.545
Constit. of *Heinsia crinata*. Cryst. (as per-Ac). Mp 123-124° (per-Ac). $[\alpha]_D^{18}$ +14.29 (c, 0.6 in $CHCl_3$) (per-Ac).

3-O-[β-D-Glucopyranosyl-(1→2)-β-D-glucopyranosyl-(1→6)-[α-L-rhamnopyranosyl-(1→2)]-β-D-glucopyranosyl-(1→2)-[α-L-rhamnopyranosyl-(1→6)]-β-D-glucopyranoside]: ***Mussaendoside U***
$C_{72}H_{115}NO_{32}$ 1506.688
Constit. of *Mussaenda pubescens*. Amorph. powder. $[\alpha]_D^{25}$ -14 (c, 0.27 in MeOH). λ_{max} 265 (MeOH).

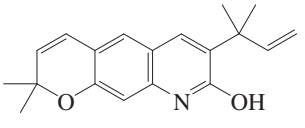
18-Hydroxy: ***18-Hydroxyheinsiagenin A***
$C_{36}H_{55}NO_5$ 581.834
Sapogenin from *Mussaenda pubescens*.

18-Hydroxy, 3-O-[α-L-rhamnopyranosyl-(1→2)-β-D-glucopyranosyl-(1→2)-[α-L-rhamnopyranosyl-(1→4)]-β-D-glucopyranoside]: ***Mussaendoside H***
[178402-88-5]
$C_{60}H_{95}NO_{23}$ 1198.403
Constit. of *Mussaenda pubescens*. Amorph. powder. $[\alpha]_D^{24}$ +6.3 (c, 0.2 in Py).

Zhao, W. *et al., Nat. Prod. Sci.*, 1965, **1**, 61 (*Mussaendoside F*)
Babady-Bila, *et al., Tetrahedron*, 1989, **45**, 5907 (*Heinsiagenin A*)
Xu, J.-P. *et al., Huaxue Xuebao*, 1991, **49**, 621 (*Mussaendosides A-C*)
Xu, J.-P. *et al., J. Nat. Prod.*, 1992, **55**, 1124 (*Mussaendosides*)
Zhao, W.M. *et al., Chin. Chem. Lett.*, 1994, **5**, 309 (*Mussaendoside O*)
Zhao, W. *et al., J. Nat. Prod.*, 1994, **57**, 1613 (*Mussaendoside O*)
Babady-Bila, *et al., Phytochemistry*, 1994, **36**, 1489 (*saponins*)
Zhao, W. *et al., Phytochemistry*, 1996, **42**, 827; 1131; 1997, **45**, 1073-1078 (*Mussaendosides*)

Helietidine H-91

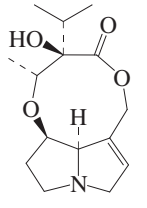
[476358-91-5]



$C_{19}H_{21}NO_2$ 295.38
Alkaloid from the stem bark of *Helietta longifoliata*. Needles. Mp 132-134°.

De Moura, N.F. *et al., Planta Med.*, 2002, **68**, 631-634 (*isol, pmr, cmr*)

Helindicine H-92



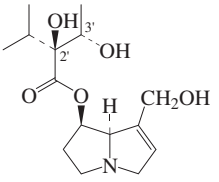
Relative Configuration

$C_{15}H_{23}NO_4$ 281.351
Alkaloid from the roots of *Heliotropium indicum*. Resin. $[\alpha]_D^{20}$ -0.6 (c, 0.05 in MeOH).

Souza, J.S.N. *et al., J. Braz. Chem. Soc.*, 2005, **16**, 1410-1414 (*isol, pmr, cmr, ms*)

Heliospathuline H-93

[135683-58-8]
[6224-43-7]



Absolute Configuration

$C_{15}H_{25}NO_5$ 299.366
Struct. and stereochem. incorr. described in the paper owing to a typographical error and incorrect (*R*,*S*) assignments. The struct. shown appears to be correct. Alkaloid from *Heliotropium spathulatum*. Yellow oil. $[\alpha]_D^{20}$ +3.2 (EtOH).

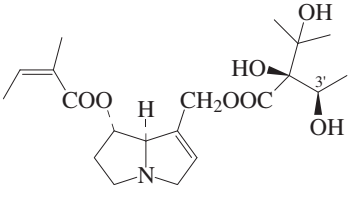
3′-Epimer: ***Tessellatine***
$C_{15}H_{25}NO_5$ 299.366
Alkaloid from *Amsinckia douglasiana* and *Amsinckia tesellata* var. *gloriosa* (Boraginaceae). Oil. $[\alpha]_D^{25}$ +2.4 (c, 0.45 in EtOH).

2′,3′-Diepimer: ***Isolycopsamine***
$C_{15}H_{25}NO_5$ 299.366
Alkaloid from *Heliotropium keralense*. $[\alpha]_D$ +19.5 (EtOH).

Ravi, S. *et al., Phytochemistry*, 1990, **29**, 361-364 (*Isolycopsamine*)
Roeder, E. *et al., Phytochemistry*, 1991, **30**, 1703-1706 (*isol, pmr, cmr, ms*)
Kelley, R.B. *et al., Phytochemistry*, 1992, **31**, 2513-2518 (*Tessellatine*)
Logie, C.G. *et al., Phytochemistry*, 1994, **37**, 43-109 (*rev, pmr*)

Heliosupine H-94

Cynoglossophine
[32728-78-2]
[32779-96-7]



$C_{20}H_{31}NO_7$ 397.467
Alkaloid from *Heliotropium supinum* and *Cynoglossum* spp. (Boraginaceae). Shows antitumour activity. Sol. MeOH, EtOH, $CHCl_3$; poorly sol. H_2O. Mp 148-149°. $[\alpha]_D$ -4.3 (c, 5.1 in EtOH). CA Index Guide 2002 incorrectly names this compd. Asperumine; Asperumine applies to Asperumine in T-188.

▶ MH6000000

Picrate:
Cryst. + H_2O. Mp 102-106° (97-100°). Dehydrates to a gum on drying *in vacuo*.

N-*Oxide:* ***Heliosupine* N-*oxide***
[31701-88-9]
$C_{20}H_{31}NO_8$ 413.467
Alkaloid from *Cynoglossum pictum* and *Paracynoglossum imeretinum* (preferred genus name *Cynoglossum*). Mp 165° dec.

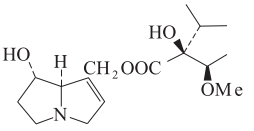
3′-Ac: ***Acetylheliosupine***
[31514-30-4]
$C_{22}H_{33}NO_8$ 439.505
Minor alkaloid from *Cynoglossum officinale* and from *Myosotis sylvatica* (Boraginaceae). $[\alpha]_D^{24.5}$ -1.8 (c, 0.567 in EtOH). Acetylated at the secondary OH group. Originally considered to be the 2′-Ac deriv. λ_{max} 217 (log ϵ 3.95) (MeOH).

3′-Ac, N-*oxide:* ***3′-Acetylheliosupine* N-*oxide***
[147802-43-5]
$C_{22}H_{33}NO_9$ 455.504
Alkaloid from aerial parts of *Heliotropium hirsutissimum* (Boraginaceae). Oil. $[\alpha]_D^{20}$ +14.9 (c, 0.35 in $CHCl_3$).

Denisova, S.I. *et al., Dokl. Akad. Nauk SSSR, Ser. Khim.*, 1953, **93**, 59-61; *CA*, **49**, 3992h (*isol*)
Culvenor, C.C.J. *et al., Aust. J. Chem.*, 1956, **9**, 512 (*struct*)
Crout, D.H.G. *et al., J.C.S.(C)*, 1966, 1968-1972; 1967, 1233-1234 (*biosynth*)
Pedersen, E. *et al., Dan. Tidsskr. Farm.*, 1970, **44**, 287-291; *CA*, **74**, 72780e (*3′-Ac, isol*)
Pedersen, G. *et al., Org. Mass Spectrom.*, 1970, **4**, 249-256 (*ms*)
Man'ko, I.V. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1971, **7**, 523 (*occur, oxide*)
Zalkow, L.H. *et al., J. Nat. Prod.*, 1979, **42**, 612-623 (*isol*)
Smith, L.W. *et al., J. Nat. Prod.*, 1981, **44**, 129-152 (*rev, occur*)
Jones, A.J. *et al., Aust. J. Chem.*, 1982, **35**, 1173-1184 (*cmr*)
Resch, J.F. *et al., Phytochemistry*, 1982, **21**, 2430 (*3′-Ac, uv, pmr, cmr, ms, struct*)
Constantinidis, T. *et al., Phytochemistry*, 1993, **32**, 1335-1337 (*3′-Acetylheliosupine-N-oxide*)

Heliotrine H-95

[303-33-3]



Absolute configuration

$C_{16}H_{27}NO_5$ 313.393
Alkaloid from *Heliotropium europaeum, Heliotropium indicum* and *Heliotropium lasiocarpum* (Boraginaceae). Toxin, cause of chronic liver poisoning in animals. Shows ganglion-blocking activity and antineoplastic props. Shows antifungal

activity. Prisms (Me_2CO). Sol. H_2O. Mp 128° (125-126°). $[\alpha]_D^{20}$ +63.8 ($CHCl_3$). $[\alpha]_D$ +17.6 (EtOH). Log P -0.39 (calc). The first pyrrolizidine alkaloid to be extensively studied. One of the crystallographic papers shows the wrong enantiomer.

▶ Toxic (less so than Lasiocarpine, L-47 or Retrorsine, R-62). Genotoxic agent. MH6125000

Methiodide: Mp 108-110° (softens at 103°).

N-*Oxide:* ***Heliotrine* N-*oxide***
[6209-65-0]
$C_{16}H_{27}NO_6$ 329.392
Alkaloid present in *Heliotropium europaeum* (Boraginaceae). Mp 169.5-170.5° (synthetic). $[\alpha]_D$ +26.6 (EtOH) (synthetic).

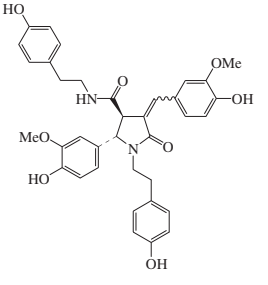
▶ EK7879100

2′-Ac: ***2′-O-Acetylheliotrine***
[208662-67-3]
$C_{18}H_{29}NO_6$ 355.43
Alkaloid from *Heliotropium disciforme*.

Men'shikov, G.P. *et al., Ber.*, 1932, **65**, 974; 1933, **66**, 875; 1935, **68**, 1051; 1555 (*isol, props, struct*)
Culvenor, C.C.J. *et al., Aust. J. Chem.*, 1954, **7**, 277; 287; 1965, **18**, 1625 (*isol, struct, pmr*)
Šimánek, V. *et al., Coll. Czech. Chem. Comm.*, 1969, **34**, 1832 (*uv*)
Pedersen, E. *et al., Org. Mass Spectrom.*, 1970, **4**, 249 (*ms*)
Culvenor, C.C.J. *et al., J.C.S.(C)*, 1971, 3653 (*cd*)
Wodak, S.J. *et al., Acta Cryst. B*, 1975, **31**, 569 (*cryst struct*)
Zalkow, L.H. *et al., J. Nat. Prod.*, 1979, **42**, 612 (*isol, cryst struct*)
Jones, A.J. *et al., Aust. J. Chem.*, 1982, **35**, 1173 (*cmr*)
Marquina, G. *et al., Pharmazie*, 1989, **44**, 870-871 (*Heliotrine, activity*)
Farsam, H. *et al., Pharm. Pharmacol. Lett.*, 1998, **8**, 79-80 (*2′-Acetylheliotrine*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, HAL500

Heliotropamide H-96

[646990-38-7]



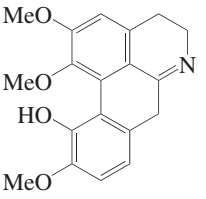
Relative Configuration

$C_{36}H_{36}N_2O_8$ 624.689
Alkaloid from the aerial parts of *Heliotropium ovalifolium*. Amorph. powder. $[\alpha]_D^{21}$ +14 (c, 0.01 in MeOH). λ_{max} 223 (log ϵ 4.16); 287 (log ϵ 3.86); 327 (log ϵ 3.94) (MeOH).

Guntern, A. *et al., J. Nat. Prod.*, 2003, **66**, 1550-1553 (*isol, pmr, cmr, ms*)

Hemiargine B H-97

6,6a-Didehydro-11-hydroxy-1,2,10-trimethoxynoraporphine
[710948-55-3]

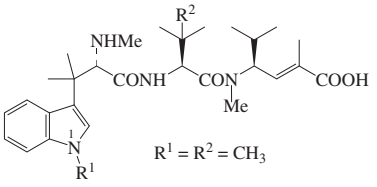


$C_{19}H_{19}NO_4$ 325.363
Alkaloid from leaves of *Croton hemiargyreus* var. *gymnodiscus*.

Lin, W.-H. *et al., J. Chin. Pharm. Sci.*, 2003, **12**, 117-122 (*Hemiargine B*)

Hemiasterlin H-98

Milnamide B
[157207-90-4]



$C_{30}H_{46}N_4O_4$ 526.718
Peptide antibiotic. Isol. from the marine sponges *Auletta* sp., *Cymbastela* sp. and *Hemiasterella minor*. Cytotoxic. Microtubule formation inhibitor. Cryst. (MeOH/hexane). Mp 120-130°. $[\alpha]_D$ -95 (c, 0.06 in MeOH). λ_{max} 220 (ϵ 30000); 270 (ϵ 9000); 295 (ϵ 5000) (MeOH) (Derep).

N^1-*De-Me:* ***Hemiasterlin A***
[169181-24-2]
$C_{29}H_{44}N_4O_4$ 512.691
Isol. from sponges *Cymbastela* sp. and *Siphonochalina* sp. Cytotoxic. Amorph. solid. Sol. MeOH. $[\alpha]_D$ -45 (c, 0.25 in MeOH). λ_{max} 218 (ϵ 23400); 280 (ϵ 2800) (MeOH).

Talpir, R. *et al., Tet. Lett.*, 1994, **35**, 4453-4456 (*isol, pmr, cmr, ms*)
Coleman, J.E. *et al., Tetrahedron*, 1995, **51**, 10653-10662 (*Hemiasterlin A*)
Coleman, J.E. *et al., Acta Cryst. C*, 1996, **52**, 1525-1527 (*cryst struct*)
Gamble, W.R. *et al., Bioorg. Med. Chem.*, 1999, **7**, 1611-1615 (*isol, activity*)
Vedejs, E. *et al., J.O.C.*, 2001, **66**, 7355-7364 (*synth, pmr, cmr*)
Nieman, J.A. *et al., J. Nat. Prod.*, 2003, **66**, 183-199 (*synth, pmr, cmr, activity*)
Chevallier, C. *et al., Org. Lett.*, 2003, **5**, 3737-3739 (*isol, activity*)
Sonnenschein, R. *et al., Org. Lett.*, 2004, **6**, 779-782 (*isol, activity*)

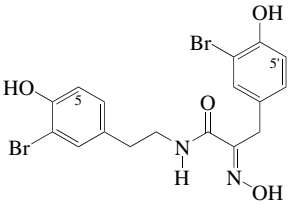
Hemiasterlin C H-99

[246847-61-0]
As Hemiasterlin, H-98 with
$R^1 = CH_3$, $R^2 = H$
$C_{29}H_{44}N_4O_4$ 512.691
Isol. from the sponge *Siphonochalina* sp. Cytotoxic agent. $[\alpha]_D$ -18.8 (c, 0.11 in MeOH).

Gamble, W.R. *et al., Bioorg. Med. Chem.*, 1999, **7**, 1611-1615

Hemibastadin 1 H-100

[134981-79-6]



$C_{17}H_{16}Br_2N_2O_4$ 472.132
Numbering systems vary. Minor constit. of the Australian marine sponge *Ianthella basta*. Solid.

4-Sulfate: ***4-O-Sulfohemibastadin 1***. *1*-O-*Sulfohemibastadin 1*
$C_{17}H_{16}Br_2N_2O_7S$ 552.197
Constit. of *Ianthella basta*. Amorph. solid (as Na salt).

4′-Me ether: ***4′-O-Methylhemibastadin 1***. *1′-Methoxyhemibastadin 1*
[182496-48-6]
$C_{18}H_{18}Br_2N_2O_4$ 486.159
Constit. of *Ianthella basta*. Oil. λ_{max} 213 (log ϵ 4.53); 280 (log ϵ 3.87) (MeOH).

5-Bromo: ***Hemibastadin 3***
[182806-14-0]
$C_{17}H_{15}Br_3N_2O_4$ 551.029
Constit. of *Ianthella basta*. Isol. as a 3:1 inseparable mixt. with Hemibastadin 2.

5′-Bromo: ***Hemibastadin 2***
[134981-80-9]
$C_{17}H_{15}Br_3N_2O_4$ 551.029
Constit. of *Ianthella basta*. Solid.

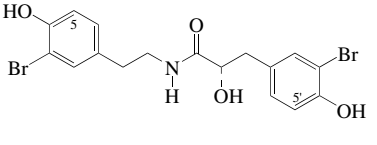
5′-Bromo, 4-sulfate: ***4-O-Sulfohemibastadin 2***. *1*-O-*Sulfohemibastadin 2*
$C_{17}H_{15}Br_3N_2O_7S$ 631.093
Constit. of *Ianthella basta*. Amorph. solid. λ_{max} 204 ; 282 (MeOH).

5′-Bromo, 4′-Me ether: ***4′-O-Methylhemibastadin 2***. *1′-Methoxyhemibastadin 2*
[182496-49-7]
$C_{18}H_{17}Br_3N_2O_4$ 565.055
Constit. of *Ianthella basta*. Solid. λ_{max} 213 (log ϵ 4.5); 281 (log ϵ 3.87) (MeOH).

Butler, M.S. *et al., Aust. J. Chem.*, 1991, **44**, 287-296 (*isol, pmr, ms, struct*)
Pettit, G.R. *et al., J. Nat. Prod.*, 1996, **59**, 927-934 (*4′-O-Methylhemibastadins, Hemibastadin 3*)
Wasserman, H.H. *et al., J.O.C.*, 1998, **63**, 5581-5586 (*Hemibastadin 2, synth*)
Masuno, M.N. *et al., Mar. Drugs*, 2004, **2**, 176-184 (*4-Sulfohemibastadins*)

Hemibastadinol 1 H-101

[182806-09-3]



$C_{17}H_{17}Br_2NO_4$ 459.134
Isol. from the Papua New Guinea marine sponge *Ianthella basta*. Solid. $[\alpha]_D^{23}$ -31 (c,

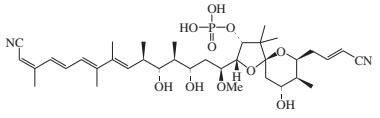
1.83 in MeOH). λ_{max} 208 (log ϵ 4.43); 281 (log ϵ 3.69) (MeOH).

5′-Bromo: ***Hemibastadinol 2***
[182806-11-7]
$C_{17}H_{16}Br_3NO_4$ 538.03
From *Ianthella basta*. Oil. $[\alpha]_D^{23}$ -24 (c, 0.10 in MeOH). Inseparable mixt. with Hemibastadinol 3, to which data refer.

5-Bromo: ***Hemibastadinol 3***
[182806-12-8]
$C_{17}H_{16}Br_3NO_4$ 538.03
From *Ianthella basta*. Inseparable mixt. with Hemibastadinol 2.

Pettit, G.R. *et al., J. Nat. Prod.*, 1996, **59**, 927 (*isol, uv, ir, pmr, cmr, ms, struct*)

Hemicalyculin A H-102

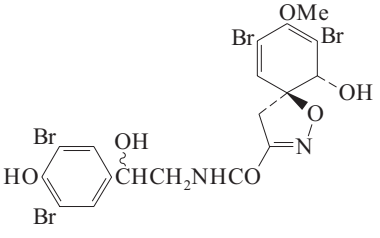


$C_{36}H_{55}N_2O_{10}P$ 706.812
Isol. from the sponge *Discodermia calyx*. Amorph. solid. $[\alpha]_D^{20}$ -107 (c, 0.5 in MeOH). λ_{max} 237 (ϵ 3700); 340 (ϵ 19000) (MeOH).

Wakimoto, T. *et al., Chem. Biol.*, 2002, **9**, 309-319 (*isol, pmr, cmr*)

Hemifistularin 3 H-103

[153415-35-1]

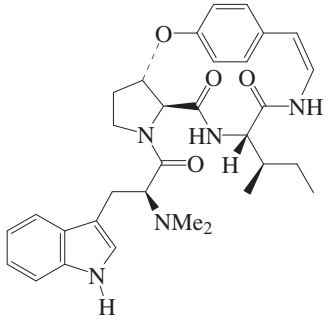


$C_{18}H_{16}Br_4N_2O_6$ 675.95
Metab. from a new sp. of sponge of the family Aplysinellidae, order Verongida, from the Coral Sea. Powder (hexane/Et_2O). Mp 73-75°. $[\alpha]_D^{20}$ +110 (c, 0.2 in Me_2CO). λ_{max} 207 (ϵ 39000); 281 (ϵ 6900) (MeOH) (Berdy).

Mancini, I. *et al., J.C.S. Perkin 1*, 1993, 3121 (*isol, uv, ir, pmr, cmr, struct*)

Hemsine A H-104

[530092-42-3]

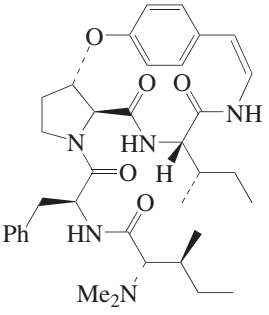


$C_{32}H_{39}N_5O_4$ 557.691
Alkaloid from the roots of *Paliurus hemsleyanus*. $[\alpha]_D^{26}$ -64.5 (c, 2 in MeOH). λ_{max} 224 (log ϵ 4.96); 272 (log ϵ 4.3); 280 (log ϵ 4.3); 290 (log ϵ 4.21) (MeOH).

Lin, H.-Y. *et al., Helv. Chim. Acta*, 2003, **86**, 127-138 (*isol, pmr, cmr*)

Hemsine B H-105

[530092-43-4]



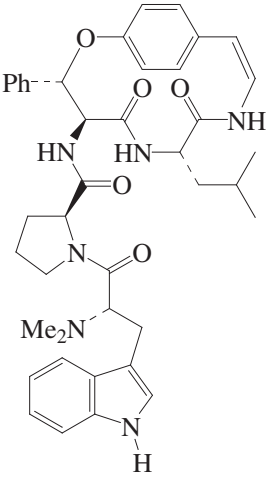
$C_{36}H_{49}N_5O_5$ 631.814
Alkaloid from the roots of *Paliurus hemsleyanus*. $[\alpha]_D^{26}$ -124 (c, 1 in MeOH). λ_{max} 217 (log ϵ 4.68); 257 (sh) (log ϵ 4.14); 285 (log ϵ 3.92) (MeOH).

N-*De-Me:* ***Ramosine B***. N-*Demethylhemsine B*
[530092-40-1]
$C_{35}H_{47}N_5O_5$ 617.787
Alkaloid from the roots of *Paliurus ramosissimus*. $[\alpha]_D^{26}$ -181.5 (c, 2 in MeCN). λ_{max} 216 (log ϵ 4.6); 233 (log ϵ 4.43); 329 (log ϵ 3.57) (MeCN).

Lin, H.-Y. *et al., Helv. Chim. Acta*, 2003, **86**, 127-138 (*isol, pmr, cmr*)

Hemsine C H-106

[530092-44-5]

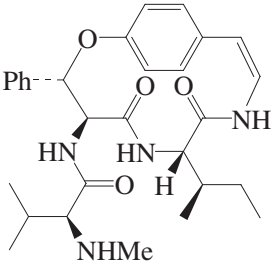


$C_{41}H_{48}N_6O_5$ 704.867
Alkaloid from the roots of *Paliurus hemsleyanus*. $[\alpha]_D^{26}$ -107 (c, 1 in MeOH). λ_{max} 214 (log ϵ 4.28); 280 (log ϵ 4.31) (MeOH).

Lin, H.-Y. *et al., Helv. Chim. Acta*, 2003, **86**, 127-138 (*isol, pmr, cmr*)

Hemsine D H-107

[530092-45-6]

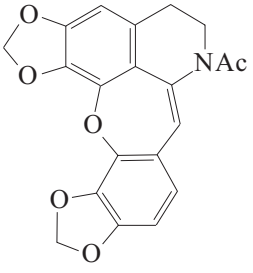


$C_{29}H_{38}N_4O_4$ 506.644
Alkaloid from the roots of *Paliurus hemsleyanum*. $[\alpha]_D^{26}$ -573.3 (c, 0.75 in $CHCl_3$). λ_{max} 217 (log ϵ 4.7); 230 (log ϵ 3.66); 255 (log ϵ 3.4) (MeOH).

Lin, H.-Y. *et al., Helv. Chim. Acta*, 2003, **86**, 127-138 (*isol, pmr, cmr*)

Henderine H-108

[102686-11-3]

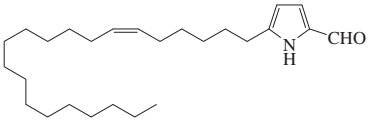


$C_{20}H_{15}NO_6$ 365.342
Alkaloid from the whole plants of *Corydalis hendersonii (Corydalis nepalensis)* (Papaveraceae).

Lin, M. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 1986, **28**, 91; *CA*, **105**, 3497q

5-(6-Heneicosenyl)-1*H*-pyrrole-2-carboxaldehyde, 9CI H-109

*2-Formyl-5-(6-heneicosenyl)-1*H*-pyrrole*



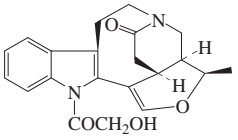
$C_{26}H_{45}NO$ 387.648

(Z)-form [262351-88-2]
Isol. from *Mycale mytilorum*. Pale yellow flakes. Mp 40-43°. λ_{max} 302 (ϵ 16000) (EtOH).

Reddy, G.B.S. *et al., Bioorg. Med. Chem.*, 2000, **8**, 27-36 (*Z-form, ir, ms, pmr, cmr*)

Henningsamide H-110

[141544-34-5]



Relative Configuration

$C_{21}H_{22}N_2O_4$ 366.416
Alkaloid from *Strychnos henningsii* (Loganiaceae). $[\alpha]_D$ -368 (c, 0.5 in MeOH). λ_{max} 203 ; 242 ; 285 ; 308 (sh) (MeOH).

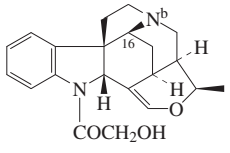
N-*De(hydroxyacetyl):* ***Deshydroxyacetylhenningsamide***
[141544-35-6]
$C_{19}H_{20}N_2O_2$ 308.379
Alkaloid from *Strychnos henningsii* (Loganiaceae). $[\alpha]_D$ -744 (c, 0.33 in MeOH). λ_{max} 223 ; 287 ; 295 (MeOH).

O-*Ac:* ***O-Acetylhenningsamide***
[141565-03-9]
$C_{23}H_{24}N_2O_5$ 408.453
Alkaloid from *Strychnos henningsii* (Loganiaceae). $[\alpha]_D$ -104 (c, 0.5 in $CHCl_3$). λ_{max} 203 ; 242 ; 284 ; 309 (sh) (MeOH).

Massiot, G. *et al., Phytochemistry*, 1991, **30**, 3449-3456 (*isol, struct*)

Henningsiine H-111

[141544-27-6]



Absolute Configuration

$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from *Strychnos henningsii* (Loganiaceae). $[\alpha]_D$ -24 (c, 1 in $CHCl_3$). CA numbering shown.

N^b-*Oxide:* ***Henningsiine* N-*oxide***
[141544-31-2]
$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from *Strychnos henningsii* (Loganiaceae). $[\alpha]_D$ -9 (c, 0.35 in $CHCl_3$).

O-*Ac:* ***O-Acetylhenningsiine***
[141544-29-8]
$C_{23}H_{26}N_2O_4$ 394.469
Alkaloid from *Strychnos henningsii* (Loganiaceae). $[\alpha]_D$ -22 (c, 1.3 in $CHCl_3$).

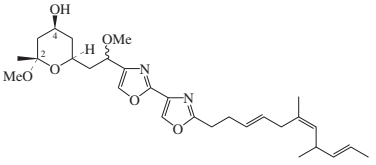
N-*De(hydroxyacetyl):* ***Deshydroxyacetylhenningsiine***
[141544-28-7]
$C_{19}H_{22}N_2O$ 294.396
Alkaloid from *Strychnos henningsii* (Loganiaceae). $[\alpha]_D$ -22 (c, 1.3 in $CHCl_3$).

16-Hydroxy: ***16-Hydroxyhenningsiine***. *3-Hydroxyhenningsiine*
[141544-30-1]
$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from *Strychnos henningsii* (Loganiaceae). $[\alpha]_D$ -29 (c, 0.35 in $CHCl_3$).

Massiot, G. *et al., Phytochemistry*, 1991, **30**, 3449-3456 (*isol, struct*)

Hennoxazole A H-112

[132564-95-5]



$C_{29}H_{42}N_2O_6$ 514.661
Alkaloid from the marine sponge *Polyfibrospongia* sp. Possesses antiviral and peripheral analgesic activities. Light yellow oil. $[\alpha]_D^{25}$ -47 (c, 3.12 in $CHCl_3$) (-42.7). λ_{max} 254 (ϵ 12000) (MeOH) (Derep).

4-Ac: ***4-O-Acetylhennoxazole A***
$C_{31}H_{44}N_2O_7$ 556.698
Alkaloid from a *Polyfibrospongia* sp. CAS no. not found 8-14CI.

O^2-*De-Me:* ***Hennoxazole E***
$C_{28}H_{40}N_2O_6$ 500.634
Alkaloid from *Polyfibrospongia* sp. CAS no. not found 8-14CI.

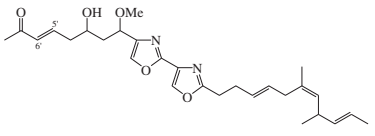
O^2-*De-Me,* O^2-*Et:* ***Hennoxazole B***
[132564-96-6]
$C_{30}H_{44}N_2O_6$ 528.687
Alkaloid from *Polyfibrospongia* sp. Analgesic. λ_{max} 254 (ϵ 12000) (MeOH) (Derep).

O^2-*De-Me,* O^2-*butyl:* ***Hennoxazole C***
[132564-97-7]
$C_{32}H_{48}N_2O_6$ 556.741
Alkaloid from *Polyfibrospongia* sp. λ_{max} 254 (ϵ 12000) (MeOH) (Derep).

4-Deoxy: ***Hennoxazole D***
[132564-98-8]
$C_{29}H_{42}N_2O_5$ 498.661
From *Polyfibrospongia* sp. Light yellow oil. λ_{max} 254 (ϵ 12000) (MeOH) (Derep).

Ichiba, T. *et al., J.A.C.S.*, 1991, **113**, 3173-3174 (*isol, struct*)
Higa, T. *et al., Pure Appl. Chem.*, 1994, **66**, 2227-2230 (*4-Acetylhennoxazole A, Hennoxazole E*)
Williams, D.R. *et al., J.A.C.S.*, 1999, **121**, 4924-4925 (*synth*)
Yokokawa, F. *et al., Tetrahedron*, 2001, **57**, 6311-6327 (*synth, ir, pmr, cmr, ms*)
Smith, T.E. *et al., J.O.C.*, 2008, **73**, 142-150 (*synth*)

Hennoxazole F H-113



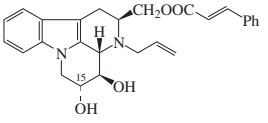
$C_{28}H_{38}N_2O_5$ 482.619
Alkaloid from the sponge *Polyfibrospongia* sp. Not indexed by CA.

5′,6′-Dihydro, 5′-hydroxy: ***Hennoxazole G***
$C_{28}H_{40}N_2O_6$ 500.634
Alkaloid from *Polyfibrospongia* sp. Not indexed by CA.

Higa, T. *et al., Pure Appl. Chem.*, 1994, **66**, 2227-2230

Henrycinol A H-114

[606925-22-8]



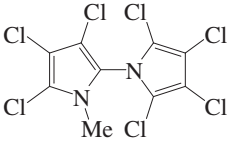
Relative Configuration

$C_{27}H_{28}N_2O_4$ 444.529
Alkaloid from the roots of *Melodinus henryi*. Amorph. solid. $[\alpha]_D^{20}$ -43.7 (c, 0.4 in $CHCl_3$). λ_{max} 232 (log ϵ 2.6); 278 (log ϵ 2.4); 280 (log ϵ 2.8); 290 (log ϵ 2.3) (EtOH).

15-(2-Methylpropanoyl): ***Henrycinol B***
[606925-23-9]
$C_{31}H_{34}N_2O_5$ 514.62
Alkaloid from the roots of *Melodinus henryi*. Amorph. powder. $[\alpha]_D^{20}$ -60.7 (c, 0.7 in $CHCl_3$). λ_{max} 232 (log ϵ 2.4); 278 (log ϵ 2.9); 290 (log ϵ 2.6) (EtOH).

Zhang, Y.W. *et al., Helv. Chim. Acta*, 2003, **86**, 415-419 (*isol, pmr, cmr, ms*)

2,3,3′,4,4′,5,5′-Heptachloro-1′-methyl-1,2′-bi-1*H*-pyrrole *Q1* H-115

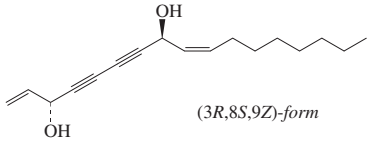


$C_9H_3Cl_7N_2$ 387.305
Widespread in natural sources. Distribution pattern resembles that of environmental contaminants, e.g. PCBs, but appears to be a genuine nat. prod. Cryst. Mp 154-155.5°. Readily oxidises and polymerises.

Wu, J. *et al., Angew. Chem., Int. Ed.*, 2002, **41**, 1740-1743 (*synth, cryst struct*)
Vetter, W. *et al., Chemosphere*, 2003, **52**, 415-422 (*isol, pmr, cmr*)
Vetter, W. *et al., Rapid Commun. Mass Spectrom.*, 2006, **20**, 3018-3022 (*cmr, occur*)
Vetter, W. *et al., Rev. Environ. Contam. Toxicol.*, 2006, **188**, 1-57 (*rev, occur*)

1,9-Heptadecadiene-4,6-diyne-3,8-diol, 9CI H-116

[30779-95-4]



(3*R*,8*S*,9*Z*)-*form*

$C_{17}H_{24}O_2$ 260.375
Log P 2.49 (calc).

(3R,8S,9Z)-form Falcarindiol
[55297-87-5]

Constit. of roots of *Aegopodium podagraria*, *Angelica acutiloba* (Dong Dang Gui), *Angelica japonica*, *Anthriscus sylvestris*, *Aralia cordata* (udo), *Crithmum maritimum* (rock samphire), *Daucus carota* (carrot), *Dendropanax arboreus*, *Falcaria vulgaris*, *Glehnia littoralis*, *Glehnia littoralis leiocarpa*, *Heteromorpha trifoliata*, *Levisticum officinale* (lovage), *Oenanthe javanica* (water dropwort), *Osmorhiza occidentalis*, *Peucedanum oreoselinum*, *Schefflera digitata*, *Apium graveolens* (celery), *Foeniculum vulgare* (fennel), *Petroselinum crispum* (parsley) and *Pastinaca sativa* (parsnip). Constit. of Chinese crude drug Toki. Has antifungal, antibiotic and analgesic activity. Antinociceptive agent. DNA topoisomerase inhibitor. Shows phytotoxic, allelochemical, antimutagenic and antiproliferative props. Pale yellow oil. Sol. MeOH, Et_2O. $[\alpha]_D$ +204.8 (c, 1 in $CHCl_3$). Log P 2.49 (calc). Pharmacol. active isomer. λ_{max} 231 ; 244 ; 256 (MeOH) (Berdy). λ_{max} 233 (ϵ 1000); 245 (ϵ 1000); 259 (ϵ 800) (EtOH) (Berdy). λ_{max} 232 (ϵ 400); 244 (ϵ 400); 258 (ϵ 200) (Et_2O) (Berdy).

8-O-*(1*H*-Indol-3-ylacetyl):* ***8-(1*H*-Indol-3-ylacetyl)falcarindiol***
[945857-69-2]
$C_{27}H_{31}NO_3$ 417.547
Alkaloid from the flower buds of *Hedera rhombea*. Oil. $[\alpha]_D^{26}$ +43 (c, 0.4 in $CHCl_3$). λ_{max} 221 (log ϵ 4.4); 271 (log ϵ 4); 281 (log ϵ 3.9); 289 (log ϵ 3.9) (Et_2O).

Yamazoe, S. *et al., Phytochemistry*, 2007, **68**, 1706-1711 (*indole-3-acetate*)

14-Heptadecene-4,16-diynoic acid H-117

$HC{\equiv}CCH{=}CH(CH_2)_8C{\equiv}CCH_2CH_2COOH$

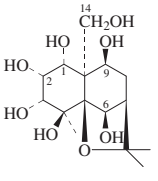
$C_{17}H_{24}O_2$ 260.375

(Z)-form

2-Phenylethylamide: N-*(2-Phenylethyl)-14-heptadecene-4,16-diynamide.* ***Callyspongamide A***
[549494-83-9]
$C_{25}H_{33}NO$ 363.542
Alkaloid from the Red Sea sponge *Callyspongia fistularis*. Cytotoxic. Light yellow oil. λ_{max} 216 (log ϵ 4.12) (MeOH).

Youssef, D.T.A. *et al., J. Nat. Prod.*, 2003, **66**, 861-862 (*isol, pmr, cmr*)

1,2,3,4,6,9,14-Heptahydroxydihydro-β-agarofuran H-118



(1α,2α,3α,4β*OH*,6β,9β)-*form*

$C_{15}H_{26}O_8$ 334.366

(1α,2α,3α,4β*OH*,6β,9β)-form

9-(3-Furancarbonyl), 3-(2-methylbutanoyl), 1,2,6,14-tetra-Ac: [828921-28-4]
$C_{33}H_{44}O_{15}$ 680.702
Constit. of *Euonymus nanoides*. Gum. $[\alpha]_D^{20}$ +26 (c, 1.1 in $CHCl_3$). λ_{max} 242 (MeOH).

(1α,2α,3β,4β*OH*,6β,9β)-form
Maytol

9-(3-Pyridinecarbonyl), 1,2,6,14-tetra-Ac: ***Maytoline***
[31146-55-1]
$C_{29}H_{37}NO_{13}$ 607.61
Alkaloid from the fruit of *Maytenus serrata* (*Maytenus ovatus*) (Celastraceae). Noncryst. $[\alpha]_D^{25}$ +0.3 (c, 0.75 in $CHCl_3$).

9-(3-Pyridinecarbonyl), 1,2,6,14-tetra-Ac; methiodide: [31146-59-5]
Cryst. (MeOH/Et_2O). Cryst. unstable in air and rapidly loses solvent of crystallisation to give a powder. Mp 190-193° dec.

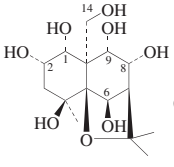
9-(3-Pyridinecarbonyl), 6-benzoyl, 1,2,3,14-tetra-Ac: ***Maytolidine***
[60512-69-8]
$C_{36}H_{41}NO_{14}$ 711.718
Alkaloid from the fruit of *Maytenus serrata* (Celastraceae). Cryst. (EtOAc/Et_2O). Mp 128-132°.

Bryan, R.F. *et al., J.C.S.(B)*, 1971, 2159 (*cryst struct*)

Kupchan, S.M. *et al., J.O.C.*, 1977, **42**, 115-118 (*Maytoline, Maytolidine*)

Liu, Z.-L. *et al., Planta Med.*, 2004, **70**, 353-358 (*Euonymus nanoides constit*)

1,2,4,6,8,9,14-Heptahydroxydihydro-β-agarofuran H-119



(1α,2α,4β,6β,8α,9α)-*form*

$C_{15}H_{26}O_8$ 334.366

(1α,2α,4β,6β,8α,9α)-form

8-O-*(3-Pyridinecarbonyl), 9-benzoyl, 2*-O-*(2-methylpropanoyl), 1,14-di-Ac:* ***1,14-Diacetoxy-9-benzoyloxy-4,6-dihydroxy-2-isobutanoyloxy-8-nicotinoyloxydihydro-β-agarofuran***
[117714-46-2]
$C_{36}H_{43}NO_{13}$ 697.735
Alkaloid from *Celastrus angulatus* (Celastraceae). Insect antifeedant. Amorph. $[\alpha]_D^{20}$ +43.4 (c, 0.52 in MeOH).

(1α,2α,4β,6β,8α,9β)-form [455260-81-8]
Isol. from *Celastrus angulatus*. Cryst. Mp 177-179°.

1-O-*(3-Pyridinecarbonyl), 9*-O-*(3-furancarbonyl), 14*-O-*(2-methylpropanoyl), 2,6,8-tri-Ac:* [864179-26-0]
$C_{36}H_{43}NO_{15}$ 729.733
Constit. of *Tripterygium wilfordii*. Amorph. powder. $[\alpha]_D^{25}$ +9.2 (c, 1.2 in MeOH). λ_{max} 216 (log ϵ 3.97); 255 (log ϵ 3.56) (MeOH).

1-O-*(3-Pyridinecarbonyl), 9-benzoyl, 14*-O-*(2-methylbutanoyl), 8-Ac:* [862703-02-4]
$C_{35}H_{43}NO_{12}$ 669.724
Constit. of *Crossopetalum tonduzii*. Glass. $[\alpha]_D^{25}$ +3.6 (c, 0.42 in $CHCl_3$). λ_{max} 223 ; 264 (EtOH).

1-O-*(3-Pyridinecarbonyl), 9-benzoyl, 14*-O-*(2-methylbutanoyl), 2,8-di-Ac:* [862703-01-3]
$C_{37}H_{45}NO_{13}$ 711.761
Constit. of *Crossopetalum tonduzii*. Glass. $[\alpha]_D^{25}$ +9.1 (c, 0.11 in $CHCl_3$). λ_{max} 224 ; 264 (EtOH).

1-O-*(3-Pyridinecarbonyl), 9-benzoyl, 14*-O-*(2-methylbutanoyl), 6,8-di-Ac:* [862703-00-2]
$C_{37}H_{45}NO_{13}$ 711.761
Constit. of *Crossopetalum tonduzii*. Glass. $[\alpha]_D^{25}$ +9.6 (c, 0.91 in $CHCl_3$). λ_{max} 221 ; 264 (EtOH).

2-O-*(3-Pyridinecarbonyl), 9-benzoyl, 14*-O-*(2-methylbutanoyl), 1,8-di-Ac:* [862702-98-5]
$C_{37}H_{45}NO_{13}$ 711.761
Constit. of *Crossopetalum tonduzii*. Glass. $[\alpha]_D^{25}$ +42.9 (c, 0.24 in $CHCl_3$). λ_{max} 224 ; 264 (EtOH).

2-O-*(3-Pyridinecarbonyl), 9-benzoyl, 14*-O-*(2-methylbutanoyl), 6,8-di-Ac:* [862702-99-6]
$C_{37}H_{45}NO_{13}$ 711.761
Constit. of *Crossopetalum tonduzii*. Glass. $[\alpha]_D^{25}$ +43.2 (c, 0.19 in $CHCl_3$). λ_{max} 223 ; 264 (MeOH).

2-O-*(3-Pyridinecarbonyl), 1,9-dibenzoyl, 14*-O-*(2-methylbutanoyl), 8-Ac:* [862703-03-5]
$C_{42}H_{47}NO_{13}$ 773.832
Constit. of *Crossopetalum tonduzii*. Glass. $[\alpha]_D^{25}$ +59.4 (c, 0.17 in $CHCl_3$). λ_{max} 227 ; 264 (EtOH).

8-O-*(3-Pyridinecarbonyl), 9-benzoyl, 1,2,6,14-tetra-Ac:*
$C_{36}H_{41}NO_{14}$ 711.718
Constit. of *Tripterygium wilfordii*. Amorph. powder. $[\alpha]_D^{25}$ -38.4 (c, 1 in MeOH). λ_{max} 229 (log ϵ 4.33); 263 (log ϵ 3.64) (MeOH).

9-O-*(3-Pyridinecarbonyl), 2*-O-*(3-furancarbonyl), 8,14-bis*-O-*(2-methylpropanoyl), 1,6-di-Ac:* [148461-95-4]
$C_{38}H_{47}NO_{15}$ 757.787
Constit. of *Celastrus angulatus*. Amorph. $[\alpha]_D^{20}$ +45.8 (c, 0.52 in MeOH).

1,2-Bis-O-*(3-pyridinecarbonyl), 9-benzoyl, 14*-O-*(2-methylbutanoyl), 8-Ac:* [862702-97-4]
$C_{41}H_{46}N_2O_{13}$ 774.82
Constit. of *Crossopetalum tonduzii*. Glass. $[\alpha]_D^{25}$ +50.5 (c, 1.57 in $CHCl_3$). λ_{max} 222 ; 263 (EtOH).

1,2-Bis-O-*(3-pyridinecarbonyl), 8,9-dibenzoyl, 6,14-di-Ac:* ***Cangorin E***
[152340-58-4]
$C_{45}H_{44}N_2O_{14}$ 836.848
Constit. of *Maytenus ilicifolia*. Amorph. solid. Mp 103-108°. $[\alpha]_D$ +26.3 (c, 0.19 in $CHCl_3$).

1,8-Bis-O-*(3-pyridinecarbonyl), 6,9-dibenzoyl, 2,14-di-Ac:* ***Cangorin I***
[156400-97-4]
$C_{45}H_{44}N_2O_{14}$ 836.848

Constit. of *Maytenus ilicifolia*. Amorph. solid. Mp 111-115°. $[\alpha]_D$ +14.8 (c, 0.58 in $CHCl_3$).

2,8-Bis-O-*(3-pyridinecarbonyl), 9-benzoyl, 1,14-di-Ac:* ***Cangorin F***
[156400-94-1]
$C_{38}H_{40}N_2O_{13}$ 732.74
Constit. of *Maytenus ilicifolia*. Cryst. Mp 214-217°. $[\alpha]_D$ +66 (c, 0.59 in $CHCl_3$).

2,8-Bis-O-*(3-pyridinecarbonyl), 9-benzoyl, 1,6,14-tri-Ac:* ***Cangorin D***
[152340-57-3]
$C_{40}H_{42}N_2O_{14}$ 774.777
Constit. of *Maytenus ilicifolia*. Amorph. solid. Mp 123-138°. $[\alpha]_D$ +11.2 (c, 0.2 in $CHCl_3$).

2,8-Bis-O-*(3-pyridinecarbonyl), 6,9-dibenzoyl, 1,14-di-Ac:* ***Cangorin C***
[152340-56-2]
$C_{45}H_{44}N_2O_{14}$ 836.848
Constit. of *Maytenus ilicifolia*. Amorph. solid. Mp 122-126°. $[\alpha]_D$ -45 (c, 0.36 in $CHCl_3$).

1,2,8-Tris-O-*(3-pyridinecarbonyl), 9-benzoyl, 14-Ac:* ***Cangorin G***
[156400-95-2]
$C_{42}H_{41}N_3O_{13}$ 795.798
Constit. of *Maytenus ilicifolia*. Amorph. solid. Mp 124-128°. $[\alpha]_D$ +29.4 (c, 1.11 in $CHCl_3$).

1,2,8-Tris-O-*(3-pyridinecarbonyl), 9-benzoyl, 6,14-di-Ac:* ***Cangorin H***
[156400-96-3]
$C_{44}H_{43}N_3O_{14}$ 837.835
Constit. of *Maytenus ilicifolia*. Amorph. solid. Mp 125-130°. $[\alpha]_D$ +43.4 (c, 0.45 in $CHCl_3$).

1,2,8-Tris-O-*(3-pyridinecarbonyl), 6,9-dibenzoyl, 14-Ac:* ***Cangorin B***
[152340-55-1]
$C_{49}H_{45}N_3O_{14}$ 899.906
Constit. of *Maytenus ilicifolia*. Amorph. solid. Mp 137-141°. $[\alpha]_D$ +77.3 (c, 0.33 in $CHCl_3$).

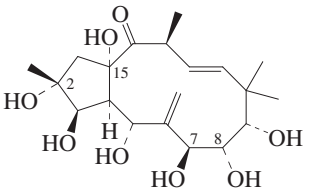
2,6,8-Tris-O-*(3-pyridinecarbonyl), 9-benzoyl, 1,14-di-Ac:* ***Cangorin A***
[152340-54-0]
$C_{44}H_{43}N_3O_{14}$ 837.835
Constit. of *Maytenus ilicifolia*. Amorph. solid. Mp 136-140°. $[\alpha]_D$ +45.7 (c, 0.37 in $CHCl_3$).

(1α,2α,4β,6β,8β,9α)-*form* [120693-69-8]
Constit. of *Celastrus angulatus*.

8-O-*(3-Pyridinecarbonyl), 9-benzoyl, 2*-O-*(2-methylpropanoyl), 1,14-di-Ac:*
[141544-40-3]
$C_{36}H_{43}NO_{13}$ 697.735
Constit. of *Celastrus angulatus*. Amorph. $[\alpha]_D^{20}$ +43.4 (c, 0.52 in MeOH).

Ji-Kai, L. *et al., Phytochemistry*, 1991, **30**, 3437-3448 (*Celastrus angulatus constits*)
Itokawa, H. *et al., J. Nat. Prod.*, 1993, **56**, 1479-1485; 1994, **57**, 460-470 (*Cangorins, cryst struct*)
Tincusi, B.M. *et al., J. Nat. Prod.*, 1998, **61**, 1520-1523 (*Crossopetalum tonduzii esters*)
Jiménez, I.A. *et al., J. Nat. Prod.*, 2003, **66**, 1047-1050 (*Crossopetalum tonduzii esters*)
Mendoza, C.R. *et al., Chem. Biodiversity*, 2005, **2**, 286-294 (*Crossopetalum tonduzii esters*)

2,3,5,7,8,9,15-Heptahydroxy-6(17),11-jatrophadien-14-one H-120



(2α,3β,5α,7β,8α,9α,11*E*,15α)-*form*

$C_{20}H_{32}O_8$ 400.468

(2α,3β,5α,7β,8α,9α,11*E*,15β)-*form*

2-O-*(3-Pyridinecarbonyl), 5*-O-*(2-methylbutanoyl), 7,8,9-tri-Ac:* [250293-36-8]
$C_{37}H_{49}NO_{13}$ 715.793
Constit. of *Euphorbia obtusifolia*. Oil. $[\alpha]_D$ -6 (c, 0.68 in $CHCl_3$).

2-O-*(3-Pyridinecarbonyl), 5-benzoyl, 3,7,8,9-tetra-Ac:* ***Guyonianin A***
[936020-20-1]
$C_{41}H_{47}NO_{14}$ 777.821
Constit. of *Euphorbia guyoniana*.

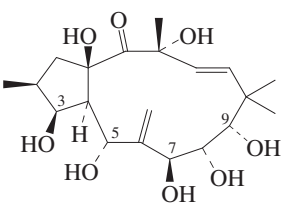
3-O-*(3-Pyridinecarbonyl), 7*-O-*(2-methylpropanoyl), 2,5,8,9-tetra-Ac:* ***Euphodendroidin G***
[578738-22-4]
$C_{38}H_{49}NO_{14}$ 743.803
Constit. of *Euphorbia dendroides*. Amorph. solid. $[\alpha]_D^{25}$ +3.5 (c, 0.1 in $CHCl_3$).

5-O-*(3-Pyridinecarbonyl), 7-benzoyl, 2,8,9-tri-Ac:* ***Euphodendroidin C***
[578738-18-8]
$C_{39}H_{45}NO_{13}$ 735.783
Constit. of *Euphorbia dendroides*. Amorph. solid. $[\alpha]_D^{25}$ -5 (c, 0.1 in $CHCl_3$).

2,9-Bis-O-*(3-pyridinecarbonyl), 5*-O-*(2-methylpropanoyl), 3,7,8,15-tetra-Ac:* ***Euphodendroidin I***
[578738-24-6]
$C_{44}H_{52}N_2O_{15}$ 848.899
Constit. of *Euphorbia dendroides*. Amorph. solid. $[\alpha]_D^{25}$ -1.3 (c, 0.1 in $CHCl_3$).

Marco, J.A. *et al., Phytochemistry*, 1999, **52**, 479-485 (*Euphorbia obtusifolia esters*)
Corea, G. *et al., J. Med. Chem.*, 2003, **46**, 3395-3402 (*Euphodendroidins*)
Ahmed, A.A. *et al., Nat. Prod. Commun.*, 2006, **1**, 273-279; *CA*, **146**, 478757d (*Guyonianin A*)

3,5,7,8,9,13,15-Heptahydroxy-6(17),11-jatrophadien-14-one H-121



$C_{20}H_{32}O_8$ 400.468

(2β,3β,5α,7β,8α,9α,11*E*,13α,15β)-*form*

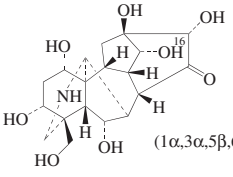
9-(3-Pyridinecarbonyl), 3,7-diangeloyl, 8-Ac: ***Amygdaloidin B***
[853007-72-4]
$C_{38}H_{49}NO_{12}$ 711.805
Constit. of *Euphorbia amygdaloides*. Amorph. solid. $[\alpha]_D^{25}$ +117.7 (c, 0.1 in $CHCl_3$).

9-(3-Pyridinecarbonyl), 7,8-diangeloyl, 3,5-di-Ac: ***Amygdaloidin A***
[853007-71-3]
$C_{40}H_{51}NO_{13}$ 753.842
Constit. of *Euphorbia amygdaloides*. Amorph. solid. $[\alpha]_D^{25}$ -22.17 (c, 0.1 in $CHCl_3$).

9-(3-Pyridinecarbonyl), 3-(3-hydroperoxy-2-methylenebutanoyl), 7-angeloyl, 8-Ac: ***Amygdaloidin C***
[853007-73-5]
$C_{38}H_{49}NO_{14}$ 743.803
Constit. of *Euphorbia amygdaloides*. Amorph. solid. $[\alpha]_D^{25}$ -16.67 (c, 0.1 in $CHCl_3$).

Corea, G. *et al., Tetrahedron*, 2005, **61**, 4485-4494 (*Amygdaloidins A-L*)

1,3,6,13,14,16,18-Heptahydroxy-4-methylaconitan-15-one H-122



(1α,3α,5β,6α,14α,16α)-*form*

$C_{19}H_{27}NO_8$ 397.424

(1α,3α,5β,6α,14α,16α)-*form*

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Me, 14-benzoyl:* ***16-Epipyromesaconitine***
[123827-18-9]
$C_{31}H_{41}NO_9$ 571.666
Alkaloid from the the crude drug bushi obt. from the roots of some *Aconitum* spp. (Ranunculaceae). Amorph. $[\alpha]_D$ -79.5 (c, 0.44 in EtOH). Artifact.

▶AR5574000
O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14-benzoyl:* ***16-Epipyroaconitine***
[123834-18-4]
$C_{32}H_{43}NO_9$ 585.693
Alkaloid from the the crude drug bushi obt. from the roots of some *Aconitum* spp. (Ranunculaceae). Needles. Mp 166-167° (96-98°). $[\alpha]_D$ -64.3 (c, 0.23 in EtOH). Artifact.

▶AR5570000
O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14*-O-*(4-methoxybenzoyl):* ***16-Epipyrojesaconitine***
[123930-58-5]
$C_{33}H_{45}NO_{10}$ 615.719
Alkaloid from the the crude drug bushi obt. from the roots of some *Aconitum* spp. (Ranunculaceae). Needles. Mp 181-182°. $[\alpha]_D$ -58.9 (c, 0.55 in EtOH). Artifact.

►AR5582000

(1α,3α,5β,6α,14α,16β)-*form*

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Me, 14-benzoyl:* ***Pyromesaconitine***
[121707-41-3]
$C_{31}H_{41}NO_9$ 571.666
Alkaloid from the the crude drug bushi obt. from the roots of some *Aconitum* spp. (Ranunculaceae). Amorph. $[\alpha]_D$ +15.4 (c, 0.48 in EtOH). Artifact.

►AR5576000

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14-benzoyl:* ***Pyroaconitine***
[561-05-7]
$C_{32}H_{43}NO_9$ 585.693
Alkaloid from the the crude drug bushi obt. from the roots of some *Aconitum* spp. (Ranunculaceae). Amorph. $[\alpha]_D$ +21.8 (c, 0.22 in EtOH). Artifact formed from Aconitine, A-104 present in the raw aconite roots during the processing procedure. Has not been isol. so far from raw roots of *A.* spp.

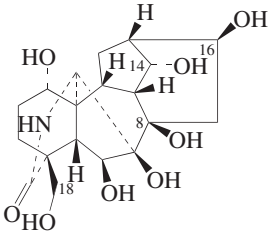
►AR5572000

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14-O-(4-methoxybenzoyl):* ***Pyrojesaconitine***
[16298-91-2]
$C_{33}H_{45}NO_{10}$ 615.719
Alkaloid from the the crude drug bushi obt. from the roots of some *Aconitum* spp. (Ranunculaceae). Amorph. $[\alpha]_D$ +20.5 (c, 0.43 in EtOH). Artifact.

►AR5584000

Mori, T. *et al., Heterocycles*, 1989, **29**, 873-885 (*isol, uv, ir, pmr, cmr, ms*)
Ji, H. *et al., J. Asian Nat. Prod. Res.*, 2006, **8**, 619-624 (*16-Epipyroaconitine*)

1,6,7,8,14,16,18-Heptahydroxy-4-methylaconitan-19-one H-123



$C_{19}H_{27}NO_8$ 397.424

(1α,5β,6β,14α,16β)-*form*

O^1,O^6,O^{14},O^{16}-*Tetra-Me, 18-O-(2-aminobenzoyl):* ***Pacifinine****.* N-*Desethylpacifiline.* N-*Desethyl-19-oxoanthranoyllycoctonine*
[142768-35-2]
$C_{30}H_{40}N_2O_9$ 572.654
Alkaloid from seeds of *Delphinium elatum* cv. "Pacific Giant" (Ranunculaceae). Amorph. solid. $[\alpha]_D^{20}$ +48.5 (c, 0.8 in $CHCl_3$).

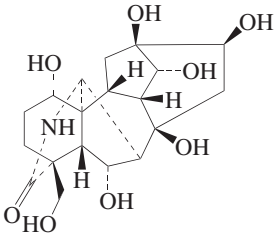
O^1,O^6,O^{14},O^{16}-*Tetra-Me,* N-*Et, 18-O-(2-aminobenzoyl):* ***Pacifiline****. 19-Oxoanthranoyllycoctonine*
[138964-90-6]
$C_{32}H_{44}N_2O_9$ 600.708
Alkaloid from the stems and leaves of *Delphinium ajacis* and seeds of *Delphinium elatum* (Ranunculaceae). Amorph. $[\alpha]_D$ +58.1 (c, 0.08 in $CHCl_3$).

$O^1,O^6,O^{14},O^{16},O^{18}$-*Penta-Me,* N-*Et:* ***19-Oxodelphatine***
[25488-63-5]
$C_{26}H_{41}NO_8$ 495.612
Alkaloid from the stems and leaves of *Delphinium ajacis* (Ranunculaceae). $[\alpha]_D$ +32.8 (c, 0.31 in $CHCl_3$).

1-Deoxy, 1,2-didehydro, O^8,O^{14},O^{16}-*tri-Me,* N-*Et, 1α,2α-epoxide:* ***Budelphine***
$C_{24}H_{35}NO_8$ 465.542
Alkaloid from *Delphinium buschianum*. $[\alpha]_D^{20}$ +6.9 (c, 0.18 in $CHCl_3$). Unusual Δ^1-unsaturated equivalent functionality.

Liang, X. *et al., J. Nat. Prod.*, 1991, **54**, 1283-1287 (*19-Oxodelphatine, 19-Oxoanthranoyllycoctonine*)
Wada, K. *et al., Phytochemistry*, 1992, **31**, 2135-2138 (*Pacifiline, Pacifinine*)
Bitis, L. *et al., Helv. Chim. Acta*, 2007, **90**, 2217-2221 (*Budelphine*)

1,6,8,13,14,16,18-Heptahydroxy-4-methylaconitan-19-one H-124



$C_{19}H_{27}NO_8$ 397.424

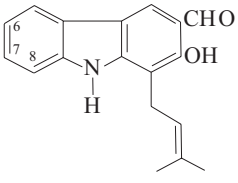
(1α,5β,6α,14α,16β)-*form*

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14-O-(4-methoxybenzoyl), 8-Ac:* ***Habaenine A***
[248263-85-6]
$C_{35}H_{47}NO_{11}$ 657.756
Alkaloid from *Aconitum habaense.* Amorph. solid. $[\alpha]_D^{15}$ -44.4 (c, 0.04 in $CHCl_3$). λ_{max} 259 (log ϵ 4.47); 313 (log ϵ 3.71); 397 (log ϵ 2.97) ($CHCl_3$).

Yang, S. *et al., Helv. Chim. Acta*, 2007, **90**, 1160-1164 (*isol, pmr, cmr*)

Heptaphylline H-125

*2-Hydroxy-1-(3-methyl-2-butenyl)-9*H*-carbazole-3-carboxaldehyde, 9CI. 3-Formyl-2-hydroxy-1-prenylcarbazole*
[17750-35-5]



$C_{18}H_{17}NO_2$ 279.338
Alkaloid from the roots of *Clausena heptaphylla* and *Clausena pentaphylla*, the root bark of *Clausena excavata*, and the leaves of *Clausena lansium* (Rutaceae). Shows antiplasmodial activity. Bright yellow needles (Et_2O or $CHCl_3$/hexane). Mp 171-172°. λ_{max} 234 (log ϵ 4.42); 278 (log ϵ 4.53); 298 (log ϵ 4.58); 346 (log ϵ 4.09) (no solvent reported).

2,4-Dinitrophenylhydrazone:
Dark red cryst. (DMF). Mp 315-316°.

Me ether: 3-Formyl-2-methoxy-1-prenylcarbazole. **O-*Methylheptaphylline***
[39027-80-0]
Alkaloid from *Clausena suffruticosa*. Mp 139-140°.

*7-Hydroxy: 2,7-Dihydroxy-1-(3-methyl-2-butenyl)-9*H*-carbazole-3-carboxaldehyde, 9CI. 3-Formyl-2,7-dihydroxy-1-prenylcarbazole.* ***7-Hydroxyheptaphylline***
[170663-15-7]
$C_{18}H_{17}NO_3$ 295.337
Alkaloid from root bark of *Clausena lansium* (wampee) (Rutaceae). Yellow needles (CH_2Cl_2/MeOH). Mp 194-196°. λ_{max} 238 (log ϵ 4.43); 302 (log ϵ 4.71); 340 (log ϵ 4.05) (MeOH).

*8-Hydroxy: 2,8-Dihydroxy-1-(3-methyl-2-butenyl)-9*H*-carbazole-3-carboxaldehyde, 9CI. 3-Formyl-2,8-dihydroxy-1-prenylcarbazole.* ***Heptazoline***
[32042-35-6]
$C_{18}H_{17}NO_3$ 295.337
Alkaloid from *Clausena heptaphylla* and *Micromelum minutum*. Mp 212-214°. λ_{max} 240 (log ϵ 4.58); 275 (log ϵ 4.62); 298 (log ϵ 4.4) (EtOH).

2′,3′,8-Trihydroxy, 2′,3′-dihydro: ***Clauszoline D***
[185508-04-7]
$C_{18}H_{19}NO_5$ 329.352
Alkaloid from stem bark of *Clausena excavata*. Yellow oil. $[\alpha]_D^{25}$ 0 (c, 0.1 in $CHCl_3$). λ_{max} 206 ; 217 ; 242 ; 276 ; 292 ; 301 (sh) ; 356 (MeOH).

*2′ξ,3′,7-Trihydroxy, 2′,3′-dihydro: 1-(2,3-Dihydroxy-3-methylbutyl)-2,7-dihydroxy-9*H*-carbazole-3-carboxaldehyde.* ***Clausine U***
$C_{18}H_{19}NO_5$ 329.352
Alkaloid from *Clausena excavata*. Yellowish powder (Me_2CO). Mp 255-257°. $[\alpha]_D$ -72.8 (c, 0.01 in MeOH). λ_{max} 201 ; 221 ; 240 (sh) ; 245 ; 254 ; 288 (sh) ; 303 ; 324 (sh) ; 339 (MeOH).

*6-Methoxy: 2-Hydroxy-6-methoxy-1-(3-methyl-2-butenyl)-9*H*-carbazole-3-carboxaldehyde, 9CI. 3-Formyl-2-hydroxy-6-methoxy-1-prenylcarbazole.* ***6-Methoxyheptaphylline***
[41679-22-5]
$C_{19}H_{19}NO_3$ 309.364
Alkaloid from the roots of *Clausena indica* (Rutaceae). Bright yellow cryst. Mp 173-174°. λ_{max} 207 (log ϵ 4.5); 235 (log ϵ 4.35); 252 (sh) (log ϵ 4.2); 272 (sh) (log ϵ 4.32); 283 (log ϵ 4.47); 311 (log ϵ 4.57); 340 (log ϵ 3.95) (EtOH).

*7-Methoxy: 2-Hydroxy-7-methoxy-1-(3-methyl-2-butenyl)-9*H*-carbazole-3-carboxaldehyde, 9CI. 3-Formyl-2-hydroxy-7-methoxy-1-prenylcarbazole.* ***7-Methoxyheptaphylline***
[119736-84-4]

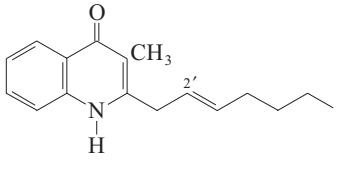
$C_{19}H_{19}NO_3$ 309.364
Alkaloid from the root bark of *Clausena harmandiana* (Rutaceae). Cryst. (Me_2CO). Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. Mp 164-166°. λ_{max} 222 (ϵ 18800); 238 (ϵ 20000); 244 (ϵ 20000); 254 (ϵ 19300); 302 (ϵ 34700); 340 (ϵ 7400) (MeOH) (Berdy).

*Δ$^{3'}$-Isomer, 2′ξ-hydroxy: 2-Hydroxy-1-(2-hydroxy-3-methyl-3-butenyl)-9*H*-carbazole-3-carboxaldehyde.* ***Clausine S***
[250259-38-2]
$C_{18}H_{17}NO_3$ 295.337
Alkaloid from *Clausena excavata*. Yellowish oil. $[\alpha]_D$ +159.1 (c, 0.002 in MeOH). λ_{max} 203 ; 236 ; 249 ; 279 ; 291 (sh) ; 299 ; 329 (sh) ; 343 (MeOH).

Chakraborty, D.P. *et al., J. Indian Chem. Soc.*, 1970, **47**, 1197-1198 (*Heptazoline, uv, ir, pmr, struct*)
Joshi, B.S. *et al., Indian J. Chem.*, 1972, **10**, 1123-1124 (*6-Methoxyheptaphylline, isol, uv, ir, pmr, ms, struct*)
Joshi, B.S. *et al., Phytochemistry*, 1972, **11**, 2065-2071 (*isol, uv, ir, pmr, struct, synth*)
Anwer, F. *et al., Experientia*, 1977, **33**, 412-413 (*isol*)
Sharma, R.B. *et al., Chem. Ind. (London)*, 1980, 158; 1982, 268 (*synth, 6-Methoxyheptaphylline, Heptazoline*)
Prakash, D. *et al., Indian J. Chem., Sect. B*, 1980, **19**, 1075-1076 (*isol*)
Wu, T.-S. *et al., J. Nat. Prod.*, 1982, **45**, 718-720 (*isol*)
Chaichantipyuth, C. *et al., J. Nat. Prod.*, 1988, **51**, 1285-1288 (*7-Methoxyheptaphylline*)
Kumar, V. *et al., Phytochemistry*, 1995, **40**, 1563-1565 (*7-Hydroxyheptaphylline*)
Ito, C. *et al., Chem. Pharm. Bull.*, 1996, **44**, 2231-2235 (*Clauszoline D*)
Wu, T.-S. *et al., Phytochemistry*, 1999, **52**, 523-527 (*Clausine S, Clausine U*)
Yenjai, C. *et al., Planta Med.*, 2000, **66**, 277-281 (*activity*)
Fun, H.-K. *et al., Acta Cryst. E*, 2007, **63**, o3964-o3965 (*Heptazoline, cryst struct*)
Begum, R. *et al., Nat. Prod. Commun.*, 2008, **3**, 815-818 (O-*Methylheptaphylline*)

2-(2-Heptenyl)-3-methyl-4(1*H*)-quinolinone H-126

2-(2-Heptenyl)-3-methyl-4-quinolinol. 2-(2-Heptenyl)-4-hydroxy-3-methylquinoline. PSC-B. HMQ
[15436-59-6]



$C_{17}H_{21}NO$ 255.359
λ_{max} 213 ; 244 ; 322 ; 335 (MeOH) (Berdy).

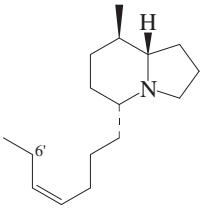
(*E*)-*form* [178956-00-8]
Alkaloid from *Pseudomonas cepacia* PC II. Shows antifungal and red pepper growth promoting activity. Cryst. (MeOH aq.). Mp 225-227°.

2′,3′-Dihydro: ***2-Heptyl-3-methyl-4(1H)-quinolinone****. 2-Heptyl-3-methyl-4-quinolinol. 2-Heptyl-4-hydroxy-3-methylquinoline. PSC-C*
[172484-87-6]
[15436-60-9]
$C_{17}H_{23}NO$ 257.375
From *Pseudomonas cepacia* PC II. Cryst. (MeOH aq.). Mp 227-228°. λ_{max} 215 ; 239 ; 322 ; 335 (MeOH) (Berdy).

Hashimoto, M. *et al., Chem. Pharm. Bull.*, 1967, **15**, 718 (*occur, uv, pmr, struct*)
Moon, S.-S. *et al., Phytochemistry*, 1996, **42**, 365 (*isol, uv, ir, pmr, cmr, ms*)

5-(4-Heptenyl)octahydro-8-methylindolizine, 9CI H-127

5-(4-Heptenyl)-8-methylindolizidine. Dendrobates *Alkaloid 235B.* ***Indolizidine 235B***



(+)-*form*

$C_{16}H_{29}N$ 235.412

(+)-*form*
Alkaloid from skin extracts of the Panamanian poison-frog *Dendrobates pumilio*. Trace constit. in *Dendrobates histrionicus* (Dendrobatidae). $[\alpha]_D$ +11.3 (c, 1.0 in MeOH).

6′,7′-Didehydro: 5-(4,6-Heptadienyl)octahydro-8-methylindolizine, 9CI. Dendrobates *Alkaloid 233D.* ***Indolizidine 233D***
[141643-30-3]
Alkaloid from the skin of the Panamanian frog *Dendrobates pumilio*. $[\alpha]_D$ -3.4 (c, 0.16 in MeOH) (as hydrochloride).

6′,7′-Didehydro, 4′,5′-dihydro: 5-(6-Heptenyl)-8-methylindolizidine. Dendrobates *Alkaloid 235B′.* ***Indolizidine 235B′***
$C_{16}H_{29}N$ 235.412
Alkaloid from *Dendrobates pumilio*.

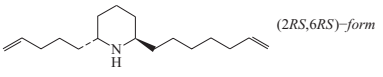
6′ξ-Hydroxy: 7-(Octahydro-8-methyl-5-indolizinyl)-3-hepten-2-ol, 9CI. Dendrobates *Alkaloid 251B.* ***Indolizidine 251B***
[141643-31-4]
$C_{16}H_{29}NO$ 251.411
Alkaloid from the skin of the Panamanian frog *Dendrobates pumilio*. $[\alpha]_D$ +25.9 (c, 0.8 in $CHCl_3$).

(-)-*form*

4′,5′-Dihydro: 5-Heptyl-8-methylindolizidine. Dendrobates *Alkaloid 237D.* ***Indolizidine 237D***
$C_{16}H_{31}N$ 237.428
Alkaloid from *Dendrobates pumilio* and *Dendrobates speciosus*.

Daly, J.W. *et al., Toxicon*, 1978, **16**, 163-180 (*isol, ms, rev*)
Daly, J.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 205 (*ms, rev*)
Tokuyama, T. *et al., Tetrahedron*, 1987, **43**, 643; 1991, **47**, 5401 (*isol, pmr, cmr, ms, struct, derivs*)
Collins, I. *et al., J.C.S. Perkin 1*, 1991, 175-182 (*synth*)
Comins, D.L. *et al., J.O.C.*, 1997, **62**, 8182-8187 (*synth*)
Toyooka, N. *et al., Chem. Pharm. Bull.*, 2005, **53**, 555-560 (*237D, synth, abs config*)
Daly, J.W. *et al., J. Nat. Prod.*, 2005, **68**, 1556-1575 (*rev*)

2-(6-Heptenyl)-6-(4-pentenyl)piperidine H-128



(*2RS,6RS*)-*form*

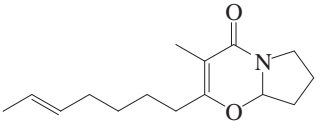
$C_{17}H_{31}N$ 249.439

(2*RS*,6*RS*)-*form*
(±)-trans-*form*
[127629-08-7]
Alkaloid from the venom of the ant *Monomorium delagoense*. Possesses insecticidal and repellent props.

(2*RS*,6*SR*)-*form*
(±)-cis-*form*
[127629-06-5]
Alkaloid from *Monomorium delagoense*. Possesses insecticidal and repellent props.

Jones, T.H. *et al., J. Nat. Prod.*, 1990, **53**, 429 (*isol, struct, synth*)

2-(5-Heptenyl)-6,7,8,8*a*-tetrahydro-3-methyl-4*H*-pyrrolo[2,1-*b*][1,3]oxazin-4-one H-129



$C_{15}H_{23}NO_2$ 249.352
Isol. from *Penicillium brevicompactum*. Insecticidal agent.

Cantin, A. *et al., Eur. J. Org. Chem.*, 1999, 221-226 (*isol, ir, pmr, cmr, ms*)
Castillo, M.-A. *et al., J. Agric. Food Chem.*, 1999, **47**, 2120-2124 (*props*)

1-Heptylamine, 8CI H-130

1-Heptanamine, 9CI. 1-Aminoheptane
[111-68-2]
$H_3C(CH_2)_5CH_2NH_2$
$C_7H_{17}N$ 115.218
Present in teak (*Tectona grandis*) wood. Fp -23. Bp 155.25°. n_D^{17} 1.4268. pK_a 10.66 (25°).

► Flammable, fl. p. 35°. MK0600000

Hydrochloride: [142-93-8]
Cryst. ($EtOH/Et_2O$). Mp 246°.

Picrate:
Yellow needles. Mp 120-122°.

N-*Ac:* [14202-55-2]
$C_9H_{19}NO$ 157.255
Bp_1 123° Bp_{13} 155°.

N-*Me:* [36343-05-2]
$C_8H_{19}N$ 129.245

Bp 168°.

N-*Me, picrate:* Mp 97°.

N,N-*Di-Me:* [5277-11-2]
$C_9H_{21}N$ 143.272
Bp 172°.

N,N-*Di-Me,* N-*oxide:* [15290-93-4]
$C_9H_{21}NO$ 159.271
Cryst. Mp 130-134°.

N-*Et:* [66793-76-8]
$C_9H_{21}N$ 143.272
Bp 181° Bp_{16} 81-83°.

N,N-*Di-Et:* [26981-81-7]
$C_{11}H_{25}N$ 171.325
Bp 198° $Bp_{10.5}$ 82-83°.

Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 451C (*nmr*)
Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 281D (*ir*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 365C (*ir*)
Gohlke, R.S. *et al., Anal. Chem.*, 1962, **34**, 1281 (*ms*)
Hullot, P. *et al., Bull. Soc. Chim. Fr.*, 1973, 2989 (*synth*)
Eggert, H. *et al., J.A.C.S.*, 1973, **95**, 3710 (*cmr*)
Kliger, G.A. *et al., Neftekhimiya*, 1977, **17**, 602 (*synth*)
Sax, N.I. *et al., Dangerous Properties of Industrial Materials, 5th edn., Van Nostrand Reinhold*, 1979, 715

2-Heptyl-1-cyclopropanepropanoic acid H-131

4,5-Methylenedodecanoic acid



(1*R*,2*R*)-*form*

$C_{13}H_{24}O_2$ 212.331

(1*R*,2*R*)-*form*

2-Phenylethylamide: ***Grenadamide***
[205521-84-2]
$C_{21}H_{33}NO$ 315.498
Isol. from *Lyngbya majuscula*. Toxic to brine shrimp, cannabinoid receptor antagonist. $[\alpha]_D$ -11 (c, 0.1 in $CHCl_3$). λ_{max} 206 (ε 2600) (MeOH).

(1*R*,2*R*)-*form*

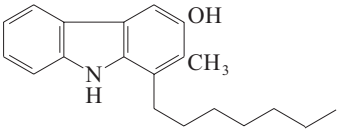
(5-Acetoxy-4-bromo-1,3-pentadienyl) ester (Z,Z-): ***Grenadadiene***
[205521-82-0]
$C_{20}H_{31}BrO_4$ 415.367
Isol. from *Lyngbya majuscula*. Cytotoxic agent. $[\alpha]_D$ -8 (c, 0.1 in $CHCl_3$). λ_{max} 252 (ε 12200) (MeOH).

*5-Acetoxy-1,3-pentadienyl ester (1Z,3*E*-):* ***Debromogrenadadiene***
[205521-83-1]
$C_{20}H_{32}O_4$ 336.47
Isol. from *Lyngbya majuscula*. Toxic to brine shrimp. $[\alpha]_D$ +5 (c, 0.1 in $CHCl_3$). λ_{max} 232 (ε 8000) (hexane).

Sitachitta, N. *et al., J. Nat. Prod.*, 1998, **61**, 681-684 (*isol, uv, ir, pmr, cmr, ms*)
Al Dulayymi, J.R. *et al., Tetrahedron*, 2004, **60**, 341-345 (*Grenadamide, synth, abs config*)
Green, R. *et al., Tet. Lett.*, 2005, **46**, 7931-7934 (*Grenadamide, synth*)
Avery, T.D. *et al., Org. Biomol. Chem.*, 2006, **4**, 323-330 (*Grenadamide, synth*)
Salim, H. *et al., Tet. Lett.*, 2007, **48**, 2059-2062 (*Grenadamide, synth*)

1-Heptyl-3-hydroxy-2-methyl-9*H*-carbazole H-132

*1-Heptyl-2-methyl-9*H*-carbazol-3-ol, 9CI.* ***Carazostatin***
[126168-32-9]



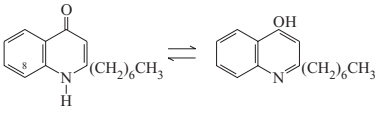
$C_{20}H_{25}NO$ 295.424
Prod. by *Streptomyces chromofuscus*. Lipid peroxidation inhibitor, free radical scavenger. Pale yellow powder. Sol. Me_2CO, $CHCl_3$, EtOAc; poorly sol. H_2O. Mp 149-152° dec. λ_{max} 218 (ε 153000); 235 (ε 141000); 254 (ε 76000); 266 (ε 60000); 303 (ε 83000); 342 (ε 20000) (MeOH) (Derep). λ_{max} 218 (ε 153000); 235 (ε 141000); 254 (ε 76000) (MeOH) (Berdy).

▶ FE6366000

Kato, S. *et al., J. Antibiot.*, 1989, **42**, 1879 (*isol, struct*)
Jackson, P.M. *et al., J.C.S. Perkin 1*, 1991, 2941 (*synth*)
Shin, K. *et al., Chem. Lett.*, 1995, 289 (*synth*)
Choshi, T. *et al., J.O.C.*, 1997, **62**, 2535 (*synth*)
Nonaka, Y. *et al., Heterocycles*, 2000, **53**, 1681-1684 (*synth*)
Knölker, H.-J. *et al., Tetrahedron*, 2002, **58**, 8937-8945 (*synth, uv, ir, pmr, cmr*)

2-Heptyl-4-hydroxyquinoline H-133

*2-Heptyl-4(1*H*)-quinolinone, 9CI. 2-Heptyl-4-quinolinol.* ***Pyo Ib****. Pseudane VII. MY 12-62a. Antibiotic MY 12-62a*
[40522-46-1]



$C_{16}H_{21}NO$ 243.348
Alkaloid from a yellow marine pseudomonad. The terrestrial bacterium *Pseudomonas aeruginosa* also yields this compd. Shows antibiotic props. against a number of bacteria. 5-Lipoxygenase inhibitor and Streptomycin antagonist. Cryst. (Me_2CO aq.). Mp 146-147°. $Bp_{0.2}$ 118-122°.

N-*Oxide: 2-Heptyl-4-hydroxyquinoline* N-*oxide.* ***Pyo II****. KF 8940. Antibiotic KF 8940*
[341-88-8]
[1401-06-5]
$C_{16}H_{21}NO_2$ 259.347
Metab. of *Pseudomonas pyocyanea, Pseudomonas aeruginosa*, *Pseudomonas methanica* and *Pseudomonas* sp. KUH-001. Potent 5-lipoxygenase inhibitor. Active against *Staphylococcus aureus*. Synergistic with Vancomycin and Erythromycin. Cryst. (EtOH). Mp 158-160°.

▶ LD_{50} (mus, ipr) 40 mg/kg. VC5890000

*1′,2′-Didehydro(*E*-): 2-(1-Heptenyl)-4(1*H*)-quinolinone, 9CI. 2-(1-Heptenyl)-4-hydroxyquinoline.* ***Δ[1]-Pseudene VII***
[60783-02-0]
$C_{16}H_{19}NO$ 241.332
Prod. by *Pseudomonas aeruginosa*. Antifungal agent.

*1′,2′-Didehydro(*Z*-):*
$C_{16}H_{19}NO$ 241.332
Metab. of *Pseudomonas aeruginosa*. No CAS no. found to 2007.

*4′,5′-Didehydro: 2-(4-Heptenyl)-4(1*H*)-quinolinone.* ***Acutine***
[36150-05-7]
$C_{16}H_{19}NO$ 241.332
Alkaloid from the above-ground parts of *Haplophyllum acutifolium* (Rutaceae). Prisms (Me_2CO). Mp 122-123°. Becomes pink on standing in the light.

NH-form

N-*Me: 2-Heptyl-1-methyl-4(1*H*)-quinolinone.* ***Schinifoline***†
[80554-58-1]
$C_{17}H_{23}NO$ 257.375
Alkaloid from peel of *Zanthoxylum schinifolium* (Rutaceae). Cryst. Mp 81-82°.

8-Methoxy, N-*Me:* ***2-Heptyl-8-methoxy-1-methyl-4(1*H*)-quinolinone***
$C_{18}H_{25}NO_2$ 287.401
Alkaloid from trunk bark of *Esenbeckia almawillia* (Rutaceae). Oil.

OH-form [159979-57-4]

Me ether: 2-Heptyl-4-methoxyquinoline, 9CI
[80554-59-2]
$C_{17}H_{23}NO$ 257.375
Alkaloid from *Zanthoxylum avicennae*. Mp 35-38°.

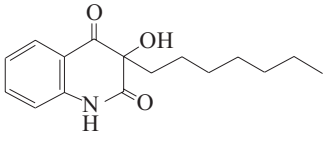
[2503-80-2]

Hays, E.E. *et al., J. Biol. Chem.*, 1945, **159**, 725-750 (*isol*)
Wells, I.C. *et al., J. Biol. Chem.*, 1952, **196**, 331-340; 341-345 (*synth, uv, struct*)
Cornforth, J.W. *et al., Biochem. J.*, 1956, **63**, 124-130; 130-137 (*isol, props*)
Ames, D.E. *et al., J.C.S.*, 1956, 3079-3083 (*synth*)
Luckner, M. *et al., Tet. Lett.*, 1965, **6**, 741-744 (*biosynth*)
Ritter, C. *et al., Eur. J. Biochem.*, 1971, **18**, 391-400 (*biosynth*)
Razzakova, D.M. *et al., Khim. Prir. Soedin.*, 1973, **9**, 206-210; *Chem. Nat. Compd. (Engl. Transl.)*, 1973, **9**, 199-202 (*Acutine*)
Kozlovskii, A.G. *et al., Izv. Akad. Nauk SSSR, Ser. Khim.*, 1976, 1146-1150 (*Δ[1]-Pseudene VII*)
Wratten, S.J. *et al., Antimicrob. Agents Chemother.*, 1977, **11**, 411-414 (*isol*)
Budzikiewicz, H. *et al., Monatsh. Chem.*, 1979, **110**, 947-953 (*isol, uv*)
Somanathan, R. *et al., J. Het. Chem.*, 1981, **18**, 1077-1079 (*synth, uv, ir, pmr*)
Kitamura, S. *et al., J. Antibiot.*, 1986, **39**, 1160-1166 (*KF8940, isol, struct, props*)
Liu, S.L. *et al., Yaoxue Xuebao*, 1991, **26**, 836-840; *CA*, **117**, 86638h (*Schinifoline*)
Wu, W. *et al., Zhongcaoyao*, 1992, **23**, 115-116; *CA*, **117**, 76305h (*isol, Me ether*)

Guilhon, G.M.S.P. *et al., Phytochemistry*, 1994, **37**, 1193-1195 (*2-Heptyl-8-methoxy-1-methyl-4(1H)-quinolinone*)
Debitus, C. *et al., J. Mar. Biotechnol.*, 1998, **6**, 136-141 (*isol*)
Hwang, S.-Y. *et al., J. Microb. Biotechnol.*, 1998, **8**, 111-118 (*N-oxide, isol, activity*)
Lepine, F. *et al., J. Am. Soc. Mass Spectrom.*, 2004, **15**, 862-869 (*occur*)
Deziel, E. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 2004, **101**, 1339-1344 (*biosynth*)
Bredenbruch, F. *et al., J. Bacteriol.*, 2005, **187**, 3630-3635 (*biosynth*)

3-Heptyl-3-hydroxy-2,4(1*H*,3*H*)-quinolinedione H-134

MY 12-62c. Antibiotic MY 12-62c
[69808-30-6]

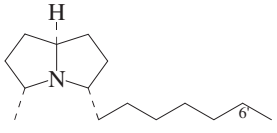


$C_{16}H_{21}NO_3$ 275.347
Prod. by *Pseudomonas methanica* and *Pseudomonas aeruginosa*. Also prod. by a bacterium isol. from the sponge *Suberea creba*. 5-Lipoxygenase inhibitor. Cryst. (EtOAc). Mp 142°.

Neuenhaus, N. *et al., Z. Naturforsch., B*, 1979, **34**, 313 (*isol, struct, synth*)
Kitamura, S. *et al., J. Antibiot.*, 1986, **39**, 1160 (*isol, struct, props*)
Debitus, C. *et al., J. Mar. Biotechnol.*, 1998, **6**, 136-141 (*isol*)

3-Heptyl-5-methylpyrrolizidine H-135

***Xenovenine**. Pyrrolizidine 223H′*



$C_{15}H_{29}N$ 223.401

(3*S*,5*R*,8*S*)-*form* [135683-51-1]
Alkaloid from the venom of the cryptic thief ant *Solenopsis xenoveneum*. $[\alpha]_D^{24}$ +11.7 (c, 0.7 in $CHCl_3$).

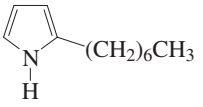
6′ξ-Hydroxy: 3-(6-Hydroxyheptyl)-5-methylpyrrolizidine. ***Pyrrolizidine 239K′***
[151805-19-5]
$C_{15}H_{29}NO$ 239.4
Alkaloid from the frog *Mantella* sp.

[74986-28-0 , 105616-96-4 , 88931-18-4 , 161106-53-2]

Jones, T.H. *et al., J.O.C.*, 1980, **45**, 4778-4780 (*isol, ir, pmr, cmr, ms, struct, synth*)
Provot, O. *et al., J.O.C.*, 1991, **57**, 2163-2166 (*synth, pmr, abs config*)
Garraffo, H.M. *et al., J. Nat. Prod.*, 1993, **56**, 1016-1038 (*isol*)
Dhimane, H. *et al., Eur. J. Org. Chem.*, 1998, 1955-1963 (*synth, pmr, cmr*)
Arredondo, V.M. *et al., J.A.C.S.*, 1999, **121**, 3633-3639 (*synth*)
Takahata, H. *et al., Bioorg. Med. Chem. Lett.*, 2000, **10**, 1293-1295 (*synth*)

2-Heptylpyrrole, 9CI H-136

[878-12-6]



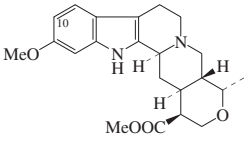
$C_{11}H_{19}N$ 165.278
Bp_{40} 160°.

N-*Sulfo: 2-Heptylpyrrole sulfamate*
[587875-52-3]
$C_{11}H_{19}NO_3S$ 245.342
Alkaloid from the marine annelid *Cirriformia tentaculata*. Glass (as Na salt).

Garrido, D.O.A. *et al., J.O.C.*, 1984, **49**, 2619-2622 (*synth*)
Barsby, T. *et al., J. Nat. Prod.*, 1003, **66**, 1110-1112 (*sulfamate*)

Herbaine H-137

Vincaherbine
[5308-82-7]



Absolute Configuration

$C_{22}H_{28}N_2O_4$ 384.474
Alkaloid from *Vinca herbacea* (Apocynaceae). Mp 126-128° dec. $[\alpha]_D$ -217. λ_{max} 228 (log ϵ 4.63); 274 (log ϵ 3.85); 297 (log ϵ 3.87) (EtOH).

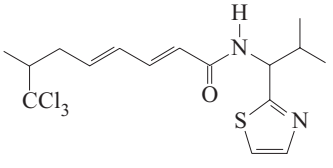
10-Methoxy: ***Herbaceine**. Vincaherbinine*
[5308-79-2]
$C_{23}H_{30}N_2O_5$ 414.5
Alkaloid from *Vinca herbacea* (Apocynaceae). Cryst. (EtOH). Mp 144° dec. $[\alpha]_D^{22}$ -219 (c, 0.544 in Py). λ_{max} 226 (log ϵ 4.53); 280 (sh) (log ϵ 3.83); 300 (log ϵ 4.04) (EtOH).

10-Methoxy; methiodide:
Orange cryst. (Me_2CO/MeOH). Mp 219-223°.

Ognyanov, I. *et al., Chem. Ber.*, 1966, **99**, 1008-1014 (*Herbaine, Herbaceine, isol, uv, ir, pmr, ms, struct*)
Ognyanov, I. *et al., Chem. Comm.*, 1967, 579-581 (*stereochem*)
Ognyanov, I. *et al., CA*, 1969, **71**, 760p (*isol, struct*)

Herbamide A H-138

[161503-26-0]

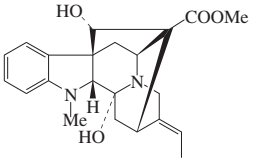


$C_{16}H_{21}Cl_3N_2OS$ 395.779
Isol. from the marine sponge *Dysidea herbacea*. Oil. $[\alpha]_D$ +13 (c, 0.013 in $CHCl_3$).

Clark, W.D. *et al., Tet. Lett.*, 1995, **36**, 1185 (*isol, uv, ir, pmr, cmr, struct*)

Herbamine H-139

Methyl 19,20-didehydro-3,17-dihydroxyyajmalan-16-carboxylate, 9CI. 2-Epi-3-hydroxyvincamajine
[38485-13-1]



Absolute Configuration

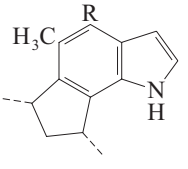
$C_{22}H_{26}N_2O_4$ 382.458
Alkaloid from the aerial parts of *Vinca libanotica* (Apocynaceae). Mp 153-155°. $[\alpha]_D^{27}$ -15 (c, 0.66 in $CHCl_3$).

N-*De-Me:* ***Herbadine**. 2-Epi-3-hydroxyquebrachidine*
[38485-12-0]
$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from *Vinca herbacea* and *Vinca libanotica* (Apocynaceae). Mp 202-205° dec.

Vachnadze, V.Yu. *et al., Khim. Prir. Soedin.*, 1972, **8**, 341; *Chem. Nat. Compd. (Engl. Transl.)*, 1972, **8**, 334 (*isol, uv, ir, pmr, ms*)
Aynilian, G.H. *et al., J. Nat. Prod.*, 1974, **37**, 299 (*isol, ir, uv, ms*)
Aynilian, G.H. *et al., J. Pharm. Sci.*, 1975, **64**, 341 (*pmr, struct*)

Herbindole A H-140

1,6,7,8-Tetrahydro-4,5,6,8-tetramethylcyclopent[g]indole, 9CI
[128397-78-4]



R = CH_3

$C_{15}H_{19}N$ 213.322
Alkaloid from the sponge *Axinella* sp. Cytotoxic and fish antifeedant. Needles (MeOH). Mp 120-122°. λ_{max} 222 (ϵ 46800); 272 (ϵ 12300) (base in MeOH) (Derep). λ_{max} 210 (ϵ 55000); 226 (sh) (ϵ 47900); 272 (ϵ 8510) (acidic MeOH) (Derep).

Herb, R. *et al., Tetrahedron*, 1990, **46**, 3089 (*isol, pmr, cmr, struct*)
Muratake, H. *et al., Chem. Pharm. Bull.*, 1994, **42**, 854 (*synth, abs config*)
Jackson, S.K. *et al., J.O.C.*, 2007, **72**, 1405-1411 (*synth*)

Herbindole B H-141

4-Ethyl-1,6,7,8-tetrahydro-5,6,8-trimethylcyclopent[g]indole, 9CI
[128397-79-5]
As Herbindole A, H-140 with
R = $-CH_2CH_3$

$C_{16}H_{21}N$ 227.349
Alkaloid from the sponge *Axinella* sp. Cytotoxic and fish antifeedant. Needles (MeOH). Mp 118-120°. λ_{max} 222 (ϵ 46800); 272 (ϵ 12300) (base in MeOH) (Derep). λ_{max} 210 (ϵ 55000); 226 (sh) (ϵ 47900); 272 (ϵ 8510) (acidic MeOH) (Derep). λ_{max} 222 (ϵ 46773); 272 (ϵ 12300) (MeOH) (Berdy).

Herb, R. *et al., Tetrahedron*, 1990, **46**, 3089 (*isol, pmr, cmr, struct*)
Muratake, H. *et al., Chem. Pharm. Bull.*, 1994, **42**, 854 (*synth, abs config*)
Jackson, S.K. *et al., J.O.C.*, 2007, **72**, 1405-1411 (*synth*)

Herbindole C H-142

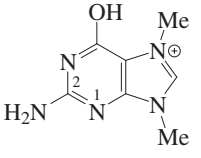
4-(1-Butenyl)-1,6,7,8-tetrahydro-5,6,8-trimethylcyclopent[g]indole, 9CI
[128397-80-8]
As Herbindole A, H-140 with
R = $-CH{=}CHCH_2CH_3$(*E*-)

$C_{18}H_{23}N$ 253.386
Alkaloid from the sponge *Axinella* sp. Cytotoxic and fish antifeedant. Oil. Regioisomer of Trikentrin B, T-595. λ_{max} 212 (ϵ 50100); 226 (ϵ 42700); 294 (ϵ 10000) (MeOH) (Derep).

Herb, R. *et al., Tetrahedron*, 1990, **46**, 3089 (*isol, pmr, cmr, struct*)
Muratake, H. *et al., Chem. Pharm. Bull.*, 1994, **42**, 854 (*synth, abs config*)

Herbipoline H-143

2-Amino-6-hydroxy-7,9-dimethylpurinium, 9CI. 7,9-Dimethylguaninium
[524-35-6]



$C_7H_{10}N_5O^{\oplus}$ 180.189
The +ve charge is delocalised over N-7 and N-9. Isol. as the zwitterionic enolate. Isol. from the giant silicious sponge *Geodia gigas*. Needles (EtOH aq.). Mp 312°.

Picrate: Mp 292-295°.

N^2*-Me:* ***Heteromine E***
[196090-68-3]
$C_8H_{12}N_5O^{\oplus}$ 194.216
Alkaloid from *Heterostemma brownii*. Needles (MeOH) (as chloride). Mp 295° (dec.) (chloride). CAS no. refers to chloride. λ_{max} 236 (log ϵ 3.9); 253 (sh) (log ϵ 3.98); 291 (log ϵ 3.79) (MeOH).

3-Me: ***1-Methylherbipoline***
[97174-15-7]
$C_8H_{12}N_5O^{\oplus}$ 194.216
From the marine sponge *Jaspis* sp. Collagenase inhibitor. Sol. MeOH, Et_2O. Counterion in nat. prod. not characterised. λ_{max} 260 (ϵ 7600); 282 (ϵ 4460) (MeOH) (Berdy).

N^2,N^2*-Di-Me:* ***Heteromine D***
$C_9H_{14}N_5O^{\oplus}$ 208.243
Alkaloid from the aerial parts of *Heterostemma brownii* (Asclepiadaceae). Needles (MeOH) (as chloride). Mp 196-198° (chloride). CAS no. refers to chloride. λ_{max} 240 (log ϵ 4); 258 (sh) (log ϵ 3.85); 300 (log ϵ 3.69) (MeOH).

Me ether: 2-Amino-6-methoxy-7,9-dimethylpurinium(1+). ***Heteromine C***
[176900-99-5]
$C_8H_{12}N_5O^{\oplus}$ 194.216
Alkaloid from aerial parts of *Heterostemma brownii*. Needles (MeOH) (as chloride). Mp 268-270° (chloride). CAS no. refers to chloride.

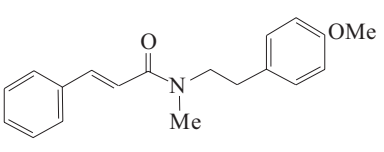
Me ether, N^2*-Me:* ***Heteromine B***
[176900-98-4]
$C_9H_{14}N_5O^{\oplus}$ 208.242
From aerial parts of *Heterostemma brownii*. Shows inhibitory activity on K562 and HL-60 cell lines. Needles (MeOH) (as chloride). Mp 229-231° (chloride). CAS no. refers to chloride.

Me ether, N^2,N^2*-di-Me:* ***Heteromine A***
[176900-97-3]
$C_{10}H_{16}N_5O^{\oplus}$ 222.269
From aerial parts of *Heterostemma brownii*. Shows inhibitory activity against K562 and HL-60 cell lines. Needles (MeOH) (as chloride). Mp 225-227° (chloride). CAS no. refers to chloride.

Ackermann, D. *et al., Hoppe-Seyler's Z. Physiol. Chem.*, 1957, **308**, 270; **309**, 286 (*Herbipoline, isol, ir*)
Bredereck, H. *et al., Chem. Ber.*, 1960, **93**, 1206 (*Herbipoline, synth, struct*)
Pfleiderer, W. *et al., Annalen*, 1961, **647**, 167-173 (*synth*)
Yagi, H. *et al., J. Nat. Prod.*, 1994, **57**, 837-838 (*1-Methylherbipoline*)
Metzger, S. *et al., Chem. Eur. J.*, 1996, **35**, 1228 (*Herbipoline, struct, props*)
Lin, Y.-L. *et al., Heterocycles*, 1996, **43**, 781 (*Heteromines*)
Lin, Y.-L. *et al., J. Nat. Prod.*, 1997, **60**, 982-985 (*Heteromines D-E*)
Peinador, C. *et al., Tetrahedron*, 1997, **53**, 8269 (*Heteromine A, synth*)
Jakobsen, E. *et al., Heterocycles*, 2000, **53**, 935-940 (*Heteromine C, synth*)

Herclavine H-144

N-*[2-(4-Methoxyphenyl)ethyl]*-N-*methyl-3-phenyl-2-propenamide, 9CI.* N-*(*p-*Methoxyphenethyl)*-N-*methylcinnamamide.* N-*(2-*p-*Anisylethyl)*-N-*methylcinnamamide. Cinnamic acid* p-*methoxyphenethylamide*



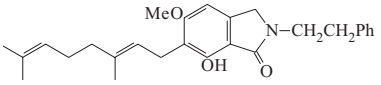
$C_{19}H_{21}NO_2$ 295.38

(E)-form [539-18-4]
Alkaloid from the bark of *Zanthoxylum clava-herculis* (Hercules' club) (Rutaceae). Cryst. (Et_2O or petrol). Mp 76°.

LaForge, F.B. *et al., J.O.C.*, 1944, **9**, 250 (*isol, struct, synth*)
Crombie, L. *et al., J.C.S.*, 1955, 995 (*isol, uv, ir*)
Chatterjee, A. *et al., J.O.C.*, 1959, **24**, 687 (*ir*)

Hericerin H-145

*6-(3,7-Dimethyl-2,6-octadienyl)-2,3-dihydro-7-hydroxy-5-methoxy-2-(2-phenylethyl)-1*H-*isoindol-1-one, 9CI*
[140381-53-9]



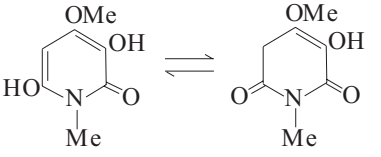
$C_{27}H_{33}NO_3$ 419.563
Isol. from the edible lions mane mushroom (*Hericium erinaceum*). Pollen growth inhibitor. Needles + $\frac{1}{2}H_2O$ (C_6H_6/EtOAc). Mp 138-140°.

5′-Oxo: ***Hericenone B***
[126654-53-3]
$C_{27}H_{31}NO_4$ 433.546
Isol. from the edible lions mane mushroom (*Hericium erinaceum*). Cytotoxic. Cryst. ($CHCl_3$). Mp 136-138°. λ_{max} 214 (ϵ 45000); 235 (sh) (ϵ 16800); 248 (ϵ 17800) (MeOH) (Derep).

Kawagishi, H. *et al., Tet. Lett.*, 1990, **31**, 373 (*Hericenone B*)
Kimura, Y. *et al., Agric. Biol. Chem.*, 1991, **55**, 2673 (*Hericerin*)

Hermidin H-146

*3,6-Dihydroxy-4-methoxy-1-methyl-2(1*H*)-pyridinone. 3-Hydroxy-4-methoxy-1-methyl-2,6(1*H*,3*H*)-pyridinedione*
[92446-30-5]

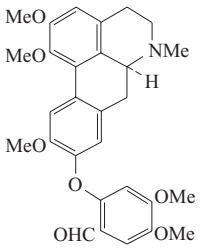


$C_7H_9NO_4$ 171.152
Monooxo-form predominates in aq. soln. Chromogenic substance from aqueous extract of *Mercurialis perennis*. Cryst. $Bp_{0.01}$ 110° subl. Readily oxid. by air to give a radical-anion Cyanohermidin followed by a mixt. of dimers Chrysohermidin.
▶ Powerful sternutator.

Di-Ac:
Needles (CH_2Cl_2). Mp 150-151°.

Forrester, A.R. *et al., Experientia*, 1984, **40**, 688-689 (*epr*)
Swan, G.A. *et al., J.C.S. Perkin 1*, 1985, 1757-1766 (*isol, uv, ir, pmr, struct, synth*)
Ostrozhenkova, E. *et al., Phytochemistry*, 2007, **68**, 2816-2824 (*biosynth*)

Hernandaline H-147



$C_{29}H_{31}NO_7$ 505.566

(*S*)-*form* [10210-99-8]
Alkaloid from *Hernandia ovigera* and *Hernandia nymphaeifolia*(Hernandiaceae). Also obt. by $KMnO_4$ oxidation of Thalicarpine, T-312. Shows anti-platelet aggregation activity. Needles (EtOH). Mp 170-171.5°. $[\alpha]_D^{25}$ +36.5 (c, 0.10 in $CHCl_3$). λ_{max} 216 (log ϵ 4.36); 278 (log ϵ 4.4); 304 (log ϵ 4.2) (EtOH).

2′-Alcohol: Hernandalinol
[62874-90-2]
$C_{29}H_{33}NO_7$ 507.582
Prod. from Thalicarpine, T-312 by *Streptomyces punipalus*. Mp 95-100°. $[\alpha]_D^{26}$ +35 (c, 1.03 in EtOH). λ_{max} 283 (log ϵ 4.24); 303 (log ϵ 4.16) (EtOH).

6a,7-Didehydro: ***Dehydrohernandaline***
[5263-33-2]
$C_{29}H_{29}NO_7$ 503.551
Alkaloid from trunk bark of *Hernandia sonora* (Hernandiaceae). Yellowish needles ($CHCl_3$/MeOH). Mp 151-153°.

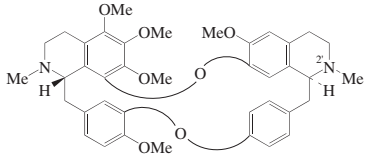
3-Methoxy: ***Thaliadine***
[67510-96-7]
$C_{30}H_{33}NO_8$ 535.593
Alkaloid from the roots of *Thalictrum minus* Race B (Ranunculaceae). Also obt. by brief oxidation of Adiantifoline. Shows hypotensive activity. Yellow rosettes (MeOH). Mp 143.5-144.5°. $[\alpha]_D^{26}$ 0 (c, 0.22 in $CHCl_3$ or MeOH).

3-Methoxy, 6a,7-didehydro:
Synthetic. Yellow needles (Me_2CO/MeOH). Mp 147-148°.

Cava, M.P. *et al., Tet. Lett.*, 1966, 4279-4282 (*isol, uv, ir, pmr, synth, struct*)
Kupchan, S.M. *et al., Chem. Comm.*, 1971, 599-600 (*synth*)
Nabih, T. *et al., J. Med. Chem.*, 1977, **20**, 914-917 (*Hernandalinol*)
Liao, W.T. *et al., J. Nat. Prod.*, 1978, **41**, 271-276 (*Thaliadine*)
Chen, I.S. *et al., Phytochemistry*, 1995, **40**, 983-986 (*Dehydrohernandaline*)
Chen, J.J. *et al., Planta Med.*, 2000, **66**, 251-256 (*activity*)

Hernandezine H-148

Thalicsimine. Thaliximine
[6681-13-6]



Absolute Configuration

$C_{39}H_{44}N_2O_7$ 652.786
Alkaloid from *Thalictrum hernandezii, Thalictrum fendleri, Thalictrum podocarpum, Thalictrum rochebrunianum* and other *Thalictrum* spp. (Ranunculaceae). Inhibitor of conditioned avoidance reactions in exptl. animals. Shows strong antiinflammatory activity. Weak antineoplastic agent. Antiseptic. Cryst. (hexane). Mp 192-193° (122-124°, 158-159°). $[\alpha]_D^{20}$ +250 (c, 0.2 in $CHCl_3$). Log P 7.83 (uncertain value) (calc). Mp dependent on solv. of crystallisation. λ_{max} 282 (ϵ 7250) (MeOH) (Berdy).

N$^{2'}$-Oxide: ***Hernandezine 2′-N-oxide***
[78414-48-9]
$C_{39}H_{44}N_2O_8$ 668.785
Alkaloid from the aerial parts of *Thalictrum sultanabadense* (Ranunculaceae). Mp 179-180°.

O^5-De-Me, N^2-de-Me: ***N-Desmethylthalidezine***
[65230-06-0]
$C_{37}H_{40}N_2O_7$ 624.732
Alkaloid from the roots of *Thalictrum podocarpum* (Ranunculaceae). Shows antimicrobial activity. Needles (MeOH). Mp 173-174°. $[\alpha]_D^{25}$ +280 (c, 0.14 in MeOH).

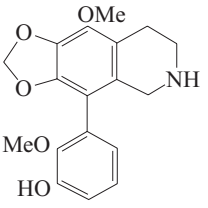
N$^{2'}$-De-Me: ***Thalisamine****. N′-Norhernandezine. 2′-Demethylhernandezine*
[26326-54-5]
$C_{38}H_{42}N_2O_7$ 638.759
Alkaloid from *Thalictrum rochebrunianum* roots and the aerial parts of *Thalictrum simplex* (Ranunculaceae). Noncryst. $[\alpha]_D^{22}$ +143 (c, 0.28 in MeOH). $[\alpha]_D^{15}$ +241 (c, 2.6 in $CHCl_3$). Identity with *N′*-Norhernandezine established in 1984. Mollov *et al* quote a negative opt. rotn. but Thalisamine is dextrorotatory since it was related chemically to (+)-Hernandezine.

O^5-De-Me: ***Thalidezine****. 5-O-Demethylhernandezine*
[18251-36-0]
$C_{38}H_{42}N_2O_7$ 638.759
Alkaloid from *Thalictrum fendleri* (whole plant), the roots of *Thalictrum rugosum, Thalictrum minus* and *Thalictrum podocarpum*, and from the aerial parts of *Thalictrum simplex* and *Thalictrum sultanabadense* (Ranunculaceae). Antiseptic. Shows antimicrobial activity. Cryst. (Me_2CO). Mp 158-159°. $[\alpha]_D^{25}$ +235 ($CHCl_3$). Log P 7.54 (uncertain value) (calc).

1′-Epimer, O^5-de-Me: ***Isothalidezine***
[64924-28-3]
$C_{38}H_{42}N_2O_7$ 638.759
Alkaloid from the roots of *Thalictrum podocarpum* (Ranunculaceae). Mp 136-138°. $[\alpha]_D^{25}$ -70 (c, 0.13 in MeOH).

Padilla, J. *et al., Tetrahedron*, 1962, **18**, 427 (*isol, uv, ir, pmr, struct*)
Battersby, A.R. *et al., J.C.S.*, 1965, 2239 (*ord*)
Mollov, N.M. *et al., Dokl. Bulg. Akad. Nauk*, 1967, **20**, 329; 1970, **23**, 181 (*Thalidezine, Thalisamine, isol*)
Shamma, M. *et al., Tetrahedron*, 1967, **23**, 2887 (*Hernandezine, Thalidezine, isol, uv, ms, pmr, struct*)
Baldas, J. *et al., J.C.S. Perkin 1*, 1972, 592 (*ms*)
Cava, M.P. *et al., Tet. Lett.*, 1974, 4259 (*cd*)
Wu, W.-N. *et al., J. Nat. Prod.*, 1977, **40**, 384-394 (*N-Desmethylthalidezine, Isothalidezine, activity*)
Wu, J. *et al., J.O.C.*, 1980, **45**, 213 (*N′-Norhernandezine*)
Mukhamedova, S. *et al., Khim. Prir. Soedin.*, 1981, **17**, 250; *CA*, **95**, 58078j (*Hernandezine 2′-N-oxide*)
Guinaudeau, H. *et al., Tetrahedron*, 1984, **40**, 1975 (*struct, Thalisamine*)

Hernandine† H-149

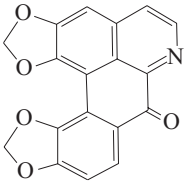


$C_{18}H_{19}NO_5$ 329.352
See also Hernandine in L-244 and Hernandine in P-209. Alkaloid from *Hernandia bivalvis* (Hernandiaceae).

Sam, S.K. *et al., Proc. Malays. Biochem. Soc. Conf.*, 1985, 11th; 49; *CA*, **107**, 214804s (*struct*)

Hernandonine H-150

*8H-Bis[1,3-benzodioxolo[6,5,4-*de*:4′,5′-*g*]quinolin-8-one, 9CI. 1,2:10,11-Bis(-methylenedioxy)oxoaporphine*
[28314-78-5]



$C_{18}H_9NO_5$ 319.273
Alkaloid from the trunk bark and root bark of *Hernandia ovigera*, and the bark of *Hernandia jamaicensis* and *Hernandia papuana* (Hernandiaceae). Yellow needles (C_6H_6/$CHCl_3$ or MeOH/$CHCl_3$). Mp 298-300° dec.

Oxime:
Orange needles (EtOH). Mp 264-265° dec.

3-Methoxy: Oxoduocine
[155944-22-2]
$C_{19}H_{11}NO_6$ 349.299
Trace alkaloid from roots of *Lindera myrrha* (Lauraceae). Red cryst. (MeOH). Mp 265°.

Ito, K. *et al., Tet. Lett.*, 1970, 3023 (*uv, ir, pmr, struct, synth*)
Lahey, F.N. *et al., Aust. J. Chem.*, 1971, **24**, 671 (*isol, uv, ir, pmr*)
Cava, M.P. *et al., Tetrahedron*, 1971, **27**, 2639 (*isol, uv, ir, pmr*)
Yang, T.H. *et al., J. Chin. Chem. Soc. (Taipei)*, 1976, **23**, 29; *CA*, **85**, 37125a (*isol*)

Ba Hung Phan, *et al., Phytochemistry*, ‘, 1994, **35**, 1363 (*Oxoduocine*)

Herpestine H-151

$C_{34}H_{46}N_2O_6$ 578.747

Struct. unknown. Alkaloid from *Monnieria cuneifolia* (Rutaceae). Needles (C_6H_6). Mp 116-118°.

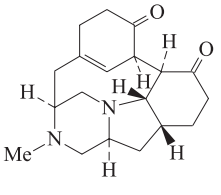
Sulfate: Mp 120° dec.

Tartrate: Mp 209-210°.

Basu, N.K. *et al., Q. J. Pharm. Pharmacol.*, 1947, **20**, 137-139

Herquline A H-152

[71812-08-3]



Relative configuration

$C_{19}H_{26}N_2O_2$ 314.427

Prod. by *Penicillium herquei*. Weakly active against platelet aggregation induced by ADP. Mycotoxin. Cryst. + ½H_2O. Sol. MeOH, C_6H_6; fairly sol. hexane; poorly sol. H_2O. Mp 171-174° dec. $[\alpha]_D^{27}$ -388 (c, 1 in MeOH). λ_{max} 288 (MeOH) (Derep). λ_{max} 287 (sh) (ϵ 317) (MeOH/NaOH) (Derep). λ_{max} 288 (sh) (ϵ 283) (MeOH) (Derep). λ_{max} 291 (ϵ 331) (MeOH/HCl) (Berdy).

► LD_{50} (mus, ipr) 100-300 mg/kg.

Omura, S. *et al., J. Antibiot.*, 1979, **32**, 786 (*isol, uv, ir*)

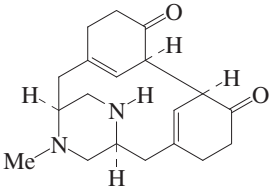
Furusaki, A. *et al., Chem. Comm.*, 1980, 698 (*cryst struct*)

Enomoto, Y. *et al., J. Antibiot.*, 1996, **49**, 50 (*pmr, cmr*)

Herquline B H-153

15-Methyl-15,17-diazatetracyclo[12.2.2.1^{3,7}]eicosa-3(20),12(19)-diene-6,9-dione, 9CI

[174423-44-0]



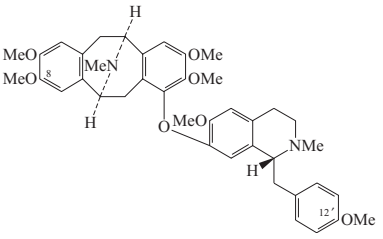
$C_{19}H_{26}N_2O_2$ 314.427

Prod. by *Penicillium herquei*. Active against platelet aggregation induced by ADP. Mycotoxin. Powder. Sol. MeOH, $CHCl_3$; fairly sol. hexane; poorly sol. H_2O, C_6H_6, EtOAc. Mp 109-113°. $[\alpha]_D^{25}$ -85.2 (c, 0.3 in MeOH). λ_{max} 203 (ϵ 9100); 222 (sh) (ϵ 1530); 285 (ϵ 780) (MeOH).

Enomoto, Y. *et al., J. Antibiot.*, 1996, **49**, 50-53 (*isol, uv, ir, pmr, cmr, props*)

Herveline C H-154

[160098-81-7]



$C_{40}H_{46}N_2O_7$ 666.813

Alkaloid from stem bark of *Hernandia voyronii* (Hernandiaceae). Cryst. (hexane). Mp 85-86°. $[\alpha]_D^{20}$ -24 (c, 0.3 in CH_2Cl_2).

O^{8}-*De-Me:* ***Herveline B***

[160098-80-6]

$C_{39}H_{44}N_2O_7$ 652.786

From stem bark of *Hernandia voyronii* (Hernandiaceae). Cryst. (hexane). Mp 102-104°. $[\alpha]_D^{20}$ +2.4 (c, 0.3 in CH_2Cl_2).

O$^{12'}$-*De-Me:* ***Herveline A***

[160098-79-3]

$C_{39}H_{44}N_2O_7$ 652.786

From stem bark of *Hernandia voyronii* (Hernandiaceae). Cryst. (hexane). Mp 114-116°. $[\alpha]_D^{20}$ -2 (c, 0.02 in CH_2Cl_2).

8,12′-Di-O-*de-Me:* ***Herveline D***

$C_{38}H_{42}N_2O_7$ 638.759

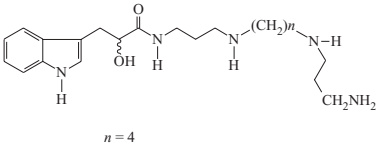
From the stem bark of *Hernandia voyronii*. Cryst. (hexane/EtOAc). Mp 120-122°. $[\alpha]_D^{20}$ +1.7 (c, 0.4 in CH_2Cl_2). λ_{max} 225 (log ϵ 4.72); 284 (log ϵ 4.13); 320 (log ϵ 3.4) (MeOH).

Rasoanaivo, P. *et al., Tetrahedron*, 1995, **51**, 1221 (*isol, uv, cd, pmr, cmr, ms, struct*)

Rasoanaivo, P. *et al., Planta Med.*, 1998, **64**, 58-62 (*Herveline D*)

Het$_{389}$ H-155

[128941-10-6]



$C_{21}H_{35}N_5O_2$ 389.54

Isol. from venom of the trap-door spider *Hebestatis theveniti* and the tarantula *Harpactirella* sp.

Skinner, W.S. *et al., Toxicon*, 1990, **28**, 541 (*isol*)

Het$_{403}$ H-156

[128941-11-7]

As Het$_{389}$, H-155 with

n = 5

$C_{22}H_{37}N_5O_2$ 403.567

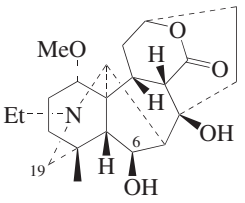
Isol. from venom of the trap-door spider *Hebestatis theveniti*.

Skinner, W.S. *et al., Toxicon*, 1990, **28**, 541 (*isol*)

Heteratisine H-157

20-Ethyl-6,8-dihydroxy-1-methoxy-4-methylheteratisan-14-one, 9CI. Zeravschanine

[3328-84-5]



$C_{22}H_{33}NO_5$ 391.506

Alkaloid from the roots of *Aconitum heterophyllum*, *Aconitum tanguticum* and *Aconitum zeravschanicum* (Ranunculaceae). Mp 267-269°. $[\alpha]_D^{28}$ +40 (c, 1 in MeOH).

Hydrochloride: Mp 265-270° dec.

6-Ac: ***6-Acetylheteratisine***

[52418-02-7]

$C_{24}H_{35}NO_6$ 433.544

Alkaloid from the roots of *Aconitum palmatum* (Ranunculaceae). Cryst. (Me_2CO/hexane). Mp 156-158°. $[\alpha]_D^{26}$ +18.7 (c, 0.2 in $CHCl_3$).

6,8-Di-Ac: ***6,8-Diacetylheteratisine***

[198422-45-6]

$C_{26}H_{37}NO_7$ 475.581

Constit. of *Aconitum pulchellum*.

6-Benzoyl: ***6-Benzoylheteratisine***

[99759-48-5]

$C_{29}H_{37}NO_6$ 495.614

Alkaloid from the roots of *Aconitum heterophyllum* and *Aconitum tanguticum* (Ranunculaceae). Prisms (C_6H_6). Mp 213-214°. $[\alpha]_D^{25}$ +73 (c, 1.0 in EtOH).

O-*De-Me:* ***Heterophyllidine***

[15266-43-0]

$C_{21}H_{31}NO_5$ 377.48

Trace alkaloid from the roots of *Aconitum heterophyllum* (Ranunculaceae). Prisms (MeOH). Mp 269-272°. $[\alpha]_D^{26}$ +43.3 (c, 1.26 in MeOH).

6-Deoxy: ***Heterophyllisine***

[15266-41-8]

$C_{22}H_{33}NO_4$ 375.507

Trace alkaloid from the roots of *Aconitum heterophyllum* (Ranunculaceae). Fine needles (Me_2CO). Mp 178-179°. $[\alpha]_D^{27}$ +15.5 (c, 0.90 in MeOH).

6-Deoxy, 8-Ac: ***8-Acetylheterophyllisine***

[187741-57-7]

$C_{24}H_{35}NO_5$ 417.544

Alkaloid from roots of *Delphinium denudatum*. Shows antifungal activity. Brown cryst. (2,3,3-trimethylpentane/CH_2Cl_2). Mp 152°. $[\alpha]_D$ +38.24 (c, 0.052 in MeOH).

6-Deoxy, O-*de-Me:* ***Heterophylline***†

[15266-42-9]

$C_{21}H_{31}NO_4$ 361.48

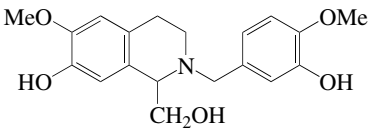
Trace alkaloid from the roots of *Aconitum heterophyllum* (Ranunculaceae). Prisms (MeOH). Mp 221.5-223°. $[\alpha]_D^{30}$ +10.5 (c, 2.0 in MeOH). See also 17-Methylparsonsianidine, M-502 and Aricine, A-1423.

6-Deoxy, O*-de-Me, 1-Ac:*
Prismatic needles (Et_2O/petrol). Mp 174-176°.

6-Deoxy, 19-oxo, O*-de-Me, 1,8-di-Ac:* ***Souline B***
[244246-52-4]
$C_{25}H_{33}NO_7$ 459.538
Alkaloid from *Delphinium souliei*. Cryst.

Jacobs, W.A. *et al., J. Biol. Chem.*, 1942, **143**, 605; 1943, **147**, 571 (*Benzoylheteratisine, isol*)
Przybylska, M. *et al., Can. J. Chem.*, 1963, **41**, 2911 (*Heteratisine, cryst struct*)
Pelletier, S.W. *et al., Phytochemistry*, 1968, **7**, 625 (*Heterophylline, Heterophyllidine, Heterophyllisine*)
Aneja, R. *et al., Tetrahedron*, 1973, **29**, 3297 (*Heteratisine, Benzoylheteratisine*)
Vaisov, Z.M. *et al., Khim. Prir. Soedin.*, 1984, **20**, 800; *Chem. Nat. Compd. (Engl. Transl.)*, 1984, **20**, 760 (*isol*)
Jiang, Q. *et al., Tet. Lett.*, 1988, **29**, 1875
Desai, H.K. *et al., J. Nat. Prod.*, 1993, **56**, 2193 (*cmr*)
Chen, P. *et al., CA*, 1997, **127**, 356972g (*6,8-Diacetylheteratisine*)
Atta-ur-Rahman, *et al., J. Nat. Prod.*, 1997, **60**, 472 (*8-Acetylheterophyllisine*)
Pan, X. *et al., Chin. Chem. Lett.*, 1998, **9**, 57-59 (*Souline B*)

Heterocarpine H-158



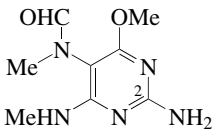
$C_{19}H_{23}NO_5$ 345.394
Mp 105-106°.

(±)-*form*
Alkaloid from *Ceratocapnos heterocarpa*. Amorph. powder. Mp 105-106°. λ_{max} 226 (log ε 4.08); 284 (log ε 3.79) (MeOH).

Suau, R. *et al., Phytochemistry*, 1998, **49**, 2551-2555 (*isol, synth, uv, ir, pmr, cmr, ms*)

Heteromine H H-159

[116137-80-5]



$C_8H_{13}N_5O_2$ 211.223
Alkaloid from *Heterostemma brownii* (Asclepiadaceae). Needles (MeOH). Mp 220-222°. λ_{max} 236 (log ε 3.44); 258 (log ε 3.46); 290 (log ε 3.3) (MeOH).

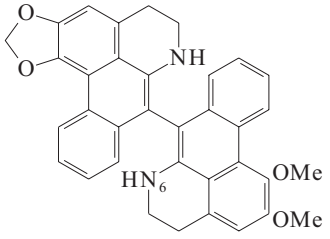
N^2*-Me:* ***Heteromine G***
[196090-70-7]
$C_9H_{15}N_5O_2$ 225.25
Alkaloid from *Heterostemma brownii*. Needles (MeOH). Mp 105-106°. λ_{max} 242 (log ε 3.61); 266 (log ε 3.62) (MeOH).

N^2,N^2*-Di-Me:* ***Heteromine F***
[196090-69-4]
$C_{10}H_{17}N_5O_2$ 239.277
Alkaloid from *Heterostemma brownii*. Needles (MeOH). Mp 176-177°. λ_{max} 247 (log ε 4.14); 268 (log ε 3.91) (MeOH).

Kohda, K. *et al., Tet. Lett.*, 1987, **28**, 6285-6288 (*synth*)
Lin, Y.-L. *et al., J. Nat. Prod.*, 1997, **60**, 982-985 (*isol, uv, ir, pmr, cmr, ms*)

Heteropsine H-160

[112543-99-4]



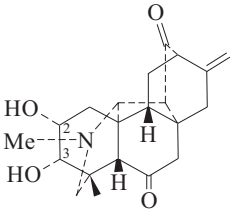
$C_{35}H_{28}N_2O_4$ 540.617
Alkaloid from the bark of *Unonopsis spectabilis* and roots of *Piptostigma fugax* (Annonaceae). Amorph.

N^6*-Me:* **N-*Methylheteropsine***
[112523-85-0]
$C_{36}H_{30}N_2O_4$ 554.644
Alkaloid from roots of *Piptostigma fugax* (Annonaceae). Powder. Mp 267-269°.

Laprévote, O. *et al., J. Nat. Prod.*, 1987, **50**, 984 (*isol, uv, ir, pmr, ms, struct*)
Achenbach, H. *et al., Phytochemistry*, 1995, **38**, 1037 (*N-Methylheteropsine*)

Hetidine H-161

2,3-Dihydroxy-21-methyl-6,21-secohetisan-6,13-dione, 9CI
[28154-35-0]



$C_{21}H_{27}NO_4$ 357.449
Alkaloid from the roots of *Aconitum heterophyllum* (Ranunculaceae). Cryst. (C_6H_6/hexane). Mp 218-221°.

Hydroiodide:
Cryst. (MeCN). Mp 305-307°.

*3-*O*-(2-Methylpropanoyl), 2-Ac:* ***Contorsine****. 2-Acetyl-3-isobutyrylhetidine*
[144398-40-3]
$C_{27}H_{35}NO_6$ 469.577
Alkaloid from roots of *Aconitum contortum* (Ranunculaceae). Prisms (Me_2CO). Mp 203-206°. $[\alpha]_D$ -88.1 (c, 0.62 in EtOH).

*3-*O*-(2*S*-Methylbutanoyl), 2-Ac:* ***Contortine***
[144398-39-0]
$C_{28}H_{37}NO_6$ 483.603
Alkaloid from roots of *Aconitum contortum* (Ranunculaceae). Prisms (Me_2CO). Mp 230-233°. $[\alpha]_D$ -82.1 (c, 0.45 in EtOH).

3-Benzoyl, 2-Ac: ***Episcopalidine***
[83685-24-9]
$C_{30}H_{33}NO_6$ 503.594
Alkaloid from the roots of *Aconitum episcopale* (Ranunculaceae).

*3-*O*-(4-Methoxybenzoyl), 2-Ac:* ***Contortine****. 2-Acetyl-3-anisoylhetidine*
[144398-38-9]
$C_{31}H_{35}NO_7$ 533.62
Alkaloid from roots of *Aconitum contortum* (Ranunculaceae). Prisms (Me_2CO). Mp 239° dec. $[\alpha]_D$ -44.9 (c, 0.35 in EtOH).

Δ^{15}-Isomer: ***Racemulodine***
$C_{21}H_{27}NO_4$ 357.449
Alkaloid from *Aconitum racemulosum* var. *pengzhouense*. Needles (cyclohexane/Me_2CO). Mp 181-183°. $[\alpha]_D^{17}$ -24.9 (c, 0.2 in EtOH).

3-Deoxy: ***Deacetylheterophylloidine***
[78174-98-8]
$C_{21}H_{27}NO_3$ 341.449
Alkaloid from aerial parts of *Delphinium albiflorum* (Ranunculaceae). Mp 160-162° (154-158°). $[\alpha]_D$ -59.9 (c, 0.76 in $CHCl_3$).

3-Deoxy, 2-Ac: ***Heterophylloidine****. Panicutine*
[78174-97-7]
$C_{23}H_{29}NO_4$ 383.486
Minor alkaloid from *Aconitum heterophylloides*, also isol. from *Aconitum paniculatum* (Ranunculaceae). Amorph. or cryst. (Et_2O/pentane). Mp 159-161°. $[\alpha]_D^{24}$ -82 (c, 1.5 in $CHCl_3$). $[\alpha]_D^{26}$ -141.1 (c, 0.429 in $CHCl_3$).

3-Deoxy, 2-ketone: ***2-Dehydrodeacetylheterophylloidine***
$C_{21}H_{25}NO_3$ 339.433
Alkaloid from *Delphinium pentagynum*. Amorph. solid. $[\alpha]_D^{25}$ -73.3 (c, 0.17 in $CHCl_3$).

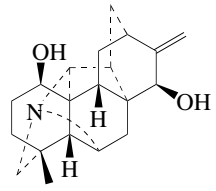
13-Deoxo, 3-deoxy, 2-ketone: ***Variegatine***
$C_{21}H_{27}NO_2$ 325.45
Alkaloid from *Aconitum variegatum*. Amorph. solid. $[\alpha]_D^{20}$ +20.5 (c, 0.41 in $CHCl_3$).

[81425-75-4 , 31260-17-0]

Pelletier, S.W. *et al., Phytochemistry*, 1968, **7**, 625-635 (*Hetidine*)
Pelletier, S.W. *et al., Chem. Comm.*, 1970, 393 (*Hetidine, cryst struct*)
Pelletier, S.W. *et al., Tet. Lett.*, 1981, **22**, 313 (*Heterophylloidine*)
Katz, A. *et al., Helv. Chim. Acta*, 1982, **65**, 286 (*Panicutine*)
Wang, F. *et al., Yaoxue Xuebao*, 1983, **18**, 514-521; 1985, **20**, 436-445; *CA*, **100**, 64981m; **105**, 24476x (*Episcopalidine, struct, ms*)
Sun, F. *et al., Youji Huaxue*, 1985, 395-398; *CA*, **105**, 24482w (*Episcopalidine, cd*)
Chen, J. *et al., CA*, 1986, **105**, 60804m (*Episcopalidine, ir*)
Pelletier, S.W. *et al., Heterocycles*, 1986, **24**, 1275 (*Heterophylloidine, Panicutine, struct*)
Wang, F. *et al., Youji Huaxue*, 1986, 19-24; *CA*, **105**, 115252n (*Episcopalidine, cmr*)
Niitsu, K. *et al., Heterocycles*, 1992, **34**, 1231 (*Contorine, Contortine, Contorsine*)
Ulubelen, A. *et al., J. Nat. Prod.*, 1995, **58**, 1555-1561 (*Deacetylheterophylloidine*)
Peng, C.S. *et al., Chin. Chem. Lett.*, 2000, **11**, 411-414 (*Racemulodine*)

Díaz, J.G. *et al., Phytochemistry*, 2004, **65**, 2123-2127; 2005, **66**, 837-846 (*2-Dehydrodeacetylheterophylloidine, Variegatine*)

Hetisan-1,15-diol H-162



$C_{20}H_{27}NO_2$ 313.439

(1β,15β)-*form*

Davisine. *Cossonidine*

[173220-99-0]

Alkaloid from aerial parts of *Delphinium davisii, Delphinium cossanianum* and *Delphinium cardiopetalum*. Cryst. (Me_2CO/hexane). Mp 130-132° Mp 243-245° (dec.). $[\alpha]_D^{25}$ +29.9 (c, 1.56 in $CHCl_3$). Large discrepancy in Mp's noted; one may refer to a salt.

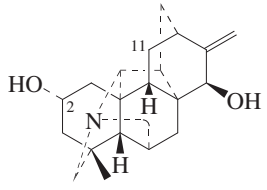
Di-Ac:

Amorph. $[\alpha]_D^{25}$ +6 (c, 0.75 in $CHCl_3$).

Reina, M. *et al., J. Nat. Prod.*, 1996, **59**, 145 (*isol, ir, pmr, cmr, ms, struct*)

Ulubelen, A. *et al., J. Nat. Prod.*, 1996, **59**, 360 (*isol, pmr, cmr, struct*)

Hetisan-2,15-diol, 9CI H-163



$C_{20}H_{27}NO_2$ 313.439

(2α,15β)-*form*

Sanyonamine. *2-Hydroxynominine. Katsuyama base I. Dogo base*

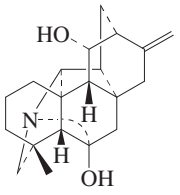
[85352-56-3]

Minor alkaloid from *Aconitum sanyoense*. Mp 276-278°. $[\alpha]_D$ +62.9. λ_{max} 224 (ε 20000); 251 (ε 3600); 285 (ε 3380) (MeOH) (Derep).

Okamoto, T. *et al., Chem. Pharm. Bull.*, 1964, **12**, 1124 (*struct*)

Sakai, S. *et al., Chem. Pharm. Bull.*, 1982, **30**, 4576; 4579 (*ir, pmr, ms, cryst struct, abs config*)

Hetisan-6,11-diol, 9CI H-164



11α-*form*

$C_{20}H_{27}NO_2$ 313.439

11α-*form*

Venulol

[102517-36-2]

Alkaloid from the aerial parts of *Delphinium venulosum* (Ranunculaceae). $[\alpha]_D^{22}$ +19.7 (c, 0.15 in MeOH).

11ξ-*form*

Spiradine B

[19741-51-6]

Alkaloid from *Spiraea japonica*. Mp 259-260°. $[\alpha]_D^{25}$ -13 (c, 0.25 in $CHCl_3$). pK_a 9.54 (66% MeOH aq.).

11-Ac: ***Spiradine C***

[19741-52-7]

$C_{22}H_{29}NO_3$ 355.476

Alkaloid from *Spiraea japonica* (Rosaceae). Mp 248-249°. pK_a 9.02 (66% MeOH).

11-Ketone: 6-Hydroxyhetisan-11-one, 9CI. ***Spiradine A***

[19741-46-9]

$C_{20}H_{25}NO_2$ 311.423

Alkaloid from *Spiraea japonica* (Rosaceae). Mp 281-282°. pK_a 8.35 (50% MeOH).

11-Ketone; methiodide: Mp 330°.

Goto, G. *et al., Tet. Lett.*, 1968, 1369 (*Spiradines*)

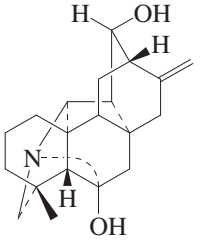
Sasaki, K. *et al., J.C.S.(B)*, 1971, 354 (*Spiradine A, cryst struct*)

Sakai, S. *et al., Chem. Pharm. Bull.*, 1982, **30**, 4579 (*Spiradine A, cd*)

Ulubelen, A. *et al., Phytochemistry*, 1992, **31**, 3239 (*Venulol*)

Fan, L.-M. *et al., J. Integ. Plant Biol.*, 2005, **47**, 120-123 (*Spiradine A,B, pmr, cmr*)

Hetisan-6,13-diol H-165



(13*R*)-*form*

$C_{20}H_{27}NO_2$ 313.439

(13*R*)-*form*

Spirasine XV

[115610-49-6]

Minor alkaloid from the roots of *Spiraea japonica* var. *fortunei* (Rosaceae). Cryst. (CH_2Cl_2/EtOAc). Mp 156-158°. $[\alpha]_D^{17}$ 0 (EtOH).

(13*S*)-*form*

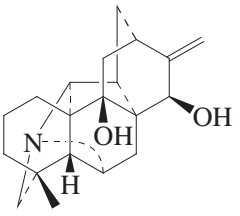
Spirasine XIV

[115610-48-5]

Minor alkaloid from the roots of *Spiraea japonica* var. *fortunei* (Rosaceae). Needles (CH_2Cl_2/EtOAc). Mp 244-246°. $[\alpha]_D^{17}$ -18.8 (c, 1.6 in EtOH).

Sun, F. *et al., J. Nat. Prod.*, 1988, **51**, 50 (*isol, uv, ir, pmr, cmr, ms, cd, struct*)

Hetisan-9,15-diol H-166



$C_{20}H_{27}NO_2$ 313.439

(15β)-*form*

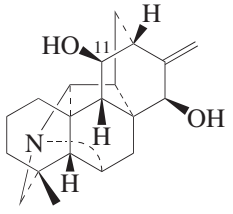
2-Desoxyryosenaminol. *9-Hydroxynominine*

[91197-66-9]

Alkaloid from *Aconitum ibukiense* (Ranunculaceae). Mp 287-291° dec. $[\alpha]_D^{23}$ +68.5 (c, 0.08 in MeOH).

Sakai, S. *et al., Yakugaku Zasshi*, 1984, **104**, 222; *CA*, **101**, 69329k (*Desoxyryosenaminol*)

Hetisan-11,15-diol H-167



$C_{20}H_{27}NO_2$ 313.439

▶ MK7000000

(11β,15β)-*form*

Kobusine†

[27530-78-5]

Alkaloid from *Aconitum sachalinense*, *Aconitum yesoense*, *Aconitum luciduscu-lum* and *Aconitum kamtschaticum*, also *Delphinium davisii* (Ranunculaceae). Prisms (Me_2CO). Mp 267-267.5°. $[\alpha]_D^{12}$ +104.4 (MeOH).

Hydrobromide:

Cryst. (EtOH). Mp 285° dec.

Picrate: Mp 282-284° dec.

11-Ketone: 15-Hydroxyhetisan-11-one, 9CI. ***11-Dehydrokobusine***

[85352-58-5]

$C_{20}H_{25}NO_2$ 311.423

Alkaloid from aerial parts of *Aconitum talassicum* (Ranunculaceae). Cryst. (Me_2CO). Mp 239-241°.

Suginome, H. *et al., Annalen*, 1940, **545**, 220-228 (*Kobusine, isol*)

Okamoto, T. *et al., Chem. Pharm. Bull.*, 1959, **7**, 44-49; 1962, **10**, 883-886 (*struct*)

Pelletier, S.W. *et al., Chem. Comm.*, 1970, 98-99 (*cryst struct*)

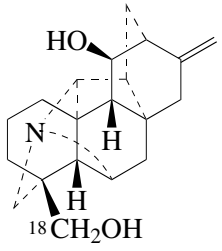
Scott, A.I. *et al., Tetrahedron*, 1971, **27**, 4787-4819 (*cd*)

Sakai, S. *et al., Chem. Pharm. Bull.*, 1982, **30**, 4579-4582; 4583-4584 (*abs config, synth*)

Nishanov, A.A. *et al., Khim. Prir. Soedin.*, 1989, **25**, 857; *Chem. Nat. Compd. (Engl.*

Transl.), 1989, **25**, 728 (*11-Dehydrokobusine*)
Wada, K. *et al., Heterocycles*, 1991, **32**, 1297-1300 (*synth*)
Ulubelen, A. *et al., J. Nat. Prod.*, 1996, **59**, 360-366 (*pmr, cmr*)

Hetisan-11,18-diol H-168



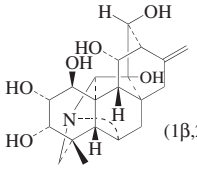
$C_{20}H_{27}NO_2$ 313.439

11β-*form*
Davisinol
[175097-22-0]
Alkaloid from aerial parts of *Delphinium davisii*. Amorph. $[\alpha]_D^{25}$ +27.5 (c, 0.189 in $CHCl_3$).

18-Benzoyl: ***18-Benzoyldavisinol***
[174587-13-4]
$C_{27}H_{31}NO_3$ 417.547
Alkaloid from aerial parts of *Delphinium davisii*. Amorph. $[\alpha]_D^{25}$ +42.3 (c, 0.26 in $CHCl_3$).

Ulubelen, A. *et al., J. Nat. Prod.*, 1996, **59**, 360 (*isol, ir, pmr, cmr, struct*)

Hetisan-1,2,3,11,13,14-hexol H-169



(1β,2α,3α,11α,13*R*)-form

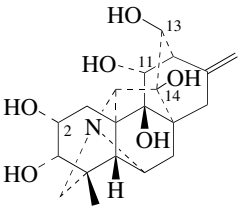
$C_{20}H_{27}NO_6$ 377.436

(1β,2α,3α,11α,13*R*)-*form*
*13-Benzoyl, 2-*O*-(2-methylbutanoyl), 1,3,11-tri-Ac:* ***Cardiodine***
[174476-66-5]
$C_{38}H_{45}NO_{11}$ 691.774
Alkaloid from aerial parts of *Delphinium cardiopetalum*. Resin. $[\alpha]_D$ -26 (c, 0.05 in EtOH).

(1β,2α,3α,11α,13*S*)-*form*
2,13-Dibenzoyl, 1,3,11,-tri-Ac: ***Delphigraciline***
[1015757-95-5]
$C_{40}H_{41}NO_{11}$ 711.764
Alkaloid from *Delphinium gracile*. Cryst. (hexane/EtOAc). Mp 208-212°. $[\alpha]_D$ -95 (c, 0.02 in $CHCl_3$).

Reina, M. *et al., Phytochemistry*, 1996, **41**, 1235-1250 (*Cardiodine*)
Reina, M. *et al., Nat. Prod. Res.*, 2007, **21**, 1048-1055 (*Delphigraciline*)

Hetisan-2,3,9,11,13,14-hexol H-170



$C_{20}H_{27}NO_6$ 377.436

(2α,3α,11α,13*R*)-*form*
*2-*O*-(2-Methylbutanoyl), 3-Ac:* ***Glandduline***
[188559-93-5]
$C_{27}H_{37}NO_8$ 503.591
Alkaloid from aerial parts of *Consolida glandulosa*. Cryst. (hexane/EtOAc). Mp 134-137°. $[\alpha]_D$ +24 (c, 0.5 in MeOH).

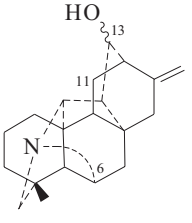
*2-*O*-(2-Methylbutanoyl), 3,9-di-Ac:* ***9-O-Acetylglanduline***
$C_{29}H_{39}NO_9$ 545.628
Alkaloid from *Consolida glandulosa*. Cryst. (hexane/EtOAc/MeOH). Mp 147-150°. $[\alpha]_D^{25}$ +5.1 (c, 0.14 in EtOH).

*2-*O*-(2-Methylbutanoyl), 3,13-di-Ac:* ***13-O-Acetylglanduline***
[188560-00-1]
$C_{29}H_{39}NO_9$ 545.628
From aerial parts of *Consolida glandulosa*. Cryst. (hexane/EtOAc). Mp 110-115°. $[\alpha]_D$ +15.2 (c, 0.46 in MeOH).

*2-*O*-(2-Methylbutanoyl), 3,11,13-tri-Ac:* ***11,13-Di-O-acetylglanduline***
[425382-34-9]
$C_{31}H_{41}NO_{10}$ 587.666
Alkaloid from *Consolida glandulosa*. Cryst. (hexane/EtOAc). Mp 240-241°. $[\alpha]_D^{25}$ +60.4 (c, 0.39 in $CHCl_3$).

Almanza, G. *et al., Phytochemistry*, 1997, **44**, 739 (*isol, ir, pmr, cmr, ms, struct*)
Ruiz-Mesia, L. *et al., J. Nat. Prod.*, 2002, **65**, 496-499 (*9-O-Acetylglanduline, 11,13-Diacetylglanduline*)

Hetisan-13-ol, 9CI H-171



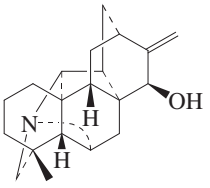
$C_{20}H_{27}NO$ 297.439

(13ξ)-*form*
Spirasine XI
[102358-20-3]
Alkaloid from the roots of *Spiraea japonica* (Rosaceae). Cryst. Mp 286-288°. $[\alpha]_D^{11}$ -23.8 (c, 0.84 in $CHCl_3$). C-13 Config. ambiguously shown.

13-Ketone: ***Spirasine IV****. Hetisan-13-one*
[102386-48-1]
$C_{20}H_{25}NO$ 295.424
Alkaloid from the roots of *Spiraea japonica* (Rosaceae). Powder. $[\alpha]_D^{17}$ -95.7 (c, 1.1 in $CHCl_3$).

Sun, F. *et al., Yaoxue Xuebao*, 1985, **20**, 913-917 (*Spirasines IV,XI, isol, struct*)

Hetisan-15-ol H-172



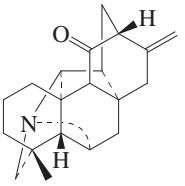
$C_{20}H_{27}NO$ 297.439

15β-*form*
***Nominine*†**. *Nomi-base I. 11-Deoxykobusine*
[79808-87-0]
Minor alkaloid from *Aconitum sanyoense* (Ranunculaceae). Mp 251-54°. $[\alpha]_D^{24}$ +53.4. λ_{max} 224 (ϵ 20000); 251 (ϵ 3600); 285 (ϵ 3380) (MeOH) (Derep).

Sakai, S. *et al., Chem. Pharm. Bull.*, 1982, **30**, 4576-4578; 4579-4582 (*ir, pmr, ms, cryst struct, abs config*)
Peese, K.M. *et al., J.A.C.S.*, 2006, **128**, 8734-8735 (*synth*)
Muratake, H. *et al., Tetrahedron*, 2006, **62**, 7093-7112 (*synth*)

Hetisan-11-one H-173

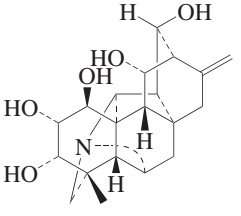
Spirasine IX
[102386-47-0]



$C_{20}H_{25}NO$ 295.424
Alkaloid from the roots of *Spiraea japonica* (Rosaceae). Cryst. Mp 157-158°. $[\alpha]_D^{21}$ +135.5 (c, 1 in $CHCl_3$).

Sun, F. *et al., Yaoxue Xuebao*, 1985, **20**, 913-917 (*isol, struct*)

Hetisan-1,2,3,11,13-pentol H-174



$C_{20}H_{27}NO_5$ 361.437

(1β,2α,3α,11α,13*S*)-*form*
*13-Benzoyl, 2-*O*-(2-methylpropanoyl),*

1,11-di-Ac: ***Cardiopinine***
[174423-46-2]
$C_{35}H_{41}NO_9$ 619.71
Alkaloid from aerial parts of *Delphinium cardiopetalum*. Cryst. (EtOAc/hexane). Mp 218-220°. $[\alpha]_D$ -26.6 (c, 0.08 in EtOH).

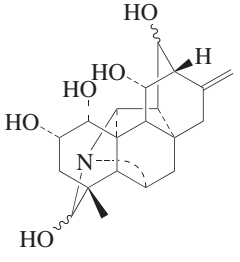
*13-Benzoyl, 3-*O*-(2-methylpropanoyl), 1,11-di-Ac:* ***Cardiopimine***
[174423-47-3]
$C_{35}H_{41}NO_9$ 619.71
Alkaloid from *Delphinium cardiopetalum*. Resin. $[\alpha]_D$ -81.3 (c, 0.2 in EtOH).

*13-Benzoyl, 2-*O*-(2ξ-methylbutanoyl), 1,11-di-Ac:* ***Cardiopine***
[174423-45-1]
$C_{36}H_{43}NO_9$ 633.737
Alkaloid from aerial parts of *Delphinium cardiopetalum*. Cryst. (EtOAc/hexane). Mp 194-197°. $[\alpha]_D$ -26.3 (c, 0.06 in EtOH).

*13-Benzoyl, 3-*O*-(2ξ-methylbutanoyl), 1,11-di-Ac:* ***Cardiopidine***
[174423-48-4]
$C_{36}H_{43}NO_9$ 633.737
Alkaloid from aerial parts of *Delphinium cardiopetalum*. Resin. $[\alpha]_D$ -22.5 (c, 0.05 in EtOH).

Reina, M. *et al., Phytochemistry*, 1996, **41**, 1235-1250 (*isol, ir, pmr, cmr, ms, struct*)

Hetisan-1,2,11,13,19-pentol H-175



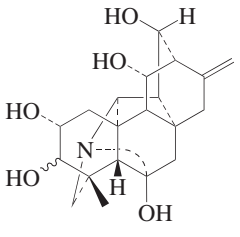
$C_{20}H_{27}NO_5$ 361.437

(1α,2α,11α,13ξ,19ξ)-*form*

2-Benzoyl: ***Delgramine***
[152434-56-5]
$C_{27}H_{31}NO_6$ 465.545
Alkaloid from aerial parts of *Delphinium grandiflorum* (Ranunculaceae).

Li, C. *et al., Huaxue Xuebao*, 1993, **51**, 915; *CA*, **120**, 73352x

Hetisan-2,3,6,11,13-pentol H-176



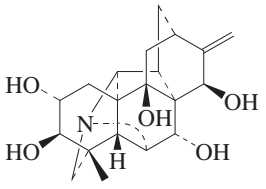
$C_{20}H_{27}NO_5$ 361.437

(2α,3ξ,11α,13*R*)-*form*

*11-*O*-(2ξ-Methylbutanoyl), 3-Ac:* ***Geyerinine***
[100045-30-5]
$C_{27}H_{37}NO_7$ 487.592
Minor alkaloid from the flowers, small stems and leaves of *Delphinium geyeri* (Ranunculaceae). Gum.

Grina, J.A. *et al., J.O.C.*, 1986, **51**, 390 (*isol, uv, ir, pmr, cmr, ms, struct*)

Hetisan-2,3,7,9,15-pentol H-177



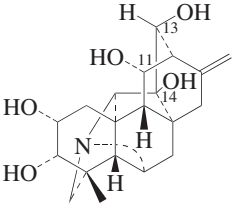
$C_{20}H_{27}NO_5$ 361.437

(2α,3β,7α,15β)-*form*

2-Benzoyl: ***Sadosine***
[85753-45-3]
$C_{27}H_{31}NO_6$ 465.545
Minor alkaloid from the roots of *Aconitum japonicum* (Ranunculaceae). Needles + $1H_2O$ (Me_2CO). Mp 222-224°. $[\alpha]_D^{25}$ +53.1 (c, 0.96 in MeOH).

Okamoto, T. *et al., Chem. Pharm. Bull.*, 1983, **31**, 360 (*isol, pmr, cmr, ms, cryst struct*)

Hetisan-2,3,11,13,14-pentol H-178



$C_{20}H_{27}NO_5$ 361.437

(2α,3α,11α,13*R*)-*form*

*2-*O*-(2-Methylpropanoyl), 3,11,13-tri-Ac:* ***Glandulosine***†
[425382-33-8]
$C_{30}H_{39}NO_9$ 557.639
Alkaloid from *Consolida glandulosa*. Amorph. solid. $[\alpha]_D^{25}$ +120 (c, 0.1 in $CHCl_3$). Not to be confused with Glandulosine in M-309.

*2-*O*-(2-Methylbutanoyl), 3-Ac:* ***9-Deoxyglanduline***
[425382-32-7]
$C_{27}H_{37}NO_7$ 487.592
Alkaloid from *Consolida glandulosa*. Cryst. (hexane/EtOAc). Mp 174-176°. $[\alpha]_D^{25}$ +6.6 (c, 0.19 in $CHCl_3$).

*2-*O*-(2-Methylbutanoyl), 3,13-di-Ac:* ***13-O-Acetyl-9-deoxyglanduline***
[188560-03-4]
$C_{29}H_{39}NO_8$ 529.629
From aerial parts of *Consolida glandulosa*. Cryst. (hexane/EtOAc). Mp 154-156°. $[\alpha]_D$ +46.6 (c, 0.39 in MeOH).

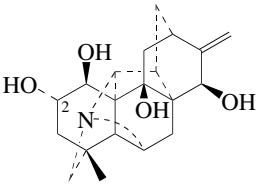
*2-*O*-(2-Methylbutanoyl), 3,14-di-Ac: 14-*O*-Acetyl-9-deoxyglanduline*
[188560-01-2]
$C_{29}H_{39}NO_8$ 529.629
From aerial parts of *Consolida glandulosa*. Cryst. (hexane/EtOAc). Mp 145-148°. $[\alpha]_D$ +20 (c, 0.2 in MeOH).

*2-*O*-(2-Methylbutanoyl), 3,11,13-tri-Ac: 11,13-Di-*O*-acetyl-9-deoxyglanduline*
[188560-04-5]
$C_{31}H_{41}NO_9$ 571.666
From aerial parts of *Consolida glandulosa*. Cryst. (hexane/EtOAc). Mp 195-198°. $[\alpha]_D$ +36 (c, 0.50 in MeOH).

Almanza, G. *et al., Phytochemistry*, 1997, **44**, 739 (*isol, ir, pmr, cmr, ms, struct*)

Ruiz-Mesia, L. *et al., J. Nat. Prod.*, 2002, **65**, 496-499 (*Glandulosine, 9-Deoxyglanduline*)

Hetisan-1,2,9,15-tetrol, 9CI H-179



$C_{20}H_{27}NO_4$ 345.438

▶ MK7300000

(1β,2α,15β)-*form*

Hypognavinol
[32199-38-5]
Hydrol. prod. of Hypognavine. Prisms (MeOH). Mp 307-308°. $[\alpha]_D^{24}$ +67.7 (MeOH).

Hydrochloride:
Prisms (MeOH/Me_2CO). Mp 310° dec.

2-Benzoyl: ***Hypognavine***
[79808-88-1]
$C_{27}H_{31}NO_5$ 449.546
Alkaloid from *Aconitum sanyoense* (Ranunculaceae). Needles (Me_2CO). Mp 239-241°. $[\alpha]_D^{24}$ +127.1 (MeOH).

2-Benzoyl, 1-Ac: ***1-O-Acetylhypognavine***
[148225-50-7]
$C_{29}H_{33}NO_6$ 491.583
Alkaloid from roots of *Aconitum sanyoense* var. *tonense* (Ranunculaceae). Prisms (Me_2CO). Mp 127-128° dec. $[\alpha]_D^{30}$ +116.7 (c, 0.21 in $CHCl_3$).

2-Benzoyl, 1,15-di-Ac: ***1,15-Di-O-acetylhypognavine***
[120527-39-1]
$C_{31}H_{35}NO_7$ 533.62
Alkaloid from roots of *Aconitum sanyoense* var. *tonense* (Ranunculaceae). Amorph. powder; cryst. (EtOH aq., as picrate). Mp 233-239° dec. (picrate). $[\alpha]_D^{30}$ +83 (c, 0.44 in $CHCl_3$).

Ochiai, E. *et al., Chem. Pharm. Bull.*, 1953, **1**, 152 (*Hypognavine, isol*)

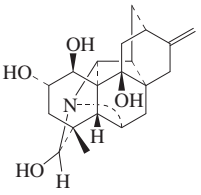
Sakai, S. *et al., Chem. Pharm. Bull.*, 1957, **5**, 1; 1958, **6**, 448; 1959, **7**, 50,55 (*Hypognavine, struct*)

Pelletier, S.W. *et al., Tet. Lett.*, 1971, 795 (*cryst struct, deriv*)

Sakai, S. *et al., Chem. Pharm. Bull.*, 1982, **30**, 4573 (*Hypognavine, struct, abs config*)

Takayama, H. *et al., Chem. Pharm. Bull.*, 1992, **40**, 2927 (*1-Acetylhypognavine, 1,15-Diacetylhypognavine*)

Hetisan-1,2,9,19-tetrol H-180



(1β,2α,19*R*)-*form*

$C_{20}H_{27}NO_4$ 345.438

(1β,2α,19*R*)-*form*

Septentriosine

[115569-73-8]

Minor alkaloid from the roots of *Aconitum septentrionale* (Ranunculaceae). Cubes (MeOH). Mp 260-262°. $[\alpha]_D^{28}$ +20.78 (c, 0.55 in MeOH).

Hydrochloride:

Cryst. (MeOH). Mp 299-300°. $[\alpha]_D$ -7.5 (c, 1.0 in MeOH).

2-Ac: ***2-Acetylseptentriosine***

[147677-10-9]

$C_{22}H_{29}NO_5$ 387.475

Alkaloid from roots of *Aconitum septentrionale* (Ranunculaceae). Cryst. + $1H_2O$ (Et_2O/hexane), cryst. (Et_2O/MeOH). Mp 182-184° (with swelling and darkening at 150-156°). $[\alpha]_D^{15}$ +6.4 (c, 1 in EtOH).

1,2,19-Tri-Ac: [147677-11-0]

Cryst. (Me_2CO). Mp 210.5-212.5°.

(1β,2α,19*S*)-*form*

2-Ac: ***Septenine***

[169626-10-2]

$C_{22}H_{29}NO_5$ 387.475

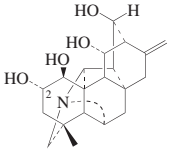
Alkaloid from the roots of *Aconitum septentrionale*. Cryst. ($CHCl_3$/MeOH). Mp 190-192°.

Joshi, B.S. *et al., J. Nat. Prod.*, 1988, **51**, 265 (*Septentriosine, isol, ir, pmr, cmr, ms, cryst struct*)

Usmanova, S.K. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1993, **29**, 349-351 (*Septenine*)

Ross, S.A. *et al., J. Nat. Prod.*, 1993, **56**, 424 (*2-Acetylseptentriosine*)

Hetisan-1,2,11,13-tetrol H-181



(1β,2α,11α,13*R*)-*form*

$C_{20}H_{27}NO_4$ 345.438

(1β,2α,11α,13*R*)-*form*

2-Benzoyl, 1,11-di-Ac: ***Tadzhaconine***. *Anthoroidine*

[11087-94-8]

$C_{31}H_{35}NO_7$ 533.62

Alkaloid from *Aconitum zeravschanicum* and *Aconitum anthoroideum* (Ranunculaceae). Cryst. (EtOH). Mp 236-237° (dec.).

(1β,2β,11α,13*R*)-*form*

11-Benzoyl, 1,2-di-Ac: ***Paniculatine***†

[1400-72-2]

$C_{31}H_{35}NO_7$ 533.62

Alkaloid from *Aconitum paniculatum* (Ranunculaceae). Rhombic prisms (MeOH). Mp 263°. See also Lycopaniculatine, L-334. Struct. revised in 1989.

Brunner, G.E. *et al., Schweiz. Apoth.-Ztg.*, 1922, **60**, 357; *CA*, **16**, 2962 (*Paniculatine, isol*)

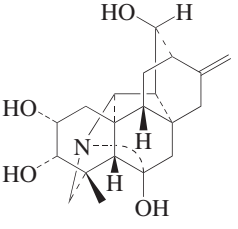
Staehelin, E. *et al., Pharm. Acta Helv.*, 1980, **55**, 221; *CA*, **93**, 201040g (*Paniculatine, isol*)

Katz, A. *et al., J. Nat. Prod.*, 1989, **52**, 430 (*Paniculatine, uv, ir, pmr, cmr, ms, struct*)

Yusupova, I.M. *et al., Khim. Prir. Soedin.*, 1992, **28**, 382-388; *Chem. Nat. Compd. (Engl. Transl.)*, 1992, **28**, 335-339 (*Tadzhaconine*)

Vaisov, Z.M. *et al., Khim. Prir. Soedin.*, 1993, 86-87 (*Anthoroidine*)

Hetisan-2,3,6,13-tetrol H-182



$C_{20}H_{27}NO_4$ 345.438

(2α,3α,13*S*)-*form*

N-*Me:* ***Vakhmadine***

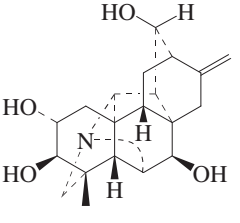
[135250-81-6 (hydroxide)]

$C_{21}H_{30}NO_4^{\oplus}$ 360.472

Quaternary alkaloid from *Aconitum palmatum* (Ranunculaceae). Cryst. (EtOH) (as hydroxide). Mp 263-273° (hydroxide). $[\alpha]_D^{24}$ -37.8 (c, 0.1 in MeOH).

Jiang, Q. *et al., J. Nat. Prod.*, 1991, **54**, 525 (*isol, ir, pmr, cmr, ms, struct*)

Hetisan-2,3,7,13-tetrol H-183



$C_{20}H_{27}NO_4$ 345.438

(2α,3β,7β,13*S*)-*form*

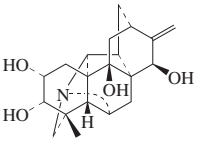
2-Benzoyl, 13-Ac: ***Jaluenine***

$C_{29}H_{33}NO_6$ 491.583

Alkaloid from the roots of *Aconitum jaluense*. Amorph. solid (MeOH). Mp 114-116°. $[\alpha]_D^{23}$ +19.3 (c, 0.27 in $CHCl_3$).

Shim, S.H. *et al., J. Asian Nat. Prod. Res.*, 2006, **8**, 451-455 (*isol, pmr, cmr, ms*)

Hetisan-2,3,9,15-tetrol H-184



(2α,3α,15β)-*form*

$C_{20}H_{27}NO_4$ 345.438

(2α,3α,15β)-*form*

3-Epiignavinol

[119240-18-5]

Alkaloid from the roots of *Aconitum japonicum*, var. *montanum* (Ranunculaceae). Prisms. Mp 292-293.5° dec. $[\alpha]_D^{23}$ +49.1 (c, 0.11 in MeOH).

(2α,3β,15β)-*form*

Anhydroignavinol

[30373-79-6]

Alkaline hydrol. prod. of Ignavine. Mp 302-304°.

2-Benzoyl: ***Ignavine***

[1357-76-2]

$C_{27}H_{31}NO_5$ 449.546

Alkaloid from *Aconitum sanyoense, Aconitum tasiromontanum* and the roots of *Aconitum japonicum* and *Aconitum carmichaeli* (Ranunculaceae). Mp 172-174°. $[\alpha]_D$ +85.3 (EtOH).

► MK7350000

Ochiai, E. *et al., Yakugaku Zasshi*, 1956, **76**, 550-553; *CA*, **50**, 13372f (*Ignavine, isol*)

Ochiai, E. *et al., Chem. Pharm. Bull.*, 1959, **7**, 556-559 (*Ignavine, struct*)

Pelletier, S.W. *et al., Tet. Lett.*, 1970, 4825-4827 (*cryst struct*)

Saito, H. *et al., Chem. Pharm. Bull.*, 1982, **30**, 1844-1850 (*Ignavine, pharmacol*)

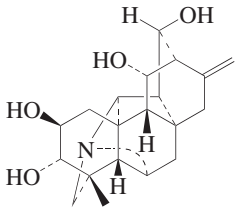
Okamoto, T. *et al., Chem. Pharm. Bull.*, 1982, **30**, 4600-4601 (*abs config, cryst struct*)

Takayama, H. *et al., Yakugaku Zasshi*, 1982, **102**, 525-532; *CA*, **97**, 141690q (*Ignavine, isol*)

Hikino, H. *et al., J. Nat. Prod.*, 1983, **46**, 178-182 (*Ignavine, isol*)

Takayama, H. *et al., Chem. Pharm. Bull.*, 1988, **36**, 3210-3212 (*3-Epiignavinol, cryst struct*)

Hetisan-2,3,11,13-tetrol H-185



$C_{20}H_{27}NO_4$ 345.438

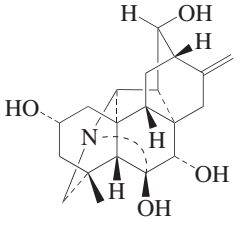
(2β,3α,11α,13*S*)-*form*

2-Benzoyl, 3,13-di-Ac: ***Cossonine***

[152343-38-9]
$C_{31}H_{35}NO_7$ 533.62
Alkaloid from above-ground parts of *Delphinium cossonianum* (Ranunculaceae). Amorph. $[\alpha]_D$ +45 (c, 0.16 in $CHCl_3$).

De la Fuente, G. *et al., Phytochemistry*, 1993, **34**, 553 (*isol, ir, pmr, cmr, ms, struct*)

Hetisan-2,6,7,13-tetrol H-186



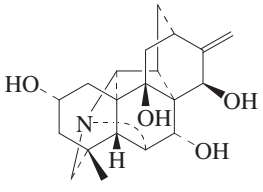
$C_{20}H_{27}NO_4$ 345.438

(2α,7α,13*R*)-*form*

13-Ketone, N-*Me, 2-Ac:* ***2-O-Acetyl-7-hydroxyorochrine***
[959853-60-2]
$C_{23}H_{30}NO_5^{\oplus}$ 400.494
Alkaloid from *Aconitum orochryseum*. Pale green solid (as hydroxide). Mp 110-112° (hydroxide). $[\alpha]_D^{25}$ -31.8 (c, 0.34 in MeOH) (hydroxide).

Wangchuk, P. *et al., J. Nat. Prod.*, 2007, **70**, 1808-1811 (*isol, pmr, cmr, ms*)

Hetisan-2,7,9,15-tetrol H-187



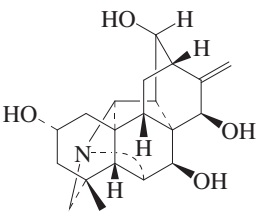
$C_{20}H_{27}NO_4$ 345.438

(2α,7α,15β)-*form*

2-Benzoyl: ***Torokonine****. 7-Hydroxyryosenamine*
[110397-61-0]
$C_{27}H_{31}NO_5$ 449.546
Alkaloid from the roots of *Aconitum subcuneatum* (Ranunculaceae). Cryst. (Me_2CO). Mp 198.5-199°. $[\alpha]_D$ +71.7 (c, 0.14 in MeOH).

Sakai, S. *et al., Chem. Pharm. Bull.*, 1987, **35**, 2615 (*Torokonine*)

Hetisan-2,7,13,15-tetrol H-188



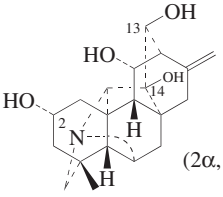
$C_{20}H_{27}NO_4$ 345.438

(2α,7β,13*R*,15β)-*form*

Tanwusine A†
Alkaloid from *Aconitum tanguticum* (Ranunculaceae). Not the same as Tanwusine in H-203 CAS No. not found to 2006.

Liang, X.-T. *et al., Pure Appl. Chem.*, 1986, **58**, 711 (*rev*)

Hetisan-2,11,13,14-tetrol H-189



(2α,11α,13*R*)-*form*

$C_{20}H_{27}NO_4$ 345.438
13-Configs. in these alkaloids are difficult to interpret from the accessible lit. and may not be as indicated here.

(2α,11α,13*R*)-*form*

Tangutisine*. 14-Hydroxyhetisine*
[139219-95-7]
Alkaloid from *Aconitum tanguticum* (Ranunculaceae). Cryst. (H_2O) (as hydrochloride). Mp 310-315° dec. (hydrochloride).

2-Ac: ***Acorine****. Guan-fu base I. Guan-fu base Y*
[110225-59-7]
$C_{22}H_{29}NO_5$ 387.475
Alkaloid from the roots of *Aconitum koreanum*. Cryst. (Me_2CO). Mp 218-219°.

Ac: ***Guan-fu base B***
[1394-49-6]
$C_{22}H_{29}NO_5$ 387.475
Alkaloid from the Chinese herbal drug Guan-Bai-Fu-Tzu (*Aconitum koreanum*) (Ranunculaceae). Mp 204°. $[\alpha]_D^{26.6}$ +16 ($CHCl_3$). Site of acylation (2, 11 or 13) not known.

2,13-Di-Ac: ***Guan-fu base A***
[1394-48-5]
$C_{24}H_{31}NO_6$ 429.512
Alkaloid from Guan-Bai-Fu-Tzu (*Aconitum koreanum*) (Ranunculaceae). Shows antiarrhythmic props. Mp 198°. $[\alpha]_D^{22.8}$ +49 ($CHCl_3$).
▶ LD_{50} (mus, ipr) 421 mg/kg. LD_{50} (mus, ivn) 134 mg/kg. MK7900000

2,11,13-Tri-Ac: ***Guan-fu base G***
[78969-72-9]
$C_{26}H_{33}NO_7$ 471.549
Alkaloid from Guan-Bai-Fu-Tzu (*Aconitum koreanum*) (Ranunculaceae). Mp 178°.

Tetra-Ac: Mp 154.5-155°.

2-Propanoyl: ***Acoridine***
[144425-27-4]
$C_{23}H_{31}NO_5$ 401.502
Alkaloid from epigeal parts of *Aconitum koreanum* (Ranunculaceae). Needles ($Me_2CO/CHCl_3$). Mp 204-206°. $[\alpha]_D$ +16 (c, 0.663 in MeOH).

2-Propanoyl, 13-Ac: ***13-Acetylacoridine****. Guan-fu base O*
[150901-10-3]
[252565-78-9]
$C_{25}H_{33}NO_6$ 443.539
Alkaloid from *Aconitum koreanum.*

2-Propanoyl, 11,13-di-Ac: ***Guan-fu base R***
[1004550-87-1]
$C_{27}H_{35}NO_7$ 485.576
Alkaloid from the roots of *Aconitum koreanum.*

*2-*O*-(2-Methylpropanoyl): 2-Isobutyryl-14-hydroxyhetisine.* ***Guan-fu base Z***
[103847-13-8]
$C_{24}H_{33}NO_5$ 415.528
Alkaloid from Guan-Bai-Fu-Tzu (*Aconitum koreanum*) (Ranunculaceae). Needles. Mp 230-231°.

*2-*O*-(2-Methylpropanoyl),* N*-oxide:* ***Guan-fu base Z N-oxide***
[131916-92-2]
$C_{24}H_{33}NO_6$ 431.528
Alkaloid from epigeal parts of *Aconitum koreanum* (Ranunculaceae). Needles. Mp 317-319°. $[\alpha]_D^{20}$ +25 (c, 0.34 in EtOH).

*2-*O*-(2-Methylpropanoyl), 13-Ac:* ***Guan-fu base F***
[79030-10-7]
$C_{26}H_{35}NO_6$ 457.566
Alkaloid from Guan-Bai-Fu-Tzu (*Aconitum koreanum*) (Ranunculaceae). Mp 184°.

*2-*O*-(2-Methylpropanoyl), 13-Ac,* N*-oxide:* ***Guan-fu base F N-oxide***
[131966-22-8]
$C_{26}H_{35}NO_7$ 473.565
Alkaloid from epigeal parts of *Aconitum koreanum* (Ranunculaceae). Mp 240-242°.

*2-*O*-(2-Methylpropanoyl), 11,13-di-Ac:* ***Guan-fu base P***
[1004550-88-2]
$C_{28}H_{37}NO_7$ 499.603
Alkaloid from the roots of *Aconitum koreanum.*

13-Benzoyl, 2-Ac: ***Zeravschanisine****. Zeravschanizine*
[192705-33-2]
$C_{29}H_{33}NO_6$ 491.583
Alkaloid from *Aconitum zeravschanicum* (Ranunculaceae). Exhibits antiarrhythmic and anaesthetic activities. Cryst. (EtOH) (as perchlorate). Mp 287-289° dec. (perchlorate).

(2α,11α,13*S*)-*form*

2-Ketone, N*-oxide:* ***14-Hydroxyhetisinone N-oxide***
[1015699-80-5]
$C_{20}H_{25}NO_5$ 359.421
Alkaloid from *Delphinium gracile.* Gum. $[\alpha]_D$ -125 (c, 0.2 in EtOH).

Kao, H.-C. *et al., Yaoxue Xuebao*, 1966, **13**, 186-194; *CA*, **65**, 3922g (*Guan-fu bases A, B, isol*)

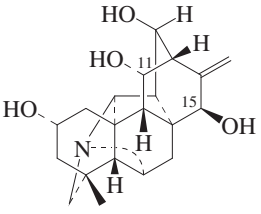
Liu, J.-H. *et al., Zhongcaoyao*, 1981, **12**, 1-2; *CA*, **95**, 138450q (*Guan-fu bases, struct*)

Reinecke, M.G. *et al., Heterocycles*, 1986, **24**, 49-61 (*Guan-fu base Z, pmr, cmr, struct*)

Reinecke, M.G. *et al., Tetrahedron*, 1986, **42**, 6621-6626 (*Guan-fu bases A, Y*)

Bessonova, I.A. *et al., Khim. Prir. Soedin.*, 1987, **23**, 690-692; *Chem. Nat. Compd. (Engl. Transl.)*, 1987, **23**, 573-575 (*Acorine*)
Yusipova, I.M. *et al., Khim. Prir. Soedin.*, 1990, **26**, 378-383; 383-386; *Chem. Nat. Compd. (Engl. Transl.)*, 1990, **26**, 314-318; 318-320 (*Guan-fu base F Z N-oxide*)
Joshi, B.S. *et al., Heterocycles*, 1991, **32**, 1793-1804 (*Tangutisine*)
Bessonova, I.A. *et al., Khim. Prir. Soedin.*, 1991, **27**, 91-93; *Chem. Nat. Compd. (Engl. Transl.)*, 1991, **27**, 79-81 (*Acoridine*)
Salimov, B.T. *et al., Khim. Prir. Soedin.*, 1992, **28**, 375-382; *Chem. Nat. Compd. (Engl. Transl.)*, 1992, **28**, 329-334 (*Zeravschanisine*)
Wang, Y.P. *et al., Zhongguo Yaoli Xuebao (Acta Pharmacol. Sin.)*, 1992, **13**, 231-234 (*Guan-fu base A, activity*)
Liu, J. *et al., CA*, 1993, **119**, 221622g (*13-Acetylacoridine*)
Mericli, A.H. *et al., Pharmazie*, 2000, **55**, 696-698 (*Guan-fu base Y, isol, pmr, cmr*)
Yang, C. *et al., Zhongcaoyao*, 2004, **35**, 1328-1330; *CA*, **144**, 11244 (*Guan-fu base P*)
Jiang, K. *et al., Yaoxue Xuebao*, 2006, **41**, 128-131 (*Guan-fu base R*)
Reina, M. *et al., Nat. Prod. Res.*, 2007, **21**, 1048-1055 (*14-Hydroxyhetisinone* N-*oxide*)

Hetisan-2,11,13,15-tetrol H-190



$C_{20}H_{27}NO_4$ 345.438

(11α,13*R*,15β)-*form*

2-Ketone: 11,13,15-Trihydroxyhetisan-2-one

2-Ketone, 11-benzoyl: ***Cardiopetamine***
[88841-41-2]
$C_{27}H_{29}NO_5$ 447.53
Alkaloid from *Delphinium cardiopetalum* and aerial parts of *Aconitum napellus* (Ranunculaceae). Mp 302-305° dec. $[\alpha]_D$ +65 (c, 1.4 in EtOH).

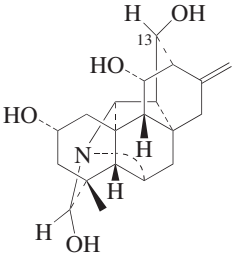
2-Ketone, 11-benzoyl, 15-Ac: ***15-Acetylcardiopetamine***
[88840-05-5]
$C_{29}H_{31}NO_6$ 489.567
Alkaloid from *Delphinium cardiopetalum* and aerial parts of *Aconitum napellus* (Ranunculaceae). Mp 236-237°. $[\alpha]_D$ +12 (c, 0.51 in EtOH).

2,13-Diketone: 11,15-Dihydroxyhetisan-2,13-dione
$C_{20}H_{23}NO_4$ 341.406

2,13-Diketone, 11-benzoyl, 15-Ac: ***15-Acetyl-13-dehydrocardiopetamine***
[88840-09-9]
$C_{29}H_{29}NO_6$ 487.551
Alkaloid from aerial parts of *Aconitum napellus* (Ranunculaceae). Mp 253-255°. $[\alpha]_D$ -46 (c, 0.03 in EtOH).

González, A.G. *et al., Tet. Lett.*, 1983, **24**, 3765 (*Cardiopetamine, 15-Acetylcardiopetamine, uv, ir, pmr, cryst struct*)
De la Feunte, G. *et al., Heterocycles*, 1989, **29**, 1577 (*15-Acetyl-13-dehydrocardiopetamine*)

Hetisan-2,11,13,19-tetrol H-191



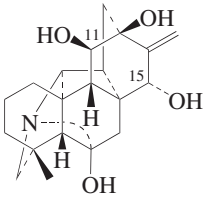
$C_{20}H_{27}NO_4$ 345.438

(2α,11α,13*S*,19*S*)-*form*
Vakhmatine
[135273-17-5]
Alkaloid from *Aconitum palmatum* (Ranunculaceae). Also isol. from seeds of *Consolida ambigua* (Ranunculaceae). Cryst. (MeOH). Mp 170.5-174.5°. $[\alpha]_D^{24}$ +12.6 (c, 0.2 in MeOH).

13-Ac: ***13-O-Acetylvakhmatine***
[172045-40-8]
$C_{22}H_{29}NO_5$ 387.475
Alkaloid from seeds of *Consolida ambigua* (Ranunculaceae). $[\alpha]_D$ -20 (c, 3.11 in $CHCl_3$).

Jiang, Q. *et al., J. Nat. Prod.*, 1991, **54**, 525 (*isol, ir, pmr, cmr, ms, struct*)
Venkateswarlu, V. *et al., J. Nat. Prod.*, 1995, **58**, 1527 (*13-O-Acetylvakhmatine*)

Hetisan-6,11,12,15-tetrol H-192



$C_{20}H_{27}NO_4$ 345.438

(11β,15α)-*form*

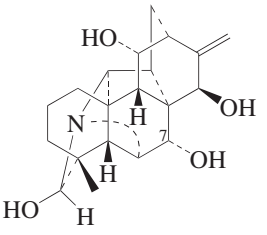
*15-*O*-(2-Methylpropanoyl):* ***Cardionine***
[123151-94-0]
$C_{24}H_{33}NO_5$ 415.528
Alkaloid from above-ground parts of *Delphinium cardiopetalum* (Ranunculaceae). Cryst. (EtOAc). Mp 235° dec. $[\alpha]_D$ +4.68 (c, 0.13 in EtOH).

*15-*O*-(2-Methylpropanoyl), hydroiodide:* Mp 265-270° dec.

*15-*O*-(2-Methylpropanoyl), picrate:* Mp 158-160° dec.

*15-*O*-(2-Methylpropanoyl), 11-Ac:* ***11-Acetylcardionine***
[123151-95-1]
$C_{26}H_{35}NO_6$ 457.566
Alkaloid from aerial parts of *Delphinium gracile* (Ranunculaceae). Gum. $[\alpha]_D$ -5.71 (c, 0.14 in $CHCl_3$).
De la Fuente, G. *et al., J.O.C.*, 1990, **55**, 342 (*isol, ir, pmr, cmr, ms, struct*)

Hetisan-7,11,15,19-tetrol H-193

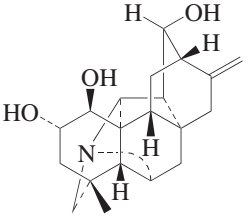


$C_{20}H_{27}NO_4$ 345.438

(7α,11α,15β,19*R*)-*form*
Ternatidine
[193901-49-4]

*7-*O*-(2-Methylpropanoyl):* ***Ternatine***†
[193901-34-7]
$C_{24}H_{33}NO_5$ 415.528
Alkaloid from the aerial parts of *Delphinium ternatum*. Cryst. (Me_2CO). Mp 236-238°.
Narzullaev, A.S. *et al., Russ. Chem. Bull. (Engl. Transl.)*, 1997, **46**, 184-185 (*isol, pmr, cmr*)

Hetisan-1,2,13-triol H-194

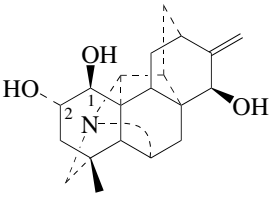


$C_{20}H_{27}NO_3$ 329.438

(1β,2α,13*R*)-*form*

Tri-Ac: ***Venudelphine***
[154887-96-4]
$C_{26}H_{33}NO_6$ 455.55
Alkaloid from aerial parts of *Delphinium venulosum* (Ranunculaceae). $[\alpha]_D^{22}$ 0 (c, 0.1 in $CHCl_3$).
Ulubelen, A. *et al., J. Nat. Prod.*, 1993, **56**, 780 (*isol, ir, pmr, cmr, ms, struct*)

Hetisan-1,2,15-triol H-195



$C_{20}H_{27}NO_3$ 329.438

(1β,2α,15β)-*form*

2-Benzoyl: ***Deacetylhanamisine****. Hanamiyama base. 9-Deoxyhypognavine*
[148245-81-2]
$C_{27}H_{31}NO_4$ 433.546
Alkaloid from *Aconitum sanyoense* (Ranunculaceae). Plates (Me_2CO/MeOH). Mp 246-247° (243-244.5°). $[\alpha]_D^{28}$ +120.6. $[\alpha]_D^{16}$ +130 (c, 0.11 in MeOH).

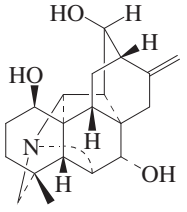
2-Benzoyl, 1-Ac: ***Hanamisine***
[87201-23-8]
$C_{29}H_{33}NO_5$ 475.583
Alkaloid from *Aconitum sanyoense* and *Aconitum sanyoense* var. *tonense* (Ranunculaceae). Prisms (Me_2CO). Mp 124-127°. $[\alpha]_D^{25}$ +122.6 (c, 1.06 in MeOH).

Ochiai, E. *et al., Yakugaku Zasshi*, 1956, **76**, 1436; *CA*, **51**, 6662d (*Deacetylhanamisine, isol*)

Okamoto, T. *et al., Chem. Pharm. Bull.*, 1983, **31**, 1431 (*Hanamisine, pmr, cmr, ms, abs config, cryst struct*)

Takayama, H. *et al., Chem. Pharm. Bull.*, 1992, **40**, 2927 (*Deacetylhanamisine, struct*)

Hetisan-1,7,13-triol H-196



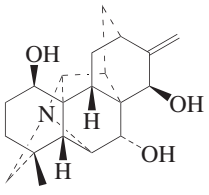
$C_{20}H_{27}NO_3$ 329.438

(1β,7α,13*S*)-*form*

13-Benzoyl: ***Crassicauline B****. Crassicauline II*
[79620-39-6]
$C_{27}H_{31}NO_4$ 433.546
Minor alkaloid from the roots of *Aconitum crassicaule* (Ranunculaceae). Powder. Mp 311-315° dec. (sealed tube).

Wang, F.-P. *et al., Planta Med.*, 1981, **42**, 375; 1985, 443 (*isol, uv, ir, pmr, ms, struct*)

Hetisan-1,7,15-triol H-197



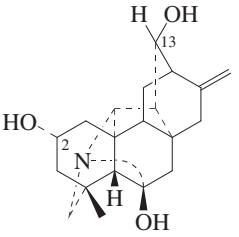
$C_{20}H_{27}NO_3$ 329.438

(1β,7α,15β)-*form*

7-Hydroxycossonidine*. 7-Hydroxydavisine*
Alkaloid from *Consolida oliveriana*. Amorph. solid. $[\alpha]_D^{25}$ +25 (c, 0.1 in $CHCl_3$).

Grandez, M. *et al., J. Nat. Prod.*, 2002, **65**, 513-516 (*isol, pmr, cmr, ms*)

Hetisan-2,6,13-triol, 9CI H-198



$C_{20}H_{27}NO_3$ 329.438

(2α,13*S*)-*form*

Tatsirine
[132922-83-9]
Alkaloid from the roots of *Delphinium tatsienense*. Mp 260-263°.

2-Ketone: 6,13-Dihydroxyhetisan-2-one. ***Delnuttidine***
[163597-05-5]
$C_{20}H_{25}NO_3$ 327.422
Alkaloid from *Delphinium nuttallianum*.

13-Ketone: 2,6-Dihydroxyhetisan-13-one. ***Panicudine***
[178451-93-9]
$C_{20}H_{25}NO_3$ 327.422
Alkaloid from *Aconitum paniculatum*. Cryst. Mp 249-250°.

13-Ketone, N-*Me:* ***Orochrine***
[959906-92-4]
$C_{21}H_{28}NO_3^{\oplus}$ 342.457
Alkaloid from *Aconitum orochryseum*. Needles (as hydroxide). Mp 210-214° (hydroxide). $[\alpha]_D^{23}$ -65.2 (c, 0.62 in MeOH) (hydroxide).

13-Ketone, N-*Me, 2-Ac:* ***2-O-Acetylorochrine***
[959853-59-9]
$C_{23}H_{30}NO_4^{\oplus}$ 384.494
Alkaloid from *Aconitum orochryseum*. Amorph. solid (as hydroxide). Mp 148-150° (hydroxide). $[\alpha]_D^{22}$ -82.5 (c, 0.82 in $CHCl_3$) (hydroxide).

2,13-Diketone: 6-Hydroxyhetisan-2,13-dione. ***Paniculadine***
[188904-81-6]
$C_{20}H_{23}NO_3$ 325.407
Alkaloid from *Aconitum paniculatum*. Cryst. (Me_2CO). Mp 276-278°. λ_{max} 301 (log ϵ 5.11) (EtOH).

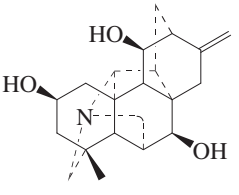
Zhang, X. *et al., Heterocycles*, 1990, **31**, 1879-1888 (*Tatsirine*)

Bai, Y. *et al., Phytochemistry*, 1994, **37**, 1717-1724 (*Delnuttidine*)

Bessonova, I.A. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1995, **31**, 705-707; 1996, **32**, 561-563 (*Panicudine, Paniculadine*)

Wangchuk, P. *et al., J. Nat. Prod.*, 2007, **70**, 1808-1811 (*Orochrine, 2-Acetylorochrine*)

Hetisan-2,7,11-triol H-199



$C_{20}H_{27}NO_3$ 329.438

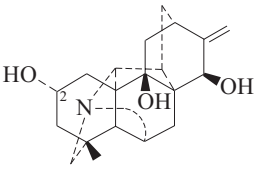
(2β,7β,11β)-*form*

Souline F
[244616-34-0]
Alkaloid from *Delphinium souliei*. Cryst. (MeOH). Mp >° 350. $[\alpha]_D^{24}$ -1.2 (c, 0.85 in MeOH).

He, L. *et al., Chin. Chem. Lett.*, 1999, **10**, 395-396 (*isol, pmr, cmr*)

He, L. *et al., Indian J. Chem., Sect. B*, 2001, **40**, 1285-1286 (*isol, pmr, cmr*)

Hetisan-2,9,15-triol H-200



$C_{20}H_{27}NO_3$ 329.438

(2α,15β)-*form*

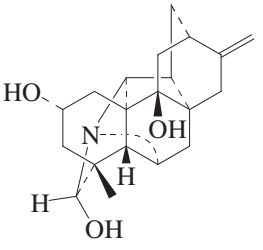
Ryosenaminol*. 1-Deoxyhypognavinol*
[88142-54-5]
Alkaloid from *Aconitum ibukiense* (Ranunculaceae). Mp 287-290° dec. $[\alpha]_D^{29}$ +66.8 (c, 0.38 in MeOH).

2-Benzoyl: ***Ryosenamine****. 1-Deoxyhypognavine*
[88142-55-6]
$C_{27}H_{31}NO_4$ 433.546
Alkaloid from *Aconitum ibukiense* (Ranunculaceae). Also isol. from the processed aconite kako-bushi-matsu. Mp 213-215°. $[\alpha]_D^{12}$ +96.8 (c, 0.20 in MeOH).

Sakai, S. *et al., Chem. Pharm. Bull.*, 1983, **31**, 3338 (*isol, ir, uv, pmr, cmr, ms, cryst struct*)

Mori, T. *et al., Heterocycles*, 1989, **29**, 873 (*Ryosenamine*)

Hetisan-2,9,19-triol H-201



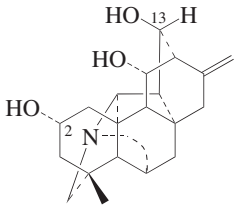
$C_{20}H_{27}NO_3$ 329.438

(2α,19*S*)-*form*

2-Ac: ***Acsinatine***
[1353-76-0]
$C_{22}H_{29}NO_4$ 371.475
Alkaloid from roots of *Aconitum leucostomum*. Cryst. (Et_2O/MeOH). Mp 251-253°. Incorrect C-19 stereochem. given in CA.

Telnov, V.A. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1993, **29**, 346-348 (*Acsinatine*)

Hetisan-2,11,13-triol, 9CI H-202



$C_{20}H_{27}NO_3$ 329.438

(2α,11α,13*R*)-*form*
Hetisine. *Delatine*
[10089-23-3]
Alkaloid from the roots of *Aconitum heterophyllum* and *Delphinium tatsienense*, the seeds of *Delphinium elatum*, and the above-ground parts of *Delphinium cardinale* (Ranunculaceae). Cryst. (MeOH/Me_2CO). Mp 261-264° (256.5-259°). $[\alpha]_D^{27}$ +10.9 (c, 1.5 in $CHCl_3$). $[\alpha]_D^{25}$ +13.7 (c, 1.02 in EtOH).

Hydrochloride:
Cryst. (H_2O). Mp 274-275°. $[\alpha]_D^{18}$ +13.4 (c, 2 in H_2O).

11-Ac: ***11-Acetylhetisine***
[116107-39-2]
$C_{22}H_{29}NO_4$ 371.475
Alkaloid from *Delphinium nuttallianum*. Cryst. (Me_2CO/hexane). Mp 264-266°.

13-Ac: ***13-Acetylhetisine***
[103956-38-3]
$C_{22}H_{29}NO_4$ 371.475
Alkaloid from *Delphinium macrocentrum* and *Delphinium nuttallianum* (Ranunculaceae). Amorph. solid. Mp 241-243°. Mp refers to a semisynthetic sample.

O^{11},O^{13}*-Di-Ac:* ***11,13-Diacetylhetisine***
[105742-72-1]
$C_{24}H_{31}NO_5$ 413.513
Alkaloid from *Delphinium nuttallianum*. Mp 225-227°. $[\alpha]_D$ +26.1 ($CHCl_3$).

Tri-Ac:
Amorph.

13-Cinnamoyl: ***Palmasine***
[116085-15-5]
$C_{29}H_{33}NO_4$ 459.584
Minor alkaloid from roots of *Aconitum palmatum* (Ranunculaceae). Cryst. (Me_2CO). Mp 252-254°.

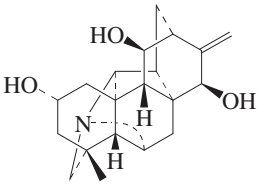
13-Cinnamoyl, 11-Ac: ***Palmadine***
[116085-14-4]
$C_{31}H_{35}NO_5$ 501.621
Alkaloid from roots of *Aconitum palmatum* (Ranunculaceae). Cryst. (Me_2CO). Mp 269-271°. $[\alpha]_D^{26}$ +11.2 (c, 0.2 in $CHCl_3$).

2-Ketone: ***Hetisinone***. *11,13-Dihydroxyhetisan-2-one. Dehydrohetisine*
[4829-55-4]
$C_{20}H_{25}NO_3$ 327.422
Alkaloid from *Delphinium cardinale*, *Delphinium cardiopetalum* and from the roots of *Delphinium tatsienense* and *Aconitum heterophyllum* (Ranunculaceae). Rhombs (C_6H_6). Mp 273-275° (268-270°). $[\alpha]_D$ +18. A semisynthetic sample showed Mp 195-197° (Glinski); discrepancy unexplained.

2-Ketone, 13-Ac: ***13-Acetylhetisinone***
[82209-94-7]
$C_{22}H_{27}NO_4$ 369.46
Alkaloid from *Delphinium cardiopetalum*.

Jacobs, W.A. *et al., J. Biol. Chem.*, 1942, **143**, 605; 1947, **170**, 189 (*isol, uv*)
Goodson, J. *et al., J.C.S.*, 1943, 139 (*isol*)
Solo, A.J. *et al., J.A.C.S.*, 1959, **81**, 4439; *J.O.C.*, 1962, **27**, 2702 (*ir, pmr, struct*)
Przybylska, M. *et al., Acta Cryst. B*, 1962, **16**, 871 (*cryst struct*)
Benn, M.H. *et al., Can. J. Chem.*, 1966, **44**, 1 (*isol, uv, ord, ir, pmr, struct*)
Aplin, R.T. *et al., Can. J. Chem.*, 1968, **46**, 2635 (*Hetisinone*)
Pelletier, S.W. *et al., Phytochemistry*, 1968, **7**, 625 (*Hetisinone*)
González, A.G. *et al., An. Quim., Ser. C*, 1981, **77**, 171; *CA*, **97**, 20730u (*Hetisinone, Acetylhetisinone*)
Pelletier, S.W. *et al., Heterocycles*, 1983, **20**, 1347 (*isol, occur*)
Varughese, K.I. *et al., J. Nat. Prod.*, 1984, **47**, 470 (*cryst struct*)
Benn, M. *et al., Heterocycles*, 1986, **24**, 1605 (*13-Acetylhetisine*)
Glinski, J.A. *et al., Heterocycles*, 1988, **27**, 185
Jiang, Q. *et al., Tet. Lett.*, 1988, **29**, 1875 (*Palmadine, Palmasine*)
Bai, Y. *et al., Heterocycles*, 1990, **31**, 1233-1236 (*11,13-Diacetylhetisine*)
Bai, Y. *et al., Phytochemistry*, 1994, **37**, 1717-1724 (*11-Acetylhetisine*)

Hetisan-2,11,15-triol H-203



$C_{20}H_{27}NO_3$ 329.438

(2α,11β,15β)-*form*
Isohypognavinol. *Tanwusine*†
[34692-47-2]
Alkaloid from *Aconitum tanguticum* (Ranunculaceae).

2-Benzoyl: ***Isohypognavine***
[3368-91-0]
$C_{27}H_{31}NO_4$ 433.546
Alkaloid from *Aconitum majimai* and *Aconitum japonicum* (Ranunculaceae). Mp 135°.
▶ MK8400000

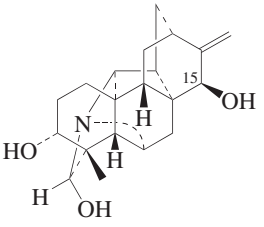
2-Benzoyl, hydrochloride: Mp 190-192° dec.

2-Benzoyl, 11-Ac: ***11-Acetylisohypognavine***
[71239-52-6]
$C_{29}H_{33}NO_5$ 475.583
Alkaloid from *Aconitum japonicum* (Ranunculaceae). Mp 187.5-188.5°. $[\alpha]_D^{19}$ +74.1 (c, 0.8 in $CHCl_3$).

2-Benzoyl, 11,15-di-Ac: ***Diacetylisohypognavine***
[71239-53-7]
$C_{31}H_{35}NO_6$ 517.621
Alkaloid from *Aconitum japonicum* (Ranunculaceae). Mp 181-183°. $[\alpha]_D^{18}$ +55.3 (c, 0.2 in $CHCl_3$).

Ochiai, E. *et al., Yakugaku Zasshi*, 1956, **76**, 550; *CA*, **50**, 13372f (*Isohypognavine, isol*)
Okamoto, T. *et al., Chem. Pharm. Bull.*, 1964, **12**, 1124-1128 (*Isohypognavine, struct*)
Sakai, S. *et al., Yakugaku Zasshi*, 1979, **99**, 647-656; *CA*, **91**, 105185w (*11-Acetylisohypognavine, Diacetylisohypognavine*)
Sakai, S. *et al., Chem. Pharm. Bull.*, 1982, **30**, 4576; 4579 (*ir, pmr, ms, cryst struct, abs config*)
Chen, D. *et al., Zhongcaoyao*, 1985, **16**, 338; *CA*, **104**, 95320 (*Tanwusine*)

Hetisan-3,15,19-triol H-204

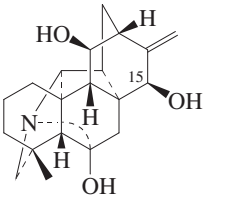


$C_{20}H_{27}NO_3$ 329.438

(3α,15β,19*S*)-*form*
15-Ac: ***Andersobine***
[159982-64-6]
$C_{22}H_{29}NO_4$ 371.475
Alkaloid from aerial parts of *Delphinium andersonii* (Ranunculaceae). Plates (MeOH). Mp 310°.

Joshi, B.S. *et al., Tetrahedron*, 1994, **50**, 12283 (*isol, ir, cd, pmr, cmr, ms, struct*)

Hetisan-6,11,15-triol H-205



$C_{20}H_{27}NO_3$ 329.438

(11β,15β)-*form*
Pseudokobusine
[27901-01-5]
Alkaloid from *Aconitum yesoense* and *Aconitum luciduculum* (Ranunculaceae). Mp 271-272° dec.
▶ MK8200000

*15-*O*-(2*S*-Methylbutanoyl):* ***Yesodine***
[131652-36-3]
$C_{25}H_{35}NO_4$ 413.556
Alkaloid from *Aconitum yesoense* var. *macroyesoense* (Ranunculaceae). Amorph. powder. $[\alpha]_D^{22}$ -9.4 (c, 0.34 in $CHCl_3$).

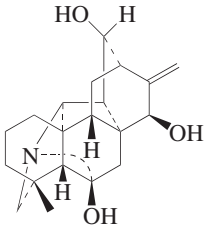
15-Benzoyl: ***15-Benzoylpseudokobusine***
[112574-95-5]
$C_{27}H_{31}NO_4$ 433.546
Alkaloid from rhizomes of *Aconitum yesoense* var. *macroyesoense* (Ranunculaceae). Amorph. $[\alpha]_D$ -6.9 (c, 0.13 in EtOH).

*15-*O*-(3,4-Dimethoxybenzoyl):* ***15-(3,4-***

***Dimethoxybenzoyl)pseudokobusine**. 15-Veratroylpseudokobusine*
[112561-71-4]
$C_{29}H_{35}NO_6$ 493.599
Alkaloid from the rhizomes of *Aconitum yesoense* var. *macroyesoense* (Ranunculaceae). Amorph. $[\alpha]_D$ -6.7 (c, 0.18 in EtOH).

Natsume, M. *et al., Chem. Pharm. Bull.*, 1962, **10**, 879 (*Pseudokobusine*)
Bando, H. *et al., Heterocycles*, 1987, **26**, 2623 (*15-Benzoylpseudokobusine, 15-Veratroylpseudokobusine*)
Wada, K. *et al., Heterocycles*, 1990, **31**, 1081 (*Yesodine*)
Mericli, A.H. *et al., Heterocycles*, 2000, **53**, 1987-1996 (*Pseudokobusine*)

Hetisan-6,13,15-triol H-206

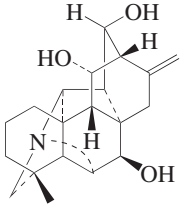


$C_{20}H_{27}NO_3$ 329.438

(13*S*,15β)-*form*
Acorientine
[174232-21-4]
Alkaloid from aerial parts of *Aconitum orientale*. $[\alpha]_D$ +13.5 (c, 0.1 in $CHCl_3$).

Ulubelen, A. *et al., Phytochemistry*, 1996, **41**, 957-961 (*isol, ir, pmr, cmr, ms*)

Hetisan-7,11,13-triol H-207

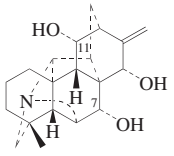


$C_{20}H_{27}NO_3$ 329.438

(7β,11α,13*S*)-*form*
Delfissinol
[152606-55-8]
Alkaloid from aerial parts of *Delphinium fissum* ssp. *anatolicum* (Ranunculaceae). Amorph. $[\alpha]_D^{20}$ -39.1 (c, 0.2 in MeOH). Struct. incorrectly drawn in ref.

Ulubelen, A. *et al., Phytochemistry*, 1993, **34**, 1165-1167 (*isol, ir, pmr, cmr, ms*)

Hetisan-7,11,15-triol H-208



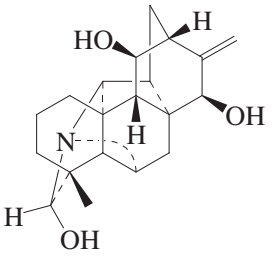
(7α,11α,15α)-*form*
$C_{20}H_{27}NO_3$ 329.438

(7α,11α,15α)-*form*
7-Benzoyl, 11-Ac: ***Tiantaishandine***
[959843-33-5]
$C_{29}H_{33}NO_5$ 475.583
Alkaloid from the roots of *Delphinium tiantaishanense*. Amorph. powder. Mp 248-249°. $[\alpha]_D^{20}$ +35.6 (c, 0.85 in $CHCl_3$).

(7α,11α,15β)-*form*
11-Ac: ***Delnuttine***
[163564-88-3]
$C_{22}H_{29}NO_4$ 371.475
Minor alkaloid from *Delphinium nuttallianum* (Ranunculaceae).

Bai, Y. *et al., Phytochemistry*, 1994, **37**, 1717-1724 (*Delnuttine*)
Li, J. *et al., Molecules*, 2007, **12**, 353-360 (*Tiantaishandine*)

Hetisan-11,15,19-triol H-209

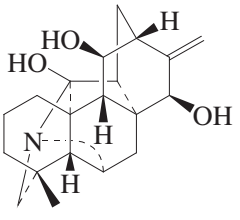


$C_{20}H_{27}NO_3$ 329.438

(11β,15β,19*S*)-*form*
Talatizine
[80248-73-3]
Alkaloid from *Aconitum talassicum* (Ranunculaceae). Cryst. (EtOH). Mp 246-246.5°. $[\alpha]_D$ +38 (EtOH).

Karimov, Z. *et al., Khim. Prir. Soedin.*, 1981, **17**, 335; *Chem. Nat. Compd. (Engl. Transl.)*, 1981, **17**, 259 (*Talatisine*)

Hetisan-11,15,20-triol H-210



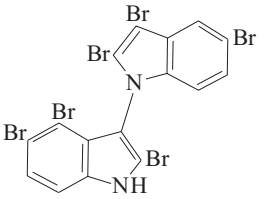
$C_{20}H_{27}NO_3$ 329.438

(11β,15β)-*form*
Orgetine
Alkaloid from *Aconitum orientale*. Cryst. (Me_2CO). Mp 280-282°. $[\alpha]_D^{22}$ +40 (c, 0.36 in EtOH).

Beshitaishvili, L.V. *et al., Khim. Prir. Soedin.*, 1992, **28**, 240; *Chem. Nat. Compd. (Engl. Transl.)*, 1992, **28**, 206-208 (*Orgetine*)

2,2′,3,4′,5,5′-Hexabromo-1,3′-bi-1*H*-indole H-211

Rivularin A
[81387-87-3]

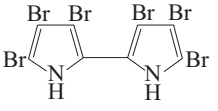


$C_{16}H_6Br_6N_2$ 705.661
Isol. from the marine blue-green alga *Rivularia firma*. Prisms (MeCN). Mp 263-264°. $[\alpha]_D^{20}$ +18.7 (c, 1 in MeCN). Exhibits opt. activity owing to restricted rotn. λ_{max} 226 (ϵ 63000); 287 (ϵ 17000) (MeCN).

Norton, R.S. *et al., J.A.C.S.*, 1982, **104**, 3628-3635 (*isol, uv, ir, pmr, cmr*)
Maehr, H. *et al., J.O.C.*, 1984, **49**, 1549-1553 (*nomenclature*)

3,3′,4,4′,5,5′-Hexabromo-2,2′-bi-1*H*-pyrrole H-212

Bistribromopyrrole
[54705-15-6]



$C_8H_2Br_6N_2$ 605.541
Pyrrole antibiotic. Isol. from marine *Chromobacterium* sp. Active against *Chromobacterium* sp. Sol. MeOH, Et_2O; fairly sol. hexane; poorly sol. H_2O. λ_{max} 258 (MeOH) (Berdy). λ_{max} 272 (MeOH/NaOH) (Berdy).

*N,N′-Di-Me: 3,3′,4,4′,5,5′-Hexabromo-1,1′-dimethyl-2,2′-bi-1*H*-pyrrole*
[253798-63-9]
$C_{10}H_6Br_6N_2$ 633.595
Isol. from the eggs of various seabirds. Mp 247-248°.

Andersen, R.J. *et al., Mar. Biol. (Berlin)*, 1974, **27**, 281 (*isol*)
Gribble, G.W. *et al., Chem. Comm.*, 1999, 2195-2196 (*synth, pmr, ms*)

1,1,1,15,15,15-Hexachloro-3,12-pentadecadiyn-8-amine H-213

8-Amino-1,1,1,15,15,15-hexachloro-3,12-pentadecadiyne
$Cl_3CCH_2C{\equiv}C(CH_2)_3CH(NH_2)(CH_2)_3C{\equiv}CCH_2CCl_3$
$C_{15}H_{19}Cl_6N$ 426.038

(+)-*form*
N-*Ac: 8-Acetamido-1,1,1,15,15,15-hexachloro-3,12-pentadecadiyne*
[345261-10-1]
$C_{17}H_{21}Cl_6NO$ 468.075
Isol. from the cyanobacterium *Microcoleus lyngbyaceus*. Oil.

Dechloro, N-*Ac: 8-Acetamido-1,1,1,15,15-pentachloro-3,12-pentadecadiyne*
[345261-09-8]
$C_{17}H_{22}Cl_5NO$ 433.63
Isol. from the cyanobacterium *Microcoleus lyngbyaceus*. Pale yellow oil. $[\alpha]_D$ +36 (c, 0.08 in $CHCl_3$).

15-Dechloro, 3,3,4,4-tetrahydro, N-*Ac: 8-Acetamido-1,1,15,15,15-pentachloro-3-pentadecyne*
[345261-19-0]
$C_{17}H_{26}Cl_5NO$ 437.662
Isol. from the cyanobacterium *Microcoleus lyngbyaceus*. Oil. $[\alpha]_D$ +30 (c, 0.07 in $CHCl_3$).

1,15-Didechloro, 3,3,4,4-tetrahydro, N-*Ac: 8-Acetamido-1,1,15,15-tetrachloro-3-pentadecyne*
[345261-11-2]
$C_{17}H_{27}Cl_4NO$ 403.217
Isol. from the cyanobacterium *Microcoleus lyngbyaceus*. Oil. $[\alpha]_D$ +24 (0.08 in $CHCl_3$).

Orsini, M.A. *et al., J. Nat. Prod.*, 2001, **64**, 572-577 (*isol, ir, pmr, cmr*)

Hexacosanoic acid, 9Cl H-214

Cerinic acid. Cerotic acid. Ceric acid. Ceratinic acid. EB 82B
[506-46-7]
$H_3C(CH_2)_{24}COOH$
$C_{26}H_{52}O_2$ 396.696
Constit. of various oils, waxes and bacterial lipids. Mp 88-89°.

Me ester: [5802-82-4]
$C_{27}H_{54}O_2$ 410.722
Mp 63-68°. Bp_{15} 286° $Bp_{3.5}$ 248°.

Et ester: [29030-81-7]
$C_{28}H_{56}O_2$ 424.749
Mp 59.5-59.8°.

Nonyl ester: Nonyl hexacosanoate
$C_{35}H_{70}O_2$ 522.937
Constit. of *Artabotrys odoratissimus*. Cryst. (C_6H_6). Mp 83°.

Amide: [22715-86-2]
$C_{26}H_{53}NO$ 395.711
Mp 105-107°.

2-Methylpropylamide: N-*(2-Methylpropyl)hexacosanamide, 9CI. Hexacosanoic acid isobutylamide.* ***Longamide***†
[119736-87-7]
$C_{30}H_{61}NO$ 451.818
Minor constit. of fruits of *Piper longum* (long pepper) (Piperaceae). Amorph. powder. Mp 72°.

Levene, P.A. *et al., J. Biol. Chem.*, 1924, **59**, 905 (*synth*)
Helz, G.E. *et al., J. Biol. Chem.*, 1936, **116**, 203
Bernhard, K. *et al., Helv. Chim. Acta*, 1948, **31**, 977
Asselineau, J. *et al., C. R. Hebd. Seances Acad. Sci.*, 1953, **237**, 1804
Tember, G.A. *et al., CA*, 1974, **80**, 47410a (*synth*)
Watanabe, S. *et al., Z. Naturforsch., C*, 1975, **30**, 825 (*ms*)
Koul, S.K. *et al., Phytochemistry*, 1988, **27**, 3523 (*Longamide*)
Mehta, B.K. *et al., Indian J. Chem., Sect. B*, 1999, **38**, 1304-1306 (*Nonyl hexacosanoate*)

2,9-Hexadecadiene-12,14-diynoic acid, 9Cl H-215

$H_3CC{\equiv}CC{\equiv}CCH_2CH{=}CH(CH_2)_5CH{=}CHCOOH$
$C_{16}H_{20}O_2$ 244.333

(2E,9Z)-form

2-Methylpropylamide: N-*(2-Methylpropyl)-2,9-hexadecadiene-12,14-diynamide, 9CI. 2,9-Hexadecadiene-12,14-diynoic acid isobutylamide*
[120727-32-4]
Isol. from the roots of *Echinacea angustifolia*. Oil. λ_{max} 199, 211sh nm.

Bauer, R. *et al., Phytochemistry*, 1989, **28**, 505 (*isol, struct, ir, uv, pmr, ms*)

2,4-Hexadecadienoic acid, 9Cl H-216

[25377-52-0]
$H_3C(CH_2)_{10}CH{=}CHCH{=}CHCOOH$
$C_{16}H_{28}O_2$ 252.396

(all-E)-form [59404-48-7]

2-Methylpropylamide: **N-*Isobutyl-2,4-hexadecadienamide***
$C_{20}H_{37}NO$ 307.518
Constit. of the fruits of *Piper guineense* and *Evodia huipephensis* (Piperaceae, Rutaceae). Noncryst. Mp 78.5-84° (refers to synthetic material).

(2E,4Z)-form

Me ester: [54977-89-8]
$C_{17}H_{30}O_2$ 266.423
Used as aroma compd. in the food industry.

Et ester:
$C_{18}H_{32}O_2$ 280.45
Aroma compd.

(2ξ,4ξ)-form

Piperidide: ***2,4-Hexadecadienoic acid piperidide***
[486447-33-0]
$C_{21}H_{37}NO$ 319.529
Constit. of *Piper guineense*.

[28933-88-2]

Okogun, J.I. *et al., J.C.S. Perkin 1*, 1974, 2195 (*pmr, ms*)
Swiss Pat., 1974, 557 645; *CA*, **82**, 138023 (*synth*)
Vig, O.P. *et al., Indian J. Chem.*, 1975, **13**, 1358 (*synth*)
Reisch, J. *et al., J. Nat. Prod.*, 1985, **48**, 862 (*isol, uv, ir, pmr, ms, struct, isobutylamide*)
Strunz, G.M. *et al., Can. J. Chem.*, 1996, **74**, 419 (*synth, isobutylamide*)
Adesina, S.K. *et al., Pharmazie*, 2003, **58**, 425 (*piperidide*)

2,7-Hexadecadienoic acid H-217

[25377-52-0]
$H_3C(CH_2)_7CH{=}CH(CH_2)_3CH{=}CHCOOH$
$C_{16}H_{28}O_2$ 252.396

(2E,7Z)-form

Pyrrolide: ***2,7-Hexadecadienoic acid pyrrolide****. 1-(1-Oxo-2,7-hexadienyl)-1*H*-pyrrole, 9CI*
[111509-31-0]
$C_{20}H_{31}NO$ 301.471
Isol. from the underground parts of *Achillea ageratifolia* ssp. *serbica* (Asteraceae). Oil.

[28933-88-2]

Greger, H. *et al., Phytochemistry*, 1987, **26**, 2289 (*isol, uv, ir, pmr, ms, struct*)

2,7-Hexadecadien-10-ynoic acid H-218

$H_3C(CH_2)_4C{\equiv}CCH_2CH{=}CH(CH_2)_3CH{=}CHCOOH$
$C_{16}H_{24}O_2$ 248.364

(2E,7Z)-form

Pyrrolide: ***2,7-Hexadeca-10-ynoic acid pyrrolide****. 1-(1-Oxo-2,7-hexadecadien-10-ynyl)-1*H*-pyrrole, 9CI*
[111509-28-5]
$C_{20}H_{27}NO$ 297.439
Isol. from the underground parts of *Achillea ageratifolia* ssp. *serbica* (Asteraceae). Oil.

Pyrrolidide: ***2,7-Hexadeca-10-ynoic acid pyrrolidide****. 1-(1-Oxo-2,7-hexadecadien-10-ynyl)pyrrolidine, 9CI*
[111509-34-3]
$C_{20}H_{31}NO$ 301.471
From underground parts of *Achillea ageratifolia* ssp. *serbica* (Asteraceae). Oil.

Greger, H. *et al., Phytochemistry*, 1987, **26**, 2289 (*isol, uv, ir, pmr, cmr, ms, struct*)

6,8-Hexadecadien-10-ynoic acid H-219

$H_3C(CH_2)_4C{\equiv}CCH{=}CHCH{=}CH(CH_2)_4COOH$
$C_{16}H_{24}O_2$ 248.364

(6E,8E)-form

Pyrrolidide: ***6,8-Hexadecadien-10-ynoic acid pyrrolidide****. 1-(1-Oxo-6,8-hexadecadien-10-ynyl)pyrrolidine, 9CI*
[111509-35-4]
$C_{20}H_{31}NO$ 301.471
Isol. from the underground parts of *Achillea ageratifolia* ssp. *serbica* (Asteraceae). Oil.

Greger, H. *et al., Phytochemistry*, 1987, **26**, 2289 (*isol, uv, ir, pmr, ms, struct*)

2,4,6,8,10,12,14-Hexadecaheptaenedioic acid H-220

$HOOCCH{=}CHCH{=}CHCH{=}CHCH{=}CHCH{=}CHCH{=}CHCOOH$
$C_{16}H_{16}O_4$ 272.3

(all-E)-form

Red tablets. Mp 300°. Probable config.

Di-Me ester:
$C_{18}H_{20}O_4$ 300.354
Orange cryst. (AcOH). Mp 236°.

Di-Et ester: [5941-46-8]
$C_{20}H_{24}O_4$ 328.407
Orange cryst. (AcOH). Mp 217°.

1-L-Aspartic acid, 16-L-isoleucine diamide: ***Boletocrocin A***
[220376-33-0]
$C_{26}H_{32}N_2O_8$ 500.547
Isol. from the fruit bodies of *Boletus laetissimus*. Orange solid. Mp 268°

(dec.). $[\alpha]_D^{25}$ +25 (c, 2.1 in MeOH). λ_{max} 246 (log ϵ 4); 312 (log ϵ 3.83); 389 (log ϵ 4.65); 410 (log ϵ 4.81); 434 (log ϵ 4.77) (MeOH).

1-L-Asparagine, 16-L-isoleucine diamide: ***Boletocrocin B***
[220376-47-6]
$C_{26}H_{33}N_3O_7$ 499.563
Isol. from the fruit bodies of *Boletus aetissimus*. Orange solid. Mp 260° (dec.). $[\alpha]_D^{25}$ +3.4 (c, 1.8 in MeOH). λ_{max} 245 (log ϵ 3.92); 310 (log ϵ 3.69); 389 (log ϵ 4.51); 409 (log ϵ 4.68); 433 (log ϵ 4.65) (MeOH).

1-L-Aspartic acid, 16-L-valine diamide: ***Boletocrocin E***
[220379-17-9]
$C_{25}H_{30}N_2O_8$ 486.521
Isol. from the fruit bodies of *Boletus laetissimus*.

1-L-Glutamic acid, 16-L-isoleucine diamide: ***Boletocrocin F***
[220379-21-5]
$C_{27}H_{34}N_2O_8$ 514.574
Isol. from the fruit bodies of *Boletus laetissimus*.

1-L-Glutamine, 16-L-isoleucine diamide: ***Boletocrocin G***
[220379-25-9]
$C_{27}H_{35}N_3O_7$ 513.589
Isol. from the fruit bodies of *Boletus laetissimus*.

[1441-62-9 (di-Et ester, ns), 77186-01-7 (di-Me ester, ns)]

Kuhn, R. *et al., Ber.*, 1937, **70**, 1318-1330 (*synth, di-Me ester, di-Et ester*)
Kahner, L. *et al., Phytochemistry*, 1998, **49**, 1693-1697 (*Boletocrocins*)

Hexadecanoic acid H-221

Palmitic acid, USAN. Aethalic acid. FEMA 2832
[57-10-3]
$H_3C(CH_2)_{14}COOH$
$C_{16}H_{32}O_2$ 256.428
Occurs in the form of esters (glycerides) in oils and fats of vegetable and animal origin, e.g. present in lipids of *Physalia physalis* (Portuguese-man-of-war). Usually obt. from palm oil. Widely distributed in plants. Used in detn. of water hardness. Active ingredient of Levovist™, used in echo enhancement in sonographic Doppler B-mode imaging. Ultrasound contrast medium. Cryst. Mp 63-64°. Bp 390° Bp_{100} 268.5° Bp_{15} 215°.

▶ Skin irritant. LD_{50} (mus, ivn) 57 mg/kg. RT4550000

Amide: Hexadecanamide, 9CI. Palmitamide, 8CI
[629-54-9]
$C_{16}H_{33}NO$ 255.443
Isol. from seeds of Mexican apple (*Casimiroa edulis*). Cryst. (EtOH). Mp 106-107°. Bp_{12} 235-236°.

Benzylamide: N-*Benzylhexadecanamide.* ***Macamide B***
[74058-71-2]
$C_{23}H_{39}NO$ 345.567
Alkaloid from the tubers of *Lepidium meyenii* (maca). Amorph. solid. λ_{max} 208 (log ϵ 4.03) (MeOH).

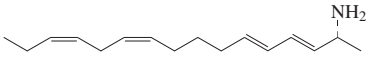
3-Methoxybenzylamide: N-*(3-Methoxybenzyl)hexadecanamide*
$C_{24}H_{41}NO_2$ 375.593
Alkaloid from the tubers of *Lepidium meyenii* (maca). Powder. λ_{max} 216 (log ϵ 3.94); 274 (log ϵ 3.41) (MeOH).

[4991-47-3 , 408-35-5 , 542-42-7 , 2624-31-9]

Kincl, F.A. *et al., J.C.S.*, 1956, 4163 (*isol, amide*)
Muhammad, I. *et al., Phytochemistry*, 2002, **59**, 105-110 (*Macamide B*)
Zhao, J.-P. *et al., J. Agric. Food Chem.*, 2005, **53**, 690-693 (*3-methoxybenzylamide*)

3,5,10,13-Hexadecatetraen-2-amine H-222

2-Amino-3,5,10,13-hexadecatetraene



$C_{16}H_{27}N$ 233.396

(2R,3E,5E,10Z,13Z)-form [356073-88-6]
Isol. from a *Pseudodistoma* sp. Oil. $[\alpha]_D$ -6 (c, 0.05 in MeOH). λ_{max} 229 (log ϵ 3.38) (MeOH).

Rashid, M.A. *et al., Tetrahedron*, 2001, **57**, 5751-5755 (*Pseudodistoma constit, isol, ir, pmr, cmr, uv*)

2,6,8,12-Hexadecatetraen-10-ynoic acid H-223

$H_3CCH_2CH_2CH{=}CHC{\equiv}CCH{=}CHCH{=}CHCH_2CH_2CH{=}CHCOOH$
$C_{16}H_{20}O_2$ 244.333

(2E,6E,8E,12Z)-form

2-Methylpropylamide: ***2,6,8,12-Hexadecatetraen-10-ynoic acid isobutylamide.*** N-*(2-Methylpropyl)-2,6,8,12-hexadecatetraenamide, 9CI*
[81427-12-5]
$C_{20}H_{29}NO$ 299.455
Alkaloid from *Achillea tomentosa* (Asteraceae). Gum.

2,3-Didehydropyrrolidide: ***2,6,8,12-Hexadecatetraen-10-ynoic acid dehydropyrrolidide.*** *2,3-Dihydro-1-(1-oxo-4,6,8,12-hexadecatetraen-10-ynyl)-1*H*-pyrrole, 9CI*
[81427-13-6]
$C_{20}H_{25}NO$ 295.424
Alkaloid from *Achillea tomentosa* (Asteraceae). Gum.

Greger, H. *et al., Phytochemistry*, 1981, **20**, 2579 (*isol, uv, ir, ms, struct*)

2,6,8-Hexadecatrien-10-ynoic acid H-224

$H_3C(CH_2)_4C{\equiv}CCH{=}CHCH{=}CHCH_2CH_2CH{=}CHCOOH$
$C_{16}H_{22}O_2$ 246.349

(2E,6E,8E)-form

Pyrrolide: ***2,6,8-Hexadecatrien-10-ynoic acid pyrrolide***
$C_{20}H_{25}NO$ 295.424
Isol. from the underground parts of *Achillea ageratifolia* ssp. *serbica* (Asteraceae). Mp 34°.

Greger, H. *et al., Phytochemistry*, 1987, **26**, 2289 (*isol, uv, ir, pmr, ms, struct*)

7-Hexadecen-10-ynoic acid H-225

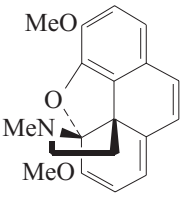
$H_3C(CH_2)_4C{\equiv}CCH_2CH{=}CH(CH_2)_5COOH$
$C_{16}H_{26}O_2$ 250.38

(Z)-form

Pyrrolide: ***7-Hexadecen-10-ynoic acid pyrrolide.*** *1-(1-Oxo-7-hexadecen-10-ynyl)-1*H*-pyrrole, 9CI*
[111509-30-9]
$C_{20}H_{29}NO$ 299.455
Isol. from the underground parts of *Achillea ageratifolia* ssp. *serbica* (Asteraceae). Oil.

Greger, H. *et al., Phytochemistry*, 1987, **26**, 2289 (*isol, uv, ir, pmr, ms, struct*)

6,7,8,9,10,14-Hexadehydro-4,5-epoxy-3,6-dimethoxy-17-methylthebinan H-226



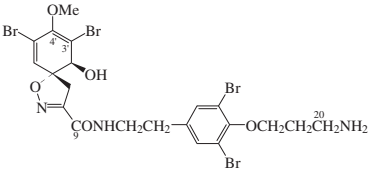
$C_{19}H_{19}NO_3$ 309.364
Unusual type of morphine alkaloid. Alkaloid from capsules of *Papaver bracteatum* cv. "Arya I" (Papaveraceae). Mp 174-175°.

Methiodide:
Needles. Mp 172-173°.

Theuns, H.G. *et al., J.C.S. Perkin 1*, 1984, 1701 (*isol, uv, ir, pmr, cmr, ms, struct, synth*)

Hexadellin B H-227

[121135-01-1]



$C_{21}H_{23}Br_4N_3O_5$ 717.046
Alkaloid from the deep water sponge *Hexadella* sp.

N^{20}-*Me:* ***Purealidin S***
$C_{22}H_{25}Br_4N_3O_5$ 731.073
Alkaloid from the Fijian sponge *Druinella* sp. Cytotoxic. Oil. λ_{max} 280 (log ϵ 3.28) (MeOH).

N^{20},N^{20}-*Di-Me:* ***Purealidin Q***
[167394-82-3]
$C_{23}H_{27}Br_4N_3O_5$ 745.099
Alkaloid from the Okinawan sponge *Psammaplysilla purea*. Cytotoxic agent. Enzyme inhibitor. Oil (as trifluoroacetate). Sol. MeOH, EtOAc; poorly sol. H_2O. $[\alpha]_D^{19}$ +9.1 (c, 0.39 in MeOH). λ_{max} 277 (ϵ 1700); 284 (ϵ 1380) (MeOH) (Berdy).

N^{20}-*(13-Methyltetradecanoyl):* ***Purpurealidin C***
[799246-88-1]
$C_{36}H_{51}Br_4N_3O_6$ 941.431
Isol. from *Psammaplysilla purpurea*. Oil. $[\alpha]_D^{28}$ +158.5 (c, 0.2 in $CHCl_3$). λ_{max} 218 (ϵ 2500); 282 (ϵ 10000) (MeOH).

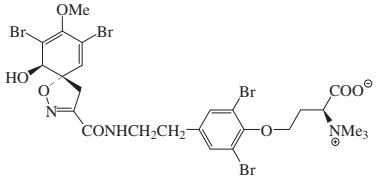
N^{20}-*Hexadecanoyl:* ***Purpurealidin D***
[799246-89-2]
$C_{37}H_{53}Br_4N_3O_6$ 955.458
Isol. from *Psammaplysilla purpurea*. Oil. λ_{max} 218 (ϵ 2500); 282 (ϵ 10000) (MeOH).

3′ξ,4′ξ-Dihydro, N^9,N^{20},N^{20}*-tri-Me:* ***Purpurealidin A***
[799246-86-9]
$C_{24}H_{31}Br_4N_3O_5$ 761.142
Isol. from the sponge *Psammaplysilla purpurea*. Oil. $[\alpha]_D^{28}$ +9.5 (c, 0.2 in MeOH). λ_{max} 277 (ϵ 1700); 284 (ϵ 1400) (MeOH).

Morris, S.A. *et al., Can. J. Chem.*, 1989, **67**, 677 (*isol, ir, pmr, cmr, ms, struct*)
Kobayashi, J. *et al., Chem. Pharm. Bull.*, 1995, **43**, 403 (*Purealidin Q*)
Tabudravu, J.N. *et al., J. Nat. Prod.*, 2002, **65**, 1798-1801 (*Purealidin S*)
Tilvi, S. *et al., Tetrahedron*, 2004, **60**, 10207-10215 (*Purpurealidins A,C,D, Purealidin Q*)

Hexadellin C H-228

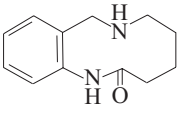
[245436-91-3]



$C_{25}H_{29}Br_4N_3O_7$ 803.136
Zwitterionic. Isol. from the sponge *Aiolochroia crassa*. Amorph. solid. $[\alpha]_D$ +102 (c, 0.07 in MeOH). λ_{max} 207 (ϵ 8300); 284 (ϵ 1200) (EtOH).
Gao, H. *et al., Tetrahedron*, 1999, **55**, 9717-9726

3,4,5,6,7,8-Hexahydro-1,7-benzodiazecin-2(1*H*)-one H-229

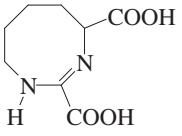
[98155-99-8]



$C_{12}H_{16}N_2O$ 204.271
Minor alkaloid from *Mackinlaya macrosciadia* (Araliaceae). Cryst. (CCl_4). Mp 92.5-93.5°. Artifact. Formed in low yield from dec. of 6,8,9,11-Tetrahydro-7*H*-pyrido[2,1-*b*]quinazoline, T-227, the major base, on storage, and is prepd. by hydrol. of the major base in H_2O.
Johns, S.R. *et al., Aust. J. Chem.*, 1985, **38**, 1007-1008 (*occur, synth, pmr, struct*)

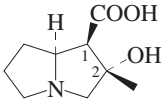
1,4,5,6,7,8-Hexahydro-1,3-diazocine-2,4-dicarboxylic acid, 9CI H-230

[203579-33-3]



$C_8H_{12}N_2O_4$ 200.194
Zwitterionic with charge delocalisation over the two N's. Isol. from the sponge *Axinyssa terpnis*. Needles (MeOH). Mp 210-212°. $[\alpha]_D$ -66.3 (c, 0.9 in MeOH).
Li, C.-J. *et al., J. Nat. Prod.*, 1998, **61**, 387-389 (*isol, ir, pmr, cmr, ms*)

Hexahydro-2-hydroxy-2-methyl-1*H*-pyrrolizine-1-carboxylic acid, 9CI H-231



(1*R*,2*S*,7a*S*)-*form*

$C_9H_{15}NO_3$ 185.222

(1*R*,2*S*,7a*S*)-*form*
Neotussilaginic acid
[147634-91-1]
Genuine alkaloid from *Arnica montana*, *Arnica chammisonis* ssp. *foliosa*, *Arnica amplexicaulis* and *Arnica sachalinensis*.

Me ester: ***Neotussilagine***. *Isotussilaginine*
[147730-89-0]
$C_{10}H_{17}NO_3$ 199.249
Alkaloid artifact from *Tussilago farfara* (coltsfoot), *Arnica montana*, *Arnica chammisonis* ssp. *foliosa*, *Arnica amplexicaulis* and *Arnica sachalinensis*, resulting from the use of MeOH during isol.

(1*R*,2*R*,7a*S*)-*form*
Neoisotussilagic acid
[147634-92-2]
Genuine alkaloid from *Arnica montana*, *Arnica chammisonis* ssp. *foliosa*, *Arnica amplexicaulis* and *Arnica sachalinensis*.

Me ester: ***Neoisotussilagine***. *Tussilaginine*
[147730-90-3]
$C_{10}H_{17}NO_3$ 199.249
Alkaloid artifact from *Tussilago farfara* (coltsfoot), *Arnica chammisonis* ssp. *foliosa*, *Arnica amplexicaulis* and *Arnica sachalinensis*, resulting from the use of MeOH during isol.

(1*S*,2*S*,7a*S*)-*form*
Tussilagic acid
[147634-89-7]
Genuine alkaloid from *Echinacea purpurea*, *Echinacea angustifolia*, *Arnica montana*, *Arnica chammisonis* ssp. *foliosa*, *Arnica amplexicaulis* and *Arnica sachalinensis*.

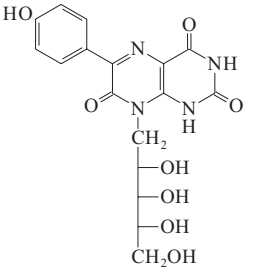
Me ester: ***Tussilagine***
[80151-77-5]
Alkaloid artifact from *Echinacea purpurea*, *Echinacea angustifolia*, *Arnica montana*, *Arnica chammisonis* ssp. *foliosa*, *Arnica amplexicaulis* and *Arnica sachalinensis*, resulting from the use of MeOH during isol. Also isol. from *Tussilago farfara* (coltsfoot). Mp 193° (dec.). $[\alpha]_D^{25}$ -2.7 (c, 0.15 in EtOH).

(1*S*,2*R*,7a*S*)-*form*
Isotussilaginic acid
[147634-90-0]
Genuine alkaloid from *Echinacea purpurea*, *Echinacea angustifolia*, *Arnica montana*, *Arnica chammisonis* ssp. *foliosa*, *Arnica amplexicaulis* and *Arnica sachalinensis*.

Me ester: ***Isotussilagine***
[91108-32-6]
$C_{10}H_{17}NO_3$ 199.249
Alkaloid artifact from *Tussilago farfara* (coltsfoot), *Echinacea angustifolia*, *Arnica montana*, *Arnica chammisonis* ssp. *foliosa*, *Arnica amplexicaulis* and *Arnica sachalinensis*, resulting from the use of MeOH during isol. $[\alpha]_D^{25}$ +129 (c, 0.17 in $CHCl_3$).

Röder, E. *et al., Planta Med.*, 1981, **43**, 99 (*ir, pmr, cmr, ms, struct*)
Weidenfeld, H. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1983, **316**, 367 (*cryst struct, abs config*)
Röder, E. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1984, **317**, 403 (*synth*)
Passreiter, C.M. *et al., Phytochemistry*, 1992, **31**, 4135 (*stereoisomers*)
Passreiter, C.M. *et al., Planta Med.*, 1992, **58**, 556-557 (*isol*)
Ma, D. *et al., Tet. Lett.*, 1998, **39**, 9067-9068 (*synth, pmr*)
Ma, D. *et al., J.C.S. Perkin 1*, 1999, 1703-1707 (*synth*)

1,2,3,4,7,8-Hexahydro-6-(4-hydroxyphenyl)-8-(2,3,4,5-tetrahydroxypentyl)-2,4,7-pteridinetrione H-232



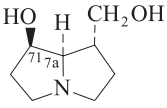
$C_{17}H_{18}N_4O_8$ 406.351

D-*ribo-form*
6-(4-Hydroxyphenyl)-8-D-ribosyl-2,4,7(1H,3H,8H)-pteridinetrione, 9CI. 6-(p-Hydroxyphenyl)-8-(1-D-ribityl)-2,4,7-trioxohexahydropteridine

[32507-81-6]
Isol. from *Pseudomonas ovalis*. Yellow cryst. (H_2O). Mp 272-273° dec.
Suzuki, A. *et al., Bull. Chem. Soc. Jpn.*, 1971, **44**, 1869 (*synth*)

Hexahydro-7-hydroxy-1*H*-pyrrolizine-1-methanol, 9CI H-233

1-Hydroxy-7-hydroxymethylpyrrolizidine



(1*R*,7*R*,7a*R*)–*form*

$C_8H_{15}NO_2$ 157.212

(1*R*,7*R*,7*aR*)-*form*
*(1α,7β,*7aα*)-form*. ***Turneforcidine***. *Racemonecine*
[21850-67-9]
Hydrol. prod. from Turneforcine and Retusine. Needles (Me_2CO). Mp 118-120°. $[\alpha]_D^{26}$ -13.9 (c, 0.36 in MeOH). Racemonecine (Mp 138-140°, $[\alpha]_D$ -11.4 ($CHCl_3$)) the necine base from Racemocine and Racemonine, was assigned the (1*S*,7*S*,7*aS*)-stereochem. but apparently with no supporting evidence. On grounds of opt. rotn. it appears to be identical with Turneforcidine. Racemocine $[\alpha]_D$ -16 ($CHCl_3$) appears to be the enantiomer of Farfugine which supports this assignment.
Hydrochloride:
S. hygroscopic long needles (EtOH/Et_2O). Mp 120° (116°).
1′-Angeloyl: ***9-Angeloylturneforcidine***
[1007096-45-8]
$C_{13}H_{21}NO_3$ 239.314
Alkaloid from *Pittocaulon bombycophole* and *Pittocaulon hintonii*.
7-Angeloyl: ***7-Angeloylturneforcidine***
[135637-69-3]
$C_{13}H_{21}NO_3$ 239.314
Alkaloid from *Pittocaulon* spp. and *Senecio integrifolius* var. *fauriri*. $[\alpha]_D$ +5 (c, 1 in EtOH).
Angeloyl: ***Turneforcine***. *Angeloylturneforcidine*
$C_{13}H_{21}NO_3$ 239.314
Alkaloid from *Tournefortia sibirica* (Boraginaceae). Oil; cryst. (as hydrochloride). Mp 169-170° (hydrochloride). $[\alpha]_D$ -58. Posn. of esterification not. detd.
1′-Tigloyl: ***Racemocine***. *Racemozine*
[139490-40-7]
$C_{13}H_{21}NO_3$ 239.314
Alkaloid from *Senecio racemosus*. Gum. $[\alpha]_D$ -16 (c, 0.25 in $CHCl_3$).
*1′-*O*-(2-Ethoxycarbonyl-3-methyl-2-butenoyl):* ***Racemonine***
$C_{16}H_{25}NO_5$ 311.377
Alkaloid from *Senecio racemosus* (Asteraceae). Gum. $[\alpha]_D^{20}$ -24.3 (c, 0.2 in $CHCl_3$). Struct. revised in 1993.

(1*S*,7*R*,7*aR*)-*form*
*(1β,7β,*7aα*)-form*. ***Platynecine***. *Mikanecine*
[520-62-7]
Necine component of various pyrrolizidine alkaloids, e.g. Platyphylline, P-516, Sarracine, S-90. Mp 148-148.5°. $[\alpha]_D$ -56.8 ($CHCl_3$). pK_a 10.2 (24°).
Picrate: Mp 184°.
1′-Angeloyl: ***9-Angeloylplatynecine***
[94132-25-9]
Alkaloid from stems and leaves of *Castilleja rhexifolia* aff. *miniata* (Scrophulariaceae).
1′-Angeloyl, N*-oxide:* ***9-Angeloylplatynecine* N*-oxide***
$C_{13}H_{21}NO_4$ 255.313
Isol. from the stems and leaves of *Castilleja rhexifolia* aff. *miniata* (Scrophulariaceae).
7-Angeloyl: ***7-Angeloylplatynecine***
[94054-32-7]
Alkaloid from the stems and leaves of *Castilleja rhexifolia* aff. *miniata* (Scrophulariaceae). $[\alpha]_D^{23.5}$ -98 (c, 0.004 in EtOH).
Diangeloyl: ***Diangeloylplatynecine***
[47928-73-4]
$C_{18}H_{27}NO_4$ 321.416
Alkaloid from the roots of *Senecio macedonicus*. Oil.
*1′-*O*-(3-Methyl-2-butenoyl):* ***Fuchsisenecionine***. O*-Senecioylplatynecine*
$C_{13}H_{21}NO_3$ 239.314
Alkaloid from *Senecio fuchsii*. $[\alpha]_D^{22}$ -120.2.
*1′-*O*-(2,3-Dihydroxy-2-methylbutanoyl):* see Ipanguline D_3, I-166
*1′-*O*-[2*S*-Hydroxy-2-(1*S*-hydroxyethyl)-4-methylpentanoyl],* N*-oxide:*
$C_{16}H_{29}NO_6$ 331.408
Alkaloid from the leaves of *Anchusa strigosa*. Orange oil. $[\alpha]_D^{25}$ +3 (c, 0.1 in MeOH). λ_{max} 235 (sh) ; 282 (MeOH).
*1′-*O*-(Phenylacetyl):* ***Ipanguline D₇***
[210698-85-4]
$C_{16}H_{21}NO_3$ 275.347
Alkaloid from *Ipomoea hederifolia*.
*7-*O*-(Phenylacetyl):* ***Ipanguline D₆***
[63503-40-2]
$C_{16}H_{21}NO_3$ 275.347
Alkaloid from *Ipomoea hederifolia*.

(1*S*,7*S*,7*aR*)-*form*
Dihydroheliotridine
[21824-59-9]
Mp 76-77°. $[\alpha]_D$ -34 (EtOH).
1′-Angeloyl: ***9-Angeloyldihydroheliotridine***
Alkaloid from *Pittocaulon praecox*. $[\alpha]_D$ -8.2 (MeOH).
7-Angeloyl: ***7-Angeloyldihydroheliotridine***
Alkaloid from *Pittocaulon praecox*. $[\alpha]_D$ +7.5 (MeOH).

(1*S*,7*R*,7*aS*)-*form*
Hastanecine
[480-84-2]
Necine base from Hastacine, H-69. Mp 113-114°. $[\alpha]_D$ -9.1 (MeOH).
1′-Angeloyl: ***9-Angeloylhastanecine***
[173010-19-0]
$C_{13}H_{21}NO_3$ 239.314
Alkaloid from *Senecio aquaticus* ssp. *barbareifolius* and *Senecio chrysocoma*. Yellow oil.

(1*R*,7*S*,7*aR*)-*form*
Synthetic. Prisms (Me_2CO). Mp 113-114°. $[\alpha]_D^{18}$ +8.5 (c, 2.2 in EtOH).

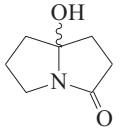
(1*S*,7*S*,7*aS*)-*form*
(+)-Turneforcidine
Oil. Rare enantiomer. Isol. for the first time in 1983 as component of Farfugine.
1′-Angeloyl: ***Farfugine***
[86194-08-3]
$C_{13}H_{21}NO_3$ 239.314
Alkaloid from *Farfugium japonicum* (Asteraceae). Oil. Mp 156.5-157.5° (as picrate). $[\alpha]_D^{23}$ +23 (c, 0.54 in EtOH).

Orekhov, A. *et al., Ber.*, 1935, **68**, 1886 (*Platynecine*)
Konovalov, V.S. *et al., J. Gen. Chem. USSR (Engl. Transl.)*, 1945, **15**, 328; *CA*, **40**, 3760 (*Hastanecine*)
Men'shikov, G.P. *et al., J. Gen. Chem. USSR (Engl. Transl.)*, 1952, **22**, 1465-1467; *CA*, **47**, 7512 (*Turneforcine, Turneforcidine*)
Aasen, A.J. *et al., Aust. J. Chem.*, 1969, **22**, 2657 (*struct, synth*)
Aasen, A.J. *et al., J.O.C.*, 1969, **34**, 4137 (*struct, synth, ms, pmr*)
Hrbek, J. *et al., Coll. Czech. Chem. Comm.*, 1972, **37**, 3918 (*cd*)
Viscontini, M. *et al., Helv. Chim. Acta*, 1972, **55**, 73 (*synth, ms, pmr*)
Gupta, V.P. *et al., Curr. Sci.*, 1975, **44**, 451 (*ir*)
Danishefsky, S. *et al., J.A.C.S.*, 1977, **99**, 7711 (*synth*)
Röder, E. *et al., Phytochemistry*, 1977, **16**, 1462 (*Fuchsisenecionine*)
Mody, N.V. *et al., J. Nat. Prod.*, 1979, **42**, 417 (*cmr*)
Hart, D.J. *et al., Chem. Comm.*, 1983, 135 (*synth*)
Niwa, H. *et al., Chem. Lett.*, 1983, 789 (*Farfugine*)
Rüeger, H. *et al., Heterocycles*, 1983, **20**, 1331 (*synth*)
Ohsawa, T. *et al., J.O.C.*, 1983, **48**, 3644 (*synth, Turneforcidine*)
Roby, M.R. *et al., J. Nat. Prod.*, 1984, **47**, 846 (*Angeloylplatynecines*)
Freer, A.A. *et al., Acta Cryst. C*, 1987, **43**, 2020 (*cryst struct, Platynecine*)
Ahmed, W. *et al., Heterocycles*, 1991, **32**, 1729-1736 (*Racemocine*)
Roeder, E. *et al., Phytochemistry*, 1991, **30**, 1735-1737 (*7-Angeloylturneforcidine*)
Ahmed, W. *et al., Fitoterapia*, 1993, **64**, 361 (*struct, Racemonine*)
Logie, C.G. *et al., Phytochemistry*, 1994, **37**, 43-109 (*pmr*)
Knight, D.W. *et al., J.C.S. Perkin 1*, 1997, 2087 (*synth*)
Jenett-Siems, K. *et al., Phytochemistry*, 1998, **47**, 1551-1560 (*Ipangulines*)
Goti, A. *et al., Eur. J. Org. Chem.*, 2000, 3633-3645 (*synth*)
Wee, A.G.H. *et al., J.O.C.*, 2001, **66**, 8513-8517 (*synth, pmr, cmr*)
An, D.K. *et al., Org. Lett.*, 2001, **3**, 2961-2963 (*synth*)

Christov, V.S. *et al., Fitoterapia*, 2002, **73**, 171-173 (*9-Angeloylhastanecine*)
Christov, V. *et al., Z. Naturforsch., C*, 2002, **57**, 780-784 (*Diangeloylplatynecine*)
Zhou, C.-Y. *et al., J.O.C.*, 2004, **69**, 7072-7082 (*synth*)
Vanecko, J.A. *et al., Org. Lett.*, 2005, **7**, 2949-2952 (*synth*)
Siciliano, T. *et al., Phytochemistry*, 2005, **66**, 1593-1600 (*Anchusa strigosa ester oxide*)
Jiang, Y. *et al., Asian J. Pharmacodyn. Pharmacokinet.*, 2006, **6**, 187-192 (*tox, derivs*)
Marin-Loaiza, J.C. *et al., Phytochemistry*, 2008, **69**, 154-167 (*isol, pmr, cmr, ms*)

Hexahydro-7*a*-hydroxy-3*H*-pyrrolizin-3-one, 9CI H-234

5-Hydroxy-1-azabicyclo[3.3.0]octan-2-one. ***Pyrrolam C***
[104885-96-3]



$C_7H_{11}NO_2$ 141.169
Sol. MeOH, $CHCl_3$; poorly sol. H_2O.

(±)-*form* [119100-90-2]
Prod. by *Streptomyces olivaceus*. Oil.

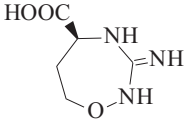
*Me ether: Hexahydro-7*a*-methoxy-3*H*-pyrrolizin-3-one.* ***Pyrrolam B***
[126424-77-9]
$C_8H_{13}NO_2$ 155.196
From *Streptomyces olivaceus*. Sol. MeOH, $CHCl_3$; poorly sol. H_2O.

*(1-Ethoxyethyl) ether: Hexahydro-7*a*-(1-ethoxyethoxy)-3*H*-pyrrolizin-3-one.* ***Pyrrolam D***
[126424-78-0]
$C_{11}H_{19}NO_3$ 213.276
From *Streptomyces olivaceus*. Cryst. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Isol. as a mix of diastereoisomers.

Yoshifuji, S. *et al., Chem. Pharm. Bull.*, 1985, **33**, 5042 (*synth*)
Ikeda, M. *et al., Heterocycles*, 1988, **27**, 943 (*synth*)
Grote, R. *et al., Annalen*, 1990, 525 (*isol, pmr, cmr, struct*)

Hexahydro-3-imino-1,2,4-oxadiazepine-3-carboxylic acid, 9CI H-235

Desaminocanavanine. Deaminocanavanine

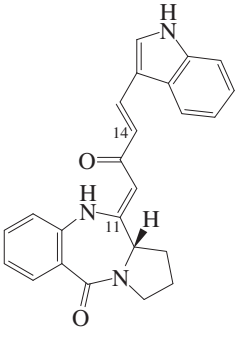


$C_5H_9N_3O_3$ 159.144
Cyclic anhydride of Canavanine, C-74; the name Desaminocanavanine is rather misleading.

(*S*)-*form*
L-form
[21539-44-6]
May occur with Canavanine, C-74 in Jack bean meal (*Canavalia ensiformis*) and other plants. Cryst. Mp 257-258° dec. $[\alpha]_D$ +25. Unreactive to ninhydrin.

Rosenthal, G.A. *et al., Phytochemistry*, 1972, **11**, 2827 (*synth, bibl*)

1,2,3,10,11,11*a*-Hexahydro-11-[4-(1*H*-indol-3-yl)-2-oxo-3-butenylidene]-5*H*-pyrrolo[2,1-*c*][1,4]benzodiazepin-5-one H-236

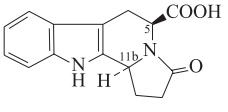


$C_{24}H_{21}N_3O_2$ 383.449

(11*Z*,11a*S*,14*E*)-*form*
Isol. from the myxomycete *Fuligo candida*. Yellow solid. $[\alpha]_D^{26}$ +149 (c, 0.6 in MeOH). λ_{max} 415 (ε 8700) (MeOH).

Nakatani, S. *et al., Chem. Pharm. Bull.*, 2004, **52**, 368-370 (*isol, cd, pmr, cmr*)

2,3,5,6,11,11*b*-Hexahydro-3-oxo-1*H*-indolizino[8,7-*b*]indole-5-carboxylic acid, 9CI H-237



(5*S*,11b*S*)–*form*

$C_{15}H_{14}N_2O_3$ 270.287

(5*S*,11*bS*)-*form*
Cuscutamine
[122170-93-8]
Alkaloid from *Clerodendrum trichotomum* (Verbenaceae) and from the dried fruits of *Cuscuta chinensis* (Convolvulaceae). Amorph. pale yellow powder. $[\alpha]_D^{27}$ +120.6 (c, 0.73 in MeOH).

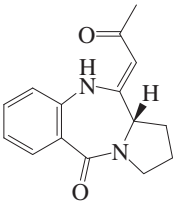
Me ester: [70004-59-0]
Solid ($CHCl_3$). Mp 109-111°. $[\alpha]_D$ -110 (c, 0.218 in MeOH).

(5*S*,11*bR*)-*form* [122170-94-9]
Alkaloid from *Clerodendrum trichotomum* (Verbenaceae).

Me ester: [82535-75-9]
Solid ($CHCl_3$/hexane). Mp 202-203° (185°). $[\alpha]_D$ +187 (c, 0.214 in MeOH).

Toyoda, Y. *et al., Chem. Lett.*, 1982, 903 (*ir, pmr, ms, struct, synth*)
Irikawa, H. *et al., Bull. Chem. Soc. Jpn.*, 1989, **62**, 880 (*isol, ir, pmr, cmr, ms, struct*)
Yahara, S. *et al., Phytochemistry*, 1994, **37**, 1755 (*Cuscutamine, isol, pmr, cmr, struct*)
Fontaine, H. *et al., Synth. Commun.*, 1997, **27**, 2817-2824 (*synth*)

1,2,3,10,11,11*a*-Hexahydro-11-(2-oxopropylidene)-5*H*-pyrrolo[2,1-*c*][1,4]benzodiazepin-5-one H-238

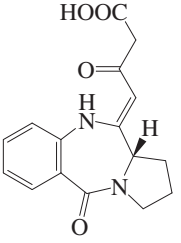


$C_{15}H_{16}N_2O_2$ 256.304

(*S*)-(*Z*)-*form*
Isol. from the myxomycete *Fuligo candida*. Cytotoxic. Plates. Mp 140-144°. $[\alpha]_D^{26}$ +657 (c, 1.4 in MeOH). Possible artifact. λ_{max} 338 (ε 60000) (MeOH).

Nakatani, S. *et al., Chem. Pharm. Bull.*, 2004, **52**, 368-370 (*isol, cd, pmr, cmr*)

4-(1,2,3,10,11,11*a*-Hexahydro-5-oxo-5*H*-pyrrolo[2,1-*c*][1,4]benzodiazepin-11-ylidene)-3-oxobutanoic acid H-239



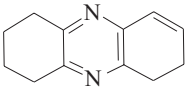
$C_{16}H_{16}N_2O_4$ 300.313

(*S*)-(*Z*)-*form*
Isol. from the myxomycete *Fuligo candida*. Amorph. solid. $[\alpha]_D^{26}$ +466 (c, 1 in MeOH). Unstable. λ_{max} 340 (ε 19000) (MeOH).

Nakatani, S. *et al., Chem. Pharm. Bull.*, 2004, **52**, 368-370 (*isol, cd, pmr, cmr*)

3,4,6,7,8,9-Hexahydrophenazine H-240

Polycartine A
[112448-71-2]

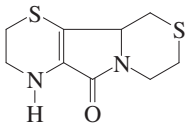


$C_{12}H_{14}N_2$ 186.256
Isol. from the fruits of *Idesia polycarpa* (Flacourtiaceae). Pale-yellow cryst. (MeOH aq.). Mp 69-71°. λ_{max} 260 (ε); 323 (ε) (MeOH) (Derep).

Moritake, M. *et al., Tet. Lett.*, 1987, **28**, 1425 (*isol, uv, ir, pmr, cmr, ms, struct*)

3,4,7,8,10,10*a*-Hexahydro-2*H*,5*H*-pyrrolo[2,1-*c*:3,4-*b*′]bis[1,4]thiazin-5-one H-241

Aminoethylcysteine ketimine decarboxylated dimer
[83923-12-0]

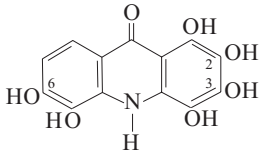


$C_9H_{12}N_2OS_2$ 228.339

(ξ)-*form*
Detected in human plasma and urine and bovine cerebellum, possibly arising from dietary sources. Constit. of fresh vegetables, e.g. garlic, spinach, tomato, asparagus, aubergine, onion, pepper and courgette. Antioxidant. Mp 137-138°.

Hermann, P. *et al., Chem. Ber.*, 1961, **94**, 442-445 (*synth*)
Antonucci, A. *et al., Amino Acids*, 1994, **7**, 83-88 (*synth*)
Macone, A. *et al., J. Agric. Food Chem.*, 2002, **50**, 2169-2172 (*occur, bibl*)

1,2,3,4,5,6-Hexahydroxyacridone H-242

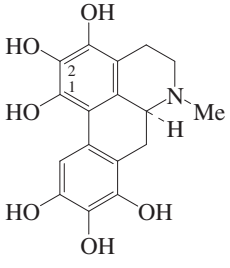


$C_{13}H_9NO_7$ 291.217

2,3,4,5-Tetra-Me ether, N-*Me: 1,6-Dihydroxy-2,3,4,5-tetramethoxy-10-methylacridone.* ***Glyfoline***
[82354-35-6]
$C_{18}H_{19}NO_7$ 361.351
Alkaloid from the root and stem bark of *Glycosmis citrifolia* (Rutaceae). Orange plates (Me_2CO). Mp 215-217°. λ_{max} 272 (ϵ 37300); 333 (ϵ 13200); 409 (ϵ 3400) (MeOH) (Berdy).

Wu, T.-S. *et al., J.C.S. Perkin 1*, 1983, 1681 (*uv, ir, pmr, ms, struct*)
Su, T.-L. *et al., J. Med. Chem.*, 1992, **35**, 2703 (*synth*)

1,2,3,8,9,10-Hexahydroxyaporphine H-243

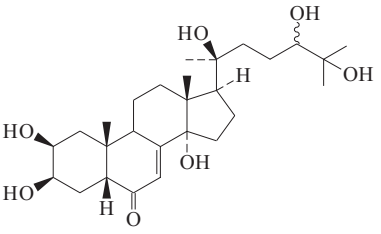


$C_{17}H_{17}NO_6$ 331.324

(*S*)-*form*
1,2:8,9-Bis(methylene), 3,10-di-Me ether: 4a,*5,6,7-Tetrahydro-8,13-dimethoxy-5-methyl-4*H-*bis[1,3]benzodioxolo[6,5,4-*de*:5′,4′-*g*]quinoline, 9CI. 3,10-Dimethoxy-1,2:8,9-bis(methylenedioxy)aporphine.* ***Ocotominarine***
[72170-07-1]
$C_{21}H_{21}NO_6$ 383.4
Alkaloid from the leaves of *Ocotea minarum* (Lauraceae). Mp 148-149°. $[\alpha]_D$ +40 (c, 1.0 in $CHCl_3$).

Vecchietti, V. *et al., Farmaco, Ed. Sci.*, 1979, **34**, 829 (*isol, uv, pmr, ms, struct*)

2,3,14,20,24,25-Hexahydroxycholest-7-en-6-one H-244



$C_{27}H_{44}O_7$ 480.64

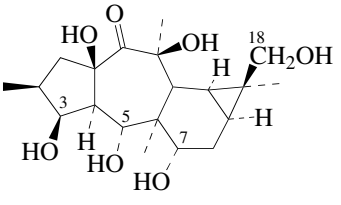
(2β,3β,5β,14α,20*S*,24ξ)-*form*
Pinnatasterone
[146959-88-8]
Constit. of *Vitex pinnata*. Amorph. solid (MeOH/EtOAc). Mp 198-200°. $[\alpha]_D^{25}$ +41.2 (c, 0.2 in MeOH).

*24-*O-*(2-Pyrrolecarbonyl):* ***Canescensterone***
$C_{32}H_{47}NO_8$ 573.725
Constit. of *Vitex canescens*. Cryst. (MeOH/EtOAc). Mp 152-153°. $[\alpha]_D^{26}$ +18.8 (c, 0.09 in MeOH).

24-Epimer: ***24-Epipinnatasterone***
[474524-74-8]
$C_{27}H_{44}O_7$ 480.64
Constit. of *Vitex scabra* stem bark.

Suksamrarn, A. *et al., Phytochemistry*, 1993, **32**, 303 (*Pinnatasterone*)
Suksamrarn, A. *et al., Phytochemistry*, 1995, **38**, 473 (*Canescensterone*)
Suksamrarn, A. *et al., J. Nat. Prod.*, 2002, **65**, 1690-1692 (*24-Epipinnatasterone*)

3,5,7,13,15,18-Hexahydroxy-6,12-cyclo-14-lathyrone H-245

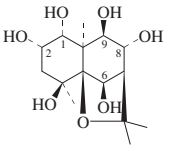


$C_{20}H_{32}O_7$ 384.469

3,18-Bis(3-pyridinecarbonyl), 5-benzoyl, 7-Ac: [213920-27-5]
$C_{41}H_{44}N_2O_{11}$ 740.805
Constit. of *Euphorbia seguieriana*. Cryst. Mp 178°. λ_{max} 220 (log ϵ 1.5); 253 (log ϵ 0.63); 260 (log ϵ 0.7) (EtOH).

Öksüz, S. *et al., J. Nat. Prod.*, 1998, **61**, 1198-1201 (*isol, pmr, cmr*)

1,2,4,6,8,9-Hexahydroxydihydro-β-agarofuran H-246



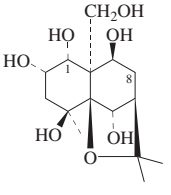
(1α,2α,4β,6β,8α,9β)-*form*

$C_{15}H_{26}O_7$ 318.366

(1α,2α,4β,6β,8β,9β)-*form*
*6-*O-*(1,6-Dihydro-1-methyl-6-oxo-3-pyridinecarbonyl), 2,9-dibenzoyl, 1,8-di-Ac:* ***Reissantin B***
[628290-36-8]
$C_{40}H_{43}NO_{13}$ 745.779
Constit. of *Reissantia buchananii*. Powder. Mp 168-172°. $[\alpha]_D^{25}$ +45.7 (c, 0.32 in $CHCl_3$).

Chang, F.-R. *et al., J. Nat. Prod.*, 2003, **66**, 1416-1420 (*Reissantin B*)

1,2,4,6,9,14-Hexahydroxydihydro-β-agarofuran H-247



(1α,2α,4β,6α,9β)-*form*

$C_{15}H_{26}O_7$ 318.366

(1α,2α,4β,6β,9β)-*form* [31146-58-4]
Constit. of *Celastrus angulatus.*

1-(3-Pyridinecarbonyl), 9-benzoyl, 2,6,14-tri-Ac: ***2,6,14-Triacetoxy-9-(benzoyloxy)dihydro-1-nicotinoyloxy-β-agarofuran***
[130774-23-1]
$C_{34}H_{39}NO_{12}$ 653.682
Alkaloid from the root bark of *Celastrus angulatus* (Celastraceae). Insect antifeedant. Amorph. solid. $[\alpha]_D^{20}$ +43.9 (c, 0.5 in MeOH).

1-(3-Pyridinecarbonyl), 9-(3-furancarbonyl), 2,6,14-tri-Ac: ***2,6,14-Triacetoxy-9-furoyloxydihydro-1-nicotinoyloxy-β-agarofuran***
[130774-22-0]
$C_{32}H_{37}NO_{13}$ 643.643
Alkaloid from the root bark of *Celastrus angulatus* (Celastraceae). Insect antifeedant. Amorph. solid. $[\alpha]_D^{20}$ +23.9 (c, 0.5 in MeOH).

1-(3-Pyridinecarbonyl), 9-(3-furancarbonyl), 14-(2-methylpropanoyl), 2,6-di-Ac: ***2,6-Diacetoxy-9-furoyloxydihydro-14-(2-methylpropanoyloxy)-1-nicotinoyloxy-β-agarofuran***

[130774-20-8]
$C_{34}H_{41}NO_{13}$ 671.697
Alkaloid from the root bark of *Celastrus angulatus* (Celastraceae). Insect antifeedant. Mp 127-128°. $[\alpha]_D^{20}$ +34.5 (c, 0.5 in MeOH).

1-(3-Pyridinecarbonyl), 9-(3-furancarbonyl), 14-(2-methylbutanoyl), 2,6-di-Ac: ***2,6-Diacetoxy-9-furoyloxydihydro-14-(2-methylbutanoyloxy)-1-nicotinoyloxy-β-agarofuran***
[130774-21-9]
$C_{35}H_{43}NO_{13}$ 685.724
Alkaloid from the root bark of *Celastrus angulatus* (Celastraceae). Insect antifeedant. Amorph. solid. $[\alpha]_D^{20}$ +30.1 (c, 0.5 in MeOH).

2-(3-Pyridinecarbonyl), 6,9-dibenzoyl, 1,14-di-Ac: [389865-22-9]
$C_{39}H_{41}NO_{12}$ 715.752
Constit. of *Maytenus magellanica* and *Maytenus chubutensis*. Amorph. solid. $[\alpha]_D^{25}$ +15.4 (c, 0.22 in $CHCl_3$). λ_{max} 229 ; 273 (EtOH).

9-(3-Pyridinecarbonyl), 1,2,6,14-tetra-Ac: ***Maytine***
[31146-56-2]
$C_{29}H_{37}NO_{12}$ 591.611
Alkaloid from the fruits of *Maytenus serrata* (Celastraceae). Noncryst.

9-(3-Pyridinecarbonyl), 1-benzoyl, 2,6,14-tri-Ac: ***2,6,14-Triacetoxy-1-benzoyloxydihydro-9-nicotinoyloxy-β-agarofuran***
[126061-43-6]
$C_{34}H_{39}NO_{12}$ 653.682
Alkaloid from *Celastrus angulatus* (Celastraceae).

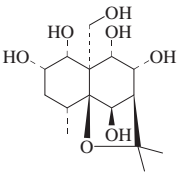
9-(3-Pyridinecarbonyl), 1-(3-furancarbonyl), 2,6,14-tri-Ac: ***2,6,14-Triacetoxy-1-furoyloxydihydro-9-nicotinoyloxy-β-agarofuran***
[126006-73-3]
$C_{32}H_{37}NO_{13}$ 643.643
Alkaloid from *Celastrus angulatus* (Celastraceae).

9-(3-Pyridinecarbonyl), 1-(3-furancarbonyl), 6-(2-methylpropanoyl), 2,14-di-Ac: ***2,14-Diacetoxy-1-furoyloxydihydro-6-(2-methylpropanoyloxy)-9-nicotinoyloxy-β-agarofuran***
[126006-71-1]
$C_{34}H_{41}NO_{13}$ 671.697
Alkaloid from *Celastrus angulatus* (Celastraceae).

9-(3-Pyridinecarbonyl), 1-(3-furancarbonyl), 6-(2-methylbutanoyl), 2,14-di-Ac: ***2,14-Diacetoxy-1-furoyloxydihydro-6-(2-methylbutanoyloxy)-9-nicotinoyloxy-β-agarofuran***
[126006-72-2]
$C_{35}H_{43}NO_{13}$ 685.724
Alkaloid from *Celastrus angulatus* (Celastraceae).

Kupchan, S.M. *et al., J.O.C.*, 1977, **42**, 115 (*Maytine*)
Liu, J. *et al., Phytochemistry*, 1990, **29**, 2503-2506 (*Celastrus angulatus constits*)
Kennedy, M.L. *et al., J. Med. Chem.*, 2001, **44**, 4668-4676 (*Maytenus magellanica constit*)

1,2,6,8,9,14-Hexahydroxydihydro-β-agarofuran H-248



(1α,2α,6β,8α,9α)-*form*

$C_{15}H_{26}O_7$ 318.366

(1α,2α,6β,8α,9α)-*form*
***Alatol*†**
[57461-75-3]
Constit. of *Euonymus alatus*. Amorph.

8-(3-Pyridinecarbonyl), 9-benzoyl, 2,6,14-tri-Ac: [185414-42-0]
$C_{34}H_{39}NO_{12}$ 653.682
Constit. of *Celastrus angulatus*. Needles (Me_2CO). Mp 200-202°. $[\alpha]_D$ -43.1 (c, 0.51 in MeOH). λ_{max} 201 (log ϵ 3.16); 219 (log ϵ 3.14); 263 (log ϵ 2.49) (MeOH).

3-Pyridinecarbonyl, benzoyl, tetra-Ac: ***Ever 6***
[105286-90-6]
$C_{36}H_{41}NO_{13}$ 695.719
Isol. from *Euonymus verrucosus*. Mp 89-96°.

8-(3-Pyridinecarbonyl), 1,9-dibenzoyl, 2,6,14-tri-Ac: [185414-41-9]
$C_{41}H_{43}NO_{13}$ 757.79
Constit. of *Celastrus angulatus*. Needles (Me_2CO). Mp 206-208°. $[\alpha]_D$ -51.3 (c, 0.54 in MeOH). λ_{max} 201 (log ϵ 3.29); 226 (log ϵ 3.26); 263 (log ϵ 2.53) (MeOH).

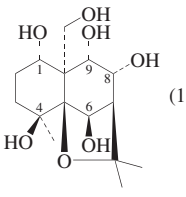
3-Pyridinecarbonyl, dibenzoyl, tri-Ac: ***Ever 7***
[105286-93-9]
$C_{41}H_{43}NO_{13}$ 757.79
Isol. from *Euonymus verrucosus*. Cryst. (MeOH). Mp 83-95°.

(1α,2α,6β,8α,9β)-*form*
2,8-Bis-(3-pyridinecarbonyl), 9-benzoyl, 1,6,14-tri-Ac: ***Cangorin J***
[156400-98-5]
$C_{40}H_{42}N_2O_{13}$ 758.777
Constit. of *Maytenus ilicifolia*. Amorph. solid. Mp 115-120°. $[\alpha]_D$ +20 (c, 0.26 in $CHCl_3$).

Begley, M.J. *et al., J.C.S. Perkin 1*, 1986, 535-539 (*Ever series*)
Itokawa, H. *et al., J. Nat. Prod.*, 1994, **57**, 460 (*Cangorin J*)
Wang, Y. *et al., J. Nat. Prod.*, 1997, **60**, 178-179 (*alkaloids*)

1,4,6,8,9,14-Hexahydroxydihydro-β-agarofuran H-249

5,11-Epoxy-1,4,6,8,9,14-eudesmanehexol



(1α,4β,6β,8α,9α)-*form*

$C_{15}H_{26}O_7$ 318.366

(1α,4β,6β,8α,9α)-*form*
Isoalatol

1-O-(3-Pyridinecarbonyl): ***Tripterregeline A***
$C_{21}H_{29}NO_8$ 423.462
Alkaloid from the stem bark of *Tripterygium regelii* (Celastraceae).

*8-O-(3-Pyridinecarbonyl), 1-O-(*E*-cinnamoyl), 9-benzoyl, 6,14-di-Ac:* ***Triptofordinine A1***
[112494-33-4]
$C_{41}H_{43}NO_{12}$ 741.79
Alkaloid from leaves of *Tripterygium wilfordii* var. *regelii* (Celastraceae). Mp 193-194°. $[\alpha]_D$ -81.4 (MeOH).

8-O-(3-Pyridinecarbonyl), 1-O-(Z-cinnamoyl), 9-benzoyl, 6,14-di-Ac: ***Triptofordinine A2***
[112571-89-8]
$C_{41}H_{43}NO_{12}$ 741.79
Alkaloid from *Tripterygium wilfordii* var. *regelii*. Mp 93-94°. $[\alpha]_D$ -101 (MeOH).

9-O-(3-Pyridinecarbonyl), 1-benzoyl: ***Tripterregeline B***
$C_{28}H_{33}NO_9$ 527.57
Alkaloid from the stem bark of *Tripterygium regelii* (Celastraceae).

9-O-(3-Pyridinecarbonyl), 1-benzoyl, 8,14-di-Ac: ***Tripterregeline C***
$C_{32}H_{37}NO_{11}$ 611.644
Alkaloid from the stem bark of *Tripterygium regelii* (Celastraceae).

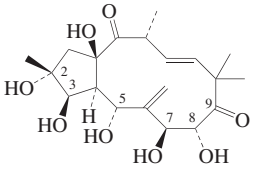
9-O-(3-Pyridinecarbonyl), 8-benzoyl, 1,6,14-tri-Ac: [339151-91-6]
$C_{34}H_{39}NO_{12}$ 653.682
Constit. of *Tripterygium wilfordii*. Amorph. powder. $[\alpha]_D^{25}$ -52.4 (c, 0.4 in MeOH). λ_{max} 216 (log ϵ 4.31); 253 (log ϵ 3.64) (MeOH).

(1α,4β,6β,8β,9α)-*form*
*8-O-(*N*-Methyl-6(1*H*)-pyridone-3-carbonyl), 1-O-(3-furancarbonyl), 9-benzoyl, 6-Ac:* ***Reissantin F***
[910651-20-6]
$C_{38}H_{41}NO_{14}$ 735.74
Constit. of *Reissantia buchananii*. Powder. Mp 138-139°. $[\alpha]_D^{24}$ +35.7 (c, 0.23 in $CHCl_3$). λ_{max} 219 (log ϵ 4.35); 270 (log ϵ 4.07) (MeOH).

[128385-39-7 , 128197-56-8]

Takaishi, Y. *et al., Chem. Pharm. Bull.*, 1987, **35**, 3534 (*Triptofordinins*)
Han, B.H. *et al., Arch. Pharmacal Res.*, 1989, **12**, 310 (*Tripterregelines*)
Duan, H.-Q. *et al., Phytochemistry*, 2001, **56**, 341-346 (*Tripterygium wilfordii ester*)
Chang, F.-R. *et al., Planta Med.*, 2006, **72**, 92-96 (*Reissantin F*)

2,3,5,7,8,15-Hexahydroxy-6(17),11-jatrophadiene-9,14-dione H-250



(2α,3β,5α,7β,8α,11*E*,13α,15β)-*form*

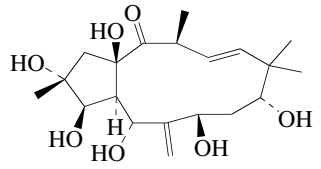
$C_{20}H_{30}O_8$ 398.452

(2α,3β,5α,7β,8α,11*E*,13α,15β)-*form*

2-(3-Pyridinecarbonyl), 3,5,7,8,15-penta-Ac:
$C_{36}H_{43}NO_{14}$ 713.734
Constit. of *Euphorbia semiperfoliata*. Gum.

Appendino, G. *et al., J. Nat. Prod.*, 1998, **61**, 749-756 (*Euphorbia semiperfoliata esters*)

2,3,5,7,9,15-Hexahydroxy-6(17),11-jatrophadien-14-one H-251



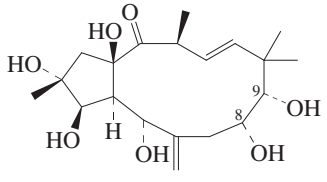
$C_{20}H_{32}O_7$ 384.469

(2α,3β,5α,7β,9α,11*E*,13α*H*,15β)-*form*

9-(3-Pyridinecarbonyl), 2,3,5,7,15-penta-Ac: [210108-85-3]
$C_{36}H_{45}NO_{13}$ 699.75
Constit. of *Euphorbia peplus*.

Jakupovic, J. *et al., Phytochemistry*, 1998, **47**, 1601-1609 (*isol, pmr, cmr*)

2,3,5,8,9,15-Hexahydroxy-6(17),11-jatrophadien-14-one H-252



$C_{20}H_{32}O_7$ 384.469

(2α,3β,5α,8α,9α,11*E*,13β,15β)-*form*

9-(3-Pyridinecarbonyl), 3-benzoyl, 5,8-di-Ac: ***Euphocharacin B***
[777896-13-6]
$C_{37}H_{43}NO_{11}$ 677.747
Constit. of *Euphorbia characias*. Amorph. solid. $[\alpha]_D^{25}$ +117.7 (c, 0.1 in $CHCl_3$).

9-(3-Pyridinecarbonyl), 3-benzoyl, 5,8,15-tri-Ac: ***Euphocharacin A***
[777896-12-5]
$C_{39}H_{45}NO_{12}$ 719.784
Constit. of *Euphorbia characias*. Amorph. solid. $[\alpha]_D^{25}$ -22.17 (c, 0.1 in $CHCl_3$).

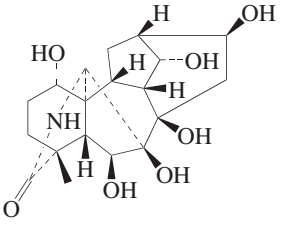
3,9-Dibenzoyl, 5,8-di-Ac: ***Euphocharacin C***
[777896-15-8]
$C_{38}H_{44}O_{11}$ 676.759
Constit. of *Euphorbia characias*. Amorph. solid. $[\alpha]_D^{25}$ +16.67 (c, 0.1 in $CHCl_3$).

9-(3-Pyridinecarbonyl), 3-(2-methylbutanoyl), 5,8,15-tri-Ac: ***Euphocharacin D***
[777896-17-0]
$C_{37}H_{49}NO_{12}$ 699.794
Constit. of *Euphorbia characias*. Amorph. solid. $[\alpha]_D^{25}$ +8 (c, 0.1 in $CHCl_3$).

9-(3-Pyridinecarbonyl), 3-benzoyl, 8,15-di-Ac: ***Euphocharacin L***
[777896-33-0]
$C_{37}H_{43}NO_{11}$ 677.747
Constit. of *Euphorbia characias*. Amorph. solid. $[\alpha]_D^{25}$ -40 (c, 0.1 in $CHCl_3$).

Corea, G. *et al., Planta Med.*, 2004, **70**, 657-665 (*isol, pmr, cmr*)

1,6,7,8,14,16-Hexahydroxy-4-methylaconitan-19-one H-253



$C_{19}H_{27}NO_7$ 381.425

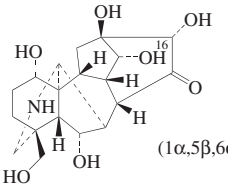
(1α,6β,14α,16β)-*form*

7,8-Methylene ether, O^1,O^6,O^{16}*-tri-Me:* ***Tongolenine D***
[198754-26-6]
$C_{23}H_{33}NO_7$ 435.516
Alkaloid from *Delphinium tongolense* (Ranunculaceae). Needles. Mp 310-311°. $[\alpha]_D^{24}$ +5.7 (c, 0.27 in $CHCl_3$). Possible artifact.

He, L. *et al., Chin. Chem. Lett.*, 1997, **8**, 791-792 (*isol, pmr, cmr, struct*)

He, L. *et al., Indian J. Chem., Sect. B*, 1998, **37**, 612-614

1,6,13,14,16,18-Hexahydroxy-4-methylaconitan-15-one H-254



(1α,5β,6α,14α,16α)-*form*

$C_{19}H_{27}NO_7$ 381.425

(1α,5β,6α,14α,16α)-*form*

O^1,O^6,O^{16},O^{18}*-Tetra-Me,* N*-Me, 14-benzoyl:* ***16-Epipyrohypaconitine***
[123842-96-6]
$C_{31}H_{41}NO_8$ 555.667
Alkaloid from the processed aconite kako-bushi-matsu from the roots of some *Aconitum* spp. (Ranunculaceae). Amorph. $[\alpha]_D$ -65 (c, 0.18 in EtOH). Artifact.

▶AR5578000

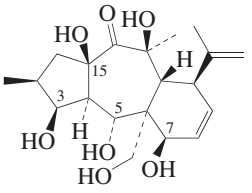
(1α,5β,6α,14α,16β)-*form*

O^1,O^6,O^{16},O^{18}*-Tetra-Me,* N*-Me, 14-benzoyl:* ***Pyrohypaconitine***
[123842-97-7]
$C_{31}H_{41}NO_8$ 555.667
Alkaloid from kako-bushi-matsu from the roots of some *Aconitum* spp. (Ranunculaceae). Amorph. $[\alpha]_D$ +15.6 (c, 0.18 in EtOH). Artifact formed from Hypaconitine in M-343 present in the raw aconite roots during the processing procedure. Has not been isol. so far from the raw roots of *A*. spp.

▶AR5580000

Mori, T. *et al., Heterocycles*, 1989, **29**, 873 (*isol, uv, ir, pmr, cmr, ms, struct*)

3,5,7,13,15,17-Hexahydroxy-8,10(18)-myrsinadien-14-one H-255



$C_{20}H_{30}O_7$ 382.453
Various structs. revised in 2001.

(2β,3β,5α,7β,13β,15β)-*form*

*5-*O*-(3-Pyridinecarbonyl), 3-butanoyl, 7,15-di-Ac:* ***Decipinol ester A***
$C_{34}H_{43}NO_{11}$ 641.714
Constit. of *Euphorbia decipiens*. $[\alpha]_D^{23}$ -25.3 (c, 0.786 in $CHCl_3$). λ_{max} 204 ; 217 ; 264 (MeOH).

*17-*O*-(3-Pyridinecarbonyl), 3,7,15-tri-Ac:* ***Decipinone A***
[220705-93-1]
$C_{36}H_{45}NO_{12}$ 683.751
Constit. of *Euphorbia decipiens*. Powder. $[\alpha]_D^{27}$ -9.1 (c, 0.22 in $CHCl_3$).

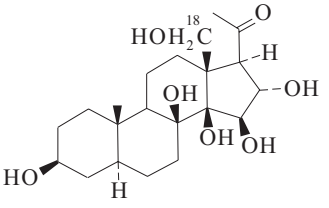
*17→14 Acetal, 5-*O*-(3-pyridinecarbonyl), 3,7,15-tri-Ac:* [616217-03-9]
$C_{32}H_{39}NO_{11}$ 613.66
Constit. of *Euphorbia decipiens*. Oil. λ_{max} 199 ; 270 (MeOH).

Ahmad, V.U. *et al., Planta Med.*, 1998, **64**, 728-731 (*Decipinones A-C*)

Jassbi, A.R. *et al., Helv. Chim. Acta*, 2002, **85**, 1706-1713 (*abs config*)

Ahmad, V.U. *et al., Chem. Pharm. Bull.*, 2003, **51**, 719-723 (*acetal derivs*)

3,8,14,15,16,18-Hexahydroxypregnan-20-one H-256



$C_{21}H_{34}O_7$ 398.495

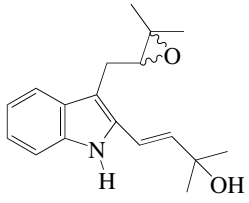
(3β,5α,8β,14β,15β,16α)-*form*

Shitakigenin
[68457-66-9]

O^{18}*-(2-Methylaminobenzoyl):* ***Stephanthraniline C***
[68564-11-4]
$C_{29}H_{41}NO_8$ 531.645
Alkaloid from stems of *Stephanotis japonica* (Asclepiadaceae). Amorph.

$[\alpha]_D$ +4.2 (c, 0.58 in $CHCl_3$).
Terada, S. *et al., Tet. Lett.*, 1978, **23**, 1995

2,3-Hexalobine E H-257
*3-(2,3-Epoxy-3-methylbutyl)-2-(3-hydroxy-3-methyl-1-butenyl)-1*H*-indole*
[103772-00-5]



$C_{18}H_{23}NO_2$ 285.385
Alkaloid from stem bark of *Hexalobus crispiflorus*. Oil. $[\alpha]_D^{21}$ +12 (c, 1.0 in $CHCl_3$). λ_{max} 231 (log ϵ 4.3); 241 (sh) ; 306 (log ϵ 4.4); 315 (log ϵ 4.4) (MeOH).

Achenbach, H. *et al., Annalen*, 1995, 1327-1337 (*isol, uv, ir, pmr, cmr, ms, struct*)

Hexanedioic acid, 9CI H-258
Adipic acid. Butane-1,4-dicarboxylic acid. E355. FEMA 2011
[124-04-9]
$HOOCCH_2CH_2CH_2CH_2COOH$
$C_6H_{10}O_4$ 146.143
Obt. industrially by oxidn. of Cyclohexane by air/catalyst followed by HNO_3 oxidn. of Cyclohexanol. Cyclohexanone intermed. Constit. of leaves and stems of *Anthyllis sericea*. Also isol. from guava fruit (*Psidium guajava*), papaya (*Carica papaya*) and raspberry (*Rubus idaeus*). Used in manuf. of nylons, esp. nylon-6,6; also plasticisers, resins and as food acidulant. Used in pptn. of Al, Zr, U(*VI*) and standardisation of base solns. Important industrial chemical, 46th in order of volume for USA in 1994 (production 0.90 million tons/year). Monoclinic cryst. (HNO_3). Sol. EtOH; mod. sol. H_2O; spar. sol. Et_2O. Mp 153° (149-150°). Bp 337.5° Bp_{100} 265° Bp_{15} 216°. pK_{a1} 4.41; pK_{a2} 5.41 (20°). pK_{a1} 4.44; pK_{a2} 5.44 (25°). Sublimes. Does not readily form a monomeric anhydride; forms a polymeric anhydride which gives the unstable monomer on dist.

▶ Fl. p. 196°, autoignition temp. 420°. Severe eye and mucous membrane irritant. LD_{50} (mus, orl) 1900 mg/kg.
AU8400000

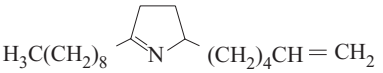
Diamide: Hexanediamide. Adipamide
[628-94-4]
$C_6H_{12}N_2O_2$ 144.173
Isol. from *Rhizoclonium hieroglyphicum*. Prisms. Mp 220°. Subl.0.01 150-160.

▶ AU7800000

[23311-84-4 , 19090-60-9 , 27178-16-1 , 3385-41-9 , 110-29-2 , 29254-17-9]

Dembitsky, V.M. *et al., Phytochemistry*, 2000, **54**, 965-967 (*isol, diamide*)

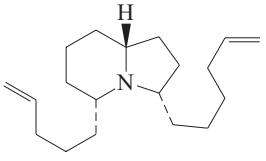
2-(5-Hexenyl)-3,4-dihydro-5-nonyl-2*H*-pyrrole, 9CI H-259
[107342-26-7]



$C_{19}H_{35}N$ 277.492
Alkaloid from the venom glands of the ant *Monomorium minutum*.

Clément, J.-L. *et al., C. R. Hebd. Seances Acad. Sci., Ser. III*, 1986, **303**, 669 (*isol, ms, struct*)

3-(5-Hexenyl)octahydro-5-(4-pentenyl)indolizine, 9CI H-260
3-(5-Hexenyl)-5-(4-pentenyl)indolizidine. **Mantella *Alkaloid 275C***. *Indolizidine 275C*
[151805-31-1]



$C_{19}H_{33}N$ 275.476
Provisional struct. Minor or trace alkaloid from skin extracts of 2 populations of the Madagascan frog *Mantella madagascariensis*.

Garraffo, H.M. *et al., J. Nat. Prod.*, 1993, **56**, 1016 (*isol, ir, ms*)

1-Hexylamine H-261
1-Hexanamine, 9CI. 1-Aminohexane
[111-26-2]
$H_3C(CH_2)_4CH_2NH_2$
$C_6H_{15}N$ 101.191
Metab. of *Claviceps purpurea* and *Claviceps microcephala*. Fp -19. Bp_{742} 129-130°. pK_a 10.56 (25°).

▶ Flammable, fl. p. 29° (oc). Severe skin and eye irritant. LD_{50} (rat, orl) 670 mg/kg. LD_{50} (rbt, skn) 420 mg/kg.
MQ4540000

Hydrochloride: [142-81-4]
Leaflets. Mp 219°.

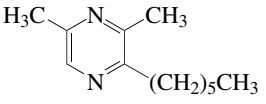
N-*Ac:*
$C_8H_{17}NO$ 143.228
Bp_{14} 152°.

N-*Me:* [35161-70-7]
$C_7H_{17}N$ 115.218
d 0.76. Bp 140-142° (137°). n_D^{20} 1.4160.

N,N-*Di-Me:* [4385-04-0]
$C_8H_{19}N$ 129.245
Bp 146-150°. n_D^{20} 1.4136.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 281C (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 451B; 485A (*nmr*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 365B; 385B (*ir*)
v. Braun, J. *et al., Ber.*, 1910, **43**, 3596 (*synth*)
Steiner, M. *et al., Naturwissenschaften*, 1955, **42**, 345 (*anal*)
Gohlke, R.S. *et al., Anal. Chem.*, 1962, **34**, 1281 (*ms*)
Hartmann, T. *et al., Planta Med.*, 1964, **12**, 340 (*isol*)
Eggert, H. *et al., J.A.C.S.*, 1973, **95**, 3710 (*cmr*)
Fieser and Fieser's Reagents for Organic Synthesis, Wiley, 1979, **7**, 170 (*use*)
Nikishin, G.I. *et al., Tetrahedron*, 1985, **41**, 4279 (*deriv synth, ir, pmr, ms*)
Erra-Balsells, R. *et al., Aust. J. Chem.*, 1988, **41**, 103 (*pmr, cmr, ms*)
Kabalka, G.W. *et al., Organometallics*, 1989, **8**, 1093-1095 (*N-Me, synth, cmr*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, HFK000

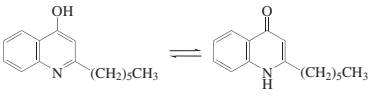
2-Hexyl-3,5-dimethylpyrazine H-262
[70303-40-1]



$C_{12}H_{20}N_2$ 192.303
Constit. of the glands of various ants incl. *Odontomachus* sp. and *Streblognathus* sp.

Longhurst, C. *et al., J. Insect Physiol.*, 1978, **24**, 833-837 (*isol*)
Jones, T.H. *et al., J. Chem. Ecol.*, 1998, **24**, 125-134 (*isol, ms*)

2-Hexyl-4-hydroxyquinoline H-263
*2-Hexyl-4(1*H*)-quinolinone. 2-Hexyl-4-quinolinol, 9CI*
[678172-85-5]



$C_{15}H_{19}NO$ 229.321
Metab. of *Pseudomonas aeruginosa*.

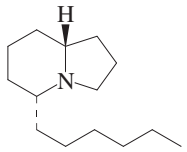
N-*Oxide: 2-Hexyl-4(1*H*)-quinolinone* N-*oxide. 2-Hexyl-4-hydroxyquinoline* N-*oxide*
[678172-92-4]
$C_{15}H_{19}NO_2$ 245.321
Metab. of *Pseudomonas aeruginosa*.

*1′,2′-Didehydro(*E-*): 2-(1-Hexenyl)-4(1*H*)-quinolinone. 2-(1-Hexenyl)-4-hydroxyquinoline. 2-(1-Hexenyl)-4-quinolinol*
$C_{15}H_{17}NO$ 227.305
Metab. of *Pseudomonas aeruginosa*. No CAS no. found to 2007.

*1′,2′-Didehydro(*Z-*):*
$C_{15}H_{17}NO$ 227.305
Metab. of *Pseudomonas aeruginosa*. No CAS no. found to 2007.

Lepine, F. *et al., J. Am. Soc. Mass Spectrom.*, 2004, **15**, 862-869 (*occur, oxide, 1′,2′-didehydro*)
Deziel, E. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 2004, **101**, 1339-1344 (*biosynth*)

5-Hexylindolizidine H-264
5-Hexyloctahydroindolizine, 9CI. ***Indolizidine 209D***. Dendrobates *Alkaloid 209D*
[129784-76-5 , 153922-74-8]



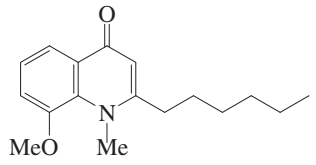
$C_{14}H_{27}N$ 209.374

(5*R*,9*R*)-*form* [129709-01-9]
Isol. from skin extracts of an undescribed *Dendrobates* sp. Oil. $[\alpha]_D^{26}$ -80.4 (c, 1 in CH_2Cl_2).

Polniaszek, R.P. *et al., J.O.C.*, 1990, **55**, 4688-4693 (*synth, pmr, cmr*)
Lee, E. *et al., Tet. Lett.*, 1996, **37**, 1445-1446 (*synth*)
Kim, G. *et al., Tetrahedron: Asymmetry*, 2001, **12**, 2073-2076 (*synth*)
Reddy, P.G. *et al., J.O.C.*, 2004, **69**, 3093-3101 (*synth, pmr, cmr*)
Patil, N.T. *et al., Tet. Lett.*, 2005, **46**, 2101-2103 (*synth*)
Takahata, H. *et al., Heterocycles*, 2006, **67**, 407-411 (*synth*)
Alegret, C. *et al., J.O.C.*, 2008, **73**, 8661-8664 (*synth*)
Pohmakotr, M. *et al., Tetrahedron*, 2008, **64**, 2339-2347 (*synth*)

2-Hexyl-8-methoxy-1-methyl-4(1*H*)-quinolinone, 9CI H-265

[159979-56-3]

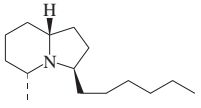


$C_{17}H_{23}NO_2$ 273.374
Alkaloid from trunk bark of *Esenbeckia almawillia* (Rutaceae). Oil.

Guilhon, G.M.S.P. *et al., Phytochemistry*, 1994, **37**, 1193-1195 (*isol, ir, pmr, cmr, ms, struct*)

3-Hexyloctahydro-5-methylindolizine, 9CI H-266

3-Hexyl-5-methylindolizidine



(3*R**,5*R**,8*aR**)-*form*

$C_{15}H_{29}N$ 223.401

(3*R*,5*S*,8*aS*)-*form* [153481-99-3]
Synthetic. Oil. $[\alpha]_D^{24}$ +27.9 (c, 1.35 in hexane).

(3*S*,5*S*,8*aS*)-*form* [153482-03-2]
Synthetic. Oil. $[\alpha]_D^{24}$ +90.1 (c, 0.28 in MeOH).

(3*R*,5*R*,8*aR*)-*form* [208849-62-1]
Isol. from the venom of thief ants, *Solenopsis* sp.

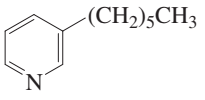
(3*R*,5*S*,8*aR*)-*form* [92512-78-2]
Isol. from the venom of *Solenopsis* sp.

(3*R*,5*S*,8*aS*)-*form* [181378-97-2]
Isol. from the venom of *Solenopsis* sp.

Takahata, H. *et al., Tetrahedron*, 1993, **49**, 11205-11212 (*synth, ir, pmr, cmr*)
Jones, T.H. *et al., J. Chem. Ecol.*, 1996, **22**, 1221-1236 (*isol*)
Gorman, J.S.T. *et al., J. Chem. Ecol.*, 1998, **24**, 933-943 (*isol*)

3-Hexylpyridine, 9CI H-267

[6311-92-8]

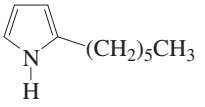


$C_{11}H_{17}N$ 163.262
Found in orange oil. Perfumery and flavouring ingredient. Liq. with sweet fragrance. $Bp_{0.08}$ 65-71°.

Eur. Pat., 1992, 470 391; *CA*, **116**, 194165 (*synth, use*)
Thomas, A.F. *et al., J. Agric. Food Chem.*, 1992, **40**, 2236-2243 (*synth, isol, ms, pmr*)
Tereshko, A.B. *et al., Zh. Org. Khim.*, 1995, **31**, 289-290; *J. Org. Chem. USSR (Engl. Transl.)*, 1995, **31**, 258-259 (*synth*)
Schwab, P.F.H. *et al., J.O.C.*, 2002, **67**, 443-449 (*synth, pmr*)

2-Hexylpyrrole, 9CI H-268

[1551-14-0]



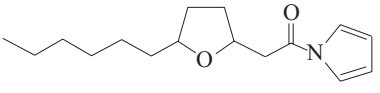
$C_{10}H_{17}N$ 151.251
$Bp_{1.5}$ 92°.

N-*Sulfo: 2-Hexylpyrrole sulfamate*
[587875-53-4]
$C_{10}H_{17}NO_3S$ 231.315
Alkaloid from the marine annelid *Cirriformia tentaculata*. Glass (as Na salt).

Utimoto, K. *et al., Tet. Lett.*, 1981, **22**, 4277-4288 (*synth*)
Garrido, D.O.A. *et al., J.O.C.*, 1984, **49**, 2619-2622 (*synth*)
Barsby, T. *et al., J. Nat. Prod.*, 2003, **66**, 1110-1112 (*sulfamate*)

1-[(5-Hexyltetrahydro-2-furanyl)acetyl]-1*H*-pyrrole, 9CI H-269

3,6-Epoxydodecanoic acid pyrrolide
[111509-36-5]

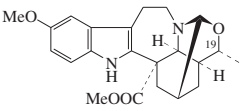


$C_{16}H_{25}NO_2$ 263.379
Isol. from the underground parts of *Achillea ageratifolia* ssp. *serbica* (Asteraceae). Oil.

Greger, H. *et al., Phytochemistry*, 1987, **26**, 2289 (*isol, uv, ir, pmr, cmr, ms, struct*)

Heyneatine H-270

[76129-65-2]



Absolute Configuration

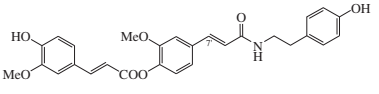
$C_{22}H_{26}N_2O_4$ 382.458
Alkaloid from the wood and stem bark of *Ervatamia heyneana* (Apocynaceae). Cytotoxic agent. Powder (90% EtOH aq.). $[\alpha]_D^{26}$ -6 (c, 0.14 in $CHCl_3$). λ_{max} 220 (ϵ 31600); 280 (ϵ 10480); 300 (ϵ 8520) (MeOH) (Berdy).

19-Epimer, demethoxy: ***3,19-Oxidocoronaridine***
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from the stem bark of *Tabernaemontana dichotoma* (Apocynaceae). Sol. MeOH, butanol, $CHCl_3$; poorly sol. H_2O, hexane. Exists in equilib. with its open form, a mixt. of 3*R*- and 3*S*-Hydroxy-19*R*-heyneanine. λ_{max} 226 (ϵ 16600); 286 (ϵ 3800); 293 (ϵ 3650) (EtOH) (Berdy).

Gunasekera, S.P. *et al., Phytochemistry*, 1980, **19**, 1213 (*Heyneatine*)
Perera, P. *et al., Phytochemistry*, 1985, **24**, 2097 (*Oxidocoronaridine*)

Hibiscuwanin A H-271

N-*(4′*-O-*Feruloylferuloyl)tyramine*



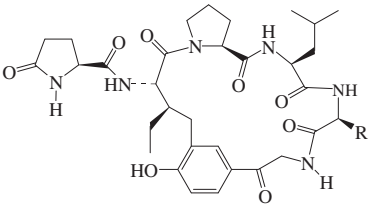
$C_{28}H_{27}NO_7$ 489.524
Constit. of the stems of *Hibiscus taiwanensis*. Pale yellow powder. λ_{max} 290 (log ϵ 4.23); 318 (log ϵ 4.3) (MeOH).

7′Z-Isomer: ***Hibiscuwanin B***
$C_{28}H_{27}NO_7$ 489.524
Constit. of the stems of *Hibiscus taiwanensis*. Pale yellow powder. λ_{max} 288 (log ϵ 4.19); 315 (log ϵ 4.22) (MeOH).

Wu, P.-L. *et al., Bioorg. Med. Chem.*, 2004, **12**, 2193-2197 (*isol, pmr, cmr, ms*)

Hibispeptin A H-272

[204439-16-7]



R = -CH_2Ph

$C_{39}H_{50}N_6O_8$ 730.859
Cyclic peptide. Constit. of the root bark of *Hibiscus syriacus*. Shows antimicrobial, cytotoxic, antioxidative and tyrosinase inhibitory activities. Powder. $[\alpha]_D$ -38 (c,

0.2 in $CHCl_3$/MeOH). λ_{max} 206 (ϵ 31200); 224 (sh) (ϵ 11300); 276 (ϵ 8600) (MeOH).

Yoo, I.-D. *et al., Phytochemistry*, 1997, **47**, 799-802 (*isol, activity*)

Yun, B.-S. *et al., Tet. Lett.*, 1998, **39**, 993-996 (*isol, uv, ir, pmr, cmr*)

Yun, B.-S. *et al., Tetrahedron*, 1998, **54**, 15155-15160 (*activity*)

Hibispeptin B H-273

[219825-49-7]

As Hibispeptin A, H-272 with

R = $CH_2CH(CH_3)_2$

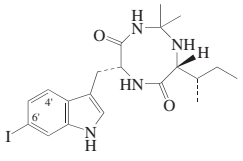
$C_{36}H_{52}N_6O_8$ 696.842

Cyclic peptide. Constit. of the root bark of *Hibiscus syriacus*. Powder. $[\alpha]_D$ -42.7 (c, 0.75 in $CHCl_3$/MeOH). λ_{max} 209 (ϵ 37500); 221 (sh) (ϵ 24400); 272 (ϵ 23300); 325 (ϵ 9800); 360 (ϵ 9000) (MeOH).

Yun, B.-S. *et al., Tetrahedron*, 1998, **54**, 15155-15160

Hicksoane A H-274

[1033618-61-9]



Absolute Configuration

$C_{20}H_{27}IN_4O_2$ 482.363

Alkaloid from *Subergorgia hicksoni*. Pale yellow powder. $[\alpha]_D^{20}$ +31 (c, 0.01 in MeOH). λ_{max} 227 (log ϵ 4.21); 286 (log ϵ 3.75) (MeOH).

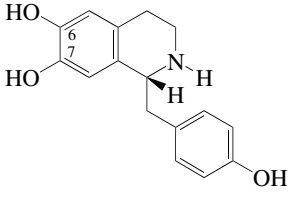
6′-Deiodo, 4′-iodo: ***Hicksoane B***
[1033618-62-0]
$C_{20}H_{27}IN_4O_2$ 482.363
Alkaloid from *Subergorgia hicksoni*. Pale yellow powder. $[\alpha]_D^{20}$ +37 (c, 0.009 in MeOH). λ_{max} 228 (log ϵ 4.17); 285 (log ϵ 3.65) (MeOH).

4′-Iodo: ***Hicksoane C***
[1033618-63-1]
$C_{20}H_{26}I_2N_4O_2$ 608.26
Alkaloid from *Subergorgia hicksoni*. Yellow powder. $[\alpha]_D^{20}$ +41 (c, 0.007 in MeOH). λ_{max} 225 (log ϵ 4.37); 284 (log ϵ 3.86) (MeOH).

Rezanka, T. *et al., Eur. J. Org. Chem.*, 2008, 1265-1270 (*isol, pmr, cmr*)

Higenamine H-275

1,2,3,4-Tetrahydro-1-[(4-hydroxyphenyl)-methyl]-6,7-isoquinolinediol, 9CI. 1,2,3,4-Tetrahydro-6,7-dihydroxy-1-(4-hydroxybenzyl)isoquinoline. Demethylcoclaurine
[17072-47-8]



(*R*)-*form*

$C_{16}H_{17}NO_3$ 271.315

Historically, Higenamine was the racemate and Demethylcoclaurine the opt. active form, probably the (*S*)-form.

(R)-form [106032-53-5]
Alkaloid from the seed embryo of *Nelumbo nucifera* (East India lotus) (Nelumbonaceae). Prisms (EtOH). Mp 242-244° dec. $[\alpha]_D^{26.5}$ +16 (c, 1 in MeOH). Abs. config. not proven.

N-*Me,* N-*oxide(*R-*):* **N-*Methylhigenamine* N-*oxide***
[240430-84-6]
$C_{17}H_{19}NO_4$ 301.341
Alkaloid from *Gnetum parvifolium*. Needles (H_2O). Mp 156-159°. $[\alpha]_D$ -9.6 (c, 0.12 in DMSO). λ_{max} 225 (sh) (log ϵ 4.35); 284 (log ϵ 3.64) (H_2O).

O^6-*Me:* ***Coclaurine****. Sanjoinine K*
[2196-60-3]
[486-39-5]
$C_{17}H_{19}NO_3$ 285.342
Alkaloid from *Xylopia papuana* and *Alseodaphne archboldiana* (Annonaceae, Lauraceae). Also isol. from Sanjoin (seeds of *Zizyphus vulgaris* var. *spinosus*) (Rhamnaceae). Anti-HIV and hypotensive agent. Mp 217-218°. $[\alpha]_D$ +47 (EtOH). The *A. archboldiana* isolate, $[\alpha]_D$ +22°, was a partial racemate (1:1 mixt. of (+)- and (±)-forms).

O^6-*Me,* N,O,O-*tri-Ac:* Mp 199°. $[\alpha]_D$ -76 (EtOH).

O^6,N-*Di-Me:* **N-*Methylcoclaurine***
[5096-70-8]
$C_{18}H_{21}NO_3$ 299.369
Alkaloid from *Phylica rogersii* (Rhamnaceae). Weak neuromuscular inhibitor. Mp 182-183°. $[\alpha]_D$ -80 (c, 0.17 in EtOH). $[\alpha]_D$ -62 (c, 0.13 in $CHCl_3$). Remarkably (+)-Coclaurine forms a (-)-*N*-methyl deriv. λ_{max} 226 (ϵ 20600); 286 (ϵ 7100) (EtOH).

O^7-*Me:* ***Isococlaurine***
[574-75-4]
$C_{17}H_{19}NO_3$ 285.342
Alkaloid occurring to small extent in commercial Radix pareirae bravae. Isol. from roots of *Cissampelos mucronata*. Plates (MeOH). Mp 216-217°. $[\alpha]_D$ +12 (MeOH).

O^7-*Me, hydrochloride:*
Plates + 1H_2O (H_2O). Mp 175-176°. $[\alpha]_D$ +28 (H_2O). $[\alpha]_D$ +16 (MeOH).

O^6,O^7-*Di-Me:* see Armepavine, A-1444

O^6,N,N-*Tri-Me:* ***(-)-Magnocurarine***
[6801-40-7]
$C_{19}H_{24}NO_3^{\oplus}$ 314.404
Alkaloid from *Magnolia obovata* and several other *Magnolia* spp. and from *Michelia fuscata* (Magnoliaceae). Curarising and ganglionic blocking agent. Hypotensive. Mp 199-200° (as chloride). $[\alpha]_D$ -91 (H_2O).

O^7,N,N-*Tri-Me:* ***Lotusine***
[6871-67-6]
$C_{19}H_{24}NO_3^{\oplus}$ 314.404
Quaternary alkaloid from the embryo of *Nelumbo nucifera* (East India lotus) and from *Tiliacora racemosa* (Nelumbonaceae). Mp 213-215° (as chloride). $[\alpha]_D$ -15 (MeOH) (chloride). Another natural product (cyanogenic glycoside) reported in 1901 and named Lotusin was erroneous. λ_{max} 282 (EtOH).

O$^{4'}$,N,N-*Tri-Me:* ***Luxandrine***
[107584-81-6]
$C_{19}H_{24}NO_3^{\oplus}$ 314.404
Quaternary alkaloid from the trunk bark of *Pseudoxandra sclerocarpa*. Pale brown amorph. solid (as chloride). $[\alpha]_D$ +27 (c, 0.24 in $CHCl_3$/MeOH). Dec. in soln.

O$^{4'}$,O^6,N-*Tri-Me:* **N-*Demethylcolletine****. 4′-Methyl*-N-*methylcoclaurine***
[19879-50-6]
$C_{19}H_{23}NO_3$ 313.396
Obt. synthetically as a prod. from cleavage of Neferine, N-87 by Na/liq. NH_3. Alkaloid from *Aconitum leucostomum*. Oil. $[\alpha]_D^{20}$ -74 (c, 0.7 in MeOH).

O$^{4'}$,O^6,N,N-*Tetra-Me:* ***Colletine***
[15500-51-3]
$C_{20}H_{26}NO_3^{\oplus}$ 328.43
Quaternary alkaloid from the aerial parts of *Colletia spinosissima* (Rhamnaceae). Cryst. + 1H_2O (EtOAc/EtOH) (as chloride). Mp 130-132° (chloride). $[\alpha]_D^{20}$ -132.8 (c, 1.07 in EtOH).

(S)-form [22672-77-1]

O^7-*Me:* [486-39-5]
Obt. by resoln. of (±)-*O*,*O*-Dibenzylisococlaurine and subsequent acid hydrol. Cryst. (MeOH). Mp 195-197°. $[\alpha]_D$ -14 (c, 0.5 in MeOH).

O^7-*Me, hydrochloride:* [3422-42-2]
Needles (MeOH). Mp 242-243°. $[\alpha]_D$ -18 (c, 0.5 in MeOH). $[\alpha]_D$ -27.5 (c, 1.0 in H_2O).

O^6,N-*Di-Me:* [3423-07-2]
Obt. by reductive fission of Tetrandrine, T-286 or Isotetrandrine, I-328. Mp 134-136° Mp 176-177°. $[\alpha]_D^{22}$ +82 (c, 0.496 in EtOH).

O^6,N-*Di-Me,* O^7-α-D-*xylopyranoside:* ***Latericine***
[93631-49-3]
$C_{23}H_{29}NO_7$ 431.485
Alkaloid from *Papaver latericium, Papaver pilosum* and *Papaver monanthum* (Papaveraceae). Needles + 1MeOH (MeOH). Mp 216-223°. $[\alpha]_D$ +93 (c, 0.555 in EtOH). $[\alpha]_D$ +40 (c, 0.521 in Py). Stereochem. incorrectly assigned in CAS.

O^6,N,N-*Tri-Me:* ***(+)-Magnocurarine***
[63428-12-6]
$C_{19}H_{24}NO_3^{\oplus}$ 314.404
Alkaloid from *Gyrocarpus americanus* and *Lindera oldhamii* (Hernandiaceae, Lauraceae). Mp 199-200° dec.(as chloride). $[\alpha]_D^{22}$ +106 (c, 1 in H_2O).

O$^{4'}$,O^7,N-*Tri-Me:* ***Roefractine***
[131724-50-0]
$C_{19}H_{23}NO_3$ 313.396
Alkaloid from *Roemeria refracta* (Papaveraceae). Amorph. $[\alpha]_D$ +73 (c, 0.14 in MeOH).

O,O,O,N-*Tetra-Me,* N-*oxide:* **O-*Methylroefractine* N-*oxide***

[240122-94-5]
$C_{20}H_{25}NO_4$ 343.422
Alkaloid from *Delphinium fangshanense*. $[\alpha]_D$ -2.3 (c, 1.7 in H_2O). λ_{max} 230 (log ϵ 4.4); 285 (log ϵ 3.61) (no solvent reported).

O,O,O,N,N-*Penta-Me:* [770645-80-2]
Mp 115° dec. (hydrate) (as iodide) Mp 139° dec (anhyd.) (iodide).

(±)-*form* [5843-65-2]
Alkaloid from *Aconitum japonicum*, *Asiasarum heterotropoides* and *Gnetum parvifolium* (Ranunculaceae, Aristolochiaceae, Gnetaceae).

Hydrochloride: Mp 265° (258° dec.).

Hydrobromide: Mp 269-270°.

N-*Me:* **N-*Methylhigenamine***
[66277-20-1]
$C_{17}H_{19}NO_3$ 285.342
Alkaloid from *Gnetum parvifolium*. Cryst. (EtOH). Mp 148-150°. λ_{max} 225 (sh) (log ϵ 4.6); 285 (log ϵ 4.08) (EtOH).

O^6-*Me:* [19442-69-4]
Alkaloid from *Cocculus laurifolius*. Mp 220-221°.

O^7-*Me:* [2033-08-1]
Synthetic. Mp 135-136°.

O^7-*Me, hydrochloride:* [17934-80-4]
Mp 215°.

O^6,N-*Di-Me:* [1472-62-4]
Mp 161-162° (anhyd.).

(ξ)-*form*

4′-O-*β*-D-*Glucopyranoside:* [192324-89-3]
$C_{22}H_{27}NO_8$ 433.457
Alkaloid from *Phoebe chekiangensis* (Lauraceae). $[\alpha]_D$ -2.3 (c, 0.4 in MeOH). λ_{max} 200 ; 222 ; 292 (no solvent reported).

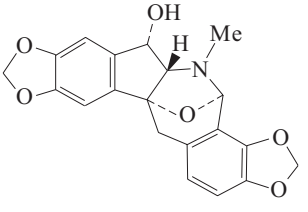
N-*Me,* O^7-*β*-D-*glucopyranoside:* **N-*Methylhigenamine 7*-O-*β*-D-*glucopyranoside***
[154418-17-4]
$C_{23}H_{29}NO_8$ 447.484
Alkaloid from bark of *Phellodendron amurense*. Pale brownish prisms + $2^1/_2H_2O$ (Py aq.). Mp 158-159°. $[\alpha]_D$ -35.8 (c, 1.0 in Py).

[94997-19-0]

King, H. *et al., J.C.S.*, 1940, 737-746 (*Isococlaurine*)
Finkelstein, J. *et al., J.A.C.S.*, 1951, **73**, 550-553 (*Coclaurine, synth*)
Tomita, M. *et al., Yakugaku Zasshi*, 1951, **71**, 1069-1075; *CA*, **46**, 5059 (*Magnocurarine*)
McKenzie, A.K. *et al., Aust. J. Chem.*, 1953, **6**, 180-185 (*Magnocurarine*)
Arndt, R.R. *et al., J.C.S.*, 1963, 2547-2549 (*N-Methylcoclaurine*)
Furukawa, H. *et al., Yakugaku Zasshi*, 1965, **85**, 335-338; 472-475; *CA*, **63**, 4351d; 5692d (*4′-Methyl-N-methylcoclaurine, Lotusine*)
Preininger, V. *et al., Coll. Czech. Chem. Comm.*, 1966, **31**, 3345-3352 (*Latericine*)
Albonico, S.M. *et al., J.C.S.(C)*, 1966, 1340-1342 (*Colletine, Magnocurarine, uv, ord, abs config*)
Johns, S.R. *et al., Aust. J. Chem.*, 1967, **20**, 1729-1735 (*Coclaurine, isol, pmr, ms*)
Sanchez, E. *et al., Tetrahedron*, 1967, **23**, 1139-1143 (*Colletine*)
Fridrichsons, J. *et al., Tetrahedron*, 1968, **24**, 5785-5789 (*Coclaurine, cryst struct*)
Koshiyama, H. *et al., Chem. Pharm. Bull.*, 1970, **18**, 2564-2568 (*Demethylcoclaurine, isol, uv, ir, pmr, ms, struct, synth*)
Bhakuni, D.S. *et al., Tetrahedron*, 1972, **28**, 1093-1095 (*Isococlaurine, abs config*)
Masaki, N. *et al., J.C.S. Perkin 1*, 1977, 717-719 (*cryst struct, Demethylcoclaurine*)
Torres, R. *et al., J. Nat. Prod.*, 1979, **42**, 430-431 (*N-Demethylcolletine*)
Saxena, N.K. *et al., J. Indian Chem. Soc.*, 1980, **57**, 773-774 (*Lotusine, uv, ir, pmr*)
Nishibe, S. *et al., J. Nat. Prod.*, 1986, **49**, 547-548 (*4′-Methyl-N-methylcoclaurine*)
Cortes, D. *et al., Phytochemistry*, 1986, **25**, 2693-2695 (*Luxandrine*)
Han, B.H. *et al., Pure Appl. Chem.*, 1989, **61**, 443-448 (*isol, Coclaurine*)
Gozler, B. *et al., J. Nat. Prod.*, 1990, **53**, 666-668 (*Roefractine*)
Ida, Y. *et al., Phytochemistry*, 1994, **35**, 209-215 (*N-Methylhigenamine 7-glucoside*)
Hegde, V.R. *et al., Bioorg. Med. Chem. Lett.*, 1997, **7**, 1207-1212 (*glucoside*)
Xu, Q. *et al., J. Nat. Prod.*, 1999, **62**, 1025-1027 (*N-Methylhigenamine, N-Methylhigenamine oxide*)
Zhang, S. *et al., Phytochemistry*, 1999, **51**, 333-336 (*O-Methylroefractine N-oxide*)
Tshibangu, J.N. *et al., Phytochem. Anal.*, 2003, **14**, 13-22 (*Isococlaurine, isol, hplc*)
Yang, J. *et al., Magn. Reson. Chem.*, 2005, **43**, 184-185 (*Lotusine, pmr, cmr*)

Himalayamine H-276

[86702-42-3]

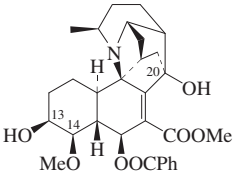


$C_{20}H_{17}NO_6$ 367.357
Alkaloid from *Meconopsis villosa* (Papaveraceae). Cryst. ($CHCl_3$/petrol). Mp 218°. $[\alpha]_D^{25}$ +137 (c, 0.185 in MeOH).

Allais, D.P. *et al., Tet. Lett.*, 1983, **24**, 2445 (*uv, cd, pmr, ms, struct*)

Himandridine H-277

Himandreline
[15521-76-3]



Absolute Configuration

$C_{30}H_{37}NO_7$ 523.625
Himandreline (originally assigned formula $C_{32}H_{41}NO_7$) was shown to be the polymorph, Mp 189-190°, of Himandridine. Alkaloid from the bark of *Himantandra baccata* and *Himantandra belgraveana* (preferred genus name *Galbulimima*) (Himantandraceae). Prisms (C_6H_6/hexane, MeOH aq. or EtOAc/petrol). Mp 189-190° Mp 204-205°. $[\alpha]_D^{18}$ -22 (c, 2.0 in $CHCl_3$). pK_a 7.7 (50% EtOH).

Hydroiodide:
Needles (EtOH/Et_2O). Mp 194-195°.

13-Ac: ***Alkaloid GB6***
[15401-76-0]
$C_{32}H_{39}NO_8$ 565.662
Alkaloid from the bark of *Himantandra baccata* (Himantandraceae). Prisms (Me_2CO), needles (Et_2O/hexane). Mp 154° Mp 170°. $[\alpha]_D^{19}$ -12 (c, 1.2 in $CHCl_3$).

20-Ac: ***Alkaloid GB7***
[15549-97-0]
$C_{32}H_{39}NO_8$ 565.662
Alkaloid from the bark of *Himantandra baccata* (Himantandraceae). Prisms (heptane). Mp 183°. $[\alpha]_D$ +35 (c, *ca*. 1 in $CHCl_3$).

O-*De-Me,* O-*debenzoyl, 20-Ac:* ***Alkaloid GB5***
[15342-51-5]
$C_{24}H_{33}NO_7$ 447.527
Alkaloid from the bark of *Himantandra baccata* and *Himantandra belgraveana* (Himantandraceae). Prisms (EtOAc). Mp 234°. $[\alpha]_D$ +60 (c, *ca*. 1 in $CHCl_3$).

O-*De-Me,* O-*debenzoyl, 13,20-di-Ac:* ***Alkaloid GB3***
[15488-89-8]
$C_{26}H_{35}NO_8$ 489.564
Alkaloid from the bark of *Himantandra belgraveana* (Himantandraceae). Prisms (EtOAc). Mp 237°. $[\alpha]_D$ +97 (c, *ca*. 1 in $CHCl_3$).

O-*De-Me,* O-*debenzoyl, tetra-Ac:* ***Alkaloid GB2***
[15373-50-9]
$C_{30}H_{39}NO_{10}$ 573.639
Alkaloid from the bark of *Himantandra baccata* and *Himantandra belgraveana* (Himantandraceae). Prisms (EtOAc/cyclohexane). Mp 238°. $[\alpha]_D$ +38 (c, *ca*. 1 in $CHCl_3$).

O-*De-Me,* O-*debenzoyl, 13-benzoyl, 20-Ac:* ***Alkaloid GB4***
[15342-50-4]
$C_{31}H_{37}NO_8$ 551.635
Alkaloid from the bark of *Himantandra baccata* and *Himantandra belgraveana* (Himantandraceae). Prisms (MeOH/$CHCl_3$). Mp 238°. $[\alpha]_D$ +63 (c, *ca*. 1 in $CHCl_3$).

O-*De-Me,* O-*debenzoyl, 14-benzoyl, 13,16-di-Ac:* ***Alkaloid GB1***. *GB 1*
[15342-91-3]
$C_{33}H_{39}NO_9$ 593.672
Alkaloid from the bark of *Himantandra baccata* and *Himantandra belgraveana* (Himantandraceae). Prisms (MeOH/$CHCl_3$). Mp 242°. $[\alpha]_D$ +8 (c, *ca*. 1 in $CHCl_3$).

O-*De-Me,* O-*debenzoyl, 14-benzoyl, tri-Ac:* ***Himbosine***
[15448-14-3]
$C_{35}H_{41}NO_{10}$ 635.71
Alkaloid from the bark of *Himantandra baccata* and *Himantandra belgraveana* (Himantandraceae). Prisms

(MeOH/$CHCl_3$). Mp 262°. $[\alpha]_D^{15}$ +55 (c, 0.89 in $CHCl_3$). $[\alpha]_D^{25}$ +28 (c, 1.1 in $CHCl_3$).

O-*De-Me,* O-*debenzoyl, 14-benzoyl, tri-Ac, hydrobromide:*
Needles (EtOH). Mp 228°.

13-Deoxy: ***Himandrine***
[15610-97-6]
$C_{30}H_{37}NO_6$ 507.625
Alkaloid from the bark of *Himantandra baccata* and *Himantandra belgraveana* (Himantandraceae). Prisms (EtOH) or glistening leaflets (EtOH aq.). Mp 185-186°. $[\alpha]_D^{20}$ -38 (c, 1.22 in $CHCl_3$).

▶ MR7000000

13-Deoxy, hydrochloride: Mp 222° dec.

13-Deoxy, O-*debenzoyl:* ***Alkaloid GB8***. *Debenzoylhimandrine*
[15401-61-3]
$C_{23}H_{33}NO_5$ 403.517
Alkaloid from the bark of *Himantandra belgraveana* (Himantandraceae). Prisms (cyclohexane or Et_2O/hexane). Mp 188° (183-185°). $[\alpha]_D^{25}$ +65 (c, 2.1 in $CHCl_3$).

13-Deoxy, O-*debenzoyl, 16-Ac:* ***Alkaloid GB9***
[15342-52-6]
$C_{25}H_{35}NO_6$ 445.555
Alkaloid from the bark of *Himantandra belgraveana* (Himantandraceae). Prisms (heptane). Mp 168°. $[\alpha]_D$ +23 (c, *ca*. 1 in $CHCl_3$).

13-Deoxy, O-*debenzoyl, 16,20-di-Ac:* ***Alkaloid GB10***
[15423-42-4]
$C_{27}H_{37}NO_7$ 487.592
Alkaloid from the bark of *Himantandra belgraveana* (Himantandraceae). Prisms (EtOAc/cyclohexane). Mp 162°. $[\alpha]_D$ +19 (c, *ca*. 1 in $CHCl_3$).

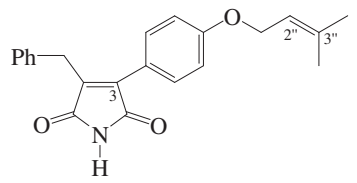
13-Deoxy, O-*de-Me,* O-*debenzoyl, 20-Ac:* ***Alkaloid GB11***
[15342-53-7]
$C_{24}H_{33}NO_6$ 431.528
Alkaloid from the bark of *Himantandra belgraveana* (Himantandraceae). Prisms (EtOAc). Mp 239°. $[\alpha]_D$ +64 (c, *ca*. 1 in $CHCl_3$).

13-Deoxy, O-*de-Me,* O-*debenzoyl, tri-Ac:* ***Alkaloid GB12***
[15342-54-8]
$C_{28}H_{37}NO_8$ 515.602
Alkaloid from the bark of *Himantandra belgraveana* (Himantandraceae). Prisms (EtOAc/cyclohexane). Mp 222°. $[\alpha]_D$ +23 (c, *ca*. 1 in $CHCl_3$).

Brown, R.F.C. *et al., Aust. J. Chem.*, 1956, **9**, 283-287 (*isol*)
Pinhey, J.T. *et al., Aust. J. Chem.*, 1961, **14**, 106-134 (*nomencl*)
Lovell, F.M. *et al., Proc. Chem. Soc., London*, 1964, 58 (*Himbosine, cryst struct*)
Binns, S.V. *et al., Aust. J. Chem.*, 1965, **18**, 569-573 (*GB alkaloids, isol*)
Mander, L.N. *et al., Aust. J. Chem.*, 1967, **20**, 981-1019; 1021-1027 (*Himandridine, Himbosine, uv, ir, pmr, struct*)
Guise, G.B. *et al., Aust. J. Chem.*, 1967, **20**, 1029-1035 (*uv, ir, pmr, struct, synth*)
Willis, A.C. *et al., Aust. J. Chem.*, 2006, **59**, 629-632 (*abs config, Himbosine, cryst struct*)

Himanimide A H-278

[464895-13-4]



$C_{22}H_{21}NO_3$ 347.413
Prod. by the basidiomycete *Serpula himantoides*. Yellow oil. λ_{max} 230 (log ϵ 4.1); 356 (log ϵ 3.6) (MeOH).

N-*Hydroxy:* ***Himanimide C***
[464189-92-2]
$C_{22}H_{21}NO_4$ 363.412
Prod. by *Serpula himantoides*. Antifungal and cytotoxic agent. Yellow oil. λ_{max} 232 (log ϵ 4.3); 290 (log ϵ 3.7); 374 (log ϵ 3.6) (MeOH).

3,4-Dihydro, N-*hydroxy:* ***Himanimide D***
[464194-69-2]
$C_{22}H_{23}NO_4$ 365.428
Prod. by *Serpula himantoides*. Oil. Possesses *cis*-config. Racemate. λ_{max} 225 (sh) (log ϵ 4.1); 277 (log ϵ 3.4) (MeOH).

2″,3″-Dihydro, 2″ξ,3″-dihydroxy: ***Himanimide B***
[464194-68-1]
$C_{22}H_{23}NO_5$ 381.427
Prod. by *Serpula himantoides*. Yellow oil. λ_{max} 229 (log ϵ 4.3); 356 (log ϵ 3.8) (MeOH).

Aqueveque, P. *et al., Z. Naturforsch., C*, 2002, **57**, 257-262 (*isol, pmr, cmr, activity*)
Sellés, P. *et al., Org. Lett.*, 2005, **7**, 605-608 (*Himanimide C, synth*)
Cheng, C.-F. *et al., Tetrahedron*, 2008, **64**, 4347-4353 (*Himanimide D, synth*)

Himanthine H-279

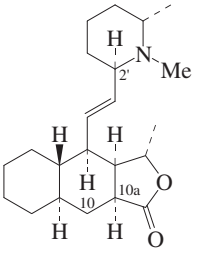
$C_{37}H_{40}N_2O_6$ 608.733

Bisbenzylisoquinoline alkaloid. Struct. unknown. Alkaloid from the stem bark of *Berberis himalaica* (Berberidaceae). Needles (MeOH). Mp 206-207°. $[\alpha]_D^{33}$ -198.7.

Chatterjee, R. *et al., J. Indian Chem. Soc.*, 1952, **29**, 921-924 (*isol, uv*)

Himbacine H-280

4-[2-(1,6-Dimethyl-2-piperidinyl)ethenyl]decahydro-3-methylnaphtho[2,3-c]furan-1(3H)-one, 9CI
[6879-74-9]



Absolute Configuration

$C_{22}H_{35}NO_2$ 345.524
Alkaloid from the bark of *Himantandra baccata* and *Himantandra belgraveana* (preferred genus name *Galbulimima*) (Himantandraceae). Muscarine M_4-receptor antagonist, research tool for differentiating between muscarinic receptor sites. Antispasmodic agent. Needles (heptane). Mp 132°. $[\alpha]_D^{14}$ +63 (c, 1.04 in $CHCl_3$). pK_a 9.3 (50% EtOH). Log P 4.36 (uncertain value) (calc).

▶ QL0843500

Hydrochloride:
Cryst. + $1H_2O$ (Me_2CO/Et_2O). Mp 267°.

N-*Oxide:*
Needles (EtOAc). Mp 192-194° dec. Hygroscopic. Mp depends on rate of heating.

N-*De-Me:* ***Himbeline***
[518-99-0]
$C_{21}H_{33}NO_2$ 331.497
Alkaloid from the bark of *Himantandra belgraveana* (Himantandraceae). Needles (petrol). Mp 100°. $[\alpha]_D^{18}$ +19 (c, 2.4 in $CHCl_3$).

N-*De-Me; hydrochloride:*
Needles + $1H_2O$ (EtOH). Mp 265-266°.

N-*De-Me,* N-*Ac:*
Needles (petrol). Mp 159°.

*10,10*a-*Didehydro:* ***Himgravine***
[6879-75-0]
$C_{22}H_{33}NO_2$ 343.508
Alkaloid from the bark of *Himantandra baccata* and *Himantandra belgraveana* (Himantandraceae). Needles (petrol). Mp 120°. $[\alpha]_D^{18}$ +47 (c, 1.5 in $CHCl_3$). pK_a 9.3 (50% EtOH).

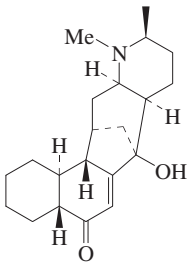
2′-Epimer, N-*de-Me:* ***Himandravine***
[6879-73-8]
$C_{21}H_{33}NO_2$ 331.497
Alkaloid from the bark of *Himantandra belgraveana* (Himantandraceae). Needles (hexane). Mp 119°. $[\alpha]_D^{18}$ +23 (c, 1.89 in $CHCl_3$).

2′-Epimer, N-*de-Me, hydrochloride:*
Prisms (Me_2CO/EtOH). Mp 238-240°.

Brown, R.F.C. *et al., Aust. J. Chem.*, 1956, **9**, 283-287 (*Himbeline, Himandravine, Himgravine*)
Abraham, R.J. *et al., Aust. J. Chem.*, 1961, **14**, 64-68 (*Himgravine, struct*)
Pinhey, J.T. *et al., Aust. J. Chem.*, 1961, **14**, 106-134 (*Himbeline, Himandravine, Himgravine, ir, struct*)
Fridrichsons, J. *et al., Acta Cryst.*, 1962, **15**, 119-128 (*cryst struct*)
Galbraith, M.N. *et al., Aust. J. Chem.*, 1963, **16**, 112-122 (*synth, derivs*)
Binns, S.V. *et al., Aust. J. Chem.*, 1965, **18**, 569-573 (*Himbeline, Himandravine, Himgravine, isol*)
Hart, D.J. *et al., J.O.C.*, 1997, **62**, 5023-5033 (*Himbeline, synth, pmr, cmr*)
Chackalamannil, S. *et al., J.O.C.*, 1999, **64**, 1932-1940 (*Himbeline, synth*)
Chackalamannil, S. *et al., Org. Lett.*, 2001, **3**, 1427-1429 (*Himandravine, synth*)
Takadoi, M. *et al., Tetrahedron*, 2002, **58**, 9903-9923 (*synth*)
Takadoi, M. *et al., Bioorg. Med. Chem.*, 2003, **11**, 1169-1186 (*bibl, pharmacol*)
Tchabanenko, K. *et al., Tetrahedron*, 2005, **61**, 11649-11656 (*synth*)
Willis, A.C. *et al., Aust. J. Chem.*, 2006, **59**, 629-632 (*abs config*)

Himbadine H-281

[24932-15-8]



Absolute Configuration

$C_{21}H_{31}NO_2$ 329.481
Alkaloid from the bark of *Himantandra baccata* (preferred genus name*Galbulimima*) (Himantandraceae). Cryst. + ½ H_2O (MeOH aq.). Mp 114-115°. $[\alpha]_D^{25}$ -42 (c, 1.43 in $CHCl_3$). pK_a 8 (50% MeOH). Anhyd. material is a gum.

Hydrochloride:
Prisms (EtOH/Et_2O). Mp 233-235°.

Oxime:
Buff-coloured needles (Me_2CO). Mp 200-204°.

2,4-Dinitrophenylhydrazone:
Orange needles (C_6H_6/petrol). Mp 148°.

Ac:
Cryst. (MeOH). Mp 120°. $[\alpha]_D^{20}$ -27 (c, 1.51 in $CHCl_3$). Subl. at 0.1mm.

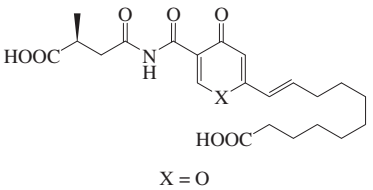
N-De-Me: ***Alkaloid GB13***. *GB 13*
[16625-34-6]
$C_{20}H_{29}NO_2$ 315.455
Alkaloid from the bark of *Himantandra baccata* (Himantandraceae). Prisms (heptane). Mp 185°. $[\alpha]_D$ -84 (c, ca. 1 in $CHCl_3$).

N-De-Me; hydrochloride:
Prisms (EtOH/Et_2O). Mp 275-277°.

Brown, R.F.C. *et al., Aust. J. Chem.*, 1956, **9**, 283-287 (*isol*)
Pinhey, J.T. *et al., Aust. J. Chem.*, 1961, **14**, 106-134 (*nomencl*)
Binns, S.V. *et al., Aust. J. Chem.*, 1965, **18**, 569-573 (*GB13, isol*)
Mander, L.N. *et al., Aust. J. Chem.*, 1967, **20**, 1473-1491 (*Himbadine, GB13, uv, ir, pmr, struct*)
Mander, L.N. *et al., J.A.C.S.*, 2003, **125**, 2400-2401 (*GB13, synth*)
Willis, A.C. *et al., Aust. J. Chem.*, 2006, **59**, 629-632 (*abs config*)
Movassaghi, M. *et al., J.A.C.S.*, 2006, **128**, 8126-8127 (*GB13, synth, stereochem*)
Evans, D.A. *et al., J.A.C.S.*, 2007, **129**, 1048-1049 (*GB 13, synth*)

Himeic acid A H-282

[838847-67-9]



X = O

$C_{22}H_{29}NO_8$ 435.473
Prod. by a marine-derived *Aspergillus* sp. Ubiquitin-activating enzyme inhibitor. $[\alpha]_D^{26}$ -15 (c, 0.14 in MeOH). λ_{max} 234 (log ϵ 4.5); 254 (log ϵ 4.4) (MeOH).

N-*Deacyl: 11-[5-(Aminocarbonyl)-4-oxo-4*H*-pyran-2-yl]-10-undecenoic acid.* ***Himeic acid B***
[838847-69-1]
$C_{17}H_{23}NO_5$ 321.372
Isol. from a marine-derived *Aspergillus* sp. λ_{max} 227 (log ϵ 4.3); 266 (log ϵ 4.1) (MeOH).

Tsukamoto, S. *et al., Bioorg. Med. Chem. Lett.*, 2005, **15**, 191-194 (*isol, pmr, cmr*)

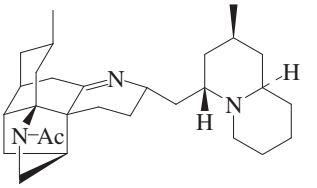
Himeic acid C H-283

[838847-71-5]
As Himeic acid A, H-282 with
X = NH
$C_{22}H_{30}N_2O_7$ 434.488
Prod. by a marine-derived *Aspergillus* sp. $[\alpha]_D^{26}$ -9.8 (c, 0.32 in MeOH). λ_{max} 252 (log ϵ 4.4) (MeOH).

Tsukamoto, S. *et al., Bioorg. Med. Chem. Lett.*, 2005, **15**, 191-194 (*isol, pmr, cmr*)

Himeradine A H-284

[552831-75-1]

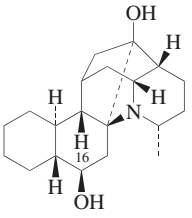


$C_{29}H_{45}N_3O$
Alkaloid from *Lycopodium chinense.*

Morita, H. *et al., J.O.C.*, 2003, **68**, 4563-4566 (*isol, pmr, cmr*)

Himgaline H-285

[16585-08-3]



Absolute Configuration

$C_{20}H_{31}NO_2$ 317.47
Alkaloid from bark of *Himantandra baccata* and *Himantandra belgraveana* (preferred genus name *Galbulimima*) (Himantandraceae). Needles (C_6H_6). Mp 226°. $[\alpha]_D$ -76 (c, 1 in $CHCl_3$). pK_a 11 (50% MeOH aq.).

Hydrochloride:
Needles (MeOH/Et_2O). Mp 311°.

Picrate:
Yellow needles (MeOH aq.). Mp 136-137°.

Di-Ac:
Prisms (MeCN). Mp 143-145°. $[\alpha]_D^{20}$ -95 (c, 3.1 in $CHCl_3$).

Binns, S.V. *et al., Aust. J. Chem.*, 1965, **18**, 569-573 (*isol*)
Mander, L.N. *et al., Aust. J. Chem.*, 1967, **20**, 1705-1718 (*ir, pmr, struct*)
Willis, A.C. *et al., Aust. J. Chem.*, 2006, **59**, 629-632 (*cryst struct, abs config*)
Shah, U. *et al., J.A.C.S.*, 2006, **128**, 12654-12655 (*synth*)
Evans, D.A. *et al., J.A.C.S.*, 2007, **129**, 1048-1049 (*synth*)

Himgrine H-286

Struct. unknown
$C_{22}H_{33}NO_3$ 359.508
Alkaloid from the bark of *Himantandra belgraveana* (preferred genus name *Galbulimima*) (Himantandraceae). Noncryst.

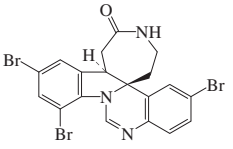
Perchlorate:
Needles + 1H_2O (EtOH aq.). Mp 143-144°.

Methiodide:
Needles (EtOH). Mp 222-223°.

Brown, R.F.C. *et al., Aust. J. Chem.*, 1956, **9**, 283-287 (*isol*)

Hinckdentine A H-287

[112663-91-9]



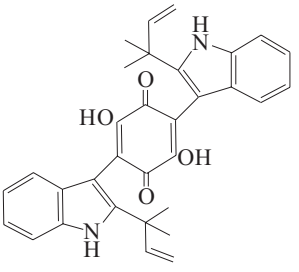
Absolute Configuration

$C_{19}H_{14}Br_3N_3O$ 540.051
Alkaloid from the marine bryozoan *Hincksinoflustra denticulata*. Mp 196-197°. $[\alpha]_D^{25}$ +274 (solvent unspecified).

Blackman, A.J. *et al., Tet. Lett.*, 1987, **28**, 5561-5562 (*isol, uv, ir, pmr, ms, struct, abs config*)

Hinnuliquinone H-288

*2,5-Bis[2-(1,1-dimethyl-2-propenyl)-1*H*-indol-3-yl]-3,6-dihydroxy-2,5-cyclohexadiene-1,4-dione*
[78860-37-4]



$C_{32}H_{30}N_2O_4$ 506.6
Isol. from *Nodulisporium hinnuleum*. Inhibitor of HIV-1 protease. Dark red cryst. Poorly sol. hexane. Mp 243°. Isomeric with Cochliodinol, C-547. λ_{max} 280 (ϵ 26500); 288 (ϵ 17400); 506 (ϵ 950) (MeOH). λ_{max} 280 (ϵ 18600); 288 (ϵ 19500); 322 (ϵ 20400); 516 (ϵ 1470) (EtOH/NaOH).

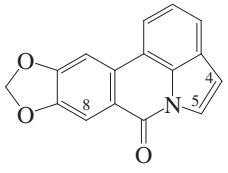
Di-Ac:
Purple rods (Ac_2O). Mp 240°.
O'Leary, M.A. *et al., J.C.S. Perkin 1*, 1984, 567-569 (*isol, uv, ir, pmr, ms, biosynth*)
Singh, S.B. *et al., Biochem. Biophys. Res. Commun.*, 2004, **324**, 108-113 (*isol, activity*)

Hippacine† H-289

$C_{17}H_{21}NO_5$ 319.357
Amaryllidaceae alkaloid. Struct. unknown. Isol. from *Hippeastrum vittatum* (Amaryllidaceae). Mp 245-246°.
Döpke, W. *et al., Pharmazie*, 1966, **21**, 323-324; *CA*, **65**, 10632e (*isol*)

Hippadine H-290

*7*H-*[1,3]Dioxolo[4,5*-j*]pyrrolo[3,2,1*-de*]phenanthridin-7-one, 9CI. Pratorine. Alkaloid N3*
[52886-06-3]



$C_{16}H_9NO_3$ 263.252
Identity of Alkaloid N3 with Hippadine is not certain. Alkaloid from *Hippeastrum vittatum, Crinum pratense, Crinum bulbispermum, Crinum asiaticum* var. *japonicum, Crinum latifolium* and *Haemanthus kalbreyeri* and (Alkaloid N3) from *Lycoris sanguinea* (Amaryllidaceae). Mp 209-210°. λ_{max} 230 (log ϵ 4.25); 238 (log ϵ 4.29); 248 (log ϵ 4.42); 255 (log ϵ 4.26); 300 (log ϵ 4.21); 308 (sh) (log ϵ 4.03); 335 (log ϵ 3.97); 350 (log ϵ 3.99); 368 (log ϵ 3.87) (MeOH).
► JI5025000

4,5-Dihydro: ***Anhydrolycorin-7-one***
[40360-71-2]
$C_{16}H_{11}NO_3$ 265.268
Alkaloid from the bulbs of *Crinum pratense* (Amaryllidaceae). Pale yellow prisms ($CHCl_3$/MeOH). Mp 232-234° (228-230°). λ_{max} 242 (ϵ 30000); 274 (ϵ 13000); 342 (ϵ 4000) (95% EtOH).

*Deoxo: 7*H-*[1,3]Dioxolo[4,5*-j*]pyrrolo[3,2,1*-de*]phenanthridine. 8,9-Methylenedioxy-11*H-*pyrrolo[3,2,1*-de*]phenanthridine.* ***4,5-Dehydroanhydrolycorine***
[212-38-4]
$C_{16}H_{11}NO_2$ 249.268
Alkaloid from the bulbs of *Pancratium biflorum* (Amaryllidaceae) infected with *Imperata cylindrica*. Mp 154-156°.

Deoxo, picrate:
Reddish-brown needles. Mp 143-145° dec.

4-Hydroxy, deoxo, 4,5-dihydro: ***4-Hydroxyanhydrolycorine***
[136850-09-4]
$C_{16}H_{13}NO_3$ 267.284
Alkaloid from leaves of *Hymenocallis caymanensis* (Amaryllidaceae).

8-Hydroxy: ***Kalbretorine***
[98899-99-1]
$C_{16}H_9NO_4$ 279.251
Alkaloid from the roots of *Haemanthus kalbreyeri* (Amaryllidaceae). Mp 245-248° dec. λ_{max} 225 (log ϵ 4.32); 234 (log ϵ 4.02); 248 (log ϵ 4.31); 255 (log ϵ 4.11); 292 (log ϵ 3.78); 335 (log ϵ 3.24); 355 (log ϵ 3.48) (MeOH). λ_{max} 222 (log ϵ 4.27); 250 (log ϵ 4.29); 260 (log ϵ 4.2); 298 (log ϵ 3.66); 348 (log ϵ 3.33); 375 (log ϵ 3.4) (MeOH/NaOMe).

8-Methoxy:
Brown microcryst. (petrol/Me_2CO). Mp 258-260°.
Cook, J.W. *et al., J.C.S.*, 1954, 4176 (*deoxo, synth*)
Humber, L.G. *et al., J.C.S.*, 1954, 4622-4630 (*synth*)
Hara, H. *et al., Tet. Lett.*, 1972, 5031-5033 (*synth*)
Takagi, S. *et al., Yakugaku Zasshi*, 1974, **94**, 617-622; *CA*, **81**, 74924y (*isol*)
El-Moghazi, A.M. *et al., Planta Med.*, 1976, **29**, 156-159 (*isol*)
Ghosal, S. *et al., Phytochemistry*, 1981, **20**, 2003-2007; 1983, **22**, 2305-2309; 1985, **24**, 1825-1828; 1986, **25**, 1097 (*Hippadine, Kalbretorine, Anhydrolycorin-7-one, 4,5-Dehydroanhydrolycorine*)
Ali, A.A. *et al., Planta Med.*, 1981, **43**, 407 (*pmr, cmr, ms, struct*)
Hayakawa, K. *et al., Tet. Lett.*, 1987, **28**, 5895-5898 (*synth*)
Trimino, Z. *et al., Rev. Cubana Quim.*, 1989, **5**, 55-57; *CA*, **115**, 203303s (*4-Hydroxyanhydrolycorine*)
Siddiqui, M.A. *et al., Tet. Lett.*, 1990, **31**, 1523-1526 (*synth*)
Lauk, U. *et al., Tet. Lett.*, 1991, **32**, 65-68 (*synth*)
Grigg, R. *et al., Tet. Lett.*, 1991, **32**, 3859-3862 (*synth*)
Sakamoto, T. *et al., Heterocycles*, 1993, **36**, 2597-2600 (*synth*)
Iwao, M. *et al., Heterocycles*, 1994, **38**, 1717-1720 (*Hippadine, Anhydrolycorinone, Kalbretorine, synth*)
Banwell, M.G. *et al., Chem. Comm.*, 1995, 2551-2553 (*synth*)
Shao, H.W. *et al., Chin. Chem. Lett.*, 1996, **7**, 13-14; *CA*, **124**, 289955b (*synth*)
Hutchings, R.H. *et al., J.O.C.*, 1996, **61**, 1004-1013 (*Hippadine, Kalbretorine, synth*)
Padwa, A. *et al., J.O.C.*, 1998, **63**, 3986-3997; 1999, **64**, 3595-3607 (*synth*)
Harrowven, D.C. *et al., Synthesis*, 1999, 1300-1302 (*synth, ir, uv, pmr, cmr, ms*)
Miki, Y. *et al., Tet. Lett.*, 1999, **40**, 4347-4348 (*synth*)
Boger, D.L. *et al., J.O.C.*, 2000, **65**, 9120-9124 (*synth*)
Campbell, W.E. *et al., Phytochemistry*, 2000, **53**, 587-591 (*cmr*)
Harayama, T. *et al., Tetrahedron*, 2004, **60**, 1611-1616 (*Anhydrolycorinone, synth*)
Ganton, M.D. *et al., Org. Lett.*, 2005, **7**, 4777-4779 (*synth*)
Mentzel, U.V. *et al., J.O.C.*, 2006, **71**, 5807-5810 (*synth*)

Hippandrine H-291

$C_{17}H_{19}NO_4$ 301.341
Amaryllidaceae alkaloid. Struct. unknown. Isol. from the bulbs of *Hippeastrum brachyandrum* (Amaryllidaceae). Prisms (Me_2CO). Mp 194°. $[\alpha]_D^{23}$ -110 (c, 0.2 in $CHCl_3$).

Picrate:
Cryst. (MeOH). Mp 179° dec.
Boit, H.-G. *et al., Chem. Ber.*, 1959, **92**, 2582-2584 (*isol*)

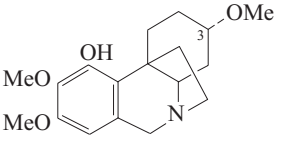
Hippauline H-292

[1357-53-5]
$C_{17}H_{19}NO_4$ 301.341
Amaryllidaceae alkaloid. Struct. unknown. Isol. from the bulbs of *Hippeastrum aulicum* var. *robustum* (Amaryllidaceae). Mp 163-164°. $[\alpha]_D$ +10 (c, 0.2 in $CHCl_3$).

Perchlorate: Mp 175° dec.
Boit, H.-G. *et al., Naturwissenschaften*, 1960, **47**, 109 (*isol*)

Hippeastidine H-293

[66276-51-5]

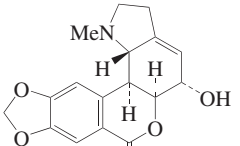


$C_{18}H_{25}NO_4$ 319.4
Alkaloid from the bulbs of *Hippeastrum ananuca* (Amaryllidaceae).
► KM5830000

O^3*-De-Me:* ***O^3-Demethylhippeastidine***
[81904-08-7]
$C_{17}H_{23}NO_4$ 305.373
Alkaloid from *Hippeastrum ananuca* bulbs (Amaryllidaceae). Mp 175°. Alkaloid not named in the abstr.
Watson, W.H. *et al., Cryst. Struct. Commun.*, 1977, **6**, 797 (*cryst struct*)
Pacheco, P. *et al., Rev. Latinoam. Quim.*, 1978, **9**, 28; *CA*, **89**, 103746q
Pacheco, P. *et al., Bol. Soc. Chil. Quim.*, 1982, **27**, 289; *CA*, **96**, 214311h (*deriv*)

Hippeastrine H-294

Trisphaerine. Trispherine
[477-17-8]



(+)-*form*

$C_{17}H_{17}NO_5$ 315.325
Alkaloid from *Amaryllis belladonna*, *Hippeastrum vittatum* and many other spp. in the Amaryllidaceae. Mp 214-215°. $[\alpha]_D^{22}$ +160 (c, 0.3 in $CHCl_3$). λ_{max} 236 (log ϵ 3.4); 268 (log ϵ 2.7); 308 (log ϵ 2.6) (MeOH).

Picrate: Mp 256°.

Methiodide: Mp 238°.

N-*Oxide:* ***Hippeastrine* N-*oxide***
[137810-41-4]
$C_{17}H_{17}NO_6$ 331.324
Alkaloid from the flowers of *Lycoris radiata* (Amaryllidaceae). Cubes (EtOAc). Mp 172-173°. $[\alpha]_D^{22}$ +81.7 (c,

0.23 in MeOH). Data refers to synthetic compd.

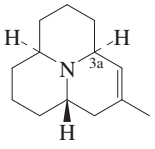
Me ether: ***Ungerine****. Nivaline*†
[477-13-4]
$C_{18}H_{19}NO_5$ 329.352
Alkaloid from *Ungernia severtzovii, Ungernia trisphaera* and *Leucojum aestivum* (Amaryllidaceae). Mp 135-136°. $[\alpha]_D$ +103.

Me ether; hydrochloride: Mp 270-271°.

Yunusov, S. *et al., Dokl. Akad. Nauk SSSR*, 1953, **6**, 44; *CA*, **49**, 1281b (*Ungerine*)
Boit, H.-G. *et al., Chem. Ber.*, 1956, **89**, 1129; 2093 (*isol, ir*)
Briggs, C.K. *et al., J.A.C.S.*, 1956, **78**, 2899 (*Ungerine*)
Kitagawa, T. *et al., J.C.S.*, 1959, 3741 (*struct, config*)
Proskurnina, N.F. *et al., CA*, 1963, **59**, 14035h (*deriv*)
Abduazimov, K.A. *et al., Dokl. Akad. Nauk SSSR, Ser. Khim.*, 1963, **153**, 1315; *CA*, **60**, 9324e (*Ungerine*)
Hawksworth, W.A. *et al., J.C.S.*, 1965, 1991 (*pmr*)
Katakawa, J. *et al., Heterocycles*, 1984, **22**, 2213 (*synth*)
Kihara, M. *et al., Chem. Pharm. Bull.*, 1991, **39**, 1849 (*Hippeastrine N-oxide*)
Astley, S.T. *et al., Tet. Lett.*, 1993, **34**, 2035 (*synth*)
Wagner, J. *et al., Tetrahedron*, 1996, **52**, 6591 (*cd*)
Evidente, A. *et al., Phytochemistry*, 2004, **65**, 2113-2118 (*isol, cd, pmr, cmr, ms*)

Hippocasine H-295

*1,2,3,3*a*,4,5,6,6*a*,7,9*a*-Decahydro-8-methylpyrido[2,1,6*-de*]quinolizine, 9CI*



Absolute Configuration

$C_{13}H_{21}N$ 191.316

Natural-*form* [60022-25-5]
Alkaloid from the defence secretion of the ladybug *Hippodamia caseyi*. Oil.

N-*Oxide:* ***Hippocasine* N-*oxide***
[60022-26-6]
$C_{13}H_{21}NO$ 207.315
Constit. of *Hippodamia caseyi*. Oil.

N-*Oxide; hydrochloride:* [60047-14-5]
Cryst. (EtOAc/MeOH). $[\alpha]_D^{25}$ +14.8 (c, 0.73 in MeOH). Dec. >220° without melting.

*3*a*-Epimer,* N-*oxide:* ***2-Dehydrococcinelline***
$C_{13}H_{21}NO$ 207.315
Constit. of the defence secretion of *Anatis ocellata*. Oil. $[\alpha]_{579}$ +8 (c, 0.16 in CH_2Cl_2).

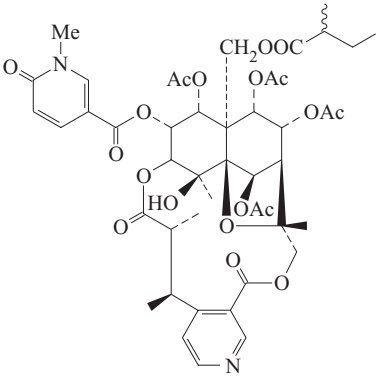
(±)-*form* [75556-13-7]
Synthetic. Oil; yellow needles (EtOH)(as picrate). Mp 137.5-139° (picrate).

N-*Oxide:* [75556-12-6]
Synthetic. Oil; feathery cryst. (EtOAC/MeOH)(as hydrochloride). Mp 210° dec. (hydrochloride).

Ayer, W.A. *et al., Can. J. Chem.*, 1976, **54**, 1807 (*isol, ir, ms, synth, oxide, ord, pmr, cryst struct*)
Mueller, R.M. *et al., J.O.C.*, 1984, **49**, 2217 (*synth, ir, pmr, ms*)
Lebrun, B. *et al., J. Nat. Prod.*, 1997, **60**, 1148-1149 (*Dehydrococcinelline*)

Hippocrateine III H-296

[169626-41-9]

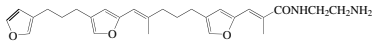


$C_{46}H_{56}N_2O_{19}$ 940.95
Alkaloid from root and stem barks of *Hippocratea excelsa* (Celastraceae). Gum. Note differing regiochemistry of nicotinoyl group compared with Per(-deacyl)emarginatine, P-246.

Calzada, F. *et al., Phytochemistry*, 1995, **40**, 583 (*isol, uv, ir, pmr, cmr, struct*)

Hippospongin C H-297

[184301-92-6]

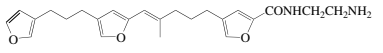


$C_{27}H_{34}N_2O_4$ 450.577
Constit. of *Hippospongia* sp. Pale yellow oil. λ_{max} 206 (log ϵ 4.19); 276 (log ϵ 4.39); 287 (log ϵ 4.39); 303 (log ϵ 4.34) (EtOH). λ_{max} 206 (ϵ 13800); 276 (ϵ 24000); 287 (ϵ 24000); 303 (ϵ 21900) (MeOH) (Berdy).

Rochfort, S.J. *et al., J. Nat. Prod.*, 1996, **59**, 1024-1028 (*isol, pmr, cmr, ms*)

Hippospongin E H-298

[184301-94-8]



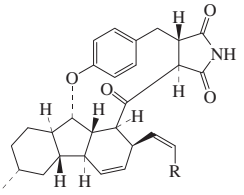
$C_{24}H_{30}N_2O_4$ 410.512
Constit. of a *Hippospongia* sp. Pale yellow oil. λ_{max} 279 (log ϵ 3.95) (EtOH). λ_{max} 279 (ϵ 8900) (MeOH) (Berdy).

ω-N-*Ac:* ***Hippospongin F***
[184301-95-9]
$C_{26}H_{32}N_2O_5$ 452.549
Constit. of a *Hippospongia* sp. Pale yellow oil. λ_{max} 265 (log ϵ 4.02) (EtOH). λ_{max} 265 (ϵ 10450) (MeOH) (Berdy).

Rochfort, S.J. *et al., J. Nat. Prod.*, 1996, **59**, 1024 (*isol, pmr, cmr, ms*)

Hirsutellone A H-299

[857672-62-9]



Relative Configuration

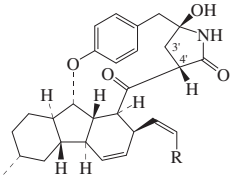
R = H

$C_{28}H_{31}NO_4$ 445.557
Related to Pyrrocidine B, P-940 and Antibiotic GKK 1032B, A-1183. Alkaloid from the insect pathogenic fungus *Hirsutella nivea* BCC 2594. Cryst. Mp 155-157°. $[\alpha]_D^{29}$ +168 (c, 0.2 in MeOH). λ_{max} 203 (log ϵ 4.42); 228 (sh) (log ϵ 3.72); 281 (sh) (log ϵ 2.99) (MeOH).

Isaka, M. *et al., Tetrahedron*, 2005, **61**, 5577-5583 (*isol, pmr, cmr, cryst struct*)

Hirsutellone B H-300

[857672-63-0]



Relative Configuration

R = H

$C_{28}H_{33}NO_4$ 447.573
Related to Pyrrocidine B, P-940 and Antibiotic GKK 1032A_2, A-1182. Alkaloid from the insect pathogenic fungus *Hirsutella nivea* BCC 2594. Amorph. solid. Mp 261-263°. $[\alpha]_D^{27}$ +256 (c, 0.2 in MeOH). λ_{max} 203 (log ϵ 4.37); 227 (sh) (log ϵ 3.78); 276 (sh) (log ϵ 2.99) (MeOH).

3′β,4′β-Epoxy: ***Hirsutellone C***
[857672-64-1]
$C_{28}H_{31}NO_5$ 461.557
Alkaloid from *Hirsutella nivea* BCC 2594. Amorph. solid. Mp 234-235° dec. $[\alpha]_D^{29}$ +129 (c, 0.2 in MeOH). λ_{max} 203 (log ϵ 4.42); 230 (log ϵ 3.93); 277 (log ϵ 3.12) (MeOH).

Isaka, M. *et al., Tetrahedron*, 2005, **61**, 5577-5583 (*isol, pmr, cmr*)

Hirsutellone D H-301

[857672-65-2]
As Hirsutellone A, H-299 with
R = CH_3

$C_{29}H_{33}NO_4$ 459.584
Related to Pyrrocidine B, P-940 and Antibiotic GKK 1032B, A-1183. Alkaloid from *Hirsutella nivea* BCC 2594.

Amorph. solid. Mp 106-109°. $[\alpha]_D^{29}$ +214 (c, 0.07 in MeOH). λ_{max} 204 (log ϵ 4.46); 229 (sh) (log ϵ 3.78); 283 (sh) (log ϵ 3.07) (MeOH).

Isaka, M. *et al., Tetrahedron*, 2005, **61**, 5577-5583 (*isol, pmr, cmr*)

Hirsutellone E H-302

[857672-66-3]

As Hirsutellone B, H-300 with

R = CH_3

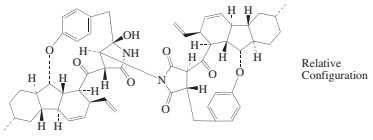
$C_{29}H_{35}NO_4$ 461.6

Related to Pyrrocidine B, P-940 and Antibiotic GKK 1032A_2, A-1182. Alkaloid from *Hirsutella nivea* BCC 2594. Amorph. solid. λ_{max} 227 (sh) ; 276 (MeOH).

Isaka, M. *et al., Tetrahedron*, 2005, **61**, 5577-5583 (*isol, pmr, cmr*)

Hirsutellone F H-303

[901129-86-0]



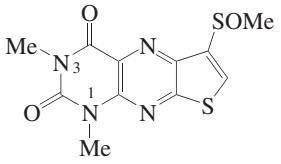
$C_{56}H_{62}N_2O_8$ 891.114

Prod. by *Trichoderma* sp. BCC 7579. Antitubercular agent. Solid. Mp 235-237°. $[\alpha]_D^{25}$ +169 (c, 0.25 in $CHCl_3$). λ_{max} 203 (log ϵ 4.6); 228 (sh) (log ϵ 4.03); 285 (sh) (log ϵ 3.41) (MeOH).

Isaka, M. *et al., Org. Lett.*, 2006, **8**, 2815-2817 (*isol, pmr, cmr*)

Hirudinoidine A H-304

[1021944-70-6]



$C_{11}H_{10}N_4O_3S_2$ 310.357

Alkaloid from the leech *Hirudo nipponica*. Yellow prisms ($CHCl_3$/MeOH). λ_{max} 227 (log ϵ 1.03); 250 (log ϵ 1.68); 254 (log ϵ 1.68); 365 (log ϵ 0.55) (MeOH).

N^3-*De-Me:* ***Hirudinoidine B***
[1021944-72-8]
$C_{10}H_8N_4O_3S_2$ 296.33
Alkaloid from *Hirudo nipponica*. Orange-brown powder. λ_{max} 248 (log ϵ 1.2); 363 (log ϵ 0.45) (MeOH).

N^1,N^3-*Di-de-Me:* ***Hirudinoidine C***
[1021944-73-9]
$C_9H_6N_4O_3S_2$ 282.303
Alkaloid from *Hirudo nipponica*. Orange-brown powder. λ_{max} 244 (log ϵ 1.12); 358 (log ϵ 0.39); 362 (log ϵ 0.4) (MeOH).

Li, Y.-B. *et al., Helv. Chim. Acta*, 2008, **91**, 303-307 (*isol, pmr, cmr, ms, cryst struct*)

Hirudonine H-305

3-[[[4-[(Aminoiminomethyl)amino]butyl]amino]propyl]guanidine, 9CI. 4-[[[3-Guanidinopropyl)amino]butyl]guanidine, 8CI. 4-Aza-1,8-diguanidinooctane. Diamidinospermidine. Hyrudonine

[2465-97-6]

$HN{=}C(NH_2)NH(CH_2)_4NH(CH_2)_3NHC(NH_2){=}NH$

$C_9H_{23}N_7$ 229.328

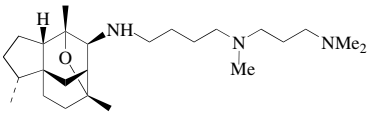
Alkaloid from *Hirudo medicinalis* (medicinal leech). Mp 169° (as hydrated sulfate salt).

Picrate:
Yellow platelets. Mp 226-228°.

Robin, Y. *et al., Biochim. Biophys. Acta*, 1957, **24**, 381 (*isol*)
Robin, Y. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1961, **252**, 1224 (*isol, struct, synth*)
Robin, Y. *et al., Comp. Biochem. Physiol.*, 1967, **22**, 787; *CA*, **67**, 98070d (*biosynth*)
Mitchinson, A. *et al., Chem. Comm.*, 1994, 2613 (*synth*)

Hispidospermidine H-306

[154648-89-2]



Absolute Configuration

$C_{25}H_{47}N_3O$ 405.666

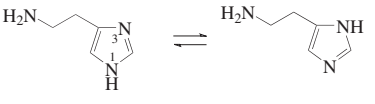
Prod. by *Chaetosphaeronema hispidulum*. Phospholipase C inhibitor. Oil. Sol. DMSO, acids, MeOH, CH_2Cl_2; poorly sol. H_2O. $[\alpha]_D^{24}$ -60 (c, 1.45 in $CHCl_3$). λ_{max} (MeOH) (Berdy).

Sakai, A. *et al., J. Antibiot.*, 1994, **47**, 1-5; 6-15 (*isol, ir, pmr, cmr*)
Frontier, A.J. *et al., J.A.C.S.*, 1997, **119**, 6686-6687 (*synth*)
Overman, L.E. *et al., J.A.C.S.*, 1998, **120**, 4039-4040 (*synth*)
Frontier, A.J. *et al., J.A.C.S.*, 2000, **122**, 6151-6159 (*synth*)
Tamiya, J. *et al., Tetrahedron*, 2003, **59**, 6921-6932 (*synth*)

Histamine H-307

*1*H-*Imidazole-4-ethanamine, 9CI. 4-(2-Aminoethyl)-1*H-*imidazole. Ergamine. Scombrotoxin*

[51-45-6]



$C_5H_9N_3$ 111.146

1*H*-form predominates *ca*. 4:1 in aq. soln. At physiological pH exists as a mixt. of base: monocation: dication in ratio 1:96:3 with both base and monocation capable of 1*H*⇔3*H* tautom. Found in *Claviceps purpurea*, *Verongia fistularis*, *Furcellaria lumbricalis*, *Anemonia sulcata*, *Coprinus comatus*, *Geodia baretti*, *Octopus* sp., *Metridium senile*, *Actinia* sp. and many other plants and animals. Cardiotonic, vasodilator, gastric secretion stimulant. Substance responsible for localised oedema response in mammalian tissues. Diagnostic aid. Sol. H_2O, MeOH. Mp 86°. $Bp_{0.8}$ 167°. pK_{a1} 6.02; pK_{a2} 9.7 (25°, 0.1*M* KCl).

▶ Adverse human effects by subcutaneous (and other non-oral routes of) administration. Potent capillary dilator. Allergic skin effects. Exp. reprod. effects. LD_{50} (rat, ivn) 630 mg/kg; LD_{50} (mus, ims) 12 mg/kg. MS1050000

Hydrochloride (1:2): ***Histamine dihydrochloride, USAN****. Amin-Glaukosan. Histamyl. Imido. Peremin. Many other names*
[56-92-8] Allergic therapy, diagnostic aid. Mp 244-246°.

▶ Exp. reprod. effects. LD_{50} (mus, ivn) 370 mg/kg. MS1575000

Phosphate (1:2): ***Histamine phosphate, USAN****. Histapon*
[6890-40-0]
[51-74-1] Gastric secretion stimulant. Mp 140°.

Dipicrate: Mp 239°.

N^{ω}-*Ac:* **N-*Acetylhistamine***
[673-49-4]
$C_7H_{11}N_3O$ 153.183
May be considered a regular constit. of amphibian skin whenever histamine is present in large amounts, e.g. *Litoria caerulea, Litoria aurea, Litoria moorei*. Isol. from leaves of *Spinacia oleracea* (spinach). Mammalian metab. of histamine. Prisms (EtOH/Et_2O or EtOH/EtOAc). Mp 147-148°.

N^{ω}-*(4-Oxodecanoyl):* ***N*$^{\alpha}$*-(4-Oxodecanoyl)histamine***
[7222-82-4]
$C_{15}H_{25}N_3O_2$ 279.381
Alkaloid from the leaves of a *Glochidion* sp. (probably *Glochidion philippicum*). Cryst. ($CHCl_3$ or $CHCl_3$/EtOH). Mp 115-117°. Readily cyclises to Glochidine, G-101 and Glochidicine, G-100.

N^{ω}-*Cinnamoyl:* see N^{α}-Cinnamoylhistamine, C-455

N^{ω}-*Me:* **N-*Methylhistamine***
[673-50-7]
$C_6H_{11}N_3$ 125.173
Constit. of the skin of amphibians, e.g. *Nyctimystes disrupta*, *Litoria glandulosa* and *Leptodactylus pentadactylus labyrinthicus*.

▶ NI7355000

N^{ω}-*Me, dihydrochloride:* Mp 176-177°.

N^{ω}-*Me, dipicrate:* Mp 188°.

N^{ω}-*Me, 1*-N-*β*-*D*-*glucopyranosyl: Casimidine*
[490-41-5]
Hydrol. prod. of Casimiroedine, C-176. Cryst. (MeOH). Mp 207-209°. $[\alpha]_D$ +11 (EtOH).

N^{ω},N^{ω}-*Di-Me:* see 4-[2-(Dimethylamino)ethyl]imidazole, D-731

N^{ω}-*(3-Methylbutanoyl):* N-*[2-(1*H-*Imidazol-4-yl)ethyl]-3-methylbutanamide. 4-[2-[(2-Methylbutanoyl)amino]ethyl]*

imidazole. N^{ω}*-Isopentanoylhistamine.* ***Dolichotheline***
[23100-08-5]
$C_{10}H_{17}N_3O$ 195.264
Alkaloid from the cactus *Dolichothele sphaerica* (Cactaceae). Mp 130-131°.

N^{ω}*-(3-Methylbutanoyl), picrate:* Mp 150-152°.

N^{ω}*-(2*E*,4Z-Decadienoyl):* N-*[2-(1*H*-Imidazol-4-yl)ethyl]-2,4-decadienamide.* ***N^{ω}-2,4-Decadienoylhistamine***
[55582-43-9]
Alkaloid from *Acacia longifolia* (Fabaceae). Cryst. (MeOH aq.). Mp 145-147° (143-145°).

N^{ω}*-(2-Hydroxy-4-oxodecanoyl):* 2-Hydroxy-N-*[2-(1*H*-imidazol-4-yl)ethyl]-4-oxodecanamide.* ***ω-(2-Hydroxy-4-oxodecanoyl)histidine***
[139339-31-4]
$C_{15}H_{25}N_3O_3$ 295.381
Alkaloid from the exudate of *Jatropha gossypifolia* (Euphorbiaceae). Amorph. solid. Mp 138-140°.

1*H-form*

N^{1}*-Me:* tele-*Methylhistamine*
[501-75-7]
$C_6H_{11}N_3$ 125.173
Metab. of histamine. Cryst. (EtOH aq.). Mp 218-219° (as picrate).

N^{1}*-Me, dihydrochloride:* [6481-48-7]
Cryst. (EtOH). Mp 205-207°.

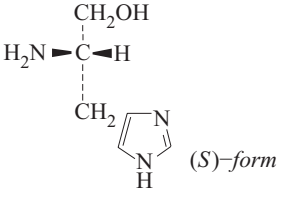
3*H-form*

N^{ω}*-Me,* N^{ω}*-(4-oxodecanoyl),* N^{3}*-Ac:* N-*[2-(1-Acetyl-1*H*-imidazol-5-yl)ethyl]*-N-*methyl-4-oxodecanamide.* ***3-Acetyl-ω-methyl-ω-(4-oxodecanoyl)histidine***
[139339-32-5]
$C_{18}H_{29}N_3O_3$ 335.445
Alkaloid from the exudate of *Jatropha gossypifolia* (Euphorbiaceae). Mp 196-198°.

Aldrich Library of NMR Spectra, 2nd edn., 1983, **2**, 489B; 492C (*pmr*)
Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 617D; 623B (*ir*)
Koessler, K.K. *et al., J.A.C.S.*, 1918, **40**, 1716 (*synth*)
Tabor, H. *et al., J. Biol. Chem.*, 1949, **180**, 703 (*isol, synth, N-Acetylhistamine*)
Appel, W. *et al., Arzneim.-Forsch.*, 1959, **9**, 22 (*isol, derivs*)
Johns, S.R. *et al., Aust. J. Chem.*, 1967, **20**, 555 (*ω-N-(4-Oxodecanoyl)histamine*)
Reisch, J. *et al., J. Pharm. Pharmacol.*, 1968, **20**, 81 (*ms*)
Rosenberg, H. *et al., Phytochemistry*, 1970, **9**, 655; 1976, **15**, 501 (*Dolichotheline, isol, ir, pmr, ms, struct, synth, biosynth*)
Fales, H.M. *et al., Arch. Mass Spectral Data*, 1971, **2**, 650 (*ms*)
Rosenberg, H. *et al., J. Nat. Prod.*, 1971, **34**, 372; 1974, **37**, 313 (*biosynth*)
Horan, H. *et al., J.C.S.(C)*, 1971, 2083 (*Dolichotheline, biosynth*)
Milne, G.W.A. *et al., Anal. Chem.*, 1973, **45**, 1952 (*cims*)
Ganellin, C.R. *et al., J. Med. Chem.*, 1973, **16**, 610 (*pmr*)
Bonnet, J.J. *et al., J.A.C.S.*, 1973, **95**, 4829 (*cryst struct*)
Panzcia, R.P. *et al., J.A.C.S.*, 1973, **95**, 8737 (*Casimidine*)
Repke, D.B. *et al., J. Nat. Prod.*, 1975, **38**, 101 (*Acacia longifolia alkaloid*)
Roseghini, M. *et al., Comp. Biochem. Physiol., C: Comp. Pharmacol.*, 1976, **54**, 31 (*occur, derivs*)
Durant, G.J. *et al., J. Med. Chem.*, 1976, **19**, 923 (N^{1}*-Me*)
Bryn, S.R. *et al., J.O.C.*, 1976, **41**, 2283 (*conformn*)
Roseghini, M. *et al., Z. Naturforsch., C*, 1976, **31**, 118 (*occur, derivs*)
Reynolds, W.F. *et al., Can. J. Biochem.*, 1977, **55**, 576 (*cmr, tautom*)
Bertaccini, G. *et al., Handb. Exp. Pharmacol.*, 1982, **59**, 201 (*rev*)
Ferrigni, N.R. *et al., Rev. Latinoam. Quim.*, 1984, **14**, 131 (*Dolichotheline, pmr, cmr*)
Green, J.P. *et al., Agents Actions*, 1987, **22**, 1 (*rev, metab*)
Potvin, P.G. *et al., Chem. Comm.*, 1987, 672 (N^{1}*-Me*)
Negwer, M. *et al., Organic-Chemical Drugs and their Synonyms, 6th edn., Akademie-Verlag*, 1987, 321
Ahmad, M.U. *et al., Indian J. Chem., Sect. B*, 1992, **31**, 67 (*Jatropha gossypifolia alkaloids*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 775
Worth, G.A. *et al., J.A.C.S.*, 1994, **116**, 239 (*tautom*)
Al-Badr, A.A. *et al., Anal. Profiles Drug Subst.*, 2001, **27**, 159-264 (*rev*)
Ramifrez, F.J. *et al., J.A.C.S.*, 2003, **125**, 2328-2340 (*tautom, conformn, ir*)
Galmarini, C.M. *et al., Curr. Opin. Invest. Drugs*, 2004, **5**, 1298-1310 (*rev*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, HGD000; HGE000; HGD500

Histidinol H-308

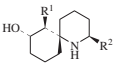
*β-Amino-1*H*-imidazole-4-propanol, 9CI. 2-Amino-3-(4-imidazolyl)propanol. Histidol*
[501-28-0]
[70142-15-3]



$C_6H_{11}N_3O$ 141.172

(S)-form [4836-52-6]
Hydrochloride (1:2): [1596-64-1]
Mp 193-195°. $[\alpha]_D^{19}$ -3.98 (H_2O).
▶ NI8260000
O-*Phosphate:*
$C_6H_{12}N_3O_4P$ 221.152
Intermed. in histidine biosynth. Plates + $4H_2O$.
N-*Ac:* **N-*Acetylhistidinol***
[20462-55-9]
$C_8H_{13}N_3O_2$ 183.21
Isol. from a histidine-deficient *Streptomyces coelicolor* strain.
N-*Benzoyl:*
$C_{13}H_{15}N_3O_2$ 245.28
Mp 207-208°. $[\alpha]_D^{19}$ -47.6 (EtOH).
N-*Benzoyl; hydrochloride:* Mp 178°.
N^{1}*-Me:* [205885-22-9]
$C_7H_{13}N_3O$ 155.199
Needles (EtOAc). Mp 80-81°. $[\alpha]_D$ -7.2 (c, 1.4 in MeOH).
N^{3}*-Me:* [65096-23-3]
[145104-39-8]
$C_7H_{13}N_3O$ 155.199
Cryst. (EtOH/Et_2O) (as dihydrochloride). Mp 195-198° (dihydrochloride). $[\alpha]_D^{20}$ -2.5 (c, 1.2 in 1*N* HCl).
Aldrich Library of NMR Spectra, 2nd edn., 1983, **2**, 492B (*nmr*)
Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 622B (*ir*)
Karrer, P. *et al., Helv. Chim. Acta*, 1953, **36**, 570 (*synth*)
Bauer, H. *et al., Biochem. Prep.*, 1955, **4**, 46-50 (*synth*)
Ballio, A. *et al., CA*, 1966, **66**, 101841 (*N-Ac, isol*)
Lintermans, J. *et al., Biochim. Biophys. Acta*, 1972, **273**, 18-20 (*synth*)
Bentley, K.W. *et al., Org. Prep. Proced. Int.*, 1973, **5**, 5-7 (*synth*)
Beyerman, H.C. *et al., Rec. Trav. Chim. (J. R. Neth. Chem. Soc.)*, 1977, **96**, 222-224 (*3-Me, synth, pmr*)
Suga, T. *et al., Acta Cryst. C*, 1997, **53**, 134-136 (*cryst struct, phosphate*)
Fahrni, C.J. *et al., Helv. Chim. Acta*, 1998, **81**, 491-506 (*1-Me, synth, ir, pmr, cmr*)

Histrionicotoxins H-309



Histrionicotoxin	R^1	R^2
235A	-CH=CH_2	-CH_2CH=CH_2
259	-CH=CHC≡CH	-CH_2CH=CH_2
283A	-CH=CHC≡CH	-CH_2CH=CHC≡CH
285A	-CH=CHC≡CH	-CH_2CH_2CH=C=CH_2
285B	-CH=CHCH=CH_2	-CH_2CH=CHC≡CH
285C	-CH=CHC≡CH	-$(CH_2)_3$C≡CH
285E	-CH=CHC≡CH	-CH_2CH=CHCH=CH_2
287A	-CH=CHCH=CH_2	-CH_2CH_2CH=C=CH_2
287B	-CH=CHCH=CH_2	-CH_2CH=CHCH=CH_2
287D	-CH=CHCH=CH_2	-$(CH_2)_3$C≡CH
291A	-CH_2CH_2CH=CH_2	-$(CH_2)_5$CH=CH_2

All ethylene bonds (Z-)

Histrionicotoxin 235A
7-Ethenyl-2-(2-propenyl)-1-azaspiro[5.5]undecan-8-ol, 9CI. HTX-235A. Dendrobates *Alkaloid 235A*
$C_{15}H_{25}NO$ 235.369
Minor or trace alkaloid from skin extracts of the poison-frogs *Dendrobates auratus, Dendrobates granuliferus, Dendrobates histrionicus, Dendrobates parvulus, Dendrobates truncatus* and *Dendrobates trivittatus* (Dendrobatidae).

Histrionicotoxin 259A
HTX-259A. Dendrobates *Alkaloid 259A*
$C_{17}H_{25}NO$ 259.391
A major alkaloid of *Dendrobates tinctorius* and *Dendrobates trivittatus*; minor constit. of *Dendrobates auratus, Dendrobates azureus, Dendrobates granuliferus, Dendrobates histrionicus* (several populations), *Dendrobates occultator* and *Dendrobates truncatus* (Dendrobatidae).

Histrionicotoxin 283A
HTX-283A. Dendrobates *Alkaloid 283A*
[34272-51-0]
$C_{19}H_{25}NO$ 283.413
A major alkaloid from *Dendrobates*

azureus, Dendrobates granuliferus, Dendrobates histrionicus (all populations), *Dendrobates occultator, Dendrobates parvulus, Dendrobates pictus, Dendrobates tinctorius, Dendrobates trivittatus* and *Dendrobates truncatus* (Dendrobatidae). Also isol. from skin extracts of the Madagascan frog *Mantella madagascariensis* (Ranidae, subfamily Mantellinae). Affects nerve channel membranes. Mp 225-228° (as hydrochloride). $[\alpha]_D^{25}$ -96.3 (c, 1.0 in EtOH).

▶ Rel. nontoxic to mammals.

*(17*E*)-isomer:* ***Δ^{17}-trans-Histrionicotoxin 283A***. *Δ^{17}*-trans-*HTX-283A*
[85718-94-1]
$C_{19}H_{25}NO$ 283.413
Trace alkaloid from *Dendrobates histrionicus* (Dendrobatidae). Opt. rotn. not recorded. May be an artifact of isoln.

Histrionicotoxin 285A
Isodihydrohistrionicotoxin. HTX-285A. Dendrobates *Alkaloid 285A*
[34272-52-1]
$C_{19}H_{27}NO$ 285.428
A major alkaloid of *Dendrobates azureus, Dendrobates granuliferus, Dendrobates histrionicus* (all populations), *Dendrobates occultator, Dendrobates parvulus, Dendrobates pictus* and *Dendrobates tinctorius* (Dendrobatidae). Also isol. from skin extracts of *Mantella madagascariensis* (Ranidae, subfamily Mantellinae). Mp 240-243° (as hydrochloride). $[\alpha]_D^{25}$ -35.3 (c, 0.5 in EtOH).

Histrionicotoxin 285B
Neodihydrohistrionicotoxin. HTX-285B. Dendrobates *Alkaloid 285B*
[55475-52-0]
$C_{19}H_{27}NO$ 285.428
Minor alkaloid from *Dendrobates histrionicus* (several populations), *Dendrobates pictus, Dendrobates trivittatus* and *Dendrobates truncatus* (Dendrobatidae). Mp 195-200° (as hydrochloride). $[\alpha]_D^{25}$ -125.9 (c, 1.1 in EtOH).

Histrionicotoxin 285C
Allodihydrohistrionicotoxin. HTX-285C. Dendrobates *Alkaloid 285C*
[63983-63-1]
$C_{19}H_{27}NO$ 285.428
A major alkaloid of *Dendrobates histrionicus* (all populations), *Dendrobates pictus, Dendrobates trivittatus, Dendrobates truncatus*; minor constit. in *Dendrobates granuliferus* and *Dendrobates tinctorius* (Dendrobatidae). Also isol. from skin extracts of *Mantella madagascariensis* (Ranidae, subfamily Mantellinae). Mp 247-250° (as hydrochloride). $[\alpha]_D^{25}$ -43.4 (c, 1.2 in EtOH).

Histrionicotoxin 285E
Dihydrohistrionicotoxin. Syndihydrohistrionicotoxin. HTX-285E. Dendrobates *Alkaloid 285E*
[55785-62-1]
$C_{19}H_{27}NO$ 285.428
Minor alkaloid of *Dendrobates histrionicus* (Dendrobatidae). $[\alpha]_D^{25}$ -122 (c, 1.0 in EtOH) (hydrochloride).

Histrionicotoxin 287A
Isotetrahydrohistrionicotoxin. HTX-287A. Dendrobates *Alkaloid 287A*
[55522-87-7]
$C_{19}H_{29}NO$ 287.444
Minor alkaloid of *Dendrobates azureus, Dendrobates histrionicus* (all Colombian populations) and *Dendrobates pictus* (Dendrobatidae).

Histrionicotoxin 287B
Tetrahydrohistrionicotoxin. HTX-287B. Dendrobates *Alkaloid 287B*
[55475-49-5]
$C_{19}H_{29}NO$ 287.444
Minor alkaloid from *Dendrobates histrionicus* (several populations) and *Dendrobates parvulus* (Dendrobatidae).

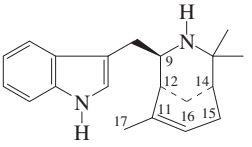
Histrionicotoxin 287D
Allotetrahydrohistrionicotoxin. HTX-287D. Dendrobates *Alkaloid 287D*
[63983-64-2]
$C_{19}H_{29}NO$ 287.444
Trace alkaloid from the Guayacana population of *Dendrobates histrionicus* (Dendrobatidae).

Histrionicotoxin 291A
Octahydrohistrionicotoxin. HTX-291A. Dendrobates *Alkaloid 291A*
[55475-50-8]
$C_{19}H_{33}NO$ 291.476
A major alkaloid from one population of *Dendrobates histrionicus*, minor constit. in other populations, also in *Dendrobates parvulus, Dendrobates tinctorius* and *Dendrobates truncatus* (Dendrobatidae). Mp 180-181° (as hydrobromide).

Daly, J.W. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 1971, **68**, 1870 (*isol, uv, ir, pmr, ms, cryst struct, HTX-283A, HTX-285E*)
Karle, I.L. *et al., J.A.C.S.*, 1973, **95**, 4036 (*cryst struct, HTX-285E*)
Tokuyama, T. *et al., Helv. Chim. Acta*, 1974, **57**, 2597 (*HTX-285A, HTX-285B, HTX-287A, HTX-287B, HTX-291A*)
Fukuyama, T. *et al., J.O.C.*, 1975, **40**, 2011 (*synth, HTX-291A*)
Daly, J.W. *et al., Helv. Chim. Acta*, 1977, **60**, 1128 (*HTX-285C, HTX-287D*)
Tokuyama, T. *et al., Tetrahedron*, 1983, **39**, 49 (*HTX-259A, HTX-285E, trans-HTX-283E*)
Daly, J.W. *et al., Toxicon*, 1984, **22**, 905 (*isol, ms, HTX-283A, HTX-285A, HTX-285C*)
Tanner, D. *et al., Tetrahedron*, 1998, **54**, 7907-7918 (*synth, perhydroHTX-283A*)
Daly, J.W. *et al., Alkaloids: Chem. Biol. Perspect.*, 1999, **13**, 1-161 (*rev, pharmacol*)
Williams, G.M. *et al., J.A.C.S.*, 1999, **121**, 4900-4901 (*synth*)
Stockman, R.A. *et al., Tet. Lett.*, 2000, **41**, 9163-9165 (*synth*)
Davison, E.C. *et al., J.C.S. Perkin 1*, 2002, 1494-1514 (*synth*)
Daly, J.W. *et al., J. Nat. Prod.*, 2005, **68**, 1556-1575 (*rev*)
Karatholuvhu, M.S. *et al., J.A.C.S.*, 2006, **128**, 12656-12657 (*HTX-238A, synth*)
Sinclair, A. *et al., Nat. Prod. Rep.*, 2007, **24**, 298-326 (*rev, synth*)
Macdonald, J.M. *et al., Org. Lett.*, 2008, **10**, 4227-4229 (*HMX-285A, synth*)

Hobartine H-310

*4-(1*H*-Indol-3-ylmethyl)-2,2,6-trimethyl-3-azabicyclo[3.3.1]non-6-ene, 9CI*



(-)-*form*

$C_{20}H_{26}N_2$ 294.439
Various numbering systems have been used.

(-)-*form* [73004-61-2]
Alkaloid from *Aristotelia peduncularis* (Elaeocarpaceae). Mp 149-150.5°. $[\alpha]_D^{22}$ -20 (c, 1.66 in $CHCl_3$). $[\alpha]_D^{28}$ -27 (c, 1.69 in $CHCl_3$) (synthetic). λ_{max} 223 (log ε 4.6); 283 (log ε 3.84); 291 (log ε 3.78) (EtOH).

11,16-Dihydro, 11β,16β-dihydroxy: ***Hobartidiol***
[131669-90-4]
$C_{20}H_{28}N_2O_2$ 328.453
Alkaloid from *Aristotelia australasica*. Cryst. ($CHCl_3$). Mp 270°. $[\alpha]_D^{20}$ +120 (c, 0.8 in MeOH). λ_{max} 222 (log ε 4.07); 282 (log ε 3.76); 290 (log ε 3.69) (EtOH).

17-Hydroxy: ***17-Hydroxyhobartine***
[131669-91-5]
$C_{20}H_{26}N_2O$ 310.438
Alkaloid from *Aristotelia australasica*. Amorph. $[\alpha]_D^{20}$ +113 (c, 0.4 in $CHCl_3$). Numbering systems vary. Doubtful structural assignment: synthetic material not identical with the nat. prod. λ_{max} 220 (log ε 4.18); 282 (log ε 3.63); 290 (log ε 3.56) (EtOH).

15-Oxo: ***Serratenone***
[85954-13-8]
$C_{20}H_{24}N_2O$ 308.422
Alkaloid from *Aristotelia serrata*. Amorph. $[\alpha]_D^{19}$ -45.3 (c, 1.0 in $CHCl_3$). Abs. config. revised in 2002 to that of other *Aristotelia* alkaloids.

*8-Oxo, 9,*N*-didehydro:* ***8-Oxo-9-dehydrohobartine***
[128508-04-3]
$C_{20}H_{22}N_2O$ 306.407
Alkaloid from aerial parts of *Aristotelia chilensis*. Cryst. (CCl_4). Mp 225°.

Δ^{11,17}-Isomer: ***Makomakine***
[79559-56-1]
$C_{20}H_{26}N_2$ 294.439
Alkaloid from *Aristotelia serrata*. Cryst. ($CHCl_3$). Mp 106-106.5° (99-100°). $[\alpha]_D^{19}$ +131.2 (c, 0.5 in $CHCl_3$). $[\alpha]_D^{25}$ +142.5 (c, 2.69 in $CHCl_3$).

*Δ^{11,17}-Isomer, 8-oxo, 9,*N*-didehydro:* ***8-Oxo-9-dehydromakomakine***. *11,12-Didehydromakomakin-10-one*
[126267-21-8]
$C_{20}H_{22}N_2O$ 306.407
Alkaloid from aerial parts of *Aristotelia chilensis*. Cryst. (CCl_4). Mp 257°. Numbering systems vary.

12,14-Diepimer: ***Isohobartine***
$C_{20}H_{26}N_2$ 294.439
Alkaloid from *Aristotelia serrata* and *Aristotelia fruticosa*. Cryst. ($CHCl_3$).

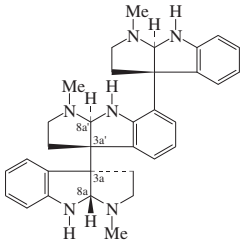
Mp 134-135°. $[\alpha]_D^{19}$ -30 ($CHCl_3$).

(±)-*form* [82769-16-2]
Synthetic. Mp 166-167°.

Kyburz, R. *et al., Helv. Chim. Acta*, 1979, **62**, 2539-2546 (*isol, uv, ir, pmr, cmr, ms*)
Bick, I.R.C. *et al., Heterocycles*, 1981, **16**, 1301-1303 (*Makomakine*)
Mirand, C. *et al., J.O.C.*, 1982, **47**, 4169-4170 (*Hobartine, Makomakine, synth*)
Stevens, R.V. *et al., Chem. Comm.*, 1983, 384-386 (*Hobartine, Makomakine, synth, cmr*)
Bick, I.R.C. *et al., Heterocycles*, 1983, **20**, 667 (*Serratenone*)
Darbre, T. *et al., Helv. Chim. Acta*, 1984, **67**, 1040-1052 (*synth, abs config*)
Bick, I.R.C. *et al., Alkaloids (Academic Press)*, 1985, **24**, 113-151 (*rev, Isohobartine*)
Gribble, G.W. *et al., J.O.C.*, 1985, **50**, 5900-5902 (*synth*)
Watson, W.H. *et al., Acta Cryst. C*, 1989, **45**, 1322-1324 (*8-Oxo-9-dehydromakomakine, cryst struct*)
Quirion, J.C. *et al., J. Nat. Prod.*, 1990, **53**, 713-716 (*17-Hydroxyhobartine, Hobartidiol*)
Cespedes, C. *et al., Phytochemistry*, 1990, **29**, 1354-1356 (*8-Oxo-9-dehydrohobartine, 8-Oxo-9-dehydromakomakine*)
Beerli, R. *et al., Helv. Chim. Acta*, 1991, **74**, 110-116 (*synth*)
Burkard, S. *et al., Helv. Chim. Acta*, 1991, **74**, 275-289 (*Serratenone, synth, ir, pmr, cmr, ms*)
Dobler, M. *et al., Tetrahedron: Asymmetry*, 1992, **3**, 1411-1420 (*17-Hydroxyhobartine, synth*)
Stoermer, D. *et al., J.O.C.*, 1993, **58**, 564-568 (*Makomakine, synth*)
Galli, R. *et al., Helv. Chim. Acta*, 2002, **85**, 3400-3413 (*Serratenone, 8-Oxo-9-dehydromakomakine, synth, pmr*)

Hodgkinsine H-311

[18210-71-4]



Absolute Configuration

$C_{33}H_{38}N_6$ 518.703
Alkaloid from *Hodgkinsonia frutescens* (Rubiaceae), *Psychotria lyciiflora* and *Psychotria oleosides*. Platelet aggregation inhibitor, analgesic, sedative. Cryst. (C_6H_6). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 128°. λ_{max} 232 (ϵ 39000); 252 (ϵ 30200); 310 (ϵ 10400); 326 (ϵ 8600) (MeOH) (Berdy).

3a,3a′,8a,8a′-Tetraepimer: ***Hodgkinsine B***
$C_{33}H_{38}N_6$ 518.703
Alkaloid from *Psychotria* sp. $[\alpha]_D^{27}$ -77 (c, 1 in $CHCl_3$).

Anet, F.A.L. *et al., Aust. J. Chem.*, 1961, **14**, 173-174 (*isol, uv*)
Hart, N.K. *et al., Aust. J. Chem.*, 1974, **27**, 639-646 (*ms, pmr*)
Fridrichsons, J. *et al., Tetrahedron*, 1974, **30**, 85-92 (*cryst struct*)
Verotta, L. *et al., J. Nat. Prod.*, 1998, **61**, 392-396 (*isol, pmr, cmr, cd*)
Jannic, V. *et al., J. Nat. Prod.*, 1999, **62**, 838-843 (*isol, cd, ms*)
Kodanko, J.J. *et al., Angew. Chem., Int. Ed.*, 2003, **42**, 2528-2531 (*synth, abs config, Hodgkinsine B*)

Hodorine H-312

$C_{19}H_{31}NO_5$ 353.458
Struct. unknown. Alkaloid from the roots of *Stemona sessilifolia* (Stemonaceae). Amorph.

Hydrochloride: Mp 244-247° dec.

Hydrobromide: Mp 258-259°.

Furuya, T. *et al., Chem. Zentralbl.*, 1913, 1823 (*isol*)
Suzuki, K. *et al., Yakugaku Zasshi*, 1929, **49**, 457-464; *CA*, **23**, 36031

Holacimine H-313

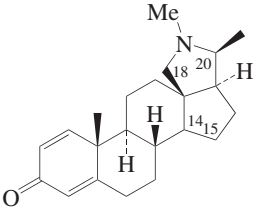
[84991-64-0]

Struct. unknown. Alkaloid from the bark of *Holarrhena antidysenterica* (Apocynaceae). Mp 335-336°.

Siddiqui, S. *et al., Pak. J. Sci. Ind. Res.*, 1982, **25**, 201-203

Holadienine H-314

Cona-1,4-dienin-3-one
[2841-61-4]



$C_{22}H_{31}NO$ 325.493
Alkaloid from the bark of *Holarrhena floribunda* and from *Didymeles madagascariensis* (Apocynaceae, Didymelaceae). Mp 109° subl. $[\alpha]_D$ +80 (c, 1 in $CHCl_3$).

N-*De-Me:* ***Norholadienine***. *Norholadiene*
[86171-05-3]
$C_{21}H_{29}NO$ 311.466
Alkaloid from bark of *Holarrhena pubescens* (Apocynaceae). Fine needles (Me_2CO). Mp 216-218°. Called Norholadiene in the paper.

N-*De-Me,* N-*(*N-*methylcarbamoyl):* ***Holamide***
[162857-95-6]
$C_{23}H_{32}N_2O_2$ 368.518
Alkaloid from bark of *Holarrhena pubescens* (*Holarrhena antidysenterica*) (Apocynaceae). Shows hypotensive activity in rats. Plates (Me_2CO). Mp 248-250°. $[\alpha]_D$ +126 (c, 0.331 in $CHCl_3$).

14,15-Didehydro: ***14,15-Dehydroholadienine***. *Cona-1,4,14-trienin-3-one*
[91147-30-7]
$C_{22}H_{29}NO$ 323.477
Alkaloid from the stem bark of *Didymeles madagascariensis* (Didymelaceae). $[\alpha]_D$ -8 (c, 0.64 in $CHCl_3$).

18-Oxo: ***3,18-Dioxo-1,4-conadienine***. *18-Oxoholadienine*
[113846-39-2]
$C_{22}H_{29}NO_2$ 339.477
Alkaloid from leaves of *Didymeles madagascariensis* and *Didymeles perrieri* (Didymelaceae). $[\alpha]_D$ +32 (c, 0.8 in EtOH).

18-Oxo, 14,15-didehydro: ***14-Dehydro-18-oxoholadienine***
[113846-38-1]
$C_{22}H_{27}NO_2$ 337.461
Alkaloid from leaves of *Didymeles madagascariensis* and *Didymeles perrieri* (Didymelaceae). Cryst. (Et_2O). Mp 185-187°. $[\alpha]_D$ +64 (c, 1.1 in EtOH).

16,18-Dioxo, 14,15-didehydro: ***3,16,18-Trioxo-1,4,14-conatrienine***
$C_{22}H_{25}NO_3$ 351.444
Trace alkaloid from leaves of *Didymeles madagascariensis* (Didymelaceae). CAS No. not found to 2006.

11α-Hydroxy: 11α-Hydroxycona-1,4-dienin-3-one, 9CI. ***Regholarrhenine A***
[114687-90-0]
$C_{22}H_{31}NO_2$ 341.492
Alkaloid from the stem bark of *Holarrhena antidysenterica* (Apocynaceae). Light yellow prisms (petrol). Mp 197-198°. $[\alpha]_D^{33}$ -105 (c, 0.2 in MeOH).

11α-Hydroxy, N-*de-Me:* ***Regholarrhenine B***
[114687-91-1]
$C_{21}H_{29}NO_2$ 327.466
Alkaloid from the stem bark of *Holarrhena antidysenterica*. Needles (MeOH). Mp 245-247°. $[\alpha]_D^{33}$ -83.5 (c, 0.3 in MeOH).

11α-Acetoxy: Mp 101-103°.

11α-Hydroxy, 18-oxo, N-*de-Me: 11-Hydroxycona-1,4-dienine-3,18-dione.* ***Pubamide***
[403647-88-1]
$C_{21}H_{27}NO_3$ 341.449
Alkaloid from the bark of *Holarrhena pubescens*. Orange rods. Mp 130-132°. λ_{max} 201 ; 245 (MeOH).

11α-Acetoxy, 17,20-didehydro, N-*de-Me:* ***Pubescinine***
[162857-94-5]
$C_{23}H_{29}NO_3$ 367.487
Alkaloid from bark of *Holarrhena pubescens* (*Holarrhena antidysenterica*) (Apocynaceae). Shows hypotensive activity in rats. Fine needles (Me_2CO). Mp 138-140°. $[\alpha]_D$ +51 (c, 0.276 in $CHCl_3$).

15α-Hydroxy, N-*de-Me:* ***Kurchinidine***
[151271-81-7]
$C_{21}H_{29}NO_2$ 327.466
Alkaloid from bark of *Holarrhena antidysenterica*. Plates ($CHCl_3$/MeOH). Mp 114-116°.

16α-Hydroxy, 18-oxo, 14,15-didehydro: ***16-Hydroxy-3,18-dioxo-1,4,14-conatrienine***
[113846-40-5]
$C_{22}H_{27}NO_3$ 353.46
Alkaloid from leaves of *Didymeles perrieri* (Didymelaceae). $[\alpha]_D$ -30 (c, 0.46 in EtOH).

18α-Hydroxy, 14,15-didehydro: ***18-Hydroxy-3-oxo-1,4,14-conatrienine***
[113846-37-0]
$C_{22}H_{29}NO_2$ 339.477

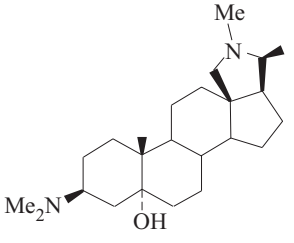
Alkaloid from leaves of *Didymeles madagascariensis* (Didymelaceae). Cryst. ($CHCl_3$/Et_2O). Mp 218-220°. $[\alpha]_D$ +64 (c, 0.4 in EtOH).

11α,18α-Dihydroxy, N-*de-Me,* N-*hydroxymethyl:* ***Pubatriol***
[609343-73-9]
$C_{22}H_{31}NO_4$ 373.491
Alkaloid from the bark of *Holarrhena pubescens*. Orange rods (MeOH). Mp 110-112°. λ_{max} 210 ; 246 (MeOH).

Janot, M.M. *et al., Ann. Pharm. Fr.*, 1967, **25**, 733 (*isol, struct, ir, uv, pmr, ms, cd*)
Hoyer, G.A. *et al., Planta Med.*, 1978, **34**, 47-52 (*isol*)
Sánchez, V. *et al., Bull. Soc. Chim. Fr.*, 1984, 71-76; 1987, 877-884 (*Didymeles constits*)
Bhutani, K.K. *et al., Phytochemistry*, 1988, **27**, 925-928 (*Regholarrhenines*)
Siddiqui, B.S. *et al., Phytochemistry*, 1993, **33**, 925-928 (*Kurchinidine*)
Begum, S. *et al., Phytochemistry*, 1994, **36**, 1537-1541 (*Norholadiene*)
Siddiqui, B.S. *et al., Heterocycles*, 1995, **41**, 267-276 (*Holamide, Pubescinine*)
Siddiqui, B.S. *et al., Phytochemistry*, 2001, **58**, 1199-1204 (*Pubamide*)
Siddiqui, B.S. *et al., Heterocycles*, 2003, **60**, 909-915 (*Pubatriol*)

Holaline H-315

3-Dimethylaminoconan-5-ol
[3559-32-8]

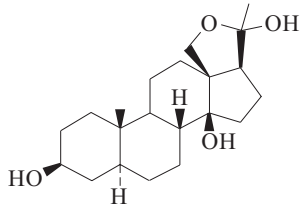


$C_{24}H_{42}N_2O$ 374.609
Minor alkaloid from the bark of *Holarrhena floribunda* (Apocynaceae). Cryst. (CH_2Cl_2/MeOH). Mp 267°. $[\alpha]_D$ +36 ($CHCl_3$/MeOH 1:1).

Janot, M.M. *et al., Bull. Soc. Chim. Fr.*, 1967, 4315 (*isol, ir, pmr, ms, struct*)

Holantogenin H-316

18,20-Epoxypregnane-3,14,20-triol
[28708-12-5]



$C_{21}H_{34}O_4$ 350.497
Cryst. (dioxan aq.). Mp 125°. $[\alpha]_D^{20}$ -31 ($CHCl_3$).

3-O-*(4-Amino-2,4,6-trideoxy-3-*O-*methyl-β-D-*ribo-*hexopyranoside):* ***Holantosine A***
[28719-38-2]
$C_{28}H_{47}NO_6$ 493.682
Constit. of *Holarrhena antidysenterica* (Apocynaceae). Cryst. (Me_2CO)(as *N*-acetyl). Mp 260-261° (*N*-acetyl). $[\alpha]_D^{20}$ -28 ($CHCl_3$) (*N*-acetyl).

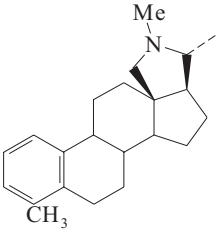
3-O-*(4-Amino-2,4,6-trideoxy-3-*O-*methyl-α-L-*arabino-*hexopyranoside):* ***Holantosine C***
[34312-24-8]
$C_{28}H_{47}NO_6$ 493.682
Constit. of *Holarrhena antidysenterica* (Apocynaceae). Cryst. (as *N*-acetyl). Mp 245° (*N*-acetyl). $[\alpha]_D$ -73 ($CHCl_3$/MeOH, 7:3) (*N*-acetyl).

3-O-*(4-Amino-2,4,6-trideoxy-3-*O-*methyl-β-D-*xylo-*hexopyranoside):* ***Holantosine E***
[40738-39-4]
$C_{28}H_{47}NO_6$ 493.682
Alkaloid from leaves of *Holarrhena antidysenterica*. Cryst. (Me_2CO/hexane)(as *N*-acetyl). Mp 152° (*N*-acetyl). $[\alpha]_D^{20}$ -47 (c, 1 in $CHCl_3$) (*N*-acetyl).

Janot, M.M. *et al., Tetrahedron*, 1970, **26**, 1695 (*isol*)
Khuong-Hui, Q. *et al., Bull. Soc. Chim. Fr.*, 1971, 864 (*isol*)
Choay, P. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1971, **272**, 782 (*synth*)
Goutarel, R. *et al., Carbohydr. Res.*, 1972, **24**, 297 (*Holantosine* E)

Holaromine H-317

4-Methyl-19-norcona-1,3,5(10)-trienine, 9CI
[17905-60-1]

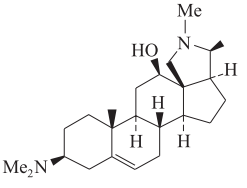


$C_{22}H_{31}N$ 309.494
Alkaloid from the bark of *Holarrhena floribunda* (Apocynaceae). Mp 198°. $[\alpha]_D$ +90 (c, 1 in $CHCl_3$).

Janot, M.M. *et al., Ann. Pharm. Fr.*, 1967, **25**, 733 (*isol, struct, ir, uv, pmr, ms, synth*)

Holarrhenine H-318

3-Dimethylaminocon-5-enin-12-ol. 12-Hydroxyconessine
[561-22-8]



Absolute configuration

$C_{24}H_{40}N_2O$ 372.593
Alkaloid from *Holarrhena congolensis* and *Holarrhena mitis* (Apocynaceae). Needles (EtOAc). Mp 197-198°. $[\alpha]_D$ -7.1 ($CHCl_3$).

Dihydrobromide: Mp 265-268° (anhyd.). $[\alpha]_D$ +11 (H_2O).

O-*(4-Methyl-3-pentenoyl):* ***Holarrhetine***
$C_{30}H_{48}N_2O_2$ 468.721
Alkaloid from *Holarrhena africana* (Apocynaceae). Mp 74-75°. $[\alpha]_D$ -4.6 (c, 1.12 in EtOH). $[\alpha]_D$ -14.9 (c, 1.12 in $CHCl_3$). Rare occurrence of 4-methyl-3-pentenoic acid residue in natural product: (See also Holafrine below).

N^3-*De-Me:* ***Holarrheline****. 12-Hydroxyconessimine*
[2842-93-5]
$C_{23}H_{38}N_2O$ 358.566
Alkaloid from the bark of *Holarrhena floribunda* (Apocynaceae). Mp 190°. $[\alpha]_D$ +18 (c, 1 in EtOH).

N^3-*De-Me,* N-*Ac:* [17905-57-6]
Mp 207°. $[\alpha]_D$ +10 (c, 1 in $CHCl_3$).

N^3-*De-Me,* O-*(4-methyl-3-pentenoyl):* ***Holarrhesine****. Holafrine*
[70866-29-4]
$C_{29}H_{46}N_2O_2$ 454.695
Alkaloid from the bark of *Holarrhena africana* (Apocynaceae). Platelets (Me_2CO). Mp 116-117°. $[\alpha]_D^{20}$ -19.1 (c, 0.93 in $CHCl_3$).

5α,6-Dihydro, N^3,N^3-*di-de-Me: 3-Aminoconan-12-ol.* ***Funtessine***
$C_{22}H_{38}N_2O$ 346.555
Alkaloid from bark of *Funtumia latifolia* (Apocynaceae). Cryst. (MeOH). Mp 195°. $[\alpha]_D$ +49 (c, 1 in $CHCl_3$).

5α,6-Dihydro, N^3,N^3-*di-de-Me,* O,N-*di-Ac:* Mp 300° dec. $[\alpha]_D$ +25 (c, 0.9 in $CHCl_3$).

5α,6-Dihydro, N^3,N^3-*di-de-Me,* N^3-*isopropylidene:*
Cryst. (Me_2CO). Mp 215-216°. $[\alpha]_D$ +45 (c, 1 in $CHCl_3$).

Uffer, A. *et al., Helv. Chim. Acta*, 1956, **39**, 1834 (*isol, ir, struct*)
Rostock, H. *et al., Helv. Chim. Acta*, 1958, **41**, 11 (*Holafrine*)
v. Hove, L. *et al., Tetrahedron*, 1959, **7**, 104 (*struct*)
Khuong-Huu, Q. *et al., Bull. Soc. Chim. Fr.*, 1965, 1831 (*Funtessine*)
Vandevoude, G. *et al., Tet. Lett.*, 1966, 2657 (*struct*)
Janot, M.M. *et al., Ann. Pharm. Fr.*, 1967, **25**, 733 (*Holarrheline*)
Hoyer, G.A. *et al., Planta Med.*, 1978, **34**, 47 (*Holarrhesine*)
Zirihi, G.N. *et al., Bioorg. Med. Chem. Lett.*, 2005, **15**, 2637-2640 (*Holarrhetine, Holarrhesine*)

Holarrhessimine H-319

$C_{22}H_{36}N_2O$ 344.539
Steroidal alkaloid. Struct. unknown. Alkaloid from the bark of *Holarrhena antidysenterica* (Apocynaceae). Cryst. (EtOAc). Mp 160-164°. $[\alpha]_D^{18}$ -31 (c, 0.775 in $CHCl_3$).

Hydrobromide: Mp 293-294°.

Methiodide: Mp 279-280°.

Picrate: Mp 250-255° dec.

Tschesche, R. *et al., Chem. Ber.*, 1954, **87**, 1719-1725

Holarrhine H-320

[61089-72-3]

$C_{20}H_{38}N_2O_3$ 354.532
Steroidal alkaloid, prob. of conanine type. Struct. unknown. Alkaloid from *Holarrhena antidysenterica* and *Wrightia tomentosa* (Apocynaceae). Needles (MeOH/EtOAc). V. sol. MeOH, EtOH, spar. sol. $CHCl_3$, almost insol. EtOAc. Mp 240°. $[\alpha]_D^{25}$ -17.01 (c, 4.99 in MeOH). The anal. figures quoted do not correspond to the mol. formula claimed and are a better fit for $C_{24}H_{44}N_2O_4$.

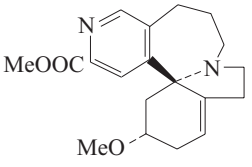
Hexachloroplatinate: [63448-28-2]
Yellowish amorph. powder. Darkens >270°; chars >300°.

Picrate: [63408-15-1]
Pale-yellow semicryst. powder. Mp 320°.

Siddiqui, S. *et al., J. Indian Chem. Soc.*, 1932, **9**, 562 (*isol*)

Holidine H-321

[95066-35-6]



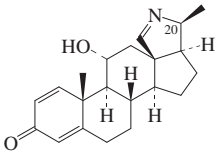
$C_{19}H_{24}N_2O_3$ 328.41
Alkaloid from the leaves of *Phelline* sp. aff. *Phelline lucida* (Phellinaceae). $[\alpha]_D$ +175 (c, 1.0 in $CHCl_3$). Possibly an artifact.

Parent acid, amide: ***Phellinamide***
[95066-34-5]
$C_{18}H_{23}N_3O_2$ 313.399
Alkaloid from *Phelline billiardieri* and from the leaves of *Phelline* sp. aff. *Phelline lucida* (Phellinaceae). Cryst. (Me_2CO). Mp 206°. $[\alpha]_D$ +180 (c, 1.0 in $CHCl_3$). Artifact.

Langlois, N. *et al., Heterocycles*, 1984, **22**, 2453 (*uv, cd, ir, pmr, cmr, ms, struct*)
Langlois, N. *et al., J. Nat. Prod.*, 1988, **51**, 499

Holonamine H-322

11-Hydroxy-23-norcona-1,4,18(22)-trien-in-3-one



Absolute Configuration

$C_{21}H_{27}NO_2$ 325.45
Minor alkaloid from bark of *Holarrhena antidysenterica* (Apocynaceae). Mp 257-259°. $[\alpha]_D^{21}$ -14.8 (c, 1.1 in MeOH). "Di-Ac" and "Tri-Ac" derivs. are descr.; the struct. of these is not clear.

$\Delta^{20(N)}$-Isomer: ***Kurchinine***
[155023-57-7]
$C_{21}H_{27}NO_2$ 325.45
Alkaloid from bark of *Holarrhena pubescens* (Apocynaceae). Plates (MeOH). Mp 202-204°.

11-Deoxy: ***Maingayine***
[27317-25-5]
$C_{21}H_{27}NO$ 309.45
Alkaloid from the bark of *Paravallaris maingayi* (Apocynaceae). Mp 150-152°. $[\alpha]_D$ +2.1 ($CHCl_3$).

11-Deoxy, 1,2-dihydro: ***Malouetafrine***
[50980-95-5]
$C_{21}H_{29}NO$ 311.466
Alkaloid from leaves of *Malouetia heudelotii* (Apocynaceae). Cryst. (Me_2CO). Mp 205°. $[\alpha]_D$ +87.

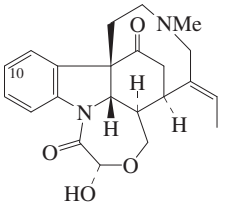
12α-Hydroxy: ***11,12-Dihydroxynorcona-N(18),1,4-trienin-3-one***
$C_{21}H_{27}NO_3$ 341.449
Alkaloid from the stem bark of *Funtumia africana* (Apocynaceae). Mp 240-245°.

12α-Hydroxy, 11-deoxy: ***12-Hydroxynorcona-N(18),1,4-trienin-3-one***
$C_{21}H_{27}NO_2$ 325.45
Alkaloid from the stem bark of *Funtumia africana* (Apocynaceae). Mp 110°. $[\alpha]_D^{22}$ +50 (c, 0.104 in $CHCl_3$).

Tschesche, R. *et al., Chem. Ber.*, 1964, **97**, 2316; 2326 (*Holonamine*)
Davis, J.B. *et al., Chem. Ind. (London)*, 1970, 627 (*Maingayine*)
Khuong-Huu, M.F. *et al., Phytochemistry*, 1973, **12**, 1813 (*Malouetafrine*)
Wagner, H. *et al., Planta Med.*, 1987, 444 (*Funtumia africana alkaloids*)
Siddiqui, B.S. *et al., J. Nat. Prod.*, 1994, **57**, 27 (*Kurchinine*)

Holstiine, 9CI H-323

[11053-97-7]



Absolute Configuration

$C_{22}H_{26}N_2O_4$ 382.458
Alkaloid from *Strychnos henningsii (Strychnos holstii)* (Loganiaceae). Mp 247-248° dec Mp 262-264° Mp 290-292°.

O-*Ac:*
Cryst. (EtOAc). Mp 194-196°. $[\alpha]_D^{20}$ +222.3 (c, 1 in $CHCl_3$).

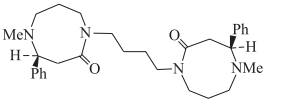
Me ether: ***Holstiline***. ar-*Demethoxyrindline*
[57103-48-7]
$C_{23}H_{28}N_2O_4$ 396.485
Alkaloid from *Strychnos henningsii* (Loganiaceae). Mp 219-220°. $[\alpha]_D^{20}$ +202 (c, 0.25 in $CHCl_3$).

10-Methoxy, Me ether: ***Rindline***
[18361-65-4]
$C_{24}H_{30}N_2O_5$ 426.511
Alkaloid from the bark of *Strychnos henningsii* (Loganiaceae). Prisms (Et_2O). Mp 214-216°. $[\alpha]_D^{19}$ +194 (c, 1 in $CHCl_3$). Struct. revised in 1975.

Janot, M.-M. *et al., C. R. Hebd. Seances Acad. Sci.*, 1951, **232**, 853-855 (*isol, uv, ir*)
Grossert, J.S. *et al., J.C.S.*, 1965, 2812-2814 (*isol, Rindline*)
Spiteller-Friedmann, M. *et al., Annalen*, 1968, **711**, 205-206 (*ms, Rindline*)
Bisset, N.G. *et al., Phytochemistry*, 1975, **14**, 1411-1414 (*Holstiin, Holstiline, ir, pmr, ms, struct*)
Chapya, W.A. *et al., Gazz. Chim. Ital.*, 1983, **113**, 773-775 (*isol*)
Cherif, A. *et al., J. Nat. Prod.*, 1990, **53**, 793-802 (*pmr, cmr, config*)
Martin, G.E. *et al., J. Nat. Prod.*, 2000, **63**, 543-585 (*N-15 nmr*)

Homaline H-324

1,1′-(1,4-Butanediyl)bis[hexahydro-5-methyl-4-phenyl-1,5-diazocin-2(1H)-one], 9CI
[20410-93-9]



Absolute configuration

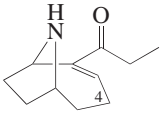
$C_{30}H_{42}N_4O_2$ 490.687
Alkaloid from the leaves of *Homalium pronyense* and from other *Homalium* spp. (Flacourtiaceae). Cryst. (Me_2CO). Mp 134°. $[\alpha]_D$ -34 ($CHCl_3$).

Dihydrochloride:
Cryst. + 1.5H_2O (MeOH). Mp 250°. $[\alpha]_D$ +7 (MeOH).

Pais, M. *et al., Tetrahedron*, 1973, **29**, 1001 (*isol, ir, pmr, ms, struct*)
Lefèbvre-Soubeyran, O. *et al., Acta Cryst. B*, 1976, **32**, 1305 (*cryst struct*)
Crombie, L. *et al., Chem. Comm.*, 1983, 960 (*synth*)
Wasserman, H.H. *et al., Tetrahedron*, 1983, **39**, 2459 (*synth*)
Crombie, L. *et al., J.C.S. Perkin 1*, 1993, 2047 (*synth*)
Ensch, C. *et al., Helv. Chim. Acta*, 2002, **85**, 1659-1677 (*synth*)

Homoanatoxin a H-325

1-(9-Azabicyclo[4.2.1]non-2-en-2-yl)-1-propanone, 9CI. HomoAnTx
[142926-84-9]



$C_{11}H_{17}NO$ 179.261
Isol. from *Oscillatoria formosa* (*Phormidium formosum*) and *Raphidiopsis mediterranea*. Potent nicotinic acetylcholine agonist. Glass (as hydrochloride). Sol. H_2O, MeOH, EtOH. (±)-Form shows similar potency to (+)-enantiomer of Anatoxin a, A-974. λ_{max} 227 (no solvent reported).

▶ LD_{50} (mus, ipr) 0.25 mg/kg.

4S-Hydroxy: 1-(4-Hydroxy-9-azabicyclo[4.2.1]non-2-en-2-yl)-1-propanone. ***4-Hydroxyhomoanatoxin a***
[666829-18-1]
$C_{11}H_{17}NO_2$ 195.261
Isol. from cyanobacterium *Raphidiopsis mediterranea*.

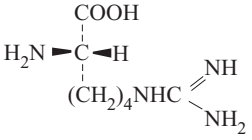
[142926-85-0 , 142926-86-1 , 142861-06-1]

Wonnacott, S. *et al., Biochem. Pharmacol.*,

1992, **43**, 419 (*synth, ir, pmr, activity*)
Skulberg, O.M. *et al., Environ. Toxicol. Chem.*, 1992, **11**, 321 (*isol, pmr, cmr, activity*)
Zotov, A. *et al., Analyst (London)*, 1993, **118**, 753 (*hplc*)
Thomas, P. *et al., Drug Dev. Res.*, 1994, **31**, 147
Furey, A. *et al., Rapid Commun. Mass Spectrom.*, 2003, **17**, 583-588 (*ms*)
Namikoshi, M. *et al., Toxicon*, 2003, **42**, 533-538 (*4-Hydroxyhomoanatoxin a*)

Homoarginine H-326

N^6-*(Aminoiminomethyl)lysine, 9CI.* N^6-*Amidinolysine, 8CI. 2-Amino-6-guanidinohexanoic acid*



(S)–form

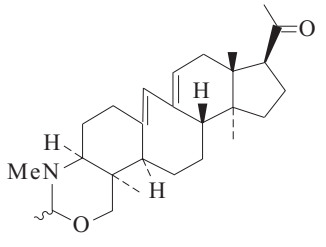
$C_7H_{16}N_4O_2$ 188.229

(*S*)-*form*
L-form
[156-86-5]
Present in the seeds of *Lotus helleri* and some members of genus *Lathyrus.*
► OL5550000
Hydrochloride: [1483-01-8]
Cryst. (EtOH aq.). Mp 207-209°. $[\alpha]_D^{22}$ +13 (c, 0.8 in 1*M* HCl).
Picrate:
Cryst. (EtOH aq.). Mp 202-203° dec.

(±)-*form*
Cryst. (EtOH aq.)(as hydrochloride). Mp 224° (hydrochloride).
N^{α}-*Benzoyl:*
Cryst. (H_2O). Mp 273°.
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 1281C (*nmr*)
Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 786C (*ir*)
Stevens, C.M. *et al., J. Biol. Chem.*, 1950, **183**, 139 (*synth*)
Rao, S.L.N. *et al., Biochemistry*, 1963, **2**, 298 (*isol*)
Bell, E.A. *et al., Phytochemistry*, 1966, **5**, 1211 (*occur*)
Eisele, K. *et al., Annalen*, 1975, 2033 (*synth*)

Homobuxaquamarine H-327

[109305-89-7]



$C_{27}H_{41}NO_2$ 411.626
The C-4 config. is prob. the opposite of that shown; see note under Buxaquamarine, B-462. Alkaloid from the leaves of *Buxus papilosa* (Buxaceae). Amorph. $[\alpha]_D$ +21.9 (c, 0.64 in $CHCl_3$).
Choudhary, M.I. *et al., J. Nat. Prod.*, 1987, **50**, 84-88 (*isol, uv, ir, pmr, ms, struct*)

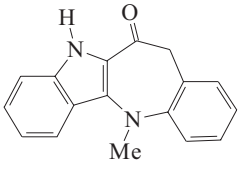
Homocinchonidine H-328

[1399-77-5]

$C_{19}H_{22}N_2O$ 294.396
Struct. unknown. Alkaloid from the bark of *Cinchona* spp.(Rubiaceae). Prisms (EtOH). Mp 207.5°. $[\alpha]_D$ -107.3 (EtOH).
Hydrochloride:
Cryst. + $2H_2O$. $[\alpha]_D$ -138 (EtOH).
Ac: $[\alpha]_D$ -34 (EtOH).
Hesse, O. *et al., Ber.*, 1877, **10**, 2152; 1881, **14**, 1890
Hesse, O. *et al., Annalen*, 1880, **205**, 194

Homocryptolepinone H-329

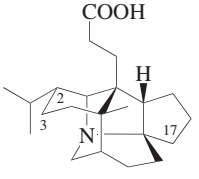
[171439-52-4]



$C_{17}H_{14}N_2O$ 262.31
Alkaloid from roots of *Cryptolepis sanguinolenta*. Fine greenish-yellow needles (MeOH).
Sharaf, M.H.M. *et al., J. Het. Chem.*, 1995, **32**, 1631 (*isol, uv, ir, pmr, cmr, ms*)

Homodaphniphyllic acid H-330

Daphnan-23-oic acid, 9CI
[25455-54-3]

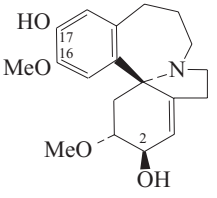


Absolute Configuration

$C_{22}H_{35}NO_2$ 345.524
Me ester: ***Methyl homodaphniphyllate***
[23496-03-9]
[104115-43-7]
$C_{23}H_{37}NO_2$ 359.551
Alkaloid from the fruits of *Daphniphyllum macropodum* and *Daphniphyllum teijsmanni*. Cryst. (MeOH/Et_2O) (as hydrochloride). Mp 233-234° (sealed tube) (hydrochloride).
2,3-Didehydro, Me ester: Methyl 2,3-didehydrohomodaphniphyllate. ***Calyciphylline L***
$C_{23}H_{35}NO_2$ 357.535
Alkaloid from *Daphniphyllum calycinum*. Amorph. solid. $[\alpha]_D^{22}$ -3.5 (c, 0.5 in $CHCl_3$).
*17*R-*Hydroxy:* ***17-Hydroxyhomodaphniphyllic acid***
$C_{22}H_{35}NO_3$ 361.523
Alkaloid from the seeds of *Daphniphyllum calycinum*. Microcryst. (MeOH). Mp 97-99°. $[\alpha]_D$ -17 (c, 0.2 in MeOH).
*17*R-*Hydroxy, Me ester:* ***Methyl 17-hydroxyhomodaphniphyllate***
$C_{23}H_{37}NO_3$ 375.55
Alkaloid from the fruit of *Daphniphyllum macropodum*. Yellowish oil. $[\alpha]_D^{20}$ -47.5 (c, 0.1 in MeOH).
Irikawa, H. *et al., Tet. Lett.*, 1969, 1821-1824 (*Me ester, synth, ir, pmr, ms*)
Toda, M. *et al., Tetrahedron*, 1974, **30**, 2683-2688 (*Me ester, isol*)
Heathcock, C.H. *et al., J.O.C.*, 1992, **57**, 2531-2544; 2585-2594 (*Me ester, synth*)
El Bitar, H. *et al., J. Nat. Prod.*, 2004, **67**, 1094-1099 (*17-Hydroxyhomodaphniphyllic acid*)
Wang, X.N. *et al., Helv. Chim. Acta*, 2007, **90**, 2156-2162 (*Methyl 17-hydroxyhomodaphniphyllate*)
Saito, S. *et al., Tetrahedron*, 2008, **64**, 1901-1908 (*Calyciphylline L*)

Homoerysotine H-331

2-Hydroxyisotaxodine
[93888-49-4]



$C_{19}H_{25}NO_4$ 331.411
2-Hydroxyisotaxodine and Homoerysotine have not been compared. No phys. props. were reported for the latter. Alkaloid from the twigs and foliage of *Athrotaxis cupressoides, Athrotaxis selaginoides* and *Athrotaxis laxifolia* (Taxodiaceae) and from *Phelline* sp. aff. *Phelline lucida* (Phellinaceae). Noncryst. $[\alpha]_D^{19}$ +60.69 (c, 1.0 in $CHCl_3$).
2-Ac: ***2-Acetoxyisotaxodine***
[93888-50-7]
$C_{21}H_{27}NO_5$ 373.448
Trace alkaloid from the twigs and foliage of *Athrotaxis cupressoides* and *Athrotaxis selaginoides* (Taxodiaceae). Inseparable mixt. with 2-acetoxytaxodine.
O^{16}-*De-Me,* O^{17}-*Me:* ***Hydroxytaxodine***
[93888-53-0]
$C_{19}H_{25}NO_4$ 331.411
Alkaloid from twigs and foliage of *Athrotaxis cupressoides, Athrotaxis selaginoides* and *Athrotaxis laxifolia* (Taxodiaceae). Cryst. (Me_2CO). Mp 192-193°. $[\alpha]_D^{19}$ +51.47 (c, 1.03 in $CHCl_3$).
O^{16}-*De-Me,* O^{17}-*Me, 2-Ac:* ***2-Acetoxytaxodine***
[93888-54-1]
$C_{21}H_{27}NO_5$ 373.448
Alkaloid from twigs and leaves of *Athrotaxis cupressoides* (Taxodiaceae). Inseparable mixt. with 2-acetoxyisotaxodine.
2-Epimer: ***2-Epihydroxyisotaxodine***
[93888-48-3]
$C_{19}H_{25}NO_4$ 331.411
Alkaloid from the twigs and foliage of *Athrotaxis cupressoides, Athrotaxis selaginoides* and *Athrotaxis laxifolia*

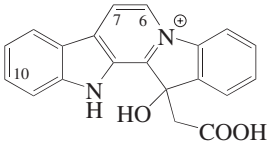
(Taxodiaceae). Inseparable mixt. with 2-hydroxytaxodine.

2-Epimer, O^{17}*-Me:* ***7-Deoxycephalofortuneine***
[128508-20-3]
$C_{20}H_{27}NO_4$ 345.438
Alkaloid from *Cephalotaxus fortunei* (Cephalotaxaceae).

Panichanun, S. *et al., Tetrahedron*, 1984, **40**, 2677; 2685 (*isol, uv, ir, pmr, ms, struct, derivs*)
Razafimbelo, J. *et al., C. R. Hebd. Seances Acad. Sci. Ser. 2*, 1985, **300**, 441 (*isol, uv, ir, pmr, ms, cd, struct*)
Ma, G. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 1989, **31**, 137-140; *CA*, **113**, 74722k (*7-Deoxycephalofortuneine*)

Homofascaplysate A H-332

[694436-60-7 ((+)-form, chloride)]



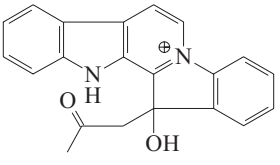
$C_{20}H_{15}N_2O_3^{\oplus}$ 331.35
Quaternary alkaloid isol. from the sponge *Fascaplysinopsis reticulata*. Yellow solid (as chloride). $[\alpha]_D^{25}$ +14 (c, 0.25 in MeOH) (chloride).

10-Bromo, 6,7-dihydro: ***10-Bromo-6,7-dihydrohomofascaplysate A***
[1001396-30-0]
$C_{20}H_{16}BrN_2O_3^{\oplus}$ 412.262
Alkaloid from an undescribed thorectid sponge.

Segraves, N.L. *et al., J. Nat. Prod.*, 2004, **67**, 783-792 (*Homofascaplysate A*)
Ankietty, S. *et al., Nat. Prod. Commun.*, 2007, **2**, 1145-1148 (*10-Bromodihydrohomofascaplysate A*)

Homofascaplysin A H-333

[132911-50-3]



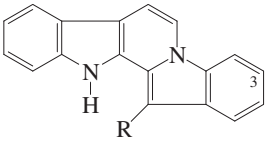
$C_{21}H_{17}N_2O_2^{\oplus}$ 329.377
Isol. from the sponge *Hyrtios erecta* and from *Fascaplysinopsis reticulata*. Inhibits HIV reverse transcriptase (HIV-rt). Shows cytotoxic, antibacterial and antiplasmodial activities. Inhibits $p56^{ICK}$ tyrosine kinase. Brown oil. λ_{max} 202 (ϵ 11300); 220 (ϵ 11200); 264 (ϵ 8100); 334 (ϵ 5250) (MeOH) (Derep). λ_{max} 256 (ϵ 2010); 314 (ϵ 838) (EtOH) (Berdy).

Salt with Dehydroluffariellolide diacid:
$C_{46}H_{54}N_2O_6$ 730.942
Alkaloid-sesterterpene salt from the sponge *Fascaplysinopsis reticulata*. Red viscous oil. $[\alpha]_D^{20}$ -9.36 (c, 0.0064 in MeOH).

Jiménez, C. *et al., J.O.C.*, 1991, **56**, 3403 (*isol, uv, ir, pmr, cmr, ms, struct, activity*)
Kirsch, G. *et al., J. Nat. Prod.*, 2000, **63**, 825-829 (*isol, activity*)

Homofascaplysin B H-334

[132938-12-6]



R = COCOOMe

$C_{21}H_{14}N_2O_3$ 342.353
Alkaloid from the sponge *Fascaplysinopsis reticulata*. Red oil. λ_{max} 268 (ϵ 12100); 294 (ϵ 5980); 330 (ϵ 7690) (MeOH) (Derep).

3-Bromo: ***3-Bromohomofascaplysin B***
[693790-73-7]
$C_{21}H_{13}BrN_2O_3$ 421.249
Isol. from a *Didemnum* sp. Yellow solid.

Jimenez, C. *et al., J.O.C.*, 1991, **56**, 3403-3410 (*isol, uv, ir, pmr, cmr, struct*)
Gribble, G.W. *et al., J.O.C.*, 1992, **57**, 3636-3642 (*synth*)
Segraves, N.L. *et al., J. Nat. Prod.*, 2004, **67**, 783-792 (*3-Bromohomofascaplysin B*)

Homofascaplysin B1 H-335

[694436-61-8]
As Homofascaplysin B, H-334 with
R = -COCOOEt
$C_{22}H_{16}N_2O_3$ 356.38
Isol. from a *Didemnum* sp. Red oil.

3-Bromo: ***3-Bromohomofascaplysin B1***
[693790-74-8]
$C_{22}H_{15}BrN_2O_3$ 435.276
Isol. from a *Didemnum* sp. Yellow solid.

Segraves, N.L. *et al., J. Nat. Prod.*, 2004, **67**, 783-792 (*isol, pmr, cmr*)

Homofascaplysin C H-336

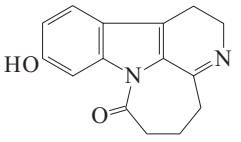
*12*H-*Pyrido[1,2-*a*:3,4-*b′*]diindole-13-carboxaldehyde, 9CI*
[132911-52-5]
As Homofascaplysin B, H-334 with
R = CHO
$C_{19}H_{12}N_2O$ 284.317
Alkaloid from *Didemnum* sp. and *Fascaplysinopsis reticulata*. Yellow oil. λ_{max} 266 (ϵ 7810); 292 (ϵ 2980) (MeOH) (Derep).

3-Bromo: ***3-Bromohomofascaplysin C***
[193790-75-9]
$C_{19}H_{11}BrN_2O$ 363.213
Isol. from a *Didemnum* sp. Yellow solid.

Jimenez, C. *et al., J.O.C.*, 1991, **56**, 3403-3410 (*isol, uv, ir, pmr, cmr, struct*)
Gribble, G.W. *et al., J.O.C.*, 1992, **57**, 3636-3642 (*synth*)
Carter, D.S. *et al., J.O.C.*, 1999, **64**, 8537-8545 (*synth*)
Segraves, N.L. *et al., J. Nat. Prod.*, 2004, **67**, 783-792 (*3-Bromohomofascaplysin C*)

Homofluorodaturatin H-337

[80757-46-6]

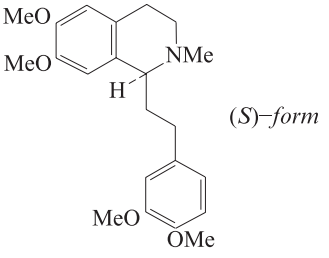


$C_{15}H_{14}N_2O_2$ 254.288
Struct. revised in 1988. Alkaloid from seeds of *Datura stramonium* (Solanaceae). Amorph. λ_{max} 268 (ϵ 2800); 368 (ϵ 8600); 455 (ϵ 5200) (MeOH/NaOH) (Derep). λ_{max} 217 (ϵ 22200); 261 (ϵ 6780); 387 (ϵ 20700) (MeOH) (Derep).

Maier, I. *et al., Monatsh. Chem.*, 1981, **112**, 1425 (*isol, uv, ir, pmr, ms*)
Robien, W. *et al., Sci. Pharm.*, 1988, **56**, 133; *CA*, **110**, 193165d (*struct*)

Homolaudanosine H-338

1-[2-(3,4-Dimethoxyphenyl)ethyl]-1,2,3,4-tetrahydro-6,7-dimethoxy-2-methylisoquinoline, 9CI



(*S*)–*form*

$C_{22}H_{29}NO_4$ 371.475

(R)-form
Synthetic. $[\alpha]_{578}$ -13.5 (c, 0.89 in EtOH).

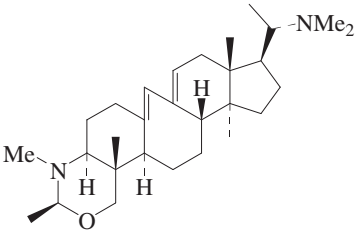
(S)-form [85611-40-1]
Alkaloid from the leaves of *Dysoxylum lenticellare* (Meliaceae). $[\alpha]_D^{25}$ +11 (c, 0.21 in EtOH).

Picrate: Mp 78-79°.

Aladesanmi, A.J. *et al., J. Nat. Prod.*, 1983, **46**, 127 (*isol, uv, pmr, ms, cmr, cd, struct*)
Wanner, K.T. *et al., Heterocycles*, 1989, **29**, 29 (*synth*)
Gottlieb, L. *et al., J.O.C.*, 1990, **55**, 5659 (*synth*)

Homomoenjodaramine H-339

[220749-24-6]



$C_{29}H_{48}N_2O$ 440.711
Alkaloid from *Buxus hyrcana*. Acetylcholinesterase inhibitor. Amorph. pow-

der. $[\alpha]_D^{25}$ +40 (c, 1.12 in $CHCl_3$). λ_{max} 237 (log ϵ 3.82); 244 (log ϵ 3.85) (MeOH).

Atta-ur-Rahman, *et al., Heterocycles*, 1998, **49**, 481-488 (*isol, pmr, cmr, uv*)

Homophleine H-340

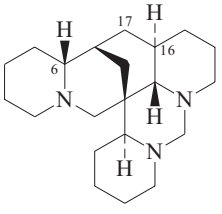
$C_{56}H_{90}N_2O_9$ 935.335

Erythrophleum alkaloid. Struct. unknown. Alkaloid from the bark of *Erythrophleum guineense* (Fabaceae). Cardiac stimulant, hypotensive agent, local anaesthetic. Amorph. No further data to 2007.

Dalma, G. *et al., Ann. Chim. Appl.*, 1935, **25**, 569-571; *CA*, **30**, 6378 (*isol*)

Homopiptanthine H-341

[38965-96-7]



$C_{21}H_{35}N_3$ 329.528

Stereoisomeric with Jamine, J-16. Note quasi-enantiommeric relationship. Alkaloid from the stem bark of *Bowdichia virgiloides* (Fabaceae). Mp 184-185°. $[\alpha]_D^{21}$ -40 (c, 0.32 in $CHCl_3$).

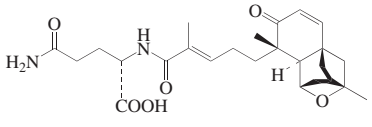
16,17-Didehydro: ***Homopodopetaline***
[114420-75-6]
$C_{21}H_{33}N_3$ 327.512
Alkaloid from *Ormosia coutinhoi*, *Ormosia macrophylla* and *Ormosia semicastrata*. Also produced synthetically by the action of HCHO on Podopetaline, P-529. Plates (Me_2CO). Mp 117-118.5°. $[\alpha]_D$ -147.7 (c, 0.2 in MeOH).

6-Epimer, 16,17-didehydro: ***Homo-6-epipodopetaline****. Homosweetinine*
[114370-18-2]
$C_{21}H_{33}N_3$ 327.512
5Alkaloid from *Ormosia coutinhoi* and *Ormosia nobilis* and *Sweetia elegans.*

McLean, S. *et al., Can. J. Chem.*, 1981, **59**, 34 (*Homopodopetaline, synth, ms*)
Balandrin, M.F. *et al., J. Nat. Prod.*, 1981, **44**, 619-622 (*Homosweetinine*)
Kinghorn, A.D. *et al., Phytochemistry*, 1988, **27**, 439-444 (*Homopodopetaline, occur*)
Torrenegra, R. *et al., Phytochemistry*, 1989, **28**, 2219-2221 (*isol, ir, ms, struct*)
Le, P.M. *et al., Magn. Reson. Chem.*, 2005, **43**, 283-293 (*Homopodopetaline*)

Homoplatensimide H-342

[1036714-38-1]



$C_{25}H_{34}N_2O_6$ 458.553

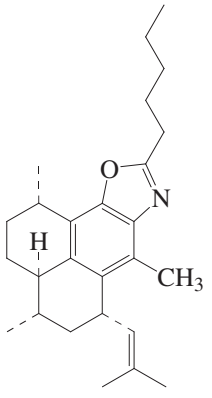
Prod. by *Streptomyces platensis* MA7327. Gum.

Me ester: [1036714-39-2]
$C_{26}H_{36}N_2O_6$ 472.58
Prod. by *Streptomyces platensis* MA7327. $[\alpha]_D^{23}$ -16 (c, 0.5 in MeOH). λ_{max} 236 (MeOH).

Jayasuriya, H. *et al., Tet. Lett.*, 2008, **49**, 3648-3651 (*isol, pmr, cmr*)

Homopseudopteroxazole H-343

[549520-74-3]



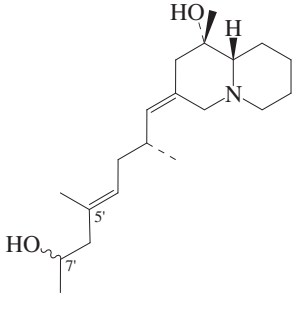
$C_{26}H_{37}NO$ 379.584

Homologue of Pseudopteroxazole, P-724. Alkaloid from *Pseudopterogorgia elisabethae.* Active against *Mycobacterium tuberculosis.* Yellowish oil. $[\alpha]_D^{25}$ +103.2 (c, 0.9 in $CHCl_3$). λ_{max} 204 (ϵ 25500); 244 (ϵ 9000); 279 (ϵ 3500) (MeOH).

Rodriguez, I.I. *et al., J. Nat. Prod.*, 2003, **66**, 855-857 (*isol, pmr, cmr*)

Homopumiliotoxin 321B H-344

*Octahydro-3-(7-hydroxy-2,5-dimethyl-4-octenylidene)-1-methyl-2*H*-quinolizin-1-ol, 9CI*
[150044-81-8]



$C_{20}H_{35}NO_2$ 321.502
Isol. from toads of the genus *Melanophyrniscus.*

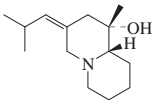
7′-Ketone: ***Homopumiliotoxin 319A***
[150044-79-4]
$C_{20}H_{33}NO_2$ 319.486
Isol. from the genus *Melanophyrniscus.*

$\Delta^{5',6'}$-Isomer, 7′-ketone: ***Homopumiliotoxin 319B***
[150044-80-7]
$C_{20}H_{33}NO_2$ 319.486
Isol. from the genus *Melanophyrniscus.*

Garraffo, H.M. *et al., J. Nat. Prod.*, 1993, **56**, 357-373 (*isol*)
Kibayashi, C. *et al., J. Nat. Prod.*, 2000, **63**, 1157-1159 (*struct*)

Homopumiliotoxin 223G H-345

Dendrobates *Alkaloid 223G*
[109175-44-2]



Absolute Configuration

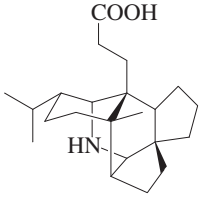
$C_{14}H_{25}NO$ 223.358
Alkaloid from skin extracts of the Panamanian poison-frog *Dendrobates pumilio* (Dendrobatidae). $[\alpha]_D^{28}$ +1.7 (c, 1 in $CHCl_3$) (synthetic).

Hydrochloride: Mp 183-184° (synthetic). $[\alpha]_D^{25}$ +48.1 (c, 0.5 in MeOH) (synthetic).

Tokuyama, T. *et al., Tetrahedron*, 1987, **43**, 643 (*isol, pmr, ms, struct*)
Edwards, M.W. *et al., J. Nat. Prod.*, 1988, **51**, 1188 (*isol*)
Kibayashi, C. *et al., J. Nat. Prod.*, 2000, **63**, 1157-1159 (*synth, abs config*)
Santos, L.S. *et al., Tet. Lett.*, 2001, **42**, 6999-7001 (*synth*)
Chen, B.-F. *et al., Tetrahedron*, 2004, **60**, 10223-10231 (*synth*)
Huang, P.-Q. *et al., Org. Lett.*, 2006, **8**, 1435-1438 (*synth*)
Voituriez, A. *et al., Org. Lett.*, 2007, **9**, 4705-4708 (*synth*)

Homosecodaphniphyllic acid H-346

12,16-Cyclo-1,12-secodaphnan-23-oic acid



Absolute Configuration

$C_{22}H_{35}NO_2$ 345.524

Me ester: ***Methyl homosecodaphniphyllate***
[28519-09-7]
[118099-25-5 ((±)-form)]
$C_{23}H_{37}NO_2$ 359.551
Alkaloid from *Daphniphyllum macropodum* and the fruits of *Daphniphyllum teijsmanni* (Daphniphyllaceae). Cryst. (hexane). Mp 102.5-103°.

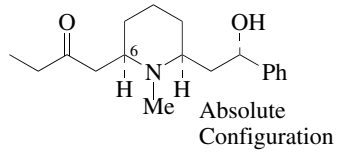
N-*Ac, Me ester:*
Plates (hexane). Mp 105-106°.

Irikawa, H. *et al., Tet. Lett.*, 1969, 1821 (*ir, ms*)
Sasaki, K. *et al., J.C.S.(B)*, 1971, 1565 (*cryst struct, abs config*)
Toda, M. *et al., Tetrahedron*, 1972, **28**, 1477; 1974, **30**, 2683 (*isol, ir, pmr, ms, struct*)
Ruggeri, R.B. *et al., J.A.C.S.*, 1988, **110**, 8734 (*synth*)
Heathcock, C.H. *et al., J.O.C.*, 1992, **57**, 2544 (*synth*)

Nicolaou, K.C. *et al., Classics in Total Synthesis, Targets, Strategies, Methods*, VCH, 1996, 465 (*bibl, synth*)

Homosedinone H-347

1-[6-(2-Hydroxy-2-phenylethyl)-1-methyl-2-piperidinyl]-2-butanone, 9CI. 2-(2-Hydroxy-2-phenylethyl)-1-methyl-6-(2-oxobutyl)piperidine
[145774-74-9]



Absolute Configuration

$C_{18}H_{27}NO_2$ 289.417
Trace alkaloid from *Sedum acre*. Cryst. (hexane). Mp 62-63°. $[\alpha]_D^{20}$ -40 (c, 0.2 in $CHCl_3$).

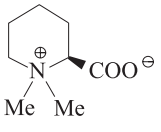
6-Epimer: ***6-Epihomosedinone***
[145307-61-5]
$C_{18}H_{27}NO_2$ 289.417
Alkaloid from *Sedum acre*.

Stereoisomer: ***Lelobanololine***
[128508-05-4]
$C_{18}H_{27}NO_2$ 289.417
Alkaloid from whole plants of *Lobelia davidii*. Red-brown oil. $[\alpha]_D^{24}$ -28.4 ($CHCl_3$).

Zhang, M.-Z. *et al., Phytochemistry*, 1990, **29**, 1353 (*Lelobanololine*)
Durant, A. *et al., Can. J. Chem.*, 1992, **70**, 2722 (*occur, pmr, cmr, cnr, ms, synth, struct*)

Homostachydrine H-348

2-Carboxy-1,1-dimethylpiperidinium hydroxide inner salt, 9CI. Pipecolic acid methylbetaine
[1195-94-4]



(S)–form

$C_8H_{15}NO_2$ 157.212

(*S*)-*form* [472-22-0]
Isol. from seeds of *Medicago sativa* and *Achillea millefolium*. Fine needles. Mp 300° dec. $[\alpha]_D$ -9 (H_2O).
Hydrochloride: Mp 216-217° dec. $[\alpha]_D$ -13.3 (c, 1.43 in EtOH).

(±)-*form*
V. hygroscopic cryst. Mp 207-208°.
Hydrochloride: Mp 210-211° dec.
Wiehler, G. *et al., Can. J. Chem.*, 1958, **36**, 339 (*isol, struct, synth*)
Robertson, A.V. *et al., Can. J. Chem.*, 1959, **37**, 829 (*abs config*)
Beyerman, H.C. *et al., Rec. Trav. Chim. (J. R. Neth. Chem. Soc.)*, 1959, **78**, 134 (*abs config*)
Pailer, M. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1960, **293**, 646 (*isol*)
Buechel, K.H. *et al., Chem. Ber.*, 1962, **95**, 2453 (*synth*)

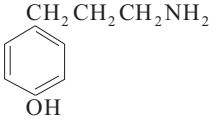
Homothermopsine H-349

[11024-41-2]

$C_{17}H_{24}N_2O$ 272.389
Prob. quinolizidine alkaloid. Struct. unknown. Alkaloid from *Thermopsis lanceolata* (Fabaceae). Small, fine needles (EtOH). Mp 224-225°. $[\alpha]_D$ +86.9 (c, 1.4 in MeOH). Cooccurs with Anagyrine, A-970, Sparteine, S-385, Thermopsine, T-363 and Caulophylline in C-938.
Orechoff, A. *et al., Ber.*, 1934, **67**, 1394-1398

Homotyramine H-350

*4-(3-Aminopropyl)phenol, 9CI. 3-(*p*-Hydroxyphenyl)propylamine*
[57400-89-2]



$C_9H_{13}NO$ 151.208
Mp 68.5-69.5°. Bp_3 153.5-155.5°.

Hydrochloride: [40829-38-7]
Mp 160-161°.

N-*Me:* ***Methylhomotyramine***. *4-[(3-Methylamino)propyl]phenol*
[32180-92-0]
$C_{10}H_{15}NO$ 165.235
Alkaloid from *Croton humilis* (Euphorbiaceae). Cryst. Mp 105-108°.

Me ether, N-*(3-hydroxy-4-methoxy-*E*-cinnamoyl):* ***Mirabliamide***
[220360-38-3]
$C_{20}H_{23}NO_4$ 341.406
Alkaloid from *Mirabilis himalaica*.

Goldschmidt, G. *et al., Monatsh. Chem.*, 1914, **35**, 388 (*synth*)
Mazitova, F.N. *et al., Izv. Akad. Nauk SSSR, Ser. Khim.*, 1963, 2063; *CA*, **60**, 5371c (*synth*)
Stuart, K.L. *et al., Phytochemistry*, 1971, **10**, 460 (*isol, struct, pmr, ms, deriv*)
Zhang, G. *et al., CA*, 1999, **130**, 165486d (*Mirabliamide*)

N-Homoveratroylhomoveratrylamine H-351

N-*[2-(3,4-Dimethoxyphenyl)ethyl]-3,4-dimethoxybenzeneacetamide, 9CI*
[139-76-4]

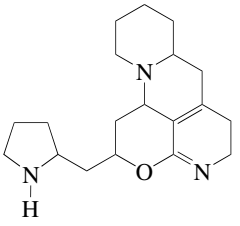


$C_{20}H_{25}NO_5$ 359.421
Alkaloid from *Pleiospermium alatum* leaves (Rutaceae). Needles (C_6H_6/petrol). Mp 122.5-123° (119-121°).

Kundu, A.B. *et al., Chem. Ind. (London)*, 1975, 433-434 (*isol, uv, ir, ms, struct, synth*)
Kozikowski, A.P. *et al., J.O.C.*, 1980, **45**, 2548-2550 (*synth*)
Patra, A. *et al., Org. Magn. Reson.*, 1981, **16**, 65-67 (*cnr*)
Martin, N.H. *et al., Helv. Chim. Acta*, 1982, **65**, 762-774 (*synth*)
Konyukov, V.N. *et al., CA*, 1983, **99**, 212765x (*synth*)

Hopeanine H-352

*1,5,6,7,7*a,*8,9,10,11,12*a-*Decahydro-2-(2-pyrrolidinylmethyl)-2*H*-pyrano[2,3,4-*ij*]-pyrido[1,2-*b*][2,7]naphthyridine, 9CI*
[68156-57-0]

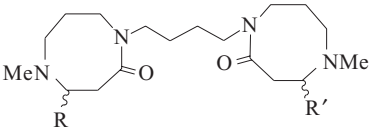


$C_{19}H_{29}N_3O$ 315.458
Alkaloid from *Brunfelsia hopeana* (Solanaceae).

Iyer, R. *et al., CA*, 1978, **89**, 191130n (*isol*)
Gellert, E. *et al., CA*, 1980, **92**, 42210y (*isol*)

Hopromalinol H-353

*1-[4-[Hexahydro-4-(2-hydroxyheptyl)-5-methyl-2-oxo-1,5-diazocin-1(2*H*)-yl]butyl]hexahydro-5-methyl-4-phenyl-1,5-diazocin-2(1*H*)-one, 9CI*
[49620-05-5]



R = Ph, R′ = $CH_2CH(OH)(CH_2)_4CH_3$

$C_{31}H_{52}N_4O_3$ 528.777
Alkaloid from the leaves of *Homalium pronyense* (Flacourtiaceae). Noncryst. $[\alpha]_D$ -17 (c, 2.5 in $CHCl_3$).

Pais, M. *et al., Tetrahedron*, 1973, **29**, 1001 (*isol, ir, pmr, ms, struct*)
Crombie, L. *et al., J.C.S. Perkin 1*, 1993, 2055 (*synth*)

Hopromine H-354

*1-[4-[4-Heptylhexahydro-5-methyl-2-oxo-1,5-diazocin-1(2*H*)-yl]butyl]hexahydro-5-methyl-4-pentyl-1,5-diazocin-2(1*H*)-one, 9CI*
[49620-03-3]
As Hopromalinol, H-353 with R = -$(CH_2)_4CH_3$, R′ = -$(CH_2)_6CH_3$
$C_{30}H_{58}N_4O_2$ 506.814
Alkaloid from the leaves of *Homalium pronyense* (Flacourtiaceae). Noncryst. $[\alpha]_D$ -10 (c, 3 in $CHCl_3$).

Pais, M. *et al., Tetrahedron*, 1973, **29**, 1001 (*isol, ir, pmr, ms, struct*)
Crombie, L. *et al., J.C.S. Perkin 1*, 1993, 2055 (*synth*)

Ensch, C. *et al., Helv. Chim. Acta*, 2002, **85**, 1659-1677 (*synth, abs config*)

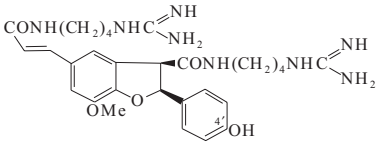
Hoprominol H-355

1-[4-[Hexahydro-4-(2-hydroxyheptyl)-5-methyl-2-oxo-1,5-diazocin-1(2H)-yl]butyl]hexahydro-5-methyl-4-pentyl-1,5-diazocin-2(1H)-one, 9CI
[49620-04-4]
As Hopromalinol, H-353 with
R = -$(CH_2)_4CH_3$, –m =- $CH_2CH(OH)(CH_2)_4CH_3$
$C_{30}H_{58}N_4O_3$ 522.813
Alkaloid from the leaves of *Homalium pronyense* (Flacourtiaceae). Noncryst. $[\alpha]_D$ -19 (c, 2 in $CHCl_3$).

Païs, M. *et al., Tetrahedron*, 1973, **29**, 1001 (*isol, ir, pmr, ms, struct*)
Crombie, L. *et al., J.C.S. Perkin 1*, 1993, 2055 (*synth*)

Hordatine B, 8CI H-356

[10502-21-3]



$C_{29}H_{40}N_8O_5$ 580.686
Alkaloid from *Hordeum vulgare* (barley), *Hordeum bulbosum*, *Hordeum jubatum*, *Hordeum murinum* and *Hordeum spontaneum* (Poaceae). Antifungal antibiotic, phytotoxin. Sol. H_2O. Mp 132-135° (as dipicrate). $[\alpha]_D^{23}$ +54 (c, 1 in H_2O). λ_{max} 223 (ε 22000); 301 (ε 15500); 316 (ε 16200) (EtOH) (Berdy).

4′-O-α-D-Glucopyranoside: Hordatine B glucoside
$C_{35}H_{50}N_8O_{10}$ 742.828
Present in barley (*Hordeum vulgare*) as an inseparable mixt. with Hordatine A glucoside, known as Hordatine M (Poaceae). $[\alpha]_D^{23}$ +60 (c, 1 in H_2O).

O-*De-Me:* ***Hordatine A***
[7073-64-5]
$C_{28}H_{38}N_8O_5$ 566.659
Alkaloid from *Hordeum vulgare*, *Hordeum bulbosum*, *Hordeum distichon*, *Hordeum jubatum* and *Hordeum murinum* (Poaceae). Antifungal agent. Sol. H_2O. Mp 132-135° (as dipicrate). $[\alpha]_D^{23}$ +69 (c, 1 in H_2O). λ_{max} 229 (ε 20700); 298 (ε 18400); 307 (ε 18400) (MeOH) (Berdy). λ_{max} 235 (ε 17000); 297 (ε 19400); 305 (ε 18700) (MeOH/NaOH) (Berdy).

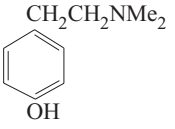
O-*De-Me, 4′-O-α-D-glucopyranoside: Hordatine A glucoside*
$C_{34}H_{48}N_8O_{10}$ 728.801
Component of Hordatine M from barley (see above).

[16995-91-8]

Stoessl, A. *et al., Can. J. Chem.*, 1967, **45**, 1745 (*isol, uv, ir, nmr, struct, synth*)
Smith, T.A. *et al., Phytochemistry*, 1978, **17**, 1093 (*occur*)

Hordenine H-357

4-(2-Dimethylaminoethyl)phenol, 9CI. 4-Hydroxy-N,N-dimethylphenethylamine. N,N-Dimethyltyramine. Peyocactine. Anhaline. Cactine. Eremursine
[539-15-1]



$C_{10}H_{15}NO$ 165.235
Alkaloid from *Anhalonium fissuratum, Hordeum vulgare* (barley), a very wide range of plant spp. esp. in the Cactaceae. Also present in the Amaryllidaceae, Poaceae, Fabaceae and a few algae and fungi including marine alga *Phyllophora nervosa*. Diuretic, disinfectant, antihypotensive (in large doses) agent. Used for treatment of dysentery. Feeding repellant for grasshoppers. Shows similar actions to 2-(Methylamino)-1-phenyl-1-propanol, M-386. Mp 118°. Bp_{11} 173-174°. Log P 1.17 (calc).

Hydrochloride: Mp 176-177°.
Sulfate (2:1): [622-64-0]
Mp 207-208°.

O-*β-D-Glucopyranoside: Hordenine O-glucoside*
[93710-65-7]
$C_{16}H_{25}NO_6$ 327.377
Alkaloid from *Pancratium biflorum*. Solid. Mp 100-108° dec. $[\alpha]_D^{20}$ -55.4 (c, 0.5 in EtOH). λ_{max} 225 (log ε 3.92); 266 (sh) (log ε 3.61); 275 (log ε 3.52); 305 (sh) (log ε 2.98) (MeOH).

O-*α-L-Rhamnopyranoside: Hordenine O-rhamnoside*
$C_{16}H_{25}NO_5$ 311.377
Alkaloid from *Selaginella doederleinii* (Selaginellaceae). Amorph. solid. $[\alpha]_D^{20}$ -96 (c, 1 in MeOH).

O-*[6-O-E-Cinnamoyl-β-D-glucopyranosyl-(1→3)-α-L-rhamnopyranoside]: Hordenine O-(6″-O-trans-cinnamoyl-3′-O-β-D-glucopyranosyl-α-L-rhamnopyranoside)*
[111537-51-0]
$C_{31}H_{41}NO_{11}$ 603.665
Alkaloid from *Selaginella doederleinii* (Selaginellaceae). Amorph. solid. $[\alpha]_D^{20}$ -84 (c, 1 in MeOH).

O-*[4-Hydroxycinnamoyl-(→6)-β-D-glucopyranosyl-(1→3)-α-L-rhamnopyranoside]: Hordenine O-(6″-O-p-coumaroyl-3′-O-β-D-glucopyranosyl-α-L-rhamnopyranoside)*
[130748-25-3]
$C_{31}H_{41}NO_{12}$ 619.664
Alkaloid from *Selaginella doederleinii* (Selaginellaceae). Amorph. $[\alpha]_D^{20}$ -81 (c, 0.2 in MeOH).

N-*Ac:* **N-*Acetylhordenine***
$C_{12}H_{18}NO_2^{\oplus}$ 208.28
Alkaloid from *Stapelia hirsuta*. Buff powder. Mp 120-123°. Counterion not specified.

N-*Me:* ***Candicine***. *Maltoxin*
[6656-13-9]
$C_{11}H_{18}NO^{\oplus}$ 180.269
Quaternary alkaloid from *Trichocereus candicans, Trichocereus lamprochlorus, Trichocereus spachianus*, several *Desmodium* spp. (Cactaceae, Fabaceae) and several other spp. in different families. Also from mescal (*Lophophora williamsii*). Ganglionic blocker and vasoconstrictor with nicotine-like action. Curarising in large doses.
▶ Toxic, LD_{50} (rat) 50 mg/kg. BR1574700

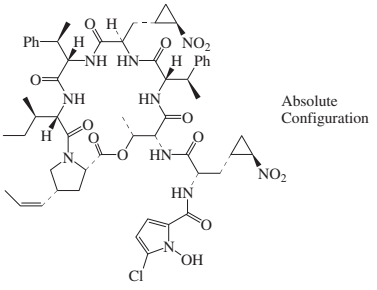
N-*Me, chloride:* Mp 285° dec.

N-*Me, iodide:* [1976-98-3]
Mp 230-231°.

Voswinckel, H. *et al., Ber.*, 1912, **45**, 1004 (*synth*)
Buck, J.S. *et al., J.A.C.S.*, 1938, **60**, 1789 (*synth, deriv*)
Badger, G.M. *et al., Aust. J. Chem.*, 1963, **16**, 734 (*isol, pmr*)
Rao, G.S. *et al., J. Pharm. Pharmacol.*, 1970, **22**, 545
Güven, K.C. *et al., Phytochemistry*, 1970, **9**, 1893 (*isol, Phyllophora*)
Cherayil, G.D. *et al., J. Pharm. Sci.*, 1973, **62**, 2054 (*synth*)
Rao, K.V. *et al., Planta Med.*, 1975, **27**, 31 (*isol, deriv*)
Srinivasan, P.R. *et al., Org. Magn. Reson.*, 1976, **8**, 198 (*cmr*)
Kruger, T.L. *et al., J.O.C.*, 1977, **42**, 4161 (*ms*)
Smith, T.A. *et al., Phytochemistry*, 1977, **16**, 9 (*occur*)
Meyer, B.N. *et al., J. Nat. Prod.*, 1983, **46**, 688 (*O-Methylcandicine*)
Ghosal, S. *et al., Phytochemistry*, 1984, **23**, 1167 (*glucoside*)
Lin, R.C. *et al., J. Nat. Prod.*, 1990, **53**, 882 (*glycosides*)
Parvez, M. *et al., Acta Cryst. C*, 1991, **47**, 1450 (*cryst struct*)
Shabana, M. *et al., Nat. Prod. Res.*, 2006, **20**, 710-714 (*Candicine, N-Acetylhordenine, glucoside*)

Hormaomycin H-358

Takaokamycin
[121548-21-8]
[92092-69-8]

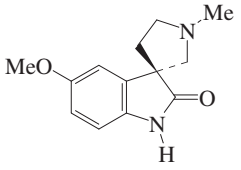


$C_{55}H_{69}ClN_{10}O_{14}$ 1129.661
Depsipeptide antibiotic. Prod. by *Streptomyces griseoflavus* W384 and *Streptomyces* sp. AC-1978. Morphogenic agent, antibiotic production stimulator, cytodifferentiation Inducer, mycelium formation inducer. Powder. Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. Mp 166-168°. $[\alpha]_D^{20}$ +20.8 (c, 0.5 in MeOH). λ_{max} 206 (ε 43000); 278 (ε 9150) (MeOH).

Omura, S. *et al., J. Antibiot.*, 1984, **37**, 700-705 (*Takaokamycin*)

Andres, N. *et al., Helv. Chim. Acta*, 1989, **72**, 426-437 (*isol, pmr, cmr, ms*)
Roessner, E. *et al., Angew. Chem., Int. Ed.*, 1990, **29**, 64-65 (*struct*)
Otoguru, K. *et al., J. Antibiot.*, 2003, **56**, 322-323 (*isol, struct*)
Zlatopolskiy, B.D. *et al., Chem. Eur. J.*, 2004, **10**, 4708-4717; 4718-4727; 5568; 2005, **11**, 2929-2945 (*synth, pmr, comformn, abs config*)

Horsfiline H-359



(*R*)-*form*

$C_{13}H_{16}N_2O_2$ 232.282

(*R*)-*form* [136247-72-8]
Alkaloid from the leaves of *Horsfieldia superba* (Myristicaceae). Cryst. (Me_2CO). Mp 125-126°. $[\alpha]_D^{20}$ -7.2 (c, 1 in MeOH).

Hydrochloride: $[\alpha]_D$ -28 (c, 0.6 in MeOH).

(*S*)-*form*
Synthetic. $[\alpha]_D$ +5.2 (c, 0.5 in MeOH). Mp not detd. due to paucity of material for recrystallisation.

Hydrochloride: $[\alpha]_D$ +28 (c, 0.6 in MeOH).

(±)-*form* [136316-07-9]
Cryst. (Me_2CO). Mp 156-157°.

(ξ)-*form*
Demethoxy: ***Coerulescine***
[66859-18-5]
$C_{12}H_{14}N_2O$ 202.255
Alkaloid from the leaves of *Phalaris coerulescens*. Pale yellow gum. $[\alpha]_D^{20}$ -0.8 (c, 0.02 in MeOH).

Jossang, A. *et al., J.O.C.*, 1991, **56**, 6527 (*isol, uv, ir, pmr, cmr, ms, synth, struct*)
Jones, K. *et al., Chem. Comm.*, 1992, 1767 (*synth*)
Bascop, S.-I. *et al., Heterocycles*, 1994, **38**, 725 (*synth*)
Pellegrini, C. *et al., Tetrahedron: Asymmetry*, 1994, **5**, 1979 (*synth, abs config*)
Palmisano, G. *et al., Tetrahedron: Asymmetry*, 1996, **7**, 1 (*synth*)
Anderton, N. *et al., Phytochemistry*, 1998, **48**, 437-439 (*isol, pmr, cmr, ms, Coerulescine*)
Lakshmaiah, G. *et al., J.O.C.*, 1999, **64**, 1699-1704 (*synth*)
Fischer, C. *et al., Helv. Chim. Acta*, 2000, **83**, 1175-1181 (*synth*)
Somei, M. *et al., Heterocycles*, 2000, **53**, 7-10 (*Coerulescine, synth*)
Cravotto, G. *et al., J.O.C.*, 2001, **66**, 8447-8453 (*synth*)
Lizo, D.E. *et al., Org. Biomol. Chem.*, 2003, **1**, 117-122 (*Horsfiline, Coerulescine, synth*)
Murphy, J.A. *et al., Org. Lett.*, 2005, **7**, 3287-3289 (*synth*)
Chang, M.-Y. *et al., Tet. Lett.*, 2005, **46**, 8463-8465 (*synth*)

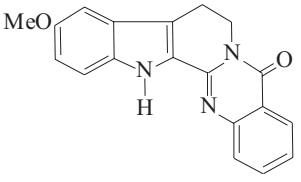
Hortesin H-360

Deriv. of cytosine containing a phosphate group. Metab. of *Streptomyces mutabilis* NRRL 2528. Antifungal agent. Sol. H_2O; fairly sol. MeOH; poorly sol. EtOH, hexane. λ_{max} 267 (E1%/1cm 100) (pH 7 buffer) (Berdy). λ_{max} 270 (H_2O) (Berdy).

U.S. Pat., 1961, 2 972 569 (*isol, activity*)
U.S. Pat., 1965, 3 169 902; *CA*, **62**, 11115 (*isol, props*)

Hortiacine H-361

8,13-Dihydro-10-methoxyindolo[2′,3′:3,4]pyrido[2,1-b]quinazolin-5(7H)-one, 9CI. 10-Methoxyrutaecarpine
[522-55-4]

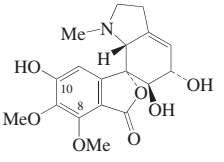


$C_{19}H_{15}N_3O_2$ 317.346
Alkaloid from the bark of *Hortia arborea* and *Hortia badinii* and from the trunk wood of *Hortia longifolia* (Rutaceae). Pale-yellow needles (EtOAc). Mp 252-252.5°. Also obt. by subliming Hortiamine hydrochloride at 230-270°/0.5 mm.

Pachter, I.J. *et al., J.A.C.S.*, 1960, **82**, 5187 (*isol, struct, synth*)
Danieli, B. *et al., Gazz. Chim. Ital.*, 1975, **105**, 45 (*synth*)
de Barros Corrêa, D. *et al., Phytochemistry*, 1975, **14**, 2059 (*isol*)
Bergman, J. *et al., J.O.C.*, 1985, **50**, 1246 (*synth, ir, ms*)

Hostasine H-362

[955092-43-0]



Relative Configuration

$C_{18}H_{21}NO_7$ 363.366
Alkaloid from *Hosta plantaginea*. Cryst. (EtOH). Mp 202-205°. $[\alpha]_D^{26}$ -34 (c, 0.21 in MeOH). λ_{max} 223 (log ϵ 4.34); 263 (log ϵ 3.87); 344 (log ϵ 1.79); 360 (log ϵ 1.01); 397 (log ϵ 1.32) (MeOH).

10-Me ether: ***10-O-Methylhostasine***
[955089-62-0]
$C_{19}H_{23}NO_7$ 377.393
Alkaloid from *Hosta plantaginea*. Amorph. solid. $[\alpha]_D^{26}$ -65.7 (c, 0.38 in MeOH). λ_{max} 223 (log ϵ 4.38); 261 (log ϵ 3.88); 291 (log ϵ 3.3); 369 (log ϵ 1.98); 392 (log ϵ 2.13) (MeOH).

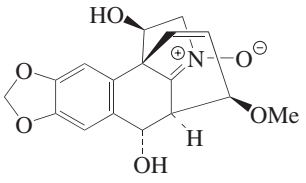
8-Demethoxy: ***8-Demethoxyhostasine***
[955089-53-9]
$C_{17}H_{19}NO_6$ 333.34
Alkaloid from *Hosta plantaginea*. Amorph. solid. $[\alpha]_D^{26}$ -29.5 (c, 0.36 in MeOH). λ_{max} 223 (log ϵ 4.28); 260 (log ϵ 3.71); 297 (log ϵ 3.62); 392 (log ϵ 2.02) (MeOH).

8-Demethoxy, 10-Me ether: ***8-Demethoxy-10-O-methylhostasine***
[955089-57-3]
$C_{18}H_{21}NO_6$ 347.367
Alkaloid from *Hosta plantaginea*. Acetylcholinesterase inhibitor. Amorph. solid. $[\alpha]_D^{26}$ -76.4 (c, 0.53 in MeOH). λ_{max} 224 (log ϵ 4.37); 258 (log ϵ 3.76); 295 (log ϵ 3.65); 343 (log ϵ 1.57); 380 (log ϵ 1.9) (MeOH).

Wang, Y.-H. *et al., J. Nat. Prod.*, 2007, **70**, 1458-1461 (*isol, pmr, cmr, cryst struct*)

Hostasinine A H-363

[960010-06-4]

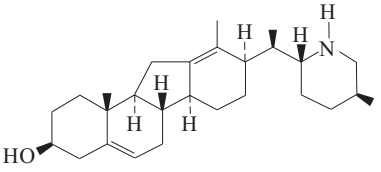


$C_{17}H_{17}NO_6$ 331.324
Alkaloid from *Hosta plantaginea*. Needles (MeOH). Mp 229-231°. $[\alpha]_D^{16}$ +124.4 (c, 0.45 in MeOH). λ_{max} 244 (log ϵ 3.87); 297 (log ϵ 3.48) (MeOH).

Wang, Y.-H. *et al., Org. Lett.*, 2007, **9**, 5279-5281 (*isol, synth, cd, pmr, cmr, ms, cryst struct*)

Hosukinidine H-364

Veratraman-3-ol, 9CI. Veratra-5,12-dien-3-ol
[72765-23-2]

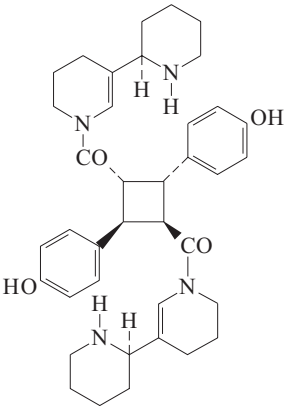


$C_{27}H_{43}NO$ 397.643
Alkaloid from the rhizomes of illuminated *Veratrum grandiflorum* (Liliaceae). Mp 176.5-177.5°. $[\alpha]_D$ -56.5 (c, 0.27 in MeOH). Unusual configs. at C-17 and C-20.

N,O-Di-Ac: Mp 195-197°. $[\alpha]_D$ -55.6 (c, 0.23 in $CHCl_3$).

Kaneko, K. *et al., Chem. Pharm. Bull.*, 1979, **27**, 2534 (*isol, cryst struct*)

Hoveine H-365



$C_{38}H_{48}N_4O_4$ 624.822

Alkaloid from the whole plant of *Hovea longipes* (Fabaceae). Cryst. +½ $CHCl_3$. Mp 190-193°. $[\alpha]_D$ -11 (c, 0.27 in $CHCl_3$/MeOH, 1:1).

Hydrochloride (1:2):
Needles + $4H_2O$. Mp *ca.*° 280 (dec.). $[\alpha]_D$ -9 (c, 0.30 in EtOH/H_2O, 4:1).

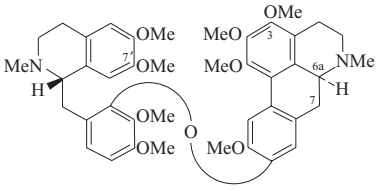
Hydrobromide (1:2):
Cryst. + $2H_2O$ (EtOH). Mp 280° dec. $[\alpha]_D$ -8 (c, 0.26 in EtOH/H_2O, 4:1).

Tetra-Ac:
Noncryst. powder. Mp 153-155°.

Fitzgerald, J.S. *et al., An. Quim.*, 1972, **68**, 737 (*isol, ir, struct, abs config*)

Huangshanine H-366

$O^{7'}$-*Methylfaberonine*
[88313-35-3]



$C_{42}H_{50}N_2O_9$ 726.865
Alkaloid from the roots of *Thalictrum faberi* (Ranunculaceae). Yellowish powder. Sol. MeOH, $CHCl_3$; poorly sol. hexane. Mp 70-75°. $[\alpha]_D^{25}$ +120.6 (c, 0.43 in MeOH). λ_{max} 281 (ϵ 25500); 302 (ϵ 15900) (MeOH) (Berdy).

$O^{7'}$-*De-Me:* ***Faberonine****. 7′-Desmethylhuangshanine*
[91926-00-0]
$C_{41}H_{48}N_2O_9$ 712.838
Alkaloid from the roots of *Thalictrum faberi* (Ranunculaceae). Yellow solid. $[\alpha]_D^{24}$ +82.8 (c, 0.498 in MeOH).

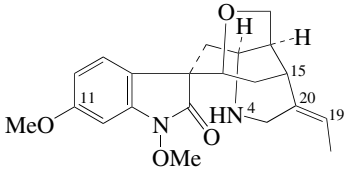
$O^{7'}$,$O^{11'}$-*Di-de-Me:* ***Iznikine***
[82958-14-3]
$C_{40}H_{46}N_2O_9$ 698.811
Minor alkaloid from the roots and rhizomes of *Thalictrum minus* var. *microphyllum* (Ranunculaceae). $[\alpha]_D^{25}$ +76 (c, 0.068 in MeOH).

6a,*7-Didehydro:* ***Dehydrohuangshanine***
[91948-29-7]
$C_{42}H_{48}N_2O_9$ 724.849
Alkaloid from the roots of *Thalictrum faberi* (Ranunculaceae). Yellow solid.

Guinaudeau, H. *et al., Tet. Lett.*, 1982, **23**, 2523 (*Iznikine*)
Lin, L.-Z. *et al., Planta Med.*, 1983, **49**, 55 (*Huangshanine*)
Wagner, H. *et al., Tetrahedron*, 1984, **40**, 2133 (*Huangshanine, Faberonine, Dehydrohuangshanine*)

Humantenirine H-367

4-Demethyl-11-methoxyhumantenine, 9CI
[82375-30-2]



$C_{21}H_{26}N_2O_4$ 370.447
Alkaloid from Hu-Man-Teng (root of *Gelsemium elegans*) and from the stems of *Gelsemium rankinii* (Loganiaceae). Needles (Me_2CO). Mp 167-170°. $[\alpha]_D^{20}$ -135 (c, 0.56 in MeOH).

N^4-*Me:* ***11-Methoxyhumantenine***
[93914-74-0]
$C_{22}H_{28}N_2O_4$ 384.474
Alkaloid from the whole plant of *Gelsemium elegans* (Loganiaceae). Yellow powder. $[\alpha]_D^{22}$ -146.5 (c, 0.06 in MeOH).

O^{11}-*De-Me:* ***11-Hydroxyrankinidine****. 11-O-Demethylhumantenirine*
[122590-03-8]
$C_{20}H_{24}N_2O_4$ 356.421
Alkaloid from the whole plant of *Gelsemium elegans* (Loganiaceae). Needles. Mp 212-214°. $[\alpha]_D^{22}$ -135 (c, 0.06 in MeOH).

O^{11}-*De-Me,* N^4-*Me:* ***11-Hydroxyhumantenine, 9CI***
[122590-04-9]
$C_{21}H_{26}N_2O_4$ 370.447
Alkaloid from the whole plant of *Gelsemium elegans* (Loganiaceae). Needles. Mp 176-177°. $[\alpha]_D^{22}$ -130 (c, 0.05 in MeOH).

11-Demethoxy: ***Rankinidine****. 4-Demethylhumantenine, 9CI*
[106466-66-4]
$C_{20}H_{24}N_2O_3$ 340.421
Alkaloid from the stems of *Gelsemium rankinii* (Loganiaceae). Needles (Me_2CO). Mp 175-178°. $[\alpha]_D^{20}$ -126 (c, 0.07 in MeOH). Dec. rapidly to gum, even at 5°.

11-Demethoxy, N^4-*Me:* ***Humantenine, 9CI***
[82375-29-9]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from roots of *Gelsemium elegans* (Loganiaceae). Gum. $[\alpha]_D$ -142.

*11-Demethoxy, 19,20-dihydro, 20*R*-hydroxy:* ***20-Hydroxydihydrorankinidine***
[135626-62-9]
$C_{20}H_{26}N_2O_4$ 358.436
Alkaloid from *Gelsemium elegans* (Loganiaceae). Needles (Me_2CO). Mp 173-174°. $[\alpha]_D$ -165 (c, 0.02 in MeOH).

Bis(demethoxy): **N-*Desmethoxyrankinidine***
[122590-02-7]
$C_{19}H_{22}N_2O_2$ 310.395
Alkaloid from the whole plant of *Gelsemium elegans* (Loganiaceae). Needles. Mp 258-260°. $[\alpha]_D^{22}$ -169.2 (c, 0.052 in MeOH).

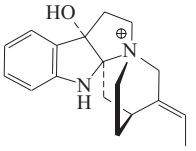
Bis(demethoxy), N^4-*Me:* ***1-Demethoxyhumantenine***
[123629-91-4]
$C_{20}H_{24}N_2O_2$ 324.422
Alkaloid from *Gelsemium elegans* (Loganiaceae). Needles. Mp 238-240°. $[\alpha]_D$ -188.5 (c, 0.052 in MeOH).

15-Hydroxy, 11-demethoxy, N^4-*Me:* ***15-Hydroxyhumantenine, 9CI***
[135626-63-0]
$C_{21}H_{26}N_2O_4$ 370.447
Alkaloid from whole plants of *Gelsemium elegans*. Needles. Mp 213-215°. $[\alpha]_D$ -82.2 (c, 0.028 in MeOH).

Yang, J. *et al., Yaoxue Tongbao*, 1982, **17**, 119; *CA*, **97**, 36099f (*Humantenine*)
Yang, J. *et al., Yaoxue Xuebao*, 1983, **18**, 104; 1984, **19**, 686; *CA*, **99**, 102248y; **102**, 21236w (*isol, cryst struct, Humantenine*)
Schun, Y. *et al., J. Nat. Prod.*, 1986, **49**, 806 (*Rankinidine*)
Xu, C. *et al., Zhongguo Yixue Kexueyuan Xuebao*, 1987, **9**, 95; *CA*, **108**, 187030y (*cryst struct, abs config, Humantenine*)
Lin, L.-Z. *et al., J. Nat. Prod.*, 1989, **52**, 588 (*derivs*)
Kitajima, M. *et al., J.C.S. Perkin 1*, 1991, 1773 (*synth, N-Desmethoxyrankinidine*)
Lin, L.-Z. *et al., Phytochemistry*, 1991, **30**, 1311 (*15-Hydroxyhumantenine*)
Takayama, H. *et al., Nat. Prod. Lett.*, 1993, **2**, 271 (*synth*)
Phisalaphong, C. *et al., Tet. Lett.*, 1993, **34**, 4035 (*synth, 20-Hydroxydihydrorankinidine*)

Hunteracine H-368

[28999-86-2]
[53643-60-0 (chloride)]



Absolute configuration

$C_{18}H_{23}N_2O^{\oplus}$ 283.392
Indole alkaloid, poss. Corynanthe-related. Alkaloid from *Hunteria eburnea* (Apocynaceae). Mp 343-344° dec. (as chloride). $[\alpha]_D$ -90 (c, 0.1 in MeOH aq.) (chloride).

Bartlett, M.F. *et al., J.O.C.*, 1963, **28**, 1445 (*isol, uv*)
Burnell, R.H. *et al., Chem. Comm.*, 1970, 772; *Can. J. Chem.*, 1974, **52**, 2327 (*uv, ir, pmr, ms, cryst struct*)

Hunteriamine H-369

[1357-71-7]

$[C_{38\text{-}39}H_{46\text{-}48}N_4O_2]$
Struct. unknown. Dimeric indole alkaloid. Alkaloid from *Hunteria eburnea* (Apocynaceae). Shows hypotensive props.

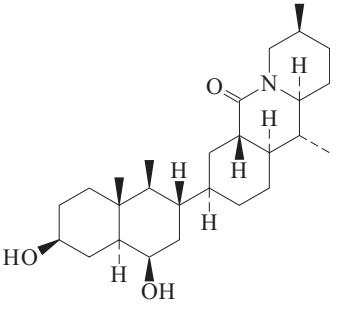
Perchlorate:
Cryst. Mp 279-281° dec. $[\alpha]_D$ +29.4 (c, 1 in MeOH).

Hydrochloride: Mp 310-315° dec. $[\alpha]_D^{23}$ +27.5 (c, 1 in MeOH).

Renner, U. *et al., Hoppe-Seyler's Z. Physiol. Chem.*, 1963, **331**, 105-108 (*isol*)

Hupehenidine H-370

3,6-Dihydroxy-11,12-secocevan-18-one
[123857-37-4]

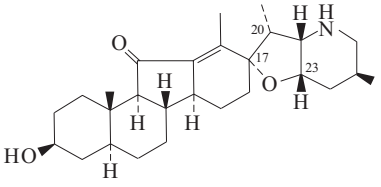


$C_{27}H_{45}NO_3$ 431.657
Alkaloid from the Hubei-beimu (bulbs of *Fritillaria hupehensis*) (Liliaceae).

Wu, J. *et al., Zhongcaoyao*, 1989, **20**, 194; *CA*, **111**, 228955m

Hupehenisine H-371

17,23-Epoxy-5,6-dihydro-3-hydroxyveratraman-11-one, 9CI
[105814-56-0]



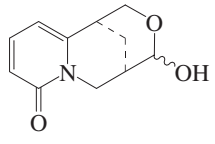
$C_{27}H_{41}NO_3$ 427.626
The config. at C-17 is poss. erroneous.
Alkaloid from the bulbs of *Fritillaria hupehensis* (Liliaceae).

17,20,23-Triepimer: ***Songbeisine***
[129214-36-4]
$C_{27}H_{41}NO_3$ 427.626
Alkaloid from bulbs of *Fritillaria unibracteata* (Liliaceae).

Wu, J. *et al., Yaoxue Xuebao*, 1986, **21**, 546; *CA*, **106**, 15699r (*isol, uv, ir, pmr, ms, struct*)
Yu, S. *et al., Zhongcaoyao*, 1990, **21**, 2; *CA*, **113**, 112481r (*Songbeisine*)
Wang, I.P. *et al., Yaoxue Xuebao*, 1992, **27**, 273

Hupeol H-372

[209168-34-3]

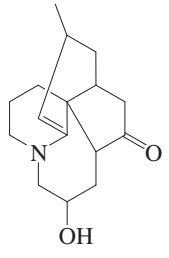


$C_{11}H_{13}NO_3$ 207.229
Alkaloid from *Maackia hupehensis*. Regarded as an intermediate in the metab. of lupine alkaloids. Needles (CH_2Cl_2/MeOH). $[\alpha]_D^{23}$ +32.3 (c, 0.26 in EtOH).

Wang, Y.-H. *et al., J. Chem. Res., Synop.*, 1998, 196-197 (*isol, pmr, cmr, ms*)
Wang, Y.-H. *et al., Heterocycles*, 2000, **53**, 545-548 (*synth*)

Huperzine I H-373

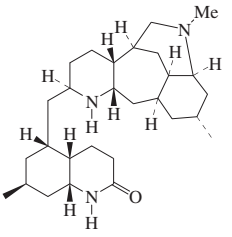
[291764-11-9]



$C_{16}H_{23}NO_2$ 261.363
Alkaloid from *Huperzia serrata*. Needles ($CHCl_3$/Me_2CO). Mp 154-156°. $[\alpha]_D$ +141.1 (c, 0.05 in MeOH).

Gao, W.-Y. *et al., Chin. J. Chem.*, 2000, **18**, 614-616

Huperzine V H-374



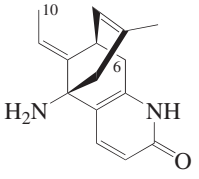
Absolute Configuration

$C_{28}H_{47}N_3O$ 441.699
Alkaloid from *Huperzia serrata*. Prisms. CAS No. not found to 2008.

Liu, H.Q. *et al., Chin. Chem. Lett.*, 2004, **15**, 303-304 (*isol, pmr, cmr*)

Huperzine A H-375

Selagine. Fordine. Isoselagine
[102518-79-6]



$C_{15}H_{18}N_2O$ 242.32
Identity of Huperzine A with Selagine established in 1989 and with Isoselagine in 1993. Alkaloid from *Lycopodium serratum* (= *Huperzia serrata*), *Lycopodium selago, Lycopodium saururus, Lycopodium erythraeum* and *Lycopodium gnidioides* (Lycopodiaceae). Shows very strong anticholinesterase activity and markedly increases efficiency for learning and memory in animals. Currently under clinical investigation in China for treatment of myasthenia gravis and Alzheimer's disease. Mp 230° (224-226°, 214-215°). $[\alpha]_D^{24.5}$ -150.4 (c, 0.498 in MeOH). $[\alpha]_D$ -99. λ_{max} 231 (ϵ 10200); 313 (ϵ 7760) (EtOH) (Derep).

▶ PB9185700

6β-Hydroxy: ***6β-Hydroxyhuperzine A***
[125295-13-8]
$C_{15}H_{18}N_2O_2$ 258.319
Minor alkaloid from *Lycopodium selago* (Lycopodiaceae). Cryst. (Me_2CO/MeOH). Mp 207-210°. $[\alpha]_D$ -206 (c, 0.37 in MeOH).

10-Hydroxy: 10-Hydroxyhuperzine A. ***Carinatumine A***
[929286-89-5]
$C_{15}H_{18}N_2O_2$ 258.319
Alkaloid from *Lycopodium carinatum*. Amorph. solid. $[\alpha]_D^{25}$ -30 (c, 0.3 in MeOH).

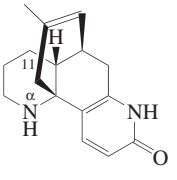
6,6-Dimethyl: Dimethylhuperzine A
[316792-28-6]
$C_{17}H_{22}N_2O$ 270.374
Potent acetylcholinesterase inhibitor. $[\alpha]_D$ -64.2 (c, 0.61 in $CHCl_3$).

[132435-40-6 , 103735-86-0 , 130791-77-4 , 174876-78-9 , 120786-18-7]

Yoshimura, H. *et al., Tet. Lett.*, 1960, **No. 12**, 14 (*Selagine*)
Valenta, Z. *et al., Tet. Lett.*, 1960, **No. 10**, 26 (*isol, uv, ir, pmr*)
Chen, C.H. *et al., T'ai-wan Yao Hsueh Tsa Chih*, 1984, **36**, 1; *CA*, **101**, 143940w (*Isoselagine*)
Liu, J.-S. *et al., Can. J. Chem.*, 1986, **64**, 837 (*uv, ir, pmr, cmr, struct*)
Liu, J. *et al., Huaxue Xuebao*, 1986, **44**, 1035; *CA*, **107**, 115821p (*struct*)
Ayer, W.A. *et al., Can. J. Chem.*, 1989, **67**, 1538 (*6β-Hydroxyhuperzine A, Isoselagine*)
Xia, Y. *et al., J.A.C.S.*, 1989, **111**, 4116 (*synth*)
Qian, L. *et al., Tet. Lett.*, 1989, **30**, 2089 (*synth*)
Geib, S.J. *et al., Acta Cryst. C*, 1991, **47**, 824 (*cryst struct*)
Yamada, F. *et al., J.A.C.S.*, 1991, **113**, 4695 (*synth*)
Kozikowski, A.P. *et al., J.O.C.*, 1991, **56**, 4636 (*synth*)
Kozikowski, A.P. *et al., Adv. Med.*, 1992, **1**, 175 (*rev, synth, props*)
Kozikowski, A.P. *et al., Chem. Comm.*, 1993, 860 (*synth*)
Campiani, G. *et al., J.O.C.*, 1993, **58**, 7660 (*synth*)
Zhou, B.N. *et al., Phytochemistry*, 1993, **34**, 1425 (*pmr, cmr*)
Sun, C.M. *et al., Planta Med.*, 1993, **59**, 467 (*Isoselagine, struct*)
Kozikowski, A.P. *et al., Bioorg. Med. Chem. Lett.*, 1996, **6**, 259-262; 2000, **10**, 2467-2469 (*dimethylhuperzine A, isomers, pharmacol*)
Kaneko, S. *et al., Heterocycles*, 1997, **46**, 27-30 (*synth*)
Kaneko, S. *et al., Tetrahedron*, 1998, **54**, 5471-5484 (*synth, isomers, pmr*)
Chassaing, C. *et al., Tet. Lett.*, 1999, **40**, 8805-8809 (*synth*)
Bai, D.L. *et al., Curr. Med. Chem.*, 2000, **7**, 355-374 (*rev, chem, pharmacol*)
Haudrechy, A. *et al., Tetrahedron*, 2000, **56**, 3181-3187 (*synth*)
Camps, P. *et al., Tetrahedron*, 2000, **56**, 4541-4553 (*synth*)
Wang, R. *et al., Acta Pharmacol. Sin.*, 2006, **27**, 1-26 (*rev*)
Choo, C.Y. *et al., Bioorg. Med. Chem.*, 2007, **15**, 1703-1707 (*Carinatumine A*)
Ma, X. *et al., J. Ethnopharmacol.*, 2007, **113**, 15-34 (*rev*)
Niemitz, M. *et al., Magn. Reson. Chem.*, 2007, **45**, 878-882 (*pmr*)
Lucey, C. *et al., Org. Biomol. Chem.*, 2007, **5**, 301-306 (*synth*)
Little, J.T. *et al., Expert Opin. Invest. Drugs*, 2008, **17**, 209-215 (*pharmacol*)
Ma, X. *et al., Phytochemistry*, 2008, **69**, 2022-2028 (*Huperzine A, isol*)

Huperzine B H-376

*8,15-Didehydro-1(18*H*)-lycodinone, 9CI. Fordimine*
[103548-82-9]



Absolute Configuration

$C_{16}H_{20}N_2O$ 256.347
Unclear whether Fordimine, assigned the same struct. as Huperzine B but claimed to be a new alkaloid, is a stereoisomer of Huperzine B. Alkaloid from *Lycopodium serratum*, *Huperzia serrata* and *Phlegmariurus fordii* (preferred genus name *Huperzia*). Exhibits marked anticholinesterase activity. Mp 270-271°. $[\alpha]_D^{25}$ -54.2 (c, 0.203 in MeOH). λ_{max} 231 (ϵ 10200); 313 (ϵ 7760) (EtOH) (Derep).

► OL2780000

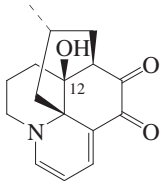
N^{α}-*Me:* **N-*Methylhuperzine B***
[110037-64-4]
$C_{17}H_{22}N_2O$ 270.374
Alkaloid from *Lycopodium serratum* (*Huperzia serrata*) (Lycopodiaceae). This N atom is normally tertiary in Lycopodium alkaloids and does not have a locant number in the usual numbering scheme.

*11*R-*Hydroxy: 11-Hydroxyhuperzine B.* ***Carinatumine B***
[929103-66-2]
$C_{16}H_{20}N_2O_2$ 272.346
Alkaloid from *Lycopodium carinatum*. Amorph. solid. $[\alpha]_D^{25}$ -16 (c, 0.3 in MeOH).

Liu, J.-S. *et al., Can. J. Chem.*, 1986, **64**, 837-839 (*uv, ir, pmr, cmr, struct*)
Liu, J. *et al., Huaxue Xuebao*, 1986, **44**, 1035-1040; *CA*, **107**, 115821p (*struct*)
Li, J. *et al., Zhongcaoyao*, 1987, **18**, 50-51; *CA*, **107**, 93545x (*N-Methylhuperzine B*)
Chu, B.M. *et al., Yaoxue Xuebao*, 1988, **23**, 115-121; *CA*, **109**, 70347 (*Fordimine*)
Wu, B. *et al., J.O.C.*, 1997, **62**, 5978-5981 (*synth, pmr, cmr*)
Lee, I.Y.C. *et al., Tet. Lett.*, 2004, **45**, 285-287 (*synth*)
Choo, C.Y. *et al., Bioorg. Med. Chem.*, 2007, **15**, 1703-1707 (*Carinatumine B*)

Huperzine F′ H-377

[927704-42-5]



Absolute Configuration

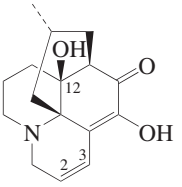
$C_{16}H_{19}NO_3$ 273.331
Alkaloid from *Huperzia serrata*. Amorph. purple powder. Mp 117-119° dec. $[\alpha]_D^{23}$ -3182 (c, 0.004 in MeOH). λ_{max} 204 (log ϵ 1.01); 287 (log ϵ 0.4); 556 (log ϵ 1.23) (MeOH).

12-Deoxy: ***Huperzine E′***
[927704-41-4]
$C_{16}H_{19}NO_2$ 257.332
Alkaloid from *Huperzia serrata*. Amorph. purple powder. $[\alpha]_D^{23}$ -4750 (c, 0.004 in MeOH). λ_{max} 205 (log ϵ 1.48); 286 (log ϵ 0.78); 547 (log ϵ 2.62) (MeOH).

Wang, H.-B. *et al., Helv. Chim. Acta*, 2007, **90**, 153-157 (*isol, pmr, cmr*)

Huperzine F H-378

[371918-18-2]



Absolute Configuration

$C_{16}H_{21}NO_3$ 275.347
Alkaloid from *Huperzia serrata*.

2,3-Dihydro: ***Huperzine O***
[314285-43-3]
$C_{16}H_{23}NO_3$ 277.363
Alkaloid from *Huperzia serrata*.

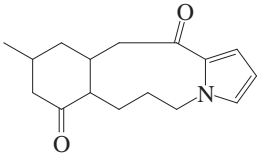
12-Deoxy: ***Huperzine E***
[371918-17-1]
$C_{16}H_{21}NO_2$ 259.347
Alkaloid from *Huperzia serrata*.

12-Deoxy, 2-chloro: ***2-Chlorohuperzine E***
[927704-40-3]
$C_{16}H_{20}ClNO_2$ 293.792
Alkaloid from *Huperzia serrata*. Yellowish needles. Mp 149-150° dec. $[\alpha]_D^{25}$ -63.4 (c, 0.46 in $CHCl_3$). λ_{max} 204 (log ϵ 0.72); 324 (log ϵ 2.53) (MeOH).

Wang, B.-D. *et al., Youji Huaxue*, 2000, **20**, 812-814; 2001, **21**, 606-610; *CA*, **134**, 68763; **135**, 344620t (*isol, struct*)
Wang, H.-B. *et al., Helv. Chim. Acta*, 2007, **90**, 153-157 (*2-Chlorohuperzine E*)

Huperzine H H-379

[245432-14-8]

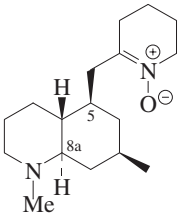


$C_{16}H_{21}NO_2$ 259.347
Alkaloid from *Huperzia serrata*. Needles. Mp 168-170°. $[\alpha]_D$ -216 (c, 0.02 in $CHCl_3$).

Gao, W.Y. *et al., Chin. Chem. Lett.*, 1999, **10**, 463-466

Huperzine J H-380

[316821-09-7]



Absolute Configuration

$C_{17}H_{30}N_2O$ 278.437
Alkaloid from *Huperzia serrata* and *Lycopodium serratum*. Prisms (EtOAc/hexane). Mp 120-123°. $[\alpha]_D^{20}$ +32.2 (c, 0.05 in $CHCl_3$).

N^{b}-*Oxide:* ***Huperzine L***
[316821-11-1]
$C_{17}H_{30}N_2O_2$ 294.436
Alkaloid from *Huperzia serrata*. Yellowish oil. $[\alpha]_D^{20}$ +69.4 (c, 0.08 in $CHCl_3$).

N-*De-Me:* ***Lycoposerramine X***. *Carinatumine C*
[927813-32-9]
$C_{16}H_{28}N_2O$ 264.41
Alkaloid from *Lycopodium carinatum* and *Lycopodium serratum*. Amorph. powder. $[\alpha]_D^{25}$ +35 (c, 0.3 in MeOH) (Carinatumine C).

5-Epimer: ***Lycoposerramine Y***
[927813-33-0]
$C_{17}H_{30}N_2O$ 278.437
Alkaloid from *Lycopodium serratum*. Amorph. powder.

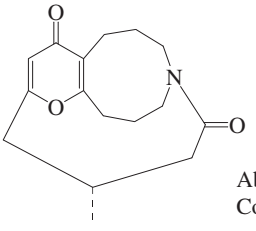
5-Epimer, N-*de-Me:* ***Huperzine K***
[316821-10-0]
$C_{16}H_{28}N_2O$ 264.41
Alkaloid from *Huperzia serrata*. Yellowish oil. $[\alpha]_D^{20}$ -16.8 (c, 0.06 in $CHCl_3$).

*8*a-*Epimer,* N-*de-Me:* ***Lycoposerramine Z***
[927813-34-1]
$C_{16}H_{28}N_2O$ 264.41
Alkaloid from *Lycopodium serratum*. Amorph. powder.

Gao, W. *et al., Planta Med.*, 2000, **66**, 664-667 (*Huperzines J-L*)
Katakawa, K. *et al., Heterocycles*, 2006, **69**, 223-229 (*Lycoposerramines X, Y and Z, cryst struct*)
Choo, C.Y. *et al., Bioorg. Med. Chem.*, 2007, **15**, 1703-1707 (*Carinatumine C*)

Huperzine P H-381

[292601-58-2]



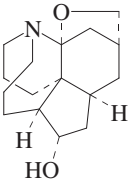
Absolute Configuration

$C_{16}H_{21}NO_3$ 275.347
Alkaloid from *Huperzia serrata*. Prisms. Mp 320.5-321.5°. $[\alpha]_D^{25}$ +2.5 (c, 1 in $CHCl_3$).

Tan, C.-H. *et al., Tet. Lett.*, 2000, **41**, 5733-5736

Huperzine Q H-382

[441756-04-3]



$C_{16}H_{25}NO_2$ 263.379
Alkaloid from the whole plant of *Hu-*

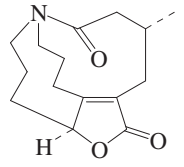
perzia serrata. Prisms (Me_2CO). Mp 192-194°. $[\alpha]_D^{25}$ -0.28 (c, 0.44 in $CHCl_3$).

N-*Oxide:* ***Huperzine Q* N-*oxide***. *Oxyhuperzine Q*
[441756-05-4]
$C_{16}H_{25}NO_3$ 279.378
Alkaloid from the whole plant of *Huperzia serrata*. Amorph. powder. $[\alpha]_D^{25}$ +0.06 (c, 0.12 in $CHCl_3$).

Tan, C.-H. *et al., Helv. Chim. Acta*, 2002, **85**, 1058-1061 (*isol, pmr, cmr, ms, cryst struct*)

Huperzine R H-383

[443776-29-2]



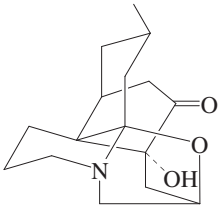
Relative Configuration

$C_{15}H_{21}NO_3$ 263.336
Alkaloid from the whole plant of *Huperzia serrata*. Prisms (petrol/Me_2CO). Mp 189-191°. $[\alpha]_D^{25}$ -0.1 (c, 0.42 in $CHCl_3$).

Tan, C.-H. *et al., J. Nat. Prod.*, 2002, **65**, 1021-1022 (*isol, pmr, cmr, cryst struct*)

Huperzine S H-384

[618457-04-8]

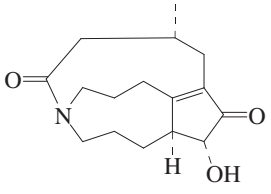


$C_{16}H_{23}NO_3$ 277.363
Alkaloid from *Huperzia serrata*. Needles (petrol/Me_2CO). Mp 146-148°. $[\alpha]_D^{25}$ +156.6 (c, 1.34 in $CHCl_3$).

Tan, C.-H. *et al., Can. J. Chem.*, 2003, **81**, 315-318 (*isol, pmr, cmr*)

Huperzine T H-385

[618457-05-9]

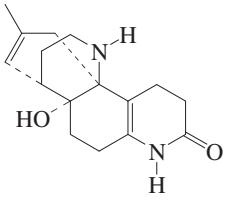


$C_{16}H_{23}NO_3$ 277.363
Alkaloid from *Huperzia serrata*. Amorph. powder. $[\alpha]_D^{25}$ -1.5 (c, 0.07 in $CHCl_3$).

Tan, C.-H. *et al., Can. J. Chem.*, 2003, **81**, 315-318 (*isol, cd, pmr, cmr*)

Huperzine U H-386

[618457-06-0]

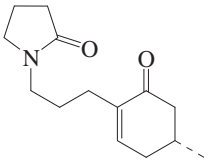


$C_{16}H_{22}N_2O_2$
Alkaloid from *Huperzia serrata*. Amorph. powder. Mp >300° dec. Racemic.

Tan, C.-H. *et al., Can. J. Chem.*, 2003, **81**, 315-318 (*isol, cd, pmr, cmr*)

Huperzine W H-387

[439694-98-1]

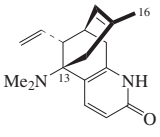


$C_{14}H_{21}NO_2$ 235.325
Alkaloid from the whole plant *Huperzia serrata*. Yellowish oil.

Tan, C.H. *et al., Chin. Chem. Lett.*, 2002, **13**, 331-332 (*isol, pmr, cmr*)

Huperzinine H-388

[119188-49-7]



Absolute Configuration

$C_{17}H_{22}N_2O$ 270.374
Alkaloid from *Lycopodium serratum* (also given as *Huperzia serrata*; preferred genus name *Lycopodium*) and *Lycopodium casuarinoides* (*Lycopodiastrum casuarinoides*) (Lycopodiaceae). Shows modest antiacetylcholinesterase activity. Needles (CH_2Cl_2/Me_2CO). Mp 251-253° (249-250°). $[\alpha]_D$ -26.9 (c, 0.2056 in $CHCl_3$) (-25.3).

N^{13}-*Oxide:* ***Huperzinine* N^{13}-*oxide***
$C_{17}H_{22}N_2O_2$ 286.373
Alkaloid from *Lycopodium casuarinoides*. Powder. $[\alpha]_D^{20}$ -8.1 (c, 0.73 in MeOH). λ_{max} 234 (log ε 4); 306 (log ε 3.84) (MeOH).

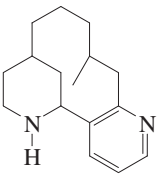
N-*De-Me:* **N-*Demethylhuperzinine***
$C_{16}H_{20}N_2O$ 256.347
Alkaloid from aerial parts of *Lycopodiastrum casuarinoides* (Lycopodiaceae). Exhibits anticholinesterase activity. Amorph. powder.

N,N-*Di-de-Me:* ***Huperzine C***
[163089-71-2]
$C_{15}H_{18}N_2O$ 242.32
Alkaloid from *Lycopodium casuarinoides* (*Lycopodiastrum casuarinoides*) (Lycopodiaceae). Shows antiacetylcholinesterase activity. Cryst. (Me_2CO). Mp 233-235°.

16-Hydroxy: ***Huperzine D***
[163047-27-6]
$C_{17}H_{22}N_2O_2$ 286.373
Alkaloid from *Lycopodium casuarinoides* (*Lycopodiastrum casuarinoides*) (Lycopodiaceae). Cryst. (CH_2Cl_2/MeOH). Mp 269-271°. No antiacetylcholinesterase activity.

Shen, Y.-C. *et al., J. Nat. Prod.*, 1994, **57**, 824-826 (*isol, pmr, cmr, N-Demethylhuperzinine*)
Liu, J.-S. *et al., Phytochemistry*, 1994, **37**, 1759-1761 (*Huperzine C, Huperzine D*)
Yin, S. *et al., Helv. Chim. Acta*, 2006, **89**, 138-143 (*isol, pmr, cmr, N-oxide*)

Huperzinine C H-389

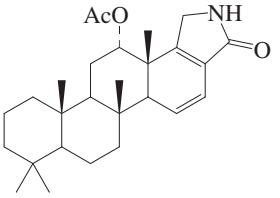


$C_{16}H_{24}N_2$ 244.379
Alkaloid from *Huperzia serrata*. Mp 42-44°. λ_{max} 268 (log ε 3.6) (no solvent reported).

Yuan, S.-Q. *et al., Yaoxue Xuebao*, 2004, **39**, 116-118 (*isol, pmr, cmr*)

Hyatelactam H-390

[894786-47-1]

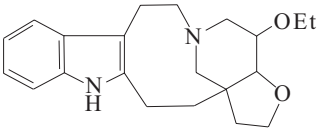


$C_{27}H_{39}NO_3$ 425.61
Constit. of *Hyatella intestinalis*. Amorph. solid. $[\alpha]_D$ +56 (c, 0.1 in $CHCl_3$). λ_{max} 217 (ε 7900); 278 (ε 2500) (MeOH).

Hernández-Guerrero, C.J. *et al., Tetrahedron*, 2006, **62**, 5392-5400 (*Hyatelactam*)

Hyderabadine H-391

[88607-18-5]

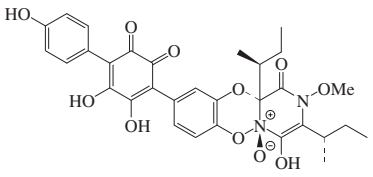


$C_{21}H_{28}N_2O_2$ 340.464
Alkaloid from the leaves of *Ervatamia coronaria* (Apocynaceae). Amorph.

Atta-ur-Rahman, *et al., Z. Naturforsch., B*, 1983, **38**, 1310 (*isol, uv, ir, pmr, cmr, ms,*

struct)

Hydnellin B H-392



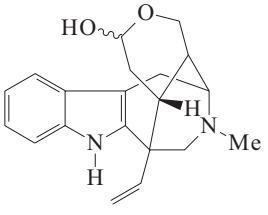
$C_{31}H_{32}N_2O_{11}$ 608.601

Closely related to Sarcodonin, S-76. Isol. from *Hydnellum suaveolens*. $[\alpha]_D^{20}$ +12.6 (c, 0.7 in $CHCl_3$) (as tetra-Ac). Not obt. in pure state.

Hashimoto, T. *et al., Chem. Pharm. Bull.*, 2006, **54**, 912-914 (*isol, pmr, cmr*)

Hydrakouminol H-393

[105418-81-3]

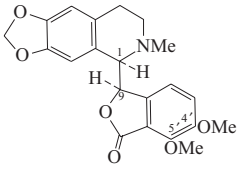


$C_{20}H_{24}N_2O_2$ 324.422

Isol. from a long-stored extract of *Gelsemium elegans* in hydrochloric acid. Prob. artifact.

Liu, Z. *et al., Huaxue Xuebao*, 1986, **44**, 239; *CA*, **106**, 18909v

Hydrastine H-394



(1*R*,9*R*)–*form*

$C_{21}H_{21}NO_6$ 383.4

All 4 stereoisomers as well as both racemates have been isol. from plants. Other spp. from which hydrastine(s) of unspecified config. have been isol. include *Corydalis fimbrillifera, Stylomecon heterophylla, Berberis laurina* and *Hydrastis canadensis* (Papaveraceae, Berberidaceae). Antihypertensive agent. Antibacterial, sedative agent. Has been used clinically to treat uterine haemorrhagia. Claimed use in ophthalmology for pupil dilation and topical anaesthesia. Log P 2.76 (uncertain value) (calc). Some stereoisomers may be artifacts.

▶ MU6030000

(1*R*,9*R*)-*form*

(-)-α-Hydrastine. Stylophylline

[4370-85-8]

Alkaloid from *Stylomecon heterophylla* and *Hydrastis canadensis* (Papaveraceae). Mp 162-163.5°. $[\alpha]_D$ -141 (c, 1.0 in $CHCl_3$).

(1*R*,9*S*)-*form*

(-)-β-Hydrastine

[118-08-1]

Alkaloid from *Hydrastis canadensis* and *Berberis laurina* (Papaveraceae, Berberidaceae). Cryst. (EtOH). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 133-135°. $[\alpha]_D$ -68 ($CHCl_3$).

▶ Adverse human effects by ingestion. Causes convulsions and gastro-intestinal disturbance. LD_{50} (rat, ipr) 104 mg/kg.

MU6030000

O$^{4'}$-*De-Me:* ***Isohydrastidine***

[76851-95-1]

$C_{20}H_{19}NO_6$ 369.373

Alkaloid from *Hydrastis canadensis* and *Corydalis pseudo-adunca* (Papaveraceae). Cryst. (EtOAc/hexane). Mp 163-166°. $[\alpha]_D^{20}$ -77.7 (c, 0.6 in $CHCl_3$).

O$^{5'}$-*De-Me:* ***Hydrastidine***

[76851-94-0]

$C_{20}H_{19}NO_6$ 369.373

Alkaloid from *Hydrastis canadensis* (Papaveraceae). Cryst. (EtOAc/hexane). Mp 172-174°. $[\alpha]_D^{20}$ -60.3 (c, 0.7 in $CHCl_3$).

(1*S*,9*S*)-*form*

(+)-α-Hydrastine

Alkaloid from *Fumaria schleicheri, Fumaria parviflora* and *Fumaria vaillantii* (Papaveraceae). Cryst. (EtOH). Mp 159-161°. $[\alpha]_D$ +127.7 (c, 1.1 in $CHCl_3$).

(1*S*,9*R*)-*form*

(+)-β-Hydrastine

Alkaloid from *Corydalis gortschakovii, Corydalis pseudo-adunca* and *Corydalis stricta* (Papaveraceae). Cryst. (MeOH). Mp 131-132°. $[\alpha]_D^{18}$ +63 ($CHCl_3$).

O^4-*De-Me: Corftaline.* ***Corphthaline***

[77492-95-6]

$C_{20}H_{19}NO_6$ 369.373

Alkaloid from *Corydalis pseudo-adunca* (Papaveraceae).

(1*RS*,9*RS*)-*form*

(±)-α-Hydrastine. Hydrastine b

Alkaloid from *Fumaria schleicheri* (Papaveraceae), also synthetic. Mp 137° Mp 149°. pK_a 6.63 (15°).

(1*RS*,9*SR*)-*form*

(±)-β-Hydrastine. Hydrastine a

Alkaloid from *Fumaria schleicheri* (Papaveraceae). Cryst. (EtOH). Mp 153° (151°).

Haworth, R.D. *et al., J.C.S.*, 1950, 1776 (*synth*)
Ohta, M. *et al., Tet. Lett.*, 1963, 859 (*abs config*)
Safe, S. *et al., Can. J. Chem.*, 1964, **42**, 160 (*pmr, config*)
Snatzke, G. *et al., Tetrahedron*, 1969, **25**, 5059 (*ord*)
Hughes, D.W. *et al., Can. J. Chem.*, 1976, **54**, 2252 (*cmr*)
Moniot, J.L. *et al., J.A.C.S.*, 1976, **98**, 6714 (*synth*)
Kametani, T. *et al., J.C.S. Perkin 1*, 1976, 1221 (*synth*)
Moniot, J.L. *et al., Heterocycles*, 1978, **9**, 145 (*pmr*)
Holland, H.L. *et al., Can. J. Chem.*, 1979, **57**, 1588-1597 (*biosynth*)
Messina, I. *et al., Gazz. Chim. Ital.*, 1980, **110**, 539 (*Hydrastidine, Isohydrastidine*)
Israilov, I.A. *et al., Khim. Prir. Soedin.*, 1980, 851 (*Corphthaline*)
Blaskó, G. *et al., J. Nat. Prod.*, 1982, **45**, 105 (*occur*)
Shono, T. *et al., J.O.C.*, 1983, **48**, 1621 (*synth*)
Wasserman, H.H. *et al., Tet. Lett.*, 1989, **30**, 869 (*synth*)
Rajnikant, *et al., Acta Cryst. C*, 1993, **49**, 504 (*cryst struct*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 1377
Seger, C. *et al., Magn. Reson. Chem.*, 2004, **42**, 882-886 (*pmr, cmr*)

1,2-Hydrazinedicarboxylic acid, 9CI H-395

Bicarbamic acid, 8CI. Hydrazodicarboxylic acid. Hydrazoformic acid. Hydrazodiformic acid. Hydrazobisformic acid

[5814-86-8]

HOOCNHNHCOOH

$C_2H_4N_2O_4$ 120.065

Not isol. in free state. Ester derivs. used as dispersants in lubricating oils and as blowing agents for polymer foams.

Monoamide: 2-(Aminocarbonyl)hydrazinecarboxylic acid, 9CI

$C_2H_5N_3O_3$ 119.08

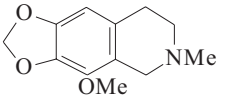
Constit. of the seeds of *Butea monosperma*.

Sharma, S. *et al., Indian J. Chem., Sect. B*, 1991, **30**, 715-716 (*isol, amide*)

Hydrocotarnine H-396

5,6,7,8-Tetrahydro-4-methoxy-6-methyl-1,3-dioxolo[4,5-g]isoquinoline, 9CI. 1,2,3,4-Tetrahydro-8-methoxy-2-methyl-6,7-methylenedioxyisoquinoline

[550-10-7]



$C_{12}H_{15}NO_3$ 221.255

Alkaloid from opium (*Papaver somniferum*). (Papaveraceae). Reduction prod. of Cotarnine in N-292. Plates (petrol). Mp 55.5-56.5°. Bp_{15} 182-183°.

▶ JI4825000

Hydrochloride:
Cryst. (EtOH). Mp 215-217° Mp 247-249° dec.

Hydrobromide: Mp 237-238° (229°).

Picrate: Mp 173°.

Hesse, O. *et al., Annalen*, (Suppl.), 1872, **8**, 261 (*isol*)
Beckett, G.H. *et al., J.C.S.*, 1875, **28**, 573 (*synth*)
Bandow, E. *et al., Ber.*, 1898, **31**, 1577 (*synth*)
Pyman, F.L. *et al., J.C.S.*, 1912, **101**, 1595 (*synth*)
Dey, B.B. *et al., J. Indian Chem. Soc.*, 1935, **12**, 421 (*synth*)
Clayson, D.B. *et al., J.C.S.*, 1949, 2016 (*synth*)
Schneider, W. *et al., Annalen*, 1958, **615**, 34 (*synth*)

Habermehl, G. *et al., Annalen*, 1970, **742**, 138 (*ms*)
Charnock, G.A. *et al., J.C.S. Perkin 2*, 1972, 856 (*synth, pmr, ms*)
Göber, B. *et al., Pharmazie*, 1973, **28**, 221 (*synth*)
Harsányi, K. *et al., Annalen*, 1975, 1201 (*synth*)
Minamikawa, J. *et al., Can. J. Chem.*, 1979, **57**, 1720 (*synth*)

Hydrocotyline H-397

$C_{22}H_{33}NO_8$ 439.505

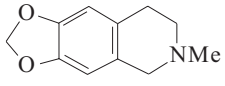
Struct. unknown. Alkaloid from *Hydrocotyle asiatica*.

Basu, N.K. *et al., Q. J. Pharm. Pharmacol.*, 1947, **20**, 135-136; *CA*, **42**, 1025g (*isol*)

Hydrohydrastinine H-398

5,6,7,8-Tetrahydro-6-methyl-1,3-dioxolo[4,5-g]isoquinoline, 9CI. 1,2,3,4-Tetrahydro-2-methyl-6,7-methylenedioxyisoquinoline

[494-55-3]



$C_{11}H_{13}NO_2$ 191.229

Alkaloid from *Corydalis cava* and *Corydalis tuberosa* (Papaveraceae). Degradn. prod. of hydrastine and cotarnine. Needles (petrol). Mp 66° (61-62°).

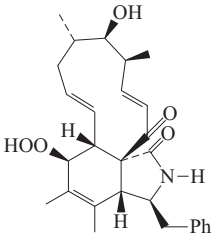
Hydrochloride:
Cryst. (H_2O or EtOH). Mp 276-278° (263-269°, 274°).

Hydrobromide: Mp 276-278°.

Picrate: Mp 175-176°.

Pyman, F.L. *et al., J.C.S.*, 1912, **101**, 1595 (*synth*)
Späth, E. *et al., Ber.*, 1931, **64**, 1131 (*isol*)
Clayson, D.B. *et al., J.C.S.*, 1949, 2016 (*synth*)
Schneider, W. *et al., Annalen*, 1958, **615**, 34 (*synth*)
Bobbitt, J.M. *et al., J.O.C.*, 1967, **32**, 2225 (*synth*)
Habermehl, G. *et al., Annalen*, 1970, **742**, 138 (*ms*)
Göber, B. *et al., Pharmazie*, 1973, **28**, 221 (*synth*)
Moniot, J.L. *et al., Heterocycles*, 1978, **9**, 145 (*pmr*)
Moniot, J.L. *et al., J.O.C.*, 1979, **44**, 4337 (*synth*)
Ruchirawat, S. *et al., Synth. Commun.*, 1984, **14**, 1221 (*synth, pmr, ms*)
Takano, S. *et al., Heterocycles*, 1993, **35**, 47 (*synth*)

7-Hydroperoxy-17-hydroxy-16,18-dimethyl-10-phenyl[11]cytochalasa-5,13,19-triene-1,21-dione H-399



Relative configuration

$C_{28}H_{35}NO_5$ 465.588

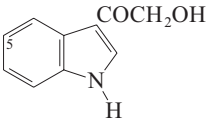
Metab. from an unidentified *Daldinia* sp. Amorph. solid. $[\alpha]_D$ +16.9 (c, 0.09 in MeOH).

Buchanan, M.S. *et al., Phytochemistry*, 1996, **41**, 821 (*isol, pmr, cmr, ms, struct*)

3-(Hydroxyacetyl)-1*H*-indole H-400

2-Hydroxy-1-(1H-indol-3-yl)ethanone, 9CI

[2400-51-3]



$C_{10}H_9NO_2$ 175.187

Alkaloid from the red marine alga *Prionitis lanceolata*. Also isol. from the sponge *Tedania ignis* and from liquid cultures of the fungus *Lactarius deliciosus*. Plant growth regulator. CNS stimulant. Needles (EtOAc); cryst. (H_2O or C_6H_6). Mp 162-163° Mp 173-174°. λ_{max} 212 (ϵ 10232); 240 (ϵ 5500); 294 (ϵ 4466) (MeOH) (Berdy).

▶ KM5779000

Oxime:
$C_{10}H_{10}N_2O_2$ 190.201
Mp 116-118°.

O-*Ac:* [27536-15-8]
$C_{12}H_{11}NO_3$ 217.224
Cryst. (H_2O). Mp 140°.

O-*Benzoyl:* [2400-52-4]
$C_{17}H_{13}NO_3$ 279.295
Cryst. (MeOH). Mp 187-189°.

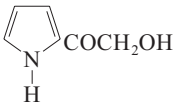
N,O-*Di-Ac:*
$C_{14}H_{13}NO_4$ 259.261
Oil. Mp 0° approx.

5-Hydroxy: 5-Hydroxy-3-(hydroxyacetyl)-1H-indole. ***Hyrtiosin A***†
[132922-98-6]
$C_{10}H_9NO_3$ 191.186
Alkaloid from the marine sponge *Hyrtios erecta*. Needles. Mp 196-197°. λ_{max} 215 (ϵ 59200); 252 (ϵ 35000); 270 (ϵ 22400); 303 (ϵ 23300) (MeOH) (Berdy).

[34951-71-8 , 34951-79-6]

Suvorov, N.N. *et al., Khim. Geterotsikl. Soedin.*, 1965, 265; 1971, 778; *Chem. Heterocycl. Compd.*, 1965, 173; 1971, 725 (*synth, oxime, ir*)
U.K. Pat., 1970, 1 183 919; *CA*, **72**, 132517v (*synth, O-Ac*)
Vereshchagin, A.L. *et al., Khim. Geterotsikl. Soedin.*, 1983, 46; *Chem. Heterocycl. Compd. (Engl. Transl.)*, 1983, 40 (*O-Ac*)
Tsujii, S. *et al., J.O.C.*, 1988, **53**, 5446 (*synth*)
Bernart, M. *et al., Phytochemistry*, 1990, **29**, 3697 (*isol*)
Kobayashi, J. *et al., Tetrahedron*, 1990, **46**, 7699 (*Hyrtiosin A*)
Dillman, R.L. *et al., J. Nat. Prod.*, 1991, **54**, 1056 (*isol, uv, pmr, cmr, ms*)
Ayer, W.A. *et al., J. Nat. Prod.*, 1994, **57**, 839 (*isol, pmr, ms, struct*)
Böhlendorf, B. *et al., Annalen*, 1996, 49 (*isol, ir, pmr, cmr, ms*)

2-(Hydroxyacetyl)-1*H*-pyrrole H-401



$C_6H_7NO_2$ 125.127

N-*(2-Acetoxyethyl)*, O-*Ac:* ***2-(Acetoxyacetyl)-1-(2-acetoxyethyl)-1H-pyrrole***
[136396-66-2]
$C_{12}H_{15}NO_5$ 253.254
Constit. of the red alga *Gracilariopsis lemaneiformis*. Oil.

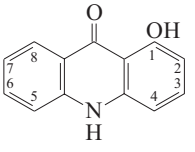
N-*(2-Acetoxypropyl)*, O-*Ac:* ***2-(Acetoxyacetyl)-1-(2-acetoxypropyl)-1H-pyrrole***
[136396-64-0]
$C_{13}H_{17}NO_5$ 267.281
Constit. of red alga *Gracilariopsis lemaneiformis*. Oil. $[\alpha]_D^{23}$ -47.2 (c, 0.29 in MeOH).

Jiang, Z.D. *et al., J. Nat. Prod.*, 1991, **54**, 403-407 (*isol, uv, ir, pmr, cmr, ms, struct, derivs*)

1-Hydroxyacridone H-402

1-Hydroxy-9(10H)-acridinone, 9CI

[65582-54-9]



$C_{13}H_9NO_2$ 211.22

Constit. of the roots of *Boenninghausenia albiflora* (Rutaceae). Yellow needles (Me_2CO). Mp 280° (subl., dec.).

N-*Me:* ***1-Hydroxy-10-methylacridone***
[16584-54-6]
$C_{14}H_{11}NO_2$ 225.246
Alkaloid from the roots of *Boenninghausenia albiflora* and *Ruta graveolens* (rue). Also isol. from the callus cultures obt. from the meristematic cells of *Ruta graveolens* (Rutaceae). Yellow needles (Me_2CO). Mp 192-194°.

Me ether, N-*Me:* ***1-Methoxy-10-methylacridone***
[16584-58-0]
$C_{15}H_{13}NO_2$ 239.273
Alkaloid from a new Australian species, assigned as aff. *Samadera bidwillii*. Yellow amorph. solid. Mp 164°.

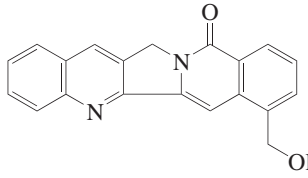
Hughes, G.K. *et al., Aust. J. Sci. Res., Ser. A*, 1952, **5**, 206 (*synth*)
Reisch, J. *et al., Experientia*, 1971, **27**, 1005 (*deriv, isol, pmr, struct*)
Scharlemann, W. *et al., Z. Naturforsch., B*, 1972, **27**, 806 (*deriv, isol, uv*)
Rózsa, Zs. *et al., Pharmazie*, 1975, **30**, 753 (*isol, deriv*)
Adams, J.H. *et al., J.C.S. Perkin 1*, 1977, 2173 (*deriv, synth, uv, ir, pmr*)
Rózsa, Zs. *et al., Phytochemistry*, 1978, **17**, 169 (*uv, ir, pmr, ms, deriv, isol, synth*)
Gibbons, S. *et al., Phytochemistry*, 1997, **44**, 1109 (*1-Methoxy-10-methylacridone*)

Coppola, G.M. *et al., Org. Prep. Proced. Int.*, 1999, **31**, 225-227 (*synth, ir, pmr*)

22-Hydroxyacuminatine H-403

7-(Hydroxymethyl)benz[6,7]indolizino[1,2-b]quinolin-11(13H)-one, 9CI

[123086-77-1]



$C_{20}H_{14}N_2O_2$ 314.343

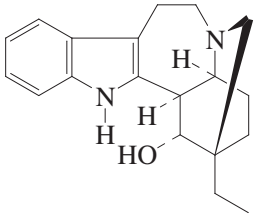
Prob. a rearranged indole alkaloid (camptothecin type). Alkaloid from the seeds of *Camptotheca acuminata*. Cytotoxic agent. Yellow cryst. (Me_2CO). Mp 258-260° dec. The parent Acuminatine appears to be unknown. λ_{max} 222 (log ϵ 4.45); 251 (log ϵ 4.51); 274 (sh) (log ϵ 4); 285 (log ϵ 4); 313 (sh) (log ϵ 3.91); 365 (sh) (log ϵ 4.21); 380 (log ϵ 4.23) (MeOH) (Berdy).

Aldehyde: ***22-Oxoacuminatine***
[850415-08-6]
$C_{20}H_{12}N_2O_2$ 312.327
Alkaloid from the root bark of *Camptotheca acuminata*. Amorph. yellow powder. λ_{max} 221 (log ϵ 4.43); 251 (log ϵ 4.38); 285 (log ϵ 4.01); 381 (log ϵ 4.26) (MeOH).

Lin, L.-Z. *et al., Phytochemistry*, 1989, **28**, 1295-1297 (*isol, uv, pmr*)
Zhang, Z. *et al., Planta Med.*, 2004, **70**, 1216-1221 (*22-Oxoacuminatine*)
Ma, Z. *et al., Tet. Lett.*, 2004, **45**, 6721-6723 (*synth*)
Xiao, X. *et al., J. Med. Chem.*, 2006, **49**, 1408-1412 (*synth, pharmacol*)
Babjak, M. *et al., Org. Biomol. Chem.*, 2006, **4**, 407-409 (*synth*)
Zhou, H.-B. *et al., J.O.C.*, 2007, **72**, 6270-6272 (*synth*)

16-Hydroxyalloibogamine H-404

17-Hydroxyalloibogamine



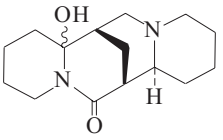
$C_{19}H_{24}N_2O$ 296.411

(±)-*form*
Minor alkaloid from the stem and root of *Strychnos ngouniensis* (Loganiaceae). Amorph. First natural *allo*-iboga alkaloid.

Massiot, G. *et al., Chem. Comm.*, 1983, 1018-1019 (*uv, ir, pmr, cmr, ms, cryst struct*)

Hydroxyaphylline H-405

Oxaphylline



$C_{15}H_{24}N_2O_2$ 264.367

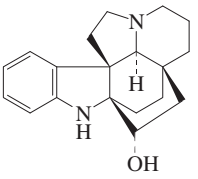
Probable struct. Alkaloid from *Anabasis aphylla* (Chenopodiaceae). Needles (Me_2CO). Mp 165-167°. $[\alpha]_D$ +39.2. Dehydrates to Aphyllidine salts on treatment with acids.

Methiodide: Mp 223-225°.

Sadykov, A.S. *et al., Zh. Obshch. Khim.*, 1960, **30**, 1736; *J. Gen. Chem. USSR (Engl. Transl.)*, 1723 (*isol, struct*)
Sadykov, A.S. *et al., Abh. Dtsch. Akad. Wiss. Berlin, Kl. Chem., Geol. Biol.*, 1966, 279; *CA*, **67**, 32865k (*isol*)

16-Hydroxyaspidofractinine H-406

Aspidofractinin-16-ol



Absolute Configuration

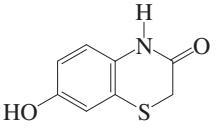
$C_{19}H_{24}N_2O$ 296.411

Alkaloid from leaves of *Kopsia officinalis*. Amorph. powder. $[\alpha]_D^{26}$ -15.7 (c, 0.33 in $CHCl_3$). λ_{max} 242 ; 290 ; 391 ($CHCl_3$).

Zhou, H. *et al., Helv. Chim. Acta*, 2006, **89**, 515-519 (*isol, pmr, cmr*)

7-Hydroxy-2*H*-1,4-benzothiazin-3(4*H*)-one, 9CI H-407

[91375-75-6]



$C_8H_7NO_2S$ 181.215

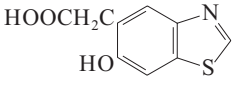
Prod. by the marine-derived *Halomonas* sp. RK377. Cryst. (Me_2CO). Mp 217°.

Jones, G.H. *et al., J. Med. Chem.*, 1987, **30**, 295-303 (*synth*)
Crescenzi, O. *et al., Gazz. Chim. Ital.*, 1990, **120**, 21-24 (*synth*)
Liang, L. *et al., Dissertation*, Univ. of Göttingen, 2003, (*isol, pmr, cmr, ms*)

6-Hydroxy-5-benzothiazoleacetic acid, 9CI H-408

C 304A. M 4582. Antibiotic C 304A. Antibiotic M 4582

[115585-81-4]



$C_9H_7NO_3S$ 209.225

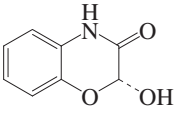
Prod. by an *Actinosynnema* sp. and *Paecilomyces lilacinus*. Aldose reductase inhibitor. λ_{max} 226 ; 247 ; 274 ; 291 ; 305 (MeOH) (Berdy).

Japan. Pat., 1988, 88 30 493; *CA*, **109**, 91257 (*isol*)
Japan. Pat., 1989, 89 181 793; *CA*, **112**, 96995 (*isol*)

2-Hydroxy-2*H*-1,4-benzoxazin-3(4*H*)-one, 9CI H-409

***Blepharigenin**. HBOA*

[27779-92-6]



(*R*)-*form*

$C_8H_7NO_3$ 165.148

(*R*)-*form*
Constit. of juvenile wheat (*Triticum aestivum*). Biosynth. intermed. of DIBOA. Yellow needles. Mp 207°.

O-*β*-D-*Glucopyranoside:* ***Blepharin**. HBOA-Glc*
[27625-86-1]
$C_{14}H_{17}NO_8$ 327.29
Isol. from *Blepharis edulis* (Acanthaceae) and seedlings of rye and sweet corn (*Zea mays*). Mp 226-227°. $[\alpha]_D$ +127.3 (H_2O).

O-*Ac:* [23520-35-6]
$C_{10}H_9NO_4$ 207.185
Cryst. (MeOH). Mp 177°.

O-*Benzoyl:*
$C_{15}H_{11}NO_4$ 269.256
Cryst. (MeOH/EtOAc). Mp 207°.

Me ether: 2-Methoxy-2H-1,4-benzoxazin-3(4H)-one, 9CI
[27392-93-4]
$C_9H_9NO_3$ 179.175
Cryst. (MeOH aq.). Mp 168-171°.

Me ether, N-*Me: 2-Methoxy-4-methyl-2H-1,4-benzoxazin-3(4H)-one*
$C_{10}H_{11}NO_3$ 193.202
Cryst. (MeOH aq.). Mp 71°. Bp_1 180-185°.

N-*Hydroxy: 2,4-Dihydroxy-2H-1,4-benzoxazin-3(4H)-one. DIBOA*
[17359-54-5]
$C_8H_7NO_4$ 181.148
Isol. from seedlings of rye (*Secale cereale*) and sweet corn (*Zea mays*). Antialgal agent. Cryst. (Et_2O/cyclohexane). Mp 152°.

▶ DM3850000

N-*Hydroxy, 2-Me ether: 4-Hydroxy-2-methoxy-2H-1,4-benzoxazin-3(4H)-one, 9CI*
[55574-10-2]
$C_9H_9NO_4$ 195.174
Cryst. Mp 136-138°.

*6-Hydroxy, 2-*O-*β*-D-*glucopyranoside:* ***6-Hydroxyblepharin***
[651728-01-7]
$C_{14}H_{17}NO_9$ 343.29
Constit. of *Lamium galeobdolon*. Amorph. solid.

(*S*)-*form*

N-*Hydroxy, 2*-O-*β*-D-*glucopyranoside: DIBOA-Glc. GDIMBOA*
[155835-54-4]
[157241-60-6 , 22260-47-5]
$C_{14}H_{17}NO_9$ 343.29
Isol. from seedlings of rye (*Secale cereale*), sweet corn (*Zea mays*) and seeds of *Acanthus mollis*. Cryst. Mp 186.5-187°. $[\alpha]_D^{24}$ +106 (c, 1 in H_2O). λ_{max} 254 (ϵ 8300); 281 (ϵ 6380) (prob. MeOH) (Derep).

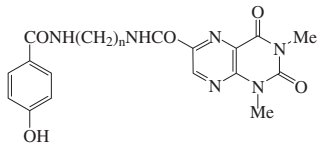
7-Chloro, O-*β*-D-*glucopyranoside:*
$C_{14}H_{16}ClNO_8$ 361.735
Constit. of *Acanthus ilicifolius*. Amorph. powder. $[\alpha]_D^{26}$ +198 (c, 0.33 in DMSO).

7-Chloro, N-*hydroxy,* O-*β*-D-*glucopyranoside: 7-Cl-DIBOA-Glc*
$C_{14}H_{16}ClNO_9$ 377.734
Constit. of *Acanthus ebracteatus*. Amorph. powder. $[\alpha]_D^{22}$ +18.6 (c, 0.86 in DMSO).

Lal, J.B. *et al., J. Indian Chem. Soc.*, 1940, **17**, 269 (*isol, deriv*)
Virtanen, A.L. *et al., Acta Chem. Scand.*, 1960, **14**, 499; 502; 504 (*synth, uv*)
Chatterjee, A. *et al., Chem. Ind. (London)*, 1969, 328 (*synth*)
Hofman, J. *et al., Eur. J. Biochem.*, 1969, **8**, 109-112 (*HBOA-Glc*)
Tipton, C.L. *et al., Phytochemistry*, 1973, **12**, 347 (*biosynth*)
Wilson, A.S. *et al., Cryst. Struct. Commun.*, 1982, **11**, 809-813 (*DIBOA, cryst struct*)
Wolf, R.B. *et al., J. Nat. Prod.*, 1985, **48**, 59-63 (*DIBOA-Glc*)
Atkinson, J. *et al., J.O.C.*, 1991, **56**, 1788 (*synth, pmr, ms, uv, ir*)
Tietze, L.F. *et al., Synthesis*, 1991, 1118 (*synth, pmr, abs config*)
Sicker, D. *et al., Synthesis*, 1993, 771 (*synth*)
Hartenstein, H. *et al., Phytochemistry*, 1994, **35**, 827-828 (*DIBOA-Glc, isol, abs config*)
Bravo, H.R. *et al., J. Agric. Food Chem.*, 1996, **44**, 1569 (*DIBOA, activity*)
Kamperdick, C. *et al., Pharmazie*, 1997, **52**, 965-966 (*isol, pmr, cmr*)
Tays, K. *et al., Synth. Commun.*, 1998, **28**, 903-912 (*N-hydroxy*)
Tanabe, J. *et al., Biosci., Biotechnol., Biochem.*, 1999, **63**, 1614-1617 (*isol, biosynth*)
Baumeler, A. *et al., Phytochemistry*, 2000, **53**, 213-222 (*isol, pmr*)
Kanchanapoom, T. *et al., Phytochemistry*, 2001, **58**, 637-640; 811-817 (*7-chloro derivs*)
Alipieva, K.I. *et al., Phytochemistry*, 2003, **64**, 1413-1417 (*6-Hydroxyblepharin*)
Macías, F. *et al., J. Agric. Food Chem.*, 2006, **54**, 991-1000 (*synth, DIBOA-Glc, isol, uv, pmr, cmr*)
Schullehner, K. *et al., Phytochemistry*, 2008, **69**, 2668-2677 (*biosynth*)

N-[4-(4-Hydroxybenzoylamino)butyl]-1,3-dimethyllumazine-6-carboxamide H-410

*6-[[[4-[(4-Hydroxybenzoyl)amino]butyl]amino]carbonyl]-1,3-dimethyl-2,4(1*H*,3*H*)-pteridinedione*



n = 4

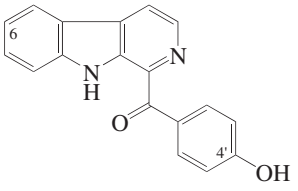
$C_{20}H_{22}N_6O_5$ 426.431
Isol. from the leech *Limnatis nilotica*. Cryst. ($CHCl_3$/MeOH aq.). Mp 256-257°. λ_{max} 194 ; 249 ; 337 (MeOH).

Homologue (n = 5): N-*[5-(4-Hydroxybenzoylamino)pentyl]-1,3-dimethyllumazine-6-carboxamide*
$C_{21}H_{24}N_6O_5$ 440.458
Isol. from *Limnatis nilotica*. Beige powder. Mp 268-270° dec. λ_{max} 194 ; 249 ; 337 (MeOH).

Voerman, G. *et al., J. Nat. Prod.*, 2005, **68**, 938-941 (*isol, synth, pmr, cmr, ms*)

1-(4-Hydroxybenzoyl)-β-carboline H-411

*1-(4-Hydroxybenzoyl)-9*H-*pyrido[3,4-*b*]indole.* ***Eudistomin Y₁***
[1007893-74-4]



$C_{18}H_{12}N_2O_2$ 288.305
Alkaloid from a *Eudistoma* sp. Amorph. yellow solid. λ_{max} 223 (log ϵ 3.46); 301 (log ϵ 3.25); 382 (log ϵ 2.87) (MeOH).

*6-Bromo: 6-Bromo-1-(4-hydroxybenzoyl)-9*H-*pyrido[3,4-*b*]indole.* ***Eudistomin Y₂***
[1007893-75-5]
$C_{18}H_{11}BrN_2O_2$ 367.201
Alkaloid from a *Eudistoma* sp. Amorph. yellow solid. λ_{max} 233 (log ϵ 3.74); 307 (log ϵ 3.75); 387 (log ϵ 3.27) (MeOH).

*3′-Bromo: 1-(3-Bromo-4-hydroxybenzoyl)-9*H-*pyrido[3,4-*b*]indole.* ***Eudistomin Y₃***
[1007893-76-6]
$C_{18}H_{11}BrN_2O_2$ 367.201
Alkaloid from a *Eudistoma* sp. Amorph. yellow solid. λ_{max} 240 (log ϵ 3.88); 306 (log ϵ 3.91); 389 (log ϵ 3.57) (MeOH).

*3′,6-Dibromo: 6-Bromo-1-(3-bromo-4-hydroxybenzoyl)-9*H-*pyrido[3,4-*b*]indole.* ***Eudistomin Y₄***
[1007893-77-7]
$C_{18}H_{10}Br_2N_2O_2$ 446.097
Alkaloid from a *Eudistoma* sp. Amorph. yellow solid. λ_{max} 240 (log ϵ 3.88); 306 (log ϵ 3.91); 389 (log ϵ 3.57) (MeOH).

*3′,5′-Dibromo: 1-(3,5-Dibromo-4-hydroxybenzoyl)-9*H-*pyrido[3,4-*b*]indole.* ***Eudistomin Y₅***
[1007893-78-8]
$C_{18}H_{10}Br_2N_2O_2$ 446.097
Alkaloid from a *Eudistoma* sp. Amorph. yellow solid. λ_{max} 224 (log ϵ 3.79); 296 (log ϵ 3.61); 388 (log ϵ 3.5) (MeOH).

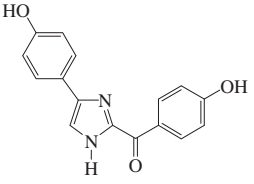
*3′,5′,6-Tribromo: 6-Bromo-1-(3,5-dibromo-4-hydroxybenzoyl)-9*H-*pyrido[3,4-*b*]indole.* ***Eudistomin Y₆***
[1007893-79-9]
$C_{18}H_9Br_3N_2O_2$ 524.993
Alkaloid from a *Eudistoma* sp. Amorph. yellow solid. λ_{max} 239 (log ϵ 3.97); 304 (log ϵ 3.95); 392 (log ϵ 3.75) (MeOH).

*3′,5′,7-Tribromo: 7-Bromo-1-(3,5-dibromo-4-hydroxybenzoyl)-9*H-*pyrido[3,4-*b*]indole.* ***Eudistomin Y₇***
[1007893-80-2]
$C_{18}H_9Br_3N_2O_2$ 524.993
Alkaloid from a *Eudistoma* sp. Amorph. yellow solid. λ_{max} 225 (log ϵ 3.68); 299 (log ϵ 3.42); 392 (log ϵ 3.28) (MeOH).

Wang, W. *et al., J. Nat. Prod.*, 2008, **71**, 163-166 (*isol, pmr, cmr*)

2-(4-Hydroxybenzoyl)-4(5)-(4-hydroxyphenyl)-1*H*-imidazole H-412

[251907-19-4]

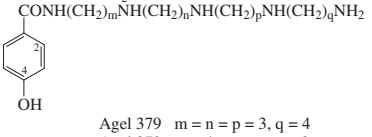


1*H-form*

$C_{16}H_{12}N_2O_3$ 280.282
Alkaloid from the red ascidian *Botryllus leachi*. Amorph. yellow solid. λ_{max} 248 (ϵ 7600); 305 (ϵ 6000); 360 (ϵ 13700) (MeOH).

Duran, R. *et al., Tetrahedron*, 1999, **55**, 13225-13232 (*isol*)
Mahboobi, S. *et al., Monatsh. Chem.*, 2004, **135**, 333-342 (*synth, pmr, tautom*)

Agelenopsis aperta Hydroxybenzoylpentamine toxins H-413



Agel 379 m = n = p = 3, q = 4
Agel 379a m = 4, n = p = q = 3
Agel 379b m = n = q = 3, p = 4
Agel 379c m = p = q = 3, n = 4

See also Agel 452, A-176 for related toxins. Acylpolyamine alkaloid complex isol. from the venom of the spider *Agelenopsis aperta*.

Agel 379
AG 379
$C_{20}H_{37}N_5O_2$ 379.545

$N^{2'}$-*Hydroxy:* ***Agel 395a****. AG 395a*
$C_{20}H_{37}N_5O_3$ 395.544
From *Agelenopsis aperta*.

4-Deoxy, 2,5-dihydroxy: ***Agel 395b****. AG 395b. HO 395*
$C_{20}H_{37}N_5O_3$ 395.544
From *Agelenopsis aperta* and *Hololena curta*.

Agel 379a
AG 379a

$C_{20}H_{37}N_5O_2$ 379.545

4-Deoxy, 2,5-dihydroxy: ***Agel 395c****. AG 395c*
$C_{20}H_{37}N_5O_3$ 395.544
From *Agelenopsis aperta*.

Agel 379b
AG 379b
$C_{20}H_{37}N_5O_2$ 379.545

$N^{2'}$*-Hydroxy:* ***Agel 395****. AG 395*
$C_{20}H_{37}N_5O_3$ 395.544
From *Agelenopsis aperta*.

4-Deoxy, 2,5-dihydroxy:
$C_{20}H_{37}N_5O_3$ 395.544
From *Agelenopsis aperta*.

Agel 379c
AG 379c

4-Deoxy, 2,5-dihydroxy:
$C_{20}H_{37}N_5O_3$ 395.544
From *Agelenopsis aperta*.

Chesnov, S. *et al., Helv. Chim. Acta*, 2001, **84**, 2178-2197; 2002, **85**, 2827-2846 (*isol, synth, ms*)

4-Hydroxybenzyl alcohol, 8CI H-414

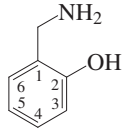
4-Hydroxybenzenemethanol, 9CI. α,4-Dihydroxytoluene. p-*Hydroxymethylphenol. Gastrodigenin*
[623-05-2]
$C_7H_8O_2$ 124.139
Constit. of muskmelon (*Cucurbita moschata*) seedlings and from infected bulbs of *Orchis militaris* and *Loroglossum hircinum* (preferred genus name *Himantoglossum*). Cofactor for indoleacetic acid oxidase. Prisms or needles (H_2O). Mp 124.5-125.5°. pK_{a1} 9.73 (25°).

*4-*O*-[3-Pyridinecarbonyl-(→5)-β-D-apiofuranosyl-(1→2)-β-D-glucopyranoside]:* ***Cucurbitoside L***
$C_{24}H_{29}NO_{12}$ 523.493
Constit. of the seeds of *Cucurbita pepo*. Amorph. solid. $[\alpha]_D^{22}$ -80.6 (c, 0.4 in MeOH). λ_{max} 220 (log ϵ 4.19); 264 (log ϵ 3.5) (MeOH).

Li, W. *et al., J. Nat. Prod.*, 2005, **68**, 1754-1757 (*Cucurbitosides K-M*)

2-Hydroxybenzylamine H-415

2-(Aminomethyl)phenol, 9CI. α-Amino-o-cresol, 8CI. Salicylamine
[932-30-9]



C_7H_9NO 123.154
Found in flowers of *Reseda odorata*. Cryst. (EtOH/petrol) or solid. Mp 97-99° Mp 129° (prob. refers to a hydrate). Sublimes.

Sorensen, H. *et al., Phytochemistry*, 1970, **9**, 865-870 (*isol*)
Olsen, O. *et al., Phytochemistry*, 1980, **19**, 1783-1787 (*isol, pmr, cmr*)

3-Hydroxybenzylamine H-416

*3-(Aminomethyl)phenol, 9CI. α-Amino-*m-*cresol, 8CI*
[73604-31-6]
C_7H_9NO 123.154
Isol. from *Reseda media*. Cryst. (MeOH). Mp 173-174°.

Me ether: 3-Methoxybenzylamine
[5071-96-5]
$C_8H_{11}NO$ 137.181
Bp_6 103-104°.

▶ DP5550000

Me ether, N,N-*di-Me: 3-Methoxy-*N,N-*dimethylbenzenemethanamine, 9CI*
[15184-99-3]
$C_{10}H_{15}NO$ 165.235
Pale yellow liq. Bp_{13} 105°. n_D^{20} 1.5140.

N,N-*Di-Me: 3-(Dimethylaminomethyl)-phenol*
[60760-04-5]
$C_9H_{13}NO$ 151.208
Prisms (C_6H_6). Mp 108°.

Stedman, E. *et al., J.C.S.*, 1927, 1902-1906 (*N,N-di-Me, Me ether N,N-di-Me*)
Shoppee, C.W. *et al., J.C.S.*, 1932, 696-711 (*Me ether*)
Ger. Pat., 1953, 865 455; *CA*, **52**, 17182 (*synth*)
Olsen, O. *et al., Phytochemistry*, 1980, **19**, 1783 (*isol, pmr, cmr*)
Yamagiwa, Y. *et al., Tetrahedron*, 1987, **43**, 3387 (*Me ether N,N-di-Me*)
Vallée, C. *et al., Adv. Synth. Catal.*, 2005, **347**, 1827-1834 (*N,N-di-Me*)

4-Hydroxybenzylamine H-417

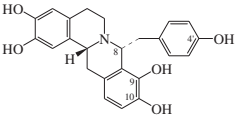
*4-(Aminomethyl)phenol, 9CI. α-Amino-*p-*cresol*
[696-60-6]
C_7H_9NO 123.154
Isol. from seeds of *Sinapis alba* (white mustard) (Brassicaceae) and *Sinapis arvensis*. Plates + $1H_2O$ (H_2O). Mp 114-115° dec.

Hydrobromide: [90430-14-1]
Solid. Mp 175-180°.

N-*Ac:* **N-*Acetyl-4-hydroxybenzylamine****. Antibiotic BMY 40660. BMY 40660*
[34185-04-1]
$C_9H_{11}NO_2$ 165.191
Isol. from *Actinomadura verrucosospora*. Active against gram-positive bacteria. Sol. MeOH; poorly sol. $CHCl_3$. Mp 113-117°. λ_{max} 292 (ϵ 5620); 367 (ϵ 1150) (MeOH/NaOH) (Derep). λ_{max} 277 (ϵ 4790); 310 (sh) (ϵ) (MeOH) (Derep). λ_{max} 367 (ϵ 1150) (MeOH) (Berdy).

Olsen, O. *et al., Phytochemistry*, 1980, **19**, 1783 (*isol, pmr, cmr*)
Larsen, P.O. *et al., Phytochemistry*, 1984, **23**, 895 (*isol*)
Chichak, K.S. *et al., J.O.C.*, 2005, **70**, 7956-7962 (*synth*)

8-(4-Hydroxybenzyl)-2,3,9,10-berbintetrol H-418



(8*R**,13*aR**)-*form*

$C_{24}H_{23}NO_5$ 405.449

(8*R*,13*aR*)-*form*
O^2*-Me,* O^9*-α-D-glucopyranoside:* [145134-72-1]
$C_{31}H_{35}NO_{10}$ 581.618
Alkaloid from leaves of *Aristolochia gigantea* (Aristolochiaceae). Amorph. yellow solid (MeOH) (as hepta-Ac). Mp 122.5-125° (hepta-Ac). CAS No. refers to hepta-Ac. λ_{max} 230 (log ϵ 4.27); 276 (log ϵ 3.69) (MeOH) (as hepta-Ac).

(8*R*,13*aS*)-*form*
O^2*-Me,* O^{10}*-β-xylopyranoside:* [145134-69-6]
$C_{30}H_{33}NO_9$ 551.592
Alkaloid from leaves of *Aristolochia gigantea* (Aristolochiaceae). Amorph. yellow solid (MeOH). Mp 163-166°. $[\alpha]_{578}^{22}$ +106.4 (c, 0.52 in MeOH). λ_{max} 231 (log ϵ 3.98); 233 (log ϵ 3.89); 282 (log ϵ 3.52) (MeOH).

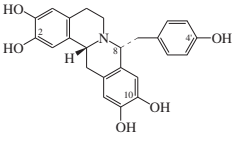
O^2*-Me,* O^{10}*-β-glucopyranoside:* [145134-70-9]
$C_{31}H_{35}NO_{10}$ 581.618
Alkaloid from leaves of *Aristolochia gigantea* (Aristolochiaceae). Amorph. red-brownish solid (MeOH). Mp 150-152°. $[\alpha]_{578}^{22}$ +231.6 (c, 0.73 in MeOH). λ_{max} 230 (log ϵ 3.96); 281 (log ϵ 3.58) (MeOH).

O^2*-Me,* $O^{4'}$*-β-glucopyranoside:* [145134-71-0]
$C_{31}H_{35}NO_{10}$ 581.618
Alkaloid from leaves of *Aristolochia gigantea* (Aristolochiaceae). Amorph. yellow solid (as hepta-Ac). Mp 150-153° (hepta-Ac). Reg. No. refers to hepta-Ac. λ_{max} 230 (log ϵ 4.04); 277 (log ϵ 3.7) (MeOH) (as hepta-Ac).

O^3*-Me,* O^{10}*-β-glucopyranoside,* N-*oxide:* [190953-12-9]
$C_{31}H_{35}NO_{11}$ 597.618
Alkaloid from leaves of *Aristolochia gigantea*. Amorph. yellow solid (MeOH). Mp 220-224° (dec.). $[\alpha]_{578}^{25}$ -24.6 (c, 0.12 in MeOH). λ_{max} 215 (log ϵ 3.22); 230 (log ϵ 3.31); 250 (log ϵ 3.3); 265 (log ϵ 3.29); 275 (log ϵ 3.31); 295 (log ϵ 3.31); 325 (sh) (log ϵ 3.08); 385 (log ϵ 2.88) (MeOH).

Lopes, L.M.X. *et al., Phytochemistry*, 1992, **31**, 4005-4009; 1997, **45**, 431-435 (*isol, uv, ir, pmr, cmr, ms, struct*)

8-(4-Hydroxybenzyl)-2,3,10,11-berbintetrol H-419



(8*R**,13*aR**)-*form*

$C_{24}H_{23}NO_5$ 405.449

(8*R*,13*aR*)-*form*
O^2*-Me:* ***8-(4-Hydroxybenzyl)-2-methoxy-3,10,11-berbintriol***
[145134-66-3]

$C_{25}H_{25}NO_5$ 419.476
Alkaloid from leaves of *Aristolochia gigantea* (Aristolochiaceae). Amorph. yellow solid. Mp 178-180°. $[\alpha]_D^{22}$ -65.3 (c, 2.17 in MeOH). λ_{max} 203 (log ϵ 4.36); 290 (log ϵ 3.58) (MeOH).

O^2-*Me,* O^{10}-*β-xylopyranoside:* [145134-65-2]
$C_{30}H_{33}NO_9$ 551.592
Alkaloid from leaves of *Aristolochia gigantea* (Aristolochiaceae). Amorph. yellow solid (MeOH). Mp 165-168°. $[\alpha]_{578}^{22}$ +14 (c, 1.83 in MeOH). λ_{max} 201 (log ϵ 4.73); 203 (log ϵ 4.74); 286 (log ϵ 3.49) (MeOH).

O^2-*Me,* O^{10}-*β-glucopyranoside:* [145134-64-1]
$C_{31}H_{35}NO_{10}$ 581.618
Alkaloid from leaves of *Aristolochia gigantea* (Aristolochiaceae). Amorph. yellow solid (MeOH). Mp 166-170°. $[\alpha]_{578}^{22}$ +52.2 (c, 1.11 in MeOH). λ_{max} 203 (log ϵ 4.79); 285 (log ϵ 4.14) (MeOH).

(8*R*,13*aS*)-*form* [240430-85-7]
Alkaloid from *Gnetum parvifolium*. Needles (MeOH aq.)(as penta-Ac). Mp 166-168° (penta-Ac). λ_{max} 275 (log ϵ 3.92) (EtOH) (penta-Ac).

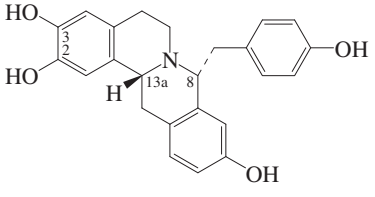
O^2-*Me,* O^{10}-*β-glucopyranoside:* [145134-67-4]
$C_{31}H_{35}NO_{10}$ 581.618
Alkaloid from leaves of *Aristolochia gigantea* (Aristolochiaceae). Amorph. yellow solid (as hepta-Ac). Mp 124.5-127° (hepta-Ac). $[\alpha]_{578}^{22}$ -101.5 (c, 0.31 in MeOH) (hepta-Ac). CAS No. refers to hepta-Ac. λ_{max} 203 (log ϵ 5.18); 281 (log ϵ 4.24) (MeOH) (hepta-Ac).

O^3-*Me,* O^{10}-*β-glucopyranoside:* [190952-98-8]
$C_{31}H_{35}NO_{10}$ 581.618
Alkaloid from leaves of *Aristolochia gigantea*. Amorph. yellow solid (MeOH). Mp 201-204°. $[\alpha]_{578}^{25}$ -50.8 (c, 0.04 in MeOH). λ_{max} 210 (log ϵ 3.65); 230 (log ϵ 3.71); 250 (log ϵ 3.69); 270 (log ϵ 3.71); 290 (log ϵ 3.71); 325 (log ϵ 3.63); 385 (log ϵ 3.22) (MeOH).

O^2,$O^{4'}$-*Di-Me:* [145134-68-5]
$C_{26}H_{27}NO_5$ 433.503
Alkaloid from leaves of *Aristolochia gigantea* (Aristolochiaceae). Amorph. yellow solid (MeOH). Mp 191-193°. $[\alpha]_{578}^{22}$ -34.4 (c, 0.25 in MeOH). λ_{max} 201 (log ϵ 4.35); 293 (log ϵ 3.77) (MeOH).

Lopes, L.M.X. *et al., Phytochemistry*, 1992, **31**, 4005-4009; 1997, **45**, 431-435 (*Me ether derivs, isol, uv, ir, pmr, cmr, ms, struct*)
Xu, Q. *et al., J. Nat. Prod.*, 1999, **62**, 1025-1027 (*8R*,13aS*-form*)

8-(4-Hydroxybenzyl)-2,3,10-berbintriol H-420



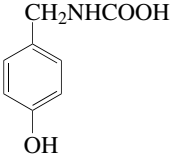
$C_{24}H_{23}NO_4$ 389.45

(8*R*,13a*R*)-*form*
O^2,O^3-*Di-Me:* ***8-(4-Hydroxybenzyl)-2,3-dimethoxy-10-berbinol***
[195971-32-5]
$C_{26}H_{27}NO_4$ 417.504
Alkaloid from *Aristolochia constricta* (Aristolochiaceae). Amorph. yellow solid. Mp 150-162°. $[\alpha]_D^{25}$ -65.3 (c, 1 in MeOH). λ_{max} 290 (log ϵ 4.36) (MeOH).

Rastrelli, L. *et al., J. Nat. Prod.*, 1997, **60**, 1065-1069 (*isol, uv, pmr, cmr*)

(4-Hydroxybenzyl)carbamic acid H-421

[(4-Hydroxyphenyl)methyl]carbamic acid. (4-Hydroxybenzyl)aminoformic acid



$C_8H_9NO_3$ 167.164

Benzyl ester: [75383-60-7]
$C_{15}H_{15}NO_3$ 257.288
Cryst. (C_6H_6). Mp 90.5-91° dec.

O-*α-L-Rhamnopyranoside, Et ester:* [208346-80-9]
$C_{16}H_{23}NO_7$ 341.36
Isol. from seed pods of *Moringa oleifera* (horseradish tree). λ_{max} 202 ; 222 ; 252 (MeOH).

O-*(4-O-Acetyl-α-L-rhamnopyranoside), Me ester:* ***Niazicinin A***
[163812-19-9]
$C_{17}H_{23}NO_8$ 369.371
Constit. of *Moringa oleifera* (horseradish tree) (Moringaceae). λ_{max} 200 ; 223 ; 271 (MeOH).

O-*(Tri-O-acetyl-α-L-rhamnopyranoside), Me ester:* [163812-18-8]
$C_{21}H_{27}NO_{10}$ 453.445
Constit. of *Moringa oleifera* (horseradish tree) (Moringaceae). Isol. as two conformational (rotational) isomers. λ_{max} 201 ; 222 ; 247 (MeOH).

O-*(4-O-Acetyl-α-L-rhamnopyranoside), Et ester (1):* ***Niazimin A***
[159768-73-7]
$C_{18}H_{25}NO_8$ 383.397
Constit. of *Moringa oleifera* (horseradish tree). Plates ($CHCl_3$/MeOH). Mp 168-170°.

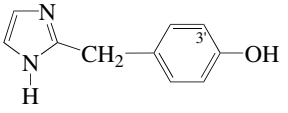
O-*(4-O-Acetyl-α-L-rhamnopyranoside), Et ester (2):* ***Niazimin B***
$C_{18}H_{25}NO_8$ 383.397
Constit. of *Moringa oleifera* (horseradish tree). Needles ($CHCl_3$/MeOH). Mp 182-184°. Conformational isomer of Niazimin A, differing in the orientation of the NH proton with respect to the carbonyl group.

O-*(Tri-O-acetyl-α-L-rhamnopyranoside), Et ester:* [159733-93-4]
$C_{22}H_{29}NO_{10}$ 467.472
Constit. of *Moringa oleifera* (horseradish tree) (Moringaceae). λ_{max} 203 ; 222 ; 246 (MeOH).

Nakano, M. *et al., Chem. Pharm. Bull.*, 1980, **28**, 2212-2216 (*synth, benzyl ester*)
Faizi, S. *et al., J.C.S. Perkin 1*, 1994, 3035-3040 (*Niazimin A, Niazimin B*)
Faizi, S. *et al., Phytochemistry*, 1995, **38**, 957-963 (*isol, uv, pmr, cmr, derivs*)
Leuck, M. *et al., Carbohydr. Res.*, 1998, **312**, 33-44 (*synth*)
Faizi, S. *et al., Planta Med.*, 1998, **64**, 225-228 (*Et ester rhamnoside*)

2-(4-Hydroxybenzyl)imidazole H-422

*4-(1*H*-Imidazol-2-ylmethyl)phenol. Semilepidine A*



$C_{10}H_{10}N_2O$ 174.202
Powder (CH_2Cl_2/MeOH). Mp 164-166°. Artifact.

O-*β-D-Galactopyranoside:* ***Semilepidinoside A***
$C_{16}H_{20}N_2O_6$ 336.344
Alkaloid from the seeds of *Lepidium sativum* (garden cress). Amorph. powder. Mp 188-190° dec.

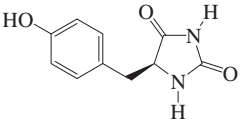
3'-Methoxy: 2-(4-Hydroxy-3-methoxybenzyl)imidazole. Semilepidine B
$C_{11}H_{12}N_2O_2$ 204.228
Powder (CH_2Cl_2/MeOH). Mp 187-190°. Artifact.

3'-Methoxy, O-*β-D-galactopyranoside:* ***Semilepidinoside B***
$C_{17}H_{22}N_2O_7$ 366.37
Alkaloid from the seeds of *Lepidium sativum* (garden cress). Amorph. powder. Mp 212-215° dec.

Maier, U.H. *et al., Phytochemistry*, 1998, **49**, 1791-1795 (*isol, pmr, cmr, ms*)

5-(4-Hydroxybenzyl)-2,4-imidazolidinedione H-423

*5-(*p*-Hydroxybenzyl)hydantoin*
[58942-04-4]
[98819-07-9]



(*S*)-*form*

$C_{10}H_{10}N_2O_3$ 206.201

(*S*)-*form* [40856-79-9]
$[\alpha]_D$ -165 (EtOH). $[\alpha]_D$ -292 (1*M* NaOH).

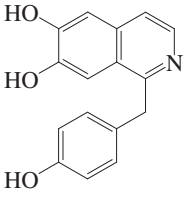
(±)-*form* [67337-72-8]
Cryst. (EtOH). Mp 258-259°.

(ξ)-*form*
Isol. from a marine endophytic fungus No. 1893. No details are given for its isol. from the fungus.
Suzuki, T. *et al., Agric. Biol. Chem.*, 1973, **37**,

411-416; 1976, **40**, 225-226 (*synth ord pmr*)
Marton, J. *et al., J. Agric. Food Chem.*, 1993, **41**, 148-152 (*synth*)
Chen, G. *et al., Tetrahedron*, 2003, **59**, 4907-4909 (*isol*)

1-(4-Hydroxybenzyl)-6,7-isoquinolinediol H-424

6,7-Dihydroxy-1-(4-hydroxybenzyl)isoquinoline



$C_{16}H_{13}NO_3$ 267.284

6-Me ether: 7-Hydroxy-1-(4-hydroxybenzyl)-6-methoxyisoquinoline. ***Juzirine***
[64069-53-0]
$C_{17}H_{15}NO_3$ 281.31
Alkaloid from the leaves of *Zizyphus jujuba* (Chinese date). Cryst. (Me_2CO). Mp 203-205°.

6,7-Di-Me ether: 4-[(6,7-Dimethoxy-1-isoquinolinyl)methyl]phenol, 9CI. 1-(4-Hydroxybenzyl)-6,7-dimethoxyisoquinoline. ***Crykonisine***
[5544-58-1]
$C_{18}H_{17}NO_3$ 295.337
Alkaloid from *Cryptocarya konishii* and *Machilus acuminatissima* (Lauraceae). Needles. Mp 235-236° dec.

Tri-Me ether: ***6,7-Dimethoxy-1-(4-methoxybenzyl)isoquinoline***
[41498-25-3]
[41498-26-4]
$C_{19}H_{19}NO_3$ 309.364
Alkaloid from *Ocotea macrophylla*. Cryst. (Et_2O). Mp 125°. λ_{max} 238 (log ϵ 4.77); 269 (log ϵ 3.78); 278 (log ϵ 3.76); 314 (log ϵ 3.57); 326 (log ϵ 3.63) (EtOH).

6,7-Methylene ether: 1-(4-Hydroxybenzyl)-6,7-methylenedioxyisoquinoline. ***Neolitacumonine***
$C_{17}H_{13}NO_3$ 279.295
Alkaloid from the stem bark of *Neolitsea acuminatissima*. Amorph. powder. λ_{max} 261 (log ϵ 4.56); 298 (log ϵ 4.45); 330 (log ϵ 4.38) (MeOH).

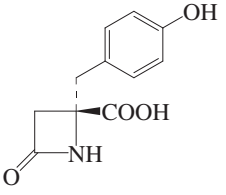
6,7-Methylene, 4′-Me ether: 1-(4-Methoxybenzyl)-6,7-methylenedioxyisoquinoline
[55857-56-2]
$C_{18}H_{15}NO_3$ 293.321
Alkaloid from *Ocotea macrophylla*. Cryst. ($CHCl_3$). Mp 122°. λ_{max} 237 (log ϵ 4.77); 267 (log ϵ 3.84); 276 (log ϵ 3.85); 315 (log ϵ 3.65); 329 (log ϵ 3.74) (EtOH).

6,7-Methylene, 4′-Me ether, N-*Me:* ***4-Methoxy-2-methyl-6,7-methylenedioxyisoquinolinium***
$C_{19}H_{18}NO_3^{\oplus}$ 308.356
Quaternary alkaloid from *Doryphora sassafras*. Brown gum (as chloride). λ_{max} 228 (log ϵ 4.18); 253 (log ϵ 4.43); 283 (log ϵ 3.6); 313 (log ϵ 3.78); 333 (sh) (log ϵ 3.7); 348 (sh) (log ϵ 3.6) (MeOH) (chloride).

Lu, S.-T. *et al., Yakugaku Zasshi*, 1967, **87**, 1278 (*Crykonisine*)
Coomes, R.M. *et al., J.O.C.*, 1973, **38**, 3701-3704 (*synth*)
Franca, N.C. *et al., Phytochemistry*, 1975, **14**, 1671-1672 (*Ocotea isolates*)
Ziyaev, R. *et al., Khim. Prir. Soedin.*, 1977, **13**, 239; *Chem. Nat. Compd. (Engl. Transl.)*, 1977, **13**, 204 (*Juzirine*)
Marsaioli, A.J. *et al., Phytochemistry*, 1978, **17**, 1655-1658 (*cmr*)
Carroll, A.R. *et al., J. Nat. Prod.*, 2001, **64**, 1572-1573 (*Doryphora isolate*)
Chang, F.R. *et al., J. Nat. Prod.*, 2002, **65**, 255-258 (*Neolitacumonine*)

2-(4-Hydroxybenzyl)-4-oxo-2-azetidinecarboxylic acid H-425

2-[(4-Hydroxyphenyl)methyl]-4-oxo-2-azetidinecarboxylic acid. ***Streptovercillone***

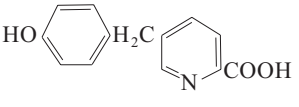


$C_{11}H_{11}NO_4$ 221.212

(***S*)-*form*** [941687-54-3]
Prod. by *Streptomyces morookaense* strain SC1169. Antifungal agent. Amorph. powder. $[\alpha]_D^{20}$ +62.8 (c, 0.32 in MeOH). λ_{max} 225 (log ϵ 3.89); 278 (log ϵ 3.17) (MeOH).
Feng, N. *et al., J. Antibiot.*, 2007, **60**, 179-183 (*isol, pmr, cmr, ms*)

5-(4-Hydroxybenzyl)-2-pyridinecarboxylic acid H-426

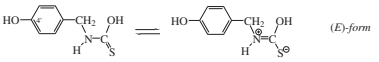
5-[(4-Hydroxyphenyl)methyl]-2-pyridinecarboxylic acid, 9CI. ***Phenopicolinic acid***
[56153-30-1]



$C_{13}H_{11}NO_3$ 229.235
Isol. from culture filtrates of the fungus *Paecilomyces*. Dopamine β-hydroxylase inhibitor; strong hypotensive action. Sol. Py, bases, DMSO; fairly sol. MeOH, EtOAc, H_2O; poorly sol. C_6H_6, hexane. Mp 222-226°. Log P 2.2 (calc). λ_{max} 271 (ϵ 11100) (HCl) (Berdy). λ_{max} 271 (ϵ 8000); 277 (ϵ 7300); 300 (ϵ 3700) (NaOH) (Berdy).
▶ LD_{50} (mus, ipr) 350 mg/kg. US5770000
U.K. Pat., 1975, 1 452 728; *CA*, **86**, 104446s
Nakamura, T. *et al., J. Antibiot.*, 1975, **28**, 477

(4-Hydroxybenzyl)thiocarbamic acid H-427

[(4-Hydroxyphenyl)methyl]carbamothioic acid. (4-Hydroxybenzyl)aminothioformic acid



$C_8H_9NO_2S$ 183.231
Known as naturally-occurring *O*-alkyl esters, the *E*- and *Z*-isomers of which are separately isolable.

4′-O-β-L-Rhamnopyranoside, O-*α-D-glucopyranosyl ester:*
$C_{20}H_{29}NO_{11}S$ 491.515
Constit. of the fruit of *Moringa oleifera* (horseradish tree). Amorph. powder.

4′-O-α-L-Rhamnopyranoside, O-*Me ester (*E-*):* ***Niazinin A***
[148152-07-2]
$C_{15}H_{21}NO_6S$ 343.4
Constit. of the horseradish tree (*Moringa oleifera*, Moringaceae). Hypotensive agent. λ_{max} 200 ; 224 ; 245 (MeOH).

4′-O-α-L-Rhamnopyranoside, O-*Me ester (*Z-*):* ***Niazinin B***
[147821-47-4]
$C_{15}H_{21}NO_6S$ 343.4
Constit. of *Moringa oleifera* (horseradish tree) (Moringaceae). Hypotensive agent. λ_{max} 200 ; 224 ; 245 (MeOH).

4′-O-α-L-Rhamnopyranoside, O-*Et ester (*E-*):* ***Niazimicin A***
[147821-49-6]
$C_{16}H_{23}NO_6S$ 357.427
Constit. of *Moringa oleifera* (horseradish tree) (Moringaceae). Hypotensive agent. Antitumour promoter. Chemopreventive agent. $[\alpha]_D^{25}$ -96.8 (c, 0.5 in $CHCl_3$). λ_{max} 200 ; 223 ; 246 (MeOH).

4′-O-(4-O-Acetyl-α-L-rhamnopyranoside), O-*Me ester (*E-*):* ***Niazicin A***
[159768-74-8]
$C_{17}H_{23}NO_7S$ 385.437
Constit. of *Moringa oleifera* (horseradish tree). λ_{max} 201 ; 223 ; 245 (MeOH).

4′-O-(4-O-Acetyl-α-L-rhamnopyranoside), O-*Me ester (*Z-*):* ***Niazicin B***
$C_{17}H_{23}NO_7S$ 385.437
Constit. of *Moringa oleifera* (horseradish tree). λ_{max} 201 ; 223 ; 245 (MeOH).

4′-O-(4-O-Acetyl-α-L-rhamnopyranoside), O-*Et ester (*E-*):* ***Niaziminin A***
[147821-51-0]
$C_{18}H_{25}NO_7S$ 399.464
Constit. of *Moringa oleifera* (horseradish tree) (Moringaceae). Hypotensive agent. Cryst. ($CHCl_3$/MeOH). Mp 168-170°. λ_{max} 195 ; 201 ; 222 ; 246 (MeOH).

4′-O-(4-O-Acetyl-α-L-rhamnopyranoside), O-*Et ester (*Z-*):* ***Niaziminin B***

[147921-21-9]
$C_{18}H_{25}NO_7S$ 399.464
Constit. of *Moringa oleifera* (horseradish tree) (Moringaceae). Hypotensive agent.

4′-O-*(Tri*-O-*acetyl-α-L-rhamnopyranoside),* O-*Me ester (*E-*):* [147821-48-5]
$C_{21}H_{27}NO_9S$ 469.512
Constit. of *Moringa oleifera* (horseradish tree) (Moringaceae). λ_{max} 201 ; 222 ; 247 (MeOH).

4′-O-*(Tri*-O-*acetyl-α-L-rhamnopyranoside),* O-*Et ester (Z-):*
$C_{21}H_{27}NO_9S$ 469.512
Constit. of *Moringa oleifera* (horseradish tree) (Moringaceae). λ_{max} 200 ; 221 ; 248 (MeOH).

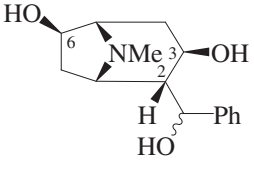
4′-O-*(Tri*-O-*acetyl-α-L-rhamnopyranoside),* O-*Et ester:* [147821-50-9]
$C_{22}H_{29}NO_9S$ 483.538
Constit. of *Moringa oleifera* (horseradish tree) (Moringaceae). λ_{max} 203 ; 221 ; 246 (MeOH).

O-*α-L-Rhamnopyranoside, Et ester (Z-):* ***Niazimicin B***
$C_{16}H_{23}NO_6S$ 357.427
Constit. of *Moringa oleifera* (horseradish tree).

Faizi, S. *et al., J.C.S. Perkin 1*, 1992, 3237-3241; 1994, 3035-3040 (*Niazinins, Niaziminins, Niazimicin, Niazicins*)
Faizi, S. *et al., Phytochemistry*, 1995, **38**, 957-963 (*isol, uv, pmr, cmr*)
Leuck, M. *et al., Carbohydr. Res.*, 1998, **312**, 33-44 (*synth, bibl*)
Murakami, A. *et al., Planta Med.*, 1998, **64**, 319-323 (*isol, activity*)
Guevara, A.P. *et al., Mutat. Res.*, 1999, **440**, 181-188 (*activity*)
Francis, J.A. *et al., Helv. Chim. Acta*, 2004, **87**, 317-326 (*4′-rhamnoside glucosyl ester*)

2-(α-Hydroxybenzyl)-3,6-tropanediol H-428

2-(Hydroxyphenylmethyl)-8-methyl-8-azabicyclo[3.2.1]octane-3,6-diol, 9CI



$C_{15}H_{21}NO_3$ 263.336
Stereochem. of alkaloids not fully known; they may not all correspond stereochemically.

O^3-*Benzoyl:* ***Knightolamine***
[75638-70-9]
$C_{22}H_{25}NO_4$ 367.444
Alkaloid from the leaves of *Knightia strobilina* (Proteaceae). Cryst. (Me_2CO). Mp 231-232°. $[\alpha]_D^{20}$ +66 ($CHCl_3$).

O^6-*Ac:* ***Knightalbinol***
[75638-71-0]
$C_{17}H_{23}NO_4$ 305.373
Alkaloid from the leaves of *Knightia strobilina* (Proteaceae). Amorph. $[\alpha]_D^{20}$ +54 ($CHCl_3$).

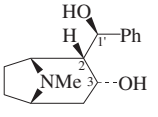
O^6-*Benzoyl:* **Knightia *Alkaloid F***
[55249-52-0]
$C_{22}H_{25}NO_4$ 367.444
Minor alkaloid from *Knightia deplanchei* (Proteaceae). Cryst. (Me_2CO). Mp 164-167°. $[\alpha]_D$ 0 ($CHCl_3$). Tentative plane struct. only detd.; appears to be racemic.

O^6-*Benzoyl,* O^3-*cinnamoyl:* **Knightia *Alkaloid E***
[55249-51-9]
$C_{31}H_{31}NO_5$ 497.59
Minor alkaloid from *Knightia deplanchei* (Proteaceae). Viscous oil. $[\alpha]_D$ 0 ($CHCl_3$). Tentative plane struct. only detd.; prob. racemic.

Lounasmaa, M. *et al., J.O.C.*, 1975, **40**, 3694-3697 (*cmr, struct, config*)
Lounasmaa, M. *et al., Planta Med.*, 1975, **27**, 83-88 (*O^6-benzoyl, O^6-benzoyl O^3-cinnamoyl*)
Lounasmaa, M. *et al., Phytochemistry*, 1980, **19**, 953-955 (*ir, pmr, ms, struct, Knightolamine, Knightalbinol*)

2-(α-Hydroxybenzyl)-3-tropanol H-429

3-Hydroxy-8-methyl-α-phenyl-8-azabicyclo[3.2.1]octane-2-methanol, 9CI



(1*R*,1′*R*,2*S*,3*R*)-*form*

$C_{15}H_{21}NO_2$ 247.336

(1*R*,1′*R*,2*S*,3*R*)-*form*

O^3-*Ac:* ***Knightinol***
[77053-06-6]
$C_{17}H_{23}NO_3$ 289.374
Alkaloid from *Knightia strobilina* (Proteaceae). Mp 153-154°. $[\alpha]_D^{20}$ +24 ($CHCl_3$). Has 2*R*-config. (change of Cahn-Ingold-Prelog priorities).

(1*R*,1′*R*,2*S*,3*R*)-*form*

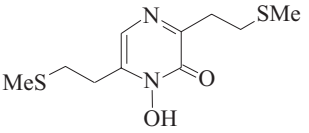
Di-Ac: ***Acetylknightinol***
[77053-07-7]
$C_{19}H_{25}NO_4$ 331.411
Alkaloid from *Knightia strobilina* (Proteaceae). Mp 118-120°. $[\alpha]_D^{20}$ -18 ($CHCl_3$).

O^3-*Benzoyl:* **Darlingia *Alkaloid DF***
[73045-48-4]
$C_{22}H_{25}NO_3$ 351.444
Minor alkaloid from leaves, stems and root of *Darlingia ferruginea* (Proteaceae). Needles (petrol). Mp 136-138°. $[\alpha]_D^{19}$ +28 ($CHCl_3$). Has 2*R*-config. (change of Cahn-Ingold-Prelog priorities).

Bick, I.R.C. *et al., Aust. J. Chem.*, 1979, **32**, 2537-2543 (*Alkaloid DF*)
Lounasmaa, M. *et al., Phytochemistry*, 1980, **19**, 949-952 (*Knightinol, Acetylknightinol*)
Lounasmaa, M. *et al., Planta Med.*, 1983, **48**, 56-58 (*synth*)
Majewski, M. *et al., J.O.C.*, 1995, **60**, 5825-5830 (*Knightinol, synth, pmr, cmr, abs config*)

1-Hydroxy-3,6-bis[2-(methylthio)ethyl]-2(1*H*)-pyrazinone H-430

[37167-10-5]



$C_{10}H_{16}N_2O_2S_2$ 260.381
Metab. from *Aspergillus flavus.* Mp 106-107°.

MacDonald, J.C. *et al., Can. J. Biochem.*, 1972, **50**, 543 (*isol, pmr, ms, struct*)

4-Hydroxy-2-butenoic acid, 9CI H-431

4-Hydroxycrotonic acid, 8CI
[4013-24-5]
$HOCH_2CH{=}CHCOOH$
$C_4H_6O_3$ 102.09

(*E*)-*form* [24587-49-3]
Cryst. (EtOAc). Mp 109°. Readily undergoes polycondensation.

Et ester: [10080-68-9]
$C_6H_{10}O_3$ 130.143
d_4^{17} 1.08. Bp_{13} 119-120°. n_D^{23} 1.4610.

Ac:
$C_6H_8O_4$ 144.127
Cryst. (Et_2O/petrol).

(*Z*)-*form*

Nitrile, O-*β-D-glucopyranoside:* ***Alliarinoside***
$C_{10}H_{15}NO_6$ 245.232
Constit. of *Alliaria petiolata*. Feeding deterrent for larvae of *Pieris napi oleracea*. Prisms (as tetra-Ac). Mp 84-86° (tetra-Ac). $[\alpha]_D$ -4 (c, 0.4 in $CHCl_3$) (tetra-Ac). λ_{max} 218 (MeOH).

[29576-13-4 , 82744-23-8 , 4508-99-0]

Laporte, J.F. *et al., Bull. Soc. Chim. Fr.*, 1969, 1340 (*synth, ir, pmr*)
Boulanger, T. *et al., J. Crystallogr. Spectrosc. Res.*, 1987, **17**, 71 (*cryst struct*)
Dardoize, F. *et al., Tetrahedron*, 1989, **45**, 7783 (*synth, pmr*)
Haribal, M. *et al., J. Nat. Prod.*, 2001, **64**, 440-443 (*Alliarinoside*)

(4-Hydroxybutyl)guanidine, 9CI H-432

4-Guanidino-1-butanol
[17581-95-2]
$HN{=}C(NH_2)NH(CH_2)_3CH_2OH$
$C_5H_{13}N_3O$ 131.177
Alkaloid from *Leonurus sibiricus.*

Monohydrochloride: [27091-78-7]
Cryst. (2-propanol). Mp 107-109°.

Sulfate (2:1): [98600-31-8]
Cryst. (EtOH). Mp 168-169°.

O-*(4-Hydroxy-3,5-dimethoxybenzoyl):* ***Leonurine****. 4-Guanidinobutyl syringate*
[24697-74-3]
$C_{14}H_{21}N_3O_5$ 311.337
Alkaloid from *Leonurus artemisia* (a Chinese herbal medicine used in ob-

stetrics) and *Leonurus sibiricus* (Lamiaceae). Uterotonic agent. Mp 229-230°. pK_a 7.9 (H_2O).

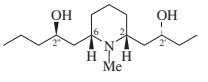
O-*(4-Hydroxy-3,5-dimethoxybenzoyl), hydrochloride:* Mp 195-196°.

[106936-57-6]

Fishbein, L. *et al., J.A.C.S.*, 1954, **76**, 3217-3219 (*synth*)
Goto, T. *et al., Tet. Lett.*, 1962, **3**, 545-548 (*Leonurine, isol, struct*)
Sugiura, S. *et al., Tetrahedron*, 1969, **25**, 5155-5161 (*Leonurine, synth, struct*)
Ludwig, B.J. *et al., J. Med. Chem.*, 1970, **13**, 60-63 (*synth*)
Reuter, G. *et al., Pharmazie*, 1971, **26**, 777 (*isol*)
Yeung, H.W. *et al., Planta Med.*, 1977, **31**, 51 (*Leonurine, isol, ir, pmr, ms, struct*)
Cheng, K.F. *et al., Experientia*, 1979, **35**, 571-572 (*Leonurine, !synth*)

2-(2-Hydroxybutyl)-6-(2-hydroxypentyl)-1-methylpiperidine H-433

8-Ethyl-10-propyllobelidiol



(2*R**,2'*R**,2''*R**,6*S*)-*form*

$C_{15}H_{31}NO_2$ 257.415

(2*R,2'*R**,2''*R**,6*S*)-*form*** [212006-68-3]
Alkaloid from *Siphocampylus verticillatus*. Amorph. Mp 55° (as hydrochloride).

(2*R,2'*S**,2''*R**,6*S*)-*form*** [212515-05-4]
Alkaloid from *Dialypetalum floribundum*.

(2*S*,2'*R*,2''*R*,6*S*)-*form*

3,4-Didehydro: α⁶-Ethyl-1,2,3,6-tetrahydro-1-methyl-α²-propyl-2,6-pyridinediethanol, 9CI. 1,2,5,6-Tetrahydro-2-(2-hydroxybutyl)-6-(2-hydroxypentyl)-1-methylpyridine. ***Andrachcine***
[109028-29-7]
$C_{15}H_{29}NO_2$ 255.4
Alkaloid from *Andrachne aspera* (Euphorbiaceae). Gum. $[\alpha]_D^{25}$ -87 (c, 1.2 in MeOH). Has 2*R*-config. owing to introduction of double bond.

3,4-Didehydro, 2'-ketone: ***Andrachcinine***
[274925-35-8]
$C_{15}H_{27}NO_2$ 253.384
Alkaloid from *Andrachne aspera*. Oil. $[\alpha]_D^{22}$ -108 (c, 2.5 in $CHCl_3$).

(2*S*,2'*S*,2''*S*,6*S*)-*form*

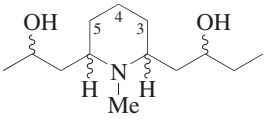
N-*De-Me: 2-(2-Hydroxybutyl)-6-(2-hydroxypentyl)piperidine.* ***Aspertine D***
[442155-63-7]
$C_{14}H_{29}NO_2$ 243.389
Alkaloid from the aerial parts of *Andrachne aspera*. Gum. $[\alpha]_D$ -97 (c, 0.8 in $CHCl_3$).

3,4-Didehydro, N-*de-Me: 1,2,5,6-Tetrahydro-2-(2-hydroxybutyl)-6-(2-hydroxypentyl)pyridine.* ***Aspertine A***
[442155-60-4]
$C_{14}H_{27}NO_2$ 241.373
Alkaloid from the aerial parts of *Andrachne aspera*. Gum. $[\alpha]_D$ -103 (c, 0.5 in $CHCl_3$).

Biavatti, M.W. *et al., Phytochemistry*, 1998, **48**, 747-749 (*isol, ir, pmr, ms*)
Krebs, H.C. *et al., Phytochemistry*, 1998, **48**, 911-913 (*isol, pmr, cmr, ms*)
Mill, S. *et al., J. Nat. Prod.*, 2000, **63**, 762-764 (*isol, pmr, cmr, abs config*)
Ahmad, V.U. *et al., Turk. J. Chem.*, 2002, **26**, 245-250 (*Aspertine A, D*)
Miguel, O.G. *et al., Z. Naturforsch., C*, 2002, **57**, 81-84 (*isol, pmr, cmr*)

2-(2-Hydroxybutyl)-6-(2-hydroxypropyl)-1-methylpiperidine H-434

10-Ethyl-8-methyllobelidiol. 8-Methyl-10-ethyllobelidiol
[96777-12-7]



$C_{13}H_{27}NO_2$ 229.362
Minor alkaloid from *Lobelia inflata* (Campanulaceae). Oil. Opt. inactive. Hydrochloride, hydrobromide, hydroiodide and perchlorate were noncryst.

Hexachloroplatinate: Mp 217-218° dec.

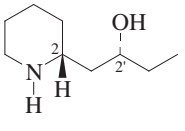
Picrate: [110555-04-9]
Cryst. (2-propanol). Mp 133-134°.

4,5-Didehydro: α²-Ethyl-1,2,3,6-tetrahydro-α⁶,1-dimethyl-2,6-pyridinediethanol, 8CI. 6-(2-Hydroxybutyl)-2-(2-hydroxypropyl)-1-methyl-Δ³-piperideine. ***Dehydro-8-methyl-10-ethyllobelidiol****. Alkaloid D3*
[105694-51-7]
$C_{13}H_{25}NO_2$ 227.346
Alkaloid from *Lobelia syphilitica* and *Lobelia berlandieri* (Campanulaceae). Extremely hygroscopic cryst. (as hydrochloride). Mp 120° (sealed tube)(-hydrochloride). $[\alpha]_D^{25}$ -110 (c, 1.0 in EtOH). Props. refer to the *L. syphilitica* isolate, a 2,6-*trans*-isomer which gives on hydrogenation 10-ethyl-8-methyllobelidiol identical to the (opt. inactive) natural alkaloid. The *L. berlandieri* isolate may not necessarily be identical.

Schöpf, C. *et al., Annalen*, 1957, **608**, 88-127 (*isol, struct*)
Tschesche, R. *et al., Chem. Ber.*, 1961, **94**, 3327-3336 (*didehydro*)
Williams, H.J. *et al., J. Agric. Food Chem.*, 1987, **35**, 19-22 (*didehydro*)

2-(2-Hydroxybutyl)piperidine H-435

α-Ethyl-2-piperidineethanol, 9CI. 1-(2-Piperidinyl)-2-butanol. 8-Ethylnorlobelol I



(2*R*,2'*R*)-*form*

$C_9H_{19}NO$ 157.255

(2*R*,2'*R*)-*form*
Synthetic. Mp 86-87°. $[\alpha]_D^{22}$ -26 (c, 2.1 in EtOH).

(2*S*,2'*R*)-*form*
Alkaloid from *Andrachne aspera*. $[\alpha]_D^{22}$ -15.7 (c, 2.1 in MeOH).

(2*S*,2'*S*)-*form*
Alkaloid from *Lobelia inflata* (Campanulaceae). Cryst. (Et_2O). Mp 87°. $[\alpha]_D^{21.5}$ +22.3 (c, 1.56 in EtOH). Readily subl.

Hydrochloride: Mp 135°.

Picrate: Mp 116-117°.

(2ξ,2'ξ)-*form*
Alkaloid from leaves of *Sedum brissemoreti* and *Sedum fusiforme*. Identified by gc-ms.

N-*Me: 1-(*N-*Methyl-2-piperidinyl)-2-butanol. 2-(2-Hydroxybutyl)*-N-*methylpiperidine*
$C_{10}H_{21}NO$ 171.282
Alkaloid from leaves of *Sedum brissemoreti*, *Sedum nudum*, *Sedum lancerottense* and *Sedum fusiforme*. Identified by gc-ms.

8-Ketone: ***1-(2-Piperidinyl)-2-butanone****. 2-(2-Oxobutyl)piperidine*
$C_9H_{17}NO$ 155.239
Alkaloid from leaves of *Sedum brissemoreti*, *Sedum nudum*, *Sedum lancerottense* and *Sedum fusiforme*. Identified by gc-ms.

8-Ketone, N-*Me:* ***1-(*N*-Methyl-2-piperidinyl)-2-butanone****.* N-*Methyl-2-(2-oxobutyl)piperidine*
$C_{10}H_{19}NO$ 169.266
Alkaloid from leaves of *Sedum brissemoreti*, *Sedum nudum*, *Sedum lancerottense* and *Sedum fusiforme*. Identified by gc-ms.

(2*RS*,2'*RS*)-*form*
Synthetic. Cryst. (hexane). Mp 65-66°.

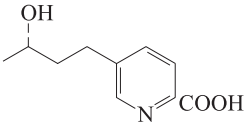
8-Ketone, N-*Me:* Alkaloid from whole plants of *Pratia nummularia*. Pale yellow oil.

[81738-59-2]

Wieland, H. *et al., Annalen*, 1931, **491**, 14 (*isol*)
Schöpf, C. *et al., Annalen*, 1957, **608**, 88 (*isol, struct*)
Stevens, J.F. *et al., Phytochemistry*, 1992, **31**, 3917-3924 (*derivs*)
Ho, L.K. *et al., Planta Med.*, 1995, **61**, 567 (*deriv*)
Mill, S. *et al., Annalen*, 1996, 2083-2086 (*synth, abs config*)
Mill, S. *et al., J. Nat. Prod.*, 2000, **63**, 762-764 (*isol, synth*)
Chen, L.-J. *et al., Tetrahedron: Asymmetry*, 2008, **19**, 715-720 (*synth*)

5-(3-Hydroxybutyl)-2-pyridinecarboxylic acid, 9CI H-436

5-(3-Hydroxybutyl)picolinic acid. ***Fusarinolic acid***
[26108-30-5]



(*S*)–*form*

$C_{10}H_{13}NO_3$ 195.218

(S)*-*form [33130-74-4]
Isol. from *Gibberella fujikuroi*. Cryst.

(CH_2Cl_2/MeOH)(synthetic); oil (nat.). Mp 108-109°. $[\alpha]_D^{25}$ +20.5 (c, 1.05 in MeOH). The oily natural product appears to have been largely racemic.

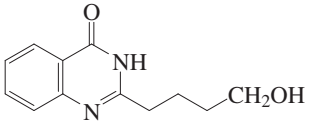
Me ester:
Oil. $[\alpha]_D^{25}$ +17.9 (c, 1.13 in $CHCl_3$).

(±)-*form* [33130-77-7]
Mp 122-123°.

Steiner, K. *et al., Helv. Chim. Acta*, 1971, **54**, 845 (*synth*)
Frederiks, J.C. *et al., Verh. Schweiz. Naturforsch. Ges.*, 1971, **151**, 84
Buyuk, G. *et al., Helv. Chim. Acta*, 1975, **58**, 682 (*synth*)
Renslo, A.R. *et al., J.O.C.*, 1998, **63**, 7840-7850 (*S-form, synth*)
Song, J.J. *et al., J.O.C.*, 2001, **66**, 605-608 (*synth*)

2-(4-Hydroxybutyl)-4(3*H*)-quinazolinone H-437

2-(4-Hydroxybutyl)-4-quinazolinol
[60915-16-4]

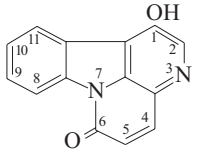


$C_{12}H_{14}N_2O_2$ 218.255
Alkaloid from the leaves of *Dichroa febrifuga*. Cryst. (EtOAc). Mp 175-177°.

Deng, Y. *et al., J. Chin. Pharm. Sci.*, 2000, **9**, 116-118 (*isol*)
Mhaske, S.B. *et al., Tetrahedron*, 2004, **60**, 3417-3420 (*synth, pmr, cmr*)

1-Hydroxycanthin-6-one H-438

*1-Hydroxy-6*H*-indolo[3,2,1*-de*][1,5]-naphthyridin-6-one, 9CI*
[80787-59-3]



$C_{14}H_8N_2O_2$ 236.229
Alkaloid from the heartwood of *Ailanthus giraldii* and root bark of *Ailanthus altissima* (Simaroubaceae). Yellow cryst. (MeOH/Me_2CO). Mp 220°.

*1-*O*-[β-D-Xylopyranosyl-(1→6)-β-D-glucopyranoside]: **Ailantcanthinoside B***
[960002-01-1]
$C_{25}H_{26}N_2O_{11}$ 530.487
Alkaloid from the root bark of *Ailanthus altissima*. Powder. Mp 186-188°. λ_{max} 225 ; 358 ; 376 (Py).

Ac:
$C_{16}H_{10}N_2O_3$ 278.267
Cryst. (MeOH). Mp 205°.

*Me ether: **1-Methoxycanthin-6-one**. 1-Methoxy-6*H*-indolo[3,2,1*-de*][1,5]-naphthyridin-6-one, 9CI*
[60755-86-4]
$C_{15}H_{10}N_2O_2$ 250.256
Alkaloid from the wood and root bark of *Ailanthus altissima*, and from the root bark of *Ailanthus excelsa* (Simaroubaceae). Cytotoxic to guinea pig keratocytes. Shows significant anti-HIV activity. Pale yellow needles (Me_2CO or MeOH). Sol. MeOH, Me_2CO; poorly sol. H_2O. Mp 250-250.5° (246°). λ_{max} 259 ; 270 ; 280 ; 346 ; 360 ; 383 (MeOH) (Berdy). λ_{max} 279 (ε 12300); 330 (ε 7500); 361 (ε 17400); 370 (ε 16300); 378 (ε 19000) (EtOH) (Berdy).

Me ether, N*-oxide: **1-Methoxycanthin-6-one** N**(3)-oxide***
[77370-00-4]
$C_{15}H_{10}N_2O_3$ 266.256
Alkaloid from the root bark of *Ailanthus altissima* (Simaroubaceae). Yellow needles ($CHCl_3$). Mp 256-257°.

Ohmoto, T. *et al., Chem. Pharm. Bull.*, 1976, **24**, 1532 (*isol, uv, ir, pmr, ms, struct*)
Cordell, G.A. *et al., J. Nat. Prod.*, 1978, **41**, 166 (*isol*)
Ohmoto, T. *et al., Chem. Pharm. Bull.*, 1981, **29**, 390 (*isol, uv, ir, pmr, ms, derivs*)
Varga, E. *et al., Fitoterapia*, 1981, **52**, 183 (*isol*)
Khan, S.A. *et al., Phytochemistry*, 1981, **20**, 2062 (*isol, uv, ir, pmr, ms, struct*)
Hagen, T.J. *et al., J.O.C.*, 1989, **54**, 2170 (*synth, pmr, 1-Me ether*)
Xu, Z. *et al., J. Nat. Prod.*, 2000, **63**, 1712-1715 (*activity*)
Suzuki, H. *et al., Synthesis*, 2005, 28-31 (*1-Me ether, synth*)
Zhang, L.-P. *et al., J. Asian Nat. Prod. Res.*, 2007, **9**, 253-259 (*Ailantcanthinoside B*)

2-Hydroxycanthin-6-one H-439

*2-Hydroxy-6*H*-indolo[3,2,1*-de*][1,5]-naphthyridin-6-one, 9CI*
$C_{14}H_8N_2O_2$ 236.229
Alkaloid from cell cultures of *Ailanthus altissima* (Simaroubaceae). Amorph. solid.

*Me ether: 2-Methoxy-6*H*-indolo[3,2,1*-de*][1,5]naphthyridin-6-one, 9CI. **2-Methoxycanthin-6-one***
[116353-93-6]
$C_{15}H_{10}N_2O_2$ 250.256
Alkaloid from stem wood of *Quassia amara* (Surinam quassia) (Simaroubaceae). Pale yellow powder (MeOH/$CHCl_3$). Mp 262-264°.

Crespi-Perellino, N. *et al., J. Nat. Prod.*, 1986, **49**, 1010 (*isol, uv, pmr, ms, struct*)
Njar, V.C.O. *et al., Planta Med.*, 1993, **59**, 259 (*2-Methoxycanthin-6-one*)

4-Hydroxycanthin-6-one H-440

*4-Hydroxy-6*H*-indolo[3,2,1*-de*][1,5]-naphthyridin-6-one, 9CI*
$C_{14}H_8N_2O_2$ 236.229
Alkaloid from cell cultures of *Ailanthus altissima* (Simaroubaceae). Yellow amorph. solid (MeOH).

*Me ether: **4-Methoxycanthin-6-one**. 4-Methoxy-6*H*-indolo[3,2,1*-de*][1,5]-naphthyridin-6-one, 9CI. Cordatanine*
[5023-08-5]
$C_{15}H_{10}N_2O_2$ 250.256
Alkaloid from the stem and root bark of *Charpentiera obovata* and from *Drymaria cordata* (Aramanthaceae, Caryophyllaceae). Needles (C_6H_6). Mp 220-221°.

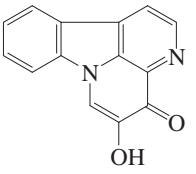
Me ether, picrate:
Yellow needles (EtOH). Mp 221.5-222.5° dec.

Me ether, methiodide:
Cryst. +1 H_2O (H_2O + trace HI). Mp 218° dec.

Nelson, E.R. *et al., Aust. J. Sci. Res., Ser. A*, 1952, **5**, 768 (*synth*)
Scheuer, P.J. *et al., J. Nat. Prod.*, 1965, **28**, 95 (*isol, uv, synth*)
Chen, W. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 1986, **28**, 450; *CA*, **106**, 15732w (*deriv*)

5-Hydroxycanthin-4-one H-441

*5-Hydroxy-4*H*-indolo[3,2-*de*][1,5]-naphthyridin-4-one, 9CI*



$C_{14}H_8N_2O_2$ 236.229

*Me ether: 5-Methoxycanthin-4-one. **Drymaritine***
$C_{15}H_{10}N_2O_2$ 250.256
Alkaloid from *Drymaria diandra*. Anti-HIV agent. Pale yellow solid. Mp 181-183°. λ_{max} 222 (log ε 3.75); 237 (sh) (log ε 3.64); 264 (log ε 3.6); 288 (log ε 3.41); 297 (log ε 3.41); 333 (sh) (log ε 3.18); 349 (log ε 3.43); 366 (log ε 3.41) (MeOH).

Hsieh, P.-W. *et al., J. Nat. Prod.*, 2004, **67**, 1175-1177 (*isol, uv, pmr, cmr, ms*)

5-Hydroxycanthin-6-one H-442

*5-Hydroxy-6*H*-indolo[3,2,1*-de*][1,5]-naphthyridin-6-one, 9CI*
[64118-73-6]
$C_{14}H_8N_2O_2$ 236.229
Alkaloid from the root bark of *Simarouba amara* and from *Ailanthus altissima* (Simaroubaceae). Orange-yellow platelets (MeOH). Sol. MeOH, $CHCl_3$. Mp 259-261° dec.

*O-[β-D-Xylopyranosyl-(1→6)-β-D-glucopyranoside]: **Ailantcanthinoside A***
[960002-00-0]
$C_{25}H_{26}N_2O_{11}$ 530.487
Alkaloid from the root bark of *Ailanthus altissima*. Powder (MeOH). Mp 200-202°. λ_{max} 225 ; 304 ; 343 ; 358 ; 376 (Py).

*O-[β-D-Glucopyranosyl-(1→6)-β-D-glucopyranoside]: **Bruceolline B**. Brucea-canthinoside*
[159194-91-9]
$C_{26}H_{28}N_2O_{12}$ 560.513
Alkaloid from stems of *Brucea javanica* and root wood of *Brucea mollis* var. *tonkinensis* (Simaroubaceae). Pale yellow amorph. powder. Mp 192-194°. $[\alpha]_D^{23}$ -41 (c, 1 in Py). $[\alpha]_D^{25}$ -64.4 (c, 0.45 in DMSO).

Ac:
Needles (C_6H_6). Mp 231.5-232°.

*Me ether: **5-Methoxycanthin-6-one***
[15071-56-4]

$C_{15}H_{10}N_2O_2$ 250.256
Alkaloid from the bark of *Zanthoxylum caribaeum*, *Zanthoxylum elephantiasis*, *Pentaceras australis* and *Odyendea gabonensis*, the wood of *Picrasma excelsa* (Jamaican quassiawood), and the root bark of *Ailanthus excelsa* (Rutaceae, Simaroubaceae). Antineoplastic agent. Cytotoxic to guinea pig keratocytes. Pale yellow needles (MeOH, $CHCl_3$/MeOH or EtOH/CH_2Cl_2). Mp 243-244° (237-238°) dec. Log P 2.35 (uncertain value) (calc).

Me ether, hydrochloride:
Needles (MeOH). Mp 205-208°.

Me ether, picrate:
Yellow needles (MeOH). Mp 244-246°.

Haynes, H.F. *et al., Aust. J. Sci. Res., Ser. A*, 1952, **5**, 387 (*isol*)
Nelson, E.R. *et al., Aust. J. Sci. Res., Ser. A*, 1952, **5**, 563 (*uv, struct, synth*)
Bartlett, M.F. *et al., J.A.C.S.*, 1960, **82**, 5941 (*synth*)
Awad, A.T. *et al., J. Pharm. Sci.*, 1967, **56**, 279 (*isol*)
Della Casa, D. *et al., J.C.S.(C)*, 1967, 2155 (*isol, uv, ir, pmr*)
Lassak, E.V. *et al., Phytochemistry*, 1977, **16**, 1126 (*isol, synth, uv, ms, struct*)
Cordell, G.A. *et al., J. Nat. Prod.*, 1978, **41**, 166 (*isol, uv, ir, pmr, ms*)
Wagner, H. *et al., Planta Med.*, 1979, **36**, 113 (*isol*)
Forgacs, P. *et al., Planta Med.*, 1982, **46**, 187 (*isol*)
Kitagawa, I. *et al., Chem. Pharm. Bull.*, 1994, **42**, 1416 (*Bruceacanthinoside*)
Ouyang, Y. *et al., Phytochemistry*, 1994, **36**, 1543 (*Bruceolline B*)
Zhang, L.-P. *et al., J. Asian Nat. Prod. Res.*, 2007, **9**, 253-259 (*Ailantcanthinoside A*)

8-Hydroxycanthin-6-one H-443

*8-Hydroxy-6*H-*indolo[3,2,1*-de*][1,5]-naphthyridin-6-one, 9CI*
[66762-19-4]

$C_{14}H_8N_2O_2$ 236.229
Alkaloid from the root bark of *Ailanthus excelsa* and the trunk bark of *Odyendea gabonensis* (Simaroubaceae). Cryst. ($CHCl_3$). Mp 340° (270-275° dec.).

Cordell, G.A. *et al., J. Nat. Prod.*, 1978, **41**, 166 (*isol, uv, ir, pmr, ms, struct*)
Forgacs, P. *et al., Planta Med.*, 1982, **46**, 187 (*isol*)

9-Hydroxycanthin-6-one H-444

*9-Hydroxy-6*H-*indolo[3,2,1*-de*][1,5]-naphthyridin-6-one, 9CI*
[138544-91-9]

$C_{14}H_8N_2O_2$ 236.229
Alkaloid from the wood of *Simaba multiflora*, from the roots of *Eurycoma longifolia* and from stems of *Picrolemma granatensis* (Simaroubaceae). Yellow needles. Mp 288-293° (285-286°). The nat. prod. from *S. multiflora* has been reassigned this struct. by Kardono, *et al.* λ_{max} 238 (sh) (ϵ 15850); 274 (ϵ 15850); 310 (ϵ 10960); 352 (ϵ 14130) (MeOH).

N^3-*Oxide:* ***9-Hydroxycanthin-6-one*** **N^3-oxide**
[137739-75-4]
$C_{14}H_8N_2O_3$ 252.229
Alkaloid from the roots of *Eurycoma longifolia* (Simaroubaceae). Red needles. Mp 248-250° dec. λ_{max} 230 (ϵ 33110); 289 (ϵ 3200); 360 (ϵ 19500); 417 (ϵ 1200) (MeOH).

O-*β-D-Glucopyranoside:* [339077-98-4]
$C_{20}H_{18}N_2O_7$ 398.371
Alkaloid from the roots of *Eurycoma harmandiana*. Amorph. yellow powder. λ_{max} 285 (log ϵ 3.16); 321 (log ϵ 3.14); 367 (log ϵ 3.22) (MeOH/HCl).

*Me ether: 9-Methoxy-6*H-*indolo[3,2,1-*de*][1,5]naphthyridin-6-one, 9CI.* ***9-Methoxycanthin-6-one****. 8-Methoxycanthin-6-one (incorr.)*
[74991-91-6]
$C_{15}H_{10}N_2O_2$ 250.256
Yellow cryst. (EtOH). Mp 178-180°. λ_{max} 272 (ϵ 14750); 310 (ϵ 4500); 353 (ϵ 7000) (MeOH). λ_{max} 278 (ϵ 25000); 320 (ϵ 12000); 380 (ϵ 18700) (MeOH/HCl) (Berdy).

Me ether, N^3*-oxide:* ***9-Methoxycanthin-6-one*** **N^3-oxide**
[137739-74-3]
$C_{15}H_{10}N_2O_3$ 266.256
Alkaloid from the roots of *Eurycoma longifolia* and stems of *Picrolemma granatensis* (Simaroubaceae). Orange-yellow powder. Mp 238-240° (193° dec.). λ_{max} 242 (ϵ 1000); 286 (ϵ 15500); 293 (ϵ 18600); 360 (ϵ 6300); 422 (ϵ 5600) ($CHCl_3$).

1,2-Dihydro: 1,2-Dihydro-9-hydroxy-6-canthinone. ***4,5-Dehydrofluorodaturatin****. 1,2-Dehydrofluorodaturatin (incorr.). 1,2-Dehydrofluorodaturine (incorr.)*
[95855-89-3]
$C_{14}H_{10}N_2O_2$ 238.245
Alkaloid from the seeds of *Datura stramonium* var. *stramonium* (Solanaceae). Brown cryst. Mp 360° (blackens >73°). Also obt. by air oxidn. of Fluorodaturatin, therefore prob. artifact. Incorr. called 1,2-Dehydrofluorodaturine in *CA*. The struct. was assigned (and the name 1,2-Dehydrofluorodaturatin allocated) before the correct struct. of Fluorodaturatin was assigned.

1,2,4,5-Tetrahydro: 1,2,4,5-Tetrahydro-9-hydroxy-6-canthinone. ***Fluorodaturatin****. Alkaloid GF*
[80757-43-3]
$C_{14}H_{12}N_2O_2$ 240.261
Alkaloid from the seeds of *Datura stramonium* var. *stramonium* (Solanaceae). Yellow cryst. Dec. >125°, turns black above 140°; does not melt < 360°. Largely enolised. Struct. revised in 1988. λ_{max} 268 (ϵ 2800); 368 (ϵ 8600); 455 (ϵ 5200) (MeOH/NaOH) (Derep). λ_{max} 217 (ϵ 22200); 261 (ϵ 6780); 387 (ϵ 20700) (MeOH) (Derep).

Giesbrecht, A.M. *et al., Phytochemistry*, 1980, **19**, 313-315 (*Me ether, isol, uv, ir, pmr, ms, struct*)
Maier, I. *et al., Monatsh. Chem.*, 1981, **112**, 1425-1439 (*Fluorodaturatin*)
Polonsky, J. *et al., Tet. Lett.*, 1982, **23**, 869-872 (*isol, uv, ir, pmr, struct*)
Jurenitsch, J. *et al., Sci. Pharm.*, 1984, **52**, 301-306 (*Dehydrofluorodaturin*)
Robien, W. *et al., Sci. Pharm.*, 1988, **56**, 133 (*Fluorodaturatin, struct*)
Kardono, L.B.S. *et al., J. Nat. Prod.*, 1991, **54**, 1360-1367 (*N-oxide, Me ether, Me ether N-oxide, isol, uv, ir, ms, pmr, cmr*)
Rodrigues Fo, E. *et al., Phytochemistry*, 1992, **31**, 2499-2501 (*Me ether N-oxide*)
Kanchanapoom, T. *et al., Phytochemistry*, 2001, **56**, 383-386 (*glucoside*)

10-Hydroxycanthin-6-one H-445

*10-Hydroxy-6*H-*indolo[3,2,1*-de*][1,5]-naphthyridin-6-one, 9CI.* ***Aervine****. Ervine*†
[86293-41-6]

$C_{14}H_8N_2O_2$ 236.229
Alkaloid from aerial parts of *Aerva lanata* (Amaranthaceae) and from *Simaba multiflora*. Yellow cryst. (MeOH or $CHCl_3$/MeOH). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 310-313° dec. λ_{max} 238 (sh) (ϵ 15800); 283 (sh) (ϵ 13800); 297 (ϵ 15500); 320 (sh) (ϵ 12900); 356 (ϵ 11000); 428 (ϵ 8510) (MeOH/NaOH) (Derep). λ_{max} 238 (sh) (ϵ 15500); 269 (sh) (ϵ 16600); 275 (ϵ 17800); 304 (sh) (ϵ 11000); 312 (ϵ 11700); 352 (ϵ 14800) (MeOH) (Derep).

O-*β-D-Glucopyranoside:* ***Aervoside****. Ervoside*
[139767-01-4]
$C_{20}H_{18}N_2O_7$ 398.371
From aerial parts of *Aerva lanata* (Amaranthaceae). Bright yellow cryst. (MeOH or EtOH). Mp 215-218°.

*Me ether: 10-Methoxy-6*H-*indolo[3,2,1-*de*][1,5]naphthyridin-6-one, 9CI. 10-Methoxycanthin-6-one.* ***Methylaervin***
[86293-40-5]
$C_{15}H_{10}N_2O_2$ 250.256
From aerial parts of *Aerva lanata* (Amaranthaceae)Alkaloid from aerial parts of *Aerva lanata* (Amaranthaceae) and from *Simaba multiflora*. Bright yellow needles (MeOH or $CHCl_3$/EtOH). Mp 194-196°. λ_{max} 212 (ϵ 15800); 232 (sh) (ϵ 6460); 266 (sh) (ϵ 8910); 274 (ϵ 11500); 310 (ϵ 4900); 352 (ϵ 6760) (MeOH) (Derep).

Zapesochnaya, G. *et al., Planta Med.*, 1992, **58**, 192 (*isol, uv, ir, pmr, cmr, ms, struct*)

11-Hydroxycanthin-6-one H-446

*11-Hydroxy-6*H-*indolo[3,2,1*-de*][1,5]-naphthyridin-6-one, 9CI. Amarorine*
[75969-83-4]

$C_{14}H_8N_2O_2$ 236.229
Alkaloid from the bark of *Amaroria soulameoides* and from *Soulamea soulameoides*, *Brucea antidysenterica* and *Quassia kerstingii* (Simaroubaceae). Red-brown cryst. + $1H_2O$ (MeOH aq.). Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. Mp 323-325°. λ_{max} 326 (ϵ 33200); 383 (ϵ 40900) (MeOH) (Berdy). λ_{max} 352 ; 445 (MeOH-NaOH) (Berdy). λ_{max} 325 (ϵ 9100); 385 (ϵ 17800) (EtOH) (Berdy).

N-*Oxide:* ***11-Hydroxycanthin-6-one*** **N-oxide**
[158784-71-5]
$C_{14}H_8N_2O_3$ 252.229
Alkaloid from root wood of *Brucea mollis* var. *tonkinensis* (Simaroubaceae). Yellow needles. Mp 300°. Intense yellow-green fluor. in MeOH.

O-*β-D-Glucopyranoside:* ***Bruceolline G.***

11-O-*β*-D-*Glucopyranosyloxycanthin-6-one*
[165967-63-5]
$C_{20}H_{18}N_2O_7$ 398.371
Alkaloid from root wood of *Brucea mollis* var. *tonkinensis* (Simaroubaceae). Amorph. pale yellow powder.

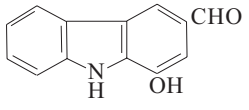
O-*[β-D-Glucopyranosyl-(1→6)-β-D-glucopyranoside]*: ***Bruceolline A***
[159194-90-8]
$C_{26}H_{28}N_2O_{12}$ 560.513
Alkaloid from root wood of *Brucea mollis* var. *tonkinensis* (Simaroubaceae). Pale yellow amorph. powder (MeOH). Mp 241-243° dec. $[\alpha]_D^{23}$ -62.2 (c, 1 in Py).

Me ether: ***11-Methoxycanthin-6-one***. *11-Methoxy-6*H-*indolo[3,2,1-*de*][1,5]-naphthyridin-6-one, 9CI. Amaroridine*
[75969-82-3]
$C_{15}H_{10}N_2O_2$ 250.256
Alkaloid from bark of *Amaroria soulameoides* (Simaroubaceae). Mp 237-238°.

Clarke, P.J. *et al., J.C.S. Perkin 1*, 1980, 1614 (*isol, uv, ir, pmr, ms, cryst struct*)
Ouyang, Y. *et al., Phytochemistry*, 1994, **36**, 1543 (*oxide, Bruceolline A*)
Ouyang, Y. *et al., Phytochemistry*, 1995, **39**, 911 (*Bruceolline G*)

1-Hydroxy-9*H*-carbazole-3-carboxaldehyde H-447

3-Formyl-1-hydroxycarbazole. ***Demethylmurrayanine***
[123497-84-7]



$C_{13}H_9NO_2$ 211.22
Alkaloid from *Clausena heptaphylla* (Rutaceae). Plates ($CHCl_3$). Mp 237-239°. λ_{max} 226 (log ε 4.4); 244 (log ε 4.51); 255 (log ε 4.39); 278 (log ε 4.59); 291 (log ε 4.45); 336 (log ε 4.22); 346 (log ε 4.22) (EtOH).

*Me ether: 1-Methoxy-9*H-*carbazole-3-carboxaldehyde, 9CI. 3-Formyl-1-methoxycarbazole.* ***Murrayanine***†
[723-97-7]
$C_{14}H_{11}NO_2$ 225.246
Alkaloid from the stem bark of *Murraya koenigii* (curryleaf tree) and the roots of *Clausena heptaphylla* (Rutaceae). Active against gram-positive bacteria. Needles (C_6H_6/petrol). Sol. MeOH, C_6H_6; poorly sol. hexane. Mp 168-170° Mp 219° dec. (synthetic). $Bp_{0.05}$ 110-115° subl. λ_{max} 239 (ε 29510); 247 (ε 19950); 274 (ε 36310); 289 (ε 36300) (MeOH) (Berdy).

Me ether, picrate:
Fine orange needles (C_6H_6/petrol). Mp 198-200° dec.

Me ether, oxime:
$C_{14}H_{12}N_2O_2$ 240.261
Needles (C_6H_6/petrol). Mp 155-156°.

Me ether, N-*Me:*
$C_{15}H_{13}NO_2$ 239.273
Cream-coloured needles (C_6H_6/petrol). Mp 150.5-151.5°.

Das, K.C. *et al., Experientia*, 1965, **21**, 340 (*Murrayanine, activity*)
Chakraborty, D.P. *et al., Tetrahedron*, 1965, **21**, 681-685 (*Murrayanine, isol, uv, ir, pmr, struct*)
Crum, J.D. *et al., Chem. Comm.*, 1966, 417-419 (*Murrayanine, synth, uv, ir, pmr*)
Chakraborty, D.P. *et al., J.O.C.*, 1968, **33**, 1265-1268 (*Murrayanine, synth, uv, ir*)
Bhattracharyya, P. *et al., Phytochemistry*, 1973, **12**, 1831-1832 (*Murrayanine, isol, uv, ir*)
Ngadjui, B.T. *et al., Phytochemistry*, 1989, **28**, 1517-1519 (*isol, uv, ir, pmr, cmr, ms, struct*)
Knölker, H.-J. *et al., Tetrahedron*, 1993, **49**, 11221-11234 (*Murrayanine, synth*)
Bringmann, G. *et al., Planta Med.*, 1998, **64**, 54-57 (*synth, pmr, cmr*)
Bringmann, G. *et al., Synthesis*, 1998, 1501-1505 (*synth, Me ether, cmr*)
Benavides, A. *et al., Synthesis*, 2004, 2499-2504 (*Murrayanine, synth*)
Bernal, P. *et al., Helv. Chim. Acta*, 2007, **90**, 1449-1454 (*Murrayanine, synth*)

2-Hydroxy-9*H*-carbazole-3-carboxaldehyde H-448

3-Formyl-2-hydroxycarbazole. ***Mukonal***
[20323-67-5]
$C_{13}H_9NO_2$ 211.22
Alkaloid from the stem bark of *Murraya koenigii* (curryleaf tree) (Rutaceae). Cryst. (C_6H_6/$CHCl_3$). Mp 238°. λ_{max} 229 (ε 26360); 247 (ε 16220); 278 (ε 34990); 297 (ε 36140); 345 (ε 11560) (EtOH).

O-*Ac:*
Cryst. (C_6H_6). Mp 210°.

*Me ether: 2-Methoxy-9*H-*carbazole-3-carboxaldehyde. 3-Formyl-2-methoxycarbazole.* ***Glycosinine***. O-*Methylmukonal*
[51971-08-5]
$C_{14}H_{11}NO_2$ 225.246
Alkaloid from *Murraya siamensis* and roots of *Glycosmis pentaphylla* (Rutaceae). Mp 189-189.5° (185°). λ_{max} 296 (log ε 4.64); 350 (log ε 4.19) (EtOH).

Joshi, B.S. *et al., Chem. Ind. (London)*, 1968, 685 (*uv, ir, pmr, synth*)
Bhagwanth, M.R.R. *et al., Indian J. Chem.*, 1969, **7**, 1065-1069 (*synth*)
Bhattacharyya, P. *et al., Phytochemistry*, 1984, **23**, 471-472 (*isol, uv, ir, pmr, cmr, ms*)
Ruangrungsi, N. *et al., J. Nat. Prod.*, 1990, **53**, 946-952 (*O-Methylmukonal*)
Wu, T.S. *et al., Phytochemistry*, 1993, **32**, 449-451 (*Glycosinine*)
Knölker, H.J. *et al., Synlett*, 1996, 737-740 (*Mukonal, O-Methylmukonal, synth*)

6-Hydroxy-9*H*-carbazole-3-carboxaldehyde H-449

3-Formyl-6-hydroxycarbazole

$C_{13}H_9NO_2$ 211.22

*Me ether: 6-Methoxy-9*H-*carbazole-3-carboxaldehyde. 8-Methoxy-2-carbazolecarboxaldehyde (obsol.). 3-Formyl-6-methoxycarbazole*
[107816-72-8]
$C_{14}H_{11}NO_2$ 225.246
Alkaloid from the roots of *Clausena lansium* (wampee) (Rutaceae). Prisms (Me_2CO/hexane). Mp 135-136°.
Hewlins, M.J.E. *et al., J. Chem. Res., Synop.*, 1986, 292

7-Hydroxy-9*H*-carbazole-3-carboxaldehyde, 9CI H-450

6-Formyl-2-hydroxycarbazole
[142750-13-8]
$C_{13}H_9NO_2$ 211.22
Alkaloid from root bark of *Murraya euchrestifolia* (Rutaceae). Powder (Me_2CO).

*Me ether: 7-Methoxy-9*H-*carbazole-3-carboxaldehyde, 9CI. 6-Formyl-2-methoxycarbazole.* ***Clauszoline K***
[187110-71-0]
$C_{14}H_{11}NO_2$ 225.246
Alkaloid from *Clausena excavata*. Powder. λ_{max} 226 (sh) ; 232 ; 252 (sh) ; 293 ; 324 (MeOH).

Ito, C. *et al., Chem. Pharm. Bull.*, 1992, **40**, 230; 1997, **45**, 48-52 (*isol, uv, ir, pmr, ms, struct*)
Krahl, M.P. *et al., Org. Biomol. Chem.*, 2006, **4**, 3215-3219 (*synth*)

8-Hydroxy-9*H*-carbazole-3-carboxaldehyde H-451

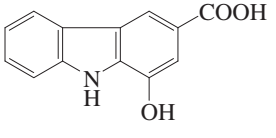
6-Formyl-1-hydroxycarbazole

$C_{13}H_9NO_2$ 211.22

*Me ether: 8-Methoxy-9*H-*carbazole-3-carboxaldehyde, 9CI. 3-Formyl-8-methoxycarbazole. 6-Formyl-1-methoxycarbazole.* ***Mukolidine***
[87264-45-7]
$C_{14}H_{11}NO_2$ 225.246
Minor alkaloid from roots of *Murraya koenigii* (curryleaf tree). Cryst. (C_6H_6). Mp 152-155°.

Roy, S. *et al., J. Indian Chem. Soc.*, 1982, **59**, 1369 (*Mukolidine*)

1-Hydroxy-9*H*-carbazole-3-carboxylic acid, 9CI H-452



$C_{13}H_9NO_3$ 227.219

Me ester: ***Clausine E***. *Clauszoline I*
[182261-83-2]
$C_{14}H_{11}NO_3$ 241.246
Alkaloid from stem bark of *Clausena excavata*. Powder (Me_2CO). Mp 218-220°. λ_{max} 222 (sh) (log ε 4.01); 239 (log ε 4.14); 248 (sh) (log ε 4.08); 269 (sh) (log ε 4.22); 276 (log ε 4.23); 311 (log ε 3.65); 324 (log ε 3.64); 337 (log ε 3.5) (MeOH).

*Me ether: 1-Methoxy-9*H-*carbazole-3-carboxylic acid.* ***Mukoeic acid***. *Mukeic acid*
[3889-89-2]
$C_{14}H_{11}NO_3$ 241.246
Alkaloid from the stem bark of *Murraya koenigii* (curryleaf tree) (Rutaceae). Cryst. (C_6H_6 or EtOAc). Mp 242°. λ_{max} 210 (log ε 4.58); 230 (log ε 3.92); 235 (log ε 4.51) (no solvent

reported).

Me ether, picrate: Mp 225-228°.

Me ether, Me ester: ***Mukonine***
[23523-94-6]
$C_{15}H_{13}NO_3$ 255.273
Alkaloid from the stem bark of *Murraya koenigii* (curryleaf tree) (Rutaceae). Cryst. ($CHCl_3/C_6H_6$). Mp 198-200° (195°). λ_{max} 236 (log ε 4.6); 245 (log ε 4.57); 266 (log ε 4.64); 274 (log ε 4.73); 306 (log ε 3.88); 320 (log ε 3.78) (EtOH).

Choudhury, B.K. *et al., Phytochemistry*, 1971, **10**, 1967-1970 (*Mukoeic acid, isol, uv, ir, pmr, struct*)
Chakraborty, D.P. *et al., Phytochemistry*, 1978, **17**, 834-855 (*Mukonine, synth*)
Knölker, H.-J. *et al., Tet. Lett.*, 1993, **49**, 11221-11236 (*synth*)
Wu, T.-S. *et al., Phytochemistry*, 1996, **43**, 133-140 (*Clausine E*)
Ho, C. *et al., Chem. Pharm. Bull.*, 1997, **45**, 48-52 (*Clauszoline I*)
Knölker, H.J. *et al., Tet. Lett.*, 1997, **38**, 533-536 (*synth*)
Bringmann, G. *et al., Synthesis*, 1998, 1501-1505 (*Mukoeic acid, Mukonine, Clausine E, synth*)
Brenna, E. *et al., Tetrahedron*, 1998, **54**, 1585-1588 (*synth*)
Zempoalteca, A. *et al., Heterocycles*, 2002, **57**, 259-267 (*synth*)
Bergman, J. *et al., Org. Prep. Proced. Int.*, 2006, **38**, 593-599 (*Clausine E, synth*)

2-Hydroxy-9*H*-carbazole-3-carboxylic acid, 9CI H-453

[14501-64-5]

$C_{13}H_9NO_3$ 227.219
Mp 273-274°.

Me ester: ***Mukonidine****. 2-Hydroxy-3-carbomethoxycarbazole*
[24949-00-6]
$C_{14}H_{11}NO_3$ 241.246
Alkaloid from the stem bark of *Murraya koenigii* (curryleaf tree) (Rutaceae). Cryst. ($C_6H_6/CHCl_3$). Mp 168-170° Mp 188° Mp 190° Mp 245°. Doubts have been expressed as to the correctness of this struct.; see below. λ_{max} (EtOH). λ_{max} 230 (log ε 4.8); 248 (log ε 4.57); 266 (log ε 4.64); 272 (log ε 4.73); 308 (log ε 3.88); 316 (log ε 3.78); 323 (log ε 3.18) (EtOH).

Me ether, Me ester: 2-Methoxy-3-carbomethoxycarbazole. ***Clausine L****. O-Methylmukonidine*
[14501-65-6]
$C_{15}H_{13}NO_3$ 255.273
Alkaloid from stem bark of *Murraya koenigii* (curryleaf tree) and leaves of *Clausena excavata* (Rutaceae). Cryst. ($C_6H_6/CHCl_3$). Plates (Me_2CO). Mp 133-135° Mp 205°. Methylmukonidine and Clausine L not compared. Phys. data are not identical. λ_{max} 227 (log ε 4.5); 250 (log ε 4.28); 255 (log ε 4.1); 285 (log ε 4.13) (EtOH).

Chakraborty, D.P. *et al., Indian J. Chem.*, 1966, **4**, 416 (*synth*)
Joshi, B.S. *et al., J.C.S.(C)*, 1969, 1518 (*synth*)
Chakraborty, D.P. *et al., J. Indian Chem. Soc.*, 1978, **55**, 1114-1115 (*Mukonidine, isol, uv, ir, ms, struct, synth*)
Wu, T.S. *et al., Phytochemistry*, 1993, **32**, 449-451 (*Clausine L*)
Bhattacharyya, P. *et al., Phytochemistry*, 1994, **35**, 1085-1086 (*O-Methylmukonidine*)
Forke, R. *et al., Org. Biomol. Chem.*, 2008, **6**, 2481-2483 (*Clausine L, synth*)

6-Hydroxy-9*H*-carbazole-3-carboxylic acid H-454

8-Hydroxy-2-carbazolecarboxylic acid (obsol.)

$C_{13}H_9NO_3$ 227.219

Me ether, Me ester: ***Methyl 6-methoxy-9H-carbazole-3-carboxylate****. Methyl 8-methoxy-2-carbazolecarboxylate (obsol.)*
[132922-58-8]
$C_{15}H_{13}NO_3$ 255.273
Alkaloid from the roots of *Clausena lansium* (wampee) (Rutaceae). Prisms (Et_2O/hexane). Mp 147-149°.

Hewlins, M.J.E. *et al., J. Chem. Res., Synop.*, 1986, 292 (*synth*)
Li, W.-S. *et al., Phytochemistry*, 1991, **30**, 343 (*isol*)

7-Hydroxy-9*H*-carbazole-3-carboxylic acid, 9CI H-455

$C_{13}H_9NO_3$ 227.219

Me ester: ***Clausine M***
[250259-33-7]
$C_{14}H_{11}NO_3$ 241.246
Alkaloid from *Clausena excavata*. Yellowish needles (Me_2CO). Mp 200-203°.

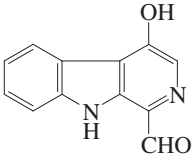
*Me ether: 7-Methoxy-9*H*-carbazole-3-carboxylic acid.* ***Clausine N***
[250259-34-8]
$C_{14}H_{11}NO_3$ 241.246
Alkaloid from *Clausena excavata*. Yellow powder (Me_2CO). Mp 215-218°.

Me ether, Me ester: 3-Carbomethoxy-7-methoxycarbazole. ***Clausine C****. Clauszoline L*
[186002-61-9]
$C_{15}H_{13}NO_3$ 255.273
Alkaloid from stem bark of *Clausena excavata*. Yellowish needles (Me_2CO). Mp 195-197°. λ_{max} 220 ; 239 (sh) ; 249 ; 282 ; 308 (sh) ; 320 (sh) (MeOH).

Wu, T.-S. *et al., Phytochemistry*, 1996, **43**, 1427-1429; 1999, **52**, 523-527 (*Clausines*)
Ito, C. *et al., Chem. Pharm. Bull.*, 1997, **45**, 48-52 (*Clauszoline L*)
Krahl, M.P. *et al., Org. Biomol. Chem.*, 2006, **4**, 3215-3219 (*synth*)
Watanabe, T. *et al., Chem. Comm.*, 2007, 4516-4518 (*Clausine C, synth*)

4-Hydroxy-β-carboline-1-carboxaldehyde H-456

*4-Hydroxy-9*H*-pyrido[3,4-b]indole-1-carboxaldehyde, 9CI. 1-Formyl-4-hydroxy-β-carboline*
[74690-70-3]



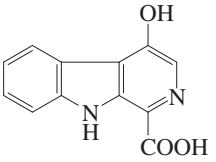
$C_{12}H_8N_2O_2$ 212.207
Isol. from *Picrasma quassioides* (Simaroubaceae). Inhibitor of xanthine oxidase. Cryst. (MeOH aq). Mp 296-298°. λ_{max} 210 ; 240 ; 283 ; 370 (EtOH).

*Me ether: 4-Methoxy-9*H*-pyrido[3,4-b]indole-1-carboxaldehyde. 1-Formyl-4-methoxy-β-carboline.* ***Kumujancine***
[92631-69-1]
$C_{13}H_{10}N_2O_2$ 226.234
Alkaloid from the wood of *Picrasma quassioides* (Simaroubaceae). Yellow needles. Mp 209-210°.

Ger. Pat., 1980, 2 941 449; *CA*, **93**, 114495 (*isol, synth, uv, ir*)
Yang, J. *et al., Huaxue Xuebao*, 1984, **42**, 679-683; *CA*, **101**, 207605a

4-Hydroxy-β-carboline-1-carboxylic acid H-457

*4-Hydroxy-9*H*-pyrido[3,4-b]indole-1-carboxylic acid, 9CI*
[74690-79-2]



$C_{12}H_8N_2O_3$ 228.207
Needles (MeOH/THF). Mp 158-159° dec.

Me ester: [74690-72-5]
$C_{13}H_{10}N_2O_3$ 242.234
Isol. from *Picrasma quassioides*. Prisms (dioxan). Mp 241-242°. λ_{max} 280 ; 304 ; 350 ; 365 (EtOH).

Me ether, Me ester: ***Methyl 4-methoxy-β-carboline-1-carboxylate****. 4-Methoxy-1-methoxycarbonyl-β-carboline*
[60807-25-2]
$C_{14}H_{12}N_2O_3$ 256.26
Alkaloid from root bark and cell cultures of *Ailanthus altissima*. Pale yellow needles (C_6H_6). Mp 191-192°. λ_{max} 236 (log ε 4.32); 247 (log ε 4.29); 267 (log ε 4.41); 278 (log ε 4.31); 303 (log ε 3.94); 363 (log ε 3.87) (EtOH).

Ohmoto, T. *et al., Chem. Pharm. Bull.*, 1976, **24**, 1532-1536 (*Me ether Me ester, synth, uv, ir, pmr, ms*)
Ger. Pat., 1980, 2 941 449; *CA*, **93**, 114495 (*Me ester, isol*)
Varga, E. *et al., Planta Med.*, 1980, **40**, 337-339 (*Me ether Me ester, isol*)
Crespi-Pellerino, N. *et al., J. Nat. Prod.*, 1986, **49**, 1010-1014 (*Me ether Me ester, isol*)
Suzuki, H. *et al., Chem. Pharm. Bull.*, 1991, **39**, 2170-2172 (*Me ether Me ester, synth*)
Suzuki, H. *et al., Tetrahedron*, 1997, **53**, 1593 (*Me ether Me ester, synth*)

6-Hydroxy-β-carboline-1-carboxylic acid H-458

*6-Hydroxy-9*H*-pyrido[3,4-b]indole-1-carboxylic acid, 9CI*

$C_{12}H_8N_2O_3$ 228.207

Me ester: ***Begonanline***
$C_{13}H_{10}N_2O_3$ 242.234

Alkaloid from the rhizomes of *Begonia nantoensis*. Yellow syrup. λ_{max} 206 (log ϵ 3.82); 267 (log ϵ 3.04); 316 (log ϵ 2.56); 392 (log ϵ 2.04) (MeOH).

Wu, P.-L. *et al., Chem. Pharm. Bull.*, 2004, **52**, 345-349 (*isol, pmr, cmr*)

7-Hydroxy-β-carboline-1-carboxylic acid H-459

*7-Hydroxy-9*H*-pyrido[3,4-*b*]indole-1-carboxylic acid, 9CI*

$C_{12}H_8N_2O_3$ 228.207

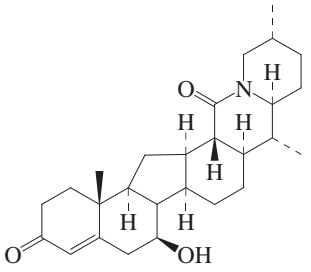
Me ether, Me ester: ***Harmic acid methyl ester.*** *Methyl harmate*
[57498-79-0]
$C_{14}H_{12}N_2O_3$ 256.26
Alkaloid from *Banisteriopsis caapi* (Malphigiaceae). Light-yellow needles ($CHCl_3$). Mp 118° dec. λ_{max} 256 (log ϵ 4.29); 282 (log ϵ 4.25); 323 (log ϵ 4.12) ($CHCl_3$) (Solvent reported may be incorr).

Me ether, amide: 7-Methoxy-β-carboline-1-carboxamide. ***Harmic amide***
[62230-09-5]
$C_{13}H_{11}N_3O_2$ 241.249
Alkaloid from *Banisteriopsis caapi* (Malphigiaceae). Needles ($CHCl_3$/MeOH). Mp 226-227° dec. λ_{max} 255 (log ϵ 4.54); 279 (log ϵ 4.44); 321 (log ϵ 4.35) ($CHCl_3$) (Solvent reported may be incorr).

3,4-Dihydro, Me ether: 3,4-Dihydro-7-hydroxy-β-carboline-1-carboxylic acid. ***Harmalinic acid***
[57498-77-8]
$C_{13}H_{12}N_2O_3$ 244.249
Alkaloid from *Banisteriopsis caapi* (Malphigiaceae). Yellow plates (MeOH). Mp 224-225°. λ_{max} 250 (log ϵ 3.9); 372 (log ϵ 4.36) (MeOH).

Hashimoto, Y. *et al., Phytochemistry*, 1975, **14**, 1633-1635; 1976, **15**, 1559-1560 (*Methyl harmate, Harmic amide, Harmalinic acid, isol, uv, ir, pmr, ms, struct, synth*)

7-Hydroxycev-4-ene-3,18-dione H-460



$C_{27}H_{39}NO_3$ 425.61

(7β,25α)-*form*
Veralodine
[41787-59-1]
Alkaloid from *Veratrum lobelianum* (Liliaceae). Cryst. (Me_2CO). Mp 254-257°. $[\alpha]_D$ +96.4 (c, 0.89 in $CHCl_3$).

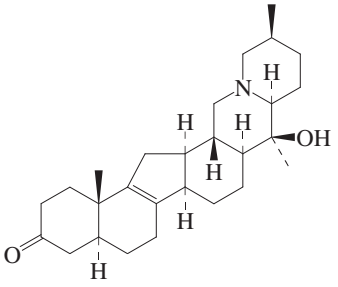
Ac: Mp 249-250°. $[\alpha]_D$ +76.4 (c, 0.102 in $CHCl_3$).

Samikov, K. *et al., Khim. Prir. Soedin.*, 1972, **8**, 770; *Chem. Nat. Compd. (Engl. Transl.)*, 1972, **8**, 751-766 (*isol, ir, pmr, struct*)

Moiseeva, G.P. *et al., Khim. Prir. Soedin.*, 1976, **12**, 630 (*cd, config*)

20-Hydroxycev-8-en-3-one H-461

8,9-Didehydro-20-hydroxy-3-cevanone, 9CI



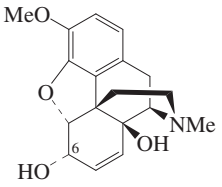
$C_{27}H_{41}NO_2$ 411.626

(5α,20β,25β)-*form*
Edpetisine
[61966-02-7]
Alkaloid from *Petilium eduardii* (aerial parts) (Liliaceae). Cryst. (Me_2CO). Mp 169-171°. $[\alpha]_D$ +5.31 (c, 1.6 in $CHCl_3$).

Nabiev, A. *et al., Khim. Prir. Soedin.*, 1976, **12**, 403-404; *Chem. Nat. Compd. (Engl. Transl.)*, 1976, **12**, 357-358 (*isol, ir, ms, pmr, struct*)

14-Hydroxycodeine H-462

7,8-Didehydro-4,5-epoxy-3-methoxy-17-methylmorphinan-6,14-diol, 9CI
[4829-46-3]



Absolute Configuration

$C_{18}H_{21}NO_4$ 315.368
Alkaloid from *Papaver bracteatum*. Metab. of Thebaine (Papaveraceae). Yellow cryst.

6-Ketone: ***14-Hydroxycodeinone***
[508-54-3]
$C_{18}H_{19}NO_4$ 313.352
Alkaloid from *Papaver bracteatum* (Papaveraceae). Pale-yellow oil.
▶ GG8225000

Misra, A.L. *et al., J. Chromatogr.*, 1972, **71**, 554 (*tlc*)

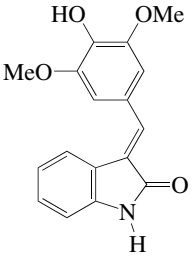
Theuns, H.G. *et al., Phytochemistry*, 1977, **16**, 753 (*isol, struct*)

Coop, A. *et al., Tetrahedron*, 1999, **55**, 11429-11436 (*synth*)

Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, HJX500

3-(4-Hydroxy-3,5-dimethoxybenzylidene)-2-indolinone H-463

[193621-08-8]



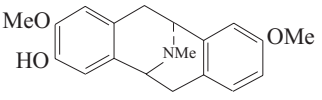
$C_{17}H_{15}NO_4$ 297.31

(*E*)-*form* [189098-75-7]
Alkaloid from the roots of *Isatis indigotica* (Brassicaceae). Yellow prisms. Mp 204-206°. $[\alpha]_D$ +90.7 (c, 0.1 in EtOH). λ_{max} 211 (log ϵ 4.44); 256 (log ϵ 4.22); 379 (log ϵ 4.22) (MeOH).

Wu, X. *et al., Planta Med.*, 1997, **63**, 55-57 (*isol, uv, ir, pmr, cmr*)

2-Hydroxy-3,8-dimethoxypavinane H-464

5,6,11,12-Tetrahydro-2,9-dimethoxy-13-methyldibenzo[a,e]cycloocten-5,11-imin-3-ol, 9CI. 2,9-Dimethoxy-3-hydroxypavinane (incorr.). 3,8-Dimethoxy-9-hydroxypavinane (incorr.)



$C_{19}H_{21}NO_3$ 311.38

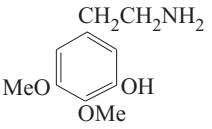
(-)-*form* [41498-94-6]
Alkaloid from the above-ground parts of *Argemone munita* var. *rotundata* (Papaveraceae). Cryst. (MeOH). Mp 197-198°. $[\alpha]_D^{27}$ -254 (c, 1.59 in MeOH).

(±)-*form* [41498-95-7]
Synthetic. Mp 162°.

Coomes, R.M. *et al., J.O.C.*, 1973, **38**, 3701 (*isol, ir, pmr, ms, struct, synth*)

3-Hydroxy-4,5-dimethoxyphenethylamine H-465

5-(2-Aminoethyl)-2,3-dimethoxyphenol, 9CI, 8CI. 3-Demethylmescaline
[16046-07-4]



$C_{10}H_{15}NO_3$ 197.233
Alkaloid from mescal (*Lophophora williamsii*), *Trichocereus pachanoi* (Cactaceae) and *Acacia rigidula*. Prob. intermed. in mescaline biosynth.; precursor of Pellotine and Anhalidine in *L.*

williamsii. Plant growth inhibitor. Identified by ms.

Hydrochloride: [13062-71-0]
Flat needles (EtOH/C_6H_6). Mp 178-179°.

N-*Formyl:* **N-*Formyl-3-demethylmescaline***
$C_{11}H_{15}NO_4$ 225.244
Alkaloid from *Lophophora williamsii* (Cactaceae).

N-*Ac:* **N-*Acetyl-3-demethylmescaline***. N-*[2-(3-Hydroxy-4,5-dimethoxyphenyl)ethyl]acetamide, 9CI*
[4958-20-7]
$C_{12}H_{17}NO_4$ 239.271
Alkaloid from *Lophophora williamsii* (Cactaceae).

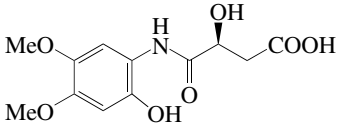
N-*Me:* ***3-Hydroxy-4,5-dimethoxymethylphenethylamine***
[35144-96-8]
$C_{11}H_{17}NO_3$ 211.26
Present in *Lophophora williamsii* as immediate precursor of Pellotine and Anhalidine (Cactaceae). Mp 159-161° (as hydrochloride, synthetic).

N-*Di-Me:* ***3-Hydroxy-4,5-dimethoxydimethylphenethylamine***. *5-[2-(Dimethylamino)ethyl]-2,3-dimethoxyphenol, 9CI*. N,N-*Dimethyl-3-hydroxy-4,5-dimethoxyphenethylamine. 3-Demethyltrichocereine*
[38184-65-5]
$C_{12}H_{19}NO_3$ 225.287
Alkaloid from *Pelecyphora aselliformis*, also detected in *Lophophora williamsii* (Cactaceae). Mp 155-156° (as oxalate).

Späth, E. *et al., Monatsh. Chem.*, 1922, **43**, 93 (*synth*)
Agurell, S. *et al., Chem. Comm.*, 1968, 1638
Kapadia, G.J. *et al., Chem. Comm.*, 1968, 1688 (*isol, ms, derivs*)
Lee, F.G.H. *et al., J. Med. Chem.*, 1969, **12**, 959 (*synth, deriv*)
Agurell, S. *et al., J. Nat. Prod.*, 1969, **32**, 206 (*isol*)
Kapadia, G.J. *et al., J. Pharm. Sci.*, 1969, **58**, 1157 (*isol, ms, synth*)
Lundstrom, J. *et al., Acta Pharm. Suec.*, 1971, **8**, 485; *CA*, **76**, 56708y (*deriv*)
Neal, J.M. *et al., Science (Washington, D.C.)*, 1972, **176**, 1131 (*deriv*)

4-[(2-Hydroxy-4,5-dimethoxyphenyl)amino]-3-hydroxy-4-oxobutanoic acid H-466

N-*(2-Hydroxy-4,5-dimethoxyphenyl)-α-malamic acid*

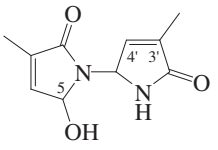


$C_{12}H_{15}NO_7$ 285.253
Constit. of the leaves of *Justicia ghiesbreghtiana*. Pink cryst. Mp 175-176°. $[\alpha]_D^{25}$ -56 (c, 1 in MeOH). λ_{max} 252 (ϵ 7250); 302 (ϵ 7010) (MeCN).

Ismail, L.D. *et al., J. Nat. Prod.*, 1998, **61**, 1174-1176 (*isol, synth, uv, ir, pmr, cmr, ms*)

5-Hydroxy-3,4′-dimethyl-[1,2′-bipyrrole]-2,5′(2′*H*,5*H*)-dione, 9CI H-467

*(1,5-Dihydro-3-methyl-2-oxo-2*H*-pyrrol-5-yl)-1,5-dihydro-5-hydroxy-3-methyl-2*H*-pyrrol-2-one. 5-Hydroxy-3-methyl-1-(3-methyl-2-oxo-2*H*-pyrrolin-5-yl)-3-pyrrolin-2-one*
[79641-96-6]



$C_{10}H_{12}N_2O_3$ 208.216
Alkaloid from the bulbs of *Lilium candidum* (Liliaceae). Cryst. ($CHCl_3$/MeOH). Mp 194-198°.

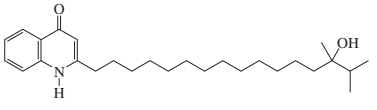
*3′,4′-Dihydro: 1,5-Dihydro-5-hydroxy-3-methyl-1-(4-methyl-5-oxo-2-pyrrolidinyl)-2*H*-pyrrol-2-one, 9CI. 5-Hydroxy-3-methyl-1-(3-methyl-2-oxo-5-pyrrolidinyl)-3-pyrrolin-2-one*
[114054-73-8]
$C_{10}H_{14}N_2O_3$ 210.232
Isol. from petals of *Lilium candidum* (Liliaceae). Mp 169-171°. $[\alpha]_{Hg}^{20}$ +206 (c, 0.15 in MeOH).

*5-Deoxy, 3′,4′-dihydro: 1,5-Dihydro-3-methyl-1-(4-methyl-5-oxo-2-pyrrolidinyl)-2*H*-pyrrol-2-one, 9CI. 3-Methyl-1-(3-methyl-2-oxo-5-pyrrolidinyl)-3-pyrrolin-2-one*
[114020-01-8]
$C_{10}H_{14}N_2O_2$ 194.233
Isol. from the petals of *Lilium candidum* (Liliaceae). Mp 172-174°. $[\alpha]_{Hg}^{20}$ +248 (c, 0.25 in MeOH).

Yakushijin, K. *et al., Heterocycles*, 1981, **16**, 1157 (*synth*)
Haladová, M. *et al., Coll. Czech. Chem. Comm.*, 1988, **53**, 157; 1991, **56**, 436 (*isol, struct*)

2-(14-Hydroxy-14,15-dimethylhexadecyl)-4(1*H*)-quinolinone H-468

4-Hydroxy-2-(14-hydroxy-14,15-dimethylhexadecyl)quinoline



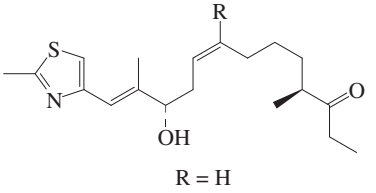
$C_{27}H_{43}NO_2$ 413.642

(+)-*form*
Alkaloid from the leaves of *Dictyoloma vandellianum*. Yellow gum. $[\alpha]_D$ +3 (c, 0.2 in $CHCl_3$). λ_{max} 236 ; 314 ; 325 (MeOH).

*3-Methoxy: 2-(14-Hydroxy-14,15-dimethylhexadecyl)-3-methoxy-4(1*H*)-quinolinone*
$C_{28}H_{45}NO_3$ 443.668
Alkaloid from the leaves of *Dictyoloma vandellianum*. Yellow gum. $[\alpha]_D$ +4 (c, 0.3 in $CHCl_3$). λ_{max} 237 ; 288 ; 335 (MeOH).

Sartor, C.F.P. *et al., Phytochemistry*, 2003, **63**, 185-192 (*isol, pmr, cmr, ms*)

11-Hydroxy-4,12-dimethyl-13-(2-methyl-4-thiazolyl)-8,12-tridecadien-3-one H-469



R = H

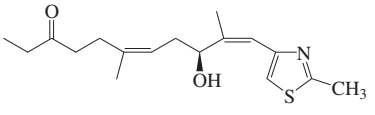
$C_{19}H_{29}NO_2S$ 335.51
Prod. by *Sorangium cellulosum*. Precursor of Epothilones. Amorph. solid. $[\alpha]_D^{22}$ -25 (c, 0.5 in MeOH). λ_{max} 212 (ϵ 17700); 247 (ϵ 13400) (MeOH).

Homologue (R = CH_3): ***11-Hydroxy-4,8,12-trimethyl-13-(2-methyl-4-thiazolyl)-8,12-tridecadien-3-one***
$C_{20}H_{31}NO_2S$ 349.536
Prod. by *Sorangium cellulosum*. Precursor of Epothilones. Amorph. solid. $[\alpha]_D^{22}$ -9 (c, 0.02 in MeOH). λ_{max} 203 (ϵ 19100); 244 (ϵ 12500) (MeOH).

Hardt, I. *et al., J. Nat. Prod.*, 2001, **64**, 847-856

9-Hydroxy-6,10-dimethyl-11-(2-methyl-4-thiazolyl)-6,10-undecadien-3-one H-470

4-(3-Hydroxy-2,6-dimethyl-9-oxo-1,5-undecadienyl)-2-methylthiazole

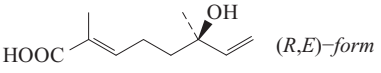


$C_{17}H_{25}NO_2S$ 307.456
Epothilone fragment. Isol. from recombinant *Myxococcus xanthus*. Yellow oil. $[\alpha]_D$ +1.8 (c, 0.027 in MeOH). λ_{max} 211 (ϵ 17600); 247 (ϵ 12800) (MeOH).

Starks, C.M. *et al., J. Nat. Prod.*, 2003, **66**, 1313-1317 (*isol*)

6-Hydroxy-2,6-dimethyl-2,7-octadienoic acid H-471

Linalolic acid. *Linalool-1-oic acid. Menthiafolic acid*
[28420-25-9]



(*R,E*)*–form*

$C_{10}H_{16}O_3$ 184.235

(*S,E*)-*form* [75979-26-9]
Constit. of *Juniperus thurifera*, *Monilinia mali* and *Penstemon ambiguus*. $[\alpha]_D$ +16.8 (c, 1.1 in $CHCl_3$).

Amide: ***Concinnamide***. *Acacialactam (incorr.)*
[126262-46-2]
$C_{10}H_{17}NO_2$ 183.25
Constit. of *Acacia concinna*. Oil. $[\alpha]_D$ +4.3 (c, 0.16 in MeOH). Struct. revised

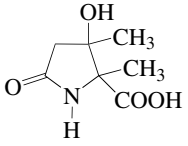
in 1994. λ_{max} 210 (ϵ 15700) (MeOH).

[67711-07-3 , 121843-29-6 , 34935-27-8]

Sekine, T. *et al., Chem. Pharm. Bull.*, 1989, **37**, 3164-3165; 1997, **45**, 148 (*Concinnamide*)

3-Hydroxy-2,3-dimethyl-5-oxo-2-pyrrolidinecarboxylic acid H-472

3-Hydroxy-2,3-dimethyl-5-oxoproline

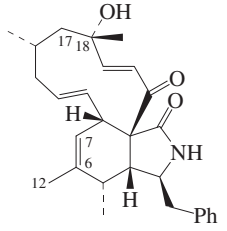


$C_7H_{11}NO_4$ 173.168

Residue present in the lipopolysaccharide of *Pseudomonas fluorescens* 361.

Naberezhnych, G.A. *et al., Bioorg. Khim.*, 1987, **13**, 1426

18-Hydroxy-16,18-dimethyl-10-phenyl[11]cytochalasa-6,13,19-triene-1,21-dione H-473



Relative Configuration

$C_{28}H_{35}NO_3$ 433.589

Metab. of an unidentified *Daldinia* fungus. Amorph. solid. $[\alpha]_D$ -98.4 (c, 0.34 in $CHCl_3$).

6β,7β-Epoxide: ***6,7-Epoxy-18-hydroxy-16,18-dimethyl-10-phenyl[11]cytochalasa-13,19-diene-1,21-dione***

$C_{28}H_{35}NO_4$ 449.589

From *Daldinia* sp. Amorph. solid. $[\alpha]_D$ -57.7 (c, 0.23 in $CHCl_3$).

12-Hydroxy: ***12,18-Dihydroxy-16,18-dimethyl-10-phenyl[11]cytochalasa-6,13,19-triene-1,21-dione***

$C_{28}H_{35}NO_4$ 449.589

From *Daldinia* sp. Amorph. solid. $[\alpha]_D$ -70.4 (c, 0.31 in $CHCl_3$).

19,20-Dihydro, 19β-hydroxy, 6β,7β-epoxide: ***6,7-Epoxy-18,19-dihydroxy-16,18-dimethyl-10-phenyl[11]cytochalas-13-ene-1,21-dione***

$C_{28}H_{37}NO_5$ 467.604

From *Daldinia* sp. Amorph. solid. $[\alpha]_D$ -49 (c, 0.35 in $CHCl_3$).

19,20-Dihydro, 19β-methoxy, 6β,7β-epoxide: 6,7-Epoxy-18-hydroxy-19-methoxy-16,18-dimethyl-10-phenyl[11]cytochalas-13-ene-1,21-dione

$C_{29}H_{39}NO_5$ 481.631

Isol. from *Microporellus subsessilis*. Amorph. solid (MeOH). $[\alpha]_D^{20}$ -115 (c, 0.0007 in $CHCl_3$).

19,20-Dihydro, 19β-methoxy, 12-hydroxy: 12,18-Dihydroxy-19-methoxy-16,18-dimethyl-10-phenyl[11]cytochalasa-6,13-diene-1,21-dione

$C_{29}H_{39}NO_5$ 481.631

Isol. from *Microporellus subsessilis*. Needles (MeOH). Mp 136-138°. $[\alpha]_D^{28}$ -102 (c, 0.0003 in $CHCl_3$).

18-Deoxy, 17β-hydroxy: ***17-Hydroxy-16,18-dimethyl-10-phenyl[11]cytochalasa-6,13,19-triene-1,21-dione***

$C_{28}H_{35}NO_3$ 433.589

From *Daldinia* sp. Amorph. solid. $[\alpha]_D$ -126.6 (c, 0.54 in $CHCl_3$).

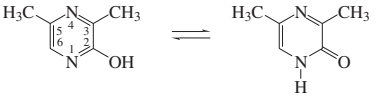
Buchanan, M.S. *et al., Phytochemistry*, 1996, **41**, 821 (*isol, pmr, cmr, ms, struct*)

Kurnia, D. *et al., Phytochemistry*, 2007, **68**, 697-702 (*Microporellus constits*)

2-Hydroxy-3,5-dimethylpyrazine, 9CI H-474

3,5-Dimethyl-2(1H)-pyrazinone, 9CI. 3,5-Dimethyl-2-pyrazinol

[60187-00-0]



$C_6H_8N_2O$ 124.142

NH-Form predominates. Cryst. (EtOH). Mp 149.5-151°.

OH-form

Me ether: 2-Methoxy-3,5-dimethylpyrazine, 9CI

[92508-08-2]

$C_7H_{10}N_2O$ 138.169

Isol. from *Crotalaria ochroleuca* seeds and prod. by microorganisms, e.g. *Chondromyces crocatus*. Causes objectionable odour in foods. Liq. with unpleasant musty odour.

Klein, B. *et al., J.O.C.*, 1964, **29**, 2623-2626 (*synth*)

Macdonald, J.C. *et al., Tetrahedron*, 1976, **32**, 655-660 (*pmr, cmr*)

Ohta, A. *et al., J. Het. Chem.*, 1983, **20**, 311-320 (*synth*)

Mottram, D.S. *et al., Chem. Ind. (London)*, 1984, 448-449 (*Me ether, isol, synth, ms*)

Leitner, H. *et al., Chem. Mikrobiol. Technol. Lebensm.*, 1990, **12**, 151-158; *CA*, **113**, 3275f (*Me ether, isol*)

Simpson, R.F. *et al., J. Agric. Food Chem.*, 2004, **52**, 5425-5430 (*Me ether, isol, synth, pmr, cmr, ms*)

Dickschat, J.S. *et al., Eur. J. Org. Chem.*, 2005, 4141-4153 (*Me ether, isol, synth, pmr, cmr*)

3-Hydroxy-2,5-dimethylpyrazine H-475

3,6-Dimethyl-2(1H)-pyrazinone, 9CI. 3,6-Dimethyl-2-pyrazinol

[16289-18-2]

$C_6H_8N_2O$ 124.142

Cryst. (C_6H_6). Mp 210-211°.

OH-*form*

Me ether: 3-Methoxy-2,5-dimethylpyrazine, 9CI

[19846-22-1]

$C_7H_{10}N_2O$ 138.169

Prod. by *Chondromyces crocatus*. Liq. with musty odour. Bp_2 41°.

Klein, B. *et al., J.O.C.*, 1964, **29**, 2623 (*synth*)

Macdonald, J.C. *et al., Tetrahedron*, 1976, **32**, 655 (*cmr, pmr*)

Ohta, A. *et al., Chem. Pharm. Bull.*, 1979, **27**, 2027 (*synth*)

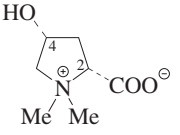
Mottram, D.S. *et al., Chem. Ind. (London)*, 1984, 448 (*synth, ms, deriv*)

Schulz, S. *et al., Tetrahedron*, 2004, **60**, 3863-3872 (*isol*)

4-Hydroxy-1,1-dimethylpyrrolidinium-2-carboxylate H-476

2-Carboxy-4-hydroxy-1,1-dimethylpyrrolidinium hydroxide inner salt, 9CI. 4-Hydroxyproline betaine

[105869-44-1]



(2*R*,4*R*)-*form*

$C_7H_{13}NO_3$ 159.185

(2*R*,4*R*)-*form*

Turicine*. Combretine A*

[515-24-2]

[12785-71-6 (Combretine A)]

Alkaloid from *Betonica wiesin* (preferred genus name *Stachys*), *Canavalia ensiformis* (jack bean), *Combretum micranthum* and *Stachys sylvatica*. Needles or prisms+1H_2O (EtOH aq.). V. sol. H_2O. Mp 260° dec. $[\alpha]_D^{20}$ +37.5 (c, 2.4 in H_2O). Identity of Combretine A not certain.

O-*(4-Bromo-1H-pyrrole-2-carbonyl):* ***Damituricine***

[949091-37-6]

$C_{12}H_{15}BrN_2O_4$ 331.166

Alkaloid from *Axinella damicormis*. Serotonin receptor modulator. $[\alpha]_D^{20}$ +10.7 (c, 0.001 in H_2O).

(2*S*,4*R*)-*form*

Betonicine*. Achillein*

[515-25-3]

Constit. of *Achillea millefolium* (yarrow), *Betonica officinalis* (preferred genus name *Stachys*), *Marrubium vulgare* (horehound) and *Stachys sylvatica*. Shows antiinflammatory props. Prisms (EtOH). Mp 252° dec. $[\alpha]_D^{15}$ -36.6 (H_2O).

4-O-(4-Hydroxy-E-cinnamoyl): ***4-O-p-Coumaroylbetonicine***

$C_{16}H_{19}NO_5$ 305.33

Constit. of *Phlomis brunneogaleata*. Plates (MeCN/MeOH). Mp 239-241°. $[\alpha]_D^{20}$ +3.9 (c, 0.1 in MeOH). λ_{max} 229 ; 304 (MeOH).

(2*RS*,4*RS*)-*form*

Combretine B

[12785-70-5]

Alkaloid from the leaves of *Combretum micranthum* (Combretaceae). Mp 248-249° dec. $[\alpha]_D^{20}$ 0 (c, 2.7 in H_2O). Identity not certain.

[119303-01-4 , 101198-81-6]

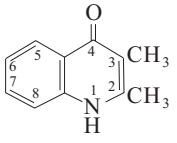
Schulze, E. *et al., Hoppe-Seyler's Z. Physiol. Chem.*, 1911, **76**, 258; 1912, **79**, 236 (*isol*)

Goodson, J.A. *et al., J.C.S.*, 1919, **115**, 923 (*isol*)

Paudler, W.W. *et al., Chem. Ind. (London)*, 1963, 1693-1694 (*isol, struct*)
Mandava, N. *et al., Annalen*, 1970, **741**, 167 (*pmr, config*)
Ogan, A.U. *et al., Planta Med.*, 1972, **21**, 210-217 (*Combretines A,B*)
Musich, J.A. *et al., J.O.C.*, 1977, **42**, 139 (*synth*)
Blunden, G. *et al., Magn. Reson. Chem.*, 1986, **24**, 965-971 (*pmr, cmr*)
Jones, G.P. *et al., Acta Cryst. C*, 1988, **44**, 2208-2211 (*cryst struct*)
Blunden, G. *et al., Biochem. Syst. Ecol.*, 1996, **24**, 71-81 (*occur*)
Kirmizibekmez, H. *et al., Planta Med.*, 2004, **70**, 711-717 (*4-Coumaroylbetonicine*)
Aiello, A. *et al., Bioorg. Med. Chem.*, 2007, **15**, 5877-5887 (*Damituricine*)

4-Hydroxy-2,3-dimethylquinoline H-477

2,3-Dimethyl-4(1H)-quinolinone, 9CI. 2,3-Dimethyl-4-quinolinol. 4-Hydroxy-3-methylquinaldine
[58596-45-5]



$C_{11}H_{11}NO$ 173.214
Alkaloid from aerial parts of *Boronia lanceolata* (Rutaceae). Prisms + H_2O (H_2O). Spar. sol. EtOH. Mp 315°. Subl. at ca. 300°.

N-*Acetoxymethyl:* ***1-Acetoxymethyl-2,3-dimethyl-4(1H)-quinolinone***
[151077-57-5]
$C_{14}H_{15}NO_3$ 245.277
Alkaloid from aerial parts of *Boronia lanceolata* (Rutaceae). Needles ($CHCl_3$/MeOH). Mp 175-178°.

Conrad, M. *et al., Ber.*, 1891, **24**, 2990-2992 (*synth*)
Mander-Jones, B. *et al., CA*, 1933, **27**, 1350 (*synth*)
Royer, R. *et al., J.C.S.*, 1948, 106-110 (*synth*)
Scheuer, P.J. *et al., J.C.S.*, 1963, 5569-5571 (*synth, ir, uv, pmr*)
Ahsan, M. *et al., Phytochemistry*, 1993, **33**, 1507 (*isol, uv, ir, pmr, cmr, ms, struct*)

6-Hydroxy-4,8-dimethylquinoline H-478

4,8-Dimethyl-6-quinolinol, 9CI
[194143-58-3]
$C_{11}H_{11}NO$ 173.214
Alkaloid from the marine cyanobacterium *Lyngbya majuscula*. Amorph. powder. λ_{max} 234 (log ϵ 4.47); 283 (log ϵ 3.51); 322 (log ϵ 3.28); 333 (log ϵ 3.28) (MeOH).

O-*(2,4-Di-O-methyl-β-D-xylopyranoside):* [194143-57-2]
$C_{18}H_{23}NO_5$ 333.383
From *Lyngbya majuscula*. Amorph. powder. $[\alpha]_D^{25}$ -56.7 (c, 0.15 in $CHCl_3$). λ_{max} 236 (log ϵ 4.65); 286 (log ϵ 3.57); 316 (log ϵ 3.44); 328 (log ϵ 3.44) (MeOH).

Orjala, J. *et al., Phytochemistry*, 1997, **45**, 1087-1090 (*isol, uv, ir, pmr, cmr, ms, struct*)

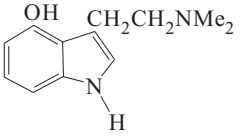
6-Hydroxy-5,7-dimethylquinoline H-479

5,7-Dimethyl-6-quinolinol, 9CI. ***Phlegmariurine N***
[126552-19-0]
$C_{11}H_{11}NO$ 173.214
Alkaloid isol. from *Phlegmariurus fordii* (preferred genus name *Huperzia*). Mp 179-181°. λ_{max} 328 (log ϵ 3.71) (EtOH).

Miao, Z.C. *et al., Yaoxue Xuebao*, 1989, **24**, 114-117; *CA*, **112**, 179528j (*isol, pmr, cmr*)

4-Hydroxy-*N*,*N*-dimethyltryptamine H-480

3-(2-Dimethylaminoethyl)-1H-indol-4-ol, 9CI. 3-(2-Dimethylaminoethyl)-4-hydroxyindole. ***Psilocine.*** *CX 59*
[520-53-6]



$C_{12}H_{16}N_2O$ 204.271
Alkaloid from fungi *Psilocybe* and *Conocybe* spp., *Copelandia chlorocystis* and from *Stropharia* spp. Euphoric, hallucinogen. Sol. MeOH, butanol; fairly sol. H_2O. Mp 173-176° dec. Log P 1.16 (calc). λ_{max} 222 (ϵ 39800); 260 (ϵ 5000); 267 (ϵ 6300); 283 (ϵ 5000); 293 (ϵ 4000) (MeOH) (Berdy).

▶ LD_{50} (rat, ivn) 75 mg/kg. NM2625000

O-*Phosphate:* ***Psilocybine, BAN, INN.*** *Indocybin. CY 39*
[520-52-5]
$C_{12}H_{17}N_2O_4P$ 284.251
Active principle of hallucinogenic mushrooms *Psilocybe mexicana* and other *Psilocybe* spp. Also from *Stropharia* spp. *Inocybe aeruginascens* and *Conocybe cyanopus*. Psychotomimetic agent, hallucinogen. Cryst. (MeOH or H_2O). Sol. MeOH, H_2O, butanol. Mp 220-228° (185-195°). λ_{max} 221 (ϵ 18620); 268 (ϵ 6920); 280 (ϵ 5500); 290 (ϵ 4360) (MeOH) (Berdy). λ_{max} 220 (ϵ 39800); 267 (ϵ 6300); 290 (ϵ 4000) (EtOH) (Berdy).

▶ Human adverse systemic effects by ingestion and intraperitoneal routes incl. toxic psychosis. LD_{50} (rat, ivn) 280 mg/kg; LD_{50} (mus, ipr) 420 mg/kg. NM3150000

N^b-*Me,* O-*phosphate:* N^b-*Methylpsilocybine.* ***Aeruginascine***
[114264-95-8]
$C_{13}H_{20}N_2O_4P^{\oplus}$ 299.286
Quaternary alkaloid from *Inocybe aeruginascens*. Glassy solid. Counter-ion not specified. λ_{max} 219 (log ϵ 3.92); 267 (log ϵ 3.2); 282 (sh) (log ϵ 3.1); 288 (sh) (log ϵ 3) (H_2O).

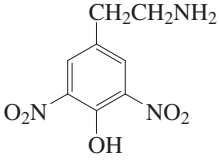
N-*De-Me,* O-*phosphate:* ***Baeocystine***
[21420-58-6]
$C_{11}H_{15}N_2O_4P$ 270.224
Alkaloid from *Psilocybe semilanceolata* and *Psilocybe baeocystis*. Mp 254-258° dec.

Di-N-*de-Me,* O-*phosphate:* ***Norbaeocystine***
[21420-59-7]
$C_{10}H_{13}N_2O_4P$ 256.197
Alkaloid from *Psilocybe baeocystis*. Mp 188-192° dec.

Julia, M. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1959, **269**, 51 (*synth*)
Hofmann, A. *et al., Helv. Chim. Acta*, 1959, **42**, 1557-1572 (*isol, synth, ir, uv*)
Leung, A.Y. *et al., J. Pharm. Sci.*, 1967, **56**, 146; 1968, **57**, 1667-1671 (*Baeocystine, Norbaeocystine*)
Agurell, S. *et al., Acta Chem. Scand.*, 1968, **22**, 1210-1218 (*biosynth*)
Hofmann, A. *et al., Bull. Narc.*, 1971, **23**, 3-14 (*rev*)
Aboul-Enein, H.Y. *et al., Am. J. Pharm.*, 1974, **146**, 91-95 (*rev, Psilocybine*)
Weber, H.P. *et al., J.C.S. Perkin 2*, 1974, 942-946; 946-948 (*cryst struct*)
Repke, D.B. *et al., J. Pharm. Sci.*, 1977, **66**, 113; 743 (*isol, glc, ms, derivs*)
Unger, S.E. *et al., Anal. Lett.*, 1979, **12**, 1157-1167 (*ms*)
White, P.C. *et al., J. Chromatogr.*, 1979, **169**, 453-456 (*hplc*)
Weeks, R.A. *et al., J. Nat. Prod.*, 1979, **49**, 469-474 (*isol, uv, ms*)
Chilton, W.S. *et al., J. Psychedelic Drugs*, 1979, **11**, 61-69 (*rev*)
Repke, D.B. *et al., J. Het. Chem.*, 1981, **18**, 175 (*synth, bibl*)
Seeger, R. *et al., Dtsch. Apoth. -Ztg.*, 1985, **125**, 65-66 (*rev, Psilocybine*)
Brenneisen, R. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1988, **321**, 487-489 (*synth, uv, ir, pmr, cmr, P-31 nmr, ms, bibl, Baeocystine*)
Sakagami, H. *et al., Heterocycles*, 1999, **51**, 1131-1135 (*synth*)
Martindale, The Extra Pharmacopoeia, 32nd edn., Pharmaceutical Press, 1999, 1622
Nichols, D.E. *et al., Synthesis*, 1999, 935-938 (*Psilocine, Psilocybine*)
Shirota, O. *et al., J. Nat. Prod.*, 2003, **66**, 885-887 (*synth, pmr, cmr, ms*)
Gathergood, N. *et al., Org. Lett.*, 2003, **5**, 921-923 (*synth*)
Jensen, N. *et al., Planta Med.*, 2006, **72**, 665-666 (*Aeruginascine*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, HKE000; Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, PHU500

2-(4-Hydroxy-3,5-dinitrophenyl)ethylamine H-481

4-(2-Aminoethyl)-2,6-dinitrophenol, 9CI. 4-Hydroxy-2,6-dinitrophenethylamine. 3,5-Dinitrotyramine



$C_8H_9N_3O_5$ 227.176

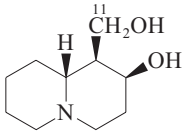
N-*Ac:* N-*2-[(4-Hydroxy-3,5-dinitrophenyl)ethyl]acetamide.* N-*Acetyl-3,5-dinitrotyramine*
$C_{10}H_{11}N_3O_6$ 269.213
Isol. from the marine-derived *Flavobacterium* sp. T436.

Schuhmann, I. *et al., Dissertation*, Univ. of Göttingen, 2005, (*isol*)

4-Hydroxyepilupinine H-482

*Octahydro-2-hydroxy-2*H*-quinolizine-1-methanol, 9CI*

[135531-65-6]



$C_{10}H_{19}NO_2$ 185.266

Alkaloid from *Virgilia divaricata* and *Virgilia oroboides* (Fabaceae).

11-O-*Benzoyl:* ***11*-O-*Benzoyl-4-hydroxyepilupinine***

[135531-70-3]

$C_{17}H_{23}NO_3$ 289.374

Alkaloid from *Virgilia divaricata* and *Virgilia oroboides* (Fabaceae).

4-O-*(2-Pyrrolecarbonyl):* ***4-(2-Pyrrolecarbonyloxy)epilupinine***

[135531-69-0]

$C_{15}H_{22}N_2O_3$ 278.35

Alkaloid from *Virgilia divaricata* and *Virgilia oroboides* (Fabaceae).

11-O-*(2-Pyrrolecarbonyl):* ***4-Hydroxy-11-O-(2-pyrrolecarbonyl)epilupinine***

[135531-71-4]

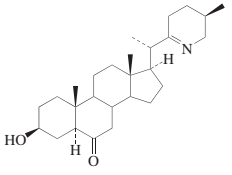
$C_{15}H_{22}N_2O_3$ 278.35

Alkaloid from *Virgilia divaricata* and *Virgilia oroboides*.

Veen, G. *et al., Phytochemistry*, 1991, **30**, 1891

3-Hydroxy-22,26-epimino-cholest-22(*N*)-en-6-one H-483

3-Hydroxy-16,28-secosolanid-22(28)-en-6-one, 9CI



(3β,5α,25*R*)-*form*

$C_{27}H_{43}NO_2$ 413.642

(3β,5α,25*R*)-*form*

Obt. by acid hydrol. of the glucoside. Amorph. powder. $[\alpha]_D^{28}$ +35.5 (c, 0.22 in $CHCl_3$).

O-*β-D-Glucopyranoside:* [145867-04-5]

$C_{33}H_{53}NO_7$ 575.784

Alkaloid from bulbs of *Fritillaria persica* (Liliaceae). Amorph. powder. $[\alpha]_D^{20}$ -44 (c, 0.50 in MeOH).

(3β,5α,20ξ,25*S*)-*form*

Petiline

[26989-18-4]

Alkaloid from *Petilium raddeanum* and *Petilium eduardii* (Liliaceae). Antiinflammatory agent. Mp 205-206°. $[\alpha]_D$ -51.1 (c, 1.2 in EtOH).

Hydrochloride: Mp 288-289°.

(3β,5α,20ξ,25ξ)-*form*

Korsiline

[62929-45-7]

Alkaloid from *Korolkowia sewerzowii* (Liliaceae). Mp 194-196°. $[\alpha]_D$ 0 (c, 0.8 in EtOH).

Nuriddinov, R.N. *et al., Khim. Prir. Soedin.*, 1968, 168-174; 1969, 604-605; *Chem. Nat. Compd. (Engl. Transl.)*, 1968, 145; 1969, 525 (*Petiline, isol, ir, uv, pmr, ms, struct*)

Samikov, K. *et al., Khim. Prir. Soedin.*, 1976, **12**, 827-828; *Chem. Nat. Compd. (Engl. Transl.)*, 1976, **12**, 748 (*Korsiline*)

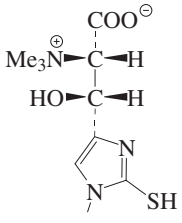
Nakhatov, I. *et al., Khim. Prir. Soedin.*, 1981, 616-619; *CA*, **96**, 65672x (*isol*)

Moiseeva, G.P. *et al., Khim. Prir. Soedin.*, 1986, 345-347; *Chem. Nat. Compd. (Engl. Transl.)*, 1986, **22**, 319-321 (*Petiline, ord*)

Ori, K. *et al., Phytochemistry*, 1992, **31**, 4337-4341 (*3β,5α,25R-form, glucoside*)

β-Hydroxyergothioneine H-484

*α-Carboxy-2,3-dihydro-β-hydroxy-*N,N,N*-trimethyl-2-thioxo-1*H*-imidazole-4-ethanaminium hydroxide inner salt. β-Hydroxy-2-mercaptohistidine trimethylbetaine*



Absolute Configuration

$C_9H_{15}N_3O_3S$ 245.302

Isol. from the mushroom *Lyophyllum connatum*. Hepatoprotectant. Prisms (EtOH aq.). Mp 195-200° dec. $[\alpha]_D$ +35 (c, 0.27 in H_2O). λ_{max} 250 (ε 9200) (H_2O). λ_{max} 235 (NaOH aq.).

Kimura, C. *et al., Biosci., Biotechnol., Biochem.*, 2005, **69**, 357-363 (*isol, uv, pmr, cmr, ms, cryst struct*)

***N*-(1-Hydroxyethyl)benzanilide** H-485

N-*(1-Hydroxyethyl)*-N-*phenylbenzamide.* N-*Benzoyl*-N-*phenylaminomethylcarbinol*

PhCONPhCH(OH)CH_3

$C_{15}H_{15}NO_2$ 241.289

Alkaloid from *Oxytropis muricata*. Cryst. ($CHCl_3$). Mp 147-149°.

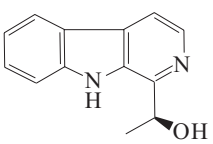
Hydrochloride:

Cryst. Mp 194-197°.

Duboshina, Z.N. *et al., Zh. Obshch. Khim.*, 1963, **33**, 2071; *CA*, **59**, 12851h (*isol*)

1-(1-Hydroxyethyl)-β-carboline H-486

*α-Methyl-9*H*-pyrido[3,4-*b*]indole-1-methanol, 9CI*



$C_{13}H_{12}N_2O$ 212.251

λ_{max} 211 (ε 6030); 234 (ε 9770); 287 (sh) (ε 6170); 337 (ε 1020) (EtOH) (Derep).

(*S*)-*form* [110282-66-1]

Alkaloid from the marine bryozoan *Costaticella hastata*. Mp 163-169° dec. $[\alpha]_D^{25}$ -11.4 (MeOH).

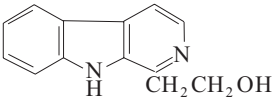
Blackman, A.J. *et al., J. Nat. Prod.*, 1987, **50**, 494 (*isol, uv, ir, pmr, ms, struct*)

Bracher, F. *et al., Annalen*, 1993, 837 (*synth*)

1-(2-Hydroxyethyl)-β-carboline H-487

*9*H*-Pyrido[3,4-*b*]indole-1-ethanol, 9CI*

[102828-03-5]



$C_{13}H_{12}N_2O$ 212.251

Alkaloid from the stem bark of *Soulamea fraxinifolia* (Simaroubaceae). Cryst. (MeOH). Mp 192°. λ_{max} 214 (ε 20900); 235 (ε 37200); 240 (sh) (ε 38000); 250 (ε 25100); 282 (sh) (ε 10000); 288 (ε 16200); 336 (ε 4680); 350 (ε 4570) (EtOH) (Derep).

Charles, B. *et al., J. Nat. Prod.*, 1986, **49**, 303 (*isol, uv, pmr, ms, struct*)

Torisawa, Y. *et al., Tetrahedron*, 1991, **47**, 8067 (*synth*)

***N*-(2-Hydroxyethyl)cinnamamide, 8CI** H-488

N-*(2-Hydroxyethyl)-3-phenyl-2-propenamide, 9CI.* ***Idrocilamide, INN.*** *Brolitene. Srilane. Talval. LCB 29*

[6961-46-2]

PhCH=CHCONHCH$_2$CH$_2$OH

$C_{11}H_{13}NO_2$ 191.229

Alkaloid from leaves of *Erythrophleum chlorostachys* (Fabaceae). Muscle relaxant, antiinflammatory agent. Cryst. ($CHCl_3$/petrol or EtOH/petrol). Mp 101° (97°). Log P 1.12 (calc).

▶ LD_{50} (mus, orl) 2950 mg/kg. Adverse effects incl. gastrointestinal disturbances and drowsiness. GD7360000

N-*Me:* **N-*(2-Hydroxyethyl)*-N-*methylcinnamamide.*** N-*(2-Hydroxyethyl)*-N-*methyl-3-phenyl-2-propenamide, 9CI*

[30687-16-2]

$C_{12}H_{15}NO_2$ 205.256

Alkaloid from leaves of *Erythrophleum chlorostachys* (Fabaceae). Cryst. (EtOH/petrol or C_6H_6). Mp 78°.

▶ LD_{50} (mus, orl) 3000 mg/kg. GD7380000

N-*Me, 4-hydroxy:* **N-*(2-Hydroxyethyl)*-N-*methyl*-p-*hydroxycinnamamide.*** N-*(2-Hydroxyethyl)-3-(4-hydroxyphenyl)*-N-*methyl-2-propenamide, 9CI*

[35241-60-2]

$C_{12}H_{15}NO_3$ 221.255

Alkaloid from leaves of *Erythrophleum chlorostachys* (Fabaceae). Cryst. (EtOH). Mp 176-177°.

Behrens, O.K. *et al., J. Biol. Chem.*, 1948, **175**, 771 (*synth*)

Griffin, W.J. *et al., Phytochemistry*, 1971, **10**, 2793 (*isol, ir, struct, synth*)

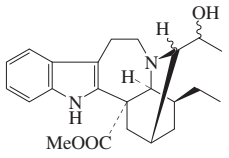
Grand, M. *et al., Eur. J. Med. Chem. (Chim. Ther.)*, 1974, **9**, 205 (*pharmacol*)

Xu, J. *et al., Zhongguo Yiyao Gongye Zazhi*, 1990, **21**, 70; *CA*, **113**, 70738x (*pharmacol, tox*)

Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 1205

3-(1-Hydroxyethyl)coronaridine H-489

[82464-33-3]



Absolute Configuration

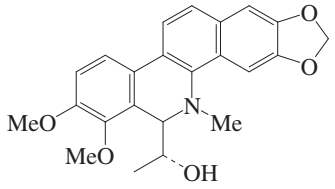
$C_{23}H_{30}N_2O_3$ 382.502

Incorrectly called β-hydoxyethyl in the ref. Alkaloid from the roots of *Ervatamia hainanensis* (Apocynaceae). Amorph. $[\alpha]_D$ -25.4 (c, 0.4 in $CHCl_3$). λ_{max} 228 (log ϵ 4.3); 286 (log ϵ 3.58); 294 (log ϵ 3.52) (EtOH).

Feng, X.Z. *et al., Planta Med.*, 1982, **44**, 212-214 (*isol, uv, pmr*)

8-(1-Hydroxyethyl)dihydrochelerythrine H-490

12,13-Dihydro-1,2-dimethoxy-α,12-dimethyl[1,3]benzodioxolo[5,6-c]phenanthridine-13-methanol, 9CI



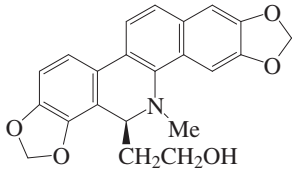
$C_{23}H_{23}NO_5$ 393.438

(R)-form [928006-52-4]

Alkaloid from the roots of *Zanthoxylum nitidum*. Yellow solid. Mp 152-173°. $[\alpha]_D^{22}$ +8 (c, 0.2 in $CHCl_3$).

Hu, J. *et al., Chem. Biodiversity*, 2006, **3**, 990-995 (*isol, pmr, cmr, ms*)

8-(2-Hydroxyethyl)dihydrosanguinarine H-491



$C_{22}H_{19}NO_5$ 377.396

λ_{max} 232 (log ϵ 4.2); 284 (log ϵ 4.6); 322 (log ϵ 4.8) (MeOH).

(S)-form

Alkaloid from the roots of *Corydalis flabellata*. Cryst. (MeOH/C_6H_6). Mp 212-213°. $[\alpha]_D^{20}$ +29.2 (c, 0.05 in $CHCl_3$).

Ac:

Cryst. ($CHCl_3$/petrol). Mp 180-181°.

2′-Carboxylic acid: ***Spallidamine***

[129388-65-4]

$C_{22}H_{17}NO_6$ 391.379

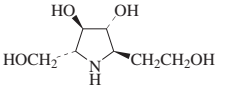
Alkaloid from aerial parts of *Corydalis bulbosa* and the roots of *Corydalis flabelatta* (Papaveraceae). Amorph. solid. Mp 140-141°. $[\alpha]_D$ +35 (c, 0.04 in $CHCl_3$). Abs. config. not determined but prob. *S*-. λ_{max} 206 ; 231 ; 286 ; 322 (MeOH).

Ito, C. *et al., Phytochemistry*, 1990, **29**, 2044-2045 (*Spallidamine*)

Koul, S. *et al., Planta Med.*, 2002, **68**, 262-265 (*isol, pmr, cmr, ms*)

2-(2-Hydroxyethyl)-5-(hydroxymethyl)-3,4-pyrrolidinediol, 9CI H-492

3,4-Dihydroxy-5-(hydroxymethyl)-1-pyrrolidineethanol. 2,5-Imino-2,5,6-trideoxyheptitol. 3,4-Dihydroxy-2-(2-hydroxyethyl)-5-(hydroxymethyl)pyrrolidine



(2R,3R,4R,5R)-form

$C_7H_{15}NO_4$ 177.2

(2R,3R,4R,5R)-form

D-manno-*form. 2,5,6-Trideoxy-2,5-imino-D*-manno-*heptitol*

[205762-20-5]

Alkaloid from the bulbs of *Hyacinthus orientalis* and *Scilla sibirica*. Inhibitor of α-glucosidase and chitin synthase. $[\alpha]_D$ +98.5 (c, 1.13 in H_2O). $[\alpha]_D$ +46 (c, 1.15 in H_2O). Significantly lower α_D recorded for the synthetic product.

3-O-β-D-Mannopyranoside:

$C_{13}H_{25}NO_9$ 339.342

Alkaloid from the bulbs of *Scilla sibirica*. Inhibitor of α-fucosidase. Powder. $[\alpha]_D$ +2 (c, 0.32 in H_2O).

3-O-[β-D-Mannopyranosyl-(1→4)-β-D-mannopyranoside]:

$C_{19}H_{35}NO_{14}$ 501.484

Alkaloid from the bulbs of *Scilla sibirica*. Inhibitor of α-fucosidase. Powder. $[\alpha]_D$ +10.4 (c, 0.69 in H_2O).

(2R,3S,4S,5S)-form

D-gulo-*form. 2,5,6-Trideoxy-2,5-imino-D*-gulo-*heptitol*

[205762-22-7]

Alkaloid from the bulbs of *Hyacinthus orientalis* and *Scilla sibirica*. Inhibitor of α-fucosidase. $[\alpha]_D$ +41.4 (c, 0.56 in H_2O).

Asano, N. *et al., J. Nat. Prod.*, 1998, **61**, 625-628 (*isol, pmr, cmr*)

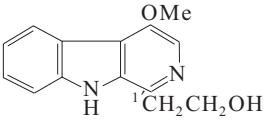
Yamashita, T. *et al., J. Nat. Prod.*, 2002, **65**, 1875-1881 (*Scilla sibirica alkaloids*)

Behr, J.-B. *et al., Tetrahedron: Asymmetry*, 2002, **13**, 111-113 (*D-manno-form, D-gulo-form, synth, pmr, cmr*)

1-(2-Hydroxyethyl)-4-methoxy-β-carboline H-493

*4-Methoxy-9*H*-pyrido[3,4-*b*]indole-1-ethanol, 9CI*

[77369-98-3]



$C_{14}H_{14}N_2O_2$ 242.277

Alkaloid from the root bark of *Ailanthus altissima* (Simaroubaceae). Pale-yellow needles. Mp 253-254° dec.

O-*Ac:*

Pale-yellow needles (Me_2CO). Mp 175-177°.

*1′ξ-Hydroxy: 1-(4-Methoxy-9*H*-pyrido[3,4-*b*]indol-1-yl)-1,2-ethanediol, 9CI.* ***1-(1,2-Dihydroxyethyl)-4-methoxy-β-carboline***

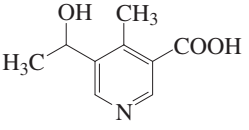
[77369-99-4]

$C_{14}H_{14}N_2O_3$ 258.276

Alkaloid from root bark of *Ailanthus altissima* (Simaroubaceae). Pale-yellow needles ($CHCl_3$). Mp 189-190°. $[\alpha]_D^{20}$ -2.56 (c, 0.78 in EtOH).

Ohmoto, T. *et al., Chem. Pharm. Bull.*, 1981, **29**, 390-395 (*isol, uv, ir, pmr, cmr, ms, struct*)

5-(1-Hydroxyethyl)-4-methyl-3-pyridinecarboxylic acid H-494



$C_9H_{11}NO_3$ 181.191

(ξ)-form

Me ester. 3-(1-Hydroxyethyl)-4-methyl-5-methoxycarbonylpyridine

[149155-03-3]

$C_{10}H_{13}NO_3$ 195.218

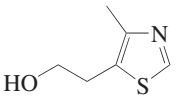
Alkaloid from *Strychnos cocculoides* and *Strychnos spinosa*. $[\alpha]_D$ -27 (c, 0.58 in $CHCl_3$).

Delaude, C. *et al., Bull. Soc. R. Sci. Liege*, 1992, **61**, 429-440 (*Me ester, isol, pmr*)

5-(2-Hydroxyethyl)-4-methylthiazole H-495

4-Methyl-5-thiazoleethanol, 9CI. 2-(4-Methyl-5-thiazolyl)ethanol. FEMA 3204

[137-00-8]



C_6H_9NOS 143.209

Present in porcini (*Boletus edulis*). Oil with nut-like odour on extreme dilution. Bp_{10} 142-145° Bp_3 127-129°. n_D^{20} 1.5470.

N-*Me:*

[16311-69-6 (iodide)]

$C_7H_{12}NOS^{\oplus}$ 158.244

Mp 88-89° (as iodide). Light-sensitive.

Ac: FEMA 3205

[656-53-1]

$C_8H_{11}NO_2S$ 185.246

Flavour ingredient. Mp 131°. Bp_4 123°.

Benzoyl: [31299-77-1]

$C_{13}H_{13}NO_2S$ 247.317

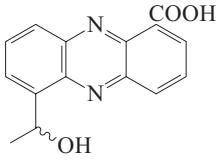
Mp 192°. Bp_4 185°.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 643C (*ir*)

Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 111B; 116B (*nmr*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 1493D; 1495B (*ir*)
Buchman, E.R. *et al., J.A.C.S.*, 1936, **58**, 1803 (*deriv*)
U.K. Pat., 1951, 641 426; *CA*, **45**, 2509
Takeda, Y. *et al., Yakugaku Zasshi*, 1951, **71**, 84; *CA*, **45**, 9532
Dornow, A. *et al., Chem. Ber.*, 1953, **86**, 1404
U.S. Pat., 1954, 2 654 760; *CA*, **48**, 12810
Miyatake, K. *et al., Yakugaku Zasshi*, 1955, **75**, 1054; *CA*, **50**, 5633
Thiel, M. *et al., Annalen*, 1958, **619**, 161
Rubtsov, I.A. *et al., CA*, 1970, **73**, 56015
Encyclopedia of Food and Color Additives, (ed. Burdock, G.A.), CRC Press, 1997, 1862; 1863 (*occur, props*)

6-(1-Hydroxyethyl)-1-phenazinecarboxylic acid H-496

***Saphenic acid**. DC 86Y. Antibiotic DC 86Y*
[94448-14-3]



$C_{15}H_{12}N_2O_3$ 268.271
Phenazine antibiotic. Prod. by *Streptomyces luteogriseus* and *Streptomyces antibioticus*. Biol. inactive. Yellow needles. Sol. MeOH, C_6H_6; poorly sol. H_2O. Mp 223-225°. $[\alpha]_D^{20}$ +55.8 (c, 1.0 in DMSO). λ_{max} 252 (ε 79000); 363 (ε 14000) (MeOH) (Derep). λ_{max} 253 (ε 84000); 367 (ε 16000) (MeOH) (Berdy). λ_{max} 255 (ε 58100); 365 (ε 13200) (EtOH) (Berdy).

▶ LD_{50} (mus, ipr) 300 mg/kg.

Me ester: [73634-72-7]
$C_{16}H_{14}N_2O_3$ 282.298
Prod. by *Streptomyces* sp. Phosphodiesterase inhibitor.

6-Deoxy-α-L-glucopyranos-2-yl ester: 2′-L-Quinovosyl saphenate
[137570-43-5]
$C_{21}H_{22}N_2O_7$ 414.414
Isol. from a *Streptomyces* sp. Amorph. yellow solid. $[\alpha]_D$ -35 (c, 0.49 in MeOH). λ_{max} 252 (ε 74100); 365 (ε 14200) (EtOH) (Derep).

6-Deoxy-α-L-glucopyranos-3-yl ester: 3′-L-Quinovosyl saphenate
[137570-42-4]
$C_{21}H_{22}N_2O_7$ 414.414
Isol. from a *Streptomyces* sp. Amorph. yellow solid. $[\alpha]_D$ -40 (c, 0.73 in MeOH). λ_{max} 252 (ε 74100); 365 (ε 14200) (EtOH) (Derep).

O-*(Hydroxyacetyl):* ***Antibiotic DC 86M**. DC 86M*
[94448-15-4]
$C_{17}H_{14}N_2O_5$ 326.308
Prod. by *Streptomyces luteogriseus*. Active against gram-positive and -negative bacteria and murine sarcoma. Yellow needles. Sol. MeOH, C_6H_6; poorly sol. H_2O. Mp 185-187°. $[\alpha]_D^{20}$ -43.8 (c, 0.5 in $CHCl_3$). λ_{max} 252 (ε 79000); 363 (ε 14000) (MeOH) (Derep).

▶ LD_{50} (mus, ipr) 20 mg/kg.

O-*(Chloroacetyl): Antibiotic DC 86C. DC 86C*
$C_{17}H_{13}ClN_2O_4$ 344.753
Semisynth., prod. from DC 86Y. Shows strong antibacterial activity. Yellow solid. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 154-156°. $[\alpha]_D^{25}$ -54 (c, 0.6 in $CHCl_3$). λ_{max} 254 ; 364 (MeOH) (Berdy).

▶ LD_{50} (mus, ipr) 40 mg/kg.

O-*(*tert*-Butoxyacetyl): Antibiotic DC 86R. DC 86R*
$C_{21}H_{22}N_2O_5$ 382.415
Semisynthetic. Biol. inactive. Yellow needles. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 189-192°. $[\alpha]_D^{25}$ -34.6 (c, 0.5 in $CHCl_3$). λ_{max} 252 ; 364 (MeOH) (Berdy).

▶ LD_{50} (mus, ipr) 250 mg/kg.

O-*Tetradecanoyl:* [120482-16-8]
$C_{29}H_{38}N_2O_4$ 478.63
From *Streptomyces antibioticus*.

O-*(12-Methyltridecanoyl):* [120464-89-3]
$C_{29}H_{38}N_2O_4$ 478.63
From *Streptomyces antibioticus*.

O-*(12-Methyltetradecanoyl):* [120464-90-6]
$C_{30}H_{40}N_2O_4$ 492.657
From *Streptomyces antibioticus*.

O-*(14-Methylpentadecanoyl):* [120464-91-7]
$C_{31}H_{42}N_2O_4$ 506.684
From *Streptomyces antibioticus*.

O-*Hexadecanoyl:* [120464-92-8]
$C_{31}H_{42}N_2O_4$ 506.684
From *Streptomyces antibioticus*.

O-*(14-Methylhexadecanoyl):*
$C_{32}H_{44}N_2O_4$ 520.711
From *Streptomyces antibioticus*.

O-*(16-Methylheptadecanoyl):* [120464-94-0]
$C_{33}H_{46}N_2O_4$ 534.737
From *Streptomyces antibioticus*.

O-*Benzoyl:* O-*Benzoylsaphenic acid*. ***Shisen 1***
[221300-00-1]
$C_{22}H_{16}N_2O_4$ 372.379
Prod. by *Streptoplanospora viridis*. Active against MRSA. Yellow powder. λ_{max} 254 ; 364 (no solvent reported).

O-*(2-Hydroxy-6-methylbenzoyl):* ***Saphenamycin**. A 32256. Antibiotic A 32256*
[83198-27-0]
$C_{23}H_{18}N_2O_5$ 402.406
From *Streptomyces canarius* and other *Streptomyces* spp. Active against gram-positive and -negative bacteria. Weak antitumour props. Mosquito larvicide. Yellow prisms ($CHCl_3$/hexane). Mp 200-202°. λ_{max} 254 (ε 95000); 300 (ε 15000); 348 (ε 17000); 364 (ε 22000) (EtOH/NaOH) (Derep). λ_{max} 207 (ε 51000); 255 (ε 86700); 365 (ε 13700) (EtOH) (Derep).

▶ SG1576540

Me ether: 6-(1-Methoxyethyl)-1-phenazinecarboxylic acid. Saphenic acid methyl ether
[120464-87-1]
$C_{16}H_{14}N_2O_3$ 282.298
From *Streptomyces antibioticus*. Yellow needles (Me_2CO/hexane). Mp 158-159° dec. $[\alpha]_D^{24}$ +9.1 (c, 0.54 in $CHCl_3$).

Me ether, Me ester: [73634-71-6]
$C_{17}H_{16}N_2O_3$ 296.325
From *Streptomyces* sp. Phosphodiesterase inhibitor.

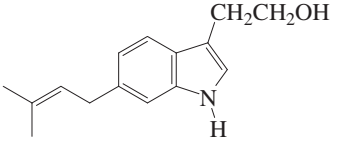
1′-Ketone: ***6-Acetyl-1-phenazinecarboxylic acid***
[120464-88-2]
$C_{15}H_{10}N_2O_3$ 266.256
From *Streptomyces antibioticus*. Yellow needles (Me_2CO). Mp 219-221°. Turns brown in light.

[137570-45-7 , 137570-44-6]

Japan. Pat., 1980, 80 3 737; *CA*, **92**, 213541 (*isol, struct, props*)
Kitahara, M. *et al., J. Antibiot.*, 1982, **35**, 1412 (*Saphenamycin*)
Asano, K. *et al., J. Antibiot.*, 1986, **39**, 619 (*isol*)
Takahashi, K. *et al., J. Antibiot.*, 1986, **39**, 624 (*struct, uv, pmr, ms, props*)
Geiger, A. *et al., J. Antibiot.*, 1988, **41**, 1542 (*derivs*)
Pathirana, C. *et al., J.O.C.*, 1992, **57**, 740 (*glycosyl esters*)
Van't Land, C.W. *et al., J.O.C.*, 1993, **58**, 6576 (*Saphenamycin, biosynth*)
Yue, H. *et al., CA*, 1999, **130**, 234411q (*Shisen 1*)
Petersen, L. *et al., Synthesis*, 1999, 1763-1766 (*synth, cmr*)
Laursen, J.B. *et al., Bioorg. Med. Chem.*, 2003, **11**, 723-731 (*Saphenamycin, synth*)

3-(2-Hydroxyethyl)-6-prenylindole H-497

*6-(3-Methyl-2-butenyl)-1*H*-indole-3-ethanol, 9CI. 3-(2-Hydroxyethyl)-6-(3-methyl-2-butenyl)indole. 6-Prenyltryptophol*
[583060-24-6]



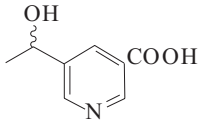
$C_{15}H_{19}NO$ 229.321
Alkaloid from a marine *Streptomyces* sp. (BL-49-58-005). Cytotoxic. λ_{max} 226 ; 282 (MeOH).

*Carboxylic acid, nitrile: 6-(3-Methyl-2-butenyl)-1*H*-indole-3-acetonitrile. 3-Cyanomethyl-6-prenylindole*
[583060-26-8]
$C_{15}H_{16}N_2$ 224.305
Prod. by a marine *Streptomyces* sp. (BL-49-58-005). λ_{max} 226 ; 278 (MeOH).

Aldehyde, oxime: [583060-25-7]
$C_{15}H_{18}N_2O$ 242.32
Prod. by a marine *Streptomyces* sp. (BL-49-58-005). Cytotoxic. λ_{max} 226 ; 280 (MeOH).

Sánchez López, J.M. *et al., J. Nat. Prod.*, 2003, **66**, 863-864 (*isol, pmr, cmr*)

5-(1-Hydroxyethyl)-3-pyridinecarboxylic acid, 9CI H-498



$C_8H_9NO_3$ 167.164

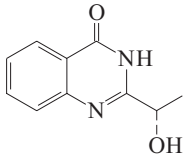
Me ester: ***3-(1-Hydroxyethyl)-5-methoxycarbonylpyridine***
[38940-64-6]
$C_9H_{11}NO_3$ 181.191
Alkaloid from *Nauclea diderrichii* (Rubiaceae), *Isertia haenkeana*, *Strychnos cocculoides* and *Strychnos spinosa*. Cryst. (Me_2CO). Mp 53-56° (52°). $[\alpha]_D^{20}$ +23 (c, 2.5 in $CHCl_3$). Spec. rotn. refers to the *Isertia* isolate.

Me ether, Me ester: ***3-(1-Methoxyethyl)-5-methoxycarbonylpyridine***
[38940-66-8]
$C_{10}H_{13}NO_3$ 195.218
Alkaloid from *Nauclea diderrichii* (Rubiaceae). Cryst. (hexane). Mp 47-48°. $[\alpha]_D^{26}$ +50 (c, 5 in MeOH).

McLean, S. *et al., Can. J. Chem.*, 1972, **50**, 1478-1485 (*synth, ir, pmr, ms*)
Bruix, M. *et al., Phytochemistry*, 1993, **33**, 1257-1261 (*isol, uv, ir, pmr, cmr, ms*)
Din Belle, D. *et al., Tetrahedron*, 1996, **52**, 11361-11378 (*synth*)

2-(1-Hydroxyethyl)-4(3*H*)-quinazolinone, 8CI H-499

Chrysogine
[18326-30-2]



(*S*)–*form*

$C_{10}H_{10}N_2O_2$ 190.201

(*S*)-*form* [42599-89-3]
Metab. of the fungi *Alternaria citri via, Fusarium culmorum*, *Fusarium sambucinum* and *Penicillium chrysogenum*. Cryst. (EtOAc). Mp 190-192° (179-182°). $[\alpha]_D$ -25 (c, 0.39 in MeOH). $[\alpha]_D$ -41 (c, 2.5 in EtOH). λ_{max} 226 ; 304 (MeOH) (Berdy). λ_{max} 226 (ϵ 18620); 230 (ϵ 20892); 238 (ϵ 12882); 265 (ϵ 7244); 273 (ϵ 6660); 292 (ϵ 2884); 305 (ϵ 3890); 316 (ϵ 3235) (EtOH) (Berdy).

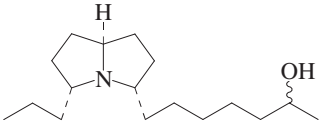
1′-Ketone: see 2-Acetyl-4(3*H*)-quinazolinone, A-75

(±)-*form* [14422-59-4]
Synthetic. Needles (MeOH/EtOAc or Me_2CO). Mp 190-191°.

Uskokovic, M. *et al., J.O.C.*, 1964, **29**, 582 (*synth, uv, ir*)
Suter, P.J. *et al., J.C.S.(C)*, 1967, 2240 (*isol, synth*)
Hikino, H. *et al., Yakugaku Zasshi*, 1973, **93**, 619; *CA*, **79**, 40922g (*isol, struct*)
Blight, M.M. *et al., J.C.S. Perkin 1*, 1974, 1691 (*isol*)
Kametani, T. *et al., J.C.S. Perkin 1*, 1977, 2347 (*synth*)
Chadwick, D.J. *et al., Acta Cryst. C*, 1983, **39**, 454 (*isol, cryst struct*)
Bergman, J. *et al., Tetrahedron*, 1990, **46**, 1295 (*synth*)
Niederer, D. *et al., Tet. Lett.*, 1992, **33**, 3997 (*isol, ir, pmr, cmr, abs config*)
Maiti, D.K. *et al., J. Chem. Res., Synop.*, 1996, 306 (*synth*)
Bergman, J. *et al., J. Chem. Res., Synop.*, 1997, 224 (*synth*)

3-(6-Hydroxyheptyl)-5-propylpyrrolizidine H-500

*Hexahydro-α-methyl-5-propyl-1*H*-pyrrolizine-3-hexanol, 9CI.* ***Pyrrolizidine 267H′***



$C_{17}H_{33}NO$ 267.454

(3S,5R,6′ξ,8S)-form [151805-21-9]
Alkaloid from the Madagascan frog *Mantella* sp.

*Ketone: 7-(Hexahydro-5-propyl-1*H*-pyrrolizin-3-yl)-2-heptanone, 9CI. 3-(6-Oxoheptyl)-5-propylpyrrolizidine.* ***Pyrrolizidine 265H′***
[151805-20-8]
$C_{17}H_{31}NO$ 265.438
Alkaloid from *Mantella* sp.

Garraffo, H.M. *et al., J. Nat. Prod.*, 1993, **56**, 1016-1038 (*isol*)
Takahata, H. *et al., Bioorg. Med. Chem. Lett.*, 2000, **10**, 1293-1295 (*synth*)

16-Hydroxy-4-hexadecenoic acid H-501

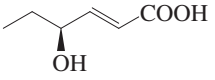
$HOCH_2(CH_2)_{10}CH{=}CHCH_2CH_2COOH$

$C_{16}H_{30}O_3$ 270.411

Methylamide: 16-Hydroxy-N-*methyl-4-hexadecenamide*
$C_{17}H_{33}NO_2$ 283.453
Alkaloid from *Michelia champaka*. Cryst. (MeOH). Mp 52°.

Sharma, S. *et al., Indian J. Chem., Sect. B*, 1998, **37**, 1219-1220

4-Hydroxy-2-hexenoic acid H-502



$C_6H_{10}O_3$ 130.143

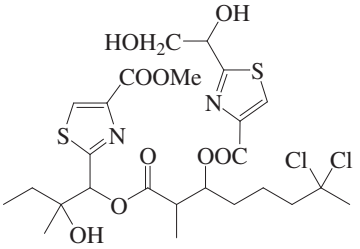
(2*E*,4*S*)-*form*

2-Methylpropylamide: 4-Hydroxy-N-*(2-methylpropyl)-2-hexenamide. 4-Hydroxy*-N-*isobutyl-2-hexenamide.* ***Piptahsine***
[622405-50-9]
$C_{10}H_{19}NO_2$ 185.266
Alkaloid from the dried seeds of *Piper nigrum*. Needles (petrol/EtOAc). Mp 115-116°. Quoted as *S*-isomer in text but drawn as *R*-isomer. λ_{max} 213 (ϵ 6965) (MeOH).

Siddiqui, B.S. *et al., Helv. Chim. Acta*, 2003, **86**, 2760-2767 (*Piptahsine*)

Hydroxyhomodolabellin H-503

Homohydroxydolabellin

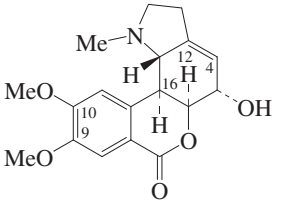


$C_{25}H_{34}Cl_2N_2O_9S_2$ 641.589
Isol. from a *Lyngbya* sp. Cytotoxic. Amorph. solid. $[\alpha]_D^{25}$ -10 (c, 0.05 in $CHCl_3$). CAS no. not found to CA 138. λ_{max} 203 (log ϵ 4.47); 238 (log ϵ 4.06) (MeOH).

Luesch, H. *et al., Tetrahedron*, 2002, **58**, 7959-7966 (*isol, pmr, cmr*)

5-Hydroxyhomolycorine H-504

[13255-05-5]



$C_{18}H_{21}NO_5$ 331.368
Alkaloid from the bulbs of *Crinum defixum* (Amaryllidaceae). Cryst. (Me_2CO/MeOH). Mp 168-170°. λ_{max} 228 (ϵ 22100); 265 (ϵ 8030); 302 (ϵ 4070) (EtOH).

O^9-*De-Me,* O^5-*Me:* ***5-Methoxy-9-O-demethylhomolycorine***
[167416-33-3]
$C_{18}H_{21}NO_5$ 331.368
Alkaloid from whole plants of *Galanthus elwesii* (Amaryllidaceae). Prisms ($MeOH/CHCl_3$). Mp 232-236°. $[\alpha]_D^{21}$ +75.2 (c, 0.067 in MeOH). λ_{max} 200 (log ϵ 4.45); 227 (log ϵ 4.51); 265 (log ϵ 4.01); 305 (log ϵ 3.8) (MeOH).

O^{10}-*De-Me:* ***5-Hydroxy-10-O-demethylhomolycorine***
[119309-00-1]
$C_{17}H_{19}NO_5$ 317.341
Alkaloid from *Narcissus tortifolius* and *Narcissus dubius* (Amaryllidaceae). Cryst. ($MeOH/CH_2Cl_2$). Mp 272-275°. $[\alpha]_D$ +98.8 (c, 0.52 in EtOH).

O^{10}-*De-Me,* O^{10}-*(3ξ-hydroxybutanoyl),* O^5-*Ac:* ***Dubiusine***
[119308-98-4]

$C_{23}H_{27}NO_8$ 445.468
Alkaloid from the aerial parts of *Narcissus dubius* (Amaryllidaceae). Cryst. + ½H_2O ($CHCl_3$). Mp 226-228°. λ_{max} 210 (log ε 4.15); 232 (log ε 4.24); 276 (log ε 3.8); 308 (log ε 3.66) (EtOH).

4β,12β-Epoxide, O^5-Me: ***Galwesine***
[167568-93-6]
$C_{19}H_{23}NO_6$ 361.394
Alkaloid from whole plants of *Galanthus elwesii* (Amaryllidaceae). Yellow amorph. powder. $[\alpha]_D^{21}$ +13.4 (c, 0.3 in MeOH). λ_{max} 225 (log ε 4.34); 267 (log ε 3.85); 303 (log ε 3.64) (MeOH).

4β,12β-Epoxide, O^9-de-Me, O^5-Me: ***9-O-Demethylgalwesine***
[167416-36-6]
$C_{18}H_{21}NO_6$ 347.367
From whole plants of *Galanthus elwesii* (Amaryllidaceae). Prisms. Mp 241-242°. $[\alpha]_D^{21}$ +25.7 (c, 0.14 in MeOH). λ_{max} 227 (log ε 4.42); 265 (log ε 3.92); 306 (log ε 3.72) (MeOH).

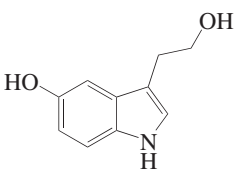
16-Hydroxy, 4β,12β-epoxide, O^5-Me: ***16-Hydroxygalwesine***
[167416-34-4]
$C_{19}H_{23}NO_7$ 377.393
From whole plants of *Galanthus elwesii* (Amaryllidaceae). Prisms (EtOAc). Mp 154-156°. $[\alpha]_D^{21}$ +1.8 (c, 0.22 in MeOH). λ_{max} 202 (log ε 4.36); 226 (log ε 4.46); 269 (log ε 3.99); 303 (log ε 3.76) (MeOH).

16-Hydroxy, 4β,12β-epoxide, O^9-de-Me, O^5-Me: ***16-Hydroxy-9-O-demethylgalwesine***
[167416-35-5]
$C_{18}H_{21}NO_7$ 363.366
From whole plants of *Galanthus elwesii* (Amaryllidaceae). Amorph. powder. Mp 107-110°. $[\alpha]_D^{21}$ +5.2 (c, 0.155 in MeOH). $[\alpha]_D^{21}$ +23 (c, 0.48 in $CHCl_3$). λ_{max} 200 (log ε 4.27); 226 (log ε 4.31); 266 (log ε 3.81); 305 (log ε 3.6) (MeOH). λ_{max} 243 ; 276 ; 341 (MeOH/NaOH).

Jeffs, P.W. *et al., J.O.C.*, 1985, **50**, 1732-1737 (*5-Hydroxyhomolycorine, isol, uv, cd, pmr*)
Bastida, J. *et al., Phytochemistry*, 1988, **27**, 3657-3660; 1990, **29**, 2683-2684 (*Dubiusine, 5-Hydroxy-10-O-demethylhomolycorine*)
Latvala, A. *et al., Phytochemistry*, 1995, **39**, 1229-1240 (*Galwesine, 9-O-Methylgalwesine, 16-Hydroxygalwesine, 16-Hydroxy-9-O-demethylgalwesine, 5-Methoxy-9-O-demethylhomolycorine, cryst struct*)

5-Hydroxy-3-(2-hydroxyethyl)-1*H*-indole H-505

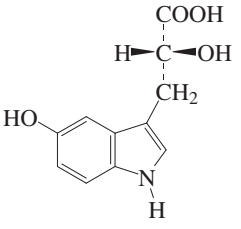
*5-Hydroxy-1*H*-indole-3-ethanol, 9CI. 5-Hydroxytryptophol*
[154-02-9]



$C_{10}H_{11}NO_2$ 177.202
Serotonin metab. in rat. Present in bovine pineal tissue and *Bufo alvarius*. Isol. from the sponge *Hyrtios erectus*. Prisms. Mp 105-107°. λ_{max} 210 (ε 14400); 276 (ε 4940); 300 (sh) (ε 3450) (MeOH).
▶ Exp. reprod. effects. NL8512500
Picrate: Mp 150-152°.
5-O-β-D-Glucopyranoside:
$C_{16}H_{21}NO_7$ 339.344
Constit. of the stem bark of *Tetracentron sinense*. Cytotoxic. Pale brown oil. λ_{max} 224 ; 278 ; 296 (MeOH).
5-Me ether: 3-(2-Hydroxyethyl)-5-methoxyindole. 5-Methoxytryptophol
[712-09-4]
$C_{11}H_{13}NO_2$ 191.229
Present in bovine pineal tissue and *Bufo alvarius*.
▶ Human and exp. reprod. effects. NL8513000
Kveder, S. *et al., Biochem. J.*, 1962, **85**, 447 (*synth*)
McIsaac, W.M. *et al., Science (Washington, D.C.)*, 1965, **148**, 102
Salmoun, M. *et al., J. Nat. Prod.*, 2002, **65**, 1173-1176 (*isol, pmr, cmr*)
Wang, Y.-F. *et al., Chem. Biodiversity*, 2006, **3**, 1023-1030 (*5-glucoside*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, MFT300

2-Hydroxy-3-(5-hydroxy-1*H*-indol-3-yl)propanoic acid H-506

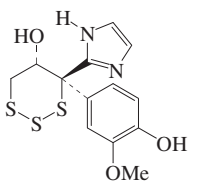
*α,5-Dihydroxy-1*H*-indole-3-propanoic acid, 9CI. 3-(5-Hydroxy-3-indolyl)lactic acid.* ***Hyrtioerectine C***



$C_{11}H_{11}NO_4$ 221.212
(*S*)-*form* [151764-92-0]
Alkaloid from the sponge *Hyrtios erectus*. Amorph. solid. $[\alpha]_D^{25}$ -31.3 (c, 0.13 in MeOH). λ_{max} 229 (log ε 3.76); 276 (log ε 3.56); 301 (log ε 3.44) (MeOH).
Youssef, D.T.A. *et al., J. Nat. Prod.*, 2005, **68**, 1416-1419 (*isol, pmr, cmr*)

5-Hydroxy-4-(4-hydroxy-3-methoxyphenyl)-4-(2-imidazolyl)-1,2,3-trithiane H-507

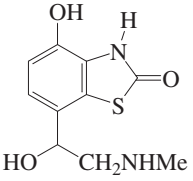
*4-(4-Hydroxy-3-methoxyphenyl)-4-(1*H*-imidazol-2-yl)-1,2,3-trithian-5-ol, 9CI*



Relative Configuration
$C_{13}H_{14}N_2O_3S_3$ 342.463
(+)-*form* [383191-04-6]
Isol. from the ascidian *Aplidium* sp. D. Cytotoxic. Yellow gum. $[\alpha]_D^{20}$ +26 (c, 0.1 in MeOH). λ_{max} 216 (ε 13750); 255 (ε 8100); 290 (ε 5800) (MeOH/KOH) (Derep). λ_{max} 283 (ε 3900) (MeOH) (Derep).
(-)-*form* [383191-01-3]
Isol. from the ascidian *Hypsistozoa fasmeriana*. Cytotoxic. $[\alpha]_D^{20}$ -26 (c, 0.1 in MeOH).
[123060-46-8 , 123060-45-7]
Copp, B.R. *et al., Tet. Lett.*, 1989, **30**, 3703-3706 (*isol, struct*)
Pearce, A.N. *et al., J.O.C.*, 2001, **66**, 8257-8259 (*isol, cd, pmr, cmr*)

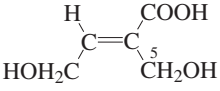
4-Hydroxy-7-[1-hydroxy-2-(methylamino)ethyl]-2(3*H*)-benzothiazolone H-508

S 1319
[220752-37-4]



$C_{10}H_{12}N_2O_3S$ 240.282
Isol. from the marine sponge *Dysidea* sp. β_2-Adrenoceptor agonist.
Suzuki, H. *et al., Bioorg. Med. Chem. Lett.*, 1999, **9**, 1361-1364 (*isol, pmr, cmr, activity*)
Fairhurst, R.A. *et al., Org. Lett.*, 2005, **7**, 4697-4700 (*synth*)

4-Hydroxy-2-(hydroxymethyl)-2-butenoic acid, 9CI H-509



(*E*)-*form*
$C_5H_8O_4$ 132.116
(*E*)-*form*
5-O-E-Cinnamoyl, Me ester: [54118-68-2]
$C_{15}H_{16}O_5$ 276.288
Constit. of *Enkianthus perulatus*. Oil. Sol. MeOH, Et_2O; poorly sol. H_2O. λ_{max} 217 (ε 27800); 222 (ε 22800); 278 (ε 22900) (EtOH).
(*Z*)-*form* [111833-91-1]
Nitrile, 4-O-β-D-glucopyranoside: 4-(β-D-Glucopyranosyloxy)-2-(hydroxymethyl)-2-butenenitrile, 9CI. ***Sarmentosin***†. *Nigrumin*
[71933-54-5]
$C_{11}H_{17}NO_7$ 275.258
Isol. from *Ribes nigrum* (blackcurrant), *Sedum sarmentosum* and from the moth *Abroxas grossulariata*. Antihe-

patotoxic compd. $[\alpha]_D^{24}$ -18 (c, 0.3 in MeOH). Has (*E*)-config.

5-O-*(4-Hydroxybenzoyl), nitrile, 4*-O-*β*-D-*glucopyranoside:* [930275-35-7]
$C_{18}H_{21}NO_9$ 395.365
Constit. of redcurrants (*Ribes rubrum*). Amorph. powder. Has (*E*)-config. (change of Cahn-Ingold priorities). λ_{max} 211 ; 255 (MeCN).

5-O-*(4-Hydroxy-3-methoxybenzoyl), nitrile, 4*-O-*β*-D-*glucopyranoside:* [930275-36-8]
$C_{19}H_{23}NO_{10}$ 425.391
Constit. of redcurrants (*Ribes rubrum*). Amorph. powder. Has (*E*)-config. (change of Cahn-Ingold priorities). λ_{max} 211 ; 263 (MeCN).

5-O-*(3,4,5-Trihydroxybenzoyl), nitrile, 4*-O-*β*-D-*glucopyranoside:* ***Rhodiocyanoside B***
[168433-87-2]
$C_{18}H_{21}NO_{11}$ 427.364
Constit. of *Rhodiola quadrifida*. Powder. $[\alpha]_D$ -12.2 (MeOH). Has (*E*)-config. (change of Cahn-Ingold priorities). λ_{max} 217 (log ϵ 4.48); 279 (log ϵ 3.99) (MeOH).

5-O-*(4-Hydroxy*-E-*cinnamoyl), nitrile, 4*-O-*β*-D-*glucopyranoside:* ***5*-O-p-*Coumaroylnigrumin***
$C_{20}H_{23}NO_9$ 421.403
Constit. of the seeds of *Ribes nigrum* (blackcurrant). Powder. Has (*E*)-config. (change of Cahn-Ingold priorities).

5-O-*(4-Hydroxy-3-methoxy*-E-*cinnamoyl), nitrile, 4*-O-*β*-D-*glucopyranoside:* ***5*-O-*Feruloylnigrumin***
$C_{21}H_{25}NO_{10}$ 451.429
Constit. of the seeds of *Ribes nigrum* (blackcurrant). Has (*E*)-config. (change of Cahn-Ingold priorities).

2,3-Epoxide, nitrile, 4-O-*β*-D-*glucopyranoside:* ***Epoxysarmentosin***. *Sarmentosin epoxide*
[81907-02-0]
$C_{11}H_{17}NO_8$ 291.257
Isol. from *Sedum cepaea*. Hygroscopic powder.

[77459-99-5 , 111833-90-0]

Kobayashi, A. *et al., Agric. Biol. Chem.*, 1974, **38**, 1997-2000 (*5-cinnamoyl Me ester*)
Gu, Y.-X. *et al., CA*, 1981, **94**, 183828j (*cryst struct, Sarmentosin*)
Nahrstedt, A. *et al., Phytochemistry*, 1982, **21**, 107 (*epoxide*)
Alen, R. *et al., Acta Chem. Scand., Ser. B*, 1987, **41**, 76 (*synth, ms*)
Chu, G. *et al., Bioorg. Med. Chem. Lett.*, 1993, **3**, 1343 (*synth, Sarmentosin*)
Nishida, R. *et al., Phytochemistry*, 1994, **36**, 37 (*isol*)
Yoshikawa, M. *et al., Chem. Pharm. Bull.*, 1995, **43**, 1245-1247 (*Rhodiocyanoside B*)
Lu, Y. *et al., Phytochemistry*, 2002, **59**, 465-468 (*Nigrumins*)
Xu., R. *et al., Synth. Commun.*, 2003, **33**, 3355-3363 (*synth, Sarmentosin*)
Schwarz, B. *et al., J. Agric. Food Chem.*, 2007, **55**, 1405-1410 (*redcurrant constits*)

4-Hydroxy-3-hydroxymethyl-2-butenoic acid H-510

$(HOCH_2)_2C{=}CHCOOH$

$C_5H_8O_4$ 132.116

Nitrile: 4-Hydroxy-3-hydroxymethyl-2-butenenitrile. 3-Cyano-2-hydroxymethyl-2-propen-1-ol. 2-(Cyanomethylene)-1,3-propanediol
[29768-68-1]
$C_5H_7NO_2$ 113.116
Constit. of *Cardiospermum halicacabum*, *Heliotropium* spp. and other Sapindaceae. Component of Jia Ku Gua.

*Nitrile(*E-*),* O-*β*-D-*glucopyranoside:*
[84976-19-2]
$C_{11}H_{17}NO_7$ 275.258
Constit. of the secretions of *Leptocoris isolata*.

*Nitrile(*Z-*),* O-*β*-D-*glucopyranoside: 4-(β-D-Glucopyranosyloxy)-3-(hydroxymethyl)-2-butenenitrile, 9CI*. ***Sutherlandin***
[110115-57-6]
$C_{11}H_{17}NO_7$ 275.258
Isol. from leaves of *Acacia sutherlandii*. Powder.

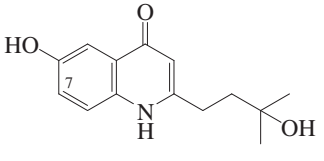
Nitrile, O′*-octadecanoyl,* O″*-(14*Z*-eicosenoyl):*
$C_{43}H_{77}NO_4$ 672.086
Constit. of the seeds of *Koelreuteria paniculata*.

*Nitrile(*E-*),* O-*(4-hydroxy*-E-*cinnamoyl),* O-*β*-D-*glucopyranoside:* ***Sutherlandin* trans-p-*coumarate***
$C_{20}H_{23}NO_9$ 421.403
Constit. of *Sorbaria sorbifolia* var. *stellipila*. Needles. Mp 88-89°. $[\alpha]_D^{18}$ +27.8 (c, 0.09 in MeOH). λ_{max} 211 ; 315 (MeOH).

*Nitrile, 2*S*,3*R*-epoxide,* O-*β*-D-*glucopyranoside:* ***Sutherlandin epoxide***
[173792-47-7]
$C_{11}H_{17}NO_8$ 291.257
Constit. of *Exochorda giraldii, Exochorda serratifolia* and *Rhodotypos scandens*.

Braekman, J.C. *et al., Biochem. Syst. Ecol.*, 1982, **10**, 355-364 (*isol*)
Swenson, W.K. *et al., Phytochemistry*, 1987, **26**, 1835-1836 (*Sutherlandin*)
Lechtenberg, M. *et al., Phytochemistry*, 1994, **37**, 1039-1043 (*isol, pmr, cmr*)
Lechtenberg, M. *et al., Phytochemistry*, 1996, **41**, 779-785 (*Sutherlandin epoxide*)
Spitzer, V. *et al., Phytochemistry*, 1996, **42**, 1357-1360
Akita, H. *et al., Tetrahedron: Asymmetry*, 1999, **10**, 2429-2439 (*Sutherlandin, synth*)
Kim, D.K. *et al., Chem. Pharm. Bull.*, 2000, **48**, 1766-1767 (*Sutherlandin trans-p-coumarate*)
Yang, X. *et al., Yaoxue Xuebao*, 2000, **35**, 279-283 (*isol, nitrile, ester*)

6-Hydroxy-2-(3-hydroxy-3-methylbutyl)-4(1*H*)-quinolinone H-511



$C_{14}H_{17}NO_3$ 247.293

Alkaloid from the leaves of *Spathelia excelsa*. Yellow powder. λ_{max} 240 ; 332 ; 346 (MeOH).

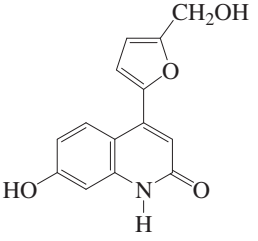
Da Paz Lima, M. *et al., Phytochemistry*, 2005, **66**, 1560-1566 (*isol, pmr, cmr*)

7-Hydroxy-2-(3-hydroxy-3-methylbutyl)-4(1*H*)-quinolinone H-512

$C_{14}H_{17}NO_3$ 247.293
Alkaloid from the leaves of *Spathelia excelsa*. Yellow powder. λ_{max} 240 ; 331 ; 347 (MeOH).

Da Paz Lima, M. *et al., Phytochemistry*, 2005, **66**, 1560-1566 (*isol, pmr, cmr*)

7-Hydroxy-4-(5-hydroxymethyl-2-furanyl)-2(1*H*)-quinolinone H-513

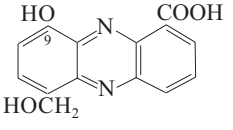


$C_{14}H_{11}NO_4$ 257.245
Alkaloid from the whole plant of *Aquilegia ecalcarata*. Cytotoxic. Amorph. orange powder. Mp 278-280° dec. λ_{max} 238 ; 262 ; 360 (MeOH).

Chen, S.-B. *et al., Planta Med.*, 2002, **68**, 554-556 (*isol, pmr, cmr, ms*)

9-Hydroxy-6-hydroxymethyl-1-phenazinecarboxylic acid, 9CI H-514

Antibiotic T 41348. *T 41348*
[60160-03-4]



$C_{14}H_{10}N_2O_4$ 270.244
Phenazine antibiotic. Isol. from *Streptomyces recifensis*. Active against gram-positive and -negative bacteria. Orange-red cryst. Sol. MeOH. λ_{max} 267 (ϵ 42000); 368 (ϵ 8700) (MeOH) (Berdy).

9-Me ether: 6-Hydroxymethyl-9-methoxy-1-phenazinecarboxylic acid. ***Griseoluteic acid***. *B 4607B. Antibiotic B 4607B*
[489-76-9]
$C_{15}H_{12}N_2O_4$ 284.271
From *Streptomyces griseoluteus* and also *Vibrio* and *Bacillus* spp. Degradation prod. of Griseoluteins. Active against HeLa cells and Ehrlich carcinoma. Orange cryst. Sol. H_2O, MeOH. λ_{max} 263 ; 350 ; 365 (MeOH) (Berdy).

9-Me ether, Me ester:
Orange-yellow needles. Mp 189°.

*9-Me ether, 1′-*O*-(aminoacetyl):* ***Pelagiomicin C****. 2088C. Antibiotic 2088C. B 4607A. Antibiotic B 4607A.* O*-Glycylgriseoluteic acid*
[173485-82-0]
$C_{17}H_{15}N_3O_5$ 341.323
Prod. by the marine bacterium *Pelagiomonas variabilis* and by a *Vibrio* sp. Active against gram-positive and -negative bacteria. Cytotoxic agent. Red-orange solid. λ_{max} 210 (log ϵ 4.67); 267 (log ϵ 4.65); 369 (log ϵ 4.09) (EtOH).

*9-Me ether, 1′-*O*-(hydroxyacetyl):* ***Griseolutein A***
[573-84-2]
$C_{17}H_{14}N_2O_6$ 342.307
Produced by *Streptomyces griseoluteus.* Shows antibiotic activity against gram-positive and -negative bacteria. Orange-yellow needles. Sol. bases; fairly sol. MeOH, EtOAc; poorly sol. C_6H_6, H_2O, hexane. Mp 193° dec. λ_{max} 265 (ϵ 67700); 362 (ϵ 11300) (MeOH) (Derep). λ_{max} 267 ; 368 (EtOH) (Berdy).

▶ LD_{50} (mus, scu) 500 mg/kg. SG1576550

*9-Me ether, 1′-*O*-(2-aminopropanoyl):* **O-*Alanylgriseoluteic acid****. B 4607C. Antibiotic B 4607C*
$C_{18}H_{17}N_3O_5$ 355.349
Prod. by *Vibrio* sp. Yellow powder. Sol. H_2O, MeOH. $[\alpha]_D$ -3.7 (MeOH). λ_{max} 263 ; 365 (MeOH) (Berdy).

*9-Me ether, 1′-*O*-(2-amino-3-methylbutanoyl)(*S*-):* ***Pelagiomicin B****. 2088B. Antibiotic 2088B.* O*-Valylgriseoluteic acid*
[173485-81-9]
$C_{20}H_{21}N_3O_5$ 383.403
Prod. by *Pelagiomonas variabilis.* Red-orange needles. Sol. MeOH, butanol, $CHCl_3$. λ_{max} 210 (log ϵ 4.7); 267 (log ϵ 4.66); 369 (log ϵ 4.1) (EtOH).

*9-Me ether, 1′-*O*-(2-amino-3-hydroxy-3-methylbutanoyl)(*S*-):* ***Pelagiomicin A****. 2088A. Antibiotic 2088A.* O*-(3-Hydroxyvalyl)griseoluteic acid*
[173485-80-8]
$C_{20}H_{21}N_3O_6$ 399.402
Prod. by *Pelagiomonas variabilis.* Antitumour agent. Red-orange needles. Mp 130° dec. $[\alpha]_D^{20}$ +19.8 (c, 1 in $CHCl_3$). λ_{max} 209 (log ϵ 4.59); 265 (log ϵ 4.62); 368 (log ϵ 3.96) (EtOH).

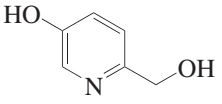
5,10-Dihydro, 9-Me ether, N^5*-(hydroxyacetyl):* ***Griseolutein B***
$C_{17}H_{16}N_2O_6$ 344.323
Isol. from *Streptomyces griseoluteus.* Shows antibiotic activity similar to that of Griseolutein A but weaker. Yellow needles (EtOAc). Sol. Py, bases; fairly sol. dioxan, MeOH; poorly sol. butyl acetate, toluene, Et_2O. Mp 220° dec. λ_{max} 282 (ϵ 10200); 342 (ϵ 5850) (MeOH) (Derep).

▶ LD_{50} (mus, ivn) 200 mg/kg, LD_{50} (mus, scu) 400 mg/kg.

Nakamura, S. *et al., J. Antibiot., Ser. A*, 1957, **10**, 265; 1959, **12**, 26; 55; 133 (*synth, props*)
Nakamura, S. *et al., Chem. Pharm. Bull.*, 1958, **6**, 539; 543; 547 (*synth, props*)
Yagishita, K. *et al., J. Antibiot., Ser. A*, 1960, **13**, 83 (*isol*)
Holliman, F.G. *et al., Chem. Comm.*, 1970, 1423 (*synth, bibl*)
Challand, S.R. *et al., Chem. Comm.*, 1970, 1423 (*Griseoluteins A-B, synth, ms, ir, pmr, struct*)
Ueda, K. *et al., Chem. Pharm. Bull.*, 1970, **18**, 1931 (*synth*)
Japan. Pat., 1976, 76 32 790; *CA*, **85**, 107461 (*isol, props*)
Japan. Pat., 1995, 95 330 741; *CA*, **124**, 315159s (*Antibiotic 2088A*)
Imamura, N. *et al., CA*, 1996, **124**, 170245e (*Pelagiomicins*)
Japan. Pat., 1996, 96 217 760; *CA*, **125**, 273725m
Imamura, N. *et al., J. Antibiot.*, 1997, **50**, 8-12 (*Pelagiomicins A-C*)

5-Hydroxy-2-(hydroxymethyl)pyridine H-515

5-Hydroxy-2-pyridinemethanol, 9CI
[40222-77-3]



$C_6H_7NO_2$ 125.127
Acid dehydration product of 5-Amino-5-deoxygalactose, A-726. Alkaloid from *Codonopsis pilosula* and *Papaver nudicaule.* Cryst. (MeCN). Mp 122-124°. Subl.0.05 12.5.

Picrate: Mp 182-183°.

N-*Oxide:* [73737-02-7]
$C_6H_7NO_3$ 141.126
Mp 183-184°.

1′-Ac: [89098-99-7]
$C_8H_9NO_3$ 167.164
Cryst. (C_6H_6). Mp 121-123°.

Di-Ac: [31181-78-9]
$C_{10}H_{11}NO_4$ 209.201
Liq. $Bp_{0.8}$ 122-128°.

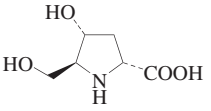
Di-Ac, N*-oxide:*
$C_{10}H_{11}NO_5$ 225.201
Cryst. (EtOAc). Mp 121-122°.

[74386-51-9]

Elming, N. *et al., Acta Chem. Scand.*, 1956, **10**, 1603-1605 (*synth*)
Inouye, S. *et al., Tetrahedron*, 1968, **20**, 2125-2144 (*synth*)
French, F.A. *et al., J. Med. Chem.*, 1970, **13**, 1124-1130; 1974, **17**, 172
Loh, W. *et al., J. Med. Chem.*, 1980, **23**, 631-634 (*N-oxide, synth*)
Hass, W. *et al., Annalen*, 1982, 1615-1622 (*di-Ac*)
Deady, L.W. *et al., Aust. J. Chem.*, 1983, **36**, 2565-2568 (*synth, pmr, Ac*)
Hachisu, M. *et al., J. Pharmacobio-Dyn.*, 1983, **6**, 922-931 (*synth*)
Miyake, Y. *et al., Agric. Biol. Chem.*, 1988, **52**, 661-666 (*formn*)
Wang, Z.T. *et al., CA*, 1989, **111**, 12386d (*isol*)
Zhang, Y. *et al., CA*, 1998, **128**, 306192c (*isol*)
Müller, C. *et al., Tetrahedron*, 1998, **54**, 10703-10712 (*synth, pmr, cmr*)

4-Hydroxy-5-hydroxymethyl-2-pyrrolidinecarboxylic acid H-516

4-Hydroxy-5-hydroxymethylproline



(2*R*,4*R*,5*S*)*-form*

$C_6H_{11}NO_4$ 161.157

(2*R*,4*R*,5*S*)*-form*
Synthetic isomer. $[\alpha]_D$ +16.7 (c, 0.42 in H_2O).

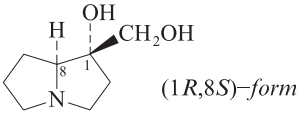
(2*R*,4*S*,5*R*)*-form*
[921201-49-2 (hydrochloride)]
$[\alpha]_D^{25}$ +29.8 (c, 0.6 in 1*M* HCl) (hydrochloride).

(2*S*,4*S*,5*R*)*-form*
Bulgecinine
[95863-87-9]
Constit. of bulgecins, glycopeptides prod. by *Pseudomonas acidophila* and *Pseudomonas mesoacidophila*. $[\alpha]_D^{20}$ -13.1 (c, 0.95 in H_2O).

Shinagawa, S. *et al., Tetrahedron*, 1984, **40**, 3465
Wakamiya, T. *et al., Tet. Lett.*, 1985, **26**, 4759 (*synth*)
Bashyal, B.P. *et al., Tet. Lett.*, 1986, **27**, 3205 (*synth*)
Yuasa, Y. *et al., Chem. Comm.*, 1994, 1383 (*synth, bibl*)
Maeda, M. *et al., Chem. Pharm. Bull.*, 1997, **45**, 962 (*synth, bibl*)
Panday, S.K. *et al., Synth. Commun.*, 1997, **27**, 1373-1384 (*Bulgecinine, synth*)
Fehn, S. *et al., Tetrahedron: Asymmetry*, 1997, **8**, 2001-2005 (*synth*)
Krasinski, A. *et al., Tet. Lett.*, 2001, **42**, 2019-2021 (*synth*)
Chavan, S.P. *et al., Tet. Lett.*, 2005, **46**, 439-441 (*Bulgecinine, synth*)
Trost, B.M. *et al., Chem. Eur. J.*, 2006, **12**, 6607-6620 (*Bulgecinine, synth*)
Chandrasekhar, S. *et al., Tetrahedron: Asymmetry*, 2006, **17**, 2864-2869 (*Bulgecinine, 2R,4S,5R-form, synth*)
Toumi, M. *et al., Tet. Lett.*, 2008, **49**, 1175-1179 (*Bulgecinine, synth*)

1-Hydroxy-1-hydroxymethylpyrrolizidine H-517

*Hexahydro-1-hydroxy-1*H*-pyrrolizine-1-methanol, 9CI*



(1*R*,8*S*)*–form*

$C_8H_{15}NO_2$ 157.212

(1*R*,8*S*)*-form*
Yellow oil.

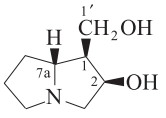
(1*S*,8*S*)*-form*
Curassanecine
[82842-00-0]
Necine base from *Heliotropium curassavicum* (Boraginaceae).

[138752-57-5 , 138752-56-4]

Subramanian, P.S. *et al., Aust. J. Chem.*, 1980, **33**, 1357 (*isol, ms*)
Mohanraj, S. *et al., Phytochemistry*, 1982, **21**, 1775 (*struct*)
Gramain, J.-C. *et al., J. Nat. Prod.*, 1991, **54**, 1062 (*synth, abs config, cryst struct*)
Dieter, R.K. *et al., Tet. Lett.*, 2002, **43**, 7725-7728 (*synth*)

2-Hydroxy-1-hydroxymethylpyrrolizidine H-518

*Hexahydro-2-hydroxy-1*H*-pyrrolizine-1-methanol, 9CI*



(1*S*,2*R*,7a*R*)*-form*

$C_8H_{15}NO_2$ 157.212

(1*S*,2*R*,7*aR*)-*form*
(1β,2β,7aβ)-form. Macronecine
[21824-61-3]
[21823-73-4 ((±)-form)]
Obt. by hydrol. of Macrophylline. Long needles (Me_2CO). Mp 126-128° (129°). $[\alpha]_D$ +49.3 (c, 1.6 in EtOH).

Hydrochloride:
Cryst. (EtOH). Mp 152-153°. $[\alpha]_D^{18}$ +49.4 (c, 1.37 in EtOH).

$O^{1'}$*-Angeloyl:* ***Macrophylline***†
[27841-97-0]
$C_{13}H_{21}NO_3$ 239.314
Alkaloid from *Senecio macrophyllus* (Asteraceae). Mp 42-44°. $[\alpha]_D^{20}$ +34.5 (c, 1.68 in EtOH). See also Macrophylline, M-21.

O^{2}*-(3-Methyl-2-butenoyl):* **O^{2}-*Senecioylmacronecine***
$C_{13}H_{21}NO_3$ 239.314
Alkaloid from *Senecio caudatus* (Asteraceae). Alkaloid not named in the lit.

$O^{1'}$*-(3-Methyl-2-butenoyl):* **O^{9}-*Senecioylmacronecine***
$C_{13}H_{21}NO_3$ 239.314
Alkaloid from *Senecio caudatus* (Asteraceae). Not named in the lit.

(1*R*,2*R*,7*aS*)-*form* [21823-66-5]
Fine needles (Me_2CO). Mp 128-128.5°. $[\alpha]_D^{18}$ -42.1 (c, 1 in EtOH).

$O^{1'}$*-Angeloyl,* N*-oxide:* ***2α-Hydroxy-9-angeloyloxy-(-)-trachelanthamidine* N*-oxide***
[119060-86-5]
$C_{13}H_{21}NO_4$ 255.313
Alkaloid from aerial parts of *Senecio deferens* (Asteraceae). The *N*-oxide of the enantiomer of Macrophylline.

(1*S*,2*R*,7*aS*)-*form*
(1β,2β,7aα)-form. Petasinecine
[70494-70-1]
Obt. by hydrol. of Petasinine. Mp 132-134°.

$O^{1'}$*-Angeloyl:* ***Hectorine***
$C_{13}H_{21}NO_3$ 239.314
Alkaloid from *Brachyglottis hectori*. Glass.

O^{2}*-Angeloyl:* ***Petasinine***
[70474-33-8]
$C_{13}H_{21}NO_3$ 239.314
Alkaloid from *Petasites japonicus* (sweet coltsfoot) (Asteraceae). Amorph. powder. $[\alpha]_D^{25}$ +16 (c, 2.5 in EtOH).

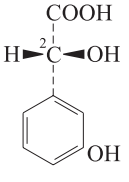
O^{2}*-Angeloyl,* $O^{1'}$*-[α-L-rhamnopyranosyl-(→4)-4-hydroxycinnamoyl]:* ***Petasinoside***
[70474-34-9]
$C_{28}H_{37}NO_9$ 531.602
Alkaloid from flower stalks of *Petasites japonicus* (sweet coltsfoot) (Asteraceae). Amorph. powder. $[\alpha]_D^{25}$ -38 (c, 1.1 in EtOH).

(1*R*,2*S*,7*aS*)-*form*
Synthetic. Mp 124-127°. $[\alpha]_D$ -49.4 (c, 0.96 in EtOH).

Danilova, A.V. *et al., Zh. Obshch. Khim.*, 1955, **25**, 831; *CA*, **50**, 2626 (*isol, struct, Macrophylline*)
Aasen, A.J. *et al., J.O.C.*, 1969, **34**, 4143 (*struct, synth, pmr*)
Yamada, K. *et al., Tet. Lett.*, 1978, 4543 (*isol, pmr, struct, Petasinine, Petasinoside*)
Rüeger, H. *et al., Heterocycles*, 1983, **20**, 235 (*synth*)
Bohlmann, F. *et al., Phytochemistry*, 1986, **25**, 1151 (*isol, ir, ms, struct, derivs*)
Hirschmann, G.S. *et al., Planta Med.*, 1988, **54**, 360 (*isol, pmr, ms, struct, oxide*)
Ito, H. *et al., J.A.C.S.*, 1994, **116**, 5469 (*Macronecine, synth*)
Ma, D. *et al., J.C.S. Perkin 1*, 1999, 1703-1707 (*synth*)
Sarkar, T.K. *et al., Tetrahedron*, 2005, **61**, 1155-1165 (*Macronecine, synth*)
Bai, Y. *et al., ARKIVOC*, 2006, **iii**, 34-42 (*Hectorine, Petasinine*)

2-Hydroxy-2-(3-hydroxyphenyl)acetic acid H-519

α,3-Dihydroxybenzeneacetic acid, 9CI. m*-Hydroxymandelic acid, 8CI. α,3-Dihydroxyphenylacetic acid. 3-Hydroxyphenylglycollic acid. α,3-Dihydroxy-α-toluic acid*
[17119-15-2]



(*R*)*-form*

$C_8H_8O_4$ 168.149

(*R*)-*form* [17513-99-4]
*Nitrile, 2-*O*-(6-*O*-acetyl-β-D-glucopyranoside):* ***6″-O-Acetylholocalin***
$C_{16}H_{19}NO_8$ 353.328
Constit. of *Sambucus nigra* (elderberry). $[\alpha]_D$ -47 (c, 0.2 in EtOH). Possible artifact. λ_{max} 278 (EtOH).

(*S*)-*form* [12514-00-0]
*Nitrile, 2-*O*-β-D-glucopyranoside:* ***Zierin***
[645-02-3]
$C_{14}H_{17}NO_7$ 311.291
Isol. from above ground parts of *Zieria laevigata*. Needles ($EtOAc/CHCl_3$). Mp 156° (softens at 153°). $[\alpha]_D^{20.3}$ -29.5.

*Nitrile, 2-*O*-[β-D-xylopyranosyl-(1→6)-β-D-glucopyranoside]:* ***Zierinxyloside***
[82083-98-5]
$C_{19}H_{25}NO_{11}$ 443.407
Constit. of the fruit of *Xeranthemum cylindraceum*.

*Nitrile, 2-*O*-[β-D-glucopyranosyl(1→4)-3,4-dihydroxycinnamoyl(→5)-β-D-apiofuranosyl(1→4)-β-D-xylopyranosyl-(1→6)-β-D-glucopyranoside]:* ***Xeranthin***
[129761-12-2]
$C_{39}H_{49}NO_{23}$ 899.809
Constit. of the fruit of *Xeranthemum cylindraceum*. Powder. $[\alpha]_D^{20}$ -88.1 (c, 1.29 in MeOH).

[19988-46-6]

Finnemore, H. *et al., J. Proc. R. Soc. N.S.W.*, 1936, **70**, 135 (*Zierin*)
Gmelin, R. *et al., Phytochemistry*, 1973, **12**, 457-461 (*Holocalin*)
Schwarzmaier, U. *et al., Chem. Ber.*, 1976, **109**, 3250-3251 (*pmr, Zierin*)
Moehrle, H. *et al., Pharmazie*, 1980, **35**, 756-761 (*synth, Zierin*)
Huebel, W. *et al., Planta Med.*, 1982, **44**, 178-180 (*Zierinxyloside*)
Schwind, P. *et al., Phytochemistry*, 1990, **29**, 1903-1911 (*Xeranthin, Zierinxyloside*)
Greca, M.D. *et al., Nat. Prod. Lett.*, 2000, **14**, 175-182 (*Holocalin, 6″-Acetylholocalin*)

2-Hydroxy-2-(4-hydroxyphenyl)acetic acid H-520

α,4-Dihydroxybenzeneacetic acid, 9CI. p*-Hydroxymandelic acid, 8CI. α,4-Dihydroxyphenylacetic acid. 4-Hydroxyphenylglycollic acid. α,4-Dihydroxy-α-toluic acid.* ***Pisolithin B***
[1198-84-1]
$C_8H_8O_4$ 168.149

(*R*)-*form* [13244-78-5]
Metab. of the fungus *Pisolithus tinctorius*. Cryst. + $^1/_2H_2O$ (H_2O). Mp 102-103° (anhyd.). $[\alpha]_D$ -144.4 (H_2O). Readily isomerises during isoln. λ_{max} 228 ; 274 (HCl) (Berdy). λ_{max} 248 (NaOH) (Berdy).

*Nitrile, 2-*O*-β-D-glucopyranoside:* ***Taxiphyllin***. *Phyllanthin*†. *Phyllanthoside*†
[21401-21-8]
Cyanogenic glucoside of *Taxus* spp., *Bambusa vulgaris*, *Bambusa guadua*, *Triglochin maritima*, *Stenocarpus sinuatus*, *Sorghum* sp. *Girgensohnia oppositiflora* and *Macadamia ternifolia*. Algicide, phytotoxic. Cryst. (EtOH/C_6H_6). Mp 168-169° Mp 176°. $[\alpha]_D^{20}$ -66.7 (c, 0.37 in EtOH). Diastereoisomeric, not enantiomeric, with Dhurrin (see below). λ_{max} 216 (ε 17780); 222 (ε 15490); 277 (ε 21880) (MeOH) (Derep).

(*S*)-*form* [13244-75-2]
Plates + $1H_2O$ (H_2O). Mp 114-115°. $[\alpha]_D$ +154.7 (c, 1.36 in H_2O).

*Nitrile, 2-*O*-β-D-glucopyranoside:* ***Dhurrin***
[499-20-7]
Cyanogenic glucoside isol. from *Sorghum vulgare* (sorghum), *Sorghum halapeuse* and *Suckleya suckleyana*. Algicide, phytotoxin. Cryst. + $1H_2O$ (H_2O); cryst. + 1EtOH (EtOH). Sol. MeOH, H_2O. Mp 165°. λ_{max} 228 (ε 13000) (MeOH) (Berdy).

*Nitrile, 2-*O*-[3,4,5-trihydroxybenzoyl-(→*

2)-β-D-glucopyranoside]: ***Glochidacuminoside D***
$C_{21}H_{21}NO_{11}$ 463.397
Constit. of the leaves of *Glochidion acuminatum*. Amorph. powder. $[\alpha]_D^{28}$ -72.8 (c, 0.67 in MeOH). λ_{max} 223 (log ε 4.19); 275 (log ε 3.98) (MeOH).

*Nitrile, 2-*O*-[β-D-glucopyranosyl-(1→6)-β-D-glucopyranoside]:* ***Dhurrin 6′-glucoside***
$C_{20}H_{27}NO_{12}$ 473.433
Constit. of *Sorghum bicolor* (sorghum).

(ξ)-*form*

*Nitrile, 4′-*O*-β-D-glucopyranoside:* p-*Hydroxymandelonitrile glucoside*
$C_{14}H_{17}NO_7$ 311.291
Constit. of *Goodia latifolia*, *Nandina domestica* and *Thalictrum aquilegifolium*. Unstable. Config. of mandelonitrile residue undetd.

*Nitrile, di-*O*-β-D-glucopyranoside:*
$C_{20}H_{27}NO_{12}$ 473.433
Constit. of *Thalictrum aqualegifolium*.

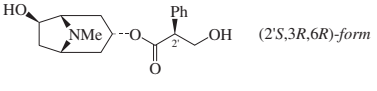
*Nitrile, 4′-*O*-[3,4-dihydroxycinnamoyl-(→4)-β-D-glucopyranoside]:* ***Nandinin***†
[91919-94-7]
$C_{23}H_{23}NO_{10}$ 473.435
Constit. of *Nandina domestica*. Pale yellow powder. Mp 101-104° dec. λ_{max} 329 (MeOH).

[70013-61-5 , 78689-25-5 , 59845-69-1 , 68758-69-0 , 82492-24-8 , 82492-25-9 , 69322-02-7 , 69322-01-6 , 79694-14-7 , 82503-24-0]

Plouvier, V. *et al., C. R. Hebd. Seances Acad. Sci.*, 1964, **259**, 665 (*Taxiphyllin*)
Towers, G.H.N. *et al., Tetrahedron*, 1964, **20**, 71-77 (*Taxiphyllin, isol, uv, ir, pmr*)
Mao, C.H. *et al., Phytochemistry*, 1965, **4**, 297 (*Taxiphyllin, struct*)
Schwartzmaier, U. *et al., Chem. Ber.*, 1976, **109**, 3250; 3379 (*abs config*)
Olechno, J.D. *et al., Phytochemistry*, 1984, **23**, 1784-1785 (*Nandinin*)
Selmar, D. *et al., Phytochemistry*, 1996, **43**, 569 (*Dhurrin 6′-glycoside*)
Nielsen, J.S. *et al., Arch. Biochem. Biophys.*, 1999, **368**, 121-130 (*Dhurrin, biosynth*)
Calderón, A.I. *et al., Acta Cryst. C*, 2003, **59**, o174-o176 (*Taxiphyllin, cryst struct*)
Otsuka, H. *et al., Chem. Pharm. Bull.*, 2004, **52**, 591-596 (*Glochidacuminoside D*)
Seigler, D.S *et al., Phytochemistry*, 2005, **66**, 1567-1580 (*Dhurrin, Taxiphyllin*)

6-Hydroxyhyoscyamine H-521

6-Hydroxy-8-methyl-8-azabicyclo[3.2.1]oct-3-yl α-(hydroxymethyl)benzeneacetate, 9CI. Anisodamine. Alkaloid V†
[17659-49-3]



(2′*S*,3*R*,6*R*)-*form*

$C_{17}H_{23}NO_4$ 305.373
Anticholinergic, antispasmodic agent. Reduces effects of acute myocardial infarction in rabbits. Shows atropine-like activity. Log P 0.11 (calc).

(2′*S*,3*R*,6*R*)-*form* [126371-43-5]
Alkaloid from *Duboisia* sp. and *Hyoscyamus albus*. Needles (MeOH). Mp 67°. $[\alpha]_D^{25}$ +1.2 (c, 1.9 in Me_2CO).

(2′*S*,3*S*,6*S*)-*form* [55869-99-3]
Alkaloid from *Datura ferox*, *Duboisia* sp., *Przewalskia tangutica*, *Scopoliatanguticus* and *Physochlaina dubia*. Cryst. (C_6H_6). Mp 61-62°. $[\alpha]_D^{20}$ -13.5 (c, 1.9 in MeOH).
▶ CY1634520

Hydrobromide: Mp 162° (156-157°). $[\alpha]_D^{23}$ -6.8.

N-*Oxide:* ***6-Hydroxyhyoscyamine* N-*oxide***
[54519-13-0]
$C_{17}H_{23}NO_5$ 321.372
Alkaloid from *Physochlaina alaica* (Solanaceae). Cryst. (EtOH). Mp 105-106°. Config. not detd.

Di-Ac:
Cryst. (Et_2O). Mp 74.5-75.5°.

Stereoisomer: [855784-79-1]
$C_{17}H_{23}NO_4$ 305.373
Alkaloid from *Datura stramonium*. Relative config. only determined. Complex stereochem. Appears from CAS to be the 3-epimer of previous isolates but with undetermined side-chain config.

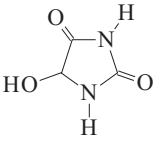
(±)-*form*
6-Hydroxyatropine
Alkaloid from *Physochlaina alaica* (Solanaceae). Mp 68-69°.

[52646-91-0]

Fodor, G. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1962, **295**, 91 (*synth*)
Romeike, A. *et al., Naturwissenschaften*, 1962, **49**, 281 (*isol*)
Mirzamatov, P.T. *et al., Khim. Prir. Soedin.*, 1972, 493; 1974, 416; 540 (*isol, pmr, ms, oxide*)
Hsiao, P.K. *et al., CA*, 1981, **95**, 138447u (*isol*)
Shi, J. *et al., CA*, 1984, **100**, 114755p (*pharmacol*)
Ishimaru, K. *et al., Phytochemistry*, 1989, **28**, 3507-3509 (*isol, pmr, cmr*)
Doncheva, T. *et al., CA*, 2005, **143**, 74802f (*Datura stramonium alkaloid*)
Muñoz, M.A. *et al., J. Nat. Prod.*, 2006, **69**, 1335-1340 (*vcd, abs config*)

5-Hydroxy-2,4-imidazolidinedione H-522

5-Hydroxyhydantoin
[29410-13-7]



$C_3H_4N_2O_3$ 116.076

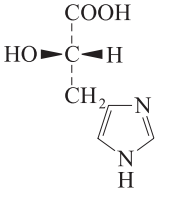
(±)-*form*
Cryst. (AcOH). Mp 140-142°. Compd. descr. in early ref. had different props.

(ξ)-*form*
Isol. from the tunicate *Botryllus schlosseri*.

Biltz, H. *et al., Ber.*, 1921, **54**, 1802-1828 (*synth*)
Abblard, J. *et al., Bull. Soc. Chim. Fr.*, 1971, 942-946 (*synth, pmr*)
Usov, A.I. *et al., Russ. J. Bioorg. Chem. (Engl. Transl.)*, 2002, **28**, 147-151 (*ξ-form, isol*)

2-Hydroxy-3-(4-imidazolyl)-propanoic acid H-523

*α-Hydroxy-1*H*-imidazole-4-propanoic acid, 9CI. Hydroxydesaminohistidine. 3-(4-Imidazolyl)lactic acid*
[876-19-7]



(*S*)–*form*

$C_6H_8N_2O_3$ 156.141
Intermed. in histidine biosynth. by *Escherichia coli*.

(*S*)-*form* [14403-45-3]
Urinary metab. of histidine. Cryst. + $1H_2O$ (H_2O). Mp 204°. $[\alpha]_D^{25}$ -43 (c, 2.8 in H_2O).

Me ester: [80941-71-5]
$C_7H_{10}N_2O_3$ 170.168
Cryst. ($MeOH/Et_2O$) (as hydrochloride). Mp 140-142° (hydrochloride). $[\alpha]_D^{25}$ -22 (c, 1.9 in MeOH) (hydrochloride).

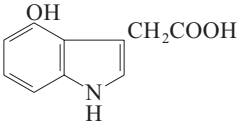
(±)-*form*
Cryst. + $1H_2O$. Mp 222°.

Et ester:
$C_8H_{12}N_2O_3$ 184.194
Cryst. ($CHCl_3$). Mp 118-119°.

[72710-85-1 , 86093-33-6]

Pyman, F.L. *et al., J.C.S.*, 1911, **99**, 1386-1401 (*synth*)
Fargher, R.G. *et al., J.C.S.*, 1919, **115**, 1015-1020 (*Et ester, synth*)
Hedegaard, J. *et al., Biochem. Biophys. Res. Commun.*, 1966, **25**, 335-339 (*occur*)
Noordam, A. *et al., Rec. Trav. Chim. (J. R. Neth. Chem. Soc.)*, 1981, **100**, 441-446 (*synth, ord*)
Okabe, N. *et al., Acta Cryst. C*, 1999, **55**, 217-218 (*S-form, cryst struct*)

4-Hydroxy-1*H*-indole-3-acetic acid H-524



$C_{10}H_9NO_3$ 191.186

Amide, O-*β-D-glucopyranoside:*
$C_{16}H_{20}N_2O_7$ 352.343
Alkaloid from the roots of *Capparis tenera*. Mp 257-260°. $[\alpha]_D^{25}$ -59.3 (c, 0.09 in MeOH aq.). λ_{max} 203 (sh) (log ε 1.13); 221 (log ε 1.45); 272 (log ε 0.28); 290 (log ε 0.2) (MeOH aq.).

*Nitrile: 4-Hydroxy-1*H*-indole-3-acetonitrile. 3-(Cyanomethyl)-4-hydroxyindole*

[118573-52-7]
$C_{10}H_8N_2O$ 172.186
Present in rapeseed. Identified by ms.

Nitrile, O-*β*-D-*glucopyranoside:* ***Capparisloside A***
[229483-41-4]
$C_{16}H_{18}N_2O_6$ 334.328
Constit. of the fruit of *Capparis spinosa* (caper). Amorph. $[\alpha]_D^{20}$ -58.8 (c, 0.4 in MeOH). λ_{max} 267 ; 278 ; 289 (MeOH).

Nitrile, O-*[β-D-glucopyranosyl-(1→6)-β-D-glucopyranoside]:* ***Capparisloside B***
[229483-42-5]
$C_{22}H_{28}N_2O_{11}$ 496.47
Constit. of the fruit of *Capparis spinosa* (caper). Amorph. $[\alpha]_D^{20}$ -23.7 (c, 0.3 in MeOH). λ_{max} 272 ; 279 ; 289 (MeOH).

*Me ether, nitrile: 4-Methoxy-1*H-*indole-3-acetonitrile. 3-(Cyanomethyl)-4-methoxyindole.* ***Arvelexin***
[4837-74-5]
$C_{11}H_{10}N_2O$ 186.213
Constit. of *Brassica pekinensis* infected with *Plasmodiophora brassicae.* Also from *Rorippa sylvestris* and *Thalaspi arvense.* Phytoalexin. Prisms ($CHCl_3$/hexane). Mp 145-146°.

Nomoto, M. *et al., Agric. Biol. Chem.*, 1970, **34**, 1590-1592 (*isol*)
Slominski, B.A. *et al., J. Chromatogr.*, 1988, **454**, 285-291 (*occur*)
Yamada, F. *et al., Heterocycles*, 1993, **36**, 2783-2804 (*synth*)
Calis, I. *et al., Phytochemistry*, 1999, **50**, 1205-1208 (*Capparilosides*)
Somei, M. *et al., Heterocycles*, 2000, **53**, 1573-1578 (*Capparilosides A, synth*)
Pedras, M.S.C. *et al., Phytochemistry*, 2003, **64**, 949-956 (*Arvelexin*)
Su, D.-M. *et al., Chem. Biodiversity*, 2008, **4**, 2852-2862 (*amide glucoside*)

5-Hydroxy-1*H*-indole-3-acetic acid, 9CI H-525

[54-16-0]

$C_{10}H_9NO_3$ 191.186
Present in brain and cerebrospinal fluid. Serotonin metabolite. Mp 165°.

► LD_{50} (mus, ipr) 1125 mg/kg. NL3650000

N-*Me, Me ether, nitrile:* [176688-98-5]
$C_{12}H_{12}N_2O$ 200.24
Cryst. Mp 105-106°.

*Me ether: 5-Methoxy-1*H-*indole-3-acetic acid*
[3471-31-6]
$C_{11}H_{11}NO_3$ 205.213
Present in bovine pineal tissue. Mp 150°.

► LD_{50} (mus, ipr) 98 mg/kg. Exp. neoplastigenic data. Exp. teratogen. NL3660500

Me ether, Me ester: [23304-48-5]
$C_{12}H_{13}NO_3$ 219.24
Cryst. (C_6H_6/petrol). Mp 73-74°.

Me ether, Et ester: [57000-49-4]
$C_{13}H_{15}NO_3$ 233.266
Cryst. (C_6H_6/petrol). Mp 97-98°.

Me ether, nitrile: [2436-17-1]
$C_{11}H_{10}N_2O$ 186.213
Oil.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 670B; 670C (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 142C (*nmr*)
Hoshino, T. *et al., Bull. Chem. Soc. Jpn.*, 1936, **11**, 221; *CA*, **30**, 5982
Asero, B. *et al., Farmaco, Ed. Sci.*, 1956, **11**, 219; *CA*, **50**, 13870
Lerner, A.B. *et al., J. Biol. Chem.*, 1960, **235**, 1992
McIsaac, W.M. *et al., Science (Washington, D.C.)*, 1965, **148**, 102
Olivieri, G. *et al., Med. Sci. Res.*, 1990, **18**, 99 (*metab*)
Tsotinis, A. *et al., J. Med. Chem.*, 2006, **49**, 3509-3519 (*Me ether nitrile, N-Me Me ether nitrile*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, HLJ000; MES850

6-Hydroxy-1*H*-indole-3-acetic acid H-526

[31031-05-7]

$C_{10}H_9NO_3$ 191.186
No phys. props. reported.

*Amide: 6-Hydroxy-1*H-*indole-3-acetamide*
[192184-73-9]
$C_{10}H_{10}N_2O_2$ 190.201
Alkaloid from the edible mushroom *Agrocybe cylindracea*. Lipid peroxidation inhibitor. Powder. λ_{max} 224 (ε 9870); 274 (ε 1690); 295 (ε 2360) (MeOH).

L-*Valine amide:* N-*(6-Hydroxy-1*H-*indol-3-ylacetyl)valine. 6-Hydroxyindole-3-acetylvaline*
[945774-95-8]
$C_{15}H_{18}N_2O_4$ 290.318
Metab. of 1*H*-Indole-3-acetic acid, I-81 in *Arabidopsis* sp.

L-*Phenylalanine amide:* N-*(6-Hydroxy-1*H-*indol-3-ylacetyl)phenylalanine. 6-Hydroxyindole-3-acetylphenylalanine*
[945774-96-9]
$C_{19}H_{18}N_2O_4$ 338.362
Metab. of 1*H*-Indole-3-acetic acid, I-81 in *Arabidopsis* sp.

Nitrile, O-*β*-D-*glucopyranoside:*
$C_{16}H_{18}N_2O_6$ 334.328
Alkaloid from *Isatis indigotica*. Mp 240-242°.

*Me ether: 6-Methoxy-1*H-*indole-3-acetic acid*
[103986-22-7]
$C_{11}H_{11}NO_3$ 205.213
Cryst. (H_2O). Mp 163-164° (dec.).

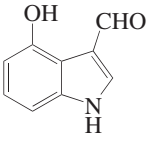
*Me ether, nitrile: 6-Methoxy-1*H-*indole-3-acetonitrile. 3-(Cyanomethyl)-6-methoxyindole*
[23084-35-7]
$C_{11}H_{10}N_2O$ 186.213
Needles (EtOH). Mp 113-114°.

[116621-16-0]

Findlay, S.P. *et al., J.O.C.*, 1948, **13**, 560 (*deriv, synth*)
Toyota, M. *et al., J.C.S. Perkin 1*, 1992, 547-552 (*synth*)
Shinada, T. *et al., Tet. Lett.*, 1996, **37**, 7099-7102 (*synth*)
Kim, W.-G. *et al., J. Nat. Prod.*, 1997, **60**, 721 (*amide, isol, uv, ir, pmr, cmr, ms*)
Li, B. *et al., Yaoxue Xuebao*, 2000, **35**, 508-510 (*nitrile, glucoside*)
Kai, K. *et al., Phytochemistry*, 2007, **68**, 1651-1663 (*aminoacid amides*)

4-Hydroxy-1*H*-indole-3-carboxaldehyde, 9CI H-527

3-Formyl-4-hydroxyindole
[81779-27-3]



$C_9H_7NO_2$ 161.16

O-*β*-D-*Glucopyranoside:*
$C_{15}H_{17}NO_7$ 323.302
Alkaloid from the roots of *Capparis tenera*. Amorph. solid. λ_{max} 216 (log ε 2.46); 243 (log ε 2.43); 306 (log ε 1.1) (MeOH).

*Me ether: 4-Methoxy-1*H-*indole-3-carboxaldehyde*
[90734-97-7]
$C_{10}H_9NO_2$ 175.187
Cryst. (MeOH). Mp 162-163°.

Somei, M. *et al., Heterocycles*, 1986, **24**, 3065-3069 (*synth*)
Pindur, U. *et al., Monatsh. Chem.*, 1990, **121**, 77-80 (*Me ether, synth, pmr*)
Yamada, F. *et al., Chem. Pharm. Bull.*, 2002, **50**, 92-99 (*synth*)
Su, D.-M. *et al., Chem. Biodiversity*, 2008, **4**, 2852-2862 (*glucoside*)

5-Hydroxy-1*H*-indole-3-carboxaldehyde, 9CI H-528

3-Formyl-5-hydroxyindole
[3414-19-5]

$C_9H_7NO_2$ 161.16
Alkaloid from the marine sponge *Hyrtios erecta*. Needles. Mp 220-221°. λ_{max} 215 (ε 12500); 252 (ε 11300); 270 (ε 9000); 298 (ε 1500) (MeOH) (Berdy).

*Me ether: 5-Methoxy-1*H-*indole-3-carboxaldehyde*
[10601-19-1]
$C_{10}H_9NO_2$ 175.187
Cryst. (CH_2Cl_2/petrol). Mp 174-175°.

Me ether, N-*Me: 5-Methoxy-1-methyl-1*H-*indole-3-carboxaldehyde*
[39974-94-2]
$C_{11}H_{11}NO_2$ 189.213
Needles (EtOH). Mp 134°.

Reimann, E. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1988, **321**, 823-826 (*Me ether N-Me, synth, ms, pmr, anal*)
Kobayashi, J. *et al., Tetrahedron*, 1990, **46**, 7699-7702 (*isol*)
Moody, C.J. *et al., J.C.S. Perkin 1*, 1993, 2561 (*Me ether, synth, ir, pmr, cmr, ms*)
Naylor, M.A. *et al., J. Med. Chem.*, 1997, **40**, 2335-2346 (*Me ether N-Me, synth, pmr*)
Sauleau, P. *et al., J. Nat. Prod.*, 2006, **69**, 1676-1679 (*isol, pmr, cmr*)

6-Hydroxy-1*H*-indole-3-carboxaldehyde H-529

3-Formyl-6-hydroxyindole
[192184-71-7]

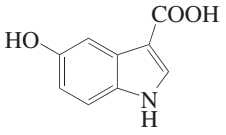
$C_9H_7NO_2$ 161.16
Alkaloid from the edible mushroom

Agrocybe cylindracea. Lipid peroxidation inhibitor. Powder. λ_{max} 220 (ϵ 3950); 235 (ϵ 3500); 276 (ϵ 2730); 300 (ϵ 1820) (MeOH).

Kim, W.G. *et al., J. Nat. Prod.*, 1997, **60**, 721-723 (*isol, uv, pmr, cmr, ms*)

5-Hydroxy-1*H*-indole-3-carboxylic acid, 9CI H-530

[3705-21-3]



$C_9H_7NO_3$ 177.159
Cryst. (C_6H_6/EtOH). Mp 187°.

Me ester: [112332-96-4]
$C_{10}H_9NO_3$ 191.186
Isol. from the sponge *Hyrtios erectus*. Yellow needles.

Et ester: [24370-69-2]
$C_{11}H_{11}NO_3$ 205.213
Mp 185-186°.

Benzyl ether: [24370-73-8]
$C_{16}H_{13}NO_3$ 267.284
Mp 203-204° dec.

Marchelli, R. *et al., Can. J. Chem.*, 1969, **47**, 4375-4381; 1971, **49**, 1296-1300 (*synth, ms, uv*)
Nakatsuka, S. *et al., Heterocycles*, 1987, **26**, 1471-1474 (*Me ester, synth, pmr*)
Sauleau, P. *et al., J. Nat. Prod.*, 2006, **69**, 1676-1679 (*Me ester, isol, pmr, cmr*)

6-Hydroxy-1*H*-indole-3-carboxylic acid, 9CI H-531

[24370-78-3]

$C_9H_7NO_3$ 177.159
Cryst. (EtOH aq.). Mp 229°.

Me ester: [112332-97-5]
$C_{10}H_9NO_3$ 191.186
Alkaloid from a *Spongosorites* sp. Oil.

Me ester, O-*[α-L-rhamnopyranosyl-(1→6)-β-D-glucopyranoside]:*
$C_{22}H_{29}NO_{12}$ 499.471
Constit. of the roots of *Clematis manshurica*. Light brown gum. λ_{max} 192 ; 214 ; 279 ; 322 (MeOH).

Et ester: [24370-70-5]
$C_{11}H_{11}NO_3$ 205.213
Mp 174-176° dec.

Me ether, Me ester:
$C_{11}H_{11}NO_3$ 205.213
Constit. of the roots of *Clematis manshurica*. Powder. Mp 163-165°. λ_{max} 218 ; 228 ; 275 ; 322 (MeOH).

Me ether, Et ester: [88612-61-7]
$C_{12}H_{13}NO_3$ 219.24
Mp 141-142°.

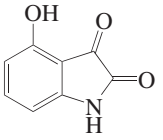
Et ether, Me ester:
$C_{12}H_{13}NO_3$ 219.24
Constit. of the roots of *Clematis manshurica*. Amorph. powder. Mp 172-174°. λ_{max} 218 ; 228 ; 275 ; 322 (MeOH).

Benzyl ether: [24370-74-9]
$C_{16}H_{13}NO_3$ 267.284
Mp 185-187° dec.

Marchelli, R. *et al., Can. J. Chem.*, 1969, **47**, 4375-4381; 1971, **49**, 1296-1300 (*synth, ms, uv*)
Kasahara, A. *et al., Bull. Chem. Soc. Jpn.*, 1986, **59**, 927-928 (*Me ether Et ester*)
Nakatsuka, S. *et al., Heterocycles*, 1987, **26**, 1471-1474 (*Me ester, synth, pmr*)
Shi, S.-P. *et al., J. Asian Nat. Prod. Res.*, 2006, **8**, 73-78 (*Clematis manshurica constits*)
Bao, B. *et al., Mar. Drugs*, 2007, **5**, 31-39 (*Me ester, isol, pmr, cmr, ms*)

4-Hydroxy-1*H*-indole-2,3-dione H-532

4-Hydroxyisatin



$C_8H_5NO_3$ 163.132
Orange prisms. Mp 260° dec.

*Me ether: 4-Methoxy-1*H*-indole-2,3-dione. 4-Methoxyisatin.* ***Isalexin***
[108937-87-7]
$C_9H_7NO_3$ 177.159
Alkaloid from *Brassica napus* ssp. *rapifera* (rutabaga) and *Brassica oleracea* var. *botrytis* (cauliflower). Phytoalexin. Mp 197-198°. λ_{max} 199 (log ϵ 4.2); 234 (log ϵ 3.9); 335 (log ϵ 3.4) (no solvent reported).

Giovannini, E. *et al., Helv. Chim. Acta*, 1957, **31**, 249-255 (*synth*)
Hewawasam, P. *et al., Tet. Lett.*, 1994, **35**, 7303-7306 (*Isalexin, synth*)
Pedras, M.S.C. *et al., J.O.C.*, 2004, **69**, 4471-4476 (*Isalexin*)

6-Hydroxy-1*H*-indole-2,3-dione, 9CI H-533

6-Hydroxyisatin
[116569-08-5]
$C_8H_5NO_3$ 163.132
Prod. by the marine-derived *Streptomyces* sp. B1848. Orange cryst. (MeOH). Dec. >325° without melting. λ_{max} 263 ; 280 (sh) ; 349 (sh) ; 420 (sh) (MeOH).

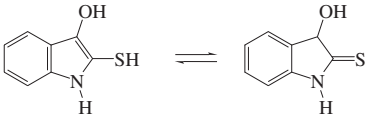
*Me ether: 6-Methoxy-1*H*-indole-2,3-dione. 6-Methoxyisatin*
[52351-75-4]
$C_9H_7NO_3$ 177.159
Yellow needles (H_2O). Mp 233-235°.

O,N-*Di-Me: 6-Methoxy-1-methyl-1*H*-indole-2,3-dione.* ***6-Methoxy*-N-*methylisatin***
[35162-27-7]
$C_{10}H_9NO_3$ 191.186
Alkaloid from the aerial parts of *Boronella koniambiensis*. Bright orange needles (cyclohexane/EtOAc). Mp 196°.

Giovannini, E. *et al., Helv. Chim. Acta*, 1948, **31**, 1381-1391 (*synth, Me ether*)
Pavlidis, V.H. *et al., Synth. Commun.*, 1994, **24**, 533 (*synth*)
Shabaan, M. *et al., Dissertation*, Univ. of Göttingen, 2004, (*isol, pmr, cmr, ms*)
Grougnet, R. *et al., J. Nat. Prod.*, 2005, **68**, 1083-1086 (*6-Methoxy-N-methylisatin*)
Kaila, N. *et al., J. Med. Chem.*, 2007, **50**, 21-39 (*Me ether*)

3-Hydroxy-1*H*-indole-2-thiol H-534

*1,3-Dihydro-3-hydroxy-2*H*-indole-2-thione. 3-Hydroxy-2-mercaptoindole*



C_8H_7NOS 165.215

SH-form

O,S-*Di-β-D-glucopyranoside:* ***Calanthoside***
$C_{20}H_{27}NO_{11}S$ 489.499
Alkaloid from *Calanthe discolor*. Powder. $[\alpha]_D^{25}$ -12 (c, 0.2 in MeOH). λ_{max} 222 (log ϵ 3.5); 290 (log ϵ 2.7) (MeOH).

S-*Me: 3-Hydroxy-2-(methylthio)-1*H*-indole*
C_9H_9NOS 179.242
Constit. of *Murex trunculus*. Biosynthetic precursor of Indigotin, I-72.

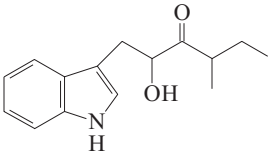
S-*Me,* O-*sulfate:*
$C_9H_9NO_4S_2$ 259.306
Isol. from *Murex trunculus*.

S-*Me,* S,S-*dioxide: 3-Hydroxy-2-(methylsulfonyl)-1*H*-indole*
$C_9H_9NO_3S$ 211.241
Constit. of *Purpura haemastoma*. Prob. biosynthetic precursor of Indigotin, I-72.

Baker, J.T. *et al., Tet. Lett.*, 1968, 43 (*S-Me sulfate*)
Fouquet, H. *et al., Angew. Chem., Int. Ed.*, 1971, **10**, 816-817 (*S-Me sulfate, isol*)
Baker, J.T. *et al., Tet. Lett.*, 1976, 1233-1234 (*S-Me sulfate, occur*)
Murakami, T. *et al., Heterocycles*, 2001, **54**, 957-966 (*Calanthoside*)
Cooksey, C.J. *et al., Molecules*, 2001, **6**, 736-769 (*S-Me sulfate, rev*)

2-Hydroxy-1-(1*H*-indol-3-yl)-4-methyl-3-hexanone H-535

*3-(2-Hydroxy-4-methyl-3-oxohexyl)-1*H*-indole*
[79338-81-1]



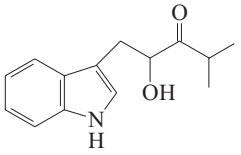
$C_{15}H_{19}NO_2$ 245.321
Metab. from the bacterium *Xenorhabdus bovienii* A2. Possesses antifungal and antibacterial props. Oil. Sol. MeOH, $CHCl_3$; poorly sol. hexane. $[\alpha]_D^{25}$ +87 (c, 1.0 in $CHCl_3$).

O-*Ac:* ***3-(2-Acetoxy-4-methyl-3-oxohexyl)-1*H*-indole***
[79338-82-2]
$C_{17}H_{21}NO_3$ 287.358
From *Xenorhabdus bovienii* A2. Possesses antifungal and antibacterial props. Oil. Sol. MeOH, $CHCl_3$; poorly sol. hexane. $[\alpha]_D^{25}$ +57 (c, 1.1 in $CHCl_3$). λ_{max} 273 (ϵ 6560); 280 (ϵ 6990); 289 (ϵ 6200) (MeOH) (Berdy).

Li, J. *et al., J. Nat. Prod.*, 1995, **58**, 1081 (*isol, ir, pmr, cmr, ms, struct*)

2-Hydroxy-1-(1*H*-indol-3-yl)-4-methyl-3-pentanone H-536

*3-(2-Hydroxy-4-methyl-3-oxopentyl)-1*H-*indole*
[161889-68-5]



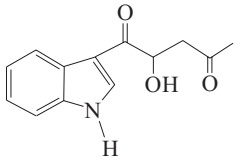
$C_{14}H_{17}NO_2$ 231.294
Metab. from the bacterium *Xenorhabdus bovienii* A2. Possesses antifungal and antibacterial props. Oil. $[\alpha]_D^{25}$ +86 (c, 1.1 in $CHCl_3$). λ_{max} 273 ; 279 ; 289 (MeOH) (Berdy).

O-*Ac:* ***3-(2-Acetoxy-4-methyl-3-oxopentyl)-1*H*-indole***
[161889-67-4]
$C_{16}H_{19}NO_3$ 273.331
From *Xenorhabdus bovienii* A2. Possesses antifungal and antibacterial props. Oil. Sol. MeOH, $CHCl_3$. λ_{max} 273 (ϵ 6700); 279 (ϵ 7050); 289 (ϵ 5900) (MeOH) (Berdy).

Li, J. *et al., J. Nat. Prod.*, 1995, **58**, 1081 (*isol, pmr, ms, struct*)

2-Hydroxy-1-(1*H*-indol-3-yl)-1,4-pentanedione, 9CI H-537

3-(2-Hydroxy-1,4-dioxopentyl)indole. 4-Hydroxy-5-(3-indolyl)-5-oxo-2-pentanone
[107749-00-8]



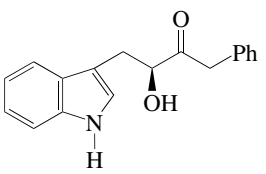
$C_{13}H_{13}NO_3$ 231.251

(±)-*form*
Alkaloid from the sponges *Dysidea etheria* and *Ulosa ruetzleri*. Possesses plant growth regulatory activity. Off-white solid. Sol. Me_2CO, MeOH.

Cardellina, J.H. *et al., J. Nat. Prod.*, 1986, **49**, 1065-1067 (*isol, ir, pmr, ms, struct*)

3-Hydroxy-4-(1*H*-indol-3-yl)-1-phenyl-2-butanone H-538

Kurasoin B
[183008-45-9]



$C_{18}H_{17}NO_2$ 279.338

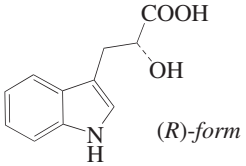
(*S*)-*form* [182232-66-2]
Prod. by *Paecilomyces* sp. FO-3684. Protein farnesyltransferase inhibitor. Powder. λ_{max} 205 (sh) (ϵ 14790); 218 (ϵ 17020); 273 (ϵ 3490); 283 (ϵ 3630); 289 (ϵ 3210) (MeOH).

*4″-Hydroxy: 3-Hydroxy-1-(4-hydroxyphenyl)-4-(1*H*-indol-3-yl)-2-butanone.* ***Soraphinol A***
[1006373-58-5]
$C_{18}H_{17}NO_3$ 295.337
Prod. by *Sorangium cellulosum* JW1059. Oil. $[\alpha]_D^{25}$ +28.1 (c, 0.3 in MeOH). λ_{max} 202 (log ϵ 4.46); 221 (log ϵ 4.53); 280 (log ϵ 3.82) (MeOH).

Uchida, R. *et al., J. Antibiot.*, 1996, **49**, 886; 932 (*isol, synth, uv, ir, pmr, cmr*)
Sunazuka, T. *et al., J. Antibiot.*, 1997, **50**, 453 (*synth, abs config*)
Li, X.-M. *et al., Bull. Korean Chem. Soc.*, 2007, **28**, 835-836 (*Soraphinol A*)
Tsuchiya, S. *et al., Heterocycles*, 2007, **72**, 91-94 (*synth*)
Fernandes, R.A. *et al., Tetrahedron: Asymmetry*, 2008, **19**, 15-18 (*synth*)

2-Hydroxy-3-(3-indolyl)propanoic acid H-539

*α-Hydroxy-1*H*-indole-3-propanoic acid, 9CI. 3-(3-Indolyl)lactic acid*
[1821-52-9]



(*R*)-*form*

$C_{11}H_{11}NO_3$ 205.213

(*R*)-*form*
D-form
[101312-07-6]
Isol. from the yeast *Malassezia furfur*. Mp 100-103°. $[\alpha]_D^{25}$ -6 (c, 0.28 in H_2O). λ_{max} 221 (log ϵ 4.56); 281 (log ϵ 3.8); 290 (log ϵ 3.74) (MeOH).

(*S*)-*form*
L-form
[7417-65-4]
Cryst. (Et_2O/petrol). Mp 100-101° (99°). $[\alpha]_D^{20}$ -5.36 (H_2O).

N-*Me: α-Hydroxy-1-methyl-1*H*-indole-3-propanoic acid. 2-Hydroxy-3-(1-methylindolyl)propanoic acid*
$C_{12}H_{13}NO_3$ 219.24
Constit. of the skins of peanuts (*Arachis hypogaea*). Needles (MeOH). Mp 216° dec. $[\alpha]_D^{25}$ +32.2 (c, 0.13 in MeOH).

*Me ether: α-Methoxy-1*H*-indole-3-propanoic acid. 2-Methoxy-3-(3-indolyl)propanoic acid*
$C_{12}H_{13}NO_3$ 219.24
Constit. of the skins of peanuts (*Arachis hypogaea*). Needles (MeOH). Mp 252° dec. $[\alpha]_D^{25}$ +22.2 (c, 0.1 in MeOH).

(±)-*form* [832-97-3]
Mp 144-145°.

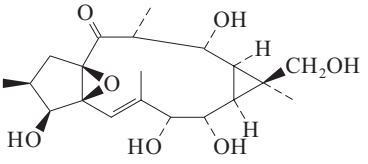
(ξ)-*form*
Metab. of various bacteria *Agrobacterium* spp., *Acetobacter* spp., *Aspergillus* spp. and *Streptomyces* spp. incl. the marine *Streptomyces* sp. B2150.

Et ester, O-β-D-glucopyranoside: [143884-93-9]
$C_{19}H_{25}NO_8$ 395.408
Constit. of grapes (Riesling wine).

*Me ether, dimethylamide: α-Methoxy-*N,N*-dimethyl-1*H*-indole-3-propanamide, 9CI. 3-(1*H*-Indol-3-yl)-2-methyl-*N,N*-dimethylpropanamide*
[201284-05-1]
$C_{14}H_{18}N_2O_2$ 246.308
Alkaloid from the seeds of *Erythrina brucei*.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 669B (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 140C (*nmr*)
Ehrlich, F. *et al., Ber.*, 1911, **44**, 888
Bauguess, L.C. *et al., J. Biol. Chem.*, 1934, **104**, 679
Ratusky, J. *et al., Chem. Listy*, 1957, **51**, 109; *CA*, **51**, 13843 (*synth*)
Marinos, V.A. *et al., Phytochemistry*, 1992, **31**, 2755-2759; 4399 (*isol*)
Bugge, J. *et al., Pharm. Pharmacol. Lett.*, 1997, **7**, 155-156 (*Me ether dimethylamide*)
Lou, H. *et al., Planta Med.*, 2001, **67**, 345-349 (*N-Me, Me ether*)
Shabaan, M. *et al., Dissertation*, Univ. of Göttingen, 2004, (*marine, isol*)
Irlinger, B. *et al., Helv. Chim. Acta*, 2005, **88**, 1472-1485 (*isol, pmr, cmr, ms*)

19-Hydroxyingol H-540



$C_{20}H_{30}O_7$ 382.453

8-Tigloyl, 12,19-di-Ac:
$C_{29}H_{40}O_{10}$ 548.629
Constit. of *Euphorbia acrurensis*. Oil. $[\alpha]_D$ +2 (c, 4 in $CHCl_3$).

8-Tigloyl, 3,12,19-tri-Ac:
$C_{31}H_{42}O_{11}$ 590.666
Constit. of *Euphorbia acrurensis*. Oil. $[\alpha]_D$ -15 (c, 1 in $CHCl_3$).

7,8-Ditigloyl, 3,12-di-Ac:
$C_{34}H_{46}O_{11}$ 630.731
Constit. of *Euphorbia acrurensis*. Oil. $[\alpha]_D$ -29 (c, 4.8 in $CHCl_3$).

8-Benzoyl, 3,7,12-tri-Ac:
$C_{33}H_{40}O_{11}$ 612.672
Constit. of *Euphorbia hermentiana*. Gum. $[\alpha]_D^{25}$ -45.1 (c, 0.2 in $CHCl_3$).

7-Phenylacetyl, 3,19-di-Ac:
$C_{32}H_{40}O_{10}$ 584.662
Constit. of *Euphorbia poisonii*. $[\alpha]_D^{23}$ +11 (c, 0.93 in $CHCl_3$). λ_{max} 201 (ϵ 10230) (MeOH) (Berdy).

7-Phenylacetyl, 3,12,19-tri-Ac:
$C_{34}H_{42}O_{11}$ 626.699
Constit. of *Euphorbia poisonii*. Flakes. Mp 180-182°. $[\alpha]_D^{23}$ -4.3 (c, 1.03 in $CHCl_3$). λ_{max} 201 (ϵ 5623); 212 (ϵ 6000) (MeOH) (Berdy).

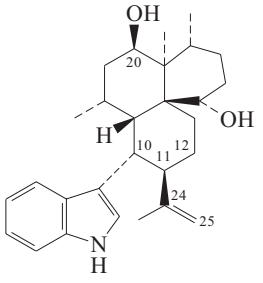
8-(3-Pyridinecarbonyl), 7-(phenylacetyl), 3,12,19-tri-Ac:
$C_{40}H_{45}NO_{12}$ 731.795
Constit. of *Euphorbia poisonii*. Cryst. Mp 198-199°. $[\alpha]_D^{23}$ -30 (c, 0.52 in $CHCl_3$). λ_{max} 201 (ϵ 23442); 247 (ϵ 2570); 263 (ϵ 3020) (MeOH) (Berdy).

19-(3-Pyridinecarbonyl), 8-benzoyl, 3,7,12-tri-Ac: [225640-78-8]
$C_{39}H_{43}NO_{12}$ 717.768
Constit. of *Euphorbia marginata*.

Lin, L.-J. *et al., Phytochemistry*, 1983, **22**, 2795-2799 (*benzoyl ester*)
Branch, S.K. *et al., Magn. Reson. Chem.*, 1992, **30**, 632 (*isol, pmr, cmr*)
Fatope, M.O. *et al., Bioorg. Med. Chem.*, 1996, **4**, 1679 (*isol, pmr, cmr*)
Marco, J.A. *et al., Phytochemistry*, 1998, **49**, 1095-1099 (*Euphorbia acrurens esters*)

20-Hydroxyisoaflavinine H-541

24,25-Didehydro-10,11-dihydro-20-hydroxyflavinone
[116865-09-9]



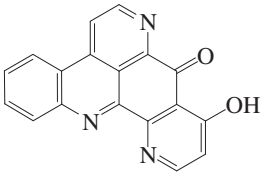
$C_{28}H_{39}NO_2$ 421.622
Metab. of *Aspergillus flavus*. Prisms (MeOH). Mp 146-148° Mp 259-262°. $[\alpha]_D^{24}$ +56 (c, 0.1 in MeOH). $[\alpha]_D$ +0.9 (c, 0.34 in MeOH).

20-Epimer: ***20*-epi-*Hydroxyisoaflavinine***
[124815-91-4]
$C_{28}H_{39}NO_2$ 421.622
From *Aspergillus tubingensis*. Mp 79-82°. $[\alpha]_D$ -5.6 (c, 1.06 in $CHCl_3$).

Gloer, J.B. *et al., J.O.C.*, 1988, **53**, 5457 (*isol*)
Nozawa, K. *et al., Chem. Pharm. Bull.*, 1989, **37**, 626 (*isol, cryst struct*)
TePaske, M.R. *et al., Tetrahedron*, 1989, **45**, 4961 (*isol*)

9-Hydroxyisoascididemnin H-542

*9-Hydroxy-8*H*-benzo[*b*]pyrido[4,3,2-*de*][1,10]phenanthrolin-8-one, 9CI*
[215590-37-7]



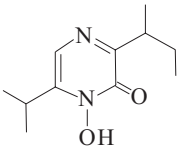
$C_{18}H_9N_3O_2$ 299.288
Alkaloid from the sponge *Biemna fortis*. Neuronal differentiation inducer. Amorph. yellow solid. Mp 293-295° dec. (as Me ether). Possible artifact. λ_{max} 227 (ϵ 15000); 277 (ϵ 10600); 365 (ϵ 5270) (MeOH).

*9-Deoxy, 9-amino: 9-Amino-8*H*-benzo[*b*]pyrido[4,3,2-*de*][1,10]phenanthrolin-8-one, 9CI.* ***9-Aminoisoascididemnin***
[191849-14-6]
$C_{18}H_{10}N_4O$ 298.303
Alkaloid from the sponge *Biemna fortis*. Neuronal differentiation inducer. Amorph. yellow solid (natural). Red powder ($CHCl_3$/petrol) (synthetic). Mp > 250° (synthetic). λ_{max} 231 (ϵ 20000); 282 (ϵ 14100); 373 (ϵ 7020) (MeOH).

Kitahara, Y. *et al., Tetrahedron*, 1998, **54**, 8421-8432 (*synth, pmr, cmr*)
De la Fuente, J.A. *et al., Bioorg. Med. Chem.*, 2001, **9**, 1807-1814 (*synth, pmr, cmr*)
Aoki, S. *et al., Bioorg. Med. Chem.*, 2003, **11**, 1969-1973 (*isol, pmr, cmr*)

1-Hydroxy-6-isopropyl-3-(1-methylpropyl)-2(1*H*)-pyrazinone H-543

*1-Hydroxy-6-(1-methylethyl)-3-(1-methylpropyl)-2(1*H*)-pyrazinone*
[63538-07-8]



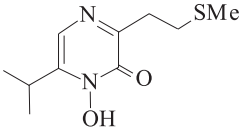
$C_{11}H_{18}N_2O_2$ 210.275
Metab. from *Aspergillus oryzae*. Oil.

Cu salt:
Grass-green cryst. (Me_2CO). Mp 205-207°.

Ueno, T. *et al., Agric. Biol. Chem.*, 1977, **41**, 901 (*isol, uv, pmr, ms, struct*)

1-Hydroxy-6-isopropyl-3-[2-(methylthio)ethyl]-2(1*H*)-pyrazinone H-544

*1-Hydroxy-6-(1-methylethyl)-3-[2-(methylthio)ethyl]-2(1*H*)-pyrazinone*
[37167-11-6]

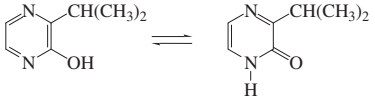


$C_{10}H_{16}N_2O_2S$ 228.315
Metab. from *Aspergillus flavus*. Mp 69-75°.

MacDonald, J.C. *et al., Can. J. Biochem.*, 1972, **50**, 543 (*isol, pmr, ms, struct*)

2-Hydroxy-3-isopropylpyrazine H-545

*3-Isopropyl-2-pyrazinol. 2-Hydroxy-3-(1-methylethyl)pyrazine, 9CI. 3-(1-Methylethyl)-2(1*H*)-pyrazinone*



$C_7H_{10}N_2O$ 138.169

OH-form

Me ether: 2-Isopropyl-3-methoxypyrazine
[25773-40-4]
$C_8H_{12}N_2O$ 152.196
Occurs in petitgrain and galbanum oil. Prod. by *Penicillium* spp., *Pseudomonas* spp. and *Streptomyces* spp. Perfumery and flavouring ingredient.

1′-Hydroxy, Me ether: ***2-(1-Hydroxy-1-methylethyl)-3-methoxypyrazine**. 3-Methoxy-α,α-dimethylpyrazinemethanol, 9CI*
[38346-80-4]
$C_8H_{12}N_2O_2$ 168.195
Prod. by *Chondromyces crocatus*. Oil.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 842B (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 404B (*nmr*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 1560C (*ir*)
Parliment, T.H. *et al., J. Agric. Food Chem.*, 1972, **20**, 682-684 (*struct*)
Bramwell, A.F. *et al., J.C.S. Perkin 1*, 1972, 2004-2007 (*synth*)
Bramwell, A.F. *et al., Tetrahedron*, 1973, **29**, 3939-3942 (*pmr*)
Calabretta, P.J. *et al., Cosmet. Perfum.*, 1975, **90**, 74; 76; 79-80; *CA*, **83**, 183292c (*synth, props*)
Murray, K.E. *et al., J. Sci. Food Agric.*, 1975, **26**, 973-986; *CA*, **84**, 29266u (*occur*)
Gerber, N.N. *et al., Dev. Ind. Microbiol.*, 1978, **20**, 225-238; *CA*, **91**, 206932t (*isol, rev*)
Karahadian, C. *et al., J. Agric. Food Chem.*, 1985, **33**, 339-343 (*isol*)
McInver, R.C. *et al., ACS Symp. Ser.*, 1986, **317**, 266 (*isol*)
Maga, J.A. *et al., Food Res. Int.*, 1987, **3**, 269-284 (*occur, rev*)
Arnoldi, A. *et al., Heterocycles*, 1988, **27**, 2875-2882 (*ms*)
Leete, E. *et al., Spec. Publ. - R. Soc. Chem.*, 1992, **95**, 75 (*rev, biosynth*)
Fenaroli's Handbook of Flavor Ingredients, 4th edn., (ed. Burdock, G.A.), CRC Press, 2001, 1052-1053 (*FEMA 3358*)
Schulz, S. *et al., Tetrahedron*, 2004, **60**, 3863-3872 (*Chondromyces crocatus constit*)

2-Hydroxy-5-isopropylpyrazine H-546

*5-(1-Methylethyl)-2(1*H*)-pyrazinone. 5-Isopropyl-2-pyrazinol*
$C_7H_{10}N_2O$ 138.169

OH-form

Me ether: 2-Isopropyl-5-methoxypyrazine
[68039-46-3 , 56891-99-7]
$C_8H_{12}N_2O$ 152.196
Present in various vegetable sources, e.g. carrot, cucumber. Component of FEMA 3358 together with its regioisomers. See also 2-Hydroxy-3-isopropylpyrazine, H-545. Not characterised except as isomeric mixt.

Stofberg, J. *et al., Perfum. Flavor.*, 1984, **9**, 53-56; 58-59; 62; 65-72; 76-83 (*use*)
Fenaroli's Handbook of Flavor Ingredients, 4th edn., (ed. Burdock, G.A.), CRC Press, 2001, 1052-1053 (*use, occur*)

2-Hydroxy-6-isopropylpyrazine H-547

*6-(1-Methylethyl)-2(1*H*)-pyrazinone. 6-Isopropyl-2-pyrazinol*

$C_7H_{10}N_2O$ 138.169

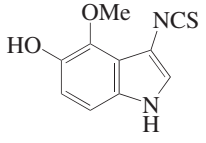
OH-form

Me ether: 2-Isopropyl-6-methoxypyrazine
$C_8H_{12}N_2O$ 152.196
Present in various vegetable sources, e.g. carrot, cucumber. Component of FEMA 3358 together with its regioisomers. Not characterised except as isomeric mixt.

Stofberg, J. *et al., Perfum. Flavor.*, 1984, **9**, 53-56; 58-59; 62; 65-72; 76-83 (*use*)
Fenaroli's Handbook of Flavor Ingredients, 4th edn., (ed. Burdock, G.A.), CRC Press, 2001, 1052-1053 (*occur, use*)

5-Hydroxy-3-isothiocyanato-4-methoxyindole H-548

*3-Isothiocyanato-4-methoxy-1*H*-indol-5-ol, 9CI.* ***Rapalexin B***
[929083-73-8]

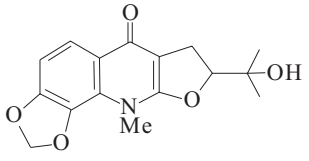


$C_{10}H_8N_2O_2S$ 220.251
Phytoalexin isol. from white rust infected *Brassica rapa*. No phys. props. reported.

Pedras, M.S.C. *et al., Chem. Comm.*, 2007, 368-370 (*isol, synth, pmr, cmr*)

Hydroxylunine H-549

*7,10-Dihydro-8-(1-hydroxy-1-methylethyl)-10-methyl-1,3-dioxolo[4,5-*h*]furo[2,3-*b*]quinolin-6(8*H*)-one, 9CI. 3,9-Dihydro-2-(1-hydroxy-1-methylethyl)-9-methyl-7,8-methylenedioxyfuro[2,3-*b*]quinolin-4(2*H*)-one*



$C_{16}H_{17}NO_5$ 303.314

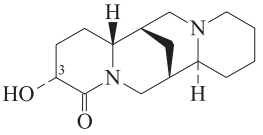
(+)-*form*
Alkaloid from the leaves of *Ptelea trifoliata* (Rutaceae). Cryst. (MeOH). Mp 224-227°. $[\alpha]_D^{25}$ +6 (c, 0.59 in EtOH).

(-)-*form*
Alkaloid from the leaves of *Lunasia amara* (Rutaceae). Cryst. (C_6H_6). Mp 228-230°. $[\alpha]_D^{25}$ -5.9 (c, 0.276 in EtOH).

(±)-*form*
Synthetic.
Needles ($MeOH/Et_2O$). Mp 222-225°.

Goodwin, S. *et al., J.A.C.S.*, 1959, **81**, 6209 (*isol, uv, ir, struct*)
Reisch, J. *et al., Tet. Lett.*, 1969, 3803 (*occur, struct*)
Neville, C.F. *et al., J.C.S. Perkin 1*, 1991, 259 (*synth*)

3-Hydroxylupanine H-550



3α–*form*

$C_{15}H_{24}N_2O_2$ 264.367

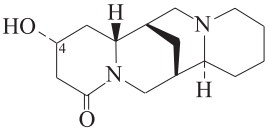
3α-*form* [129242-22-4]
Alkaloid from leaves of *Ammopiptanthus mongolicus* (Fabaceae) and from *Leontice leontopetalum* (Berberidaceae). Cryst. (toluene), needles ($CHCl_3$/petrol). Mp 143-145° (130-132°). $[\alpha]_D^{20}$ +73.8 (c, 1 in $CHCl_3$). $[\alpha]_D$ +54.2 (c, 0.15 in MeOH).

3β-*form* [129443-39-6]
Alkaloid from *Pearsonia* sp. (Fabaceae). Mp 94-95°. Incorr. descr. as 4β-Hydroxylupanine (see 4-Hydroxylupanine, H-551). Racemic.

Proksa, B. *et al., Coll. Czech. Chem. Comm.*, 1990, **55**, 1257
Verdoorn, G.H. *et al., Phytochemistry*, 1990, **29**, 1297
Al-Tel, T.H. *et al., Phytochemistry*, 1991, **30**, 2393

4-Hydroxylupanine H-551

*Dodecahydro-2-hydroxy-7,14-methano-4*H*,6*H*-dipyrido[1,2-a:1′,2′-e]diazocin-4-one, 9CI. 4-Hydroxy-2-oxosparteine*



4α–*form*

$C_{15}H_{24}N_2O_2$ 264.367

4α-*form*
Chamaetin
[31190-54-2]
Alkaloid from *Chamaecytisus frivaldskyanus, Chamaecytisus albus* ssp. *microphyllus, Chamaecytisus janae, Chamaecytisus supinus, Chamaecytisus calcareus* and *Chamaecytisus polytrichus* (Fabaceae). Cryst. Mp 207-209°. $[\alpha]_D^{25}$ +59.2 (c, 0.38 in EtOH).

Perchlorate: [23360-88-5]
Mp 170-172°.

4β-*form*
Nuttalline†
[23360-87-4]
Alkaloid from *Lupinus nuttallii* and *Lupinus hartwegii* (Fabaceae). Mp 108-109°. $[\alpha]_D^{26}$ +25.3 (c, 2 in EtOH).

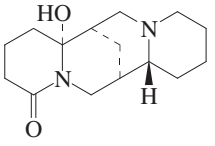
Ac: ***Nuttalline acetate****. 4β-Acetoxylupanine*
[68385-76-2]
$C_{17}H_{26}N_2O_3$ 306.404
Alkaloid detected in *Lupinus polyphyllus*, *Lupinus angustifolius*, *Lupinus mutabilis* and *Lupinus albus*.

4ξ-*form* [81149-32-8]
Alkaloid from *Lupinus mutabilis* seeds (Fabaceae).

O-*Angeloyl:* ***4-(Angeloyloxy)lupanine***
[86632-28-2]
$C_{20}H_{30}N_2O_3$ 346.469
Minor alkaloid detected in *Lupinus mutabilis* seeds (Fabaceae).

Goldberg, S.I. *et al., Chem. Comm.*, 1969, 660 (*isol, struct, uv, Nuttalline*)
Cho, Y.D. *et al., Arch. Mass Spectral Data*, 1972, **2**, 732 (*ms*)
Anderson, J.N. *et al., J.O.C.*, 1976, **41**, 3441 (*isol, Nuttalline*)
Daily, A. *et al., Tet. Lett.*, 1978, 1453 (*isol, pmr, abs config, Chamaetin*)
Hatzold, T. *et al., J. Agric. Food Chem.*, 1983, **31**, 934 (*isol, glc*)
Rastogi, R. *et al., J. Indian Chem. Soc.*, 1984, **61**, 918 (*isol, Nuttalline*)
Mühlbauer, P. *et al., Planta Med.*, 1988, **54**, 237 (*Nuttalline acetate*)

6-Hydroxylupanine H-552



6α-*form*

$C_{15}H_{24}N_2O_2$ 264.367

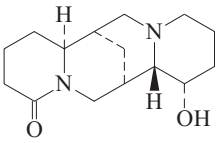
6α-*form* [278617-91-7]
Alkaloid from *Lygos raetam* var. *sarcocarpa* (preferred genus name *Genista*) and *Maackia amurensis*. Cryst. Mp 116-117°. $[\alpha]_D^{23}$ -73.5 (c, 0.17 in EtOH).

Me ether: ***6α-Methoxylupanine***
[278617-92-8]
$C_{16}H_{26}N_2O_2$ 278.394
Alkaloid from *Maackia amurensis*. Oil. $[\alpha]_D^{23}$ -16.5 (c, 0.42 in EtOH).

6β-*form* [103847-11-6]
Alkaloid from *Bolusanthus speciosus*.

Asres, K. *et al., Phytochemistry*, 1986, **25**, 1449-1452 (*isol, ir, pmr, ms, cd, struct*)
Abdel-Halim, O.B. *et al., Phytochemistry*, 1995, **40**, 1323-1325 (*isol, pmr, cmr, ms*)
Wang, Y.-H. *et al., Chem. Pharm. Bull.*, 2000, **48**, 641-645 (*isol, pmr, cmr, ms*)

12-Hydroxylupanine H-553



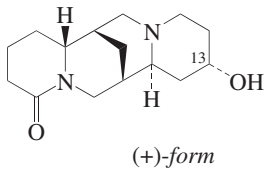
$C_{15}H_{24}N_2O_2$ 264.367

12α-*form* [145204-92-8]
Alkaloid from aerial parts of *Lygos raetam* var. *sarcocarpa* (preferred genus name *Genista*) (Fabaceae). Cryst. Mp 173-175°. $[\alpha]_D^{24}$ +20 (c, 0.15 in EtOH).

Abdel-Halim, O.B. *et al., Phytochemistry*, 1992, **31**, 3251 (*isol, ir, pmr, cmr, ms, struct*)

13-Hydroxylupanine H-554

13-Hydroxy-2-oxosparteine. Octalupine. Hydroxylupanine
[15358-48-2]



(+)-*form*

$C_{15}H_{24}N_2O_2$ 264.367
Alkaloid from *Cytisus scoparius*, *Chamaecytisus absinthoides*, *Calpurnia aurea* ssp. *aurea*, *Lupinus angustifolius*, *Lupinus albus*, *Lupinus hilarianus*, *Lupinus perennis*, *Lupinus polyphyllus*, *Lupinus wyethi*, *Cadia* spp., *Genista cinerea*, *Sarothamnus catalaunicus* and *Thermopsis cinerea*. Mp 178-180° (172-174°) Mp 76° (hydrate). $[\alpha]_D$ +74.1 (c, 3.6 in H_2O). $[\alpha]_D$ +51.8.

► OK5746000

Hydroiodide: Mp 234-238°.

Ac: ***13-Acetoxylupanine***
[72822-06-1]
$C_{17}H_{26}N_2O_3$ 306.404
Alkaloid from *Lupinus polyphyllus*, *Lupinus mutabilis* and *Lupinus albus*. Mp 103-105°.

Propanoyl: ***13-Propanoyloxylupanine***. *13-Propyloxylupanine (incorr.)*
[118636-92-3]
$C_{18}H_{28}N_2O_3$ 320.431
Alkaloid detected in *Lupinus polyphyllus*, *Lupinus mutabilis*, *Lupinus angustifolius* and *Lupinus albus*.

Butanoyl: ***13-Butyryloxylupanine***
[118636-94-5]
$C_{19}H_{30}N_2O_3$ 334.458
Alkaloid detected in *Lupinus polyphyllus*, *Lupinus mutabilis*, *Lupinus angustifolius* and *Lupinus albus*.

O-*(2-Methylpropanoyl):* ***13-Isobutyryloxylupanine***
[118636-93-4]
$C_{19}H_{30}N_2O_3$ 334.458
Alkaloid detected in *Lupinus polyphyllus*, *Lupinus mutabilis*, *Lupinus angustifolius* and *Lupinus albus*.

Pentanoyl: ***13-Valeroyloxylupanine***
[118636-96-7]
$C_{20}H_{32}N_2O_3$ 348.484
Alkaloid detected in *Lupinus albus*.

O-*(2-Methylbutanoyl):* ***13-(2-Methylbutyryloxy)lupanine***
[81362-35-8]
$C_{20}H_{32}N_2O_3$ 348.484
Alkaloid from cell cultures of *Lupinus polyphyllus*, detected by glc/ms (Fabaceae). Also from *Rothia trifoliata*.

O-*(3-Methylbutanoyl):* ***13-Isovaleroyloxylupanine***
[118636-95-6]
$C_{20}H_{32}N_2O_3$ 348.484
Alkaloid detected in *Lupinus polyphyllus*, *Lupinus mutabilis*, *Lupinus angustifolius* and *Lupinus albus*.

Hexanoyl: ***13-Caproyloxylupanine***
[134958-48-8]
$C_{21}H_{34}N_2O_3$ 362.511
Alkaloid from *Lupinus angustifolius*.

Angeloyl: ***13-Angeloyloxylupanine***
[57943-35-8]
$C_{20}H_{30}N_2O_3$ 346.469
Alkaloid from *Calpurnia aurea*, seeds of *Lupinus mutabilis*, and from cell cultures of *Lupinus polyphyllus*, detected by glc/ms (Fabaceae).

Tigloyl: ***13-Tigloyloxylupanine***
[57943-34-7]
$C_{20}H_{30}N_2O_3$ 346.469
Alkaloid from *Lupinus polyphyllus* and seeds of *Lupinus mutabilis* (Fabaceae). Oil. Mp 260° dec. (as perchlorate). $Bp_{0.001}$ 180-200° (synthetic).

O-*(4-Hydroxy-2-methyl-2*E*-butenoyl):* ***13-(4-Hydroxytigloyloxy)lupanine***
[149155-69-1]
$C_{20}H_{30}N_2O_4$ 362.468
Alkaloid from seeds of *Ormosia krugii* (Fabaceae). Yellow oil. $[\alpha]_D^{20}$ +42 (c, 0.1 in MeOH).

O-*(3-Hydroxy-5-octenoyl)(*Z*-):* ***Cineroctine***
[155454-00-5]
$C_{23}H_{36}N_2O_4$ 404.548
Alkaloid from aerial parts of *Genista cinerea* subsp. *cinerea*, *Genista cinerea* ssp. *speciosa* and *Genista ramosissima* (Fabaceae). Yellow oil. $[\alpha]_D^{30}$ +6.4 (c, 1 in MeOH).

Benzoyl: ***13-Benzoyloxylupanine***
[34226-97-6]
$C_{22}H_{28}N_2O_3$ 368.475
Alkaloid from *Lupinus angustifolius*, *Lupinus albus*, *Lupinus polyphyllus*, seeds of *Lupinus mutabilis* and *Genista cinerea* (Fabaceae). Mp 205°. $[\alpha]_D^{20}$ +35.

O-*(3-Hydroxy-4-methoxybenzoyl):* ***Isocinevanine***
[36101-56-1]
$C_{23}H_{30}N_2O_5$ 414.5
Alkaloid from *Sarothamnus patens* (Fabaceae). Mp 210-211°.

O-*(4-Hydroxy-3-methoxybenzoyl):* ***Cinevanine***. *13-Vanilloyloxylupanine*
[34221-21-1]
$C_{23}H_{30}N_2O_5$ 414.5
Alkaloid from *Genista cinerea*, also detected in cell cultures of *Lupinus polyphyllus* (Fabaceae). Mp 207-208°. $[\alpha]_D$ +69 (MeOH).

O-*(3,4-Dimethoxybenzoyl):* ***Cineverine***
[10547-06-5]
$C_{24}H_{32}N_2O_5$ 428.527
Alkaloid from *Genista cinerea* (Fabaceae). Mp 155-157° (148-149°). $[\alpha]_D^{20}$ +65 (c, 1 in EtOH). $[\alpha]_D$ +71 (MeOH).

O-*(3,5-Dihydroxy-4-methoxybenzoyl):* ***Cinegalline***
[20772-38-7]
$C_{23}H_{30}N_2O_6$ 430.5
Alkaloid from *Genista cinerea* (Fabaceae). Mp 223-225°. $[\alpha]_D$ +46.7 (EtOH).

O-*(3-Hydroxy-4,5-dimethoxybenzoyl):* ***Cinegalleine***
[27570-28-1]
$C_{24}H_{32}N_2O_6$ 444.527
Alkaloid from *Genista cinerea* (Fabaceae). Mp 182°. $[\alpha]_D^{20}$ +48 (c, 0.25 in MeOH).

O-*(3-Formyloxy-4,5-dimethoxybenzoyl):* ***Formylcinegalleine***
[33192-90-4]
$C_{25}H_{32}N_2O_7$ 472.537
Alkaloid from *Genista cinerea* (Fabaceae). Needles (MeOH). Mp 188-189°.

O-*(3,4,5-Trimethoxybenzoyl):* ***Sarodesmine***
[30430-48-9]
$C_{25}H_{34}N_2O_6$ 458.553
Constit. of branches of *Sarothamnus catalaunicus* (Fabaceae). Needles (Et_2O or MeOH). Mp 174°. $[\alpha]_D^{20}$ +73.6 (c, 1 in MeOH).

E-*Cinnamoyl:* **trans-*13-Cinnamoyloxylupanine***
[5835-04-1]
$C_{24}H_{30}N_2O_3$ 394.513
Alkaloid from *Lupinus angustifolius*, *Lupinus polyphyllus* and seeds of *Lupinus mutabilis* (Fabaceae). Mp 166°. $[\alpha]_D^{20}$ +42.

Z-*Cinnamoyl:* **cis-*13-Cinnamoyloxylupanine***
[6068-29-7]
$C_{24}H_{30}N_2O_3$ 394.513
Alkaloid from *Lupinus* spp. and seeds of *Lupinus mutabilis*. Mp 145° (as hydrochloride). $[\alpha]_D^{20}$ +26.1.

O-*Phenylacetyl:* ***13-Hydroxylupanine phenylacetate***
[57943-36-9]
$C_{23}H_{30}N_2O_3$ 382.502
Alkaloid in leaves and twigs of *Cadia purpurea* (Fabaceae). Identified only by tlc comparison with synthetic sample.

O-*(4-Hydroxyphenylacetyl):* ***Cadiaine***. *13-Hydroxylupanine* p-*hydroxyphenylacetate*
[36445-14-4]
$C_{23}H_{30}N_2O_4$ 398.501
Alkaloid in leaves and twigs of *Cadia purpurea* (Fabaceae). Identified only by tlc comparison with synthetic sample.

O-*(2-Pyrrolecarbonyl):* ***Calpurnine***. *Oroboidine. Hoe 933*
[6874-80-2]
$C_{20}H_{27}N_3O_3$ 357.452
Alkaloid from *Calpurnia lasiogyne*, *Calpurnia aurea*, *Virgilia capensis* and *Cadia ellisiana* (Fabaceae). Shows hypotensive effects. Prisms (EtOAc). Mp 152-154°. $[\alpha]_D^{22}$ +59 (c, 1 in $CHCl_3$). $[\alpha]_D^{20}$ +47 (c, 1.16 in EtOH).

► Highly toxic (fish, mice). LD_{50} (mus, orl) 32 mg/kg. LD_{50} (mus, ivn) 3.1 mg/kg. UX9372400

O-*(2-Pyrrolecarbonyl), perchlorate:* Prisms (MeOH). Mp 279° (255-260°).

Me ether: ***13-Methoxylupanine***
[4697-77-2]
$C_{16}H_{26}N_2O_2$ 278.394
Alkaloid from combined leaf/hypocotyl extracts of *Lupinus polyphyllus* (Fabaceae).

Et ether: ***13-Ethoxylupanine***
[58165-60-9]

$C_{17}H_{28}N_2O_2$ 292.42
Alkaloid from *Cadia purpurea*, identified by ms (Fabaceae).

13-Epimer: ***Jamaidine****. Epihydroxylupanine*
[6870-60-6]
$C_{15}H_{24}N_2O_2$ 264.367
Alkaloid from seeds of *Ormosia jamaicensis* and from *Lupinus polyphyllus* (Fabaceae), also obt. by reacn. of Angustifoline, A-1013 with CH_2O. Mp 194.5-195° Mp 170° (synthetic) Mp 190° (polymorph, synthetic), $[\alpha]_D$ +63.7 (c, 0.66 in EtOH). $[\alpha]_D^{20}$ +47 (c, 1.5 in MeOH) (synthetic).

13-Epimer, perchlorate: Mp 175-177°.

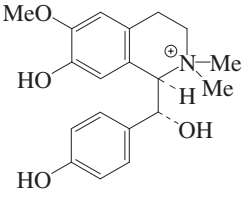
13-Epimer, Ac: [3382-87-4]
Mp 170.5-171°.

13-Epimer, Me ether: ***13-Epimethoxylupanine****. Alkaloid W95. 13β-Methoxylupanine*
[3382-85-2]
$C_{16}H_{26}N_2O_2$ 278.394
Alkaloid from *Lupinus angustifolius* (Fabaceae) and *Acosmium panamense*. Mp 97°. $[\alpha]_D^{24}$ +64.5 (c, 1.24 in EtOH) (synthetic).

Marion, L. *et al., Can. J. Chem.*, 1951, **29**, 721-724 (*isol, ir*)
Bohlmann, F. *et al., Chem. Ber.*, 1958, **91**, 2194-2205 (*ir*)
Lloyd, H.A. *et al., J.O.C.*, 1960, **25**, 1959-1962; 1961, **26**, 2143-2145 (*Jamaidine*)
Bratek, M.D. *et al., Bull. Acad. Pol. Sci., Ser. Sci. Chim.*, 1961, **9**, 705 (*Jamaidine, 13-Epimethoxylupanine*)
Bratek-Wiewiorowska, M.D. *et al., Bull. Acad. Pol. Sci., Ser. Sci. Chim.*, 1963, **11**, 629 (*isol, esters*)
Bohlmann, F. *et al., Chem. Ber.*, 1963, **96**, 2254-2255 (*tiglate*)
Goosen, A. *et al., J.C.S.*, 1963, 3067 (*Calpurnine*)
Gerrans, G.C. *et al., J.C.S.*, 1964, 2202 (*Calpurnine*)
Bohlmann, F. *et al., Chem. Ber.*, 1965, **98**, 3133-3141 (*synth*)
Vazquez, M.D. *et al., An. R. Soc. Esp. Fis. Quim., Ser. B*, 1966, **62**, 837; *CA*, **66**, 76216h (*Jamaidine, synth*)
Faugeras, G. *et al., C. R. Hebd. Seances Acad. Sci. Ser. D*, 1966, **263**, 436; 1968, **267**, 538; 1970, **270**, 203; 1971, **271**, 611; 1219 (*isol, esters*)
Fales, H.M. *et al., J.A.C.S.*, 1970, **92**, 1590-1597 (*ms*)
Faugeras, G. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1971, **273**, 1372 (*isol, esters*)
Wycocka, W. *et al., Bull. Acad. Pol. Sci., Ser. Sci. Chim.*, 1974, **22**, 831-842 (*13-epimer, synth*)
Klyne, W. *et al., J.C.S. Perkin 1*, 1974, 2565-2570 (*cd*)
Bohlmann, F. *et al., Chem. Ber.*, 1975, **108**, 1043-1051 (*struct, cmr*)
Radema, M.H. *et al., Planta Med.*, 1975, **28**, 143 (*13-Ethoxylupanine*)
Lindner, G. *et al., Arzneim.-Forsch.*, 1976, **26**, 1651 (*Calpurnine, pharmacol*)
Kaluski, Z. *et al., Bull. Acad. Pol. Sci., Ser. Sci. Chim.*, 1977, **25**, 347; *CA*, **88**, 23224g (*cryst struct*)
Van Eijk, J.L. *et al., Planta Med.*, 1977, **32**, 275 (*Capurnine, isol*)
Wink, M. *et al., Planta Med.*, 1982, **44**, 15-20 (*Lupinus polyphyllus constits*)
Hatzold, T. *et al., J. Agric. Food Chem.*, 1983, **31**, 934-938 (*Lupinus mutabilis constits*)
Mühlbauer, P. *et al., Planta Med.*, 1988, **54**, 237-239 (*esters, synth, ms*)
Strack, D. *et al., Prog. Hemostasis Thromb.*, 1991, **31**, 1493-1498 (*13-Caproyloxylupanine*)
Veen, G. *et al., Phytochemistry*, 1992, **31**, 4343-4345 (*13-epimer tigloyl deriv*)
Nasution, M.P. *et al., Phytochemistry*, 1993, **32**, 1603-1605 (*13α-(4-Hydroxytigloyloxy)lupanine*)
Van Rensen, I. *et al., Phytochemistry*, 1994, **35**, 421-424 (*Cineroctine, Cineverine*)
Veitch, N.C. *et al., Phytochemistry*, 1997, **45**, 847-850 (*13-Epimethoxylupamine*)
Borowiak, T. *et al., J. Mol. Struct.*, 2005, **753**, 27-34 (*cryst struct, 13-epimer*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, CAZ125 (*Calpurnine*)

α-Hydroxymagnocurarine H-555

1a-Hydroxymagnocurarine



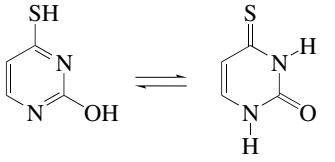
$C_{19}H_{24}NO_4^{\oplus}$ 330.403

(1R,αR)-form [152154-55-7]
[152154-56-8]
Alkaloid from stems of *Cryptocarya konishii* (Lauraceae). Amorph. solid (as perchlorate). Mp 142° (perchlorate). $[\alpha]_D^{24.5}$ +35 (c, 0.50 in MeOH) (perchlorate).

Lee, S.-S. *et al., J. Nat. Prod.*, 1993, **56**, 1971 (*isol, uv, ir, pmr, cmr, ms, cd, struct*)

2-Hydroxy-4-mercaptopyrimidine H-556

3,4-Dihydro-4-thioxo-2(1H)-pyrimidinone, 9CI. 4-Mercapto-2-pyrimidinol. 4-Thiouracil
[591-28-6]



$C_4H_4N_2OS$ 128.154
Di-*NH* form predominates. Intermediate mono-*NH* tautomers also posssible. Isol. from *Streptomyces libani soldani*. Broad antibacterial agent with low specific activity. Shows antineoplastic activity. Yellow cryst. (EtOH). Mp 317-321°. λ_{max} 241 (ε 5380); 253 (sh) (ε 5100); 342 (ε 20900) (MeOH/KOH) (Derep). λ_{max} 246 (ε 3960); 327 (ε 17000) (MeOH) (Derep).

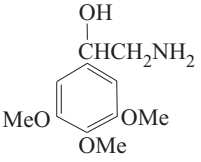
N^1***-Benzoyl:*** [215544-47-1]
$C_{11}H_8N_2O_2S$ 232.262
Yellow needles (MeCN). Mp 181° dec.

N^1,N^3***-Di-Me:*** [49785-67-3]
$C_6H_8N_2OS$ 156.208
Yellow solid. Mp 183°.

Fox, J.J. *et al., J.A.C.S.*, 1960, **82**, 486-489 (*synth*)
Mizuno, Y. *et al., Chem. Pharm. Bull.*, 1962, **10**, 647-652 (*synth*)
Dolak, L. *et al., Antimicrob. Agents Chemother.*, 1977, **11**, 569-570 (*isol, cmr, ms, props*)
Still, I.W.J. *et al., Can. J. Chem.*, 1978, **56**, 725-729 (*cmr*)
Brown, D.J. *et al., Aust. J. Chem.*, 1980, **33**, 1147-1152 (*synth*)
Tajiri, A. *et al., Biochim. Biophys. Acta*, 1981, **656**, 1-15 (*uv*)
Lapucha, A.R. *et al., Synthesis*, 1987, 256-258 (*synth, ir, pmr, cmr, ms*)
Isono, K. *et al., J. Antibiot.*, 1988, **41**, 1711-1739 (*rev*)
Kaneko, K. *et al., Synthesis*, 1988, 152-154 (*synth*)
Frieden, M. *et al., J.C.S. Perkin 1*, 1998, 2827-2832 (*synth, pmr, cmr, N-benzoyl*)
Friden, M. *et al., J.C.S. Perkin 1*, 1998, 2827-2832 (*synth, pmr*)
Rodriguez, J. *et al., Chem. Eur. J.*, 1999, **5**, 3549-3561 (*1,3-di-Me*)

β-Hydroxymescaline H-557

α-(Aminomethyl)-3,4,5-trimethoxybenzenemethanol, 9CI. 2-Amino-1-(3,4,5-trimethoxyphenyl)ethanol. β-Hydroxy-3,4,5-trimethoxyphenethylamine
[13079-18-0]



$C_{11}H_{17}NO_4$ 227.26

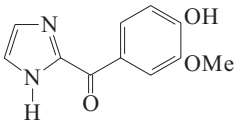
(±)-*form* [92536-08-8]
Impurity in illegally synthesised Mescaline, M-219. Needles (MeOH/Et_2O). Mp 196-199°.

(ξ)-*form*
Alkaloid detected in *Pereskia grandiflora* (Cactaceae).

Friedman, O.M. *et al., J. Med. Chem.*, 1963, **6**, 227 (*synth*)
Doetsch, P.W. *et al., J. Chromatogr.*, 1980, **189**, 79 (*occur*)

2-(4-Hydroxy-3-methoxybenzoyl)imidazole H-558

2-Vanilloylimidazole
[114703-13-8]



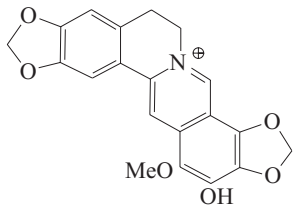
$C_{11}H_{10}N_2O_3$ 218.212
Metab. from the Australian ascidian *Aplidium pliciferum*. Also obt. from aged extracts of an undescr. New Zealand *Aplidium* sp. (not detected in freshly-prepared ascidian extracts). Mp 226°. Prob. not a naturally occurring metab. Genus name given as *Aplydium*. λ_{max} 369 (ε 4300) (MeOH/KOH) (Derep). λ_{max} 240

(ϵ 2300); 291 (ϵ 2400); 324 (ϵ 2600) (MeOH) (Derep).

Arabshahi, L. *et al., Tet. Lett.*, 1988, **29**, 1099-1102 (*isol, pmr, struct*)
Copp, B.R. *et al., Tet. Lett.*, 1989, **30**, 3703-3706 (*uv, ir, cmr, cryst struct*)

11-Hydroxy-12-methoxycoptisine H-559

[30426-64-3]
[32585-02-7]



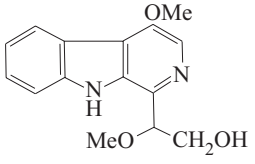
$C_{20}H_{16}NO_6^{\oplus}$ 366.349
Alkaloid from *Coptis groenlandica* (Ranunculaceae). Mp 270-275° (as chloride).

[30426-69-8 , 30426-70-1 , 30426-68-7]

Cooper, S.F. *et al., Planta Med.*, 1971, **19**, 23

1-(1-Hydroxy-2-methoxyethyl)-4-methoxy-β-carboline H-560

*β,4-Dimethoxy-9*H*-pyrido[3,4-*b*]indole-1-ethanol, 9CI*
[89915-40-2]



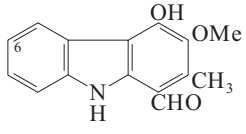
$C_{15}H_{16}N_2O_3$ 272.303
Alkaloid from the root bark of *Ailanthus altissima* (Simaroubaceae). Needles (Me_2CO). Mp 223°.

Ac:
Needles (Me_2CO). Mp 125°.

Ohmoto, T. *et al., Chem. Pharm. Bull.*, 1983, **32**, 170 (*isol, uv, ir, pmr, ms, struct*)

4-Hydroxy-3-methoxy-2-methyl-9*H*-carbazole-1-carboxaldehyde, 9CI H-561

Carbazomycin E. *Carbazomycinal*
[103744-20-3]



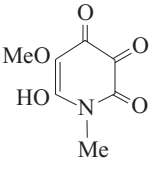
$C_{15}H_{13}NO_3$ 255.273
Isol. from *Streptoverticillium ehimense*. Pale-yellow needles (EtOAc/hexane). Mp 224°. λ_{max} 214 (ϵ 24400); 227 (ϵ 23200); 263 (ϵ 12200); 295 (ϵ 16300); 320 (ϵ 5100); 372 (ϵ 8400) (MeOH) (Derep).

*6-Methoxy: 4-Hydroxy-3,6-dimethoxy-2-methyl-9*H*-carbazole-1-carboxaldehyde, 9CI*. ***Carbazomycin F***. *6-Methoxycarbazomycinal*
[103744-21-4]
$C_{16}H_{15}NO_4$ 285.299
From *Streptoverticillium ehimense*. Pale-yellow needles (EtOAc/hexane). λ_{max} 215 (ϵ 27000); 227 (ϵ 24500); 245 (ϵ 13000); 268 (ϵ 13000); 310 (ϵ 17000); 382 (ϵ 8500) (MeOH) (Derep).

Kondo, S. *et al., J. Antibiot.*, 1986, **39**, 727 (*isol, struct*)
Naid, T. *et al., J. Antibiot.*, 1987, **40**, 157 (*isol*)
Knölker, H.-J. *et al., Heterocycles*, 1991, **32**, 2443 (*synth, Carbazomycin E*)

6-Hydroxy-5-methoxy-1-methyl-2,3,4(1*H*)-pyridinetrione, 9CI H-562

SEN 34. *Antibiotic SEN 34*
[70158-18-8]



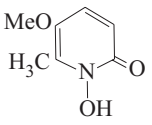
$C_7H_7NO_5$ 185.136
Isol. from *Streptomyces aburaviensis*. Weak antimicrobial activity against gram-positive and -negative bacteria. Yellow prisms. Sol. MeOH, $CHCl_3$; fairly sol. H_2O; poorly sol. hexane. Mp 161-162°. λ_{max} 215 (ϵ 8732); 275 (ϵ 9309); 385 (ϵ 1924) (MeOH) (Berdy). λ_{max} 276 ; 385 (EtOH) (Berdy). λ_{max} 216 ; 276 ; 385 (MeOH) (Berdy).

▶ LD_{50} (mus, ipr) 160 mg/kg.

Ozaki, M. *et al., Heterocycles*, 1978, **11**, 191 (*isol*)

1-Hydroxy-5-methoxy-6-methyl-2(1*H*)-pyridinone, 9CI H-563

Cepabactin. *BN 227*. *G 1549*. *Antibiotic BN 227*. *Antibiotic G 1549*
[72731-33-0]



$C_7H_9NO_3$ 155.153
Prod. by *Pseudomonas* sp. Active against gram-positive and gram-negative bacteria. Siderophore. Cryst. (EtOAc). Mp 115°. λ_{max} 229 (ϵ 8680); 330 (ϵ 7150) (MeOH) (Derep).

▶ UU7786100

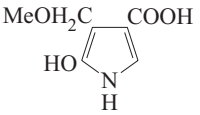
Fe complex (3:1): ***Antibiotic BN 227F***. *BN 227F*
[73349-00-5]
$C_{21}H_{24}FeN_3O_9$ 518.282
Prod. by *Pseudomonas* sp. Active against gram-positive and -negative bacteria. Red cryst. ($CHCl_3$). Mp 156°. λ_{max} 224 (ϵ 63000); 318 (ϵ 15100) (MeOH) (Derep).

Cu complex (2:1): [73349-01-6] Active against gram-positive bacteria and fungi. Green cryst. Mp 308-310° dec.

Al complex (3:1): ***Antibiotic BN 229A***. *BN 229A*
[73298-51-8]
$C_{21}H_{24}AlN_3O_9$ 489.417
From *Pseudomonas cepacia*. Active against *Staphylococcus aureus*.

Itoh, J. *et al., J. Antibiot.*, 1979, **32**, 1089; 1980, **33**, 377 (*isol, struct*)
Barker, N.W. *et al., J. Antibiot.*, 1979, **32**, 1096 (*isol, struct*)
Japan. Pat., 1979, 79 157 501; *CA*, **92**, 162178 (*deriv*)
Japan. Pat., 1979, 79 132 577; *CA*, **93**, 6121 (*isol*)
Meyer, J.M. *et al., J. Gen. Microbiol.*, 1989, **135**, 1479 (*isol, uv, pmr, props*)
Ohta, A. *et al., Heterocycles*, 1990, **30**, 875 (*synth, ms, ir, pmr*)

5-Hydroxy-4-methoxymethyl-1*H*-pyrrole-3-carboxylic acid H-564



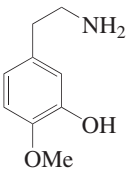
$C_7H_9NO_4$ 171.152

Me ester: ***Methyl 5-hydroxy-4-methoxymethyl-1*H*-pyrrole-3-carboxylate***
[128922-72-5]
$C_8H_{11}NO_4$ 185.179
Alkaloid from stems of *Gnetum montanum* (Gnetaceae). Mp 194-197°.

Zhou, J. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 1989, **31**, 878-882; *CA*, **113**, 94757d (*isol, deriv*)

3-Hydroxy-4-methoxyphenethylamine H-565

5-(2-Aminoethyl)-2-methoxyphenol. *4-O-Methyldopamine*
[3213-30-7]
[645-33-0 (hydrochloride)]



$C_9H_{13}NO_2$ 167.207
Alkaloid from *Acacia rigidula*, *Pachycereus pecten-aboriginum*, the soft coral *Nephthea* sp., and human urine. Shows cardiovascular and CNS activity. Needles (MeOH/EtOAc) (as hydrochloride). Mp 206.5-207° (hydrochloride). Identified chromatographically as a nat. prod.

N-*(4-Hydroxy-3-methoxy-*E*-cinnamoyl)*: **N-trans-*Feruloyl-4*-O-*methyldopamine***
[78510-20-0]
$C_{19}H_{21}NO_5$ 343.379
Alkaloid from roots of the pseudocereal *Chenopodium album* (lambsquar-

ters) (Chenopodiaceae). Oil.

N-*(3,4-Dimethoxy-*E*-cinnamoyl):* **N-*(4-O-Methyl*-trans-*feruloyl)-4-O-methyldopamine***
[651768-68-2]
$C_{20}H_{23}NO_5$ 357.405
Alkaloid from *Chenopodium album* (lambsquarters). Oil.

N-*Me: 3-Hydroxy-4-methoxy-*N*-methylphenethylamine*
[35266-68-3]
$C_{10}H_{15}NO_2$ 181.234
Alkaloid from *Acacia rigidula*.

N,N,N-*Tri-Me: 3-Hydroxy-4-methoxy-*N,N,N*-trimethylbenzeneethanaminium.* ***Salicifoline***
[6882-07-1]
$C_{12}H_{20}NO_2^{\oplus}$ 210.295
Alkaloid from *Magnolia grandiflora* roots, *Magnolia kobus, Magnolia denudata, Magnolia stellata* and *Michelia alba* (Magnoliaceae). Mp 260-261° dec. (as chloride).

Ramirez, F.A. *et al., J.A.C.S.*, 1950, **72**, 2781-2782 (*synth*)
Tomita, M. *et al., Yakugaku Zasshi*, 1952, **72**, 197-203; 727-731; 766-767; 1256-1260; *CA*, **47**, 1627; 12288; 12409; **48**, 2639 (*Salicifoline*)
Nakano, T. *et al., Pharm. Bull.*, 1954, **2**, 321; 1956, **4**, 409 (*Salicifoline*)
Kakimoto, Y. *et al., J. Biol. Chem.*, 1962, **237**, 208 (*isol*)
Yang, T.H. *et al., Yakugaku Zasshi*, 1962, **82**, 816-820; *CA*, **58**, 7991 (*Salicifoline*)
Agurell, S. *et al., J. Nat. Prod.*, 1971, **34**, 183-187 (*isol, struct*)
Gregson, R.P. *et al., Experientia*, 1981, **37**, 493-494 (*isol*)
Kohno, M *et al., Bull. Chem. Soc. Jpn.*, 1990, **63**, 1252-1254 (*synth, ir, pmr*)
Horio, T. *et al., Phytochemistry*, 1993, **33**, 807-808 (*N-Feruloyl-4-methyldopamine*)
Clement, B.A. *et al., Phytochemistry*, 1998, **49**, 1377-1380 (*isol*)
Cutillo, F. *et al., Phytochemistry*, 2003, **64**, 1381-1387 (*4-O-Methylferuloyl-4-O-methyldopamine*)

4-Hydroxy-3-methoxyphenethylamine H-566

*4-(2-Aminoethyl)-2-methoxyphenol, 9CI, 8CI. 3-*O*-Methyldopamine. 3-Methoxytyramine. Homovanillylamine. 4-(2-Aminoethyl)guaiacol*
[554-52-9]
$C_9H_{13}NO_2$ 167.207
Alkaloid from *Lophophora williamsii, Carnegiea gigantea, Trichocereus* spp. and other cacti, also detected in *Echinocereus merkeri*. Constit. of human brain tissue and urine. Intermed. in mescaline biosynth. hypotensive agent. Prisms (EtOH). Mp 159° (156-157°).

Hydrochloride: [1477-68-5]
Prisms (EtOH). Mp 210-211°.

N-*(2-Hydroxy-5-methoxybenzoyl):* ***Aduncamide***
[154992-23-1]
$C_{17}H_{19}NO_5$ 317.341
Constit. of *Piper aduncum*. λ_{max} 280 (ε 25118); 323 (ε 36300) (MeOH) (Berdy).

N-*(3-Hydroxy-4-methoxy-*E*-cinnamoyl):* **N-*(4-O-Methyl*-trans-*caffeoyl)-3-O-methyldopamine***. N-trans-*Isoferuloyl-3-O-methyldopamine*
[125002-88-2]
$C_{19}H_{21}NO_5$ 343.379
Alkaloid from *Chenopodium album* (lambsquarters). Oil.

N-*(4-Hydroxy-3-methoxy-*E*-cinnamoyl):* **N-trans-*Feruloyl-3-methoxytyramine***. N-trans-*Feruloyl-3-*O*-methyldopamine*
[78510-19-7]
$C_{19}H_{21}NO_5$ 343.379
Alkaloid from *Annona cherimola* (cherimoya), immature green onions and spinach and from the wood of *Actinodaphne longifolia*. Needles. Mp 111-113°. λ_{max} 220 (ε 3.42); 290 (ε 2.67); 319 (ε 3.15) (EtOH).

N-*(4-β-D-Galactopyranosyloxy-3-methoxy-*E*-cinnamoyl):* ***Cimicifugamide***
[155159-01-6]
$C_{25}H_{31}NO_{10}$ 505.521
Alkaloid from the rhizomes of *Cimicifuga dahurica*.

N-*(4-β-D-Glucopyranosyloxy-3-methoxy-*E*-cinnamoyl), 4-*O*-β-D-glucopyranoside:* ***Aristomanoside***
$C_{31}H_{41}NO_{15}$ 667.663
Alkaloid from the stems of *Aristolochia manshuriensis*. Amorph. yellow powder ($CHCl_3$/MeOH). Mp 195-197°. λ_{max} 219 (log ε 4.3); 228 (log ε 4.3); 284 (log ε 4.29); 313 (log ε 4.24) (MeOH).

N-*(4-Hydroxy-3-methoxy-Z-cinnamoyl):* **N-cis-*Feruloyl-3-methoxytyramine***
$C_{19}H_{21}NO_5$ 343.379
Alkaloid from *Annona cherimola* (cherimoya) and *Aristolochia gehrtii*. Needles. Mp 107-110° (248-251). λ_{max} 222 (ε 3.47); 290 (ε 2.64); 319 (ε 3.2) (EtOH).

N-*(4-β-D-Galactopyranosyloxy-3-methoxy-Z-cinnamoyl):* ***Isocimicifugamide***
[156318-64-8]
$C_{25}H_{31}NO_{10}$ 505.521
Constit. of *Chenopodium dahurica*. Amorph. powder. Mp 97-100°. $[\alpha]_D$ -46.2 (c, 0.13 in MeOH).

N-*(4-β-D-Glucopyranosyloxy-3-methoxy-Z-cinnamoyl):* ***Drodrenin***
[102062-99-7]
$C_{25}H_{31}NO_{10}$ 505.521
Constit. of *Scopolia japonica*. Antibacterial agent. Sol. MeOH. λ_{max} 210 ; 230 ; 287 ; 312 (MeOH).

N-*Me:* ***4-Hydroxy-3-methoxymethylphenethylamine***
$C_{10}H_{15}NO_2$ 181.234
Alkaloid in *Trichocereus courantii* and *Lophophora williamsii* (Cactaceae).

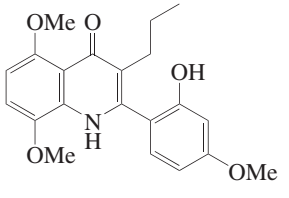
N,N-*Di-Me: 4-[2-(Dimethylamino)ethyl]-2-methoxyphenol, 9CI.* ***4-Hydroxy-3-methoxydimethylphenethylamine***. N,N-*Dimethyl-3-methoxytyramine. Magnosprengerine*
[35266-63-8]
$C_{11}H_{17}NO_2$ 195.261
Alkaloid from *Ariocarpus agavoides* and *Magnolia sprengeri* (Cactaceae, Magnoliaceae). Mp 258-260°.

N,N,N-*Tri-Me: 4-Hydroxy-3-methoxy-*N,N,N*-trimethylbenzeneethanaminium, 9CI.* ***4-Hydroxy-3-methoxytrimethylphenethylammonium***
$C_{12}H_{20}NO_2^{\oplus}$ 210.295
Quaternary alkaloid from *Alhagi pseudalhagi* (Fabaceae).

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 1294C (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **2**, 623A (*nmr*)
Kratzl, K. *et al., Monatsh. Chem.*, 1952, **83**, 1038 (*synth*)
Agurell, S. *et al., J. Nat. Prod.*, 1969, **32**, 40 (*isol, synth*)
Lundstrom, J. *et al., Acta Chem. Scand.*, 1971, **25**, 3489
Milne, G.W.A. *et al., Anal. Chem.*, 1973, **45**, 1952 (*ms*)
Crosby, D.M. *et al., J. Nat. Prod.*, 1973, **36**, 418 (*isol*)
Cherayil, G.D. *et al., J. Pharm. Sci.*, 1973, **62**, 2054 (*synth*)
Bruhn, J.G. *et al., Econ. Bot.*, 1974, **27**, 241; *CA*, **80**, 93142n (*isol, deriv*)
Ghosal, S. *et al., Planta Med.*, 1974, **26**, 318 (*isol, deriv*)
Pardanani, J.H. *et al., J. Nat. Prod.*, 1977, **40**, 585 (*isol*)
Strombom, J. *et al., Acta Pharm. Suec.*, 1978, **15**, 127; *CA*, **89**, 126107w (*isol*)
Doetsch, P.W. *et al., J. Chromatogr.*, 1980, **189**, 79 (*occur*)
Meyer, B.N. *et al., Phytochemistry*, 1980, **19**, 719 (*occur*)
Pummangura, S. *et al., J. Nat. Prod.*, 1981, **44**, 498 (*isol*)
Japan. Pat., 1985, 85 199 395; *CA*, **104**, 205524m (*Drodrenin*)
Cao, Z. *et al., Zhongcaoyao*, 1985, **16**, 386; *CA*, **104**, 17645c (*Magnosprengerine*)
Tanaka, H. *et al., Phytochemistry*, 1989, **28**, 2516 (*N-Feruloyl-3-methyldopamine*)
Okabe, N. *et al., Acta Cryst. C*, 1992, **48**, 1698 (*cryst struct*)
Li, C.J. *et al., Chin. Chem. Lett.*, 1993, **4**, 891 (*Cimicifugamide*)
Orjala, J. *et al., Nat. Prod. Lett.*, 1993, **2**, 231-236 (*Aduncamide*)
Li, C.J. *et al., Yaoxue Xuebao*, 1994, **29**, 129 (*Isocimicifugamide*)
Ding, P.Y. *et al., Chin. Chem. Lett.*, 1996, **7**, 545 (*Cimicifugamide, synth*)
Chen, C.-Y. *et al., Phytochemistry*, 1998, **49**, 1443-1447 (*N-feruloyl derivs*)
Navickiena, H.M.D. *et al., J. Braz. Chem. Soc.*, 2001, **12**, 467-472 (*N-cis-feruloyl*)
Wu, P.-L. *et al., J. Nat. Prod.*, 2003, **66**, 996-998 (*Aristomanoside*)
Cutillo, F. *et al., Phytochemistry*, 2003, **64**, 1381-1387 (*4-O-Methylcaffeoyl-3-O-methyldopamine*)
Xiao, H. *et al., J. Agric. Food Chem.*, 2006, **54**, 8417-8424 (*4-Hydroxy-3-methoxy-E-cinnamoyl, isol*)

2-(2-Hydroxy-4-methoxyphenyl)-5,8-dimethoxy-3-propyl-4(1*H*)-quinolinone H-567

4-Hydroxy-2-(2-hydroxy-4-methoxyphenyl)-5,8-dimethoxy-3-propylquinoline
[1010070-86-6]

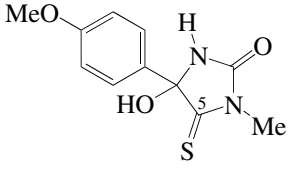


$C_{21}H_{23}NO_5$ 369.416

Alkaloid from the fruit of *Casimiroa edulis*. Cryst. ($CHCl_3$). Mp 115-116°. λ_{max} 280 (ϵ 14294); 300 (ϵ 8140); 320 (ϵ 6590) (EtOH).

Awaad, A.S. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2007, **43**, 576-580 (*isol, pmr, cmr*)

4-Hydroxy-4-(4-methoxyphenyl)-1-methyl-5-thioxo-2-imidazolidinone, 9CI H-568



$C_{11}H_{12}N_2O_3S$ 252.293

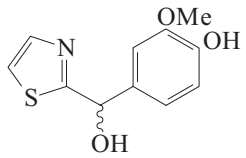
(±)-*form*
Metab. from the Indian ocean ascidian *Polycarpa clavata*. Amorph. solid. Prob. an artifact. CAS no. not found 8-14CI. λ_{max} 202 (log ϵ 3.99); 220 (log ϵ 3.91); 278 (log ϵ 3.88) (MeOH).

Me ether: 4-Methoxy-4-(4-methoxyphenyl)-1-methyl-5-thioxo-2-imidazolidinone
$C_{12}H_{14}N_2O_3S$ 266.32
Metab. from the ascidians *Polycarpa clavata* and *Polycarpa aurata*. Inosine monophosphate dehydrogenase inhibitor. Needles. Mp 127-129°. Prob. an artifact. CAS no. not found 8-14CI. λ_{max} 203 (log ϵ 4.14); 222 (log ϵ 4.17); 279 (log ϵ 4.1) (MeOH). λ_{max} 224 (ϵ 8822); 282 (ϵ 7640) (MeOH) (Berdy).

Abas, S.A. *et al., J.O.C.*, 1996, **61**, 2709-2712 (*Me ether, isol, uv, pmr, cmr, ms, struct*)
Kang, H. *et al., Tet. Lett.*, 1996, **37**, 2369-2372 (*Me ether, isol, ir, uv, pmr, cmr, struct*)

α-(4-Hydroxy-3-methoxyphenyl)-2-thiazolemethanol, 9CI H-569

[110281-34-0]



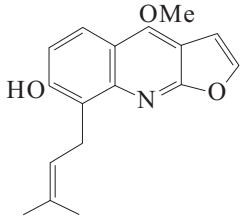
$C_{11}H_{11}NO_3S$ 237.279
Minor metab. from the Australian ascidian *Aplydium pliciferum*. Mp 154-155°.

Ketone: (4-Hydroxy-3-methoxyphenyl)-2-thiazolylmethanone, 9CI. 2-(4-Hydroxy-3-methoxybenzoyl)thiazole
[110281-33-9]
$C_{11}H_9NO_3S$ 235.263
Metab. from *Aplydium pliciferum*. Mp 104°. λ_{max} 233 (ϵ 4900); 300 (ϵ 4800); 341 (ϵ 5600) (EtOH) (Derep).

Arabshahi, L. *et al., Tet. Lett.*, 1988, **29**, 1099-1102 (*isol, uv, ir, pmr, cmr, ms, struct*)

7-Hydroxy-4-methoxy-8-prenylfuro[2,3-*b*]quinoline H-570

4-Methoxy-8-(3-methyl-2-butenyl)-furo[2,3-b]quinolin-7-ol, 9CI
[107882-26-8]

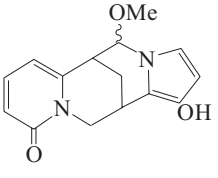


$C_{17}H_{17}NO_3$ 283.326
Alkaloid from the leaves of *Sarcomelicope glauca* (Rutaceae) and aerial parts of *Haplophyllum tuberculatum*. Yellowish cryst. (C_6H_6). Mp 106-108°. λ_{max} 252 (ϵ 34700); 306 (sh) (ϵ 5890); 318 (ϵ 7080); 330 (ϵ 6920); 342 (ϵ 6170) (MeOH) (Derep).

*Me ether: 4,7-Dimethoxy-8-(3-methyl-2-butenyl)furo[2,3-b]quinoline, 9CI. 7-**Methoxy-8-prenyldictamnine**. 8-(Dimethylallyl)-7-methoxydictamnine*
[208170-82-5]
$C_{18}H_{19}NO_3$ 297.353
Alkaloid from *Almeidea coerulea*. Cryst. Mp 86-88°.

Mitaku, S. *et al., J. Nat. Prod.*, 1986, **49**, 1091 (*isol, uv, ir, pmr, ms, struct*)
Al-Yahya, M.A. *et al., J. Nat. Prod.*, 1992, **55**, 899 (*isol, cmr*)
Santos, C.S. *et al., J. Braz. Chem. Soc.*, 1998, **9**, 39-42; *CA*, **129**, 79124g (*Me ether*)

12-Hydroxy-16-methoxy-11,12,13,14-tetradehydrocamoensine H-571

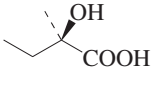


$C_{15}H_{16}N_2O_3$ 272.303
Alkaloid from the seeds of *Camoensia brevicalyx* (Fabaceae). Brown amorph. solid.

Waterman, P.G. *et al., Phytochemistry*, 1982, **21**, 215 (*isol, uv, ir, pmr, ms, struct*)

2-Hydroxy-2-methylbutanoic acid, 9CI H-572

Ethylmethylglycollic acid. 2-Ethyllactic acid
[3739-30-8]



(*R*)-*form*

$C_5H_{10}O_3$ 118.132

(*R*)-*form* [37505-02-5]
Mp 73.5-74.5°. $[\alpha]_D^{24}$ -8.9 (c, 3.0 in $CHCl_3$).

Me ester: [55568-78-0]
$C_6H_{12}O_3$ 132.159
Oil. Bp 153°. $[\alpha]_D^{25}$ -6.7 (neat).

4-Phenylphenacyl ester: Mp 122°. $[\alpha]_D^{22}$ -2.1 (c, 3 in $CHCl_3$).

Nitrile, O-β-D-glucopyranoside: ***Lotaustralin***
[534-67-8]
$C_{11}H_{19}NO_6$ 261.274
Glycoside from *Lotus australis*, other *Lotus* spp., *Trifolium repens* (white clover) and other plants. Needles (EtOAc). Mp 125-126°. $[\alpha]_D$ -19.1 (c, 1 in H_2O).

Nitrile, O-[β-D-glucopyranosyl-(1→6)-β-D-glucopyranoside]: ***Neolinustatin***
[72229-42-6]
$C_{17}H_{29}NO_{11}$ 423.416
Isol. from *Passiflora pendens* and flaxseed meal. Cryst. (EtOH). Mp 190-192°. $[\alpha]_D^{25}$ -37 (c, 0.37 in H_2O).

Nitrile, O-[β-D-apiofuranosyl-(1→6)-β-D-glucopyranoside]: ***6′-Apiosyllotaustralin***
[170033-25-7]
$C_{16}H_{27}NO_{10}$ 393.39
Constit. of the roots of *Manihot esculenta* (cassava). Probable abs. config.

(*S*)-*form* [37505-07-0]
Mp 74-75°. $[\alpha]_D^{25}$ +9.1 (c, 1.6 in $CHCl_3$).

Benzyl ester: [587832-08-4]
$C_{12}H_{16}O_3$ 208.257
Oil. $[\alpha]_D^{19}$ -4.9 (c, 1.35 in $CHCl_3$).

4-Phenylphenacyl ester: Mp 117.5-118°. $[\alpha]_D^{25}$ +2.5 (c, 1.5 in $CHCl_3$).

Nitrile, O-β-D-glucopyranoside: ***Epilotaustralin***
[55758-42-4]
$C_{11}H_{19}NO_6$ 261.274
Isol. from *Triticum monococcum* (wheat) and *Passiflora warmingii*.

(±)-*form* [37505-03-6]
Needles by subl. V. sol. H_2O, Et_2O. Mp 72-73°. Bp_{16} 133-134°. pK_{a1} 3.73 (25°).

Me ester: [32793-34-3]
Oil. Bp 151.6-152°.

Amide: [1112-12-5]
$C_5H_{11}NO_2$ 117.147
Mp 160°.

Nitrile: 2-Cyano-2-butanol
[73683-34-8]
C_5H_9NO 99.132
Oil. Bp 180° $Bp_{20.5}$ 91°.

Ac, nitrile:
$C_7H_{11}NO_2$ 141.169
Oil. Mp 195°.

Me ether:
$C_6H_{12}O_3$ 132.159
Bp_{21} 112-113°.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 519C (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 808A (*nmr*)

Meerwein, H. *et al., Annalen*, 1913, **396**, 200-263 (*synth*)
Fischer, E. *et al., Annalen*, 1914, **406**, 1-11 (*synth*)
Tatibiout, F. *et al., C. R. Hebd. Seances Acad. Sci.*, 1960, **250**, 145-146 (*synth*)
Christensen, B. *et al., Acta Chem. Scand.*, 1962, **16**, 2466-2467 (*synth, abs config*)
Butler, G.W. *et al., Phytochemistry*, 1965, **4**, 127-131 (*Lotaustralin*)
Terashima, S. *et al., Tet. Lett.*, 1977, 1005-1008 (*synth*)
Smith, C.R. *et al., J.O.C.*, 1980, **45**, 507-510 (*Neolinustatin*)
Pitsch, C. *et al., Planta Med.*, 1984, **50**, 388-390 (*Epilotaustralin*)
Cardillo, G. *et al., J.C.S. Perkin 1*, 1990, 1487-1488 (*synth*)
Grout, D.H.C. *et al., J.C.S. Perkin 2*, 1991, 53-62 (*synth, pmr*)
Prawat, H. *et al., Phytochemistry*, 1995, **40**, 1167-1173 (*6′-Apiosyllotaustralin, Lotaustralin*)
Yabuuchi, T. *et al., Chem. Pharm. Bull.*, 1999, **47**, 684-686 (*Me ether, synth, pmr, cmr*)
Tan, L. *et al., Tetrahedron*, 2002, **58**, 7403-7410 (*resoln*)
Akgul, Y. *et al., Fitoterapia*, 2004, **75**, 612-614 (*Lotaustralin, pmr, cmr*)
Ikegai, K. *et al., Bull. Chem. Soc. Jpn.*, 2006, **79**, 780-790 (*S-form, benzyl ester*)
Fechter, M.H. *et al., Chem. Eur. J.*, 2007, **13**, 3369-3376 (*S-form, synth*)

3-Hydroxy-3-methylbutanoic acid, 9CI H-573

3-Hydroxy-3-methylbutyric acid, 8CI. 3-Hydroxyisovaleric acid
[625-08-1]
$(H_3C)_2C(OH)CH_2COOH$
$C_5H_{10}O_3$ 118.132
Oil. Sol. H_2O. Bp_{12} 162°. pK_a 4.43. Mp <-32°.

Me ester: [6149-45-7]
$C_6H_{12}O_3$ 132.159
Oil. Bp_{10} 70-71°.

Nitrile: 1-Cyano-2-methyl-2-propanol
[13635-04-6]
C_5H_9NO 99.132
Oil. Spar. sol. H_2O. Mp -12°. Bp 210-212° Bp_{30} 130-132°.

Nitrile, O-*β*-D-*glucopyranoside:* ***Epidermin***†
[126050-09-7]
$C_{11}H_{19}NO_6$ 261.274
Constit. of barley (*Hordeum vulgare*) and *Rhodotypos scandens.*

Ac, nitrile:
$C_7H_{11}NO_2$ 141.169
Oil. Bp 198-200°.

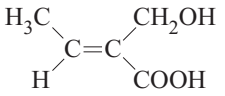
Phenylurethane: Mp 129-130°.

[18267-36-2]

Coffman, D.D.V. *et al., J.A.C.S.*, 1958, **80**, 2882 (*synth*)
Rathka, M.W. *et al., J.A.C.S.*, 1970, **90**, 3222 (*synth*)
Vuitel, L. *et al., Synthesis*, 1972, 608 (*synth*)
Pourmohseni, H. *et al., Phytochemistry*, 1993, **33**, 295-297 (*Epidermin*)
Sekine, M. *et al., J.O.C.*, 1996, **61**, 4087 (*nitrile, synth, pmr, cmr*)
Lechtenberg, M. *et al., Phytochemistry*, 1996, **41**, 779-785 (*Epidermin*)

2-Hydroxymethyl-2-butenoic acid H-574

[11042-14-1]



(*E*)–*form*

$C_5H_8O_3$ 116.116

(*E*)-*form*
cis-*form*
Cryst. (Et_2O/petrol). Mp 74-75°.

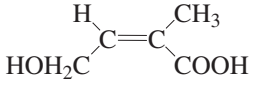
Me ester: [28127-64-2]
$C_6H_{10}O_3$ 130.143
No phys. descr. given.

(*Z*)-*form*
trans-*form*. *Sarracinic acid*
Residue present in Sarracine, S-90 and a wide variety of natural products as an esterifying group. Mp 57-58° (52-54°).

Nitrile, O-*β*-D-*glucopyranoside:* ***Rhodiocyanoside D***
[197508-56-8]
$C_{11}H_{17}NO_6$ 259.258
Constit. of *Rhodiola sacra*. Powder. $[\alpha]_D^{25}$ -14.1 (c, 0.4 in MeOH). Has (*E*)-config. (Change of Cahn-Ingold priorities). λ_{max} 211 (log ϵ 4.8) (MeOH).

Culvenor, C.C.J. *et al., J.O.C.*, 1961, **26**, 3045-3050 (*isol, pmr*)
Edwards, J.D. *et al., J.O.C.*, 1967, **32**, 244-246 (*synth, pmr*)
Roush, W.R. *et al., J.O.C.*, 1993, **58**, 2151-2161 (*Me ester, synth, pmr, ir*)
Yoshikawa, M. *et al., Chem. Pharm. Bull.*, 1997, **45**, 1498-1503 (*Rhodiocyanoside D*)

4-Hydroxy-2-methyl-2-butenoic acid H-575



$C_5H_8O_3$ 116.116

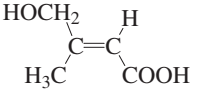
(*Z*)-*form*
Rhodiocyanogenin
[168433-88-3]
Oil.

*Nitrile, 4-*O-*β*-D-*glucopyranoside:* ***Multifidin***. *Rhodiocyanoside A*
[168433-86-1]
$C_{11}H_{17}NO_6$ 259.258
Constit. of *Jatropha multifida* and *Rhodiola quadrifida*. Powder. $[\alpha]_D$ -16.1 (MeOH). Non-cyanogenic on hydrol. λ_{max} 208 (log ϵ 4.03) (MeOH).

Yoshikawa, M. *et al., Chem. Pharm. Bull.*, 1995, **43**, 1245-1247
Van den Berg, A.J.J. *et al., Phytochemistry*, 1995, **40**, 597-598
Akita, H. *et al., Tetrahedron: Asymmetry*, 1999, **10**, 2429-2439 (*Multifidin, synth*)

4-Hydroxy-3-methyl-2-butenoic acid, 9CI H-576

4-Hydroxy-3-methylcrotonic acid



(*E*)-*form*

$C_5H_8O_3$ 116.116

(*E*)-*form* [44647-19-0]
Needles (C_6H_6). Mp 112-113° (108-110°).

Me ester: [13866-57-4]
$C_6H_{10}O_3$ 130.143
Bp_1 30-50°.

Nitrile: 4-Hydroxy-3-methyl-2-butenenitrile. 3-Cyano-2-methyl-2-propen-1-ol
[120696-93-7]
[13931-34-5]
C_5H_7NO 97.116
Yellow liq. Bp_1 70° $Bp_{0.001}$ 75-77°. Presumably an error in Bp pressure reported by Schmidt or Jordis.

Ac: [21622-85-5]
$C_7H_{10}O_4$ 158.154
Bp_{12} 154-155°.

Ac, nitrile: [13931-33-4]
$C_7H_9NO_2$ 139.154
$Bp_{0.08}$ 60°.

(*Z*)-*form*
O-*β*-D-*Glucopyranoside, nitrile:* ***Osmaronin***
[160551-60-0]
[126050-10-0]
$C_{11}H_{17}NO_6$ 259.258
Constit. of the leaves of *Osmaronia cerasiformis* (preferred genus name *Oemleria*) and *Hordeum vulgare* (barley). Config. of product from *Hordeum* sp. not stated.

O-*Tetradecanoyl, nitrile: 3-Methyl-4-tetradecanoyloxy-2-butenenitrile*
$C_{19}H_{33}NO_2$ 307.475
Constit. of the seeds of *Koelreuteria paniculata*. Mp 49-51°.

O-*(14Z-Eicosenoyl), nitrile: 4-(14Z-Eicosenoyloxy)-3-methyl-2-butenenitrile*
$C_{25}H_{43}NO_2$ 389.62
Constit. of the seeds of *Koelreuteria paniculata*.

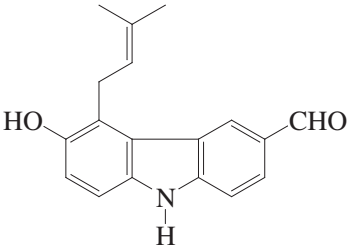
2S,3R-Epoxide, O-*β*-D-*glucopyranoside, nitrile:* ***Osmaronin epoxide***
[160492-57-9]
$C_{11}H_{17}NO_7$ 275.258
Constit. of the leaves of *Osmaronia cerasiformis*. Incorrect config. given in paper.

Nechvatal, A. *et al., J.C.S.(C)*, 1968, 185 (*synth*)
Larcheveque, M. *et al., Synthesis*, 1983, 297-300 (*nitrile*)
Bourguignon, J.-J. *et al., J. Med. Chem.*, 1988, **31**, 893 (*synth, pmr*)
Pourmohseni, H. *et al., Phytochemistry*, 1993, **33**, 295-297 (*Osmaronin*)
Lechtenberg, M. *et al., Phytochemistry*, 1994, **37**, 1039-1043; 1996, **41**, 779-785 (*Osmaronin, Osmaronin epoxide*)

Schmidt, R.R. *et al., Synthesis*, 1994, 255 (*synth, Ac, pmr*)
Jordis, U. *et al., Org. Prep. Proced. Int.*, 1997, **29**, 549-560 (*nitrile*)
Akita, H. *et al., Tetrahedron: Asymmetry*, 1999, **10**, 2429-2439 (*Osmaronin, synth*)
Yang, X. *et al., Yaoxue Xuebao*, 2000, **35**, 279-283 (*isol, nitrile, esters*)

6-Hydroxy-5-(3-methyl-2-butenyl)-9*H*-carbazole-3-carboxaldehyde H-577

6-Formyl-3-hydroxy-4-prenylcarbazole. ***Micromeline***†

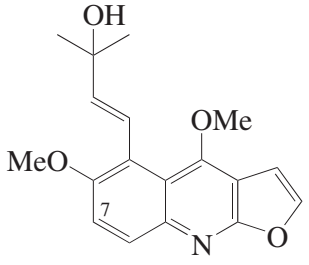


$C_{18}H_{17}NO_2$ 279.338
Alkaloid from the stem bark of *Micromelum hirsutum*. Yellow powder. λ_{max} 316 (log ϵ 3.3); 329 (log ϵ 3.7) (Me_2CO).

Ma, C. *et al., Planta Med.*, 2005, **71**, 261-267 (*isol, pmr, cmr*)

5-(3-Hydroxy-3-methyl-1-butenyl)-4,6-dimethoxyfuro[2,3-*b*]quinoline H-578

[953812-16-3]



$C_{18}H_{19}NO_4$ 313.352

(*E*)-*form*
Alkaloid from the leaves of *Choisya ternata*. Cryst. (EtOAc/hexane). Mp 144-145°.

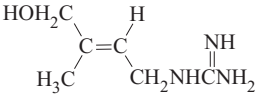
Me ether: ***4,6-Dimethoxy-5-(3-methoxy-3-methyl-1-butenyl)furo[2,3-b]quinoline***
[953812-15-2]
$C_{19}H_{21}NO_4$ 327.379
Alkaloid from the leaves of *Choisya ternata*. Cryst. (EtOAc/hexane). Mp 94°.

7-Methoxy, 3′-hydroperoxide: ***5-(3-Hydroperoxy-3-methyl-1-butenyl)-4,6,7-trimethoxyfuro[2,3-b]quinoline***
[953812-12-9]
$C_{19}H_{21}NO_6$ 359.378
Alkaloid from the leaves of *Choisya ternata*. Cryst. (EtOAc/hexane). Mp 138-139°.

Boyd, D.R. *et al., Org. Biomol. Chem.*, 2007, **5**, 2983-2991 (*isol, pmr, cmr*)

(4-Hydroxy-3-methyl-2-butenyl)guanidine H-579

4-Hydroxygalegine
[1557-67-1]



(*E*)–*form*

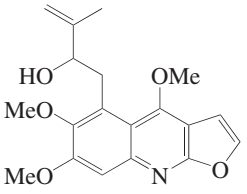
$C_6H_{13}N_3O$ 143.188

(*E*)-*form* [26806-04-2]
Mp 196° (as flavianate).

(*Z*)-*form* [26806-06-4]
Constit. of *Galega officinalis*. Mp 149-151° (as picrate).

Pufahl, K. *et al., Experientia*, 1961, **17**, 302 (*isol*)
Olomucki, M. *et al., C. R. Hebd. Seances Acad. Sci.*, 1965, **260**, 4519 (*synth*)
Leonard, N.J. *et al., Chem. Comm.*, 1972, 133 (*synth*)

5-(2-Hydroxy-3-methyl-3-butenyl)-4,6,7-trimethoxyfuro[2,3-*b*]quinoline H-580



$C_{19}H_{21}NO_5$ 343.379

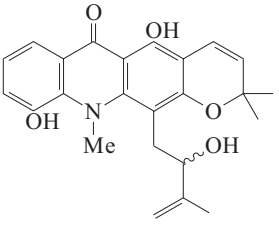
(±)-*form* [953812-14-1]
Alkaloid from the leaves of *Choisya ternata*. Cryst. ($CHCl_3$). Mp 95°.

2′-Hydroperoxide: 5-(2-Hydroperoxy-3-methyl-3-butenyl)-4,6,7-trimethoxyfuro[2,3-b]quinoline
[953812-10-7]
$C_{19}H_{21}NO_6$ 359.378
Alkaloid from the leaves of *Choisya ternata*. Cryst. (CH_2Cl_2). Mp 169-170°.

Boyd, D.R. *et al., Org. Biomol. Chem.*, 2007, **5**, 2983-2991 (*isol, pmr, cmr*)

4-(2-Hydroxy-3-methyl-3-butenyl)yukocitrine H-581

[176391-57-4]

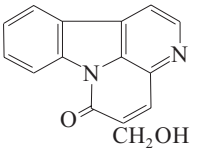


$C_{24}H_{25}NO_5$ 407.465
Alkaloid from stem bark of *Bosistoa transversa*. Yellow oil. $[\alpha]_D$ +16.4 (c, 0.0005 in $CHCl_3$).

Auzi, A.A. *et al., Phytochemistry*, 1996, **42**, 235 (*isol, uv, ir, pmr, ms, struct*)

5-Hydroxymethylcanthin-6-one H-582

*5-(Hydroxymethyl)-6*H*-indolo[3,2,1-de][1,5]naphthyridin-6-one, 9CI*
[89915-37-7]



$C_{15}H_{10}N_2O_2$ 250.256
Alkaloid from the root bark of *Ailanthus altissima* (Simaroubaceae). Needles (MeOH). Mp 246-247° dec.

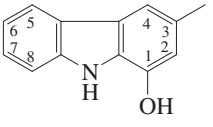
Ac:
Needles (Me_2CO). Mp 154°.

*9-Methoxy: 5-(Hydroxymethyl)-9-methoxy-6*H*-indolo[3,2,1-de][1,5]-naphthyridin-6-one, 9CI.* ***5-Hydroxymethyl-9-methoxycanthin-6-one***
$C_{16}H_{12}N_2O_3$ 280.282
Alkaloid from the roots of *Eurycoma longifolia*. Yellow powder (MeOH). Mp 235° dec. λ_{max} 263 (log ϵ 3.24); 273 (log ϵ 3.35); 299 (log ϵ 2.99); 309 (log ϵ 3.03); 346 (log ϵ 3.02); 376 (log ϵ 2.83) (MeOH).

Ohmoto, T. *et al., Chem. Pharm. Bull.*, 1984, **32**, 170 (*isol, uv, ir, pmr, ms, struct*)
Kuo, P.-C. *et al., J. Nat. Prod.*, 2003, **66**, 1324-1327 (*9-methoxy*)

1-Hydroxy-3-methyl-9*H*-carbazole H-583

*3-Methyl-9*H*-carbazol-1-ol*
[14960-81-7]



$C_{13}H_{11}NO$ 197.236
Alkaloid from the stem bark of *Murraya koenigii* (curryleaf tree) (Rutaceae). Cryst. (EtOH aq.). Mp 157-158°.

*Me ether: 1-Methoxy-3-methyl-9*H*-carbazole, 9CI.* ***Murrayafoline A***
[4532-33-6]
$C_{14}H_{13}NO$ 211.263
Alkaloid from the root bark of *Murraya euchrestifolia* (Rutaceae). Cytotoxic agent. Plates (hexane). Mp 52-54°.

Me ether, picrate:
Brown needles (C_6H_6). Mp 188-190°.

Benzyl ether: [220985-64-8]
$C_{20}H_{17}NO$ 287.36
Oil.

Chakraborty, D.P. *et al., J.O.C.*, 1968, **33**, 1265 (*synth*)
Wu, T.-S. *et al., Heterocycles*, 1983, **20**, 1267 (*occur, pmr*)
Furukawa, H. *et al., Chem. Pharm. Bull.*, 1985, **33**, 4132 (*isol, uv, ir, pmr, cmr, ms*)
Martin, T. *et al., J.C.S. Perkin 1*, 1988, 235 (*synth, uv, ir, pmr, ms*)
Knölker, H.-J. *et al., Tetrahedron*, 1993, **49**, 11221 (*synth*)
Bhattacharyya, P. *et al., Phytochemistry*, 1994, **35**, 1085 (*isol, uv, ir, pmr, cmr, struct*)
Murakami, Y. *et al., Heterocycles*, 1998, **49**, 127-132 (*Murrayafoline A, synth*)
Bringmann, G. *et al., Synthesis*, 1998, 1501-1505 (*synth, Me ether, ir, pmr, cmr, ms*)
Itoigawa, M. *et al., J. Nat. Prod.*, 2000, **63**, 893-897 (*Murrayafoline A, activity*)
Lin, G. *et al., Tetrahedron*, 2000, **56**, 7163-7171 (*synth, pmr, ms, benzyl ether*)
Benavides, A. *et al., Synthesis*, 2004, 2499-2504 (*Murrayafoline A, synth*)
Mal, D. *et al., Tet. Lett.*, 2006, **47**, 1071-1075 (*Murrayafoline A, synth*)

1-Hydroxy-6-methyl-9*H*-carbazole H-584

*6-Methyl-9*H*-carbazol-1-ol, 9CI*
[73910-76-6]

$C_{13}H_{11}NO$ 197.236
Cryst. (C_6H_6). Mp 194-195°.

*Me ether: 1-Methoxy-6-methyl-9*H*-carbazole.* ***Glycozolicine***
[73910-79-9]
[143438-96-4]
$C_{14}H_{13}NO$ 211.263
Alkaloid from the roots of *Glycosmis pentaphylla*. Cryst. (C_6H_6) or fine needles (hexane). Mp 150° (synthetic) Mp 137-138° (natural). Struct. of nat. prod. revised in 2001 but not fully confirmed.

Shah, G.D. *et al., Indian J. Chem., Sect. B*, 1979, **18**, 451 (*synth, Me ether*)
Patel, B.P.J. *et al., Indian J. Chem., Sect. B*, 1982, **21**, 20-23 (*synth*)
Roy, S. *et al., J. Indian Chem. Soc.*, 1982, **59**, 1369-1371 (*synth, Me ether*)
Jash, S.S. *et al., Phytochemistry*, 1992, **31**, 2503-2505 (*Glycozolicine, isol, cmr*)
Chakravarty, A.K. *et al., Indian J. Chem., Sect. B*, 2001, **40**, 484-489 (*Glycozolicine, synth, struct*)

2-Hydroxy-3-methyl-9*H*-carbazole H-585

*3-Methyl-9*H*-carbazol-2-ol, 9CI*
[24224-30-4]

$C_{13}H_{11}NO$ 197.236
Alkaloid from the roots of *Murraya koenigii* (curryleaf tree) (Rutaceae) and stem bark of (*Clausena excavata*). Mp 245-246°.

Me ether: ***2-Methoxy-3-methyl-9H-carbazole***
[24224-28-0]
$C_{14}H_{13}NO$ 211.263
Alkaloid from the seeds of *Murraya koenigii* (curryleaf tree) (Rutaceae). Cryst. (C_6H_6 or C_6H_6/petrol). Mp 225° (218°).

Chakraborty, D.P. *et al., Chem. Ind. (London)*, 1969, 1662 (*synth, uv, ir*)
Bhattacharyya, P. *et al., Chem. Ind. (London)*, 1986, 246 (*isol, uv, ir, pmr, cmr*)
Knölker, H. *et al., J. Indian Chem. Soc.*, 1994, **71**, 345 (*synth, 2-Methoxy-3-methylcarbazole*)
Wu, T.-S. *et al., Phytochemistry*, 1996, **43**, 133-140 (*isol*)
Knölker, H.J. *et al., Synlett*, 1996, 737 (*synth*)

2-Hydroxy-7-methyl-9*H*-carbazole H-586

*7-Methyl-9*H*-carbazol-2-ol, 9CI*
[151985-61-4]

$C_{13}H_{11}NO$ 197.236
Alkaloid from aerial parts of *Cimicifuga simplex* (Ranunculaceae). Pale yellow amorph. powder ($CHCl_3$/MeOH). Mp 269-271°.

Ac:
$C_{15}H_{13}NO_2$ 239.273
Needles (EtOAc). Mp 245-247°.

Kusano, G. *et al., Heterocycles*, 1993, **36**, 2367 (*isol, uv, ir, pmr, cmr, ms, struct*)

3-Hydroxy-6-methyl-9*H*-carbazole H-587

*6-Methyl-9*H*-carbazol-3-ol, 9CI.* ***Glycozolinine****. Glycozolinol*
[5257-08-9]

$C_{13}H_{11}NO$ 197.236
Alkaloid from the seeds of *Glycosmis pentaphylla* (Rutaceae). Cryst. (C_6H_6). Mp 231-232°.

O-*Ac:*
$C_{15}H_{13}NO_2$ 239.273
Cryst. (C_6H_6). Mp 210°.

*Me ether: 3-Methoxy-6-methyl-9*H*-carbazole, 9CI.* ***Glycozoline***
[5234-30-0]
$C_{14}H_{13}NO$ 211.263
Alkaloid from the roots of *Glycosmis mauritiana* and the root bark of *Glycosmis pentaphylla* (Rutaceae). Also from *Murraya koeingii*. Mp 181-182°. λ_{max} 227 (ϵ 33000); 252 (ϵ 14500); 264 (ϵ 40000); 304 (ϵ 14700) (EtOH) (Berdy).

Me ether, picrate: Mp 182°.

Carruthers, W. *et al., Chem. Comm.*, 1966, 272 (*synth, uv, pmr*)
Chakraborty, D.P. *et al., Tet. Lett.*, 1966, 661 (*uv, ir, pmr, struct*)
Bhattacharyya, P. *et al., J. Indian Chem. Soc.*, 1976, **53**, 321 (*synth*)
Rastogi, K. *et al., Phytochemistry*, 1980, **19**, 945 (*isol*)
Mukherjee, S. *et al., Phytochemistry*, 1983, **22**, 1064 (*isol, uv, ir, pmr, struct, Glycozolinine*)
Bhattacharyya, P. *et al., Indian J. Chem., Sect. B*, 1984, **23**, 49 (*isol, uv, ir, pmr, synth, Glycozolinine*)
Iwao, M. *et al., Heterocycles*, 1993, **36**, 1483 (*synth, Glycozolinine*)

4-Hydroxy-6-methyl-9*H*-carbazole H-588

*6-Methyl-9*H*-carbazol-4-ol*

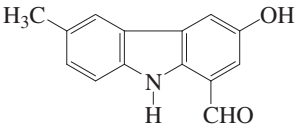
$C_{13}H_{11}NO$ 197.236

*Me ether: 5-Methoxy-3-methyl-9*H*-carbazole, 9CI.* ***Glycoborine***
[359865-27-3]
$C_{14}H_{13}NO$ 211.263
Alkaloid from roots of *Glycosmis arborea*. Fine needles (petrol/hexane). Mp 155-156°. Struct. formerly assigned to Glycozolicine.

Chakravarty, A.K. *et al., Indian J. Chem., Sect. B*, 2001, **40**, 484-489 (*isol, synth, pmr, cmr*)

3-Hydroxy-6-methyl-9*H*-carbazole-1-carboxaldehyde H-589

1-Formyl-3-hydroxy-6-methylcarbazole



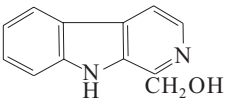
$C_{14}H_{11}NO_2$ 225.246

*Me ether: 3-Methoxy-6-methyl-9*H*-carbazole-1-carboxaldehyde. 1-Formyl-3-methoxy-6-methylcarbazole*
[356549-34-3]
$C_{15}H_{13}NO_2$ 239.273
Alkaloid from the leaves of *Murraya koenigii*. Light yellow cryst. Mp 181-182°. λ_{max} 227 (log ϵ 4.78); 262 (log ϵ 4.1); 303 (log ϵ 4.41); 398 (log ϵ 3.87) (MeOH).

Chowdhury, B.K. *et al., Indian J. Chem., Sect. B*, 2001, **40**, 490-494 (*isol, synth, pmr*)

1-Hydroxymethyl-β-carboline H-590

*9*H*-Pyrido[3,4-*b*]indole-1-methanol, 9CI*
[17337-22-3]



$C_{12}H_{10}N_2O$ 198.224
Alkaloid from the stems of *Picrasma ailanthoides* and the wood of *Picrasma quassioides* (Simaroubaceae). Yellow needles (MeOH). Mp 228-230° dec.

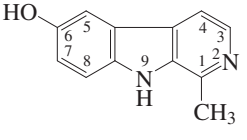
Hydrochloride:
Yellow needles (MeOH). Mp 240° dec.

O-*Ac:*
Pale-yellow needles (Et_2O). Mp 113-113.5°.

Kondo, Y. *et al., Chem. Pharm. Bull.*, 1973, **21**, 837 (*isol, uv, pmr, struct, synth*)
Koike, K. *et al., Org. Magn. Reson.*, 1984, **22**, 471 (*cmr*)
Ohmoto, T. *et al., Chem. Pharm. Bull.*, 1984, **32**, 3579 (*isol, uv, ir, synth*)

6-Hydroxy-1-methyl-β-carboline H-591

*1-Methyl-9*H*-pyrido[3,4-*b*]indol-6-ol, 9CI.* ***6-Hydroxyharman***
[67767-19-5]



$C_{12}H_{10}N_2O$ 198.224
Alkaloid from the roots of *Grewia mollis*

and from *Ophiorrhiza japonica*. Also from the bryozoan *Cribricellina cribraria*. Pale-yellow prisms. Mp 276-278°.

Hydrochloride:
Cryst. (MeOH). Mp 320° dec.

Me ether: 6-Methoxy-1-methyl-β-carboline. 6-Methoxyharman. ***Isoharmine****. Coharmine*
[3589-72-8]
$C_{13}H_{12}N_2O$ 212.251
Alkaloid from *Mucuna pruriens* and leaves and stems of *Virola cuspidata* (Myristicaceae, Fabaceae). Also isol. from *Peganum harmala* (Zygophyllaceae). Prisms (MeOH). Mp 275-276° dec. λ_{max} 232 (ϵ 33800); 246 (sh) (ϵ 29400); 257 (sh) (ϵ 21900); 285 (sh) (ϵ 15000); 290 (ϵ 15600); 296 (ϵ 25000); 354 (ϵ 7500) (EtOH).

▶ UV0168000

3,4-Dihydro, Me ether: ***3,4-Dihydro-6-methoxy-1-methyl-β-carboline****. 6-Methoxyharmalan*
[3589-73-9]
$C_{13}H_{14}N_2O$ 214.266
Alkaloid from the leaves and stems of *Virola cuspidata* (Myristicaceae).

▶ UU9802000

Cook, J.W. *et al., J.C.S.*, 1951, 1203-1207 (*synth*)
Cassady, J.M. *et al., J. Nat. Prod.*, 1971, **34**, 161-162 (*6-Methoxyharman, 6-Methoxyharmalan*)
Ghosal, S. *et al., Planta Med.*, 1972, **21**, 200-203 (*6-Methoxyharman, occur*)
Rosler, H. *et al., J. Nat. Prod.*, 1978, **41**, 383-384 (*isol, uv, ir, pmr, ms, struct*)
Aimi, N. *et al., Chem. Pharm. Bull.*, 1986, **34**, 3064-3066 (*isol*)
Ayoub, M.T. *et al., Phytochemistry*, 1991, **30**, 1046-1047 (*Isoharmine*)
Rocca, P. *et al., Tet. Lett.*, 1994, **35**, 2003-2004 (*synth*)
Harwood, D.T. *et al., Nat. Prod. Res.*, 2003, **17**, 15-19 (*isol, pmr, cmr*)

7-Hydroxy-1-methyl-β-carboline H-592

*1-Methyl-9*H*-pyrido[3,4-*b*]indol-7-ol, 9CI.* ***Harmol****. 7-Hydroxyharman*
[487-03-6]
$C_{12}H_{10}N_2O$ 198.224
Alkaloid from *Carex brevicollis*, *Elaeagnus angustifolia* (Russian olive), *Hippophae rhamnoides*, *Banisteriopsis caapi*, *Banisteriopsis inebrians*, *Peganum harmala*, *Tribulus terrestris*, *Zygophyllum fabago* and *Passiflora incarnata* (maypops) (Cyperaceae, Eleagnaceae, Malphigiaceae, Zygophyllaceae, Passifloraceae) and the watermoss *Fontinalis squamosa*. Shows antiparasitic activity. Active against gram-positive bacteria and fungi. Sol. $CHCl_3$, Me_2CO, bases; poorly sol. H_2O. Mp 304-307°. λ_{max} 210 ; 240 ; 300 ; 325 (MeOH) (Berdy).

O-*Ac:* [257938-78-6]
$C_{14}H_{12}N_2O_2$ 240.261
Needles (EtOH). Mp 155°.

*Me ether: 7-Methoxy-1-methyl-9*H*-pyrido[3,4-*b*]indole. 7-Methoxy-1-methyl-β-carboline.* ***Harmine****. Yageine. Banisterine. Telepathine*
[442-51-3]
$C_{13}H_{12}N_2O$ 212.251
Alkaloid from *Peganum harmala*, several *Banisteriopsis* spp., *Passiflora edulis* (passionfruit) and several other spp. (Zygophyllaceae, Malphigiaceae, Passifloraceae). Acid-base fluorescence indicator (pH 7.2-8.9, colour change blue → yellow). Antiparkinsonian agent. CNS stimulant. Component of a South American hallucinogenic drink. Active against gram-positive bacteria and fungi. Cryst. Mp 264-265° (257-259°). pK_a 7.61 (20°). Log P 3.12 (calc). λ_{max} 210 ; 240 ; 300 ; 338 (MeOH) (Berdy). λ_{max} 298 (log ϵ 4.21); 324 (log ϵ 3.72); 332 (log ϵ 3.68) (MeCN). λ_{max} 242 (log ϵ 4.62); 301 (log ϵ 4.2) (EtOH).

▶ Adverse gastrointestinal and CNS effects in humans by intramuscular route . LD_{50} (mus, scu) 243 mg/kg; LD_{50} (mus, ivn) 38 mg/kg. UV0175000

Me ether, hydrochloride: [343-27-1]
Dihydrate. Mp 268-270° dec Mp 321° (anhyd.).

▶ MG9450000

Me ether, picrate: Mp 249-250° dec.

Me ether, N^2*-oxide:* ***Harmine*** **N-*oxide***
[57498-78-9]
$C_{13}H_{12}N_2O_2$ 228.25
Alkaloid from *Banisteriopsis caapi* (Malphigiaceae). Needles (MeOH). Mp 226-227° dec. λ_{max} 213 (log ϵ 4.45); 248 (log ϵ 4.72); 330 (log ϵ 4.62) (MeOH).

*3,4-Dihydro: 4,9-Dihydro-1-methyl-3*H*-pyrido[3,4-*b*]indol-7-ol. 3,4-Dihydro-7-hydroxy-1-methyl-β-carboline.* ***Harmalol***
[525-57-5]
[6028-07-5]
$C_{12}H_{12}N_2O$ 200.24
Alkaloid from *Peganum harmala, Passiflora incarnata* (maypops), *Amsonia tabernaemontana, Apocynum cannabinum* and *Hippophae rhamnoides* (Zygophyllaceae, Passifloraceae, Apocynaceae, Eleagnaceae). Traditional dye for wool. CNS stimulant. Active against gram-positive bacteria and fungi. Fine orange-yellow or red needles + $3H_2O$ (EtOH aq.). Sol. Me_2CO, $CHCl_3$; poorly sol. H_2O. Mp 100-105°. Log P 1.31 (uncertain value) (calc). Readily oxid. in air. λ_{max} 218 ; 260 ; 376 (MeOH) (Berdy).

▶ LD_{50} (mus, ipr) 175 mg/kg.

3,4-Dihydro, hydrochloride: [6028-00-8]
Green cryst. (EtOH), red needles (EtOH). Mp 264-267° dec.

*3,4-Dihydro, Me ether: 4,9-Dihydro-7-methoxy-1-methyl-3*H*-pyrido[3,4-*b*]indole. 3,4-Dihydro-7-methoxy-1-methyl-β-carboline.* ***Harmaline****. Dihydroharmine. Harmidine*
[304-21-2]
$C_{13}H_{14}N_2O$ 214.266
Alkaloid from *Peganum harmala*, *Passiflora incarnata*, *Banisteria caapi* (preferred genus name *Heteropterys*) and some *Banisteriopsis* spp. (Zygophyllaceae, Passifloraceae, Malphigiaceae). CNS stimulant. Possesses antiparkinsonian props. Component of a S. American hallucinogenic drink. Active against gram-positive bacteria and fungi. Sol. Et_2O. Mp 250-251° (227-229°). Log P 1.91 (uncertain value) (calc). λ_{max} 218 (ϵ 17700); 260 (ϵ 7950); 376 (ϵ 10050) (MeOH) (Berdy). λ_{max} 260 (log ϵ 4.07); 380 (log ϵ 4.49) (0.1M HCl). λ_{max} 300 (log ϵ 4.24); 324 (log ϵ 3.8); 336 (log ϵ 3.73) (MeOH). λ_{max} 216 ; 228 ; 261 ; 341 ; 352 ; 380 (MeOH).

▶ LD_{50} (rat, scu) 120 mg/kg. UU9800000

3,4-Dihydro, Me ether, hydrochloride:
[6027-98-1]
Mp 212° Mp 239-240° (dihydrate).

▶ MG8750000

3,4-Dihydro, Me ether, N-*Ac:* Mp 204-205°.

*1,2,3,4-Tetrahydro: 2,3,4,9-Tetrahydro-1-methyl-1*H*-pyrido[3,4-*b*]indol-7-ol, 8CI. 1,2,3,4-Tetrahydro-7-hydroxy-1-methyl-β-carboline.* ***Tetrahydroharmol***
[17952-75-9]
$C_{12}H_{14}N_2O$ 202.255
Alkaloid from *Elaeagnus angustifolia* (Russian olive), *Shepherdia argentea* and *Shepherdia canadensis* (Eleagnaceae). Mp 254-255°.

1,2,3,4-Tetrahydro, N^2*,*O*-di-Ac:* [28090-84-8]
$C_{16}H_{18}N_2O_3$ 286.33
Cryst. (EtOAc). Mp 202°.

1,2,3,4-Tetrahydro, N^2*-Me:* **N^b-*Methyltetrahydroharmol***
[57116-40-2]
$C_{13}H_{16}N_2O$ 216.282
Alkaloid from *Elaeagnus angustifolia* (Russian olive) (Eleagnaceae). Cryst. (EtOH). Mp 268-270°. Racemic.

[28090-85-9]

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 682C (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 166B; 166C (*nmr*)
Späth, E. *et al., Ber.*, 1930, **63**, 120-125 (*Harmine, Harmaline, synth*)
Doig, G.G. *et al., J.C.S.*, 1952, 3912-3916 (*Harmaline, uv*)
Spenser, I.D. *et al., Can. J. Chem.*, 1959, **37**, 1851-1858 (*Harmaline, synth, uv, ir*)
Lutomski, J. *et al., CA*, 1961, **55**, 21479a (*Harmol, isol*)
Robinson, B. *et al., Chem. Ind. (London)*, 1965, 605 (*Harmaline, pmr*)
Ayer, W.A. *et al., Can. J. Chem.*, 1970, **48**, 1980-1984 (*Tetrahydroharmol*)
Ribas, I. *et al., CA*, 1972, **77**, 123811n (*isol*)
Bishop, E. *et al., Indicators*, 1972, 695 (*Harmine, use*)
Phillipson, J.D. *et al., J. Chromatogr.*, 1975, **405**, 163 (*Harmaline, uv, tlc, glc*)
Hashimoto, Y. *et al., Phytochemistry*, 1975, **14**, 1633-1635 (*Harmine N-oxide*)
Shoemaker, D.W. *et al., J. Chromatogr.*, 1979, **174**, 159-164 (*Harmine, Harmol, glc, ms*)
Ross, S.A. *et al., Fitoterapia*, 1980, **6**, 309-312 (*Harmalol, Harmaline, activity*)
Allen, J.R.F. *et al., Phytochemistry*, 1980, **19**, 1573-1582 (*rev, bibl*)
Coune, C.A. *et al., Phytochemistry*, 1980, **19**, 2009-2011 (*Harmalol, Harmaline, cmr*)
Al-Shamma, A. *et al., J. Nat. Prod.*, 1981, **44**, 745-747 (*Harmine, activity*)

Verpoorte, R. *et al., Org. Magn. Reson.*, 1984, **22**, 328-335 (*Harmaline, cmr*)
Ahmad, A. *et al., J. Ethnopharmacol.*, 1992, **35**, 289-294 (*Harmine, activity*)
Biondic, M.C. *et al., J.C.S. Perkin 2*, 1992, 1049-1058 (*Harmaline, uv*)
Salm, R.F. *et al., Phytochemistry*, 1998, **49**, 887-892 (*isol*)
Martindale, The Extra Pharmacopoeia, 32nd edn., Pharmaceutical Press, 1999, 1587 (*Harmine, Harmaline*)
Ponce, M.A. *et al., J. Het. Chem.*, 2001, **38**, 1071-1082 (*O-Ac*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, HA1500 (*Harmine*)

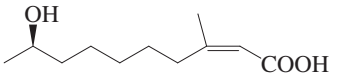
8-Hydroxy-1-methyl-β-carboline H-593

*1-Methyl-9*H*-pyrido[3,4-*b*]indol-8-ol, 9CI.* ***8-Hydroxyharman***
[521305-60-2]

$C_{12}H_{10}N_2O$ 198.224
Alkaloid from the bryozoan *Cribricellina cribraria*. Yellow oil. λ_{max} 216 (ϵ 4000); 242 (ϵ 6500); 277 (ϵ 1300); 286 (ϵ 1500); 340 (ϵ 800) (EtOH).

Harwood, D.T. *et al., Nat. Prod. Res.*, 2003, **17**, 15-19 (*isol, pmr, cmr, ms*)

9-Hydroxy-3-methyl-2-decenoic acid H-594



$C_{11}H_{20}O_3$ 200.277

(2Z,9R)-form

O-*(15Z-Docosenoyl), 2-sulfoethyl ester:* ***Irciniasulfonic acid A1***
$C_{35}H_{64}O_7S$ 628.952
Isol. from the sponge *Ircinia* sp. Multidrug resistance modulator. Isol. as a mixt. with other Irciniasulfonic acids A, to which data refers. λ_{max} 220 (ϵ 6100) (MeOH).

O-*(15Z-Docosenoyl), 2-sulfoethylamide:* ***Irciniasulfonic acid B1***
[901764-82-7 (Irciniasulfonic acid B)]
$C_{35}H_{65}NO_6S$ 627.968
Isol. from *Ircinia* sp. Isol. as a mixt. with B_2.

O-*Tricosanoyl, 2-sulfoethyl ester:* ***Irciniasulfonic acid A3***
$C_{36}H_{68}O_7S$ 644.995
Isol. from *Ircinia* sp.

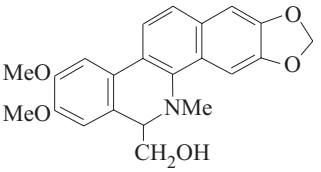
O-*(5Z,9Z-Tetracosadienoyl), 2-sulfoethyl ester:* ***Irciniasulfonic acid A2***
$C_{37}H_{66}O_7S$ 654.99
Isol. from *Ircinia* sp.

O-*(5Z,9Z-Tetracosadienoyl), 2-sulfoethylamide:* ***Irciniasulfonic acid B2***
[901764-82-7 (Irciniasulfonic acid B)]
$C_{37}H_{67}NO_6S$ 654.005
Isol. from *Ircinia* sp. Isol. as a mixt. with B_1.

Kawakami, A. *et al., Tet. Lett.*, 2001, **42**, 3335-3337 (*isol, pmr, cmr*)
Dobbs, A.P. *et al., Synlett*, 2005, 652-654 (*synth*)
Emura, C. *et al., Tetrahedron*, 2006, **62**, 5682-5685 (*Irciniasulfonic acid B*)

8-Hydroxymethyldihydronitidine H-595

6-Hydroxymethyldihydronitidine
[96627-11-1]

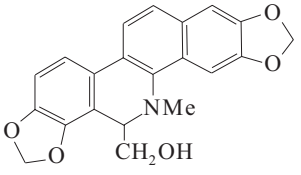


$C_{22}H_{21}NO_5$ 379.412
Minor alkaloid from the stem bark of *Fagaropsis angolensis* (Rutaceae). Yellow gum.

Khalid, S.A. *et al., J. Nat. Prod.*, 1985, **48**, 118 (*isol, uv, ir, pmr, ms, struct*)

8-Hydroxymethyldihydrosanguinarine H-596

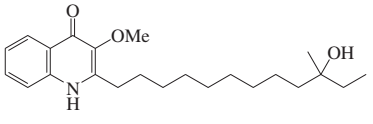
*13,14-Dihydro-13-methyl[1,3]benzodioxolo[5,6-*c*]-1,3-dioxolo[4,5-*i*]phenanthridine-14-methanol, 9CI*
[67951-20-6]
[88588-10-7]



$C_{21}H_{17}NO_5$ 363.369
Possibly an artifact. Alkaloid from the roots of *Chelidonium japonicum* (Papaveraceae) and aerial parts of *Fumaria vaillantii*. Cryst. ($CHCl_3$/EtOH). Mp 249-251.5°. λ_{max} 212 (log ϵ 4.24); 235 (log ϵ 4.39); 284 (log ϵ 4.42); 322 (log ϵ 4.02); 350 (sh) (log ϵ 3.54) (MeOH).

Itokawa, H. *et al., Phytochemistry*, 1978, **17**, 839-840 (*isol, uv, ir, pmr, ms, struct*)

2-(10-Hydroxy-10-methyldodecyl)-3-methoxy-4(1*H*)-quinolinone H-597



$C_{23}H_{35}NO_3$ 373.534

(+)-form

Alkaloid from the leaves of *Spathelia excelsa*. Oil. $[\alpha]_D$ +5.4 (c, 0.02 in $CHCl_3$). λ_{max} 241 ; 248 ; 325 ; 334 (MeOH).

Da Paz Lima, M. *et al., Phytochemistry*, 2005, **66**, 1560-1566 (*isol, pmr, cmr*)

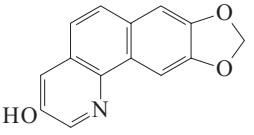
2-(11-Hydroxy-11-methyldodecyl)-3-methoxy-4(1*H*)-quinolinone H-598

$C_{23}H_{35}NO_3$ 373.534
Alkaloid from the leaves of *Spathelia excelsa*. Oil. λ_{max} 241 ; 248 ; 326 ; 336 (MeOH).

Da Paz Lima, M. *et al., Phytochemistry*, 2005, **66**, 1560-1566 (*isol, pmr, cmr*)

3-Hydroxy-8,9-methylenedioxybenzo[*h*]quinoline H-599

*[1,3]Benzodioxolo[5,6-*h*]quinolin-3-ol, 9CI.* ***Toddaquinoline***
[152406-73-0]



$C_{14}H_9NO_3$ 239.23
Alkaloid from the root bark of *Toddalia asiatica* (Rutaceae). Prisms (MeOH/Et_2O). Mp 235-237°.

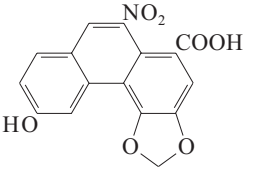
Ac:
Needles ($CHCl_3$/MeOH). Mp 174-176°.

Me ether:
Prisms (MeOH). Mp 145-148°.

Chen, I.-S. *et al., Phytochemistry*, 1993, **34**, 1449 (*isol, uv, ir, pmr, struct*)
Harrowven, D.C. *et al., Tetrahedron*, 2001, **57**, 4447-4454 (*synth*)

6-Hydroxy-3,4-methylenedioxy-10-nitro-1-phenanthrenecarboxylic acid H-600

*10-Hydroxy-6-nitrophenanthro[3,4-*d*]-1,3-dioxole-5-carboxylic acid, 9CI.* ***Aristolochic acid C****. Aristolochic acid IIIa*
[4849-90-5]



$C_{16}H_9NO_7$ 327.25
Alkaloid from *Aristolochia debilis* and from the tubers of *Aristolochia rotunda*. An active principle of "Tong Cheng Hu Geng" (roots of *Aristolochia tagala*) and of the Chinese drug Fang-chi. Also found in the butterfly *Zerynthia polyxena*. Cytotoxic. Needles + $5H_2O$. Mp 280° dec.

Me ester: Mp 254°.

6-O-β-D-Glucopyranoside:
$C_{22}H_{19}NO_{12}$ 489.392
Alkaloid from roots of *Aristolochia cinnabarina* (Aristochiaceae). Yellow amorph. powder. $[\alpha]_D^{25}$ -46.6 (c, 0.09 in MeOH).

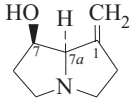
Me ether: ***Aristolochic acid III****. 10-Methoxy-6-nitrophenanthro[3,4-*d*]-1,3-dioxole-5-carboxylic acid, 9CI. 6-Methoxy-3,4-methylenedioxy-10-nitro-1-phenanthrenecarboxylic acid*
[7267-92-7]
$C_{17}H_{11}NO_7$ 341.276
Alkaloid from the roots of *Aristolochia argentina, Aristolochia esperanzae, Aristolochia clematitis* and *Aristolochia longa* (Aristolochiaceae).

Me ether, Me ester: ***Aristolochic acid III methyl ester***
$C_{18}H_{13}NO_7$ 355.303
Alkaloid from *Aristolochia cucurbitifolia*. Yellowish needles. Mp 272-274° (265-266°). λ_{max} 216 (log ε 4.06); 256 (log ε 4.33); 278 (sh) (log ε 3.91); 300 (log ε 3.81); 350 (log ε 3.63); 384 (log ε 3.59) (MeOH).

Tomita, M. *et al., Yakugaku Zasshi*, 1959, **79**, 973; 1470; *CA*, **53**, 21841e; **54**, 6688i (*isol, ir, uv*)
Sasagawa, S. *et al., Yakugaku Zasshi*, 1962, **82**, 921; *CA*, **59**, 1552g (*struct*)
Pailer, M. *et al., Monatsh. Chem.*, 1965, **96**, 863 (*isol, deriv*)
Carboni, S. *et al., Gazz. Chim. Ital.*, 1966, **96**, 641 (*isol, ir*)
Priestap, H.A. *et al., An. Asoc. Quim. Argent.*, 1971, **59**, 245; *CA*, **76**, 43943w (*isol, deriv*)
Rothschild, M. *et al., Insect Biochem.*, 1972, **2**, 334; *CA*, **77**, 137607n (*isol, ms*)
Chen, Z.-L. *et al., Huaxue Xuebao*, 1981, **39**, 237; *CA*, **95**, 156428t (*isol*)
Ding, L. *et al., Zhongcaoyao*, 1981, **12**, 436; *CA*, **96**, 214267y (*isol*)
De Pascual Teresa, J. *et al., Phytochemistry*, 1983, **22**, 2745 (*ir, pmr, ms*)
Priestap, H.A. *et al., Magn. Reson. Chem.*, 1989, **27**, 460 (*cmr*)
Hong, L. *et al., Phytochemistry*, 1994, **37**, 237 (*glucoside*)
Leu, Y.-L. *et al., Phytochemistry*, 1998, **48**, 743-745 (*isol, uv, pmr, ms*)
Wu, T.-S. *et al., Chem. Pharm. Bull.*, 2000, **48**, 1006-1009 (*Aristolochic acid III Me ester, activity*)

7-Hydroxy-1-methylenepyrrolizidine H-601

*2,3,5,6,7,7*a-*Hexahydro-7-methylene-1*H-*pyrrolizin-1-ol, 8CI*



(7*R*,7*aR*)*-form*

$C_8H_{13}NO$ 139.197
The 7*a* posn. acc. to CAS numbering is often numbered 8.

(7*R*,7*aR*)*-form*
Minor alkaloid from *Crotalaria goreensis* (Fabaceae). Mp 35-36°. $Bp_{0.1}$ 41°. $[\alpha]_D^{19}$ -150 (c, 1.2 in EtOH). pK_a 9.5.

Picrate:
Needles. Mp 203.5-204°. $[\alpha]_D$ -47.5 (c, 0.68 in Me_2CO).

*Angeloyl: 7-**Angeloyl-1-methylenepyrrolizidine***
$C_{13}H_{19}NO_2$ 221.299
Alkaloid from *Senecio chrysocoma* (Asteraceae). Gum.

N-*Oxide: 7-**Hydroxy-1-methylenepyrrolizidine* **N-oxide***
$C_8H_{13}NO_2$ 155.196
Alkaloid from epigeal parts of *Senecio schweinfurthii* (Asteraceae). Oil.

(7*R*,7*aS*)*-form* [2520-33-4]
Major alkaloid from *Crotalaria goreensis*, also isol. from *Crotalaria podocarpa, Crotalaria maypurensis* and *Crotalaria aegyptiaca* (Fabaceae). Needles (petrol). Mp 33-35°. $Bp_{0.03}$ 62°. $[\alpha]_D^{18}$ +36.1 (c, 1.39 in EtOH). pK_a 9.3.

Picrate:
Yellow needles (EtOH). Mp 173.5-174.5°. $[\alpha]_D^{18}$ -24.2 (c, 1.01 in Me_2CO).

(7*S*,7*aR*)*-form*

Angeloyl:
$C_{13}H_{19}NO_2$ 221.299
Alkaloid from *Senecio chrysocoma* (Asteraceae). Gum.

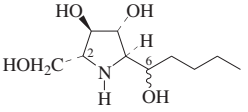
Angeloyl, N-*oxide: 7-**Angeloyl-1-methylenepyrrolizidine* **N-oxide***
$C_{13}H_{19}NO_3$ 237.298
Alkaloid from *Senecio chrysocoma* (Asteraceae). Gum.

[6257-42-7]

Culvenor, C.C.J. *et al., Aust. J. Chem.*, 1961, **14**, 284 (*isol, struct, abs config*)
Robins, D.J. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 115 (*occur*)
Liddell, J.R. *et al., Phytochemistry*, 1993, **34**, 1198 (*derivs*)
Benn, M.H. *et al., Phytochemistry*, 1995, **40**, 1327 (*oxide*)
Logie, C.G. *et al., S. Afr. J. Chem.*, 1997, **50**, 72-74 (*synth, abs config*)

2-Hydroxymethyl-5-(1-hydroxypentyl)-3,4-pyrrolidinediol H-602

3,4-Dihydroxy-2-hydroxymethyl-5-(1-hydroxypentyl)pyrrolidine



Relative Configuration

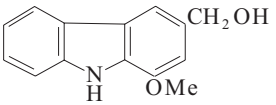
$C_{10}H_{21}NO_4$ 219.28

(2*R*,3*R*,4*R*,5*R*,6ξ)*-form*
Alkaloid from *Adenophora triphylla* var. *japonica*. Inhibitor of almond β-glucosidase. $[\alpha]_D$ +174.3 (c, 0.32 in H_2O).

Asano, N. *et al., Phytochemistry*, 2000, **53**, 379-382

3-Hydroxymethyl-1-methoxycarbazole H-603

*1-Methoxy-9*H-*carbazole-3-methanol, 9CI.* ***Koenoline***
[3909-78-2]



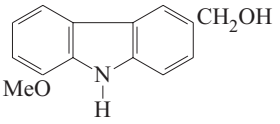
$C_{14}H_{13}NO_2$ 227.262
Alkaloid from the root bark of *Murraya koenigii* (curryleaf tree) (Rutaceae). Exhibits cytotoxic activity vs. KB cells. Cryst. (C_6H_6/petrol). Mp 142° (130°). Partially converted to Murrayanine (see 1-Hydroxy-9*H*-carbazole-3-carboxaldehyde, H-447) on standing at r.t.

O-*Ac:*
Cryst. (Py aq.). Mp 110°.

Chakraborty, D.P. *et al., Tetrahedron*, 1965, **21**, 681 (*synth*)
Fiebig, M. *et al., Phytochemistry*, 1985, **24**, 3041 (*isol, uv, ir, pmr, cmr, ms*)
Knölker, H.-J. *et al., Tetrahedron*, 1993, **49**, 11221 (*synth*)
Bringmann, G. *et al., Synthesis*, 1998, 1501-1505 (*synth, ms*)
Knölker, H.-J. *et al., Chem. Rev.*, 2002, **102**, 4303-4427 (*rev*)

6-Hydroxymethyl-1-methoxycarbazole H-604

*8-Methoxy-9*H-*carbazole-3-methanol, 9CI.* ***Mukoline***
[87264-41-3]



$C_{14}H_{13}NO_2$ 227.262
Minor alkaloid from roots of *Murraya koenigii* (curryleaf tree). Cryst. (C_6H_6). Mp 118°.

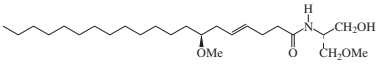
Picrate:
Cryst. (C_6H_6). Mp 230°.

O-*Ac:*
Cryst. (C_6H_6/petrol). Mp 145°.

N-*Me:*
Cryst. (C_6H_6/petrol). Mp 140°.

Roy, S. *et al., J. Indian Chem. Soc.*, 1982, **59**, 1369 (*isol, uv, ir, pmr, ms, struct*)

N-(1-Hydroxymethyl-2-methoxyethyl)-7-methoxy-4-eicosenamide H-605



$C_{25}H_{49}NO_4$ 427.666

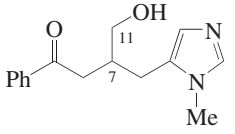
(1′*R*,4*E*,7*S*)*-form* [253443-61-7]
Isol. from an Australian cyanobacterium. Plates. Mp 32-34°. $[\alpha]_D^{20}$ -3 (c, 0.33 in $CHCl_3$).

2′-Ac: N-*(1-Acetoxymethyl-2-methoxyethyl)-7-methoxy-4-eicosenamide*
[253443-58-2]
$C_{27}H_{51}NO_5$ 469.704
Isol. from an Australian cyanobacterium. Needles. Mp 39-40.5°. $[\alpha]_D^{20}$ -6.1 (c, 0.58 in $CHCl_3$).

Wan, F. *et al., J. Nat. Prod.*, 1999, **62**, 1696-1699 (*isol, ir, pmr, cmr*)

3-(Hydroxymethyl)-4-(1-methyl-1*H*-imidazol-5-yl)-1-phenyl-1-butanone H-606

[38993-91-8]



$C_{15}H_{18}N_2O_2$ 258.319
Alkaloid from *Pilocarpus microphyllus.*

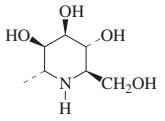
*11-Deoxy, 7,11-didehydro: 3-Methylene-4-(1-methyl-1*H*-imidazol-5-yl)-1-phenyl-1-butanone*

[942060-97-1]
$C_{15}H_{16}N_2O$ 240.304
Alkaloid from *Pilocarpus microphyllus*.

Abreu, I.N. *et al., Rapid Commun. Mass Spectrom.*, 2007, **21**, 1205-1213 (*isol, ms*)
Sawaya, A.C.H.F. *et al., Molecules*, 2008, **13**, 1518-1529 (*ms, chromatog*)

2-(Hydroxymethyl)-6-methyl-3,4,5-piperidinetriol H-607

1,2,6-Trideoxy-2,6-iminoheptitol



(2*R*,3*R*,4*R*,5*R*,6*R*)-*form*

$C_7H_{15}NO_4$ 177.2

(2*R*,3*R*,4*R*,5*R*,6*R*)-*form*
7-Deoxy-α-homomannonojirimycin
Alkaloid from the bulbs of *Scilla sibirica*. Syrup. $[\alpha]_D$ -11.1 (c, 0.44 in H_2O).

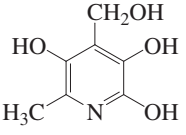
(2*R*,3*R*,4*R*,5*R*,6*S*)-*form*
7-Deoxy-β-homomannonojirimycin. β-Homofuconojirimycin
Alkaloid from *Angylocalyx pynaertii*, *Scilla sibirica* and *Scilla socialis*. Inhibitor of α-fucosidases. $[\alpha]_D$ -21.5 (c, 0.73 in H_2O).

(2*R*,3*R*,4*R*,5*S*,6*R*)-*form*
7-Deoxy-α-homonojirimycin
Alkaloid from the bulbs of *Scilla sibirica* and *Scilla socialis*. Inhibitor of α-glucosidase. Powder. $[\alpha]_D$ +78.9 (c, 0.46 in H_2O).

Asano, N. *et al., Eur. J. Biochem.*, 2001, **268**, 35-41 (*isol, pmr, cmr*)
Yamashita, T. *et al., J. Nat. Prod.*, 2002, **65**, 1875-1881 (*isol, pmr, cmr*)

4-(Hydroxymethyl)-6-methyl-2,3,5-pyridinetriol H-608

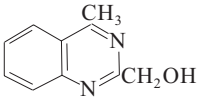
2,3,5-Trihydroxy-4-(hydroxymethyl)-6-methylpyridine
[95508-58-0]



$C_7H_9NO_4$ 171.152
Tentative struct. assigned. Prod. by *Streptoverticillium hiroshimense*. Dopamine β-hydroxylase inhibitor, antihypertensive agent. Cryst. (H_2O). Sol. H_2O; fairly sol. MeOH; poorly sol. hexane. λ_{max} 276 (HCl) (Berdy). λ_{max} 227 ; 304 (NaOH) (Berdy).
U.S. Pat., 1984, 4 487 761; *CA*, **102**, 130458r

2-Hydroxymethyl-4-methylquinazoline H-609

4-Methyl-2-quinazolinemethanol, 9CI
[13535-91-6]

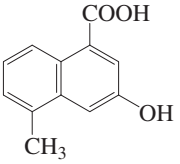


$C_{10}H_{10}N_2O$ 174.202
Metab. of the bacterium *Pseudomonas aeruginosa*.

Mann, S. *et al., Arch. Mikrobiol.*, 1967, **56**, 324

3-Hydroxy-5-methyl-1-naphthalenecarboxylic acid, 9CI H-610

3-Hydroxy-5-methyl-1-naphthoic acid, 8CI
[34581-87-8]



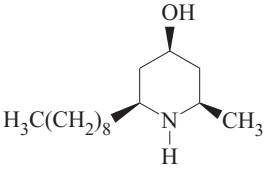
$C_{12}H_{10}O_3$ 202.209
Obt. by alkaline hydrolysis of Carzinophilin. Needles (C_6H_6/EtOAc). Mp 246°.

Me ether, [1-(aminocarbonyl)-2,3-epoxy-2-methylpropyl] ester(1S,2S-):
[110450-52-7]
$C_{18}H_{19}NO_5$ 329.352
Prod. by *Streptomyces griseofuscus*. Needles ($CHCl_3$/hexane). Mp 153-154°. $[\alpha]_D^{25}$ +48 (c, 0.33 in MeOH). A fragment of Azinomycin A. Biol. inactive. λ_{max} 217 (ϵ 46600); 245 (sh) ; 303 (ϵ 3300); 343 (ϵ 4900) (MeOH).

Yokoi, K. *et al., Chem. Pharm. Bull.*, 1986, **34**, 4554-4561 (*Streptomyces constits*)

4-Hydroxy-2-methyl-6-nonylpiperidine H-611

2-Methyl-6-nonyl-4-piperidinol, 9CI



$C_{15}H_{31}NO$ 241.416

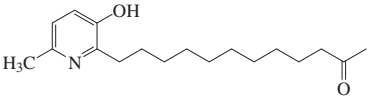
(2*R,4*S**,6*S**)-*form***
Dendrobates *Alkaloid 241D*
[120030-06-0]
Alkaloid from skin extracts of the Panamanian poison frog *Dendrobates speciosus*. Also detected as a trace constit. in certain populations of *Dendrobates pumilio*. $[\alpha]_D^{25}$ +39 (c, 0.2 in MeOH).

Oxo: **Dendrobates *Alkaloid 255***
[120041-46-5]
$C_{15}H_{29}NO$ 239.4
Alkaloid from skin extracts of *Dendrobates speciosus*. Tentative struct. assignment. Prob. a side chain oxo deriv. of 241D.

Edwards, M.W. *et al., J. Nat. Prod.*, 1988, **51**, 1188 (*isol, pmr, ms, struct*)
Edwards, M.W. *et al., Synthesis*, 1994, 1167 (*synth*)
Ciblat, S. *et al., J.C.S. Perkin 1*, 2000, 353-357 (*synth*)
Girard, N. *et al., Tet. Lett.*, 2007, **48**, 4097-4099 (*synth*)

3-Hydroxy-6-methyl-2-(11-oxododecyl)pyridine H-612

12-(3-Hydroxy-6-methyl-2-pyridinyl)-2-dodecanone



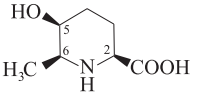
$C_{18}H_{29}NO_2$ 291.433
Alkaloid from the flowers of *Senna spectabilis*. Cytotoxic. Oil. λ_{max} 224 (log ϵ 3.9); 288 (log ϵ 3.8) (MeOH).

N-*Oxide:*
$C_{18}H_{29}NO_3$ 307.432
Alkaloid from the flowers of *Senna spectabilis*. Cytotoxic. Cryst. Mp 71-72°. λ_{max} 222 (log ϵ 4); 260 (log ϵ 3.6); 303 (log ϵ 3.2) (MeOH).

Sriphong, L. *et al., Planta Med.*, 2003, **69**, 1054-1056 (*isol, pmr, cmr, ms*)

5-Hydroxy-6-methyl-2-piperidinecarboxylic acid, 9CI H-613

5-Hydroxy-6-methylpipecolic acid. 2-Carboxy-5-hydroxy-6-methylpiperidine



(2*S*,5*S*,6*S*)–*form*

$C_7H_{13}NO_3$ 159.185

(2*S*,5*S*,6*S*)-*form* [54957-04-9]
Found in seeds of the Fagaceae esp. *Fagus sylvatica*. Cryst. (H_2O/EtOH/Et_2O). $[\alpha]_D^{23}$ -11 (c, 1.3 in H_2O). $[\alpha]_D^{23}$ +1.1 (c, 2.2 in 2*M* HCl).

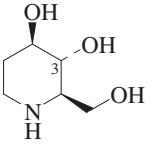
(2*S*,5*R*,6*S*)-*form* [54836-98-5]
Found in seeds of *Fagus sylvatica*. Cryst. $[\alpha]_D^{23}$ -46.4 (c, 2.8 in H_2O). $[\alpha]_D^{23}$ -33.8 (c, 2.8 in 2*M* HCl).

Hydrochloride:
Cryst. (H_2O/EtOH/Et_2O). $[\alpha]_D^{22}$ -35.6 (c, 1 in H_2O).

Kristensen, I. *et al., Tetrahedron*, 1976, **32**, 2799 (*isol, struct, ir, nmr, cd*)
Kasai, T. *et al., Phytochemistry*, 1978, **17**, 1911 (*isol*)

2-(Hydroxymethyl)-3,4-piperidinediol, 9CI H-614

3,4-Dihydroxy-2-(hydroxymethyl)piperidine. 3,4-Dihydroxy-2-piperidinemethanol. 1,2,5-Trideoxy-1,5-iminohexitol



(2*R*,3*R*,4*R*)-*form*

$C_6H_{13}NO_3$ 147.174

Care needed with numbering; if named as an iminosugar the numbering is different.

(2*R*,3*R*,4*R*)-*form*

Fagomine

[53185-12-9]

Alkaloid from buckwheat seeds (*Fagopyrum esculentum*) (Polygonaceae). Also from seeds of *Castanospermum australe* and *Xanthocercis zambesiaca* (Fabaceae). Needles (MeOH/EtOH). Mp 186-188°. $[\alpha]_D^{11}$ +23 (c, 1 in H_2O). $[\alpha]_D^{11}$ +37 (c, 1 in 0.1*M* HCl).

Hydrochloride: Mp 176-177°.

3-O-*β*-*D*-*Glucopyranosyl:* ***3*-O-*β*-*D*-*Glucopyranosylfagomine***

[104958-79-4]

[96602-64-1]

$C_{12}H_{23}NO_8$ 309.316

Alkaloid from the seeds of *Xanthocercis zambesiaca* (Fabaceae). Cryst. (MeOH/EtOH/Me_2CO). Mp 232-233° dec. $[\alpha]_D^{20}$ -3.1 (c, 1.2 in H_2O). Can also be named as 4-glucopyranosylfagomine (confusion with 4-isomer below).

4-O-*β*-*D*-*Glucopyranosyl:* ***4*-O-*β*-*D*-*Glucopyranosylfagomine***

$C_{12}H_{23}NO_8$ 309.316

Alkaloid from leaves and roots of *Xanthocercis zambesiaca*. $[\alpha]_D$ -18.2 (c, 0.48 in H_2O). Can also be numbered as the 3-isomer (see above).

(2*R*,3*R*,4*S*)-*form*

4-Epifagomine. *3-Epifagomine*

[156639-77-9]

Alkaloid from roots of *Morus alba* (white mulberry) (Moraceae) and from leaves and roots of *Xanthocercis zambesiaca* (Fabaceae). Solid. Mp 220-222° synthetic. $[\alpha]_D^{25}$ +77.15 (c, 0.68 in H_2O). Numbering systems vary.

(2*R*,3*S*,4*S*)-*form*

3,4-Diepifagomine

Alkaloid from leaves of *Xanthocercis zambesiaca*. $[\alpha]_D$ -8.7 (c, 0.3 in H_2O) (natural). $[\alpha]_D^{25}$ +13.4 (c, 0.32 in H_2O) (synthetic). No CAS no. found.

Koyama, M. *et al., Agric. Biol. Chem.*, 1974, **38**, 1111 (*ir, pmr, ms, struct*)

Evans, S.V. *et al., Tet. Lett.*, 1985, **26**, 1465 (*3*-O-*β*-*D*-*glucopyranosyl, pmr, struct*)

Fleet, G.W.J. *et al., Tet. Lett.*, 1985, **26**, 1469 (*abs config, synth*)

Molyneux, R.J. *et al., J. Nat. Prod.*, 1988, **51**, 1198-1206 (*isol*)

Asano, N. *et al., Carbohydr. Res.*, 1994, **259**, 243 (*3-Epifagomine*)

Kato, A. *et al., J. Nat. Prod.*, 1997, **60**, 312-314 (*glucoside, diepimer*)

Schneider, C. *et al., Eur. J. Org. Chem.*, 1998, 1155-1159 (*synth*)

Banba, Y. *et al., Tetrahedron: Asymmetry*, 2001, **12**, 817-819 (*synth*)

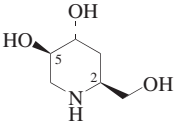
Takahata, H. *et al., J.O.C.*, 2003, **68**, 3603-3607 (*synth*)

Takahata, H. *et al., Tetrahedron*, 2004, **60**, 8199-8205 (*Fagomine, 4-Epifagomine, synth*)

Yokoyama, H. *et al., Tetrahedron: Asymmetry*, 2007, **18**, 852-856 (*Fagomine, synth*)

6-(Hydroxymethyl)-3,4-piperidinediol, 9CI H-615

1,4,5-Trideoxy-1,5-iminoheptitol



(2*S*,4*R*,5*R*)-*form*

$C_6H_{13}NO_3$ 147.174

(2*S*,4*R*,5*R*)-*form*

1,4-Dideoxyaltronojirimycin

Alkaloid from *Connarus ferrugineus*. Amorph. solid. $[\alpha]_D$ -9 (c, 1.2 in H_2O).

(2*S*,4*R*,5*S*)-*form*

1,4-Dideoxyallonojirimycin

Alkaloid from *Connarus ferrugineus*. Amorph. solid. Mp 166-170°. $[\alpha]_D$ +62 (c, 0.92 in H_2O).

(2*S*,4*S*,5*R*)-*form*

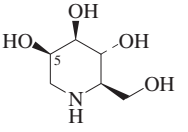
1,4-Dideoxymannonojirimycin

Alkaloid from *Connarus ferrugineus*. Syrup. $[\alpha]_D$ -37.5 (c, 0.14 in H_2O).

Asano, N. *et al., J. Nat. Prod.*, 2005, **68**, 1238-1242 (*isol, pmr, cmr*)

2-(Hydroxymethyl)-3,4,5-piperidinetriol, 12CI H-616

3,4,5-Trihydroxy-2-piperidinemethanol. 3,4,5-Trihydroxy-2-hydroxymethylpiperidine. 1,5-Dideoxy-1,5-iminohexitol



(2*R*,3*R*,4*R*,5*R*)-*form*

$C_6H_{13}NO_4$ 163.173

CAS name was changed for 12CI period. Different numbering systems depending on whether named as a piperidine or as an iminosugar.

(2*R*,3*R*,4*R*,5*R*)-*form*

1,5-Dideoxy-1,5-imino-D-mannitol, 9CI. ***1-Deoxymannonojirimycin***. *LU 1. Antibiotic LU 1*

[84444-90-6]

Alkaloid from the seeds of *Lonchocarpus sericeus*, *Lonchocarpus costaricensis* (Fabaceae), *Commelina communis* and *Streptomyces lavendulae*. Inhibitor of mannosidase and α-glucosidase. Cryst. (MeOH/Et_2O). Mp 187-188°. $[\alpha]_D^{20}$ -26.7 (c, 0.12 in MeOH). $[\alpha]_D^{24}$ -45.5 (c, 1.02 in H_2O).

Hydrochloride: [73465-43-7]

Mp 175-180°. $[\alpha]_D^{20}$ -10.9 (c, 0.3 in H_2O).

1′-O-*α*-*L*-*Rhamnopyranoside:* ***6*-O-*α*-*L*-*Rhamnopyranosyl-1-deoxymannonojirimycin***

[330594-47-3]

$C_{12}H_{23}NO_8$ 309.316

Alkaloid from the bark of *Angylocalyx pynaertii*. $[\alpha]_D$ -42.6 (c, 0.33 in H_2O).

5-O-*α*-*D*-*Galactopyranoside: 2*-O-*α*-*D*-*Galactopyranosyl-1-deoxymannonojirimycin*

$C_{12}H_{23}NO_9$ 325.315

Constit. of *Connarus ferrugineus*. Powder. $[\alpha]_D$ +51.1 (c, 0.96 in H_2O).

3-O-*β*-*D*-*Glucopyranoside: 4*-O-*β*-*D*-*Glucopyranosyl-1-deoxymannonojirimycin*

$C_{12}H_{23}NO_9$ 325.315

Constit. of *Albizia myriophylla*. Powder. $[\alpha]_D$ -26.3 (c, 0.41 in H_2O).

4-O-*β*-*D*-*Glucopyranoside: 3*-O-*β*-*D*-*Glucopyranosyl-1-deoxymannonojirimycin*

$C_{12}H_{23}NO_9$ 325.315

Constit. of *Connarus ferrugineus*. Powder. $[\alpha]_D$ -27.9 (c, 0.35 in H_2O).

5-O-*β*-*D*-*Glucopyranoside: 2*-O-*β*-*D*-*Glucopyranosyl-1-deoxymannonojirimycin*

$C_{12}H_{23}NO_9$ 325.315

Constit. of *Albizia myriophylla*. Powder. $[\alpha]_D$ -28.3 (c, 0.86 in H_2O).

(2*R*,3*R*,4*R*,5*S*)-*form*

1,5-Dideoxy-1,5-imino-D-glucitol, 9CI. ***1-Deoxynojirimycin***. *Moranoline. Antibiotic S-GI. S-GI*

[19130-96-2]

Alkaloid from *Morus* spp. (Moraceae), *Jacobinia suberecta* and *Commelina communis*. Also prod. by various *Bacillus* spp. and *Streptomyces lavendulae* ssp. *trehalostaticus*. α-Glucosidase inhibitor. Animal feedstuff additive. Shows anti-HIV activity. Antihyperglycaemic activity *in vivo*. Cryst. (MeOH). Mp 206° (195-197°). $[\alpha]_D^{22}$ +44.7 (c, 1 in H_2O). $[\alpha]_D^{20}$ -34.9 (c, 5 in H_2O). pK_a 6.6. Log P -2.85 (calc).

Hydrochloride: [73285-50-4]

Amorph. powder. Mp 196-198°. $[\alpha]_D^{22}$ +38 (c, 1 in H_2O).

1′-Phosphate: ***1-Deoxynojirimycin 6-phosphate***

[134462-64-9]

$C_6H_{14}NO_7P$ 243.153

Isol. from the sponge *Lendenfeldia chondrodes*. Amorph. solid. $[\alpha]_D^{24}$ +27 (c, 0.19 in H_2O).

1′-O-*α*-*D*-*Galactopyranoside:* ***6*-O-*α*-*D*-*Galactopyranosyl-1-deoxynojirimycin***

[156639-78-0]

$C_{12}H_{23}NO_9$ 325.315

Alkaloid from *Morus alba* (white mulberry). Powder. $[\alpha]_D$ +107 (c, 0.1 in H_2O).

5-O-*α*-*D*-*Galactopyranoside:* ***2*-O-*α*-*D*-*Galactopyranosyl-1-deoxynojirimycin***

[155168-05-1]

$C_{12}H_{23}NO_9$ 325.315

From leaves of *Morus bombycis* and from *Morus alba* (white mulberry). Powder. $[\alpha]_D$ +118.8 (c, 0.1 in H_2O).

1′-O-*β*-*D*-*Glucopyranoside:* ***6*-O-*β*-*D*-*Glucopyranosyl-1-deoxynojirimycin***

[156714-96-4]

$C_{12}H_{23}NO_9$ 325.315

Alkaloid from *Morus alba* (white mulberry). Powder.

3-O-*α*-*D*-*Glucopyranoside:* ***4*-O-*α*-*D*-*Glu-***

copyranosyl-1-deoxynojirimycin. *4*-O-α-D-*Glucopyranosylmoranoline*
[80312-32-9]
$C_{12}H_{23}NO_9$ 325.315
Alkaloid from *Morus alba* (white mulberry). Needles (H_2O). Mp 189-192°. $[\alpha]_D^{24}$ +128.6 (c, 1 in H_2O).

3-O-β-D-*Glucopyranoside:* ***4-O-β-D-Glucopyranosyl-1-deoxynojirimycin***
[152375-46-7]
$C_{12}H_{23}NO_9$ 325.315
Alkaloid from *Morus alba* (white mulberry). $[\alpha]_D$ +25 (c, 0.42 in H_2O).

4-O-α-D-*Glucopyranoside:* ***3-O-α-D-Glucopyranosyl-1-deoxynojirimycin***
[156714-94-2]
[150447-77-1]
$C_{12}H_{23}NO_9$ 325.315
Alkaloid from *Morus alba* (white mulberry) and *Scilla sibirica*. $[\alpha]_D$ +137.5 (c, 0.52 in H_2O).

4-O-β-D-*Glucopyranoside:* ***3-O-β-D-Glucopyranosyl-1-deoxynojirimycin***
[143900-42-9]
$C_{12}H_{23}NO_9$ 325.315
Alkaloid from *Morus alba* (white mulberry). Powder. $[\alpha]_D$ +18.1 (c, 0.74 in H_2O).

5-O-α-D-*Glucopyranoside:* ***2-O-α-D-Glucopyranosyl-1-deoxynojirimycin***
[156714-93-1]
$C_{12}H_{23}NO_9$ 325.315
Alkaloid from *Morus alba* (white mulberry). $[\alpha]_D$ +127.6 (c, 0.61 in H_2O).

5-O-β-D-*Glucopyranoside:* ***2-O-β-D-Glucopyranosyl-1-deoxynojirimycin***
[156714-95-3]
$C_{12}H_{23}NO_9$ 325.315
Alkaloid from *Morus alba* (white mulberry). $[\alpha]_D$ -0.8 (c, 0.51 in H_2O).

N-*Me: 1,5-Dideoxy-1,5-(methylimino)-D-glucitol, 9CI*. **N-*Methyl-1-deoxynojirimycin***. N-*Methylmoranoline*
[69567-10-8]
$C_7H_{15}NO_4$ 177.2
Alkaloid from *Morus alba* (white mulberry) and *Morus bombycis*. Isol. from a *Streptomyces* sp. Cryst. (EtOH). Mp 141-142°. $[\alpha]_D^{24}$ +15.5 (H_2O).

N-*Me, 1′-phosphate:* **N-*Methyl-1-deoxynojirimycin 6-phosphate***
[915158-93-9]
$C_7H_{16}NO_7P$ 257.18
Isol. from the sponge *Lendenfeldia chondrodes*. Amorph. solid. $[\alpha]_D^{24}$ +9.7 (c, 0.1 in H_2O).

N-*Butyl:* N-*Butyldeoxynojirimycin*. ***Miglustat, BAN, INN, USAN***. *Butyl-DNJ. OXAIDS. Vevesca. Zavesca. OGT 918. SC48334*
[72599-27-0]
$C_{10}H_{21}NO_4$ 219.28
Ceramide-specific glucosyltransferase inhibitor. Inhibits biosynthesis of glucosphingolipids. Antiviral activity, of potential use against HIV infections. A substrate balance (deprivation) therapy for the treatment of Gaucher's disease and other lysosomal storage disorders. Log P -0.4 (calc).

(2*R*,3*R*,4*S*,5*R*)-*form*
1,5-Dideoxy-1,5-imino-D-altritol. 1-Deoxy-D-altronojirimycin
[135395-59-4]
Alkaloid from the bark of *Angylocalyx pynaertii* and the bulbs of *Scilla sibirica*. Mp 175°. $[\alpha]_D^{20}$ -30.7 (c, 0.13 in MeOH) (synthetic). $[\alpha]_D$ +19.1 (c, 0.74 in H_2O) (natural).

(2*R*,3*R*,4*S*,5*S*)-*form*
1-Deoxy-1,5-imino-D-allitol. 1-Deoxy-D-allonojirimycin
[158341-94-7]
$[\alpha]_D^{25}$ +30.5 (c, 1 in H_2O).

(2*R*,3*S*,4*R*,5*R*)-*form*
1,5-Dideoxy-1,5-imino-D-talitol. 1-Deoxy-D-talonojirimycin
[143406-74-0]
Mp 150-151°. $[\alpha]_D^{20}$ +30.4 (c, 0.3 in EtOH). $[\alpha]_D^{23}$ -22.4 (c, 1.6 in MeOH).

(2*R*,3*S*,4*R*,5*S*)-*form*
1,5-Dideoxy-1,5-imino-D-galactitol. 1-Deoxy-D-galactonojirimycin. 1-Deoxy-D-galactostatin. ***Migalastat, INN***. *AT 1001*
[108147-54-2] α-Galactosidase A enzyme inhibitor. Irregular prisms (EtOH aq.) (as hydrochloride). Mp 240-241.5° dec. (hydrochloride). $[\alpha]_D^{23}$ +52.8 (c, 1 in H_2O). $[\alpha]_D$ +61.3 (c, 0.4 in H_2O).

Hydrochloride: ***Migalastat hydrochloride, USAN***. *Amigal*
[75172-81-5] Used in the treatment of Fabry disease.

(2*R*,3*S*,4*S*,5*R*)-*form*
1,5-Dideoxy-1,5-imino-D-iditol. 1-Deoxy-D-idonojirimycin
Cryst. (MeOH/Et_2O). Mp 137-139°. $[\alpha]_D^{25}$ +28 (c, 0.5 in H_2O).

(2*R*,3*S*,4*S*,5*S*)-*form*
1-Deoxy-D-gulonojirimycin. 1-Deoxy-1,5-imino-D-gulitol
[254104-05-7]
Mp 148-148.6°. $[\alpha]_D^{20}$ -16.2 (c, 0.3 in EtOH).

(2*S*,3*R*,4*R*,5*R*)-*form*
1,5-Dideoxy-1,5-imino-L-gulitol. 1-Deoxy-L-gulonojirimycin
[84518-54-7]
Alkaloid from the bark of *Angylocalyx pynaertii*. Oil. $[\alpha]_D^{21}$ +8.8 (c, 0.25 in H_2O) (synthetic). $[\alpha]_D$ +14 (c, 0.56 in H_2O) (natural). Abs. config. of natural product was revised in 2005.

(2*S*,3*R*,4*R*,5*S*)-*form*
1,5-Dideoxy-1,5-imino-L-iditol. 1-Deoxy-L-idonojirimycin
[16647-80-6]
Cryst. (MeOH/Et_2O). Mp 137-139°. $[\alpha]_D^{25}$ -27 (c, 0.33 in H_2O).

Hydrochloride: [210223-32-8]
Cryst. (MeOH aq.). $[\alpha]_D^{20}$ +32.3 (c, 1.0 in H_2O).

N-*Pentyl: OGT 2378*
[441061-33-2]
$C_{11}H_{23}NO_4$ 233.307
Antineoplastic agent. Inhibits glucosylceramide synth. Powder.

(2*S*,3*R*,4*S*,5*R*)-*form*
1,5-Dideoxy-1,5-imino-L-galactitol
[126663-71-6]
$[\alpha]_D^{20}$ -48.3 (c, 1.06 in H_2O).

Hydrochloride: [126663-84-1]
Mp 225-230°. $[\alpha]_D^{20}$ -54.1 (c, 1.0 in H_2O).

(2*S*,3*S*,4*R*,5*S*)-*form*
1,5-Dideoxy-1,5-imino-L-altritol. 1-Deoxy-L-altronojirimycin
[188779-13-7]
Oil. $[\alpha]_D$ -7 (c, 0.4 in MeOH). $[\alpha]_D^{20}$ -34.6 (c, 0.3 in H_2O).

(2*S*,3*S*,4*S*,5*R*)-*form*
1,5-Dideoxy-1,5-imino-L-glucitol
[146747-37-7]
Mp 193-195°. $[\alpha]_D^{25}$ -46 (c, 0.3 in H_2O).

(2*S*,3*S*,4*S*,5*S*)-*form*
1,5-Dideoxy-1,5-imino-L-mannitol
[117821-07-5]
$[\alpha]_D^{22}$ +26.6 (H_2O).

Hydrochloride: [118464-54-3]
Mp 184-186°. $[\alpha]_D^{20}$ +12.6 (H_2O).

Yagi, M. *et al., CA*, 1977, **86**, 167851r (*isol*)
Fellows, L.E. *et al., Chem. Comm.*, 1979, 977 (*isol, pmr, cmr, ms, cd, struct, Deoxymannojirimycin*)
Schmidt, D.D. *et al., Naturwissenschaften*, 1979, **66**, 584 (*isol*)
Murao, S. *et al., Agric. Biol. Chem.*, 1980, **44**, 219 (*isol*)
Legler, G. *et al., Carbohydr. Res.*, 1984, **61**, 128 (*Deoxymannojirimycin, synth*)
Bernotas, R.C. *et al., Tet. Lett.*, 1984, **25**, 165; 1985, **26**, 1123 (*Deoxymannojirimycin*)
Ezure, Y. *et al., Agric. Biol. Chem.*, 1985, **49**, 2159-2165 (*4-Glucosyl-1-deoxynojirimycin, synth*)
Fleet, G.W.J. *et al., Tet. Lett.*, 1985, **26**, 1469; 1988, **29**, 2817 (*D-manno, L-manno, synth*)
Daigo, K. *et al., Chem. Pharm. Bull.*, 1986, **34**, 2243 (*isol*)
Yoshikuni, Y. *et al., Agric. Biol. Chem.*, 1988, **52**, 121 (*Moranoline, pharmacol*)
Ziegler, T. *et al., Angew. Chem., Int. Ed.*, 1988, **27**, 716 (*Deoxymannojirimycin*)
Paulsen, H. *et al., Annalen*, 1988, 1121 (*synth, L-galacto*)
Fleet, G.W.J. *et al., FEBS Lett.*, 1988, **237**, 128 (*N-butyl, synth*)
Ezure, Y. *et al., J. Antibiot.*, 1988, **41**, 1142 (*Deoxymannojirimycin, isol*)
Cole, M.D. *et al., J. Chromatogr.*, 1988, **445**, 295 (*hplc*)
Karpas, A. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 1988, **85**, 9229 (*pharmacol, N-butyl*)
Furumoto, T. *et al., J. Antibiot.*, 1989, **42**, 1302 (*Deoxymannojirimycin*)
Von der Ostern, C.H. *et al., J.A.C.S.*, 1989, **111**, 3924 (*enzymatic synth*)
Paulsen, H. *et al., Annalen*, 1990, 953 (*synth, L-galacto*)
Ermert, P. *et al., Helv. Chim. Acta*, 1991, **74**, 2043 (*Moranoline, synth*)
Behling, J. *et al., Synth. Commun.*, 1991, **21**, 1383 (*Moranoline, synth*)
Baxter, E.W. *et al., Bioorg. Med. Chem. Lett.*, 1992, **2**, 1419 (*N-butyl, synth*)
Chida, N. *et al., Carbohydr. Res.*, 1992, **237**, 185 (*Deoxynojirimycin, synth*)
Faber, E.D. *et al., Pharm. Res.*, 1992, **9**, 1442 (*Deoxynojirimycin, metab*)
Hardick, D.J. *et al., Tetrahedron*, 1992, **48**, 6285 (*biosynth*)
Oshiro, Y. *et al., Toxicol. Lett.*, 1992, **60**, 275 (*N-butyl, tox*)

Ratner, L. *et al., AIDS Res. Hum. Retroviruses*, 1993, **9**, 291 (*N-butyl, HIV-1*)
Fowler, P.A. *et al., Carbohydr. Res.*, 1993, **246**, 377 (*L-ido*)
Hempel, A. *et al., J. Med. Chem.*, 1993, **36**, 4082 (*Deoxynojirimycin, cryst struct*)
Asano, N. *et al., Carbohydr. Res.*, 1994, **253**, 235-245; **259**, 243-255 (*N-Methyl-1-deoxynojirimycin, glycosides, 2-O-α-D-Galactopyranosyl-1-deoxynojirimycin*)
Zou, W. *et al., Carbohydr. Res.*, 1994, **254**, 25 (*Deoxymannojirimycin, synth*)
Platt, F.M. *et al., J. Biol. Chem.*, 1994, **269**, 8362 (*N-butyl, pharmacol*)
Park, K.H. *et al., J.C.S. Perkin 1*, 1994, 2871 (*synth, D-manno*)
Hughes, A.B. *et al., Nat. Prod. Rep.*, 1994, **11**, 135 (*Moranoline, rev*)
Block, T.M. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 1994, **91**, 2235 (*N-butyl, antihepatitis B activity*)
Johnson, C.R. *et al., Synlett*, 1995, 313-314 (*D-talo-Deoxyaltronojirimycin, Deoxyimannojkirimycin, synth, pmr, cmr*)
Ikota, N. *et al., Heterocycles*, 1997, **46**, 637-643 (*Moraniline, synth*)
Xu, J.-M. *et al., J.C.S. Perkin 1*, 1997, 741-746
Schaller, C. *et al., Carbohydr. Res.*, 1998, **314**, 25-35 (*D-gluco, L-gluco, D-ido, L-ido*)
Kazmaier, U. *et al., Eur. J. Org. Chem.*, 1998, 1833-1840 (*Deoxyaltronojirimycin*)
Davis, B.G. *et al., Tetrahedron: Asymmetry*, 1998, **9**, 2947-2960 (*L-gulo*)
Kim, H.-S. *et al., Planta Med.*, 1999, **65**, 437-439 (*isol, activity*)
Ruiz, M. *et al., Synlett*, 1999, 204-206, (*D-talo*)
Uriel, C. *et al., Synlett*, 1999, 593-595 (*synth, D-galacto, L-altro*)
Matos, C.R.R. *et al., Synthesis*, 1999, 571-573 (*synth, Deoxynojirimycin*)
Meyers, A.I. *et al., Tetrahedron*, 1999, **55**, 8931-8952 (*L-manno, synth*)
Cox, T. *et al., Lancet*, 2000, **355**, 1481-1485 (*N-butyl, pharmacol*)
Lee, B.W. *et al., Synthesis*, 2000, 1305-1309 (*L-ido*)
Ranes, M.K. *et al., Br. J. Cancer*, 2001, **84**, 1107-1114 (*N-butyl, pharmacol*)
Asano, N. *et al., Eur. J. Biochem.*, 2001, **268**, 35-41 (*Angylocalyx pynaertii isolates*)
Watson, A.A. *et al., Phytochemistry*, 2001, **56**, 265-295
Spreitz, J. *et al., Carbohydr. Res.*, 2002, **337**, 183-186 (*Deoxymannojirimycin, synth*)
Joseph, C.C. *et al., Carbohydr. Res.*, 2002, **337**, 1083-1087 (*L-gulo form, D-talo-form, synth*)
Schiffmann, R. *et al., Drugs*, 2002, **62**, 733-742 (*N-butyl, rev*)
Ruiz, M. *et al., Tetrahedron: Asymmetry*, 2002, **13**, 795-799 (*D-allo, D-gulo, synth*)
Weiss, M. *et al., Cancer Res.*, 2003, **63**, 3654-3658 (*OGT 2378*)
Lachmann, R.H. *et al., Curr. Opin. Invest. Drugs*, 2003, **4**, 472-479 (*miglustat, rev*)
McCormack, P.L. *et al., Drugs*, 2003, **63**, 2427-2434 (*miglustat, rev*)
Sorbera, L.A. *et al., Drugs of the Future*, 2003, **28**, 229-236 (*N-butyl, rev*)
Banwell, M.G. *et al., Org. Biomol. Chem.*, 2003, 2035-2037 (*Deoxymannonojirimycin 6-rhamnoside, synth*)
Zimran, A. *et al., Philos. Trans. R. Soc. London, B*, 2003, **358**, 961-966 (*N-butyl, pharmacol*)
Somfai, P. *et al., Tetrahedron*, 2003, **59**, 1293-1299 (*Deoxynojirimycin, synth*)
Pyun, S.-J. *et al., Heterocycles*, 2004, **62**, 333-341 (*Deoxygalactonojirimycin, synth*)
Kimura, T. *et al., J. Agric. Food Chem.*, 2004, **52**, 1415-1418 (*Deoxynojirimycin, detn, hplc*)
Amat, M. *et al., Tet. Lett.*, 2004, **45**, 5355-5358 (*D-gulo-form, synth*)
Morwenna, M.S.M. *et al., Eur. J. Org. Chem.*, 2005, 2159-2191 (*rev, synth*)
Asano, N. *et al., J. Nat. Prod.*, 2005, **68**, 1238-1242 (*5-galactoside, 3-,4-,5-glucosides*)
Boglio, C. *et al., Org. Lett.*, 2005, **7**, 4851-4854 (*Deoxymannojirimycin, synth*)
Pyun, S.-J. *et al., Tetrahedron*, 2005, **61**, 1413-1416 (*Deoxygulonojirimycin, synth, abs config*)
Sakai, R. *et al., J. Antibiot.*, 2006, **59**, 507-511 (*1-Deoxynojirimycin 6-phosphates*)
Ghosh, S. *et al., Tet. Lett.*, 2006, **47**, 6041-6044 (*synth*)
Song, X. *et al., Tet. Lett.*, 2007, **48**, 3115-3118 (*synth*)

2-Hydroxy-2-methylpropanoic acid, 9CI H-617

2-Methyllactic acid, 8CI. 2-Hydroxyisobutyric acid. Acetonic acid

[594-61-6]

$(H_3C)_2C(OH)COOH$

$C_4H_8O_3$ 104.105

Hygroscopic prisms (Et_2O). Sol. H_2O; spar. sol. C_6H_6. Mp 79°. Bp 212° Bp_{12} 114°.

Nitrile: 2-Hydroxy-2-methylpropanenitrile. 2-Cyano-2-propanol. 2-Hydroxyisobutyronitrile. Acetone cyanohydrin

[75-86-5]

Used in place of HCN in Gattermann reaction for formylation of arenes. V. sol. H_2O; spar. sol. petrol. Mp -19°. Bp_{23} 82°.

▶ Hydrolyses readily to HCN and Me_2CO. Fl. p. 64/74°, autoignition temp. 688°. LD_{50} (rat, orl) 17.8 mg/kg. LD_{50} (rbt, skn) 17 mg/kg. Human fatalities reported from skin contact or oral ingestion. OD9275000

Nitrile, O-*β-D-glucopyranoside: 2-(β-D-Glucopyranosyloxy)-2-methylpropanenitrile, 9CI*. ***Linamarin***. *Phaseolunatin. Manihotoxin*

[554-35-8]

$C_{10}H_{17}NO_6$ 247.247

Occurs in flax (*Linum usitatissimum*), manioc (*Manihot utilissimus*), *Phaseolus lunatus, Trifolium repens* (white clover) and other plants. First isol. in 1830. Needles. Mp 143-144°. $[\alpha]_D$ -28.5 (c, 3.86 in H_2O).

▶ Exp. teratogen. TZ4850000

Nitrile, O-*[β-D-glucopyranosyl-(1→6)-β-D-glucopyranoside]:* ***Linustatin***. *Linamarin gentiobioside*

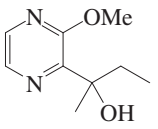
[72229-40-4]

$C_{16}H_{27}NO_{11}$ 409.389

Isol. from *Passiflora pendens* and flax seed meal. Cryst. (EtOH). Mp 123-123.5°. $[\alpha]_D^{25}$ -37 (c, 0.31 in H_2O).

Butler, G.W. *et al., Phytochemistry*, 1965, **4**, 127 (*Linamarin*)
Malik, B.K. *et al., Indian J. Chem., Sect. B*, 1978, **16**, 76 (*Linamarin*)
Smith, C.R. *et al., J.O.C.*, 1980, **45**, 507 (*Linustatin*)
Hirata, K. *et al., CA*, 1990, **114**, 162500n (*Linamarin, anal*)
Olafsdottir, E.S. *et al., Phytochemistry*, 1992, **31**, 4129 (*biosynth*)
Nakajima, N. *et al., Biosci., Biotechnol., Biochem.*, 1998, **62**, 453-458 (*Linamarin, synth, pmr, cmr*)

2-(1-Hydroxy-1-methylpropyl)-3-methoxypyrazine H-618



$C_9H_{14}N_2O_2$ 182.222

Prod. by *Chondromyces crocatus*. Oil.

Schulz, S. *et al., Tetrahedron*, 2004, **60**, 3863-3872 (*isol, synth, pmr, cmr*)

2-(1-Hydroxy-2-methylpropyl)-3-methoxypyrazine H-619

$C_9H_{14}N_2O_2$ 182.222

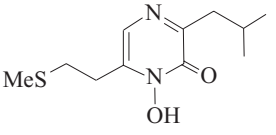
Prod. by *Chondromyces crocatus*.

Schulz, S. *et al., Tetrahedron*, 2004, **60**, 3863-3872 (*isol, synth, pmr, cmr*)

1-Hydroxy-3-(2-methylpropyl)-6-[2-(methylthio)ethyl]-2(1*H*)-pyrazinone H-620

*1-Hydroxy-3-isobutyl-6-[2-(methylthio)ethyl]-2(1*H*)-pyrazinone*

[37175-51-2]



$C_{11}H_{18}N_2O_2S$ 242.341

Metab. from *Aspergillus flavus*. Mp 114-116°.

MacDonald, J.C. *et al., Can. J. Biochem.*, 1972, **50**, 543 (*isol, pmr, ms, struct*)

1-Hydroxy-6-(2-methylpropyl)-3-[2-(methylthio)ethyl]-2(1*H*)-pyrazinone H-621

*1-Hydroxy-6-isobutyl-3-[2-(methylthio)ethyl]-2(1*H*)-pyrazinone*

[37175-52-3]

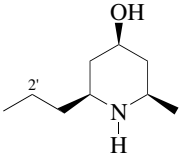
$C_{11}H_{18}N_2O_2S$ 242.341

Metab. from *Aspergillus flavus*. Mp 114-116°.

MacDonald, J.C. *et al., Can. J. Biochem.*, 1972, **50**, 543 (*isol, pmr, ms, struct*)

4-Hydroxy-2-methyl-6-propylpiperidine H-622

2-Methyl-6-propyl-4-piperidinol, 9CI



$C_9H_{19}NO$ 157.255

(2*R*,4*S*,6*S*)-*form*

Trace alkaloid from *Picea pungens*. Cryst. (EtOAc). Mp 88-89° (synthetic).

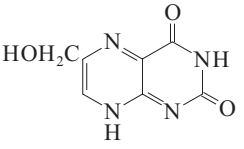
2′-Oxo: 1-(4-Hydroxy-6-methyl-2-piperi-

dinyl)-2-propanone. 4-Hydroxy-2-methyl-6-(2-oxopropyl)piperidine
$C_9H_{17}NO_2$ 171.239
Trace alkaloid from *Picea pungens*. Oil (synthetic).

Tawara, J.N. *et al., J. Nat. Prod.*, 1999, **62**, 321-323 (*isol, synth, pmr, cmr, ms*)

6-(Hydroxymethyl)-2,4(1*H*,3*H*)-pteridinedione H-623

6-Hydroxymethyllumazine, 8CI
[10129-99-4]

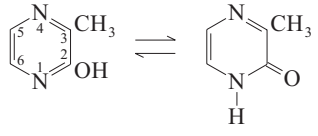


$C_7H_6N_4O_3$ 194.149
Isol. from leaves of *Spinacia oleracea*. Mp 260-262° dec.

Sugiura, K. *et al., CA*, 1966, **65**, 15375; 20508 (*isol, uv, synth, struct*)

2-Hydroxy-3-methylpyrazine H-624

*3-Methyl-2(1*H*)-pyrazinone, 9CI. 3-Methylpyrazinol, 8CI*
[19838-07-4]



$C_5H_6N_2O$ 110.115
Cryst. (EtOAc). Mp 151-152°.

OH-form

Me ether: 2-Methoxy-3-methylpyrazine
[2847-30-5]
$C_6H_8N_2O$ 124.142
Prod. by *Chondromyces crocatus*. Flavouring ingredient. Liq. Bp_{60} 87°.

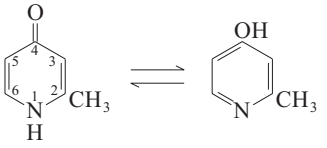
Et ether: 2-Ethoxy-3-methylpyrazine
[32737-14-7]
$C_7H_{10}N_2O$ 138.169
Flavouring ingredient. Bp_{48} 88-90°.

Et ether, 4-oxide:
$C_7H_{10}N_2O_2$ 154.168
Cryst. (EtOH). Mp 121-122.5°.

Karmus, G. *et al., J.A.C.S.*, 1952, **74**, 1580 (*synth*)
Hirschberg, A. *et al., J.O.C.*, 1961, **26**, 2356-2360 (*Et ether, synth*)
Klein, B. *et al., J.O.C.*, 1964, **29**, 2623-2626 (*Et ether, Et ether N-oxide*)
Fr. Pat., 1965, 1 391 212; *CA*, **62**, 16270g (*FEMA 3183*)
Kolor, M.G. *et al., Org. Mass Spectrom.*, 1971, **5**, 959-966 (*Me ether, ms*)
Nakel, G.M. *et al., J. Agric. Food Chem.*, 1972, **20**, 682-684 (*Me ether, struct*)
Bramwell, A.F. *et al., Tetrahedron*, 1972, **28**, 4155-4170; 1973, **29**, 3939 (*synth, pmr*)
Parliment, T.H. *et al., J. Agric. Food Chem.*, 1973, **21**, 714-716 (*synth*)
Calabretta, P.J. *et al., Cosmet. Perfum.*, 1975, **90**, 74; 76; 79-80 (*Me ether, synth, use*)
Macdonald, J.C. *et al., Tetrahedron*, 1976, **32**, 655 (*pmr, cmr*)
Fenaroli's Handbook of Flavor Ingredients, 4th edn., (ed. Burdock, G.A.), CRC Press, 2001, 1057-1058; *Fenaroli's Handbook of Flavor Ingredients, 3rd edn., (ed. Burdock, G.A.), CRC Press*, 1995, 1118 (*FEMA 3569, FEMA 3183*)
Schulz, S. *et al., Tetrahedron*, 2004, **60**, 3863-3872 (*isol*)

4-Hydroxy-2-methylpyridine H-625

*2-Methyl-4(1*H*)-pyridinone. 2-Methyl-4-pyridinol*
[18615-86-6]



NH−form *OH−form*

C_6H_7NO 109.127
NH-form predominates. Isol. from the fungus *Physisporinus sanguinolentus*. Cryst. (Me_2CO). Mp 174-176°. $Bp_{0.003}$ 180-189°.

Hydrochloride: Mp 116°.

N-*Oxide:*
$C_6H_7NO_2$ 125.127
Mp 192-193°.

OH-form

Me ether, N-*oxide:*
$C_7H_9NO_2$ 139.154
Mp 78-80°.

Et ether: 4-Ethoxy-2-methylpyridine
$C_8H_{11}NO$ 137.181
Bp *ca.* 220.

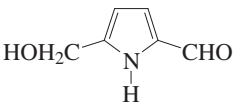
Ph ether, N-*oxide:*
$C_{12}H_{11}NO_2$ 201.224
Mp 161-162° (as hydrochloride).

Benzyl ether, N-*oxide:* [63071-08-9]
$C_{13}H_{13}NO_2$ 215.251
Fluffy cryst. (Me_2CO). Mp 154-156°.

Collie, J.N. *et al., J.C.S.*, 1925, **127**, 962
Suzuki, *et al., Yakugaku Zasshi*, 1948, **68**, 126
Kato, T. *et al., Yakugaku Zasshi*, 1955, **75**, 1239; *CA*, **50**, 8666
Nantka-Namirski, P. *et al., Acta Pol. Pharm.*, 1967, **24**, 231; *CA*, **69**, 2827y
Hom, R.K. *et al., J.O.C.*, 1996, **61**, 2624 (*benzyl ether oxide*)
Svensson, M. *et al., Phytochemistry*, 2001, **56**, 747-751 (*isol, pmr, cmr, ms*)

5-(Hydroxymethyl)-1*H*-pyrrole-2-carboxaldehyde H-626

2-Formyl-5-(hydroxymethyl)pyrrole
[67350-50-9]



$C_6H_7NO_2$ 125.127
Cryst. (C_6H_6). Mp 94-95°.

O-*(4-Hydroxybutanoyl): (5-Formyl-1*H*-pyrrol-2-yl)methyl 4-hydroxybutanoate*
$C_{10}H_{13}NO_4$ 211.217
Alkaloid from the seeds of *Castanea sativa*. Oil. λ_{max} 255 (sh) ; 291 (MeOH).

N-*Me: 5-Hydroxymethyl-1-methylpyrrolecarboxaldehyde*
[29813-44-3]
$C_7H_9NO_2$ 139.154
Oil or cryst. Mp 23-24°. Subl.0.01 80.

N-*Me,* O-*Ac:*
$C_9H_{11}NO_3$ 181.191
Cryst. Mp 20-20.2°.

N-*(3-Methylbutyl):* ***Ganoine***
[133086-80-3]
$C_{11}H_{17}NO_2$ 195.261
Alkaloid from the mycelium of *Ganoderma capense*.

N-*(2-Phenylethyl):* ***Ganodine***
[133086-81-4]
$C_{14}H_{15}NO_2$ 229.278
Alkaloid from the mycelium of *Ganoderma capense*.

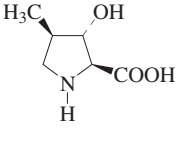
N-*[2-(4-Hydroxyphenyl)ethyl]:* ***Pyrrolezanthine***
$C_{14}H_{15}NO_3$ 245.277
Alkaloid from the stems of *Zanthoxylum simulans* (Szechuan pepper). Needles (C_6H_6). Mp 106-108°. λ_{max} 206 (log ϵ 3.9); 224 (log ϵ 3.8); 296 (log ϵ 3.89) (EtOH).

*Me ether: 5-(Methoxymethyl)-1*H*-pyrrole-2-carboxaldehyde. 2-Formyl-5-(methoxymethyl)-1*H*-pyrrole*
$C_7H_9NO_2$ 139.154
Alkaloid from the roots of *Salvia miltiorrhiza*. Brown oil.

Kato, H. *et al., Agric. Biol. Chem.*, 1970, **34**, 1071-1077 (*synth, uv, pmr*)
Jurch, G.R. *et al., Carbohydr. Res.*, 1970, **15**, 233-239 (*synth, derivs, ir, pmr, ms*)
Severin, T. *et al., Chem. Ber.*, 1975, **108**, 1768-1775 (*synth, derivs, ir, pmr, ms*)
Olsson, K. *et al., Acta Chem. Scand., Ser. B*, 1977, **31**, 469-474; 1978, **32**, 249-256 (*synth, derivs, ir, pmr, ms*)
Yang, J.J. *et al., Yaoxue Xuebao*, 1990, **25**, 555; 612; *CA*, **114**, 160668z; 164574p (*Ganoine, Ganodine*)
Hiermann, A. *et al., Fitoterapia*, 2002, **73**, 22-27 (*4-hydroxybutanoyl*)
Yang, Y.-P. *et al., Phytochemistry*, 2002, **61**, 567-572 (*Pyrrolezanthine*)
Don, M.-J. *et al., J. Nat. Prod.*, 2005, **68**, 1066-1070 (*Me ether*)

3-Hydroxy-4-methyl-2-pyrrolidinecarboxylic acid H-627

3-Hydroxy-4-methylproline, 9CI



(2*S*,3*S*,4*R*)-*form*

$C_6H_{11}NO_3$ 145.158

(2*S*,3*S*,4*R*)-*form*

Hydrochloride: [208709-19-7]
$[\alpha]_D^{24}$ -4 (c, 0.48 in MeOH).

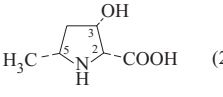
(2*S*,3*S*,4*S*)-*form* [54615-51-9]
Component of the antibiotic complex Antibiotic A 30912. Mp 265° dec. $[\alpha]_D$ -21 (c, 0.425 in H_2O).

Keller-Schierlein, W. *et al., Helv. Chim. Acta*,

1974, **57**, 2459-2477 (*isol*)
Koyama, G. *et al., Helv. Chim. Acta*, 1974, **57**, 2477-2483 (*cryst struct*)
Keller-Jusler, C. *et al., Tet. Lett.*, 1976, 4147 (*isol*)
Kurokawa, N. *et al., J.A.C.S.*, 1986, **108**, 6041-6043 (*synth*)
Mulzer, J. *et al., J.A.C.S.*, 1989, **111**, 7500-7504 (*synth, pmr, cmr, ir*)
Langlois, N. *et al., Tetrahedron*, 2000, **56**, 2437-2448 (*2S,3S,4S-form, 2S,3S,4R-form, synth, pmr, cmr*)
Raghavan, S. *et al., Tet. Lett.*, 2003, **44**, 7459-7462 (*2R,3R,4R-form, synth*)
Inaba, H. *et al., Heterocycles*, 2005, **65**, 2657-2665 (*2R,3R,4R-form, synth*)

3-Hydroxy-5-methyl-2-pyrrolidinecarboxylic acid H-628

3-Hydroxy-5-methylproline, 9CI



(2*R**,3*S**,5*R**)–*form*

$C_6H_{11}NO_3$ 145.158

(2*R,3*S**,5*R**)-*form***
(2α,3α,5α)-form
[55137-75-2]
Isol. from hydrolysates of Actinomycin Z.

(2*RS*,3*SR*,4*RS*)-*form*
(±)-(2α,3α,5α)-form
[61248-03-1]
Needles (Me_2CO aq.). Mp 267-268°.

(2*RS*,3*RS*,5*RS*)-*form*
(±)-(2α,3β,5α)-form
[61248-05-3]
Plates (Me_2CO aq.). Mp 204-205° dec.

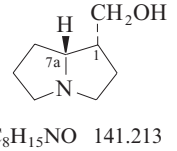
(2*RS*,3*RS*,5*SR*)-*form*
(±)-(2α,3β,5β)-form
[61248-07-5]
Plates (Me_2CO aq.). Mp 259-260° dec.

(2*RS*,3*SR*,5*SR*)-*form*
(±)-(2α,3α,5β)-form
[61248-04-2]
Plates (Me_2CO aq.). Mp 242-243° dec.

Katz, E. *et al., Biochem. Biophys. Res. Commun.*, 1975, **63**, 502 (*isol, struct, ms*)
Mauger, A.B. *et al., J.O.C.*, 1977, **42**, 1000 (*struct, synth, ms, pmr*)
Fushiya, S. *et al., Chem. Lett.*, 1987, 2229 (*synth*)

1-Hydroxymethylpyrrolizidine H-629

*Hexahydro-1*H*-pyrrolizine-1-methanol, 9CI*



(1*R*,7*aR*)–*form*

$C_8H_{15}NO$ 141.213

Only simple esters are included here. Many others have individual entries. pK_a 10.83 (26°).

(1*R*,7*aR*)-*form*
***Lindelofidine**. (+)-Isoretronecanol*
[488-06-2]
Necine base from pyrrolizidine alkaloids, also isol. from *Thesium minkwitzianum, Vandopsis lissochiloides* and *Vandopsis gigantea* (Santalaceae, Orchidaceae). Oil or cryst. Mp 40-41°. Bp_2 116-117°. $[\alpha]_D^{23}$ +72 (c, 1 in EtOH).

Picrate: Mp 193-194°.

Ac: ***Lindelofidine acetate***
[26673-87-0]
$C_{10}H_{17}NO_2$ 183.25
Alkaloid from *Vandopsis lissochiloides* and *Vandopsis gigantea* (Orchidaceae). Oil. $[\alpha]_D^{24}$ +69 (c, 0.6 in $CHCl_3$).

4-Hydroxy-E-*cinnamoyl:* ***Thesinine***
[488-02-8]
$C_{17}H_{21}NO_3$ 287.358
Alkaloid from *Thesium minkwitzianum* (Santalaceae). Mp 38-40°.

O-*[α-L-Rhamnopyranosyl-(→4)-4-hydroxy*-E-*cinnamoyl]:* ***Thesinine 4′-rhamnoside***
$C_{23}H_{31}NO_7$ 433.5
Alkaloid from *Tephroseris kirilowii*. Amorph. solid. $[\alpha]_D^{23}$ -72.7 (c, 0.55 in MeOH). λ_{max} 220 (log ε 4.22); 298 (log ε 4.22) (MeOH).

O-*[β-D-Glucopyranosyl-(→4)-4-hydroxy*-E-*cinnamoyl]:* ***Thesinine 4′-glucoside***
$C_{23}H_{31}NO_8$ 449.5
Alkaloid from the seeds of *Borago officinalis* (borago). Amorph. solid. $[\alpha]_D^{20}$ -22.8 (c, 2 in DMSO). λ_{max} 204 (log ε 4.15); 225 (log ε 4.06); 297 (log ε 4.28); 305 (log ε 4.29) (MeOH).

(1*R*,7*aS*)-*form*
Trachelanthamidine
[526-64-7]
Alkaloid present in *Eupatorium maculatum* and *Phalaenopsis equestris* (Asteraceae, Orchidaceae); also obt. by hydrol. of Trachelanthamine and Viridiflorine. Oil. Bp_{12} 134°. $[\alpha]_D^{20}$ -14.91 (c, 1 in EtOH).

O-*[2*S*-Hydroxy-2-(1*S*-hydroxyethyl)-4-methylpentanoyl]:*
$C_{16}H_{29}NO_4$ 299.409
Alkaloid from the roots of *Anchusa strigosa*. Yellow oil. $[\alpha]_D^{25}$ +2 (c, 0.1 in MeOH). λ_{max} 233 (sh) ; 275 (MeOH).

O-*(4-Hydroxy-3,5-dimethoxybenzoyl):* ***Alafine**. Syringyltrachelanthamidine*
$C_{17}H_{23}NO_5$ 321.372
Mp 167-168°. $[\alpha]_D$ +5 ($CHCl_3$).

(1*S*,7*aR*)-*form*
Laburnine
[3348-73-0]
Alkaloid from the seeds of *Cytisus laburnum* and from *Vandopsis* spp. (Fabaceae, Orchidaceae). Oil. Bp_{12} 134°. $[\alpha]_D^{20}$ +17.01 (c, 1 in EtOH).

Ac: ***Laburnine acetate**. Acetyllaburnine*
$C_{10}H_{17}NO_2$ 183.25
Alkaloid from *Vandopsis lissochiloides* and *Vandopsis gigantea* (Orchidaceae). $[\alpha]_D^{24}$ +12 (c, 5.1 in EtOH).

Tigloyl: ***Tigloyllaburnine**. Laburnine tiglate*
$C_{13}H_{21}NO_2$ 223.314
Alkaloid in *Planchonella thyrsoidea* (preferred genus name *Pouteria*) and *Planchonella anteridifera* (Sapotaceae). Identified after hydrol. Prob. occurs as the angelate in the plant.

O-*Benzoyl:* ***Benzoyllaburnine**. Laburnine benzoate*
$C_{15}H_{19}NO_2$ 245.321
Alkaloid detected in *Planchonella thyrsoidea* and *Planchonella anteridifera* (Sapotaceae). Identified after hydrol. to Laburnine and benzoic acid.

(1*S*,7*aS*)-*form*
Isoretronecanol
[526-63-6]
Alkaloid present in *Planchonella equestris*, also obt. by hydrol. of other pyrrolizidine alkaloids (Sapotaceae). Oil. Bp_2 116-117°. $[\alpha]_D^{20}$ -77.5 (c, 2.5 in MeOH). pK_a 10.83 (26°).

Tigloyl: ***Isoretronecyl tiglate***
$C_{13}H_{21}NO_2$ 223.314
Minor alkaloid from a *Planchonella* sp. (Sapotaceae).

O-*(2*R*-Hydroxy-3*R*-methylpentanoyl):* ***Cremastrine***
$C_{14}H_{25}NO_3$ 255.356
Alkaloid from the bulbs of *Cremastra appendiculata*. Inhibitor of the muscarinic M3 receptor. Syrup. $[\alpha]_D^{25}$ -26.8 (c, 1 in EtOH).

(1*RS*,7*aRS*)-*form*
(±)-Isoretronecanol
[18929-90-3]
Yellow oil. Bp_3 118-119°.

Picrate:
Yellow needles (EtOH). Mp 192-193° (189.5-191°).

(1*RS*,7*aSR*)-*form*
(±)-Trachelanthamidine
[18929-91-4]
Yellow oil.

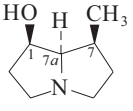
Picrate: Mp 174-175.5°.

Leonard, N.J. *et al., J.A.C.S.*, 1950, **72**, 2537 (*synth, struct*)
Arendaruk, A.P. *et al., Zh. Obshch. Khim.*, 1960, **30**, 670; *CA*, **54**, 24835d (*isol, Lindelofidine, Thesinine*)
Tsuda, Y. *et al., Can. J. Chem.*, 1963, **41**, 1919 (*isol*)
Hart, N.K. *et al., Aust. J. Chem.*, 1966, **19**, 1259; 1968, **21**, 1393 (*Benzoyllaburnine, Tigloyllaburnine, isol, esters*)
Lindström, B. *et al., Acta Chem. Scand.*, 1969, **23**, 3352 (*Acetyllaburnine*)
Pais, M. *et al., Ann. Pharm. Fr.*, 1971, **29**, 57 (*Alafine*)
Abdullaev, U.A. *et al., Khim. Prir. Soedin.*, 1972, **8**, 634; *Chem. Nat. Compd. (Engl. Transl.)*, 1972, **8**, 602 (*ms*)
Brandänge, S. *et al., Acta Chem. Scand.*, 1973, **27**, 1096 (*isol, Laburnine, Lindelofidine, acetates*)
Danishefsky, S. *et al., J.A.C.S.*, 1977, **99**, 4783 (*synth*)
Borch, R.F. *et al., J.O.C.*, 1977, **42**, 1225 (*synth*)
Pinnick, H.W. *et al., J.O.C.*, 1978, **43**, 4662-4663 (*Isoretronecanol, Trachelanthamidine, synth*)
Muchowski, J.M. *et al., Tet. Lett.*, 1980, **21**, 4585 (*synth*)
Robins, D.J. *et al., J.C.S. Perkin 1*, 1981, 909-913 (*synth*)
Robins, D.J. *et al., Chem. Comm.*, 1982, 1289-1290 (*Trachelanthamidine, synth*)

Terao, Y. *et al., Chem. Pharm. Bull.*, 1982, **30**, 3167 (*synth*)
Iwashita, T. *et al., J.O.C.*, 1982, **47**, 230 (*synth*)
Flitsch, W. *et al., Annalen*, 1983, 521 (*synth*)
Tatsuta, K. *et al., J.A.C.S.*, 1983, **105**, 4096 (*synth*)
Blum, Z. *et al., Acta Chem. Scand., Ser. B*, 1984, **38**, 297 (*synth*)
Kametani, T. *et al., Heterocycles*, 1984, **22**, 729 (*synth*)
Chamberlin, A.R. *et al., J.O.C.*, 1984, **49**, 1682 (*synth*)
Gramain, J.-C. *et al., J.O.C.*, 1985, **50**, 710 (*synth*)
Ortiz, C. *et al., Tet. Lett.*, 1985, **26**, 2831 (*synth*)
Celerier, J.P. *et al., Tet. Lett.*, 1987, **28**, 6597 (*Isoretronecanol, synth, pmr, cmr*)
Keusenkothen, P.F. *et al., J.C.S. Perkin 1*, 1994, 2485 (*synth*)
Knight, D.W. *et al., J.C.S. Perkin 1*, 1997, 2089 (*synth*)
David, O. *et al., J.O.C.*, 1999, **64**, 3122-3131 (*synth, pmr, cmr*)
Bertrand, S. *et al., Tet. Lett.*, 1999, **40**, 3173-3174 (*synth*)
Herrmann, M. *et al., Phytochemistry*, 2002, **60**, 399-402 (*Thesinine, Thesinine 4′-glucoside*)
Braca, A. *et al., Planta Med.*, 2003, **69**, 835-841 (*Anchusa strigosa ester*)
Lemaire, S. *et al., Eur. J. Org. Chem.*, 2004, 2840-2847 (*Isoretronecanol, synth*)
Chang, M.-Y. *et al., Heterocycles*, 2005, **65**, 2965-2971 (*Trachelanthamidine, synth*)
Ikeda, Y. *et al., J. Nat. Prod.*, 2005, **68**, 572-573 (*Cremastrine*)
Pereira, E. *et al., Tet. Lett.*, 2005, **46**, 2691-2693 (*Isoretronecanol, synth*)
Wang, Y.-H. *et al., J. Asian Nat. Prod. Res.*, 2008, **10**, 25-31 (*Thesinine 4′-rhamnoside*)
Ishibashi, H. *et al., Tetrahedron*, 2008, **64**, 7771-7773 (*Trachelanthamidine, synth*)

1-Hydroxy-7-methylpyrrolizidine H-630

*Hexahydro-7-methyl-1*H*-pyrrolizin-1-ol, 9CI. 7-Methyl-1-pyrrolizidinol*



$C_8H_{15}NO$ 141.213

(1*R*,7*S*,7*aR*)-*form*

Retronecanol

[567-39-5]

Necine base obt. by redn. of retronecine or by reductive hydrol. of pyrrolizidine alkaloids, e.g. Retrorsine. Cryst. (petrol). Mp 95-96°. Bp_{30} 140°. $[\alpha]_D^{28}$ -91.1 (EtOH). pK_a 10.88 (25°).

Picrate: Mp 208°.

Ac:

$C_{10}H_{17}NO_2$ 183.25

Oil. Bp_{12} 107°.

Ac, picrate:

Long prisms (EtOH). Mp 176°.

O-*(4-Methoxybenzoyl):* ***Ehretinine***

[76231-29-3]

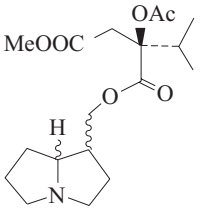
$C_{16}H_{21}NO_3$ 275.347

Alkaloid from the leaves of *Ehretia aspera* (Ehretiaceae). Mp 187-188°. $[\alpha]_D^{25}$ -108 (c, 1 in MeOH). First report of a retronecanol ester alkaloid. May be an artifact arising from hydrogenolysis of retronecine diester alkaloids during isol.

Barger, G. *et al., J.C.S.*, 1935, 11
Warren, F.L. *et al., J.C.S.*, 1958, 4574 (*abs config*)
Neuner-Jehle, M. *et al., Monatsh. Chem.*, 1965, **96**, 321 (*ms*)
Culvenor, C.C.J. *et al., J.C.S.(C)*, 1971, 3653 (*cd*)
Suri, O.P. *et al., Phytochemistry*, 1980, **19**, 1273 (*isol, ir, pmr, ms, struct, synth, Ehretinine*)
Robins, D.J. *et al., Alkaloids (London)*, 1982, **12**, 61 (*Ehretinine*)
Pandey, G. *et al., Tet. Lett.*, 1996, **37**, 2285-2288; 1998, **39**, 8371 (*synth*)

1-Hydroxymethylpyrrolizidine methyl 2-*O*-acetyl-2-isopropylmalate H-631

[77156-31-1]



$C_{18}H_{29}NO_6$ 355.43

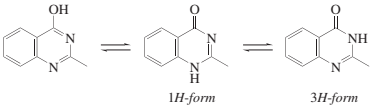
Ester of (*S*)-methyl 2-isopropylmalate with 1-Hydroxymethylpyrrolizidine, H-629 of undetd. config. Alkaloid from *Parsonsia heterophylla* and *Parsonsia spiralis* (Apocynaceae). Prob. a mixt. of diastereoisomers with stereochem. corresp. to Laburnine and Lindelofidine.

Cole, F.E. *et al., Biochemistry*, 1973, **12**, 3346 (*abs config*)
Edgar, J.A. *et al., Tet. Lett.*, 1980, **21**, 2657 (*isol, pmr, ms, struct*)

4-Hydroxy-2-methylquinazoline H-632

*2-Methyl-4(1*H*)-quinazolinone, 9CI. 2-Methyl-4-quinazolinol*

[1769-24-0]



$C_9H_8N_2O$ 160.175

1*H*-Form predominates. Prod. by *Bacillus cereus*. Inhibitor of poly(ADP-ribose) synthetase. Needles (EtOH). Sol. MeOH, C_6H_6; poorly sol. H_2O, hexane. Mp 240-242° (232-234°). λ_{max} 232 (ϵ 38900); 269 (ϵ 10200); 291 (ϵ 7240); 302 (ϵ 5750) (MeOH/HCl) (Derep). λ_{max} 229 (ϵ 38000); 280 (ϵ 14500); 309 (ϵ 9120) (MeOH/NaOH) (Derep). λ_{max} 225 (ϵ 40700); 263 (ϵ 12900); 303 (ϵ 7080); 314 (ϵ 5890) (MeOH) (Derep). λ_{max} 229 (ϵ 38000); 280 (ϵ 14400); 309 (ϵ 9200) (MeOH/NaOH) (Berdy).

▶ LD_{50} (mus, orl) 859 mg/kg. VA3677000

Hydrochloride: [29378-39-0]

Cryst. (MeOH). Dec. >320°.

1*H-form*

N-*Me: 1,2-Dimethyl-4(1*H*)-quinazolinone.* ***Glomerine***

[7471-65-0]

$C_{10}H_{10}N_2O$ 174.202

Alkaloid from the defensive secretion of the arthropod *Glomeris marginata*. Yellow needles (EtOAc). Mp 209-211°.

3*H-form*

N-*(2-Methoxycarbonylphenyl):*

$C_{17}H_{14}N_2O_3$ 294.309

Alkaloid from the roots of *Aconitum pseudo-laeve* var. *erectum*. Amorph. powder (MeOH). λ_{max} 227 (log ϵ 4.23); 231 (log ϵ 4.24); 266 (log ϵ 3.87); 273 (log ϵ 3.85); 306 (log ϵ 3.5); 316 (log ϵ 3.42) (EtOH).

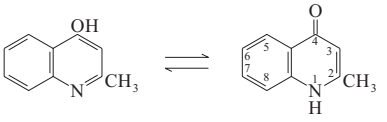
[110287-94-0 , 92442-54-1 , 132305-21-6 , 86030-13-9]

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 882A (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 467A (*nmr*)
Bogert, M.T. *et al., J.A.C.S.*, 1900, **22**, 523; 1902, **24**, 1031 (*synth*)
Schildknecht, H. *et al., Z. Naturforsch., B*, 1966, **21**, 121; 552 (*Glomerine, isol, uv, ir, pmr, ms, struct, synth*)
Schildknecht, H. *et al., Tet. Lett.*, 1967, 1815 (*biosynth*)
Goncalves, H. *et al., Bull. Soc. Chim. Fr.*, 1970, 2599 (*synth*)
Kametani, T. *et al., J.C.S. Perkin 1*, 1977, 2347 (*synth*)
Kirmani, M.Z. *et al., Indian J. Chem., Sect. B*, 1978, **16**, 526 (*ms*)
Naik, N.R. *et al., J. Indian Chem. Soc.*, 1979, **56**, 708 (*Glomerine, synth*)
Bhattacharrya, J. *et al., Heterocycles*, 1980, **14**, 1469 (*cmr*)
Etter, M.C. *et al., J.C.S. Perkin 2*, 1983, 115 (*synth, cryst struct*)
Gupton, J.T. *et al., Synth. Commun.*, 1984, **14**, 1013 (*synth, ir, pmr*)
Spasov, S. *et al., Magn. Reson. Chem.*, 1985, **23**, 795 (*pmr, cmr*)
Bajardi, M.L. *et al., Heterocycles*, 1986, **24**, 1367 (*synth*)
Singh, H. *et al., Tetrahedron*, 1986, **42**, 1449 (*synth*)
Shishoo, C.J. *et al., Indian J. Chem., Sect. B*, 1989, **28**, 1039 (*synth*)
Yoshida, S. *et al., J. Antibiot.*, 1991, **44**, 111 (*isol, props*)
Smith, K. *et al., Zh. Org. Khim.*, 2003, **39**, 452-462; *Russ. J. Org. Chem. (Engl. Transl.)*, 2003, **39**, 430-435 (*synth, ir, pmr, cmr, ms*)
Rocco, S.A. *et al., Synthesis*, 2004, 429-435 (*synth, ir, pmr*)
Shim, S.H. *et al., J. Nat. Prod.*, 2006, **69**, 400-402 (*N-methoxycarbonylphenyl*)

4-Hydroxy-2-methylquinoline H-633

*2-Methyl-4(1*H*)-quinolinone, 9CI. 2-Methyl-4(1*H*)-quinolone, 8CI. 4-Hydroxyquinaldine. 2-Methyl-4-quinolinol. γ-Quinaldone. Pseudane I*

[5660-24-2]



$C_{10}H_9NO$ 159.187
Tautomeric. Cryst. (H_2O). Mp 234-235°.
Hydrochloride:
Prisms + $1H_2O$ (H_2O). Mp 217° (anhyd.).
Methiodide:
Cryst. + $1H_2O$, losing H_2O at 100°. Mp 201° (anhyd.).
N-*Oxide:*
$C_{10}H_9NO_2$ 175.187
Mp 246-248°.

NH-form

N-*Me: 1,2-Dimethyl-4(1*H*)-quinolinone*
[6760-40-3]
$C_{11}H_{11}NO$ 173.214
Alkaloid from *Platydesma campanulata* and *Acronychia baueri* (Rutaceae). Needles (C_6H_6). Sol. H_2O, EtOH, hot C_6H_6. Mp 176°.

N-*Me, picrate:* Mp 234-238°.

N-*Acetoxymethyl: 1-Acetoxymethyl-2-methyl-4(1*H*)-quinolinone*
$C_{13}H_{13}NO_3$ 231.251
Alkaloid from aerial parts of *Boronia lanceolata* (Rutaceae). Needles ($CHCl_3$/MeOH). Mp 160-164°.

OH-form

O-*Ac:* [117498-01-8]
$C_{12}H_{11}NO_2$ 201.224
Liq. $Bp_{0.2}$ 100-102°.

Me ether: 4-Methoxy-2-methylquinoline. 4-Methoxyquinaldine
[31835-53-7]
$C_{11}H_{11}NO$ 173.214
Alkaloid from aerial parts of *Ruta montana*. Cryst. (H_2O). Mp 82° (63-65°). Bp 294-298°.

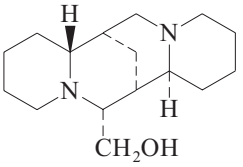
Et ether: 4-Ethoxy-2-methylquinoline. 4-Ethoxyquinaldine
[46272-56-4]
$C_{12}H_{13}NO$ 187.241
Mp 48°.

[607-67-0]

Aldrich Library of NMR Spectra, 2nd edn., 1983, **2**, 737C (*nmr*)
Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 860C (*ir*)
Knorr, L. *et al., Ber.*, 1897, **30**, 922-926 (*methiodide*)
Limpach, L. *et al., Ber.*, 1931, **64**, 969-970 (*synth*)
Backeberg, O.E. *et al., J.C.S.*, 1931, 2814-2817 (*synth*)
Werny, F. *et al., Tetrahedron*, 1963, **19**, 1293 (*isol, uv, pmr, synth, deriv*)
Lamberton, J.A. *et al., Aust. J. Chem.*, 1966, **19**, 1995 (*isol, ms, pmr, deriv*)
Werner, W. *et al., Tetrahedron*, 1969, **25**, 255 (*tautom*)
Schweizer, E.E. *et al., J.O.C.*, 1977, **42**, 200-205 (*Me ether, Et ether*)
Claret, P.A. *et al., Spectrosc. Lett.*, 1977, **10**, 25 (*pmr, cmr*)
Muscio, O.J. *et al., J.O.C.*, 1989, **54**, 166 (*deriv, synth*)
Ulubelen, A. *et al., Fitoterapia*, 1991, **62**, 279 (*4-Methoxyquinaldine*)
Ahsan, M. *et al., Phytochemistry*, 1993, **33**, 1507 (N-*acetoxymethyl*)

10-Hydroxymethylsparteine H-634

[139112-20-2]

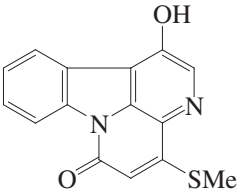


$C_{16}H_{28}N_2O$ 264.41
Constit. of *Genista sessilfolia* (Fabaceae). Mp 168-170° (as picrate).

Nasution, M.P. *et al., Tet. Lett.*, 1991, **32**, 5915

1-Hydroxy-4-(methylthio)-canthin-6-one H-635

*1-Hydroxy-4-methylthio-6*H*-indolo[3,2,1-de][1,5]naphthyridin-6-one, 9CI*



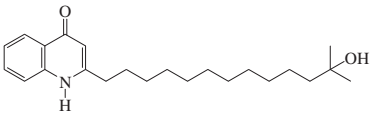
$C_{15}H_{10}N_2O_2S$ 282.322

S-*Oxide(*S-*):* ***9-Deoxycurtisin***
$C_{15}H_{10}N_2O_3S$ 298.322
Alkaloid from the mushroom *Boletus curtisii*. Pale yellow solid. $[\alpha]_D^{20}$ -70 (c, 0.05 in MeOH). λ_{max} 210 (log ϵ 1); 242 (sh) (log ϵ 0.3); 276 (sh) (log ϵ 0.21); 286 (log ϵ 0.26); 308 (log ϵ 0.19); 352 (log ϵ 0.18); 366 (log ϵ 0.3); 384 (log ϵ 0.35); 414 (log ϵ 0.2) (MeOH).

Bröckelmann, M.G. *et al., Eur. J. Org. Chem.*, 2004, 4856-4863 (*isol, uv, cd, ir, pmr, cmr, ms*)

2-(12-Hydroxy-12-methyltridecyl)-4(1*H*)-quinolinone H-636

4-Hydroxy-2-(12-hydroxy-12-methyltridecyl)quinoline

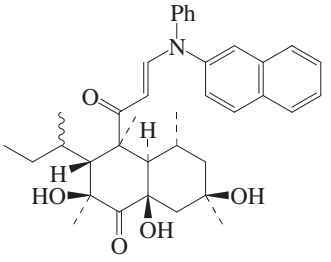


$C_{23}H_{35}NO_2$ 357.535
Alkaloid from the leaves of *Dictyoloma vandellianum*. Yellow gum. λ_{max} 238 ; 325 ; 335 (MeOH).

*3-Methoxy: 2-(12-Hydroxy-12-methyltridecyl)-3-methoxy-4(1*H*)-quinolinone*
$C_{24}H_{37}NO_3$ 387.561
Alkaloid from the leaves of *Dictyoloma vandellianum*. Yellow gum. λ_{max} 239 ; 330 ; 348 (MeOH).

Sartor, C.F.P. *et al., Phytochemistry*, 2003, **63**, 185-192 (*isol, pmr, cmr, ms*)

10-Hydroxy-18-(*N*-naphthalenyl-*N*-phenylamino)betaenone C H-637

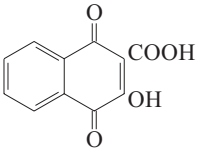


$C_{37}H_{45}NO_5$ 583.766
Prod. by a *Microsphaeropsis* sp. isol. from the sponge *Aplysina aerophoba*. Powder. $[\alpha]_D$ -44.4 (c, 1 in EtOH). λ_{max} 221 ; 350 (MeOH).

Brauers, G. *et al., J. Nat. Prod.*, 2000, **63**, 739-745

3-Hydroxy-1,4-naphthoquinone-2-carboxylic acid H-638

1,4-Dihydro-3-hydroxy-1,4-dioxo-2-naphthalenecarboxylic acid, 9CI



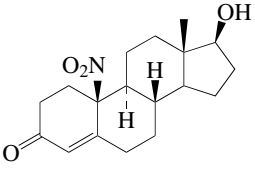
$C_{11}H_6O_5$ 218.165

Amide: [103646-20-4]
$C_{11}H_7NO_4$ 217.181
Constit. of *Rubia cordifolia*. Yellow cryst. (MeOH). Mp 228-230° dec. (subl. at 200°).

Me ether, amide: 2-Carbamoyl-3-methoxy-1,4-naphthoquinone
[144258-80-0]
$C_{12}H_9NO_4$ 231.207
Constit. of *Rubia cordifolia*. Yellow cryst. (MeOH). Mp 150-151°.

Bretschneider, H. *et al., Monatsh. Chem.*, 1957, **88**, 652 (*synth*)
Koyama, J. *et al., Phytochemistry*, 1992, **31**, 2907 (*isol, pmr, cmr, struct*)

17-Hydroxy-10-nitroestr-4-en-3-one H-639



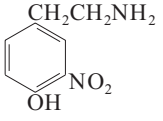
$C_{18}H_{25}NO_4$ 319.4

17β-*form*
Nitrohedon
[61573-76-0]
Constit. of the male of fossil plant *Palaeogelos doleros.*

Roedder, W. *et al., Pharm. Ztg.*, 1976, **121**, 479-484 (*isol*)

2-(4-Hydroxy-3-nitropheny-l)ethylamine H-640

4-(2-Aminoethyl)-2-nitrophenol, 9CI. 4-Hydroxy-2-nitrophenethylamine. 3-Nitrotyramine
[49607-15-0]



$C_8H_{10}N_2O_3$ 182.179
Isol. from the cactus *Cereus validus.* Yellow orange prisms. Mp 217° dec.

Hydrochloride: [63195-80-2]
Yellow-brown plates (EtOH). Mp 214-215°.

Nitrate: [63195-79-9]
Mp 214-216° dec.

N-*Ac:* N-*(4-Hydroxy-3-nitrophenylethyl)acetamide*
$C_{10}H_{12}N_2O_4$ 224.216
Metab. of *Pyricularia oryzae.* Isol. from the marine-derived *Flavobacterium* sp. T436. Yellow needles (C_6H_6/hexane). Mp 95-98°.

Me ether: 2-(4-Methoxy-3-nitrophenyl)ethylamine
$C_9H_{12}N_2O_3$ 196.205
Oil.

Me ether, hydrochloride:
Yellow needles (MeOH). Mp 231-232°.

N-*(2-Methylpropanoyl):* **N-*(2-Methylpropionyl)-3-nitrotyramine***
[173791-66-7]
$C_{12}H_{16}N_2O_4$ 252.269
Isol. from a facultatively anaerobic, halophilic bacterium sediment from the Great Salt Plains, Oklahoma. Shows cytotoxicity against murine leukaemia P-388. Fine needles (CH_2Cl_2). Mp 99-100°. λ_{max} 274 (ϵ 8860); 357 (ϵ 3350) (MeOH) (Berdy).

N-*(3-Methylbutanoyl):* **N-*(3-Methylbutanoyl)-3-nitrotyramine***
[173791-67-8]
$C_{13}H_{18}N_2O_4$ 266.296
Isol. from a facultatively anaerobic halophilic bacterium from sediment from the Great Salt Plains, Oklahoma. Fine needles (CH_2Cl_2). Mp 88-89°.

Waser, E. *et al., Helv. Chim. Acta*, 1923, **6**, 55 (*synth*)
Callow, R.K. *et al., J.C.S.*, 1929, 1453 (*Me ether*)
Neme, G. *et al., Phytochemistry*, 1977, **16**, 277 (*isol*)
Sviridov, S.I. *et al., Khim. Prir. Soedin.*, 1990, **26**, 811; *Chem. Nat. Compd. (Engl. Transl.)*, 1990, **26**, 691 (*isol, deriv*)
Fu, X. *et al., J. Nat. Prod.*, 1995, **58**, 1950 (*N-2-Methylpropionyl, N-3-Methylbutanoyl*)
Schuhmann, I. *et al., Dissertation*, Univ. of Göttingen, 2005, (*N-Ac, marine, isol*)

4-Hydroxy-3-nitrosobenzoic acid H-641

[32749-97-6]
$C_7H_5NO_4$ 167.121

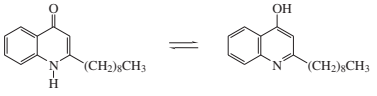
Fe complex (2:1): ***Actinoviridin A***
$C_{14}H_8FeN_2O_8$ 388.073
Isol. from *Streptomyces griseus.* Dark-green solid. Mp 300°. λ_{max} 268 (ϵ 26100); 295 (ϵ 22700); 433 (ϵ 7200); 686 (ϵ 6700) (MeOH) (Berdy).

Amide: [162152-90-1]
$C_7H_6N_2O_3$ 166.136
Prod. by *Streptomyces murayamensis.* Pale yellow cryst. (EtOH/hexane). Mp 145° dec. λ_{max} 233 (ϵ 11000); 280 (sh) (ϵ 5300); 373 (ϵ 2950) (MeOH). λ_{max} 233 (ϵ 11000); 373 (ϵ 2950) (MeOH) (Berdy). λ_{max} 232 (ϵ 11300); 288 (ϵ 4600); 372 (ϵ 3060) (MeOH-HCl) (Berdy). λ_{max} 206 (ϵ 10800); 267 (ϵ 13000); 449 (ϵ 4450) (MeOH-NAOH) (Berdy).

Cronheim, G. *et al., J.O.C.*, 1947, **12**, 7 (*synth*)
Lazar, J. *et al., Acta Chim. Acad. Sci. Hung.*, 1978, **98**, 327 (*synth*)
Kurobane, I. *et al., J. Antibiot.*, 1987, **40**, 1131 (*isol, struct, bibl*)
Cone, M.C. *et al., Tetrahedron*, 1995, **51**, 3095-3102 (*amide*)

4-Hydroxy-2-nonylquinoline H-642

2-Nonyl-4(1H)-quinolinone. 2-Nonyl-4-quinolinol. Pyo Ic. Pseudane IX
[55396-45-7]



$C_{18}H_{25}NO$ 271.402
Isol. from *Pseudomonas aeruginosa*. Also prod. by a bacterium isol. from the sponge *Suberea creba*. Antibacterial agent. Cryst. Sol. MeOH, Et_2O; poorly sol. H_2O, acids. Mp 138.8-139.2°. λ_{max} 213 (ϵ 23500); 236 (ϵ 26900); 316 (ϵ 10400); 327 (ϵ 10000) (MeOH) (Berdy). λ_{max} 236 (E1%/1cm 1050); 316 (E1%/1cm 431); 328 (E1%/1cm 415) (EtOH) (Berdy).

Oxalate: Mp 158-159°.

N-*Oxide:* [316-66-5]
$C_{18}H_{25}NO_2$ 287.401
Metab. of *Pseudomonas aeruginosa*. Leaflets (EtOH). Mp 148-149°.

1′,2′-Didehydro(E-): 2-(1-Nonenyl)-4(1H)-quinolinone. 4-Hydroxy-2-(1-nonenyl)quinoline. 2-(1-Nonenyl)-4-quinolinol. Δ^1-Pseudene IX. Pyo III
[60783-01-9]
[1033-24-5]
$C_{18}H_{23}NO$ 269.386
Isol. from *Pseudomonas aeruginosa*. Also prod. by a bacterium isol. from the sponge *Suberea creba*. Moderately active against gram-positive bacteria. Cryst. Sol. MeOH, Et_2O; poorly sol. H_2O. Mp 152.8-153.5°. λ_{max} 258 (ϵ 39000); 267 (ϵ 38000); 308 (ϵ 8700); 330 (ϵ 11000) (MeOH) (Berdy). λ_{max} 258 (E1%/1cm 1460); 266 (E1%/1cm 1376); 307 (E1%/1cm 340); 338 (E1%/1cm 434) (EtOH) (Berdy).

1′,2′-Didehydro(Z-):
$C_{18}H_{23}NO$ 269.386
Metab. of *Pseudomonas aeruginosa*.

3′,4′,6′,7′-Tetradehydro: ***2-(3,6-Nonadienyl)-4(1H)-quinolinone****. 4-Hydroxy-2-(3,6-nonadienyl)quinoline. 2-(3,6-Nonadienyl)-4-quinolinol*
[29479-51-4]
$C_{18}H_{21}NO$ 267.37
Alkaloid from *Vepris ampody* (Rutaceae). Mp 103°. Config. of double bonds unknown.

9′-Hydroxy: ***2-(9-Hydroxynonyl)-4(1H)-quinolinone***
[29479-52-5]
$C_{18}H_{25}NO_2$ 287.401
Alkaloid from leaves of *Vepris ampody* (Rutaceae). Cryst. (Me_2CO). Mp 50°.

8′-Oxo: 2-(8-Oxononyl)-4(1H)-quinolinone
[263026-21-7]
$C_{18}H_{23}NO_2$ 285.385
Alkaloid from *Ruta montana*. λ_{max} 216 (log ϵ 4.5); 236 (log ϵ 4.2); 320 (log ϵ 3.8); 332 (log ϵ 3.8) (MeOH).

8′-Oxo, N-*Me: 1-Methyl-2-(8-oxononyl)-4(1H)-quinolinone*
[263026-23-9]
$C_{19}H_{25}NO_2$ 299.412
Alkaloid from *Ruta montana*. λ_{max} 220 (log ϵ 4.2); 235 (log ϵ 4.5); 320 (log ϵ 3.8); 332 (log ϵ 3.8) (MeOH).

NH-form

N-*Me:* ***1-Methyl-2-nonyl-4(1H)-quinolinone***
[68353-24-2]
$C_{19}H_{27}NO$ 285.428
Alkaloid from *Ruta graveolens* (rue) and the ripe fruit of *Evodia rutaecarpa* (Rutaceae). Plates (C_6H_6/cyclohexane). Mp 71-75°.

N-*Acetoxymethyl:* ***1-Acetoxymethyl-2-nonyl-4(1H)-quinolinone***
[156547-73-8]
$C_{21}H_{29}NO_3$ 343.465
Alkaloid from aerial parts of *Boronia bowmanii* (Rutaceae). Amorph. solid. Mp 79°.

OH-form

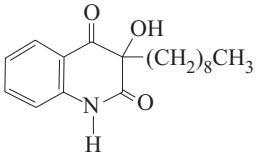
8′-Oxo, Me ether: ***4-Methoxy-2-(8-oxononyl)quinoline****. 9-(4-Methoxy-2-quinolinyl)-2-nonanone*
[263026-22-8]
$C_{19}H_{25}NO_2$ 299.412
Alkaloid from *Ruta montana*. λ_{max} 228 (log ϵ 4.5); 300 (log ϵ 2.9); 314 (log ϵ 2.8) (MeOH).

Hays, E.E. *et al., J. Biol. Chem.*, 1945, **159**, 725-750 (*isol, uv*)
Wells, I.C. *et al., J. Biol. Chem.*, 1952, **196**, 331-340 (*isol, struct, synth*)
Kan-Fan, C. *et al., Phytochemistry*, 1970, **9**, 1283-1291 (*9′-hydroxy, 3′,4′,6′,7′-tetradehydro*)
Ritter, C. *et al., Eur. J. Biochem.*, 1971, **18**, 391-400 (*biosynth*)
Wratten, S.J. *et al., Antimicrob. Agents Chemother.*, 1977, **11**, 411-414 (*isol*)
Kamikado, T. *et al., Agric. Biol. Chem.*, 1978, **42**, 1515-1519 (*1-Methyl-2-nonyl-4(1H)-quinolinone*)
Budzikiewicz, H. *et al., Monatsh. Chem.*, 1979, **110**, 947-953 (*isol, uv*)
Grundon, M.F. *et al., Phytochemistry*, 1979, **18**, 1768-1769 (*1-Methyl-2-nonyl-4(1H)-quinolinone*)

Somanathan, R. *et al., J. Het. Chem.*, 1981, **18**, 1077-1079 (*synth, uv, ir, pmr*)
Ahsan, M. *et al., J. Nat. Prod.*, 1994, **57**, 670-672 (*1-Acetoxymethyl-2-nonyl-4(1H)-quinolinone*)
Debitus, C. *et al., J. Mar. Biotechnol.*, 1998, **6**, 136-141 (*isol*)
Touati, D. *et al., Phytochemistry*, 2000, **53**, 277-279 (*8′-oxo derivs*)
Biavatti, M.W. *et al., J. Braz. Chem. Soc.*, 2002, **13**, 66-70 (*isol, pmr, cmr*)
Lepine, F. *et al., J. Am. Soc. Mass Spectrom.*, 2004, **15**, 862-869 (*occur, 1′,2′-didehydro, oxide*)
Deziel, E. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 2004, **101**, 1339-1344 (*biosynth*)
Bredenbruch, F. *et al., J. Bacteriol.*, 2005, **187**, 3630-3635 (*biosynth*)

3-Hydroxy-3-nonyl-2,4(1*H*,3*H*)-quinolinedione, 9CI H-643

[69808-31-7]

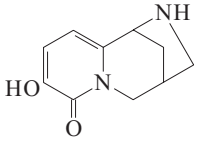


$C_{18}H_{25}NO_3$ 303.4
Metab. from *Pseudomonas aeruginosa*. Mp 146°.

Neuenhaus, W. *et al., Z. Naturforsch., B*, 1979, **34**, 313 (*isol, uv, ir, pmr, cmr, ms, cd, struct*)

3-Hydroxy-11-norcytisine H-644

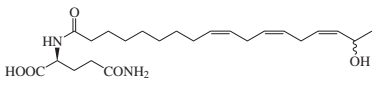
2,3,4,5-Tetrahydro-8-hydroxy-1,4-methanopyrido[1,2-a][1,4]diazepin-7(1H)-one, 9CI
[121063-35-2]



$C_{10}H_{12}N_2O_2$ 192.217
Alkaloid from the green pods of *Laburnum anagyroides*.

Hayman, A.R. *et al., Phytochemistry*, 1989, **28**, 673-675 (*isol, pmr, ms*)
Yohannes, D. *et al., Org. Lett.*, 2008, **10**, 5353-5356 (*synth, pmr, cmr*)

N^2-(17-Hydroxy-9,12,15-octadecatrienoyl)glutamine H-645



$C_{23}H_{38}N_2O_5$ 422.564

(2S,9′Z,12′Z,15′Z,17′ξ)-form

17′-Phosphate: **N^2-(17-Phosphonooxylinolenoyl)glutamine**
$C_{23}H_{39}N_2O_8P$ 502.544
Isol. from the oral secretions of *Spodoptera exigua*.

17′-(9Z,12Z-Octadecadienoyl): **N^2-(17-Linoleoyloxylinolenoyl)glutamine**
$C_{41}H_{68}N_2O_6$ 684.998
Constit. of the oral secretions of the caterpillars *Spodoptera* spp. and *Heliothis virescens*.

17′-(9Z,12Z,15Z-Octadecatrienoyl): **N^2-(17-Linolenoyloxylinolenoyl)glutamine**
$C_{41}H_{66}N_2O_6$ 682.982
Constit. of the oral secretions of the caterpillars *Spodoptera* spp. and *Heliothis virescens*.

15′,16′-Dihydro, 17′-phosphate: **N^2-(17-Phosphonooxylinoleoyl)glutamine**
$C_{23}H_{41}N_2O_8P$ 504.559
Isol. from the oral secretions of *Spodoptera exigua*.

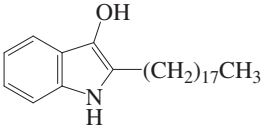
15′,16′-Dihydro, 17′-(9Z,12Z-octadecadienoyl): **N^2-(17-Linoleoyloxylinoleoyl)glutamine**
$C_{41}H_{70}N_2O_6$ 687.014
Constit. of the oral secretions of the caterpillars *Spodoptera* spp. and *Heliothis virescens*.

15′,16′-Dihydro, 17′-(9Z,12Z,15Z-octadecatrienoyl): **N^2-(17-Linolenoyloxylinoleoyl)glutamine**
$C_{41}H_{68}N_2O_6$ 684.998
Constit. of the oral secretions of the caterpillars *Spodoptera* spp. and *Heliothis virescens*.

Spiteller, D. *et al., J.O.C.*, 2003, **68**, 8743-8749; 2004, **69**, 1104-1108

3-Hydroxy-2-octadecylindole H-646

1,2-Dihydro-2-octadecyl-3H-indol-3-one. 2-Octadecyl-1H-indol-3-ol. ***Fistulosin***



$C_{26}H_{43}NO$ 385.632
Tautomeric with oxo form. Alkaloid from the roots of *Allium fistulosum* (Welsh onion). Antifungal agent. Cryst. Mp 80-83°. λ_{max} 220 ; 237 ; 252 ; 277 ; 302 (EtOH).

Phay, N. *et al., Phytochemistry*, 1999, **52**, 271-274 (*isol, uv, ir, pmr, cmr*)

8-Hydroxy-2,4,6-octatriynoic acid H-647

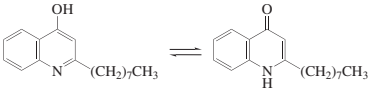
$HOCH_2C{\equiv}CC{\equiv}CC{\equiv}CCOOH$
$C_8H_4O_3$ 148.118

Amide: 8-Hydroxy-2,4,6-octatriynamide. ***Agrocybin***†
[544-44-5]
$C_8H_5NO_2$ 147.133
From *Agrocybe dura* and *Marasmius oreades* (fairy ring mushroom). Antifungal antibiotic. Phytotoxin. Cryst. (EtOH aq.). Sol. MeOH, EtOH, Me_2CO, Et_2O; fairly sol. H_2O; poorly sol. hexane. Mp 130-140° dec. λ_{max} 216 (ε 67600); 224 (ε 87000); 269 (ε 1740); 286 (ε 2400); 304 (ε 3020); 325 (ε 1950) (MeOH) (Berdy).
▶ Causes dermatitis. LD_{50} (mus, ivn) 6 mg/kg. RH2100000

Jones, E.R.H. *et al., J.C.S.*, 1953, 3719
Bu'Lock, J.D. *et al., Chem. Ind. (London)*, 1954, 990 (*struct*)
Ashworth, P.J. *et al., J.C.S.*, 1958, 950 (*synth, ir*)
Ayer, W.A. *et al., Can. J. Chem.*, 1989, **67**, 1371 (*isol*)

4-Hydroxy-2-octylquinoline H-648

2-Octyl-4(1H)-quinolinone. 2-Octyl-4-quinolinol, 9CI
[678172-88-8]



$C_{17}H_{23}NO$ 257.375
Metab. of *Pseudomonas aeruginosa*.

N-*Oxide: 2-Octyl-4(1H)-quinolinone* N-*oxide. 4-Hydroxy-2-octylquinoline* N-*oxide. 2-Octyl-4-quinolinol* N-*oxide*
[2503-84-6]
$C_{17}H_{23}NO_2$ 273.374
Metab. of *Pseudomonas aeruginosa*.

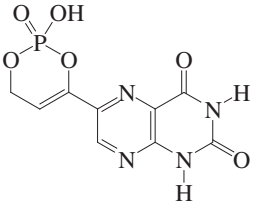
1′,2′-Didehydro(E-): 2-(1-Octenyl)-4(1H)-quinolinone. 4-Hydroxy-2-(1-octenyl)quinoline
$C_{17}H_{21}NO$ 255.359
Metab. of *Pseudomonas aeruginosa*.

1′,2′-Didehydro(Z-):
$C_{17}H_{21}NO$ 255.359
Metab. of *Pseudomonas aeruginosa*.
No CAS no. found to 2007.

Lepine, F. *et al., J. Am. Soc. Mass Spectrom.*, 2004, **15**, 862-869 (*occur, oxide, 1′,2′-didehydro, ms*)
Deziel, E. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 2004, **101**, 1339-1344 (*biosynth*)

6-(2-Hydroxy-2-oxido-4*H*-1,3,2-dioxaphosphorin-6-yl)-2,4(1*H*,3*H*)-pteridinedione, 9CI H-649

[149230-97-7]



$C_9H_7N_4O_6P$ 298.151
Isol. from the marine polychaete *Odontosyllis undecimdonta*. Pale yellow cryst. Mp 225-235° dec.

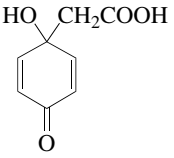
N^3-*Me:* [149230-96-6]
$C_{10}H_9N_4O_6P$ 312.178
Isol. from *Odontosyllis undecimdonta*. Pale yellow needles (MeOH aq.). Mp 230-235° dec.

N^1,N^3-*Di-Me:* [149230-95-5]
$C_{11}H_{11}N_4O_6P$ 326.205
Isol. from *Odontosyllis undecimdonta*. Pale yellow prisms (MeOH aq.). Mp 220-227° dec.

Inou, S. *et al., Heterocycles*, 1993, **35**, 147-150 (*isol, pmr, cmr, P-31 nmr*)

1-Hydroxy-4-oxo-2,5-cyclohexadiene-1-acetic acid H-650

[55604-87-0]



$C_8H_8O_4$ 168.149
Constit. of *Ajuga parviflora*, *Pseudogynoxys cunninghammii*, *Jacaranda caucana* and the marine alga *Delesseria sanguinea*. Larvicide, leishmanicidal agent. Cryst. (EtOAc). Sol. Et_2O, MeOH; poorly sol. H_2O. Mp 103-104°. Log P -0.69 (calc). λ_{max} 224 (log ϵ 5.8) (MeOH).

Amide: 1-Hydroxy-4-oxo-2,5-cyclohexadiene-1-acetamide. 4-(Carbamoylmethyl)-4-hydroxy-2,5-cyclohexadien-1-one. Verongiaquinol
[86254-99-1]
$C_8H_9NO_3$ 167.164
Parent compd. unknown.

Di-Me acetal, amide: ***1-Hydroxy-4,4-dimethoxy-2,5-cyclohexadiene-1-acetamide***
$C_{10}H_{15}NO_4$ 213.233
Isol. from *Verongia aerophoba*. Cryst. Mp 187-189°.

Di-Et acetal, amide: ***4,4-Diethoxy-1-hydroxy-2,5-cyclohexadiene-1-acetamide***
[253308-66-6]
$C_{12}H_{19}NO_4$ 241.286
Isol. from the sponge *Verongia aerophoba*. Cryst. Mp 183-187°.

Et-Me acetal, amide: ***4-Ethoxy-1-hydroxy-4-methoxy-2,5-cyclohexadiene-1-acetamide***
$C_{11}H_{17}NO_4$ 227.26
Isol. from *Verongia aerophoba*. Cryst. Mp 183-184°.

3-Bromo, amide: ***3-Bromoverongiaquinol***
[137006-40-7]
$C_8H_8BrNO_3$ 246.06
Isol. from the marine sponge *Verongia cavernicola* and from *Suberea creba*. Sticky semi-solid. Sol. MeOH, C_6H_6; poorly sol. H_2O. Racemic. λ_{max} 235 (ϵ 5500) (MeOH) (Berdy).

3-Bromo, 5-chloro, amide: ***3-Bromo-5-chloroverongiaquinol***
[98349-14-5]
$C_8H_7BrClNO_3$ 280.505
Isol. from *Verongia cavernicola*. Cryst. Mp 175-177°. Racemic.

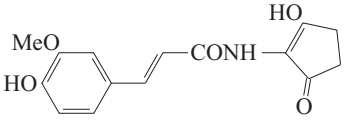
3,5-Dibromo, amide: ***3,5-Dibromoverongiaquinol***
[16628-93-6]
$C_8H_7Br_2NO_3$ 324.956
Isol. from *Verongia cauliformis* (*Aplysina cauliformis*). Shows antibiotic props. Needles (Et_2O/Me_2CO). Mp 195-196°. λ_{max} 200 (sh) (ϵ) (MeOH/NaOH) (Derep). λ_{max} 257 (ϵ 8300) (MeOH) (Derep).

3,5-Dichloro, amide: ***Dichloroverongiaquinol***
[88290-16-8]
$C_8H_7Cl_2NO_3$ 236.054
Isol. from the Mediterranean sponges *Aplysina cavernicola* and *Aplysina fistularis*. Inhibitor of gram-positive and gram-negative bacteria. Cryst. Mp 162-163°.

Evans, D.A. *et al., J.O.C.*, 1977, **42**, 350-352 (*3,5-dibromo amide*)
D'Ambrosio, M. *et al., Experientia*, 1983, **39**, 1091-1092 (*Dichloroverongiaquinol, isol, uv, ir, pmr, ms, synth*)
Fischer, A. *et al., Tet. Lett.*, 1983, **24**, 131-134 (*3,5-dibromo amide, synth*)
D'Ambrosio, M. *et al., Helv. Chim. Acta*, 1984, **67**, 1484-1492 (*3-Bromoverongiaquinol*)
Goo, Y.M. *et al., Arch. Pharmacal Res.*, 1985, **8**, 21-30 (*Dichloroverongiaquinol*)
Bicchierini, N. *et al., Tet. Lett.*, 1991, **32**, 4039-4040 (*bromoamide, dibromoamide, chlorobromoamide*)
Aydogmuş, Z. *et al., Turk. J. Chem.*, 1999, **23**, 339-344 (*acetal amides*)

N-(3-Hydroxy-1-oxocyclopent-2-en-2-yl)-3-(4-hydroxy-3-methoxyphenyl)propenamide H-651

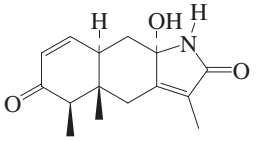
2880-II
[117820-36-7]



$C_{15}H_{15}NO_5$ 289.287
Metab. of *Streptomyces griseoflavus*. Yellow powder. Sol. DMSO, DMF; fairly sol. $CHCl_3$; poorly sol. H_2O, hexane. Mp 272°. λ_{max} 268 (ϵ 30500); 338 (ϵ 28500) (MeOH/HCl) (Derep). λ_{max} 252 (ϵ 46100); 364 (ϵ 28800) (MeOH/NaOH) (Derep). λ_{max} 250 (ϵ 51800); 322 (ϵ 20900) (MeOH) (Derep). λ_{max} 250 (ϵ 51800); 322 (ϵ 20900) (MeOH) (Berdy). λ_{max} 268 (ϵ 51800); 338 (ϵ 28500) (MeOH-HCl) (Berdy). λ_{max} 252 (ϵ 46100); 364 (ϵ 28800) (MeOH-NaOH) (Berdy).

Grote, R. *et al., J. Antibiot.*, 1988, **41**, 1275 (*isol, pmr, cmr, ir*)
Ebenezer, W.J. *et al., Synth. Commun.*, 1991, **21**, 351 (*synth*)
Macdonald, G. *et al., Tetrahedron*, 1998, **54**, 9823-9836 (*synth*)

8-Hydroxy-3-oxo-1,7(11)-eremophiladien-12,8-lactam H-652



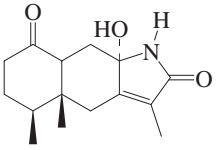
$C_{15}H_{19}NO_3$ 261.32

8α-OH-form

Me ether: [261164-36-7]
$C_{16}H_{21}NO_3$ 275.347
Constit. of *Senecio flavus*. Oil.

Torres, P. *et al., Phytochemistry*, 1999, **52**, 1507-1513 (*isol, pmr, cmr*)

8-Hydroxy-1-oxo-7(11)-eremophilene-12,8-lactam H-653



$C_{15}H_{21}NO_3$ 263.336

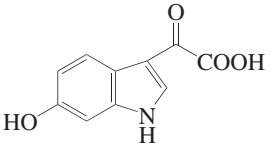
(8α-OH)-form

Me ether: 8-Methoxy-1-oxo-7(11)-eremophilene-12,8-lactam
[849700-46-5]
$C_{16}H_{23}NO_3$ 277.363
Constit. of *Senecio aegyptius* var. *discoideus*. Oil. $[\alpha]_D^{25}$ -58.7 (c, 2.74 in $CHCl_3$).

Mohamed, A.E.H. *et al., J. Nat. Prod.*, 2005, **68**, 439-442 (*Senecio aegyptius constit*)

6-Hydroxy-α-oxo-1*H*-indole-3-acetic acid H-654

2-(6-Hydroxy-3-indolyl)-2-oxoacetic acid



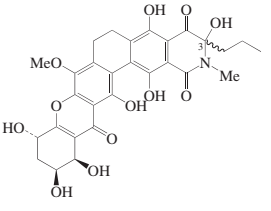
$C_{10}H_7NO_4$ 205.17

Me ester: [956611-98-6]
$C_{11}H_9NO_4$ 219.196
Alkaloid from a *Spongosorites* sp. Amorph. yellow powder.

Bao, B. *et al., Mar. Drugs*, 2007, **5**, 31-39 (*isol, pmr, cmr, ms*)

25-Hydroxy-24-oxokibdelone C H-655

[934464-85-4]



Relative Configuration

$C_{29}H_{29}NO_{12}$ 583.548
Poorly named. Prod. by *Kibdelosporangium* sp. (MST-108465). Possible artifact.

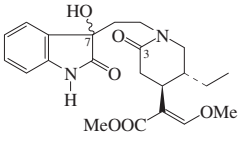
3-Me ether: 25-Methoxy-24-oxokibdelone C
[934464-84-3]
$C_{30}H_{31}NO_{12}$ 597.574
Prod. by *Kibdelosporangium* sp. (MST-108465). Amorph. yellow solid. $[\alpha]_D^{25}$ +164 (c, 0.01 in $CHCl_3$). Possible artifact. λ_{max} 208 (ϵ 21200); 221 (sh) ; 254 (ϵ 23100); 317 (sh) ; 388 (sh) ; 429

(ϵ 12100) (EtOH).

Ratnayake, R. *et al., Chem. Eur. J.*, 2007, **13**, 1610-1619 (*isol, pmr, cmr*)

7-Hydroxy-3-oxo-3,7-secorhynchophylline H-656

[128638-15-3]



Absolute Configuration

$C_{22}H_{28}N_2O_6$ 416.473

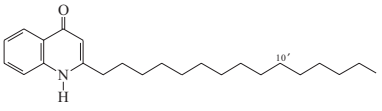
Alkaloid from the leaves of *Uncaria salaccensis* (*Uncaria attenuata*) (Rubiaceae). Amorph. The nat. prod. is a mixt. of C-7 epimers.

Ponglux, D. *et al., Chem. Pharm. Bull.*, 1990, **38**, 573-575 (*isol, uv, ir, pmr, cmr, ms, synth, struct*)

Takayama, H. *et al., Tetrahedron*, 1999, **55**, 6841-6846 (*config*)

4-Hydroxy-2-pentadecylquinoline H-657

*2-Pentadecyl-4(1*H*)-quinolinone. 2-Pentadecyl-4-quinolinol, 9CI*



$C_{24}H_{37}NO$ 355.562

λ_{max} 215 (log ϵ 4.18); 239 (log ϵ 4.46); 321 (log ϵ 4.15); 334 (log ϵ 4.16) (MeOH).

N-*Me:* ***1-Methyl-2-pentadecyl-4(1*H*)-quinolinone, 9CI***
[59443-03-7]
$C_{25}H_{39}NO$ 369.589
Alkaloid from the leaves and fruits of *Evodia rutaecarpa* (Rutaceae). Leaflets (EtOAc/Et_2O). Mp 80°.

*6′,7′-Didehydro(*Z*-),* N-*Me:* ***1-Methyl-2-(6-pentadecenyl)-4(1*H*)-quinolinone***
[120693-51-8]
$C_{25}H_{37}NO$ 367.573
Alkaloid from fruits of *Evodia rutaecarpa* (Rutaceae). Oil. Isol. as an inseparable mixt. with the $\Delta^{10'}$-isomer.

*9′,10′-Didehydro(*Z*-),* N-*Me:* ***1-Methyl-2-(9-pentadecenyl)-4(1*H*)-quinolinone***
[170661-70-8]
$C_{25}H_{37}NO$ 367.573
Alkaloid from fruits of *Evodia rutaecarpa*. Oil. Isol. as an inseparable mixt. with the $\Delta^{10'}$-isomer.

*10′,11′-Didehydro(*Z*-),* N-*Me:* ***1-Methyl-2-(10-pentadecenyl)-4(1*H*)-quinolinone***
[120693-50-7]
$C_{25}H_{37}NO$ 367.573
Alkaloid from fruits of *Evodia rutaecarpa* (Rutaceae). Oil. Isol. as an inseparable mixt. with the $\Delta^{6'}$-isomer.

*6′,7′,9′,10′-Tetradehydro(*Z,Z*-),* N-*Me:* ***1-Methyl-2-(6,9-pentadecadienyl)-4(1*H*)-quinolinone***
[120693-52-9]
$C_{25}H_{35}NO$ 365.558
Alkaloid from fruits of *Evodia rutaecarpa* (Rutaceae). Oil.

*6′,7′,9′,10′,12′,13′-Hexadehydro(*all-E*-): 2-(6,9,12-Pentadecatrienyl)-4(1*H*)-quinolinone, 9CI.* ***Hapovine, 9CI***
[80981-97-1]
$C_{24}H_{31}NO$ 349.515
Alkaloid from *Haplophyllum popovii* (Rutaceae).

Kamikado, T. *et al., Agric. Biol. Chem.*, 1976, **40**, 605-609 (*N-Me, isol, uv, ir, pmr, ms, struct, synth*)

Razakova, D.M. *et al., Khim. Prir. Soedin.*, 1981, **17**, 528-529; *CA*, **96**, 100871k (*Hapovine*)

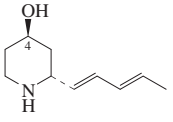
Sugimoto, T. *et al., Chem. Pharm. Bull.*, 1988, **36**, 4453-4461 (*isol, uv, ir, pmr, cmr, ms, struct*)

Tang, Y.-Q. *et al., Phytochemistry*, 1996, **43**, 719-722 (*Evodia rutaecarpa constits*)

Deziel, F. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 2004, **101**, 1339-1344 (*biosynth*)

4-Hydroxy-2-(1,3-pentadienyl)piperidine H-658

2-(1,3-Pentadienyl)-4-piperidinol, 9CI



(1′*E*,2*R*,3′*E*,4*R*)-*form*

$C_{10}H_{17}NO$ 167.25

(1′*E*,2*R*,3′*E*,4*R*)-*form* [261364-07-2]
Prod. by *Streptomyces* sp. GT 41006. Yellow cryst. $[\alpha]_D^{20}$ +10.8 (c, 1.1 in MeOH). λ_{max} 230 (ϵ 17400) (MeOH).

(1′*E*,2*S*,3′*E*,4*R*)-*form* [137121-80-3]
Prod. by a *Streptomyces* sp. Cryst. (Et_2O). Mp 67-68°. $[\alpha]_D^{20}$ -13 (c, 1 in $CHCl_3$) (natural). $[\alpha]_D^{25}$ -37 (c, 1 in $CHCl_3$) (synthetic).

(1′*E*,2*S*,3′*E*,4*S*)-*form*
Antibiotic SS 20846A. *SS 20846A*
[104259-19-0]
From a *Streptomyces* sp. Inhibits intestine motility. Oil. Sol. MeOH, $CHCl_3$. $[\alpha]_D^{20}$ -15 (c, 1 in $CHCl_3$) (natural). $[\alpha]_D^{25}$ -20 (c, 1.4 in $CHCl_3$) (synthetic). λ_{max} 228 (MeOH) (Berdy). λ_{max} 228 (E1%/1cm 3100); 300 (E1%/1cm 50) (EtOH) (Berdy).

4-Deoxy: 2-(1,3-Pentadienyl)piperidine
[137692-89-8]
$C_{10}H_{17}N$ 151.251
From a *Streptomyces* sp. $[\alpha]_D^{20}$ +27 (c, 1 in $CHCl_3$).

Japan. Pat., 1986, 86 35 788; *CA*, **105**, 132137 (*2S,4S-form, isol, struct, props*)

Grabley, S. *et al., J. Antibiot.*, 1991, **44**, 797-800 (*2S,4R-form, isol*)

Takemoto, Y. *et al., Chem. Pharm. Bull.*, 1997, **45**, 1906-1909 (*synth*)

Ripoche, I. *et al., J.C.S. Perkin 1*, 1998, 3485-3492 (*synth, pmr, cmr*)

Yokoyama, H. *et al., Tet. Lett.*, 1998, **39**, 5971-5974 (*synth*)

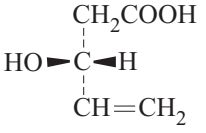
Maul, C. *et al., J. Antibiot.*, 1999, **52**, 1124-1134 (*2R,4R-form, isol, uv, pmr, cmr*)

Davis, F.A. *et al., Org. Lett.*, 2000, **2**, 1041-1043 (*synth*)

Sabat, M. *et al., Tet. Lett.*, 2001, **42**, 1209-1212 (*synth*)

3-Hydroxy-4-pentenoic acid, 9CI H-659

[81357-28-0]



(*R*)–*form*

$C_5H_8O_3$ 116.116

(R)-form [38996-04-2]
Oil or cryst. Mp 41.5-42.5°. $Bp_{0.04}$ 69°. $[\alpha]_D^{17}$ -26 (c, 1 in 95% EtOH) (>99.8% op).

Nitrile: 3-Hydroxy-4-pentenenitrile, 9CI. 1-Cyano-3-buten-2-ol
[7451-85-6]
C_5H_7NO 97.116
Produced by enzymatic hydrol. of Glucorapiferin (Progoitrin). Isol. from *Crambe abyssinica* seed meal. Shows phytotoxic activity. Oil.

Nitrile, 1-naphthylurethane:
Cryst. Mp 89-92°.

(S)-form [38996-05-3]

Et ester: [349649-09-8]
$C_7H_{12}O_3$ 144.17
$Bp_{0.125}$ 42°. $[\alpha]_D^{20}$ -5 (c, 0.98 in $CHCl_3$) (>99% ee).

Nitrile: ***Crambene***
[6071-81-4]
Found in cruciferous vegetables incl. *Crambe abyssinica*. Prod. by enzymatic hydrol. of Epiglucorapiferin (Epiprogoitrin). Oil. n_D^{20} 1.4544.

▶ LD_{50} (rat, scu) 200 mg/kg. Exp. teratogen. SB4500000

Nitrile, 1-naphthylurethane:
Cryst. (C_6H_6/heptane). Mp 93°.

(±)-*form* [38996-03-1]
$Bp_{0.07}$ 74-76°. n_D^{30} 1.4633.

Et ester: [38996-01-9]
[134896-00-7]
$C_7H_{12}O_3$ 144.17
Liq. $Bp_{0.6}$ 57°.

tert-*Butyl ester:* [122763-67-1]
[159787-33-4]
$C_9H_{16}O_3$ 172.224
$Bp_{0.04}$ 35°. n_D^{20} 1.4374.

Nitrile: [27451-36-1]
Bp_{30} 132-133°.

▶ SB2270000

Nitrile, 1-naphthylurethane: Mp 112.5-113.5°.

[27451-36-1]

Bissinger, W.E. *et al., J.A.C.S.*, 1947, **69**, 2955-2961 (*nitrile, synth*)

Daxenbichler, M.E. *et al., Biochemistry*, 1966, **5**, 692-697 (*isol, pmr, ord, nitrile*)

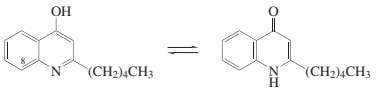
Spencer, G.F. *et al., J. Sci. Food Agric.*, 1980, **31**, 359-367 (*ms, nitrile*)

Das, N.B. *et al., Tetrahedron*, 1983, **39**, 2247-2253 (*synth, nitrile*)

Graf, S. *et al., Annalen*, 1993, 1091-1098 (*synth, pmr, cmr*)
Vaughn, S.F. *et al., J. Chem. Ecol.*, 1998, **24**, 1117-1126 (*nitrile, isol, activity*)
Org. Synth., Coll. Vol., 9, 1998, 423-435 (*Et ester, synth, ir, pmr*)
Jeffery, E.H. *et al., Handbook of Nutraceuticals and Functional Foods*, (ed. Wildman, R.E.C.), CRC Press, 2001, 169-191
Niedoborski, T.E. *et al., J. Agric. Food Chem.*, 2001, **49**, 3394-3399 (*Crambene, isol, purifn*)
Song, J. *et al., Tetrahedron: Asymmetry*, 2001, **12**, 387-391 (*S-form, synth, Et ester*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, COP400

4-Hydroxy-2-pentylquinoline H-660

*2-Pentyl-4(1*H*)-quinolinone. 2-Pentyl-4-quinolinol*
[62869-70-9]



$C_{14}H_{17}NO$ 215.294
Alkaloid from *Boronia ternata* var. *elongata*, *Pseudomonas aeruginosa* and a yellow marine pseudomonad. Antibacterial agent. Cryst. Sol. MeOH, $CHCl_3$. Mp 146° (141-142°). λ_{max} 235 (log ϵ 5.13); 282 (log ϵ 4.12); 294 (log ϵ 4.28); 310 (log ϵ 4.63); 315 (log ϵ 4.74); 327 (log ϵ 4.71) (MeOH).

N-*Oxide: 2-Pentyl-4(1*H*)-quinolinone* N-*oxide. 4-Hydroxy-2-pentylquinoline* N-*oxide*
[91292-96-5]
$C_{14}H_{17}NO_2$ 231.294
Metab. of *Pseudomonas aeruginosa*.

*1′,2′-Didehydro(*E-*): 2-(1*E*-Pentenyl)-4(1*H*)-quinolinone. 4-Hydroxy-2-(1*E*-pentenyl)quinoline*
$C_{14}H_{15}NO$ 213.279
Metab. of *Pseudomonas aeruginosa*.

*1′,2′-Didehydro(*Z-*): 2-(1*Z*-Pentenyl)-4(1*H*)-quinolinone. 4-Hydroxy-2-(1*Z*-pentenyl)quinoline*
$C_{14}H_{15}NO$ 213.279
Metab. of *Pseudomonas aeruginosa*.

NH-form

N-*Me: 1-Methyl-2-pentyl-4(1*H*)-quinolinone*
[22048-98-2]
$C_{15}H_{19}NO$ 229.321
Alkaloid from *Boronia ternata* var. *elongata* and fruit of *Evodia rutaecarpa*. Powder (EtOAc/Et_2O) or brownish oil. Mp 65-66°. λ_{max} 213 (log ϵ 4.4); 239 (log ϵ 4.46); 321 (log ϵ 4.13); 333 (log ϵ 4.15) (MeOH). λ_{max} 213 (log ϵ 4.62); 235 (log ϵ 4.67); 316 (log ϵ 4.14); 325 (log ϵ 4.13) (MeOH).

8-Methoxy, N-*Me: 8-Methoxy-1-methyl-2-pentyl-4(1*H*)-quinolinone*
[159979-55-2]
$C_{16}H_{21}NO_2$ 259.347
Alkaloid from trunk bark of *Esenbeckia almawillia*. Oil.

OH-form

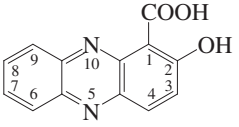
Me ether: 4-Methoxy-2-pentylquinoline
[22048-99-3]
$C_{15}H_{19}NO$ 229.321
Alkaloid from *Galipea officinalis* and *Galipea longiflora*. Oil. $Bp_{0.14}$ 135°.

1′,2′-Didehydro, Me ether: 4-Methoxy-2-(1-pentenyl)quinoline
[124902-97-2]
$C_{15}H_{17}NO$ 227.305
Alkaloid from stem bark of *Galipea bracteata*. Amorph.

Buu-Hoi, N.G. *et al., J.O.C.*, 1953, **18**, 1209-1224 (*synth*)
Werner, W. *et al., Tetrahedron*, 1969, **25**, 255-261 (*synth*)
Kimimado, T. *et al., Agric. Biol. Chem.*, 1976, **40**, 605-609 (*N-Me*)
Wratten, S.J. *et al., Antimicrob. Agents Chemother.*, 1977, **11**, 411-414 (*isol, struct*)
Thomsen, I. *et al., Acta Chem. Scand., Ser. B*, 1988, **42**, 309-313 (*synth, pmr*)
Sugimoto, T. *et al., Chem. Pharm. Bull.*, 1988, **36**, 4453-4461 (*N-Me*)
Fournet, A. *et al., Can. J. Chem.*, 1989, **67**, 2116-2118 (*4-Methoxy-2-pentylquinoline, 4-Methoxy-2-(1-pentenyl)quinoline*)
Guilhon, G.M.S.P. *et al., Phytochemistry*, 1994, **37**, 1193-1195 (*8-Methoxy-1-methyl-2-pentyl-4(1H)-quinolinone*)
Lepine, F. *et al., J. Am. Soc. Mass Spectrom.*, 2004, **15**, 862-869 (*occur, oxide, 1′,2′-didehydro, ms*)
Deziel, E. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 2004, **101**, 1339-1344 (*biosynth*)
Agier, C. *et al., Nat. Prod. Res.*, 2007, **21**, 698-703 (*isol, Boronia, pmr, cmr, ms*)

2-Hydroxy-1-phenazinecarboxylic acid, 9CI H-661

[4075-25-6]



$C_{13}H_8N_2O_3$ 240.218
Pigment produced by *Pseudomonas aureofaciens*. Shows antimicrobial activity. Fine orange needles (C_6H_6). Sol. bases. Mp 225-226° dec. (darkens >220°). pK_a 7.6 (66.8% dioxan aq.). λ_{max} 252 ; 363 (MeOH) (Berdy). λ_{max} 287 ; 363 ; 490 (MeOH/NaOH) (Berdy).

Me ester: [13389-20-3]
$C_{14}H_{10}N_2O_3$ 254.245
Cryst. (MeOH). Mp 140-141°.

Me ether: 2-Methoxy-1-phenazinecarboxylic acid
$C_{14}H_{10}N_2O_3$ 254.245
Cryst. (C_6H_6). Mp 204-205°.

Me ether, Me ester: [13392-00-2]
$C_{15}H_{12}N_2O_3$ 268.271
Yellow cryst. (CCl_4). Mp 129° subl.

Olson, E.S. *et al., J.O.C.*, 1967, **32**, 2887 (*isol, uv, ir, struct*)
Herbert, R.B. *et al., Tet. Lett.*, 1968, 1907 (*synth*)
Brooke, P.K. *et al., J.C.S. Perkin 1*, 1976, 2248 (*synth*)
Herbert, R.P. *et al., J.C.S. Perkin 1*, 1979, 2411 (*biosynth*)

4-Hydroxy-1-phenazinecarboxylic acid H-662

[79417-75-7]

$C_{13}H_8N_2O_3$ 240.218
Minor pigment from *Pseudomonas aureofaciens*.

Römer, A. *et al., Z. Naturforsch., B*, 1981, **36**, 1037 (*isol, uv, ir, pmr, ms, struct*)

6-Hydroxy-1-phenazinecarboxylic acid H-663

$C_{13}H_8N_2O_3$ 240.218

Me ether, Me ester: 6-Methoxy-1-phenazinecarboxylic acid methyl ester, 9CI. ***Mycomethoxin B***
[39011-76-2]
$C_{15}H_{12}N_2O_3$ 268.271
Isol. from *Streptomyces luteoreticuli*. Active against mycobacteria. Yellow needles. Mp 150-151° (139-141°).

Yamanaka, S. *et al., CA*, 1972, **77**, 162986 (*isol*)
Brooke, P.K. *et al., J.C.S. Perkin 1*, 1976, 2248 (*synth, uv, pmr*)
Buckland, P.R. *et al., J. Chem. Res., Synop.*, 1981, 363 (*biosynth*)
Roemer, A. *et al., Org. Magn. Reson.*, 1982, **19**, 66 (*pmr*)

9-Hydroxy-1-phenazinecarboxylic acid H-664

[23462-26-2]

$C_{13}H_8N_2O_3$ 240.218
Formed by *Pseudomonas phenazinium*. Mp 270°.

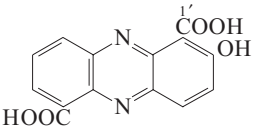
Me ether: 9-Methoxy-1-phenazinecarboxylic acid
[23531-25-1]
$C_{14}H_{10}N_2O_3$ 254.245
Mp 258-261°.

Me ether, Me ester:
$C_{15}H_{12}N_2O_3$ 268.271
Mp 115-120°.

Ph ether: 9-Phenoxy-1-phenazinecarboxylic acid
[103942-79-6]
$C_{19}H_{12}N_2O_3$ 316.315
Solid. Mp 232-234°.

Yoshida, K. *et al., Yakugaku Zasshi*, 1964, **84**, 703
Gerber, N.N. *et al., J. Het. Chem.*, 1969, **6**, 297
Byng, G.S. *et al., Biochem. Soc. Trans.*, 1975, **3**, 742
Brooke, P.K. *et al., J.C.S. Perkin 1*, 1976, 2248 (*synth*)
Spicer, J.A. *et al., J. Med. Chem.*, 2000, **43**, 1350-1358 (*Ph ether, synth, pmr*)

2-Hydroxy-1,6-phenazinedicarboxylic acid H-665



$C_{14}H_8N_2O_5$ 284.228

1′-Me ester: ***Antibiotic SB 212021****. SB 212021*

[170591-55-6]
$C_{15}H_{10}N_2O_5$ 298.254
Prod. by a *Streptomyces* sp. Inhibitor of metalloenzymes. Sol. MeOH, bases, butanol; poorly sol. H_2O. λ_{max} 210 (ϵ 23563); 247 (ϵ 11680); 294 (ϵ 17672); 370 (ϵ 2840); 520 (ϵ 1178) (MeOH) (Berdy). λ_{max} 203 (ϵ 20145); 248 (ϵ 16421); 268 (ϵ 17914); 369 (ϵ 5938); 431 (ϵ 2582) (MeOH/HCl) (Berdy). λ_{max} 210 (ϵ 73271); 246 (ϵ 17554); 288 (ϵ 19778); 370 (ϵ 4000); 520 (ϵ 2528) (MeOH/NaOH) (Berdy).

[83297-76-1]

Roemer, A. *et al., Org. Magn. Reson.*, 1982, **19**, 66 (*pmr, deriv*)
Gilpin, M.L. *et al., J. Antibiot.*, 1995, **48**, 1081 (*isol, deriv*)

4-Hydroxy-1,6-phenazinedicarboxylic acid H-666

$C_{14}H_8N_2O_5$ 284.228

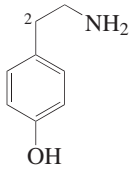
Di-Me ester: [79417-76-8]
$C_{16}H_{12}N_2O_5$ 312.281
Minor pigment from *Pseudomonas cepacia*.

Me ether, di-Me ester:
$C_{17}H_{14}N_2O_5$ 326.308
Mp 147° (142-144°).

Römer, A. *et al., Z. Naturforsch., B*, 1981, **36**, 1037 (*isol, uv, ir, pmr, ms, struct, synth*)

4-Hydroxyphenethylamine H-667

*4-(2-Aminoethyl)phenol, 9CI. 2-(*p-*Hydroxyphenyl)ethylamine.* ***Tyramine****. Tyrosamine*
[51-67-2]



$C_8H_{11}NO$ 137.181
Widespread biogenic amine, found in plant spp. such as *Magnolia*, *Desmodium* spp., *Pisum sativum*, *Hordeum vulgare*, *Actinodaphne* sp., *Cannabis sativa*, *Piper nigrum* (pepper) mescal (*Lophophora williamsii*) and other cacti and in putrefied animal tissues. Found in urine of patients with Parkinson's disease. Diagnostic aid. Vasopressor. Mp 164-164.5° (161°). pK_{a1} 9.3; pK_{a2} 10.9 (25°). Log P 0.62 (calc).

▶ LD_{50} (mus, ivn) 229 mg/kg. SJ5950000

Hydrochloride: [60-19-5]
Mp 269°.

▶ SJ6050000

N-*Ac:* N-*[2-(4-Hydroxyphenyl)ethyl]acetamide.* N-(p-*Hydroxyphenethyl)acetamide, 8CI.* **N-*Acetyltyramine***
[1202-66-0]
$C_{10}H_{13}NO_2$ 179.218
Metab. of pathogenic fungi, mycobacteria, enterobacteria and from *Bombyx mori* at the chrysalis stage. Mp 134-135° (sinters at 128°).

▶ AC3852300

N-*Ac,* O-*[4-methoxy-*E*-cinnamoyl-(→6)-β-D-glucopyranosyl-(1→2)-[β-D-glucopyranosyl-(1→3)]-α-L-rhamnopyranoside]:* [952340-41-9]
$C_{38}H_{51}NO_{18}$ 809.817
Constit. of the aerial parts of *Schnabelia tetradonta*.

N-*Ac,* O-*[4-methoxy-Z-cinnamoyl-(→6)-β-D-glucopyranosyl-(1→2)-[β-D-glucopyranosyl-(1→3)]-α-L-rhamnopyranoside]:*
$C_{38}H_{51}NO_{18}$ 809.817
Constit. of the aerial parts of *Schnabelia tetradonta*. Needles (MeOH). Mp 198-199°. $[\alpha]_D^{25}$ -14.1 (c, 0.75 in MeOH).

N-*Ac,* O-*[4-methoxy-*E*-cinnamoyl-(→6)-β-D-glucopyranosyl-(1→2)-[β-D-glucopyranosyl-(1→3)]-4-*O*-acetyl-α-L-rhamnopyranoside]:* [952340-42-0]
$C_{40}H_{53}NO_{19}$ 851.854
Constit. of the aerial parts of *Schnabelia tetradonta*. CA name incorrect.

N-*Ac,* O-*[4-methoxy-Z-cinnamoyl-(→6)-β-D-glucopyranosyl-(1→2)-[β-D-glucopyranosyl-(1→3)]-4-*O*-acetyl-α-L-rhamnopyranoside]:*
$C_{40}H_{53}NO_{19}$ 851.854
Constit. of the dried roots of *Schnabelia tetradonta*. Needles (MeOH). Mp 156-158°. $[\alpha]_D^{20}$ -16.4 (c, 0.19 in MeOH).

O,N-*Di-Ac:* [14383-56-3]
$C_{12}H_{15}NO_3$ 221.255
Mp 100.5°.

N-*(2-Methylbutanoyl):* N-*[2-(4-Hydroxyphenyl)ethyl]-2-methylbutanamide.* N-*(2-Methylbutanoyl)tyramine.* ***Antibiotic YUA 001****. YUA 001*
[218153-66-3]
$C_{13}H_{19}NO_2$ 221.299
Prod. by *Corynebacterium* sp. YUA 25. Aldose reductase inhibitor. Powder. Mp 103°. λ_{max} 224 ; 276 (MeOH).

N-*Tigloyl:* N-*[2-(4-Hydroxyphenyl)ethyl]tiglamide.* N-*Tigloyltyramine*
$C_{13}H_{17}NO_2$ 219.283
Constit. of the wood of *Hortia colombiana*.

N-*(5Z,8Z,11Z-Tetradecatrienoyl):* **N-*(5,8,11-Tetradecatrienoyl)tyramine***
$C_{22}H_{31}NO_2$ 341.492
Isol. from *Muricea austera*. Oil.

N-*Tetracosanoyl:* ***Violyedoenamide****.* N-*[2-(4-Hydroxyphenyl)ethyl]tetracosanamide, 9CI.* N-*Tetracosanoyltyramine*
[113122-70-6]
$C_{32}H_{57}NO_2$ 487.808
Constit. of *Viola yedoensis.*

N-*Benzoyl:* N-*[2-(4-Hydroxyphenyl)ethyl]benzamide, 9CI.* **N-*Benzoyltyramine***
[41859-54-5]
$C_{15}H_{15}NO_2$ 241.289
Alkaloid from seeds of the Mexican apple (*Casimiroa edulis*) and from *Aniba riparia*. Plates (Et_2O). Mp 161-162°.

N-*(2-Hydroxybenzoyl):* N-*(2-Hydroxybenzoyl)tyramine*
[112356-52-2]
$C_{15}H_{15}NO_3$ 257.288
Constit. of the fruit of *Aniba riparia*. Cryst. (Et_2O). Mp 135-137°. λ_{max} 225 (ϵ 5650); 240 (ϵ 4000); 305 (ϵ 1650) (MeOH).

O-*(3,4,5-Trihydroxybenzoyl):* **O-*Galloyltyramine***
$C_{15}H_{15}NO_5$ 289.287
Alkaloid from the leaves of *Cupaniopsis macropetala*. Pim2 enzyme inhibitor. Brown oil (as trifluoroacetate salt). λ_{max} 212 (log ϵ 4.68); 272 (log ϵ 4.3) (MeOH) (trifluoroacetate).

N-*Cinnamoyl:* **N-*Cinnamoyltyramine****.* N-*[2-(4-Hydroxyphenyl)ethyl]cinnamide*
[103188-44-9]
[20384-14-9]
$C_{17}H_{17}NO_2$ 267.327
Alkaloid from *Piper steerni*. Cryst. (EtOH). Mp 194-195° (synthetic).

N-*(4-Hydroxy-*E*-cinnamoyl):* **N-p-trans-*Coumaroyltyramine****.* N-*(*p-*Hydroxyphenyl)ethyl* p-*hydroxycinnamide. Paprazine*
[36417-86-4]
$C_{17}H_{17}NO_3$ 283.326
Constit. of *Actinodaphne* spp., *Allium chinense*, *Cannabis sativa*, *Evodia belahe*, *Fumaria indica* and *Vicia faba*. Cryst. (MeOH). Mp 260-261°.

▶ LD_{50} (mus, ipr) 780 mg/kg.

N-*(4-Hydroxy-Z-cinnamoyl):* **N-p-cis-*Coumaroyltyramine***
[111129-11-4]
$C_{17}H_{17}NO_3$ 283.326
Alkaloid from *Allium chinense* and *Aristolochia kankauensis*. Needles ($CHCl_3$/MeOH). Mp 234-235°.

N-*(3,4-Dihydroxy-*E*-cinnamoyl):* **N-trans-*Caffeoyltyramine***
[103188-48-3]
$C_{17}H_{17}NO_4$ 299.326
Constit. of *Annona crassiflora*, *Annona montana*, *Mangifera indica* and *Cannabis sativa*. Powder. Mp 219.5-222.5° (214-215°). λ_{max} 221 (ϵ 14125); 294 (ϵ 10960); 321 (ϵ 12020) (MeOH) (Berdy). λ_{max} 208 (ϵ 12500); 225 (ϵ 13182); 242 (ϵ 10300); 308 (ϵ 7080); 349 (ϵ 13800) (MeOH/NaOH) (Berdy).

N-*(3,4-Dihydroxy-Z-cinnamoyl):* **N-cis-*Caffeoyltyramine***
[219773-48-5]
$C_{17}H_{17}NO_4$ 299.326
Alkaloid from stems of cherimoya (*Annona cherimola*). Yellow oil. λ_{max} 203 (log ϵ 2.43); 220 (sh) (log ϵ 3.36); 280 (log ϵ 2.53); 310 (log ϵ 3.21) (EtOH).

N-*(4-Hydroxy-3-methoxy-*E*-cinnamoyl):* **N-trans-*Feruloyltyramine****.* *Moupinamide*
[66648-43-9]
[65646-26-6]
$C_{18}H_{19}NO_4$ 313.352
Alkaloid from *Aristolochia moupinensis*, *Cannabis sativa*, *Asimina triloba*, *Annona montana*, *Tribulus terrestris*, *Piper nigrum*, *Cananga odorata* and other plant spp. Platelet aggregation inhibitor, hepatoprotective. Cryst.(Me_2CO/$CHCl_3$). Mp 144.5-145°.

N-*(4-Hydroxy-3-methoxy-Z-cinnamoyl):* **N-cis-*Feruloyltyramine***
[80510-09-4]
$C_{18}H_{19}NO_4$ 313.352
Alkaloid from *Aristolochia kankauensis*, *Capsicum annuum* var. *grossum* and *Tinospora tuberculata*. Pale yellow oil.

N-*(4-Hydroxy-3,5-dimethoxy-*E*-cinnamoyl):* **N-trans-*Sinapoyltyramine***
[200125-11-7]
$C_{19}H_{21}NO_5$ 343.379
Alkaloid from *Porcelia macrocarpa*. Amorph. powder. λ_{max} 205 (log ϵ 4.21); 225 (log ϵ 4.14); 320 (log ϵ 3.96) (MeOH).

N-*(4-Hydroxy-3,5-dimethoxy-Z-cinnamoyl):* **N-cis-*Sinapoyltyramine***
$C_{19}H_{21}NO_5$ 343.379
Alkaloid from *Lindera glauca*. Amorph. powder. λ_{max} 225 ; 320 (EtOH).

N-*[3-(3,4-Dihydroxyphenyl)propanoyl]:* **N-*Dihydrocaffeoyltyramine***
$C_{17}H_{19}NO_4$ 301.341
Alkaloid from the root bark of *Lycium chinense* (Chinese boxthorn).

N-*[3-(4-Hydroxy-3-methoxyphenyl)propanoyl]:* **N-*Dihydroferuloyltyramine***
[184877-32-5]
$C_{18}H_{21}NO_4$ 315.368
Alkaloid from stems of cherimoya (*Annona cherimola*). Amorph. powder. Mp > 300°. λ_{max} 206 (log ϵ 2.73); 255 (sh) (log ϵ 3.65); 280 (log ϵ 2.34) (EtOH).

N-*Jasmonoyl:* **N-*Jasmonoyltyramine***
[202661-57-2]
$C_{20}H_{27}NO_3$ 329.438
Constit. of the pollen of *Petunia hybrida*.

N-*Me: 4-[2-(Methylamino)ethyl]phenol, 9CI.* **N-*Methyltyramine***
[370-98-9]
$C_9H_{13}NO$ 151.208
Alkaloid from *Hordeum vulgare*, *Panicum miliaceum* (proso millet), some *Coryphantha* spp. and several other spp. Also found in mescal (*Lophophora williamsii*), *Trichocereus* spp. and other cacti (Poaceae, Cactaceae). Mp 130-131° (127-128°).

▶ SL8300000

N-*Me,* O-*α-L-rhamnopyranoside:* **N-*Methyltyramine* O-*α-L-rhamnopyranoside***
[111537-50-9]
$C_{15}H_{23}NO_5$ 297.35
Alkaloid from *Selaginella doederleinii* (Selaginellaceae). Amorph. solid. $[\alpha]_D^{20}$ -131 (c, 0.3 in MeOH).

N-*Me,* N-*formyl:* **N-*Formyl*-N-*methyltyramine***
$C_{10}H_{13}NO_2$ 179.218
Alkaloid from *Cyathobasis fruticulosa*. Needles (MeOH). Mp 112-114°. λ_{max} 226 (log ϵ 2.8); 270 (log ϵ 2.8) (MeOH).

N,N-*Di-Me:* see Hordenine, H-357

Me ether: see 2-(4-Methoxyphenyl)ethylamine, M-280

O-*(3-Methyl-2-butenyl),* N-*tigloyl:* N-*[2-(4-Prenyloxyphenyl)ethyl]tiglamide*
[172837-74-0]
$C_{18}H_{25}NO_2$ 287.401
Constit. of *Boronia megastigma* (brown boronia). Cryst. (Et_2O). Mp 69-71°.

O-*(3-Methyl-2-butenyl),* N-*benzoyl:* ***Hortiamide***
[106055-13-4]
$C_{20}H_{23}NO_2$ 309.407
Alkaloid from roots of *Hortia regia* (Rutaceae). Cryst. Mp 109-111°.

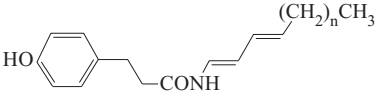
O-*(3-Methyl-2-butenyl),* N-E-*cinnamoyl:* N-*[2-[4-[(3-Methyl-2-butenyl)oxy]-phenyl]ethyl]-3-phenyl-2-propenamide.* **N-*2-[4-(3,3-Dimethylallyloxy)phenyl]ethylcinnamide***. N-*Cinnamoyl*-p-*prenyloxyphenethylamine*
[87596-51-8]
$C_{22}H_{25}NO_2$ 335.445
Alkaloid from the leaves of *Aegle marmelos* (bael fruit) (Rutaceae). Cryst. (MeOH). Mp 125-126°.

[70185-64-7 , 20375-37-5]

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 1289C; 1289D (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **2**, 612A; 612B (*nmr*)
Barger, G. *et al., J.C.S.*, 1909, **95**, 1127; 1722 (*synth*)
Kincl, F.A. *et al., J.C.S.*, 1956, 4163 (*N-Benzoyltyramine*)
Butenandt, A. *et al., Arch. Biochem. Biophys.*, 1959, **83**, 76 (*N-Acetyltyramine*)
Mann, J.D. *et al., J. Biol. Chem.*, 1963, **238**, 676-681 (*N-Me, isol*)
Kappe, T. *et al., J. Med. Chem.*, 1965, **8**, 368 (*uv*)
Boulton, A.A. *et al., Nature (London)*, 1967, **215**, 132 (*occur*)
Rondest, J. *et al., Bull. Soc. Chim. Fr.*, 1968, 2411-2414 (*N-4-hydroxycinnamoyl*)
Takahashi, T. *et al., Agric. Biol. Chem.*, 1970, **34**, 1256-1258 (*isol, sawa millet*)
Stuart, K.L. *et al., Phytochemistry*, 1971, **10**, 460 (*isol, derivs*)
Milne, G.W. *et al., Anal. Chem.*, 1973, **45**, 1952 (*ms*)
Tamura, K. *et al., Bull. Chem. Soc. Jpn.*, 1974, **47**, 2682 (*cryst struct*)
Lambert, F. *et al., Org. Magn. Reson.*, 1975, **72**, 66 (*pmr*)
Kruger, T.L. *et al., J.O.C.*, 1977, **42**, 4161 (*derivs, ms*)
Smith, T.A. *et al., Phytochemistry*, 1977, **16**, 9 (*rev, occur, derivs*)
Doetsch, P.W. *et al., J. Chromatogr.*, 1980, **189**, 79 (*occur*)
Yoshihara, T. *et al., Agric. Biol. Chem.*, 1981, **45**, 2593-2598 (*N-Feruloyltyramines*)
Fukuda, N. *et al., Chem. Pharm. Bull.*, 1983, **31**, 156-161 (*N-Feruloyltyramines*)
Govindachari, T.R. *et al., Phytochemistry*, 1983, **22**, 755 (*N-cinnamoyl-p-prenyl*)
Xu, L. *et al., Yaoxue Xuebao*, 1984, **19**, 48; *CA*, **101**, 107360y (*Moupinamide*)
Chao, L.R. *et al., J. Nat. Prod.*, 1987, **50**, 477 (*N-Methyltyramine rhamnopyranoside*)
Barbosa-Filho, J.M. *et al., Phytochemistry*, 1987, **26**, 2615-2617 (*N-2-hydroxybenzoyl*)
Xiao, Y. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 1987, **29**, 532; *CA*, **108**, 109524y (*Violyedoenamide*)
Tseng, C.-F. *et al., Chem. Pharm. Bull.*, 1992, **40**, 396-400 (*synth, cinnamic amides*)
Tinto, W.F. *et al., J. Nat. Prod.*, 1992, **55**, 1676 (*Hortiamide*)
Atta-ur-Rahman, *et al., Phytochemistry*, 1992, **31**, 2869-2872 (*Paprazine*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 780
Weyerstahl, P. *et al., Annalen*, 1994, 1043 (*Prenyloxyphenylethyltiglamide*)
Wu, T.-S. *et al., Phytochemistry*, 1994, **36**, 1063 (*N-p-cis-Coumaroyltyramine*)
Posso, O. *et al., Rev. Colomb. Quim.*, 1994, **23**, 53-62; *CA*, **122**, 286624r (*N-Cinnamoyltyramine*)
Wu, Y.-C. *et al., Planta Med.*, 1995, **61**, 146 (*N-Caffeoyltyramine*)
Nishioka, T. *et al., Biosci., Biotechnol., Biochem.*, 1997, **61**, 1138-1141 (*N-p-Coumaroyltyramine, isol, synth*)
Chaves, M.H. *et al., Phytochemistry*, 1997, **46**, 879-881 (*N-Sinapoyltyramine*)
Bahn, Y.-S. *et al., J. Antibiot.*, 1998, **51**, 902-907 (*YUA 001*)
Miersch, O. *et al., Phytochemistry*, 1998, **47**, 327-329 (*N-Jasmonoyltyramine*)
Chen, C.-Y. *et al., Phytochemistry*, 1998, **49**, 1443-1447 (*Annona cherimola amides*)
Kalač, P. *et al., Biologically-active Phytochemicals in Food*, (eds. Pfannhauser, W. *et al*), Royal Society of Chemistry, 2001, 217-220 (*sauerkraut*)
Chang, Y.-C. *et al., J. Chin. Chem. Soc. (Taipei)*, 2001, **48**, 811-815 (*N-Sinapoyltyramines, N-Feruloyltyramines*)
Lee, H.H. *et al., Arch. Pharmacal Res.*, 2002, **25**, 428-432 (*N-Dihydrocaffeoyltyramine*)
Suarez, L.E.C. *et al., J. Braz. Chem. Soc.*, 2002, **13**, 339-344 (*Hydroxyphenylethyltiglamide*)
Dou, H. *et al., J. Nat. Prod.*, 2002, **65**, 1777-1781 (*Schnabelia tetradonta C38 glycoside*)
Dou, H. *et al., Helv. Chim. Acta*, 2003, **86**, 2797-2804 (*Schnabelia tetradonta C40 glycoside*)
Bahçeevli, A.K. *et al., J. Nat. Prod.*, 2005, **68**, 956-958 (*N-Formyl-N-methyltyramine*)
Guttiérez, M. *et al., J. Nat. Prod.*, 2006, **69**, 1379-1383 (*Muricea austera constit*)
Li, B. *et al., Tianran Chanwu Yanjiu Yu Kaifa*, 2006, **18**, 61-64; *CA*, **147**, 443770w (*Schnabelia trans-cinnamoylglycosides*)
Zhao, P.-J. *et al., Chem. Biodiversity*, 2007, **4**, 899-904 (*N-Ac, isol, pmr, cmr*)
Davis, R.A. *et al., J. Nat. Prod.*, 2008, **71**, 451-452 (*Galloyltyramine*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, TOF750; TOG250

N-(4-Hydroxyphenethyl)-2,4-decadienamide H-668

2,4-Decadienoic acid p-*hydroxyphenethylamide*



n = 4

$C_{18}H_{25}NO_2$ 287.401

(*E,E*)-*form* [24738-52-1]
Constit. of the roots of *Anacyclus pyrethrum* (Asteraceae). Mp 132-133°.
Burden, R.S. *et al., J.C.S.(C)*, 1969, 2477 (*isol, uv, ir, pmr, struct, synth*)

N-(4-Hydroxyphenethyl)-2,4-dodecadienamide H-669

2,4-Dodecadienoic acid p-*hydroxyphenethylamide*
As *N*-(4-Hydroxyphenethyl)-2,4-decadienamide, H-668 with
n = 6
$C_{20}H_{29}NO_2$ 315.455

(*E,E*)-*form* [24738-53-2]
Constit. of the roots of *Anacyclus pyrethrum* (Asteraceae). Mp 140-141°.

Burden, R.S. *et al., J.C.S.(C)*, 1969, 2477 (*isol, synth*)

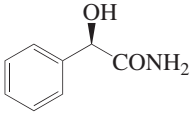
N-(4-Hydroxyphenethyl)-2,4-tetradecadienamide H-670

2,4-Tetradecadienoic acid p-*hydroxyphenethylamide*
As *N*-(4-Hydroxyphenethyl)-2,4-decadienamide, H-668 with n = 8
$C_{22}H_{33}NO_2$ 343.508

(*E*,*E*)-*form* [24738-54-3]
Constit. of the roots of *Anacyclus pyrethrum* (Asteraceae). Mp 141.5-142.5°.
Burden, R.S. *et al., J.C.S.(C)*, 1969, 2477 (*isol, synth*)

2-Hydroxy-2-phenylacetamide H-671

α-Hydroxybenzeneacetamide, 9CI. Mandelamide, 8CI
[4410-31-5]



(*R*)-*form*

$C_8H_9NO_2$ 151.165
(*R*)- and (*S*)-forms confused in early lit.

(*R*)-*form* [24008-62-6]
Plates (C_6H_6). Mp 123-124°. $[\alpha]_D^{20}$ -73 (c, 1.60 in Me_2CO).

O-*β-D-Glucopyranoside:* [151649-54-6]
$C_{14}H_{19}NO_7$ 313.307
Constit. of *Olinia emarginata* and *Olinia ventosa*. $[\alpha]_D^{20}$ -135 (c, 0.4 in MeOH).

O-*(6-O-Benzoyl-β-D-glucopyranoside):* ***Persicaside***
[1007096-61-8]
$C_{21}H_{23}NO_8$ 417.415
Constit. of the seeds of *Prunus persica* (peach). Antiinflammatory agent. Cryst. Config. not confirmed.

O-*[β-D-Xylopyranosyl-(1→6)-β-D-glucopyranoside]:* ***Lucuminamide***
$C_{19}H_{27}NO_{11}$ 445.422
Constit. of *Calocarpum sapota* (preferred genus name *Pouteria*). Powder.

N-*Me:*
$C_9H_{11}NO_2$ 165.191
Mp 94-95°.

Me ether: 2-Methoxy-2-phenylacetamide
$C_9H_{11}NO_2$ 165.191
Plates (petrol). Mp 108-109°. $[\alpha]_D^{18}$ -103.6 (Me_2CO).

(*S*)-*form* [24008-63-7]
Mp 123°. $[\alpha]_D^{20}$ +73 (c, 1.60 in Me_2CO).

N-*Benzyl:*
$C_{15}H_{15}NO_2$ 241.289
Catalyst for enantioselective addn. of dimethylzinc to α-keto esters. Solid (MeOH). Mp 134-135°. $[\alpha]_D^{25}$ +83.2 (c, 0.54 in $CHCl_3$).

(±)-*form*
Plates (C_6H_6 or EtOH). Spar. sol. Et_2O. Mp 134-135°.

O-*Ac:* [6635-16-1]
$C_{10}H_{11}NO_3$ 193.202
Needles (H_2O). Mp 112-113°.

N,N-*Di-Me:* [2019-71-8]
$C_{10}H_{13}NO_2$ 179.218
Mp 158°.

Me ether: [56598-63-1]
Plates (H_2O or Et_2O). Sol. EtOH, C_6H_6. Mp 112-114°.

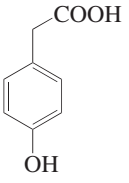
Me ether, N,N-*di-Me:*
$C_{11}H_{15}NO_2$ 193.245
Mp 41°.

[65645-88-7]

Freudenberg, K. *et al., Annalen*, 1933, **501**, 199 (*synth, abs config*)
Org. Synth., Coll. Vol., 3, 1955, 536 (*synth*)
Iriuchijima, S. *et al., J.A.C.S.*, 1975, **97**, 596 (*synth, ir*)
Schwanghart, A.-D. *et al., Chem. Ber.*, 1977, **110**, 778 (*resoln*)
Nahrstedt, A. *et al., Phytochemistry*, 1993, **34**, 433-436 (*isol, glucoside*)
Takeda, T. *et al., Chem. Pharm. Bull.*, 1997, **45**, 697 (*Lucuminamide*)
Papakyprianou, A. *et al., Org. Prep. Proced. Int.*, 2002, **34**, 436-440 (*synth*)
Tietze, L.F. *et al., Synthesis*, 2004, 2236-2239 (*S-form, synth*)
Rho, J.-R. *et al., Bull. Korean Chem. Soc.*, 2007, **28**, 1289-1293 (*Persicaside*)
Blay, G. *et al., Synthesis*, 2007, 3754-3757 (*S-form, N-benzyl*)

4-Hydroxyphenylacetic acid H-672

4-Hydroxybenzeneacetic acid, 9CI. p-*Hydroxy-α-toluic acid*
[156-38-7]



$C_8H_8O_3$ 152.149
Constit. of sweet clover (*Melilotus officinalis*) and also from seeds of *Taraxacum officinale* yeast, wool and other biol. sources incl. an unidentified marine-derived fungus. Needles (H_2O). Sol. EtOH, Et_2O, hot H_2O. Mp 148-150°. pK_a 4.59 (10% EtOH aq.).

▶ AI2680000

Amide: 4-Hydroxybenzeneacetamide, 9CI. p-*Hydroxyphenylacetamide*
[17194-82-0]
$C_8H_9NO_2$ 151.165
Isol. from the sponge *Suberites tylobtusa*. Prod. by *Cytophaga marinoflava* sp. AM13. and an unidentified marine-derived fungus. Antitumour agent. Leaflets (H_2O). Mp 175°.

▶ AC3851500

Amide, N-*formyl:* N-*Formyl-4-hydroxybenzeneacetamide, 9CI.* N-*[2-(4-Hydroxyphenyl)acetyl]formamide*
[913691-27-7]
$C_9H_9NO_3$ 179.175
Isol. from an unidentified marine-derived fungus.

Nitrile: 4-Hydroxyphenylacetonitrile. 4-Hydroxybenzyl cyanide. 4-(Cyanomethyl)phenol
[14191-95-8]
C_8H_7NO 133.149
Isol. from *Brassica alba* as a dec. prod. of 4-Hydroxybenzyl glucosinolate. Needles (H_2O). Mp 72°. Bp 330°.

▶ AM0530000

Nitrile, O-*α-L-rhamnopyranoside:* ***Niazirin***
[122001-32-5]
$C_{14}H_{17}NO_5$ 279.292
Constit. of the leaves of the horseradish tree (*Moringa oleifera*, Moringaceae). Hypotensive agent.

▶ Mutagen.

Nitrile, O-*(4-O-acetyl-α-L-rhamnopyranoside):* ***Niazirinin***
[159397-73-6]
$C_{16}H_{19}NO_6$ 321.329
Constit. of horseradish tree (*Moringa oleifera*, Moringaceae) leaves. Hypotensive agent. Needles ($CHCl_3$/MeOH). Mp 183-184°. Struct. originally given as the 3-Ac isomer but revised without comment. 4-Ac is more likely (cf. other *M. oleifera* isolates). λ_{max} 200 ; 222 (MeOH).

Nitrile, O-*(tri-O-acetyl-α-L-rhamnopyranoside):* [219501-37-8]
$C_{20}H_{23}NO_8$ 405.404
Constit. of horseradish tree (*Moringa oleifera*, Moringaceae) leaves. Cryst. (EtOAc/petrol). Mp 103° (synthetic). λ_{max} 200 ; 220 ; 278 (MeOH).

Nitrile, O-*[β-D-apiofuranosyl-(1→6)-β-D-glucopyranoside]:* [845531-45-5]
$C_{19}H_{25}NO_{10}$ 427.407
Constit. of the roots of *Semiaquilegia adoxoides*. $[\alpha]_D^{20}$ -68.5 (c, 1 in MeOH).

Nitrile, O-*[β-D-glucopyranosyl-(1→3)-α-L-rhamnopyranoside]:* [764656-60-2]
$C_{20}H_{27}NO_{10}$ 441.434
Constit. of the fruit of *Moringa oleifera* (horseradish tree). Amorph. powder.

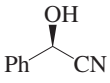
O-*(3-Methyl-2-butenyl), nitrile: 4-(3-Methyl-2-butenyloxy)phenylacetonitrile.* ***Zanthonitrile***
[230308-50-6]
$C_{13}H_{15}NO$ 201.268
Alkaloid from the fruit of *Zanthoxylum integrifoliolum*. Yellowish oil.

Li, S. *et al., CA*, 1984, **100**, 117826y (*amide, nitrile*)
Faizi, S. *et al., J. Nat. Prod.*, 1994, **57**, 1256-1261 (*Niazirin, Niazirinin*)
Strauss, C.R. *et al., Org. Prep. Proced. Int.*, 1995, **27**, 552-555 (*amides*)
Kumar, A. *et al., Synth. Commun.*, 1997, **27**, 1133-1141 (*synth, amide*)
Leuck, M. *et al., Carbohydr. Res.*, 1998, **312**, 33-44 (*Niazirin derivs, synth, struct*)
Chen, I.-S. *et al., J. Nat. Prod.*, 1999, **62**, 833-837 (*Zanthonitrile*)
Zhang, H. *et al., Chin. J. Chem.*, 2004, **22**, 1200-1203 (*nitrile 6-apiosylglucoside*)
Shabaan, M. *et al., Dissertation*, Univ. of Göttingen, 2004, (*amide, isol, Cytophaga*)
Francis, J.A. *et al., Helv. Chim. Acta*, 2004, **87**, 317-326 (*nitrile 3-glucosylrhamnoside, Me ester rhamnoside*)

2-Hydroxy-2-phenylacetonitrile H-673

α-Hydroxybenzeneacetonitrile, 9CI. Benzaldehyde cyanohydrin. Amygdonitrile. Mandelonitrile

[532-28-5]



(*R*)-*form*

C_8H_7NO 133.149

Glycosides widespread in (mostly higher) plants as cyanogenic glycosides. Glycosides of both enantiomers and of the racemate occur.

(*R*)-*form* [10020-96-9]

Needles. Mp 28.5-29.5°. $[\alpha]_{Hg}^{25}$ +46.9 (C_6H_6).

► Eye irritant. LD_{50} (rat, orl) 116 mg/kg. OO8400000

O-*Ac:* [119718-89-7]
$C_{10}H_9NO_2$ 175.187
$[\alpha]_D^{20}$ +8.8 (c, 1 in $CHCl_3$).

O-*β-D-Allopyranoside:* ***Passiedulin***
$C_{14}H_{17}NO_6$ 295.291
Constit. of the leaves and stems of *Passiflora edulis* (passion fruit). $[\alpha]_D^{25}$ -69 (c, 0.24 in MeOH).

O-*β-D-Glucopyranoside:* ***Prunasin***
[99-18-3]
$C_{14}H_{17}NO_6$ 295.291
Isol. from kernels of *Prunus* spp., immature fruits of *Passiflora* spp. and leaves of perilla (*Perilla frutescens* var. *acuta*). Needles ($CHCl_3$). Mp 147-148°. $[\alpha]_D$ -29.6 (H_2O).

► UL3420000

O-*(6-O-Malonyl-β-D-glucopyranoside):* ***6′-O-Malonylprunasin***
[121748-23-0]
$C_{17}H_{19}NO_9$ 381.338
Constit. of *Lotononis fruticoides* and *Lotononis* aff. *falcata*.

O-*[3,4,5-Trihydroxybenzoyl-(→6)-β-D-glucopyranoside]:* ***6′-O-Galloylprunasin***
$C_{21}H_{21}NO_{10}$ 447.398
Constit. of *Monochaetum multiflorum* and *Phyllagathis rotundifolia*. Pinkish amorph. powder. $[\alpha]_D^{27}$ -81.2 (c, 0.22 in MeOH) (-17). λ_{max} 276 (log ε 3.98) (MeOH). λ_{max} 269 (log ε 2.8); 351 (log ε 2.4) (MeOH).

O-*[2,6-Bis(3,4,5-trihydroxybenzoyl)-β-D-glucopyranoside]:* ***2′,6′-Di-O-galloylprunasin***
$C_{28}H_{25}NO_{14}$ 599.504
Constit. of *Phyllagathis rotundifolia*. Tan amorph. powder. $[\alpha]_D^{27}$ -77.2 (c, 0.12 in MeOH). λ_{max} 278 (log ε 4.31) (MeOH).

O-*[3,6-Bis(3,4,5-trihydroxybenzoyl)-β-D-glucopyranoside]:* ***3′,6′-Di-O-galloylprunasin***
$C_{28}H_{25}NO_{14}$ 599.504
Constit. of *Phyllagathis rotundifolia*. Tan amorph. powder. $[\alpha]_D^{27}$ -8.2 (c, 0.27 in MeOH). λ_{max} 276 (log ε 4.28) (MeOH).

O-*[4,6-Bis(3,4,5-trihydroxybenzoyl)-β-D-glucopyranoside]:* ***4′,6′-Di-O-galloylprunasin***
$C_{28}H_{25}NO_{14}$ 599.504
Constit. of *Phyllagathis rotundifolia*. Tan amorph. powder. $[\alpha]_D^{27}$ -73.1 (c, 0.12 in MeOH). λ_{max} 277 (log ε 4.21) (MeOH).

O-*[2,3,6-Tris(3,4,5-trihydroxybenzoyl)-β-D-glucopyranoside]:* ***2′,3′,6′-Tri-O-galloylprunasin***
$C_{35}H_{29}NO_{18}$ 751.61
Constit. of *Phyllagathis rotundifolia*. Tan amorph. powder. $[\alpha]_D^{27}$ +57 (c, 0.16 in MeOH). λ_{max} 278 (log ε 4.39) (MeOH).

O-*[3,4,6-Tris(3,4,5-trihydroxybenzoyl)-β-D-glucopyranoside]:* ***3′,4′,6′-Tri-O-galloylprunasin***
$C_{35}H_{29}NO_{18}$ 751.61
Constit. of *Phyllagathis rotundifolia*. Tan amorph. powder. $[\alpha]_D^{27}$ -65 (c, 0.23 in MeOH). λ_{max} 278 (log ε 4.49) (MeOH).

O-*[2,3,4,6-Tetrakis(3,4,5-trihydroxybenzoyl)-β-D-glucopyranoside]:* ***2′,3′,4′,6′-Tetra-O-galloylprunasin***
$C_{42}H_{33}NO_{22}$ 903.716
Constit. of *Phyllagathis rotundifolia*. Tan amorph. powder. $[\alpha]_D^{27}$ +14.2 (c, 0.25 in MeOH). λ_{max} 279 (log ε 4.58) (MeOH).

O-*[4-Hydroxy-*E*-cinnamoyl-(→4)-β-D-glucopyranoside]:* ***4′-O-p-Coumaroylprunasin***
[190581-72-7]
$C_{23}H_{23}NO_8$ 441.437
Constit. of *Microlepia strigosa*.

O-*[3,4-Dihydroxy-*E*-cinnamoyl-(→4)-β-D-glucopyranoside]:* ***4′-O-Caffeoylprunasin***
[190581-73-8]
$C_{23}H_{23}NO_9$ 457.436
Constit. of *Microlepia strigosa*.

O-*[3,4-Dihydroxy-*E*-cinnamoyl-(→6)-β-D-glucopyranoside]:* ***Grayanin***
[110978-97-7]
$C_{23}H_{23}NO_9$ 457.436
Constit. of *Prunus grayana* bark. Pale yellow powder. $[\alpha]_D^{25}$ -39.1 (c, 0.7 in Me_2CO).

O-*[β-D-Apiofuranosyl-(1→6)-β-D-glucopyranoside]:* ***Oxyanthin***
[140681-88-5]
$C_{19}H_{25}NO_{10}$ 427.407
Constit. of *Oxyanthus pyriformis* and *Psydrax livida*. Mp 158° (as per-Ac). $[\alpha]_D^{20}$ -81.1 (c, 0.95 in MeOH).

O-*[5-O-Benzoyl-β-D-apiofuranosyl-(1→6)-β-D-glucopyranoside]:* ***5″-O-Benzoyloxyanthin***
[140701-86-6]
$C_{26}H_{29}NO_{11}$ 531.515
Constit. of *Oxyanthus pyriformis* and *Psydrax livida*. Mp 183° (as per-Ac). $[\alpha]_D^{28}$ -59.4 (c, 3.3 in MeOH).

O-*[α-L-Arabinopyranosyl-(1→6)-β-D-glucopyranoside]:* ***Vicianin***
[155-57-7]
$C_{19}H_{25}NO_{10}$ 427.407
Isol. from seeds of vetch (*Vicia angustifolia*). Also from *Gerbera jamesonii* and ferns (*Davallia* spp.). Needles (H_2O). Mp 160°. $[\alpha]_D$ -20.7.

► Toxic.

O-*[β-D-Xylopyranosyl-(1→6)-β-D-glucopyranoside]:* ***Lucumin***. *Lucuminoside*
[1392-28-5]
$C_{19}H_{25}NO_{10}$ 427.407
Isol. from marmalade plum (*Lucuma mammosa*, preferred genus name *Pouteria*) seeds. Mp 184-185°. $[\alpha]_D^{20}$ -50.5 (c, 0.4 in H_2O).

O-*[α-L-Rhamnopyranosyl-(1→6)-β-D-glucopyranoside]:* *Mandelonitrile rutinoside*
[184002-37-7]
$C_{20}H_{27}NO_{10}$ 441.434
Constit. of the fruit of purple passion fruit (*Passiflora edulis*).

O-*[β-D-Glucopyranosyl-(1→2)-β-D-glucopyranoside]:* *Mandelonitrile sophoroside*
[99520-78-2]
$C_{20}H_{27}NO_{11}$ 457.433
Isol. from leaves of perilla (*Perilla frutescens* var. *acuta*). Needles (H_2O). Mp 193-195°. $[\alpha]_D^{22}$ -22.6 (c, 0.14 in MeOH).

O-*[β-D-Glucopyranosyl-(1→6)-β-D-glucopyranoside]:* *Mandelonitrile gentiobioside.* ***Amygdalin***. *Amygdaloside. Glucoprunasin. Laetrile. Vitamin B_{17}. NSC 15780*
[29883-15-6]
[672-72-0]
$C_{20}H_{27}NO_{11}$ 457.433
Bitter glycoside of the Rosaceae, found esp. in kernels of cherries, peaches and apricots. Present in cold pressed bitter almond oil from the above sources prior to enzymic hydrolysis and steam distillation for food use.
Antiinflammatory agent. Trihydrate. Poorly sol. Et_2O. Mp 214°. $[\alpha]_D^{25}$ -40.6 (H_2O). Log P -4.18 (uncertain value) (calc).

► LD_{50} (rat, orl) 522 mg/kg. Exp. teratogen. OO8450000

(*S*)-*form*

O-*β-D-Allopyranoside:* Constit. of the leaves and stems of passion fruit (*Passiflora edulis*).

O-*β-D-Glucopyranoside:* ***Sambunigrin***
[99-19-4]
$C_{14}H_{17}NO_6$ 295.291
Isol. from leaves of elderberry (*Sambucus nigra*) and from other plants. Needles (EtOAc). Mp 151-152°. $[\alpha]_D$ -76.3 (EtOAc).

O-*[β-D-Apiofuranosyl-(1→2)-β-D-glucopyranoside]:*
$C_{19}H_{25}NO_{10}$ 427.407
Constit. of *Sambucus nigra* (elderberry). $[\alpha]_D$ -73 (c, 0.7 in EtOH). λ_{max} 278 (EtOH).

O-*[3,4,5-Trihydroxybenzoyl-(→6)-β-D-glucopyranoside]:* ***6′-O-Galoylsambunigrin***
$C_{21}H_{21}NO_{10}$ 447.398
Constit. of *Elaeocarpus sericopetalus*. Oil. $[\alpha]_D^{21}$ -41 (c, 0.4 in MeOH). λ_{max} 216 (log ε 9.1); 278 (log ε 10.2) (MeOH).

(±)-***form*** [613-88-7]
Isol. from peach kernels (*Prunus persica*). Prisms or oil. Mp 21.5-22°.

O-*β*-D-*Glucopyranoside:* ***Prulaurasin***
[138-53-4]
$C_{14}H_{17}NO_6$ 295.291
Isol. from cherry laurel leaves (*Prunus laurocerasus*), *Cotoneaster* spp. and other plants. Needles (EtOAc). Mp 122-123°. $[\alpha]_D$ -53 (H_2O).

► UL3200000

O-*[β-D-Xylopyranosyl-(1→6)-β-D-glucopyranoside]:* ***Epilucumin***
[89460-01-5]
$C_{19}H_{25}NO_{10}$ 427.407
Isol. from fruits of *Anthemis cairica*.

Ac: [5762-35-6]
$C_{10}H_9NO_2$ 175.187
Bp_{25} 152° Bp_{11} 137-138°.

Benzoyl: [4242-46-0]
$C_{15}H_{11}NO_2$ 237.257
Found in defensive secretions of millipedes. Needles (EtOH). Mp 63-64°. Releases HCN and acetophenone.

Me ether: [13031-13-5]
C_9H_9NO 147.176
Bp_{14} 116-118°.

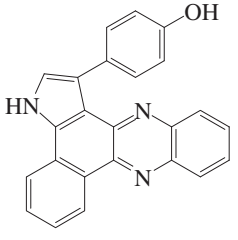
Et ether: [33224-69-0]
$C_{10}H_{11}NO$ 161.203
Bp_{16} 122-124°.

[51371-34-7 , 60981-47-7 , 61091-09-6 , 61091-10-9 , 29883-16-7]

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 426B; 426D (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **2**, 1483B; 1484A (*nmr*)
Caldwell, R.J. *et al., J.C.S.*, 1907, **91**, 671 (*Sambunigrin, Prulaurasin*)
Power, F.B. *et al., J.C.S.*, 1909, **95**, 243; 1910, **97**, 1099 (*Prunasin*)
Hawarth, W.N. *et al., J.C.S.*, 1923, 3120; 1924, 1337 (*Amygdalin*)
Chaudhury, D.N. *et al., J.C.S.*, 1949, 2054 (*Vicianin*)
Jones, M.B. *et al., Science (Washington, D.C.)*, 1961, **134**, 284 (*isol, (±)-form*)
Towers, G.H.N. *et al., Tetrahedron*, 1964, **20**, 71 (*pmr, glucosides*)
Kofod, H. *et al., Phytochemistry*, 1968, **8**, 1509 (*Vicianin*)
Schwartzmaier, U. *et al., Chem. Ber.*, 1976, **109**, 3250 (*pmr, Amygdalin*)
Duffey, S.S. *et al., J. Chem. Ecol.*, 1977, **3**, 101 (*benzoyl*)
Turczan, J.W. *et al., J. Assoc. Off. Anal. Chem.*, 1978, **61**, 192; 1979, **62**, 190 (*pmr, derivs*)
Dreifuss, P.A. *et al., Biomed. Mass Spectrom.*, 1980, **7**, 201 (*ms, Amygdalin*)
Huebel, W. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1981, **314**, 609 (*cmr*)
Spencer, K.C. *et al., J. Agric. Food Chem.*, 1983, **31**, 794-796 (*Prunasin*)
Nahrstedt, A. *et al., Planta Med.*, 1983, **49**, 143 (*Epilucumin*)
Aritomi, M. *et al., Phytochemistry*, 1985, **24**, 2438 (*sophoroside*)
Shimomura, H. *et al., Phytochemistry*, 1987, **26**, 2363 (*Grayanin*)
Rockenbach, J. *et al., Phytochemistry*, 1992, **31**, 567 (*Oxyanthin*)
Cardona, L. *et al., Phytochemistry*, 1992, **31**, 3507 (*Prunasin, cmr*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 1428
Takeda, T. *et al., Chem. Pharm. Bull.*, 1997, **45**, 697 (*Lucumin*)
Wada, H. *et al., Nat. Med. (Tokyo)*, 1997, **51**, 69-70 (*Cinnamoylprunasins*)
Nakajima, N. *et al., Biosci., Biotechnol., Biochem.*, 1998, **62**, 453-458 (*Prunasin, synth, pmr, cmr*)
Chassagne, D. *et al., Phytochemistry*, 1998, **49**, 757-759 (*rutinoside*)
Lechtenberg, M. *et al., Biochem. Syst. Ecol.*, 1999, **27**, 607-612 (*6′-Malonylprunasin*)
Greca, M.D. *et al., Nat. Prod. Lett.*, 2000, **14**, 175-182 (*2-apiosylglucoside*)
Christensen, J. *et al., Org. Lett.*, 2001, **3**, 2193-2195 (*Passiedulin*)
Isaza, J.H. *et al., Phytochemistry*, 2001, **58**, 321-327 (*6′-Galloylprunasin*)
Ling, S.-K. *et al., J. Nat. Prod.*, 2002, **65**, 131-135 (*Phyllagathis galloylprunasins*)
Seigler, D.S. *et al., Phytochemistry*, 2002, **60**, 873-882 (*allopyranosides*)
Belokon, Yu.N. *et al., Eur. J. Org. Chem.*, 2006, 4609-4617 (*R-form, O-Ac*)
Miller, R.E. *et al., Phytochemistry*, 2006, **67**, 1365-1371 (*6′-O-Galloylsambunigrin*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, AOD500; MAP250; IHO700

1-(4-Hydroxyphenyl)-3*H*-benzo[*a*]pyrrolo[2,3-*c*]phenazine H-674

*4-(3*H*-Benzo[a]pyrrolo[2,3-c]phenazin-1-yl)phenol, 9CI*
[156753-18-3]

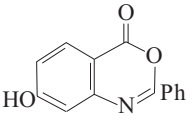


$C_{24}H_{15}N_3O$ 361.402
Prod. by *Nostoc commune*. Antibacterial agent and spore formn. inhibitor. Cell division inhibitor. Phytotoxin.

Japan. Pat., 1994, 94 116 159; *CA*, **121**, 151281k

7-Hydroxy-2-phenyl-4*H*-3,1-benzoxazin-4-one H-675

Dianthalexine
[85915-62-4]

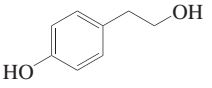


$C_{14}H_9NO_3$ 239.23
Alkaloid from *Dianthus caryophyllus* (Caryophyllaceae). Cryst. Sol. MeOH, Me_2CO; poorly sol. hexane. Mp 229-231°. λ_{max} 261 (ε 44900); 292 (ε 14200); 302 (ε 13500) (MeOH) (Berdy).

Bouillant, M.-L. *et al., Tet. Lett.*, 1983, **24**, 51 (*uv, pmr, ms, struct*)
Hauteville, M. *et al., J. Het. Chem.*, 1988, **25**, 715 (*synth*)
Crombie, L. *et al., Tet. Lett.*, 1990, **31**, 2647 (*synth*)

2-(4-Hydroxyphenyl)ethanol H-676

4-Hydroxybenzeneethanol, 9CI. p-*Hydroxyphenethyl alcohol.* ***Tyrosol.*** *Salidrosol*
[501-94-0]



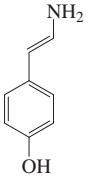
$C_8H_{10}O_2$ 138.166
Prod. by several *Ceratocystis* spp. Isol. from leaves of *Ligustrum ovalifolium* and bark of *Fraxinus excelsior*. Prod. by *Gibberella fujikuroi* and by the marine strain *Bacillus subtilis* KMM3427 associated with sea sponge *Verongia* sp. Also isol. from peanuts. Needles ($CHCl_3$). Sol. H_2O, EtOH, Et_2O, Me_2CO; spar. sol. petrol. Mp 85-86°.

1-O-Carbamoyl: 2-(4-Hydroxyphenyl)ethyl carbamate. Tyrosol carbamate
[1001207-09-5]
$C_9H_{11}NO_3$ 181.191
Prod. by a marine-derived *Arthrinium* sp.

Gautschi, J.T. *et al., Nat. Prod. Commun.*, 2007, **2**, 541-546 (*carbamate*)

2-(4-Hydroxyphenyl)ethenamine H-677

4-Hydroxystyrylamine. 4-(2-Aminoethenyl)phenol



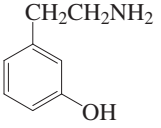
C_8H_9NO 135.165

N-*Ac:* [214217-93-3]
$C_{10}H_{11}NO_2$ 177.202
Prod. by *Streptomyces* sp. T-950510. Antitumour agent.

Japan. Pat., 1998, 98 259 174; *CA*, **129**, 289264d (*N-Ac*)

2-(3-Hydroxyphenyl)ethylamine H-678

3-(2-Aminoethyl)phenol, 9CI. 3-Hydroxyphenethylamine. m-*Tyramine*
[588-05-6]



$C_8H_{11}NO$ 137.181
Found in human brain. Tan needles (C_6H_6). Mp 103-104° (72-75°).

Hydrochloride: [3458-98-8]
Cryst. (EtOH/Et_2O). Mp 145°.

► SJ5975000

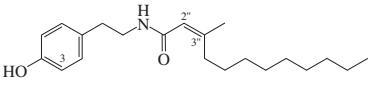
[38449-59-1]

Corrodi, H. *et al., Helv. Chim. Acta*, 1966, **49**, 798 (*synth*)

Anderson, W.K. *et al., J. Med. Chem.*, 1984, **27**, 1321 (*synth*)

N-[2-(4-Hydroxyphenyl)ethyl]-3-methyl-2-dodecenamide, 9CI H-679

3-Methyl-2-dodecenoic acid p-*hydroxyphenethylamide*



$C_{21}H_{33}NO_2$ 331.497

(*Z*)-*form* [75513-94-9]
Isol. from *Muricea austera* and *Sinularia flexibilis*. Shows antiinflammatory, cytotoxic and cardiotoxic activities. Sol. MeOH, CH_2Cl_2; poorly sol. H_2O. Mp 70-72°. λ_{max} 278 (ϵ 2860) (MeOH) (Derep).

2″,3″ξ-Dihydro: **N-*[2-(4-Hydroxyphenyl)ethyl]-3-methyldodecanamide***
$C_{21}H_{35}NO_2$ 333.513
Isol. from *Muricea austera*. Oil. $[\alpha]_D^{25}$ -26.8 (c, 0.5 in $CHCl_3$).

3-Hydroxy, Me ether: **N-*[2-(3-Hydroxy-4-methoxyphenyl)ethyl]-3-methyl-2-dodecenamide, 9CI***
[75513-96-1]
$C_{22}H_{35}NO_3$ 361.523
Isol. from *Sinularia flexibilis*. Shows antiinflammatory and cardiotoxic props. Oil which slowly solidifies. Sol. MeOH, CH_2Cl_2; poorly sol. H_2O. λ_{max} 280 (ϵ 3400); 287 (sh) (MeOH) (Derep).

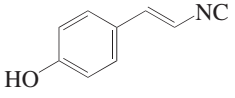
3-Methoxy: **N-*[2-(4-Hydroxy-3-methoxyphenyl)ethyl]-3-methyl-2-dodecenamide, 9CI***
[75513-95-0]
$C_{22}H_{35}NO_3$ 361.523
Isol. from *Sinularia flexibilis*. Shows antiinflammatory and cardiotoxic props. Oil which slowly solidifies. Sol. MeOH, CH_2Cl_2; poorly sol. H_2O. λ_{max} 280 (ϵ 3400); 287 (sh) (MeOH) (Derep).

[75513-93-8 *E*-form]

Kazlauskas, R. *et al., Aust. J. Chem.*, 1980, **33**, 1799 (*isol, uv, ir, pmr, cmr, ms, struct, synth*)
Sheu, J.-H. *et al., J. Chin. Chem. Soc. (Taipei)*, 1999, **46**, 253-257 (*isol, activity*)
Guttiérez, M. *et al., J. Nat. Prod.*, 2006, **69**, 1379-1383 (*Muricea austera constit*)

1-(4-Hydroxyphenyl)-2-isocyanoethene H-680

4-(2-Isocyanoethenyl)phenol



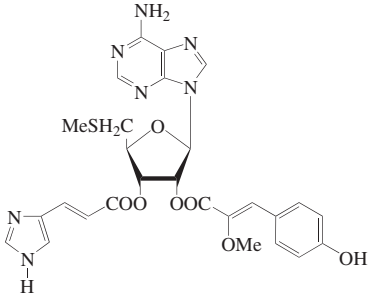
C_9H_7NO 145.16

(*E*)-*form* [298711-81-6]
Prod. by *Erwinia carotovora*.

O-*(6-Deoxyhexopyranoside):* [957062-49-6]
$C_{15}H_{17}NO_5$ 291.303
Prod. by *Erwinia carotovora*.

Brady, S.F. *et al., J.A.C.S.*, 2007, **129**, 12102-12103 (*isol, pmr, cmr, ms*)

2′-*O*-[3-(4-Hydroxyphenyl)-2-methoxypropenoyl]-3′-*O*-[3-(1*H*-imidazol-4-yl)propenoyl]-*S*-methyl-5′-thioadenosine H-681



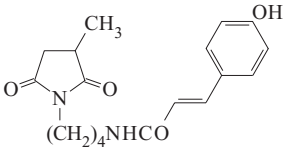
$C_{27}H_{27}N_7O_7S$ 593.619
Isol. from the ascidian *Atriolum robustum*. Amorph. solid. $[\alpha]_D^{24}$ -115 (c, 0.18 in MeOH). λ_{max} 293 (ϵ 44800) (MeOH).

S-*Oxide:*
$C_{27}H_{27}N_7O_8S$ 609.618
Isol. from *Atriolum robustum*. Amorph. solid. $[\alpha]_D^{24}$ -124.1 (c, 0.08 in MeOH). λ_{max} 288 (ϵ 44000) (MeOH).

Kehraus, S. *et al., J. Med. Chem.*, 2004, **47**, 2243-2255 (*isol, pmr, cmr, ms*)

3-(4-Hydroxyphenyl)-*N*-[4-(3-methyl-2,5-dioxo-1-pyrrolidinyl)-butyl]-2-propenamide, 9CI H-682

N-*(4-Methylsuccinimidobutyl)*-p-*coumaramide*

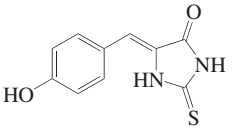


$C_{18}H_{22}N_2O_4$ 330.383

(±)-(*E*)-*form* [128866-07-9]
Alkaloid from bulbs of *Lilium regale* (Liliaceae). Needles (MeOH). Mp 184-185.5° (natural) Mp 192-193° (synthetic).

Mimaki, Y. *et al., Chem. Pharm. Bull.*, 1990, **38**, 541 (*isol, uv, ir, pmr, cmr, ms, struct*)
Kuehne, P. *et al., Tetrahedron*, 1993, **49**, 4575 (*synth*)
Linden, A. *et al., Acta Cryst. C*, 1997, **53**, 1472-1475 (*cryst struct*)

5-[(4-Hydroxyphenyl)methylene]-2-thioxo-4-imidazolidinone H-683



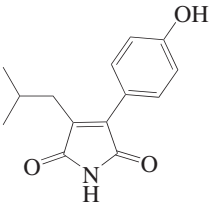
$C_{10}H_8N_2O_2S$ 220.251

(*Z*)-*form* [280137-26-0]
Prod. by *Burkholderia mallei*. Cryst.

Brady, S.F. *et al., J.A.C.S.*, 2007, **129**, 12102-12103 (*isol, pmr, cryst struct*)

3-(4-Hydroxyphenyl)-4-(2-methylpropyl)-1*H*-pyrrole-2,5-dione H-684

2-(4-Hydroxyphenyl)-3-isobutylmaleimide
[1040394-24-8]



$C_{14}H_{15}NO_3$ 245.277
Prod. by *Antrodia camphorata*. Yellow needles. Mp 199-201°. λ_{max} 231 (log ϵ 4.4); 269 (log ϵ 4.4); 360 (log ϵ 3.8) (MeOH).

O-*(3-Methyl-2-butenyl): 3-[4-(3-Methyl-2-butenyloxy)phenyl]-4-(2-methylpropyl)-1*H*-pyrrole-2,5-dione. 2-Isobutyl-3-(4-prenyloxyphenyl)maleimide.* ***Antrodin B****. Camphorataimide B. Antropyrroledione*
[656830-25-0]
$C_{19}H_{23}NO_3$ 313.396
Prod. by *Antrodia camphorata* and *Antrodia cinnamomea*. Cytotoxic. Yellow needles (hexane/EtOAc). Mp 110-111°. λ_{max} 230 (log ϵ 4.3); 272 (log ϵ 3.5); 355 (log ϵ 3.7) (MeOH).

O-*(3-Methyl-2-butenyl),* N-*hydroxy:* ***Antrodin C****. Camphorataimide C*
[656830-26-1]
$C_{19}H_{23}NO_4$ 329.395
Prod. by *Antrodia camphorata* and *Antrodia cinnamomea*. Cytotoxic. Yellow oil. λ_{max} 232 (log ϵ 4.3); 296 (log ϵ 3.7); 374 (log ϵ 3.7) (MeOH).

*2-Deoxo, 2ξ,*N-*dihydroxy,* O-*(3-methyl-2-butenyl):*
$C_{19}H_{25}NO_4$ 331.411
Isol. from *Sparassis crispa* (cauliflower mushroom). Inhibitor of melanin synth. Oil.

*3*R**,4*R**-Dihydro,* O-*(3-methyl-2-butenyl),* N-*hydroxy:* ***Antrodin E****. Camphorataimide D*
[656832-05-2]
$C_{19}H_{25}NO_4$ 331.411
Prod. by *Antrodia camphorata* and *Antrodia cinnamomea*. Oil. $[\alpha]_D^{23}$ +3 (c, 0.2 in MeOH). λ_{max} 227 (log ϵ 4.3); 275 (log ϵ 3.4); 283 (log ϵ 3.3) (MeOH).

*3*R*,4*S*-Dihydro,* N-*hydroxy:* [1040394-21-5]
$C_{14}H_{17}NO_4$ 263.293
Prod. by *Antrodia camphorata*. Mp 189-193°. $[\alpha]_D^{25}$ +9.6 (c, 0.11 in MeOH). λ_{max} 221 (log ϵ 4.16); 275 (log ϵ 3.46); 283 (log ϵ 3.38) (MeOH).

*3*R*,4*S*-Dihydro,* O-*(3-methyl-2-butenyl):* [1030374-53-8]
$C_{19}H_{25}NO_3$ 315.411
Prod. by *Antrodia camphorata*. Gum. $[\alpha]_D^{25}$ +24 (c, 0.2 in MeOH).

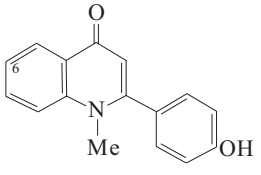
*3*R**,4*S**-Dihydro,* O-*(3-methyl-2-butenyl),* N-*hydroxy:* ***Antrodin D****. Camphorataimide E*

[656832-04-1]
$C_{19}H_{25}NO_4$ 331.411
Prod. by *Antrodia camphorata*, *Antrodia cinnamomea* and *Sparassis crispa* (cauliflower mushroom). Oil. $[\alpha]_D^{23}$ +2.5 (c, 0.2 in MeOH). λ_{max} 225 (log ϵ 4.3); 275 (log ϵ 3.3); 283 (log ϵ 3.2) (MeOH).

Nakamura, N. *et al., J. Nat. Prod.*, 2004, **67**, 46-48 (*O-prenyl, isol, pmr, cmr, cryst struct*)
Baag, M.M. *et al., Synthesis*, 2006, 1005-1008 (*synth, ir, pmr, cmr*)
Kawagishi, H. *et al., Biosci., Biotechnol., Biochem.*, 2007, **71**, 1804-1806 (*Sparassis crispa constit*)
Stewart, S.G. *et al., Tet. Lett.*, 2007, **48**, 2241-2244 (*synth*)
Chien, S.-C. *et al., J. Agric. Food Chem.*, 2008, **56**, 7017-7022 (*Antrodia camphorata constits*)
Cheng, C.-F. *et al., Tetrahedron*, 2008, **64**, 4347-4353 (*Antrodins D,E, synth*)

2-(4-Hydroxyphenyl)-1-methyl-4(1*H*)-quinolinone, 9CI H-685

Reevesianine A
[109030-96-8]



$C_{16}H_{13}NO_2$ 251.284
Alkaloid from the root and stem bark of *Skimmia reevesiana* (Rutaceae). Plates (MeOH). Mp 322-326°.

Ac: [109030-97-9]
Plates (Me_2CO). Mp 124-126°.

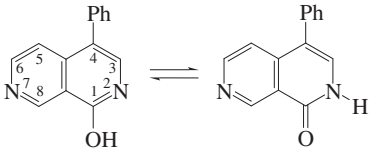
6-Methoxy: ***Reevesianine B***
[109030-98-0]
$C_{17}H_{15}NO_3$ 281.31
Alkaloid from the root and stem bark of *Skimmia reevesiana* (Rutaceae). Plates (MeOH). Mp 304-306°.

6-Methoxy, Ac: [109030-99-1]
Mp 200-202°.

Wu, T.S. *et al., Phytochemistry*, 1987, **26**, 873-875 (*isol, uv, ir, pmr, cmr, ms, struct, deriv*)
Kuo, S.C. *et al., J. Med. Chem.*, 1993, **36**, 1146-1156 (*synth, ir, pmr*)
Koyama, J. *et al., Chem. Pharm. Bull.*, 1999, **47**, 1038-1039 (*synth, ir, pmr*)

1-Hydroxy-4-phenyl-2,7-naphthyridine H-686

*4-Phenyl-2,7-naphthyridin-1(2*H*)-one, 9CI.* ***Lophocladine A***

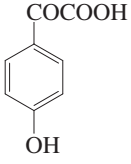


$C_{14}H_{10}N_2O$ 222.246
Alkaloid from *Lophocladia* sp. Displays affinity for NMDA receptors. δ-Opioid receptor antagonist. Needles (DMSO).
Mp 211-213°. λ_{max} 224 (log ϵ 4.06); 250 (log ϵ 4.03); 314 (log ϵ 3.88) (MeOH).

Gross, H. *et al., J. Nat. Prod.*, 2006, **69**, 640-644 (*isol, pmr, cmr, ms*)

2-(4-Hydroxyphenyl)-2-oxoacetic acid H-687

4-Hydroxy-α-oxobenzeneacetic acid, 9CI. p-Hydroxyphenylglyoxylic acid, 8CI. 4-Hydroxybenzoylformic acid. ***Pisolithin A***
[15573-67-8]



$C_8H_6O_4$ 166.133
Metab. of the fungus *Pisolithus tinctorius*. Needles (Et_2O/C_6H_6/petrol). Mp 177.5-178°. λ_{max} 206 ; 226 ; 296 (HCl) (Berdy). λ_{max} 240 ; 334 (NaOH) (Berdy).

*Me ether, methylamide: 2-(4-Methoxyphenyl)-*N*-methyl-2-oxoacetamide*
[244264-57-1]
$C_{10}H_{11}NO_3$ 193.202
Isol. from the ascidian *Polycarpa aurata*. Oil. λ_{max} 225 (ϵ 8738); 293 (ϵ 1675) (EtOH).

[54537-30-3]

Wessels, M. *et al., J. Nat. Prod.*, 2001, **64**, 1556-1558 (*Me ether derivs*)

Hydroxyphenylpropanedioic acid H-688

Hydroxyphenylmalonic acid. Phenyltartronic acid
$PhC(OH)(COOH)_2$
$C_9H_8O_5$ 196.159
Parent acid not well known.

Di-Me ester: [92607-06-2]
$C_{11}H_{12}O_5$ 224.213
Needles. Mp 67°. Bp_{11} 165°.

Di-Et ester:
$C_{13}H_{16}O_5$ 252.266
Cryst. mass. Mp 28°. Bp_{10} 170°.

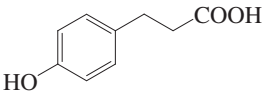
Me ether, di-Me ester: [124604-00-8]
$C_{12}H_{14}O_5$ 238.24
Oil.

Diamide: 2-Hydroxy-2-phenylpropanediamide. ***Armillarisin B***
[53696-75-6]
$C_9H_{10}N_2O_3$ 194.19
Isol. from *Armillariella tabescens*. Shows insecticidal activity. Solid (EtOH). Mp 159-161°.

Guyot, A. *et al., C. R. Hebd. Seances Acad. Sci.*, 1909, **148**, 564 (*synth*)
Weishengwu Xuebao, 1974, **14**, 9; *CA*, **82**, 40463c (*isol, diamide*)
Ger. Pat., 1983, 3 140 275; *CA*, **99**, 22142u (*synth*)
Toth, G. *et al., CA*, 1988, **109**, 62247u (*props, diamide*)
Kawabata, J. *et al., Annalen*, 1990, 181 (*synth, pmr*)

3-(4-Hydroxyphenyl)propanoic acid H-689

*4-Hydroxybenzenepropanoic acid, 9CI. 3-(*p*-Hydroxyphenyl)propionic acid, 8CI. Dihydro-*p*-coumaric acid.* p*-Hydroxyhydrocinnamic acid. Phloretic acid. Phloretinic acid. HPPA*
[501-97-3]



$C_9H_{10}O_3$ 166.176
Constit. of urine. Isol. from sulfite liquors, prod. by *Clostridium butyricum*. Isol. from heartwood of *Haplormosia monophylla* (Fabaceae). A prod. of tyrosine metab.; conc. in urine increases in patients with gastrointestinal diseases. Fluorescent substrate for the detn. of peroxidase. Prisms (Et_2O). Mp 129-130°. pK_a 4.76 (25°).

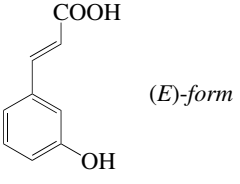
▶ MW5342000

*Methylamide: 3-(4-Hydroxyphenyl)-*N*-methylpropanamide*
$C_{10}H_{13}NO_2$ 179.218
Prod. by *Micromonospora* sp. P1068. Pale yellow solid. Mp 86°.

Gutierrez-Lugo, M.-T. *et al., Nat. Prod. Res.*, 2005, **19**, 645-652 (*methylamide*)

3-(3-Hydroxyphenyl)-2-propenoic acid, 9CI H-690

m-*Hydroxycinnamic acid.* m-*Coumaric acid.* m-*Cumaric acid*
[588-30-7]
[25429-38-3]



(*E*)-*form*

$C_9H_8O_3$ 164.16

(E)-form [14755-02-3]
Present in roots of *Citrus sinensis* (orange), *Citrus limon* (lemon) and *Citrus paradisi* (grapefruit). Prisms (H_2O). Sol. EtOH, Et_2O, C_6H_6, hot H_2O. Mp 191° (194°). pK_a 4.44.

Me ester: [66417-46-7]
$C_{10}H_{10}O_3$ 178.187
Leaflets. Mp 85°.

Me ether, pyrrolidide: ***1-(m-Methoxycinnamoyl)pyrrolidine, 8CI***. m-*Methoxycinnamic acid pyrrolidide*
[29647-01-6]
$C_{14}H_{17}NO_2$ 231.294
Alkaloid from the roots of *Piper methysticum* (kava) (Piperaceae). Needles (petrol). Mp 90-93°.

[6099-04-3]

Achenbach, H. *et al., Chem. Ber.*, 1970, **103**, 2535 (*Me ether pyrrolidide*)

Chen, I.-S. *et al., Fitoterapia*, 2007, **78**, 414-419 (*Me ether pyrrolidide*)

3-(4-Hydroxyphenyl)-2-propenoic acid, 9CI H-691

p-*Hydroxycinnamic acid, 8CI*. p-*Hydroxyphenylacrylic acid*. **p-*Coumaric acid***. *Naringenic acid*. *Naringeninic acid*. p-*Cumaric acid*

[7400-08-0]

$C_9H_8O_3$ 164.16

► LD_{50} (mus, ipr) 657 mg/kg. Exp. reprod. effects. GD9094000

(*E*)-*form* [501-98-4]

Widespread in plants, e.g. peel of black cherry (*Prunus serotina*), lentil seeds and from red clover (*Trifolium pratense*) and *Daviesia latifolia*. Occurs as many glycosides. Found by Bate-Smith in 48% of investigated dicotyledonous and 55% of monocotyledonous spp. Shows cytostatic activity. Immunoactive agent, inhibitor of stilbene oxidase. Cryst. + $1H_2O$ (cold H_2O), anhyd. cryst. (hot H_2O). Sol. Et_2O, hot EtOH; spar. sol. C_6H_6; insol. petrol. Mp 210-213°. pK_{a1} 4.64; pK_{a2} 9.45 (25°). $SOCl_2$-activated polycondensation gives the homopolyester with an all-*trans* struct. Polyesters with other hydroxy acids are also known. λ_{max} 225 ; 290 ; 310 (MeOH) (Berdy). λ_{max} 223 (ϵ 14450); 286 (ϵ 19000) (EtOH) (Berdy).

► GD9095000

Me ether, pyrrolidide: N-*(4-Methoxycinnamoyl)pyrrolidine*. p-*Methoxycinnamic acid pyrrolidide*. ***Piperlotine A***

[389572-70-7]

$C_{14}H_{17}NO_2$ 231.294

Alkaloid from the leaves of *Piper lolot*. Syrup. λ_{max} 225 ; 300 (MeOH).

(*Z*)-*form* [4501-31-9]

Found in *Larix sibirica* bark and *Miscanthus floridulus*. Cryst. (C_6H_6 or H_2O). Mp 134-134.5° dec. (subl. from 124°).

► GD9095100

Me ether, pyrrolidide: ***Piperlotine B***

[958296-12-3]

$C_{14}H_{17}NO_2$ 231.294

Alkaloid from the leaves of *Piper lolot*. Syrup. λ_{max} 215 ; 273 (MeOH).

[155339-67-6 , 155339-66-5 , 830-09-1 , 1929-30-2 , 2979-06-8 , 3943-97-3 , 7139-64-2 , 13080-39-2]

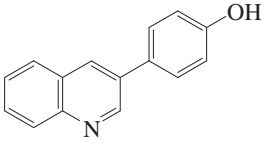
Wang, M.F. *et al., Chin. Chem. Lett.*, 1997, **8**, 35-36 (*Tataramide A*)

Li, C.-Y. *et al., J. Agric. Food Chem.*, 2007, **55**, 9436-9442 (*Piperlotines A,B*)

3-(4-Hydroxyphenyl)quinoline H-692

4-(3-Quinolinyl)phenol, 9CI

[107915-36-6]



$C_{15}H_{11}NO$ 221.258

Alkaloid from *Peganum nigellastrum*. Yellow needles (C_6H_6). Mp 224.5-226° (221-222°).

Me ether: 3-(4-Methoxyphenyl)quinoline

[57479-32-0]

$C_{16}H_{13}NO$ 235.285

Cryst. Mp 85-86°.

Kaslow, C.E. *et al., J.O.C.*, 1958, **23**, 271-276 (*synth*)

Ishikura, M. *et al., Heterocycles*, 1985, **23**, 2375-2386 (*Me ether*)

Cacchi, S. *et al., Tetrahedron*, 1996, **52**, 10225-10240 (*synth, ir, pmr, cmr*)

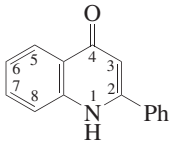
Giroux, A. *et al., Tet. Lett.*, 1997, **38**, 3841-3844 (*Me ether*)

Ma, Z.-Z. *et al., Phytochemistry*, 2000, **53**, 1075-1078 (*isol*)

4-Hydroxy-2-phenylquinoline H-693

*2-Phenyl-4(1*H*)-quinolinone, 9CI*. *2-Phenyl-4-quinolinol*

[14802-18-7]



$C_{15}H_{11}NO$ 221.258

NH-form predominates. Plates (EtOH). Mp 255-257°.

NH-form

N-*Me: 1-Methyl-2-phenyl-4(1*H*)-quinolinone*

[17182-60-4]

$C_{16}H_{13}NO$ 235.285

Alkaloid from *Balfourodendron riedelianum* (Rutaceae). Needles (MeOH). Mp 143-144°.

OH-form [1144-20-3]

Benzoyl: [880250-95-3]

$C_{22}H_{15}NO_2$ 325.366

Needles (petrol) or rhombs (dimorph.). Mp 96° (needles) Mp 110-111° (rhombs). Dimorphic, melts and resolidifies to give higher melting form.

Methanesulfonyl: [147197-91-9]

$C_{16}H_{13}NO_3S$ 299.35

Cryst. (C_6H_6/petrol). Mp 132-134°.

4-Methylbenzenesulfonyl: [147197-92-0]

$C_{22}H_{17}NO_3S$ 375.447

Cryst. (C_6H_6/petrol). Mp 126-128°.

Me ether: 4-Methoxy-2-phenylquinoline

[22680-62-2]

$C_{16}H_{13}NO$ 235.285

Alkaloid from the leaves of *Lunasia amara* (Rutaceae). Needles (pentane). Mp 69-70° (66-67°).

Me ether, perchlorate:

Rods (EtOH). Mp 215-218°.

Me ether, methiodide:

Bright yellow needles (MeOH). Mp 148-151°.

Et ether: [22680-63-3]

$C_{17}H_{15}NO$ 249.312

Mp 74-75°.

Goodwin, S. *et al., J.A.C.S.*, 1957, **79**, 2239-2241 (*Me ether, isol, uv*)

Price, J.R. *et al., Aust. J. Chem.*, 1959, **12**, 589-600 (*ir*)

Rapoport, H. *et al., J.A.C.S.*, 1960, **82**, 4395-4404 (*N-Me, isol*)

Ogata, Y. *et al., Tetrahedron*, 1971, **27**, 2765-2770 (*synth, uv*)

Koyama, J. *et al., Chem. Express*, 1992, **7**, 321-324 (*synth, N-Me*)

Kuo, S.-C. *et al., J. Med. Chem.*, 1993, **36**, 1146-1156 (*synth, Me ether, ir, pmr*)

Singh, O.V. *et al., Synth. Commun.*, 1993, **23**, 277-283 (*synth*)

Jensen, S. *et al., Acta Chem. Scand.*, 1994, **49**, 53-56 (*synth*)

Fürstner, A. *et al., J.O.C.*, 1994, **59**, 5215-5229 (*synth, pmr, cmr, ms*)

Prakash, O. *et al., Synth. Commun.*, 1994, **24**, 2169-2172 (*synth*)

Varma, R.S. *et al., Tet. Lett.*, 1998, **39**, 9113-9116 (*synth*)

Koyama, T. *et al., Chem. Pharm. Bull.*, 1999, **47**, 1038-1039 (*N-Me, synth, ir, pmr*)

Sato, S. *et al., J. Het. Chem.*, 1999, **36**, 1189-1193 (*synth*)

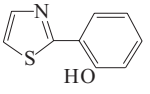
George, L. *et al., Org. Biomol. Chem.*, 2006, **4**, 558-564 (*O-benzoyl*)

Hemanth, K. *et al., Tetrahedron*, 2007, **63**, 9531-9535 (*Me ether, Et ether*)

2-(2-Hydroxyphenyl)thiazole H-694

2-(2-Thiazolyl)phenol, 9CI

[83053-38-7]



C_9H_7NOS 177.226

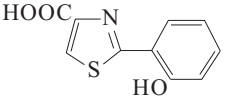
Isol. from *Pseudomonas cepacia*. Mp 51°.

Bukovits, G.J. *et al., Z. Naturforsch., B*, 1982, **37**, 877 (*isol*)

2-(2-Hydroxyphenyl)-4-thiazolecarboxylic acid, 9CI H-695

Aeruginoic acid. *Eruginoic acid*

[27501-91-3]



$C_{10}H_7NO_3S$ 221.236

Isol. from cultures of *Pseudomonas aeruginosa* and *Pseudomonas cepacia*. Antibiotic showing antimicrobial, antiinflammatory and hypotensive activity. Sol. $CHCl_3$, bases, EtOH, Me_2CO, MeOH; fairly sol. EtOAc, Et_2O; poorly sol. H_2O, hexane. Mp 271-272°. λ_{max} 276 (ϵ 3000); 320 (ϵ 2250) (0.1*N* HCl) (Derep). λ_{max} 240 (sh) (ϵ 3750); 282 (ϵ 1400); 362 (ϵ 1800) (0.1*N* NaOH) (Derep). λ_{max} 280 (ϵ 2400); 324 (ϵ 1850) (EtOH) (Derep). λ_{max} 220 ; 279 ; 322 (ϵ 10500) (MeOH) (Berdy). λ_{max} 212 ; 282 ; 362 (EtOH/NaOH) (Berdy).

Me ester: [27501-92-4]

$C_{11}H_9NO_3S$ 235.263

Isol. from cultures of *Pseudomonas aeruginosa*. Mp 138°.

Ac, Me ester: [27501-93-5]
Mp 99°.

Aldehyde: ***2-(2-Hydroxyphenyl)-4-thiazolecarboxaldehyde, 9CI***
[83053-39-8]
$C_{10}H_7NO_2S$ 205.237
From *Pseudomonas cepacia*. Mp 126-127°.

Alcohol: 2-(2-Hydroxyphenyl)-4-(hydroxymethyl)thiazole. ***Aeruginol***
$C_{10}H_9NO_2S$ 207.253
Metab. from *Pseudomonas aeruginosa*. Off white amorph. solid. λ_{max} 324 (MeOH) (Berdy). λ_{max} 365 (MeOH/NaOH) (Berdy).

4S,5-Dihydro: ***Dihydroaeruginoic acid***
$C_{10}H_9NO_3S$ 223.252
Antibiotic from *Pseudomonas fluorescens* strain PFM2. Exhibits antimicrobial activity. $[\alpha]_D^{27}$ +47 (c, 0.10 in $CHCl_3$). λ_{max} 214 (ϵ 31750); 252 (ϵ 15800); 315 (ϵ 6670) (MeCN) (Berdy).

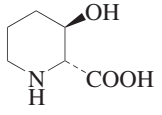
4S,5-Dihydro, Me ester: $[\alpha]_D^{25}$ +11.3 (c, 0.15 in MeOH).

4ξ,5-Dihydro, alcohol: 4,5-Dihydro-2-(2-hydroxyphenyl)-4-thiazolemethanol. 4-Hydroxymethyl-2-(2-hydroxyphenyl)-2-thiazoline. ***Aerugine***
[112515-23-8]
$C_{10}H_{11}NO_2S$ 209.268
Prod. by *Pseudomonas aeruginosa* 590, *Pseudomonas fluorescens* MM-B16 and *Streptomyces fradiae* SU-1. Cryst. (hexane). Mp 85-88°. $[\alpha]_D$ +28 (c, 1.0 in $CHCl_3$). λ_{max} 213 (ϵ 12300); 251 (ϵ 5500); 317 (ϵ 2090) (MeOH) (Berdy). λ_{max} 213 (ϵ 6760); 276 (ϵ 5250); 298 (ϵ 1950) (MeOH/HCl) (Berdy). λ_{max} 353 (ϵ 4466) (MeOH/NaOH) (Berdy).

Ger. Pat., 1969, 2 045 819; *CA*, **75**, 18612j
Yamada, Y. *et al., Agric. Biol. Chem.*, 1970, **34**, 780 (*isol, uv*)
Bukovits, G.J. *et al., Z. Naturforsch., B*, 1982, **37**, 877 (*isol*)
Zunnundzhanov, A. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1987, **23**, 461-465 (*Aerugine, isol*)
Yang, W. *et al., J. Nat. Prod.*, 1993, **56**, 1993 (*Aeruginol, isol, uv, pmr, struct*)
Carmi, R. *et al., J. Nat. Prod.*, 1994, **57**, 1200 (*Dihydroaeruginoic acid*)
Loughlin, W.A. *et al., Aust. J. Chem.*, 2000, **53**, 457-462 (*Dihydroaeruginoic acid, synth*)
Lee, J.Y. *et al., Appl. Environ. Microbiol.*, 2003, **69**, 2023-2031 (*Aerugine, isol, pmr, cmr, ms, activity*)

3-Hydroxy-2-piperidinecarboxylic acid H-696

3-Hydroxypipecolic acid, 8CI. 2-Carboxy-3-hydroxypiperidine
[56879-47-1]



(2*R*,3*R*)-*form*

$C_6H_{11}NO_3$ 145.158

(2*R*,3*R*)-*form*
(-)-trans-*form*
[176019-04-8]
Mp 232° dec. $[\alpha]_D^{22}$ -14 (c, 0.4 in 10% HCl aq.).

(2*R*,3*S*)-*form*
(+)-cis-*form*
[119593-44-1]
No phys. props. reported.

(2*S*,3*R*)-*form*
(-)-cis-*form*
[112241-70-0]
Cryst. (MeOH). Mp 300°. $[\alpha]_D^{20}$ -93.3 (c, 0.3 in H_2O).

(2*S*,3*S*)-*form*
(+)-trans-*form*
[176019-05-9]
Mp 232-236°. $[\alpha]_D^{20}$ +13.5 (c, 0.2 in 10% HCl aq.).

Amide: [908040-24-4]
$C_6H_{12}N_2O_2$ 144.173
Cryst. (MeOH/Et_2O). Mp 149-150°. $[\alpha]_D^{20}$ +43.8 (c, 0.4 in 10% HCl).

(2*RS*,3*SR*)-*form*
(±)-cis-*form*
[122088-79-3]
Isol. from halophyte leaves, flowers and fruits. Cryst. (EtOH aq.). Mp 284-285° dec.

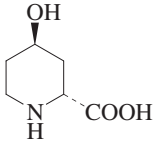
Me ester:
$C_7H_{13}NO_3$ 159.185
Mp 191-192° dec. (hydrochloride).

[122019-48-1]

Fowden, L. *et al., Biochem. J.*, 1958, **70**, 629 (*isol, struct, synth*)
Pleininger, H. *et al., Chem. Ber.*, 1959, **92**, 1579 (*synth*)
Kusano, G. *et al., Chem. Pharm. Bull.*, 1987, **35**, 3482 (*synth, pmr*)
Drummond, J. *et al., J. Med. Chem.*, 1989, **32**, 2116 (*synth*)
Roemmele, R.C. *et al., J.O.C.*, 1989, **54**, 1866 (*synth*)
Battistini, L. *et al., Tetrahedron: Asymmetry*, 1997, **8**, 2975-2987 (*synth*)
Haddad, M. *et al., Tet. Lett.*, 2001, **42**, 5223-5225 (*R,R-form, synth*)
Bodas, M.S. *et al., Tet. Lett.*, 2004, **45**, 8461-8463 (*S,S-form, synth*)
Kumar, P. *et al., J.O.C.*, 2005, **70**, 360-363 (*R,R, S,S-forms*)
Liang, N. *et al., J.O.C.*, 2005, **70**, 10182-10185 (*synth*)
Kim, I.S. *et al., Tet. Lett.*, 2006, **47**, 7289-7293 (*S,S-form, synth*)
Feng, C.-G. *et al., Tetrahedron*, 2006, **62**, 7459-7465 (*2S,3S-form, amide*)
Phansavath, P. *et al., J. Chem. Res.*, 2007, 313-316 (*synth*)
Pham, V.-T. *et al., Tetrahedron: Asymmetry*, 2008, **19**, 318-321 (*2S,3R-form, synth*)
Liu, L.-X. *et al., Tetrahedron: Asymmetry*, 2008, **19**, 1200-1203 (*2S,3S-form, synth*)

4-Hydroxy-2-piperidinecarboxylic acid, 9CI H-697

4-Hydroxypipecolic acid. ***Pegaline***
[14228-16-1]



(2*R*,4*R*)-*form*

$C_6H_{11}NO_3$ 145.158

(2*R*,4*R*)-*form*
D-trans-*form*
[189385-64-6]
Gum. $[\alpha]_D^{20}$ +12.6 (c, 0.8 in H_2O).

O-*(4-Bromo-1*H*-pyrrole-2-carbonyl):* ***Damipipecoline***
[949091-36-5]
$C_{11}H_{13}BrN_2O_4$ 317.139
Isol. from *Axinella damicornis*. Serotonin receptor modulator. $[\alpha]_D^{20}$ +5.4 (c, 0.001 in H_2O).

(2*R*,4*S*)-*form*
D-cis-*form*
[175671-49-5]
Gum. $[\alpha]_D^{20}$ +19.3 (c, 0.7 in H_2O).

(2*S*,4*R*)-*form*
L-cis-*form*
Isol. from leaves of *Calliandra pittieri* and *Strophanthus scandeus*. Cryst. + 1 or $2H_2O$ (EtOH aq.). Mp 265° dec. $[\alpha]_D^{25}$ -23.5 (c, 1 in H_2O) (99.8% ee).

Me ester:
$C_7H_{13}NO_3$ 159.185
Beige solid (as hydrochloride). Mp 172.5-174.5° dec. (hydrochloride). $[\alpha]_D^{25}$ +9.9 (c, 1.01 in MeOH) (95.8% ee).

tert-*Butylamide:*
$C_{10}H_{20}N_2O_2$ 200.28
Solid. Mp 165.5-168°. $[\alpha]_D^{25}$ -18.5 (c, 1.02 in MeOH).

N-*Benzoyl:*
$C_{13}H_{15}NO_4$ 249.266
Mp 104° Mp 191° (dimorph.).

N-*(2,4-Dinitrophenyl):*
Yellow prisms (EtOH aq.). Mp 134°.

(2*S*,4*S*)-*form*
L-trans-*form*
[4382-31-4]
Isol. from heartwood, sapwood and leaves of *Acacia* spp. and *Armeria* spp. (Fabaceae, Plumbaginaceae). Prisms (EtOH aq.). Mp 294° dec. $[\alpha]_D^{20}$ -13 (c, 1 in H_2O). $[\alpha]_D^{20}$ -2.7 (c, 1 in 5*M* HCl).

Hydrochloride:
Cryst. (EtOH aq.). Mp 161-163°.

4-O-*Sulfate:* [99694-77-6]
$C_6H_{11}NO_6S$ 225.222
Isol. from seeds of *Peltophorum africanum, Peltophorum adnatum, Peltophorum dubium, Peltophorum ferrugineum, Peltophorum inerme, Peltophorum pterocarpum* and *Peltophorum tonkinense*. Also isol. from various sponges. Glutamate receptor agonist. Cryst. + $1H_2O$ (H_2O). Mp 248° dec. $[\alpha]_D^{20}$ +6.5 (H_2O).

N-*Benzoyl:*
$C_{13}H_{15}NO_4$ 249.266
Needles (EtOH aq.). Mp 174°. $[\alpha]_D^{15}$ -54 (c, 1 in EtOH).

N-*Me:* ***Ovalin***
[73710-91-5]
$C_7H_{13}NO_3$ 159.185
Obt. from seeds of *Millettia ovalifolia* (Fabaceae). Mp 280-281°.

N-*(2,4-Dinitrophenyl):*
Orange prisms (EtOH aq.). Mp 183°.

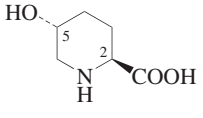
Me ether: 4-Methoxy-2-piperidinecar-

*boxylic acid. **4-Methoxypipecolic acid***
[135607-86-2]
$C_7H_{13}NO_3$ 159.185
Isol. from *Inga paterno* and other *Inga* spp. (Fabaceae).

(2RS,4RS)-form
(±)-trans-*form*
[143616-98-2]
Mp 161-163° (as hydrochloride). CAS no. refers to hydrochloride.
Clark-Lewis, J.W. *et al., J.C.S.*, 1961, 189 (*isol, struct*)
Shooley, J.N. *et al., Acta Chem. Scand.*, 1962, **16**, 2547 (*pmr, conformn*)
Witkop, B. *et al., J.A.C.S.*, 1964, **86**, 1844 (*synth*)
Murakoshi, I. *et al., Yakugaku Zasshi*, 1969, **89**, 1723 (*isol, struct*)
Gupta, R.K. *et al., Phytochemistry*, 1979, **18**, 2021-2022 (*Ovalin*)
Callens, R.E.A. *et al., Bull. Soc. Chim. Belg.*, 1982, **91**, 713 (*synth*)
Evans, S.V. *et al., Phytochemistry*, 1985, **24**, 2593-2596 (*4-sulfate*)
Morton, T.C. *et al., Phytochemistry*, 1991, **30**, 2397 (*4-methoxypipecolic acid*)
Pellicciari, R. *et al., Med. Chem. Res.*, 1992, **2**, 491 (*synth, sulfate*)
Gillard, J. *et al., J.O.C.*, 1996, **61**, 2226 (*2S,4R-form, synth, ir, pmr, cmr, bibl*)
Di Nardo, C. *et al., J.O.C.*, 1999, **64**, 6119-6125 (*synth*)
Haddad, M. *et al., Tetrahedron: Asymmetry*, 1999, 4231-4237 (*2S,4R-form, synth, pmr, cmr*)
Davis, F.A. *et al., Synthesis*, 2000, 2106-2112 (*isomers, synth*)
Brooks, C.A. *et al., Tet. Lett.*, 2000, **41**, 3551-3553 (*synth*)
Agami, C. *et al., Eur. J. Org. Chem.*, 2001, 2385-2389 (*2S,4R-form, synth, pmr, cmr*)
Lloyd, R.C. *et al., Org. Process Res. Dev.*, 2002, **66**, 762-766 (*isomers, synth, pmr, cmr*)
Sakai, R. *et al., J. Nat. Prod.*, 2003, **66**, 784-787 (*4-sulfate, isol, pmr, cmr, activity*)
Cordero, F.M. *et al., Eur. J. Org. Chem.*, 2006, 3235-3241 (*2R,4R-form, 2S,4S-form, synth, pmr*)
Aiello, A. *et al., Bioorg. Med. Chem.*, 2007, **15**, 5877-5887 (*Damipipecolin*)
Occhiato, E.G. *et al., Eur. J. Org. Chem.*, 2008, 524-531 (*2S,4R-form, synth, pmr, cmr*)
Alegret, C. *et al., Eur. J. Org. Chem.*, 2008, 1789-1796 (*synth*)

5-Hydroxy-2-piperidinecarboxylic acid H-698

5-Hydroxypipecolic acid
[13096-31-6]



(2*S*,5*R*)-*form*

$C_6H_{11}NO_3$ 145.158

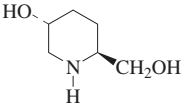
(2S,5R)-form
L-trans-*form*
[50439-45-7]
Present in dates (*Phoenix dactylifera*), Rhodesian teak (*Rhapis excelsa*), Acacia, leaves of *Morus alba* (white mulberry) and the seeds of *Caesalpinia* spp. and *Gleditsia* spp. (Arecaceae, Fabaceae, Moraceae, Caesalpiniaceae). Mp 235° dec. $[\alpha]_D^{20}$ -23.1 (c, 1 in H_2O).
Hydrochloride:
Cryst. (EtOH aq.). Mp 210-215° dec. $[\alpha]_D^{20}$ -10.9 (c, 0.92 in H_2O).
N-*Benzyloxycarbonyl:* [84409-89-2]
$C_{14}H_{17}NO_5$ 279.292
Cryst. (Me_2CO/petrol). Mp 150-152°. $[\alpha]_D^{20}$ -17.9 (c, 1 in Me_2CO).

(2S,5S)-form
L-cis-*form*
[63088-78-8]
Present in the leaves of *Morus alba* (white mulberry), *Gleditsia* spp. and *Lathyrus japonicus* (Fabaceae). Cryst. (EtOH aq.). Mp 230-235° dec. $[\alpha]_D^{22}$ -29.5 (c, 2 in H_2O). $[\alpha]_D^{22}$ -17.3 (6*M* HCl).
Hydrochloride:
Cryst. (EtOH aq./Et_2O). Mp 183-185° dec. $[\alpha]_D^{24}$ -18.5 (c, 1 in H_2O).
Hydrobromide: Mp 200-201°.
Lactone: 2-Oxa-5-azabicyclo[2.2.2]octan-3-one
$C_6H_9NO_2$ 127.143
Platelets (as hydrobromide). Mp 228-231° (hydrobromide).
N-*Benzyloxycarbonyl:* [917507-80-3]
$C_{14}H_{17}NO_5$ 279.292
Mp 131-132°. $[\alpha]_D^{24}$ +76.5 (c, 0.17 in MeOH).

(2RS,5SR)-form
(±)-trans-*form*
Hydrochloride:
Cryst. (EtOH). Mp 192-194°.
Virtanen, A.I. *et al., Acta Chem. Scand.*, 1954, **8**, 1290 (*isol*)
Witkop, B. *et al., J.A.C.S.*, 1957, **79**, 192-197; 1964, **86**, 1844 (*isol, synth*)
Kristensen, I. *et al., Tetrahedron*, 1976, **32**, 2799 (*nmr*)
Hatanaka, S.-I. *et al., Phytochemistry*, 1977, **16**, 1041 (*isol*)
Evans, C.S. *et al., Phytochemistry*, 1978, **17**, 1127 (*isol, occur*)
Callen, R.E.A. *et al., Bull. Soc. Chim. Belg.*, 1982, **91**, 713 (*synth*)
Adams, D.R. *et al., Chem. Comm.*, 1996, 349-350 (*synth*)
Botman, P.N.M. *et al., Org. Lett.*, 2004, **6**, 4941-4944 (*synth*)
Jung, J.-C. *et al., Tetrahedron: Asymmetry*, 2005, **17**, 2479-2486 (*2S,5R-form, 2S,5S-form, N-benzyloxycarbonyl*)

5-Hydroxy-2-piperidinemethanol, 9CI H-699

6-(Hydroxymethyl)-3-piperidinol. 5-Hydroxy-2-(hydroxymethyl)piperidine

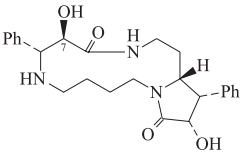


$C_6H_{13}NO_2$ 131.174

(2S,5R)-form
1,3,4-Trideoxynojirimycin
Alkaloid from the pods of *Angylocalyx pynaertii*. $[\alpha]_D$ +36.6 (c, 0.23 in H_2O).
Yasuda, K. *et al., J. Nat. Prod.*, 2002, **65**, 198-202 (*isol, pmr, cmr*)

7-Hydroxypleurocorine H-700

[155210-50-7]

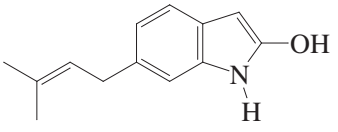


Relative configuration

$C_{25}H_{31}N_3O_4$ 437.538
The parent Pleurocorine is not known. Alkaloid from leaves of *Pleurostylia opposita* (Celastraceae). Amorph. $[\alpha]_D$ 0 (c, 1 in $CHCl_3$).
Séguineau, C. *et al., Heterocycles*, 1994, **38**, 181 (*isol, ir, pmr, cmr, struct*)

2-Hydroxy-6-prenylindole H-701

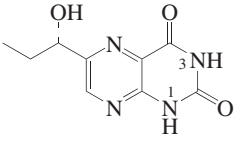
6-(3-Methyl-2-butenyl)-1H-indol-2-ol. 1,3-Dihydro-6-(3-methyl-2-butenyl)-2H-indol-2-one. 6-Prenyl-2-indolinone. 6-Prenyloxindole



$C_{13}H_{15}NO$ 201.268
Tautomeric with oxindole and 3*H*-forms. Alkaloid from *Monodora angolensis*. Orange solid.
Nkunya, M.H.H. *et al., Nat. Prod. Res.*, 2004, **18**, 253-258 (*isol, pmr, cmr*)

6-(1-Hydroxypropyl)lumazine H-702

6-(1-Hydroxypropyl)-2,4(1H,3H)-pteridinedione, 9CI



(*S*)-*form*

$C_9H_{10}N_4O_3$ 222.203

(S)-form
1-Me: 6-(1-Hydroxypropyl)-1-methyllumazine. ***Leucettidine***
[79121-29-2]
$C_{10}H_{12}N_4O_3$ 236.23
Isol. from the calcareous sponge *Leucetta microraphis*. Sol. MeOH. $[\alpha]_D^{21}$ -35.9 (c, 1.26 in MeOH). Struct. revised in 1988. λ_{max} 237 (ε 13200); 248 (sh) (ε 12000); 334 (ε 7080) (MeOH) (Derep). λ_{max} 218 (ε 10400); 245 (ε 19500); 288 (ε 2900); 343 (ε 8320) (MeOH/NaOH) (Derep).
3-Me: ***6-(1-Hydroxypropyl)-3-methyllumazine***
[155758-91-1]
$C_{10}H_{12}N_4O_3$ 236.23

Isol. from the marine polychaete *Odontosyllis undecimdonta*. $[\alpha]_D^{25}$ -76 (c, 0.938 in MeOH) (synthetic).

1,3-Di-Me: ***6-(1-Hydroxypropyl)-1,3-dimethyllumazine***
[155758-92-2]
$C_{11}H_{14}N_4O_3$ 250.257
From *Odontosyllis undecimdonta*. Mp 173-174° (synthetic). $[\alpha]_D$ -59.6 (c, 1.079 in MeOH) (synthetic).

*1′-Ketone: 6-(1-Oxopropyl)-2,4(1*H*,3*H*)-pteridinedione.* ***6-Propionyllumazine***
[126857-77-0]
$C_9H_8N_4O_3$ 220.187
Isol. from the marine polychaete *Odontosyllis undecimdonta*. Mp 278-280° dec.

*1′-Ketone, 3-Me: 3-Methyl-6-(1-oxopropyl)-2,4(1*H*,3*H*)-pteridinedione.* ***3-Methyl-6-propionyllumazine***
[71014-16-9]
$C_{10}H_{10}N_4O_3$ 234.214
Isol. from *Odontosyllis undecimdonta*. Cryst. ($CHCl_3$/hexane). Mp 234° (227-228°).

*1′-Ketone, 1,3-di-Me: 1,3-Dimethyl-6-(1-oxopropyl)-2,4(1*H*,3*H*)-pteridinedione.* ***1,3-Dimethyl-6-propionyllumazine***
[71014-17-0]
$C_{11}H_{12}N_4O_3$ 248.241
Isol. from *Odontosyllis undecimdonta*. Cryst. (C_6H_6/petrol). Mp 146-147° (141-142°).

3′-Hydroxy, 1′-ketone, 3-Me: ***6-(β-Hydroxypropionyl)-3-methyllumazine***
[135048-63-4]
$C_{10}H_{10}N_4O_4$ 250.213
From *Odontosyllis undecimdonta*. Mp 200° dec.

3′-Methoxy, 1′-ketone, 3-Me: ***6-(β-Methoxypropionyl)-3-methyllumazine***
[135048-61-2]
$C_{11}H_{12}N_4O_4$ 264.24
From *Odontosyllis undecimdonta*. Mp 193-196° dec.

3′-Hydroxy, 1′-ketone, 1,3-di-Me: ***6-(β-Hydroxypropionyl)-1,3-dimethyllumazine***
[163132-70-5]
$C_{11}H_{12}N_4O_4$ 264.24
From *Odontosyllis undecimdonta*. Mp 168-169° dec.

3′-Methoxy, 1′-ketone, 1,3-di-Me: ***6-(β-Methoxypropionyl)-1,3-dimethyllumazine***
[135048-62-3]
$C_{12}H_{14}N_4O_4$ 278.267
From *Odontosyllis undecimdonta*. Mp 129-130°.

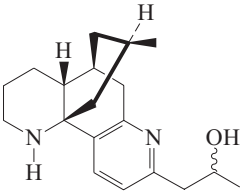
(±)-*form*
Cryst.

1-Me: Mp 195°.

Cardellina, J.H. *et al., J.O.C.*, 1981, **46**, 4782-4784 (*Leucettidine, isol, uv, ir, pmr, ms*)
Baur, R. *et al., Annalen*, 1984, 1798-1814 (*1′-ketone 1,3-di-Me, synth*)
Pfleiderer, W. *et al., Tetrahedron*, 1988, **44**, 3373-3378 (*Leucettidine, struct, synth, uv, pmr*)
Inoue, S. *et al., Chem. Lett.*, 1990, 367-368 (*6-Propionyllumazine, 3-Methyl-6-propionyllumazine, 1,3-Dimethyl-6-propionyllumazine, isol*)
Tanino, H. *et al., Heterocycles*, 1994, **38**, 971-974 (*Odontosyllis undecimdonta constits*)
Kakoi, H. *et al., Heterocycles*, 1995, **41**, 789-797 (*Odontosyllis undecimdonta constits*)

Hydroxypropyllycodine H-703

α-Methyllycodine-1-ethanol, 9CI
[123118-09-2]

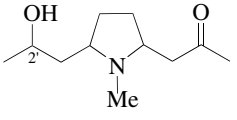


$C_{19}H_{28}N_2O$ 300.443
Alkaloid from *Lycopodium obscurum* (Lycopodiaceae). Opaque solid. $[\alpha]_D$ +11 (c, 0.39 in MeOH).

Ayer, W.A. *et al., Can. J. Chem.*, 1989, **67**, 1077 (*isol, uv, ir, pmr, cmr, struct*)

2-(2-Hydroxypropyl)-1-methyl-5-(2-oxopropyl)pyrrolidine H-704

1-[5-(2-Hydroxypropyl-1-methyl-2-pyrrolidinyl)]-2-propanone, 9CI. 2-Acetonyl-5-(2-hydroxypropyl)-1-methylpyrrolidine
[202057-29-2]



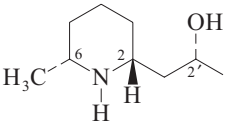
$C_{11}H_{21}NO_2$ 199.292
Alkaloid from *Erythroxylum lucidum* (Erythroxylaceae) and *Merremia* sp. (Convolvulaceae).

2′-Ketone: 1,1′-(1-Methyl-2,5-pyrrolidinediyl)bis-2-propanone. 2,5-Diacetonyl-1-methylpyrrolidine
[36295-25-7]
[36295-52-0]
$C_{11}H_{19}NO_2$ 197.277
Alkaloid from *Erythroxylum lucidum* (Erythroxylaceae) and *Merremia* sp. (Convolvulaceae). Mp 176-177° (as picrate).

Hess, J. *et al., Chem. Ber.*, 1972, **105**, 441-453 (*synth*)
Brachet, A. *et al., Phytochemistry*, 1997, **46**, 1439-1442 (*isol, struct*)

2-(2-Hydroxypropyl)-6-methylpiperidine H-705

α,6-Dimethyl-2-piperidineethanol, 9CI. ***Pinidinol***



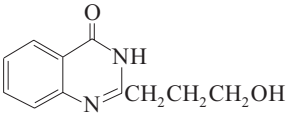
$C_9H_{19}NO$ 157.255

(2*R*,2′*R*,6*R*)-*form* [129785-16-6]
Alkaloid from *Picea engelmannii* and its root parasite *Pedicularis bracteosa*. Also found in *Picea abies*, *Picea pungens* and *Picea sitchensis*. Shows antifeedant activity on the Spruce budworm. $[\alpha]_D^{26}$ -15 (c, 0.55 in $CHCl_3$).

Stermitz, F.R. *et al., J. Nat. Prod.*, 1990, **53**, 1019-1020 (*cryst struct, abs config*)
Schneider, M.J. *et al., J. Nat. Prod.*, 1991, **54**, 905-909 (*isol*)
Molander, G.A. *et al., J.O.C.*, 2001, **66**, 4344-4347 (*synth*)
Gebauer, J. *et al., Heterocycles*, 2006, **68**, 2129-2132 (*synth*)
Davis, F.A. *et al., J.O.C.*, 2008, **73**, 9619-9626 (*synth*)

2-(3-Hydroxypropyl)-4(3*H*)-quinazolinone H-706

Pegamine
[31431-93-3]



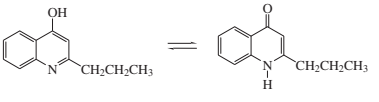
$C_{11}H_{12}N_2O_2$ 204.228
Alkaloid from *Peganum harmala* (Zygophyllaceae). Mp 160-161°.

O-*Ac:* Mp 173-174°.

Khashimov, Kh.N. *et al., Khim. Prir. Soedin.*, 1970, **6**, 453; *Chem. Nat. Compd. (Engl. Transl.)*, 1970, **6**, 462 (*isol, uv, ir, pmr, ms, struct*)
Mhaske, S.B. *et al., J.O.C.*, 2002, **66**, 9038-9040 (*synth*)

4-Hydroxy-2-propylquinoline H-707

*2-Propyl-4(1*H*)-quinolinone. 2-Propyl-4-quinolinol*



$C_{12}H_{13}NO$ 187.241
Alkaloid from the leaves and terminal branches of *Boronia ternata*. Needles (C_6H_6/petrol). Mp 214-216° (as hydrochloride). Artifact of the isol. procedure.

NH-form

N-*Me: 1-Methyl-2-propyl-4(1*H*)-quinolinone.* ***Leptomerine***
[22048-97-1]
$C_{13}H_{15}NO$ 201.268
Alkaloid from the aerial parts of *Haplophyllum leptomerum* (Rutaceae). Cryst. (EtOAc). Mp 149-150°.

N-*(Acetoxymethyl): 1-Acetoxymethyl-2-propyl-4(1*H*)-quinolinone*
$C_{15}H_{17}NO_3$ 259.304
Alkaloid from leaves and terminal branches of *Boronia ternata* (Rutaceae). Cryst. (C_6H_6/petrol). Mp 112°.

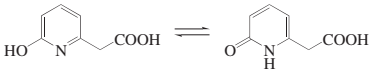
OH-form

Me ether: 4-Methoxy-2-propylquinoline. ***Chimanine A***
[22048-96-0]
$C_{13}H_{15}NO$ 201.268
Alkaloid from the trunk bark of *Galipea longiflora* (Rutaceae). Oil.

Duffield, A.M. *et al., Aust. J. Chem.*, 1963, **16**, 292 (*isol, uv, struct, deriv*)
Werner, W. *et al., Tetrahedron*, 1969, **25**, 255-261 (*synth*)
Akhmedzhanova, V.I. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1986, **22**, 78-79 (*Leptomerine*)
Fournet, A. *et al., J. Nat. Prod.*, 1993, **56**, 1547-1552 (*Chimanine A*)

6-Hydroxy-2-pyridineacetic acid H-708

1,6-Dihydro-6-oxo-2-pyridineacetic acid. 2-Pyridone-6-acetic acid



$C_7H_7NO_3$ 153.137

Et ester:
$C_9H_{11}NO_3$ 181.191
Cryst. (C_6H_6). Mp 170°.

Amide:
$C_7H_8N_2O_2$ 152.152
Cryst. (EtOH). Mp 254°.

NH-form

N-*β-D-Glucopyranosyl:* [117803-24-4]
$C_{13}H_{17}NO_8$ 315.279
Isol. from the Algerian newt, *Pleurodeles walthii*. Cryst. λ_{max} 316 (H_2O).

N-*Me, Et ester:* [103096-12-4]
$C_{10}H_{13}NO_3$ 195.218
Mp 100-101°.

N-*Benzyl:* [107922-40-7]
$C_{14}H_{13}NO_3$ 243.262
Cryst. (H_2O). Mp 169° dec.

OH-form

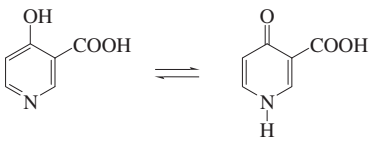
Et ether, Et ester: [99986-53-5]
$C_{11}H_{15}NO_3$ 209.244
Oil. $Bp_{0.3}$ 80°.

Et ether, nitrile: 2-(Cyanomethyl)-6-ethoxypyridine
[53676-89-4]
$C_9H_{10}N_2O$ 162.191
Mp 54°. $Bp_{0.05}$ 95°.

Adams, R. *et al., J.A.C.S.*, 1954, **76**, 3168; 1959, **81**, 2537 (*derivs, synth*)
Yoshida, T. *et al., Eur. J. Biochem.*, 1988, **175**, 41-44 (*1-glucosyl*)

4-Hydroxy-3-pyridinecarboxylic acid H-709

1,4-Dihydro-4-oxo-3-pyridinecarboxylic acid. 4(1H)-Pyridone-3-carboxylic acid. 4-Hydroxynicotinic acid
[609-70-1]



$C_6H_5NO_3$ 139.11
Needles (H_2O). Mp 250°.

Me ester: [67367-24-2]
$C_7H_7NO_3$ 153.137
Needles (hexane). Mp 221-222°.

Et ester: [57905-31-4]
$C_8H_9NO_3$ 167.164
Cryst. (EtOH). Mp 219-220°.

Amide: 4-Hydroxynicotinamide
[7418-63-5]
$C_6H_6N_2O_2$ 138.126
Isol. from ferns *Arachniodes festina* and *Arachniodes nigrospinosa*. Cryst. (H_2O). Mp 276-278° (263-265°).

NH-form

1-α-D-Ribofuranosyl, amide: [171284-19-8]
$C_{11}H_{14}N_2O_6$ 270.241
Isol. from human urine.

1-β-D-Ribofuranosyl, amide: 1,4-Dihydro-4-oxo-1-β-D-ribofuranosyl-3-pyridinecarboxamide, 9CI. 1-β-D-Ribofuranosyl-4-pyridone-3-carboxamide
[78686-01-8]
$C_{11}H_{14}N_2O_6$ 270.241
Isol. from human urine. Constit. of *Rothmannia longiflora*. Cryst. (EtOH). Mp 211-212°. $[\alpha]_D^{25}$ -97.1 (c, 0.25 in MeOH).

N-*Me, nitrile: 1,4-Dihydro-1-methyl-4-oxo-3-pyridinecarbonitrile. 3-Cyano-1-methyl-4(1H)-pyridinone.* ***Mallorepine***
[767-98-6]
$C_7H_6N_2O$ 134.137
Alkaloid from *Mallotus repandus*. Prisms (MeOH). Mp 185-186° (179-181°). λ_{max} 258 (log ε 4.21); 263 (log ε 4.2); 289 (log ε 3.76) (MeOH).

OH-form

O-*β-D-Glucopyranoside:*
$C_{12}H_{15}NO_8$ 301.252
Alkaloid from *Conyza bonariensis*. Needles. Mp 203-205°. $[\alpha]_D^{25}$ -250.4 (c, 1.35 in MeOH).

Me ether: 4-Methoxy-3-pyridinecarboxylic acid
[10177-31-8]
$C_7H_7NO_3$ 153.137
Plates (EtOH). Mp 178-179° dec.

Me ether, Me ester: [10177-32-9]
$C_8H_9NO_3$ 167.164
Cryst. (cyclohexane). Mp 82-84°.

Me ether, nitrile: 3-Cyano-4-methoxypyridine
[74133-20-3]
$C_7H_6N_2O$ 134.137
Alkaloid from *Hernandia nymphaefolia* (Hernadiaceae). Needles (Et_2O). Mp 124°.

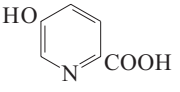
Me ether, nitrile, N*-oxide: 3-Cyano-4-methoxypyridine 1-oxide.* ***Malloapeltine***
[220698-57-7]
$C_7H_6N_2O_2$ 150.137
Alkaloid from the roots of *Mallotus apelta*. Amorph. powder. Mp 204-206°. λ_{max} 220 (log ε 1.93); 280 (log ε 1.53) (MeOH). λ_{max} 220 (ε 85); 280 (ε 32) (MeOH) (Berdy).

Et ether: 4-Ethoxy-3-pyridinecarboxylic acid
$C_8H_9NO_3$ 167.164
Prisms (EtOH). Mp 178° dec.
[10177-31-8]

Wieland, T. *et al., Annalen*, 1961, **642**, 163-173 (*synth, nitrile, amide, Me ether amide*)
Robinson, T. *et al., Phytochemistry*, 1965, **4**, 75-79 (*synth, Malloapeltine*)
Ross, W.C.J. *et al., J.C.S.(C)*, 1966, 1816-1821 (*synth*)
Kitagawa, T. *et al., Chem. Pharm. Bull.*, 1978, **26**, 1403-1414 (*uv, struct*)
Hikino, H. *et al., Planta Med.*, 1978, **33**, 385-388 (*Mallorepine*)
Yukuskijin, K. *et al., Phytochemistry*, 1980, **19**, 161-162 (*isol, Me ether nitrile, ir, uv, pmr*)
Tanaka, N. *et al., Chem. Pharm. Bull.*, 1984, **32**, 1355-1358 (*amide*)
Dutta, S.P. *et al., Nucleic Acid Chem.*, 1991, **4**, 152-154 (*synth, riboside*)
Chheda, G.B. *et al., Nucleosides Nucleotides*, 1995, **14**, 1519-1537 (*isol, riboside*)
Leroy, F. *et al., Synth. Commun.*, 1996, **26**, 2257 (*Me ether Me ester*)
Cheng, X.-F. *et al., Phytochemistry*, 1998, **49**, 2193-2194 (*Malloapeltine*)
Bringmann, G. *et al., Phytochemistry*, 1999, **51**, 271-276 (*isol, riboside*)
Kong, L.D. *et al., Phytochemistry*, 2001, **58**, 645-651 (*glucoside*)

5-Hydroxy-2-pyridinecarboxylic acid, 9CI H-710

5-Hydroxypicolinic acid
[15069-92-8]

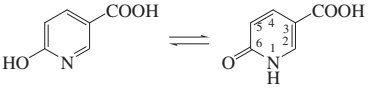


$C_6H_5NO_3$ 139.11
Detected in culture filtrate of *Nocardia* sp. Isol. from marine macrophytes. Cryst. + $1H_2O$ (H_2O) or powder. Mp 269-271° (258°). λ_{max} 250 ; 283 (EtOH) (Berdy). λ_{max} 252 (EtOH-HCl) (Berdy). λ_{max} 273 ; 303 (EtOH-NaOH) (Berdy).

Duesel, B.F. *et al., J.A.C.S.*, 1949, **71**, 1866 (*synth*)
Paulsen, H. *et al., Chem. Ber.*, 1973, **106**, 1525 (*synth*)
Entsch, B. *et al., J. Biol. Chem.*, 1976, **251**, 2550 (*biochem*)
Grachev, V.T. *et al., Izv. Akad. Nauk SSSR, Ser. Khim.*, 1977, 2273 (*uv, ir*)
Lezina, V.P. *et al., Izv. Akad. Nauk SSSR, Ser. Khim.*, 1980, 98; 1981, 2218 (*pmr*)
Oehlke, J. *et al., Pharmazie*, 1983, **38**, 591; 624 (*synth, derivs, ms, uv, pmr*)
Makar'eva, T.N. *et al., Khim. Prir. Soedin.*, 1989, 140-141; *Chem. Nat. Compd. (Engl. Transl.)*, 1989, **25**, 125-126 (*isol*)

6-Hydroxy-3-pyridinecarboxylic acid H-711

1,6-Dihydro-6-oxo-3-pyridinecarboxylic acid, 9CI. 6-Hydroxynicotinic acid, 8CI. 6(1H)-Pyridone-3-carboxylic acid. α-Pyridone-5-carboxylic acid
[5006-66-6]



$C_6H_5NO_3$ 139.11

Pyridone (*NH*)-form predominates. Needles (EtOH). Mp 304° dec. pK_{a1} 3.82 (20°).

Me ester: [66171-50-4]
$C_7H_7NO_3$ 153.137
Leaflets (Me_2CO). Mp 164°. pK_a 9.92 (20°).

Et ester: [18617-50-0]
$C_8H_9NO_3$ 167.164
Cryst. (Me_2CO). Mp 149-150°.

NH-form

N-*Me: 1,6-Dihydro-1-methyl-6-oxo-3-pyridinecarboxylic acid, 9CI. Nudifloric acid*
[3719-45-7]
$C_7H_7NO_3$ 153.137
Mp 238°.

N-*Me, Me ester:* ***1-Methyl-5-carbomethoxy-α-pyridone***
[6375-89-9]
$C_8H_9NO_3$ 167.164
Alkaloid from the leaves of *Ampelocera ruizii* (Ulmaceae). Cryst. (Me_2CO). Mp 132°.

N-*Me, amide:* [701-44-0]
$C_7H_8N_2O_2$ 152.152
Cryst. Mp 214-215°.

N-*Me, nitrile: 5-Cyano-1-methyl-2(1H)-pyridinone.* ***Nudiflorine***
[768-45-6]
$C_7H_6N_2O$ 134.137
Alkaloid from the leaves of *Trewia nudiflora* (Euphorbiaceae). Needles ($CHCl_3$/petrol). Mp 161°.

OH-form

Me ether: 6-Methoxy-3-pyridinecarboxylic acid
[66572-55-2]
$C_7H_7NO_3$ 153.137
Needles (H_2O). Mp 237-238° Mp 171.5-172.5°.

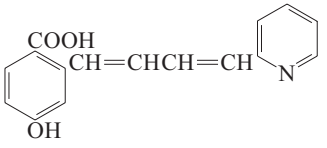
Me ether, Et ester: [74925-37-4]
$C_9H_{11}NO_3$ 181.191
Prisms (EtOH). Mp 71°. $Bp_{0.25}$ 135°.

Me ether, nitrile: 3-Cyano-6-methoxypyridine
[15871-85-9]
$C_7H_6N_2O$ 134.137
Solid. Mp 97°.

Et ether: 6-Ethoxy-3-pyridinecarboxylic acid
$C_8H_9NO_3$ 167.164
Cryst. (EtOH). Mp 183°.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 787D (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 322A (*nmr*)
Reissert, A. *et al., Ber.*, 1895, **28**, 119 (*Et ether*)
Meyer, H. *et al., Monatsh. Chem.*, 1907, **28**, 59 (*derivs*)
Org. Synth., Coll. Vol., 4, 1963, 532 (*synth*)
Mukherjee, R. *et al., Tetrahedron*, 1966, **22**, 1461 (*isol, uv, pmr, synth, Nudiflorine*)
Gault, H. *et al., C. R. Hebd. Seances Acad. Sci.*, 1968, **266**, 131 (*synth*)
Weber, H. *et al., Chem. Ber.*, 1971, **104**, 1478; 1985, **118**, 4086 (*synth*)
Burnell, R.H. *et al., J. Nat. Prod.*, 1975, **38**, 444 (*isol, uv, ir, pmr, ms, struct, synth, deriv*)
Kametani, T. *et al., Chem. Pharm. Bull.*, 1976, **24**, 1870 (*synth*)
Bernofsky, C. *et al., Anal. Biochem.*, 1979, **96**, 189 (*synth*)
Buurman, D.J. *et al., J. Het. Chem.*, 1986, **23**, 1015-1018 (*N-Me amide, N-Me nitrile*)
Encyclopaedia of Reagents for Organic Synthesis, (ed. Paquette, L.A.), Wiley, 1995, **4**, 2769-2771 (*use*)
Ghosez, L. *et al., Tetrahedron*, 1999, **55**, 3387-3400 (*Me ester*)
Khanna, I.K. *et al., J. Med. Chem.*, 2000, **43**, 3168-3185 (*Me ether nitrile, synth, pmr*)
Sobczak, A. *et al., Synth. Commun.*, 2005, **35**, 2993-3001 (*Et ester*)
Gupta, S. *et al., Acta Cryst. E*, 2007, **63**, o2784 (*cryst struct*)

4-Hydroxy-2-[4-(2-pyridinyl)-1,3-butadienyl]benzoic acid H-712



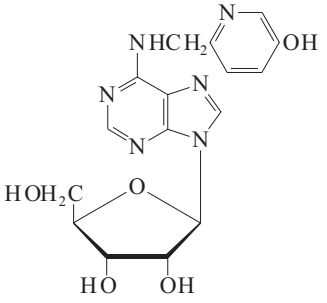
$C_{16}H_{13}NO_3$ 267.284

Me ester: [125508-38-5]
$C_{17}H_{15}NO_3$ 281.31
Alkaloid from the aerial parts of *Dehaasia kurzii* (Lauraceae).

Rahman, M.A. *et al., CA*, 1990, **112**, 95569k (*isol, uv, ir, pmr, ms, struct*)

N-[(5-Hydroxy-2-pyridinyl)methyl]adenosine, 9CI H-713

6-(5-Hydroxy-2-pyridinylmethylamino)-9β-ribofuranosylpurine. AMG 1
[123369-41-5]

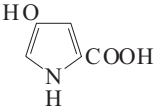


$C_{16}H_{18}N_6O_5$ 374.355
Isol. from *Armillaria mellea* (honey mushroom). Cytokinin. Powder. Sol. H_2O, MeOH; poorly sol. EtOAc, hexane. λ_{max} 268 (MeOH) (Berdy). λ_{max} 265 (MeOH-HCl) (Berdy). λ_{max} 264 (MeOH-NaOH) (Berdy).

Watanabe, N. *et al., Planta Med.*, 1990, **56**, 48 (*isol, pmr, cmr, struct*)

4-Hydroxy-1*H*-pyrrole-2-carboxylic acid H-714

Hydroxyminaline



$C_5H_5NO_3$ 127.099
Component of the molecule pectase found in *Penicillium* and *Aspergillus*. Grey-brown amorph. powder which cannot be recryst. or subl. Dec. readily in soln.

Me ether: 4-Methoxy-2-pyrrolecarboxylic acid
$C_6H_7NO_3$ 141.126
Cryst. by subl. Mp 179-180°.

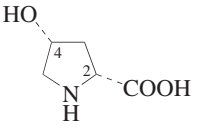
Me ether, Me ester:
$C_7H_9NO_3$ 155.153
Cryst. (MeOH). Mp 85-86°.

Me ether, Et ester:
$C_8H_{11}NO_3$ 169.18
Cryst. (C_6H_6). Mp 55-58°.

Minagawa, T. *et al., Proc. Imp. Acad. (Tokyo)*, 1945, **21**, 33; 37; *CA*, **47**, 151i; 152b (*isol*)
Kuhn, R. *et al., Chem. Ber.*, 1956, **89**, 1423 (*synth, uv*)
Rapoport, H. *et al., J.A.C.S.*, 1962, **84**, 630 (*derivs, synth, uv, ir*)

4-Hydroxy-2-pyrrolidinecarboxylic acid H-715

4-Hydroxyproline. Oxyproline



(2*R,4R*)-*form*

$C_5H_9NO_3$ 131.131

(2*R*,4*R*)-*form*
D-allo-*form*. D-cis-*form*
[2584-71-6]
Mp 237-241°. $[\alpha]_D^{25}$ +58.6 (c, 0.65 in H_2O). Insipid taste.

(2*R*,4*S*)-*form*
D-trans-*form*
[3398-22-9]
Mp 274°. $[\alpha]_D^{21}$ +75.2 (H_2O). Insipid taste.

(2*S*,4*R*)-*form*
L-trans-*form*
[51-35-4]
Constit. of proteins. Chiral building block. Mp 274°. $[\alpha]_D^{26}$ -74.6. pK_{a1} 1.92; pK_{a2} 9.73 (25°). Sweet taste.

β-D-Galactopyranosyl ester: [79284-73-4]
$C_{11}H_{19}NO_8$ 293.273
Isol. from hydrolysed wheat endosperm.

O-*β-D-Galactopyranoside:* [80185-44-0]
$C_{11}H_{19}NO_8$ 293.273
Isol. from hydrolysed wheat endosperm.

Me ester: [1499-56-5]
$C_6H_{11}NO_3$ 145.158
Needles (MeOH/EtOAc) (as hydrochloride). Mp 162-164°.

Et ester, hydrochloride: [33996-30-4] [61478-25-9]
Cryst. Mp 153-153.5°.

N-*Ac:* ***Oxaceprol, INN****. Jonctum. CO 61*
[33996-33-7]
$C_7H_{11}NO_4$ 173.168
Antirheumatic, dermatological agent.

Mp 135°. $[\alpha]_D$ -118.5 (H_2O). Log P -1.11 (calc).

O-*Benzoyl:* [54665-21-3]
$C_{12}H_{13}NO_4$ 235.239
Mp 218-219°. $[\alpha]_D^{21}$ -6.66 (c, 0.21 in MeOH).

N-*Benzoyl, Me ester:* [31560-20-0]
$C_{13}H_{15}NO_4$ 249.266
Cryst. (EtOAc). Mp 145-146° (141°). $[\alpha]_D^{25}$ -142.4 (c, 1.6 in $CHCl_3$).

N-*Benzoyl,* tert-*butyl ester:* [158177-75-4]
$C_{16}H_{21}NO_4$ 291.346
Cryst. (Et_2O). Mp 90°. $[\alpha]_D^{21}$ -137.2 (c, 1 in $CHCl_3$).

N-*Benzyloxycarbonyl:* [13504-85-3]
$C_{13}H_{15}NO_5$ 265.265
Cryst. Mp 106-107°. $[\alpha]_D^{24}$ -75.5 (c, 1.03 in $CHCl_3$).

N-*Me:* N-*Methyl*-trans-*4-hydroxy-L-proline.* ***4-Hydroxyhygrinic acid***. *Aceprolinum*. *Joint*. *Problaston*. *Thioprol*
[4252-82-8]
$C_6H_{11}NO_3$ 145.158
Constit. of *Capsicum annuum* (sweet pepper), *Copaifera* spp., *Croton gubougia*, *Dalbergia sympathetica*, *Erythroxylum argentinum*, *Toddalia aculeata* and *Afrormosia elata* (preferred genus name *Pericopsis*). Also from the red alga *Chondria coerulescens* and other red algae. Cryst. (MeOH). Mp 238-240° dec. $[\alpha]_D$ -86.6 (c, 1.5 in H_2O). Isolate from *Dalbergia sympathetica* originally thought to be a 2-piperidone but struct. was corrected by Winkler, *et al* in 2006.

N-*Me; hydrochloride:* Mp 181-183°. $[\alpha]_D$ -55 (c, 2.3 in MeOH).

N-*Me,* O-*Ac:* [90088-50-9]
$C_8H_{13}NO_4$ 187.195
Cryst. (EtOAc). $[\alpha]_D$ +67 (c, 2 in MeOH).

N-*Heptyl:* [76666-35-8]
$C_{12}H_{23}NO_3$ 229.319
Hplc stationary phase for resoln. of amino acids.

N-*Hexadecyl:* [76652-69-2] Hplc stationary phase for resoln. of amino acids.

N-*Benzyl, Et ester:* [154342-88-8]
$C_{14}H_{19}NO_3$ 249.309
Oil. $[\alpha]_D^{20}$ -56.3 (c, 1 in $CHCl_3$).

N-*Benzyl, amide:* [500733-22-2]
$C_{12}H_{16}N_2O_2$ 220.271
Yellowish cryst. Mp 39°. $[\alpha]_D^{20}$ -79.6 (c, 1 in $CHCl_3$).

Me ether: 4-Methoxy-2-pyrrolidinecarboxylic acid
$C_6H_{11}NO_3$ 145.158
Mp 202°. $[\alpha]_D^{20}$ -56 (c, 1 in H_2O).

Me ether, N-*Me:* trans-*4-Methoxy*-N-*methyl-L-proline*
[131559-49-4]
$C_7H_{13}NO_3$ 159.185
Alkaloid from *Petiveria alliacea*. Mp 251-253°. $[\alpha]_D^{20}$ -32.9 (c, 0.7 in MeOH).

N-*Nitroso:* [30310-80-6]
$C_5H_8N_2O_4$ 160.129
Cryst. (MeOH/butanol). Mp 138-140° dec.

► Potential carcinogen.

(2*S*,4*S*)-*form*
L-allo-*form*. *L*-cis-*form*
[618-27-9]
Occurs in toxic peptides of the death cap mushroom (*Amanita phalloides*). Mp 238-241°. $[\alpha]_D^{25}$ -57.7 (c, 0.65 in H_2O). Sweet taste.

Me ester:
Needles + 1H_2O (EtOAc/hexane) (as hydrochloride). Mp 79-80° (hydrochloride). $[\alpha]_D$ -49.2 (c, 0.5 in MeOH).

N-*Ac:* [66267-44-5]
Cryst. (EtOH/Et_2O). Mp 144-145°. $[\alpha]_D$ -91.5 (c, 2 in H_2O).

N-*Ac, Me ester:* [78804-96-3]
$C_8H_{13}NO_4$ 187.195
Cryst. (Et_2O/EtOH). Mp 78°.

N-tert-*Butyloxycarbonyl:* [13726-69-7]
$C_{10}H_{17}NO_5$ 231.248
Oil.

N-tert-*Butyloxycarbonyl, dicyclohexylamine salt (1:1):* [21157-12-0]
Cryst. (EtOAc/petrol). Mp 194-195°. $[\alpha]_{578}^{21.5}$ -25.3 (DMF).

N-*Benzyloxycarbonyl:*
Cryst. (EtOAc/petrol). Mp 106-107°. $[\alpha]_D^{20}$ -72 (c, 1 in $CHCl_3$).

(2*RS*,4*RS*)-*form*
DL-allo-*form*. *(±)*-cis-*form*
[49761-17-3]
Mp 238°.

Et ester:
[51814-20-1 (hydrochloride)]
$C_7H_{13}NO_3$ 159.185
Mp 133-136° (as hydrochloride).

N-*Ac:*
Cryst. (EtOH/Et_2O). Mp 143-144°.

N-*Ac, Me ester:*
Cryst. (Et_2O/EtOH). Mp 79-80°.

(2*RS*,4*SR*)-*form*
(±)-trans-*form*
[618-28-0]
Cryst. (EtOH aq.). Mp 247°.

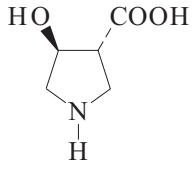
Et ester:
Cryst. (EtOH). Mp 142°.

[67463-44-9 , 89771-43-7]

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 583D; 584B; 584A (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 887B; 887C (*nmr*)
Goodson, J.A. *et al., J.C.S.*, 1919, 923 (*isol, struct, deriv*)
Patchett, A.A. *et al., J.A.C.S.*, 1957, **79**, 185-192 (*N-benzyloxycarbonyl*)
Morgan, J.W.W. *et al., Chem. Ind. (London)*, 1964, 542 (*deriv*)
Abraham, R.J. *et al., J.C.S.*, 1964, 3739 (*pmr*)
Schnabel, E. *et al., Annalen*, 1967, **702**, 188-196 (*N-tert-butyloxycarbonyl*)
U.K. Pat., 1971, 1 246 141; *CA*, **75**, 140679b (*Oxaceprol*)
Thomas, W.A. *et al., Chem. Comm.*, 1972, 788 (*pmr, cryst struct, Oxaceprol*)
Koetzle, T.F. *et al., Acta Cryst. B*, 1973, **29**, 231 (*cryst struct*)
Kaneko, T. *et al., Synth. Prod. Util. Amino Acids*, 1974, 123 (*rev*)
Shamala, N. *et al., Acta Cryst. B*, 1976, **32**, 3267 (*cryst struct*)
Roques, B.P. *et al., Tetrahedron*, 1976, **32**, 1517 (*cmr, Oxaceprol*)
Ramaswamy, S.G. *et al., J.O.C.*, 1977, **42**, 3440 (*synth*)
Hospital, M. *et al., Biopolymers*, 1979, **18**, 1141 (*cryst struct, Oxaceprol*)
Davankov, V.A. *et al., Chromatographia*, 1980, **13**, 677 (*N-heptyl, N-hexadecyl*)
Hara, J. *et al., Bull. Chem. Soc. Jpn.*, 1981, **54**, 3871 (*synth*)
Baker, G.L. *et al., J.O.C.*, 1981, **46**, 2954-2960 (*Et ester, synth, ir, pmr, cmr*)
Field, L. *et al., J.O.C.*, 1981, **46**, 17114182 (*synth, derivs*)
Strahm, A. *et al., Phytochemistry*, 1981, **20**, 1061 (*galactosyl ester*)
Martindale, The Extra Pharmacopoeia, 28th/29th edn., Pharmaceutical Press, 1982, 13051
Sciuto, S. *et al., Phytochemistry*, 1983, **22**, 2311 (*isol, pmr, cmr, deriv*)
Inigo, R.P.A. *et al., An. Asoc. Quim. Argent.*, 1984, **72**, 1428 (*isol, deriv*)
Thaning, M. *et al., Helv. Chim. Acta*, 1986, **69**, 1711 (*derivs*)
Figliuolo, R. *et al., Phytochemistry*, 1987, **26**, 3255 (*isol, ir, pmr, cmr, ms, deriv*)
Jones, G.P. *et al., Phytochemistry*, 1987, **26**, 3343 (*isol, deriv*)
Jones, G.P. *et al., Acta Cryst. C*, 1988, **44**, 2208 (*cryst struct, deriv*)
Papaioannon, D. *et al., Acta Chem. Scand.*, 1990, **44**, 243 (*synth, pmr*)
De Martino, G. *et al., J. Het. Chem.*, 1990, **27**, 507 (*synth*)
De Sousa, J.R. *et al., Phytochemistry*, 1990, **29**, 3653 (*Me ether N-Me*)
Bridges, R.J. *et al., J. Med. Chem.*, 1991, **34**, 715-725 (*N-benzyloxycarbonyl*)
Remuzon, P. *et al., J. Med. Chem.*, 1992, **35**, 2898 (*Ac*)
Burger, K. *et al., Angew. Chem., Int. Ed.*, 1993, **32**, 285 (*synth*)
Matsuoka, T. *et al., Biosci., Biotechnol., Biochem.*, 1994, **58**, 1747 (*synth*)
Mehlfuehrer, M. *et al., Chem. Comm.*, 1994, 1291 (*synth*)
Seki, M. *et al., Biosci., Biotechnol., Biochem.*, 1995, **59**, 1161 (*synth, pmr, cmr*)
Blanco, M.-J. *et al., J.O.C.*, 1996, **61**, 4748 (*Me ester, synth, pmr, cmr*)
Remuzon, P. *et al., Tetrahedron*, 1996, **52**, 13803-13835 (*2S,4R-form, rev, use in chiral synth*)
Lowe, G. *et al., J.C.S. Perkin 1*, 1997, 539-546 (*isom, pmr*)
Baldwin, J.E. *et al., Tetrahedron*, 1997, **53**, 5233-5254 (*2S,4R-form, N-benzoyl esters, synth*)
Lewis, A. *et al., J.C.S. Perkin 1*, 1998, 3767-3776; 3777-3794 (*Me ester, synth, ir, pmr, cmr, ms*)
Ohtake, H. *et al., Bull. Chem. Soc. Jpn.*, 1999, **72**, 2737-2754 (*O-benzoyl*)
Puripattanavong, J. *et al., Planta Med.*, 2000, **66**, 740-745 (*isol, N-Me*)
Kimura, R. *et al., Bull. Chem. Soc. Jpn.*, 2002, **75**, 2517-2525 (*2S,4S-form, synth, ir, pmr*)
Croce, P.D. *et al., Tetrahedron: Asymmetry*, 2002, **13**, 197-201 (*2R,4R-form, synth, pmr, cmr*)
Schuch, C.M. *et al., Tetrahedron: Asymmetry*, 2002, **13**, 1973-1980 (*2R,4S-form, synth*)
El-Ashry, E.H. *et al., Carbohydr. Res.*, 2003, **338**, 2265-2290 (*rev, synth*)
Heindl, C. *et al., Tetrahedron: Asymmetry*, 2003, **14**, 3141-3152; 3153-3172 (*2S,4R-form, Et ester N-benzyl, amide N-benzyl*)
Winkler, T. *et al., Magn. Reson. Chem.*, 2006, **44**, 571-572 (*N-Me, pmr, cmr*)
Jain, S.C. *et al., Phytochemistry*, 2006, **67**, 1005-1010 (*N-Me, pmr, cmr, cryst struct*)

Fonari, M.S. *et al., Tetrahedron*, 2006, **62**, 8779-8786 (*2S,4R-form, N-nitroso, synth, cryst struct, pmr, cmr*)
Dekebo, A. *et al., Biosci., Biotechnol., Biochem.*, 2007, **71**, 421-426 (*Capsicum, isol*)

4-Hydroxy-3-pyrrolidinecarboxylic acid H-716

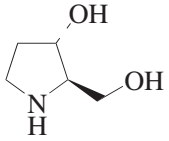


$C_5H_9NO_3$ 131.131

(3*R,4*S**)-*form***
(+)-trans-*form*
N,N-*Di-Me, betaine: 4-Hydroxy*-N,N-*dimethyl-3-pyrrolidinecarboxylate*
[117845-15-5]
$C_7H_{13}NO_3$ 159.185
Isol. from the Mediterranean red alga *Grateloupia proteus*. Off-white hygroscopic powder. $[\alpha]_D^{25}$ +14.42 (c, 0.34 in H_2O).
Sciuto, S. *et al., J. Nat. Prod.*, 1988, **51**, 1017 (*isol, pmr, cmr, ms, struct*)

3-Hydroxy-2-pyrrolidinemethanol, 9CI H-717

3-Hydroxy-2-(hydroxymethyl)pyrrolidine. 1,2,4-Trideoxy-1,4-iminopentitol. CYB 3

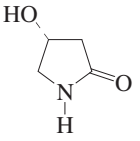


$C_5H_{11}NO_2$ 117.147

(2*R*,3*S*)-*form*
D-erythro-*form*
Alkaloid from the seeds of *Castanospermum australe*. Mp 108-112° (as hydrochloride). $[\alpha]_D^{21}$ +46.5 (H_2O) (hydrochloride).
N-*(2-Hydroxyethyl):* ***3-Hydroxy*-N-*(2-hydroxyethyl)-2-(hydroxymethyl)pyrrolidine***. *3-Hydroxy-2-(hydroxymethyl)-1-pyrrolidineethanol, 9CI*
[136600-18-5]
$C_7H_{15}NO_3$ 161.2
Alkaloid from the seeds of *Castanospermum australe*. Oil.
Nash, R.J. *et al., Chem. Comm.*, 1985, 738 (*pmr, ms, cryst struct*)
Ikota, N. *et al., Heterocycles*, 1988, **27**, 2535 (*synth*)
Molyneux, R.J. *et al., Biochemistry*, 1991, **30**, 9981 (*2-hydroxyethyl*)
Griffart-Brunet, D. *et al., Tet. Lett.*, 1994, **35**, 119 (*synth*)
Huwe, C.M. *et al., Synthesis*, 1997, 61 (*synth, pmr, cmr*)
Malle, B.M. *et al., J. Carbohydr. Chem.*, 2000, **19**, 573-583 (*synth, pmr, cmr*)
Hulme, A.N. *et al., J.C.S. Perkin 1*, 2002, 1083-1091 (*synth*)
El-Ashry, H.E. *et al., Carbohydr. Res.*, 2003, **338**, 2265-2290 (*rev, synth*)
Merino, P. *et al., Eur. J. Org. Chem.*, 2008, 2929-2947 (*synth*)

4-Hydroxy-2-pyrrolidinone, 9CI H-718

4-Hydroxy-2-pyrrolidone, 8CI
[25747-41-5]



(*R*)-*form*

$C_4H_7NO_2$ 101.105

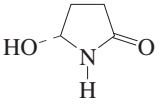
(*R*)-*form* [40759-90-8]
Cryst. Mp 157-158°. $[\alpha]_D^{25}$ +57.3 (c, 1.40 in H_2O).

(*S*)-*form* [22677-21-0]
Isol. from *Amanita muscaria*. Cryst. Mp 155-157°. $[\alpha]_D^{25}$ -55.5 (c, 1.04 in H_2O).

(±)-*form* [62624-29-7]
Plates (Me_2CO). Mp 123-125°.
▶ UY5775500
Ac: 4-Acetoxy-2-pyrrolidone
[64097-45-6]
$C_6H_9NO_3$ 143.142
Needles (C_6H_6/hexane). Mp 91-92°.
N-tert-*Butyloxycarbonyl:* [409341-03-3]
$C_9H_{15}NO_4$ 201.222
Solid. Mp 150.4-151.4° dec.
N-*Benzyl:* [125370-52-7]
$C_{11}H_{13}NO_2$ 191.229
Oil.
Matsumoto, T. *et al., Helv. Chim. Acta*, 1969, **52**, 716 (*isol, ir, pmr*)
Seiler, N. *et al., Z. Anorg. Allg. Chem.*, 1970, **252**, 127 (*ms*)
Pifferi, G. *et al., Farmaco, Ed. Sci.*, 1977, **32**, 602 (*synth*)
Pellegata, R. *et al., Synthesis*, 1978, 614 (*synth*)
Baker, J.T. *et al., J.O.C.*, 1979, **44**, 2798 (*synth, nmr*)
Bladé-Font, A. *et al., Tet. Lett.*, 1980, 2443 (*abs config, synth*)
Konda, Y. *et al., Chem. Pharm. Bull.*, 1985, **33**, 1083 (*synth, ir, pmr*)
Pellegata, R. *et al., Tetrahedron*, 1985, **41**, 5607 (*synth, pmr*)
Seki, M. *et al., Synthesis*, 1999, 745-747 (*S-form, synth, ir, pmr, cmr*)
Daoust, B. *et al., Tetrahedron*, 1999, **55**, 3495-3514 (*N-benzyl*)
Tian, Z. *et al., Org. Process Res. Dev.*, 2002, **6**, 416-418 (*N-tert-butyloxycarbonyl, synth, pmr, cmr, ms*)

5-Hydroxy-2-pyrrolidinone, 9CI H-719

5-Hydroxy-2-pyrrolidone, 8CI
[62312-55-4]



(*R*)-*form*

$C_4H_7NO_2$ 101.105
Constit. of *Jatropha curcas*.

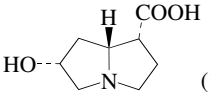
(*R*)-*form* [168111-92-0]
Constit. of *Hyptis verticillata*. Isol. from the mushroom *Macrolepiota neomastoidea*. Amorph. powder. $[\alpha]_D^{25}$ +5 (c, 0.05 in MeOH). λ_{max} 198 (log ε 1.55); 224 (sh) (log ε 0.61); 241 (sh) (log ε 0.55) (H_2O). λ_{max} 203 (log ε 5.33); 229 (log ε 5.04) (MeOH).

(±)-*form*
Cryst. Mp 98-99°.
Me ether: 5-Methoxy-2-pyrrolidinone
[63853-74-7]
$C_5H_9NO_2$ 115.132
Cryst. (EtOAc/hexane). Mp 59-60.5°.

(ξ)-*form*
Me ether: ***Pterolactam***
[38072-88-7]
[63853-74-7]
$C_5H_9NO_2$ 115.132
Constit. of *Pteridium aquilinum* (bracken fern). Cryst. (petrol). Mp 56-67°. $[\alpha]_D^{25}$ +2 ($CHCl_3$).
De Mayo, P. *et al., Chem. Ind. (London)*, 1962, 1576 (*synth*)
Takatori, K. *et al., Chem. Pharm. Bull.*, 1972, **20**, 1087 (*isol, Me ether*)
Iwasaki, T. *et al., J.O.C.*, 1979, **44**, 1552 (*synth, Me ether*)
Cue, B.W. *et al., Org. Prep. Proced. Int.*, 1979, **11**, 285 (*synth*)
Barco, A. *et al., Synthesis*, 1979, 68 (*synth, ir, pmr*)
Lundgren, D.W. *et al., J. Biol. Chem.*, 1980, **255**, 4481 (*ms*)
Phan, X.T. *et al., J.O.C.*, 1983, **48**, 5164 (*synth, Me ether*)
Farina, F. *et al., Heterocycles*, 1984, **22**, 1733-1739 (*synth*)
Shono, T. *et al., J.O.C.*, 1985, **50**, 3243 (*synth, Me ether*)
Kuhnt, M. *et al., Planta Med.*, 1995, **61**, 227-232 (*isol, uv, pmr, cmr, ms*)
Staubmann, R. *et al., Phytochemistry*, 1999, **50**, 337-338 (*isol, pmr, cmr*)
Kim, K.H. *et al., Bull. Korean Chem. Soc.*, 2008, **29**, 1591-1593 (*isol, cd, pmr, cmr*)

6-Hydroxy-1-pyrrolizidinecarboxylic acid H-720

*Hexahydro-6-hydroxy-1*H*-pyrrolizine-1-carboxylic acid*



(1*R*,6*R*,7*aR*)-*form*

$C_8H_{13}NO_3$ 171.196

(1*R*,6*R*,7*aR*)-*form*
Cryst. (Me_2CO/MeOH)(as hydrochloride). Mp 147-148° (hydrochloride). $[\alpha]_D$ +32 (c, 1 in MeOH).
Me ester: ***Amphorogynine D***
$C_9H_{15}NO_3$ 185.222
Alkaloid from *Amphorogyne spicata*. Amorph. gum. $[\alpha]_D$ +17 (c, 1 in $CHCl_3$).
Et ester: [73354-03-7]
$C_{10}H_{17}NO_3$ 199.249
Needles (EtOAc). Mp 110°. $[\alpha]_D^{18}$ +73.4 (c, 4 in $CHCl_3$).
6-O-[3-(4-Hydroxy-3-methoxyphenyl)-propanoyl], Me ester: ***Amphorogynine A***
$C_{19}H_{25}NO_6$ 363.41

Alkaloid from *Amphorogyne spicata*. Cryst. (MeOH/heptane). Mp 108°. $[\alpha]_D$ +53 (c, 1 in $CHCl_3$).

(1*R*,6*S*,7*aR*)-*form*

6-O-[3-(4-Hydroxy-3-methoxyphenyl)-propanoyl], Me ester: ***Amphorogynine C***

$C_{19}H_{25}NO_6$ 363.41

Alkaloid from *Amphorogyne spicata*. Cryst. (MeOH). Mp 130°. $[\alpha]_D$ -2 (c, 1 in $CHCl_3$).

(1*S*,6*S*,7*aR*)-*form*

6-O-[3-(4-Hydroxy-3-methoxyphenyl)-propanoyl], Me ester: ***Amphorogynine B***

Alkaloid from *Amphorogyne spicata*. Gum. $[\alpha]_D$ -7 (c, 1 in $CHCl_3$).

(1*S*,6*S*,7*aS*)-*form*

Et ester: [78175-02-7]

Needles (EtOAc). Mp 110°. $[\alpha]_D^{18}$ -72.1 (c, 4 in $CHCl_3$).

Robins, D.J. *et al., J.C.S. Perkin 1*, 1989, 1339-1342 (*synth, ester*)

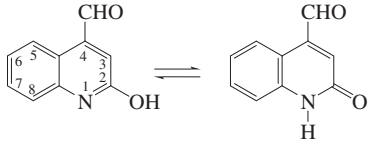
Huong, D.T.T. *et al., J. Nat. Prod.*, 1998, **61**, 1444-1446 (*isol, ir, pmr, cmr*)

Yoda, H. *et al., Tet. Lett.*, 2003, **44**, 1643-1646 (*Amphorogynine A, synth*)

Roche, C. *et al., J.O.C.*, 2005, **70**, 8352-8363 (*Amphorogynine A, D, synth*)

2-Hydroxy-4-quinolinecarboxaldehyde H-721

1,2-Dihydro-2-oxo-4-quinolinecarboxaldehyde. 4-Formyl-2-hydroxyquinoline. 4-Formylcarbostyril



$C_{10}H_7NO_2$ 173.171

NH-form

N-*Mercapto: 4-Formyl-1-mercapto-2(1*H*)-quinolinone. 4-Formyl*-N-*mercaptocarbostyril*

$C_{10}H_7NO_2S$ 205.237

Prod. by *Pseudomonas fluorescens* strain G308. Antifungal agent. λ_{max} 222 ; 280 ; 318 (no solvent reported).

Fakhouri, W. *et al., Phytochemistry*, 2001, **58**, 1297-1303 (*N-mercapto, isol, pmr, cmr, ms*)

8-Hydroxy-4-quinolinecarboxaldehyde, 9CI H-722

8-Hydroxycinchoninaldehyde, 8CI. 4-Formyl-8-hydroxyquinoline

[14510-07-7]

$C_{10}H_7NO_2$ 173.171

Alkaloid from *Broussonetia zeylanica*. Orange cryst. (EtOH aq.). Mp 144-145°. λ_{max} 244 ; 263 ; 325 (no solvent reported).

Oxime: [71294-68-3]

$C_{10}H_8N_2O_2$ 188.185

Alkaloid from *Broussonetia zeylanica*. Cryst. Subl. 222. Natural product originally assigned a bipyridine struct.

Me ether: 8-Methoxy-4-quinolinecarboxaldehyde. 4-Formyl-8-methoxyquinoline

$C_{11}H_9NO_2$ 187.198

Mp 109-110°.

Buechi, J. *et al., Helv. Chim. Acta*, 1956, **39**, 1676-1683 (*synth*)

Fujikawa, F. *et al., Yakugaku Zasshi*, 1967, **87**, 844-849 (*synth*)

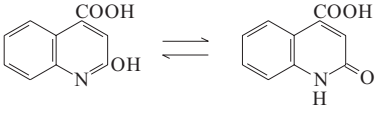
Gunatilaka, A.A.L. *et al., J. Chem. Res., Synop.*, 1979, 61 (*isol*)

Dehmlow, E.V. *et al., Phytochemistry*, 1990, **29**, 3993-3995 (*oxime*)

2-Hydroxy-4-quinolinecarboxylic acid H-723

*1,2-Dihydro-2-oxo-4-quinolinecarboxylic acid. 2(1*H*)-Quinolinone-4-carboxylic acid. 2-Hydroxycinchoninic acid. Carbostyril-4-carboxylic acid*

[84906-81-0]



$C_{10}H_7NO_3$ 189.17

NH-form is major tautomer. Isol. from poppy straw (*Papaver somniferum*). Needles (H_2O). Mp 343° (anhyd.) Mp 310° (monohydrate).

Me ester:

$C_{11}H_9NO_3$ 203.197

Prod. by a marine bacterium strain He159b. Needles (H_2O). Mp 248-251°.

Et ester: ***4-Ethoxycarbonyl-2-(1*H*)-quinolinone***

[5466-27-3]

$C_{12}H_{11}NO_3$ 217.224

Alkaloid from the fruit of *Brucea javanica* and *Parthenocissus tricuspidata*. Needles (EtOH aq.). Mp 207-210°.

NH-form [15733-89-8]

N-*Me:*

$C_{11}H_9NO_3$ 203.197

Mp 244°.

OH-form

Me ether: 2-Methoxy-4-quinolinecarboxylic acid

[10222-62-5]

$C_{11}H_9NO_3$ 203.197

Cryst. (MeOH). Mp 175°.

Et ether: 2-Ethoxy-4-quinolinecarboxylic acid

$C_{12}H_{11}NO_3$ 217.224

Needles (H_2O). Mp 145-146°.

Et ether, Et ester:

$C_{14}H_{15}NO_3$ 245.277

Needles. Mp 86°.

Wojahn, H. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1931, **269**, 422 (*synth*)

Sugasawa, S. *et al., Yakugaku Zasshi*, 1937, **57**, 296 (*synth*)

Schmid, H. *et al., Helv. Chim. Acta*, 1945, **28**, 722 (*isol*)

Org. Synth., Coll. Vol., 3, 1955, 456 (*synth*)

Kadaba, P.K. *et al., Synthesis*, 1972, 628 (*deriv*)

Sawayama, T. *et al., Chem. Pharm. Bull.*, 1976, **24**, 2305 (*synth*)

Wang, Y.Z. *et al., Yaoxue Xuebao*, 1982, **17**, 466; *CA*, **97**, 107056 (*isol, deriv*)

Mirek, J. *et al., Z. Naturforsch., A*, 1982, **37**, 1276 (*tautom, uv*)

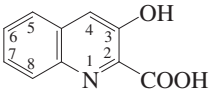
Yu, Y.N. *et al., Yaoxue Xuebao*, 1990, **25**, 382; *CA*, **113**, 227957 (*isol, deriv*)

Shabaan, M. *et al., Dissertation*, Univ. of Göttingen, 2004, (*Me ester, marine, isol*)

3-Hydroxy-2-quinolinecarboxylic acid, 9CI H-724

3-Hydroxyquinaldic acid, 8CI

[15462-45-0]



$C_{10}H_7NO_3$ 189.17

Isol. from *Streptomyces griseoflavus*. Yellow needles (Me_2CO). Mp 200° dec. (196-198°). λ_{max} 237 (ε 11000); 328 (ε 2400); 369 (ε 2200) (MeOH/HCl) (Derep). λ_{max} 228 (ε 14500); 286 (ε 1800); 353 (ε 2100) (MeOH/NaOH) (Derep). λ_{max} 217 (ε 16300); 228 (ε 16100); 291 (ε 1500); 352 (ε 2100) (MeOH) (Derep).

Ca salt: [110429-27-1]

Sol. MeOH; poorly sol. H_2O. Mp 170°. λ_{max} 217 (ε 16300); 228 (ε 16100); 292 (ε 1500); 352 (ε 2100) (MeOH) (Berdy). λ_{max} 237 (ε 11000); 328 (ε 2400); 369 (ε 2200) (MeOH-HCl) (Berdy). λ_{max} 228 (ε 14500); 286 (ε 1800); 353 (ε 2100) (MeOH-NAOH) (Berdy).

Me ester: [171917-61-6]

$C_{11}H_9NO_3$ 203.197

Solid. Mp 122-124°.

Amide: [15462-44-9]

$C_{10}H_8N_2O_2$ 188.185

Pale-yellow needles (Me_2CO). Mp 215-216°.

Nitrile: 2-Cyano-3-hydroxyquinoline

[15462-43-8]

$C_{10}H_6N_2O$ 170.17

Needles (MeOH). Mp 183° Mp 300° dec. No explanation given for widely differing Mp's.

Me ether, Me ester: [110429-26-0]

$C_{12}H_{11}NO_3$ 217.224

Mp 78-80°.

Benzyl ether: [110429-24-8]

$C_{17}H_{13}NO_3$ 279.295

Needles (MeOH). Mp 150-151° dec.

Benzyl ether, Me ester:

$C_{18}H_{15}NO_3$ 293.321

Oil.

Kaneko, C. *et al., Chem. Pharm. Bull.*, 1967, **15**, 663 (*synth*)

Breiding-Mack, S. *et al., J. Antibiot.*, 1987, **40**, 953 (*isol, props*)

Boger, D.L. *et al., J.O.C.*, 1995, **60**, 7369 (*derivs*)

Bergeron, R.J. *et al., J. Med. Chem.*, 1999, **42**, 95-108 (*nitrile*)

4-Hydroxy-2-quinolinecarboxylic acid H-725

1,4-Dihydro-4-oxo-2-quinolinecarboxylic acid, 9CI. 4(1H)-Quinolinone-2-carboxylic acid. 4-Hydroxyquinaldinic acid. ***Kynurenic acid****. Transtorine. Transitorine*
[492-27-3]

$C_{10}H_7NO_3$ 189.17

The oxo form is the major tautomer. A normal prod. of mammalian tryptophan metab. Isol. from urine of dogs (Liebig, 1953). Alkaloid from *Ephedra transitoria* (Ephedraceae). Shows anticonvulsant props. Needles. Ppt. from soln. of Na salt by HCl. Insol. H_2O, Et_2O; sol. hot EtOH. Mp 123° (nat. prod.) Mp 287-288° dec.

Me ester:
$C_{11}H_9NO_3$ 203.197
Mp 224°.

Et ester: [13720-90-6]
$C_{12}H_{11}NO_3$ 217.224
Mp 215° (213°).

OH-form

Me ether: 4-Methoxy-2-quinolinecarboxylic acid
[15733-83-2]
$C_{11}H_9NO_3$ 203.197
Needles (H_2O). Mp 196-197° dec.

Me ether, Me ester: [67976-94-7]
$C_{12}H_{11}NO_3$ 217.224
Mp 148-149°.

Me ether, Et ester:
$C_{13}H_{13}NO_3$ 231.251
Prisms (C_6H_6/petrol). Mp 131-133°.

Oxo-*form*

N-*Me, Et ester:* [60442-66-2]
$C_{13}H_{13}NO_3$ 231.251
Mp 110-112°.

Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 448C (*nmr*)
Besthorn, E. *et al., Ber.*, 1921, **54**, 1330 (*synth*)
Riegel, B. *et al., J.A.C.S.*, 1946, **68**, 2685 (*ester*)
Wald, D.K. *et al., J.O.C.*, 1966, **31**, 3369 (*synth, ir*)
Narumiya, S. *et al., J. Biol. Chem.*, 1979, **254**, 7007 (*metab*)
Okabe, N. *et al., Acta Cryst. C*, 1996, **52**, 1827 (*cryst struct*)
Al-Khalil, S. *et al., J. Nat. Prod.*, 1998, **61**, 262-263 (*isol, Ephedra*)
Michael, J.P. *et al., Nat. Prod. Rep.*, 2000, **17**, 603-620 (*Transitorine*)

6-Hydroxy-4-quinolinecarboxylic acid H-726

6-Hydroxycinchoninic acid. Xanthoquininic acid. Xanthoquinic acid
[4312-44-1]

$C_{10}H_7NO_3$ 189.17
Plates (H_2O). Mp 325° dec.

Methiodide:
Orange-yellow cryst. (EtOH). Mp 302°.

Et ester: [31610-09-0]
$C_{12}H_{11}NO_3$ 217.224
Mp 185.5°.

Amide: 6-Hydroxy-4-quinolinecarboxamide. ***Xanthoquininamide***
[51094-27-0]
$C_{10}H_8N_2O_2$ 188.185
Alkaloid from the roots of *Microdesmis keayana*. Pale yellow powder. λ_{max} 205 (log ε 4.17); 232 (log ε 3.94); 270 (log ε 3.91); 308 (log ε 3.23) (MeOH).

Me ether: 6-Methoxy-4-quinolinecarboxylic acid. Quininic acid
[86-68-0]
$C_{11}H_9NO_3$ 203.197
Used as a satd. aq. soln. as acid-base fluorescent indicator (pH range: 4.0-5.0; colour change: yellow → blue). Yellow prisms (dil. HCl). Spar. sol. H_2O; sol. acids, alkalis. Mp 285° dec. pK_a 3.05. Yellow colour in acid soln. Blue fluor. in EtOH destroyed by H_2O or acids.

Me ether, Me ester: [19834-77-6]
$C_{12}H_{11}NO_3$ 217.224
Mp 84°.

Me ether, Et ester: [5345-57-3]
$C_{13}H_{13}NO_3$ 231.251
Insol. H_2O. Mp 69°.

Me ether, nitrile: 4-Cyano-6-methoxyquinoline
[6443-89-6]
$C_{11}H_8N_2O$ 184.197
Yellow needles (C_6H_6). Mp 157°.

Et ether: 6-Ethoxy-4-quinolinecarboxylic acid. Optoquinic acid
[525-39-3]
$C_{12}H_{11}NO_3$ 217.224
Yellow needles (propanol). Mp 278°.

John, H. *et al., Ber.*, 1930, **63**, 2657-2661 (*Me ether*)
John, H. *et al., J. Prakt. Chem.*, 1930, **128**, 194 (*synth*)
Rabe, P. *et al., Ber.*, 1931, **64**, 2487-2500 (*Me ether*)
Thielpape, E. *et al., Ber.*, 1939, **72B**, 1432-1443 (*Me ether*)
King, H. *et al., J.C.S.*, 1942, 401-404 (*Me ether*)
Campbell, K.N. *et al., J.O.C.*, 1946, **11**, 803-811 (*Me ether Et ester*)
Benassi, C.A. *et al., Gazz. Chim. Ital.*, 1967, **97**, 3 (*synth, ir*)
Schultz, O.-E. *et al., Annalen*, 1970, **740**, 192-195 (*Me ether*)
Bishop, E. *et al., Indicators*, Pergamon, Oxford, 1972, (*use, Me ether*)
Zamble, A. *et al., Chem. Pharm. Bull.*, 2007, **55**, 643-645 (*Xanthoquininamide*)

8-Hydroxy-2-quinolinecarboxylic acid H-727

[1571-30-8]

$C_{10}H_7NO_3$ 189.17
Cryst. Mp 210°.

▶ UZ9450000

Diethylamide:
$C_{14}H_{16}N_2O_2$ 244.293
Solid. Mp 104°.

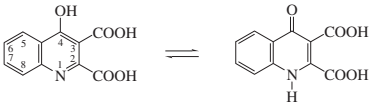
Me ether: 8-Methoxy-2-quinolinecarboxylic acid
[21638-90-4]
$C_{11}H_9NO_3$ 203.197
Isol. from scent gland of beetle *Ilybius fenestratus*. Yellow needles. Mp 75-75.5°.

Benzyl ether: [176696-00-7]
$C_{17}H_{13}NO_3$ 279.295
Mp 109°.

Tamada, T. *et al., CA*, 1969, **70**, 113301n (*tox*)
Schildknecht, H. *et al., Z. Naturforsch., B*, 1969, **24**, 38 (*isol, synth*)
Caris, C. *et al., Tetrahedron*, 1996, **52**, 4659-4672 (*benzyl ether, synth, pmr, cmr*)
Albrecht, M. *et al., Eur. J. Org. Chem.*, 2007, 4902-4908 (*diethylamide*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, HOE000

4-Hydroxy-2,3-quinolinedicarboxylic acid H-728

1,4-Dihydro-4-oxo-2,3-quinolinedicarboxylic acid, 9CI



$C_{11}H_7NO_5$ 233.18

NH-form

N-*Me, di-Me ester:* ***2,3-Dicarbomethoxy-1-methyl-4(1H)-quinolinone***
[181289-63-4]
$C_{14}H_{13}NO_5$ 275.26
Alkaloid from leaves of *Sarcomelicope dogniensis*. Amorph. λ_{max} 223 (log ε 3.97); 247 (log ε 3.87); 321 (log ε 3.74); 337 (log ε 3.79) (MeOH).

N-*Me, di-Et ester:* [73281-87-5]
Mp 96-98°.

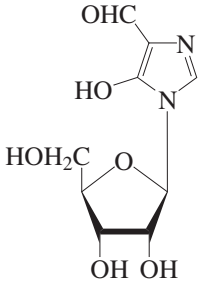
N-*Me, 3-amide: 3-(Aminocarbonyl)-1,4-dihydro-1-methyl-4-oxo-2-quinolinecarboxylic acid.* ***Quinolonic acid***
[888728-71-0]
$C_{12}H_{10}N_2O_4$ 246.222
Prod. by *Penicillium citrinum* (MST-F10130). solid. λ_{max} 221 (ε 9300); 250 (ε 8600); 258 (ε 8500); 304 (sh) (ε 3500); 316 (ε 4000) (MeOH).

N-*Me, imide: 4-Methyl-1H-pyrrolo[3,4-b]quinoline-1,3,9(2H,4H)-trione.* ***Quinolonimide***
[888728-70-9]
$C_{12}H_8N_2O_3$ 228.207
Prod. by *Penicillium citrinum* (MST-F10130). Pale yellow solid. λ_{max} 224 (ε 12500); 251 (sh) (ε 8700); 269 (sh) (ε 5600); 313 (ε 3800); 325 (ε 4300) (MeOH).

Coppola, G.M. *et al., J. Het. Chem.*, 1979, **16**, 1605 (*synth, di-Et ester*)
Coppola, G.M. *et al., Org. Magn. Reson.*, 1981, **17**, 242 (*cmr, di-Et ester*)
Mitaku, S. *et al., Nat. Prod. Lett.*, 1995, **7**, 219 (*isol, di-Me ester*)
Clark, B. *et al., Org. Biomol. Chem.*, 2006, **4**, 1512-1519 (*Quinolonic acid, Quinolonimide*)

5-Hydroxy-1-β-D-ribofuranosyl-1*H*-imidazole-4-carboxaldehyde, 9CI H-729

F 2787. *Antibiotic F 2787*
[143577-73-5]



$C_9H_{12}N_2O_6$ 244.204

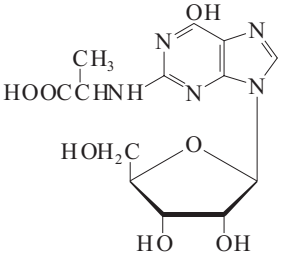
Nucleoside-type antibiotic. Prod. by *Streptomyces filipinensis-artispiralis*. Plant growth regulator and herbicide. Powder. Sol. H_2O; fairly sol. MeOH; poorly sol. butanol, Me_2CO, hexane. $[\alpha]_D$ -43 (H_2O). λ_{max} 215 (E1%/1cm 320); 240 (E1%/1cm 160); 305 (ε 695) (H_2O) (Berdy). λ_{max} 210 (E1%/1cm 210); 245 (E1%/1cm 150) (HCl) (Berdy).

▶ LD_{50} (mus, ipr) 500 mg/kg.

Japan. Pat., 1992, 92 112 896; *CA*, **117**, 145326e

***N*-(6-Hydroxy-9-β-D-ribofuranosyl-9*H*-purin-2-yl)alanine** H-730

Guanosinepropionic acid

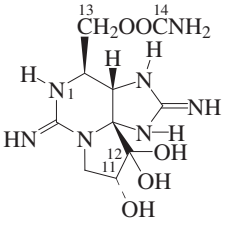


$C_{13}H_{17}N_5O_7$ 355.307

Isol. from a *Fusarium* sp. Cryst. ($MeOH/Me_2CO$). $[\alpha]_D^{25}$ +9.9 (c, 1.0 in H_2O).

Gerster, J.F. *et al., J.A.C.S.*, 1965, **87**, 3752 (*synth, uv*)
Ballio, A. *et al., Gazz. Chim. Ital.*, 1966, **96**, 337 (*isol*)

11-Hydroxysaxitoxin H-731



11α-*form*

$C_{10}H_{17}N_7O_5$ 315.288

11α-*form* [78780-57-1]
Isol. from *Gonyaulax tamarensis*.

11-O-*Sulfate:* ***Gonyautoxin II***. *GTX2*
[60508-89-6]
$C_{10}H_{17}N_7O_8S$ 395.352
From *Gonyaulax* and *Protogonyaulax* spp. and present in other marine organisms. Neurotoxin. Sol. H_2O.

▶ Toxic.

11-O-*Sulfate*, N^{14}-*sulfonic acid:* ***Protogonyautoxin I***. *Toxin C_1*. *Toxin PX_1*
[80173-30-4]
$C_{10}H_{17}N_7O_{11}S_2$ 475.417
From *Gonyaulax* and *Protogonyaulax* spp. Neurotoxin. Prisms + H_2O (MeOH aq.).

▶ Toxic.

Decarbamoyl: ***Decarbamoyl-11α-hydroxysaxitoxin***
$C_9H_{16}N_6O_4$ 272.263
Isol. from shellfish. No CAS no. 8-14 CI.

Decarbamoyl, 11-O-*sulfate:* ***Decarbamoylgonyautoxin II***
[86996-87-4]
$C_9H_{16}N_6O_7S$ 352.327
Isol. from various shellfish.

Decarbamoyl, O^{13}-*Ac, 11*-O-*sulfate:* ***13-Acetyldecarbamoylgonyautoxin II***. *LWTX3*
[200816-97-3]
$C_{11}H_{18}N_6O_8S$ 394.365
Isol. from *Lyngbya wollei*.

Decarbamoyl, 13-O-*(4-hydroxybenzoyl), 11*-O-*sulfate:* ***GC 1***
[603125-80-0]
$C_{16}H_{20}N_6O_9S$ 472.435
Isol. from *Gymnodinium catenatum*.

De(carbamoyloxy), 11-O-*sulfate:* ***Decarbamoyloxygonyautoxin II***
[186249-38-7]
$C_9H_{16}N_6O_6S$ 336.328
Isol. from *Alexandrium* sp.

N^1-*Hydroxy:* ***11α-Hydroxyneosaxitoxin***
$C_{10}H_{17}N_7O_6$ 331.288
Isol. from shellfish. No CAS no found 8-14CI.

N^1-*Hydroxy, 11*-O-*sulfate:* ***Gonyautoxin I***. *GTX1*
[60748-39-2]
$C_{10}H_{17}N_7O_9S$ 411.352
Prod. by *Gonyaulax* and *Protogonyaulax* spp. and isol. from shellfish and other marine organisms. Neurotoxin, causal agent, with Saxitoxin, of shellfish poisoning. Sol. H_2O. The Gonyautoxins, esp. the *N*-sulfates, show reduced toxicity compared with Saxitoxin.

▶ Toxic.

N^1-*Hydroxy, 11*-O-*sulfate*, N^{14}-*sulfonic acid:* ***Protogonyautoxin 3***. *Toxin C_3*. *Toxin PX_3*
[89614-45-9]
$C_{10}H_{17}N_7O_{12}S_2$ 491.416
From *Gonyaulax* and *Protogonyaulax* spp. Neurotoxin.

▶ Toxic.

N^1-*Hydroxy, decarbamoyl:* ***Decarbamoyl-11α-hydroxyneosaxitoxin***
$C_9H_{16}N_6O_5$ 288.263
No CAS no. found 8-14CI.

N^1-*Hydroxy, decarbamoyl, 11*-O-*sulfate:* ***Decarbamoylgonyautoxin I***
[122075-86-9]
$C_9H_{16}N_6O_8S$ 368.327
Isol. from *Gymnodinium catenatum* and *Alexandrium* sp.

11β-*form* [99685-70-8]
Isol. from mussels (*Mytilus* sp.) during an intense bloom of *Alexandrium tamarense*.

11-O-*Sulfate:* ***Gonyautoxin III***. *GTX3*
[60537-65-7]
$C_{10}H_{17}N_7O_8S$ 395.352
From *Gonyaulax* and *Protogonyaulax* spp. and other marine organisms. Neurotoxin. Sol. H_2O.

▶ Toxic.

11-O-*Sulfate*, N^{14}-*sulfonic acid:* ***Gonyautoxin VIII***. *GTX8*. *Protogonyautoxin 2*. *Toxin C_2*. *Toxin PX_2*
[80226-62-6]
$C_{10}H_{17}N_7O_{11}S_2$ 475.417
From *Gonyaulax* and *Protogonyaulax* spp. Neurotoxin. Large cryst. + H_2O (H_2O).

▶ Toxic. UU6858700

Decarbamoyl: ***Decarbamoyl-11β-hydroxysaxitoxin***
$C_9H_{16}N_6O_4$ 272.263
Isol. from shellfish. No CAS no found 8-14CI.

Decarbamoyl, 11-O-*sulfate:* ***Decarbamoylgonyautoxin III***
[87038-53-7]
$C_9H_{16}N_6O_7S$ 352.327
Isol. from various shellfish.

Decarbamoyl, O^{13}-*Ac, 11*-O-*sulfate:* ***13-Acetyldecarbamoylgonyautoxin III***. *LWTX2*
[200816-96-2]
$C_{11}H_{18}N_6O_8S$ 394.365
Isol. from *Lyngbya wollei*.

Decarbamoyl, 13-O-*(4-hydroxybenzoyl), 11*-O-*sulfate:* ***GC 2***
[603125-81-1]
$C_{16}H_{20}N_6O_9S$ 472.435
Isol. from *Gymnodinium catenatum*.

De(carbamoyloxy), 11-O-*sulfate:* ***Decarbamoyloxygonyautoxin III***
[155666-11-8]
$C_9H_{16}N_6O_6S$ 336.328
Isol. from *Gymnodinium catenatum* and *Alexandrium* sp.

N^1-*Hydroxy:* ***11β-Hydroxyneosaxitoxin***
$C_{10}H_{17}N_7O_6$ 331.288
Isol. from shellfish. No CAS no found 8-14CI.

N^1-*Hydroxy, 11*-O-*sulfate:* ***Gonyautoxin IV***. *GTX4*
[64296-26-0]
$C_{10}H_{17}N_7O_9S$ 411.352
From *Gonyaulax* and *Protogonyaulax* spp. and other marine organisms. Neurotoxin. Sol. H_2O.

▶ Toxic.

N^1-*Hydroxy, 11*-O-*sulfate*, N^{14}-*sulfonic acid:* ***Protogonyautoxin 4***. *Toxin C_4*. *Toxin PX_4*
[89674-98-6]
$C_{10}H_{17}N_7O_{12}S_2$ 491.416
From *Gonyaulax* and *Protogonyaulax* spp. Neurotoxin.

▶ Toxic.

N^1-*Hydroxy, decarbamoyl:* ***Decarbamoyl-11β-hydroxyneosaxitoxin***
$C_9H_{16}N_6O_5$ 288.263
Isol. from shellfish.

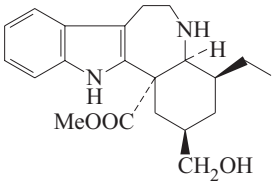
N^1-*Hydroxy, decarbamoyl, 11*-O-*sulfate:* ***Decarbamoylgonyautoxin IV***
[122169-51-1]
$C_9H_{16}N_6O_8S$ 368.327
Isol. from *Gymnodinium catenatum* and *Alexandrium* sp.

12-Deoxy, decarbamoyl, O^{13}*-Ac, 11*-O-*sulfate: LWTX1*
[200816-95-1]
$C_{11}H_{18}N_6O_7S$ 378.365
Isol. from *Lyngbya wollei*.

Onoue, Y. *et al., J. Agric. Food Chem.*, 1983, **31**, 420-430 (*props*)
Oshima, Y. *et al., Agric. Biol. Chem.*, 1984, **48**, 1707-1711 (*chromatog, bibl*)
Maruyama, J. *et al., Agric. Biol. Chem.*, 1984, **48**, 2783-2788 (*ms*)
Hall, S. *et al., Tet. Lett.*, 1984, **25**, 3537-3538 (*Toxins C3, C4*)
Shimizu, Y. *et al., Tetrahedron*, 1984, **40**, 539-544 (*props*)
Anderson, D.M. *et al., Toxicon*, 1989, **27**, 665-674 (*Decarbamoylgonyautoxins*)
Hall, S. *et al., ACS Symp. Ser.*, 1990, 418 (*book*)
Gallacher, S. *et al., Appl. Environ. Microbiol.*, 1997, **63**, 239-245 (*Decarbamoyloxygonyautoxins*)
Onodera, H. *et al., Nat. Toxins*, 1997, **5**, 146-151 (*LWTX toxins*)
Food Sci. Technol., Seafood and Freshwater Toxins, (ed. Botana, L.M.), Marcel Dekker, 2000, **103**, (*revs*)
Negri, A. *et al., Chem. Res. Toxicol.*, 2003, **16**, 1029-1033 (*GC1, GC2*)
Ciminiello, P. *et al., Eur. J. Org. Chem.*, 2004, 2533-2551 (*rev*)
Llewellyn, L.E. *et al., Nat. Prod. Rep.*, 2006, **23**, 200-222 (*rev*)
Dell'Aversano, C. *et al., J. Nat. Prod.*, 2008, **71**, 1518-1523 (*isol, pmr, cmr, ms*)
Mulcahy, J.V. *et al., J.A.C.S.*, 2008, **130**, 12630-12631 (*Gonyautoxin III, synth*)

3-Hydroxy-3,4-secocoronaridine H-732

[131653-78-6]

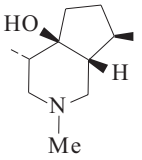


$C_{21}H_{28}N_2O_3$ 356.464
Alkaloid from the leaves and stem bark of *Ervatamia polyneura* (Apocynaceae). $[\alpha]_D$ -46 (c, 0.5 in $CHCl_3$).

Clivio, P. *et al., Phytochemistry*, 1990, **29**, 3007 (*isol, uv, ir, pmr, cmr, ms struct*)

4*a*-Hydroxyskytanthine H-733

*Octahydro-2,4,7-trimethyl-1*H-*cyclopenta[c]pyridin-4*a-*ol, 9CI. Isooxyskytanthine*
[22324-99-8]
[947688-44-0 (monohydrochloride)]



Absolute configuration

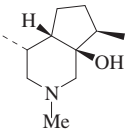
$C_{11}H_{21}NO$ 183.293
Alkaloid from *Tecoma stans*. Mp 91-92°.

Picrate: Mp 170-170.5°.

Dickinson, E.M. *et al., Tetrahedron*, 1969, **25**, 1523 (*ir, pmr, isol*)
Jones, G. *et al., Chem. Comm.*, 1971, 994 (*cryst struct*)
Ferguson, G. *et al., J.C.S. Perkin 2*, 1975, 1124 (*cryst struct*)
Berg, W. *et al., Pharmazie*, 1977, **32**, 41 (*ms*)
Cossy, J. *et al., J.O.C.*, 1993, **58**, 2351 (*synth, pmr, cmr, ms*)
Marzouk, M. *et al., Z. Naturforsch., C*, 2006, **61**, 783-791 (*isol, pmr, cmr*)

7*a*-Hydroxyskytanthine H-734

*Octahydro-2,4,7-trimethyl-1*H-*cyclopenta[c]pyridin-7*a-*ol, 9CI*
[22325-03-7]



(4*R*,4*aS**,7*R**,7*aR**)-*form*

$C_{11}H_{21}NO$ 183.293

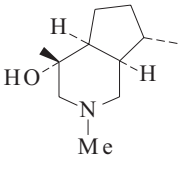
(4*R*,4*aS*,7*R*,7*aR*)-*form*
N-*Oxide:* ***Kinabalurine G***
$C_{11}H_{21}NO_2$ 199.292
Alkaloid from *Kopsia dasyrachis*.

(4ξ,4*a*ξ,7ξ,7*a*ξ)-*form*
Alkaloid from *Tecoma stans*. Mp 87-89°.
Methiodide:
Cryst. (EtOH). Mp 310-312° dec.

Dickinson, E.M. *et al., Tetrahedron*, 1969, **25**, 1523-1529 (*isol, ir, pmr, ms*)
Kam, T.S. *et al., Phytochemistry*, 1999, **52**, 959-963 (*Kinabalurine G*)

4-Hydroxyskytanthine H-735

Hydroxyskytanthine I
[16625-64-2]

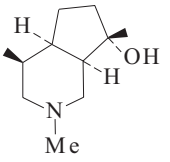


$C_{11}H_{21}NO$ 183.293
Minor alkaloid from the leaves of *Skytanthus acutus* (Apocynaceae). Cryst. (cyclohexane or by subl.). Mp 94-95°. $[\alpha]_D^{19}$ +38.5 (c, 1.50 in cyclohexane). $[\alpha]_D^{19}$ +35.8 (c, 1.80 in MeOH).

Appel, H.H. *et al., Scientia (Valparaiso)*, 1961, **28**, 5; *CA*, **57**, 2332g (*isol*)
Casinovi, C.G. *et al., Chem. Ind. (London)*, 1963, 984 (*ir, pmr*)
Adolphen, G. *et al., Tetrahedron*, 1967, **23**, 3147 (*isol, pmr, ms, struct*)

7-Hydroxyskytanthine H-736

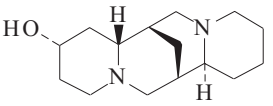
Hydroxyskytanthine II
[16625-65-3]



$C_{11}H_{21}NO$ 183.293
Minor alkaloid from the leaves of *Skytanthus acutus* (Apocynaceae). Cryst. (cyclohexane or by subl.). Mp 119-120°. $[\alpha]_D^{19}$ -38.5 (c, 1.00 in MeOH).

Adolphen, G. *et al., Tetrahedron*, 1967, **23**, 3147 (*isol, pmr, ms, struct*)

4-Hydroxysparteine H-737



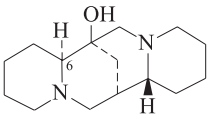
$C_{15}H_{26}N_2O$ 250.383

4α-form
Alkaloid from bark of *Acosmium panamense* (Fabaceae). Oil. $[\alpha]_D^{23}$ -31. $[\alpha]_{365}^{23}$ -103 (c, 0.1 in EtOH).

Balandrin, M.F. *et al., Heterocycles*, 1982, **19**, 1931 (*isol, struct, ms, synth*)

7-Hydroxysparteine H-738

[36565-37-4]



Relative configuration

$C_{15}H_{26}N_2O$ 250.383
Alkaloid in *Cytisus hirsutus* and *Chamaecytisus ciliatus* (Fabaceae).

6-Epimer: ***7-Hydroxy-β-isosparteine***
$C_{15}H_{26}N_2O$ 250.383
Alkaloid from *Lupinus sericeus* (Fabaceae). Cryst. solid by subl. Mp 103.5-104.5°. $[\alpha]_D^{25}$ -8 (c, 3.0 in EtOH). pK_a 10.7 (50% EtOH aq.). Crystallises with difficulty.

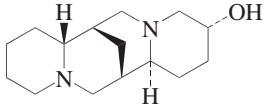
6-Epimer, perchlorate: Mp 207.5-208.5°.

6-Epimer, Ac:
Noncryst. Mp 231-236.5° (as perchlorate). $[\alpha]_D^{25}$ +23.5 (c, 0.66 in EtOH).

Pinkerton, J.M.H. *et al., J.O.C.*, 1967, **32**, 1828 (*cryst struct, epimer*)
Carmack, M. *et al., J.O.C.*, 1967, **32**, 3045 (*isol, struct, epimer*)
Neuner-Jehle, N. *et al., Monatsh. Chem.*, 1967, **98**, 836 (*ms*)

Mollov, N.M. *et al., Dokl. Bulg. Akad. Nauk*, 1971, **24**, 1657; *CA*, **76**, 138214y (*isol*)
Daily, A. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1978, **311**, 889 (*occur*)

14-Hydroxysparteine H-739

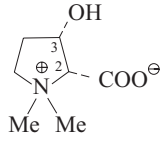


$C_{15}H_{26}N_2O$ 250.383

14α-*form*
Alkaloid from *Laburnum watereri*. Characterised by ms only.
Bohlmann, F. *et al., Chem. Ber.*, 1965, **98**, 653 (*synth*)
Greinwald, R. *et al., Biochem. Physiol. Pflanz.*, 1990, **186**, 1 (*occur*)

3-Hydroxystachydrine H-740

2-Carboxy-3-hydroxy-1,1-dimethylpyrrolidinium hydroxide inner salt, 9CI. 3-Hydroxyproline dimethylbetaine
[51795-35-8]



(2*R*,3*S*)–*form*

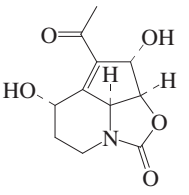
$C_7H_{13}NO_3$ 159.185
Alkaloid in *Boscia*, *Cadaba*, *Capparis*, *Maerua*, *Morisonia*, *Neothorelia*, *Poilanedora*, *Steriphoma*, *Thilachium* and *Tiranía* spp. (no stereochem. detd.). Characteristic of the Capparidaceae.

(2*R*,3*S*)-*form*
D-cis-*form. 3-Hydroxystachydrine b*
[32213-41-5]
Alkaloid from *Courbonia virgata* (preferred genus name *Maerua*). Cryst. + $1H_2O$ (EtOH aq.). Mp 209-210° dec. $[\alpha]_D^{22}$ +53 (c, 2.5 in H_2O).
Hydrochloride:
Prisms (EtOH). Mp 201-202°.

(2*S*,3*S*)-*form*
L-trans-*form. 3-Hydroxystachydrine a*
Alkaloid from *Courbonia virgata*. Prisms. Mp 250° (efferv.) (245°). $[\alpha]_D^{30}$ +10 (c, 29 in H_2O).
Hydrochloride:
Needles (EtOH). Mp 196-197° dec.
Picrate:
Yellow cryst. (EtOH). Mp 160°.
Cornforth, J.W. *et al., J.C.S.*, 1952, 597 (*isol, struct*)
Sakiyama, F. *et al., J.A.C.S.*, 1964, **86**, 1842 (*synth, config*)
Mandava, N. *et al., Annalen*, 1970, **741**, 167 (*pmr, config*)
Delaveau, P. *et al., Phytochemistry*, 1973, **12**, 2893 (*occur*)
Yousif, G. *et al., Fitoterapia*, 1984, **55**, 117; *CA*, **102**, 21169b (*occur*)

8-Hydroxystreptazolone H-741

*4-Acetyl-2*a,*3,5,6,7,7*b-*hexahydro-3,5-dihydroxy-1*H-*2-oxa-7*a-*azacyclopent[*c-d*]inden-1-one*
[479581-78-7]

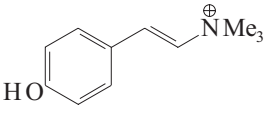


Relative Configuration

$C_{11}H_{13}NO_5$ 239.227
Prod. by *Streptomyces* sp.
Nomura, I. *et al., Org. Lett.*, 2002, **4**, 4301-4304 (*synth*)
Nomura, I. *et al., J.O.C.*, 2004, **69**, 1803-1812 (*synth*)

(4-Hydroxystyryl)trimethylammonium(1+) H-742

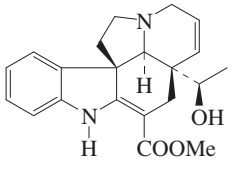
2-(4-Hydroxyphenyl)-N,N,N-*trimethylethenaminium, 9CI*



$C_{11}H_{16}NO^{\oplus}$ 178.253

(*E*)-*form* [778550-97-3]
[162827-15-8 (chloride)]
Metab. of the Palauan sponge *Axinyssa aplysinoides*. Highly hygroscopic solid (as chloride).
Compagnone, R.S. *et al., J. Nat. Prod.*, 1995, **58**, 145-148 (*isol, uv, ir, pmr, cmr*)
Sumaryono, W. *et al., CA*, 2006, **145**, 502464h (*isol*)

19-Hydroxytabersonine H-743



(19*R*)-*form*

$C_{21}H_{24}N_2O_3$ 352.432

(19*R*)-*form* [59086-85-0]
Alkaloid from *Catharanthus ovalis* and *Melodinus celastroides* (Apocynaceae). $[\alpha]_D^{22}$ -365 (c, 0.53 in $CHCl_3$). λ_{max} 220 (ϵ 10500); 300 (ϵ 10500); 330 (ϵ 13500) (EtOH).
14β,15β-Epoxide: ***(19R)-Epimisiline****. 19-Hydroxypachysiphine*
[109063-93-6]
$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from the leaves of *Petchia ceylanica* (Apocynaceae). Mp 252° dec. $[\alpha]_D^{27}$ -382 (c, 0.3 in $CHCl_3$).
14,15-Dihydro: see Minovincinine, M-631
11-Hydroxy: ***11,19R-Dihydroxytabersonine***
[138615-17-5]
$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from *Melodinus fusiformis* (Apocynaceae). Shows significant spermatocidal activity.
11-Methoxy: ***Vandrikidine****. 20-Hydroxy-16-methoxytabersonine*
[50656-92-3]
$C_{22}H_{26}N_2O_4$ 382.458
Alkaloid from *Craspidospermum verticillatum* (Apocynaceae). No phys. props. reported. λ_{max} 240 ; 328 (MeOH).

(19*S*)-*form*
14,15-Dehydro-19-epiminovincinine*. 6,7-Dehydro-20-epiminovincinine*
[59086-86-1]
Alkaloid from *Catharanthus ovalis*, *Catharanthus lanceus* and *Melodinus celastroides* (Apocynaceae). Cryst. (MeOH). Mp 163°. $[\alpha]_D^{22}$ -375 (c, 0.49 in $CHCl_3$). λ_{max} 220 (ϵ 13000); 300 (ϵ 10000); 330 (ϵ 14000) (EtOH).
14α,15α-Epoxide: ***Cathovalinine***
[61825-77-2]
$C_{21}H_{24}N_2O_4$ 368.432
Minor alkaloid from *Catharanthus ovalis* (Apocynaceae). Cryst. (C_6H_6). Mp 223°. $[\alpha]_D$ -492 (c, 0.30 in $CHCl_3$).
14β,15β-Epoxide: ***(19S)-Epimisiline***
[109063-94-7]
$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from *Petchia ceylanica* (Apocynaceae). Mp 198° dec. $[\alpha]_D^{27}$ -399 (c, 0.2 in $CHCl_3$).

(19ξ)-*form* [80286-66-4]
14β,15β-Epoxide: Demethoxyhoerhammerinine. Horhammericine. Hoerhammericine
[19459-04-2]
$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from *Catharanthus trichophyllus* (Apocynaceae). Shows antitumour activity. Needles (C_6H_6). Mp 140-144° (138-140°). $[\alpha]_D^{25}$ -40.3 (c, 2.04 in $CHCl_3$). $[\alpha]_D^{23}$ -395 (c, 0.1 in $CHCl_3$). λ_{max} 299 (log ϵ 4.14); 328 (log ϵ 4.32) (MeOH) (Berdy).
11-Methoxy, 14β,15β-epoxide: ***Hoerhammerinine****. Horhammerinine*
[19459-05-3]
Alkaloid from *Catharanthus lanceus* (Apocynaceae). Needles (EtOH). Mp 209.5-211° dec. $[\alpha]_D^{25}$ -381 (c, 1 in $CHCl_3$). λ_{max} 242 ; 300 ; 325 (MeOH).
Blomster, R.N. *et al., Naturwissenschaften*, 1968, **55**, 298 (*Hoerhammericine*)
Farnsworth, N.R. *et al., Z. Naturforsch., B*, 1968, **23**, 1061-1063 (*Hoerhammerinine*)
Abraham, D.J. *et al., J.O.C.*, 1969, **34**, 1575 (*Hoerhammericine*)
Gabetta, B. *et al., Fitoterapia*, 1976, **47**, 6-7; *CA*, **85**, 177738c (*19S-Hydroxytabersonine*)
Cordell, G.A. *et al., J. Pharm. Sci.*, 1976, **65**, 366-369 (*Hoerhammericine*)
Chiaroni, A. *et al., Tetrahedron*, 1976, **32**, 1899 (*Cathovalinine, isol, uv, ir, pmr, ms, cryst struct*)

Gabetta, B. *et al., Fitoterapia*, 1979, **35**, 1151 (*14,15-Dehydro-19-epiminovicinine*)
Langlois, N. *et al., J.O.C.*, 1979, **44**, 2468-2471 (*19R-Hydroxytabersonine, 19S-Hydroxytabersonine*)
Langlois, N. *et al., Phytochemistry*, 1979, **18**, 467-471 (*19R-Hydroxytabersonine, 19S-Hydroxytabersonine*)
Lounasmaa, M. *et al., Acta Chem. Scand., Ser. B*, 1980, **34**, 379-381 (*Vandrikidine, pmr, config*)
Kurz, W.G.W. *et al., Helv. Chim. Acta*, 1980, **63**, 1891-1896 (*Vandrikidine, biosynth*)
Kutney, J.P. *et al., Phytochemistry*, 1980, **19**, 2589-2595 (*Vandrikidine, biosynth, uv, pmr, ms*)
Caron, C. *et al., Heterocycles*, 1981, **16**, 645-646 (*19R-Hydroxytabersonine*)
Chen, W. *et al., Yaoxue Xuebao*, 1985, **20**, 906-912; 1986, **21**, 187-190; *CA*, **105**, 3520s; 3558k (*19-Hydroxy-11-methoxytabersonine*)
Atta-ur-Rahman, *et al., Phytochemistry*, 1987, **26**, 543 (*Epimisilines*)
He, X. *et al., Huaxue Xuebao*, 1992, **50**, 96-101; *CA*, **116**, 191092c (*11,19R-Dihydroxytabersonine*)

12-Hydroxy-2,4,8,10-tetradecatetraenoic acid H-744

$H_3CCH_2CH(OH)CH{=}CHCH{=}CHCH_2CH_2CH{=}CHCH{=}CHCOOH$

$C_{14}H_{20}O_3$ 236.31

(2*E*,4*E*,8*Z*,10*E*,12ξ)-*form*

2-Methylpropylamide: 12-Hydroxy-N-*isobutyl-2,4,8,10-tetradecatetraenamide.* ***Lanyuamide VI***
$C_{18}H_{29}NO_2$ 291.433
Alkaloid from the fruit of *Zanthoxylum integrifoliolum*. Oil. $[\alpha]_D^{25}$ -20.9 (c, 0.13 in $CHCl_3$). λ_{max} 237 (log ϵ 4.23); 259 (log ϵ 4.27) (EtOH).

Tsai, I.-L. *et al., Helv. Chim. Acta*, 2001, **84**, 830-833

11-Hydroxy-2,4,8-tetradecatrienoic acid H-745

$H_3CCH_2CH_2CH(OH)CH_2CH{=}CHCH_2CH_2CH{=}CHCH{=}CHCOOH$

$C_{14}H_{22}O_3$ 238.326

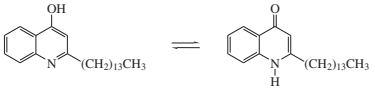
(2*E*,4*E*,8*Z*,11ξ)-*form*

2-Methylpropylamide: 11-Hydroxy-N-*isobutyl-2,4,8-tetradecatrienamide.* ***Lanyuamide IV***
$C_{18}H_{31}NO_2$ 293.448
Alkaloid from the fruit of *Zanthoxylum integrifoliolum*. Oil. $[\alpha]_D^{25}$ -42.9 (c, 0.11 in $CHCl_3$). λ_{max} 260 (log ϵ 3.85) (EtOH).

Tsai, I.-L. *et al., Helv. Chim. Acta*, 2001, **84**, 830-833

4-Hydroxy-2-tetradecylquinoline H-746

*2-Tetradecyl-4(1*H*)-quinolinone*



$C_{23}H_{35}NO$ 341.536

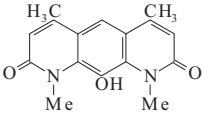
NH-form

N-*Me: 1-Methyl-2-tetradecyl-4(1*H*)-quinolinone*
$C_{24}H_{37}NO$ 355.562
Alkaloid from the fruit of *Evodia rutaecarpa*. Powder. λ_{max} 212 ; 238 ; 321 ; 333 (MeOH).

Ko, J.S. *et al., Planta Med.*, 2002, **68**, 1131-1133 (*isol, pmr, cmr, ms*)

10-Hydroxy-1,4,6,9-tetramethylpyrido[3,2-*g*]quinoline-2,8(1*H*,9*H*)-dione, 9CI H-747

BE 12233. Antibiotic BE 12233
[136158-10-6]



$C_{16}H_{16}N_2O_3$ 284.314
Prod. by *Streptomyces* BA-12233. Antineoplastic agent. Mp 300°. λ_{max} 225 ; 283 ; 355 ; 374 (MeOH) (Berdy).

Japan. Pat., 1991, 91 30 688; *CA*, **115**, 157136 (*isol, props*)

7-Hydroxy-2,8-tridecadiene-10,12-diynoic acid H-748

$HC{\equiv}CC{\equiv}CCH{=}CHCH(OH)(CH_2)_3CH{=}CHCOOH$

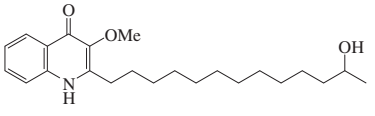
$C_{13}H_{14}O_3$ 218.252

(2*E*,7ξ,8*E*)-*form*

2-Methylpropylamide: 7-Hydroxy-N-*(2-methylpropyl)-2,8-tridecadiene-10,12-diynamide*
[1017577-34-2]
$C_{17}H_{23}NO_2$ 273.374
Alkaloid from *Spilanthescallimorpha*.

Li, G.-P. *et al., J. Integ. Plant Biol.*, 2007, **49**, 1608-1610 (*isol*)

2-(12-Hydroxytridecyl)-3-methoxy-4(1*H*)-quinolinone H-749



$C_{23}H_{35}NO_3$ 373.534

(+)-*form*

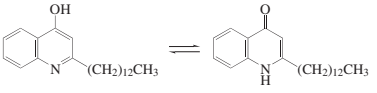
Alkaloid from the leaves of *Spathelia excelsa*. Oil. $[\alpha]_D$ +20.7 (c, 0.02 in $CHCl_3$). λ_{max} 240 ; 248 ; 326 ; 335 (MeOH).

*12′-Ketone: 3-Methoxy-2-(12-oxotridecyl)-4(1*H*)-quinolinone*
$C_{23}H_{33}NO_3$ 371.519
Alkaloid from the leaves of *Spathelia excelsa*. Gum. λ_{max} 242 ; 247 ; 324 ; 335 (MeOH).

Da Paz Lima, M. *et al., Phytochemistry*, 2005, **66**, 1560-1566 (*isol, pmr, cmr*)

4-Hydroxy-2-tridecylquinoline H-750

*2-Tridecyl-4(1*H*)-quinolinone. 2-Tridecyl-4-quinolinol, 9CI*
[14427-54-4]



$C_{22}H_{33}NO$ 327.509
Alkaloid from fruits of *Evodia rutaecarpa*. Metab. of *Pseudomonas aeruginosa*. Amorph. powder. Mp 132-134°. λ_{max} 212 (log ϵ 4.44); 235 (log ϵ 4.54); 315 (log ϵ 4.12); 327 (log ϵ 4.09) (MeOH).

N-*Oxide: 2-Tridecyl-4(1*H*)-quinolinone* N-*oxide*
[185855-03-2]
$C_{22}H_{33}NO_2$ 343.508
Metab. of *Pseudomonas aeruginosa*.

*1′,2′-Didehydro(*E-*): 2-(1*E*-Tridecenyl)-4(1*H*)-quinolinone. 4-Hydroxy-2-(1*E*-tridecenyl)quinoline*
$C_{22}H_{31}NO$ 325.493
Metab. of *Pseudomonas aeruginosa*.

*1′,2′-Didehydro(*Z-*): 2-(1*Z*-Tridecenyl)-4(1*H*)-quinolinone. 4-Hydroxy-2-(1*Z*-tridecenyl)quinoline*
$C_{22}H_{31}NO$ 325.493
Metab. of *Pseudomonas aeruginosa*.

NH-form

N-*Me: 1-Methyl-2-tridecyl-4(1*H*)-quinolinone, 9CI.* ***Dihydroevocarpine***
[15266-35-0]
$C_{23}H_{35}NO$ 341.536
Alkaloid from the leaves and fruits of *Evodia rutaecarpa* (Rutaceae). Active against *Helicobacter pylori*. Needles ($EtOAc/Et_2O$). Mp 74-75° (57°).

*7′,8′-Didehydro(*Z-*),* N-*Me:* ***1-Methyl-2-(7-tridecenyl)-4(1H)-quinolinone***
[182056-19-5]
$C_{23}H_{33}NO$ 339.52
Alkaloid from fruits of *Evodia rutaecarpa*. Oil. Isol. as an inseparable mixt. with Evocarpine.

8′,9′-Didehydro, N-*Me: 1-Methyl-2-(8-tridecenyl)-4(1*H*)-quinolinone.* ***Evocarpine***
[15266-38-3]
$C_{23}H_{33}NO$ 339.52
Alkaloid from the fruit of *Evodia rutaecarpa* (Rutaceae). Active against *Helicobacter pylori*. Mp 34-38°. Geometry of side-chain double bond not definitely known, inferred to be probably (*Z*-). λ_{max} 215 (log ϵ 4.25); 240 (log ϵ 4.34); 322 (log ϵ 4.04); 335 (log ϵ 4.06) (MeOH).

8′,9′-Didehydro, N-*Me, picrate:* Mp 96-96.5°.

*4′,5′,7′,8′-Tetradehydro(*Z,Z-*),* N-*Me:* ***1-Methyl-2-(4,7-tridecadienyl)-4(1H)-quinolinone***
[120693-53-0]

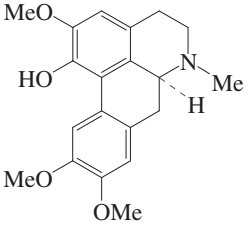
$C_{23}H_{31}NO$ 337.504
Alkaloid from fruits of *Evodia rutaecarpa* (Rutaceae). Oil.

8-Methoxy, N-*Me:* ***8-Methoxy-1-methyl-2-tridecyl-4(1H)-quinolinone, 9CI***
[132113-93-0]
$C_{24}H_{37}NO_2$ 371.562
Alkaloid from roots of *Esenbeckia leiocarpa* (Rutaceae).

Tschesche, R. *et al., Tetrahedron*, 1967, **23**, 1873-1881 (*Evocarpine, uv, ir, ms, pmr, isol, struct*)
Kamikado, T. *et al., Agric. Biol. Chem.*, 1976, **40**, 605-609 (*N-Me*)
Sugimoto, T. *et al., Chem. Pharm. Bull.*, 1988, **36**, 4453-4461 (*N-Me*)
Delle Monache, F. *et al., Gazz. Chim. Ital.*, 1990, **120**, 387-389 (*8-methoxy-N-Me*)
Tang, Y.-Q. *et al., Phytochemistry*, 1996, **43**, 719-722 (*Evodia rutaecarpa constits*)
Rho, T.C. *et al., Biol. Pharm. Bull.*, 1999, **22**, 1141-1143 (*Evocarpin, Dihydroevocarpine, isol, activity*)
Lepine, F. *et al., J. Am. Soc. Mass Spectrom.*, 2004, **15**, 862-869 (*occur, 1′,2′-didehydro*)
Deziel, E. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 2004, **101**, 1339-1344 (*biosynth*)

1-Hydroxy-2,9,10-trimethoxyaporphine H-751

*5,6,6a,7-Tetrahydro-2,9,10-trimethoxy-6-methyl-4*H*-dibenzo[*de,g*]quinolin-1-ol, 9CI. O^9-Methylisoboldine. Thalicmidine*



(*S*)-*form*

$C_{20}H_{23}NO_4$ 341.406
λ_{max} 220 (ϵ 33110); 280 (ϵ 13180); 305 (ϵ 13180) (EtOH) (Berdy).

(*S*)-*form*
Thaliporphine
[5083-88-5]
Alkaloid from *Thalictrum fendleri* and other spp. (Ranunculaceae, Papaveraceae, Lauraceae, Rutaceae, Annonaceae, Berberidaceae, Magnoliaceae, Euphorbiaceae, Lauraceae). Soporific and narcotic enhancer. Hypotensive agent, produces motility disturbances and convulsions. Mp 170-172°. $[\alpha]_D$ +44 (c, 0.97 in EtOH). λ_{max} 220 (log ϵ 4.52); 280 (log ϵ 4.12); 305 (log ϵ 4.12) (EtOH).
► Toxic, LD_{50} (mus/rbt, ivn) 10 mg/kg.

N-*Oxide:* ***Thalicmidine* N-*oxide***
[41607-13-0]
$C_{20}H_{23}NO_5$ 357.405
Alkaloid from *Thalictrum minus* and *Berberis integerrima* (Ranunculaceae, Berberidaceae). Mp 192-193° dec. λ_{max} 227 (log ϵ 4.42); 282 (log ϵ 4.1); 308 (log ϵ 4.07) (no solvent reported).

N-*Me:* ***Fagara base****. Aporphinium DVT*
[7224-60-4]
[18482-48-9 , 68889-50-9 , 47476-23-3]
$C_{21}H_{26}NO_4^{\oplus}$ 356.441
Quaternary alkaloid from *Fagara tinguassoiba* and *Fagara rhoifolia* (Rutaceae). Mp 215-219° (as chloride). $[\alpha]_D^{25}$ +30.2 (c, 2.16 in H_2O).

N-*De-Me: 1-Hydroxy-2,9,10-trimethoxynoraporphine.* ***Wilsonirine****. Aducaine. Northaliporphine*
[17807-64-6]
$C_{19}H_{21}NO_4$ 327.379
Alkaloid from *Croton wilsonii* and *Monodora angolensis* (Euphorbiaceae, Annonaceae). Mp 211-213° dec. (108-110°). $[\alpha]_D$ +47 (c, 0.13 in MeOH).

(±)-*form* [2755-00-2]
Synthetic. Mp 192-194°.

N-*Me:* [15358-35-7]
Mp 243-245° (as iodide). CAS no. refers to iodide.

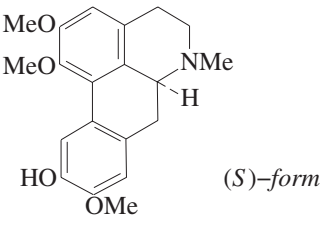
N-*De-Me:* [39945-43-2]
Synthetic. Mp 214-216° dec. (210-213°).

Ac: [35587-63-4]
Mp 156-158°.

Tschesche, R. *et al., Tet. Lett.*, 1965, 445-449 (*struct*)
Shamma, M. *et al., Tetrahedron*, 1967, **23**, 2887-2892 (*isol, uv, pmr*)
Ismailov, Z.F. *et al., Khim. Prir. Soedin.*, 1968, **4**, 196; *Chem. Nat. Compd. (Engl. Transl.)*, 1968, **4**, 169-170 (*ms*)
Johns, S.R. *et al., Aust. J. Chem.*, 1970, **23**, 363-368 (*Wilsonirine*)
Hoshino, O. *et al., Chem. Comm.*, 1971, 1533 (*synth*)
Khozhdaev, V.G. *et al., Khim. Prir. Soedin.*, 1972, **8**, 631-633; *Chem. Nat. Compd. (Engl. Transl.)*, 1972, **8**, 599-601 (*oxide*)
Cava, M.P. *et al., J.O.C.*, 1973, **38**, 2394-2397 (*synth, ir, pmr, ms, Wilsonirine*)
Karimov, A. *et al., Khim. Prir. Soedin.*, 1978, **14**, 419; *Chem. Nat. Compd. (Engl. Transl.)*, 1978, **14**, 360-361 (*oxide*)
Jackmann, L.M. *et al., J. Nat. Prod.*, 1979, **42**, 437-449 (*cmr*)
Castedo, L. *et al., Heterocycles*, 1980, **14**, 1135-1138 (*synth*)
Hoshino, O. *et al., Heterocycles*, 1987, **25**, 151-153 (*synth, pmr, Wilsonirine*)
Hara, H. *et al., Tetrahedron: Asymmetry*, 1995, **6**, 1683-1692 (*synth, Wilsonirine*)

10-Hydroxy-1,2,9-trimethoxyaporphine H-752

*5,6,6a,7-Tetrahydro-1,2,9-trimethoxy-6-methyl-4*H*-dibenzo[*de,g*]quinolin-10-ol, 9CI*



(*S*)–*form*

$C_{20}H_{23}NO_4$ 341.406

(*S*)-*form*
Lirioferine
[6883-42-7]
Alkaloid from the discoloured sapwood of *Liriodendron tulipifera* (Magnoliaceae). Needles (EtOAc). Mp 172-174°. $[\alpha]_D$ +128.6 ($CHCl_3$).

N-*Me:* ***Cocsarmine***
[7096-88-0]
$C_{21}H_{26}NO_4$ 356.441
Quaternary alkaloid from the roots of *Cocculus sarmentosus* (Menispermaceae). Cryst. + $3H_2O$ (as iodide). Mp 205-207° (sinters at 185°) (iodide) Mp 257-259° dec. (iodide). $[\alpha]_D^{22}$ +27.9 (c, 0.93 in EtOH).

N-*De-Me: 10-Hydroxy-1,2,9-trimethoxynoraporphine.* ***Norlirioferine***
[86941-27-7]
$C_{19}H_{21}NO_4$ 327.379
Alkaloid from the bark of *Phoebe pittieri* (Lauraceae). Mp 94-96°. No opt. rotn. recorded, abs. config. not detd. λ_{max} 220 (log ϵ 4.36); 281 (log ϵ 3.83); 302 (log ϵ 3.95); 312 (sh) (log ϵ 3.89) (MeOH). λ_{max} 280 (sh) (log ϵ 3.8); 310 (sh) (log ϵ 3.95); 315 (log ϵ 3.98); 330 (sh) (log ϵ 3.91) (MeOH/KOH).

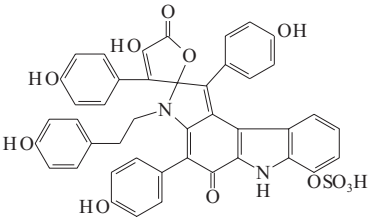
(±)-*form*
Synthetic. Mp 140-145°.

Hydroiodide:
Cryst. (EtOH). Mp 227-228°.

Tomita, M. *et al., Yakugaku Zasshi*, 1963, **83**, 190-194 (*Cocsarmine*)
Baarschers, W.H. *et al., Tetrahedron*, 1965, **21**, 2155-2158 (*synth, pmr, uv*)
Chen, C.-L. *et al., Phytochemistry*, 1976, **15**, 1161-1167 (*isol, uv, pmr, ms, struct*)
Castedo, L. *et al., Heterocycles*, 1980, **14**, 1135-1138 (*synth*)
Castedo, G. *et al., An. Quim., Ser. C*, 1982, **78**, 103-107; *CA*, **97**, 56087d (*cmr*)
Castro, C.O. *et al., Phytochemistry*, 1985, **24**, 203-204 (*Norlirioferine*)

4-Hydroxy-1′,3,4′-tris(4-hydroxyphenyl)-3′-[2-(4-hydroxyphenyl)ethyl]-7′-(sulfooxy)spiro[furan-2(5*H*),2′(3′*H*)-pyrrolo[2,3-*c*]carbazole]-5,5′(6′*H*)-dione, 9CI H-753

[149444-91-7]



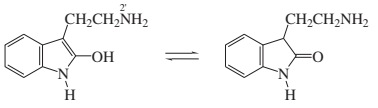
$C_{43}H_{30}N_2O_{12}S$ 798.782
Isol. from the marine sponge *Dictyodendrilla* sp. Potent aldose reductase inhibitor. Purple solid (as Na salt). Mp 300° (Na salt). Opt. inactive (racemic). λ_{max} 229 (ϵ 40800); 289 (ϵ 20900); 324 (ϵ 19800); 391 (ϵ 9700); 475 (ϵ 1200) (EtOH) (Derep).

[149444-90-6]

Sato, A. *et al., J.O.C.*, 1993, **58**, 7632 (*isol, uv, ir, pmr, cmr, struct*)

2-Hydroxytryptamine H-754

*3-(2-Dimethylaminoethyl)oxindole. 3-(2-Dimethylaminoethyl)-2*H*-indol-2-one*



$C_{10}H_{12}N_2O$ 176.218

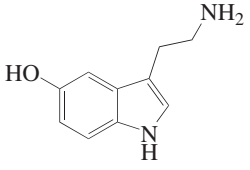
Oxo-form likely to predominate.

$N^{2'}$*-Me: 3-[2-(Methylamino)ethyl]-1*H*-indol-2-ol, 9CI.* ***2-Hydroxy*-N*-methyltryptamine****. 3-(2-Methylaminoethyl)oxindole*
[106987-89-7]
$C_{11}H_{14}N_2O$ 190.244
Alkaloid from the roots of *Desmanthus illinoensis* (Fabaceae).

Thompson, A.C. *et al., J. Agric. Food Chem.*, 1987, **35**, 361-365 (*isol, ir, pmr, ms, struct*)

5-Hydroxytryptamine H-755

*3-(2-Aminoethyl)-1*H*-indol-5-ol, 9CI. 3-(2-Aminoethyl)-5-hydroxyindole.* ***Serotonin****. Enteramine. Hippophaine. Anthemovister. Thrombocytin. Thrombotonin. 5 HT*
[50-67-9]



$C_{10}H_{12}N_2O$ 176.218
Found in blood and other tissues. Widespread alkaloid from terrestrial and marine organisms, e.g. *Mucuna pruriens*, bananas (*Musa* sp.) and other fruits, basidiomycete *Panaeolus campanulatus*, cotton (*Gossypium hirsutum*) and other plants. Also from the sea anemone *Calliactis parasitica*, *Hippophae rhaminoides*, *Panaeolus* sp., *Pentacta crassa*, *Thelenota ananas*, *Octopus vulgaris*, *Eledone moschata*, *Corallistes undulatus*, *Physalia* sp., *Hydra littoralis* , *Sycon ciliatum* and arthropod venoms and constit. of toad venom (*Bufo* spp.). Vasoconstrictor, hypotensive agent, neurotransmitter. Plays a major role in regulating behaviour such as aggression, depression, psychosis. pK_{a1} 1; pK_{a2} 4.52; pK_{a3} 15 (20°). Log P 0.61 (calc). Echinoderm name given apparently incorrectly as Pentacter crasa.

▶ LD_{50} (mus, orl) 60 mg/kg. Exp. reprod. and teratogenic effects. NM2450000

Hydrochloride: [153-98-0]
[21591-86-6] Sol. H_2O. Mp 167-168°. Light-sensitive. Aq. solns. stable at acid pH.

Creatinine sulfate complex: Antemovis
[971-74-4]
[61-47-2]
Found in mammalian sera. Potent vasoconstrictor. Plates $+1H_2O$. Mp 214-216° dec. (monohydrate).

▶ NM2550000

O-*Sulfate:* [16310-20-6]
$C_{10}H_{12}N_2O_4S$ 256.282
Metab. of 5-hydroxytryptamine excreted in mammalian urine. Cryst. (H_2O). Mp 192-194°.

N^b*-Ac:* [1210-83-9]
$C_{12}H_{14}N_2O_2$ 218.255
Metab. of 5-hydroxytryptamine. Enzyme inhibitor. Melanophore which produces night coloration in fish. Mp 120-122°.

N^b*-Eicosanoyl:* N^b*-Eicosanoylserotonin*
[21249-34-3]
$C_{30}H_{50}N_2O_2$ 470.737
Constit. of coffee (*Coffea arabica*). Mp 122.5-123°. λ_{max} 278 (log ε 3.77) (no solvent reported).

N^b*-(11Z-Eicosenoyl):* N^b*-(11Z-Eicosenoyl)serotonin.* ***Scorodocarpine C***
[381719-44-4]
$C_{30}H_{48}N_2O_2$ 468.721
Alkaloid from the fruit of *Scorodocarpus borneensis.*

N^b*-Docosanoyl:* N^b*-Docosanoylserotonin.* ***Scorodocarpine A***
[21249-35-4]
$C_{32}H_{54}N_2O_2$ 498.791
Alkaloid from the fruit of *Scorodocarpus borneensis.* Constit. of green coffee beans.

N^b*-(13Z-Docosenoyl):* N^b*-(13Z-Docosenoyl)serotonin.* ***Scorodocarpine B***
[381719-43-3]
$C_{32}H_{52}N_2O_2$ 496.775
Alkaloid from the fruit of *Scorodocarpus borneensis.*

N^b*-Tetracosanoyl:* N^b*-Tetracosanoylserotonin*
[21249-36-5]
$C_{34}H_{58}N_2O_2$ 526.844
Constit. of coffee (*Coffea arabica*). No phys. props. reported.

N^b*-Carbamoyl:* N-*Carbamoylserotonin.* ***Bufoserotonin A***
[1002722-85-1]
$C_{11}H_{13}N_3O_2$ 219.243
Isol. from the venom of *Bufo* spp. (ChanSu). Amorph. solid (MeOH). Mp 156-158°. λ_{max} 221 ; 277 ; 300 (MeOH).

N^b*-(3-Carboxypropanoyl):* ***Bufobutanoic acid***
[74010-65-4]
$C_{14}H_{16}N_2O_4$ 276.291
Alkaloid from the Chinese traditional drug Ch'an Su (prepared skin secretions of *Bufo* spp.). Amorph. solid. λ_{max} 225 ; 274 ; 300 (MeOH).

N^b*-(7-Carboxyheptanoyl):* ***Bufoserotonin B***
[1002722-86-2]
$C_{18}H_{24}N_2O_4$ 332.399
Isol. from the venom of *Bufo* spp. (ChanSu). Amorph. powder. λ_{max} 236 ; 309 (MeOH).

N^b*-(15ξ-Hydroxy-9Z-hexadecenoyl),* O-*[β-D-glucopyranosyl-(1→6)-β-D-glucopyranoside]:* ***Withanamide G***
[702702-58-7]
$C_{38}H_{60}N_2O_{13}$ 752.898
Alkaloid from the fruit of *Withania somnifera*. Lipid peroxidation inhibitor. Amorph. powder. λ_{max} 277 (log ε 3.34); 301 (sh) (log ε 3.23) (MeOH).

N^b*-(14ξ-Hydroxyhexadecanoyl),* O-*[β-D-glucopyranosyl-(1→6)-β-D-glucopyranoside]:* ***Withanamide C***
[702702-42-9]
$C_{38}H_{62}N_2O_{13}$ 754.913
Alkaloid from the fruit of *Withania somnifera*. Lipid peroxidation inhibitor. Amorph. powder. $[\alpha]_D^{20}$ -34 (c, 0.01 in MeOH). λ_{max} 276 (log ε 3.53); 300 (sh) (log ε 3.42) (MeOH).

N^b*-(15ξ-Hydroxyhexadecanoyl),* O-*[β-D-glucopyranosyl-(1→6)-β-D-glucopyranoside]:* ***Withanamide B***
[702702-41-8]
$C_{38}H_{62}N_2O_{13}$ 754.913
Alkaloid from the fruit of *Withania somnifera*. Lipid peroxidation inhibitor. Amorph. powder. $[\alpha]_D^{20}$ -34 (c, 0.01 in MeOH). λ_{max} 277 (log ε 3.32); 300 (sh) (log ε 3.22) (MeOH).

N^b*-(16ξ-Hydroxyoctadecanoyl),* O-*[β-D-glucopyranosyl-(1→6)-β-D-glucopyranoside]:* ***Withanamide E***
[702702-55-4]
$C_{40}H_{66}N_2O_{13}$ 782.967
Alkaloid from the fruit of *Withania somnifera*. Lipid peroxidation inhibitor. Pale brown solid. λ_{max} 275 (log ε 3.3); 300 (sh) (log ε 3.2) (MeOH).

N^b*-(16ξ-Hydroxy-9Z-octadecenoyl),* O-*[β-D-glucopyranosyl-(1→6)-β-D-glucopyranoside]:* ***Withanamide F***
[702702-56-5]
$C_{40}H_{64}N_2O_{13}$ 780.951
Alkaloid from the fruit of *Withania somnifera*. Lipid peroxidation inhibitor. Amorph. powder. λ_{max} 276 (log ε 3.31); 301 (sh) (log ε 3.21) (MeOH).

N^b*-(17ξ-Hydroxyoctadecanoyl),* O-*[β-D-glucopyranosyl-(1→6)-β-D-glucopyranoside]:* ***Withanamide D***
[702702-54-3]
$C_{40}H_{66}N_2O_{13}$ 782.967
Alkaloid from the fruit of *Withania somnifera*. Lipid peroxidation inhibitor. Amorph. powder. λ_{max} 277 (log ε 3.43); 301 (sh) (log ε 3.3) (MeOH).

N^b*-(17*R*-Hydroxy-6Z,9Z-octadecadienoyl),* O-*[β-D-glucopyranosyl-(1→6)-β-D-glucopyranoside]:* ***Withanamide A***
[702702-22-5]
$C_{40}H_{62}N_2O_{13}$ 778.935
Alkaloid from the fruit of *Withania somnifera*. Lipid peroxidation inhibitor. Pale brown powder. $[\alpha]_D^{20}$ -35 (c, 0.01 in MeOH). λ_{max} 276 (log ε 3.5); 300 (sh) (log ε 3.4) (MeOH).

N^b*-(17ξ-Hydroxy-6Z,9Z-octadecadienoyl),* O-*[β-D-glucopyranosyl-(1→6)-β-D-glucopyranosyl-(1→6)-β-D-glucopyranoside]:* ***Withanamide I***
[702702-72-5]
$C_{46}H_{72}N_2O_{18}$ 941.077

Alkaloid from the fruit of *Withania somnifera*. Lipid peroxidation inhibitor. Amorph. powder. λ_{max} 278 (log ϵ 3.43); 302 (sh) (log ϵ 3.3) (MeOH).

N^b-*(17ξ-Hydroxy-6Z,9Z,12Z,15Z-octadecatetraenoyl),* O-*[β-D-glucopyranosyl-(1→6)-β-D-glucopyranoside]:* ***Withanamide H***
[702702-59-8]
$C_{40}H_{58}N_2O_{13}$ 774.904
Alkaloid from the fruit of *Withania somnifera*. Lipid peroxidation inhibitor. Amorph. powder. λ_{max} 276 (log ϵ 3.53); 301 (sh) (log ϵ 3.38); 330 (sh) (log ϵ 3.2) (MeOH).

N^b-*(4-Hydroxy*-E-*cinnamoyl):* N^b-p-*Coumaroylserotonin*. ***Ipobscurine A***
[201301-83-9]
[68573-24-0]
$C_{19}H_{18}N_2O_3$ 322.363
Alkaloid from seeds of *Ipomoea obscura*, *Carthamus tinctorius* (safflower) and dried *Amorphophallus konjac* (Devil's tongue). Needles. Mp 195-196°.

N^b-*(4-Hydroxy*-E-*cinnamoyl),* O-*β-D-glucopyranoside:* [76423-56-8]
$C_{25}H_{28}N_2O_8$ 484.505
Alkaloid from *Carthamus tinctorius* (safflower). Needles. Mp 240-242°. $[\alpha]_D^{25}$ -14.9 (c, 0.7 in MeOH).

N^b-*(4-Hydroxy-Z-cinnamoyl):* N^b-cis-p-*Coumaroylserotonin*
[314298-49-2]
$C_{19}H_{18}N_2O_3$ 322.363
Constit. of dried *Amorphophallus konjac* (Devil's tongue). Amorph. powder. Mp 205-206°. λ_{max} 277 (log ϵ 4.4) (MeOH aq.).

N^b-*(4-Hydroxy-3-methoxy*-E-*cinnamoyl):* N^b-*(*E*)-Feruloylserotonin*. ***Moschamine***
[193224-22-5]
[68573-23-9]
$C_{20}H_{20}N_2O_4$ 352.389
Alkaloid from *Carthamus tinctorius* (safflower) and *Centaurea moschata* (Asteraceae). Needles. Mp 115-117°. Isol. with *Z*-isomer as a mixt.

N^b-*(4-Hydroxy-3-methoxy*-E-*cinnamoyl),* O-*β-D-glucopyranoside:*
[201301-85-1]
$C_{26}H_{30}N_2O_9$ 514.531
Alkaloid from *Carthamus tinctorius* (safflower). Needles. Mp 143-145°. $[\alpha]_D^{25}$ -8.8 (c, 1.2 in MeOH).

N^b-*(4-Hydroxy-3-methoxy-Z-cinnamoyl):* N^b-*(*Z*)-Feruloylserotonin*. **cis-*Moschamine***
[193224-24-7]
$C_{20}H_{20}N_2O_4$ 352.389
Alkaloid from the seeds of *Centaurea moschata* (Asteraceae). Isol. with *E*-isomer as a mixt.

N^b-*Me:* ***5-Hydroxy-N$^\omega$-methyltryptamine***. N^b-*Methylserotonin, 9CI*
[1134-01-6]
[15558-50-6]
$C_{11}H_{14}N_2O$ 190.244
Isol. from *Citrus unshiu* (satsuma mandarin). Component of oviposition-stimulating complex for the butterfly *Papilio xuthus*. Constit. of toad venom (*Bufo* spp.). Serotonin metab. in schizophrenic patients treated with MAO inhibitors. Mp 153-156° (as oxalate).

N^b,N^b-*Di-Me:* see Bufotenine, B-393

Me ether: see 5-Methoxytryptamine, M-288

Benzyl ether: [20776-45-8]
[52055-23-9]
Cryst. (MeOH) (as hydrochloride). Mp 265° (248-250°) (hydrochloride).

Hamlin, K.E. *et al., J.A.C.S.*, 1951, **73**, 5007-5008 (*synth, uv*)
Speeter, H.E. *et al., J.A.C.S.*, 1951, **73**, 5514-5515 (*synth*)
Asero, B. *et al., Annalen*, 1952, **576**, 69-74 (*synth, uv*)
Bowden, K. *et al., Nature (London)*, 1954, **174**, 925-926 (*isol*)
Abramovitch, R.A. *et al., Chem. Ind. (London)*, 1955, 1255 (*synth*)
Stoll, A. *et al., Helv. Chim. Acta*, 1955, **38**, 1452-1472 (*N-Me*)
Mathias, A.P. *et al., Nature (London)*, 1957, **180**, 658-659 (*isol, occur*)
Harms, U. *et al., Z. Lebensm.-Unters. -Forsch.*, 1968, **138**, 75-80 (*coffee amides*)
Thewalt, U. *et al., Acta Cryst. B*, 1972, **28**, 82-92 (*cryst struct*)
Couch, M.W. *et al., Anal. Biochem.*, 1972, **50**, 612-622 (*ms*)
Folstar, P. *et al., J. Agric. Food Chem.*, 1979, **27**, 12-15 (*coffee amides, hplc*)
Biagini, S. *et al., J.C.S. Faraday 2*, 1983, **79**, 491-496 (*pmr, cmr*)
Borgulya, J. *et al., Synthesis*, 1983, 29-30 (*O-sulfate*)
Falcon, J. *et al., Ann. Endocrinol.*, 1986, **47**, 65-66 (*N^b-Ac, activity*)
Eich, E. *et al., Planta Med.*, 1986, **52**, 523 (*Ipobscurine A*)
Nishida, R. *et al., Experientia*, 1987, **43**, 342-344 (*5-Hydroxy-N$^\omega$-methyltryptamine*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 1411
Zhang, H.L. *et al., Chem. Pharm. Bull.*, 1997, **45**, 1910-1914 (*isol, cinnamides*)
Somei, M. *et al., Heterocycles*, 1997, **46**, 91-94 (*synth*)
Sarker, S.D. *et al., Nat. Prod. Lett.*, 1997, **9**, 189-199 (*Moschamines*)
Zaunreiter, M. *et al., NeuroReport*, 1998, **9**, 1475-1479; *CA*, **129**, 173288 (*N^b-Ac, activity*)
Kamano, Y. *et al., Heterocycles*, 1999, **50**, 499-503 (*Bufobutanoic acid*)
Neuropsychopharmacology, Special Supplement Issue, Serotonin 50th Anniversary, 1999, **21**, 2S-115S (***rev***)
Niwa, T. *et al., Biosci., Biotechnol., Biochem.*, 2000, **64**, 2269-2271 (*N-coumaroylserotonin*)
Kurauchi, T. *et al., Heterocycles*, 2000, **53**, 1017-1019 (*synth, Bufobutanoic acid*)
Somei, M. *et al., Chem. Pharm. Bull.*, 2001, **49**, 87-96 (*synth*)
Wiart, C. *et al., Phytochemistry*, 2001, **58**, 653-656 (*Scorodocarpines*)
Jayaprakasam, B. *et al., Tetrahedron*, 2004, **60**, 3109-3121 (*Withanamides*)
Zhang, P. *et al., Chem. Pharm. Bull.*, 2005, **53**, 1582-1586 (*toad venom constits*)
Liu, R.-H. *et al., Helv. Chim. Acta*, 2007, **90**, 2427-2431 (*Bufoserotonins A,B*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, (*AJX500, AJX750*)

10-Hydroxy-2,4,6,8-undecatetraynoic acid, 9CI H-756

$H_3CCH(OH)C{\equiv}CC{\equiv}CC{\equiv}CC{\equiv}CCOOH$

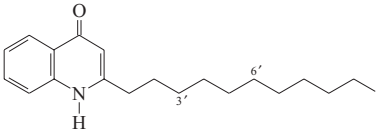
$C_{11}H_6O_3$ 186.167

Amide: [83475-37-0]
$C_{11}H_7NO_2$ 185.182
Major metabolite isol. from *Mycena viridimarginata*. Light yellow cryst. turning brown immediately. Poorly sol. hexane. λ_{max} 236 ; 247 ; 299 ; 319 ; 341 ; 367 (Et_2O) (Berdy).

Jente, R. *et al., Phytochemistry*, 1985, **24**, 553 (*isol, struct*)

4-Hydroxy-2-undecylquinoline H-757

*2-Undecyl-4(1*H*)-quinolinone, 9CI. 2-Undecyl-4-quinolinol, 9CI*
[56183-46-1]



$C_{20}H_{29}NO$ 299.455
Alkaloid from *Evodia rutaecarpa*, *Ptelea trifoliata* and roots of *Ruta graveolens* (rue) (as the main component of an inseparable mixt. of 2-alkylquinolones contg. the 2-dodecyl, 2-tridecyl and 2-tetradecyl homologues). Metab. of *Pseudomonas aeruginosa*. Antagonist of Dihydrostreptomycin. Cryst. (Me_2CO). Mp 130-132°. λ_{max} 213 (log ϵ 4.43); 235 (log ϵ 4.44); 315 (log ϵ 4.03); 327 (log ϵ 4.01) (MeOH).

N-*Oxide:* ***2-Undecyl-4(1*H*)-quinolinone* N-*oxide***
[2503-86-8]
$C_{20}H_{29}NO_2$ 315.455
Metab. of *Pseudomonas pyocyanea* and *Pseudomonas aeruginosa*. Isol. from flowers of *Ptelea trifoliata* and roots of *Ruta graveolens* (rue) (Rutaceae). Leaflets. Mp 148.5-149.5°.

N-*Me:* ***1-Methyl-2-undecyl-4(1*H*)-quinolinone, 9CI***
[59443-02-6]
$C_{21}H_{31}NO$ 313.482
Alkaloid from the leaves and fruits of *Evodia rutaecarpa* (Rutaceae). Active against *Helicobacter pylori*. Needles ($EtOAc/Et_2O$). Mp 68.5-70°.

*1′,2′-Didehydro(*E*-): 2-(1-Undecenyl)-4(1*H*)-quinolinone. 4-Hydroxy-2-(1-undecenyl)quinoline*
[678176-79-9]
$C_{20}H_{27}NO$ 297.439
Metab. of *Pseudomonas aeruginosa*.

*1′,2′-Didehydro(*Z*-):*
$C_{20}H_{27}NO$ 297.439
Metab. of *Pseudomonas aeruginosa*.

*3′,4′-Didehydro: 2-(3-Undecenyl)-4(1*H*)-quinolinone.* ***Pyo V***
[71932-11-1]
$C_{20}H_{27}NO$ 297.439
From *Pseudomonas aeruginosa*. Mp

114°. λ_{max} 213 (ϵ 37300); 236 (ϵ 37000); 316 (ϵ 12200); 327 (ϵ 12900) (MeOH) (Berdy).

5′,6′-Didehydro(Z-), N-*Me:* ***1-Methyl-2-(5-undecenyl)-4(1H)-quinolinone***
$C_{21}H_{29}NO$ 311.466
Alkaloid from fruits of *Evodia rutaecarpa*. Oil. Isol. as an inseparable mixt. with the $\Delta^{6'}$-isomer.

6′,7′-Didehydro(Z-), N-*Me:* ***1-Methyl-2-(6-undecenyl)-4(1H)-quinolinone***
$C_{21}H_{29}NO$ 311.466
Alkaloid from fruits of *Evodia rutaecarpa* (Rutaceae). Oil.

10′-Acetoxy, N-*(acetoxymethyl):* ***1-Acetoxymethyl-2-(10-acetoxyundecyl)-4(1H)-quinolinone***
$C_{25}H_{35}NO_5$ 429.555
Alkaloid from a new Australian species tentatively aff. *Samadera bidwillii*. Dark yellow oil. $[\alpha]_D$ -1 (c, 0.45 in MeOH).

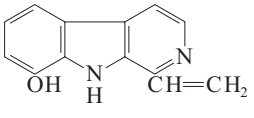
10′-Oxo: ***2-(10-Oxoundecyl)-4(1H)-quinolinone***
[29479-53-6]
$C_{20}H_{27}NO_2$ 313.439
Alkaloid from *Evodia rutaecarpa* and *Vepris ampody*. Cryst. (Me_2CO). Mp 126°.

10′-Oxo, N-*Me: 1-Methyl-2-(10-oxoundecyl)-4(1H)-quinolinone*
$C_{21}H_{29}NO_2$ 327.466
Alkaloid from the fruit of *Evodia rutaecarpa* var. *bodinaieri*. Amorph. powder. λ_{max} 216 ; 239 ; 321 ; 334 (MeOH).

Cornforth, J.W. *et al., Biochem. J.*, 1956, **63**, 124-130 (*isol*)
Kan-Fan, C. *et al., Phytochemistry*, 1970, **9**, 1283-1291 (*10′-oxo*)
Reisch, T. *et al., Phytochemistry*, 1975, **14**, 840-841 (*isol, ir, pmr*)
Kamikado, T. *et al., Agric. Biol. Chem.*, 1976, **40**, 605-609 (*N-Me*)
Budzikiewicz, H. *et al., Monatsh. Chem.*, 1979, **110**, 947-953 (*N-oxide*)
Sugimoto, T. *et al., Chem. Pharm. Bull.*, 1988, **36**, 4453-4461 (*Evodia rutaecarpa constits*)
Tang, Y.-Q. *et al., Phytochemistry*, 1996, **43**, 719-722 (*Evodia rutaecarpa constits*)
Gibbons, S. *et al., Phytochemistry*, 1997, **44**, 1109-1114 (*10′-acetoxy-N-acetoxymethyl*)
Tae, C.R. *et al., Biol. Pharm. Bull.*, 1999, **22**, 1141 (*N-Me, activity*)
Lepine, F. *et al., J. Am. Soc. Mass Spectrom.*, 2004, **15**, 862-869 (*occur, 1′,2′-didehydro*)
Deziel, E. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 2004, **101**, 1339-1344 (*biosynth*)
Yang, X.-W. *et al., J. Asian Nat. Prod. Res.*, 2006, **8**, 697-703 (*isol, pmr, cmr, ms*)

8-Hydroxy-1-vinyl-β-carboline H-758

*1-Ethenyl-9*H*-pyrido[3,4-*b*]indol-8-ol, 9CI*
[138683-69-9]

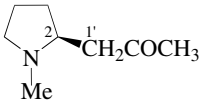


$C_{13}H_{10}N_2O$ 210.235
Alkaloid from the marine bryozoans *Cribricellina cribraria* and *Catenicella cribraria*. Exhibits cytotoxicity. Yellow oil. Pmr data revised in 1993. λ_{max} 240 (ϵ 11700); 262 (ϵ 11500); 287 (ϵ 10800); 386 (ϵ 6610) (MeOH/NaOH) (Derep). λ_{max} 230 (ϵ 11500); 244 (ϵ 12300); 296 (ϵ 9330); 369 (ϵ 8510) (MeOH) (Derep). λ_{max} 240 (ϵ 11750); 262 (ϵ 11450); 287 (ϵ 10715); 386 (ϵ 6600) (EtOH) (Berdy).

Prinsep, M.R. *et al., J. Nat. Prod.*, 1991, **54**, 1068 (*isol, uv, ir, pmr, cmr, struct*)
Beutler, J.A. *et al., J. Nat. Prod.*, 1993, **56**, 1825 (*isol, pmr*)

Hygrine H-759

1-(1-Methyl-2-pyrrolidinyl)-2-propanone, 9CI. 2-Acetonyl-1-methylpyrrolidine



(*S*)-*form*

$C_8H_{15}NO$ 141.213
Isol. samples of Hygrine are racemic due to ready racemisation esp. in alkaline soln. In the plant, enantiomers are present and both can be precursors of tropane alkaloids, depending on spp. Alkaloid from *Erythroxylum truxillense, Erythroxylum coca, Nicandra physaloides, Convolvulus hamadana, Datura, Atropa, Hyoscyamus, Physalis*, *Dendrobium* and *Cochlearia* spp. (Erythroxylaceae, Solanaceae, Convolvulaceae, Orchidaceae, Brassicaceae). Intermed. in biosynth. of tropane alkaloids.

(R)-form [496-49-1]
(+)-Tartrate: Mp 129-130°. $[\alpha]_D^{21}$ +30.1 (c, 6.1 in H_2O).

(S)-form [65941-22-2]
Liq. d_4^{17} 0.94. Bp 193-195° Bp_{50} 111-113°.
(+)-Tartrate: Mp 67-68°. $[\alpha]_D^{21}$ +4.1 (c, 6.5 in H_2O) (-1.8).

N-*De-Me,* N-E-*cinnamoyl:* **trans-*Dendrochrysanine***
[851439-76-4]
$C_{16}H_{19}NO_2$ 257.332
Alkaloid from the stems of *Dendrobium chrysanthum*. Viscous oil. $[\alpha]_D^{20}$ -19.2 (c, 3.4 in $CHCl_3$).

N-*De-Me,* N-Z-*cinnamoyl:* **cis-*Dendrochrysanine***
[851439-77-5]
$C_{16}H_{19}NO_2$ 257.332
Alkaloid from the stems of *Dendrobium chrysanthum*. Viscous oil. $[\alpha]_D^{20}$ -17.7 (c, 3.5 in $CHCl_3$).

(±)-form [45771-52-6]
Bp_{16} 88°.
Picrate:
Yellow needles. Mp 158° (155°).
Oxime: Mp 125°.

(ξ)-form
N-*De-Me:* ***Norhygrine***. N-*Demethylhygrine*
$C_7H_{13}NO$ 127.186
Alkaloid from whole plants of *Nierembergia hippomanica* (Solanaceae).

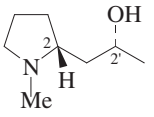
CAS erroneously assigns the stereochem. as *R*- and CAS no. 130325-43-8.

*1′,2-Didehydro(*E-*): 1-(1-Methyl-2-pyrrolidinylidene)-2-propanone.* ***1′,2-Dehydrohygrine***
[126412-05-3]
[39178-30-8]
$C_8H_{13}NO$ 139.197
Alkaloid from the stem bark of *Erythroxylum lucidum*. λ_{max} 304 (ϵ 26000) (EtOH aq.).

Liebermann, C. *et al., Ber.*, 1889, **22**, 675-679; 1895, **28**, 578-585 (*isol, struct*)
Willstätter, R. *et al., Ber.*, 1900, **33**, 1160-1166 (*synth*)
Šorm, F. *et al., Coll. Czech. Chem. Comm.*, 1947, **12**, 245-250 (*synth*)
Galinovsky, F. *et al., Monatsh. Chem.*, 1953, **84**, 798-808 (*synth, resoln*)
Lukeš, R. *et al., Coll. Czech. Chem. Comm.*, 1960, **25**, 483-491 (*abs config*)
Lüning, B. *et al., Acta Chem. Scand.*, 1965, **19**, 1607-1611 (*isol, ms, pmr*)
Romeike, A. *et al., Naturwissenschaften*, 1965, **52**, 619-620 (*isol*)
McGaw, B.A. *et al., Phytochemistry*, 1978, **17**, 257-259 (*occur, props*)
McGaw, B.A. *et al., Tet. Lett.*, 1979, 3135-3138 (*biosynth*)
Langenskioeld, T. *et al., Heterocycles*, 1983, **20**, 671-675 (*synth*)
Ghirlando, R. *et al., Tetrahedron*, 1984, **40**, 2879-2884 (*synth*)
Leete, E. *et al., Phytochemistry*, 1985, **24**, 953-955 (*biosynth*)
Nagasaka, T. *et al., Heterocycles*, 1989, **29**, 155-164 (*synth, ir, pmr*)
Pomilio, A.B. *et al., Phytochemistry*, 1996, **41**, 1393-1398 (*Norhygrine*)
Brachet, A. *et al., Phytochemistry*, 1997, **46**, 1439-1442 (*Dehydrohygrine*)
Yang, L. *et al., Heterocycles*, 2005, **65**, 633-636 (*Dendrochrysanines*)
Konno, H. *et al., Heterocycles*, 2006, **68**, 2579-2585 (*Dendrochrysanines, synth*)
Lee, J.-H. *et al., J.O.C.*, 2006, **71**, 6690-6692 (*synth*)
Arévalo-Garcia, E.B. *et al., Tet. Lett.*, 2008, **49**, 3995-3996 (*synth*)

Hygroline H-760

α,1-Dimethyl-2-pyrrolidineethanol, 9CI. 1-(1-Methyl-2-pyrrolidinyl)-2-propanol. 2-(2-Hydroxypropyl)-1-methylpyrrolidine



(2*R*,2′*R*)-*form*

$C_8H_{17}NO$ 143.228

(2R,2′R)-form [496-47-9]
Alkaloid from *Erythroxylum coca* (minor congener of cocaine) and from *Cochlearia arctica* (Erythroxylaceae, Brassicaceae). Needles (petrol). Mp 33-34°. $[\alpha]_D$ -63.2 (c, 11.4 in H_2O).
3,5-Dinitrobenzoyl: Mp 68°.
(+)-Tartrate:
Cryst. + $2H_2O$. Mp 69°. $[\alpha]_D^{21}$ +4.1 (c, 6.5 in H_2O). $[\alpha]_D^{18}$ -1.8.

(2S,2′S)-form [1617-83-0]
Major alkaloid from leaves of *Carallia*

brachiata and from *Gynotroches axillaris* (Rhizophoraceae). Mp 29-31°. $[\alpha]_D^{21}$ +87 (c, 0.90 in H_2O) (+84). $[\alpha]_D$ +50 (c, 0.77 in EtOH). $[\alpha]_D$ +39.3 (EtOH) (synthetic).

Methiodide: Mp 124°. $[\alpha]_D^{20}$ +11 (c, 2.69 in H_2O).

Ac; hydrochloride: Cryst. (Me_2CO). Mp 177°.

Ac, picrate: Mp 128-129° (120-123°).

(2*R*,2′*S*)-*form*
Pseudohygroline
[496-48-0]
Alkaloid from roots of *Schizanthus hookeri* (Solanaceae). Oil. $[\alpha]_D^{25}$ +73.13 (c, 1.68 in EtOH).

Methiodide: Cryst. (MeOH). Mp 118°.

Ac, picrate: Mp 165° (163°).

(2*RS*,2′*RS*)-*form*
(±)-Hygroline
Cryst. or oil. Mp 24-25°. Bp_{12} 84°. n_D^{20} 1.4597.

(+)-Tartrate: Mp 132°.

Ac, picrate: Mp 127-128°.

(2*RS*,2′*SR*)-*form*
(±)-Pseudohygroline
Bp_{13} 90-94°. n_D^{20} 1.4653.

Picrate: Mp 95°.

Methiodide: Cryst. (EtOH/Et_2O). Mp 117-119°.

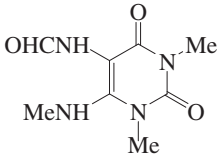
Ac, picrate: Cryst. (EtOH). Mp 158°.

N-*De-Me: Norpseudohygroline*
$Bp_{1.2}$ 85-87°. n_D^{20} 1.4792.

Späth, E. *et al., Ber.*, 1943, **76**, 942
Galinovsky, F. *et al., Monatsh. Chem.*, 1953, **84**, 798 (*synth, resoln*)
Lukeš, R. *et al., Coll. Czech. Chem. Comm.*, 1960, **25**, 483 (*abs config*)
Platonova, T.F. *et al., CA*, 1964, **60**, 8350a (*isol*)
Fitzgerald, J.S. *et al., Aust. J. Chem.*, 1965, **18**, 589 (*isol, ms, pmr*)
Johns, S.R. *et al., Aust. J. Chem.*, 1967, **20**, 1303 (*isol*)
San Martin, A. *et al., Phytochemistry*, 1980, **19**, 2007 (*isol, Pseudohygroline*)
Shono, T. *et al., J.O.C.*, 1986, **51**, 2590 (*synth*)
Takahata, H. *et al., Tetrahedron: Asymmetry*, 1997, **8**, 2801-2810 (*synth*)
Enierga, G. *et al., Tet. Lett.*, 1998, **39**, 2813-2814 (*synth*)
Knight, D.W. *et al., Tet. Lett.*, 1999, **40**, 5915-5918 (*synth*)

Hymeniacidine H-761

5-(Formylamino)-6-(methylamino)-2,4-pyrimidinedione. 5-(Formylamino)-6-(methylamino)uracil. N-*Methyl*-N-*[1,2,3,4-tetrahydro-1,3-dimethyl-6-(methylamino)-2,4-dioxo-5-pyrimidinyl]-formamide, 9CI*
[104509-28-6]

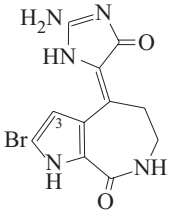


$C_8H_{12}N_4O_3$ 212.208
Seco-xanthine formamide. Alkaloid from the sponge *Hymeniacidon* sp. Viscous pale yellow oil (natural). Cryst. (EtOAc) (synthetic). Mp 158-159° (synthetic). Exists as two formamide rotamers. λ_{max} 271 (ϵ 11400) (MeOH).

Capon, R.J. *et al., J. Nat. Prod.*, 2002, **65**, 368-370 (*isol, synth, pmr, cmr, ms*)

Hymenialdisine H-762

4-(2-Amino-4-oxo-2-imidazolidin-5-ylidene)-2-bromo-4,5,6,7-tetrahydropyrrolo[2,3-c]azepin-8-one
[82005-12-7]



$C_{11}H_{10}BrN_5O_2$ 324.136
Isol. from the Okinawan marine sponge *Hymeniacidon aldis*, the Red Sea sponge *Acanthella aurantiaca* and the sponges *Axinella verrucosa* and *Axinella carteri*. Exhibits potent cytotoxicity against murine P388 lymphocytic leukaemia cells. Shows insecticidal activity. Inhibits interleukin-1 stimulated rheumatoid synovial fibroblasts. Antiinflammatory agent. Yellow needles + 1MeOH (MeOH aq.) or yellow amorph. solid. Sol. DMSO, insol. most solvs. Mp 160-164° dec. λ_{max} 229 (ϵ 11900); 270 (ϵ 11700); 346 (ϵ 15900) (MeOH) (Derep).

(E)-Isomer: ***(10E)-Hymenialdisine***
$C_{11}H_{10}BrN_5O_2$ 324.136
Isol. from the marine sponge *Stylotella aurantium*.

Debromo: ***Debromohymenialdisine***
[75593-17-8]
$C_{11}H_{11}N_5O_2$ 245.24
Isol. from the Great Barrier Reef sponge *Phakellia flabellata, Hymeniacidon aldis*, and from an unidentified sponge from Korolevu, Fiji. Exhibits potent cytotoxicity against murine P388 lymphocytic leukaemia cells. Also shows insecticidal activity. Cryst. + $2H_2O$ (H_2O). Mp 220-225° dec. λ_{max} 224 (ϵ 8600); 252 (ϵ 6300); 338 (ϵ 15900) (HCl salt) (Derep). λ_{max} 228 (ϵ); 272 (ϵ); 365 (ϵ) (5% NaOH) (Derep). λ_{max} 228 (ϵ 11700); 262 (ϵ 10000); 346 (ϵ 18000) (MeOH) (Derep).

Debromo; hydrochloride: Mp 230-235° dec.

Debromo, (E)-isomer: ***(10E)-Debromohymenialdisine***
$C_{11}H_{11}N_5O_2$ 245.24
Isol. from the marine sponge *Stylotella aurantium*.

3-Bromo: ***3-Bromohymenialdisine***
[175421-15-5]
$C_{11}H_9Br_2N_5O_2$ 403.032
From *Axinella carteri*. Cytotoxic agent. λ_{max} 269 ; 332 (MeOH) (Berdy).

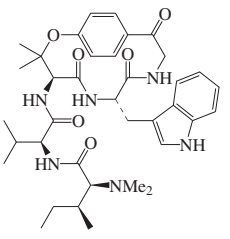
3-Bromo, (E)-isomer: ***Spongiacidin A***
[206433-68-3]
$C_{11}H_9Br_2N_5O_2$ 403.032
Isol. from a *Hymeniacidon* sp. and *Stylissa carteri*. Enzyme inhibitor. Amorph. solid. λ_{max} 206 (ϵ 10000); 270 (ϵ 7000); 332 (ϵ 7000) (MeOH).

3-Bromo, 2-debromo, (E)-isomer: ***Spongiacidin B***
[206443-95-0]
$C_{11}H_{10}BrN_5O_2$ 324.136
Isol. from a *Hymeniacidon* sp. Enzyme inhibitor. Amorph. solid. λ_{max} 204 (ϵ 10000); 272 (ϵ 10000); 331 (ϵ 9000) (MeOH).

Sharma, G.M. *et al., Chem. Comm.*, 1980, 435 (*deriv*)
Mattia, C.A. *et al., Acta Cryst. B*, 1982, **38**, 2513 (*cryst struct*)
Cimino, G. *et al., Tet. Lett.*, 1982, **23**, 767 (*isol, uv, pmr, cmr, cryst struct*)
Kitagawa, I. *et al., Chem. Pharm. Bull.*, 1983, **31**, 2321 (*isol, uv, ir, cmr, ms, cryst struct, deriv*)
Schmitz, F.J. *et al., J. Nat. Prod.*, 1985, **48**, 47 (*isol, uv, ir, pmr, ms*)
Utkina, N.K. *et al., Khim. Prir. Soedin.*, 1985, **21**, 578; *Chem. Nat. Compd. (Engl. Transl.)*, 1985, **21**, 547 (*isol, deriv*)
Annoura, H. *et al., Tet. Lett.*, 1995, **36**, 413 (*synth, Hymenialdisine, Debromohymenialdisine*)
Supriyono, A. *et al., Z. Naturforsch., C*, 1995, **50**, 669 (*3-Bromohymenialdisine*)
Williams, D.H. *et al., Nat. Prod. Lett.*, 1996, **9**, 57 (*10E-Hymenialdisine, 10E-Debromohymenialdisine*)
Roshak, A. *et al., J. Pharmacol. Exp. Ther.*, 1997, **283**, 955-961 (*pharmacol*)
Xu, Y. *et al., J.O.C.*, 1997, **62**, 456 (*synth, Hymenialdisine, Debromohymenialdisine*)
Inaba, K. *et al., J. Nat. Prod.*, 1998, **61**, 693-695 (*Spongiacidins*)
Barrios Sosa, A.C. *et al., J.O.C.*, 2000, **65**, 610-611 (*Debromohymenialdisine, synth*)
Hoffmann, H. *et al., Synthesis*, 2003, 1753-1783 (*rev*)
Papeo, G. *et al., Org. Lett.*, 2005, **7**, 5641-5644 (*synth*)

Hymenocardine H-763

N,N-*Dimethyl-L-isoleucyl*-N-*[7-(1H-indol-3-ylmethyl)-3,3-dimethyl-5,8,11-trioxo-2-oxa-6,9-diazabicyclo[10.2.2]hexadeca-12,14,15-trien-4-yl]-L-valinamide, 9CI*
[19771-56-3]



Absolute Configuration

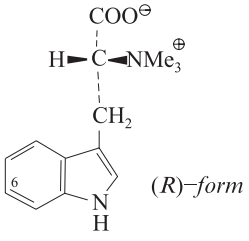
$C_{37}H_{50}N_6O_6$ 674.839
Alkaloid from *Hymenocardia acida* (Hymenocardiaceae). Cryst. + $1H_2O$

(Me_2CO). Mp 261°. $[\alpha]_D$ -124 (c, 1 in $CHCl_3$).

Païs, M. *et al., Bull. Soc. Chim. Fr.*, 1968, 2979 (*isol, uv, ir, pmr, ms, struct*)
Païs, M. *et al., Phytochemistry*, 1979, **18**, 1869 (*cmr*)

Hypaphorine H-764

*α-Carboxy-*N,N,N-*trimethyl-1*H-*indole-3-ethanaminium hydroxide inner salt, 9CI. Trimethyltryptophan betaine. 1-Trimethylammonio-3-(3-indolyl)propionate. Tryptophan betaine. Glyyunnanenine. Lenticine*



$C_{14}H_{18}N_2O_2$ 246.308

(*R*)-*form*

D-form

6-Bromo: ***6-Bromohypaphorine***
[158250-30-7]
$C_{14}H_{17}BrN_2O_2$ 325.205
Isol. from the Okinawan marine sponge *Aplysina* sp. Yellow needles. Mp 275° dec. $[\alpha]_D^{19}$ -27 (c, 0.80 in MeOH/CF_3COOH 8:1). λ_{max} 227 (ϵ 36000); 285 (ϵ 9300); 293 (ϵ 8000) (MeOH) (Berdy).

(*S*)-*form*

L-form
[487-58-1]
Present in seeds of the genus *Erythrina* (Fabaceae). Isol. from *Abrus precatorius*, *Astragalus lusitanicus* and seedlings of lentil (*Lens culinaris*). Feeding deterrent for a seed-eating rodent (*Lionys salvini*). Neurotoxin. Cryst. (H_2O or dil. acid). V. sol. H_2O, EtOH, insol. most other solvs. Mp 255°. $[\alpha]_D^{20}$ +140 (c, 1 in H_2O).
► Convulsive poison.

5-Bromo: ***5-Bromohypaphorine***
$C_{14}H_{17}BrN_2O_2$ 325.205
Isol. from the sponge *Thorectandra* sp. Yellow solid. $[\alpha]_D^{25}$ +46.3 (c, 0.5 in MeOH).

6-Bromo: [64364-14-3]
$C_{14}H_{17}BrN_2O_2$ 325.204
Metab. of the sponge *Pachymatisma johnstoni*. Rods. Mp 275-280° dec. $[\alpha]_D^{15}$ +58 (MeOH/CF_3COOH 8:1).

5-Iodo, 7-chloro: ***Plakohypaphorine F***
$C_{14}H_{16}ClIN_2O_2$ 406.65
Isol. from *Plakortis simplex*. Pale yellow solid. $[\alpha]_D^{25}$ +26.7 (c, 1.5 in MeOH/TFA). λ_{max} 226 (ϵ 17200); 286 (ϵ 3740) (MeOH).

7-Iodo: ***Plakohypaphorine A***
[502686-54-6]
$C_{14}H_{17}IN_2O_2$ 372.205
Isol. from the sponge *Plakortis simplex*. Pale yellow solid. $[\alpha]_D^{25}$ +17.3 (c, 1.5 in MeOH/CF_3COOH). λ_{max} 224 (ϵ 17210); 286 (ϵ 3740) (MeOH).

5,6-Diiodo: ***Plakohypaphorine D***
$C_{14}H_{16}I_2N_2O_2$ 498.102
Isol. from *Plakortis simplex*. Pale yellow solid. $[\alpha]_D^{25}$ +27.1 (c, 2 in MeOH/TFA). λ_{max} 224 (ϵ 17200); 288 (ϵ 3700) (MeOH).

5,7-Diiodo: ***Plakohypaphorine C***
[502686-56-8]
$C_{14}H_{16}I_2N_2O_2$ 498.102
Isol. from the sponge *Plakortis simplex*. Yellow solid. $[\alpha]_D^{25}$ +29.1 (c, 1 in MeOH/CF_3COOH). λ_{max} 231 (ϵ 8190); 284 (ϵ 1210) (MeOH).

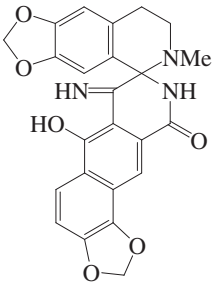
6,7-Diiodo: ***Plakohypaphorine B***
[502686-55-7]
$C_{14}H_{16}I_2N_2O_2$ 498.102
Isol. from the sponge *Plakortis simplex*. Yellow solid. $[\alpha]_D^{25}$ +30.4 (c, 1.2 in MeOH/CF_3COOH). λ_{max} 236 (ϵ 18600); 290 (ϵ 3690) (MeOH).

5,6,7-Triiodo: ***Plakohypaphorine E***
$C_{14}H_{15}I_3N_2O_2$ 623.998
Isol. from *Plakortis simplex*. Pale yellow solid. $[\alpha]_D^{25}$ +31.2 (c, 4 in MeOH/TFA). λ_{max} 224 (ϵ 17210); 288 (ϵ 3740) (MeOH).

(±)-*form* [64363-86-6]
Mp 253-255°.

Van Romburgh, P. *et al., J.C.S.*, 1911, **99**, 2068-2071 (*struct, synth*)
Cahill, W.M. *et al., J. Biol. Chem.*, 1938, **126**, 29-36 (*synth*)
Folkers, K. *et al., J.A.C.S.*, 1940, **62**, 436-441 (*isol*)
Hofinger, M. *et al., Phytochemistry*, 1975, **14**, 475-477 (*isol, biosynth*)
Raverty, W.D. *et al., J.C.S. Perkin 1*, 1977, 1204-1211 (*6-Bromohypaphorine, synth, isol*)
Kondo, K. *et al., J. Nat. Prod.*, 1994, **57**, 1008-1011 (*isol, uv, ir, pmr, cmr, struct, 6-Bromohypaphorine*)
Hu, J.-F. *et al., CA*, 1996, **124**, 50632g (*Glyyunnanenine*)
Campagnuolo, C. *et al., Eur. J. Org. Chem.*, 2003, 284-287; 2004, 3227-3232 (*Plakohypaphorines*)
Segraves, N.L. *et al., J. Nat. Prod.*, 2005, **68**, 1484-1488 (*5-Bromohypaphorine*)
Bel-Kassaoui, H. *et al., Nat. Prod. Res.*, 2008, **22**, 461-465 (*isol, synth, pmr, cmr*)

Hypecoleptopine H-765



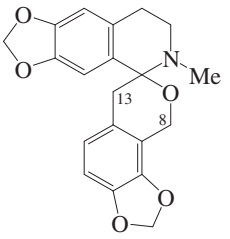
$C_{24}H_{19}N_3O_6$ 445.431

(±)-*form* [401947-62-4]
Alkaloid from *Hypecoum leptocarpum*. Amorph. powder (MeOH). Mp 206.5-209.5°. λ_{max} 260 (log ϵ 4.56); 295 (sh) ; 350 (log ϵ 3.44) (MeOH).

Li, B.-G. *et al., Indian J. Chem., Sect. B*, 2001, **40**, 1215-1218 (*isol, uv, pmr, cmr, ms*)

Hypecorine H-766

[41787-56-8]



$C_{20}H_{19}NO_5$ 353.374

(±)-*form* [88271-32-3]
Alkaloid from flowering *Hypecoum erectum* (Hypecoaceae). Cryst. (Me_2CO). Mp 160-162° (154-156°). The nat. alkaloid is presumably racemic. Phys. props. refer to synthetic material. λ_{max} 208 (log ϵ 4.55); 248 (log ϵ 4.15); 294 (log ϵ 3.85); 369 (log ϵ 3.89) (MeOH).

8-Oxo: ***Leptopidinine***
[221347-16-6]
$C_{20}H_{17}NO_6$ 367.357
Alkaloid from *Hypecoum leptocarpum*. Yellow needles (MeOH/$CHCl_3$). Mp 345-350°. λ_{max} 240 (log ϵ 3.96); 307 (log ϵ 3.66); 330 (log ϵ 3.65); 410 (log ϵ 3.88) (MeOH).

13-Oxo: ***Hypecorinine****. Corydalispirone*
[41787-57-9]
[56142-90-6]
$C_{20}H_{17}NO_6$ 367.357
Alkaloid from *Hypecoum erectum, Pteridophyllum racemosum* and *Corydalis incisa* (Hypecoaceae, Pteridophyllaceae, Papaveraceae). Prisms ($CHCl_3$/MeOH). Mp 196-198°. Racemic. λ_{max} 240 (log ϵ 4.36); 292 (log ϵ 4.08); 320 (log ϵ 3.93) (MeOH).

13-Oxo, perchlorate:
Pale brown needles (MeOH). Mp 248-250° dec.

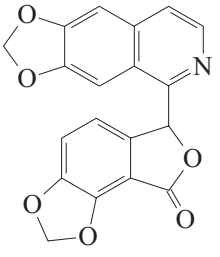
8,13-Dioxo: ***8-Oxohypecorinine***
[163165-34-2]
$C_{20}H_{15}NO_7$ 381.341
Alkaloid from whole plants of *Hypecoum procumbens* var. *glaucescens* (Hypecoaceae). Amorph. orange powder. Racemic. λ_{max} 224 (log ϵ 4.46); 245 (sh) (log ϵ 4.11); 308 (log ϵ 3.82); 362 (log ϵ 3.8) (MeOH).

8,13-Dioxo, N*-oxide:* ***8-Oxohypecorinine N-oxide***
[401892-68-0]
$C_{20}H_{15}NO_8$ 397.34
Alkaloid from *Hypecoum leptocarpum*. Amorph. yellow powder (MeOH). Mp 200-205°. Racemic. λ_{max} 248 (log ϵ 4.06); 309 (log ϵ 3.87); 374 (log ϵ 3.77) (MeOH).

Yakhontova, L.D. *et al., Khim. Prir. Soedin.*, 1972, **8**, 624-628; *Chem. Nat. Compd. (Engl. Transl.)*, 1972, **8**, 592-595 (*Hypecorine, Hypecorinine, isol, struct*)
Nonaka, G. *et al., Chem. Pharm. Bull.*, 1975, **23**, 294-298 (*Hypecorinine, uv, ir, pmr, ms, struct*)
Ikuta, A. *et al., Phytochemistry*, 1976, **15**, 577-578 (*Hypecorinine, isol, uv, ir, pmr, ms*)
Nalliah, B.C. *et al., Can. J. Chem.*, 1978, **56**, 1378-1380 (*Hypecorinine, synth, ir, pmr*)
Gözler, B. *et al., J.C.S. Perkin 1*, 1983, 2431-2434 (*synth, uv, ir, pmr, ms*)
Iwasa, K. *et al., Chem. Pharm. Bull.*, 1985, **33**, 998-1008 (*synth, pmr, cmr, ms*)
Rozwadowska, M.D. *et al., Tetrahedron*, 1988, **44**, 1221-1226 (*Hypecorinine, synth, ir, pmr, ms*)
Saad, H.E.A. *et al., Phytochemistry*, 1995, **38**, 1049-1051 (*8-Oxohypecorinine*)
Zhou, Y. *et al., Phytochemistry*, 1999, **50**, 339-343 (*Leptopidinine*)
Li, B.-G. *et al., Indian J. Chem., Sect. B*, 2001, **40**, 1215-1218 (*8-Oxohypecorinine N-oxide*)

Hypecoumine H-767

Decumbenine C
[100163-16-4]

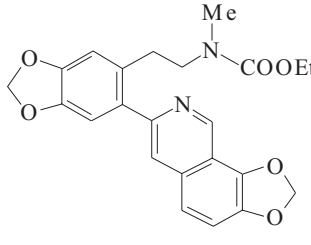


$C_{19}H_{11}NO_6$ 349.299
Same struct. given for Hypecoumine and Decumbenine C: they appear to be identical. Alkaloid from *Hypecoum leptocarpum* (Hypecoaceae) and *Corydalis decumbens* (Papaveraceae). Cryst. Mp 202-204° (Hypecoumine) Mp 211-213° (Decumbenine C). $[\alpha]_D^{32}$ +45.1 (c, 0.07 in $CHCl_3$).

Chen, B. *et al., Yaoxue Xuebao*, 1985, **20**, 658-661; *CA*, **104**, 65907m
Zhang, J.-S. *et al., Phytochemistry*, 1995, **39**, 435-437 (*Decumbenine C*)

Hypecumine H-768

[102719-88-0]

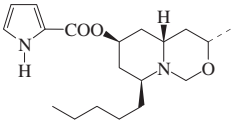


$C_{23}H_{22}N_2O_6$ 422.437
Alkaloid from *Hypecoum procumbens* (Hypecoaceae).

Önür, M.A. *et al., Planta Med.*, 1986, 70 (*isol, uv, pmr, ms, struct*)
Fitzgerald, J.J. *et al., Tet. Lett.*, 1994, **35**, 9191 (*synth*)

Hyperaspine H-769

[356547-86-9]



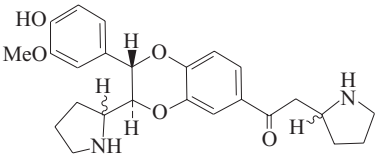
Absolute Configuration

$C_{19}H_{30}N_2O_3$ 334.458
Alkaloid from the ladybird beetle *Hyperaspis campestris*. λ_{max} 263 (ϵ 3650) (no solvent reported).

Lebrun, B. *et al., Tet. Lett.*, 2001, **42**, 4621-4623 (*isol, pmr, cmr*)
Zhu, W. *et al., Org. Lett.*, 2003, **5**, 5063-5066 (*synth*)
Dooms, C. *et al., Eur. J. Org. Chem.*, 2005, 1378-1383 (*synth, abs config*)
Comins, D.L. *et al., Org. Lett.*, 2005, **7**, 5227-5228 (*synth*)
Krishna, P.R. *et al., Tet. Lett.*, 2007, **48**, 6924-6927 (*synth*)

Hypercratine H-770

1-[2,3-Dihydro-2-(4-hydroxy-3-methoxyphenyl)-3-(2-pyrrolidinyl)-1,4-benzodioxin-6-yl]-2-(1-pyrrolidinyl)ethanone, 9CI
[88607-22-1]

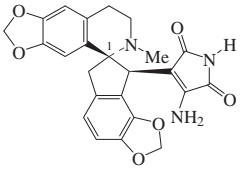


$C_{25}H_{30}N_2O_5$ 438.522
Alkaloid from the roots of *Ruspolia hypercrateriformis* (Acanthaceae). Opt. inactive.

Neukomm, G. *et al., Planta Med.*, 1983, **48**, 246 (*isol, uv, ir, pmr, cmr, ms, struct*)

Hyperectine H-771

[94656-46-9]



Relative Configuration

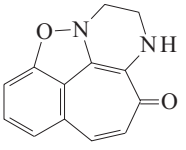
$C_{24}H_{21}N_3O_6$ 447.446
Alkaloid from *Hypecoum erectum* and *Hypecoum leptocarpum* (Hypecoaceae). Mp 237-238°.

1-Epimer: ***Isohyperectine***
[170384-75-5]
$C_{24}H_{21}N_3O_6$ 447.446
Alkaloid from *Hypecoum erectum* and *Hypecoum leptocarpum*. Cryst. ($CHCl_3$/MeOH). Mp 239-240°.

Perel'son, M.E. *et al., Khim. Prir. Soedin.*, 1984, **20**, 628-635; *Chem. Nat. Compd. (Engl. Transl.)*, 1984, **20**, 592-598
Yakhontova, L.D. *et al., Khim. Prir. Soedin.*, 1993, **29**, 835-839; *Chem. Nat. Compd. (Engl. Transl.)*, 1993, **29**, 744-747 (*Isohyperectine*)
Zhang, G.-L. *et al., Phytochemistry*, 1995, **40**, 1813-1816 (*isol, uv, pmr, cmr*)

Hypodemapyrazine H-772

2,3-Dihydro-4-oxa-1,3a-diazacyclohepta[-def]fluoren-10(1H)-one, 9CI
[151936-22-0]

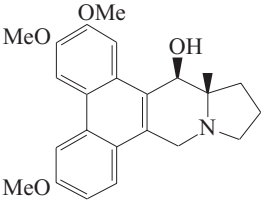


$C_{13}H_{10}N_2O_2$ 226.234
Alkaloid from the fern *Hypodematium sinense* (Woodsiaceae).

Lu, Y. *et al., Chin. Chem. Lett.*, 1993, **4**, 609-610; *CA*, **120**, 73332r (*isol, ir, uv, pmr, ms*)

Hypoestestatin 2 H-773

[97415-40-2]



$C_{24}H_{27}NO_4$ 393.482
Alkaloid from *Hypoestes verticillaris* (Acanthaceae). Inhibits cell growth. Highly cytotoxic. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 206-212°. $[\alpha]_D^{31}$ -80 (c, 0.525 in CH_2Cl_2). λ_{max} 259 (ϵ 41600); 285 (ϵ 25700); 340 (ϵ 1600) (MeOH) (Berdy).

Deoxy: ***Hypoestestatin 1***
[97387-93-4]
$C_{24}H_{27}NO_3$ 377.482
Alkaloid from *Hypoestes verticillaris* (Acanthaceae). Cell growth inhibitor. Highly cytotoxic. Pale yellow solid. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 191-197°. $[\alpha]_D^{31}$ -36.4 (c, 0.55 in CH_2Cl_2). Extremely sensitive to air and acid. λ_{max} 258 (ϵ 28100); 286 (ϵ 15500); 342 (ϵ 870); 360 (ϵ 510) (MeOH) (Berdy).

Pettit, G.R. *et al., J. Nat. Prod.*, 1984, **47**, 913-919 (*isol, uv, ir, pmr, cmr, ms, cd, struct*)

Hypotuberostemonine **H-774**

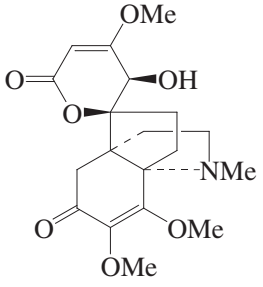
Struct. unknown

Minor alkaloid from the roots of *Stemona tuberosa* (Stemonaceae). Mp 183°. $[\alpha]_D^{19}$ +63.22 (MeOH).

Kondo, H. *et al., CA*, 1957, **51**, 1540f; *Chem. Zentralbl.*, 1958, **129**, 14057 (*isol*)

Hypserpine **H-775**

[312487-95-9]



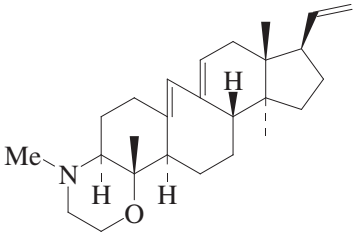
$C_{19}H_{25}NO_7$ 379.409

Alkaloid from the bark of *Hypserpa neocaledonica*.

Montagnac, A. *et al., CA*, 2001, **134**, 27525x (*isol*)

Hyrcanine **H-776**

[220749-23-5]



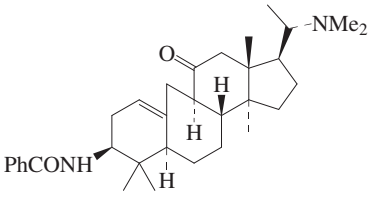
$C_{26}H_{39}NO$ 381.6

Alkaloid from *Buxus hyrcana*. Needles (Me_2CO). Mp 118°. $[\alpha]_D^{25}$ -33 (c, 0.09 in $CHCl_3$). λ_{max} 236 (log ϵ 4); 243 (log ϵ 4.01) (MeOH).

Atta-ur-Rahman, *et al., Heterocycles*, 1998, **49**, 481-488 (*isol, pmr, cmr, uv*)

Hyrcanone **H-777**

[934386-81-9]



$C_{33}H_{48}N_2O_2$ 504.754

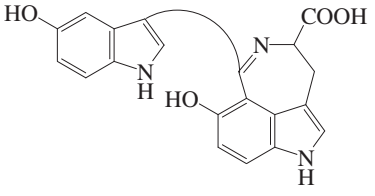
Alkaloid from the leaves of *Buxus hyrcana*. Amorph. solid. $[\alpha]_D^{24}$ +15.8 (c, 0.13 in $CHCl_3$). λ_{max} 225 (log ϵ 4.2) (MeOH).

Choudhary, M.I. *et al., Chem. Biodiversity*, 2006, **3**, 1039-1052 (*isol*)

Hyrtiazepine **H-778**

*3,4-Dihydro-7-hydroxy-6-(5-hydroxy-1*H*-indol-3-yl)-1*H*-azepino[5,4,3-*cd*]indole-4-carboxylic acid*

[922495-16-7]



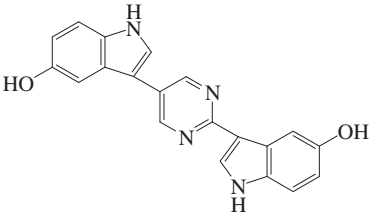
$C_{20}H_{15}N_3O_4$ 361.356

Alkaloid from *Hyrtios erectus*. Yellow solid. $[\alpha]_D^{25}$ -16.9 (c, 0.13 in MeOH). λ_{max} 227 (log ϵ 4.22); 351 (log ϵ 3.73); 435 (log ϵ 3.72) (EtOH).

Sauleau, P. *et al., J. Nat. Prod.*, 2006, **69**, 1676-1679 (*isol, pmr, cmr*)

Hyrtinadine A **H-779**

[925253-33-4]

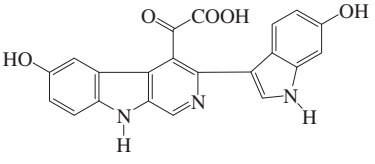


$C_{20}H_{14}N_4O_2$ 342.356

Isol. from a *Hyrtios* sp. (SS-1127). Cytotoxic. Amorph. solid. λ_{max} 277 (ϵ 7600); 339 (ϵ 3100) (MeOH).

Endo, T. *et al., J. Nat. Prod.*, 2007, **70**, 423-424 (*isol, pmr, cmr*)

Hyrtioerectine A **H-780**



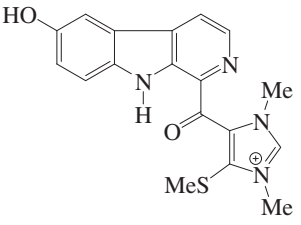
$C_{21}H_{13}N_3O_5$ 387.351

Alkaloid from the sponge *Hyrtios erectus*. Amorph. yellow solid. λ_{max} 387 (log ϵ 4.05) (MeOH).

Youssef, D.T.A. *et al., J. Nat. Prod.*, 2005, **68**, 1416-1419 (*isol, pmr, cmr*)

Hyrtiomanzamine **H-781**

[177988-05-5]



$C_{18}H_{17}N_4O_2S^{\oplus}$ 353.424

Related to Dragmacidonamine A, D-933. Counterion not specified. Charge is delocalised. Alkaloid from the marine sponge *Hyrtios erecta*. Shows immunosuppressive activity. Orange glassy solid. λ_{max} 394 (MeOH) (Berdy).

Deoxo: ***Gesashidine A***

$C_{18}H_{19}N_4OS^{\oplus}$ 339.44

Alkaloid from an unidentified sponge of the family Thorectidae. Amorph. yellow solid. λ_{max} 212 (ϵ 25000); 246 (ϵ 7300); 289 (ϵ 4400); 297 (ϵ 5600); 364 (ϵ 1400) (MeOH).

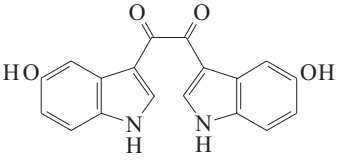
Bourguet-Kondracki, M.L. *et al., Tet. Lett.*, 1996, **37**, 3457-3460 (*isol, pmr, cmr*)

Iinuma, Y. *et al., J. Nat. Prod.*, 2005, **68**, 1109-1110 (*Gesashidine A*)

Hyrtiosin B† **H-782**

*Bis(5-hydroxy-1*H*-indol-3-yl)ethanedione, 9CI*

[132922-99-7]



$C_{18}H_{12}N_2O_4$ 320.304

Alkaloid from the marine sponge *Hyrtios erecta*. Pale green solid. Mp >° 400. λ_{max} 212 (ϵ 30000); 255 (ϵ 12800); 290 (ϵ 12100); 332 (ϵ 11000) (MeOH) (Berdy).

*Dideoxy: Di-1*H*-indol-3-ylethanedione, 9CI. Di-3-indolylglyoxal*

[65610-87-9]

$C_{18}H_{12}N_2O_2$ 288.305

Alkaloid from the sponge *Smenospongia* sp. Yellow cryst. (Me_2CO aq.). Mp 279-280°. λ_{max} 247 (log ϵ 4.28); 266 (log ϵ 4.27); 326 (log ϵ 4.27) (no solvent reported).

Bergman, J. *et al., Tetrahedron*, 1990, **46**, 6061-6066 (*Bisindolylethanedione, synth*)

Kobayashi, J. *et al., Tetrahedron*, 1990, **46**, 7699-7702 (*isol, uv, ir, pmr, cmr, ms, struct*)

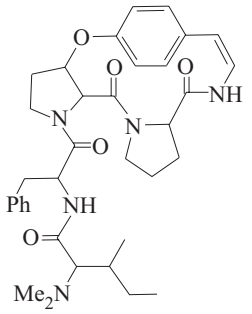
Bergman, J. *et al., Synthesis*, 1999, 580-585 (*synth, ir, pmr, cmr*)

McKay, M.J. *et al., J. Nat. Prod.*, 2002, **65**, 595-597 (*Bisindolylethanedione*)

Krasyushkin, M.M. *et al., Zh. Org. Khim.*, 2005, **41**, 895-902; *Russ. J. Org. Chem. (Engl. Transl.)*, 2005, **41**, 875-883 (*dideoxy, synth*)

Hysodricanine A H-783

[64309-17-7]



$C_{35}H_{45}N_5O_5$ 615.771

Alkaloid from the bark of *Zizyphus hysodrica* and *Zizyphus hutchinsonii* (Rhamnaceae). Needles (MeOH/petrol). Mp 93-96°. $[\alpha]_D^{20}$ -215 (c, 0.05 in $CHCl_3$).

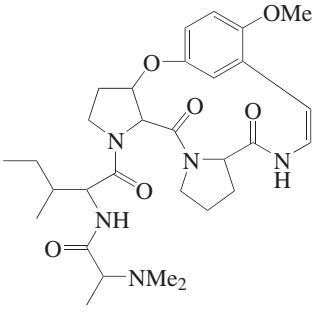
Dihydro:

Cryst. (MeOH aq.). Mp 130-132°. $[\alpha]_D^{20}$ -186 (c, 0.03 in MeOH).

Tschesche, R. *et al., Phytochemistry*, 1977, **16**, 1025-1028 (*isol, uv, ir, pmr, ms, struct*)

Tschesche, R. *et al., Pharmazie*, 1981, **36**, 511 (*isol, uv, ir, pmr, ms*)

Hysodricanine B H-784



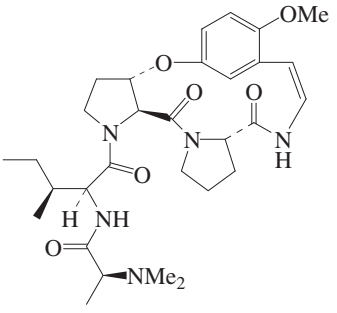
$C_{30}H_{43}N_5O_6$ 569.7

Cyclic peptide alkaloid. Constit. of *Zizyphus hysodrica*. Cryst. ($CHCl_3$/cyclohexane). Mp 35°. λ_{max} 360 ; 395 ($CHCl_3$).

Khokhar, I. *et al., Sci. Int. (Lahore)*, 1993, **5**, 37-39; *CA*, **119**, 245538k (*isol, ir, uv, pmr, ms*)

Hysodricanine C H-785

[220376-45-4]



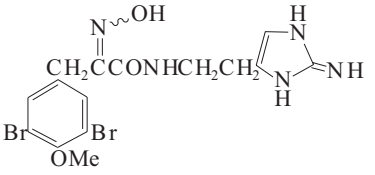
$C_{30}H_{43}N_5O_6$ 569.7

Cyclic peptide alkaloid. Constit. of *Zizyphus hysodrica*. Cryst. ($CHCl_3$/cyclohexane). Mp 35°.

Khokhar, I. *et al., J. Nat. Sci. Math.*, 1996, **36**, 149-154; *CA*, **130**, 165491b (*isol*)

Ianthelline I-1

[105596-36-9]

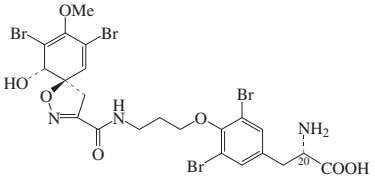


$C_{15}H_{17}Br_2N_5O_3$ 475.139

Amino acid-derived antibiotic. Isol. from the sponge *Ianthella ardis* and *Pseudoceratina crassa*. Shows antibacterial and antifungal props. Pale yellow powder. Mp 113-115°.

Litaudon, M. *et al., Tet. Lett.*, 1986, **27**, 4455 (*isol, ir, pmr, cmr, ms, struct*)

Ianthesine B I-2



$C_{22}H_{23}Br_4N_3O_7$ 761.056

Alkaloid from the marine sponge *Ianthella* sp. Cryst. (MeOH aq.). Mp 154-157°. $[\alpha]_D^{22}$ -97 (c, 0.58 in MeOH). λ_{max} 207 (ϵ 45400); 283 (ϵ 7300) (MeOH).

20-Epimer, N^{20}*-di-Me:* ***Ianthesine A***

$C_{24}H_{27}Br_4N_3O_7$ 789.109

Alkaloid from *Ianthella* sp. Cryst. (MeOH aq.). Mp 154-156°. $[\alpha]_D^{22}$ -118 (c, 1 in MeOH). λ_{max} 210 (ϵ 29500); 283 (ϵ 7390) (MeOH).

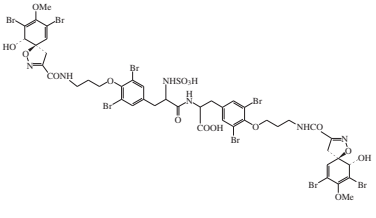
N^{20}*-Sulfo:* ***Ianthesine D***

$C_{22}H_{23}Br_4N_3O_{10}S$ 841.12

Alkaloid from *Ianthella* sp. Powder (as Na salt). Mp 190° dec. (Na salt). $[\alpha]_D^{25}$ -69 (c, 0.19 in MeOH) (Na salt). C-20 config. not determined. λ_{max} 206 (ϵ 53200); 220 (sh) (ϵ 25000); 282 (ϵ 6760) (MeOH) (Na salt).

Okamoto, Y. *et al., Tetrahedron*, 2000, **56**, 5813-5818

Ianthesine C I-3



$C_{44}H_{44}Br_8N_6O_{16}S$ 1584.16

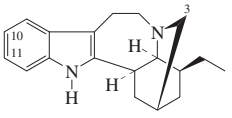
Alkaloid from the marine sponge *Ianthella* sp. Yellow powder (DMSO aq.) (as Na salt). Mp 200° dec. (Na salt). $[\alpha]_D^{26}$ -93 (c, 0.86 in DMSO) (Na salt). λ_{max} 231 (ϵ 26900); 283 (ϵ 11900) (MeOH/DMSO) (Na salt).

Okamoto, Y. *et al., Tetrahedron*, 2000, **56**, 5813-5818

Ibogamine, 9CI I-4

[481-87-8]

[2288-55-3 (+/-)-form]



Absolute Configuration

$C_{19}H_{24}N_2$ 280.412

Alkaloid from *Tabernanthe iboga* and several other *Tabernanthe* spp., *Pandaca retusa*, *Stemmadenia galeottiana* and *Stemmadenia glabra* (Apocynaceae). Shows moderate to weak cytotoxic activity and weak antibacterial activity. Also shows some CNS, brachycardic and hypotensive activity. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 162-164°. $[\alpha]_D^{18}$ -54.7 (c, 1 in EtOH). Log P 4.03 (uncertian value) (calc). λ_{max} 225 (log ϵ 4.58); 285 (log ϵ 3.96); 293 (log ϵ 3.94) (MeOH).

Hydrochloride: Mp 247-250°.

*19*R*-Hydroxy:* ***19R-Hydroxyibogamine***

[73543-09-6]

$C_{19}H_{24}N_2O$ 296.411

Alkaloid from the roots of *Tabernanthe quadrangularis* and *Pandaca mocquerysii* var. *pendula* (Apocynaceae). Needles (MeOH). Mp 172-174°. $[\alpha]_D^{20}$ -28 (c, 1 in $CHCl_3$). λ_{max} 227 (log ϵ 4.49); 276 (sh) (log ϵ 3.73); 283 (log ϵ 3.89); 291 (log ϵ 3.81) (MeOH).

*19*S*-Hydroxy:* ***19S-Hydroxyibogamine***

[437764-31-3]

$C_{19}H_{24}N_2O$ 296.411

Alkaloid from *Tabernaemontana corymbosa* and *Pandaca mocquerysii* var. *pendula*. Pale yellow oil. $[\alpha]_D$ -21 (c, 0.16 in $CHCl_3$). λ_{max} 226 (log ϵ 4.28); 283 (log ϵ 3.66); 292 (log ϵ 3.62) (EtOH).

10-Methoxy: ***Ibogaine****. Endabuse*

[83-74-9]

[6516-52-5 (+/-)-form]

$C_{20}H_{26}N_2O$ 310.438

Major alkaloid from *Tabernanthe iboga* (5-6% in root bark), also from *Tabernanthe pubescens*, *Tabernaemontana crassa*, *Voacanga thouarsii* and several other spp. in the Apocynaceae. Strong CNS stimulant, hallucinogen, anticonvulsant agent. Possesses antihypertensive props. *T. iboga* is an African folk remedy against fatigue. Sigma 2-receptor ligand and serotonergic agent. Under investigation for treatment of withdrawal symptoms from drugs of abuse. Shows antimycobacterial activity. Sol. org. solvs. Mp 152-153°. $[\alpha]_D$ -53 (EtOH). Log P 4.05 (uncertain value) (calc). Dec. by heat and light. λ_{max} 228 (log ϵ 4.4); 300 (log ϵ 3.92) (MeOH).

10-Methoxy, hydrochloride: [5934-55-4] Mp 299-300° dec. $[\alpha]_D$ -63 (EtOH). $[\alpha]_D$ -49 (H_2O).

▶ LD_{50} (rat, orl) 482 mg/kg. NH6730000

*10-Methoxy, 19*R*-hydroxy:* ***19-Epiiboxygaine***

[17378-49-3]

$C_{20}H_{26}N_2O_2$ 326.438

Alkaloid from leaves of *Tabernaemontana dichotoma*. λ_{max} 226 (log ϵ 4.32); 288 (log ϵ 3.79) (EtOH).

*10-Methoxy, 19*S*-hydroxy:* ***Iboxygaine****. Kimvuline. Decarbomethoxyvoacangarine*

[82-55-3]

$C_{20}H_{26}N_2O_2$ 326.438

Alkaloid from *Tabernanthe iboga*, *Daturicarpa elliptica* (preferred genus name *Tabernanthe*), *Pandaca speciosa* and several other spp. in the Apocynaceae. Shows weak antibacterial and some CNS, brachycardial and hypotensive activity. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 235-236°. $[\alpha]_D^{20}$ -10 (EtOH). $[\alpha]_D^{20}$ -15 (c, 0.41 in $CHCl_3$). Log P 1.84 (uncertain value) (calc). λ_{max} 228 ; 288 (MeOH) (Berdy).

11-Methoxy: ***Tabernanthine****. 11-Methoxyibogamine. 13-Methoxyibogamine*

[83-94-3]

$C_{20}H_{26}N_2O$ 310.438

Alkaloid from *Tabernanthe iboga*, *Tabernanthe laurifolia* and *Stemmadenia donnell-smithii* (Apocynaceae). Shows some CNS, brachycardial and hypotensive activity. Active against gram-positive bacteria. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 211-212° (209°). $[\alpha]_D^{25}$ -35 ($CHCl_3$). $[\alpha]_D$ -40 (Me_2CO). Log P 4.05 (uncertain value) (calc). λ_{max} 229 (ϵ 35970); 271 (ϵ 4410); 299 (ϵ 5810) (MeOH) (Berdy).

*11-Methoxy, 3*RS*-hydroxy:* ***3-Hydroxytabernanthine***

[524729-87-1]

$C_{20}H_{26}N_2O_2$ 326.438

Alkaloid from *Tabernaemontana calcarea*. Oil. $[\alpha]_D$ -17 (c, 0.24 in $CHCl_3$). λ_{max} 222 (log ϵ 4.02); 286 (log ϵ 3.68); 294 (log ϵ 3.26) (MeOH).

10,11-Dimethoxy: ***Ibogaline****. Descarbomethoxyconopharyngine*

[482-18-8]

$C_{21}H_{28}N_2O_2$ 340.464

Alkaloid from *Tabernanthe iboga* bark (Apocynaceae). Hypotensive and brachycardic agent. CNS stimulant. Cryst. (MeOH aq.). Mp 141-143°. Log P 3.5 (uncertain value) (calc).

10,11-Dimethoxy; hydrochloride: Mp 264-266° dec.

Delourme-Houdé, J. *et al., Ann. Pharm. Fr.*, 1946, **4**, 30-36; *CA*, **41**, 1390d (*Tabernanthine*)

Burckhardt, C.A. *et al., Helv. Chim. Acta*, 1952, **35**, 642-643 (*isol*)

Goutarel, M. *et al., Helv. Chim. Acta*, 1956, **39**, 742-748 (*uv, ir*)

Goutarel, R. *et al., C. R. Hebd. Seances Acad. Sci.*, 1958, **246**, 279-281 (*Iboxygaine, isol, uv, ir*)

Bartlett, M.F. *et al., J.A.C.S.*, 1958, **80**, 126-136 (*Ibogamine, Tabernanthine, struct*)

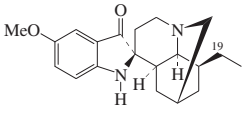
Walls, F. *et al., Tetrahedron*, 1958, **2**, 173-182 (*Tabernanthine*)

Neuss, N. *et al., J.O.C.*, 1959, **24**, 2047-2048 (*Ibogaline*)

Biemann, K. *et al., J.A.C.S.*, 1961, **83**, 4805 (*Ibogaine, Iboxygaine, ms, struct*)
Binst, G.V. *et al., Tet. Lett.*, 1964, 973 (*pmr*)
Büchi, G. *et al., J.A.C.S.*, 1966, **88**, 3099-3109 (*Ibogaine, synth*)
Hirai, S. *et al., Chem. Comm.*, 1968, 1016-1017 (*synth*)
Thomas, D.W. *et al., J. Nat. Prod.*, 1968, **31**, 1-8 (*ms*)
Mitscher, L.A. *et al., J. Nat. Prod.*, 1972, **35**, 157-176 (*Tabernanthine, activity*)
Bláha, K. *et al., Coll. Czech. Chem. Comm.*, 1974, **39**, 2258-2266 (*Iboxygaine, abs config*)
Rosenmund, P. *et al., Chem. Ber.*, 1975, **108**, 1871-1895 (*Ibogamine, Ibogaine, synth, ms*)
DeBellefon, M. *et al., Phytochemistry*, 1975, **14**, 1649-1652 (*19-Hydroxyibogamines*)
Harmouche, A. *et al., Ann. Pharm. Fr.*, 1976, **34**, 31-35 (*pmr*)
Wenkert, E. *et al., Helv. Chim. Acta*, 1976, **59**, 2437 (*cmr*)
Damak, M. *et al., Tet. Lett.*, 1976, 3531-3534 (*cmr*)
Trost, B.M. *et al., J.A.C.S.*, 1978, **100**, 3930-3931 (*synth*)
Achenbach, H. *et al., Z. Naturforsch., B*, 1980, **35**, 219-225 (*19-Hydroxyibogamine*)
Perera, P. *et al., Planta Med.*, 1983, **47**, 148-150 (*19-Epiiboxygaine*)
Imanishi, T. *et al., Chem. Pharm. Bull.*, 1985, **33**, 4202-4211 (*synth, ir, pmr, ms*)
Van Beek, T.A. *et al., J. Ethnopharmacol.*, 1985, **14**, 315-318; *CA*, **104**, 106242 (*Ibogamine, activity*)
Huffmann, J.W. *et al., J.O.C.*, 1985, **50**, 1460-1464 (*synth*)
Kuehne, M.E. *et al., J.O.C.*, 1985, **50**, 1464-1467 (*synth*)
Danieli, B. *et al., Alkaloids (Academic Press)*, 1986, **127**, 1-130 (*rev, pharmacol*)
Herdeis, C. *et al., Annalen*, 1991, 99-104 (*synth*)
Soriano-García, M. *et al., Acta Cryst. C*, 1992, **48**, 2055-2057 (*cryst struct*)
Bornmann, W.G. *et al., J.O.C.*, 1992, **57**, 1752-1760 (*Ibogamine, synth*)
Sershen, H. *et al., Neurochem. Res.*, 1994, **19**, 1463-1466 (*Ibogaine, pharmacol*)
Gallagher, C.A. *et al., Biochem. Pharmacol.*, 1995, **49**, 73-79 (*Ibogaine, gc-ms*)
Mach, R.H. *et al., Life Sci.*, 1995, **57**, PL57-PL62 (*Ibogaine, pharmacol*)
Henry, K.J. *et al., Tet. Lett.*, 1996, **37**, 8289-8292 (*Ibogamine, synth*)
Rastogi, N. *et al., FEMS Immunol. Med. Microbiol.*, 1998, **20**, 267-273 (*Ibogaine, activity*)
Alper, K.R. *et al., Alkaloids (Academic Press)*, 2001, **56**, 1-38 (*Ibogaine, !rev*)
White, J.D. *et al., Helv. Chim. Acta*, 2002, **85**, 4306-4327 (*Ibogamine, synth*)
Kam, T.-S. *et al., J. Nat. Prod.*, 2002, **65**, 669-672 (*19S-Hydroxyibogamine*)
Chaturvedula, V.S.P. *et al., J. Nat. Prod.*, 2003, **66**, 528-531 (*3-Hydroxytabernanthine*)
Höck, S. *et al., Helv. Chim. Acta*, 2006, **89**, 542-557 (*19R-Hydroxyibogamine, synth*)

Iboluteine I-5

[468-11-1]



Absolute Configuration

$C_{20}H_{26}N_2O_2$ 326.438
Alkaloid from *Tabernanthe iboga*, *Tabernaemontana* spp., *Pandaca ochrascens*, *Pandaca speciosa* and *Rejoua aurantiaca* (preferred genus name *Tabernaemontana*) (Apocynaceae). Mp 142°. $[\alpha]_D^{25}$ -114 ($CHCl_3$). Also an autoxidn. prod. of Ibogaine in I-4 therefore poss. artifact. Wenkert shows the incorr. abs. config.

Oxime: Mp 293-294°.

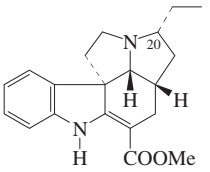
Demethoxy: ***Desmethoxyiboluteine***. *Ibogamine pseudoindoxyl*
[73777-64-7]
$C_{19}H_{24}N_2O$ 296.411
Alkaloid from *Tabernaemontana iboga* and from the roots of *Tabernaemontana quadrangularis* (Apocynaceae). Cryst. (C_6H_6 or MeOH). Mp 141° (137-138°). $[\alpha]_D^{20}$ -62 (c, 0.2 in $CHCl_3$). Prob. artifact of autoxidn.

*Demethoxy, 19*R*-hydroxy:* ***19R-Hydroxyibogamine pseudoindoxyl***. *20*R*-Hydroxyibogamine pseudoindoxyl*
[73459-04-8]
$C_{19}H_{24}N_2O_2$ 312.411
Alkaloid from the roots of *Tabernaemontana quadrangularis* (Apocynaceae). Yellow oil. $[\alpha]_D^{20}$ -16 (c, 0.1 in $CHCl_3$).

Goutarel, R. *et al., Helv. Chim. Acta*, 1956, **39**, 742 (*ir, uv, synth*)
Dickel, D.F. *et al., J.A.C.S.*, 1958, **80**, 123 (*struct*)
Thomas, D.W. *et al., Tetrahedron*, 1968, **24**, 4223 (*ms, uv, ir*)
Wenkert, E. *et al., Heterocycles*, 1977, **7**, 753 (*cmr, config*)
Achenbach, H. *et al., Z. Naturforsch., B*, 1980, **35**, 219 (*Ibogamine pseudoindoxyl, 19-Hydroxyibogamine pseudoindoxyl*)

Ibophyllidine I-6

Methyl 2,3-didehydro-7-ethyl-E,20,21-trinoraspidospermidine-3-carboxylate, 9CI
[59871-84-0]
[78019-50-8 (±)-form]



Absolute Configuration

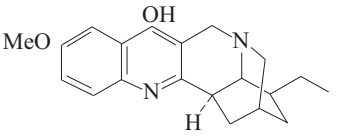
$C_{20}H_{24}N_2O_2$ 324.422
Alkaloid from the leaves of *Tabernanthe iboga* and *Tabernanthe subsessilis*, the stems of *Tabernaemontana flavicans* and the bark of *Tabernaemontana albiflora* and *Daturicarpa elliptica* (preferred genus name *Tabernanthe*) (Apocynaceae). Noncryst. $[\alpha]_D$ +134 (c, 1 in $CHCl_3$).

N^b*-Oxide:* ***Ibophyllidine*** **N^b*-oxide***
[76190-14-2]
$C_{20}H_{24}N_2O_3$ 340.421
Alkaloid from the stems of *Tabernaemontana flavicans* (Apocynaceae). Oil. $[\alpha]_D^{20}$ +187 ($CHCl_3$).

20-Epimer: ***20-Epiibophyllidine***
[74170-68-6]
[78019-52-0 (±)-form]
$C_{20}H_{24}N_2O_2$ 324.422
Alkaloid from the bark of *Tabernaemontana albiflora* (Apocynaceae). Amorph. $[\alpha]_D^{20}$ +518 (c, 0.3 in $CHCl_3$) (natural). $[\alpha]_D^{20}$ +322 (c, 1.3 in $CHCl_3$) (natural). $[\alpha]_D^{20}$ +268 (c, 1 in $CHCl_3$) (synthetic).

Khuong-Huu, F. *et al., Tetrahedron*, 1976, **32**, 2539 (*isol, uv, ir, pmr, cmr, ms, struct*)
Kan, C. *et al., Tet. Lett.*, 1980, **21**, 55 (*uv, ir, pmr, ms, struct, epimer*)
Achenbach, H. *et al., Z. Naturforsch., B*, 1980, **35**, 1465 (*isol, uv, ir, pmr, ms, cd, oxide, synth*)
Kuehne, M.E. *et al., J.O.C.*, 1981, **46**, 3443 (*synth, uv, ir, pmr, ms, epimer*)
Barsi, M.-C. *et al., Chem. Comm.*, 1985, 88 (*synth*)
Jegham, S. *et al., Tet. Lett.*, 1989, **30**, 1959 (*synth*)
Bornmann, W.G. *et al., J.O.C.*, 1992, **57**, 1752 (*synth*)

Iboquine I-7

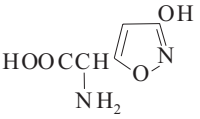


$C_{20}H_{24}N_2O_2$ 324.422
Alkaloid from roots of *Tabernanthe iboga* (Apocynaceae). Mp 284°. Prob. artifact of autoxidn. of Ibogaine in I-4.

Goutarel, R. *et al., Ann. Pharm. Fr.*, 1953, **11**, 272 (*isol*)
Dickel, D.F. *et al., J.A.C.S.*, 1958, **80**, 123

Ibotenic acid I-8

α-Amino-2,3-dihydro-3-oxo-5-isoxazoleacetic acid, 9CI. Premuscimol
[2552-55-8]



$C_5H_6N_2O_4$ 158.113

(±)-*form* [60573-88-8]
Prod. by *Amanita muscaria*, *Amanita pantherina*, *Amanita strobiliformis* and *Tricholoma muscarium*. Narcotizing agent, CNS depressant, psychomimetic agent, pesticide. Aspartic acid receptor agonist. Cryst. + $1H_2O$. Sol. H_2O. Mp 151-152° dec. pK_{a1} 2; pK_{a2} 5.1; pK_{a3} 8.2.
▶ LD_{50} (mus, ivn) 15 mg/kg. NY2100000

Et ester: [127020-25-1]
$C_7H_{10}N_2O_4$ 186.167
Solid (EtOH/Et_2O) (as hydrochloride). Mp 184-186° dec. (hydrochloride).

Et ether, Et ester:
$C_9H_{14}N_2O_4$ 214.221
Solid (EtOH/Et_2O) (as hydrochloride). Mp 172-174° dec. (hydrochloride).

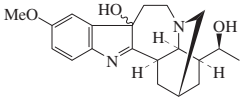
[25690-45-3 , 31758-99-3]

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 636D (*ir*)
Gagneux, A.R. *et al., Tet. Lett.*, 1965, 2081 (*synth*)
Yokobe, T. *et al., Yakugaku Zasshi*, 1969, **89**, 1236 (*ms*)
Nakamura, N. *et al., Chem. Pharm. Bull.*, 1971, **19**, 46 (*synth*)

Chilton, W.S. *et al., J. Nat. Prod.*, 1976, **39**, 150 (*occur*)
Leslie, D.T. *et al., J. Pharm. Sci.*, 1978, **67**, 485 (*glc, ms*)
Madsen, U. *et al., Acta Chem. Scand.*, 1990, **44**, 96 (*deriv*)
Ohta, T. *et al., Nat. Med. (Tokyo)*, 1995, **49**, 354 (*isol, uv, ir, pmr, cmr*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, AKG250

Iboxygaine hydroxyindolenine I-9

[23627-68-1]



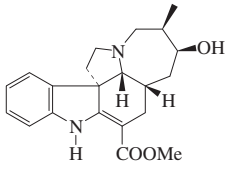
Absolute Configuration

$C_{20}H_{26}N_2O_3$ 342.437
Alkaloid from the leaves, stems and bark of *Peschiera lundii* (Apocynaceae). Mp 223°. $[\alpha]_D^{25}$ +111 (c, 0.026 in $CHCl_3$).

Hwang, B. *et al., J.O.C.*, 1969, **34**, 412 (*isol, uv, ir, struct, synth*)

Iboxyphylline I-10

Methyl 2,3-didehydro-7-hydroxy-8-methyl-ε-homo-20,21-dinoraspidospermidine-3-carboxylate, 9CI
[62861-08-9]



Absolute Configuration

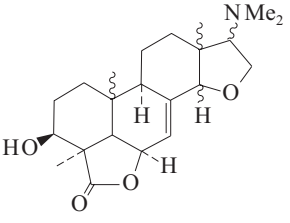
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from the leaves of *Tabernanthe iboga* and *Tabernanthe subsessilis*. Cryst. + $1H_2O$ (Et_2O or MeCN). Mp 245°. $[\alpha]_D$ +444 (c, 1 in $CHCl_3$).

O-*Ac:*
Cryst. (MeOH). Mp 167°. $[\alpha]_D$ +466 (c, 1 in $CHCl_3$).

Khuong-Huu, F. *et al., Tetrahedron*, 1976, **32**, 2539-2543 (*isol, uv, ir, pmr, cmr, ms, cryst struct*)
Bornmann, W.G. *et al., J.O.C.*, 1992, **57**, 1752-1760 (*synth*)
Tóth, F. *et al., Heterocycles*, 2008, **75**, 65-76 (*synth*)

Icaceine I-11

17-(Dimethylamino)-3,6-dihydroxy-4-methyl-15-oxaandrost-7-ene-4-carboxylic acid, 9CI
[74991-71-2]



$C_{22}H_{33}NO_4$ 375.507
First known pimarane-derived diterpene alkaloid. Stereochem. not fully determined but prob. the same as that of Icacine. Alkaloid from the leaves and roots of *Icacina guesfeldtii* (Icacinaceae). Needles (MeOH/$CHCl_3$). Mp 220-250° dec., subl. $[\alpha]_D^{20}$ -196.7 (c, 0.995 in $CHCl_3$).

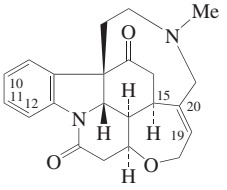
Ac:
Needles. Mp 190-215° dec. subl. $[\alpha]_D$ -180.3 (c, 0.295 in $CHCl_3$).

N-*De-Me:* ***De*-N-*methylicaceine***
[75008-99-0]
$C_{21}H_{31}NO_4$ 361.48
Alkaloid from *Icacina guesfeldtii* (Icacinaceae). Mp 210-235° dec., subl. $[\alpha]_D^{20}$ -165.8 (c, 0.535 in $CHCl_3$).

On'okoko, P. *et al., Phytochemistry*, 1980, **19**, 303-305 (*isol, ir, pmr*)

Icajine I-12

19-Methyl-16,19-secostrychnidine-10,16-dione, 9CI. N-*Methyl*-sec-*pseudostrychnine*
[5525-31-5]



Absolute Configuration

$C_{22}H_{24}N_2O_3$ 364.443
Several numbering schemes in the lit. Only derivative synonyms using the biogenetic scheme favoured in DNP are given here. Alkaloid from the leaves of *Strychnos icaja* and *Strychnos wallichiana* (Loganiaceae). Weak convulsive agent. Mp 271-272° dec. $[\alpha]_D$ -10 (c, 1 in $CHCl_3$). λ_{max} 253 (log ϵ 4.23); 291 (log ϵ 3.52) (EtOH).

N-*Oxide:* ***Icajine* N-*oxide***
[52080-27-0]
$C_{22}H_{24}N_2O_4$ 380.443
Alkaloid from leaves of *Strychnos wallichiana* (Loganiaceae). Needles (MeOH). λ_{max} 210 (log ϵ 4.66); 255 (log ϵ 4.32); 283 (log ϵ 3.91); 289 (sh) (log ϵ 3.8) (EtOH).

N-*De-Me,* N-*cyano:* **N-*Cyano*-sec-*pseudostrychnine***
[52080-24-7]
$C_{22}H_{21}N_3O_3$ 375.426
Alkaloid from leaves of *Strychnos wallichiana*, also detected in *Strychnos ignatii* (Loganiaceae). Needles (Me_2CO). Mp 235° dec. λ_{max} 222 (log ϵ 4.62); 257 (log ϵ 4.76); 283 (log ϵ 4.25) (EtOH).

12-Hydroxy: ***Vomicine***. *Strychnicine. Struxine*
[125-15-5]
$C_{22}H_{24}N_2O_4$ 380.443
Alkaloid from *Strychnos nux-vomica* (leaves and seeds) and *Strychnos icaja* (Loganiaceae). Weak convulsive agent. Mp 250° dec Mp 281-282° dec. $[\alpha]_D$ +100 (c, 1 in $CHCl_3$).

12-Hydroxy, hydrochloride: Mp 245° dec. (browns from 210°).

12-Hydroxy, 19α,20α-epoxide: ***19,20-Epoxyvomicine***. *19,20-Epoxy-12-hydroxy*-N-*methyl*-sec-*pseudostrychnine*
[22029-94-3]
$C_{22}H_{24}N_2O_5$ 396.442
Alkaloid from leaves of *Strychnos icaja* (Loganiaceae). Small needles (MeOH). Mp 252-255° dec. $[\alpha]_D$ +112 (c, 1 in $CHCl_3$).

▶ZB2505000

15-Hydroxy: ***15-Hydroxyicajine***. *15-Hydroxy*-N-*methyl*-sec-*pseudostrychnine*
[22029-96-5]
$C_{22}H_{24}N_2O_4$ 380.443
Alkaloid from leaves of *Strychnos icaja* and *Strychnos wallichiana* (Loganiaceae). Needles (MeOH). Mp 262-265° dec. $[\alpha]_D$ -60 (c, 1.1 in $CHCl_3$).

▶VS3615000

15-Hydroxy, 19α,20α-epoxide: ***19,20-Epoxy-15-hydroxyicajine***. *19,20-Epoxy-15-hydroxy*-N-*methyl*-sec-*pseudostrychnine*
[22029-99-8]
$C_{22}H_{24}N_2O_5$ 396.442
Alkaloid from the leaves of *Strychnos icaja* (Loganiaceae). Rods (MeOH). Mp 266-268° dec. $[\alpha]_D$ +3 (c, 1 in $CHCl_3$).

12,15-Dihydroxy, 19α,20α-epoxide: ***19,20α-Epoxy-15-hydroxyvomicine***. *19,20-Epoxy-12,15-dihydroxy*-N-*methyl*-sec-*pseudostrychnine*
[22029-97-6]
$C_{22}H_{24}N_2O_6$ 412.441
Alkaloid from leaves of *Strychnos icaja* (Loganiaceae). Rods (Me_2CO). Mp 239-242°. $[\alpha]_D$ +86 (c, 1.01 in $CHCl_3$).

10-Methoxy: **N-*Methyl*-sec-*pseudo-β-colubrine***
[52080-22-5]
$C_{23}H_{26}N_2O_4$ 394.469
Alkaloid from fruits of *Strychnos nux-vomica* and leaves of *Strychnos wallichiana* (Loganiaceae). Needles (Me_2CO). A 10- or 11-methoxy (see below) icajine was isol. from leaves of *S. icaja*. λ_{max} 226 (log ϵ 4.38); 261 (log ϵ 3.95); 300 (log ϵ 3.92) (EtOH).

10-Methoxy, 19α,20α-epoxide: ***19,20-Epoxy-10-methoxyicajine***. *19,20-Epoxy-10-methoxy*-N-*methyl*-sec-*pseudostrychnine*
[27239-52-7]
$C_{23}H_{26}N_2O_5$ 410.469
Alkaloid from leaves of *Strychnos icaja* (Loganiaceae). Flat prisms (MeOH). Mp 265-267° dec.

11-Methoxy: ***11-Methoxyicajine***
[73710-81-3]
$C_{23}H_{26}N_2O_4$ 394.469
Alkaloid from *Strychnos nux-vomica* (Loganiaceae). Mp 240-242°.

11-Methoxy, 12-hydroxy: ***12-Hydroxy-11-methoxy*-N-*methyl*-sec-*pseudostrychnine***

[50837-33-7]
$C_{23}H_{26}N_2O_5$ 410.469
Alkaloid from seeds of *Strychnos wallichiana (Strychnos cinnamomifolia)* (Loganiaceae). $[\alpha]_D$ +33 (c, 0.24 in $CHCl_3$). λ_{max} 232 ; 270 ; 301 (EtOH).

11-Methoxy, 12-hydroxy, 19α,20α-epoxide: ***19,20-Epoxy-11-methoxyvomicine****. 19,20-Epoxy-12-hydroxy-11-methoxy-*N*-methyl*-sec*-pseudostrychnine*
[27281-86-3]
$C_{23}H_{26}N_2O_6$ 426.468
Alkaloid from leaves of *Strychnos icaja* (Loganiaceae). Noncryst. $[\alpha]_D$ +78 (c, 1.05 in $CHCl_3$).

11-Methoxy, 12,15-dihydroxy, 19α,20α-epoxide: ***19,20-Epoxy-15-hydroxy-11-methoxyvomicine****. 19,20-Epoxy-12,15-dihydroxy-11-methoxy-*N*-methyl*-sec*-pseudostrychnine*
[62421-66-3]
$C_{23}H_{26}N_2O_7$ 442.468
Alkaloid from *Strychnos icaja* leaves (Loganiaceae). Prisms (EtOAc). Mp 255-260°. λ_{max} 237 (log ε 4.21); 270 (log ε 3.8) (EtOH).

12-Methoxy, 19α,20α-epoxide: ***19,20-Epoxy-12-methoxyicajine****. 19,20-Epoxy-12-methoxy-*N*-methyl*-sec*-pseudostrychnine*
[62421-68-5]
$C_{23}H_{26}N_2O_5$ 410.469
Minor alkaloid from dried fruits of m'boundou (*Strychnos* sp.) from Gabon (Loganiaceae). Noncryst. λ_{max} 217 (log ε 4.29); 256 (log ε 4.11); 295 (log ε 3.85) (EtOH).

12-Methoxy, 15-hydroxy, 19α,20α-epoxide: ***19,20-Epoxy-15-hydroxy-12-methoxyicajine****. 19,20-Epoxy-15-hydroxy-12-methoxy-*N*-methyl*-sec*-pseudostrychnine*
[62421-69-6]
$C_{23}H_{26}N_2O_6$ 426.468
Major alkaloid from dried fruits of m'boundou (*Strychnos* sp.) (Loganiaceae). Noncryst. λ_{max} 217 (log ε 4.29); 256 (log ε 4.11); 295 (log ε 3.58) (EtOH).

10,11-Dimethoxy: ***Novacine****.* N*-Methyl*-sec*-pseudobrucine*
[466-64-8]
[30864-62-1]
$C_{24}H_{28}N_2O_5$ 424.496
Alkaloid from *Strychnos nux-vomica* seeds, *Strychnos icaja* and *Strychnos wallichiana* leaves (Loganiaceae). Prisms (EtOAc). Mp 231-232°. $[\alpha]_D^{20}$ -17.7 (c, 5 in $CHCl_3$). λ_{max} 215 (log ε 4.36); 266 (log ε 4.04); 300 (log ε 3.88) (EtOH).

10,11-Dimethoxy, hydrochloride:
Prismatic needles + H_2O (EtOH). Mp 229-230°.

10,11-Dimethoxy, N*-de-Me,* N*-cyano:* ***N-Cyano-sec-pseudobrucine***
[52080-25-8]
$C_{24}H_{25}N_3O_5$ 435.479
Alkaloid from leaves of *Strychnos wallichiana* (Loganiaceae). Needles (Me_2CO).

10,11-Dimethoxy, 19,20α-epoxide: ***19,20-Epoxynovacine****. 19,20-Epoxy-*N*-methyl*-sec*-pseudobrucine. Alkaloid C*†
[19879-54-0]
$C_{24}H_{28}N_2O_6$ 440.495
Alkaloid from the leaves of *Strychnos icaja* (Loganiaceae). Hexagonal plates (MeOH). Mp 239-241°. $[\alpha]_D$ +12 (c, 1.09 in $CHCl_3$).

10,11-Dimethoxy, 15-hydroxy: ***15-Hydroxynovacine***
[52080-26-9]
$C_{24}H_{28}N_2O_6$ 440.495
Alkaloid from leaves of *Strychnos wallichiana* (Loganiaceae). Fine needles (MeOH). Mp 200° dec. λ_{max} 217 (log ε 4.64); 265 (log ε 4.39); 301 (log ε 4.27) (EtOH).

10,11-Dimethoxy, 15-hydroxy, 19α,20α-epoxide: ***19,20-Epoxy-15-hydroxynovacine****. 19,20-Epoxy-14-hydroxy-10,11-dimethoxy-*N*-methyl*-sec*-pseudostrychnine. Alkaloid B′*
[22029-98-7]
$C_{24}H_{28}N_2O_7$ 456.494
Alkaloid from leaves of *Strychnos icaja* (Loganiaceae). Rods (Me_2CO). Mp 251-253° dec. $[\alpha]_D$ +3 (c, 0.96 in $CHCl_3$).

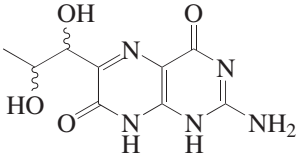
11,12-Dimethoxy, 19α,20α-epoxide: ***19,20-Epoxy-11,12-dimethoxyicajine****. 19,20-Epoxy-11,12-dimethoxy-*N*-methyl*-sec*-pseudostrychnine*
[62421-67-4]
$C_{24}H_{28}N_2O_6$ 440.495
Alkaloid from *Strychnos icaja* leaves (Loganiaceae). Noncryst. λ_{max} 226 (log ε 4.3); 256 (log ε 4.11); 295 (log ε 3.58) (EtOH).

[19774-65-3]

Wieland, H. *et al., Annalen*, 1929, **469**, 193-215 (*Vomicine, sol*)
Leuchs, H. *et al., Ber.*, 1939, **72**, 965-972; 1940, **73**, 885-892 (*synth*)
Martin, W.F. *et al., J.C.S.*, 1952, 3603-3604 (*Novacine*)
Smith, G.F. *et al., Alkaloids (Academic Press)*, 1965, **8**, 591-671 (*rev, bibl*)
Bisset, N.G. *et al., C. R. Hebd. Seances Acad. Sci.*, 1965, **261**, 5237-5238 (*isol, uv, ms*)
Bisset, N.G. *et al., Tet. Lett.*, 1968, 3107-3110 (*Epoxynovacine*)
Bisset, N.G. *et al., J. Pharm. Pharmacol.*, 1973, **25**, 563-569 (*12-Hydroxy-11-methoxy-N-methyl-sec-pseudostrychnine*)
Bisset, N.G. *et al., Tetrahedron*, 1973, **29**, 4137-4148 (*19,20-Epoxy-10-methoxyicajine, Strychnos icaja constits*)
Bisset, N.G. *et al., Phytochemistry*, 1974, **13**, 255-258; 259-263; 265-269; 1976, **15**, 1973-1976 (*Epoxides, 15-Hydroxynovacine, N-Cyano-sec-pseudobrucine, N-Cyano-sec-pseudostrychnine, Icajine N-oxide, N-methyl-sec-pseudo-β-colubrine*)
Verpoorte, R. *et al., Org. Magn. Reson.*, 1977, **9**, 567-571; 1984, **22**, 345-348 (*cmr*)
Rodriguez, F. *et al., Phytochemistry*, 1979, **18**, 2065 (*11-Methoxyicajine*)
Mostad, A. *et al., Acta Chem. Scand., Ser. B*, 1984, **38**, 821-827 (*cryst struct*)
Mostad, A. *et al., Acta Chem. Scand., Ser. B*, 1985, **39**, 141-148 (*19,20-Epoxy-15-hydroxyicajine, cryst struct*)

Ichthyopterin I-13

*2-Amino-6-(1,2-dihydroxypropyl)-4,7(1*H*,8*H*)-pteridinedione, 9CI. 6-(1,2-Dihydroxypropyl)isoxanthopterin. 7-Hydroxybiopterin. 2-Amino-4,7-dihydroxy-6-(1,2-dihydroxypropyl)pteridine*
[490-58-4]
[18503-60-1 (*N,O,O*-tri-Ac), 18503-57-6 (mono-Ac)]



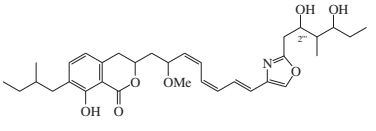
$C_9H_{11}N_5O_4$ 253.217
Pigment present in the scales of various fish (e.g. *Cyprinus carpio*). Also isol. from scorpion flies (*Panorpa japonica*). Cryst. (EtOH)(as tri-Ac). Mp 188-196° dec. (tri-Ac). Stereochem. not determined.

2′-Deoxy, N^8*-Me: 2-Amino-6-(1-hydroxypropyl)-8-methyl-4,7(1*H*,8*H*)-pteridinedione.* ***6-(1-Hydroxypropyl)-8-methylisoxanthopterin***
[78944-83-9]
$C_{10}H_{13}N_5O_3$ 251.244
Pterin from the firefly *Photinus pyralis.* Mp 350°. $[\alpha]_D^{20}$ +113.1 (c, 0.011 in MeOH).

Hüttel, R. *et al., Annalen*, 1943, **554**, 69-82 (*isol, fish*)
Tschesche, R. *et al., Chem. Ber.*, 1958, **91**, 2081-2089 (*synth*)
Hüttel, R. *et al., Chem. Ber.*, 1960, **93**, 2439-2441 (*struct*)
Ohta, K. *et al., J. Biochem. (Tokyo)*, 1968, **63**, 127
Goetz, M.A. *et al., Experientia*, 1981, **37**, 679-680 (*2′-deoxy N-Me*)
Nakagoshi, M. *et al., Experientia*, 1983, **39**, 742-744 (*Panorpa japonica constit, isol, bibl*)

Icumazole A I-14

[159311-91-8]



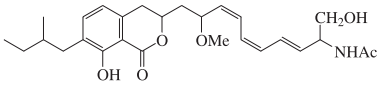
$C_{33}H_{45}NO_7$ 567.721
Prod. by *Sorangium cellulosum*. Antifungal agent. Yellow oil. $[\alpha]_D$ +165 (MeOH). λ_{max} 214 (ε 29510); 302 (ε 46770); 316 (ε 38900) (MeOH). λ_{max} 214 (ε 29512); 302 (ε 46773); 316 (ε 38900) (MeOH) (Berdy).

*2‴-*O*-Pentofuranoside:* ***Icumazole B***
[159311-92-9]
$C_{38}H_{53}NO_{11}$ 699.837
Prod. by *Sorangium cellulosum*. Antifungal agent. Yellow oil. λ_{max} 214 ; 302 ; 316 (MeOH). λ_{max} 214 ; 302 ; 316 (MeOH) (Berdy).

Ger. Pat., 1994, 4 305 486; *CA*, **121**, 300667v (*isol*)

Icumazole F I-15

[159311-93-0]

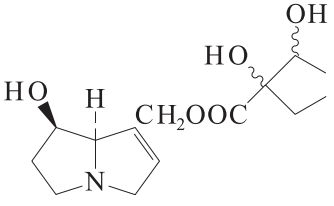


$C_{27}H_{37}NO_6$ 471.592
Prod. by *Sorangium cellulosum*. Antifungal agent. Yellow oil. λ_{max} 214 ; 302 ; 316 (MeOH). λ_{max} 214 ; 302 ; 316 (MeOH) (Berdy).

Ger. Pat., 1994, 4 305 486; *CA*, **121**, 300667v

Ideamine A I-16

[137821-13-7]



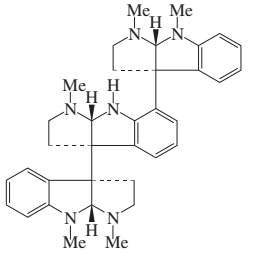
$C_{14}H_{23}NO_5$ 285.339
$[\alpha]_D^{31}$ +4 (c, 1.25 in EtOH).

N-*Oxide:* ***Ideamine A* N-*oxide***
[137760-62-4]
$C_{14}H_{23}NO_6$ 301.339
Isol. from adult bodies of the Apocynaceae-feeding danaine butterfly *Idea leuconoe*. $[\alpha]_D^{32}$ +5 (c, 2.0 in MeOH).

Nishida, R. *et al., Agric. Biol. Chem.*, 1991, **55**, 1787 (*isol, pmr, cmr, ms, struct*)

Idiospermuline I-17

[169397-89-1]



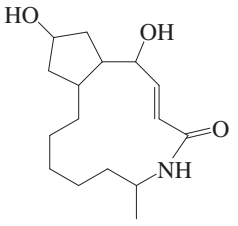
Absolute Configuration

$C_{35}H_{42}N_6$ 546.757
Closely related to Hodgkinsine, H-311. Alkaloid from seeds of *Idiospermum australiense* (Idiospermaceae). Powder. Mp 95-97°. $[\alpha]_D^{25}$ -2.5 (c, 1.0 in $CHCl_3$).
Methiodide (1:3):
Needles (MeOH). Mp 230-231° dec. (subl. at 220-225°). $[\alpha]_D^{25}$ -2.3 (c, 0.1 in H_2O).

Duke, R.K. *et al., J. Nat. Prod.*, 1995, **58**, 1200 (*isol, uv, cd, ir, pmr, cmr, ms, cryst struct*)
Overman, L.E. *et al., Tetrahedron*, 2003, **59**, 6905-6919 (*synth*)

IFB Lactam 1 I-18

2,15-Dihydroxy-7-methyl-6-azabicyclo[11.3.0]hexadec-3-en-5-one

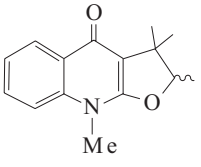


$C_{16}H_{27}NO_3$ 281.394
Prod. by *Trichoderma* sp. obt. from cabbage. Active against *Gloesporium kaki* Hori. Cryst. (MeOH).

Hu, S.-C. *et al., Acta Cryst. E*, 2006, **62**, o5777-o5778 (*isol, cryst struct*)

Ifflaiamine I-19

3,9-Dihydro-2,3,3,9-tetramethylfuro[2,3-b]quinolin-4(2H)-one, 9CI



$C_{15}H_{17}NO_2$ 243.305

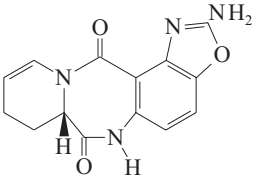
(-)-*form* [31520-95-3]
Alkaloid from *Flindersia ifflaiana* (Flindersiaceae). Mp 122-125°. $[\alpha]_D^{25}$ -0.6 (-6.20) (MeOH). Forms monohydrate, Mp 62-3°, and dihydrate, Mp 56-8°.
Picrate: Mp 207-209° (189-192°).

(±)-*form* [18194-15-5]
Mp 128-129°.
Picrate: Mp 179-182°.

Bosson, J.A. *et al., Aust. J. Chem.*, 1963, **16**, 480 (*isol, ir, uv, pmr, struct*)
Chamberlain, T.R. *et al., J.C.S.(C)*, 1971, 910 (*isol, synth, pmr*)
Hammerum, S. *et al., Acta Chem. Scand., Ser. B*, 1977, **31**, 31 (*ms*)

Iforrestine I-20

2-Amino-8,9-dihydrooxazolo[4,5-g]pyrido[2,1-c][1,4]benzodiazepine-7,13(6H,7aH)-dione, 9CI
[125287-08-3]

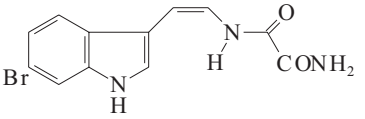


$C_{14}H_{12}N_4O_3$ 284.274
Alkaloid from *Isotropis forrestii* (Fabaceae). Nephrotoxin. Needles (MeOH/$CHCl_3$). Mp 330-331° (dec. from 275°). $[\alpha]_D$ +362.6 (c, 1.15 in EtOH).

Colegate, S.M. *et al., Aust. J. Chem.*, 1989, **42**, 1249 (*isol, ir, pmr, cmr, ms, cryst struct*)

Igzamide I-21

[149355-80-6]

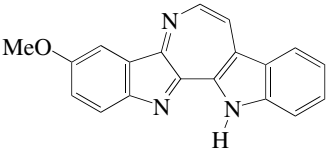


$C_{12}H_{10}BrN_3O_2$ 308.134
Alkaloid from the northeastern Pacific sponge *Plocamissa igzo*. Yellow solid. Genus name given as Plocamissma, which appears to be an error. λ_{max} 228 (ϵ 12800); 294 (ϵ 4900) (MeOH) (Berdy).

Dumdei, E. *et al., J. Nat. Prod.*, 1993, **56**, 792-794 (*isol, uv, ir, pmr, cmr, ms, struct*)

Iheyamine A I-22

[221160-80-1]

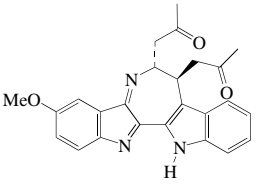


$C_{19}H_{13}N_3O$ 299.331
Alkaloid from an ascidian *Polycitorella* sp. Cytotoxic agent. Amorph. purple solid (as trifluoroacetate). λ_{max} 284 (ϵ 16000); 325 (sh) (ϵ 33000); 341 (ϵ 36000); 360 (sh) (ϵ 30000); 388 (ϵ 19000); 499 (ϵ 5200) (MeOH) (as trifluoroacetate salt). λ_{max} 287 ; 346 ; 395 ; 515 (MeOH) (Berdy). λ_{max} 348 (ϵ 42000); 480 (ϵ 4400) (MeOH/NaOH) (Berdy).

Sasaki, T. *et al., Tet. Lett.*, 1999, **40**, 303-306 (*isol, uv, ir, pmr, cmr*)

Iheyamine B I-23

[221160-84-5]



Relative Configuration

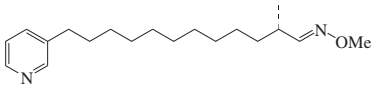
$C_{25}H_{23}N_3O_3$ 413.475
Alkaloid from an ascidian *Polycitorella* sp. Cytotoxic agent. Amorph. purple solid. $[\alpha]_D^{25}$ -16 (c, 0.0002 in $CHCl_3$). λ_{max} 276 (sh) (ϵ 18000); 300 (ϵ 36000); 307 (ϵ 36000); 330 (sh) (ϵ 14000); 526 (ϵ 7400) ($CHCl_3$). λ_{max} 284 (ϵ 16000); 341 (ϵ 36000); 388 (ϵ 19000); 499 (ϵ 5200) (MeOH) (Berdy).

Sasaki, T. *et al., Tet. Lett.*, 1999, **40**, 303-306 (*isol, uv, ir, pmr, cmr*)

Ikimine A I-24

α-Methyl-3-pyridinedodecanal O-*methyloxime, 9CI*

[131479-30-6]



$C_{19}H_{32}N_2O$ 304.475

Alkaloid from the Okinawan sponge *Niphates* sp. and another sponge. Cytotoxic agent. Shows antibacterial and antifungal activity. Oil. Occurs as a partial racemate of the *E*-form with the *S*-enantiomer, illus., predominating. The *Z*-isomer, also isol., is prob. an artifact. λ_{max} 260 (ϵ 2090); 265 (ϵ 7760); 272 (ϵ 1660) (MeOH) (Derep). λ_{max} 260 (ϵ 2090); 263 (ϵ 3300); 265 (ϵ 8912); 272 (ϵ 1660) (MeOH) (Berdy).

[131564-74-4]

Carroll, A.R. *et al., Tetrahedron*, 1990, **46**, 6637 (*isol, uv, ir, pmr, cmr, ms, struct, activity*)

Kobayashi, J. *et al., J.C.S. Perkin 1*, 1992, 1291 (*isol, uv, ir, pmr, cmr, ms*)

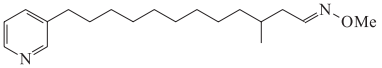
Bracher, F. *et al., Nat. Prod. Lett.*, 1994, **4**, 223 (*synth*)

Nicholas, G.M. *et al., Tetrahedron*, 2000, **56**, 2921-2927 (*isol, abs config*)

Ikimine B I-25

β-Methyl-3-pyridinedodecanal O-*methyloxime, 9CI*

[131479-31-7]



$C_{19}H_{32}N_2O$ 304.475

The struct. illus. has been shown to be in doubt (2004). Alkaloid from an unidentified sponge. Cytotoxic. Oil. The *syn*-isomer, also isol., is prob. an artifact. λ_{max} 260 (ϵ 2090); 265 (ϵ 7760); 272 (ϵ 1660) (MeOH) (Derep). λ_{max} 260 (ϵ 1995); 264 (ϵ 10964); 274 (ϵ 1348) (MeOH) (Berdy).

[131564-75-5]

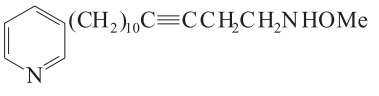
Carroll, A.R. *et al., Tetrahedron*, 1990, **46**, 6637-6644 (*isol, uv, ir, pmr, cmr, ms, struct*)

Romeril, S.P. *et al., Tet. Lett.*, 2004, **45**, 3273-3277 (*struct*)

Ikimine D I-26

N-*Methoxy-14-(3-pyridinyl)-3-tetradecyn-1-amine, 9CI*

[131479-33-9]



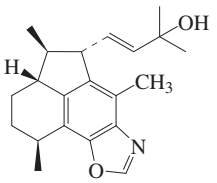
$C_{20}H_{32}N_2O$ 316.486

Alkaloid from an unidentified sponge. Cytotoxic. Oil. λ_{max} 260 (ϵ 2000); 265 (ϵ 6610); 270 (ϵ 2880) (MeOH) (Derep).

Carroll, A.R. *et al., Tetrahedron*, 1990, **46**, 6637 (*isol, uv, ir, pmr, cmr, ms, struct*)

Ileabethoxazole I-27

[890022-30-7]



Relative Configuration

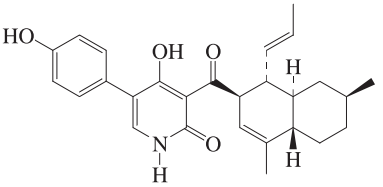
$C_{21}H_{27}NO_2$ 325.45

Alkaloid from *Pseudopterogorgia elisabethae.* Antimycobacterial agent. Pale yellow oil. $[\alpha]_D^{20}$ +6.8 (c, 1 in $CHCl_3$). λ_{max} 225 (ϵ 22200); 277 (ϵ 2300); 288 (ϵ 1800) (MeOH).

Rodriguez, I.I. *et al., Tet. Lett.*, 2006, **47**, 3229-3232 (*isol, pmr, cmr*)

Ilicicolin H, 9CI I-28

[12689-26-8]



$C_{27}H_{31}NO_4$ 433.546

Isol. from *Cylindrocladium ilicicola*. Antifungal antibiotic. Yellow needles (C_6H_6). Mp 144-150°. $[\alpha]_D^{23}$ -17.4. λ_{max} 248 (ϵ 23200); 349 (ϵ 5300) (EtOH) (Derep).

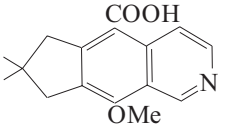
Hayakawa, S. *et al., J. Antibiot.*, 1971, **24**, 653 (*isol*)

Matsumoto, M. *et al., Tet. Lett.*, 1976, 3827 (*ir, uv, ms, nmr, struct, stereochem*)

Tanabe, M. *et al., Tetrahedron*, 1983, **39**, 3569 (*biosynth*)

Illudinine I-29

[18500-63-5]



$C_{16}H_{17}NO_3$ 271.315

Alkaloid from the microfungus *Clitocybe illudens.* Mp 228-229° dec.

Me ester: Mp 83-84°.

Nair, M.S.R. *et al., J.O.C.*, 1969, **34**, 240 (*ir, uv, pmr, struct*)

Wenkert, E. *et al., J.O.C.*, 1973, **38**, 4305 (*synth*)

Woodward, R.B. *et al., J.A.C.S.*, 1977, **99**, 8007 (*synth*)

Girija, T. *et al., J.C.S. Perkin 1*, 1991, 1467 (*synth*)

Shanker, P.S. *et al., Indian J. Chem., Sect. B*, 1993, **32**, 1209 (*synth*)

Teske, J.A. *et al., J.O.C.*, 2008, **73**, 342-345 (*synth*)

Illukumbin I-30

3-(Methylthio)-N-*(2-phenylethenyl)-2-propenamide, 9CI*

$MeSCH{=}^{2}CHCONH^{1'}CH{=}CHPh$

$C_{12}H_{13}NOS$ 219.307

(E,E)-form

Illukumbin A

[152135-69-8] Not yet known as a nat. prod.

N-*Me:* ***Methylillukumbin A***

[152175-17-2]

$C_{13}H_{15}NOS$ 233.334

From leaves of *Glycosmis mauritiana* (Rutaceae). Shows antifungal activity. Mp 83-84°. Originally reported as a cinnamic acid deriv. λ_{max} 222 ; 311 (Et_2O) (Berdy).

(1′Z,2E)-form

Illukumbin B

[152135-60-9]

Isol. from leaves of *Glycosmis mauritiana* (Rutaceae). Exhibits antifungal activity. Mp 120-122°. Originally reported with an isomeric struct. λ_{max} 223 ; 297 (Et_2O) (Berdy).

N-*Me:* ***Methylillukumbin B***

[152175-16-1]

$C_{13}H_{15}NOS$ 233.334

From leaves of *Glycosmis mauritiana* (Rutaceae). Shows antifungal activity. Mp 71-72°. Originally reported as a cinnamic acid deriv. λ_{max} 283 (Et_2O) (Berdy).

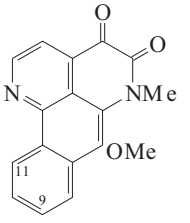
Greger, H. *et al., Tetrahedron*, 1992, **48**, 1209-1218 (*activity*)

Greger, H. *et al., Phytochemistry*, 1993, **34**, 175-179 (*isol, uv, ir, pmr, cmr, ms*)

Hinterberger, S. *et al., Tetrahedron*, 1994, **50**, 6279-6286; 1998, **54**, 487-496 (*struct, synth*)

Imbiline 1 I-31

[139220-13-6]



$C_{17}H_{12}N_2O_3$ 292.293

Alkaloid from aerial parts of *Eupomatia bennettii* and bark of *Eupomatia laurina* (Eupomatiaceae). Red prisms (EtOH). Mp 212-214°.

N-*De-Me:* ***Hadranthine B***

$C_{16}H_{10}N_2O_3$ 278.267

Alkaloid from the stem bark of *Duguetia hadrantha*. Cytotoxic agent. Orange plates ($MeCN/CH_2Cl_2$). Mp 214-216°. λ_{max} 204 (log ϵ 4.3); 242 (log ϵ 3.85); 282 (sh) (log ϵ 3.1); 305 (log ϵ 3.65); 316 (log ϵ 3.68); 460 (log ϵ 3.55) (MeOH).

11-Hydroxy: ***Imbiline 2***

[139220-14-7]

$C_{17}H_{12}N_2O_4$ 308.293

Alkaloid from aerial parts of *Eupo-*

matia bennettii and bark of *Eupomatia laurina* (Eupomatiaceae). Dark red prisms (EtOH). Mp 267-270°.

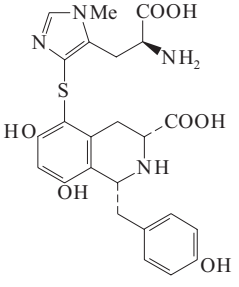
9-Methoxy: ***Imbiline 3***
[139253-59-1]
$C_{18}H_{14}N_2O_4$ 322.32
Alkaloid from aerial parts of *Eupomatia bennettii* and bark of *Eupomatia laurina* (Eupomatiaceae). Fine orange-red needles (petrol). Mp 240-244°.

10-Methoxy: ***Hadranthine A***
$C_{18}H_{14}N_2O_4$ 322.32
Alkaloid from the stem bark of *Duguetia hadrantha*. Antimalarial agent. Light purple plates (CH_2Cl_2). Mp 288-290°. λ_{max} 208 (log ϵ 4.35); 244 (log ϵ 3.9); 315 (log ϵ 3.75); 328 (log ϵ 3.8); 450 (sh) (log ϵ 3.65) (MeOH).

Carroll, A.R. *et al., Aust. J. Chem.*, 1991, **44**, 1615 (*isol, uv, ir, pmr, cmr, ms, struct*)
Muhammad, I. *et al., J. Nat. Prod.*, 2001, **64**, 559-562 (*Hadranthines*)
Kitahara, Y. *et al., Tetrahedron*, 2003, **59**, 2885-2891 (*synth*)

Imbricatine† I-32

[105372-70-1]



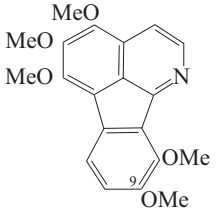
Absolute configuration

$C_{24}H_{26}N_4O_7S$ 514.558
Alkaloid from the starfish *Dermasterias imbricata*. Amorph. solid. First example of a benzyltetrahydroisoquinoline alkaloid from a marine organism, and apparently the first example from a non-plant source.

Pathirana, C. *et al., J.A.C.S.*, 1986, **108**, 8288-8289 (*pmr, cmr, struct*)
Burgoyne, D.L. *et al., Can. J. Chem.*, 1991, **69**, 20-27 (*abs config*)
Ohba, M. *et al., Tetrahedron*, 1999, **55**, 4999-5016 (*deriv, synth*)

Imeluteine I-33

4,5,6,9,10-Pentamethoxyindeno[1,2,3-ij]isoquinoline, 9CI
[38366-03-9]



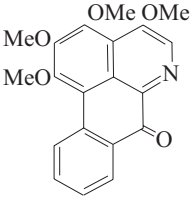
$C_{20}H_{19}NO_5$ 353.374
Alkaloid from the stems of *Abuta imene* and *Abuta rufescens* (Menispermaceae). Yellow prisms (2-propanol/MeOH). Mp 146-147°.

O⁹-De-Me: ***Norimeluteine***
[152606-56-9]
$C_{19}H_{17}NO_5$ 339.347
Alkaloid from the roots and wood of *Cissampelos pareira* (Menispermaceae). Cytotoxic to P388 cells. Yellow powder. λ_{max} 210 (ϵ 25400); 240 (ϵ 22800); 256 (ϵ 23200); 292 (ϵ 18200) (MeOH) (Berdy).

Cava, M.P. *et al., Tetrahedron*, 1975, **31**, 1667 (*isol, uv, ir, pmr, struct*)
Boger, D.L. *et al., J.O.C.*, 1984, **49**, 4050 (*synth, ir, pmr, ms*)
Zhao, B. *et al., Tet. Lett.*, 1991, **32**, 5277 (*synth*)
Morita, H. *et al., Chem. Pharm. Bull.*, 1993, **41**, 1307 (*Norimeluteine*)
Fu, J.-M. *et al., Can. J. Chem.*, 1994, **72**, 227 (*synth, pmr, cmr*)

Imenine I-34

*1,2,3,4-Tetramethoxy-7*H*-dibenzo[*de,g*]-quinolin-7-one, 9CI*
[24268-94-8]

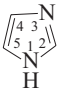


$C_{20}H_{17}NO_5$ 351.358
Alkaloid from the stems of *Abuta imene* and *Abuta rufescens* (*Abuta splendida*)(-Menispermaceae). Yellow needles (MeOH). Mp 206-207°.

Glick, M.D. *et al., Chem. Comm.*, 1969, 1217 (*uv, ir, pmr, struct*)
Cava, M.P. *et al., J.O.C.*, 1973, **38**, 60 (*synth, uv, pmr, ms*)
Cava, M.P. *et al., Tetrahedron*, 1975, **31**, 1667 (*isol, uv, ir, pmr*)
Skiles, J.W. *et al., Can. J. Chem.*, 1979, **57**, 1642 (*isol*)
Menachery, M.D. *et al., J. Nat. Prod.*, 1997, **60**, 1328-1330 (*isol, cmr*)

Imidazole, 9CI, 8CI I-35

1,3-Diazole. Glyoxaline. Iminazole
[288-32-4]



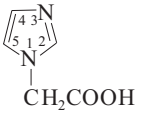
$C_3H_4N_2$ 68.078
In general, imidazoles show 1*H*⇔3*H* tautomerism. 4-Substituted imidazoles are indistinguishable from 5-substituted unless blocked by *N*-substitution. Isol. from the seeds of *Lens culinaris* (lentil). Also present in the seeds of other legumes: *Adenanthera pavonina*, *Amphimas pterocarpoides*, *Cathormion altissimum* (preferred genus name *Albizia*), *Erythrophleum* sp., *Lathyrus rotundifolius*, *Lathyrus sylvestris*, *Macrotyloma uniflorum* (horse gram), *Parkia bicolor*, *Psophocarpus tetragonolobus* (winged bean), *Tephrosia platycarpa*, *Vigna radiata* (mung bean). Used as aq. soln. to accelerate the colour reaction in photometric detn. of Co with porphine. Epoxy resin curing agent. Sol. H_2O, EtOH, Et_2O, Me_2CO. Mp 88-90°. Bp 255°. pK_{a1} 7; pK_{a2} 14.52 (25°,acidic). Sublimes.
▶ LD_{50} (mus, orl) 880 mg/kg. NI3325000

[17009-90-4 , 36877-68-6]

Hayman, A.R. *et al., Phytochemistry*, 1987, **26**, 3247-3248 (*isol, pmr, ms*)

1*H*-Imidazole-1-acetic acid, 9CI I-36

[22884-10-2]



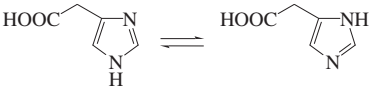
$C_5H_6N_2O_2$ 126.115
Isol. from *Coprinus atramentarius* (common ink cap). Cryst. (MeOH aq.). Mp 268-269° dec.

Et ester: [17450-34-9]
$C_7H_{10}N_2O_2$ 154.168
Mp 50°. Bp_{17} 160°.

Easson, A.P.T. *et al., J.C.S.*, 1932, 1806
List, P.H. *et al., Arzneim.-Forsch.*, 1960, **10**, 34-40 (*isol*)
Birkofer, L. *et al., Chem. Ber.*, 1960, **93**, 2804 (*synth*)
Sunjic, V. *et al., Croat. Chem. Acta*, 1969, **41**, 107-110 (*struct*)

1*H*-Imidazole-4(5)-acetic acid, 9CI I-37

[645-65-8]



$C_5H_6N_2O_2$ 126.115
Isol. from various fungi, e.g. *Polyporus sulphureus, Inocybe patouillardi, Coprinus atramentarius* (common ink cap) and *Phallus impudicus* (common stinkhorn). Cryst. + $1H_2O$. Mp 222° dec.

[51718-81-1]

Tabor, H. *et al., J.A.C.S.*, 1955, **77**, 505-506 (*biochem*)
List, P.H. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1959, **292**, 260-271; 777-787; 1962, **295**, 564-571 (*isol*)
List, P.H. *et al., Hoppe-Seyler's Z. Physiol. Chem.*, 1960, **319**, 17-21; *CA*, **55**, 18901g (*isol*)
Okabe, N. *et al., Acta Cryst. C*, 1999, **55**, 1142-1144 (*cryst struct*)

1*H*-Imidazole-4(5)-ethanol, 9CI I-38

2-(4-Imidazolyl)ethanol. Histaminol
[872-82-2]
$C_5H_8N_2O$ 112.131

Metab. of *Saccharomyces rouxii*; found in urine.

Hydrochloride:
Cryst. (Me_2CO/petrol). Mp 120°.

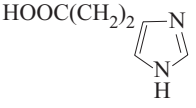
O-*Ac:*
Cryst. (EtOH) (as oxalate salt). Mp 149-152° (oxalate).

Me ether: 4-(2-Methoxyethyl)imidazole
Cryst. ($MeOH/Et_2O$) (as oxalate salt). Mp 158-159° (oxalate).

LaRue, T. *et al., Experientia*, 1966, **22**, 729
Schunack, W. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1974, **307**, 517 (*synth*)

1*H*-Imidazole-4(5)-propanoic acid, 9CI I-39

3-(4-Imidazolyl)propionic acid
[1074-59-5]



$C_6H_8N_2O_2$ 140.141
Isol. from the fungus *Coprinus atramentarius* (common ink cap). Also in *Ustilago maydis*. Cryst. (1-butanol aq.). Mp 206-208°.

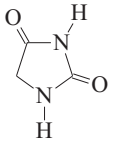
Me ester: [31434-93-2]
$C_7H_{10}N_2O_2$ 154.168
Cryst. (Me_2CO) (as hydrochloride). Mp 106-107° (hydrochloride).

Et ester: [52237-38-4]
$C_8H_{12}N_2O_2$ 168.195
$Bp_{0.05}$ 143-152°.

Windaus, A. *et al., Ber.*, 1910, **43**, 499
Akabori, S. *et al., Ber.*, 1933, **66**, 156
List, P.H. *et al., Hoppe-Seyler's Z. Physiol. Chem.*, 1960, **319**, 17 (*isol*)
Schunack, W. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1974, **307**, 517

2,4-Imidazolidinedione, 9CI I-40

Hydantoin. Diketotetrahydroglyoxaline. Glycollylurea. 2,4-Dioxoimidazolidine. 2,4(5)-Dihydroxyimidazole
[461-72-3]



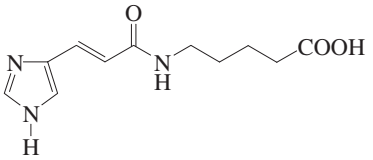
$C_3H_4N_2O_2$ 100.077
Present in tobacco smoke. Needles (MeOH). Spar. sol. H_2O, sol. alkalis. Mp 217-220°. pK_{a1} 8.93 (25°).

▶ Exp. teratogen. MT8210000

3-Me: 3-Methyl-2,4-imidazolidinedione. 3-Methylhydantoin
[6843-45-4]
$C_4H_6N_2O_2$ 114.104
Isol. from an endophytic mangrove fungus No. 1839. Prisms (H_2O). Sol. H_2O. Mp 155-157°. Sublimes.

Chen, G. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2006, **42**, 138-141 (*3-Me, isol*)

5-[[3-(1*H*-Imidazol-4-yl)propenoyl]amino]pentanoic acid I-41



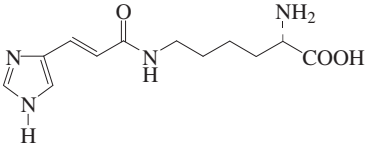
$C_{11}H_{15}N_3O_3$ 237.258

(E)-form
Isol. from the ascidian *Atriolum robustum*. Amorph. solid. λ_{max} 277 (ϵ 39500) (H_2O).

Kehraus, S. *et al., J. Med. Chem.*, 2004, **47**, 2243-2255 (*isol, pmr, cmr*)

N^6-[3-(1*H*-Imidazol-4-yl)propenoyl]lysine I-42

2-Amino-6-[[3-(1H-imidazol-4-yl)-2-propenoyl]amino]hexanoic acid



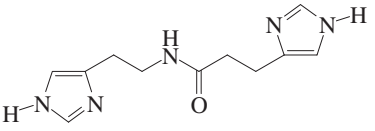
$C_{12}H_{18}N_4O_3$ 266.299

(S,E)-form
Isol. from the ascidian *Atriolum robustum*. Amorph. solid. $[\alpha]_D^{25}$ -9 (c, 1.7 in H_2O). λ_{max} 280 (ϵ 25500) (H_2O).

Kehraus, S. *et al., J. Med. Chem.*, 2004, **47**, 2243-2255 (*isol, pmr, cmr*)

N^{α}-[3-(1*H*-Imidazol-4-yl)propenyl]histamine I-43

3-(1H-Imidazol-4-yl)-N-[2-(1H-imidazol-4-yl)ethyl]propanamide
[50767-80-1]

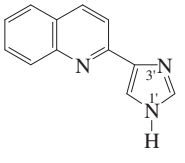


$C_{11}H_{15}N_5O$ 233.272
Isol. from the Philippine gastropod *Drupa concatenata*. Cryst. (MeOH). Mp 163-164°.

Roseghini, M. *et al., Experientia*, 1973, **29**, 940-941 (*isol*)
Baures, P.W. *et al., Molecules*, 2002, **7**, 813-816 (*synth, pmr, cmr*)

2-(1*H*-Imidazol-4-yl)quinoline, 9CI I-44

Normacrorine
[2054-67-3]



$C_{12}H_9N_3$ 195.223
Alkaloid from the aerial parts of *Macrorungia longistrobus* (preferred genus name *Anisotes*) (Acanthaceae). Plates (Me_2CO/hexane). Mp 156-157°. pK_a 5.36 (50% MeOH).

Picrate:
Yellow needles (MeOH). Mp 211-212° dec.

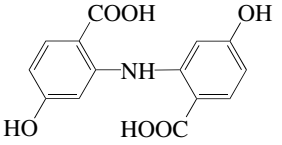
1′-Me: 2-(1-Methyl-1H-imidazol-4-yl)-quinoline, 9CI. ***Macrorine***
[2552-96-7]
$C_{13}H_{11}N_3$ 209.25
Alkaloid from the aerial parts of *Macrorungia longistrobus* (Acanthaceae). Needles (Me_2CO). Mp 160°. pK_a 4.87 (50% MeOH).

3′-Me: 2-(1-Methyl-1H-imidazol-5-yl)-quinoline. ***Isomacrorine***
[2552-97-8]
$C_{13}H_{11}N_3$ 209.25
Alkaloid from the aerial parts of *Macrorungia longistrobus* (Acanthaceae). Needles (hexane/Me_2CO). Mp 110° (105-107°). pK_a 5.09 (50% EtOH).

Arndt, R.R. *et al., J.C.S.*, 1964, 5969 (*Macrorine, Isomacrorine*)
Jordaan, A. *et al., J.C.S.*, 1965, 3001 (*Normacrorine*)
Joynt, V.P. *et al., J.C.S.(B)*, 1966, 980 (*ms*)
Wuonola, M.A. *et al., Tetrahedron*, 1976, **32**, 1085 (*synth, uv, ir, pmr, ms*)

2,2′-Iminobis[4-hydroxybenzoic acid], 9CI I-45

5,5′-Dihydroxydiphenylamine-2,2′-dicarboxylic acid. ***Dianthramine***
[136945-65-8]

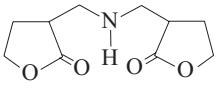


$C_{14}H_{11}NO_6$ 289.244
Alkaloid from *Dianthus caryophyllus* infected with *Fusarium oxysporum* f. sp. *dianthi*. λ_{max} 221 (sh) ; 255 ; 283 (sh) (EtOH).

Niemann, G.J. *et al., Planta Med.*, 1990, **56**, 564 (*isol*)
Niemann, G.J. *et al., Physiol. Mol. Plant Pathol.*, 1991, **38**, 417-432 (*isol*)

3,3′-[Iminobis(methylene)]-bis-2(3*H*)furanone, 9CI I-46

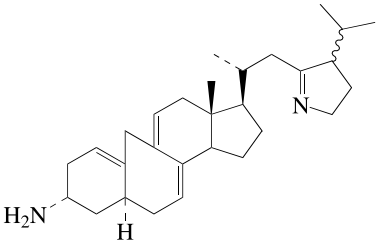
Di(α-methylene-γ-butyrolactonyl)amine
[96562-86-6]



$C_{10}H_{15}NO_4$ 213.233
Isol. from *Garnieria spathulaefolia* (Proteaceae). Oil which partially cryst. on standing. Artifact.

Lounasmaa, M. *et al., Heterocycles*, 1985, **23**, 939 (*isol, ir, pmr, cmr, ms, struct*)

23,29-Imino-*B*(9*a*)-homo-19-norstigmasta-1(10),7,9(11),23(*N*)-tetraen-3-amine I-47



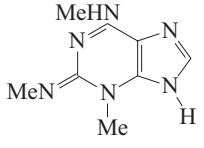
$C_{29}H_{44}N_2$ 420.68

(3α,5α,24ξ)-*form* [215245-26-4]
Alkaloid from the marine sponge *Corticium* sp. $[\alpha]_D$ -50 (c, 0.01 in $CHCl_3$). λ_{max} 207 (log ϵ 3.62); 248 (log ϵ 3.72) (MeOH).

9,11-Dihydro: ***23,29-Imino-B(9a)-homo-19-norstigmasta-1(10),7,23(N)-trien-3-amine***
[215245-28-6]
$C_{29}H_{46}N_2$ 422.696
Alkaloid from *Corticium* sp. $[\alpha]_D$ -8.1 (c, 0.01 in $CHCl_3$). λ_{max} 210 (log ϵ 3.74); 240 (log ϵ 3.5) (MeOH).

De Marino, S. *et al., Tet. Lett.*, 1998, **39**, 7611-7614 (*isol, uv, pmr, cmr*)

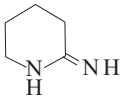
2-Iminomethyl-3-methyl-6-methylamino-9*H*-purine I-48
*3,7-Dihydro-*N*,3-dimethyl-2-(methylimino)-2*H*-purin-6-amine, 9CI*
[112058-06-7]



$C_8H_{12}N_6$ 192.223
Isol. from the sea-anemone *Sagartia troglodytes*. Phytotoxic agent. Cryst. (MeOH). Mp 226-227°. λ_{max} 288 (ϵ 14000) (MeOH) (Berdy).

De Rosa, S. *et al., J. Nat. Prod.*, 1987, **50**, 876 (*isol, uv, pmr, ms, cryst struct*)

2-Iminopiperidine I-49
2-Piperidinimine, 9CI



$C_5H_{10}N_2$ 98.147
Prod. by *Streptomyces atroolivaceus* 70757. NO formation inhibitor. Mp 208-209° dec. Bp 121-135°. Sample not pure.

Hydrochloride: [16011-96-4]
Mp 159-161°.

▶ TN0404000

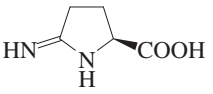
Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 825C (*ir*)

Renault, J. *et al., CA*, 1956, **50**, 9409g (*synth*)

Moriconi, E.J. *et al., J.O.C.*, 1968, **33**, 2109-2111 (*synth, ir*)

Japan. Pat., 1996, 2 08 475; *CA*, **125**, 238709n (*isol*)

5-Imino-2-pyrrolidinecarboxylic acid I-50
5-Iminoproline, 9CI



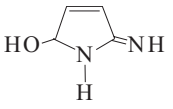
$C_5H_8N_2O_2$ 128.13

(S)-form

N-*Me: 5-Imino-1-methyl-2-pyrrolidinecarboxylic acid. 5-Imino-1-methylproline*
[915127-35-4]
$C_6H_{10}N_2O_2$ 142.157
Isol. from *Cliona tenuis*. $[\alpha]_D$ -10.1 (c, 0.1 in H_2O) (as Me ester). Originally assigned as struct. of Pyrostatin B.

Castellanos, L. *et al., Org. Lett.*, 2006, **8**, 4967-4970 (*isol, synth, pmr, cmr, abs config*)

5-Imino-2*H*-pyrrol-2-ol, 9CI I-51
2-Hydroxy-5-iminoazacyclopent-3-ene
[71765-74-7]



$C_4H_6N_2O$ 98.104
Pyrroline antibiotic. Isol. from *Streptoverticillium parvisporogenes*. Weakly active against gram-positive and -negative bacteria. Sol. H_2O. λ_{max} 205 (ϵ 11300); 240 (ϵ 1580) (hydrochloride salt in H_2O) (Derep). λ_{max} 205 (ϵ 11300); 240 (ϵ 1580) (H_2O) (Berdy).

▶ LD_{50} (mus, ivn) 100 - 200 mg/kg.

Hydrochloride: [71765-75-8]
Needles (propanol). Mp 108° dec. $[\alpha]_D^{24}$ 0 (c, 0.8 in H_2O).

▶ UY8691300

Okuyama, A. *et al., J. Antibiot.*, 1979, **32**, 768 (*isol, uv, ir, pmr*)

Imperoline I-52
$C_{27}H_{45}NO_3$ 431.657
Steroidal alkaloid. Struct. unknown. Alkaloid from *Fritillaria imperialis* var. *lutea* (Liliaceae). Mp 201-204° (as di-Ac). Redn. prod. of Imperonine, I-53.

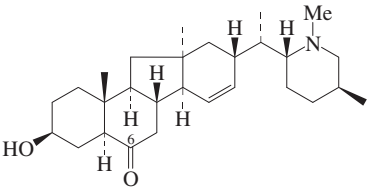
Paul, L. *et al., Chem. Ber.*, 1958, **91**, 1968

Imperonine I-53
$C_{27}H_{43}NO_3$ 429.642
Steroidal alkaloid. Prob. the ketone corresponding to Imperoline, I-52. Struct. unknown. Alkaloid from *Fritillaria imperialis* (Liliaceae). Mp 237-238°. $[\alpha]_D^{23}$ -8 ($CHCl_3$).

Ac: Mp 208-209°.

Paul, L. *et al., Chem. Ber.*, 1958, **91**, 1968

Impranine I-54
[571167-90-3]

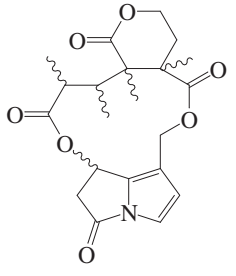


$C_{28}H_{45}NO_2$ 427.669
Alkaloid from the bulbs of *Fritillaria imperialis*. Amorph. powder. $[\alpha]_D^{25}$ +28 (c, 0.05 in MeOH). λ_{max} 289 (log ϵ 2.47) (MeOH).

6β-Alcohol: ***Dihydroimpranine***
[571167-91-4]
$C_{28}H_{47}NO_2$ 429.685
Alkaloid from the bulbs of *Fritillaria imperialis*. Amorph. powder. $[\alpha]_D^{25}$ -32 (c, 0.08 in MeOH).

Akhtar, M.N. *et al., Phytochemistry*, 2003, **63**, 115-122 (*isol, pmr, ms*)

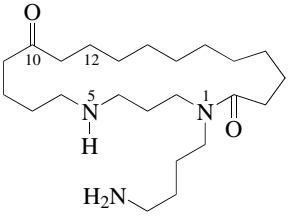
Inaequidenine, 9CI I-55
[64215-80-1]



$C_{21}H_{25}NO_7$ 403.431
Alkaloid from *Senecio inaequidens* roots (Asteraceae). Oil.

Bohlmann, F. *et al., Phytochemistry*, 1977, **16**, 965 (*isol, ms*)

Inandenin-10-one I-56
[122890-12-4]
[122890-15-7]



$C_{23}H_{45}N_3O_2$ 395.627
Alkaloid from the bark of *Oncinotis nitida*. Oil.

10-Alcohol: ***Inandenin-10-ol***
[122890-13-5 , 122890-14-6]
$C_{23}H_{47}N_3O_2$ 397.643
From *Oncinotis nigra*. Inseparable mixt. with other Inandeninols.

10-Alcohol, 11-hydroxy: ***Inandenin-10,11-diol***
$C_{23}H_{47}N_3O_3$ 413.643
From bark of *Oncinotis nitida*. Oil.

Badawi, M.M. *et al., Pure Appl. Chem.*, 1973, **33**, 81 (*occur, Inandenin-10-one, Inandenin-10,11-diol*)
Guggisberg, A. *et al., Alkaloids (Academic Press)*, 1983, **22**, 85 (*occur, Inandenin-10-ol*)
Bienz, S. *et al., Helv. Chim. Acta*, 1988, **71**, 1708 (*synth, Inandenin-10-one, Inandenin-10-ol*)

Inandenin-11-one I-57

$C_{23}H_{45}N_3O_2$ 395.627
Alkaloid from leaves of *Oncinotis tenuiloba*. Tentative identification.

11-Alcohol: ***Inandenin-11-ol***
$C_{23}H_{47}N_3O_2$ 397.643
Alkaloid from *Oncinotis nigra*. Inseparable mixt. with other Inandeninols.

Guggisberg, A. *et al., Alkaloids (Academic Press)*, 1983, **22**, 85 (*occur, Inandenin-11-ol*)
Doll, M.K.-H. *et al., Phytochemistry*, 1995, **39**, 689 (*occur*)

Inandenin-12-one I-58

Inandenin A
[29579-65-5]
[29579-67-7]

$C_{23}H_{45}N_3O_2$ 395.627
Alkaloid from leaves of *Oncinotis inandensis, Oncinotis nitida* and *Oncinotis tenuiloba*. Noncryst. Usually isol. as an inseparable mixt. with Inandenin-13-one, I-59. First successful separation of the mixt. achieved in 1995 via the N,N′-diacetate derivs.

12-Alcohol: ***Inandenin-12-ol***
$C_{23}H_{47}N_3O_2$ 397.643
Alkaloid from *Oncinotis nigra* and leaves of *Oncinotis tenuiloba*. Isol. and characterised as the N,N′-diacetate.

Veith, H.J. *et al., Helv. Chim. Acta*, 1970, **53**, 1355 (*isol, uv, ir, pmr, ms, struct*)
Guggisberg, A. *et al., Helv. Chim. Acta*, 1976, **59**, 3026 (*struct*)
Trost, B.M. *et al., J.A.C.S.*, 1982, **104**, 6881 (*synth*)
Guggisberg, A. *et al., Alkaloids (Academic Press)*, 1983, **22**, 85 (*occur, Inandenin-12-ol*)
Doll, M.K.-H. *et al., Phytochemistry*, 1995, **39**, 689 (*isol, Inandenin-12-one, Inandenin-12-ol*)

Inandenin-13-one I-59

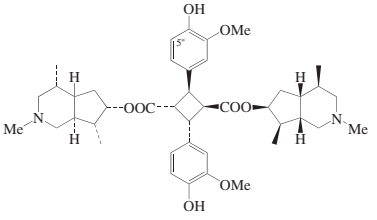
Inandenin B
[29579-66-6]
$C_{23}H_{45}N_3O_2$ 395.627
Alkaloid from leaves of *Oncinotis inandensis, Oncinotis nitida* and *Oncinotis tenuiloba*. See note under Inandenin-12-one, I-58.

13-Alcohol: ***Inandenin-13-ol***
[29579-86-0]
$C_{23}H_{47}N_3O_2$ 397.643
Alkaloid from *Oncinotis nigra* and leaves of *Oncinotis tenuiloba*. Isol. and characterised as the N,N′-diacetate.

Veith, H.J. *et al., Helv. Chim. Acta*, 1970, **53**, 1355 (*isol, uv, ir, pmr, ms, struct*)
Guggisberg, A. *et al., Helv. Chim. Acta*, 1976, **59**, 3026 (*struct*)
Guggisberg, A. *et al., Alkaloids (Academic Press)*, 1983, **22**, 85 (*occur, Inandenin-13-ol*)
Doll, M.K.-H. *et al., Phytochemistry*, 1995, **39**, 689 (*isol, Inandenin-13-one, Inandenin-13-ol*)

Incarvillateine I-60

[129748-10-3]



Relative Configuration

$C_{42}H_{58}N_2O_8$ 718.929
Alkaloid from the aerial parts of *Incarvillea sinensis*. Antinociceptive agent. Cryst. (MeOH). Mp 217.2-217.7°. $[\alpha]_D$ -10.8 (MeOH).

N-*Oxide:* ***Incarvillateine* N-*oxide***
[185054-71-1]
$C_{42}H_{58}N_2O_9$ 734.928
Alkaloid from *Incarvillea sinensis*. Powder. $[\alpha]_D^{18}$ -19.2 (c, 0.5 in MeOH). Obt. as an inseparable mixt. of the two possible *N*-oxides.

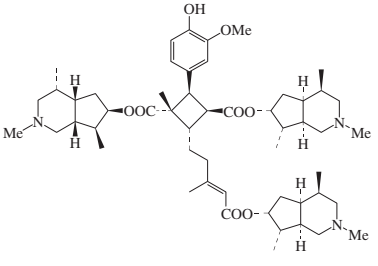
5′′-Methoxy: ***Methoxyincarvillateine***
[185054-70-0]
$C_{43}H_{60}N_2O_9$ 748.955
Alkaloid from *Incarvillea sinensis*. Powder. $[\alpha]_D^{20}$ -4 (c, 0.6 in $CHCl_3$).

Mono(demethoxy): ***Incarvillateine D***
[244259-23-2]
$C_{41}H_{56}N_2O_7$ 688.903
Alkaloid from *Incarvillea sinensis*. Powder. $[\alpha]_D^{16}$ -5.1 (c, 0.3 in $CHCl_3$).

Bis(demethoxy): ***Incarvillateine C***
[244259-22-1]
$C_{40}H_{54}N_2O_6$ 658.876
Alkaloid from *Incarvillea sinensis*. Powder. $[\alpha]_D^{17}$ -3.2 (c, 0.3 in $CHCl_3$).

Chi, Y.-M. *et al., Phytochemistry*, 1990, **29**, 2376-2378 (*isol, cryst struct*)
Chi, Y.-M. *et al., Phytochemistry*, 1997, **46**, 763-769 (*N-oxide, Methoxyincarvillateine*)
Nakamura, M. *et al., J. Nat. Prod.*, 1999, **62**, 1293-1294 (*activity*)
Nakamura, M. *et al., Phytochemistry*, 1999, **51**, 595-597 (*Incarvillaeines C,D*)
Ichikawa, M. *et al., J.A.C.S.*, 2004, **126**, 16553-16558 (*synth*)
Chi, Y.-M. *et al., Chem. Pharm. Bull.*, 2005, **53**, 1472-1474 (*isol, pmr, cmr, cryst struct*)
Tsai, A.S. *et al., J.A.C.S.*, 2008, **130**, 6316-7317 (*synth*)

Incarvillateine E I-61

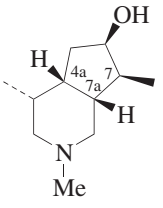


$C_{53}H_{81}N_3O_8$ 888.238
Alkaloid from the aerial parts of *Incarvillea sinensis*. Powder. $[\alpha]_D^{23}$ -6.4 (c, 0.32 in $CHCl_3$).

Chi, Y.-M. *et al., Chem. Pharm. Bull.*, 2005, **53**, 1178-1179 (*isol, pmr, cmr, ms*)

Incarvilline I-62

6-Hydroxyskytanthine
[145307-22-8]



Absolute Configuration

$C_{11}H_{21}NO$ 183.293
Numbering systems vary. Standardised here on that shown. Alkaloid from aerial parts of *Incarvillea sinensis* (Bignoniaceae). Mp 93.4-93.8°. $[\alpha]_D^{24}$ -8 (c, 1.24 in $CHCl_3$).

O-*(8-Hydroxy-2,6-dimethyl-2-octenoyl)*(E-*):* ***Incarvine D***
[185123-29-9]
$C_{21}H_{37}NO_3$ 351.528
From aerial parts of *Incarvillea sinensis* (Bignoniaceae). Powder. $[\alpha]_D^{26}$ -4.2 (c, 0.6 in $CHCl_3$).

O-*(8-Carboxy-3,7-dimethyl-2,6-octadienoyl):* ***Incarvine B***
[168009-88-9]
$C_{21}H_{33}NO_4$ 363.496
From aerial parts of *Incarvillea sinensis* (Bignoniaceae). Powder. $[\alpha]_D$ +14 (c, 0.45 in $CHCl_3$). Ester of Incarvilline with 2,6-Dimethyl-2,6-octadienedioic acid.

O-*(4-Hydroxy-3-methoxy*-E-*cinnamoyl):* ***Incarvine C****. Incarvilline 7*-O-*ferulate*
[168009-89-0]
$C_{21}H_{29}NO_4$ 359.464
From aerial parts of *Incarvillea sinensis* (Bignoniaceae). Powder. $[\alpha]_D$ -20.8 (c, 0.46 in $CHCl_3$).

*4*a*,5-Didehydro:* ***6-Hydroxydehydroskytanthine***
$C_{11}H_{19}NO$ 181.277
Alkaloid from fruits of *Tecoma stans* (Bignoniaceae). Oil. Stereochem. uncertain. Called 7-hydroxy in the lit.

*4*a*-Hydroxy:* ***4*a*-Hydroxyincarvilline***
[185054-68-6]
$C_{11}H_{21}NO_2$ 199.292
Alkaloid from *Incarvillea sinensis*. Powder. $[\alpha]_D$ -6.1 (c, 1.5 in $CHCl_3$).

*4*a*,7*a*-Diepimer:* ***Kinabalurine F***
[190962-58-4]
$C_{11}H_{21}NO$ 183.293
Alkaloid from *Kopsia pauciflora*. Light yellow oil. $[\alpha]_D$ +56 (c, 0.02 in $CHCl_3$).

*7,7*a-*Diepimer:* ***Kinabalurine A***
[183815-45-4]
$C_{11}H_{21}NO$ 183.293
Alkaloid from the leaves of *Kopsia pauciflora* (Apocynaceae). Plates. Mp 92-93°. $[\alpha]_D$ +26 (c, 0.35 in $CHCl_3$).

*7,7*a-*Diepimer, 6-ketone:* ***Kinabalurine B***
[190961-66-1]
$C_{11}H_{19}NO$ 181.277
Alkaloid from the leaves of *Kopsia pauciflora* (Apocynaceae). Light yellow oil. $[\alpha]_D$ -100 (c, 0.02 in $CHCl_3$).

*7,7*a-*Diepimer, 6-ketone,* N-*de-Me:* ***Kinabalurine C***
[190961-75-2]
$C_{10}H_{17}NO$ 167.25
Alkaloid from the leaves of *Kopsia pauciflora*. Light yellow oil. $[\alpha]_D$ +25 (c, 0.09 in $CHCl_3$).

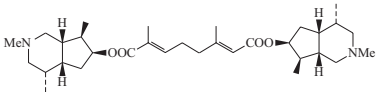
*4,4*a*,7-Triepimer:* ***Kinabalurine D***
[190962-01-7]
$C_{11}H_{21}NO$ 183.293
Alkaloid from *Kopsia pauciflora*. Light yellow oil. $[\alpha]_D$ -13 (c, 0.3 in $CHCl_3$).

*4,4*a*,7-Triepimer, 6-ketone:* ***Kinabalurine E***
[190962-45-9]
$C_{11}H_{19}NO$ 181.277
Alkaloid from the leaves of *Kopsia pauciflora*. Light yellow oil. $[\alpha]_D$ +134 (c, 0.06 in $CHCl_3$).

Chi, Y.-M. *et al., Phytochemistry*, 1992, **31**, 2930; 1995, **39**, 1485 (*isol, ir, pmr, cmr, ms*)
Lins, A.P. *et al., Phytochemistry*, 1993, **34**, 876 (*6-Hydroxydehydroskytanthine*)
Kam, T.-S. *et al., Nat. Prod. Lett.*, 1996, **8**, 231-235 (*pmr, cmr, cryst struct, Kinabalurine A*)
Chi, Y.-M. *et al., Chem. Pharm. Bull.*, 1997, **45**, 495-498 (*cryst struct, abs config*)
Kam, T.-S. *et al., J. Nat. Prod.*, 1997, **60**, 673 (*Kinabalurines, isol, pmr, cmr, ms*)
Chi, Y.-M. *et al., Phytochemistry*, 1997, **46**, 763-769 (*Incarvine D*)
Ichikawa, M. *et al., J.A.C.S.*, 2004, **126**, 16553-16558 (*synth*)
Honda, T. *et al., J.O.C.*, 2007, **72**, 6541-6547 (*synth*)

Incarvine A I-63

[168434-17-1]



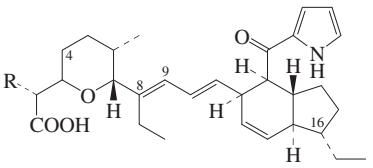
$C_{32}H_{52}N_2O_4$ 528.774
Alkaloid from aerial parts of *Incarvillea sinensis* (Bignoniaceae). Powder. $[\alpha]_D$ -0.9 ($CHCl_3$).

N-*Oxide:* ***Incarvine A* N-*oxide***
$C_{32}H_{52}N_2O_5$ 544.773
Alkaloid from *Incarvillea sinensis* (Bignoniaceae). Powder. $[\alpha]_D^{27}$ -14.8 (c, 0.4 in $CHCl_3$). Obt. as an inseparable mixture of the two possible *N*-oxides.

Chi, Y.-M. *et al., Phytochemistry*, 1995, **40**, 353 (*isol, pmr, cmr, ms, struct*)
Chi, Y.-M. *et al., Phytochemistry*, 1997, **46**, 763-769 (*N-oxide*)

Indanomycin I-64

X 14547A. Antibiotic X 14547A
[66513-28-8]



R = CH_3

$C_{31}H_{43}NO_4$ 493.685
Polyether-type antibiotic. Prod. by *Streptomyces antibioticus*, *Streptomyces galbus* and *Streptomyces griseofuscus*. Ionophore active against gram-positive bacteria, shows antihypertensive props. Growth promotor for ruminants. Insecticide. Sol. MeOH, DMF, DMSO, Et_2O; poorly sol. H_2O. Mp 138-141°. $[\alpha]_D$ -328 (c, 1 in $CHCl_3$). λ_{max} 244 (ϵ 32000); 291 (ϵ 16100) (EtOH) (Derep). λ_{max} 244 (ϵ 32000); 291 (ϵ 16100) (EtOH) (Berdy). λ_{max} 245 (24000); 292 (12500) (no solvent reported).
▶ LD_{50} (mus, orl) 129 mg/kg. UP6100000

Me ester: [76567-01-6]
Glassy solid. $[\alpha]_D^{21}$ -236 (c, 2.55 in $CHCl_3$).

8,9-Dihydro: ***8,9-Dihydroindanomycin***
$C_{31}H_{45}NO_4$ 495.701
Prod. by *Streptomyces galbus*.

16-Deethyl: ***16-Deethylindanomycin***. *A 83094A. Antibiotic A 83094A. Omomycin*
[117615-33-5]
$C_{29}H_{39}NO_4$ 465.631
From *Streptomyces setonii*. Active against gram-positive bacteria and coccidia. Pale yellow powder. Sol. MeOH, C_6H_6; poorly sol. H_2O, hexane. λ_{max} 244 (ϵ 32000); 291 (ϵ 16100) (EtOH) (Derep).
▶ LD_{50} (mus, ipr) 196.4 mg/kg, LD_{50} (mus, orl) 630 mg/kg. UP6120000

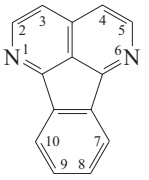
Homologue (R = CH_2CH_3): ***Homoindanomycin***
[129258-44-2]
$C_{32}H_{45}NO_4$ 507.712
Prod. by *Streptomyces galbus*. λ_{max} 244 (E1%/1cm 608); 290 (E1%/1cm 325) (MeOH) (Berdy).

Homologue (R = CH_2CH_3), 4-methyl: ***4-Methylhomoindanomycin***
$C_{33}H_{47}NO_4$ 521.739
Prod. by *Streptomyces galbus*. Cryst. λ_{max} 246 ; 291 (MeOH). λ_{max} 246 ; 291 (MeOH) (Berdy).

Ger. Pat., 1978, 2 735 456; *CA*, **89**, 40863c (*isol*)
Westley, J.W. *et al., J.A.C.S.*, 1978, **100**, 6784 (*struct*)
Liu, C.-M. *et al., J. Antibiot.*, 1979, **32**, 95 (*isol*)
Westley, J.W. *et al., J. Antibiot.*, 1979, **32**, 100 (*isol*)
Edwards, M.P. *et al., J.C.S. Perkin 1*, 1984, 1761 (*synth*)
Nicolaou, K.C. *et al., J.O.C.*, 1985, **50**, 1440 (*synth*)
Burke, S.D. *et al., Tet. Lett.*, 1985, **26**, 1163 (*synth, bibl*)
Larsen, S.H. *et al., J. Antibiot.*, 1988, **41**, 1170 (*deriv*)
Hungarian Pat., 1989, 49 909; *CA*, **113**, 130720x (*Homoindanomycin, Dihydroindanomycin, Methylhomoindanomycin*)
Burke, S.D. *et al., J.O.C.*, 1994, **59**, 332 (*synth*)

Indeno[1,2,3-*ij*][2,7]naphthyridine, 9CI I-65

1,6-Diazafluoranthene. ***Eupolauridine****. Canangine. EL Base 1*
[58786-39-3]



$C_{14}H_8N_2$ 204.231
Alkaloid from the bark of *Eupomatia laurina*, *Cleistopholis patens* and *Cananga odorata* (ylang ylang) (Eupomatiaceae, Annonaceae). Shows antiyeast activity. Mp 156-157°. λ_{max} 228 (log ϵ 4.33); 233 (log ϵ 4.34); 278 (log ϵ 4.23); 288 (log ϵ 4.2); 296 (sh) (log ϵ 3.98); 335 (log ϵ 3.57); 350 (log ϵ 3.81); 367 (log ϵ 3.8) (EtOH).

Hydrochloride:
Orange cryst. (MeOH/Et_2O). Mp 248-249° dec.

N-*Oxide:* ***Eupolauridine* N-*oxide***
[96889-95-1]
$C_{14}H_8N_2O$ 220.23
Alkaloid from the root bark of *Cleistopholis patens* (Annonaceae). Yellow needles ($CHCl_3$). Mp 186-188°.

Di-N-*Oxide: Eupolauridine-di*-N-*oxide*
[96889-96-2]
$C_{14}H_8N_2O_2$ 236.229
Alkaloid from *Cleistopholis patens*. Orange plates ($CHCl_3$). Mp 190-195°. λ_{max} 230 (log ϵ 3.96); 250 (log ϵ 4.24); 295 (log ϵ 4.3); 405 (log ϵ 3.62); 440 (log ϵ 3.64) (MeOH).

N-*Me: 1-Methylindeno[1,2,3-*ij*][2,7]-naphthyridinium*
[58786-40-6]
$C_{15}H_{11}N_2^{\oplus}$ 219.265
Red prismatic needles (MeOH) (as iodide). Mp 267-269° dec. (iodide).

3-Methoxy: ***3-Methoxyeupolauridine***
[139220-17-0]
$C_{15}H_{10}N_2O$ 234.257
Alkaloid from bark of *Eupomatia laurina* (Eupomatiaceae). Yellow needles (petrol). Mp 166-168°. λ_{max} 216 (ϵ 21880); 226 (ϵ 21380); 237 (ϵ 23440); 285 (ϵ 9120); 298 (ϵ 12020); 306 (ϵ 12880); 320 (ϵ 6760); 341 (ϵ 3800); 358 (ϵ 6030); 376 (ϵ 6310) (EtOH).

Bowden, B.F. *et al., Aust. J. Chem.*, 1972, **25**, 2659-2669; 1975, **28**, 2681-2701 (*isol, uv, pmr, ms, struct, synth*)
Leboeuf, M. *et al., Ann. Pharm. Fr.*, 1975, **33**, 43-47 (*isol*)
Leboeuf, M. *et al., J. Nat. Prod.*, 1976, **39**, 459-460 (*uv, ir, pmr, ms, struct*)
Taylor, W.C. *et al., Aust. J. Chem.*, 1984, **37**, 1097-1104 (*biosynth*)

Waterman, P.G. *et al., Phytochemistry*, 1985, **24**, 523-527 (*oxide, dioxide*)
Hufford, C.D. *et al., J. Nat. Prod.*, 1987, **50**, 961-964 (*activity*)
Carroll, A.R. *et al., Aust. J. Chem.*, 1991, **44**, 1615-1626 (*3-Methoxyeupolauridine*)
Tong, T.H. *et al., Synth. Commun.*, 1992, **22**, 1773-1782 (*synth*)

Indicamine† I-66

$C_{14}H_{23}NO$ 221.342

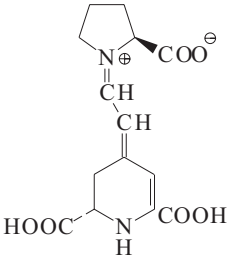
Monoterpene alkaloid. Struct. unknown. Alkaloid from *Pedicularis dolichorrhiza*, *Plantago albicans*, *Plantago indica*, *Plantago notata*, *Plantago ovata* and *Plantago psyllium* (African plantain) (Scrophulariaceae, Plantaginaceae). Mp 127-128° (as picrate).

Danilova, A.V. *et al., Zh. Obshch. Khim.*, 1952, **22**, 2237-2239; *CA*, **48**, 691c (*isol*)
Abdusamatov, A. *et al., Khim. Prir. Soedin.*, 1968, **4**, 195; *Chem. Nat. Compd. (Engl. Transl.)*, 1968, **4**, 168
Karawya, M.S. *et al., U. A. R. J. Pharm. Sci.*, 1971, **12**, 53-61; *CA*, **78**, 13729e (*isol*)

Indicaxanthin I-67

4-[2-(2-Carboxy-1-pyrrolidinyl)ethenyl]-2,3-dihydro-2,6-pyridinedicarboxylic acid, 9CI

[2181-75-1]



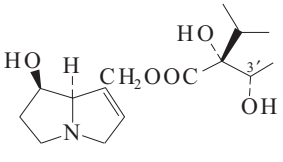
$C_{14}H_{16}N_2O_6$ 308.29

Constit. of the fruits of *Opuntia ficus-indica* (Indian fig), flowers of *Mirabilis jalapa* and petals of *Portulaca grandiflora* (Cactaceae, Nyctaginaceae, Portulaceae). Pigment of the small betaxanthin group which replace anthocyanins in some plants of the Centrospermae. Orange cryst. (H_2O). Mp 160-162° dec. $[\alpha]_D^{20}$ +394 (c, 1 in 0.1*M* phosphate buffer; pH 7). pK_a 3.3. Undergoes rapid E/Z-isomerism in soln.

Piattelli, M. *et al., Tetrahedron*, 1964, **20**, 2325 (*isol, struct, abs config*)
Piattelli, M. *et al., Phytochemistry*, 1965, **4**, 817 (*isol*)
Piattelli, M. *et al., Phytochemistry*, 1972, **11**, 2499 (*biosynth*)
Wyler, H. *et al., Helv. Chim. Acta*, 1984, **67**, 1793 (*pmr*)
Stintzing, F.C. *et al., Helv. Chim. Acta*, 2006, **89**, 1008-1016 (*pmr, cmr*)

Indicine† I-68

[480-82-0]



$C_{15}H_{25}NO_5$ 299.366

Ester of Retronecine, in T-188 with Trachelanthic acid. Diastereoisomeric with Intermedine, I-160 and Echinatine, E-12. Alkaloid from *Heliotropium indicum* (Boraginaceae) and twigs of *Messerschmidia argentea*. Shows strong antitumour activity. . Prisms (petrol). Mp 97-98°. $[\alpha]_D$ +22.3 (c, 1.65 in EtOH). V. difficult to crystallise.

▶ EK7789900

Picrate:
Leaflets (C_6H_6). Mp 81-86° Mp 90° (dimorph.).

Methiodide:
Blades (EtOH/Et_2O). Mp 159-160°. $[\alpha]_D$ +12.5 (c, 4.32 in EtOH).

N-*Oxide:* ***Indicine* N-*oxide***. *NSC 132319*
[41708-76-3]
$C_{15}H_{25}NO_6$ 315.366
Constit. of *Heliotropium indicum* (Boraginaceae) and twigs of *Messerschmidia argentea*. Exhibits strong antitumour activity *vs.* Walker 256 carcinosarcoma, poss. by a mechanism of purine antagonism; clinically tested antineoplastic agent (1985). Deliquescent cryst. (MeOH). Mp 130-131° dec. $[\alpha]_D^{20}$ +34 (c, 7 in EtOH). Log P -2.8 (uncertain value) (calc).

▶ Haematopoietic and hepatotoxic effects reported when used therapeutically. LD_{50} (mus, ipr) 1917 mg/kg. EK7791200

3′-Ac: ***Acetylindicine***
[11014-09-8]
$C_{17}H_{27}NO_6$ 341.403
Alkaloid from *Heliotropium indicum* (Boraginaceae) and twigs of *Messerschmidia argentea*. Gum. $[\alpha]_D^{25}$ -13.8 (c, 2.2 in EtOH).

3′-Ac, N-*oxide:* ***3′-Acetylindicine* N-*oxide***
$C_{17}H_{27}NO_7$ 357.403
Isol. from twigs of *Messerschmidia argentea*. Gum. $[\alpha]_D^{25}$ -3.7 (c, 5.4 in EtOH).

Tri-Ac: [39870-08-1]
Viscous oil. $[\alpha]_D$ -9.25 (c, 4.4 in EtOH).

Tri-Ac, picrate:
Leaflets (EtOH). Mp 131-132°.

3′-Epimer: ***Morifoline***
[95462-13-8]
$C_{15}H_{25}NO_5$ 299.366
Alkaloid from *Critonia morifolia*. Ester of Retronecine, in T-188 with (+)-Viridifloric acid.

2′- or 3′-Epimer, 3′-Ac: ***9-(3′-Acetylviridifloryl)retronecine***
[115793-79-8]
$C_{17}H_{27}NO_6$ 341.403
Alkaloid from roots of *Heliotropium curassavicum* var. *curassavicum* (Boraginaceae). Config. of side-chain centres not detd. May be the Ac deriv. of Morifoline.

2′ or 3′-Epimer, $O^{3'}$*-Me:* ***Sincamidine***
$C_{16}H_{27}NO_5$ 313.393
Alkaloid from *Amsinckia intermedia* (Boraginaceae). Noncryst. Hydrol. gives an acid Mp 138-139°, $[\alpha]_D^{20}$ +5.8°, isomeric with Heliotrinic acid. May be the Me ether of Morifoline.

Mattocks, A.R. *et al., J.C.S.*, 1961, 5400 (*isol, struct*)
Culvenor, C.C.J. *et al., Aust. J. Chem.*, 1966, **19**, 1955 (*Sincamidine*)
Mattocks, A.R. *et al., J.C.S.(C)*, 1967, 329 (*Acetylindicine*)
Kugelman, M. *et al., J. Nat. Prod.*, 1976, **39**, 125 (*pharmacol, oxide*)
Jones, A.J. *et al., Aust. J. Chem.*, 1982, **35**, 1173 (*cmr*)
Letendre, L. *et al., Cancer (Philadelphia)*, 1984, **54**, 1256 (*N-oxide, activity, tox*)
Suffness, M. *et al., Alkaloids (Academic Press)*, 1985, **25**, 32 (*rev, pharmacol, oxide*)
Zalkow, L.H. *et al., J. Med. Chem.*, 1985, **28**, 687 (*synth*)
Vedejs, E. *et al., J.O.C.*, 1985, **50**, 2170 (*synth*)
Mattocks, A.R. *et al., Chemistry and Toxicology of Pyrrolizidine Alkaloids*, Academic Press, London, 1986, 312 (*oxide, rev*)
Nishimura, Y. *et al., Bull. Chem. Soc. Jpn.*, 1987, **60**, 4107 (*synth, enantiomers*)
Davicino, J.G. *et al., Phytochemistry*, 1988, **27**, 960 (*9-(3′-Acetylviridifloryl)retronecine*)
Moore, D.J. *et al., Toxicol. Appl. Pharmacol.*, 1989, **101**, 271 (*oxide, tox*)
Miser, J.S. *et al., Invest. New Drugs*, 1991, **9**, 339 (*clin trial, N-oxide*)
Miser, J.S. *et al., Am. J. Clin. Oncol.*, 1992, **15**, 135 (*clin trial, N-oxide*)
Ogawa, T. *et al., Tetrahedron*, 1993, **49**, 1571 (*synth, Indicine, oxide*)
Nambu, M. *et al., Chem. Comm.*, 1996, 1619 (*synth*)
Ogihara, K. *et al., Phytochemistry*, 1997, **44**, 545 (*3′-Acetylindicine N-oxide*)
Wiedenfeld, H. *et al., Phytochemistry*, 1998, **49**, 1463-1465 (*Morifoline*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, ICD100

Indicinine I-69

[11014-14-5]

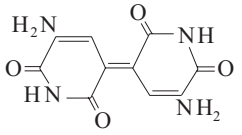
Pyrrolizidine alkaloid, struct. unknown. Alkaloid from *Heliotropium indicum* (Boraginaceae). Gum. Hydrol. gives retronecine in T-188 and a noncryst. acid resembling trachelanthic acid.

Mattocks, A.R. *et al., J.C.S.(C)*, 1967, 329-331

Indigoidin I-70

*5-Amino-3-[5-amino-1,6-dihydro-2,6-dioxo-3(2*H*)-pyridinylidene]-2,6(1*H,3H*)-pyridinedione, 9CI. 5,5′-Diamino-4,4′-dihydroxy-3,3′-diaza-2,2′-diphenoquinone*

[2435-59-8]
[2435-61-2 (di-Ac)]



$C_{10}H_8N_4O_4$ 248.198

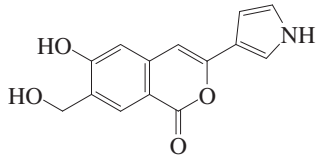
Blue pigment from *Corynebacterium insidiosum, Pseudomonas indigofera, Arthrobacter atrocyaneus* and *Arthrobacter polychromogenes*. Blue solid. Extremely insol. all org. solvs., sol. hot conc. acids. λ_{max} 605 (log ε 4.33) (*N*-Methylpyrrolidine).

Kuhn, R. *et al., Arch. Mikrobiol.*, 1965, **51**, 71-84 (*isol*)

Kuhn, R. *et al., Chem. Ber.*, 1965, **98**, 2139-2153 (*synth, struct, ir, pmr, uv*)
Dieris, C.-G. *et al., Synthesis*, 1979, 948-950 (*synth*)
Takahashi, H. *et al., J. Biol. Chem.*, 2007, **282**, 9073-9081 (*isol, ms*)

Indigotiisocoumarin A I-71

*6-Hydroxy-7-(hydroxymethyl)-3-(1*H*-pyrrol-3-yl)-1*H*-2-benzopyran-1-one*
[924890-68-6]

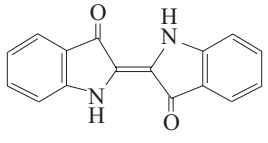


$C_{14}H_{11}NO_4$ 257.245
Constit. of *Isatis indigotica*.

Wang, F. *et al., Shenyang Yaoke Daxue Xuebao*, 2005, **22**, 187-188; *CA*, **146**, 224723j (*isol*)

Indigotin† I-72

$\Delta^{2,2'}$-Biindoline-3,3'-dione, 8CI. $\Delta^{2,2'}$-Bipseudoindoxyl. Diindogen. Indigo. Indigo blue. C.I. Natural Blue 1. C.I. Vat Blue 1. C.I. 75780
[482-89-3]



$C_{16}H_{10}N_2O_2$ 262.267
Known since ancient times; obt. from various plants, e.g. *Indigofera tinctoria*, where it occurs as its precursor Indican. Constit. of Tyrian purple obt. from *Murex trunculus*. Blue powder with coppery lustre. Insol. H_2O. Mp 390-392°. Sublimes.

▶ DU2988400

1,1'-Di-Ac: [33934-64-4]
$C_{20}H_{14}N_2O_4$ 346.342
Red cryst. Mp 200-220°.

1,1'-N-*Dibenzoyl:*
$C_{30}H_{18}N_2O_4$ 470.483
Violet cryst. Mp 254° Mp 257°.

N-*Me:* [23831-49-4]
$C_{17}H_{12}N_2O_2$ 276.294
Mp 254°.

Di-N-*Me:* [18996-72-0]
$C_{18}H_{14}N_2O_2$ 290.321
Sol. nonpolar solvs. Mp 182-183°. Green in soln. Shows bathochromicity compared with indigotin owing to nonpolarity. Has no affinity for cotton fibres.

N-*Et:* [97207-48-2]
$C_{18}H_{14}N_2O_2$ 290.321
Mp 245°.

Di-N-*Et:* [109670-05-5]
$C_{20}H_{18}N_2O_2$ 318.374
Mp 161°.

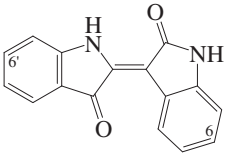
N-*Benzyl:* [449761-23-3]
$C_{23}H_{16}N_2O_2$ 352.392
Mp 210°.

1,1'-N-*Dibenzyl:* [858229-81-9]
$C_{30}H_{22}N_2O_2$ 442.516
Mp 165°.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 394B (*ir*)
Harley-Mason, J. *et al., J.C.S.*, 1950, 2907 (*synth*)
Pummerer, R. *et al., Annalen*, 1954, **590**, 173-194 (*N,N-di-Me*)
Yamanaka, T. *et al., CA*, 1956, **50**, 304 (*synth*)
Gosteli, J. *et al., Helv. Chim. Acta*, 1977, **60**, 1980-1983 (*synth*)
Christophersen, C. *et al., Tet. Lett.*, 1977, 1747-1748
Miehe, G. *et al., Angew. Chem., Int. Ed.*, 1991, **30**, 964-967 (*cryst struct, bibl, N,N-di-Me*)
Wouters, J. *et al., J. Soc. Dyers Colour.*, 1991, **107**, 226-269 (*isol, hplc*)
Kirk-Othmer Encycl. Chem. Technol., 4th edn., Wiley, 1991, **8**, 796-800 (*rev*)
Rademacher, P. *et al., Chem. Ber.*, 1992, **125**, 1773-1775 (*pe, struct*)
Grimme, G. *et al., Chem. Ber.*, 1993, **126**, 1015-1021 (*struct*)
Maugard, T. *et al., Phytochemistry*, 2001, **58**, 897-904 (*isol, uv*)
Tanoue, Y. *et al., The Fischer Indole Synthesis*, 2001, **67**, 726-729 (*synth*)
Sigma-Aldrich Library of Stains, Dyes and Indicators, 403

Indirubin I-73

*3-(1,3-Dihydro-3-oxo-2*H*-indol-2-ylidene)-1,3-dihydro-2*H*-indol-2-one, 9CI. $\Delta^{2,3'}$-Biindoline-2',3-dione. Couroupitine B. Indigo red. C.I. 75790*
[479-41-4]



$C_{16}H_{10}N_2O_2$ 262.267
Alkaloid from *Indigofera* spp. as minor constit. of indigo. Isol. from the molluscs *Hexaplex trunculus* and *Murex brandaris* (as component of Tyrian purple). Constit. of *Couroupita guianensis*, root of *Isatis indigotica*, *Isatis tinctoria*, *Polygonum tinctorium* and *Baphicacanthus cusia*. Isol. from the fungal pigment of a *Schizophyllum commune* mutant. Inhibitor of Lewis lung carcinoma and Walker 256 carcinosarcoma in mice. Red cryst. Sol. EtOH, AcOH; poorly sol. H_2O, hexane. Mp > 400° subl. λ_{max} 522 ; 561 (xylene). λ_{max} 207 ; 239 ; 290 ; 360 ; 540 (MeOH) (Berdy).

▶ DU2995000

1,1'-Di-Ac: Mp 192-193°.

Oxime: [160807-49-8]
$C_{16}H_{11}N_3O_2$ 277.282
Glycogen synthase kinase (GSK-3) inhibitor. Deep red cryst. Mp 246°.

6-Bromo: ***6-Bromoindirubin***
[200273-66-1]
$C_{16}H_9BrN_2O_2$ 341.163
Isol. from the mollusc *Hexaplex trunculus*. Selective inhibitor of GSK-3.

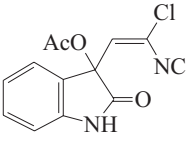
6'-Bromo: [200273-67-2]
$C_{16}H_9BrN_2O_2$ 341.163
Isol. from the mollusc *Hexaplex trunculus*.

6,6'-Dibromo: ***6,6'-Dibromoindirubin***
[171565-08-5]
$C_{16}H_8Br_2N_2O_2$ 420.059
Isol. from the molluscs *Hexaplex trunculus* and *Nucella lapillus*. λ_{max} 305 (log ϵ 4.43); 350 (sh) ; 367 (log ϵ 3.94); 387 (sh) ; 525 (sh) ; 552 (log ϵ 4.07) ($CHCl_3$). λ_{max} 305 (log ϵ 4.28); 371 (log ϵ 3.73); 552 (log ϵ 3.89) (CCl_4).

De Diesbach, H. *et al., Helv. Chim. Acta*, 1945, **28**, 690-700 (*synth*)
v. Eller-Pandraud, H. *et al., Bull. Soc. Chim. Fr.*, 1958, 712-714 (*cryst struct*)
Epstein, E. *et al., CA*, 1966, **66**, 102443 (*isol*)
Plieninger, D.W. *et al., Chem. Ber.*, 1966, **99**, 3063-3069 (*synth*)
Sen, A.K. *et al., Tet. Lett.*, 1974, 609-610 (*isol*)
Bergmann, J. *et al., Tet. Lett.*, 1977, 2625-2626 (*struct*)
Bergmann, J. *et al., Tetrahedron*, 1985, **41**, 2879-2891 (*isol, struct, props*)
Shen, Y. *et al., Yaoxue Tongbao*, 1985, **19**, 601-602; *CA*, **102**, 10071 (*isol*)
Ji, X. *et al., Yaoxue Xuebao*, 1985, **20**, 137-139; *CA*, **103**, 98313 (*activity*)
Zhang, S. *et al., Yaoxue Xuebao*, 1985, **20**, 301-305; *CA*, **103**, 92918 (*detn*)
Koren, Z.C. *et al., Isr. J. Chem.*, 1995, **35**, 117-124 (*hplc*)
Clark, R.J.H. *et al., J. Soc. Dyers Colour.*, 1997, **113**, 316-321 (*Bromoindirubins*)
Leclerc, S. *et al., J. Biol. Chem.*, 2001, **276**, 251-260 (*oxime, pharmacol, synth, pmr, cmr*)
Cooksey, C.J. *et al., Molecules*, 2001, **6**, 736-769 (*6,6'-Dibromoindirubin, rev*)
Maugard, T. *et al., Phytochemistry*, 2001, **58**, 897-904 (*isol, uv*)
Meijer, L. *et al., Chem. Biol.*, 2003, **10**, 1255-1266 (*Bromoindirubins*)
Mak, N.K. *et al., Biochem. Pharmacol.*, 2004, **67**, 167-174 (*oxime, pharmacol*)
Polychronopoulos, P. *et al., J. Med. Chem.*, 2004, **47**, 935-946 (*synth, oxime, acetoxime, pmr, pharmacol*)
Sato, N. *et al., Nat. Med. (N.Y.)*, 2004, **10**, 55-63 (*pharmacol*)
Xie, Y. *et al., Neurosci. Lett.*, 2004, **367**, 355-359 (*oxime, pharmacol*)

Indisocin I-74

*3-(Acetyloxy)-3-(2-chloro-2-isocyanoethenyl)-1,3-dihydro-2*H*-indol-2-one, 9CI. 3-(Acetyloxy)-3-(2-chloro-2-isocyanoethenyl)-2-oxoindole. 3-Acetoxy-3-(2-chloro-2-isocyanovinyl)-2-oxoindole*
[90632-49-8]



$C_{13}H_9ClN_2O_3$ 276.678
Indole antibiotic. Isol. from *Nocardia blackwellii*. Active against gram-positive and -negative bacteria and fungi. Sol. MeOH, C_6H_6; poorly sol. H_2O. $[\alpha]_D^{25}$ +20 (c, 0.03 in MeOH). Stable in org. solvs. Related to 3-(2-Isocyanoethenyl)-1*H*-indole, I-216. λ_{max} 208 (ϵ 1120); 225 (sh) (ϵ 730); 255 (sh) (ϵ 340); 290 (sh) (ϵ 80)

(MeOH) (Derep). λ_{max} 208 (E1%/1cm 1120) (MeOH) (Berdy).

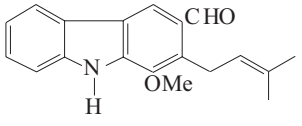
N-*Me:* **N-*Methylindisocin***
[90632-48-7]
$C_{14}H_{11}ClN_2O_3$ 290.705
Isol. from *Nocardia blackwellii*. Active against gram-positive and -negative bacteria and fungi. $[\alpha]_D^{25}$ +22 (c, 0.04 in MeOH). λ_{max} 208 (ϵ 1120); 225 (sh) (ϵ 730); 255 (sh) (ϵ 340); 290 (sh) (ϵ 80) (MeOH) (Derep).

[114114-51-1 , 114114-64-6 , 114114-52-2 , 114114-63-5]

Isshiki, K. *et al., J. Antibiot.*, 1987, **40**, 1195; 1199; 1202 (*isol, uv, ir, pmr, ms, struct, synth, props*)

Indizoline I-75

1-Methoxy-2-(3-methyl-2-butenyl)-9H-carbazole-3-carboxaldehyde, 9CI
[54313-18-7]

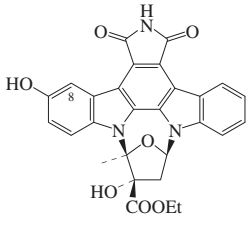


$C_{19}H_{19}NO_2$ 293.365
Alkaloid from the roots of *Clausena indica* (Rutaceae). Plates (hexane/CH_2Cl_2). Mp 170-171°. Isomeric with Atanisatine, A-1530.

Joshi, B.S. *et al., Indian J. Chem.*, 1974, **12**, 437 (*isol, uv, ir, pmr, ms, struct*)

Indocarbazostatin I-76

[253450-08-7]



Relative Configuration

$C_{28}H_{21}N_3O_7$ 511.49
Prod. by *Streptomyces* sp. TA-0403. Inhibitor of NGF-induced neurite outgrowth. Pale yellow cryst. (Me_2CO/C_6H_6). Mp 256° dec. $[\alpha]_D^{26}$ +51.3 (c,0.05 in MeOH). λ_{max} 236 (log ϵ 4.61); 283 (log ϵ 3.36); 290 (log ϵ 4.43); 326 (log ϵ 4.6) (MeOH).

Me ester analogue: ***Indocarbazostatin C***
$C_{27}H_{19}N_3O_7$ 497.463
Prod. by a mutant strain, *Streptomyces* sp. MUV-6-83. Yellow powder. Mp 259-262°. λ_{max} 236 (log ϵ 4.44); 286 (log ϵ 4.1); 293 (log ϵ 4.2); 325 (log ϵ 4.4) (MeOH).

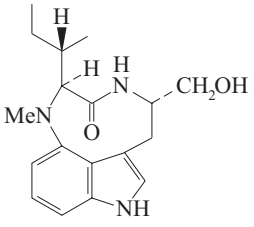
8-Amino: ***Indocarbazostatin B***
[334831-87-7]
$C_{28}H_{22}N_4O_7$ 526.504
Prod. by *Streptomyces* sp. TA-0403. Inhibitor of NGF-induced neurite growth. Yellow powder. Mp 255° dec. $[\alpha]_D^{26}$ -48.7 (c, 0.05 in MeOH). λ_{max} 236 (log ϵ 4.36); 270 (log ϵ 4.11); 292 (log ϵ 4.04); 327 (log ϵ 4.04) (MeOH).

8-Amino, Me ester analogue: ***Indocarbazostatin D***
$C_{27}H_{20}N_4O_7$ 512.478
Prod. by a mutant strain, *Streptomyces* sp. MUV-6-83. Orange powder. Mp > 300°. $[\alpha]_D$ -44 (c, 0.05 in MeOH). λ_{max} 237 (log ϵ 4.06); 269 (log ϵ 3.9); 291 (log ϵ 3.85); 325 (log ϵ 3.64) (MeOH).

Ubukata, M. *et al., J. Antibiot.*, 1999, **52**, 921-924 (*Indocarbazostatin*)
Matsuura, N. *et al., J. Antibiot.*, 2002, **55**, 355-362; 363-370 (*Indocarbazostatin B*)
Feng, Y. *et al., J. Antibiot.*, 2004, **57**, 627-633 (*Indocarbazostatins C,D*)

Indolactam I I-77

[132738-83-1]

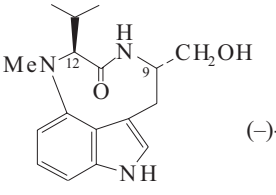


$C_{18}H_{25}N_3O_2$ 315.414
Lactam antibiotic. Isol. from *Streptoverticillium blastmyceticum*. Tumour promotor. Amorph. λ_{max} 228 (ϵ 27600); 289 (ϵ 7500); 300 (ϵ 7500) (MeOH) (Derep).

Irie, K. *et al., Tet. Lett.*, 1990, **31**, 7337 (*isol, struct, pmr, cd*)

Indolactam V I-78

[90365-57-4]



(–)-*form*

$C_{17}H_{23}N_3O_2$ 301.388
Prod. by *Streptomyces blastmyceticum* sp. NA34-17. Induces the early antigen of Epstein-Barr virus. CSF inducer. Needles (EtOH aq.) or amorph. solid. Sol. MeOH, EtOAc; poorly sol. H_2O. Mp 130-165°. $[\alpha]_D^{27}$ -170 (c, 0.499 in EtOH). λ_{max} 228 (ϵ 27600); 289 (ϵ 7500); 300 (ϵ 7500) (MeOH) (Derep).

O-*Ac:* **O-*Acetylindolactam V***
[91403-61-1]
$C_{19}H_{25}N_3O_3$ 343.425
Prod. by *Streptomyces blastmyceticum* sp. NA34-17. Induces the early antigen of Epstein-Barr virus. Powder. Sol. MeOH, EtOAc; poorly sol. H_2O. Mp 100-110°. $[\alpha]_D^{26}$ -57 (c, 0.315 in EtOH). λ_{max} 227 (ϵ 27800); 295 (ϵ 7200) (EtOH) (Berdy).

O-*Malonoyl:* **O-*Malonylindolactam V***
$C_{20}H_{25}N_3O_5$ 387.435
Prod. by *Streptomyces blastmyceticum* sp. NA34-17. Amorph. solid. $[\alpha]_D^{23}$ -47.4 (c, 0.3 in MeOH). λ_{max} 226 (ϵ 24300); 298 (ϵ 6800) (MeOH).

N-*De-Me:* **N-*Desmethylindolactam V***
[90365-52-9]
$C_{16}H_{21}N_3O_2$ 287.361
Isol. from *Streptomyces blastmyceticum*. Needles (EtOAc/hexane). Mp 199-201°. $[\alpha]_D^{25}$ -81 (c, 0.25 in EtOH).

9-Epimer: Epiindolactam V
[90365-55-2]
Needles ($CHCl_3$). Mp 134-136°. $[\alpha]_D^{20}$ -84.9 (c, 0.75 in MeOH).

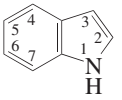
7-(3,7-Dimethyl-2,6-octadienyl): ***7-Geranylindolactam V***
$C_{27}H_{39}N_3O_2$ 437.624
Metab. of *Streptomyces blastmyceticum*. Tumour promoter. Amorph. powder. $[\alpha]_D^{28}$ -119 (c, 0.47 in MeOH). λ_{max} 229 (ϵ 30200); 286 (ϵ 8900) (MeOH) (Berdy).

[90365-56-3 , 84622-58-2 , 132341-58-3 , 90365-54-1]

Endo, Y. *et al., Chem. Pharm. Bull.*, 1982, **30**, 3457; 1984, **32**, 358 (*synth, abs config*)
Irie, K. *et al., Agric. Biol. Chem.*, 1984, **48**, 1269 (*isol, uv, ir, pmr, cd*)
Endo, Y. *et al., Tetrahedron*, 1986, **42**, 5905-5924; 1987, **43**, 3695-3704 (*synth, stereochem, props*)
Hagiwara, N. *et al., Agric. Biol. Chem.*, 1988, **52**, 641-648 (*N-Demethylindolactam V*)
Mascal, M. *et al., Chem. Comm.*, 1988, 589 (*synth*)
Masuda, T. *et al., Agric. Biol. Chem.*, 1989, **53**, 2257-2260 (*synth*)
Irie, K. *et al., Tet. Lett.*, 1990, **31**, 101 (*biosynth*)
Kogan, T.P. *et al., Tetrahedron*, 1990, **46**, 6623 (*synth, bibl*)
Mascal, M. *et al., J.C.S. Perkin 1*, 1992, 823 (*synth*)
Kawai, T. *et al., J.O.C.*, 1992, **57**, 6150 (*epi-Indolactam V*)
Semmelhack, M.F. *et al., Tet. Lett.*, 1993, **34**, 1395 (*synth*)
Irie, K. *et al., J. Nat. Prod.*, 1994, **57**, 363 (*7-Geranylindolactam V*)
Quick, J. *et al., Tet. Lett.*, 1994, **35**, 8549 (*synth*)
Irie, K. *et al., Biosci., Biotechnol., Biochem.*, 1999, **63**, 1669-1670 (*Malonylindolactam V, biosynth*)

Indole, 9CI, 8CI I-79

1-Benzazole. 2,3-Benzopyrrole. 1-Azaindene. Ketole (obsol.). FEMA 2593



1*H-form*

C_8H_7N 117.15
Constit. of coal tar. Constit. of several flower oils, esp. of *Jasminum* and *Citrus* spp. (Oleaceae, Rutaceae). A prod. of bacterial dec. of proteins, ubiquitous in faeces. Constit. of anal gland secretion of aardwolf *Proteles cristatus*. Prod. by marine bacterium strain Ta-6 from *Tapes philippinarum* and by a range of microorganisms isol. from fish and shellfish. Perfumery and flavouring ingredient. Used as 0.5% EtOH soln. for

photometric detn. of $NO_2^{\ominus}$. λ_{max} 530 nm (ϵ 9500, 2.5-5*M* HCl). Cryst. (H_2O). Sol. EtOH, MeOH, Et_2O; poorly sol. H_2O. Mp 52°. Bp 253-254° Bp_5 122.5-124°. pK_{a1} -2.4; pK_{a2} 16.97 (25°,NH, KOH aq.). λ_{max} 216 ; 270 ; 278 ; 281 ; 295 (MeOH) (Berdy).

▶ LD_{50} (rat, orl) 1000 mg/kg. NL2450000

Stowe, B.B. *et al., Prog. Chem. Org. Nat. Prod.*, 1959, **17**, 250-297 (*occur*)

Apps, P.J. *et al., J. Chem. Ecol.*, 1989, **15**, 1681-1688 (*occur*)

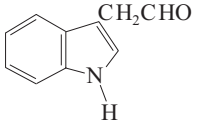
Kirk-Othmer Encycl. Chem. Technol., 4th edn., Wiley, 1991, **14**, 161-173 (*rev*)

Takao, T. *et al., Biosci., Biotechnol., Biochem.*, 1994, **58**, 1780-1783 (*isol, occur*)

1*H*-Indole-3-acetaldehyde, 9CI I-80

β-Indolylacetaldehyde. 3-(Formylmethyl)indole. Skototenin

[2591-98-2]



$C_{10}H_9NO$ 159.187

Isol. from various plants incl. *Brassica* spp. Intermed. in biosynth. of 1*H*-Indole-3-acetic acid, I-81 from Tryptophan, T-640. Syrup. $Bp_{0.00005}$ 120°.

Oxime: [2776-06-9]
[95394-24-4 , 95394-25-5]
$C_{10}H_{10}N_2O$ 174.202
Metab. of *Archangium gephyra* and various plant spp. incl. *Brassica* spp. Cryst. ($CHCl_3$). Mp 140-141°. Isol. as a mixt. of *E*/*Z*-isomers.

Semicarbazone: Mp 142-155°.

2,4-Dinitrophenylhydrazone: Mp 196-202°.

Gordon, S.A. *et al., Arch. Biochem.*, 1949, **43**, 7096

Brown, J.B. *et al., Nature (London)*, 1952, **169**, 335 (*synth, uv, ir*)

Ahmad, A. *et al., Can. J. Chem.*, 1960, **38**, 2523 (*synth, oxime*)

Ihara, M. *et al., Tetrahedron*, 1985, **41**, 2109 (*synth, ir, pmr*)

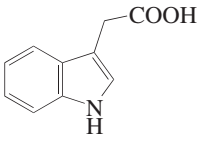
Schlecht, M.F. *et al., J. Med. Chem.*, 1990, **33**, 386 (*synth*)

Bohlendorf, B. *et al., Annalen*, 1996, 49-53 (*isol, oxime*)

1*H*-Indole-3-acetic acid, 9CI I-81

3-Indolylacetic acid. Heteroauxin. Rhizopin. IAA. Rhizipon A

[87-51-4]



$C_{10}H_9NO_2$ 175.187

Isol. from the marine alga *Undaria pinnatifida*. Widely distributed in higher plants, also in bacteria, algae, yeasts and fungi. Plant growth hormone (auxin). Involved in root development. Phytotoxic agent. Cryst. ($CHCl_3$). Sol. EtOH, Me_2CO; fairly sol. H_2O, $CHCl_3$. Mp 164-165°. pK_{a1} 4.36; pK_{a2} 16.9 (NH). λ_{max} 229 (ϵ 10400); 273 (ϵ 9900); 278 (ϵ 10000); 289 (ϵ 8700) (MeOH) (Berdy).

▶ Exp. reprod. and teratogenic effects. NL3150000

β-D-Glucopyranosyl ester: [19817-95-9]
$C_{16}H_{19}NO_7$ 337.329
Metab. of 1*H*-Indole-3-acetic acid, I-81 in *Arabidopsis* sp. and other plants. Isol. from rice (*Oryza sativa*) and other plants.

Me ester: [1912-33-0]
$C_{11}H_{11}NO_2$ 189.213
Isol. from immature seeds of beach pea (*Lathyrus maritimus*), *Vicia amurensis*, wild soybean (*Glycine soja*), lobiya (*Vigna catiang* var. *sinensis*) and hyacinth bean (*Dolichos lablab*). Mp 125° (as picrate).

Et ester: [778-82-5]
Mp 44-45°. Bp_1 164-166°.

▶ NL3528000

Chloride: [50720-05-3]
$C_{10}H_8ClNO$ 193.632
Flakes (Et_2O). Mp 63-65°.

*Amide: 1*H*-Indole-3-acetamide*
[879-37-8]
$C_{10}H_{10}N_2O$ 174.202
Isol. from etiolated seedlings of the black gram (*Phaseolus mungo*). Also from the sponges *Dysidea etheria* and *Ulosa ruetzleri*. Plant growth regulator. Mp 150-151°.

Hydrazide: [5448-47-5]
$C_{10}H_{11}N_3O$ 189.216
Mp 138-139°.

▶ NL3600000

*Nitrile: 1*H*-Indole-3-acetonitrile. 3-Cyanomethyl-1*H*-indole*
[771-51-7]
$C_{10}H_8N_2$ 156.187
Myrosinase-induced hydrol. prod. of indole glucosinolates, found in cabbage and other crucifers. Antineoplastic agent. Plant growth hormone. Mp 36.5-37°. $Bp_{0.2}$ 157°. Log P 1.55 (calc). Functions by enzymic hydrol. to the acid.

▶ LD_{50} (rat, scu) 255 mg/kg. AM0700000

N-*Benzenesulfonyl:* [945401-04-7]
$C_{16}H_{13}NO_4S$ 315.349
Solid. Mp 171-173°.

N-*Me:* [1912-48-7]
$C_{11}H_{11}NO_2$ 189.213
Mp 128°. $Bp_{0.1}$ 130-150°.

N-*Me, amide:*
$C_{11}H_{12}N_2O$ 188.229
Solid.

N-*Me, nitrile:* [51584-17-9]
$C_{11}H_{10}N_2$ 170.213
Cryst. Mp 58-60°.

N-*β-D-Glucopyranosyl:* [351346-16-2]
$C_{16}H_{19}NO_7$ 337.329
Constit. of redcurrants (*Ribes rubrum*), rice (*Oryza sativa*) and maize (*Zea mays*). Isol. from *Cortinarius brunneus*. Amorph. powder. $[\alpha]_D^{25}$ +18.1 (c, 0.23 in MeOH). λ_{max} 215 ; 267 (MeCN). λ_{max} 222 (log ϵ 4.35); 273 (log ϵ 3.72) (MeOH).

N-*β-D-Glucopyranosyl, Me ester:* [23099-32-3]
$C_{17}H_{21}NO_7$ 351.355
Constit. of redcurrants (*Ribes rubrum*). Isol. from *Cortinarius brunneus*. Amorph. powder. $[\alpha]_D^{25}$ +4.7 (c, 0.06 in MeOH). λ_{max} 215 ; 267 (MeCN). λ_{max} 221 (log ϵ 4.12); 273 (log ϵ 3.45) (MeOH).

N-*Methoxy, nitrile: 1-Methoxy-1*H*-indole-3-acetonitrile, 9CI.* ***Caulilexin C***
[30536-48-2]
$C_{11}H_{10}N_2O$ 186.213
Alkaloid from the Japanese radish Daikon (*Raphanus sativus* var. *hortensis*) inoculated with *Pseudomonas cichorii* and from clubroots of Chinese cabbage (*Brassica pekinensis*) infected with *Plasmodiophora brassicae*. Also from *Brassica oleracea* var. *botrytis* (cauliflower). Phytoalexin.

N-tert-*Butoxycarbonyl:*
$C_{15}H_{17}NO_4$ 275.304
Solid. Mp 117-120°.

N-tert-*Butoxycarbonyl, Me ester:*
$C_{16}H_{19}NO_4$ 289.33
Solid. Mp 53°.

[2338-19-4]

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 667C; 675D; 676D; 678C (*ir*)

Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 138B; 149A; 154A; 159A (*nmr*)

Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 1503C (*ir*)

Henbest, H.B. *et al., J.C.S.*, 1953, 3796-3801 (*isol, nitrile*)

Stowe, B.B. *et al., Prog. Chem. Org. Nat. Prod.*, 1959, **17**, 248-297 (*rev, bibl*)

Isogai, Y. *et al., Chem. Pharm. Bull.*, 1963, **11**, 1217-1218 (*isol, amide*)

Johnson, H.E. *et al., J.O.C.*, 1963, **28**, 1246-1248 (*synth*)

Stefanescu, P. *et al., Rev. Chim. (Bucharest)*, 1969, **20**, 65; *CA*, **69**, 30311 (*synth*)

Nomoto, M. *et al., Agric. Biol. Chem.*, 1970, **34**, 1590-1592 (*Caulilexin C, isol*)

Abe, H. *et al., Agric. Biol. Chem.*, 1972, **36**, 2259-2260 (*isol, uv, ms*)

Karrer, W. *et al., Konstitution und Vorkommen der Organischen Pflanzenstoffe*, 2nd edn., Birkhäuser Verlag, 1972, nos. 2514; 2515 (*bibl*)

Suvorov, N.N. *et al., CA*, 1973, **79**, 146320g (*synth*)

Chandrasekhar, K. *et al., Acta Cryst. B*, 1982, **38**, 2534-2535 (*cryst struct*)

Vekrel, J. *et al., Spectrochim. Acta A*, 1983, **39**, 887-894 (*ir, pmr, ms*)

Acheson, R.M. *et al., J. Chem. Res., Synop.*, 1984, 101 (*Caulilexin C, synth*)

Somei, M. *et al., Heterocycles*, 1985, **23**, 1101-1106 (*Caulilexin C, synth*)

Cardellina, J.H. *et al., J. Nat. Prod.*, 1986, **49**, 1065-1067 (*isol, amide*)

Pfeiffer, D. *et al., Cryst. Res. Technol.*, 1987, **22**, KI (*cryst struct*)

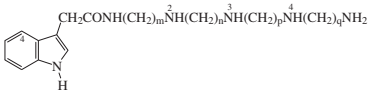
Raucher, S. *et al., J.A.C.S.*, 1987, **109**, 442-446 (*chloride*)

Morales-Rios, M.S. *et al., Magn. Reson. Chem.*, 1987, **25**, 377-395 (*cnmr*)

Katayama, N. *et al., Plant Cell Physiol.*, 1987, **28**, 383-386 (*isol, Me ester*)

Wall, M.E. *et al., J. Nat. Prod.*, 1988, **51**, 129-135 (*isol, nitrile*)
Agrochemicals Handbook, 3rd edn., Royal Society of Chemistry, 1992, A232
Nagarathnam, D. *et al., J. Het. Chem.*, 1992, **29**, 953-958 (*synth*)
Fukuyama, T. *et al., J.A.C.S.*, 1994, **116**, 3127-3128 (*synth*)
Faul, M. *et al., J.O.C.*, 1998, **63**, 6053-6058 (*N-Me, amide, synth, pmr, cmr, uv, ir*)
Shimada, A. *et al., Biosci., Biotechnol., Biochem.*, 2000, **64**, 187-189 (*isol, activity*)
Tsotinis, A. *et al., J. Med. Chem.*, 2006, **49**, 3509-3519 (*N-Me nitrile*)
Pesticide Manual, 14th edn., 2006, No. 476
Pedras, M.S.C. *et al., Phytochemistry*, 2006, **67**, 1503-1509 (*Caulilexin C*)
Schwarz, B. *et al., J. Agric. Food Chem.*, 2007, **55**, 1405-1410 (*N-glucosyl*)
Knör, S. *et al., J. Med. Chem.*, 2007, **50**, 4329-4339 (*N-Boc*)
Kai, K. *et al., Phytochemistry*, 2007, **68**, 2512-2522 (*N-glucosyl, glucosyl ester*)
Roy, S. *et al., Synth. Commun.*, 2007, **37**, 1879-1886 (*N-benzenesulfonyl*)
Teichert, A. *et al., Chem. Biodiversity*, 2008, **5**, 664-669 (*N-glucosyl*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 11th edn., J. Wiley*, 2004, ICN000; ICW000

Agelenopsis aperta Indoleacetylpentamine toxins I-82



Agel 416 m = n = q = 3, p = 4
Agel 416a m = n = p = 3, q = 4
Agel 416b m = 4, n = p = q = 3
Agel 416c m = p = q = 3, n = 4

$C_{23}H_{40}N_6O$ 416.609
Acylpolyamine alkaloid complex isol. from the venom of the spider *Agelenopsis aperta*.

Agel 416
AG 416
[133805-31-9]
$C_{23}H_{40}N_6O$ 416.609
Isol. from the venom of the spider *Agelenopsis aperta*.

N^2-*Hydroxy:* ***Agel 432f***. *AG 432f*
$C_{23}H_{40}N_6O_2$ 432.608
From *Agelenopsis aperta*.

Hydroxy(2): ***Agel 432***. *AG 432*
$C_{23}H_{40}N_6O_2$ 432.608
From *Agelenopsis aperta*. OH group attached to indole ring but posn. not determined.

Hydroxy(3): ***Agel 432b***. *AG 432b*
$C_{23}H_{40}N_6O_2$ 432.608
From *Agelenopsis aperta*. OH group attached to indole ring but posn. not determined.

N^2,*4-Dihydroxy:* ***Agel 448***. *AG 448*. *PB 448*
[128550-00-5]
$C_{23}H_{40}N_6O_3$ 448.607
From *Agelenopsis aperta* and *Paracoelotes birulae*.

N^2,N^3,*4-Trihydroxy:* ***Agel 464a***. *AG 464a*
$C_{23}H_{40}N_6O_4$ 464.607
From *Agelenopsis aperta*.

Agel 416a
AG 416a
$C_{23}H_{40}N_6O$ 416.609
isol. from the venom of the spider *Agelenopsis aperta*.

N^2-*Hydroxy:* ***Agel 432g***. *AG 432g*
$C_{23}H_{40}N_6O_2$ 432.608
From *Agelenopsis aperta*.

Hydroxy(2): ***Agel 432a***. *AG 432a*
$C_{23}H_{40}N_6O_2$ 432.608
From *Agelenopsis aperta*. OH group attached to indole ring but posn. not determined.

Hydroxy(3): ***Agel 432c***. *AG 432c*
$C_{23}H_{40}N_6O_2$ 432.608
From *Agelenopsis aperta*. OH group attached to indole ring but posn. not determined.

N^2,*4-Dihydroxy:* ***Agel 448a***. *AG 448a*
$C_{23}H_{40}N_6O_3$ 448.607
From *Agelenopsis aperta*.

N^5-*(3-Aminopropyl),* N^2-*hydroxy:* ***Agel 489***. *AG 489*
[128549-96-2]
$C_{26}H_{47}N_7O_2$ 489.703
Alkaloid from the venom of the spider *Agelenopsis aperta*.

N^5-*(3-Aminopropyl),* N^4-*hydroxy:* ***Agel 489b***. *AG 489b*
$C_{26}H_{47}N_7O_2$ 489.703
Alkaloid from the venom of *Agelenopsis aperta*.

N^5-*(3-Aminopropyl),* N^2,N^3-*dihydroxy:* ***Agel 505b***. *AG 505b*
$C_{26}H_{47}N_7O_3$ 505.702
Alkaloid from the venom of *Agelenopsis aperta*.

N^5-*(3-Aminopropyl),* N^2,*4-dihydroxy:* ***Agel 505***. *AG 505*
[128549-97-3]
[128550-22-1]
$C_{26}H_{47}N_7O_3$ 505.702
Alkaloid from the venom of the spider *Agelenopsis aperta*.

N^5-*(3-Aminopropyl),* N^2,N^2,*4-trihydroxy:* ***Agel 521***. *AG 521*
$C_{26}H_{47}N_7O_4$ 521.702
Alkaloid from the venom of *Agelenopsis aperta*.

N^5-*(Aminoiminomethyl),* N^2,*4-dihydroxy:* ***PB 490***
$C_{24}H_{42}N_8O_3$ 490.648
Isol. from the venom of the spider *Paracoelotes birulai*.

Agel 416b
AG 416b. *HO 416b*
[133823-88-8]
$C_{23}H_{40}N_6O$ 416.609
Isol. from the venom of the spiders *Agelenopsis aperta* and *Hololena curta*.

N^2-*Hydroxy:* ***Agel 432h***. *AG 432h*
$C_{23}H_{40}N_6O_2$ 432.608
From *Agelenopsis aperta*.

N^3-*Hydroxy:* ***Agel 432i***. *AG 432i*
$C_{23}H_{40}N_6O_2$ 432.608
From *Agelenopsis aperta*.

Hydroxy(3): ***Agel 432d***. *AG 432d*
$C_{23}H_{40}N_6O_2$ 432.608
From *Agelenopsis aperta*. OH group attached to indole ring but posn. not determined.

Hydroxy(4): ***Agel 432e***. *AG 432e*
$C_{23}H_{40}N_6O_2$ 432.608
From *Agelenopsis aperta*. OH group attached to indole ring but posn. not determined.

N^2,*4-Dihydroxy:* ***Agel 448b***. *AG 448b*
$C_{23}H_{40}N_6O_3$ 448.607
From *Agelenopsis aperta*.

N^2,N^3-*Dihydroxy:* ***Agel 448c***. *AG 448c*
$C_{23}H_{40}N_6O_3$ 448.607
From *Agelenopsis aperta*.

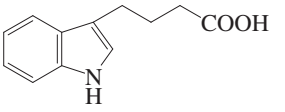
N^2,N^3,*4-Trihydroxy:* ***Agel 464***. *AG 464*
$C_{23}H_{40}N_6O_4$ 464.607
From *Agelenopsis aperta*.

Agel 416c
AG 416c
$C_{23}H_{40}N_6O$ 416.609
Isol. from the venom of the spider *Agelenopsis aperta*.

Jasys, V.J. *et al., J.A.C.S.*, 1990, **112**, 6696-6704 (*AG505, AG489*)
Schulz, S. *et al., Angew. Chem., Int. Ed.*, 1997, **36**, 314 (*rev*)
Hidai, Y. *et al., Chem. Pharm. Bull.*, 2000, **48**, 1570-1576 (*AG 416, AG 489, synth, pmr, cmr, ms*)
Chesnov, S. *et al., Helv. Chim. Acta*, 2000, **83**, 3295-3305; 2001, **84**, 2178-2197; 2002, **85**, 2827-2846 (*isol, synth, ms, bibl*)

1*H*-Indole-3-butanoic acid, 9CI I-83

4-Indol-3-ylbutyric acid, ISO. Hormex. Hormodin. IBA. Seradix
[133-32-4]



$C_{12}H_{13}NO_2$ 203.24
Widespread in plants. Plant growth regulator: "Rooting powder". Cryst. (C_6H_6/petrol). Insol. H_2O; sol. Me_2CO, Et_2O, EtOH. Mp 124°.

▶ LD_{50} (mus, orl) 100 mg/kg. NL5250000

Me ester: [15591-70-5]
$C_{13}H_{15}NO_2$ 217.267
Cryst. (MeOH aq.). Mp 73-74°. Bp_6 230°.

Et ester: [49850-32-0]
$C_{14}H_{17}NO_2$ 231.294
Cryst. (cyclohexane). Mp 39-40°.

Hydrazide: [27086-07-3]
$C_{12}H_{15}N_3O$ 217.27
Cryst. (EtOH). Mp 112°.

Amide: [6245-91-6]
$C_{12}H_{14}N_2O$ 202.255
Solid. Mp 86-87°.

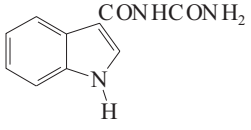
[110627-85-5]

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 668A (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 139A (*nmr*)
Jackson, R.W. *et al., J.A.C.S.*, 1930, **52**, 5029-5035 (*synth, Me ester, hydrazide*)
Suvarov, N.N. *et al., CA*, 1954, **48**, 12078
Bullock, M.W. *et al., J.A.C.S.*, 1956, **78**, 5854-5857 (*Me ester, Et ester*)

Avramenko, V.G. *et al., CA*, 1970, **73**, 14615 (*synth*)
Bowman, R.E. *et al., Chem. Ind. (London)*, 1971, 154 (*synth*)
Sharma, J.P. *et al., Talanta*, 1976, **23**, 841 (*detn*)
Harris, R.L.N. *et al., Aust. J. Plant Physiol.*, 1977, **4**, 235 (*activity*)
Chandrasekhar, K. *et al., Acta Cryst. B*, 1980, **36**, 1165 (*cryst struct*)
Wurst, M. *et al., J. Chromatogr.*, 1984, **286**, 237 (*hplc*)
Soriano-Garcia, M. *et al., Rev. Latinoam. Quim.*, 1984, **15**, 64 (*cryst struct*)
Soriano-Garcia, M. *et al., J. Crystallogr. Spectrosc. Res.*, 1987, **17**, 207 (*cryst struct, picrate*)
Morales-Rios, M.S. *et al., Magn. Reson. Chem.*, 1987, **25**, 377 (*cmr*)
Pesticide Manual, 9th edn., 1991, No. 7270
Agrochemicals Handbook, 3rd edn., Royal Society of Chemistry, 1992, A231
Epstein, E. *et al., Physiol. Plant.*, 1993, **88**, 382 (*rev, occur, synth, metab*)
Mewshaw, R.E. *et al., J. Med. Chem.*, 2004, **47**, 3823-3842 (*amide*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, ICP000

N-(1*H*-Indole-3-carbonyl)urea I-84

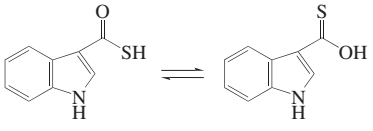
N-*(Aminocarbonyl)-1*H-*indole-3-carboxamide, 9CI*
[159308-53-9]



$C_{10}H_9N_3O_2$ 203.2
Metab. from the sponge *Zyzza massalis.*

Mancini, I. *et al., Helv. Chim. Acta*, 1994, **77**, 1886-1894 (*isol, uv, pmr, cmr, ms, struct*)

1*H*-Indole-3-carbothioic acid, 9CI I-85



C_9H_7NOS 177.226

OH-form

N-*Me, amide: 1-Methyl-1*H-*indole-3-carbothioamide*
[24662-21-3]
$C_{10}H_{10}N_2S$ 190.268
Yellow solid. Mp 125-126°.

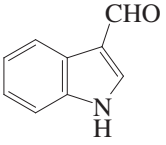
SH-form

Me ester: S-*Methyl 1*H-*indole-3-carbothioate. Methyl 1*H-*indolethiolcarboxylate*
[54584-28-0]
$C_{10}H_9NOS$ 191.253
Isol. from the marine-derived *Oceanibulbus indolifex* Hel 45. Cryst. (C_6H_6/petrol). Mp 164-166°.

Barbero, M. *et al., Synthesis*, 1988, 300-302 (*synth, pmr, cmr*)
Moody, C.J. *et al., Anti-Cancer Drugs*, 1997, **8**, 489-499 (*N-Me amide*)
Wagner-Döbler, I. *et al., Int. J. Syst. Evolut. Microbiol.*, 2004, **54**, 1177-1184 (*isol*)

1*H*-Indole-3-carboxaldehyde, 9CI I-86

Indole-3-aldehyde. 3-Formylindole
[487-89-8]



C_9H_7NO 145.16
Alkaloid from the stem bark of *Murraya exotica* and from the red alga *Botryocladia leptopoda*. Also found in barley and tomato seedlings, cotton, *Pseudomonas syringae, Rhizobium* sp. and the coral *Tubastrea coccinea*. Mp 180° Mp 197-199°. pK_{a2} 12.36 (25°,NH).

▶ NL5993600

N-*Methoxy:* ***1-Methoxy-1*H-*indole-3-carboxaldehyde, 9CI***. *1-Methoxy-3-formylindole*
[67282-55-7]
$C_{10}H_9NO_2$ 175.187
Stress metab. from the Japanese radish Daikon (*Raphanus sativus* var. *hortensis*) inoculated with *Pseudomonas cichorii*. Prisms + ½H_2O (Et_2O/hexane). Mp 50-51°. $Bp_{0.06}$ 109-110°.

Schneider, E.A. *et al., J. Exp. Bot.*, 1972, **23**, 152-170 (*occur*)
Acheson, R.M. *et al., J.C.S. Perkin 1*, 1978, 1117-1125 (*N-methoxy, synth*)
Somei, M. *et al., Chem. Pharm. Bull.*, 1986, **34**, 677-681 (*N-methoxy, synth*)
Monde, K. *et al., Phytochemistry*, 1995, **39**, 581-586 (*1-Methoxy-3-indolecarboxaldehyde, isol*)

1*H*-Indole-5-carboxaldehyde I-87

5-Formylindole
[1196-69-6]
C_9H_7NO 145.16
Alkaloid from *Monodora angolensis.* Mp 99-101°. n_D^{20} 1.4196.

*Ethylene acetal: 5-(1,3-Dioxolan-2-yl)-1*H-*indole, 9CI*
[152879-74-8]
$C_{11}H_{11}NO_2$ 189.213
Light yellow cryst. (toluene). Mp 127-128°.

Troxler, F. *et al., Helv. Chim. Acta*, 1968, **51**, 1616 (*synth*)
Somei, M. *et al., Chem. Pharm. Bull.*, 1986, **34**, 4116 (*synth, ir, pmr, bibl*)
Moyer, M.P. *et al., J.O.C.*, 1986, **51**, 5106 (*synth, pmr*)
Nkunya, M.H.H. *et al., Nat. Prod. Res.*, 2004, **18**, 253-258 (*isol, pmr, cmr*)
Cody, W.L. *et al., Bioorg. Med. Chem.*, 2005, **13**, 59-68 (*synth*)
Fetter, J. *et al., J. Het. Chem.*, 2005, **42**, 137-139 (*synth, ethylene acetal*)

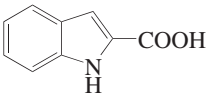
1*H*-Indole-7-carboxaldehyde I-88

7-Formylindole
[1074-88-0]
C_9H_7NO 145.16
Isol. from roots of *Esenbeckia leiocarpa*. Needles (hexane). Mp 87-89°.

Troxler, F. *et al., Helv. Chim. Acta*, 1968, **51**, 1616-1628 (*synth*)
Somei, M. *et al., Chem. Pharm. Bull.*, 1986, **34**, 4116-4125 (*synth, pmr*)
Moyer, M.P. *et al., J.O.C.*, 1986, **51**, 5106-5110 (*synth, pmr*)
Delle Monache, *et al., Gazz. Chim. Ital.*, 1989, **119**, 435-439 (*isol, uv, ir, pmr, cmr, ms*)
Uchil, V.R. *et al., Synth. Commun.*, 2006, **36**, 1051-1056 (*synth, pmr*)
Kochnev, A.I. *et al., Russ. J. Org. Chem. (Engl. Transl.)*, 2007, **43**, 571-575 (*synth, pmr*)
Mohanakrishnan, A.K. *et al., Synth. Commun.*, 2007, **37**, 4343-4352 (*synth*)

1*H*-Indole-2-carboxylic acid I-89

[1477-50-5]



$C_9H_7NO_2$ 161.16
Alkaloid from *Strychnos cathayensis.* Cryst. (C_6H_6 or Et_2O/petrol). Mp 203°. pK_{a2} 17.13 (25°,NH, KOH aq.).

Cheng, M.-J. *et al., J. Chin. Chem. Soc. (Taipei)*, 2001, **48**, 235-239 (*isol*)

1*H*-Indole-3-carboxylic acid I-90

Indole-β-carboxylic acid
[771-50-6]
$C_9H_7NO_2$ 161.16
Present in plants, e.g. apple (*Pyrus malus*), garden pea (*Pisum sativum*), *Brassica* spp, and the marine algae *Undaria pinnatifida* and *Botryocladia leptopoda*. Mp 210-218° (198-200°). pK_{a1} 3.87; pK_{a2} 15.59 (25°,NH). λ_{max} 270 ; 280 ; 288 (EtOH).

α-L-Rhamnopyranosyl ester: [309297-78-7]
$C_{15}H_{17}NO_6$ 307.302
Prod. by *Streptomyces* sp. GT 61150. Light yellow powder ($CHCl_3$/MeOH). Mp 132-133°. $[\alpha]_D^{25}$ -36.8 (c, 0.1 in MeOH). λ_{max} 211 (log ϵ 3.45); 227 (sh) (log ϵ 1.56); 284 (log ϵ 0.97) (MeOH).

[α-L-Rhamnopyranosyl-(1→6)-β-D-glucopyranosyl] ester:
$C_{21}H_{27}NO_{11}$ 469.444
Constit. of the roots of *Clematis manshurica*. Amorph. powder. Mp 130-132°. $[\alpha]_D^{20}$ -121 (c, 2 in MeOH). λ_{max} 210 ; 228 ; 285 ; 322 (MeOH).

Me ester: [942-24-5]
$C_{10}H_9NO_2$ 175.187
Isol. from the red alga *Botryocladia leptopoda* and a *Spongosorites* sp. Phytotoxin. Mp 147-148° (140°). Probably an artifact.

Et ester: [776-41-0]
$C_{11}H_{11}NO_2$ 189.213
Mp 122-124°.

Amide: ***1*H-*Indole-3-carboxamide, 9CI***
[1670-85-5]
$C_9H_8N_2O$ 160.175
Isol. from the sponge *Zyzza massalis*. Solid (EtOAc/hexane). Mp 201-203°.

*Nitrile: 1*H-*Indole-3-carbonitrile, 9CI. 3-Cyanoindole*
[5457-28-3]
$C_9H_6N_2$ 142.16
Alkaloid from a facultatively anaerobic, halophilic bacterium. Mp 178°.

N-*Ac, nitrile:*
$C_{11}H_8N_2O$ 184.197
Mp 202°.

N-*Ethoxycarbonyl, Et ester: Diethyl 1*H-*indole-1,3-dicarboxylate*
[13328-43-3]
$C_{14}H_{15}NO_4$ 261.277
Cryst. (EtOH). Mp 102-104°.

N-*Me: 1-Methyl-1*H-*indole-3-carboxylic acid*
[32387-21-6]
$C_{10}H_9NO_2$ 175.187
Cryst. (2-propanol) or plates (Me_2CO aq.). Mp 212° (200-201° dec.). λ_{max} 215 ; 243 (sh) ; 286 ; 298 (sh) (MeOH).

N-*Me, Me ester:* [108438-43-3]
$C_{11}H_{11}NO_2$ 189.213
Solid. Mp 85-87°.

N-*Me, Et ester:* [56559-60-5]
$C_{12}H_{13}NO_2$ 203.24
Mp 69.7-70.2°.

N-*Me, amide:* [118959-44-7]
$C_{10}H_{10}N_2O$ 174.202
Solid. Mp 176-177°.

N-*Me, nitrile: 3-Cyano-1-methyl-1*H-*indole*
[24662-37-1]
$C_{10}H_8N_2$ 156.187
Cryst. (Et_2O/hexane). Mp 60-61°.

N-*(1,1-Dimethyl-2-propenyl), Me ester:*
[306776-02-3]
$C_{15}H_{17}NO_2$ 243.305
Alkaloid from the fungus *Aporpium caryae*. Antifungal agent. Oil. λ_{max} 240 (log ϵ 3.05); 244 (log ϵ 3.05); 288 (log ϵ 3.03) (CH_2Cl_2).

N-*(2,3-Dihydroxy-1,1-dimethylpropyl)(*S-*), Me ester:* [306776-03-4]
$C_{15}H_{19}NO_4$ 277.319
Alkaloid from the fungus *Aporpium caryae*. Oil. $[\alpha]_D$ -11.8 (c, 0.21 in CH_2Cl_2). λ_{max} 242 (log ϵ 3.05); 248 (log ϵ 3.05); 284 (log ϵ 3.03) (CH_2Cl_2).

N-*Benzyl:* [27018-76-4]
$C_{16}H_{13}NO_2$ 251.284
Cryst. (EtOAc/hexane). Mp 194-196° Mp 198-204°.

N-*Hydroxy: 1-Hydroxy-1*H-*indole-3-carboxylic acid, 9CI*
[18377-48-5]
$C_9H_7NO_3$ 177.159
Pale orange solid. Mp 135-137° dec.

N-*Hydroxy, amide:* [69111-90-6]
$C_9H_8N_2O_2$ 176.174
Green-brown rods (H_2O). Mp 181-182° dec.

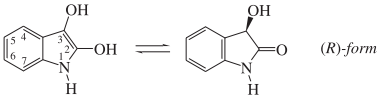
N-*Hydroxy, nitrile: 1*H-*Indole-3-carbonitrile* N-*oxide*
[69111-88-2]
$C_9H_6N_2O$ 158.159
Cryst. (C_6H_6/hexane). Mp 127-128°.

N-*Methoxy, Me ester:* ***Methyl 1-methoxy-1H-indole-3-carboxylate***
[18377-50-9]
$C_{11}H_{11}NO_3$ 205.213
Prod. by Japanese horseradish (*Wasabia japonica*). Phytoalexin. Antifungal agent. Prisms ($CHCl_3$). Mp 45-46° (40-41°) Mp 40-41°.

Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 138A; 158B (*nmr*)
Whalley, W.B. *et al., J.C.S.*, 1954, 1651-1653 (*N-Me, synth*)
Millich, F. *et al., J.O.C.*, 1958, **23**, 1096-1102 (*N-Me, synth*)
Hart, G. *et al., J.O.C.*, 1962, **27**, 2940-2942 (*N-Me, synth*)
Kasparek, S. *et al., Can. J. Chem.*, 1966, **40**, 2805-2811 (*synth*)
Glombitza, K.W. *et al., Planta*, 1966, **69**, 135-149 (*biosynth*)
Katner, A.S. *et al., Org. Prep. Proced. Int.*, 1970, **2**, 297-303 (*synth*)
Aldridge, D.C. *et al., J.C.S.(C)*, 1971, 1623-1627 (*isol*)
Abe, H. *et al., Agric. Biol. Chem.*, 1972, **36**, 2259-2260 (*isol, uv, ms*)
Acheson, R.M. *et al., J.C.S. Perkin 1*, 1978, 1117-1125 (*N-hydroxy*)
Mehta, G. *et al., Synthesis*, 1978, 374-376 (*synth, amide, nitrile*)
Acheson, R.M. *et al., J. Chem. Res., Synop.*, 1984, 101; *J. Chem. Res., Miniprint*, 1984, 1301-1319 (*N-hydroxy, N-methoxy Me ester, synth*)
Plate, R. *et al., Tetrahedron*, 1986, **42**, 6511-6518 (*N-Me, uv*)
Bano, S. *et al., Planta Med.*, 1987, **53**, 117-118 (*isol, uv, pmr, cmr, ms, esters*)
Baiocchi, L. *et al., J. Het. Chem.*, 1988, **25**, 1905-1909 (*synth, N-Me, N-benzyl*)
Swain, C.J. *et al., J. Med. Chem.*, 1992, **35**, 1019-1031 (*N-Me, nitrile*)
Buttery, C.D. *et al., J.C.S. Perkin 1*, 1993, 1425-1431 (*N-Me, synth, ir, pmr*)
Mancini, I. *et al., Helv. Chim. Acta*, 1994, **77**, 1886-1894 (*amide, isol*)
Vorbrüggen, H. *et al., Tetrahedron*, 1994, **50**, 6549-6558 (*nitrile*)
Fu, X. *et al., J. Nat. Prod.*, 1995, **58**, 1950-1954 (*isol, nitrile*)
Prashad, M. *et al., Synth. Commun.*, 1995, **25**, 95-100 (*Me ester, synth*)
Moody, C.J. *et al., Anti-Cancer Drugs*, 1997, **8**, 489-499 (*N-Me Me ester, N-Me amide*)
Pedras, M.S.C. *et al., Phytochemistry*, 1998, **49**, 1959-1965 (*1-methoxy Me ester*)
Hu, J.-F. *et al., J. Antibiot.*, 2000, **53**, 944-953 (*rhamnosyl ester*)
Levy, L.M. *et al., Phytochemistry*, 2000, **54**, 941-943 (*N-1,1-dimethylpropyl derivs*)
Somei, M *et al., Heterocycles*, 2001, **54**, 425-432 (*1-methoxy Me ester, synth*)
Everett, S.A. *et al., J.C.S. Perkin 2*, 2001, 1989-1997 (*N-Me amide*)
Sala, G.D. *et al., Tet. Lett.*, 2002, **43**, 8839-8841 (*N-1,1-dimethylpropyl derivs, synth*)
Hu, S.-C. *et al., Acta Cryst. E*, 2005, **61**, o1654-o1656 (*Me ester, cryst struct*)
Shi, S.-P. *et al., J. Asian Nat. Prod. Res.*, 2006, **8**, 73-78 (*6-rhamnosylglucosyl ester*)
Bao, B. *et al., Mar. Drugs*, 2007, **5**, 31-39 (*Me ester, isol*)

1*H*-Indole-2,3-diol I-91

*1,3-Dihydro-3-hydroxy-2*H-*indol-2-one, 9CI. Dioxindole.* o-*Aminomandelic lactam. 3-Hydroxyoxindole. 2,3-Dihydroxyindole*
[61-71-2]
[5638-85-7]



$C_8H_7NO_2$ 149.149
Oxindole form predominates. Prod. by a marine bacterial strain isol. from gills of *Sphyraena japonica* and prod. by a range of microorganisms present in fish and shellfish. Prod. of metab. of Indole, I-79 by microorganisms. Antioxidant. Cryst. (H_2O or EtOH). Mp 167-168°.

▶ NM3289460

Hydrochloride: Mp 156°.

Acyl deriv.: ***Isatan C***
[397243-11-7]
$C_{20}H_{13}NO_8$ 395.325
Isol. from the leaves of *Isatis tinctoria*. Precursor of Indigotin, I-72.
Full struct. not determined. Ester with a ($C_{11}H_7O_5$)-CO acyl group. Not indexed by CA. λ_{max} 218 ; 280 (no solvent reported).

Fujioka, M. *et al., Biochim. Biophys. Acta*, 1965, **158**, 70-78 (*isol*)
Maugard, T. *et al., Phytochemistry*, 2001, **58**, 897-904 (*Isatan C*)

1*H*-Indole-2,5-diol I-92

*1,3-Dihydro-5-hydroxy-2*H-*indol-2-one, 9CI. 5-Hydroxyoxindole. 2,5-Dihydroxy-1*H-*indole*
[3416-18-0]

$C_8H_7NO_2$ 149.149
Constit. of the leaves of *Isatis tinctoria*. Metab. of 1*H*-Indol-2-ol, I-103, excreted in urine. Cryst. (H_2O or by subl.), needles (EtOAc/petrol). Mp 270° (265-266°) dec.

*Me ether: 1,3-Dihydro-5-methoxy-2*H-*indol-2-one. 5-Methoxyoxindole*
[7699-18-5]
$C_9H_9NO_2$ 163.176
Cryst. (EtOH). Mp 156-157° (153-154°).

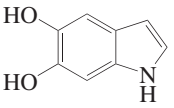
N,O-*Di-Me: 1,3-Dihydro-5-methoxy-1-methyl-2*H-*indol-2-one*
$C_{10}H_{11}NO_2$ 177.202
Cryst. Mp 97-98.5° (91-92.5°).

Beer, R.J. *et al., J.C.S.*, 1953, 1262 (*synth*)
Becket, A.H. *et al., Tetrahedron*, 1968, **24**, 6093 (*synth, ir, uv, pmr, deriv*)
Reio, L. *et al., J. Chromatogr.*, 1974, **88**, 119 (*chromatog*)
Bocelli, G. *et al., J. Mol. Struct.*, 1982, **96**, 127 (*cryst struct*)
Sakamoto, T. *et al., J. Het. Chem.*, 1988, **25**, 1279 (*synth, use*)
Andreani, A. *et al., J. Het. Chem.*, 1988, **25**, 1519 (*deriv*)
Crestini, C. *et al., Synth. Commun.*, 1994, **24**, 2835 (*Me ether*)
Li, L. *et al., CA*, 1996, **125**, 270492x (*isol*)
Smith, K. *et al., J.C.S. Perkin 1*, 1996, 2793 (*N,O-di-Me*)

Li, B. *et al., Yaoxue Xuebao*, 2000, **35**, 508-510 (*isol*)

1*H*-Indole-5,6-diol, 9CI I-93

5,6-Dihydroxyindole. Dopamine lutine
[3131-52-0]



$C_8H_7NO_2$ 149.149
Alkaloid from the leaves of *Rhaphidophora korthalsii* and *Epipremnum pinnatum*. Cytotoxic agent. Intermed. in the tyrosinase-catalysed biosynth. pathway from tyrosine to melanin. Needles (C_6H_6/petrol). Sol. hot H_2O; insol. petrol. Mp 140° dec. Unstable on storage, undergoes spont. oxidn. and condensation to melanin.

▶ Toxic.

N,*6*-O-*Disulfo:* ***Ancorinolate B***
[473740-08-8]
$C_8H_7NO_8S_2$ 309.277
Alkaloid from the sponge *Ancorina* sp. Powder (as di-Na salt). λ_{max} 222 (log ϵ 4.08); 265 (log ϵ 3.61); 296 (log ϵ 3.39) (MeOH) (di-Na salt).

Wong, K.T. *et al., Nat. Prod. Lett.*, 1996, **9**, 137-140 (*isol, ir, pmr, cmr, ms*)
Meragelman, K.M. *et al., J.O.C.*, 2002, **67**, 6671-6677 (*Ancorinolate B*)

1*H*-Indole-6,7-diol, 9CI I-94

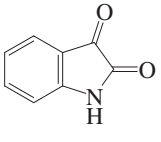
6,7-Dihydroxyindole
[151980-99-3]

$C_8H_7NO_2$ 149.149
Poss. marine alkaloid from several *Agelas* spp. Identified on the basis of colour reacns. only; struct. of the alkaloid requires reinvestigation. Could be the isomer 4,6-Dihydroxyindole.

Stempien, M.F. *et al., Am. Zool.*, 1966, **6**, 363 (*isol*)

1*H*-Indole-2,3-dione, 9CI I-95

2,3-Indolinedione. ***Isatin***
[91-56-5]



$C_8H_5NO_2$ 147.133
Isol. from the fungal pigment of a mutant of *Schizophyllum commune*. Prod. by *Alteromonas* sp.I2 and a marine *Halomonas* sp. RK377. Also prod. by an *Alteromonas* sp. commensal in shrimp embryos *Palaemon macrodactylus* and in egg masses of the muricid mollusc *Trunculariopsis trunculus*. Intermed. for indigoid dyestuffs. Used as 0.2% MeOH soln. for photometric detn. of Thiophene, Proline, hydroxyproline. Chromatog. spray for amino acids. Shows antifungal activity in the marine environment.
Orange cryst. Spar. sol. H_2O. Mp 203.5° dec. Sublimes.

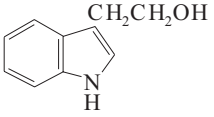
▶ Exp. reprod. effects. NL7873000

[73859-66-2 , 73859-64-0]

Epstein, E. *et al., CA*, 1966, **66**, 102443 (*isol*)
Popp, F.D. *et al., Adv. Heterocycl. Chem.*, 1975, **18**, 1-58 (*rev*)
Liang, L. *et al., Dissertation*, Univ. of Göttingen, 2003, (*marine, isol, pmr, cryst struct*)
Smith, K. *et al., Synthesis*, 2003, 2047-2051 (*synth, ir, pmr, cmr, ms*)
Pelosi, G. *et al., Acta Cryst. C*, 2005, **61**, o589-o592 (*cryst struct*)

1*H*-Indole-3-ethanol, 9CI I-96

3-(2-Hydroxyethyl)indole. 2-(3-Indolyl)ethanol. ***Tryptophol***
[526-55-6]



$C_{10}H_{11}NO$ 161.203
Isol. from Tryptophan fermentations, plant seedlings and *Candida* spp., *Aspergillus niger*, *Agrobacterium tumefaciens*, *Ceratocystis* spp. and *Rhizobium* spp. Also isol. from the sponge *Ircinia spinulosa*. Plant auxin. Active against gram-positive bacteria and *Candida albicans*. Associated with fungal diseases of trees. Prisms (C_6H_6/petrol); plates (Et_2O/petrol). Sol. most org. solvs.; spar. sol. H_2O, petrol. Mp 59°. Bp_2 174°. Red. soln. in warm conc. H_2SO_4.

▶ LD_{50} (mus, ipr) 351 mg/kg. KL3685000

Picrate:
Red needles (H_2O). Mp 100-101°.

O-*β-D-Galactopyranoside: Tryptophol galactoside*
[95088-52-1]
$C_{16}H_{21}NO_6$ 323.345
Isol. from *Euglena gracilis*.

O-*β-D-Glucopyranoside: Tryptophol glucoside*
[40883-44-1]
$C_{16}H_{21}NO_6$ 323.345
Isol. from numerous plant and algae. Plant growth promotor.

O-*[β-D-Xylopyranosyl-(1→6)-β-D-glucopyranoside]:* [149817-65-2]
$C_{21}H_{29}NO_{10}$ 455.461
Isol. from *Lycium chinense* (Chinese boxthorn). Pale yellow powder. $[\alpha]_D^{20}$ -32.7 (c, 0.4 in MeOH).

O-*Ac:* [13137-14-9]
$C_{12}H_{13}NO_2$ 203.24
Oil.

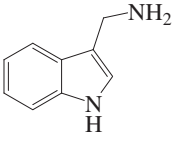
N-*Benzoyl:*
$C_{17}H_{15}NO_2$ 265.311
Yellow prisms and plates (petrol). Mp 76°.

O-*Phenylacetyl: 2-(3-Indolyl)ethyl phenylacetate.* ***Monaspiloindole***
$C_{18}H_{17}NO_2$ 279.338
Isol. from *Monascus pilosus*. Oil. λ_{max} 280 (log ϵ 3.74) (MeOH).

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 659B (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 130A (*nmr*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 1502A (*ir*)
Jackson, R.W. *et al., J. Biol. Chem.*, 1930, **88**, 659
Snyder, H.R. *et al., J.A.C.S.*, 1948, **70**, 3770-3771 (*synth, bibl*)
Nogrady, T. *et al., Can. J. Chem.*, 1964, **42**, 485-486 (***synth***)
Narayanan, T.K. *et al., Antimicrob. Agents Chemother.*, 1976, **9**, 375 (*isol, props*)
Magnus, V. *et al., Carbohydr. Res.*, 1979, **76**, 261 (*synth, glucoside*)
Lacan, G. *et al., Plant Physiol.*, 1984, **76**, 889; 1985, **78**, 447 (*glucoside, galactoside*)
Ayer, W.A. *et al., Can. J. Chem.*, 1986, **64**, 904 (*isol*)
Yahara, S. *et al., Chem. Pharm. Bull.*, 1993, **41**, 703 (*xylosylglucoside*)
Novák, L. *et al., Annalen*, 1995, 1877 (*Ac*)
Böhlendorf, B. *et al., Annalen*, 1996, 49 (*isol, ir, pmr, cmr, ms*)
Erdogan, I. *et al., Biochem. Syst. Ecol.*, 2000, **28**, 793-794 (*isol, sponge*)
Garcez, W.S. *et al., J. Braz. Chem. Soc.*, 2005, **16**, 1382-1386 (*glucoside, isol, pmr, cmr*)
Cheng, M.-J. *et al., Chem. Pharm. Bull.*, 2008, **56**, 394-397 (*Monaspiloindole*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, ICS000

1*H*-Indole-3-methanamine I-97

3-Indolylmethylamine. 3-(Aminomethyl)indole. **N-*Dinorgramine*** N-*Bisnorgramine*
[22259-53-6]



$C_9H_{10}N_2$ 146.191
Detected in *Hordeum vulgare* (barley). Cryst. (C_6H_6). Mp 103-104° (101-102°).

1′-N-*Ac:*
$C_{11}H_{12}N_2O$ 188.229
Cryst. (C_6H_6). Mp 133-134°.

1′-N-*Benzoyl:*
$C_{16}H_{14}N_2O$ 250.299
Mp 157-159°.

N^1-*Me: 1-Methyl-1*H*-indole-3-methanamine. 3-(Aminomethyl)-1-methylindole.* ***Donaxamine***
[19293-60-8]
$C_{10}H_{12}N_2$ 160.218
Alkaloid from the aerial parts of *Arundo donax*. Mp 178-179°.

′-N-*Me: 3-(Methylaminomethyl)indole.* **N-*Norgramine***
$C_{10}H_{12}N_2$ 160.218
Detected in *Hordeum vulgare* (barley). Cryst. (EtOH)(as picrate). Mp 176-176.5° (picrate).

*1′*N,*1′*N-*Di-Me:* see 3-[(Dimethylamino)methyl]indole, D-736

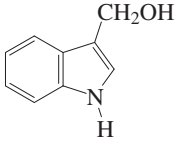
1-Methoxy, 1′-N-*formyl: 3-(Formylaminomethyl)-1-methoxyindole.* ***Caulilexin B***
$C_{11}H_{12}N_2O_2$ 204.228
Alkaloid from *Brassica oleracea* var.

botrytis (cauliflower). Phytoalexin. Cryst. (CH_2Cl_2/MeOH). Mp 71-73°. λ_{max} 221 (log ϵ 4.4); 290 (log ϵ 3.7) (MeOH).

Putochin, N. *et al., Ber.*, 1926, **59**, 1987
Mudd, S.H. *et al., Nature (London)*, 1961, **189**, 489 (*N-Norgramine*)
Gower, B.E. *et al., J.A.C.S.*, 1963, **85**, 3683 (*synth*)
Zhalolov, I. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2000, **36**, 528-530 (*Donaxamine*)
Csomós, P. *et al., Tetrahedron*, 2005, **61**, 9257-9262 (*synth, N-benzoyl*)
Gaspari, P. *et al., J. Med. Chem.*, 2006, **49**, 684-692 (*synth*)
Pedras, M.S.C. *et al., Phytochemistry*, 2006, **67**, 1503-1509 (*Caulilexin B*)
Kutschy, P. *et al., Tetrahedron*, **54**, 3549-3566 (*synth, 1-Me*)

1*H*-Indole-3-methanol I-98

3-Hydroxymethylindole. Indole-3-carbinol
[700-06-1]



C_9H_9NO 147.176
Isol. from cruciferous vegetables. Shown clinically to have anti-cancer props. Potential nutriceutical. Platelets (C_6H_6). Mp 89-91° Mp 158°. pK_{a1} 16.5 (25°,NH, KOH aq.). Mp dependent on rate of heating.

▶ Exp. teratogenic effects. NL9483000

N-*Ac:*
$C_{11}H_{11}NO_2$ 189.213
Cryst. (C_6H_6/EtOAc). Mp 137-139°.

O,N-*Di-Ac:*
$C_{13}H_{13}NO_3$ 231.251
Cryst. (EtOH). Mp 89-90°.

N-*Me:* [6965-44-2]
$C_{10}H_{11}NO$ 161.203
Needles. Mp 30°. Bp_5 150-160°.

▶ NL9486900

N-*Me, trinitrobenzene complex:*
Cryst. (MeOH). Mp 139-141°.

Mingoia, G. *et al., Gazz. Chim. Ital.*, 1932, **62**, 844 (*synth*)
Ames, D.E. *et al., J.C.S.*, 1956, 1984 (*synth*)
Leete, E. *et al., J.A.C.S.*, 1959, **81**, 6023 (*N-methyl*)
Mattocks, A.R. *et al., J.C.S. Perkin 1*, 1978, 896 (*N-methyl*)
Broadbent, T.A. *et al., Curr. Med. Chem.*, 1998, **5**, 337-352; 469-491 (*rev, pharmacol*)
Jeffery, E.H. *et al., Handbook of Nutraceuticals and Functional Foods*, (ed. Wildman, R.E.C.), CRC Press,, 2001, 169-191
Goyal, R.N. *et al., J.C.S. Perkin 2*, 2001, 618-623 (*props, bibl*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, ICP100

1*H*-Indole-7-methanol, 9CI I-99

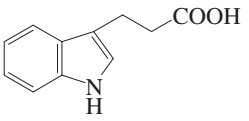
7-Hydroxymethylindole
[1074-87-9]

C_9H_9NO 147.176
Alkaloid from roots of *Esenbeckia leiocarpa*. Needles (CH_2Cl_2/hexane). Mp 56-56.5°.

Somei, M. *et al., Chem. Pharm. Bull.*, 1986, **34**, 4116 (*synth*)
Delle Monache, F. *et al., Gazz. Chim. Ital.*, 1989, **119**, 435 (*isol, pmr, cmr, ms*)
Uchil, V.R. *et al., Synth. Commun.*, 2006, 1051-1056 (*synth, ir, pmr*)

1*H*-Indole-3-propanoic acid I-100

3-(3-Indolyl)propionic acid. Antibiotic KG 431B. IPA. KG 431B
[830-96-6]



$C_{11}H_{11}NO_2$ 189.213
Isol. from *Claviceps* (ergot) cultures. Mp 134° (111-112°).

▶ NM1329000

Me ester: [5548-09-4]
$C_{12}H_{13}NO_2$ 203.24
Mp 79-80°.

▶ NM1480000

Cyclohexyl ester: ***Indobinine***
[109897-76-9]
$C_{17}H_{21}NO_2$ 271.358
Alkaloid from roots of *Rauwolfia serpentina* (Apocynaceae). Elongated rods (MeOH). Mp 180-181°.

Benzyl ester: ***Indobine***
[85612-35-7]
$C_{18}H_{17}NO_2$ 279.338
Alkaloid from the roots of *Rauwolfia serpentina* (Apocynaceae). Needles (MeOH). Mp 163-164°.

Amide: ***1H-Indole-3-propanamide***
[5814-93-7]
$C_{11}H_{12}N_2O$ 188.229
Cryst. (MeOH aq.). Mp 134-136°.

Methylamide: **N-*Methyl-1H-indole-3-propanamide***. *3-(3-Indolyl)*-N-*methylpropanamide*
[69397-85-9]
$C_{12}H_{14}N_2O$ 202.255
Prod. by *Omphalotus olearius* (common chanterelle). Cryst. (CH_2Cl_2/petrol). Mp 97.5-99° (synthetic).

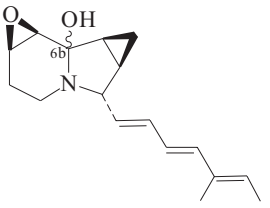
Hydrazide: [20401-90-5]
$C_{11}H_{13}N_3O$ 203.243
Mp 129-130°.

Nitrile: 3-(2-Cyanoethyl)indole
[4414-76-0]
$C_{11}H_{10}N_2$ 170.213
Mp 67-68°.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 667D (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 138C (*nmr*)
Yamano, T. *et al., CA*, 1963, **58**, 763 (*isol*)
Ghosal, S. *et al., J. Indian Chem. Soc.*, 1964, **41**, 496 (*synth*)
Bowman, R.E. *et al., Chem. Ind. (London)*, 1971, 154 (*synth*)
Siddiqui, S. *et al., Indian J. Chem., Sect. B*, 1987, **26**, 279 (*Indobinine*)
Siddiqui, S. *et al., Z. Naturforsch., B*, 1987, **42**, 783 (*Indobine*)
Thompson, A.M. *et al., J. Med. Chem.*, 1994, **37**, 598-609 (*synth, amide*)
Mayer, A. *et al., Nat. Prod. Lett.*, 1997, **10**, 25-32 (*methylamide*)
Okabe, N. *et al., Acta Cryst. C*, 1998, **54**, 386-387 (*cryst struct*)
Mewshaw, R.E. *et al., J. Med. Chem.*, 2004, **47**, 3823-3842 (*amide*)
Black, P.J. *et al., Eur. J. Org. Chem.*, 2006, 4367-4378 (*nitrile*)

Indolizomycin I-101

*Octahydro-5-(5-methyl-1,3,5-heptatrienyl)-6*bH-*cycloprop[*a*]oxireno[*g*]indolizin-6*b-*ol, 9CI*
[94935-24-7]



$C_{17}H_{23}NO_2$ 273.374
Triene antibiotic. Isol. from *Streptomyces griseus*. Weakly active against gram-positive and gram-negative bacteria. Pale-yellow thick oil. Sol. MeOH, EtOAc; poorly sol. H_2O. $[\alpha]_D^{20}$ -28.6 (c, 0.5 in MeOH). LD_{50} 12.5 mg/kg (i.p. mice). Related to Cyclizidine. λ_{max} 260 (sh) (ϵ 29100); 268 (ϵ 33400); 277 (sh) (ϵ 27300) (MeOH) (Derep). λ_{max} 268 (ϵ 33400) (MeOH) (Berdy).

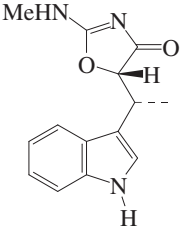
▶ LD_{50} (mus, ipr) 12.5 - 25 mg/kg. GZ2247500

6b-*Deoxy: Deoxyindolizomycin*
[94935-27-0]
$[\alpha]_D^{27}$ -12.6 (c, 1 in MeOH).

Hotta, K. *et al., J. Antibiot.*, 1984, **37**, 1491 (*isol*)
Yamashita, F. *et al., J. Antibiot.*, 1985, **38**, 58; 64 (*isol*)
Kim, G. *et al., J.A.C.S.*, 1993, **115**, 30 (*synth*)
Nicolaou, K.C. *et al., Classics in Total Synthesis, Targets, Strategies, Methods*, VCH, 1996, 471 (*bibl, synth*)
Groaning, M.D. *et al., Tet. Lett.*, 1999, **40**, 4639-4642 (*synth*)

Indolmycin I-102

*5-[1-(1*H*-Indol-3-yl)ethyl]-2-(methylamino)-4(5*H*)-oxazolone, 9CI. PA 155A. Antibiotic PA 155A*
[21200-24-8]
[20893-33-8 (Isoindolmycin), 21200-23-7]



Absolute Configuration

$C_{14}H_{15}N_3O_2$ 257.291
Isol. from *Streptomyces albus* BA 3972 and *Streptomyces griseus* ATCC 12648. Shows activity against gram-positive bacteria including mycobacteria. L-Tryptophan antagonist. Prisms (MeOH or EtOAc). Sol. MeOH, Me_2CO, butanol,

EtOH; fairly sol. H_2O, C_6H_6, Et_2O; poorly sol. hexane. Mp 209-210°. $[\alpha]_D^{25}$ -214 (c, 2 in MeOH).

▶ LD_{50} (mus, scu) 800mg/kg.

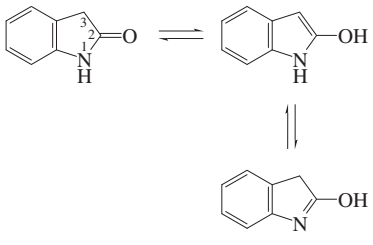
Dipicrate:
Orange-red plates (EtOH/Et_2O). Mp 148-149°.

[13786-41-9 ±-form]

Schach von Wittenau, M. *et al., J.A.C.S.*, 1963, **85**, 3425-3431 (*synth, struct*)
Preobrazhenskaya, M.N. *et al., Tetrahedron*, 1968, **24**, 6131-6143 (*synth*)
Chan, T.H. *et al., J.O.C.*, 1970, **35**, 3519-3521 (*abs config*)
Hornemann, V. *et al., J.A.C.S.*, 1971, **93**, 3028-3035 (*biosynth*)
Hirota, A. *et al., Agric. Biol. Chem.*, 1978, **42**, 147-151 (*isol, uv, ir, ms*)
Dirlam, J.P. *et al., J.O.C.*, 1986, **51**, 4920-4924 (*synth*)
Akita, H. *et al., Chem. Pharm. Bull.*, 1990, **38**, 323-328 (*synth*)
Bando, T. *et al., Heterocycles*, 1997, **46**, 111-114 (*synth*)
Hasuoka, A. *et al., Chem. Pharm. Bull.*, 2001, **49**, 1604-1608 (*synth*)
Sutou, N. *et al., Tetrahedron: Asymmetry*, 2008, **19**, 1833-1838 (*synth*)

1*H*-Indol-2-ol I-103

*1,3-Dihydro-2*H*-indol-2-one, 9CI. 2-Indolinone, 8CI. 2-Hydroxyindole. Oxindole*
[59-48-3]



C_8H_7NO 133.149

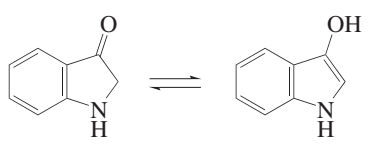
In solid state exists solely as oxo tautomer which also predominates in soln. Prod. by *Chromobacterium violaceum* and *Penicillium* spp. Also found in the oil of *Narcissus geranium*. Shows phospholipase A_2 inhibitory activity. Shows weak cytotoxic effect. Needles (H_2O). Mp 127°. Bp_{23} 227°. Reduces Tollen's reagent.

▶ LD_{50} (mus, orl) 400 mg/kg. NM2080500

Haun, M. *et al., Biol. Res.*, 1992, **25**, 21 (*isol*)
Witter, L. *et al., Z. Naturforsch., C*, 1998, **53**, 60-66 (*isol, activity*)

1*H*-Indol-3-ol, 9CI I-104

*1,2-Dihydro-3*H*-indol-3-one, 9CI. Indoxyl. Dihydro-3-oxoindole. 3-Hydroxyindole. Pseudoindoxyl*



oxo-form *OH-form*

C_8H_7NO 133.149

OH-form prob. favoured for parent. Unstable yellow solid. Mp 85°. Readily oxidised in air, especially in alkaline soln. to Indigotin, I-72.

N-*Ac:* [33025-60-4]
$C_{10}H_9NO_2$ 175.187
Needles (H_2O). Mp 139° (135°). Shown by ir studies to exist in soln. as oxo-form.

OH-form [480-93-3]

O-*Sulfate:*
$C_8H_7NO_4S$ 213.214
Isol. from *Murex trunculus.*

O-*β-D-Glucopyranoside:* ***Indican***. *Plant indican. Uroxanthin*
[487-60-5]
$C_{14}H_{17}NO_6$ 295.291
Occurs in *Polygonum tinctorium, Isatis tinctoria*, *Celosia argentea* and *Indigofera* spp. Biosynth. precursor to Indigotin, I-72. Shows growth inhibitory activity on the germination of lettuce. Cryst. + $3H_2O$ (H_2O). Mp 57-58° (hydrate) Mp 180° (anhyd.). $[\alpha]_D^{15}$ -66.2 (H_2O).

O-*β-D*-ribo-*Hexopyranos-3-uloside:* ***Isatan B***
[20307-14-6]
$C_{14}H_{15}NO_6$ 293.276
Constit. of *Isatis tinctoria*. Precursor of Indigotin, I-72. Beige amorph. powder. $[\alpha]_D^{20}$ -14 (c, 1 in MeOH). Readily undergoes hydrol. Occurs as hydrate in aq. solns. λ_{max} 223 (ϵ 32200); 281 (ϵ 5700) (MeOH).

O-*(6-*O*-Malonyl-β-D-*ribo-*hexopyranos-3-uloside):* ***Isatan A***
$C_{17}H_{17}NO_9$ 379.323
Constit. of *Isatis tinctoria*. Precursor of Indigotin, I-72. Beige amorph. powder. $[\alpha]_D^{20}$ -10.5 (c, 1 in MeOH). Readily undergoes hydrol. Occurs as hydrate in aq. solns. λ_{max} 212 (log ϵ 2.03); 251 (log ϵ 3.51); 280 (log ϵ 4.61) (MeOH).

O-*[β-D-Glucopyranosyl-(1→6)-β-D-glucopyranoside]: 3-Indolyl gentiobioside.* ***Glucoindican***
$C_{20}H_{27}NO_{11}$ 457.433
Constit. of *Calanthe discolor* and *Calanthe liukiuensis.* Powder. $[\alpha]_D^{25}$ +164 (MeOH). λ_{max} 224 (log ϵ 5.4); 282 (log ϵ 4.7) (no solvent reported).

O-*Ac: 3-Acetoxy-1*H*-indole*
[608-08-2]
$C_{10}H_9NO_2$ 175.187
Alkaloid from *Strychnos cathayensis.* Cryst. (H_2O). Mp 127.5°.

▶ LD_{50} (mus, ipr) 600 mg/kg. AI3325000

1,3-Di-Ac: [16800-67-2]
$C_{12}H_{11}NO_3$ 217.224
Cryst. (H_2O). Mp 82°.

1-Benzoyl, 3-Ac: [90539-82-5]
$C_{17}H_{13}NO_3$ 279.295
Cryst. (EtOH). Mp 87°.

3-Benzoyl, 1-Ac: [110912-16-8]
$C_{17}H_{13}NO_3$ 279.295
Cryst. (2-propanol). Mp 158-160°.

1-Me, 3-Ac: [3260-63-7]
$C_{11}H_{11}NO_2$ 189.213
Cryst. (EtOH aq.). Mp 56.5°.

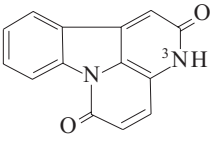
*Et ether: 3-Ethoxy-1*H*-indole*
[916756-92-8]
$C_{10}H_{11}NO$ 161.203
Purple oil.

[3260-61-5 , 487-94-5]

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 675B (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 148B (*nmr*)
Spencer, G. *et al., J. Soc. Chem. Ind., London*, 1931, **50**, 63T (*N-Ac, 3-O-Ac, synth*)
Robertson, A. *et al., J.C.S.*, 1933, 30 (*Indican*)
Holt, S.J. *et al., J.C.S.*, 1958, 1217 (*N-Ac, conformn, ir*)
Kirby, G.W. *et al., Chem. Comm.*, 1965, 381 (*synth*)
Raileanu, D. *et al., Rev. Roum. Chim.*, 1967, **12**, 105; *CA*, **68**, 21775 (*N-Ac, di-Ac, synth*)
Baker, J.T. *et al., Tet. Lett.*, 1968, 43; 1976, 1233-1234 (*sulfate*)
Fouquet, H. *et al., Angew. Chem., Int. Ed.*, 1971, **10**, 816-817 (*sulfate, isol*)
Rodd's Chem. Carbon Compd. (2nd edn.), 1973, **4A**, 454 (*rev*)
Strobel, J. *et al., Biochem. Physiol. Pflanz.*, 1989, **184**, 321 (*occur*)
Traldi, P. *et al., Rapid Commun. Mass Spectrom.*, 1990, **4**, 335 (*ms*)
Xia, Z.-Q. *et al., Phytochemistry*, 1992, **31**, 2695 (*Indican, Isatan B, biosynth, cmr*)
Yoshikawa, M. *et al., Chem. Pharm. Bull.*, 1998, **46**, 886-888 (*Glucoindican*)
Sawabe, A. *et al., Stud. Plant Sci.*, 1999, **6**, 290-296 (*Indican, isol, activity*)
Cheng, M.-J. *et al., J. Chin. Chem. Soc. (Taipei)*, 2001, **48**, 235-239 (*3-Acetoxyindole, isol*)
Cooksey, C.J. *et al., Molecules*, 2001, **6**, 736-769 (*sulfate, rev*)
Oberthür, C. *et al., Chem. Biodiversity*, 2004, **1**, 174-182 (*Isatans A,B*)
Clawson, R.W. *et al., Tetrahedron*, 2006, **62**, 10829-10834 (*Et ether*)

3*H*-Indolo[3,2,1-*de*][1,5]-naphthyridine-2,6-dione, 9CI I-105

Canthin-2,6-dione
[86293-43-8]



$C_{14}H_8N_2O_2$ 236.229
Alkaloid from the wood of *Simaba multiflora* (Simaroubaceae). Yellow microneedles. Mp 290-305°. λ_{max} 227 (ϵ 27500); 247 (ϵ 21900); 253 (ϵ 20400); 291 (ϵ 9770); 300 (ϵ 10200); 400 (sh) (ϵ 8130); 421 (ϵ 12900); 445 (ϵ 13800) (MeOH) (Derep).

N^3-*Me:* ***3-Methylcanthin-2,6-dione***
[82652-21-9]
$C_{15}H_{10}N_2O_2$ 250.256
Alkaloid from the roots of *Picrasma quassioides* (Simaroubaceae). Orange-red needles ($CHCl_3$/MeOH). Mp 330°. Strong yellow-green fluor. in soln. λ_{max} 227 (log ϵ 4.25); 242 (log ϵ 4.33); 250 (log ϵ 4.3); 287 (log ϵ 3.87); 345 (log ϵ 3.55); 444 (log ϵ 4.1); 462 (log ϵ 4.1) (EtOH).

N^3-*Methoxy:* ***3-Methoxycanthin-2,6-dione***
[74991-92-7]
$C_{15}H_{10}N_2O_3$ 266.256
Alkaloid from the wood of *Simaba multiflora* and the trunk bark of *Simaba cuspidata* var. *typica* (Simaroubaceae). Red cryst. (AcOH). Mp 330°. Strong green fluor. in soln. λ_{max} 227 (ϵ 17400); 232 (sh) (ϵ 17400); 248 (ϵ 16600); 253 (sh) (ϵ 16200); 292 (ϵ 10200); 302 (ϵ 10200); 325 (ϵ 6460); 403 (sh) (ϵ 9330); 420 (ϵ 13500) (MeOH) (Derep). λ_{max} 226 (ϵ 14500); 247 (ϵ 13500); 290 (ϵ 4300); 302 (ϵ 4500); 325 (ϵ 2700); 422 (ϵ 7100); 446 (ϵ 8000) (MeOH) (Berdy).

4-Methoxy, 5-hydroxy, N^3*-Me:* ***5-Hydroxy-4-methoxy-3-methylcanthin-2,6-dione***
[129724-30-7]
$C_{16}H_{12}N_2O_4$ 296.282
Alkaloid from the wood of *Quassia amara* (Surinam quassia) (Simaroubaceae). Orange-red needles (MeOH). Mp 250-254°.

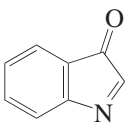
10-Hydroxy, N^3*-methoxy:* ***10-Hydroxy-3-methoxycanthin-2,6-dione***
[86293-42-7]
$C_{15}H_{10}N_2O_4$ 282.255
Alkaloid from the wood of *Simaba multiflora* (Simaroubaceae). Yellow microneedles. Mp 280-290° dec.

*5-Methoxy: 5-Methoxy-3*H*-indolo[3,2,1-de][1,5]naphthyridine-2,6-dione. 5-Methoxycanthin-2,6-dione.* ***Indicanthinone***
[35817-57-3]
$C_{15}H_{10}N_2O_3$ 266.256
Alkaloid from the wood of *Samadera indica* (Simaroubaceae). Stout red needles ($CHCl_3$/MeOH). Mp 258° dec. Displays intense yellow-green fluor. in organic solvents.

Iyer, V.S. *et al., Curr. Sci.*, 1972, **41**, 140-141 (*Indacanthinone*)
Giesbrecht, A.M. *et al., Phytochemistry*, 1980, **19**, 313-315 (*3-Methoxycanthin-2,6-dione*)
Ohmoto, T. *et al., Chem. Pharm. Bull.*, 1982, **30**, 1204-1209 (*3-Methylcanthin-2,6-dione*)
Arisawa, M. *et al., J. Nat. Prod.*, 1983, **46**, 222-225 (*Canthin-2,6-dione, 10-Hydroxy-3-methoxy-2,6-canthindione*)
Barbetti, P. *et al., Planta Med.*, 1990, **56**, 216-217 (*5-Hydroxy-4-methoxy-3-methyl-2,6-canthindione*)

3*H*-Indol-3-one, 9CI, 8CI I-106

3-Oxoindole. Dehydroindoxyl. 3-Pseudoindolone
[67285-12-5]



C_8H_5NO 131.134
Pigment from the edible fungus *Pleurotus salmoneostramineus.* Dark orange-red prisms. Mp 110-112° dec. λ_{max} 208 (ϵ 1318); 220 (ϵ 1288); 282 (ϵ 501); 290 (ϵ 489); 456 (ϵ 692); 480 (MeOH) (Berdy).

Oxime: 3-Hydroxyiminoindole. 3-Nitrosoindole
[76983-82-9]
$C_8H_6N_2O$ 146.148
Brown needles (C_6H_6). Mp 180-182° dec. Tautomeric.

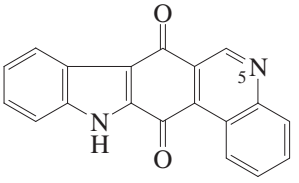
1-Oxide: Isatogen
[5814-98-2]
$C_8H_5NO_2$ 147.133

1-Oxide, oxime: [69111-91-7]
$C_8H_6N_2O_2$ 162.148
Yellow-green needles (H_2O). Mp 167-169°. Subl. *ca.* 150.

Neunhoeffer, O. *et al., Chem. Ber.*, 1961, **94**, 2965-2967
Stamm, H. *et al., Method. Chim.*, 1975, **6**, 329 (*rev*)
Hiremath, S.P. *et al., Adv. Heterocycl. Chem.*, 1978, **22**, 123-181 (*rev*)
Acheson, R.M. *et al., J.C.S. Perkin 1*, 1978, 1117-1125 (*1-oxide, oxime*)
Hiremath, S.P. *et al., Indian J. Chem., Sect. B*, 1980, **19**, 767-769 (*oxime*)
Takehuma, S. *et al., J.A.C.S.*, 1994, **116**, 8849-8850 (*isol*)
Portela-Cubillo, F. *et al., Chem. Comm.*, 2007, 4041-4043 (*synth*)

7*H*-Indolo[3,2-*j*]phenanthridine-7,13(12*H*)-dione, 9CI I-107

Calothrixin B
[254114-34-6]



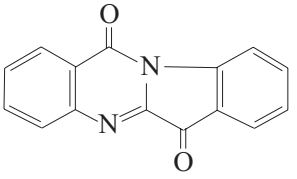
$C_{19}H_{10}N_2O_2$ 298.3
Alkaloid from the cyanobacterium *Calothrix* sp. obtained from soil. Exhibits antimalarial and cytotoxic activities. Amorph. orange-red solid. λ_{max} 283 (ϵ 15000); 352 (ϵ 2900); 405 (ϵ 1710) (EtOH).

N^5-*Oxide:* ***Calothrixin A***
[254114-33-5]
$C_{19}H_{10}N_2O_3$ 314.3
Alkaloid from *Calothrix* sp. obtained from soil. Exhibits antimalarial and cytotoxic activities. Long wine-red needles (DMSO). Dec. at 280°. λ_{max} 292 (ϵ 19000); 362 (ϵ 4260); 413 (ϵ 3100) (EtOH).

Rickards, R.W. *et al., Tetrahedron*, 1999, **55**, 13513-13520 (*isol*)
Bernardo, P.H. *et al., J.O.C.*, 2003, **68**, 8906-8909 (*synth*)
Tohyama, S. *et al., Tet. Lett.*, 2005, **46**, 5263-5264; 2006, **47**, 5859-5861 (*synth*)
Sissouma, D. *et al., J.O.C.*, 2006, **71**, 8384-8389 (*synth*)
Bennasar, M.-L *et al., Org. Lett.*, 2006, **8**, 561-564 (*synth*)
McErlean, C.S.P. *et al., Tetrahedron*, 2007, **63**, 10963-10970 (*synth*)

Indolo[2,1-*b*]quinazoline-6,12-dione, 9CI I-108

*6,12-Dihydro-6,12-dioxoindolo[2,1-*b*]quinazoline.* ***Tryptanthrine****. Couroupitine A*
[13220-57-0]

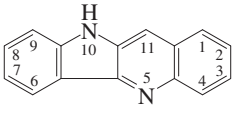


$C_{15}H_8N_2O_2$ 248.24
Isol. from the yeast *Candida lipolytica* grown in the presence of L-Trytophan. Also from *Couroupita guianensis* (Lecythidaceae), *Isatis indigotica* and *Polygonum tiucforum*. Prod. by *Cytophaga marinoflava* sp. AM13.1. Antifungal and antimicrobial agent showing specific activity against dermatophytes. Active against *Helicobacter pylori*. Yellow needles. Sol. MeOH, $CHCl_3$; poorly sol. H_2O, bases, acids. Mp 266-267°. Subl. *in vacuo*. Couroupitine A was initially assigned an incorr. struct. λ_{max} 248 ; 252 ; 277 ; 311 ; 328 ; 387 (MeOH) (Berdy). λ_{max} 254 (ϵ 34800); 280 (ϵ 7000); 340 (ϵ 7200); 405 (ϵ 6600) (EtOH) (Berdy).

Brufani, M. *et al., Experientia*, 1971, **27**, 1249 (*cryst struct, pmr, ms*)
Fedeli, W. *et al., J.C.S. Perkin 2*, 1974, 1621 (*cryst struct*)
Bergman, J. *et al., Tet. Lett.*, 1977, 2625 (*struct, synth*)
Karpf, H. *et al., Tet. Lett.*, 1978, 3007 (*synth, ir, uv, ms*)
Honda, G. *et al., Planta Med.*, 1979, **37**, 172 (*props*)
Mitscher, L.A. *et al., Heterocycles*, 1981, **15**, 1017 (*synth*)
Capuano, L. *et al., Chem. Ber.*, 1983, **116**, 741 (*synth*)
Eguchi, S. *et al., Heterocycles*, 1992, **33**, 153 (*synth*)
Cornforth, J. *et al., J.C.S. Perkin 1*, 1996, 2787 (*synth*)
Hashimoto, T. *et al., Nat. Med. (Tokyo)*, 1999, **53**, 27 (*isol, activity*)
Shaaban, M. *et al., Dissertation*, Univ. of Göttingen, 2004, (*Cytophaga, isol, pmr, cmr*)
Batanero, B. *et al., Tet. Lett.*, 2006, **47**, 8201-8203 (*synth*)
Bowman, W.R. *et al., Org. Biomol. Chem.*, 2007, **5**, 103-113 (*synth*)

Indolo[3,2-*b*]quinoline I-109

Quindoline
[243-58-3]



10*H-form*

$C_{15}H_{10}N_2$ 218.257
10*H*-Form appears to predominate for parent compd. Alkaloid from the roots of *Cryptolepis sanguinolenta* (Asclepiadaceae). Active against gram-positive bacteria. Anticomplementary agent. Needles

(EtOH) (isol. from the plant as amorph. solid). Mp 187° Mp 247-248°. Blue fluor. in soln. Subl. with part. dec. λ_{max} 228 ; 276 ; 344 (MeOH) (Berdy). λ_{max} 226 ; 272 ; 286 ; 368 (MeOH/HCl) (Berdy).

Hydrochloride:
Yellow cryst. H_2O, EtOH.

5-Oxide: [13220-52-5]
$C_{15}H_{10}N_2O$ 234.257
Yellow prisms (EtOH). Mp 294-296°.

5H-form

*5-Me: 5-Methyl-5*H*-quindoline, 9CI.* ***Cryptolepine***
[480-26-2]
$C_{16}H_{12}N_2$ 232.284
Alkaloid from *Cryptolepis sanguinolenta* (Asclepiadaceae). Antibacterial, antiherpetic, antimalarial and antihyperglycaemic agent. Platelet aggregation inhibitor. Active against gram-positive bacteria. Deep purple needles. Mp 175-178°. Forms a monohydrate, Mp 166-169°.

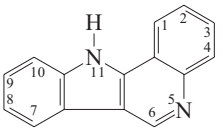
5-Me; hydrochloride: [72782-09-3]
Mp 263-265°.

[42375-21-3]

Fichter, F. *et al., Ber.*, 1906, **39**, 3932-3942; 1910, **43**, 3489-3499 (*synth*)
Armit, J.N. *et al., J.C.S.*, 1922, **121**, 827-839 (*synth*)
Holt, S.J. *et al., J.C.S.*, 1947, 607-611 (*synth*)
Gellert, E. *et al., Helv. Chim. Acta*, 1951, **34**, 642-651 (*isol, uv, struct, Cryptolepine*)
Dwuma-Badu, D. *et al., J. Pharm. Sci.*, 1978, **67**, 433-434 (*isol, uv, ir, pmr, ms, Cryptolepine*)
Oyekan, A.O. *et al., Gen. Pharmacol.*, 1988, **19**, 233-237; 1993, **24**, 461-469; 1285-1290 (*Cryptolepine, pharmacol*)
Tackie, A.N. *et al., J. Het. Chem.*, 1991, **28**, 1429-1435; 1996, **33**, 789-797 (*pmr, cmr, Cryptolepine*)
Spitzer, T.D. *et al., J. Het. Chem.*, 1991, **28**, 2065-2070 (*pmr, cmr*)
Oyekan, A.O. *et al., J. Cardiovasc. Pharmacol.*, 1994, **23**, 601-611 (*pharmacol*)
Paulo, A. *et al., J. Ethnopharmacol.*, 1994, **44**, 127-130 (*activity*)
Sawer, I.K. *et al., J. Appl. Bacteriol.*, 1995, **79**, 314-321 (*Cryptolepine, activity*)
Cimanga, K. *et al., Planta Med.*, 1996, **62**, 22-27 (*isol, pmr, cmr, ir, uv, activity, Cryptolepine*)
Cooper, M.M. *et al., Tet. Lett.*, 1996, **37**, 4283-4286 (*synth*)
Cimanga, K. *et al., J. Nat. Prod.*, 1997, **60**, 688-691 (*Cryptolepine, activity*)
Bierer, D.E. *et al., J. Med. Chem.*, 1998, **41**, 894-901; 2754-2764 (*Cryptolepine, isol, synth*)
Hadden, C.E. *et al., J. Het. Chem.*, 1999, **36**, 525-531 (*pmr, cmr*)
Yang, S.-W. *et al., J. Nat. Prod.*, 1999, **62**, 976-983 (*isol, synth, pmr, cmr, Cryptolepine*)
Csanyi, D. *et al., Synth. Commun.*, 1999, **29**, 3959-3969 (*synth*)
Radl, S. *et al., J. Het. Chem.*, 2000, **37**, 855-862 (*synth, uv, pmr*)
Ho, T.-L. *et al., Helv. Chim. Acta*, 2002, **85**, 3823-3827 (*synth, ir, pmr, cmr*)
Dhanabal, T. *et al., Tetrahedron*, 2006, **62**, 6258-6263 (*Cryptolepine, synth*)
Tousek, J. *et al., Magn. Reson. Chem.*, 2008, **46**, 42-51 (*pmr, cmr, N-15 nmr*)

Indolo[3,2-*c*]quinoline I-110

3,4-Benzo-γ-carboline
[239-09-8]



11*H-form*

$C_{15}H_{10}N_2$ 218.257
Parent compd. should exist as 11*H*-form. Prisms (EtOH aq.). Mp 320° (310°) subl.

Picrate:
Orange-yellow needles (EtOH). Mp 268°.

5H-form

N-*Me: 5-Methyl-5*H*-indolo[3,2-*c*]quinoline. Cryptosanguinolentine.* ***Isocryptolepine***
[165467-65-2]
$C_{16}H_{12}N_2$ 232.284
Alkaloid from the roots of *Cryptolepis sanguinolenta* (Asclepiadaceae). Cryst. Mp 132-133°.

[76401-99-5]

Russel, O. *et al., J.C.S.*, 1965, 5458 (*synth*)
Dave, V. *et al., Tetrahedron*, 1975, **31**, 1255 (*synth*)
Stadlbauer, W. *et al., Monatsh. Chem.*, 1987, **118**, 81 (*synth*)
Pousset, J.-L. *et al., Phytochemistry*, 1995, **39**, 735 (*isol, uv, ir, pmr, cmr, ms, struct, deriv*)
Dubovitskii, S.V. *et al., Izv. Akad. Nauk, Ser. Khim.*, 1996, 2797; *CA*, **126**, 157678v (*synth*)
Sharaf, M.H.M. *et al., J. Het. Chem.*, 1996, **33**, 239 (*isol, pmr, cmr, struct, deriv*)
Molina, A. *et al., J.O.C.*, 1996, **61**, 5587 (*synth*)
Timari, G. *et al., Synlett*, 1997, 1067-1068 (*synth*)
Murray, P.E. *et al., J. Chem. Res., Synop.*, 1998, 376-377 (*synth*)
Fresneda, P.M. *et al., Tetrahedron*, 2001, **57**, 6197-6202 (*Isocryptolepine, synth*)
Kumar, R.N. *et al., Tet. Lett.*, 2002, **43**, 3327-3328 (*Isocryptolepine, synth*)
Dhanabal, T. *et al., Tet. Lett.*, 2005, **46**, 4509-4510 (*Cryptosanguinolentine, synth*)
Dhanabal, T. *et al., Tetrahedron*, 2006, **62**, 6258-6263 (*Isocryptolepine, synth*)
Miki, Y. *et al., Tet. Lett.*, 2007, **48**, 9093-9095 (*Isocryptolepine, synth*)
Tousek, J. *et al., Magn. Reson. Chem.*, 2008, **46**, 42-51 (*pmr, cmr, N-15 nmr*)

10*H*-Indolo[3,2-*b*]quinoline-11-carboxylic acid I-111

Quindoline-11-carboxylic acid. Flavindin
$C_{16}H_{10}N_2O_2$ 262.267
Yellow ppt. Mp 336-337° dec.

Me ester:
$C_{17}H_{12}N_2O_2$ 276.294
Yellow needles (MeOH aq.). Mp 154-155°.

Amide:
$C_{16}H_{11}N_3O$ 261.282
Mp 334-336°.

5H-form

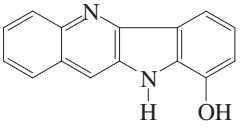
N-*Me: 5-Methyl-5*H*-indolo[3,2-*b*]quinoline-11-carboxylic acid.* ***Cryptolepinoic acid***
$C_{17}H_{12}N_2O_2$ 276.294
Alkaloid from *Cryptolepis sanguinolenta*. Amorph. orange powder. λ_{max} 223 (log ϵ 3.55); 244 (log ϵ 3.3); 280 (log ϵ 3.69); 352 (sh) (log ϵ 3.24); 366 (log ϵ 3.52) (MeOH).

N-*Me, Me ester:* ***Methyl cryptolepinoate***
$C_{18}H_{14}N_2O_2$ 290.321
Alkaloid from *Cryptolepis sanguinolenta*. Dark reddish powder.

Fichter, R. *et al., Ber.*, 1910, **43**, 3489
Holt, S.J. *et al., J.C.S.*, 1947, 607
Paulo, A. *et al., Planta Med.*, 2000, **66**, 30-34 (*Cryptolepinoic acid*)

10*H*-Indolo[3,2-*b*]quinolin-9-ol I-112

*9-Hydroxy-10*H*-quindoline*



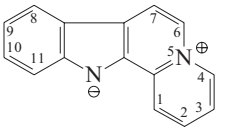
$C_{15}H_{10}N_2O$ 234.257

O-*β-D-Glucopyranoside:* ***Jusbetonin***
$C_{21}H_{20}N_2O_6$ 396.399
Alkaloid from the leaves of *Justicia betonica*. Amorph. yellow powder. $[\alpha]_D^{25}$ -48.2 (c, 0.54 in MeOH). Mp >300°.

Subbaraju, G.V. *et al., J. Nat. Prod.*, 2004, **67**, 461-462 (*isol, pmr, cmr*)

Indolo[2,3-*a*]quinolizine, 9CI I-113

Indolopyridocoline
[239-15-6]



$C_{15}H_{10}N_2$ 218.257
Truncated indole alkaloid, original skeleton uncetain. Prob. not secologanin-derived. Alkaloid from *Gonioma kamassi* (Apocynaceae). Orange-yellow, noncryst. solid.

Perchlorate:
Yellow-green cryst. Mp 282-285° dec.

Picrate: Mp 252-255°.

1,2,3,4,6,7-Hexahydro: ***1,2,3,4,6,7-Hexahydroindolo[2,3-a]quinolizine****. Tetramethylenedihydro-β-carboline*
$C_{15}H_{16}N_2$ 224.305
Alkaloid from *Nitraria schoberi*. Mp 81-83°.

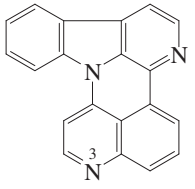
1,2,3,4,6,7-Hexahydro, hydrochloride: Mp 252°.

Kaschnitz, R. *et al., Monatsh. Chem.*, 1965, **96**, 909 (*isol, uv, ms, struct*)
Gribble, G.W. *et al., Tet. Lett.*, 1987, **28**, 5259 (*synth*)
Fürstner, A. *et al., Tetrahedron*, 1995, **51**, 773 (*synth*)
Shakirov, R. *et al., Khim. Prir. Soedin.*, 1996, **32**, 937-1035; *Chem. Nat. Compd. (Engl. Transl.)*, 1996, **32**, 932-1028 (*hexahydro*)
Kraus, G.A. *et al., Synlett*, 1997, 107 (*synth*)

Indolo[3,2,1-*ij*]quino[4,5-*bc*][1,5]naphthyridine, 9CI I-114

Komarovidinine

[85412-78-8]



$C_{20}H_{11}N_3$ 293.327

Alkaloid from *Nitraria komarovii* (Zygophyllaceae). Cryst. (MeOH/$CHCl_3$). Mp 254-255°.

N^3-*Oxide:* ***Komarovidinine*** **N^3-*oxide***

[342880-44-8]

$C_{20}H_{11}N_3O$ 309.326

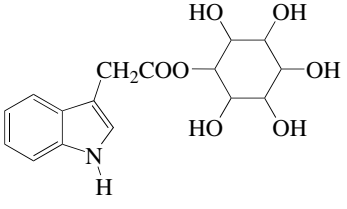
Alkaloid from the aerial parts of *Nitraria komarovii*. Cryst. (EtOH/Me_2CO). Mp 263-264°.

Tulyaganov, T.S. *et al., Khim. Prir. Soedin.*, 1982, **18**, 635-638; *Chem. Nat. Compd. (Engl. Transl.)*, 1982, **18**, 601-603 (*isol, struct*)

Tulyaganov, T.S. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2000, **36**, 396-398 (*isol, Komarovidinine N-oxide*)

1*H*-Indol-3-ylacetyl-*myo*-inositol I-115

[73925-84-5]



$C_{16}H_{19}NO_7$ 337.329

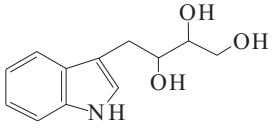
The inositol residue has the *myo*- config. but the point of attachment is variable (i.e. exact config. is unknown). Present in *Oryza sativa* (rice) and *Zea mays* (corn).

Hall, P.J. *et al., Phytochemistry*, 1980, **19**, 2121

4-(1*H*-Indol-3-yl)-1,2,3-butanetriol, 9CI I-116

3-(2,3,4-Trihydroxybutyl)indole

[61183-25-3]



$C_{12}H_{15}NO_3$ 221.255

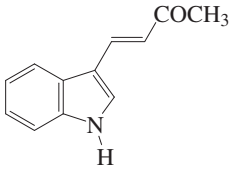
Alkaloid from the clavicipitaceous fungus *Balansia epichloë* which parasitizes pasture grasses. λ_{max} 221 (log ϵ 4.65); 272 (log ϵ 3.78); 279 (log ϵ 3.8); 288 (log ϵ 3.73) (MeOH).

Porter, J.K. *et al., J. Agric. Food Chem.*, 1977, **25**, 88-93 (*isol, uv, ir, pmr, ms*)

4-(1*H*-Indol-3-yl)-3-buten-2-one, 9CI I-117

*3-(3-Oxo-1-butenyl)-1*H-*indole*

[31951-75-4]



$C_{12}H_{11}NO$ 185.225

(E)-form [57598-80-8]

Alkaloid from the sponge *Tedania ignis*. Cryst. (petrol or C_6H_6). Mp 145-146°. Possible artifact. λ_{max} 223 (ϵ 19000); 276 (ϵ 9400); 353 (ϵ 17800) (no solvent reported).

*6-Bromo: 4-(6-Bromo-1*H-*indol-3-yl)-3-buten-2-one*

[654649-67-9]

$C_{12}H_{10}BrNO$ 264.121

Alkaloid from the sponge *Iotrochota birotulata*. Powder. Mp 145-148°. λ_{max} 270 ; 290 ; 340 (MeOH).

Nonnenmacher, A. *et al., Annalen*, 1983, 2135-2140 (*synth, pmr*)

Dillman, R.L. *et al., J. Nat. Prod.*, 1991, **54**, 1056-1061 (*isol*)

Li, L. *et al., Pharmazie*, 2003, **58**, 680-681 (*6-bromo*)

4-(1*H*-Indol-6-yl)-3-buten-2-one, 9CI I-118

*6-(3-Oxo-1-butenyl)-1*H-*indole*

[56774-96-0]

$C_{12}H_{11}NO$ 185.225

(E)-form [40863-48-7]

Alkaloid from *Monodora angolensis*. Pale yellow cryst. (cyclohexane/C_6H_6). Mp 135-137°.

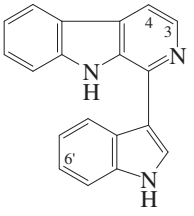
Ishii, H. *et al., Tetrahedron*, 1975, **31**, 933-938 (*synth, pmr*)

Nkunya, M.H.H. *et al., Nat. Prod. Res.*, 2004, **18**, 253-258 (*isol, pmr, cmr, ms*)

1-(3-Indolyl)-β-carboline I-119

*1-(1*H-*Indol-3-yl)-9*H-*pyrido[3,4-*b*]indole, 9CI.* ***Eudistomin U***

[155885-64-6]



$C_{19}H_{13}N_3$ 283.332

Alkaloid from the Caribbean ascidian *Lissoclinum fragile*. Exhibits antibacterial activity. DNA binder. Yellow foam. Sol. MeOH. λ_{max} 220 (ϵ 8000); 240 (ϵ 3500); 252 (ϵ 10500); 270 (ϵ 7700); 340 (ϵ 9020); 380 (ϵ 13000); 470 (ϵ 5120) (MeOH) (Berdy).

3,4-Dihydro: ***3,4-Dihydroeudistomin U.*** *Isoeudistomin U. Eudisin B*

[155885-65-7]

$C_{19}H_{15}N_3$ 285.348

From *Lissoclinum fragile* and a *Eudistoma* sp. Exhibits antibacterial activity. Yellow foam. Originally assigned an α-carboline struct. by Badre *et al* (1994). The name Isoeudistomin U is now misleading. λ_{max} 208 (ϵ 27500); 248 (ϵ 11200); 274 (ϵ 6100); 282 (ϵ 6100); 330 (ϵ 9560); 397 (ϵ 9530) (MeOH). λ_{max} 210 (ϵ 60000); 243 (sh) ; 314 (ϵ 9340) (MeOH).

3,4-Dihydro, 6′-bromo: ***19-Bromo-3,4-dihydroeudistomin U.*** *19-Bromoisoeudistomin U (incorr.). Eudisin A*

[186820-55-3]

$C_{19}H_{14}BrN_3$ 364.244

Alkaloid from a *Eudistoma* sp. tunicate. Antitumour agent. Yellow-green powder. λ_{max} 220 (ϵ 56600); 290 (ϵ 17500); 325 (ϵ 20700); 396 (ϵ 10400) (MeOH). λ_{max} 206 (ϵ 70000); 245 (sh) ; 292 (ϵ 7040); 315 (ϵ 9020) (MeOH). λ_{max} 206 (ϵ 70000); 292 (ϵ 7040); 315 (ϵ 9020) (MeOH-NaOH) (Berdy).

Badre, A. *et al., J. Nat. Prod.*, 1994, **57**, 528-533 (*isol, uv, ir, pmr, cmr, ms, struct*)

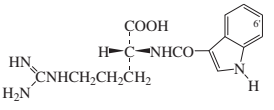
Massiot, G. *et al., J. Nat. Prod.*, 1995, **58**, 1636-1639 (*Isoeudistomin U*)

Molina, P. *et al., Tet. Lett.*, 1995, **36**, 3581-3582 (*synth*)

Rocca, P. *et al., Tet. Lett.*, 1995, **36**, 7085-7088 (*synth*)

Kang, H. *et al., Nat. Prod. Lett.*, 1996, **9**, 7-12 (*Isoeudistomin U, 19-Bromoisoeudistomin U*)

N^{α}-(1*H*-Indol-3-ylcarbonyl)arginine I-120



(R)-form

$C_{15}H_{19}N_5O_3$ 317.347

(R)-form [178495-40-4]

Isol. from the ascidian *Leptoclinides dubius*. Sol. MeOH, butanol. $[\alpha]_D^{20}$ -133.3 (c, 0.1 in MeOH). λ_{max} 214 (log ϵ 3.65); 246 (log ϵ 3.13); 282 (log ϵ 3.11); 286 (log ϵ 3.1) (MeOH).

(S)-form

6′-Bromo: N^{α}-*(6-Bromo-1*H-*indol-3-ylcarbonyl)arginine*

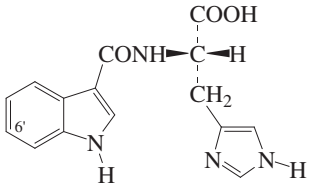
[178495-41-5]

$C_{15}H_{18}BrN_5O_3$ 396.243

Isol. from *Leptoclinides dubius*. Sol. MeOH, butanol. $[\alpha]_D^{20}$ +3.6 (c, 0.5 in MeOH). λ_{max} 222 (log ϵ 3.78); 250 (log ϵ 3.43); 280 (log ϵ 3.18) (MeOH).

Garcia, A. *et al., J. Nat. Prod.*, 1996, **59**, 782-785 (*isol*)

N^{α}-(1*H*-Indol-3-ylcarbonyl)-histidine I-121



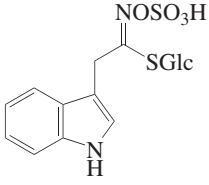
$C_{15}H_{14}N_4O_3$ 298.301

(*S*)-*form*

6′-Bromo: N^{α}*-(6-Bromo-1*H*-indol-3-ylcarbonyl)histidine*
[178495-42-6]
$C_{15}H_{13}BrN_4O_3$ 377.197
Isol. from the ascidian *Leptoclinides dubius*. Sol. MeOH, butanol. $[\alpha]_D^{20}$ +26.6 (c, 0.5 in MeOH). λ_{max} 222 (log ϵ 3.53); 250 (log ϵ 3.17); 282 (log ϵ 2.92) (MeOH).
Garcia, A. *et al., J. Nat. Prod.*, 1996, **59**, 782-785 (*isol*)

3-Indolylmethyl glucosinolate I-122

Glucobrassicin
[4356-52-9]



$C_{16}H_{20}N_2O_9S_2$ 448.474
Constit. of *Brassica* and *Raphanus* spp., e.g. rape (*Brassica napus* var. *napus*) and Brussels sprouts (*Brassica oleracea* var. *gemmifera*). Minor constit. of *Moricandia arvensis* (Brassicaceae). Mp 149-150° (as Me_4N salt). $[\alpha]_D^{22}$ -13.3 (Me_4N salt).

N-*Ac: (1-Acetyl-1*H*-indol-3-yl)methyl glucosinolate.* **N-*Acetylglucobrassicin***
[103951-50-4]
$C_{18}H_{22}N_2O_{10}S_2$ 490.511
Present in *Tovaria pendulata* seedlings.

N-*Sulfonic acid: (1-Sulfo-1*H*-indol-3-yl)-methyl glucosinolate, 9CI.* ***Sulfoglucobrassicin***
[29702-28-1]
$C_{16}H_{20}N_2O_{12}S_3$ 528.538
Isol. from woad (*Isatis tinctoria*). Cryst. (EtOH aq.) (as Me_4N salt). Mp 156° dec. (Me_4N salt).

N-*Methoxy:* ***Neoglucobrassicin***. N-*Methoxyglucobrassicin*
[5187-84-8]
$C_{17}H_{22}N_2O_{10}S_2$ 478.5
Widespread in *Brassica* spp. and found in the Brassicaceae, Tovariaceae, Capparidaceae and Resedaceae. Mp 175° dec. (as brucine salt).

4-Hydroxy: ***4-Hydroxyindol-3-ylmethyl glucosinolate. 4-Hydroxyglucobrassicin***
[83327-20-2]
[87592-99-2 , 96828-27-2 , 96828-26-1 , 87593-00-8]
$C_{16}H_{20}N_2O_{10}S_2$ 464.473
Isol. from *Brassica* sp. and other crucifers. Formulated as the 5-hydroxy isomer by Goetz *et al*. Readily oxidises in the presence of air and light. λ_{max} 267 ; 284 ; 293 (MeOH).

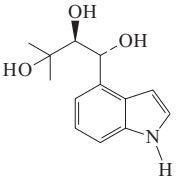
4-Methoxy: 4-Methoxyindol-3-ylmethyl glucosinolate. ***4-Methoxyglucobrassicin***
[83327-21-3]
$C_{17}H_{22}N_2O_{10}S_2$ 478.5
Isol. from *Brassica* sp. and other crucifers. Gummy solid. λ_{max} 267 ; 282 ; 292 (MeOH).

N,*4-Dimethoxy:* ***1,4-Dimethoxyglucobrassicin***
[334832-34-7]
$C_{18}H_{24}N_2O_{11}S_2$ 508.526
Isol. from the roots of *Barbarea vulgaris* ssp. *arcuata*.

Gmelin, R. *et al., Suom. Kemistil. B*, 1961, **34**, 15-18 (*isol*)
Gmelin, R. *et al., Acta Chem. Scand.*, 1962, **16**, 1378-1384 (*Neoglucobrassicin*)
Gmelin, R. *et al., CA*, 1965, **63**, 5584e (*isol, struct*)
Schraudolf, H. *et al., Experientia*, 1965, **21**, 520-522 (*occur*)
Elliott, M.C. *et al., Phytochemistry*, 1970, **9**, 1629-1632 (*N-sulfonic acid*)
Fenwick, G.R. *et al., Biomed. Mass Spectrom.*, 1980, **7**, 410-412 (*ms*)
Truscott, R.J.W. *et al., Biochem. Biophys. Res. Commun.*, 1982, **107**, 1258-1264; 1368-1375 (*4-methoxy, 4-hydroxy, isol, struct*)
Truscott, R.J.W. *et al., J. Sci. Food Agric.*, 1983, **34**, 247-254 (*isol*)
Hanley, A.B. *et al., J. Sci. Food Agric.*, 1983, **34**, 867-869 (*isol*)
Goetz, J.K. *et al., Phytochemistry*, 1983, **22**, 905-907 (*N-methoxy, 4-hydroxy, isol*)
Cox, I.J. *et al., Carbohydr. Res.*, 1984, **132**, 323-329 (*cmr, pmr*)
Hanley, A.P. *et al., Phytochemistry*, 1985, **24**, 598-600 (*isol, struct*)
Schraudolf, H. *et al., Z. Naturforsch., C*, 1986, **41**, 526-528 (*acetyl*)
Belkhiri, A. *et al., Phytochemistry*, 1990, **29**, 1315-1316 (*isol, uv, pmr*)
Viaud, M.C. *et al., Tet. Lett.*, 1990, **31**, 1417-1418 (*synth*)
Agerbirk, N. *et al., J. Agric. Food Chem.*, 2001, **49**, 1502-1507 (*1,4-Dimethoxyglucobrassicin*)
Fahey, J.W. *et al., Phytochemistry*, 2001, **56**, 5-51 (*rev, occur*)

1-(1*H*-Indol-7-yl)-3-methyl-1,2,3-butanetriol, 9CI I-123

*7-(1,2,3-Trihydroxy-3-methylbutyl)-1*H*-indole*



(1′R*,2′R*)-form

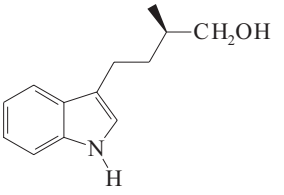
$C_{13}H_{17}NO_3$ 235.282

(1′R*,2′R*)-form
threo-*form*. ***Leiocarpatriol A***
[132200-50-1]
Isol. from the roots of *Esenbeckia leiocarpa*. Amorph. Sensitive to light and air.

(1′R*,2′S*)-form
erythro-*form*. ***Leiocarpatriol B***
[132113-91-8]
Isol. from the roots of *Esenbeckia leiocarpa*. Amorph. Sensitive to light and air.
Delle Monache, F. *et al., Gazz. Chim. Ital.*, 1990, **120**, 387 (*isol, pmr, cmr*)

4-(3-Indolyl)-2-methyl-1-butanol I-124

*β-Methyl-1*H*-indole-3-butanol, 9CI.* ***Paniculidine C***. *Paniculol*



$C_{13}H_{17}NO$ 203.283

(R)-form [97399-95-6]
Alkaloid from the root bark of *Murraya paniculata* (Rutaceae). Oil. $[\alpha]_D^{20}$ +45 (c, 0.035 in $CHCl_3$).

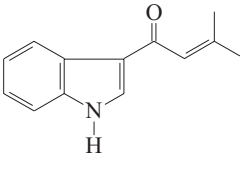
N-*Methoxy: 1-Methoxy-β-methyl-1*H*-indole-3-butanol, 9CI.* ***Paniculidine B***
[97399-94-5]
$C_{14}H_{19}NO_2$ 233.31
Alkaloid from root bark of *Murraya paniculata* (Rutaceae). Oil. $[\alpha]_D^{20}$ +21 (c, 0.025 in $CHCl_3$).

*Carboxylic acid, Me ester. β-Methyl-1*H*-indole-3-butanoic acid, 9CI. 4-(3-Indolyl)-2-methylbutanoic acid.* ***Paniculidine A***
[97399-93-4]
$C_{14}H_{17}NO_2$ 231.294
Alkaloid from root bark of *Murraya paniculata* (Rutaceae). Oil. $[\alpha]_D^{24}$ -31.9 (c, 0.1 in $CHCl_3$).

[120786-74-5 , 129172-71-0]
Kinoshita, T. *et al., Chem. Pharm. Bull.*, 1985, **33**, 1770 (*uv, ir, pmr, cmr, ms, struct, synth*)
Somei, M. *et al., Chem. Pharm. Bull.*, 1985, **33**, 5147 (*synth*)
Cheskis, B.A. *et al., J.C.S. Perkin 1*, 1989, 1353
Kinoshita, T. *et al., Phytochemistry*, 1989, **28**, 147 (*isol, uv, ir, pmr, cmr, ms, struct*)
Boumendjel, A. *et al., Bull. Soc. Chim. Fr.*, 1990, 645 (*synth, Paniculidine A*)
Ito, C. *et al., J.C.S. Perkin 1*, 1990, 2047 (*isol, pmr*)
Cheskis, B.A. *et al., Zh. Org. Khim.*, 1990, **26**, 425 (*synth*)
Selvakumar, N. *et al., J.O.C.*, 2004, **69**, 4429-4432 (*synth*)

1-(1*H*-Indol-3-yl)-3-methyl-2-buten-1-one, 9CI I-125

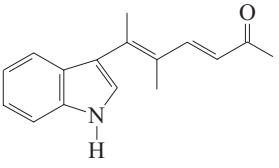
*3-(3-Methyl-1-oxo-2-butenyl)-1*H*-indole*
[50615-00-4]



$C_{13}H_{13}NO$ 199.252
Alkaloid from root bark of *Pamburus missionis* (Rutaceae). Needles (CH_2Cl_2/hexane). Mp 136.5-138° (130-131°).

Somei, M. *et al., Tet. Lett.*, 1973, 2451 (*synth*)
Wenkert, E. *et al., J.O.C.*, 1986, **51**, 2343 (*synth*)
Kumar, V. *et al., Phytochemistry*, 1994, **36**, 879 (*isol, uv, ir, pmr, cmr, ms*)

6-(1*H*-Indol-3-yl)-5-methyl-3,5-heptadien-2-one, 9CI I-126

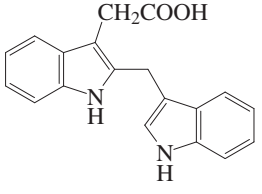


$C_{16}H_{17}NO$ 239.316

(3*E*,5*E*)-*form* [136685-36-4]
Isol. from the sponge *Tedania ignis*. Phytotoxic agent. λ_{max} 224 (ϵ 12300); 290 (ϵ 8300) (EtOH) (Berdy).

Dillman, R.L. *et al., J. Nat. Prod.*, 1991, **54**, 1056 (*isol, uv, ir, pmr, ms, cmr, struct*)

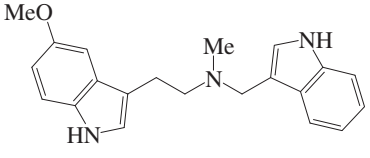
2-(1*H*-Indol-3-ylmethyl)-1*H*-indole-3-acetic acid, 9CI I-127
[68232-56-4]



$C_{19}H_{16}N_2O_2$ 304.348
Prod. by *Sulfolobus acidocaldarius*. Pink cryst. ($CHCl_3$/hexane). Undefined Mp. λ_{max} 224 (ϵ 31000); 282 (ϵ 15200); 290 (ϵ 13200) (MeOH). λ_{max} 225 ; 283 ; 291 (EtOH) (Berdy).

Suzuki, Y. *et al., Agric. Biol. Chem.*, 1978, **42**, 1315-1321 (*synth*)
Amat-Guerri, F. *et al., J. Chem. Res., Synop.*, 1984, 160-161 (*synth*)
White, R.H. *et al., J. Bacteriol.*, 1987, **169**, 5859-5860 (*isol*)

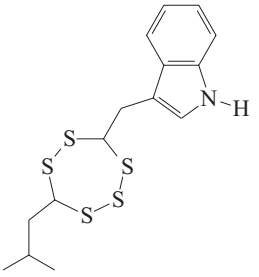
N^b-(3-Indolylmethyl)-5-methoxy-N^b-methyltryptamine I-128
N-*(1*H-*Indol-3-ylmethyl)-5-methoxy*-N-*methyl-1*H-*indole-3-ethanamine*
[173180-36-4]



$C_{21}H_{23}N_3O$ 333.432
Alkaloid from the roots of *Antirhea lucida* (Rubiaceae). Amorph. powder. λ_{max} 221 (log ϵ 4.1); 282 (log ϵ 3.5) (EtOH).

Weniger, B.R. *et al., Planta Med.*, 1995, **61**, 569-570 (*isol, pmr, cmr, uv, struct*)

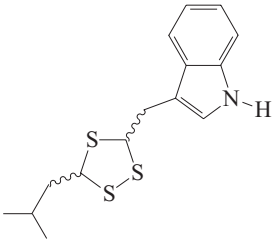
4-(3-Indolylmethyl)-7-(2-methylpropyl)-1,2,3,5,6-pentathiepane I-129
3-[(7-Isobutyl-1,2,3,5,6-pentathiepan-4-yl)methyl]indole. 4-(3-Indolemethyl)-7-isobutyl-1,2,3,5,6-pentathiepane
[151261-55-1]



$C_{15}H_{19}NS_5$ 373.652
Prod. by the sulfur-metabolising hyperthermophilic archaebacteria *Thermococcus acidaminovorans* and *Thermococcus tadjuricus*. Solid. Mp 123°.

Ritzau, M. *et al., Annalen*, 1993, 871

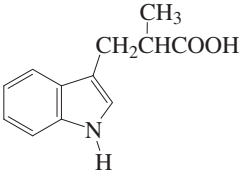
3-(3-Indolylmethyl)-5-(2-methylpropyl)-1,2,4-trithiolane I-130
3-[(5-Isobutyl-1,2,4-trithiolan-3-yl)-methyl]indole. 3-(3-Indolemethyl)-5-isobutyl-1,2,4-trithiolane
[151261-46-0]



$C_{15}H_{19}NS_3$ 309.52
Prod. by the sulfur-metabolising archaebacteria *Thermococcus acidaminovorans* and *Thermococcus tadjuricus*. Solid. Mp 98°.

Ritzau, M. *et al., Annalen*, 1993, 871

3-(1*H*-Indol-3-yl)-2-methylpropanoic acid I-131
*α-Methyl-1*H-*indole-3-propanoic acid, 9CI*. ***Rhizophorine***
[15142-91-3]
[69088-73-9]



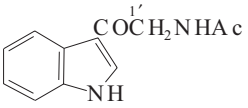
$C_{12}H_{13}NO_2$ 203.24

(ξ)-*form* [61755-28-0]
Constit. of *Rhizophora mucronata*. Plant growth inhibitor. Off-white needles (H_2O). Mp 129-130°.

Et ester: [57901-11-8]
$C_{14}H_{17}NO_2$ 231.294
$Bp_{0.75}$ 165°.

Johnson, H.E. *et al., J.O.C.*, 1963, **28**, 2030-2032 (*synth*)
Saha, P.K. *et al., Plant Biochem. J.*, 1978, **5**, 65-68 (*isol*)

***N*-[2-(1*H*-Indol-3-yl)-2-oxoethyl]acetamide, 9CI** I-132
N-*Acetyl-β-oxotryptamine. 3-(Acetamidoacetyl)indole. 34N*
[73053-91-5]

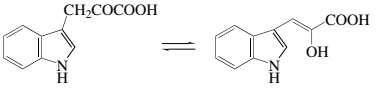


$C_{12}H_{12}N_2O_2$ 216.239
Prod. by *Streptomyces ramulosus*. Shows no antimicrobial activity. Cryst. (EtOH). Mp 216-218° (203-204°). λ_{max} 241 (ϵ 11000); 261 (ϵ 8200); 300 (ϵ 11000) (MeOH) (Derep).

1′-Hydroxy: **N-*[1-Hydroxy-2-(1*H*-indol-3-yl)-2-oxoethyl]acetamide***. *34M*
[87084-38-6]
$C_{12}H_{12}N_2O_3$ 232.238
Prod. by *Streptomyces ramulosus*. Shows no antibacterial activity. Needles (MeOH). Mp 146-147°. $[\alpha]_D^{20}$ -92 (c, 1.0 in MeOH). λ_{max} 241 (ϵ 11000); 261 (ϵ 8200); 300 (ϵ 11000) (MeOH) (Derep).

Oikawa, Y. *et al., Heterocycles*, 1979, **12**, 1457-1462 (*synth*)
Yoshioka, T. *et al., J. Chem. Res., Synop.*, 1981, 194-195; *J. Chem. Res., Miniprint*, 1981, 2252-2281 (*synth*)
Chen, Y. *et al., J. Antibiot.*, 1983, **36**, 913-915 (*isol, uv, ir, pmr, cmr, ms, struct*)

3-(1*H*-Indol-3-yl)-2-oxopropanoic acid I-133
*α-Oxo-1*H-*indole-3-propanoic acid, 9CI. 2-Hydroxy-3-(1*H-*indol-3-yl)-2-propenoic acid. 3-(3-Indolyl)pyruvic acid*
[392-12-1]
[144334-60-1]



$C_{11}H_9NO_3$ 203.197
Tautomer ratio solvent dependent in soln. Crystallises as the (*Z*)-enol tautomer. Prod. from tryptophan by microorganisms; poss. present in higher plants. Grey cryst. + 1AcOH (AcOH). Mp 211°.
▶ NM1880000

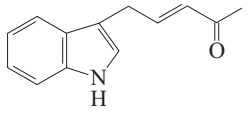
Oxime:
$C_{11}H_{10}N_2O_3$ 218.212
Mp 175°.

4-Nitrophenylhydrazone: Mp 153-154°.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 669A (*ir*)

Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 140B (*nmr*)
Gränacher, C. *et al., Helv. Chim. Acta*, 1924, **7**, 575 (*synth*)
Kaper, J.M. *et al., Arch. Biochem. Biophys.*, 1963, **103**, 475
Srivastava, B.I.S. *et al., Plant Physiol.*, 1964, **39**, 381; *CA*, **61**, 16442
Matchett, W.H. *et al., Biochim. Biophys. Acta*, 1965, **107**, 222
Havaaldsen, R. *et al., Acta Chem. Scand.*, 1967, **21**, 1095 (*synth*)
Nazario, J. *et al., Arch. Biochem. Biophys.*, 1968, **123**, 457-461 (*tautom, ir*)
Okabe, N. *et al., Acta Cryst. C*, 1998, **54**, 1330-1331 (*cryst struct*)

5-(1*H*-Indol-3-yl)-3-penten-2-one, 9CI I-134



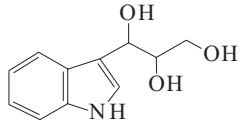
$C_{13}H_{13}NO$ 199.252

(*E*)-*form* [136685-35-3]
Isol. from the sponge *Tedania ignis*. Possibly an artifact.

Dillman, R.L. *et al., J. Nat. Prod.*, 1991, **54**, 1056 (*isol, uv, ir, pmr, ms, cmr, struct*)

1-(1*H*-Indol-3-yl)-1,2,3-propanetriol, 9CI I-135

3-(1,2,3-Trihydroxypropyl)indole. 3-(3-Indolyl)glycerol
[13615-41-3]



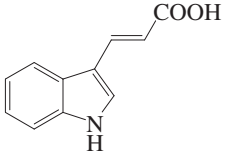
$C_{11}H_{13}NO_3$ 207.229
Alkaloid from the clavicipitaceous fungus *Balansia epichloë* which parasitizes pasture grasses. The nat. prod. was a 3:2 mixt. of *erythro* and *threo* isomers. The racemates have been synthesised and characterised. λ_{max} 220 (log ϵ 4.95); 273 (log ϵ 4); 280 (log ϵ 4.02); 289 (log ϵ 3.95) (MeOH).

[66701-28-8 , 66701-27-7]

Porter, J.K. *et al., J. Agric. Food Chem.*, 1977, **25**, 88-93 (*isol, synth, uv, ir, pmr, ms*)

3-(1*H*-Indol-3-yl)-2-propenoic acid I-136

*1*H-*Indole-3-propenoic acid. 3-(3-Indolyl)acrylic acid*
[1204-06-4]



(*E*)-*form*

$C_{11}H_9NO_2$ 187.198
Major auxin from roots of *Lens culinaris* (lentil) (Fabaceae).

▶ Exp. carcinogenic data. NL3680000

(*E*)-*form* [29953-71-7]
Alkaloid from the red alga *Chondria* sp. Red-brown cryst. (H_2O or AcOH). Mp 195-196°.

Me ester: [19626-92-7]
[2756-97-0 (non-stereospecific)]
$C_{12}H_{11}NO_2$ 201.224
Cryst. (C_6H_6). Mp 153-154°.

Me ester, N-*Ac:* [19626-93-8]
$C_{14}H_{13}NO_3$ 243.262
Cryst. (C_6H_6). Mp 179-180°.

*Amide: 3-(1*H*-Indol-3-yl)-2-propenamide.* ***3-(3-Indolyl)acrylamide***
[218591-77-6]
$C_{11}H_{10}N_2O$ 186.213
Alkaloid from *Chondria atropurpurea*. Anthelminthic agent. Amber cryst. (Me_2CO). Mp 212.8-214.2°. λ_{max} 226 (log ϵ 1.49); 275 (log ϵ 1.25); 322 (log ϵ 1.55) (MeOH). λ_{max} 226 ; 275 ; 322 (MeOH) (Berdy).

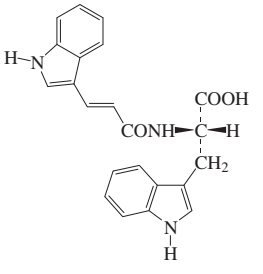
Amide, N^b*-formyl:* N-*Formyl-3-(1*H*-indol-3-yl)-2-propenamide, 9CI.* **N-*Formyl-3-indoleacrylamide***
[142677-08-5]
$C_{12}H_{10}N_2O_2$ 214.223
From *Chondria* sp. Oil.

Nitrile: [85452-78-4]
$C_{11}H_8N_2$ 168.198
Beige solid. Mp 143-144°.

*7′-Hydroxy: 3-(7-Hydroxy-1*H*-indol-3-yl)-2-propenoic acid, 9CI.* **7-*Hydroxy-3-indoleacrylic acid***
[142677-11-0]
$C_{11}H_9NO_3$ 203.197
From *Chondria* sp.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 668B (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 139B (*nmr*)
Furst, A. *et al., Arch. Biochem. Biophys.*, 1951, **31**, 190 (*synth*)
Inhoffen, H.H. *et al., Annalen*, 1963, **668**, 104-121 (*Me ester, Me ester N-Ac, synth*)
Rappe, C. *et al., Acta Chem. Scand.*, 1964, **18**, 818 (*config*)
Hofinger, M. *et al., Phytochemistry*, 1970, **9**, 1757 (*isol*)
Palermo, J.A. *et al., Tet. Lett.*, 1992, **33**, 3097 (*Chondria derivs, isol*)
Davyt, D. *et al., J. Nat. Prod.*, 1998, **61**, 1560-1563 (*isol, amide*)
Slätt, J. *et al., J. Het. Chem.*, 2005, **42**, 141-145 (*nitrile*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, ICO000

N^a-[3-(1*H*-Indol-3-yl)propenoyl]tryptophan I-137



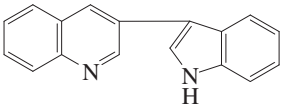
$C_{22}H_{19}N_3O_3$ 373.41
Deriv. of 3-(1*H*-Indol-3-yl)-2-propenoic acid, I-136.

(*S,E*)-*form*
L-trans-*form*
Et ester: [142677-12-1]
$C_{24}H_{23}N_3O_3$ 401.464
Minor constit. of a red alga *Chondria* sp. Prob. artifact.

Palermo, J.A. *et al., Tet. Lett.*, 1992, **33**, 3097-3100 (*Et ester, isol*)

3-(1*H*-Indol-3-yl)quinoline, 9CI I-138

*3-(3-Quinolinyl)-1*H*-indole*
[146535-51-5]

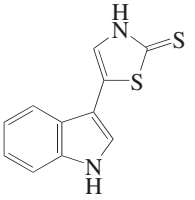


$C_{17}H_{12}N_2$ 244.295
Alkaloid from *Peganum nigellastrum*. Cryst. (hexane/EtOH). Mp 173-175°.

Maguire, M.P. *et al., J. Med. Chem.*, 1994, **37**, 2129-2137 (*synth, pmr*)
Ma, Z.-Z. *et al., Phytochemistry*, 2000, **53**, 1075-1078 (*isol*)

5-(1*H*-Indol-3-yl)-2(3*H*)-thiazolethione I-139

*3-(2-Mercaptothiazol-5-yl)-1*H*-indole*
[929282-55-3]

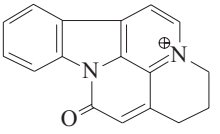


$C_{11}H_8N_2S_2$ 232.33
Prod. by *Escherichia coli* eDNA clone CSLG18.

Brady, S.F. *et al., J.A.C.S.*, 2007, **129**, 12102-12103 (*isol, pmr, cryst struct*)

Infractopicrine I-140

1,2,3,12-Tetrahydro-12-oxoindolo[3,2,1-de]pyrido[3,2,1-ij][1,5]naphthyridin-4-ium(1+), 9CI
[91147-09-0]

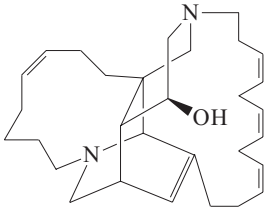


$C_{17}H_{13}N_2O^{\oplus}$ 261.302
Alkaloid from the fruit bodies of the gilled agaric *Cortinarius infractus*. Pale yellow powder (as chloride). Mp 350° (darkens above 200°). Responsible for the bitter taste of the toadstool.

Steglich, W. *et al., Tet. Lett.*, 1984, **25**, 2341 (*isol, uv, ir, pmr, cmr, ms, struct*)

Ingamine A I-141

[156310-17-7]



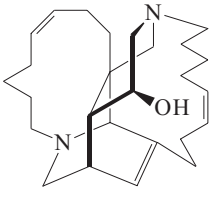
$C_{30}H_{44}N_2O$ 448.69
Alkaloid from the marine sponge *Xestospongia ingens*. Exhibits *in vitro* cytotoxicity against murine leukaemia P388 cells. Glass. Sol. MeOH, EtOAc. $[\alpha]_D$ +131 (c, 0.18 in MeOH).

Deoxy: ***Ingamine B***
[156310-18-8]
$C_{30}H_{44}N_2$ 432.691
From *Xestospongia ingens*. Exhibits *in vitro* cytotoxicity against murine leukaemia P388 cells. Glass. Sol. MeOH, EtOAc. $[\alpha]_D$ +108 (c, 0.5 in MeOH).

Kong, F. *et al., Tetrahedron*, 1994, **50**, 6137; 1995, **51**, 2895 (*isol, ir, pmr, cmr, ms, struct, abs config*)

Ingenamine I-142

[155210-52-9]



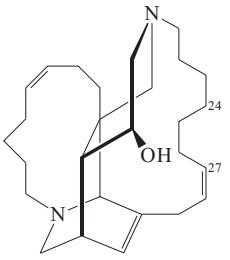
$C_{26}H_{40}N_2O$ 396.615
Alkaloid from the Papua New Guinea *Xestospongia ingens*. Cytotoxic. Amorph. solid. Sol. MeOH, EtOAc. $[\alpha]_D$ +62 (c, 0.14 in MeOH).

Deoxy: ***Keramaphidin B***
[157536-35-1]
$C_{26}H_{40}N_2$ 380.615
Alkaloid from *Xestospongia ingens* and from the Okinawan marine sponge *Amphimedon* sp. Exhibits cytotoxicity against P388 murine leukaemia and KB human epidermoid carcinoma cells. Poss. biogenetic precursor of manzamine alkaloids (e.g. Manzamine A, M-91). Amorph. solid. $[\alpha]_D$ +29.8 (c, 1.1 in MeOH). The isolate (Mp 131-132°) from *Amphimedon* sp. is racemic.

Kong, F. *et al., Tet. Lett.*, 1994, **35**, 1643 (*isol, pmr, cmr, struct*)
Kobayashi, J. *et al., Tet. Lett.*, 1994, **35**, 4383 (*Keramaphidin B*)
Kong, F. *et al., Tetrahedron*, 1995, **51**, 2895 (*abs config*)
Tsuda, M. *et al., Heterocycles*, 1997, **46**, 765-795 (*rev*)
Matzanke, N. *et al., Org. Prep. Proced. Int.*, 1998, **30**, 3-51 (*rev, Keramaphidin B*)

Ingenamine B I-143

[164081-00-9]



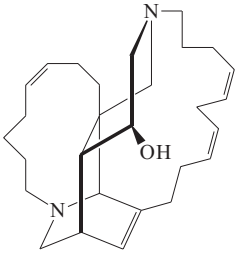
$C_{27}H_{42}N_2O$ 410.642
Minor alkaloid from the Papua New Guinea sponge *Xestospongia ingens*. Powder. $[\alpha]_D$ +22.4 (c, 0.25 in MeOH).

27,28-Dihydro, 24,25-didehydro(Z-), Ac: ***Ingenamine C acetate***
[164081-02-1]
$C_{29}H_{44}N_2O_2$ 452.679
Minor alkaloid from *Xestospongia ingens*. Glass. $[\alpha]_D$ +41.6 (c, 0.09 in MeOH).

Kong, F. *et al., Tetrahedron*, 1995, **51**, 2895 (*isol, pmr, cmr, ms, struct*)

Ingenamine D I-144

[164081-03-2]

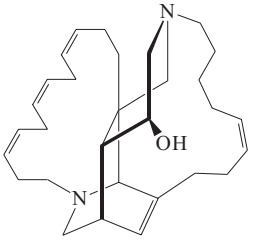


$C_{28}H_{42}N_2O$ 422.653
Minor alkaloid from the Papua New Guinea sponge *Xestospongia ingens*. Glass.

Kong, F. *et al., Tetrahedron*, 1995, **51**, 2895 (*isol, pmr, cmr, ms, struct*)

Ingenamine E I-145

[164081-04-3]



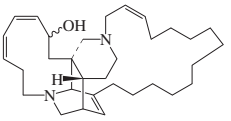
$C_{30}H_{44}N_2O$ 448.69
Minor alkaloid from the Papua New Guinea sponge *Xestospongia ingens*. Glass. $[\alpha]_D$ -23.8 (c, 0.062 in MeOH).

Deoxy: ***Ingenamine F***
[164122-97-8]
$C_{30}H_{44}N_2$ 432.691
Minor alkaloid from *Xestospongia ingens*. Glass. $[\alpha]_D$ -64.3 (c, 0.062 in MeOH).

Kong, F. *et al., Tetrahedron*, 1995, **51**, 2895 (*isol, pmr, cmr, ms, struct*)

Ingenamine G I-146

[787551-03-5]



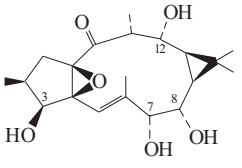
Probable Absolute Configuration

$C_{32}H_{50}N_2O$ 478.76
Alkaloid from the Brazilian sponge *Pachychalina* sp. Cytotoxic. Glassy solid. $[\alpha]_D^{29}$ -59.2 (c, 0.05 in MeOH). λ_{max} 230 (ϵ 2500); 283 (ϵ 625) (MeOH).

De Oliveira, J.H.H.L. *et al., J. Nat. Prod.*, 2004, **67**, 1685-1689 (*isol, pmr, cmr*)

Ingol I-147

[51847-86-0]



$C_{20}H_{30}O_6$ 366.453
Hydrol. prod. from *Euphorbia ingens* and *Euphorbia kamerunica*. Antineoplastic agent.

Tetra-Ac: [51906-02-6]
$C_{28}H_{38}O_{10}$ 534.602
Constit. of *Euphorbia kamerunica*. Cryst. (isopropyl ether). Poorly sol. hexane. Mp 172-175°. λ_{max} 212 (ϵ 2570); 226 (ϵ 1410) (MeOH) (Berdy).

3-O-(2-Methylbutanoyl), 7,8,12-tri-Ac:
[928298-74-2]
$C_{31}H_{44}O_{10}$ 576.683
Constit. of *Euphorbia cornigera*. Resin. $[\alpha]_D^{25}$ +95.8 (c, 0.17 in $CHCl_3$). λ_{max} 218 (log ϵ 4.32); 228 (log ϵ 4.93); 278 (log ϵ 2.93); 286 (log ϵ 2.82) (MeOH).

7-O-(2-Methylbutanoyl), 3,8,12-tri-Ac:
[928298-75-3]
$C_{31}H_{44}O_{10}$ 576.683
Constit. of *Euphorbia cornigera*.

8-(2-Methylbutanoyl), 3,7,12-tri-Ac:
[928298-76-4]
$C_{31}H_{44}O_{10}$ 576.683
Constit. of *Euphorbia tirucalli* and *Euphorbia cornigera*. Oil or resin. $[\alpha]_D$ +92 ($CHCl_3$). $[\alpha]_D^{25}$ +94.8 (c, 0.17 in $CHCl_3$). λ_{max} 218 (log ϵ 4.32); 228 (log ϵ 4.93); 278 (log ϵ 2.93); 286 (log ϵ 2.82) (MeOH).

8-(3-Methylbutanoyl), 3,7,12-tri-Ac:
$C_{31}H_{44}O_{10}$ 576.683
Constit. of *Euphorbia acrurensis*. Oil.

12-O-(2-Methylbutanoyl), 3,7,8-tri-Ac:
[928298-77-5]
$C_{31}H_{44}O_{10}$ 576.683
Constit. of *Euphorbia cornigera*. Resin. $[\alpha]_D^{25}$ +97.8 (c, 0.17 in $CHCl_3$). λ_{max} 218 (log ϵ 4.32); 228 (log ϵ 4.93); 278 (log ϵ

2.93); 286 (log ϵ 2.82) (MeOH).

7-Angeloyl, 3,12-di-Ac: [627512-36-1]
$C_{29}H_{40}O_9$ 532.63
Constit. of *Euphorbia nivulia*. $[\alpha]_D^{25}$ -3.6 (c, 0.125 in $CHCl_3$).

7-Angeloyl, 3,8,12-tri-Ac: [92998-77-1]
$C_{31}H_{42}O_{10}$ 574.667
Constit. of *Euphorbia kamerunica*.

8-Angeloyl, 3,7,12-tri-Ac:
$C_{31}H_{42}O_{10}$ 574.667
Constit. of *Euphorbia kamerunica*.

7-Tigloyl, 3,12-di-Ac:
$C_{29}H_{40}O_9$ 532.63
Constit. of *Euphorbia kamerunica*.

7-Tigloyl, 3,8,12-tri-Ac: [92910-93-5]
$C_{31}H_{42}O_{10}$ 574.667
Constit. of *Euphorbia kamerunica*.

8-Tigloyl:
$C_{25}H_{36}O_7$ 448.555
Constit. of *Euphorbia antiquorum*. $[\alpha]_D$ +21.8 (c, 0.12 in $CHCl_3$).

8-Tigloyl, 12-Ac:
$C_{27}H_{38}O_8$ 490.592
Constit. of *Euphorbia antiquorum*. $[\alpha]_D$ +10 (c, 0.16 in $CHCl_3$).

8-Tigloyl, 3,12-di-Ac:
$C_{29}H_{40}O_9$ 532.63
Constit. of *Euphorbia antiquorum* and *Euphorbia lactea*. $[\alpha]_D$ -16.2 (c, 0.13 in $CHCl_3$).

8-Tigloyl, 3,7,12-tri-Ac:
$C_{31}H_{42}O_{10}$ 574.667
Constit. of *Euphorbia kamerunica*.

12-Tigloyl, 3,7-di-Ac: [81980-37-2]
$C_{29}H_{40}O_9$ 532.63
Constit. of *Euphorbia kamerunica*. Sol. MeOH, Et_2O; poorly sol. H_2O, hexane. λ_{max} 209 (ϵ 30200); 224 (ϵ 15850) (MeOH) (Berdy).

12-Tigloyl, 3,7,8-tri-Ac: [81427-04-5]
$C_{31}H_{42}O_{10}$ 574.667
Constit. of *Euphorbia kamerunica*. Sol. MeOH, Et_2O; poorly sol. hexane. λ_{max} 208 (ϵ 17000); 226 (ϵ 14120) (MeOH) (Berdy).

7,8-Ditigloyl, 3,12-di-Ac:
$C_{34}H_{46}O_{10}$ 614.731
Constit. of *Euphorbia acrurensis*. Oil.

8-Benzoyl, 3,12-di-Ac: [124657-64-3]
$C_{31}H_{38}O_9$ 554.636
Constit. of *Euphorbia antiquorum* and *Euphorbia nivulia*. Powder. Mp 95-97°. $[\alpha]_D$ -21.8 (c, 0.16 in $CHCl_3$). $[\alpha]_D^{25}$ -27 (c, 0.5 in $CHCl_3$).

8-Benzoyl, 3,7,12-tri-Ac:
$C_{33}H_{40}O_{10}$ 596.673
Constit. of *Euphorbia kamerunica*.

7-(Phenylacetyl), 3,8,12-tri-Ac:
$C_{34}H_{42}O_{10}$ 610.7
Constit. of *Euphorbia* spp.

8-(Phenylacetyl), 3,7,12-tri-Ac: [403740-67-0]
$C_{34}H_{42}O_{10}$ 610.7
Constit. of *Euphorbia resinifera*. Amorph. solid. $[\alpha]_D^{25}$ +15 (c, 0.002 in $CHCl_3$).

8-(3-Pyridinecarbonyl), 3,7,12-tri-Ac:
$C_{32}H_{39}NO_{10}$ 597.661
Constit. of *Euphorbia ingens*.

8-(3-Pyridinecarbonyl), 7-benzoyl, 3,12-di-Ac: [462119-30-8]
$C_{37}H_{41}NO_{10}$ 659.732
Constit. of *Euphorbia nivulia*. Powder. Mp 90-92°. $[\alpha]_D^{25}$ -61 (c, 0.5 in $CHCl_3$).

8-Me ether, 3,12-di-Ac: [625830-44-6]
$C_{25}H_{36}O_8$ 464.555
Constit. of *Euphorbia nivulia*. $[\alpha]_D^{25}$ +35 (c, 0.25 in $CHCl_3$).

8-Me ether, 3,7,12-tri-Ac: ***Tirucalicine*** [77573-15-0]
$C_{27}H_{38}O_9$ 506.592
Constit. of *Euphorbia tirucalli*. Needles (EtOH). Mp 148-150°. $[\alpha]_D$ +16.13 (c, 3.41 in $CHCl_3$).

*8-Me ether, 3-*O*-(2-methylbutanoyl), 7,12-di-Ac:* [928298-78-6]
$C_{30}H_{44}O_9$ 548.672
Constit. of *Euphorbia cornigera*. Resin. $[\alpha]_D^{25}$ -9.8 (c, 0.17 in $CHCl_3$). λ_{max} 208 (log ϵ 4.32); 225 (log ϵ 4.93); 273 (log ϵ 2.93); 284 (log ϵ 2.82) (MeOH).

*8-Me ether, 7-*O*-(2-Methylbutanoyl), 3,12-di-Ac:* [928298-79-7]
$C_{30}H_{44}O_9$ 548.672
Constit. of *Euphorbia cornigera*. Resin. $[\alpha]_D^{25}$ +4.8 (c, 0.17 in $CHCl_3$). λ_{max} 208 (log ϵ 4.32); 225 (log ϵ 4.93); 273 (log ϵ 2.93); 284 (log ϵ 2.82) (MeOH).

*8-Me ether, 12-*O*-(2-methylbutanoyl), 3,7-di-Ac:* [928298-80-0]
$C_{30}H_{44}O_9$ 548.672
Constit. of *Euphorbia cornigera*. Resin. $[\alpha]_D^{25}$ +9.8 (c, 0.17 in $CHCl_3$). λ_{max} 208 (log ϵ 4.32); 225 (log ϵ 4.93); 273 (log ϵ 2.93); 284 (log ϵ 2.82) (MeOH).

8-Me ether, 7-angeloyl, 3-Ac: [625830-43-5]
$C_{28}H_{40}O_8$ 504.619
Constit. of *Euphorbia nivulia*. $[\alpha]_D$ -1 (c, 0.25 in $CHCl_3$).

8-Me ether, 7-angeloyl, 3,12-di-Ac: [90027-10-4]
$C_{30}H_{42}O_9$ 546.656
Constit. of *Euphorbia kamerunica*.

8-Me ether, 7-tigloyl, 3,12-di-Ac: [89984-06-5]
$C_{30}H_{42}O_9$ 546.656
Constit. of latex of *Euphorbia kamerunica*.

8-Me ether, 7-benzoyl, 3,12-di-Ac: [89984-05-4]
$C_{32}H_{40}O_9$ 568.663
Constit. of *Euphorbia kamerunica* and *Euphorbia hermentiana*. Gum. $[\alpha]_D$ -7.2 (c, 0.08 in $CHCl_3$).

2-Epimer, tetra-Ac:
$C_{28}H_{38}O_{10}$ 534.602
Constit. of *Euphorbia portulacoides*.

2-Epimer, 7-(2-methylpropanoyl), 3,8,12-tri-Ac:
$C_{30}H_{42}O_{10}$ 562.656
Constit. of *Euphorbia portulacoides*.

2-Epimer, 7-(2-methylbutanoyl), 3,8,12-tri-Ac:
$C_{31}H_{44}O_{10}$ 576.683
Constit. of *Euphorbia portulacoides*.

2-Epimer, 7-benzoyl, 3,8,12-tri-Ac:
$C_{33}H_{40}O_{10}$ 596.673
Constit. of *Euphorbia portulacoides*.

2-Epimer, 8-benzoyl, 3,7,12-tri-Ac:
$C_{33}H_{40}O_{10}$ 596.673
Constit. of *Euphorbia canariensis*. Oil. $[\alpha]_D$ -41 (c, 1 in $CHCl_3$).

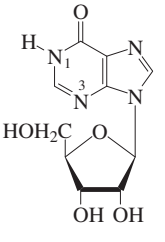
2,3-Diepimer, 8-benzoyl, 7,12-di-Ac:
$C_{31}H_{38}O_9$ 554.636
Constit. of *Euphorbia canariensis*. Oil. $[\alpha]_D$ -25 (c, 3.4 in $CHCl_3$).

2,3-Diepimer, 8-(2-methylpropanoyl), 7,12-di-Ac:
$C_{28}H_{40}O_9$ 520.619
Constit. of *Euphorbia canariensis*. Oil. $[\alpha]_D$ -8.5 (c, 1.4 in $CHCl_3$).

Schroeder, G. *et al., Planta Med.*, 1979, **35**, 235 (*derivs*)
Lotter, H. *et al., Tet. Lett.*, 1979, 77 (*cryst struct*)
Abo, K. *et al., J. Nat. Prod.*, 1981, **45**, 365 (*derivs*)
Abo, K. *et al., Phytochemistry*, 1981, **20**, 2535-2537 (*derivs*)
Abo, K. *et al., Planta Med.*, 1981, **43**, 392 (*derivs*)
Lin, L.-J. *et al., Phytochemistry*, 1983, **22**, 2795-2799 (*isol, esters*)
Evans, F.J. *et al., Prog. Chem. Org. Nat. Prod.*, 1983, **44**, 1 (*rev*)
Connolly, J.D. *et al., Tet. Lett.*, 1984, **25**, 3773 (*struct, deriv*)
Khan, A.Q. *et al., Heterocycles*, 1988, **27**, 2851 (*Tirucalicine*)
Gewali, M.B. *et al., Chem. Pharm. Bull.*, 1989, **37**, 1547 (*derivs*)
Khan, A.Q. *et al., J. Nat. Prod.*, 1990, **53**, 728 (*isol, deriv*)
Morgenstern, T. *et al., Phytochemistry*, 1996, **41**, 1149-1153 (*Euphorbia portulacoides isolates*)
Marco, J.A. *et al., Phytochemistry*, 1997, **45**, 563-570; 1998, **49**, 1095-1099 (*Euphorbia canariensis esters, Euphorbia acurensis esters*)
Ahmed, A.A. *et al., Fitoterapia*, 1999, **70**, 140-143 (*8-tigloyl 3,12-di-Ac*)
Fattorusso, E. *et al., Eur. J. Org. Chem.*, 2002, 71-78 (*8-phenylacetyl 3,7,12-tri-Ac*)
Ravikanth, V. *et al., Phytochemistry*, 2002, **59**, 331-335 (*Euphorbia nivulia constits*)
Ravikanth, V. *et al., Chem. Pharm. Bull.*, 2003, **51**, 431-434 (*Euphorbia nivulia constits*)
Baloch, I.B. *et al., Planta Med.*, 2006, **72**, 830-834 (*Euphorbia cornigera constits*)

Inosine, 9CI, INN, JAN I-148

*1,9-Dihydro-9-β-*D*-ribofuranosyl-6*H*-purin-6-one, 9CI. 9-β-*D*-Ribofuranosylhypoxanthine, 8CI. Hypoxanthine riboside. Hypoxanthosine. Aminosin*†*. Carnine. Delimmun. Inosie. Oxiamine. Trophicardyl*
[58-63-9]



1*H-form*

$C_{10}H_{12}N_4O_5$ 268.229
Present in meat extracts and sugar beet. Also prod. by microorganisms, e.g. *Bacillus subtilis, Escherichia coli, Saccharomyces cerevisiae, Fusarium* spp. A minor constit. of *t*-RNA's. Activates cellular functions. Cardiotonic. Suggested to be

capable of forming base pairs with Adenine, A-137, Cytosine, C-961 or Uracil, U-42 thus contributing to genetic code degeneracy by causing stable mispairings. Used to treat cardiac disorders. Egg-release pheromone of *Nereis succinea*. Mp 215° dec. $[\alpha]_D^{18}$ -49.2 (c, 0.9 in H_2O). pK_{a1} 1.5; pK_{a2} 8.85; pK_{a3} 12.5 (25°). Log P -3.76 (calc). λ_{max} 249 (ϵ 12200) (H_2O) (pH 6).

► Probable mutagen. Exp. reprod. effects (very high dose) LD_{50} (mus, ivn) 3000 mg/kg. NM7460000

3′-O-α-D-Glucopyranosyl: ***3′-O-α-D-Glucopyranosylinosine***
$C_{16}H_{22}N_4O_{10}$ 430.371
Isol. from the crustacean *Ligia exotica*. Amorph. solid. $[\alpha]_D^{20}$ +38 (c, 0.34 in H_2O). λ_{max} 248 (ϵ 8400) (H_2O).

2′-Me: ***2′-O-Methylinosine***
[3881-21-8]
$C_{11}H_{14}N_4O_5$ 282.255
Isol. from the starfish *Asterias rollestoni*. Mp 153-156°.

OH-form

6-O-[2-Hydroxy-1-(hydroxymethyl)ethyl]: ***6-O-(1,3-Dihydroxyisopropyl)inosine***
[193889-60-0]
$C_{13}H_{18}N_4O_7$ 342.308
Constit. of *Pedicularis longiflora*.

[35908-31-7]

Hall, R.H. *et al., Biochem. Biophys. Res. Commun.*, 1963, **13**, 394 (*isol, deriv*)
Munns, A.R.I. *et al., Acta Cryst. B*, 1970, **26**, 1114 (*cryst struct*)
Chenon, M.T. *et al., J.A.C.S.*, 1975, **97**, 4627 (*cmr*)
Westhof, E. *et al., Z. Naturforsch., C*, 1975, **30**, 131 (*pmr*)
Hawkes, G.E. *et al., J.C.S. Perkin 2*, 1977, 1268 (*N-15 nmr*)
Wang, C. *et al., CA*, 1997, **127**, 173867g (*Dihydroxyisopropylinosine*)
Zeeck, E. *et al., Chemoecology*, 1998, **8**, 77-84 (*biochem, Nereis*)
Kim, S.H. *et al., J. Nat. Prod.*, 2000, **63**, 1188-1191 (*3′-α-D-glucosyl*)
Li, G.-Q. *et al., J. Chin. Pharm. Sci.*, 2004, **13**, 81-86 (*2′-O-Methylinosine, isol*)

Insulamine I-149

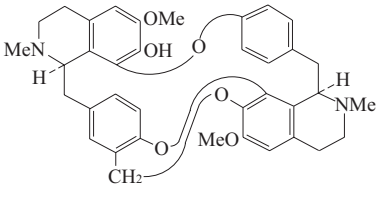
$C_{16}H_{17}NO_3$ 271.315

Amaryllidaceae alkaloid. Struct. unknown. Isol. from the bulbs of *Narcissus* sp. (Amaryllidaceae). Cryst. (Me_2CO). Mp 177-178°. $[\alpha]_D^{25}$ -95 (c, 0.1 in $CHCl_3$).

Boit, H.-G. *et al., Chem. Ber.*, 1957, **90**, 2197-2202 (*isol*)

Insularoline I-150

Insulanoline
[478-62-6]



$C_{37}H_{38}N_2O_6$ 606.717

Alkaloid from the rhizomes of *Cyclea insularis* and roots of *Cyclea sutchuenensis* (Menispermaceae). Shows significant inhibitory activity against human colon adenocarcinoma. Plates + $1H_2O$. Mp 195° dec. $[\alpha]_D^{14}$ +48.6 (MeOH). λ_{max} 211 (ϵ 54954); 280 (ϵ 4467) (EtOH) (Berdy). λ_{max} 287 ; 299 (EtOH-NaOH) (Berdy).

Me ether: ***Insularine****.* O-*Methylinsularoline*
[549-07-5]
$C_{38}H_{40}N_2O_6$ 620.744
Alkaloid from the rhizomes of *Cyclea insularis*, the roots of *Cyclea sutchuenensis* and *Cissampelos pareira*, the roots and terrestrial portion of *Stephania japonica*, and from the stems, roots and rhizomes of *Paracyclea ochiaiana* (Menispermaceae). Cryst. (Et_2O). Mp 157°. $[\alpha]_D^{22}$ +11.36 (c, 0.44 in EtOH).

Me ether, dipicrate: Mp 230-231° dec.

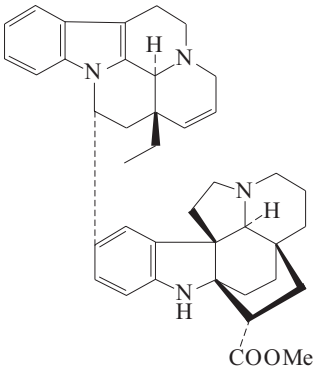
*Me ether, 2β-*N*-oxide:* ***Insularine 2β-N-oxide***
$C_{38}H_{40}N_2O_7$ 636.743
Alkaloid from roots of *Cyclea sutchuenensis* (Menispermaceae).

*Me ether, 2′β-*N*-oxide:* ***Insularine 2′β-N-oxide***
$C_{38}H_{40}N_2O_7$ 636.743
Alkaloid from roots of *Cyclea sutchuenensis* (Menispermaceae).

Tomita, M. *et al., Nippon Kagaku Kaishi*, 1943, **64**, 64; 70; 77; 142; 147; *CA*, **41**, 3803 (*isol, struct*)
Satomi, M. *et al., Itsuu Kenkyusho Nempo*, 1955, **6**, 31; *CA*, **50**, 10112f (*isol, Insularine*)
Tomita, M. *et al., Yakugaku Zasshi*, 1957, **77**, 997; 1967, **87**, 1285; *CA*, **52**, 3832e; **58**, 36765w (*Insularine, Insularoline, isol, struct*)
Kikuchi, T. *et al., Yakugaku Zasshi*, 1958, **78**, 1408; 1413; *CA*, **53**, 7219f; 7220a (*isol, struct*)
Bick, I.R.C. *et al., J.C.S.*, 1961, 1896 (*pmr*)
Kunitomo, J. *et al., Yakugaku Zasshi*, 1962, **82**, 1152; *CA*, **58**, 4614a (*abs config*)
Baldas, J. *et al., J.C.S. Perkin 1*, 1972, 599 (*ms*)
Dwuma-Badu, D. *et al., Phytochemistry*, 1975, **14**, 2520 (*isol, uv, ir, ms*)
Lai, S. *et al., Huaxue Xuebao*, 1993, **51**, 1133; *CA*, **120**, 129507w (*Insularine oxides*)

Insulopinine I-151

[102965-05-9]

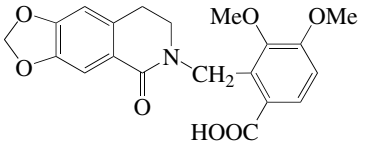


$C_{40}H_{46}N_4O_2$ 614.829
Alkaloid from *Melodinus insulae-pinorum* (Apocynaceae).

Batchily, F. *et al., Ann. Pharm. Fr.*, 1985, **43**, 359; *CA*, **105**, 75870d

Intebrine I-152

[169238-47-5]

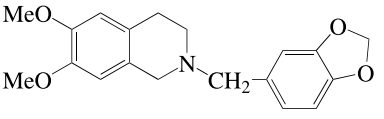


$C_{20}H_{19}NO_7$ 385.373
Alkaloid from leaves of *Berberis integerrima*. Prisms (MeOH). Mp 193-194°. λ_{max} 223 (log ϵ 4.98); 250 (log ϵ 4.62); 304 (log ϵ 4.45) (EtOH).

Karimov, A. *et al., Khim. Prir. Soedin.*, 1993, 65-70; *Chem. Nat. Compd. (Engl. Transl.)*, 1993, **29**, 53-57 (*isol, uv, cryst struct*)

Intebrinine I-153

[169238-46-4]

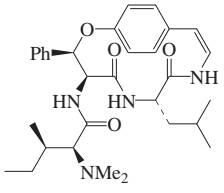


$C_{19}H_{21}NO_4$ 327.379
Alkaloid from the leaves of *Berberis integerrima*. Cryst. (MeOH)(as hydrochloride). Mp 223-224° (hydrochloride).

Karimov, A. *et al., Khim. Prir. Soedin.*, 1993, 70-73; *Chem. Nat. Compd. (Engl. Transl.)*, 1993, **29**, 57-60 (*isol, uv, pmr, cryst struct*)

Integerrenine I-154

*2-(Dimethylamino)-3-methyl-*N*-[7-(2-methylpropyl)-5,8-dioxo-3-phenyl-2-oxa-6,9-diazabicyclo[10.2.2]hexadeca-10,12,14,16-tetraen-4-yl]pentanamide, 9CI*
[18067-39-5]



Absolute Configuration

$C_{31}H_{42}N_4O_4$ 534.697
Alkaloid from the roots of *Ceanothus integerrimus*, root bark of *Zizyphus nummularia*, bark of *Heisteria nitida*and leaves of *Melochia pyramidata*. Needles ($CHCl_3$/petrol). Mp 278° dec. $[\alpha]_D^{20}$ -228 (c, 0.2 in $CHCl_3$).

N-*De-Me:* ***Nummularine D****.* N-*Demethylintegerrenine*
[58775-93-2]
$C_{30}H_{40}N_4O_4$ 520.67
Alkaloid from the root bark of *Zizyphus nummularia* (Rhamnaceae). Cryst. (MeOH). Mp 265-268°. $[\alpha]_D^{20}$ -186 (c, 0.2 in $CHCl_3$).

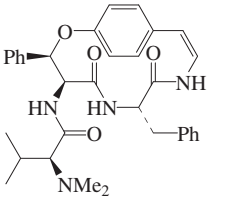
Dihydro:

Needles ($CHCl_3$/petrol). Mp 318° (314-316°). $[\alpha]_D^{20}$ -40.2 (c, 0.13 in $CHCl_3$).

Tschesche, R. *et al., Chem. Ber.*, 1967, **100**, 3924-3936 (*isol, uv, cd, ir, pmr, ms, struct*)
Tschesche, R. *et al., Tetrahedron*, 1975, **31**, 2944-2947 (*Nummularine D*)
Lagarias, J.C. *et al., J. Nat. Prod.*, 1979, **42**, 220-227 (*isol*)
Medina, E. *et al., Annalen*, 1981, 538-545 (*isol, uv, ir, pmr*)

Integerressine I-155

2-(Dimethylamino)-N-*[5,8-dioxo-3-phenyl-7-(phenylmethyl)-2-oxa-6,9-diazabicyclo[10.2.2]hexadeca-10,12,14,16-tetraen-4-yl]-3-methylbutanamide, 9CI*
[17948-40-2]



Absolute Configuration

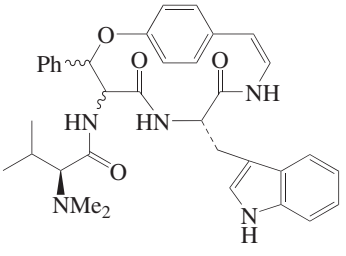
$C_{33}H_{38}N_4O_4$ 554.688
Major alkaloid from the roots of *Ceanothus integerrimus*. Also isol. from *Retanilla ephedra* (Rhamnaceae). Mp 285° dec. $[\alpha]_D^{20}$ -164 (c, 0.2 in $CHCl_3$).

Dihydro:
Needles ($CHCl_3$/petrol). Mp 321°. $[\alpha]_D^{20}$ -74.6 (c, 0.13 in $CHCl_3$).

Tschesche, R. *et al., Chem. Ber.*, 1967, **100**, 3924 (*isol, uv, cd, ir, pmr, ms, struct*)
Bhakuni, D.S. *et al., Rev. Latinoam. Quim.*, 1974, **5**, 158; *CA*, **82**, 108803w (*isol*)

Integerrine I-156

2-(Dimethylamino)-N-*[7-(1*H*-indol-3-ylmethyl)-5,8-dioxo-3-phenyl-2-oxa-6,9-diazabicyclo[10.2.2]hexadeca-10,12,14,16-tetraen-4-yl]-3-methylbutanamide, 9CI*
[18397-13-2]



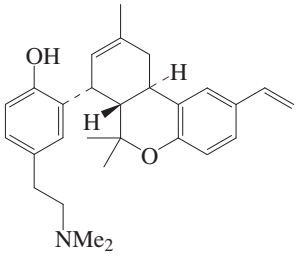
$C_{35}H_{39}N_5O_4$ 593.724
Minor alkaloid from roots of *Ceanothus integerrimus* (Rhamnaceae). Needles ($CHCl_3$/petrol). Mp 258°. Opt. rotn. not reported.

N-*De-Me:* **N-*Demethylintegerrine***
[70440-98-1]
$C_{34}H_{37}N_5O_4$ 579.697
Alkaloid from the root bark of *Ceanothus integerrimus* var. *integerrimus* (Rhamnaceae). Mp 350°. No stereochem. shown.

Tschesche, R. *et al., Tet. Lett.*, 1968, 1311 (*isol, ms, struct*)
Lagarias, J.C. *et al., J. Nat. Prod.*, 1979, **42**, 220-227 (*N-de-Me*)

Integramine I-157

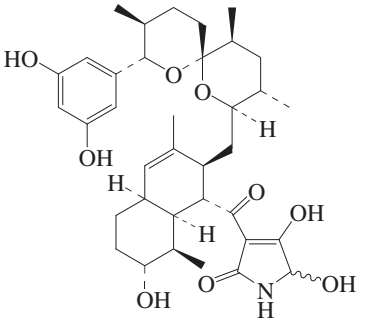
[289042-21-3]



$C_{28}H_{35}NO_2$ 417.59
Alkaloid from *Zanthoxylum integrifoliolum*. Prisms (Me_2CO). Mp 208-210°. λ_{max} 232 (log ϵ 4.08); 265 (log ϵ 4.26); 290 (sh) (log ϵ 3.81) (MeOH).

Liu, S.-L. *et al., J. Chin. Chem. Soc. (Taipei)*, 2000, **47**, 571-574 (*isol, ir, uv, pmr, cmr*)

Integramycin I-158

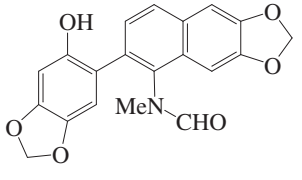


$C_{36}H_{49}NO_9$ 639.784
Prod. by *Actinoplanes* sp. ATCC202188. HIV-1 integrase inhibitor. Powder. $[\alpha]_D^{23}$ +30.6 (c, 2.35 in MeOH).

Singh, S.B. *et al., Org. Lett.*, 2002, **4**, 1123-1126 (*isol, pmr, cmr*)

Integriamide I-159

N-*[6-(6-Hydroxy-1,3-benzodioxol-5-yl)-naphtho[2,3-*d*]-1,3-dioxol-5-yl]*-N-*methylformamide, 9CI*
[72459-16-6]

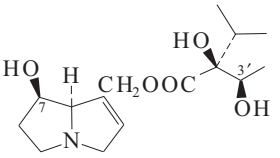


$C_{20}H_{15}NO_6$ 365.342
A secobenzo[c]phenanthridine alkaloid. Minor alkaloid from the root-xylem of *Zanthoxylum integrifoliolum* (Rutaceae). Prisms ($CHCl_3$/MeOH). Mp 302-304°.

Ishii, H. *et al., Heterocycles*, 1979, **12**, 1037 (*ir, pmr, synth*)

Intermedine† I-160

[10285-06-0]



$C_{15}H_{25}NO_5$ 299.366
Ester of Retronecine, in T-188 with Trachelanthic acid. Diastereoisomeric with Indicine, I-68 and Echinatine, E-12. Main alkaloid from *Amsinckia lycopsoides* and *Amsinckia hispida* (Boraginaceae). Cryst. (usually obt. as a gum). Mp 140-142°. $[\alpha]_D^{20}$ +7.8 (c, 1.49 in EtOH) (+4.4).
▶ Hepatotoxin.

O^7-*Ac:* ***7-Acetylintermedine***
[74243-01-9]
$C_{17}H_{27}NO_6$ 341.403
Alkaloid from leaves of *Symphytum uplandicum* (Boraginaceae). Identified hydrolytically.

$O^{3'}$,O^7-*Di-Ac:* ***3′,7-Diacetylintermedine***
$C_{19}H_{29}NO_7$ 383.441
Alkaloid from *Amsinckia menziesii* var. *intermedia* (Boraginaceae). Oil. $[\alpha]_D^{25}$ +2.5 (c, 0.57 in $CHCl_3$).

7-O-*Propanoyl:* ***7-Propionylintermedine***
$C_{18}H_{29}NO_6$ 355.43
Alkaloid from *Pulmonaria obscura*.

7-O-*(2-Methylpropanoyl):* ***7-Isobutyrylintermedine***
$C_{19}H_{31}NO_6$ 369.457
Alkaloid from *Pulmonaria obscura*.

7-O-*(2-Methylbutanoyl):* ***7-(2-Methylbutyryl)intermedine***
$C_{20}H_{33}NO_6$ 383.484
Alkaloid from *Pulmonaria obscura*.

7-O-*(3-Methylbutanoyl):* ***7-(3-Methylbutyryl)intermedine***. *7-Isovaleroylintermedine*
$C_{20}H_{33}NO_6$ 383.484
Alkaloid from *Pulmonaria obscura*.

7-O-*(3-Methyl-2-butenoyl):* see Echiupinine, E-32

7-O-*Angeloyl:* see Echiumine, E-31

3′-Epimer: ***Lycopsamine***
[10285-07-1]
$C_{15}H_{25}NO_5$ 299.366
Alkaloid from *Amsinckia lycopsoides, Amsinckia hispida, Eupatorium coelestinum, Anchusa officinalis, Echium plantagineum*, *Heliotropium spathulatum* etc. (Boraginaceae). Cryst. (usually obt. as gum). Mp 132-134°. $[\alpha]_D$ +3.3. $[\alpha]_D^{20}$ +1.4 (EtOH). Cryst. with difficulty. Ester of Retronecine, in T-188 with Viridifloric acid. The struct. is incorrectly given in the 1991 paper, which substitutes the struct. for Heliospathuline (error in struct. diagrams).
▶ Hepatotoxin.

3′-Epimer, N-*oxide:* ***Lycopsamine* N-*oxide***
[95462-15-0]
$C_{15}H_{25}NO_6$ 315.366
Isol. from adult bodies of the Apocynaceae-feeding danaine butterfly *Idea leuconoe*. $[\alpha]_D^{32}$ +6 (c, 2.3 in MeOH).

3′-Epimer, O^7*-Ac:* ***7-Acetyllycopsamine***
[73544-48-6]
$C_{17}H_{27}NO_6$ 341.403
Alkaloid from leaves of *Symphytum uplandicum, Anchusa officinalis* and *Anchusa menziesii* (Boraginaceae). Identified hydrolytically.

3′-Epimer, $O^{3'}$*-Ac:* ***3′-Acetyllycopsamine***
[86702-00-3]
$C_{17}H_{27}NO_6$ 341.403
Alkaloid from *Amsinckia menziesii* (Boraginaceae). Gum. $[\alpha]_D^{25}$ +9.3 (c, 1.3 in $CHCl_3$).

3′-Epimer, O^7,$O^{3'}$*-di-Ac:* ***3′,7-Diacetyllycopsamine***
[86702-01-4]
$C_{19}H_{29}NO_7$ 383.441
Alkaloid from *Amsinckia menziesii* (Boraginaceae). Faint-amber oil. $[\alpha]_D^{25}$ -2.6 (c, 1.7 in $CHCl_3$).

*3′-Epimer, 7-*O*-propanoyl:* ***7-Propionyllycopsamine***
$C_{18}H_{29}NO_6$ 355.43
Alkaloid from *Pulmonaria obscura*.

*3′-Epimer, 7-*O*-(2-methylpropanoyl):* ***7-Isobutyryllycopsamine***
$C_{19}H_{31}NO_6$ 369.457
Alkaloid from *Pulmonaria obscura*.

*3′-Epimer, 7-*O*-(2-methylbutanoyl):* ***7-(2-Methylbutyryl)lycopsamine***
$C_{20}H_{33}NO_6$ 383.484
Alkaloid from *Pulmonaria obscura*.

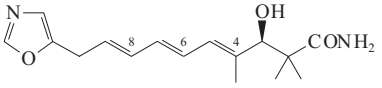
3′-Epimer, $O^{3'}$*-(3-methylbutanoyl):* ***9-(3′-Isovaleroyl)viridiflorylretronecine***
[114926-21-5]
$C_{20}H_{33}NO_6$ 383.484
Alkaloid from roots of *Heliotropium curassavicum* (2 varieties) (Boraginaceae).

*3′-Epimer, 7-*O*-(3-methylbutanoyl):* ***7-(3-Methylbutyryl)lycopsamine****. 7-Isovaleroyllycopsamine*
$C_{20}H_{33}NO_6$ 383.484
Alkaloid from *Pulmonaria obscura*.

Culvenor, C.C.J. *et al., Aust. J. Chem.*, 1966, **19**, 1955; 1980, **33**, 1105 (*isol, struct, synth, Acetylintermedine, Acetyllycopsamine*)
Broch-Due, A.I. *et al., Acta Chem. Scand., Ser. B*, 1980, **34**, 75 (*isol, pmr*)
Herz, W. *et al., Experientia*, 1981, **37**, 683 (*isol, props*)
Culvenor, C.C.J. *et al., J. Agric. Food Chem.*, 1981, **29**, 958 (*isol*)
Jones, A.J. *et al., Aust. J. Chem.*, 1982, **35**, 1173 (*cmr*)
Mackay, M.F. *et al., Acta Cryst. C*, 1983, **39**, 785 (*cryst struct, Lycopsamine, Intermedine*)
Roitman, J.N. *et al., Aust. J. Chem.*, 1983, **36**, 769 (*isol, pmr, cmr, ms, struct, Acetyllycopsamine, Diacetyllycopsamine*)
Zalkow, L.H. *et al., J. Med. Chem.*, 1985, **28**, 687 (*synth*)
Davicino, J.G. *et al., Phytochemistry*, 1988, **27**, 960 (*Isovaleroylviridiflorylretronecine*)
Nishida, R. *et al., Agric. Biol. Chem.*, 1991, **55**, 1787 (*Lycopsamine N-oxide*)
Wiedenfeld, H. *et al., Planta Med.*, 1991, **57**, 57B (*isol from A. conyzoides*)
Kelley, R.B. *et al., Phytochemistry*, 1992, **31**, 2513 (*3′,7-Diacetylintermedine*)
Logie, C.G. *et al., Phytochemistry*, 1994, **37**, 43-109 (*rev, pmr*)
Nambu, M. *et al., Chem. Comm.*, 1997, 1619 (*synth*)
Haberer, W. *et al., Planta Med.*, 2002, **68**, 480-482 (*isol, 7-acyl esters*)

Inthomycin I-161

3-Hydroxy-2,2,4-trimethyl-10-(5-oxazolyl)-4,6,8-decatrienamide, 9CI



(4E,6E,8E)-form

$C_{16}H_{22}N_2O_3$ 290.361

(4E,6E,8E)-form
Inthomycin C
[133004-93-0]
Isol. from *Streptomyces* sp. Possesses antifungal and herbicidal props.

(4Z,6E,8E)-form
Inthomycin B
[133004-92-9]
From *Streptomyces* sp. Shows antifungal and herbicidal props.

10ξ-Hydroxy: ***Phthoxazolin D***
$C_{16}H_{22}N_2O_4$ 306.361
From *Streptomyces* sp. KO-7888. Antifungal agent, herbicide (cellulose biosynthesis inhibitor). Powder. Sol. MeOH, EtOH, Me_2CO; poorly sol. H_2O, $CHCl_3$. Mp 63-69°. $[\alpha]_D^{25}$ +51 (c, 0.2 in MeOH).

(4Z,6Z,8E)-form
Inthomycin A*. Phthoxazolin A. OM 5714. Antibiotic OM 5714*
[130288-22-1]
Prod. by *Streptomyces* sp. OM-5714. Specific inhibitor of cellulose biosynth. Mp 58-62°. $[\alpha]_D^{20}$ +81.8 (c, 1.52 in Me_2CO). $[\alpha]_D^{18}$ +37.4 (c, 1 in CH_2Cl_2). Substruct. element of Oxazolomycin, O-155. λ_{max} 203 (ϵ 8900); 215 (sh) (ϵ 8200); 243 (sh) (ϵ 7600); 253 (sh) (ϵ 8200); 265 (sh) (ϵ 10300); 275 (ϵ 12000); 285 (sh) (ϵ 10000); 330 (sh) (ϵ 1000) (MeOH) (Derep).
▶ HE1790000

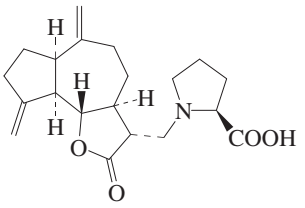
10ξ-Hydroxy (1): ***Phthoxazolin B***
$C_{16}H_{22}N_2O_4$ 306.361
From *Streptomyces* sp. KO-7888. Antifungal agent, herbicide (cellulose biosynth. inhibitor). Powder. Sol. MeOH, EtOH, Me_2CO; poorly sol. H_2O, $CHCl_3$. Mp 63-65°. $[\alpha]_D^{25}$ +141 (c, 0.6 in MeOH). λ_{max} 278 (MeOH) (Berdy).

10ξ-Hydroxy (2): ***Phthoxazolin C***
$C_{16}H_{22}N_2O_4$ 306.361
From *Streptomyces* sp. KO-7888. Antifungal agent, herbicide (cellulose biosynth. inhibitor). Powder. Sol. MeOH, Me_2CO, EtOH; poorly sol. H_2O, $CHCl_3$. Mp 64-67°. $[\alpha]_D^{25}$ +30 (c, 0.2 in MeOH). 10-Epimer of Phthoxazolin B. λ_{max} 267 ; 288 (MeOH) (Berdy).

Henkel, T. *et al., Annalen*, 1991, 367 (*isol, pmr, cmr, struct*)
Tanaka, Y. *et al., J. Antibiot.*, 1993, **46**, 1208; 1214 (*Phthoxazolin*)
Shiomi, K. *et al., J. Antibiot.*, 1995, **48**, 714 (*Phthoxazolins*)
Henaff, N. *et al., Tetrahedron*, 2000, **56**, 5193-5204 (*synth*)
Webb, M.R. *et al., Tetrahedron*, 2008, **64**, 4778-4791 (*synth*)

Involucratine I-162

*1-[[Dodecahydro-6,9-bis(methylene)-2-oxoazuleno[4,5-*b*]furan-3-yl]methyl]proline, 9CI. Saussureamide B*
[126209-82-3]



$C_{20}H_{27}NO_4$ 345.438
Alkaloid from *Saussurea involucrata* and *Saussurea lappa* (Asteraceae). Powder. $[\alpha]_D$ -25.9 (c, 0.8 in MeOH). Involucratine and Saussureamine B not compared.

Li, Y. *et al., Phytochemistry*, 1989, **28**, 3395 (*Involucratine*)
Yoshikawa, M. *et al., Chem. Pharm. Bull.*, 1993, **41**, 214-216 (*Saussureamine B*)
Matsuda, H. *et al., Tetrahedron*, 2000, **56**, 7763-7777 (*synth, abs config*)

Iodoacetic acid, 9CI, 8CI I-163

[64-69-7]
ICH_2COOH
$C_2H_3IO_2$ 185.949
Constit. of the red alga *Asparagopsis taxiformis*. Used as a chromatographic derivatisation reagent for the *S*-carboxymethylation of cystine and cysteine in peptides. Plates (petrol). V. sol. Et_2O; sol. H_2O, EtOH. Mp 82-83°. pK_a 3.18 (25°, H_2O).
▶ Corrosive and irritating to eyes, skin and mucous membranes. LD_{50} (mus, orl) 83 mg/kg. AI3500000

Me ester: Methyl iodoacetate
[5199-50-8]
$C_3H_5IO_2$ 199.976
Liq. Bp 169-171°.

Et ester: Ethyl iodoacetate. KSK
[623-48-3]
$C_4H_7IO_2$ 214.003
War gas, tear gas. Oil. Bp 178-180° Bp_{16} 73°.
▶ Highly lachrymatory and irritant. AI3575000

Chloride: Iodoacetyl chloride
[38020-81-4]
C_2H_2ClIO 204.394
Yellow-brown oil. d^{25} 2.25. Bp_{15} 49-52°.

Amide: Iodoacetamide, 9CI
[144-48-9]
C_2H_4INO 184.964
Constit. of *Asparagopsis taxiformis*. Reagent for cleavage of methionine containing peptides. Flaky cryst. (H_2O). Mp 95°.
▶ LD_{50} (mus, orl) 74 mg/kg. AC4200000

Nitrile: Iodoacetonitrile. Cyanoiodo-

methane
[624-75-9]
C_2H_2IN 166.949
Oil. Bp_{12} 76-77°.

Anhydride: [54907-61-8]
$C_4H_4I_2O_3$ 353.883
Cryst. (EtOH aq.). V. sol. $CHCl_3$, EtOAc, Et_2O; less sol. H_2O, EtOH. Mp 46°.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 509C; 651C; 751B; 848D (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 791B; 1010A; 1172A; 1366B (*nmr*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 701A; 807C (*ir*)
v. Braun, J. *et al., Ber.*, 1908, **41**, 2130 (*synth, nitrile, amide*)
Abderhalden, E. *et al., Ber.*, 1908, **41**, 2852 (*synth*)
Jacobs, W.A. *et al., J.A.C.S.*, 1919, **41**, 2090 (*amide*)
Fieser and Fieser's Reagents for Organic Synthesis, Wiley, 1967, **1**, 504 (*amide, use*)
Paraskewas, S. *et al., Synthesis*, 1974, 574 (*amide*)
Moodie, I.M. *et al., J. Chromatogr.*, 1976, **124**, 315 (*use*)
Woolard, F.X. *et al., Tetrahedron*, 1976, **32**, 2843-2846 (*amide, isol*)
Karpitskaya, L.G. *et al., Zh. Org. Khim.*, 1976, **12**, 462 (*synth*)
Woolard, F.X. *et al., Phytochemistry*, 1979, **18**, 617-620 (*isol*)
Dillon, K.B. *et al., J. Magn. Reson.*, 1980, **39**, 499 (*pmr*)
Lorenzi-Riatsch, A. *et al., Helv. Chim. Acta*, 1981, **64**, 1563 (*ms*)
Cooper, J.D.H. *et al., J. Chromatogr.*, 1982, **227**, 158 (*use*)
Encyclopaedia of Reagents for Organic Synthesis, (ed. Paquette, L.A.), Wiley, 1995, **4**, 2822-2824 (*nitrile, use*)
Luxon, S.G. *et al., Hazards in the Chemical Laboratory, 5th edn., Royal Society of Chemistry*, 1992, 730
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, ELQ000; IDW000; IDZ000

(Iodomethyl)trimethylammonium(1+) I-164

1-Iodo-N,N,N-*trimethylmethanaminium, 9CI*
[39895-69-7]
$Me_3N^{\oplus}CH_2I$
$C_4H_{11}IN^{\oplus}$ 200.042
Isol. from the Japanese gastropod *Turbo marmorata*.

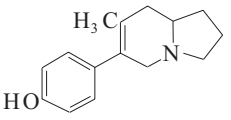
Chloride: [65603-17-0]
$C_4H_{11}ClIN$ 235.495
Counterion for natural product.

Iodide: [39741-91-8]
$C_4H_{11}I_2N$ 326.947
Cryst. (1,2-ethanediol). Mp 192° dec.(approx.) Mp 240° dec.(approx.) (double Mp).

Schreiber, J. *et al., Angew. Chem., Int. Ed.*, 1971, **10**, 330-331 (*synth*)
Laber, R.A. *et al., Spectrochim. Acta A*, 1977, **33**, 1079-1081 (*ir, Raman*)
Kotaki, Y. *et al., CA*, 1978, **88**, 100056h (*isol*)
Wittmann, H. *et al., Monatsh. Chem.*, 1982, **113**, 1451-1458 (*synth, pmr*)
Almarzoqi, B. *et al., Tetrahedron*, 1986, **42**, 601-607 (*synth*)

Ipalbidine I-165

*4-(1,2,3,5,8,8*a-*Hexahydro-7-methyl-6-indolizinyl)phenol, 9CI. 6-(4-Hydroxyphenyl)-7-methyl-1,2,3,5,8,8*a-*hexahydroindolizine*



$C_{15}H_{19}NO$ 229.321

(+)-*form* [31470-51-6]
Obt. by resoln. of racemate. Cryst. (C_6H_6/cyclohexane). Mp 72-82°. $[\alpha]_D^{25}$ +233.5 (c, 1 in $CHCl_3$). Contains some solvent of crystallisation.

Picrate:
Cryst. (MeOH). Mp 183-185°. $[\alpha]_D^{25}$ +112.6.

Ac: $[\alpha]_D^{25}$ +149.6 (c, 1 in MeOH).

(-)-*form* [31470-52-7]
Obt. by resoln. of racemate. Glass. Mp 82-84°. $[\alpha]_D^{25}$ -237 (c, 1 in $CHCl_3$). $[\alpha]_D$ -190.5 (c, 1 in MeOH).

Hydrochloride:
Cryst. + $1H_2O$ (MeCN). Mp 103.5-105°. $[\alpha]_D^{25}$ -170 (c, 0.1 in MeOH).

Picrate:
Cryst. (MeOH). Mp 184-186°. $[\alpha]_D^{25}$ -114.4 (c, 1 in MeOH).

(±)-*form* [26294-41-7]
Alkaloid from the seeds of *Ipomoea alba* and *Ipomoea muricata* (Convolvulaceae). Cryst. (EtOAc or EtOH). Mp 149-150° (144-146°).

Hydrochloride:
Cryst. + $1H_2O$ (MeOH/Et_2O or MeCN). Mp 107-109°.

Picrate:
Cryst. (MeOH). Mp 163-165° Mp 178°.

O-*β-D-Glucopyranoside:* ***Ipalbine***
[23544-46-9]
$C_{21}H_{29}NO_6$ 391.463
Alkaloid from seeds of *Ipomoea alba* (Convolvulaceae). Cryst. (MeOH/MeCN). Mp 118°. $[\alpha]_D^{23}$ +32.5 (c, 0.03 in EtOH). $[\alpha]_D^{25}$ +65.8 (c, 0.7 in EtOH).

O-*[4–Hydroxy-*E*-cinnamoyl-(→6)-β-D-glucopyranoside]:* ***Ipomine***
[65370-71-0]
$C_{30}H_{35}NO_8$ 537.608
Alkaloid from seeds of *Ipomoea muricata* (Convolvulaceae). Amorph. solid + $2H_2O$ (Et_2O). Mp 139-143°. $[\alpha]_D$ +46.4. Ikhiri *et al* isolated Ipalbine and Ipomine with opt. rotns. completely different from those previously reported. They suggest that their Ipomine, $[\alpha]_D$ -46°(EtOH) is the enantiomer of that previously isol., but since the chirality of Ipomine is entirely due to a D-Glucose residue, this is extremely improbable. It could be the glycoside of an enantiomer of Ipalbidine. They also suggest photoisomerism of the *p*-Hydroxycinnamoyl residue as a possibility.

O-*[4–Hydroxy-*Z*-cinnamoyl-(→6)-β-D-glucopyranoside]:* ***Isoipomine***
[110044-49-0]
$C_{30}H_{35}NO_8$ 537.608
Alkaloid from the seeds of *Ipomoea alba* (Convolvulaceae). Obt. in admixture with Ipomine.

O-*[4–Hydroxy-3-methoxycinnamoyl-(→6)-β-D-glucopyranoside]:* ***Methoxyipomine***
[110011-73-9]
$C_{31}H_{37}NO_9$ 567.635
Alkaloid from the seeds of *Ipomoea alba* (Convolvulaceae). Amorph.

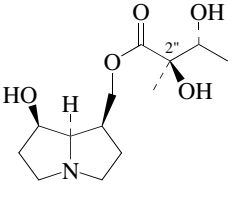
O-*[4–Hydroxy-3,5-dimethoxycinnamoyl-(→6)-β-D-glucopyranoside]:* ***Dimethoxyipomine***
[110011-74-0]
$C_{32}H_{39}NO_{10}$ 597.661
Alkaloid from the seeds of *Ipomoea alba* (Convolvulaceae). Amorph.

Ac: Mp 67-69°.

Gourley, J.M. *et al., Chem. Comm.*, 1969, 709 (*isol, uv, ir, pmr, ms, struct, Ipalbine, Ipalbidine*)
Govindachari, T.R. *et al., Tetrahedron*, 1970, **26**, 3829 (*synth*)
Wick, A.E. *et al., Helv. Chim. Acta*, 1971, **54**, 513 (*synth, uv, ir, pmr, ms, resoln*)
Stevens, R.V. *et al., Tet. Lett.*, 1977, 979 (*synth*)
Dawidar, A.M. *et al., Tetrahedron*, 1977, **33**, 1733 (*isol, uv, ir, ms*)
Chari, V.M. *et al., Planta Med.*, 1978, **34**, 93 (*cmr, struct*)
Hedges, S.H. *et al., J. Chem. Res., Synop.*, 1979, 1 (*synth*)
Howard, A.S. *et al., J.O.C.*, 1980, **45**, 1713 (*synth*)
Cragg, J.E. *et al., Tet. Lett.*, 1981, 2127 (*synth*)
Iida, H. *et al., J.C.S. Perkin 1*, 1985, 261 (*synth*)
Jefford, C.W. *et al., Helv. Chim. Acta*, 1986, **69**, 2048 (*synth, uv, ir, pmr, ms*)
Danishefsky, S.J. *et al., J.O.C.*, 1986, **51**, 3915 (*synth*)
Ikhiri, K. *et al., J. Nat. Prod.*, 1987, **50**, 152 (*isol, pmr, cmr, ms, derivs*)
Sheehan, S.M. *et al., J.O.C.*, 1997, **62**, 438 (*synth*)
Ikeda, M. *et al., Heterocycles*, 1999, **50**, 31-34 (*synth*)
Honda, T. *et al., Tet. Lett.*, 2003, **44**, 3035-3038 (*synth*)

Ipanguline D_3 I-166

[210779-90-1]



$C_{13}H_{23}NO_5$ 273.328
Alkaloid from *Ipomoea hederifolia* (Convolvulaceae). Other Ipangulines have been isol. but were not fully characterised.

3″-Ac: ***Ipanguline D_5***
[210779-91-2]
$C_{15}H_{25}NO_6$ 315.366

Alkaloid from *Ipomoea hederifolia* (Convolvulaceae).

2″,3″-Di-Ac: ***Ipanguline D₉***
[210698-86-5]
$C_{17}H_{27}NO_7$ 357.403
Alkaloid *Ipomoea hederifolia* (Convolvulaceae). Stereochem. of side-chain unclear.

7-O-(2-Methylbutanoyl): ***Ipanguline C₁***
[210779-92-3]
$C_{18}H_{31}NO_6$ 357.446
Alkaloid from *Ipomoea hederifolia*. Abs. config. of 2-methylbutanoyl residue not determined.

7-O-(2-Methylbutanoyl), 3″-Ac: ***Ipanguline C₂***
[210779-93-4]
$C_{20}H_{33}NO_7$ 399.483
Alkaloid from *Ipomoea hederifolia*.

7-O-(2-Methylbutanoyl), 2″,3″-di-Ac: ***Ipanguline C₃***
[210698-91-2]
$C_{22}H_{35}NO_8$ 441.52
Alkaloid from *Ipomoea hederifolia*.

3″-(2-Methylbutanoyl): ***Ipanguline D₁₀***
[210698-88-7]
$C_{18}H_{31}NO_6$ 357.446
Alkaloid from *Ipomoea cristulata* (Convolvulaceae).

2″ or 3″-Tigloyl: ***Ipanguline D₁₄***
$C_{18}H_{29}NO_6$ 355.43
Alkaloid from *Ipomoea* x *peregrina* (Convolvulaceae). Stereochem. of side-chain uncertain.

2″ or 3″-Tigloyl, stereoisomer: ***Ipanguline D₁₅***
$C_{18}H_{29}NO_6$ 355.43
Alkaloid from seeds of *Ipomoea* x *peregrina* (Convolvulaceae). Stereochem. of side-chain uncertain.

3″,7-Bis(2-methylbutanoyl): ***Ipanguline C₄***
[210698-92-3]
$C_{23}H_{39}NO_7$ 441.564
Alkaloid from *Ipomoea hederifolia*.

7-O-(2-Hydroxybenzoyl): ***Ipanguline B₁***
[152273-76-2]
$C_{20}H_{27}NO_7$ 393.436
Alkaloid from above-ground parts (without fruits) of *Ipomoea hederifolia*.

7-O-(2-Hydroxybenzoyl), 3″-Ac: ***Ipanguline B₂***
[210779-99-0]
$C_{22}H_{29}NO_8$ 435.473
Alkaloid from *Ipomoea hederifolia*.

7-O-(2-Hydroxybenzoyl), 2″,3″-di-Ac: ***Ipanguline B₃***
[210698-96-7]
$C_{24}H_{31}NO_9$ 477.51
Alkaloid from *Ipomoea hederifolia*.

7-O-(Phenylacetyl): ***Ipanguline A₁***
[152273-75-1]
$C_{21}H_{29}NO_6$ 391.463
Alkaloid from seeds of *Ipomoea hederifolia* (Convolvulaceae). Oil. $[\alpha]_D^{21}$ -69 (c, 0.98 in MeOH).

7-O-(Phenylacetyl), 3″-Ac: ***Ipanguline A₂***
[210779-98-9]
$C_{23}H_{31}NO_7$ 433.5
Alkaloid from *Ipomoea hederifolia*.

7-O-(Phenylacetyl), 2″,3″-di-Ac: ***Ipanguline A₃***
[210780-00-0]
$C_{25}H_{33}NO_8$ 475.538
Alkaloid from *Ipomoea hederifolia*.

7-O-(Phenylacetyl), 3″-(2-methylbutanoyl): ***Ipanguline A₄***
[210698-97-8]
$C_{26}H_{37}NO_7$ 475.581
Alkaloid from *Ipomoea hederifolia*.

2″-Epimer: ***Isoipanguline D₃***
$C_{13}H_{23}NO_5$ 273.328
Alkaloid from *Ipomoea hederifolia* (Convolvulaceae).

2″-Epimer, 3″-Ac: ***Isoipanguline D₅***
$C_{15}H_{25}NO_6$ 315.366
Alkaloid from *Ipomoea hederifolia* (Convolvulaceae).

2″-Epimer, 3″-(2-methylbutanoyl): ***Isoipanguline D₁₀***
$C_{18}H_{31}NO_6$ 357.446
Alkaloid from *Ipomoea hederifolia* and *Ipomoea quamoclit*.

2″-Epimer, 7-O-(2-methylbutanoyl): ***Isoipanguline C₁***
$C_{18}H_{31}NO_6$ 357.446
Alkaloid from *Ipomoea hederifolia*.

2″-Epimer, 7-O-(2-methylbutanoyl), 3″-Ac: ***Isoipanguline C₂***
$C_{20}H_{33}NO_7$ 399.483
Alkaloid from *Ipomoea hederifolia*.

2″-Epimer, 7-O-(2-hydroxybenzoyl): ***Isoipanguline B₁***
[152375-56-9]
$C_{20}H_{27}NO_7$ 393.436
Alkaloid from above-ground parts (without fruits) of *Ipomoea hederifolia*. Oil. $[\alpha]_D^{21}$ -108 (c, 0.90 in MeOH).

2″-Epimer, 7-O-(2-hydroxybenzoyl), 3″-Ac: ***Isoipanguline B₂***
$C_{22}H_{29}NO_8$ 435.473
Alkaloid from *Ipomoea hederifolia*.

2″-Epimer, 7-O-(phenylacetyl): ***Isoipanguline A₁***
[152375-55-8]
$C_{21}H_{29}NO_6$ 391.463
Alkaloid from seeds of *Ipomoea hederifolia* (Convolvulaceae). Oil. $[\alpha]_D^{21}$ -61 (c, 1.47 in MeOH).

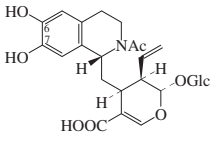
2″-Epimer, 7-O-(phenylacetyl), 3″-Ac: ***Isoipanguline A₂***
$C_{23}H_{31}NO_7$ 433.5
Alkaloid from *Ipomoea hederifolia*.

2″-Epimer, 7-O-(phenylacetyl), 2″,3″-di-Ac: ***Isoipanguline A₃***
$C_{25}H_{33}NO_8$ 475.538
Alkaloid from *Ipomoea hederifolia*.

Jenett-Siems, K. *et al., Phytochemistry*, 1993, **34**, 437; 1998, **47**, 1551-1560; 2005, **66**, 223-231 (*isol, pmr, cmr, ms, struct*)

Ipecosidic acid I-167

[137318-69-5]



Absolute Configuration

$C_{26}H_{33}NO_{12}$ 551.546
Most refs. refer to Ipecoside. Alkaloid from *Cephaelis ipecacuanha* (Rubiaceae). Cryst. (MeOH). Mp 248-250°. $[\alpha]_D^{22}$ -166 (c, 0.2 in MeOH). λ_{max} 207 (log ϵ 4.52); 226 (log ϵ 4.19); 233 (sh) (log ϵ 4.15); 286 (log ϵ 3.6) (MeOH).

Me ester: ***Ipecoside***
[15401-60-2]
$C_{27}H_{35}NO_{12}$ 565.573
Alkaloid from the roots of *Cephaelis acuminata* and *Cephaelis ipecacuanha* (Rubiaceae). Mp 174-175° (monohydrate) Mp 176-178° (dihydrate).

N-*De-Ac, Me ester:* ***Deacetylipecoside***
[21618-62-2]
$C_{25}H_{33}NO_{11}$ 523.536
Alkaloid from *Alangium lamarckii*. $[\alpha]_D$ -104 (c, 0.8 in MeOH) (as hydrochloride).

N-*De-Ac,* N-*(4-hydroxy-3-methoxy*-E-*cinnamoyl), Me ester:* **trans-*Cephaeloside***
[148717-73-1]
$C_{35}H_{41}NO_{14}$ 699.707
Alkaloid from roots of *Cephaelis ipecacuanha* (Rubiaceae). Needles (MeOH). Mp 170-172°. $[\alpha]_D^{27}$ -193 (c, 1.0 in MeOH).

N-*De-Ac,* N-*(4-hydroxy-3-methoxy*-Z-*cinnamoyl), Me ester:* **cis-*Cephaeloside***
[148717-74-2]
$C_{35}H_{41}NO_{14}$ 699.707
Alkaloid from roots of *Cephaelis ipecacuanha* (Rubiaceae). Needles + $1^1/_2H_2O$ (MeOH). Mp 164-165°. $[\alpha]_D^{28}$ -183 (c, 1.0 in MeOH).

Hexa-Ac, Me ester:
Amorph. powder + $2H_2O$. $[\alpha]_D^{25}$ -168.8 (c, 0.77 in $CHCl_3$).

6-Me ether, Me ester: ***6-O-Methylipecoside***
[137318-68-4]
$C_{28}H_{37}NO_{12}$ 579.6
Alkaloid from *Cephaelis ipecacuanha* (Rubiaceae). Needles (MeOH/Et_2O). Mp 154-155°. $[\alpha]_D^{22}$ -184 (c, 1 in MeOH).

6-Me ether, N-*de-Ac:* **N-*Deacetyl*-*6*-O-*methylipecosidic acid***
[265096-92-2]
$C_{25}H_{33}NO_{11}$ 523.536
Alkaloid from *Alangium kurzii*. Cryst. (MeOH). Mp 203-205°. $[\alpha]_D$ -144 (c, 0.2 in Py). $[\alpha]_D$ -124 (c, 0.34 in MeOH). λ_{max} 207 (log ϵ 4.51); 228 (log ϵ 4.18); 286 (log ϵ 3.56); 291 (sh) (log ϵ 3.52) (MeOH).

6-Me ether, N-*de-Ac,* N-*(4-hydroxy-3-methoxy*-E-*cinnamoyl), Me ester:* ***6-O-Methyl*-trans-*cephaeloside***
[147677-04-1]
$C_{36}H_{43}NO_{14}$ 713.734
Alkaloid from roots of *Cephaelis ipecacuanha* (Rubiaceae). Needles (MeOH). Mp 162-164°. $[\alpha]_D^{22}$ -189 (c, 1.0 in MeOH).

6-Me ether, N-*de-Ac,* N-*(4-hydroxy-3-methoxy-Z-cinnamoyl), Me ester:* **6-O-*Methyl*-cis-*cephaeloside***
[147731-71-3]
$C_{36}H_{43}NO_{14}$ 713.734
Alkaloid from roots of *Cephaelis ipecacuanha* (Rubiaceae). Needles + 1½H_2O (MeOH). Mp 154-155°. $[\alpha]_D^{28}$ -157 (c, 1.0 in MeOH).

7-Me ether, Me ester: **7-O-*Methylipecoside***
[137318-76-4]
$C_{28}H_{37}NO_{12}$ 579.6
Alkaloid from roots of *Cephaelis ipecacuanha* (Rubiaceae). Amorph. powder. $[\alpha]_D^{31}$ -194 (c, 1.0 in MeOH).

6,7-Di-Me ether, Me ester: [73611-00-4] [34461-36-4]
Cryst. + 1.5 H_2O (MeOH/Et_2O). Mp 136-138°. $[\alpha]_D^{21}$ -168 (c, 0.54 in MeOH). $[\alpha]_D$ -190 (c, 1 in MeOH).

*4*R-*Hydroxy, Me ester:* ***4*R-*Hydroxyipecoside***
$C_{27}H_{35}NO_{13}$ 581.572
Alkaloid from the roots of *Cephaelis acuminata*. Amorph. powder. $[\alpha]_D^{24}$ -140 (c, 0.37 in MeOH). λ_{max} 208 (log ϵ 4.5); 227 (log ϵ 4.17); 237 (sh) (log ϵ 4.09); 286 (log ϵ 3.53) (MeOH).

6-Deoxy, 8-hydroxy, Me ester: ***Neoipecoside***
[122587-76-2]
$C_{27}H_{35}NO_{12}$ 565.573
Alkaloid from *Cephaelis ipecacuanha* (Rubiaceae). Needles (MeOH). Mp 184-185°. $[\alpha]_D^{28}$ -161 (MeOH).

6-Deoxy, 8-hydroxy, O^7*-Me, Me ester:* ***7-Methylneoipecoside***
[122587-77-3]
$C_{28}H_{37}NO_{12}$ 579.6
Alkaloid from *Cephaelis ipecacuanha* (Rubiaceae). Powder. $[\alpha]_D^{20}$ -150 (EtOH).

6-Deoxy, 8-hydroxy, 3,4-didehydro, Me ester: ***3,4-Dehydroneoipecoside***
[137318-70-8]
$C_{27}H_{33}NO_{12}$ 563.557
Alkaloid from *Cephaelis ipecacuanha* (Rubiaceae). Cryst. (H_2O). Mp 154-156°. $[\alpha]_D^{23}$ -206 (c, 1.4 in MeOH).

6′′-O-*α*-*D*-*Glucopyranosyl, Me ester:* ***6′′*-O-*α*-*D*-*Glucopyranosylipecoside***
$C_{33}H_{45}NO_{17}$ 727.715
Alkaloid from the roots of *Cephaelis acuminata*. Amorph. powder. $[\alpha]_D^{27}$ -108 (c, 0.24 in MeOH). λ_{max} 207 (log ϵ 4.53); 225 (log ϵ 4.18); 234 (sh) (log ϵ 4.11); 287 (log ϵ 3.61) (MeOH).

6′′-O-*β*-*D*-*Glucopyranosyl, Me ester:* ***6′′*-O-*β*-*D*-*Glucopyranosylipecoside***
$C_{33}H_{45}NO_{17}$ 727.715
Alkaloid from the roots of *Cephaelis acuminata*. Amorph. powder. $[\alpha]_D^{28}$ -149 (c, 1 in MeOH).

1-Epimer, N-*de-Ac, Me ester:* ***Deacetylisoipecoside***
[69400-51-7]
$C_{25}H_{33}NO_{11}$ 523.536
Alkaloid from *Alangium lamarckii*. $[\alpha]_D$ -170 (c, 1 in MeOH) (as hydrochloride).

1-Epimer, 6-Me ether, N-*de-Ac:* **N-*Deacetyl-6*-O-*methylisoipecosidic acid***
[342036-85-5]
$C_{25}H_{33}NO_{11}$ 523.536
Alkaloid from the dried fruit of *Alangium lamarckii*. Cryst. (MeOH). Mp 192-194°. $[\alpha]_D^{22}$ -203 (c, 1.1 in H_2O). λ_{max} 230 (log ϵ 4.14); 285 (log ϵ 3.58); 292 (sh) (log ϵ 3.52) (MeOH).

1-Epimer, 7-Me ether, N-*de-Ac:* **N-*Deacetyl-7*-O-*methylisoipecosidic acid***
[342036-86-6]
$C_{25}H_{33}NO_{11}$ 523.536
Alkaloid from the dried fruit of *Alangium lamarckii*. Cryst. (MeOH). Mp 250-252°. $[\alpha]_D^{24}$ -201 (c, 0.2 in H_2O). λ_{max} 229 (log ϵ 4.12); 285 (log ϵ 3.54); 292 (sh) (log ϵ 3.54) (MeOH).

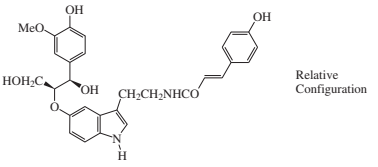
1-Epimer, 6,7-di-Me ether, N-*de-Ac:* **N-*Deacetyl-6,7-di*-O-*methylisoipecosidic acid***
[342036-87-7]
$C_{26}H_{35}NO_{11}$ 537.563
Alkaloid from the dried fruit of *Alangium lamarckii*. Cryst. (MeOH). Mp 198-201°. $[\alpha]_D^{26}$ -205 (c, 0.5 in H_2O). λ_{max} 233 (log ϵ 4.2); 279 (sh) (log ϵ 3.51); 284 (log ϵ 3.54); 287 (sh) (log ϵ 3.52) (MeOH).

1-Epimer, 6′′-O-*α*-*D*-*glucopyranosyl, l6-Me ether,* N-*de-Ac:* [342036-88-8]
$C_{31}H_{43}NO_{16}$ 685.678
Alkaloid from the dried fruit of *Alangium lamarckii*. Powder. $[\alpha]_D^{30}$ -177 (c, 0.3 in H_2O). λ_{max} 228 (log ϵ 4.12); 285 (log ϵ 3.54); 292 (sh) (log ϵ 3.46) (MeOH).

Bellet, P. *et al., Ann. Pharm. Fr.*, 1954, **12**, 466-470; *CA*, **49**, 4234a (*6,7-di-Me ether Me ester, synth*)
Battersby, A.R. *et al., Chem. Comm.*, 1967, 219-221 (*Ipecoside, uv, ir, pmr, ms, struct*)
Battersby, A.R. *et al., J.C.S.(C)*, 1969, 1187-1192 (*synth, uv, ir, pmr, ms*)
Battersby, A.R. *et al., Chem. Comm.*, 1971, 901-902 (*biosynth*)
Garg, A.K. *et al., Phytochemistry*, 1972, **11**, 689-695 (*biosynth*)
Roberts, P.J. *et al., Acta Cryst. B*, 1974, **30**, 133-139 (*6,7-di-Me ether Me ester, cryst struct, abs config*)
Nagakura, N. *et al., Chem. Comm.*, 1978, 896 (*biosynth, cd*)
Hoefle, G. *et al., Chem. Ber.*, 1980, **113**, 566-576 (*synth, uv, ir, pmr, ms*)
Bhakuni, D.S. *et al., J.C.S. Perkin 1*, 1983, 1949-1952 (*Deacetylipecoside, Deacetylisoipecoside*)
Itoh, A. *et al., Chem. Pharm. Bull.*, 1989, **37**, 1137-1139 (*Neoipecoside, 7-O-Methylneoipecoside*)
Itoh, A. *et al., Phytochemistry*, 1991, **30**, 3117-3123 (*Ipecosidic acid, 6-O-Methylipecoside, 3,4-Dehydroneoipecoside*)
Nagakura, N. *et al., Phytochemistry*, 1993, **32**, 761-765 (*Cephaelosides*)
Itoh, A. *et al., Phytochemistry*, 1994, **36**, 383-387 (*7-O-Methylipecoside*)
Tanahashi, T. *et al., Chem. Pharm. Bull.*, 2000, **48**, 415-419 (*N-Deacetyl-6-O-methylipecosidic acid*)
Itoh, A. *et al., Phytochemistry*, 2001, **56**, 623-630 (*Isoipecosidic acid derivs*)
Itoh, A. *et al., Phytochemistry*, 2002, **59**, 91-97 (*6′′-Glucopyranosylipecosides, 4R-Hydroxyipecoside*)

Ipobscurine B I-168

[571144-95-1]

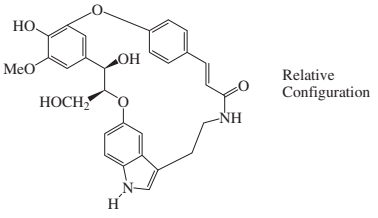


$C_{29}H_{30}N_2O_7$ 518.565
Alkaloid from the seeds of *Ipomoea obscura*. Yellow solid. $[\alpha]_D^{20}$ -35 (c, 0.28 in MeOH).

Eich, E. *et al., Planta Med.*, 1989, **55**, 607 (*isol, struct*)
Jenett-Siems, K. *et al., Phytochemistry*, 2003, **62**, 1257-1263 (*isol, pmr, cmr*)

Ipobscurine C I-169

[571144-96-2]



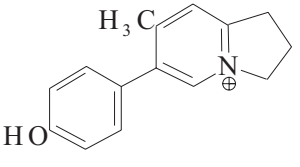
$C_{29}H_{28}N_2O_7$ 516.549
Alkaloid from seeds of *Ipomoea obscura*. Cryst. Mp 193-195°. $[\alpha]_D^{20}$ -44 (c, 0.16 in $CHCl_3$).

Z-Isomer: ***Ipobscurine D***
[571144-97-3]
$C_{29}H_{28}N_2O_7$ 516.549
Alkaloid from the seeds of *Ipomoea obscura*. Yellow solid. Mp 245-247°.

Jenett-Siems, K. *et al., Phytochemistry*, 2003, **62**, 1257-1263 (*isol, synth, pmr, cmr, ms*)

Ipohardine I-170

*2,3-Dihydro-6-(4-hydroxyphenyl)-7-methyl-1*H-*indolizinium, 9CI. Ipalbidinium*
[108937-65-1]



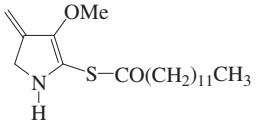
$C_{15}H_{16}NO^{\oplus}$ 226.297
Alkaloid from *Ipomoea hardwickii* and *Ipomoea alba* (Convolvulaceae).

[108937-64-0 , 108937-66-2]

Yu, Z. *et al., Jiegou Huaxue*, 1985, **4**, 152; 156; *CA*, **107**, 40161n; 40162p (*cryst struct*)
Ikhiri, K. *et al., J. Nat. Prod.*, 1987, **50**, 152 (*isol, uv, pmr, cmr*)
Daab, J.C. *et al., Monatsh. Chem.*, 2003, **134**, 573-583 (*synth*)

Ircinamine I-171

1-[(4,5-Dihydro-3-methoxy-4-methylene-1H-pyrrol-2-yl)thio]-1-tridecanone
[437980-03-5]

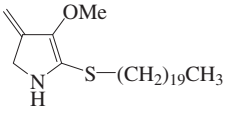


$C_{19}H_{33}NO_2S$ 339.541
Alkaloid from the sponge *Ircinia* sp. Cytotoxic. Amorph. solid. λ_{max} 242 (ϵ 1270) (MeOH).

Kuramoto, M. *et al., Chem. Lett.*, 2002, 464-465 (*isol, pmr, cmr, ms*)

Ircinamine B I-172

2-(Eicosylthio)-4,5-dihydro-3-methoxy-4-methylene-1H-pyrrole
[915403-62-2]

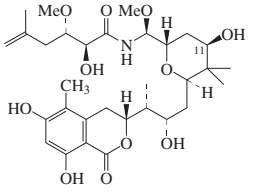


$C_{26}H_{49}NOS$ 423.745
Alkaloid from the sponge *Dactylia* sp. Cytotoxic. Oil.

Sato, S. *et al., Tet. Lett.*, 2006, **47**, 7871-7873 (*isol, pmr, cmr, ms*)

Irciniastatin A I-173

Psymberin



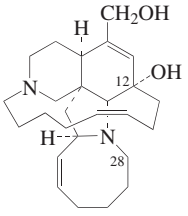
Absolute Configuration

$C_{31}H_{47}NO_{11}$ 609.712
Isol. from the sponges *Ircinia* cf. *ramosa* and *Psammocinia* aff. *bulbosa*. Cytotoxic. Amorph. powder. $[\alpha]_D$ +29 (c, 0.02 in MeOH). λ_{max} 215 ; 230 (sh) ; 270 ; 310 (MeOH aq.).

11-Ketone: ***Irciniastatin B***
$C_{31}H_{45}NO_{11}$ 607.697
Isol. from *Ircinia* cf. *ramosa*. Cytotoxic. Amorph. powder. $[\alpha]_D$ -4.7 (c, 0.15 in MeOH). λ_{max} 215 ; 230 (sh) ; 270 ; 310 (MeOH).

Pettit, G.R. *et al., J. Med. Chem.*, 2004, **47**, 1149-1152 (*isol, pmr, cmr*)
Cichewitz, R.H. *et al., Org. Lett.*, 2004, **6**, 1951-1954 (*Psymberin*)
Jiang, X. *et al., J.A.C.S.*, 2005, **127**, 11254-11255 (*synth, abs config*)
Kiren, S. *et al., Org. Lett.*, 2005, **7**, 2905-2908 (*pmr, cmr, config*)
Robinson, S.J. *et al., J. Nat. Prod.*, 2007, **70**, 1002-1009 (*isol, activity*)
Shangguan, N. *et al., Org. Lett.*, 2007, **9**, 1093-1096 (*synth*)
Huang, X. *et al., Org. Lett.*, 2007, **9**, 2597-2600 (*synth*)
Rubio, B.K. *et al., J.O.C.*, 2008, **71**, 1475-1478 (*isol*)
Smith, A.B. *et al., Org. Lett.*, 2008, **10**, 5625-5628 (*synth*)
Huang, X. *et al., Tet. Lett.*, 2008, **49**, 3592-3595 (*synth*)

Ircinol A I-174



(+)-*form*

$C_{26}H_{40}N_2O_2$ 412.614
The enantiomer of Ircinol A itself so far characterised has the opposite abs. config. to other Manzamine alkaloids, but Ircinal A belonged to the 'normal' series.

(+)-*form*

Aldehyde: ***Ircinal A***
[139975-55-6]
$C_{26}H_{38}N_2O_2$ 410.598
Alkaloid from the Okinawan marine sponge *Ircinia* sp. and *Amphimedon* sp. Exhibits cytotoxicity against L1210 murine leukaemia cells and KB human epidermoid carcinoma cells. Plausible biogenetic precursor of manzamine alkaloids. Mp 70°. $[\alpha]_D^{25}$ +48 (c, 2.9 in $CHCl_3$). λ_{max} 231 (ϵ 8500) (MeOH) (Derep).

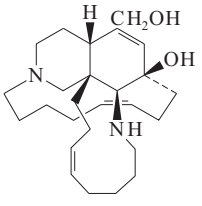
12-Deoxy, 12,28-epoxide, 1-aldehyde: ***12,28-Oxaircinal A***
$C_{26}H_{36}N_2O_2$ 408.583
Alkaloid fron an *Acanthostrongylophora* sp. Yellow powder. $[\alpha]_D^{25}$ +56.6 (c, 0.06 in $CHCl_3$). λ_{max} 208 (log ϵ 3.63); 268 (log ϵ 3.78) (MeOH).

(-)-*form* [157000-77-6]
Alkaloid from the Okinawan marine sponge *Amphimedon* sp. Cytotoxic. Endothelin converting enzyme inhibitor. Amorph. solid. Mp 83-85°. $[\alpha]_D^{18}$ -19 (c, 0.54 in MeOH).

Kondo, K. *et al., J.O.C.*, 1992, **57**, 2480 (*Ircinal A*)
Tsuda, M. *et al., Tetrahedron*, 1994, **50**, 7957 (*isol, ir, pmr, cmr, ms, struct*)
Tsuda, M. *et al., Heterocycles*, 1997, **46**, 765-794 (*rev*)
Winkler, J.D. *et al., J.A.C.S.*, 1998, **120**, 6425-6426 (*synth*)
Martin, S.F. *et al., J.A.C.S.*, 1999, **121**, 866-867 (*Ircinal A, synth*)
Rao, K.V. *et al., J. Nat. Prod.*, 2006, **69**, 1034-1040 (*12,28-Oxaircinal A*)

Ircinol B I-175

[157000-78-7]



$C_{26}H_{42}N_2O_2$ 414.63
Alkaloid from the Okinawan marine sponge *Amphimedon* sp. Cytotoxic, endothelin converting enzyme inhibitor. Amorph. solid. Mp 78-79°. $[\alpha]_D^{18}$ -2.8 (c, 0.12 in MeOH). Possesses opposite config. to Manzamine alkaloids.

Enantiomer, 1-aldehyde: ***Ircinal B***
[139975-56-7]
$C_{26}H_{40}N_2O_2$ 412.614
Alkaloid from the Okinawan marine sponge *Ircinia* sp. and *Amphimedon* sp. Exhibits cytotoxicity against L1210 murine leukaemia cells and KB human epidermoid carcinoma cells. Plausible biogenetic precursor of manzamine alkaloids. Mp 95°. $[\alpha]_D^{25}$ +18 (c, 1.1 in $CHCl_3$). λ_{max} 224 (ϵ 12000) (MeOH) (Derep).

Kondo, K. *et al., J.O.C.*, 1992, **57**, 2480 (*Ircinal B*)
Tsuda, M. *et al., Tetrahedron*, 1994, **50**, 7957 (*isol, ir, pmr, cmr, ms struct*)
Tsuda, M. *et al., Heterocycles*, 1997, **46**, 765-794 (*rev*)

Irenine I-176

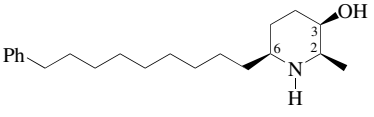
$C_{17}H_{23}NO_3$ 289.374

Amaryllidaceae alkaloid. Struct. unknown. Originally, Irenine was thought to be Dihydroepigalanthamine, but this was disproved by Barton *et al*. Isol. from the bulbs of *Narcissus* sp. (Amaryllidaceae). Prisms (EtOAc). Mp 128°. $[\alpha]_D^{25}$ +120 (c, 0.2 in $CHCl_3$).

Boit, H.-G. *et al., Chem. Ber.*, 1957, **90**, 2197-2202 (*isol, ir*)
Barton, D.H.R. *et al., J.C.S.*, 1962, 806-817 (*struct*)

Irnigaine I-177

2-Methyl-6-(9-phenylnonyl)-3-piperidinol. 3-Hydroxy-2-methyl-6-(9-phenylnonyl)piperidine
[180779-56-0]



Absolute Configuration

$C_{21}H_{35}NO$ 317.514
Revised abs. config. Alkaloid from tubers of *Arisarum vulgare* (Araceae). Toxic to brine shrimp larvae. Oil. $[\alpha]_D^{25}$ -14 (c, 0.3 in $CHCl_3$).

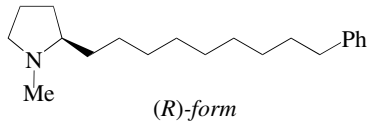
N-*Me:* **N-*Methylirnigaine***
[180779-57-1]
$C_{22}H_{37}NO$ 331.54
From tubers of *Arisarum vulgare*. Toxic to brine shrimp larvae. Oil. $[\alpha]_D^{25}$ -8 (c, 5 in $CHCl_3$).

Hydrochloride: $[\alpha]_D^{20}$ +2.8 (c, 0.9 in $CHCl_3$).

Melhaoui, A. *et al., Nat. Prod. Lett.*, 1995, **7**, 101 (*isol, ir, pmr, cmr, struct*)
Pahl, A. *et al., Tet. Lett.*, 1998, **39**, 2095-2096 (*synth, ir, pmr, cmr, ms, cryst struct*)
Ma, N. *et al., Chin. J. Chem.*, 2003, **21**, 1356-1359 (*synth*)

Irniine I-178

1-Methyl-2-(9-phenylnonyl)pyrrolidine, 9CI



(*R*)-*form*

$C_{20}H_{33}N$ 287.487

(*R*)-*form* [144425-08-1]
Alkaloid from the tubers of *Arisarum vulgare* (Araceae). Cytotoxic. Displays anti gram-positive bacterial and antifungal activity. Oil. $[\alpha]_D^{21}$ -35 (c, 0.2 in CH_2Cl_2). $[\alpha]_D^{20}$ -55 (c, 1 in MeOH) (synthetic).
▶ Toxic.

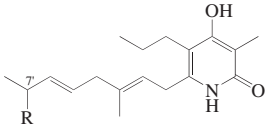
2″-Methoxy: 2-[9-(2-Methoxyphenyl)-nonyl]-1-methylpyrrolidine. ***Irnidine***
$C_{21}H_{35}NO$ 317.514
Alkaloid from tubers of *Arisarum vulgare*. Oil. $[\alpha]_D^{25}$ -20 (c, 0.3 in $CHCl_3$).
▶ Toxic.

(*S*)-*form*
Synthetic. Displays anti gram-positive bacterial and antifungal activity. $[\alpha]_D^{20}$ +50.7 (c, 1.8 in MeOH).

Melhaoui, A. *et al., J. Nat. Prod.*, 1992, **55**, 950 (*isol, ir, pmr, cmr, ms, struct*)
Jossang, A. *et al., Heterocycles*, 1996, **43**, 755 (*synth*)
Takahata, H. *et al., Heterocycles*, 1997, **46**, 349-356 (*synth*)
Melhaoui, A. *et al., Planta Med.*, 1998, **64**, 476-477 (*Irnidine*)
Lamkadem, M. *et al., Nat. Prod. Res.*, 2004, **18**, 311-318; 2005, **19**, 573-580 (*pmr, cmr, ms, activity*)

Iromycin A I-179

6-(3,7-Dimethyl-2,5-octadienyl)-4-hydroxy-3-methyl-5-propyl-2(1H)-pyridinone, 9CI. 2-(3,7-Dimethyl-2,5-octadienyl)-4,6-dihydroxy-5-methyl-3-propylpyridine. NK 26588. Antibiotic NK 26588
[213137-53-2]



R = CH_3

Tautomeric. Prod. by *Streptomyces bottropensis* Gö Dra 17 and *Streptomyces* sp. NK 26588. Inhibitor of nitric oxide synthase. λ_{max} 206 (ϵ 32120); 291 (ϵ 7065) (MeOH).

7′-Hydroxy: ***Iromycin B***
[913690-66-1]
$C_{19}H_{29}NO_3$ 319.443
Prod. by *Streptomyces bottropensis* Gö Dra 17. λ_{max} 207 (ϵ 41595); 290 (ϵ 9540) (MeOH).

Japan. Pat., 1998, 98 237 044; *CA*, **129**, 244203s (*NK 26588*)
Surup, F. *et al., J.O.C.*, 2007, **72**, 5085-5090; 5091-5097 (*Iromycins, isol, synth, biosynth, pmr, cmr, cryst struct*)

Iromycin C I-180

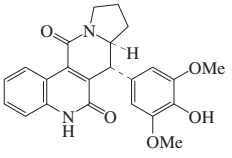
[945634-84-4]
As Iromycin A, I-179 with
R = H
$C_{18}H_{27}NO_2$ 289.417
Prod. by *Streptomyces bottropensis* Gö Dra 17. Inhibitor of nitric oxide synthase. λ_{max} 207 (ϵ 8430); 293 (ϵ 1990) (MeOH).

7′ξ-Hydroxy: ***Iromycin D***
[945634-85-5]
$C_{18}H_{27}NO_3$ 305.416
Prod. by *Streptomyces bottropensis* Gö Dra 17. $[\alpha]_D^{20}$ -150 (c, 0.1 in MeOH). λ_{max} 206 (ϵ 3770); 289 (ϵ 910) (MeOH).

Surup, F. *et al., J.O.C.*, 2007, **72**, 5085-5090 (*isol, pmr, cmr*)

Isaindigotidione I-181

[197720-99-3]



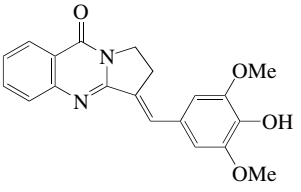
Relative Configuration

$C_{23}H_{22}N_2O_5$ 406.437
Alkaloid from the roots of *Isatis indigotica* (Brassicaceae). Cryst. Mp 240-242°. $[\alpha]_D^{20}$ +90.9 (c, 0.05 in DMSO). λ_{max} 209 (log ϵ 4.92); 235 (sh) (log ϵ 4.53); 265 (log ϵ 4.02); 278 (sh) (log ϵ 3.95); 355 (log ϵ 3.89) (EtOH).

Wu, X. *et al., Tetrahedron*, 1997, **53**, 13323-13328 (*isol, uv, ir, pmr, cmr, ms, cryst struct*)

Isaindigotone I-182

[189316-00-5]

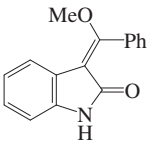


$C_{20}H_{18}N_2O_4$ 350.373
Alkaloid from the roots of *Isatis indigotica*. Yellow prisms. Mp 247-248°. $[\alpha]_D^{20}$ -5 (c, 0.02 in EtOH). λ_{max} 210 (log ϵ 3.3); 228 (sh) (log ϵ 3); 365 (log ϵ 3.22) (EtOH).

Wu, X. *et al., Tetrahedron*, 1997, **53**, 13323-13328 (*isol, uv, ir, pmr, cmr, ms, cryst struct*)
Molina, P. *et al., Synthesis*, 2000, 1523-1525 (*synth*)
Liu, J.-F. *et al., Org. Lett.*, 2005, **7**, 3363-3366 (*synth, pmr, cmr*)

Isatinone A I-183

3-[Methoxy(phenyl)methylene]-2-indolinone
[936632-48-3]

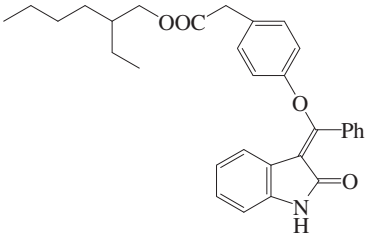


$C_{16}H_{13}NO_2$ 251.284
Alkaloid from *Isatis costata*. Antifungal agent. Pale yellow solid. Mp 178-179°. λ_{max} 208 ; 231 ; 270 (MeOH).

Fatima, I. *et al., Molecules*, 2007, **12**, 155-162 (*isol, pmr, cmr, ms*)

Isatinone B I-184

[936632-49-4]

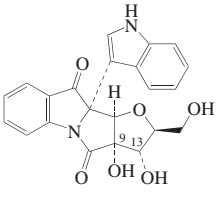


$C_{31}H_{33}NO_4$ 483.606
Alkaloid from *Isatis costata*. Antifungal agent. Pale yellow solid. Mp 189-191°. $[\alpha]_D^{18}$ +89.7 (c, 0.02 in MeOH). λ_{max} 205 ; 232 ; 275 (MeOH).

Fatima, I. *et al., Molecules*, 2007, **12**, 155-162 (*isol, pmr, cmr, ms*)

Isatisine A I-185

[953786-75-9]



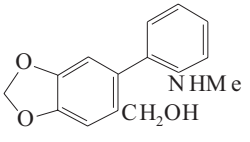
Relative Configuration

$C_{22}H_{18}N_2O_6$ 406.394
Alkaloid from the leaves of *Isatis indigofera*. Yellow needles (as 9,13-isopropylidene). $[\alpha]_D^{14}$ -283.1 (c, 0.46 in MeOH) (9,13-isopropylidene). Isol. as the 9,13 isopropylidene deriv., thought to be an artifact.

Liu, J.-F. *et al., Org. Lett.*, 2007, **9**, 4127-4129 (*isol, pmr, cmr, cryst struct*)

Ismine I-186

6-[2-(Methylamino)phenyl]-1,3-benzodioxole-5-methanol, 9CI. 2-Hydroxymethyl-2′-methylamino-4,5-methylenedioxybiphenyl
[1805-78-3]



$C_{15}H_{15}NO_3$ 257.288
Alkaloid from the bulbs of an *Ismene* sp. (preferred genus name *Hymenocallis*), *Crinum powellii*, *Sprekelia formosissima*, *Narcissus bicolor*, *Narcissus pallidiflorus* and *Narcissus obesus* (Amaryllidaceae). Cryst. (C_6H_6/hexane). Mp 99.5-100.5°.

Picrate: Mp 158-159°.

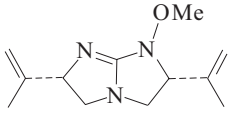
N-*Formyl:* **N-*Formylismine***
$C_{16}H_{15}NO_4$ 285.299
Alkaloid from *Galanthus plicatus* ssp. byzantinus. Amorph. solid. λ_{max} 208 (log ϵ 4.64); 292 (log ϵ 3.71) (MeOH).

Me ether: **O-*Methylismine***
$C_{16}H_{17}NO_3$ 271.315
Alkaloid from the flowers of *Hippeastrum vittatum*. Oil. λ_{max} 245 (log ϵ 4.16); 290 (log ϵ 4.65) (MeOH).

Highet, R.J. *et al., J.O.C.*, 1961, **26**, 4767 (*isol, uv, ir, struct, bibl*)
Hill, R.K. *et al., J.O.C.*, 1965, **30**, 1571 (*synth*)
Fuganti, C. *et al., Tet. Lett.*, 1973, 1785 (*biosynth*)
Prabhakar, S. *et al., J. Chem. Res., Synop.*, 1985, 394 (*synth*)
Siddiqui, M.A. *et al., Tet. Lett.*, 1988, **29**, 5463 (*synth, pmr*)
Viladomat, F. *et al., Phytochemistry*, 1990, **29**, 1307 (*isol*)
Codina, C. *et al., Phytochemistry*, 1990, **29**, 2685 (*isol*)
Viladomat, F. *et al., J. Nat. Prod.*, 1992, **55**, 804 (*isol*)
Cowden, C.J. *et al., J. Nat. Prod.*, 1994, **57**, 1746 (*pmr, cmr*)
Viladomat, F. *et al., Acta Cryst. C*, 1998, **54**, 81-82 (*cryst struct*)
Unver, N. *et al., Heterocycles*, 2001, **55**, 641-652 (*N-Formylismine*)
Youssef, D.T.A. *et al., J. Nat. Prod.*, 2001, **64**, 839-841 (*O-Methylismine*)

Isoalchorneine I-187

*2,3,5,6-Tetrahydro-1-methoxy-2,6-bis(1-methylethenyl)-1*H*-imidazo[1,2-*a*]imidazole, 9CI*
[41758-40-1]

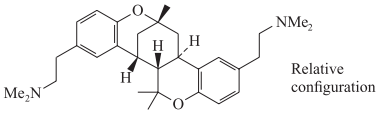


$C_{12}H_{19}N_3O$ 221.302
Alkaloid from the root bark and leaves of *Alchornea floribunda* (Euphorbiaceae). Liq. $[\alpha]_D$ 0 (c, 1 in $CHCl_3$).

Khuong-Huu, F. *et al., Tetrahedron*, 1972, **28**, 5207 (*isol, ir, pmr, ms, struct*)
Büchi, G. *et al., J.O.C.*, 1989, **54**, 4494 (*synth*)

Isoalfileramine I-188

[73326-86-0]
[73365-21-6]



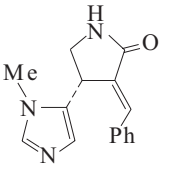
$C_{30}H_{42}N_2O_2$ 462.674
Isol. from leaves *Zanthoxylum chiriquinum* (Rutaceae). Also prod. by treatment of Alfileramine, A-260 with acid. Tan cryst. (EtOAc/MeOH)(as hydrobromide). Mp 284-287° (hydrobromide). Opt. inactive. Poss. an artifact of isol. procedure.

N^a,N^b-*Di-de-Me:* **N^a,N^b-*Didemethylisoalfileramine***
[129743-96-0]
$C_{28}H_{38}N_2O_2$ 434.62
Alkaloid from the leaves of *Zanthoxylum coriaceum* (Rutaceae). Opt. inactive.

Caolo, M.A. *et al., Tetrahedron*, 1979, **35**, 1487; 1492 (*synth*)
Marcos, M. *et al., J. Nat. Prod.*, 1990, **53**, 459 (*isol*)
Marcos, M. *et al., Phytochemistry*, 1990, **29**, 2315 (*Didemethylisoalfileramine*)

Isoanantine I-189

*4-(1-Methyl-1*H*-imidazol-5-yl)-3-(phenylmethylene)-2-pyrrolidinone, 9CI*



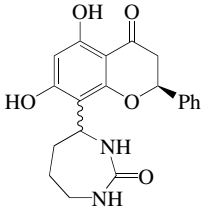
$C_{15}H_{15}N_3O$ 253.303
λ_{max} 218 (ϵ 15800); 277 (ϵ 25000) (prob. MeOH) (Derep).

(-)-*form* [50656-85-4]
Alkaloid from the root bark of *Cynometra lujae* (Fabaceae). Cryst. (Me_2CO). Mp 190°. $[\alpha]_D^{20}$ -347 (c, 1 in $CHCl_3$).

(±)-*form* [68108-27-0]
Synthetic. Mp 201°.

Tchissambou, L. *et al., Tetrahedron*, 1982, **38**, 2687 (*isol, uv, ir, pmr, cmr, ms, struct, synth*)
Naito, T. *et al., Chem. Pharm. Bull.*, 1997, **45**, 1932-1939 (*synth*)

Isoaquiledine I-190

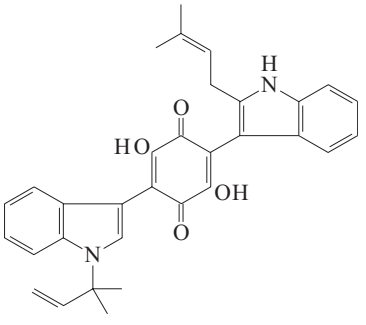


$C_{20}H_{20}N_2O_5$ 368.388
Alkaloid from *Aquilegia ecalcarata*. Amorph. powder (MeOH). Mp 232-233°. $[\alpha]_D$ +19 (c, 0.43 in MeOH). λ_{max} 286 ; 322 (sh) (MeOH).

Chen, S.-B. *et al., J. Nat. Prod.*, 2001, **64**, 85-87

Isoasterriquinone I-191

Isoasterriquinone SU 5220. Asterriquinone SU 5220
[78860-47-6]

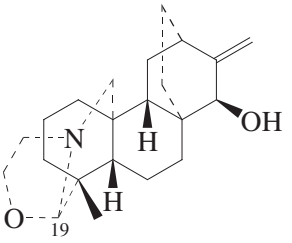


$C_{32}H_{30}N_2O_4$ 506.6
Prod. by *Aspergillus candidus*, *Aspergillus terreus* and *Aspergillus coradidus*. Also obt. by treatment of Asterriquinone, A-1520 with HCl/AcOH. Inhibits binding of proteins to the EGF receptor tyrosine kinase. Dark purple needles (hexane/CH_2Cl_2). Mp 150-151° dec. λ_{max} 225 ; 283 ; 289 ; 450 (MeOH). λ_{max} 225 (ϵ 47500); 282 (ϵ 31600); 288 (ϵ 31000); 477 (ϵ 2700) (EtOH) (Berdy).

Arai, K. *et al., Chem. Pharm. Bull.*, 1981, **29**, 991 (*synth*)
Kaji, A. *et al., Chem. Pharm. Bull.*, 1994, **42**, 1682 (*isol, uv, ir, pmr*)
Alvi, K.A. *et al., J. Antibiot.*, 1999, **52**, 215-223 (*isol, uv, ir, pmr, cmr, activity*)

Isoatisine, 9CI I-192

[510-38-3]
[111001-28-6]



$C_{22}H_{33}NO_2$ 343.508
Alkaloid from the roots of *Aconitum heterophyllum* (Ranunculaceae). Also obt. from Atisine, A-1534 in hot MeOH. Mp 149.5-152°. $[\alpha]_D$ -22.4 (c, 1.45 in 95% EtOH). pK_a 10.3 (50% MeOH).

Hydrochloride:
Needles (Me_2CO). Mp 304-307°. $[\alpha]_D^{30}$ -6.9 (c, 1.17 in 95% EtOH). Exists as a quaternary immonium salt rather than a protonated salt.

7α-Hydroxy: ***7-Hydroxyisoatisine***
[70022-66-1]
$C_{22}H_{33}NO_3$ 359.508
Alkaloid from *Consolida glandulosa*. Amorph.

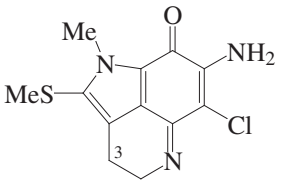
19-Epimer: ***19-Epiisoatisine***
[111001-27-5]
$C_{22}H_{33}NO_2$ 343.508
Trace alkaloid from the Chinese herb Guan-Bai-Fu (*Aconitum koreanum*) (Ranunculaceae). Inseparable mixt. with Isoatisine.

Pelletier, S.W. *et al., J.A.C.S.*, 1965, **87**, 777-798; 1977, **99**, 284-286; 1978, **100**, 7976-7987 (*ir, cmr, cryst struct, abs config*)
Pelletier, S.W. *et al., Phytochemistry*, 1968, **7**, 625-635 (*isol, synth, ir*)
Pelletier, S.W. *et al., Tetrahedron*, 1968, **24**, 2019-2038 (*pmr*)
Mody, N.V. *et al., Tetrahedron*, 1978, **34**, 2421-2431 (*cmr*)
Reinecke, M.G. *et al., J.O.C.*, 1987, **52**, 5051-5053 (*19-Epiisoatisine*)
González-Coloma, A. *et al., Chem. Biodiversity*, 2004, **1**, 1327-1335 (*7-Hydroxyisoatisine*)

Isobatzelline A I-193

7-Amino-6-chloro-3,4-dihydro-1-methyl-2-(methylthio)pyrrolo[4,3,2-de]quinolin-8(1H)-one, 9CI

[133401-01-1]



$C_{12}H_{12}ClN_3OS$ 281.765

Alkaloid from the marine sponge *Batzella* sp. Exhibits cytotoxic and moderate antifungal activities. Brown solid. λ_{max} 262 (ϵ 15500); 342 (ϵ 9000); 430 (ϵ 3100) (MeOH) (Derep).

3,4-Didehydro: ***Isobatzelline D***

[133401-04-4]

$C_{12}H_{10}ClN_3OS$ 279.749

From *Batzella* sp. Exhibits cytotoxic and moderate antifungal activities. Red-brown solid. λ_{max} 239 (ϵ 33900); 263 (ϵ 25000); 439 (ϵ 25200) (MeOH) (Derep).

Dechloro: ***Isobatzelline B***

[133401-02-2]

$C_{12}H_{13}N_3OS$ 247.32

From *Batzella* sp. Exhibits cytotoxic and moderate antifungal activities. Red-brown solid. λ_{max} 264 (ϵ 14200); 362 (ϵ 7000); 402 (ϵ 5000) (MeOH) (Derep).

De(methylthio): ***Isobatzelline C***

[133401-03-3]

$C_{11}H_{10}ClN_3O$ 235.672

From *Batzella* sp., *Zyzzya massalis* and *Zyzzya fuliginosa*. Exhibits cytotoxic and moderate antifungal activities. Green-brown or red solid. λ_{max} 244 (ϵ 9700); 344 (ϵ 5900); 394 (ϵ 2600) (MeOH) (Derep). λ_{max} 224 (log ϵ 3.72); 341 (log ϵ 2.26); 422 (log ϵ 3.43) (MeOH).

De(methylthio), 3,4-didehydro: ***Isobatzelline E***

[437980-21-7]

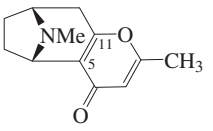
$C_{11}H_8ClN_3O$ 233.656

Isol. from *Zyzzya fuliginosa* and *Zyzzya massalis*. Orange solid. λ_{max} 224 (ϵ 21500); 290 (ϵ 4800); 422 (ϵ 13400) (MeOH).

Sun, H.H. *et al., J.O.C.*, 1990, **55**, 4964-4966 (*isol, uv, ir, pmr, ms, struct, cmr*)
Tao, X.L. *et al., Tetrahedron*, 1994, **50**, 2017 (*Isobatzelline C, synth*)
Yamada, F. *et al., Heterocycles*, 1995, **41**, 1905-1908 (*Isobatzelline C, synth*)
Roberts, D. *et al., J.O.C.*, 1997, **62**, 568 (*Isobatzelline C, synth*)
Alvarez, M. *et al., Tet. Lett.*, 1998, **39**, 679-680 (*Isobatzelline B, synth*)
Alvarez, M. *et al., Eur. J. Org. Chem.*, 1999, 1173-1183 (*synth*)
Chang, L.C. *et al., J. Nat. Prod.*, 2002, **65**, 775-778 (*Isobatzellines C,E*)
Dijoux, M.-G. *et al., Bioorg. Med. Chem.*, 2005, **13**, 6035-6044 (*Isobatzellines C,E*)

Isobellendine I-194

6,7,8,9-Tetrahydro-2,10-dimethylcyclohepta[b]pyran-5,8-imin-4(5H)-one, 9CI



Absolute Configuration

$C_{12}H_{15}NO_2$ 205.256

(+)-*form* [72362-45-9]

Alkaloid from upper leaves, flowers and flowering stems of *Bellendena montana* (Proteaceae). Fine needles (Et_2O). Mp 114-116°. $[\alpha]_D^{19}$ +143 ($CHCl_3$).

5ξ,11ξ-Dihydro: ***5,11-Dihydroisobellendine***

[72362-46-0]
[72401-73-1]

$C_{12}H_{17}NO_2$ 207.272

Alkaloid from *Bellendena montana* (Proteaceae). Oil. Mp 172-174° (as picrate). $[\alpha]_D^{19}$ -53 ($CHCl_3$).

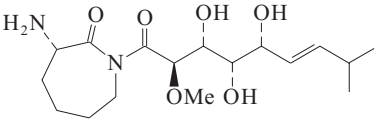
(±)-*form*

Mp 88-90° subl.

Bick, I.R.C. *et al., Aust. J. Chem.*, 1979, **32**, 1827-1840 (*isol, uv, pmr, ms, struct, synth, deriv*)
Lounasmaa, M. *et al., Tet. Lett.*, 1981, 5179-5180 (*synth*)
Majewski, M. *et al., J.O.C.*, 1995, **60**, 5825-5830 (*synth, abs config*)

Isobengamide E I-195

[118477-05-7]



Absolute conguration

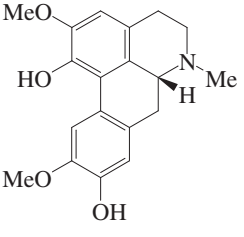
$C_{17}H_{30}N_2O_6$ 358.434

Metab. of an undescribed Fijian marine sponge (Jaspidae). Anthelmintic. Nematocide. Oil. $[\alpha]_D^{20}$ +17.1 (c, 0.052 in MeOH).

Adamczeski, M. *et al., J.A.C.S.*, 1989, **111**, 647 (*isol, ir, pmr, cmr, ms, struct*)
Adamczeski, M. *et al., J.O.C.*, 1990, **55**, 240 (*abs config*)

Isoboldine I-196

1,9-Dihydroxy-2,10-dimethoxyaporphine. N-*Methyllaurelliptine*



(*R*)-*form*

$C_{19}H_{21}NO_4$ 327.379

(*R*)-*form*

β-N-*Oxide:* ***Isoboldine* N-*oxide***

$C_{19}H_{21}NO_5$ 343.379

Alkaloid from *Cryptocarya chinensis*. Brown powder. Mp 177-179°. $[\alpha]_D$ -90.3 (c, 0.14 in MeOH). λ_{max} 219 (log ϵ 3.08); 271 (sh) (log ϵ 2.68); 279 (log ϵ 2.7); 304 (log ϵ 2.7) (MeOH).

(*S*)-*form* [3019-51-0]

Alkaloid from a wide variety of genera in the Annonaceae (*Annona*, *Enantia*, *Uvaria*, *Monodora*, *Schefferomitra*, *Xylopia*, *Desmos*, *Guatteria*, *Polyalthia*), Berberidaceae (*Berberis*, *Mahonia*), Lauraceae (*Beilschmiedia*, *Cassytha*, *Litsea*, *Neolitsea*, *Nectandra*, *Phoebe*, *Ocotea*, *Sassafras*, *Machilus*), Fabaceae (*Erythrina*), Menispermaceae (*Cocculus*, *Stephania*), Monimiaceae (*Peumus*), Papaveraceae (*Corydalis*, *Fumaria*, *Glaucium*), Symplocaceae (*Symplocos*), Ranunculaceae (*Delphinium*, *Aconitum*, *Thalictrum*), Rhamnaceae (*Zizyphus*), Hernandiaceae (*Hernandia*), Nandinaceae (*Nandina*) and Monimiaceae (*Laurelia*). Antifeedant, insecticide. Mp 178-180° dec. $[\alpha]_D^{13}$ +54 (c, 0.20 in EtOH). λ_{max} 219 (ϵ 38020); 280 (ϵ 14454); 304 (ϵ 16220) (MeOH) (Berdy).

N-*Me:* ***Laurifoline***†

[7224-61-5]

$C_{20}H_{24}NO_4^{\oplus}$ 342.414

Quaternary alkaloid from *Cocculus laurifolius* and *Zanthoxylum elephantiasis* (Menispermaceae, Rutaceae). Mp 253° dec. (as chloride). $[\alpha]_D$ +14 (c, 6.22 in MeOH).

N-*De-Me: 1,9-Dihydroxy-2,10-dimethoxynoraporphine.* ***Laurelliptine****. Norisoboldine*

[23599-69-1]

$C_{18}H_{19}NO_4$ 313.352

Alkaloid from *Beilschmiedia elliptica*, *Beilschmiedia podagrica*, *Cassytha pubescens*, *Monodora tenuifolia*, *Litsea xylanica* and some other *Litsea* spp., *Zizyphus jujuba*, *Nectandra rigida* and (possibly) *Monanthotaxis cauliflora* (Lauraceae, Annonaceae, Rhamnaceae). Shows antifungal activity. Cryst. (C_6H_6/EtOH). Mp 190-192°. $[\alpha]_D^{21}$ +47.3 (c, 1.0 in EtOH).

N-*De-Me, hydrochloride:*

Cryst. (MeOH/Et_2O or EtOH/Et_2O). Mp 270-280°. $[\alpha]_D^{27}$ +22.2 (c, 0.5 in EtOH).

N-*De-Me, picrate:*

Deep orange needles + ½ H_2O (EtOH aq.). Mp 194-195° dec.

N-*De-Me,* N-*Ac:*

Prisms (EtOH). Mp 298-300° dec. $[\alpha]_D$ +340 (c, 0.19 in $CHCl_3$/MeOH, 1:1).

N-*De-Me, tri-Ac:*

Needles (C_6H_6/petrol). Mp 187-190°. $[\alpha]_D^{17}$ +76 (c, 1.4 in EtOH).

N-*De-Me,* N-*hexadecanoyl: Laurelliptin-1-hexadecanone*

[862587-53-9]

$C_{34}H_{49}NO_5$ 551.765

Alkaloid from the stems of *Cocculus orbiculatus*. Obt. as a mixt. of *E*/*Z*-enolates with *N*-octadecanoyl homologue, to which data refers. Brown powder. $[\alpha]_D^{25}$ +154.4 (c, 1 in MeOH). λ_{max} 221 ; 281 ; 304 (MeOH).

N-*De-Me,* N-*octadecanoyl: Laurelliptin-1-octadecanone*
[862587-54-0]
$C_{36}H_{53}NO_5$ 579.818
Alkaloid from the stems of *Cocculus orbiculatus*. Obt. as a mixt. of *E*/*Z*-enolates with *N*-hexadecanoyl analogue above.

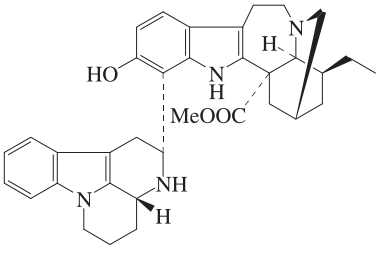
(±)-*form* [5164-93-2]
Alkaloid from *Glaucium flavum* (Papaveraceae). Mp 130-131° (123-135°).

Picrate: Mp 163-165°.

Tomita, M. *et al., Pharm. Bull.*, 1953, **1**, 1 (*Laurifoline*)
Clezy, P.S. *et al., Aust. J. Chem.*, 1966, **19**, 135 (*isol, uv, pmr, Isoboldine, Laurelliptine*)
Johns, S.R. *et al., Aust. J. Chem.*, 1966, **19**, 2331; 1969, **22**, 1277 (*isol, uv, pmr, Isoboldine, Laurelliptine*)
Chan, W.W.C. *et al., J.C.S.(C)*, 1966, 753 (*synth, ir, uv, pmr*)
Albonico, S.M. *et al., J.C.S.(C)*, 1966, 1340 (*ord, abs config, Laurifoline*)
Jackson, A.H. *et al., J.C.S.(C)*, 1966, 2061 (*synth, uv, pmr*)
Slavík, J. *et al., Coll. Czech. Chem. Comm.*, 1968, **33**, 323 (*racemate, isol*)
Wada, K. *et al., J. Agric. Food Chem.*, 1968, **16**, 471
Dominguez, X.A. *et al., Phytochemistry*, 1974, **13**, 680 (*isol, uv, pmr, ms, Laurifoline*)
Brown, G.M. *et al., Acta Cryst. B*, 1977, **33**, 2051 (*cryst struct, abs config*)
Kametani, T. *et al., J.A.C.S.*, 1977, **99**, 3805 (*synth*)
Roques, R. *et al., Acta Cryst. B*, 1978, **34**, 837 (*cryst struct, Laurelliptine*)
Ricca, G.S. *et al., Gazz. Chim. Ital.*, 1979, **109**, 1 (*cmr, pmr*)
Marsaioli, A.J. *et al., Phytochemistry*, 1979, **18**, 165 (*cmr*)
Paulo, M. de Q. *et al., J. Ethnopharmacol.*, 1992, **36**, 39-41 (*Laurelliptine, activity*)
Lin, F.-W. *et al., Chem. Pharm. Bull.*, 2001, **49**, 1292-1294 (*N-oxide*)
Chang, F.-R. *et al., J. Nat. Prod.*, 2005, **68**, 1056-1060 (*Laurelliptin-1-hexadecanone, Laurelliptin-1-octadecanone*)

Isobonafousine I-197

[76202-19-2]

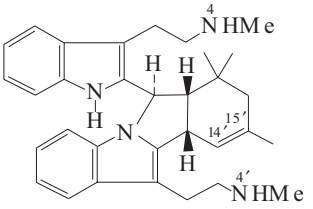


$C_{35}H_{40}N_4O_3$ 564.726
Alkaloid from the leaves of *Bonafousia tetrastachya* (preferred genus name *Tabernaemontana*) (Apocynaceae). Amorph. $[\alpha]_D$ +19 (c, 0.36 in $CHCl_3$).

Damak, M. *et al., Bull. Soc. Chim. Fr.*, 1980, 490 (*isol, uv, ir, pmr, cmr, ms, struct*)

Isoborreverine I-198

[69461-07-0]



$C_{32}H_{40}N_4$ 480.695
Alkaloid from *Borreria verticillata* and *Flindersia fournieri* (Rubiaceae, Flindersiaceae). Noncryst. Opt. inactive. λ_{max} 226 (ϵ 19000); 287 (ϵ 12500); 294 (ϵ 10000) (EtOH) (Berdy).

N^4-*Me:* ***4-Methylisoborreverine***
[73706-29-3]
$C_{33}H_{42}N_4$ 494.722
Isol. from *Flindersia fournieri* (Flindersiaceae). Cryst. (Me_2CO). Mp 209°. $[\alpha]_D^{20}$ 0 ($CHCl_3$).

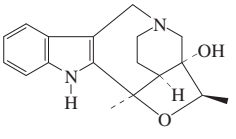
N^4,$N^{4'}$-*Di-Me:* ***4,4′-Dimethylisoborreverine***
[73706-30-6]
$C_{34}H_{44}N_4$ 508.748
Isol. from *Flindersia fournieri* (Flindersiaceae). Amorph. $[\alpha]_D^{20}$ 0 ($CHCl_3$).

14′,15′-Dihydro, 15′-hydroxy: ***15′-Hydroxy-14′,15′-dihydroisoborreverine***
[73706-31-7]
$C_{32}H_{42}N_4O$ 498.71
Isol. from *Flindersia fournieri* (Flindersiaceae). Amorph. $[\alpha]_D^{20}$ 0 ($CHCl_3$).

Tillequin, F. *et al., J. Nat. Prod.*, 1979, **42**, 92 (*uv, ir, pmr, ms, struct, synth*)
Tillequin, F. *et al., Phytochemistry*, 1979, **18**, 1559; 2066 (*derivs*)

Isobrafouedine I-199

[104021-42-3]



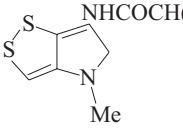
Relative Configuration

$C_{18}H_{22}N_2O_2$ 298.384
Alkaloid from the stem bark of *Strychnos dinklagei* (Loganiaceae). Amorph. $[\alpha]_D^{20}$ -13 (c, 0.05 in MeOH). λ_{max} 227 (log ϵ 4.18); 275 (sh) (log ϵ 3.5); 285 (log ϵ 3.52); 292 (log ϵ 3.51) (EtOH).

Michel, S. *et al., J. Nat. Prod.*, 1986, **49**, 452-455 (*uv, ir, pmr, ms, struct*)

Isobutyropyrrothine† I-200

6-Isobutyrylamino-4,5-dihydro-4-methyl-1,2-dithiolo[4,3-b]pyrrole

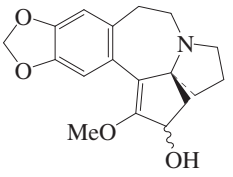


$C_{10}H_{14}N_2OS_2$ 242.365
Isol. from *Streptomyces pimprina*. Active against gram-positive bacteria. Orange-red plates. Mp 228-229°. Related to Holothin and Thiolutin.

Bhate, D.S. *et al., Experientia*, 1960, **16**, 504; *Hind. Antibiot. Bull.*, 1964, **6**, 153 (*isol, props*)

Isocephalotaxine I-201

[73208-54-5]



$C_{18}H_{21}NO_4$ 315.368
Alkaloid from the fruit of *Cephalotaxus fortunei*. Amorph. solid. $[\alpha]_D^{21}$ -47 (c, 0.5 in $CHCl_3$).

Ketone: ***Isocephalotaxinone***
[50908-91-3]
[56144-23-1]
$C_{18}H_{19}NO_4$ 313.352
Alkaloid from *Cephalotaxus fortunei*.

Ketone, O-*de-Me:* ***Demethylcephalotaxinone****. Desmethylcephalotaxinone*
[51020-45-2]
$C_{17}H_{17}NO_4$ 299.326
Alkaloid from *Cephalotaxus harringtonia* var. *harringtonia, Cephalotaxus fortunei, Cephalotaxus hainanensis* and *Cephalotaxus sinensis* (Cephalotaxaceae). Pale-yellow solid (MeOH). Mp 102-107°. $[\alpha]_D$ +40 (semisynthetic). $[\alpha]_D^{26}$ +2.3 (c, 0.52 in MeOH). The nat. alkaloid is nearly racemic.

Ketone, O-*de-Me, stereoisomer:*
$C_{17}H_{17}NO_4$ 299.326
Alkaloid from the heartwood of *Cephalotaxus wilsonii*. Brownish powder. $[\alpha]_D^{28}$ +52 (c, 0.08 in MeOH). Incorrectly indexed by CAS. λ_{max} 212 (log ϵ 4.64); 288 (log ϵ 4.22) (MeOH).

Powell, R.G. *et al., Phytochemistry*, 1973, **12**, 2987-2991 (*Demethylcephalotaxinone*)
Weinreb, S.M. *et al., J.A.C.S.*, 1975, **97**, 2503-2516 (*Demethylcephalotaxinone, synth, uv, ir, pmr*)
Lin, W. *et al., Yaoxue Xuebao*, 1985, **20**, 283-287; *CA*, **103**, 85049r (*Isocephalotaxinone*)
Bocar, M. *et al., J. Nat. Prod.*, 2003, **66**, 152-154 (*Isocephalotaxine*)
Wang, L.W. *et al., J. Nat. Prod.*, 2004, **67**, 1182-1185 (*Demethylcephalotaxinone stereoisomer*)

Isochaksine I-202

[11029-95-1]

$C_{11}H_{20}N_3O_2^{\oplus}$ 226.298

Struct. unknown. Alkaloid from the seeds, roots and leaves of *Cassia absus* (Fabaceae).

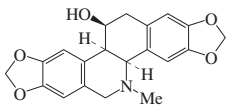
Chloride:
$C_{11}H_{20}ClN_3O_2$ 261.751
Mp 250-252° (248°).

Picrate: Mp 182-184°.

Siddiqui, S. *et al., Proc. - Indian Acad. Sci., Sect. A*, 1935, **2**, 421-425; *CA*, **30**, 1799 (*isol*)
Cheema, M. *et al., Arch. Int. Pharmacodyn. Ther.*, 1965, **158**, 307-313 (*pharmacol*)
Krishna Rao, R.V. *et al., J. Nat. Prod.*, 1979, **42**, 299-300 (*isol*)

Isochelidonine I-203

[142741-30-8]



Absolute Configuration

$C_{20}H_{19}NO_5$ 353.374
Alkaloid from aerial parts of *Chelidonium majus* (Papaveraceae). Cryst. (EtOH). Mp 124-125°. $[\alpha]_D$ +72 (c, 0.23 in EtOH).

De Rosa, S. *et al., Phytochemistry*, 1992, **31**, 1085 (*isol, uv, ir, pmr, struct*)

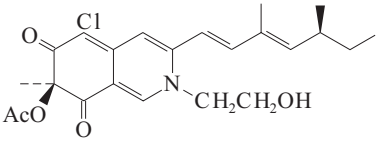
Isochondocurarine I-204

Bisbenzylisoquinoline alkaloid. Struct. unknown. Alkaloid from Curare. Cryst. (MeOH/Me_2CO)(as dihydrochloride). Mp 278° dec. (dihydrochloride). $[\alpha]_D^{20}$ -150 (H_2O) (dihydrochloride).

Bodendorf, K. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1954, **287**, 555; *CA*, **52**, 10119h (*isol*)

Isochromophilone VI I-205

[167173-91-3]



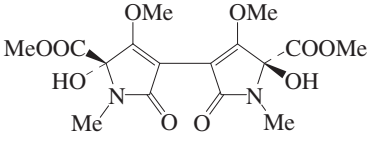
$C_{23}H_{28}ClNO_5$ 433.931
Prod. by *Penicillium multicolor* FO-3216. Acyl-CoA: cholesterol transferase (ACAT) inhibitor. Red powder. Mp 122-125°. $[\alpha]_D$ +2170 (c, 0.1 in MeOH). Related to Sclerotiorin. λ_{max} 235 (ϵ 15600); 370 (ϵ 23400); 485 (ϵ 3900) (MeOH) (Berdy).

N-*De(hydroxyethyl),* N-*(3-carboxypropyl):* ***Isochromophilone IX***
$C_{25}H_{30}ClNO_6$ 475.968
Prod. by a *Penicillium* sp. (MIN-AP9902). $[\alpha]_D$ +430 (c, 0.1 in MeOH).

Arai, N. *et al., J. Antibiot.*, 1995, **48**, 696 (*isol, uv, ir, pmr, cmr*)
Michael, A.P. *et al., Aust. J. Chem.*, 2003, **56**, 13-15 (*Isochromophilone IX*)

Isochrysohermidin I-206

[104006-84-0]
[128726-53-4 (*R**,*S**)-*form*]

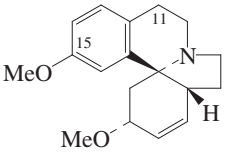


$C_{16}H_{20}N_2O_{10}$ 400.341
Alkaloid from the whole plant of *Mercurialis leiocarpa*. DNA cross-linking agent. Needles (MeOH). Mp 266-268°. Racemic.

Masui, Y. *et al., Phytochemistry*, 1986, **25**, 1470-1471 (*isol, pmr, cmr, ms, cryst struct*)
Abe, K. *et al., Phytochemistry*, 1989, **28**, 960 (*synth*)
Wasserman, H.H. *et al., Tetrahedron*, 1997, **53**, 8731-8738 (*synth*)
Nicolaou, K.C. *et al., Classics in Total Synthesis II: More Targets, Strategies, Methods*, 2003, 15-30 (*rev, synth, bibl*)

Isococculidine I-207

1,2-Didehydro-3,15-dimethoxyerythrinan, 9CI. O-*Methylisococculine*



$C_{18}H_{23}NO_2$ 285.385
Rel. config. only detd.

(+)-*form* [60229-91-6]
Alkaloid from the leaves of *Cocculus laurifolius* (Menispermaceae). Weak cholinergic receptor blocking agent. Cryst. (C_6H_6/hexane). Mp 95-96°. $[\alpha]_D$ +124 (c, 1.2 in MeOH).

▶ KF1950000

Methiodide:
Cryst. (Et_2O/MeOH). Mp 198-199°.

O^{15}-*De-Me:* ***Isococculine***
[67657-98-1]
$C_{17}H_{21}NO_2$ 271.358
Alkaloid from the leaves of *Cocculus laurifolius* (Menispermaceae). Mp 182-184°. $[\alpha]_D$ +164 (c, 1.0 in $CHCl_3$).

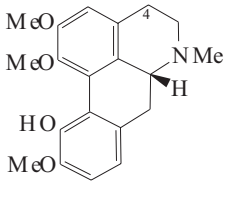
11ξ-Methoxy, O^{15}*-de-Me:* ***Cocculimine***
[77795-08-5]
$C_{18}H_{23}NO_3$ 301.385
Alkaloid from the leaves of *Cocculus laurifolius* (Menispermaceae). Amorph. powder. λ_{max} 233 ; 282 (EtOH). λ_{max} 305 (EtOH/NaOH).

(±)-*form* [78463-72-6]
Synthetic. Oil.

Bhakuni, D.S. *et al., Phytochemistry*, 1976, **15**, 739-741 (*isol, uv, ir, pmr, ms, struct*)
Bhakuni, D.S. *et al., Tetrahedron*, 1980, **36**, 2153-2156; 3107-3114 (*Isococculine, Cocculimine, isol, pmr, ms, synth, biosynth*)
Ju-ichi, M. *et al., Chem. Pharm. Bull.*, 1981, **29**, 396-401 (*synth, ir, pmr, ms*)
Madhusudanan, K.P. *et al., Indian J. Chem., Sect. B*, 1983, **22**, 907-908 (*ms*)
Prakash, O. *et al., J. Nat. Prod.*, 1988, **51**, 603-605 (*pmr, cmr*)

Isocorydine I-208

11-Hydroxy-1,2,10-trimethoxyaporphine. Luteanine†



(*R*)-*form*

$C_{20}H_{23}NO_4$ 341.406

(*R*)-*form* [55056-91-2]
Alkaloid from leaves of *Annona senegalensis* (Annonaceae). Amorph. powder. Mp 78-80°. $[\alpha]_D^{25}$ -190 (c, 0.02 in $CHCl_3$).

α-N-*Oxide:* ***Isocorydine* N-*oxide***
[25405-80-5]
$C_{20}H_{23}NO_5$ 357.405
Alkaloid from *Miliusa velutina*, *Glaucium* sp. and *Berberis integerrima* (Berberidaceae). Amorph. solid or gum. Mp 228-229° (as hydrochloride). The *M. velutina* isolate (confusingly called (-)-Isocorydine *N*-oxide by the authors), to which the opt. rotn. refers, is the only isolate with determined stereochem. It appears to have different stereochem from the *B. integerrima* isolate (no opt. rotn. reported) to which the Mp refers. λ_{max} 221 (log ϵ 4.31); 268 (log ϵ 3.87); 306 (log ϵ 3.46) (MeOH).

N-*De-Me:* [194923-28-9]
Alkaloid from *Annona cherimola* (cherimoya) (Annonaceae). Brown powder. Mp 200-203°. $[\alpha]_D^{24}$ -46 (c, 0.5 in $CHCl_3$). λ_{max} 223 ; 265 ; 309 (no solvent reported).

N-*De-Me,* N-*(methoxycarbonyl):* N-*Methoxycarbonylnorisocorydine.* ***Romucosine H***
[344928-15-0]
$C_{21}H_{23}NO_6$ 385.416
Alkaloid from *Annona cherimola* (cherimoya). Amorph. brown powder. Mp 230-233°. $[\alpha]_D^{24}$ -43 (c, 0.01 in $CHCl_3$). λ_{max} 222 (log ϵ 4.39); 270 (log ϵ 4.19); 310 (log ϵ 3.8) (EtOH).

(*S*)-*form* [475-67-2]
Alkaloid from a wide variety of genera in the Annonaceae (*Annona*, *Enantia*, *Asimina*, *Artabotrys*), Berberidaceae (*Berberis*, *Mahonia*), Lauraceae (*Cryptocarya*, *Dehaasia*, *Beilschmiedia*, *Litsea*, *Phoebe*, *Ocotea*), Menispermaceae (*Stephania*), Monimiaceae (*Peumus*), Papaveraceae (*Corydalis*, *Dicentra*, *Glaucium*, *Papaver*, *Dicranostigma*), Ranunculaceae (*Thalictrum*), Rhamnaceae (*Phylica*), Hernandiaceae (*Hernandia*), Monimiaceae (*Atherosperma, Doryphora*) and Pteridophyllaceae (*Pteridophyllum*). Adrenocytic, sedative and cholinergic agent. Shows virtually no antitussive activity. Poorly sol. hexane. Mp 185°. $[\alpha]_D^{23}$ +215 (c, 1 in $CHCl_3$). λ_{max} 210 ; 267 ; 302 (MeOH) (Berdy).

▶ LD_{50} (rat, ipr) 10.9 mg/kg. CE1057950

Hydrochloride: [13552-72-2]
Mp 215-218° dec. $[\alpha]_D^{20}$ +170 (c, 0.5 in $CHCl_3$).

N-*Me:* ***Menisperine***. N-*Methylisocorydine. Chakranine*
[25342-82-9]
$C_{21}H_{26}NO_4^{\oplus}$ 356.441
Quaternary alkaloid from *Bragantia wallichii* (preferred genus name *Thottea*), *Cryptocarya angulata*, *Cryptocarya triplinervis*, *Fagara coco*, *Legnephora moorei* and many other spp. (Aristo-

lochiaceae, Lauraceae, Rutaceae, Menispermaceae). Prisms (EtOH) (as chloride). Mp 217-218° dec. (slow heating) (chloride) Mp 235° (rapid heating) (chloride). $[\alpha]_D^{15}$ +146.3 (c, 0.17 in $CHCl_3$).

N-*De-Me:* ***Norisocorydine***. *Sanjoinine Ib*
[475-70-7]
$C_{19}H_{21}NO_4$ 327.379
Alkaloid from a variety of genera in the Annonaceae (*Annona*, *Xylopia*), Hernandiaceae (*Hernandia*), Monimiaceae (*Nemuaron, Peumus*), Papaveraceae (*Glaucium*, *Corydalis*), Lauraceae (*Cryptocarya*), and Rhamnaceae (*Zizyphus*). Mp 203-205° (as hydrobromide). $[\alpha]_D^{20}$ +158.5 (c, 0.1 in EtOH) (hydrobromide). Free base unstable.

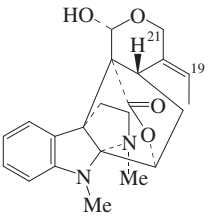
4R-*Hydroxy:* ***Rhopalotine***. *Crabbine*
[151271-85-1]
$C_{20}H_{23}NO_5$ 357.405
Alkaloid from *Corydalis lutea* and *Papaver rhopalothece* (Papaveraceae). Cryst. (MeOH). Mp 191°. $[\alpha]_D$ +162 (c, 0.2 in MeOH).

(±)-*form* [36284-37-4]
Mp 151-152°.

Gadamer, J. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1911, **249**, 641 (*isol*)
Comin, J. *et al., J.O.C.*, 1954, **19**, 1774 (*Isocorydine, Menisperine, isol, uv, struct*)
Ruegger, A. *et al., Helv. Chim. Acta*, 1959, **42**, 754 (*Norisocorydine*)
Katritzky, A.R. *et al., J.C.S.*, 1960, 1950 (*Menisperine, ir, pmr, struct*)
Kuck, A.M. *et al., J.O.C.*, 1961, **26**, 5253 (*synth, uv*)
Albonico, S.M. *et al., J.C.S.(C)*, 1966, 1340 (*ord, derivs*)
Jackson, A.H. *et al., J.C.S.(C)*, 1966, 2181 (*ms*)
Johns, S.R. *et al., Aust. J. Chem.*, 1967, **20**, 1277 (*isol, pmr*)
Groebel, A. *et al., Planta Med.*, 1970, **18**, 66 (*Menisperine, isol, uv, pmr, ms*)
Bhakuni, D.S. *et al., Phytochemistry*, 1972, **11**, 1819 (*Norisocorydine, isol, uv, pmr, ms*)
Karimov, A. *et al., Khim. Prir. Soedin.*, 1978, **14**, 419; *Chem. Nat. Compd. (Engl. Transl.)*, 1978, **14**, 360 (*Isocorydine N-oxide*)
Marsaioli, A.J. *et al., Phytochemistry*, 1979, **18**, 165 (*cmr, derivs*)
Ringdahl, B. *et al., J. Nat. Prod.*, 1981, **44**, 80 (*cd*)
Toure, S. *et al., Acta Cryst. C*, 1985, **41**, 1827 (*cryst struct*)
Sariyar, G. *et al., Planta Med.*, 1990, **56**, 232 (*Rhopalotine*)
Ribár, B. *et al., Acta Cryst. C*, 1992, **48**, 945 (*cryst struct*)
Yang, M.H. *et al., Phytochemistry*, 1993, **33**, 943 (*Crabbine*)
You, M. *et al., J. Nat. Prod.*, 1995, **58**, 598 (*isol, (R)-Isocorydine*)
Lee, S.-S. *et al., J. Nat. Prod.*, 1996, **59**, 55 (*cd*)
Chen, C.Y. *et al., J. Chin. Chem. Soc. (Taipei)*, 1997, **44**, 313 (*R-Norisocorydine*)
Rasoanaivo, P. *et al., Planta Med.*, 1998, **64**, 58 (*Norisocorydine, cmr*)
Marek, R. *et al., Magn. Reson. Chem.*, 1999, **37**, 195-202 (*N-15 nmr*)
Hasan, C.M. *et al., Nat. Prod. Lett.*, 2000, **14**, 393-397 (*α-N-oxide*)
Chen, C.-Y. *et al., Phytochemistry*, 2001, **56**, 753-757 (*Romucosine H*)

Isocorymine I-209

[16843-68-8]



Absolute Configuration

$C_{22}H_{26}N_2O_4$ 382.458
Alkaloid from *Hunteria umbellata* seeds and from *Hunteria zeylanica* (Apocynaceae). Cryst. (propanol). Mp 183-185°. $[\alpha]_D$ -243.

Ac:
Cryst. (propanol). Mp 160°.

N^4-*De-Me:* ***Norisocorymine***
[69734-94-7]
$C_{21}H_{24}N_2O_4$ 368.432
Isol. from the leaves of *Hunteria congolana* and leaves and stem bark of *Hunteria zeylanica* (Apocynaceae). Amorph. solid + ½ H_2O. $[\alpha]_D$ -10 (c, 1.0 in $CHCl_3$).

Deoxy, 21-oxo (lactone): Erinine
[4825-07-4]
$C_{22}H_{24}N_2O_4$ 380.443
Alkaloid from the leaves of *Hunteria umbellata* and *Hunteria eburnea* (Apocynaceae). Cryst. ($CHCl_3$/MeOH). Mp 267-269°. $[\alpha]_D$ -186 ($CHCl_3$).

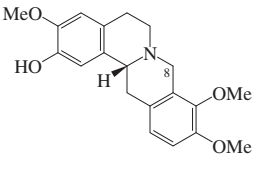
Deoxy, 21-oxo, picrate:
Cryst. (MeOH). Mp 195-197° dec.

Deoxy, 21-oxo, 19,20ξ-dihydro: ***Erinicine***
[4684-41-7]
$C_{22}H_{26}N_2O_4$ 382.458
Alkaloid from *Hunteria eburnea* leaves and *Hunteria umbellata* (Apocynaceae). Mp 210-212°.

Bycroft, B.W. *et al., Helv. Chim. Acta*, 1965, **48**, 1598 (*Erinine, Erinicine*)
Bevan, C.W.L. *et al., Tetrahedron*, 1967, **23**, 3809-3821 (*ms, pmr*)
Morfaux, A.M. *et al., Ann. Pharm. Fr.*, 1969, **27**, 679 (*Erinine, Erinicine, isol*)
Heatley, F. *et al., J.C.S. Perkin 2*, 1981, 725-729 (*struct*)
Arambewala, L.S.R. *et al., Phytochemistry*, 1981, **20**, 349-350 (*Isocorymine, isol*)
Vercauteren, J. *et al., Bull. Soc. Chim. Fr.*, Part II, 1982, 291-296 (*Norisocorymine*)

Isocorypalmine I-210

*5,8,13,13*a-*Tetrahydro-3,9,10-trimethoxy-6*H-*dibenzo[*a,g*]quinolizin-2-ol, 9CI. 3,9,10-Trimethoxyberbin-2-ol, 8CI. 2-Hydroxy-3,9,10-trimethoxytetrahydroprotoberberine. Tetrahydrocolumbamine. Casealutine*



(*R*)-*form*

$C_{20}H_{23}NO_4$ 341.406

(*R*)-*form* [53447-14-6]
Alkaloid from *Corydalis cava*, in partially racemised form (Papaveraceae). Cryst. (MeOH). Mp 239-241° (220-222°). $[\alpha]_D$ +303 ($CHCl_3$).

(*S*)-*form* [483-34-1]
Alkaloid from the leaves of *Bocconia frutescens*, *Corydalis lutea*, *Corydalis ophiocarpa*, other *Corydalis* spp., *Dicranostigma* spp., *Glaucium fimbrilligerum*, *Hydrastis canadensis*, *Thalictrum* spp., *Pachypodanthium confine* and *Tinomiscium petiolare* (Papaveraceae, Ranunculaceae, Annonaceae). Mp 241-242°.

► NQ7685000

α-N-*Oxide:* ***Isocorypalmine α-N-oxide***
$C_{20}H_{23}NO_5$ 357.405
Alkaloid from *Corydalis tashiroi*. Needles ($CHCl_3$/MeOH). Mp 247-249°. $[\alpha]_D^{25}$ -24.7 (c, 0.25 in $CHCl_3$). λ_{max} 209 (log ϵ 4.55); 225 (sh) (log ϵ 4.19); 283 (log ϵ 3.76) (EtOH).

β-N-*Oxide:* ***Isocorypalmine β-N-oxide***
$C_{20}H_{23}NO_5$ 357.405
Alkaloid from *Corydalis tashiroi*. Needles ($CHCl_3$). Mp 224-226°. $[\alpha]_D^{25}$ -38.6 (c, 0.23 in $CHCl_3$). λ_{max} 210 (log ϵ 4.53); 225 (sh) (log ϵ 4.18); 284 (log ϵ 3.73) (EtOH).

β-N-*Me:* ***β-N-Methylisocorypalminium***. N-*Methyltetrahydrocolumbaminum*
[92758-34-4]
[95462-85-4 , 96442-66-9]
$C_{21}H_{26}NO_4^{\oplus}$ 356.441
Quaternary alkaloid from *Glaucium squamigerum*, *Cymbopetalum brasiliense* and *Tinospora heinanensis*. Prisms (MeOH) (as iodide). Mp 175-176° (iodide). $[\alpha]_D^{24}$ -127 (c, 0.13 in MeOH). CAS no. refers to iodide.

Me ether: see Tetrahydropalmatine, T-212

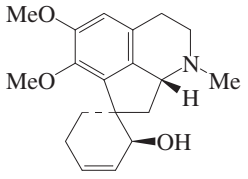
8-Oxo: ***8-Oxoisocorypalmine***
[142808-34-2]
$C_{20}H_{21}NO_5$ 355.39
Alkaloid from stems of *Coscinium fenestratum* (Menispermaceae). Gum. $[\alpha]_D$ -222 (c, 0.072 in $CHCl_3$).

(±)-*form* [6487-33-8]
Alkaloid from *Corydalis cava* (Papaveraceae). Prisms ($CHCl_3$/MeOH). Mp 221-222° (215-216°).

Corrodi, H. *et al., Helv. Chim. Acta*, 1956, **39**, 889
Tomita, M. *et al., Yakugaku Zasshi*, 1967, **87**, 881 (*isol*)
Naruto, S. *et al., Phytochemistry*, 1972, **11**, 2462 (*isol*)
Slavík, J. *et al., Coll. Czech. Chem. Comm.*, 1975, **40**, 3206; 1979, **44**, 2261; 1984, **49**, 1318 (*isol, N-Methylisocorypalminium*)
Battersby, A.R. *et al., J.C.S. Perkin 1*, 1975, 1147 (*biosynth*)
Casnaw, J. *et al., Anal. Biochem.*, 1976, **74**, 343 (*glc, ms*)
Ribár, B. *et al., Acta Cryst. C*, 1992, **48**, 944 (*cryst struct*)
Pinho, P.M.M. *et al., Phytochemistry*, 1992, **31**, 1403 (*8-Oxoisocorypalmine*)
Guo, Y *et al., Chem. Pharm. Bull.*, 1999, **47**, 287-289 (*N-Methylisocorypalminium*)

Chen, J.-J. *et al., Planta Med.*, 1999, **65**, 643-647; 2001, **67**, 423-427 (*N-oxides*)

Isocryprochine I-211

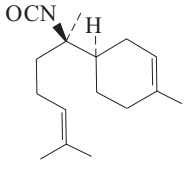


$C_{19}H_{25}NO_3$ 315.411
Alkaloid from the wood of *Cryptocarya chinensis*. Needles (Me_2CO). Mp 186-187°. $[\alpha]_D$ -22.2 (c, 0.03 in MeOH). λ_{max} 227 (log ϵ 3.83); 285 (log ϵ 3.27) (MeOH).

Wu, T.-S. *et al., J. Nat. Prod.*, 2001, **64**, 1404-1407

7-Isocyanato-2,10-bisaboladiene I-212

7-Isocyanato-7,8-dihydro-α-bisabolene



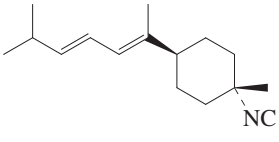
$C_{16}H_{25}NO$ 247.38

(6*R*,7*R*)-*form* [105281-35-4]
Constit. of a *Ciocalypta* sp. Oil. $[\alpha]_D^{25}$ -24.3 (c, 0.094 in hexane). λ_{max} 205 (ϵ 5000); 248 (ϵ 500) (hexane) (Derep).

Gulavita, N.K. *et al., J.O.C.*, 1986, **51**, 5136 (*isol, cryst struct*)

3-Isocyano-7,9-bisaboladiene I-213

4-(1,5-Dimethyl-1,3-hexadienyl)-1-isocyano-1-methylcyclohexane, 9CI. 3-Isocyanotheonellin. ***Theonelline isocyanide*** [105281-40-1]



$C_{16}H_{25}N$ 231.38
Constit. of *Phyllidia pustulosa* and *Halichondria* cf. *lendenfeldi*. Oil. λ_{max} 203 (ϵ 6400); 232 (sh) (ϵ 1100); 239 (ϵ 11600) (MeOH) (Derep).

Isothiocyanate: ***Theonelline isothiocyanate***
[94663-94-2]
$C_{16}H_{25}NS$ 263.446
Constit. of the sponge *Theonella* cf. *swinhoei*. Shows antibacterial props. Oil. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Has -NCS relacing -NC. λ_{max} 238 (ϵ 30200) (MeOH) (Derep). λ_{max} 230 (MeOH) (Berdy).

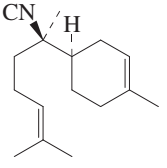
Formamide: ***Theonelline formamide***. *3-Formamidotheonellin*
[94663-93-1]
$C_{16}H_{27}NO$ 249.395
Constit. of the sponge *Theonella* cf. *swinhoei* and *Axinyssa* sp. Oil. Sol. MeOH, $CHCl_3$, Me_2CO; poorly sol. H_2O. Has -NHCHO replacing -NC. λ_{max} 238 (ϵ 24000) (MeOH) (Derep).

Formamide, 11-ethoxy: ***11-Ethoxy-3-formamidotheonellin***
[937800-57-2]
$C_{18}H_{31}NO_2$ 293.448
Constit. of *Axinyssa* aff. *variabilis*. Oil. λ_{max} 238 (log ϵ 4.18) (MeOH).

Nakamura, H. *et al., Tet. Lett.*, 1984, **25**, 5401-5404 (*isothiocyanate, formamide*)
Gulavita, N.K. *et al., J.O.C.*, 1986, **51**, 5136
Kassühlke, K.E. *et al., J.O.C.*, 1991, **56**, 3747-3750 (*isol*)
Fusetani, N. *et al., Tet. Lett.*, 1991, **32**, 7291
Kitano, Y. *et al., J.C.S. Perkin 1*, 2002, 2251-2255 (*synth*)
Mao, S.-C. *et al., Helv. Chim. Acta*, 2007, **90**, 588-593 (*11-Ethoxy-3-formamidotheonellin*)

7-Isocyano-2,10-bisaboladiene I-214

7-Isocyano-7,8-dihydro-α-bisabolene



(6*R*,7*R*)-*form*

$C_{16}H_{25}N$ 231.38
λ_{max} 195 (ϵ 14500) (hexane) (Derep).

(6*R*,7*R*)-*form* [105281-36-5]
Constit. of a *Ciocalypta* sp. Oil. $[\alpha]_D^{22}$ -49.9 (c, 0.033 in hexane).

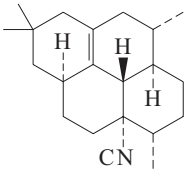
(6*R*,7*S*)-*form* [957138-58-8]
Constit. of *Acanthella cavernosa*. Oil. $[\alpha]_D$ +60.8 (c, 0.049 in $CHCl_3$).

Isothiocyanate: ***7-Isothiocyanato-2,10-bisaboladiene***
[105281-46-7]
$C_{16}H_{25}NS$ 263.446
Isol. from a *Halichondria* sp. and *Phyllidia pustulosa*. Oil. $[\alpha]_D^{20}$ +60.5 (c, 6.8 in $CHCl_3$). Has -NCS in place of -NC.

Sullivan, B.W. *et al., J.O.C.*, 1986, **51**, 5134-5136 (*isothiocyanate, isol, pmr, cmr*)
Gulavita, N.K. *et al., J.O.C.*, 1986, **51**, 5136 (*isocyanide*)
Kassühlke, K.E. *et al., J.O.C.*, 1991, **56**, 3747-3750 (*isothiocyanate, isol*)
Jumaryatno, P. *et al., J. Nat. Prod.*, 2007, **70**, 1725-1730 (*Acanthella cavernosa constit*)

8-Isocyano-1(12)-cycloamphilectene I-215

[108695-82-5]

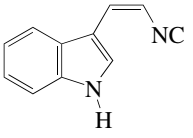


$C_{21}H_{31}N$ 297.483
Struct. revised in 1987. Constit. of *Adocia* spp. and a *Halichondria* sp. Gum. Poorly sol. hexane. $[\alpha]_D^{20}$ +39.6 (c, 0.6 in $CHCl_3$).

Kaslauskas, R. *et al., Tet. Lett.*, 1980, 315 (*isol*)
Molinski, T.F. *et al., J.O.C.*, 1987, **52**, 3334 (*isol, cryst struct*)

3-(2-Isocyanoethenyl)-1*H*-indole, 9CI I-216

2-(3-Indolyl)vinyl isocyanide. Indoleacryloisonitrile. B 371. Antibiotic B 371. SF 2636. Antibiotic SF 2636

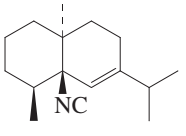


$C_{11}H_8N_2$ 168.198
The struct. given in the 1990 CAS abstract is prob. incorrect.

(Z)-form [61168-06-7]
Isol. from an unidentified *Pseudomonas* sp. and from the marine *Streptomyces* sp. SF2636. Shows antibiotic activity against *Staphylococcus* and other bacteria and yeasts. Probable biosynth. precursor to various cyanobacterial indole alkaloids. Extremely unstable, storeable only in soln. for a short period. λ_{max} 273 (sh); 279; 288 (MeOH/HCl) (Derep). λ_{max} 275 (sh); 313 (MeOH) (Derep).

Evans, J.R. *et al., J. Antibiot.*, 1976, **29**, 850-852 (*isol*)
Hoppe, I. *et al., Annalen*, 1984, 600-607 (*synth, ir, pmr, ms*)
Hatsu, M. *et al., CA*, 1990, **113**, 112056f (*isol*)
Stratmann, K. *et al., J.A.C.S.*, 1994, **116**, 9935-9942 (*biochem*)

5-Isocyano-6-eudesmene I-217

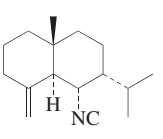


$C_{16}H_{25}N$ 231.38

(4β,5β,10α)-*form* [786703-09-1]
Constit. of *Phyllidiella pustulosa*. Oil. $[\alpha]_D$ +23 (c, 2 in $CHCl_3$).

Manzo, E. *et al., J. Nat. Prod.*, 2004, **67**, 1701-1704 (*isol, pmr, cmr*)

6-Isocyano-4(15)-eudesmene I-218



(5α,6α,7α,10β)-*form*

$C_{16}H_{25}N$ 231.38

(5α,6α,7α,10β)-*form* [91466-62-5]

Isol. from *Axinella cannabina*. Oil. $[\alpha]_D$ +39.6 (c, 0.3 in $CHCl_3$).

Isothiocyanate: [91466-63-6]
$C_{16}H_{25}NS$ 263.446
Isol. from *Axinella cannabina*. Oil. $[\alpha]_D$ +41 (c, 0.35 in $CHCl_3$).

Formamide: [91466-64-7]
$C_{16}H_{27}NO$ 249.395
Isol. from *Axinella cannabina*. Oil. $[\alpha]_D$ +48.5 (c, 0.3 in $CHCl_3$).

(5α,6α,7β,10α)-*form*
Constit. of *Axinella cannabina* and *Acanthella acuta*. Cryst. or oil. Mp 78-79°. $[\alpha]_D$ +92.9 (c, 1.8 in $CHCl_3$). Incorr. config. assigned in CAS.

Isothiocyanate: ***6-Isothiocyanato-4(15)-eudesmene***
$C_{16}H_{25}NS$ 263.446
Constit. of *Acanthella acuta* and *Axinella cannabina*. Mp 52-53°. $[\alpha]_D$ +88.4 (c, 1.0 in $CHCl_3$). Has -NCS replacing -NC. Incorr. config. assigned in CAS.

Formamide: ***6-Formamido-4(15)-eudesmene***
$C_{16}H_{27}NO$ 249.395
Constit. of *Axinella cannabina*. Oil. Has -NHCHO replacing -NC. Incorr. config. assigned in CAS.

(5α,6α,7β,10β)-*form*
Halichonadin C
[847605-78-1]
Constit. of a *Halichondria* sp. Amorph. solid. $[\alpha]_D^{19}$ -130 (c, 1 in $CHCl_3$).

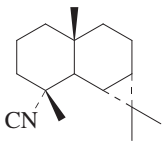
Isothiocyanate: ***Acanthene B***
$C_{16}H_{25}NS$ 263.446
Constit. of an *Acanthella* sp. Solid. $[\alpha]_D$ -34 (c, 0.18 in $CHCl_3$). Incorr. config. assigned in CAS.

Formamide: ***Acanthene C***
$C_{16}H_{27}NO$ 249.395
Constit. of *Cadlina luteomarginata* which feed on *Acanthella* sp. Amorph. solid. Incorr. config. assigned in CAS.

Ciminiello, P. *et al., J.O.C.*, 1984, **49**, 3949-3951 (*5α,6α,7α,10β-form Axinella cannabina constits*)
Ciminiello, P. *et al., J. Nat. Prod.*, 1987, **50**, 217-220 (*5α,6α,7β,10α-form Axinella and Acanthella constits*)
Burgoyne, D.L. *et al., Tetrahedron*, 1993, **49**, 4503-4510 (*Acanthenes B,C*)
Ishiyama, H. *et al., Tetrahedron*, 2005, **61**, 1101-1105 (*Halichonadin C*)

4-Isocyanomaaliane I-219

[133109-45-2]

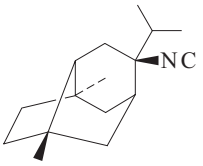


$C_{16}H_{25}N$ 231.38
Isol. from the mollusc *Cadlina luteomarginata*. $[\alpha]_D$ +36 (c, 0.2 in $CHCl_3$).

Thompson, J.E. *et al., Tetrahedron*, 1982, **38**, 1865 (*isol, pmr, cmr, ms*)
Burgoyne, D.L. *et al., Tetrahedron*, 1993, **49**, 4503-4510 (*isol*)

9-Isocyanoneopupukeanane I-220

[119323-93-2]

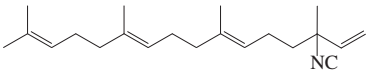


$C_{16}H_{25}N$ 231.38
Constit. of a *Ciocalypta* sp. Oil. $[\alpha]_D$ +33 (c, 1 in $CHCl_3$).

Karuso, P. *et al., J.O.C.*, 1989, **54**, 2092-2095; 2095-2097 (*isol, pmr, cmr, biosynth*)
Ho, T.-L. *et al., J.O.C.*, 1999, **64**, 8965-8967 (*synth*)
Krishna, A. *et al., Tetrahedron*, 2005, **61**, 8855-8859 (*synth*)

3-Isocyano-3,7,11,15-tetramethyl-1,6,10,14-hexadecatetraene, 9CI I-221

[55784-75-3]
[154614-35-4]



$C_{21}H_{33}N$ 299.498

(6*E*,10*E*)-(+)-*form*
Geranyllinaloyl isocyanide
[57766-63-9]
Isol. from *Halichondria* sp. Oil. $[\alpha]_D$ +15 (c, 2.8 in CCl_4).

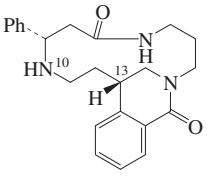
Isothiocyanate: Geranyllinaloyl isothiocyanate
$C_{21}H_{33}NS$ 331.564
Present in a *Halichondria* sp. sponge. Has -NCS in place of -NC.

Formamide: Geranyllinaloyl formamide
$C_{21}H_{35}NO$ 317.514
Present in a *Halichondria* sp. sponge. Has -NHCHO replacing -NC.

Burreson, B.J. *et al., Tetrahedron*, 1975, **31**, 2015-2018 (*isol, ir, pmr, cmr*)
Ichikawa, Y. *et al., J.C.S. Perkin 1*, 1993, 2429-2432 (*synth, ir, pmr, cmr*)

Isocyclocelabenzine I-222

*3,4,5,6,8,9,10,11,12,13-Decahydro-9-phenyl-2,13-methano-2*H*-2,6,10-benzotriazacyclopentadecine-1,7-dione, 9CI*
[70503-72-9]



Absolute Configuration

$C_{23}H_{27}N_3O_2$ 377.485
CAS numbering shown. Alkaloid from *Maytenus mossambicensis* var. *mossambicensis* (Celastraceae).

N^{10}-*Ac:* Mp 255°. $[\alpha]_D^{25}$ +221 (c, 0.356 in $CHCl_3$).

13-Hydroxy: ***13-Hydroxyisocyclocelabenzine***
[82497-77-6]
$C_{23}H_{27}N_3O_3$ 393.485
Alkaloid from *Maytenus mossambicensis* var. *mossambicensis* (Celastraceae). Mp 135°. $[\alpha]_D^{24}$ +113.1 (c, 0.603 in $CHCl_3$).

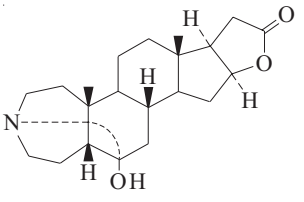
13-Hydroxy, N^{10}-*Ac:* Mp 315-320°.

[104595-98-4 ((±)-form)]

Wagner, H. *et al., Helv. Chim. Acta*, 1982, **65**, 739 (*isol, uv, ir, pmr, cmr, ms, struct*)
Iida, H. *et al., J.O.C.*, 1986, **51**, 4701 (*synth, ir, pmr*)
Schultz, K. *et al., Tetrahedron*, 1996, **52**, 14189 (*synth, abs config, cryst struct*)
Linden, Y.L.A. *et al., Helv. Chim. Acta*, 2003, **86**, 579-591 (*13-Hydroxyisocyclocelabenzine, synth*)

Isocycloneosamandaridine I-223

[63653-59-8]



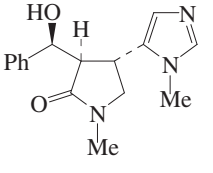
$C_{21}H_{31}NO_3$ 345.481
Probable struct. shown. The originally proposed struct. (referred to as Cycloneosamandaridine) was synthesised and found to be incorr. with consequent name change. Alkaloid from the skin of *Salamandra maculosa maculosa*. Mp 270-272° (synthetic) Mp 281-283° (natural).

Hydrochloride: Mp 250° dec.

Habermehl, G. *et al., Chem. Ber.*, 1965, **98**, 3001-3005 (*isol, ir, ms*)
Oka, K. *et al., J.O.C.*, 1978, **43**, 4408-4408 (*synth, struct, bibl*)

Isocynometrine I-224

[79659-62-4]



(-)-*form*

$C_{16}H_{19}N_3O_2$ 285.345
Alkaloid from the trunk bark of *Cynometra lujae* (Fabaceae). Cryst. (Me_2CO/pentane). Mp 181°. $[\alpha]_D^{20}$ -66 (c, 1 in $CHCl_3$).

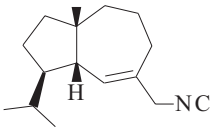
Benzoyl: ***Isocynodine***
[85644-19-5]
$C_{23}H_{23}N_3O_3$ 389.453
Alkaloid from the root bark, trunk bark and leaves of *Cynometra lujae*

(Fabaceae). Cryst. (Me_2CO/hexane). Mp 167°. $[\alpha]_D^{20}$ +139 (c, 1 in $CHCl_3$).

Chiaroni, A. *et al., J. Chem. Res., Synop.*, 1981, 182; *J. Chem. Res., Miniprint*, 1981, 2116-2145 (*cryst struct, abs config*)
Tchissambou, L. *et al., Tetrahedron*, 1982, **38**, 2687-2695 (*isol, ir, pmr, cmr, struct, synth, deriv*)
Xie, X. *et al., J.O.C.*, 2001, **66**, 6545-6550 (*synth*)
Xu, W. *et al., J.O.C.*, 2006, **71**, 3854-3858 (*synth*)

6-Isodaucene 14-isonitrile I-225

[112767-02-9]



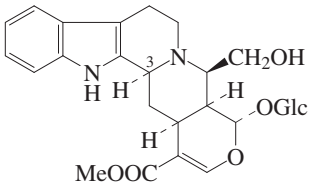
$C_{16}H_{25}N$ 231.38
Metab. of marine sponge *Acanthella acuta*. Oil. $[\alpha]_D$ +44 (c, 1.0 in $CHCl_3$).

Isothiocyanate: ***6-Isodaucene 14-isothiocyanate***
[112757-35-4]
$C_{16}H_{25}NS$ 263.446
Metab. of *Acanthella acuta*. Oil. $[\alpha]_D$ +36.2 (c, 0.2 in $CHCl_2$). Has -NCS replacing -NC.

Mayol, L. *et al., Tetrahedron*, 1987, **43**, 5381

Isodihydrocadambine I-226

[55624-02-7]



$C_{27}H_{34}N_2O_{10}$ 546.573
Alkaloid from the heartwood of *Anthocephalus cadamba* (Rubiaceae). $[\alpha]_D^{25}$ -66 (MeOH) (as penta-Ac).

3-Epimer: ***3β-Isodihydrocadambine***
[62014-69-1]
$C_{27}H_{34}N_2O_{10}$ 546.573
Alkaloid from the leaves of *Anthocephalus cadamba*, *Nauclea cadamba* and *Uncaria* spp. Exhibits hypotensive activity. Amorph. solid; needles (MeOH) (as penta-Ac). Mp 170-171° (penta-Ac). $[\alpha]_D$ -3.3 (c, 0.368 in MeOH).

Brown, R.T. *et al., Tet. Lett.*, 1974, 3335; 1976, 2723 (*uv, ir, pmr, ms, cd, struct, epimer*)
Endo, K. *et al., Planta Med.*, 1983, **49**, 188 (*epimer*)
Takayama, H. *et al., Chem. Pharm. Bull.*, 2003, **51**, 232-233 (*3β-Isodihydrocadambine*)

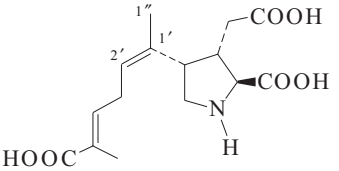
C-Isodihydrotoxiferine I I-227

$C_{20}H_{23}N_2^{\oplus}$ 291.415
Minimum formula. Struct. unknown.
Alkaloid from calabash curare (*Strychnos* spp.) (Loganiaceae). Mp 242° dec. (sintering from 200°)(as picrate). $[\alpha]_D^{20}$ -566 (H_2O) (as chloride).

Wieland, H. *et al., Annalen*, 1941, **547**, 156-179; 1947, **558**, 144-156 (*isol, uv*)
Wieland, T. *et al., Chem. Ber.*, 1962, **85**, 731

Isodomoic acid A I-228

2-Carboxy-4-(5-carboxy-1-methyl-1,4-hexadienyl)-3-pyrrolidineacetic acid, 9CI
[101899-44-9]



$C_{15}H_{21}NO_6$ 311.334
Isol. from the red alga *Chondria armata* and the diatom *Nitzschia navis-varingica*. Anthelminthic; exhibits insecticidal activity. Sol. MeOH. Mp 185-187° dec. $[\alpha]_D^{25}$ -70 (c, 0.1 in H_2O).

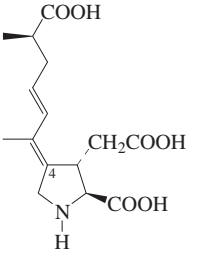
*1′*E-*Isomer:* ***Isodomoic acid B***
[101977-25-7]
$C_{15}H_{21}NO_6$ 311.334
Isol. from *Chondria armata* and *Nitzschia navis-varingica*. Anthelminthic; insecticide; vermifuge. Sol. H_2O, MeOH. Mp 182-183° dec. $[\alpha]_D^{25}$ -8.1 (c, 0.14 in H_2O). λ_{max} 214 (ε 9850) (H_2O) (Berdy).

$\Delta^{1',1''}$-Isomer: ***Isodomoic acid C***
[101899-45-0]
$C_{15}H_{21}NO_6$ 311.334
Isol. from *Chondria armata* and *Pseudo-nitzschia australis*. Insecticide. Sol. MeOH, H_2O. Mp 257-260° dec. $[\alpha]_D^{25}$ -30 (c, 0.015 in H_2O). λ_{max} 213 (ε 5030) (MeOH) (Berdy).

Maeda, M. *et al., Chem. Pharm. Bull.*, 1986, **34**, 4892 (*isol, uv, ir, pmr, cmr, ms*)
Holland, P.T. *et al., Chem. Res. Toxicol.*, 2005, **18**, 814-816 (*Isodomoic acid C, isol*)
Clayden, J. *et al., J.A.C.S.*, 2005, **127**, 2412-2413 (*Isodomoic acid C, synth*)
Clayden, J. *et al., Tetrahedron*, 2005, **61**, 5713-5724 (*rev*)
Kotaki, Y. *et al., Toxicon*, 2005, **46**, 946-953 (*isol*)

Isodomoic acid G I-229

2-Carboxy-4-(5-carboxy-1-methyl-2-hexenylidene)-3-pyrrolidineacetic acid
[188346-81-8]



Absolute Configuration

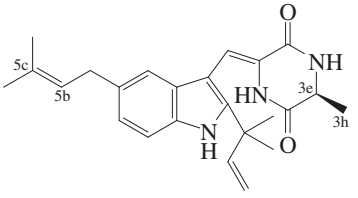
$C_{15}H_{21}NO_6$ 311.334
Isol. from the red alga *Chondria armata*.

4Z-Isomer: ***Isodomoic acid H***
[188346-82-9]
$C_{15}H_{21}NO_6$ 311.334
Isol. from *Chondria armata*.

Zaman, L. *et al., Toxicon*, 1997, **35**, 205-212 (*isol, pmr*)
Ni, Y. *et al., Org. Lett.*, 2003, **5**, 3771-3773 (*synth, abs config*)

Isoechinulin A I-230

*3-[[2-(1,1-Dimethyl-2-propenyl)-5-(3-methyl-2-butenyl)-1*H*-indol-3-yl]methylene]-6-methyl-2,5-piperazinedione, 9CI*
[60422-87-9]



$C_{24}H_{29}N_3O_2$ 391.512
Isol. from *Aspergillus ruber*. Mycotoxin.

*3*e,*3*h-*Didehydro:* ***Isoechinulin B***
[60422-88-0]
$C_{24}H_{27}N_3O_2$ 389.496
Isol. from *Aspergillus ruber*. Mycotoxin.

*3*e,*3*h-*Didehydro, 5*b,*5*c-*epoxide:* ***Isoechinulin C***
[60422-89-1]
$C_{24}H_{27}N_3O_3$ 405.496
Isol. from *Aspergillus ruber*.

*5*b,*5*c-*Dihydro, 5*bR-*chloro, 5*c-*hydroxy:* ***Variecolorin B***
[957780-66-4]
$C_{24}H_{30}ClN_3O_3$ 443.972
Isol. from *Aspergillus variecolor* B-17. Amorph. powder. $[\alpha]_D^{25}$ -29 (c, 0.1 in MeOH). λ_{max} 208 (log ε 3.5); 228 (log ε 3.6); 287 (log ε 3); 342 (log ε 3.2) (MeOH).

*5*b,*5*c-*Dihydro, 5*c-*chloro, 5*bR-*hydroxy:* ***Variecolorin A***
[957780-65-3]
$C_{24}H_{30}ClN_3O_3$ 443.972
Isol. from *Aspergillus variecolor* B-17. Amorph. powder. $[\alpha]_D^{25}$ -39 (c, 0.1 in MeOH). λ_{max} 210 (log ε 3.6); 228 (log ε 3.6); 285 (log ε 3.1); 340 (log ε 3.2) (MeOH).

*5*b,*5*c-*Dihydro, 5*bR,*5*c-*dihydroxy:* ***19,20-Dihydroxyisoechinulin A***
[744253-48-3]
$C_{24}H_{31}N_3O_4$ 425.527
Prod. by a marine *Aspergillus* sp. Oil. λ_{max} 209 (log ε 3.9); 226 (log ε 3.9); 289 (log ε 3.4); 340 (log ε 3.5) (MeOH).

*5*b,*5*c-*Dihydro, 5*bR,*5*c-*dihydroxy, isopropylidene:* ***Variecolorin D***
[957780-70-0]
$C_{27}H_{35}N_3O_4$ 465.591
Isol. from *Aspergillus variecolor* B-17. Amorph. powder. $[\alpha]_D^{25}$ -51 (c, 0.1 in MeOH). λ_{max} 210 (log ε 3.6); 229 (log ε 3.7); 288 (log ε 3.2); 340 (log ε 3.3)

(MeOH).

*5*b,*5*c-*Dihydro, 5*b-*oxo:* ***Variecolorin E***
[957780-71-1]
$C_{24}H_{29}N_3O_3$ 407.511
Isol. from *Aspergillus variecolor* B-17. Amorph. powder. $[\alpha]_D^{25}$ -20 (c, 0.1 in MeOH). λ_{max} 203 (log ϵ 3.4); 230 (log ϵ 3.4); 285 (log ϵ 3.1); 345 (log ϵ 3.2) (MeOH).

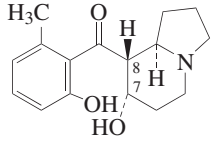
*3*eξ-*Methoxy:* ***Variecolorin I***
[957780-80-2]
$C_{25}H_{31}N_3O_3$ 421.538
Isol. from *Aspergillus variecolor* B-17. Amorph. powder. Racemic. λ_{max} 208 (log ϵ 3.8); 228 (log ϵ 3.7); 285 (log ϵ 3.2); 350 (log ϵ 3.3) (MeOH).

*Δ^{5c}-Isomer, 5*bR-*hydroxy:* ***Variecolorin C***
[957780-67-5]
$C_{24}H_{29}N_3O_3$ 407.511
Isol. from *Aspergillus variecolor* B-17. Amorph. powder. $[\alpha]_D^{25}$ -44 (c, 0.1 in MeOH). λ_{max} 209 (log ϵ 3.4); 228 (log ϵ 3.4); 290 (log ϵ 3.1); 345 (log ϵ 3.2) (MeOH).

Nagasawa, H. *et al., Tet. Lett.*, 1976, 1601-1604 (*isol, uv, ir, pmr, ms*)
Nagasawa, H. *et al., Agric. Biol. Chem.*, 1979, **43**, 1759-1763 (*cmr, struct*)
Li, Y. *et al., J. Antibiot.*, 2004, **57**, 337-340 (*Dihydroxyisoechinulin A*)
Wang, W.-L. *et al., J. Nat. Prod.*, 2007, **70**, 1558-1564 (*Variecolorins A,B,C,E,I*)
Cole, R.J. *et al., Handbook of Toxic Fungal Metabolites*, Academic Press, 1981, 475; 476; 477

Isoelaeocarpicine I-231

(2-Hydroxy-6-methylphenyl)(octahydro-7-hydroxy-8-indolizinyl)methanone, 9CI. 7-Hydroxy-8-(2-hydroxy-6-methylbenzoyl)indolizidine



(+)-*form*

$C_{16}H_{21}NO_3$ 275.347

(+)-*form* [21104-52-9]
Alkaloid from the leaves of *Elaeocarpus fuscoides* and *Elaeocarpus polydactylus.* Prisms (EtOH). Mp 164-166°. $[\alpha]_D$ +29 (c, 0.30 in $CHCl_3$).

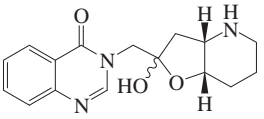
(±)-*form* [72521-90-5]
Synthetic. Mp 143-145°.

7-Deoxy, 7,8-didehydro: ***Elaeocarpenine***
[942293-11-0]
$C_{16}H_{19}NO_2$ 257.332
Alkaloid from the leaves of *Elaeocarpus fuscoides.* Shows binding affinity for the human δ-opioid receptor. Yellow gum (as trifluoroacetate). λ_{max} 223 (log ϵ 3.29) (trifluoroacetate).

Johns, S.R. *et al., Aust. J. Chem.*, 1969, **22**, 775-792 (*isol, uv, ir, pmr, ms*)
Tufariello, J.J. *et al., J.A.C.S.*, 1979, **101**, 7114-7116 (*synth*)
Katavic, P.L. *et al., J. Nat. Prod.*, 2007, **70**, 872-875 (*isol, pmr, cmr, Elaeocarpenine*)

Isofebrifugine I-232

*3-[(Octahydro-2-hydroxyfuro[3,2-*b*]pyridin-2-yl)methyl]-4(3*H*)-quinazolinone, 9CI. α-Dichroine. Dichroine A*
[32434-44-9]



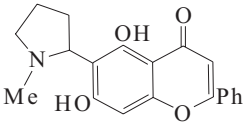
$C_{16}H_{19}N_3O_3$ 301.344
Stereochem. revised in 1999. Alkaloid from the roots of the Chinese drug Ch'ang Shan (*Dichroa febrifuga*) and *Hydrangea umbellata* (Hydrangeaceae). Cryst. (MeOH or $CHCl_3$/EtOH). Mp 138-139° (129-130°). $[\alpha]_D^{23}$ +131 (c, 0.35 in $CHCl_3$).

Bis(benzenesulfonyl): Mp 182.5-183.5°.

Koepfli, J.B. *et al., J.A.C.S.*, 1947, **69**, 1837; 1949, **71**, 1048 (*isol, uv, struct*)
Ablondi, F. *et al., J.O.C.*, 1952, **17**, 14-18 (*isol*)
Uesato, S. *et al., Chem. Pharm. Bull.*, 1998, **46**, 1-5 (*pmr, cmr, conformn*)
Murata, K. *et al., J. Nat. Prod.*, 1998, **61**, 729-733 (*isol, uv, ir, pmr, cmr, ms*)
Takeuchi, Y. *et al., Chem. Pharm. Bull.*, 1999, **47**, 905-906 (*synth*)
Takaya, Y. *et al., J. Med. Chem.*, 1999, **42**, 3163-3166 (*isol*)
Kobayashi, S. *et al., J.O.C.*, 1999, **64**, 6833-6841 (*synth, config*)
Takeuchi, Y. *et al., Synthesis*, 1999, 1814-1818 (*synth*)
Ooi, H. *et al., Org. Lett.*, 2001, **3**, 953-955 (*synth*)
Takeuchi, Y. *et al., Tetrahedron*, 2001, **57**, 1213-1218 (*synth*)
Katoh, M. *et al., Heterocycles*, 2006, **67**, 189-204 (*synth*)
Wee, A.G.H. *et al., Org. Lett.*, 2008, **10**, 3869-3872 (*synth*)

Isoficine I-233

*5,7-Dihydroxy-6-(1-methyl-2-pyrrolidinyl)-2-phenyl-4*H*-1-benzopyran-4-one, 9CI. 5,7-Dihydroxy-6-(1-methylpyrrolidinyl)flavone*
[2255-62-1]

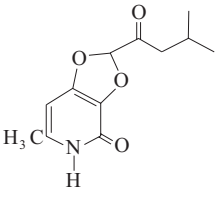


$C_{20}H_{19}NO_4$ 337.374
Minor alkaloid from *Ficus pantoniana* (Moraceae). Mp 168°.

Johns, S.R. *et al., Tet. Lett.*, 1965, 1987 (*pmr, struct*)

Isoflavipucine I-234

[61277-39-2]

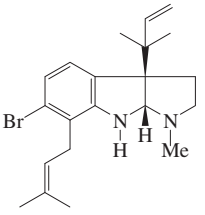


$C_{12}H_{15}NO_4$ 237.255
Isol. from *Aspergillus flavipes.* Also obt. by heating Flavipucine, F-81 at 138-140°. Cryst. (Et_2O). Mp 166-171°. $[\alpha]_D^{21}$ 0 (c, 1 in EtOH). λ_{max} 221 (ϵ 26100); 307 (ϵ 10300) (EtOH) (Derep).

Findlay, J.A. *et al., Can. J. Chem.*, 1977, **55**, 600 (*isol, uv, ir, pmr, cmr, ms, struct*)

Isoflustramine D I-235

[104387-14-6]



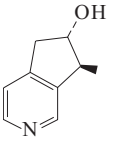
Relative Configuration

$C_{21}H_{29}BrN_2$ 389.377
Isol. as a 65:35 inseparable mixt. with Flustramine D, F-107. Metab. from the marine bryozoan *Flustra foliacea*. $[\alpha]_D^{25}$ -14.6 (c, 0.07 in CH_2Cl_2). λ_{max} 240 ; 290 (MeOH) (Berdy).

Laycock, M.V. *et al., Can. J. Chem.*, 1986, **64**, 1312-1316 (*isol, uv, ir, pmr, ms, struct*)

Isogentialutine I-236

[55399-77-4]

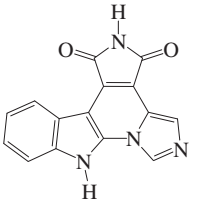


$C_9H_{11}NO$ 149.192
Alkaloid from the roots of *Gentiana tibetica* (Gentianaceae). Mp 131°.

Rulko, F. *et al., Pol. J. Pharmacol. Pharm.*, 1974, **26**, 561; *CA*, **82**, 57984w (*isol, uv, ir, pmr, ms, struct*)

Isogranulatimide I-237

[219829-00-2]

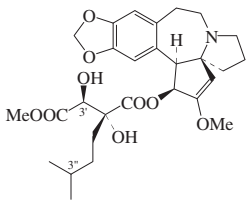


$C_{15}H_8N_4O_2$ 276.254
Alkaloid from the ascidian *Didemnum granulatum*. G2 specific cell cycle checkpoint inhibitor. Deep purple cryst. (MeCN aq.) or amorph. red solid. λ_{max} 210 (ϵ 10230); 231 (ϵ 10650); 280 (ϵ 6550); 470 (ϵ 1880) (MeOH).

Berlinck, R.G.S. *et al., J.O.C.*, 1998, **63**, 9850-9856 (*isol, uv, ir, pmr, cmr, synth*)
Vervoort, H.C. *et al., J. Nat. Prod.*, 1999, **62**, 389-391 (*isol, uv, ir, pmr, cmr, ms*)
Piers, E. *et al., J.O.C.*, 2000, **65**, 530-535 (*synth*)

Isoharringtonine I-238

[26833-86-3]



Absolute Configuration

$C_{28}H_{37}NO_9$ 531.602

Alkaloid from *Cephalotaxus harringtonia* var. *harringtonia, Cephalotaxus harringtonia* var. *drupacea, Cephalotaxus hainanensis, Cephalotaxus wilsoniana* and *Cephalotaxus sinensis* (Cephalotaxaceae). Shows significant antineoplastic activity. Mp 69-72.5°. $[\alpha]_D$ -99.6 (c, 1.06 in $CHCl_3$). Log P 1.04 (uncertain value) (calc). λ_{max} 261 (ϵ 724); 290 (ϵ 4570) (EtOH) (Derep).

▶ NR2935500

Parent acid: ***Isoharringtonic acid****. 5′-Des-O-methylisoharringtonine*
[55825-71-3]
$C_{27}H_{35}NO_9$ 517.575
Alkaloid from *Cephalotaxus hainanensis* (Cephalotaxaceae) and *Cephalotaxus harringtonia* var. *drupacea*. Amorph. solid. Mp 224-228°. $[\alpha]_D$ -113 (c, 0.33 in DMSO).

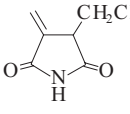
3′′-Hydroxy: ***Cephalezomine C***
[288300-74-3]
$C_{28}H_{37}NO_{10}$ 547.601
Alkaloid from *Cephalotaxus harringtonia* var. *nana*. Cytotoxic agent. Amorph. solid. $[\alpha]_D$ -122 (c, 2.3 in MeOH). λ_{max} 291 (ϵ 2100) (MeOH).

3′-Epimer, 3′′-hydroxy: ***Cephalezomine D***
[182325-75-3]
$C_{28}H_{37}NO_{10}$ 547.601
Alkaloid from *Cephalotaxus harringtonia* var. *nana*. Cytotoxic agent. Amorph. solid. $[\alpha]_D$ -97 (c, 13.7 in MeOH). λ_{max} 291 (ϵ 2100) (MeOH).

Powell, R.G. *et al., Tet. Lett.*, 1970, 815 (*struct*)
Brandänge, S. *et al., Acta Chem. Scand., Ser. B*, 1974, **28**, 1237 (*abs config*)
Weisleder, D. *et al., Org. Magn. Reson.*, 1980, **13**, 114 (*cmr*)
Xue, Z. *et al., Yaoxue Xuebao*, 1981, **16**, 752; *CA*, **96**, 82690u (*Isoharringtonic acid*)
Huang, L. *et al., Alkaloids (Academic Press)*, 1984, **23**, 157 (*rev*)
Takano, I. *et al., Phytochemistry*, 1996, **43**, 299 (*Isoharringtonic acid*)
Morita, H. *et al., Tetrahedron*, 2000, **56**, 2929-2934 (*Cephalezomines*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, IKS500

Isohematinic acid I-239

4-Methylene-2,5-dioxo-3-pyrrolidinepropanoic acid, 9CI. Ishaematinic acid



$C_8H_9NO_4$ 183.163

Sol. MeOH, Me_2CO, bases; fairly sol. EtOAc; poorly sol. H_2O, C_6H_6, hexane. λ_{max} 225 (ϵ 8000) (MeOH) (Derep). λ_{max} 225 (E1%/1cm 450) (MeOH) (Berdy).

▶ LD_{50} (mus, ivn) 300 mg/kg.

(±)-form [86408-37-9]

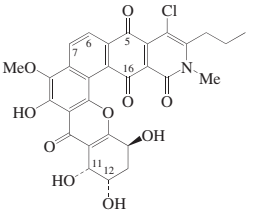
Alkaloid from *Actinoplanes philippinensis*. Cryst. (MeOH). Mp 138°.

▶ UY1881500

Takeuchi, M. *et al., J. Antibiot.*, 1983, **36**, 493 (*isol*)
Itoh, Y. *et al., J. Antibiot.*, 1983, **36**, 497 (*uv, ir, pmr, cmr, struct*)

Isokibdelone A I-240

[916660-08-7]



Absolute Configuration

$C_{29}H_{24}ClNO_{10}$ 581.962

Prod. by *Kibdelosporangium* sp. (MST-108465). Amorph. orange solid. $[\alpha]_D$ +133 (c, 0.01 in $CHCl_3$). λ_{max} 239 (ϵ 27600); 271 (ϵ 26600); 319 (ϵ 16300); 404 (ϵ 11700); 442 (sh) (EtOH).

11-O-α-Rhamnopyranoside: [916660-07-6]
$C_{35}H_{34}ClNO_{14}$ 728.105
Prod. by *Kibdelosporangium* sp. (MST-108465). Amorph. orange solid. $[\alpha]_D$ +60 (c, 0.01 in $CHCl_3$). λ_{max} 210 (ϵ 25000); 229 (ϵ 23200); 271 (ϵ 17400); 410 (ϵ 6700); 442 (sh) (EtOH).

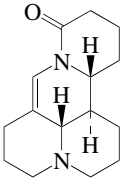
6,7-Dihydro: ***Isokibdelone B***
[916660-09-8]
$C_{29}H_{26}ClNO_{10}$ 583.978
Prod. by *Kibdelosporangium* sp. (MST-108465). Amorph. orange solid. $[\alpha]_D$ +82 (c, 0.02 in $CHCl_3$). λ_{max} 203 (ϵ 13700); 244 (ϵ 9500); 266 (sh) ; 326 (sh) ; 447 (ϵ 3700); 583 (sh) (EtOH).

5,16-Hydroquinone, 6,7-dihydro: Isokibdelone C
[916660-10-1] Artifact prod. after storage.

Ratnayake, R. *et al., Org. Lett.*, 2006, **8**, 5267-5270 (*isol, pmr, cmr*)

Isoleontalbine I-241

5,17-Didehydromatridin-15-one, 9CI
[40444-77-7]



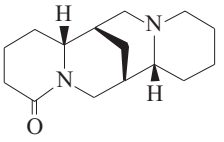
$C_{15}H_{22}N_2O$ 246.352

Stereoisomer of Darvasine, D-80 and Leontalbine, L-93. Alkaloid from *Leontice smirnowii* (Leonticaceae). Oil. Mp 207° (as perchlorate). $[\alpha]_D$ -147 (EtOH). λ_{max} 240 (log ϵ 4.2) (no solvent reported).

Bohlmann, F. *et al., Chem. Ber.*, 1958, **91**, 2176-2189 (*config*)
Shakirov, R. *et al., Khim. Prir. Soedin.*, 1996, **32**, 410-512; *Chem. Nat. Compd. (Engl. Transl.)*, 1996, **32**, 386-512 (*rev*)

α-Isolupanine I-242

11-Isolupanine. Tetrahydrothermopsine. Alkaloid P7



(+)–*form*

$C_{15}H_{24}N_2O$ 248.367

(+)-form [486-87-3]

Alkaloid from *Lupinus sericeus, Lupinus mutabilis, Lupinus leontopetalum* tubers and *Lupinus caudatus* (Fabaceae). Rectangular plates. Mp 75-76° Mp 83-84° (dimorph.). $[\alpha]_D^{23}$ +65.9 (c, 1.495 in EtOH).

Perchlorate:
Cryst. (MeOH). Mp 248-249°.

Picrate:
Long yellow needles (EtOH). Mp 197-198°.

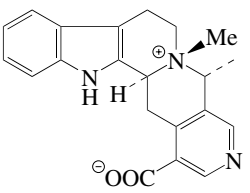
(-)-form

By hydrogenation of (-)-Thermopsine in T-363. Mp 75-76°.

Marion, L. *et al., Can. J. Chem.*, 1951, **29**, 22-29; 1953, **31**, 181-186 (*isol, ir, struct*)
Baranowski, P. *et al., Pol. J. Chem. (Rocz. Chem.)*, 1966, **40**, 73-80 (*synth*)
Wiewiorowski, M. *et al., Can. J. Chem.*, 1967, **45**, 1447-1457 (*ir, pmr, conformn*)
Panov, P.P. *et al., CA*, 1972, **77**, 72554w (*isol*)
Vul'fson, N.S. *et al., Chem. Heterocycl. Compd.*, 1974, **10**, 221-229 (*ms*)
Bohlmann, F. *et al., Chem. Ber.*, 1975, **108**, 1043-1051 (*cmr*)
Anderson, J.N. *et al., J.O.C.*, 1976, **41**, 3441-3444 (*isol*)
Kennelly, E.J. *et al., J. Nat. Prod.*, 1999, **62**, 1385-1389 (*isol, pmr, cmr*)

Isomalindine-16-carboxylate I-243

[203255-40-7]



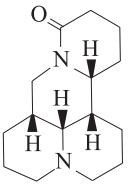
$C_{21}H_{21}N_3O_2$ 347.416

Zwitterionic. Alkaloid from *Ophiorrhiza* cf. *communis* (Rubiaceae). Needles (MeOH/EtOAc). Mp 193° (dec.). $[\alpha]_D$ +667 (c, 0.03 in MeOH).

Arbain, D. *et al., Aust. J. Chem.*, 1997, **50**, 1109-1110 (*isol, pmr, cmr, struct*)

Isomatrine I-244

[17801-36-4]



Absolute configuration

$C_{15}H_{24}N_2O$ 248.367

Stereoisomer of Matrine, M-121, Allomatrine, A-628, Sophoridine, S-380 and Darvasamine, D-79. Alkaloid from roots of *Sophora flavescens* (Fabaceae). Mp 132-134°. $[\alpha]_D^{25}$ +44 ($CHCl_3$).

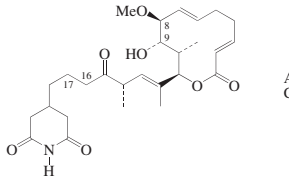
Hydrobromide:
V. deliquescent cryst. Mp 166.5-168°.

Methiodide: Mp 213° dec.

Ueno, A. *et al., Chem. Pharm. Bull.*, 1975, **23**, 2560 (*isol, ir, pmr, cryst struct*)
Ibragimov, B.T. *et al., Khim. Prir. Soedin.*, 1982, **18**, 71; *Chem. Nat. Compd. (Engl. Transl.)*, 66 (*rev, stereochem*)

Isomigrastatin I-245

[415952-70-4]



Absolute Configuration

$C_{27}H_{39}NO_7$ 489.608

Glutarimide-lactone antibiotic. Closely related to Lactimidomycin, L-7. Prod. by *Streptomyces platensis* NRRL18993. Antitumour agent. Oil. $[\alpha]_D^{25}$ +170 (c, 0.18 in $CHCl_3$).

O-*De-Me: 8*-O-*Demethylisomigrastatin*
$C_{26}H_{37}NO_7$ 475.581
Prod. by *Streptomyces platensis* NRRL18993. Oil. $[\alpha]_D^{23}$ +83 (c, 0.1 in $CHCl_3$).

16,17-Didehydro: ***16,17-Didehydroisomigrastatin***
$C_{27}H_{37}NO_7$ 487.592
Prod. by *Streptomyces platensis* NRRL18993. Oil. $[\alpha]_D$ +123.9 (c, 0.18 in $CHCl_3$).

16,17-Didehydro, O-*de-Me:* ***16,17-Didehydro-8-O-demethylisomigrastatin***
$C_{26}H_{35}NO_7$ 473.565
Prod. by *Streptomyces platensis* NRRL18993. Oil.

*17*R-*Hydroxy:* ***17-Hydroxyisomigrastatin***
$C_{27}H_{39}NO_8$ 505.607
Prod. by *Streptomyces platensis* NRRL18993. Oil. $[\alpha]_D^{25}$ +140 (c, 0.1 in $CHCl_3$).

*17*R-*Hydroxy,* O-*de-Me:* ***17-Hydroxy-8-O-demethylisomigrastatin***
$C_{26}H_{37}NO_8$ 491.58
Prod. by *Streptomyces platensis* NRRL18993.

Demethoxy: ***Demethoxyisomigrastatin***
$C_{26}H_{37}NO_6$ 459.581
Prod. by *Streptomyces platensis* NRRL18993. Oil. $[\alpha]_D^{25}$ +77 (c, 0.1 in $CHCl_3$).

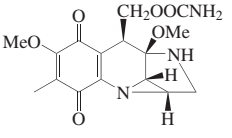
Demethoxy, 16,17-didehydro: ***16,17-Didehydrodemethoxyisomigrastatin***
$C_{26}H_{35}NO_6$ 457.566
Prod. by *Streptomyces platensis* NRRL18993. Oil. $[\alpha]_D^{25}$ +7.3 (c, 0.05 in $CHCl_3$).

*Demethoxy, 17*R-*hydroxy:* ***17-Hydroxydemethoxyisomigrastatin***. *8,9-Dihydro-9-hydroxylactimidomycin*
[866629-46-1]
$C_{26}H_{37}NO_7$ 475.581
Prod. by *Streptomyces amphibiosporus* ATCC53964 and *Streptomyces platensis* NRRL18993. Oil. $[\alpha]_D^{25}$ +80 (c, 0.1 in $CHCl_3$).

Woo, E.J. *et al., J. Antibiot.*, 2002, **55**, 141-146 (*Isomigrastatin*)
Ju, J. *et al., J.A.C.S.*, 2005, **127**, 1622-1623; 11930-11931 (*isol, biosynth, derivs*)
Krauss, I.J. *et al., Angew. Chem., Int. Ed.*, 2007, **46**, 5576-5579 (*synth*)
Ju, J. *et al., Org. Lett.*, 2007, **9**, 5183-5186 (*isol, derivs*)

Isomitomycin A I-246

AX 2. Antibiotic AX 2
[91917-64-5]



Absolute Configuration

$C_{16}H_{19}N_3O_6$ 349.343

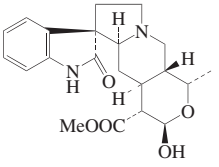
Quinone antibiotic. Metab. of *Streptomyces caespitosus* NRRL12508. Prod. by intramolecular rearrangement of Mitomycin A, M-653. Shows antitumour props. Yellow-orange needles ($CHCl_3$). Sol. MeOH, $CHCl_3$; fairly sol. H_2O; poorly sol. hexane. Mp 78-80°. $[\alpha]_D^{23}$ -273 (c, 0.17 in $CHCl_3$). Isomerises to Mitomycin A, M-653. λ_{max} 205 (ϵ 10800); 294 (ϵ 5200); 410 (ϵ 340) (MeOH) (Berdy).

▶ LD_{50} (mus, ia) 27 mg/kg, LD_{50} (mus, ipr) 7.8 mg/kg.

Kono, M. *et al., J.A.C.S.*, 1987, **109**, 7224-7225 (*isol, struct*)
Kasai, M. *et al., J.O.C.*, 1992, **57**, 7296-7299 (*synth, pmr*)

Isomitraphyllinol I-247

[949081-83-8]



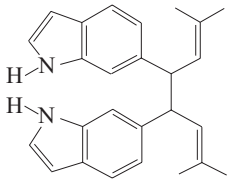
Absolute Configuration

$C_{21}H_{26}N_2O_5$ 386.447
Alkaloid from the leaves of *Mitragyna hirsuta*.

Kitajima, M. *et al., J. Nat. Med. (Tokyo)*, 2007, **61**, 192-195 (*isol, pmr, cmr*)

Isomonodoroindole I-248

*6,6′-[1,2-Bis(2-methyl-1-propenyl)-1,2-ethanediyl]bis-1*H*-indole, 9CI. 4,5-Di-6-indolyl-2,7-dimethyl-2,6-octadiene*
[110325-62-7]

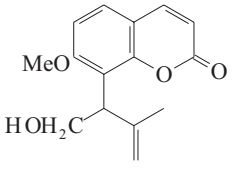


$C_{26}H_{28}N_2$ 368.521
Alkaloid from the seeds of *Monodora myristica* (Annonaceae).

Muhammad, I. *et al., J. Bangladesh Acad. Sci.*, 1987, **11**, 1-7; *CA*, **107**, 172452t

Isomurralonginol I-249

*8-[1-(Hydroxymethyl)-2-methyl-2-propenyl]-7-methoxy-2*H*-1-benzopyran-2-one, 9CI*
[112606-75-4]



$C_{15}H_{16}O_4$ 260.289

Ac: ***Isomurralonginol acetate***
[112667-51-3]
$C_{17}H_{18}O_5$ 302.326
Constit. of *Murraya exotica*. Oil. $[\alpha]_D$ +18.8 (c, 0.2 in $CHCl_3$).

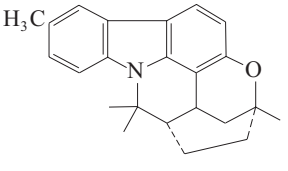
O-*(3-Methylbutanoyl):* ***Isomurralonginol isovalerate***
[131652-27-2]
$C_{20}H_{24}O_5$ 344.407
Constit. of *Murraya paniculata*. Pale yellow syrup. $[\alpha]_D$ +14.5 (c, 0.13 in $CHCl_3$).

O-*(3-Pyridinecarbonyl):* ***Isomurralonginol nicotinate***
[112606-77-6]
$C_{21}H_{19}NO_5$ 365.385
Constit. of *Murraya paniculata*. Yellow oil. $[\alpha]_D$ +31.8 (c, 0.145 in $CHCl_3$).

Ito, C. *et al., Chem. Pharm. Bull.*, 1987, **35**, 4277 (*isol, uv, ir, pmr, ms*)
Ito, C. *et al., Heterocycles*, 1987, **26**, 2959
Ito, C. *et al., J.C.S. Perkin 1*, 1990, 2047 (*isol, uv, ir, pmr, cmr, ms*)

Isomurrayazoline I-250

[85547-20-2]



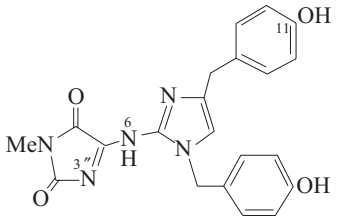
$C_{23}H_{25}NO$ 331.457

Alkaloid from the stem bark of *Murraya koenigii* (curryleaf tree) (Rutaceae). Cryst. (C_6H_6/$CHCl_3$). Mp 269-270°. $[\alpha]_D$ -7.33 ($CHCl_3$).

Bhattacharya, L. *et al., Phytochemistry*, 1982, **21**, 2432 (*isol, uv, ir, pmr, ms, struct*)

Isonaamidine A I-251

[110189-04-3]



$C_{21}H_{19}N_5O_4$ 405.412

Two tautomers of the –NH(6)C═N(3″) group are possible. Alkaloid from the Red Sea sponge *Leucetta chagosensis* and from mollusc *Notodoris citrina*. λ_{max} 227 (ϵ 20000); 264 (ϵ 540); 358 (ϵ 6000); 366 (ϵ 6800); 380 (ϵ 590) (dioxan) (Derep).

O^{11}-Me: ***Isonaamidine B***
[121819-70-3]
$C_{22}H_{21}N_5O_4$ 419.439
Alkaloid from *Leucetta chagosensis*. Amorph. yellow solid (as Zn complex). Also isol. as the bimolecular Zn complex with Isonaamidine D. λ_{max} 226 (ϵ 19400); 276 (ϵ 4300); 374 (ϵ 8000) (MeOH) (Berdy). λ_{max} 228 (ϵ 22400); 278 (ϵ 3900); 368 (ϵ 8700); 380 (ϵ 8500) (MeOH) (as Zn complex).

O^{11}-Me, $N^{1''}$-de-Me: ***Isonaamidine D***
$C_{21}H_{19}N_5O_4$ 405.412
Alkaloid from *Leucetta* cf. *chagoensis*. Amorph. yellow solid. λ_{max} 226 (ϵ 18900); 278 (ϵ 4000); 370 (ϵ 6600) (MeOH).

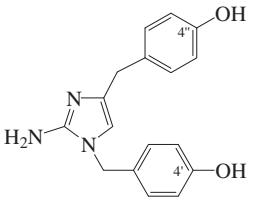
Di-Me ether: ***Isonaamidine C***
[146845-43-4]
$C_{23}H_{23}N_5O_4$ 433.466
Alkaloid from a *Leucetta* sp. and from *Notodoris gardineri*. Yellow solid (as Zn complex). Isol. as the Zn complex, to which the CAS no. refers. λ_{max} 263 ; 275 ; 367 ; 580 (MeOH) (Zn complex). λ_{max} 241 (ϵ 13100); 275 (ϵ 7400); 380 (ϵ 19100) ($CHCl_3$).

10-Methoxy, di-Me ether: ***Isonaamidine E***
$C_{24}H_{25}N_5O_5$ 463.492
Alkaloid from *Leucetta chagosensis*. Cytotoxic. Amorph. yellow solid. λ_{max} 237 (ϵ 23840); 279 (ϵ 5550); 383 (ϵ 11340) ($CHCl_3$).

Carmely, S. *et al., Tetrahedron*, 1989, **45**, 2193-2200 (*isol, uv, ir, pmr, cmr, ms, struct*)
Alvi, K.A. *et al., Tetrahedron*, 1993, **49**, 329 (*Isonaamidine C*)
Copp, B.R. *et al., J. Med. Chem.*, 1998, **41**, 3909-3911 (*Isonaamidine C*)
Fu, X. *et al., J. Nat. Prod.*, 1998, **61**, 384-386 (*Isonaamidine D complexes*)
Gross, H. *et al., J. Nat. Prod.*, 2002, **65**, 1190-1193 (*Isonaamidine E*)
Nakamura, S. *et al., Heterocycles*, 2003, **60**, 583-598 (*synth*)

Isonaamine A I-252

*4,4′-[(2-Amino-1*H*-imidazole-1,4-diyl)-bis(methylene)]bisphenol, 9CI. 2-Amino-1,4-bis(*p*-hydroxybenzyl)imidazole*
[110189-02-1]



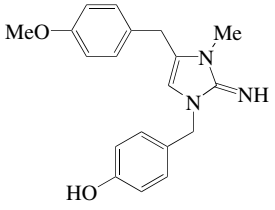
$C_{17}H_{17}N_3O_2$ 295.34
Alkaloid from the Red Sea sponge *Leucetta chagosensis* and the Indo-Pacific nudibranchs *Notodoris gardineri* and *Notodoris citrina*. Yellow powder. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. λ_{max} 227 ; 265 ; 275 ; 294 ; 300 (MeOH) (Derep).

3″-Methoxy, 4′,4″-di-Me ether: ***Isonaamine C***
$C_{20}H_{23}N_3O_3$ 353.42
Alkaloid from the sponge *Leucetta chagosensis*. Cytotoxic. Amorph. yellow solid. λ_{max} 251 (ϵ 6080); 276 (ϵ 6450); 379 (ϵ 1210) ($CHCl_3$).

Carmely, S. *et al., Tetrahedron*, 1989, **45**, 2193 (*isol, ir, pmr, cmr, ms, struct*)
Alvi, K.A. *et al., J. Nat. Prod.*, 1991, **54**, 1509 (*isol, uv, pmr*)
Molina, P. *et al., J.O.C.*, 1999, **64**, 2540-2544 (*synth, pmr, cmr*)
Gross, H. *et al., J. Nat. Prod.*, 2002, **65**, 1190-1193 (*Isonaamine C*)

Isonaamine B I-253

[203116-58-9]

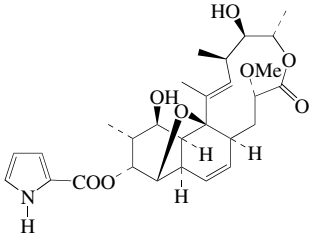


$C_{19}H_{21}N_3O_2$ 323.394
Alkaloid from the sponge *Leucetta* cf. *chagosensis*. Yellow glass. λ_{max} 226 (ϵ 19300); 276 (ϵ 5800); 308 (ϵ 3700) (MeOH).

Fu, X. *et al., J. Nat. Prod.*, 1998, **61**, 384-386 (*isol, uv, ir, pmr, cmr*)

Isonargenicin A1 I-254

[74666-93-6]

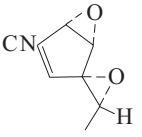


$C_{28}H_{37}NO_8$ 515.602
Prod. by *Nocardia argentinensis*. Powder. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Co-metabolite and possible rearrangement product of Nargenicin A_1 in N-276.

Cane, D.E. *et al., J.A.C.S.*, 1984, **106**, 784-787 (*isol, struct*)

Isonitrin A I-255

4-Isocyano-3′-methylspiro[6-oxabicyclo[3.1.0]hex-3-ene-2,2′-oxirane], 9CI
[83016-48-2]



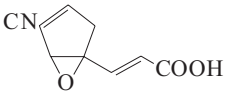
$C_8H_7NO_2$ 149.149
Prod. by *Trichoderma hamatum*. Active against gram-positive and gram-negative bacteria, yeasts and fungi. Needles. Sol. MeOH. Mp 91-91.5°. $[\alpha]_D$ +9 (c, 0.2 in MeOH). λ_{max} 230 (ϵ 13900) (MeOH) (Berdy).

▶ LD_{50} (mus, ipr) 160 mg/kg. WH1424250

Fujiwara, A. *et al., Agric. Biol. Chem.*, 1982, **46**, 1803; 1811 (*isol, props*)

Isonitrinic acid E I-256

3-(4-Isocyano-6-oxabicyclo[3.1.0]hex-3-en-1-yl)-2-propenoic acid, 9CI
[83016-51-7]



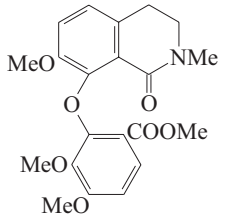
$C_9H_7NO_3$ 177.159
Prod. by *Trichoderma hamatum*. Weakly active antibacterial agent. Needles. Sol. MeOH, Et_2O, CCl_4, $CHCl_3$; poorly sol. H_2O, hexane. Mp 114-117° dec. $[\alpha]_D$ +155.5 (c, 0.2 in MeOH). λ_{max} 223 (ϵ 14160) (MeOH) (Berdy). λ_{max} 222 (ϵ 15500) (Et_2O) (Berdy).

▶ LD_{50} (mus, ipr) 240 mg/kg. UD3390800

Fujiwara, A. *et al., Agric. Biol. Chem.*, 1982, **46**, 1803; 1811 (*isol, struct*)

Isonoyaine I-257

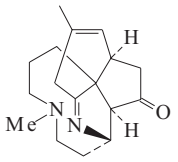
[132185-18-3]



$C_{21}H_{23}NO_7$ 401.415
Alkaloid from *Sarcocapnos saetabensis*. Powder. λ_{max} 241 ; 292 ; 313 (EtOH).

Blanco, O. *et al., Phytochemistry*, 1991, **30**, 2071-2074 (*isol, pmr, cmr*)

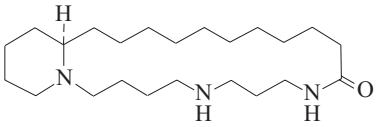
Isoobscurinine I-258



$C_{17}H_{24}N_2O$ 272.389
Alkaloid from *Lycopodium obscurum* (Lycopodiaceae). Off-white plates (hexane/Me_2CO). Mp 106-107°. $[\alpha]_D$ +107 (c, 1.1 in MeOH). Possibly an artifact.
Ayer, W.A. *et al., Can. J. Chem.*, 1989, **67**, 1077 (*isol, ir, pmr, cmr, ms, struct*)

Isooncinotine I-259

*Docosahydro-1*H*-pyrido[1,2-j][1,5,10]triazacyclodocosin-10(11*H*)-one, 9CI*



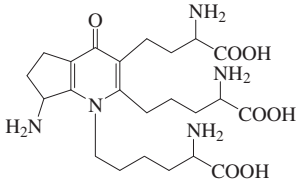
$C_{23}H_{45}N_3O$ 379.628

(*R*)-*form* [21008-80-0]
Alkaloid from the stem bark of *Oncinotis nitida*. Cryst. (pentane). Mp 66-71° (block). $[\alpha]_D$ -37 (c, 0.067 in MeOH).

(±)-*form* [62107-31-7]
Synthetic. Cryst. (Et_2O/pentane). Mp 52-68°.
Badawi, M.M. *et al., Helv. Chim. Acta*, 1968, **51**, 1813-1817 (*struct*)
Guggisberg, A. *et al., Helv. Chim. Acta*, 1974, **57**, 414-434; 1976, **59**, 3013-3025 (*isol, ir, ord, cd, ms, abs config, synth*)
Scheiper, B. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 2004, **101**, 11960-11965 (*synth, pmr, cmr, ms*)
Cheng, H.-Y. *et al., Tetrahedron*, 2007, **63**, 3000-3005 (*synth*)

Isooxodesmosine I-260

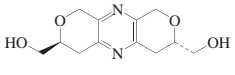
[147044-50-6]



$C_{23}H_{37}N_5O_7$ 495.575
Cross-linking amino acid. Isol. from bovine aorta elastin.
Suyama, K. *et al., Bioorg. Med. Chem. Lett.*, 1992, **2**, 1767-1770 (*isol, pmr*)

Isopalythazine I-261

*4,6,7,9-Tetrahydro-1*H*,3*H*-dipyrano[3,4-b:4′,3′-e]pyrazine-3,7-dimethanol, 9CI*
[72681-95-9]

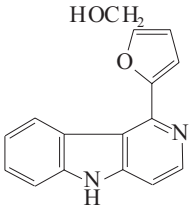


Relative Configuration

$C_{12}H_{16}N_2O_4$ 252.269
Isol. from the zoanthid *Palythoa tuberculosa*. Mp 216-219°.
Uemura, D. *et al., Chem. Lett.*, 1979, 1481-1482 (*isol, cmr, struct, synth*)
Jarglis, P. *et al., Angew. Chem., Int. Ed.*, 1982, **21**, 141-142 (*synth*)

Isoperlolyrine I-262

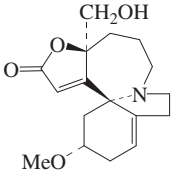
*5-(5*H*-Pyrido[4,3-b]indol-1-yl)-2-furanmethanol, 9CI. 1-(5-Hydroxymethyl-2-furanyl)-γ-carboline*
[91897-55-1]



$C_{16}H_{12}N_2O_2$ 264.283
Alkaloid from the seeds of *Gloriosa superba* (Liliaceae). Mp 186° dec.
Dvořáčková, S. *et al., Coll. Czech. Chem. Comm.*, 1984, **49**, 1536 (*isol, uv, pmr, ms, struct*)

Isophellibilidine I-263

*1,6-Didehydro-12-(hydroxymethyl)-3-methoxy-C-homo-D-nor-16-oxaerythrinan-15(12*H*)-one, 9CI*
[80249-90-7]

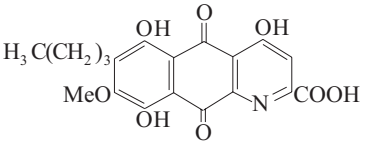


Absolute Configuration

$C_{17}H_{23}NO_4$ 305.373
Alkaloid from *Phelline billiardieri* (Phellinaceae). Mp 132°. $[\alpha]_D$ +204 (c, 1.2 in $CHCl_3$).
Langlois, N. *et al., Tet. Lett.*, 1981, **22**, 2263 (*uv, ir, cd, ms, pmr, cmr, synth, struct*)

Isophomazarin I-264

7-Butyl-5,10-dihydro-4,6,9-trihydroxy-8-methoxy-5,10-dioxobenzo[g]quinoline-2-carboxylic acid, 9CI
[71295-01-7]



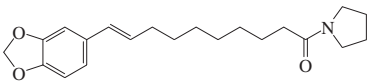
$C_{19}H_{17}NO_8$ 387.345
Isol. from cultures of *Pyrenochaeta terrestris*. Red needles. Mp 215-216°.
Effenberger, R. *et al., J.C.S. Perkin 1*, 1979, 823

Isophysostigmine I-265

Struct. unknown. Tentative occur. Not detected by Salway. Alkaloid from seeds of *Physostigma venenosum* (Fabaceae). Insol. H_2O. Mp 202° (H_2SO_4 salt). Shows similar chem. and physiol. activity to Physostigmine (no details given of chemistry).
Ogiu, *et al., Apoth. Ztg.*, 1904, **19**, 891
Salway, A.H. *et al., J.C.S.*, 1911, **99**, 2148-2159 (*Physostigma venenosum constits*)
Robinson, B. *et al., J.C.S.*, 1964, 1503-1506 (*Physostigma venenosum constits*)

Isopiperolein B I-266

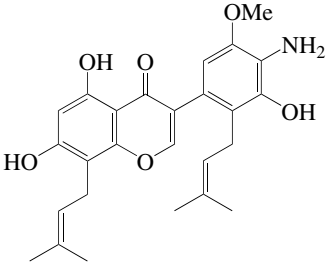
1-[10-(1,3-Benzodioxol-5-yl)-1-oxo-9-decenyl]pyrrolidine. 10-(3,4-Methylenedioxyphenyl)-9-decenoic acid pyrrolidide



$C_{21}H_{29}NO_3$ 343.465
Alkaloid from the berries of *Piper nigrum* (pepper). Yellow oil. λ_{max} 260 (no solvent reported).
Srinivas, P.V. *et al., Phytochemistry*, 1999, **52**, 957-958

Isopiscerythramine I-267

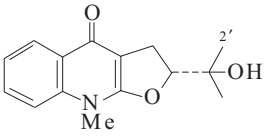
4′-Amino-3′,5,7-trihydroxy-5′-methoxy-2′,8-diprenylisoflavone
[151590-42-0]



$C_{26}H_{29}NO_6$ 451.518
Constit. of the root bark of *Piscidia erythrina*. Pale yellow powder. Mp 155-156°. λ_{max} 211 ; 260 (sh) ; 266 ; 300 (sh) ; 330 (sh) (MeOH).
Moriyama, M. *et al., Phytochemistry*, 1993, **32**, 1317-1325 (*isol, uv, pmr, cmr, ms*)

Isoplatydesmine I-268

*3,9-Dihydro-2-(1-hydroxy-1-methylethyl)-9-methylfuro[2,3-b]quinolin-4(2*H*)-one, 9CI*



(*R*)-*form*

$C_{15}H_{17}NO_3$ 259.304

(*R*)-*form* [27495-37-0]
Alkaloid from *Pelea barbigera* (preferred genus name *Melicope*) and *Araliopsis*

soyauxii (Rutaceae). Cryst. ($CHCl_3$). Mp 191°. $[\alpha]_D$ +60 (c, 1 in $CHCl_3$).

Me ether: **O-*Methylisoplatydesmine***
[220961-34-2]
$C_{16}H_{19}NO_3$ 273.331
Constit. of *Skimmia laureola*. Cryst. $[\alpha]_D$ +40 (c, 0.1 in $CHCl_3$). λ_{max} 211 (log ϵ 2.08); 237 (log ϵ 2.33) (MeOH).

(ξ)-*form*

2′-Hydroxy: ***Folisine***
[36069-06-4]
$C_{15}H_{17}NO_4$ 275.304
Alkaloid from *Haplophyllum foliosum* (Rutaceae). Cryst. (MeOH). Mp 236-237°. $[\alpha]_D^{28}$ -123 (c, 1.22 in MeOH). λ_{max} 215 (log ϵ 4.5); 237 (log ϵ 4.43); 251 (sh) (log ϵ 4.24); 299 (sh) (log ϵ 4.01); 310 (log ϵ 4.12); 321 (log ϵ 4.07) (MeOH).

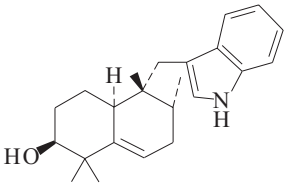
2′-Hydroxy, hydrochloride: Mp 230°.

(±)-*form* [41234-42-8]
Synthetic. Mp 213-215° (186-187°, 201-203°).

Bowman, R.M. *et al., J.C.S.(C)*, 1966, 1504 (*synth*)
Bessonova, I.A. *et al., Khim. Prir. Soedin.*, 1971, **7**, 629; *Chem. Nat. Compd. (Engl. Transl.)*, 1971, **7**, 608 (*Folisine*)
Higa, T. *et al., Phytochemistry*, 1974, **13**, 1269 (*isol, uv, ir, ms, struct*)
Vaquette, J. *et al., Phytochemistry*, 1976, **15**, 743 (*isol, uv, ir, pmr, ms, config*)
Coppola, G.M. *et al., J. Het. Chem.*, 1983, **20**, 1589 (*synth, uv, ir, pmr, cmr*)
Atta-ur-Rahman, *et al., Nat. Prod. Lett.*, 1998, **12**, 223-229 (*Methylisoplatydesmine, isol*)

Isopolyalthenol I-269

[99615-96-0]

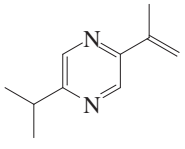


$C_{23}H_{31}NO$ 337.504
Alkaloid from *Polyalthia suaveolens* (Annonaceae). Cryst. (petrol). Mp 129°. $[\alpha]_D$ -49 (c, 0.8 in EtOH).

Kunesch, N. *et al., Tet. Lett.*, 1985, **26**, 4937 (*uv, ir, pmr, cmr, ms, struct*)

2-Isopropenyl-5-isopropylpyrazine I-270

2-(1-Methylethenyl)-5-(1-methylethyl)-pyrazine
[704909-07-9]

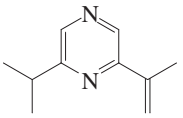


$C_{10}H_{14}N_2$ 162.234
Prod. by *Chondromyces crocatus*. Liq.

Dickschat, J.S. *et al., Eur. J. Org. Chem.*, 2005, 4141-4153 (*isol, synth, pmr, cmr, ms*)

2-Isopropenyl-6-isopropylpyrazine I-271

2-(1-Methylethenyl)-6-(1-methylethyl)-pyrazine
[704909-06-8]

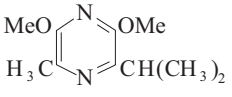


$C_{10}H_{14}N_2$ 162.234
Prod. by *Chondromyces crocatus*.

Schulz, S. *et al., Tetrahedron*, 2004, **60**, 3863-3872 (*isol*)

2-Isopropyl-3,5-dimethoxy-6-methylpyrazine I-272

2,6-Dimethoxy-3-methyl-5-(1-methylethyl)pyrazine, 9CI
[32021-42-4]

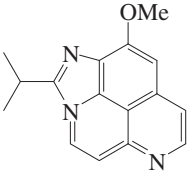


$C_{10}H_{16}N_2O_2$ 196.249
Constit. of Galbanum oil.

Burrell, J.W.K. *et al., Chem. Ind. (London)*, 1970, 1409 (*synth*)
Takken, H.J. *et al., J. Agric. Food Chem.*, 1975, **23**, 638 (*synth*)

2-Isopropyl-10-methoxybenzimidazo[6,7,1-*def*][1,6]naphthyridine I-273

[597553-93-0]

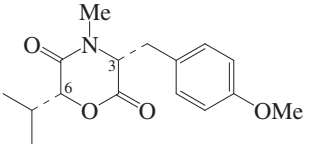


$C_{16}H_{15}N_3O$ 265.314
Alkaloid from a *Xestospongia* sp. Brown gum.

Calcul, L. *et al., Tetrahedron*, 2003, **59**, 6539-6544 (*isol, pmr, cmr*)

6-Isopropyl-3-(4-methoxybenzyl)-4-methyl-2,5-morpholinedione I-274

3-(4-Methoxyphenylmethyl)-4-methyl-6-(1-methylethyl)-2,5-morpholinedione, 9CI



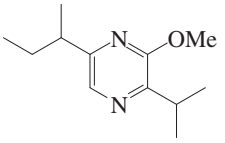
$C_{16}H_{21}NO_4$ 291.346

(3*R,6*R**)-*form***
Isol. from the sea hare *Bursatella leachii*. Amorph. solid. $[\alpha]_D^{20}$ -58.2 (c, 0.05 in MeOH). λ_{max} 223 (log ϵ 2.93); 250 (log ϵ 2.2); 273 (log ϵ 2.08); 281 (log ϵ 1.99) (MeOH).

Suntornchashwej, S. *et al., J. Nat. Prod.*, 2005, **68**, 951-955 (*isol, pmr, cmr*)

2-Isopropyl-3-methoxy-5-(1-methylpropyl)pyrazine I-275

3-Methoxy-2-(1-methylethyl)-5-(1-methylpropyl)pyrazine
[870543-97-8]

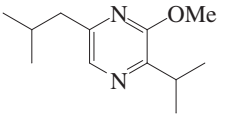


$C_{12}H_{20}N_2O$ 208.303
Prod. by *Chondromyces crocatus*.

Dickschat, J.S. *et al., Eur. J. Org. Chem.*, 2005, 4141-4153 (*isol, synth, pmr, cmr, ms*)

2-Isopropyl-3-methoxy-5-(2-methylpropyl)pyrazine I-276

3-Methoxy-2-(1-methylethyl)-5-(2-methylpropyl)pyrazine
[68290-69-7]

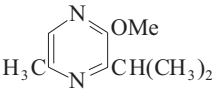


$C_{12}H_{20}N_2O$ 208.303
Prod. by *Chondromyces crocatus*.

Dickschat, J.S. *et al., Eur. J. Org. Chem.*, 2005, 4141-4153 (*isol, synth, pmr, cmr, ms*)

3-Isopropyl-2-methoxy-5-methylpyrazine I-277

2-Methoxy-5-methyl-3-(1-methylethyl)-pyrazine, 9CI
[32021-41-3]

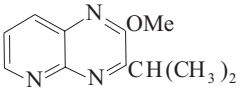


$C_9H_{14}N_2O$ 166.222
Constit. of Galbanum oil.

Burrell, J.W.K. *et al., Chem. Ind. (London)*, 1970, 1409 (*synth*)
Takken, H.J. *et al., J. Agric. Food Chem.*, 1975, **23**, 638 (*synth*)

3-Isopropyl-2-methoxypyrido[2,3-*b*]pyrazine I-278

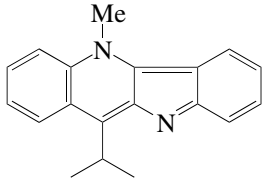
2-Methoxy-3-(1-methylethyl)pyrido[2,3-b]pyrazine, 9CI
[103518-16-7]



$C_{11}H_{13}N_3O$ 203.243
Isol. from the lipid fraction extract of the springtail *Tetrodontophora bielanensis*. Noncryst.

Buděšinský, M. *et al., Coll. Czech. Chem. Comm.*, 1986, **51**, 956 (*isol, ms, pmr, struct*)

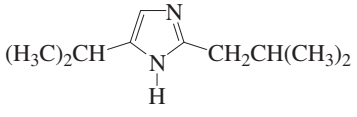
11-Isopropyl-5-methyl-5*H*-indolo[3,2-*b*]quinoline **I-279**
*11-Isopropyl-5-methyl-5*H*-quindoline. **11-Isopropylcryptolepine***
[219843-82-0]



$C_{19}H_{18}N_2$ 274.365
Alkaloid from the dried roots of *Cryptolepis sanguinolenta*. Deep purple solid.

Hadden, C.E. *et al., J. Nat. Prod.*, 1999, **62**, 238-240 (*isol, pmr, cmr, N-15 nmr*)

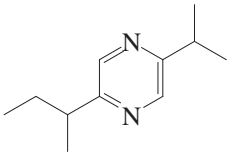
5-Isopropyl-2-(2-methylpropyl)-1*H*-imidazole **I-280**
*5-(1-Methylethyl)-2-(2-methylpropyl)-1*H*-imidazole. 2-Isobutyl-5-isopropyl-1*H*-imidazole.* ***Catharsitoxin F***



$C_{10}H_{18}N_2$ 166.266
Isol. from the Chinese remedy Qiung laug prepd. from the beetle *Catharsius molossus*. Oil.

Suenaga, K. *et al., Tet. Lett.*, 2001, **42**, 7079-7081 (*isol, pmr*)

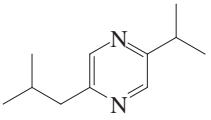
2-Isopropyl-5-(1-methylpropyl)pyrazine **I-281**
2-(1-Methylethyl)-5-(1-methylpropyl)-pyrazine
[595605-19-9]



$C_{11}H_{18}N_2$ 178.277
Prod. by *Chondromyces crocatus* and *Paenibacillus polymyxa*.

Beck, H.C. *et al., FEMS Microbiol. Lett.*, 2003, **220**, 67-73 (*isol*)
Dickschat, J.S. *et al., Eur. J. Org. Chem.*, 2005, 4141-4153 (*isol*)

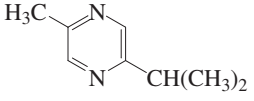
2-Isopropyl-5-(2-methylpropyl)pyrazine **I-282**
2-(1-Methylethyl)-5-(2-methylpropyl)-pyrazine. 2-Isobutyl-5-isopropylpyrazine
[68290-70-0]



$C_{11}H_{18}N_2$ 178.277
Prod. by *Chondromyces crocatus* and *Paenibacillus polymyxa*.

Beck, H.C. *et al., FEMS Microbiol. Lett.*, 2003, **220**, 67-73 (*isol*)
Dickschat, J.S. *et al., Eur. J. Org. Chem.*, 2005, 4141-4153 (*isol*)

2-Isopropyl-5-methylpyrazine, 8CI **I-283**
2-Methyl-5-(1-methylethyl)pyrazine, 9CI. FEMA 3554
[13925-05-8]



$C_8H_{12}N_2$ 136.196
Present in various cooked foods. Prod. by *Chondromyces crocatus*. Liq. with peanut-like odour. Bp_{13} 68-70° (as 1:1 mixt. with the 2,6-isomer). n_D^{23} 1.4865.

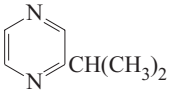
Goldman, I.M. *et al., Helv. Chim. Acta*, 1967, **50**, 694-705 (*synth, ms, isol*)
Peer, H.G. *et al., Rec. Trav. Chim. (J. R. Neth. Chem. Soc.)*, 1969, **88**, 1335-1336 (*synth*)
Oser, B.L. *et al., Food Technol. (Chicago)*, 1978, **32**, 60-62; **32(2)**, 64-66; 68-70 (*use*)
Cantalego, M.J. *et al., J. Agric. Food Chem.*, 1997, **45**, 1853-1860 (*glc, detn, earth-almond*)
Ulrich, D. *et al., Am. J. Potato Res.*, 2000, **77**, 111-117 (*glc, detn*)
Schulz, S. *et al., Tetrahedron*, 2004, **60**, 3863-3872 (*isol*)

2-Isopropyl-6-methylpyrazine **I-284**
2-Methyl-6-(1-methylethyl)pyrazine, 9CI
[24541-74-0]

$C_8H_{12}N_2$ 136.196
Prod. by *Chondromyces crocatus*. No phys. props. reported.

Peer, H.G. *et al., Rec. Trav. Chim. (J. R. Neth. Chem. Soc.)*, 1969, **88**, 1335-1336 (*synth*)
Bramwell, A.F. *et al., J.C.S.(C)*, 1971, 1627-1632 (*synth*)
Schulz, S. *et al., Tetrahedron*, 2004, **60**, 3863-3872 (*isol*)

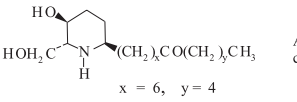
Isopropylpyrazine **I-285**
(1-Methylethyl)pyrazine, 9CI. FEMA 3940
[29460-90-0]



$C_7H_{10}N_2$ 122.169
Prod. by *Chondromyces crocatus*. Flavouring agent. Oil.

Oerteh, R.P. *et al., Anal. Chem.*, 1972, **44**, 1589 (*Raman*)
Rizzi, G.P. *et al., J.O.C.*, 1974, **39**, 3598 (*pmr, synth*)
Konakahara, T. *et al., Heterocycles*, 1979, **12**, 373
Schulz, S. *et al., Tetrahedron*, 2004, **60**, 3863-3872 (*isol*)

Isoprosopinine A **I-286**
12-[5-Hydroxy-6-(hydroxymethyl)-2-piperidinyl]-6-dodecanone, 9CI. 3-Hydroxy-2-hydroxymethyl-6-(7-oxododecyl)piperidine



$C_{18}H_{35}NO_3$ 313.479
Alkaloid obt. only as a mixt. with Isoprosopinine B, I-287.

(+)-*form* [38764-79-3]
Alkaloid from roots and stem bark of *Prosopis africana* (Fabaceae). Cryst. (EtOAc). Mp 95° (isomeric mixt.). $[\alpha]_D$ +16 ($CHCl_3$).

(±)-*form*
Synthetic. Mp 86-87°.
Khuong-Huu, Q. *et al., Bull. Soc. Chim. Belg.*, 1972, **81**, 425; 443 (*isol, struct, ms, abs config*)
Khuong-Huu, Q. *et al., J. Chem. Soc. Pak.*, 1982, **4**, 267 (*cmr*)
Birkinshaw, T.N. *et al., Tet. Lett.*, 1987, **28**, 813 (*synth, ir, pmr, cmr*)

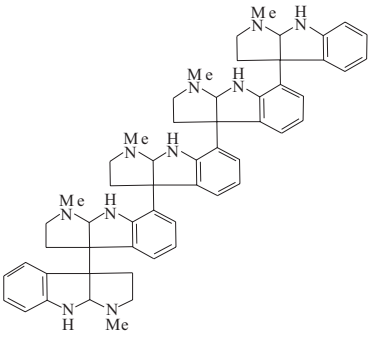
Isoprosopinine B **I-287**
12-[5-Hydroxy-6-(hydroxymethyl)-2-piperidinyl]-5-dodecanone, 9CI. 3-Hydroxy-2-hydroxymethyl-6-(8-oxododecyl)piperidine
As Isoprosopinine A, I-286 with x = 7, y = 3

$C_{18}H_{35}NO_3$ 313.479
Alkaloid obt. only as a mixt. with Isoprosopinine A, I-286.

Natural-form [38764-80-6]
Alkaloid from roots and stem bark of *Prosopis africana* (Fabaceae).

(±)-*form*
Synthetic. Mp 90-91°.
[96894-88-1]
Khuong-Huu, Q. *et al., Bull. Soc. Chim. Belg.*, 1972, **81**, 425; 443 (*isol, ms, struct, abs config*)
Khuong-Huu, Q. *et al., J. Chem. Soc. Pak.*, 1982, **4**, 267 (*cmr*)
Holmes, A.B. *et al., Chem. Comm.*, 1985, 37 (*synth*)
Birkinshaw, T.N. *et al., Tet. Lett.*, 1987, **28**, 813 (*synth, ir, pmr, cmr*)

Isopsychotridine A **I-288**
[112295-92-8]
[98985-58-1]



$C_{55}H_{62}N_{10}$ 863.162
Alkaloid from *Psychotria oleoides* (Rubiaceae). Amorph. $[\alpha]_D$ +66 (c, 1 in $CHCl_3$).

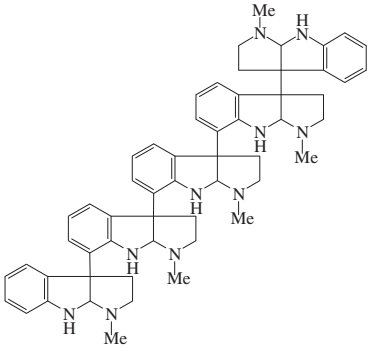
Stereoisomer (1): ***Isopsychotridine B***
[112295-91-7]
$C_{55}H_{62}N_{10}$ 863.162
Alkaloid from *Psychotria oleoides* (Rubiaceae). Amorph. $[\alpha]_D$ +70 (c, 1 in $CHCl_3$). Tentative stereochem. assignments have been made.

Stereoisomer (2): ***Isopsychotridine C***. *Alkaloid D*†
[129651-29-2]
$C_{55}H_{62}N_{10}$ 863.162
Alkaloid from leaves of *Psychotria forsteriana* (Rubiaceae). Exhibits potent cytotoxicity. Amorph. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. $[\alpha]_D$ +183.3 (c, 0.05 in EtOH). λ_{max} 243 (ϵ 17780); 303 (ϵ 10230) (EtOH) (Berdy).

Roth, A. *et al., Planta Med.*, 1985, 289 (*isol, uv, ir, cmr, ms, struct*)
Libot, F. *et al., J. Nat. Prod.*, 1987, **50**, 468-473 (*isol, uv, ir, pmr, ms, struct*)
Jannic, V. *et al., J. Nat. Prod.*, 1999, **62**, 838-843 (*stereochem, Isopsychotridine B*)

Isopsychotridine E I-289

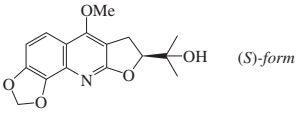
[168611-80-1]



$C_{55}H_{62}N_{10}$ 863.162
Alkaloid from *Calycodendron milnei*. Shows analgesic props.

Saad, H.-E.A. *et al., Phytochemistry*, 1995, **61**, 313-316

Isopteleflorine I-290



(*S*)-*form*

$C_{16}H_{17}NO_5$ 303.314

(S)-form [174513-97-4]
Alkaloid from *Orixa japonica*. Oil. $[\alpha]_D^{20}$ -18.3 (c, 0.2 in $CHCl_3$). λ_{max} 255 (13000); 307 (1300); 325 (1100) (MeCN).

Ac: **O-*Acetylisopteleflorine***
[174231-90-4]
$C_{18}H_{19}NO_6$ 345.351
Alkaloid from stems of *Orixa japonica*. Oil. $[\alpha]_D^{25}$ +6.4 (c, 0.7 in $CHCl_3$).

N-*Me:* ***Hydroxyluninium(1+)***. O^4-*Methylhydroxyluninium(1+)*
[60593-04-6]
[70474-30-5 (perchlorate), 55812-57-2 (chloride)]
$C_{17}H_{20}NO_5^{\oplus}$ 318.349
Alkaloid from the leaves of *Ptelea trifoliata* (Rutaceae). Mp 225° (133-135°) (as chloride) Mp 176-178° (as perchlorate). $[\alpha]_D^{20}$ -15.6 (c, 0.01 in MeOH) (chloride).

(±)-form [134353-95-0]
Synthetic. Solid (Et_2O/diisopropyl ether). Mp 163-166°.

N-*Me:*
Synthetic. Cryst. (MeOH/Et_2O) (as iodide). Mp 159-161° (iodide).

(ξ)-form

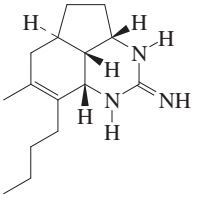
Deoxy, N-*Me:* **O-*Methylluninium***
[26605-52-7]
$C_{17}H_{20}NO_4^{\oplus}$ 302.349
Alkaloid from the leaves of *Lunasia quercifolia* (Rutaceae). Microcryst. (MeOH/Et_2O) (as perchlorate). Mp 208-209° (perchlorate). $[\alpha]_D^{24}$ -23.8 (c, 1.2 in MeOH) (perchlorate).

Deoxy, 1′,2′-didehydro, N-*Me:* ***Ptelefolidonium(1+)***
[59719-27-6]
$C_{17}H_{18}NO_4^{\oplus}$ 300.333
Alkaloid from the leaves of *Ptelea trifoliata* (Rutaceae).

Hart, N.K. *et al., Aust. J. Chem.*, 1966, **19**, 2185-2187 (*O-Methylluninium*)
Mitscher, L.A. *et al., J. Nat. Prod.*, 1975, **38**, 109-116 (*O-Methylhydroxyluninium, struct*)
Rideau, M. *et al., Phytochemistry*, 1979, **18**, 155-159 (*Hydroxyluninium, Ptelefolidonium*)
Petit-Paly, G. *et al., Planta Med.*, 1989, **55**, 209-210 (*Ptelefolidonium*)
Neville, C.F. *et al., J.C.S. Perkin 1*, 1991, 259-262 (*O-Methylhydroxyluninium, synth*)
Funayama, S. *et al., Phytochemistry*, 1996, **41**, 1231-1233 (*O-Acetylisopteleflorine*)
Noshita, T. *et al., Biosci., Biotechnol., Biochem.*, 2001, **65**, 710-713 (*isol, uv, pmr, cmr, ms*)
Boyd, D.R. *et al., Chem. Comm.*, 2002, 3070-3071 (*abs config*)

Isoptilocaulin I-291

[78777-03-4]



Absolute Configuration

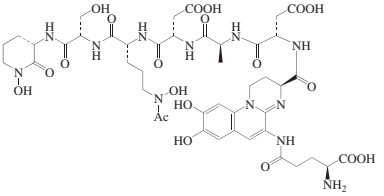
$C_{15}H_{25}N_3$ 247.383

Constit. of the Caribbean sponge *Ptilocaulis* aff. *Ptilocaulis spiculifer*. Shows potent antitumour props. and activity against gram-positive bacteria. Poorly sol. hexane. λ_{max} 225 (ϵ 10000) (MeOH) (Derep).

Harbour, G.C. *et al., J.A.C.S.*, 1981, **103**, 5604-5606 (*isol, pmr, cmr, ms*)
Yu, M. *et al., J.O.C.*, 2008, **73**, 9065-9074 (*synth, pmr, cmr*)

Isopyoverdin Pp BTP 1 I-292

[159325-01-6]



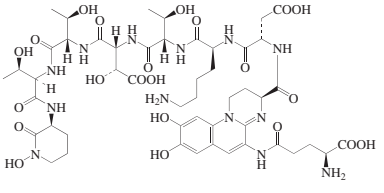
Absolute Configuration

$C_{44}H_{60}N_{12}O_{20}$ 1077.026
Isol. from *Pseudomonas putida* BTP 1. Siderophore.

Jacques, P. *et al., Z. Naturforsch., C*, 1995, **50**, 622-629 (*isol, struct*)
Michalke, R. *et al., Z. Naturforsch., C*, 1997, **52**, 549-550 (*config*)

Isopyoverdin Pp CFML 90-33 I-293

[334009-11-9]



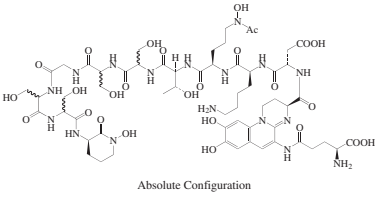
Absolute Configuration

$C_{49}H_{71}N_{13}O_{22}$ 1194.174
Isol. from *Pseudomonas putida* strain CFML 90-33. Siderophore.

Sultana, R. *et al., Tetrahedron*, 2001, **57**, 1019-1023 (*isol, pmr, cmr, ms*)

Isopyoverdin Pp CFML 90-44 I-294

[349112-28-3]



Absolute Configuration

$C_{58}H_{87}N_{17}O_{26}$ 1438.424
Conts. 2 D-Ser and 2 L-Ser residues, posns. unknown. Isol. from *Pseudomonas putida* CFML 90-44. Siderophore.

Sultana, R. *et al., Z. Naturforsch., C*, 2001, **56**, 303-307

Isopyroine I-295

[1399-97-9]

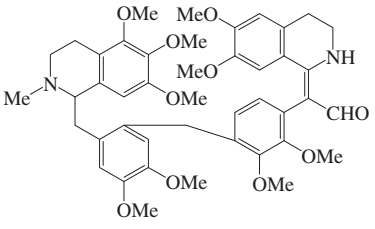
Struct. unknown. MF uncertain. Alka-

loid from *Isopyrum biternatum*. Cryst. (EtOH). Mp 160° Mp 255-257° (as hydrochloride).

Frankforter, G.B. *et al., J.A.C.S.*, 1903, **25**, 99-102 (*isol*)

Isopyruthaldine I-296

[307342-48-9]



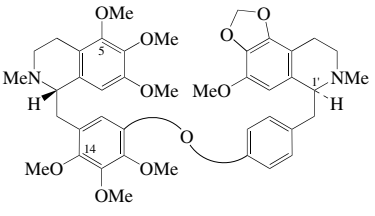
$C_{44}H_{52}N_2O_{10}$ 768.902

Alkaloid from *Isopyrum thalictroides*. Amorph. yellow solid. λ_{max} 215 (log ϵ 6.72); 242 (log ϵ 6.66); 250 (sh) (log ϵ 6.59); 260 (sh) (log ϵ 6.44); 282 (sh) (log ϵ 6.56); 292 (log ϵ 6.65) (EtOH).

Istatkova, R.S. *et al., Phytochemistry*, 2000, **54**, 959-964 (*isol, struct*)

Isopyruthaline I-297

[189316-07-2]



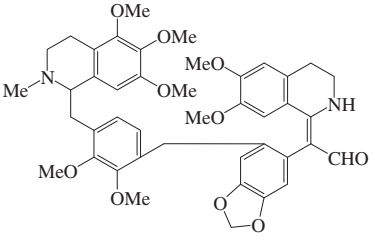
$C_{42}H_{50}N_2O_{10}$ 742.864

Alkaloid from roots and rhizomes of *Isopyrum thalictroides*. Amorph. solid. $[\alpha]_D$ +21 (c, 0.45 in $CHCl_3$). λ_{max} 208 (log ϵ 6.02); 232 (sh) (log ϵ 5.65); 283 (log ϵ 5.14) (EtOH).

Philipov, S.A. *et al., Phytochemistry*, 1997, **44**, 1591 (*isol, uv, ir, pmr, ms, cd, struct*)

Isopythaldine I-298

[307342-50-3]



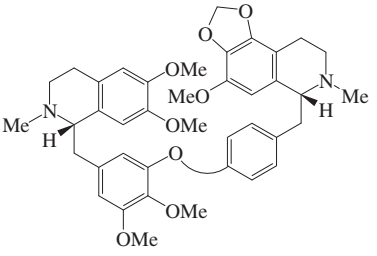
$C_{43}H_{48}N_2O_{10}$ 752.86

Alkaloid from *Isopyrum thalictroides*. Amorph. yellow solid. λ_{max} 215 (log ϵ 6.64); 242 (log ϵ 6.61); 250 (sh) (log ϵ 6.54); 260 (sh) (log ϵ 6.4); 282 (sh) (log ϵ 6.48); 292 (log ϵ 6.56) (EtOH).

Istatkova, R.S. *et al., Phytochemistry*, 2000, **54**, 959-964 (*isol, struct*)

Isopythaline I-299

[189316-08-3]



$C_{40}H_{46}N_2O_8$ 682.812

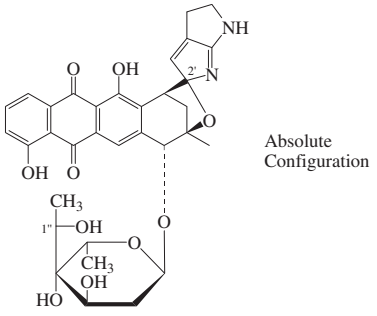
From roots and rhizomes of *Isopyrum thalictroides*. Amorph. solid. $[\alpha]_D$ -6 (c, 0.35 in $CHCl_3$). λ_{max} 207 (log ϵ 6.43); 236 (log ϵ 6.1); 260 (log ϵ 5.79); 283 (log ϵ 5.74) (EtOH).

Philipov, S.A. *et al., Phytochemistry*, 1997, **44**, 1591

Isoquinocycline A I-300

PA 371γ. Antibiotic PA 371γ

[37332-17-5]



Absolute Configuration

$C_{33}H_{34}N_2O_{10}$ 618.639

Anthracycline antibiotic. Isol. from *Streptomyces aureofaciens*. Active against gram-positive bacteria and mycobacteria. Orange powder (as hydrochloride). $[\alpha]_D^{25}$ +112 (c, 1 in AcOH) (hydrochloride). Furamai *et al* gave orig. sugar moiety as L-lyxo. This was later corrected to L-xylo. λ_{max} 231 (ϵ 55000); 260 (ϵ 19100); 292 (ϵ 10700); 430 (ϵ 12000) (0.1*N* HCl) (Derep). λ_{max} 245 (ϵ 52500); 280 (sh) (ϵ 15500); 500 (ϵ 15100) (0.1*N* NaOH) (Derep). λ_{max} 228 (ϵ 71800); 258 (ϵ 45000); 288 (sh) (ϵ 18300); 425 (ϵ 18900) (MeOH) (Derep).

1′′-Ketone: ***Isoquinocycline B****. γ-Activity X. PA 371ϵ. Antibiotic PA 371ϵ*
[37332-18-6]
$C_{33}H_{32}N_2O_{10}$ 616.623
From *Streptomyces aureofaciens*. Active against gram-positive bacteria and mycobacteria. Orange powder (as hydrochloride). $[\alpha]_D$ +24 (MeOH) (hydrochloride).

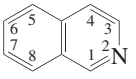
2′-Epimer, 1′′-ketone: ***Quinocycline B****. Kosinostatin*
[37231-76-8]
$C_{33}H_{32}N_2O_{10}$ 616.623
Prod. by *Micromonospora* sp. TP-A0468 and *Streptomyces aureofaciens*. Dark yellow powder. Mp >° 155 dec. $[\alpha]_{Hg}^{25}$ +116.7 (c, 0.11 in MeOH/HCl). Identity with Kosinostatin most probable. Direct comparison not possible. λ_{max} 228 (log ϵ 4.76); 258 (log ϵ 4.09); 291 (log ϵ 4.09); 423 (log ϵ 4.2) (MeOH).

Celmer, C.D. *et al., Antibiot. Annu.*, 1958, 484; 493 (*isol*)
Cosulich, D.B. *et al., Tet. Lett.*, 1963, 453; 1964, 750 (*struct*)
Tulinsky, A. *et al., J.A.C.S.*, 1964, **86**, 5368-5369 (*cryst struct*)
Matern, U. *et al., Eur. J. Biochem.*, 1972, **29**, 1-4; 5 (*struct*)
Paulsen, H. *et al., Chem. Ber.*, 1978, **111**, 869-878 (*synth*)
Fukushima, K. *et al., CA*, 1979, **93**, 114889x (*ms*)
Furumai, T. *et al., J. Antibiot.*, 2002, **55**, 128-133; 134-140; 2003, **56**, C1 (*isol, uv, pmr, cmr, ms, revised struct*)

Isoquinoline, 9CI, 8CI I-301

2-Benzazine. Benzopyridine. 2-Azanaphthalene. FEMA 2978

[119-65-3]



C_9H_7N 129.161

Isol. from the upper parts of *Spigelia anthelmia* (Loganiaceae). Used for photometric detn. of Ni (λ_{max} 410 nm, ϵ 7900). Flavouring agent. Hygroscopic cryst. or oil. Sol. EtOH, Et_2O, Me_2CO, C_6H_6. d_4^{20} 1.1. Mp 25.5-26°. Bp 242° Bp_{40} 142°. pK_a 5.4 (25°).

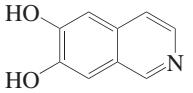
▶ Fl. p. >107°. Severe eye and skin irritant. LD_{50} (rat, orl) 360 mg/kg. LD_{50} (rbt, skn) 590 mg/kg. NW6825000

Wagner, H. *et al., Planta Med.*, 1986, 378 (*isol, uv, pmr, ms*)

6,7-Isoquinolinediol I-302

6,7-Dihydroxyisoquinoline

[48125-47-9]



$C_9H_7NO_2$ 161.16

7-Me ether: 6-Hydroxy-7-methoxyisoquinoline. 7-Methoxy-6-isoquinolinol
$C_{10}H_9NO_2$ 175.187
Light brown solid. Mp 198-200°.

Di-Me ether: 6,7-Dimethoxyisoquinoline. ***Backebergine***
[15248-39-2]
$C_{11}H_{11}NO_2$ 189.213
Alkaloid from *Backebergia militaris* (preferred genus name *Pachycereus*) (Cactaceae). Cryst. (Et_2O). Mp 93-94°.

Di-Me ether, hydrochloride:
Cryst. + $3H_2O$ (dil. HCl). Mp 219° (208-210° dec.).

Di-Me ether, N*-Me:* ***6,7-Dimethoxy-2-methylisoquinolinium(1+)***

[23901-08-8]
[74046-23-4]
$C_{12}H_{14}NO_2^{\oplus}$ 204.248
Quaternary alkaloid from the fruits of *Thalictrum revolutum* (Ranunculaceae). Fine needles (EtOH/hexane) (as chloride). Mp 185.5-186.5° (chloride).

Methylene ether, N-*Me:* see *N*-Me, in 6,7-Methylenedioxyisoquinoline, M-446

Birch, A.J. *et al., J.C.S. Perkin 1*, 1974, 2185 (*synth*)
Wehrli, P.A. *et al., Synthesis*, 1974, 288 (*synth*)
Hughes, D.W. *et al., Can. J. Chem.*, 1976, **54**, 2252 (*cmr*)
Wu, J. *et al., J. Nat. Prod.*, 1980, **43**, 270 (*di-Me ether N-Me, isol, uv, pmr, ms, struct*)
Boger, D.L. *et al., Tetrahedron*, 1981, **37**, 3977 (*synth*)
Ferrigni, N.R. *et al., J. Nat. Prod.*, 1984, **47**, 839 (*isol, ms, synth*)
Janssen, R.H.A.M. *et al., Phytochemistry*, 1989, **28**, 2833 (*pmr, cmr*)
Kucznierz, R. *et al., Synth. Commun.*, 1999, **29**, 1617-1625 (*7-Me ether*)

7,8-Isoquinolinediol, 9CI I-303

7,8-Dihydroxyisoquinoline
[142913-22-2]
[142913-21-1 (hydrobromide)]

$C_9H_7NO_2$ 161.16
Solid; yellow needles + ½H_2O (as hydrobromide). Mp 243-245° (hydrobromide).

Di-Me ether: 7,8-Dimethoxyisoquinoline. ***Isobackebergine***
[16503-95-0]
$C_{11}H_{11}NO_2$ 189.213
Alkaloid from *Backebergia militaris* (preferred genus name *Pachycereus*) (Cactaceae). Oil. Bp_1 140° $Bp_{0.15}$ 107-109°.

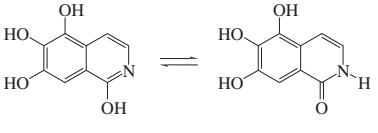
Di-Me ether, picrate:
Wispy needles + 1EtOH (EtOH). Mp 204°.

1,2,3,4-Tetrahydro: see 1,2,3,4-Tetrahydro-7,8-dihydroxyisoquinoline, T-159

Djerassi, C. *et al., J.O.C.*, 1956, **21**, 975 (*synth*)
Bevis, M.J. *et al., Tetrahedron*, 1969, **25**, 1585; 1971, **27**, 1253 (*synth*)
Ferrigni, N.R. *et al., J. Nat. Prod.*, 1984, **47**, 839 (*isol, ms, synth*)
Janssen, R.H.A.M. *et al., Phytochemistry*, 1989, **28**, 2833 (*pmr, cmr*)
U.S. Pat., 1993, 5 194 433; *CA*, **117**, 111380c (*synth, ir, pmr*)

1,5,6,7-Isoquinolinetetrol I-304

*5,6,7-Trihydroxy-1(2*H*)-isoquinolinone. 1,5,6,7-Tetrahydroxyquinoline*



$C_9H_7NO_4$ 193.159

NH-form

Tri-Me ether, N-*Me: 5,6,7-Trimethoxy-2-methyl-1(2*H*)-isoquinolinone.* ***Thalactamine***
[23434-97-1]
$C_{13}H_{15}NO_4$ 249.266
Alkaloid from the above-ground parts of *Thalictrum minus* and the leaves of *Thalictrum minus* var. *microphyllum* (Ranunculaceae). Needles (petrol), plates (MeOH). Mp 112-114°.

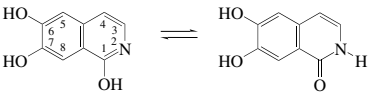
3,4-Dihydro, 6,7-di-Me ether, N-*Me: 3,4-Dihydro-5-hydroxy-2-methyl-1(2*H*)-isoquinolinone.* ***5-Hydroxy-N-methylcorydaline***
$C_{12}H_{15}NO_4$ 237.255
Alkaloid from the leaves of *Thalictrum delavayi*. Plates ($CHCl_3$). Mp 230-231°.

3,4-Dihydro, tri-Me ether, N-*Me: 3,4-Dihydro-5,6,7-trimethoxy-2-methyl-1(2*H*)-isoquinolinone.* **N-*Methylthalidaldine***
[23434-99-3]
$C_{13}H_{17}NO_4$ 251.282
Trace alkaloid from *Thalictrum fendleri* (whole plant) (Ranunculaceae). Mp 104-106°. Thalidaldine appears to be unknown as an alkaloid.

Mollov, N.M. *et al., Tet. Lett.*, 1969, 1951 (*Thalactamine, uv, ir, pmr, ms, struct*)
Shamma, M. *et al., Tetrahedron*, 1971, **27**, 727 (*N-Methylthalidaldine*)
Duchevska, Kh. *et al., Izv. Akad. Nauk SSSR, Ser. Khim.*, 1975, **8**, 134; *CA*, **84**, 150809a (*Thalactamine, synth*)
Belgaonkar, V.H. *et al., J. Het. Chem.*, 1978, **15**, 257 (*Thalactamine, synth, uv, ir, pmr*)
Mashelkar, U.C. *et al., Indian J. Chem., Sect. B*, 1979, **18**, 301 (*Thalactamine, synth*)
Başer, K.H.C. *et al., J. Nat. Prod.*, 1982, **45**, 704 (*Thalactamine, isol, uv, ir, pmr, ms*)
Wang, Y. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 2003, **45**, 500-502 (*5-Hydroxy-N-methylcorydaldine*)

1,6,7-Isoquinolinetriol I-305

*6,7-Dihydroxy-1(2*H*)-isoquinolinone, 9CI. 1,6,7-Trihydroxyisoquinoline*



$C_9H_7NO_3$ 177.159

*6-Me ether: 7-Hydroxy-6-methoxy-1(2*H*)-isoquinolinone. 1,7-Dihydroxy-6-methoxyisoquinoline.* **N-*Demethyldoryphornine***
[711006-89-2]
$C_{10}H_9NO_3$ 191.186
Alkaloid from the roots of *Menispermum dauricum*. Rods (MeOH). Mp 257-259°. λ_{max} 243 (log ε 3.24); 279 (log ε 1.14); 290 (log ε 1.17); 325 (log ε 0.83) (MeOH).

*6,7-Di-Me ether: 1-Hydroxy-6,7-dimethoxyisoquinoline. 6,7-Dimethoxy-1(2*H*)-isoquinolinone*
[16101-63-6]
$C_{11}H_{11}NO_3$ 205.213
Cryst. ($CHCl_3$/C_6H_6). Mp 244-245° (237°). λ_{max} 246 (log ε 4.26); 253 (sh) (log ε 4); 268 (log ε 3.45); 278 (log ε 3.48); 290 (log ε 3.51); 310 (log ε 3.25); 322 (log ε 3.35); 335 (log ε 3.24) (EtOH).

*Methylene ether: 1,3-Dioxolo[4,5-*g*]isoquinolin-5(6*H*)-one, 9CI. 1-Hydroxy-6,7-methylenedioxyisoquinoline. 3,4-Dehydronoroxyhydrastinine. 6,7-Methylenedioxyisocarbostyril. 6,7-Methylenedioxy-1(2*H*)-isoquinolinone*
[24188-76-9]
$C_{10}H_7NO_3$ 189.17
Alkaloid from *Corydalis bungeana* and *Thalictrum rugosum*. Cryst. ($CHCl_3$ or EtOH); needles (C_6H_6/Me_2CO). Mp 278° (268-270°). *NH*-form predominates.

*3,4-Dihydro: 3,4-Dihydro-1,6,7-isoquinolinetriol. 3,4-Dihydro-1,6,7-trihydroxyisoquinoline. 3,4-Dihydro-6,7-dihydroxy-1(2*H*)-isoquinolinone.* ***Pericampylinone A***. *Iseluxine*
[330847-76-2]
$C_9H_9NO_3$ 179.175
Alkaloid from *Aristolochia elegans* and *Iseia luxurians*. Pale yellow needles ($CHCl_3$). Mp 229-230°. λ_{max} 220 (log ε 4.23); 267 (log ε 3.75); 304 (log ε 3.69) (MeOH).

*3,4-Dihydro, 6-Me ether: 3,4-Dihydro-7-hydroxy-6-methoxy-1(2*H*)-isoquinolinone. 3,4-Dihydro-6-methoxy-1,7-isoquinolinediol.* ***Northalifoline***
[157669-72-2]
$C_{10}H_{11}NO_3$ 193.202
Alkaloid from pedicels of *Lindera megaphylla* (Lauraceae). Rods (MeOH/Me_2CO). Mp 222-224°.

*3,4-Dihydro, 6,7-di-Me ether: 3,4-Dihydro-6,7-dimethoxy-1(2*H*)-isoquinolinone. 3,4-Dihydro-6,7-dimethoxy-1-isoquinolinol. 3,4-Dihydro-6,7-dimethoxyisocarbostyril.* ***Corydaldine***
[493-49-2]
$C_{11}H_{13}NO_3$ 207.229
Alkaloid from *Berberis baluchistanica* and *Enantia polycarpa* (Berberidaceae, Annonaceae). Needles (butanone), prisms (C_6H_6). Mp 174-175°.

*3,4-Dihydro, methylene ether: 7,8-Dihydro-1,3-dioxolo[4,5-*g*]isoquinolin-5(6*H*)-one.* ***Noroxyhydrastinine***. *3,4-Dihydro-6,7-methylenedioxy-1(2*H*)-isoquinolinone*
[21796-14-5]
$C_{10}H_9NO_3$ 191.186
Alkaloid from *Fumaria parviflora, Corydalis ophiocarpa*, and from the roots of *Thalictrum alpinum, Thalictrum minus* var. *adianthifolium, Thalictrum rugosum* and *Thalictrum foliolosum* (Papaveraceae, Ranunculaceae). Cryst. (MeOH or C_6H_6). Mp 182-183° Mp 187-187.5°.

NH-form

O^6,N-*Di-Me: 7-Hydroxy-6-methoxy-2-methyl-1(2*H*)-isoquinolinone.* ***Doryphornine***
[54302-47-5]
$C_{11}H_{11}NO_3$ 205.213
Alkaloid from the bark of *Doryphora sassafras* (Monimiaceae). Needles ($CHCl_3$). Mp 215-217°.

Di-Me ether, N-*Me: 6,7-Dimethoxy-2-methyl-1(2*H*)-isoquinolinone. 6,7-Dimethoxy-2-methylisocarbostyril.* N-

Methyl-6,7-dimethoxyisoquinolone
[20323-75-5]
$C_{12}H_{13}NO_3$ 219.24
Alkaloid from *Hernandia ovigera, Stephania sasakii*, and from the roots of *Thalictrum alpinum* and *Thalictrum isopyroides* (Hernandiaceae, Menispermaceae, Ranunculaceae). Needles (MeOH/$CHCl_3$). Mp 112-113° (98-100°). λ_{max} 245 (log ϵ 3.8); 270 (log ϵ 3.11); 280 (log ϵ 3.18); 290 (log ϵ 3.18); 335 (log ϵ 2.9) (MeOH).

Methylene ether, N-*Me:* ***Doryanine****. 6-Methyl-1,3-dioxolo[4,5-*g*]isoquinolin-5(6*H*)-one. 2-Methyl-6,7-methylenedioxy-1(2*H*)-isoquinolinone*
[24880-42-0]
$C_{11}H_9NO_3$ 203.197
Alkaloid from leaves and bark of *Doryphora sassafras* (Monimiaceae). Needles (Me_2CO/petrol or C_6H_6/hexane). Mp 162-163°. λ_{max} 230 (log ϵ 4.45); 250 (log ϵ 4.51); 255 (log ϵ 3.85); 295 (log ϵ 3.91); 325 (log ϵ 3.67) (MeOH).

Methylene ether, N-*(2-acetyl-5,6-methylenedioxybenzyl):* N-*(2-Acetyl-5,6-methylenedioxybenzyl)-6,7-methylenedioxy-1(2*H*)-isoquinolinone*
[813466-13-6]
$C_{20}H_{15}NO_6$ 365.342
Alkaloid from *Corydalis bungeana*. Cryst. (MeOH).

3,4-Dihydro, 6-Me ether, N-*Me:* ***Thalifoline***
[21796-15-6]
$C_{11}H_{13}NO_3$ 207.229
Alkaloid from the roots of *Thalictrum minus* var. *adiantifolium*, and from the leaves, stems, roots and fruit of *Cryptocarya longifolia* (Ranunculaceae, Lauraceae). Prisms (MeOH). Mp 210-211° Mp 220°.

3,4-Dihydro, di-Me ether, N-*Me: 3,4-Dihydro-6,7-dimethoxy-2-methyl-1(2*H*)-isoquinolinone.* **N-*Methylcorydaldine***
[6514-05-2]
$C_{12}H_{15}NO_3$ 221.255
Alkaloid from *Hernandia ovigera, Papaver bracteatum*, *Papaver urbanianum* and *Thalictrum fendleri* (Hernandiaceae, Papaveraceae, Ranunculaceae). Also obt. by degradn. of Warifteine, W-9, Thaliracebine, T-332 and Adiantifoline, A-139. Cryst. (MeOH, EtOH or petrol). Mp 125-126° (120.5°).

3,4-Dihydro, methylene ether, N-*Me: 7,8-Dihydro-6-methyl-1,3-dioxolo[4,5-*g*]isoquinolin-5(6*H*)-one. 3,4-Dihydro-2-methyl-6,7-methylenedioxy-2(1*H*)-isoquinolinone.* ***Oxyhydrastinine***
[552-29-4]
$C_{11}H_{11}NO_3$ 205.213
Alkaloid from *Fumaria schleicheri, Argemone mexicana* and *Papaver dubium* var. *glabrum* (Papaveraceae). Cryst. (petrol). Mp 98°. λ_{max} 207 (log ϵ 4.39); 217 (log ϵ 4.47); 222 (log ϵ 4.46); 262 (log ϵ 3.84); 303 (log ϵ 3.9) (MeOH).

Gharbo, S.A. *et al., J. Nat. Prod.*, 1965, **28**, 237-244 (*Doryanine*)
Cava, M.P. *et al., Tet. Lett.*, 1966, 4279-4282 (*N-Methylcorydaldine*)
Eloy, F. *et al., Helv. Chim. Acta*, 1969, **52**, 1755-1762 (*methylene ether, synth*)
Doskotch, R.W. *et al., J. Nat. Prod.*, 1969, **32**, 29-35 (*isol, uv*)
Mollov, N.M. *et al., Tet. Lett.*, 1969, 1951-1952 (*tri-Me, uv, ir, pmr*)
Doskotch, R.W. *et al., Tetrahedron*, 1969, **25**, 469-475 (*Thalifoline, isol, uv, ir, pmr, ms, struct, synth*)
Shamma, M. *et al., Tetrahedron*, 1971, **27**, 727-733 (*N-Methylcorydaldine, isol, ir, pmr, ms, struct*)
Chen, C.R. *et al., J. Nat. Prod.*, 1974, **37**, 493 (*Doryphornine, Doryanine*)
Shamma, M. *et al., J.A.C.S.*, 1974, **96**, 7809-7811 (*Corydaldine, occur*)
Jackson, A.H. *et al., J.C.S. Perkin 1*, 1974, 1911-1920 (*Corydaldine, N-Methylcorydaldine, synth, pmr*)
Markosyan, S.S. *et al., Arm. Khim. Zh.*, 1976, **29**, 1053-1057; *CA*, **86**, 136375j (*Oxyhydrastinine*)
Passannanti, S. *et al., J. Het. Chem.*, 1977, **14**, 103-106 (*methylene ether, synth, ir, pmr*)
Belgaonkar, V.H. *et al., J.C.S. Perkin 1*, 1977, 702-706 (*Doryanine, synth*)
Theuns, H.G. *et al., Phytochemistry*, 1977, **16**, 753-755 (*N-Methylcorydaldine, ms*)
Belgaonkar, V.H. *et al., J. Het. Chem.*, 1978, **15**, 257-261 (*tri-Me, synth, uv, ir, pmr*)
Abduzhabbarova, S. *et al., Khim. Prir. Soedin.*, 1978, **14**, 472-474; *Chem. Nat. Compd. (Engl. Transl.)*, 1978, **14**, 400-402 (*tri-Me, isol, uv, ir, pmr, ms*)
Shamma, M. *et al., Carbon-13 NMR Shift Assignments of Amines and Alkaloids*, Plenum Press, N.Y., 1979, 116 (*cmr*)
Wu, W.-N. *et al., J. Nat. Prod.*, 1980, **43**, 372-381 (*tri-Me, Noroxyhydrastinine, isol, uv, ir, pmr, ms*)
Kondo, Y. *et al., J.C.S. Perkin 1*, 1980, 911-918 (*6,7-di-Me ether, synth, ir, pmr, uv*)
Bick, I.R.C. *et al., Aust. J. Chem.*, 1981, **34**, 195-207 (*Thalifoline, isol, cryst struct*)
Modi, A.R. *et al., Indian J. Chem., Sect. B*, 1981, **20**, 813-815 (*tri-Me, synth*)
Chattopadhyay, S.K. *et al., J. Nat. Prod.*, 1981, **44**, 45-49 (*Noroxyhydrastinine*)
Castedo, L. *et al., Tet. Lett.*, 1981, **22**, 2233-2236 (*Doryanine, synth*)
Kunitomo, J. *et al., Yakugaku Zasshi*, 1981, **101**, 431-436; *CA*, **95**, 204236c (*tri-Me, isol*)
Hanaoka, M. *et al., Chem. Pharm. Bull.*, 1982, **30**, 2793-2796 (*Noroxyhydrastinine, synth, ir, pmr, ms*)
Joshi, V. *et al., Indian J. Chem., Sect. B*, 1983, **22**, 65-66 (*Corydaldine, N-Methylcorydaldine, synth*)
Hussain, S.F. *et al., Phytochemistry*, 1983, **22**, 319-320 (*Oxyhydrastinine*)
Thakur, P. *et al., J. Indian Chem. Soc.*, 1991, **68**, 526-528 (*Doryanine, synth*)
Lee, A.W.M. *et al., J.C.S. Perkin 1*, 1992, 309-310 (*N-Methylcorydaldine, Oxyhydrastinine, Doryanine, synth*)
Chou, C.-J. *et al., J. Nat. Prod.*, 1994, **57**, 689-694 (*Northalifoline, synth, isol, pmr, cmr, ir, uv*)
Schimming, T. *et al., Z. Naturforsch., C*, 2000, **55**, 1023-1025 (*Iseluxine*)
Wu, T.-S. *et al., J. Nat. Prod.*, 2002, **65**, 1522-1525 (*Pericampylinone A*)
Wang, Y.-C. *et al., Synthesis*, 2002, 2187-2190 (*Thalifoline, synth, pmr, cmr, ms*)
Zhang, X. *et al., Phytochemistry*, 2004, **65**, 929-932 (*N-Demethyldoryphornine*)
Xie, C. *et al., Phytochemistry*, 2004, **65**, 3041-3047 (*N-acetylmethylenedioxybenzyl deriv*)

1,6,8-Isoquinolinetriol I-306

*1,6,8-Trihydroxyisoquinoline. 6,8-Dihydroxy-1(2*H*)-isoquinolinone, 9CI.* ***Siaminine B***
[92446-27-0]
$C_9H_7NO_3$ 177.159
Alkaloid from the leaves of *Cassia siamea* (Fabaceae). Mp 235° (as hydrochloride).

El-Sayyad, S.M. *et al., J. Nat. Prod.*, 1984, **47**, 708 (*isol, uv, ir, pmr, ms, struct*)

5,6,7-Isoquinolinetriol I-307

5,6,7-Trihydroxyisoquinoline
[120092-56-0]
$C_9H_7NO_3$ 177.159
CAS no. refers to the iodide.

Tri-Me ether: 5,6,7-Trimethoxyisoquinoline. ***Isonortehaunine***
[36982-71-5]
$C_{12}H_{13}NO_3$ 219.24
Alkaloid detected in *Pachycereus weberi* by tandem mass spectrom. (Cactaceae). Oil. Mp 180-181° (as picrate).

Tri-Me ether, N-*Me:* N-*Methyl-5,6,7-trimethoxyisoquinolinium(1+)*
$C_{13}H_{16}NO_3^{\oplus}$ 234.274
Quaternary alkaloid from *Isopyrum thalictroides* (Ranunculaceae).

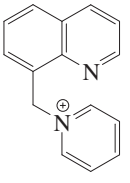
3,4-Dihydro, tri-Me ether: 3,4-Dihydro-5,6,7-trimethoxyisoquinoline. ***Dehydronortehaunine***
[93474-25-0]
$C_{12}H_{15}NO_3$ 221.255
Alkaloid detected in *Pachycereus weberi* by tandem mass spectrom. (Cactaceae).

1,2,3,4-Tetrahydro, tri-Me ether, N-*Me:* see 1,2,3,4-Tetrahydro-5,6,7-trimethoxy-2-methylisoquinoline, T-238

Birch, A.J. *et al., J.C.S. Perkin 1*, 1974, 2185 (*5,6,7-tri-Me ether*)
Boger, D.L. *et al., Tetrahedron*, 1981, **37**, 3977 (*5,6,7-tri-Me ether*)
Roush, R.A. *et al., Anal. Chem.*, 1985, **57**, 109
Kostalova, D. *et al., Chem. Pap.*, 1988, **42**, 841; *CA*, **110**, 170219k

1-(8-Isoquinolinylmethyl)pyridinium(1+) I-308

Sibiridine
[709612-22-6]

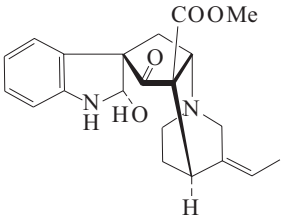


$C_{15}H_{13}N_2^{\oplus}$ 221.281
Quaternary alkaloid from *Nitraria schoberi* and *Nitraria sibirica*. Cryst. (EtOH) (as hydroxide). Mp 192-193° (hydroxide).

λ_{max} 220 (log ϵ 4.1); 287 (log ϵ 3.51 broad); 307 (log ϵ 3.46); 320 (log ϵ 3.54) (EtOH) (hydroxide).

Tulyaganov, T.S. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2003, **39**, 292-293 (*isol, uv, ir, ms*)

Isorhazicine I-309



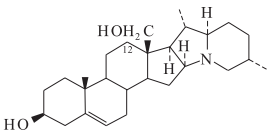
$C_{21}H_{24}N_2O_4$ 368.432

A 2,3-secoajmaline. This struct. may be incorrect. The struct. of Rhazicine has been revised. See under Lanceomigine, L-28. Alkaloid from the leaves of *Rhazya stricta* (Apocynaceae). Hygroscopic needles. $[\alpha]_D$ +61.4 ($CHCl_3$).

Atta-ur-Rahman, *et al., Heterocycles*, 1987, **26**, 405 (*isol, uv, ir, pmr, cmr, ms, struct*)

Isorubijervine I-310

Solanid-5-ene-3,18-diol
[468-45-1]



Absolute configuration

$C_{27}H_{43}NO_2$ 413.642

Alkaloid from *Veratrum album*, *Veratrum californicum*, *Veratrum eschscholtzii* and *Veratrum grandiflorum* (Liliaceae). Shows antifungal activity. Mp 241-244°. $[\alpha]_D$ +9.2 (EtOH).

O^3-*β-D-Glucopyranoside:* ***Isorubijervosine***
[468-46-2]
$C_{33}H_{53}NO_7$ 575.784
Alkaloid from *Veratrum viride* and *Veratrum eschscholtzii* (Liliaceae). Fine needles (MeOH). Mp 279-280°. $[\alpha]_D^{24}$ -20 (c, 1.45 in Py).

18-Ac: Mp 219°.

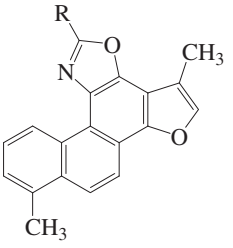
Di-Ac: Mp 202°.

12β-Hydroxy: ***Rubivirine****. 12-Hydroxyisorubijervine*
[164178-46-5]
$C_{27}H_{43}NO_3$ 429.642
Alkaloid from roots and rhizomes of *Veratrum viride* (Liliaceae). Needles (MeOH). Mp 239-241°. $[\alpha]_D$ +28.5 (c, 0.1 in $CHCl_3$).

Klohs, M.W. *et al., J.A.C.S.*, 1953, **75**, 2133 (*isol, ir*)
Höhne, E. *et al., Tetrahedron*, 1966, **22**, 673 (*cryst struct*)
Wolters, B. *et al., Planta Med.*, 1970, **19**, 189-193 (*activity*)
Keeler, R.F. *et al., Phytochemistry*, 1974, **13**, 2336 (*isol*)
Kaneko, K. *et al., Tet. Lett.*, 1978, 4801 (*isol*)
El Sayed, K.A. *et al., Phytochemistry*, 1995, **38**, 1547 (*Rubivirine*)

Isosalviamine A I-311

[878475-29-7]



R = H

$C_{19}H_{13}NO_2$ 287.317

Alkaloid from the roots of *Salvia trijuga*. Amorph. yellow powder (Me_2CO). Mp 178-180°. λ_{max} 239 (log ϵ 3.61); 258 (sh) (log ϵ 3.74); 267 (log ϵ 3.93); 276 (log ϵ 4); 282 (sh) (log ϵ 3.8); 290 (sh) (log ϵ 3.53); 303 (log ϵ 3.47); 311 (sh) (log ϵ 3.11); 326 (log ϵ 2.55); 342 (log ϵ 2.64); 359 (log ϵ 2.57) (MeOH).

Lin, F.-W. *et al., Heterocycles*, 2006, **68**, 159-165 (*isol, uv, pmr, cmr, ms*)

Isosalviamine B I-312

[878475-30-0]
As Isosalviamine A, I-311 with
R = CH_3

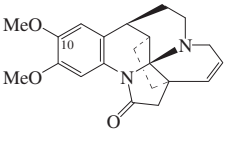
$C_{20}H_{15}NO_2$ 301.344

Alkaloid from the roots of *Salvia trijuga*. Pale yellow needles (Me_2CO). Mp 175-177°. λ_{max} 259 (log ϵ 3.47); 267 (sh) (log ϵ 3.63); 276 (log ϵ 3.66); 283 (sh) (log ϵ 3.49); 289 (sh) (log ϵ 3.35); 303 (log ϵ 3.2); 310 (sh) (log ϵ 2.91); 361 (log ϵ 2.15) (MeOH).

Lin, F.-W. *et al., Heterocycles*, 2006, **68**, 159-165 (*isol, uv, pmr, cmr, ms*)

Isoschizogamine I-313

[2779-07-9]



Absolute Configuration

$C_{21}H_{24}N_2O_3$ 352.432

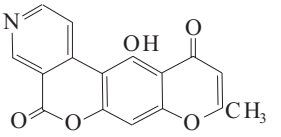
Struct. revised in 1998. Prob. related biogenetically to Schizozygine, S-137. Alkaloid from *Schizozygia coffaeoides* (Apocynaceae). Cryst. (EtOAc or petrol). Mp 184-185° (181.5-184.5°). $[\alpha]_D$ -241 (c, 0.8 in $CHCl_3$).

10-Demethoxy: ***Isoschizogaline***
[2671-29-6]
$C_{20}H_{22}N_2O_2$ 322.406
Alkaloid from *Schizozygia coffaeoides* (Apocynaceae). Cryst. (Et_2O). Mp 110-112°. $[\alpha]_D^{25}$ -262.3 (c, 1 in $CHCl_3$). Struct. revised in 2002.

Hajicek, J. *et al., Tet. Lett.*, 1998, **39**, 505-508 (*pmr, cmr, struct*)
Hubbs, J.L. *et al., Org. Lett.*, 1999, **1**, 1315-1317 (*synth*)
Kariba, R.M. *et al., J. Nat. Prod.*, 2002, **65**, 566-569 (*Isoschizogaline*)
Zhou, J. *et al., J.O.C.*, 2007, **72**, 3808-3815 (*synth, abs config*)
Stephens, P.J. *et al., Chirality*, 2008, **20**, 454-470 (*cd, abs config*)

Isoschumanniophytine I-314

[96889-79-1]



$C_{16}H_9NO_5$ 295.251

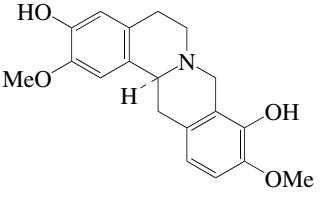
Struct. revised in 1987. Alkaloid from the root bark of *Schumanniophyton magnificum* (Rubiaceae). Anti-HIV agent. Yellow cryst. ($CHCl_3$). λ_{max} 226 (ϵ 12880); 245 (ϵ 9120); 260 (ϵ 9120); 272 (ϵ 3630); 314 (ϵ 954) (MeOH) (Berdy).

N-*Me:* **N-*Methylisoschumanniophytine***
$C_{17}H_{12}NO_5^{\oplus}$ 310.285
Quaternary alkaloid from *Schumanniophyton magnificum* (Rubiaceae). Anti-HIV agent. λ_{max} 204 ; 225 ; 236 ; 355 (MeOH) (Berdy).

Houghton, P.J. *et al., Planta Med.*, 1985, 23-27; 1987, **53**, 262-263; 264-266 (*isol, uv, ir, pmr, ms, struct, N-Me*)
Kelly, T.R. *et al., J.O.C.*, 1992, **57**, 1593-1597 (*synth, pmr, struct*)

Isoscoulerine I-315

5,8,13,13a-Tetrahydro-2,10-dimethoxy-6H-dibenzo[a,g]quinolizine-3,9-diol, 9CI. 3,9-Dihydroxy-2,10-dimethoxytetrahydroprotoberberine



(*S*)-*form*

$C_{19}H_{21}NO_4$ 327.379

(*S*)-*form* [62249-73-4]
Alkaloid from *Stephania hainanensis.*

N-*Me(*cis-*):* ***Steponine***
[17132-69-3]
[17132-70-6]
$C_{20}H_{24}NO_4^{\oplus}$ 342.414
Quaternary alkaloid from dried rhizomes of *Stephania japonica*, *Stephania sasakii* and *Stephania cepharantha* (Menispermaceae). Also isol. from roots of *Cissampelos mucronata*. Prisms (as chloride). Mp 235° dec. (chloride). $[\alpha]_D^{21}$ -129.9 (chloride).

Di-Me ether: see Tetrahydropalmatine, T-212

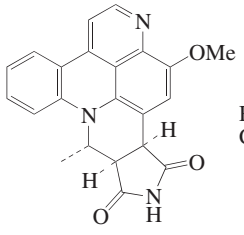
(±)-*form* [62057-90-3]

Synthetic. Prisms (MeOH). Mp 218-221°.

Tomita, M. *et al., Yakugaku Zasshi*, 1957, **77**, 274-277; *CA*, **51**, 11361g (*Steponine*)
Kunimoto, J. *et al., Yakugaku Zasshi*, 1967, **87**, 1010-1011; *CA*, **68**, 3051g (*Steponine*)
Brochmann-Hanssen, E. *et al., J.O.C.*, 1977, **42**, 3588-3591 (*synth, ir, pmr, ms*)
Ohiri, F.C. *et al., Planta Med.*, 1983, **49**, 162-164 (*pmr*)
Fang, S. *et al., Zhongcaoyao*, 1987, **18**, 146-149; *CA*, **107**, 93551w (*isol*)
Tshibangu, J.N. *et al., Phytochem. Anal.*, 2003, **14**, 13-22 (*Steponine, isol, hplc*)

Isosegoline A I-316

[117694-97-0]



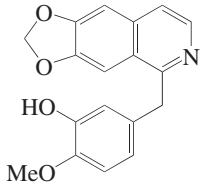
Relative Configuration

$C_{23}H_{19}N_3O_3$ 385.421
Alkaloid from the Red Sea tunicate *Eudistoma* sp. $[\alpha]_D^{24}$ -660 (c, 0.001 in $CHCl_3$). λ_{max} 248 (ϵ 13400); 297 (ϵ 25000); 368 (ϵ 6100); 388 (ϵ 7700); 550 (ϵ 7800) (MeOH/HCl) (Derep). λ_{max} 242 (ϵ 13900); 274 (ϵ 19100); 330 (ϵ 9400); 360 (ϵ 2300); 386 (ϵ 3100); 470 (ϵ 3500) (MeOH) (Derep).

Rudi, A. *et al., J.O.C.*, 1989, **54**, 5331 (*isol, uv, ir, pmr, cmr, cd, struct*)

Isosevanine I-317

1-(3-Hydroxy-4-methoxybenzyl)-6,7-methylenedioxyisoquinoline
[70400-40-7]



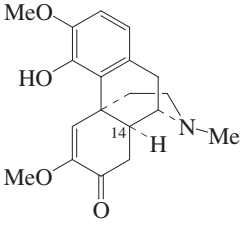
$C_{18}H_{15}NO_4$ 309.321
Trace alkaloid from *Hedycarya angustifolia* (Monimiaceae). Pale yellow needles (EtOH). Mp 148° (natural) Mp 182-183° (synthetic).

O-*De-Me,* $O^{3'}$,N-*di-Me:* ***Escholamidine***
[55861-73-9]
$C_{19}H_{18}NO_4^{\oplus}$ 324.356
Quaternary alkaloid from *Eschscholtzia oregana*. Small prisms (H_2O)(as iodide). Mp 214-215° (iodide). Cryst. dec. and turn red-brown in air.

Slavík, J. *et al., Coll. Czech. Chem. Comm.*, 1975, **40**, 1095 (*Escholamidine*)
Bick, I.R.C. *et al., Aust. J. Chem.*, 1985, **38**, 1571 (*cryst struct*)
Chantimakorn, V. *et al., Aust. J. Chem.*, 1989, **42**, 209 (*synth, uv, ir, pmr, ms*)

Isosinomenine I-318

5,6-Didehydro-4-hydroxy-3,6-dimethoxy-17-methylmorphinan-7-one, 9CI. 8,14-Dihydrosalutaridine



(+)-*form*

$C_{19}H_{23}NO_4$ 329.395

(+)-*form* [510-42-9]
Poss. minor alkaloid from *Sinomenium acutum*. Cryst. (Et_2O). Mp 198-202°. $[\alpha]_D$ +73 (c, 1.2 in EtOH).

14-Epimer: ***Ocobotrine***
[60761-55-9]
$C_{19}H_{23}NO_4$ 329.395
Alkaloid from *Ocotea brachybotra* (Lauraceae). Cryst. + ½ EtOAc (EtOAc/Et_2O). Mp 97-99°. $[\alpha]_D^{20}$ -93 (c, 1 in $CHCl_3$). λ_{max} 210 (log ϵ 4.52); 264 (log ϵ 4.01) (MeOH).

14-Epimer, hydrochloride:
Cryst. (MeOH). Mp 296-297°.

(-)-*form*
Alkaloid from *Croton linearis*, *Croton balsamifera* and *Croton discolor* (Euphorbiaceae). Mp 198-203°. $[\alpha]_D^{15}$ -76.1 (c, 0.59 in MeOH). λ_{max} 206 (ϵ 32730); 230 (ϵ 6960); 265 (ϵ 7550) (EtOH).

Ac: **O-*Acetyldihydrosalutaridine***
$C_{21}H_{25}NO_5$ 371.432
From *Croton linearis* (Euphorbiaceae). Mp 210°. $[\alpha]_D^{15}$ -22.1 (MeOH).

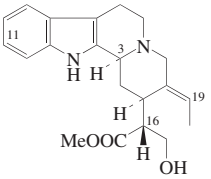
N-*De-Me:* ***8,14-Dihydronorsalutaridine***
$C_{18}H_{21}NO_4$ 315.368
Alkaloid from *Croton linearis* (Euphorbiaceae). Cryst. + EtOAc. Mp 208-212°. $[\alpha]_D^{15}$ -69.1 (MeOH). λ_{max} 206 (ϵ 35900); 235 (ϵ 8611); 261 (ϵ 8950) (EtOH).

14-Epimer: ***Milonine***
[171485-61-3]
$C_{19}H_{23}NO_4$ 329.395
Alkaloid from leaves of *Cissampelos sympodialis* (Menispermaceae). Reddish amorph. powder. Mp 74-76°. $[\alpha]_D^{25}$ +50 (c, *ca*. 0.6 in MeOH). It appears that Milonine should be the enantiomer of Ocobotrine, but the opt. rotns. do not support this assignment. λ_{max} 224 ; 262 ; 300 (MeOH).

Barton, D.H.R. *et al., J.C.S.(C)*, 1968, 929-936 (*(+)-form, occur, synth*)
Haynes, L.J. *et al., J.C.S.(C)*, 1968, 951-957 (*(-)-form, isol, struct, ms*)
Vecchietti, V. *et al., Tet. Lett.*, 1976, 1631-1634 (*Ocobotrine, uv, ir, pmr, ms, struct*)
De Freitas, M.R. *et al., Phytochemistry*, 1995, **40**, 1553-1555 (*Milonine*)
Rasoanaivo, P. *et al., Planta Med.*, 1998, **64**, 58-62 (*Ocobotrine, cmr*)

Isositsirikine I-319

[6519-27-3]



Absolute Configuration

$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from *Catharanthus roseus*, *Aspidosperma marcgravianum*, *Aspidosperma oblongum*, a number of *Strychnos* spp. and others. $[\alpha]_D$ -20 ($CHCl_3$). λ_{max} 224 (log ϵ 4.55); 283 (log ϵ 3.92); 291 (log ϵ 3.84) (MeOH).

Sulfate (1:2): Mp 263.5°.

Picrate:
Yellow needles (MeOH). Mp 216°.

β-N^4-*Oxide:* ***(16R)-Isositsirikine (4S)-N-oxide***
[88607-61-8]
$C_{21}H_{26}N_2O_4$ 370.447
Alkaloid from the stem bark of *Aspidosperma marcgravianum* (Apocynaceae). Amorph. $[\alpha]_D$ -56 (c, 0.54 in MeOH). Named 16-Epiisositsirikine 3*S*,4*S*-*N*-oxide in the original literature (confusing).

N^4-*α-Me:* ***Diploceline***
[69306-89-4]
$C_{22}H_{29}N_2O_3^{\oplus}$ 369.483
Alkaloid from *Strychnos gossweileri* roots (Loganiaceae). Shows antiparasitic and weak antibacterial activity. 16-Config. not determined, may be the oxide of 16-Epiisositsirikine. λ_{max} 220 (log ϵ 4.54); 270 (log ϵ 3.86); 280 (log ϵ 3.82); 289 (log ϵ 3.68) (MeOH).

O-*Ac:* **O-*Acetylisositsirikine***
[6519-40-0]
$C_{23}H_{28}N_2O_4$ 396.485
Alkaloid from the roots and leaves of *Rhazya stricta* (Apocynaceae). $[\alpha]_D$ -2.5 (MeOH). λ_{max} 202 (log ϵ 4.22); 282 (log ϵ 3.27); 289 (log ϵ 3.15) (MeOH).

9-Methoxy: ***Strychnorubigine****. 9-Methoxy-(16*R*)*-E*-isositsirikine*
[72994-76-4]
$C_{22}H_{28}N_2O_4$ 384.474
Alkaloid from the root bark of *Strychnos rubiginosa* (Loganiaceae) and from *Strychnos lucens* and *Strychnos madagascariensis*. Cryst. (EtOAc/hexane). Mp 126-127° dec. $[\alpha]_D$ +53 (c, 0.17 in $CHCl_3$). λ_{max} 227 (log ϵ 4.68); 274 (sh) (log ϵ 3.91); 284 (sh) (log ϵ 3.84); 293 (log ϵ 3.84) (EtOH).

9-Methoxy, O-*Ac:*
Cryst. (EtOAc/hexane). Mp 96-97°.

11-Methoxy: ***Hervine***
[16049-27-7]
$C_{22}H_{28}N_2O_4$ 384.474
Alkaloid from *Vinca herbacea* (Apocynaceae). Cryst. (EtOH). Mp 173-175°. $[\alpha]_D$ -93 (c, 0.20 in EtOH). 16-

Config. not determined, may be 11-methoxy-16-epiisositsirikine. λ_{max} 228 (log ϵ 4.45); 270 (log ϵ 3.6); 290 (log ϵ 3.7) (EtOH).

19Z-Isomer: ***19Z-Isositsirikine***
[80287-17-8]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from the leaves of *Alstonia sphaerocapitata* and from *Catharanthus roseus* cell suspension cultures (Apocynaceae). Mp 183°. $[\alpha]_D$ -32 (c, 1 in $CHCl_3$). λ_{max} 227 ; 283 ; 290 (MeOH).

3-Epimer: ***Rhazimanine***
[119618-47-2]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from the fruits of *Rhazya stricta* (Apocynaceae). Amorph. $[\alpha]_D^{26}$ 0 ($CHCl_3$). May be identical with Bhimberine below. Unstable to air and light. λ_{max} 222 ; 268 (sh) ; 273 (sh) ; 282 ; 290 (MeOH).

3-Epimer, 10-hydroxy, 19,20β-dihydro: ***19,20-Dihydro-10-hydroxyisositsirikine***
[916334-46-8]
$C_{21}H_{28}N_2O_4$ 372.463
Alkaloid from the stems of *Ervatamia yunnanensis.*

16-Epimer: ***16-Epiisositsirikine.*** *(16*S*)-Isositsirikine*
[60031-91-6]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from *Alstonia cuspa*, *Alstonia marcgravianum*, *Alstonia oblongum*, *Peschiera echinata*, *Pterotaberna inconspicua*, *Tabernaemontana psorocarpa*, *Tabernaemontana pachysiphon*, *Tabernaemontana chippii*, *Tabernaemontana ventricosa* and a number of *Strychnos* spp. Cryst. (EtOAc). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 186-187° (182-184° dec.). $[\alpha]_D^{28}$ -205 (c, 0.2 in $CHCl_3$) (-145). λ_{max} 226 (ϵ 31620); 285 (ϵ 7940); 293 (ϵ 6310) (EtOH).

16-Epimer, β-N^4*-oxide:* ***(16S)-Isositsirikine (4S)-N-oxide***
[88607-62-9]
$C_{21}H_{26}N_2O_4$ 370.447
Alkaloid from the root bark of *Alstonia marcgravianum* (Apocynaceae). Amorph. $[\alpha]_D$ -56 (c, 0.54 in MeOH).

16-Epimer, N^4*-α-Me:* ***16-Epidiploceline***
[75364-53-3]
$C_{22}H_{29}N_2O_3^{\oplus}$ 369.483
Alkaloid from *Strychnos gossweileri* roots. 16-Config. not certain, may be as in Isositsirikine.

16-Epimer, N^1*-hydroxymethyl:* ***N^1-Hydroxymethyl-(16S)-isositsirikine***
$C_{22}H_{28}N_2O_4$ 384.474
Alkaloid from the roots of *Rauwolfia yunnanensis.* Amorph. yellow solid. $[\alpha]_D^{24}$ +48 (c, 0.23 in Py). λ_{max} 225 (log ϵ 4.46); 275 (log ϵ 3.81); 280 (log ϵ 3.81); 291 (log ϵ 3.7); 347 (log ϵ 2.75); 363 (log ϵ 2.78) (MeOH).

16-Epimer, 9-methoxy: ***9-Methoxy-(16S)-E-isositsirikine***
[149250-44-2]
$C_{22}H_{28}N_2O_4$ 384.474
Alkaloid from the root bark of *Strychnos lucens and Strychnos madagascariensis.* $[\alpha]_D$ -108 (c, 0.11 in MeOH). λ_{max} 225 ; 254 ; 351 (MeOH).

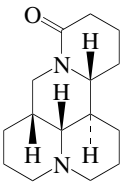
16-Epimer, 19Z-isomer: ***16-Epi-Z-isositsirikine***
[80287-16-7]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from the leaves of *Catharanthus roseus* and *Rhazya stricta* (Apocynaceae). Shows *in vivo* antineoplastic activity vs. human nasopharynx KP and mouse P388 tumour cells. Mp 181°. $[\alpha]_D^{25}$ -41 (c, 0.1 in MeOH).

3,16-Diepimer: ***Bhimberine***
[102043-86-7]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from the fruits and leaves of *Rhazya stricta* (Apocynaceae). Amorph. Sensitive to light and air. Evidence has been presented (Lounasmaa *et al*) that Bhimberine has the (16*R*)-config. and is identical with Rhazimanine. λ_{max} 222 (log ϵ 4.2); 268 (sh) (log ϵ 3.61); 273 (sh) (log ϵ 3.61); 282 (log ϵ 3.61); 290 (log ϵ 3.55) (MeOH).

Kutney, J.P. *et al., Tetrahedron*, 1966, **22**, 321-336 (*struct, uv, ir, ms, pmr*)
Ogyanov, I. *et al., Helv. Chim. Acta*, 1967, **50**, 754-758 (*Hervine*)
Simões, J.C. *et al., Phytochemistry*, 1976, **15**, 543-544 (*16-Epiisositsirikine*)
Coune, C.A. *et al., Phytochemistry*, 1978, **17**, 1447-1448 (*Diploceline*)
Hirata, T. *et al., Chem. Comm.*, 1979, 1081-1083 (*abs config*)
Coune, C.A. *et al., Herba Hung.*, 1980, **19**, 189-193; *CA*, **93**, 21790e (*16-Epidiploceline*)
Marini-Bettolo, G.B. *et al., Phytochemistry*, 1980, **19**, 992-994 (*Strychnorubigine*)
Mukhopadhyay, S. *et al., J. Nat. Prod.*, 1983, **46**, 409-413 (*16-Epi-Z-isositsirikine*)
Robert, G.M.T. *et al., J. Nat. Prod.*, 1983, **46**, 694-707 (*oxides*)
Caron, C. *et al., Phytochemistry*, 1984, **23**, 2355-2357 (*16R-Z-Isositsirikine*)
Kohl, W. *et al., Planta Med.*, 1984, **50**, 242-244 (*16R-Z-Isositsirikine*)
Winterfeldt, E. *et al., Annalen*, 1986, 1262-1267 (*synth*)
Atta-ur-Rahman, *et al., Heterocycles*, 1986, **24**, 703-708 (*Bhimberine*)
Atta-ur-Rahman, *et al., Phytochemistry*, 1986, **25**, 1731-1733 (*Rhazimanine*)
Freund, R. *et al., Annalen*, 1988, 1007-1008 (*Rhazimanine, Bhimberine*)
Naito, T. *et al., Heterocycles*, 1988, **27**, 1603-1606 (*Isositsirikine, 16-Epiisositsirikine, Rhazimanine, Bhimberine, synth*)
Naito, T. *et al., Tet. Lett.*, 1989, **30**, 2941-2944 (*Z-Isositsirikine, 16-Epi-Z-isositsirikine, synth*)
Atta-ur-Rahman, *et al., Phytochemistry*, 1991, **30**, 1285-1293 (*O-Acetylisositsirikine*)
Delaude, C. *et al., Bull. Soc. R. Sci. Liege*, 1992, **61**, 429-440 (*9-Methoxyisositsirikines*)
Lounasmaa, M. *et al., J. Nat. Prod.*, 1995, **58**, 131-133 (*Rhazimanine, Bhimberine*)
Delaude, C. *et al., Bull. Soc. R. Sci. Liege*, 1997, **66**, 183-286 (*occur, Strychnos*)
Liang, S. *et al., Chin. Chem. Lett.*, 2006, **17**, 783-786 (*19,20-Dihydro-10-hydroxyisositsirikine*)
Hu, X.-J. *et al., Helv. Chim. Acta*, 2006, **89**, 1344-1350 (*N-Hydroxymethylisositsirikine*)

Isosophoridine I-320

(5β,6β)-Matridin-15-one, 9CI



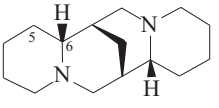
$C_{15}H_{24}N_2O$ 248.367
Stereoisomer of Allomatrine, A-628, Darvasamine, D-79, Isomatrine, I-244, Matrine, M-121 and Sophoridine, S-380.

(+)-form [6838-36-4]
Alkaloid from *Sophora alopecuroides* (Fabaceae). Cryst. (petrol). Mp 111-112°. $[\alpha]_D$ +101 (EtOH).

Rulko, F. *et al., Zh. Obshch. Khim.*, 1962, **32**, 1690-1695 (*struct*)
Iskandarov, S. *et al., Khim. Prir. Soedin.*, 1969, **5**, 331-332; *Chem. Nat. Compd. (Engl. Transl.)*, 1969, **5**, 282 (*ms*)
Kushmuradov, Y.K. *et al., Khim. Prir. Soedin.*, 1977, **13**, 244-247; *Chem. Nat. Compd. (Engl. Transl.)*, 1977, **13**, 207-210 (*biosynth*)
Ibragimov, B.T. *et al., Khim. Prir. Soedin.*, 1981, **17**, 460-465; *Chem. Nat. Compd. (Engl. Transl.)*, 1981, **17**, 340-344 (*cryst struct*)

α-Isosparteine I-321

11β-Sparteine. Genistein†



(–)-form

$C_{15}H_{26}N_2$ 234.384
Log P 2.15 (calc).

(+)-form
From (+) Sparteine, S-385 by epimerisation. Mp 110-115° (hydrate). $[\alpha]_D^{25}$ +48.4 (MeOH). pK_{a1} 2.5; pK_{a2} 12.1 (66% DMF aq.).

(-)-form [446-95-7]
Alkaloid from *Cytisus scoparius*, *Lupinus caudatus* and *Sarothamnus scoparius* (Fabaceae). Mp 96-117° (hydrate). $[\alpha]_D$ -56 (MeOH).

Sulfate: Mp 267°.

Dipicrate: Mp 221°.

(±)-form
Mp 98-105° (hydrate) Mp 78-80° (anhyd.).

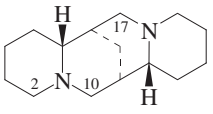
Perchlorate: Mp 160-162°.

Leonard, N.J. *et al., J.A.C.S.*, 1950, **72**, 1316 (*synth, ir*)
Marion, L. *et al., Can. J. Chem.*, 1951, **29**, 22; 297 (*isol, struct*)
Kettelhack, D. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1954, **287**, 1 (*isol*)
Fales, H.M. *et al., J.A.C.S.*, 1970, **92**, 1590 (*ms*)
Schöpf, C. *et al., Annalen*, 1972, **755**, 86 (*synth*)
Przybylska, M. *et al., Acta Cryst. B*, 1974, **30**, 2455 (*cryst struct*)

Klyne, W. *et al., J.C.S. Perkin 1*, 1974, 2565 (*cd*)
Bohlmann, F. *et al., Chem. Ber.*, 1975, **108**, 1043 (*cmr*)
Oinuma, H. *et al., J.C.S. Perkin 1*, 1990, 2593 (*synth*)
Norcross, N.R. *et al., J.O.C.*, 2008, **73**, 7939-7951 (*synth*)

β-Isosparteine I-322

Spartalupine. Pusilline. Spathulatine. Nonalupine



(-)-*form*

$C_{15}H_{26}N_2$ 234.384

Care needed with numbering of derivs owing to twofold rotational symmetry. The term 'β-Isosparteine' was first used by Winterfeld *et al* (1934) for a different compd. (semisynthetic). For the naturally occurring alkaloid the name Spartalupine has historical precedence, but β-Isosparteine is preferred as being more descriptive. Nonalupine was actually a hydrate of β-Isosparteine and Spathulatine was its hydrochloride.

(+)-*form*

From (-)-Sparteine by epimerisation. Oil. $[\alpha]_D^{32}$ +15.8 (c, 1.25 in EtOH). Air-sensitive.

(-)-*form* [492-06-8]

Alkaloid from *Lupinus argenteus stenophyllus, Lupinus solosericeus, Sophora secundiflora* (Fabaceae). Forms metal complexes. Mp 32-32.5°. $Bp_{0.03}$ 110°. $[\alpha]_D^{25}$ -15.4 (EtOH).

Perchlorate: Mp 216° (211.5-212°).

Perchlorate (1:2):
Small stout prisms (MeOH). Mp 247-249° dec.

Dipicrate: Mp 133-133.5°.

(±)-*form*

Dipicrate: Mp 220.5-221° dec.

(ξ)-*form*

10-Oxo: ***10-Oxo-β-isosparteine***
$C_{15}H_{24}N_2O$ 248.367
Minor alkaloid from *Lupinus sericeus* (Fabaceae). Oil. $[\alpha]_D^{25}$ -4.8 (c, 0.15 in EtOH).

17-Oxo, 2ξ-hydroxy: ***Lupanoline****. 2-Hydroxy-17-oxo-β-isosparteine*
$C_{15}H_{24}N_2O_2$ 264.367
Alkaloid from *Lupinus sericeus* (tentative identification) (Fabaceae). Stout prisms (Me_2CO). Mp 174-176°. $[\alpha]_D^{23}$ +31 (c, 0.726 in EtOH). $[\alpha]_D^{23}$ +64.4 (c, 0.88 in H_2O).

17-Oxo, 2ξ-hydroxy, hydrochloride:
Prisms (Me_2CO/MeOH). Mp 275-276°.

10,17-Dioxo: ***10,17-Dioxo-β-isosparteine***
$C_{15}H_{22}N_2O_2$ 262.351
Minor alkaloid from *Lupinus sericeus* (Fabaceae).

[24915-04-6]

Couch, J.F. *et al., J.A.C.S.*, 1940, **62**, 554 (*Lupanoline, isol*)
Marion, L. *et al., Can. J. Chem.*, 1953, **31**, 181; 187 (*Lupanoline, isol, struct*)
Carmack, M. *et al., J.A.C.S.*, 1955, **77**, 4435 (*isol, struct, synth*)
Greenhalgh, R. *et al., Can. J. Chem.*, 1956, **34**, 456
Winterfeld, K. *et al., Annalen*, 1966, **698**, 230 (*synth*)
Carmack, M. *et al., J.O.C.*, 1967, **32**, 3045 (*isol, ir, nomencl*)
Skolik, J. *et al., Bull. Acad. Pol. Sci., Ser. Sci. Chim.*, 1969, **17**, 201 (*ir, conformn*)
Kim, I.C. *et al., J. Agric. Food Chem.*, 1982, **30**, 796 (*10-Oxo-β-isosparteine, 10,17-Dioxo-β-isosparteine*)
Norcross, N.R. *et al., J.O.C.*, 2008, **73**, 7939-7951 (*synth*)

Isostemonidine I-323

$C_{19}H_{31}NO_5$ 353.458

Struct. unknown. Alkaloid from the roots of *Stemona ovata* (Stemonaceae). Mp 137°. $[\alpha]_D$ -48.9 (Me_2CO). Can be written $C_{17}H_{28}(NH)(CO)(OH)_2(COO)$.

Suzuki, K. *et al., Yakugaku Zasshi*, 1934, **54**, 567-572; *CA*, **31**, 106 (*isol*)

Isostemonine I-324

[24945-83-3]

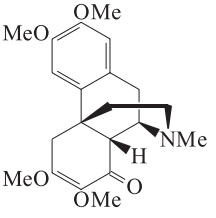
$C_{22}H_{33}NO_4$ 375.507

Isomeric with Stemoninine, S-521 and Tuberostemonine, T-664. Struct. unknown. Alkaloid from the roots of *Stemona tuberosa* (Stemonaceae). Mp 212-216° dec.

Pfeifer, S. *et al., Pharmazie*, 1968, **23**, 342 (*isol, uv*)

Isostephodeline I-325

Stephaphylline
[56648-85-2]



Relative configuration

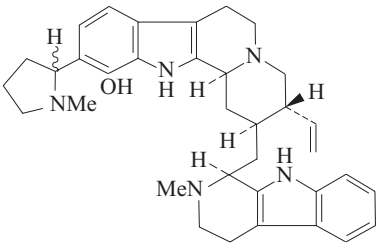
$C_{21}H_{27}NO_5$ 373.448

Struct. revised in 1989. The struct. originally proposed for Isostephodeline has now been assigned to Tannagine, T-28. Alkaloid from roots of *Stephania delavayi*, tuberous roots of *Stephania suberosa* and aerial parts of *Stephania zippeliana* (Menispermaceae). Mp 197° (184-185°). $[\alpha]_D$ +160 (c, 2 in EtOH). $[\alpha]_D$ +93 (c, 1.0 in $CHCl_3$). $[\alpha]_D^{25}$ +77.3 (c, 0.35 in $CHCl_3$). λ_{max} 211 ; 225 ; 273 (EtOH).

14-Epimer: ***Erromangine***
[123688-33-5]
$C_{21}H_{27}NO_5$ 373.448
Alkaloid from aerial parts of *Stephania zippeliana* (Menispermaceae). $[\alpha]_D$ +15 (c, 0.85 in $CHCl_3$). λ_{max} 212 ; 224 ; 273 (EtOH).

Perel'son, M.E. *et al., Khim. Prir. Soedin.*, 1975, **11**, 188; *Chem. Nat. Compd. (Engl. Transl.)*, 1975, **11**, 197 (*uv, pmr, isol*)
Patra, A. *et al., Phytochemistry*, 1987, **26**, 2391 (*Stephaphylline*)
Charles, B. *et al., Can. J. Chem.*, 1989, **67**, 1257-1260 (*Isostephodeline, Erromangine, isol, uv, ir, pmr, cmr, ms, struct*)
Guinadeau, H. *et al., Phytochemistry*, 1998, **49**, 2561-2563 (*cd, pmr, cmr*)

Isostrychnopentamine B I-326



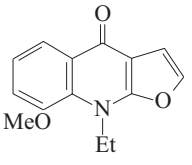
$C_{35}H_{43}N_5O$ 549.758

Proposed struct. Alkaloid from *Strychnos usambarensis* leaves (Loganiaceae).

Angenot, L. *et al., J. Pharm. Belg.*, 1978, **33**, 11 (*isol*)
Cordell, G.A. *et al., Alkaloids (Academic Press)*, 1981, **20**, 1; 54 (*rev*)

Isotaifine I-327

[84323-09-1]



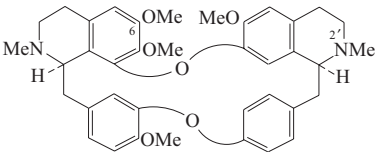
$C_{14}H_{13}NO_3$ 243.262

Struct. unknown. The proposed struct. illus. is incorrect. Props. of authentic synthetic material differ from those of the alkaloid. Alkaloid from *Ruta chalepensis* (Rutaceae). Needles (petrol). Mp 123-125°.

Mohr, N. *et al., Phytochemistry*, 1982, **21**, 1838-1839 (*isol, uv, ir, pmr*)
Shich, B. *et al., Hua Hsueh*, 1990, **48**, 309-316; *CA*, **116**, 174486s

Isotetrandrine I-328

O-*Methylberbamine*
[477-57-6]



$C_{38}H_{42}N_2O_6$ 622.76

Alkaloids covered by this entry (1*R*,1′*S*-series) are enantiomeric with those included under Peinamine, P-171. Alkaloid from *Atherosperma moschatum*, *Berberis empetrifolia*, *Berberis kawakamii*, *Berberis mingetsensis*, *Berberis morrisonensis*, *Berberis poiretii*, *Berberis thunbergii*, *Cyclea barbata*, *Doryphora aromatica*, *Iso-*

pyrum thalictroides, *Laurelia sempervirens* (Peruvian nutmeg), *Limaciopsis loangensis*, *Mahonia japonica*, *Mahonia lomariifolia*, *Mahonia morrisonensis*, *Mahonia philippinensis*, *Pycnarrhena australiana*, *Pycnarrhena manillensis*, *Stephania cepharantha*, *Stephania elegans*, *Thalictrum foetidum*, *Tiliacora funifera*, and *Triclisia gilletii* (Monimiaceae, Berberidaceae, Menispermaceae, Ranunculaceae). Shows *in vitro* antineoplastic activity against HeLa cells and Ehrlich ascites. Antiinflammatory, antihypertensive agent. Active against gram-positive bacteria. Prisms (MeOH). Mp 182-183°. $[\alpha]_D^{20}$ +150.7 (c, 0.85 in $CHCl_3$). Log P 8.3 (uncertain value) (calc). λ_{max} 218 (ϵ 31600); 240 (sh) (ϵ 15800); 282 (ϵ 12600) (MeOH) (Derep).

▶ LD_{50} (mus, orl) 6400 mg/kg; LD_{50} (mus, ipr) 160 mg/kg. NX7285000

$N^{2'}$-*Oxide:* ***Isotetrandrine* N-*2′-oxide***
[70191-83-2]
$C_{38}H_{42}N_2O_7$ 638.759
Alkaloid from the roots of *Limaciopsis loangensis* (Menispermaceae). Cryst. (MeOH). Mp 191-192°. $[\alpha]_D$ +94 ($CHCl_3$).

N^{2}-*De-Me:* ***2-Norisotetrandrine***
[123930-96-1]
$C_{37}H_{40}N_2O_6$ 608.733
Alkaloid from the tubers of *Stephania pierrii* (Menispermaceae). $[\alpha]_D$ +100 (c, 0.16 in $CHCl_3$). λ_{max} 208 (log ϵ 4.82); 239 (sh) (log ϵ 4.34); 282 (log ϵ 3.86) (MeOH).

$N^{2'}$-*De-Me:* ***2′-Norisotetrandrine***
[70191-82-1]
$C_{37}H_{40}N_2O_6$ 608.733
Alkaloid from the roots of *Limaciopsis loangensis* (Menispermaceae). Noncryst. $[\alpha]_D$ +26 ($CHCl_3$).

$N^{2'}$-*Me:* ***2′*-N-*Methylisotetrandrine***
[68331-87-3]
$C_{39}H_{45}N_2O_6^{\oplus}$ 637.794
Quaternary alkaloid from shoots of *Berberis oblonga* (Berberidaceae). Cryst. (THF) (as iodide). Mp 221-222° (iodide). $[\alpha]_D$ +29.5 (c, 0.1 in $CHCl_3$).

O^{6}-*De-Me:* ***Cycleabarbatine***. *6*-O-*Demethylisotetrandrine*
[152697-36-4]
$C_{37}H_{40}N_2O_6$ 608.733
Alkaloid from roots of *Cyclea barbata* (Menispermaceae). $[\alpha]_D$ +20 (c, 0.1 in $CHCl_3$).

O^{7}-*De-Me:* ***Thalrugosine***. *Thaligine*. *Isofangchinoline*
[33889-68-8]
$C_{37}H_{40}N_2O_6$ 608.733
Alkaloid from *Cyclea barbata*, *Thalictrum polygamum*, *Thalictrum lucidum*, *Thalictrum rugosum*, *Thalictrum minus* Race B, *Thalictrum sachalinense*, *Limaciopsis loangensis*, *Pycnarrhena novoguineensis*, *Tiliacora funifera* and *Stephania japonica* var. *australis* (Menispermaceae, Ranunculaceae). Shows antibacterial activity. Cryst. + $0.5H_2O$ (Et_2O). Mp 212-214°. $[\alpha]_D^{30}$ +128 (MeOH). λ_{max} 282 (ϵ 8710) (EtOH).

O^{7}-*De-Me,* N^{2}-*de-Me:* ***2-Northalrugosine***
[65995-42-8]
$C_{36}H_{38}N_2O_6$ 594.706
Alkaloid from stems of *Pycnarrhena ozantha* (Menispermaceae). $[\alpha]_D$ +209 (c, 0.16 in $CHCl_3$).

O^{7}-*De-Me,* N^{2},$N^{2'}$-*di-de-Me:* ***Bisnorthalrugosine***
[111537-45-2]
$C_{35}H_{36}N_2O_6$ 580.679
Alkaloid from the stems of *Pycnarrhena ozantha* (Menispermaceae). $[\alpha]_D$ +142 (c, 0.13 in $CHCl_3$).

O^{12}-*De-Me:* ***Berbamine***. *Berbenine*
[478-61-5]
$C_{37}H_{40}N_2O_6$ 608.733
Alkaloid from *Atherosperma moschatum*, many *Berberis* spp., *Cyclea, Limaciopsis, Mahonia* and other genera (Monimiaceae, Berberidaceae, Menispermaceae, Ranunculaceae). Antihypertensive, leucocytotic agent. Strong curarising agent. Shows antibacterial activity. Cryst. (C_6H_6). Mp 155-157°. $[\alpha]_D$ +109 (c, 0.24 in $CHCl_3$). Log P 7.83 (uncertain value) (calc). Isom. to Pycnamine in P-301 when treated with MeOH (40°/24h then 2 days at r.t.). λ_{max} 284 (log ϵ 3.79) (EtOH).

▶ Highly toxic; LD_{50} (mus, ipr) 75 mg/kg. DR9450000

O^{12}-*De-Me, hydrochloride (1:2):*
Needles + $7H_2O$. Mp 257-258° dec. (2% HCl). $[\alpha]_D^{20}$ +64.2 (c, 1.0 in H_2O).

O^{12}-*De-Me,* $N^{2'}$-*β-oxide:* ***Berbamine 2′-β-N-oxide***
[103839-20-9]
$C_{37}H_{40}N_2O_7$ 624.732
Alkaloid from aerial parts of *Berberis brandisiana* (Berberidaceae).

O^{12}-*De-Me,* N^{2}-*de-Me:* ***2*-N-*Norberbamine***
[39028-61-0]
$C_{36}H_{38}N_2O_6$ 594.706
Alkaloid from *Pycnarrhena australiana* whole plant (Menispermaceae). Cryst. + 0.66 C_6H_6 (C_6H_6). Mp 166-168°. $[\alpha]_D$ +117 (c, 0.23 in $CHCl_3$).

O^{12}-*De-Me,* $N^{2'}$-*Me:* ***2′*-N-*Methylberbamine***
[68231-29-8]
$C_{38}H_{43}N_2O_6^{\oplus}$ 623.767
Quaternary alkaloid from *Berberis oblonga* (Berberidaceae). Amorph. solid (as iodide). CAS no. refers to iodide.

O^{12}-*De-Me,* N^{2},$N^{2'}$-*di-Me:*
Needles + $1H_2O$ (Me_2CO aq.). Mp 287-289° dec.

O^{6},O^{12}-*Di-de-Me:* ***Aquifoline***. *6*-O-*Demethylberbamine*
[107900-77-6]
$C_{36}H_{38}N_2O_6$ 594.706
Alkaloid from roots of *Mahonia aquifolium* (also present in stem and seeds) (Berberidaceae). Cryst. (C_6H_6/$CHCl_3$). Mp 168°. $[\alpha]_D^{25}$ +80 (c, 0.1 in MeOH). λ_{max} 229 (sh) (log ϵ 4.6); 282 (log ϵ 2.39) (MeOH).

O^{7},O^{12}-*Di-de-Me:* ***Obamegine***. *Stepholine*
[479-37-8]
$C_{36}H_{38}N_2O_6$ 594.706
Alkaloid from *Berberis tschonoskyana*, *Stephania japonica*, *Thalictrum lucidum*, *Thalictrum rugosum*, *Xanthorhiza simplicissima*, *Mahonia repens* and *Triclisia gilletii* (Berberidaceae, Menispermaceae, Ranunculaceae). Shows antibacterial activity. Antineoplastic agent. Needles (C_6H_6). Mp 171-173°. $[\alpha]_D^{19}$ +273 ($CHCl_3$). Log P 7.54 (uncertain value) (calc). λ_{max} 280 (log ϵ 3.19) (MeOH) (Berdy).

O^{7},O^{12}-*Di-de-Me,* N^{2}-*de-Me:* ***2*-N-*Norobamegine***
[38962-94-6]
Alkaloid from *Pycnarrhena australiana* and *Pycnarrhena ozantha* (Menispermaceae). Cryst. + $2CHCl_3$ ($CHCl_3$). Sol. $CHCl_3$-MeOH; fairly sol. Me_2CO. Mp 188-190° dec. $[\alpha]_D$ +290 (c, 0.25 in $CHCl_3$). λ_{max} 283 (ϵ 7530) (MeOH) (Berdy).

O^{7},O^{12}-*Di-de-Me,* N^{2},$N^{2'}$-*di-de-Me:* ***Bisnorobamegine***
[111537-44-1]
$C_{34}H_{34}N_2O_6$ 566.652
Alkaloid from the stems of *Pycnarrhena ozantha* (Menispermaceae). $[\alpha]_D$ +260 (c, 0.65 in $CHCl_3$).

Bick, I.R.C. *et al., Aust. J. Chem.*, 1956, **9**, 111-119; 1980, **33**, 225-228 (*isol, synth, Berbamine*)

Tomita, M. *et al., Yakugaku Zasshi*, 1959, **79**, 317-321; 1963, **83**, 940-944; *CA*, **53**, 17161e; **60**, 4202a (*Obamegine, isol, struct*)

Kugo, T. *et al., Yakugaku Zasshi*, 1959, **79**, 322-324; *CA*, **53**, 17161f (*Obamegine*)

Yang, T.-H. *et al., Yakugaku Zasshi*, 1960, **80**, 847-849; *CA*, **54**, 23187i (*isol*)

Battersby, A.R. *et al., J.C.S.*, 1965, 2239-2247 (*uv, ord*)

Tomimatsu, T. *et al., J. Pharm. Sci.*, 1966, **55**, 208-209 (*Obamegine, uv, ir, pmr*)

Falco, M.R. *et al., Tet. Lett.*, 1968, 1953-1959 (*pmr*)

Mitscher, L.A. *et al., Dtsch. Apoth. -Ztg.*, 1971, **111**, 1704-176 (*activity*)

Loder, J.W. *et al., Aust. J. Chem.*, 1972, **25**, 2193-2197 (*2-N-Norobamegine, 2-N-Norberbamine, isol, uv, pmr, ms, struct*)

Sioumis, A.A. *et al., Aust. J. Chem.*, 1972, **25**, 2251-2254 (*2-N-Norobamegine, 2-N-Norberbamine, isol, uv, pmr, ms*)

Mitscher, L.A. *et al., J. Nat. Prod.*, 1972, **35**, 167-176 (*Thalrugosine, Obamegine, isol, uv, ir, pmr, ms, cd, struct*)

Baldas, J. *et al., J.C.S. Perkin 1*, 1972, 592-596 (*ms*)

Shamma, M. *et al., Experientia*, 1973, **29**, 517-518 (*Thaligine*)

Tackie, A.N. *et al., J. Nat. Prod.*, 1974, **37**, 1-5 (*isol, uv, pmr, ms*)

Kuroda, H. *et al., Chem. Pharm. Bull.*, 1976, **24**, 2413-2420 (*activity*)

Akasu, M. *et al., Phytochemistry*, 1976, **15**, 471-473 (*Berbamine, isol, uv, ir, pmr, ms*)

Ayim, J.S.K. *et al., J. Nat. Prod.*, 1977, **40**, 561-565 (*Thalrugosine, isol*)

Karimov, A. *et al., Khim. Prir. Soedin.*, 1978, **14**, 227-231; *Chem. Nat. Compd. (Engl. Transl.)*, 1978, **14**, 186-189 (*2′-N-Methylberbamine*)

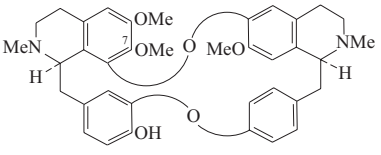
Moiseeva, G.P. *et al., Khim. Prir. Soedin.*, 1979, **15**, 818-823; *Chem. Nat. Compd. (Engl. Transl.)*, 1979, **15**, 723-727 (*cd, abs config*)

Cavé, A. *et al., Planta Med.*, 1979, **35**, 31-41 (*2′-Norisotetrandrine, Isotetrandrine 2′-N-oxide*)

Koike, L. *et al., Tet. Lett.*, 1979, 3765-3768 (*cmr*)
Bhakuni, D.S. *et al., Tetrahedron*, 1980, **36**, 2149-2151 (*biosynth*)
Owusu, P.D. *et al., J. Nat. Prod.*, 1981, **44**, 61-66 (*Obamegine, isol, uv, ir, pmr*)
Moulis, C. *et al., J. Nat. Prod.*, 1981, **44**, 101-103 (*isol, uv, ir, pmr, ms*)
Hussain, S.F. *et al., J. Nat. Prod.*, 1981, **44**, 274-278; 1986, **49**, 538-539 (*Berbamine 2′-β-N-oxide, isol*)
Nakova, E. *et al., Khim. Prir. Soedin.*, 1985, **21**, 86-91; 91-95; *Chem. Nat. Compd. (Engl. Transl.)*, 1985, **21**, 83-87; 88-91 (*synth*)
Buck, K.T. *et al., Alkaloids (Academic Press)*, 1987, **30**, 147 (*pharmacol*)
Kostálová, D. *et al., Coll. Czech. Chem. Comm.*, 1987, **52**, 242-246 (*Aquifoline*)
Abouchacra, M.L. *et al., J. Nat. Prod.*, 1987, **50**, 375-380 (*2-Northalrugosine, Bisnorthalrugosine, Bisnorobamegine*)
Tantisewie, B. *et al., J. Nat. Prod.*, 1989, **52**, 846-851 (*2-Norisotetrandrine*)
Guinaudeau, H. *et al., J. Nat. Prod.*, 1993, **56**, 1989-1992 (*Cycleabarbatine*)
Schiff, P.L. *et al., J. Nat. Prod.*, 1997, **60**, 934-953 (*Thalrugosine, pmr, cmr*)
Tanahashi, T. *et al., Chem. Pharm. Bull.*, 2000, **48**, 370-373 (*2′-N-Methylisotetrandrine*)
Chen, C.-K. *et al., Chin. Pharm. J. (Taipei)*, 2003, **55**, 35-47 (*Norobamegine, Obamegine, Thalrugosine*)

Isothalicberine I-329

1-Isothalicberine
[25514-42-5]



$C_{37}H_{40}N_2O_6$ 608.733

Stereoisomer of Thalicberine, T-313. Alkaloid from the aerial parts of *Berberis chilensis* (Berberidaceae). Cryst. ($CHCl_3$/cyclohexane). Mp 153-155°. $[\alpha]_D^{20}$ -205 (c, 0.4 in $CHCl_3$).

Me ether: **O-*Methylisothalicberine***. *7*-O-*Methylbelarine*
[19879-44-8]
$C_{38}H_{42}N_2O_6$ 622.76
Alkaloid from the trunk bark and roots of *Berberis laurina* and from the aerial parts of *Berberis chilensis* (Berberidaceae). Mp 208-209°. $[\alpha]_D$ -195 (c, 0.5 in $CHCl_3$).

O^7-*De-Me:* ***7*-O-*Demethylisothalicberine***
[73711-14-5]
$C_{36}H_{38}N_2O_6$ 594.706
Alkaloid from the aerial parts of *Berberis chilensis* (Berberidaceae). Cryst. ($CHCl_3$/cyclohexane). Mp 245-247°. $[\alpha]_D^{20}$ +230 (c, 0.2 in $CHCl_3$).

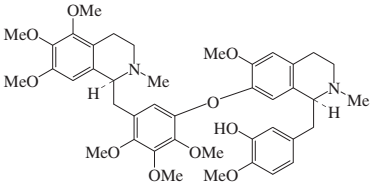
Me ether, O^7*-De-Me:* ***Belarine***
[35471-06-8]
$C_{37}H_{40}N_2O_6$ 608.733
Alkaloid from the root bark of *Berberis laurina* (Berberidaceae). Mp 158-160°. $[\alpha]_D$ -222 (c, 0.2 in $CHCl_3$).

[73711-13-4]

Falco, M.R. *et al., Tet. Lett.*, 1968, 1953; *Chem. Comm.*, 1971, 1056 (O-*Methylisothalicberine, Belarine*)
Baldas, J. *et al., J.C.S. Perkin 1*, 1972, 597 (*ms, Belarine*)
Torres, R. *et al., Gazz. Chim. Ital.*, 1979, **109**, 567 (*isol, uv, ir, pmr, ms, ord, struct,Isothalicberine,* O-*Methylisothalicberine*)

Isothalicrine I-330

[246852-81-3]

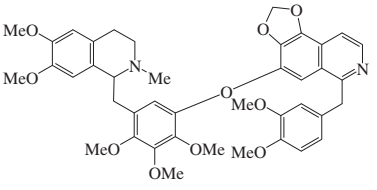


$C_{42}H_{52}N_2O_{10}$ 744.88
Alkaloid from *Isopyrum thalictroides.* Amorph. solid. $[\alpha]_D$ +33 (c, 0.31 in $CHCl_3$). λ_{max} 208 (log ϵ 6.62); 236 (sh) (log ϵ 6.06); 285 (log ϵ 5.74) (EtOH).

Philipov, S.A. *et al., Phytochemistry*, 1999, **51**, 1161-1165 (*isol, uv, ir, pmr, cmr, ms*)

Isothalictrine I-331

[241482-19-9]

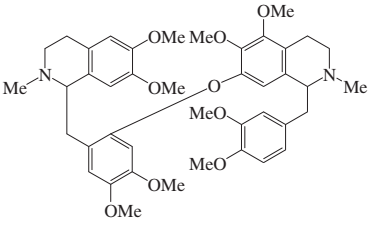


$C_{41}H_{44}N_2O_{10}$ 724.806
Alkaloid from *Isopyrum thalictroides.* Amorph. solid. Racemic. λ_{max} 208 (log ϵ 6.61); 236 (sh) (log ϵ 6.32); 259 (log ϵ 6.29); 285 (log ϵ 5.84) (EtOH).

Philipov, S.A. *et al., Phytochemistry*, 1999, **51**, 1161-1165 (*isol, uv, ir, pmr, cmr, ms*)

Isothalirine I-332

[246852-82-4]

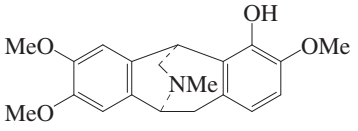


$C_{42}H_{52}N_2O_9$ 728.881
Alkaloid from *Isopyrum thalictroides.* Amorph. solid. Racemic. λ_{max} 208 (log ϵ 7.2); 236 (sh) (log ϵ 6.82); 285 (log ϵ 6.39) (EtOH).

Philipov, S.A. *et al., Phytochemistry*, 1999, **51**, 1161-1165 (*isol, uv, ir, pmr, cmr, ms*)

Isothalisopavine I-333

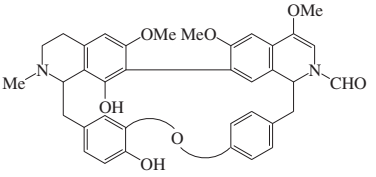
*10,11-Dihydro-3,7,8-trimethoxy-12-methyl-10,5-(iminomethano)-5*H*-dibenzo[a,d]cyclohepten-4-ol, 9CI*



$C_{20}H_{23}NO_4$ 341.406
Alkaloid from *Thalictrum minus.* Amorph. solid. $[\alpha]_D^{25}$ -169 (c, 3.4 in $CHCl_3$).

Sidjimov, A.K. *et al., Phytochemistry*, 1998, **48**, 403-405 (*isol, pmr, cmr, ms*)

Isothalmidine I-334

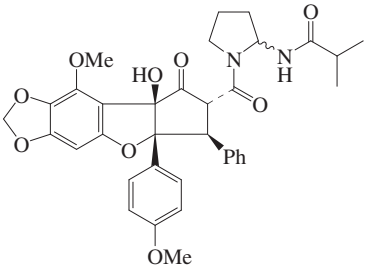


$C_{37}H_{36}N_2O_7$ 620.701
Alkaloid from *Isopyrum thalictroides.* Pale yellow solid. λ_{max} 210 (log ϵ 6.52); 240 (sh) (log ϵ 6.17); 290 (log ϵ 5.77); 312 (log ϵ 5.77) (EtOH).

Istatkova, R.S. *et al., Phytochemistry*, 2000, **54**, 959-964

Isothapsakone A I-335

[302598-27-2]

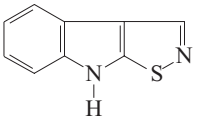


$C_{35}H_{36}N_2O_9$ 628.677
Alkaloid from *Aglaia oligophylla.* Insecticidal agent. Amorph. solid. $[\alpha]_D^{20}$ +12.2 (c, 1 in EtOH).

Dreyer, M. *et al., J. Nat. Prod.*, 2001, **64**, 415-420 (*isol, cd, pmr, cmr, ms*)

8*H*-Isothiazolo[5,4-*b*]indole, 9CI I-336

Brassilexin
[119752-76-0]



$C_9H_6N_2S$ 174.226

Isol. from leaves of brown mustard (*Brassica juncea*) (Brassicaceae). Phytoalexin. Microcryst. Mp 172-173° (164-167°). λ_{max} 218 (ϵ 50000); 245 (ϵ 14000); 264 (ϵ 12000) (MeOH) (Derep).

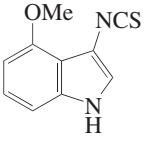
N-*Ac:*
$C_{11}H_8N_2OS$ 216.263
Mp 172-178°.

N-*Methoxy: 8-Methoxy-8*H-*isothiazolo[5,4-*b*]indole.* ***Sinalexin***
[200192-82-1]
$C_{10}H_8N_2OS$ 204.252
Isol. from leaves of white mustard (*Sinapis alba*) (Brassicaceae) under biotic or abiotic elicitation. Phytoalexin.

Devys, M. *et al., Tet. Lett.*, 1988, **29**, 6447-6448 (*isol, uv, ir, pmr, cmr, ms*)
Devys, M. *et al., Synthesis*, 1990, 214-215 (*synth, ir, uv, pmr, ms*)
Pedras, M.S.C. *et al., Phytochemistry*, 1997, **46**, 833-837 (*Sinalexin*)
Pedras, M.S.C. *et al., Phytochemistry*, 2000, **53**, 161-176 (*rev*)
Pedras, M.S.C. *et al., J.O.C.*, 2005, **70**, 1828-1834 (*synth*)
Pedras, M.S.C. *et al., Org. Biomol. Chem.*, 2005, **3**, 2002-2007 (*metab*)

3-Isothiocyanato-4-methoxy-1*H*-indole, 9CI I-337

4-Methoxyindole 3-isothiocyanate. Rapalexin A
[929083-72-7]

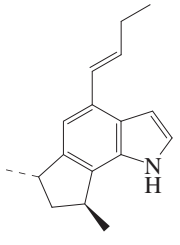


$C_{10}H_8N_2OS$ 204.252
Phytoalexin isol. from white rust infected *Brassica rapa*. No phys. props. reported.

Pedras, M.S.C. *et al., Chem. Comm.*, 2007, 368-370 (*isol, synth, pmr, cmr*)

Isotrikentrin B I-338

*4-(1-Butenyl)-1,6,7,8-tetrahydro-6,8-dimethylcyclopent[*g*]indole, 9CI*
[107368-94-5]
[152784-95-7]



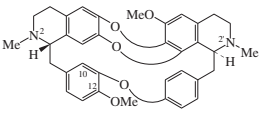
Absolute Configuration

$C_{17}H_{21}N$ 239.36
Inseparable mixt. with *cis*-Trikentrin B (ratio 2:3) (see Trikentrin B, T-595). Isol. from the marine sponge *Trikentrion flabelliforme*. Possesses antimicrobial activity. Unstable oil which darkens on storage. Sol. MeOH, $CHCl_3$. λ_{max} 240 (ϵ 44900); 298 (ϵ 12300) (MeOH).

Capon, R.J. *et al., Tetrahedron*, 1986, **42**, 6545-6550 (*isol, uv, ir, pmr, cmr, ms, struct*)
Muratake, H. *et al., Chem. Pharm. Bull.*, 1994, **42**, 854-864 (*abs config, synth*)

Isotrilobine I-339

Homotrilobine. N,O-*Dimethylcocsoline.* O-*Methylcocsuline*
[26195-62-0]



Absolute Configuration

$C_{36}H_{36}N_2O_5$ 576.691
Alkaloids covered by this entry are enantiomeric with those included in Micranthine, M-591 and diastereomeric with those in Apateline, A-1331. The name Isotrilobine is misleading. Homotrilobine is more accurate. Alkaloid from the stems of *Anisocycla grandidieri, Albertisia papuana* and *Cocculus pendulus*, the stems and roots of *Cocculus hirsutus*, the roots of *Cocculus sarmentosus* and *Stephania hernandifolia*, the roots and tops of *Pachygone pubescens*, the bark and trunk of *Cocculus laurifolius* and from *Cocculus trilobus* (all parts) (Menispermaceae). Shows antitumour activity against HeLa-S_3 cells and Ehrlich ascites. Shows antibacterial activity. Needles (Me_2CO). Mp 217-218°. $[\alpha]_D$ +325 (c, 0.41 in $CHCl_3$).

▶ LD_{50} (mus, ipr) 115 mg/kg. NY0890000

2-N-*Oxide:* ***Isotrilobine 2*-N-*oxide***
[139953-39-2]
$C_{36}H_{36}N_2O_6$ 592.69
Alkaloid from roots of *Cocculus trilobus* (Menispermaceae). Light yellow cryst. (MeOH). Mp 178-179°. $[\alpha]_D^{20}$ +150.9 (c, 0.91 in $CHCl_3$).

N^2-*De-Me:* **O-*Methylcocsoline***
[54352-71-5]
$C_{35}H_{34}N_2O_5$ 562.664
Alkaloid from the stems of *Albertisia papuana* (Menispermaceae). Cryst. (EtOAc). Mp 235-237°. $[\alpha]_D$ +236 (c, 1.2 in $CHCl_3$). Phys. constants are for synthetic material.

N^2-*De-Me,* $N^{2'}$-*β-oxide:* **O-*Methylcocsoline 2′-β*-N-*oxide***
[149492-48-8]
$C_{35}H_{34}N_2O_6$ 578.663
Alkaloid from roots of *Anisocycla cymosa* (Menispermaceae). Amorph. powder.

$N^{2'}$-*De-Me:* ***Trilobine***
[6138-73-4]
$C_{35}H_{34}N_2O_5$ 562.664
Alkaloid from *Anisocycla grandidieri*, *Pachygone ovata*, *Cocculus hirsutus*, *Cocculus sarmentosus*, *Cocculus laurifolius*, *Cocculus trilobus* and *Stephania japonica*. Convulsive agent. Shows *in vitro* antitumour activity against HeLa-S_3 cells. Cryst. (Me_2CO). Mp 235-239°. $[\alpha]_D^{20}$ +305 (c, 1.26 in $CHCl_3$).

▶ LD_{50} 500 mg/kg.

N^2,$N^{2'}$-*Di-de-Me:* ***Nortrilobine***
[91897-39-1]
$C_{34}H_{32}N_2O_5$ 548.637
Alkaloid from the roots of *Pachygone ovata* (Menispermaceae). Powder (MeOH). Mp 177-180°. $[\alpha]_D^{25}$ +216 (c, 0.44 in $CHCl_3$).

$O^{6'}$-*De-Me:* ***12*-O-*Methyltricordatine***
[187086-17-5]
$C_{35}H_{34}N_2O_5$ 562.664
Alkaloid from stem bark of *Pachygone dasycarpa*. Shows antiplasmodial activity. $[\alpha]_D$ +55 (c, 0.196 in MeOH). λ_{max} 206 (log ϵ 4.82); 236 (sh) (log ϵ 4.29); 286 (log ϵ 3.73) (MeOH).

O^{12}-*De-Me:* ***Cocsuline***. *Efirine. Trigillettine*
[26279-88-9]
$C_{35}H_{34}N_2O_5$ 562.664
Alkaloid from *Cocculus pendulus, Cocculus leaebe, Triclisia gilletii, Triclisia dictyophylla, Triclisia patens, Synclisia scabrida* and *Anisocycla papuana* (Menispermaceae). Minute needles (abs. EtOH). Mp 272-274°. $[\alpha]_D^{23}$ +292 (c, 0.76 in $CHCl_3$). $[\alpha]_D^{23}$ +337 (c, 0.86 in Py).

O^{12}-*De-Me,* N^2-*oxide:* ***Cocsuline 2*-N-*oxide***
[91106-34-2]
$C_{35}H_{34}N_2O_6$ 578.663
Alkaloid from the stems and roots of *Cocculus hirsutus* (Menispermaceae). Amorph. (MeOH). Mp 182-187°. $[\alpha]_D^{25}$ +125 (c, 0.5 in MeOH).

O^{12}-*De-Me, Ac:*
Rosettes of prisms (EtOAc/hexane). Mp 166-168° dec.

O^{12}-*De-Me,* N^2-*de-Me:* ***Cocsoline***
[54352-70-4]
$C_{34}H_{32}N_2O_5$ 548.637
Alkaloid from the leaves and stems of *Cocculus pendulus*, the roots of *Cocculus leaebe*, and the stems of *Synclisia scabrida* and *Albertisia papuana* (Menispermaceae). Amorph. powder. Mp 197-199°. $[\alpha]_D$ +204 (c, 1.3 in $CHCl_3$).

O^{12}-*De-Me,* N^2-*de-Me,* $N^{2'}$-*β-oxide:* ***Cocsoline 2′-β*-N-*oxide***
[149492-49-9]
$C_{34}H_{32}N_2O_6$ 564.637
Alkaloid from roots of *Anisocycla cymosa* (Menispermaceae). Amorph. powder.

O^{12}-*De-Me,* N^2,$N^{2'}$-*di-de-Me:* ***2′-Norcocsoline***. *12*-O-*Demethyltrilobine*
[39986-72-6]
$C_{33}H_{30}N_2O_5$ 534.61
Alkaloid from roots of *Anisocycla cymosa, Anisocycla grandidieri* and *Albertisia* sp. (Menispermaceae). Cryst. Mp 256-258°. $[\alpha]_D$ +238 (c, 0.15 in $CHCl_3$). $[\alpha]_D$ +332 (c, 1.52 in Py).

$O^{6'}$,O^{12}-*Di-de-Me:* ***Tricordatine***
[51076-20-1]
$C_{34}H_{32}N_2O_5$ 548.637
Alkaloid from the roots of *Triclisia subcordata* and the stems of *Cocculus pendulus* (Menispermaceae). Cryst. ($CHCl_3$/MeOH). Mp 280° dec. $[\alpha]_D^{22}$ +247.9 (c, 1.17 in Py). Insolubility in common organic solvents precluded the recording of pmr spectra.

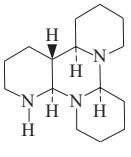
10-Hydroxy: ***10-Hydroxyisotrilobine***
$C_{36}H_{36}N_2O_6$ 592.69
Alkaloid from the stems of *Cocculus*

orbiculatus. Light yellow powder. $[\alpha]_D^{25}$ +96.1 (c, 1 in MeOH). λ_{max} 220 ; 233 ; 288 (MeOH).

Kondo, H. *et al., Yakugaku Zasshi*, 1926, **532**, 461-465; 1927, **542**, 265-278 (*Trilobine, isol, struct*)
Tomita, M. *et al., Chem. Pharm. Bull.*, 1953, **1**, 1-5 (*Trilobine, isol*)
Tomita, M. *et al., Yakugaku Zasshi*, 1959, **79**, 977-979; 1963, **83**, 190-194; *CA*, **53**, 22042i; **59**, 3971h (*Trilobine, isol*)
Inubushi, Y. *et al., Yakugaku Zasshi*, 1963, **83**, 282-288; 288-292 (*Trilobine, struct*)
Hart, N.K. *et al., Aust. J. Chem.*, 1972, **25**, 2289-2290 (*isol, pmr*)
Schlittler, E. *et al., Helv. Chim. Acta*, 1972, **55**, 2061-2064 (*12-O-Demethyltrilobine*)
Baldas, J. *et al., J.C.S. Perkin 1*, 1972, 592-596 (*ms*)
Tackie, A.N. *et al., Phytochemistry*, 1973, **12**, 2509-2511 (*Tricordatine*)
Joshi, P.P. *et al., Indian J. Chem.*, 1974, **12**, 649-650 (*Cocsoline*)
Weber, N. *et al., Phytochemistry*, 1974, **13**, 2326 (*Cocsuline*)
Bhakuni, D.S. *et al., Tetrahedron*, 1975, **31**, 2575-2579 (*Cocsoline, Cocsuline*)
Kuroda, H. *et al., Chem. Pharm. Bull.*, 1976, **24**, 2413-2420 (*Isotrilobine, activity*)
Tripathi, V.J. *et al., Indian J. Chem., Sect. B*, 1976, **14**, 62-63 (*isol, uv, pmr, ms*)
Inubushi, Y. *et al., Chem. Pharm. Bull.*, 1977, **25**, 1636-1644 (*Trilobine, synth*)
Bhakuni, D.S. *et al., J.C.S. Perkin 1*, 1978, 121-125 (*biosynth*)
Dasgupta, S. *et al., J. Nat. Prod.*, 1979, **42**, 399-406 (*Trilobine, isol, uv, ir, pmr, ms*)
Bick, I.R.C. *et al., Heterocycles*, 1981, **16**, 2105-2108 (*biosynth*)
Spiff, A.I. *et al., J. Nat. Prod.*, 1981, **44**, 160-165 (*Cocsuline*)
Leboeuf, M. *et al., Plant. Med. Phytother.*, 1982, **16**, 280-291 (*O-Methylcocsoline*)
Ohiri, F.C. *et al., Planta Med.*, 1983, **47**, 87-89 (*Cocsoline, Cocsuline*)
El-Shabrawy, A.O. *et al., Heterocycles*, 1984, **22**, 993-995 (*Cocsuline 2-N-oxide*)
El-Kawi, M.A. *et al., J. Nat. Prod.*, 1984, **47**, 459-465 (*Nortrilobine*)
Hussain, S.F. *et al., Tetrahedron*, 1984, **40**, 2513-2517 (*Tricordatine, Cocsuline, isol, cd, uv, pmr, ms, struct*)
Lavault, M. *et al., Can. J. Chem.*, 1987, **65**, 343-347 (*2′-Norcocsoline*)
Chen, H.S. *et al., Yaoxue Xuebao*, 1991, **26**, 755-758; *CA*, **116**, 170119b (*Isotrilobine 2-N-oxide*)
Kanyinda, B. *et al., J. Nat. Prod.*, 1993, **56**, 957-960 (*Cocsoline 2′-β-N-oxide, 12-O-Methylcocsoline 2′-β-N-oxide, 2′-Norcocsoline*)
Guinaudeau, H. *et al., J. Nat. Prod.*, 1997, **60**, 258-260 (*12-O-Methyltricordatine*)
Schiff, P.L. *et al., J. Nat. Prod.*, 1997, **60**, 934-953 (*Cocsuline, pmr*)
Atta-ur-Rahman, *et al., Chem. Pharm. Bull.*, 2004, **52**, 802-806 (*Cocsoline, Cocsuline*)
Chang, F.-R. *et al., J. Nat. Prod.*, 2005, **68**, 1056-1060 (*10-Hydroxyisotrilobine*)

Isotripiperideine I-340

*Tetradecahydro-2*H,*11*H-*tripyrido[1,2-a:1′,2′-c:3″,2″-e]pyrimidine, 9CI*
[482-59-7]



$C_{15}H_{27}N_3$ 249.398

A large number of stereoisomers are theoretically possible but it appears that the nat. alkaloid is identical with the *all-trans*-isomer (illus.) prepared synthetically and characterised by nmr. Alkaloid from *Coelidium fourcadei* dried branches and leaves (Fabaceae). Cryst. (hexane). Mp 97-98° (94-96°). Prob. an artifact of thermal dec.

Schöpf, C. *et al., Chem. Ber.*, 1951, **84**, 690; 1952, **85**, 937 (*synth*)
Haglid, F. *et al., Acta Chem. Scand.*, 1966, **20**, 2896 (*synth*)
Arndt, R.R. *et al., J. S. Afr. Chem. Inst.*, 1968, **21**, 54; *CA*, **70**, 4342f (*ir, uv, ms, pmr, isol, struct*)
Kessler, H. *et al., J.O.C.*, 1977, **42**, 66 (*cmr, config*)
Warning, K. *et al., Tet. Lett.*, 1979, 1565 (*synth*)

Isotuberostemonine I-341

Struct. unknown. Minor alkaloid from the roots of *Stemona tuberosa* (Stemonaceae). Mp 118-120°. $[\alpha]_D^{19}$ -86.15 (MeOH). Mol. formula $C_{22}H_{33}NO_4$ or $C_{22}H_{35}NO_4$.

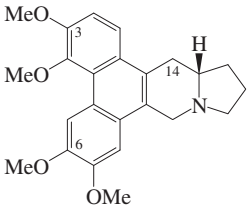
Hydroiodide (1:3):
Reddish-brown needles. Mp 214-216° dec.

Perchlorate:
Cryst. + ½ H_2O (MeOH). Mp 211-213°.

Kondo, H. *et al., CA*, 1957, **51**, 1540f (*isol*)
Kondo, H. *et al., Chem. Zentralbl.*, 1958, **129**, 14057 (*isol*)

Isotylocrebrine I-342

*9,11,12,13,13*a,*14-Hexahydro-3,4,6,7-tetramethoxydibenzo[*f,h*]pyrrolo[1,2-*b*]isoquinoline, 9CI. 3,4,6,7-Tetramethoxyphenanthroindolizidine*



(*S*)-*form*

$C_{24}H_{27}NO_4$ 393.482

Abs. config. of natural Isotylocrebine has been reversed from (*R*)- to (*S*)-.

(*R*)-*form*

β-N-*Oxide:* ***(10S,13aR)-Isotylocrebrine* N-*oxide***
$C_{24}H_{27}NO_5$ 409.481
Alkaloid from the stems of *Ficus septica*. Pale yellow needles. Mp 230-235° dec. $[\alpha]_D^{25}$ -66.6 (c, 0.02 in MeOH). λ_{max} 245 (log ε 3.24); 263 (log ε 5.39); 283 (log ε 3.12); 287 (log ε 3.08); 309 (log ε 2.41); 344 (log ε 2.24); 359 (log ε 2.19) (MeOH).

7-Demethoxy: 3,4,6-Trimethoxyphenanthroindolizidine. ***Ficuseptine D***
$C_{23}H_{25}NO_3$ 363.455
Alkaloid from the stems of *Ficus septica*. Gum. $[\alpha]_D^{25}$ -75.6 (c, 0.1 in MeOH). λ_{max} 252 (sh) (log ε 3.58); 260 (log ε 3.62); 280 (log ε 2.68); 342 (log ε 2.61); 351 (log ε 3.21) (MeOH).

(*S*)-*form* [50657-02-8]
Minor alkaloid from the leaves of *Tylophora asthmatica* and from *Tylophora tanakae* (Asclepiadaceae). Cryst. (CH_2Cl_2/MeOH). Mp 212-214° (198-203° dec.). $[\alpha]_D$ +22.43 (c, 1.1 in $CHCl_3$).

N-*Oxide:* ***Isotylocrebrine* N-*oxide***
[165606-50-8]
$C_{24}H_{27}NO_5$ 409.481
From leaves of *Tylophora tanakae* (Asclepiadaceae). Solid. $[\alpha]_D^{30}$ +28.9 (c, 0.30 in MeOH).

β-N-*Oxide:* ***(10S)-Isotylocrebrine* N-*oxide***
$C_{24}H_{27}NO_5$ 409.481
Alkaloid from the stems of *Ficus septica*. Pale yellow needles. Mp 205-210° dec. $[\alpha]_D^{25}$ +6.5 (c, 0.02 in MeOH). λ_{max} 245 (log ε 3.21); 264 (log ε 5.41); 285 (log ε 3.17); 305 (log ε 2.89); 344 (log ε 2.21) (MeOH).

O^3-*De-Me:* ***3-De-O-methylisotylocrebrine***
[165606-48-4]
$C_{23}H_{25}NO_4$ 379.455
From leaves of *Tylophora tanakae* (Asclepiadaceae). Mp 193-203° dec. $[\alpha]_D^{28}$ +34.5 (c, 0.80 in $CHCl_3$/MeOH, 1:1).

O^3,O^6-*Di-de-Me:* ***3,6-Dide-O-methylisotylocrebrine***
[209684-49-1]
$C_{22}H_{23}NO_4$ 365.428
Alkaloid from *Tylophora tanakae*. Brownish needles. Mp 233-238° dec. $[\alpha]_D^{32}$ +102.7 (c, 0.2 in $CHCl_3$/MeOH). λ_{max} 261 (log ε 4.44); 280 (log ε 4.15); 286 (log ε 4.14); 305 (sh) (log ε 3.75); 316 (log ε 3.75) (MeOH).

14α-Hydroxy, N-*oxide:* ***14α-Hydroxyisotylocrebrine* N-*oxide***
[165606-51-9]
$C_{24}H_{27}NO_6$ 425.48
From leaves of *Tylophora tanakae* (Asclepiadaceae). Mp 212-215° dec. $[\alpha]_D^{26}$ +8.3 (c, 0.12 in $CHCl_3$/MeOH, 1:1).

14α-Hydroxy, O^3*-de-Me:* ***3-De-O-methyl-14α-hydroxyisotylocrebrine***
[165606-49-5]
$C_{23}H_{25}NO_5$ 395.454
From leaves of *Tylophora tanakae* (Asclepiadaceae). Mp 210-213° dec. $[\alpha]_D^{27}$ +91.2 (c, 0.35 in $CHCl_3$/MeOH, 1:1).

14α-Hydroxy, O^3*-de-Me,* N-*oxide:* ***3-De-O-methyl-14α-hydroxyisotylocrebrine* N-*oxide***
[165606-52-0]
$C_{23}H_{25}NO_6$ 411.454
From leaves of *Tylophora tanakae* (Asclepiadaceae). Mp 215-223° dec. $[\alpha]_D^{30}$ +5.5 (c, 0.12 in MeOH).

14α-Hydroxy, O^3,O^4*-di-de-Me,* N-*oxide: 3,4-Dide-O-methyl-14α-hydroxyisotylocrebrine* N-*oxide*
$C_{22}H_{23}NO_6$ 397.427
Isol. from the butterfly *Ideopsis similis* reared on the host plant, *Tylophora tanakae*.

14α-Hydroxy, O^3,O^6-di-de-Me: ***3,6-Dide-O-methyl-14α-hydroxyisotylocrebrine***
[209802-55-1]
$C_{22}H_{23}NO_5$ 381.427
Alkaloid from *Tylophora tanakae.* Amorph. powder. $[\alpha]_D^{29}$ +17.4 (c, 0.3 in MeOH). λ_{max} 241 (log ϵ 4.3); 260 (log ϵ 4.38); 280 (log ϵ 4.21); 285 (sh) (log ϵ 4.18); 304 (log ϵ 3.89); 316 (log ϵ 3.87) (MeOH).

(±)-*form*
Synthetic. Cryst. ($CHCl_3$/MeOH). Mp 219°.

(ξ)-*form*
O^4*-De-Me: 4-Hydroxy-3,6,7-trimethoxyphenanthroindolizidine. Alkaloid B*†
[30062-23-8]
$C_{23}H_{25}NO_4$ 379.455
Alkaloid from *Tylophora crebriflora* (Asclepiadaceae). Cryst. (as Ac). Mp 226-228° (Ac).

14ξ-Hydroxy: ***14-Hydroxy-3,4,6,7-tetramethoxyphenanthroindolizidine****. Alkaloid A*†
[30062-22-7]
$C_{24}H_{27}NO_5$ 409.481
Alkaloid from *Tylophora crebriflora* (Asclepiadaceae). Cryst. (as Ac). Mp 197-198° (Ac).

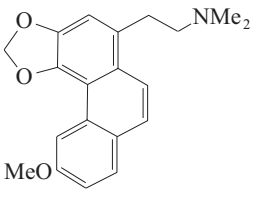
14ξ-Hydroxy, O^4*-de-Me:* ***4,14-Dihydroxy-3,6,7-trimethoxyphenanthroindolizidine****. Alkaloid C*†
[30062-24-9]
$C_{23}H_{25}NO_5$ 395.454
Alkaloid from *Tylophora crebriflora* (Asclepiadaceae). Cryst. (as di-Ac). Mp 216-218° (di-Ac). Stereochem. not determined.

[50657-02-8]

Gellert, E. *et al., J.C.S.*, 1962, 1008-1014 (*synth*)
Rao, K.V. *et al., J. Pharm. Sci.*, 1970, **59**, 1608-1611 (*Tylophora crebriflora constits*)
Govindachari, T.R. *et al., Tetrahedron*, 1973, **29**, 891-897 (*isol, uv, pmr, ms, struct*)
Govindachari, T.R. *et al., J.C.S. Perkin 1*, 1974, 1161-1165 (*ord*)
Abe, F. *et al., Phytochemistry*, 1995, **39**, 695-699; 2001, **56**, 697-701 (*isol, pmr, Tylophera tanakae constits*)
Abe, F. *et al., Chem. Pharm. Bull.*, 1998, **46**, 767-769 (*3,6-Didemethylisotylocrebrines*)
Damu, A.G. *et al., J. Nat. Prod.*, 2005, **68**, 1071-1075 (*Ficus septica constits*)

Isouvariopsine I-343

*10-Methoxy-*N,N*-dimethylphenanthro[3,4-d]-1,3-dioxole-5-ethanamine. 1-(2-Dimethylaminoethyl)-6-methoxy-3,4-methylenedioxyphenanthrene*
[22137-49-1]

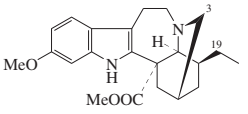


$C_{20}H_{21}NO_3$ 323.391
Alkaloid from the leaves, twigs and bark of *Hedycarya angustifolia* (Monimiaceae). Yellow solid. Mp 155-157°.

Geewanda, Y.A. *et al., Heterocycles*, 1987, **26**, 447 (*isol, uv, ir, pmr, ms, struct*)

Isovoacangine I-344

[596-54-3]



Absolute Configuration

$C_{22}H_{28}N_2O_3$ 368.475
Alkaloid from *Conopharyngia durissima*, *Stemmadenia donnell-smithii* and *Tabernaemontana laurifolia* (Apocynaceae). Shows weak antibacterial and some CNS, brachycardial and hypotensive activity. Cryst. (Et_2O/MeOH). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 156-157°. $[\alpha]_D^{22}$ -52 ($CHCl_3$). λ_{max} 227 (ϵ 37150); 270 (sh) (ϵ 6170); 278 (ϵ 4580); 300 (ϵ 7840) (MeOH).

Hydrochloride:
Cryst. (MeOH). Mp 225-228°.

O-*De-Me:* ***11-Hydroxycoronaridine***
[76202-23-8]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from the leaves of *Anartia* cf. *meyeri* (Apocynaceae) (preferred genus name *Tabernaemontana*). Amorph. $[\alpha]_D$ -34 (c, 0.6 in $CHCl_3$).

3-Hydroxy: ***3-Hydroxyisovoacangine***
[56867-70-0 , 56867-71-1]
$C_{22}H_{28}N_2O_4$ 384.474
Alkaloid from the root bark of *Gabunia eglandulosa* (preferred genus name *Tabernaemontana*) and from *Voacanga* sp. (Apocynaceae). Cryst. (C_6H_6). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 159-160°. $[\alpha]_D$ -80 (c, 0.021 in $CHCl_3$). Mixt. of C-3 epimers. λ_{max} 226 (log ϵ 4.58); 266 (sh) (log ϵ 3.73); 275 (log ϵ 3.77); 298 (log ϵ 3.93) (EtOH).

3-Oxo: ***3-Oxoisovoacangine***
[102488-57-3]
$C_{22}H_{26}N_2O_4$ 382.458
Alkaloid from a callus culture of *Tabernaemontana elegans* (Apocynaceae). λ_{max} 275 (sh) ; 288 (sh) ; 295 (MeOH).

*19*R*-Hydroxy:* ***19-Epiisovoacristine***
[438201-17-3]
$C_{22}H_{28}N_2O_4$ 384.474
Alkaloid from *Tabernaemontana corymbosa*. Oil. $[\alpha]_D$ -31 (c, 0.05 in $CHCl_3$). λ_{max} 226 (log ϵ 4.31); 283 (log ϵ 3.64); 294 (log ϵ 3.61) (EtOH).

*19*S*-Hydroxy:* ***Isovoacristine***
[5525-37-1]
$C_{22}H_{28}N_2O_4$ 384.474
Alkaloid from the bark of *Tabernaemontana laurifolia* (Apocynaceae). Amorph. Mp 104-107° (DMSO solvate) Mp 211-213° (picrate). $[\alpha]_D^{28}$ -19.6 ($CHCl_3$). Forms a DMSO solvate, Mp 104-107°. λ_{max} 227 (ϵ 32115); 297 (ϵ 5192) (EtOH).

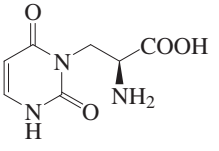
*19*S*-Hydroxy,* O*-de-Me:* ***11-Hydroxyheyneanine***
[79235-41-9]
$C_{21}H_{26}N_2O_4$ 370.447
Alkaloid from the leaves of *Anartia* cf. *meyeri* (preferred genus name *Tabernaemontana*) (Apocynaceae). Amorph. $[\alpha]_D$ -22 (c, 0.37 in $CHCl_3$).

19-Oxo: ***Isovoacryptine***
[438201-18-4]
$C_{22}H_{26}N_2O_4$ 382.458
Alkaloid from *Tabernaemontana corymbosa*. Pale yellow oil. $[\alpha]_D$ +17 (c, 0.85 in $CHCl_3$). λ_{max} 225 (log ϵ 4.25); 280 (log ϵ 3.88); 298 (log ϵ 3.97) (EtOH).

Walls, F. *et al., Tetrahedron*, 1958, **2**, 173-182 (*isol, uv, struct*)
Renner, U. *et al., Helv. Chim. Acta*, 1959, **42**, 1572-1581 (*isol, uv, ir*)
Cava, M.P. *et al., Chem. Ind. (London)*, 1965, 2064 (*Isovoacristine*)
Agwada, V.C. *et al., Helv. Chim. Acta*, 1975, **58**, 1001-1016 (*3-Hydroxyisovoacangine*)
Ladhar, F. *et al., J. Nat. Prod.*, 1981, **44**, 459-465 (*11-Hydroxyheyneanine, 11-Hydroxycoronaridine*)
van der Heijden, R. *et al., Phytochemistry*, 1986, **25**, 843-846 (*3-Oxoisovoacangine*)
Soriano-Garcia, M. *et al., J. Crystallogr. Spectrosc. Res.*, 1991, **21**, 681-685 (*cryst struct*)
Kam, T.-S. *et al., J. Nat. Prod.*, 2002, **65**, 669-672 (*Isovoacryptine, 19-Epiisovoacristine*)

Isowillardiine I-345

*α-Amino-3,6-dihydro-2,6-dioxo-1(2*H*)-pyrimidinepropanoic acid. β-(2,4-Dihydroxy-3-pyrimidinyl)alanine*

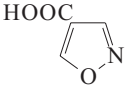


$C_7H_9N_3O_4$ 199.166

(*S*)-*form* [21381-33-9]
From seeds of *Pisum sativum* (peas) (Fabaceae).

Lambein, F. *et al., Biochem. Biophys. Res. Commun.*, 1968, **32**, 474 (*isol, uv, struct*)
Ashworth, T.S. *et al., Biochem. J.*, 1972, **129**, 897 (*biosynth*)
Janzen, D.H. *et al., Phytochemistry*, 1977, **16**, 223 (*biosynth, tox*)
Al-Baldaw, N.F. *et al., CA*, 1980, **93**, 180253m (*metab*)
Tsuchida, K. *et al., Chem. Pharm. Bull.*, 1980, **28**, 2748 (*synth*)
De Bruyn, A. *et al., Org. Magn. Reson.*, 1991, **29**, 641 (*pmr, cmr*)

4-Isoxazolecarboxylic acid I-346



$C_4H_3NO_3$ 113.073
Metab. of a *Streptomyces* sp. Phytotoxic. Plates (toluene), cryst. ($CHCl_3$ or by subl.). Mp 123-124° (121-123°). Dec. at 140° or on keeping. λ_{max} 212 (E1%/1cm

390) (MeOH) (Berdy). λ_{max} 215 (E1%/1cm 277) (H_2O) (Berdy).

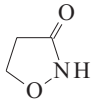
Et ester: [80370-40-7]
$C_6H_7NO_3$ 141.126
Liq. Bp_3 30° $Bp_{13.5}$ 93° (lit. gives a pressure range).

Nitrile: 4-Cyanoisoxazole. 4-Isoxazolecarbonitrile
[68776-58-9]
$C_4H_2N_2O$ 94.073
Sticky pale yellow solid. Mp 63-65°.

Panizzi, L. *et al., Gazz. Chim. Ital.*, 1947, **77**, 206 (*synth, ester*)
Maggioni, P. *et al., Gazz. Chim. Ital.*, 1966, **96**, 443 (*synth, ir*)
Angus, R.O. *et al., Synthesis*, 1988, 746 (*nitrile, synth*)
Kobinata, K. *et al., Agric. Biol. Chem.*, 1991, **55**, 1415 (*isol, ir, props*)

3-Isoxazolidinone, 9CI I-347

*4,5-Dihydro-3(2*H*)-isoxazolone. 3-Isoxazolidone*
[1192-07-0]

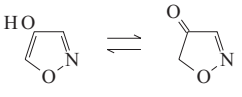


$C_3H_5NO_2$ 87.078
Isol. from seedlings of *Canavalia ensiformis* (jack bean). Cryst. Mp 70°.

Shunk, C.H. *et al., J.O.C.*, 1957, **22**, 76 (*synth*)
Olive, J.L. *et al., Bull. Soc. Chim. Fr.*, 1976, 1589 (*synth, pmr*)
Sugii, M. *et al., Phytochemistry*, 1981, **20**, 451 (*isol*)
Wolfe, S. *et al., Can. J. Chem.*, 2003, **81**, 937-960 (*synth, pmr*)

4-Isoxazolol I-348

*4-Hydroxyisoxazole. Triumferol. 4(5*H*)-Isoxazolone*
[80348-66-9]

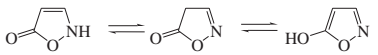


$C_3H_3NO_2$ 85.062
OH-form predominates in aq. soln., 4*H*-oxo-form in gas phase. Isol. from *Triumfetta rhomboidea*. Antigermination principle. Cryst. (Et_2O/hexane). Mp 67-68°. λ_{max} 270 (ϵ) (MeOH/NaOH) (Derep). λ_{max} 240 (ϵ 1100) (MeOH) (Derep).

Kusumi, T. *et al., Tet. Lett.*, 1981, 3451 (*isol, synth*)
Karelson, M.M. *et al., J.C.S. Perkin 2*, 1990, 195 (*tautom*)

5-Isoxazolol I-349

*5(4*H*)-Isoxazolone, 9CI. 2-Isoxazolin-5-one, 8CI. 5-Hydroxyisoxazole. 5(2*H*)-Isoxazolone*
[1072-48-6]



2H-Oxo-form *4H-Oxo-form* *OH-form*

$C_3H_3NO_2$ 85.062
Exists in several tautomeric forms. 2*H*-Oxo-form predominates in aq. soln., 4*H*-Oxo-form in gas phase. Cryst. Mp 67-69°.

2*H*-Oxo-*form* [43228-53-1]

N-*β-D-Glucopyranosyl: 2-β-D-Glucopyranosyl-3-isoxazolin-5-one*
[51581-00-1]
$C_9H_{13}NO_7$ 247.204
Constit. of the seedlings of *Lathyrus odoratus* and from the defence secretion of *Chrysomela tremulae*. Amorph. solid.

N-*[3-Nitropropanoyl-(→6)-β-D-glucopyranosyl]: 2-[6-(3-Nitropropanoyl)-β-D-glucopyranosyl]-3-isoxazolin-5-one*
[83566-20-5]
$C_{12}H_{16}N_2O_{10}$ 348.266
Constit. of the defence secretion of *Chrysomela tremulae*. Amorph. solid.

N-*Benzoyl:* [174902-45-5]
$C_{10}H_7NO_3$ 189.17
Cryst. Mp 87-89°.

N-*(2-Aminoethyl): 2-(2-Aminoethyl)-3-isoxazolin-5-one*
[54019-50-0]
$C_5H_8N_2O_2$ 128.13
Constit. of the seedlings of *Lathyrus odoratus*.

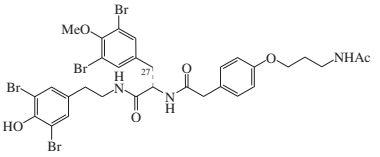
N-*(β-Glutaminylaminoethyl): 2-(β-Glutaminylaminoethyl)-3-isoxazolin-5-one*
[53987-20-5]
$C_{10}H_{15}N_3O_5$ 257.246
Constit. of the seedlings of *Lathyrus odoratus*.

OH-form

Me ether: 5-Methoxyisoxazole
[31681-57-9]
$C_4H_5NO_2$ 99.089
Mp 7°. $Bp_{0.3}$ 24-25°.

De Sarlo, F. *et al., J.C.S.(C)*, 1971, 86-89 (*synth, Me ether*)
Teysseyre, J. *et al., J. Mol. Struct.*, 1972, **12**, 191 (*tautom*)
Van Rompuy, L. *et al., Biochem. Biophys. Res. Commun.*, 1974, **56**, 199
Lambien, F. *et al., Biochem. Biophys. Res. Commun.*, 1974, **61**, 155
Kuo, Y.-H. *et al., Plant Physiol.*, 1982, **70**, 1283
Pasteels, J.M. *et al., Tetrahedron*, 1982, **38**, 1891
Ikegami, F. *et al., Phytochemistry*, 1984, **23**, 1567 (*derivs*)
Karelson, M.M. *et al., J.C.S. Perkin 2*, 1990, 195 (*tautom*)
Gould, I.R. *et al., J.C.S. Perkin 2*, 1993, 1771 (*tautom*)
Prager, R.H. *et al., J.C.S. Perkin 1*, 1997, 2659-2664 (*N-Benzoyl, synth, pmr, cmr, ir, ms*)

Itampolin A I-350



$C_{31}H_{33}Br_4N_3O_6$ 863.234
Constit. of *Iotrochota purpurea*. Pale green oil. $[\alpha]_D^{21}$ +6 (c, 0.66 in MeOH).

27ξ-Hydroxy: ***Itampolin B***
$C_{31}H_{33}Br_4N_3O_7$ 879.234
Constit. of *Iotrochota purpurea*. Pale green oil. $[\alpha]_D^{21}$ -2.5 (c, 0.25 in MeOH).

Sorek, H. *et al., Tet. Lett.*, 2006, **47**, 7237-7239 (*isol, pmr, cmr*)

Ivonine I-351

$C_{29}H_{34}N_7O_9S$ 656.695
Struct. unknown. Alkaloid from the mushroom *Phallus impudicus* (common stinkhorn). Mp 262°.

Stefănescu, P. *et al., Med. Promst. SSSR*, 1960, **14**, 15-17; *CA*, **55**, 11763i

Jaborandine J-1

$C_{18}H_{28}N_2O_2$ 304.431

Struct. unknown. Alkaloid from *Piper jaborandi* (Piperaceae). Shows local anaesthetic props. pK_a 8.14 (2-Ethoxyethanol). The *p*-Aminobenzoate ester of an aminoalcohol $C_{11}H_{23}NO$, prob. a piperidine.

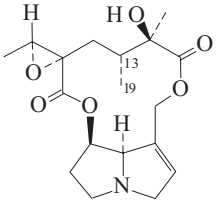
Hydrochloride: Mp 134°. Sometimes resolidifies and remelts at 154-156°.

Picrolonate: Mp 148-149°.

Wiesner, K. *et al., Can. J. Chem.*, 1951, **29**, 352-354

Jacobine J-2

15,20-Epoxy-15,20-dihydro-12-hydroxysenecionan-11,16-dione, 9CI
[6870-67-3]



$C_{18}H_{25}NO_6$ 351.399

Retronecine cyclic diester. Alkaloid of *Senecio jacobaea*, *Senecio brasiliensis* and *Senecio cineraria* (Asteraceae). Plates (EtOH). Mp 228° (219°). $[\alpha]_D^{17}$ -40 ($CHCl_3$). Samples of higher rotation have been reported including one of -139° ($CHCl_3$); this may be due to stereomutation.

▶ Hepatotoxin, genotoxin. NY5775000

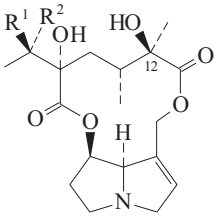
Hydrochloride: Mp 220°. $[\alpha]_D^{19}$ -14.3 (H_2O).

13,19-Didehydro: ***Jacozine***
[5532-23-0]
$C_{18}H_{23}NO_6$ 349.383
Alkaloid from *Senecio jacobaea*, *Senecio alpinus* and *Senecio incanus* (Asteraceae). Tabular prisms (EtOH). Mp 228° sl. dec. (evac. tube). $[\alpha]_D$ -140 (c, 1.90 in $CHCl_3$).

Bradbury, R.B. *et al., Aust. J. Chem.*, 1954, **7**, 378; 1956, **9**, 258 (*isol, bibl*)
Geissman, T.A. *et al., Aust. J. Chem.*, 1959, **12**, 247 (*struct*)
Bradbury, R.B. *et al., J.A.C.S.*, 1959, **81**, 5201 (*struct*)
Masamune, S. *et al., J.A.C.S.*, 1960, **82**, 5253 (*struct, abs config*)
Culvenor, C.C.J. *et al., Aust. J. Chem.*, 1964, **17**, 233; 1965, **18**, 1625 (*struct, pmr, Jacozine*)
Klásek, A. *et al., Helv. Chim. Acta*, 1968, **51**, 1088 (*isol, Jacozine*)
Šimánek, V. *et al., Coll. Czech. Chem. Comm.*, 1969, **34**, 1832 (*uv*)
Culvenor, C.C.J. *et al., J.C.S.(C)*, 1971, 3653 (*cd*)
Jones, A.J. *et al., Aust. J. Chem.*, 1982, **35**, 1173 (*cmr*)
Rohrer, D.C. *et al., Acta Cryst. C*, 1984, **40**, 1449 (*cryst struct*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, JAK000

Jacoline J-3

15,20-Dihydro-12,15,20-trihydroxysenecionan-11,16-dione, 9CI
[480-76-2]



R^1 = OH, R^2 = H

$C_{18}H_{27}NO_7$ 369.414

Retronecine cyclic diester. Alkaloid from *Senecio jacobaea* (Asteraceae). Cryst. (EtOH). Mp 221.5°. $[\alpha]_D$ +48 (c, 1.155 in $CHCl_3$).

O^{12}*-Ac:* **O-*Acetyljacoline***
[123403-03-2]
$C_{20}H_{29}NO_8$ 411.451
Alkaloid from the roots of *Cirsium wallichii* (Asteraceae). Noncryst. $[\alpha]_D^{20}$ +47 (c, 2.1 in EtOH).

O-*Ac, picrate:* Mp 148-150°.

Bradbury, R.B. *et al., Aust. J. Chem.*, 1954, **7**, 378 (*isol*)
Geissman, T.A. *et al., Aust. J. Chem.*, 1959, **12**, 247 (*struct*)
Bradbury, R.B. *et al., J.A.C.S.*, 1959, **81**, 5201 (*struct, bibl*)
Šimánek, V. *et al., Coll. Czech. Chem. Comm.*, 1969, **34**, 1832 (*uv*)
Culvenor, C.C.J. *et al., J.C.S.(C)*, 1971, 3653-3664 (*cd*)
Gable, R.W. *et al., Acta Cryst. C*, 1988, **44**, 1942 (*cryst struct*)
Negi, R.K.S. *et al., Indian J. Chem., Sect. B*, 1989, **28**, 524 (*O-Acetyljacoline*)

Jaconine J-4

20-Chloro-15,20-dihydro-12,15-dihydroxysenecionan-11,16-dione, 9CI
[480-75-1]
As Jacoline, J-3 with
R^1 = Cl, R^2 = H

$C_{18}H_{26}ClNO_6$ 387.859
Alkaloid from *Senecio jacobaea* (Asteraceae). Prisms (EtOH). Mp 147°. $[\alpha]_D$ +52.5 (c, 1.144 in EtOH). MF originally given as $C_{30}H_{32}ClNO_7$.

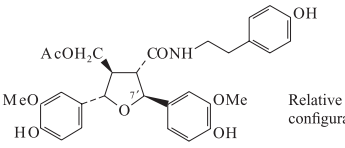
▶ VT5704000

18-Hydroxy: ***18-Hydroxyjaconine***
$C_{18}H_{26}ClNO_7$ 403.859
Alkaloid from aerial parts of *Senecio selloi*. No phys. props. reported.

Barger, G. *et al., J.C.S.*, 1937, 584 (*isol*)
Bradbury, R.B. *et al., Aust. J. Chem.*, 1954, **7**, 378 (*isol*)
Geissman, T.A. *et al., Aust. J. Chem.*, 1959, **12**, 247 (*struct*)
Bradbury, R.B. *et al., J.A.C.S.*, 1959, **81**, 5201 (*struct, bibl*)
Šimánek, V. *et al., Coll. Czech. Chem. Comm.*, 1969, **34**, 1832 (*uv*)
Culvenor, C.C.J. *et al., J.C.S.(C)*, 1971, 3653-3664 (*cd*)
Gable, R.W. *et al., Acta Cryst. C*, 1988, **44**, 1942 (*cryst struct*)
Krebs, H.C. *et al., Phytochemistry*, 1996, **43**, 1227 (*18-Hydroxyjaconine*)

Jacpaniculine J-5

[162857-96-7]



Relative configuration

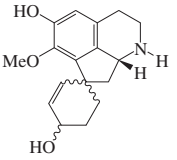
$C_{30}H_{33}NO_9$ 551.592
Lignanamide alkaloid from fruits of *Jacquemontia paniculata* var. *paniculata* (Convolvulaceae). Cryst. Mp not reported.

7′-Epimer: ***Isojacpaniculine***
[162990-76-3]
$C_{30}H_{33}NO_9$ 551.592
Alkaloid from fruits of *Jacquemontia paniculata* var. *paniculata* (Convolvulaceae). Cryst. Mp not reported.

Henrici, A. *et al., Phytochemistry*, 1994, **37**, 1637 (*isol, pmr, cmr, ms, struct*)

Jaculadine J-6

[27317-49-3]



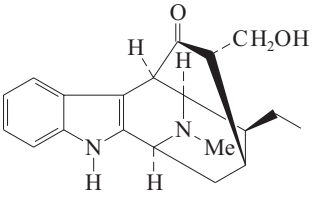
Tentative Absolute Configuration

$C_{17}H_{21}NO_3$ 287.358
Alkaloid from *Croton linearis* (Euphorbiaceae). Noncryst. Mp 201-204° (as tri-Ac). $[\alpha]_D$ -164.7 (c, 0.59 in MeOH) (tri-Ac).

Stuart, K.L. *et al., J.C.S.(C)*, 1970, 1228-1230 (*isol, uv, ir, pmr, ms, struct*)

Jadiffine J-7

[120374-32-5]



$C_{20}H_{24}N_2O_2$ 324.422

Appears to be a structural variant related to Macroline, M-17. Alkaloid from *Vinca difformis* (Apocynaceae).

Garnier, J. *et al., Phytochemistry*, 1989, **28**, 308 (*pmr, cmr, struct*)

Jadomycin V J-8

[689281-75-2 (3*aR*), 689281-68-3 (3*aS*)]
As Jadomycin Ala, J-10 with

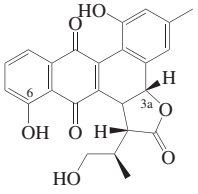
R = -$CH(CH_3)_2$

$C_{29}H_{29}NO_9$ 535.549
Metab. of *Streptomyces venezuelae* ISP 5230. Mixt. of diastereoisomers, 67% 3*aS*, 33% 3*aR*.

Rix, U. *et al., J.A.C.S.*, 2004, **126**, 4496-4497 (*isol, pmr, cmr*)
Borrisow, C.N. *et al., ChemBioChem*, 2007, **8**, 1198-1203 (*isol, biosynth*)

Jadomycin A J-9

[138863-47-5]



Absolute Configuration

$C_{24}H_{21}NO_6$ 419.433
Naphthoquinone antibiotic. Prod. by *Streptomyces venezuelae* ISP5230 (ATCC10712). Green cryst. solid. Mp 167-168°. λ_{max} 214 (ϵ 37200); 239 (ϵ 18600); 289 (sh) ; 314 (ϵ 21400); 429 (ϵ 6030) (MeOH) (Derep).

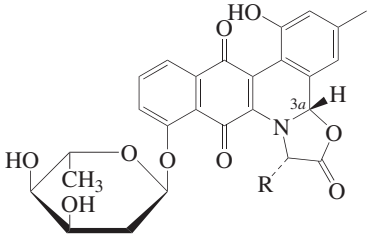
*6-O-(2,6-Dideoxy-α-L-*ribo*-hexopyranoside): **Jadomycin B***
[149633-99-8]
[689281-67-2 (3*aS*), 689281-74-1 (3*aR*)]
$C_{30}H_{31}NO_9$ 549.576
Prod. by *Streptomyces venezuelae* ISP5230 (ATCC10712) after heat shock. Obt. as a mixt. of diastereomers at C-3*a*, *R:S* 33:67%. λ_{max} 313 (MeOH) (Berdy).

*6-O-(6-Deoxy-α-L-*altro*-hexopyranoside): ILEVS 1080*
[913188-61-1]
$C_{30}H_{31}NO_{10}$ 565.576
Isol. from *Streptomyces venezuelae* VS1080. Exists as a mixt. of 3*aS* and 3*aR* diastereoisomers.

Ayer, S.W. *et al., Tet. Lett.*, 1991, **32**, 6301-6304 (*Jadomycin A*)
Ayer, S.W. *et al., J. Antibiot.*, 1993, **46**, 869-871 (*Jadomycin B*)
Rix, U. *et al., J.A.C.S.*, 2004, **126**, 4496-4497 (*biosynth*)
Zheng, J.-T. *et al., J. Antibiot.*, 2005, **58**, 405-408 (*activity*)
Jakeman, D.L. *et al., Chem. Comm.*, 2006, 3738-3740 (*biosynth, ILEVS 1080, isol, pmr*)
Borissow, C.N. *et al., ChemBioChem*, 2007, **8**, 1198-1203 (*analogues*)

Jadomycin Ala J-10

[689281-70-7 (3*aS*), 689281-77-4 (3*aR*)]



R = CH_3

$C_{27}H_{25}NO_9$ 507.496
Metab. of *Streptomyces venezuelae* ISP 5230. Mixt. of diastereoisomers, 60% 3*aS*, 40% 3*aR*.

Rix, U. *et al., J.A.C.S.*, 2004, **126**, 4496-4497 (*isol, pmr, cmr*)
Borissow, C.N. *et al., ChemBioChem*, 2007, **8**, 1198-1203 (*isol, biosynth*)

Jadomycin F J-11

[689281-69-4 (3*aS*), 689281-76-3 (3*aR*)]
As Jadomycin Ala, J-10 with

R = -CH_2Ph

$C_{33}H_{29}NO_9$ 583.593
Metab. of *Streptomyces venezuelae* ISP 5230. Mixt. of diastereoisomers at 3*a*, 66% 3*aS* 34% 3*aR*.

Rix, U. *et al., J.A.C.S.*, 2004, **126**, 4496-4497 (*isol, pmr, cmr*)
Borissow, C.N. *et al., ChemBioChem*, 2007, **8**, 1198-1203 (*isol, biosynth*)

Jadomycin S J-12

[689281-80-9 (3*aR*), 689281-73-0 (3*aS*)]
As Jadomycin Ala, J-10 with

R = CH_2OH

$C_{27}H_{25}NO_{10}$ 523.495
Metab. of *Streptomyces venezuelae* ISP 5230. Mixt. of diastereoisomers 95% 3*aR*, 5% 3*aS*.

Rix, U. *et al., J.A.C.S.*, 2004, **126**, 4496-4497 (*isol, pmr, cmr*)
Berissow, C.N. *et al., ChemBioChem*, 2007, **8**, 1198-1203 (*isol, biosynth*)

Jadomycin T J-13

[689281-78-5 (3*aR*), 689281-72-9 (3*aS*)]
As Jadomycin Ala, J-10 with

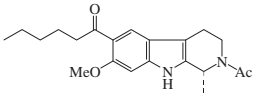
R = -CH(OH)CH_3 (*R*-)

$C_{28}H_{27}NO_{10}$ 537.522
Metab. of *Streptomyces venezuelae* ISP 5230. Mixt. of diastereoisomers at C-3*a* 95% 3*aR*, 5% 3*aS*.

Rix, U. *et al., J.A.C.S.*, 2004, **126**, 4496-4497 (*isol, pmr, cmr*)
Borissow, C.N. *et al., ChemBioChem*, 2007, **8**, 1198-1203 (*isol, biosynth*)

Jafrine J-14

[479672-79-2]

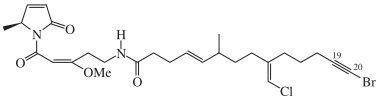


Absolute Configuration

$C_{21}H_{28}N_2O_3$ 356.464
Alkaloid from the flowers of *Tagetes patula*. Yellow gum. $[\alpha]_D^{26}$ +19.2 (c, 0.1 in $CHCl_3$).

Faizi, S. *et al., Tetrahedron*, 2002, **58**, 6185-6197 (*isol, synth, cd, pmr, cmr, ms*)

Jamaicamide A J-15



$C_{27}H_{36}BrClN_2O_4$ 567.949
Isol. from *Lyngbya majuscula*. Neurotoxin. Pale yellow oil. $[\alpha]_D^{25}$ +44 (c, 1.5 in MeOH). λ_{max} 272 (log ϵ 3.9) (MeOH).

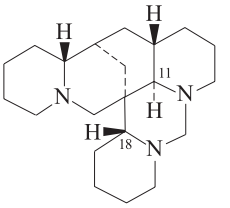
*Debromo: **Jamaicamide B***
$C_{27}H_{37}ClN_2O_4$ 489.053
Isol. from *Lyngbya majuscula*. Pale yellow oil. $[\alpha]_D^{25}$ +53 (c, 0.61 in MeOH). λ_{max} 272 (log ϵ 3.9) (MeOH).

*Debromo, 19,20-dihydro: **Jamaicamide C***
$C_{27}H_{39}ClN_2O_4$ 491.069
Isol. from *Lyngbya majuscula*. Pale yellow oil. $[\alpha]_D^{25}$ +49 (c, 0.39 in MeOH). λ_{max} 273 (log ϵ 3.8) (MeOH).

Edwards, D.J. *et al., Chem. Biol.*, 2004, **11**, 817-833 (*isol, biosynth, pmr, cmr*)

Jamine J-16

Homoormosanine, 9CI



(–)-*form*

$C_{21}H_{35}N_3$ 329.528
Stereoisomeric with Homopiptanthine, H-341.

(-)-*form* [10550-80-8]
Alkaloid from *Ormosia costulata* (Fabaceae) and *Bowdichia virgiloides*, formed by the action of CH_2O on Ormosanine, O-115. Mp 126-127° (116-117°). $[\alpha]_D^{24}$ -10.4 (c, 1.2 in $CHCl_3$) (-1.6, -3.8).

*18-Epimer: **18-Epihomoormosanine***
[123123-43-3]
$C_{21}H_{35}N_3$ 329.528
Alkaloid from the stem bark of *Bowdichia virgiloides* (Fabaceae). Cryst. Mp 93-95°. $[\alpha]_D^{21}$ +6 (c, 1.03 in $CHCl_3$).

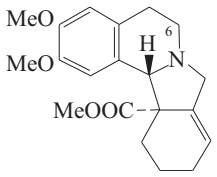
*11,18-Diepimer: **Homodasycarpine***
[67670-84-2]
$C_{21}H_{35}N_3$ 329.528
Alkaloid from *Ormosia costulata* (Fabaceae). Cryst. (CH_2Cl_2/hexane). Mp 130-140°. $[\alpha]_D^{24}$ +16 ($CHCl_3$). Relative config. only known.

(±)-*form* [4673-41-0]
Alkaloid from seeds of *Ormosia panamensis* and *Ormosia jamaicensis* (Fabaceae). Mp 153-154°.

Clarke, R.T. *et al., J.C.S.*, 1963, 535-539 (*Homodasycarpine*)
Karle, I.L. *et al., Tet. Lett.*, 1963, 2065-2067 (*cryst struct*)
Naegeli, P. *et al., Tet. Lett.*, 1963, 2069-2073 (*isol, struct, resoln, synth*)
Frank, J.K. *et al., Acta Cryst. B*, 1978, **34**, 2316-2319 (*isol, cryst struct*)
Wang, A.H.J. *et al., Acta Cryst. B*, 1978, **34**, 2319-2321 (*Homodasycarpine*)
Torrenegra, G.R. *et al., Planta Med.*, 1985, 276-277 (*isol*)
Torrenegra, R. *et al., Phytochemistry*, 1989, **28**, 2219-2221 (*18-Epihomoormosanine*)
Le, P.M. *et al., Magn. Reson. Chem.*, 2005, **43**, 283-293 (*pmr, cmr*)

Jamtine J-17

[111261-78-0]



$C_{20}H_{25}NO_4$ 343.422

Synthetic studies (2003) raise serious doubts about the structural assignments in this series. λ_{max} 220 ; 239 ; 300 (MeOH).

N-*Oxide:* ***Jamtine* N-*oxide***
[111261-79-1]
$C_{20}H_{25}NO_5$ 359.421
Alkaloid from the leaves of *Cocculus hirsutus* (Menispermaceae). Viscous oil.

O^3-*De-Me:* ***Hirsutine***†
[135250-40-7]
$C_{19}H_{23}NO_4$ 329.395
Alkaloid from *Cocculus hirsutus* (Menispermaceae). Gum. $[\alpha]_D^{25}$ +178 ($CHCl_3$).

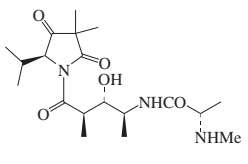
O^2,O^3-*Di-de-Me:* ***Haiderine***. *Jamtinine*†
[154722-71-1]
$C_{18}H_{21}NO_4$ 315.368
Alkaloid from aerial parts (Haiderine) or whole plants (Jamtinine) of *Cocculus hirsutus* (Menispermaceae). Gum. $[\alpha]_D^{25}$ +167 ($CHCl_3$). Haiderine and Jamtinine not compared, but same struct. assigned. The name Jamtinine is misleading as this name was previously used for 6-Oxojamtine.

6-Oxo: ***Jamtinine***†
[151079-01-5]
$C_{20}H_{23}NO_5$ 357.405
Alkaloid from *Cocculus hirsutus* (Menispermaceae). Gum. $[\alpha]_D^{25}$ +177 ($CHCl_3$).

Ahmad, V.U. *et al., Heterocycles*, 1987, **26**, 1251-1255 (*Jamtine N-oxide*)
Rasheed, T. *et al., J. Nat. Prod.*, 1991, **54**, 582-584 (*Hirsutine*)
Ahmad, V.U. *et al., Nat. Prod. Lett.*, 1993, **2**, 105-109 (*Haiderine*)
Ahmad, V.U. *et al., Phytochemistry*, 1993, **33**, 735-736 (*Jamtinine*)
Durrani, S. *et al., Fitoterapia*, 1995, **66**, 172 (*Jamtinine*)
Padwa, A. *et al., J.O.C.*, 2003, **68**, 929-941 (*synth, struct*)
Gill, C.D. *et al., Tetrahedron*, 2003, **59**, 9213-9230 (*synth, struct*)

Janolusimide J-18

[103612-45-9]



Absolute Configuration

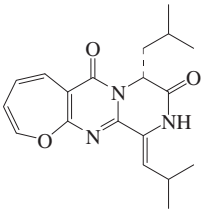
$C_{19}H_{33}N_3O_5$ 383.487

Peptide toxin. Isol. from *Janolus cristatus*. Neurotoxin, atropine antagonist. Amorph. $[\alpha]_D^{25}$ -10.3 (c, 2.5 in $CHCl_3$).

▶ LD_{50} (mus, ipr) 5 mg/kg.

Sodano, G. *et al., Tet. Lett.*, 1986, **27**, 2505-2508 (*isol, struct, nmr*)
Giordano, A. *et al., Tet. Lett.*, 2000, **41**, 3979-3982 (*synth, abs config*)

Janoxepin J-19



Absolute Configuration

$C_{19}H_{23}N_3O_3$ 341.409

Homologue of Cinereain, C-449. Prod. by *Aspergillus janus* (IBT 22274). Antiplasmodial agent. Orange-red cryst. Mp 88-89°. $[\alpha]_D^{25}$ -3.4 (c, 1.5 in MeOH).

Sprogoe, K. *et al., Tetrahedron*, 2005, **61**, 8718-8721 (*isol, pmr, cmr*)

Janthitrem A J-20

[73561-89-4]

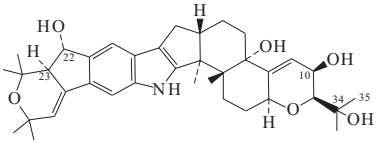
$C_{37}H_{47}NO_6$ 601.781

Struct. unknown. Prod. by *Penicillium janthinellum*. Tremorgenic mycotoxin. Fluorescent.

Gallagher, R.T. *et al., Appl. Environ. Microbiol.*, 1980, **39**, 272-273 (*isol*)
Lauren, D.R. *et al., J. Chromatogr.*, 1982, **248**, 150-154
Penn, J. *et al., Phytochemistry*, 1993, **32**, 1431-1434 (*isol, ms*)

Janthitrem E J-21

[90986-50-8]



$C_{37}H_{49}NO_6$ 603.797

Rel. stereochem. at C-22 and C-23 depicted. Prod. by *Penicillium janthinellum*. Tremorgenic mycotoxin. Amorph. solid. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. λ_{max} 228 (ϵ 17700); 265 (ϵ 30000); 330 (ϵ 17000) (MeOH) (Berdy).

10-Ac: ***Janthitrem F***
[90986-52-0]
$C_{39}H_{51}NO_7$ 645.834
From *Penicillium janthinellum*. Tremorgenic mycotoxin. Amorph. solid. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. λ_{max} 228 (ϵ 24200); 265 (ϵ 22400); 330 (ϵ 12200) (MeOH) (Berdy).

22-Deoxy, 10-Ac: ***Janthitrem G***
[90986-51-9]
$C_{39}H_{51}NO_6$ 629.835
From *Penicillium janthinellum*. Tremorgenic mycotoxin. Amorph. solid. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. λ_{max} 228 (ϵ 23000); 263 (ϵ 15700); 331 (ϵ 10800) (MeOH) (Berdy).

22-Deoxy, 10-ketone: ***Shearinine B***
[163136-25-2]
$C_{37}H_{47}NO_5$ 585.782
Isol. from the ascostromata of *Eupenicillium shearii*. Mycotoxin. Shows antiinsectant activity. Mp 165-170° dec. $[\alpha]_D$ -76 (c, 0.20 in $CHCl_3$). C-23 config. not defined.

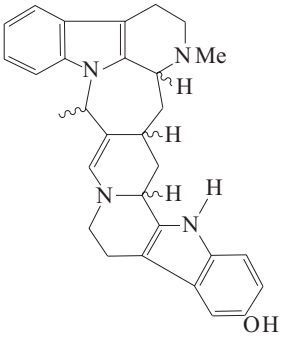
34-Deoxy, 34,35-didehydro: ***Janthitrem B***
[73561-90-7]
$C_{37}H_{47}NO_5$ 585.782
Isol. from *Penicillium janthinellum*. Tremorgenic mycotoxin.

22,34-Dideoxy, 34,35-didehydro: ***Janthitrem C***
[73561-91-8]
$C_{37}H_{47}NO_4$ 569.783
Isol. from *Penicillium janthinellum*. Tremorgenic mycotoxin. Amorph. solid.

De Jesus, A.E. *et al., J.C.S. Perkin 1*, 1984, 697 (*isol, uv, ir, pmr, cmr, struct*)
Wilkins, A.L. *et al., J. Agric. Food Chem.*, 1992, **40**, 1307 (*struct, config*)
Penn, J. *et al., Phytochemistry*, 1993, **32**, 1431 (*struct*)
Belofsky, G.N. *et al., Tetrahedron*, 1995, **51**, 3959 (*Shearinine B*)

Janussine A J-22

[97466-24-5]



$C_{30}H_{32}N_4O$ 464.609

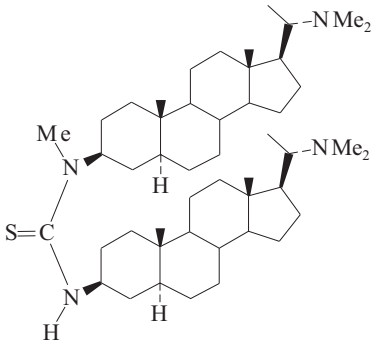
Alkaloid from the root bark and stem bark of *Strychnos johnsonii* (Loganiaceae). $[\alpha]_D$ +492 (c, 0.5 in MeOH).

Stereoisomer: ***Janussine B***
[97400-83-4]
$C_{30}H_{32}N_4O$ 464.609
Alkaloid from the root bark and stem bark of *Strychnos johnsonii* (Loganiaceae). $[\alpha]_D$ +153 (c, 0.2 in MeOH).

Massiot, G. *et al., Tet. Lett.*, 1985, **26**, 2441-2444 (*uv, ir, pmr, cmr, ms, struct*)
Massiot, G. *et al., Phytochemistry*, 1987, **26**, 2839-2846 (*isol, uv, ir, pmr, ms*)

Japindine J-23

N,N′-Bis(20-dimethylaminopregnan-3-yl)-N-methylthiourea, 9CI
[52483-07-5]

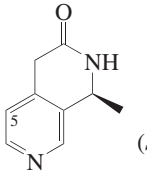


$C_{48}H_{84}N_4S$ 749.284
Alkaloid from root bark of *Chonemorpha macrophylla* (Apocynaceae). Mp 275-280° dec. subl. $[\alpha]_D^{23}$ +5.4 (MeOH/$CHCl_3$ 1:4). Yields Chonemorphine and *N*-Acetylchonemorphine on acetylation.

Banerji, J. *et al., Indian J. Chem., Sect. B*, 1978, **16**, 346

Jasminidine J-24

1,4-Dihydro-1-methyl-2,7-naphthyridin-3(2H)-one



(*S*)-*form*

$C_9H_{10}N_2O$ 162.191

(*S*)-*form* [68711-43-3]
Alkaloid from the leaves of *Syringa vulgaris* (Oleaceae). Cryst. ($CHCl_3$/Et_2O). Mp 190-194° dec. $[\alpha]_D^{27}$ -3.2 (c, 0.35 in $CHCl_3$).

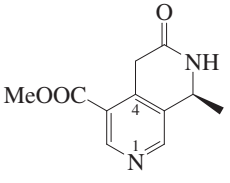
(ξ)-*form*

5-Methoxy: ***Acanthicifoline***
[76193-60-7]
$C_{10}H_{12}N_2O_2$ 192.217
Alkaloid from *Acanthus ilicifolius* (Acanthaceae). Mp 168-170°. $[\alpha]_D^{24}$ -31.6 ($CHCl_3$).

Ripperger, H. *et al., Phytochemistry*, 1978, **17**, 1069-1070 (*Jasminidine*)
Tiwara, K.P. *et al., Pol. J. Chem. (Rocz. Chem.)*, 1980, **54**, 857-858 (*Acanthicifoline*)

Jasminine† J-25

Methyl 5,6,7,8-tetrahydro-8-methyl-6-oxo-2,7-naphthyridine-4-carboxylate, 9CI



$C_{11}H_{12}N_2O_3$ 220.227

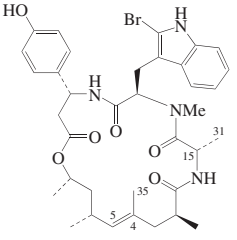
(*S*)-*form* [19634-30-1]
Alkaloid from *Jasminum gracile* and several other *Jasminum* spp., *Ligustrum novoguineense*, *Olea paniculata* and *Syringa vulgaris* (Oleaceae). Mp 175-176°. $[\alpha]_D^{24}$ -29.8 (c, 1 in $CHCl_3$).

1,4-Dihydro: ***Dihydrojasminine***
[206440-44-0]
$C_{11}H_{14}N_2O_3$ 222.243
Alkaloid from *Osmanthus austrocaledonica*. $[\alpha]_D^{20}$ +300 (c, 0.01 in $CHCl_3$). Rel. config. only determined. 4*H*- *cis*- to Me group. λ_{max} 206 (log ϵ 4.27); 344 (log ϵ 3.83) (MeOH).

Hart, N.K. *et al., Aust. J. Chem.*, 1968, **21**, 1321-1326 (*uv, ir, pmr, ms, isol, struct*)
Ripperger, H. *et al., Phytochemistry*, 1978, **17**, 1069-1070 (*ir, pmr, ms, config*)
Benkrief, R. *et al., Phytochemistry*, 1998, **47**, 825-832 (*Dihydrojasminine, isol, uv, ir, pmr, cmr*)
Bennasar, M.-L. *et al., Tetrahedron*, 2004, **60**, 6785-6789 (*synth*)

Jaspamide J-26

Jasplakinolide
[102396-24-7]



Absolute Configuration

$C_{36}H_{45}BrN_4O_6$ 709.679
Cyclodepsipeptide antibiotic. Isol. from the marine sponge *Jaspis* sp. F-actin inhibitor. Active against yeasts, nematodes and carcinoma. Possesses antifungal, anthelmintic and insecticidal props. Cytotoxic. $[\alpha]_D$ +35 (c, 3.62 in MeOH). λ_{max} 281 (ϵ 5400); 290 (ϵ 4100) (MeOH) (Derep).

31-Hydroxy: ***Jaspamide E***
[942155-33-1]
$C_{36}H_{45}BrN_4O_7$ 725.678
Isol. from *Jaspis splendans*. Amorph. solid. $[\alpha]_D^{25}$ +42.2 (c, 0.05 in $CHCl_3$).

4Z-Isomer, 35-oxo: ***Jaspamide G***
[942155-35-3]
$C_{36}H_{43}BrN_4O_7$ 723.662
Isol. from *Jaspis splendans*. Amorph. solid. $[\alpha]_D^{25}$ -6.7 (c, 0.06 in $CHCl_3$). Has 35*E*-config.

$\Delta^{4,35}$-Isomer, 5ξ-hydroxy: ***Jaspamide C***
[219774-75-1]
$C_{36}H_{45}BrN_4O_7$ 725.678
Isol. from *Jaspis splendans*. Glass. $[\alpha]_D^{25}$ +25.4 (c, 0.0013 in $CHCl_3$). λ_{max} 220 (log ϵ 3.37); 276 (log ϵ 2.71) (MeOH).

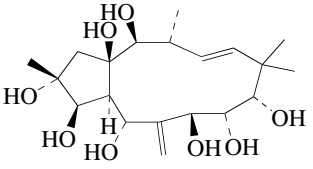
$\Delta^{4,35}$-Isomer, 5-oxo: ***Jaspamide B***
[219774-74-0]
$C_{36}H_{43}BrN_4O_7$ 723.662
Isol. from *Jaspis splendans*. Glass. $[\alpha]_D^{25}$ +11.4 (c, 0.0014 in $CHCl_3$). λ_{max} 232 (log ϵ 3.75); 278 (log ϵ 3.66) (MeOH).

31-Methyl, 15-epimer: ***Jaspamide D***
[942155-32-0]
$C_{37}H_{47}BrN_4O_6$ 723.706
Isol. from *Jaspis splendans*. Amorph. solid. $[\alpha]_D^{25}$ +20.1 (c, 0.05 in $CHCl_3$).

4-Demethyl: ***Jaspamide F***
[942155-34-2]
$C_{35}H_{43}BrN_4O_6$ 695.652
Isol. from *Jaspis splendans*. Amorph. solid. $[\alpha]_D^{25}$ -15.7 (c, 0.07 in $CHCl_3$).

Zabriskie, T.M. *et al., J.A.C.S.*, 1986, **108**, 3123 (*isol, ir, pmr, cmr, cryst struct*)
Crews, P. *et al., Tet. Lett.*, 1986, **27**, 2797 (*isol, uv, ir, pmr, cmr, ms, struct*)
Braekman, J.C. *et al., J. Nat. Prod.*, 1987, **50**, 994 (*isol, pmr, cmr, ir, uv, ms*)
Grieco, P.A. *et al., J.A.C.S.*, 1988, **110**, 1630 (*synth*)
Kato, S. *et al., Tet. Lett.*, 1988, **29**, 6465 (*synth*)
Inman, W. *et al., J.O.C.*, 1989, **54**, 2523 (*props, bibl*)
Konopelski, J.P. *et al., J.O.C.*, 1991, **56**, 1355 (*synth*)
Kang, S.K. *et al., Synlett*, 1991, 175 (*synth*)
Rao, A.V.R. *et al., Tet. Lett.*, 1993, **34**, 7085 (*synth*)
Hirai, Y. *et al., Heterocycles*, 1994, **39**, 603 (*synth*)
Imaeda, T. *et al., Tet. Lett.*, 1994, **35**, 591 (*synth*)
Ashworth, P. *et al., Synthesis*, 1995, 199 (*synth*)
Zampella, A. *et al., J. Nat. Prod.*, 1999, **62**, 332-334 (*Jaspamides B-C*)
Tabudravu, J.N. *et al., Org. Biomol. Chem.*, 2005, **3**, 745-749 (*conformn*)
Gosh, A.K. *et al., Org. Lett.*, 2007, **9**, 2425-2427 (*synth*)
Gala, F. *et al., Tetrahedron*, 2007, **63**, 5212-5219 (*Jaspamides D-G*)

6(17),11-Jatrophadiene-2,3,5,7,8,9,14,15-octol J-27



$C_{20}H_{34}O_8$ 402.484

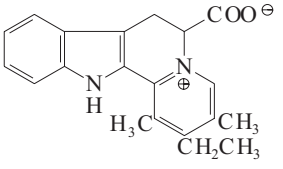
(2α,3β,5α,7β,8α,9α,11*E*,14β,15β)-*form*

9-(3-Pyridinecarbonyl), 3-benzoyl, 2,5,7,14-tetra-Ac: [210108-89-7]
$C_{41}H_{49}NO_{14}$ 779.836
Constit. of *Euphorbia peplus*.

9-(3-Pyridinecarbonyl), 3-benzoyl, 7-(2-methylpropanoyl), 2,5,14-tri-Ac:
[210108-87-5]
$C_{43}H_{53}NO_{14}$ 807.89
Constit. of *Euphorbia peplus*.

Jakupovic, J. *et al., Phytochemistry*, 1998, **47**, 1601-1609 (*isol, pmr, cmr*)

Javacarboline J-28



$C_{20}H_{20}N_2O_2$ 320.39

Truncated indole alkaloid, original skeleton uncertain. Prob. not secologanin-derived.

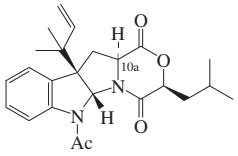
(±)-*form* [157232-63-8]

Alkaloid from the stem of *Picrasma javanica* (Simaroubaceae). Exhibits *in vitro* cytotoxicity against human tumour PC-6 cells and murine lymphocytic leukaemia P-388 cells. Pale yellow prisms (MeOH aq.). Mp 220-222°. λ_{max} 235 (ϵ 13500); 308 (ϵ 8710); 380 (ϵ 10471) (MeOH) (Berdy).

Koike, K. *et al., Heterocycles*, 1994, **38**, 1413 (*isol, uv, ir, pmr, cmr, ms, cryst struct*)

Javanicunine A J-29

[915137-81-4]



Absolute Configuration

$C_{24}H_{30}N_2O_4$ 410.512

Similar to Mollenine A, M-670. Prod. by *Eupenicillium javanicum* IFM 54704. Amorph. solid. $[\alpha]_D^{22}$ -152.3 (c, 1 in CH_2Cl_2). λ_{max} 247 (log ϵ 3.95); 278 (log ϵ 3.14); 285 (log ϵ 3.09) (CH_2Cl_2).

*10*a-*Epimer, 10*a-*hydroxy:* ***Javanicunine B***
[915137-82-5]
$C_{24}H_{30}N_2O_5$ 426.511
Prod. by *Eupenicillium javanicum* IFM 54704. Amorph. solid. $[\alpha]_D^{22}$ -118.5 (c, 0.2 in CH_2Cl_2). λ_{max} 246 (log ϵ 3.87); 278 (log ϵ 3.13); 285 (log ϵ 3.09) (MeOH).

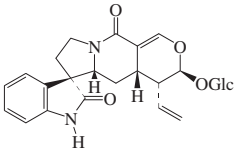
Nakadate, S. *et al., Heterocycles*, 2006, **68**, 1969-1972 (*isol, pmr, cmr*)

Javanine† J-30

Struct. unknown. Alkaloid from the bark of *Cinchona calisaya* var. *javanica* (Rubiaceae). Rhombic leaflets (H_2O).

Hesse, O. *et al., Ber.*, 1877, **10**, 2152

Javaniside J-31



Absolute Configuration

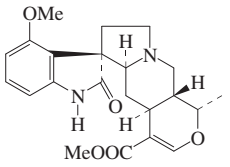
$C_{26}H_{30}N_2O_9$ 514.531

Alkaloid from the leaves of *Alangium javanicum*. DNA cleavage agent. Amorph. powder. $[\alpha]_D^{21}$ -50.2 (c, 0.2 in MeOH).

Pham, V.C. *et al., J. Nat. Prod.*, 2005, **68**, 1147-1152 (*isol, pmr, cmr, ms*)

Javaphylline J-32

[17138-12-4]



Absolute Configuration

$C_{22}H_{26}N_2O_5$ 398.458

Alkaloid from *Mitragyna javanica* (Rubiaceae). Mp 180°.

Shellard, E.J. *et al., Planta Med.*, 1967, **15**, 245
Shellard, E.J. *et al., J. Chromatogr.*, 1968, **32**, 472; 1975, **105**, 163

Jaxartinine J-33

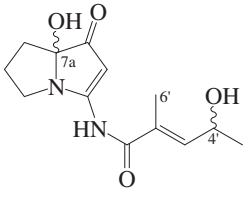
$C_{10}H_{15}NO$ 165.235

Struct. unknown. Alkaloid from *Anabasis jaxartica* (Chenopodiaceae). Cryst. (Me_2CO). Mp 166-169°.

Platonova, T.F. *et al., Zh. Obshch. Khim.*, 1958, **28**, 3128-3131; *CA*, **53**, 7506e

Jenamidine B J-34

[677756-96-6]



$C_{13}H_{18}N_2O_4$ 266.296

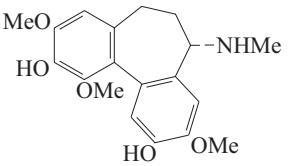
Structs. revised in 2004. Formerly assigned as pyridopyrimidines. Prod. by *Streptomyces* sp. strain HKI0297. Light yellowish oil. $[\alpha]_D^{25}$ +8.4 (c, 0.6 in MeOH). Isol. as a 1:1 mixt. of stereoisomers B_1/B_2. λ_{max} 228 (log ϵ 4.12); 299 (log ϵ 3.08); 333 (log ϵ 3.26) (MeOH).

4′-Deoxy, 6′-hydroxy: ***Jenamidine C***
[677756-98-8]
$C_{13}H_{18}N_2O_4$ 266.296
Prod. by *Streptomyces* sp. strain HKI0297. Light yellowish gum. $[\alpha]_D^{25}$ +1.8 (c, 0.39 in MeOH). Isol. as a 1:1 mixt. of stereoisomers C_1/C_2. λ_{max} 228 (log ϵ 4.23); 248 (log ϵ 3.53); 299 (log ϵ 3.13); 332 (log ϵ 3.48) (MeOH).

*7*a-*Deoxy:* ***Jenamidine A***
[677756-94-4]
$C_{13}H_{18}N_2O_3$ 250.297
Prod. by *Streptomyces* sp. strain HKI0297. Antiproliferative agent against chronic myeloid leukaemic cells. Light yellowish oil. $[\alpha]_D^{25}$ +6.8 (c, 0.7 in MeOH). Isol. as a 1:1 mixt. of stereoisomers A_1/A_2. λ_{max} 240 (log ϵ 4.01); 280 (log ϵ 3.11); 326 (log ϵ 3.32) (MeOH).

Hu, J.-F. *et al., J. Antibiot.*, 2003, **56**, 747-754 (*isol, pmr, cmr, ms*)
Snider, B.B. *et al., Tet. Lett.*, 2004, **45**, 6725-6727 (*pmr, cmr, struct*)
Duvall, J.R. *et al., J.O.C.*, 2006, **71**, 8579-8590 (*synth, struct*)

Jerusalemine J-35



$C_{19}H_{23}NO_5$ 345.394

The 9CI name is defective.

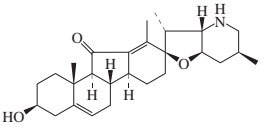
(*S*)-*form* [138704-11-7]

Alkaloid from *Colchicum decaisnei* (Liliaceae). Amorph. solid. $[\alpha]_D$ -35 (c, 0.17 in MeOH).

Abu Zarga, M.H. *et al., J. Nat. Prod.*, 1991, **54**, 936 (*isol, uv, ir, pmr, cmr, ms, struct*)
Banwell, M.G. *et al., Chem. Comm.*, 1994, 2647 (*synth*)

Jervine J-36

17,23-Epoxy-3-hydroxyveratraman-11-one. Jervin-11-one
[469-59-0]



Absolute Configuration

$C_{27}H_{39}NO_3$ 425.61

Alkaloid from *Veratrum album* var. *grandiflorum, Veratrum californicum*, several other *Veratrum* spp. and *Amianthium muscaetoxicum* (Liliaceae). Starting material for synth. of C-nor-D-homosteroids. Shows antibacterial and antifungal activity. Severe teratogen responsible for cyclopic malformation in sheep grazing on *V.* spp. Antihypertensive agent. Mp 243-244°. $[\alpha]_D$ -147 (EtOH). λ_{max} 250 (ϵ 16400); 252 (ϵ 14000); 300 (ϵ 80); 360 (ϵ 70) (EtOH) (Berdy).

▶ Reprod. and teratogenic effects; LD_{50} (mus, scu) 29 mg/kg; LD_{50} (mus, ivn) 9.3 mg/kg. WG9700000

Hydrochloride: Mp 308°.

O-*β*-D-*Glucopyranoside:* ***Pseudojervine***
[36069-05-3]
$C_{33}H_{49}NO_8$ 587.752
Alkaloid from *Veratrum album* and some other *Veratrum* spp. (Liliaceae). Shows antifungal activity. Sol. $CHCl_3$, C_6H_6; fairly sol. EtOH; poorly sol. Et_2O. Mp 300-301°. $[\alpha]_D$ -131 ($CHCl_3$/EtOH 1:1). $[\alpha]_D^{25}$ -97 (c, 0.12 in $CHCl_3$/EtOH).

▶ LD_{50} (mus, ivn) 50-150 mg/kg. NY9062000

O-*Ac:* **O-*Acetyljervine***
[14788-78-4]
$C_{29}H_{41}NO_4$ 467.647
Alkaloid from the leaves of *Veratrum album* (Liliaceae). Powder. Mp 240°. $[\alpha]_D$ -120 (MeOH).

▶ Exp. reprod. and teratogenic effects. NY8900000

N-*Methoxycarbonyl:* ***Verapatuline***

$C_{29}H_{41}NO_5$ 483.647
Alkaloid from *Veratrum patulum*. Amorph. solid. $[\alpha]_D^{23}$ -49.9 (c, 0.3 in EtOH). λ_{max} 252 (log ϵ 4.25) (EtOH).

N-*(2-Methoxycarbonylethyl):* ***Methyl jervine-N-3′-propanoate***
[132943-48-7]
Alkaloid from the leaves of *Veratrum album* (Liliaceae). Powder. Mp 234°. $[\alpha]_D$ -76 (MeOH).

3-Ketone: ***Jervinone***
$C_{27}H_{37}NO_3$ 423.594
Alkaloid from rhizomes of *Veratrum album* (Liliaceae). Amorph. powder. Mp 246-248°. $[\alpha]_D^{25}$ +38.5 (c, 1.00 in $CHCl_3$).

11α-Alcohol, N-*methoxycarbonyl:* ***Neoverapatuline***
[944455-07-6]
$C_{29}H_{43}NO_5$ 485.662
Alkaloid from *Veratrum nigrum*. Powder ($CHCl_3$). Mp 155-156°. $[\alpha]_D^{20}$ -6 (c, 0.01 in $CHCl_3$).

11β-Alcohol: ***Veratrobasine****. Jervin-11β-ol*
[20226-97-5]
$C_{27}H_{41}NO_3$ 427.626
Alkaloid from *Veratrum album* and *Veratrum grandiflorum* (Liliaceae). Shows antifungal activity. Large prisms (C_6H_6/MeOH). Mp 285-288° (dec. from 270°). $[\alpha]_D$ -76.6 (c, 0.58 in 95% EtOH). $[\alpha]_D^{20}$ -126 (c, 0.65 in Py).

▶ Teratogenic.

11β-Alcohol, 3,11-di-Ac: Mp 208-210°. $[\alpha]_D^{20}$ -77 (c, 0.46 in Py).

Deoxo: ***Cyclopamine****. Alkaloid V*†*. 11-Deoxojervine*
[4449-51-8]
$C_{27}H_{41}NO_2$ 411.626
Isol. from *Veratrum californicum* and *Veratrum album* (Liliaceae). Severe teratogen responsible for cyclopic malformation in sheep grazing on *V. californicum*. Needles (EtOH). Mp 237-238°. $[\alpha]_D^{25}$ -48 (c, 1 in MeOH/$CHCl_3$ 2:1).

▶ Exp. reprod. and teratogenic effects. GY0750000

*Deoxo, 3-*O*-β-D-glucopyranoside:* ***Cycloposine***
[23185-94-6]
$C_{33}H_{51}NO_7$ 573.768
Alkaloid from *Veratrum californicum* (Liliaceae). Teratogen causing cyclopic malformation in sheep grazing on *V. californicum*. Mp 267-269°. $[\alpha]_D^{25}$ -51 (c, 1 in EtOH). Acid hydrol. produces Veratramine, V-71 by aromatisation.

▶ Exp. teratogen.

Deoxo, O,N-*di-Ac:* Mp 195-197°. $[\alpha]_D^{25}$ -5 (EtOH). A lower addnl. Mp at 163-164° also reported.

1α-Hydroxy, 5α,6-dihydro: ***5α,6-Dihydro-1α-hydroxyjervine***
$C_{27}H_{41}NO_4$ 443.625
Alkaloid from rhizomes of *Veratrum album* (Liliaceae). Amorph. powder. Mp 245°. $[\alpha]_D$ -70 ($CHCl_3$).

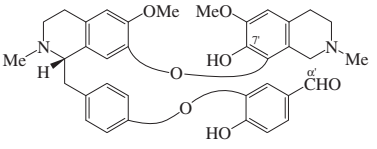
1β-Hydroxy, 5β,6-dihydro: ***5β,6-Dihydro-1β-hydroxyjervine***
[944358-35-4]
$C_{27}H_{41}NO_4$ 443.625
Alkaloid from *Veratrum nigrum*. Powder ($CHCl_3$). Mp 239-240°. $[\alpha]_D^{20}$ -57 (c, 0.01 in MeOH/$CHCl_3$).

23α-Methoxy, deoxo: 23-Methoxy-11-deoxojervine. ***23-Methoxycyclopamine***
$C_{28}H_{43}NO_3$ 441.653
Alkaloid from *Veratrum nigrum*. Amorph. yellow powder. $[\alpha]_D^{25}$ +44 (c, 0.05 in $CHCl_3$).

Jacobs, W.A. *et al., J. Biol. Chem.*, 1947, **170**, 635 (*uv*)
Stoll, A. *et al., Helv. Chim. Acta*, 1955, **38**, 1964 (*Veratrobasine*)
Budzikiewicz, H. *et al., Tetrahedron*, 1964, **20**, 2267 (*ms*)
Masamune, T. *et al., J.A.C.S.*, 1967, **89**, 4521 (*synth*)
Reeke, G.N. *et al., J.A.C.S.*, 1968, **90**, 1663 (*Veratrobasine, cryst struct*)
Kupchan, S.M. *et al., J.A.C.S.*, 1968, **90**, 2730 (*abs config*)
Keeler, R.F. *et al., Phytochemistry*, 1969, **8**, 223 (*Cyclopamine*)
Keeler, R.F. *et al., Steroids*, 1969, **13**, 579 (*Cycloposine*)
Wolters, B. *et al., Planta Med.*, 1970, **19**, 189-193 (*activity*)
Sprague, P.W. *et al., Tetrahedron*, 1971, **27**, 4857 (*cmr*)
Bryden, M.M. *et al., CA*, 1973, **79**, 143407e (*tox*)
Han, Y.B. *et al., Yakhak Hoeji*, 1973, **17**, 13-16; 137-140 (*activity*)
Kutney, J.P. *et al., Can. J. Chem.*, 1975, **53**, 1796 (*synth*)
Keeler, R.F. *et al., Alkaloids: Chem. Biol. Perspect.*, 1984, **4**, 389 (*rev, tox*)
Atta-ur-Rahman, *et al., Phytochemistry*, 1991, **30**, 368 (*O-Acetyljervine, Methyl jervine-N-3′-propanoate*)
Atta-ur-Rahman, *et al., J. Nat. Prod.*, 1992, **55**, 565 (*Jervinone*)
Atta-ur-Rahman, *et al., Planta Med.*, 1993, **59**, 569 (*5α,6-Dihydro-1α-hydroxyjervine*)
Atta-ur-Rahman, *et al., Phytochemistry*, 1996, **43**, 907 (*Pseudojervine, bibl*)
Tezuka, Y. *et al., J. Nat. Prod.*, 1998, **61**, 1078-1081 (*Verapatuline*)
Cong, Y. *et al., Helv. Chim. Acta*, 2007, **90**, 1038-1042 (*5β,6-Dihydro-1β-hydroxyjervine, Neoverapatuline*)
Wang, B. *et al., Helv. Chim. Acta*, 2008, **91**, 244-248 (*23-Methoxycyclopamine*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, CPT750; JDA000; JCS000

Jhelumine J-37

[85588-85-8]



$C_{36}H_{38}N_2O_7$ 610.705
Alkaloid from *Berberis lycium* (Berberidaceae). $[\alpha]_D^{25}$ +28 (c, 0.6 in MeOH).

O$^{7'}$*-Me:* ***Chenabine***
[85588-86-9]
$C_{37}H_{40}N_2O_7$ 624.732
Alkaloid from *Berberis lycium*. $[\alpha]_D^{25}$ +40 (c, 0.18 in MeOH).

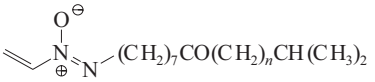
α′-Alcohol: ***Chenabinol***
[122148-81-6]
$C_{37}H_{42}N_2O_7$ 626.748
Obt. by $NaBH_4$ redn. of Chenabine (see Jhelumine, J-37).

α′-Alcohol, Me ether: ***Chenabinol methyl ether***
[122127-75-7]
$C_{38}H_{44}N_2O_7$ 640.775
Alkaloid from *Berberis brandisiana*. Amorph. $[\alpha]_D$ +21 (c, 0.11 in MeOH).

Leet, J.E. *et al., Heterocycles*, 1983, **20**, 425-429 (*Jhelumine, Chenabine*)
Hussain, S.F. *et al., J. Nat. Prod.*, 1989, **52**, 317-319 (*Chenabinol, Chenabinol methyl ether*)

Jietacin A J-38

[109766-61-2]



n = 5

$C_{18}H_{34}N_2O_2$ 310.479
Prod. by *Streptomyces* sp. (KP197; P8889). Exhibits potent nematocidal props. Possesses weak activity against some fungi. Sol. DMSO, hexane, EtOAc, Me_2CO; poorly sol. H_2O, MeOH. λ_{max} 228 (ϵ 3650); 250 (sh) (ϵ 2400) (cyclohexane) (Derep). λ_{max} 218 (ϵ 3650) (MeOH) (Berdy).

▶ LD_{50} (mus, ipr) 200 - 600 mg/kg. RZ2020000

Omura, S. *et al., J. Antibiot.*, 1987, **40**, 623 (*isol, props*)
Imamura, N. *et al., J. Antibiot.*, 1989, **42**, 156 (*struct*)
Giencke, W. *et al., Annalen*, 1989, 671 (*synth*)

Jietacin B J-39

[109766-62-3]
As Jietacin A, J-38 with
n = 6
$C_{19}H_{36}N_2O_2$ 324.506
From *Streptomyces* sp. (KP197; P8889). Similar biol. props. as Jietacin A, J-38. Sol. DMSO, hexane, EtOAc, Me_2CO; poorly sol. H_2O, MeOH. λ_{max} 228 (ϵ 3650); 250 (sh) (ϵ 2400) (cyclohexane) (Derep). λ_{max} 228 (ϵ 3650) (MeOH) (Berdy).

▶ LD_{50} (mus, ipr) 200 - 600 mg/kg.

Omura, S. *et al., J. Antibiot.*, 1987, **40**, 623 (*isol, props*)
Imamura, N. *et al., J. Antibiot.*, 1989, **42**, 156 (*struct*)

Jingsimycin J-40

[75718-53-5]

Thiazole-peptide antibiotic. Struct. unknown. Prod. by *Streptomyces hygroscopicus.* Yellow powder. Sol. MeOH, H_2O, DMF. $[\alpha]_D$ +42 (H_2O). λ_{max} 222 ; 270 (MeOH). λ_{max} 222 ; 270 (MeOH) (Berdy).

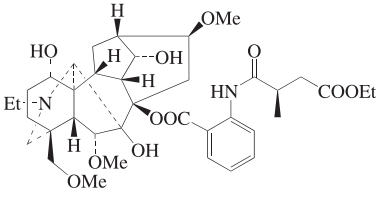
▶ LD_{50} (mus, ipr) 1000 - 3000 mg/kg.

Lu, W.-Z. *et al., CA*, 1981, **94**, 2894j

Jiufengsine **J-41**

Jiufengisine

[737792-40-4]



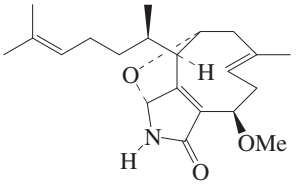
$C_{38}H_{54}N_2O_{11}$ 714.851

Deriv. of 4-Methylaconitane-1,6,7,8,14,16,18-heptol, M-309. Alkaloid from the roots of *Delphinium potaninii* var. *jiufengshanense*. Mp 85-87°. $[\alpha]_D$ +22.8 (c, 1 in $CHCl_3$).

Shen, X.-L. *et al., Zhongguo Tianran Yaowu*, 2004, **2**, 152-154; *CA*, **141**, 187848 (*Jiufengsine*)

Joalin **J-42**

[150999-04-5]



$C_{21}H_{31}NO_3$ 345.481

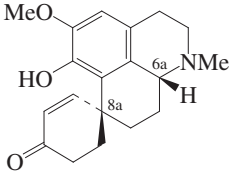
Constit. of a *Dictyota* sp. Semicryst. $[\alpha]_D^{29}$ -59 (c, 0.01 in $CHCl_3$). λ_{max} 205 (ϵ 12300); 245 (MeOH) (Berdy).

Guella, G. *et al., J.C.S. Perkin 1*, 1993, 1545 (*isol, pmr, cmr*)

Jolantamine **J-43**

Alkaloid K8. *Alkaloid MJ1*. *Iolantamine*

[37376-03-7]



$C_{19}H_{23}NO_3$ 313.396

Alkaloid from *Colchicum kesselringii* and *Merendera jolantae* (Liliaceae). Mp 215-216° (193-197°). $[\alpha]_D$ +112 ($CHCl_3$). Same plain struct. as Bulbocodine, B-398. Jolantamine is said to have the 6*aR* config. (same as Bulbocodine) and therefore if a different alkaloid must be the 8*a*-epimer. Evidence for its non-identity with Bulbocodine is however weak and they have not been directly compared.

Hydrochloride: Mp 248-250°.

N-*Me:* ***Jolantine***. *Iolantine*

[62249-76-7]

$C_{20}H_{26}NO_3^{\oplus}$ 328.43

Quaternary alkaloid from *Merendera jolantae* (Liliaceae). Cryst. (Me_2CO/MeOH)(as hydroxide). Mp 269-270° (hydroxide).

Me ether: ***Crociflorinone***

[55437-98-4]

$C_{20}H_{25}NO_3$ 327.422

Alkaloid from *Colchicum kesselringii* (Liliaceae). Cryst. (Me_2CO/Et_2O). Mp 246-248°.

Yusupov, M.K. *et al., J. Gen. Chem. USSR (Engl. Transl.)*, 1964, **34**, 1672 (*isol*)

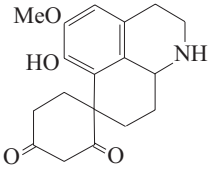
Yusupov, M.K. *et al., Dokl. Akad. Nauk SSSR, Ser. Khim.*, 1973, **208**, 1123; *CA*, **79**, 79010r (*uv, pmr, struct*)

Turdikulov, K. *et al., Khim. Prir. Soedin.*, 1974, **10**, 810; 1976, **12**, 555; *Chem. Nat. Compd. (Engl. Transl.)*, 1974, **10**, 844; 1976, **12**, 501 (*Crociflorinone, Jolantine*)

Jolantimine **J-44**

Iolantimine

[60142-20-3]



$C_{18}H_{21}NO_4$ 315.368

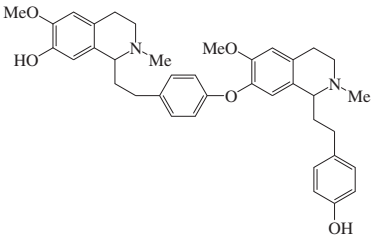
Alkaloid from *Colchicum kesselringii* and *Merendera jolantae* (Liliaceae). Cryst. (Me_2CO/MeOH). Mp 272-273°. $[\alpha]_D$ +98 (c, 0.5 in MeOH).

Abdullaeva, D.A. *et al., Khim. Prir. Soedin.*, 1976, 121; *CA*, **85**, 106633d

Jolantinine **J-45**

Iolantinine

[64986-29-4]



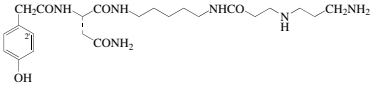
$C_{38}H_{44}N_2O_5$ 608.776

Probable struct. Dimeric phenethylisoquinoline alkaloid. Alkaloid from *Merendera jolantae* (Liliaceae).

Usmanov, A.M. *et al., Khim. Prir. Soedin.*, 1977, **13**, 422; *Chem. Nat. Compd. (Engl. Transl.)*, 1977, **13**, 360 (*isol, ir, pmr, cmr, ms, struct*)

Joramine **J-46**

[161897-98-9]



$C_{23}H_{38}N_6O_5$ 478.59

Alkaloid from the spider *Nephila clavata*. λ_{max} 276 (ϵ 854) (MeOH).

2′-Hydroxy: ***Spidamine***

[161897-97-8]

$C_{23}H_{38}N_6O_6$ 494.59

Alkaloid from the spider *Nephila clavata*. $[\alpha]_D^{25}$ -4.96 (c, 0.6 in H_2O). λ_{max} 279 (ϵ 1690) (MeOH).

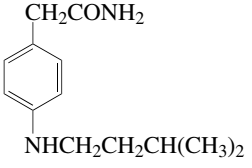
Chiba, T. *et al., Chem. Pharm. Bull.*, 1994, **42**, 1864-1869; 1995, **43**, 2177-2181; 1996, **44**, 972-979 (*isol, pmr, cmr, ms, synth*)

Nihei, K. *et al., Tetrahedron*, 2006, **62**, 8335-8350 (*synth*)

Jordanine **J-47**

4-[(3-Methylbutyl)amino]benzeneacetamide, 9CI

[123690-75-5]



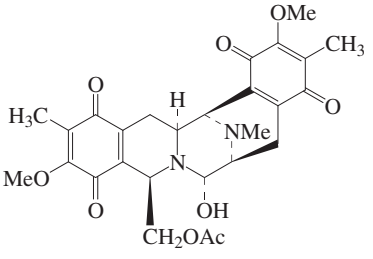
$C_{13}H_{20}N_2O$ 220.314

Alkaloid from *Bongardia chrysogonum*. Cryst. (MeOH). Mp 167-170°. λ_{max} 253 (log ϵ 3.51); 368 (log ϵ 1.92); 402 (log ϵ 1.97); 424 (log ϵ 1.92) (MeOH).

Alfatafta, A.A. *et al., J. Nat. Prod.*, 1989, **52**, 818 (*isol, synth, uv, ir, pmr, ms*)

Jorumycin **J-48**

[304852-37-7]



$C_{27}H_{30}N_2O_9$ 526.542

Related to Renieramycin A, R-41. Isol. from the marine nudibranch *Jorunna funebris*. Antitumour agent. Unstable pale yellow powder. $[\alpha]_D$ -57 (c, 0.05 in $CHCl_3$). λ_{max} 266 (ϵ 15000) (MeOH).

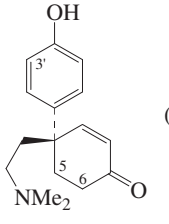
Fontana, A. *et al., Tetrahedron*, 2000, **56**, 7305-7308 (*isol*)

Saito, N. *et al., Tetrahedron*, 2004, **60**, 3873-3881 (*synth, pmr, cmr*)

Lane, J.W. *et al., J.A.C.S.*, 2005, **127**, 12684-12690 (*synth*)

Joubertiamine **J-49**

4-[2-(Dimethylamino)ethyl]-4-(4-hydroxyphenyl)-2-cyclohexen-1-one, 9CI



(*R*)-*form*

$C_{16}H_{21}NO_2$ 259.347

(*R*)-*form*

Me ether: **O-*Methyljoubertiamine***
[77844-21-4]
$C_{17}H_{23}NO_2$ 273.374
Alkaloid from *Sceletium subvelutium* (Aïzoaceae). Syrup. $Bp_{0.01}$ 110-120° (bath). $[\alpha]_D^{25}$ -51 (c, 1.45 in MeOH). λ_{max} 227 (log ϵ 4.19); 276 (log ϵ 3.25); 282 (log ϵ 3.21) (MeOH).

3′-Methoxy, Me ether: 4-(3,4-Dimethoxyphenyl)-4-[2-(dimethylamino)ethyl]-2-cyclohexen-1-one. ***3′-Methoxy-4′-O-methyljoubertiamine***
[59096-18-3]
$C_{18}H_{25}NO_3$ 303.4
Minor alkaloid from *Sceletium namaquense*. Oil. λ_{max} 230 (ϵ 14100); 280 (ϵ 2000); 346 (ϵ 600) (95% EtOH).

(*S*)-*form* [28379-30-8]
Alkaloid from the aerial parts of *Sceletium joubertii* (Aïzoaceae). Liq. Opt. rotn. not reported. λ_{max} 226 (ϵ 13610); 278 (ϵ 1960) (96% EtOH).

(±)-*form* [34603-53-7]
Synthetic. Yellow needles (Et_2O), cryst. (MeCN). Mp 126-130° Mp 162.5-164°.

Me ether: [34603-52-6]
Synthetic. Oil.

2,3-Dihydro: ***Dihydrojoubertiamine****. 4-[2-(Dimethylamino)ethyl]-4-(4-hydroxyphenyl)cyclohexanone*
[28513-25-9]
$C_{16}H_{23}NO_2$ 261.363
Alkaloid from the aerial parts of *Sceletium joubertii* (Aïzoaceae). Achiral. λ_{max} 226 (ϵ 7905); 278 (ϵ 1857) (96% EtOH).

2,3-Dihydro, Me ether: 4-[2-(Dimethylamino)ethyl]-4-(4-methoxyphenyl)cyclohexanone. **O-*Methyldihydrojoubertiamine***
[77784-04-4]
$C_{17}H_{25}NO_2$ 275.39
Alkaloid from *Sceletium subvelutium* (Aïzoaceae). Syrup. Achiral.

*2,3-Dihydro, (*N,N*-dimethylamino)ethyl ether:* ***Amisine****. 4-[4-[2-(Dimethylamino)ethoxy]phenyl]-4-[2-(dimethylamino)ethyl]cyclohexanone, 9CI*
[76129-90-3]
$C_{20}H_{32}N_2O_2$ 332.485
Alkaloid from the above-ground parts of *Hymenocallis arenicola* (Amaryllidaceae). Needles (Me_2CO). Mp 74-80°.

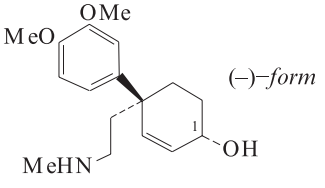
5,6-Didehydro: 4-[2-(Dimethylamino)ethyl]-4-(4-hydroxyphenyl)-2,5-cyclohexadien-1-one. ***Dehydrojoubertiamine****. Didehydrojoubertiamine*
[28564-22-9]
$C_{16}H_{19}NO_2$ 257.332
Trace alkaloid from the aerial parts of *Sceletium joubertii* (Aïzoaceae). Pale yellow oil. Achiral.

5,6-Didehydro, Me ether: **O-*Methyldehydrojoubertiamine***
[121983-83-3]
$C_{17}H_{21}NO_2$ 271.358
Alkaloid from whole plants of *Sceletium subvelutinum* (Aizoaceae). Achiral. λ_{max} 226 (log ϵ 3.24); 276 (log ϵ 2.51); 283 (log ϵ 2.45) (MeOH).

Arndt, R.R. *et al., Tet. Lett.*, 1970, 3237-3240 (*Joubertiamine, Dihydrojoubertiamine, Dehydrojoubertiamine, isol, uv, ir, pmr, ms, struct*)
Stevens, R.V. *et al., J.O.C.*, 1972, **37**, 2138-2140 (*synth, ir, pmr*)
Martin, N.H. *et al., Org. Mass Spectrom.*, 1976, **11**, 1-19 (*ms*)
Capps, T.M. *et al., J.C.S. Perkin 2*, 1977, 1098-1104 (*3′-Methoxy-4′-O-methyljoubertiamine*)
Strauss, H.F. *et al., Tetrahedron*, 1978, **34**, 127-130 (*O-Methyljoubertiamine, synth*)
Döpke, W. *et al., Z. Chem.*, 1980, **20**, 298-299 (*Amisine*)
Nieuwenhuis, J.J. *et al., J.C.S. Perkin 1*, 1981, 284-286 (*O-Methyljoubertiamine, O-Methyldihydrojoubertiamine, isol, uv, cd, ir, pmr, struct*)
Hoshino, O. *et al., Chem. Pharm. Bull.*, 1988, **36**, 3373-3380 (*synth, ir, pmr, ms*)
Herbert, R.B. *et al., Tetrahedron*, 1990, **46**, 7105-7118 (*O-Methyldehydrojoubertiamine*)
Bauermeister, S. *et al., J.C.S. Perkin 1*, 1991, 561-565 (*synth, O-Methyljoubertiamine*)
Parkinson, C.J. *et al., J.C.S. Perkin 1*, 1991, 1053-1057 (*synth, O-Methyljoubertiamine*)
Stephenson, G.R. *et al., Tetrahedron*, 1993, **49**, 5649-5662 (*synth, O-Methyljoubertiamine*)
Matsumura, Y. *et al., Tetrahedron*, 1993, **49**, 8503-8512 (*synth*)

Joubertinamine J-50

4-(3,4-Dimethoxyphenyl)-4-[2-(methylamino)ethyl]-2-cyclohexen-1-ol, 9CI



$C_{17}H_{25}NO_3$ 291.389

(-)-*form* [71294-61-6]
Alkaloid from *Sceletium joubertii* (Aïzoaceae). Noncryst. $[\alpha]_D^{20}$ -18 ($CHCl_3$).

O,N-*Di-Ac:*
Noncryst. $[\alpha]_D^{20}$ +21 ($CHCl_3$).

1-Epimer, N-*Me: 4-(3,4-Dimethoxyphenyl)-4-[2-(dimethylamino)ethyl]-2-cyclohexen-1-ol.* ***3′-Methoxy-4′-O-methyljoubertiaminol***
[59096-21-8]
$C_{18}H_{27}NO_3$ 305.416
Alkaloid from *Sceletium namageurise* (Aïzoaceae). Solid. Mp 100.5°. $[\alpha]_D^{25}$ -12.4 (c, 2.6 in MeOH).

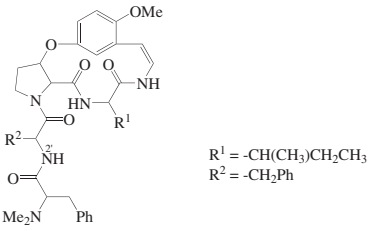
(±)-*form*
Synthetic. Oil.

1-Epimer: Epijoubertinamine
Synthetic. Oil.

Psotta, K. *et al., J.C.S. Perkin 1*, 1979, 1063 (*isol, uv, ir, pmr, ms, struct*)
Jeffs, P.W. *et al., J.O.C.*, 1982, **47**, 3611 (*3′-Methoxy-4′-O-methyljoubertiaminol*)
Sánchez, I.H. *et al., Tet. Lett.*, 1983, **24**, 551 (*synth*)
Hoshino, O. *et al., Chem. Pharm. Bull.*, 1988, **36**, 3373 (*synth, ir, pmr*)
Tam, N.T. *et al., Org. Lett.*, 2007, **9**, 3391-3392 (*synth*)

Jubanine A J-51

[60375-07-7]



$C_{40}H_{49}N_5O_6$ 695.857
Alkaloid from the root or stem bark of *Zizyphus jujuba*, *Zizyphus nummularia* and *Zizyphus spina-christi* (Rhamnaceae). Amorph. $[\alpha]_D^{20}$ -326 (c, 0.12 in MeOH). Stereochemistry unspecified.

N-*De-Me:* ***Nummularine H***. N-*Demethyljubanine A*
[64309-23-5]
$C_{39}H_{47}N_5O_6$ 681.83
Alkaloid from the bark of *Zizyphus nummularia* and stems of *Paliurus ramosissimus* (Rhamnaceae). Needles (MeOH). Mp 194-196°. $[\alpha]_D^{20}$ -343 (c, 0.27 in MeOH).

Dihydro: Mp 247-249°. $[\alpha]_D^{20}$ -148 (c, 0.06 in MeOH).

Tschesche, R. *et al., Phytochemistry*, 1976, **15**, 541-542 (*Jubanine A*)
Tschesche, R. *et al., Chem. Ber.*, 1977, **110**, 2649 (*Nummularine H*)

Jubanine B J-52

[60375-08-8]
As Jubanine A, J-51 with
$R^1 = R^2 = CH_2Ph$
$C_{43}H_{47}N_5O_6$ 729.874
Alkaloid from the stem bark of *Zizyphus jujuba* and from *Zizyphus nummularia* (Rhamnaceae). Amorph. Mp 97-100°. $[\alpha]_D^{20}$ -218 (c, 0.28 in MeOH). Stereochemistry unspecified.

N-*De-Me:* ***Nummularine O***. N-*Desmethyljubanine B*
[107602-86-8]
[103197-36-0 (*N*-Desmethyljubanine B)]
$C_{42}H_{45}N_5O_6$ 715.847
Alkaloid from the root bark of *Zizyphus nummularia* (Rhamnaceae). Powder (MeOH). Mp 159-161°. $[\alpha]_D^{20}$ -239 (c, 0.2 in MeOH). Identity of the two isolates not certain. *N*-Desmethyljubanine B supported only by ms evidence.

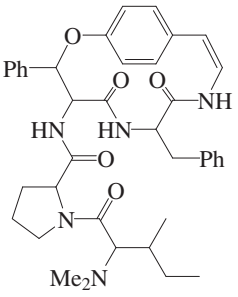
$N^{2'}$-*Deacyl,* $N^{2'}$-*di-Me:* ***Xylopyrine B***
[1010795-96-6]
$C_{34}H_{38}N_4O_5$ 582.698
Alkaloid from the root bark of *Zizyphus xylopyra*. Cryst. (MeOH). Mp 206-208°. $[\alpha]_D^{25}$ -190 (c, 0.15 in $CHCl_3$). λ_{max} 270 (log ϵ 2.8); 320 (log ϵ 2.4) (MeOH).

Tschesche, R. *et al., Phytochemistry*, 1976, **15**, 541-542 (*Jubanine B*)
Miana, G.A. *et al., Fitoterapia*, 1985, **56**, 363-364; *CA*, **105**, 75886p (*N-Desmethyljubanine B*)

Pandey, V.B. *et al., Phytochemistry*, 1986, **25**, 2690-2691 (*Nummularine O*)
Singh, A.K. *et al., Nat. Prod. Res.*, 2007, **21**, 1114-1120 (*Xylopyrine B*)

Jubanine C J-53

[159226-00-3]

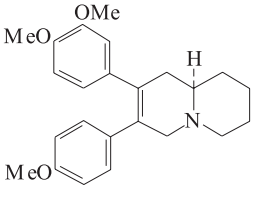


$C_{39}H_{47}N_5O_5$ 665.831
Alkaloid from the stem bark of *Zizyphus jujuba* (Chinese date). Cryst. (MeOH). Mp 233-235° dec. λ_{max} 214 (MeOH).

Tripathi, M. *et al., Fitoterapia*, 2001, **72**, 507-510

Julandine J-54

*8-(3,4-Dimethoxyphenyl)-1,3,4,6,9,9a-hexahydro-7-(4-methoxyphenyl)-2*H*-quinolizine, 9CI*



(*R*)–*form*

$C_{24}H_{29}NO_3$ 379.498

(*R*)-*form*
Synthetic. Needles (EtOAc/hexane). Mp 138.5-140°. $[\alpha]_D^{26}$ -71.6 (c, 0.33 in $CHCl_3$).

(*S*)-*form* [20772-34-3]
Constit. of *Boehmeria cylindrica* and *Boehmeria platyphylla* (Urticaceae). Shows antifungal activity. Needles (Me_2CO). Poorly sol. hexane. Mp 134.5-135.5°. $[\alpha]_D$ +4.6 (c, 0.5 in $CHCl_3$). Although natural Julandine is weakly optically active, it is largely racemic.

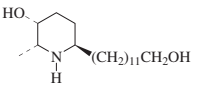
*4′,4″-Di-*O*-de-Me:* ***4′,4″-Dide-O-methyljulandine***
$C_{22}H_{25}NO_3$ 351.444
Alkaloid from *Boehmeria siamensis*. Cryst. Mp 123-125°.

(±)-*form* [23365-39-1]
Synthetic. Long needles (EtOAc/hexane). Mp 139-140° (134-136°).

Hart, N.K. *et al., Aust. J. Chem.*, 1968, **21**, 2579 (*isol, uv, pmr, ms, struct*)
Paton, J.M. *et al., J.C.S.(C)*, 1969, 1309 (*synth, ir, pmr*)
Herbert, R.B. *et al., Chem. Comm.*, 1978, 794 (*synth*)
Trigo, G.G. *et al., J. Het. Chem.*, 1979, **16**, 1625 (*synth, ir, pmr, ms*)
Cragg, J.E. *et al., J.C.S. Perkin 1*, 1982, 2487 (*synth, pmr, ms*)
Al-Shamma, A. *et al., Phytochemistry*, 1982, **21**, 485 (*biochem*)
Iida, H. *et al., J.O.C.*, 1984, **49**, 2412 (*synth, pmr, ms*)
Grieco, P.A. *et al., J.O.C.*, 1988, **53**, 3325 (*synth, ir, pmr*)
Suzuki, H. *et al., J.O.C.*, 1995, **60**, 6114 (*synth, abs config*)
Ciufolini, M.A. *et al., J.A.C.S.*, 1996, **118**, 12082 (*synth*)
Luo, Y.G. *et al., Chin. Chem. Lett.*, 2001, **12**, 337-338 (*4′,4″-di-O-de-Me*)

Julifloridine J-55

5-Hydroxy-6-methyl-2-piperidinedodecanol, 9CI



(*2R*,5R*,6R*)-form*

$C_{18}H_{37}NO_2$ 299.496

(2*R*,5*R*,6*R*)-*form* [66731-40-6]
Minor alkaloid from *Prosopis juliflora* leaves (Fabaceae). Mp 82-83°. $[\alpha]_D$ +18 (c, 0.84 in MeOH) (synthetic).

(2*R*,5*S*,6*S*)-*form*
Alkaloid from *Prosopis alba*. Resin. $[\alpha]_D^{20}$ -2.8 (c, 1.24 in $CHCl_3$).

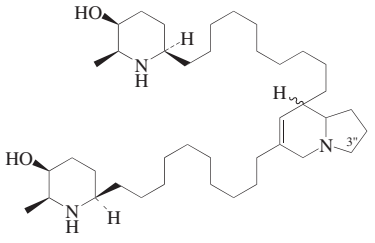
(±)-*form* [87304-12-9]
Cryst. (EtOH). Mp 87-90°.

N-*Me: 5-Hydroxy-1,6-dimethyl-2-piperidinedodecanol*. **N-*Methyljulifloridine***
[132972-82-8]
$C_{19}H_{39}NO_2$ 313.523
Alkaloid from *Prosopis juliflora* (Fabaceae). Struct. requires revision (1998).

Ahmad, V.U. *et al., Z. Naturforsch., B*, 1978, **33**, 347 (*isol, ms, struct*)
Paterne, M. *et al., C. R. Hebd. Seances Acad. Sci., Ser. II*, 1983, **296**, 433 (*synth*)
Ahmad, V.U. *et al., Sci. Pharm.*, 1990, **58**, 409 (N-*Methyljulifloridine*)
Kiguchi, T. *et al., Tetrahedron*, 1998, **54**, 15589-15606 (*synth, struct*)
Astudillo, S.L. *et al., Planta Med.*, 1999, **65**, 161-162 (*isol, pmr, cmr, ms*)
Lemire, A. *et al., Org. Lett.*, 2005, **7**, 2747-2750 (*synth*)
Zhai, H. *et al., J.O.C.*, 2007, **72**, 3853-3858 (*synth*)

Juliflorine J-56

Juliprosopine
[76202-00-1]



Relative Configuration

$C_{40}H_{75}N_3O_2$ 630.051

The two piperidine systems need not have the same abs. config. Alkaloid from *Prosopis juliflora*, *Prosopis fracta* and *Prosopis glandulosa* (Fabaceae). Shows antibacterial and antifungal props. Amoebicide. Noncryst. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. $[\alpha]_D$ +0.7 (c, 1.05 in EtOH). $[\alpha]_D$ +10 (c, 2.15 in $CHCl_3$). Several *O*,*N*-acetyl and *N*-Me derivs. were all noncryst.

▶ TN7637000

3″-Oxo: ***3″-Oxojuliflorine***. *3″-Oxojuliprosopine*
$C_{40}H_{73}N_3O_3$ 644.035
Alkaloid from *Prosopis juliflora*. Gum. $[\alpha]_D^{23}$ +4 (c, 1 in MeOH).

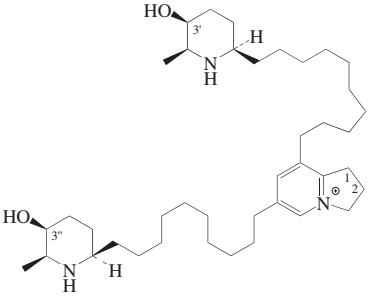
Stereoisomer: ***Julifloricine***
[66771-80-0]
$C_{40}H_{75}N_3O_2$ 630.051
Alkaloid from leaves of *Prosopis juliflora* (Fabaceae). Shows antibacterial props. Gum. $[\alpha]_D$ +4.3 (c, 1.4 in $CHCl_3$). Two structs. stereoisomeric with Juliflorine have been proposed but current spectroscopic data cannot distinguish between them.

Stereoisomer (2): ***Juliflorinine***
[122441-92-3]
$C_{40}H_{75}N_3O_2$ 630.051
Alkaloid from leaves of *Prosopis juliflora* (Fabaceae). Sol. MeOH, C_6H_6. $[\alpha]_D$ +3.9 (c, 0.03 in $CHCl_3$). Has (2α,5β,6β) configs. of the piperidine systems. λ_{max} 208 ; 285 (MeOH) (Berdy).

Ahmad, V.U. *et al., Z. Naturforsch., B*, 1978, **33**, 347 (*isol*)
Ahmad, V.U. *et al., J. Chem. Soc. Pak.*, 1979, **1**, 137; 1985, **7**, 347 (*struct, ms, pmr, cmr, deriv*)
Ott-Longoni, R. *et al., Helv. Chim. Acta*, 1980, **63**, 2119 (*isol, ir, pmr, cmr, ms, struct*)
Ahmad, A. *et al., Planta Med.*, 1986, 285 (*props*)
Aqeel, A. *et al., Arzneim.-Forsch.*, 1989, **39**, 652 (*props, Julifloricine*)
Ahmad, V.U. *et al., J. Nat. Prod.*, 1989, **52**, 497 (*Juliflorinine*)
Nakano, H. *et al., Phytochemistry*, 2004, **65**, 587-591 (*3″-Oxojuliflorine*)
Snyder, B.B. *et al., Org. Lett.*, 2005, **7**, 2715-2718 (*synth*)

Juliprosine J-57

*2,3-Dihydro-6,8-bis[10-(5-hydroxy-6-methyl-2-piperidinyl)decyl]-1*H*-indolizinium, 9CI*
[80233-19-8]



Absolute Configuration

$C_{40}H_{72}N_3O_2^{\oplus}$ 627.028

Alkaloid from *Prosopis juliflora* (Fabaceae). Oil (as chloride). Sol. MeOH, $CHCl_3$. $[\alpha]_D$ +11 (c, 0.50 in $CHCl_3$) (chloride). λ_{max} 279 (ϵ 6200) (EtOH) (Berdy).

3′-Ketone: ***3′-Oxojuloprosine***
$C_{40}H_{70}N_3O_2^{\oplus}$ 625.012
Alkaloid from *Prosopis juliflora*. Plant growth inhibitor. Isol. as a mixt. with 3-Oxojuliprosine.

3′′-Ketone: ***3-Oxojuliprosine***
$C_{40}H_{70}N_3O_2^{\oplus}$ 625.012
Alkaloid form *Prosopis juliflora*. Plant growth inhibitor. Gum. $[\alpha]_D^{28}$ +3 (c, 1 in MeOH). Isol. as a mixt. with 3′-Oxojuliprosine to which data refers.

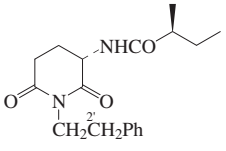
*1,2-Didehydro: 6,8-Bis[10-(5-hydroxy-6-methyl-2-piperidinyl)decyl]-1*H*-indolizinium.* ***Juliprosinene***
[123061-99-4]
$C_{40}H_{70}N_3O_2^{\oplus}$ 625.012
Alkaloid from the leaves of *Prosopis juliflora* (Fabaceae). Gum (as chloride). Sol. MeOH, C_6H_6. $[\alpha]_D$ +9.5 (c, 0.04 in $CHCl_3$) (chloride). λ_{max} 208 ; 285 (MeOH) (Berdy).

5′,5′′,6′,6′′-Tetraepimer: ***Isojuliprosine***
[123805-40-3]
[123750-53-8]
$C_{40}H_{72}N_3O_2^{\oplus}$ 627.028
Alkaloid from *Prosopis juliflora* (Fabaceae). Yellow oil (as chloride). Sol. MeOH, $CHCl_3$. λ_{max} 280 (EtOH) (Berdy).

Dätwyler, P. *et al., Helv. Chim. Acta*, 1981, **64**, 1959 (*isol, spectra*)
Ahmad, A. *et al., Fitoterapia*, 1989, **60**, 86-89 (*Isojulioprosine*)
Ahmed, V.U. *et al., J. Nat. Prod.*, 1989, **52**, 497-501 (*Juliprosinine*)
Nakano, H. *et al., Phytochemistry*, 2004, **65**, 587-591 (*Oxojuliprosines*)
Snyder, B.B. *et al., Org. Lett.*, 2005, **7**, 2715-2718 (*synth*)

Julocrotine J-58

N-*[2,6-Dioxo-1-(2-phenylethyl)-3-piperidinyl]-2-methylbutanamide, 9CI*
[492-87-5]



Absolute Configuration

$C_{18}H_{24}N_2O_3$ 316.399
Originally considered to be $C_{19}H_{26}N_2O_3$.
Alkaloid from *Julocroton montevidensis*, *Julocroton subpannosus*, *Julocroton camporum* and *Croton membranaceus*. Mp 108-109°. $Bp_{0.25}$ 160-165° subl. $[\alpha]_D$ -9 (c, 1.24 in $CHCl_3$).

*2′*R*-Hydroxy:* ***Julocrotol***
$C_{18}H_{24}N_2O_4$ 332.399
Alkaloid from the aerial parts of *Croton cuneatus*. Orange oil. $[\alpha]_D^{25}$ -56 (c, 1.2 in $CHCl_3$).

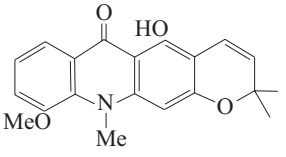
*2′*S*-Hydroxy:* ***Isojulocrotol***
$C_{18}H_{24}N_2O_4$ 332.399
Alkaloid from *Croton cuneatus*. Green oil. $[\alpha]_D^{25}$ +63 (c, 1.3 in $CHCl_3$).

2′-Oxo: ***Julocrotone***
$C_{18}H_{22}N_2O_4$ 330.383
Alkaloid from *Croton cuneatus*. Amorph. yellow solid. Mp 89-92°. $[\alpha]_D^{25}$ -10 (c, 1 in $CHCl_3$).

Nakano, T. *et al., J.O.C.*, 1961, **26**, 1184-1191 (*Julocrotine*)
Aboagye, F.A. *et al., Fitoterapia*, 2000, **71**, 461-462 (*Julocrotine*)
Suárez, A.I. *et al., Nat. Prod. Res.*, 2004, **18**, 421-426 (*Julocrotol, Isojulocrotol, Julocrotone*)
Moreira, R.Y.O. *et al., Int. J. Quantum Chem.*, 2008, **108**, 513-520 (*cryst struct*)

Junosidine J-59

*2,11-Dihydro-5-hydroxy-10-methoxy-2,2,11-trimethyl-6*H*-pyrano[3,2-*b*]acridin-6-one, 9CI*
[110883-39-1]



$C_{20}H_{19}NO_4$ 337.374
Alkaloid from the root bark of *Citrus junos* (yuzu) (Rutaceae). Orange needles. Mp 188-189°.

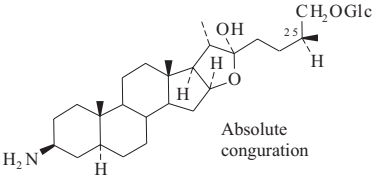
O-*De-Me:* ***Yukocitrine***
[145940-32-5]
$C_{19}H_{17}NO_4$ 323.348
Alkaloid from roots of *Citrus yuko* (Rutaceae). Yellow oil.

9-Hydroxy: ***Honyumine***
[100595-86-6]
$C_{20}H_{19}NO_5$ 353.374
Alkaloid from the root bark of *Citrus grandis* (pummelo) (Rutaceae). Yellow granules (Me_2CO). Mp 175-176°.

Wu, T.S. *et al., Heterocycles*, 1986, **24**, 41-43 (*Honyumine*)
Ju-ichi, M. *et al., Heterocycles*, 1987, **26**, 2077 (*Junosidine*)
Takemura, Y. *et al., Heterocycles*, 1992, **34**, 2123-2130 (*Yukocitrine*)

Jurubine J-60

[14256-61-2]



Absolute conguration

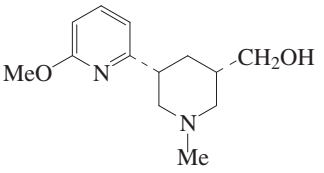
$C_{33}H_{57}NO_8$ 595.815
Alkaloid from roots of *Solanum paniculatum* and *Solanum torvum* (pea eggplant) (Solanaceae) and from *Solanum chacoense*. Mp 212-214°. $[\alpha]_D^{18}$ -30.9 (c, 1.04 in Py). Paniculine from *Solanum paniculatum* was a mixt. of Jurubine and its C-25 epimer.

N-Salicylidene: Mp 176-177°. $[\alpha]_D$ -34.9 (Py).

Penta-Ac: Mp 165-168°. $[\alpha]_D$ -41.1 (Py).

Ripperger, H. *et al., Chem. Ber.*, 1967, **100**, 1725 (*isol, ir, ms, pmr, struct*)
Schreiber, K. *et al., CA*, 1968, **69**, 27721 (*isol*)

Jussiaeiine A J-61

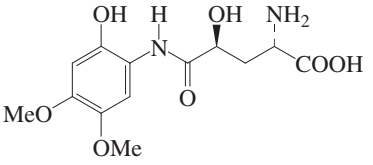


$C_{13}H_{20}N_2O_2$ 236.313
Alkaloid from *Ulex jussiaei*. Oil. $[\alpha]_D^{25}$ +3.3 (c, 0.26 in $CHCl_3$). λ_{max} 219 (log ϵ 3.34); 267 (log ϵ 3.56); 274 (sh) (MeOH).

Maximo, P. *et al., J. Nat. Prod.*, 2000, **63**, 201-204 (*isol, pmr, cmr*)
Honda, T. *et al., J.O.C.*, 2005, **70**, 499-504 (*synth*)

Justiciamide J-62

*4-Hydroxy-*N*^{4}-(2-hydroxy-4,5-dimethoxyphenyl)glutamine*

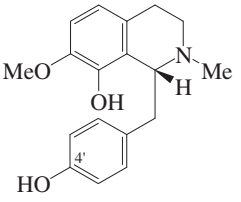


$C_{13}H_{18}N_2O_7$ 314.294
Alkaloid from *Justicia ghiesbreghtiana*. Mp 185°. $[\alpha]_D^{25}$ -2.7 (c, 0.07 in H_2O). λ_{max} 244 (ϵ 6220); 296 (ϵ 5775) (H_2O).

Lorenz, P. *et al., Phytochemistry*, 1999, **52**, 63-66 (*isol, uv, ir, pmr, cmr*)

Juziphine J-63

Yuziphine. Yuzifine



(*R*)*-form*

$C_{18}H_{21}NO_3$ 299.369

(R)-form [64091-05-0]
Alkaloid from the aerial parts of *Corydalis gortschakovii* and the leaves of *Zizyphus jujuba* (Chinese date) (Papaveraceae, Rhamnaceae).

N-*Oxide:* ***Juziphine* N-*oxide***
[65954-43-0]
$C_{18}H_{21}NO_4$ 315.368
Alkaloid from *Corydalis gortschakovii* (Papaveraceae). Cryst. (MeOH). Mp 197-198°. $[\alpha]_D$ -29 (MeOH).

N-*De-Me:* ***Norjuziphine***
[74119-87-2]
$C_{17}H_{19}NO_3$ 285.342
Alkaloid from *Corydalis bulleyana* and *Fumaria vaillantii* (Papaveraceae). Plates (MeOH). Mp 199-201°. $[\alpha]_D^{21}$ +17.3 (MeOH).

N-*Me: 1,2,3,4-Tetrahydro-8-hydroxy-1-[(4-hydroxyphenyl)methyl]-7-methoxy-2,2-dimethylisoquinolinium(1+).* ***Oblongine***†
[152230-57-4]
[152230-59-6]
$C_{19}H_{24}NO_3^{\oplus}$ 314.403
Quaternary alkaloid from stems of *Litsea cubeba* (mountain pepper) (Lauraceae). Amorph. solid (as perchlorate). Mp 109.5° (perchlorate). $[\alpha]_D^{24}$ -11 (c, 1.0 in MeOH).

(S)-form
N-*Me:* [60008-01-7]
[60134-32-9]
Quaternary alkaloid from *Berberis oblonga*. Mp 160° (as iodide). $[\alpha]_D$ 9.

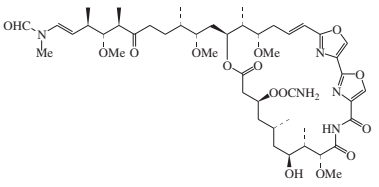
(±)-form
N-*Me:* [97185-37-0]
Quaternary alkaloid from the roots of *Tiliacora dinklagei* (Menispermaceae). Cryst. (Me_2CO/petrol) (as iodide). Mp 161° (153-155°) (iodide).

[152321-76-1]

Karimov, A. *et al., Khim. Prir. Soedin.*, 1976, **12**, 117-118 (*Oblongine, isol*)
Ziyaev, R. *et al., Khim. Prir. Soedin.*, 1977, **13**, 239; *Chem. Nat. Compd. (Engl. Transl.)*, 1977, **13**, 204
Israilov, I.A. *et al., Khim. Prir. Soedin.*, 1977, **13**, 834; *Chem. Nat. Compd. (Engl. Transl.)*, 1977, **13**, 702
Alimova, M. *et al., Khim. Prir. Soedin.*, 1979, **15**, 874; *Chem. Nat. Compd. (Engl. Transl.)*, 1979, **15**, 783 (*Norjuziphine*)
Dwuma-Badu, D. *et al., J. Nat. Prod.*, 1983, **46**, 342 (*Oblongine, isol, uv, ir, pmr, ms, struct, synth*)
Hong, H. *et al., Planta Med.*, 1986, 193 (*Norjuziphine*)
Lee, S.S. *et al., J. Nat. Prod.*, 1993, **56**, 1971 (*Oblongine*)
Chen, J.-J. *et al., Planta Med.*, 2001, **67**, 423-427 (*Norjuziphine, isol, pmr, cmr*)

Kabiramide I K-1

[927836-97-3]

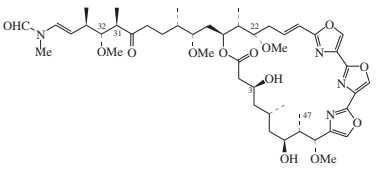


$C_{47}H_{71}N_5O_{15}$ 946.102
Isol. from the sponge *Pachastrissa nux*.

Petchprayoon, C. *et al., Heterocycles*, 2006, **69**, 447-456 (*isol, pmr, cmr*)

Kabiramide D K-2

[101550-95-2]



$C_{47}H_{70}N_4O_{13}$ 899.089
Isol. from the eggs of *Hexabranchus* sp. and from *Pachastrissa nux*. Cytotoxic agent. Sol. MeOH, Et_2O; poorly sol. H_2O. $[\alpha]_D^{23}$ -5 (c, 0.1 in $CHCl_3$). λ_{max} 245 (ϵ 26000) (MeOH) (Derep).

3-Ac: ***Kabiramide E***
[101550-96-3]
$C_{49}H_{72}N_4O_{14}$ 941.126
Isol. from the eggs of *Hexabranchus* sp. Cytotoxic agent. Sol. MeOH, Et_2O; poorly sol. H_2O. $[\alpha]_D^{23}$ -20 (c, 0.1 in $CHCl_3$). λ_{max} 245 (ϵ 26000) (MeOH) (Derep).

3-O-*Carbamoyl:* ***Kabiramide C***
[100045-78-1]
$C_{48}H_{71}N_5O_{14}$ 942.114
Isol. from the eggs of *Hexabranchus* sp. and the sponge *Pachastrissa nux*. Shows antifungal props. Solid. Sol. MeOH, Et_2O; poorly sol. H_2O. $[\alpha]_D^{23}$ +20 (c, 0.1 in $CHCl_3$). Macrolide antibiotic. Related to Halichondramide, H-15. λ_{max} 245 (ϵ 26000) (MeOH) (Derep).

22-O-*De-Me:* ***Kabiramide F***
$C_{46}H_{68}N_4O_{13}$ 885.062
Isol. from *Pachastrissa nux*. $[\alpha]_D$ -26 (c, 0.46 in $CHCl_3$).

22-O-*De-Me, 3*-O-*carbamoyl:* ***Kabiramide B***
[101550-94-1]
$C_{47}H_{69}N_5O_{14}$ 928.087
Isol. from the eggs of *Hexabranchus* sp. and from *Pachastrissa nux*. Cytotoxic. Sol. MeOH, Et_2O; poorly sol. H_2O. $[\alpha]_D^{23}$ +8 (c, 0.1 in $CHCl_3$). λ_{max} 245 (ϵ 26000) (MeOH) (Derep).

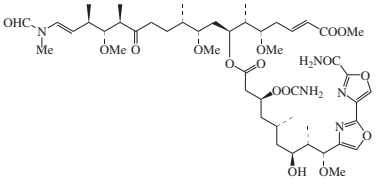
47-Hydroxy, 3-O-*carbamoyl:* ***Kabiramide A***
[101550-93-0]
$C_{48}H_{71}N_5O_{15}$ 958.113
Isol. from the eggs of *Hexabranchus* sp. Cytotoxic. Sol. MeOH, Et_2O; poorly sol. H_2O. $[\alpha]_D^{23}$ +6 (c, 0.1 in $CHCl_3$). λ_{max} 245 (ϵ 26000) (MeOH) (Derep). λ_{max} 245 ; 345 (ϵ 25000) (MeOH) (Berdy).

*32-Demethoxy, 31,32-didehydro(*E-*), 3*-O-*carbamoyl:* ***Kabiramide G***
$C_{47}H_{67}N_5O_{13}$ 910.072
Isol. from *Pachastrissa nux*. $[\alpha]_D$ +38 (c, 0.4 in $CHCl_3$).

Matsunaga, S. *et al., J.A.C.S.*, 1986, **108**, 847-849 (*Kabiramide C*)
Matsunaga, S. *et al., J.O.C.*, 1989, **54**, 1360-1363 (*Kabiramides A,B,D,E*)
Petchprayoon, C. *et al., Heterocycles*, 2006, **69**, 447-456 (*Pachastrissa nux constits*)

Kabiramide H K-3

[927836-94-0]

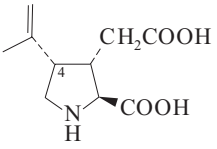


$C_{48}H_{75}N_5O_{16}$ 978.144
Isol. from the sponge *Pachastrissa nux*. $[\alpha]_D$ -35 (c, 0.3 in $CHCl_3$).

Petchprayoon, C. *et al., Heterocycles*, 2006, **69**, 447-456 (*isol, pmr, cmr*)

Kainic acid, INN, JAN K-4

2-Carboxy-4-(1-methylethenyl)-3-pyrrolidineacetic acid, 9CI. 3-Carboxymethyl-4-isopropenylproline. α-Kaininic acid. Digenic acid. Digenin. α-Kainic acid
[487-79-6]



$C_{10}H_{15}NO_4$ 213.233
Constit. of red algae *Alsidium helminthochorton*, *Centroceras clavulatum* and *Digenea simplex*. Glutamate receptor agonist. Neurotoxin, formerly used as an anthelmintic agent. Cryst. + $1H_2O$ (EtOH aq.). Sol. H_2O. Mp 253-254° dec. $[\alpha]_D^{24}$ -14.8 (c, 1 in H_2O). Log P -1.21 (calc).

▶ V. neurotoxic. UX9665250

Di-Me ester: [4071-37-8]
Bp_4 145°. $[\alpha]_D^{20}$ +23.

N-*Ac:* [59845-92-0]
Mp 161-162°. $[\alpha]_D$ -53 (H_2O).

9,10-Dihydro, 9-hydroxy: 2-Carboxy-4-(1-hydroxy-1-methylethyl)-3-pyrrolidineacetic acid, 9CI. ***1′-Hydroxykainic acid***
[159834-87-4]
$C_{10}H_{17}NO_5$ 231.248
Constit. of the red alga *Palmaria palmata*.

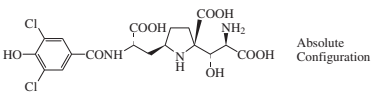
4-Epimer: ***α-Allokainic acid****. α-Allokainic acid*
[4071-39-0]
$C_{10}H_{15}NO_4$ 213.233
Constit. of *Digenea simplex*. Mp 238-242° dec. $[\alpha]_D^{20}$ +7.7 (c, 1.3 in H_2O).

[92180-28-4 , 58002-62-3 , 92180-29-5]

Watase, H. *et al., Bull. Chem. Soc. Jpn.*, 1957, **30**, 889 (*cryst struct*)
Nitta, I. *et al., Nature (London)*, 1958, **181**, 761 (*struct*)
Impellizzeri, G. *et al., Phytochemistry*, 1975, **14**, 1549-1557 (*algae, isol*)
Kainic Acid Tool Neurobiol., (eds. McGeer, E.G. *et al*), Raven Press, 1978, (*book*)
Oppolzer, W. *et al., Tet. Lett.*, 1978, 3397-3400 (*α-Allokainic acid, synth*)
Oppolzer, W. *et al., Helv. Chim. Acta*, 1979, **62**, 2282 (*synth, bibl*)
Nadler, J.V. *et al., Life Sci.*, 1979, **24**, 289 (*rev, props*)
Kraus, G.A. *et al., Tet. Lett.*, 1983, **24**, 3427-3430 (*α-Allokainic acid, synth*)
DeShong, P. *et al., Tet. Lett.*, 1986, **27**, 3979-3982 (*α-Allokainic acid, synth*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 785
Yoo, S.-E. *et al., J.O.C.*, 1994, **59**, 6968-6972 (*synth*)
Agami, C. *et al., J.O.C.*, 1994, **59**, 7937-7940 (*synth*)
Ramsey, U.P. *et al., Nat. Toxins*, 1994, **2**, 286-292 (*1′-Hydroxykainic acid*)
Parsons, A.F. *et al., Tetrahedron*, 1996, **52**, 4149-4174 (*rev*)
Todeschi, N. *et al., Bioorg. Med. Chem.*, 1997, **5**, 1943-1957 (*pmr, conformn*)
Bachi, M.D. *et al., Pure Appl. Chem.*, 1998, **70**, 259-262 (*rev, synth*)
Rubio, A. *et al., Tet. Lett.*, 1998, **39**, 2171-2174 (*synth*)
Chevliakov, M.V. *et al., J.A.C.S.*, 1999, **121**, 11139-11143 (*synth*)
Campbell, A.D. *et al., J.C.S. Perkin 1*, 2000, 3194-3204 (*synth*)
Miyata, O. *et al., Tetrahedron*, 2000, **56**, 6199-6207 (*synth, bibl*)
Anderson, J.C. *et al., J.O.C.*, 2003, **68**, 6160-6163 (*synth*)
Trost, B.M. *et al., Org. Lett.*, 2003, **5**, 1467-1470 (*synth*)
Cook, G.R. *et al., Org. Lett.*, 2004, **6**, 2481-2484 (*synth*)
Martinez, M.M. *et al., Eur. J. Org. Chem.*, 2005, 1427-1443 (*synth*)
Scott, M.E. *et al., Org. Lett.*, 2005, **7**, 3045-3047 (*synth*)
Morita, Y. *et al., Org. Lett.*, 2005, **7**, 4337-4340 (*synth*)
Pandey, S.K. *et al., Org. Lett.*, 2006, **8**, 5665-5668 (*synth*)
Sakaguchi, H. *et al., Org. Lett.*, 2007, **9**, 1635-1638 (*synth*)
Chalker, J.M. *et al., Org. Lett.*, 2007, **9**, 3825-3828 (*synth*)
Tomooka, K. *et al., Tet. Lett.*, 2008, **49**, 6327-6329 (*synth*)

Kaitocephalin K-5

Antibiotic PF 1191. PF 1191
[198710-92-8]



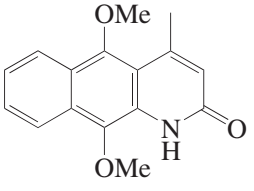
$C_{18}H_{21}Cl_2N_3O_9$ 494.284

Revision of abs. config. originally assigned in 2001. Prod. by *Eupenicillium shearii* PF-1191. Glutamate receptor antagonist and nerve cell protectant. Powder. Mp 235-238° dec. $[\alpha]_D^{21}$ -31 (c, 0.7 in H_2O). λ_{max} 217 (ϵ 18200); 297 (ϵ 8200) (H_2O).

Shin-ya, K. *et al., Tet. Lett.*, 1997, **38**, 7079-7082 (*isol, uv, ir, pmr, cmr, N-15 nmr*)
Pat. Coop. Treaty (WIPO), 1998, 41 503; *CA*, **129**, 274808k (*isol*)
Okue, M. *et al., Tet. Lett.*, 2002, **43**, 857-860; 861-864 (*synth, abs config*)
Kawasaki, M. *et al., Org. Lett.*, 2005, **7**, 4165-4167 (*synth*)
Vaswani, R.G. *et al., J.O.C.*, 2008, **73**, 1661-1681 (*synth*)

Kalasinamide K-6

5,10-Dimethoxy-4-methylbenzo[g]quinolin-2(1H)-one, 9CI. Atemoine



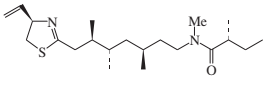
$C_{16}H_{15}NO_3$ 269.299
Alkaloid from *Annona atemoya* (custard apple) and *Polyalthia suberosa*. Orange needles ($EtOH/CH_2Cl_2$). Mp 233.8-235.5°. λ_{max} 216 (log ϵ 4.52); 247 (log ϵ 4.81); 264 (sh) (log ϵ 4.78); 274 (log ϵ 4.91); 284 (log ϵ 4.87); 310 (log ϵ 3.95); 323 (log ϵ 4.13); 338 (log ϵ 4.22); 392 (log ϵ 3.66) (EtOH).

6- or 9-Methoxy: ***Geovanine***
[111971-82-5]
$C_{17}H_{17}NO_4$ 299.326
Alkaloid from the trunkwood of *Annona ambotay* (Annonaceae). Yellow powder. Mp 190-192°.

De Oliveira, A.B. *et al., Phytochemistry*, 1987, **26**, 2650-2651 (*Geovanine*)
Tuchinda, P. *et al., Phytochemistry*, 2000, **53**, 1079-1082 (*isol, uv, pmr, cmr, ms*)
Wu, Y.-C. *et al., J. Nat. Prod.*, 2005, **68**, 406-408 (*Atemoine*)
Gandy, M.N. *et al., J. Nat. Prod.*, 2008, **71**, 866-868 (*synth*)

Kalkitoxin K-7

[247184-89-0]



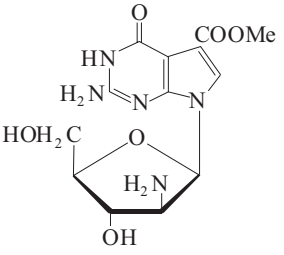
Absolute Configuration

$C_{21}H_{38}N_2OS$ 366.61
Isol. from *Lyngbya majuscula*. Neurotoxin and ichthyotoxin. Cytotoxic.

Berman, F.W. *et al., Toxicon*, 1999, **37**, 1645-1648 (*isol, activity*)
Wu, M. *et al., J.A.C.S.*, 2000, **122**, 12041-12042 (*synth, struct*)
White, J.D. *et al., Org. Biomol. Chem.*, 2004, **2**, 2092-2012 (*synth*)
Yokokawa, F. *et al., Tetrahedron*, 2004, **60**, 6859-6880 (*synth, abs config*)

Kanagawamicin K-8

AB 116. Antibiotic AB 116
[84873-16-5]



$C_{13}H_{17}N_5O_6$ 339.307
Nucleoside antibiotic. Prod. by *Actinoplanes kanagawaensis*. Shows antitumour and weak antibacterial props. Amorph. powder +1 H_2O. Sol. H_2O, DMSO, Py, MeOH; poorly sol. Me_2CO, hexane. Mp 225-228°. $[\alpha]_D^{25}$ -14 (c, 1 in DMSO). λ_{max} 231 (ϵ 14100); 272 (ϵ 6310); 297 (ϵ 6920) (0.1*M* HCl) (Derep). λ_{max} 225 (sh) (ϵ 9175); 268 (ϵ 9175); 282 (sh) (H_2O at pH 11) (Derep). λ_{max} 232 (ϵ 19680); 272 (ϵ 6881); 298 (ϵ 7610) (H_2O) (Derep).

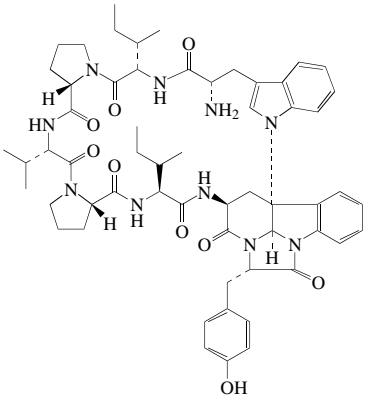
N,O,O-*Tri-Ac:*
Amorph. powder. Mp 170-171°.

[86330-89-4]

Naruto, S. *et al., Heterocycles*, 1983, **20**, 27 (*isol, struct*)
Japan. Pat., 1983, 83 32 893; *CA*, **99**, 37106 (*isol*)
Isono, K. *et al., J. Antibiot.*, 1988, **41**, 1711 (*rev*)

Kapakahine A K-9

[181862-46-4]

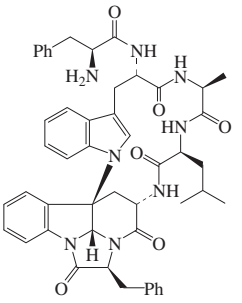


$C_{58}H_{72}N_{10}O_9$ 1053.268
Cyclic peptide. Isol. from the sponge *Cribrochalina olemda*. Protein phosphatase inhibitor. Amorph. solid. $[\alpha]_D^{20}$ -131 (c,1 in MeOH). λ_{max} 206 (ϵ 39000); 232 (ϵ 19000); 274 (ϵ 9500) (MeOH).

Yeung, B.K.S. *et al., J.O.C.*, 1996, **61**, 7168 (*isol, uv, pmr, cmr*)

Kapakahine B K-10

[165406-94-0]



Absolute Configuration

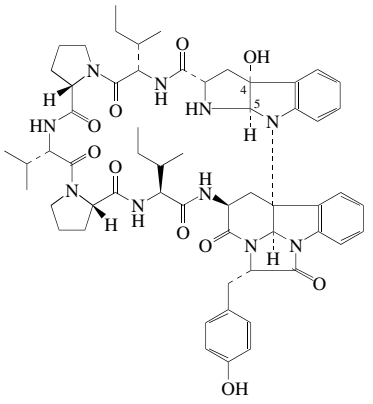
$C_{49}H_{52}N_8O_6$ 849
Isol. from the sponge *Cribrochalina olemda*. Cytotoxic agent. Amorph. solid. Sol. MeOH, EtOAc; poorly sol. hexane. $[\alpha]_D^{20}$ -70 (c, 0.3 in MeOH). λ_{max} 214 (ϵ 21000); 250 (ϵ 8400); 280 (ϵ 5600); 294 (ϵ 4000) (MeOH).

N-*De(2-amino-3-phenylpropanoyl):* ***Kapakahine F***
[530097-82-6]
$C_{40}H_{43}N_7O_5$ 701.824
Isol. from *Cribrochalina olemda*.

Nakao, Y. *et al., J.A.C.S.*, 1995, **117**, 8271-8272 (*isol, uv, ir, pmr, cmr*)
Yeung, B.K.S. *et al., J.O.C.*, 1996, **61**, 7168-7173 (*abs config*)
Nakao, Y. *et al., Org. Lett.*, 2003, **5**, 1387-1390 (*Kapakahine F*)

Kapakahine C K-11

[181862-47-5]



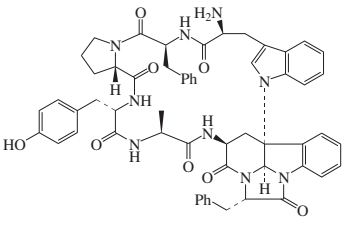
$C_{58}H_{72}N_{10}O_{10}$ 1069.268
Cyclic peptide. Isol. from the sponge *Cribrochalina olemda*. Amorph. solid. $[\alpha]_D^{20}$ -120 (c, 0.5 in MeOH). λ_{max} 208 (ϵ 44000); 253 (ϵ 12000); 279 (ϵ 41000); 305 (ϵ 1200) (MeOH).

4,5-Diepimer: ***Kapakahine D***
[182074-03-9]
$C_{58}H_{72}N_{10}O_{10}$ 1069.268
Isol. from *Cribrochalina olemda*. Amorph. solid. $[\alpha]_D^{20}$ -30.7 (c, 0.9 in MeOH). λ_{max} 206 (ϵ 35000); 247 (ϵ 9000); 279 (ϵ 2800); 304 (ϵ 690) (MeOH).

Yeung, B.K.S. *et al., J.O.C.*, 1996, **61**, 7168 (*isol, uv, ir, pmr, cmr*)

Kapakahine E **K-12**

[530097-81-5]

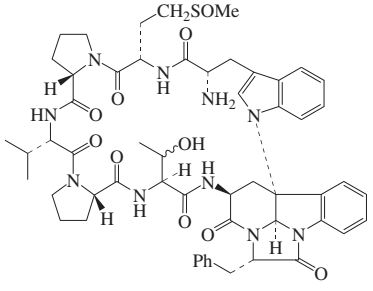


$C_{57}H_{57}N_9O_8$ 996.133
Isol. from the sponge *Cribrochalina olemda*. Cytotoxic.

Nakao, Y. *et al., Org. Lett.*, 2003, **5**, 1387-1390 (*isol, pmr, cmr, ms*)

Kapakahine G **K-13**

[530097-83-7]

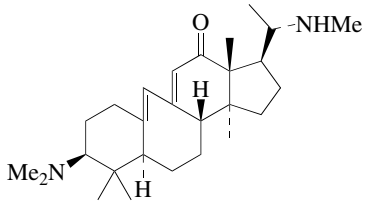


$C_{55}H_{66}N_{10}O_{10}S$ 1059.253
Isol. from the sponge *Cribrochalina olemda*.

Nakao, Y. *et al., Org. Lett.*, 2003, **5**, 1387-1390 (*isol, pmr, cmr, ms*)

Karachicine **K-14**

[91926-06-6]

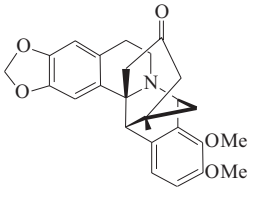


$C_{27}H_{44}N_2O$ 412.657
Alkaloid from the leaves of *Buxus papilosa* (Buxaceae). Amorph. λ_{max} 210 ; 241 ; 248 ; 257 (no solvent reported).

Atta-ur-Rahman, *et al., Z. Naturforsch., B*, 1984, **39**, 839 (*isol, pmr, ir, uv, ms*)

Karachine **K-15**

[80908-02-7]

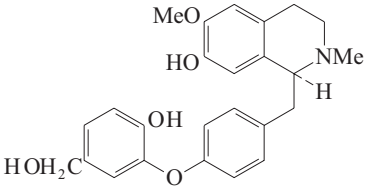


$C_{26}H_{27}NO_5$ 433.503
Minor alkaloid from *Berberis aristata* (Berberidaceae). Cryst. (EtOAc). Mp 146-148°.

Blaskó, G. *et al., J.A.C.S.*, 1982, **104**, 2039 (*uv, ir, pmr, ms, struct*)
Stevens, R.V. *et al., Chem. Comm.*, 1983, 1425 (*synth*)

Karakoramine **K-16**

[85588-84-7]

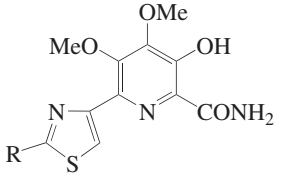


$C_{25}H_{27}NO_5$ 421.492
Alkaloid from *Berberis lycium* (Berberidaceae). Amorph. $[\alpha]_D^{25}$ +71 (c, 0.17 in MeOH). Poss. derived by *in vivo* oxidn. of Berbamunine, B-98.

Leet, J.E. *et al., Heterocycles*, 1983, **20**, 425 (*isol, uv, pmr, ms, cd, struct*)

Karnamicin A_1 **K-17**

BU 3557A_1. Antibiotic BU 3557A_1
[122535-48-2]



R = -CH(OH)CH_2CH_2CH(OH)CH_3

$C_{16}H_{21}N_3O_6S$ 383.424
Prod. by *Saccharothrix aerocolonigenes*. Active against fungi and yeasts. Powder. Sol. MeOH, $CHCl_3$, EtOAc, DMSO, C_6H_6, EtOH; poorly sol. hexane, H_2O. Mp 56.5-58.5°. $[\alpha]_D^{25}$ -11 (c, 0.5 in $CHCl_3$). λ_{max} 220 (ϵ 25700); 243 (ϵ 25700); 318 (ϵ 7500) (MeOH/HCl). λ_{max} 220 (ϵ 23400); 251 (ϵ 21600); 281 (ϵ 17200); 342 (ϵ 9000) (MeOH/NaOH). λ_{max} 219 (ϵ 25000); 242 (ϵ 22700); 317 (ϵ 6700) (MeOH).

1″-Deoxy: ***Karnamicin B_2***. *BU 3557B_2. Antibiotic BU 3557B_2*
[122535-52-8]
$C_{16}H_{21}N_3O_5S$ 367.425
Isol. from *Saccharothrix aerocolonigenes*. Active against fungi and yeasts. Rods ($CHCl_3$). Sol. MeOH, EtOH, $CHCl_3$, EtOAc, C_6H_6, DMSO; poorly sol. hexane, H_2O. Mp 171-172.5°. λ_{max} 220 (sh) (ϵ 23500); 243 (ϵ 26900); 318 (ϵ 8100) (MeOH/HCl). λ_{max} 221 (ϵ 23300); 252 (ϵ 21100); 293 (ϵ 16600); 342 (ϵ 9000) (MeOH/NaOH). λ_{max} 219 (ϵ 26100); 242 (ϵ 23500); 317 (ϵ 6800) (MeOH).

1″-Deoxy, 4″-ketone: ***Karnamicin B_1***. *BU 3557B_1. Antibiotic BU 3557B_1*
[122535-51-7]
$C_{16}H_{19}N_3O_5S$ 365.409
Prod. by *Saccharothrix aerocolonigenes*. Active against fungi and yeasts. Needles ($CHCl_3$/hexane). Sol. MeOH, C_6H_6, EtOAc, DMSO, $CHCl_3$, EtOH; poorly sol. hexane, H_2O. Mp 151-153°. $[\alpha]_D^{25}$ 0 (c, 0.5 in $CHCl_3$). λ_{max} 220 (sh) (ϵ 23900); 243 (ϵ 26400); 318 (ϵ 8000) (MeOH/HCl). λ_{max} 220 (ϵ 23300); 251 (ϵ 21300); 292 (ϵ 16600); 341 (ϵ 9100) (MeOH/NaOH). λ_{max} 219 (ϵ 25900); 242 (ϵ 23600); 316 (ϵ 6900) (MeOH).

4″-Deoxy: ***Karnamicin C_5***. *BU 3557C_5. Antibiotic BU 3557C_5*
[122535-58-4]
$C_{16}H_{21}N_3O_5S$ 367.425
Prod. by *Saccharothrix aerocolonigenes*. Active against fungi and yeasts. Powder. Sol. MeOH, EtOH, $CHCl_3$, EtOAc, DMSO, C_6H_6; poorly sol. hexane, H_2O. Mp 138-140°. $[\alpha]_D^{25}$ +19 (c, 1 in $CHCl_3$). λ_{max} 220 (ϵ 25700); 243 (ϵ 23900); 317 (ϵ 7100) (MeOH). λ_{max} 220 (ϵ 24600); 243 (ϵ 24700); 317 (ϵ 7400) (MeOH/HCl). λ_{max} 217 (ϵ 22200); 252 (ϵ 20700); 283 (ϵ 16700); 343 (ϵ 8900) (MeOH/NaOH).

1″,4″-Dideoxy, 3″-hydroxy: ***Karnamicin C_1***. *BU 3557C_1. Antibiotic BU 3557C_1*
[122535-54-0]
$C_{16}H_{21}N_3O_5S$ 367.425
Prod. by *Saccharothrix aerocolonigenes*. Active against fungi and yeasts. Powder. Sol. MeOH, C_6H_6, EtOAc, DMSO, EtOH, $CHCl_3$; poorly sol. hexane, H_2O. Mp 152.5-154°. $[\alpha]_D^{25}$ +14 (c, 0.25 in $CHCl_3$). λ_{max} 220 (ϵ 25000); 243 (ϵ 22200); 317 (ϵ 6600) (MeOH). λ_{max} 222 (sh) (ϵ 23100); 242 (ϵ 23500); 317 (ϵ 7500) (MeOH/HCl). λ_{max} 220 (ϵ 22100); 252 (ϵ 19800); 294 (ϵ 15700); 342 (ϵ 8400) (MeOH/NaOH).

Nishio, M. *et al., J. Antibiot.*, 1989, **42**, 852-868 (*Karnamicins, isol, struct, props*)
Umemura, K. *et al., Tet. Lett.*, 1997, **38**, 4811-4814 (*Karnamicin B_1, synth*)

Karnamicin A_2 **K-18**

BU 3557A_2. Antibiotic BU 3557A_2
[122535-49-3]
As Karnamicin A_1, K-17 with
R = -$^{1''}$CH(OH)CH_2CH_2C(OH)$(CH_3)_2$
$C_{17}H_{23}N_3O_6S$ 397.451
Isol. from *Saccharothrix aerocolonigenes*. Active against fungi and yeasts. Powder. Sol. MeOH, $CHCl_3$, EtOAc, DMSO, C_6H_6, EtOH; poorly sol. hexane, H_2O. Mp 60-63°. $[\alpha]_D^{25}$ -14 (c, 0.5 in $CHCl_3$). λ_{max} 220 (ϵ 23900); 243 (ϵ 23900); 318 (ϵ 6900) (MeOH/HCl). λ_{max} 219 (ϵ 25500); 242 (ϵ 23500); 316 (ϵ 6800) (MeOH). λ_{max} 220 (ϵ 23400); 251 (ϵ 21500); 282 (ϵ 17000); 342 (ϵ 9000) (MeOH/NaOH).

1″-Deoxy: ***Karnamicin B_3***. *BU 3557B_3. Antibiotic BU 3557B_3*
[122535-53-9]
$C_{17}H_{23}N_3O_5S$ 381.452
Isol. from *Saccharothrix aerocolonigenes*. Active against fungi and yeasts. Rods ($CHCl_3$). Sol. MeOH, EtOH, $CHCl_3$, C_6H_6, DMSO, EtOAc; poorly sol. hexane, H_2O. Mp 187.5-189.5°. $[\alpha]_D^{25}$ 0 (c, 0.5 in $CHCl_3$). λ_{max} 220 (ϵ

25400); 242 (ϵ 23200); 317 (ϵ 6800) (MeOH). λ_{max} 220 (sh) (ϵ 22100); 243 (ϵ 26500); 318 (ϵ 7900) (MeOH/HCl). λ_{max} 218 (ϵ 21400); 252 (ϵ 20200); 294 (ϵ 16200); 342 (ϵ 8700) (MeOH/NaOH).

Nishio, M. *et al., J. Antibiot.*, 1989, **42**, 852-868 (*Karnamicins, isol, struct, props*)

Karnamicin C_2 **K-19**

BU 3557C_2. Antibiotic BU 3557C_2
[122535-55-1]
As Karnamicin A_1, K-17 with
R = $-CH_2(CH_2)_2CH(CH_3)CH_2OH$
$C_{17}H_{23}N_3O_5S$ 381.452
Isol. from *Saccharothrix aerocolonigenes*. Active against fungi and yeasts. Powder. Mp 130.5-133°. $[\alpha]_D^{25}$ -8 (c, 0.25 in $CHCl_3$). λ_{max} 220 (ϵ 26000); 243 (ϵ 24000); 318 (ϵ 7100) (MeOH). λ_{max} 222 (sh) (ϵ 22500); 243 (ϵ 26600); 318 (ϵ 8200) (MeOH/HCl). λ_{max} 217 (ϵ 22100); 253 (ϵ 20600); 294 (ϵ 16800); 342 (ϵ 9100) (MeOH/NaOH).

Nishio, M. *et al., J. Antibiot.*, 1989, **42**, 852-868 (*isol, struct, props*)

Karnamicin C_3 **K-20**

BU 3557C_3. Antibiotic BU 3557C_3
[122535-56-2]
As Karnamicin A_1, K-17 with
R = $-CH_2CH_2^{3''}CH(CH_3)^{4''}CH(OH)CH_3$
$C_{17}H_{23}N_3O_5S$ 381.452
Isol. from *Saccharothrix aerocolonigenes*. Active against fungi and yeasts. Powder. Mp 165.5-167.5°. $[\alpha]_D^{25}$ +20 (c, 1 in $CHCl_3$). λ_{max} 220 (ϵ 25800); 242 (ϵ 23200); 317 (ϵ 6800) (MeOH). λ_{max} 222 (sh) (ϵ 25000); 244 (ϵ 28300); 318 (ϵ 8400) (MeOH/HCl). λ_{max} 220 (ϵ 17300); 251 (ϵ 21000); 294 (ϵ 16600); 341 (ϵ 8800) (MeOH/NaOH).

4″-Ketone: ***Karnamicin C_4***. *BU 3557C_4. Antibiotic BU 3557C_4*
[122535-57-3]
$C_{17}H_{21}N_3O_5S$ 379.436
Isol. from *Saccharothrix aerocolonigenes*. Active against fungi and yeasts. Powder. Sol. MeOH, EtOH, $CHCl_3$, EtOAc, DMSO, C_6H_6; poorly sol. hexane, H_2O. Mp 124.5-126.5°. $[\alpha]_D^{25}$ 0 (c, 1 in $CHCl_3$). λ_{max} 220 (ϵ 25900); 243 (ϵ 23900); 317 (ϵ 7100) (MeOH). λ_{max} 223 (sh) (ϵ 23200); 243 (ϵ 26100); 318 (ϵ 8000) (MeOH/HCl). λ_{max} 217 (ϵ 22300); 252 (ϵ 20600); 294 (ϵ 16700); 342 (ϵ 9100) (MeOH/NaOH).

4″-Deoxy, 3″-hydroxy: ***Karnamicin D_3***. *BU 3557D_3. Antibiotic BU 3557D_3*
[122535-61-9]
$C_{17}H_{23}N_3O_5S$ 381.452
Isol. from *Saccharothrix aerocolonigenes*. Active against fungi and yeasts. Powder. Sol. MeOH, EtOH, $CHCl_3$, EtOAc, DMSO, C_6H_6; poorly sol. hexane, H_2O. Mp 153-154°. $[\alpha]_D^{25}$ +4 (c, 0.18 in $CHCl_3$). λ_{max} 220 (ϵ 25200); 244 (ϵ 23200); 316 (ϵ 7300) (MeOH). λ_{max} 220 (sh) (ϵ 21000); 244 (ϵ 25700); 318 (ϵ 7800) (MeOH/HCl). λ_{max} 221 (ϵ 23300); 254 (ϵ 22200); 294 (ϵ 17900); 344 (ϵ 9800) (MeOH/NaOH).

Nishio, M. *et al., J. Antibiot.*, 1989, **42**, 852-868 (*Karnamicins, isol, struct, props*)

Karnamicin D_2 **K-21**

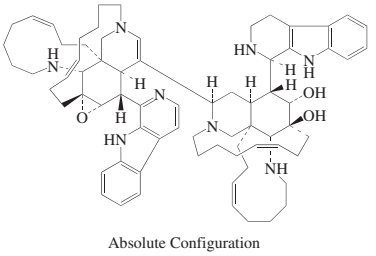
BU 3557D_2. Antibiotic BU 3557D_2
[122535-60-8]
As Karnamicin A_1, K-17 with
$-CH_2(CH_2)_2^{4''}CH_2^{5''}COCH_3$
$C_{17}H_{21}N_3O_5S$ 379.436
Isol. from *Saccharothrix aerocolonigenes*. Active against fungi and yeasts. Powder. Sol. MeOH, EtOAc, DMSO, C_6H_6, EtOH, $CHCl_3$; poorly sol. hexane, H_2O. Mp 139-140°. $[\alpha]_D^{25}$ 0 (c, 0.2 in $CHCl_3$). λ_{max} 220 (ϵ 25800); 244 (ϵ 23900); 315 (ϵ 7900) (MeOH). λ_{max} 219 (sh) (ϵ 21400); 244 (ϵ 25400); 319 (ϵ 7900) (MeOH/HCl). λ_{max} 220 (ϵ 21500); 254 (ϵ 20900); 294 (ϵ 16800); 342 (ϵ 9400) (MeOH/NaOH).

5″-Deoxo, 4″-oxo: ***Karnamicin D_4***. *BU 3557D_4. Antibiotic BU 3557D_4*
[122535-62-0]
$C_{17}H_{21}N_3O_5S$ 379.436
Isol. from *Saccharothrix aerocolonigenes*. Active against fungi and yeasts. Powder. Sol. MeOH, C_6H_6, DMSO, EtOAc, $CHCl_3$, EtOH; poorly sol. hexane, H_2O. Mp 164-165.5°. $[\alpha]_D^{25}$ 0 (c, 0.2 in $CHCl_3$). λ_{max} 220 (ϵ 25400); 244 (ϵ 24000); 315 (ϵ 7500) (MeOH). λ_{max} 219 (sh) (ϵ 22000); 244 (ϵ 26200); 319 (ϵ 7900) (MeOH/HCl). λ_{max} 221 (ϵ 22400); 254 (ϵ 21600); 293 (ϵ 17200); 344 (ϵ 9700) (MeOH/NaOH).

Nishio, M. *et al., J. Antibiot.*, 1989, **42**, 852-868 (*isol, struct, props*)

Kauluamine **K-22**

[170474-99-4]



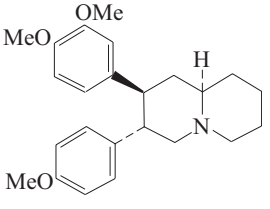
Absolute Configuration

$C_{72}H_{94}N_8O_3$ 1119.586
Alkaloid from an Indonesian marine sponge, *Prianos* sp. Shows mod. immunosuppressive activity. Unstable pale yellow solid. Sol. MeOH, $CHCl_3$, CH_2Cl_2. $[\alpha]_D$ +0.7 (c, 0.18 in $CHCl_3$).

Ohtani, I.I. *et al., J.A.C.S.*, 1995, **117**, 10743-10744 (*isol, ir, pmr, cmr, struct*)

Kayawongine **K-23**

2-(3,4-Dimethoxyphenyl)-3-(4-methoxyphenyl)quinolizidine
[86688-02-0]



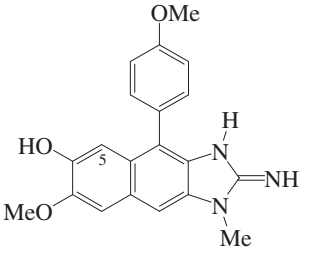
$C_{24}H_{31}NO_3$ 381.514

Major alkaloid from the leaves of *Cissus rheifolia* (Vitidaceae). Mp 124-124.5°. $[\alpha]_D^{25}$ -116 (c, 0.85 in $CHCl_3$).

Saifah, E. *et al., J. Nat. Prod.*, 1983, **46**, 353 (*isol, uv, pmr, cmr, ms, cd, struct*)

Kealiinine A **K-24**

[700813-15-6]



$C_{20}H_{19}N_3O_3$ 349.388
Alkaloid from the sponge *Leucetta chagosensis*. Cytotoxic. Yellow-brown powder. λ_{max} 250 ; 314 ; 338 (MeOH).

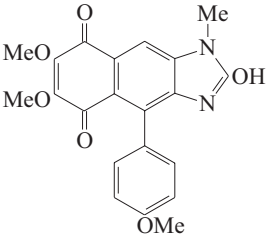
6-Me ether: ***Kealiinine B***
[700813-16-7]
$C_{21}H_{21}N_3O_3$ 363.415
Alkaloid from *Leucetta chagosensis*. Dark brown solid. λ_{max} 250 ; 314 ; 338 (MeOH).

5-Methoxy, 6-Me ether: ***Kealiinine C***
[700813-17-8]
$C_{22}H_{23}N_3O_4$ 393.441
Alkaloid from *Leucetta chagosensis*. Dark brown solid. λ_{max} 250 ; 314 ; 338 (MeOH).

Hassan, W. *et al., J. Nat. Prod.*, 2004, **67**, 817-822 (*isol, pmr, cmr, ms*)

Kealiiquinone **K-25**

*6,7-Dimethoxy-4-(4-methoxyphenyl)-1-methyl-1*H*-naphth[2,3-*d*]imidazole-2,5,8(3*H*)-trione, 9CI*
[124535-78-0]



$C_{21}H_{18}N_2O_6$ 394.383
CAS registry no. refers to the trioxo tautomer. Alkaloid from the sponge *Leucetta* sp. Long red needles (MeOH/CH_2Cl_2/hexane). Mp 300° dec. λ_{max} 230 (ϵ 15100); 296 (ϵ 22400); 388 (ϵ 1380) (MeOH) (Derep).

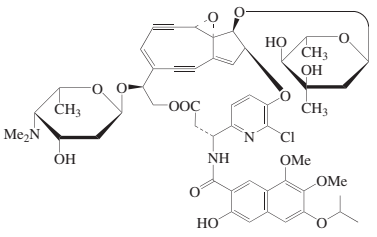
2-Deoxy, 2-amino: ***2-Amino-2-deoxykealiiquinone***. *2-Deoxy-2-aminokealiiquinone*
[189748-83-2]
$C_{21}H_{19}N_3O_5$ 393.398
Alkaloid from the sponge *Leucetta chagosensis*. Red needles (MeOH/CH_2Cl_2). Mp > 250° dec. λ_{max} 220 (log

ϵ 4.49); 294 (log ϵ 4.57); 382 (log ϵ 3.73) (MeOH).

Akee, R.K. *et al., J.O.C.*, 1990, **55**, 1944 (*isol, uv, ir, pmr, cmr, cryst struct*)
Kawasaki, I. *et al., Chem. Pharm. Bull.*, 1997, **45**, 1393-1398 (*synth, uv, ir, pmr, cmr, cryst struct*)
Fu, X. *et al., J. Nat. Prod.*, 1997, **60**, 497 (*2-Deoxy-2-aminokealiiquinone*)

Kedarcidin K-26

[128512-39-0]



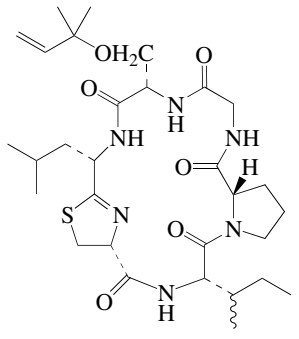
$C_{53}H_{60}ClN_3O_{16}$ 1030.52

Chromoprotein enediyne antibiotic. Struct. of chromophore shown. Apoprotein moiety is a linear polypeptide consisting of 114 amino acid residues of known struct. Struct. of chromophore revised in 1997 and stereochem. again in 2007. Prod. by *Streptoalloteichus* sp. LS85-6. Antineoplastic agent. Active against gram-positive bacteria. Buff powder. Sol. EtOAc. λ_{max} 258 (ϵ 43800); 306 (ϵ 15500); 313 (ϵ 15200) (H_2O/protein) (Derep). λ_{max} 256 (ϵ 60300); 316 (ϵ 14500) (MeOH) (Derep).

Lam, K.S. *et al., J. Antibiot.*, 1991, **44**, 472 (*props*)
Hofstead, S.J. *et al., J. Antibiot.*, 1992, **45**, 1250 (*isol*)
Leet, J.E. *et al., J.A.C.S.*, 1992, **114**, 7946; 1993, **115**, 8432 (*struct, pmr, cmr, ms*)
Zein, N. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 1993, **90**, 8009-8012 (*pharmacol*)
Constantine, K.L. *et al., Biochemistry*, 1994, **33**, 11438 (*bibl*)
Lam, K.S. *et al., J. Ind. Microbiol. Biotechnol.*, 1994, **13**, 356-360 (*manuf*)
Zein, N. *et al., NATO ASI Ser., Ser. C*, 1996, **479**, 53 (*rev*)
Kawata, S. *et al., J.A.C.S.*, 1997, **119**, 12012-12013 (*synth, struct*)
Ren, F. *et al., J.A.C.S.*, 2007, **129**, 5381-5383 (*synth*)

Keenamide A K-27

[177742-52-8]



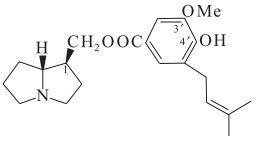
$C_{30}H_{48}N_6O_6S$ 620.812

Isol. from the marine mollusc *Pleurobranchus forskalii*. Cytotoxic agent. Off-white powder. $[\alpha]_D$ +24 (c, 0.3 in MeOH).

Wesson, K.J. *et al., J. Nat. Prod.*, 1996, **59**, 629-631 (*isol, ir, pmr, cmr, ms*)

Keitine K-28

[40766-51-6]



Absolute configuration

$C_{21}H_{29}NO_4$ 359.464

Alkaloid from *Liparis keitaoensis* (Orchidaceae). Noncryst. $[\alpha]_D^{23}$ -7 (c, 0.6 in EtOH). Ester of Laburnine.

O$^{4'}$-β-D-Glucopyranoside: ***Keitaoine***
[40766-50-5]
$C_{27}H_{39}NO_9$ 521.606
Alkaloid from *Liparis keitaoensis* (Orchidaceae). Noncryst. $[\alpha]_D^{23}$ -13 (c, 0.8 in EtOH).

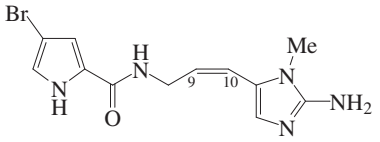
3′-Demethoxy, O$^{4'}$-β-D-glucopyranoside: ***Malaxine***
[19128-95-1]
$C_{26}H_{37}NO_8$ 491.58
Alkaloid from *Liparis bicallosa*, *Liparis hachijoensis* and *Malaxis congesta* (Orchidaceae). Mp 151-159°. $[\alpha]_D^{22}$ -31 (c, 2.7 in EtOH).

1-Epimer, O$^{4'}$-β-D-glucopyranoside: ***Hammarbine***
[40766-49-2]
$C_{27}H_{39}NO_9$ 521.606
Minor alkaloid of *Hammarbya paludosa* (Orchidaceae). Amorph. $[\alpha]_D^{23}$ +9 (c, 0.31 in EtOH). Hydrol. → Lindelofidine.

Leander, K. *et al., Tet. Lett.*, 1967, 3477 (*isol, Malaxine*)
Nishikawa, K. *et al., Tetrahedron*, 1969, **25**, 2723 (*struct, Malaxine*)
Tanino, H. *et al., Tetrahedron*, 1969, **25**, 3033 (*synth, Malaxine*)
Linström, B. *et al., Acta Chem. Scand.*, 1972, **26**, 2963 (*Keitine, Keitaoine, Hammarbine*)

Keramadine K-29

[88839-97-8]



$C_{12}H_{14}BrN_5O$ 324.18

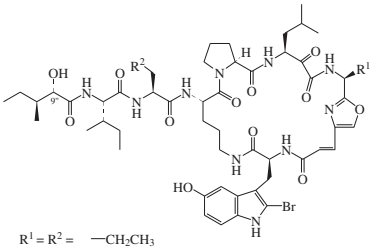
Isol. from the Okinawan sea sponge *Agelas* sp. Antagonist of serotonergic receptors. Powder. Sol. MeOH, $CHCl_3$. Mp 183-187°. λ_{max} 269 (ϵ 21400) (MeOH) (Derep).

9,10-Dihydro: ***9,10-Dihydrokeramadine***
$C_{12}H_{16}BrN_5O$ 326.195
Isol. from an *Agelas* sp. Amorph. solid. λ_{max} 202 (ϵ 21200); 280 (ϵ 19700) (MeOH).

Nakamura, H. *et al., Tet. Lett.*, 1984, **25**, 2475-2478 (*isol, uv, ir, pmr, cmr, ms*)
Daninos-Zeghal, S. *et al., Tetrahedron*, 1997, **53**, 7605-7614 (*synth*)
Cafieri, F. *et al., J. Nat. Prod.*, 1998, **61**, 122-125 (*isol, pmr*)
Lindel, T. *et al., Tet. Lett.*, 1998, **39**, 2541-2544 (*synth, pmr*)
Endo, T. *et al., J. Nat. Prod.*, 2004, **67**, 1262-1267 (*9,10-Dihydrokeramadine*)

Keramamide B K-30

[137041-25-9]



$C_{54}H_{77}BrN_{10}O_{12}$ 1138.166

Cyclic peptide. Isol. from the marine sponge *Theonella* sp. $[\alpha]_D^{23}$ -50 (c, 0.7 in MeOH). λ_{max} 267 (ϵ 23500); 312 (ϵ 4300) (MeOH) (Derep). λ_{max} 267 (ϵ 23500); 312 (ϵ 4300) (MeOH) (Berdy).

Kobayshi, J. *et al., J.A.C.S.*, 1991, **113**, 7812-7813 (*isol, pmr, cmr*)
Shioiri, T. *et al., Heterocycles*, 2003, **61**, 23-29 (*synth*)

Keramamide D K-31

[137041-27-1]

As Keramamide B, K-30 with

$R^1 = R^2 = -CH_3$

$C_{52}H_{73}BrN_{10}O_{12}$ 1110.112

Cyclic peptide. Isol. from the marine sponge *Theonella* sp. λ_{max} 267 (ϵ 23500); 312 (ϵ 4300) (MeOH) (Derep).

9″-O-Sulfate: ***Keramamide M***
$C_{52}H_{73}BrN_{10}O_{15}S$ 1190.177
Isol. from a *Theonella* sp. Amorph. solid. λ_{max} 269 (ϵ 20000) (MeOH).

Kobayashi, J. *et al., J.A.C.S.*, 1991, **113**, 7812-7813 (*isol*)
Tsuda, M. *et al., Tetrahedron*, 1999, **55**, 12543-12548 (*Keramamide M*)

Keramamide E K-32

[161995-32-0]

As Keramamide B, K-30 with

R^1=CH_3, R^2=CH_2CH_3

$C_{53}H_{75}BrN_{10}O_{12}$ 1124.139

Cyclic peptide. Isol. from the sponge *Theonella* sp. Solid. $[\alpha]_D^{22}$ -39 (c, 0.1 in MeOH). λ_{max} 269 (ϵ 30900); 310 (sh) (MeOH). λ_{max} 269 (ϵ 30900); 310 (MeOH) (Berdy).

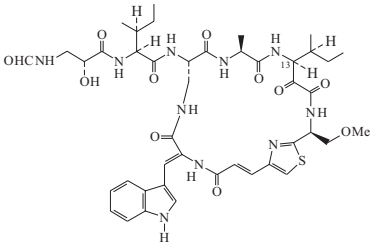
9″-O-Sulfate: ***Keramamide N***
$C_{53}H_{75}BrN_{10}O_{15}S$ 1204.204
Isol. from a *Theonella* sp. Amorph. solid. λ_{max} 270 (ϵ 18000) (MeOH).

Kobayashi, J. *et al., Tetrahedron*, 1995, **51**, 2525-2532 (*isol, uv, ir, pmr, cmr, ms*)

Tsuda, M. *et al., Tetrahedron*, 1999, **55**, 12543-12548 (*Keramamide N*)

Keramamide F K-33

[143330-97-6]



$C_{43}H_{56}N_{10}O_{11}S$ 921.042

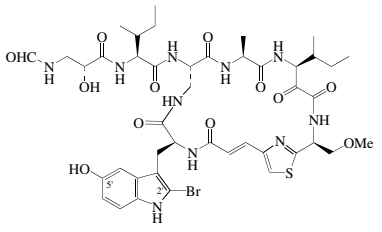
Cyclic thiopeptide antibiotic. Isol. from a *Theonella* sp. Amorph. Mp 187° dec. $[\alpha]_D^{21}$ -25 (c, 0.86 in MeOH). λ_{max} 209 (ϵ 30800); 220 (ϵ 30800); 275 (ϵ 23200); 339 (ϵ 9800) (MeOH) (Berdy).

13-Epimer. ***Keramamide G***
[162063-07-2]
$C_{43}H_{56}N_{10}O_{11}S$ 921.042
Isol. from a *Theonella* sp. Solid. $[\alpha]_D^{21}$ +10 (c, 0.1 in MeOH). λ_{max} 224 (ϵ 26500); 279 (ϵ 21200); 340 (ϵ 11700) (MeOH) (Berdy).

Itagaki, F. *et al., J.O.C.*, 1992, **57**, 5540 (*isol, pmr, cmr, struct*)
Kobayashi, J. *et al., Tetrahedron*, 1995, **51**, 2525 (*Keramamide G*)

Keramamide H K-34

[161995-33-1]



$C_{43}H_{57}BrN_{10}O_{12}S$ 1017.953

Cyclic peptide. Isol. from the sponge *Theonella* sp. Solid. $[\alpha]_D^{20}$ -42 (c, 0.05 in MeOH). λ_{max} 233 ; 277 (ϵ 23100) (MeOH). λ_{max} 277 (ϵ 23100) (MeOH) (Berdy).

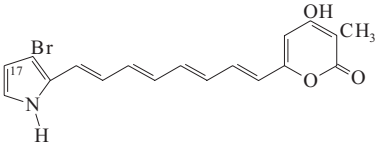
2′-Debromo, 5′-deoxy: ***Keramamide J***
[161995-34-2]
$C_{43}H_{58}N_{10}O_{11}S$ 923.058
Isol. from *Theonella* sp. Solid. $[\alpha]_D^{18}$ +8.4 (c, 0.1 in MeOH). λ_{max} 222 (ϵ 45200); 278 (ϵ 27200) (MeOH). λ_{max} 228 (ϵ 45200); 278 (ϵ 27200) (MeOH) (Berdy).

2′-Debromo, 5′-deoxy, $N^{1'}$*-Me:* ***Keramamide K***
$C_{44}H_{60}N_{10}O_{11}S$ 937.084
Isol. from the sponge *Theonella* sp. Cytotoxic agent. Amorph. solid. $[\alpha]_D^{28}$ -25 (c, 0.1 in MeOH). λ_{max} 269 (ϵ 20000) (MeOH). λ_{max} 269 (ϵ 20000) (MeOH) (Berdy).

Kobayashi, J. *et al., Tetrahedron*, 1995, **51**, 2525-2532 (*isol, uv, ir, pmr, cmr, ms*)
Uemoto, H. *et al., Tetrahedron*, 1998, **54**, 6719-6724 (*Keramamide K*)
Sowinski, J.A. *et al., Chem. Comm.*, 1999, 981-982 (*synth, Keramamide J*)

Keronopsin B_1 K-35

[158182-29-7]



$C_{18}H_{16}BrNO_3$ 374.233
Alkaloid from the marine ciliate *Pseudokeronopsis rubra*. Chemical defence substance. Black cryst. (Me_2CO). Mp 135-139°. λ_{max} 229 (ϵ 14454); 266 (ϵ 18620); 421 (ϵ 70794) (MeOH) (Berdy).

O-*Sulfate:* ***Keronopsin A_1***
[158182-31-1]
$C_{18}H_{16}BrNO_6S$ 454.297
Alkaloid from *Pseudokeronopsis rubra*. Brick-red amorph. powder (as Na salt). Unstable in the crude extract. Converted into Keronopsin B_1 with traces of acid. In dry state may polymerise spontaneously. CAS no. refers to Na salt. λ_{max} 221 ; 267 ; 325 ; 339 ; 439 (MeOH) (Berdy).

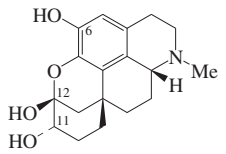
17-Bromo: ***Keronopsin B_2***
[158182-30-0]
$C_{18}H_{15}Br_2NO_3$ 453.129
Alkaloid from *Pseudokeronopsis rubra*. Brown-red amorph. powder. λ_{max} 229 (ϵ 15850); 439 (ϵ 61659) (MeOH) (Berdy).

17-Bromo, O-*sulfate:* ***Keronopsin A_2***
[158182-32-2]
$C_{18}H_{15}Br_2NO_6S$ 533.194
Alkaloid from *Pseudokeronopsis rubra*. Unstable in the crude extract. Converted into Keronopsin B_2 with traces of acid. CAS no. refers to Na salt. λ_{max} 222 ; 269 ; 326 ; 434 (MeOH) (Berdy).

Höfle, G. *et al., Angew. Chem., Int. Ed.*, 1994, **33**, 1495-1497 (*isol, uv, ir, pmr, cmr, ms, struct*)

Kesselridine K-36

O^{12}*-Demethylkesselringine*
[56775-79-2]



Absolute Configuration

$C_{18}H_{23}NO_4$ 317.384
Alkaloid from *Colchicum kesselringii* (Liliaceae). Mp 232-234°. $[\alpha]_D$ -50 (Py).

O^6*-Me:* ***Regelamine****. Norregeline. Regalamine*
[58111-42-5]
$C_{19}H_{25}NO_4$ 331.411
Alkaloid from *Colchicum kesselringii* (Liliaceae). Mp 226°. $[\alpha]_D$ +33 (MeOH). Not correlated with Kesselridine. λ_{max} 218 (log ϵ 4.34); 290 (log ϵ 3.59) (MeOH).

O^6*-Me,* N-*de-Me:* ***Jolantidine****. Iolantidine*
[89759-22-8]
$C_{18}H_{23}NO_4$ 317.384
Alkaloid from above-ground parts of *Merendera jolantae* (Liliaceae). Cryst. (Me_2CO). Mp 275-277°. $[\alpha]_D$ +102 (c, 0.4 in MeOH). λ_{max} 216 ; 290 (no solvent reported).

O^{12}*-Me:* ***Kesselringine***
[54692-48-7]
$C_{19}H_{25}NO_4$ 331.411
Alkaloid from *Colchicum kesselringii* (Liliaceae). Mp 194-196°. $[\alpha]_D^{18}$ +93.2 (c, 1.02 in $CHCl_3$). $[\alpha]_D^{22}$ +53.3 (c, 3.0 in MeOH). λ_{max} 231 (log ϵ 3.85); 293 (log ϵ 3.44) (EtOH). λ_{max} 224 (log ϵ 4.3); 255 (log ϵ 3.76); 305 (log ϵ 3.56) (EtOH/NaOH).

O^{12}*-Me; hydrochloride:* Mp 252-253°.

O^6,O^{12}*-Di-Me:* ***Regeline***
[62653-08-1]
$C_{20}H_{27}NO_4$ 345.438
Alkaloid from *Colchicum kesselringii* (Liliaceae). Cryst. (Me_2CO). Mp 198-200°. $[\alpha]_D$ +93 (c, 1.5 in MeOH). λ_{max} 216 (log ϵ 4.04); 225 (log ϵ 3.96); 290 (log ϵ 3.37) (no solvent reported).

O^6,O^{12}*-Di-Me; hydrochloride:*
Cryst. (Me_2CO). Mp 249-250°.

11-Epimer, O^{12}*-Me:* ***Luteine***†
[62624-08-2]
$C_{19}H_{25}NO_4$ 331.411
Alkaloid from *Colchicum luteum* (Liliaceae). Mp 228-230°. $[\alpha]_D$ +93 (MeOH). Proposed struct. λ_{max} 210 (log ϵ 4.7); 285 (log ϵ 3.7) (MeOH).

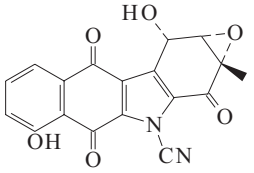
11-Epimer, O^6,O^{12}*-di-Me:* ***Regelinine****. Regilinine*
[97806-68-3]
$C_{20}H_{27}NO_4$ 345.438
Alkaloid from *Colchicum kesselringii* aerial parts (Liliaceae). Mp 253-254°. Unstable, readily oxidised. Methylation gives Luteine. λ_{max} 243 ; 293 (no solvent reported).

Kasimov, A.K. *et al., Khim. Prir. Soedin.*, 1975, **11**, 194-197; 383; *Chem. Nat. Compd. (Engl. Transl.)*, 1975, **11**, 202-205; 395 (*Regelamine, uv, ir, pmr, ms, struct*)
Yusupov, M.K. *et al., Khim. Prir. Soedin.*, 1976, **12**, 350-354; *Chem. Nat. Compd. (Engl. Transl.)*, 1976, **12**, 305-308 (*uv, ir, pmr, ms, struct*)
Abdullaeva, D.A. *et al., Khim. Prir. Soedin.*, 1976, **12**, 783-787; *Chem. Nat. Compd. (Engl. Transl.)*, 1976, **12**, 702-705 (*Regeline*)
Mukhamed'yarova, N.L. *et al., Khim. Prir. Soedin.*, 1976, **12**, 801-804; *Chem. Nat. Compd. (Engl. Transl.)*, 1976, **12**, 718-721 (*Luteine*)
Yusupov, M.K. *et al., Coll. Czech. Chem. Comm.*, 1977, **42**, 1581-1587 (*pmr, struct, synth, Kesselridine, Regelamine*)
Chommadov, B. *et al., Khim. Prir. Soedin.*, 1983, **19**, 790-791; *Chem. Nat. Compd. (Engl. Transl.)*, 1983, **19**, 755 (*Jolantidine*)
Yusupov, M.K. *et al., Khim. Prir. Soedin.*, 1985, **21**, 419-420; *Chem. Nat. Compd. (Engl. Transl.)*, 1985, **21**, 396-397 (*Regelinine*)

Ketoanhydrokinamycin K-37

*1*a,*2,4,9,10,10*a-*Hexahydro-5,10-dihydroxy-1*a-*methyl-2,4,9-trioxo-3*H-*benz[*b*]oxireno[*h*]carbazole-3-carbonitrile, 9CI. Antibiotic Y1*†

[120796-25-0]



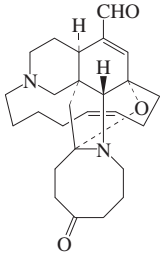
$C_{18}H_{10}N_2O_6$ 350.287

Metab. of *Streptomyces murayamaensis*. Mp 300° dec. λ_{max} 236 (ϵ 43300); 255 (ϵ 28100); 306 (ϵ 18600); 410 (ϵ 9010); 453 (ϵ 9790) ($CHCl_3$) (Derep).

Seaton, P.J. *et al., J. Antibiot.*, 1989, **42**, 179; 189 (*isol, pmr, cmr, struct*)

31-Keto-12,34-oxa-32,33-dihydroircinal A K-38

[721429-61-4]



Absolute Configuration

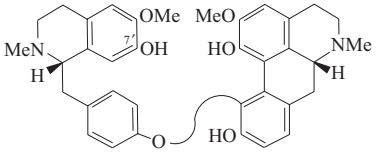
$C_{26}H_{36}N_2O_3$ 424.582

Related to Ircinol A, I-174. Isol. from an *Acanthostrongylophora* sp. Powder (MeOH). Mp 164° dec. $[\alpha]_D^{25}$ +44 (c, 0.1 in $CHCl_3$). λ_{max} 235 (log ϵ 3.93) (MeOH).

Yousaf, M. *et al., J. Med. Chem.*, 2004, **47**, 3512-3517 (*isol, pmr, cmr*)

Khyberine K-39

[77795-10-9]



$C_{36}H_{38}N_2O_6$ 594.706

Trace alkaloid from the roots of *Berberis calliobotrys*. Also obt. by the acid-catalysed dienone-phenol rearr. of Epivaldiberine(Berberidaceae). Cryst. ($CHCl_3$/MeOH). Mp 145-147°.

7′-Me ether: ***Kalashine***
[76372-24-2]
$C_{37}H_{40}N_2O_6$ 608.733
Alkaloid from the roots of *Berberis calliobotrys* and *Berberis orthobotrys* (Berberidaceae). Obt. in too low a yield for crystallisation.

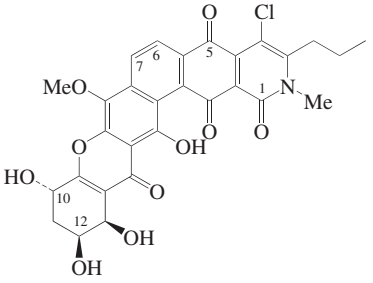
Hussain, S.F. *et al., Tet. Lett.*, 1980, **21**, 3315; 4573 (*isol, uv, cd, pmr, ms, struct, abs config*)

Hussain, S.F. *et al., J. Nat. Prod.*, 1981, **44**, 274 (*isol, uv, Kalashine*)

Guinaudeau, H. *et al., Chem. Comm.*, 1982, 1122 (*synth*)

Kibdelone A K-40

[934464-77-4]



Relative Configuration

$C_{29}H_{24}ClNO_{10}$ 581.962

Prod. by *Kibdelosporangium* sp. (MST-108465). Cytotoxic. Orange solid. $[\alpha]_D^{25}$ +72 (c, 0.01 in $CHCl_3$). λ_{max} 214 (ϵ 24500); 254 (ϵ 24900); 311 (ϵ 20000); 420 (ϵ 11000); 447 (sh) (EtOH).

12-O-α-L-*Rhamnopyranoside: Kibdelone A rhamnoside*
[934464-80-9]
$C_{35}H_{34}ClNO_{14}$ 728.105
Prod. by *Kibdelosporangium* sp. (MST-108465).

10-Ketone: ***10-Oxokibdelone A***
[934464-83-2]
$C_{29}H_{22}ClNO_{10}$ 579.946
Prod. by *Kibdelosporangium* sp. (MST-108465).

6,7-Dihydro: ***Kibdelone B***
[934464-78-5]
$C_{29}H_{26}ClNO_{10}$ 583.978
Prod. by *Kibdelosporangium* sp. (MST-108465). Amorph. orange solid. $[\alpha]_D^{25}$ +157 (c, 0.01 in $CHCl_3$). λ_{max} 208 (ϵ 22000); 258 (ϵ 23800); 308 (sh) ; 402 (ϵ 9670); 444 (sh) (EtOH).

6,7-Dihydro, 12-O-α-L-*rhamnopyranoside: Kibdelone B rhamnoside*
[934464-81-0]
$C_{35}H_{36}ClNO_{14}$ 730.12
Prod. by *Kibdelosporangium* sp. (MST-108465). Amorph. orange solid. $[\alpha]_D^{25}$ +150 (c, 0.1 in $CHCl_3$). λ_{max} 205 (ϵ 18600); 258 (ϵ 16300); 308 (sh) ; 435 (ϵ 5700) (EtOH).

5,16-Hydroquinone, 6,7-dihydro: ***Kibdelone C***
[934464-79-6]
$C_{29}H_{28}ClNO_{10}$ 585.994
Prod. by *Kibdelosporangium* sp. (MST-108465). Amorph. yellow solid. $[\alpha]_D^{25}$ +49 (c, 0.01 in $CHCl_3$). λ_{max} 217 (ϵ 22800); 258 (ϵ 27500); 272 (sh) ; 308 (sh) ; 339 (sh) ; 396 (ϵ 20100) (EtOH).

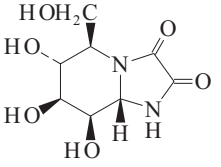
5,16-Hydroquinone, 6,7-dihydro, 12-O-α-L-*rhamnopyranoside: Kibdelone C rhamnoside*
[934464-82-1]
$C_{35}H_{38}ClNO_{14}$ 732.136
Prod. by *Kibdelosporangium* sp. (MST-108465).

Ratnayake, R. *et al., Chem. Eur. J.*, 2007, **13**, 1610-1619 (*isol, pmr, cmr*)

Kifunensine K-41

*Hexahydro-6,7,8-trihydroxy-5-(hydroxymethyl)imidazo[1,2-*a*]pyridine-2,3-dione, 9CI. FR 900494. Antibiotic FR 900494*

[109944-15-2]



$C_8H_{12}N_2O_6$ 232.193

Prod. by *Kitasatospora kifunense*. Immunomodulator, α-mannosidase inhibitor. Prisms (H_2O). Sol. H_2O; fairly sol. MeOH, EtOH; poorly sol. Me_2CO, $CHCl_3$. Mp 120-136° dec Mp 280°. $[\alpha]_D$ +58 (c, 0.1 in H_2O). Genus name given as Kitasatosporia, but Kitasatospora is preferred. λ_{max} 222 (sh) (ϵ 5600) (H_2O/HCl) (Derep). λ_{max} 224 (ϵ 5600) (H_2O/NaOH) (Derep). λ_{max} 226 (ϵ 5340) (H_2O) (Derep). λ_{max} 227 (ϵ 5000) (MeOH) (Berdy).

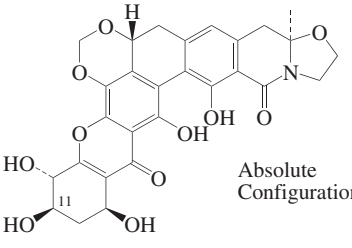
Iwami, M. *et al., J. Antibiot.*, 1987, **40**, 612 (*isol, props*)

Kayakiri, H. *et al., J.O.C.*, 1989, **54**, 4015 (*pmr, cmr, struct*)

Kayakiri, H. *et al., Chem. Pharm. Bull.*, 1991, **39**, 1378; 1392; 1397 (*pmr, cmr, cryst struct, synth*)

Kigamicinone K-42

[864183-17-5]



Absolute Configuration

$C_{28}H_{25}NO_{11}$ 551.506

Kigamicins are active against gram-positive bacteria incl. MRSA and are antitumour agents.

11-O-*(2,3,6-Trideoxy-β-D-*erythro-*hexopyranoside):* ***Kigamicin A***
[680571-49-7]
$C_{34}H_{35}NO_{13}$ 665.649
Prod. by *Amycolatopsis* sp. ML630-mF1. Yellow powder. Mp 225-227°. $[\alpha]_D^{24}$ -153 (c, 1 in MeOH). λ_{max} 217 (log ϵ 4.67); 236 (log ϵ 4.64); 254 (log ϵ 4.64); 280 (log ϵ 4.54); 341 (log ϵ 4.28) (MeOH).

11-O-*[2,3,6-Trideoxy-β-D-*erythro-*hexopyranosyl-(1→4)-2,3,6-trideoxy-β-D-*erythro-*hexopyranoside]:* ***Kigamicin B***
[680571-50-0]
$C_{40}H_{45}NO_{15}$ 779.793
Prod. by *Amycolatopsis* sp. ML630-mF1. Yellow powder. Mp 225-227°.

λ_{max} 217 (log ϵ 4.73); 236 (log ϵ 4.71); 254 (log ϵ 4.71); 280 (log ϵ 4.61); 341 (log ϵ 4.35) (MeOH).

11-O-*[2,6-Dideoxy-3*-O-*methyl-β-D*-arabino-*hexopyranosyl-(1→4)-2,3,6-trideoxy-β-D*-erythro-*hexopyranoside]:* ***Kigamicin C***
[680571-51-1]
$C_{41}H_{47}NO_{16}$ 809.819
Prod. by *Amycolatopsis* sp. ML630-mF1. Yellow powder. Mp 210-212°. $[\alpha]_D^{24}$ -154 (c, 1 in MeOH). λ_{max} 217 (log ϵ 4.37); 236 (log ϵ 4.34); 254 (log ϵ 4.32); 280 (log ϵ 4.22); 341 (log ϵ 4.02) (MeOH).

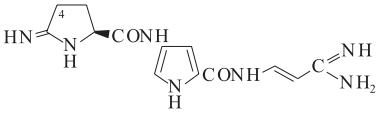
11-O-*[2,6-Dideoxy-3*-O-*methyl-β-D*-arabino-*hexopyranosyl-(1→4)-2,6-dideoxy-3*-O-*methyl-β-D*-arabino-*hexopyranosyl-(1→4)-2,3,6-trideoxy-β-D*-erythro-*hexopyranoside]:* ***Kigamicin D***
[680571-52-2]
$C_{48}H_{59}NO_{19}$ 953.989
Prod. by *Amycolatopsis* sp. ML630-mF1. Yellow powder. Mp 210-212°. $[\alpha]_D^{24}$ -190.6 (c, 1 in MeOH). λ_{max} 217 (log ϵ 4.56); 236 (log ϵ 4.52); 254 (log ϵ 4.5); 280 (log ϵ 4.39); 341 (log ϵ 4.12) (MeOH).

11-O-*[2,6-Dideoxy-3*-O-*methyl-β-D*-arabino-*hexopyranosyl-(1→4)-2,6-dideoxy-3*-O-*methyl-β-D*-arabino-*hexopyranosyl-(1→4)-2,6-dideoxy-3*-O-*methyl-β-D*-arabino-*hexopyranosyl-(1→4)-2,3,6-trideoxy-β-D*-erythro-*hexopyranoside]:* ***Kigamicin E***
[680571-53-3]
$C_{55}H_{71}NO_{22}$ 1098.159
Prod. by *Amycolatopsis* sp. ML630-mF1. Yellow powder. Mp 210-212°. $[\alpha]_D^{24}$ -175.2 (c, 1 in MeOH). λ_{max} 217 (log ϵ 4.59); 236 (log ϵ 4.55); 254 (log ϵ 4.52); 280 (log ϵ 4.42); 341 (log ϵ 4.16) (MeOH).

Kunimoto, S. *et al., J. Antibiot.*, 2003, **56**, 1004-1011; 1012-1017 (*isol, uv, pmr, cmr, activity*)
Someno, T. *et al., J. Antibiot.*, 2005, **58**, 56-60 (*abs config*)

Kikumycin A, 8CI K-43

TAN 868B. Antibiotic TAN 868B
[37913-77-2]



$C_{13}H_{17}N_7O_2$ 303.323
Oligopeptide-type antibiotic. Isol. from *Streptomyces phaeochromogenes* and *Streptomyces idiomorphus*. Shows antiviral, antitumour and antibacterial properties. Fine needles (as sulfate salt). Mp 285° dec. (sulfate). $[\alpha]_D^{25}$ +12.8 (c, 1 in 1*M* HCl) (sulfate). λ_{max} 230 (ϵ 17200); 321 (ϵ 33300) (H_2O) (as hydrochloride) (Derep). λ_{max} 240 (sh) (ϵ); 356 (ϵ 40000) (0.1*M* NaOH) (Derep).
▶ UX9353000

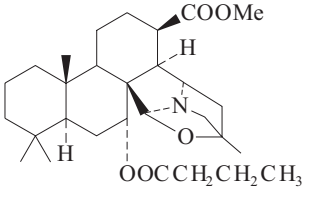
Pyrrolo-N-*Me:* ***Kikumycin B***
[37913-78-3]
$C_{14}H_{19}N_7O_2$ 317.35
From *Streptomyces phaeochromogenes*. Antiviral, antibacterial and antitumour agent. Sol. H_2O; fairly sol. MeOH; poorly sol. butanol, hexane. Mp 220-223° (as hydrochloride). $[\alpha]_D^{25}$ +14 (c, 1 in H_2O). λ_{max} 230 (ϵ 17200); 321 (ϵ 33300) (H_2O) (as hydrochloride) (Derep). λ_{max} 240 (sh) (ϵ); 356 (ϵ 40000) (0.1*M* NaOH) (Derep). λ_{max} 239 (E1%/1cm 430); 328 (E1%/1cm 790) (H_2O) (Berdy). λ_{max} 242 (ϵ 10500); 320 (ϵ 19500) (HCl) (Berdy).
▶ LD_{50} (mus, ipr) 200 mg/kg. UX9354000

*4*R-*Hydroxy:* ***Antibiotic TAN 868A***. *TAN 868A*
[111631-13-1]
$C_{13}H_{17}N_7O_3$ 319.322
From *Streptomyces idiomorphus*. Active against bacteria, fungi and a protozoan; and possesses cytotoxic props. Powder + $2H_2O$ (as hydrochloride). Sol. MeOH, DMSO, H_2O; fairly sol. EtOAc; poorly sol. Et_2O, hexane. $[\alpha]_D$ +61.6 (c, 1.05 in H_2O). λ_{max} 230 (ϵ 17200); 321 (ϵ 33300) (H_2O) (as hydrochloride) (Derep). λ_{max} 240 (sh); 356 (ϵ 40000) (0.1*M* NaOH) (Derep).
▶ LD_{50} (mus, ipr) 25 mg/kg, LD_{50} (mus, scu) 50 mg/kg.

Kikuchi, M. *et al., J. Antibiot., Ser. A*, 1965, **18**, 243 (*isol*)
Takaishi, T. *et al., Tet. Lett.*, 1972, 1873 (*struct, ir, uv, ms, nmr*)
Takaishi, T. *et al., Org. Mass Spectrom.*, 1974, **9**, 635 (*ms, struct*)
Takizawa, M. *et al., J. Antibiot.*, 1987, **40**, 1220 (*isol*)

Kimbasine A K-44

[135626-55-0]



$C_{29}H_{45}NO_5$ 487.678
Norsesterterpene alkaloid from the sponge *Igernella notabilis*. Cytotoxic. $[\alpha]_D$ -69.1 (c, 1.1 in $CHCl_3$).

O-*Debutanoyl,* O-*Ac:* ***Kimbasine B***
[135626-56-1]
$C_{27}H_{41}NO_5$ 459.625
Alkaloid from *Igernella notabilis*. Cytotoxic agent. $[\alpha]_D$ -64.1 (c, 0.1 in $CHCl_3$).

Cardellina, J.H. *et al., Tet. Lett.*, 1991, **32**, 2347 (*isol, pmr, cmr, struct*)

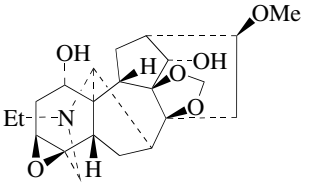
Kimorexin A K-45

[163663-02-3]
Thiazole-peptide antibiotic. Struct. unknown. Prod. by *Kitasatospora kimorexae*. Antifungal agent. Genus name given as Kitasatosporia but Kitasatospora is preferred.

Yeo, W.-H. *et al., J. Microb. Biotechnol.*, 1994, **4**, 349-353

Kiridine K-46

[161068-73-1]



$C_{22}H_{31}NO_6$ 405.49
Alkaloid from *Aconitum kirinense*. Possible artifact.

Feng, F. *et al., CA*, 1995, **122**, 128605f

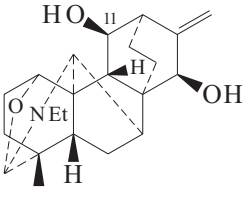
Kirigamycin C K-47

Antibiotic 2908C
Nucleoside antibiotic. Struct. unknown. Prod. by *Streptomyces* sp. 2908 and *Streptomyces microflavus*. Powder. Sol. H_2O; fairly sol. MeOH, DMSO, DMF; poorly sol. EtOH, hexane. $[\alpha]_D$ +12.8 (H_2O).

Proc. Int. Ferment. Symp., Berlin, 5th, 1976, 234

Kirinine B K-48

1,19-Epoxydenudatine
[161068-72-0]



$C_{22}H_{31}NO_3$ 357.492
Alkaloid from *Aconitum kirinense*. Cubes ($CHCl_3$/MeOH). Mp 157-158°.

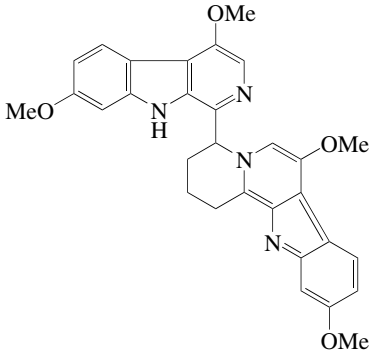
11-Ac: ***11-Acetyl-1,19-epoxydenudatine***
[132215-96-4]
$C_{24}H_{33}NO_4$ 399.529
Alkaloid from aerial parts of *Aconitum barbatum* (Ranunculaceae). Cryst. ($CHCl_3$/heptane). Mp 202-203°. $[\alpha]_D^{20}$ +99.7 (c, 1 in $CHCl_3$).

O^{11}-*Me:* ***Vilmorinianine***. *1,19-Epoxy-11-methoxydenudatine*
[203513-11-5]
$C_{23}H_{33}NO_3$ 371.519
Alkaloid from *Aconitum vilmorinianum* var. *altifidum*. $[\alpha]_D$ +60 (c, 0.4 in $CHCl_3$).

Proksa, B. *et al., Planta Med.*, 1990, **56**, 461 (*11-Ac*)
Zhang, J. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 1997, **39**, 582-584; *CA*, **128**, 190400n (*Vilmorinianine*)
Feng, F. *et al., Phytochemistry*, 1998, **49**, 2557-2559 (*isol, ir, pmr, cmr, ms*)

Kirondrine K-49

[198541-68-3]



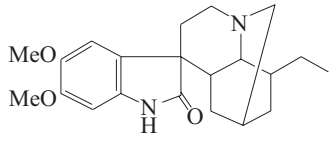
$C_{30}H_{28}N_4O_4$ 508.576

Dimer of 4,7-Dimethoxy-1-vinyl-β-carboline, D-723. Alkaloid from the root bark of *Perriera madagascariensis* (Simaroubaceae). Mp 267°. $[\alpha]_D$ -15.6 (c, 0.5 in MeOH) (hydrochloride). It is not clear whether the Mp given refers to the free base or the hydrochloride. λ_{max} 210 (log ϵ 3.77); 247 (log ϵ 4.16); 300 (log ϵ 3.55); 336 (log ϵ 3.76); 367 (log ϵ 3.65) (MeOH).

Krebs, H.C. *et al., J. Nat. Prod.*, 1997, **60**, 1183-1185 (*isol, uv, ir, pmr, cmr*)

Kisantine† K-50

[1673-92-3]



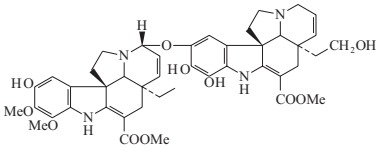
$C_{21}H_{28}N_2O_3$ 356.464

Alkaloid from the roots of *Tabernanthe iboga* (Apocynaceae). Cryst. (EtOH). Mp 236-238°. $[\alpha]_D^{26}$ -15 ($CHCl_3$). No further work reported since 1965. λ_{max} 213 (ϵ 31700); 269 (ϵ 6270); 296 (sh) (ϵ 4710) (no solvent reported).

Dickel, D.F. *et al., J.A.C.S.*, 1958, **80**, 123-125 (*isol, uv, ir*)

Taylor, W.I. *et al., J.O.C.*, 1965, **30**, 309-310 (*uv, ir, pmr, ms, struct*)

Kisantine† K-51



$C_{44}H_{50}N_4O_{11}$ 810.899

Alkaloid from the leaves of *Pterotaberna inconspicua* (Apocynaceae). $[\alpha]_D$ -21 (c, 0.33 in MeOH). Unstable.

Massiot, G. *et al., Phytochemistry*, 1988, **27**, 1085 (*isol, uv, ir, pmr, cmr, ms, struct*)

Kitagine K-52

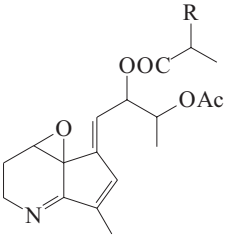
$C_7H_7NO_3$ 153.137

Struct. unknown. Constit. of *Canavalia ensiformis* (jack bean) seeds (Fabaceae). Mp 240-242°. Opt. inactive.

Ackermann, D. *et al., Hoppe-Seyler's Z. Physiol. Chem.*, 1939, **262**, 103-110 (*isol*)

Kobutimycin A K-53

[145458-91-9]



R = CH_3

$C_{19}H_{25}NO_5$ 347.41

Prod. by a *Streptomyces* sp. Herbicide. Oil. Sol. MeOH, hexane; poorly sol. H_2O. $[\alpha]_D^{22}$ +88.2 (c, 1 in $CHCl_3$). λ_{max} 230 (ϵ 11700); 322 (ϵ 11500) (MeOH/HCl) (Derep). λ_{max} 220 (sh) (ϵ 6800); 258 (ϵ 16300) (MeOH/NaOH) (Derep). λ_{max} 210 (ϵ 5600); 257 (ϵ 14500) (MeOH) (Derep).

Kanbe, K. *et al., J. Antibiot.*, 1992, **45**, 1700 (*isol, pmr, cmr, struct*)

Kobutimycin B K-54

[145458-92-0]

As Kobutimycin A, K-53 with

R = CH_2CH_3

$C_{20}H_{27}NO_5$ 361.437

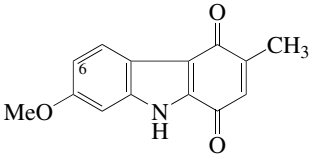
Prod. by a *Streptomyces* sp. Herbicide. Oil. Sol. MeOH, hexane; poorly sol. H_2O. $[\alpha]_D^{22}$ +107.2 (c, 1 in $CHCl_3$). λ_{max} 230 (ϵ 11700); 322 (ϵ 11500) (MeOH/HCl) (Derep). λ_{max} 220 (sh) (ϵ 6800); 258 (ϵ 16300) (MeOH/NaOH) (Derep). λ_{max} 210 (ϵ 5600); 257 (ϵ 14500) (MeOH) (Derep). λ_{max} 207 (ϵ 7180); 256 (ϵ 16100) (MeOH) (Berdy). λ_{max} 232 (ϵ 12900); 322 (ϵ 12800) (MeOH/HCl) (Berdy). λ_{max} 211 (ϵ 7000); 257 (ϵ 15400) (MeOH/NaOH) (Berdy).

Kanbe, K. *et al., J. Antibiot.*, 1992, **45**, 1700 (*isol, pmr, cmr, struct*)

Koeniginequinone A K-55

*7-Methoxy-3-methyl-1*H*-carbazole-1,4(9*H*)-dione. 7-Methoxy-3-methyl-1,4-carbazolequinone*

[110519-58-9]



$C_{14}H_{11}NO_3$ 241.246

Alkaloid from the stem bark of *Murraya koenigii* (curryleaf tree). Red needles (C_6H_6/petrol). Mp 240° (dec.). λ_{max} 227 (log ϵ 4.65); 260 (log ϵ 4.51); 286 (sh) (log ϵ 3.8); 387 (log ϵ 3.72) (MeOH).

*6-Methoxy: 6,7-Dimethoxy-3-methyl-1*H*-carbazole-1,4(9*H*)-dione.* ***Koeniginequinone B***

[211183-78-7]

$C_{15}H_{13}NO_4$ 271.272

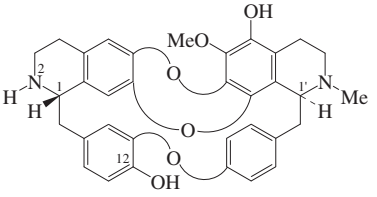
Alkaloid from the stem bark of *Murraya koenigii* (curryleaf tree). Reddish-brown needles (C_6H_6/petrol). Mp 256° (dec.). λ_{max} 225 (log ϵ 4.61); 263 (log ϵ 4.39); 293 (sh) (log ϵ 3.21); 464 (log ϵ 3.09) (MeOH).

Saha, C. *et al., Phytochemistry*, 1998, **48**, 363-366 (*isol, synth, uv, ir, pmr*)

Knölker, H.-J. *et al., Heterocycles*, 2003, **60**, 1049-1052 (*synth*)

Kohatine K-56

[92664-90-9]



$C_{34}H_{32}N_2O_6$ 564.637

Redrawn here to correspond with other related alkaloids, e.g. Isotrilobine, I-339, with interchange of the primed and unprimed locants. The names for derivs. are as given in the lit. using the alternative scheme. Alkaloid from the stems of *Cocculus pendulus* (Menispermaceae). $[\alpha]_D^{25}$ +183 (c, 0.2 in MeOH).

O^{12}-Me: ***12′-O-Methylkohatine****. Kohatamine*

[109269-68-3]

$C_{35}H_{34}N_2O_6$ 578.663

Alkaloid from *Cocculus pendulus* (Menispermaceae). $[\alpha]_D$ +99.4 ($CHCl_3$).

1,2-Didehydro: ***Dehydrokohatine***

[109269-72-9]

$C_{34}H_{30}N_2O_6$ 562.621

Alkaloid from *Cocculus pendulus* (Menispermaceae). $[\alpha]_D$ +53 ($CHCl_3$).

1,2-Didehydro, N$^{2'}$-β-oxide: ***1′,2′-Dehydrokohatine 2β-N-oxide***

$C_{34}H_{30}N_2O_7$ 578.62

Alkaloid from *Cocculus pendulus* (Menispermaceae). $[\alpha]_D$ +81.2 (MeOH).

1,2-Didehydro, O^{12}-Me: ***12′-O-Methyldehydrokohatine****. 1′,2′-Didehydrokohatamine*

[109269-71-8]

$C_{35}H_{32}N_2O_6$ 576.648

Alkaloid from *Cocculus pendulus* (Menispermaceae). $[\alpha]_D$ +97 ($CHCl_3$).

1,2-Didehydro, di-Me ether, N$^{2'}$-de-Me: **O,O-*Dimethyl-1′,2′-dehydronorkohatine***

$C_{35}H_{32}N_2O_6$ 576.648

Alkaloid from *Cocculus pendulus* (Menispermaceae). $[\alpha]_D$ +56.6 (MeOH).

1,2,3,4-Tetradehydro: ***Siddiquine***
[109269-70-7]
$C_{34}H_{28}N_2O_6$ 560.605
Alkaloid from *Cocculus pendulus* (Menispermaceae). $[\alpha]_D$ +172 ($CHCl_3$).

1,2,3,4-Tetradehydro, O^{12}-Me: ***Siddiquamine***
[109269-69-4]
$C_{35}H_{30}N_2O_6$ 574.632
Alkaloid from *Cocculus pendulus* (Menispermaceae). $[\alpha]_D$ +113 ($CHCl_3$).

Hussain, S.F. *et al., Tetrahedron*, 1984, **40**, 2513 (*isol, uv, pmr, ms, cd, struct*)
Atta-ur-Rahman, *et al., Pure Appl. Chem.*, 1986, **58**, 663 (*derivs*)
Guinaudeau, H. *et al., Phytochemistry*, 1987, **26**, 829 (*Kohatamine, Dehydrokohatamine, Dehydrokohatine, Siddiquine, Siddiquamine*)

Kokusaginoline K-57

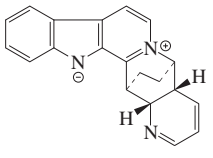
$C_{17}H_{13}NO_5$ 311.293
Struct. unknown. Alkaloid from the root bark of *Orixa japonica* (Rutaceae). Cryst. + $1^1/_2H_2O$. Mp 283°.

Mono-Ac: Mp 172.5°.

Terasaka, M. *et al., Yakugaku Zasshi*, 1933, **53**, 1046-1056; *CA*, **29**, 7337

Komarine K-58

[335373-40-5]



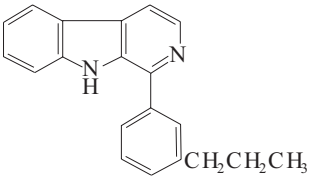
Absolute Configuration

$C_{20}H_{17}N_3$ 299.374
Alkaloid from the aerial parts of *Nitraria komarovii*. Cryst. (Me_2CO/EtOH). Mp 224-225°. λ_{max} 210 (log ϵ 4.41); 252 (log ϵ 4.16); 306 (log ϵ 4.08); 370 (log ϵ 3.8) (EtOH).

Tulyaganov, T.S. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2000, **36**, 76-78 (*isol, pmr*)

Komaroine K-59

*1-(3-Propylphenyl)-9*H*-pyrido[3,4-*b*]indole, 9CI. 1-(3-Propylphenyl)-β-carboline*
[94898-73-4]

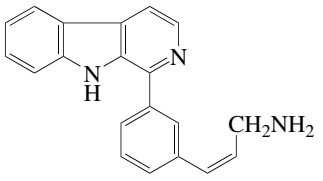


$C_{20}H_{18}N_2$ 286.376
Alkaloid from *Nitraria komarovii* (Zygophyllaceae). Cryst. (CH_2Cl_2/hexane). Mp 144-145°. λ_{max} 215 (log ϵ 4.44); 235 (log ϵ 4.42); 280 (log ϵ 4.12); 290 (log ϵ 4.12); 350 (log ϵ 3.81) (EtOH).

Tulyaganov, T.S. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1984, **20**, 378-379 (*isol, uv, ir, pmr, ms, struct*)
Bracher, F. *et al., Annalen*, 1992, 1315-1319 (*synth, ir, pmr, cmr, ms*)

Komavicine K-60

[169626-15-7]

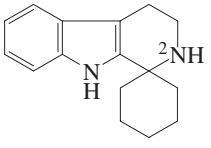


$C_{20}H_{17}N_3$ 299.374
Alkaloid from aerial parts of *Nitraria komarovii*. Amorph.

Tulyaganov, T.S. *et al., Khim. Prir. Soedin.*, 1993, **29**, 33; *Chem. Nat. Compd. (Engl. Transl.)*, 1993, **29**, 26

Komavine K-61

[6716-66-1]



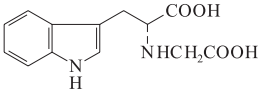
$C_{16}H_{20}N_2$ 240.347
Alkaloid from the aerial parts of *Nitraria komarovii*. Cryst. (hexane). Mp 131-132° Mp 279-281° (as hydrochloride). λ_{max} 225 (log ϵ 4.69); 282 (log ϵ 4.14); 291 (log ϵ 4.03) (EtOH).

N^2-*Ac:* ***N^2-Acetylkomavine***
[80616-05-3]
$C_{18}H_{22}N_2O$ 282.385
Alkaloid from the aerial parts of *Nitraria komarovii*. Cryst. (2-propanol). Mp 162-163°. λ_{max} 225 (log ϵ 4.62); 282 (log ϵ 4.03); 291 (sh) (log ϵ 3.96) (EtOH).

Carrasco, N. *et al., J.O.C.*, 1973, **38**, 4342-4343 (*synth*)
Bobowski, G. *et al., J. Het. Chem.*, 1981, **18**, 1179-1187 (*synth, uv, pmr*)
Rodriguez, J.G. *et al., J. Appl. Chem.*, 1983, **30**, 373-378 (*synth, pmr*)
Tulyaganov, T.S. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2001, **37**, 61-64 (*isol, pmr, cmr, synth*)

Konbamidin K-62

N-*(Carboxymethyl)tryptophan, 9CI*



(*R*)-*form*

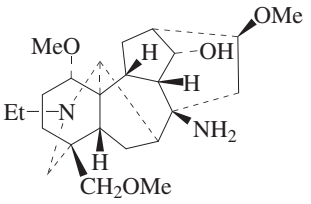
$C_{13}H_{14}N_2O_4$ 262.265

(R)-form
D-form
[160955-40-8]
Alkaloid from the Okinawan marine sponge *Ircinia* sp. Exhibits cytotoxicity against HeLa cells *in vitro*. Powder. $[\alpha]_D^{21}$ +15 (c, 0.27 in MeOH). λ_{max} 228 (ϵ 18200); 281 (ϵ 3310); 290 (ϵ 2690) (MeOH) (Berdy).

(S)-form
L-form
Synthetic. Not significantly cytotoxic. $[\alpha]_D^{21}$ -12.6 (c, 1.9 in MeOH).

Shinonaga, H. *et al., J. Nat. Prod.*, 1994, **57**, 1603 (*isol, uv, ir, pmr, cmr, synth, struct*)

Kongboentine A K-63

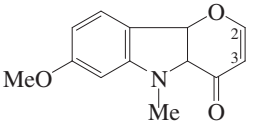


$C_{24}H_{40}N_2O_4$ 420.591
Unusual aminoaconitane. Alkaloid from the roots of *Aconitum kongboense*. Amorph. powder. Mp 94-96°.

Ping, A. *et al., J. Asian Nat. Prod. Res.*, 2004, **6**, 151-154 (*isol, pmr, cmr*)

Koniamborine K-64

*7-Methoxy-5-methyl-4*H*-pyrano[3,2-*b*]indol-4(5*H*)-one*



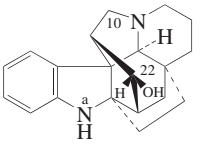
$C_{13}H_{11}NO_3$ 229.235
Alkaloid from the aerial parts of *Boronella koniambiensis*. Needles (cyclohexane/EtOAc). Mp 142°. λ_{max} 242 (log ϵ 3.83); 264 (log ϵ 3.96); 279 (log ϵ 3.83); 322 (log ϵ 4.21) (MeOH).

2,3-Dihydro: ***2,3-Dihydrokoniamborine***
$C_{13}H_{13}NO_3$ 231.251
Alkaloid from *Boronella koniambiensis*. Amorph. solid.

Grougnet, R. *et al., J. Nat. Prod.*, 2005, **68**, 1083-1086 (*isol, pmr, cmr, ms*)
Clawson, R.W. *et al., Tet. Lett.*, 2007, **48**, 6019-6021 (*synth*)

Kopsanol K-65

Kopsan-22-ol, 9CI
[6582-68-9]



Absolute Configuration

$C_{20}H_{24}N_2O$ 308.422
Alkaloid from *Aspidosperma duckei*, *Aspidosperma cuspa*, *Aspidosperma macrocarpon* and *Aspidosperma verbascifolium* (Apocynaceae). Needles ($CHCl_3$ or MeOH). Mp 239-245° dec. $[\alpha]_D^{27}$ +16.7 (c, 0.6 in $CHCl_3$). pK_a 8.2 (66% DMF).

N^a-*Formyl:* ***N^a-Formylkopsanol***
[24382-01-2]

$C_{21}H_{24}N_2O_2$ 336.433
Alkaloid from *Aspidosperma verbascifolium* (Apocynaceae).

O-*Ac:*
Cryst. (Me_2CO/hexane or MeOH). Mp 202-205°. $[\alpha]_D^{26}$ +37 (c, 2.97 in $CHCl_3$).

22-Ketone: ***Kopsanone****. Kopsan-22-one, 9CI*
[6662-83-5]
$C_{20}H_{22}N_2O$ 306.407
Alkaloid from *Aspidosperma duckei*, *Aspidosperma cuspa*, *Aspidosperma macrocarpon*, *Aspidosperma verbascifolium* and *Vinca erecta* (Apocynaceae). Cryst. (MeOH). Mp 161-163°. $[\alpha]_D^{25}$ -21.3 (c, 3.47 in $CHCl_3$). pK_a 6.1 (67% DMF aq.).

22-Ketone; methiodide:
Cryst. (MeOH aq.). Mp 287-289° dec.

22-Ketone, N-*Ac:*
Cryst. (EtOAc). Mp 184-185°.

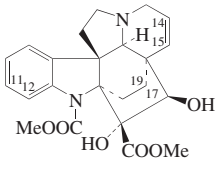
22-Epimer: ***22-Epikopsanol***
[24992-91-4]
$C_{20}H_{24}N_2O$ 308.422
Alkaloid from *Aspidosperma duckei*, *Aspidosperma cuspa*, *Aspidosperma macrocarpon* and *Aspidosperma verbascifolium* (Apocynaceae). Cryst. (MeOH). Mp 196-197°. $[\alpha]_D^{24}$ -75.5 (c, 0.98 in $CHCl_3$). pK_a 7.45 (66% DMF).

22-Epimer, N^a,O-*di-Ac:*
Cryst. (EtOAc). Mp 231-235° dec. $[\alpha]_D^{22}$ +20.1 (c, 2.08 in $CHCl_3$).

Ferreira Filho, J.M. *et al., J.C.S.(C)*, 1966, 1260-1266 (*isol, Kopsanone, Epikopsanol, uv, ord, ir, pmr, ms, struct*)
Craven, B.M. *et al., Chem. Comm.*, 1968, 955-956 (*Kopsanone, abs config, cryst struct*)
Brackman, J.C. *et al., Bull. Soc. Chim. Belg.*, 1969, **78**, 63-68 (*Aspidosperma verbascifolium constits*)
Simões, J.C. *et al., Phytochemistry*, 1976, **15**, 543-544 (*Aspidosperma cuspa constits*)
Magnus, P. *et al., J.A.C.S.*, 1984, **106**, 2105-2114 (*Kopsanone, synth, pmr*)
Pihko, A.J. *et al., Tetrahedron*, 2005, **61**, 8769-8807 (*synth, rev*)

Kopsaporine K-66

Demethoxykopsingine
[18555-88-9]



Absolute Configuration

$C_{23}H_{26}N_2O_6$ 426.468
CAS sometimes gives the opposite incorrect abs. configs. Alkaloid from the leaves of *Kopsia singapurensis* and stem bark of *Kopsia teoi*. Needles (EtOH). Mp 234° dec. $[\alpha]_D^{27}$ +48. pK_a 5.63. λ_{max} 207 (log ε 4.53); 246 (log ε 4.15); 279 (log ε 3.43); 287 (log ε 3.39) (MeOH).

N-*De(methoxycarbonyl):* ***Kopsinol****.* N-*Decarbomethoxykopsaporine*
[149355-62-4]
$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from stem bark of *Kopsia teoi*. $[\alpha]_D$ +82 (c, 0.022 in $CHCl_3$).

12-Hydroxy: ***Kopsingarine****. 17-Hydroxykopsaporine*
[1358-67-4]
$C_{23}H_{26}N_2O_7$ 442.468
Alkaloid from the leaves of *Kopsia singapurensis*. Needles (EtOH aq.). Mp 230° dec. $[\alpha]_D$ +14. pK_a 5.83. Struct. proposed on comparative IR and UV data with Kopsingine and Kopsaporine. λ_{max} 247 (log ε 4.14); 280 (log ε 3.36); 288 (log ε 3.32) (no solvent reported).

12-Hydroxy, 14α,15α-epoxide: ***Kopsimaline B***
$C_{23}H_{26}N_2O_8$ 458.467
Alkaloid from *Kopsia singapurensis*. Oil. $[\alpha]_D$ -5 (c, 0.53 in $CHCl_3$). λ_{max} 217 (log ε 4.38); 244 (log ε 3.97); 284 (log ε 3.59) (EtOH).

11-Methoxy, 12-hydroxy, 14α,15α-epoxide: ***Kopsimaline C***
$C_{24}H_{28}N_2O_9$ 488.493
Alkaloid from *Kopsia singapurensis*. Oil. $[\alpha]_D$ -27 (c, 0.09 in $CHCl_3$). λ_{max} 220 (log ε 4.53); 252 (log ε 3.89); 283 (log ε 3.42) (EtOH).

12-Methoxy: ***Kopsingine***
[1358-68-5]
$C_{24}H_{28}N_2O_7$ 456.494
Alkaloid from *Kopsia singapurensis* leaves and *Kopsia teoi*. Prisms ($CHCl_3$/EtOH). Mp 270-274° dec. $[\alpha]_D^{29}$ +75. pK_a 5.27. λ_{max} 217 (log ε 4.56); 253 (log ε 4.04); 282 (log ε 3.38); 288 (log ε 3.36) (MeOH).

12-Methoxy, 14α,15α-epoxide: ***Kopsimaline E****. 14,15-Epoxykopsingine*
[199981-81-2]
$C_{24}H_{28}N_2O_8$ 472.494
Alkaloid from *Kopsia teoi* and *Kopsia singapurensis*. $[\alpha]_D$ +15 (c, 0.3 in $CHCl_3$). Stereochem. revised in 2008. λ_{max} 217 (log ε 4.34); 254 (log ε 3.83); 283 (log ε 3.15); 289 (log ε 3.14) (EtOH).

12-Methoxy, 14,15-dihydro:
Prisms ($CHCl_3$/MeOH). Mp 268-270° dec.

12-Methoxy, 14,15-dihydro, 15α-hydroxy: ***Kopsinganol***
[149355-63-5]
$C_{24}H_{30}N_2O_8$ 474.51
Trace alkaloid from stem bark of *Kopsia teoi*. $[\alpha]_D$ +39 (c, 1.80 in $CHCl_3$). CAS gives the incorrect opposite abs. config. λ_{max} 217 (log ε 4.56); 254 (log ε 4.07); 282 (log ε 3.38); 290 (log ε 3.35) (EtOH).

12-Methoxy, 17-deoxy: ***Kopsinginine****. 17-Dehydroxykopsingine*
[149355-59-9]
$C_{24}H_{28}N_2O_6$ 440.495
Alkaloid from stem bark of *Kopsia teoi*. λ_{max} 217 (log ε 4.44); 254 (log ε 3.97); 280 (log ε 3.34); 289 (log ε 3.32) (EtOH).

12-Methoxy, 11-hydroxy: ***11-Hydroxykopsingine***
[199981-78-7]
$C_{24}H_{28}N_2O_8$ 472.494
Alkaloid from *Kopsia teoi*. $[\alpha]_D$ +28 (c, 0.3 in $CHCl_3$). λ_{max} 220 (log ε 4.43); 252 (log ε 3.87); 289 (log ε 3.27) (EtOH).

11,12-Dimethoxy: ***11-Methoxykopsingine***
[199981-79-8]
$C_{25}H_{30}N_2O_8$ 486.521
Alkaloid from *Kopsia teoi*. $[\alpha]_D$ -24 (c, 0.2 in $CHCl_3$). λ_{max} 220 (log ε 4.37); 251 (log ε 3.77); 280 (log ε 3.08); 286 (log ε 3.05) (EtOH).

11,12-Methylenedioxy: ***11,12-Methylenedioxykopsaporine***
[152243-73-7]
$C_{24}H_{26}N_2O_8$ 470.478
Alkaloid from *Kopsia teoi* and *Kopsia singapurensis*. Amorph. powder. $[\alpha]_D^{20}$ +21 (c, 0.8 in $CHCl_3$).

11,12-Methylenedioxy, N-*de(methoxycarbonyl): 11,12-Methylenedioxykopsinol*. ***Kopsinicine***
$C_{22}H_{24}N_2O_6$ 412.441
Alkaloid from *Kopsia singapurensis*. Oil. $[\alpha]_D$ +22 (c, 0.38 in $CHCl_3$). λ_{max} 219 (log ε 4.27); 246 (log ε 3.69); 279 (log ε 3.07) (EtOH).

11,12-Methylenedioxy, 14α,15α-epoxide: ***Kopsimaline A***
$C_{24}H_{26}N_2O_9$ 486.477
Alkaloid from *Kopsia singapurensis*. Oil. $[\alpha]_D$ +159 (c, 0.13 in $CHCl_3$). λ_{max} 225 (log ε 4.43); 255 (log ε 3.97); 286 (log ε 3.24) (EtOH).

11,12-Methylenedioxy, 14,15-dihydro, 17-ketone, N-*de(methoxycarbonyl):* ***Kopsofinone***
$C_{22}H_{24}N_2O_6$ 412.441
Alkaloid from *Kopsia singapurensis*. Amorph. solid. $[\alpha]_D$ +37 (c, 0.27 in $CHCl_3$). λ_{max} 218 (log ε 4.23); 244 (log ε 3.73); 284 (log ε 3.01) (EtOH).

11,12-Methylenedioxy, 19β-hydroxy, 14α,15α-epoxide: ***Kopsimaline D***
$C_{24}H_{26}N_2O_{10}$ 502.477
Alkaloid from *Kopsia singapurensis*. Oil. $[\alpha]_D$ +83 (c, 0.36 in $CHCl_3$). λ_{max} 225 (log ε 4.15); 245 (log ε 3.72); 256 (log ε 3.62); 286 (log ε 3.07) (EtOH).

17-Epimer: ***Kopsiloscine A****. 17-Epikopsaporine*
[958247-15-9]
$C_{23}H_{26}N_2O_6$ 426.468
Alkaloid from *Kopsia singapurensis*. Pale yellow oil. $[\alpha]_D^{25}$ +16 (c, 0.25 in $CHCl_3$). λ_{max} 206 (log ε 4.31); 244 (log ε 3.96); 278 (log ε 3.28); 285 (log ε 3.23) (EtOH).

17-Epimer, N-*de(methoxycarbonyl): 17-Epikopsinol*. ***Kopsiloscine H***
$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from *Kopsia singapurensis*. Yellowish oil. $[\alpha]_D$ -13 (c, 0.17 in $CHCl_3$). λ_{max} 203 (log ε 3.59); 243 (log ε 3.01); 293 (log ε 2.62) (EtOH).

17-Epimer, 14,15-dihydro: ***Kopsiloscine B***
[958247-16-0]
$C_{23}H_{28}N_2O_6$ 428.484
Alkaloid from *Kopsia singapurensis*. Oil. $[\alpha]_D^{25}$ +50 (c, 0.23 in $CHCl_3$). λ_{max} 204 (log ε 4.32); 244 (log ε 3.96); 281 (log ε 3.27); 287 (log ε 3.23) (EtOH).

17-Epimer, 14,15-dihydro, N-*de(methoxycarbonyl):* ***Kopsiloscine I***

$C_{21}H_{26}N_2O_4$ 370.447
Alkaloid from *Kopsia singapurensis*. Oil. $[\alpha]_D$ -29 (c, 0.09 in $CHCl_3$). λ_{max} 205 (log ε 3.9); 242 (log ε 3.34); 293 (log ε 2.96) (EtOH).

17-Epimer, 14,15-dihydro, 15α-hydroxy: ***Kopsiloscine C***
[364781-91-9]
$C_{23}H_{28}N_2O_7$ 444.483
Alkaloid from *Kopsia singapurensis*. Pale yellow cryst. (Et_2O). Mp 172-174°. $[\alpha]_D^{25}$ -40 (c, 0.28 in $CHCl_3$). λ_{max} 206 (log ε 3.28); 243 (log ε 2.98); 279 (log ε 2.02); 288 (log ε 1.76) (EtOH).

17-Epimer, 10-methoxy, 14,15-dihydro: ***Kopsiloscine D***
[958247-17-1]
$C_{24}H_{30}N_2O_7$ 458.51
Alkaloid from *Kopsia singapurensis*. Oil. $[\alpha]_D^{25}$ -63 (c, 0.1 in $CHCl_3$). λ_{max} 201 (log ε 4.59); 249 (log ε 4.27); 297 (log ε 3.67) (EtOH).

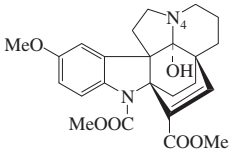
17-Epimer, 10-methoxy, 15α-hydroxy, 14,15-dihydro: ***Kopsiloscine E***
[958247-18-2]
$C_{24}H_{30}N_2O_8$ 474.51
Alkaloid from *Kopsia singapurensis*. Oil. $[\alpha]_D^{25}$ -25 (c, 0.15 in $CHCl_3$). λ_{max} 202 (log ε 4.46); 249 (log ε 4.14); 298 (log ε 3.51) (EtOH).

17-Epimer, 12-methoxy, 15α-hydroxy, 14,15-dihydro: ***Kopsiloscine F***
[958247-19-3]
$C_{24}H_{30}N_2O_8$ 474.51
Alkaloid from *Kopsia singapurensis*. Pale yellow oil. $[\alpha]_D^{25}$ +9 (c, 0.28 in $CHCl_3$). λ_{max} 216 (log ε 3.57); 252 (log ε 3.1); 283 (log ε 2.55) (EtOH).

Kiang, A.K. *et al., CA*, 1959, **53**, 14131 (*isol, Kopsingine, Kopsingarine*)
Thomas, D.W. *et al., J.A.C.S.*, 1967, **89**, 3235-3242 (*Kopsaporine, Kopsingine, uv, ir, pmr, ms, struct, Kopsingarine*)
Kam, T.-S. *et al., Phytochemistry*, 1993, **32**, 1343-1345; 1996, **42**, 539-541 (*Kopsingine, cryst struct, Kopsinginine, Kopsinol, Kopsinganol*)
Kam, T.-S. *et al., Phytochemistry*, 1997, **46**, 789-792 (*Hydroxykopsingine, Methoxykopsingine, Epoxykopsingine*)
Subramaniam, G. *et al., J. Nat. Prod.*, 2007, **70**, 1783-1789 (*Kopsiloscines A-F*)
Subramaniam, G. *et al., J. Nat. Prod.*, 2008, **71**, 53-57 (*Kopsimalines A-E, Kopsofinone, Kopsinicine, Kopsiloscines H,I*)

Kopsidasine K-67

[85559-71-3]



Absolute Configuration

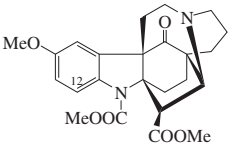
$C_{24}H_{28}N_2O_6$ 440.495
Alkaloid from the leaves of *Kopsia dasyrachis* (Apocynaceae). Gum. $[\alpha]_D^{22}$ -133 (c, 3.58 in $CHCl_3$).

N^4*-Oxide:* ***Kopsidasine*** $\mathbf{N^4}$***-oxide***
[85559-72-4]
$C_{24}H_{28}N_2O_7$ 456.494
Alkaloid from leaves of *Kopsia dasyrachis* (Apocynaceae). Cryst. (MeOH/Et_2O). $[\alpha]_D^{23}$ -159.5 (c, 1.013 in $CHCl_3$).

Homberger, K. *et al., Helv. Chim. Acta*, 1982, **65**, 2548-2557 (*isol, uv, ir, pmr, cmr, ms, struct*)
Magnus, P. *et al., Tetrahedron*, 2002, **58**, 3423-3443 (*synth*)

Kopsidasinine K-68

[85559-78-0]



Absolute Configuration

$C_{24}H_{28}N_2O_6$ 440.495
Alkaloid from the leaves of *Kopsia dasyrachis* (Apocynaceae). Gum. $[\alpha]_D^{23}$ -139.1 (c, 1.307 in $CHCl_3$).

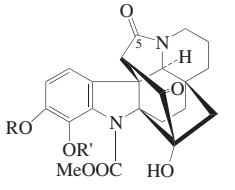
Demethoxy: ***10-Demethoxykopsidasinine***
[117259-13-9]
$C_{23}H_{26}N_2O_5$ 410.469
Alkaloid from the leaves of *Kopsia jasminiflora* (Apocynaceae). Prisms. Mp 194-196°. $[\alpha]_D^{20}$ -159 (c, 1.00 in MeOH).

Demethoxy, 12-methoxy: ***10-Demethoxy-12-methoxykopsidasinine***
[184870-16-4]
$C_{24}H_{28}N_2O_6$ 440.495
Alkaloid from stems of *Kopsia pauciflora*. $[\alpha]_D$ -115 (c, 0.114 in $CHCl_3$). λ_{max} 216 (log ε 4.3); 249 (log ε 3.82); 280 (log ε 2.98); 287 (log ε 3.04) (EtOH).

Homberger, K. *et al., Helv. Chim. Acta*, 1982, **65**, 2548 (*isol, uv, ir, pmr, cmr, ms, struct*)
Hamburger, M.O. *et al., Phytochemistry*, 1988, **27**, 2719 (*10-Demethoxykopsidasinine*)
Kam, T.-S. *et al., Phytochemistry*, 1996, **43**, 1385 (*10-Demethoxy-12-methoxykopsidasinine*)

Kopsifine K-69

[204514-78-3]



Absolute Configuration

R,R' = -CH_2-

$C_{23}H_{22}N_2O_7$ 438.436
Alkaloid from *Kopsia dasyrachis*. $[\alpha]_D$ +97 (c, 0.04 in $CHCl_3$). λ_{max} 223 (log ε 4.41); 250 (log ε 3.94); 285 (log ε 3.16); 295 (log ε 3.1) (EtOH).

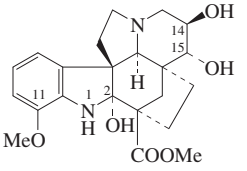
De(methoxycarbonyl): ***Decarbomethoxykopsifine***. *Demethoxycarbonylkopsifine*
[237078-12-5]
$C_{21}H_{20}N_2O_5$ 380.399
Alkaloid from *Kopsia dasyrachis*. $[\alpha]_D$ +52 (c, 0.07 in $CHCl_3$). λ_{max} 220 (log ε 4.72); 243 (log ε 4.23); 288 (log ε 3.51) (EtOH).

5-Deoxo: ***11,12-Methylenedioxykopsine***
[237078-14-7]
$C_{23}H_{24}N_2O_6$ 424.452
Alkaloid from *Kopsia dasyrachis*. $[\alpha]_D$ -13 (c, 0.18 in $CHCl_3$). λ_{max} 225 (log ε 4.61); 244 (log ε 4.2); 287 (log ε 3.41); 294 (log ε 3.39) (EtOH).

Kam, T.-S. *et al., Phytochemistry*, 1999, **51**, 159-169 (*isol, uv, pmr, cmr, ms*)

Kopsifoline C K-70

[603131-70-0]



Relative Configuration

$C_{22}H_{28}N_2O_6$ 416.473
Alkaloid from *Kopsia fruticosa*. Oil. $[\alpha]_D$ +87 (c, 0.08 in $CHCl_3$). λ_{max} 214 (log ε 4.35); 248 (log ε 3.72); 294 (log ε 3.33) (EtOH).

14-Deoxy: ***Kopsifoline B***
[603131-69-7]
$C_{22}H_{28}N_2O_5$ 400.474
Alkaloid from *Kopsia fruticosa*. Oil. $[\alpha]_D$ -46 (c, 0.66 in $CHCl_3$). λ_{max} 213 (log ε 4); 248 (log ε 3.88); 295 (log ε 3.44) (EtOH).

14,15-Dideoxy, 14,15-didehydro: ***Kopsifoline A***
[603131-68-6]
$C_{22}H_{26}N_2O_4$ 382.458
Alkaloid from *Kopsia fruticosa*. Oil. $[\alpha]_D$ -11 (c, 0.43 in $CHCl_3$). λ_{max} 213 (log ε 4.26); 248 (log ε 3.93); 296 (log ε 3.51) (EtOH).

2,14,15-Trideoxy, 1,2,14,15-tetradehydro: ***Kopsifoline E***
$C_{22}H_{24}N_2O_3$ 364.443
Alkaloid from *Kopsia fruticosa*. Light yellow oil. $[\alpha]_D$ +84 (c, 0.15 in $CHCl_3$). λ_{max} 230 (log ε 4.05); 253 (log ε 3.63); 309 (log ε 3.56) (EtOH).

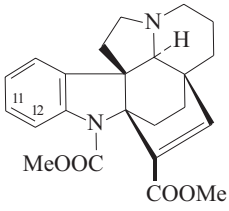
Demethoxy, 2,14,15-trideoxy, 1,2,14,15-tetradehydro: ***Kopsifoline D***
$C_{21}H_{22}N_2O_2$ 334.417
Alkaloid from *Kopsia fruticosa*. Light yellow oil. $[\alpha]_D$ -27 (c, 0.09 in $CHCl_3$). λ_{max} 224 (log ε 4.15); 249 (log ε 3.68); 280 (log ε 3.56) (EtOH).

Demethoxy, 11-methoxy, 2,14,15-trideoxy, 14,15-didehydro: ***Kopsifoline F***
$C_{22}H_{26}N_2O_3$ 366.459
Alkaloid from *Kopsia fruticosa*. Oil. $[\alpha]_D$ -112 (c, 0.07 in $CHCl_3$). λ_{max} 212 (log ε 4.56); 248 (log ε 3.99); 295 (log ε 3.57) (EtOH).

Kam, T.-S. *et al., Helv. Chim. Acta*, 2004, **87**, 991-998 (*Kopsifolines, isol, pmr, cmr, ms*)

Kopsijasmine K-71

N[1]-*Methoxycarbonyl-16,17-didehydrokopsinine. 10-Demethoxy-21-deoxykopsidasine*
[114639-86-0]



$C_{23}H_{26}N_2O_4$ 394.469
Alkaloid from the leaves of *Kopsia jasminiflora* (Apocynaceae). Mp 199-202°. $[\alpha]_D$ -202 ($CHCl_3$). λ_{max} 204 (ϵ 16700); 239 (ϵ 7400); 277 (ϵ 1600); 286 (ϵ 1300) (EtOH) (Derep).

N-*De(methoxycarbonyl):* ***Kopsijasminine***. *$\Delta^{16,17}$-Kopsinine. 16,17-Didehydrokopsinine*
[947251-86-7]
$C_{21}H_{24}N_2O_2$ 336.433
Alkaloid from the stem bark of *Kopsia teoi*. Light yellow oil. $[\alpha]_D$ -60 (c, 0.05 in $CHCl_3$). λ_{max} 206 (log ϵ 4.36); 243 (log ϵ 3.77); 292 (log ϵ 3.3) (EtOH).

12-Hydroxy: ***12-Hydroxy*-N-*methoxycarbonyl-$\Delta^{16,17}$-kopsinine***
[164661-14-7]
$C_{23}H_{26}N_2O_5$ 410.469
Alkaloid from leaves and stems of *Kopsia profunda* (Apocynaceae). $[\alpha]_D$ -121 (c, 0.04 in $CHCl_3$).

12-Methoxy: ***12-Methoxy*-N-*methoxycarbonyl-$\Delta^{16,17}$-kopsinine***
[129743-93-7]
$C_{24}H_{28}N_2O_5$ 424.496
Alkaloid from the stems and leaves of *Kopsia profunda* (Apocynaceae). Needles (EtOH). Mp 150-152°. $[\alpha]_D$ -75 (c, 0.123 in $CHCl_3$).

12-Methoxy, N[4]*-oxide:* ***12-Methoxy*-N-*methoxycarbonyl-$\Delta^{16,17}$-kopsinine* N[4]*-oxide***
[164661-16-9]
$C_{24}H_{28}N_2O_6$ 440.495
Alkaloid from stems and leaves of *Kopsia profunda* (Apocynaceae). Mp 244-245°. $[\alpha]_D$ -163 (c, 0.15 in $CHCl_3$).

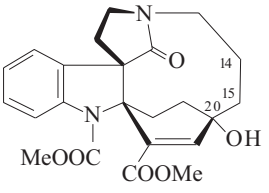
11,12-Methylenedioxy: **N-*Methoxycarbonyl-11,12-methylenedioxy-$\Delta^{16,17}$-kopsinine***
[129743-92-6]
$C_{24}H_{26}N_2O_6$ 438.479
Alkaloid from the stems and leaves of *Kopsia profunda* (Apocynaceae). Prisms (MeOH). Mp 198-200°. $[\alpha]_D$ -180 (c, 0.17 in $CHCl_3$).

11,12-Methylenedioxy, N[4]*-oxide:* **N-*Methoxycarbonyl-11,12-methylenedioxy-$\Delta^{16,17}$-kopsinine* N-*oxide***
[164661-15-8]
$C_{24}H_{26}N_2O_7$ 454.479
Alkaloid from leaves and stems of *Kopsia profunda* (Apocynaceae). $[\alpha]_D$ -125 (c, 0.06 in $CHCl_3$).

Ruangrungsi, N. *et al., Tet. Lett.*, 1987, **28**, 3679 (*pmr, cmr, ms, struct*)
Magnus, P. *et al., J.O.C.*, 1988, **53**, 5772 (*synth, uv, ir, pmr, ms*)
Kam, T.-S. *et al., Phytochemistry*, 1990, **29**, 2321; 1995, **39**, 469 (*derivs*)
Lim, S.-H. *et al., J. Nat. Prod.*, 2007, **70**, 1380-1383 (*Kopsijasminine*)

Kopsijasminilam K-72

[114639-87-1]



$C_{23}H_{26}N_2O_6$ 426.468
New skeletal group of *Kopsia* alkaloids. Can be regarded as 20,21-secoaspidofractines. Alkaloid from the leaves of *Kopsia jasminiflora* (Apocynaceae). Mp 245-246°. $[\alpha]_D$ -220 ($CHCl_3$). λ_{max} 208 (ϵ 41700); 245 (ϵ 17800); 280 (ϵ 2950); 290 (ϵ 2690) (MeOH) (Derep).

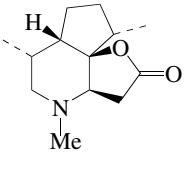
20-Deoxy: ***Deoxykopsijasminilam***
[114622-12-7]
$C_{23}H_{26}N_2O_5$ 410.469
Alkaloid from the leaves of *Kopsia jasminiflora* (Apocynaceae). Mp 192-195°. $[\alpha]_D$ -210 ($CHCl_3$). λ_{max} 208 (ϵ 41700); 245 (ϵ 17800); 280 (ϵ 2950); 290 (ϵ 2690) (MeOH) (Derep).

14,15-Didehydro: Δ^{14}-Kopsijasminilam
[114622-13-8]
$C_{23}H_{24}N_2O_6$ 424.452
Alkaloid from the leaves of *Kopsia jasminiflora* (Apocynaceae). Amorph. powder.

Ruangrungsi, N. *et al., Tet. Lett.*, 1987, **28**, 3679 (*uv, ir, pmr, cmr, ms, cryst struct, derivs*)
Kuehne, M.E. *et al., J.O.C.*, 2000, **65**, 6434-6440 (*synth*)
Magnus, P. *et al., Tetrahedron*, 2002, **58**, 3423-3443 (*synth*)

Kopsilactone K-73

[180841-82-1]



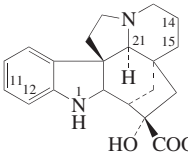
Relative Configuration

$C_{13}H_{21}NO_2$ 223.314
Minor alkaloid from leaves of *Kopsia macrophylla*. Amorph. $[\alpha]_D^{25}$ +43 (c, 0.8 in $CHCl_3$).

Kan-Fan, C. *et al., Nat. Prod. Lett.*, 1995, **7**, 283 (*isol, ir, pmr, cmr, ms, struct*)

Kopsinaline K-74

Methyl 3-hydroxyaspidofractinine-3-carboxylate, 9CI
[88607-44-7]



Absolute Configuration

$C_{21}H_{26}N_2O_3$ 354.448
Kopsinaline itself is currently unknown.

N-*Methoxycarbonyl:* ***Kopsiflorine***. N-*Methoxycarbonylkopsinaline*
[1358-64-1]
$C_{23}H_{28}N_2O_5$ 412.485
Alkaloid from the leaves of *Kopsia longiflora* and *Kopsia dasyrachis* (Apocynaceae). Shows multidrug resistance (MDR) reversing effect. Needles (petrol). Mp 144-145°. $[\alpha]_D^{23}$ -66.9 (c, 1.41 in $CHCl_3$). pK_a 6.38 (70% MeOH).

N-*Methoxycarbonyl,* N[4]*-oxide:* ***Kopsiflorine* N[4]*-oxide***
[237078-10-3]
$C_{23}H_{28}N_2O_6$ 428.484
Alkaloid from *Kopsia dasyrachis*. $[\alpha]_D$ -57 (c, 0.32 in $CHCl_3$). λ_{max} 206 (log ϵ 4.38); 242 (log ϵ 4.04); 278 (log ϵ 3.23); 284 (log ϵ 3.2) (EtOH).

11-Methoxy, 12-hydroxy, N-*methoxycarbonyl:* **N-*Methoxycarbonyl-12-hydroxy-11-methoxykopsinaline***
[114495-07-7]
$C_{24}H_{30}N_2O_7$ 458.51
Alkaloid from the fruits of *Kopsia officinalis*. Yellow cryst. Mp 184°. $[\alpha]_D^{20}$ -104.6 (c, 0.0015*M* in $CHCl_3$). λ_{max} 223 (log ϵ 4.54); 255 (log ϵ 3.98); 280 (log ϵ 3.22); 290 (log ϵ 3.22) (MeOH).

12-Methoxy: ***12-Methoxykopsinaline***
[88607-45-8]
$C_{22}H_{28}N_2O_4$ 384.474
Alkaloid from the roots of *Kopsia officinalis* (Apocynaceae). Amorph. $[\alpha]_D$ -7 (c, 0.17 in $CHCl_3$).

12-Methoxy, N-*methoxycarbonyl:* ***Kopsilongine***. *12-Methoxy*-N-*methoxycarbonylkopsinaline*. N-*Methoxycarbonyl-12-methoxykopsinaline*
[1358-65-2]
$C_{24}H_{30}N_2O_6$ 442.511
Alkaloid from the roots of *Kopsia longiflora* and (Kopsilongine) from bark and leaves of *Kopsia officinalis* (Apocynaceae). Cryst. (MeOH or Me_2CO). Mp 210-211° (206°). $[\alpha]_D$ -5 (c, 1.31 in $CHCl_3$). pK_a 6.6 (70% MeOH). The identity of the two isolates is not certain. Mps are similar. Most data refers to the later isolate, *N*-Methoxycarbonyl-12-methoxykopsinaline.

12-Methoxy, N-*methoxycarbonyl, perchlorate:*
Plates (H_2O). Mp 246-248° dec. Deriv. of Kopsilongine.

12-Methoxy, N-*methoxycarbonyl,* N[4]-

oxide: ***Kopsilongine* N^4*-oxide***
[958247-20-6]
$C_{24}H_{30}N_2O_7$ 458.51
Alkaloid from *Kopsia singapurensis*. Oil. $[\alpha]_D^{25}$ -29 (c, 0.21 in $CHCl_3$). λ_{max} 216 (log ϵ 4.15); 252 (log ϵ 3.58); 287 (log ϵ 2.51) (EtOH).

12-Methoxy, 11-hydroxy, N-*methoxycarbonyl:* **N-*Methoxycarbonyl-11-hydroxy-12-methoxykopsinaline***
[127608-79-1]
$C_{24}H_{30}N_2O_7$ 458.51
Alkaloid from the fruits of *Kopsia officinalis*. Yellow cryst. Mp 207-209°. λ_{max} 203 (log ϵ 4.45); 253 (log ϵ 3.98); 293 (log ϵ 3.43) (MeOH).

11,12-Dimethoxy, N-*methoxycarbonyl:* ***11,12-Dimethoxy*-N-*methoxycarbonylkopsinaline***. N-*Methoxycarbonyl-11,12-dimethoxykopsinaline. 11-Methoxykopsilongine*
[88607-47-0]
$C_{25}H_{32}N_2O_7$ 472.537
Alkaloid from the roots of *Kopsia officinalis* (Apocynaceae). Amorph. $[\alpha]_D$ -4 (c, 0.68 in $CHCl_3$).

11,12-Dimethoxy, N-*methoxycarbonyl,* N^4*-oxide:* ***11-Methoxykopsilongine* N^4*-oxide***
[237078-11-4]
$C_{25}H_{32}N_2O_8$ 488.536
Alkaloid from *Kopsia dasyrachis*. $[\alpha]_D$ -11 (c, 0.13 in $CHCl_3$). λ_{max} 223 (log ϵ 4.44); 252 (log ϵ 3.86); 282 (log ϵ 3.12); 289 (log ϵ 3.12) (EtOH).

11,12-Methylenedioxy: ***11,12-Methylenedioxykopsinaline***
[88607-48-1]
$C_{22}H_{26}N_2O_5$ 398.458
Alkaloid from the roots of *Kopsia officinalis* and from *Kopsia dasyrachis* (Apocynaceae). Amorph. $[\alpha]_D$ -12 (c, 0.70 in $CHCl_3$).

11,12-Methylenedioxy, N^4*-oxide:* ***11,12-Methylenedioxykopsinaline* N^4*-oxide***
[221149-28-6]
$C_{22}H_{26}N_2O_6$ 414.457
Alkaloid from *Kopsia griffithii*. $[\alpha]_D$ -16 (c, 0.19 in $CHCl_3$). λ_{max} 221 (log ϵ 4.35); 246 (log ϵ 3.77); 282 (log ϵ 2.97) (EtOH).

11,12-Methylenedioxy, N-*methoxycarbonyl:* ***Kopsamine***. N-*Methoxycarbonyl-11,12-methylenedioxykopsinaline*
[1358-62-9]
$C_{24}H_{28}N_2O_7$ 456.494
Alkaloid from *Kopsia officinalis*, *Kopsia longiflora* and *Kopsia flavida* (prob. the same as *Kopsia pruniformis*) (Apocynaceae). Prisms (MeOH or Me_2CO). Mp 208°. $[\alpha]_D$ -48.2 (c, 1.0 in $CHCl_3$) (-42).

11,12-Methylenedioxy, N-*methoxycarbonyl,* N^4*-oxide:* ***Kopsamine* N^4*-oxide***
[125295-15-0]
$C_{24}H_{28}N_2O_8$ 472.494
Alkaloid from *Kopsia officinalis*. Cryst. Mp 251-252°. $[\alpha]_D^{20}$ -40.7 ($CHCl_3$). λ_{max} 226 (log ϵ 4.5); 247 (log ϵ 4.06); 255 (log ϵ 3.96); 285 (log ϵ 3.21); 295 (log ϵ 3.21) (MeOH).

11,12-Methylenedioxy, 14,15-didehydro: 14,15-Didehydro-11,12-methylenedioxykopsinaline. ***Kopsamidine A***
[949932-19-8]
$C_{22}H_{24}N_2O_5$ 396.442
Alkaloid from the stem bark of *Kopsia arborea*. Oil. $[\alpha]_D$ +97 (c, 0.15 in $CHCl_3$). λ_{max} 220 (log ϵ 4.46); 245 (log ϵ 3.88); 281 (log ϵ 3.11) (EtOH).

11,12-Methylenedioxy, 21-hydroxy, N-*methoxycarbonyl:* ***Paucifinine***
[199981-75-4]
$C_{24}H_{28}N_2O_8$ 472.494
Alkaloid from the leaves of *Kopsia pauciflora* (Apocynaceae). $[\alpha]_D$ -91 (c, 0.08 in $CHCl_3$). λ_{max} 248 (log ϵ 4.08); 255 (log ϵ 4.03); 285 (log ϵ 3.13); 290 (log ϵ 3.09) (EtOH).

11,12-Methylenedioxy, 21-hydroxy, N-*methoxycarbonyl,* N^4*-oxide:* ***Paucifinine* N-*oxide***
[200053-20-9]
$C_{24}H_{28}N_2O_9$ 488.493
Alkaloid from the leaves of *Kopsia pauciflora* (Apocynaceae). $[\alpha]_D$ -36 (c, 0.3 in $CHCl_3$). λ_{max} 227 (log ϵ 4.5); 248 (log ϵ 4.06); 255 (log ϵ 3.97); 285 (log ϵ 3.21); 290 (log ϵ 3.17) (EtOH).

Crow, W.D. *et al., Aust. J. Chem.*, 1955, **8**, 129-135; 1962, **15**, 130-138 (*Kopsilongine, Kopsiflorine*)
Feng, X.Z. *et al., Planta Med.*, 1983, **48**, 280-282 (*Kopsia officinalis constits*)
Wu, J. *et al., Jiegou Huaxue*, 1987, **6**, 47-52 (*11-methoxy-12-hydroxy-N-methoxycarbonyl, cryst struct*)
Wu, J. *et al., CA*, 1988, **108**, 204851m (*Kopsamine, cryst struct*)
Zheng, J.-J. *et al., Acta Chim. Sin. (Engl. edn.)*, 1989, 168-175 (*Kopsamine, Kopsamine N-oxide, 12-methoxy-11-hydroxy-N-methoxycarbonyl, 11-methoxy-12-hydroxy-N-methoxycarbonyl*)
Kam, T.S. *et al., Phytochemistry*, 1997, **46**, 785-787; 1999, **50**, 75-79; **51**, 159-169 (*Paucifinine, Paucifinine N-oxide, 11,12-Methylenedioxykopsinaline N-oxide, Kopsiflorine N-oxide, 11-Methoxykopsilongine N-oxide*)
Kam, T.-S. *et al., Bioorg. Med. Chem. Lett.*, 1998, **8**, 2769-2772 (*Kopsiflorine, activity*)
Rho, M.-C. *et al., Planta Med.*, 1999, **65**, 307-310 (*Kopsiflorine, activity*)
Magnus, P. *et al., Tetrahedron*, 2002, **58**, 3423-3443 (*11-Methoxykopsilongine, synth*)
Lim, K.-H. *et al., J. Nat. Prod.*, 2007, **70**, 1302-1307 (*Kopsamidine A*)
Subramaniam, G. *et al., J. Nat. Prod.*, 2007, **70**, 1783-1789 (*Kopsilongine N^4-oxide*)

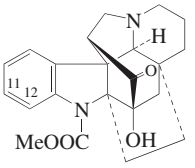
Kopsinarine K-75

[237078-13-6]
As Kopsifine, K-69 with
R = R′ = Me
$C_{24}H_{26}N_2O_7$ 454.479
Alkaloid from *Kopsia dasyrachis*. $[\alpha]_D$ +97 (c, 0.25 in $CHCl_3$). λ_{max} 219 (log ϵ 4.66); 240 (log ϵ 4.15); 280 (log ϵ 3.32); 288 (log ϵ 3.3) (EtOH).

Kam, T.-S. *et al., Phytochemistry*, 1999, **51**, 159-169 (*isol, uv, pmr, cmr, ms*)

Kopsine K-76

Methyl 3-hydroxy-22-oxokopsan-1-carboxylate, 9CI
[559-48-8]



Absolute Configuration

$C_{22}H_{24}N_2O_4$ 380.443
Alkaloid from the leaves of *Kopsia fruticosa* (Apocynaceae). Cryst. (MeOH). Mp 217-218° (210-213°). $[\alpha]_D$ -17.5 (c, 2.15 in $CHCl_3$). pK_{a1} 4.28 (2-Methoxyethanol aq.). pK_{a1} 4.45 (2-Methoxyethanol).

Perchlorate: Mp 284° dec.

Picrate: Mp 230° dec.

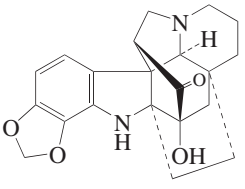
N-*De(methoxycarbonyl):* ***Decarbomethoxykopsine***
$C_{20}H_{22}N_2O_2$ 322.406
Alkaloid from the leaves of *Kopsia fruticosa* (Apocynaceae). Cryst. (Me_2CO aq. or MeOH aq.). Mp 101-127°.

11,12-Dimethoxy: 11,12-Dimethoxykopsine. ***Kopsinidine B***
[949932-22-3]
$C_{24}H_{28}N_2O_6$ 440.495
Alkaloid from the stem bark of *Kopsia arborea*. Oil. $[\alpha]_D$ +113 (c, 0.18 in $CHCl_3$). λ_{max} 219 (log ϵ 4.28); 239 (log ϵ 3.79); 285 (log ϵ 3.01) (EtOH).

Govindachari, T.R. *et al., Helv. Chim. Acta*, 1962, **45**, 1146; 1963, **46**, 572 (*uv, ir, pmr, ms*)
Guggisberg, A. *et al., Helv. Chim. Acta*, 1963, **46**, 679; 1969, **52**, 76 (*Decarbomethoxykopsine*)
Battersby, A.R. *et al., J.C.S.*, 1963, 22 (*isol, pmr, ms*)
Magnus, P. *et al., J.A.C.S.*, 1989, **111**, 6707 (*synth, ir, pmr*)
Watt, W. *et al., Acta Cryst. C*, 1993, **49**, 171 (*cryst struct*)
Glover, R.P. *et al., Magn. Reson. Chem.*, 2005, **43**, 483-485 (*pmr, cmr, N-15 nmr*)
Lim, K.-H. *et al., J. Nat. Prod.*, 2007, **70**, 1302-1307 (*Kopsinidine B*)

Kopsinidine A K-77

[949932-21-2]

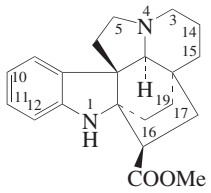


$C_{21}H_{22}N_2O_4$ 366.416
Alkaloid from the stem bark of *Kopsia arborea*. Oil. $[\alpha]_D$ -15 (c, 0.17 in $CHCl_3$). λ_{max} 221 (log ϵ 4.48); 242 (log ϵ 3.99); 277 (log ϵ 3.23) (EtOH).

Lim, K.-H. *et al., J. Nat. Prod.*, 2007, **70**, 1302-1307 (*isol, pmr, cmr*)

Kopsinine K-78

Methyl aspidofractinine-3-carboxylate, 9CI. Ervinine. Copsinine. Erectine
[559-51-3]



Absolute Configuration

$C_{21}H_{26}N_2O_2$ 338.449
Alkaloid from *Kopsia longiflora*, *Kopsia hainanensis*, *Pleiocarpa mutica*, *Pleiocarpa tubicina*, *Pleiocarpa pycnantha* var. *tubicina*, *Aspidosperma multiflorum*, *Aspidosperma populifolium*, *Alstonia venenata*, *Vinca erecta*, *Vinca herbacea*, *Hunteria elliotii* and *Hunteria zeylanica* (Apocynaceae). CNS analeptic agent, antinarcotic. Prisms (petrol or Et_2O/hexane). Mp 104-105°. $[\alpha]_D^{23}$ -76.9 (c, 2.09 in $CHCl_3$). pK_a 7.5 (70% MeOH). λ_{max} 204 (log ε 4.35); 246 (log ε 3.83); 295 (log ε 3.45) (EtOH).

Hydrochloride:
Needles + $2H_2O$ (MeOH/Et_2O). Mp 244-245°.

Hydrochloride (1:2):
Needles (EtOH). Mp 253-254°.

Picrate:
Yellow needles (EtOH). Mp 222-223° (213-214° dec.).

N^4-*Oxide:* ***Kopsinoline***
[7290-10-0]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from bark of *Pleiocarpa tubicina* and *Kopsia hainanensis*; and the roots of *Pleiocarpa mutica* (Apocynaceae). Mp 158-160° dec. $[\alpha]_D^{22}$ -70.1 (c, 0.48 in $CHCl_3$). λ_{max} 205 (log ε 4.43); 244 (log ε 3.87); 295 (log ε 3.47) (EtOH).

N^1-*Formyl:* ***Aspidofractine***
[2348-67-6]
$C_{22}H_{26}N_2O_3$ 366.459
Alkaloid from *Alstonia refractum* and *Alstonia populifolium* (Apocynaceae). Mp 195-196°. $[\alpha]_D^{24}$ -128 (c, 1.3 in $CHCl_3$).

N-*Methoxycarbonyl:* ***Pleiocarpine***
[559-52-4]
$C_{23}H_{28}N_2O_4$ 396.485
Major alkaloid from the roots of *Pleiocarpa mutica*, also isol. from *Pleiocarpa pycnantha*, *Hunteria eburnea* and *Comularia camerunensis* (preferred genus name *Hunteria*) (Apocynaceae). Cryst. (MeOH or pentane/MeOH). Mp 142.5°. $[\alpha]_D^{25}$ -145 (c, 1.1725 in $CHCl_3$). pK_a 6.19 (MCS).

N-*Methoxycarbonyl, hydrochloride:*
Cryst. (EtOH or EtOH/Et_2O). Mp 234-235° dec. (229-230°).

N-*Methoxycarbonyl,* N^4-*oxide:* ***Pleiocarpoline***
$C_{23}H_{28}N_2O_5$ 412.485
Alkaloid from *Pleiocarpa mutica* and the bark of *Pleiocarpa tubicina*. Also isol. from *Hunteria eburnea* (Apocynaceae). Prisms (MeOH/Et_2O). Mp 234-235° dec Mp 248-250° dec. $[\alpha]_D^{24}$ -131.6 (c, 0.94 in $CHCl_3$). CAS no. not found 8-14CI. λ_{max} 208 (log ε 4.41); 245 (log ε 4.13); 281 (log ε 3.33); 287 (log ε 3.32) (EtOH).

N^1-*Me:* ***Pleiocarpinine***
[559-50-2]
$C_{22}H_{28}N_2O_2$ 352.475
Minor alkaloid from the roots of *Pleiocarpa mutica*. Also isol. from *Hunteria eburnea* and *Comularia camerunensis* (preferred genus name *Hunteria*) (Apocynaceae). Cryst. (pentane). Mp 135-136°. $[\alpha]_D^{22}$ -124 (c, 1.461 in $CHCl_3$). pK_a 6.94 (2-methoxyethanol).

N^1-*Me, picrate:*
Cryst. (MeOH). Mp 222-223° dec.

N^1-*Me,* N^4-*oxide:* ***Pleiocarpolinine***
[18559-10-9]
$C_{22}H_{28}N_2O_3$ 368.475
Alkaloid from the bark of *Pleiocarpa tubicina*, the roots of *Pleiocarpa mutica* and from *Hunteria eburnea* (Apocynaceae). Prisms (MeOH/Et_2O). Mp 210-211° dec Mp 239-260° dec. $[\alpha]_D^{26}$ -111 (c, 2.575 in $CHCl_3$). λ_{max} 207 (log ε 4.42); 251 (log ε 4); 300 (log ε 3.53) (EtOH).

Parent acid, N^4-*Me:* ***Kopsinic acid methosalt***
[1348-45-4]
$C_{21}H_{27}N_2O_2^{\oplus}$ 339.456
Alkaloid from root bark of *Pleiocarpa tubicina* and roots of *Pleiocarpa mutica* (Apocynaceae). Cryst. (MeOH) (as chloride). Mp 282-295° dec. (chloride). $[\alpha]_D^{25}$ -107 (c, 0.42 in 50% MeOH aq.). λ_{max} 248 (log ε 3.85); 295 (log ε 3.45) (EtOH).

15β-Hydroxy: ***Hydroxykopsinine I****. Ld 90*
[26619-90-9]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from the stem bark of *Melodinus australis* (Apocynaceae). Prisms ($CHCl_3$/Et_2O). Mp 190-197°. $[\alpha]_D^{22}$ -62 (c, 1.142 in $CHCl_3$).

17β-Hydroxy, N-*methoxycarbonyl:* ***N-Carbomethoxy-17-hydroxykopsinine***
[116988-03-5]
$C_{23}H_{28}N_2O_5$ 412.485
Alkaloid from the stem bark of *Kopsia deverrei* (Apocynaceae). Amorph. $[\alpha]_D^{20}$ -132 (c, 0.18 in $CHCl_3$). λ_{max} 245 (log ε 4.21); 281 (log ε 3.58); 288 (log ε 3.55) (EtOH).

19α-Hydroxy: ***Hydroxykopsinine II****. Ld 91*
[26619-91-0]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from *Melodinus australis* (Apocynaceae). Prisms ($CHCl_3$/Et_2O). Mp 187-192°. $[\alpha]_D^{23}$ -63 (c, 1.037 in $CHCl_3$).

3-Oxo, hydroxy: ***3-Oxohydroxykopsinine***
[90341-31-4]
$C_{21}H_{24}N_2O_4$ 368.432
Trace alkaloid from the stem bark and aerial parts of *Melodinus guillauminii*. $[\alpha]_D$ -14.5 (c, 0.15 in $CHCl_3$). Full struct. not known. OH group possibly on C-18 or C-19.

5-Oxo: ***Kopsinilam***
[464-68-6]
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from *Pleiocarpa mutica*, *Pleiocarpa tubicina*, *Hunteria eburnea* and *Vinca erecta* (Apocynaceae). Prisms (Me_2CO/pentane). Mp 254-254.5°. $[\alpha]_D^{25}$ -13 (c, 2.27 in $CHCl_3$).

5-Oxo, N^1-*Me:* ***Pleiocarpinilam***
$C_{22}H_{26}N_2O_3$ 366.459
Minor alkaloid from *Pleiocarpa mutica*, *Pleiocarpa tubicina* and *Hunteria eburnea* (Apocynaceae). Cryst. (Et_2O or Me_2CO/pentane). Mp 249-250°. $[\alpha]_D^{25}$ -53.4 (c, 1.385 in $CHCl_3$). CAS no. not found 8-14CI. λ_{max} 253 (log ε 4.01); 300 (log ε 3.49) (EtOH).

*5-Oxo, 3,*N-*dehydro:* ***Kopsinilamine***
[36101-53-8]
$C_{21}H_{23}N_2O_3^{\oplus}$ 351.424
Alkaloid from *Vinca erecta* (Apocynaceae). Mp 243-244°. $[\alpha]_D$ -65.5 (0.76 in Me_2CO). Reduction gave Kopsinilam. Stereochemistry not explicit. λ_{max} 246 (log ε 3.75); 296 (log ε 3.34) (EtOH).

5,6-Dioxo, N-*methoxycarbonyl:* ***5,6-Dioxopleiocarpine****. 10,11-Dioxopleiocarpine*
$C_{23}H_{24}N_2O_6$ 424.452
Alkaloid from the stem bark of *Pleiocarpa mutica* (Apocynaceae). Yellow cryst. Mp 285-287°. $[\alpha]_D^{17}$ -265 ($CHCl_3$). CAS no. not found 8-14CI.

12-Methoxy, N-*formyl:* ***Refractine****. Vellosine*
[2517-52-4]
$C_{23}H_{28}N_2O_4$ 396.485
Alkaloid from *Aspidosperma refractum* and *Aspidosperma populifolium* (Apocynaceae). Mp 157.5-159° Mp 191-192° (dimorph.). λ_{max} 216 (log ε 4.43); 260 (log ε 4.12); 287 (sh) (log ε 3.44) (EtOH).

12-Methoxy, N-*Ac:* ***6-Demethoxypyrifoline***
[88153-40-6]
$C_{24}H_{30}N_2O_4$ 410.512
Alkaloid from leaves of *Aspidosperma pyrifolium* (Apocynaceae). Cryst. (petrol). Mp 121-123°. λ_{max} 216 (log ε 4.34); 259 (log ε 3.97); 290 (sh) (log ε 3.6) (MeOH).

12-Methoxy, N-*methoxycarbonyl:* ***12-Methoxypleiocarpine***
[202195-91-3]
$C_{24}H_{30}N_2O_5$ 426.511
Alkaloid from the leaves of *Kopsia griffithii* (Apocynaceae). $[\alpha]_D$ -79 (c, 0.1 in $CHCl_3$). λ_{max} 216 (log ε 4.23); 253 (log ε 3.78); 282 (log ε 3.17); 288 (log ε 3.2) (EtOH).

15α-Methoxy: ***Kopsamidine B****. 15-Methoxykopsinine*
[949932-20-1]
$C_{22}H_{28}N_2O_3$ 368.475
Alkaloid from the stem bark of *Kopsia arborea*. Oil. $[\alpha]_D$ -46 (c, 0.22 in $CHCl_3$). λ_{max} 212 (log ε 4.05); 245 (log ε 3.73); 295 (log ε 3.36) (EtOH).

15α-Methoxy, N-*formyl:* ***Refractidine***
[6883-09-6]
$C_{23}H_{28}N_2O_4$ 396.485
Alkaloid from *Aspidosperma refractum* (Apocynaceae). Mp 158-160°. $[\alpha]_D$ -140 ($CHCl_3$). pK_a 6.5. Several errors in the lit.; in two refs. the -COOMe group is omitted, and the abs. config. is wrongly shown. λ_{max} 205 (log ϵ 4.36); 253 (log ϵ 4.16); 278 (log ϵ 3.72); 288 (log ϵ 3.67) (EtOH).

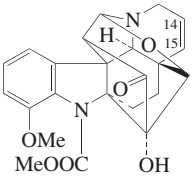
12,15α-Dimethoxy, N-*Ac:* ***Pyrifoline***
[6878-72-4]
$C_{25}H_{32}N_2O_5$ 440.538
Alkaloid from *Aspidosperma pyrifolium* trunk bark and cambium (Apocynaceae). Mp 141.5-143.5°. $[\alpha]_D$ +102 ($CHCl_3$). pK_a 6.4 (66% DMF). λ_{max} 217 (log ϵ 4.41); 261 (log ϵ 4.04); 287 (sh) (log ϵ 3.63) (EtOH).

16-Epimer: ***16-Epikopsinine***
[28161-78-6]
$C_{21}H_{26}N_2O_2$ 338.449
Alkaloid from *Kopsia singapurensis*. Yellowish oil. $[\alpha]_D^{25}$ +7 (c, 0.22 in $CHCl_3$). λ_{max} 201 (log ϵ 4.23); 241 (log ϵ 3.45); 291 (log ϵ 2.89) (EtOH).

Crow, W.D. *et al., Aust. J. Chem.*, 1955, **8**, 129-135 (*isol, uv*)
Gilbert, B. *et al., Experientia*, 1960, **16**, 61-62 (*Refractine, Pyrifoline*)
Kump, W.G. *et al., Helv. Chim. Acta*, 1961, **44**, 1503-1516; 1962, **45**, 854-858; 1090-1095; 1965, **48**, 1002-1012 (*Kopsinine, Kopsinine N-oxide, Kopsinilam, Kopsinoline, Pleiocarpine, Pleiocarpoline, Pleiocarpinine, Pleiocarpolinine, isol, uv, ir, struct*)
Djerassi, C. *et al., J.A.C.S.*, 1962, **84**, 1499-1501 (*Aspidofractine, Refractine*)
Battersby, A.R. *et al., J.C.S.*, 1962, 3245-3248 (*Pleiocarpine*)
Gilbert, B. *et al., Tet. Lett.*, 1962, 59-67 (*Pyrifoline, Refractidine*)
Djerassi, C. *et al., Helv. Chim. Acta*, 1963, **46**, 742-751 (*ms*)
Linde, H.H.A. *et al., Helv. Chim. Acta*, 1965, **48**, 1822-1842 (*Melodinus australis constits*)
Khan, Z.M. *et al., Helv. Chim. Acta*, 1965, **48**, 1957-1965; 1967, **50**, 625-627 (*Kopsinic acid methosalt*)
Achenbach, H. *et al., Tet. Lett.*, 1965, 3239-3242 (*10,11-Dioxopleiocarpine*)
Gilbert, B. *et al., Tetrahedron*, 1965, **21**, 1141-1166 (*Kopsinine, Aspidofractine, Refractine*)
Govindachari, T.R. *et al., Tetrahedron*, 1965, **21**, 2951-2956 (*isol, uv*)
Thomas, D.W. *et al., J.A.C.S.*, 1966, **88**, 3423-3426 (*Kopsinoline, Pleiocarpoline, Pleiocarpolinine*)
Raymond-Hamet, *et al., C. R. Hebd. Seances Acad. Sci. Ser. D*, 1967, **265**, 71-74 (*Refractine, Vellosine*)
Rakhimov, D.A. *et al., Khim. Prir. Soedin.*, 1967, **3**, 354-355; *Chem. Nat. Compd. (Engl. Transl.)*, 1967, **3**, 300-301 (*Kopsinilam*)
Gilbert, B. *et al., Alkaloids (Academic Press)*, 1968, **11**, 205-306 (*abs config*)
Klyne, W. *et al., Helv. Chim. Acta*, 1968, **51**, 1169-1184 (*abs config*)
Guggisberg, A. *et al., Helv. Chim. Acta*, 1969, **52**, 76-89 (*abs config*)
Linde, H.H.A. *et al., Pharm. Acta Helv.*, 1970, **45**, 248-253 (*Refractidine, Pyrifoline*)
Malikov, V.M. *et al., Khim. Prir. Soedin.*, 1971, **7**, 793; *Chem. Nat. Compd. (Engl. Transl.)*, 1971, **7**, 765-766 (*Kopsinilamine*)
Bruneton, J. *et al., Planta Med.*, 1982, **46**, 58-59 (*Pleiocarpine, Pleiocarpinine*)
Craveiro, A.A. *et al., Phytochemistry*, 1983, **22**, 1526-1528 (*Pyrifoline, 6-Demethoxypyrifoline*)
Zeches, M. *et al., Phytochemistry*, 1984, **23**, 171-174 (*3-Oxohydroxykopsinine*)
Magnus, P. *et al., Chem. Comm.*, 1985, 184-188 (*Kopsinine, Kopsinilam, synth*)
Ogawa, M. *et al., Tet. Lett.*, 1987, **28**, 3985-3986 (*synth*)
Kan-Fan, C. *et al., J. Nat. Prod.*, 1988, **51**, 703-707 (*N-Carbomethoxy-17-hydroxykopsinine*)
Wenkert, E. *et al., J.O.C.*, 1988, **53**, 4875-4877 (*synth*)
Laprévote, O. *et al., Org. Mass Spectrom.*, 1990, **25**, 563-565 (*Kopsinoline, ms*)
Varea, T. *et al., J. Nat. Prod.*, 1993, **56**, 2166-2169 (*16-Epi-17-hydroxy-$\Delta^{14,15}$-kopsinine*)
Kam, T.-S. *et al., Phytochemistry*, 1998, **47**, 145-147; 1999, **50**, 171-175 (*12-Methoxypleiocarpine, 17-Hydroxy-$\Delta^{14,15}$-kopsinine*)
Lim, K.-H. *et al., J. Nat. Prod.*, 2007, **70**, 1302-1307 (*Kopsamidine B*)
Subramaniam, G. *et al., J. Nat. Prod.*, 2007, **70**, 1783-1789 (*16-Epikopsinine*)

Kopsinitarine A K-79

[157207-85-7]



Absolute Configuration

$C_{23}H_{22}N_2O_6$ 422.437
Novel cage struct.; see also Mersingine A, M-216. Trace alkaloid from leaves of *Kopsia teoi* (Apocynaceae). $[\alpha]_D$ +23 (c, 0.093 in $CHCl_3$). λ_{max} 215 (log ϵ 4.41); 245 (log ϵ 3.85); 289 (log ϵ 3.06) (EtOH).

N-*De(methoxycarbonyl):* ***Kopsinitarine B***
[157207-86-8]
$C_{21}H_{20}N_2O_4$ 364.4
Trace alkaloid from leaves of *Kopsia teoi* (Apocynaceae). $[\alpha]_D$ +188 (c, 0.051 in $CHCl_3$). λ_{max} 212 (log ϵ 4.6); 246 (log ϵ 3.9); 290 (log ϵ 3.33) (EtOH).

14,15-Dihydro, 15α-hydroxy: ***Kopsinitarine D***
[184245-98-5]
$C_{23}H_{24}N_2O_7$ 440.452
Alkaloid from leaves of *Kopsia teoi*. Cryst. (CH_2Cl_2/Et_2O). Mp 258-260°. $[\alpha]_D$ -46 (c, 0.079 in $CHCl_3$). λ_{max} 217 (log ϵ 4.43); 246 (log ϵ 3.86); 288 (log ϵ 3.03) (EtOH).

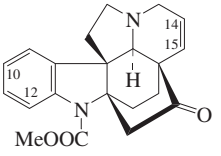
14,15-Dihydro, 15α-hydroxy, N-*de(methoxycarbonyl):* ***Kopsinitarine C***
[157207-87-9]
$C_{21}H_{22}N_2O_5$ 382.415
Trace alkaloid from leaves of *Kopsia teoi* (Apocynaceae). $[\alpha]_D$ -96 (c, 0.026 in $CHCl_3$). λ_{max} 213 (log ϵ 4.49); 246 (log ϵ 3.8); 290 (log ϵ 3.15) (EtOH).

Demethoxy, 14,15-dihydro: ***Kopsinitarine E***
[947251-85-6]
$C_{22}H_{22}N_2O_5$ 394.426
Alkaloid from the stem bark of *Kopsia teoi*. Pale yellow oil. $[\alpha]_D$ -21 (c, 0.04 in $CHCl_3$). λ_{max} 207 (log ϵ 4.13); 238 (log ϵ 3.82); 279 (log ϵ 3.14); 287 (log ϵ 3.06) (MeOH).

Kam, T.-S. *et al., J. Nat. Prod.*, 1996, **59**, 1109-1112 (*isol, uv, pmr, cmr, ms, cryst struct*)
Lim, S.-H. *et al., J. Nat. Prod.*, 2007, **70**, 1380-1383 (*Kopsinitarine E*)

Kopsinone K-80

[116988-05-7]



Absolute Configuration

$C_{21}H_{22}N_2O_3$ 350.416
Alkaloid from the stem bark of *Kopsia deverrei* (Apocynaceae). Amorph. $[\alpha]_D^{20}$ +87 (c, 1.2 in $CHCl_3$). λ_{max} 241 (log ϵ 4.17); 279 (log ϵ 3.55); 288 (log ϵ 3.51) (EtOH).

17β-Alcohol, N-*de(methoxycarbonyl):* ***Kopsinginol***
[149355-61-3]
$C_{19}H_{22}N_2O$ 294.396
Trace alkaloid from the stem bark of *Kopsia teoi*. $[\alpha]_D$ +288 (c, 0.016 in $CHCl_3$).

14,15-Dihydro, N-*de(methoxycarbonyl):* ***Kopsonoline***
[19634-39-0]
$C_{19}H_{22}N_2O$ 294.396
Alkaloid from the stem bark of *Kopsia teoi*. Light yellow oil. $[\alpha]_D$ +27 (c, 0.41 in $CHCl_3$). λ_{max} 209 (log ϵ 4.06); 241 (log ϵ 3.77); 291 (log ϵ 3.32) (EtOH).

10-Methoxy: ***10-Methoxykopsinone***
[116979-55-6]
$C_{22}H_{24}N_2O_4$ 380.443
Alkaloid from the leaves of *Kopsia deverrei* (Apocynaceae). Cryst. (Me_2CO/Et_2O). Mp 178°. $[\alpha]_D^{20}$ -11 (c, 1.4 in $CHCl_3$). λ_{max} 219 (log ϵ 4.27); 246 (log ϵ 4.03); 297 (log ϵ 3.38) (EtOH).

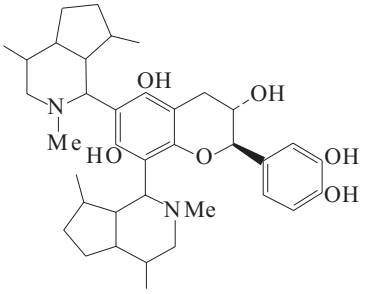
10-Methoxy, 14,15-dihydro: ***14,15-Dihydro-10-methoxykopsinone***
[116979-53-4]
$C_{22}H_{26}N_2O_4$ 382.458
Alkaloid from the leaves of *Kopsia deverrei* (Apocynaceae). Cryst. (Me_2CO/Et_2O). Mp 214°. $[\alpha]_D^{20}$ -11 (c, 1.2 in $CHCl_3$). λ_{max} 219 (log ϵ 4.29); 246 (log ϵ 4.06); 296 (log ϵ 3.43) (EtOH).

12-Methoxy: ***12-Methoxykopsinone***
[116979-54-5]
$C_{22}H_{24}N_2O_4$ 380.443
Alkaloid from the leaves of *Kopsia deverrei* (Apocynaceae). Cryst. (Me_2CO/Et_2O). Mp 176°. $[\alpha]_D^{20}$ +69 (c, 2.1 in $CHCl_3$). λ_{max} 219 (log ϵ 4.23); 246 (log ϵ 3.94); 279 (log ϵ 3.26) (EtOH).

Kan-Fan, C. *et al., J. Nat. Prod.*, 1988, **51**, 703-707 (*Kopsinone*)
Do Carmo Carreiras, M. *et al., J. Nat. Prod.*, 1988, **51**, 806-808 (*Kopsia deverrei constits*)

Kam, T.S. *et al., Phytochemistry*, 1996, **42**, 539-541 (*Kopsinginol*)
Lim, S.-H. *et al., J. Nat. Prod.*, 2007, **70**, 1380-1383 (*Kopsonoline*)

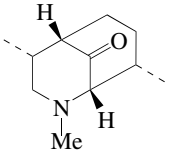
Kopsirachin **K-81**
2-(3,4-Dihydroxyphenyl)-3,4-dihydro-6,8-bis(octahydro-2,4,7-trimethyl-1H-2-pyridin-1-yl)-2H-1-benzopyran-3,5,7-triol, 9CI
[89759-08-0]



$C_{37}H_{52}N_2O_6$ 620.828
Alkaloid from the leaves of *Kopsia dasyrachis* (Apocynaceae). Amorph. powder. $[\alpha]_D^{23}$ +65.8 (c, 0.987 in $CHCl_3$).

Homberger, K. *et al., Helv. Chim. Acta*, 1984, **67**, 237 (*isol, uv, ir, pmr, cmr, ms, struct*)

Kopsone **K-82**
[180841-83-2]

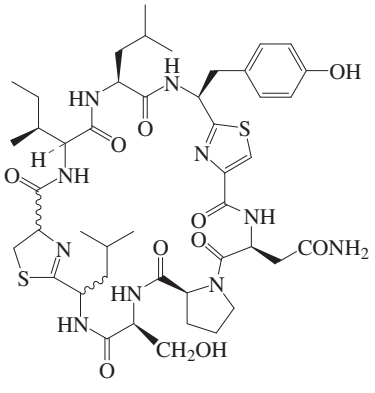


Relative Configuration

$C_{11}H_{19}NO$ 181.277
Alkaloid from leaves of *Kopsia macrophylla*. Amorph. $[\alpha]_D^{25}$ +132 (c, 1.25 in $CHCl_3$).

Kan-Fan, C. *et al., Nat. Prod. Lett.*, 1995, **7**, 283 (*isol, ir, pmr, cmr, ms, struct*)

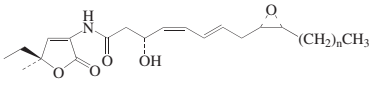
Kororamide **K-83**
[261373-26-6]



$C_{45}H_{64}N_{10}O_{10}S_2$ 969.194
Isol. from *Lyngbya majuscula*. Amorph. solid. λ_{max} 238 (ϵ 6400) (MeOH).

Mitchell, S.S. *et al., J. Nat. Prod.*, 2000, **63**, 279-282 (*isol, pmr, cmr, cd, uv*)

Kororamicin A **K-84**
[200433-05-2]



n = 7
Absolute Configuration

$C_{25}H_{39}NO_5$ 433.587
Prod. by the marine bacterium *Pseudoalteromonas* sp. F-420 isol. from an alga. Active against marine gram-negative bacteria. Oil. $[\alpha]_D^{26}$ -24.4 (c, 0.3 in EtOH). λ_{max} 233 (log ϵ 4.8) (EtOH).

Yoshikawa, K. *et al., J. Antibiot.*, 1997, **50**, 949-953; 1999, **52**, 182-185 (*isol, uv, ir, pmr, cmr, activity*)
Uehara, H. *et al., Tet. Lett.*, 1999, **40**, 8641-8645 (*synth, abs config*)
Kobayashi, Y. *et al., Eur. J. Org. Chem.*, 2001, 1873-1881 (*synth, abs config*)

Kororamicin B **K-85**
As Kororamicin A, K-84 with n = 5
$C_{23}H_{35}NO_5$ 405.533
Stereochem. not confirmed. Prod. by *Pseudoalteromonas* sp. F-420. Oil. λ_{max} 232 (log ϵ 4.55) (EtOH).

Yoshikawa, K. *et al., J. Antibiot.*, 2003, **56**, 866-870

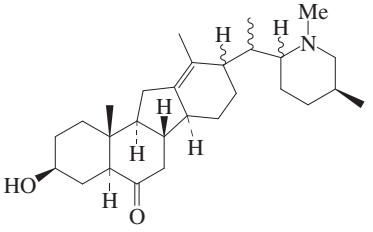
Kororamicin C **K-86**
As Kororamicin A, K-84 with n = 6
$C_{24}H_{37}NO_5$ 419.56
Prod. by *Pseudoalteromonas* sp. F-420. Oil. Stereochem. not confirmed. λ_{max} 232 (log ϵ 4.59) (EtOH).

Yoshikawa, K. *et al., J. Antibiot.*, 2003, **56**, 866-870

Kororamicin D **K-87**
As Kororamicin A, K-84 with n = 8
$C_{26}H_{41}NO_5$ 447.614
Prod. by *Pseudoalteromonas* sp. F-420. Oil. Stereochem. not confirmed. λ_{max} 233 (log ϵ 4.43) (EtOH).

Yoshikawa, K. *et al., J. Antibiot.*, 2003, **56**, 866-870

Korsevine **K-88**
Corsevine
[18209-21-7]



$C_{28}H_{45}NO_2$ 427.669
Alkaloid from *Fritillaria imperialis* and *Korolkowia sewerzowii*. Needles (Me_2CO). Mp 170-172°. $[\alpha]_D^{25}$ -87 (c, 0.5 in MeOH).

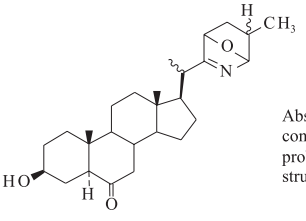
Hydrobromide:
Cryst. (H_2O). Mp 244-245°.

Oxime: Mp 200-201°.

3-O-β-D-Glucopyranoside: ***Korsemine***
[74119-90-7]
$C_{34}H_{55}NO_7$ 589.811
Alkaloid from *Korolkowia sewerzowii*. $[\alpha]_D$ -46.9 (c, 0.81 in MeOH).

Nuriddinov, R.N. *et al., Khim. Prir. Soedin.*, 1967, **3**, 398; *Chem. Nat. Compd. (Engl. Transl.)*, 1967, **3**, 333 (*ir, uv, ms, pmr*)
Samikov, K. *et al., Khim. Prir. Soedin.*, 1979, **15**, 823; *Chem. Nat. Compd. (Engl. Transl.)*, 1979, **15**, 728 (*Korsemine*)
Akhtar, M.N. *et al., Phytochemistry*, 2003, **63**, 115-122 (*isol, pmr*)

Korsevinine **K-89**
23,26-Epoxy-3-hydroxy-16,28-secosolanid-22(28)-en-6-one. Corsevinine
[27336-00-1]



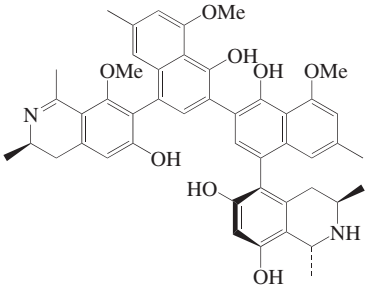
Absolute configuration probable structure

$C_{27}H_{41}NO_3$ 427.626
Alkaloid from *Korolkowia sewerzowii* (Liliaceae). Mp 224-225°. $[\alpha]_D$ -16 (solv. not specified).

Ac: Mp 154-155°.

Nuriddinov, R.N. *et al., Khim. Prir. Soedin.*, 1969, **5**, 600; *Chem. Nat. Compd. (Engl. Transl.)*, 1969, **5**, 519 (*ir, pmr, ms, struct*)

Korundamine A **K-90**
[212957-33-0]



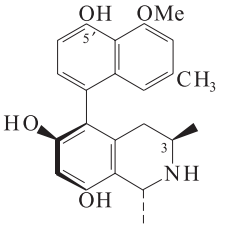
Absolute Configuration

$C_{47}H_{48}N_2O_8$ 768.905
Alkaloid from *Ancistrocladus korupensis*. Exhibits antimalarial and cytotoxic properties. Tan solid. λ_{max} 206 (ϵ 56234); 232 (ϵ 50120); 261 (ϵ 33880); 331 (ϵ 18620); 347 (ϵ 21880); 381 (ϵ 22390) (MeOH) (Berdy).

Hallock, Y.F. *et al., Bioorg. Med. Chem. Lett.*, 1998, **8**, 1729-1734 (*isol, pmr, cmr*)

Korupensamine A K-91

[158182-18-4]



Absolute configuration

$C_{23}H_{25}NO_4$ 379.455
Alkaloid from leaves and twigs of *Ancistrocladus korupensis* (Ancistrocladaceae). Shows antimalarial activity. Light brown solid. $[\alpha]_D$ -75.5 (c, 1.84 in MeOH).

5′-Me ether: ***Korupensamine C***
[158182-19-5]
$C_{24}H_{27}NO_4$ 393.482
From leaves and twigs of *Ancistrocladus korupensis* (Ancistrocladaceae). Light brown solid. $[\alpha]_D$ -62 (c, 0.54 in MeOH).

6-Me ether, N-*Me:* ***Ancistrolikokine A***
[297749-36-1]
$C_{25}H_{29}NO_4$ 407.508
Alkaloid from *Ancistrocladus likoko*. Solid. Mp 230-231°. $[\alpha]_D^{25}$ +79.6 (c, 0.25 in MeOH).

5′,6-Di-Me ether, N-*Me:* ***Ancistrocongoline B***
[455255-18-2]
$C_{26}H_{31}NO_4$ 421.535
Alkaloid from the root bark of *Ancistrocladus congolensis*. Solid (MeOH). Mp 161-162°. $[\alpha]_D^{23}$ -12 (c, 0.22 in $CHCl_3$).

4′-O-De-Me, 5′-Me ether, N-*Me:* ***Ancistrocongoline A***
[455255-21-7]
$C_{24}H_{27}NO_4$ 393.482
Alkaloid from the stem and root bark of *Ancistrocladus congolensis*. Light brown powder. $[\alpha]_D^{23}$ +6.9 (c, 0.05 in $CHCl_3$).

3-Epimer, N-*Me:* ***Korupensamine D***
[158182-20-8]
$C_{24}H_{27}NO_4$ 393.482
From leaves and twigs of *Ancistrocladus korupensis* (Ancistrocladaceae). Solid. $[\alpha]_D$ +6 (c, 0.3 in MeOH).

Atropisomer: ***Korupensamine B***
[158252-04-1]
$C_{23}H_{25}NO_4$ 379.455
From leaves and twigs of *Ancistrocladus korupensis* (Ancistrocladaceae). Shows antimalarial activity. Light brown solid. $[\alpha]_D$ +65 (c, 0.76 in MeOH).

Atropisomer, 5′,8-di-Me ether, N-*Me:* ***Ancistrocongoline C***
[455255-19-3]
$C_{26}H_{31}NO_4$ 421.535
Alkaloid from the root bark of *Ancistrocladus congolensis*. Brownish powder. Mp 140-141°. $[\alpha]_D^{24}$ +128.1 (c, 0.12 in $CHCl_3$).

Atropisomer, 4′-O-de-Me, 5′,8-di-Me ether: ***Korupensamine E***
$C_{24}H_{27}NO_4$ 393.482
From the leaves of *Ancistrocladus korupensis* (Ancistrocladaceae). Antimalarial agent. Pale yellow solid. $[\alpha]_D$ +15.4 (c, 0.26 in MeOH). λ_{max} 232 (log ϵ 4.46); 289 (log ϵ 3.68); 308 (log ϵ 3.75); 322 (log ϵ 3.67); 337 (log ϵ 3.58) (MeOH).

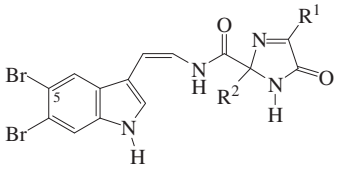
Atropisomer, 4′-O-de-Me, 5′,8-di-Me ether, N-*Me:* ***Ancistrolikokine C***. N-*Methylkorupensamine E*
[297749-38-3]
$C_{25}H_{29}NO_4$ 407.508
Alkaloid from *Ancistrocladus likoko*. Amorph. solid. $[\alpha]_D^{20}$ -54.9 (c, 0.11 in EtOH).

Atropisomer, 1-epimer, 4′-O-de-Me, 5′,8-di-Me ether: ***Ancistrolikokine B***
[297749-37-2]
$C_{24}H_{27}NO_4$ 393.482
Alkaloid from *Ancistrocladus likoko*. Amorph. solid. $[\alpha]_D^{25}$ -166.4 (c, 0.11 in EtOH).

Bringmann, G. *et al., Heterocycles*, 1994, **39**, 503 (*synth*)
Hallock, Y.F. *et al., J.O.C.*, 1994, **59**, 6349 (*isol, uv, ir, pmr, cmr, cd, cryst struct*)
Hoye, T.R. *et al., Tet. Lett.*, 1996, **37**, 3097; 3099 (*synth*)
Hallock, Y.F. *et al., J. Nat. Prod.*, 1997, **60**, 677 (*Korupensamine E*)
Hoye, T.R. *et al., J.O.C.*, 1999, **64**, 7184-7201 (*synth*)
Bringmann, G. *et al., J. Nat. Prod.*, 2000, **63**, 1333-1337 (*Ancistrolikokines*)
Bringmann, G. *et al., J.O.C.*, 2000, **65**, 2069-2077 (*synth*)
Bringmann, G. *et al., Synthesis*, 2000, 1843-1847 (*synth*)
Kamikawa, K. *et al., Tetrahedron*, 2000, **56**, 2325-2337 (*synth*)
Bringmann, G. *et al., J. Nat. Prod.*, 2002, **65**, 1096-1101 (*Ancistrocongolines*)
Watanabe, T. *et al., J.O.C.*, 2004, **69**, 4152-4158 (*synth*)

Kottamide A K-92

[446862-69-7]



R^1 = -$CH(CH_3)CH_2CH_3$, R^2 = -$CH(CH_3)_2$

$C_{21}H_{24}Br_2N_4O_2$ 524.254
Isol. from the New Zealand ascidian *Pycnoclavella kottae*. Cytotoxic agent. Amorph. solid. $[\alpha]_D^{20}$ +160 (c, 0.2 in MeOH). λ_{max} 236 (log ϵ 4.46); 284 (log ϵ 4.14) (MeOH).

5-Debromo: ***Kottamide B***
[446862-70-0]
$C_{21}H_{25}BrN_4O_2$ 445.358
Isol. from the New Zealand ascidian *Pycnoclavella kottae*. Amorph. solid. $[\alpha]_D^{20}$ +245 (c, 0.2 in MeOH). Obt. as a mixt. with Kottamide C to which data refers. λ_{max} 232 (log ϵ 4.44); 286 (log ϵ 4.13) (MeOH).

6-Debromo: ***Kottamide C***
[446862-71-1]
$C_{21}H_{25}BrN_4O_2$ 445.358
Isol. from *Pycnoclavella kottae*. Obt. as a mixt. with Kottamide B.

Appleton, D.R. *et al., J.O.C.*, 2002, **67**, 5402-5404 (*isol, pmr, cmr, N-15 nmr, ms*)

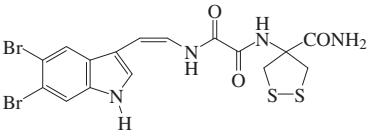
Kottamide D K-93

[446862-72-2]
As Kottamide A, K-92 with
R^1 = CH_3, R^2 = -$CH(CH_3)CH_2CH_3$
$C_{19}H_{20}Br_2N_4O_2$ 496.201
Isol. from the New Zealand ascidian *Pycnoclavella kottae*. Antiinflammatory and cytotoxic agent. Amorph. solid. $[\alpha]_D^{20}$ +150 (c, 0.2 in MeOH). λ_{max} 237 (log ϵ 4.39); 286 (log ϵ 4.11) (MeOH).

Appleton, D.R. *et al., J.O.C.*, 2002, **67**, 5402-5404 (*isol, pmr, cmr, N-15 nmr, ms*)

Kottamide E K-94

[642492-69-1]



$C_{16}H_{14}Br_2N_4O_3S_2$ 534.252
Alkaloid from the ascidian *Pycnoclavella kottae*. Amorph. solid. λ_{max} 202 (log ϵ 4.36); 239 (log ϵ 4.41); 305 (log ϵ 3.92) (MeOH).

Appleton, D.R. *et al., Tet. Lett.*, 2003, **44**, 8963-8965 (*isol, pmr, cmr*)

Koumicine K-95

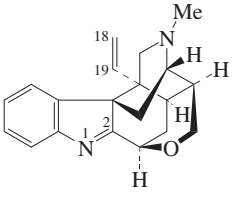
[1358-74-3]

$C_{26}H_{30}N_2O_4$ 434.534
Indole alkaloid. Struct. unknown. Alkaloid from *Gelsemium elegans* (Loganiaceae). Mp 232-234°.

Liu, C.-T. *et al., Huaxue Xuebao*, 1961, **27**, 47-58; *CA*, **59**, 1404ib

Koumine K-96

*1,2,18,19-Tetradehydro-3,17-epoxy-7,20(2*H*,19*H*)-cyclovobasan, 9CI*
[1358-76-5]



(-)-*form*

$C_{20}H_{22}N_2O$ 306.407
Main alkaloid from *Gelsemium elegans* (Loganiaceae). Cryst. (Me_2CO). Mp

172°. $[\alpha]_D$ -272 (EtOH). λ_{max} 220 (log ϵ 4.32); 262 (log ϵ 3.84) (EtOH).

N^b-*Oxide(*R-*):* Semisynthetic by oxidation of Koumine. Cryst. + $2H_2O$ (Me_2CO). Mp 214-216°. $[\alpha]_D^{19}$ -157 (c, 0.14 in MeOH).

N^b-*Oxide(*S-*):* ***Koumine* N-*oxide***
[113900-75-7]
$C_{20}H_{22}N_2O_2$ 322.406
Alkaloid from the leaves of *Gelsemium elegans* (Loganiaceae). Cryst. + $^1/_4$ H_2O (Me_2CO). Mp 111-113°. $[\alpha]_D^{19}$ -237 (c, 0.14 in MeOH).

1,2-Dihydro: ***Dihydrokoumine***
[104654-06-0]
$C_{20}H_{24}N_2O$ 308.422
Alkaloid from roots of *Gelsemium elegans* (Loganiaceae).

*18,19-Dihydro, 19*R*-hydroxy:* ***19*R-*Kouminol***
[126398-76-3]
$C_{20}H_{24}N_2O_2$ 324.422
Alkaloid from the roots or whole plant of *Gelsemium elegans*. Needles or amorph. solid. Mp 198-200°. $[\alpha]_D$ -232.7 (c, 0.52 in MeOH) (-153.8).

*18,19-Dihydro, 19*S*-hydroxy:* ***19*S-*Kouminol***
[126398-77-4]
Alkaloid from roots of *Gelsemium elegans*. Amorph. $[\alpha]_D^{18}$ -209.9 (c, 1.0 in EtOH).

[83705-29-7 , 119241-69-9]

Liu, C.-T. *et al., J.A.C.S.*, 1981, **103**, 4634-4635 (*pmr, cmr, cryst struct*)
Khuong-Huu, F. *et al., Tet. Lett.*, 1981, 733-734 (*uv, ir, pmr, ms, cryst struct*)
Ponglux, D. *et al., Tetrahedron*, 1988, **44**, 5075-5094 (*isol, uv, ir, pmr, ms, struct, oxide*)
Sun, F. *et al., J. Nat. Prod.*, 1989, **52**, 1180-1182 (*Kouminols*)
Takayama, H. *et al., Heterocycles*, 1990, **30**, 325-327 (*synth*)
Magnus, P. *et al., J.A.C.S.*, 1990, **112**, 5220-5230 (*synth*)
Lin, L.Z. *et al., Phytochemistry*, 1990, **29**, 965-968 (*Kouminols*)
Zhang, Z. *et al., Chin. Chem. Lett.*, 1991, **2**, 365-368 (*Dihydrokoumine*)
Bailey, P.D. *et al., J.C.S. Perkin 1*, 1993, 441-449 (*synth*)

Kouminidine K-97

[1358-77-6]

$C_{20}H_{26}N_2O_4$ 358.436

Struct. unknown. Alkaloid from *Gelsemium elegans* (Loganiaceae). Prisms ($MeOH/Et_2O$). Mp 299° dec.

Chi, Y.F. *et al., J.A.C.S.*, 1938, **60**, 1723 (*isol*)
Liu, C.-T. *et al., Huaxue Xuebao*, 1961, **27**, 47-58; *CA*, **59**, 14041b

Krelagine K-98

[1358-78-7]

$C_{17}H_{19}NO_4$ 301.341

Amaryllidaceae alkaloid. Struct. unknown. Isol. from the bulbs of *Crinum powellii* var. *krelagei* (Amaryllidaceae). Cryst. (Me_2CO). Mp 202° dec. $[\alpha]_D^{25}$ +290 (c, 0.2 in $CHCl_3$).

Picrate: Mp 268° dec.

Methiodide: Mp 260° dec.

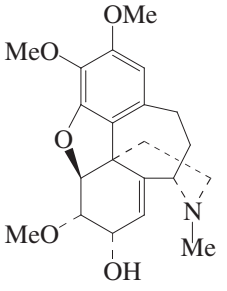
Methyl perchlorate: Mp 233° dec.

Methopicrate: Mp 256-257° dec.

Boit, H.-G. *et al., Naturwissenschaften*, 1960, **47**, 498 (*isol*)

Kreysiginine K-99

Alkaloid CC21



(+)-*form*

$C_{21}H_{27}NO_5$ 373.448

Alkaloid CC21 was the (-)-enantiomer.

(+)-*form* [19741-86-7]
Alkaloid from *Kreysigia multiflora* (Liliaceae) and seeds of *Iphigenia stellata*. Prisms (EtOH or Et_2O). Mp 149°. $[\alpha]_D^{24}$ +89 (c, 1.98 in EtOH). λ_{max} 218 (ϵ 36220); 274 (ϵ 2240) (no solvent reported).

Hydrobromide:
Cryst. + $1H_2O$ ($EtOH/Et_2O$). Mp 142-143°.

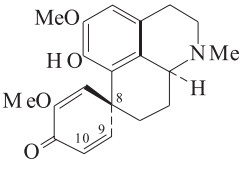
Methiodide:
Prisms + $1Me_2CO$ (Me_2CO). Mp 150° (softens).

(-)-*form*
Alkaloid from *Colchicum cornigerum* (Liliaceae). Mp 151-154°. $[\alpha]_D^{22}$ -100 (c, 0.55 in EtOH). Opt. rotn. decreased to -42° on recryst. due to racemisation. λ_{max} 212 (log ϵ 4.6); 231 (sh) (log ϵ 4.02); 275 (log ϵ 3.07); 282 (log ϵ 3.07) (EtOH).

Badger, G.M. *et al., J.C.S.*, 1960, 445-447 (*isol, uv*)
Battersby, A.R. *et al., Chem. Comm.*, 1968, 695-697 (*pmr, struct*)
Hart, N.K. *et al., Tet. Lett.*, 1968, 2891-2894 (*pmr, struct*)
Potěšilová, H. *et al., Coll. Czech. Chem. Comm.*, 1969, **34**, 3540-3552 (*Alkaloid CC-21*)
Fridrichsons, J. *et al., Tetrahedron*, 1970, **26**, 1869-1877 (*cryst struct*)

Kreysiginone K-100

Dienone I
[17441-87-1]



Relative configuration

$C_{20}H_{23}NO_4$ 341.406

Natural-form
Alkaloid from *Kreysigia multiflora* (Liliaceae). Mp 193-194°. Opt. act. not given.

9,10-Dihydro: ***Dihydrokreysiginone***
[17750-51-5]
$C_{20}H_{25}NO_4$ 343.422
Minor alkaloid from *Kreysigia multiflora*. Mp 217-222° dec. Probably corresponds in config. at the spirocentre to Kreysiginone.

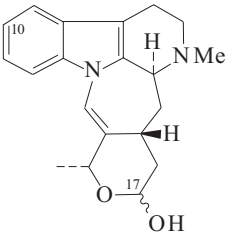
(±)-*form*
Synthetic. Cryst. (C_6H_6). Mp 145-149° (155°, resolid., 193-194°).

8-Epimer: Dienone II
Synthetic. Mp 202° dec.

Battersby, A.R. *et al., Chem. Comm.*, 1967, 934 (*isol, ms, uv, ir, pmr, deriv*)
Harmon, R.E. *et al., J. Het. Chem.*, 1970, **7**, 1077 (*synth, ir, uv, ms, pmr*)
Battersby, A.R. *et al., J.C.S. Perkin 1*, 1974, 1394 (*isol*)
Kametani, T. *et al., J.A.C.S.*, 1977, **99**, 3805 (*synth*)

Kribine K-101

[69241-15-2]



$C_{20}H_{24}N_2O_2$ 324.422

Mixt. of C-17 epimers. Alkaloid from stem bark of *Strychnos dale*, *Strychnos elaeocarpa*, *Strychnos nigritanaStrychnos spinosaStrychnos usambarensis* (Loganiaceae). Rearr. to Akagerine, A-222 on acid treatment.

Me ether (17β –): ***17*-O-*Methylkribine***. *21*-O-*Methylkribine*
[69307-96-6]
$C_{21}H_{26}N_2O_2$ 338.449
Alkaloid from *Strychnos dale* and *Strychnos elaeocarpa* (Loganiaceae). $[\alpha]_D^{22}$ -52 (c, 0.02 in $CHCl_3$). Prob. artifact. The struct. was assigned (and the name 21-*O*-methylkribine allocated) before the correct struct. of Kribine was assigned. The 17-configs. of this isomer and its 17-epimer (see below) are therefore not well established and may be reversed.

Me ether (17α –): ***Epi-17*-O-*methylkribine***. *Epi-21*-O-*methylkribine*
[69241-16-3]
$C_{21}H_{26}N_2O_2$ 338.449
Alkaloid from *Strychnos dale* and *Strychnos elaeocarpa* (Loganiaceae). $[\alpha]_D^{22}$ -212 (c, 0.02 in $CHCl_3$).

10-Hydroxy, Me ether (17α –): ***10-Hydroxy-17*-O-*methylkribine***. *10-Hydroxy-21*-O-*methylkribine*
[73360-06-2]

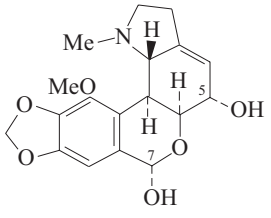
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from *Strychnos decussata* (Loganiaceae).

10-Hydroxy, Me ether (17β –): ***10-Hydroxyepi-17-O-methylkribine***. *10-Hydroxyepi-21-O-methylkribine*
[73367-21-2]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from *Strychnos decussata*. Amorph. powder. Mp 176-180° dec.

Rolfsen, W. *et al., Planta Med.*, 1978, **34**, 264-273 (*isol, uv, ir, pmr, cmr, ms*)
Rolfsen, W.N.A. *et al., J. Nat. Prod.*, 1980, **43**, 97-102 (*10-Hydroxy-17-O-methylkribine, 10-Hydroxyepi-17-O-methylkribine*)
Verpoorte, R. *et al., J.C.S. Perkin 1*, 1984, 1455-1457 (*cmr, struct*)
Delaude, C *et al., Bull. Soc. R. Sci. Liege*, 1997, **66**, 183-286 (*occur, Strychnos*)

Krigeine K-102

[905-37-3]



$C_{18}H_{21}NO_6$ 347.367
Alkaloid from the bulbs of *Nerine krigeii* (Amaryllidaceae). Cryst. (Me_2CO aq.). Mp 209-210° dec. $[\alpha]_D^{25}$ +234 (c, 0.15 in $CHCl_3$).

7-Ketone (lactone): ***Neronine***
[1167-58-4]
$C_{18}H_{19}NO_6$ 345.351
Alkaloid from bulbs of *Nerine krigeii* (Amaryllidaceae). Hygroscopic prisms + $1H_2O$ (EtOAc or C_6H_6/cyclohexane). Mp 196-197°. $[\alpha]_D^{24}$ +161.6 (c, 0.57 in $CHCl_3$).

7-Ketone, Ac:
Cryst. (EtOH). Mp 201-202°.

7-Ketone (lactone), O-*de-Me:* ***Nornerononine***
$C_{17}H_{17}NO_6$ 331.324
Alkaloid from the bulbs of *Pancratium longiflorum* (Amaryllidaceae). Needles ($CHCl_3$/MeOH or EtOH). Mp 238-240° dec. $[\alpha]_D^{30}$ +90 (MeOH).

7-Ketone, O-*de-Me, di-Ac:*
Needles (Me_2CO). Mp 248-250° dec. $[\alpha]_D^{30}$ +20 ($CHCl_3$).

5-Deoxy: ***Krigenamine***
[1165-00-0]
$C_{18}H_{21}NO_5$ 331.368
Alkaloid from the bulbs of *Nerine krigeii* (Amaryllidaceae). Needles (Me_2CO, EtOH or EtOAc). Mp 210-211°. $[\alpha]_D$ +210 (c, 0.43 in $CHCl_3$).

5-Deoxy; methiodide: Mp 235-237° dec. $[\alpha]_D$ +150 (c, 1.2 in H_2O).

5-Deoxy, 7-ketone (lactone): ***Didehydrokrigenamine***. *Oxokrigenamine*
[1165-01-1]
$C_{18}H_{19}NO_5$ 329.352
Alkaloid from the bulbs of *Nerine krigeii* (Amaryllidaceae). Prisms (EtOAc). Mp 147-148°. $[\alpha]_D^{20}$ +117 (c, 1.0 in $CHCl_3$). Apparently an artifact.

5-Deoxy, 7-ketone; methiodide:
Prisms (MeOH). Mp 254-255° dec.

Briggs, C.K. *et al., J.A.C.S.*, 1956, **78**, 2899 (*isol, uv, Krigeine, Neronine*)
Garbutt, D.F.C. *et al., J.C.S.*, 1962, 5010 (*isol, ir, uv, Krigenamine*)
Jeffs, P.W. *et al., Tet. Lett.*, 1963, 217 (*struct, Neronine*)
Hawksworth, W.A. *et al., J.C.S.*, 1965, 1991 (*pmr, struct*)
Rangaswami, S. *et al., Tet. Lett.*, 1966, 4481 (*Norneronine*)
Clardy, J. *et al., J.O.C.*, 1972, **37**, 49 (*config*)

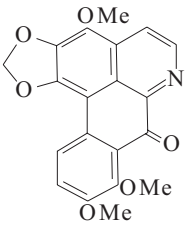
Kryptocurine K-103

Cryptocurine
Struct. unknown. Alkaloid from calabash curare (from bark of an unknown plant) (Loganiaceae). No col. with $Ce(SO_4)_2$. Forms a cryst. tetraphenylborate. Chloride, picrate and reineckate were noncryst.
▶ Mod. toxic.

Meyer, H. *et al., Helv. Chim. Acta*, 1956, **39**, 1214-1218 (*isol, uv*)

Kuafumine K-104

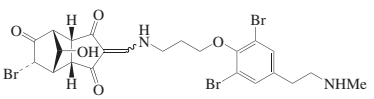
*4,9,10-Trimethoxy-8*H-*benzo[*g*]-1,3-benzodioxolo[6,5,4-*de*]quinolin-8-one, 9CI*
[107208-76-4]



$C_{20}H_{15}NO_6$ 365.342
Alkaloid from *Fissistigma glaucescens* (Annonaceae). Cytotoxic. Reddish needles (Me_2CO). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 230-232°. λ_{max} 214 (ϵ 20890); 245 (ϵ 13800); 283 (ϵ 23990); 375 (ϵ 2400) (MeOH) (Berdy). λ_{max} 214 ; 238 ; 245 ; 375 (MeOH-NaOH) (Berdy).

Wu, Y.-C. *et al., Heterocycles*, 1987, **26**, 9 (*uv, ir, pmr, struct*)

Kuchinoenamine K-105



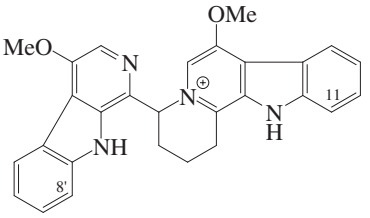
Relative Configuration

$C_{23}H_{25}Br_3N_2O_5$ 649.173
Alkaloid from the sponge *Hexadella* sp. Antibacterial agent. Amorph. solid. $[\alpha]_D^{21}$ +21 (c, 0.05 in MeOH). λ_{max} 244 (ϵ 8620); 310 (ϵ 12730) (MeOH).

Matsunaga, S. *et al., J.O.C.*, 2005, **70**, 1893-1896 (*isol, pmr, cmr*)

Kumujansine K-106

[116064-72-3]



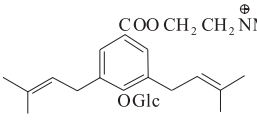
$C_{28}H_{25}N_4O_2^{\oplus}$ 449.531
Alkaloid from *Picrasma quassioides* (Simaroubaceae). Light yellow granular cryst. (as chloride). Mp 249-250° dec. (chloride).

8′,11-Dimethoxy: ***Kumujansine B***. *Kumujantine*
[116064-73-4]
$C_{30}H_{29}N_4O_4^{\oplus}$ 509.583
Alkaloid from *Picrasma quassioides* (Simaroubaceae). Light yellow granular cryst. (as chloride). Mp 270° dec. (chloride).

Yang, J.S. *et al., Yaoxue Xuebao*, 1988, **23**, 267-272; *CA*, **109**, 107726n

Kuramerine K-107

[21284-19-5]



Absolute configuration

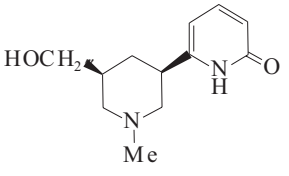
$C_{28}H_{44}NO_8^{\oplus}$ 522.657
Alkaloid from *Liparis kurameri* and *Liparis kumokiri* (Orchidaceae). $[\alpha]_D^{20}$ -19.7 (MeOH) (as chloride).

Tetra-Ac:
Yellow needles (EtOH)(as picrate). Mp 150-151° (picrate).

Nishikawa, K. *et al., Tet. Lett.*, 1967, 2579 (*isol, struct, ir, uv*)
Tanino, H. *et al., Tetrahedron*, 1969, **25**, 3033 (*synth*)

Kuraramine K-108

*6-[5-(Hydroxymethyl)-1-methyl-3-piperidinyl]-2(1*H*)-pyridinone, 9CI*
[79659-61-3]



$C_{12}H_{18}N_2O_2$ 222.286
Alkaloid from the fresh flowers of *Sophora flavescens* (Fabaceae). Amorph. solid. $[\alpha]_D^{20}$ +8.4 (c, 0.52 in EtOH). λ_{max} 226 (log ϵ 3.59); 304 (log ϵ 3.64) (EtOH).

Epimer: ***Isokuraramine***
[85799-36-6]
$C_{12}H_{18}N_2O_2$ 222.286

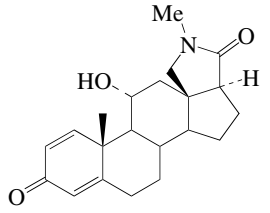
Alkaloid from *Sophora flavescens* (Fabaceae). Amorph.

Murakoshi, I. *et al., Phytochemistry*, 1981, **20**, 1407-1409; 1982, **21**, 2379-2384 (*isol, pmr, cmr, ms*)

Honda, T. *et al., J.O.C.*, 2005, **70**, 499-504 (*synth*)

Kurchamide K-109

[148717-72-0]



$C_{21}H_{27}NO_3$ 341.449

Alkaloid from bark of *Holarrhena antidysenterica*. Irregular plates (MeOH). Mp 84-86°. λ_{max} 238 (MeOH).

N-*De-Me:* ***Norkurchamide***
[609343-72-8]
$C_{20}H_{25}NO_3$ 327.422
Alkaloid from the bark of *Holarrhena pubescens*. Orange rods (MeOH). Mp 130-132°. λ_{max} 206 ; 246 (MeOH).

Begum, S. *et al., Heterocycles*, 1993, **36**, 717-723 (*Kurchamide, struct*)

Siddiqui, B.S. *et al., Heterocycles*, 2003, **60**, 909-915 (*Norkurchamide*)

Kurchenine K-110

$C_{21}H_{32}N_2O_2$ 344.496

Struct. unknown. Alkaloid from *Holarrhena antidysenterica* (Apocynaceae). Platelets (MeOH). Mp 335-336°. $[\alpha]_D$ -92 (2M HCl). Conts. no *N*-Me gps. Prob. a steroidal alkaloid.

Sulfate:
Needles (EtOH). $[\alpha]_D$ -78.3 (H_2O).

Bertho, A. *et al., Ber.*, 1933, **66**, 786-790

Kurchicine K-111

[1400-17-5]

Steroidal alkaloid. Struct. unknown. Alkaloid from *Holarrhena floribunda* and *Wrightia tomentosa* (Apocynaceae). Poorly documented. No struct. reported to 2007.

► OC7849100

Jayasuval, S.B. *et al., CA*, 1977, **86**, 12205j (*isol*)

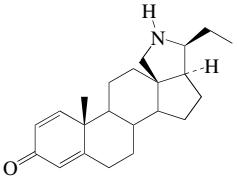
Jayaswal, S.B. *et al., Indian J. Pharm.*, 1977, **39**, 37-39 (*isol*)

Zaki, A.Y. *et al., CA*, 1984, **100**, 117842a (*isol*)

Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, KHU136

Kurchilidine K-112

[148717-71-9]



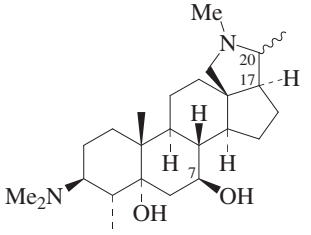
$C_{22}H_{31}NO$ 325.493

Alkaloid from bark of *Holarrhena antidysenterica*. Irregular plates (MeOH). Mp 118-120°. λ_{max} 238 (MeOH).

Begum, S. *et al., Heterocycles*, 1993, **36**, 717 (*isol, uv, ir, pmr, ms, struct*)

Kurcholessine K-113

[6869-47-2]



$C_{25}H_{44}N_2O_2$ 404.635

Produced from extract of the rind of *Holarrhena antidysenterica* by methylation with CH_2O/HCOOH (Apocynaceae). Mp 218.5-221.5°. $[\alpha]_D$ -4 ($CHCl_3$).

Hydrochloride: Mp 255-265° dec.

Stereoisomer, 17,20-didehydro: ***Holacine***
[84953-46-8]
$C_{26}H_{44}N_2O_2$ 416.646
Alkaloid from the bark of *Holarrhena antidysenterica* (Apocynaceae). Needles (EtOAc/MeOH). Mp 270-271°. $[\alpha]_D^{27}$ -49 (EtOH). Undetermined stereochem.

7,20-Diepimer: ***Regholarrhenine E***
[128718-02-5]
$C_{25}H_{44}N_2O_2$ 404.635
Alkaloid from stem bark of *Holarrhena antidysenterica* (Apocynaceae). Brown solid (MeOH). Mp 285-287°.

Tschesche, R. *et al., Chem. Ber.*, 1962, **95**, 1114 (*isol, uv, ir*)

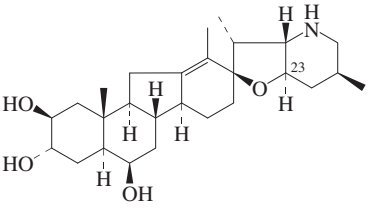
Tschesche, R. *et al., Tet. Lett.*, 1964, 1659 (*struct, ms, ir, pmr*)

Siddiqui, S. *et al., Pak. J. Sci. Ind. Res.*, 1982, **25**, 201 (*Holacine*)

Bhutani, K.K. *et al., Phytochemistry*, 1990, **29**, 969 (*Regholarrhenine E*)

Kuroyurinidine K-114

17,23-Epoxy-5,6-dihydroveratraman-2,3,6-triol, 9CI
[123085-17-6]



$C_{27}H_{43}NO_4$ 445.641

Alkaloid from the fresh bulbs of *Fritillaria camtschatcensis* and *Fritillaria maximowiczii*. Amorph. powder. $[\alpha]_D^{25}$ -10.1 (c, 0.4 in MeOH).

6-Ketone: ***Pengbeisine B***
$C_{27}H_{41}NO_4$ 443.625
Alkaloid from the fresh bulbs of *Fritillaria monatha*. Needles (Me_2CO).

23-Epimer: ***23-Epikuroyurinidine***. *23-Isokuroyurinidine*
[169786-65-6]
$C_{27}H_{43}NO_4$ 445.641
Alkaloid from fresh bulbs of *Fritillaria maximowiczii*. Amorph. $[\alpha]_D^{25}$ -14.2 (c, 0.40 in MeOH).

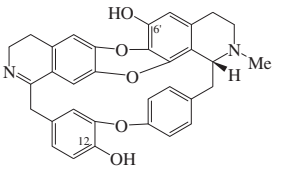
2,3-Diepimer, 6-ketone: ***Pengbeisine A***
$C_{27}H_{41}NO_4$ 443.625
Alkaloid from the fresh bulbs of *Fritillaria monatha*. Needles (Me_2CO).

Mimaki, Y. *et al., Chem. Pharm. Bull.*, 1990, **38**, 1090-1092 (*Fritillaria camtschatcensis constit*)

Qian, Z.-Z. *et al., Phytochemistry*, 1995, **40**, 979-981 (*Kuroyurinidine, 23-Epikuroyurinidine*)

Liu, H.N. *et al., Chin. Chem. Lett.*, 2008, **19**, 544-546 (*Pengbeisines A,B*)

Kurramine K-115



(*R*)-*form*

$C_{33}H_{28}N_2O_5$ 532.595

(*R*)-*form*

O$^{6'}$-*Me:* ***1,2-Dehydromicranthine***
[58207-93-5]
$C_{34}H_{30}N_2O_5$ 546.621
Alkaloid from the leaves and terminal twigs of an unnamed *Daphnandra* sp. (Monimiaceae). Mp 188-194° dec. $[\alpha]_D^{20}$ -150 ($CHCl_3$).

(*S*)-*form* [92664-89-6]
Alkaloid from the stems of *Cocculus pendulus* (Menispermaceae). $[\alpha]_D$ +83 (c, 0.13 in MeOH).

2′-α-N-*Oxide:* ***Kurramine 2′-α-N-oxide***
$C_{33}H_{28}N_2O_6$ 548.594
Alkaloid from *Cocculus pendulus*. Amorph. yellow powder. $[\alpha]_D^{25}$ +50 (c, 0.01 in MeOH). λ_{max} 201 (log ϵ 4.58); 228 (log ϵ 4.45); 264 (log ϵ 4.1); 290 (log ϵ 3.8); 333 (log ϵ 3.66) (MeOH).

2′-β-N-*Oxide:* ***Kurramine 2′-β-N-oxide***
$C_{33}H_{28}N_2O_6$ 548.594
Alkaloid from *Cocculus pendulus*. Amorph. yellow powder. $[\alpha]_D^{25}$ +60 (c, 0.01 in MeOH). λ_{max} 203 (log ϵ 4.61); 235 (log ϵ 4.41); 263 (log ϵ 4.02); 291 (log ϵ 3.81); 341 (log ϵ 3.52) (MeOH).

O$^{6'}$-*Me:* ***1,2-Dehydroapateline***
[68711-77-3]
$C_{34}H_{30}N_2O_5$ 546.621
Alkaloid from the bark of *Daphnandra apatela* and *Doryphora aromatica*, and from the stems of *Cocculus pendulus*. Mp 196-198° dec. (192-198° dec.). $[\alpha]_D^{20}$ +137 ($CHCl_3$).

O$^{6'}$-*Me, dipicrate:*
Cryst. + $1.5H_2O$. Mp 198-200° dec.

Di-Me ether: ***1,2-Dehydrotelobine***
$C_{35}H_{32}N_2O_5$ 560.648
Alkaloid from the bark of *Doryphora*

apatela and the stems of *Albertisia papuana* (Monimiaceae, Menispermaceae). Mp 168-172° dec. $[\alpha]_D^{19}$ +172 ($CHCl_3$).

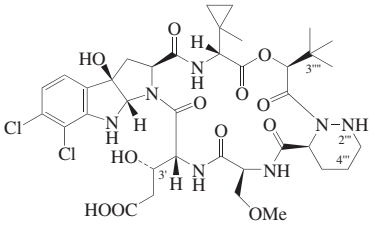
Di-Me ether, dipicrate:
Cryst. + $1.5H_2O$. Mp 187-192° dec.

Di-Me ether, N-*de-Me:* ***1,2-Dehydro-2′-nortelobine***
$C_{34}H_{30}N_2O_5$ 546.621
Alkaloid from *Cocculus pendulus*. $[\alpha]_D$ +100 ($CHCl_3$).

Bick, I.R.C. *et al., J.C.S. Perkin 1*, 1972, 2884 (*Dehydrotelobine*)
Bick, I.R.C. *et al., Tet. Lett.*, 1975, 2219 (*1,2-Dehydromicranthine*)
Bick, I.R.C. *et al., Aust. J. Chem.*, 1978, **31**, 2077 (*Dehydroapateline*)
Leboeuf, M. *et al., Plant. Med. Phytother.*, 1982, **16**, 280 (*Dehydrotelobine*)
Hussain, S.F. *et al., Tetrahedron*, 1984, **40**, 2513 (*Kurramine, Dehydroapateline*)
Atta-ur-Rahman, *et al., Pure Appl. Chem.*, 1986, **58**, 663 (*1,2-Dehydro-2′-nortelobine*)
Atta-ur-Rahman, *et al., Chem. Pharm. Bull.*, 2004, **52**, 802-806 (*Kurramine N-oxides, Dehydroapateline*)

Kutzneride 1 K-116

[878997-78-5]



Absolute Configuration

$C_{37}H_{49}Cl_2N_7O_{12}$ 854.739
Prod. by the actinomycete *Kutzneria* sp. 744. Moderate antifungal agent. Powder. $[\alpha]_D^{20}$ -16.7 (c, 0.33 in MeOH).

2‴,3‴-Didehydro: ***Kutzneride 9***
[918664-82-1]
$C_{37}H_{47}Cl_2N_7O_{12}$ 852.723
Prod. by *Kutzneria* sp. 744. Powder.

*4‴*R-*Chloro:* ***Kutzneride 2***
[878997-79-6]
$C_{37}H_{48}Cl_3N_7O_{12}$ 889.184
Prod. by *Kutzneria* sp. 744. Powder. $[\alpha]_D^{20}$ -19.4 (c, 0.29 in MeOH).

3′-Epimer: ***Kutzneride 3***
[878997-80-9]
$C_{37}H_{49}Cl_2N_7O_{12}$ 854.739
Prod. by *Kutzneria* sp. 744. Powder. $[\alpha]_D^{20}$ -30.9 (c, 0.16 in MeOH).

3′-Epimer, 2‴,3‴-didehydro: ***Kutzneride 4***
[878997-81-0]
$C_{37}H_{47}Cl_2N_7O_{12}$ 852.723
Prod. by *Kutzneria* sp. 744. Powder. $[\alpha]_D^{20}$ -17.9 (c, 0.07 in MeOH).

*3′-Epimer, 4‴*R-*chloro:* ***Kutzneride 8***
[918664-81-0]
$C_{37}H_{48}Cl_3N_7O_{12}$ 889.184
Prod. by *Kutzneria* sp. 744. Powder.

*3′-Epimer, 4‴*R-*hydroxy, 2‴,3‴-didehydro:* ***Kutzneride 6***
[918664-79-6]
$C_{37}H_{47}Cl_2N_7O_{13}$ 868.723
Prod. by *Kutzneria* sp. 744. Powder.

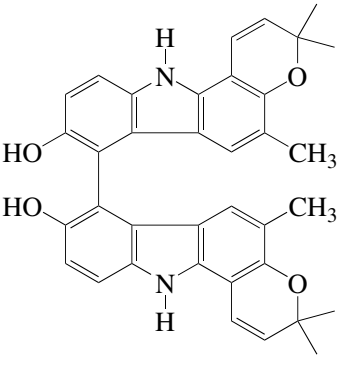
3′′′′-Demethyl: ***Kutzneride 7***
[918664-80-9]
$C_{36}H_{47}Cl_2N_7O_{12}$ 840.712
Prod. by *Kutzneria* sp. 744. Powder.

3′′′′-Demethyl, 3′-epimer: ***Kutzneride 5***
[918664-78-5]
$C_{36}H_{47}Cl_2N_7O_{12}$ 840.712
Prod. by *Kutzneria* sp. 744. Powder.

Broberg, A. *et al., J. Nat. Prod.*, 2006, **69**, 97-102 (*isol, pmr, cmr*)
Pohanka, A. *et al., J. Nat. Prod.*, 2006, **69**, 1776-1781 (*isol, pmr, cmr*)

Kwangsine K-117

5,5′-Bis(6-hydroxygirinimbine A)

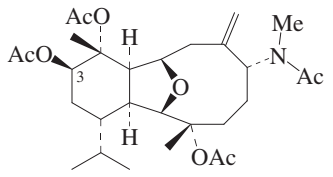


$C_{36}H_{32}N_2O_4$ 556.66
Alkaloid from *Murraya kwangsiensis*. Mp 263-273°. $[\alpha]_D^{19}$ -3.3 (c, 0.1 in $CHCl_3$). λ_{max} 222 (log ϵ 4.8); 236 (log ϵ 4.77); 294 (log ϵ 4.77); 335 (log ϵ 4.2) (MeOH).

Xie, F.-Z. *et al., Yaoxue Xuebao*, 2000, **35**, 826-828

Labiatamide A L-1

[174285-78-0]



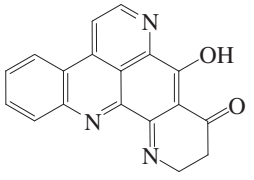
$C_{29}H_{45}NO_8$ 535.676
Constit. of *Eunicella labiata*. Oil. $[\alpha]_D$ +12.8 (c, 0.6 in $CHCl_3$).

3-Deacetoxy: ***Labiatamide B***
[174285-79-1]
$C_{27}H_{43}NO_6$ 477.64
Constit. of *Eunicella labiata*. Oil. $[\alpha]_D$ -6 (c, 0.2 in $CHCl_3$).

Roussis, V. *et al., Tetrahedron*, 1996, **52**, 2735 (*isol, pmr, cmr*)

Labuanine A L-2

*10,11-Dihydro-8-hydroxy-9*H*-benzo[*b*]-pyrido[4,3,2-*de*][1,10]phenanthrolin-9-one*

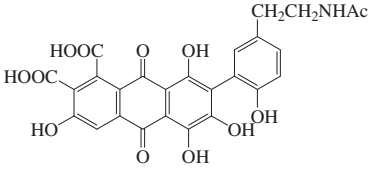


$C_{18}H_{11}N_3O_2$ 301.304
Isol. from the marine sponge *Biemna fortis*. Neuronal differentiation inducer. Amorph. yellow solid. λ_{max} 227 (ϵ 18000); 288 (ϵ 7720); 317 (ϵ 5190); 357 (ϵ 6070) (MeOH).

Aoki, S. *et al., Bioorg. Med. Chem.*, 2003, **11**, 1969-1973 (*isol, pmr, cmr*)

Laccaic acid A_1 L-3

7-[5-[2-(Acetylamino)ethyl]-2-hydroxyphenyl]-9,10-dihydro-3,5,6,8-tetrahydroxy-9,10-dioxo-1,2-anthracenedicarboxylic acid, 9CI. Laccaic acid A
[15979-35-8]



$C_{26}H_{19}NO_{12}$ 537.436
Pigment from stick lac (secretion of the insect *Laccifer lacca*). Food colourant. Red, strongly dichroic platelets (MeOH) or bright red needles (H_2O or MeOH). Does not melt but chars from 230°.

Penta-Me ether, di-Me ester: Mp 115-116°.

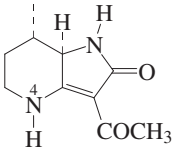
N-*De-Ac:* ***Laccaic acid E***
[14597-16-1]
$C_{24}H_{17}NO_{11}$ 495.398
Pigment from stick lac. Amorph. red solid. Mp >360°. λ_{max} 291 (log ϵ 4.5); 360 (sh) (log ϵ 4.03); 470 (sh) (log ϵ 3.91); 494 (log ϵ 3.97); 515 (sh) (log ϵ 3.88) (MeOH).

[60687-93-6]

Pandhare, E.D. *et al., Tetrahedron, Suppl.*, No. 8, 1966, 229
Burwood, R. *et al., J.C.S.(C)*, 1967, 842-851 (*isol, uv, pmr, struct*)
Pandhare, E.D. *et al., Tet. Lett.*, 1967, 2437 (*isol, struct*)
Oka, H. *et al., J. Chromatogr., A*, 1998, **813**, 71-77 (*chromatog*)
Quye, A. *et al., Chem. Rev. (Deddington, U.K.)*, 1999, **8**, 27-31 (*rev*)

Laccarin L-4

*3-Acetyl-1,4,5,6,7,7*a*-hexahydro-7-methyl-2*H*-pyrrolo[3,2-*b*]pyridin-2-one*
[175669-28-0]



Relative Configuration

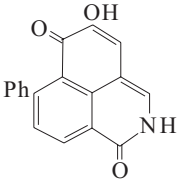
$C_{10}H_{14}N_2O_2$ 194.233
Alkaloid from fruit bodies of the mushrooms *Lactarius subplinthogalus* and *Laccaria vinaceoavellanea*. Shows moderate phosphodiesterase inhibitory activity. Powder. $[\alpha]_D^{31}$ +188 (c, 0.47 in $CHCl_3$). λ_{max} 235 (ϵ 11220); 293 (ϵ 11750) (MeOH) (Berdy).

N^4*-(4-Aminobutanoyl):* ***Laccarin A***
[766509-22-2]
$C_{14}H_{21}N_3O_3$ 279.338
Alkaloid from *Lactarius subplinthogalus*. Powder. $[\alpha]_D^{20}$ -51.8 (c, 1.05 in MeOH). λ_{max} 235 (log ϵ 2.5); 239 (log ϵ 2.5) (MeOH).

Matsuda, M. *et al., Heterocycles*, 1996, **43**, 685-690 (*isol, uv, ir, pmr, cmr, struct*)
Wang, Y. *et al., Nat. Prod. Res.*, 2004, **18**, 159-162 (*Laccarin A*)

Lachnanthopyridone L-5

*5-Hydroxy-7-phenyl-1*H*-benz[de]isoquinoline-1,6(2*H*)-dione, 9CI*
[37011-65-7]



$C_{18}H_{11}NO_3$ 289.29
Poor cryst. (Me_2CO). Mp 338-342°.

N-*(1-Carboxy-2-methylbutyl):* [60924-82-5]
$C_{24}H_{21}NO_5$ 403.434
Alkaloid from blooms of *Lachnanthes tinctoria*. Rosettes of orange cryst. Mp 218-219°.

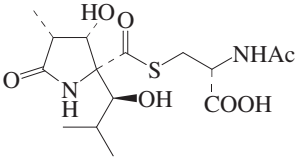
N-*(2-Hydroxyethyl):* N-*(2-Hydroxyethyl)lachnanthopyridone*
[37009-33-9]
$C_{20}H_{15}NO_4$ 333.343
Alkaloid from *Lachnanthes tinctoria*. Orange cryst. (EtOAc). Mp 155°.

Me ether, N-*butyl:* **N-*Butyl*-O-*methyl*-*lachnanthopyridone***
$C_{23}H_{21}NO_3$ 359.424
Alkaloid from *Xiphidium caeruleum*.

Edwards, J.M. *et al., Tet. Lett.*, 1972, 1631 (*isol, struct, deriv*)
Bazan, A.C. *et al., Phytochemistry*, 1976, **15**, 1413 (*isol, synth*)
Opitz, S. *et al., J. Nat. Prod.*, 2002, **65**, 1122-1130 (*N-Butyl-O-methyllachnanthopyridone*)

Lactacystin L-6

[133343-34-7]



Absolute Configuration

$C_{15}H_{24}N_2O_7S$ 376.43
Prod. by a *Streptomyces* sp. Induces differentiation of neuroblastoma cells. Needles. Sol. H_2O, Py, DMSO, MeOH; poorly sol. EtOAc, hexane, C_6H_6, $CHCl_3$. Mp 237-238° dec. $[\alpha]_D^{25}$ +71.3 (c, 0.5 in MeOH). λ_{max} 239 (E1%/1cm 170) (MeOH) (Berdy).

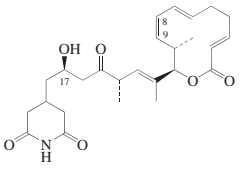
[133398-98-8]

Omura, S. *et al., J. Antibiot.*, 1991, **44**, 113; 117 (*isol, pmr, cmr, struct, props*)
Corey, E.J. *et al., J.A.C.S.*, 1992, **114**, 10677 (*synth*)
Sunazuka, T. *et al., J.A.C.S.*, 1993, **115**, 5302 (*synth*)
Corey, E.J. *et al., Tet. Lett.*, 1993, **34**, 6969; 6973; 6977 (*synth*)
Uno, H. *et al., J.A.C.S.*, 1994, **116**, 2139 (*synth*)
Nakagawa, A. *et al., Pure Appl. Chem.*, 1994, **66**, 2411 (*biosynth*)
Nakagawa, A. *et al., Tet. Lett.*, 1994, **35**, 5009 (*biosynth*)
Chida, N. *et al., Chem. Comm.*, 1995, 793 (*synth*)
Takahashi, S. *et al., J. Antibiot.*, 1995, **48**, 1015 (*biosynth*)
Chida, N. *et al., Tetrahedron*, 1997, **53**, 16287-16298 (*synth*)
Panek, J.S. *et al., Angew. Chem., Int. Ed.*, 1999, **38**, 1093-1095 (*synth*)
Corey, E.J. *et al., Chem. Pharm. Bull.*, 1999, **47**, 1-10 (*rev, synth*)
Masse, C.E. *et al., Eur. J. Org. Chem.*, 2000, 2513-2528 (*rev, synth*)
Green, M.P. *et al., Tet. Lett.*, 2002, **43**, 6609-6611 (*synth*)
Ooi, H. *et al., J.O.C.*, 2004, **69**, 7765-7768 (*synth*)
Wardrop, D.J. *et al., Chem. Comm.*, 2005, 5106-5108 (*synth*)
Balskus, E.P. *et al., J.A.C.S.*, 2006, **128**, 6810-6812 (*synth*)
Fukuda, N. *et al., J.O.C.*, 2006, **71**, 1220-1225 (*synth*)
Shibasaki, M. *et al., Chem. Asian J.*, 2007, **2**, 20-38 (*rev, synth*)

Hayes, C.J. *et al., J.O.C.*, 2008, **73**, 2041-2051 (*synth*)
Pattenden, G. *et al., Org. Biomol. Chem.*, 2008, **6**, 3428-3438 (*synth*)

Lactimidomycin L-7

BMY 28886. BU 4146T. Antibiotic BMY 28886. Antibiotic BU 4146T
[134869-15-1]



Absolute Configuration

$C_{26}H_{35}NO_6$ 457.566

Glutarimide-lactone antibiotic. Closely related to Isomigrastatin, I-245. Prod. by *Streptomyces amphibiosporus* ATCC53964. Active against fungi and tumours. Pale yellow solid + $^1/_4H_2O$. Mp 121-125°. $[\alpha]_D$ -20 (c, 0.5 in DMSO).

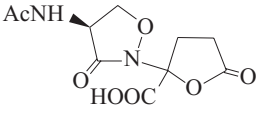
8,9-Dihydro: ***8,9-Dihydrolactimidomycin***
[959984-76-0]
$C_{26}H_{37}NO_6$ 459.581
Prod. by *Streptomyces amphibiosporus* ATCC53964. Oil. $[\alpha]_D^{25}$ +36.3 (c, 0.12 in $CHCl_3$).

*8,9-Dihydro, 8*S*-hydroxy:* ***8,9-Dihydro-8-hydroxylactimidomycin***
[910217-36-6]
$C_{26}H_{37}NO_7$ 475.581
Prod. by *Streptomyces amphibiosporus* ATCC53964. Powder. $[\alpha]_D^{25}$ +176 (c, 0.3 in $CHCl_3$).

Sugawara, K. *et al., J. Antibiot.*, 1992, **45**, 1433-1441 (*isol, pmr, cmr, props*)
Ju, J. *et al., Org. Lett.*, 2007, **9**, 5183-5186 (*isol, pmr, cmr*)

Lactivicin L-8

2-[4-(Acetylamino)-3-oxo-2-isoxazolidinyl]tetrahydro-5-oxo-2-furancarboxylic acid, 9CI. Antibiotic TAN 588. TAN 588
[107167-31-7]
[113194-68-6 , 113194-69-7]



$C_{10}H_{12}N_2O_7$ 272.214

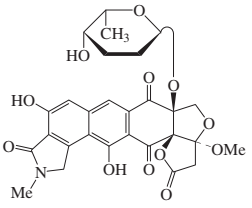
Cyclic peptide antibiotic. Prod. by *Empedobacter lactamgensis* and *Lysobacter albus.* Active against gram-positive and -negative bacteria. β-Lactamase inhibitor. $[\alpha]_D$ -24.1 (H_2O) (as Na salt). Epimerises readily. λ_{max} 216 (sh) (ε 4050) (H_2O) (Derep).

[106944-73-4 , 106944-74-5 , 159150-63-7 , 105629-02-5 , 106962-13-4 , 106962-14-5]

Natsugari, H. *et al., Chem. Comm.*, 1987, 62 (*synth*)
Harada, S. *et al., Tetrahedron*, 1988, **44**, 6589 (*isol, pmr, cmr, ir, props*)
Nozaki, Y. *et al., J. Antibiot.*, 1989, **42**, 84 (*props*)
Nakao, Y. *et al., Spec. Publ. - R. Soc. Chem.*, 1989, **70**, 119 (*rev*)

Lactonamycin L-9

[182234-02-2]



Absolute Configuration

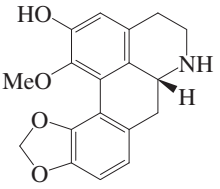
$C_{28}H_{27}NO_{12}$ 569.521
Prod. by *Streptomyces rishiriensis* MJ773-88K4. Active against gram-positive bacteria. Yellowish powder. Sol. MeOH, EtOAc; poorly sol. H_2O. Mp 168-171°. $[\alpha]_D^{27}$ +34 (c, 0.27 in MeOH). λ_{max} 228 (ε 11300); 257 (ε 13200); 300 (ε 20000); 395 (ε 6700); 412 (ε 7500) (MeOH). λ_{max} 232 (ε 11600); 250 (ε 12900); 287 (ε 12200); 323 (ε 11300); 367 (ε 10700); 398 ; 448 (MeOH-NaOH) (Berdy).

4′-Epimer, 3′β-hydroxy: ***Lactonamycin Z***
$C_{28}H_{27}NO_{13}$ 585.52
Prod. by *Streptomyces sanglieri* strain AK 623. Antitumour agent. Yellow powder. Abs. config. not determined. λ_{max} 210 (sh) ; 229 (sh) ; 258 (sh) ; 300 ; 398 (sh) ; 415 (sh) (MeOH).

Matsumoto, N. *et al., J. Antibiot.*, 1999, **52**, 269-275; 276-280 (*isol, uv, pmr, cmr, abs config*)
Höltzel, A. *et al., J. Antibiot.*, 2003, **56**, 1058-1061 (*Lactonamycin Z*)

Laetine L-10

*6a,7,8,9-Tetrahydro-12-methoxy-6*H*-benzo[de]-1,3-benzodioxolo[4,5-g]quinolin-11-ol, 9CI. 2-Hydroxy-1-methoxy-10,11-methylenedioxynoraporphine*



(*R*)-*form*

$C_{18}H_{17}NO_4$ 311.337

(R)-form [75638-75-4]
Alkaloid from the bark of *Litsea laeta* (Lauraceae). Mp 296° dec. $[\alpha]_D^{25}$ -23.7.

Me ether: 1,2-Dimethoxy-10,11-methylenedioxynoraporphine
$[\alpha]_D^{25}$ -14.8 (c, 0.355 in EtOH).

(S)-form [385366-60-9]
Alkaloid from the trunk bark of *Hernandia nymphaeifolia*. Amorph. powder. $[\alpha]_D^{24}$ +177 (c, 0.11 in $CHCl_3$). λ_{max} 224 (log ε 4.37); 271 (log ε 4.07); 307 (log ε 3.71) (EtOH).

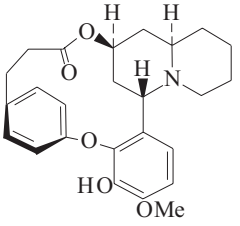
(ξ)-form

3-Methoxy, Me ether: 1,2,3-Trimethoxy-10,11-methylenedioxynoraporphine. ***Polygospermine***
[69477-64-1]
$C_{20}H_{21}NO_5$ 355.39
Alkaloid from the trunk bark of *Polyalthia oligosperma* (Annonaceae). λ_{max} 222 ; 276 ; 306 (sh) (EtOH).

Guineaudeau, H. *et al., Plant. Med. Phytother.*, 1978, **12**, 166-172 (*Polygospermine*)
Rastogi, R.C. *et al., Phytochemistry*, 1980, **19**, 998-999 (*R-Laetine*)
Chen, J.-J. *et al., Planta Med.*, 2001, **67**, 593-598 (*S-Laetine*)

Lagerine L-11

4′-Demethoxy-6′-hydroxydecaline, 9CI
[34532-74-6]



$C_{25}H_{29}NO_5$ 423.508
Alkaloid from *Lagerstroemia indica* (Lythraceae). Mp 210°. $[\alpha]_D$ -184 ($CHCl_3$). pK_a 7.3 (EtOH).

Ac:
Cryst. (Et_2O). Mp 217°.

Methiodide:
Cryst. (EtOH). Mp 266°.

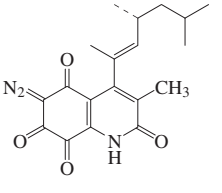
Me ether: ***Methyllagerine***
[33033-88-4]
$C_{26}H_{31}NO_5$ 437.535
Alkaloid from *Lagerstroemia indica* (Lythraceae). Cryst. by subl. Mp 240°. $[\alpha]_D$ -178 ($CHCl_3$).

Me ether, N*-oxide:*
Cryst. (EtOAc). Mp 204-206°.

Ferris, J.P. *et al., J.A.C.S.*, 1971, **93**, 2958 (*isol, uv, ir*)
Hanaoka, M. *et al., Chem. Pharm. Bull.*, 1975, **23**, 2191 (*struct, synth, ir, pmr, ms*)

Lagunamycin L-12

*6-Diazo-3-methyl-4-(1,3,5-trimethyl-1-hexenyl)-2,5,7,8(1*H*,6*H*)-quinolinetetrone, 9CI*
[150693-65-5]



Absolute Configuration

$C_{19}H_{21}N_3O_4$ 355.393
Prod. by *Streptomyces* sp. AA0310. 5-Lipoxygenase inhibitor. Yellow needles (MeOH aq.). Mp 134-136° dec. $[\alpha]_D^{26}$ -33 (c, 0.2 in MeOH). λ_{max} 233 (ε 16300); 264 (sh) (ε 9500); 284 (ε 9100); 352 (ε 25200) (MeOH/NaOH) (Derep). λ_{max} 258 (ε 18300); 302 (ε 15800); 353 (sh) (ε 3400); 420 (ε 1200) (MeOH) (Derep).

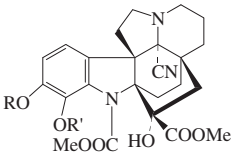
▶ VC3215000

Nihei, Y. *et al., J. Antibiot.*, 1993, **46**, 900-907; 1031-1033 (*isol, pmr, cmr, struct*)

Hosokawa, S. *et al., Tet. Lett.*, 2006, **47**, 6183-6186 (*synth, abs config*)

Lahadinine A L-13

[200053-18-5]



Absolute Configuration

R,R' = -CH_2-

$C_{25}H_{27}N_3O_7$ 481.504

Alkaloid from *Kopsia pauciflora* (Apocynaceae). Oil. $[\alpha]_D$ -184 (c, 0.1 in $CHCl_3$). λ_{max} 227 (log ϵ 4.36); 248 (log ϵ 3.89); 255 (log ϵ 3.84); 285 (log ϵ 2.97); 290 (log ϵ 2.92) (EtOH).

Kam, T.-S. *et al., Phytochemistry*, 1997, **46**, 785-787 (*isol, uv, ir, pmr, cmr, ms*)

Lahadinine B L-14

[200053-19-6]

As Lahadinine A, L-13 with

R = R′ = Me

$C_{26}H_{31}N_3O_7$ 497.547

Alkaloid from *Kopsia pauciflora* (Apocynaceae). Oil. $[\alpha]_D$ -123 (c, 0.03 in $CHCl_3$). λ_{max} 222 (log ϵ 4.39); 253 (log ϵ 3.79); 284 (log ϵ 3.06); 289 (log ϵ 3.03) (EtOH).

Kam, T.-S. *et al., Phytochemistry*, 1997, **46**, 785-787 (*isol, uv, ir, pmr, cmr, ms*)

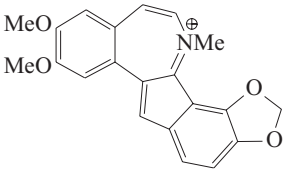
Magnus, P. *et al., Tetrahedron*, 2002, **58**, 3423-3443 (*synth*)

Lahoramine L-15

8,9-Dimethoxy-13-methyl-1,3-dioxolo[6,7]indeno[2,1-a][3]benzazepinium(1+)

[81189-54-0]

[80787-70-8]



$C_{21}H_{18}NO_4^{\oplus}$ 348.377

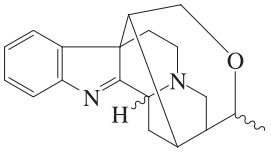
Quaternary alkaloid from *Fumaria parviflora* (Papaveraceae). Obt. as chloride, in amts. too small for crystallisation.

Blaskó, G. *et al., Tet. Lett.*, 1981, **22**, 3127 (*isol, uv, ms, struct*)

Lahoricine L-16

17,19-Epoxy-19,20-dihydroakuammilan, 9CI

[93961-19-4]



$C_{19}H_{22}N_2O$ 294.396

Stereochem. undefined. Alkaloid from the leaves of *Ervatamia coronaria* (Apocynaceae). Amorph. $[\alpha]_D$ +99 ($CHCl_3$).

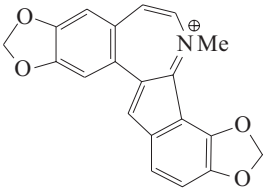
Atta-ur-Rahman, *et al., Z. Naturforsch., B*, 1984, **39**, 1289 (*uv, ir, pmr, ms, struct*)

Lahorine L-17

4-Methyl[1,3]dioxolo[4,5-h]-1,3-dioxolo[6,7]indeno[2,1-a][3]benzazepinium

[81189-53-9]

[80787-72-0]

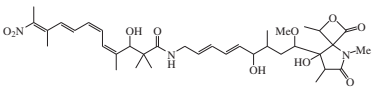


$C_{20}H_{14}NO_4^{\oplus}$ 332.335

Quaternary alkaloid from *Fumaria parviflora* (Papaveraceae). Yellow cryst. ($CHCl_3$)(as chloride). Mp 253-255° dec. (chloride). First representative of a new class of isoquinoline alkaloids, the indenobenzazepines.

Blaskó, G. *et al., Tet. Lett.*, 1981, **22**, 3127 (*isol, uv, pmr, ms, struct*)

Lajollamycin L-18



$C_{36}H_{53}N_3O_{10}$ 687.829

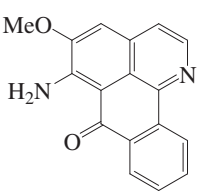
Closely related to Oxazolomycin, O-155. Prod. by the marine-derived *Streptomyces nodosus* (NPS007994). Antibacterial. Bright yellow solid. Mp 92-95°. $[\alpha]_D^{25}$ +75 (c, 0.00002 in MeOH). λ_{max} 229 (ϵ 63000); 306 (ϵ 40000); 375 (ϵ 22000) (MeOH).

Manam, R.R. *et al., J. Nat. Prod.*, 2005, **68**, 240-243 (*isol, pmr, cmr*)

Lakshminine L-19

6-Amino-5-methoxy-7H-dibenzo[de,h]-quinolin-7-one

[479669-27-7]



$C_{17}H_{12}N_2O_2$ 276.294

Alkaloid from the woody vines of *Sciadotenia toxifera*. Orange-yellow powder. λ_{max} 250 (log ϵ 3.46); 264 (sh) (log ϵ 3.13); 350 (log ϵ 1.96); 400 (sh) (log ϵ 2.05) (EtOH).

Killmer, L. *et al., J. Nat. Prod.*, 2003, **66**, 115-118 (*isol, pmr, cmr*)

Lallemancine L-20

$C_{23}H_{29}N_3O_2$ 379.501

Struct. unknown. Alkaloid from *Lallemantia peltata* (Lamiaceae). Mp 191-193°.

Perchlorate: Mp 221-222°.

N-*Ac:* Mp 210-211°.

Platanova, T.F. *et al., Med. Promst. SSSR*, 1962, **16**, 14; *CA*, **57**, 4759h (*isol, ir*)

Lamarckine L-21

Lamarkine

$C_{13}H_{12}N_2O_6$ 292.248

Struct. unknown. Alkaloid from *Alangium lamarckii* (Alangiaceae). Yellow cryst. Mp 60-62°.

Picrate: Mp 148-150°.

Oxalate: Mp 73-75°.

Aurichloride: Mp 255-258°.

Chloroplatinate: Mp 229-230°.

Basu, N.K. *et al., Indian J. Pharm.*, 1950, **12**, 98-99; *CA*, **44**, 8601b

Lamarckinine† L-22

$C_{25}H_{33}N_3O_4$ 439.553

Struct. unknown. Alkaloid from the bark of *Alangium lamarckii* (Alangiaceae). Mp 265-268° dec.

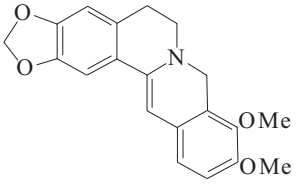
Khan, N.H. *et al., Pak. J. Biol. Agric. Sci.*, 1965, **8**, 211-213; *CA*, **64**, 9782f

Lambertine L-23

Dihydroberberine

[120834-89-1]

[119420-08-5]



$C_{20}H_{19}NO_4$ 337.374

Alkaloid from *Berberis lambertii*, *Berberis chitria* and *Berberis vulgaris* (barberry) (Berberidaceae). Yellow needles (MeOH or Me_2CO). Mp 163-164°. λ_{max} 280 (log ϵ 4.21); 368 (log ϵ 4.3) (no solvent reported).

N-*Me:* **N-*Methyllambertine***. N-*Methyldihydroberberine. 7,8-Dihydro-N-methylberberine*

[47474-50-0]

[26668-90-6]

$C_{21}H_{22}NO_4^{\oplus}$ 352.409

Alkaloid from *Berberis heteropoda* (Berberidaceae). Cryst. (as chloride). Mp 210-212° (chloride).

Chatterjee, R. *et al., J. Indian Chem. Soc.*, 1955, **32**, 609 (*isol, uv, struct, synth*)

Onda, M. *et al., Chem. Pharm. Bull.*, 1974, **22**, 2365-2371 (*deriv, synth*)

Dobhal, M.P. *et al., Pharmazie*, 1988, **43**, 659-660 (*isol, pmr, cmr*)

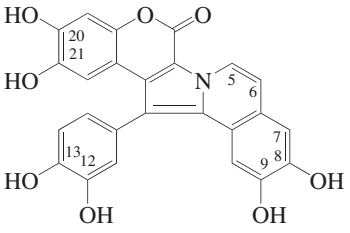
Yusupov, M.M. *et al., Khim. Prir. Soedin.*, 1990, **26**, 128-129; *Chem. Nat. Compd. (Engl. Transl.)*, **105**, 106 (*isol*)

Yusupov, M.M. *et al., Khim. Prir. Soedin.*, 1993, **29**, 53-59; *Chem. Nat. Compd. (Engl.*

Transl.), 1993, **29**, 43-48 (*Didhydromethylberberine, isol, deriv*)
Marek, R. *et al., Magn. Reson. Chem.*, 1999, **37**, 195-202 (*N-15 nmr*)

Lamellarin H L-24

[115982-22-4]



$C_{25}H_{15}NO_8$ 457.395

Authors' numbering scheme shown. Alkaloid from the marine ascidian *Didemnum chartaceum*. Amorph. solid. λ_{max} 208 (ϵ 31000); 282 (ϵ 24000); 303 (sh) ; 324 (sh) ; 340 (ϵ 6000); 370 (ϵ 9000); 389 (ϵ 12000) (MeOH) (Derep). λ_{max} 218 (ϵ 30000); 244 (sh) ; 297 (ϵ 20000); 316 ; 402 (ϵ 13000) (MeOH/NaOH) (Derep). λ_{max} 205 (ϵ 44000); 298 (ϵ 20000); 405 (ϵ 13000) (MeOH/NaOH) (Berdy).

9,12,21-Tri-Me ether: ***Lamellarin D***
[97614-65-8]
$C_{28}H_{21}NO_8$ 499.476
Isol. from *Lamellaria* sp. Inhibitor of cell division in fertilised sea urchin eggs. Pale yellow powder. Sol. MeOH, EtOAc; poorly sol. H_2O. λ_{max} 218 (ϵ 30000); 244 (sh) ; 297 (ϵ 20000); 316 ; 402 (ϵ 13000) (MeOH/NaOH) (Derep). λ_{max} 208 (ϵ 31000); 282 (ϵ 24000); 303 (sh) ; 324 (sh) ; 340 (ϵ 6000); 370 (ϵ 9000); 389 (ϵ 12000) (MeOH) (Derep). λ_{max} 212 ; 280 ; 368 ; 387 (MeOH) (Berdy).

9,13,21-Tri-Me ether: ***Lamellarin N***
[149379-26-0]
$C_{28}H_{21}NO_8$ 499.476
Alkaloid from the unidentified *Didemnum* sp. and a *Lamellaria* sp. Needles (MeOH) (as tri-Ac). Mp 283-285° (tri-Ac). λ_{max} 204 (ϵ 29500); 279 (ϵ 22500); 365 (ϵ 6000); 386 (ϵ 4000) (MeOH) (Berdy). λ_{max} 204 (ϵ 50000); 295 (ϵ 16800); 402 (ϵ 11300) (MeOH/NaOH) (Berdy).

*8,9,12,21-Tetra-Me ether, 20-*O*-sulfate:* ***Lamellarin α 20-sulfate***
[229956-47-2]
$C_{29}H_{23}NO_{11}S$ 593.567
Isol. from *Lamellaria* sp. HIV-1 integrase inhibitor. Solid (as Na salt). Mp 145-148° (Na salt). λ_{max} 204 (ϵ 31500); 276 (ϵ 19500); 303 (ϵ 16000); 324 (sh) ; 338 (sh) ; 364 (ϵ 5500); 386 (ϵ 7000) (MeOH).

8,9,13,21-Tetra-Me ether: ***Lamellarin α***
[475232-29-2]
$C_{29}H_{23}NO_8$ 513.503
Alkaloid from *Didemnum obscurum*. Amorph. solid. Mp 228-230°. λ_{max} 206 (log ϵ 1.99); 281 (log ϵ 1.91); 302 (log ϵ 1.79); 323 (log ϵ 1.54) (MeOH).

8,9,12,13,21-Penta-Me ether: ***Lamellarin η***
$C_{30}H_{25}NO_8$ 527.529
Alkaloid from *Didemnum obscurum*. Amorph. solid. Mp 265-269°. λ_{max} 236 (log ϵ 0.76); 308 (log ϵ 0.55) (MeOH).

5,6-Dihydro, 9-Me ether: ***Lamellarin S***
[181423-71-2]
$C_{26}H_{19}NO_8$ 473.438
Metab. from an Australian tunicate, *Didemnum* sp. Oil. $[\alpha]_D$ +66.5 (c, 0.84 in MeOH). CAS name is defective. First example of this structural class to show atropisomerism. Abs config. not determined. Slowly racemises.

5,6-Dihydro, 13-Me ether: ***Lamellarin β***
[425381-27-7]
$C_{26}H_{19}NO_8$ 473.438
Isol. from a *Didemnum* sp. Cytotoxic. Amorph. solid. λ_{max} 205 (ϵ 43000); 268 (sh) ; 278 (ϵ 23000); 315 (ϵ 17000); 336 (ϵ 17000) (MeOH).

5,6-Dihydro, 9,20-di-Me ether: ***Lamellarin Z***
[221169-77-3]
$C_{27}H_{21}NO_8$ 487.465
Alkaloid from *Didemnum chartaceum*. Amorph. solid. λ_{max} 207 (ϵ 31000); 265 (sh) (ϵ 16000); 276 (ϵ 18000); 314 (ϵ 16000); 333 (ϵ 15000); 348 (sh) (ϵ 14000); 352 (sh) (ϵ 11000) (MeOH).

5,6-Dihydro, 9,12,21-tri-Me ether, 8,13,20-tri-Ac: ***Lamellarin χ***
$C_{34}H_{29}NO_{11}$ 627.603
Isol. from *Didemnum obscurum*. Amorph. solid. Mp 164-166°. λ_{max} 208 (log ϵ 0.55); 274 (log ϵ 0.32) (MeOH).

5,6-Dihydro, 8,13,21-tri-Me ether, 20-sulfate: ***Lamellarin Y 20-sulfate***
[189084-06-8]
$C_{28}H_{23}NO_{11}S$ 581.556
Alkaloid from an unidentified ascidian. Powder (as Na salt). CAS no. refers to Na salt. λ_{max} 204 (ϵ 35000); 265 (sh) ; 273 (ϵ 23000); 309 (ϵ 21000); 328 (sh) (MeOH) (Na salt).

5,6-Dihydro, 9,13,20-tri-Me ether: ***Lamellarin G***
[115982-21-3]
$C_{28}H_{23}NO_8$ 501.492
Alkaloid from *Didemnum chartaceum*. Prisms (DMSO). Mp 263-265°. λ_{max} 204 (ϵ 55000); 278 (ϵ 12000); 324 (ϵ 12000); 346 (ϵ 8000); 368 (sh) (MeOH/NaOH) (Derep). λ_{max} 206 (ϵ 46000); 267 (sh) ; 276 (ϵ 25000); 314 (ϵ 21000); 334 (ϵ 21000) (MeOH) (Derep).

5,6-Dihydro, 9,13,20-tri-Me ether, 8-sulfate: ***Lamellarin G 8-sulfate***
[221169-76-2]
$C_{28}H_{23}NO_{11}S$ 581.556
Alkaloid from *Didemnum chartaceum*. Amorph. solid. λ_{max} 205 (ϵ 46000); 225 (sh) (ϵ 35000); 266 (sh) (ϵ 24000); 275 (ϵ 28000); 301 (sh) (ϵ 20000); 314 (ϵ 27000); 336 (ϵ 22000) (MeOH).

5,6-Dihydro, 9,13,21-tri-Me ether: ***Lamellarin L***
[149378-57-4]
$C_{28}H_{23}NO_8$ 501.492
Alkaloid from an unidentified *Didemnum* sp. Immunomodulator. Amorph. powder. Mp 285-287°.

5,6-Dihydro, 9,13,21-tri-Me ether, 20-sulfate: ***Lamellarin L 20-sulfate***
[221169-75-1]
$C_{28}H_{23}NO_{11}S$ 581.556
Alkaloid from *Didemnum chartaceum*. Amorph. solid. λ_{max} 203 (ϵ 32000); 221 (sh) (ϵ 21000); 267 (sh) (ϵ 16000); 276 (ϵ 19000); 314 (ϵ 16000); 338 (sh) (ϵ 14000) (MeOH).

5,6-Dihydro, 8,9,13,21-tetra-Me ether: ***Lamellarin U***
[189083-79-2]
$C_{29}H_{25}NO_8$ 515.518
Alkaloid from an unidentified ascidian. Mp 200-204°.

5,6-Dihydro, 8,9,13,21-tetra-Me ether, 20-sulfate: Lamellarin U 20-sulfate
[189084-01-3]
$C_{29}H_{25}NO_{11}S$ 595.583
Alkaloid from an unidentified ascidian. Mp 222-226°. λ_{max} 202 (ϵ 40000); 265 (sh) ; 273 (ϵ 23500); 309 (ϵ 20000); 327 (sh) (MeOH).

5,6-Dihydro, 9,12,13,21-tetra-Me ether: ***Lamellarin J***
[149355-76-0]
$C_{29}H_{25}NO_8$ 515.518
Alkaloid from the unidentified *Didemnum* sp. and a *Lamellaria* sp. Immunomodulator. Amorph. powder. Mp 216-220°.

5,6-Dihydro, 8,9,12,13,21-penta-Me ether: ***Lamellarin F***
[115982-20-2]
$C_{30}H_{27}NO_8$ 529.545
Alkaloid from *Didemnum chartaceum*. Prisms (DMSO). Mp 273-276° dec. λ_{max} 205 (ϵ 64000); 265 (sh) ; 288 (ϵ 28000); 323 (ϵ 23000) (MeOH/NaOH) (Derep). λ_{max} 208 (ϵ 48000); 268 (sh) ; 278 (ϵ 38000); 310 (ϵ 23000); 330 (sh) (MeOH) (Derep). λ_{max} 210 (ϵ 47000); 278 (ϵ 21000); 312 (ϵ 28000) (MeOH) (Berdy). λ_{max} 207 (ϵ 52000); 290 (ϵ 28000); 322 (ϵ 31000) (MeOH/NaOH) (Berdy).

5,6-Dihydro, 5ξ,7-dihydroxy, 7,8,9,12,20-penta-Me ether: ***Lamellarin A***
[97614-62-5]
$C_{30}H_{27}NO_{10}$ 561.544
Metab. of *Lamellaria* sp. MDR inhibitor, immunomodulator. Pale yellow prisms (MeOH). Mp 168-172° dec. Consists of a 1:1 mixt. of geom. isomers generated by restricted rotn. around the pyrrole-aryl bond. Opt. inactive, prob. due to rapid interconversion at C-5 through an open-chain tautomer. λ_{max} 218 (ϵ 46000); 287 (ϵ 33000); 319 (ϵ 36000); 378 (ϵ 9000) (MeOH/NaOH) (Derep). λ_{max} 215 (ϵ 41000); 275 (ϵ 33000); 309 (ϵ 28000); 325 (sh) ; 326 (ϵ 25000) (MeOH) (Derep).

7-Hydroxy, 8,9,12,21-tetra-Me ether: ***Lamellarin M***
[149378-58-5]
$C_{29}H_{23}NO_9$ 529.502
Alkaloid from the unidentified *Didemnum* sp. and a *Lamellaria* sp. Immunomodulator. Amorph. powder.

7-Hydroxy, 8,9,13,21-tetra-Me ether: ***Lamellarin X***
[189083-94-1]
$C_{29}H_{23}NO_9$ 529.502
Alkaloid from an unidentified ascidian. Powder. λ_{max} 204 (ϵ 30000); 276 (ϵ 15000); 303 (ϵ 14000); 324 (sh) ; 338 (sh) ; 365 (sh) (MeOH).

7-Hydroxy, 7,8,9,12,21-penta-Me ether: ***Lamellarin B***
[97614-63-6]
$C_{30}H_{25}NO_9$ 543.529
Isol. from the marine prosobranch mollusc *Lamellaria* sp. Dehydration prod. of Lamellarin A. Immunomodulator. Pale yellow needles (MeOH). Mp 258-259°. λ_{max} 218 (ϵ 30000); 244 (sh) ; 297 (ϵ 20000); 316 ; 402 (ϵ 13000) (MeOH/NaOH) (Derep). λ_{max} 208 (ϵ 31000); 282 (ϵ 24000); 303 (sh) ; 324 (sh) ; 340 (ϵ 6000); 370 (ϵ 9000); 389 (ϵ 12000) (MeOH) (Derep).

7-Hydroxy, 7,8,9,12,21-penta-Me ether, 20-sulfate: ***Lamellarin B 20-sulfate***
[221169-73-9]
$C_{30}H_{25}NO_{12}S$ 623.593
Alkaloid from *Didemnum chartaceum*. Amorph. solid. λ_{max} 202 (ϵ 31000); 224 (sh) (ϵ 18000); 283 (ϵ 27000); 301 (sh) (ϵ 21000); 321 (sh) (ϵ 11000); 365 (ϵ 8000); 386 (ϵ 10000) (MeOH).

7-Hydroxy, 8,9,12,13,21-penta-Me ether: ***Lamellarin ϵ***
$C_{30}H_{25}NO_9$ 543.529
Alkaloid from *Didemnum obscurum*. Amorph. solid. Mp 271-275°. λ_{max} 209 (log ϵ 2.61); 277 (log ϵ 2.37); 304 (log ϵ 2.33); 325 (log ϵ 2.1); 367 (log ϵ 1.69) (MeOH).

7-Hydroxy, 5,6-dihydro, 8,9,12,21-tetra-Me ether: ***Lamellarin K***
[149378-56-3]
$C_{29}H_{25}NO_9$ 531.518
Alkaloid from an unidentified *Didemnum* sp. Immunomodulator. Amorph. powder. Mp 196-198°. λ_{max} 203 (ϵ 40000); 278 (ϵ 23000); 312 (ϵ 20000); 337 (ϵ 17000) (MeOH) (Berdy).

7-Hydroxy, 5,6-dihydro, 8,9,13,21-tetra-Me ether: ***Lamellarin E***
[115982-19-9]
$C_{29}H_{25}NO_9$ 531.518
Alkaloid from *Didemnum chartaceum*. Prisms (MeOH). Mp 228-232°. λ_{max} 205 (ϵ 64000); 265 (sh) ; 288 (ϵ 28000); 323 (ϵ 23000) (MeOH/NaOH) (Derep). λ_{max} 208 (ϵ 48000); 268 (sh) ; 278 (ϵ 38000); 310 (ϵ 23000); 330 (sh) (MeOH) (Derep).

7-Hydroxy, 5,6-dihydro, 7,8,9,12,21-penta-Me ether: ***Lamellarin C****. Dihydrolamellarin B*
[97614-64-7]
$C_{30}H_{27}NO_9$ 545.545
Metab. of a *Lamellaria* sp. Needles (MeOH). Sol. MeOH, EtOAc; poorly sol. H_2O. Mp 225-230°. λ_{max} 218 (ϵ 46000); 287 (ϵ 33000); 319 (ϵ 36000); 378 (ϵ 9000) (MeOH/NaOH) (Derep). λ_{max} 215 (ϵ 41000); 275 (ϵ 33000); 309 (ϵ 28000); 325 (sh) ; 326 (ϵ 25000) (MeOH) (Derep).

7-Hydroxy, 5,6-dihydro, 7,8,9,12,21-penta-Me ether, 20-sulfate: ***Lamellarin C 20-sulfate***
[221169-74-0]
$C_{30}H_{27}NO_{12}S$ 625.609
Alkaloid from *Didemnum chartaceum*. Amorph. solid. λ_{max} 205 (ϵ 45000); 225 (sh) (ϵ 31000); 265 (sh) (ϵ 21000); 276 (ϵ 25000); 310 (ϵ 22000); 337 (sh) (17000) (MeOH).

7-Hydroxy, 5,6-dihydro, 7,8,9,12,13,21-hexa-Me ether: ***Lamellarin I***
[149355-75-9]
$C_{31}H_{29}NO_9$ 559.571
Alkaloid from an unidentified *Didemnum* sp. MDR inhibitor. Off-white irregular prisms (MeOH). Mp 218-220°.

7-Methoxy, 8,12,21-tri-Me ether, 9,13,20-tri-Ac: ***Lamellarin ϕ***
$C_{35}H_{29}NO_{12}$ 655.614
Isol. from *Didemnum obscurum*. Amorph. solid. Mp 276-279°. λ_{max} 224 (log ϵ 0.44); 298 (log ϵ 0.32) (MeOH).

7-Methoxy, 8,9,13,21-tetra-Me ether: ***Lamellarin W***
[189083-85-0]
$C_{30}H_{25}NO_9$ 543.529
Alkaloid from an unidentified ascidian. Pale yellow solid. Mp 224-228°. λ_{max} 205 (ϵ 30000); 279 (ϵ 15000); 302 (ϵ 13000); 336 (sh) ; 364 (ϵ 5000); 385 (ϵ 6000) (MeOH).

7-Methoxy, 8,9,12,13,21-penta-Me ether: ***Lamellarin ζ***
$C_{31}H_{27}NO_9$ 557.556
Alkaloid from *Didemnum obscurum*. Amorph. solid. Mp 268-272°. λ_{max} 230 (log ϵ 0.36); 404 (log ϵ 0.23) (MeOH).

7-Methoxy, 5,6-dihydro, 8,9,13,21-tetra-Me ether: ***Lamellarin T***
[189083-78-1]
$C_{30}H_{27}NO_9$ 545.545
Alkaloid from an unidentified ascidian. Powder. Mp 214-218°.

7-Methoxy, 5,6-dihydro, 8,9,13,21-tetra-Me ether, 20-sulfate: Lamellarin T 20-sulfate
[189084-00-2]
$C_{30}H_{27}NO_{12}S$ 625.609
Alkaloid from an unidentified ascidian. Powder (as Na salt). CAS no. refers to Na salt. λ_{max} 204 (ϵ 47000); 265 (sh) (ϵ 19350); 274 (ϵ 24000); 309 (ϵ 21000); 330 (sh) (ϵ 16600) (MeOH) (Na salt).

7-Methoxy, 5,6-dihydro, 5ξ-hydroxy, 8,9,13,21-tetra-Me ether: ***Lamellarin V***
[189083-80-5]
$C_{30}H_{27}NO_{10}$ 561.544
Alkaloid from an unidentified ascidian. Powder. Mp 162-166°.

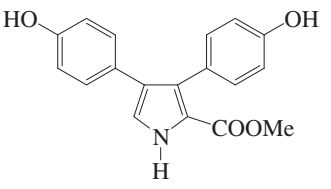
7-Methoxy, 5,6-dihydro, 5ξ-hydroxy, 8,9,13,21-tetra-Me ether, 20-sulfate: Lamellarin V 20-sulfate
[189084-02-4]
$C_{30}H_{27}NO_{13}S$ 641.608
Alkaloid from an unidentified ascidian. Mp 174-178°. λ_{max} 202 (ϵ 29000); 264 (sh) ; 273 (ϵ 17000); 304 (ϵ 14000); 328 (sh) (MeOH).

14-Methoxy, 13-deoxy, 7-hydroxy, 5,6-dihydro, 8,9,12,21-tetra-Me ether: ***Lamellarin γ***
$C_{30}H_{27}NO_9$ 545.545
Alkaloid from *Didemnum obscurum*. Amorph. solid. Mp 163-165°. λ_{max} 206 (log ϵ 1.88); 278 (log ϵ 1.65); 310 (log ϵ 1.63); 331 (log ϵ 1.55); 365 (log ϵ 0.87) (MeOH).

Andersen, R.J. *et al., J.A.C.S.*, 1985, **107**, 5492-5495 (*Lamellarins A-D*)
Lindquist, N. *et al., J.O.C.*, 1988, **53**, 4570-4574 (*Lamellarins E-H*)
Carroll, A.R. *et al., Aust. J. Chem.*, 1993, **46**, 489-501 (*Lamellarins I-N*)
Urban, S. *et al., Aust. J. Chem.*, 1996, **49**, 711-713 (*Lamellarin S*)
Heim, A. *et al., Angew. Chem., Int. Ed.*, 1997, **36**, 155-156 (*Lamellarin G, synth*)
Banwell, M. *et al., Chem. Comm.*, 1997, 2259-2260 (*Lamellarin K, synth*)
Pat. Coop. Treaty (WIPO), 1997, (*Pharma Mar*)97 01336; *CA*, **1327**, 166474 (*activity*)
Reddy, M.V.R. *et al., Tetrahedron*, 1997, **53**, 3457-3466 (*Lamellarins T-Y*)
Ishibashi, F. *et al., Tetrahedron*, 1997, **53**, 5951-5962 (*synth*)
Reddy, M.V.R. *et al., J. Med. Chem.*, 1999, **42**, 1901-1907 (*Lamellarin α 20-sulfate*)
Davis, R.A. *et al., J. Nat. Prod.*, 1999, 419-424 (*Didemnum chartaceum constits*)
Steglich, W. *et al., Chem. Eur. J.*, 2000, **6**, 1147-1152 (*Lamellarin L, synth*)
Ruchirawat, S. *et al., Tet. Lett.*, 2001, **42**, 1205-1208 (*Lamellarin G, synth*)
Ham, J. *et al., Bull. Korean Chem. Soc.*, 2002, **23**, 163-166 (*Lamellarin β*)
Iwao, M. *et al., Tet. Lett.*, 2003, **44**, 4443-4446 (*Lamellarin G, synth*)
Bailly, C. *et al., Curr. Med. Chem. Anticancer Agents*, 2004, **4**, 363-378 (*rev*)
Krishnaiah, P. *et al., J. Nat. Prod.*, 2004, **67**, 1168-1171 (*Lamellarins α,γ,ϵ*)
Handy, S.T. *et al., J.O.C.*, 2004, **69**, 2362-2366 (*Lamellarin G, synth*)
Reddy, S.M. *et al., Tetrahedron*, 2005, **61**, 9242-9247 (*Lamellarins ζ,η,ϕ,χ*)
Ploypradith, P. *et al., J.O.C.*, 2006, **71**, 9440-9448 (*synth*)
Peschko, C. *et al., Synthesis*, 2006, 3048-3057 (*Lamellarin G, Lamellarin K, synth*)
Yamaguchi, T. *et al., Tet. Lett.*, 2006, **47**, 3755-3757 (*Lamellarin α 20-sulfate, synth*)
Fujikawa, N. *et al., Tetrahedron*, 2006, **62**, 594-604 (*Lamellarins D,L,N, synth*)
Fan, H. *et al., Chem. Rev.*, 2008, **108**, 264-287 (***rev***)
Liermann, J.C. *et al., J.O.C.*, 2008, **73**, 4526-4531 (*synth*)
Baunbaeck, D. *et al., Mar. Drugs*, 2008, **6**, 5134-527 (*sar, props*)

Lamellarin Q L-25

Methyl 3,4-bis(4-hydroxyphenyl)-1H-pyrrole-2-carboxylate
[168010-02-4]



$C_{18}H_{15}NO_4$ 309.321

Isol. from the sponge *Dendrilla cactos*. Pale yellow oil. λ_{max} 240 (ϵ 14000); 287 (ϵ 12000) (EtOH).

N-*(4-Hydroxyphenyl):* ***Lamellarin R***
[168010-03-5]
$C_{24}H_{19}NO_5$ 401.418
Isol. from the sponge *Dendrilla cactos*. Green oil. λ_{max} 229 (ϵ 13500); 283 (ϵ 6000); 336 (ϵ 2200); 418 (ϵ 1200) (EtOH).

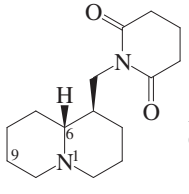
N-*[2-(4-Methoxyphenyl)-2-oxoethyl]:* ***Lamellarin O***
[158402-61-0]
$C_{27}H_{23}NO_6$ 457.482
Isol. from the Australian marine sponge *Dendrilla cactos*. Unstable pale yellow oil; pale yellow cryst. (as di-Me ether). Mp 55-58° (di-Me ether). λ_{max} 277 (ϵ 5200) (EtOH) (Berdy).

N-*[2-(2-Hydroxy-4-methoxyphenyl)-2-oxoethyl]:* ***Lamellarin P***
[158402-60-9]
$C_{27}H_{23}NO_7$ 473.481
From *Dendrilla cactos*. Moderately stable pale yellow oil. λ_{max} 231 (ϵ 5800); 276 (ϵ 6200); 305 (ϵ 3000) (EtOH) (Berdy).

Urban, S. *et al., Aust. J. Chem.*, 1994, **47**, 1919-1924; 1995, **48**, 1491-1494 (*isol, pmr, cmr, ms, struct, uv, ir*)
Fürstner, A. *et al., J.O.C.*, 1995, **60**, 6637 (*synth*)
Banwell, M.G. *et al., Chem. Comm.*, 1997, 207 (*synth*)
Boger, D.L. *et al., J.A.C.S.*, 1999, **121**, 54-62 (*synth*)
Marfil, M. *et al., Tetrahedron*, 2004, **60**, 8659-8668 (*synth*)
Fukuda, T. *et al., Tetrahedron*, 2008, **64**, 328-338 (*synth*)

Lamprolobine L-26

*1-[(Octahydro-2*H*-quinolizin-1-yl)-methyl]-2,6-piperidinedione, 9CI. 5-(Glutarimidomethyl)quinolizidine*
[18688-40-9]



Absolute Configuration

$C_{15}H_{24}N_2O_2$ 264.367

(+)-*form*
Alkaloid from *Lamprolobium fruticosum* and *Lupinus holosericeus* (Fabaceae). Oil, cryst. at 0°. $[\alpha]_D$ +29 (c, 1.5 in EtOH).

Picrate: Mp 153-154°.

9β-Hydroxy: ***9β-Hydroxylamprolobine***
[80324-07-8]
$C_{15}H_{24}N_2O_3$ 280.366
Alkaloid from the leaves of *Sophora velutina* var. *zimbabweensis* (Fabaceae). $[\alpha]_D$ +24 (EtOH).

6-Epimer: ***Epilamprolobine***
[80374-24-9]
$C_{15}H_{24}N_2O_2$ 264.367
Alkaloid from leaves of *Sophora tomentosa* (Fabaceae). Needles (C_6H_6/hexane). Mp 101.5°. $[\alpha]^{20}_{365}$ -13.8 (EtOH).

6-Epimer, 1β-oxide: ***Epilamprolobine* N-*oxide***
$C_{15}H_{24}N_2O_3$ 280.366
Alkaloid from leaves, stems, seeds and pods of *Sophora tomentosa* (Fabaceae). Amorph. solid. $[\alpha]^{20}_D$ +14.9 (c, 0.77 in EtOH).

Deoxo, 6-epimer: ***17-Deoxyepilamprolobine***. *17-Desoxy-*cis*-lamprolobine*
[220908-80-5]
$C_{15}H_{26}N_2O$ 250.383
Constit. of *Bongardia chrysogonum*. Amorph. solid. $[\alpha]^{22}_D$ -70 (c, 0.9 in MeOH). λ_{max} 203 (log ϵ 2.67) (MeOH).

(±)-*form*
Noncryst. Mp 192-193° (as picrate).

6-Epimer:
Cryst. (hexane/EtOAc). Mp 68-68.5°.

Hart, N.K. *et al., Aust. J. Chem.*, 1968, **21**, 1619 (*isol, ir, ms, struct*)
Yamada, Y. *et al., Agric. Biol. Chem.*, 1970, **34**, 1536 (*synth*)
Goldberg, S.I. *et al., J.O.C.*, 1970, **35**, 242 (*synth*)
Wenkert, E. *et al., J.O.C.*, 1970, **35**, 515 (*synth*)
Keller, W.J. *et al., Phytochemistry*, 1980, **19**, 2233 (*isol*)
Keller, W.J. *et al., J. Nat. Prod.*, 1981, **44**, 357 (*isol*)
Murakoshi, I. *et al., Phytochemistry*, 1981, **20**, 1725 (*Epilamprolobine, Epilamprolobine oxide*)
Asres, K. *et al., J. Nat. Prod.*, 1986, **49**, 117 (*isol, ir, pmr, cmr, ms, struct, 9-Hydroxylamprolobine*)
Michael, J.P. *et al., Tetrahedron*, 1992, **48**, 10211 (*synth, Lamprolobine, Epilamprolobine*)
Atta-ur-Rahman, *et al., Nat. Prod. Lett.*, 1998, **12**, 161-173 (*Deoxyepilamprolobine*)

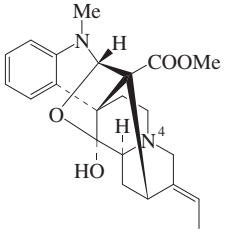
Lanceine L-27

[1358-85-6]
Struct. unknown. MF = $C_{20\text{-}24}H_{26\text{-}36}N_2O_{3\text{-}4}$. Alkaloid from *Catharanthus lancea* (Apocynaceae). Mp 198°. $[\alpha]^{20}_D$ +64 (c, 0.5 in EtOH).

Janot, M.M. *et al., Ann. Pharm. Fr.*, 1957, **15**, 474-478 (*isol, ir, uv*)
Blomster, R.N. *et al., J. Pharm. Sci.*, 1967, **56**, 284-286 (*isol, ir*)

Lanceomigine L-28

*Methyl 2,17-epoxy-2-hydroxy-1-methyl-1,17-cyclo-1,2(1*H*,2*H*)-secoakuammilan-16-carboxylate, 9CI*
[79659-63-5]



Absolute Configuration

$C_{22}H_{26}N_2O_4$ 382.458
Alkaloid from *Hunteria congolana, Hunteria zeylanica* and *Alstonia lanceolata* (Apocynaceae). Amorph. $[\alpha]_D$ +32 (c, 1 in $CHCl_3$).

N^4-*Oxide:* ***Lanceomigine* N^4-*oxide***
[79659-64-6]
$C_{22}H_{26}N_2O_5$ 398.458
Alkaloid from the stem bark of *Alstonia lanceolata* (Apocynaceae). Amorph. $[\alpha]_D$ +79 (c, 0.63 in $CHCl_3$).

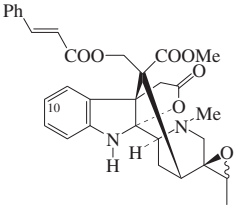
N-*De-Me:* ***Rhazicine***
[93772-10-2]
$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from fresh leaves of *Rhazya stricta* and from leaves of *Melodinus acutiflorus* (Apocynaceae). Prisms (MeOH) or hygroscopic needles. Mp 122.6-124.4°. $[\alpha]_D$ +69.8 (c, 0.76 in $CHCl_3$) (+65). Struct. revised in 1987.

N-*De-Me,* N^4-*oxide:* ***Rhazicine* N-*oxide***
[117138-43-9]
$C_{21}H_{24}N_2O_5$ 384.431
Alkaloid from leaves of *Melodinus acutiflorus* (Apocynaceae). Needles (C_6H_6/EtOH). Mp 188-188.1°. $[\alpha]^{22}_D$ +120.4 (c, 0.467 in $CHCl_3$).

Vercauteren, J. *et al., Phytochemistry*, 1981, **20**, 1411 (*isol, uv, ir, pmr, cmr, ms, struct, oxide*)
Atta-ur-Rahman, *et al., Heterocycles*, 1984, **22**, 2183 (*Rhazicine*)
Wen-Lan, H. *et al., Phytochemistry*, 1987, **26**, 2625 (*Rhazicine, isol, uv, ir, pmr, cmr, cryst struct*)
Hu, W.-L. *et al., Planta Med.*, 1988, **54**, 235 (*Rhazicine N-oxide*)

Lanciferine L-29

[56440-64-3]



Absolute Configuration

$C_{31}H_{32}N_2O_7$ 544.603
Alkaloid from the aerial parts of *Alstonia lanceolifera* and *Alstonia boulindaensis* (Apocynaceae). Cryst. (EtOH). Mp 259-262°. $[\alpha]^{20}_D$ -60 (c, 1 in $CHCl_3$).

10-Hydroxy: ***10-Hydroxylanciferine***
[56486-42-1]
$C_{31}H_{32}N_2O_8$ 560.602
Alkaloid from the aerial parts of *Alstonia lanceolifera* and *Alstonia boulindaensis* (Apocynaceae). Cryst. (Et_2O/MeOH). Mp 228-231°. $[\alpha]^{20}_D$ -48 (c, 1 in $CHCl_3$).

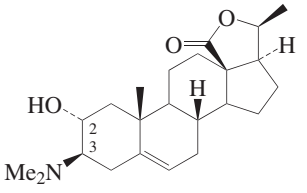
10-Methoxy: ***10-Methoxylanciferine***
[56440-65-4]
$C_{32}H_{34}N_2O_8$ 574.629
Alkaloid from the aerial parts of *Alstonia lanceolifera* and *Alstonia boulindaensis* (Apocynaceae). Cryst. (MeOH). Mp 251-254°. $[\alpha]^{20}_D$ -64 (c, 1

in $CHCl_3$).

Lewin, G. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1975, **280**, 987 (*isol, struct, derivs*)
Lewin, G. *et al., J. Indian Chem. Soc.*, 1978, **55**, 1096 (*isol, uv, ir, pmr, ms, derivs*)
Lewin, G. *et al., Bull. Soc. Chim. Fr.*, Part 2, 1980, 400 (*struct*)

Lanitine **L-30**

3-(Dimethylamino)-2-hydroxypregn-5-en-18,20-olide
[30452-63-2]



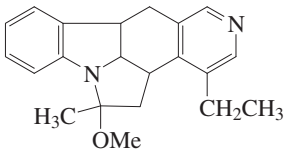
$C_{23}H_{35}NO_3$ 373.534
Alkaloid from stem bark of *Kibatalia gitingensis* (Apocynaceae). Mp 184-186°.

2,3-Diepimer: ***Lanitinine***
[30452-64-3]
Alkaloid from the stem bark of *Kibatalia gitingensis* (Apocynaceae). Mp 223-225°.

Bernal-Santos, R.M. *et al., Philipp. J. Sci.*, 1967, **96**, 411; *CA*, **76**, 10364p

Lankanescine **L-31**

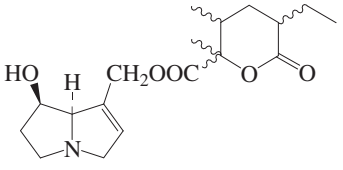
*12-Ethyl-1,2,7*b*,8,12*b*,12*c*-hexahydro-2-methoxy-2-methylpyrido[4,3-*b*]pyrrolo[1,2,3-*lm*]carbazole, 9CI*
[367938-59-8]



$C_{21}H_{24}N_2O$ 320.433
Poss. related to the Ellipticine and Olivacine groups; biosynth. not yet known. Alkaloid from *Rauwolfia canescens*. λ_{max} 260 ; 279 (MeOH).

Arambewela, L.S.R. *et al., Pharm. Biol.*, 2001, **39**, 239-240 (*isol, pmr, cmr, ms*)

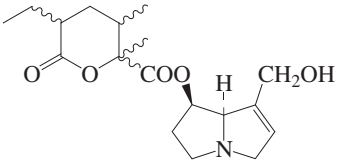
Lankongensisine A **L-32**



$C_{18}H_{27}NO_5$ 337.415
Alkaloid from the roots of *Ligularia lankongensis*. Yellow oil. $[\alpha]_D^{24}$ +48.4 (c, 4.8 in $CHCl_3$).

Tan, A.M. *et al., Chin. Chem. Lett.*, 2004, **15**, 68-70 (*isol, pmr, cmr*)

Lankongensisine B **L-33**

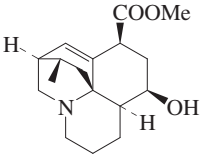


$C_{18}H_{27}NO_5$ 337.415
Alkaloid from the roots of *Ligularia lankongensis*. Yellow oil. $[\alpha]_D^{20}$ +76.7 (c, 1.2 in $CHCl_3$).

Tan, A.M. *et al., Chin. Chem. Lett.*, 2004, **15**, 68-70 (*isol, pmr, cmr*)

Lannotinidine A **L-34**

[851461-36-4]



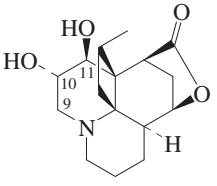
Relative Configuration

$C_{17}H_{25}NO_3$ 291.389
Alkaloid from *Lycopodium annotinum*. Amorph. solid. $[\alpha]_D^{23}$ +47 (c, 1 in MeOH).

Koyama, K. *et al., Tetrahedron*, 2005, **61**, 3681-3690 (*isol, pmr, cmr*)

Lannotinidine E **L-35**

[851461-40-0]



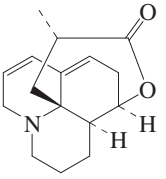
$C_{16}H_{23}NO_4$ 293.362
Alkaloid from *Lycopodium annotinum* var. *acrifolium*. Amorph. solid. $[\alpha]_D^{18}$ -7 (c, 0.2 in MeOH).

10-Deoxy, 9,10-didehydro, 11-ketone: ***Lannotinidine F***
[851461-41-1]
$C_{16}H_{19}NO_3$ 273.331
Alkaloid from *Lycopodium annotinum*. Amorph. solid. $[\alpha]_D^{24}$ -22 (c, 1 in MeOH).

Koyama, K. *et al., Tetrahedron*, 2005, **61**, 3681-3690 (*isol, pmr, cmr*)

Lannotinidine G **L-36**

[851461-42-2]



$C_{16}H_{21}NO_2$ 259.347
Alkaloid from *Lycopodium annotinum*. Amorph. solid. $[\alpha]_D^{18}$ -2 (c, 1 in MeOH).

Koyama, K. *et al., Tetrahedron*, 2005, **61**, 3681-3690 (*isol, pmr, cmr*)

Lanopylins **L-37**



Lanopylin
A_1 R = $-(CH_2)_{13}CH(CH_3)_2$
B_1 R = $-(CH_2)_{15}CH_3$
C_1 R = $-(CH_2)_{11}CH(CH_3)_2$
D_1 R = $-(CH_2)_{13}CH_3$
E_1 R = $-(CH_2)_{12}CH(CH_3)_2$
F_1 R = $-(CH_2)_{14}CH_3$
G_1 R = $-(CH_2)_{14}CH(CH_3)_2$
G_2 R = $-(CH_2)_{10}CH{=}CH(CH_2)_4CH(CH_3)_2$
H_1 R = $-(CH_2)_{16}CH_3$
H_2 R = $-(CH_2)_{10}CH{=}CH(CH_2)_6CH_3$
I_1 R = $-(CH_2)_{15}CH(CH_3)_2$
I_2 R = $-(CH_2)_{10}CH{=}CH(CH_2)_5CH(CH_3)_2$
J_1 R = $-(CH_2)_{17}CH_3$
J_2 R = $-(CH_2)_{10}CH{=}CH(CH_2)_7CH_3$

Structs. given are tentative except for Lanopylins A_1 and B_1. Prod. by *Streptomyces* sp. K99-5041. Lanosterol synthase inhibitors.

Lanopylin A_1
2-Methyl-3-(15-methylhexadecylidene)-1-pyrroline
$C_{22}H_{41}N$ 319.573
Oil. λ_{max} 235 (ε 14500) (MeOH).

12′,13′-Didehydro(Z-): 2-Methyl-3-(15-methyl-12Z-hexadecenylidene)-1-pyrroline. ***Lanopylin C_2***
$C_{22}H_{39}N$ 317.557

Lanopylin B_1
3-Heptadecylidene-2-methyl-1-pyrroline
$C_{22}H_{41}N$ 319.573
Oil. λ_{max} 235 (ε 13900) (MeOH).

12′,13′-Didehydro(Z-): 3-(12Z-Heptadecenylidene)-2-methyl-1-pyrroline. ***Lanopylin D_2***
$C_{22}H_{39}N$ 317.557

Lanopylin C_1
2-Methyl-3-(13-methyltetradecylidene)-1-pyrroline
$C_{20}H_{37}N$ 291.519

Lanopylin D_1
2-Methyl-3-pentadecylidene-1-pyrroline
$C_{20}H_{37}N$ 291.519

Lanopylin E_1
2-Methyl-3-(14-methylpentadecylidene)-1-pyrroline
$C_{21}H_{39}N$ 305.546

Lanopylin F_1
3-Hexadecylidene-2-methyl-1-pyrroline
$C_{21}H_{39}N$ 305.546

Lanopylin G_1
2-Methyl-3-(16-methylheptadecylidene)-1-pyrroline
$C_{23}H_{43}N$ 333.599

*12′,13′-Didehydro(*E-*): 2-Methyl-3-(16-methyl-12Z-heptadecenylidene)-1-pyrroline.* ***Lanopylin E₂***
$C_{23}H_{41}N$ 331.584

Lanopylin G_2
2-Methyl-3-(18-methyl-12Z-nonadecenylidene)-1-pyrroline
$C_{25}H_{45}N$ 359.637

Lanopylin H_1
2-Methyl-3-octadecylidene-1-pyrroline
$C_{23}H_{43}N$ 333.599

*12′,13′-Didehydro(*Z-*): 2-Methyl-3-(12Z-octadecenylidene)-1-pyrroline.* ***Lanopylin F_2***
$C_{23}H_{41}N$ 331.584

Lanopylin H_2
3-(12Z-Eicosenylidene)-2-methyl-1-pyrroline
$C_{25}H_{45}N$ 359.637

Lanopylin I_1
2-Methyl-3-(17-methyloctadecylidene)-1-pyrroline
$C_{24}H_{45}N$ 347.626

*12′,13′-Didehydro(*Z-*): 2-Methyl-3-(17-methyl-12Z-octadecenylidene)-1-pyrroline.* ***Lanopylin A_2***
$C_{24}H_{43}N$ 345.61
Oil.

Lanopylin I_2
2-Methyl-3-(19-methyl-12Z-eicosenylidene)-1-pyrroline
$C_{26}H_{47}N$ 373.664

Lanopylin J_1
2-Methyl-3-nonadecylidene-1-pyrroline
$C_{24}H_{45}N$ 347.626

*12′,13′-Didehydro(*Z-*): 2-Methyl-3-(12Z-nonadecenylidene)-1-pyrroline.* ***Lanopylin B_2***
$C_{24}H_{43}N$ 345.61
Oil.

Lanopylin J_2
3-(12Z-Heneicosenylidene)-2-methyl-1-pyrroline
$C_{26}H_{47}N$ 373.664

Sakano, Y. *et al., J. Antibiot.*, 2003, **56**, 817-826 (*isol, pmr, cmr, ms*)
Snider, B.B. *et al., J.O.C.*, 2005, **70**, 1087-1088 (*Lanopylin B_1, synth*)

Lansamide 1 L-38

N-*Methyl-3-phenyl*-N-*(2-phenylethenyl)-2-propenamide, 9CI.* N-*Methyl*-N-*styrylcinnamamide. Lansimide 1*
PhCH═CHNMeCOCH═CHPh
$C_{18}H_{17}NO$ 263.338

(E,E)-form [77527-97-0]
Alkaloid from the leaves and seeds of *Clausena lansium* (wampee). Mp 124-125° (119-120°). λ_{max} 218 ; 290 ; 306 ; 327 (MeOH).

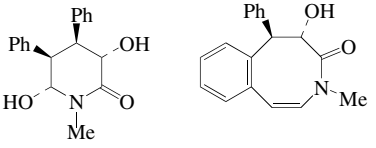
(Z,E)-form
Lansiumamide B. N-*Methyl*-N-cis-*styrylcinnamamide*
[121817-37-6]
Alkaloid from the seeds of *Clausena lansium* (wampee). Yellowish plates (Et_2O). Mp 72-73°. λ_{max} 218 ; 226 ; 285 (MeOH).

N-*De-Me:* ***Lansiumamide A***
[121817-36-5]
$C_{17}H_{15}NO$ 249.312
Constit. of the seeds of *Clausena lansium* (wampee). Pale yellow needles (cyclohexane/Et_2O). Mp 121-123°. λ_{max} 218 ; 265 ; 303 (MeOH).

Prakash, D. *et al., Indian J. Chem., Sect. B*, 1980, **19**, 1075 (*isol, uv, ir, pmr, ms, struct, synth*)
Lin, J.-H. *et al., Phytochemistry*, 1989, **28**, 621-622 (*isol, pmr, ms*)
Stefanuti, I. *et al., Tet. Lett.*, 2000, **41**, 3735-3738 (*synth*)
Huang, X.-S. *et al., Acta Cryst. E*, 2006, **62**, 1987-1988 (*Lansiumamide B, cryst struct*)

Lansamide 2 L-39

Lansimide 2
[119574-06-0]



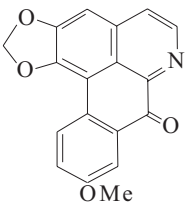
Relative Configurations

$C_{18}H_{36}N_2O_5$ 360.493
A 1:1 complex of cyclic amides Lansamide 3 in D-575 and ζ-Clausenamide, C-501. Constit. of *Clausena lansium* (wampee). Spasmolytic agent. Cryst. (MeOH/C_6H_6). Mp 173-174°. Racemic. λ_{max} 229 ; 254 (MeOH).

Ji, X. *et al., Acta Cryst. C*, 1992, **48**, 1082-1085 (*conformn, cryst struct*)
Lakshmi, V. *et al., Nat. Prod. Res.*, 2005, **19**, 355-358 (*isol, pmr, cmr, cryst struct*)

Lanuginosine L-40

*10-Methoxy-8*H*-benzo[*g*]-1,3-benzodioxolo[6,5,4-*de*]quinolin-8-one, 9CI. 9-Methoxy-1,2-methylenedioxy-7-oxodibenzo[*de,g*]quinoline. Oxoxylopine. 9-Methoxyliriodenine*
[23740-25-2]



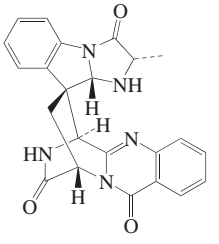
$C_{18}H_{11}NO_4$ 305.289
Alkaloid from a variety of genera in the Annonaceae (*Annona*, *Enantia*, *Guatteria*, *Polyalthia*, *Xylopia*), Magnoliaceae (*Magnolia*, *Michelia*, *Liriodendron*, *Talauma*) and Menispermaceae (*Stephania*). Shows antimicrobial activity. Mp 319-321°.

▶ RB6035500
O-*De-Me:* ***Oxoanolobine***
[76788-85-7]
$C_{17}H_9NO_4$ 291.262
Alkaloid from stem bark of *Guatteria melosma* (Annonaceae). Amorph. orange solid (MeOH). Mp 270-275° dec.

Talapatra, S.K. *et al., Chem. Ind. (London)*, 1969, 1056 (*isol, uv, ir*)
Govindachari, T.R. *et al., Indian J. Chem.*, 1970, **8**, 475 (*synth*)
Kupchan, S.M. *et al., J.O.C.*, 1970, **35**, 1682 (*isol, pmr, ms, uv, ir*)
Talapatra, S.K. *et al., Tetrahedron*, 1975, **31**, 1105 (*isol, uv, ir, ms, pmr*)
Phoebe, C.H. *et al., Heterocycles*, 1980, **14**, 1977 (*Oxoanolobine*)
Villar, A. *et al., Planta Med.*, 1986, **52**, 556-557 (*activity*)
Zhang, Z. *et al., J. Nat. Prod.*, 2002, **65**, 856-859 (*cmr*)

Lapatin A L-41

[859152-45-7]



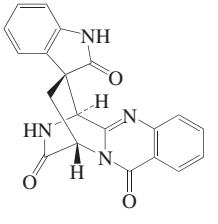
Absolute Configuration

$C_{23}H_{19}N_5O_3$ 413.435
Prod. by *Penicillium lapatayae* (IBT 10870). $[\alpha]_D^{22}$ +22 (c, 1.1 in EtOH). λ_{max} 206 (log ϵ 4.43); 237 (log ϵ 4.05); 255 (log ϵ 3.96); 257 (log ϵ 3.97); 306 (log ϵ 3.5) (EtOH).

Larsen, T.O. *et al., J. Nat. Prod.*, 2005, **68**, 871-874 (*isol, uv, cd, pmr, cmr*)

Lapatin B L-42

[859152-47-9]



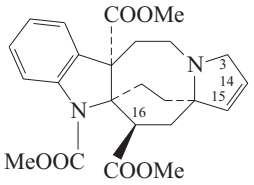
Absolute Configuration

$C_{20}H_{14}N_4O_3$ 358.356
Prod. by *Penicillium lapatayae* (IBT 10870). $[\alpha]_D^{22}$ -20 (c, 1.6 in EtOH). λ_{max} 255 (log ϵ 3.36); 265 (log ϵ 3.38); 277 (log ϵ 3.31); 302 (log ϵ 3.02); 314 (log ϵ 2.9) (EtOH).

Larsen, T.O. *et al., J. Nat. Prod.*, 2005, **68**, 871-874 (*isol, uv, cd, pmr, cmr*)
Leca, D. *et al., J.O.C.*, 2007, **72**, 4284-4287 (*synth*)
Walker, S.J. *et al., Tet. Lett.*, 2007, **48**, 6214-6216 (*synth*)

Lapidilectine A L-43

[143070-42-2]



$C_{24}H_{28}N_2O_6$ 440.495

N^4-*C*21:*C*-20-*C*21Bissecoaspidofractines. Alkaloid from bark and leaves of *Kopsia lapidilecta* (Apocynaceae). Amorph. $[\alpha]_D$ -33 (c, 0.8 in $CHCL_3$).

14,15-Dihydro, 15α-hydroxy: ***Epilapidilectinol***
[150881-26-8]
$C_{24}H_{30}N_2O_7$ 458.51
Alkaloid from bark and leaves of *Kopsia lapidilecta* (Apocynaceae). Amorph. $[\alpha]_D$ +19 (c, 0.8 in $CHCl_3$).

14,15-Dihydro, 15β-hydroxy: ***Lapidilectinol***
[151003-94-0]
$C_{24}H_{30}N_2O_7$ 458.51
Alkaloid from bark and leaves of *Kopsia lapidilecta* (Apocynaceae). Amorph. $[\alpha]_D$ -5 (c, 0.5 in $CHCl_3$).

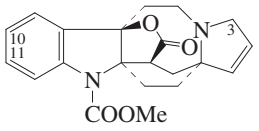
3-Oxo: ***Lapidilectam***
[150881-25-7]
$C_{24}H_{26}N_2O_7$ 454.479
Alkaloid from bark and leaves of *Kopsia lapidilecta* (Apocynaceae). $[\alpha]_D$ +77 (c, 0.55 in $CHCl_3$).

16-Epimer: ***Isolapidilectine A***
[151003-93-9]
$C_{24}H_{28}N_2O_6$ 440.495
Alkaloid from bark and leaves of *Kopsia lapidilecta* (Apocynaceae). Amorph. $[\alpha]_D$ +54 (c, 0.72 in $CHCl_3$).

Awang, K. *et al., Tet. Lett.*, 1992, **33**, 2493 (*isol, uv, pmr, cmr, ms, struct*)
Awang, K. *et al., J. Nat. Prod.*, 1993, **56**, 1134 (*config*)

Lapidilectine B L-44

[143052-16-8]



$C_{21}H_{22}N_2O_4$ 366.416

Aspidofractine alkaloids showing N^4-*C*-21:*C*20-*C*21 cleavage and elimination of *C*-21. Alkaloid from bark and leaves of *Kopsia lapidilecta*. Amorph. $[\alpha]_D$ +7.6 (c, 0.9 in $CHCl_3$).

10-Methoxy: ***Tenuisine A***
[185741-73-5]
$C_{22}H_{24}N_2O_5$ 396.442
Alkaloid from the leaves of *Kopsia tenuis.* $[\alpha]_D$ +77 (c, 0.8 in $CHCl_3$). Struct. revised in 2004. λ_{max} 206 (log ϵ 4.46); 247 (log ϵ 3.99); 304 (log ϵ 3.64) (EtOH).

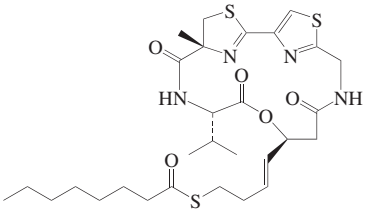
10-Methoxy, 3-oxo: ***Tenuisine C***
[185742-51-2]
$C_{22}H_{22}N_2O_6$ 410.426
Alkaloid from the leaves of *Kopsia tenuis.* $[\alpha]_D$ +87 (c, 0.06 in $CHCl_3$). Struct. revised in 2004. λ_{max} 203 (log ϵ 4.41); 247 (log ϵ 4.1); 304 (log ϵ 3.55) (EtOH).

10,11-Dimethoxy: ***Tenuisine B***
[185742-22-7]
$C_{23}H_{26}N_2O_6$ 426.468
Alkaloid from the leaves of *Kopsia tenuis.* Struct. revised in 2004. $[\alpha]_D$ +51 (c, 0.09 in $CHCl_3$). λ_{max} 214 (log ϵ 4.48); 252 (log ϵ 4.08); 300 (log ϵ 3.7) (EtOH).

Awang, K. *et al., Tet. Lett.*, 1992, **33**, 2493-2496 (*isol, uv, pmr, cmr, struct*)
Pearson, W.H. *et al., J.O.C.*, 2004, **69**, 9109-9122 (*synth*)
Kam, T.-S. *et al., Tetrahedron*, 2004, **60**, 10739-10745 (*Tenuisines*)
Pihko, A.J. *et al., Tetrahedron*, 2005, **61**, 8769-8807 (*synth, rev*)

Largazole L-45

[1009815-87-5]



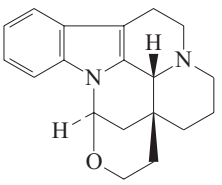
$C_{29}H_{42}N_4O_5S_3$ 622.873

Isol. from a *Symploca* sp. Histone deacetylase inhibitor. Cytotoxic. Potent antiproliferative agent. Amorph. solid. $[\alpha]_D^{20}$ +22 (c, 0.1 in MeOH).

Taori, K. *et al., J.A.C.S.*, 2008, **130**, 1806-1807; 13506 (*isol, pmr, cmr, ms*)
Ying, Y. *et al., J.A.C.S.*, 2008, **130**, 8455-8459 (*synth*)
Bowers, A. *et al., J.A.C.S.*, 2008, **130**, 11219-11222 (*synth*)
Nasveschuk, C.G. *et al., Org. Lett.*, 2008, **10**, 3595-3598 (*synth*)
Ghosh, A.K. *et al., Org. Lett.*, 2008, **10**, 3907-3909 (*synth*)

Larutensine L-46

Larutenine
[138615-19-7]



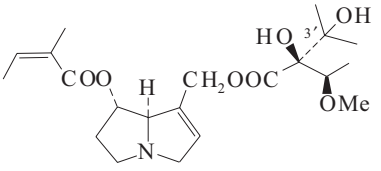
$C_{19}H_{22}N_2O$ 294.396

Alkaloid from the bark and stems of *Kopsia larutensis* and bark of *Kopsia terengganensis* (Apocynaceae). Amorph. $[\alpha]_D$ +22 (c, 0.17 in $CHCl_3$).

Awang, K. *et al., Phytochemistry*, 1991, **30**, 3164 (*isol, uv, pmr, cmr, struct*)
Kam, T.-S. *et al., Phytochemistry*, 1992, **31**, 2936 (*isol, uv, pmr, cmr, ms, struct*)
Lounasmaa, M. *et al., Heterocycles*, 1993, **36**, 751 (*synth*)
Uzir, S. *et al., Tet. Lett.*, 1997, **38**, 1571 (*isol*)

Lasiocarpine L-47

[303-34-4]



$C_{21}H_{33}NO_7$ 411.494

Diester of heliotridine with angelic and lasiocarpic acids. Major alkaloid from *Heliotropium europaeum, Heliotropium lasiocarpum, Heliotropium arbainense, Heliotropium curassavicum, Heliotropium eichwaldii, Heliotropium indicum* and other *Heliotropium* spp. (Boraginaceae). Antineoplastic agent. Hepatotoxin, causes liver damage in grazing animals. Shows activity against hepatoma and sarcoma 45. Shows antibacterial and antifungal activity. Plates (petrol). Mp 95.5-97°. $[\alpha]_D^{16}$ -3.5 (c, 2.0 in EtOH). $[\alpha]_D^{16}$ +0.9 (c, 6.3 in $CHCl_3$). Log P 0.46 (calc).

▶ Highly toxic. Possible human carcinogen (IARC 2B). OE7875000

N-*Oxide:* ***Lasiocarpine* N-*oxide***
[127-30-0]
$C_{21}H_{33}NO_8$ 427.494
From *Heliotropium europaeum* (Boraginaceae). Shows antifungal and antibacterial activity. Prisms or needles. Mp 134-135° dec. (variable). $[\alpha]_D^{17}$ +13.1 (c, 4.97 in EtOH).

▶ OE7900000

$O^{3'}$-*Ac:* ***Acetyllasiocarpine***
[57538-10-0]
$C_{23}H_{35}NO_8$ 453.531
From *Heliotropium europaeum* (Boraginaceae). Noncryst. $[\alpha]_D^{20}$ -0.9 (c, 2 in EtOH).

$O^{3'}$-*Ac,* N-*oxide:* ***3′-Acetyllasiocarpine* N-*oxide***
$C_{23}H_{35}NO_9$ 469.531
Alkaloid from aerial parts of *Heliotropium hirsutissimum* (Boraginaceae). Gummy solid. $[\alpha]_D^{20}$ +10 (c, 0.27 in $CHCl_3$). Named 4′-Acetyllasiocarpine *N*-oxide in the lit.

3′-Deoxy: ***7-Angelylheliotrine***
[56317-17-0]
$C_{21}H_{33}NO_6$ 395.495
Minor alkaloid from *Heliotropium eichwaldii* (Boraginaceae). $[\alpha]_D^{16}$ -13.77 (c, 0.8 in EtOH). Ester of heliotridine with angelic and heliotrinic acids.

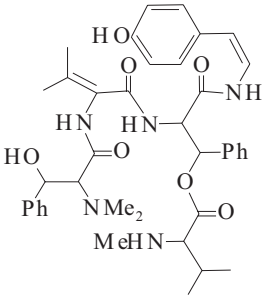
3′-Deoxy, picrate: Mp 191-193°.

Culvenor, C.C.J. *et al., Aust. J. Chem.*, 1954, **7**, 277; 287; 1975, **28**, 2319 (*struct, Acetyllasiocarpine*)

Mattocks, A.R. *et al., Nature (London)*, 1968, **217**, 723 (*tox*)
Šimánek, V. *et al., Coll. Czech. Chem. Comm.*, 1969, **34**, 1832 (*uv*)
Pedersen, E. *et al., Org. Mass Spectrom.*, 1970, **4**, 249 (*ms*)
Culvenor, C.C.J. *et al., J.C.S.(C)*, 1971, 3653 (*cd*)
Suri, O.P. *et al., Indian J. Chem.*, 1975, **13**, 505 (*7-Angelylheliotrine*)
Mody, N.V. *et al., J. Nat. Prod.*, 1979, **42**, 417 (*cmr*)
Hay, D.G. *et al., Acta Cryst. B*, 1982, **38**, 155 (*cryst struct*)
Jones, A.J. *et al., Aust. J. Chem.*, 1982, **35**, 1173 (*cmr*)
Marquina, G. *et al., Pharmazie*, 1989, **44**, 870-871 (*activity*)
Constantinidis, T. *et al., Phytochemistry*, 1993, **32**, 1335 (*Acetyllasiocarpine N-oxide*)
IARC Monog. (Web),
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, LBG000

Lasiodine A† L-48

[22326-90-5]



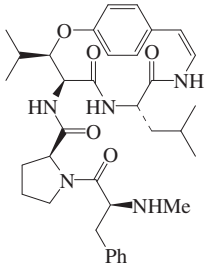
$C_{39}H_{49}N_5O_7$ 699.845

A seco-ansapeptide alkaloid. Alkaloid from the leaves of *Lasiodiscus marmoratus* (Rhamnaceae). Cryst. (Me_2CO). Mp 195°. $[\alpha]_D$ +38 ($CHCl_3$). Contains a D-phenylalanine residue.

Marchand, J. *et al., Tetrahedron*, 1969, **25**, 937 (*isol, uv, ir, pmr, ms, struct*)
Païs, M. *et al., Phytochemistry*, 1979, **18**, 1869 (*cmr*)

Lasiodine B L-49

[22400-56-2]



Absolute Configuration

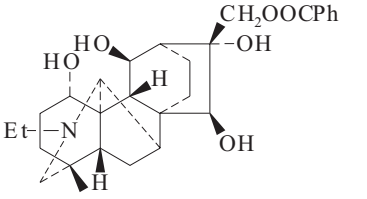
$C_{35}H_{47}N_5O_5$ 617.787

Alkaloid from the leaves of *Lasiodiscus marmoratus* (Rhamnaceae). Cryst. + $0.5H_2O$ (Me_2CO). Mp 221°. $[\alpha]_D$ -301 (c, 1 in $CHCl_3$/MeOH 1:1).

Marchand, J. *et al., Tetrahedron*, 1969, **25**, 937 (*isol, uv, ir, pmr, ms, struct*)
Marchand, J. *et al., Bull. Soc. Chim. Fr.*, 1971, 3742; 1972, 4699 (*stereochem*)
González Sierra, M. *et al., Chem. Comm.*, 1972, 915 (*stereochem*)
Païs, M. *et al., Phytochemistry*, 1979, **18**, 1869 (*cmr*)

Lassiocarpine L-51

[125287-01-6]



$C_{29}H_{39}NO_6$ 497.63

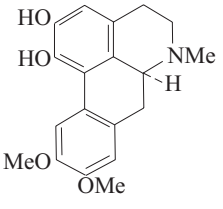
Alkaloid from roots of *Aconitum kojimae* var. *lassiocarpium* and *Aconitum fukutomei* (Ranunculaceae). Cryst. (Me_2CO). Mp 141-143°. $[\alpha]_D^{22}$ -17.4 (c, 0.49 in MeOH).

11-Epimer, O-*debenzoyl:* ***11-Epi-16,17-dihydroxylepenine****. 16,17-Dihydroxy-11-epilepenine*
$C_{22}H_{35}NO_5$ 393.522
Alkaloid from the roots of *Aconitum nagarum* var. *lasiandrum*. Powder. Mp 205-207°. $[\alpha]_D^{20}$ -62 (c, 0.1 in MeOH). The semitrivial names are not strictly correct.

Takayama, H. *et al., Tet. Lett.*, 1989, **30**, 3441 (*isol, ir, pmr, cmr, struct*)
Takayama, H. *et al., J. Nat. Prod.*, 1990, **53**, 936 (*isol*)
Zhang, F. *et al., Planta Med.*, 2005, **71**, 1073-1076 (*11-Epi-16,17-dihydroxylepenine*)

Lastourvilline L-52

*5,6,6a,7-Tetrahydro-9,10-dimethoxy-6-methyl-4*H*-dibenzo[*de,g*]quinoline-1,2-diol, 9CI. 1,2-Dihydroxy-9,10-dimethoxyaporphine*



$C_{19}H_{21}NO_4$ 327.379

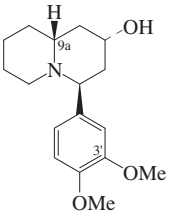
(S)-form [70518-70-6]

Alkaloid from the bark of *Artabotrys lastourvillensis* (Annonaceae). Large pale-yellow cryst. (CH_2Cl_2/MeOH). Mp 128-136° dec. $[\alpha]_D^{25}$ +120 (c, 0.5 in EtOH). Crystals turn violet when exposed to air.

Eloumi-Ropivia, J. *et al., J. Nat. Prod.*, 1985, **48**, 460 (*isol, uv, ir, pmr, cmr, ms, struct*)

Lasubine I L-53

*4-(3,4-Dimethoxyphenyl)octahydro-2*H*-quinolizin-2-ol, 9CI. 2-Hydroxy-4-(3,4-dimethoxyphenyl)quinolizidine*
[68622-77-5]
[88931-04-8 ((±)-form)]



Absolute Configuration

$C_{17}H_{25}NO_3$ 291.389

The abs. configs. of all the alkaloids do not appear to have been firmly established, but are prob. as given here.
Alkaloid from *Lagerstroemia subcostata* (Lythraceae), also obt. by basic hydrol. of Subcosine I. Mp 120.5-122°. $[\alpha]_D^{23}$ -8.8 (c, 0.34 in MeOH).

O-*(3,4-Dimethoxycinnamoyl):* ***Subcosine I***
[68622-78-6]
[88931-06-0 ((±)-form)]
$C_{28}H_{35}NO_6$ 481.588
Minor alkaloid from leaves of *Lagerstroemia subcostata* (Lythraceae). Oil. $[\alpha]_D^{23}$ +68 (c, 0.20 in MeOH).

$O^{3'}$*-De-Me:* ***Demethyllasubine I***
[59373-46-5]
$C_{16}H_{23}NO_3$ 277.363
Minor alkaloid from young seedlings of *Heimia salicifolia* (Lythraceae), absent from older plants. Cryst. (MeOH/Et_2O). Mp 193-194°. Equilib. mixt. of conformers in soln.

$O^{3'}$*-De-Me, 2-*O-*(4-hydroxycinnamoyl):* ***5-Epidemethoxyabresoline***
[66512-90-1]
$C_{25}H_{29}NO_5$ 423.508
Minor alkaloid from young seedlings of *Heimia salicifolia* (Lythraceae). Equilib. mixt. of conformers in DMSO soln.

2-Ketone, $O^{3'}$*-de-Me:* ***1,3,4,6,7,8,9,9a-Octahydro-4-(3-hydroxy-4-methoxyphenyl)-2-quinolizidinone***
$C_{16}H_{21}NO_3$ 275.347
Trace alkaloid from young seedlings of *Heimia salicifolia* (Lythraceae). Stereochem. not determined.

9a-Epimer: ***Lasubine II***
[68681-73-2]
[89771-49-3 ((±)-form)]
$C_{17}H_{25}NO_3$ 291.389
Alkaloid from *Lagerstroemia subcostata* (Lythraceae), also obt. by basic hydrol. of Subcosine II. Oil. $[\alpha]_D^{23}$ -34.7 (c, 0.32 in MeOH).

9a-Epimer, O-*(3,4-dimethoxycinnamoyl):* ***Subcosine II***
[68681-74-3]
$C_{28}H_{35}NO_6$ 481.588
Minor alkaloid from leaves of *Lagerstroemia subcostata* (Lythraceae). Oil. $[\alpha]_D^{23}$ +85.3 (c, 0.64 in MeOH) (natur-

al). $[\alpha]_D^{25}$ +121 (c, 3.5 in MeOH) (synthetic).

9a-Epimer, O$^{3'}$*-de-Me:* ***Demethyllasubine II***
[52656-92-5]
$C_{16}H_{23}NO_3$ 277.363
Minor alkaloid from young seedlings of *Heimia salicifolia* (Lythraceae), absent from older plants. Cryst. (EtOAc). Mp 94-95°.

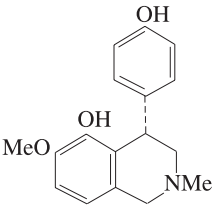
9a-Epimer, O$^{3'}$*-de-Me, 2-*O*-(4-hydroxycinnamoyl):* ***Demethoxyabresoline***
[66408-51-3]
$C_{25}H_{29}NO_5$ 423.508
Minor alkaloid from young seedlings of *Heimia salicifolia* (Lythraceae). Noncryst. solid.

9a-Epimer, O$^{3'}$*-de-Me, 2-*O*-(4-hydroxy-3-methoxycinnamoyl):* ***Abresoline***
[53778-14-6]
$C_{26}H_{31}NO_6$ 453.534
Rel. config. only known. Minor alkaloid from *Heimia salicifolia* (Lythraceae). Amorph. solid.

Rother, A. *et al., J. Nat. Prod.*, 1975, **38**, 477 (*Demethyllasubines, ketone O-de-Me*)
Hörhammer, R.B. *et al., J.O.C.*, 1975, **40**, 656 (*Abresoline*)
Fuji, K. *et al., Chem. Pharm. Bull.*, 1978, **26**, 2515 (*isol, uv, ir, pmr, cmr, ms, struct, synth*)
Rother, A. *et al., Phytochemistry*, 1978, **17**, 305 (*Demethoxyabresolines*)
Quick, J. *et al., Org. Prep. Proced. Int.*, 1979, **11**, 111 (*synth, deriv*)
Takano, S. *et al., Chem. Pharm. Bull.*, 1984, **32**, 3892 (*synth, ir, pmr*)
Iida, H. *et al., J.O.C.*, 1984, **49**, 1909 (*synth, ir, pmr, cmr, ms*)
Hoffmann, R.W. *et al., Annalen*, 1986, 1823 (*synth, pmr, cmr, Lasubine II*)
Narasaka, K. *et al., Bull. Chem. Soc. Jpn.*, 1986, **59**, 525 (*synth*)
Ent, H. *et al., Heterocycles*, 1988, **27**, 237 (*synth, ir, pmr, ms*)
Brown, J.D. *et al., J.A.C.S.*, 1988, **110**, 7445 (*synth, ir, pmr, cmr, Lasubine II*)
Comins, D.L. *et al., J.O.C.*, 1992, **57**, 5807 (*synth*)
Pilli, R.A. *et al., J.O.C.*, 1995, **60**, 717 (*Lasubine II, synth*)
Bardot, V. *et al., Heterocycles*, 1998, **48**, 507-518 (*synth, pmr, cmr*)
Chalard, P. *et al., Tetrahedron: Asymmetry*, 1998, **9**, 4361-4368 (*synth*)
Ratni, H. *et al., Org. Lett.*, 1999, **1**, 1997-1999 (*synth*)
Ukaji, Y. *et al., Heterocycles*, 2000, **52**, 563-566 (*Lasubine II, synth*)
Davis, F.A. *et al., Org. Lett.*, 2003, **5**, 3855-3857 (*synth*)
Gracias, V. *et al., Org. Lett.*, 2003, **5**, 4999-5001 (*Lasubine II, synth*)
Zaja, M. *et al., Tetrahedron*, 2004, **60**, 9629-9634 (*Lasubine II, synth*)
Back, T.G. *et al., J.O.C.*, 2005, **70**, 967-972 (*Lasubine II, synth*)
Atobe, M. *et al., Tet. Lett.*, 2005, **46**, 2669-2673 (*Abresoline, synth*)
Yu, R.T. *et al., J.A.C.S.*, 2006, **128**, 12370-12371 (*Lasubine II, synth*)
Liu, S. *et al., Tet. Lett.*, 2006, **47**, 7681-7684 (*synth*)
Mancheño, O.G. *et al., J.O.C.*, 2007, **72**, 10294-10297 (*synth*)
Lim, J. *et al., Tet. Lett.*, 2008, **49**, 88-89 (*synth*)

Latifine L-54

1,2,3,4-Tetrahydro-4-(4-hydroxyphenyl)-6-methoxy-2-methyl-5-isoquinolinol, 9CI. 1,2,3,4-Tetrahydro-5-hydroxy-4-(4-hydroxyphenyl)-6-methoxy-2-methylisoquinoline



(*S*)-*form*

$C_{17}H_{19}NO_3$ 285.342

(R)-form
Synthetic. Mp 213-217° dec. $[\alpha]_D$ +9.94 (c, 0.644 in MeOH). The observed specific rotn. of the synthetic material is unexpectedly lower than that of the natural product even after repeated recrystallization.

(S)-form [93915-33-4]
Alkaloid from the leaves and bulbs of *Crinum latifolium* (Liliaceae). Cubes (MeOH). Mp 215-217°. $[\alpha]_D^{20}$ -27.9 (c, 0.32 in MeOH).

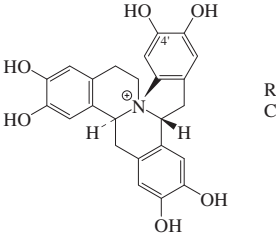
Di-Me ether:
Oil. $[\alpha]_D^{22}$ +2.7 (c, 0.37 in MeOH).

(±)-form
Synthetic. Cryst. (EtOH). Mp 212-215° dec.

Di-Me ether:
Red cryst. (CH_2Cl_2/hexane). Mp 87-88°.

Takano, S. *et al., J.C.S. Perkin 1*, 1985, 2447 (*synth*)
Kobayashi, S. *et al., J. Chem. Res., Synop.*, 1986, 280 (*isol, ir, pmr, cmr, ms, ord, cryst struct, synth*)
Katakawa, J. *et al., Chem. Pharm. Bull.*, 1988, **36**, 3928 (*synth*)
Gore, V.G. *et al., J.C.S. Perkin 1*, 1988, 481 (*synth, ir, pmr, deriv*)
Couture, A. *et al., J.C.S. Perkin 1*, 1999, 789-794 (*synth*)

Latifolian A L-55



Relative Configuration

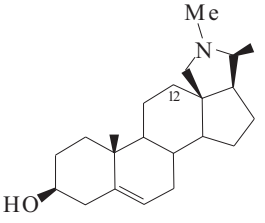
$C_{24}H_{22}NO_6^{\oplus}$ 420.441
Quaternary alkaloid from the stem bark of *Gnetum latifolium*. JNK3 kinase inhibitor. Solid (as TFA salt). $[\alpha]_D^{26}$ -33 (c, 0.21 in MeOH) (TFA salt). λ_{max} 206 (ϵ 37200); 290 (ϵ 6400) (MeOH) (TFA salt).

4′-Me ether: ***Latifolian B***
$C_{25}H_{24}NO_6^{\oplus}$ 434.468
Quaternary alkaloid from the stem bark of *Gnetum latifolium*. JNK3 kinase inhibitor. Solid (as TFA salt). $[\alpha]_D^{26}$ -12 (c, 0.14 in MeOH) (TFA salt). λ_{max} 206 (ϵ 35480); 289 (ϵ 5260) (MeOH) (TFA salt).

Rochfort, S.J. *et al., J. Nat. Prod.*, 2005, **68**, 1080-1082 (*isol, pmr, cmr*)

Latifoline† L-56

Con-5-enin-3-ol, 9CI. Conan-5-en-3-ol
[4438-06-6]



$C_{22}H_{35}NO$ 329.525
Minor alkaloid from the bark of *Funtumia latifolia* (Apocynaceae). Mp 129°. $[\alpha]_D$ -4 (c, 0.8 in $CHCl_3$).

▶ GK7621300

Ac: Mp 160°. $[\alpha]_D$ -15 (c, 1.2 in $CHCl_3$).

N-*De-Me:* ***Norlatifoline***
[6704-71-8]
$C_{21}H_{33}NO$ 315.498
Alkaloid from the bark of *Funtumia latifolia* (Apocynaceae). Cryst. (Me_2CO or by subl.). Mp 192°. $[\alpha]_D$ -26 (c, 1 in $CHCl_3$).

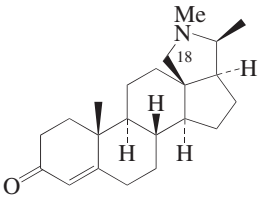
N-*De-Me,* O,N-*di-Ac:* Mp 124°. $[\alpha]_D$ +12 (c, 2 in $CHCl_3$).

12β-Hydroxy: ***Funtuline***
$C_{22}H_{35}NO_2$ 345.524
Alkaloid from the bark of *Funtumia latifolia* (Apocynaceae). Cryst. (MeOH). Mp 235°. $[\alpha]_D$ -6 ($CHCl_3$/MeOH 4:1).

12β-Hydroxy, O,O-*di-Ac:*
$C_{26}H_{39}NO_4$ 429.598
Mp 237°. $[\alpha]_D$ -15 (c, 1 in $CHCl_3$).

Janot, M.M. *et al., C. R. Hebd. Seances Acad. Sci.*, 1962, **254**, 1326 (*isol, struct, synth*)
Khuong-Huu, Q. *et al., Bull. Soc. Chim. Fr.*, 1963, 2486 (*Norlatifoline*)
Nagata, W. *et al., Tet. Lett.*, 1963, 869 (*synth*)
Janot, M.M. *et al., Bull. Soc. Chim. Fr.*, 1964, 787 (*Funtuline*)

Latifolinine L-57



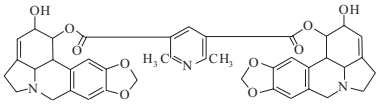
$C_{22}H_{33}NO$ 327.509
Alkaloid from *Funtumia latifolia* (Apocynaceae). Oil.

Oxime:
$C_{22}H_{34}N_2O$ 342.523
Cryst. (MeOH). Mp 225°. $[\alpha]_D$ +190 (MeOH).

18-Oxo: ***Malouetamide***
[50906-87-1]
$C_{22}H_{31}NO_2$ 341.492
Alkaloid from *Malouetia heudelotii* (Apocynaceae). Mp 182°. $[\alpha]_D$ +144 ($CHCl_3$).

Khuong-Huu, Q. *et al., Bull. Soc. Chim. Fr.*, 1963, 2486 (*Latifolinine*)
Khoung-Huu, F. *et al., Phytochemistry*, 1973, **12**, 1813-1816 (*Malouetamide*)

Latindine L-58

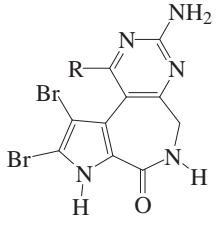


$C_{41}H_{39}N_3O_{10}$ 733.773
Not indexed by CA. Alkaloid from *Crinum latifolium* (Amaryllidaceae). Mp >300° dec.

Ghosal, S. *et al., Phytochemistry*, 1985, **24**, 2141-2156 (*rev*)

Latonduine A L-59

[572873-52-0]



R = H

$C_{10}H_7Br_2N_5O$ 373.006
Alkaloid from *Stylissa carteri*. Pale yellow solid. Dec. at 290°. λ_{max} 245 (ϵ 19830); 284 (ϵ 14220) (MeOH).

Linington, R.G. *et al., Org. Lett.*, 2003, **5**, 2735-2738 (*isol, synth, pmr, cmr*)

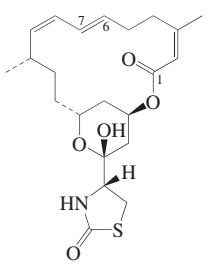
Latonduine B L-60

[572873-51-9]
As Latonduine A, L-59 with
R = -COOH
$C_{11}H_7Br_2N_5O_3$ 417.016
Alkaloid from *Stylissa carteri*. Pale yellow cryst. (as Et ester). Mp 228-231° (Et ester). λ_{max} 203 (ϵ 24130); 252 (ϵ 25920); 284 (sh) ; 348 (ϵ 5890) (MeOH).

Linington, R.G. *et al., Org. Lett.*, 2003, **5**, 2735-2738 (*isol, pmr, cmr*)

Latrunculin A† L-61

[76343-93-6]



Absolute Configuration

$C_{22}H_{31}NO_5S$ 421.557
Toxin from the Red Sea sponge *Latrunculia magnifica* and *Latrunculia corticata*. Also found in three Pacific sponges, *Spongia mycofijiensis*, *Hyatella* sp., an unidentified specimen, and in *Chromodoris hamitoni*, *Chromodoris lochii* and *Chromodoris elisabethina*. Ichthyotoxin, inhibitor of protein kinase C, shows cytochalasin-like activity, potential antiglaucoma agent. Oil. Poorly sol. H_2O. $[\alpha]_D^{24}$ +152 (c, 1.2 in $CHCl_3$). λ_{max} 218 (ϵ 23500); 268 (sh) (ϵ) (MeOH) (Derep).

Me ether:
Cryst. (C_6H_6). Mp 164-165°. $[\alpha]_D^{24}$ +315 (c, 0.33 in $CHCl_3$).

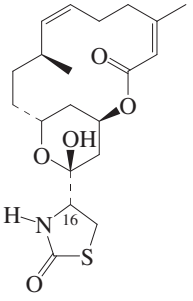
N-*(Hydroxymethyl):* ***Latrunculin G***
[122876-69-1]
$C_{23}H_{33}NO_6S$ 451.583
Isol. from *Latrunculia magnifica* plus formaldehyde. Cell division inhibitor. Oil. $[\alpha]_D^{25}$ +70 (c, 2.2 in $CHCl_3$).

6,7-Epoxide: ***6,7-Epoxylatrunculin A***
[122876-48-6]
$C_{22}H_{31}NO_6S$ 437.556
Constit. of *Latrunculia magnifica* and *Spongia* sp. Oil. Sol. MeOH. $[\alpha]_D^{25}$ +37 (c, 1.2 in $CHCl_3$). λ_{max} 218 (ϵ 23500); 268 (sh) (ϵ) (MeOH) (Derep).

Kashman, Y. *et al., Tet. Lett.*, 1980, **21**, 3629-3632 (*isol, uv, pmr, cmr, ms, cryst struct*)
Groweiss, A. *et al., J.O.C.*, 1983, **48**, 3512-3516 (*Latrunculin A, cryst struct*)
Spector, I. *et al., Science (Washington, D.C.)*, 1983, **219**, 493 (*rev*)
Okuda, R.K. *et al., Experientia*, 1985, **41**, 1355-1356
Kashman, Y. *et al., Tetrahedron*, 1985, **41**, 1905 (*abs config*)
Blasberger, D. *et al., Annalen*, 1989, 1171 (*epoxide*)
U.S. Pat., 1989, 4 857 538; *CA*, **112**, 30647q (*Latrunculin G*)
White, J.D. *et al., J.O.C.*, 1992, **57**, 5292 (*synth, bibl*)
Jefford, C.W. *et al., Tet. Lett.*, 1996, **37**, 159 (*abs config, cryst struct, bibl*)
Fürstner, A. *et al., Chem. Eur. J.*, 2007, **13**, 115-134; 135-149 (*synth, bibl*)

Latrunculin B† L-62

[76343-94-7]



Absolute Configuration

$C_{20}H_{29}NO_5S$ 395.519
Isol. from the Red Sea sponge *Latrunculia magnifica*; also from *Latrunculia corticata*, *Spongia* sp., *Glossodoris quadricolor* and *Chromodoris hamiltonii*. Strongly ichthyotoxic; actin polym. inhibitor; shows insecticidal props. $[\alpha]_D^{24}$ +112 (c, 0.48 in $CHCl_3$). λ_{max} 212 (ϵ 17300); 269 (sh) (MeOH) (Derep).

Me ether: ***15-O-Methyllatrunculin B***
[105917-28-0]
$C_{21}H_{31}NO_5S$ 409.546
Isol. from *Negombata magnifica*. $[\alpha]_D^{25}$ +108 (c, 1.5 in $CHCl_3$).

N-*Ac:* **N-*Acetyllatrunculin B***
$C_{22}H_{31}NO_6S$ 437.556
Isol. from *Negombata magnifica*. Oil. $[\alpha]_D^{25}$ +48 (c, 0.05 in EtOH).

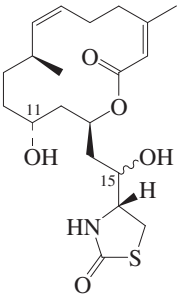
N-*(Hydroxymethyl):* ***Latrunculin H***
[122876-74-8]
$C_{21}H_{31}NO_6S$ 425.545
Isol. from *Latrunculia magnifica* plus formaldehyde. Cell division inhibitor. Oil.

16-Epimer: ***16-Epilatrunculin B***
$C_{20}H_{29}NO_5S$ 395.519
Isol. from the sponge *Negombata magnifica*.

Kashman, Y. *et al., Tet. Lett.*, 1980, **21**, 3629 (*isol, uv, ir, pmr, cmr, ms, struct*)
Groweiss, A. *et al., J.O.C.*, 1983, **48**, 3512 (*isol, uv, ir, pmr, cmr, ms, struct*)
Spector, I. *et al., Science (Washington, D.C.)*, 1983, **219**, 493 (*rev*)
Mebs, D. *et al., J. Chem. Ecol.*, 1985, **11**, 713 (*isol*)
Kashman, Y. *et al., Tetrahedron*, 1985, **41**, 1905 (*pmr, cmr*)
U.S. Pat., 1989, 4 857 538; *CA*, **112**, 30647q (*Latrunculin H*)
Hoye, T.R. *et al., J.A.C.S.*, 2002, **124**, 7405-7410 (*16-Epilatrunculin B*)
Vilozny, B. *et al., J. Nat. Prod.*, 2004, **67**, 1055-1057 (*15-O-Methyllatrunculin B*)
El Sayed, K.A. *et al., J. Nat. Prod.*, 2006, **69**, 219-223 (*N-Acetyllatrunculin B*)
Fürstner, A. *et al., Chem. Eur. J.*, 2007, **13**, 115-134 (*synth, bibl*)

Latrunculin C L-63

[76376-32-4]



$C_{20}H_{31}NO_5S$ 397.535
Macrolide. Structs. originally reported for Latrunculins C and D were reversed. Isol. from the Red Sea Sponge *Latrunculia magnifica*. Ichthyotoxin. Oil. λ_{max} 212 (ϵ 17300); 269 (sh) (ϵ) (MeOH) (Derep).

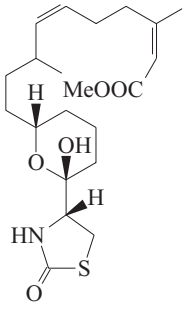
15-Ketone, 11-Me ether: ***Latrunculin D***
[98155-17-0]
$C_{21}H_{31}NO_5S$ 409.546
From *Latrunculia magnifica*. Ichthyotoxin. Oil. Sol. MeOH, hexane; poorly sol. H_2O. λ_{max} 212 (ϵ 17300); 269 (sh) (ϵ) (MeOH) (Derep).

Kashman, Y. *et al., Tetrahedron*, 1985, **41**, 1905-1914 (*isol, uv, ir, pmr, cmr, ms, struct*)

Smith, A.B. *et al., J.A.C.S.*, 1992, **114**, 2995-3007 (*synth*)
Fürstner, A. *et al., Chem. Eur. J.*, 2007, **13**, 115-134 (*synth*)

Latrunculin M L-64

[122876-49-7]

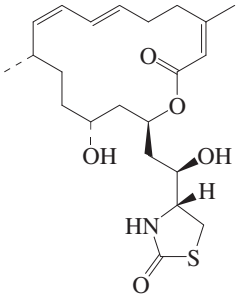


$C_{21}H_{33}NO_5S$ 411.561
Minor constit. of the Red Sea sponge *Latrunculia magnifica*. Oil. Sol. MeOH. $[\alpha]_D^{25}$ +11 (c, 0.2 in $CHCl_3$).

Blasberger, D. *et al., Annalen*, 1989, 1171 (*isol, ir, pmr, cmr, ms*)
Fürstner, A. *et al., Chem. Eur. J.*, 2007, **13**, 115-134 (*synth*)

Latrunculin S L-65

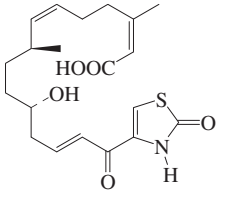
[175992-99-1]



$C_{22}H_{33}NO_5S$ 423.572
Macrolide antibiotic. Isol. from the sponge *Fasciospongia rimosa*. Cytotoxic agent. $[\alpha]_D^{26}$ +110 (c, 0.2 in $CHCl_3$).

Tanaka, J. *et al., Chem. Lett.*, 1996, 255 (*isol, ir, pmr, cmr*)
Fürstner, A. *et al., Chem. Eur. J.*, 2007, **13**, 115-134 (*synth*)

Latrunculin T L-66



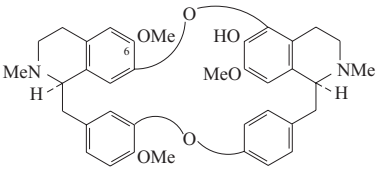
Absolute Configuration

$C_{20}H_{27}NO_5S$ 393.503
Isol. from *Negombata magnifica*. Antimicrobial agent. Oil. $[\alpha]_D^{25}$ +109.5 (c, 0.11 in EtOH).

El Sayed, K.A. *et al., J. Nat. Prod.*, 2006, **69**, 219-223 (*isol, pmr, cmr*)

Lauberine L-67

[19879-48-2]



$C_{37}H_{40}N_2O_6$ 608.733
The alkaloids covered by this entry (2*R*,2′*S*-) belong to the enantiomeric series to those included in Dryadodaphnine, D-944 (2*S*,2′*R*-) and are diastereomeric with those in Thalmine, T-341 (*S,S*-). Alkaloid from the trunk bark and roots of *Berberis laurina* (Berberidaceae). $[\alpha]_D$ -481 (c, 0.2 in $CHCl_3$). Oxidises rapidly in air.

Hydrobromide (1:2):
Cryst. (EtOH). Mp 250-255°. $[\alpha]_D$ -335 (c, 0.6 in MeOH).

Me ether: $[\alpha]_D$ -369 (c, 0.2 in $CHCl_3$).

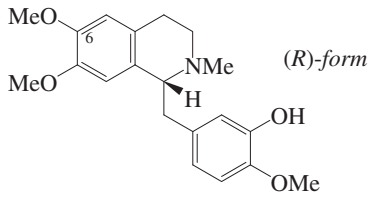
O^6-*De-Me:* ***Berbilaurine***
[120416-86-6]
$C_{36}H_{38}N_2O_6$ 594.706
Minor alkaloid from roots of *Berberis laurina* (Berberidaceae).

O^{12}-*De-Me:* ***12*-O-*Demethyllauberine***
[123880-31-9]
$C_{36}H_{38}N_2O_6$ 594.706
Alkaloid from *Berberis chilensis* (Berberidaceae).

Falco, M.R. *et al., Tet. Lett.*, 1968, 1953 (*pmr, ms, struct*)
Baldas, J. *et al., Tet. Lett.*, 1968, 6315 (*pmr*)
Baldas, J. *et al., J.C.S. Perkin 1*, 1972, 597 (*ms*)
Torres, R. *et al., Bol. Soc. Chil. Quim.*, 1989, **34**, 11; *CA*, **111**, 233323h (*12-O-Demethyllauberine*)
Weber, J.F. *et al., J. Nat. Prod.*, 1989, **52**, 81 (*Berbilaurine*)

Laudanidine L-68

Tritopine



(*R*)-*form*

$C_{20}H_{25}NO_4$ 343.422
The name Laudanine was originally applied to the racemate.

(*R*)-*form* [301-21-3]
Alkaloid from *Papaver somniferum* (opium poppy) (Papaveraceae). Mp 184-185°. $[\alpha]_D^{28}$ -101 (EtOH).

Picrate: Mp 174-175°.

Ac: Mp 98°.

(*S*)-*form* [3122-95-0]
Alkaloid from *Machilus obovatifolia*, *Machilus arisaensis*, *Thalictrum dasycarpum* and *Thalictrum revolutum* (Lauraceae, Ranunculaceae). Mp 181-182°. $[\alpha]_D^{28}$ +134 (c, 0.51 in MeOH). $[\alpha]_D$ +87 (c, 0.56 in $CHCl_3$).

N-*Me:* **N-*Methyllaudanidinium***
$C_{21}H_{28}NO_4^{\oplus}$ 358.456
Quaternary alkaloid from tubers of *Corydalis solida* (Papaveraceae). Amorph. solid (as iodide). $[\alpha]_D^{23}$ +72 (c, 0.04 in MeOH).

Me ether: see Laudanosine, L-69

(±)-*form*
Laudanine
[85-64-3]
Alkaloid from *Papaver somniferum* (opium poppy) and *Xylopia pancheri* (Papaveraceae, Annonaceae). Convulsive agent producing strychnine-like tetany. Small doses are hypertensive. Mp 166-167°. Log P 2.91 (calc).

Picrate: Mp 176-177°.

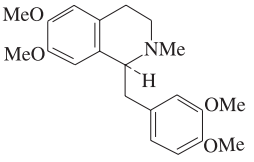
Benzoyl: Mp 156-157°.

6-O-*De-Me,* N-*Me:* ***Xylopinidine***
$C_{20}H_{26}NO_4^{\oplus}$ 344.43
Alkaloid from the bark and roots of *Xylopia parviflora*. Amorph. powder (as perchlorate). λ_{max} 282 (log ϵ 3.68) (MeOH) (perchlorate).

Späth, E. *et al., Monatsh. Chem.*, 1926, **47**, 733-740 (*synth*)
Wu, J. *et al., J. Nat. Prod.*, 1977, **40**, 593-601 (*isol, uv, pmr*)
Slavík, J. *et al., Coll. Czech. Chem. Comm.*, 1985, **50**, 2299-2309 (*N-Methyllaudanidinium*)
Blanchfield, J.T. *et al., Phytochemistry*, 2003, **63**, 711-720 (*isol, pmr, cmr*)
Nishiyama, Y. *et al., Phytochemistry*, 2004, **65**, 939-944 (*Xylopinidine*)
Sax, N.I. *et al., Dangerous Properties of Industrial Materials, 5th edn., Van Nostrand Reinhold*, 1979, 1073

Laudanosine L-69

N-*Methyltetrahydropapaverine. Laudanine methyl ether*



(*S*)-*form*

$C_{21}H_{27}NO_4$ 357.449

(*R*)-*form* [85-63-2]
Synthetic. Mp 83-85°. $[\alpha]_D^{20}$ -85 (c, 0.45 in EtOH).

(*S*)-*form* [2688-77-9]
Alkaloid from *Papaver somniferum* (opium poppy) and *Argemone grandiflora* (Papaveraceae). Major metabolite of the neuromuscular blocker Atracurium(2+). Convulsive agent acting on the extrapyramidal system and mesencephalon. Mp 89°. $[\alpha]_D^{25}$ +103 (EtOH). $[\alpha]_D$ +52 ($CHCl_3$).

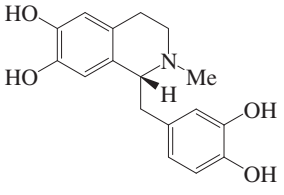
Methiodide: Mp 225-227° (218-221°). $[\alpha]_D$ +120.

N-*De-Me: Norlaudanosine*
[4747-98-2]
Light yellow oil. $[\alpha]_D^{25}$ -21.9 (c, 1 in $CHCl_3$).

(±)-*form* [1699-51-0]
Synthetic. Mp 114-115° (67-70°).
► NX5070000
Hydrochloride: Mp 123°.
Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 1318A (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **2**, 667C (*nmr*)
Cymerman-Craig, J. *et al., Tetrahedron*, 1966, **22**, 1335-1339 (*uv, ord, config*)
Elliott, I.W. *et al., J. Het. Chem.*, 1970, **7**, 1229-1230 (*synth*)
Preininger, V. *et al., Alkaloids (Academic Press)*, 1975, **15**, 207 (*pharmacol*)
Konda, M. *et al., Chem. Pharm. Bull.*, 1975, **23**, 1025-1031; 1977, **25**, 69-74 (*synth, ir, pmr, ms*)
Singh, S.P. *et al., J. Het. Chem.*, 1978, **15**, 541-544 (*cmr*)
Takano, S. *et al., Chem. Comm.*, 1982, 769-770 (*synth*)
Czarnocki, Z. *et al., Can. J. Chem.*, 1986, **64**, 2205-2210 (*synth*)
Gawley, R.E. *et al., Tet. Lett.*, 1988, **29**, 301-302 (*synth*)
Gottlieb, L. *et al., J.O.C.*, 1990, **55**, 5659-5662 (*synth*)
Coppola, G.M. *et al., J. Het. Chem.*, 1991, **28**, 1769-1772 (*synth*)
Comins, D.L. *et al., Tet. Lett.*, 1991, **32**, 2995-2996 (*synth*)
Takano, S. *et al., Heterocycles*, 1993, **35**, 47-52 (*synth*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 1200
Kitamura, M. *et al., J.O.C.*, 1994, **59**, 297-310 (*synth*)
Comins, D.L. *et al., Tetrahedron*, 1997, **48**, 16327-16340 (*synth*)
Mujahidin, D. *et al., Eur. J. Org. Chem.*, 2005, 2689-2693 (*synth*)
Werner, F. *et al., Eur. J. Org. Chem.*, 2007, 3911-3915 (*S-form, N-de-Me*)

Laudanosoline L-70

[485-33-6]
[3184-36-9]



(*R*)-*form*

$C_{17}H_{19}NO_4$ 301.341
Synthetic or semisynthetic parent of a group of benzylisoquinoline alkaloids.

(*R*)-*form* [57231-32-0]
Hydrobromide: [38221-29-3]
[84030-13-7]
Mp 124-125°. $[\alpha]_D$ -57.3 (c, 1 in EtOH).
Hydrochloride: [163455-60-5]
[3184-36-9]

O^7,N-*Di-Me:* ***Semiaquilegine A***
[935266-65-2]
$C_{19}H_{24}NO_4^{\oplus}$ 330.403
Quaternary alkaloid from the roots of *Semiaquilegia adoxoides*. Amorph. powder. Mp 220-222°. $[\alpha]_D^{22}$ -113 (c, 0.5 in H_2O). λ_{max} 206 ; 254 ; 282 (no solvent reported).

(*S*)-*form* [57231-31-9]
Hydrobromide:
[38221-28-2]
Cryst. Mp 124-125°. $[\alpha]_D$ +57.8 (c,1 in EtOH).

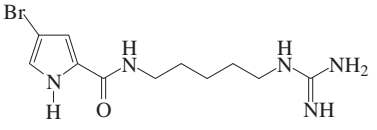
3′,6-Di-Me ether: see Orientaline, O-111
4′,6-Di-Me ether: see Reticuline, R-59
4′,7-Di-Me ether: see Protosinomenine, P-668
3′,4′,6-Tri-Me ether: see Codamine, C-554
3′,4′,7-Tri-Me ether: see Pseudolaudanine, P-715
4′,6,7-Tri-Me ether: see Laudanidine, L-68
Tetra-Me ether: see Laudanosine, L-69

(±)-*form* [19481-42-6]
Mp 114-116°.

[84030-13-7 , 163455-61-6]

Teitel, S. *et al., J. Med. Chem.*, 1972, **15**, 845-846 (*synth, N-de-Me*)
Gibson, E.P. *et al., J.C.S. Perkin 2*, 1980, 1696-1700 (*uv*)
Desbourges, D. *et al., J. Nat. Prod.*, 1987, **50**, 664-693; 852-859 (*codamine oxide*)
Goralski, C.T. *et al., Ind. Eng. Chem. Res.*, 1989, **28**, 221-224 (*synth*)
Stammel, W. *et al., Chirality*, 1995, **7**, 10-19 (*chiral hplc*)
Niu, F. *et al., Chin. J. Chem.*, 2006, **24**, 1788-1791 (*Semiaquilegine A*)

Laughine L-71

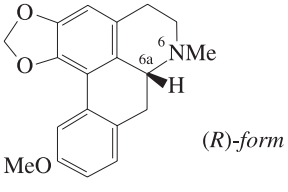


$C_{11}H_{18}BrN_5O$ 316.2
Isol. from the sponge *Eurypon laughlini*. Pale yellow oil. λ_{max} 206 (ϵ 3800); 265 (ϵ 4020) (MeOH).

Williams, D.E. *et al., J. Nat. Prod.*, 2005, **68**, 327-330 (*isol, pmr, cmr*)

Laureline L-72

10-Methoxy-1,2-methylenedioxyaporphine



(*R*)-*form*

$C_{19}H_{19}NO_3$ 309.364

(*R*)-*form* [81-38-9]
Alkaloid from the bark of *Laurelia novaezelandiae* and from the leaves, twigs and bark of *Hedycarya angustifolia* (Monimiaceae). Cryst. (petrol). Mp 114°. $[\alpha]_D$ -97.7 (EtOH).
Hydrochloride: Mp 280°.
Methiodide:
Cryst. (EtOH). Mp 223°.

N-*De-Me: 10-Methoxy-1,2-methylenedioxynoraporphine.* ***Norlaureline***
[65012-41-1]
$C_{18}H_{17}NO_3$ 295.337
Alkaloid from the stem bark of *Guatteria elata* (Annonaceae). Rapidly darkens on exp. to air and light.

N-*De-Me,* N-*Ac:*
Cryst. (Me_2CO). Mp 208-209°. $[\alpha]_D^{25}$ -336 (c, 0.25 in MeOH).

O-*De-Me: 10-Hydroxy-1,2-methylenedioxyaporphine.* ***Mecambroline****. Isofugapavine. Phoebe base 2*
$C_{18}H_{17}NO_3$ 295.337
Alkaloid from *Phoebe clemensii* (Lauraceae). Mp 220-222° (darkens at 210°). $[\alpha]_D$ -76.5 (c, 0.366 in $CHCl_3$).

O-*De-Me, hydrochloride:* Mp 330°. $[\alpha]_D$ -28.3 (c, 0.315 in H_2O).

O-*De-Me,* N-*Me:* ***Michepressine***
[25454-85-7]
$C_{19}H_{20}NO_3^{\oplus}$ 310.372
Quaternary alkaloid from *Michelia compressa* (Magnoliaceae). Mp 235-236° dec. (as iodide). $[\alpha]_D^{15}$ -131 (c, 1 in MeOH).

*6,6*a-*Didehydro,* N-*de-Me:* ***6,6a-Dehydronorlaureline***
$C_{18}H_{15}NO_3$ 293.321
Alkaloid from the leaves, twigs and bark of *Hedycarya angustifolia* (Monimiaceae). Brown gum.

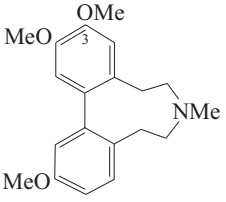
(*S*)-*form*
Synthetic. Mp 114°. $[\alpha]_D$ +97.6 (EtOH).
O-*De-Me:* [3466-56-6]
$C_{18}H_{17}NO_3$ 295.337
Alkaloid from *Meconopsis cambrica*, also from the genera *Laurelia, Phoebe* and *Papaver* (Papaveraceae, Monimiaceae, Lauraceae). Hypotensive in mice and rabbits. Mp 254-255°. $[\alpha]_D^{23}$ +76 (c, 0.48 in $CHCl_3$).
O-*De-Me, hydrochloride:* Mp 264-266°.
O-*De-Me, picrate:* Mp 179-180°.

(±)-*form*
Synthetic.
Hydrochloride:
Cryst. + $1H_2O$ (0.01*M* HCl aq.). Mp 230° dec.

Aston, B.C. *et al., J.C.S.*, 1910, **97**, 1381 (*isol*)
Barger, G. *et al., Helv. Chim. Acta*, 1931, **14**, 481 (*struct*)
Schlittler, E. *et al., Helv. Chim. Acta*, 1932, **15**, 394 (*synth*)
Faltis, F. *et al., Ber.*, 1944, **77**, 686 (*synth*)
Ito, K. *et al., Yakugaku Zasshi*, 1961, **81**, 703; *CA*, **55**, 23571h (*Mecambroline, isol*)
Slavik, J. *et al., Coll. Czech. Chem. Comm.*, 1963, **28**, 1720 (*Mecambroline, isol, uv, ir*)
Barton, D.H.R. *et al., Chem. Comm.*, 1966, 259 (*biosynth*)
Johns, S.R. *et al., Aust. J. Chem.*, 1967, **20**, 1277 (*pmr*)
Gibson, M.S. *et al., J.C.S.(C)*, 1970, 2234 (*synth, uv, ir, ms*)
Hsu, C.C. *et al., J. Nat. Prod.*, 1975, **38**, 544; 1977, **40**, 505 (*Norlaureline*)
Minamikawa, J. *et al., Can. J. Chem.*, 1979, **57**, 1720 (*synth, uv*)
Geewanda, Y.A. *et al., Heterocycles*, 1987, **26**, 447 (*6,6*a-*Dehydronorlaureline*)

Laurifonine L-73

*6,7,8,9-Tetrahydro-2,3,12-trimethoxy-7-methyl-5*H*-dibenz[*d,f*]azonine, 9CI*
[56261-25-7]



$C_{20}H_{25}NO_3$ 327.422
Alkaloid from the leaves of *Cocculus laurifolius* (Menispermaceae).
Amorph.

Perchlorate:
Cryst. (MeOH/Et_2O). Mp 191° (182-185°).

Methiodide: Mp 165-170°.

N-*De-Me:* ***Laurifine***
[56261-28-0]
$C_{19}H_{23}NO_3$ 313.396
Alkaloid from the leaves of *Cocculus laurifolius* (Menispermaceae).
Amorph.

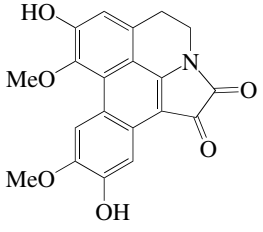
O^3-*De-Me:* ***Laurifinine***
[56261-29-1]
$C_{19}H_{23}NO_3$ 313.396
Alkaloid from the leaves of *Cocculus laurifolius* (Menispermaceae). Mp 179-181°.

O^3-*De-Me; perchlorate:*
Cryst. (MeOH/Et_2O). Mp 243-245°.

Kupchan, S.M. *et al., Heterocycles*, 1976, **4**, 235 (*synth*)
Pande, H. *et al., J.C.S. Perkin 1*, 1976, 2197 (*isol, uv, ir, pmr, ms, struct, Laurifonine,Laurifine, Laurifinine*)
Ito, K. *et al., Heterocycles*, 1978, **9**, 485 (*synth, pmr, struct*)
Bhakuni, D.S. *et al., Indian J. Chem., Sect. B*, 1981, **20**, 531 (*synth, ms*)
Bremner, J.B. *et al., Heterocycles*, 1985, **23**, 1451 (*synth, Laurifonine, Laurifine*)

Laurodionine L-74

[191654-78-1]

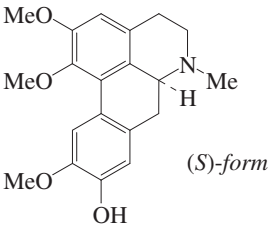


$C_{20}H_{15}NO_6$ 365.342
Modified aporphine. Alkaloid from the stems of *Phoebe formosana* (Lauraceae). Black prisms (MeOH). Mp > 300°. λ_{max} 204 (log ϵ 4.2); 266 (log ϵ 3.99); 344 (log ϵ 3.99); 430 (log ϵ 3.73); 537 (log ϵ 3.5) (MeOH).

Chen, C.-C. *et al., J. Nat. Prod.*, 1997, **60**, 826-827 (*isol, uv, ir, pmr, cmr*)

Lauroscholtzine L-75

*5,6,6*a*,7-Tetrahydro-1,2,10-trimethoxy-6-methyl-4*H*-dibenzo[*d,e*]quinolin-9-ol, 9CI. 9-Hydroxy-1,2,10-trimethoxyaporphine.* N-*Methyllaurotetanine. Rogersine*



(*S*)-*form*

$C_{20}H_{23}NO_4$ 341.406

(*S*)-*form* [2169-44-0]
Alkaloid from *Eschscholtzia californica* (Papaveraceae) and *Phylica rogersii* (Rhamnaceae), also from the Hernandiaceae, Lauraceae, Magnoliaceae, Annonaceae, Monimiaceae, Ranunculaceae and Menispermaceae. Cardiac depressant, hypotensive agent, also shows antibacterial props. Mp 100-105°. $[\alpha]_D$ +111 (c, 0.86 in MeOH).
▶ CE1057900

N-*Oxide(*R-*):* **N-*Methyllaurotetanine* N^{β}*-oxide***
[100010-00-2]
$C_{20}H_{23}NO_5$ 357.405
Alkaloid from *Glossocalyx brevipes* and *Neolitsea sericea* var. *aurata*.
Amorph. $[\alpha]_D^{25}$ +49 (c, 0.15 in MeOH).

N-*Oxide(*S-*):* **N-*Methyllaurotetanine* N^{α}*-oxide***
[937018-79-6]
$C_{20}H_{23}NO_5$ 357.405
Alkaloid from the leaves of *Neolitsea sericea* var. *aurata*.

N-*Me:* ***Xanthoplanine***
[6872-88-4]
$C_{21}H_{26}NO_4^{\oplus}$ 356.441
Quaternary alkaloid from *Zanthoxylum planispium*, *Fagara hyemalis*, *Fagara nigrescens*, *Hernandia ovigera* (Rutaceae, Hernandiaceae) and *Litsea cubeba* (mountain pepper) (Lauraceae). Mp 207-209° (as iodide). $[\alpha]_D^{21}$ +62 (c, 0.83 in EtOH).

N-*De-Me: 9-Hydroxy-1,2,10-trimethoxynoraporphine.* ***Laurotetanine****. Litsoene*
[128-76-7]
$C_{19}H_{21}NO_4$ 327.379
Alkaloid from a wide variety of genera in the Annonaceae (*Xylopia*, *Desmos*, *Guatteria*), Hernandiaceae (*Hernandia*, *Illigera*), Lauraceae (*Actinodaphne*, *Cassytha*, *Cryptocarya*, *Lindera*, *Litsea*, *Neolitsea*, *Machilus*), Monimiaceae (*Dryadodaphne*, *Palmeria*, *Peumus*, *Hedycarya*, *Monimia*, *Nemuaron*, *Laurelia*). Shows antiplatelet aggregation activity. Mp 125°. $[\alpha]_D$ +95 (c, 0.50 in EtOH). λ_{max} 219 ; 282 ; 304 (MeOH) (Berdy).
▶ RB6025000

N-*De-Me, hydrochloride:* Mp 245°.

N-*De-Me,* N-*ethoxycarbonyl:* **N-*Ethoxycarbonyllaurotetanine***
[947263-10-7]
$C_{22}H_{25}NO_6$ 399.443
Alkaloid from the roots of *Lindera angustifolia*.

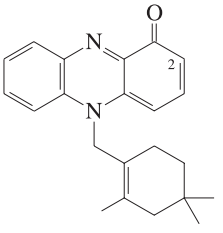
(±)-*form* [38849-65-9]
Mp 199-202° dec. (143-144°).

N-*De-Me:* [65877-55-6]
$C_{19}H_{21}NO_4$ 327.379
Synthetic.

Ruegger, A. *et al., Helv. Chim. Acta*, 1959, **42**, 754-762 (*isol, uv*)
Ishii, H. *et al., Yakugaku Zasshi*, 1961, **81**, 238 (*Xanthoplanine*)
Pachler, K.G.R. *et al., Tetrahedron*, 1965, **21**, 2159 (*Laurotetanine, struct, pmr*)
Albonico, S.M. *et al., J.C.S.(C)*, 1966, 1340 (*Xanthoplanine, uv, ord*)
Kametani, T. *et al., J.C.S. Perkin 1*, 1972, 1435 (*synth, spectra, derivs*)
Govindachari, T.R. *et al., Indian J. Chem., Sect. B*, 1977, **15**, 873 (*synth, Laurotetanine*)
Marsaioli, A.J. *et al., Phytochemistry*, 1979, **18**, 165 (*cmr, Xanthoplanine*)
Ringdahl, B. *et al., J. Nat. Prod.*, 1981, **44**, 80 (*cd, Laurotetanine, N-Methyllaurotetanine*)
Montgomery, C.T. *et al., J. Nat. Prod.*, 1985, **48**, 833 (*N-Methyllaurotetanine β-N-oxide*)
Hara, H. *et al., Chem. Pharm. Bull.*, 1986, **34**, 1946 (*synth*)
Lee, S.S. *et al., J. Nat. Prod.*, 1993, **56**, 1971-1976 (*Xanthoplanine, isol, uv, ir, pmr*)
Lee, S.-S. *et al., J. Nat. Prod.*, 1996, **59**, 55 (*cd*)
Chen, J.-J. *et al., Planta Med.*, 2000, **66**, 251-256 (*activity*)
Zhao, O. *et al., Yaoxue Xuebao*, 2005, **40**, 931-934 (*N-Ethoxycarbonyllaurotetanine*)
Lee, S.-S. *et al., J. Nat. Prod.*, 2007, **70**, 637-642 (*N-oxides*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, LBO200; TKX700

Lavanducyanin L-76

*5-[(2,4,4-Trimethyl-1-cyclohexen-1-yl)-methyl]-1(5*H*)-phenazinone, 9CI. 1,9-Dihydro-5-[(2,4,4-trimethyl-1-cyclohexen-1-yl)methyl]phenazin-1-one. WS 9659A. YP 02978L-C. Antibiotic WS 9659A. Antibiotic YP 0298L-C*
[122228-60-8]

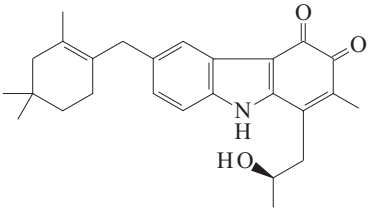


$C_{22}H_{24}N_2O$ 332.444
Phenazine antibiotic. Prod. by *Streptomyces* spp. Antitumour agent and testosterone 5α-reductase inhibitor. Deep blue prisms (MeOH/Et_2O). Mp 161-162° (135-136°). Related to Phenazinomycin, P-329. λ_{max} 274 (ϵ 9700); 386 (ϵ 5000); 508 (ϵ 1400) (MeOH/HCl) (Derep). λ_{max} 237 (ϵ 12400); 319 (ϵ 9700); 705 (ϵ) (MeOH/KOH) (Derep). λ_{max} 237 (ϵ 12400); 319 (ϵ 9700); 705 (ϵ 1700) (MeOH) (Derep). λ_{max} 238 (ϵ 21600); 320 (ϵ 23200) (MeOH) (Derep).
▶ SG2000000

2-Chloro: ***Antibiotic WS 9659B****. WS 9659B*
[123313-61-1]
$C_{22}H_{23}ClN_2O$ 366.889
From a *Streptomyces* sp. Testosterone 5α-reductase inhibitor. Deep blue prisms (MeOH/Et_2O). Sol. MeOH, $CHCl_3$; fairly sol. Et_2O, C_6H_6; poorly sol. H_2O, hexane. Mp 152-153°. λ_{max} 241 (ϵ 15400); 328 (ϵ 20500) (MeOH) (Derep). λ_{max} 238 (E1%/1cm 650); 320 (E1%/1cm 700); 730 (MeOH) (Berdy).

Imai, H. *et al., J. Antibiot.*, 1989, **42**, 1196 (*isol, struct*)
Nakayama, O. *et al., J. Antibiot.*, 1989, **42**, 1221; 1230; 1235 (*isol, struct, props*)
Imai, S. *et al., J. Antibiot.*, 1993, **46**, 1232 (*props*)
Miyake, M. *et al., Pure Appl. Chem.*, 1994, **66**, 2083 (*synth*)
Kinoshita, Y. *et al., Synlett*, 1995, 186 (*synth*)

Lavanduquinocin L-77



$C_{26}H_{31}NO_3$ 405.536

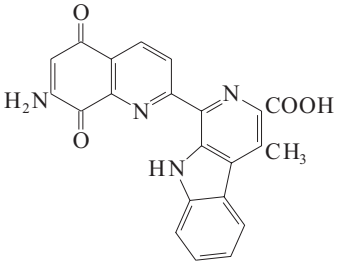
(R)-form [167114-85-4]
Prod. by *Streptomyces viridochromogenes* 2942-SVS3. Neuronal cell protecting agent. Red-brown powder. Mp 157-158°. λ_{max} 232 (ϵ 17500); 269 (ϵ 15900); 429 (ϵ 3100) (MeOH). λ_{max} 244 (ϵ 16400); 288 (ϵ 16300); 472 (ϵ 4300) (MeOH/NaOH).

(±)-form
Black cryst. Mp 221°. λ_{max} 193 (ϵ 20800); 211 (ϵ 21500); 231 (ϵ 25100); 268 (ϵ 23100); 427 (ϵ 4900) (MeOH).

Shin-ya, K. *et al., J. Antibiot.*, 1995, **48**, 574-578 (*isol, pmr, cmr*)
Knölker, H.-J. *et al., Tet. Lett.*, 1998, **39**, 2537-2540 (*synth, uv, ir, pmr, cmr, ms*)
Knölker, H.-J. *et al., Chirality*, 2000, **12**, 526-528 (*synth*)

Lavendamycin L-78

*1-(7-Amino-5,8-dihydro-5,8-dioxo-2-quinolinyl)-4-methyl-9*H*-pyrido[3,4-*b*]indole-3-carboxylic acid, 9CI. K 82A. Antibiotic K 82A*
[81645-09-2]



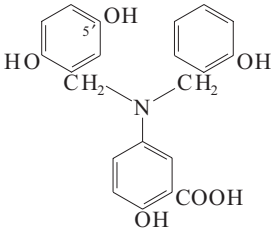
$C_{22}H_{14}N_4O_4$ 398.377
Quinone antibiotic. Isol. from *Streptomyces lavendulae*. Antineoplastic antibiotic. Mp 300° dec. Log P 3.2 (uncertain value) (calc). λ_{max} 234 (ϵ 19600); 246 (ϵ 19800); 391 (ϵ 8400) (MeOH) (Derep).

[81677-52-3]

Doyle, T.W. *et al., Tet. Lett.*, 1981, **22**, 4595 (*struct*)
Balitz, A.W. *et al., J. Antibiot.*, 1982, **35**, 259
Kende, A.S. *et al., Heterocycles*, 1984, **21**, 91 (*rev, synth*)
Boger, D.L. *et al., J.O.C.*, 1985, **50**, 5790 (*synth, bibl*)
Boger, D.L. *et al., J. Med. Chem.*, 1987, **30**, 1918 (*pharmacophore, synth*)
Behforouz, M. *et al., J.O.C.*, 1993, **58**, 7089; 1996, **61**, 6552 (*synth, bibl*)
Molina, P. *et al., Tet. Lett.*, 1994, **35**, 1453 (*synth*)

Lavendustin A L-79

[125697-92-9]



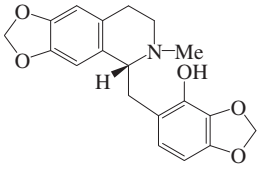
$C_{21}H_{19}NO_6$ 381.384
Prod. by *Streptomyces griseolavendus*. Tyrosine kinase inhibitor. Angiogenesis inhibitor. Powder + 1½ H_2O. Sol. MeOH, Me_2CO, EtOH, DMSO; poorly sol. $CHCl_3$, H_2O, Et_2O. Mp 158-162°. λ_{max} 216 (ϵ 24000); 280 (ϵ 4900); 297 (ϵ 5130) (MeOH) (Derep).

5′-Deoxy: ***Lavendustin B***
[125697-91-8]
$C_{21}H_{19}NO_5$ 365.385
From *Streptomyces griseolavendus*. Tyrosine kinase inhibitor. Powder. Sol. MeOH, Me_2CO, DMSO, EtOH; poorly sol. $CHCl_3$, H_2O, Et_2O. Mp 140-144°. λ_{max} 216 (ϵ 24000); 275 (ϵ 5010); 310 (ϵ 2090) (MeOH) (Derep).

Onoda, T. *et al., J. Nat. Prod.*, 1989, **52**, 1252-1257 (*isol, struct*)
Hu, D.E. *et al., Br. J. Pharmacol.*, 1995, **114**, 262-268 (*activity*)
Green, J. *et al., J.O.C.*, 1995, **60**, 4287-4290 (*synth*)
Fan, T.D. *et al., Trends Biochem. Sci.*, 1995, **16**, 57-66 (*activity*)

Ledecorine L-80

5-[(5,6,7,8-Tetrahydro-6-methyl-1,3-dioxolo[4,5-g]isoquinolin-5-yl)methyl]-1,3-benzodioxol-4-ol, 9CI. 1,2,3,4-Tetrahydro-1-(2-hydroxy-3,4-methylenedioxybenzyl)-6,7-methylenedioxyisoquinoline



(*R*)-*form*

$C_{19}H_{19}NO_5$ 341.363

(R)-form [68676-56-2]
Alkaloid from *Corydalis ledebouriana* and *Fumaria vaillantii* (Papaveraceae). Mp 199-200°. $[\alpha]_D$ -112 (c, 0.42 in MeOH). Abs. config. shown incorrectly as *S*- in 1980 paper and in CAS.

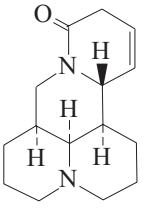
Me ether: ***Marshaline***
[68676-57-3]
$C_{20}H_{21}NO_5$ 355.39
Alkaloid from *Corydalis marshalliana* (Papaveraceae). Mp 134-135°. $[\alpha]_D$ -105 (c, 0.2 in $CHCl_3$) (nat.). $[\alpha]_D$ -63.2 (c, 0.44 in $CHCl_3$) (synthetic). This struct. was also assigned independently to Fumarizine, F-179. Takaba *et. al.* showed that their synthetic product was not identical with Fumarizine but did not compare their synthetic material with Marshaline. The pmr spectra appear v. similar although the opt. rotns. differ.

(±)-form [74924-41-7]
Synthetic. Gum.

Israilov, I.A. *et al., Khim. Prir. Soedin.*, 1978, **14**, 537-538; 1984, **20**, 672-673; *Chem. Nat. Compd. (Engl. Transl.)*, 1978, **14**, 465-466; 1984, **20**, 644 (*Ledecorine, Marshaline, isol, ir, pmr, ms, ord, struct*)
Murugesan, N. *et al., Heterocycles*, 1980, **14**, 585-587 (*synth, uv, pmr, ms*)
Takaba, K. *et al., Heterocycles*, 1996, **43**, 1777-1786 (*Marshaline, synth*)

Lehmannine† L-81

12,13-Didehydromatridin-15-one, 9CI. 12,13-Dehydromatrine
[58480-54-9]



$C_{15}H_{22}N_2O$ 246.352
Alkaloid from epigeal parts of *Ammothamnus lehmannii* (preferred genus name *Sophora*) (Fabaceae). Mp 93-94°. $[\alpha]_D^{24}$ +37.03 (c, 0.54 in EtOH).

Picrate: [58480-55-0]
Mp 144-145°.

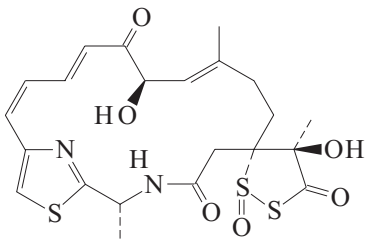
N′β-Oxide: ***Lehmannine* N-*oxide***
$C_{15}H_{22}N_2O_2$ 262.351
Alkaloid from *Ammothamnus lehmannii* (Fabaceae). Mp 136°.

Kushmadurov, Ya.K. *et al., Khim. Prir. Soedin.*, 1975, 377; *Chem. Nat. Compd. (Engl. Transl.)*, 389 (*isol, ir, uv, ms, pmr, struct*)
Ibragimov, B.T. *et al., Khim. Prir. Soedin.*, 1981, 757; *Chem. Nat. Compd.*

(Engl. Transl.), 552 (*cryst struct, oxide*)

Leinamycin L-82

DC 107. Antibiotic DC 107
[120500-15-4]



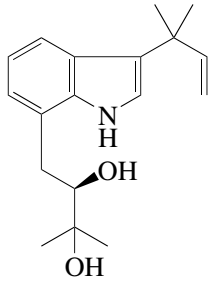
$C_{22}H_{26}N_2O_6S_3$ 510.655
Prod. by a *Streptomyces* sp. S-140. Antitumour agent. Active aginst gram-positive and negative bacteria. Appears to function by thiol-activated DNA cleavage. Needles + ¾EtOAc ($CHCl_3$). Sol. MeOH, DMSO, $CHCl_3$; poorly sol. H_2O, hexane. Mp 155° dec. $[\alpha]_D^{25}$ +140 (c, 0.1 in MeOH). λ_{max} 211 (ϵ 14000); 322 (ϵ 12000) (MeOH) (Derep). λ_{max} 211 (ϵ 14000); 322 (ϵ 12000) (MeOH) (Berdy).

▶ LD_{50} (mus, ivn) 2.8 mg/kg. WH1306540

Hara, M. *et al., J. Antibiot.*, 1989, **42**, 333-335; 1768-1774 (*isol*)
Pattenden, G. *et al., J. Het. Chem.*, 1992, **29**, 607 (*synth*)
Hirayama, N. *et al., Chem. Lett.*, 1993, 1957 (*abs config*)
Kanda, Y. *et al., J.A.C.S.*, 1993, **115**, 8451 (*synth*)
Mitra, K. *et al., J.A.C.S.*, 1997, **119**, 11691-11692 (*biochem*)
Tang, G.-L. *et al., Chem. Biol.*, 2004, **11**, 33-45 (*biosynth*)
Tang, G.-L. *et al., J. Nat. Prod.*, 2006, **69**, 387-393 (*biosynth*)

Leiocarpadiol L-83

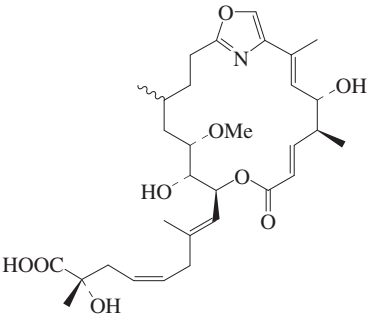
[126365-19-3]



$C_{18}H_{25}NO_2$ 287.401
Alkaloid from roots of *Esenbeckia leiocarpa* (Rutaceae). Amorph. solid. $[\alpha]_D^{20}$ +2.5 (c, 0.6 in $CHCl_3$). λ_{max} 264 (sh) (log ϵ 3.74); 271 (log ϵ 3.76); 280 (log ϵ 3.7) (no solvent reported).

Delle Monache, F. *et al., Gazz. Chim. Ital.*, 1989, **119**, 435 (*isol, uv, ir, pmr, cmr, ms, struct*)

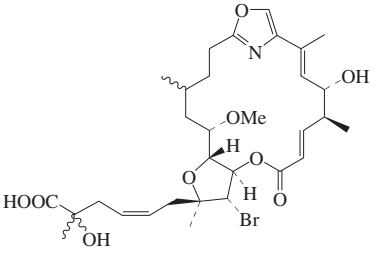
Leiodelide A L-84



$C_{31}H_{45}NO_9$ 575.698
Isol. from the sponge *Leiodermatium* sp. Cytotoxic. Pale yellow oil. λ_{max} 224 (log ϵ 3.2) (MeOH).

Sandler, J.S. *et al., J.O.C.*, 2006, **71**, 7245-7251; 8684 (*isol, cd, pmr, cmr, ms*)

Leiodelide B L-85

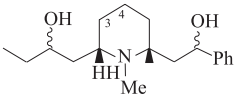


$C_{31}H_{44}BrNO_9$ 654.594
Isol. from the sponge *Leiodermatium* sp. Cytotoxic. Pale yellow oil. λ_{max} 221 (log ϵ 2.8) (MeOH).

Sandler, J.S. *et al., J.O.C.*, 2006, **71**, 7245-7251; 8684 (*isol, cd, pmr, cmr, ms*)

Lelobanidine L-86

α-Ethyl-1-methyl-α′-phenyl-2,6-piperidinediethanol, 9CI. 8-Ethyl-10-phenyllobelidiol
[492-48-8]



Relative configuration

$C_{18}H_{29}NO_2$ 291.433
Three (-)-forms and one racemate have been isol. All are 2,6-*cis* but side-chain configs. and abs. configs. are unknown.

(-)(1)-*form*
(-)-Lelobanidine I
Minor alkaloid from *Lobelia inflata* (Campanulaceae). Mp 86° (as hydrochloride). $[\alpha]_D$ -41.5 (EtOH).

(-)(2)-*form*
(-)-Lelobanidine II
Minor alkaloid from *Lobelia inflata* and *Lobelia nicotianaefolia* (Campanulaceae). Cryst. +$^H/_2$O (as hydrochloride). Mp 102-105° (hydrochloride). $[\alpha]_D$ -41.2 (EtOH). On oxidn. gives the same diketone as (-)-Lelobanidine I.

(-)(3)-*form*
(-)-Lelobanidine III. *α-Lelobanidine*
Alkaloid from *Lobelia nicotianaefolia* (Campanulaceae). $[\alpha]_D^{25}$ -37.1 (c, 0.46 in EtOH). Identity of the natural Lelobanidine III with semisynthetic (-)-α-Lelobanidine (obt. from Lobinanidine, L-221) not certain. Opt. rotns. were identical, but α-Lelobandine did not form a cryst. hydrochloride.

Hydrochloride:
Cryst. + 1½ H_2O. Mp 111°.

(+)-*form*
N-*De-Me:* ***Norlelobanidine***
$C_{17}H_{27}NO_2$ 277.406
Minor alkaloid from *Lobelia inflata* (Campanulaceae). Rosettes (petrol). Mp 90°. $[\alpha]_D$ +62.8. This is the *N*-demethyl deriv. of the enantiomer of (-)-Lelobanidine I.

N-*De-Me; hydrochloride:* Mp 193°.

(±)-*form*
(±)-Lelobanidine I
Minor alkaloid from *Lobelia inflata* (Campanulaceae). Mp 68°. Has been resolved to give (+)-Lelobanidine I.

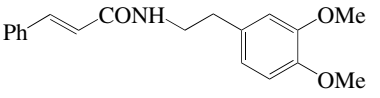
Hydrochloride: Mp 79°.

(ξ)-*form*
Hydroxy: ***Hydroxylelobanidine***
$C_{18}H_{29}NO_3$ 307.432
Alkaloid from *Sedum acre*. OH-Substd. in the piperidine ring, posn. undetd. Stereochem. unknown.

Wieland, H. *et al., Annalen*, 1939, **540**, 103 (*isol, struct*)
Gedeon, J. *et al., Pharm. Acta Helv.*, 1955, **30**, 185 (*isol*)
Spiteller-Friedmann, M. *et al., Monatsh. Chem.*, 1965, **96**, 104 (*ms*)
Francis, L.P.S. *et al., Planta Med.*, 1977, **32**, 268 (*isol, Lelobanidine, Hydroxylelobanidine*)

Lemairamine L-87

N-*(3,4-Dimethoxyphenylethyl)cinnamide*



$C_{19}H_{21}NO_3$ 311.38

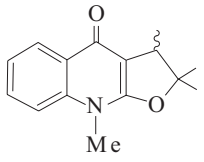
(E)-form [29946-61-0]
Alkaloid from *Zanthoxylum lemairie*. Needles. Mp 119-120°. λ_{max} 206 ; 216 (sh) ; 224 (sh) ; 277 (MeOH).

N-*Me:* ***Lemairamide***
[193901-52-9]
$C_{20}H_{23}NO_3$ 325.407
Alkaloid from *Zanthoxylum lemairie*. Powder.

Adesina, S.K. *et al., Planta Med.*, 1997, **63**, 286-287 (*isol, synth, uv, pmr, cmr, ms*)

Lemobiline L-88

3,9-Dihydro-2,2,3,9-tetramethylfuro[2,3-b]quinolin-4(2H)-one, 9CI. Alkaloid FI-A. Spectabiline†



$C_{15}H_{17}NO_2$ 243.305

Shows antineoplastic activity. Log P 2.42 (clc).

(-)-*form* [26126-76-1]

Alkaloid from *Ravenia spectabilis* and *Flindersia ifflaiana* (Rutaceae, Flindersiaceae). Mp 53-54°. $[\alpha]_D$ -5.9 (-0.9) ($CHCl_3$). Forms monohydrate, Mp 98-9°. Pharmacol. active isomer.

Picrate: Mp 198° dec. (188-191°).

(±)-*form*

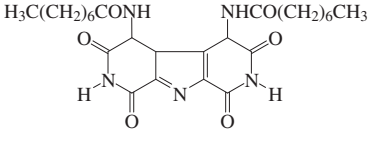
Mp 106-108°.

Picrate: Mp 186-190°.

Talapatra, S.K. *et al., Tet. Lett.*, 1969, 4789 (*ir, uv, pmr, ms, isol, struct*)
Chamberlain, T.R. *et al., J.C.S.(C)*, 1971, 910 (*synth, isol*)
Jones, A.J. *et al., Aust. J. Chem.*, 1982, **35**, 1173 (*cmr*)

Lemonnierin L-89

[75775-38-1]



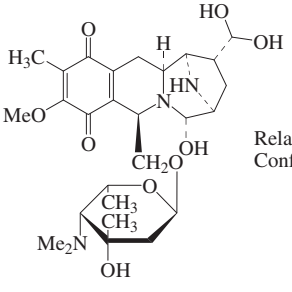
$C_{26}H_{37}N_5O_6$ 515.608

Prod. by *Pseudomonas lemonnieri*. Blue pigment. λ_{max} 625 (log ϵ 4.75) (Py).

Ferguson, G. *et al., J.C.S. Perkin 1*, 1980, 1782-1787
Jain, K.C. *et al., J.C.S. Perkin 1*, 1980, 1788-1794

Lemonomycin L-90

LL-AP-191γ. Antibiotic LL-AP-191γ



Relative Configuration

$C_{27}H_{41}N_3O_9$ 551.636

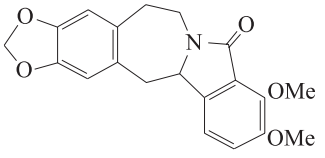
Isol. from *Streptomyces candidus*. Active against gram-positive and -negative bacteria. Antitumour agent. Sol. MeOH, $CHCl_3$, acids, DMSO; poorly sol. H_2O. Mp > 200° dec. $[\alpha]_D$ -116 ($CHCl_3$). λ_{max} 272 ; 362 (MeOH) (Berdy). λ_{max} 271 (E1%/1cm 214); 325 (E1%/1cm 17) (HCl) (Berdy).

Whaley, H.A. *et al., Antimicrob. Agents Chemother.*, 1964, 83-86 (*isol, uv, props*)
He, H. *et al., Tet. Lett.*, 2000, **41**, 2067-2071 (*pmr, cmr, struct*)
Ashley, E.R. *et al., J.A.C.S.*, 2003, **125**, 15000-15001 (*synth*)

Lennoxamine L-91

5,6,12b,13-Tetrahydro-9,10-dimethoxy-8H-1,3-dioxolo[4,5-h]isoindolo[1,2-b][3]benzazepin-8-one, 9CI

[95530-38-4]



$C_{20}H_{19}NO_5$ 353.374

(±)-*form*

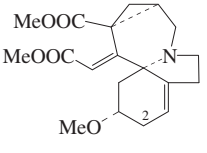
Minor alkaloid from *Berberis darwinii* (Berberidaceae). Cryst. (MeOH). Mp 228-229° (225°).

Deoxo: ***Chilenamine****. Schopf's base VI*
[95585-66-3]
$C_{20}H_{21}NO_4$ 339.39
Alkaloid from the stems of *Berberis darwinii* (Berberidaceae). Cryst. or amorph. Mp 180-181° (177-179°).

Teitel, S. *et al., Can. J. Chem.*, 1972, **50**, 2022 (*synth, uv, ir, pmr*)
Valencia, E. *et al., Tetrahedron*, 1984, **40**, 3957 (*occur, uv, ir, pmr, ms*)
Napolitano, E. *et al., J.C.S. Perkin 1*, 1986, 785 (*synth*)
Yasuda, S. *et al., Heterocycles*, 1990, **30**, 335 (*synth*)
Moody, C.J. *et al., J.C.S. Perkin 1*, 1990, 2929 (*synth*)
Koseki, Y. *et al., Chem. Pharm. Bull.*, 1995, **43**, 1604 (*synth*)
Rodríquez, G. *et al., J.O.C.*, 1996, **61**, 2780 (*synth*)
Ruchirawat, S. *et al., Tet. Lett.*, 2000, **41**, 8007-8010 (*synth, pmr, cmr, ms*)
Couture, A. *et al., Tetrahedron*, 2000, **56**, 1491-1499 (*synth*)
Koseki, Y. *et al., Heterocycles*, 2003, **59**, 527-540 (*synth*)
Sahakitpichan, P. *et al., Tetrahedron*, 2004, **60**, 4169-4172 (*synth*)
Comins, D.L. *et al., Org. Lett.*, 2005, **7**, 95-98 (*synth*)
Taniguchi, T. *et al., Org. Lett.*, 2005, **7**, 4389-4390 (*synth*)
Honda, T. *et al., Tet. Lett.*, 2005, **46**, 6823-6825 (*synth*)
Couty, S. *et al., Tet. Lett.*, 2006, **47**, 767-769 (*synth*)
Fuwa, H. *et al., Heterocycles*, 2008, **76**, 521-539 (*synth*)

Lenticellarine L-92

[117590-94-0]



$C_{19}H_{25}NO_5$ 347.41

Appears to be a homoseco-erythrina alkaloid. Alkaloid from the leaves of *Dysoxylum lenticellare* (Meliaceae) and *Lagarostrobos colensoi* (*Dacrydium colensoi*). Has moderate molluscicidal activity. Gum which darkens upon standing. $[\alpha]_D^{28}$ +16 (c, 0.165 in EtOH).

Picrate: Mp 78-80°.

2α-Hydroxy: ***2-Hydroxylenticellarine***
[155272-49-4]
$C_{19}H_{25}NO_6$ 363.41
Alkaloid from stems of *Dysoxylum lenticellare* (Meliaceae).

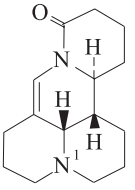
2α-Methoxy: ***2-Methoxylenticellarine***
[155272-48-3]
$C_{20}H_{27}NO_6$ 377.436
Alkaloid from stems of *Dysoxylum lenticellare* (Meliaceae).

Aladesanmi, A.J. *et al., Planta Med.*, 1986, 522 (*isol, uv, ir, pmr, cmr, ms, struct*)
Aladesanmi, A.J. *et al., Phytochemistry*, 1988, **27**, 3789-3792 (*isol, uv, ir, pmr, cmr, ms, struct*)
Aladesanmi, A.J. *et al., Phytochemistry*, 1994, **35**, 1361 (*2α-Hydroxylenticellarine, 2α-Methoxylenticellarine, isol, pmr, ir*)
Bloor, S.J. *et al., Phytochemistry*, 1996, **41**, 801-802 (*isol*)

Leontalbine L-93

5,17-Didehydromatridin-15-one, 9CI†. 5,17-Dehydromatrine. 5,17-Didehydromatrine

[6475-07-6]



(–)-*form*

$C_{15}H_{22}N_2O$ 246.352

Stereoisomeric with Isoleontalbine, I-241 and Darvasine, D-80.

▶OQ1753000

(-)-*form*

Alkaloid from epigeal parts of *Leontice albertii* (Leonticaceae). Oil. Bp_5 180-185°. $[\alpha]_D^{26}$ -167 (c, 1.15 in EtOH). Abs. config. corresponds to (-)-Matrine.

Hydrochloride: Mp 255-257°.

Picrate:
Cryst. (EtOH). Mp 214-216°.

(+)-*form*

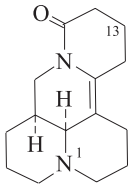
1S-Oxide: ***5,17-Dehydromatrine N-oxide***
[70509-82-9]
$C_{15}H_{22}N_2O_2$ 262.351
Minor alkaloid from *Euchresta japonica* (Fabaceae). Hygroscopic cryst. (Me_2CO). $[\alpha]_D$ +209.3 (EtOH).

Bohlmann, F. *et al., Chem. Ber.*, 1958, **91**, 2176 (*synth*)
Iskandarov, S. *et al., Khim. Prir. Soedin.*, 1966, **2**, 67; 1967, **3**, 26; 1968, **4**, 106; *Chem. Nat. Compd. (Engl. Transl.)*, 1966,

2, 55; 1967, **3**, 21; 1968, **4**, 90 (*isol, struct, ms*)
Ohmiya, S. *et al., Phytochemistry*, 1978, **17**, 2021 (*oxide*)

Leontalbinine **L-94**

7,11-Didehydromatridin-15-one, 9CI. 7,11-Dehydromatrine
[16665-57-9]
[46862-63-9]



Relative configuration

$C_{15}H_{22}N_2O$ 246.352
Alkaloid from *Leontice albertii* and flowers of *Sophora flavescens* (Leonticaceae, Fabaceae). Prisms (Et_2O). Mp 107-108°. $[\alpha]_D^{24}$ -137.2 (EtOH).

N^1-Oxide: ***Leontalbinine* N-*oxide***
[147731-96-2]
$C_{15}H_{22}N_2O_2$ 262.351
Minor alkaloid from seeds of *Sophora flavescens* var. *angustifolia* (Fabaceae). $[\alpha]_D$ -161.7 (EtOH).

13-Hydroxy: ***Albertine****. 7,11-Didehydro-13-hydroxymatridin-15-one, 9CI. 13-Hydroxy-7,11-dehydromatrine*
[20078-85-7]
$C_{15}H_{22}N_2O_2$ 262.351
Alkaloid from *Leontice albertii* (Leonticaceae). Mp 161°. $[\alpha]_D$ -101.

Iskandarov, S. *et al., Khim. Prir. Soedin.*, 1967, **3**, 26; 1968, **4**, 137; 1972, **8**, 628; *Chem. Nat. Compd. (Engl. Transl.)*, 1967, **3**, 21; 1968, **4**, 118; 1972, **8**, 596 (*isol, struct*)
Murakoski, I. *et al., Phytochemistry*, 1982, **21**, 2379 (*isol, ms, uv, pmr, cmr struct*)
Sekine, T. *et al., Yakugaku Zasshi*, 1993, **113**, 53; *CA*, **118**, 251444x (*oxide*)

Leontamine **L-95**

$C_{14}H_{26}N_2$ 222.373
Struct. unknown. Alkaloid from *Leontice eversmannii* (Leonticaceae). Oil. d_4^{20} 0.99. $Bp_{0.4}$ 118-119°. $[\alpha]_D^{15}$ +2.53 (neat). n_D 1.5113.

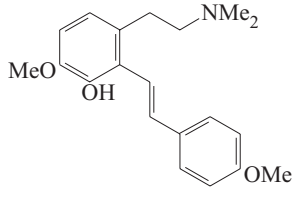
Methiodide (1:2): Mp 265-268°.

Dipicrate: Mp 194-195°.

Orechoff, A. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1932, **270**, 329-334
Platonova, T.F. *et al., Zh. Obshch. Khim.*, 1953, **23**, 880-886

Leonticine **L-96**

3-[2-(Dimethylamino)ethyl]-6-methoxy-2-[2-(4-methoxyphenyl)ethenyl]phenol, 9CI. Petaline methine



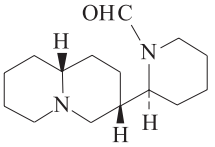
$C_{20}H_{25}NO_3$ 327.422

(E)-form [2609-29-2]
Alkaloid from *Leontice leontopetalum, Corydalis claviculata* and *Alphonsea sclerocarpa*. Needles (Me_2CO). Mp 121-123° (118.5-119.5°). Poss. artifact.

McShefferty, J. *et al., J. Pharm. Pharmacol.*, 1956, **8**, 1117 (*isol*)
McCorkindale, N.J. *et al., Tetrahedron*, 1969, **25**, 5475 (*uv, ir, pmr*)
Tadić, D. *et al., J. Nat. Prod.*, 1987, **50**, 518 (*isol*)
Allais, D.P. *et al., J. Nat. Prod.*, 1990, **53**, 1280 (*isol*)

Leontiformine **L-97**

*2-(Octahydro-2*H*-quinolizin-3-yl)-1-piperidinecarboxaldehyde, 9CI. 3-(*N*-Formyl-2-piperidyl)quinolizidine*
[29073-26-5]



Relative configuration

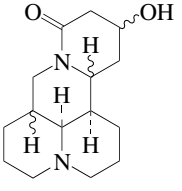
$C_{15}H_{26}N_2O$ 250.383
Alkaloid from *Leontice leontopetalum* (Leonticaceae). Mp 61-63°. $[\alpha]_D^{22}$ +51.9 (c, 0.26 in EtOH).

Hydrobromide: Mp 275-276°. $[\alpha]_D^{22}$ +57.7.

Deformyl: ***Leontiformidine****. Octahydro-3-(2-piperidinyl)-2*H*-quinolizine, 9CI*
[29073-28-7]
$C_{14}H_{26}N_2$ 222.373
Alkaloid from the roots of *Leontice leontopetalum* (Leonticaceae). Mp 44-46°. $[\alpha]_D^{22}$ +2.7.

Mollov, N.M. *et al., Tetrahedron*, 1970, **26**, 3805 (*isol, ir, pmr, struct, synth*)
Schöpf, C. *et al., Annalen*, 1971, **753**, 50 (*synth, deriv*)
Panov, P.P. *et al., Dokl. Bulg. Akad. Nauk*, 1972, **25**, 55 (*isol, deriv*)
Takatsu, N. *et al., Chem. Pharm. Bull.*, 1987, **35**, 891 (*synth*)

Leontismidine **L-98**

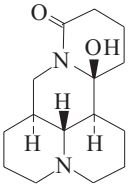


$C_{15}H_{24}N_2O_2$ 264.367
Config. not known. Stereoisomer of Albertamine in D-79 and 13α-Hydroxymatrine in M-121. Alkaloid from *Leontice smirnowii*. Cryst. (EtOH). Mp 110°. λ_{max} 220 (no solvent reported).

Shakirov, R. *et al., Khim. Prir. Soedin.*, 1996, **32**, 615-681; *Chem. Nat. Compd. (Engl. Transl.)*, 1996, **32**, 596-675 (*rev*)

Leontismine **L-99**

11-Hydroxymatridin-15-one, 9CI†. 11-Hydroxyleontine
[41787-66-0]



$C_{15}H_{24}N_2O_2$ 264.367
Stereoisomer of Darvasoline, D-81. Alkaloid from *Leontice smirnovii* (Leonticaceae). Mp 168-169°. $[\alpha]_D$ +70.7.

Tkeshelashvili, E.G. *et al., CA*, 1973, **78**, 156646m (*isol, struct*)

Leonuridine **L-100**

$C_6H_{12}N_2O_3$ 160.172
Struct. unknown. Alkaloid from the seeds of *Leonurus sibiricus*. Mp 222°.

Tang, T.-H. *et al., J. Chin. Chem. Soc. (Peking)*, 1940, **7**, 105-110; *CA*, **35**, 4913[5] (*isol*)

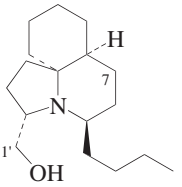
Leonurinine **L-101**

[849664-80-8]
Struct. unknown. Alkaloid from the seeds of *Leonurus sibiricus*. Mp 262-263°.

Hsu, C.-F. *et al., J. Chin. Chem. Soc. (Peking)*, 1934, **2**, 337-339; *CA*, **29**, 2659[4] (*isol*)
Ruan, J. *et al., Zhongcaoyao*, 2003, **34**, S15-S19

Lepadiformine B **L-102**

[883942-41-4]



Absolute Configuration

$C_{17}H_{31}NO$ 265.438
Alkaloid from *Clavelina moluccensis*. Pale yellow oil. $[\alpha]_D$ +3 (c, 1 in $CHCl_3$). λ_{max} 215 (log ϵ 2.98); 296 (log ϵ 2.55) (EtOH).

Deoxy: ***Lepadiformine C***
[883942-42-5]
$C_{17}H_{31}N$ 249.439
Alkaloid from *Clavelina moluccensis*. Pale yellow oil. $[\alpha]_D$ +11 (c, 1 in $CHCl_3$). λ_{max} 205 (log ϵ 2.57); 275 (log ϵ 1.63) (EtOH).

7β-Acetoxy, 1′-deoxy, 1′-thiocyanato: ***Cylindricine H***
[164740-25-4]
$C_{20}H_{32}N_2O_2S$ 364.551
Alkaloid from the ascidian *Clavelina cylindrica*. Oil. CA name is incorrect.

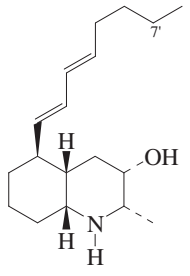
7α-Acetoxy, 1′-deoxy, 1′-isothiocyanato: ***Cylindricine I***
[164740-26-5]
$C_{20}H_{32}N_2O_2S$ 364.551
Alkaloid from *Clavelina cylindrica*. Oil.

Has -NCS replacing -SCN. CA name is incorrect.

Li, C. *et al., Aust. J. Chem.*, 1994, **47**, 1355-1361; 1995, **48**, 955-965 (*Cylindricines*)
Sauviat, M.-P. *et al., J. Nat. Prod.*, 2006, **69**, 558-562 (*Lepadiformines*)

Lepadin B L-103

[168434-12-6]



Absolute Configuration

$C_{18}H_{31}NO$ 277.449
Alkaloid from the flatworm *Prosthecerаeus villatus* and its tunicate prey *Clavelina lepadiformis*. Exhibits significant *in vitro* cytotoxicity against human cancer cell lines. Oil. $[\alpha]_D$ -96 (MeOH). *Prosthecerаeus villatus* appers to be an authors' misspelling of *P. vittatus*.

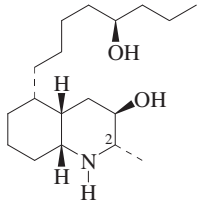
O-*(Hydroxyacetyl):* ***Lepadin A***
[141544-70-9]
$C_{20}H_{33}NO_3$ 335.486
Alkaloid from *Prosthecerаeus villatus* and *Clavelina lepadiformis*. Exhibits significant *in vitro* cytotoxicity against human cancer cell lines. Oil. $[\alpha]_D$ -8.5 (c, 0.002 in $CHCl_3$).

7'-Oxo, O-*(hydroxyacetyl):* ***Lepadin C***
[168434-13-7]
$C_{20}H_{31}NO_4$ 349.469
Alkaloid from *Prosthecerаeus villatus* and *Clavelina lepadiformis*. Oil. $[\alpha]_D$ -25 (MeOH).

Steffan, B. *et al., Tetrahedron*, 1991, **47**, 8729-8732 (*Lepadin A, isol, pmr, cmr, struct*)
Kubanek, J. *et al., Tet. Lett.*, 1995, **36**, 6189-6192 (*Lepadin B, Lepadin C*)
Toyooka, N. *et al., Tetrahedron*, 1999, **55**, 10673-10684 (*synth*)
Ozawa, T. *et al., J.O.C.*, 2001, **66**, 3338-3347 (*synth*)
Pu, X.-T. *et al., J.O.C.*, 2006, **71**, 6562-6572 (*synth, abs config*)
Barbe, G. *et al., J.A.C.S.*, 2008, **130**, 13873-13875 (*ent-form, synth*)

Lepadin D L-104

Decahydro-3-hydroxy-5-(5-hydroxyoctyl)-2-methylquinoline
[444914-17-4]
[444914-18-5 (quaternary salt)]



Absolute Configuration

$C_{18}H_{35}NO_2$ 297.48
Alkaloid from a *Didemnum* sp. Oil. $[\alpha]_D^{22}$ +3 (c, 0.2 in MeOH). $[\alpha]_D^{22}$ -14.4 (c, 0.27 in MeOH) (quaternary salt). Isol. also in oily cationic form (counterion not specified).

3-O-*(2*E*-Octenoyl):* ***Lepadin E***
[444914-21-0]
$C_{26}H_{47}NO_3$ 421.662
Alkaloid from a *Didemnum* sp. Oil. $[\alpha]_D^{22}$ -2 (c, 0.1 in MeOH). λ_{max} 263 (ε 2110) (MeOH).

3-O-*(2*E*,4*E*-Octadienoyl):* ***Lepadin H***
[412328-25-7]
$C_{26}H_{45}NO_3$ 419.646
Alkaloid from *Aplidium tabascum*. Red gum. $[\alpha]_D$ +8.2 (c, 0.75 in CH_2Cl_2). Unstable. λ_{max} 261 (ε 16000) (MeOH).

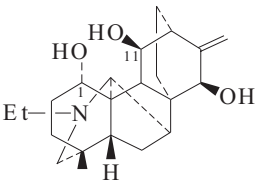
2-Epimer, 3-O-*(2*E*-octenoyl):* ***Lepadin F***
[412328-23-5]
[444914-19-6]
$C_{26}H_{47}NO_3$ 421.662
Alkaloid from *Aplidium tabascum* and *Didemnum* sp. Antiplasmodial and antitrypanosomal agent. Red gum or clear oil. $[\alpha]_D$ +5.5 (c, 0.12 in CH_2Cl_2). $[\alpha]_D$ -1.5 (c, 0.1 in $CHCl_3$). Unstable. λ_{max} 262 (ε 3000) (MeOH). λ_{max} 261 (ε 16000) (MeOH).

2-Epimer, 3-O-*(2*E*,4*E*-octadienoyl):* ***Lepadin G***
[412328-24-6]
$C_{26}H_{45}NO_3$ 419.646
Alkaloid from the ascidian *Aplidium tabascum*. Red gum. $[\alpha]_D$ +12.5 (c, 0.31 in CH_2Cl_2). Unstable. λ_{max} 263 (ε 24000) (MeOH).

Wright, A.D. *et al., J. Med. Chem.*, 2002, **45**, 3067-3072 (*isol, pmr, cmr*)
Davis, R.A. *et al., J. Nat. Prod.*, 2002, **65**, 454-457 (*isol, pmr, cmr*)
Pu, X.-T. *et al., J.O.C.*, 2006, **71**, 6562-6572 (*synth, abs config*)
Niethe, A. *et al., J.O.C.*, 2008, **73**, 3088-3093 (*ent-Lepadin F,G, synth*)
Li, G. *et al., Org. Lett.*, 2008, **10**, 4991-4994 (*Lepadin F, synth*)

Lepenine L-105

[111524-32-4]



$C_{22}H_{33}NO_3$ 359.508
Alkaloid from *Aconitum pseudohuiliense* and *Aconitum leucostomum* (Ranunculaceae). Cryst. (Me_2CO/hexane). Mp 120-122°.

N-*Oxide:* ***Lepenine* N-*oxide***
[169134-44-5]
$C_{22}H_{33}NO_4$ 375.507
Alkaloid from aerial parts of *Aconitum kirinense* (Ranunculaceae).

11-Ac: ***Lepetine***
[111509-08-1]
$C_{24}H_{35}NO_4$ 401.545
Alkaloid from *Aconitum pseudohuiliense* (Ranunculaceae). Cryst. (Me_2CO/hexane). Mp 130-131°. λ_{max} 247 (no solvent reported).

15-Ac: ***Kirinine A***
[182128-35-4]
$C_{24}H_{35}NO_4$ 401.545
Alkaloid from *Aconitum kirinense*.

O^1-*Me:* ***Lepedine***
[111509-09-2]
$C_{23}H_{35}NO_3$ 373.534
Alkaloid from *Aconitum pseudohuiliense* (Ranunculaceae).

N-*De-Et,* N-*Me:* ***Stenocarpine***
$C_{21}H_{31}NO_3$ 345.481
Alkaloid from *Aconitella stenocarpa* (Ranunculaceae). Cryst. (hexane/EtOAc). Mp 179-182°. $[\alpha]_D$ -44.3 (c, 0.2 in $CHCl_3$).

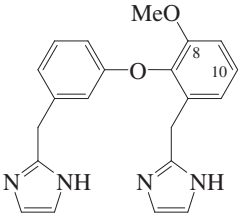
*19,21(*N*)-Didehydro,* N-*Et, 1-Ac:* ***Kirinine C***
[161068-71-9]
$C_{22}H_{29}NO_4$ 371.475
Alkaloid from roots of *Aconitum kirinense*. Needles ($CHCl_3$/MeOH). Mp 218-220°.

11-Epimer: ***11-Epilepenine***
[260365-65-9]
$C_{22}H_{33}NO_3$ 359.508
Alkaloid from *Aconitum barbatum* var. *hispidum*.

Liang, X.-T. *et al., Pure Appl. Chem.*, 1986, **58**, 711 (*rev*)
Song, W. *et al., CA*, 1987, **107**, 233050j
Nishanov, A.A. *et al., Khim. Prir. Soedin.*, 1993, **29**, 734-735; *Chem. Nat. Compd. (Engl. Transl.)*, 1993, **29**, 651-653 (*Lepenine N-oxide*)
Yue, J. *et al., J. Nat. Prod.*, 1996, **59**, 277-279 (*Lepenine, Lepetine*)
Feng, F. *et al., J. Chin. Pharm. Sci.*, 1997, **6**, 14-17 (*Kirinine A*)
Martin, G.F. *et al., Phytochemistry*, 1997, **46**, 1087-1090 (*cmr, Stenocarpine*)
Batsuren, D. *et al., Heterocycles*, 1998, **49**, 327-341 (*isol, pmr, cmr*)
Feng, F. *et al., Phytochemistry*, 1998, **49**, 2557-2559 (*Kirinine C*)
Miao, Z. *et al., Bopuxue Zazhi*, 1999, **16**, 547-552 (*11-Epilepenine*)

Lepidine L-106

[100108-65-4]



$C_{21}H_{20}N_4O_2$ 360.415
Alkaloid from the seeds of *Lepidium sativum* (garden cress) (Brassicaceae). Cryst. (CH_2Cl_2/MeOH).

O-*De-Me:* ***Lepidine B***
[220433-99-8]
$C_{20}H_{18}N_4O_2$ 346.388
Alkaloid from *Lepidium sativum* (garden cress). Yellow cryst. (CH_2Cl_2/

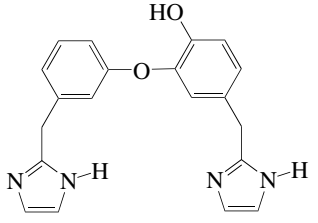
MeOH). Mp 212-214°.

8-Demethoxy, 10-hydroxy: ***Lepidine D***
[220434-01-5]
$C_{20}H_{18}N_4O_2$ 346.388
Alkaloid from *Lepidium sativum* (garden cress). Yellow cryst. (CH_2Cl_2/MeOH). Mp 202-204°.

8-Demethoxy, 10-methoxy: ***Lepidine C***
[220434-00-4]
$C_{21}H_{20}N_4O_2$ 360.415
Alkaloid from *Lepidium sativum* (garden cress). Yellow cryst. (CH_2Cl_2/MeOH). Mp 194-195°.

Bahroun, A. *et al., J. Soc. Chim. Tunis.*, 1985, **2**, 15-24; *CA*, **104**, 65910g
Maier, U.H. *et al., Phytochemistry*, 1998, **49**, 1791-1795 (*Lepidines B-D, isol, pmr, cmr, ms*)

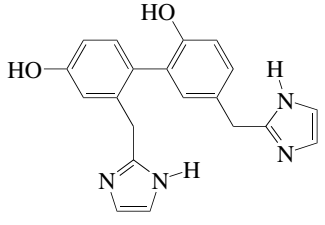
Lepidine E L-107



$C_{20}H_{18}N_4O_2$ 346.388
Alkaloid from the seeds of *Lepidium sativum* (garden cress). Yellow cryst. (CH_2Cl_2/MeOH). Mp 196-198°.

Maier, U.H. *et al., Phytochemistry*, 1998, **49**, 1791-1795 (*isol, pmr, cmr, ms*)

Lepidine F L-108

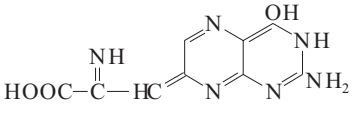


$C_{20}H_{18}N_4O_2$ 346.388
Alkaloid from the seeds of *Lepidium sativum* (garden cress). Pale yellow cryst. (CH_2Cl_2/MeOH). Mp 245-247°.

Maier, U.H. *et al., Phytochemistry*, 1998, **49**, 1791-1795 (*isol, pmr, cmr, ms*)

Lepidopterin L-109

*3-[2-Amino-4-hydroxy-7(3*H*)-pteridinylidene]-2-iminopropanoic acid, 9CI. 2-Amino-4-hydroxy-α-imino-$\Delta^{7(3H),\beta}$-pteridinepropionic acid, 8CI*
[29067-92-3]

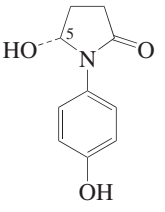


$C_9H_8N_6O_3$ 248.201
Constit. of flour moth *Ephestia kühnellia*.

Viscontini, M. *et al., Helv. Chim. Acta*, 1961, **44**, 1783; 1962, **45**, 2479; 1963, **46**, 51 (*isol, synth, uv*)

Lepiotin A L-110

5-Hydroxy-1-(4-hydroxyphenyl)-2-pyrrolidinone
[207446-07-9]



Absolute Configuration

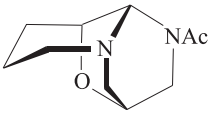
$C_{10}H_{11}NO_3$ 193.202
Alkaloid from the mushroom *Macrolepiota neomastoidea*. Oil. Sol. MeOH, butanol. $[\alpha]_D^{25}$ +7.7 (c, 0.07 in MeOH). λ_{max} 203 (log ε 4.02); 230 (log ε 4.32); 282 (log ε 3.28) (2-propanol).

5-Me ether: ***Lepiotin B***
[207446-08-0]
$C_{11}H_{13}NO_3$ 207.229
Alkaloid from the mushrooms *Chlorophyllum molybdites* and *Macrolepiota neomastoidea*. Oil. Sol. MeOH, butanol. $[\alpha]_D^{25}$ +8.3 (c, 0.2 in MeOH). λ_{max} 202 (log ε 4.09); 232 (log ε 3.77); 279 (log ε 3.13) (MeOH).

Ohta, T. *et al., Heterocycles*, 1998, **47**, 883-891 (*isol, synth, uv, ir, pmr, cmr*)
Kim, K.H. *et al., Bull. Korean Chem. Soc.*, 2008, **29**, 1591-1593 (*isol, cd, pmr, cmr, abs config*)

Lepistine L-111

*4-Acetyloctahydro-2,5-methano-5*H*-pyrido[3,2-*b*]-1,4-oxazine, 9CI*
[55623-00-2]



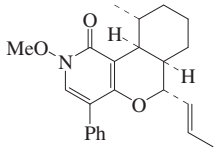
Absolute configuration

$C_{10}H_{16}N_2O_2$ 196.249
Fungal alkaloid from *Clitocybe fasciculata*. Hygroscopic liq. Mp 242° (as hydrochloride). $Bp_{0.1}$ 140-150°. n_D^{20} 1.5270.

Laing, M. *et al., Tet. Lett.*, 1975, 269 (*cryst struct*)

Leporine A L-112

*2,6,6a,7,8,9,10,10a-Octahydro-2-methoxy-10-methyl-4-phenyl-6-(1-propenyl)-1*H*-[2]benzopyrano[4,3-c]pyridin-1-one, 9CI*
[140381-54-0]



Relative Configuration

$C_{23}H_{27}NO_3$ 365.471
Related to Fusaricide, F-225. Isol. from the sclerotia of *Aspergillus leporis* NRRL 3216. Insecticide. Oil. $[\alpha]_D$ -21.9 (c, 0.8 in CH_2Cl_2). λ_{max} 240 (ε 9500); 283 (ε 1750); 344 (ε 650); 370 (ε 570) (MeOH) (Derep). λ_{max} 201 (ε 26900); 242 (ε 23900); 287 (ε 6200) (MeOH) (Berdy). λ_{max} 200 (ε 27000); 242 (ε 23000); 295 (ε 3000) (MeOH/HCl) (Berdy). λ_{max} 213 (ε 62700); 242 (ε 23000); 295 (ε 3000) (MeOH/NaOH) (Berdy).

O-*De-Me:* ***Leporine B***
$C_{22}H_{25}NO_3$ 351.444
Isol. from fungal strain OSI 54042. Hexokinase II gene inducing agent.

TePaske, M.R. *et al., Tet. Lett.*, 1991, **32**, 5687-5690 (*isol, pmr, cmr*)
Snider, B.B. *et al., J.O.C.*, 1996, **61**, 2839-2844 (*synth, uv, pmr, cmr*)
Zhang, C. *et al., Bioorg. Med. Chem. Lett.*, 2003, **13**, 1433-1435 (*Leporin B*)

Leptactinine L-113

Struct. unknown. Alkaloid from the root bark of *Leptactina senemgambica*. Long needles. Mp 264-266° Mp 258° dec. (as picrate).

Paris, R. *et al., Ann. Pharm. Fr.*, 1946, **4**, 233-236; *CA*, **41**, 7057c (*isol*)

Leptagline L-114

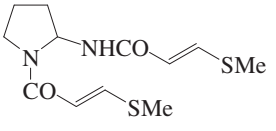
N-*[3-(Methylthio)-2-propenoyl]*-N′-*(phenylacetyl)putrescine. Aglaiathioduline*
[261158-69-4]
MeSCH═CHCONH$(CH_2)_4$NH-$COCH_2Ph$
$C_{16}H_{22}N_2O_2S$ 306.428

(E)-form
Alkaloid from *Aglaia leptantha* and *Aglaia edulis*. Needles (MeOH). Mp 140-141°. λ_{max} 271 (log ε 4.4) (MeOH).

Saifah, E. *et al., Phytochemistry*, 1999, **52**, 1085-1088 (*Aglaithioduline*)
Greger, H. *et al., J. Nat. Prod.*, 2000, **63**, 616-620 (*Leptagine*)
Detterbeck, R. *et al., Tetrahedron*, 2002, **58**, 6887-6893 (*synth*)

Leptanthine† L-115

[271586-49-3]



$C_{12}H_{18}N_2O_2S_2$ 286.418
Alkaloid from *Aglaia leptantha*. $[\alpha]_D^{20}$ +9 (c, 0.4 in MeOH). λ_{max} 226 (log ε 3.81); 273 (log ε 4.26) (MeOH).

1-Deacyl, 1-(phenylacetyl): ***Isoagleptine***
[271586-48-2]
$C_{16}H_{20}N_2O_2S$ 304.412
Alkaloid from *Aglaia leptantha*. Mp 149-151°. $[\alpha]_D^{20}$ -2 (c, 0.2 in MeOH). λ_{max} 272 (log ε 4.26) (MeOH).

*1-Deacyl, 1-*E*-cinnamoyl:* ***Aglamide A***
[922149-07-3]

$C_{17}H_{20}N_2O_2S$ 316.423
Alkaloid from the bark of *Aglaia edulis*. Amorph. powder. Racemic. λ_{max} 219 (log ϵ 4.32); 273 (log ϵ 4.6) (MeOH).

*1-Deacyl, 1-*E*-cinnamoyl,* S*-oxide:* ***Aglamide B***
[922149-08-4]
$C_{17}H_{20}N_2O_3S$ 332.423
Alkaloid from the bark of *Aglaia edulis*. Amorph. powder. Racemic. λ_{max} 206 (log ϵ 4.49); 275 (log ϵ 4.43) (MeOH).

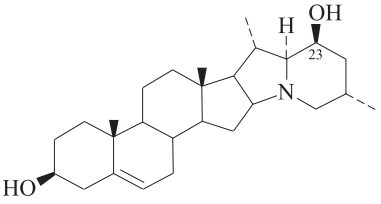
N^2*-Deacyl,* N^2*-(phenylacetyl):* ***Agleptine***
[271586-47-1]
$C_{16}H_{20}N_2O_2S$ 304.412
Alkaloid from *Aglaia leptantha*. Mp 121-123°. $[\alpha]_D^{20}$ -3 (c, 0.2 in MeOH). λ_{max} 282 (log ϵ 4.08) (MeOH).

N^2*-Deacyl,* N^2-E*-cinnamoyl:* ***Pyrrolotenin***
$C_{17}H_{20}N_2O_2S$ 316.423
Alkaloid from the leaves of *Aglaia tenuicaulis*. Cryst. Mp 167-170°. $[\alpha]_D^{20}$ -24 (c, 0.5 in MeOH). λ_{max} 217 (log ϵ 4.2); 223 (sh) (log ϵ 4.16); 277 (log ϵ 4.48) (MeOH aq.).

Greger, H. *et al., J. Nat. Prod.*, 2000, **63**, 616-620 (*Aglaia leptantha constits*)
Kim, S. *et al., J. Nat. Prod.*, 2006, **69**, 1769-1775 (*Aglamides A,B*)
Greger, H. *et al., Phytochemistry*, 2008, **69**, 928-938 (*Pyrrolotenin*)

Leptinidine L-116

Solanid-5-ene-3,23-diol, 9CI. 23-Hydroxysolanthrene
[24884-17-1]



$C_{27}H_{43}NO_2$ 413.642
Aglycone obt. by hydrol. of Leptinines. Alkaloid from *Solanum chacoense* and other *Solanum* spp. Mp 247-248°. $[\alpha]_D$ -24 (-19) ($CHCl_3$).

*3-*O*-β-*D*-Glucopyranoside: Leptinidine 3-glucoside*
$C_{33}H_{53}NO_7$ 575.784
Alkaloid from *Solanum orbignianum*. Amorph. powder.

*3-*O*-[α-*L*-Rhamnopyranosyl-(1→2)-[α-*L*-rhamnopyranosyl-(1→4)]-β-*D*-glucopyranoside]:* ***Leptinine I***
$C_{45}H_{73}NO_{15}$ 868.069
Alkaloid from *Solanum chacoense* and *Solanum orbignianum* (Solanaceae). Mp 230°. $[\alpha]_D$ -90 (Py).

*3-*O*-[β-*D*-Glucopyranosyl-(1→3)-[α-*L*-rhamnopyranosyl-(1→2)]-β-*D*-galactopyranoside]:* ***Leptinine II***
$C_{45}H_{73}NO_{16}$ 884.069
Alkaloid from *Solanum chacoense* and *Solanum orbignianum* (Solanaceae). Prisms (MeOH aq.). Mp *ca.*° 255. $[\alpha]_D$ -62 (Py).

*3-*O*-[β-*D*-Glucopyranosyl-(1→2)-β-*D*-glucopyranosyl-(1→4)-β-*D*-galactopyranoside]:* ***Solanum Alkaloid SL-c***
$C_{45}H_{73}NO_{17}$ 900.068
Alkaloid from the stems of *Solanum lyratum* (Solanaceae). Needles (MeOH). Sol. MeOH, H_2O; poorly sol. hexane. Mp 222-225°. $[\alpha]_D^{22}$ -51.5 (c, 0.54 in Py). Actually an inseparable mixt. of the 3-*O*-β-D-glucopyranosyl (1→2)-β-D-glucopyranosyl (1→4)-β-D-galactopyranosides of Leptinidine and 5,6-Dihydroleptinidine below.

*3-*O*-[β-*D*-Glucopyranosyl-(1→2)-[β-*D*-xylopyranosyl-(1→3)]-β-*D*-glucopyranosyl-(1→4)-β-*D*-galactopyranoside]:* ***Solanum Alkaloid SL-d***
$C_{50}H_{81}NO_{21}$ 1032.184
Alkaloid from *Solanum lyratum* (Solanaceae). Needles (MeOH aq.). Sol. MeOH, H_2O; poorly sol. hexane. Mp 242-246° dec. $[\alpha]_D^{23}$ -62.3 (c, 0.72 in Py). Actually an inseparable mixt. of the Lycotetraosides of Leptinidine and 5,6-Dihydroleptinidine.

Glycoside (Unknown struct. 1): ***Leptinine III***
Alkaloid from *Solanum chacoense* (Solanaceae). Not well characterised, sugar residue not identified.

Glycoside (Unknown struct. 2): ***Leptinine IV***
Alkaloid from *Solanum chacoense* (Solanaceae). Not well characterised, sugar residue not identified.

23-Ac: [100994-54-5]
Alkaloid from *Solanum chacoense*. Obt. by hydrol. of Leptines. Small needles (MeOH aq.). Mp 192-196°.

*23-*O*-Ac, glycoside (Unknown struct. 1):* ***Leptine I***
$C_{47}H_{75}NO_{16}$ 910.107
Alkaloid from *Solanum chacoense* (Solanaceae). Cholinesterase inhibitor. Needles (H_2O). $[\alpha]_D$ -85 (Py). Gives 2 L-rhamnose and 1 D-glucose on hydrol.

*23-*O*-Ac, glycoside (Unknown struct. 2):* ***Leptine III***
Alkaloid from *Solanum chacoense* (Solanaceae). Not well characterised, sugar residue not identified.

*23-*O*-Ac, glycoside (Unknown struct. 3):* ***Leptine IV***
Alkaloid from *Solanum chacoense* (Solanaceae). Not well characterised, sugar residue not identified.

*Di-*O*-Ac:* ***Di-O-acetylleptinidine***
$C_{31}H_{47}NO_4$ 497.717
Alkaloid from *Solanum chacoense* (Solanaceae). Needles (MeOH). Mp 194-196° (196-200°). $[\alpha]_D$ -36 ($CHCl_3$).

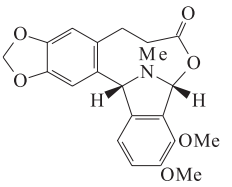
5,6-Dihydro: 5,6-Dihydrolepidine
$C_{27}H_{45}NO_2$ 415.658
Identified as glycosides as a component of alkaloids SL-c and SL-d (see above).

*5,6-Dihydro, 3-*O*-[β-*D*-glucopyranosyl-(1→2)-β-*D*-glucopyranosyl-(1→4)-β-*D*-galactopyranoside]:*
$C_{45}H_{75}NO_{17}$ 902.084
A component of Alkaloid SL-c (see above).

*5,6-Dihydro, 3-*O*-[β-*D*-glucopyranosyl-(1→2)-[β-*D*-xylopyranosyl-(1→3)]-β-*D*-glucopyranosyl-(1→4)-β-*D*-galactopyranoside]:*
$C_{50}H_{83}NO_{21}$ 1034.2
A component of Alkaloid SL-d (see above).

Kuhn, R. *et al., Chem. Ber.*, 1961, **94**, 1088; 1096; 1962, **95**, 1748 (*isol, struct*)
Ripperger, H. *et al., Chem. Ber.*, 1969, **102**, 4080 (*synth*)
Murakami, K. *et al., Chem. Pharm. Bull.*, 1985, **33**, 67 (*Alkaloids SL-c, SL-d*)
Lawson, D.R. *et al., J. Agric. Food Chem.*, 1997, **45**, 4122-4126 (*pmr, cmr, ms, isol, di-Ac*)
Coelho, R.M. *et al., Phytochemistry*, 1998, **49**, 893-897 (*isol, pmr, cmr, ms*)

Leptocarpine† L-117



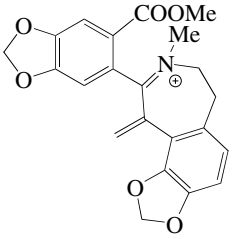
Relative configuration

$C_{21}H_{21}NO_6$ 383.4
Alkaloid from whole plants of *Hypecoum leptocarpum* (Papaveraceae). Powder ($CHCl_3$/MeOH). Mp 166-168°. $[\alpha]_D^{25}$ -94.3 (c, 0.6 in MeOH).

Zhang, G.-L. *et al., Phytochemistry*, 1995, **40**, 1813 (*isol, uv, ir, pmr, cmr, ms, struct*)

Leptocarpinine L-118

[221347-12-2 (chloride)]

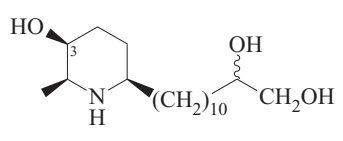


$C_{22}H_{20}NO_6^{\oplus}$ 394.403
Alkaloid from *Hypecoum leptocarpum*. Amorph. powder (as chloride). Mp > 350° (chloride). λ_{max} 259 (log ϵ 4.23); 303 (log ϵ 4.01); 376 (log ϵ 3.94) (MeOH) (chloride).

Yi, Z. *et al., Phytochemistry*, 1999, **50**, 339-343 (*isol, uv, ir, pmr, cmr, ms*)

Leptophyllin A L-119

12-(5-Hydroxy-6-methyl-2-piperidinyl)-1,2-dodecanediol, 9CI
[165689-18-9]



$C_{18}H_{37}NO_3$ 315.495

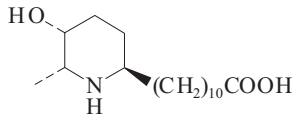
Alkaloid from leaves of *Cassia leptophylla* (Fabaceae). Oil. $[\alpha]_D$ +2.5 (c, 0.02 in $CHCl_3$).

O^3-Ac: ***3-Acetylleptophyllin A***
[165404-55-7]
$C_{20}H_{39}NO_4$ 357.532
From leaves of *Cassia leptophylla* (Fabaceae). Oil. $[\alpha]_D$ +3 (c, 0.03 in $CHCl_3$).

Bolzani, V. da.S. *et al., Tetrahedron*, 1995, **51**, 5929 (*isol, pmr, cmr, ms, struct*)

Leptophyllin B L-120

5-Hydroxy-6-methyl-2-piperidineundecanoic acid, 9CI
[165689-19-0]

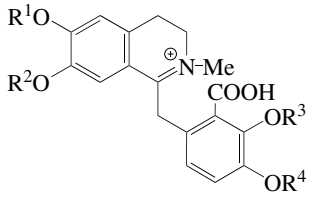


$C_{17}H_{33}NO_3$ 299.453
Alkaloid from leaves of *Cassia leptophylla* (Fabaceae). Oil. $[\alpha]_D$ -3.6 (c, 0.03 in MeOH).

Bolzani, V. da.S. *et al., Tetrahedron*, 1995, **51**, 5929 (*isol, pmr, cmr, ms, struct*)

Leptopidine L-121

[221347-15-5]



R^1, R^2 = $-CH_2-$, R^3 = H, R^4 = CH_3

$C_{20}H_{20}NO_6^{\oplus}$ 370.381
Alkaloid from *Hypecoum leptocarpum*. Yellow powder (MeOH) (as chloride). Mp 235-239° (chloride). λ_{max} 243 (log ϵ 5.41); 305 (log ϵ 4.05); 352 (log ϵ 4.05) (MeOH) (chloride).

Zhou, Y. *et al., Phytochemistry*, 1999, **50**, 339-343 (*isol, uv, ir, pmr, cmr, ms*)

Leptopine L-122

[221347-13-3]
As Leptopidine, L-121 with
R^1, R^2 = R^3, R^4 = $-CH_2-$
$C_{20}H_{18}NO_6^{\oplus}$ 368.365
Alkaloid from *Hypecoum leptocarpum*. Yellow cubes (MeOH) (as chloride). Mp 158-161° (chloride). λ_{max} 248 (log ϵ 4.25); 300 (log ϵ 3.84); 365 (log ϵ 3.94) (MeOH) (chloride).

1-Hydro: ***Dihydroleptopine***
[214537-74-3]
$C_{20}H_{19}NO_6$ 369.373
Alkaloid from *Hypecoum leptocarpum*. Amorph. powder (MeOH). Mp 185-189°. Racemic.

Zhou, Y. *et al., Phytochemistry*, 1999, **50**, 339-343 (*isol, uv, ir, pmr, cmr, ms*)

Li, B.-G. *et al., Indian J. Chem., Sect. B*, 2001, **40**, 1215-1218 (*Dihydroleptopine*)

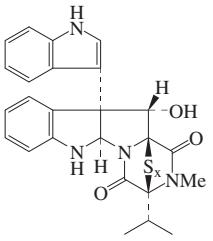
Leptopinine L-123

[221347-14-4]
As Leptopidine, L-121 with
R^1 = R^2 = H, R^3 = R^4 = CH_3
$C_{20}H_{22}NO_6^{\oplus}$ 372.397
Alkaloid from *Hypecoum leptocarpum*. Yellow powder (MeOH) (as chloride). Mp 207-210° (chloride). λ_{max} 245 (log ϵ 4.22); 310 (log ϵ 3.97); 353 (log ϵ 3.97) (MeOH) (chloride).

Zhou, Y. *et al., Phytochemistry*, 1999, **50**, 339-343 (*isol, uv, ir, pmr, cmr, ms*)

Leptosin A L-124

[159518-74-8]



Absolute Configuration

x = 2

$C_{32}H_{32}N_6O_7S_6$ 805.037
Metab. from a strain of *Leptosphaeria* sp. originally isol. from the marine alga *Sargassum tortile*. Exhibits potent cytotoxicity against P388 lymphocytic leukaemia cells and significant antitumour activity against Sarcoma 180 ascites. Pale yellow powder. Sol. MeOH, $CHCl_3$; poorly sol. hexane. Mp 216-218°. $[\alpha]_D$ +237 (c, 0.49 in $CHCl_3$). λ_{max} 209 (ϵ 40700); 242 (ϵ 15500); 298 (ϵ 6750) (EtOH) (Berdy).

Takahashi, C. *et al., J.C.S. Perkin 1*, 1994, 1859-1864 (*isol, uv, ir, pmr, cmr, ms, cd, struct*)

Leptosin B L-125

[159518-75-9]
As Leptosin A, L-124 with
x = 3, *y* = 2
$C_{32}H_{32}N_6O_7S_5$ 772.971
Metab. from a strain of *Leptosphaeria* sp. Exhibits potent cytotoxicity against P388 lymphocytic leukaemia cells. Pale yellow powder. Sol. MeOH, $CHCl_3$; poorly sol. hexane. Mp 210-213°. $[\alpha]_D$ +392 (c, 0.50 in $CHCl_3$). λ_{max} 208 (ϵ 28200); 244 (ϵ 10000); 299 (ϵ 4800) (EtOH) (Berdy).

Takahashi, C. *et al., J.C.S. Perkin 1*, 1994, 1859-1864 (*isol, uv, ir, pmr, cmr, ms, cd, struct*)

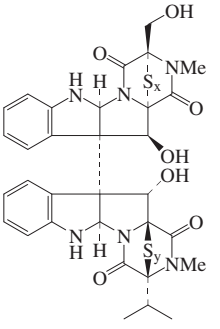
Leptosin C L-126

[159518-76-0]
As Leptosin A, L-124 with
x = 2, y = 2
$C_{32}H_{32}N_6O_7S_4$ 740.905
Metab. from a strain of *Leptosphaeria* sp. and a *Sesquicillium* sp. Exhibits potent cytotoxicity against P388 lymphocytic leukaemia cells and significant antitumour activity against Sarcoma 180 ascites. Pale yellow powder. Sol. MeOH, $CHCl_3$; poorly sol. hexane. Mp 208-210°. $[\alpha]_D$ +237 (c, 0.36 in $CHCl_3$). λ_{max} 206 (ϵ 60400); 283 (ϵ 17000); 301 (ϵ 5150) (EtOH) (Berdy).

Takahashi, C. *et al., J.C.S. Perkin 1*, 1994, 1859-1864 (*isol, uv, ir, pmr, cmr, ms, cd, struct*)

Leptosin D L-127

[159518-77-1]



Absolute Configuration

x = 4, y = 2

$C_{25}H_{24}N_4O_3S_2$ 492.622
Metab. from the mycelium of a strain of *Leptosphaeria* sp. attached to the marine alga *Sargassum tortile*. Also from *Sesquicillium* sp. Shows potent cytotoxicity against P388 lymphocytic leukaemia cells. Pale yellow powder. Sol. MeOH, $CHCl_3$; poorly sol. hexane. Mp 190-192°. $[\alpha]_D$ +436 (c, 0.51 in $CHCl_3$). λ_{max} 206 (ϵ 39800); 219 (ϵ 41600); 240 (ϵ 11450); 272 (ϵ 5900); 282 (ϵ 6750); 290 (ϵ 6750) (EtOH) (Berdy).

Takahashi, C. *et al., J.C.S. Perkin 1*, 1994, 1859-1864 (*isol, uv, ir, pmr, cmr, ms, cd, struct*)

Leptosin E L-128

[159518-78-2]
As Leptosin D, L-127 with
x = 3
$C_{25}H_{24}N_4O_3S_3$ 524.688
Metab. from a strain of *Leptosphaeria* sp. and by *Sesquicillium* sp. Exhibits potent cytotoxicity against P388 lymphocytic leukaemia cells. Pale yellow powder. Sol. MeOH, $CHCl_3$; poorly sol. hexane. Mp 229-231°. $[\alpha]_D$ +563 (c, 0.32 in $CHCl_3$). λ_{max} 206 (ϵ 42600); 218 (ϵ 44700); 240 (ϵ 13150); 273 (ϵ 6700); 282 (ϵ 6920); 291 (ϵ 6490) (EtOH) (Berdy).

Takahashi, C. *et al., J.C.S. Perkin 1*, 1994, 1859-1864 (*isol, uv, ir, pmr, cmr, ms, cd, struct*)

Leptosin F L-129

[159518-79-3]
As Leptosin D, L-127 with
x = 4
$C_{25}H_{24}N_4O_3S_4$ 556.754

Metab. from a strain of *Leptosphaeria* sp. and *Sesquicillium* sp. Exhibits potent cytotoxicity against P388 lymphocytic leukaemia cells. Pale yellow powder. Sol. MeOH, $CHCl_3$; poorly sol. hexane. Mp 219-221°. $[\alpha]_D$ +452 (c, 0.39 in $CHCl_3$). λ_{max} 206 (ϵ 45700); 216 (ϵ 49000); 240 (ϵ 15500); 272 (ϵ 7550); 281 (ϵ 7950); 290 (ϵ 7950) (EtOH) (Berdy).

Takahashi, C. *et al., J.C.S. Perkin 1*, 1994, 1859-1864 (*isol, uv, ir, pmr, cmr, ms, cd, struct*)

Leptosin G_1 L-130

[162232-33-9]
As Leptosin A, L-124 with
x = 3, y = 3
$C_{32}H_{32}N_6O_7S_6$ 805.037
Metab. from a strain of *Leptosphaeria* sp. and *Sargassum tortile*. Exhibits cytotoxicity against P388 lymphocytic leukaemia cells. Powder. Mp 210-212°. $[\alpha]_D^{24}$ +558 (c, 0.45 in $CHCl_3$). λ_{max} 210 (ϵ 52480); 240 (ϵ 13800); 296 (ϵ 6166) (EtOH) (Berdy).

Takahashi, C. *et al., Phytochemistry*, 1995, **38**, 155-158 (*isol, uv, ir, pmr, cmr, ms, cd, struct*)

Leptosin G_2 L-131

[159334-39-1]
As Leptosin A, L-125 with
x = 2, y = 3
$C_{32}H_{32}N_6O_7S_5$ 772.971
Metab. from a strain of *Leptosphaeria* sp.and *Sargassum tortile*. Exhibits cytotoxicity against P388 lymphocytic leukaemia cells. Pale yellow powder. Mp 210-215°. $[\alpha]_D^{24}$ +303 (c, 0.58 in $CHCl_3$). λ_{max} 206 (ϵ 58000); 240 (ϵ 20417); 296 (ϵ 6310) (EtOH) (Berdy).

Takahashi, C. *et al., Phytochemistry*, 1995, **38**, 155-158 (*isol, uv, ir, pmr, ms, cd, struct*)

Leptosin G L-132

[159334-43-7]
As Leptosin A, L-124 with
x = 4, y = 3
$C_{32}H_{32}N_6O_7S_7$ 837.103
Metab. of a strain of *Leptosphaeria* sp. and *Sargassum tortile*. Exhibits cytotoxicity against P388 lymphocytic leukaemia cells. Pale yellow powder. Mp 205-210°. $[\alpha]_D^{24}$ +481 (c, 0.40 in $CHCl_3$). λ_{max} 206 (ϵ 81283); 240 (ϵ 26300); 296 (ϵ 8130) (EtOH) (Berdy).

Takahashi, C. *et al., Phytochemistry*, 1995, **38**, 155 (*isol, uv, ir, pmr, cmr, ms, cd, struct*)

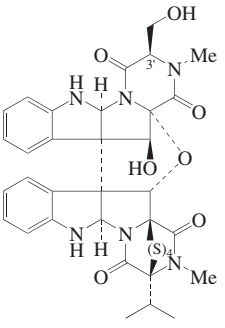
Leptosin H L-133

[159334-40-4]
As Leptosin A, L-124 with
x = 2, y = 4
$C_{32}H_{32}N_6O_7S_6$ 805.037
Metab. from a strain of *Leptosphaeria* sp. and *Sargassum tortile*. Exhibits cytotoxicity against P388 lymphocytic leukaemia cells. Pale yellow powder. Mp 214-215°. $[\alpha]_D^{24}$ +298 (c, 0.47 in $CHCl_3$). λ_{max} 207 (ϵ 64565); 240 (ϵ 23442); 302 (ϵ 7080) (EtOH) (Berdy).

Takahashi, C. *et al., Phytochemistry*, 1995, **38**, 155-158 (*isol, uv, ir, pmr, cmr, ms, cd, struct*)

Leptosin I L-134

[160472-96-8]



Relative Configuration

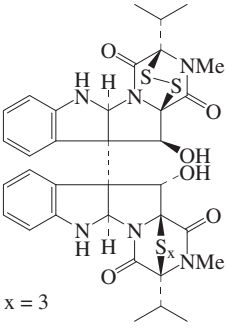
$C_{32}H_{32}N_6O_7S_4$ 740.905
Metab. from a strain of *Leptosphaeria* sp. originally isol. from the marine alga *Sargassum tortile*. Cytotoxic agent. Pale yellow powder. Sol. DMSO, $CHCl_3$, MeOH; poorly sol. H_2O, hexane. Mp 218-220°. $[\alpha]_D^{24}$ +212 (c, 0.13 in $CHCl_3$). λ_{max} 209 (log ϵ 4.45); 240 (log ϵ 3.91); 305 (log ϵ 3.45) (EtOH).

3′-Epimer: ***Leptosin J***
[160550-15-2]
$C_{32}H_{32}N_6O_7S_4$ 740.905
From *Leptosphaeria* sp. Cytotoxic agent. Pale yellow powder. Sol. DMSO, MeOH, $CHCl_3$; poorly sol. H_2O, hexane. Mp 215-216°. $[\alpha]_D^{24}$ +188 (c, 0.21 in $CHCl_3$). λ_{max} 209 (log ϵ 4.45); 240 (log ϵ 3.94); 298 (log ϵ 3.44) (EtOH).

Takahashi, C. *et al., J. Antibiot.*, 1994, **47**, 1242-1249 (*isol, uv, ir, pmr, cmr, cd, struct*)

Leptosin K_1 L-135

[159334-36-8]



Absolute Configuration

$C_{34}H_{36}N_6O_6S_5$ 785.025
Metab. from a strain of *Leptosphaeria* sp. Exhibits potent cytotoxicity against P388 lymphocytic leukaemia cells. Pale yellow powder. Mp 209-212°. $[\alpha]_D$ +88.9 (c, 0.32 in $CHCl_3$). λ_{max} 207 (ϵ 51286); 237 (ϵ 19500); 300 (ϵ 5495) (EtOH) (Berdy).

Takahashi, C. *et al., Tetrahedron*, 1995, **51**, 3483-3498 (*isol, uv, ir, pmr, ms, cd, cryst struct*)

Leptosin K_2 L-136

[159334-37-9]
As Leptosin K_1, L-135 with
x = 4
$C_{34}H_{36}N_6O_6S_6$ 817.091
Metab. from a strain of *Leptosphaeria* sp. Exhibits potent cytotoxicity against P388 lymphocytic leukaemia cells. Pale yellow powder. Mp 214-216°. $[\alpha]_D$ +482.8 (c, 0.44 in $CHCl_3$). λ_{max} 205 (ϵ 34950); 242 (ϵ 14125); 296 (ϵ 4365) (EtOH) (Berdy).

Takahashi, C. *et al., Tetrahedron*, 1995, **51**, 3483-3498 (*isol, uv, ir, pmr, cmr, ms, cd, cryst struct*)

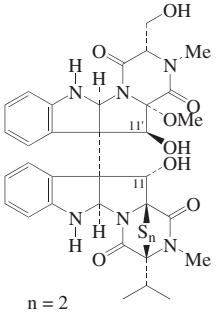
Leptosin K L-137

[159334-35-7]
As Leptosin K_1, L-135 with
x = 2
$C_{34}H_{36}N_6O_6S_4$ 752.959
Metab. from a strain of *Leptosphaeria* sp. OUPS-4 originally isolated from the marine alga *Sargassum tortile*. Exhibits potent cytotoxicity against P388 lymphocytic leukaemia cells. Prisms (EtOAc). Mp 222-224°. $[\alpha]_D$ +76.7 (c, 0.37 in $CHCl_3$). λ_{max} 206 (ϵ 60256); 240 (ϵ 19050); 302 (ϵ 6025) (EtOH).

Takahashi, C. *et al., Tetrahedron*, 1995, **51**, 3483-3498 (*isol, uv, ir, pmr, cmr, ms, cd, cryst struct*)

Leptosin M_1 L-138

[406213-88-5]



Absolute Configuration

$C_{33}H_{36}N_6O_8S_2$ 708.815
Metab. of *Leptosphaeria* sp. OUPS-4. Pale yellow powder. Mp 219-222°. $[\alpha]_D$ +140 (c, 0.18 in $CHCl_3$). λ_{max} 212 (log ϵ 4.73); 238 (log ϵ 4.3); 300 (log ϵ 3.83) (EtOH).

Yamada, T. *et al., Tetrahedron*, 2002, **58**, 479-487 (*isol, pmr, cmr, uv, ir, cd, struct*)

Leptosin M L-139

[406213-87-4]
As Leptosin M_1, L-138 with
n = 4
$C_{33}H_{36}N_6O_8S_4$ 772.947
Metab. of *Leptosphaeria* sp. OUPS-4 isol. from the marine alga *Sargassum tortile*. Pale yellow powder. Mp 223-226°. $[\alpha]_D$ +478 (c, 0.1 in $CHCl_3$). λ_{max} 206 (log ϵ 4.64); 243 (log ϵ 4.08); 304 (log ϵ 3.62) (EtOH).

11,11′-Diepimer: ***Leptosin N***
[406213-89-6]
$C_{33}H_{36}N_6O_8S_4$ 772.947
Metab. of *Leptosphaeria* sp. OUPS-4. Pale yellow powder. Mp 226-228°. $[\alpha]_D$ +276 (c, 0.16 in $CHCl_3$). λ_{max} 212 (log ϵ 4.75); 240 (log ϵ 4.36); 302 (log ϵ 3.86) (EtOH).

Yamada, T. *et al., Tetrahedron*, 2002, **58**, 479-487 (*isol, uv, pmr, cmr, cd, struct*)

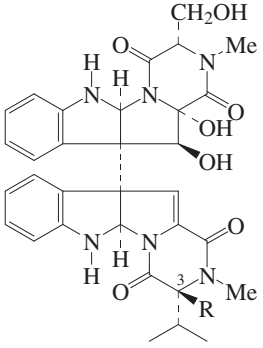
Leptosin N_1 L-140

[406213-90-9]
As Leptosin M_1, L-138 with
n = 3
$C_{33}H_{36}N_6O_8S_3$ 740.881
Metab. of *Leptosphaeria* sp. OUPS-4. Pale yellow powder. Mp 227-229°. $[\alpha]_D$ +347 (c, 0.14 in $CHCl_3$). λ_{max} 212 (log ϵ 4.74); 240 (log ϵ 4.34); 302 (log ϵ 3.82) (EtOH).

Yamada, T. *et al., Tetrahedron*, 2002, **58**, 479-487 (*isol, uv, ir, pmr, cmr, cd, struct*)

Leptosin O L-141

[721960-15-2]



R = -S-S-Me

$C_{33}H_{36}N_6O_7S_2$ 692.815
Metab. of *Leptosphaeria* sp. OUPS-N80 isol. from *Sargassum tortile*. Cytotoxic. Pale yellow powder. Mp 220-222°. $[\alpha]_D$ -99 (c, 0.08 in $CHCl_3$). λ_{max} 211 (log ϵ 4.76); 238 (log ϵ 4.58); 265 (log ϵ 4.3); 298 (log ϵ 4.08) (EtOH).

3-Epimer: ***Leptosin P***
[721960-16-3]
$C_{33}H_{36}N_6O_7S_2$ 692.815
Metab. of *Leptosphaeria* sp. OUPS-N80 from *Sargassum tortile*. Cytotoxic. Pale yellow powder. Mp 233-235°. $[\alpha]_D$ +35 (c, 0.17 in $CHCl_3$). λ_{max} 209 (log ϵ 4.49); 238 (log ϵ 4.3); 270 (log ϵ 3.99); 300 (log ϵ 3.78) (EtOH).

Yamada, T. *et al., Heterocycles*, 2004, **63**, 641-652 (*isol, cd, pmr, cmr, ms*)

Leptosin Q L-142

[721960-17-4]
As Leptosin O, L-141 with
R = -SMe
$C_{33}H_{36}N_6O_7S$ 660.749
Metab. of *Leptosphaeria* sp. OUPS-N80 isol. from *Sargassum tortile*. Pale yellow powder. Mp 231-233°. $[\alpha]_D$ -92 (c, 0.07 in $CHCl_3$). λ_{max} 212 (log ϵ 4.76); 238 (log ϵ 4.32); 268 (log ϵ 4.02); 299 (log ϵ 3.75) (EtOH).

3-Epimer: ***Leptosin R***
[721960-18-5]
$C_{33}H_{36}N_6O_7S$ 660.749
Metab. of *Leptosphaeria* sp. OUPS-N80 isol. from *Sargassum tortile*. Pale yellow powder. Mp 221-223°. $[\alpha]_D$ -24 (c, 0.1 in $CHCl_3$). λ_{max} 212 (log ϵ 4.95); 238 (log ϵ 4.72); 267 (log ϵ 4.35); 298 (log ϵ 4.14) (EtOH).

Yamada, T. *et al., Heterocycles*, 2004, **63**, 641-652 (*isol, pmr, cmr, ms*)

Leptosin S L-143

[721960-19-6]
As Leptosin O, L-141 with
R = NH_2
$C_{32}H_{35}N_7O_7$ 629.671
Metab. of *Leptosphaeria* sp. OUPS-N80 isol. from *Sargassum tortile*. Pale yellow powder. Mp 231-233°. $[\alpha]_D$ -56 (c, 0.07 in $CHCl_3$). λ_{max} 212 (log ϵ 4.77); 238 (log ϵ 4.61); 270 (log ϵ 4.1); 300 (log ϵ 4.04) (EtOH).

Yamada, T. *et al., Heterocycles*, 2004, **63**, 641-652 (*isol, pmr, cmr, ms*)

Lettocine L-144

$C_{17}H_{25}NO_2$ 275.39
Struct. unknown. Alkaloid from *Holarrhena antidysenterica* bark (Apocynaceae). Light-brown cryst. powder ($CHCl_3$/petrol). Mp 350-352°.

Hydroiodide:
Yellowish-brown cryst. powder (EtOH aq.). Mp 256° dec.

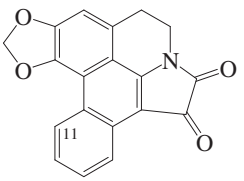
Methiodide:
Cryst. (MeOH). Mp 235°.

Picrate:
Cryst. (EtOH). Mp 198°.

Peacock, D.H. *et al., J.C.S.*, 1935, 734-735

Lettowianthine L-145

Annobraine



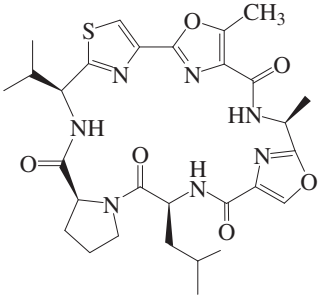
$C_{19}H_{11}NO_4$ 317.3
Alkaloid from the root bark of *Lettowianthus stellatus* and from *Annona glabra* (pond apple) (Annonaceae). Dark red solid ($CHCl_3$); red needles ($CHCl_3$). Mp 314-317° dec. (265-267°). λ_{max} 254 (log ϵ 4.02); 293 (log ϵ 3.42); 323 (sh) (log ϵ 3.5); 333 (log ϵ 3.55); 365 (log ϵ 3.23); 509 (log ϵ 3.07) (MeOH) (Lettowianthine). λ_{max} 232 (sh) (log ϵ 3.97); 253 (log ϵ 4.37); 280 (log ϵ 3.8); 291 (log ϵ 3.84); 333 (log ϵ 3.64); 355 (sh) (log ϵ 3.43); 373 (log ϵ 3.2) (EtOH) (Annobraine).

11-Hydroxy: ***11-Hydroxylettowianthine***
$C_{19}H_{11}NO_5$ 333.3
Alkaloid from the root bark of *Lettowianthus stellatus* (Annonaceae). Dark red amorph. solid. λ_{max} 260 (log ϵ 4.09); 292 (log ϵ 3.48); 311 (sh) (log ϵ 3.28); 355 (log ϵ 3.25); 505 (log ϵ 3.02) (MeOH).

Chang, F.R. *et al., J. Chin. Chem. Soc. (Taipei)*, 2000, **47**, 913-920 (*Annobraine*)
Nkunya, M.H.H. *et al., Phytochemistry*, 2000, **53**, 1067-1073 (*Lettowianthine, 11-Hydroxylettowianthine*)

Leucamide A L-146

[447461-16-7]

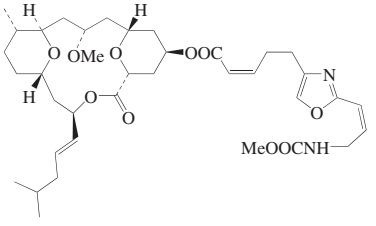


$C_{29}H_{37}N_7O_6S$ 611.721
Isol. from the Australian sponge *Leucetta microraphis*. Cytotoxic agent. Amorph. solid. $[\alpha]_D^{23}$ -69.3 (c, 0.6 in $CHCl_3$). λ_{max} 246 (ϵ 9270) ($CHCl_3$).

Kehraus, S. *et al., J.O.C.*, 2002, **67**, 4989-4992 (*isol, pmr, cmr*)
Wang, W. *et al., J.O.C.*, 2003, **68**, 1636-1639 (*synth*)

Leucascandrolide A L-147

[175448-18-7]



Absolute Configuration

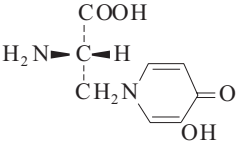
$C_{38}H_{56}N_2O_{10}$ 700.868
Isol. from the marine sponge *Leucascandra caveolata*. Shows potent antifungal activity against *Candida albicans*; shows strong cytotoxicity. Amorph. solid. Sol. MeOH, $CHCl_3$, CH_2Cl_2, EtOH; poorly sol. H_2O. $[\alpha]_D^{20}$ +41 (EtOH). λ_{max} 205 (ϵ 15000); 262 (ϵ 11000) (EtOH).

D'Ambrosio, M. *et al., Helv. Chim. Acta*, 1996, **79**, 51-60 (*isol, uv, ir, pmr, cmr, ms, cryst struct, activity*)
Hornberger, K.R. *et al., J.A.C.S.*, 2000, **122**, 12894-12895 (*synth, activity*)
Wang, Y. *et al., J.A.C.S.*, 2002, **124**, 13670-13671 (*synth*)
Williams, D.R. *et al., Angew. Chem., Int. Ed.*, 2003, **42**, 3934-3938 (*synth*)
Fettes, A. *et al., J.O.C.*, 2003, **68**, 9274-9283 (*synth*)
Crimmins, M.T. *et al., Org. Lett.*, 2003, **5**, 4641-4644 (*synth*)

Williams, D.R. *et al., Org. Lett.*, 2003, **5**, 5035-5038 (*synth*)
Paterson, I. *et al., Tetrahedron*, 2003, **59**, 6833-6849 (*synth*)
Su, Q. *et al., J.O.C.*, 2007, **72**, 2-24 (*synth*)
Van Orden, L.J. *et al., J.O.C.*, 2007, **72**, 5784-5793 (*synth*)
Ferrié, L. *et al., Org. Lett.*, 2007, **9**, 2461-2464 (*synth*)

Leucenine L-148

α-Amino-3-hydroxy-1(4H)-pyridinepropanoic acid, 9CI. Leucenol. Leucaenine. Leucaenol. Mimosine



$C_8H_{10}N_2O_4$ 198.178
Possesses depilatory props.

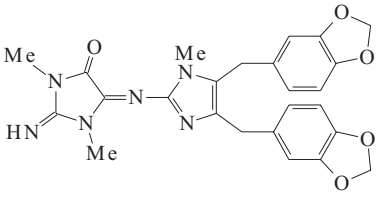
(*S*)-*form* [500-44-7]
Alkaloid from *Leucaena glauca* and *Mimosa pudica*. Cryst. (H_2O). Sol. H_2O. Mp 235-236°. $[\alpha]_D^{22}$ -20 (H_2O). pK_{a1} 2.1; pK_{a2} 7.2; pK_{a3} 9.2 (phenolic OH). λ_{max} 282 (ϵ 16980) (MeOH). λ_{max} 284 (ϵ 15000) (H_2O) (Berdy). λ_{max} 277 (HCl).

O-*β*-D-*Glucopyranoside:* ***Mimoside*** [36518-12-4]
$C_{14}H_{20}N_2O_9$ 360.32
Alkaloid from *Mimosa pudica* and *Leucaena leucocephala*. Mp 178-179°. $[\alpha]_D^{26}$ -60.9 (c, 0.46 in H_2O).

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 597D (*ir*)
Aldrich Library of NMR Spectra, 2nd edn., 1983, **1**, 506D (*nmr*)
Wibaut, J.P. *et al., Rec. Trav. Chim. (J. R. Neth. Chem. Soc.)*, 1946, **65**, 65; 1950, **69**, 37 (*struct*)
Bickel, A.F. *et al., J.A.C.S.*, 1948, **70**, 326 (*struct*)
Adams, R. *et al., J.A.C.S.*, 1949, **71**, 705 (*synth*)
Spenser, I.D. *et al., Can. J. Chem.*, 1962, **40**, 1374 (*synth*)
Hylin, J.W. *et al., Phytochemistry*, 1964, **3**, 161 (*biosynth*)
Beyerman, H.C. *et al., Rec. Trav. Chim. (J. R. Neth. Chem. Soc.)*, 1964, **83**, 1078 (*abs config*)
Murakoshi, T. *et al., Chem. Pharm. Bull.*, 1971, **19**, 2655
Mostad, A. *et al., Acta Chem. Scand.*, 1973, **27**, 164 (*cryst struct*)
Mostad, A. *et al., Acta Chem. Scand., Ser. B*, 1974, **28**, 249 (*cryst struct*)
Murakoshi, I. *et al., Chem. Pharm. Bull.*, 1986, **34**, 1473 (*synth*)

Leucettamidine L-149

[147395-97-9]

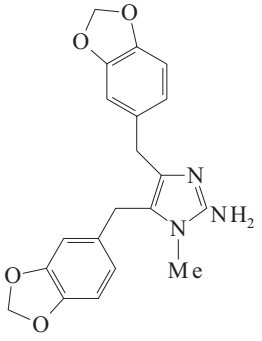


$C_{25}H_{24}N_6O_5$ 488.502
Alkaloid from the marine sponge *Leucetta microraphis*. Exhibits significant leukotriene B4 receptor binding activity. Antiinflammatory agent. λ_{max} 205 (ϵ 4200); 285 (ϵ 800); 386 (ϵ 6000) ($CHCl_3$/MeOH) (Derep). λ_{max} 205 ; 237 ; 363 (MeOH) (Berdy).

Chan, G.W. *et al., J. Nat. Prod.*, 1993, **56**, 116 (*isol, pmr, struct*)

Leucettamine A L-150

4,5-Bis(1,3-benzodioxol-5-ylmethyl)-1-methyl-1H-imidazol-2-amine, 9CI
[147395-95-7]

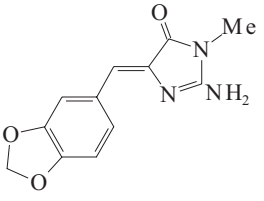


$C_{20}H_{19}N_3O_4$ 365.388
Alkaloid from the marine sponge *Leucetta microraphis*. Exhibits potent leukotriene B4 receptor binding activity. Antiinflammatory agent. Yellowish amorph. solid. λ_{max} 205 (ϵ 4280); 285 (ϵ 796) (MeOH) (Derep).

Boehm, J.C. *et al., J. Med. Chem.*, 1993, **36**, 3333 (*synth*)
Chan, G.W. *et al., J. Nat. Prod.*, 1993, **56**, 116 (*isol, uv, ir, pmr, cmr, ms, struct, activity*)

Leucettamine B L-151

[147395-96-8]

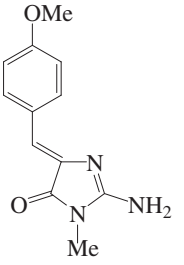


$C_{12}H_{11}N_3O_3$ 245.237
Alkaloid from the marine sponge *Leucetta microraphis*. Cream solid. λ_{max} 205 (ϵ 2320); 237 (ϵ 1830); 363 (ϵ 3710) (MeOH) (Derep).

Chan, G.W. *et al., J. Nat. Prod.*, 1993, **56**, 116 (*isol, uv, ir, pmr, cmr, ms, struct*)
Molina, P. *et al., Tet. Lett.*, 1994, **35**, 2235 (*synth*)
Roue, N. *et al., Tetrahedron*, 1999, **55**, 14729-14738 (*synth*)

Leucettamine C L-152

2-Amino-3,5-dihydro-5-[(4-methoxyphenyl)methylidene]-3-methyl-4H-imidazol-4-one, 9CI
[497085-85-5]

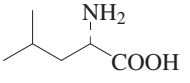


$C_{12}H_{13}N_3O_2$ 231.254
Alkaloid from the sponge *Leucetta* sp. Amorph. yellow powder. λ_{max} 207 (log ϵ 4.26); 230 (log ϵ 4.1); 368 (log ϵ 4.4) (MeOH).

Crews, P. *et al., J. Nat. Prod.*, 2003, **66**, 177-182 (*isol, pmr, cmr*)

Leucine, 9CI, USAN L-153

2-Amino-4-methylpentanoic acid. 2-Aminoisocaproic acid. 4-Methylnorvaline. Leu. Chenopodine
[7005-03-0]



(*S*)-*form*

$C_6H_{13}NO_2$ 131.174
$[\alpha]_D^{16}$ +14 (c,1.3 in H_2O). Log P -1.67 (calc). Derivs. useful in peptide synth. are listed elsewhere.

(*R*)-*form*
D-*form*
[328-38-1]
Isol. from aerial parts of *Coronilla varia* and seeds of *Coronilla scorpioides*. Plates (EtOH). Mp 293° (sealed tube). $[\alpha]_D^{20}$ +11.1 (H_2O). $[\alpha]_D^{20}$ -17 (20% HCl).
► OH2840000

Me ester: [23032-21-5]
$C_7H_{15}NO_2$ 145.201
Mp 149-150° (as hydrochloride).

Amide: [15893-47-7]
$C_6H_{14}N_2O$ 130.189
Solid (as hydrochloride). $[\alpha]_D$ -11 (c, 0.5 in MeOH).

N-*Ac:* [19764-30-8]
$C_8H_{15}NO_3$ 173.211
Mp 112-114°. $[\alpha]_D^{23}$ +23.2 (EtOH).

N-*Benzoyl:* [57357-55-8]
$C_{13}H_{17}NO_3$ 235.282
Cryst. + ½H_2O (Et_2O/petrol). Spar. sol. hot H_2O. Mp 60° Mp 105-107° (anhyd.). $[\alpha]_D^{20}$ -6.39 (KOH).

Homopolymer: D-*Leucine homopolymer. Poly-*D-*leucine*
[26335-59-1] Catalyst for the asymmetric epoxidation of unsaturated ketones.
Solid.

N-*(2-Nitrobenzenesulfenyl):* N-*[(2-*

Nitrophenyl)thio]-L-leucine
[50571-61-4]
[7685-67-8 , 7675-50-5]
$C_{12}H_{16}N_2O_4S$ 284.335
Solid. Mp 108-109° (102-106°). $[\alpha]_D^{20}$ -112.7 (c, 2 in DMF). Also obt. as dicyclohexylamine salt.

(*S*)-*form*
L-form. FEMA 3297
[61-90-5]
Obt. by hydrol. of most proteins. Flavouring ingredient. Dietary supplement; nutrient. Plates (EtOH aq.). Spar. sol. H_2O (2.3 g/100 cm^3 at 25°). Mp 337° (293-295°) dec. $[\alpha]_D^{20}$ -10.42 (H_2O). $[\alpha]_D^{15}$ +17.3 (20% HCl). pK_{a1} 2.33; pK_{a2} 9.74 (25°). Log P -1.67 (calc). Isoelectric point 5.98. Bitter taste.
▶ Exp. reprod. and teratogenic effects (v. large doses). OH2850000

Me ester: [2666-93-5]
Bp_{12} 79-79.5°. $[\alpha]_D^{17}$ +16.52.

Me ester, hydrochloride: [7517-19-3]
Mp 118° (α-form) Mp 150-151° (β-form). $[\alpha]_D^{16}$ +14 (c, 1.3 in H_2O).

Et ester: [2743-60-4]
$C_8H_{17}NO_2$ 159.228
Bp_{761} 196° Bp_{18} 88°.

Et ester, hydrochloride: [2743-40-0]
Prisms (EtOAc/petrol). Mp 134°. $[\alpha]_D$ +18.4.

tert-*Butyl ester:* [21691-53-2]
$C_{10}H_{21}NO_2$ 187.281
$Bp_{0.15}$ 45°. $[\alpha]_D^{25}$ +21.6 (c, 2.5 in EtOH).

tert-*Butyl ester, hydrochloride:* [42031-13-0]
Cryst. (EtOH/Et_2O). Mp 173°. $[\alpha]_D^{20}$ +19.8 (c, 2 in EtOH).

Benzyl ester: [1738-69-8]
$C_{13}H_{19}NO_2$ 221.299
Oil.

Benzyl ester, hydrochloride: [2462-35-3]
Mp 128°. $[\alpha]_D^{30}$ -8 (c, 2 in HCl).

Amide: 2-Amino-4-methylpentanamide, 9CI. Leucine amide. Leucinamide
[687-51-4]
$C_6H_{14}N_2O$ 130.189
Constit. of the seeds of *Trifolium repens* var. *giganteum*. Mp 254-256° (as hydrochloride). $[\alpha]_D^{20}$ +10 (c, 5 in H_2O).

(2-Naphthyl)amide: (S)-*2-Amino-4-methyl*-N-*2-naphthalenylpentanamide, 9CI*
[732-85-4]
$C_{16}H_{20}N_2O$ 256.347
Mp 105-108°.

Anilide:
$C_{12}H_{18}N_2O$ 206.287
Cryst. (as hydrochloride). Mp 218-222°.

N-*Formyl, Me ester:* [54259-27-7]
$C_8H_{15}NO_3$ 173.211
Oil. $[\alpha]_D$ -43.2 (c, 1 in MeOH).

N-*Ac:* [1188-21-2]
Mp 189-190°. $[\alpha]_D^{24}$ -40.2 (Py). $[\alpha]_D^{24}$ -23.1 (EtOH).

N-*(Chloroacetyl):* [688-12-0]
$C_8H_{14}ClNO_3$ 207.656
Cryst. Mp 136°. $[\alpha]_D$ -15.8 (EtOH).

N-*Benzoyl:* [1466-83-7]
Mp 60° (hydrated) Mp 105-107° (anhyd.).

N-*Benzoyl, Me ester:* [3005-60-5]
$C_{14}H_{19}NO_3$ 249.309
Mp 80-82°. $[\alpha]_D$ +38 (c, 1 in $CHCl_3$).

N-*(3,5-Dinitrobenzoyl):* [7495-01-4]
$C_{13}H_{15}N_3O_7$ 325.277
Used in chromatographic resoln. of enantiomers. Mp 186-188°. $[\alpha]_D^{20}$ -14.3 (c, 3 in EtOH).

4-Nitrobenzyloxycarbonyl: [122411-88-5]
$C_{14}H_{18}N_2O_6$ 310.306
Solid + H_2O. Mp 60-61° (monohydrate) Mp 81-85.5° (anhydr.). $[\alpha]_D^{27}$ -15.8 (c, 1 in 1*N* NaOH).

N-*Me:* N-*Methylleucine, 9CI. 4-Methyl-2-(methylamino)pentanoic acid. 2-Methylaminoisocaproic acid*
[3060-46-6]
$C_7H_{15}NO_2$ 145.201
Residue present in antibiotics, e.g. Ilamycins, Sporidesmolides. Cryst. (Me_2CO aq.). Mp 200° subl. $[\alpha]_D$ +21.4 (H_2O). $[\alpha]_D$ +31.3 (5*M* HCl).

N-*Me, Me ester:* [35026-08-5]
$C_8H_{17}NO_2$ 159.228
Mp 126.5-127° (as hydrochloride). $[\alpha]_D^{25}$ +31.4 (c, 1 in EtOH).

N-*Me,* N-tert-*butyloxycarbonyl:* [53363-89-6]
$C_{12}H_{23}NO_4$ 245.318
Mp 56-57°. $[\alpha]_D^{26}$ -24.6 (c, 0.5 in EtOH).

N-*Me,* N-*benzyloxycarbonyl:* [33099-08-0]
$C_{15}H_{21}NO_4$ 279.335
Mp 74-75°.

N-*(2,4-Dinitrophenyl):* [1655-57-8]
Mp 94-95°.

N-*(2,4,6-Trinitrophenyl):*
$C_{12}H_{14}N_4O_8$ 342.265
Cryst. (MeOH aq.). Mp 98-99°.

Polymer with 5-methylglutamate: ***Leuciglumer, INN***
[41385-14-2]
Dermatological agent. $[\alpha]_D^{20}$ -44 (c, 0.01 in HCl aq.).

Homopolymer: L-Leucine homopolymer. Poly-L-leucine
[25248-98-0]
Catalyst for the asymmetric epoxidation of unsaturated ketones.
Solid. $[\alpha]_D^{20}$ -103.4 (c, 0.32 in CF_3CO_2H).

N-*Jasmonoyl:* **N-*Jasmonoylleucine***
[120330-91-8]
$C_{18}H_{29}NO_4$ 323.431
Prod. by rice (*Oryza sativa*) leaves after wounding. Cryst. ($CHCl_3$/hexane). Mp 145-147° (synthetic). $[\alpha]_D^{25}$ -64.9 (c, 0.23 in MeOH) (synthetic).

(±)-*form* [328-39-2]
Dietary supplement, nutrient. Plates (H_2O). V. spar. sol. EtOH. Mp 293-295° (sealed tube). pK_{a1} 2.33; pK_{a2} 9.74 (25°).

Et ester: [2899-43-6] Misc. EtOH, Et_2O, C_6H_6, petrol. Bp_{761} 196° Bp_{18} 88°.

Amide: [13079-20-4]
Prisms (C_6H_6). Sol. H_2O; v. sol. EtOH, Me_2CO; spar. sol. C_6H_6.

N-*Ac:* ***Acetylleucine, INN****. Tanganil. RP 7452*
[99-15-0] Drug used to treat dizziness, antiemetic. Mp 160-162° (157-158°). Log P 0.84 (calc).

N-*Ac, amide:*
$C_8H_{16}N_2O_2$ 172.227
Mp 157-158°.

N-*(Chloroacetyl):* [7154-83-8]
Cryst. Mp 142°.

N-*Benzoyl:* [17966-67-5]
Needles or plates. Sol. EtOH, Et_2O, $CHCl_3$, AcOH; spar. sol. C_6H_6; insol. petrol.

N-*Benzoyl, Me ester:* [38449-08-0]
$C_{14}H_{19}NO_3$ 249.309
Cryst. (petrol). Mp 95-96°.

N-*Benzoyl, amide:*
$C_{13}H_{18}N_2O_2$ 234.297
Plates (petrol). Mp 171°.

Nitrile: [65707-62-2]
$C_6H_{12}N_2$ 112.174
Mp 170-172° (as hydrochloride) Mp 203-208° (as hydrochloride).

N-*Me:* [2566-33-8]
Needles (EtOH aq.). Sublimes.

N-*(2,4-Dinitrophenyl):* [10484-03-4]
Yellow cryst. Mp 203°.

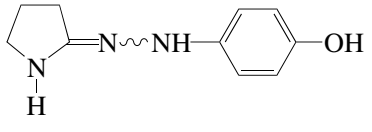
[13366-40-0 , 5845-53-4 , 10466-61-2]

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 575A; 575C; 575B (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 875B (*nmr*)
Fischer, E. *et al., Ber.*, 1900, **33**, 2370; 2377; 1901, **34**, 445; 1905, **38**, 615; 3997; 4002
Ronwin, E. *et al., J.O.C.*, 1953, **18**, 127 (*N-chloroacetyl*)
Roeske, R.W. *et al., Chem. Ind. (London)*, 1959, 1121-1127 (*tert-butyl ester*)
Russell, D.W. *et al., Biochim. Biophys. Acta*, 1960, **38**, 382; **45**, 411 (*N-Me*)
Taschner, E. *et al., Annalen*, 1961, **646**, 134-136 (*tert-butyl ester*)
Greenstein, J.P. *et al., Chemistry of the Amino Acids*, (Chapter 31), Wiley, N.Y., 1961, 2075; 2750; 2758 (*rev*)
Heyns, K. *et al., Annalen*, 1963, **667**, 194 (*ms*)
Quitt, P. *et al., Helv. Chim. Acta*, 1963, **46**, 327 (*N-Me*)
Zervas, L. *et al., J.A.C.S.*, 1963, **85**, 3660-3666 (*2-nitrobenzenesulfenyl*)
Mizoguchi, T. *et al., Chem. Pharm. Bull.*, 1970, **18**, 1465-1474 (*Me ester*)
Benoiton, N.L. *et al., Prog. Pept. Res., [Proc. Am. Pept. Symp.], 1970 (1972)*, 1972, 145 (*N-Me*)
Kricheldorf, H.R. *et al., Synthesis*, 1974, 422-424 (*2-nitrobenzenesulfenyl*)
Di Blasio, B. *et al., Acta Cryst. B*, 1975, **31**, 601; 2941 (*cryst struct*)
Oguri, T. *et al., Chem. Pharm. Bull.*, 1975, **23**, 167 (*synth*)
Harding, M.M. *et al., Acta Cryst. B*, 1976, **32**, 633 (*cryst struct*)
Kasai, T. *et al., Agric. Biol. Chem.*, 1976, **40**, 2489 (*S-form, amide*)
U.K. Pat., 1978, 1 562 373; *CA*, **90**, 110004v (*synth, use, Leuciglumer*)
Martinez, J. *et al., Int. J. Pept. Protein Res.*, 1979, **13**, 22-27 (*2-naphthylamide*)

Banfi, S. *et al., Tetrahedron*, 1984, **40**, 5207-5211 (*homopolymer, synth, ir*)
Kovalev, V.N. *et al., Khim. Prir. Soedin.*, 1985, **21**, 724; *Chem. Nat. Compd. (Engl. Transl.)*, 1985, **21**, 687 (*isol*)
Romani, S. *et al., Synthesis*, 1985, 512-513 (*2-nitrobenzenesulfenyl DCHA salt*)
Paventi, M. *et al., Can. J. Chem.*, 1987, **65**, 282 (*nitrile*)
Tamogami, S. *et al., J. Chromatogr., A*, 1988, **822**, 310-315 (*N-Jasmonoylleucine*)
Kramell, R. *et al., Tetrahedron*, 1988, **44**, 5791-5807 (*N-Jasmonoylleucine, synth, pmr, ms*)
Lewis, R.J. *et al., Food Additives Handbook*, Van Nostrand Reinhold International, New York, 1989, LER000; LES000
Fr. Pat., 1989, 2 625 507; *CA*, **113**, 29326y (*synth, Leuciglumer*)
Eur. Pat., 1990, (*(SKB)*)403 252; *CA*, **115**, 71370z (*D-form, homopolymer, synth*)
Itsuno, S. *et al., J.O.C.*, 1990, **55**, 6047-6049 (*homopolymer, S-form, synth*)
Flisak, J.R. *et al., J.O.C.*, 1993, **58**, 6247-6254 (*homopolymer, S-form, ir, pmr*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 597
Fenaroli's Handbook of Flavor Ingredients, 3rd edn., (ed. Burdock, G.A.), CRC Press, 1995, **2**, 429
Allen, J.V. *et al., Adv. Biochem. Eng./Biotechnol.*, 1996, **63**, 125-144 (*homopolymer, rev*)
Lasterra-Sanchez, M.E. *et al., J.C.S. Perkin 1*, 1996, 343-348 (*homopolymer, synth*)
Encyclopedia of Food and Color Additives, (ed. Burdock, G.A.), CRC Press, 1997, 1567-1569
Wang, Y. *et al., J.C.S. Perkin 2*, 1997, 899-904 (*amide, ir, cmr, cryst struct*)
Allen, J.V. *et al., J.C.S. Perkin 1*, 1998, 3171-3179 (*L-form, homopolymer*)
Giard, T. *et al., Synthesis*, 1998, 297-300 (*N-formyl Me ester*)
Porter, M.J. *et al., Bioorg. Med. Chem.*, 1999, **7**, 2145-2156 (*homopolymer, rev*)
Miyazawa, T. *et al., J.C.S. Perkin 1*, 2001, 82-86 (*anilide*)
Onofrio, A.B. *et al., J.C.S. Perkin 2*, 2001, 1863-1868 (*Me ester, synth*)
Dutton, F.E. *et al., J. Med. Chem.*, 2003, **46**, 2057-2073 (*benzyl ester*)
Nadia, K. *et al., J. Het. Chem.*, 2004, **41**, 57-60 (*N-benzoyl Me ester*)
Isidro-Llobet, A. *et al., Eur. J. Org. Chem.*, 2005, 3031-3039 (*4-nitrobenzyloxycarbonyl*)
Rossi, J.-C. *et al., Eur. J. Org. Chem.*, 2007, 662-668 (*R-form, amide*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, LER000; LES000

Leucoagaricone L-154

[99280-75-8]

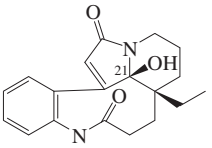


$C_{10}H_{13}N_3O$ 191.232
Assumed to be a constit. of the toadstool *Agaricus xanthoderma*. Colourless precursor of Agaricone, A-175. Cryst. (as hydrochloride). Mp 224° (hydrochloride).

Hilbig, S. *et al., Angew. Chem., Int. Ed.*, 1985, **24**, 1063-1065 (*isol*)

Leuconolam L-155

[93710-27-1]



Relative Configuration

$C_{19}H_{22}N_2O_3$ 326.394
Alkaloidal artifact from *Leuconotis griffithii* and *Leuconotis eugenifolia* (Apocynaceae). Cryst. (EtOH aq.). Mp 263-264°. $[\alpha]_D^{28}$ -515.8 (c, 0.25 in MeOH). $[\alpha]_D$ -28.3 (c, 0.7 in $CHCl_3$).

O-*Ac:*
Cryst. (MeOH). Mp 235-236°.

N-*Me:* **N-*Methylleuconolam***
[160985-67-1]
$C_{20}H_{24}N_2O_3$ 340.421
Alkaloid from roots of *Rhazya stricta* (Apocynaceae).

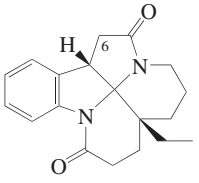
Me ether: ***21*-O-*Methylleuconolam***
[109305-79-5]
$C_{20}H_{24}N_2O_3$ 340.421
Alkaloid from leaves and stems of *Leuconotis eugenifolia* (Apocynaceae). Cryst. (MeOH). Mp 155-156° (140-150°). $[\alpha]_D^{29}$ -597.8 (c, 0.28 in MeOH).

21-Epimer: ***Epileuconolam***
$C_{19}H_{22}N_2O_3$ 326.394
Alkaloid from *Leuconotis eugenifolia* (Apocynaceae). Prob. an artifact.

Goh, S.H. *et al., Tet. Lett.*, 1984, **25**, 3483 (*uv, ir, pmr, cmr, ms, struct*)
Wei, C. *et al., Acta Cryst. C*, 1986, **42**, 349 (*cryst struct*)
Goh, S.H. *et al., Tet. Lett.*, 1986, **27**, 2501 (*Epileuconolam*)
Hiller, W. *et al., Acta Cryst. C*, 1989, **45**, 1258 (*cryst struct*)
Goh, S.H. *et al., Tetrahedron*, 1989, **45**, 7899 (*uv, ir, pmr, cmr, ms, 21-O-Methylleuconolam*)
Abe, F. *et al., Phytochemistry*, 1994, **35**, 169 (*21-O-Methylleuconolam*)
Atta-ur-Rahman, *et al., Nat. Prod. Lett.*, 1995, **5**, 245 (*N-Methylleuconolam*)
Banwell, M.G. *et al., ARKIVOC*, 2006, **iii**, 163-174 (*synth*)

Leuconoxine L-156

[155416-24-3]



Relative Configuration

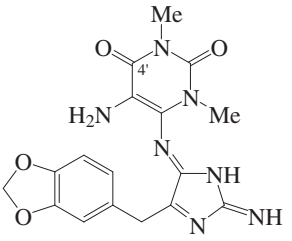
$C_{19}H_{22}N_2O_2$ 310.395
Highly rearranged indole alkaloid prob. most closely related to the Aspidosperma group. Alkaloid from leaves and stems of *Leuconotis eugenifolius* (Apocynaceae), stem bark and leaves of *Kopsia griffithii* and stems of *Kopsia dasyrachis*. Prisms ($CHCl_3$/MeOH). Mp 238-242°. $[\alpha]_D^{25}$ -88 (c, 1.2 in MeOH).

6-Oxo: ***6*-Oxoleuconoxine***
[947251-84-5]
$C_{19}H_{20}N_2O_3$ 324.379
Alkaloid from the leaves of *Kopsia griffithii*. Oil. $[\alpha]_D$ +75 (c, 0.03 in $CHCl_3$). λ_{max} 202 (log ϵ 4.42); 234 (log ϵ 4.12); 251 (log ϵ 4.02); 349 (log ϵ 3.1) (EtOH).

Abe, F. *et al., Phytochemistry*, 1994, **35**, 169-171 (*isol, pmr, cmr, struct*)
Kam, T.-S. *et al., Phytochemistry*, 1998, **47**, 145-146; 1999, **50**, 75-79; **51**, 159-169 (*occur*)
Lim, S.-H. *et al., J. Nat. Prod.*, 2007, **70**, 1380-1383 (*6-Oxoleuconoxine*)

Leucosolenamine A L-157

[926319-60-0]



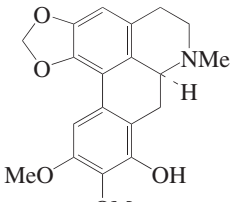
$C_{17}H_{17}N_7O_4$ 383.366
Alkaloid from the calcareous sponge *Leucosolenia* sp. Brown solid.

*4′-(*N-*Methylimine):* ***Leucosolenamine B***
[926319-67-7]
$C_{18}H_{20}N_8O_3$ 396.408
Alkaloid from a *Leucosolenia* sp. Brown solid.

Ralifo, P. *et al., J. Nat. Prod.*, 2007, **70**, 33-38 (*isol, pmr, cmr, ms*)

Leucoxine L-158

8-Hydroxy-9,10-dimethoxy-1,2-methylenedioxyaporphine



(*S*)-*form*

$C_{20}H_{21}NO_5$ 355.39

(*S*)-*form* [1358-95-8]
Alkaloid from the leaves and stems of *Ocotea leucoxylon* and from the leaves of *Ocotea brachybotra* and *Ocotea minarum* (Lauraceae). Mp 213-217° dec. $[\alpha]_D^{23}$ +81 (c, 0.518 in EtOH).

Me ether: 8,9,10-Trimethoxy-1,2-methylenedioxyaporphine. ***Ocopodine***

[19893-95-9]
$C_{21}H_{23}NO_5$ 369.416
Alkaloid from *Ocotea macropoda* and from leaves of *Ocotea minarum* and *Ocotea brachybotra* (Lauraceae). Needles (EtOH). Mp 116-117°. $[\alpha]_D^{25}$ +87 (c, 0.82 in EtOH).

6a,7-Didehydro, Me ether: ***Dehydroocopodine***
[33117-76-9]
$C_{21}H_{21}NO_5$ 367.401
Alkaloid from *Ocotea macropoda* (Lauraceae). Golden-yellow plates (EtOH). Mp 113°.

(±)-*form*
Me ether: Synthetic. Syrup.

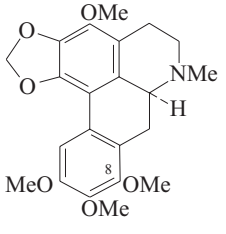
Me ether; hydrochloride:
Prisms. Mp 230-234° dec.

Me ether, styphnate:
Prisms. Mp 117-122°.

Goodwin, S. *et al., Chem. Ind. (London)*, 1960, 691 (*isol*)
Hirai, K. *et al., Yakugaku Zasshi*, 1960, **80**, 608; *CA*, **54**, 22696d (*synth, Ocopodine*)
Cava, M.P. *et al., Tet. Lett.*, 1968, 2437 (*uv, pmr, struct, Ocopodine*)
Cava, M.P. *et al., Tetrahedron*, 1971, **27**, 2639 (*Dehydroocopodine*)
Cava, M.P. *et al., J.O.C.*, 1975, **40**, 3601 (*Dehydroocopodine*)
Vecchietti, V. *et al., Farmaco, Ed. Sci.*, 1977, **32**, 767; 1979, **34**, 829; *CA*, **88**, **92**,; 133240s (*isol, uv, pmr, struct*)
Ringdahl, B. *et al., J. Nat. Prod.*, 1981, **44**, 80 (*cd*)

Leucoxylonine L-159

6,7,7a,8-Tetrahydro-4,9,10,11-tetramethoxy-7-methyl-5H-benzo[g]-1,3-benzodioxolo[6,5,4-de]quinoline, 9CI. 3,9,10,11-Tetramethoxy-1,2-methylenedioxyaporphine



$C_{22}H_{25}NO_6$ 399.443

(*S*)-*form* [1358-96-9]
Alkaloid from the leaves and stems of *Ocotea leucoxylon* and from the leaves of *Ocotea minarum* (Lauraceae). Also isol. from aerial parts of *Thalictrum simplex* (Ranunculaceae). Mp 54-58°. $[\alpha]_D^{24}$ +52 (c, 0.925 in EtOH). Prob. a solvate.

Methiodide: Mp 227-230° dec. $[\alpha]_D^{24}$ +33 (c, 0.17 in EtOH).

N-*Oxide:* ***Leucoxylonine* N-*oxide***
[166266-75-7]
$C_{22}H_{25}NO_7$ 415.442
Alkaloid from aerial parts of *Thalictrum simplex* (Ranunculaceae).

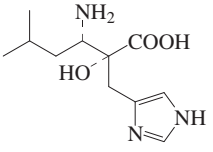
N-*De-Me:* ***Norleucoxylonine***
[72176-43-3]
$C_{21}H_{23}NO_6$ 385.416
Alkaloid from the leaves of *Ocotea minarum* (Lauraceae). Mp 255-260° (as hydrochloride). $[\alpha]_D$ +41 (c, 1.0 in MeOH).

O^8-*De-Me:* ***Ocoxylonine***
[66113-87-9]
$C_{21}H_{23}NO_6$ 385.416
Alkaloid from the leaves of *Ocotea leucoxylon* (Lauraceae). Needles (MeOH). Mp 161-162°. $[\alpha]_D$ +45 ($CHCl_3$).

Goodwin, S. *et al., Chem. Ind. (London)*, 1960, 691 (*occur, uv*)
Ahmad, R. *et al., Heterocycles*, 1977, **7**, 927 (*Leucoxylonine, Ocoxylonine, uv, pmr, ms, struct*)
Vecchietti, V. *et al., Farmaco, Ed. Sci.*, 1979, **34**, 829 (*isol*)
Valcheva, M.P. *et al., Phytochemistry*, 1995, **39**, 683 (*Leucoxylonine N-oxide*)

Leuhistin L-160

α-(1-Amino-3-methylbutyl)-α-hydroxy-1H-imidazole-4-propanoic acid, 9CI. 3-Amino-2-hydroxy-2-(1H-imidazol-4-ylmethyl)-5-methylhexanoic acid
[129085-76-3]



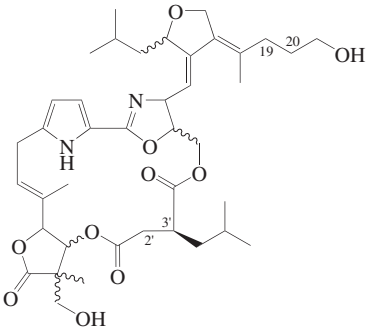
Absolute Configuration

$C_{11}H_{19}N_3O_3$ 241.289
Prod. by *Bacillus laterosporus*. Aminopeptidase M inhibitor, immunostimulant. Needles (H_2O)(as hydrochloride). Sol. H_2O, EtOH, DMSO, MeOH; poorly sol. Me_2CO, hexane, EtOAc, $CHCl_3$. Mp 180-183° (hydrochloride). $[\alpha]_D^{25}$ -51.4 (c, 1 in MeOH) (hydrochloride).

Aoyagi, T. *et al., J. Antibiot.*, 1991, **44**, 573; 579; 683 (*isol, pmr, cmr, struct, biosynth*)
Hecker, S.J. *et al., J.O.C.*, 1993, **58**, 1762 (*synth*)

Leupyrrin C L-161

[618911-34-5]



$C_{40}H_{56}N_2O_{10}$ 724.89
Partial stereochem. only determined. Prod. by *Sorangium cellulosum* strains So ce705 and So ce690. Amorph. solid.

21-Me ether: ***Leupyrrin A$_1$***
[618911-30-1]
$C_{41}H_{58}N_2O_{10}$ 738.917
Prod. by *Sorangium cellulosum*. Active against fungi and eukaryotic cells. Amorph. solid. Mp 95°. $[\alpha]_D^{20}$ +12 (c, 4.1 in MeOH). λ_{max} 260 (log ϵ 4.2); 286 (log ϵ 4.46) (MeOH).

2′,3′-Didehydro: ***Leupyrrin D***
[618911-35-6]
$C_{40}H_{54}N_2O_{10}$ 722.874
Prod. by *Sorangium cellulosum*. Amorph. solid.

2′,3′-Didehydro, 21-Me ether: ***Leupyrrin B$_1$***
[618911-32-3]
$C_{41}H_{56}N_2O_{10}$ 736.901
Prod. by *Sorangium cellulosum*. Amorph. solid. $[\alpha]_D^{20}$ +11 (c, 4.6 in MeOH). λ_{max} 228 (log ϵ 4.33); 261 (log ϵ 4.26); 286 (log ϵ 4.45) (MeOH).

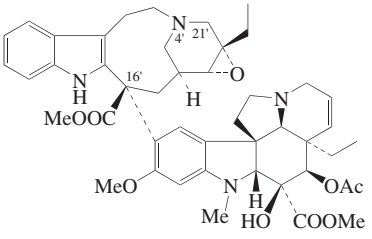
19,20-Didehydro, 21-Me ether: ***Leupyrrin A$_2$***
[618911-31-2]
$C_{41}H_{56}N_2O_{10}$ 736.901
Prod. by *Sorangium cellulosum*. Amorph. solid. $[\alpha]_D^{20}$ -36 (c, 5.4 in MeOH). λ_{max} 282 (log ϵ 4.43); 298 (log ϵ 4.57) (MeOH).

2′,3′,19,20-Tetradehydro, 21-Me ether: ***Leupyrrin B$_2$***
[618911-33-4]
$C_{41}H_{54}N_2O_{10}$ 734.885
Prod. by *Sorangium cellulosum*. Amorph. solid. $[\alpha]_D^{20}$ +7 (c, 4.6 in MeOH). λ_{max} 286 (log ϵ 4.32); 310 (log ϵ 4.16) (MeOH).

Bode, H.B. *et al., J. Nat. Prod.*, 2003, **66**, 1203-1206 (*isol, uv, pmr, cmr*)
Bode, H.B. *et al., Angew. Chem., Int. Ed.*, 2004, **43**, 4163-4167 (*biosynth*)

Leurosine L-162

4′-Deoxy-3′,4′-epoxyvincaleucoblastine, 9CI. ***Vinleurosine, INN****. NSC 528004. Lilly 32645*
[23360-92-1]



Absolute Configuration

$C_{46}H_{56}N_4O_9$ 808.97
Alkaloid from *Catharanthus roseus*, *Catharanthus lanceus*, *Catharanthus ovalis* and *Catharanthus longifolius* (Apocynaceae). Antineoplastic agent. Possesses antihyperglycaemic activity. Mp 202-205° dec. (anhyd.). Log P 2.85 (uncertain value) (calc). λ_{max} 214 (E1%/1cm 575); 259 (E1%/1cm 175) (MeOH) (Berdy).

► LD_{50} (mus, ipr) 80 mg/kg. OH6370000

Sulfate salt: ***Vinleurosine sulfate, USAN***

[1404-95-1]
Mp 238-242° dec. $[\alpha]_D$ -8.3 (MeOH).

N$^{4'}$-*Oxide:* ***Pleurosine***. *Leurosine* N$^{b'}$-*oxide*
[39608-80-5]
$C_{46}H_{56}N_4O_{10}$ 824.969
Alkaloid from *Catharanthus roseus* (Apocynaceae). Noncryst. Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. λ_{max} 217 (ϵ 55000); 260 (ϵ 16700); 291 (ϵ 14200) (EtOH) (Berdy).

N-*De-Me,* N-*formyl: 4′-Deoxy-3′,4′-epoxy-22-oxovincaleukoblastine.* N-*Demethyl*-N-*formylleurosine. Vinformide, INN.* F-*Leurosine. Leuroformine*
[54022-49-0]
$C_{46}H_{54}N_4O_{10}$ 822.953
Antineoplastic agent. Cryst. (MeOH). Mp 209-211° (212-216°). $[\alpha]_D^{20}$ +80.3 (c, 1 in $CHCl_3$). Log P 2.3 (uncertain value) (calc).

▶ Mutagenic props. LR2962000

N-*De-Me,* N-*formyl, sulfate salt: Vinformide sulfate. Alzegir*
[58115-81-4]
Mp 248-252°. $[\alpha]_D^{20}$ +37 (c, 1.0 in H_2O).

Deacetoxy: ***Deacetoxyleurosine***
[82267-12-7]
$C_{44}H_{54}N_4O_7$ 750.933
Alkaloid from *Catharanthus roseus.* Cryst. ($CHCl_3$). Mp 202°.

21′ξ-Hydroxy: ***21′-Hydroxyleurosine***
$C_{46}H_{56}N_4O_{10}$ 824.969
Alkaloid from the aerial parts of *Catharanthus ovalis* (Apocynaceae). Mp 246°.

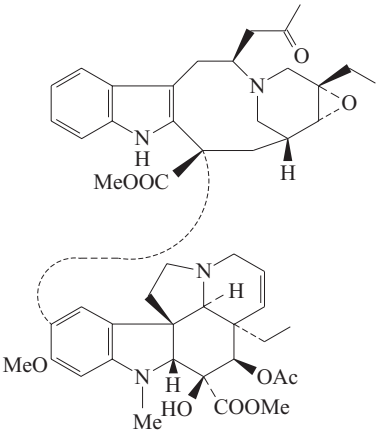
21′-Oxo: ***21′-Oxoleurosine***
$C_{46}H_{54}N_4O_{10}$ 822.953
Alkaloid from *Catharanthus roseus* (Apocynaceae). Needles (MeOH). Mp 212-215°. $[\alpha]_D^{25}$ +55 (c, 0.10 in $CHCl_3$). λ_{max} 220 (ϵ 61500); 270 (ϵ 18200); 290 (ϵ 16600) (EtOH) (Berdy).

16′-De(methoxycarbonyl): ***Vincovalinine***
[61927-01-3]
$C_{44}H_{54}N_4O_7$ 750.933
Alkaloid from the aerial parts of *Catharanthus ovalis* (Apocynaceae). $[\alpha]_D$ +19 (c, 0.3 in $CHCl_3$).

Neuss, N. *et al., J.A.C.S.*, 1959, **81**, 4754 (*ir, uv, pmr, ms, struct, oxide*)
Neuss, N. *et al., Tet. Lett.*, 1968, 783 (*ir, uv, pmr, ms, struct, oxide*)
Ger. Pat., 1974, (*(Vegyeszeti Gyar)*)2 404 120; *CA*, **81**, 169686m (*Vinformide*)
Taylor, W.I. *et al., Catharanthus Alkaloids*, Marcel, Dekker, 1975, (*rev*)
Wenkert, E. *et al., Helv. Chim. Acta*, 1975, **58**, 1560 (*cmr, struct*)
Gorog, S. *et al., J. Chromatogr.*, 1977, **139**, 203 (*Vinformide, hplc*)
Kutney, J.P. *et al., Can. J. Chem.*, 1978, **56**, 62 (*synth*)
Kutney, J.P. *et al., Heterocycles*, 1978, **9**, 201 (*Vinformide, synth*)
Langlois, N. *et al., Helv. Chim. Acta*, 1980, **63**, 793 (*Vincovalinine, 21′-Hydroxyleurosine*)
El-Sayed, A. *et al., J. Nat. Prod.*, 1980, **43**, 157 (*21′-Oxoleurosine*)
Csuka, O. *et al., Oncology*, (Suppl. 1), 1980, **37**, 83 (*Vinformide, pharmacol*)
De Bruyn, A. *et al., Bull. Soc. Chim. Belg.*, 1982, **91**, 75-85 (*Deacetoxyleurosine*)
Ronai-Lukacs, S. *et al., Eur. J. Drug Metab. Pharmacokinet.*, 1982, **7**, 47 (*Vinformide, metab, pharmacol*)
Kutney, J.P. *et al., Helv. Chim. Acta*, 1982, **65**, 2088 (*biosynth*)

Leurosinone L-163

[117590-95-1]



$C_{49}H_{60}N_4O_{10}$ 865.034
Alkaloid from the leaves of *Catharanthus roseus* (Apocynaceae). Amorph. $[\alpha]_D^{24}$ +86 (c, 0.02 in $CHCl_3$).

Atta-ur-Rahman, *et al., J.C.S. Perkin 1*, 1988, 2175 (*isol, uv, ir, pmr, cmr, ms, struct*)

Leurosivine L-164

[1358-99-2]

$C_{41}H_{54}N_3O_9$ 732.892

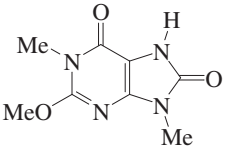
Bisindole alkaloid (*Aspidosperma*-cleavamine type). Struct. unknown. Alkaloid from the roots of *Catharanthus roseus* (Apocynaceae). Noncryst.; cryst. (EtOH)(as sulfate). Mp 335° dec. (sulfate).

Sulfate:
Cryst. (EtOH). Mp 335° dec.

Svoboda, G.H. *et al., J. Nat. Prod.*, 1963, **26**, 141-153 (*isol, uv, ir*)
Svoboda, G.H. *et al., J. Pharm. Sci.*, 1963, **52**, 407-408 (*isol, uv, ir*)

Liberine L-165

*7,9-Dihydro-2-methoxy-1,9-dimethyl-1*H*-purine-6,8-dione, 9CI.* O^2*,1,9-Trimethyluric acid*
[56119-16-5]



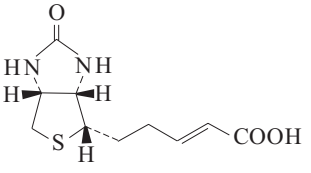
$C_8H_{10}N_4O_3$ 210.192
Constit. of *Coffea liberica* and other *Coffea* spp. Also isol. from a Chinese tea, *Camellia assamica* var. *kucha*. Needles (EtOH aq.). Mp 269-273°. Melts and resolidifies due to thermal rearrangement to 8-Oxocaffeine in U-45. λ_{max} 212 (ϵ 13520); 245 (ϵ 7790); 282 (ϵ 8155) (MeOH).

*7-Me: 7,9-Dihydro-2-methoxy-1,7,9-trimethyl-1*H*-purine-6,8-dione, 9CI.* ***Methylliberine***. O^2*,1,7,9-Tetramethyluric acid*
[51168-26-4]
$C_9H_{12}N_4O_3$ 224.219
Isol. from *Coffea* spp. and *Camellia assamica* var. *kucha*. Cryst. (MeOH). Mp 207.3-208.4°. λ_{max} 213 (ϵ 17080); 247 (ϵ 8430); 284 (ϵ 8145) (MeOH).

Wanner, H. *et al., Phytochemistry*, 1975, **14**, 747-750 (*isol, synth, uv, ms*)
Zheng, X.-Q. *et al., Phytochemistry*, 2002, **60**, 129-134 (*isol, bibl*)

Lidimycin, INN L-166

*5-(Hexahydro-2-oxo-1*H*-thieno[3,4-*d*]imidazol-4-yl)-2-pentenoic acid, 9CI, 8CI.* ***Lydimycin, USAN***. α*-Dehydrobiotin. U 15965. Antibiotic U 15965*
[10118-85-1]

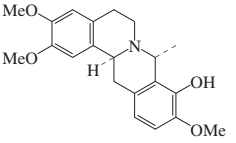


$C_{10}H_{14}N_2O_3S$ 242.298
Isol. from culture filtrates of *Streptomyces lydicus* NRRL2433. Biotin antimetab. Antifungal agent. . Needles (MeOH). Sol. MeOH, Et_2O; fairly sol. H_2O. Mp 238-240° Mp 256-257.5°. $[\alpha]_D^{25}$ +105.7 (c, 1.2 in 0.1*M* NaOH). pK_a 4.32. Log P -0.12 (calc). λ_{max} 203 (ϵ 15000) (EtOH) (Berdy).

Hanka, L.J. *et al., Science (Washington, D.C.)*, 1966, **154**, 1667 (*isol*)
Field, G.F. *et al., J.A.C.S.*, 1970, **92**, 3520 (*synth*)
Martin, D.G. *et al., Tet. Lett.*, 1971, 3791 (*synth*)
Field, G.F. *et al., J.O.C.*, 1976, **41**, 3853 (*synth, ir, nmr*)
Tanaka, M. *et al., J. Biotechnol.*, 1987, **5**, 209 (*synth*)
Pearson, B.M. *et al., Lett. Appl. Microbiol.*, 1990, **10**, 89 (*synth*)

Lienkonine L-167

[83151-88-6]



Absolute Configuration

$C_{21}H_{25}NO_4$ 355.433
Alkaloid from *Corydalis ochotensis* (Papaveraceae). Cryst. (EtOH). Mp 166-167°. $[\alpha]_D^{29}$ -180 (c, 1.0 in EtOH).

Lu, S.-T. *et al., Phytochemistry*, 1982, **21**, 809 (*isol, uv, ir, pmr, ms, struct*)

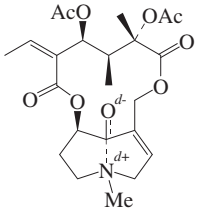
Ligudentine L-168

Pyrrolizidine alkaloid. Struct. unknown. Alkaloid from *Ligularia dentata* and *Ligularia brachypyhylla* (Asteraceae). Cooccurs with Ligularine and Clivorine.

Klásek, A. *et al., Coll. Czech. Chem. Comm.*, 1971, **36**, 2205-2215 (*isol, pmr*)

Ligularine L-169

[34429-54-4]



Absolute Configuration

$C_{23}H_{31}NO_9$ 465.499

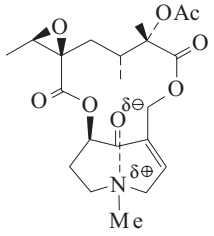
Cyclic otonecine diester. Alkaloid from *Ligularia elegans*, *Ligularia hodgsonii* and *Ligularia dentata* (Asteraceae). Noncryst. $[\alpha]_D^{24}$ -34 (c, 0.82 in $CHCl_3$).

Klásek, A. *et al., Coll. Czech. Chem. Comm.*, 1971, **36**, 2205-2215 (*isol, ir, pmr*)

Lin, G. *et al., J. Nat. Prod.*, 2000, **63**, 857-860 (*isol, pmr, cmr, struct*)

Ligularizine L-170

[90364-92-4]



$C_{21}H_{29}NO_8$ 423.462

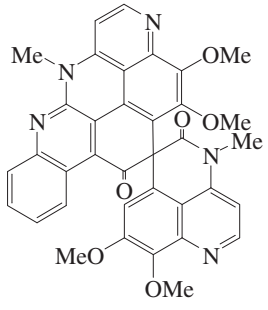
Cyclic diester of Otonecine, O-136. Alkaloid from the aerial parts and roots of *Ligularia dentata* (Asteraceae). Yellow needles (EtOH)(as picrate). Mp 210-211° (picrate). $[\alpha]_D^{25}$ -24.5 (c, 1.08 in $CHCl_3$) (picrate).

► VS3595400

Asada, Y. *et al., Chem. Pharm. Bull.*, 1984, **32**, 475 (*isol, ir, pmr, cmr, ms, struct*)

Lihouidine L-171

[714965-76-1]

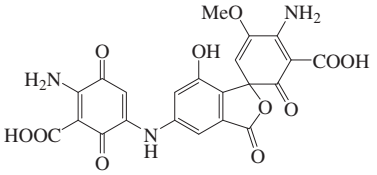


$C_{36}H_{27}N_5O_6$ 625.639

Alkaloid from the marine sponge *Suberea* sp. nov. Purple-red prisms (MeCN). Mp > 330°. Racemic. λ_{max} 210 (ε 54400); 246 (ε 74200); 287 (sh) (ε 24000); 314 (ε 19000); 340 (ε 14700); 406 (ε 5100); 430 (ε 5600); 444 (ε 5600); 514 (ε 10500); 543 (sh) (ε 10200) (EtOH).

Bowden, B.F. *et al., J.O.C.*, 2004, **69**, 7791-7793 (*isol, uv, pmr, cmr, cryst struct*)

Lilacinone L-172



$C_{22}H_{15}N_3O_{11}$ 497.374

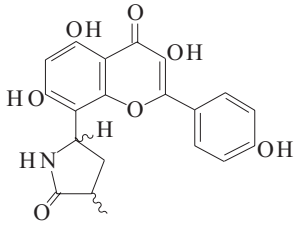
Isol. from *Lactarius lilacinus*. Red solid. Mp > 300° dec. Racemic. λ_{max} 210 (log ε 4.06); 250 (log ε 4.11); 309 (sh) (log ε 3.7); 354 (log ε 3.82); 519 (log ε 3.24) (MeOH).

Spiteller, P. *et al., J. Nat. Prod.*, 2003, **66**, 1402-1403 (*isol, uv, pmr, cmr, ms*)

Lilaline L-173

*3-Methyl-5-[3,5,7-trihydroxy-2-(4-hydroxyphenyl)-4-oxo-4*H*-1-benzopyran-8-yl]-2-pyrrolidinone, 9CI. 3,4′,5,7-Tetrahydroxy-8-(4-methyl-5-oxo-2-pyrrolidinyl)-flavone*

[110011-49-9]



$C_{20}H_{17}NO_7$ 383.357

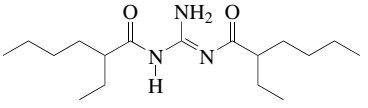
Alkaloid from the aerial parts of *Lilium candidum* (Liliaceae). Yellow prisms (Me_2CO). Mp 247°. $[\alpha]_D^{27}$ +65 (c, 0.2 in MeOH).

Mašterová, I. *et al., Phytochemistry*, 1987, **26**, 1844 (*isol, uv, ir, pmr, cmr, ms, struct*)

Limaciamine L-174

N,N′-*Carbonimidoylbis[2-ethylhexanamide], 9CI.* N,N′-*Bis(2-ethylhexanoyl)-guanidine*

[202747-40-8]



$C_{17}H_{33}N_3O_2$ 311.467

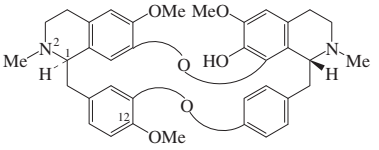
Isol. from the skin extracts of nudibranch *Limacia clavigera*. Glass. Related to Triophamine, T-617.

Graziani, E.I. *et al., J. Nat. Prod.*, 1998, **61**, 285-286 (*isol, pmr, cmr, ms*)

Limacusine L-175

6,6′,12′-Trimethoxy-2,2′-dimethyloxyacanthan-7-ol, 9CI

[10172-03-9]



$C_{37}H_{40}N_2O_6$ 608.733

Alkaloids covered by this entry (*R,R*-config.) are enantiomeric with those covered by Repandine, R-46 and diastereomeric with those under Oxyacanthine in O-1 (1*R*,1′*S*-). Alkaloid from *Limacia oblonga* and *Limacia cuspidata* (Menispermaceae). Antineoplastic agent. Cryst. ($MeOH/Me_2CO$). Mp 235-237°. $[\alpha]_D$ +110 ($CHCl_3$). Log P 8.08 (uncertain value) (calc). λ_{max} 283 (no solvent reported).

N$^{2'}$-*β-Oxide:* ***Limacusine 2′-β-*N*-oxide***

[172045-41-9]

$C_{37}H_{40}N_2O_7$ 624.732

Alkaloid from leaves of *Anisocycla jollyana* (Menispermaceae). Mp 215°. $[\alpha]_D^{20}$ +157 (c, 1.1 in $CHCl_3$). λ_{max} 218 (log ε 4.72); 283 (log ε 3.9) (MeOH).

N^{2}-*De-Me:* ***2-Norlimacusine***

[96744-71-7]

$C_{36}H_{38}N_2O_6$ 594.706

Alkaloid from *Sciadotenia eichleriana* (Menispermaceae). Cryst. (MeOH). Mp 172°. $[\alpha]_D$ +167 (c, 0.7 in $CHCl_3$).

Me ether: **O-*Methyllimacusine***

[13017-15-7]

$C_{38}H_{42}N_2O_6$ 622.76

Alkaloid from the stem bark of *Gyrocarpus americanus* (Hernandiaceae). Cryst. (MeOH). Mp 210-212°.

O^{12}-*De-Me:* ***Candicusine***. *12*-O-*Demethyllimacusine*

[99945-41-2]

$C_{36}H_{38}N_2O_6$ 594.706

Alkaloid from the roots of *Curarea candicans* (Menispermaceae). $[\alpha]_D$ +75 (c, 0.07 in MeOH).

O^{12}-*De-Me,* N^{2},N$^{2'}$-*di-de-Me:* ***Pangkoramine***

[110416-09-6]

$C_{34}H_{34}N_2O_6$ 566.652

Alkaloid from *Albertisia* cf. *Albertisia papuana* (Menispermaceae). Amorph. $[\alpha]_D$ +126 (c, 0.05 in MeOH). λ_{max} 214 (log ε 4.72); 230 (log ε 4.39); 280 (log ε 4.58) (EtOH).

O$^{6'}$-*De-Me,* O$^{7'}$-*Me:* ***Gyrocarpusine***

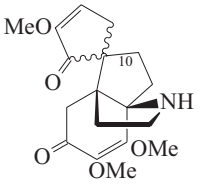
[102518-66-1]

Alkaloid from the stem bark of *Gyrocarpus americanus* (Hernandiaceae). Amorph. $[\alpha]_D$ +66 (c, 1 in $CHCl_3$). λ_{max} 234 (log ε 4.42); 283 (log ε 3.85) (MeOH).

Tomita, M. *et al., Tet. Lett.*, 1966, 4293-4296 (*Limacusine, pmr, ms, struct*)
Tomita, M. *et al., Yakugaku Zasshi*, 1967, **87**, 793-796; 1560-1561; *CA*, **68**, 3048m; 84980j (*isol, uv, pmr, ms, struct, Limacusine, O-Methyllimacusine*)
Lavault, M. *et al., J. Chem. Res., Synop.*, 1985, 248-249; *J. Chem. Res., Miniprint*, 1985, 2786-2793 (*Candicusine*)
Damas, P. *et al., J. Nat. Prod.*, 1985, **48**, 69-71 (*Limacusine, Norlimacusine*)
Chalandre, M.-C. *et al., J. Nat. Prod.*, 1986, **49**, 101-105 (*O-Methyllimacusine, Gyrocarpusine*)
Lavault, M. *et al., Can. J. Chem.*, 1987, **65**, 343-347 (*Pangkoramine*)
Kanyinda, B. *et al., J. Nat. Prod.*, 1995, **58**, 1587-1589 (*Limacusine 2′-β-N-oxide*)

Limalongine L-176

[121255-00-3]



$C_{18}H_{23}NO_5$ 333.383

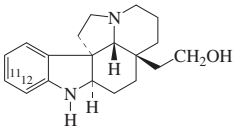
Modified hasubanan-type alkaloid. Alkaloid from the stem bark of *Limacia oblonga* (Menispermaceae). $[\alpha]_D$ +290 (c, 0.15 in $CHCl_3$).

10ξ-Chloro: ***Clolimalongine***
[121254-99-7]
$C_{18}H_{22}ClNO_5$ 367.828
Alkaloid from the stem bark of *Limacia oblonga* (Menispermaceae). $[\alpha]_D$ +300 (c, 0.1 in $CHCl_3$).

Berthou, S. *et al., J.O.C.*, 1989, **54**, 3491 (*isol, uv, ir, pmr, cmr, ms, struct*)

Limaspermidine L-177

[72821-58-0]



Absolute Configuration

$C_{19}H_{26}N_2O$ 298.427
Alkaloid from *Aspidosperma rhombeosignatum* (Apocynaceae). Mp 227-228°.

12-Hydroxy, N-*Ac:* ***Limapodine***
[2636-98-8]
$C_{21}H_{28}N_2O_3$ 356.464
Alkaloid from the bark extracts of *Aspidosperma limae* (Apocynaceae). Cryst. (Me_2CO/hexane). Mp 177°. $[\alpha]_D^{23}$ +110 (c, 0.84 in $CHCl_3$).

12-Hydroxy, N-*propanoyl:* ***Limaspermine****. Dihydrohaplocine (incorr.)*
[5516-64-3]
$C_{22}H_{30}N_2O_3$ 370.491
Alkaloid from *Aspidosperma limae* (Apocynaceae). Cryst. (MeOH or Me_2CO/hexane). Mp 175-175.5°. $[\alpha]_D^{21}$ +108 (c, 0.78 in $CHCl_3$).

12-Methoxy: Cylindrocarpinol
[28189-98-2]
Mp 145-147°. $[\alpha]_D$ +2 (MeOH).

12-Methoxy, N-*formyl:* **N-*Formylcylindrocarpinol***
$C_{21}H_{28}N_2O_3$ 356.464
Alkaloid from *Aspidosperma cylindrocarpon* (Apocynaceae). Mp 101-105°. $[\alpha]_D^{20}$ -150 (c, 0.0016 in MeOH).

12-Methoxy, N-*Ac:* **N-*Acetylcylindrocarpinol***
$C_{22}H_{30}N_2O_3$ 370.491
Alkaloid from *Aspidosperma cylindrocarpon* and *Aspidosperma dispermum* (Apocynaceae). Mp 210-215°.

12-Methoxy, N-*propanoyl:*
$C_{23}H_{32}N_2O_3$ 384.517
Mp 170°. $[\alpha]_D^{29}$ +89 (c, 0.823 in $CHCl_3$).

11-Methoxy, 12-hydroxy, N-*Ac:* ***Aspidolimidinol****. 11-Methoxylimapodine*
$C_{22}H_{30}N_2O_4$ 386.49
Alkaloid from *Aspidosperma album* and *Aspidosperma limae*(Apocynaceae). Cryst. (Me_2CO/hexane). Mp 219-220.5°. $[\alpha]_D$ +131 (c, 0.83 in $CHCl_3$). Props. given for free base refer to Methoxylimapodine from *A. limae.*

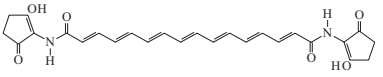
11-Methoxy, 12-hydroxy, N-*Ac, hydrobromide:*
Cryst. (MeOH aq.). Mp 197-199°. $[\alpha]_D$ +70 (c, 0.66 in H_2O). Props. for hydrobromide refer to Aspidolimidinol from *A. album*.

11-Methoxy, 12-hydroxy, N-*propanoyl:* ***11-Methoxylimaspermine***
$C_{23}H_{32}N_2O_4$ 400.517
Alkaloid from *Aspidosperma limae* (Apocynaceae). Cryst. (Me_2CO/hexane). Mp 174-175°. $[\alpha]_D^{23}$ +118 (c, 0.79 in $CHCl_3$).

Pinar, M. *et al., Helv. Chim. Acta*, 1962, **45**, 2260 (*isol, uv, ms, pmr, struct*)
Djerassi, C. *et al., Tet. Lett.*, 1962, 1001-1009 (*Cylindrocarpinol, synth*)
Pinar, M. *et al., Annalen*, 1963, **668**, 97 (*Limapodine, 11-Methoxylimaspermine*)
Ferrari, C. *et al., Can. J. Chem.*, 1964, **42**, 2705-2709 (*Aspidolimidinol*)
Cava, M.P. *et al., Tetrahedron*, 1964, **20**, 581 (*stereochem*)
Klyne, W. *et al., Helv. Chim. Acta*, 1966, **49**, 833 (*ord, abs config, synth*)
Milborrow, B.V. *et al., J.C.S.(C)*, 1969, 417 (*N-Formylcylindrocarpinol, N-Acetylcylindrocarpinol*)
Honma, Y. *et al., Heterocycles*, 1976, **5**, 47 (*Limaspermidine*)
Lawson, G. *et al., Tetrahedron*, 1977, **33**, 1641 (*synth*)
Wegmann, A. *et al., Anal. Chem.*, 1978, **50**, 830 (*ms*)
Medina, J.D. *et al., Planta Med.*, 1979, **37**, 165 (*Limaspermidine*)
Pearson, A.J. *et al., J.C.S. Perkin 1*, 1982, 2467 (*Limaspermidine, synth*)
Fukuda, Y. *et al., Heterocycles*, 2004, **62**, 787-792 (*Limaspermine, synth*)

Limocrocin L-178

N,N′-Bis(2-hydroxy-5-oxo-1-cyclopenten-1-yl)-2,4,6,8,10,12,14-hexadecaheptaenediamide, 9CI
[24112-57-0]



$C_{26}H_{26}N_2O_6$ 462.501
Prod. by *Streptomyces limosus.* Antiviral agent. Active against gram-positive bacteria. Dark-red cryst. (AcOH). Sol. MeOH, $CHCl_3$. Mp 316° dec. λ_{max} 258 (ϵ 45000); 422 (ϵ 100000); 445 (ϵ 88000) (H_2O) (Derep). λ_{max} 258 (ϵ 45000); 422 (ϵ 100000); 445 (ϵ 88000) (H_2O) (Derep). λ_{max} 258 ; 420 (Na_2CO_3) (Berdy).

Brockmann, H. *et al., Chem. Ber.*, 1953, **86**, 1110; 1955, **88**, 419 (*isol, struct*)
Macdonald, G. *et al., Tetrahedron*, 1998, **54**, 9823-9836 (*synth*)

Linantenine L-179

Limnanthenine
Struct. unknown. Alkaloid from *Limnanthemum humboldtianum* (preferred genus name *Nymphoides*). Mp 285° dec. (darkens at 260°). $[\alpha]_D$ 0. Genus Limnanthemum assigned by the authors to the Gentianaceae, but normally assigned to the Menyanthaceae.

Hydrochloride:
Needles (EtOH). Mp 194-195°.

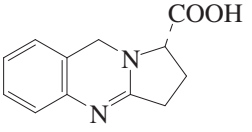
Sulfate: Mp 287°.

Picrate:
Yellow prisms (Me_2CO aq.). Mp 182°.

Ribeiro, O. *et al., CA*, 1952, **46**, 3219

Linarinic acid L-180

*1,2,3,9-Tetrahydropyrrolo[2,1-*b*]quinazoline-1-carboxylic acid*



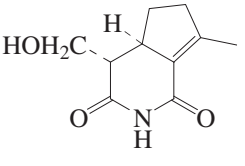
$C_{12}H_{12}N_2O_2$ 216.239

(*S*)-*form* [481710-98-9]
Alkaloid from *Linaria vulgaris.* Needles (MeOH). Mp 218° dec. $[\alpha]_D^{18}$ -217 (0.01 in MeOH) (natural). $[\alpha]_D^{18}$ -290 (c, 0.01 in MeOH) (synthetic). λ_{max} 211 ; 281 (MeOH).

Hua, H. *et al., Chem. Pharm. Bull.*, 2002, **50**, 1393-1394 (*isol, pmr, cmr*)
Cheng, M. *et al., Tetrahedron: Asymmetry*, 2006, **17**, 179-183 (*synth, abs config*)

Linavuline L-181

[215664-11-2]

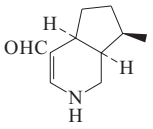


$C_{10}H_{13}NO_3$ 195.218
Alkaloid from *Linaria vulgaris.*

Hua, H. *et al., CA*, 1999, **130**, 2166k

Lindenialine L-182

*2,4*a,*5,6,7,7*a-*Hexahydro-7-methyl-1*H-*2-pyrindine-4-carboxaldehyde, 9CI*
[114542-52-8]

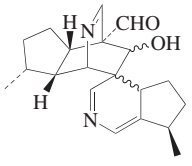


$C_{10}H_{15}NO$ 165.235
Alkaloid from the leaves of *Lindenia austro-caledonica* (Rubiaceae). Fine needles (MeOH). Mp 162°. $[\alpha]_D^{20}$ +20 (c, 1.6 in EtOH). Artifact.

Saad, H.E.A. *et al., Tet. Lett.*, 1988, **29**, 615 (*isol, uv, ir, pmr, cmr, ms, struct*)

Lindeniamine L-183

[114558-81-5]



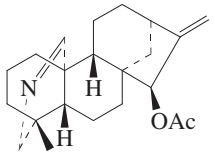
Relative Configuration

$C_{20}H_{26}N_2O_2$ 326.438
Alkaloid artifact from the leaves of *Lindenia austro-caledonica* (Rubiaceae). Cryst. (MeOH). Mp 264° dec. $[\alpha]_D^{20}$ -26 (c, 0.4 in MeOH).

Saad, H.E.A. *et al., Tet. Lett.*, 1988, **29**, 615 (*isol, uv, ir, pmr, cmr, ms, struct*)

Lindheimerine L-184

[68831-67-4]

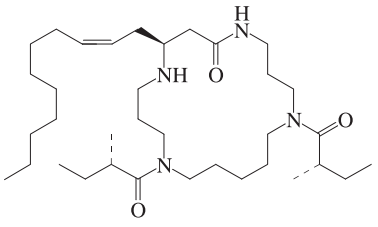


$C_{22}H_{31}NO_2$ 341.492
Minor alkaloid from the bark and leaves of *Garrya ovata* var. *lindheimeri* (Garryaceae). Amorph. $[\alpha]_D^{24}$ -113.8 (c, 1.0 in $CHCl_3$).

Pelletier, S.W. *et al., Heterocycles*, 1978, **9**, 1409-1412 (*ir, pmr, cmr, struct, synth*)
Pelletier, S.W. *et al., J.O.C.*, 1981, **46**, 1840-1846 (*isol, cmr, pmr*)

Lipogrammistin A L-185

[151756-67-1]



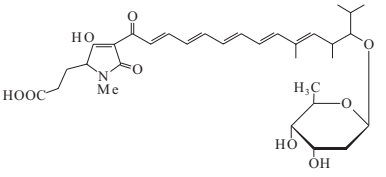
Absolute configuration

$C_{35}H_{66}N_4O_3$ 590.931
Isol. from the mucus secreted by the soapfish *Diploprion bifasciatum*. Shows haemolytic activity and exhibits erythrocyte transformation. Ichthyotoxic. $[\alpha]_D$ +18.5 (c, 0.86 in MeOH). Exists in soln. as a mixt. of 4 conformers.

Onuki, H. *et al., J.O.C.*, 1998, **63**, 3925-3932 (*synth, abs config*)
Kobayashi, Y. *et al., Bioorg. Med. Chem.*, 1999, **7**, 2073-2081 (*activity*)
Kan, T. *et al., Tetrahedron*, 2002, **58**, 6267-6276 (*synth*)

α-Lipomycin L-186

[51053-40-8]

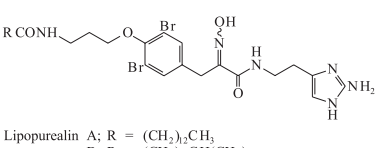


$C_{32}H_{45}NO_9$ 587.709
Pentaene antibiotic. Prod. by *Streptomyces aureofaciens*. Active against gram-positive organisms. Orange-red amorph. powder. Sol. MeOH, Et_2O, bases; poorly sol. H_2O,hexane. Mp 105°. $[\alpha]_D^{20}$ -229 (c, 0.1 in MeOH). λ_{max} 260 (ε 16400); 267 (ε 15800); 301 (ε 10600); 455 (ε 55800) (MeOH/HCl) (Derep). λ_{max} 260 (ε 15800); 270 (ε 15300); 287 (ε 10600); 403 (ε 47000) (MeOH) (Derep). λ_{max} 259 (ε 14700); 269 (ε 13500); 285 (ε 10600); 393 (ε 55900) (MeOH/NaOH) (Derep).

Aglycone: ***β-Lipomycin***
[51053-41-9]
$C_{26}H_{35}NO_6$ 457.566
Prod. by *Streptomyces aureofaciens*. Active against gram-positive bacteria. Sol. bases, Et_2O, MeOH; poorly sol. H_2O, hexane. $[\alpha]_D^{20}$ -176 (c, 0.1 in MeOH). λ_{max} 261 (ε 15800); 269 (ε 15100); 301 (ε 9830); 453 (ε 57600) (MeOH/HCl) (Derep). λ_{max} 260 (ε 14400); 269 (ε 13700); 287 (ε 10100); 393 (ε 57600) (MeOH/NaOH) (Derep). λ_{max} 260 (ε 14600); 269 (ε 14600); 287 (ε 10100); 399 (ε 9830); 460 (ε 47500) (MeOH) (Derep).

Kunze, B. *et al., Arch. Microbiol.*, 1972, **86**, 147 (*isol*)
Schabacher, K. *et al., Tet. Lett.*, 1973, 2691 (*struct*)
Zeeck, A. *et al., Annalen*, 1975, 2079
Nolte, M.J. *et al., J.C.S. Perkin 1*, 1980, 1057 (*cryst struct*)

Lipopurealins L-187



Lipopurealin A; R = $(CH_2)_{12}CH_3$
B; R = $(CH_2)_{11}CH(CH_3)_2$
C; R = $(CH_2)_{14}CH_3$
D; R = $(CH_2)_5CH{=}CH(CH_2)_4CH(CH_3)_2$ (*Z*-)
E; R = $(CH_2)_{17}CH_3$

Metabs. of the Okinawan marine sponge *Psammaplysilla purea*.

Lipopurealin A [101541-48-4]
$C_{31}H_{48}Br_2N_6O_4$ 728.566
$Na^{\oplus}$ and $K^{\oplus}$-ATPase inhibitor. Amorph. solid (as hydrochloride). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 94-95° (hydrochloride). CAS no. refers to hydrochloride. λ_{max} 284 (ε 970) (MeOH) (Berdy).

Lipopurealin B [101541-49-5]
$C_{32}H_{50}Br_2N_6O_4$ 742.593
$Na^{\oplus}$ and $K^{\oplus}$-ATPase inhibitor. Amorph. solid (as hydrochloride). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 93-95° (hydrochloride). CAS no. refers to hydrochloride. λ_{max} 284 (ε 930) (MeOH) (Berdy).

Lipopurealin C [101541-50-8]
$C_{33}H_{52}Br_2N_6O_4$ 756.62
$Na^{\oplus}$ and $K^{\oplus}$-ATPase inhibitor. Amorph. solid (as hydrochloride). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 108-110° (hydrochloride). CAS no. refers to hydrochloride. λ_{max} 284 (ε 910) (MeOH) (Berdy).

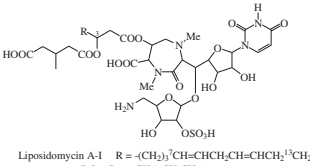
Lipopurealin D [164301-28-4]
$C_{34}H_{52}Br_2N_6O_4$ 768.631
Amorph. solid. Oxime has *E*-config.

Lipopurealin E [164301-29-5]
$C_{36}H_{58}Br_2N_6O_4$ 798.7
Amorph. solid. Oxime has *E*-config.

Wu, H. *et al., Experientia*, 1986, **42**, 855 (*Lipopurealins A-C*)
Kobayashi, J. *et al., J. Nat. Prod.*, 1995, **58**, 467 (*Lipopurealins D-E*)

Liposidomycin L-188

[118817-12-2]



Liposidomycin A-I R = $-(CH_2)_3{}^7CH{=}CHCH_2CH{=}CHCH_2{}^{13}CH_2CH_2CH_2CH_3$
B-I R = $-(CH_2)_8CH(CH_3)_2$
H-I R = $-(CH_2)_{11}CH_3$
K-I R = $-(CH_2)_8CH{=}CHCH_2{}^{12}CH{=}CH(CH_2)_4CH_3$
L-I R = $-(CH_2)_{10}CH(CH_3)_2$
X-I R = $-(CH_2)_9CH_3$
Y-I R = $-CH_2{}^5CH{=}CHCH_2{}^8CH{=}CH(CH_2)_4CH_3$

Nucleoside antibiotic complex. Components mostly not abstracted by CAS. Isol. from *Streptomyces griseosporeus*, *Streptomyces* sp. RK-1061 and *Streptomyces* sp. SN-1061M. Inhibits bacterial peptidoglycan synthetase. Sol. H_2O, DMSO; fairly sol. MeOH, EtOH, AcOH; poorly sol. Me_2CO, hexane. Mp 190° dec. $[\alpha]_D^{24}$ +18.7 (c, 0.3 in H_2O). Liposidomycins have been divided into 4 structural types. Not all of the members of each homologous series have been detected. λ_{max} 260 (ε 5150) (0.1*N* HCl) (Derep). λ_{max} 261 (ε 7160) (0.1*N* NaOH) (Derep). λ_{max} 262 (ε 7260) (H_2O) (Derep). λ_{max} 260 (E1%/1cm 60) (H_2O) (Berdy). λ_{max} 258 (E1%/1cm 44) (HCl) (Berdy). λ_{max} 259

(E1%/1cm 58) (NaOH) (Berdy).

Liposidomycin A-I [99751-55-0]
$C_{44}H_{67}N_5O_{21}S$ 1034.1
Powder.

Desulfo: ***Liposidomycin A-III***
[213201-84-4]
$C_{44}H_{67}N_5O_{18}$ 954.036
From *Streptomyces* sp. SN-1061M.
Powder.

3-O-Deacyl: ***Liposidomycin A-II***
$C_{38}H_{59}N_5O_{18}S$ 905.973
From *Streptomyces* sp. SN-1061M.
Powder.

3-O-Deacyl, desulfo: ***Liposidomycin A-IV***
$C_{38}H_{59}N_5O_{15}$ 825.909
From *Streptomyces* sp. SN-1061M.
Powder.

10,11-Dihydro: ***Liposidomycin G-I****. Antibiotic RK 1061G. RK 1061G*
$C_{44}H_{69}N_5O_{21}S$ 1036.116
Prod. by *Streptomyces* sp RK-1061.

10,11-Dihydro, desulfo: ***Liposidomycin G-III***
$C_{44}H_{69}N_5O_{18}$ 956.052
Prod. by *Streptomyces* sp. SN-1061M.

13,14-Didehydro(Z-): Liposidomycin V-I
$C_{44}H_{65}N_5O_{21}S$ 1032.084
Not detected.

13,14-Didehydro, desulfo: ***Liposidomycin V-III***
$C_{44}H_{65}N_5O_{18}$ 952.02
From *Streptomyces* sp. SN-1061M.

7,8,10,11-Tetrahydro: ***Liposidomycin M-I***
$C_{44}H_{71}N_5O_{21}S$ 1038.132
Prod. by *Streptomyces* sp. SN-1061M.

7,8,10,11-Tetrahydro, desulfo: ***Liposidomycin M-III***
$C_{44}H_{71}N_5O_{18}$ 958.068
Prod. by *Streptomyces* sp. SN-1061M.

Liposidomycin B-I [99751-53-8]
$C_{42}H_{67}N_5O_{21}S$ 1010.078
Inhibitor of bacterial peptidoglycan synthetase. Powder. Mp 190° dec. $[\alpha]_D^{24}$ +17.3 (c, 0.4 in H_2O).

Desulfo: ***Liposidomycin B-III***
$C_{42}H_{67}N_5O_{18}$ 930.014
Prod. by *Streptomyces* sp. SN-1061M.

Liposidomycin H-I
Antibiotic RK 1061H. RK 1061H
$C_{43}H_{69}N_5O_{21}S$ 1024.105

Desulfo: ***Liposidomycin H-III***
$C_{43}H_{69}N_5O_{18}$ 944.041
Prod. by *Streptomyces* sp. SN-1061M.

Liposidomycin K-I
$C_{46}H_{71}N_5O_{21}S$ 1062.154

Desulfo: ***Liposidomycin K-III***
$C_{46}H_{71}N_5O_{18}$ 982.09
Prod. by *Streptomyces* sp. SN-1061M.

12,13-Dihydro: ***Liposidomycin N-I***
$C_{46}H_{73}N_5O_{21}S$ 1064.17
Prod. by *Streptomyces* sp. SN-1061M.

12,13-Dihydro, desulfo: ***Liposidomycin N-III***
$C_{46}H_{73}N_5O_{18}$ 984.105
Prod. by *Streptomyces* sp. SN-1061M.

Liposidomycin L-I
$C_{44}H_{71}N_5O_{21}S$ 1038.132

Desulfo: ***Liposidomycin L-III***
$C_{44}H_{71}N_5O_{18}$ 958.068
Prod. by *Streptomyces* sp. SN-1061M.

Liposidomycin X-I
$C_{41}H_{65}N_5O_{21}S$ 996.051
Not detected.

Desulfo: ***Liposidomycin X-II***
$C_{41}H_{65}N_5O_{18}$ 915.987
Prod. by *Streptomyces* sp. SN-1061M.

Liposidomycin Y-I
$C_{42}H_{63}N_5O_{21}S$ 1006.047
Not detected.

Desulfo: ***Liposidomycin Y-III***
$C_{42}H_{63}N_5O_{18}$ 925.982
Prod. by *Streptomyces* sp. SN-1061M.

8,9-Dihydro: ***Liposidomycin Z-I***
$C_{42}H_{65}N_5O_{21}S$ 1008.062
Prod. by *Streptomyces* sp. SN-1061M.

8,9-Dihydro, desulfo: ***Liposidomycin Z-III***
$C_{42}H_{65}N_5O_{18}$ 927.998
Prod. by *Streptomyces* sp. SN-1061M.

5,6,8,9-Tetrahydro: ***Liposidomycin C-I***
[99751-54-9]
$C_{42}H_{67}N_5O_{21}S$ 1010.078
Prod. by *Streptomyces* sp. RK-1061.
Powder. Mp 190° dec. $[\alpha]_D^{24}$ +18.9 (c, 0.9 in H_2O).

5,6,8,9-Tetrahydro, desulfo: ***Liposidomycin C-III***
$C_{42}H_{67}N_5O_{18}$ 930.014
Prod. by *Streptomyces* sp. SN-1061M.

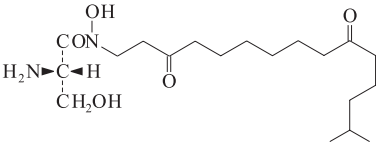
5,6,8,9-Tetrahydro, 3-deacyl: ***Liposidomycin C-II***
$C_{36}H_{59}N_5O_{18}S$ 881.951
Prod. by *Streptomyces* sp. SN-1061M.

5,6,8,9-Tetrahydro, 3-deacyl, desulfo: ***Liposidomycin C-IV***
$C_{36}H_{59}N_5O_{15}$ 801.887
Prod. by *Streptomyces* sp. SN-1061M.

Isono, K. *et al., J. Antibiot.*, 1985, **38**, 1617-1621 (*isol, uv, ir, pmr*)
Kimura, K. *et al., Agric. Biol. Chem.*, 1989, **53**, 1811-1815 (*isol, biochem*)
Ubukata, M. *et al., J.O.C.*, 1992, **57**, 6392-6403 (*pmr, ms, uv, struct*)
Kimura, K. *et al., J. Antibiot.*, 1998, **51**, 640-646; 647-654 (*isol, struct, props*)
Esumi, Y. *et al., J. Antibiot.*, 1999, **52**, 281-287
Knapp, S. *et al., J.O.C.*, 2001, **66**, 5822-5831 (*synth*)

Lipoxamycin L-189

*2-Amino-*N*,3-dihydroxy-*N*-(14-methyl-3,10-dioxopentadecyl)propanamide, 9CI. 2-Amino-1,4-dihydroxy-18-methyl-4-aza-3,7,14-nonadecanetrione.* N*-Hydroxy-*N*-(15-methyl-3,10-dioxopentadecyl)seramide. Enactin IVa. Neoenactin M_1*
[32886-15-0]



$C_{19}H_{36}N_2O_5$ 372.504
Isol. from *Streptomyces virginiae*, *Streptomyces olivoreticuli* ssp. *neoenactus* and *Streptomyces roseoviridis*. Shows antifungal activity. Mp 68-70°. Related to Neoenactins. λ_{max} 240 (ε 5500) (MeOH/NaOH) (Derep). λ_{max} 210 (ε 5900) (MeOH) (Derep).

▶ MU5230000

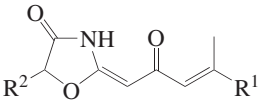
Sulfate: Mp 155°.

10′-Alcohol: ***Enactin Va****. Hydroxylipoxamycin*
[130640-31-2]
$C_{19}H_{38}N_2O_5$ 374.52
Isol. from *Streptomyces roseoviridis* and another *Streptomyces* sp. Mp 125.5-128.5° (as sulfate). λ_{max} 208 (ε 3334) (MeOH).

Whaley, M.A. *et al., J.A.C.S.*, 1971, **93**, 3767 (*isol, struct*)
Roy, S.K. *et al., J. Antibiot.*, 1987, **40**, 266 (*isol*)
Yamamoto, K. *et al., J. Antibiot.*, 1990, **43**, 1012 (*Enactins*)
Mandala, S.M. *et al., J. Antibiot.*, 1994, **47**, 376-379 (*Hydroxylipoxamycin*)

Lipoxazolidinone A L-190

[908138-32-9]



R^1 = -$(CH_2)_6CH_3$, R^2 = -$(CH_2)_3CH_3$

$C_{19}H_{31}NO_3$ 321.459
Prod. by a *Marinispora* sp. (strain NPS008920). Antibacterial agent. Oil. $[\alpha]_D$ -31 (c, 0.02 in MeOH). λ_{max} 253 (log ε 3.96); 310 (log ε 4.36) (MeOH).

Macherla, V.R. *et al., J. Nat. Prod.*, 2007, **70**, 1454-1457 (*isol, pmr, cmr*)

Lipoxazolidinone B L-191

[908138-34-1]
As Lipoxazolidinone A, L-190 with
R^1 = -$(CH_2)_6CH_3$, R^2 = -$(CH_2)_4CH_3$
$C_{20}H_{33}NO_3$ 335.486
Prod. by a *Marinispora* sp. (strain NPS008920). Antibacterial agent. Oil. λ_{max} 255 ; 310 (MeCN aq.).

Macherla, V.R. *et al., J. Nat. Prod.*, 2007, **70**, 1454-1457 (*isol, pmr, cmr*)

Lipoxazolidinone C L-192

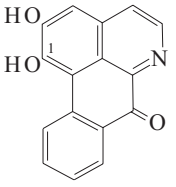
[908138-36-3]
As Lipoxazolidinone A, L-190 with
R^1 = -$(CH_2)_5CH_3$, R^2 = -$(CH_2)_3CH_3$
$C_{18}H_{29}NO_3$ 307.432
Prod. by a *Marinispora* sp. (strain NPS008920). Antibacterial agent. Oil. λ_{max} 255 ; 310 (MeCN aq.).

Macherla, V.R. *et al., J. Nat. Prod.*, 2007, **70**, 1454-1457 (*isol, pmr, cmr*)

Liriodendronine L-193

*1,2-Dihydroxy-7*H*-dibenzo[*de,g*]quinolin-7-one, 9CI*

[65400-36-4]



$C_{16}H_9NO_3$ 263.252

Alkaloid from the discoloured sapwood of *Liriodendron tulipifera* (Magnoliaceae). Shows anti-yeast activity. Violet cryst. (Et_2O). Mp 265-270° dec.

N-*Me:* **N-*Methylliriodendronine***
[132872-61-8]
$C_{17}H_{11}NO_3$ 277.279
Alkaloid from *Stephania dinklagei*. Zwitterionic.

O^1-*Me: 2-Hydroxy-1-methoxy-7*H*-dibenzo[*de,g*]quinolin-7-one, 9CI.* ***7-Oxodehydroasimilobine***
[138690-42-3]
$C_{17}H_{11}NO_3$ 277.279
Alkaloid from *Monocyclanthus vignei* (Annonaceae). Brown powder.

O^2-*Me,* N-*Me:* **O,N-*Dimethylliriodendronine***
[59626-93-6]
$C_{18}H_{13}NO_3$ 291.306
Alkaloid from *Guatteria chrysopetala* (Annonaceae). Dark green needles (MeOH). Mp 275-278° dec. Zwitterionic oxoaporphine.

*Di-Me ether: 1,2-Dimethoxydibenz[*de,g*]quinolin-7-one.* ***Lysicamine****. Daechualkaloid C. Oxonuciferine*
[15444-20-9]
$C_{18}H_{13}NO_3$ 291.306
Alkaloid from a variety of genera in the Annonaceae (*Annona, Guatteria, Enantia, Polyalthia*), Araceae (*Lysichiton*), Magnoliaceae (*Liriodendron*), Menispermaceae (*Abuta, Chasmanthera, Stephania, Telitoxicum*) and Rhamnaceae (*Colubrina*, *Zizyphus*). Shows antimicrobial and nematocidal activity. Yellow needles. Mp 185-187° Mp 211-212° dec. λ_{max} 255 ; 283 ; 335 (no solvent reported). λ_{max} 235 (ϵ 29500); 270 (ϵ 25700); 307 (ϵ 5750); 400 (ϵ 8700) (EtOH) (Berdy). λ_{max} 249 (ϵ 21400); 276 (ϵ 27700); 306 (ϵ 6600); 453 (ϵ 3800) (EtOH/HCl) (Berdy).

▶ RB6030000

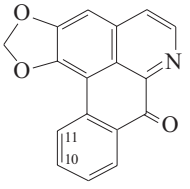
Methylene ether: see Liriodenine, L-194

Katsui, N. *et al., Tet. Lett.*, 1966, 6257 (*Lysicamine, isol, synth, uv, ir, pmr*)
Cava, M.P. *et al., Tetrahedron*, 1972, **28**, 4299 (*synth*)
Senter, P.D. *et al., Phytochemistry*, 1977, **16**, 2015 (*isol, uv, ir, pmr, ms, struct*)
Hufford, C.-D. *et al., J. Polym. Sci.*, 1980, **69**, 1180-1187 (*Lysicamine, activity*)
Hocquemiller, R. *et al., Plant. Med. Phytother.*, 1984, **18**, 165 (*O,N-Dimethylliriodendronine*)
Saá, C. *et al., Tet. Lett.*, 1985, **26**, 4559 (*synth*)
Han, B.H. *et al., Pure Appl. Chem.*, 1989, **61**, 443 (*Lysicamine, isol*)
Pabuccuoglu, V. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1991, **324**, 29-33 (*synth, activity*)
Achenbach, H. *et al., J. Nat. Prod.*, 1991, **54**, 1331 (*7-Oxodehydroasimilobine*)
Atanes, N. *et al., J.O.C.*, 1991, **56**, 2984 (*synth*)
Hsieh, J.-J. *et al., J. Chin. Chem. Soc. (Taipei)*, 1999, **46**, 607-612 (*Lysicamine, isol, uv, ir, pmr*)
Camacho, M.D.R. *et al., Planta Med.*, 2000, **66**, 478-480 (*N-Methylliriodendronine*)

Liriodenine L-194

*8*H*-Benzo[*g*]-1,3-benzodioxolo[6,5,4-*de*]quinolin-8-one, 9CI. 1,2-Methylenedioxyoxoaporphine. Spermatheridine. Micheline B. Oxoushinsunine*

[475-75-2]



$C_{17}H_9NO_3$ 275.263

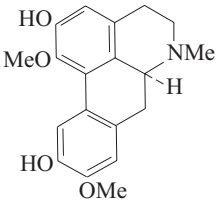
Alkaloid from a wide variety of genera in the Annonaceae (*Annona*, *Asimina*, *Cananga*, *Cleistopholis*, *Enantia*, *Fusaea*, *Isolona*, *Guatteria*, *Melodorum*, *Pseuduvaria*, *Hexalobus*, *Mitrella*, *Monodora*, *Pachypodanthium*, *Polyalthia*, *Uvariopsis*, *Schefferomitra*, *Xylopia*), Araceae (*Lysichiton*), Eupomatiaceae (*Eupomatia*), Lauraceae (*Litsea*, *Neolitsea*), Magnoliaceae (*Liriodendron*, *Magnolia*, *Michelia*, *Elmerrillia*, *Talauma*), Menispermaceae (*Pycnarrhena*, *Stephania*, *Chasmanthera*, *Pachygone*, *Rhigiocarya*), Monimiaceae (*Dryadodaphne*), Nelumbonaceae (*Nelumbo*), Papaveraceae (*Roemeria*, *Papaver*), Rhamnaceae (*Colubrina*), Rutaceae (*Zanthoxylum*), *Atherosperma*, *Doryphora*, *Laurelia* and Monimiaceae (*Atherosperma*, *Doryphora*, *Laurelia*, *Siparuna*). Shows leishmanicidal activity. Antineoplastic agent. Shows some cytotoxicity against human nasopharyngeal carcinoma cells. Shows good activity against *Trichophyton mentagraphytes* and *Syncephalestrum racemosum*. Also effective against barley net blotch, rice blast and broad bean chocolate spot disease. Muscarinic receptor antagonist, topoisomerase II inhibitor. Yellow needles ($CHCl_3$). Mp 275-276° dec. Log P 2.94 (uncertain value) (calc). Rel. nontoxic but shows some mutagenic activity. λ_{max} 257 (ϵ 21400); 277 (ϵ 18200); 329 (ϵ 4680); 392 (ϵ 4900); 455 (ϵ 3800) (EtOH/HCl) (Derep). λ_{max} 248 (ϵ 16600); 268 (ϵ 13500); 309 (ϵ 4170); 413 (ϵ 6610) (EtOH) (Derep). λ_{max} 247 (ϵ 10960); 267 (ϵ 9550); 310 (ϵ 2884); 413 (ϵ 4680) (MeOH) (Berdy). λ_{max} 204 ; 248 ; 268 ; 311 ; 415 (EtOH) (Berdy).

▶ RB6036000

Bick, I.R.C. *et al., Tet. Lett.*, 1964, 1629 (*isol, ir, uv, pmr*)
Bick, I.R.C. *et al., Aust. J. Chem.*, 1967, **20**, 1403 (*ms*)
Kessar, S.V. *et al., Tet. Lett.*, 1980, **21**, 3307 (*synth, uv*)
Nimgirawath, S. *et al., Aust. J. Chem.*, 1983, **36**, 1061 (*synth*)
Gupta, Y.P. *et al., Indian J. Chem., Sect. B*, 1983, **22**, 429 (*synth*)
Fevrier, A. *et al., Planta Med.*, 1999, **65**, 46-49 (*activity*)
Zhang, Z. *et al., J. Nat. Prod.*, 2002, **65**, 856-859 (*cmr*)

Liriotulipiferine L-195

*5,6,6*a*,7-Tetrahydro-1,9-dimethoxy-6-methyl-4*H*-dibenzo[*de,g*]quinoline-2,10-diol, 9CI. 2,10-Dihydroxy-1,9-dimethoxyaporphine*



$C_{19}H_{21}NO_4$ 327.379

(S)-form [60755-81-9]

Alkaloid from the discoloured sapwood of *Liriodendron tulipifera* (Magnoliaceae). Needles (EtOAc). Mp 184-186°. $[\alpha]_D$ +174.4 (CCl_4).

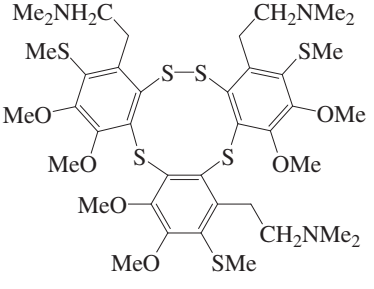
Hydrochloride:
Needles (MeOH). Mp 218-220° dec.

N-*Me:*
$C_{20}H_{24}NO_4^{\oplus}$ 342.414
Mp 214-216° dec. (as iodide).

N-*De-Me: 2,10-Dihydroxy-1,9-dimethoxynoraporphine.* ***Laetanine***
[72361-67-2]
$C_{18}H_{19}NO_4$ 313.352
Alkaloid from the bark of *Litsea laeta* (Lauraceae). Light-amber cryst. (EtOAc/MeOH). Mp 226-228°. $[\alpha]_D$ +105 (c, 0.4 in MeOH).

Chen, C.-L. *et al., Phytochemistry*, 1976, **15**, 1161 (*isol, uv, pmr, ms, struct*)
Borthakur, N. *et al., Phytochemistry*, 1979, **18**, 910 (*isol, uv, ir, pmr, ms, struct, Laetanine*)
Rasoanaivo, P. *et al., Planta Med.*, 1998, **64**, 58-62 (*cmr, Laetanine*)

Lissoclibadin 1 L-196

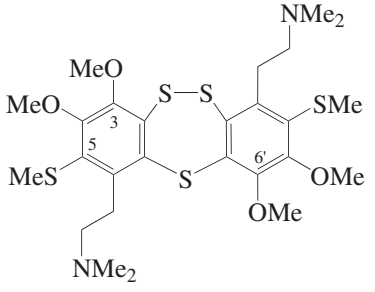


$C_{39}H_{57}N_3O_6S_7$ 888.358
Isol. from *Lissoclinum* cf. *badium*. Active against *Ruegeria atlantica*. $[\alpha]_D$ -3.6 (c, 0.1 in $CHCl_3$) (as tris(TFA) salt). λ_{max} 279 (ϵ 134300); 318 (sh) (ϵ 26500) (tris(TFA) salt).

Liu, H. *et al., Tetrahedron*, 2005, **61**, 8611-8615 (*isol, pmr, cmr*)

Lissoclibadin 2 L-197

[865369-78-4]



$C_{26}H_{38}N_2O_4S_5$ 602.927
Disulfide analogue of Lissoclibadin 3, L-198. Isol. from *Lissoclinum* cf. *badium*. λ_{max} 270 (ϵ 14300); 316 (ϵ 6500) (as bis(trifluoroacetate)).

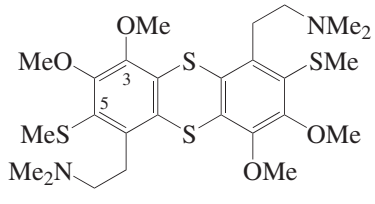
*5-De(methylthio), 3-*O*-de-Me:* ***Lissoclibadin 5***
[930086-79-6]
$C_{24}H_{34}N_2O_4S_4$ 542.808
Isol. from *Lissoclinum* cf. *badium*. λ_{max} 255 (log ϵ 4.1); 302 (log ϵ 3.86) (MeOH) (as bis(trifluoroacetate)).

*Bis(demethylthio), 3,6′-di-*O*-de-Me:* ***Lissoclibadin 4***
[930086-78-5]
$C_{22}H_{30}N_2O_4S_3$ 482.688
Isol. from *Lissoclinum* cf. *badium*. λ_{max} 258 (log ϵ 4.06); 311 (log ϵ 3.81) (MeOH) (as bis(trifluoroacetate)).

Liu, H. *et al., Tetrahedron*, 2005, **61**, 8611-8615 (*Lissoclibadin 2*)
Nakazawa, T. *et al., J. Nat. Prod.*, 2007, **70**, 439-442 (*Lissoclibadins 4,5*)

Lissoclibadin 3 L-198

[865376-21-2]



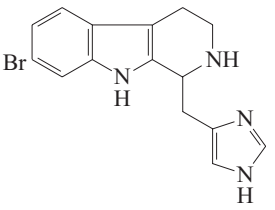
$C_{26}H_{38}N_2O_4S_4$ 570.861
Isomeric with Lissoclinotoxin E, L-209. Isol. from *Lissoclinum* cf. *badium*. Cytotoxic. Amorph. (as bis-TFA salt). λ_{max} 274 (ϵ 13300); 318 (ϵ 4500) (MeOH) (bis-TFA salt).

5-De(methylthio), O³-de-Me: ***Lissoclibadin 6***
[930086-80-9]
$C_{24}H_{34}N_2O_4S_3$ 510.742
Isol. from *Lissoclinum* cf. *badium*. λ_{max} 260 (log ϵ 4.25); 310 (log ϵ 3.93) (MeOH) (as bis-TFA salt).

Liu, H. *et al., Tetrahedron*, 2005, **61**, 8611-8615 (*Lissoclibadin 3*)
Nakazawa, T. *et al., J. Nat. Prod.*, 2007, **70**, 439-442 (*Lissoclibadin 6*)

Lissoclin C L-199

*7-Bromo-2,3,4,9-tetrahydro-1-(1*H*-imidazol-4-ylmethyl)-1*H*-pyrido[3,4-*b*]indole, 9CI*
[158761-14-9]



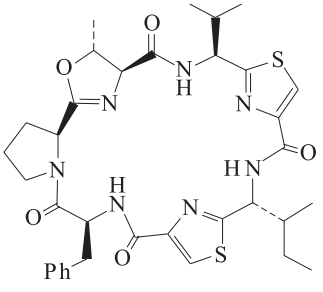
$C_{15}H_{15}BrN_4$ 331.214
Alkaloid from the tropical ascidian *Lissoclinum* sp. Isol. as a virtual racemate, prob. by racemisation during isol. λ_{max} 231 (ϵ 21900); 285 (ϵ 4170) (MeOH) (TFA salt).

*Debromo: 2,3,4,9-Tetrahydro-1-(1*H*-imidazol-4-ylmethyl)-1*H*-pyrido[3,4-*b*]indole.* ***Haploscleridamine***
[426258-83-5]
$C_{15}H_{16}N_4$ 252.318
Alkaloid from a sponge of the order Haploscleridae. Cathepsin K inhibitor. Gum. $[\alpha]_D$ -3.4 (c, 0.78 in MeOH). Racemate or virtual racemate. λ_{max} 235 (log ϵ 3.72); 270 (log ϵ 3.41); 278 (log ϵ 3.55); 288 (log ϵ 3.06) (MeOH).

Searle, P.A. *et al., J.O.C.*, 1994, **59**, 6600-6605 (*isol, uv, ir, pmr, cmr, struct*)
Patil, A.D. *et al., J. Nat. Prod.*, 2002, **65**, 628-629 (*Haploscleridamine*)

Lissoclinamide 1 L-200

[87411-84-5]

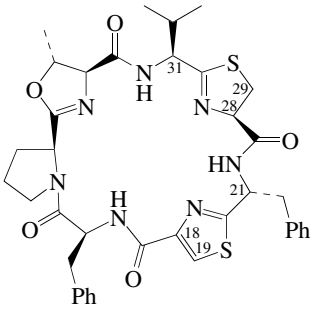


$C_{35}H_{43}N_7O_5S_2$ 705.901
Isol. from the marine tunicate *Lissoclinum patella*. Related to Ulicyclamide, U-9.

Wasylyk, J.M. *et al., J.O.C.*, 1983, **48**, 4445-4449 (*isol, ir, pmr, ms, struct*)

Lissoclinamide 4 L-201

[120853-16-9]



$C_{38}H_{43}N_7O_5S_2$ 741.934
Cyclopeptide from the ascidian *Lissoclinum patella*. Exhibits marked cytotoxicity. Powder (Et_2O). Mp 152-154°. $[\alpha]_D$ +45 (c, 0.7 in $CHCl_3$).

18α,19-Dihydro: ***Lissoclinamide 7***
[126297-39-0]
$C_{38}H_{45}N_7O_5S_2$ 743.949
Isol. from *Lissoclinum patella*. Shows selective metal binding props. Cytotoxic.

28,29-Didehydro: ***Lissoclinamide 5***
[120853-17-0]
$C_{38}H_{41}N_7O_5S_2$ 739.918
From *Lissoclinum patella*. Cytotoxic (less than Lissoclinamide 4 by two orders of magnitude).

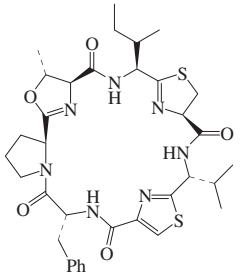
21-Epimer: ***Lissoclinamide 6***
[121209-53-8]
$C_{38}H_{43}N_7O_5S_2$ 741.934
Trace constit. of *Lissoclinum patella*. Cytotoxic. Possibly an artifact.

Stereoisomer: ***Lissoclinamide 8***
[126452-98-0]
$C_{38}H_{43}N_7O_5S_2$ 741.934
Isol. from *Lissoclinum patella*. Cytotoxic. Full config. not detd.

Degnan, B.M. *et al., J. Med. Chem.*, 1989, **32**, 1349-1354 (*isol, pmr, cmr, struct*)
Schmitz, F.J. *et al., J.O.C.*, 1989, **54**, 3463-3472 (*isol, ir, pmr, cmr, struct*)
Hawkins, C.J. *et al., J. Med. Chem.*, 1990, **33**, 1634-1638 (*Lissoclinamides 7 and 8*)
Wipf, P. *et al., J.A.C.S.*, 1996, **118**, 12358-12367; 1998, **120**, 4105-4112 (*Lissoclinamide 7, synth, abs config, conformn*)
Boden, C.D.J. *et al., J.C.S. Perkin 1*, 2000, 875-882 (*synth, abs config*)
Morris, L.A. *et al., Tetrahedron*, 2001, **57**, 3199-3207 (*activity*)

Lissoclinamide 9 L-202

[309963-07-3]



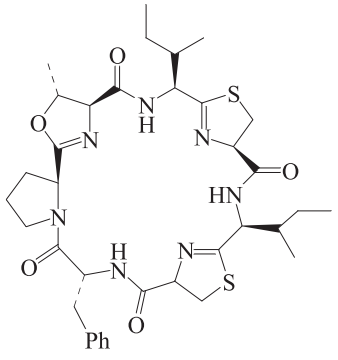
Absolute Configuration

$C_{35}H_{45}N_7O_5S_2$ 707.916
Isol. from *Lissoclinum patella*. Pale yellow oil. λ_{max} 308 (ϵ 3370) ($CHCl_3$).

Morris, L.A. *et al., Tetrahedron*, 2000, **56**, 8345-8353 (*isol, pmr, cmr, cd*)

Lissoclinamide 10 L-203

[309963-08-4]

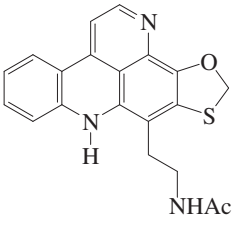


$C_{36}H_{49}N_7O_5S_2$ 723.959
Isol. from *Lissoclinum patella*. Pale yellow oil. λ_{max} 308 (ϵ 2900) ($CHCl_3$).

Morris, L.A. *et al., Tetrahedron*, 2000, **56**, 8345-8353 (*isol, pmr, cmr, cd*)

Lissoclinidine L-204

[496909-77-4]



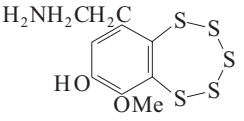
$C_{20}H_{17}N_3O_2S$ 363.439
Alkaloid from the ascidian *Lissoclinum notti*. Hygroscopic purple solid (as TFA salt). λ_{max} 218 (log ϵ 4.41); 281 (log ϵ 4.26); 295 (log ϵ 4.21); 310 (log ϵ 4.1); 384 (log ϵ 3.61); 548 (log ϵ 3.4) (MeOH/TFA).

Appleton, D.R. *et al., Tetrahedron*, 2002, **58**, 9779-9783 (*isol*)

Lissoclinotoxin A L-205

9-(2-Aminoethyl)-6-methoxy-7-benzopentathiepinol

[133883-05-3]



$C_9H_{11}NO_2S_5$ 325.521
Originally reported with an incorrect trithiane struct. Chiral molecule exhibiting unusual stereoisomerism due to restricted inversion, although isol. samples are racemic. Isol. from the tunicate *Lissoclinum perforatum*. Exhibits potent antimicrobial and antifungal activity. Amorph. yellow solid. Fairly sol. MeOH, DMSO; poorly sol. butanol, hexane. Mp 245-250°. λ_{max} 215 (ϵ 10400); 246 (ϵ 8870) (EtOH) (Derep). λ_{max} 213 (ϵ 14100) (MeOH) (Berdy).

Me ether: 8,9-Dimethoxy-6-benzopentathiepinethanamine, 9CI. ***Varacin***
[134029-48-4]
$C_{10}H_{13}NO_2S_5$ 339.548
Isol. from the ascidians *Lissoclinum vareau* and *Polycitor* sp. Exhibits potent antifungal and antimicrobial activity. Cytotoxic towards the human colon cancer HCT 116. Light yellow powder (also descr. as a glass). Mp 258-260° dec. λ_{max} 214 ; 244 (MeOH) (Derep). λ_{max} 212 ; 244 (EtOH) (Berdy).

Me ether, N-*Ac:*
Light yellow cryst. (MeOH). Mp 136-137°.

O-*De-Me: 9-(2-Aminoethyl)-6,7-benzopentathiepindiol, 9CI.* ***Dide-O-methylvaracin***. *De*-O-*methyllissoclinotoxin A*
[159645-89-3]
$C_8H_9NO_2S_5$ 311.495
Isol. from a *Eudistoma* sp. Yellow powder.

8-(Methylthio), Me ether: 9-(2-Aminoethyl)-6,7-dimethoxy-8-(methylthio)benzopentathiepin. ***5-(Methylthio)varacin***
[159645-87-1]
$C_{11}H_{15}NO_2S_6$ 385.641
Isol. from a *Lissoclinum* sp. CAS no. refers to trifluoroacetate.

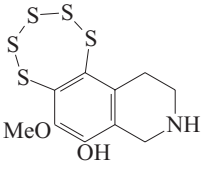
8-(Methylthio), N,N,O-*tri-Me: 6-Amino-8,9-dimethoxy*-N,N-*dimethyl-7-(methylthio)benzopentathiepin*. **N,N-*Dimethyl-5-(methylthio)varacin***
[159645-83-7]
$C_{13}H_{19}NO_2S_6$ 413.695
Isol. from *Lissoclinum japonicum*. Pale yellow oil (as trifluoroacetate). CAS no. refers to trifluoroacetate. λ_{max} 211 (ϵ 16500) (MeOH).

Davidson, B.S. *et al., J.A.C.S.*, 1991, **113**, 4709-4710 (*Varacin*)
Litaudon, M. *et al., Tet. Lett.*, 1991, **32**, 911-914 (*isol, pmr, cmr*)
Ford, P.W. *et al., J.O.C.*, 1994, **59**, 5955-5960 (*synth, struct*)
Searle, P.A. *et al., J.O.C.*, 1994, **59**, 6600-6605 (*isol, uv, ir, pmr, cmr*)
Litaudon, M. *et al., Tetrahedron*, 1994, **50**, 5323-5334 (*uv, pmr, ms, struct*)
Compagnone, R.S. *et al., Tetrahedron*, 1994, **50**, 12785-12792 (*isol, uv, pmr, cmr*)
Makarieva, T.N. *et al., J. Nat. Prod.*, 1995, **58**, 254 (*Varacin*)
Greer, A. *et al., J.A.C.S.*, 2001, **123**, 10379-10386 (*Varacin, struct*)

Lissoclinotoxin B L-206

8,9,10,11-Tetrahydro-6-methoxy-1,2,3,4,5-pentathiepino[6,7-f]isoquinolin-7-ol, 9CI

[157536-34-0]



$C_{10}H_{11}NO_2S_5$ 337.532
Minor constit. of the tunicate *Lissoclinum perforatum*. Exhibits antimicrobial activity. Antiplasmodial agent. Pale yellow powder. Fairly sol. MeOH; poorly sol. $CHCl_3$, CH_2Cl_2. Mp 310-313°. λ_{max} 215 (ϵ 20000); 246 (ϵ 6500) (MeOH) (Berdy).

Litaudon, M. *et al., Tetrahedron*, 1994, **50**, 5323 (*isol, uv, ir, pmr, cmr, struct*)

Lissoclinotoxin C L-207

5-(2-Aminoethyl)-2-methoxy-3,4-bis(methylthio)phenol, 9CI. 5-Hydroxy-4-methoxy-2,3-bis(methylthio)phenethylamine

[158761-15-0]



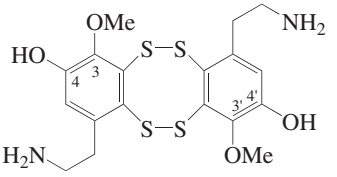
$C_{11}H_{17}NO_2S_2$ 259.393
Alkaloid from the tropical ascidian *Lissoclinum* sp.

Searle, P.A. *et al., J.O.C.*, 1994, **59**, 6600-6605 (*isol, pmr, struct*)

Lissoclinotoxin D L-208

4,10-Bis(2-aminoethyl)-1,7-dimethoxydibenzo[c,g][1,2,5,6]-tetrathiocin-2,8-diol, 9CI

[158761-16-1]



$C_{18}H_{22}N_2O_4S_4$ 458.647
Alkaloid from the tropical ascidian *Lissoclinum* sp. Exhibits antifungal activity.

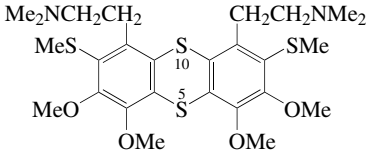
3,3′-Di-O-*de-Me, 4,4′-di-Me ether,* N-

tetra-Me: ***Lissoclibadin 7***
[930086-81-0]
$C_{22}H_{30}N_2O_4S_4$ 514.754
Isol. from *Lissoclinum* cf. *badium*. λ_{max} 260 (log ϵ 4.03); 322 (log ϵ 3.88) (MeOH) (as bis(trifluoroacetate)).

Searle, P.A. *et al., J.O.C.*, 1994, **59**, 6600-6605 (*isol, pmr, struct*)
Nakazawa, T. *et al., J. Nat. Prod.*, 2007, **70**, 439-442 (*Lissoclibadin 7*)

Lissoclinotoxin E L-209

Lissoclin

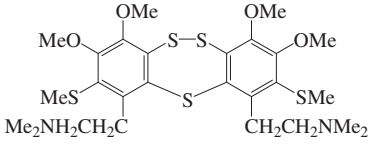


$C_{26}H_{38}N_2O_4S_4$ 570.861
Struct. revised from, and isomeric with Lissoclibadin 3, L-198 in 2005. Isol. from *Lissoclinum* cf. *badium* and an unidentified Philippine ascidian. Cytotoxic. λ_{max} 210 (ϵ 15000); 232 (sh) (ϵ 9000); 254 (ϵ 7000); 272 (ϵ 12000) (MeOH).

5,10-Dioxide: ***Lissoclin disulfoxide***
[195303-92-5]
$C_{26}H_{38}N_2O_6S_4$ 602.86
Isol. from a *Lissoclinum* sp. Inhibitor of interleukin-8 receptors. Yellow solid. λ_{max} 243 ; 266 ; 318 (MeOH).

Patil, A.D. *et al., Nat. Prod. Lett.*, 1997, **10**, 225-229 (*Lissoclin disulfoxide*)
Davies, R.A. *et al., Tetrahedron*, 2003, **59**, 2855-2859 (*isol, pmr, cmr*)
Liu, H. *et al., Tetrahedron*, 2005, **61**, 8611-8615 (*isol, struct*)

Lissoclinotoxin F L-210

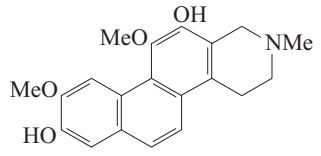


$C_{26}H_{38}N_2O_4S_5$ 602.927
Isol. from a Philippine didemnid ascidian. Cytotoxic. Light brown film (as bis-TFA salt). λ_{max} 210 (ϵ 13000); 238 (sh) (ϵ 11000); 268 (ϵ 11000); 320 (ϵ 3000) (MeOH).

Davis, R.A. *et al., Tetrahedron*, 2003, **59**, 2855-2859 (*isol, pmr, cmr*)

Litebamine L-211

1,2,3,4-Tetrahydro-9,11-dimethoxy-2-methylnaphth[2,1-f]isoquinoline-8,12-diol, 9CI
[137031-56-2]

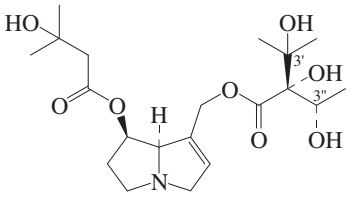


$C_{20}H_{21}NO_4$ 339.39
Alkaloid from *Litsea cubeba* (mountain pepper) (Lauraceae). Cryst. (MeOH). Mp 218-220°.

Wu, Y.-C. *et al., Tet. Lett.*, 1991, **32**, 4169 (*isol, pmr, cmr, ir, uv, struct*)
Lee, S.-S. *et al., Tet. Lett.*, 1992, **33**, 6309 (*synth*)
Hara, H. *et al., Tetrahedron*, 1995, **51**, 10189 (*synth*)

Lithosenine L-212

[159903-58-9]



$C_{20}H_{33}NO_8$ 415.483
Alkaloid from aerial parts of *Lithospermum officinale* (Boraginaceae).

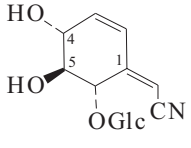
$O^{3''}$-Ac: ***Acetyllithosenine***
[159690-29-6]
$C_{22}H_{35}NO_9$ 457.52
Alkaloid from aerial parts of *Lithospermum officinale* (Boraginaceae).

3′-Deoxy, stereoisomer: ***Uluganine***
[55437-97-3]
$C_{20}H_{33}NO_7$ 399.483
Alkaloid from *Ulugbekia tschimganica* (Boraginaceae) (preferred genus name *Arnebia*). Cryst. (Me_2CO). Mp 106-107°. $[\alpha]_D^{25}$ -31.9 (c, 0.47 in Me_2CO). Stereochem. not detd.

Khasanova, M.A. *et al., Khim. Prir. Soedin.*, 1974, **10**, 809; *Chem. Nat. Compd. (Engl. Transl.)*, 1974, **10**, 842 (*Uluganine*)
Krenn, L. *et al., Phytochemistry*, 1994, **37**, 275 (*Lithosenine, Acetyllithosenine*)

Lithospermoside L-213

[63492-69-3]



$C_{14}H_{19}NO_8$ 329.306
Constit. of *Lithospermum officinale*, *Lithospermum caerulum* and *Thalictrum orientale*. Cryst. (MeOH aq.). Mp 278-279°. $[\alpha]_D^{20}$ -156 (c, 0.99 in H_2O).

4-Me ether: ***Bauhinin***
[100757-58-2]
$C_{15}H_{21}NO_8$ 343.333
Constit. of *Bauhinia championii*. Cryst. + $2H_2O$ (Me_2CO aq.). Mp 213-214°. $[\alpha]_D^{25}$ -80 (c, 1.05 in MeOH). λ_{max} 258 (19700) (MeOH).

5-Deoxy: ***Menisdaurin***
[67765-58-6]
$C_{14}H_{19}NO_7$ 313.307
Isol. from *Ilex warburgii*, *Menispermum dauricum* and *Semiaquilegia adoxoides*. Plates. Mp 175-176°. $[\alpha]_D^{15}$ -185.4 (c, 1.00 in MeOH).

E-*Isomer, aglycone:* [845536-74-5]
$C_8H_9NO_3$ 167.164
Constit. of the roots of *Semiaquilegia adoxoides*. $[\alpha]_D^{20}$ +54.3 (c, 1 in MeOH).

4-Epimer: ***Dasycarponin***
[72523-59-2]
Isol. from roots of *Thalictrum dasycarpum*. Rhombic cryst. (MeOH aq.). Mp 253-255°. $[\alpha]_D^{27}$ -11 (c, 0.25 in H_2O).

4-Epimer, aglycone: Dasycarponilide†
Mp 164-165°. $[\alpha]_D^{27}$ +370 (c, 0.01 in MeOH).

5-Epimer: [84799-31-5]
$C_{14}H_{19}NO_8$ 329.306
Constit. of *Ilex warburgii* and *Semiaquilegia adoxoides*. Cryst. (MeOH aq.). Mp 221-223°. $[\alpha]_D^{25}$ -247 (c, 0.611 in MeOH).

6-Epimer, 5-deoxy: ***Purshianin***
[162990-70-7]
$C_{14}H_{19}NO_7$ 313.307
Isol. from *Purshia tridentata*. Plates (EtOH). Mp 167-169.5°. $[\alpha]_D^{20}$ -90.2 (c, 0.45 in MeOH). λ_{max} 271 (log ϵ 3.99) (EtOH).

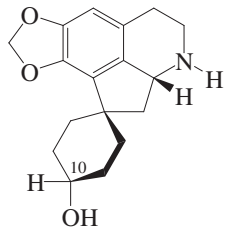
5,6-Diepimer, E-*isomer, aglycone: Huazhongilexol*
[161407-80-3]
$C_8H_9NO_3$ 167.164
Constit. of *Ilex centrocinensis*.

4,5,6-Triepimer: ***Griffonin***
$C_{14}H_{19}NO_8$ 329.306
Constit. of roots of *Griffonia simplicifolia*. Feathery cryst. (MeOH). Mp 263-265° dec. $[\alpha]_D^{21}$ +6 (c, 0.5 in H_2O). Griffonin is given the same reg. no. as Lithospermoside in CA but appears to be a distinct diastereoisomer. The opt. rotns. are v. different.

Dwuma-Badu, D. *et al., J. Nat. Prod.*, 1976, **39**, 213 (*Griffonin*)
Sosa, A. *et al., Phytochemistry*, 1977, **16**, 707 (*isol, struct*)
Takahashi, K. *et al., Chem. Pharm. Bull.*, 1978, **26**, 1677 (*Menisdaurin*)
Wu, J. *et al., J. Nat. Prod.*, 1979, **42**, 500 (*Dasycarponin*)
Ueda, K. *et al., Chem. Lett.*, 1983, 149 (*isol, struct*)
Chen, C.C. *et al., J. Nat. Prod.*, 1985, **48**, 933 (*Bauhinin*)
Nakanishi, T. *et al., Chem. Pharm. Bull.*, 1994, **42**, 2251-2255 (*Menisdaurin, Purshianin*)
Lin, L.D. *et al., Huaxue Xuebao*, 1995, **53**, 98; *CA*, **122**, 183194 (*Huazhongilexol*)
Josien-Lefebvre, D. *et al., Helv. Chim. Acta*, 2001, **84**, 890-897; 2003, **86**, 661-672; 2007, **90**, 19-30 (*synth, pmr, cmr*)
Erdemgil, F.Z. *et al., Z. Naturforsch., C*, 2003, **58**, 632-636 (*isol, pmr, cmr*)
Zhang, H. *et al., Chin. J. Chem.*, 2004, **22**, 1200-1203 (*Semiaquilegia aglycone*)
Seigler, D.S. *et al., Phytochemistry*, 2005, **66**, 1567-1580 (*Menisdaurin*)
Niu, F. *et al., Chin. J. Chem.*, 2006, **24**, 1788-1791 (*5-epimer*)

Litsericine L-214

Norhexahydromecambrine



(+)-*form*

$C_{17}H_{21}NO_3$ 287.358

(+)-*form* [15650-04-1]
Alkaloid from *Neolitsea sericea*, *Neolitsea buisanensis* and *Neolitsea aurata* (Lauraceae). Mp 156°. $[\alpha]_D$ +67 (c, 1.33 in EtOH).

O,N-*Di-Ac:* Mp 154°.

N-*Me:* **N-*Methyllitsericine***
[5890-36-8]
$C_{18}H_{23}NO_3$ 301.385
Alkaloid from *Neolitsea aurata* (Lauraceae). Mp 195-196° (185°). $[\alpha]_D^{25}$ +32 (Me_2CO). $[\alpha]_D^{16}$ +53.2 (c, 1.09 in EtOH).

N,N-*Di-Me:* Mp 173-175° (as iodide).

10-Epimer: ***Lauformine***
[91177-60-5]
$C_{17}H_{21}NO_3$ 287.358
Alkaloid from the bark of *Phoebe formosana* (Lauraceae). Needles (Me_2CO). Mp 235-237°. $[\alpha]_D^{23}$ +62 (c, 1.0 in MeOH). λ_{max} 240 (sh) (log ϵ 3.32); 290 (log ϵ 3.36) (EtOH).

10-Epimer, N-*Me:* **N-*Methyllauformine***
[91199-02-9]
$C_{18}H_{23}NO_3$ 301.385
Alkaloid from the bark of *Phoebe formosana* (Lauraceae). Needles (Me_2CO). Mp 255-256°. $[\alpha]_D^{23}$ +68 (c, 0.1 in MeOH). λ_{max} 240 (sh) (log ϵ 3.18); 292 (log ϵ 3.23) (EtOH).

(-)-*form*

N-*Me:* ***Hexahydromecambrine***. *Hexahydrofugapavine*
$C_{18}H_{23}NO_3$ 301.385
Alkaloid from *Papaver lecoquii* and *Phoebe scortechinii*. Prisms (MeOH). Mp 266-267°. $[\alpha]_D^{25}$ -44 (c, 0.09 in MeOH). λ_{max} 211 (log ϵ 4.5); 241 (sh) (log ϵ 3.61); 260 (log ϵ 3.13); 287 (log ϵ 3.63) (EtOH).

Nakasato, T. *et al., Yakugaku Zasshi*, 1966, **86**, 129; 134; 1205 (*isol, uv, pmr, struct, config*)

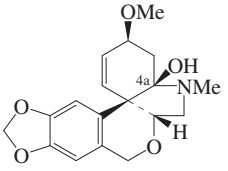
Slávik, J. *et al., Coll. Czech. Chem. Comm.*, 1970, **35**, 1558-1566; 1981, **46**, 2587-2593 (*Hexahydromecambrine, isol, uv, ord, struct, synth*)

Lu, S.T. *et al., J. Chin. Chem. Soc. (Taipei)*, 1975, **22**, 349; *CA*, **84**, 132659r (*N-Methyllitsericine*)

Lu, S.T. *et al., Heterocycles*, 1984, **22**, 1031-1033; 1323-1326 (*Litsericine, Lauformine, N-Methyllauformine, isol, uv, ir, pmr, ms, struct*)

Littoraline L-215

[171828-68-5]

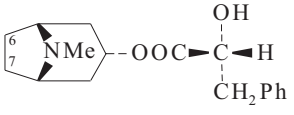


$C_{18}H_{21}NO_5$ 331.368
Alkaloid from bulbs of *Hymenocallis littoralis* and *Hymenocallis rotata* (Amaryllidaceae). Shows inhibitory activity of HIV reverse transcriptase. Powder. Sol. MeOH. Not obt. completely pure. Stereochem. at C-4a not absolutely proved, no further studies to 2001. λ_{max} 243 (ϵ 12590); 282 (ϵ 6456) (MeOH).

Lin, L.-Z. *et al., Phytochemistry*, 1995, **40**, 1295-1298 (*isol, uv, pmr, cmr*)

Littorine L-216

α-Hydroxybenzenepropanoic acid 8-methyl-8-azabicyclo[3.2.1]oct-3-yl ester, 9CI. 3α-(2-Hydroxy-3-phenylpropionyloxy)tropane. Tropan-3α-yl phenyllactate



$C_{17}H_{23}NO_3$ 289.374

(*R*)-*form* [21956-47-8]
Alkaloid from *Anthocercis littorea* and *Datura sanguinea* (Solanaceae). Mp 96-97°. $[\alpha]_D^{26}$ -12.7 (c, 4.42 in EtOH).

Picrate:
Cryst. (EtOH). Mp 162-163°.

Methiodide: Mp 167-168°.

(±)-*form*
Synthetic. Powerful mydriatic agent. Cryst. (also descr. as an oil). Mp 89-90°.

Hydrochloride: Mp 173-175°.

Picrate:
Short yellow needles. Mp 159-160°.

[62083-53-8]

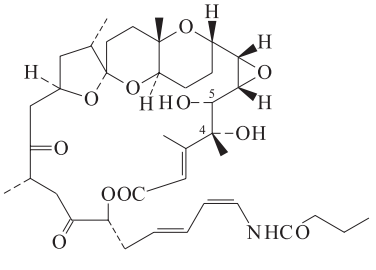
Jowett, H.A.D. *et al., J.C.S.*, 1909, **95**, 1020 (*synth*)

Cannon, J.R. *et al., Aust. J. Chem.*, 1969, **22**, 221 (*isol, struct, uv, ir*)

Takeuchi, Y. *et al., Chem. Pharm. Bull.*, 1971, **19**, 2603 (*synth, ir, pmr*)

Lituarine C L-217

[143621-77-6]



$C_{38}H_{55}NO_{11}$ 701.853
Structures may need revision; spectral properties of synthetic compds. do not match those of natural Lituarines (2008). Isol. from the sea pen *Lituaria australasiae*. Shows antifungal, cytotoxic and antineoplastic activities. Cryst. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 153-157°. λ_{max} 269 (ϵ 22419) (MeOH) (Berdy).

5-Ac: ***Lituarine B***
[143621-76-5]
$C_{40}H_{57}NO_{12}$ 743.89
Isol. from *Lituaria australasiae*. Cryst. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 126-129°. λ_{max} 269 (ϵ 26604) (MeOH) (Berdy).

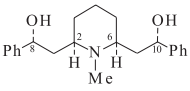
4,5-Dideoxy: ***Lituarine A***
[143621-75-4]
$C_{38}H_{55}NO_9$ 669.854
Isol. from *Lituaria australasiae*. Cryst. Mp 83-85°. λ_{max} 270 (ϵ 15857) (MeOH) (Berdy).

Vidal, J.-P. *et al., J.O.C.*, 1992, **57**, 5857-5860 (*isol, pmr, cmr*)

Smith, A.B. *et al., J.A.C.S.*, 2008, **130**, 422-423 (*synth*)

Lobelanidine, 8CI L-218

1-Methyl-α,α′-diphenyl-2,6-piperidinediethanol, 9CI. 2,6-Bis(2-hydroxy-2-phenylethyl)-1-methylpiperidine. 8,10-Diphenyllobelidiol
[552-72-7]



(2*RS*,6*SR*,8*RS*,10*SR*)-*form*

$C_{22}H_{29}NO_2$ 339.477
Two stereoisomers occur naturally. Strictly the name Lobelanidine refers to the *meso*-isomer. Other stereoisomers known synthetically.
▶ Toxic. TM7132400

(2*RS*,6*SR*,8*RS*,10*SR*)-*form*
Alkaloid from *Lobelia inflata*, *Lobelia hassleri*, *Lobelia stallfeldii*, other *Lobelia* spp. and *Isotoma longiflora* (preferred genus name *Laurentia*). Lobelanidine of undetd. stereochem. also isol. from *Sedum acre* (Campanulaceae, Crassulaceae). Prisms (EtOH). Mp 150°. Opt. inactive (*meso*-).

Di-Ac: Mp 214-215°.

O-*β*-D-*Glucopyranoside:*
$C_{28}H_{39}NO_7$ 501.619
Alkaloid from *Sedum acre* (Crassulaceae). Mp 233-236° (as penta-Ac). $[\alpha]_D^{22}$ -28 (MeOH) (penta-Ac).

O-*β*-D-*Glucopyranoside, penta-Ac:* Mp 233-236° dec. $[\alpha]_D^{22}$ -28 (MeOH).

Diketone: ***Lobelanine***. *2,2′-(1-Methyl-2,6-piperidinediyl)bis[1-phenylethanone], 9CI. 1-Methyl-2,6-diphenacylpiperidine. 8,10-Diphenyllobelidione*
[579-21-5]
$C_{22}H_{25}NO_2$ 335.445
Alkaloid from *Lobelia inflata* (Campanulaceae). Plates (petrol). Mp 99° (94-95°). Opt. inactive (*meso*-).

Diketone; hydrochloride:
Cryst. (EtOH). Mp 196° (188°).

Diketone, N-*oxide:* Mp 84-86°.

N-*De-Me:* ***Norlobelanidine****. α,α′-Diphenyl-2,6-piperidinediethanol, 9CI. 8,10-Diphenylnorlobelidiol*
[495-49-8]
$C_{21}H_{27}NO_2$ 325.45
Main alkaloid from *Lobelia polyphylla* (Campanulaceae). Needles (Et_2O). Mp 120°. Opt. inactive.

N-*De-Me; hydrochloride:*
Needles (EtOH aq.). Mp 254° (244°).

Diketone, N-*de-Me:* ***Norlobelanine****. 2,6-Diphenacylpiperidine. 8,10-Diphenylnorlobelidione. Isolobelanine*
$C_{21}H_{23}NO_2$ 321.418
Alkaloid from *Lobelia* sp. (Campanulaceae). Prisms (Et_2O or EtOH aq.). Mp 120-121° (117-118°). Opt. inactive (*meso*-).

Diketone, N-*de-Me; hydrochloride:*
Cryst. (EtOH). Mp 201-202°.

Monoketone: see Lobeline, L-219

(2*S*,6*R*,8*S*,10*S*)-*form*
(-)-cis-*form*
Alkaloid from *Isotoma longiflora* (Campanulaceae). Prismatic cryst. (Et_2O). Mp 117°. $[\alpha]_D^{20}$ -71.8 (c, 1.16 in $CHCl_3$).

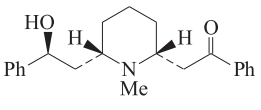
Hydrate:
Needles (Me_2CO). Mp 216-218° dec.

Nitrate:
Needles (MeOH). Mp 216-217°.

Wieland, H. *et al., Annalen*, 1925, **444**, 40; 1929, **473**, 83; 102; 118; 126 (*isol, struct, synth*)
Scheuing, G. *et al., Annalen*, 1929, **473**, 126 (*synth*)
Ebnöther, A. *et al., Helv. Chim. Acta*, 1958, **41**, 386
Parker, W. *et al., J.C.S.*, 1959, 2433 (*synth, Lobelanine*)
Arthur, H.R. *et al., J.C.S.*, 1963, 750 (*isol*)
Schöpf, C. *et al., Annalen*, 1965, **682**, 206; **687**, 241 (*abs config*)
Weinges, K. *et al., Annalen*, 1972, **756**, 177 (*Norlobelanidine*)
Krochmal, A. *et al., J. Nat. Prod.*, 1972, **35**, 303 (*isol*)
Shah, C.S. *et al., Phytochemistry*, 1972, **11**, 2884 (*isol*)
O'Donovan, D.G. *et al., J.C.S. Perkin 1*, 1975, 415 (*biosynth*)
Francis, L.P.S. *et al., Planta Med.*, 1977, **32**, 268 (*isol*)
Moreira, E. *et al., CA*, 1981, **95**, 183865q (*isol*)
Piccinni-Leopardi, C. *et al., Bull. Soc. Chim. Belg.*, 1987, **96**, 97 (*Lobelanidine glycoside*)

Lobeline, BAN, INN L-219

2-[6-(2-Hydroxy-2-phenylethyl)-1-methyl-2-piperidinyl]-1-phenylethanone, 9CI. 8,10-Diphenyllobelionol. α-Lobeline. Inflatine. Lobelidine. Many other names



(–)-*form*

$C_{22}H_{27}NO_2$ 337.461
Lobelidine was originally the racemate.

Antiasthmatic, antibronchitic, analeptic agent. Diuretic, respiratory stimulant. Possesses expectorant props. Used in antismoking preparations. Log P 3.74 (calc).

(-)-*form* [90-69-7]
Alkaloid from *Lobelia inflata*, *Lobelia nicotianaefolia*, *Lobelia hassleri*, *Lobelia stallfeldii* and several other *Lobelia* spp. Also isol. from seeds of *Campanula medium* (Campanulaceae). Used as a 0.1*M* aq. soln. for photometric detn. of Mo (λ_{max} 465 nm, ϵ 13800). Needles (EtOH). Mp 130-131°. $[\alpha]_D^{15}$ -42.85 (EtOH). Log P 3.74 (calc). Oxidn. gives the symmetrical Lobelanine which is *meso*-.

▶ Adverse gastrointestinal and CNS effects by ingestion. LD_{50} (mus, ipr) 107 mg/kg. OJ8480000

Hydrochloride: Zoolobelin. Lobran
[134-63-4]
Needles (EtOH). Mp 182°.

▶ LD_{50} (mus, ipr) 40 mg/kg. OJ8490100

Sulfate (1:2): [134-64-5]
Cryst. (EtOH). $[\alpha]_D^{25}$ -25 (c, 0.2 in $CHCl_3$).

▶ OJ8490170

Benzoyl: Mp 155-157°.

(±)-*form* [134-65-6]
Alkaloid from *Lobelia inflata* and *Lobelia salicifolia* (Campanulaceae). Prisms. Mp 110°.

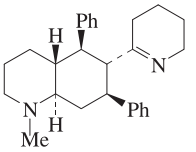
Hydrochloride: Mp 170°.

[10122-32-4]

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 47B (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **2**, 868A (*nmr*)
Wieland, H. *et al., Annalen*, 1929, **473**, 118 (*isol*)
Schöpf, C. *et al., Annalen*, 1965, **682**, 206; **687**, 241 (*abs config*)
Cambar, P.J. *et al., Arch. Int. Pharmacodyn. Ther.*, 1969, **177**, 1 (*pharmacol*)
Korczyn, A.D. *et al., Arch. Int. Pharmacodyn. Ther.*, 1969, **182**, 370 (*pharmacol*)
Döpke, W. *et al., Pharmazie*, 1970, **25**, 128 (*isol*)
Krochmal, A. *et al., J. Nat. Prod.*, 1972, **35**, 303 (*isol*)
Shah, C.S. *et al., Phytochemistry*, 1972, **11**, 2884 (*isol, occur*)
Mansuri, S.M. *et al., Arzneim.-Forsch.*, 1973, **23**, 1721 (*pharmacol*)
O'Donovan, D.G. *et al., J.C.S. Perkin 1*, 1975, 415 (*biosynth*)
Alhadeff, M. *et al., Drugs of Today (Barcelona)*, 1977, **13**, 236 (*rev*)
Nytko, K. *et al., Microchem. J.*, 1980, **25**, 548 (*detn, Mo*)
Negwer, M. *et al., Organic-Chemical Drugs and their Synonyms, 6th edn., Akademie-Verlag*, 1987, 6579
Muhtadi, F.J. *et al., Anal. Profiles Drug Subst.*, 1990, **19**, 261 (*rev*)
Glaser, R. *et al., J.C.S. Perkin 2*, 1992, 1071 (*cryst struct, abs config*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 1227
Flammia, D. *et al., J. Med. Chem.*, 1999, **42**, 3726-3731 (*sar, pharmacol*)
Felpin, F.-X. *et al., J.O.C.*, 2002, **67**, 9192-9199 (*synth*)
Felpin, F.-X. *et al., Tetrahedron*, 2004, **60**, 10127-10153 (*rev*)
Birman, V.B. *et al., Org. Lett.*, 2007, **9**, 3237-3243 (*synth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, LHY000; LHZ000

Lobinaline L-220

Decahydro-1-methyl-5,7-diphenyl-6-(3,4,5,6-tetrahydro-2-pyridinyl)quinoline, 9CI
[6887-36-1]



Relative Configuration

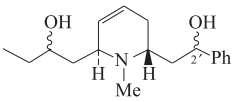
$C_{27}H_{34}N_2$ 386.579
Originally considered to be $C_{28}H_{38}N_2O$, then $C_{28}H_{36}N_2$. Abs stereochem. not reported to 1996 although it is reported in CAS. Major alkaloid from *Lobelia cardinalis*, also detected in *Lobelia elongata* (Campanulaceae). Cryst. (hexane or by subl.). Mp 108-110° (94-95°). $[\alpha]_D^{20}$ +38 ($CHCl_3$).

Hydrochloride:
Cryst. + ½H_2O ($CHCl_3$/Me_2CO). Mp 220°.

Manske, R.H.F. *et al., Can. J. Res., Sect. B*, 1938, **16**, 445 (*isol*)
Robison, M.M. *et al., J.O.C.*, 1966, **31**, 3206-3213; 3220-3223 (*ms, pmr, struct*)
Clugston, D.M. *et al., Can. J. Chem.*, 1967, **45**, 39-47 (*ms*)
Gupta, R.N. *et al., Can. J. Chem.*, 1971, **49**, 384-397 (*biosynth*)

Lobinanidine L-221

8-Ethyl-10-phenyldehydrolobelidiol



Relative configuration

$C_{18}H_{27}NO_2$ 289.417
Posn. of the double bond not thoroughly established. Alkaloid from *Lobelia inflata* (Campanulaceae). Small plates (petrol). Mp 95°. $[\alpha]_D$ -120 (EtOH). Hydrogenation of the double bond gives a Lelobanidine, L-86 diastereoisomeric with the known alkaloids.

Hydrochloride: Mp 169°.

2′-Ketone: ***Lobinine****. 8-Ethyl-10-phenyldehydrolobelionol*
$C_{18}H_{25}NO_2$ 287.401
Minor alkaloid from *Lobelia inflata* (Campanulaceae). Noncryst. Needles (EtOH/Et_2O)(as hydrochloride). Mp 144° (hydrochloride). $[\alpha]_D$ -106.1 (EtOH) (hydrochloride). Originally considered to be $C_{18}H_{27}NO_2$.

Diastereoisomer: ***Isolobinanidine***
$C_{18}H_{27}NO_2$ 289.417
Minor alkaloid from *Lobelia inflata* (Campanulaceae). Amorph. A 2,6-*cis*-isomer; hydrogenation gives (-)-Lelobanidine I, L-86.

Diastereoisomer, hydrochloride:
Cryst. + $2H_2O$. Mp 111°. $[\alpha]_D$ -28.3 (H_2O).

Diastereoisomer, 2′-ketone: ***Isolobinine***
$C_{18}H_{25}NO_2$ 287.401
Minor alkaloid from *Lobelia inflata* (Campanulaceae). Shows antiasthmatic, antitussive and hypertensive props. Cryst. (petrol). Mp 78°. A 2,6-*cis*-isomer giving (-)-Lelobanidine I, L-86 on hydrogenation.

Diastereoisomer, 2′-ketone, hydrochloride:
Cryst. + $1H_2O$. Mp 154° (anhyd.). $[\alpha]_D$ -76 (H_2O).

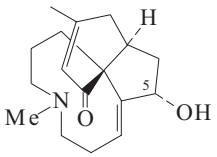
Wieland, H. *et al., Annalen*, 1931, **491**, 14; 1939, **540**, 103 (*isol, struct*)
Thomä, O. *et al., Annalen*, 1939, **540**, 99 (*Isolobinine*)
Schöpf, C. *et al., Annalen*, 1957, **608**, 88 (*struct, nomencl*)

Lobine L-222

$C_{23}H_{31}N_3O_4$ 413.516
Struct. unknown. Alkaloid from *Oxylobium parviflorum* (Fabaceae).
Mann, E.A. *et al., Proc. R. Soc. London, B*, 1907, **79**, 485-491 (*isol*)

Lobscurinol L-223

[123118-12-7]



$C_{17}H_{25}NO_2$ 275.39
Minor alkaloid from *Lycopodium obscurum* (Lycopodiaceae). Oil.

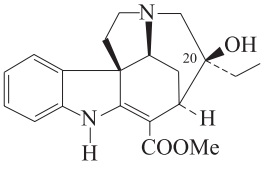
Ac: ***Acetyllobscurinol***
$C_{19}H_{27}NO_3$ 317.427
Minor alkaloid from *Lycopodium obscurum* (Lycopodiaceae). Opaque solid. $[\alpha]_D$ +110 (c, 0.16 in MeOH).

5-Epimer: ***Epilobscurinol***
[123165-90-2]
$C_{17}H_{25}NO_2$ 275.39
Trace alkaloid from *Lycopodium obscurum* (Lycopodiaceae). No phys. props. reported.

Ayer, W.A. *et al., Can. J. Chem.*, 1989, **67**, 1077 (*isol, uv, ir, pmr, cmr, ms, struct*)

Lochneridine L-224

Methyl 2,16-didehydro-20-hydroxycuran-17-oate, 9CI



(–)-*form*

$C_{20}H_{24}N_2O_3$ 340.421
Originally considered to be $C_{19}H_{24}N_2O_3$. Publ. information on the nat. occurrence of Lochneridine stereoisomers is incomplete. Some isolates are of unreported opt. rotn.

(-)-*form* [5980-01-8]
Alkaloid from *Catharanthus roseus* (Apocynaceae). Prisms (MeOH). Mp 211-214°. $[\alpha]_D$ -608. pK_a 5.5. The original publication erroneously gave a (+)- optical rotn. λ_{max} 206 ; 230 ; 298 ; 328 (EtOH).

(+)-*form*
Alkaloid from *Tabernaemontana pandacaqui* and *Alstonia scholaris* (Apocynaceae). Mp 225°. $[\alpha]_D$ +650 ($CHCl_3$). Stereochem. not certain. It is likely that this is 20-*epi*-(+)-Lochneridine, which is the probable alkaloid on biogenetic grounds.

Svoboda, G.H. *et al., J. Pharm. Sci.*, 1961, **50**, 409-413 (*isol, ir, uv*)
Nakagawa, Y. *et al., Chem. Ind. (London)*, 1962, 1986 (*struct*)
Djerassi, C. *et al., Experientia*, 1963, **19**, 467-469 (*stereochem*)
Lathuilliere, P. *et al., Ann. Pharm. Fr.*, 1966, **24**, 547-549 (*(+)-form, isol*)
Scott, A.I. *et al., J.A.C.S.*, 1974, **96**, 2273-2274 (*biosynth*)
Mirand, C. *et al., Tet. Lett.*, 1982, **23**, 1257-1258 (*20-Epilochneridine, synth*)
Banerji, J. *et al., Indian J. Chem., Sect. B*, 1984, **23**, 455 (*isol*)
Bonjoch, J. *et al., J.A.C.S.*, 1997, **119**, 7230-7240 (*20-Epilochneridine, synth*)
Kuehne, M.E. *et al., J.O.C.*, 1998, **63**, 9434-9439 (*synth, bibl*)

Lochnerivine L-225

[1359-07-5]

$C_{24}H_{28}N_2O_5$ 424.496
Struct. unknown. Alkaloid from the roots of *Catharanthus roseus*. Cryst. (MeOH). Mp 278-280°.

Svoboda, G.H. *et al., J. Nat. Prod.*, 1963, **26**, 141-153 (*isol, uv, ir*)
Svoboda, G.H. *et al., J. Pharm. Sci.*, 1963, **52**, 407-408 (*isol*)

Lochrovicine L-226

[1359-08-6]

$C_{20}H_{22}N_2O_2$ 322.406
Struct. unknown. Alkaloid from *Catharanthus roseus* (Apocynaceae). Prisms (MeOH). Mp 234-238°. $[\alpha]_D^{25}$ -345 (c, 1 in $CHCl_3$). pK_a 4.5 (33% DMF aq.).

Svoboda, G.H. *et al., J. Nat. Prod.*, 1964, **27**, 203-213 (*isol, ir, uv*)

Lochrovidine L-227

[1359-09-7]

$C_{22}H_{26}N_2O_4$ 382.458
Struct. unknown. Alkaloid from *Catharanthus roseus* (Apocynaceae). Prisms (EtOH). Mp 213-218°. $[\alpha]_D^{25}$ -496 (c, 1 in $CHCl_3$). pK_a 5.6 (33% DMF aq.).

Svoboda, G.H. *et al., J. Nat. Prod.*, 1964, **27**, 203-213 (*isol, ir, uv*)

Lochrovine L-228

[1359-10-0]

$C_{23}H_{30}N_2O_3$ 382.502
Struct. unknown. Alkaloid from *Catharanthus roseus* (Apocynaceae). Plates (MeOH). Mp 258-263°.

Svoboda, G.H. *et al., J. Nat. Prod.*, 1964, **27**, 203-213 (*isol, ir, uv*)

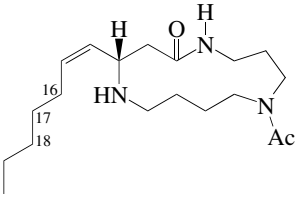
Locoine L-229

Struct. unknown. Presumed to be an alkaloid. Isol. from *Astragalus earlei* (Fabaceae).

Fraps, G.S. *et al., CA*, 1936, **31**, 6807

Loesenerine L-230

9-Acetyl-2-(1-heptenyl)-1,5,9-triazacyclotridecan-4-one, 9CI
[110011-48-8]



$C_{19}H_{35}N_3O_2$ 337.504
The revised abs. config. of Dihydromyricoidine (1996) suggests that the other abs. configs. covered by this entry should also be reversed. Alkaloid from the leaves of *Maytenus loeseneri* (Celastraceae). Cryst. (EtOAc). Mp 117°. $[\alpha]_D^{22}$ +45.4 (c, 0.52 in $CHCl_3$).

17,18Z-Didehydro: ***17,18-Didehydroloesenerine***
[114542-50-6]
$C_{19}H_{33}N_3O_2$ 335.489
Alkaloid from the leaves of *Maytenus loeseneri* (Celastraceae). Cryst. (Me_2CO). Mp 106°. $[\alpha]_D^{22}$ +51.3 (c, 0.52 in $CHCl_3$).

*16,17*E*-Didehydro, 18ξ-hydroxy:* ***16,17-Didehydroloesenerin-18-ol***
[114542-51-7]
$C_{19}H_{33}N_3O_3$ 351.488
Alkaloid from leaves of *Maytenus loeseneri* (Celastraceae). Cryst. (MeOH/Me_2CO). Mp 203-207°. $[\alpha]_D^{22}$ +176.8 (c, 0.39 in $CHCl_3$/EtOH, 19:1).

17,18Z-Didehydro, N*-de-Ac:* ***Myricoidine***
[117611-57-1]
$C_{17}H_{31}N_3O$ 293.451
Trace alkaloid from the whole plant of *Clerodendrum myricoides* (Verbenaceae). Oil. $[\alpha]_D^{22}$ +83 (c, 6 in MeOH).

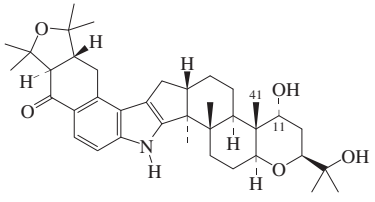
N*-De-Ac:* ***Dihydromyricoidine***
[117611-59-3]
$C_{17}H_{33}N_3O$ 295.467
Trace alkaloid from the whole plant of *Clerodendrum myricoides* (Verbenaceae). Oil. $[\alpha]_D^{22}$ +77 (c, 5.3 in MeOH).

Dáz, M. *et al., Phytochemistry*, 1987, **26**, 1847 (*isol, ir, pmr, cmr, ms, struct*)
Preiss, A. *et al., Phytochemistry*, 1988, **27**, 589 (*isol, uv, ir, pmr, cmr, ms, ord, struct, derivs*)

Bashwira, S. *et al., Tetrahedron*, 1988, **44**, 4521 (*isol, ir, pmr, cmr, ms, struct*)
Häusermann, U.A. *et al., Helv. Chim. Acta*, 1996, **79**, 1995 (*synth, abs config, Dihydromyricoidine*)
Haeusermann, U.A. *et al., Tet. Lett.*, 1998, **39**, 257-260 (*Myricoidine, synth*)

Lolicine A L-231

[201214-57-5]



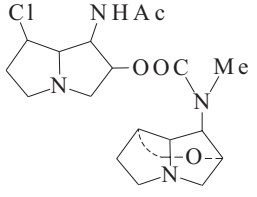
$C_{38}H_{53}NO_5$ 603.84
Isol. from *Lolium perenne* infected with *Neotyphodium lolii* (formerly *Acremonium lolii*). Solid (as 11-propanoyl).

41-Oxo: ***Lolicine B***
[201214-58-6]
$C_{38}H_{51}NO_6$ 617.824
Isol. from *Lolium perenne* infected with *Neotyphodium lolii*. Solid (as 11-propanoyl).

Munday-Finch, S.C. *et al., J. Agric. Food Chem.*, 1998, **46**, 590-598

Lolidine L-232

[60092-32-2]

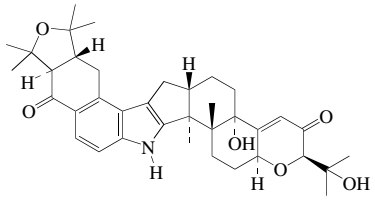


$C_{18}H_{27}ClN_4O_4$ 398.888
Alkaloid from *Lolium cuneatum* (Poaceae). Mp 225-226°. $[\alpha]_D^{20}$ +146 (c, 2.0 in $CHCl_3$).

Batirov, E.Kh. *et al., Khim. Prir. Soedin.*, 1976, **12**, 63; *CA*, **85**, 74883s (*isol, ir, ms, struct*)

Lolilline L-233

[185217-49-6]

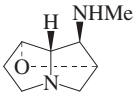


$C_{37}H_{47}NO_6$ 601.781
Alkaloid from the seeds of *Lolium perenne* infected with *Acremonium lolii*. Mycotoxin.

Mundayfinch, S.C. *et al., J. Agric. Food Chem.*, 1997, **45**, 199-204

Loline L-234

*Hexahydro-*N*-methyl-2,4-methano-4*H*-furo[3,2-*b*]pyrrol-3-amine, 9CI. 2,7-Epoxy-1-methylaminopyrrolizidine. Festucine*
[25161-91-5]



Absolute Configuration

$C_8H_{14}N_2O$ 154.211
Alkaloid from the grasses *Lolium cuneatum*, *Lolium temulentum* and *Festuca arundinacea* (Poaceae). Oil. d^{20} 1.13. Bp_{731} 229° Bp_5 103°. n_D^{22} 1.5505. pK_a 2.5.

Hydrochloride (1:2): [25161-92-6]
Needles (EtOH). Mp 256-257° dec. (237-242° dec.). $[\alpha]_D^{15}$ +6.2 (H_2O).

N-*Formyl:* **N-*Formylloline***
[38964-33-9]
$C_9H_{14}N_2O_2$ 182.222
Alkaloid from *Lolium cuneatum* (Poaceae). Cryst. Mp 93-94°. $[\alpha]_D^{20}$ +47.9 (c, 0.73 in $CHCl_3$).

N-*Ac:* ***Lolinine***. N-*Acetylloline*
[4914-36-7]
$C_{10}H_{16}N_2O_2$ 196.249
Mp 73°. $[\alpha]_D^{20}$ +36.9.

N-*Ac,* N-*oxide:* ***Lolinine* N-*oxide***. N-*Acetylloline* N-*oxide*
[61391-09-1]
$C_{10}H_{16}N_2O_3$ 212.248
From *Lolium cuneatum* (Poaceae). Oil. $[\alpha]_D^{20}$ +21.6 (c, 0.9 in MeOH).

N-*Me:* **N-*Methylloline***
[22143-50-6]
$C_9H_{16}N_2O$ 168.238
Alkaloid from *Lolium cuneatum* (Poaceae). Oil. d^{20} 1.02. Bp_2 90-91°. $[\alpha]_D^{31}$ +9.31 (c, 9.5 in MeOH). $[\alpha]_D^{20}$ +13.7 (c, 2.44 in Me_2CO). n_D^{22} 1.4968.

N-*Me; hydrochloride (1:2):* Mp 246-247°.

N-*De-Me:* ***Norloline***. N-*Depropionyldecorticasine*
[4839-19-4]
$C_7H_{12}N_2O$ 140.185
Alkaloid from *Lolium cuneatum* and *Adenocarpus decorticans* (Poaceae, Fabaceae). Bp_5 94-95°. $[\alpha]_D^{16}$ +15.1.

N-*De-Me,* N-*formyl:* **N-*Formylnorloline***
$C_8H_{12}N_2O_2$ 168.195
From *Lolium cuneatum* (Poaceae). Liq. $[\alpha]_D^{20}$ +31.3 (c, 0.96 in Me_2CO).

N-*De-Me,* N-*Ac:* **N-*Acetylnorloline***
[38964-35-1]
$C_9H_{14}N_2O_2$ 182.222
From *Lolium cuneatum* (Poaceae). Oil. $[\alpha]_D^{20}$ +49.8 (c, 2.23 in $CHCl_3$).

N-*De-Me,* N-*Ac; hydrochloride (1:2):* Mp 232-235° dec.

N-*De-Me,* N-*propanoyl:* ***Decorticasine***
[1380-03-6]
$C_{10}H_{16}N_2O_2$ 196.249
Alkaloid from *Adenocarpus decorticans* (Fabaceae).

N-*De-Me,* N-*butanoyl:* **N-*Butyryl*-N-*depropionyldecorticasine***
$C_{11}H_{18}N_2O_2$ 210.275
Alkaloid from *Adenocarpus decorticans* (Fabaceae). Mp 206° dec. (as picrate).

N-*De-Me,* N-*(2-methylpropanoyl):* **N-*Isobutyryl*-N-*depropionyldecorticasine***
$C_{11}H_{18}N_2O_2$ 210.275
Alkaloid from *Adenocarpus decorticans* (Fabaceae). Solid (EtOH). Mp 127°.

N-*De-Me,* N-*(2-methylpropanoyl), picrate:*
Cryst. (EtOH). Mp 241°.

N-*De-Me,* N-*(3-methylbutanoyl):* **N-*Isovaleryl*-N-*depropionyldecorticasine***
$C_{12}H_{20}N_2O_2$ 224.302
Alkaloid from *Adenocarpus decorticans* (Fabaceae). Cryst. (EtOH) (as picrate). Mp 241° dec. (picrate).

5,6-Didehydro, N-*Ac:* **N-*Acetyl-5,6-dehydrololine***. *5,6-Dehydrololinine*
[194205-01-1]
$C_{10}H_{14}N_2O_2$ 194.233
Alkaloid from endophyte-infected *Festuca argentina*.

Akramov, S.T. *et al., Khim. Prir. Soedin.*, 1968, **4**, 298; *Chem. Nat. Compd. (Engl. Transl.)*, 1968, **4**, 252 (*ms*)
Aasen, A.J. *et al., Aust. J. Chem.*, 1969, **22**, 2021 (*ir, pmr*)
Soto, J.P. *et al., CA*, 1970, **73**, 109943 (*Decorticasine*)
Robbins, J.D. *et al., J. Agric. Food Chem.*, 1972, **20**, 1040 (*isol, pmr, ms, derivs*)
Bates, R.B. *et al., Tet. Lett.*, 1972, 1629 (*abs config, cryst struct, bibl*)
Landa-Velon, A. *et al., An. Quim.*, 1974, **70**, 360 (*isol, struct, derivs*)
Batirov, E. *et al., Khim. Prir. Soedin.*, 1976, **12**, 60; 120 (*isol, struct, derivs*)
Wilson, S.R. *et al., J.O.C.*, 1981, **46**, 3887 (*synth*)
Dannhardt, G. *et al., Planta Med.*, 1985, 212 (*isol*)
Tufariello, J.J. *et al., J.O.C.*, 1986, **51**, 3556 (*synth*)
Knoch, F. *et al., Z. Kristallogr.*, 1993, **205**, 346 (*cryst struct*)
Casabuono, A.C. *et al., J. Ethnopharmacol.*, 1997, **57**, 1-9 (*Acetyldehydrololine*)
Blakemore, P.R. *et al., J.C.S. Perkin 1*, 2001, 1831-1845 (*synth*)

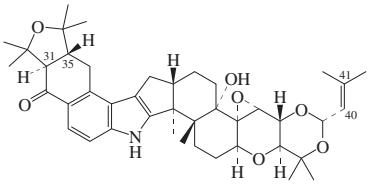
Lolinidine L-235

Struct. unknown. Alkaloid from the seeds of *Lolium cuneatum*. Mp 215-216° (as hydrochloride). Bp_5 85-93°.

Yunusov, S.Y. *et al., Zh. Obshch. Khim.*, 1955, **25**, 1813-1820; *CA*, **50**, 7117d

Lolitrem B L-236

[81771-19-9]



$C_{42}H_{55}NO_7$ 685.899
Isol. from *Lolium perenne* infected with

Neotyphodium lolii (formerly *Acremonium lolii*). Potent neurotoxin affecting cattle. Mycotoxin. Tremorgenic agent. Mp 303-304°. Major component of Lolitrem complex. λ_{max} 267 (ϵ 26800); 290 (ϵ 6700) (MeOH) (Berdy).

40,41-Dihydro: ***Lolitrem C***
[109862-63-7]
$C_{42}H_{57}NO_7$ 687.915
Isol. from *Lolium perenne* infected with *Neotyphodium lolii*. Tremorgenic neurotoxin. Tentative struct.

40,41-Epoxide: ***Lolitrem A***
[162681-78-9 , 162616-65-1]
$C_{42}H_{55}NO_8$ 701.898
Isol. from *Lolium perenne* infected with *Neotyphodiumlolii*. Amorph. solid. Isol. as a mixt. of C-40 epimers. λ_{max} 262 (ϵ 34000) (MeCN).

31-Epimer: ***31-Epilolitrem B***
$C_{42}H_{55}NO_7$ 685.899
Isol. from *Lolium perenne* infected with *Neotyphodium lolii*.

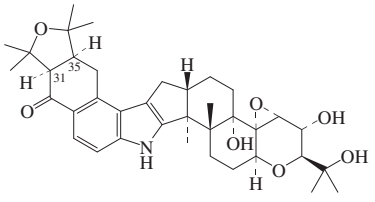
35-Epimer: ***Lolitrem F***
[179464-12-1]
$C_{42}H_{55}NO_7$ 685.899
Isol. from *Lolium perenne* infected with *Neotyphodium lolii*. Mycotoxin. Tremorgenic agent. Neurotoxin. Amorph. solid. λ_{max} 265 (MeOH) (Berdy).

31,35-Diepimer: ***31-Epilolitrem F***
$C_{42}H_{55}NO_7$ 685.899
Isol. from *Lolium perenne* infected with *Neotyphodium lolii*.

Gallagher, R.T. *et al., Chem. Comm.*, 1984, 614-616 (*isol, struct, pmr, cmr, props*)
Gallagher, R.T. *et al., J. Chromatogr.*, 1985, **322**, 159-167 (*hplc*)
Weedon, C.M. *et al., Phytochemistry*, 1987, **26**, 969-971 (*biosynth*)
Miles, C.O. *et al., J. Agric. Food Chem.*, 1994, **42**, 1488-1492 (*isol, Lolitrem B*)
Munday-Finch, S.C. *et al., J. Agric. Food Chem.*, 1995, **43**, 1283-1288; 1996, **44**, 2782-2788 (*Lolitrem A, Lolitrem F*)
Munday-Finch, S.C. *et al., J. Agric. Food Chem.*, 1998, **46**, 590-598 (*31-Epilolitrem B, 31-Epilolitrem F*)

Lolitrem N L-237

[201214-59-7]



$C_{37}H_{49}NO_7$ 619.797
Isol. from *Lolium perenne* infected with *Neotyphodium lolii* (formerly *Acremonium lolii*).

31-Epimer: ***31-Epilolitrem N***
[201214-60-0]
$C_{37}H_{49}NO_7$ 619.797
Isol. from *Lolium perenne* infected with *Neotyphodium lolii*.

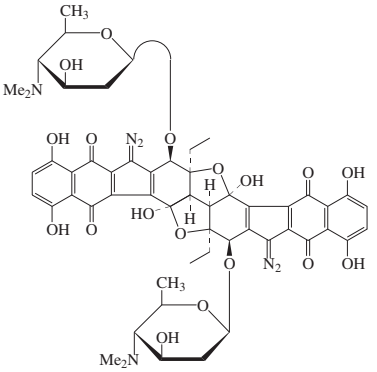
35-Epimer: ***Lolitriol***. *35-Epilolitrem N*
[138605-81-9]
$C_{37}H_{49}NO_7$ 619.797
Isol. from *Lolium perenne* infected with *Neotyphodium lolii*.

35-Epimer, O^{27}-prenyl: ***Lolitrem E***
[155964-95-7]
$C_{42}H_{57}NO_7$ 687.915
Isol. from ryegrass *Lolium perenne* infected with *Acremonium lolii*. Amorph. solid.

Miles, C.O. *et al., J. Agric. Food Chem.*, 1994, **42**, 1488-1492 (*Lolitrem E*)
Munday-Finch, S.C. *et al., J. Agric. Food Chem.*, 1998, **46**, 590-598 (*Lolitrem N, 31-Epilolitrem N, Lolitriol*)

Lomaiviticin B L-238

[349662-91-5]

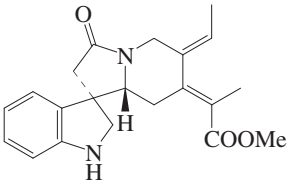


$C_{54}H_{56}N_6O_{18}$ 1077.066
Prod. by the marine-derived *Micromonospora lomaivitiensis* (strain LL-37I366). Potent antitumour agent and active against gram-positive bacteria. Amorph. red powder. $[\alpha]_D$ -71.4 (c, 0.07 in MeOH).

He, H. *et al., J.A.C.S.*, 2001, **123**, 5362-5363 (*isol, pmr, cmr, ms*)

Lombine L-239

[935261-35-1]

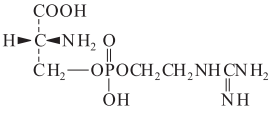


$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from the bark of *Voacanga foetida*.

Hadi, S. *et al., Nat. Prod. Commun.*, 2006, **1**, 825-829 (*isol*)

Lombricine L-240

Serine 2-[(aminoiminomethyl)amino]ethyl hydrogen phosphate (ester), 9CI. O^3-(2-Guanidinoethoxyphosphinicoserine). Lumbricine



(*R*)-*form*

$C_6H_{15}N_4O_6P$ 270.181

(R)-form

D-form
Constit. of *Ophelia bicornis* muscle. Mp 229-230°. $[\alpha]_D^{25.4}$ +14.4 (c, 0.917 in H_2O).

N^{ω}*-Phosphonyl:* ***Phospholombricine***. N-*Phosphoryllombricine. Lombricine phosphate*
[25540-15-2]
$C_6H_{16}N_4O_9P_2$ 350.161
Isol. from *Lumbricus terrestris* and other earthworms. High-energy phosphate regulator.
Characterised as a cryst. $NH_4^{\oplus}$ salt and as other salts.

(S)-form

L-form
[18416-85-8]
Constit. of the body wall muscle of the echiuroid worm *Thalassema neptuni*. Cryst. (EtOH aq.). Mp 233°. $[\alpha]_D^{25}$ -11.3 (c, 0.380 in H_2O). pK_{a1} 2; pK_{a2} 8.9 (20°).

N^2,N^2*-Di-Me:* ***Thalassemine***
[40524-74-1]
$C_8H_{19}N_4O_6P$ 298.235
Constit. of viscera of *Thalassema neptuni*. Cryst. + $1H_2O$ (H_2O). Mp 184°. $[\alpha]_D^{26}$ -11.3 (c, 0.919 in H_2O).

N^2,N^2*-Di-Me,* N^{ω}*-phosphonyl:* ***Phosphothalessemine***
[39667-80-6]
$C_8H_{20}N_4O_9P_2$ 378.215
Constit. of viscera of *Thalassema neptuni*.

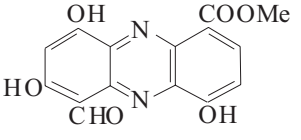
N^2-*L-α-Aspartyl:* N^{α}*-Aspartyllombricine.* ***Bonellidine***
[76848-19-6]
$C_{10}H_{20}N_5O_9P$ 385.27
Isol. from *Bonellia viridis*.

[18555-02-7]

Thoai, N.-V. *et al., Biochim. Biophys. Acta*, 1954, **14**, 76 (*isol*)
Pant, R. *et al., Biochem. J.*, 1959, **73**, 30 (*isol*)
Ennor, A.H. *et al., Biochem. J.*, 1962, **83**, 14 (*Phospholombricine*)
Dubey, S.S. *et al., Indian J. Chem.*, 1963, **1**, 453 (*isol*)
Beatty, I.M. *et al., J.C.S.*, 1965, 12 (*synth, Phospholombricine*)
Thoai, N.-V. *et al., Biochemistry*, 1972, **11**, 3890-3895 (*Thalessemine, Phosphothalessemine*)
Robin, Y. *et al., Oceanis*, 1980, **5**, 575-580; *CA*, **94**, 118125p (*Bonellidine*)
Everby, M.R. *et al., J. Chromatogr.*, 1988, **445**, 433

Lomofungin, USAN L-241

Methyl 6-formyl-4,7,9-trihydroxy-1-phenazinecarboxylate, 9CI. 5-Formyl-4,6,8-trihydroxy-1-methoxycarbonylphenazine. Lomondomycin. NSC 106995. U 24792. Antibiotic U 24792
[26786-84-5]



$C_{15}H_{10}N_2O_6$ 314.254
Isol. from *Streptomyces lomondensis*. Broad-spectrum antibiotic. Sol. bases, Me_2CO, DMF; poorly sol. H_2O, hexane, MeOH, EtOAc. Mp 320°. Log P 3.87 (calc). λ_{max} 219 (ε 25300); 258 (ε 26400); 271 (ε); 284 (ε 35200); 316 (ε 13200); 441 (ε 4550) (MeOH) (Derep). λ_{max} 221 (E1%/1cm 876); 270 (E1%/1cm 1605); 311 (E1%/1cm 434); 375 (E1%/1cm 300); 465 (E1%/1cm 428) (MeOH/HCl) (Berdy). λ_{max} 239 (E1%/1cm 622); 265 (E1%/1cm 1110); 299 (E1%/1cm 900); 342 (E1%/1cm 1113); 478 (E1%/1cm 151) (MeOH/NaOH) (Berdy).

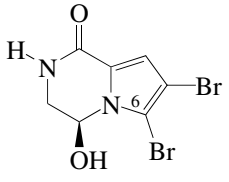
►SG1576500

Tri-Me ether: Mp 215-217°.

Bergy, M.E. *et al., J. Antibiot.*, 1969, **22**, 126 (*isol, uv, ir, pmr, props*)
Tipton, C.D. *et al., J.A.C.S.*, 1970, **92**, 1425 (*struct*)
Haber, A. *et al., CA*, 1978, **89**, 18515u (*nmr*)

Longamide A† L-242

6,7-Dibromo-3,4-dihydro-4-hydroxypyrrolo[1,2-a]pyrazin-1(2H)-one, 9CI



$C_7H_6Br_2N_2O_2$ 309.945

(*S*)-*form* [170891-48-2]
Isol. from the Caribbean sponge *Agelas longissima* and by *Homaxinella* sp. Shows moderate antibacterial activity. Sol. MeOH, butanol. $[\alpha]_D$ +86 (c, 0.001 in MeOH). λ_{max} 209 (ε 16200); 230 (ε 8100); 276 (ε 7700) (MeOH) (Berdy).

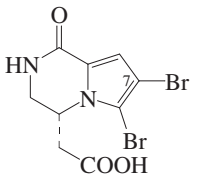
(±)-*form* [219783-00-3]
Alkaloid from the sponge *Homaxinella* sp.

(ξ)-*form*
6-Debromo: 6-Debromolongamide A. ***Mukanadin C***
[203579-34-4]
$C_7H_7BrN_2O_2$ 231.049
Isol. from the sponge *Axinella carteri* and *Agelas nakamurai*. Yellow powder. $[\alpha]_D$ -6 (c, 0.08 in MeOH). Stereochem. not determined for either isolate.

Cafieri, F. *et al., Tet. Lett.*, 1995, **36**, 7893-7896 (*isol, uv, ir, pmr, cmr, cd, struct*)
Li, C.-J. *et al., J. Nat. Prod.*, 1998, **61**, 387-389 (*deriv, isol, pmr, cmr*)
Umeyama, A. *et al., J. Nat. Prod.*, 1998, **61**, 1433-1434 (*isol*)
Uemoto, H. *et al., J. Nat. Prod.*, 1999, **62**, 1581-1583 (*Mukanadin C*)
Marchais, S. *et al., Tet. Lett.*, 1999, **40**, 5519-5522 (*synth*)

Longamide B L-243

6,7-Dibromo-1,2,3,4-tetrahydro-1-oxopyrrolo[1,2-a]pyrazine-4-acetic acid, 9CI



(*R*)-*form*

$C_9H_8Br_2N_2O_3$ 351.982

(*R*)-*form*
Me ester: [219782-99-7]
$C_{10}H_{10}Br_2N_2O_3$ 366.009
Alkaloid from the sponge *Agelas ceylonica*. $[\alpha]_D$ +7 (c, 1 in MeOH).

7-Debromo, Me ester: [335022-79-2]
$C_{10}H_{11}BrN_2O_3$ 287.113
Alkaloid from the sponge *Axinella tenuidigitata*. Solid. $[\alpha]_D^{25}$ +8.2 (c, 0.5 in MeOH). λ_{max} 220 (ε 29600); 244 (ε 12100); 303 (ε 8130) (MeOH).

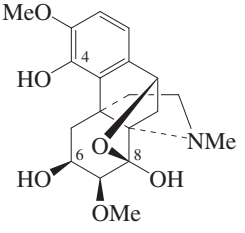
(±)-*form* [200264-70-6]
Isol. from the sponge *Agelas dispar*. Amorph. solid. λ_{max} 210 (ε 12100); 230 (ε 8500); 280 (ε 7700) (MeCN). λ_{max} 210 (ε 12100); 230 (ε 7700); 280 (ε 8500) (MeOH) (Berdy).

Et ester: ***Hanishin***
[196303-62-5]
$C_{11}H_{12}Br_2N_2O_3$ 380.035
Alkaloid from the sponges *Acanthella carteri* and *Homaxinella* sp. Semisolid. λ_{max} 203 (ε 17800); 230 (ε 10000); 280 (ε 6500) (MeOH).

Mancini, I. *et al., Tet. Lett.*, 1997, **38**, 6271-6274 (*Hanishin*)
Cafieri, F. *et al., J. Nat. Prod.*, 1998, **61**, 122-125 (*Hanishin*)
Umeyama, A. *et al., J. Nat. Prod.*, 1998, **61**, 1433-1434 (*Hanishin*)
Reddy, N.S. *et al., Biochem. Syst. Ecol.*, 2000, **28**, 1035-1037 (*Me ester, isol*)
Reddy, N.S. *et al., Indian J. Chem., Sect. B*, 2000, **39**, 971-972 (*7-debromo Me ester*)
Patel, J. *et al., J.O.C.*, 2005, **70**, 9081-9084 (*synth, abs config*)
Trost, B.M. *et al., Org. Lett.*, 2007, **9**, 2357-2359 (*synth*)
Sun, X.-T. *et al., Tet. Lett.*, 2007, **48**, 3459-3461 (*synth*)

Longanine L-244

8,10-Epoxy-3,7-dimethoxy-17-methylhasubanan-4,6,8-triol, 9CI. Longaninine
[78101-26-5]



$C_{19}H_{25}NO_6$ 363.41

Alkaloid from the roots and stems of *Stephania longa* (Menispermaceae). Mp 197-199°.

6-O-E-*Cinnamoyl:* ***Stephalonine D***
[863712-18-9]
$C_{28}H_{31}NO_7$ 493.555
Alkaloid from *Stephania longa*. Powder. $[\alpha]_D^{20}$ -17.9 (c, 0.28 in $CHCl_3$).

O^4-*Me:* ***Stephasunoline***
[52309-77-0]
$C_{20}H_{27}NO_6$ 377.436
Alkaloid from the stems and rhizomes of *Stephania japonica* (Menispermaceae). Cryst. (MeOH). Mp 233°. $[\alpha]_D^{20}$ +121.4 (c, 1.44 in $CHCl_3$).

O^8-*Me:* **N-*Methylstephuline*.** O-*Methylhernandine*
[30660-43-6]
$C_{20}H_{27}NO_6$ 377.436
Alkaloid from *Stephania hernandifolia* and *Stephania longa*. Mp 152-153°. $[\alpha]_D$ +125 (c, 0.4 in EtOH).

O^8-*Me, 6*-O-*(2-methylbutanoyl):* ***Stephalonine A***
[863712-12-3]
$C_{25}H_{35}NO_7$ 461.554
Alkaloid from *Stephania longa*. Powder. $[\alpha]_D^{20}$ +102.8 (c, 0.68 in $CHCl_3$). λ_{max} 225 (log ε 3.69); 285 (log ε 2.97) (MeOH).

O^8-*Me, 6-benzoyl:* ***Stephalonine F***
[863712-22-5]
$C_{27}H_{31}NO_7$ 481.544
Alkaloid from *Stephania longa*. Powder. $[\alpha]_D^{20}$ -11.9 (c, 0.21 in $CHCl_3$). λ_{max} 282 (log ε 3.39) (MeOH).

O^8-*Me, 6*-O-*(4-hydroxy-3-methoxybenzoyl):* ***Stephalonine H***
[863712-26-9]
$C_{28}H_{33}NO_9$ 527.57
Alkaloid from *Stephania longa*. Powder. $[\alpha]_D^{20}$ -100.7 (c, 0.15 in Py). λ_{max} 264 (log ε 3.9); 288 (log ε 3.73) (MeOH).

O^8-*Me, 6*-O-*(3,4-dimethoxybenzoyl):* ***Stephalonine G***
[863712-24-7]
$C_{29}H_{35}NO_9$ 541.597
Alkaloid from *Stephania longa*. Powder. $[\alpha]_D^{20}$ -26.9 (c, 0.3 in $CHCl_3$). λ_{max} 262 (log ε 3.92); 287 (log ε 3.68) (MeOH).

O^8-*Me, 6*-O-E-*cinnamoyl:* ***Stephalonine B***
[863712-14-5]
$C_{29}H_{33}NO_7$ 507.582
Alkaloid from *Stephania longa*. Powder. $[\alpha]_D^{20}$ +7.7 (c, 0.77 in $CHCl_3$). λ_{max} 277 (log ε 4.25) (MeOH).

O^8-*Me,* N-*de-Me:* ***Stephuline***
[30753-39-0]
$C_{19}H_{25}NO_6$ 363.41
Alkaloid from *Stephania longa*. Mp 223-225°. $[\alpha]_D^{32}$ +93 (c, 0.55 in $CHCl_3$).

O^8-*Me,* N-*de-Me, 6*-O-*(4-hydroxy-3-methoxybenzoyl):* ***Stephalonine I***
[863712-28-1]
$C_{27}H_{31}NO_9$ 513.543
Alkaloid from *Stephania longa*. Powder. $[\alpha]_D^{20}$ -18.3 (c, 0.11 in $CHCl_3$). λ_{max} 263 (log ε 3.91); 287 (log ε 3.74)

(MeOH).

O^8-*Me,* N-*de-Me, 6*-O-E-*cinnamoyl:* ***Stephalonine C***
[863712-16-7]
$C_{28}H_{31}NO_7$ 493.555
Alkaloid from *Stephania longa*. Powder. $[\alpha]_D^{20}$ -4.2 (c, 0.12 in MeOH). λ_{max} 277 (log ϵ 4.21) (MeOH).

O^8-*Me,* N-*de-Me, 6*-O-*(3-hydroxy-4-methoxycinnamoyl):* ***Stephisoferuline***. *Hernandifoline*
[30511-63-8]
$C_{29}H_{33}NO_9$ 539.581
Alkaloid from *Stephania hernandifolia* (Menispermaceae). Cryst. ($CHCl_3$/Et_2O). Mp 133-135° ($CHCl_3$ solvate). $[\alpha]_D^{32}$ +48 (c, 0.82 in MeOH). $[\alpha]_D$ -25 (EtOH). Stephisoferuline and Hernandifoline appear to be the same but their opt. rotns. are v. different and comparison of lit. values for Mp's is confused by solvate formn.

O^8-*Me,* O^3-*de-Me,* N-*de-Me, 6*-O-*(3-hydroxy-4-methoxycinnamoyl):* ***O^3-Demethylhernandifoline***
[38940-54-4]
$C_{28}H_{31}NO_9$ 525.554
Alkaloid from *Stephania hernandifolia* (Menispermaceae). Mp 148-149°.

O^4,O^8-*Di-Me, 6-Ac:* ***Dihydroepistephamiersine 6-acetate***
[57361-74-7]
$C_{23}H_{31}NO_7$ 433.5
Alkaloid from *Stephania abyssinica* (Menispermaceae).

O-*De-Me, Me ether (?):* ***Hernandine***†
[32593-70-7]
$C_{19}H_{25}NO_6$ 363.41
Alkaloid from the aerial portion of *Stephania hernandifolia* (Menispermaceae). Mp 197-199°. $[\alpha]_D$ -33 (EtOH). May be identical with Longanine or with its O^7-de-Me, O^8-Me isomer. The C-7 config. was not definitely established. The reported Mp. corresponds to that of Longanine.

6-Ketone, O^8-*Me:* ***Longanone***
[81525-51-1]
$C_{20}H_{25}NO_6$ 375.421
Alkaloid from the roots and stems of *Stephania longa* (Menispermaceae). Mp 161-163°. $[\alpha]_D$ +86.5 ($CHCl_3$).

16-Oxo, O^4-*Me:* ***Oxostephasunoline***
[91897-38-0]
$C_{20}H_{25}NO_7$ 391.42
Alkaloid from *Stephania japonica* roots (Menispermaceae). Prisms (Me_2CO). Mp 217°. $[\alpha]_D^{14}$ +199.36 (c, 0.84 in MeOH).

16-Oxo, O^8-*Me, 6*-O-E-*cinnamoyl:* ***Stephalonine E***
[863712-20-3]
$C_{29}H_{31}NO_8$ 521.566
Alkaloid from *Stephania longa*. Powder. $[\alpha]_D^{20}$ +49.6 (c, 0.11 in $CHCl_3$). λ_{max} 279 (log ϵ 4.25) (MeOH).

1-Nitro, O^8-*Me, 6*-O-*(2*S*-methylbutanoyl):* ***Stephalonine J***
[908568-26-3]
$C_{25}H_{34}N_2O_9$ 506.552
Alkaloid from *Stephania longa*. Yellow powder. $[\alpha]_D^{21}$ +181.2 (c, 0.16 in $CHCl_3$). λ_{max} 285 (log ϵ 3.76) (MeOH).

1-Nitro, O^8-*Me, 6*-O-E-*cinnamoyl:* ***Stephalonine K***
[908568-28-5]
$C_{29}H_{32}N_2O_9$ 552.58
Alkaloid from *Stephania longa*. Yellow powder. $[\alpha]_D^{21}$ +354.6 (c, 0.13 in $CHCl_3$). λ_{max} 277 (log ϵ 4.22) (MeOH).

7-Epimer, 6-ketone, O^8-*Me:* ***Isolonganone***
[863712-34-9]
$C_{20}H_{25}NO_6$ 375.421
Alkaloid from *Stephania longa*. Powder. $[\alpha]_D^{20}$ +57.5 (c, 0.57 in $CHCl_3$). λ_{max} 284 (log ϵ 3.31) (MeOH).

Kupchan, S.M. *et al., Tet. Lett.*, 1970, 4975 (*Stephuline*)

Fedenko, D.A. *et al., Khim. Prir. Soedin.*, 1971, **7**, 158; 180; 455; 1972, **8**, 130; *Chem. Nat. Compd. (Engl. Transl.)*, 1971, **7**, 150; 171; 432; 1972, **8**, 136 (*Hernandine, O-Methylhernandine, Hernandifoline, O-Demethylhernandifoline*)

Matsui, M. *et al., Chem. Pharm. Bull.*, 1975, **23**, 1323 (*Longanine, Stephasunoline, isol, uv, ir, pmr, ms, struct*)

Van Wyk, A.T. *et al., J. S. Afr. Chem. Inst.*, 1975, **28**, 284 (*Dihydroepistephamiersine 6-acetate*)

Lao, A. *et al., Yaoxue Xuebao*, 1980, **15**, 696; 1981, **16**, 940; *CA*, **95**, 49252j; **96**, 196523x (*Longanone*)

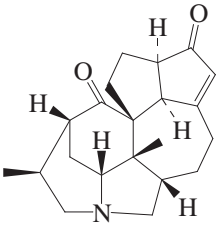
Matsui, M. *et al., J. Nat. Prod.*, 1984, **47**, 465 (*Oxostephasunoline*)

Zhang, H. *et al., J. Nat. Prod.*, 2005, **68**, 1201-1207 (*cmr, Stephalonines, Stephuline, Stephisoferuline, Isolonganone*)

Zhang, H. *et al., Chin. J. Chem.*, 2006, **24**, 781-784 (*Stephalonines J-K*)

Longeracinphylline A L-245

Daphniyunnine C
[881388-89-2]



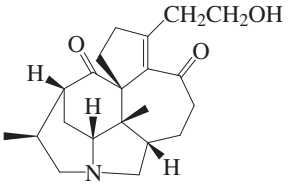
$C_{21}H_{27}NO_2$ 325.45
Alkaloid from the leaves of *Daphniphyllum longeracemosum* and from *Daphniphyllum yunnanense.* Prisms (MeOH) or amorph. powder. Mp 160-162°. $[\alpha]_D^{25}$ -246.2 (c, 0.57 in $CHCl_3$). $[\alpha]_D^{20}$ -147.1 (c, 0.14 in $CHCl_3$). λ_{max} 226 ; 242 ($CHCl_3$). λ_{max} 209 (log ϵ 4.24); 241 (log ϵ 4.02) (MeOH).

Zhang, H. *et al., J. Nat. Prod.*, 2006, **69**, 553-557 (*Daphniyunnine C*)

Di, Y.-T. *et al., J. Nat. Prod.*, 2006, **69**, 1074-1076 (*Logeracinphylline A, cryst struct*)

Longeracinphylline B L-246

Daphniyunnine B
[881388-88-1]



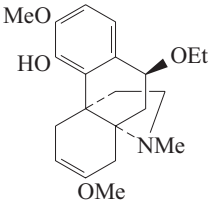
$C_{21}H_{29}NO_3$ 343.465
Alkaloid from the leaves of *Daphniphyllum longeracemosum* and from *Daphniphyllum yunnanense.* Amorph. powder. $[\alpha]_D^{25}$ +89.5 (c, 0.53 in $CHCl_3$). $[\alpha]_D^{20}$ +67 (c, 0.1 in $CHCl_3$). λ_{max} 200 ; 247 ($CHCl_3$). λ_{max} 246 (log ϵ 3.75) (MeOH).

Zhang, H. *et al., J. Nat. Prod.*, 2006, **69**, 553-557 (*Daphniyunnine B*)

Di, Y.-T. *et al., J. Nat. Prod.*, 2006, **69**, 1074-1076 (*Longiracinphylline B*)

Longetherine L-247

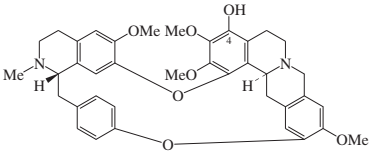
[151271-86-2]



$C_{21}H_{29}NO_4$ 359.464
Alkaloid from *Stephania longa* (Menispermaceae). Needles ($CHCl_3$/petrol). Mp 184-185°. $[\alpha]_D^{22}$ -258 (c, 0.02 in MeOH).

Deng, J.-Z. *et al., Phytochemistry*, 1993, **33**, 941 (*isol, ir, pmr, cmr, cd, ms, struct*)

Longiberine L-248



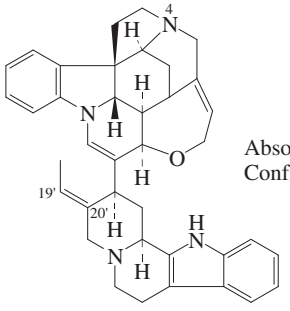
$C_{38}H_{40}N_2O_7$ 636.743
The first natural protoberberine-benzylisoquinoline dimer. Alkaloid from the roots of *Thalictrum longistylum*. Cryst. (MeOH/Et_2O). Mp 169-170°. $[\alpha]_D^{25}$ +43.8 (c, 0.56 in MeOH). λ_{max} 221 (end) (log ϵ 4.77); 240 (sh) (log ϵ 4.42); 283 (log ϵ 4.14) (MeOH).

Me ether: **O-*Methyllongiberine***
$C_{39}H_{42}N_2O_7$ 650.77
Alkaloid from the roots of *Thalictrum longistylum*. Amorph. $[\alpha]_D^{24}$ +31 (c, 0.21 in MeOH). λ_{max} 220 (end) (log ϵ 4.82); 242 (sh) (log ϵ 4.42); 282 (log ϵ 4.01) (MeOH).

Lee, S.-S. *et al., J. Nat. Prod.*, 1999, **62**, 1410-1414

Longicaudatine L-249

[85335-06-4]



Absolute Configuration

$C_{38}H_{40}N_4O$ 568.76
Alkaloid from *Strychnos longicaudata* and a number of other *Strychnos* spp. (Loganiaceae). Mp 350° dec. $[\alpha]_D$ +141 (c, 0.5 in $CHCl_3$).

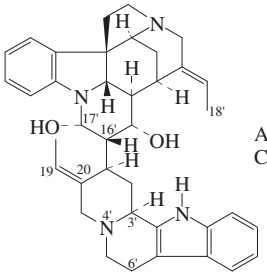
N^4-*Oxide:* ***Longicaudatine* N-*oxide***
[91377-16-1]
$C_{38}H_{40}N_4O_2$ 584.76
Alkaloid from stem bark of *Strychnos chrysophylla* and root bark of *Strychnos matopensis*.

19′,20′β-Dihydro: ***Dihydrolongicaudatine***
[144525-18-8]
$C_{38}H_{42}N_4O$ 570.776
Alkaloid from root bark of *Strychnos potatorum* (Loganiaceae). $[\alpha]_D$ +83 (c, 0.25 in MeOH).

Massiot, G. *et al., Tetrahedron*, 1983, **39**, 3645 (*isol, uv, ir, pmr, cmr, ms, struct*)
Verpoorte, R. *et al., J. Ethnopharmacol.*, 1984, **10**, 243 (*oxide*)
Massiot, G. *et al., Phytochemistry*, 1988, **27**, 3293-3304; 1992, **31**, 2873 (*cmr, Dihydrolongicaudatine*)
Delaude, C. *et al., Bull. Soc. R. Sci. Liege*, 1997, **66**, 183-286 (*occur, Strychnos*)

Longicaudatine Z L-250

[119308-19-9]



Absolute Configuration

$C_{38}H_{44}N_4O_2$ 588.791
Alkaloid from the root bark of *Strychnos matopensis* (Loganiaceae). $[\alpha]_D$ -13 (c, 0.16 in $CHCl_3$).

17′-Deoxy, 16′,17′-didehydro: ***Longicaudatine Y***
[88733-18-0]
$C_{38}H_{42}N_4O$ 570.776
Alkaloid from the root bark and stem bark of *Strychnos longicaudata* and from *Strychnos matopensis* (Loganiaceae). Amorph. $[\alpha]_D$ +328 (c, 0.4 in MeOH). Stereochem. not explicitly assigned but appears homologous with Longicaudatine Z.

17′-Deoxy, 16′,17′-didehydro, 18′-hydroxy: ***Longicaudatine F***
[88733-17-9]
$C_{38}H_{42}N_4O_2$ 586.775
Isol. from the root bark and stem bark of *Strychnos longicaudata* and from *Strychnos matopensis* and *Strychnos minfiensis* (Loganiaceae). Amorph. $[\alpha]_D$ +268 (c, 0.6 in MeOH). Stereochem. not explicitly fully assigned but appears homologous with Longicaudatine Z.

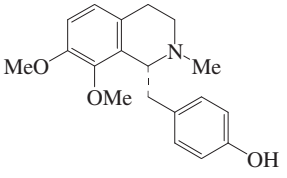
17′-Deoxy, 16′,17′-didehydro, 19,20β-dihydro: ***Dihydrolongicaudatine Y***
[144548-38-9]
$C_{38}H_{44}N_4O$ 572.792
Alkaloid from root bark of *Strychnos potatorum* (Loganiaceae). $[\alpha]_D$ +262 (c, 0.1 in MeOH).

17′-Deoxy, 3′,4′,5′,6′,16′,17′-hexadehydro: ***3′,4′,5′,6′-Tetradehydrolongicaudatine Y***
$C_{38}H_{39}N_4O^{\oplus}$ 567.752
Quaternary alkaloid from *Strychnos usambarensis*.

Massiot, G. *et al., Tetrahedron*, 1983, **39**, 3645-3656 (*Longicaudatine Y*)
Massiot, G. *et al., Phytochemistry*, 1988, **27**, 3293-3304; 1992, **31**, 2873-2876 (*Longicaudatine Z, Dihydrolongicaudatine Y*)
Frederich, M. *et al., Phytochemistry*, 1998, **48**, 1263-1266 (*Tetradehydrolongicaudatine Y*)

Longifolidine L-251

1,2,3,4-Tetrahydro-1-(4-hydroxybenzyl)-7,8-dimethoxy-1-methylisoquinoline



(*R*)-*form*

$C_{19}H_{23}NO_3$ 313.396

(*R*)-*form* [77480-17-2]
Alkaloid from *Cryptocarya longifolia* (Lauraceae). Pale yellow amorph. solid. $[\alpha]_D^{20}$ -72 (c, 0.2 in EtOH).

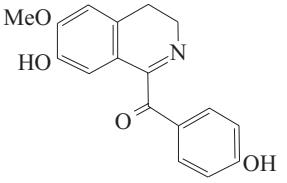
N-*Me:* ***8*-O-*Methyloblongine***
[152230-58-5]
$C_{20}H_{26}NO_3^{\oplus}$ 328.43
Alkaloid from stems of *Litsea cubeba* (mountain pepper). Amorph. solid (as perchlorate). Mp 102° (perchlorate). $[\alpha]_D^{24}$ -12 (c, 1.0 in MeOH).

(±)-*form*
Synthetic. Cryst. (Et_2O). Mp 166-168°.

Grethe, G. *et al., Helv. Chim. Acta*, 1970, **53**, 874 (*synth, uv, ir, pmr, ms*)
Bick, I.R.C. *et al., Aust. J. Chem.*, 1981, **34**, 195 (*isol, uv, ir, pmr, ms, struct*)
Lee, S.S. *et al., J. Nat. Prod.*, 1993, **56**, 1971 (*8-O-Methyloblongine*)

Longifolonine L-252

3,4-Dihydro-7-hydroxy-1-(4-hydroxybenzoyl)-6-methoxyisoquinoline
[77410-37-8]



$C_{17}H_{15}NO_4$ 297.31
Alkaloid from *Cryptocarya longifolia*. Small prisms + 1$CHCl_3$ (MeOH/$CHCl_3$). Mp 143-145°.

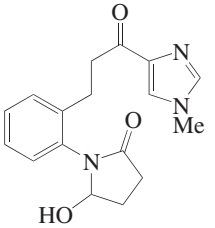
4′-Me ether: ***Velucryptine***
[123825-69-4]
$C_{18}H_{17}NO_4$ 311.337
Alkaloid from leaves of *Cryptocarya velutinosa*.

7-Me ether: ***Nelumstemine***
$C_{18}H_{17}NO_4$ 311.337
Alkaloid from the stems of *Nelumbo nucifera* (East Indian lotus). Orange cryst. (MeOH). Mp 272-273°.

Bick, I.R.C. *et al., Aust. J. Chem.*, 1981, **34**, 195-207 (*Longifolonine, cryst struct*)
Leboeuf, M. *et al., J. Nat. Prod.*, 1989, **52**, 516-521 (*Velucryptine*)
Duan, X.H. *et al., Chin. Chem. Lett.*, 2008, **19**, 308-310 (*Nelumstenine*)

Longistrobine L-253

[23544-51-6]

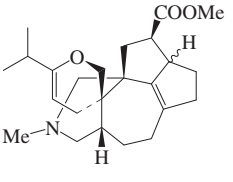


$C_{17}H_{19}N_3O_3$ 313.355
Alkaloid from the aerial parts of *Macrorungia longistrobus* (preferred genus name *Anisotes*) (Acanthaceae). Needles (Me_2CO/hexane). Mp 145-148°. λ_{max} 257 (ε 11300) (EtOH). λ_{max} 235 (ε 14900) (1% HCl/EtOH).

Arndt, R.R. *et al., Tetrahedron*, 1969, **25**, 2767-2799 (*isol, ir, uv, pmr, ms*)
Wuonola, M.A. *et al., Tetrahedron*, 1976, **32**, 1085-1095 (*struct*)

Longistylumphylline B L-254

[857672-35-6]



Relative Configuration

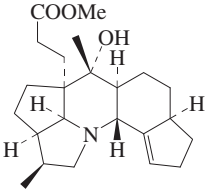
$C_{23}H_{33}NO_3$ 371.519

Alkaloid from *Daphniphyllum longistylum*. Powder. $[\alpha]_D^{20}$ -10 (c, 0.5 in MeOH/$CHCl_3$).

Chen, X. *et al., Helv. Chim. Acta*, 2005, **88**, 854-860 (*isol, pmr, cmr*)

Longistylumphylline C **L-255**

[857672-36-7]



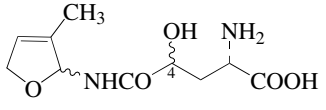
Relative Configuration

$C_{23}H_{35}NO_3$ 373.534
Alkaloid from *Daphniphyllum longistylum*. Oil. $[\alpha]_D^{20}$ +19 (c, 1 in $CHCl_3$).

Chen, X. *et al., Helv. Chim. Acta*, 2005, **88**, 854-860 (*isol, pmr, cmr, ms*)

Longitubanine A **L-256**

N-*(2,5-Dihydro-3-methyl-2-furanyl)-4-hydroxy-L-glutamine, 9CI*
[155416-39-0]



$C_{10}H_{16}N_2O_5$ 244.247
Constit. of the fresh bulbs of *Hemerocallis longituba*. Needles. Mp 178-180°. $[\alpha]_D$ -8.7 (c, 2.5 in H_2O). Similar to Oxypinnatanine.

4-Deoxy: ***Longitubanine B***
[155416-38-9]
$C_{10}H_{16}N_2O_4$ 228.247
Constit. of the fresh bulbs of *Hemerocallis longituba*. Needles. Mp 181-183°. $[\alpha]_D$ -10.5 (c, 1.6 in H_2O).

Yoshikawa, K. *et al., Phytochemistry*, 1994, **35**, 1057-1058 (*isol, pmr, cmr*)

Lophanterine **L-257**

Struct. unknown. MW 352. Alkaloid from the leaves of *Lophanthera lactescens* (Malphigiaceae). Shows febrifugal props. Needles (EtOH aq.). Mp 175-177°. $[\alpha]_D^{24}$ -92.7 (EtOH). Extremely bitter taste.

Hydrochloride:
Glassy prisms (EtOH aq.). Mp 188-189°.

Sulfate:
Prisms. Mp 194-195°.

Ribeiro, O. *et al., An. Assoc. Quim. Bras.*, 1946, **5**, 39-42; *CA*, **41**, 3109

Lophilacrine **L-258**

$C_{14}H_{25}NO_2$ 239.357
Struct. unknown. Approx. MF may be H_{27}. Alkaloid from *Lobelia syphilitica* (Campanulaceae). $Bp_{0.001}$ 117-118°. $[\alpha]_D$ -105 (EtOH).

Hydrochloride:
Needles. Mp 210-211°.

Nitrate:
Needles. Mp 83-84°.

Steinegger, E. *et al., Pharm. Acta Helv.*, 1952, **27**, 113-120; 207-211; 1955, **32**, 205-206; *CA*, **47**, 6954; 12753; **51**, 14202a (*isol*)
Tschesche, R. *et al., Chem. Ber.*, 1961, **94**, 3227-3336 (*Lobelia syphilitica constits*)
Tschesche, R. *et al., Tetrahedron*, 1964, **20**, 2885-2893 (*Lobelia syphilitica constits*)

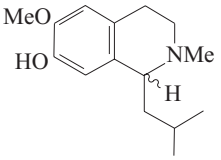
Lophiline **L-259**

$C_{28}H_{36}N_2O_2$ 432.605
Struct. unknown. Approx. MF, may be H_{38} and/or O_3. No further reports to 2007. Later more thorough investigations on this sp. are reported. Alkaloid from *Lobelia syphilitica* (Campanulaceae). Mp 210-211° (as dihydrochloride).

Steinegger, E. *et al., Pharm. Acta Helv.*, 1952, **27**, 113-120; 207-211; 1955, **32**, 205-206 (*isol*)

Lophocerine **L-260**

1,2,3,4-Tetrahydro-6-methoxy-2-methyl-1-(2-methylpropyl)-7-isoquinolinol, 9CI
1,2,3,4-Tetrahydro-7-hydroxy-1-isobutyl-6-methoxy-2-methylisoquinoline
[19485-63-3]



$C_{15}H_{23}NO_2$ 249.352

(ξ)-*form*
Alkaloid from *Lophocereus schottii* (Cactaceae). Oil. $Bp_{0.05}$ 150-225°.

Oxalate:
Prisms (EtOH). Mp 213-214° dec.

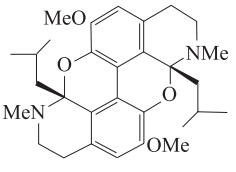
Picrate:
Yellow cryst. (EtOH). Mp 194-195°.

Me ether: $Bp_{0.5}$ 137-139°.

Djerassi, C. *et al., Tetrahedron*, 1958, **2**, 58 (*isol*)
Bobbitt, J.M. *et al., J.O.C.*, 1959, **24**, 1106 (*synth*)
Tomita, M. *et al., Chem. Pharm. Bull.*, 1963, **11**, 1477 (*synth*)
O'Donovan, D.G. *et al., J.C.S. Perkin 1*, 1974, 2528 (*biosynth*)

Lophocine **L-261**

1,2,3,6a,7,8,9,12a-Octahydro-5,11-dimethoxy-1,7-dimethyl-6a,12a-bis(2-methylpropyl)-6,12-dioxa-1,7-diazadibenzo[def,mno]chrysene, 9CI
[74991-76-7]



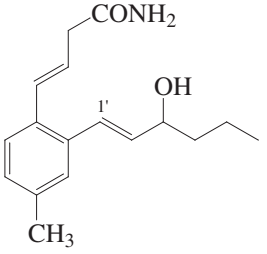
Relative configuration

$C_{30}H_{40}N_2O_4$ 492.657
Alkaloid from *Lophocereus schottii* (Cactaceae). Monoclinic cryst. Mp 194-196°. Racemic. Prob. artifact.

Wani, M.C. *et al., J. Chem. Res., Miniprint*, 1980, 0301 (*isol, uv, ir, pmr, cryst struct*)

Lorneamide A **L-262**

4-[2-(3-Hydroxy-1-hexenyl)-4-methylphenyl]-3-butenamide
[313951-44-9]



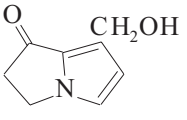
$C_{17}H_{23}NO_2$ 273.374
Alkaloid from a marine actinomycete (MST-MA190). Glass. $[\alpha]_D^{19}$ -7.2 (c, 0.2 in MeOH). λ_{max} 239 (log ϵ 4.09); 263 (log ϵ 3.96) (MeOH).

1′,2′-Dihydro, 3′-ketone: 4-[4-Methyl-2-(3-oxohexyl)phenyl]-3-butenamide. ***Lorneamide B***
[313951-45-0]
$C_{17}H_{23}NO_2$ 273.374
Alkaloid from a marine actinomycete (MST-MA190). Glass. λ_{max} 209 (log ϵ 4); 253 (log ϵ 3.8) (MeOH).

Capon, R.J. *et al., J. Nat. Prod.*, 2000, **63**, 1682-1683 (*Lorneamides A,B*)

Loroquine **L-263**

2,3-Dihydro-7-(hydroxymethyl)-1H-pyrrolizin-1-one, 9CI
[27792-82-1]



$C_8H_9NO_2$ 151.165
Constit. of the roots of *Urechites karwinsky* (preferred genus name *Pentalinon*) (Apocynaceae). Cryst. (cyclohexane). Mp 77-78°.

O-*β-D-Glucopyranoside:* ***Loroquine glucoside***
$C_{14}H_{19}NO_7$ 313.307
Alkaloid from the roots of *Ligularia cymbulifera*. Amorph. solid. $[\alpha]_D^{21}$ -20 (c, 1.3 in MeOH). λ_{max} 289 (log ϵ 1.3) (MeOH).

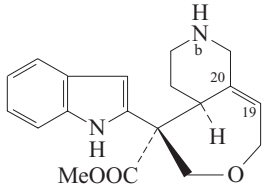
Deoxy: 2,3-Dihydro-7-methyl-1H-pyrrolizin-1-one. ***Danaidone***
[6064-85-3]
C_8H_9NO 135.165
Pheromone from hair-pencil and wing sex gland secretions of butterflies in the genera *Lycorea* and *Danaus* where it arises by metab. of pyrroli-

zidine alkaloids from plants. Mp 74-75°.

Meinwald, J. *et al., J.A.C.S.*, 1966, **88**, 1305-1310 (*Danaidone, isol, uv, ir, pmr, ms, struct, synth*)
Borges del Castillo, J. *et al., Tet. Lett.*, 1970, **11**, 1219-1220 (*Loroquine, isol, uv, ir, pmr, struct*)
Edgar, J.A. *et al., Experientia*, 1971, **27**, 761 (*Danaidone, isol*)
Petty, R.L. *et al., Experientia*, 1977, **33**, 1324 (*Danaidone, isol*)
Komai, H. *et al., Agric. Biol. Chem.*, 1983, **47**, 157 (*Danaidone*)
Pereira, A.L. *et al., Quim. Nova*, 1983, **6**, 74 (*Danaidone, synth*)
Röder, E. *et al., Annalen*, 1993, 711-713 (*Loroquine, synth, ir, pmr, cmr, ms*)
Liu, C.-M. *et al., Helv. Chim. Acta*, 2008, **91**, 308-316 (*glucoside*)

Losbanine L-264

6,7-Seco-6-norangustilobine B
[126618-33-5]



$C_{19}H_{22}N_2O_3$ 326.394
Alkaloid from the leaves of *Alstonia scholaris* (Apocynaceae). Prisms (MeOH). Mp 108-110°. $[\alpha]_D^{27}$ +191.9 (c, 1.41 in MeOH).

N^b-*Me:* ***6,7-Secoangustilobine B***
[112464-23-0]
$C_{20}H_{24}N_2O_3$ 340.421
Alkaloid from *Alstonia angustiloba, Alstonia congensis* and *Alstonia scholaris* (Apocynaceae). Solid. $[\alpha]_D^{27}$ +232.9 (c, 1.38 in MeOH).

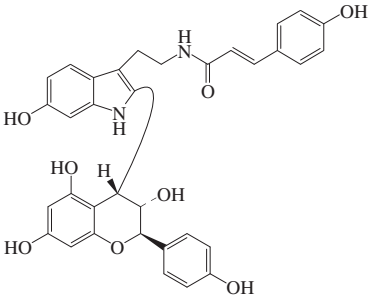
19α,20α-Epoxide: ***Angustilocine***
[740811-98-7]
$C_{19}H_{22}N_2O_4$ 342.394
Alkaloid from the leaves of *Alstonia angustiloba*. Light yellow oil. $[\alpha]_D$ -546 (c, 0.5 in $CHCl_3$). λ_{max} 216 (log ϵ 4.36); 273 (log ϵ 3.79); 282 (log ϵ 3.77); 291 (log ϵ 3.62) (EtOH).

19α,20α-Epoxide, N^b*-Me:* ***6,7-Seco-19,20-epoxyangustilobine***
[112448-51-8]
$C_{20}H_{24}N_2O_4$ 356.421
Alkaloid from the leaves of *Alstonia scholaris* (Apocynaceae). Amorph. solid. $[\alpha]_D^{29}$ +73.6 (c, 1.25 in MeOH).

Zeches, M. *et al., J. Nat. Prod.*, 1987, **50**, 714-720 (*6,7-Secoangustilobine B*)
Caron, C. *et al., Phytochemistry*, 1989, **28**, 1241-1244 (*6,7-Secoangustilobine B*)
Yamauchi, T. *et al., Phytochemistry*, 1990, **29**, 3221-3225; 3547-3352 (*Alstonia scholaris constits*)
Kam, T.-S. *et al., Helv. Chim. Acta*, 2004, **87**, 366-369 (*Angustilocine*)

Lotthanongine L-265

Afzelechin-(4β →2″)-N-*(*p-*coumaroyl)-6″-hydroxytryptamine*
[444588-55-0]

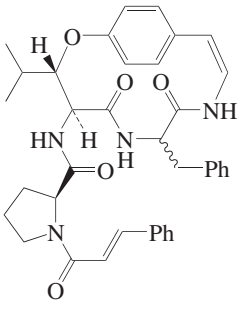


$C_{34}H_{30}N_2O_8$ 594.62
Flavanoid-indole alkaloid. Alkaloid from the roots of *Trigonostemon reidioides*. Amorph. powder. $[\alpha]_D^{15}$ +106 (c, 0.8 in MeOH).

Kanchanapoom, T. *et al., Tet. Lett.*, 2002, **43**, 2941-2943 (*isol, pmr, cmr*)

Lotusanine B L-266

[164366-87-4]

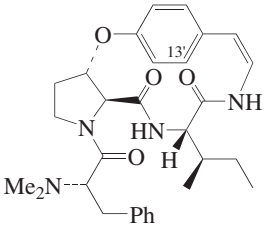


$C_{37}H_{40}N_4O_5$ 620.747
Stereochem. uncertain. CAS assigns the abs. stereochem. shown, though there is no published evidence for this. Stated by the authors to be racemic, but with no evidence cited. Alkaloid from aerial parts of *Zizyphus lotus* (Rhamnaceae). Amorph. solid. λ_{max} 280 (log ϵ 3.12) (MeOH).

Abu-Zarga, M. *et al., J. Nat. Prod.*, 1995, **58**, 504-511 (*isol, uv, ir, pmr, cmr, ms, struct*)

Lotusine A L-267

[149377-30-0]



$C_{30}H_{38}N_4O_4$ 518.655
Alkaloid from roots of *Paliurus ramosissimus* and root bark of *Zizyphus lotus* (Rhamnaceae). $[\alpha]_D$ -215 (c, 1.0 in $CHCl_3$). λ_{max} 208 ; 250 (sh) (MeOH).

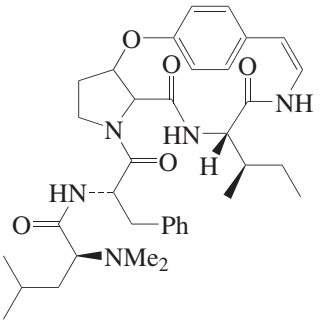
N-*De-Me:* ***Lotusine D***
[149355-66-8]
$C_{29}H_{36}N_4O_4$ 504.628
Alkaloid from roots of *Paliurus ramosissimus* and root bark of *Zizyphus lotus* (Rhamnaceae). $[\alpha]_D$ -187 (c, 0.5 in $CHCl_3$).

13′-Hydroxy: ***Ramosine C***
[530092-41-2]
$C_{30}H_{38}N_4O_5$ 534.654
Constit. of the roots of *Paliurus ramosissimus*. $[\alpha]_D^{26}$ -39 (c, 1 in MeOH). λ_{max} 218 (log ϵ 4.75); 285 (log ϵ 3.98) (MeOH).

Ghedira, K. *et al., Phytochemistry*, 1993, **32**, 1591-1594 (*isol, uv, ir, pmr, cmr, ms, struct*)
Lin, H.-Y. *et al., Helv. Chim. Acta*, 2003, **86**, 127-138 (*Ramosine C*)

Lotusine B L-268

[163136-12-7]

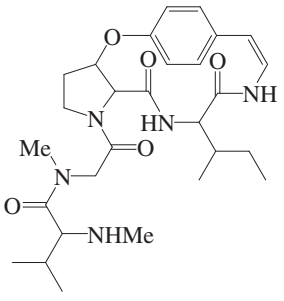


$C_{36}H_{49}N_5O_5$ 631.814
Alkaloid from root bark of *Zizyphus lotus* (Rhamnaceae). $[\alpha]_D$ -179 (c, 0.32 in $CHCl_3$). λ_{max} 207 ; 245 (sh) (MeOH).

Ghedira, K. *et al., Phytochemistry*, 1995, **38**, 767-772 (*isol, uv, ir, pmr, cmr, ms, struct*)

Lotusine C L-269

[163136-14-9]



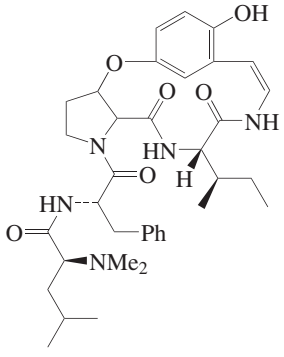
$C_{35}H_{47}N_5O_5$ 617.787
Alkaloid from root bark of *Zizyphus*

lotus (Rhamnaceae). $[\alpha]_D$ -168 (c, 0.5 in $CHCl_3$). λ_{max} 204 (MeOH).

Ghedira, K. *et al., Phytochemistry*, 1995, **38**, 767 (*isol, uv, ir, pmr, cmr, ms, struct*)

Lotusine E L-270

[163136-13-8]

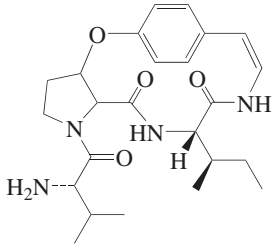


$C_{36}H_{49}N_5O_6$ 647.813
Alkaloid from root bark of *Zizyphus lotus* (Rhamnaceae). $[\alpha]_D$ -106 (c, 1.0 in $CHCl_3$). λ_{max} 206 ; 268 ; 323 (MeOH).

Ghedira, K. *et al., Phytochemistry*, 1995, **38**, 767-772 (*isol, uv, ir, pmr, cmr, ms, struct*)

Lotusine G L-271

[446035-33-2]

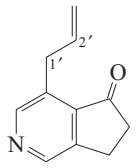


$C_{24}H_{34}N_4O_4$ 442.557
Alkaloid from the root bark of *Zizyphus lotus*. $[\alpha]_D$ -142.7 (c, 0.5 in $CHCl_3$). λ_{max} 229 (MeOH).

Le Crouéour, G. *et al., Fitoterapia*, 2002, **73**, 63-68 (*isol, pmr, cmr, ms*)

Louisianin C L-272

*6,7-Dihydro-4-(2-propenyl)-5*H*-cyclopenta[c]pyridin-5-one, 9CI. 4-Allyl-6,7-dihydro-5*H*-2-pyrindin-5-one*
[171784-05-7]



$C_{11}H_{11}NO$ 173.214
Prod. by *Streptomyces* sp. WK-4028. Antiandrogen. Angiogenesis inhibitor. Antihormone agent. Inhibits growth of SC 115 cells. Dark brown oil. Sol. MeOH, EtOAc; poorly sol. H_2O. λ_{max} 205 (ϵ 9600); 231 (ϵ 3720); 296 (ϵ 2140) (MeOH) (Berdy).

*$\Delta^{1'}$-Isomer(*E*)-:* ***Louisianin D***
[171784-06-8]
$C_{11}H_{11}NO$ 173.214
Prod. by *Streptomyces* sp. WK-4028. Antiandrogen. Angiogenesis inhibitor. Antihormone agent. Inhibits growth of SC 115 cells. Plates. Sol. MeOH, EtOAc; poorly sol. H_2O. Mp 165-169°. λ_{max} 203 (ϵ 5500); 219 (ϵ 4400); 240 (ϵ 3100); 262 (ϵ 2880); 267 (ϵ 2680); 324 (ϵ 2050) (MeOH) (Berdy).

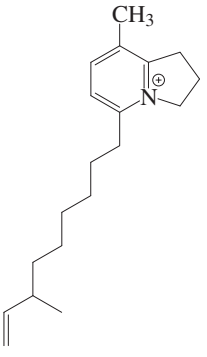
*1′ξ-Hydroxy, 2′,3′-dihydro: 6,7-Dihydro-4-(1-hydroxypropyl)-5*H*-2-pyrindin-5-one.* ***Ulupyrinone***
$C_{11}H_{13}NO_2$ 191.229
Prod. by *Streptomyces spina*. Yellow oil. Photolabile. λ_{max} 204 (log ϵ 3.71); 230 (sh) ; 294 (log ϵ 3.12) (MeOH).

1-Hydroxy: ***Louisianin A***
[171784-03-5]
$C_{11}H_{11}NO_2$ 189.213
Prod. by *Streptomyces* sp. WK-4028. Antiandrogen. Angiogenesis inhibitor. Antihormone agent. Inhibits growth of SC 115 cells. Needles. Sol. MeOH, EtOAc; poorly sol. H_2O. Mp 189-191°. λ_{max} 222 (ϵ 17000); 346 (ϵ 5500) (MeOH) (Berdy).

1-Hydroxy, 5ξ-alcohol: ***Louisianin B***
[171784-04-6]
$C_{11}H_{13}NO_2$ 191.229
Prod. by *Streptomyces* sp. WK-4028. Antiandrogen. Angiogenesis inhibitor. Antihormone agent. Inhibits growth of SC 115 cells. Plates. Sol. MeOH, EtOAc; poorly sol. H_2O. Mp 168-170°. λ_{max} 205 (ϵ 11450); 235 (ϵ 4300); 301 (ϵ 3470) (MeOH) (Berdy).

Komiyama, K. *et al., J. Antibiot.*, 1995, **48**, 1086-1089; 1090-1094 (*Louisianins A-D, isol, pmr, cmr, props*)
Henne, P. *et al., Liebigs Ann./Recl.*, 1997, 937-939 (*Ulupyrinone*)
Beierle, J.M. *et al., J.O.C.*, 2003, **68**, 4970-4972 (*synth*)
Chang, C.-Y. *et al., J.O.C.*, 2006, **71**, 6302-6304 (*Louisianin A, synth*)
Chen, H.-W. *et al., Org. Lett.*, 2006, **8**, 3033-3035 (*synth*)
Catozzi, N. *et al., Tet. Lett.*, 2008, **49**, 2865-2868 (*synth*)

Louludinium(1+) L-273



$C_{19}H_{30}N^{\oplus}$ 272.453

Isol. from the blue-green alga *Lyngbya gracilis*. Cryst. (as chloride). $[\alpha]_D^{23}$ +97 (c, 0.6 in MeOH). Mp. >300° dec. (chloride). λ_{max} 204 (ϵ 1700); 218 (ϵ 1200); 278 (ϵ 800) (MeOH).

Yoshida, W.Y. *et al., Heterocycles*, 1998, **47**, 1023-1027 (*isol, uv, ir, pmr, cmr*)

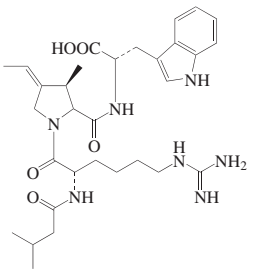
Loveraine L-274

$C_{31}H_{47}NO_{11}$ 609.712
Steroidal ester alkaloid. Struct. unknown. Alkaloid from roots of *Veratrum lobelianum* (Liliaceae). Mp 181-184°. $[\alpha]_D^{20}$ -17.3 (c, 0.46 in $CHCl_3$).

Starostenko, A.G. *et al., Biol. Nauki (Moscow)*, 1969, 89-91; *CA*, **71**, 109768y

Lucentamycin B L-275

[949009-87-4]

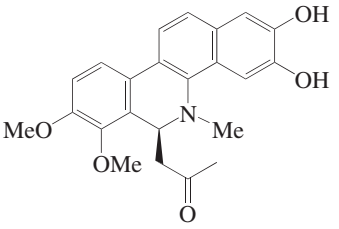


Absolute Configuration

$C_{31}H_{45}N_7O_5$ 595.74
Prod. by *Nocardiopsis lucentensis* (strain CNR-712). Cytotoxic. Yellow oil. $[\alpha]_D^{25}$ -15 (c, 0.1 in MeOH). λ_{max} 206 (log ϵ 4.1); 209 (log ϵ 3.9); 282 (log ϵ 3) (MeOH).

Cho, J.Y *et al., J. Nat. Prod.*, 2007, **70**, 1321-1328 (*isol, pmr, cmr*)

Lucidamine A L-276



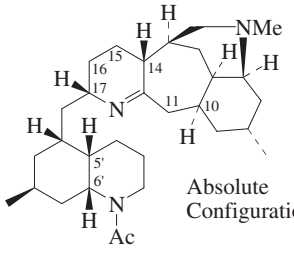
$C_{23}H_{23}NO_5$ 393.438

(S)-form [956012-27-4]
Alkaloid from the stem bark of *Garcinia lucida*. Yellowish powder (hexane/EtOAc). Mp 212°. $[\alpha]_D^{25}$ -133 (c, 0.2 in DMSO). Lucidamine B also obt. by semisynthesis from Lucidamine A. λ_{max} 286 (log ϵ 2.22); 326 (log ϵ 0.71) (DMSO).

Fotie, J. *et al., J. Nat. Prod.*, 2007, **70**, 1650-1653 (*isol, pmr, cmr, ms*)

Lucidine B L-277

Serratanine A
[71384-23-1]



Absolute Configuration

$C_{30}H_{49}N_3O$ 467.737

The previously isolated Serratanine was a mixt. of Lucidine B and Oxolucidine B. Alkaloid from *Lycopodium lucidulum* and *Lycopodium serratum* (Lycopodiaceae). Noncryst.

14β-Hydroxy: ***Oxolucidine B****. Serratanine B*
[71384-25-3]
$C_{30}H_{49}N_3O_2$ 483.736
Alkaloid from *Lycopodium lucidulum* and *Lycopodium serratum*. Also obt. by air oxidn. of Lucidine B (Lycopodiaceae). Cryst. (Me_2CO/EtOAc)(as perchlorate). Mp 259-262° dec. (perchlorate). $[\alpha]_D^{21}$ -30.7 (c, 0.55 in $CHCl_3$).

14,15,16,17-Tetradehydro: ***Dihydrolycolucine***
[71384-29-7]
$C_{30}H_{45}N_3O$ 463.705
Alkaloid from *Lycopodium lucidulum* (Lycopodiaceae).

10,11,14,15,16,17-Hexadehydro: ***Lycolucine***
[71384-28-6]
$C_{30}H_{43}N_3O$ 461.689
Alkaloid from *Lycopodium lucidulum* (Lycopodiaceae). Mp 198-200°.

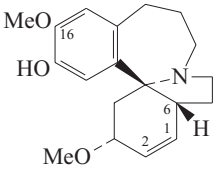
6′,17-Diepimer: ***Lucidine A***
[72254-08-1]
$C_{30}H_{49}N_3O$ 467.737
Alkaloid from *Lycopodium lucidulum*. C-14 config. not determined.

6′,17-Diepimer, 14β-hydroxy: ***Oxolucidine A***
$C_{30}H_{49}N_3O_2$ 483.736
Alkaloid from *Lycopodium lucidulum*. $[\alpha]_D^{21}$ -29.1 (c, 0.74 in $CHCl_3$).

Ayer, W.A. *et al., Can. J. Chem.*, 1979, **57**, 1105; 1984, **62**, 298 (*isol, cryst struct, stereochem*)
Inubushi, Y. *et al., Yakugaku Zasshi*, 1980, **100**, 672 (*isol, ir, pmr, ms, struct*)
Tori, M. *et al., Phytochemistry*, 2000, **53**, 503-509 (*isol, pmr, cmr, cryst struct*)

Lucidinine L-278

[95014-14-5]



$C_{19}H_{25}NO_3$ 315.411

Config. at C-6 revised in 1988. Trace alkaloid from the leaves of *Phelline lucida* (Phellinaceae). $[\alpha]_D$ +73 (c, 1.03 in $CHCl_3$).

Me ether: 6,7-Dihydrohomoerysotrine. ***Comosidine****. Alkaloid 2*
[31689-98-2]
$C_{20}H_{27}NO_3$ 329.438
Alkaloid from the leaves of *Phelline comosa* and *Phelline lucida* (Phellinaceae). Amorph. Mp 143-145° (as picrate). $[\alpha]_D$ +72 (c, 0.7 in $CHCl_3$).

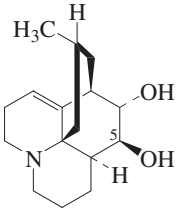
Me ether, O^{16}*-de-Me:* ***Isolucidinine***
[128508-55-4]
$C_{19}H_{25}NO_3$ 315.411
Trace alkaloid from leaves of *Phelline comosa* var. *robusta* (Phellinaceae). Tentative, struct., not obt. pure.

1,2-Dihydro, Me ether: ***1,2-Dihydrocomosidine***
[99664-95-6]
$C_{20}H_{29}NO_3$ 331.454
Trace alkaloid from the leaves of *Phelline lucida* (Phellinaceae).

Langlois, N. *et al., Bull. Soc. Chim. Fr.*, 1970, 3535 (*isol, uv, pmr, ir, ms, struct, deriv*)
Langlois, N. *et al., Heterocycles*, 1984, **22**, 2453; 1990, **30**, 659 (*uv, cd, ir, pmr, ms, Isolucidinine*)
Razafimbelo, J. *et al., C. R. Hebd. Seances Acad. Sci. Ser. 2*, 1985, **301**, 519 (*1,2-Dihydrocomosidine*)
Langlois, N. *et al., J. Nat. Prod.*, 1988, **51**, 499 (*config*)

Lucidioline L-279

[22594-91-8]



Absolute Configuration

$C_{16}H_{25}NO_2$ 263.379

Alkaloid from *Lycopodium lucidulum, Lycopodium clavatum* var. *megastachyon, Lycopodium gnidioides* and *Lycopodium ophioglossoides* (Lycopodiaceae). Mp 230-233°.

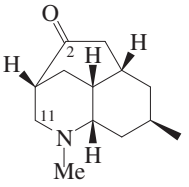
Perchlorate:
Cryst. (MeOH). Mp 238-240° dec.

5-Ketone: ***Lycoposerramine K***
[677723-12-5]
$C_{16}H_{23}NO_2$ 261.363
Alkaloid from *Lycopodium serratum*. Amorph. powder.

Ayer, W.A. *et al., Can. J. Chem.*, 1962, **40**, 2088-2100; 1969, **47**, 449-455; 499-502 (*isol, ir, pmr, ms, struct*)
Nyembo, L. *et al., Bull. Soc. Chim. Belg.*, 1976, **85**, 595-604; *CA*, **86**, 90108u (*isol*)
Zhou, B.-N. *et al., Phytochemistry*, 1993, **34**, 1425-1428 (*pmr, cmr*)
Takayama, H. *et al., Chem. Pharm. Bull.*, 2003, **51**, 1163-1169 (*Lycoposerramine K*)

Luciduline L-280

Alkaloid L21
[21041-42-9]
[38142-93-7 ((±)-form), 240132-32-5]



(+)-*form*

$C_{13}H_{21}NO$ 207.315

Alkaloid from *Lycopodium lucidulum* and *Huperzia miyoshiana*. Liq. $[\alpha]_D$ +10 (c, 0.28 in EtOH).

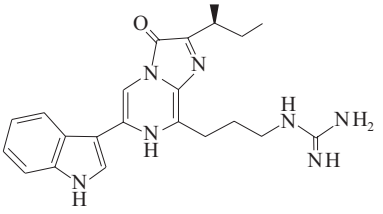
2α-Alcohol: ***Dihydroluciduline***
[21041-43-0]
$C_{13}H_{23}NO$ 209.331
Alkaloid from *Lycopodium lucidulum* and *Huperzia miyoshiana*. Mp 65-70°.

11-Oxo: ***Lucidulinone***
[21030-40-0]
$C_{13}H_{19}NO_2$ 221.299
Alkaloid from *Lycopodium lucidulum*. $[\alpha]_D^{21}$ +185 (c, 1.1 in $CHCl_3$).

Ayer, W.A. *et al., Can. J. Chem.*, 1968, **46**, 3631-3642 (*Luciduline, Dihydroluciduline, isol, ir, ord, pmr, ms, cryst struct*)
Scott, W.L. *et al., J.A.C.S.*, 1972, **94**, 4779 (*synth*)
Hall, D. *et al., Cryst. Struct. Commun.*, 1973, **2**, 271-273 (*Dihydroluciduline, cryst struct*)
Oppolzer, W. *et al., Helv. Chim. Acta*, 1978, **61**, 2755 (*synth, ir, pmr, ms*)
Szychowski, J. *et al., Can. J. Chem.*, 1979, **57**, 1631-1637 (*synth*)
Schumann, D. *et al., Annalen*, 1984, 1519-1528 (*synth*)
MacLean, D.B. *et al., Alkaloids (Academic Press)*, 1985, **26**, 241-298 (*rev*)
Comins, D.L. *et al., Org. Lett.*, 1999, **1**, 229-231 (*synth*)
Tori, M. *et al., Phytochemistry*, 2000, **53**, 503-509 (*Lucidulinone*)
Tong, X. *et al., CA*, 2005, **142**, 435915 (*isol*)

Cypridina Luciferin L-281

Cypridina luciferin
[7273-34-9]



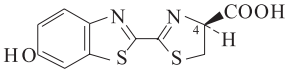
$C_{22}H_{27}N_7O$ 405.502

Isol. from *Cypridina noctiluca* and *Vargula hilgendorfii*. Cryst. (MeOH) (as dihydrobromide). Mp 252-254° (dec.) (dihydrobromide). λ_{max} 218 (ε 27500); 270 (ε 17000); 310 (sh) (ε 11500); 435 (ε 9000) (MeOH aq.) (dihydrobromide). λ_{max} 221 (ε 29000); 243 (sh) (ε 12000); 275 (ε 14500); 307 (ε 20000); 320 (sh) (ε 6000) (MeOH/HBr aq.) (dihydrobromide).

Shimomura, O. *et al., Bull. Chem. Soc. Jpn.*, 1957, **30**, 929-933 (*isol, uv*)
Kishi, Y. *et al., Tet. Lett.*, 1966, 3427-3436; 3437-3444; 3445-3450 (*struct, synth*)
Nakamura, H. *et al., Tet. Lett.*, 2000, **41**, 2185-2188 (*synth*)
Kato, S.-I. *et al., Tetrahedron*, 2004, **60**, 11427-11434 (*biosynth, ms*)
Wu, C. *et al., Tet. Lett.*, 2006, **47**, 753-756 (*synth*)
Teranishi, K. *et al., Bioorg. Chem.*, 2007, **35**, 82-111 (*rev*)
Kato, S. *et al., Heterocycles*, 2007, **72**, 673-676 (*biosynth*)

Photinus Luciferin L-282

4,5-Dihydro-2-(6-hydroxy-2-benzothiazolyl)-4-thiazolecarboxylic acid, 9CI. Firefly luciferin
[20240-21-5]



(*S*)-*form*

$C_{11}H_8N_2O_3S_2$ 280.328

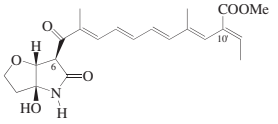
(*S*)-*form*
D-form
[2591-17-5]
Light-producing substance (luciferin) in the firefly *Photinus pyralis*and from *Luciola mingrelica*. Pale yellow cryst. (difficult to crystallise). Mp 204° (196°) dec. $[\alpha]_D^{24}$ -29 (DMF). Unstable to O_2, light and acids.

[103404-75-7]

White, J.D. *et al., J.A.C.S.*, 1963, **85**, 337 (*struct, synth, uv*)
Dennis, D. *et al., Acta Cryst. B*, 1973, **29**, 1053 (*cryst struct*)
Rubin, B.A. *et al., Khim. Prir. Soedin.*, 1974, **10**, 293; *Chem. Nat. Compd. (Engl. Transl.)*, 1974, **10**, 303 (*synth, ms*)
Okada, K. *et al., Chem. Comm.*, 1976, 32 (*biosynth*)
McCapra, F. *et al., Chem. Comm.*, 1976, 153 (*biosynth*)
Orlova, G. *et al., J.A.C.S.*, 2003, **125**, 6962-6971 (*bioluminescence*)

Lucilactaene L-283

[386278-77-9]



Absolute Configuration

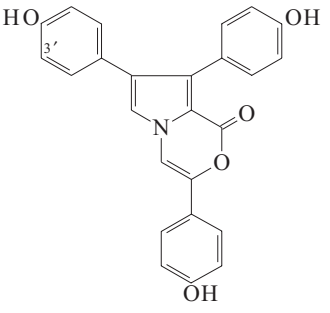
$C_{22}H_{27}NO_6$ 401.458
Similar to Fusarin A, F-226. Prod. by *Fusarium* sp. RK97-94. Cell cycle inhibitor. Pale yellow solid. $[\alpha]_D$ +39.5 (c, 0.1 in MeOH). Readily undergoes racemisation. Isolable nat. prod. is racemic. λ_{max} 273 (ε 8800); 363 (ε 48200) (MeOH).

10′Z-Isomer, 6α-hydroxy: ***Hydroxylucilactaene***
[1001568-32-6]
$C_{22}H_{27}NO_7$ 417.458
Prod. by *Fusarium acuminatum*. Called 13α-Hydroxylucilactaene in the lit.

Kakeya, H. *et al., J. Antibiot.*, 2001, **54**, 850-853 (*isol, pmr, cmr*)
Yamaguchi, J. *et al., Angew. Chem., Int. Ed.*, 2005, **44**, 3110-3115 (*synth, abs config*)
Coleman, R.S. *et al., J.A.C.S.*, 2005, **127**, 16038-16039 (*synth*)
Bashyal, B.P. *et al., Nat. Prod. Commun.*, 2007, **2**, 547-550 (*Hydroxylucilactaene*)

Lukianol A L-284

*3,7,8-Tris(4-hydroxyphenyl)-1*H*-pyrrolo[2,1-c][1,4]oxazin-1-one, 9CI*
[144398-24-3]



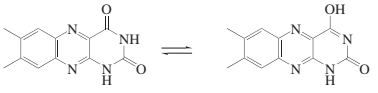
$C_{25}H_{17}NO_5$ 411.413
Isol. from an unidentified tunicate. Cytotoxic; MDR reversing agent. Amorph. powder (MeOH). Mp 264-266°. Mp refers to crystalline synthetic material. λ_{max} 206 (ε 33113); 282 (ε 35481); 344 (ε 14125) (MeOH) (Berdy).

3′-Iodo: ***Lukianol B***
[144398-25-4]
$C_{25}H_{16}INO_5$ 537.31
Minor constit. from the unidentified tunicate. Cytotoxic. Off-white powder (MeOH).

Yoshida, W.Y. *et al., Helv. Chim. Acta*, 1992, **75**, 1721 (*isol, uv, pmr, cmr, struct*)
Fürstner, A. *et al., J.O.C.*, 1995, **60**, 6637 (*synth*)
Banwell, M.G. *et al., Chem. Comm.*, 1997, 207 (*synth*)
Boger, D.L. *et al., J.A.C.S.*, 1999, **121**, 54-62 (*synth*)
Gupton, J.T. *et al., Tetrahedron*, 1999, **55**, 14515-14522 (*synth*)
Liu, J.-H. *et al., J.O.C.*, 2000, **65**, 3587-3595 (*synth, pmr, cmr*)

Lumichrome L-285

*7,8-Dimethylbenzo[g]pteridine-2,4(1*H*,3*H*)-dione, 9CI. 7,8-Dimethylalloxazine*
[1086-80-2]
[809279-55-8 (Isolumichrome)]



$C_{12}H_{10}N_4O_2$ 242.237
The 4-OH tautomer, called Isolumichrome in the lit., appears to be separately isolable. The reported Mp was the same. Irradiation prod. of Riboflavine. Prod. by *Micromonospora* sp. Tü 6368 and *Paecilomyces* sp. J300. Also isol. (as Isolumichrome) from the marine sponge *Cinachyrella australiensis*. Pale yellow cryst. ($CHCl_3$ or AcOH aq.). Spar. sol. H_2O, EtOH, $CHCl_3$. Mp 300° dec. Blue fluor. in soln. λ_{max} 211 (log ε 4.53); 242 (log ε 4.54); 252 (sh) (log ε 4.47); 258 (log ε 4.66); 331 (log ε 3.93); 377 (log ε 3.87) (MeOH).

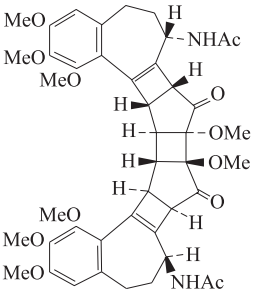
N^1*-α-Ribofuranosyl:* $\mathbf{N^1}$***-α-Ribofuranosyllumichrome***
$C_{17}H_{18}N_4O_6$ 374.352
Prod. by *Micromonospora* sp. Tü 6368. Yellow solid. $[\alpha]_D^{20}$ +319 (c, 0.1 in MeOH). λ_{max} 214 (log ε 4.45); 254 (log ε 4.55); 340 (log ε 3.85) (MeOH). λ_{max} 219 (log ε 4.52); 253 (log ε 4.54); 331 (log ε 3.95); 383 (log ε 3.92) (MeOH/NaOH).

N^1*-Me: 1,7,8-Trimethylbenzo[g]pteridine-2,4(1*H*,3*H*)-dione.* $\mathbf{N^1}$***-Methyllumichrome***
[18950-64-6]
$C_{13}H_{12}N_4O_2$ 256.263
Prod. by *Micromonospora* sp. Tü 6368. Yellow solid. λ_{max} 219 (log ε 4.43); 250 (log ε 4.44); 259 (sh) ; 338 (log ε 3.78); 386 (log ε 3.76) (MeOH).

Aldrich Library of NMR Spectra, 2nd edn., 1983, **2**, 768B (*nmr*)
Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 894D (*ir*)
Karrer, P. *et al., Helv. Chim. Acta*, 1934, **17**, 1010 (*isol*)
Seng, F. *et al., Angew. Chem., Int. Ed.*, 1972, **11**, 1010 (*synth*)
Yoneda, F. *et al., J.A.C.S.*, 1976, **98**, 830 (*synth*)
Villemin, D. *et al., Synth. Commun.*, 1995, **25**, 2319 (*synth, ms*)
Sikorska, E. *et al., Pol. J. Chem. (Rocz. Chem.)*, 2003, **77**, 65-73 (*spectra*)
Kwon, H.C. *et al., Arch. Pharmacal Res.*, 2004, **27**, 604-609 (*isol, uv, pmr, cmr*)
Li, L. *et al., CA*, 2004, **142**, 52432n (*isol, Isolumichrome*)
Antal, N. *et al., J. Antibiot.*, 2005, **58**, 95-102; 103-110 (*isol, pmr, cmr, ribosyl, N-Me*)
Sigma-Aldrich Library of Stains, Dyes and Indicators, 430

α-Lumicolchicine L-286

[7183-82-6]



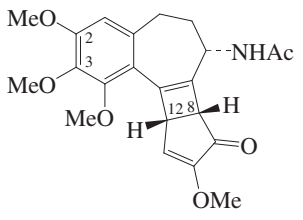
Absolute configuration

$C_{44}H_{50}N_2O_{12}$ 798.885
Product of irradiation of Colchicine, C-569. Possible alkaloid artifact. Mp 165°. $[\alpha]_D$ +81.

Chapman, O.L. *et al., J.A.C.S.*, 1961, **83**, 3916 (*ir, uv, pmr, struct*)

β-Lumicolchicine L-287

Lumicolchicine I. Substance I
[6901-13-9]



$C_{22}H_{25}NO_6$ 399.443

Numbering systems vary. Alkaloid from many *Colchicum* spp. (Liliaceae) and other spp. as photoisom. prod. of Colchicine, C-569. May be a genuine alkaloid. Cryst. (EtOH/Et_2O). Mp 183° Mp 206° (dimorph.).

N-*De-Ac,* N-*formyl:* **N-*Deacetyl*-N-*formyl*-β-*lumicolchicine, 8CI***
[18172-23-1]
$C_{21}H_{23}NO_6$ 385.416
Alkaloid from tubers of *Gloriosa superba* (Liliaceae). Mp 214-215°. $[\alpha]_D^{20}$ +340 (c, 1 in $CHCl_3$).

N-*De-Ac,* N,N-*di-Me:* **N-*Deacetyl*-N,N-*dimethyl*-β-*lumicolchicine***
$C_{22}H_{27}NO_5$ 385.459
Alkaloid from *Colchicum speciosum*. Mp 158-160°. $[\alpha]_D$ +321.

N-*De-Ac,* N-*Me,* N-*(2-hydroxybenzyl):* ***β-Lumispeciosine***
$C_{28}H_{31}NO_6$ 477.556
Alkaloid from *Colchicum speciosum*. Cryst. (Me_2CO). Mp 157-158°. $[\alpha]_D$ +132 ($CHCl_3$). λ_{max} 226 (sh) ; 265 ; 340 .

N-*Me:* **N-*Methyl*-β-*lumicolchicine***
$C_{23}H_{27}NO_6$ 413.469
Alkaloid from *Colchicum speciosum* (Liliaceae). Mp 132-133°. $[\alpha]_D$ +410 ($CHCl_3$).

2-O-*De-Me:* **2-O-*Demethyl*-β-*lumicolchicine***
[18172-24-2]
$C_{21}H_{23}NO_6$ 385.416
Alkaloid from *Colchicum autumnale, Colchicum kesselringii*, *Gloriosa superba* and *Wurmbea* spp. Cryst. (EtOAc). Mp 198-200°. $[\alpha]_D^{20}$ +337 (c, 0.45 in $CHCl_3$). λ_{max} 226 ; 264 ; 344 (MeOH).

3-O-*De-Me:* **3-O-*Demethyl*-β-*lumicolchicine***
[30632-52-1]
$C_{21}H_{23}NO_6$ 385.416
Alkaloid from *Colchicum* spp., *Gloriosa superba* and *Merendera raddeana*. Mp 235°. $[\alpha]_D^{22}$ +316 ($CHCl_3$).

2-O-*De-Me,* N-*de-Ac,* N-*formyl:* **N-*Deacetyl*-N-*formyl*-2-O-*demethyl*-β-*lumicolchicine***
[18172-25-3]
$C_{20}H_{21}NO_6$ 371.389
Alkaloid from *Colchicum decaisnei* and *Gloriosa superba* (Liliaceae). Cryst. (MeOH/EtOAc). Mp 229-230°. $[\alpha]_D$ +240 (c, 0.12 in MeOH). λ_{max} 201 ; 221 ; 266 (MeOH). λ_{max} 201 ; 291 (MeOH/NaOH).

8,12-Diepimer: **γ-*Lumicolchicine***. *Lumicolchicine. Lumicolchicine II. Substance J*
[6901-14-0]
$C_{22}H_{25}NO_6$ 399.443
Alkaloid from *Colchicum* spp., *Merendera* spp. and others, as artifact of illumination of Colchicine, C-569 and poss. as genuine alkaloid (Liliaceae). Cryst. (EtOAc/Et_2O, dioxan or anisole). Mp 268°. $[\alpha]_D^{18}$ -445 (c, 1 in $CHCl_3$). λ_{max} 265 (EtOH) (Berdy).

8,12-Diepimer, N-*de-Ac,* N-*formyl:* **N-*Deacetyl*-N-*formyl*-γ-*lumicolchicine***
[18172-22-0]
$C_{21}H_{23}NO_6$ 385.416
Alkaloid from tubers of *Gloriosa superba* (Liliaceae). Cryst. ($CHCl_3$/MeOH). Mp 255-257°. $[\alpha]_D^{20}$ -451 (c, 1 in $CHCl_3$).

8,12-Diepimer, 2-O-*de-Me:* **2-O-*Demethyl*-γ-*lumicolchicine***. *Alkaloid K13*
[26194-64-9]
$C_{21}H_{23}NO_6$ 385.416
Alkaloid from *Colchicum autumnale*, *Gloriosa superba* and *Merendera raddeana*. Mp 287-288°. $[\alpha]_D$ -420 (c, 0.40 in $CHCl_3$).

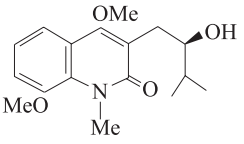
8,12-Diepimer, 3-O-*de-Me:* **3-O-*Demethyl*-γ-*lumicolchicine***. *Alkaloid L6*
[28101-27-1]
$C_{21}H_{23}NO_6$ 385.416
Alkaloid from *Colchicum luteum* (Liliaceae). Mp 291-293°. $[\alpha]_D^{22}$ -410 ($CHCl_3$).

8,12-Diepimer, 2-O-*de-Me,* N-*Me,* 2-O-β-D-*glucopyranoside:* **Colchicum autumnale *Alkaloid M***
[29623-34-5]
$C_{28}H_{35}NO_{11}$ 561.585
Alkaloid from *Colchicum autumnale* (Liliaceae). Mp 310-314°. $[\alpha]_D^{22}$ -310 (c, 0.89 in MeOH aq.).

Grewe, R. *et al., Chem. Ber.*, 1951, **84**, 621-627 (*synth, uv*)
Gardner, P.D. *et al., J.A.C.S.*, 1957, **79**, 6334-6337 (*struct*)
Chapman, O.L. *et al., J.A.C.S.*, 1963, **85**, 803-806; 807-812 (*struct, pmr*)
Canonica, L. *et al., Chim. Ind. (Milan)*, 1967, **49**, 1304-1312; *CA*, **68**, 87424s (*N-Deacetyl-N-formyllumicolchicines*)
Severini Ricca, G. *et al., Gazz. Chim. Ital.*, 1969, **99**, 133-151 (*pmr*)
Canonica, L. *et al., Tet. Lett.*, 1969, 607-608 (*struct*)
Santavy, F. *et al., Coll. Czech. Chem. Comm.*, 1970, **35**, 2857-2860 (*Alkaloid M*)
Chommadov, B.C. *et al., Khim. Prir. Soedin.*, 1970, **6**, 275; *Chem. Nat. Compd. (Engl. Transl.)*, 1970, **6**, 274-275 (*3-O-Demethyl-γ-lumicolchicine, Deacetyldimethyllumicolchicine*)
Turdikulov, K. *et al., Khim. Prir. Soedin.*, 1971, **7**, 541; 1972, **8**, 502-505; *Chem. Nat. Compd. (Engl. Transl.)*, 1971, **7**, 528; 1972, **8**, 494-496 (*2-O-Demethyl-β-lumicolchicine, Alkaloid K13*)
Hrbek, J. *et al., Coll. Czech. Chem. Comm.*, 1982, **47**, 2258-2279 (*cd*)
Meksuriyen, D. *et al., J. Nat. Prod.*, 1988, **51**, 88-93 (*pmr, cmr, β-Lumicolchicine, γ-Lumicolchicine*)
Chommadov, B. *et al., Khim. Prir. Soedin.*, 1990, **26**, 147-165; *Chem. Nat. Compd. (Engl. Transl.)*, 1990, **26**, 113-128 (*N-Methyllumicolchicine*)
Al-Tel, T.H. *et al., Phytochemistry*, 1991, **30**, 3081-3085 (*Deacetylformyldemethyl-β-lumicolchicine*)
Shakirov, R. *et al., Khim. Prir. Soedin.*, 1996, **32**, 615-681; *Chem. Nat. Compd. (Engl. Transl.)*, 1996, **32**, 596-675 (*β-Lumispeciosine*)

Lunacridine L-288

3-(2-Hydroxy-3-methylbutyl)-4,8-dimethoxy-1-methyl-2(1H)-quinolinone, 9CI



(*R*)-*form*

$C_{17}H_{23}NO_4$ 305.373

(*R*)-*form* [83-58-9]
Alkaloid from *Lunasia amara* bark (Rutaceae). Hypotensive agent. Mp 86-87°. $[\alpha]_D^{24}$ +30. Dieterle and Beyl (1937) describe an alkaloid by this name; it was probably Lunamarine, L-290. Low toxicity (LD_{50} =1100 mg/kg in mice).

Perchlorate: Mp 146-148° (solidifies and remelts at 193-195°).

3′-Hydroxy: 3-(2,3-Dihydroxy-3-methylbutyl)-4,8-dimethoxy-1-methyl-2(1H)-quinolinone. ***Balfourolone***. *Hydroxylunacridine*
[478-68-2]
$C_{17}H_{23}NO_5$ 321.372
Artifact arising from ring opening of Balfourodinium, B-14 during isol. Cryst. (CCl_4/hexane). Mp 99-100°. $[\alpha]_D$ -36. Abs. config. revised in 2002.

(*S*)-*form*
Synthetic. Viscous oil. $[\alpha]_D$ -28 (c, 0.84 in MeOH).

(±)-*form*
Mp 72-74°.

(ξ)-*form*

3′,4′-Didehydro: ***Acutifoline***
[145237-07-6]
$C_{17}H_{21}NO_4$ 303.357
Alkaloid from the leaves of *Zanthoxylum petiolare* (Rutaceae). Viscous oil. $[\alpha]_D$ +40 (c, 0.00025 in $CHCl_3$). Source originally misidentified.

3′,4′-Didehydro, O-*hexadecanoyl:* ***Acutifoline palmitate***
[145204-98-4]
$C_{33}H_{51}NO_5$ 541.77
Alkaloid from leaves of *Zanthoxylum petiolare* (Rutaceae). Viscous oil. $[\alpha]_D$ +15 (c, 0.00066 in $CHCl_3$).

3′,4′-Didehydro, N-*de-Me:* ***Acutifolidine***†
[145237-08-7]
$C_{16}H_{19}NO_4$ 289.33
Alkaloid from leaves of *Zanthoxylum petiolare* (Rutaceae). Amorph. solid.

Mp 121-123°. $[\alpha]_D$ +18.6 (c, 0.00053 in $CHCl_3$).

3′,4′-Didehydro, Me ether: **O-*Methylacutifoline***
[145204-97-3]
$C_{18}H_{23}NO_4$ 317.384
Alkaloid from leaves of *Zanthoxylum petiolare* (Rutaceae). Viscous oil. $[\alpha]_D$ -6.4 (c, 0.00156 in $CHCl_3$).

Goodwin, S. *et al., J.A.C.S.*, 1959, **81**, 1908 (*uv, ir, struct*)
Rapoport, H. *et al., J.A.C.S.*, 1959, **81**, 3738 (*Balfourolone*)
Clarke, E.A. *et al., J.C.S.*, 1964, 438 (*synth*)
Bowman, R.M. *et al., J.C.S. Perkin 1*, 1973, 1051 (*config*)
Brown, N.M.D. *et al., Tetrahedron*, 1980, **36**, 3579 (*cmr*)
Arruda, M.S.P. *et al., Phytochemistry*, 1992, **31**, 3617; 1994, **36**, 1303 (*Acutifoline, Acutifoline palmitate, Acutifolidine, O-Methylacutifoline*)
Barr, S.A. *et al., Tetrahedron*, 1994, **50**, 11219 (*synth*)
Anand, R.C. *et al., J. Chem. Res., Synop.*, 1998, 6-7 (*synth, abs config*)
Boyd, D.R. *et al., Chem. Comm.*, 2002, 3070-3071 (*Balfourolone, config*)

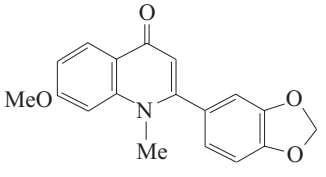
Lunamaridine L-289

$C_{16}H_{15}NO_2$ 253.3
Struct. unknown. Alkaloid from the bark of *Lunasia amara*. Small needles (EtOH aq.). Mp 209-210°.

Steldt, F.A. *et al., J. Am. Pharm. Assoc.*, 1943, **32**, 107-111 (*isol*)

Lunamarine L-290

*7-Methoxy-1-methyl-2-(3,4-methylenedioxyphenyl)-4(1*H*)-quinolinone*



$C_{18}H_{15}NO_4$ 309.321
Alkaloid from *Lunasia amara* (Rutaceae). Hypotensive agent, weak smooth muscle stimulant. Mp 245-246°. Low toxicity in mice.

Steldt, F.A. *et al., J. Am. Pharm. Assoc.*, 1943, **32**, 107; *CA*, **37**, 3562 (*isol*)
Goodwin, S. *et al., J.A.C.S.*, 1959, **81**, 6209 (*isol, ir, uv*)

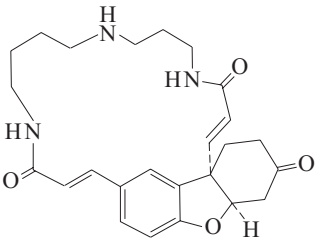
Lunariamine L-291

$C_{24}H_{33}N_3O_4$ 427.542
Prob. spermidine-type alkaloid. Struct. unknown. Minor constit. of the seeds of *Lunaria biennis* and *Lunaria rediviva* (Brassicaceae). Yellow prisms ($CHCl_3$/EtOH). Mp 248° (tube) Mp 253-254° dec Mp 290° (block). $[\alpha]_D^{20}$ 0 (c, 0.37 in AcOH).

Janot, M.-M. *et al., Bull. Soc. Chim. Fr.*, 1956, 1840-1842 (*isol, uv, ir*)
Huneck, S. *et al., Naturwissenschaften*, 1962, **49**, 233 (*isol*)

Lunaridine L-292

[34340-56-2]



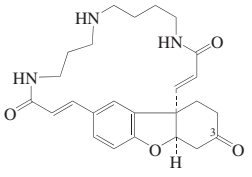
$C_{25}H_{31}N_3O_4$ 437.538
Isomeric with Lunarine, L-293. Alkaloid from the seeds of *Lunaria biennis* (Brassicaceae). Needles. Mp 265° (261°)(block). $[\alpha]_D$ +233 (c, 0.25 in $CHCl_3$).

Hydroiodide:
Cryst. (H_2O). Mp 335° dec.

Janot, M.-M. *et al., Bull. Soc. Chim. Fr.*, 1956, 1840 (*isol, uv, ir*)
Potier, P. *et al., Bull. Soc. Chim. Fr.*, 1959, 456 (*isol, uv*)
Poupat, C. *et al., Tetrahedron*, 1972, **28**, 3103 (*uv, ir, pmr, struct*)
Nagao, Y. *et al., Chem. Comm.*, 1981, 286; *Heterocycles*, 1982, **17**, 537 (*synth*)
Fujita, E. *et al., Pure Appl. Chem.*, 1981, **53**, 1141 (*synth*)

Lunarine L-293

[24185-51-1]



Absolute Configuration

$C_{25}H_{31}N_3O_4$ 437.538
Major alkaloid from the seeds of *Lunaria biennis* and *Lunaria rediviva* (Brassicaceae). Needles (MeOH aq.). Mp 239-240° (block)(232-235°). $[\alpha]_D^{20}$ +291 (c, 1.03 in $CHCl_3$).

Hydrochloride: Mp 340°.

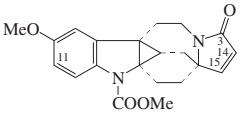
3α-Alcohol: ***Alkaloid LBY****. Lunarinol II. 3-Deoxo-3-hydroxylunarine*
[24185-52-2]
$C_{25}H_{33}N_3O_4$ 439.553
Minor alkaloid from the seeds of *Lunaria biennis* (Brassicaceae). Cryst. + $2H_2O$ (MeOH/Et_2O). Mp 268-273°. $[\alpha]_D^{20}$ +108 (c, 0.43 in EtOH).

[79298-94-5 ((±)-form)]

Janot, M.-M. *et al., Bull. Soc. Chim. Fr.*, 1956, 1840 (*isol, uv, ir*)
Huneck, S. *et al., Naturwissenschaften*, 1962, **49**, 233 (*isol*)
Potier, P. *et al., Tet. Lett.*, 1963, 293 (*uv, pmr, struct*)
Jeffreys, J.A.D. *et al., J.C.S.(B)*, 1970, 826 (*cryst struct*)
Tamura, C. *et al., J.C.S.(B)*, 1970, 991 (*cryst struct*)
Poupat, C. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1971, **273**, 433 (*biosynth*)
Doskotch, R.W. *et al., Experientia*, 1972, **28**, 382-383 (*Alkaloid LBY*)
Poupat, C. *et al., Tetrahedron*, 1972, **28**, 3087-3101 (*Lunarine, Lunarinol II, pmr, struct*)
Fujita, E. *et al., Pure Appl. Chem.*, 1981, **53**, 1141 (*synth*)
Nagao, Y. *et al., Heterocycles*, 1982, **17**, 537 (*synth*)
Sagner, S. *et al., Tet. Lett.*, 1997, **38**, 2443 (*synth*)
Sagner, S. *et al., Phytochemistry*, 1998, **47**, 375-387 (*cd, pmr, cmr, biosynth*)
Hamilton, C.J. *et al., J.C.S. Perkin 1*, 2002, 1115-1123 (*synth*)

Lundurine A L-294

[162616-56-0]



Absolute Configuration

$C_{21}H_{22}N_2O_4$ 366.416
Highly rearranged indole alkaloids prob. most closely related to the Aspidofractine group. Alkaloid from the leaves of *Kopsia tenuis*. Cytotoxic. Oil. $[\alpha]_D$ -90 (c, 0.09 in $CHCl_3$). λ_{max} 208 (log ε 4.71); 250 (log ε 4.34); 298 (log ε 3.8) (EtOH).

3-Deoxo: ***Lundurine B***
[162616-57-1]
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from the leaves of *Kopsia tenuis*. Cytotoxic. Light yellow oil. $[\alpha]_D$ -34 (c, 0.16 in $CHCl_3$). λ_{max} 211 (log ε 4.43); 252 (log ε 4.07); 299 (log ε 3.92) (EtOH).

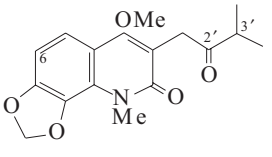
3-Deoxo, 14,15-dihydro: ***Lundurine C***
[162616-58-2]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from the leaves of *Kopsia tenuis*. Light yellow oil. $[\alpha]_D$ -25 (c, 0.067 in $CHCl_3$). λ_{max} 203 (log ε 4.71); 253 (log ε 4.42); 299 (log ε 3.92) (EtOH).

11-Methoxy, 3-deoxo: ***Lundurine D***
$C_{22}H_{26}N_2O_4$ 382.458
Alkaloid from the leaves of *Kopsia tenuis*. Light yellow oil. $[\alpha]_D$ -22 (c, 0.01 in $CHCl_3$). λ_{max} 215 (log ε 4.38); 255 (log ε 3.94); 302 (log ε 3.71) (EtOH).

Kam, T.-S. *et al., Tetrahedron*, 2004, **60**, 10739-10745 (*isol, uv, pmr, cmr, ms*)

Lunidonine L-295

[6899-80-5]



$C_{17}H_{19}NO_5$ 317.341
Alkaloid from the bark of *Lunasia amara* var. *repanda* (Rutaceae). Cryst. (MeOH). Mp 118-119°.

Semicarbazone:
Cryst. (EtOAc). Mp 209-211°.

N-*De-Me:* **N-*Demethyllunidonine***
[55396-51-5]

$C_{16}H_{17}NO_5$ 303.314
Alkaloid from *Orixa japonica* and *Ptelea trifoliata*. Powder. λ_{max} 223 (ϵ 45800); 257 (ϵ 36600); 263 (ϵ 37200); 318 (ϵ 16200) (MeOH).

2′ξ-Alcohol: ***Lunidine***
[6899-79-2]
$C_{17}H_{21}NO_5$ 319.357
Alkaloid from the bark of *Lunasia amara* var. *repanda* (Rutaceae). Cryst. (diisopropyl ether). Mp 65-66.5°. $[\alpha]_D^{20}$ +28 (c, 0.4 in EtOH).

2′ξ-Alcohol, Ac:
Cryst. (hexane/butanone). Mp 111-112°. $[\alpha]_D^{20}$ +85 (c, 0.4 in EtOH).

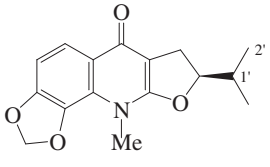
3′-Hydroxy: ***Hydroxylunidonine***
[55812-53-8]
$C_{17}H_{19}NO_6$ 333.34
Alkaloid from *Ptelea trifoliata* (Rutaceae). Cryst. (hexane/EtOAc). Mp 202-205°. λ_{max} 220 ; 265 (sh) ; 317 ; 330 (sh) (MeOH).

6-Methoxy: ***6-Methoxylunidonine***
[55812-54-9]
$C_{18}H_{21}NO_6$ 347.367
Alkaloid from *Ptelea trifoliata* (Rutaceae). Needles (diisopropyl ether). Mp 123-125°.

Rüegger, A. *et al., Helv. Chim. Acta*, 1963, **46**, 2329 (*isol, uv, ir, pmr, ms, struct, Lunidonine, Lunidine*)
Mitscher, L.A. *et al., J. Nat. Prod.*, 1975, **38**, 117 (*6-Methoxylunidonine*)
Reisch, J. *et al., Phytochemistry*, 1975, **14**, 2722-2723 (*Hydroxylunidonine*)
Funayama, S. *et al., Phytochemistry*, 1994, **36**, 525-528; *CA*, **83**, 40169g (*N-Demethyllunidonine*)

Lunine L-296

*7,10-Dihydro-10-methyl-8-(1-methylethyl)-1,3-dioxolo[4,5-*h*]furo[2,3-*b*]quinolin-6(8*H*)-one, 9CI. 3,9-Dihydro-2-isopropyl-7,8-methylenedioxy-9-methylfuro[2,3-*b*]quinolin-4(2*H*)-one*



(*S*)-*form*

$C_{16}H_{17}NO_4$ 287.315

(*S*)-*form* [518-60-5]
Alkaloid from leaves of *Lunasia amara* and other *Lunasia* spp. (Rutaceae). Prisms (EtOAc). Mp 228-229° (222-223°). $[\alpha]_D$ -39 (c, 1.5 in $CHCl_3$).
Hydrochloride: Mp 215-216° dec.

(ξ)-*form*

1′,2′-Didehydro: ***Ptelefolidone***
[58880-21-0]
$C_{16}H_{15}NO_4$ 285.299
Alkaloid from flowers of *Ptelea trifoliata* (Rutaceae). Cryst. (hexane/Me_2CO). Mp 152-154°.

Goodwin, S. *et al., J.A.C.S.*, 1959, **81**, 3065-3069; 6209-6213 (*pmr, struct, ir, uv, isol*)
McKay, M.F. *et al., Acta Cryst. B*, 1969, **25**, 1925-1932 (*cryst struct*)
Reisch, J. *et al., Phytochemistry*, 1975, **14**, 2722-2723 (*Ptelefolidone*)
Hammerum, S. *et al., Acta Chem. Scand., Ser. B*, 1977, **31**, 31-39 (*ms*)

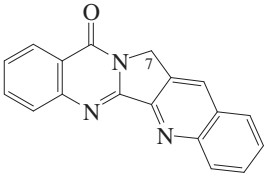
Lunolone L-297

[1359-18-8]
Struct. unknown. Alkaloid from the leaves of *Lunasia amara*. Prisms (EtOAc/pentane). Mp 100-103°. $[\alpha]_D^{23}$ +20.6 (c, 1 in EtOH).

Goodwin, S. *et al., J.A.C.S.*, 1959, **81**, 6209-6213 (*isol*)

Luotonine A L-298

*Quino[2′,3′:3,4]pyrrolo[2,1-*b*]quinazolin-11(13*H*)-one*
[205989-12-4]



$C_{18}H_{11}N_3O$ 285.304
Alkaloid from *Peganum nigellastrum*. Cytotoxic towards P388 cells. Active against human DNA topoisomerase I. Yellow needles ($CHCl_3$/Me_2CO). Mp 281-283° dec. λ_{max} 212 (log ϵ 4.61); 248 (log ϵ 4.71); 298 (log ϵ 4); 326 (sh) (log ϵ 4.18); 341 (log ϵ 4.27); 358 (log ϵ 4.21) (MeOH).

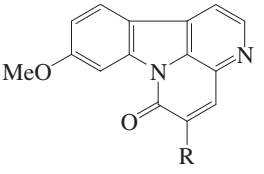
7-Hydroxy: ***Luotonine B***
[205989-13-5]
$C_{18}H_{11}N_3O_2$ 301.304
Alkaloid from *Peganum nigellastrum*. Cytotoxic towards P388 cells. Yellow cryst. Mp 237-240°. Racemic. λ_{max} 212 (log ϵ 4.67); 249 (log ϵ 4.69); 296 (sh) (log ϵ 4.1); 322 (sh) (log ϵ 4.27); 337 (log ϵ 4.32); 352 (log ϵ 4.22) (MeOH).

7-Methoxy: ***Luotonine E***
$C_{19}H_{13}N_3O_2$ 315.331
Alkaloid from *Peganum nigellastrum*. Pale yellow cryst. Mp 222-225°. Racemic. λ_{max} 213 (log ϵ 4.67); 250 (log ϵ 4.66); 301 (log ϵ 4.13); 323 (sh) (log ϵ 4.21); 337 (log ϵ 4.28); 352 (log ϵ 4.18) (MeOH).

Ma, Z.-Z. *et al., Heterocycles*, 1997, **46**, 541-546; 1999, **51**, 1593-1596; 1883-1889 (*Luotonoines A,B,E, isol, uv, ir, pmr, cmr, ms, synth, activity*)
Kelly, T.R. *et al., Tet. Lett.*, 1999, **40**, 2723-2724 (*synth*)
Toyota, M. *et al., Heterocycles*, 2002, **56**, 101-103 (*synth*)
Dallavalle, S. *et al., Tet. Lett.*, 2002, **43**, 1835-1837 (*synth*)
Yadav, J.S. *et al., Tet. Lett.*, 2002, **43**, 1905-1907 (*synth*)
Osborne, D. *et al., Tet. Lett.*, 2002, **43**, 5469-5470 (*synth*)
Cagir, A. *et al., J.A.C.S.*, 2003, **125**, 13628-13629 (*activity*)
Twin, H. *et al., Org. Lett.*, 2004, **6**, 4913-4916 (*synth*)
Chavan, S.P. *et al., Tetrahedron*, 2004, **60**, 9931-9935 (*synth*)
Harayama, T. *et al., Tetrahedron*, 2004, **60**, 10645-10649 (*synth*)
Mhaske, S.B. *et al., Tetrahedron*, 2006, **62**, 9787-9826 (*rev, synth*)
Zhou, H.-B. *et al., J.O.C.*, 2007, **72**, 6270-6272 (*synth*)
Bowman, W.R. *et al., Org. Biomol. Chem.*, 2007, **5**, 103-113 (*synth*)
Mason, J.J. *et al., Org. Biomol. Chem.*, 2007, **5**, 2486-2490 (*synth*)

Luotonine C L-299

9-Methoxy-5-methylcanthin-6-one
[261948-33-8]



R = CH_3

$C_{16}H_{12}N_2O_2$ 264.283
Alkaloid from *Peganum nigellastrum*. Pale yellow needles (Me_2CO). Mp 166-168°. λ_{max} 209 (log ϵ 4.35); 265 (sh) (log ϵ 3.9); 273 (log ϵ 4.02); 308 (log ϵ 3.66); 346 (log ϵ 3.71); 358 (log ϵ 3.7); 376 (sh) (log ϵ 3.47) (MeOH).

Ma, Z.-Z. *et al., Phytochemistry*, 2000, **53**, 1075-1078 (*isol, uv, pmr, cmr*)

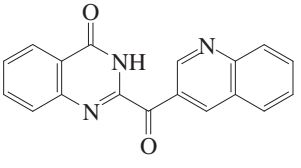
Luotonine D L-300

5-Ethyl-9-methoxycanthin-6-one
[261948-34-9]
As Luotonine C, L-299 with R = CH_2CH_3
$C_{17}H_{14}N_2O_2$ 278.31
Alkaloid from *Peganum nigellastrum*. Pale yellow needles (Me_2CO). Mp 141-143°. λ_{max} 210 (log ϵ 4.36); 266 (sh) (log ϵ 3.92); 273 (log ϵ 4.06); 310 (log ϵ 3.6); 347 (log ϵ 3.76); 358 (log ϵ 3.75); 376 (sh) (log ϵ 3.54) (MeOH).

Ma, Z.-Z. *et al., Phytochemistry*, 2000, **53**, 1075-1078 (*isol, uv, pmr, cmr*)

Luotonine F L-301

[244616-85-1]

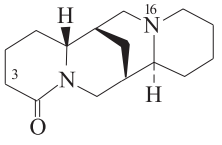


$C_{18}H_{11}N_3O_2$ 301.304
Alkaloid from aerial parts of *Peganum nigellastrum*. Pale yellow needles. Mp 238-240°. λ_{max} 212 (log ϵ 4.4); 255 (log ϵ 3.98); 303 (log ϵ 3.83); 316 (sh) (log ϵ 3.79); 328 (sh) (log ϵ 3.7) (MeOH).

Ma, Z.-Z. *et al., Heterocycles*, 1999, **51**, 1883-1889 (*isol, synth, uv, ir, pmr, cmr, ms*)
Mhaske, S.B. *et al., Synthesis*, 2002, 323-325 (*synth, ir, pmr, cmr, ms*)

Lupanine L-302

2-Oxo-11α-sparteine. Dilupanine. Trilupine. Hydrorhombinine. Tetrahydranagyrine



(+)-*form*

$C_{15}H_{24}N_2O$ 248.367

Dilupanine was impure Lupanine. Trilupine (originally assigned the struct. Lupanine di-*N*-oxide) was lupanine monohydrochloride dihydrate. Hydrorhombinine and Tetrahydroanagyrine were the (-)-form.

(+)-*form* [550-90-3]

Alkaloid from *Cytisus scoparius* and several other *Cytisus* spp., *Lupinus* spp.; also in *Leontice* spp., *Cadia purpurea, Ammopiptanthus mongolicus, Genista* spp., *Templetonia* spp., *Thermopsis chinensis* (Fabaceae, Leonticaceae). Toxic cause (together with other alkaloids including the (-)- and (±)-forms) of lupinosis in livestock fed on *Lupinus* spp. Shows antimicrobial activity. Mp 40°. $Bp_{0.08}$ 185-186°. $[\alpha]_D$ +61.4 (Me_2CO).

► LD_{50} (rat, orl) 1440 mg/kg. OK5745000

Hydrochloride: Mp 269-271°.

Hydrochloride (1:2):
Cryst. + $1H_2O$. Mp 162-163°.

Picrate: Mp 185°.

N^{16}-*Oxide:* ***Lupanine* N-*oxide***
[3019-47-4]
$C_{15}H_{24}N_2O_2$ 264.367
Alkaloid from the seeds of *Thermopsis lupinoides* (Fabaceae). Hygroscopic needles (C_6H_6). Mp 58°. $[\alpha]_D^{24}$ +65.5 (EtOH).

(-)-*form* [486-88-4]

Alkaloid from *Lupinus pusillus*, *Lupinus macounii*, *Baptisia versicolor*, *Podalyria calyptrata*, *Ammodendron* spp., *Leontice smirnovii* and *Leontice eversmannii* (Fabaceae, Leonticaceae). Liq. Bp_1 186-188°. $[\alpha]_D$ -61 (Me_2CO).

Hydroiodide:
Cryst. + $2H_2O$. Mp 190°. $[\alpha]_D$ -43.6 (H_2O).

(±)-*form* [4356-43-8]

Alkaloid from *Lupinus albus*, *Lupinus termis*, *Podalyria buxifolia*, and *Virgilia capensis* (Fabaceae). Mp 98°.

Hydrochloride:
Cryst. + $2H_2O$. Mp 127-128° Mp 250-252° (anhyd.).

Picrate: Mp 183° dec.

N^{16}-*Oxide:* [133163-04-9]
$C_{15}H_{24}N_2O_2$ 264.367
Constit. of *Lupinus termis*. Oil.

Clemo, G.R. *et al., J.C.S.*, 1928, 1811-1820; 1931, 429-437 (*struct, resoln*)
Couch, J.F. *et al., J.A.C.S.*, 1937, **59**, 1469-1471 (*isol*)
Marion, L. *et al., J.O.C.*, 1948, **13**, 780-781 (*isol*)
Marion, L. *et al., Can. J. Chem.*, 1952, **30**, 386-387 (*Dilupine, Trilupine*)
Van Tamelen, E.E. *et al., J.A.C.S.*, 1956, **78**, 2913-2914 (*synth*)
Clemo, G.R. *et al., J.C.S.*, 1956, 3390-3394 (*synth, struct*)
Bohlmann, F. *et al., Tet. Lett.*, 1965, **6**, 2435-2440 (*pmr*)
Wiewiorowski, M. *et al., Can. J. Chem.*, 1967, **45**, 1447-1457 (*ir, pmr, conformn*)
Fales, H.M. *et al., J.A.C.S.*, 1970, **92**, 1590-1597 (*ms*)
Barciszewski, J. *et al., Bull. Acad. Pol. Sci., Ser. Sci. Chim.*, 1971, **19**, 545-548 (*pmr*)
Bohlmann, F. *et al., Chem. Ber.*, 1975, **108**, 1043-1051 (*cmr*)
Skrzypczak-Jankun, E. *et al., Acta Cryst. B*, 1978, **34**, 2651-2653 (*cryst struct*)
Golebiewski, W.M. *et al., Chem. Comm.*, 1983, 1509-1511 (*biosynth*)
Wink, M. *et al., Z. Naturforsch., C*, 1984, **39**, 548-552 (*activity*)
Wippich, C. *et al., Experientia*, 1985, **41**, 1477-1479 (*activity*)
Saito, K. *et al., Phytochemistry*, 1988, **27**, 3715-3716 (*isol, ir, pmr, cmr, ms, struct, oxide*)
Saito, K. *et al., CA*, 1990, **114**, 203603 (*Lupanine N-oxide*)
Mohamed, M.H. *et al., J. Nat. Prod.*, 1990, **53**, 1578-1580 (*(±)-N-oxide*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, LIQ800

Lupilaxine L-303

$C_{15}H_{24}N_2O_2$ 264.367

Quinolizidine alkaloid. Struct. unknown. Alkaloid from *Lupinus laxus* and *Lupinus sericeus* (Fabaceae). Prisms (Me_2CO). Mp 175°.

Couch, J.F. *et al., J.A.C.S.*, 1937, **59**, 1469 (*isol*)
Marion, L. *et al., Can. J. Chem.*, 1953, **31**, 181-185 (*isol*)

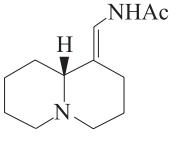
Lurenine L-304

Struct. unknown. Alkaloid from *Lobelia urens* (Campanulaceae). Mp 202-204°.

Steinegger, E. *et al., Pharm. Acta Helv.*, 1950, **25**, 276-277; *CA*, **45**, 3853

Lusitanine L-305

N-*[(Hexahydro-2*H*-quinolizin-1(6*H*)-ylidene)methyl]acetamide, 9CI*



(*R*)-*form*

$C_{12}H_{20}N_2O$ 208.303
Needles (Me_2CO).

(*R*)-*form*

Alkaloid from freshly-harvested young stems of *Maackia amurensis* var. *buergeri* and *Maackia tashiroi* (Fabaceae). Needles. Mp 185-186°. $[\alpha]_D^{23}$ -4.6 (c, 0.60 in EtOH).

(*S*)-*form* [5121-36-8]

Alkaloid from *Genista lusitanica, Cadia ellisiana* bark and *Chamaecytisus austriacus* (Fabaceae). Mp 184-186° dec. (168-170°). $[\alpha]_D^{27}$ +6.9 (c, 2.5 in EtOH).

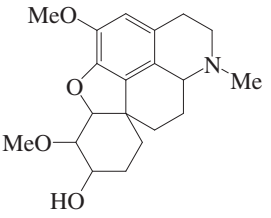
Dihydro: Mp 96-100°.

epi-*Dihydro:* Mp 140-144°.

Steinegger, E. *et al., Pharm. Acta Helv.*, 1965, **40**, 610 (*isol, uv, ir, ms*)
Wicky, K. *et al., Pharm. Acta Helv.*, 1965, **40**, 658; 1982, **57**, 215 (*ir, pmr, uv, struct, synth, config*)
Faugeras, G. *et al., Plant. Med. Phytother.*, 1975, **9**, 37 (*isol*)
Daily, A. *et al., Planta Med.*, 1979, **36**, 188 (*isol*)
Saito, K. *et al., Chem. Pharm. Bull.*, 1987, **35**, 1308 (*ir, pmr, cmr, ms, abs config*)

Luteicine L-306

[1359-25-7]



$C_{20}H_{27}NO_4$ 345.438

Synthesised from Luteidine, L-307. Since the struct. of Luteidine, L-307 has been revised, Luteicine must be formulated as shown. Alkaloid from *Colchicum luteum* epigeal parts (Liliaceae). Free base rapidly oxid. in air.

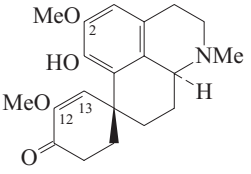
Ac:
Cryst. (Me_2CO). Mp 210-211°.

Ketone: Luteicinone
Mp 265-266° (as hydrochloride).

Yusupov, M.K. *et al., Khim. Prir. Soedin.*, 1976, 359; *Chem. Nat. Compd. (Engl. Transl.)*, 313

Luteidine L-307

[55790-08-4]



$C_{20}H_{25}NO_4$ 343.422

Struct. revised in 1985. Isomeric 2,13-dimethoxy struct. originally proposed. Alkaloid from *Colchicum luteum* (Liliaceae). Mp 231-232°. $[\alpha]_D$ -96 (MeOH).

N-*Oxide(α-):* ***Luteidine α*-N-*oxide***
$C_{20}H_{25}NO_5$ 359.421
Alkaloid from *Colchicum luteum*. Mp 179-180°.

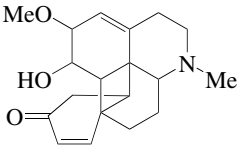
N-*Oxide(β-):* ***Luteidine β*-N-*oxide***
$C_{20}H_{25}NO_5$ 359.421
Alkaloid from *Colchicum luteum*.

Mukhamed'yarova, N.L. *et al., Khim. Prir. Soedin.*, 1976, **12**, 354-359; *Chem. Nat. Compd. (Engl. Transl.)*, 1976, **12**, 308-312 (*isol, uv, ir, pmr, cmr, ms*)
Timbekov, E.K. *et al., Khim. Prir. Soedin.*, 1985, **21**, 3-11; *Chem. Nat. Compd. (Engl. Transl.)*, 1985, **21**, 1-9 (*ms, struct*)

Chommadov, B. *et al., Khim. Prir. Soedin.*, 1985, **21**, 810-815; *Chem. Nat. Compd. (Engl. Transl.)*, 1985, **21**, 770-773 (*struct*)
Nazarov, G.B. *et al., Khim. Prir. Soedin.*, 1986, **22**, 348-352; *Chem. Nat. Compd. (Engl. Transl.)*, 1986, **22**, 321-325 (*cryst struct*)
Shakirov, R. *et al., Khim. Prir. Soedin.*, 1996, **32**, 761-863; *Chem. Nat. Compd. (Engl. Transl.)*, 1996, **32**, 737-858 (*N-oxides*)

Luteinine L-308

[1359-27-9]



$C_{19}H_{25}NO_3$ 315.411
Alkaloid from *Colchicum luteum*. λ_{max} 220 (log ϵ 4.12); 246 (sh) (log ϵ 4.04); 278 (sh) (log ϵ 3.2) (no solvent reported).

Sadykov, A.S. *et al., Zh. Prikl. Khim. (Leningrad)*, 1965, **38**, 222-225; *CA*, **62**, 12160d (*isol*)
Shakirov, R. *et al., Khim. Prir. Soedin.*, 1996, **32**, 615-681; *Chem. Nat. Compd. (Engl. Transl.)*, 1996, **32**, 596-675 (*rev*)

Lutenurine L-309

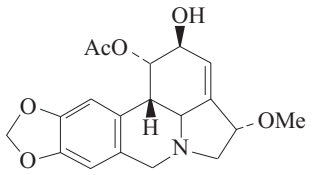
[12698-70-3]

Struct. unknown. Alkaloid complex from *Nuphar luteum*. Antiprotozoal and antitrichomonal agent. Main component appears to be Nuphleine, in T-380.

Rubinchik, M.A. *et al., Antibiotiki (Moscow)*, 1969, **14**, 926-929
Vichkanova, S.A. *et al., Farmatsiya (Moscow)*, 1969, **18**, 66-70

Lutessine L-310

[102487-18-3]



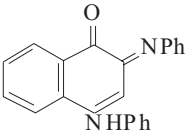
$C_{19}H_{21}NO_6$ 359.378
Alkaloid from the bulbs of *Sternbergia lutea* (Amaryllidaceae). Cryst. ($CHCl_3$). Mp 114-118°. $[\alpha]_D^{25}$ -13.4 (c, 1.24 in EtOH). The first lycorine-type alkaloid with a substituent on the D ring.

O-*De-Ac:* ***Deacetyllutessine***
[102487-20-7]
$C_{17}H_{19}NO_5$ 317.341
Alkaloid from the bulbs of *Sternbergia lutea* (Amaryllidaceae). Oil. $[\alpha]_D^{25}$ -42.9 (c, 0.35 in $CHCl_3$).

Evidente, A. *et al., J. Nat. Prod.*, 1986, **49**, 90 (*isol, uv, ir, pmr, cmr, ms, struct, deriv*)

Lutinine L-311

4-(Phenylamino)-2-(phenylimino)-1(2H)-naphthalenone, 9CI
[66855-48-9]

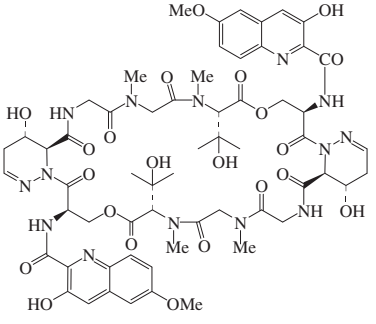


$C_{22}H_{16}N_2O$ 324.381
Alkaloid from *Reseda luteola* (Resedaceae). Mp 177-179°.

Lutfullin, K.L. *et al., Khim. Prir. Soedin.*, 1977, **13**, 826; *Chem. Nat. Compd. (Engl. Transl.)*, 1977, **13**, 696 (*ir, ms, isol*)

Luzopeptin C L-312

BBM 928C. Antibiotic BBM 928C
[76110-01-5]



$C_{60}H_{74}N_{14}O_{22}$ 1343.325
Depsipeptide antibiotic. Dimer with twofold symmetry. Isol. from *Actinomadura luzonensis*. Active against gram-positive bacteria. Cytotoxic, inhibits HIV-1 reverse transcriptase. Sol. $CHCl_3$, CH_2Cl_2; fairly sol. C_6H_6, MeOH, butanol; poorly sol. H_2O, hexane. Mp 244-248°. $[\alpha]_D^{25}$ -91 (c, 1 in $CHCl_3$). λ_{max} 230 (ϵ 80400); 256 (ϵ 109000); 330 (ϵ 16800); 383 (ϵ 16700) (EtOH/NaOH) (Derep). λ_{max} 235 (ϵ 83600); 264 (ϵ 59200); 345 (ϵ 23500) (EtOH) (Derep).
▶ LD_{50} (mus, ipr) .81 mg/kg. CB9267000

Mono-O-*Ac:* ***Luzopeptin B***. *BBM 928B. Antibiotic BBM 928B*
[76149-24-1]
$C_{62}H_{76}N_{14}O_{23}$ 1385.362
From *Actinomadura luzonensis*. Active against gram-positive bacteria and tumours. Cytotoxic, inhibits HIV-1 reverse transcriptase. Sol. $CHCl_3$, CH_2Cl_2; fairly sol. C_6H_6, butanol, MeOH; poorly sol. H_2O, hexane. Mp 214-217°. $[\alpha]_D^{25}$ -74 (c, 1 in $CHCl_3$). Acetylated at one of the alicyclic *OH* groups. λ_{max} 230 (ϵ 80400); 256 (ϵ 109000); 330 (ϵ 16800); 383 (ϵ 16700) (EtOH/NaOH) (Derep). λ_{max} 235 (ϵ 83600); 264 (ϵ 59200); 345 (ϵ 23500) (EtOH) (Derep).
▶ LD_{50} (mus, ipr) .18 mg/kg. CB9266000

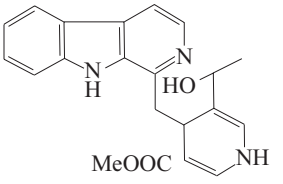
Di-O-*Ac:* ***Luzopeptin A***. *BBM 928A. Antibiotic BBM 928A*
[75580-37-9]
$C_{64}H_{78}N_{14}O_{24}$ 1427.4
From *Actinomadura luzonensis*. Active against gram-positive bacteria and tumours. Cytotoxic, inhibits HIV-1 reverse transcriptase. Mp 246-248°. $[\alpha]_D^{25}$ -27 (c, 1 in $CHCl_3$). Acetylated at both alicyclic *OH* groups. λ_{max} 230 (ϵ 80400); 256 (ϵ 109000); 330 (ϵ 16800); 383 (ϵ 16700) (EtOH/NaOH) (Derep). λ_{max} 235 (ϵ 83600); 264 (ϵ 59200); 345 (ϵ 23500) (EtOH) (Derep).
▶ CB9391300

Dideoxy: ***Luzopeptin E2***. *Dideoxyluzopeptin C*
[93079-89-1]
$C_{60}H_{74}N_{14}O_{20}$ 1311.326
Isol. from *Actinomadura luzonensis* ATCC31491. Active against gram-positive and acid-fast bacteria. Shows antitumour activity. Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. Lacks the two alicyclic *OH* groups. λ_{max} 230 (ϵ 80400); 256 (ϵ 109000); 330 (ϵ 16800); 383 (ϵ 16700) (EtOH/NaOH) (Derep). λ_{max} 235 (ϵ 83600); 264 (ϵ 59200); 345 (ϵ 23500) (EtOH) (Derep).
▶ LD_{50} (mus, ipr) .034 mg/kg.

Ohkuma, H. *et al., J. Antibiot.*, 1980, **33**, 1087
Tomita, K. *et al., J. Antibiot.*, 1980, **33**, 1098
Konishi, M. *et al., J.A.C.S.*, 1981, **103**, 1241
Rose, W.C. *et al., Cancer Res.*, 1983, **43**, 1504 (*props*)
Netherlands Pat., 1984, 84 00 237; *CA*, **102**, 22795 (*Luzopeptin E2*)
Ciufolini, M.A. *et al., Tet. Lett.*, 1989, **30**, 3027 (*synth*)
Boger, D.L. *et al., J.A.C.S.*, 1999, **121**, 1098-1099; 11375-11383; 2001, **123**, 561-568 (*synth, activity*)
Valognes, D. *et al., Tet. Lett.*, 2001, **42**, 1907-1909 (*synth*)

Lyadine L-313

[52811-49-1]

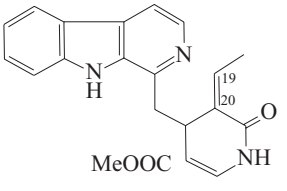


$C_{21}H_{21}N_3O_3$ 363.415
Struct. in doubt (2004). Alkaloid from the roots of *Pauridiantha lyalli* (Rubiaceae). Cryst. (Et_2O). Mp 158-160°. $[\alpha]_D$ +335 (c, 1 in $CHCl_3$).

Levesque, J. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1974, **278**, 959-961 (*isol, uv, ir, pmr, ms*)
Bennasar, M.-L. *et al., J.O.C.*, 2004, **69**, 752-756 (*synth, struct*)

Lyalidine L-314

[55856-50-3]



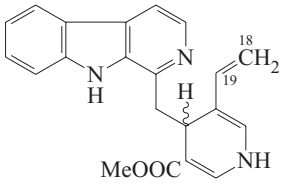
$C_{21}H_{19}N_3O_3$ 361.399
Minor alkaloid from the roots of *Pauridiantha lyalli* (Rubiaceae). Cryst. (Et_2O/MeOH). Mp 190-191°. $[\alpha]_D$ 0 (c, 1 in $CHCl_3$).

19,20-Dihydro, 19ξ-hydroxy: ***Hydroxylyalidine***
[55856-51-4]
$C_{21}H_{21}N_3O_4$ 379.415
Minor alkaloid from roots of *Pauridiantha lyalli* (Rubiaceae). Noncryst.

Levesque, J. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1974, **279**, 1053 (*uv, ir, pmr, ms, struct*)

Lyaline L-315

[52811-48-0]



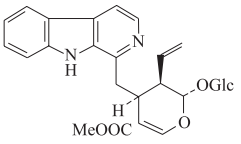
$C_{21}H_{19}N_3O_2$ 345.4
Struct. in doubt (2004). Alkaloid from root bark of *Pauridiantha lyalli* (Rubiaceae). Cryst. (Et_2O). Mp 280-282°. $[\alpha]_D$ +650 (c, 1 in $CHCl_3$).

18,19-Dihydro: Mp 229-230°. $[\alpha]_D$ +600 (c, 1 in $CHCl_3$).

Levesque, J. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1974, **278**, 959-961 (*isol, uv, ir, ms, pmr*)
Bennasar, M.-L. *et al., J.O.C.*, 2004, **69**, 752-756 (*synth, struct*)

Lyaloside L-316

[56021-85-3]



Absolute configuration

$C_{27}H_{30}N_2O_9$ 526.542
Alkaloid from *Palicourea adusta* and *Pauridiantha lyalli* (Rubiaceae). Cryst. (MeOH). Mp 168-169°. $[\alpha]_D^{20}$ -202 (c, 1 in MeOH). λ_{max} 215 (ϵ 9425); 236 (ϵ 12300); 291 (ϵ 5660); 351 (ϵ 4510) (MeOH).

Tetra-O-*Ac:* Mp 156-157°. $[\alpha]_D^{20}$ -78 (c, 1 in $CHCl_3$).

*6′-(4-Hydroxy-3-methoxycinnamoyl)(*E-*):* ***6′*-trans-*Feruloyllyaloside***
[83404-71-1]
$C_{37}H_{38}N_2O_{12}$ 702.713
Alkaloid from the leaves of *Palicourea adusta* and *Pauridiantha lyalli*. λ_{max} 238 (ϵ 26990); 292 (ϵ 13260); 330 (ϵ 10360) (MeOH).

*6′-(4-Hydroxy-3,5-dimethoxycinnamoyl)(*E-*):* ***6′*-trans-*Sinapoyllyaloside***
[83404-73-3]
$C_{38}H_{40}N_2O_{13}$ 732.74
Alkaloid from the leaves of *Palicourea adusta* and *Pauridiantha lyalli*. λ_{max} 206 (ϵ 57350); 238 (ϵ 76100); 292 (ϵ 28680); 335 (ϵ 27540) (MeOH).

N^b*-Me:* ***3,4,5,6-Tetradehydrodolichantoside***
$C_{28}H_{33}N_2O_9^{\oplus}$ 541.577
Quaternary alkaloid from *Strychnos mellodora*. Amorph. brown-yellow powder. Counterion not specified. λ_{max} 209 (log ϵ 3.96); 254 (log ϵ 3.69); 311 (log ϵ 3.52); 375 (log ϵ 2.93) (EtOH).

Parent acid: ***Lyalosidic acid***
[104821-27-4]
$C_{26}H_{28}N_2O_9$ 512.515
Alkaloid from *Ophiorrhiza japonica* (Rubiaceae). Amorph. powder. $[\alpha]_D$ -151.7 (MeOH).

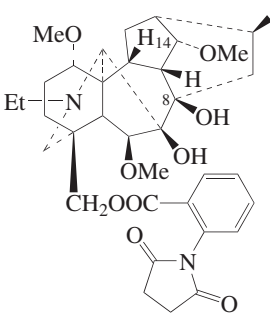
Parent acid, N^b*-Me:* ***3,4,5,6-Tetradehydropalicoside***
$C_{27}H_{31}N_2O_9^{\oplus}$ 527.55
Quaternary alkaloid from *Strychnos mellodora*. Amorph. brown-yellow powder. Counterion not specified. Presumably a zwitterion. λ_{max} 222 (log ϵ 3.97); 255 (log ϵ 3.06); 311 (log ϵ 2.85); 373 (log ϵ 2.31) (EtOH).

10-Hydroxy, parent acid: ***10-Hydroxylyalosidic acid***
[104821-28-5]
$C_{26}H_{28}N_2O_{10}$ 528.515
Alkaloid from *Ophiorrhiza japonica* (Rubiaceae). Pale-yellow prisms. Mp 300°. $[\alpha]_D$ -127.7 (MeOH).

Levesque, J. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1975, **280**, 593-595 (*uv, ir, ms, pmr, struct*)
Levesque, J. *et al., Tetrahedron*, 1982, **38**, 1417-1424 (*Feruloyllyaloside, Sinapoyllyaloside*)
Aimi, N. *et al., Chem. Pharm. Bull.*, 1986, **34**, 3064-3066; 1992, **40**, 2588-2596 (*Lyalosidic acid, 10-Hydroxylyalosidic acid, synth, abs config*)
Brandt, V. *et al., Phytochemistry*, 1999, **51**, 1171-1176 (*Tetradehydrodolichantoside, Tetradehydropalicoside*)
Valverde, J. *et al., Phytochemistry*, 1999, **52**, 1485-1489 (*isol, uv, cd, pmr, cmr, ms*)

Lycaconitine L-317

[25867-19-0]



$C_{36}H_{48}N_2O_{10}$ 668.783
Alkaloid from *Aconitum gigas, Aconitum lycoctonum, Aconitum umbrosum, Aconitum barbatum* and *Delphinium cashmirianum* (Ranunculaceae). Cryst. (MeOH). Mp 113°. $[\alpha]_D^{27}$ +16 (c, 0.64 in EtOH).

N-*De-Et,* N-*formyl:* **N-*Deethyl*-N-*formyllycaconitine***. N-*Deethyllycaconitine*-N-*aldehyde* [460731-53-7]
$C_{35}H_{44}N_2O_{11}$ 668.739
Alkaloid from the roots of *Aconitum leave*. Amorph. $[\alpha]_D^{25}$ +22.5 (c, 0.1 in $CHCl_3$). λ_{max} 230 (log ϵ 4.1); 280 (log ϵ 2.1) (MeOH).

O^8*-Me:* ***8*-O-*Methyllycaconitine***. *Oreaconine*
[144049-69-4]
$C_{37}H_{50}N_2O_{10}$ 682.809
Alkaloid from the roots of *Aconitum leave*, *Aconitum septentrionale* and *Aconitum orientale*. Amorph. $[\alpha]_D$ +22.6 (c, 0.32 in $CHCl_3$).

O^1*-De-Me:* ***Alboviolaconitine C***
[138822-62-5]
$C_{35}H_{46}N_2O_{10}$ 654.756
Alkaloid from roots of *Aconitum alboviolaceum* (Ranunculaceae). $[\alpha]_D^{28}$ +57.5 (c, 1.4 in $CHCl_3$).

O^6*-De-Me, 8-Ac:* ***Potanidine B***
[161068-59-3]
$C_{37}H_{48}N_2O_{11}$ 696.793
Alkaloid from the roots of *Delphinium potaninii*. Amorph. powder. $[\alpha]_D^{24}$ +28.6 (c, 0.07 in $CHCl_3$).

O^{14}*-De-Me:* ***14*-O-*Demethyllycaconitine***
[460731-52-6]
$C_{35}H_{46}N_2O_{10}$ 654.756
Alkaloid from the roots of *Aconitum leave*. Amorph. $[\alpha]_D^{25}$ +20 (c, 0.1 in $CHCl_3$). λ_{max} 225 (log ϵ 4.1); 278 (log ϵ 2.05) (MeOH).

O^6,O^{14}*-Di-de-Me,* O^6*-Ac:* ***Alboviolaconitine B***
[138822-61-4]
$C_{36}H_{46}N_2O_{11}$ 682.766
Alkaloid from roots of *Aconitum alboviolaceum* (Ranunculaceae). $[\alpha]_D^{28}$ +24.6 (c, 0.71 in $CHCl_3$).

Kuzovkov, A.D. *et al., J. Gen. Chem. USSR (Engl. Transl.)*, 1959, **29**, 2746-2749 (*struct*)
Pelletier, S.W. *et al., J. Nat. Prod.*, 1979, **42**, 615-623 (*isol, ir, pmr*)
Pelletier, S.W. *et al., J.A.C.S.*, 1981, **103**, 6536-6538 (*config*)
Edwards, O.E. *et al., Can. J. Chem.*, 1982, **60**, 2661-2667 (*config*)
Chen, D. *et al., Huaxue Xuebao*, 1992, **50**, 1211-1218; *CA*, **118**, 230146 (*Alboviolaconitines*)
Ross, S.A. *et al., Tetrahedron*, 1992, **48**, 1183-1192 (*8-O-Methyllycaconitine*)
Salimov, B.T. *et al., Khim. Prir. Soedin.*, 1994, **30**, 829-831; *Chem. Nat. Compd. (Engl. Transl.)*, 1994, **30**, 776-777 (*Oreaconine*)
Pu, H. *et al., Yaoxue Xuebao*, 1994, **29**, 689-692; *CA*, **122**, 122898 (*Potanidine B*)
Jacyno, J.M. *et al., J. Nat. Prod.*, 1996, **59**, 707-709 (*synth, ir, pmr, cmr*)
Ulubelen, A. *et al., Pharmazie*, 2002, **57**, 427-429 (*Aconitum leave alkaloids*)

Lyceamine L-318

[11055-27-9]

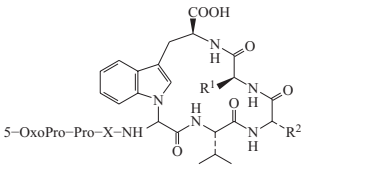
$C_{19}H_{42}N_4O_7$ 438.563
Struct. unknown. Alkaloid from *Lycium europaeum* (Solanaceae). Cryst. + $4H_2O$ (MeOH/Me_2CO). Mp 280-281°. $[\alpha]_D^{31}$ +1.5 (c, 0.79 in EtOH).

Hydrobromide: Mp 218-221°.

Picrate: Mp 180-181°.

Manzoor-i-Kuda, *et al., Pak. J. Sci. Ind. Res.*, 1968, **11**, 247-249; *CA*, **71**, 777z

Lyciumins L-319



Lyciumin A X = Tyr R^1 = CH_2OH, R^2 = H
B X = Trp R^1 = CH_2OH, R^2 = H
C X = Tyr R^1 = CH_2OH, R^2 = CH_2Ph
D X = Tyr R^1 = $CH(CH_3)CH_2CH_3$, R^2 = H

Lyciumin A [125708-06-7]
$C_{42}H_{51}N_9O_{12}$ 873.918
Isol. from root bark of *Lycium chinense* (Chinese boxthorn) and from *Lycium barbarum*. Shows anti-ACE and antirenin activity. Powder. $[\alpha]_D$ +10.1. λ_{max} 273; 281; 291 (solvent not reported) (Derep).

Lyciumin B [125756-66-3]
$C_{44}H_{52}N_{10}O_{11}$ 896.955
Isol. from *Lycium chinense* (Chinese boxthorn) and from *Lycium barbarum*. Shows anti-ACE and antirenin activity. Powder. $[\alpha]_D$ +3.5. λ_{max} 281; 291 (solvent not reported) (Derep).

Lyciumin C [150394-23-3]
$C_{49}H_{57}N_9O_{12}$ 964.042
Isol. from *Lycium chinense* (Chinese boxthorn) and from *Lycium barbarum*. Powder. Sol. MeOH, $CHCl_3$; poorly sol. hexane, H_2O. $[\alpha]_D^{24}$ -11.9 (c, 0.97 in DMSO). λ_{max} 230 ; 235 ; 292 ; 418 ; 438 (MeOH) (Berdy).

Lyciumin D [150415-40-0]
$C_{45}H_{57}N_9O_{11}$ 899.999
Isol. from *Lycium chinense* (Chinese boxthorn) and from *Lycium barbarum*. Powder. $[\alpha]_D^{25}$ -8.4 (c, 0.45 in DMSO).

Yahara, S. *et al., Tet. Lett.*, 1989, **30**, 6041 (*isol*)
Schmidt, U. *et al., Chem. Comm.*, 1992, 1353 (*synth*)
Yahara, S. *et al., Chem. Pharm. Bull.*, 1993, **41**, 703 (*isol, pmr, cmr, struct*)
Morita, H. *et al., Tetrahedron*, 1996, **52**, 2795 (*pmr, conformn, config*)

Lycocaroline L-320

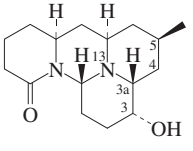
$C_{32}H_{53}N_3O$ 495.79
Struct. unknown. Alkaloid from *Lycopodium carolinianum* (Lycopodiaceae).

Didehydro: ***Dehydrolycocaroline***
$C_{32}H_{51}N_3O$ 493.774
Alkaloid from *Lycopodium carolinianum* (Lycopodiaceae).

MacLean, D.B. *et al., Alkaloids (Academic Press)*, 1985, **26**, 241

Lycocernuine L-321

Alkaloid L33
[6871-55-2]



$C_{16}H_{26}N_2O_2$ 278.394
Rel. config. shown. CAS numbering. Alkaloid from *Lycopodium cernuum*, *Lycopodium carolinianum* and *Lycopodium inundatum* (Lycopodiaceae). Mp 230-231°. $[\alpha]_D$ -24.5 (c, 0.1 in MeOH).

N^{13}*-Oxide:* ***Lycocernuine* N-*oxide***
[760947-80-6]
$C_{16}H_{26}N_2O_3$ 294.393
Alkaloid from *Lycopodium cernuum*. Amorph. solid. $[\alpha]_D^{22}$ -23 (c, 1 in MeOH).

Methiodide: Mp 270-272°.

4,5-Didehydro: ***Carolinianine***
[36101-39-0]
$C_{16}H_{24}N_2O_2$ 276.378
Alkaloid from *Lycopodium carolinianum* var. *affine* (Lycopodiaceae). Cryst. (Me_2CO). Mp 198.5-201.5°.

4,5-Didehydro, Ac: Mp 141-144°.

Deoxo: ***Dihydrodesoxylycocernuine***
[54307-43-6]
$C_{16}H_{28}N_2O$ 264.41
Alkaloid from *Lycopodium carolinianum* var. *affine* (Lycopodiaceae).

Deoxy: ***Cernuine****. Alkaloid L32*
[6880-84-8]
$C_{16}H_{26}N_2O$ 262.394
Alkaloid from *Lycopodium cernuum* and *Lycopodium carolinianum* (Lycopodiaceae). Mp 103-104°. $[\alpha]_D$ -20.5 (c, 0.1 in MeOH).

Deoxy, N^{13}*-oxide:* ***Cernuine* N-*oxide***
[760947-79-3]
$C_{16}H_{26}N_2O_2$ 278.394
Alkaloid from *Lycopodium cernuum*. Amorph. solid. $[\alpha]_D^{27}$ -18 (c, 1 in MeOH).

Deoxy; methiodide: Mp 237-238°.

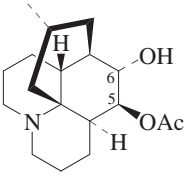
*Deoxy, 3,3*a*-didehydro:* ***Anhydrolycocernuine***
[34331-32-3]
$C_{16}H_{24}N_2O$ 260.378
Alkaloid from *Lycopodium inundatum* and *Lycopodium carolinianum* var. *affine* (Lycopodiaceae). Mp 140-142°.

Deoxy, deoxo: ***Dihydrodesoxycernuine***
[15216-33-8]
$C_{16}H_{28}N_2$ 248.411
Alkaloid from *Lycopodium carolinianum* var. *affine* (Lycopodiaceae). Mp 64-65°.

Marion, L. *et al., Can. J. Res., Sect. B*, 1948, **26**, 1 (*isol*)
Ayer, W.A. *et al., Can. J. Chem.*, 1967, **45**, 433; 445; 451 (*ir, pmr, ms, struct*)
Miller, N. *et al., Bull. Soc. Chim. Belg.*, 1971, **80**, 629; *CA*, **76**, 96981p (*Carolinianine*)
Ho, Y.K. *et al., Can. J. Chem.*, 1971, **49**, 3352 (*biosynth*)
Inubushi, Y. *et al., Yakugaku Zasshi*, 1971, **91**, 980; *CA*, **75**, 148492f (*Anhydrolycocernuine*)
Braekman, J.C. *et al., Phytochemistry*, 1974, **13**, 2519-2528 (*Dihydrodesoxylycocernuine, Anhydrolycocernuine, Dihydrodesoxycernuine*)
Morita, H. *et al., Tetrahedron*, 2004, **60**, 7015-7023 (*pmr, cmr, N-oxides*)
Nishikawa, Y. *et al., Org. Lett.*, 2008, **10**, 1987-1990 (*Cernuine, synth*)

Lycoclavine L-322

[6900-91-0]



Absolute Configuration

$C_{18}H_{29}NO_3$ 307.432
Alkaloid from *Lycopodium clavatum* var. *megastachyon, Lycopodium alpinum, Lycopodium gnidioides* and *Lycopodium paniculatum* (Lycopodiaceae). Cryst. (Me_2CO). Mp 212-213° (201-203°). $[\alpha]_D$ -9 (95% EtOH).

Hydrochloride: Mp 281-285°.

Perchlorate: Mp 283-286°.

Ac: ***Acetyllycoclavine***
[73907-66-1]
$C_{20}H_{31}NO_4$ 349.469
Alkaloid from *Lycopodium clavatum* var. *megastachyon* (Lycopodiaceae). Cryst. (petrol). Mp 144-145°.

O-*De-Ac:* ***Deacetyllycoclavine****. Alkaloid P4*
[23627-70-5]
$C_{16}H_{27}NO_2$ 265.395
Alkaloid from *Lycopodium paniculatum* (Lycopodiaceae). Cryst. (Me_2CO). Mp 217°.

O-*De-Ac, 5*-O-*[3-(4-hydroxy-3-methoxyphenyl)propanoyl], 6-Ac:* ***Lycoposerramine O***
[677723-23-8]
$C_{28}H_{39}NO_6$ 485.619
Alkaloid from *Lycopodium serratum*. Amorph. powder. $[\alpha]_D^{23}$ -27.8 (c, 0.06 in $CHCl_3$).

O-*De-Ac,* O^5*-[3-(3,4-dimethoxyphenyl)-propanoyl]:* ***Lycognidine***
[62023-84-1]
$C_{27}H_{39}NO_5$ 457.609
Alkaloid from *Lycopodium gnidioides* (Lycopodiaceae). Oil.

O-*De-Ac, 5*-O-*(3,4-dimethoxycinnamoyl), 6-Ac:* ***Lyconesidine C***
[462065-75-4]
$C_{29}H_{39}NO_6$ 497.63
Alkaloid from *Lycopodium chinense*. Amorph. solid. $[\alpha]_D$ -3 (c, 1 in MeOH). λ_{max} 204 (ϵ 16400); 217 (ϵ 14100); 236 (ϵ 12100); 300 (sh) (ϵ 13900); 327 (ϵ 18400) (MeOH).

5-Ketone, O-*de-Ac:* ***6α-Hydroxylycopodine****. Alkaloid L20*
[21061-92-7]
$C_{16}H_{25}NO_2$ 263.379
Alkaloid from *Lycopodium lucidulum*, *Lycopodium selago*, *Lycopodium serratum* var. *longipetiolatum* (Lycopodiaceae). Cryst. (MeOH or Me_2CO). Mp 258-259° (250-254°).

5-Ketone, O-*de-Ac, 6-Ac:*
Needles (petrol). Mp 143-144°. Formed at -10°.

8,15-Didehydro, O-*de-Ac:* ***Lycoposerramine J****. Miyoshianine B*

[623945-30-2]
$C_{16}H_{25}NO_2$ 263.379
Alkaloid from *Huperzia miyoshiana* and *Lycopodium serratum*. Prisms (Me_2CO/MeOH). Mp 264-266°. $[\alpha]_D^{25}$ -117 (c, 0.25 in MeOH).

8,15-Didehydro, 5-ketone, O-*de-Ac:* ***Lycoposerramine H***
[677723-08-9]
$C_{16}H_{23}NO_2$ 261.363
Alkaloid from *Lycopodium serratum*. Prisms (MeOH). Mp 227-228° subl.

6-Epimer, 5-ketone, O-*de-Ac:* ***Lycoposerramine L***. *6β-Hydroxylycopodine*
[677723-14-7]
$C_{16}H_{25}NO_2$ 263.379
Alkaloid from *Lycopodium serratum*. Amorph. powder.

Ayer, W.A. *et al., Can. J. Chem.*, 1962, **40**, 2088-2100; 1963, **41**, 649-657 (*Lycoclavine, Acetyllycoclavine, 6-Hydroxylycopodine*)
Miller, N. *et al., Phytochemistry*, 1971, **10**, 1931-1934 (*isol*)
Nyembo, L. *et al., Bull. Soc. Chim. Belg.*, 1976, **85**, 595-604; *CA*, **86**, 90108u (*Lycognidine*)
Castillo, M. *et al., Can. J. Chem.*, 1976, **54**, 2900-2908 (*Deacetyllycoclavine*)
Morales, G. *et al., Phytochemistry*, 1979, **18**, 1719-1720 (*Deacetyllycoclavine*)
Muñoz, O.M. *et al., J. Nat. Prod.*, 1990, **53**, 200-203 (*pmr, cmr, Deacetyllycoclavine*)
Sun, C.M. *et al., Planta Med.*, 1993, **59**, 467-471 (*6-Hydroxylycopodine*)
Hirasawa, Y. *et al., Tetrahedron*, 2002, **58**, 5483-5488 (*Lyconesidine C*)
Takayama, H. *et al., Chem. Pharm. Bull.*, 2003, **51**, 1163-1169 (*Lycoposerramines*)
Tong, X.-T. *et al., Planta Med.*, 2003, **69**, 576-579 (*Miyoshianine B*)

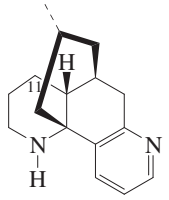
Lycodiflexine L-323

$C_{35}H_{50}N_2O_4$ 562.791
Struct. unknown. Alkaloid from *Lycopodium clavatum* var. *borbonicum* (Lycopodiaceae).

MacLean, D.B. *et al., Alkaloids (Academic Press)*, 1985, **26**, 241

Lycodine L-324

[20316-18-1]



Absolute Configuration

$C_{16}H_{22}N_2$ 242.363
Alkaloid from *Lycopodium annotinum*, *Lycopodium clavatum*, *Lycopodium fawcettii*, *Lycopodium obscurum*, *Lycopodium flabelliforme*, *Lycopodium lucidulum*, *Lycopodium serratum* var. *thunbergii* and *Lycopodium magellanicum* (Lycopodiaceae). Mp 118°. $[\alpha]_D$ -10 (c, 1 in EtOH).

Dipicrate: Mp 229-233° dec.

N-*Ac, picrate:* Mp 180-182.5°.

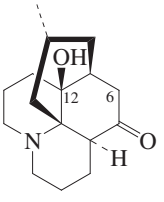
N-*Me:* **N-*Methyllycodine***
[54301-02-9]
$C_{17}H_{24}N_2$ 256.39
Alkaloid from *Lycopodium complanatum*, *Lycopodium erythraeum* and *Lycopodium magellanicum* (Lycopodiaceae). Cryst. (Me_2CO). Mp 91-92° (87-88°).

*11*R-*Hydroxy:* ***11-Hydroxylycodine***
$C_{16}H_{22}N_2O$ 258.363
Alkaloid from *Lycopodium complanatum*. Cytotoxic. Amorph. solid. $[\alpha]_D$ -47 (c, 0.5 in MeOH). λ_{max} 269 (ϵ 3500) (MeOH).

Anet, F.A.L. *et al., Can. J. Chem.*, 1958, **36**, 902 (*isol, ir, uv, pmr*)
Ayer, W.A. *et al., Can. J. Chem.*, 1960, **38**, 1823 (*N-Methyllycodine*)
Anet, F.A.L. *et al., Tet. Lett.*, 1960, **No. 20**, 9 (*struct*)
Nakashima, T.T. *et al., Can. J. Chem.*, 1975, **53**, 1936 (*cmr*)
Loyola, L.A. *et al., Phytochemistry*, 1979, **18**, 1721 (*N-Methyllycodine*)
Kleinman, E. *et al., Tet. Lett.*, 1979, 4125 (*synth*)
Heathcock, C.H. *et al., J.A.C.S.*, 1982, **104**, 1054 (*synth*)
Kobayashi, J. *et al., J.O.C.*, 2001, **64**, 5901-5904 (*11-Hydroxylycodine*)

Lycodoline L-325

Alkaloid L8. Alkaloid L30
[6900-92-1]



Absolute Configuration

$C_{16}H_{25}NO_2$ 263.379
Alkaloid from *Lycopodium alopecuroides*, *Lycopodium annotinum*, *Lycopodium clavatum* various varieties, *Lycopodium carolinum*, *Lycopodium fawcettii*, *Lycopodium inundatum*, *Lycopodium lucidulum*, *Lycopodium phlegmaria*, *Lycopodium saururus*, *Lycopodium selago* and *Lycopodium serratum* various forms. Mp 180°. Alkaloid L35 was a mixt. of Lycodoline with Lycopodine, L-341 and Flabelliformine, F-73.

Perchlorate:
Cryst. (MeOH/EtOAc). Mp 318° dec.

N-*Oxide: Lycodoline* N-*oxide*. ***Obscurumine A***
[849096-85-1]
$C_{16}H_{25}NO_3$ 279.378
Alkaloid from *Lycopodium obscurum*. Amorph. solid. $[\alpha]_D^{23}$ -44 (c, 0.1 in MeOH).

6α-Hydroxy: ***Serratezomine C***. *6-Hydroxylycodoline*
[301677-01-0]
$C_{16}H_{25}NO_3$ 279.378
Alkaloid from *Lycopodium serratum* var. *serratum*. Amorph. solid. $[\alpha]_D$ -8 (c, 0.3 in MeOH).

6α-Acetoxy: ***Lycoposerramine N***
[677723-20-5]
$C_{18}H_{27}NO_4$ 321.416
Alkaloid from *Lycopodium serratum*. Amorph. powder.

12-Epimer: ***12-Epilycodoline***. *Isolycodoline. Pseudoselagine. 12-Hydroxylycopodine. Alkaloid L23. Alkaloid L25*
[21061-90-5]
$C_{16}H_{25}NO_2$ 263.379
Alkaloid from *Lycopodium lucidulum* and *Lycopodium selago* (Lycopodiaceae). Cryst. (Me_2CO). Mp 163-164°. $[\alpha]_D$ -43 (c, 0.13 in EtOH). Alkaloid L22 was a mixt. of Isolycodoline and Lycopodine, L-341.

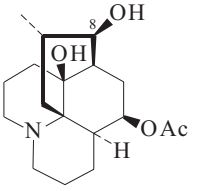
12-Epimer, perchlorate:
Prisms (MeOH/EtOH). Mp 300°.

12-Epimer, N-*oxide:* ***12-Epilycodoline* N-*oxide***
[791588-37-9]
$C_{16}H_{25}NO_3$ 279.378
Alkaloid from *Huperzia serrata*. Prisms (Me_2CO). Mp 238-240°. $[\alpha]_D^{25}$ -21.2 (c, 1.3 in $CHCl_3$).

Manske, R.H.F. *et al., Can. J. Res., Sect. B*, 1943, **21**, 92-96; 1946, **24**, 57-62 (*isol, epimer*)
Ayer, W.A. *et al., Can. J. Chem.*, 1964, **42**, 2514-2522; 1969, **47**, 449-455; 1990, **68**, 1300-1304 (*isol, ir, ms, pmr, struct, 12-Epilycodoline*)
Nakashima, T.T. *et al., Can. J. Chem.*, 1975, **53**, 1936-1942 (*cmr*)
Heathcock, C.H. *et al., J.A.C.S.*, 1982, **104**, 1054-1068 (*synth*)
Morita, H. *et al., J.O.C.*, 2000, **65**, 6241-6245 (*Serratezomine C*)
Takayama, H. *et al., Chem. Pharm. Bull.*, 2003, **51**, 1163-1169 (*Lycoposerramine N*)
Tan, C.-H. *et al., Helv. Chim. Acta*, 2004, **87**, 1963-1967 (*12-Epilycodoline N-oxide*)
Morita, H. *et al., Tetrahedron*, 2005, **61**, 1955-1960 (*Obscurumine A*)

Lycofawcine L-326

[3175-90-4]



$C_{18}H_{29}NO_4$ 323.431
Alkaloid from *Lycopodium fawcettii* (Lycopodiaceae). Oil.

Perchlorate: Mp 290-294° dec.

Methiodide:
Cryst. (Me_2CO). Mp 281-282°.

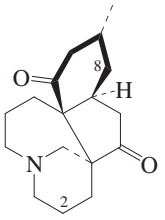
8-Ac: ***Acetyllycofawcine***
$C_{20}H_{31}NO_5$ 365.469
Alkaloid from *Lycopodium fawcettii* (Lycopodiaceae). Mp 181-182°.

Burnell, R.H. *et al., Can. J. Chem.*, 1960, **38**, 1927 (*Acetyllycofawcine*)
Burnell, R.H. *et al., Can. J. Chem.*, 1963, **41**, 3091 (*isol, ir*)

Ayer, W.A. *et al., Can. J. Chem.*, 1965, **43**, 328 (*ms, struct*)

Lycoflexine L-327

Lycobergine
[52485-00-4]



Absolute Configuration

$C_{17}H_{25}NO_2$ 275.39
Alkaloid from *Lycopodium clavatum* var. *inflexum, Lycopodium clavatum* var. *borbonicum, Lycopodium carolinum, Lycopodium inundatum, Lycopodium phlegmaria* and *Lycopodium serratum* (Lycopodiaceae). Mp 130-131°.

Hydrochloride: Mp 225-226° dec.

Methiodide: Mp 243-244°.

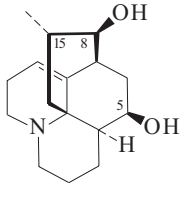
*2*S*-Hydroxy:* ***Lycoposerramine D***
[481048-29-7]
$C_{17}H_{25}NO_3$ 291.389
Alkaloid from *Lycopodium serratum*. Prisms (EtOAc/hexane). Mp 173-176°. λ_{max} 235 ; 310 (EtOH).

*8*R*-Hydroxy:* ***Lycoposerramine U***
[481048-31-1]
$C_{17}H_{25}NO_3$ 291.389
Alkaloid from *Lycopodium serratum*. Amorph. powder. λ_{max} 237 (sh) ; 306 (sh) (EtOH).

Ayer, W.A. *et al., Tet. Lett.*, 1973, 5045-5048 (*isol, ir, pmr, ms, cryst struct*)
Takayama, H. *et al., Tet. Lett.*, 2002, **43**, 8307-8311 (*cmr, Lycoposerramine D, Lycoposerramine U*)

Lycofoline L-328

11,12-Didehydrolycopodane-5,8-diol, 9CI
[7163-08-8]



$C_{16}H_{25}NO_2$ 263.379
Alkaloid from *Lycopodium annotinum* and *Lycopodium obscurum* (Lycopodiaceae). Prisms (Et_2O). Mp 144-145°. $[\alpha]_D$ -75 (c, 2.0 in EtOH).

Hydrobromide:
Cryst. (MeOH/Et_2O). Mp 274-275°.

Methiodide:
Cryst. (MeOH). Mp 263-264°.

O^5*-Ac:* ***Acetyllycofoline***
$C_{18}H_{27}NO_3$ 305.416
Alkaloid from *Lycopodium fawcettii*. Cryst. (H_2O)(as perchlorate). Mp 280-282° (perchlorate). $[\alpha]_D$ -61 (c, 1.10 in EtOH).

O^8*-Ac:* By acetylation of Lycofoline. Mp 180-182° (159-160°). $[\alpha]_D$ -42.8 (c, 1.29 in EtOH).

Di-Ac: ***Diacetyllycofoline***
$C_{20}H_{29}NO_4$ 347.453
Alkaloid from *Lycopodium fawcettii* (Lycopodiaceae). Cryst. (Et_2O). Mp 113-118°.

5-Ketone: ***Gnidioidine***
[62023-83-0]
$C_{16}H_{23}NO_2$ 261.363
Alkaloid from *Lycopodium gnidioides* and *Lycopodium phlegmaria* (Lycopodiaceae). Oil which browns in air. $[\alpha]_D^{20}$ -20 (c, 0.43 in $CHCl_3$). Configs. of OH and CH_3 groups descr. as both equatorial, which appears to be as shown.

8-Ketone: ***Acrifoline***†. *Alkaloid L27. Alkaloid L29*
[664-24-4]
[93412-90-9]
$C_{16}H_{23}NO_2$ 261.363
Alkaloid from *Lycopodium annotinum* and *Lycopodium selago* (Lycopodiaceae). Needles (Et_2O or hexane). Mp 103-104° (sinters at 95°). $[\alpha]_D^{19}$ -266.2 (c, 1 in $CHCl_3$). $[\alpha]_D^{20}$ -250 (c, 1 in EtOAc). $[\alpha]_D^{21}$ -264.8 (Me_2CO). Also isol. as 1:1 molecular complexes with other alkaloids; see Isolycopodine below and also Annotoxine in A-1062.

8-Ketone, hydroiodide: Mp 258-259° dec.

8-Ketone, perchlorate:
Stout prisms (Me_2CO/EtOAc). Mp 266° (260°).

8-Ketone, 1:1 complex with Lycopodine, L-341: Isolycopodine
$C_{32}H_{48}N_2O_3$ 508.743
Isol. from *Lycopodium annotinum* (Lycopodiaceae).

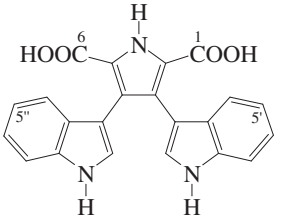
8-Ketone, 5-Ac: ***Acetylacrifoline***. *Alkaloid L12*
[6793-40-4]
$C_{18}H_{25}NO_3$ 303.4
Alkaloid from *Lycopodium annotinum* (Lycopodiaceae). Stout prisms (hexane). Mp 119°.

15-Epimer: ***Acrifolinol***
$C_{16}H_{25}NO_2$ 263.379
Minor alkaloid from *Lycopodium obscurum* (Lycopodiaceae). Cryst. (MeOH). Mp 191.1-192.6° (synthetic).

Manske, R.H.F. *et al., Can. J. Res., Sect. B*, 1943, **21**, 92 (*O-Acetylacrifoline*)
Manske, R.H.F. *et al., J.A.C.S.*, 1947, **69**, 2126 (*Acrifoline*)
Bertho, A. *et al., Chem. Ber.*, 1952, **85**, 663 (*Acrifoline*)
Achmatowicz, O. *et al., Pol. J. Chem. (Rocz. Chem.)*, 1955, **29**, 509; 1956, **30**, 233 (*Acrifoline, isol*)
Perry, G.S. *et al., Can. J. Chem.*, 1956, **34**, 1189 (*Acrifoline, Acrifolinol, synth*)
Anet, F.A.L. *et al., Can. J. Chem.*, 1959, **37**, 1589; 1962, **40**, 236 (*Lycofoline*)
Burnell, R.H. *et al., Can. J. Chem.*, 1960, **38**, 1927 (*Acetyllycofoline, Diacetyllycofoline*)
French, W.N. *et al., Can. J. Chem.*, 1961, **39**, 2100 (*Acrifoline, struct*)
Burnell, R.H. *et al., Tetrahedron*, 1962, **18**, 1467 (*struct*)
Rodewald, W.J. *et al., Bull. Acad. Pol. Sci., Ser. Sci. Chim.*, 1967, **15**, 579; *CA*, **68**, 69166e (*Isolycopodine*)
Nyembo, L. *et al., Bull. Soc. Chim. Belg.*, 1976, **85**, 595 (*Gnidioidine*)
Nyembo, L. *et al., Can. J. Chem.*, 1978, **56**, 851 (*Gnidioidine*)
Wenkert, E. *et al., Chem. Comm.*, 1984, 714 (*synth*)
Ayer, W.A. *et al., Can. J. Chem.*, 1989, **67**, 1077; 1990, **68**, 1300 (*Acrifoline, Acrifolinol*)

Lycogalic acid L-329

*3,4-Di-1*H*-indol-3-yl-1*H*-pyrrole-2,5-dicarboxylic acid, 9CI. Chromopyrrolic acid*
[150044-68-1]



$C_{22}H_{15}N_3O_4$ 385.378
Isol. from fruit bodies of the slime mould *Lycogala epidendrum*. Also prod. by *Chromobacterium violaceum* as a tryptophan metab. Cryst. Mp > 200°. Closely related to the Arcyriarubins and Arcyriaflavins (see for example Arcyriarubin A, A-1394).

Mono-Me ester:
$C_{23}H_{17}N_3O_4$ 399.405
Isol. from *Lycogala epidendrum*. Brown powder. λ_{max} 224 (ϵ 57000); 268 (ϵ 29000) (MeOH).

Di-Me ester: ***Lycogarubin C***. *Dimethyl lycogalate A*
[150044-77-2]
$C_{24}H_{19}N_3O_4$ 413.432
Isol. from *Lycogala epidendrum*. Shows moderate anti-HSV-I virus activity. Pale yellow needles (MeOH aq.). Sol. MeOH. Mp 126-127° dec. λ_{max} 226 (ϵ 58900); 270 (ϵ 33900) (EtOH) (Derep).

5′-Hydroxy, 1-Me ester:
$C_{23}H_{17}N_3O_5$ 415.404
Isol. from *Lycogala epidendrum*. Pale yellow powder. λ_{max} 225 (ϵ 38000); 268 (ϵ 22000) (MeOH).

5′-Hydroxy, di-Me ester: ***Lycogarubin B***. *Dimethyl lycogalate B*
[154071-67-7]
$C_{24}H_{19}N_3O_5$ 429.431
Isol. from *Lycogala epidendrum*. Sol. MeOH. λ_{max} 227 (ϵ 42700); 270 (ϵ 26900) (EtOH) (Derep).

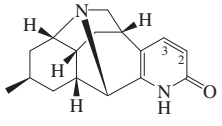
5′′-Hydroxy, 1-Me ester:
$C_{23}H_{17}N_3O_5$ 415.404
Isol. from *Lycogala epidendrum*. Pale yellow powder. λ_{max} 225 (ϵ 35000); 269 (ϵ 20000) (MeOH).

5′,5′′-Dihydroxy, di-Me ester: ***Lycogarubin A****. Dimethyl lycogalate C*
[154071-66-6]
$C_{24}H_{19}N_3O_6$ 445.431
Isol. from *Lycogala epidendrum*. λ_{max} 224 (ϵ 50100); 268 (ϵ 33900); 298 (sh) (ϵ 15800); 332 (sh) (ϵ 4270) (MeOH). λ_{max} 226 (ϵ 41700); 270 (ϵ 30200) (EtOH).

Hoshino, T. *et al., Biosci., Biotechnol., Biochem.*, 1993, **57**, 775-781 (*Chromopyrrolic acid*)
Fröde, R. *et al., Tet. Lett.*, 1994, **35**, 1689-1690 (*Lycogalic acid*)
Hashimoto, T. *et al., Tet. Lett.*, 1994, **35**, 2559-2560 (*Lycogarubins*)
Fürstner, A. *et al., Tetrahedron*, 2002, **58**, 6373-6380 (*synth*)
Kamata, K. *et al., Chem. Pharm. Bull.*, 2005, **53**, 594-597 (*mono-Me ester, 5′-hydroxy 1-Me ester, 5′′-hydroxy 1-Me ester*)
Hinze, C. *et al., Synthesis*, 2007, 608-612 (*synth, di-Me ester*)

Lyconadine A L-330

[362512-63-8]



Relative Configuration

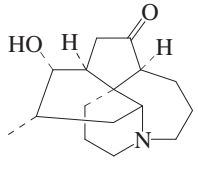
$C_{16}H_{20}N_2O$ 256.347
Alkaloid from *Lycopodium complanatum*. Cytotoxic. Amorph. solid. $[\alpha]_D$ +14 (c, 0.35 in MeOH). λ_{max} 235 (ϵ 6300); 323 (ϵ 4800) (MeOH).

2,3-Dihydro: ***Lyconadine B***
[906477-40-5]
$C_{16}H_{22}N_2O$ 258.363
Alkaloid from *Lycopodium complanatum*. Amorph. solid. $[\alpha]_D^{23}$ -66 (c, 0.5 in MeOH).

Kobayashi, J. *et al., J.O.C.*, 2001, **64**, 5901-5904 (*Lyconadine A*)
Ishiuchi, K. *et al., Bioorg. Med. Chem.*, 2006, **14**, 5995-6000 (*Lyconadine B*)
Bisai, A. *et al., J.A.C.S.*, 2008, **130**, 7222-7223 (*synth*)
Beshore, D.C. *et al., J.A.C.S.*, 2008, **130**, 13778-13789 (*synth*)

Lyconesidine A L-331

[462065-73-2]



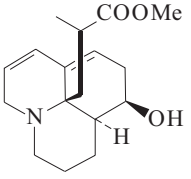
$C_{16}H_{25}NO_2$ 263.379
Alkaloid from *Lycopodium chinense*. Solid. $[\alpha]_D$ -53 (c, 1 in MeOH).

16-Hydroxy: ***Lyconesidine B***
[462065-74-3]
$C_{16}H_{25}NO_3$ 279.378
Alkaloid from *Lycopodium chinense*. Needles (MeOH aq.). Mp 170-171°. $[\alpha]_D$ -71 (c, 1.8 in MeOH).

Hirasawa, Y. *et al., Tetrahedron*, 2002, **58**, 5483-5488 (*isol, pmr, cmr, cryst struct*)

Lyconnotine L-332

[6900-93-2]



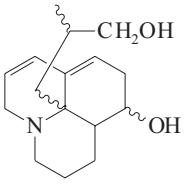
$C_{17}H_{25}NO_3$ 291.389
Alkaloid from *Lycopodium annotinum* (Lycopodiaceae). Mp 123°. $[\alpha]_D^{20}$ +125.

Picrolonate: Mp 230-231°.

Anet, F.A.L. *et al., Tet. Lett.*, 1964, 751 (*isol, uv, ir, ms, pmr, struct*)

Lyconnotinol L-333

[123145-46-0]



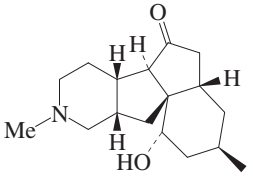
$C_{16}H_{25}NO_2$ 263.379
Alkaloid from *Lycopodium obscurum* (Lycopodiaceae). Off-white prisms (MeOH/Me_2CO). Mp 173-175°. $[\alpha]_D$ +103 (c, 0.43 in MeOH).

Di-Ac; methiodide:
Cryst. (Me_2CO/Et_2O). Mp 176-177°.

Ayer, W.A. *et al., Can. J. Chem.*, 1989, **67**, 1077 (*isol, uv, ir, pmr, cmr, ms, struct*)

Lycopaniculatine L-334

Paniculatine†
[58786-38-2]



$C_{17}H_{27}NO_2$ 277.406
The name Lycopaniculatine is preferred since the name Paniculatine has also been used for an *Aconitum* alkaloid. See Paniculatine in H-181. Alkaloid from *Lycopodium paniculatum* (Lycopodiaceae). Mp 181°. $[\alpha]_D$ +66.

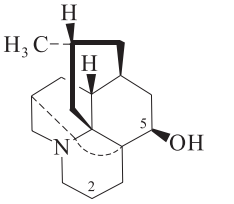
Hydrobromide: Mp 310°.

Castillo, M. *et al., Can. J. Chem.*, 1976, **54**, 2900 (*isol, ir, pmr, ms, cryst struct*)
Sha, C.-K. *et al., J.A.C.S.*, 1999, **121**, 9875-9876 (*synth*)

Kozaki, T. *et al., J.O.C.*, 2007, **72**, 10147-10154 (*synth*)

Lycopecurine L-335

[33293-82-2]



Absolute configuration

$C_{16}H_{25}NO$ 247.38
Alkaloid from *Lycopodium alopecuroides* (Lycopodiaceae). Mp 239-241°.

Hydrobromide: Mp 305-307° dec.

5-Ketone: ***Dehydrolycopecurine***
[31147-30-5]
$C_{16}H_{23}NO$ 245.364
Alkaloid from *Lycopodium inundatum* (Lycopodiaceae). Mp 57-59°.

2α-Hydroxy: ***Debenzoylalopecurine***
$C_{16}H_{25}NO_2$ 263.379
Alkaloid from *Lycopodium alopecuroides* (Lycopodiaceae). Cryst. (Me_2CO). Mp 230-232°.

2α-Hydroxy; hydrobromide: [23247-02-1]
Cryst. (Me_2CO/MeOH). Mp 249-251°.

2α-Acetoxy: ***Acetyldebenzoylalopecurine***
[23247-04-3]
$C_{18}H_{27}NO_3$ 305.416
Alkaloid from *Lycopodium alopecuroides* (Lycopodiaceae). Cryst. (Me_2CO). Mp 238-240°.

2α-Benzoyloxy: ***Alopecurine***
[23258-68-6]
$C_{23}H_{29}NO_3$ 367.487
Alkaloid from *Lycopodium alopecuroides* (Lycopodiaceae). Mp 244-245°. $[\alpha]_D$ -105 (c, 0.5 in MeOH).

2α-Hydroxy, N*-Me:* ***Lycopodatine A***
[872610-90-7]
$C_{17}H_{28}NO_2^{\oplus}$ 278.414
Alkaloid from *Lycopodium inundatum*. Solid. $[\alpha]_D^{33}$ -16 (c, 0.3 in MeOH). Counterion not specified.

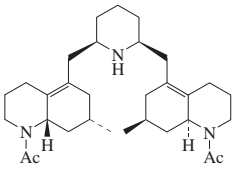
2β-Hydroxy, 5-ketone: ***Inundatine***
[34415-56-0]
$C_{16}H_{23}NO_2$ 261.363
Alkaloid from *Lycopodium inundatum* (Lycopodiaceae). Mp 174-177°.

2-Oxo: ***Isoinundatine***
[34324-37-3]
$C_{16}H_{23}NO_2$ 261.363
Alkaloid from *Lycopodium inundatum* (Lycopodiaceae). Mp 255°. 5-Config. not detd.

Ayer, W.A. *et al., Can. J. Chem.*, 1968, **46**, 15; 1969, **47**, 2449; 1971, **49**, 524 (*isol, ir, ms, cryst struct, Alopecurine, Lycopecurine*)
Braekman, J.C. *et al., Bull. Soc. Chim. Belg.*, 1971, **80**, 83 (*Dehydrolycopecurine, Inundatine, Isoinundatine*)
Morita, H. *et al., J. Nat. Prod.*, 2005, **68**, 1809-1812 (*Lycopodatine A*)

Lycoperine A L-336

[873868-50-9]



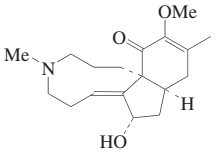
Relative Configuration

$C_{31}H_{49}N_3O_2$ 495.747
Alkaloid from *Lycopodium hamiltonii*. ACE inhibitor. Amorph. solid. $[\alpha]_D^{24}$ -238 (c, 0.1 in MeOH).

Hirasawa, Y. *et al., Org. Lett.*, 2006, **8**, 123-126 (*isol, pmr, cmr*)

Lycophlegmarine L-337

3,4,14,15-Tetradehydro-5-hydroxy-14-methoxy-17-methyl-4,17-secoserratinan-13-one, 9CI
[80953-35-1]



Absolute Configuration

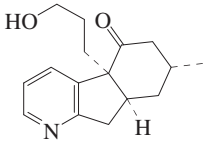
$C_{18}H_{27}NO_3$ 305.416
Alkaloid from *Lycopodium phlegmaria* (Lycopodiaceae). Oil. $[\alpha]_D^{17}$ +258.5 (c, 0.94 in EtOH).

4-Bromobenzoyl: Mp 140-142°. $[\alpha]_D^{17}$ +133.5 (c, 1.07 in EtOH).

Inubushi, Y. *et al., Chem. Pharm. Bull.*, 1981, **29**, 3418 (*ir, pmr, cmr, cryst struct*)

Lycopladine A L-338

[886546-04-9]



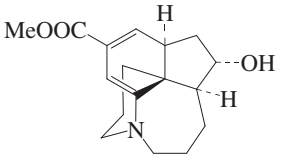
Relative Configuration

$C_{16}H_{21}NO_2$ 259.347
Alkaloid from *Lycopodium complanatum*. Amorph. solid. $[\alpha]_D^{23}$ +102 (c, 1 in MeOH). λ_{max} 270 (ϵ 2800) (MeOH).

Ishiuchi, K. *et al., Tet. Lett.*, 2006, **47**, 3287-3289 (*isol, pmr, cmr*)

Lycopladine B L-339

[906477-37-0]



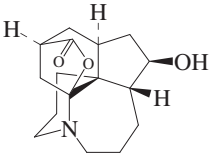
$C_{17}H_{23}NO_3$ 289.374
Alkaloid from *Lycopodium complanatum*. Amorph. solid. $[\alpha]_D^{23}$ +202 (c, 0.2 in MeOH). λ_{max} 315 (ϵ 1200) (MeOH).

Ac: ***Lycopladine C***
[906477-38-1]
$C_{19}H_{25}NO_4$ 331.411
Alkaloid from *Lycopodium complanatum*. Amorph. solid. $[\alpha]_D^{23}$ +121 (c, 0.3 in MeOH). λ_{max} 316 (ϵ 760) (MeOH).

Ishiuchi, K. *et al., Bioorg. Med. Chem.*, 2006, **14**, 5995-6000 (*isol, pmr, cmr*)

Lycopladine D L-340

[906477-39-2]

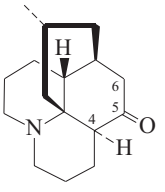


$C_{16}H_{23}NO_3$ 277.363
Alkaloid from *Lycopodium complanatum*. Amorph. solid. $[\alpha]_D^{23}$ -17 (c, 1 in MeOH).

Ishiuchi, K. *et al., Bioorg. Med. Chem.*, 2006, **14**, 5995-6000 (*isol, pmr, cmr*)

Lycopodine L-341

Alkaloid L24



$C_{16}H_{25}NO$ 247.38

(-)-*form* [466-61-5]
Alkaloid from a wide variety of *Lycopodium* spp. including *Lycopodium alopecuroides, Lycopodium alpinum, Lycopodium annotinum, Lycopodium annotinum* var. *acrifolium, Lycopodium carolinum, Lycopodium cernuum, Lycopodium clavatum, Lycopodium clavatum* var. *borbonicum, Lycopodium clavatum* var. *megastachyon*, *Lycopodium contiguum*, *Lycopodium densum*, *Lycopodium erythraeum*, *Lycopodium flabelliforme*, *Lycopodium inundatum*, *Lycopodium issleri*, *Lycopodium lucidulum*, *Lycopodium magellanicum*, *Lycopodium obscurum*, *Lycopodium obscurum* var. *dendroideum*, *Lycopodium paniculatum*, *Lycopodium phlegmaria*, *Lycopodium sabinaefolium*, *Lycopodium saururus*, *Lycopodium selago*, *Lycopodium serratum*, *Lycopodium sitchense*, *Lycopodium thyoides*, *Lycopodium tristachyum* and *Lycopodium volubile* (Lycopodiaceae). Mp 116°. $[\alpha]_D^{26}$ -24.5 (c, 1.1 in EtOH). Alkaloid L28 was a mixt. with 5,15-Oxidolycopodane, O-163. Alkaloid L15 was a mixt. with Flabelliformine, F-73. Alkaloid L16 was a mixt. with Anhydrodihydrolycopodine (see below).
▶ LD_{50} (mus, ivn) 27.58 mg/kg. OL2800600

Perchlorate: Mp 276°.

Oxime: Mp 262-264°.

5β-Alcohol: ***Dihydrolycopodine***. *Complanatine*†. *Alkaloid L1*. *Alkaloid L26*
[23768-74-3]
$C_{16}H_{27}NO$ 249.395
Alkaloid from *Lycopodium carolinum*, *Lycopodium clavatum*, *Lycopodium clavatum* var. *megastachyon*, *Lycopodium clavatum* var. *borbonicum*, *Lycopodium clavatum* var. *inflexum*, *Lycopodium contiguum*, *Lycopodium flabelliforme*, *Lycopodium paniculatum*, *Lycopodium sabinaefolium*, *Lycopodium saururus*, *Lycopodium thyoides* and *Lycopodium volubile* (Lycopodiaceae). Cryst. (Me_2CO/Et_2O). Mp 169°.

5β-Alcohol; perchlorate:
Prisms ($MeOH/Et_2O$). Mp 223-224°. Forms monohydrate, Mp 194°.

5β-Alcohol, O-*Ac:* ***Acetyldihydrolycopodine***. *Alkaloid L2*. *Alkaloid L3*
[52998-89-7]
$C_{18}H_{29}NO_2$ 291.433
Alkaloid from *Lycopodium clavatum*, *Lycopodium clavatum* var. *borbonicum*, *Lycopodium contiguum*, *Lycopodium flabelliforme*, *Lycopodium magellanicum*, *Lycopodium paniculatum* and *Lycopodium thyoides* (Lycopodiaceae). Mp 95-96°.

5β-Alcohol, O-*Ac; perchlorate:* Mp 246-247°.

8,15-Didehydro, 5β-alcohol: ***Selagoline***
[790220-40-5]
$C_{16}H_{25}NO$ 247.38
Alkaloid from the aerial parts of *Huperzia selago*. $[\alpha]_D^{25}$ -31 (c, 0.7 in $CHCl_3$).

Deoxo, 4,5-didehydro: ***Anhydrodihydrolycopodine***. *Alkaloid L14*
[54551-08-5]
$C_{16}H_{25}N$ 231.38
Alkaloid from *Lycopodium tristachyum* (Lycopodiaceae).

Deoxo, 4,5-didehydro; perchlorate:
Stout prisms (MeOH/EtOAc). Mp 238°.

7-Hydroxy: ***7-Hydroxylycopodine***
[791588-38-0]
$C_{16}H_{25}NO_2$ 263.379
Alkaloid from *Huperzia serrata*. Amorph. powder. Mp 250-252°. $[\alpha]_D^{25}$ -29.2 (c, 0.37 in MeOH).

11α-Hydroxy: ***Lycoposerramine M***. *11α-Hydroxylycopodine*
[677723-17-0]
$C_{16}H_{25}NO_2$ 263.379
Alkaloid from *Lycopodium serratum*. Amorph. solid.

11α-Hydroxy, 8,15-didehydro: ***Lycoposerramine I***
[677723-10-3]
$C_{16}H_{23}NO_2$ 261.363
Alkaloid from *Lycopodium serratum*. Amorph. powder.

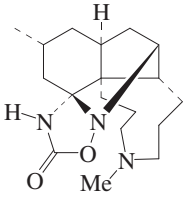
(±)-*form* [18688-24-9]
Mp 130-131°.

Marion, L. *et al., Can. J. Res., Sect. B*, 1944,

22, 1-4 (*Anhydrodihydrolycopodine*)
Manske, R.H.F. *et al., Can. J. Res., Sect. B*, 1946, **24**, 57-62 (*isol*)
Barclay, L.R.C. *et al., Can. J. Chem.*, 1956, **34**, 1519-1527 (*isol*)
Harrison, W.A. *et al., Can. J. Chem.*, 1961, **39**, 2086-2099 (*struct*)
Stork, G. *et al., J.A.C.S.*, 1968, **90**, 1647-1648 (*synth*)
Ayer, W.A. *et al., J.A.C.S.*, 1968, **90**, 1648-1650 (*synth*)
Marshall, W.D. *et al., Can. J. Chem.*, 1975, **53**, 41-50 (*biosynth*)
Nakashima, T.T. *et al., Can. J. Chem.*, 1975, **53**, 1936-1942 (*cmr*)
Ul-Haque, M. *et al., J.C.S. Perkin 2*, 1975, 93-98 (*cryst struct, abs config*)
Kleinman, E. *et al., Tet. Lett.*, 1979, 4125-4128 (*synth*)
Schumann, D. *et al., Annalen*, 1982, 1700-1705 (*synth*)
Heathcock, C.H. *et al., J.A.C.S.*, 1982, **104**, 1054-1068 (*synth*)
Wenkert, E. *et al., Chem. Comm.*, 1984, 714-715 (*synth*)
MacLean, D.B. *et al., Alkaloids (Academic Press)*, 1985, **26**, 241-298 (*rev*)
Kraus, G.A. *et al., J.A.C.S.*, 1985, **107**, 4341-4342 (*synth*)
Ayer, W.A. *et al., Can. J. Chem.*, 1990, **68**, 1300-1304 (*Alkaloid L28, Alkaloid L15, Alkaloid L16*)
Muñoz, O.M. *et al., J. Nat. Prod.*, 1990, **53**, 200-203 (*pmr, cmr, Acetyldihydrolycopodine*)
Padwa, A. *et al., J.O.C.*, 1997, **62**, 78-87 (*synth*)
Grieco, P.A. *et al., J.A.C.S.*, 1998, **120**, 5128-5129 (*synth*)
Takayama, H. *et al., Chem. Pharm. Bull.*, 2003, **51**, 1163-1169 (*Lycoposerramines*)
Tan, C.-H. *et al., Helv. Chim. Acta*, 2004, **87**, 1963-1967 (*7-Hydroxylycopodine*)
Staerk, D. *et al., Nat. Prod. Res.*, 2004, **18**, 197-203 (*Selagoline*)
Yang, H. *et al., J.A.C.S.*, 2008, **130**, 9238-9239 (*synth*)

Lycoposerramine A L-342

[392725-16-5]

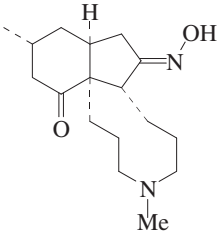


$C_{18}H_{29}N_3O_2$ 319.446
Alkaloid from *Lycopodium serratum*. Needles (EtOAc). Mp 169-171°.

Takayama, H. *et al., Org. Lett.*, 2001, **3**, 4165-4167 (*isol, ord, pmr, cmr*)

Lycoposerramine B L-343

[840489-33-0]

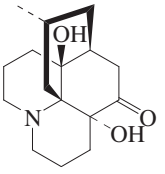


$C_{17}H_{28}N_2O_2$ 292.42
Alkaloid from *Lycopodium serratum*. Amorph. powder.

Katakawa, K. *et al., J.O.C.*, 2005, **70**, 658-663 (*isol, cd, pmr, cmr*)

Lycoposerramine G L-344

4,12-Dihydroxylycopodine
[677723-05-6]



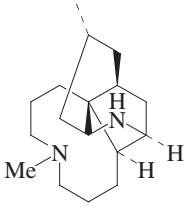
$C_{16}H_{25}NO_3$ 279.378
Alkaloid from *Lycopodium serratum*. Amorph. powder.

N-*Oxide:* ***Lycoposerramine F****. Miyoshianine A*
[623945-29-9]
$C_{16}H_{25}NO_4$ 295.378
Alkaloid from *Huperzia miyoshiana* and *Lycopodium serratum*. Prisms (MeOH/EtOAc). Mp > 300° (Lycoposerramine G) Mp 216-218° (Miyoshianine A). $[\alpha]_D^{24}$ -15.2 (c, 0.06 in MeOH) (Lycoposerramine F). $[\alpha]_D^{25}$ -85 (c, 0.08 in MeOH) (Miyoshianine A).

Takayama, H. *et al., Chem. Pharm. Bull.*, 2003, **51**, 1163-1169 (*isol, cd, pmr, cmr, cryst struct*)
Tong, X.-T. *et al., Planta Med.*, 2003, **69**, 576-579 (*Miyoshianine A*)

Lycoposerramine S L-345

[480443-97-8]

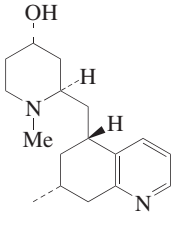


$C_{17}H_{30}N_2$ 262.437
Alkaloid from *Lycopodium serratum*. Amorph. powder. $[\alpha]_D^{25}$ -37.8 (c, 0.3 in MeOH).

Takayama, H. *et al., Tet. Lett.*, 2002, **43**, 8307-8311 (*isol, pmr, cmr*)

Lycoposerramine W L-346

[955937-63-0]



Absolute Configuration

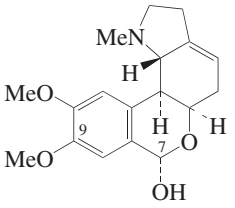
$C_{17}H_{26}N_2O$ 274.405
Related to Phlegmarine, P-361. Alkaloid from *Lycopodium serratum*. Amorph. powder. $[\alpha]_D^{25}$ +22.4 (c, 0.14 in $CHCl_3$).

Deoxy, N-*de-Me:* ***Lycoposerramine V***
[955937-62-9]
$C_{16}H_{24}N_2$ 244.379
Alkaloid from *Lycopodium serratum*. Amorph. powder. $[\alpha]_D^{23}$ +17.7 (c, 0.24 in $CHCl_3$).

Shigeyama, T. *et al., Org. Lett.*, 2007, **9**, 4069-4072 (*isol, synth, pmr, cmr*)

Lycorenine L-347

[477-19-0]



$C_{18}H_{23}NO_4$ 317.384
Alkaloid from *Lycoris radiata*, *Narcissus munozii-garmendiae* and many other spp. in the Amaryllidaceae. Mp 202°. $[\alpha]_D^{25}$ +125 (EtOH). $[\alpha]_D^{25}$ +180 ($CHCl_3$).

Hydrochloride: Mp 146-147° dec.

Me ether: **O-*Methyllycorenine***
[87733-82-2]
$C_{19}H_{25}NO_4$ 331.411
Isol. from the bulbs of *Lycoris radiata* and from whole plants of *Narcissus munozii-garmendiae* (Amaryllidaceae). Insect antifeedant. Mp 121-125°. $[\alpha]_D^{20}$ +164.1 (c, 0.53 in $CHCl_3$). $[\alpha]_D^{24}$ +198 (c, 1.04 in MeOH).

Me ether, α-N-*oxide:* **O-*Methyllycorenine* N-*oxide***
[119308-27-9]
$C_{19}H_{25}NO_5$ 347.41
Alkaloid from *Lapiedra martinezii* (Amaryllidaceae). Cryst. + H_2O (Me_2CO). Mp 136°. $[\alpha]_D^{25}$ +86.8 (c, 0.1 in MeOH).

Me ether, O^9-*de-Me:* ***9*-O-*Demethyl*-*7*-O-*methyllycorenine***
[955089-66-4]
$C_{18}H_{23}NO_4$ 317.384
Alkaloid from *Hosta plantaginea*. Amorph. solid. $[\alpha]_D^{26}$ +122.6 (c, 0.65 in $CHCl_3$). λ_{max} 240 (log ϵ 3.69); 284 (log ϵ 3.47) ($CHCl_3$).

Et ether, O^9-*de-Me:* ***Eugenine****. 9*-O-*Demethyl-7*-O-*ethyllycorenine*
[128562-43-6]
$C_{19}H_{25}NO_4$ 331.411
Alkaloid from *Narcissus eugeniae* (Amaryllidaceae). Erroneous struct. diag. in paper.

7-Ketone (lactone): ***Homolycorine****. Narcipoetine*
[477-20-3]
$C_{18}H_{21}NO_4$ 315.368
Alkaloid from *Narcissus poeticus* and from many other spp. in the Amaryllidaceae. Mp 175°. $[\alpha]_D$ +85 (95%

EtOH). λ_{max} 226 (log ϵ 4.22); 230 (log ϵ 4.22); 270 (log ϵ 3.92); 306 (log ϵ 3.7) (EtOH).

7-Ketone (lactone), hydrochloride: Mp 285°.

7-Ketone (lactone), picrate: Mp 268°.

7-Ketone (lactone), α-N-oxide: ***Homolycorine* N-*oxide***
[119308-26-8]
$C_{18}H_{21}NO_5$ 331.368
Alkaloid from *Lapiedra martinezii*. Cryst. + H_2O (MeOH aq.). Mp 134-136°. $[\alpha]_D^{25}$ +27.4 (c, 0.1 in MeOH).

7-Ketone (lactone), O^9-de-Me: ***9-O-Demethylhomolycorine***
[6879-81-8]
$C_{17}H_{19}NO_4$ 301.341
Alkaloid from *Lycoris radiata*, the bulbs of *Narcissus confusus* and *Crinum defixum* and the leaves of *Leucojum aestivum*. Also isol. from aerial parts of *Narcissus papyraceus* (Amaryllidaceae). Needles (EtOAc or H_2O). Mp 138-140° Mp 213-214° Mp 270-272°. $[\alpha]_D$ +96.4 (c, 0.28 in $CHCl_3$). Variation in Mp due to polymorphism. λ_{max} 230 (log ϵ 4.25); 274 (log ϵ 3.84); 306 (log ϵ 3.65) (EtOH).

7-Ketone (lactone), O^9-de-Me, α-N-oxide: ***9-O-Demethylhomolycorine α-N-oxide***
[128517-02-2]
$C_{17}H_{19}NO_5$ 317.341
Alkaloid from aerial parts of *Narcissus papyraceus* (Amaryllidaceae). Cryst. (EtOH). Mp 153-154°. $[\alpha]_D^{23}$ +19 (c, 0.1 in MeOH). λ_{max} 230 (log ϵ 4.43); 270 (log ϵ 4.28); 304 (log ϵ 3.9) (MeOH). λ_{max} 208 (log ϵ 5.34); 248 (log ϵ 4.57); 274 (sh) (log ϵ 4.3); 340 (log ϵ 3.82) (MeOH/NaOH).

7-Ketone (lactone), O^9-de-Me, 9-Ac: ***9-O-Demethyl-9-O-acetylhomolycorine***
[139955-91-2]
$C_{19}H_{21}NO_5$ 343.379
Alkaloid from whole plants of *Narcissus vasconicus* (Amaryllidaceae). Cryst. Mp 186-188°. $[\alpha]_D^{20}$ +70.4 (c, 0.54 in EtOH). Erroneously descr. as 8-*O*-Acetylhomolycorine in the lit.

7-Deoxy: ***Neruscine***. *Deoxylycorenine*
[13255-14-6]
$C_{18}H_{23}NO_3$ 301.385
Alkaloid from the bulbs of *Nerine corusca*, *Hippeastrum aulicum* var. *robustum* and from *Crinum powellii* (Amaryllidaceae). Mp 117-118°. $[\alpha]_D^{25}$ +92 (c, 0.5 in $CHCl_3$).

7-Deoxy, hydroiodide:
Prisms (EtOH aq.). Mp 247° dec. $[\alpha]_D^{25}$ +60 (c, 0.12 in EtOH).

7-Deoxy, perchlorate:
Cryst. (H_2O). Mp 212-213° dec.

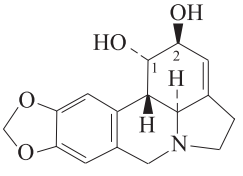
17-Epimer, 7-ketone (lactone): ***Epihomolycorine***
[66537-26-6]
$C_{18}H_{21}NO_4$ 315.368
Alkaloid from the bulbs of *Hippeastrum ananuca* (Amaryllidaceae).

Stereoisomer, 17-ketone (lactone)(?): ***Penarcine***
$C_{18}H_{21}NO_4$ 315.368
Isol. from *Narcissus cyclamineus* hybrid "Peeping Tom" (Amaryllidaceae). Mp 171-172°. $[\alpha]_D$ +110 ($CHCl_3$). Tentative struct., config. unknown.

Boit, H.G. *et al., Chem. Ber.*, 1955, **88**, 133-136; 1957, **90**, 369-373 (*Homolycorine, Neruscine, isol*)
Kitagawa, T. *et al., J.C.S.*, 1955, 1066-1068; 1959, 3741-3751 (*Lycorenine, Neruscine, Homolycorine, isol, uv, ir, struct, synth*)
Boit, H.G. *et al., Naturwissenschaften*, 1958, **45**, 85; 262-263; 1960, **47**, 109; 159 (*Neruscine, Penarcine*)
Uyeo, S, *et al., J.C.S.*, 1959, 172-177 (*9-Demethylhomolycorine*)
Hawksworth, W.A. *et al., J.C.S.*, 1965, 1991-2001 (*pmr*)
Ibuka, T. *et al., Tet. Lett.*, 1966, 4745-4748 (*ms*)
Clardy, J. *et al., J.O.C.*, 1972, **37**, 49-51 (*cryst struct*)
Fuganti, C. *et al., J.C.S. Perkin 1*, 1973, 954-956 (*biosynth*)
Pacheco, P. *et al., Rev. Latinoam. Quim.*, 1978, **9**, 28-32; *CA*, **89**, 103746q (*Epihomolycorine*)
Numata, A. *et al., Chem. Pharm. Bull.*, 1983, **31**, 2146-2149 (*Me ether, isol, ir, pmr*)
Kobayashi, S. *et al., Chem. Pharm. Bull.*, 1985, **33**, 5258-5263 (*9-Demethylhomolycorine*)
Jeffs, P.W. *et al., J.O.C.*, 1985, **50**, 1732-1737 (*9-Demethylhomolycorine*)
Suau, R. *et al., Phytochemistry*, 1988, **27**, 3285-3287 (*Homolycorine, Homolycorine N-oxide, O-Methyllycorenine N-oxide*)
Via, J. *et al., Acta Cryst. C*, 1989, **45**, 2020-2022 (*cryst struct, Eugenine*)
Codina, C. *et al., Planta Med.*, 1989, **55**, 116 (*Eugenine*)
Suau, R. *et al., Heterocycles*, 1990, **31**, 517-522 (*9-O-Demethylhomolycorine N-oxide*)
Kihara, M. *et al., Chem. Pharm. Bull.*, 1991, **39**, 1849-1853 (*9-O-Demethylhomolycorine*)
Bastida, J. *et al., J. Nat. Prod.*, 1992, **55**, 122-125 (*9-O-Demethyl-9-acetylhomolycorine*)
Codina, C. *et al., Nat. Prod. Lett.*, 1992, **1**, 85-92 (*pmr, struct*)
Codina, C. *et al., Phytochemistry*, 1993, **32**, 1354-1356 (*O-Methyllycorenine, Lycorenine*)
Latvala, A. *et al., Tetrahedron: Asymmetry*, 1995, **6**, 361-364 (*9-O-Demethylhomolycorine*)
Wagner, J. *et al., Tetrahedron*, 1996, **52**, 6591-6600 (*cd, Homolycorine, 9-O-Demethylhomolycorine*)
Labrana, J. *et al., Phytochemistry*, 1999, **50**, 183-188 (*cryst struct, abs config*)
Wang, Y.-H. *et al., J. Nat. Prod.*, 2007, **70**, 1458-1461 (*9-O-Demethyl-7-O-methyllycorenine*)

Lycorine L-348

Narcissine†. *Galanthidine*



(–)-*form*

$C_{16}H_{17}NO_4$ 287.315

(+)-*form*
Obt. by hydrol. of Poetaminine. Mp 262-264° dec.

1-Ac: ***Poetaminine***. *(+)-1-O-Acetyllycorine*
[73543-66-5]
$C_{18}H_{19}NO_5$ 329.352
Alkaloid from the bulbs of *Narcissus poeticus* var. *ornatus* (Amaryllidaceae). Needles (MeOH). Mp 221-223°. $[\alpha]_D^{20}$ +100 (c, 0.2 in EtOH).

Di-Ac: Mp 215-217°.

(-)-*form* [476-28-8]
Alkaloid of *Lycoris*, *Urginea*, *Crinum*, *Clivia*, *Narcissus*, *Hymenocallis*, *Hippeastrum*, *Pancratium*, *Brunsvigia* spp. and of a very large number of spp. in the Amaryllidaceae. The most widespread of the Amaryllidaceae alkaloids. Causes scorbutic symptoms in exptl. animals. Respiratory stimulant. Phagocytosis modulator, antimalarial. Plant growth inhibitor by inhibition of protein synth. Shows mod. antitumour activity, prob. by clastogenicity. Antiviral agent, weak protozoicide. Shows antifungal activity. Mp 280-281°. $[\alpha]_D^{26}$ -120 (EtOH). λ_{max} 290 (EtOH) (Berdy).

▶ Highly toxic, freq. cause of accidental human poisoning by *Narcissus* spp. LD_{50} (dog, ivn) 41 mg/kg. OL2900000

Picrate: Mp 198-200°.

O^1-β-D-Glucopyranoside: ***Lycorine 1-O-β-D-glucoside***
[93710-67-9]
$C_{22}H_{27}NO_9$ 449.457
Alkaloid from the roots of *Pancratium biflorum*, *Crinum asiaticum*, *Crinum augustum*, *Crinum latifolium* and *Crinum pratense* (Amaryllidaceae). Amorph. solid + $1H_2O$. $[\alpha]_D^{20}$ -92.4 (c, 0.53 in MeOH).

O^1-(6-O-Hexadecanoyl-β-D-glucopyranoside): ***Lycoriside***
[99964-81-5]
$C_{38}H_{57}NO_{10}$ 687.869
Alkaloid from the fruits of *Crinum asiaticum*. Also detected in the fleshy scale leaves and in the roots of this sp. (Amaryllidaceae). Amorph. powder. $[\alpha]_D^{22}$ -34.4 (c, 0.5 in MeOH).

O^1,O^2-Di-O-β-D-glucopyranoside: ***Lycorine 1,2-di-O-β-D-glucoside***
[128701-12-2]
$C_{28}H_{37}NO_{14}$ 611.599
Alkaloid from fruits of *Crinum asiaticum*. Straw-coloured solid + $1H_2O$. $[\alpha]_D^{28}$ -27.5 (c, 0.58 in H_2O).

1-Ac: ***(-)-1-O-Acetyllycorine***
[7344-73-2]
$C_{18}H_{19}NO_5$ 329.352
Alkaloid from the seeds of *Crinum moorei* and the bulbs of *Crinum latifolium* and *Nerine bowdenii* (Amaryllidaceae). Prisms (Me_2CO). Mp 220-221° (217-219°). $[\alpha]_D^{23}$ -96 (c, 1.11 in $CHCl_3$). $[\alpha]_D^{24}$ -66 (c, 1.18 in EtOH).

2-Ac: ***Aulamine***. *2-Acetyllycorine*
[477-10-1]
$C_{18}H_{19}NO_5$ 329.352
Alkaloid from the bulbs of *Hippeastrum aulicum* var. *robustum* (Amaryllidaceae). Shows antifungal activity. Mp 230-231°. $[\alpha]_D$ -38 (c, 0.2 in $CHCl_3$). $[\alpha]_D$ +20 (c, 0.2 in EtOH).

Di-Ac: ***1,2-Di-O-acetyllycorine***
[2492-05-9]
$C_{20}H_{21}NO_6$ 371.389
Alkaloid from the bulbs of *Crinum pratense* and *Crinum bulbispermum* (Amaryllidaceae). Shows antifungal activity. Platelets (Et_2O/MeOH). Mp 212-213° (208-210°). $[\alpha]_D^{22}$ -22 (c, 0.9 in $CHCl_3$).

O^1*-Hexadecanoyl:* ***Palmilycorine***
[99965-60-3]
$C_{32}H_{47}NO_5$ 525.727
Alkaloid from the fruits of *Crinum asiaticum*. Also detected in the fleshy scale leaves and in the roots of this sp. (Amaryllidaceae). Amorph. powder. $[\alpha]_D^{22}$ -58.5 (c, 0.23 in MeOH).

O^1*-Hexadecanoyl,* O^2*-(1-*O*-hexadecanoyl-2-*O*-octadecanoyloctadecenoyl)-glycerophosphoryl:* ***1-O-Palmitoyl-2-O-(1-O-palmitoyl-2-O-stearoylloleoyl)-glycerophosphoryllycorine***
[128701-17-7 , 128701-13-3]
Alkaloid from fruits of *Crinum asiaticum*. Straw-coloured amorph. powder. Mixt. contg. stearoyl and oleoyl alkyl residues.

O^1*-(5,8,11,14-Eicosatetraenoyl) (*all-Z*):* ***1-O-Arachidonoyllycorine***
[134253-41-1]
$C_{36}H_{47}NO_5$ 573.771
Alkaloid elaborated by the insect *Polytela gloriosa* which feeds on various Amaryllidaceae. Cream powder. $[\alpha]_D^{28}$ -35.7 (c, 0.55 in $CHCl_3$).

2-O*-(3-Acetoxybutanoyl):* ***2-O-(3-Acetoxybutanoyl)lycorine***
[946570-72-5]
$C_{22}H_{25}NO_7$ 415.442
Alkaloid from *Galanthus nivalis.*

O^2*-Me:* ***Hippamine***
[6879-76-1]
$C_{17}H_{19}NO_4$ 301.341
Alkaloid from *Hippeastrum* sp. Mp 162°. $[\alpha]_D^{24}$ -72 (c, 1.5 in EtOH).

O^2*-(1-Hydroxyethyl), 1-Ac:* ***Cliviasindhine***
[92070-72-9]
$C_{20}H_{23}NO_6$ 373.405
Alkaloid from *Clivia miniata* (Amaryllidaceae). Long needles (Me_2CO). Mp 173-175°. $[\alpha]_D^{24}$ -115 (c, 0.2 in $CHCl_3$).

O^2*-Glycerophosphoryl:* ***2-O-Glycerophosphoryllycorine***
[109269-80-9]
$C_{19}H_{24}NO_9P$ 441.374
Alkaloid from the flowers of *Zephyranthes flava* (Amaryllidaceae). Mp 300° dec.

O^2*-Phosphatidyl:* ***Phosphatidyllycorine***
[109269-84-3 , 109269-81-0]
Alkaloid from flowers of *Zephyranthes flava* (Amaryllidaceae). Straw-coloured powder. Mp 280° dec. A mixt. of stearoyl and oleoyl homologues.

O^2*-Phosphatidyl,* N*-Me:* ***Phosphatidylmethyllycorinium***
[109269-87-6]
Isol. from flowers of *Zephyranthes flava* (Amaryllidaceae). Brown hygroscopic powder. Mixt. of α- and β-epimers at N.

2-Ketone, 1-Ac: ***Jonquilline***
$C_{18}H_{17}NO_5$ 327.336
Alkaloid from *Narcissus jonquilla* Golden Sceptre hybrid. Needles (MeOH). Mp 188-190° dec. $[\alpha]_D^{20}$ -325 (c, 0.5 in $CHCl_3$).

2-Epimer: ***2-Epilycorine***
[6835-91-2]
$C_{16}H_{17}NO_4$ 287.315
Alkaloid from the flower-stem fluid of *Clivia latifolium* (Amaryllidaceae). Mp 168-170°. $[\alpha]_D^{28}$ -212.8 (c, 0.6 in MeOH).

2-Epimer, di-Ac:
Clusters of needles (petrol/MeOAc). Mp 190-191°.

(±)-*form* [66816-51-1]
Mp 253-258° dec.

Takagi, S. *et al., J.C.S.*, 1955, 4003 (*struct*)
Lyle, R.E. *et al., J.A.C.S.*, 1960, **82**, 2620 (*Acetyllycorine, Diacetyllycorine*)
Boit, H.-G. *et al., Naturwissenschaften*, 1960, **47**, 109 (*Aulamine*)
Döpke, W. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1962, **295**, 920; *CA*, **58**, 11416a (*Hippamine*)
Döpke, W. *et al., Naturwissenschaften*, 1963, **50**, 354; 1965, **52**, 60; 61 (*Poetaminine, Jonquilline*)
Kotera, K. *et al., Tet. Lett.*, 1966, 2009 (*pmr, config*)
Kinstle, T.H. *et al., Tet. Lett.*, 1966, 4659 (*ms*)
Bruce, I.T. *et al., Chem. Comm.*, 1968, 207 (*biosynth*)
Sadikov, T. *et al., Khim. Prir. Soedin.*, 1972, **8**, 134; *Chem. Nat. Compd. (Engl. Transl.)*, 1972, **8**, 140 (*manuf*)
Tsuda, Y. *et al., Chem. Comm.*, 1975, 933 (*synth*)
Miyakado, M. *et al., Phytochemistry*, 1975, **14**, 2717 (*activity*)
Gopalakrishna, E.M. *et al., Cryst. Struct. Commun.*, 1976, **5**, 795 (*cryst struct*)
Moller, O. *et al., Acta Chem. Scand., Ser. B*, 1978, **32**, 98 (*synth*)
Martin, S.F. *et al., J.O.C.*, 1981, **46**, 3763; 1982, **47**, 3634 (*synth*)
Ghosal, S. *et al., Phytochemistry*, 1981, **20**, 2003; 1984, **23**, 1167; 1985, **24**, 2703; 1987, **26**, 823; 1989, **28**, 2535; 1990, **29**, 805 (*Diacetyllycorine, Palmilycorine, Lycoriside, Phosphatidyllycorines, glycerophosphoryllycorine, diglucoside, glucoside, struct, epimer*)
Kobayashi, S. *et al., Chem. Pharm. Bull.*, 1984, **32**, 3015 (*Acetyllycorine, Diacetyllycorine*)
Döpke, W. *et al., Z. Chem.*, 1984, **24**, 209 (*Cliviasindhine*)
Suffness, M. *et al., Alkaloids (Academic Press)*, 1985, **25**, 200 (*occur, biol props*)
Martin, S.F. *et al., Alkaloids (Academic Press)*, 1987, **30**, 251 (*rev*)
Boeckman, R.K. *et al., J.A.C.S.*, 1988, **110**, 8250 (*synth*)
Ghosal, S. *et al., Indian J. Chem., Sect. B*, 1991, **30**, 260 (*1-Arachidonoyllycorine*)
Spohn, M. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1994, **327**, 123 (*cmr*)
Schultz, A.G. *et al., J.A.C.S.*, 1996, 571 (*synth*)
Hoshino, O. *et al., J.C.S. Perkin 1*, 1996, 571 (*synth*)
Wagner, J. *et al., Tetrahedron*, 1996, **52**, 6591 (*cd*)
Campbell, W.E. *et al., Planta Med.*, 1998, **64**, 91-93 (*Diacetyllycorine, pmr, cmr*)
Berkov, S. *et al., Phytochemistry*, 2007, **68**, 1791-1798 (*2-Acetoxybutanoyllycorine*)

Lycoserramine L-349

[11052-59-8]

$C_{16}H_{25}NO_2$ 263.379
Struct. unknown. Alkaloid from *Lycopodium serratum* var. *serratum* f. *intermedium* (Lycopodiaceae). $[\alpha]_D$ -46.2 (c, 0.56 in MeOH).

Inubushi, Y. *et al., Yakugaku Zasshi*, 1967, **87**, 1394-1404; *CA*, **68**, 47027h (*isol*)

Lycoserrine L-350

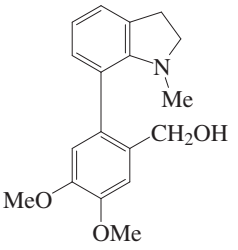
[11052-58-7]

$C_{16}H_{26}N_2$ 246.395
Struct. unknown. Alkaloid from *Lycopodium serratum* var. *serratum* f. *serratum* and *Lycopodium serratum* var. *serratum* f. *intermedium* (Lycopodiaceae). Mp 99-100°.

Inubushi, Y. *et al., Yakugaku Zasshi*, 1967, **87**, 1394-1404; *CA*, **68**, 47027h (*isol*)

Lycosinine A L-351

[870273-47-5]



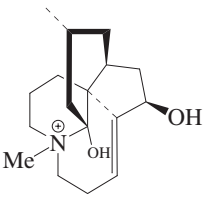
$C_{18}H_{21}NO_3$ 299.369
Alkaloid from the bulbs of *Lycoris aurea*. Powder. λ_{max} 240 (log ϵ 3.57); 283 (log ϵ 3.28) ($CHCl_3$).

Aldehyde: ***Lycosinine B***
[870273-48-6]
$C_{18}H_{19}NO_3$ 297.353
Alkaloid from the bulbs of *Lycoris aurea*. Powder. λ_{max} 242 (log ϵ 4.39); 280 (log ϵ 4.13); 312 (log ϵ 3.97) ($CHCl_3$).

Yang, Y. *et al., Helv. Chim. Acta*, 2005, **88**, 2550-2553 (*isol, pmr, cmr*)

Lycovatine A L-352

[925689-16-3]



Relative Configuration

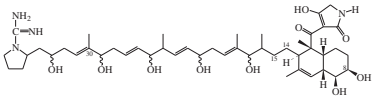
$C_{17}H_{28}NO_2^{\oplus}$ 278.414
Alkaloid from *Lycopodium clavatum* var. *robustum*. Amorph. solid. $[\alpha]_D^{23}$ -8 (c, 0.1

in MeOH). Counterion not specified.

Kubota, T. *et al., Heterocycles*, 2006, **69**, 469-474 (*isol, pmr, cmr*)

Lydicamycin L-353

[133352-27-9]



$C_{47}H_{74}N_4O_{10}$ 855.122
Prod. by *Streptomyces lydicus* SANK 60390. Active against gram-positive bacteria. Powder. Sol. MeOH, butanol; poorly sol. H_2O. Mp 161-166°. $[\alpha]_D^{18}$ +75.1 (c, 1 in MeOH). λ_{max} 207 (ϵ 18900); 250 (sh) (ϵ 6600); 282 (ϵ 9900) (MeOH/HCl) (Derep). λ_{max} 208 (ϵ 19900); 245 (ϵ 9700); 281 (ϵ 9600) (MeOH/NaOH) (Derep). λ_{max} 207 (ϵ 19600); 245 (ϵ 9900); 282 (ϵ 10000) (MeOH) (Derep).

8-Deoxy: ***8-Deoxylydicamycin***. *Antibiotic TPU 0037D. TPU 0037D*
$C_{47}H_{74}N_4O_9$ 839.123
Prod. by the marine-derived *Streptomyces platensis* TP-A0598. Active against gram-positive bacteria incl. MRSA. Powder. Mp 161-163°. $[\alpha]_D^{28}$ +50.3 (c, 1 in MeOH). λ_{max} 203 (log ϵ 4.31); 244 (log ϵ 3.95); 282 (log ϵ 3.96) (MeOH).

8-Deoxy, 14,15-didehydro: ***14,15-Didehydro-8-deoxylydicamycin***. *Antibiotic TPU 0037B. TPU 0037B*
$C_{47}H_{72}N_4O_9$ 837.107
Prod. by the marine-derived *Streptomyces platensis* TP-A0598. Active against gram-positive bacteria incl. MRSA. Powder. Mp 162-164°. $[\alpha]_D^{28}$ +105.5 (c, 1 in MeOH). λ_{max} 207 (log ϵ 4.31); 244 (log ϵ 3.95); 283 (log ϵ 3.97) (MeOH).

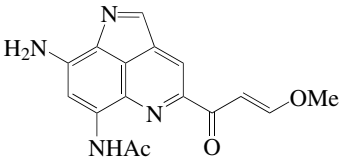
30-Demethyl: ***30-Demethyllydicamycin***. *Antibiotic TPU 0037A. TPU 0037A*
$C_{46}H_{72}N_4O_{10}$ 841.096
Prod. by the marine-derived *Streptomyces platensis* TP-A0598. Active against gram-positive bacteria incl. MRSA. Powder. Mp 151-153°. $[\alpha]_D^{28}$ +57.5 (c, 1 in MeOH). λ_{max} 204 (log ϵ 4.31); 247 (log ϵ 3.95); 282 (log ϵ 3.95) (MeOH).

30-Demethyl, 8-deoxy: ***30-Demethyl-8-deoxylydicamycin***. *Antibiotic TPU 0037C. TPU 0037C*
$C_{46}H_{72}N_4O_9$ 825.096
Prod. by the marine-derived *Streptomyces platensis* TP-A0598. Active against gram-positive bacteria incl. MRSA. Powder. Mp 161-163°. $[\alpha]_D^{28}$ +52 (c, 0.76 in MeOH). λ_{max} 207 (log ϵ 4.31); 244 (log ϵ 3.96); 281 (log ϵ 3.97) (MeOH).

Hayakawa, Y. *et al., J. Antibiot.*, 1991, **44**, 282-287; 288-292 (*isol, props*)
Hayakawa, Y. *et al., Tet. Lett.*, 1991, **32**, 213-216 (*pmr, cmr, ms*)
Furuma, T. *et al., J. Antibiot.*, 2002, **55**, 873-880 (*TPU 0037 antibiotics*)

Lymphostin L-354

Antibiotic LK6A. LK6A
[191474-39-2]

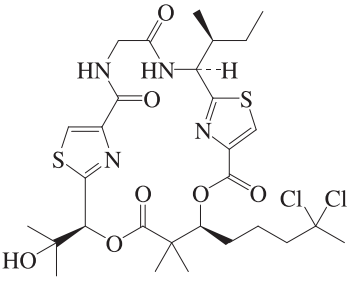


$C_{16}H_{14}N_4O_3$ 310.312
Prod. by *Streptomyces* sp. KY11783. Immunosuppressant and cytotoxic agent. Orange powder. Mp 275-277°. λ_{max} 218 (ϵ 15200); 256 (ϵ 19300); 284 (ϵ 16000); 344 (ϵ 11900); 412 (ϵ 6000); 467 (ϵ 8200) (MeOH).

Nagata, H. *et al., J. Antibiot.*, 1997, **50**, 537-542; 543-545 (*isol, uv, ir, pmr, cmr*)
Nagata, H. *et al., Biosci., Biotechnol., Biochem.*, 2002, **66**, 501-507 (*activity*)
Tatsuta, K. *et al., Tet. Lett.*, 2004, **45**, 2847-2850 (*synth*)

Lyngbyabellin A L-355

[273202-85-0]

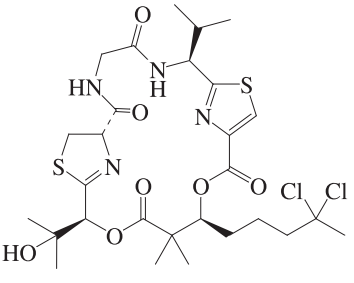


$C_{29}H_{40}Cl_2N_4O_7S_2$ 691.695
Depsipeptide antibiotic. Related to Dolabellin, D-901. Isol. from *Lyngbya majuscula*. Potent disruptor of the cellular microfilament network. Cytotoxic agent. Cryst. (CH_2Cl_2/6-methylheptane). Mp 150-152°. $[\alpha]_D^{27}$ -74 (c, 0.5 in $CHCl_3$). λ_{max} 202 (log ϵ 4.48); 236 (log ϵ 4.08) (MeOH).

Luesch, H. *et al., J. Nat. Prod.*, 2000, **63**, 611-615 (*isol*)
Yokokawa, F. *et al., Tetrahedron*, 2002, **58**, 9445-9458 (*synth*)

Lyngbyabellin B L-356

Tortugamide
[300830-53-9]

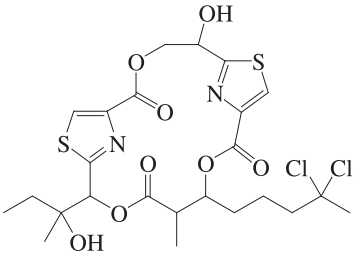


$C_{28}H_{40}Cl_2N_4O_7S_2$ 679.684
Isol. from *Lyngbya majuscula*. Cytotoxic and antifungal agent. Amorph. solid. $[\alpha]_D^{25}$ -152 (c, 0.06 in $CHCl_3$). $[\alpha]_D$ +33 (c, 0.2 in CH_2Cl_2). Isol. simultaneously by 2 groups. λ_{max} 200 (log ϵ 4.49); 224 (log ϵ 4.06); 236 (sh) (log ϵ 3.93) (MeOH).

Luesch, H. *et al., J. Nat. Prod.*, 2000, **63**, 1437-1439
Milligan, K.E. *et al., J. Nat. Prod.*, 2000, **63**, 1440-1443
Yokokawa, F. *et al., Tetrahedron*, 2002, **58**, 9445-9458 (*synth*)

Lyngbyabellin C L-357

[479482-34-3]

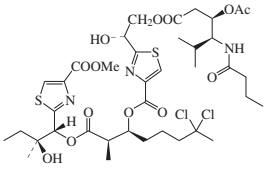


$C_{24}H_{30}Cl_2N_2O_8S_2$ 609.547
Isol. from a *Lyngbya* sp. Cytotoxic. Amorph. solid. $[\alpha]_D^{25}$ -10 (c, 0.1 in $CHCl_3$). λ_{max} 202 (log ϵ 4.47); 235 (log ϵ 4.04) (MeOH).

Luesch, H. *et al., Tetrahedron*, 2002, **58**, 7959-7966 (*isol, pmr, cmr*)

Lyngbyabellin D L-358

[532427-69-3]

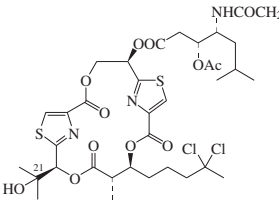


Absolute Configuration

$C_{38}H_{55}Cl_2N_3O_{13}S_2$ 896.902
Isol. from a *Lyngbya* sp. Cytotoxic. Powder. $[\alpha]_D^{25}$ +20 (c, 0.4 in MeOH). λ_{max} 202 (log ϵ 7.31); 223 (log ϵ 6.81) (MeOH).

Williams, P.G. *et al., J. Nat. Prod.*, 2003, **66**, 595-598 (*isol, pmr, cmr*)

Lyngbyabellin E L-359



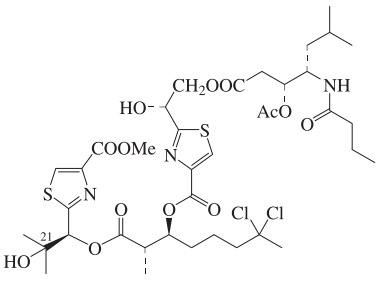
Absolute Configuration

$C_{37}H_{51}Cl_2N_3O_{12}S_2$ 864.86
Isol. from *Lyngbya majuscula*. Amorph. solid. $[\alpha]_D^{26}$ -31 (c, 0.7 in MeOH). λ_{max} 240 (log ϵ 4.18) (MeOH).

21-Deoxy: ***Lyngbyabellin H***
$C_{37}H_{51}Cl_2N_3O_{11}S_2$ 848.861
Isol. from *Lyngbya majuscula*. Amorph. solid. $[\alpha]_D^{26}$ -53 (c, 0.08 in MeOH). λ_{max} 242 (log ϵ 4.15) (MeOH).

Han, B. *et al., Tetrahedron*, 2005, **61**, 11723-11729 (*isol, pmr, cmr*)

Lyngbyabellin F L-360

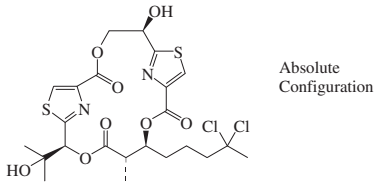


$C_{38}H_{55}Cl_2N_3O_{13}S_2$ 896.902
Isol. from *Lyngbya majuscula*. Amorph. solid. $[\alpha]_D^{26}$ -6.5 (c, 0.2 in MeOH). λ_{max} 238 (log ϵ 4) (MeOH).

21-Deoxy: ***Lyngbyabellin I***
$C_{38}H_{55}Cl_2N_3O_{12}S_2$ 880.903
Isol. from *Lyngbya majuscula*. Amorph. solid. $[\alpha]_D^{26}$ -25 (c, 0.04 in MeOH). λ_{max} 238 (log ϵ 4.28) (MeOH).

Han, B. *et al., Tetrahedron*, 2005, **61**, 11723-11729 (*isol, pmr, cmr*)

Lyngbyabellin G L-361



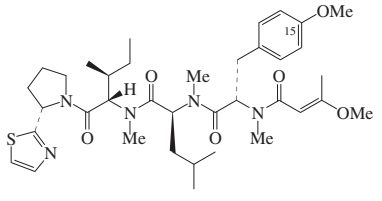
Absolute Configuration

$C_{23}H_{28}Cl_2N_2O_8S_2$ 595.52
Isol. from *Lyngbya majuscula*. Amorph. solid. $[\alpha]_D^{26}$ -26 (c, 0.2 in MeOH). λ_{max} 238 (log ϵ 3.75) (MeOH).

Han, B. *et al., Tetrahedron*, 2005, **61**, 11723-11729 (*isol, pmr, cmr*)

Lyngbyapeptin A L-362

[221531-83-5]



Absolute Configuration

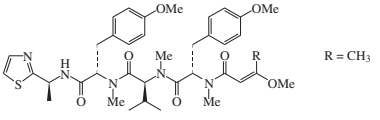
$C_{37}H_{55}N_5O_6S$ 697.937
Isol. from *Lyngbya bouillonii* and *Lyngbya majuscula*. Amorph. solid. $[\alpha]_D^{25}$ -235 (c, 0.58 in MeOH). λ_{max} 201 (log ϵ 4.55); 225 (log ϵ 4.3); 240 (sh) (log ϵ 4.09) (MeOH).

*15-*O*-De-Me:* ***15-Norlyngbyapeptin A***
[532427-68-2]
$C_{36}H_{53}N_5O_6S$ 683.911
Isol. from a *Lyngbya* sp. Powder. $[\alpha]_D^{22}$ -31 (c, 0.4 in MeOH). λ_{max} 201 (log ϵ 4.2); 226 (log ϵ 4.02) (MeOH).

Klein, D. *et al., Tet. Lett.*, 1999, **40**, 695-696 (*isol, pmr, cmr*)
Luesch, H. *et al., J.O.C.*, 2000, **63**, 1437-1439 (*abs config*)
Williams, P.G. *et al., J. Nat. Prod.*, 2003, **66**, 595-598 (*15-Norlyngbyapeptin A*)

Lyngbyapeptin B L-363

[479482-35-4]



Absolute Configuration

$C_{38}H_{51}N_5O_7S$ 721.916
Isol. from a *Lyngbya* sp. Amorph. solid. $[\alpha]_D^{25}$ -50 (c, 0.23 in MeOH). λ_{max} 200 (log ϵ 4.53); 227 (log ϵ 4.24); 245 (sh) (log ϵ 4) (MeOH).

Luesch, H. *et al., Tetrahedron*, 2002, **58**, 7959-7966 (*isol, pmr, cmr*)

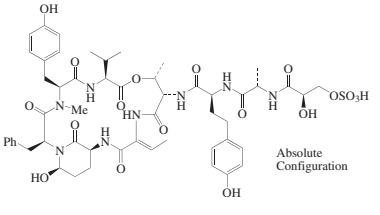
Lyngbyapeptin C L-364

[479482-36-5]
As Lyngbyapeptin B, L-363 with
R = CH_2CH_3
$C_{39}H_{53}N_5O_7S$ 735.943
Isol. from a *Lyngbya* sp. Amorph. solid. $[\alpha]_D^{25}$ -52 (c, 0.09 in MeOH). λ_{max} 200 (log ϵ 4.53); 227 (log ϵ 4.26); 245 (sh) (log ϵ 4) (MeOH).

Luesch, H. *et al., Tetrahedron*, 2002, **58**, 7959-7966 (*isol, pmr, cmr*)

Lyngbyastatin 4 L-365

[928202-70-4]



Absolute Configuration

$C_{53}H_{68}N_8O_{18}S$ 1137.229
Depsipeptide antibiotic. Isol. from *Lyngbya confervoides*. Elastase and chymotrypsin inhibitor. Amorph. powder. $[\alpha]_D^{20}$ +8.4 (c, 0.25 in MeOH). λ_{max} 210 (log ϵ 4.57); 280 (sh) (log ϵ 3.6) (MeOH).

Desulfo: ***Lyngbyastatin 5***
[957130-98-2]
$C_{53}H_{68}N_8O_{15}$ 1057.165
Isol. from *Lyngbya confervoides*. Elastase inhibitor. Amorph. solid. λ_{max} 210 (log ϵ 4.57); 280 (sh) (log ϵ 3.79) (MeOH).

11-Me ether: ***Lyngbyastatin 6***
[957130-99-3]
$C_{54}H_{70}N_8O_{18}S$ 1151.256
Isol. from a *Lyngbya* sp. Amorph. powder. λ_{max} 210 (log ϵ 4.48); 280 (sh) (log ϵ 3.65) (MeOH).

Matthew, S. *et al., J. Nat. Prod.*, 2007, **70**, 124-127 (*Lyngbyastatin 4*)
Taori, K. *et al., J. Nat. Prod.*, 2007, **70**, 1593-1600 (*Lyngbyastatins 5,6*)

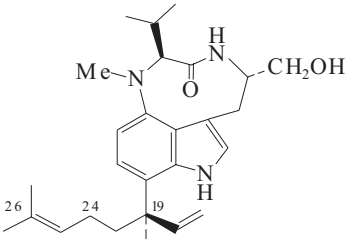
Lyngbyastatin 7 L-366

[957131-00-9]
As Somamide A, S-360 with
R^1 = $-CH_2CH_2CONH_2$, R^2 = $-(CH_2)_4CH_3$
$C_{48}H_{66}N_8O_{12}$ 947.096
Isol. from a *Lyngbya* sp. Elastase inhibitor. Amorph. powder. $[\alpha]_D^{20}$ -7.4 (c, 0.27 in MeOH). λ_{max} 230 (log ϵ 3.8); 280 (sh) (log ϵ 3.12) (MeOH).

Taori, K. *et al., J. Nat. Prod.*, 2007, **70**, 1593-1600 (*isol, pmr, cmr*)

Lyngbyatoxin A L-367

Teleocidin A_1
[70497-14-2]



$C_{27}H_{39}N_3O_2$ 437.624
Numbering as given by Aimi *et al*. Isol. from lipid extracts of a Hawaiian shallow-water variety of the marine blue-green alga *Lyngbya majuscula*. Also prod. by *Streptomyces mediocidicus*. Nematocide and acaricide. Potent tumour promoter. Mp 61°. $[\alpha]_D$ -110 (MeOH). $[\alpha]_D$ -171 (c, 1.8 in $CHCl_3$). Closely related to Teleocidin B_1, T-63. λ_{max} 233 (ϵ 34700); 287 (ϵ 9770); 298 (sh) (ϵ 8130) (MeOH) (Derep).
▶ Highly inflammatory and vesicatory. Tumour promoter. Causes dermatitis. Very toxic. LD_{50} (mus, orl) 2mg/kg.
WY1981000

*14-*O*-(2-Acetamido-2-deoxy-β-D-glucopyranoside): 14-*O*-(*N*-Acetylglucosaminyl)teleocidin A*
$C_{35}H_{52}N_4O_7$ 640.818
Prod. by *Streptomyces* sp. MM216-87F4. Powder. $[\alpha]_D$ +130.2 (c, 0.15 in MeOH). Stereochem. not confirmed. λ_{max} 229 (ϵ 19000); 279 (ϵ 7416); 297 (sh) (ϵ 7200) (MeOH).

14-Ac: ***O-Acetyllyngbyatoxin A***

[70497-15-3]
$C_{29}H_{41}N_3O_3$ 479.661
Isol. from the sea hare *Stylocheilus longicauda*. Oil. $[\alpha]_D$ -4 (c, 0.4 in MeOH). λ_{max} 229 (ϵ 4260); 297 (ϵ 1270) (MeOH).

N-*De-Me:* **N^{13}-Demethylteleocidin A$_1$**
$C_{26}H_{37}N_3O_2$ 423.597
From *Streptoverticillium blastmyceticum*. No phys. props. reported. Sol. MeOH, EtOAc; poorly sol. H_2O. λ_{max} 228 (ϵ 25900); 285 (ϵ 7600); 295 (ϵ 6800) (MeOH) (Derep).

▶ Tumour promoter.

Me ether: **O-Methylteleocidin A$_1$**
[114774-86-6]
$C_{28}H_{41}N_3O_2$ 451.651
From *Streptoverticillium blastmyceticum*. Gummy solid. Sol. MeOH, Me_2CO, C_6H_6; poorly sol. H_2O. $[\alpha]_D^{18}$ -198 (c, 0.21 in $CHCl_3$). Numbering systems vary. λ_{max} 230 (ϵ 27000); 286 (ϵ 8400); 301 (ϵ 9200) (MeOH) (Berdy).

▶ Tumour promoter.

Δ^{26}-Isomer, 24ξ-hydroxy: ***Lyngbyatoxin B***
[133084-52-3]
$C_{27}H_{39}N_3O_3$ 453.623
Isol. from *Lyngbya majuscula*. TPA binding inhibitor. Amorph.

▶ Skin irritant.

Δ^{24}-Isomer, 26-hydroxy: ***Lyngbyatoxin C***
[133084-53-4]
$C_{27}H_{39}N_3O_3$ 453.623
Isol. from *Lyngbya majuscula*. TPA binding inhibitor. Amorph.

▶ Skin irritant.

19-Epimer: **Teleocidin A$_2$**
[102209-77-8]
$C_{27}H_{39}N_3O_2$ 437.624
From *Streptoverticillium mediocidicus*. $[\alpha]_D^{18}$ -185.1 (c, 0.18 in MeOH). λ_{max} 233 (ϵ 34700); 287 (ϵ 9770); 298 (sh) (ϵ 8130) (MeOH) (Derep).

▶ Potent tumour promoter.

19-Epimer, Ac: **14-O-Acetylteleocidin A$_2$**
$C_{29}H_{41}N_3O_3$ 479.661
Prod. by *Actinomyces* sp. Stamm K 17/7. Yellow oil. $[\alpha]_D^{20}$ -81 (c, 0.1 in MeOH). λ_{max} 229 (log ϵ 4.41); 288 (sh); 297 (log ϵ 3.93) (MeOH).

Takashima, M. *et al., Agric. Biol. Chem.*, 1962, **26**, 660 (*isol, props*)
Cardellina, J.H. *et al., Science (Washington, D.C.)*, 1979, **204**, 193 (*isol, pmr, cmr, cd, struct*)
Moore, R.E. *et al., Pure Appl. Chem.*, 1982, **54**, 1919 (*rev*)
Sakai, S.-I. *et al., Tet. Lett.*, 1986, **27**, 5219
Muratake, H. *et al., Tet. Lett.*, 1987, **28**, 2265 (*synth*)
Hagiwara, N. *et al., Agric. Biol. Chem.*, 1988, **52**, 641-648 (*O-Methylteleocidin A1*)
Irie, K. *et al., Agric. Biol. Chem.*, 1988, **52**, 3193 (*deriv*)
Aimi, N. *et al., J. Nat. Prod.*, 1990, **53**, 1593 (*Lyngbyatoxin B, Lyngbyatoxin C*)
Irie, K. *et al., Tetrahedron*, 1990, **46**, 2773-2788 (*biosynth*)
Muratake, H. *et al., Tetrahedron*, 1991, **47**, 8535; 8545; 8559 (*synth*)
Gallimore, W.A. *et al., J. Nat. Prod.*, 2000, **63**, 1022-1026 (*O-Acetyllyngbyatoxin A*)
Ströch, K. *et al., Dissertation*, Univ. of Göttingen, 2003, (*14-O-Acetylteleocidin A$_2$*)
Nakae, K. *et al., J. Antibiot.*, 2006, **59**, 11-17 (*14-Acetylglucosaminylteleocidin A*)

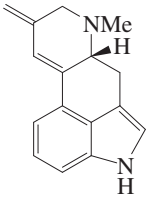
Lyophyllin L-368

Trimethyldiazenecarboxamide 2-oxide, 9CI
[88245-13-0]
$Me_2NCON{=}N(O)Me$
$C_4H_9N_3O_2$ 131.134
Isol. from the toadstool *Lyophyllum connatum*. Mp 27-28°.

▶ Prob. mutagenic, by analogy.

Fugmann, B. *et al., Angew. Chem., Int. Ed.*, 1984, **23**, 72 (*isol, synth, pmr, cmr, ir, tox*)
Ye, Y. *et al., Tet. Lett.*, 1997, **38**, 8013-8016 (*biosynth*)

Lysergene L-369



(*R*)-*form*

$C_{16}H_{16}N_2$ 236.316

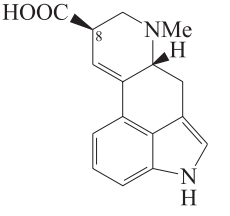
(*R*)-*form* [478-91-1]
Alkaloid from ergot (*Claviceps purpurea*), and from *Argyreia cuneata, Argyreia nervosa* and *Rivea corymbosa* (Convolvulaceae). Mp 247-249°. $[\alpha]_D^{20}$ +504 (c, 0.4 in PY).

(±)-*form*
Synthetic. Cryst. (Me_2CO). Mp 210-212° dec.

Abe, M. *et al., Agric. Biol. Chem.*, 1961, **25**, 594 (*isol*)
Bláha, K. *et al., Coll. Czech. Chem. Comm.*, 1972, **37**, 2473 (*cd, ord*)
Chao, J.-M. *et al., Phytochemistry*, 1973, **12**, 2435 (*occur*)
Kiguchi, T. *et al., Heterocycles*, 1984, **22**, 43 (*synth*)
Wheeler, W.J. *et al., Tet. Lett.*, 1986, **27**, 3469 (*synth*)
Ninomiya, I. *et al., Chem. Pharm. Bull.*, 1991, **39**, 23 (*synth*)
Harris, J.R. *et al., Synth. Commun.*, 1992, **22**, 995 (*synth*)
Saá, C. *et al., Synlett*, 1994, 487 (*synth*)

Lysergic acid L-370

9,10-Didehydro-6-methylergoline-8-carboxylic acid, 9CI



(+)-*form*

$C_{16}H_{16}N_2O_2$ 268.315

(+)-*form* [82-58-6]
Alkaloid from *Claviceps purpurea*; obt. by the hydrol. of the ergotaman group of alkaloids. 5-HT Receptor antagonist. Psychomimetic, mycotoxin, depressant. Sol. H_2O. Mp 238° dec. $[\alpha]_D^{20}$ +40 (Py).

Hydrochloride: Mp 208-210° dec.

Me ester: Mp 168°.

Amide: ***Ergine****. Lysergic acid amide. Lysergamide*
[478-94-4]
$C_{16}H_{17}N_3O$ 267.33
Alkaloid from *Claviceps paspali* and several spp. in the genera *Argyreia, Stictocardia, Ipomoea* and *Rivea* (Convolvulaceae). Hallucinogen. Prisms (MeOH). Mp 242° dec. $[\alpha]_D^{20}$ 0 (c, 0.5 in Py). $[\alpha]_{Hg}^{20}$ +15 (c, 0.5 in Py).

▶ OL4025000

α-Hydroxyethylamide: ***Lysergic acid α-hydroxyethylamide****. Lysergic acid methylcarbinolamide*
$C_{18}H_{21}N_3O_2$ 311.383
Alkaloid from *Claviceps paspali* and several *Argyreia*, *Rivea*, *Ipomoea* and *Stictocardia* spp. (Convolvulaceae). Mp 135° dec. $[\alpha]_D^{20}$ +29 (c, 1 in DMF).

8-Hydroxy, amide: ***8-Hydroxyergine****. 8-Hydroxylysergic acid amide*
$C_{16}H_{17}N_3O_2$ 283.329
Alkaloid from *Claviceps paspali* strain MG-6.

8-Epimer: ***Isolysergic acid***
[478-95-5]
$C_{16}H_{16}N_2O_2$ 268.315
Isol. from *Claviceps purpurea* and *Claviceps paspali* (Convolvulaceae). Mp 218° dec. $[\alpha]_D^{20}$ +281 (Py). pK_{a1} 3.33; pK_{a2} 8.46 (24°).

8-Epimer, amide: ***Isoergine****. Erginine. Isolysergic acid amide. Isolysergamide*
[2889-26-1]
$C_{16}H_{17}N_3O$ 267.33
Alkaloid from *Claviceps paspali* and several *Argyreia*, *Rivea* and *Ipomoea* spp. Readily formed by rearr. of Ergine, e.g. by recrystallisation of the latter from MeOH (Convolvulaceae). Prisms + 1MeOH (MeOH). Mp 132-134° dec. $[\alpha]_D^{20}$ +480 (c, 0.5 in Py).

8-Epimer, α-hydroxyethylamide: ***Isolysergic acid α-hydroxyethylamide****. Isolysergic acid methylcarbinolamide*
$C_{18}H_{21}N_3O_2$ 311.383
Alkaloid from *Claviceps paspali* and several *Argyreia*, *Rivea* and *Ipomoea* spp. (Convolvulaceae). Noncryst.

8-Epimer, 8-hydroxy, amide: ***8-Hydroxyerginine***
$C_{16}H_{17}N_3O_2$ 283.329
Alkaloid from *Claviceps paspali* strain MG-6.

(-)-*form*
Synthetic. Mp 235-240° dec. $[\alpha]_D^{20}$ -40 (Py).

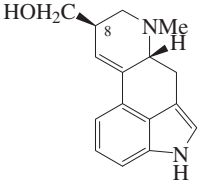
(±)-*form* [23953-76-6]
Mp 242-243° dec. pK_{a1} 3.32; pK_{a2} 7.82 (24°).

Stoll, A. *et al., Helv. Chim. Acta*, 1949, **32**, 506; 1954, **37**, 2039 (*struct, uv, config, ir*)

Kornfeld, E.C. *et al., J.A.C.S.*, 1956, **78**, 3087 (*synth, ir*)
Hofmann, A. *et al., Experientia*, 1960, **16**, 414 (*isol, uv*)
Arcamone, F. *et al., Nature (London)*, 1960, **187**, 238 (*amides, α-hydroxyethylamides*)
Stadler, P.A. *et al., Helv. Chim. Acta*, 1962, **45**, 2005 (*abs config*)
Castagnoli, N. *et al., Nature (London)*, 1966, **211**, 859 (*occur*)
Inoue, T. *et al., Chem. Pharm. Bull.*, 1972, **20**, 409 (*ms*)
Chao, J.-M. *et al., Phytochemistry*, 1973, **12**, 2435 (*occur*)
Bach, N.J. *et al., J.O.C.*, 1974, **39**, 1272 (*cmr*)
Armstrong, V.W. *et al., Tet. Lett.*, 1976, 4311 (*synth*)
Bellatti, M. *et al., Tetrahedron*, 1977, **33**, 1821 (*biosynth*)
Kumbar, M. *et al., NIDA Res. Monogr.*, 1978, **22**, 374 (*conformn, props*)
Oppolzer, W. *et al., Helv. Chim. Acta*, 1981, **64**, 478 (*synth*)
Ramage, R. *et al., Tetrahedron*, 1981, **37**, 157 (*synth*)
Rebek, J. *et al., J.A.C.S.*, 1984, **106**, 1813 (*synth*)
Ninomiya, I. *et al., J.C.S. Perkin 1*, 1985, 941 (*synth*)
Kurihara, T. *et al., Chem. Pharm. Bull.*, 1987, **35**, 4793 (*synth*)
Cacchi, S. *et al., Tet. Lett.*, 1988, **29**, 3117 (*synth*)
Flieger, M. *et al., J. Nat. Prod.*, 1989, **52**, 1003 (*8-Hydroxyergine, 8-Hydroxyerginine*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 1395
Moldvai, I. *et al., J.O.C.*, 2004, **69**, 5993-6000 (*synth*)
Hendrickson, J.B. *et al., Org. Lett.*, 2004, **6**, 3-5 (*synth*)

Lysergol L-371

[602-85-7]



Absolute Configuration

$C_{16}H_{18}N_2O$ 254.331
Alkaloid from ergot (*Claviceps purpurea*) and from several spp. in the genera *Argyreia,Stictocardia*, *Rivea* and *Ipomoea* (Convolvulaceae). 5-HT receptor antagonist, mycotoxin. Cryst. (EtOH). Mp 253-255°. $[\alpha]_D^{20}$ +54 (c, 0.3 in Py).

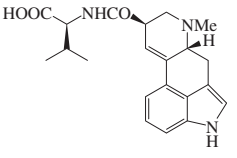
► KE6330000

Deoxy: ***Lysergine***
[519-10-8]
$C_{16}H_{18}N_2$ 238.332
Alkaloid from ergot (*Claviceps purpurea*). Cryst. (EtOH or Me_2CO). Mp 286-288°. $[\alpha]_D^{20}$ +65 (c, 0.5 in Py).

8-Epimer: ***Isolysergol***
[478-93-3]
$C_{16}H_{18}N_2O$ 254.331
Alkaloid from ergot (*Claviceps purpurea*), *Argyreia nervosa* and several other *Argyreia* spp. and *Ipomoea violacea* (Convolvulaceae).

Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 168B (*nmr*)
Schreier, E. *et al., Helv. Chim. Acta*, 1958, **41**, 1984-1997 (*Lysergine, synth*)
Abe, M. *et al., Agric. Biol. Chem.*, 1961, **25**, 594-595 (*Lysergol, Lysergine, synth*)
Hofmann, A. *et al., Planta Med.*, 1961, **9**, 354-367 (*isol*)
Bláha, K. *et al., Coll. Czech. Chem. Comm.*, 1972, **37**, 2473-2476 (*ord*)
Chao, J.-M. *et al., Phytochemistry*, 1973, **12**, 2435-2440 (*occur*)
Ninomiya, I. *et al., Heterocycles*, 1984, **22**, 1035-1038 (*Isolysergol, synth*)
Ninomiya, I. *et al., J.C.S. Perkin 1*, 1990, 707-713 (*Lysergol, Isolysergol, synth*)
Harris, J.R. *et al., Synth. Commun.*, 1992, **22**, 995-999 (*synth, pmr, cmr*)

Lysergylvaline L-372



Absolute Configuration

$C_{21}H_{25}N_3O_3$ 367.447

Me ester: ***Lysergylvaline methyl ester***
Alkaloid from ergot (*Claviceps purpurea*). Amorph. Mp 80-85°. $[\alpha]_D^{20}$ -103 (c, 1.6 in $CHCl_3$). $[\alpha]_D^{20}$ -65 (c, 1.4 in Py). Probably an artifact arising from fast methanolysis of Ergocristam, E-154 and related substances.

Me ester, hydrogen maleate:
Needles (Me_2CO). Mp 185° dec. $[\alpha]_D^{20}$ +38 (c, 1.2 in EtOH/H_2O 1:1).

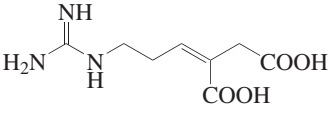
Amide: ***Ergovalide****. Lysergylvaline amide*
[41645-63-0]
$C_{21}H_{26}N_4O_2$ 366.462
Alkaloid from ergot. Cryst. (MeOH). Mp 152.5-154°. $[\alpha]_D^{20}$ -80.8 (c, 0.47 in $CHCl_3$). Prob. an artifact arising from solvolytic cleavage of Lysergylvalylphenylalanylproline.

Amide; hydrochloride: Mp 273-275° dec.

Schlientz, W. *et al., Experientia*, 1963, **19**, 397 (*isol, uv, struct*)
Stütz, P. *et al., Experientia*, 1973, **29**, 936
Ban'kovskaya, A.N. *et al., Khim. Prir. Soedin.*, 1973, **9**, 134; *Chem. Nat. Compd. (Engl. Transl.)*, 139 (*Ergovalide*)

Lysianadioic acid L-373

[3-(Aminoiminomethyl)propylidene]butanedioic acid. (3-Guanidinopropylidene)-succinic acid
[1010815-66-3]

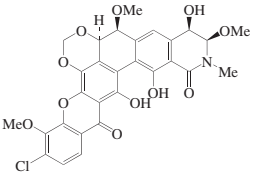


$C_8H_{13}N_3O_4$ 215.208
Alkaloid from *Lysiana subfalcata*. Carboxypeptidase B inhibitor. Amorph. solid. λ_{max} 198 (log ϵ 3.65) (MeOH).

Buchanan, M.S. *et al., Bioorg. Med. Chem. Lett.*, 2008, **18**, 1495-1497 (*isol, pmr, cmr*)

Lysolipin I, 9Cl L-374

A_3-118D. Antibiotic A_3-118D
[59113-57-4]



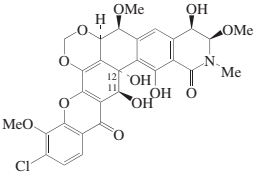
Absolute Configuration

$C_{29}H_{24}ClNO_{11}$ 597.961
Isol. from *Streptomyces violaceoniger*. Active against fungi. Cytotoxic. Yellow needles. Mp 260-262°. $[\alpha]_D$ -50.2 ($CHCl_3$). Related to Albofungin, A-244. λ_{max} 278 (ϵ 34100); 310 (ϵ 18600); 356 (ϵ 13000); 408 (sh) (ϵ 5500) ($CHCl_3$) (Derep).

Drautz, H. *et al., Arch. Microbiol.*, 1975, **106**, 175-190 (*isol, ir, uv, ms, pmr, cmr*)
Dobler, M. *et al., Helv. Chim. Acta*, 1977, **60**, 178-185 (*cryst struct, pmr*)
Yang, J. *et al., CA*, 1992, **117**, 44149 (*isol*)
Bockholt, H. *et al., J.O.C.*, 1994, **59**, 2064-2069 (*biosynth, pmr, cmr*)

Lysolipin X L-375

[59029-83-3]



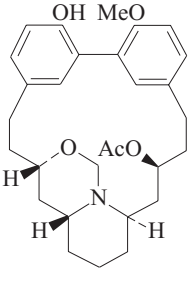
Probable Absolute Configuration

$C_{29}H_{26}ClNO_{12}$ 615.977
C-11 and C-12 configs. not certain. Isol. from *Streptomyces violaceoniger* and other *Streptomyces* spp. Active against gram-positive and -negative bacteria and fungi. Cytotoxic agent. Sol. MeOH, $CHCl_3$; poorly sol. hexane. λ_{max} 275 ; 312 ($CHCl_3$) (Berdy).

Drautz, H. *et al., Arch. Microbiol.*, 1975, **106**, 175-190 (*isol, uv, ir, pmr*)
U.S. Pat., 1981, 4 277 478; *CA*, **95**, 130977 (*isol, props*)
Bockholt, H. *et al., J.O.C.*, 1994, **59**, 2064-2069 (*biosynth, pmr, cmr*)

Lythramine L-376

[32420-56-7]



$C_{29}H_{37}NO_5$ 479.615

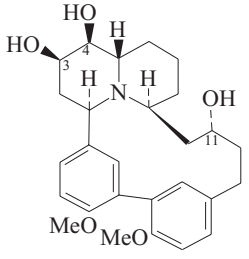
Alkaloid from *Lythrum anceps* (Lythraceae). Also obt. on treatment of Lythranine in L-378 with HCHO. Cryst. + 0.5 Me_2CO (Me_2CO). Mp 150-152° (solvate). $[\alpha]_D^{20}$ -85 (c, 0.9 in dioxan).

Me ether:
Cryst. (Me_2CO/heptane). Mp 169-171°.

Fujita, E. *et al., Chem. Pharm. Bull.*, 1970, **18**, 2216 (*isol, uv, ir, pmr, struct, synth*)
Fujita, E. *et al., J.C.S.(C)*, 1971, 1651 (*struct, abs config*)
Fuji, K. *et al., Chem. Pharm. Bull.*, 1984, **32**, 63-69 (*cryst struct*)

Lythrancine I L-377

Lythrancine, 9CI
[32209-71-5]



$C_{27}H_{35}NO_5$ 453.577
Alkaloid from *Lythrum anceps* (Lythraceae). Powder. $[\alpha]_D^{20}$ +65 (c, 0.96 in $CHCl_3$).

O^{11}-Ac: ***Lythrancine II***
[32209-72-6]
$C_{29}H_{37}NO_6$ 495.614
Alkaloid from *Lythrum anceps* (Lythraceae). Needles (MeOH/hexane). Mp 274-275°. $[\alpha]_D^{20}$ +125 (c, 0.73 in $CHCl_3$).

O^3,O^{11}-Di-Ac: ***Lythrancine III***
[32209-73-7]
$C_{31}H_{39}NO_7$ 537.652
Alkaloid from *Lythrum anceps* (Lythraceae). Needles (MeOH). Mp 134-136°. $[\alpha]_D^{20}$ +38 (c, 1.1 in $CHCl_3$).

Tri-Ac: ***Lythrancine IV***
[32209-74-8]
$C_{33}H_{41}NO_8$ 579.689
Alkaloid from *Lythrum anceps* (Lythraceae). Needles (MeOH). Mp 237-238°. $[\alpha]_D^{20}$ +27 (c, 1.1 in $CHCl_3$).

4-Deoxy: ***Lythrancepine I***. *9-Deoxylythrancine, 9CI*
[32209-75-9]
$C_{27}H_{35}NO_4$ 437.578
Alkaloid from *Lythrum anceps* (Lythraceae). Cryst. (Et_2O). Mp 149-151°. $[\alpha]_D^{20}$ +59 (c, 0.98 in $CHCl_3$).

4-Deoxy, O^{11}-Ac: ***Lythrancepine II***
[32209-76-0]
$C_{29}H_{37}NO_5$ 479.615
Alkaloid from *Lythrum anceps* (Lythraceae). Cryst. ($CHCl_3$/Et_2O). Mp 187-189°. $[\alpha]_D^{20}$ +44 (c, 1.0 in $CHCl_3$).

4-Deoxy, di-Ac: ***Lythrancepine III***
[32209-77-1]
$C_{31}H_{39}NO_6$ 521.652
Alkaloid from *Lythrum anceps* (Lythraceae). Cryst. (EtOH). Mp 175-177°. $[\alpha]_D^{20}$ +7 (c, 0.23 in $CHCl_3$).

3-Epimer, O^3,O^4-di-Ac: ***Lythrancine VI***
[40179-99-5]
$C_{31}H_{39}NO_7$ 537.652
Minor alkaloid from *Lythrum anceps* (Lythraceae). Oil. $[\alpha]_D$ +25.5 (c, 1.8 in $CHCl_3$).

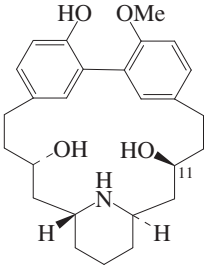
3-Epimer, O^3, O^{11}-di-Ac: ***Lythrancine VII***
[40180-00-5]
$C_{31}H_{39}NO_7$ 537.652
Minor alkaloid from *Lythrum anceps* (Lythraceae). Oil. $[\alpha]_D$ +101.5 (c, 0.37 in $CHCl_3$).

3-Epimer, tri-Ac: ***Lythrancine V***
[40179-98-4]
$C_{33}H_{41}NO_8$ 579.689
Minor alkaloid from *Lythrum anceps* (Lythraceae). Cryst. (MeOH). Mp 133-134°. $[\alpha]_D$ +91 (c, 0.55 in $CHCl_3$).

Fujita, E. *et al., J. Nat. Prod.*, 1971, **34**, 306 (*isol*)
Fujita, E. *et al., J.C.S. Perkin 1*, 1972, 2141; 1973, 297; 301; 306 (*uv, ir, pmr, ms, abs config, synth*)
Barrow, M.J. *et al., J.C.S. Perkin 2*, 1974, 1812 (*cryst struct, Lythrancines*)
Hart, D.J. *et al., J.O.C.*, 1985, **50**, 3670; 1987, **52**, 4665 (*synth, ir, pmr, ms, Lythrancepines II, III*)

Lythranidine L-378

Deacetyllythramine
[17812-78-1]
[70832-04-1 ((±)-form)]



(-)-*form*

$C_{26}H_{35}NO_4$ 425.567
Alkaloid from *Lythrum anceps* (Lythraceae). Liq.; cryst. + 1/2 H_2O (as acetate salt). Mp 136-139° (acetate salt). $[\alpha]_D^{20}$ -71 (c, 1.7 in dioxan).

O^{11}-Ac: ***Lythranine***
[32420-54-5]
$C_{28}H_{37}NO_5$ 467.604
Alkaloid from *Lythrum anceps* (Lythraceae). DMSO adduct, cryst. + 1H_2O (EtOAc or CCl_4). Mp 92-94°.

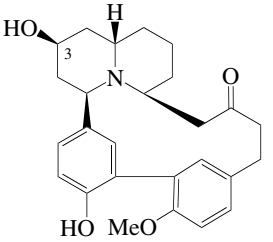
O^{11}-Ac; hydrochloride:
Cryst. + 1H_2O (MeOH). Mp 189-191° dec. $[\alpha]_D^{20}$ -40 (c, 1 in $CHCl_3$).

Tri-Ac: Mp 180-218° dec. (as hydrochloride). $[\alpha]_D^{25}$ -33 (c, 0.5 in $CHCl_3$).

Fujita, E. *et al., Chem. Pharm. Bull.*, 1970, **18**, 2216; 2393 (*isol, struct, ir, pmr, synth*)
Fujita, E. *et al., J.C.S.(C)*, 1971, 1651 (*struct, abs config*)
McClure, R.J. *et al., J.C.S. Perkin 2*, 1972, 2073 (*cryst struct, abs config, deriv*)
Fuji, K. *et al., Tet. Lett.*, 1979, 361 (*synth, ir, pmr*)
Cox, P.J. *et al., Acta Cryst. B*, 1982, **38**, 303 (*cryst struct, Lythranine*)
Fuji, K. *et al., Chem. Pharm. Bull.*, 1984, **32**, 63-69 (*cryst struct*)

Lythrumine L-379

$O^{6'}$-Demethyl-9,12-dideoxy-12-oxolythrancine, 9CI
[51024-99-8]



$C_{26}H_{31}NO_4$ 421.535
Alkaloid from *Lythrum lanceolatum* (Lythraceae). Mp 214-216°. $[\alpha]_D^{26}$ -8 (MeOH).

O^3-Ac: ***Monoacetyllythrumine***
[50651-33-7]
$C_{28}H_{33}NO_5$ 463.572
Alkaloid from *Lythrum lanceolatum* (Lythraceae). Mp 184-185°. $[\alpha]_D^{26}$ -34 (MeOH).

Wright, H. *et al., J.A.C.S.*, 1973, **95**, 6467 (*uv, ir, pmr, cryst struct, abs config*)

Maandrosine M-1

[1359-36-0]

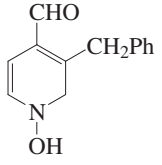
Struct. unknown. Alkaloid from the roots of *Catharanthus roseus* (Apocynaceae). Prisms (MeOH)(as sulfate salt). Mp 160-173° (sulfate).

Sulfate:
Prisms (MeOH). Mp 160-173°. pK_a 6.9 (33% DMF aq.).

Svoboda, G.H. *et al., J. Nat. Prod.*, 1963, **26**, 141-153 (*isol, uv, ir*)

Macaridine M-2

3-Benzyl-1,2-dihydro-1-hydroxy-4-pyridinecarboxaldehyde. 3-Benzyl-4-formyl-1,2-dihydro-1-hydroxypyridine
[405914-36-5]

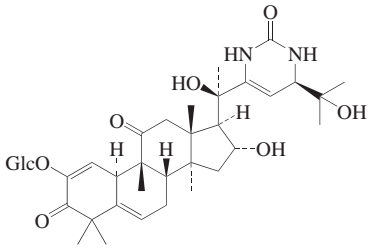


$C_{13}H_{13}NO_2$ 215.251
Alkaloid from the tubers of *Lepidium meyenii* (maca). Amorph. solid. λ_{max} 208 (log ϵ 4.07); 255 (sh) (log ϵ 3.76); 294 (log ϵ 4.14) (MeOH).

Muhammad, I. *et al., Phytochemistry*, 2002, **59**, 105-110 (*isol*)

Machilaminoside A M-3

[922510-41-6]

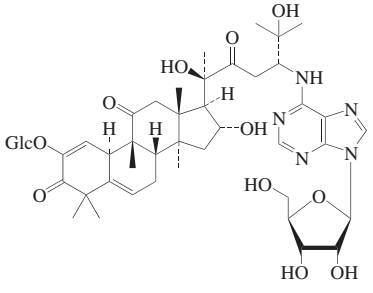


$C_{37}H_{54}N_2O_{12}$ 718.84
Constit. of *Machilus yaoshansis.*
Amorph. powder. $[\alpha]_D^{20}$ -48.8 (c, 0.06 in MeOH).

Liu, M.-T. *et al., Org. Lett.*, 2007, **9**, 129-132 (*isol, pmr, cmr, ms*)

Machilaminoside B M-4

[922510-42-7]

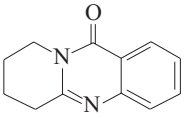


$C_{46}H_{65}N_5O_{16}$ 944.043
Constit. of *Machilus yaoshansis.*
Amorph. powder (MeOH). $[\alpha]_D^{20}$ -90.3 (c, 0.06 in MeOH).

Liu, M.-T. *et al., Org. Lett.*, 2007, **9**, 129-132 (*isol, pmr, cmr, ms*)

Mackinazolinone M-5

6,7,8,9-Tetrahydropyrido[2,1-b]quinazolin-11-one
[2446-62-0]

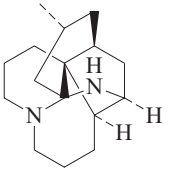


$C_{12}H_{12}N_2O$ 200.24
Alkaloid from the leaves of *Mackinlaya macrosciadia* and *Mackinlaya subulata* (Araliaceae). Cryst. (H_2O or hexane). Mp 100.5°.

Stephen, T. *et al., J.C.S.*, 1956, 4694 (*synth*)
Fitzgerald, J.S. *et al., Aust. J. Chem.*, 1966, **19**, 151 (*isol, pmr, ms*)
Kametani, T. *et al., Heterocycles*, 1976, **4**, 1487 (*synth, ir, pmr*)
Liu, J.-F. *et al., Org. Lett.*, 2005, **7**, 3363-3366 (*synth, pmr, cmr*)
Bowman, W.R. *et al., Org. Biomol. Chem.*, 2007, **5**, 103-113 (*synth*)

Macleanine M-6

[154963-00-5]

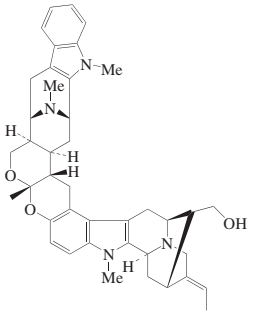


$C_{16}H_{26}N_2$ 246.395
Alkaloid from *Huperzia serrata* (*Lycopodium serratum*) (Lycopodiaceae). Mp 300° (dec.). $[\alpha]_D$ +12.5 (c, 0.24 in $CHCl_3$). Unique structural type among the Lycopodium alkaloids.

Ayer, W.A. *et al., Can. J. Chem.*, 1994, **72**, 128 (*isol, ir, pmr, cmr, ms, struct*)

Macralstonidine M-7

[17801-01-3]



Absolute Configuration

$C_{41}H_{48}N_4O_3$ 644.855

Alkaloid from the bark of *Alstonia macrophylla*, *Alstonia somersetensis* and *Alstonia spectabilis* (Apocynaceae). Needles (EtOH). Mp 295-300° dec. $[\alpha]_D^{22}$ +166 ($CHCl_3$). $[\alpha]_D$ +174.5 (c, 1.02 in C_6H_6). λ_{max} 230 (log ϵ 4.8); 285 (log ϵ 4.26); 365 (sh) (log ϵ 3.75) (EtOH).

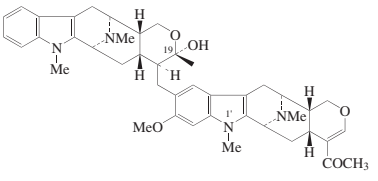
Dihydrochloride:
Needles (EtOH). Mp 326° dec. $[\alpha]_D$ +136.5 (c, 1.09 in H_2O).

Ac:
Cryst. (MeOH). Mp 205-210° dec.

Sharp, T.M. *et al., J.C.S.*, 1934, 1227-1232 (*isol*)
Kishi, T. *et al., Helv. Chim. Acta*, 1966, **49**, 946-964 (*isol*)
Waldner, E.E. *et al., Helv. Chim. Acta*, 1967, **50**, 1926-1939 (*uv, ir, pmr, ms, struct*)
Hart, N.K. *et al., Aust. J. Chem.*, 1972, **25**, 2739-2741 (*isol*)
Das, B.C. *et al., Tet. Lett.*, 1974, 4299-4302 (*cmr*)
Zhao, S. *et al., J.O.C.*, 2003, **68**, 6279-6295 (*synth*)

Macralstonine M-8

10-(20,21-Dihydro-21-hydroxy-21-methyl-18-noralstophyllan-19-yl)-11-methoxyalstophyllan-19-one, 9CI
[5594-42-3]



Absolute Configuration

$C_{43}H_{52}N_4O_5$ 704.908
Alkaloid from *Alstonia macrophylla, Alstonia muelleriana* and *Alstonia glabriflora* (Apocynaceae). Cryst. (MeOH or CH_2Cl_2/EtOH). Mp 293° (276-278°, 279-280°) dec. $[\alpha]_D^{20}$ +74.7 (c, 0.3 in $CHCl_3$).

Sulfate:
Cryst. (MeOH). Mp 263° (dec.). $[\alpha]_D$ -36.8 (c, 1.022 in H_2O).

Ac: O-*Acetylmacralstonine*
[6254-08-6]
$C_{45}H_{54}N_4O_6$ 746.945
Cytotoxic agent. Cryst. (MeOH/Et_2O). Mp 215-222°. $[\alpha]_D^{20}$ +160 (c, 0.07 in $CHCl_3$).

Me ether: **O-*Methylmacralstonine***
[5523-51-3]
$C_{44}H_{54}N_4O_5$ 718.934
Alkaloid from *Alstonia* spp. Cryst. (MeOH/Et_2O or Me_2CO/Et_2O). Mp 202-207°. $[\alpha]_D^{20}$ +241.4 (c, 0.05 in $CHCl_3$). λ_{max} 229 ; 260 ; 293 (MeOH).

19-Deoxy, 19,20-didehydro, $N^{1'}$*-de-Me:* ***Des-*N^{1a}*-methylanhydromacralstonine***
[49776-73-0]
$C_{42}H_{48}N_4O_4$ 672.866
Minor alkaloid from the bark of *Alstonia muelleriana* (Apocynaceae). Needles (MeOH). Mp 240-248° dec. $[\alpha]_D$ +10.2 (c, 0.58 in $CHCl_3$).

Sharp, T.M. *et al., J.C.S.*, 1934, 1227 (*isol*)

Kishi, T. *et al., Helv. Chim. Acta*, 1966, **49**, 946 (*isol, uv, ir, pmr, ms, struct*)
Cook, J.M. *et al., Phytochemistry*, 1971, **10**, 437 (*isol*)
Hart, N.K. *et al., Aust. J. Chem.*, 1972, **25**, 2739 (*isol*)
Burke, D.E. *et al., Chem. Comm.*, 1972, 1346 (*synth*)
Burke, D.E. *et al., Phytochemistry*, 1973, **12**, 1467-1474 (*Des-N^{1a}-methylanhydromacralstonine*)
Keawpradub, N. *et al., Planta Med.*, 1997, **63**, 97-101; 1999, **65**, 311-315 (*Methylmacralstonine,* O-*Acetylmacralastonine*)
Liao, X. *et al., Org. Lett.*, 2005, **7**, 3501-3504 (*synth*)

Macranthine M-9

[1359-38-2]

$C_{16}H_{19}NO_5$ 305.33

Struct. unknown. Amaryllidaceae alkaloid. Isol. from fresh leaf sheaths of *Crinum macrantherum* (Amaryllidaceae). Needles (EtOH). Mp 238-240° dec. $[\alpha]_D^{22}$ -19 (c, 0.235 in $CHCl_3$). $[\alpha]_D^{22}$ +49 (c, 0.229 in EtOH).

O-*Ac:* **O-*Acetylmacranthine***
$C_{18}H_{21}NO_6$ 347.367
Isol. from *Crinum macrantherum* (Amaryllidaceae). Needles (Me_2CO). Mp 222-224°. $[\alpha]_D^{22}$ -26 (c, 0.213 in $CHCl_3$). $[\alpha]_D^{22}$ +18 (c, 0.213 in EtOH).

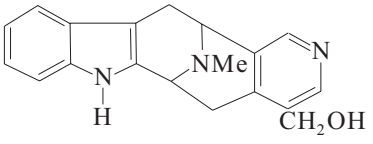
Di-O-*Ac:* **O,O-*Diacetylmacranthine***
$C_{20}H_{23}NO_7$ 389.404
Isol. from *Crinum macrantherum* (Amaryllidaceae). Fine needles (Me_2CO/Et_2O). Mp 219-221°. $[\alpha]_D^{22}$ +44 (c, 0.284 in $CHCl_3$). $[\alpha]_D^{22}$ +38 (c, 0.203 in EtOH).

Tri-Ac:
Prisms (C_6H_6/Et_2O). Mp 189-191°. $[\alpha]_D^{22}$ -2 (c, 0.22 in $CHCl_3$).

Hauth, H. *et al., Helv. Chim. Acta*, 1964, **47**, 185-194 (*isol, uv, ir, derivs*)

Macrocaffrine M-10

N^a,*18-Didemethyl-19-hydroxy-*N^b*-methylsuaveoline. Alkaloid RCLM 12. 18-Normacrophylline*
[88660-05-3]



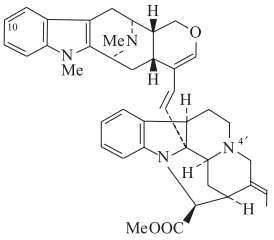
$C_{19}H_{19}N_3O$ 305.379

Struct. originally assigned has been shown to be incorrect by synthesis. Alkaloid from leaves of *Rauwolfia caffra*. Amorph. powder. $[\alpha]_D$ +33.8 (c, 0.3 in MeOH). λ_{max} 225 (log ϵ 4.32); 273 (log ϵ 3.77); 283 (log ϵ 3.75); 291 (log ϵ 3.64) (MeOH).

Nasser, A.M.A.G. *et al., Phytochemistry*, 1983, **22**, 2297-2300 (*isol, pmr, ms*)
Ohba, M. *et al., Tetrahedron*, 2007, **63**, 12689-12694 (*synth*)

Macrocarpamine M-11

Methyl 19,20-didehydro-2-(18,19-didehydroalstophyllan-18-yl)-2,7-dihydro-1,16-cyclocorynan-17-oate, 9CI
[66408-46-6]



Absolute configuration

$C_{41}H_{46}N_4O_3$ 642.839
Alkaloid from the bark of *Alstonia macrophylla* (Apocynaceae). Cytotoxic. Amorph. $[\alpha]_D$ -16 (c, 3.3 in $CHCl_3$).

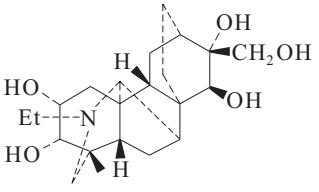
10-Methoxy: ***10-Methoxymacrocarpamine***
[120374-21-2]
$C_{42}H_{48}N_4O_4$ 672.866
Alkaloid from the leaves of *Alstonia angustifolia* (Apocynaceae).

10-Methoxy, 4′-N*-oxide:* ***10-Methoxymacrocarpamine 4′-N-oxide***
[120374-22-3]
$C_{42}H_{48}N_4O_5$ 688.865
Alkaloid from the leaves of *Alstonia angustifolia* (Apocynaceae). $[\alpha]_D$ -9 (c, 0.1 in MeOH).

Mayerl, F. *et al., Helv. Chim. Acta*, 1978, **61**, 337 (*isol, uv, cd, ir, pmr, cmr, ms, struct*)
Ghedira, K. *et al., Phytochemistry*, 1988, **27**, 3955 (*isol, uv, ir, pmr, cmr, ms, struct, derivs*)
Gan, T. *et al., J.O.C.*, 1998, **63**, 1478-1483 (*synth*)
Keawpradub, N. *et al., Planta Med.*, 1999, **65**, 311-315 (*isol, activity*)

Macrocentrine M-12

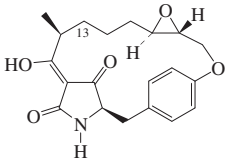
[113963-58-9]



$C_{22}H_{35}NO_5$ 393.522
Alkaloid from *Delphinium macrocentrum* (Ranunculaceae). Tablets (EtOH aq.). Mp 207-209°.

Benn, M.H. *et al., Heterocycles*, 1987, **26**, 2331 (*ir, pmr, cmr, ms, struct*)

Macrocidin A M-13



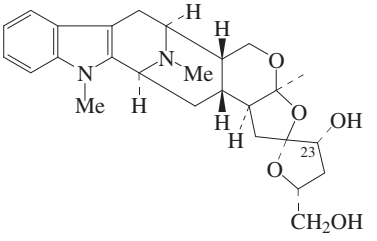
Relative Configuration

$C_{20}H_{23}NO_5$ 357.405
Tetramic acid deriv. Prod. by *Phoma macrostoma* on *Cirsium arvense.* Phytotoxin. Pale beige solid. $[\alpha]_D^{25}$ +45 (c, 0.35 in MeOH). λ_{max} 202 ; 226 ; 245 (sh) ; 284 (MeCN).

13ξ-Hydroxy: ***Macrocidin B***
$C_{20}H_{23}NO_6$ 373.405
Prod. by *Phoma macrostoma* on *Cirsium arvense.* Phytotoxin. Pale beige solid.

Graupner, P.R. *et al., J. Nat. Prod.*, 2003, **66**, 1558-1561 (*isol, pmr, cmr, cryst struct*)

Macrodasine A M-14



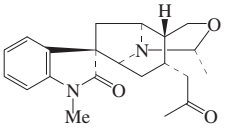
$C_{26}H_{34}N_2O_5$ 454.565
Alkaloid from the bark of *Alstonia macrophylla*. Oil. $[\alpha]_D$ +36 (c, 0.36 in $CHCl_3$). λ_{max} 230 (log ϵ 3.88); 287 (log ϵ 3.17) (EtOH).

23-Ketone: ***Macrodasine B***
$C_{26}H_{32}N_2O_5$ 452.549
Alkaloid from the bark of *Alstonia macrophylla*. Oil. $[\alpha]_D$ +149 (c, 0.07 in $CHCl_3$). λ_{max} 230 (log ϵ 3.95); 287 (log ϵ 3.23) (EtOH).

Kam, T.-S. *et al., Tetrahedron*, 2004, **60**, 3957-3966 (*isol, pmr, cmr*)

Macrogentine M-15

[301521-94-8]



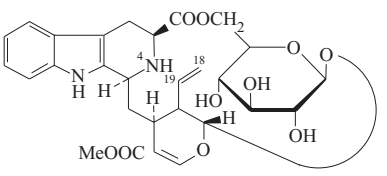
Absolute Configuration

$C_{21}H_{26}N_2O_3$ 354.448
A C16→C5 cyclomacroline alkaloid. Alkaloid from *Alstonia macrophylla*. $[\alpha]_D$ -21 (c, 0.15 in $CHCl_3$). λ_{max} 208 (log ϵ 4.44); 258 (log ϵ 3.74); 284 (log ϵ 3.15) (EtOH).

Kam, T.-S. *et al., Tetrahedron*, 2000, **56**, 6143-6150

Macrolidine M-16

[54371-00-5]



$C_{28}H_{32}N_2O_{10}$ 556.568
Alkaloid from the heartwood of *Adina rubescens* (Rubiaceae). Noncryst. $[\alpha]_D^{25}$ +2

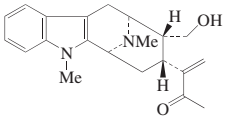
($CHCl_3$) (as N^4,*O*,*O*,*O*-tetra-Ac).

Brown, R.T. *et al., Chem. Comm.*, 1974, 553 (*struct, ms, pmr*)

Macroline M-17

*20,21-Didehydro-17-hydroxy-1,4-dimethyl-4,21-secosarpagan-19(20*H*)-one, 9CI*

[2269-93-4]



Absolute Configuration

$C_{21}H_{26}N_2O_2$ 338.449

Important degradn. prod. of the dimeric *Alstonia* alkaloids, apparently not yet isol. as a native alkaloid. Mp 211-213° dec. $[\alpha]_D^{22}$ +19 (c, 0.406 in MeOH). λ_{max} 231 (log ϵ 4.56); 282 (log ϵ 3.67); 288 (log ϵ 3.66) (EtOH).

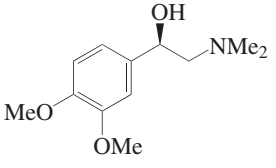
Ac:

Cryst. (MeOH/Et_2O). Mp 180°.

Hesse, M. *et al., Helv. Chim. Acta*, 1965, **48**, 689-710; 1966, **49**, 1173-1182 (*uv, ir, pmr, ms, struct*)
Esmond, R.W. *et al., J.A.C.S.*, 1980, **102**, 7116-7117 (*synth*)
Neukomm, G. *et al., Helv. Chim. Acta*, 1981, **64**, 90-96 (*abs config*)
Zhang, L.H. *et al., J.A.C.S.*, 1990, **112**, 4088-4090 (*synth*)
Bi, Y. *et al., J.A.C.S.*, 1994, **116**, 9027-9041 (*synth*)
Tran, Y.S. *et al., Org. Lett.*, 2005, **7**, 4289-4291 (*synth*)
Liao, X. *et al., J.O.C.*, 2006, **71**, 8884-8890 (*synth*)
Lewis, S.E. *et al., Tetrahedron*, 2006, **62**, 8655-8681 (*rev, chem*)

Macromerine M-18

α-[(Dimethylamino)methyl]-3,4-dimethoxybenzenemethanol, 9CI. 1-(3,4-Dimethoxyphenyl)-2-dimethylaminoethanol



(*R*)-*form*

$C_{12}H_{19}NO_3$ 225.287

(*R*)-*form* [19751-75-8]

Alkaloid from *Coryphantha (Thelocactus) macromeris, Coryphantha cornifera, Coryphantha elephantidens* and *Coryphantha pectinata* (Cactaceae). Mp 66-67.5°. $[\alpha]_D^{25}$ -42.6 (c, 2 in EtOH). $[\alpha]_D^{25}$ -147 (c, 0.039 in $CHCl_3$).

N-*De-Me:* ***Normacromerine***. N-*Methyl-3,4-dimethoxy-β-hydroxyphenethylamine*

[41787-64-8]

$C_{11}H_{17}NO_3$ 211.26

Alkaloid from *Coryphantha macromeris, Coryphantha calipensis, Coryphantha greenwoodii, Desmodium tiliaefolium* and *Dolichothele longimamma* (Cactaceae). Cryst. or brown gum. Mp 101-103°. $[\alpha]_D^{24}$ -38.4 (c, 0.41 in $CHCl_3$).

N-*De-Me; hydrochloride:* Mp 131-132°. $[\alpha]_D^{25}$ -51.3.

N-*De-Me,* N-*formyl:* N-*[2-(3,4-Dimethoxyphenyl)-2-hydroxyethyl]*-N-*methylformamide, 9CI*. **N-*Formylnormacromerine***

[41688-37-3]

$C_{12}H_{17}NO_4$ 239.271

Alkaloid from *Coryphantha macromeris* (Cactaceae).

Me ether: β,3,4-Trimethoxy-N,N-*dimethylbenzeneethanamine, 9CI*. **O-*Methylmacromerine***

[52910-84-6]

$C_{13}H_{21}NO_3$ 239.314

Alkaloid from *Coryphantha calipensis* (Cactaceae). Mp 178° (as hydrochloride). $[\alpha]_D^{25}$ -94 (c, 0.01 in EtOH).

Me ether, N-*de-Me: β,3,4-Trimethoxy*-N-*methylbenzeneethanamine, 9CI*. ***Calipamine***. O-*Methylnormacromerine*

[52910-83-5]

$C_{12}H_{19}NO_3$ 225.287

Alkaloid from *Coryphantha greenwoodii* and *Coryphantha calipensis* (Cactaceae). Mp 213-214° (206-208°) (as hydrochloride). $[\alpha]_D^{25}$ -92 (c, 0.01 in EtOH).

(*S*)-*form* [33066-27-2]

Synthetic. Mp 59-62°. $[\alpha]_D^{26}$ +34 (c, 0.035 in EtOH).

N-*Di-de-Me,* N,O-*di*-E-*cinnamoyl:* ***Syncarpamide***

$C_{28}H_{27}NO_5$ 457.525

Alkaloid from the stems of *Zanthoxylum syncarpum*. Antiplasmodial agent. Light brown solid. $[\alpha]_D^{25}$ +12.5 (c, 0.08 in $CHCl_3$). λ_{max} 242 ; 250 ; 278 (MeOH).

(±)-*form* [33122-27-9]

Mp 47.5-48.5°.

Picrate: Mp 157° (147-148°).

N-*De-Me; hydrochloride:* Mp 132-133°.

N-*Di-de-Me: α-(Aminomethyl)-3,4-dimethoxybenzenemethanol. 2-Amino-1-(3,4-dimethoxyphenyl)ethanol*

[4899-03-0]

$C_{10}H_{15}NO_3$ 197.233

Needles (C_6H_6/petrol). Mp 89-91°.

N-*Di-de-Me,* N,O-*di*-E-*cinnamoyl: (±)-Syncarpamide*

$C_{28}H_{27}NO_5$ 457.525

Alkaloid from the leaves of *Zanthoxylum syncarpum*. Pale yellow powder. λ_{max} 242 (log ϵ 4.83); 252 (log ϵ 4.69); 278 (log ϵ 4.94) (MeOH).

(ξ)-*form*

N-*Di-de-Me,* N-*benzoyl:* N-*[2-(3,4-Dimethoxyphenyl)-2-hydroxyethyl]benzamide*. ***Balsamide***

[70216-31-8]
[128820-23-5]

$C_{17}H_{19}NO_4$ 301.341

Isol. from *Amyris balsamifera* (Rutaceae). Prisms. Mp 135-136°.

Me ether, N-*di-de-Me,* N-*benzoyl:* N-*[2-(3,4-Dimethoxyphenyl)-2-methoxyethyl]benzamide*. **O-*Methylbalsamide***

$C_{18}H_{21}NO_4$ 315.368

Alkaloid from the stem bark of *Zanthoxylum hyemale*. Needles. Mp 110-112° (natural) Mp 124° (synthetic). $[\alpha]_D$ +8.8 (c, 0.01 in $CHCl_3$).

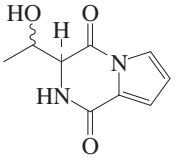
[33066-28-3 , 56120-35-5 , 33066-32-9]

Keller, W.J. *et al., J. Pharm. Sci.*, 1972, **61**, 147; 1973, **62**, 408 (*derivs*)
Brown, S.D. *et al., J.O.C.*, 1972, **37**, 773 (*isol, ir, uv, pmr, ms, synth*)
Ghosal, S. *et al., Phytochemistry*, 1973, **12**, 193 (*isol, deriv*)
Butterick, J.R. *et al., Can. J. Chem.*, 1974, **52**, 2873 (*synth*)
Bruhn, J.G. *et al., J. Pharm. Sci.*, 1974, **63**, 574 (*isol, derivs*)
Ranieri, R.L. *et al., J. Nat. Prod.*, 1976, **39**, 172 (*deriv*)
Smith, T.A. *et al., Phytochemistry*, 1977, **16**, 9 (*occur*)
Woodward, R.W. *et al., Acta Chem. Scand., Ser. B*, 1978, **32**, 619 (*cd, abs config, Calipamine*)
Burke, B. *et al., Heterocycles*, 1979, **12**, 349-351 (*Balsamide*)
Keller, W.J. *et al., J. Pharm. Sci.*, 1979, **68**, 85 (*biosynth*)
Quintard, J.P. *et al., Synthesis*, 1984, 495 (*synth*)
Estevez, J.C. *et al., Synth. Commun.*, 1990, **20**, 503 (*Balsamide, synth*)
Zhao, X. *et al., Org. Prep. Proced. Int.*, 1995, **27**, 513-517 (*di-N-de-Me*)
De Moura, N.F. *et al., Planta Med.*, 2002, **68**, 534-538 (*O-Methylbalsamide*)
Ross, S.A. *et al., J. Nat. Prod.*, 2004, **67**, 88-90; 2005, **68**, 1297-1299 (*Syncarpamide*)

Macrophominol M-19

2,3-Dihydro-3-(1-hydroxyethyl)pyrrolo[1,2-a]pyrazine-1,4-dione

[172335-92-1]



Absolute Configuration

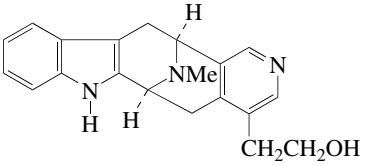
$C_9H_{10}N_2O_3$ 194.19

Isol. from cultures of the phytopathogenic fungus *Macrophomina phaseolina*. Phytotoxic agent. Mp 116-118°. $[\alpha]_D^{25}$ -25.24 (c, 0.103 in EtOH).

Trigos, A. *et al., Phytochemistry*, 1995, **40**, 1697-1698 (*isol, pmr, cmr, ms, struct*)

Macrophylline† M-20

[76372-23-1]



$C_{20}H_{21}N_3O$ 319.405

Alkaloid from *Rauwolfia caffra* and

Rauwolfia macrophylla. Amorph. powder. $[\alpha]_D^{22}$ +33.8 (c, 0.3 in MeOH). λ_{max} 225 (log ϵ 4.32); 273 (log ϵ 3.77); 283 (log ϵ 3.75); 291 (log ϵ 3.64) (MeOH).

Amer, M.M.A. *et al., Planta Med.*, Suppl., 1980, 8-12 (*isol*)
Nasser, A.M.A.G. *et al., Phytochemistry*, 1983, **22**, 2297-2300 (*isol, uv, ir*)

Macrophylline† M-21

$C_{45}H_{54}N_4O_5$ 730.945

Bisindole alkaloid. Struct. unknown. Alkaloid from *Alstonia macrophylla* (Apocynaceae). Mp 267-268° dec.

Picrate: Mp 199.5-200° dec.

Manas-Santos, F. *et al., CA*, 1937, **31**, 6243 (*isol*)

Macrophylline A† M-22

[1359-43-9]

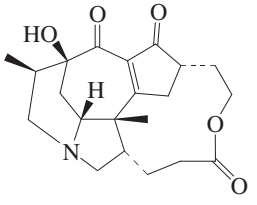
$C_{20}H_{23}N_2O_2^{\oplus}$ 323.414

Struct. unknown. Alkaloid from *Strychnos macrophylla* (Loganiaceae). Mp 300° (as picrate)(browns from 200°). Violet col. with $Ce(SO_4)_2$.

Iorio, M.A. *et al., Gazz. Chim. Ital.*, 1956, **86**, 923

Macropodumine A M-23

[908008-85-5]



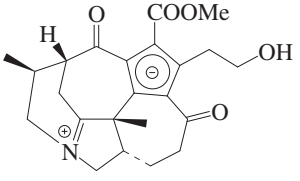
$C_{21}H_{27}NO_5$ 373.448

Alkaloid from the stems of *Daphniphyllum macropodum*. Light yellow oil. $[\alpha]_D^{20}$ +30 (c, 0.25 in MeOH). λ_{max} 210 (ϵ 3260); 239 (ϵ 6245) (MeOH).

Zhang, W. *et al., Chem. Eur. J.*, 2006, **12**, 5122-5127 (*isol, pmr, cmr, ms*)

Macropodumine B M-24

[908008-86-6]



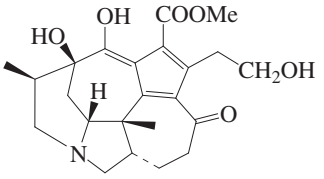
$C_{23}H_{27}NO_5$ 397.47

Zwitterion showing delocalisation of the negative charge. Alkaloid from the stems of *Daphniphyllum macropodum*. Light yellow cryst. ($CHCl_3$/MeOH). Mp 245-247°. $[\alpha]_D^{20}$ -235 (c, 0.25 in MeOH). λ_{max} 210 (ϵ 7940); 245 (ϵ 2980); 295 (ϵ 14890); 323 (ϵ 7150); 362 (ϵ 13300) (MeOH).

Zhang, W. *et al., Chem. Eur. J.*, 2006, **12**, 5122-5127 (*isol, pmr, cmr, cryst struct*)

Macropodumine C M-25

[908008-87-7]



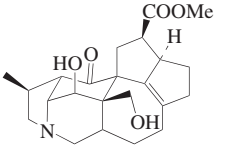
$C_{23}H_{29}NO_6$ 415.485

Alkaloid from the stems of *Daphniphyllum macropodum*. Light yellow oil. $[\alpha]_D^{20}$ -156 (c, 0.17 in MeOH). λ_{max} 209 (ϵ 7260); 250 (ϵ 2700); 301 (ϵ 15150); 325 (ϵ 7055); 367 (ϵ 14110) (MeOH).

Zhang, W. *et al., Chem. Eur. J.*, 2006, **12**, 5122-5127 (*isol, pmr, cmr, ms*)

Macropodumine D M-26

[925462-82-4]



Relative Configuration

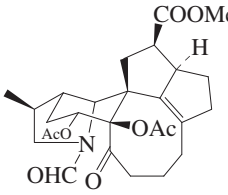
$C_{23}H_{31}NO_5$ 401.502

Alkaloid from *Daphniphyllum macropodum*. Oil. $[\alpha]_D^{20}$ -10.6 (c, 0.24 in $CHCl_3$).

Li, Z.-Y. *et al., Org. Lett.*, 2007, **9**, 477-480 (*isol, pmr, cmr*)

Macropodumine E M-27

[925462-83-5]



$C_{27}H_{35}NO_8$ 501.575

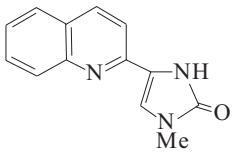
Alkaloid from *Daphniphyllum macropodum*. Oil. $[\alpha]_D^{20}$ -51.1 (c, 0.47 in $CHCl_3$).

Li, Z.-Y. *et al., Org. Lett.*, 2007, **9**, 477-480 (*isol, pmr, cmr*)

Macrorungine M-28

1,3-Dihydro-1-methyl-4-(2-quinolinyl)-2H-imidazol-2-one, 9CI

[2552-98-9]



$C_{13}H_{11}N_3O$ 225.249

Alkaloid from the aerial parts of *Macrorungia longistrobus* (preferred genus name *Anisotes*) (Acanthaceae). Yellow prisms (MeOH). Mp 267-270° dec.

Hydrochloride:
Red needles (MeOH). Mp 290° dec.

Perchlorate:
Yellow plates + 0.5 H_2O (MeOH). Mp 290° dec.

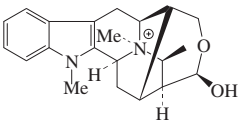
Picrate:
Cryst. (MeOH). Mp 250° dec.

Arndt, R.R. *et al., J.C.S.*, 1964, 5969 (*isol, uv, ir, struct*)
Joynt, V.P. *et al., J.C.S.(B)*, 1966, 980 (*ms*)

Macrosalhine M-29

17,19-Epoxy-19,20-dihydro-19-hydroxy-1,4,21-trimethyl-18-norsarpaganium, 9CI

[16103-76-7]



Absolute Configuration

$C_{21}H_{27}N_2O_2^{\oplus}$ 339.456

Minor quaternary alkaloid from the stem bark of *Alstonia macrophylla* (Apocynaceae).

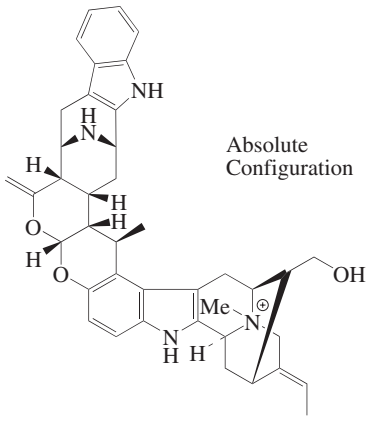
Chloride: [16049-34-6]
Mp 284-286° dec. $[\alpha]_D^{24}$ +27 (c, 0.467 in MeOH).

Thiocyanate: [16103-77-8]
Mp 300°. $[\alpha]_D^{25}$ +27.6 (c, 0.284 in MeOH).

Khan, Z.M. *et al., Helv. Chim. Acta*, 1967, **50**, 1002-1010 (*isol, uv, ir, pmr, ms, struct*)
Wulf, H. *et al., Helv. Chim. Acta*, 1967, **50**, 1011-1012 (*cryst struct*)

Macrospegatrine M-30

[113775-81-8 (chloride/monohydrochloride salt)]



Absolute Configuration

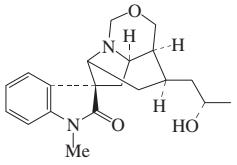
$C_{40}H_{45}N_4O_3^{\oplus}$ 629.82

Quaternary alkaloid from the roots of *Rauwolfia verticillata* (Apocynaceae). Cryst.(as chloride hydrochloride). Mp 300° dec.(chloride hydrochloride). $[\alpha]_D^{17}$ +215 ($CHCl_3$) (chloride hydrochloride).

Lin, X. *et al., Jiegou Huaxue*, 1987, **6**, 89-93; *CA*, **108**, 167761j (*cryst struct*)
Lin, M. *et al., Yaoxue Xuebao*, 1987, **22**, 833-836; *CA*, **108**, 164701d

Macroxine M-31

[135383-85-6]



Relative Configuration

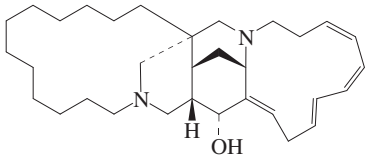
$C_{20}H_{26}N_2O_3$ 342.437

A C16→C5-cyclomacroline alkaloid. Alkaloid from the leaves of *Alstonia macrophylla* (Apocynaceae). Amorph. solid. $[\alpha]_D$ +72.2 (c, 0.002 in $CHCl_3$).

Atta-ur-Rahman, *et al., Tetrahedron*, 1991, **47**, 3129-3136 (*isol, pmr, cmr, struct*)

Madangamine F M-32

[934986-36-4]

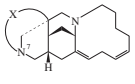


$C_{32}H_{50}N_2O$ 478.76

Alkaloid from *Pachychalina alcaloidifera*. Cytotoxic. Glassy solid. $[\alpha]_D^{25}$ -32.5 (c, 0.004 in MeOH). λ_{max} 237 (ϵ 22480) (MeOH).

De Oliveira, J.H.H.L. *et al., J. Nat. Prod.*, 2007, **70**, 538-543 (*isol, pmr, cmr, ms*)

Madangamines A-E M-33



Madangamine A X = N^7-$CH_2CH_2CH{=}^{Z}CHCH_2CH{=}^{Z}CHCH_2CH{=}^{Z}CHCH_2CH_2$-
B X = N^7-$CH_2CH_2CH{=}^{Z}CHCH_2CH{=}^{Z}CHCH_2CH_2CH{=}^{E}CHCH_2$-
C X = N^7-$(CH_2)_6CH{=}^{Z}CHCH_2CH_2$-
D X = -$(CH_2)_{11}$-
E X = -$(CH_2)_{10}$-

Madangamine A [155944-26-6]

$C_{30}H_{44}N_2$ 432.691

Alkaloid from the marine sponge *Xestospongia ingens*. Cytotoxic agent. Glass. $[\alpha]_D$ +319 (c, 1 in EtOAc).

Madangamine B [203060-01-9]

$C_{30}H_{44}N_2$ 432.691

Alkaloid from the marine sponge *Xestospongia ingens*. Cytotoxic agent. Glass. $[\alpha]_D$ +150.7 (c, 0.07 in EtOAc).

Madangamine C [203060-06-4]

$C_{28}H_{44}N_2$ 408.669

Alkaloid from the marine sponge *Xestospongia ingens*. Cytotoxic agent. Glass. $[\alpha]_D$ +140.8 (c, 0.09 in EtOAc).

Madangamine D [203060-15-5]

$C_{29}H_{48}N_2$ 424.712

Alkaloid from the marine sponge *Xestospongia ingens*. Cytotoxic agent. Isol. as an inseparable mixt. with Madangamine E.

Madangamine E [203060-37-1]

$C_{28}H_{46}N_2$ 410.685

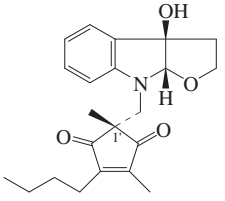
Alkaloid from the marine sponge *Xestospongia ingens*. Cytotoxic agent. Isol. as an inseparable mixt. with Madangamine D.

Kong, F. *et al., J.A.C.S.*, 1994, **116**, 6007-6008 (*isol, pmr, cmr, struct*)
Kong, F. *et al., J. Nat. Prod.*, 1998, **61**, 267-271 (*isol, pmr, cmr, ms*)
Matzanke, N. *et al., Org. Prep. Proced. Int.*, 1998, **30**, 3-51 (*rev*)

Madindoline A M-34

K 93-0711-I_1. Antibiotic K 93-0711-I_1

[184877-65-4]



Absolute Configuration

$C_{22}H_{27}NO_4$ 369.46

Prod. by *Streptomyces nitrosporeus* sp. K93-0711. Interleukin 6 inhibitor. Pale yellow needles. Sol. Me_2CO, EtOAc, Et_2O, MeOH, $CHCl_3$, C_6H_6, EtOH, hexane; fairly sol. H_2O. Mp 80-84°. $[\alpha]_D^{24}$ +44.4 (c, 0.3 in MeOH). No longer produced by original source which has mutated. λ_{max} 207 (log ϵ 4.38); 245 (log ϵ 4.26); 299 (log ϵ 3.28) (MeOH).

*1′-Epimer: **Madindoline B**. K 93-0711-I_2. Antibiotic K 93-0711-I_2*

[184877-64-3]

$C_{22}H_{27}NO_4$ 369.46

Prod. by *Streptomyces nitrosporeus* sp. K93-0711. Interleukin 6 inhibitor. Light yellow needles. Sol. Me_2CO, hexane, MeOH, EtOH, C_6H_6, $CHCl_3$, Et_2O, EtOAc; fairly sol. H_2O. Mp 105-107°. $[\alpha]_D^{24}$ +25.6 (c, 0.3 in MeOH). No longer prod. by original source. λ_{max} 208 (log ϵ 4.4); 246 (log ϵ 4.29); 304 (log ϵ 3.28) (MeOH).

Hayashi, M. *et al., J. Antibiot.*, 1996, **49**, 1091-1095 (*isol, props*)
Takamatsu, S. *et al., J. Antibiot.*, 1997, **50**, 1069-1072 (*isol, uv, pmr, cmr*)
Hosokawa, S. *et al., Tet. Lett.*, 2000, **41**, 6429-6434; 6435-6439 (*synth*)
McComas, C.C. *et al., Org. Lett.*, 2002, **4**, 2337-2340 (*synth*)
Hirose, T. *et al., Tetrahedron*, 2005, **61**, 6015-6039 (*synth, abs config*)
Hirose, T. *et al., Tet. Lett.*, 2006, **47**, 6761-6764 (*synth*)
Wan, L. *et al., Org. Lett.*, 2007, **9**, 647-650 (*synth*)

Madumycin II M-35

Madumicin II. A 2315A. A 17002F. A 15104V. Antibiotic A 2315A. Antibiotic A 17002F. Antibiotic A 15104V

[58717-24-1]

$C_{26}H_{37}N_3O_7$ 503.594

Macrolide-type antibiotic. CAS numbering shown. Isol. from *Actinoplanes philippinensis* and *Actinomadura flava*. Active against gram-positive organisms. Gum. $[\alpha]_D^{27}$ -132 (c, 0.375 in MeOH). λ_{max} 214 (ϵ 35500) (95% EtOH) (Derep).

▶OM0848200

*15-Ketone: **Madumycin I**. Madumicin I*

[58678-44-7]
[54077-27-9]

$C_{26}H_{35}N_3O_7$ 501.578

Isol. from *Actinomadura flava*. Active against gram-positive organisms. Gum. Sol. MeOH, $CHCl_3$; fairly sol. Et_2O; poorly sol. H_2O, hexane, C_6H_6. $[\alpha]_D^{20}$ -58.4 (c, 0.5 in MeOH). λ_{max} 214 (ϵ 35500) (95% EtOH) (Derep). λ_{max} 237 (E1%/1cm 324) (MeOH) (Berdy). λ_{max} 290 (MeOH/NaOH) (Berdy).

▶LD_{50} (mus, scu) 75 mg/kg, LD_{50} (mus, orl) 178.5 mg/kg. OM0848000

*13-Deoxy: **Antibiotic A 17002C**. 15-Deoxo-13-deoxy-15-hydroxymadumycin I, 9CI. A 17002C. A 15104II. Antibiotic A 15104II*

[71843-98-6]

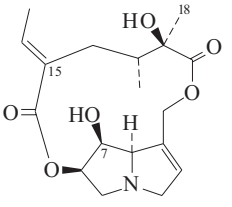
$C_{26}H_{37}N_3O_6$ 487.595

From *Actinoplanes* spp. Mainly active against gram-positive bacteria. Sol. MeOH, $CHCl_3$; poorly sol. hexane. Mp 158° dec. $[\alpha]_D^{20}$ -21 (c, 0.95 in MeOH). λ_{max} 214 (ϵ 35500) (95% EtOH) (Derep). λ_{max} 214 (ϵ 13200) (EtOH) (Berdy). λ_{max} 214 (HCl) (Berdy). λ_{max} 214 (NaOH aq.) (Berdy).

U.S. Pat., 1972, 276 546; *CA*, **81**, 2390y (*isol*)
Brazhnikova, M.G. *et al., Bioorg. Khim.*, 1976, **2**, 149 (*isol*)
Maksimora, T.S. *et al., Zentralbl. Bakteriol., Parasitenkd. Infektionskrankh. Hyg., Abt. 1, Suppl.*, 1976, **6**, 377; *CA*, **88**, 136948 (*isol, struct*)
Chamberlain, J.W. *et al., J. Antibiot.*, 1977, **30**, 1977 (*struct, spectra*)
Bycroft, B.W. *et al., J.C.S. Perkin 1*, 1977, 2464 (*conformn, nmr*)
Martinelli, E. *et al., J. Antibiot.*, 1979, **32**, 108 (*A 170002C*)
Meyers, A.I. *et al., Pure Appl. Chem.*, 1982, **54**, 2537 (*synth*)
Le Fevre, J.W. *et al., J. Nat. Prod.*, 1983, **46**, 475 (*cmr*)
Le Fevre, J.W. *et al., J.O.C.*, 1984, **49**, 2588 (*biosynth*)
Tavares, F. *et al., J.A.C.S.*, 1996, **118**, 3303 (*synth*)
Ghosh, A.K. *et al., J.O.C.*, 1997, **62**, 7908-7909 (*synth*)

Madurensine, 9CI M-36

[26126-78-3]



$C_{18}H_{25}NO_6$ 351.399

Cyclic diester of crotanecine with integerrinecic acid. Alkaloid from *Crotalaria madurensis, Crotalaria agatiflora* and *Crotalaria rosenii* (Fabaceae). Needles (EtOH). Mp 175-176° (164-164.5°). $[\alpha]_D$ +55.7.

▶OM0850000

O^7-*Ac: **Acetylmadurensine***

$C_{20}H_{27}NO_7$ 393.436
Alkaloid from *Crotalaria agatiflora* and *Crotalaria rosenii* (Fabaceae). Prisms (EtOH). Mp 179-180° (158-160°). $[\alpha]_D$ +68 (c, 0.60 in EtOH). $[\alpha]_D$ +66 (c, 2 in $CHCl_3$).

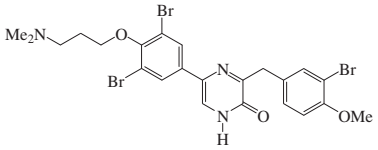
(15Z)-Isomer, O^7-Ac: ***Acetyl*-cis-*madurensine***
$C_{20}H_{27}NO_7$ 393.436
Alkaloid from *Crotalaria agatiflora* (Fabaceae). Fine needles (petrol). Mp 156-157°. $[\alpha]_D$ +102.3 (c, 0.39 in EtOH).

18-Hydroxy: ***Crotaflorine***
[112156-54-4]
$C_{18}H_{25}NO_7$ 367.398
Alkaloid from *Crotalaria agatiflora* and *Crotalaria rosenii* (Fabaceae). Prisms (EtOH). Mp 179-180°. $[\alpha]_D$ +50 (c, 0.51 in EtOH). $[\alpha]_D$ +32 (c, 2 in $CHCl_3$). Ester of crotanecine with retronecic acid.

Atal, C.K. *et al., Tet. Lett.*, 1966, 537 (*pmr*)
Culvenor, C.C.J. *et al., Chem. Comm.*, 1970, 65 (*struct*)
Culvenor, C.C.J. *et al., An. Quim.*, 1972, **68**, 883 (*isol, pmr, ms, derivs*)
Hrbek, J. *et al., Coll. Czech. Chem. Comm.*, 1972, **37**, 3918 (*cd*)
Mody, N.V. *et al., J. Nat. Prod.*, 1979, **42**, 417 (*cmr*)
Mackay, M.F. *et al., Acta Cryst. C*, 1984, **40**, 1073 (*cryst struct*)
Abegaz, B. *et al., Tetrahedron*, 1987, **43**, 3263 (*isol, ir, pmr, cmr, ms, derivs*)

Maedamine A M-37

[310396-69-1]



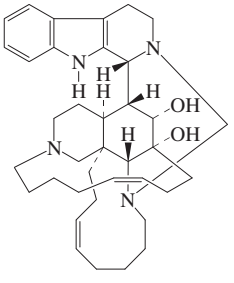
$C_{23}H_{24}Br_3N_3O_3$ 630.173
Alkaloid from the sponge *Suberea* sp. Cytotoxic agent. Amorph. yellow solid. λ_{max} 285 (ϵ 4000); 350 (ϵ 1000) (MeOH).

N-*De-Me:* ***Maedamine B***
[310396-70-4]
$C_{22}H_{22}Br_3N_3O_3$ 616.146
Alkaloid from *Suberea* sp. Cytotoxic agent. Amorph. yellow solid. λ_{max} 285 (ϵ 5000); 350 (ϵ 1200) (MeOH).

Hirano, K. *et al., Tetrahedron*, 2000, **56**, 8107-8110 (*Maedamines A,B*)

Maeganedin A M-38

[205247-54-7]

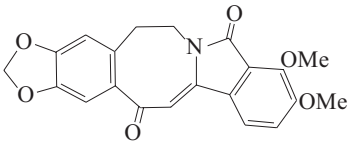


$C_{37}H_{52}N_4O_2$ 584.843
Related to Manzamine A, M-91. Alkaloid from the sponge *Amphimedon* sp. Amorph. solid. $[\alpha]_D^{25}$ +47 (c, 0.4 in MeOH). λ_{max} 205 (ϵ 13000); 223 (ϵ 2500); 274 (ϵ 2500); 322 (ϵ 4000) (MeOH).

Tsuda, M. *et al., Tet. Lett.*, 1998, **39**, 1207-1210 (*isol, uv, ir, pmr, cmr*)

Magallanesine M-39

[75767-34-9]

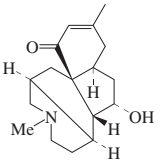


$C_{21}H_{17}NO_6$ 379.368
Alkaloid from the stems and branches of *Berberis darwinii* (Berberidaceae). Yellow cryst. (MeOH). Mp 254-256°. The first isoindolobenzazocine alkaloid. Prob. an artifact.

Manikumar, G. *et al., J.O.C.*, 1981, **46**, 386 (*synth*)
Valencia, E. *et al., Tet. Lett.*, 1985, **26**, 993 (*uv, ir, pmr, cmr, ms, struct*)
Shamma, M. *et al., J. Nat. Prod.*, 1986, **49**, 398
Fang, F.G. *et al., Tet. Lett.*, 1989, **30**, 2743 (*synth*)
Yoneda, R. *et al., Tetrahedron*, 1996, **52**, 14563 (*synth*)

Magellanine† M-40

[61273-75-4]



Absolute Configuration

$C_{17}H_{25}NO_2$ 275.39
Alkaloid from *Lycopodium magellanicum* (Lycopodiaceae). Mp 165-166°.

Methobromide: Mp 274°.

Ketone: ***Magellaninone***
[73885-47-9]
$C_{17}H_{23}NO_2$ 273.374
Alkaloid from *Lycopodium magellanicum* (Lycopodiaceae). Oil; Cryst. (Me_2CO)(as perchlorate). Mp 244-245° (perchlorate).

Castillo, M. *et al., Can. J. Chem.*, 1976, **54**, 2893 (*isol, ir, pmr, ms, cryst struct*)
Loyola, L.A. *et al., Phytochemistry*, 1979, **18**, 1721 (*Magellaninone*)
Hirst, G.C. *et al., J.A.C.S.*, 1993, **115**, 2992 (*synth*)
Paquette, L.A. *et al., J.A.C.S.*, 1993, **115**, 4377 (*synth*)
Williams, J.P. *et al., J.A.C.S.*, 1994, **116**, 4689 (*synth*)
Yen, C.-F. *et al., Angew. Chem., Int. Ed.*, 2002, **41**, 4090-4093 (*synth*)
Ishizaki, M. *et al., Tetrahedron*, 2005, **61**, 4053-4065 (*synth*)
Kozaki, T. *et al., J.O.C.*, 2007, **72**, 10147-10154 (*synth*)

Magnarcine M-41

[1359-45-1]

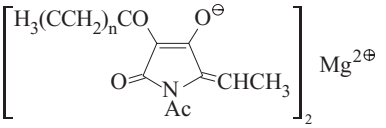
$C_{17}H_{21}NO_4$ 303.357
Amaryllidaceae alkaloid. Struct. unknown. Isol. from several *Narcissus* hybrids and from *Galanthus nivalis* (Amaryllidaceae). Cryst. (MeOH or Me_2CO). Mp 221° Mp 253-254° dec.

Perchlorate:
Prisms (EtOH/Et_2O). Mp 285° dec.

Boit, H.-G. *et al., Chem. Ber.*, 1957, **90**, 2197 (*isol*)
Boit, H.G. *et al., Naturwissenschaften*, 1959, **46**, 228; 1960, **47**, 109 (*isol*)

Magnesidin M-42

[52081-52-4]



n = 4,6

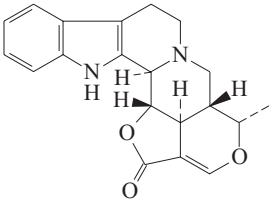
A mixt. of Mg salts of 2 tetramic acids. Obt. from *Pseudomonas magnesiorubra* ATCC 21856 and a marine *Vibrio gazogenes*. Active against gram-positive bacteria, particularly the spore bearers. Sol. MeOH, Et_2O; poorly sol. H_2O. Mol. formula $C_{28}H_{36}MgN_2O_8$/$C_{32}H_{44}MgN_2O_8$. λ_{max} 257 (ϵ 19800) (MeOH) (Derep). λ_{max} 261 (E1%/1cm 928) (MeOH) (Berdy).

▶ LD_{50} (mus, ipr) 50 mg/kg. OM2457600

Gandhi, N.M. *et al., J. Antibiot.*, 1973, **26**, 797 (*isol*)
U.K. Pat., 1977, 1 478 643; *CA*, **88**, 168480 (*synth, props*)
Imamura, N. *et al., J. Antibiot.*, 1994, **47**, 257-261 (*isol, pmr, cmr, ms*)

Magniflorine M-43

[139610-18-7]

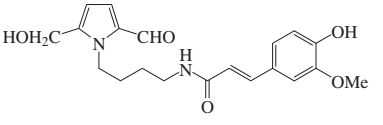


$C_{20}H_{20}N_2O_3$ 336.39
Not to be confused with Magnoflorine in C-702. Alkaloid from the fruit of *Hamelia magniflora* (Rubiaceae). Prisms (EtOAc). Mp 168-170°. $[\alpha]_D^{20}$ -271 (c, 1 in $CHCl_3$).

Rumbero, A. *et al., Tet. Lett.*, 1991, **32**, 5153-5154 (*isol, uv, ir, pmr, cmr, ms, struct*)

Magnolamide M-44

[212703-85-0]

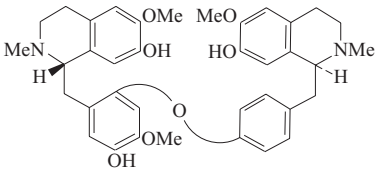


$C_{20}H_{24}N_2O_5$ 372.42
Alkaloid from the leaves of *Magnolia coco*. Antioxidant. Pale yellow oil. λ_{max} 202 (log ϵ 4.5); 236 (log ϵ 4.66); 294 (log ϵ 4.43) (MeOH).

Yu, H.-J. *et al., J. Nat. Prod.*, 1998, **61**, 1017-1019 (*isol, pmr, cmr*)
Dong, Y. *et al., Heterocycles*, 2002, **56**, 221-225 (*synth, pmr, cmr*)
Chiou, W.-F. *et al., Heterocycles*, 2005, **65**, 1215-1220 (*synth, activity*)

Magnolamine M-45

[573-73-9]



$C_{37}H_{42}N_2O_7$ 626.748
Alkaloid from the leaves of *Magnolia fuscata* and *Michelia fuscata* (Magnoliaceae). Needles (C_6H_6). Mp 117-119°. $[\alpha]_D$ +111.6 (EtOH).

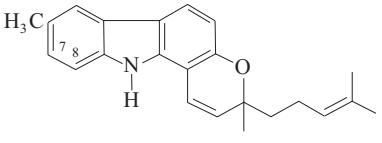
Picrate: Mp 142-145° dec.

Picrolonate: Mp 163-164° dec.

Proskurnina, N. *et al., Bull. Soc. Chim. Fr.*, Sér. 5, 1938, 1357 (*isol*)
Tomita, M. *et al., Pharm. Bull.*, 1954, **2**, 115 (*struct*)
Baldas, J. *et al., J.C.S. Perkin 1*, 1972, 592 (*ms*)
Yakhontova, L.D. *et al., Khim. Prir. Soedin.*, 1977, **13**, 234; *Chem. Nat. Compd. (Engl. Transl.)*, 1977, **13**, 200 (*struct, ms, pmr*)
Tanaka, H. *et al., Heterocycles*, 1981, **16**, 1275 (*occur, ir, pmr, synth, struct, bibl*)

Mahanimbicine M-46

*3,11-Dihydro-3,8-dimethyl-3-(4-methyl-3-pentenyl)pyrano[3,2-*a*]carbazole, 9CI. Isomahanimbine*



$C_{23}H_{25}NO$ 331.457

(+)-*form* [28305-77-3]
Alkaloid from the leaves of *Murraya koenigii* (curryleaf tree) (Rutaceae). Mp 142°. $[\alpha]_D^{30}$ +18.6 (c, 0.86 in $CHCl_3$). λ_{max} 277 (log ϵ 4.71); 288 (log ϵ 5); 315 (log ϵ 3.84); 335 (log ϵ 3.99); 350 (log ϵ 3.97) (MeOH). λ_{max} 239 (log ϵ 4.68); 291 (log ϵ 4.63); 339 (log ϵ 3.82); 353 (log ϵ 3.8) (EtOH).

7-Hydroxy: ***Pyrafoline D****. Isomahanine*
[138876-26-3]
$C_{23}H_{25}NO_2$ 347.456
Alkaloid from the stem bark of *Murraya euchrestifolia* and seeds of *Murraya koenigii* (curryleaf tree) (Rutaceae). Shows cytotoxic activity. Pale brown powder, cryst. (CH_2Cl_2/petrol). Mp 184°. $[\alpha]_D$ 0 (MeOH). Pyrafoline D descr. as brown powder, Isomahanine as cryst. with indicated Mp. Opt. rotn. refers to Pyrafoline D. The samples have not been compared. λ_{max} 220 (log ϵ 4.51); 236 (log ϵ 4.48); 286 (sh) (log ϵ 4.29); 294 (log ϵ 4.52); 324 (log ϵ 3.68); 338 (log ϵ 3.74) (MeOH).

(±)-*form* [28305-78-4]
Synthetic. Mp 140°. Racemate.

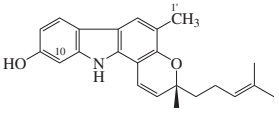
8-Methoxy: ***Murrayamine C***†
[134779-19-4]
$C_{24}H_{27}NO_2$ 361.483
Alkaloid from leaves of *Murraya euchrestifolia* (Rutaceae). Syrup. λ_{max} 240 ; 274 ; 284 ; 340 ; 353 (MeOH).

[26871-46-5]

Kureel, S.P. *et al., Chem. Ind. (London)*, 1970, 958 (*uv, ir, pmr, struct, synth*)
Joshi, B.S. *et al., Tetrahedron*, 1970, **26**, 1475-1482 (*isol, uv, ir, pmr, struct*)
Narasimhan, N.S. *et al., Indian J. Chem.*, 1975, **13**, 993-999 (*isol, uv, ir, pmr, ms, struct*)
Narasimhan, N.S. *et al., Indian J. Chem., Sect. B*, 1976, **14**, 329-331 (*synth*)
Ito, C. *et al., Chem. Pharm. Bull.*, 1991, **39**, 1668-1671 (*Pyrafoline D*)
Wu, T.-S. *et al., Phytochemistry*, 1991, **30**, 1048-1051 (*Murrayamine C*)
Reisch, J. *et al., Phytochemistry*, 1992, **31**, 2877-2879 (*Isomahanine*)
Itoigawa, M. *et al., J. Nat. Prod.*, 2000, **63**, 893-897 (*activity*)

Mahanine M-47

*3,11-Dihydro-3,5-dimethyl-3-(4-methyl-3-pentenyl)pyrano[3,2-*a*]carbazol-9-ol, 9CI*



(*R*)-*form*

$C_{23}H_{25}NO_2$ 347.456
Data on opt. rots. and abs. configs. for these compds. is mostly unsatisfactory.

(*R*)-*form* [28360-49-8]
Alkaloid from the leaves of *Murraya koenigii* (curry leaf tree) (Rutaceae). Shows cytotoxic activity. Fluffy cryst. (petrol). Mp 98-100°. $[\alpha]_D$ -24.4. λ_{max} 240 (ϵ 4.46); 263 (ϵ 3.89); 286 (ϵ 4.32); 295 (ϵ 4.57); 300 (ϵ 4); 340 (ϵ 3.73); 360 (ϵ 3.63) (MeOH).

(*S*)-*form* [134876-75-8]
From leaves of *Murraya euchrestifolia* (Rutaceae). Cytotoxic agent. Needles (Me_2CO). Mp 95-96°. $[\alpha]_D$ +34 (c, 2 in $CHCl_3$). λ_{max} 221 (ϵ 74130); 240 (ϵ 81200); 285 (sh) (ϵ 47860); 294 (ϵ 64600); 325 (ϵ 4500); 342 (ϵ 4800); 357 (ϵ 3450) (MeOH).

(±)-*form*

Deoxy: ***(±)-Mahanimbine***
[24948-14-9]
$C_{23}H_{25}NO$ 331.457
Obt. by heating (+)-mahanimbine at 150°. Alkaloid from the stem bark of *Murraya koenigii* (curryleaf tree) (Rutaceae). Cryst. (hexane). Mp 72-73° Mp 75-76° Mp 94-95°. λ_{max} 225 (log ϵ 4.6); 238 (log ϵ 4.7); 287 (log ϵ 4.6); 326 (log ϵ 4) (EtOH).

*Deoxy, 10-methoxy: 3,11-Dihydro-10-methoxy-3,5-dimethyl-3-(4-methyl-3-pentenyl)pyrano[3,2-*a*]carbazole.* ***Murrayamine B***
[134779-18-3]
$C_{24}H_{27}NO_2$ 361.483
Alkaloid from leaves of *Murraya euchrestifolia* (Rutaceae). Syrup.

(ξ)-*form*

Deoxy: ***(+)-Mahanimbine***
[21104-28-9]
$C_{23}H_{25}NO$ 331.457
Alkaloid from the fruits and leaves of *Murraya koenigii* (curryleaf tree) and the stem bark of *Murraya exotica* (Rutaceae). Cryst. (hexane). Mp 94-95°. $[\alpha]_D$ +40.6 (c, 2.1 in $CHCl_3$). $[\alpha]_D$ +52 ($CHCl_3$). Abs. config. not certain. λ_{max} 223 (log ϵ 4.55); 239 (log ϵ 4.66); 288 (log ϵ 4.61); 330 (log ϵ 3.9); 343 (log ϵ 3.42) (EtOH).

Deoxy, N-*Me:*
Needles (EtOH). Mp 120°.

*Deoxy, 1′-oxo: 3,11-Dihydro-3-methyl-3-(4-methyl-3-pentenyl)pyrano[3,2-*a*]carbazole-5-carboxaldehyde.* ***Murrayacinine***
[53508-00-2]
$C_{23}H_{23}NO_2$ 345.44
Alkaloid from the stem bark of *Murraya koenigii* (curryleaf tree) (Rutaceae). Mp 105°. Aldehyde corresponding to Mahanimbine. λ_{max} 234 (log ϵ 4.6); 280 (log ϵ 4.5); 301 (log ϵ 4.58); 312 (log ϵ 4.5) (EtOH).

Deoxy, 3′,4′-dihydro, 4′-hydroxy: ***Mahanimbinine***
[30048-24-9]
$C_{23}H_{27}NO_2$ 349.472
Alkaloid from leaves of *Murraya koenigii* (curryleaf tree) (Rutaceae). Mp 179°. λ_{max} 238 (log ϵ 4.64); 288 (log ϵ 4.61); 329 (log ϵ 3.83); 344 (log ϵ 3.87); 359 (log ϵ 3.82) (EtOH).

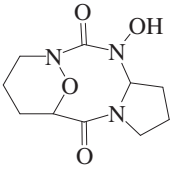
Deoxy, $\Delta^{4'}$-isomer, 3′-hydroxy: ***Murrayamine C***†*. Mahanimboline*
[73385-58-7]
$C_{23}H_{25}NO_2$ 347.456
Alkaloid from root bark of *Murraya euchrestifolia* (Rutaceae). Shows cytotoxic activity. Pale yellow oil. This struct. was formerly assigned erroneously to Mahanimboline. The pmr data of the compd. isol. by Roy *et al* (1979) are different from those reported for Murrayamine C (see Mahanimbicine, M-46), which has now been assigned this struct.

Kureel, S.P. *et al., Experientia*, 1970, **26**, 1055 (*Mahanimbinine*)
Joshi, B.S. *et al., Tetrahedron*, 1970, **26**, 1475-1482 (*Mahanimbine, isol, uv, ir, pmr, struct*)
Chakraborty, D.P. *et al., Chem. Ind. (London)*, 1974, 165-166 (*Murrayacinine, isol, uv, ir, ms, struct, synth*)
Bandranayake, W.M. *et al., J.C.S. Perkin 1*, 1974, 998-1007 (*Mahanimbine, synth*)
Roy, S. *et al., Phytochemistry*, 1974, **13**, 2893 (*Mahanimbine, isol, uv, ir, pmr*)
Narasimhan, N.S. *et al., Indian J. Chem.*, 1975, **13**, 993-999; *Indian J. Chem., Sect. B*, 1976,

14, 329-331; 430-433 (*Mahanine, Mahanimbine, isol, uv, ir, pms, ms, struct, synth*)
Bhattacharyya, P. *et al., J. Indian Chem. Soc.*, 1978, **55**, 308-309 (*Mahanimbine*)
Roy, S. *et al., Chem. Ind. (London)*, 1979, 669-670 (*Mahanimboline*)
Roy, S. *et al., J. Indian Chem. Soc.*, 1980, **57**, 759 (*Murrayacinine, synth*)
Atta-ur-Rahman, *et al., Fitoterapia*, 1988, **59**, 494-495 (*pmr, cmr*)
Wu, T.-S. *et al., Phytochemistry*, 1991, **30**, 1048-1051 (*Mahanine, Murrayamine B, isol, pmr*)
Ito, C, *et al., Phytochemistry*, 1992, **31**, 1083-1084 (*Murrayamine C*)
Meragelman, K.M. *et al., J. Nat. Prod.*, 2000, **63**, 427-428 (*Mahanimbine, isol, cmr*)
Itoigawa, M. *et al., J. Nat. Prod.*, 2000, **63**, 893-897 (*activity*)

Maingayinine M-48

[863890-49-7]

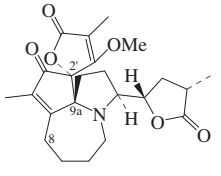


$C_{10}H_{15}N_3O_4$ 241.246
Alkaloid from the twigs of *Mitrephora maingayi*. Amorph. powder. Mp 135-137°. $[\alpha]_D^{25}$ -12.8 (c, 0.2 in MeOH).

Yu, R. *et al., Nat. Prod. Res.*, 2005, **19**, 359-362 (*isol, pmr, cmr, ms*)

Maistemonine M-49

Protostemotinine
[137031-44-8]
[169534-85-4 (Protostemotinine)]



Absolute Configuration

$C_{23}H_{29}NO_6$ 415.485
Alkaloid from the roots of *Stemona mairei* and *Stemona sessilifolia*.

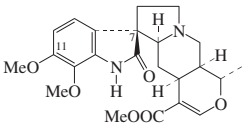
8β-Hydroxy: ***Oxymaistemonine***
[137031-45-9]
$C_{23}H_{29}NO_7$ 431.485
Alkaloid from the roots of *Stemona mairei*.

2′-Epimer: Isomaistemonine
[263870-90-2]
$C_{23}H_{29}NO_6$ 415.485
Alkaloid from the roots of *Stemona japonica*.

Lin, W. *et al., Chin. Chem. Lett.*, 1991, **2**, 369-370 (*Maistemonine, Oxymaistemonine*)
Cong, X, *et al., Phytochemistry*, 1995, **40**, 615-617 (*Protostemonine*)
Zou, C. *et al., J. Chin. Pharm. Sci.*, 1999, **8**, 185-190 (*Isomaistemonine*)
Greger, H. *et al., Planta Med.*, 2006, **72**, 99-113 (*rev*)

Majdine M-50

Herbavinine
[20497-42-1]



Absolute Configuration

$C_{23}H_{28}N_2O_6$ 428.484
Alkaloid from *Vinca herbacea, Vinca elegantissima, Vinca erecta*, and *Vinca major* (Apocynaceae). Mp 190-192°. $[\alpha]_D^{24}$ -108 (Py). λ_{max} 225 (log ϵ 4.57); 248 (sh) (log ϵ 4.23); 285 (sh) (log ϵ 3.16) (EtOH).

O^{11}-De-Me: ***Vinerinine***
[54347-88-5]
$C_{22}H_{26}N_2O_6$ 414.457
Alkaloid from *Vinca erecta* (Apocynaceae). Amorph. (?). $[\alpha]_D^{20}$ -74. λ_{max} 224 (log ϵ 4.44) (EtOH).

3-Epimer: ***Elegantissine****. Herboxine. Herboksine*
[57495-67-7]
$C_{23}H_{28}N_2O_6$ 428.484
Alkaloid from *Vinca elegantissima* and *Vinca herbacea* (Apocynaceae). Amorph. $[\alpha]_D$ +3.4 ($CHCl_3$). λ_{max} 224 (log ϵ 4.39); 250 (sh) (no solvent reported).

7-Epimer: ***Isomajdine****. Elegantine*
[20497-41-0]
$C_{23}H_{28}N_2O_6$ 428.484
Alkaloid from the *Vinca herbacea* and *Vinca elegantissima* (Apocynaceae). Mp 208-210°. $[\alpha]_D^{24}$ -111 (Py). λ_{max} 225 (log ϵ 4.53); 248 (sh) (log ϵ 4.16); 285 (sh) (log ϵ 3.04) (EtOH).

3,7-Diepimer: ***Isoelegantissine***
[57495-68-8]
$C_{23}H_{28}N_2O_6$ 428.484
Alkaloid from *Vinca elegantissima* (Apocynaceae). Mp 190°. $[\alpha]_D$ +5.7 ($CHCl_3$).

Stereoisomer (1): ***Herbavine***
[27274-48-2]
$C_{23}H_{28}N_2O_6$ 428.484
Alkaloid from *Vinca herbacea* (Apocynaceae). Stereochem. unknown.

Stereoisomer (1), parent acid: ***16-Carboxyherbavine***
[58031-34-8]
$C_{22}H_{26}N_2O_6$ 414.457
Alkaloid from *Vinca herbacea* (Apocynaceae). Corresponds to Herbavine.

Stereoisomer (2): ***Isoherbavine***
[56832-55-4]
$C_{23}H_{28}N_2O_6$ 428.484
Alkaloid from *Vinca herbacea* (Apocynaceae). Stereochem. unknown.

Stereoisomer (2), parent acid: ***16-Carboxyisoherbavine***
[74924-37-1]
$C_{22}H_{26}N_2O_6$ 414.457
Alkaloid from *Vinca herbacea* (Apocynaceae). Corresponds to Isoherbavine.

Ognyanov, I. *et al., Tetrahedron*, 1968, **24**, 4641-4648 (*Majdine, Isomajdine, uv, pmr, ms, struct, stereochem*)
Bhattacharyya, J. *et al., Tet. Lett.*, 1972, 159-162 (*Elegantine*)
Khalmirzoev, M.M. *et al., Khim. Prir. Soedin.*, 1974, **10**, 411-412; 1977, **13**, 718-719; *Chem. Nat. Compd. (Engl. Transl.)*, 1974, **10**, 419; 1977, **13**, 605 (*Vinerinine*)
Ali, E. *et al., Experientia*, 1975, **31**, 876-877 (*Elegantissine, Isoelegantissine, isol, cd, struct*)
Dzhakeli, E.Z. *et al., CA*, 1976, **84**, 44499h; 1980, **93**, 146290m (*Herbavine, Isoherbavine*)
Chkhivadze, G.V. *et al., Khim. Prir. Soedin.*, 1976, **12**, 227-229; *Chem. Nat. Compd. (Engl. Transl.)*, 1976, **12**, 201-202 (*Herboxine, isol, uv, ir, pmr, ms, struct*)
Yagudaev, M.R. *et al., Khim. Prir. Soedin.*, 1980, **16**, 217-224; *Chem. Nat. Compd. (Engl. Transl.)*, 1980, **16**, 170-176 (*cmr*)

Majorine M-51

$C_{24}H_{26}N_2O_3$ 390.481
Struct. unknown. Alkaloid from the aerial parts of *Vinca major* (Apocynaceae). Small needle-shaped cryst. (MeOH). Mp 247-249° dec. $[\alpha]_D^{20}$ -265 (c, 0.63 in $CHCl_3$).

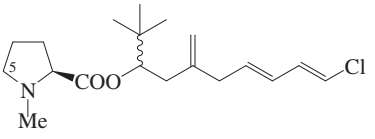
Kaul, J.L. *et al., J. Nat. Prod.*, 1966, **29**, 26-34 (*isol, uv, ir*)

Majovine M-52

Struct. unknown. Alkaloid from the aerial parts of *Vinca major* (Apocynaceae). Feathery cryst. (MeOH). Mp 227-229°. $[\alpha]_D^{20}$ +133 (c, 0.64 in $CHCl_3$).

Kaul, J.L. *et al., J. Nat. Prod.*, 1966, **29**, 26-34 (*isol, uv, ir*)

Makalika ester M-53



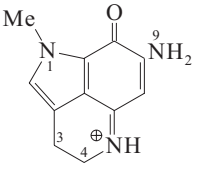
$C_{19}H_{30}ClNO_2$ 339.904
Isol. from the sea hare *Stylocheilus longicauda*. Oil. $[\alpha]_D$ -39 (c, 0.1 in MeOH). λ_{max} 214 (ϵ 45000); 220 (ϵ 45000); 223 (ϵ 11995); 229 (ϵ 45000); 245 (ϵ 12810) (MeOH).

5-Oxo: ***Makalikone ester***
$C_{19}H_{28}ClNO_3$ 353.888
Isol. from *Stylocheilus longicauda*. Oil. $[\alpha]_D$ -23 (c, 0.14 in MeOH). λ_{max} 203 (ϵ 15910); 207 (ϵ 13130); 234 (ϵ 7575); 357 (ϵ 4645) (MeOH).

Gallimore, W.A. *et al., J. Nat. Prod.*, 2000, **63**, 1022-1026

Makaluvamine A M-54

[146555-78-4]



$C_{11}H_{12}N_3O^{\oplus}$ 202.235
Isol. from the sponges *Zyzzya fuliginosa*

and *Histodermella* sp. Also isol. from the myxomycete *Didymium bahiense*. Cytotoxic. Inhibitor of topoisomerase II. Green solid (as trifluoroacetate). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. λ_{max} 220 (ε 17400); 330 (ε 16100) (MeOH/NaOH) (Derep). λ_{max} 242 (ε 24000); 348 (ε 15500) (MeOH) (Derep).

N^5-*Me:* ***Makaluvamine H***. *NSC 700647*
[174232-34-9]
$C_{12}H_{14}N_3O^{\oplus}$ 216.262
Metab. from the sponge *Zyzzya fuliginosa*. Red-brown solid (as trifluoroacetate). Sol. MeOH. λ_{max} 240 (ε 19400); 345 (ε 13500); 522 (ε 1100) (MeOH) (Berdy).

N^9-*(4-Hydroxyphenethyl):* ***Makaluvamine K***
[174232-36-1]
$C_{19}H_{20}N_3O_2^{\oplus}$ 322.386
From *Zyzzya fuliginosa*. Shows cytotoxic activity. Red-brown solid (as trifluoroacetate). Sol. MeOH. λ_{max} 222 (ε 18000); 246 (ε 29800); 347 (ε 19200); 536 (ε 2600) (MeOH) (Berdy).

N^9-*(4-Hydroxyphenethyl),* N^5-*Me:* ***Makaluvamine P***
$C_{20}H_{22}N_3O_2^{\oplus}$ 336.413
Isol. from *Zyzzya fuliginosa*. Cytotoxic. Violet solid. Counterion not specified. λ_{max} 222 (ε 7470); 248 (ε 7750); 361 (ε 5075) (MeOH).

N^9-*(4-Hydroxyphenylethenyl)*(E-)*:* ***Makaluvamine E***
[146555-82-0]
$C_{19}H_{18}N_3O_2^{\oplus}$ 320.37
Isol. from *Zyzzya fuliginosa*. Cytotoxic. Inhibitor of topoisomerase II. Green solid (as trifluoroacetate). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. λ_{max} 314 (ε 8600); 607 (ε 5000) (MeOH/NaOH) (Derep). λ_{max} 226 (ε 6200); 278 (ε 8700); 333 (ε 6800); 448 (ε 4900); 626 (ε 5700) (MeOH) (Derep).

N^9-*(4-Hydroxyphenylethenyl)*(E-), N^5-*Me:* ***Makaluvamine G***
[152273-69-3]
$C_{20}H_{20}N_3O_2^{\oplus}$ 334.397
Metab. from the Indonesian sponge *Histodermella* sp. and the micronesian sponge *Zyzzya fuliginosa*. Cytotoxic. Moderate inhibitor of topoisomerase I. Immunomodulator. Protein, DNA and RNA synthesis inhibitor. Green-black powder. Mp 250°. λ_{max} 250 (ε 13850); 346 (ε 12590); 450 (ε 7940); 624 (ε 10000) (MeOH) (Berdy). λ_{max} 286 (ε 12590); 612 (ε 12590) (MeOH/NaOH) (Berdy).

N^1-*De-Me:* ***Makaluvamine I***
[138087-43-1]
$C_{10}H_{10}N_3O^{\oplus}$ 188.208
Isol. from *Zyzzya fuliginosa*. Green solid (as trifluoroacetate). Sol. MeOH. λ_{max} 240 (ε 23900); 340 (ε 13500); 534 (ε 1000) (MeOH) (Berdy).

N^1-*De-Me,* N^1-*β-D-ribofuranosyl:* ***N^1-β-D-Ribofuranosylmakaluvamine I***
$C_{15}H_{18}N_3O_5^{\oplus}$ 320.324
Isol. from the sponge *Strongylodesma aliwaliensis*. Orange-brown solid. $[\alpha]_D^{14}$ +5.3 (c, 0.19 in MeOH). λ_{max} 242 (ε 7815); 342 (ε 4110); 532 (ε 190) (MeOH).

N^1-*De-Me,* N^5-*Me:* ***Makaluvamine C***
[146555-80-8]
$C_{11}H_{12}N_3O^{\oplus}$ 202.235
Isol. from *Zyzzya fuliginosa*. Cytotoxic. Inhibitor of topoisomerase II. Green solid (as trifluoroacetate). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. λ_{max} 246 (ε 20400); 355 (ε 16900) (MeOH/NaOH) (Derep). λ_{max} 241 (ε 25300); 358 (ε 19100) (MeOH) (Derep).

N^1-*De-Me,* N^9-*(4-hydroxyphenethyl):* ***Makaluvamine D***
[146555-81-9]
$C_{18}H_{18}N_3O_2^{\oplus}$ 308.359
Isol. from *Zyzzya fuliginosa*. Cytotoxic. Inhibitor of topoisomerase II. Brown solid (as trifluoroacetate). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. λ_{max} 243 (ε 16800); 339 (ε 12100) (MeOH/NaOH) (Derep). λ_{max} 245 (ε 22000); 348 (ε 10600) (MeOH) (Derep).

N^1-*De-Me,* N^9-*(4-hydroxyphenethyl),* N^5-*Me:* ***Makaluvamine J***
[174232-35-0]
$C_{19}H_{20}N_3O_2^{\oplus}$ 322.386
Isol. from *Zyzzya fuliginosa*. Red-brown solid (as trifluoroacetate). Sol. MeOH. λ_{max} 220 (ε 11600); 241 (ε 18600); 354 (ε 13900); 534 (ε 1400) (MeOH) (Berdy).

N^1-*De-Me,* N^9-*(4-hydroxystyryl)*(E-)*:* ***Makaluvamine M***
[174232-41-8]
$C_{18}H_{16}N_3O_2^{\oplus}$ 306.343
Trace metab. from *Zyzzya fuliginosa*. Green solid (as trifluoroacetate). Sol. MeOH. λ_{max} 274 (ε 14900); 330 (ε 11000); 445 (ε 8400); 623 (ε 9200) (MeOH) (Berdy).

N^1-*De-Me,* N^9-*(4-hydroxystyryl)*(E-), N^5-*Me:* ***Makaluvamine L***
[174232-37-2]
$C_{19}H_{18}N_3O_2^{\oplus}$ 320.37
From *Zyzzya fuliginosa*. Green solid (as trifluoroacetate). Sol. MeOH. λ_{max} 276 (ε 10500); 344 (ε 11700); 451 (ε 9200); 638 (ε 10400) (MeOH) (Berdy).

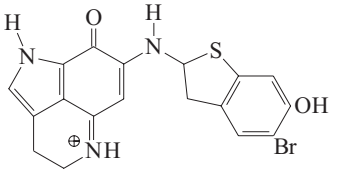
3,4-Didehydro: ***Makaluvamine B***
[146555-79-5]
$C_{11}H_{10}N_3O^{\oplus}$ 200.219
Isol. from *Zyzzya fuliginosa*. Cytotoxic. Inhibitor of topoisomerase II. Red solid (as trifluoroacetate). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. λ_{max} 204 (ε 17200); 419 (ε 4800) (MeOH/NaOH) (Derep). λ_{max} 228 (ε 9600); 442 (ε 4800) (MeOH) (Derep).

6-Bromo, N^1-*de-Me:* ***Makaluvamine N***
[187964-02-9]
$C_{10}H_9BrN_3O^{\oplus}$ 267.105
Isol. from *Zyzzya fuliginosa*. Cytotoxic against human colon tumour cells. Inhibitor of topoisomerase II. Reddish-brown solid. Counterion not specified. λ_{max} 242 (ε 52966); 344 (ε 35116); 390 (ε 18806); 544 (ε 2274) (MeOH).

Radisky, D.C. *et al., J.A.C.S.*, 1993, **115**, 1632 (*isol, uv, ir, pmr, cmr, struct*)
Carney, J.R. *et al., Tetrahedron*, 1993, **49**, 8483 (*Makaluvamine G*)
White, J.D. *et al., J.A.C.S.*, 1994, **116**, 1831 (*synth, Makaluvamine D*)
Izawa, T. *et al., Tetrahedron*, 1994, **50**, 13593 (*synth, Makaluvamines A-E*)
Yamada, F. *et al., Heterocycles*, 1995, **41**, 1905 (*synth, Makaluvamine A*)
Schmidt, E.W. *et al., J. Nat. Prod.*, 1995, **58**, 1861 (*Makaluvamines H-M*)
Sadanandan, E.V. *et al., J.O.C.*, 1995, **60**, 1800 (*synth, Makaluvamine D*)
Fu, X. *et al., J. Nat. Prod.*, 1996, **59**, 1104-1106 (*activity*)
Peat, A.J. *et al., J.A.C.S.*, 1996, **118**, 1028 (*synth, Makaluvamine C*)
Venables, D.A. *et al., J. Nat. Prod.*, 1997, **60**, 408 (*Makaluvamine N*)
Roberts, D. *et al., J.O.C.*, 1997, **62**, 568 (*synth, Makaluvamines A-D*)
Kraus, G.A. *et al., J.O.C.*, 1998, **63**, 9846-9849 (*synth, Makaluvanine C*)
Iwao, M. *et al., Tetrahedron*, 1998, **54**, 8999-9010 (*synth*)
Ishibashi, M. *et al., J. Nat. Prod.*, 2001, **64**, 108-110 (*isol, pmr, cmr*)
Casapullo, A. *et al., J. Nat. Prod.*, 2001, **64**, 1354-1356 (*Makaluvamine P*)
Keyzers, R.A. *et al., Tet. Lett.*, 2004, **45**, 9415-9418 (N^1-*Ribofuranosylmakaluvamine I*)
Dijoux, M.-G. *et al., Bioorg. Med. Chem.*, 2005, **13**, 6035-6044 (*isol, activity*)
Harayama, Y. *et al., Curr. Org. Chem.*, 2005, **9**, 1567-1588 (*rev, synth*)

Makaluvamine F M-55

[146555-83-1]

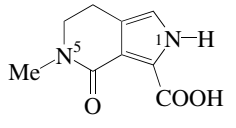


$C_{18}H_{15}BrN_3O_2S^{\oplus}$ 417.305
Metab. of the Fijian sponge *Zyzzya* cf. *marsailis*. Cytotoxic. Inhibitor of topoisomerase II. Orange solid (as trifluoroacetate). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. $[\alpha]_D$ -475.8 (c, 0.0248 in MeOH). λ_{max} 324 (ε 17700) (MeOH/NaOH) (Derep). λ_{max} 246 (ε 30200); 311 (ε 10800); 344 (ε 14100) (MeOH) (Derep).

Radisky, D.C. *et al., J.A.C.S.*, 1993, **115**, 1632 (*isol, uv, ir, pmr, cmr, struct*)
Kita, Y. *et al., Chem. Comm.*, 1999, 143-144 (*synth*)
Kita, Y. *et al., Synthesis*, 1999, 885-897 (*synth, ir, uv, pmr, cmr*)

Makaluvic acid A M-56

[184023-18-5]



$C_9H_{10}N_2O_3$ 194.19
Alkaloid from the marine sponge *Zyzzya fuliginosis*. Cryst. (MeOH). Mp not reported. λ_{max} 268 (ε 12684); 285 (ε 11086) (MeOH).

N^5-*De-Me:* ***Makaluvic acid C***

$C_8H_8N_2O_3$ 180.163
Alkaloid from the sponge *Strongylodesma aliwaliensis*. Brown solid. λ_{max} 200 (log ε 4.3); 260 (log ε 4.02); 289 (log ε 3.94) (MeOH).

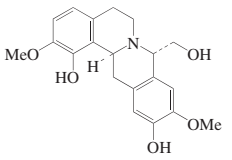
N^5-*De-Me,* N^1-*β-D-ribofuranosyl:* N'-*β-D-Ribofuranosylmakaluvic acid C*
$C_{13}H_{16}N_2O_7$ 312.279
Alkaloid from *Strongylodesma aliwaliensis*. Brown solid. $[\alpha]_D^{26}$ +41.2 (c, 0.0003 in MeOH). λ_{max} 210 (log ε 3.93); 260 (log ε 3.7); 286 (log ε 3.61) (MeOH).

N^1-*Me,* N^5-*de-Me:* ***Makaluvic acid B***
[184023-37-8]
$C_9H_{10}N_2O_3$ 194.19
From *Zyzzya fuliginosis*. λ_{max} 268 (ε 12497); 288 (ε 11386) (MeOH).

Fu, X. *et al., J. Nat. Prod.*, 1996, **59**, 1104 (*isol, uv, ir, pmr, cmr, ms, cryst struct*)
Keyzers, R.A. *et al., J. Nat. Prod.*, 2005, **68**, 506-510 (*Makaluvic acid C*)

Malacitanine M-57

*5,8,13,13*a-*Tetrahydro-8-(hydroxymethyl)-2,10-dimethoxy-6*H-*dibenzo[*a,g*]quinolizine-1,11-diol, 9CI*
[132074-88-5]



Absolute Configuration

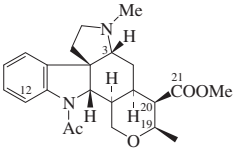
$C_{20}H_{23}NO_5$ 357.405
Alkaloid from *Ceratocapnos heterocarpa* (Papaveraceae). Powder. Mp 116-118°. $[\alpha]_D$ -87.3 (c, 0.05 in MeOH).

[131985-34-7 , 131985-29-0]

Suau, R. *et al., Tetrahedron*, 1990, **46**, 4421 (*isol, synth, struct*)

Malagashanine M-58

[139682-33-0]



Absolute Configuration

$C_{23}H_{30}N_2O_4$ 398.501
A 4,20-secocuran. Struct. revised in 1996. Alkaloid from *Strychnos mostueoides* and *Strychnos myrtoides* (Loganiaceae). Shows antimalarial potentiating activity.

12-Hydroxy: ***12-Hydroxymalagashanine***
[184363-09-5]
$C_{23}H_{30}N_2O_5$ 414.5
Alkaloid from the stem bark of *Strychnos myrtoides*.

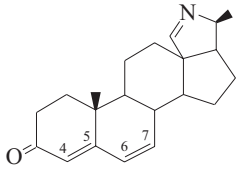
19-Epimer, 12-hydroxy: ***12-Hydroxy-19-epimalagashanine***
$C_{23}H_{30}N_2O_5$ 414.5
Alkaloid from the stem bark of *Strychnos myrtoides*. Cryst. (hexane). Mp 93-95°. $[\alpha]_D^{20}$ -69.4 (c, 0.3 in $CHCl_3$). λ_{max} 212 (log ε 4.39); 256 (log ε 4); 291 (log ε 3.39) (MeOH).

3,20-Diepimer, 21-alcohol: ***Malagashanol***
[243464-95-1]
$C_{22}H_{30}N_2O_3$ 370.491
Alkaloid from the stem bark of *Strychnos myrtoides*. Cryst. (EtOAc/hexane). $[\alpha]_D^{20}$ +23.3 (c, 0.3 in CH_2Cl_2). Dec. without melting. λ_{max} 251 (log ε 3.89); 278 (sh) (log ε 3.28); 285 (log ε 3.17) (MeOH).

Caira, M.R. *et al., J. Chem. Crystallogr.*, 1995, **25**, 725-729 (*cryst struct*)
Rasonaivo, P. *et al., Gazz. Chim. Ital.*, 1996, **126**, 517-519 (*struct*)
Martin, M.-T. *et al., Phytochemistry*, 1999, **51**, 479-486 (*isol, pmr, cmr*)

Malarboreine M-59

23-Norcona-4,6,18(22)-trienin-3-one.
18,20-Epiminopregna-4,6,18(11)-trien-3-one
[15216-19-0]



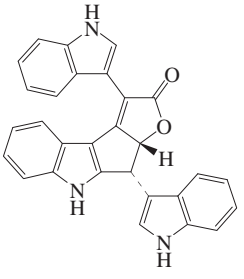
$C_{21}H_{27}NO$ 309.45
Minor alkaloid from *Malouetia arborea* (Apocynaceae). Mp 173-176°. $[\alpha]_D$ +57 (EtOH). λ_{max} 283 (ε 24700) (no solvent reported).

4,5α,6,7-Tetrahydro: ***Malarborine***
[15216-18-9]
$C_{21}H_{31}NO$ 313.482
Alkaloid from *Malouetia arborea* (Apocynaceae). Mp 164-165.5°. $[\alpha]_D$ 0 ($CHCl_3$) (synthetic).

Sóti, F. *et al., Tet. Lett.*, 1967, 1437 (*isol, struct, synth*)

Malasseziacitrin M-60

*9,9*a-*Dihydro-3,9-di-1*H-*indol-3-ylfuro[3′,2′:3,4]cyclopent[1,2-*b*]indol-2(8*H*)-one, 9CI*
[863767-43-5]



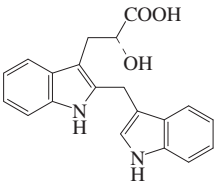
Absolute Configuration

$C_{29}H_{19}N_3O_2$ 441.488
Alkaloid from the yeast *Malassezia furfur*. Mp > 200° dec. λ_{max} 222 (log ε 4.72); 269 (log ε 4.23); 285 (log ε 4.21); 357 (log ε 3.88) (MeOH).

Irlinger, B. *et al., Helv. Chim. Acta*, 2005, **88**, 1472-1485 (*isol, pmr, cmr, ms*)

Malassezialactic acid M-61

[863767-08-2]



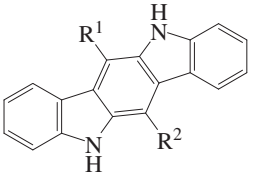
Absolute Configuration

$C_{20}H_{18}N_2O_3$ 334.374
Alkaloid from the yeast *Malassezia furfur*. Powder. Mp 135-137°. $[\alpha]_D^{25}$ -8 (c, 0.17 in MeOH). λ_{max} 209 (log ε 4.14); 225 (log ε 4.12); 276 (log ε 3.75) (MeOH).

Irlinger, B. *et al., Helv. Chim. Acta*, 2005, **88**, 1472-1485 (*isol, pmr, cmr, ms*)

Malasseziazole A M-62

*5,11-Dihydro-α-oxoindolo[3,2-*b*]carbazole-6-acetic acid, 9CI*
[454222-43-6]



R^1 = -COCOOH, R^2 = H

$C_{20}H_{12}N_2O_3$ 328.326
Alkaloid from the yeast *Malassezia furfur*. Yellow solid. Mp > 250° dec. λ_{max} 211 (log ε 0.88); 225 (log ε 0.97); 255 (log ε 1.01); 305 (log ε 0.31); 375 (log ε 0.38); 447 (log ε 0.19) (MeCN).

Irlinger, B. *et al., Helv. Chim. Acta*, 2005, **88**, 1472-1485 (*isol, uv, pmr, cmr, ms*)

Malasseziazole B M-63

[863767-09-3]
As Malasseziazole A, M-62 with
R^1 = -COCOOH, R^2 = -CHO
$C_{21}H_{12}N_2O_4$ 356.337
Alkaloid from the yeast *Malassezia furfur*. Red solid. Mp > 300° dec. λ_{max} 209 (log ε 4.39); 230 (sh) (log ε 4.15); 242 (sh) (log ε 4.05); 275 (sh) (log ε 3.7); 306 (log ε 3.55); 409 (log ε 3.33); 482 (log ε 3.16) (MeOH).

Irlinger, B. *et al., Helv. Chim. Acta*, 2005, **88**, 1472-1485 (*isol, uv, pmr, cmr*)

Malasseziazole C M-64

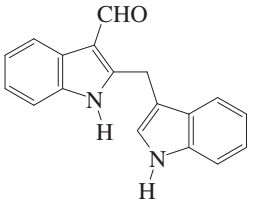
[863767-15-1]
As Malasseziazole A, M-62 with
R^1 = -COOH, R^2 = -CHO
$C_{20}H_{12}N_2O_3$ 328.326
Alkaloid from the yeast *Malassezia furfur*. Orange solid. Mp > 300° dec. λ_{max} 214 (log ε 3.76); 226 (sh) (log ε 3.71); 247 (log ε 3.66); 268 (log ε 3.51); 308 (log ε 3.23); 391 (log ε 3.19); 462 (log ε 2.95) (MeOH).

Irlinger, B. *et al., Helv. Chim. Acta*, 2005, **88**, 1472-1485 (*isol, uv, pmr, cmr, ms*)

Malassezin M-65

*2-[(1*H*-Indol-3-yl)methyl]-1*H*-indole-3-carboxaldehyde. 3-Formyl-2,3′-methylenebisindole. 2,3′-Methylenebisindole-3-carboxaldehyde*

[352712-51-7]



$C_{18}H_{14}N_2O$ 274.321

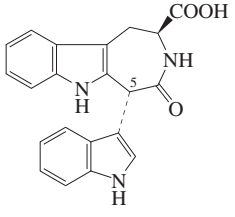
Alkaloid from the yeast *Malassezia furfur*. Agonist of the arylhydrocarbon receptor. Induces cytochrome P_{450}. Pinkish cryst. Mp 240°. λ_{max} 219 (log ϵ 4.73); 243 (log ϵ 4.23); 268 (log ϵ 4.2); 282 (log ϵ 4.15); 290 (log ϵ 4.17) (MeCN).

Wille, G. *et al., Bioorg. Med. Chem.*, 2001, **9**, 955-960 (*isol, synth, uv, pmr, cmr, cryst struct*)

Malassezindole A M-66

*1,2,3,4,5,6-Hexahydro-5-(1*H*-indol-3-yl)-4-oxoazepino[4,5-*b*]indole-2-carboxylic acid, 9CI*

[863766-97-6]



Absolute Configuration

$C_{21}H_{17}N_3O_3$ 359.384

Alkaloid from the yeast *Malassezia furfur*. Powder. Mp > 250°. $[\alpha]_D^{25}$ -87 (c, 0.04 in MeOH). λ_{max} 222 (log ϵ 4.3); 280 (log ϵ 3.68) (MeOH).

5-Hydroxy: ***Malassezindole B***

[863766-98-7]

$C_{21}H_{17}N_3O_4$ 375.383

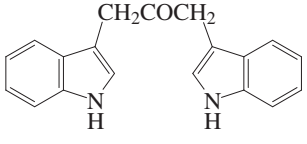
Alkaloid from *Malassezia furfur*. Powder. Mp 213-215° dec. $[\alpha]_D^{25}$ -15 (c, 0.12 in MeOH). λ_{max} 193 (log ϵ 4.23); 218 (log ϵ 4.1); 261 (log ϵ 3.56); 287 (log ϵ 3.48) (MeOH).

Irlinger, B. *et al., Helv. Chim. Acta*, 2005, **88**, 1472-1485 (*isol, cd, pmr, cmr*)

Malassezione M-67

*1,3-Di-1*H*-indol-3-yl-2-propanone, 9CI. Malasseziaketone*

[863767-46-8]



$C_{19}H_{16}N_2O$ 288.348

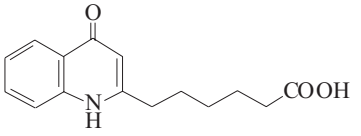
Alkaloid from the yeast *Malassezia furfur*. Amorph. solid. Mp > 150° dec. λ_{max} 207 (log ϵ 3.04); 216 (sh) (log ϵ 3.01); 266 (log ϵ 2.57); 280 (log ϵ 2.56); 289 (sh) (log ϵ 2.54) (MeOH).

Irlinger, B. *et al., Helv. Chim. Acta*, 2005, **88**, 1472-1485 (*isol, pmr, cmr, ms*)

Malatyamine M-68

1,4-Dihydro-4-oxo-2-quinolinehexanoic acid, 9CI

[98752-01-3]



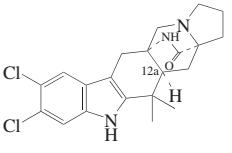
$C_{15}H_{17}NO_3$ 259.304

Alkaloid from *Haplophyllum cappadocicum* (whole plant) (Rutaceae). Isol. and elucidated as the Et ester.

Arar, G. *et al., J. Nat. Prod.*, 1985, **48**, 642 (*isol, uv, ir, pmr, ms, struct*)

Malbrancheamide A M-69

[881216-55-3]



Absolute Configuration

$C_{21}H_{23}Cl_2N_3O$ 404.338

Prod. by *Malbranchea aurantiaca*. Calmodulin inhibitor. Phytotoxin. Cryst. (MeOH/CH_2Cl_2). Mp 321-324°. $[\alpha]_D$ +42 (c, 1 in MeOH). λ_{max} 233 (log ϵ 3.94); 293 (log ϵ 4.74) (MeOH).

12a-Epimer: Epimalbrancheamide

[934266-33-8]

$C_{21}H_{23}Cl_2N_3O$ 404.338

Oil.

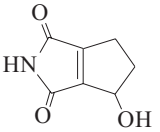
Valente, M.W.N. *et al., Heterocycles*, 2006, **70**, 249-259 (*epimer, synth, pmr, cmr*)

Martinez-Luis, S. *et al., Tetrahedron*, 2006, **62**, 1817-1822 (*isol, cd, pmr, cmr, ms, cryst struct*)

Miller, K.A. *et al., J.O.C.*, 2008, **73**, 3116-3119 (*synth*)

Maleimycin M-70

*Antibiotic IV-3. 5,6-Dihydro-4-hydroxycyclopenta[c]pyrrole-1,3(2*H*,4*H*)-dione, 9CI. 3-Aza-6-hydroxybicyclo[3.3.0]oct-1(5)-ene-2,4-dione*



$C_7H_7NO_3$ 153.137

λ_{max} 225 (ϵ 14000); 230 (sh) (ϵ 13000) (H_2O) (Derep).

▶ LD_{50} (mus, ipr) 6.25mg/kg.

(+)-form [50988-16-4]

Isol. from *Streptomyces showdoensis* and *Streptomyces filamentous*. Active against gram-positive and -negative organisms, acid-fast bacteria, leukaemia L-1210 cells and tumours. Sol. H_2O; fairly sol. EtOAc. Mp 116°. λ_{max} 225 (ϵ 14000) (H_2O) (Berdy).

(±)-form [62356-52-9]

Cryst. (C_6H_6/hexane). Mp 110-112°.

Elstner, E.F. *et al., Biochemistry*, 1973, **12**, 4992 (*isol, uv, ir, ms, nmr, struct, biosynth*)

Singh, P. *et al., Tetrahedron*, 1976, **32**, 2379 (*synth, ir, nmr*)

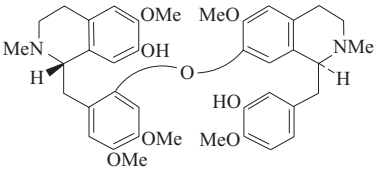
Ghiringhelli, D. *et al., Biomed. Mass Spectrom.*, 1981, **8**, 155 (*ms*)

Zhu, B. *et al., Kangshengsu*, 1986, **11**, 167; *CA*, **105**, 94208k

Lee, C.J. *et al., Synth. Commun.*, 1992, **22**, 803 (*synth*)

Malekulatine M-71

[87183-76-4]



$C_{39}H_{46}N_2O_8$ 670.801

Alkaloid from the bark of *Hernandia peltata* (Hernandiaceae). Shows selective antiplasmodial and anti-platelet aggregation activity. $[\alpha]_D^{25}$ +156 (c, 0.14 in MeOH).

Bruneton, J. *et al., J.O.C.*, 1983, **48**, 3957 (*isol, uv, cd, pmr, ms, struct*)

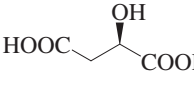
Chen, I.S. *et al., Planta Med.*, 1995, **61**, 537-539 (*activity*)

Angerhoffer, C.K. *et al., J. Nat. Prod.*, 1999, **62**, 59-66 (*activity*)

Malic acid, 8CI M-72

Hydroxybutanedioic acid, 9CI. Hydroxysuccinic acid. E296

[6915-15-7]



(*R*)-*form*

$C_4H_6O_5$ 134.088

Flavour enhancer and other uses in food. Acidulant, antioxidant. Flavouring agent, buffering agent and a chelating agent.

▶ Skin and severe eye irritant. ON7175000

(S)-form

L-form. FEMA 2655

[97-67-6]

Occurs naturally in apples and various other fruits. Cryst. (Me_2CO). V. sol. EtOH, spar. sol. Et_2O. Mp 104-105°

(100°). $[\alpha]_D^{21}$ -2.3 (c, 8.5 in H_2O). $[\alpha]_D^{20}$ -28.7 (c, 5.5 in Py) (>99.8% ee). pK_{a1} 3.46; pK_{a2} 5.1. Dec. at *ca*. 140°. Specific rotn. concn. dependent. See (±)-form for food use.

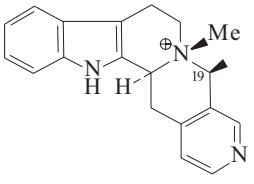
Dibenzylamide: N,N′-*Dibenzyl-2-hydroxybutanediamide.* N,N′-*Dibenzylmalamide*
$C_{18}H_{20}N_2O_3$ 312.368
Constit. of the stems of *Salvadora persica*. Mp 153-155°. $[\alpha]_D^{25}$ -24.2 (c, 0.05 in MeOH).

[3105-51-9 , 68303-40-2 , 149-61-1 , 676-46-0 , 39015-77-5 , 4387-09-1 , 22138-22-3]

Khalil, A.T. *et al., Arch. Pharmacal Res.*, 2006, **29**, 952-956 (*N,N′-Dibenzylmalamide, isol*)

Malindine M-73

[81161-28-6]



$C_{20}H_{22}N_3^{\oplus}$ 304.414
Alkaloid from the stem bark of *Strychnos decussata* and the root bark of *Strychnos usambarensis* (Loganiaceae). Muscular relaxant. Mp 232-234° dec.

N-*De-Me:* ***Normalindine***
[113122-64-8]
$C_{19}H_{19}N_3$ 289.379
Alkaloid from the root bark of *Strychnos johnsonii* (Loganiaceae) and leaves of *Ophiorrhiza filistipula* (Rubiaceae). Yellow plates (EtOAc/petrol). Mp 131-136°. $[\alpha]_D$ -210 (c, 0.1 in $CHCl_3$) (-103).

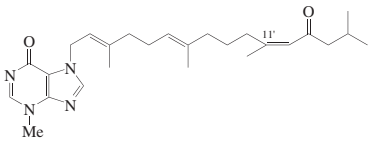
19-Epimer: ***Isomalindine***
[91739-07-0]
$C_{20}H_{22}N_3^{\oplus}$ 304.414
Alkaloid from root bark of *Strychnos usambarensis* (Loganiaceae).

19-Epimer, N-*de-Me:* ***Norepimalindine***. *Norisomalindine*
[113215-44-4]
$C_{19}H_{19}N_3$ 289.379
Alkaloid from the root of *Strychnos johnsonii* (Loganiaceae). $[\alpha]_D$ -276 (c, 0.1 in $CHCl_3$).

Olaniyi, A.A. *et al., Planta Med.*, 1981, **43**, 353-359 (*isol, uv, ir, pmr, cmr, ms, cd, struct*)
Caprasse, M. *et al., Planta Med.*, 1984, **50**, 27-30 (*isol, uv, ir, pmr, ms, cd*)
Massiot, G. *et al., Phytochemistry*, 1987, **26**, 2839-2846 (*Normalindine, Norepimalindine*)
Maiti, B.C. *et al., Heterocycles*, 1990, **31**, 847-850 (*Normalindine, Norepimalindine, synth*)
Rey, A.W. *et al., Heterocycles*, 1991, **32**, 1143-1151 (*Normalindine,synth*)
Arbain, D. *et al., Aust. J. Chem.*, 1993, **46**, 977-985 (*isol, abs config, Normalindine*)
Ohba, M. *et al., Tetrahedron*, 2000, **56**, 7751-7761 (*Normalindine,synth*)
Davis, F.A. *et al., J.O.C.*, 2006, **71**, 8761-8766 (*Normalindine, synth*)

Malonganenone A M-74

[882403-69-2]



$C_{26}H_{38}N_4O_2$ 438.612
Isol. from *Leptogorgia gilchristi*. Cytotoxic. Glass. λ_{max} 221 (ε 30900); 252 (ε 28800) (no solvent reported).

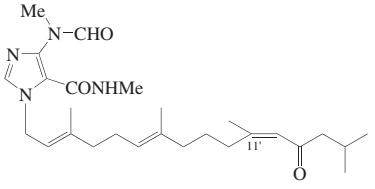
$\Delta^{10'E}$-Isomer: ***Malonganenone D***
[945458-47-9]
$C_{26}H_{38}N_4O_2$ 438.612
Isol. from *Euplexaura nuttingi*. Oil.

*11′*E-*Isomer:* ***Malonganenone E***
[945458-48-0]
$C_{26}H_{38}N_4O_2$ 438.612
Isol. from *Euplexaura nuttingi*. Oil.

Keyzers, R.A. *et al., Tetrahedron*, 2006, **62**, 2200-2206 (*Malonganenone A*)
Sorek, H. *et al., J. Nat. Prod.*, 2007, **70**, 1104-1109 (*Malonganenones D,E*)

Malonganenone B M-75

[882403-70-5]



$C_{27}H_{42}N_4O_3$ 470.654
Isol. from *Leptogorgia gilchristi*. Cytotoxic. Glass. λ_{max} 238 (ε 14400) (MeOH).

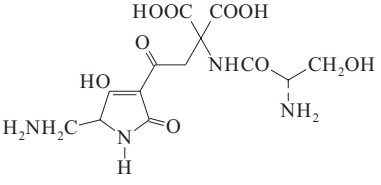
$\Delta^{10'E}$-Isomer: ***Malonganenone F***
[945458-49-1]
$C_{27}H_{42}N_4O_3$ 470.654
Isol. from *Euplexaura nuttingi*. Oil.

*11′*E-*Isomer:* ***Malonganenone G***
[945458-50-4]
$C_{27}H_{42}N_4O_3$ 470.654
Isol. from *Euplexaura nuttingi*. Oil.

Keyzers, R.A. *et al., Tetrahedron*, 2006, **62**, 2200-2206 (*Malonganenone B*)
Sorek, H. *et al., J. Nat. Prod.*, 2007, **70**, 1104-1109 (*Malonganenones F,G*)

Malonomicin M-76

Antibiotic K 16A. K 16A
[38249-71-7]



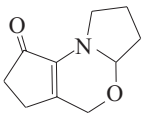
$C_{13}H_{18}N_4O_9$ 374.307
Peptide antibiotic. Several tautomers possible. Shown in zwitterionic form in the lit. Produced by *Streptomyces rimosus*. Active against gram-positive organisms. Microcryst. powder. Sol. acids, bases; fairly sol. H_2O, THF, dioxan, Py, DMSO, DMF; poorly sol. MeOH, hexane. $[\alpha]_{577}^{20}$ -64 (c, 1 in H_2O). Mp indefinite. λ_{max} 240 (ε 6600); 277 (ε 7600) (H_2O) (Berdy). λ_{max} 274 (ε 6700) (HCl) (Berdy).
▶ LD_{50} (mus, ipr) 1000 mg/kg. TY1760000

[38249-70-6]

Batelaan, J.G. *et al., Tet. Lett.*, 1972, 3103; 3107 (*struct*)
van der Baan, J.L. *et al., Tetrahedron*, 1978, **34**, 223 (*synth*)
Schipper, D. *et al., J.C.S. Perkin 1*, 1979, 2017
Schipper, D. *et al., Tet. Lett.*, 1982, **23**, 1289; 1293 (*biosynth, pmr*)

Maltoxazine M-77

*1,2,3,3*a*,6,7-Hexahydrocyclopenta[*d*]pyrrolo[2,1-*b*][1,3]oxazin-8(5*H*)-one, 9CI. Daechualkaloid A*
[80933-73-9]
[111261-77-9]

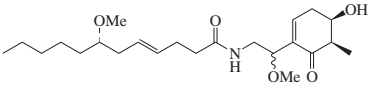


$C_{10}H_{13}NO_2$ 179.218
Aroma substance isol. from malt. Alkaloid from fruit of *Zizyphus jujuba* var. *inermis* (Rhamnaceae). Amorph. Mp 52°. $[\alpha]_D^{22}$ +0.3 (c, 0.82 in $CHCl_3$). Rapidly becomes resinous in soln. The small opt. rotn. and the Mp. were reported for Daechalkaloid A.

Tressl, R. *et al., Helv. Chim. Acta*, 1982, **65**, 483 (*Maltoxazine*)
Han, B.H. *et al., Tet. Lett.*, 1987, **28**, 3957 (*Daechualkaloid A*)

Malyngamide W M-78

[485388-83-8]

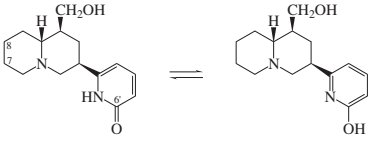


$C_{23}H_{39}NO_5$ 409.565
Isol. from *Lyngbya majuscula*. Pale yellow oil. $[\alpha]_D^{18}$ -15 (c, 0.06 in $CHCl_3$). λ_{max} 203 (log ε 4.08); 227 (log ε 3.88) (MeOH).

McPhail, K.L. *et al., J. Nat. Prod.*, 2003, **66**, 132-135 (*isol, pmr, cmr*)

Mamanine M-79

*6-[Octahydro-1-(hydroxymethyl)-2*H*-quinolizin-3-yl]-2(1*H*)-pyridinone, 9CI*
[60394-92-5]



$C_{15}H_{22}N_2O_2$ 262.351

Numbering schemes differ. Alkaloid from the bark of *Sophora chrysophylla* and from flowers of *Sophora flavescens* (Fabaceae). Mp 100° (remelts 171-172°). $[\alpha]_D$ +31.7 (c, 2.32 in EtOH).

N-*Oxide:* ***Mamanine* N-*oxide***
$C_{15}H_{22}N_2O_3$ 278.35
Alkaloid from leaves of *Sophora chrysophylla* (Fabaceae). Amorph. $[\alpha]_D^{22}$ -9 (c, 0.003 in EtOH).

8β-Hydroxy: ***13β-Hydroxymamanine***
$C_{15}H_{22}N_2O_3$ 278.35
Alkaloid from the stems of *Maackia amurensis* var. *buergeri* (Fabaceae). Amorph. solid. $[\alpha]_D^{17}$ +31.2 (c, 0.107 in MeOH).

NH-form

O,N-*Di-Ac:*
Yellow oil. Dec. on standing.

OH-form

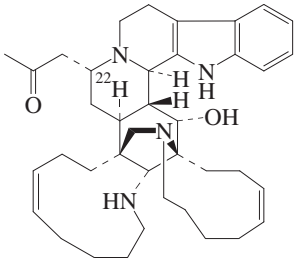
$O^{6'}$-*Me:* ***Jussiaeiine B***
$C_{16}H_{24}N_2O_2$ 276.378
Alkaloid from *Ulex jussiaei*. Oil. $[\alpha]_D^{25}$ +27.2 (c, 0.27 in $CHCl_3$). λ_{max} 217 (log ε 3.26); 268 (log ε 3.38); 273 (sh) (MeOH).

7β-Hydroxy, $O^{6'}$*-Me:* ***Jussiaeiine D***
$C_{16}H_{24}N_2O_3$ 292.377
Alkaloid from *Ulex jussiaei*. Oil. $[\alpha]_D^{25}$ +14.5 (c, 0.64 in $CHCl_3$). λ_{max} 218 (log ε 3.2); 269 (log ε 3.29) (MeOH).

8β-Hydroxy, $O^{6'}$*-Me:* ***Jussiaeiine C***
$C_{16}H_{24}N_2O_3$ 292.377
Alkaloid from *Ulex jussiaei*. Oil. $[\alpha]_D^{25}$ +32.2 (c, 0.19 in $CHCl_3$). λ_{max} 218 (log ε 3.29); 269 (log ε 3.43); 273 (sh) (MeOH).

Kadooka, M.M. *et al., Tetrahedron*, 1976, **32**, 919 (*Mamanine, isol, ir, uv, pmr, cmr, cryst struct*)
Murakoshi, I. *et al., Phytochemistry*, 1981, **20**, 1407; 1982, **21**, 2379; 1984, **23**, 887 (*Mamanine, Mamanine N-oxide*)
Saito, K. *et al., Chem. Pharm. Bull.*, 1986, **34**, 3982 (*13-Hydroxymamanine*)
Maximo, P. *et al., J. Nat. Prod.*, 2000, **63**, 201-204 (*Jussiaeiines*)

Manadomanzamine A M-80

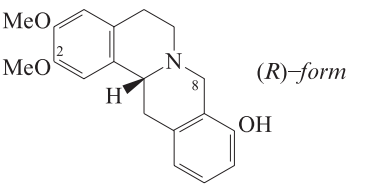


$C_{39}H_{54}N_4O_2$ 610.881
Isol. from the Indonesian sponge *Acanthostrongylophora* sp. Active against HIV-1 and mycobacteria. Powder. $[\alpha]_D$ -19 (c, 0.11 in MeOH). λ_{max} 282 (ε 7700) (no solvent reported).

22-Epimer: ***Manadomanzamine B***
$C_{39}H_{54}N_4O_2$ 610.881
Isol. from *Acanthostrongylophora* sp. Powder. $[\alpha]_D$ -18 (c, 0.11 in MeOH). λ_{max} 282 (ε 7200) (no solvent reported).

Peng, J. *et al., J.A.C.S.*, 2003, **125**, 13382-13386 (*isol, cd, pmr, cmr*)

Manibacanine M-81



$C_{19}H_{21}NO_3$ 311.38

(R)-form [151757-07-2]
Alkaloid from stem bark of *Aniba canelilla* (Lauraceae). $[\alpha]_D$ +176 (c, 0.34 in MeOH).

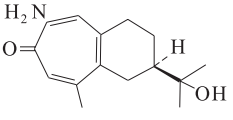
(S)-form

O^2*-De-Me:* ***Anibacanine***
[151757-06-1]
$C_{18}H_{19}NO_3$ 297.353
Alkaloid from stem bark of *Aniba canelilla* (Lauraceae). $[\alpha]_D$ -129 (c, 0.3 in $CHCl_3$).

Oger, J.-M. *et al., Can. J. Chem.*, 1993, **71**, 1128 (*isol, uv, pmr, cmr, ms, struct*)

Manicoline A M-82

[79820-32-9]



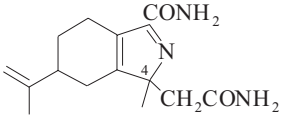
Absolute configuration

$C_{15}H_{21}NO_2$ 247.336
Alkaloid from the root bark of *Dulacia guianensis* (Olacaceae). Pale-yellow cryst. (EtOAc). Mp 197-199°. $[\alpha]_D^{22}$ +69 (c, 0.9 in $CHCl_3$ + 10% MeOH). λ_{max} 252 (ε 32100); 266 (sh) (ε 21400); 277 (sh) (ε 10700); 340 (ε 13200); 420 (ε 10700) (EtOH) (Derep).

Polonsky, J. *et al., Chem. Comm.*, 1981, 731 (*isol, uv, pmr, ms, cryst struct*)

Manicoline B M-83

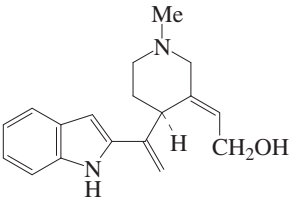
[79921-08-7]



$C_{15}H_{21}N_3O_2$ 275.35
Alkaloid from the root bark of *Dulacia guianensis* (Olacaceae). Cryst. (Me_2CO). Mp 199-200°. $[\alpha]_D^{22}$ +36 (c, 0.23 in $CHCl_3$). Equimolar mixt. of two diastereoisomers, epimeric at C-4. λ_{max} 228 (ε 2110); 272 (ε 1710) (EtOH) (Derep).

Polonsky, J. *et al., Tet. Lett.*, 1984, **25**, 2359 (*uv, pmr, ms, cryst struct*)

Manilamine M-84

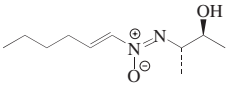


$C_{18}H_{22}N_2O$ 282.385
A secouleine alkaloid (cf. Uleine, U-8). Alkaloid from the leaves of *Alstonia scholaris*. Beige solid. Mp 88-92°. $[\alpha]_D$ +15.5 (c, 0.5 in MeOH). λ_{max} 223 (log ε 2.69); 282 (log ε 2.38); 297 (log ε 2.49) (MeOH).

Macabeo, A.P.G. *et al., Phytochemistry*, 2005, **66**, 1158-1162 (*isol, pmr, cmr, ms*)

Maniwamycin B M-85

[3-(1-Hexenyl)-O,N,N-*azoxy]-2-butanol, 9CI. Antibiotic KC 7367A. KC 7367A* [122547-71-1]



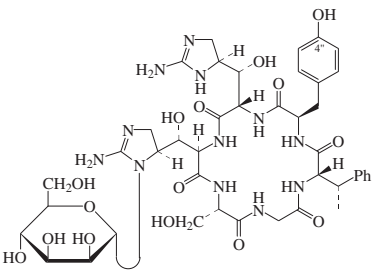
Absolute Configuration

$C_{10}H_{20}N_2O_2$ 200.28
Related to Antibiotic LL-BH872α, A-1199. Prod. by *Streptomyces prasinopilosus*. Antifungal agent. Oil. $[\alpha]_D^{22}$ +108 (c, 1 in $CHCl_3$). λ_{max} 230 (ε 45000) (MeOH).
▶ LD_{50} (mus, ivn) 100 mg/kg. EL4140000

2-Ketone: ***Maniwamycin A***. *Antibiotic KC 7367B. KC 7367B*
[122566-70-5]
$C_{10}H_{18}N_2O_2$ 198.264
From *Streptomyces prasinopilosus*. Antifungal agent. Oil. $[\alpha]_D^{22}$ -144 (c, 1 in $CHCl_3$).
▶ LD_{50} (mus, ivn) 10 mg/kg. EL8777000

Nakayama, M. *et al., J. Antibiot.*, 1989, **42**, 1535-1540; 1541-1546 (*isol, struct*)
Takahashi, Y. *et al., Tet. Lett.*, 1991, **32**, 1067-1068 (*synth*)
Nakata, M. *et al., Tet. Lett.*, 1993, **34**, 6095-6098 (*synth*)

Mannopeptimycin β M-86



$C_{42}H_{58}N_{12}O_{15}$ 970.992
Glycopeptide antibiotic. Prod. by *Streptomyces hygroscopicus* LL-AC98. Antibacterial agent. Amorph. powder. $[\alpha]_D$ -29.6 (c, 0.6 in MeOH aq.).

4″-O-[α-L-Mannopyranosyl-(1→4)-α-L-mannopyranoside]: ***Mannopeptimycin α***
$C_{54}H_{78}N_{12}O_{25}$ 1295.276
Prod. by *Streptomyces hygroscopicus* LL-AC98. Amorph. powder. $[\alpha]_D$ -3.4 (c, 0.38 in MeOH aq.).

4″-O-[3-Methylbutanoyl-(→2)-α-L-mannopyranosyl-(1→4)-α-L-mannopyranoside]: ***Mannopeptimycin γ***
$C_{59}H_{86}N_{12}O_{26}$ 1379.393
Prod. by *Streptomyces hygroscopicus* LL-AC98. Amorph. powder. $[\alpha]_D$ -7.1 (c, 0.35 in MeOH aq.).

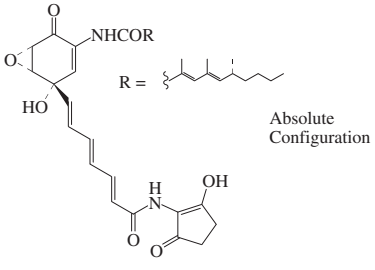
4″-O-[3-Methylbutanoyl-(→3)-α-L-mannopyranosyl-(1→4)-α-L-mannopyranoside]: ***Mannopeptimycin δ***
$C_{59}H_{86}N_{12}O_{26}$ 1379.393
Prod. by *Streptomyces hygroscopicus* LL-AC98. Amorph. powder. $[\alpha]_D$ -12.2 (c, 0.37 in MeOH aq.).

4″-O-[3-Methylbutanoyl-(→4)-α-L-mannopyranosyl-(1→4)-α-L-mannopyranoside]: ***Mannopeptimycin ε***
$C_{59}H_{86}N_{12}O_{26}$ 1379.393
Prod. by *Streptomyces hygroscopicus* LL-AC98. Amorph. powder. $[\alpha]_D$ -13.8 (c, 0.1 in MeOH aq.).

He, H. *et al., J.A.C.S.*, 2002, **124**, 9729-9736 (*isol, pmr, cmr*)

Manumycin A M-87

Antibiotic TMC 1F. TMC 1F. UCF1C. Antibiotic UCF1C
[52665-74-4]



$C_{31}H_{38}N_2O_7$ 550.65
Abs. config. revised in 1999. Isol. from *Streptomyces parvulus* Tü 64 and a marine *Streptomyces* sp. Active against gram-positive bacteria. Inhibits protein-farnesyl transferase. Shows antiprotozoal activity. Cryst. (MeOH aq.). Sol. MeOH, MeCN, C_6H_6, bases; poorly sol. H_2O, hexane. Mp 139-141° dec. $[\alpha]_D^{20}$ -185 (c, 0.4 in $CHCl_3$). Similar to *Asukamycin*. λ_{max} 270 (ε 31700); 328 (ε 32300) (MeOH/HCl) (Derep). λ_{max} 261 (ε 40200) (MeOH/NaOH) (Derep). λ_{max} 278 (ε 36400); 314 (ε 34600) (MeOH) (Derep). λ_{max} 261 (ε 40200) (MeOH-NaOH) (Berdy).

Zeeck, A. *et al., J. Antibiot.*, 1987, **40**, 1530; 1541; 1549 (*isol, abs config, props, bibl*)
Thiericke, R. *et al., J.A.C.S.*, 1990, **112**, 3979 (*biosynth*)
Hara, M. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 1993, **90**, 2281-2285 (*UCF1C*)
Kohno, J. *et al., J. Antibiot.*, 1996, **49**, 1212 (*TMC 1F*)
Alcaraz, L. *et al., J.O.C.*, 1998, **63**, 3526-3527 (*synth, config*)
Sattler, I. *et al., Nat. Prod. Rep.*, 1998, **15**, 221-240 (*rev*)
Alcaraz, L. *et al., Tetrahedron*, 1999, **55**, 3707-3716 (*synth, abs config*)
Pat. Coop. Treaty (WIPO), 2001, 01 05 384; *CA*, **134**, 110443q (*activity*)
Li, F. *et al., J. Nat. Prod.*, 2005, **68**, 349-353 (*isol, cmr*)

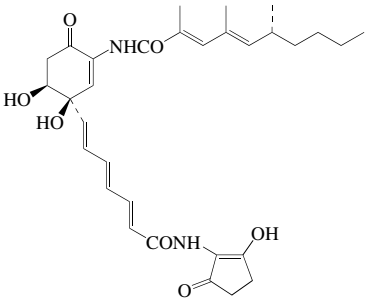
Manumycin C M-88

UCF1B. Antibiotic UCF1B. TMC 1G. Antibiotic TMC 1G
[139023-59-9]
As Manumycin A, M-87 with
R = -CH=CHC(CH_3)=CHCH(CH_3)$CH_2CH_2CH_2CH_3$
$C_{30}H_{36}N_2O_7$ 536.624
Prod. by *Streptomyces parvulus*. Mp 188-196° (dec.). $[\alpha]_D^{20}$ +32.4 (c, 0.4 in $CHCl_3$). λ_{max} 278 (ε 42700); 307 (ε 33080) (MeOH).

Sattler, I. *et al., J.O.C.*, 1993, **58**, 6583 (*isol, uv, ir, pmr, cmr, ms*)
Hara, M. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 1993, **90**, 2281-2285 (*UCF1B*)
Kohno, J. *et al., J. Antibiot.*, 1996, **49**, 1212-1220 (*TMC 1G*)
Sattler, I. *et al., Nat. Prod. Rep.*, 1998, **15**, 221-240 (*rev*)

Manumycin D M-89

TMC 1E. Antibiotic TMC 1E
[149764-30-7]

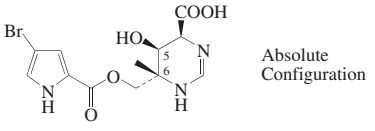


$C_{31}H_{40}N_2O_7$ 552.666
Prod. by *Streptomyces parvulus*. Protein farnesylation inhibitor. Sol. MeOH, Me_2CO, MeCN, $CHCl_3$; poorly sol. H_2O, hexane. Mp 96°. $[\alpha]_D^{20}$ -25.3 (c, 0.3 in $CHCl_3$/MeOH). λ_{max} 205 (ε 52690); 245 (ε 38900); 309 (ε 43690) (MeOH). λ_{max} 205 (ε 52690); 245 (ε 38900); 309 (ε 43690) (MeOH) (Berdy). λ_{max} 207 (ε 32080); 325 (ε 24150) (MeOH-HCl) (Berdy). λ_{max} 211 (ε 24870); 261 (ε 25580); 302 (ε 24570) (MeOH-NaOH) (Berdy).

Sattler, I. *et al., J.O.C.*, 1993, **58**, 6583 (*isol, uv, ir, pmr, cmr, ms*)
Kohno, J. *et al., J. Antibiot.*, 1996, **49**, 1212-1220 (*TMC 1E*)
Alcaraz, L. *et al., Tetrahedron*, 1999, **55**, 3707-3716 (*abs config*)

Manzacidin B M-90

[134029-42-8]



$C_{12}H_{14}BrN_3O_5$ 360.164
Alkaloid from the marine sponge *Hymeniacidon* sp. Oil. $[\alpha]_D^{22}$ -71 (c, 0.43 in MeOH). λ_{max} 209 (ε 5100); 272 (ε 5800) (MeOH) (Derep).

5-Deoxy: ***Manzacidin C***
[134107-38-3]
$C_{12}H_{14}BrN_3O_4$ 344.164
From the sponge *Hymeniacidon* sp. Oil. $[\alpha]_D^{22}$ +37 (c, 0.23 in MeOH). λ_{max} 209 (ε 5100); 272 (ε 5800) (MeOH) (Derep).

5-Deoxy, N^1*-Me:* ***N^1-Methylmanzacidin C***
[389120-67-6]
$C_{13}H_{16}BrN_3O_4$ 358.191
Isol. from the sponge *Axinella brevistyla*. Antifungal and cytotoxic agent. $[\alpha]_D^{23}$ +36.4 (c, 0.17 in MeOH). λ_{max} 202 (log ε 3.7); 220 (log ε 3.7); 273 (log ε 3.7) (MeOH).

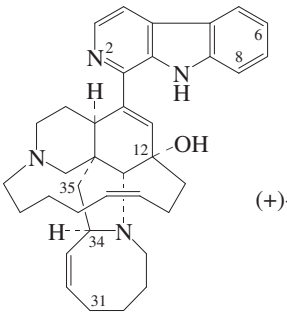
6-Epimer, 5-deoxy: ***Manzacidin A***
[134029-41-7]
$C_{12}H_{14}BrN_3O_4$ 344.164
From the sponge *Hymeniacidon* sp. Oil. $[\alpha]_D^{27}$ -28 (c, 0.67 in MeOH). λ_{max} 209 (ε 5100); 272 (ε 5800) (MeOH) (Derep).

6-Epimer, 5-deoxy, debromo, N^1*-Me:* ***Manzacidin D***
[192197-62-9]
$C_{13}H_{17}N_3O_4$ 279.295
Alkaloid from the sponge *Astrosclera willeyana*. Viscous oil. $[\alpha]_D^{25}$ +14.5 (c, 0.3 in $CHCl_3$). λ_{max} 225 (ε 5980); 270 (ε 7980) (no solvent reported).

Kobayashi, J. *et al., J.O.C.*, 1991, **56**, 4574-4576 (*isol, uv, ir, pmr, cmr, ms*)
Jahn, T. *et al., Tet. Lett.*, 1997, **38**, 3883-3884 (*Manzacidin D*)
Tsukamoto, S. *et al., J. Nat. Prod.*, 2001, **64**, 1576-1578 (*N^1-Methylmanzacidin C*)
Wehn, P.M. *et al., J.A.C.S.*, 2002, **124**, 12950-12951 (*Manzacidin A, C, synth*)
Drouin, C. *et al., Tet. Lett.*, 2004, **45**, 7197-7199 (*Manzacidin D, synth*)
Lanter, J.C. *et al., Org. Lett.*, 2005, **7**, 5905-5907 (*Manzacidin C, synth*)
Kano, T. *et al., J.A.C.S.*, 2006, **128**, 2174-2175 (*Manzacidin A, synth*)
Shinada, T. *et al., Org. Lett.*, 2007, **9**, 1765-1767 (*abs config*)
Hashimoto, T. *et al., Org. Biomol. Chem.*, 2008, **6**, 829-835 (*rev, synth*)
Tran, K. *et al., Org. Lett.*, 2008, **10**, 3165-3167 (*Manzacidin C, synth*)
Oe, K. *et al., Tet. Lett.*, 2008, **49**, 7426-7429 (*Manzacidin A,C, synth*)

Manzamine A M-91

Keramamine A



(+)-*form*

$C_{36}H_{44}N_4O$ 548.77

(+)-*form* [104196-68-1]
Alkaloid from the Japanese marine sponges *Haliclona* sp., *Xestospongia* sp. and *Pellina* sp. Isol. from *Acanthostrongylophora* aff. *ingens* as free base. Shows antitumour props. Exhibits weak cytotoxicity against KB cells, also insecticidal activity and activity against gram-positive and gram-negative bacteria. Exhibits strong antimalarial props. and activity against *Leishmania donovani*; also strong activity against *Mycobacterium tuberculosis* ($H_{37}Rv$). Cryst. (MeOH) (as hydrochloride). Mp 240° dec. (hydrochloride). $[\alpha]_D^{20}$ +50 (c, 0.28 in $CHCl_3$) (hydrochloride). Usually isol. as hydrochloride salt. λ_{max} 238 (ϵ 15300); 278 (ϵ 9680); 290 (ϵ 8350); 346 (ϵ 4420); 358 (ϵ 4770) (hydrochloride). λ_{max} 219 (ϵ 22900); 236 (ϵ 18600); 280 (ϵ 10800); 290 (ϵ 11000); 346 (ϵ 5300); 357 (ϵ 5600) (MeOH).

2-N-*Oxide:* ***Manzamine A* N-*oxide***
[184361-76-0]
$C_{36}H_{44}N_4O_2$ 564.769
Alkaloid from the Phillipine marine sponge *Xestospongia ashmorica*. Cytotoxic agent. Shows strong activity against *Mycobacterium tuberculosis* ($H_{37}Rv$). Yellow cryst. powder. $[\alpha]_D$ +18.6 (c, 0.35 in $CHCl_3$). λ_{max} 201 (ϵ 26000); 241 (ϵ 23000); 261 (ϵ 23000); 310 (ϵ 21000) (MeOH).

3,4-Dihydro: ***3,4-Dihydromanzamine A***
[162465-80-7]
$C_{36}H_{46}N_4O$ 550.786
Alkaloid from the Okinawan marine sponge *Amphimedon* sp. Cytotoxic against L-1210 and KB cells. Exhibits antibacterial activity. Shows strong activity against *Mycobacterium tuberculosis* ($H_{37}Rv$). Amorph. solid. Mp 237-241°. $[\alpha]_D^{20}$ +86 (c, 0.25 in $CHCl_3$). λ_{max} 244 (ϵ 21000); 323 (ϵ 10000) (MeOH) (Berdy).

3,4-Dihydro, 2-N-*oxide:* ***3,4-Dihydromanzamine A* N-*oxide***
[184361-75-9]
$C_{36}H_{46}N_4O_2$ 566.785
Alkaloid from *Xestospongia ashmorica*. Cytotoxic agent. Shows strong activity against *Mycobacterium tuberculosis* ($H_{37}Rv$). Yellow cryst. powder. $[\alpha]_D$ +34.1 (c, 0.59 in $CHCl_3$). λ_{max} 201 (ϵ 25000); 355 (ϵ 11000) (MeOH).

*1*R*,2,3,4-Tetrahydro:* ***Manzamine D***
[116477-23-7]
$C_{36}H_{48}N_4O$ 552.801
Alkaloid from the sponges *Haliclona, Ircinia* and *Amphimedon* spp. Cytotoxic agent. Shows strong activity against *Mycobacterium tuberculosis* ($H_{37}Rv$). Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. $[\alpha]_D^{24}$ +44. λ_{max} 223 (ϵ 28800); 281 (ϵ 6700); 288 (ϵ 5400) (MeOH) (Berdy).

*1*S*,2,3,4-Tetrahydro:* ***1-Epimanzamine D***
[302327-68-0]
$C_{36}H_{48}N_4O$ 552.801
Alkaloid from a Palaun sponge. Cytotoxic agent. Shows strong activity against *Mycobacterium tuberculosis* ($H_{37}Rv$). Amorph. powder. $[\alpha]_D^{23}$ +77.3 (c, 0.16 in $CHCl_3$). λ_{max} 225 (log ϵ 4.23); 281 (log ϵ 3.79) (MeOH).

*1*S*,2,3,4-Tetrahydro,* N^2*-Me:* ***1-Epi-2*-N-*methylmanzamine D***
[302327-67-9]
$C_{37}H_{50}N_4O$ 566.828
Alkaloid from a Palaun sponge. Cytotoxic agent. Shows strong activity against *Mycobacterium tuberculosis* ($H_{37}Rv$). Cryst. (MeOH). Mp 185-188°. $[\alpha]_D^{23}$ +91.4 (c, 0.27 in $CHCl_3$). λ_{max} 223 (log ϵ 4.24); 281 (log ϵ 3.74) (MeOH).

31,34-Epoxy, 32,33-dihydro: ***6-Deoxymanzamine X***
[184361-73-7]
$C_{36}H_{44}N_4O_2$ 564.769
Alkaloid from *Xestospongia ashmorica*. Cytotoxic agent. Active against *Leishmania donovani*. Shows strong activity against *Mycobacterium tuberculosis* ($H_{37}Rv$). Pale yellow amorph. powder. $[\alpha]_D$ +30.1 (c, 0.35 in $CHCl_3$). λ_{max} 210 (ϵ 26000); 260 (ϵ 11800); 312 (sh) (ϵ 10000); 378 (ϵ 3000) (MeOH).

31-Oxo, 32,33-dihydro: ***Manzamine E***
[117631-50-2]
$C_{36}H_{44}N_4O_2$ 564.769
Alkaloid from a *Xestospongia* sponge. Shows activity against *Mycobacterium tuberculosis* and *Leishmania donovani*. Cryst. (MeCN). Sol. MeOH, $CHCl_3$, EtOAc; poorly sol. H_2O, hexane. Mp 174-176°. $[\alpha]_D$ +63.7 (c, 2.51 in $CHCl_3$). λ_{max} 238 (ϵ 15300); 278 (ϵ 9680); 290 (ϵ 8350); 346 (ϵ 4420); 358 (ϵ 4770) (as hydrochloride) (Derep). λ_{max} 219 (ϵ 22900); 236 (ϵ 18600); 280 (ϵ 10800); 290 (ϵ 11000); 346 (ϵ 5300); 357 (ϵ 5600) (MeOH) (Derep). λ_{max} 220 (ϵ 35800); 237 (ϵ 28100); 279 (ϵ 18000); 346 (ϵ 7700); 359 (ϵ 9300) (MeOH) (Berdy).

6-Hydroxy: ***6-Hydroxymanzamine A***. *Manzamine Y*
[162465-79-4]
$C_{36}H_{44}N_4O_2$ 564.769
Alkaloid from the Okinawan marine sponge *Amphimedon* sp. and *Haliclona* sp. Cytotoxic against L-1210 and KB cells. Exhibits antibacterial activity. Shows strong activity against *Mycobacterium tuberculosis* ($H_{37}Rv$). Yellowish amorph. solid. Mp 253°. $[\alpha]_D^{20}$ +139 (c, 1.1 in MeOH). $[\alpha]_D^{19}$ +33.2 (c, 2.50 in $CHCl_3$).

6-Hydroxy, 3,4-dihydro: ***3,4-Dihydro-6-hydroxymanzamine A***
[208392-25-0]
$C_{36}H_{46}N_4O_2$ 566.785
Alkaloid from *Amphimedon* sp. Shows strong activity against *Mycobacterium tuberculosis* ($H_{37}Rv$). Amorph. solid. $[\alpha]_D^{25}$ +28 (c, 1.2 in MeOH). λ_{max} 207 (ϵ 9000); 225 (ϵ 6500); 250 (ϵ 3500); 337 (ϵ 2500) (MeOH).

6-Hydroxy, 31β,34β-epoxy, 32,33-dihydro: ***Manzamine X***
[164301-23-9]
$C_{36}H_{44}N_4O_3$ 580.769
Alkaloid from sponge *Xestospongia* sp. Cytotoxic against L-1210 and KB cells. Exhibits antibacterial activity. Yellow prisms (hexane/Me_2CO). Mp 250°. $[\alpha]_D^{19}$ +66.1 (c, 1.93 in $CHCl_3$). λ_{max} 215 (ϵ 29500); 300 (ϵ 17000); 378 (ϵ 4800) (MeOH) (Berdy).

6-Hydroxy, 31-oxo, 32,33-dihydro: ***6-Hydroxymanzamine E***
$C_{36}H_{44}N_4O_3$ 580.769
Alkaloid from the Indonesian sponge *Acanthostrongylophora* sp. Yellow powder ($CHCl_3$). Fp *ca.* 198. $[\alpha]_D^{25}$ +34.4 (c, 0.2 in $CHCl_3$). λ_{max} 218 (log ϵ 3.64); 239 (log ϵ 3.63); 280 (log ϵ 3.25); 288 (log ϵ 3.09); 346 (log ϵ 3.42) (MeOH).

6-Hydroxy, 35-oxo, 32,33-dihydro: ***32,33-Dihydro-6-hydroxy-35-oxomanzamine A***
[581782-67-4]
$C_{36}H_{44}N_4O_3$ 580.769
Alkaloid from an Indonesian sponge. Shows strong activity against *Mycobacterium tuberculosis* ($H_{37}Rv$). Pale yellow powder. Mp > 200° dec. $[\alpha]_D^{25}$ +10 (c, 1 in MeOH). λ_{max} 219 ; 248 ; 268 ; 356 ; 395 (MeOH).

8-Hydroxy: ***Manzamine G***. *8-Hydroxymanzamine A*
[154466-37-2]
$C_{36}H_{44}N_4O_2$ 564.769
Alkaloid from *Acanthostrongylophora* aff. *ingens*, *Amphimedon* sp. and *Pachypellina* sp. Exhibits antitumour, antimalarial and anti-HSV-II activities. Active against *Leishmania donovani*. Shows strong activity against *Mycobacterium tuberculosis* ($H_{37}Rv$). Pale yellow cryst. Mp 230° dec. $[\alpha]_D$ +118.5 (c, 1.94 in $CHCl_3$). Usually obt. as a salt. λ_{max} 222 (ϵ 32300); 245 (ϵ 30600); 268 (ϵ 14000); 360 (ϵ 8200) (EtOH) (Berdy).

*8-Hydroxy, 1*R*,2,3,4-tetrahydro:* ***1,2,3,4-Tetrahydro-8-hydroxymanzamine A***. *8-Hydroxymanzamine D*
[160070-84-8]
$C_{36}H_{48}N_4O_2$ 568.801
Alkaloid from the Papua New Guinea sponge *Petrosia contignata*. Shows strong activity against *Mycobacterium tuberculosis* ($H_{37}Rv$).

*8-Hydroxy, 1*R*,2,3,4-tetrahydro,* N^2*-Me:* ***1,2,3,4-Tetrahydro-2*-N-*methyl-8-hydroxymanzamine A***. *8-Hydroxy-2*-N-*methylmanzamine D*
[160070-83-7]
$C_{37}H_{50}N_4O_2$ 582.828
Alkaloid from the Papua New Guinea sponges *Petrosia contignata* and *Cribrochalina* sp. Cytotoxic to P388 leukemia cells. Shows strong activity against *Mycobacterium tuberculosis* ($H_{37}Rv$). Powder. $[\alpha]_D$ +46 (c, 0.006 in CH_2Cl_2). Props. refer to a salt (acid component not specified).

8-Hydroxy, 31-oxo, 32,33-dihydro: ***Manzamine F***. *Keramamine B*
[107900-75-4]
$C_{36}H_{44}N_4O_3$ 580.769
Isol. from a *Xestospongia* sponge and from a *Petrosia* sponge. Cytotoxic. Shows antimicrobial activity and strong activity against *Mycobacterium*

tuberculosis ($H_{37}Rv$). Cryst. (MeCN). Mp 200° dec. $[\alpha]_D$ +59.9 (c, 1.67 in $CHCl_3$). λ_{max} 245 (ϵ 25600); 268 (ϵ 12100); 353 (ϵ 6800); 360 (ϵ 6820) (as AcOH salt) (Derep). λ_{max} 220 (ϵ 36000); 244 (ϵ 31000); 265 (ϵ 13900); 355 (ϵ 8100) (MeOH) (Derep).

31β-Hydroxy, 32,33-dihydro: ***32,33-Dihydro-31-hydroxymanzamine A***
[581782-65-2]
$C_{36}H_{46}N_4O_2$ 566.785
Alkaloid from an Indonesian sponge. Cryst. (MeOH). $[\alpha]_D^{25}$ +34.4 (c, 0.9 in $CHCl_3$). λ_{max} 215 ; 248 ; 281 ; 291 ; 352 ; 359 (MeOH).

6,31β-Dihydroxy, 32,33-dihydro: ***32,33-Dihydro-6,31-dihydroxymanzamine A***
[581782-71-0]
$C_{36}H_{46}N_4O_3$ 582.784
Alkaloid from an Indonesian sponge. Shows strong activity against *Mycobacterium tuberculosis* ($H_{37}Rv$). Pale yellow powder. $[\alpha]_D^{25}$ +25.9 (c, 0.5 in MeOH). λ_{max} 218 ; 240 ; 280 ; 291 ; 356 ; 359 (MeOH).

12-Deoxy, 12,28α-epoxy: ***12,28-Oxamanzamine A***
[721429-59-0]
$C_{36}H_{42}N_4O$ 546.754
Isol. from an *Acanthostrongylophora* sp. Amorph. solid. Mp 148° dec. $[\alpha]_D^{25}$ +38 (c, 0.1 in $CHCl_3$). λ_{max} 253 (log ϵ 3.81); 274 (log ϵ 3.66); 352 (log ϵ 3.41) (MeOH).

12-Deoxy, 12,34-epoxy: ***12,34-Oxamanzamine A***
$C_{36}H_{42}N_4O$ 546.754
Alkaloid from an Indo-Pacific sponge. Shows activity against *Leishmania donovani*. Powder (MeOH). Mp 164° dec. $[\alpha]_D^{25}$ +40 (c, 0.6 in $CHCl_3$). Not indexed in CA **138**. λ_{max} 252 (log ϵ 3.82); 271 (log ϵ 3.71); 358 (log ϵ 3.41) (MeOH).

12-Deoxy, 31-oxo, 12,28α-epoxy, 32,33-dihydro: ***12,28-Oxamanzamine E***
$C_{36}H_{42}N_4O_2$ 562.753
Alkaloid from an *Acanthostrongylophora* sp. Pale yellow solid. $[\alpha]_D^{25}$ +29.4 (c, 0.2 in $CHCl_3$). λ_{max} 250 (log ϵ 3.8); 281 (log ϵ 3.63); 352 (log ϵ 3.31); 361 (log ϵ 3.42) (MeOH).

12-Deoxy, 31-oxo, 12,34-epoxy, 32,33-dihydro: ***12,34-Oxamanzamine E***
$C_{36}H_{42}N_4O_2$ 562.753
Alkaloid from the Indonesian sponge *Acanthostrongylophora* sp. Pale yellow powder (MeOH). Mp 152° dec. $[\alpha]_D^{25}$ +44.3 (c, 0.6 in $CHCl_3$). λ_{max} 239 (log ϵ 3.38); 252 (log ϵ 3.82); 275 (log ϵ 3.65); 354 (log ϵ 3.41) (MeOH).

12-Deoxy, 6-hydroxy, 31-oxo, 12,34-epoxy, 32,33-dihydro: ***6-Hydroxy-12,34-oxamanzamine E***
$C_{36}H_{42}N_4O_3$ 578.753
Alkaloid from an *Acanthostrongylophora* sp. Yellow powder. Mp 163° dec. $[\alpha]_D^{25}$ +44.3 (c, 0.4 in $CHCl_3$). λ_{max} 252 (log ϵ 3.82); 275 (log ϵ 3.67); 356 (log ϵ 3.41) (MeOH).

12-Deoxy, 8-hydroxy, 12,28α-epoxy: ***8-Hydroxy-12,28-oxamanzamine A***
[721429-60-3]
$C_{36}H_{42}N_4O_2$ 562.753
Isol. from an *Acanthostrongylophora* sp. Amorph. powder (EtOH). Mp 160° dec. $[\alpha]_D^{25}$ +8 (c, 0.1 in $CHCl_3$). λ_{max} 251 (log ϵ 3.85); 273 (log ϵ 3.78); 356 (log ϵ 3.38) (MeOH).

(-)-*form*

8-Hydroxy: **ent-*Manzamine G***
[403619-70-5]
$C_{36}H_{44}N_4O_2$ 564.769
Alkaloid from an undescribed sponge of the Petrosiidae. Exhibits activity against *Toxoplasma gondii* and strong antimalarial activity. Shows strong activity against *Mycobacterium tuberculosis* ($H_{37}Rv$). Yellowish powder (EtOH). Mp 196-198° dec. $[\alpha]_D^{25}$ -112 (c, 0.12 in $CHCl_3$). λ_{max} 266 (log ϵ 2.95); 282 (log ϵ 2.94); 390 (log ϵ 2.85) (MeOH).

8-Hydroxy, 31-oxo, 32,33-dihydro: **ent-*Manzamine F***
[403619-71-6]
$C_{36}H_{44}N_4O_3$ 580.769
Alkaloid from an undescribed sponge of the Petrosiidae. Exhibits activity against *Toxoplasma gondii* and strong antimalarial activity. Shows strong activity against *Mycobacterium tuberculosis* ($H_{37}Rv$). Yellowish powder (EtOH). Mp 194° dec. $[\alpha]_D$ -44.6 (c, 0.11 in $CHCl_3$). λ_{max} 266 (log ϵ 3.04); 300 (log ϵ 3.02); 380 (log ϵ 2.92) (MeOH).

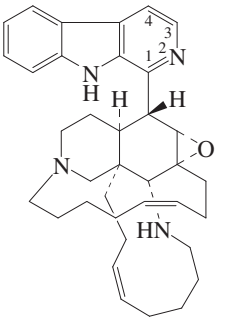
12-Deoxy, 31-oxo, 12,34-epoxy, 32,33-dihydro: **ent-*12,34-Oxamanzamine E***
[479411-38-6]
$C_{36}H_{42}N_4O_2$ 562.753
Alkaloid from an Indo-Pacific sponge. Amorph. brown powder ($CHCl_3$). Mp 152° dec. $[\alpha]_D^{25}$ -54.6 (c, 0.3 in $CHCl_3$). λ_{max} 252 (log ϵ 3.82); 275 (log ϵ 3.65); 354 (log ϵ 3.41) (MeOH).

12-Deoxy, 8-hydroxy, 31-oxo, 12,34-epoxy, 32,33-dihydro: **ent-*12,34-Oxamanzamine F***
[402935-15-3]
$C_{36}H_{42}N_4O_3$ 578.753
Alkaloid from an Indo-Pacific sponge. Shows strong activity against *Mycobacterium tuberculosis* ($H_{37}Rv$). Powder (MeOH). Mp 164° dec. $[\alpha]_D^{25}$ +40 (c, 0.6 in $CHCl_3$). λ_{max} 252 (log ϵ 3.82); 271 (log ϵ 3.71); 358 (log ϵ 3.41) (MeOH).

Sakai, R. *et al., J.A.C.S.*, 1986, **108**, 6404-6405 (*isol, uv, ir, pmr, cmr, ms, cryst struct*)
Nakamura, H. *et al., Tet. Lett.*, 1987, **28**, 621-624 (*isol, uv, pmr, cmr, cryst struct*)
Eur. Pat., 1988, 272 056; *CA*, **109**, 129416p (*Manzamine D*)
Ichiba, T. *et al., Tet. Lett.*, 1988, **29**, 3083-3086 (*Manzamines E, F*)
Baldwin, J.E. *et al., Tet. Lett.*, 1992, **33**, 2059-2062 (*biosynth*)
Ichiba, T. *et al., J. Nat. Prod.*, 1994, **57**, 168-170 (*8-Hydroxymanzamine A*)
Kobayashi, J. *et al., J. Nat. Prod.*, 1994, **57**, 1737-1740 (*3,4-Dihydromanzamine A, 6-Hydroxymanzamine A*)
Crews, P. *et al., Tetrahedron*, 1994, **50**, 13567-13574 (*1,2,3,4-Tetrahydro-8-hydroxymanzamine A, 1,2,3,4-Tetrahydro-2-N-methyl-8-hydroxymanzamine A*)
Kobayashi, M. *et al., Tetrahedron*, 1995, **51**, 3727-3736 (*Manzamine X, Manzamine Y, isol, uv, ir, pmr, cmr, cryst struct*)
Edrada, R.A. *et al., J. Nat. Prod.*, 1996, **59**, 1056-1060 (*Manzamine A N-oxide, 3,4-Dihydromanzamine A N-oxide, 6-Deoxymanzamine X*)
Tsuda, M. *et al., Tetrahedron*, 1996, **52**, 2319-2324 (*Manzamine D*)
Tsuda, M. *et al., Heterocycles*, 1997, **46**, 765-794 (*rev*)
Watanabe, D. *et al., J. Nat. Prod.*, 1998, **61**, 689-692 (*Dihydrohydroxymanzamine A*)
Winkler, J.D. *et al., J.A.C.S.*, 1998, **120**, 6425-6426 (*synth, Manzamine D*)
Matzanke, N. *et al., Org. Prep. Proced. Int.*, 1998, **30**, 3-51 (*rev, synth*)
Magnier, E. *et al., Tetrahedron*, 1998, **54**, 6201-6258 (*rev, synth*)
Ang, K.K.H. *et al., Antimicrob. Agents Chemother.*, 2000, **44**, 1645-1649 (*activity*)
Zhou, B.-N. *et al., Tetrahedron*, 2000, **56**, 5781-5784 (*1-Epimanzamine D, N-Me-1-Epimanzamine D*)
El Sayed, K.A. *et al., J.A.C.S.*, 2001, **123**, 1804-1808 (*ent-Manzamine F, ent-Manzamine G, isol, activity*)
Humphrey, J.M. *et al., J.A.C.S.*, 2002, **124**, 8584-8592 (*synth*)
Yousaf, M. *et al., Tetrahedron*, 2002, **58**, 7397-7402 (*12,34-Oxamanzamines*)
Rao, K.V. *et al., J. Nat. Prod.*, 2003, **66**, 823-828; 2004, **67**, 1314-1318 (*32,33-Dihydrohydroxymanzamines, 6-Hydroxymanzamine E, 12,34-Oxamanzamine E*)
Yousaf, M. *et al., J. Med. Chem.*, 2004, **47**, 3512-3517 (*12,28-Oxamanzamines*)
Rao, K.V. *et al., J. Nat. Prod.*, 2006, **69**, 1034-1040 (*12,28-Oxamanzamine E, 6-Hydroxy-12,34-oxamanzamine E*)
Zhang, B. *et al., Chem. Pharm. Bull.*, 2008, **56**, 866-869 (*isol, pmr, cmr, cryst struct*)

Manzamine B M-92

[112663-92-0]



$C_{36}H_{46}N_4O$ 550.786
Alkaloid from the marine sponges *Haliclona*, *Amphimedon* and *Ircinia* spp. Shows activity against *Mycobacterium tuberculosis* ($H_{37}Rv$). Cryst. (EtOAc). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 198-203°. $[\alpha]_D^{20}$ +89 (c, 1.8 in $CHCl_3$). λ_{max} 212 (ϵ 18000); 235 (ϵ 22000); 240 (sh) (ϵ 20000); 250 (sh) (ϵ 15000); 282 (sh) (ϵ 6900); 288 (ϵ 11000); 338 (ϵ 3500); 351 (ϵ 3500) (MeOH) (Derep).

1β,2,3,4-Tetrahydro: ***1,2,3,4-Tetrahydromanzamine B***
$C_{36}H_{50}N_4O$ 554.817

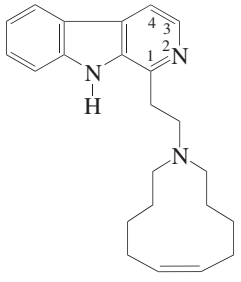
Alkaloid from the sponge *Amphimedon* sp. Shows activity against *Mycobacterium tuberculosis* ($H_{37}Rv$). Amorph. solid. $[\alpha]_D^{25}$ -16 (c, 0.14 in MeOH). λ_{max} 225 (ϵ 9700); 273 (ϵ 2500); 280 (ϵ 2600); 289 (ϵ 2100) (MeOH).

8-Hydroxy: ***8-Hydroxymanzamine B***
$C_{36}H_{46}N_4O_2$ 566.785
Alkaloid from an *Acanthostrongylophora* sp. Amorph. brown powder. $[\alpha]_D^{25}$ +39.6 (c, 0.2 in $CHCl_3$). λ_{max} 241 (log ϵ 3.78); 252 (log ϵ 3.65); 278 (log ϵ 3.61); 291 (log ϵ 3.19); 334 (log ϵ 3.26); 352 (log ϵ 3.41) (MeOH).

Sakai, R. *et al., Tet. Lett.*, 1987, **28**, 5493-5496 (*isol, uv, ir, pmr, cmr, cryst struct*)
Baldwin, J.E. *et al., Tet. Lett.*, 1992, **33**, 2059-2062 (*biosynth*)
Tsuda, M. *et al., Heterocycles*, 1997, **46**, 765-794 (*rev*)
Tsuda, M. *et al., Heterocycles*, 1999, **50**, 485-488 (*Tetrahydromanzamine B*)
El Sayed, K.A. *et al., J.A.C.S.*, 2001, **123**, 1804-1808 (*activity*)
Rao, K.V. *et al., J. Nat. Prod.*, 2006, **69**, 1034-1040 (*8-Hydroxymanzamine B*)

Manzamine C M-93

[112693-24-0]



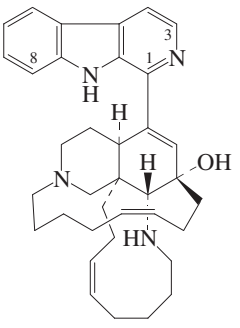
$C_{23}H_{29}N_3$ 347.502
Alkaloid from the marine sponge *Haliclona* sp. and from *Amphimedon* sp. Shows activity against *Mycobacterium tuberculosis* ($H_{37}Rv$). Plates ($CHCl_3$/MeCN). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 77-82°. λ_{max} 212 (ϵ 13500); 234 (ϵ 22000); 239 (sh) (ϵ 21000); 248 (sh) (ϵ 14000); 282 (sh) (ϵ 6100); 287 (ϵ 9500); 335 (ϵ 3000); 350 (ϵ 3000) (MeOH) (Derep).

1ξ,2,3,4-Tetrahydro: ***Keramamine C***
[157207-88-0]
$C_{23}H_{33}N_3$ 351.534
Alkaloid from the Okinawan marine sponge *Amphimedon* sp. Plausible biogenetic precursor of Manzamine C, M-93. Oil. Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. $[\alpha]_D^{25}$ +20 (c, 0.92 in MeOH). λ_{max} 225 (sh); 271 (ϵ 5600); 285 (sh); 290 (sh) (MeOH) (Derep).

Sakai, R. *et al., Tet. Lett.*, 1987, **28**, 5493-5496 (*isol, uv, ir, pmr, cmr, cryst struct*)
Torisawa, Y. *et al., Tetrahedron*, 1991, **47**, 8067-8078 (*synth*)
Baldwin, J.E. *et al., Tet. Lett.*, 1992, **33**, 2059-2062 (*biosynth*)
Nowak, W. *et al., Annalen*, 1993, 153-159 (*synth*)
Seki, H. *et al., Chem. Pharm. Bull.*, 1993, **41**, 1173-1176 (*pmr, cmr*)
Tsuda, M. *et al., Tet. Lett.*, 1994, **35**, 4387-4388 (*Keramamine C*)
Tsuda, M. *et al., Heterocycles*, 1997, **46**, 765-794 (*rev*)
Matzanke, N. *et al., Org. Prep. Proced. Int.*, 1998, **30**, 3-51 (*rev, synth*)
Magnier, E. *et al., Tetrahedron*, 1998, **54**, 6201-6258 (*rev, synth*)
MaGee, D.I. *et al., Can. J. Chem.*, 2000, **78**, 1060-1066 (*synth*)
El Sayed, K.A. *et al., J.A.C.S.*, 2001, **123**, 1804-1808 (*activity*)

Manzamine J M-94

[139975-58-9]



$C_{36}H_{46}N_4O$ 550.786
Alkaloid from the Okinawan marine sponge *Ircinia* sp. and the Philippine sponge *Xestospongia ashmorica*. Exhibits cytotoxicity against L1210 murine leukaemia cells and KB human epidermoid carcinoma cells. Shows antimycobacterial activity. Mp 140°. $[\alpha]_D^{25}$ +47 (c, 2.0 in $CHCl_3$). λ_{max} 238 (ϵ 15300); 278 (ϵ 9680); 290 (ϵ 8350); 346 (ϵ 4420); 358 (ϵ 4770) (as HCl salt) (Derep). λ_{max} 219 (ϵ 22900); 236 (ϵ 18600); 280 (ϵ 10800); 290 (ϵ 11000); 346 (ϵ 5300); 357 (ϵ 5600) (MeOH) (Derep).

N^2*-Oxide:* ***Manzamine J* N-*oxide***
$C_{36}H_{46}N_4O_2$ 566.785
Alkaloid from *Xestospongia ashmorica*. Cytotoxic agent. Shows antimycobacterial activity. Insecticide. Yellow cryst. powder. $[\alpha]_D$ +15 (c, 0.40 in $CHCl_3$). λ_{max} 261 (ϵ 25000); 325 (ϵ 19000) (MeOH).

3,4-Dihydro: ***3,4-Dihydromanzamine J***
[208392-24-9]
$C_{36}H_{48}N_4O$ 552.801
Alkaloid from *Amphimedon* sp. Shows antimycobacterial activity. Amorph. solid. $[\alpha]_D^{30}$ +50 (c, 0.1 in MeOH). λ_{max} 209 (ϵ 13000); 242 (ϵ 9000); 322 (ϵ 4500) (MeOH).

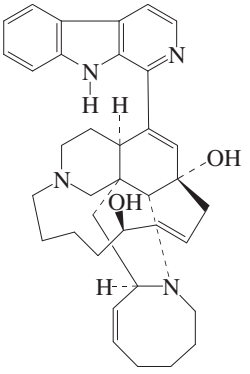
1R,2,3,4-Tetrahydro: ***Manzamine H***
[139975-57-8]
$C_{36}H_{50}N_4O$ 554.817
From *Ircinia* spp. and *Amphimedon* sp. Exhibits cytotoxicity against L1210 murine leukaemia cells and KB human epidermoid carcinoma cells. Shows antimycobacterial activity. Mp 145°. $[\alpha]_D^{27}$ +17 (c, 1.1 in $CHCl_3$). λ_{max} 224 (ϵ 20000); 283 (ϵ 4600) (MeOH) (Derep). λ_{max} 225 (ϵ 29000); 277 (ϵ 6600); 282 (ϵ 6800); 290 (ϵ 5500) (MeOH) (Derep).

1S,2,3,4-Tetrahydro: ***Manzamine L***
[175274-50-7]
$C_{36}H_{50}N_4O$ 554.817
Alkaloid from the Okinawan marine sponge *Amphimedon* sp. Shows antimycobacterial activity. Amorph. solid. Mp 143°. $[\alpha]_D^{24}$ -15 (c, 0.42 in $CHCl_3$). λ_{max} 223 (ϵ 34000); 283 (ϵ 6400) (MeOH) (Berdy).

8-Hydroxy: ***8-Hydroxymanzamine J***
$C_{36}H_{46}N_4O_2$ 566.785
Alkaloid from the Indonesian sponge *Acanthostrongylophora* sp. Pale yellow powder ($CHCl_3$). $[\alpha]_D^{25}$ +23.4 (c, 0.2 in $CHCl_3$). λ_{max} 251 (log ϵ 3.62); 274 (log ϵ 3.68); 358 (log ϵ 3.39) (MeOH).

Kondo, K. *et al., J.O.C.*, 1992, **57**, 2480 (*isol, uv, ir, pmr, cmr, ms, struct*)
Edrada, R.A. *et al., J. Nat. Prod.*, 1996, **59**, 1056 (*N-oxide*)
Tsuda, M. *et al., Tetrahedron*, 1996, **52**, 2319 (*Manzamine L*)
Watanabe, D. *et al., J. Nat. Prod.*, 1998, **61**, 689-692 (*3,4-Dihydromanzamine J*)
El Sayed, K.A. *et al., J.A.C.S.*, 2001, **123**, 1804-1808 (*activity*)
Rao, K.V. *et al., J. Nat. Prod.*, 2004, **67**, 1314-1318 (*8-Hydroxymanzamine J*)

Manzamine M M-95

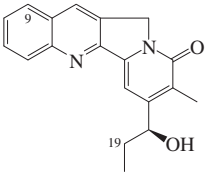


$C_{36}H_{44}N_4O_2$ 564.769
Alkaloid from the sponge *Amphimedon* sp. Amorph. solid. $[\alpha]_D^{25}$ +16 (c, 0.48 in MeOH). λ_{max} 205 (ϵ 14000); 233 (ϵ 3000); 276 (ϵ 1500); 359 (ϵ 1000) (MeOH).

Watanabe, D. *et al., J. Nat. Prod.*, 1998, **61**, 689-692 (*isol, uv, ir, pmr, cmr*)

Mappicine M-96

*7-(1-Hydroxypropyl)-8-methylindolizino[1,2-*b*]quinolin-9(11*H*)-one*



Probable Absolute Configuration

$C_{19}H_{18}N_2O_2$ 306.363

(S)-form [54318-59-1]
Minor alkaloid from *Mappia foetida* (Icacinaceae). Pale yellow cryst. + $2H_2O$ (MeOH). Mp 251-252°. $[\phi]_{500}$ -89° (c,

0.024 in dioxan). λ_{max} 218 (ϵ 30200); 253 (ϵ 22387); 290 (ϵ 5495); 366 (ϵ 14790) (EtOH) (Berdy).

O-*β-D-Glucopyranoside: Mappicine glucoside*
[162109-68-4]
$C_{25}H_{28}N_2O_7$ 468.505
Alkaloid from trunk bark of *Nothapodytes foetida* (Icacinaceae). Cryst. (EtOH). Mp 184-185°. $[\alpha]_D^{25}$ -77.3 (c, 1.59 in H_2O).

O-*[β-D-Glucopyranosyl-(1→6)-β-D-glucopyranoside]: Mappicine gentiobioside*
[162109-69-5]
$C_{31}H_{38}N_2O_{12}$ 630.647
From trunk bark of *Nothapodytes foetida* (Icacinaceae). Cryst. (EtOH). Mp 193-194°. $[\alpha]_D^{25}$ -110.7 (c, 0.66 in H_2O).

O-*Ac:*
Cryst. (MeOH). Mp 191-192°.

18-Ketone: Mappicine ketone. ***Nothapodytine B***
[55854-89-2]
$C_{19}H_{16}N_2O_2$ 304.348
Alkaloid from stems of *Nothapodytes foetida*. Shows antiviral activity. Pale yellowish needles ($CHCl_3$). Mp 210-215°.

17-Hydroxy, O-*β-D-glucopyranoside:* ***17-Hydroxymappicine glucoside***
[162109-70-8]
$C_{25}H_{28}N_2O_8$ 484.505
From trunk bark of *Nothapodytes foetida* (Icacinaceae). Cryst. (EtOH). Mp 164-165°. $[\alpha]_D^{25}$ -60.37 (c, 4.62 in H_2O).

19-Hydroxy: ***19-Hydroxymappicine***
[123086-78-2]
$C_{19}H_{18}N_2O_3$ 322.363
Alkaloid from seeds of *Camptotheca acuminata*. Yellow cryst. (Me_2CO). Mp 245-248° dec.

9-Methoxy: ***9-Methoxymappicine***
$C_{20}H_{20}N_2O_3$ 336.39
Alkaloid from *Nothapodytes foetida*. Yellow cryst. (MeOH). Mp 249-251°. $[\alpha]_D^{25}$ -9.6 (c, 0.62 in $CHCl_3$/MeOH). λ_{max} 262 ; 319 ; 362 (MeOH).

9-Methoxy, O-*[β-D-glucopyranosyl-(1→6)-β-D-glucopyranoside]: 9-Methoxymappicine gentiobioside*
[162109-71-9]
$C_{32}H_{40}N_2O_{13}$ 660.674
From trunk bark of *Nothapodytes foetida* (Icacinaceae). Cryst. (EtOH). Mp 168-169°. $[\alpha]_D^{25}$ -27.7 (c, 1.3 in MeOH).

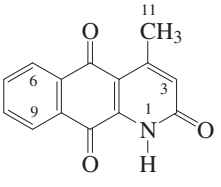
9-Methoxy, 18-ketone: ***Nothapodytine A***
[142727-51-3]
$C_{20}H_{18}N_2O_3$ 334.374
Alkaloid from stems of *Nothapodytes foetida*. Pale yellowish needles ($CHCl_3$). Mp 235-238°.

(±)-*form* [54352-77-1]
Synthetic. Cryst. (MeOH). Mp 270-271° (264-266°).

Govindachari, T.R. *et al., J.C.S. Perkin 1*, 1974, 1215 (*isol, uv, ir, pmr, ms, ord, struct*)
Adamovics, J.A. *et al., Phytochemistry*, 1979, **18**, 1085 (*synth, pmr*)
Kingsbury, W.D. *et al., Tet. Lett.*, 1988, **29**, 6847 (*synth, pmr*)
Lin, L.-Z. *et al., Phytochemistry*, 1989, **28**, 1295 (*19-Hydroxymappicine*)
Pendrak, I. *et al., J.O.C.*, 1994, **59**, 2623-2625; 1995, **60**, 3249-3251 (*activity*)
Pirillo, A. *et al., J.C.S. Perkin 1*, 1995, 583 (*glycosides*)
Comins, D.L. *et al., J.O.C.*, 1996, **61**, 9623 (*synth*)
Wu, T.-S. *et al., Phytochemistry*, 1996, **42**, 907 (*Nothapodytines*)
Josien, H. *et al., Tetrahedron*, 1997, **53**, 8881 (*synth*)
Boger, D.L. *et al., J.A.C.S.*, 1998, **120**, 1218-1222 (*synth*)
Yadav, J.S. *et al., Tetrahedron*, 1999, **55**, 5449-5456 (*Nothapodytine B, synth*)
Das, B. *et al., Tetrahedron*, 1999, **55**, 7875-7880 (*synth*)
Mekouar, K. *et al., J.O.C.*, 2000, **65**, 5212-5215 (*Nothapodytine B, synth*)
Toyota, M. *et al., J.O.C.*, 2000, **65**, 7110-7113 (*synth*)
Das, B. *et al., Nat. Prod. Lett.*, 2000, **14**, 135-140 (*9-Methoxymappicine*)
Das, B. *et al., Synth. Commun.*, 2000, **30**, 3321-3325 (*Nothapodytines*)
Zhang, Q. *et al., J.A.C.S.*, 2002, **124**, 5774-5781 (*synth*)
Carles, L. *et al., J.O.C.*, 2002, **67**, 4304-4308 (*Nothapodytine B, synth*)
Raolji, G.B. *et al., Angew. Chem., Int. Ed.*, 2003, **42**, 5059-5061 (*Nothapodytine B, synth*)
Henegar, K.E. *et al., J. Het. Chem.*, 2003, **40**, 601-605 (*synth, pmr, cmr, ms, Nothapodytine B*)
Kato, I. *et al., J.O.C.*, 2003, **68**, 7983-7989 (*Nothapodytine B, synth*)
Chavan, S.P. *et al., Tet. Lett.*, 2004, **45**, 3941-3943 (*synth*)

Marcanine A M-97

4-Methylbenzo[g]quinoline-2,5,10(1H)-trione, 9CI. 4-Methyl-1H-1-aza-2,9,10-anthracenetrione. Griffiazanone B
[157463-84-8]



$C_{14}H_9NO_3$ 239.23
Alkaloid from *Annona glabra* (pond apple), *Goniothalamus griffithii* and *Goniothalamus marcanii*. Cytotoxic agent. Yellow needles. Mp 240-242° Mp 249-251° Mp > 300°.

3-Methoxy: 3-Methoxy-4-methylbenzo[g]quinoline-2,5,10(1H)-trione, 9CI. ***Dielsiquinone***
[104696-15-3]
$C_{15}H_{11}NO_4$ 269.256
Alkaloid from *Guatteria dielsiana* and *Goniothalamus marcanii*. Cytotoxic agent. Yellow-green amorph. powder. Mp 250-252°.

3-Methoxy, N-*Me:* ***Marcanine B***
[249285-58-3]
$C_{16}H_{13}NO_4$ 283.283
Alkaloid from the stem bark of *Goniothalamus marcanii*. Cytotoxic agent. Orange powder. λ_{max} 272 (log ϵ 4.36); 299 (sh) (log ϵ 4.08); 320 (sh) (log ϵ 3.86); 419 (log ϵ 3.3) (MeOH).

3-Methoxy, 6-hydroxy: ***Marcanine D***
[249285-60-7]
$C_{15}H_{11}NO_5$ 285.256
Alkaloid from the stem bark of *Goniothalamus marcanii*. Cytotoxic agent. Yellow powder. λ_{max} 275 (log ϵ 4.2); 295 (log ϵ 4.05) (MeOH).

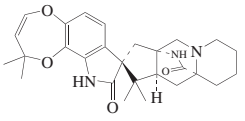
3-Methoxy, 9-hydroxy, N-*Me:* ***Marcanine E***
[249285-61-8]
$C_{16}H_{13}NO_5$ 299.282
Alkaloid from the stem bark of *Goniothalamus marcanii*. Cytotoxic agent. Orange powder. λ_{max} 274 (log ϵ 4.13); 300 (log ϵ 3.95) (MeOH).

3-Methoxy, 11-hydroxy, N-*Me:* ***Marcanine C***
[249285-59-4]
$C_{16}H_{13}NO_5$ 299.282
Alkaloid from the stem bark of *Goniothalamus marcanii*. Cytotoxic agent. Orange powder. λ_{max} 272 (log ϵ 4.23); 306 (sh) (log ϵ 3.97); 323 (sh) (log ϵ 3.82); 419 (log ϵ 3.19) (MeOH).

Goulart, M.O.F. *et al., Phytochemistry*, 1986, **25**, 1691-1695 (*Dielsiquinone*)
Marcos, A. *et al., Tetrahedron*, 1994, **50**, 12941-12952 (*synth*)
Zhang, Y.J. *et al., Chin. Chem. Lett.*, 1998, **9**, 1029-1032 (*Griffiazanone B*)
Soonthornchareonnon, N. *et al., J. Nat. Prod.*, 1999, **62**, 1390-1394 (*Goniothalamus marcanii constits*)
Chang, F.-R. *et al., J. Chin. Chem. Soc. (Taipei)*, 2000, **47**, 913-920 (*isol, pmr, cmr*)
Brisach-Wittmeyer, A. *et al., Bioorg. Med. Chem. Lett.*, 2005, **15**, 3609-3610 (*Dielsiquinone, synth*)

Marcfortine B M-98

[75789-29-6]



Absolute Configuration

$C_{27}H_{33}N_3O_4$ 463.575
Alkaloid from *Penicillium roquefortii* B26. Mycotoxin. Antiparasitic and nematocidal insecticide. Anthelmintic agent. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 178-180°. $[\alpha]_D^{22}$ -67.7 (c, 1.77 in $CHCl_3$). λ_{max} 229 (ϵ 2755) (MeOH).

N^2-*Me:* ***Marcfortine A***
[75731-43-0]
$C_{28}H_{35}N_3O_4$ 477.602
Alkaloid from *Penicillium roquefortii* B26 and *Penicillium* sp. UC7780. Mycotoxin. Antiparasitic and nematocidal insecticide. Anthelmintic agent. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. λ_{max} 226 (ϵ 30080); 286 (ϵ 4625) (MeOH).

Polonsky, J. *et al., Chem. Comm.*, 1980, 601-602 (*Marcfortine A, cryst struct*)
Prangé, T. *et al., Tet. Lett.*, 1981, 1977-1980 (*uv, pmr, cmr, ms, struct*)
Lee, B.H. *et al., Tet. Lett.*, 1994, **35**, 1135-1136 (*abs config*)
Kuo, M.S. *et al., J. Antibiot.*, 1996, **49**, 1006-1013 (*biosynth*)

Williams, R.M. *et al., Chem. Pharm. Bull.*, 2002, **50**, 711-740 (*rev, synth, biosynth*)
Trost, B.M. *et al., J.A.C.S.*, 2007, **129**, 3086-3087 (*synth*)

Marckidine M-99

[11050-74-1]

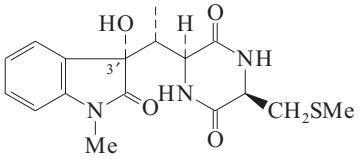
$C_{28}H_{35}N_3O_3$ 461.603

Struct. unknown. Alkaloid from the root bark of *Alangium lamarckii* (Alangiaceae). Mp 228°. $[\alpha]_D^{25}$ -84 (Py).

Siddiqui, S. *et al., Pak. J. Sci. Ind. Res.*, 1965, **8**, 161-165; *CA*, **68**, 899d
Raffauf, R.A. *et al., Handb. Alkaloids Alkaloid-Containing Plants*, Wiley, 1970,

Maremycin A M-100

[165467-67-4]



$C_{17}H_{21}N_3O_4S$ 363.437

Probable abs. config. depicted. Isol. from the marine *Streptomyces* sp. B9173. Sol. MeOH, DMSO; fairly sol. $CHCl_3$, EtOAc, Me_2CO, CH_2Cl_2; poorly sol. H_2O. Mp 229°. $[\alpha]_D^{20}$ -120.95 (c, 0.21 in MeOH). λ_{max} 209 (ϵ 33890); 257 (ϵ 3715) (MeOH). λ_{max} 208 (ϵ 35450); 257 (ϵ 3715) (MeOH/HCl). λ_{max} 212 (ϵ 27540); 248 (ϵ 3236) (MeOH/NaOH).

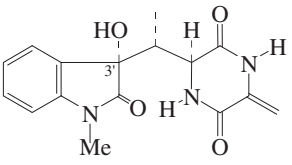
3′-Epimer: ***Maremycin B***
[165877-95-2]
$C_{17}H_{21}N_3O_4S$ 363.437
From *Streptomyces* sp. B9173. Shows sl. cytotoxicity. Sol. MeOH, DMSO; fairly sol. $CHCl_3$, CH_2Cl_2, EtOAc, Me_2CO; poorly sol. H_2O. Mp 216°. $[\alpha]_D^{20}$ +2.94 (c, 0.21 in MeOH). λ_{max} 209 (ϵ 29510); 258 (ϵ 4265) (MeOH). λ_{max} 208 (ϵ 31620); 258 (ϵ 4265) (MeOH/HCl). λ_{max} 212 (ϵ 25700); 252 (ϵ 7943) (MeOH/NaOH).

3′-Epimer, S-*oxide(*R-*):* ***Maremycin C₂***
[333997-43-6]
$C_{17}H_{21}N_3O_5S$ 379.436
Prod. by *Streptomyces* sp. strain GT 051237. Powder. $[\alpha]_D^{20}$ +20 (c, 0.58 in DMSO). Data given is for mixt. with Maremycin C_1. λ_{max} 215 (log ϵ 4.03); 258 (log ϵ 3.59); 293 (sh) (log ϵ 2.97) (EtOH).

3′-Epimer, S-*oxide(*S-*):* ***Maremycin C₁***
[333997-39-0]
$C_{17}H_{21}N_3O_5S$ 379.436
Prod. by *Streptomyces* sp. strain GT 051237. Obt. as a mixt. with Maremycin C_2.

Balk-Bindseil, W. *et al., Annalen*, 1995, 1291-1294 (*isol, uv, ir, pmr, cmr, ms, cd, struct*)
Takayama, H. *et al., Tetrahedron*, 1999, **55**, 6841-6846 (*config*)
Tang, Y.-Q. *et al., Eur. J. Org. Chem.*, 2001, 261-267 (*Maremycin B, Maremycin C, activity*)
Ueda, T. *et al., Org. Lett.*, 2008, **10**, 2043-2046 (*synth*)

Maremycin D_1 M-101



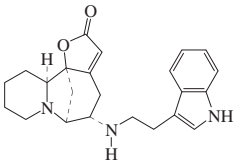
$C_{16}H_{17}N_3O_4$ 315.328
Prod. by *Streptomyces* sp. strain GT 051237. Powder. $[\alpha]_D^{20}$ -30.2 (c, 0.9 in DMSO). Data shown is for mixt. with Maremycin D_2. λ_{max} 218 (log ϵ 4.49); 253 (log ϵ 4.06); 293 (sh) (log ϵ 3.66) (EtOH).

3′-Epimer: ***Maremycin D₂***
$C_{16}H_{17}N_3O_4$ 315.328
Prod. by *Streptomyces* sp. strain GT 051237. Obt. as a mixt. with Maremycin D_1.

Tang, Y.-Q. *et al., Eur. J. Org. Chem.*, 2001, 261-267 (*isol, pmr, cmr*)
Ueda, T. *et al., Org. Lett.*, 2008, **10**, 2043-2046 (*synth*)

Margaritarine M-102

[138832-15-2]



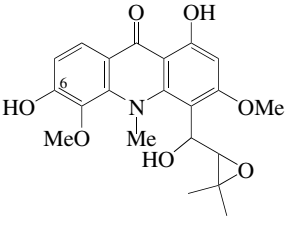
Absolute Configuration

$C_{23}H_{27}N_3O_2$ 377.485
Alkaloid from the bark of *Margaritaria indica* (Euphorbiaceae). Amorph. solid. Mp 66-68° (softens). $[\alpha]_D^{20}$ +106.9 (c, 0.06 in EtOH).

Arbain, D. *et al., J.C.S. Perkin 1*, 1991, 1863-1869 (*isol, ir, pmr, cmr, ms, struct*)

Margrapine A M-103

[185417-68-9]



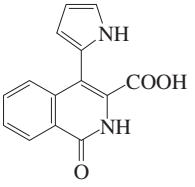
$C_{21}H_{23}NO_7$ 401.415
Alkaloid from roots of Marsh grapefruit (*Citrus paradisi*). Yellow oil. $[\alpha]_D$ -16.7 (c, 0.036 in $CHCl_3$). λ_{max} 225 (sh) ; 264 ; 295 (sh) ; 331 ; 381 (EtOH).

6-Me ether: ***Margrapine B***
[185417-69-0]
$C_{22}H_{25}NO_7$ 415.442
From roots of Marsh grapefruit (*Citrus paradisi*). Yellow oil. $[\alpha]_D$ -37.5 (c, 0.008 in $CHCl_3$). λ_{max} 226 (sh) ; 264 ; 331 ; 375 (EtOH).

Takemura, Y. *et al., Heterocycles*, 1996, **43**, 2483 (*isol, uv, ir, pmr, cmr, ms, struct*)

Marinamide M-104

*1,2-Dihydro-1-oxo-4-(1*H*-pyrrol-2-yl)-3-isoquinolinecarboxylic acid*
[920020-06-0]



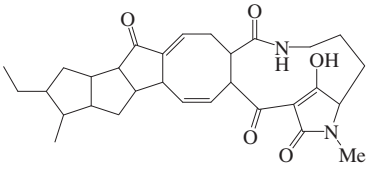
$C_{14}H_{10}N_2O_3$ 254.245
Prod. by mixed fermentation of two mangrove endophytic fungi (strain Nos. 1924 and 3893).

Me ester: [920020-07-1]
$C_{15}H_{12}N_2O_3$ 268.271
Prod. by two mangrove endophytic fungi. Mp >° 300.

Zhu, F. *et al., Chin. Sci. Bull.*, 2006, **51**, 1426-1430 (*isol*)

Marine *Streptomyces* $C_{30}H_{38}N_2O_5$ lactam M-105

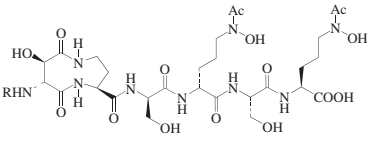
[184348-39-8]



$C_{30}H_{38}N_2O_5$ 506.641
Related to Aburatubolactam A, A-16. Prod. by *Streptomyces* sp. SCRC A20. Cytotoxic agent.

Japan. Pat., 1996, 96 245 625; *CA*, **126**, 17872d

Marinobactins M-106



Marinobactin A R = $-CO(CH_2)_{10}CH_3$
" B R = $-CO(CH_2)_5CH{=}CH(CH_2)_5CH_3$
" C R = $-CO(CH_2)_{12}CH_3$
" D_1 R = $-CO(CH_2)_7CH{=}CH(CH_2)_5CH_3$
" D_2 R = $-CO(CH_2)_5CH{=}CH(CH_2)_7CH_3$
" E R = $-CO(CH_2)_{14}CH_3$
" F R = octadecenoyl

Isol. from *Marinobacter* sp. strains DS40M6 and DS40M8. Siderophores.

Marinobactin A [265319-69-5]
$C_{40}H_{69}N_9O_{16}$ 932.036

Marinobactin B [265319-73-1]
$C_{42}H_{71}N_9O_{16}$ 958.074

Marinobactin C [265319-74-2]
$C_{42}H_{73}N_9O_{16}$ 960.089

Marinobactin D_1 [265319-75-3]
$C_{44}H_{75}N_9O_{16}$ 986.127

Marinobactin D_2 [265319-76-4]
$C_{44}H_{75}N_9O_{16}$ 986.127

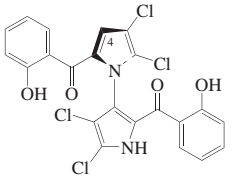
Marinobactin E [265319-77-5]
$C_{44}H_{77}N_9O_{16}$ 988.143

Marinobactin F [960157-07-7]
$C_{46}H_{79}N_9O_{16}$ 1014.181
Posn. of double bond in octadecenoyl residue not determined.

Martinez, J.S. *et al., Science (Washington, D.C.)*, 2000, **287**, 1245-1247 (*isol, struct*)
Martinez, J.S. *et al., J. Inorg. Biochem.*, 2007, **101**, 1692-1698 (*isol, ms*)

Marinopyrrole A M-107

[1010732-14-5]



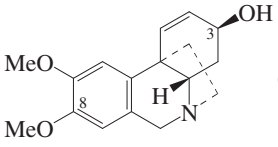
Absolute Configuration

$C_{22}H_{12}Cl_4N_2O_4$ 510.159
Prod. by a marine-derived *Streptomyces* sp. (strain CNQ-418). Active against MRSA. $[\alpha]_D$ -69 (c, 0.39 in MeOH). λ_{max} 264 (log ϵ 3.9); 315 (log ϵ 4) (MeOH).

4-Bromo: ***Marinopyrrole B***
[1010732-15-6]
$C_{22}H_{11}BrCl_4N_2O_4$ 589.055
Prod. by *Streptomyces* sp. (strain CNQ-418). $[\alpha]_D$ -72 (c, 0.2 in MeOH). λ_{max} 265 (log ϵ 4); 319 (log ϵ 3.9); 353 (log ϵ 4) (MeOH).

Hughes, C.C. *et al., Org. Lett.*, 2008, **10**, 629-631 (*isol, cd, pmr, cmr, cryst struct*)

Maritidine M-108



(+)-*form*

$C_{17}H_{21}NO_3$ 287.358

(+)-*form* [22331-07-3]
Alkaloid from *Pancratium maritimum, Hippeastrum ananuca, Narcissus tazetta* var. *chinensis, Narcissus papyraceus, Zephyranthes robusta, Zephyranthes sulphurea* and *Zephyranthes flava* (Amaryllidaceae). Prisms (EtOH/hexane). Mp 253-256° (263-265°). $[\alpha]_D^{25}$ +31 (c, 0.09 in MeOH).

Picrate: Mp 192-194°.

Me ether: **O-*Methylmaritidine***
[80550-22-7]
$C_{18}H_{23}NO_3$ 301.385
Minor alkaloid from the bulbs of *Narcissus tazetta* and from aerial parts of *Narcissus papyraceus* (Amaryllidaceae). Prisms (Et_2O). Mp 88-89°. $[\alpha]_D^{23}$ +30.9 (c, 1 in $CHCl_3$).

Me ether, hydrochloride: Mp 243-245°.

Me ether, perchlorate: Mp 258-259°.

Me ether, dihydro:
Prisms (EtOAc). Mp 195-197°. $[\alpha]_D^{23}$ +30 (c, 1.4 in $CHCl_3$).

O^8*-De-Me:* ***Normaritidine****. 8-*O*-Demethylmaritidine*
[35182-60-6]
$C_{16}H_{19}NO_3$ 273.331
Alkaloid from the bulbs of *Hymenocallis rotata* (Amaryllidaceae). Prisms (Me_2CO). Mp 139-141°. $[\alpha]_D^{23}$ +22.9 (c, 0.31 in MeOH).

O^9*-De-Me:* ***9-O-Demethylmaritidine***
[120139-66-4]
$C_{16}H_{19}NO_3$ 273.331
Alkaloid from the whole plant of *Narcissus radinganorum* (Amaryllidaceae). Mp 238-239°.

3-Ketone: ***Oxomaritidine***
$C_{17}H_{19}NO_3$ 285.342
Alkaloid from *Zephyranthes citrina*. Mp 140-142°. $[\alpha]_D^{20}$ +55 (c, 0.29 in MeOH).

1,2-Dihydro, O^8*-de-Me:* ***Maritinamine***
[123931-00-0]
$C_{16}H_{21}NO_3$ 275.347
Alkaloid from *Sternbergia lutea* (Amaryllidaceae). Amorph. $[\alpha]_D$ -20.3 (c, 1.8 in MeOH).

3-Epimer: ***3-Epimaritidine***
[28510-31-8]
$C_{17}H_{21}NO_3$ 287.358
Alkaloid from the fresh bulbs of *Zephyranthes rosea* (Amaryllidaceae). Microcryst. ($CHCl_3$ + trace MeOH). Mp 214-215°. $[\alpha]_D^{22}$ +83.2 (c, 0.47 in MeOH).

3-Epimer, O^8*-de-Me:* ***Siculine***
[123930-99-4]
$C_{16}H_{19}NO_3$ 273.331
Alkaloid from *Sternbergia sicula* (Amaryllidaceae). Amorph. $[\alpha]_D$ -80 (c, 1.3 in $CHCl_3$).

3-Epimer, 1,2-dihydro, O^8*-de-Me:* ***Epimaritinamine***
[123854-66-0]
$C_{16}H_{21}NO_3$ 275.347
Alkaloid from *Sternbergia lutea* (Amaryllidaceae). Amorph. $[\alpha]_D$ -4 (c, 2.2 in MeOH).

3-Epimer, 1,2-dihydro, O^9*-de-Me,* O^3*-Ac:* ***Cantabricine***
[171828-70-9]
$C_{18}H_{23}NO_4$ 317.384
Alkaloid from combined aerial parts and bulbs of *Narcissus cantabricus* (Amaryllidaceae). Mp 75-76°. $[\alpha]_D^{20}$ -7.14 (c, 0.52 in MeOH).

(-)-*form*

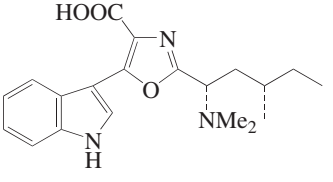
O^8*-De-Me:* ***(-)-Normaritidine****. Macowine. 8-Hydroxy-9-methoxycrinine*
$C_{16}H_{19}NO_3$ 273.331
Alkaloid from bulbs of *Crinum macowanii* and *Pancratium maritimum*. Amorph. powder. Mp 115-117°. $[\alpha]_D^{20}$ -34 (c, 0.23 in $CHCl_3$). The authors' semitrivial name based on crinine is confusing.

(±)-*form* [26722-76-9]
Synthetic. Mp 230-233° dec.

Sandberg, F. *et al., J. Nat. Prod.*, 1963, **26**, 78 (*isol, ir*)
Wildman, W.C. *et al., Alkaloids (Academic Press)*, 1968, 307 (*struct*)
DeAngelis, G.G. *et al., Tet. Lett.*, 1969, 729 (*cd, ord*)
Schwartz, M.A. *et al., J.A.C.S.*, 1970, **92**, 1090 (*synth, pmr*)
Kametani, T. *et al., Tetrahedron*, 1971, **27**, 5441 (*synth*)
Kotani, E. *et al., Chem. Comm.*, 1973, 550 (*synth*)
Yamada, S. *et al., Tet. Lett.*, 1976, 57 (*synth, pmr*)
Tomioka, K. *et al., Chem. Pharm. Bull.*, 1977, **25**, 2681 (*synth, ir, pmr*)
Zabel, V. *et al., Cryst. Struct. Commun.*, 1979, **8**, 371 (*cryst struct*)
Rao, R.V.K. *et al., Curr. Sci.*, 1979, **48**, 110 (*isol, ir*)
Tani, S. *et al., Chem. Pharm. Bull.*, 1981, **29**, 3381 (*O-Methylmaritidine*)
Ghosal, S. *et al., Phytochemistry*, 1985, **24**, 635; 1986, **25**, 1975 (*isol*)
Kihara, M. *et al., Chem. Pharm. Bull.*, 1987, **35**, 1070 (*Normaritidine*)
Bastida, J. *et al., Planta Med.*, 1988, **54**, 524 (*9-O-Demethylmaritidine*)
Pabuççuoğlu, V. *et al., J. Nat. Prod.*, 1989, **52**, 785 (*Siculine, Maritinamine, Epimaritinamine*)
Suau, R. *et al., Heterocycles*, 1990, **31**, 517 (*O-Methylmaritidine*)
Sener, B. *et al., J. Chem. Soc. Pak.*, 1994, **16**, 275-279 (*(-)-Normaritidine*)
Bastida, J. *et al., Phytochemistry*, 1995, **40**, 1549 (*Cantabricine*)
Kita, Y. *et al., J.O.C.*, 1996, **61**, 5857-5864 (*synth*)
Youssef, D.T.A. *et al., Planta Med.*, 1998, **64**, 669-670 (*isol, pmr, cmr, ms*)
Ley, S.V. *et al., J.C.S. Perkin 1*, 1999, 1251-1252 (*synth*)
Nair, J. *et al., Phytochemistry*, 2000, **54**, 945-950 (*Macowine*)
Herrera, M.R. *et al., Planta Med.*, 2001, **67**, 191-193 (*Oxomaritidine*)
Abou-Donia, A.H. *et al., Planta Med.*, 2002, **68**, 379-381 (*Normaritidine, synth*)
Bru, C. *et al., Org. Lett.*, 2003, **5**, 1845-1846 (*synth*)
Kodama, S. *et al., Tetrahedron*, 2004, **60**, 4901-4907 (*Siculine, synth*)
Roe, C. *et al., Org. Lett.*, 2008, **10**, 189-192 (*synth*)

Martefragine A M-109

[200809-93-4]
[188546-50-1]



Absolute Configuration

$C_{20}H_{25}N_3O_3$ 355.436
Alkaloid from the marine alga *Martensia fragilis*. Inhibitor of lipid peroxidation in rat microsome. Powder. Mp 147-148°. $[\alpha]_D^{26}$ -20.3 (c, 0.76 in MeOH). λ_{max} 224 (ϵ 20200); 248 (sh) (ϵ 8600); 295 (sh) (ϵ 8800); 323 (ϵ 14200) (MeOH).

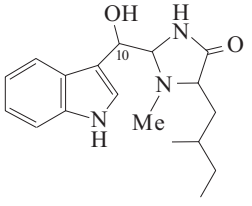
Takahashi, S. *et al., Chem. Pharm. Bull.*, 1998, **46**, 1527-1529 (*isol, uv, ir, pmr, cmr, cryst struct*)

Nishida, A. *et al., Tet. Lett.*, 1998, **39**, 5983-5986 (*synth, cd, pmr, cmr, abs config*)

Martensine A M-110

*2-(Hydroxy-1*H*-indol-3-ylmethyl)-1-methyl-5-(2-methylbutyl)-4-imidazolidinone, 9CI*

[87168-35-2]



$C_{18}H_{25}N_3O_2$ 315.414

Alkaloid from the marine red alga *Martensia fragilis*. Shows antibiotic activity. $[\alpha]_D$ +42 (c, 0.34 in MeOH). λ_{max} 223 (ϵ 20900); 257 (sh) (ϵ 5200); 268 (sh) (ϵ 5500); 280 (ϵ 5800); 288 (ϵ 5200) (EtOH) (Derep). λ_{max} 260 ; 280 ; 288 (MeOH) (Berdy). λ_{max} 223 (ϵ 20900); 280 (ϵ 5800); 288 (ϵ 5200) (EtOH) (Berdy).

10-Epimer: ***10-Epimartensine A***

[87246-79-5]

$C_{18}H_{25}N_3O_2$ 315.414

Minor alkaloid from *Martensia fragilis*. λ_{max} 223 (ϵ 20900); 257 (sh) (ϵ 5200); 268 (sh) (ϵ 5500); 280 (ϵ 5800); 288 (ϵ 5200) (EtOH) (Derep).

10-Ketone: ***Martensine B***

[87168-37-4]

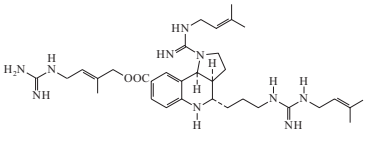
$C_{18}H_{23}N_3O_2$ 313.399

Alkaloid from *Martensia fragilis*. Mp 184-186°. $[\alpha]_D$ -18 (c, 1.1 in Me_2CO). λ_{max} 267 (ϵ 10000); 335 (ϵ 10000) (EtOH/NaOH) (Derep). λ_{max} 215 (ϵ 10000); 244 (ϵ 11000); 261 (ϵ 8400); 303 (ϵ 10000) (EtOH) (Derep).

Kirkup, M.P. *et al., Tet. Lett.*, 1983, **24**, 2087 (*isol, uv, ir, pmr, cmr, ms, struct*)

Martinelline M-111

[164178-52-3]



$C_{33}H_{52}N_{10}O_2$ 620.84

Ikeda *et al* suggest the difference in optical rotations between the synthetic and natural forms is due to the natural products being isolated in nearly racemic form. Alkaloid from roots of *Martinella iquitosensis* (Bignoniaceae). Bradykinin receptor antagonist. Pale yellow amorph. solid. $[\alpha]_D$ +9.4 (c, 0.02 in MeOH) (natural form). $[\alpha]_D^{28}$ -108 (c, 0.09 in MeOH) (synthetic). λ_{max} 314 (ϵ 12500) (H_2O at pH 7.5) (Derep).

Parent acid: ***Martinellic acid***

[164178-53-4]

$C_{27}H_{41}N_7O_2$ 495.667

Alkaloid from roots of *Martinella iquitosensis* (Bignoniaceae). Bradykinin receptor antagonist. Pale yellow amorph. solid. $[\alpha]_D$ -8.5 (c, 0.01 in MeOH) (natural form). $[\alpha]_D^{29}$ -164.3 (c, 0.14 in MeOH) (synthetic). λ_{max} 300 (ϵ 11600) (MeOH) (Derep).

Witherup, K.M. *et al., J.A.C.S.*, 1995, **117**, 6682 (*isol, uv, ir, pmr, cmr, struct*)

Ma, D. *et al., Org. Lett.*, 2001, **3**, 2189-2191 (*Martinellic acid, synth*)

Snider, B.B. *et al., Org. Lett.*, 2001, **3**, 4217-4220 (*Martinellic acid, synth*)

Powell, D.A. *et al., Org. Lett.*, 2002, **4**, 2913-2916 (*synth*)

Xia, C. *et al., Tet. Lett.*, 2002, **43**, 9405-9409 (*synth*)

He, Y. *et al., Tetrahedron*, 2006, **62**, 8755-8769 (*Martinellic acid, synth*)

Ikeda, S. *et al., Chem. Comm.*, 2007, 504-506 (*synth, Martinellic acid*)

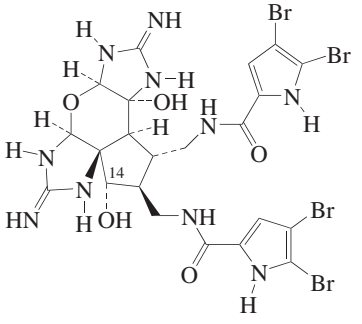
Badarinarayana, V. *et al., Tet. Lett.*, 2007, **48**, 2607-2610 (*Martinellic acid, synth*)

Miyata, O. *et al., Tetrahedron*, 2007, **63**, 10092-10117 (*synth*)

Shirai, A. *et al., J.O.C.*, 2008, **73**, 4464-4475 (*Martinellic acid, synth*)

Massadine M-112

[662145-41-7]



$C_{22}H_{24}Br_4N_{10}O_5$ 828.112

Alkaloid from the sponge *Stylissa* aff. *massa*. Yellow powder. $[\alpha]_D^{17}$ -12 (c, 0.1 in MeOH). λ_{max} 278 (ϵ 20000) (MeOH).

14-Deoxy, 14α-chloro: ***Massadine chloride***

[952523-62-5]

$C_{22}H_{23}Br_4ClN_{10}O_4$ 846.557

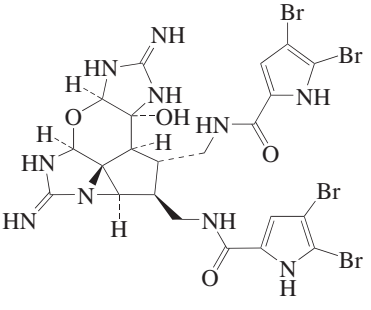
Isol. from *Stylissa* aff. *massa*. Powder. $[\alpha]_D^{20}$ -14.9 (c, 0.5 in MeOH).

Nishimura, S. *et al., Org. Lett.*, 2003, **5**, 2255-2257 (*isol, cd, pmr, cmr, ms*)

Grube, A. *et al., Angew. Chem., Int. Ed.*, 2007, **46**, 6721-6724 (*Massadine chloride*)

Su, S. *et al., J.A.C.S.*, 2008, **130**, 16490-16491 (*synth*)

Massadine aziridine M-113



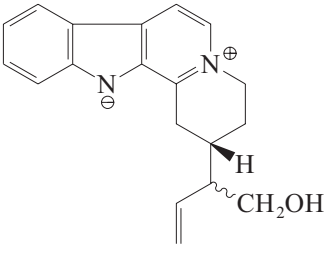
$C_{22}H_{22}Br_4N_{10}O_4$ 810.096

There is indirect evidence for the occurrence of this alkaloid. Probably occurs in sponges. Precursor of pyrrole-imidazole dimers.

Grube, A. *et al., Angew. Chem., Int. Ed.*, 2007, **46**, 6721-6724; 8107 (*occur*)

Matadine M-114

[138195-38-7]



$C_{19}H_{20}N_2O$ 292.38

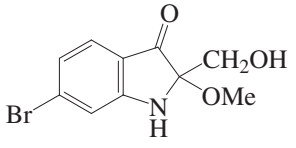
Abs. config. at C-15 tentatively assigned as *S*- (illus.) on biogenetic grounds. Alkaloid from the root bark of *Strychnos gossweileri* (Loganiaceae). Cytotoxic. λ_{max} 215 (ϵ 52600); 253 (ϵ 21950); 307 (ϵ 14200) (MeOH) (Berdy).

Quetin-Leclercq, J. *et al., Phytochemistry*, 1991, **30**, 1697-1700 (*isol, struct*)

Matemone M-115

*6-Bromo-1,2-dihydro-2-hydroxymethyl-2-methoxy-3*H*-indol-3-one*

[288849-91-2]



$C_{10}H_{10}BrNO_3$ 272.098

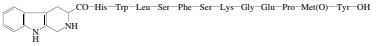
Isol. from the sponge *Iotrochota purpurea*. Mild cytotoxic agent. Yellow-green film. $[\alpha]_D^{25}$ +8.9 (c, 0.45 in MeOH). λ_{max} 228 (log ϵ 4.34); 245 (log ϵ 4.33); 273 (log ϵ 4.01); 399 (log ϵ 3.5) (MeOH).

Carletti, I. *et al., J. Nat. Prod.*, 2000, **63**, 981-983 (*isol, pmr, cmr, uv*)

Saccharomyces kluyveri α- Mating pheromone 1 M-116

α^{sk1} Mating pheromone

[103488-73-9]



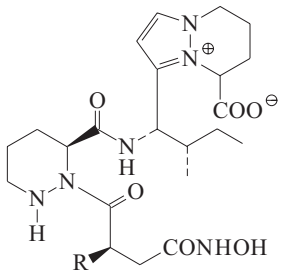
$C_{82}H_{106}N_{18}O_{20}S$ 1695.914

Prod. by mating type α cells of *Saccharomyces kluyveri*. Mating pheromone.

Sakamoto, M. *et al., Agric. Biol. Chem.*, 1986, **50**, 1279-1285

Matlystatin D M-117

[140667-42-1]



R = $(CH_2)_4CH_3$

$C_{27}H_{44}N_6O_6$ 548.681
Prod. by *Actinomadura atramentaria* SANK 61488. Collagenase inhibitor. Powder. Mp 122-126°. $[\alpha]_D^{20}$ -20.3 (c, 1.14 in MeOH). λ_{max} 229 (sh) (ϵ 7690) (MeOH) (Derep).

Ogita, T. *et al., J. Antibiot.*, 1992, **45**, 1723; 1733; 1994, **47**, 1473 (*isol, struct, props*)

Matlystatin E M-118

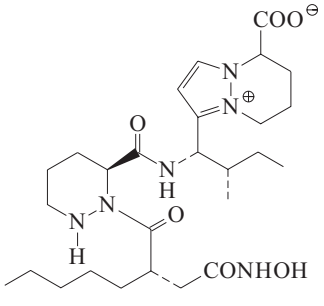
[140638-26-2]
As Matlystatin D, M-117 with
R = $(CH_2)_3CH_3$

$C_{26}H_{42}N_6O_6$ 534.654
Prod. by *Actinomadura atramentaria* SANK 61488. Collagenase inhibitor. Powder. Mp 89-94°. $[\alpha]_D^{20}$ -21.95 (c, 0.41 in MeOH). λ_{max} 229 (sh) (ϵ 7690) (MeOH) (Derep). λ_{max} 228 (ϵ 8770) (MeOH) (Berdy).

Ogita, T. *et al., J. Antibiot.*, 1992, **45**, 1723; 1733 (*isol, struct, props*)

Matlystatin F M-119

[140638-25-1]

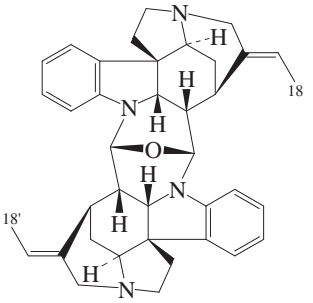


$C_{27}H_{44}N_6O_6$ 548.681
Prod. by *Actinomadura atramentaria* SANK 61488. Collagenase inhibitor. Powder. Mp 69-75°. $[\alpha]_D^{20}$ +1.43 (c, 0.14 in MeOH). λ_{max} 229 (sh) (ϵ 7690) (MeOH) (Derep). λ_{max} 228 (ϵ 7030) (MeOH) (Berdy).

Ogita, T. *et al., J. Antibiot.*, 1992, **45**, 1723; 1733; 1994, **47**, 1473 (*isol, struct, props*)

Matopensine M-120

16,16′-Dihydro-17,17′-oxybisnordihydrotoxiferine
[88761-31-3]



$C_{38}H_{42}N_4O$ 570.776
Alkaloid from *Strychnos matopensis*, *Strychnos kasengaensis*, *Strychnos minfiensis* and *Strychnos panganensis* (Loganiaceae). Amorph. $[\alpha]_D$ +105 (c, 0.6 in MeOH). λ_{max} 217 (log ϵ 4.46); 292 (log ϵ 3.92); 315 (log ϵ 3.95) (EtOH).

Mono-N-*oxide:* ***Matopensine mono*-N-*oxide***. *Matopensine* N-*oxide*
[94898-71-2]
$C_{38}H_{42}N_4O_2$ 586.775
Alkaloid from *Strychnos kasengaensis* and *Strychnos matopensis* root bark (Loganiaceae). λ_{max} 217 ; 263 ; 313 (EtOH).

18-Hydroxy: ***18-Hydroxymatopensine***
[119308-24-6]
$C_{38}H_{42}N_4O_2$ 586.775
Alkaloid from root bark of *Strychnos matopensis*. $[\alpha]_D$ +68 (c, 0.3 in MeOH). λ_{max} 218 ; 263 ; 313 (MeOH).

18,18′-Dihydroxy: ***18,18′-Dihydroxymatopensine***
[119308-25-7]
$C_{38}H_{42}N_4O_3$ 602.775
Alkaloid from root bark of *Strychnos matopensis*. λ_{max} 215 ; 263 ; 310 (MeOH).

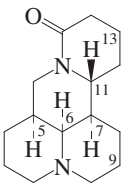
16′-Epimer, 16-methoxy: ***16-Methoxyisomatopensine***
[119308-22-4]
$C_{39}H_{44}N_4O_2$ 600.802
Alkaloid from root bark of *Strychnos matopensis*. λ_{max} 217 ; 265 ; 315 (MeOH).

16′-Epimer, 16-ethoxy: ***16-Ethoxyisomatopensine***
[119308-23-5]
$C_{40}H_{46}N_4O_2$ 614.829
Alkaloid from root bark of *Strychnos matopensis*. $[\alpha]_D$ -13 (c, 0.3 in $CHCl_3$). λ_{max} 216 ; 257 ; 293 (MeOH).

Massiot, G. *et al., Heterocycles*, 1983, **20**, 2339-2342 (*isol, struct, pmr, biosynth*)
Thepenier, P. *et al., Phytochemistry*, 1984, **23**, 2659-2663 (*isol, uv, ir, pmr, ms, oxide*)
Massiot, G. *et al., Phytochemistry*, 1988, **27**, 3293-3304 (*Strychnos matopensis constits*)
Nuzillard, J.M. *et al., Phytochemistry*, 1996, **43**, 897-902 (*isol*)

Matrine M-121

*Matridin-15-one, 9CI. Lupanidine. Dodecahydro-1*H*,5*H*,10*H*-dipyrido[2,1-f:3′,2′,1′-ij][1,6]naphthyridin-10-one*
[519-02-8]



Absolute Configuration

$C_{15}H_{24}N_2O$ 248.367
Stereoisomer of Sophoridine, S-380, Isomatrine, I-244, Allomatrine, A-628 and Darvasamine, D-79. The Matrine skeleton contains four chiral centres leading to a total of 8 possible diastereoisomers. Of these, 6 are currently known (4 or 5 of which are natural alkaloids). However, *cis*-Matrine, having a *cis*-CD ring junction (diastereoisomeric at *N*) has recently been prepd. so that up to 32 diastereoisomers may be possible. Alkaloid from *Sophora alopecuroides*, *Sophora flavescens*, *Sophora microphylla*, *Sophora pachycarpa*, *Sophora tetraptera*, many other *Sophora* spp., *Vexibia pachycarpa* (preferred genus name *Sophora*) and *Euchresta horsfeldii* (Fabaceae). Has antiulcer, antineoplastic and antibacterial props. Reverse transcriptase inhibitor. Sol. H_2O, C_6H_6, Et_2O, $CHCl_3$; fairly sol. hexane. Mp 77°. $[\alpha]_D^{15}$ +40.9 (H_2O). Log P 0.58 (uncertain value) (calc).

▶ LD_{50} (mus, ivn) 150 mg/kg; (rat, ipr) 125 mg/kg.

Hydrobromide: Mp 272-275°.

Perchlorate: Mp 214.5-216°.

N^1-*Oxide:* ***Oxymatrine***. *Matrine* N-*oxide. Ammothamnine. Pachycarpidine*
[16837-52-8]
$C_{15}H_{24}N_2O_2$ 264.367
Alkaloid from *Sophora flavescens*, *Sophora macrocarpa*, *Sophora alopecuroides*, *Ammothamnus lehmannii* (preferred genus name *Sophora*), *Euchresta horsfeldii* and other plants (Fabaceae). Mp 208° (148-150°). $[\alpha]_D$ +47 (EtOH).

▶ OQ1770000

3α-Hydroxy: ***3α-Hydroxymatrine***
[81970-01-6]
$C_{15}H_{24}N_2O_2$ 264.367
Alkaloid from leaves of *Sophora macrocarpa* (Fabaceae).

5-Hydroxy: see Sophoranol, S-377

9α-Hydroxy: ***9α-Hydroxymatrine***
[88509-92-6]
$C_{15}H_{24}N_2O_2$ 264.367
Alkaloid from the leaves of *Sophora macrocarpa* (Fabaceae). Needles (petrol). Mp 158-159°. $[\alpha]_D^{20}$ +25.4 (c, 1.0 in MeOH).

13α-Hydroxy: ***13α-Hydroxymatrine***
[148409-26-1]
$C_{15}H_{24}N_2O_2$ 264.367
Alkaloid from *Sophora viciifolia*.

Possesses antiulcer activity.

14α-Hydroxy: ***14α-Hydroxymatrine***
[225781-48-6]
$C_{15}H_{24}N_2O_2$ 264.367
Alkaloid from *Sophora tonkinensis*. Mp 120°. $[\alpha]_D^{25}$ +30.4.

14α-Acetoxy: ***14α-Acetoxymatrine***
[225781-46-4]
$C_{17}H_{26}N_2O_3$ 306.404
Alkaloid from *Sophora tonkinensis*. Cryst. Mp 96°. $[\alpha]_D^{25}$ +33 (EtOH).

14β-Hydroxy: ***14β-Hydroxymatrine***
[183074-18-2]
$C_{15}H_{24}N_2O_2$ 264.367
Alkaloid from roots of *Sophora tonkinensis*. Needles (CH_2Cl_2/hexane). Mp 69-70°. $[\alpha]_D^{21}$ -8.3 (c, 0.28 in EtOH).

14β-Hydroxy, N^1*-oxide:* ***14β-Hydroxyoxymatrine***. *14β-Hydroxymatrine* N^1*-oxide*
[914776-54-8]
$C_{15}H_{24}N_2O_3$ 280.366
Alkaloid from the roots and rhizomes of *Sophora tonkinensis*. Pale yellow oil. $[\alpha]_D^{20}$ -5.3 (c, 0.3 in MeOH). λ_{max} 208 (log ϵ 3.66) (MeOH).

14β-Acetoxy: ***14β-Acetoxymatrine***
[225781-44-2]
$C_{17}H_{26}N_2O_3$ 306.404
Alkaloid from *Sophora tonkinensis*. Cryst. Mp 113°. $[\alpha]_D^{25}$ -26.7 (EtOH).

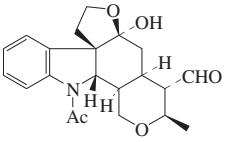
Stereoisomer: ***Albertidine***
[56832-52-1]
$C_{15}H_{24}N_2O$ 248.367
Alkaloid from epigeal parts of *Leontice albertii* (Leonticaceae). Mp 70-71°. $[\alpha]_D^{18}$ +33.8 (c, 0.52 in EtOH). Config. unknown.

Stereoisomer, perchlorate: Mp 254°.

Bohlmann, F. *et al., Chem. Ber.*, 1958, **91**, 2176-2189; 2189-2193; 1975, **108**, 1043-1051 (*ir, struct, config, cmr*)
Schütte, H.R. *et al., Annalen*, 1965, **685**, 194-199 (*biosynth*)
Mandell, L. *et al., J.A.C.S.*, 1965, **87**, 5234-5236 (*synth*)
Aslanov, A. *et al., CA*, 1967, **67**, 71108 (*oxide*)
Kamalitdinov, D.D. *et al., Khim. Prir. Soedin.*, 1969, **5**, 409-412; *Chem. Nat. Compd. (Engl. Transl.)*, 1969, **5**, 340-342 (*Albertidine*)
Kojima, R. *et al., Chem. Pharm. Bull.*, 1970, **18**, 2555-2563 (*pharmacol*)
Vul'fson, N.S. *et al., Chem. Heterocycl. Compd. (Engl. Transl.)*, 1974, **10**, 221-229 (*ms*)
Ueno, A. *et al., Chem. Pharm. Bull.*, (*footnote*), 1975, **23**, 2560-2566 (*abs config*)
Morinaga, K. *et al., Chem. Pharm. Bull.*, 1978, **26**, 2483-2488 (*pmr*)
Leeper, F.J. *et al., Can. J. Chem.*, 1981, **59**, 106-115 (*biosynth*)
Negrete, R.E. *et al., Bol. Soc. Chil. Quim.*, 1982, **27**, 263 (*3α-Hydroxymatrine*)
Ibragimov, B.T. *et al., Khim. Prir. Soedin.*, 1982, **18**, 71-75; *Chem. Nat. Compd. (Engl. Transl.)*, 1982, **18**, 66-69 (*rev, stereochem*)
Negrete, R. *et al., Phytochemistry*, 1983, **22**, 2069-2072 (*9α-Hydroxymatrine*)
Abdusalamov, B.A. *et al., Khim. Prir. Soedin.*, 1984, **20**, 3-12; *Chem. Nat. Compd. (Engl. Transl.)*, 1984, **20**, 1-9 (*biosynth*)
Sakamoto, T. *et al., Chem. Pharm. Bull.*, 1986, **34**, 2018-2023 (*synth*)
Gonnella, N.C. *et al., Magn. Reson. Chem.*, 1988, **26**, 185-190 (*pmr, cmr*)
Zhu, Z. *et al., CA*, 1993, **119**, 20256s (*13α-Hydroxymatrine*)
Xiao, P. *et al., Chem. Pharm. Bull.*, 1996, **44**, 1951-1953; 1999, **47**, 448-450 (*14-Hydroxymatrine, 14-Acetoxymatrine*)
Zhang, Z.-T. *et al., Huaxue Xuebao*, 2003, **61**, 1058-1064; *CA*, **140**, 5196n (*cryst struct*)
Ding, P.-L. *et al., Planta Med.*, 2006, **72**, 854-856 (*14β-Hydroxyoxymatrine, Oxymatrine*)

Mattogrossine M-122

*13-Acetyl-5,6,7*a*,8,8*a*,9,12,12*a*,12*b*,13-decahydro-7*a*-hydroxy-10-methyl-10*H*-furo[2,3-*d*]pyrano[3,4-*a*]carbazole-9-carboxaldehyde, 9CI*
[131989-71-4]



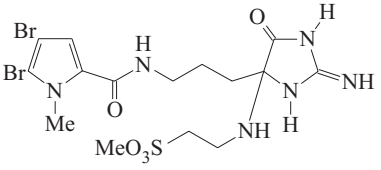
Absolute Configuration

$C_{21}H_{25}NO_5$ 371.432
Apparently an unusual secocuran alkaloid lacking one N (cf. Malagashanine, M-58). Alkaloid from the roots and branches of *Strychnos mattogrossensis* (Loganiaceae). Powder.

Angenot, L. *et al., Phytochemistry*, 1990, **29**, 2746 (*isol, uv, ir, cd, ms, pmr, cmr, struct*)

Mauritamide A M-123

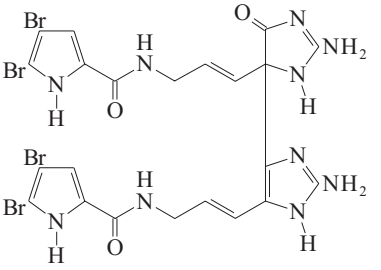
[155210-56-3]



$C_{15}H_{22}Br_2N_6O_5S$ 558.25
Alkaloid from the Fijian sponge *Agelas mauritiana*. Protein-tyrosine kinase inhibitor. Amorph. solid. $[\alpha]_D^{20}$ +1.3 (c, 0.003 in MeOH). λ_{max} 254 (ϵ 6200); 258 (ϵ 6110); 278 (ϵ 3910) (MeOH) (Derep).

Jiménez, C. *et al., Tet. Lett.*, 1994, **35**, 1375 (*isol, uv, ir, pmr, cmr, ms, struct*)

Mauritiamine M-124



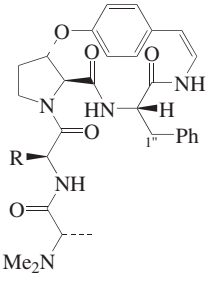
$C_{22}H_{20}Br_4N_{10}O_3$ 792.081

(±)-*form* [175669-27-9]
Alkaloid from the marine sponge *Agelas mauritiana*. Antifouling substance. Exhibits moderate antibacterial activity. Solid. λ_{max} 272 ; 278 (ϵ 18400) (MeOH) (Berdy).

Tsukamoto, S. *et al., J. Nat. Prod.*, 1996, **59**, 501-503 (*isol, uv, ir, pmr, cmr*)
Olofson, A. *et al., J.O.C.*, 1997, **62**, 7918-7919 (*synth*)

Mauritine A M-125

[38478-72-7]



Absolute Configuration

R = -CH(CH$_3$)$_2$

$C_{32}H_{41}N_5O_5$ 575.706
Alkaloid from the bark of *Zizyphus mauritiana*, *Zizyphus amphibia* and *Zizyphus spinachristi*, and the stem bark of *Zizyphus jujuba* (Chinese date) (Rhamnaceae). Rhombs (CH_2Cl_2/petrol). Mp 104°. $[\alpha]_D^{20}$ -315 (c, 0.33 in MeOH).

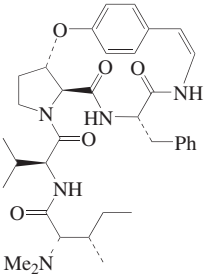
N-*De-Me:* ***Mauritine F***
[55609-23-9]
$C_{31}H_{39}N_5O_5$ 561.68
Alkaloid from the bark of *Zizyphus mauritiana* and the root bark of *Zizyphus nummularia* (Rhamnaceae). Needles ($CHCl_3$/petrol). Mp 222-225°. $[\alpha]_D^{20}$ -285 (c, 0.15 in MeOH).

*1''*R*-Hydroxy:* ***Mauritine E***
[55609-22-8]
$C_{32}H_{41}N_5O_6$ 591.706
Alkaloid from the bark of *Zizyphus mauritiana* (Rhamnaceae). Amorph. $[\alpha]_D^{20}$ -243 (c, 0.11 in MeOH).

Tschesche, R. *et al., Tet. Lett.*, 1972, 2609-2612 (*isol, ms, struct*)
Tschesche, R. *et al., Annalen*, 1974, 1694-1701 (*Mauritines E-F*)
Tschesche, R. *et al., Phytochemistry*, 1974, **13**, 1633; 1976, **15**, 541-542 (*isol*)
Tschesche, R. *et al., Tetrahedron*, 1975, **31**, 2944-2947 (*Mauritine F, isol*)
Kirfel, A. *et al., Z. Naturforsch., B*, 1976, **31**, 279-280 (*cryst struct*)
Cristau, P. *et al., Chem. Eur. J.*, 2005, **11**, 2668-2679 (*synth, pmr, cmr*)

Mauritine B M-126

[38478-73-8]



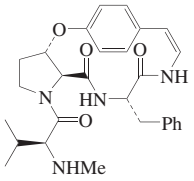
Absolute Configuration

$C_{35}H_{47}N_5O_5$ 617.787
Alkaloid from the bark of *Zizyphus mauritiana* (Rhamnaceae). Amorph. $[\alpha]_D^{20}$ -151 (c, 0.44 in MeOH).

Tschesche, R. *et al., Tet. Lett.*, 1972, 2609-2612 (*isol, ms*)
Cristau, P. *et al., Chem. Eur. J.*, 2005, **11**, 2668-2679 (*synth, pmr, cmr*)

Mauritine C M-127

[54578-03-9]



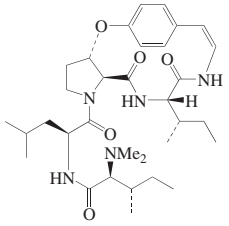
Absolute Configuration

$C_{28}H_{34}N_4O_4$ 490.601
Alkaloid from *Zizyphus mauritiana*, *Zizyphus nummularia* and *Zizyphus spina-christi* (Rhamnaceae). $[\alpha]_D^{20}$ -224 (c, 0.11 in MeOH).

Tschesche, R. *et al., Annalen*, 1974, 1694-1701 (*isol, uv, ir, pmr, ms, struct*)
Tschesche, R. *et al., Phytochemistry*, 1974, **13**, 1633 (*isol*)
Cristau, P. *et al., Chem. Eur. J.*, 2005, **11**, 2668-2679 (*synth, pmr, cmr*)

Mauritine D M-128

[55609-21-7]



Absolute Configuration

$C_{33}H_{51}N_5O_5$ 597.796
Alkaloid from the bark of *Zizyphus mauritiana*, *Zizyphus nummularia*, *Zizyphus oenoplia* and *Zizyphus xylopyra* (Rhamnaceae). Amorph. $[\alpha]_D^{20}$ -259 (c, 0.16 in MeOH).

10,11-Dihydro:
Powder. $[\alpha]_D^{20}$ -111 (c, 0.41 in MeOH).

Tschesche, R. *et al., Annalen*, 1974, 1694-1701 (*isol, uv, ir, pmr, ms*)
Cristau, P. *et al., Chem. Eur. J.*, 2005, **11**, 2668-2679 (*synth*)

Mauritine H M-129

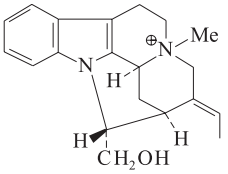
[64309-18-8]
As Mauritine A, M-125 with
R = $-CH_2CH(CH_3)_2$
$C_{33}H_{43}N_5O_5$ 589.733
Alkaloid from the bark of *Zizyphus mauritiana* (Rhamnaceae). Cryst. (MeOH/petrol). Mp 212-215°. $[\alpha]_D^{20}$ -169 (c, 0.013 in MeOH).

10,11-Dihydro:
Cryst. (EtOH aq.). Mp 166-169°. $[\alpha]_D^{20}$ -128 (c, 0.013 in MeOH).

Tschesche, R. *et al., Phytochemistry*, 1977, **16**, 1025-1028 (*isol, uv, ir, pmr, ms, struct*)

C-Mavacurine M-130

19,20-Didehydro-17-hydroxy-4-methyl-1,16-cyclocorynanium, 9CI. Mavacurine
[6801-19-0]



Probable absolute configuration

$C_{20}H_{25}N_2O^{\oplus}$ 309.43
Alkaloid from *Strychnos nux-vomica, Strychnos melinoniana, Strychnos variabilis* root bark, *Strychnos macrophylla, Strychnos divaricans, Strychnos toxifera, Strychnos amazonica, Strychnos mitscherlichii* and other *Strychnos* spp.; present in Calabash curare (Loganiaceae).

Iodide:
$C_{20}H_{25}IN_2O$ 436.335
Cryst. $[\alpha]_D$ +247 (c, 0.338 in 50% Me_2CO aq.). Carmine col. with Ce(IV).

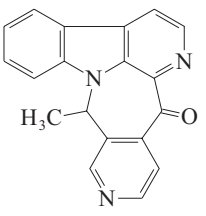
Picrate:
Cryst. Mp 179-180°.

N-*De-Me:* ***Normavacurine***
[38836-02-1]
$C_{19}H_{22}N_2O$ 294.396
Alkaloid from *Strychnos minfiensis, Strychnos potatorum* and *Strychnos longicaudata* (Loganiaceae). Amorph. solid. $[\alpha]_D$ +127 (c, 0.67 in $CHCl_3$). Erroneously assigned the struct. 1,2-Dehydrodeacetylretuline when first isolated from *S. longicaudata*.

Wieland, T. *et al., Chem. Ber.*, 1952, **85**, 731 (*isol*)
Asmis, H. *et al., Helv. Chim. Acta*, 1954, **37**, 1968 (*isol*)
Hesse, M. *et al., Helv. Chim. Acta*, 1964, **47**, 878; 1965, **48**, 674 (*uv, ir, pmr, ms, struct*)
Guggisberg, A. *et al., Helv. Chim. Acta*, 1966, **49**, 1 (*isol*)
Angenot, L. *et al., Planta Med.*, 1981, **42**, 364-370; 371-374 (*isol, ms, pmr*)
Calverley, M.J. *et al., Tet. Lett.*, 1981, 1635 (*synth, bibl*)
Coune, C.A. *et al., J. Pharm. Belg.*, 1982, **37**, 189 (*cmr*)
Massiot, G. *et al., Heterocycles*, 1989, **29**, 1435 (*Normavacurine*)

Maxonine M-131

5-Methylindolo[2′,3′:3,4]pyrido[1,2-b][2,7]naphthyridin-14(5H)one, 9CI
[125797-63-9]

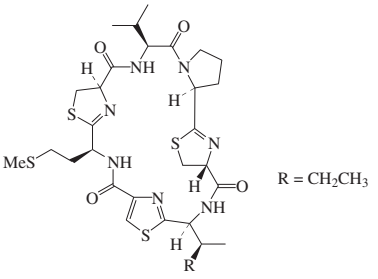


$C_{19}H_{13}N_3O$ 299.331
Struct. revised in 1993. Alkaloid from the roots of *Simira maxonii* (Rubiaceae). Yellow oil. $[\alpha]_D^{20}$ -85 (c, 0.2 in $CHCl_3$).

Hasbun, C.P. *et al., Tet. Lett.*, 1989, **30**, 6199 (*isol, uv, ir, pmr, cmr, ms*)
Kelly, T.R. *et al., Tet. Lett.*, 1993, **34**, 6173 (*synth, struct*)

Mayotamide A M-132

[217449-23-5]



$C_{30}H_{43}N_7O_4S_4$ 693.978
Isol. from *Didemnum molle*. Cytotoxic agent. Amorph. powder. $[\alpha]_D$ +77 (c, 0.3 in MeOH).

Rudi, A. *et al., Tetrahedron*, 1998, **54**, 13203-13210 (*isol, pmr, cmr, ms*)

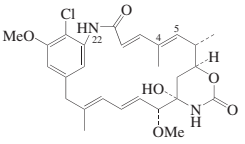
Mayotamide B M-133

[217449-24-6]
As Mayotamide A, M-132 with
R = CH_3
$C_{29}H_{41}N_7O_4S_4$ 679.951
Isol. from *Didemnum molle*. Cytotoxic agent. Amorph. powder. $[\alpha]_D$ +130 (c, 0.1 in MeOH).

Rudi, A. *et al., Tetrahedron*, 1998, **54**, 13203-13210 (*isol, pmr, cmr, ms*)

Maysenine M-134

[52978-30-0]



Absolute Configuration

$C_{27}H_{33}ClN_2O_6$ 517.02
Alkaloid from *Maytenus buchananii* (Celastraceae). Antitumour agent. Mp 184-185°. $[\alpha]_D^{30}$ -57 (c, 0.056 in EtOH). pK_a 12.2.

4S,5S-Epoxide: ***Normaysine***
[52978-29-7]
$C_{27}H_{33}ClN_2O_7$ 533.02
Alkaloid from *Maytenus buchananii* (Celastraceae). Cryst. + ½ H_2O (Me_2CO). Mp 187-188°. $[\alpha]_D$ -217 (c, 0.051 in EtOH). λ_{max} 226 ; 241 ; 252 ; 280 ; 288 (MeOH) (Berdy).

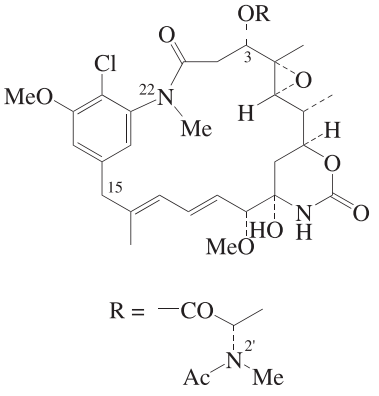
4S,5S-Epoxide, N^{22}*-Me:* ***Maysine***†
[52978-28-6]
$C_{28}H_{35}ClN_2O_7$ 547.046
Alkaloid from *Maytenus buchananii*

(Celastraceae). Mp 137-141°. $[\alpha]_D^{30}$ -173 (c, 0.23 in EtOH). λ_{max} 226 ; 241 ; 252 ; 280 ; 288 (MeOH) (Berdy).

Kupchan, S.M. *et al., J.O.C.*, 1977, **42**, 2349-2357 (*Maysenine, Normaysine, Maysine, isol, uv, ir, pmr, ms, struct*)
Corey, E.J. *et al., J.A.C.S.*, 1978, **100**, 2916 (*synth*)
Meyers, A.I. *et al., J.A.C.S.*, 1983, **105**, 5015 (*Maysine, synth*)
Keeffe, J.R. *et al., J.A.C.S.*, 1988, **110**, 1982 (*uv*)

Maytansine, 9CI, USAN M-135

Maitansine, INN. *MAYT. NSC 153858*
[35846-53-8]



$C_{34}H_{46}ClN_3O_{10}$ 692.204

Ansamycin-type antibiotic. Isol. from *Maytenus ovatus* and *Maytenus senata* (Celastraceae). Shows antileukaemic, cytotoxic, antitubulin and antimitotic props. Most potent of the maytansinoids. Has been evaluated clinically against various human carcinomas but is not a practically effective antitumour agent. Shows antimitotic, antigibberellin and auxin activity in plants. Sol. MeOH, Et_2O, $CHCl_3$; poorly sol. H_2O. Mp 171-172°. $[\alpha]_D^{26}$ -145 (c, 0.055 in $CHCl_3$). Log P 3.02 (calc). λ_{max} 233 (ϵ 29800); 243 (sh) (ϵ 27100); 254 (ϵ 27200); 282 (ϵ 5690); 290 (ϵ 5520) (EtOH) (Derep).

▶ Gastrointestinal and CNS adverse effects when used therapeutically. LD_{50} (rat, scu) 480 mg/kg. OQ2290000

N-*De-Ac,* N-*propanoyl:* ***Maytanprine***
[38997-09-0]
$C_{35}H_{48}ClN_3O_{10}$ 706.231
Isol. from *Maytenus buchananii* (Celastraceae). Antileukaemic antibiotic. Sol. MeOH, Et_2O; poorly sol. H_2O. Mp 169-170°. $[\alpha]_D^{30}$ -125 (c, 0.0559 in $CHCl_3$). Log P 3.55 (calc). λ_{max} 234 (ϵ 33100); 243 (sh) (ϵ 30400); 254 (ϵ 30500); 282 (ϵ 6430); 290 (ϵ 6380) (EtOH) (Derep). λ_{max} 234 (ϵ 30700); 254 (ϵ 27800); 282 (ϵ 5870); 290 (ϵ 5800) (MeOH) (Berdy). λ_{max} 233 ; 254 ; 282 ; 290 (EtOH) (Berdy).

N-*De-Ac;* N-*(3-mercaptopropanoyl):* $N^{2'}$*-Deacetyl-*$N^{2'}$*-(3-mercapto-1-oxopropyl)maytansine. DM1*
[139504-50-0]
$C_{35}H_{48}ClN_3O_{10}S$ 738.297
Used in the form of its conjugated humanised C242 monoclonal antibody, Cantuzumab mertansine, SB 408075, huC242-DM1 for the treatment of colorectal cancer, pancreatic cancer and other solid tumour types that express the C242 antigen.

N-*De-Ac,* N-*mercaptopropanoyl; conjugated humanised C242 monoclonal antibody:* ***Cantuzumab mertansine, INN, USAN***. *SB 408075. huC242-DM1*
Used for the treatment of colorectal cancer, pancreatic cancer and other solid tumour types that express the C242 antigen. Tumour-activated immunotoxin. Consists of a colon cancer-specifc humanised antibody, C242 conjugated to the maytansine deriv. DM1.

N-*De-Ac,* N-*(2-methylpropanoyl):* ***Maytanbutine***. *NSC 165014*
[38997-10-3]
$C_{36}H_{50}ClN_3O_{10}$ 720.258
From *Maytenus buchananii* and *Colubrina texensis* (Celastraceae, Rhamnaceae). Antileukaemic antibiotic. Mp 170-171°. $[\alpha]_D^{30}$ -122 (c, 0.0492 in $CHCl_3$). Log P 3.85 (calc). λ_{max} 234 (ϵ 33100); 243 (sh) (ϵ 30400); 254 (ϵ 30500); 282 (ϵ 6430); 290 (ϵ 6380) (EtOH) (Derep). λ_{max} 234 (ϵ 33100); 254 (ϵ 30800); 282 (ϵ 6430); 290 (ϵ 6380) (MeOH) (Berdy). λ_{max} 233 ; 254 ; 282 ; 290 (EtOH) (Berdy).

N-*De-Ac,* $N^{2'}$*-(3-methylpentanoyl):* ***Maytanvaline***. *NSC 219970*
[52978-27-5]
$C_{38}H_{54}ClN_3O_{10}$ 748.311
Alkaloid from *Maytenus buchananii* (Celastraceae). Sol. MeOH, Et_2O; poorly sol. H_2O. Mp 175-176.5°. $[\alpha]_D^{26}$ -135 (c, 0.95 in $CHCl_3$). λ_{max} 234 (ϵ 33100); 243 (sh) (ϵ 30400); 254 (ϵ 30500); 282 (ϵ 6430); 290 (ϵ 6380) (EtOH) (Derep). λ_{max} 233 (ϵ 29100); 254 (ϵ 26800); 280 (ϵ 5300); 288 (ϵ 5360) (MeOH) (Berdy).

N-*De-Ac,* $N^{2'}$*-(3-methyl-2*E*-pentenoyl):* ***Isomallotusin***
[159993-33-6]
$C_{38}H_{52}ClN_3O_{10}$ 746.296
Prod. by *Mallotus anomalus*. Cytotoxic agent.

N-*De-Ac,* $N^{2'}$*-(3-methyl-2*Z*-pentenoyl):* ***Mallotusin***
[159934-12-0]
$C_{38}H_{52}ClN_3O_{10}$ 746.296
Prod. by *Mallotus anomalus*. Cytotoxic agent.

$N^{2'}$*-De-Ac,* $N^{2'}$*-de-Me,* $N^{2'}$*-(2-methylpropanoyl):* ***$N^{2'}$-Demethylmaytanbutine***
$C_{35}H_{48}ClN_3O_{10}$ 706.231
Isol. from *Maytenus buchananii*. Amorph. solid. Mp 156-158°.

$N^{2'}$*-De-Ac,* $N^{2'}$*-mercaptopropanoyl; conjugated humanised N901 monoclonal antibody: huN901-DM1*
Compd. comprised of a CD56-targeted humanised N901 antibodh conjugated to the cytotoxic agent DM1 for the potential treatment of cancers that express CD56.

N^{22}*-De-Me:* ***Normaytansine***
[75983-74-3]
$C_{33}H_{44}ClN_3O_{10}$ 678.177
Minor alkaloid from *Maytenus buchananii* (Celastraceae). Active against P388 lymphocytic leukaemia and KB cell cultures; activity resembles that of Maytansine. Cryst. (CH_2Cl_2/hexane). Mp 166-167°. Unstable in soln. λ_{max} 240 (ϵ 34100); 250 (ϵ 25800); 281 (ϵ 4100); 288 (ϵ 3900) (EtOH) (Derep).

N,$N^{2'}$*-Di-de-Me,* $N^{2'}$*-de-Ac,* $N^{2'}$*-(2,3-dimethylcyclopropylcarbonyl):* ***Normaytancyprine***
[84123-43-3]
$C_{36}H_{48}ClN_3O_{10}$ 718.242
Alkaloid from *Putterlickia verrucosa* and *Maytenus buchananii*. Cytotoxic agent. Pale tan cryst. ($CHCl_3$/hexane). Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. Mp 143-145°. λ_{max} 232 (ϵ 48700); 252 (ϵ 28250); 280 (ϵ 7450); 289 (ϵ 7420) (EtOH).

Kupchan, S.M. *et al., J.A.C.S.*, 1972, **94**, 1354 (*uv, ir, ms, nmr, cryst struct*)
Bryan, R.F. *et al., J.C.S. Perkin 2*, 1973, 897 (*cryst struct, abs config*)
Wolpert-Defilippes, M.K. *et al., Biochem. Pharmacol.*, 1975, **24**, 751 (*pharmacol*)
Brinkmeyer, R.S. *et al., Diss. Abstr. Int., B*, 1975, **36**, 1704; *CA*, **84**, 74150 (*synth*)
Meyers, A.I. *et al., Tet. Lett.*, 1975, 1745; 1749 (*synth, ir, uv, nmr*)
Götschi, E. *et al., Helv. Chim. Acta*, 1977, **60**, 1416 (*synth*)
Kupchan, S.M. *et al., J. Med. Chem.*, 1977, **21**, 31 (*derivs*)
Kupchan, S.M. *et al., J.O.C.*, 1977, **42**, 2349 (*isol, struct, uv, ir, ms, nmr, derivs*)
Jackson, D.V. *et al., Appl. Methods Oncol.*, 1978, **1**, 277 (*rev, pharmacol*)
Sneden, A.T. *et al., J. Nat. Prod.*, 1980, **43**, 637 (*Normaytansine*)
Corey, E.J. *et al., J.A.C.S.*, 1980, **102**, 6613 (*synth*)
Sneden, A.T. *et al., J. Nat. Prod.*, 1982, **45**, 624-628 (*Normaytancyprine*)
Wallace, W.A. *et al., Org. Magn. Reson.*, 1982, **19**, 31 (*cmr*)
Reider, P.J. *et al., Alkaloids (Academic Press)*, 1984, **23**, 71 (*rev*)
Goodwin, T.E. *et al., J. Chem. Educ.*, 1984, **61**, 511 (*synth*)
Suffness, M. *et al., Alkaloids (Academic Press)*, 1985, **25**, 142 (*antitumour props*)
Chari, R.V.J. *et al., Cancer Res.*, 1992, **52**, 127-131 (*DM1, immunoconjugate, synth, pharmacol*)
Feng, S.C. *et al., Chin. Chem. Lett.*, 1994, **5**, 743-746 (*Mallotusin, Isomallotusin*)
Liu, C. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 1996, **93**, 8618-8623 (*huC242-DM1*)
Larson, G.M. *et al., J. Nat. Prod.*, 1999, **62**, 361-363 (*N-Demethylmaytanbutine*)
Smith, S. *et al., Curr. Opin. Mol. Ther.*, 2001, **3**, 198-203 (*cantuzumab mertansine*)
Tassone, P. *et al., Cancer Res.*, 2004, **64**, 4629-4636 (*huN901-DM1, pharmacol*)
Cassady, J.M. *et al., Chem. Pharm. Bull.*, 2004, **52**, 1-26 (*rev*)
Smith, S.V. *et al., Curr. Opin. Mol. Ther.*, 2004, **6**, 666-674 (*cantuzumab mertansine, rev*)
Xie, H. *et al., J. Pharmacol. Exp. Ther.*, 2004, **308**, 1073-1082 (*cantuzumab mertansine, metab, pharmacokinet*)
Smith, S.V. *et al., Curr. Opin. Mol. Ther.*, 2005, **7**, 394-401 (*huN901-DM1, rev*)

Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, MBU820

Maytansinol M-136

3-De[2-(acetylmethylamino)-1-oxopropyloxy]-3-hydroxymaytansine, 9CI. Ansamitocin P_0. C 15003P0. Antibiotic C 15003P0

[57103-68-1]

As Maytansine, M-135 with R = H

$C_{28}H_{37}ClN_2O_8$ 565.062

Constit. of *Putterlickia verrucosa* (Celastraceae). Shows pronounced antileukaemic props. No antiprotozoal activity. Mp 173-174.5°. $[\alpha]_D^{23}$ -309 (c, 0.11 in $CHCl_3$).

3-Ac: ***Maytanacine****. Ansamitocin P1. C 15003P1. Antibiotic C 15003P1. 3-O-Acetylmaytansinol*

[57103-69-2]

$C_{30}H_{39}ClN_2O_9$ 607.099

Constit. of *Putterlickia verrucosa* (Celastraceae) and *Nocardia* spp. Active against fungi, tumours, dermophytes and protozoa. Cryst. (EtOAc). Mp 234-237°. $[\alpha]_D$ -121 (c, 0.25 in $CHCl_3$). λ_{max} 233 (ϵ 30300); 242 (sh) (ϵ 28000); 252 (ϵ 27900); 281 (ϵ 5360); 289 (ϵ 5360) (EtOH) (Derep).

3-Propanoyl: ***Ansamitocin P2****. 2′-De(acetylmethylamino)maytansine, 9CI. C 15003P2. Antibiotic C 15003P2*

[57103-70-5]

$C_{31}H_{41}ClN_2O_9$ 621.126

From *Nocardia* sp. and *Actinosynnema pretiosum*. Active against fungi and tumours. Cryst. (EtOAc). Sol. MeOH, DMSO, EtOAc, THF, $CHCl_3$; fairly sol. C_6H_6, Et_2O; poorly sol. H_2O, hexane. Mp 188-190° dec. $[\alpha]_D$ -127 (c, 0.35 in $CHCl_3$). λ_{max} 233 (ϵ 30300); 242 (sh) (ϵ 28000); 252 (ϵ 27900); 281 (ϵ 5360); 289 (ϵ 5360) (EtOH) (Derep). λ_{max} 233 (ϵ 30240); 252 (ϵ 27650); 280 (ϵ 5740); 288 (ϵ 5710) (MeOH) (Berdy).

3-Butanoyl: ***Ansamitocin P3′****. C 15003P3′. Antibiotic C 15003P3′*

[66547-09-9]

$C_{32}H_{43}ClN_2O_9$ 635.152

From *Nocardia* sp. and *Actinosynnema pretiosum*. Active against fungi and tumours. Potent antiprotozoal agent. Cryst. (EtOAc). Sol. MeOH, DMSO, EtOAc, $CHCl_3$, THF; fairly sol. C_6H_6, Et_2O; poorly sol. H_2O, hexane. Mp 182-185° dec. $[\alpha]_D$ -134 (c, 0.11 in $CHCl_3$). λ_{max} 233 (ϵ 30300); 240 (sh) (ϵ 28500); 252 (ϵ 27600); 280 (ϵ 5750); 288 (ϵ 5700) (MeOH) (Derep).

▶ LD_{50} (mus, ipr) 0.313 mg/kg. OQ2293000

3-O-(2-Methylpropanoyl): ***Ansamitocin P3****. C 15003P3. Antibiotic C 15003P3*

[66584-72-3]

$C_{32}H_{43}ClN_2O_9$ 635.152

From *Actinosynnema pretiosum* and *Nocardia* sp. Active against fungi and tumours. Potent antiprotozoal agent. Antimitotic agent, tubulin polymerisation inhibitor. Cryst. (EtOAc). Sol. MeOH, EtOAc, THF, DMSO, $CHCl_3$; fairly sol. C_6H_6, Et_2O; poorly sol. H_2O, hexane. Mp 190-192° dec. $[\alpha]_D$ -136 (c, 0.375 in $CHCl_3$). λ_{max} 233 (ϵ 30300); 240 (sh) (ϵ 28500); 252 (ϵ 27600); 280 (ϵ 5750); 288 (ϵ 5700) (MeOH) (Derep).

▶ Potent mutagen. LD_{50} (mus, ipr) 0.313 mg/kg. OQ2291000

3-O-(3-Methylbutanoyl): ***Ansamitocin P4****. C 15003P4. Antibiotic C 15003P4*

[66547-10-2]

$C_{33}H_{45}ClN_2O_9$ 649.179

From *Nocardia* sp. and *Actinosynnema pretiosum*. Active against fungi and tumours. Potent antiprotozoal agent. Cryst. (EtOAc). Sol. MeOH, DMSO, THF, EtOAc, $CHCl_3$; fairly sol. C_6H_6, Et_2O; poorly sol. H_2O, hexane. Mp 177-180° dec. $[\alpha]_D$ -142 (c, 0.52 in $CHCl_3$). λ_{max} 233 (ϵ 30300); 240 (sh) (ϵ 28500); 252 (ϵ 27600); 280 (ϵ 5750); 288 (ϵ 5700) (MeOH) (Derep).

▶ LD_{50} (mus, ipr) 0.313 mg/kg. OQ2295000

3-O-(3-Hydroxy-3-methylbutanoyl): ***3-(3-Hydroxyisovaleroyl)maytansinol****. C 15003 P 4 βHY. Antibiotic C 15003 P 4 βHY*

[78619-41-7]

$C_{33}H_{45}ClN_2O_{10}$ 665.179

From *Nocardia* sp. and *Actinosynnema pretiosum*. Weakly active against *Tetrahymena pyriformis*. Needles (EtOAc). Mp 201-203° dec. λ_{max} 231 (ϵ 30100); 251 (ϵ 27500); 280 (ϵ 5650); 288 (ϵ 5630) (MeOH) (Berdy).

3-O-(3-Hydroxy-3-methylbutanoyl), N*-de-Me:* **N-*Demethyl-3-(3-hydroxyisovaleroyl)maytansinol****. C 15003 PND 4 βHY. Antibiotic C 15003 PND 4 βHY*

[78619-43-9]

$C_{32}H_{43}ClN_2O_{10}$ 651.152

From *Nocardia* sp. and *Actinosynnema pretiosum*. Weakly active against *Tetrahymena pyriformis*. Powder. λ_{max} 232 (ϵ 31500); 239 (ϵ 32000); 279 (ϵ 3800); 288 (ϵ 3700) (MeOH) (Berdy).

3-O-(4-Hydroxy-3-methylbutanoyl): ***3-(4-Hydroxyisovaleroyl)maytansinol****. C 15003 P 4 γHY. Antibiotic C 15003 P 4 γHY*

[78709-93-0]

$C_{33}H_{45}ClN_2O_{10}$ 665.179

From *Nocardia* sp. and *Actinosynnema pretiosum*. Weakly active against *Tetrahymena pyriformis*. Mp 205-207° dec. λ_{max} 232 (ϵ 30000); 252 (ϵ 27300); 280 (ϵ 5630); 288 (ϵ 5610) (MeOH) (Berdy).

*3-O-[2-(*N*-Methylacetamido)propanoyl]:* see Maytansine, M-135

N*-De-Me, 3-Ac:* **N-*Demethylansamitocin P1****.* N*-Demethylmaytanacine. Ansamitocin PND 1. C 15003 PND 1. Antibiotic C 15003 PND 1*

[77353-67-4]

$C_{29}H_{37}ClN_2O_9$ 593.072

From *Nocardia* sp., *Actinosynnema pretiosum* and *Streptomyces* sp. Powder. Sol. MeOH, $CHCl_3$, THF, DMSO, Py; poorly sol. H_2O, hexane. $[\alpha]_D$ -55.8 (EtOH). λ_{max} 232 (ϵ 31500); 239 (ϵ 32000); 279 (ϵ 3780); 288 (ϵ 3700) (MeOH).

▶ LD_{50} (mus, ipr) 1-2 mg/kg.

N*-De-Me, 3-propanoyl:* **N-*Demethylansamitocin P2****. Ansamitocin PND 2. C 15003 PND 2. Antibiotic C 15003 PND 2*

[77353-68-5]

$C_{30}H_{39}ClN_2O_9$ 607.099

Prod. by *Nocardia* sp. and *Streptomyces* sp. Powder. $[\alpha]_D$ -56.3 (EtOH). λ_{max} 232 (ϵ 31000); 239 (ϵ 32000); 279 (ϵ 3800); 288 (ϵ 3760) (MeOH).

N*-De-Me, 3-*O*-(2-methylpropanoyl):* **N-*Demethylanisamitocin P3****. C 15003 PND 3. Antibiotic C 15003 PND 3. Ansamitocin PND 3*

[77353-69-6]

$C_{31}H_{41}ClN_2O_9$ 621.126

From *Nocardia* sp., *Actinosynnema pretiosum* and *Streptomyces* sp. Powder. Sol. MeOH, $CHCl_3$, Py, THF, DMSO; poorly sol. H_2O, hexane. $[\alpha]_D$ -57.1 (EtOH). λ_{max} 239 (ϵ 33000); 279 (ϵ 3880); 288 (ϵ 3790) (MeOH).

▶ LD_{50} (mus, ipr) 1-2 mg/kg.

N*-De-Me, 3-*O*-(3-methylbutanoyl):* **N-*Demethylansamitocin P4****. C 15003 PND 4. Antibiotic C 15003 PND 4. Ansamitocin PND 4*

[77353-70-9]

From *Nocardia* sp., *Actinosynnema pretiosum* and *Streptomyces* spp. Powder. Sol. MeOH, THF, DMSO, Py, $CHCl_3$; poorly sol. H_2O, hexane. $[\alpha]_D$ -56.6 (EtOH). λ_{max} 232 (ϵ 31500); 239 (ϵ 31100); 279 (ϵ 3690); 288 (ϵ 3760) (MeOH).

▶ LD_{50} (mus, ipr) 1-2 mg/kg.

N^{22}*-De-Me, 3-Ac,* N^{22}*-β-*D*-glucopyranosyl:* ***Ansamitocinoside P1***

[950187-24-3]

$C_{35}H_{47}ClN_2O_{14}$ 755.214

Prod. by *Actinosynnema pretiosum*. Pale yellow solid. $[\alpha]_D^{19}$ -28 (c, 6.5 in MeOH). Possible struct. revision required (cf. Ansamitocinoside P2 (2007). λ_{max} 203 (log ϵ 4.57); 230 (log ϵ 4.33); 253 (log ϵ 4.25); 282 (log ϵ 3.72) (MeOH).

N^{22}*-De-Me, 3-*O*-propanoyl,* N^{22}*-(4-*O*-carbamoyl-β-*D*-glucopyranosyl):* ***Ansamitocinoside P2***

$C_{37}H_{50}ClN_3O_{15}$ 812.266

Prod. by *Actinosynnema pretiosum*. Indicated struct. shown to be the most probable in 2007.

4,5-Deepoxy, 4,5-didehydro, N*-de-Me:* **N-*Demethyl-4,5-deepoxymaytansinol****. C 15003 QNDO. Antibiotic C 15003 QNDO*

[78619-44-0]

$C_{27}H_{35}ClN_2O_7$ 535.035

From *Nocardia* sp. and *Actinosynnema pretiosum*. Weakly active against *Tetrahymena pyriformis*. Powder. λ_{max} 231 (ϵ 30300); 240 (ϵ 30000); 251 (ϵ 25800); 279 (ϵ 3600); 288 (ϵ 3560) (MeOH) (Berdy).

*4,5-Deepoxy, 4*E*,5-didehydro,* N*-de-Me, 3*-O*-(2-methylpropanoyl):* ***Antibiotic Al-R2397****. Al-R2397*
[115753-88-3]
$C_{31}H_{41}ClN_2O_8$ 605.126
Prod. by a *Thermomonospora* sp. Sol. MeOH, DMSO; fairly sol. Me_2CO, $CHCl_3$, EtOAc; poorly sol. H_2O, hexane. λ_{max} 221 (ϵ 37730); 283 (ϵ 2400) (MeOH) (Berdy).

*15*R*-Hydroxy:* ***Ansamitocin PHO 0****. 15-Hydroxyansamitocin P_0. C 15003 PHO 0. Antibiotic C 15003 PHO 0*
[79082-29-4]
[78709-92-9]
$C_{28}H_{37}ClN_2O_9$ 581.061
Prod. by *Nocardia* sp., *Chainia* sp.and *Streptomyces sclerotialus.* Cryst. Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. $[\alpha]_D$ -178 (EtOH). λ_{max} 233 (ϵ 29600); 252 (ϵ 25700); 289 (ϵ 4990) (MeOH).

*15*R*-Hydroxy, 3-Ac:* ***Ansamitocin PHO 1****. 15-Hydroxyansamitocin P1. C 15003 PHO 1. Antibiotic C 15003 PHO 1*
[79056-16-9]
$C_{30}H_{39}ClN_2O_{10}$ 623.098
Prod. by *Nocardia* sp., *Chainia* sp. and *Streptomyces sclerotialus.* Cryst. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. $[\alpha]_D$ -102 (EtOH). λ_{max} 233 (ϵ 27000); 252 (ϵ 23500); 281 (ϵ 4560); 289 (ϵ 4500) (MeOH).

*15*R*-Hydroxy, 3-propanoyl:* ***Ansamitocin PHO 2****. 15-Hydroxyansamitocin P2. C 15003 PHO 2. Antibiotic 15003 PHO 2*
[79028-00-5]
[62414-96-4]
$C_{31}H_{41}ClN_2O_{10}$ 637.125
Prod. by *Nocardia* sp., *Chainia nigra*, *Streptosporangium roseum* and *Streptomyces sclerotialus.* Cryst. Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. $[\alpha]_D$ -107 (EtOH). λ_{max} 233 (ϵ 26800); 252 (ϵ 23300); 281 (ϵ 4550); 289 (ϵ 4550) (MeOH).

*15*R*-Hydroxy, 3*-O*-(2-methylpropanoyl):* ***Anisamitocin PHO 3****. 15-Hydroxyansamitocin P3. C 15003 PHO 3. Antibiotic 15003 PHO 3*
[79082-28-3]
[80953-27-1]
$C_{32}H_{43}ClN_2O_{10}$ 651.152
Prod. by *Nocardia* sp., *Actinosynnema pretiosum*, *Chainia* sp. and *Streptomyces sclerotialus.* Cryst. Sol. Py, DMSO, $CHCl_3$, Me_2CO, EtOAc, MeOH, THF, DMF; poorly sol. hexane, H_2O. $[\alpha]_D$ -96 (EtOH). λ_{max} 233 (ϵ 26600); 252 (ϵ 23100); 281 (ϵ 4520); 289 (ϵ 4520) (EtOH).

*15*R*-Hydroxy, 3*-O*-(3-methylbutanoyl):* ***Ansamitocin PHO 4****. 15-Hydroxyansamitocin P4. C 15003 PHO 4. Antibiotic C 15003 PHO 4*
[79056-15-8]
$C_{33}H_{45}ClN_2O_{10}$ 665.179
Prod. by *Nocardia* sp., *Streptosporangium roseum* and *Streptomyces sclerotialus.* Cryst. Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. $[\alpha]_D$ -108 (EtOH). λ_{max} 233 (ϵ 26300); 252 (ϵ 22900); 281 (ϵ 4500); 289 (ϵ 4500) (MeOH).

*15*S*-Hydroxy:* ***15-Epiansamitocin PHO 0***
$C_{28}H_{37}ClN_2O_9$ 581.061
Prod. by *Streptomyces sclerotialus.*

*15*S*-Hydroxy, 3-Ac:* ***15-Epiansamitocin PHO 1***
[79027-99-9]
$C_{30}H_{39}ClN_2O_{10}$ 623.098
Prod. by *Streptomyces sclerotialus.*

*15*S*-Hydroxy, 3*-O*-(2-methylpropanoyl):* ***15-Epiansamitocin PHO 3***
[79082-27-2]
$C_{32}H_{43}ClN_2O_{10}$ 651.152
Prod. by *Nocardia* sp. and *Streptomyces sclerotialus.* Cryst. Sol. DMF, $CHCl_3$, MeOH, DMSO, Py; poorly sol. hexane, H_2O. λ_{max} 233 (ϵ 28100); 253 (ϵ 25400); 281 (ϵ 5220); 289 (ϵ 5220) (MeOH).

*15*S*-Hydroxy, 3*-O*-(3-methylbutanoyl):* ***15-Epiansamitocin PHO 4***
$C_{33}H_{45}ClN_2O_{10}$ 665.179
Prod. by *Streptomyces sclerotialus.*

30-Hydroxy, 3-Ac: ***30-Hydroxyansamitocin P1****. C 15003 PHM1. Antibiotic C 15003 PHM1*
[78619-40-6]
$C_{30}H_{39}ClN_2O_{10}$ 623.098
Prod. by *Nocardia* sp., and *Actinosynnema pretiosum*. Active against *Tetrahymena pyriformis* and tumours. Cryst. Sol. Py, THF, DMF, MeOH; poorly sol. hexane, H_2O. λ_{max} 232 (ϵ 25800); 249 (ϵ 23900); 280 (ϵ 4210); 288 (ϵ 4250) (MeOH) (Berdy).

30-Hydroxy, 3-propanoyl: ***30-Hydroxyansamitocin P2****. C 15003 PHM2. Antibiotic C 15003 PHM2*
[78619-39-3]
$C_{31}H_{41}ClN_2O_{10}$ 637.125
Prod. by *Nocardia* sp., *Streptosporangium roseum* and *Actinosynnema pretiosum*. Active against *Tetrahymena pyriformis* and tumours. Cryst. Sol. Py, THF, $CHCl_3$, DMF, DMSO; poorly sol. hexane, H_2O. λ_{max} 232 (ϵ 24500); 249 (ϵ 23600); 280 (ϵ 4200); 288 (ϵ 4240) (MeOH) (Berdy).

30-Hydroxy, 3-O*-(2-methylpropanoyl):* ***30-Hydroxyansamitocin P3****. C 15003 PHM3. Antibiotic C 15003 PHM3*
[78619-38-2]
$C_{32}H_{43}ClN_2O_{10}$ 651.152
From *Nocardia* sp. Active against *Tetrahymena pyriformis* and tumours. Cryst. (EtOH). Sol. Py, MeOH, $CHCl_3$, THF, DMF, DMSO; poorly sol. hexane, H_2O. Mp 192-194° dec. $[\alpha]_D^{24}$ -148 (c, 0.5 in EtOH). λ_{max} 232 (ϵ 25600); 249 (ϵ 23700); 280 (ϵ 4190); 288 (ϵ 4250) (MeOH) (Berdy).

30-Hydroxy, 3-O*-(3-methylbutanoyl):* ***30-Hydroxyansamitocin P4****. C 15003 PHM4. Antibiotic C 15003 PHM4*
[78630-36-1]
$C_{33}H_{45}ClN_2O_{10}$ 665.179
Prod. by *Nocardia* sp., *Streptosporangium roseum* and *Actinosynnema pretiosum*. Active against *Tetrahymena pyriformis* and tumours. Cryst. Sol. Py, DMF, $CHCl_3$, MeOH, DMSO; poorly sol. hexane, H_2O. Mp 190-192°. $[\alpha]_D^{24}$ -149 (c, 0.23 in EtOH). λ_{max} 232 (ϵ 25400); 249 (ϵ 23600); 280 (ϵ 4160); 288 (ϵ 4220) (MeOH) (Berdy).

15ξ-Acetoxy, 3-O*-(2-methylpropanoyl):* ***Maytanbutacine***
[62414-95-3]
$C_{34}H_{45}ClN_2O_{11}$ 693.189
Alkaloid from *Maytenus serrata* (Celastraceae). Cryst. (CH_2Cl_2/Et_2O). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 253-255°. $[\alpha]_D^{33}$ -90 (c, 0.055 in EtOH). Stereochem. of epoxide undetermined. λ_{max} 233 (ϵ 29800); 243 (sh) (ϵ 27100); 254 (ϵ 27200); 282 (ϵ 5690); 290 (ϵ 5520) (EtOH) (Derep). λ_{max} 233 (ϵ 27200); 253 (ϵ 24200); 282 (ϵ 5050); 290 (ϵ 5080) (EtOH) (Berdy).

15-Methoxy, 3-O*-(2-methylpropanoyl):* ***15-Methoxyansamitocin P3***
[117860-08-9]
$C_{33}H_{45}ClN_2O_{10}$ 665.179
Isol. from the Japanese mosses *Isothecium subdiversiforme* (Lembophyllaceae) and *Thamnobryum sandei* (Neckeraceae). Cytotoxic. Sol. MeOH, C_6H_6; fairly sol. hexane; poorly sol. H_2O.

Dechloro, 4,5-deepoxy, 4,5-didehydro: ***Dechloro-N-deepoxymaytansinol****. C 15003 deClQO. Antibiotic C 15003 deClQO*
[78630-38-3]
$C_{28}H_{38}N_2O_7$ 514.617
From *Nocardia* sp. Weakly active against *Tetrahymena pyriformis.* Powder.

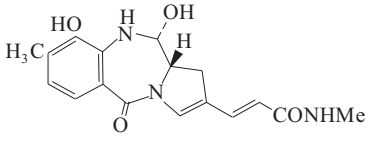
Dechloro, 4,5-deepoxy, 4,5-didehydro, N*-de-Me:* ***Dechloro-4,5-deepoxy-N-demethylmaytansinol****. C 15003 deClQNDO. Antibiotic C 15003 deClQNDO*
[78630-37-2]
$C_{27}H_{36}N_2O_7$ 500.591
From *Nocardia* sp. and *Actinosynnema pretiosum*. Weakly active against *Tetrahymena pyriformis.* Powder. λ_{max} 218 (ϵ 39800); 243 (ϵ 35400); 280 (ϵ 2800); 288 (ϵ 2500) (MeOH) (Berdy).

Kupchan, S.M. *et al., J.O.C.*, 1977, **42**, 2349-2357 (*Maytancine, Maytanbutacine, isol, struct, uv, ir, ms, nmr, synth*)
Higashide, E. *et al., Nature (London)*, 1977, **270**, 721
Asai, M. *et al., Tetrahedron*, 1979, **35**, 1079 (*Ansamitocins*)
Tanida, S. *et al., J. Antibiot.*, 1980, **33**, 192; 1981, **34**, 489-495; 496-506 (*derivs*)
Japan. Pat., 1981, 45 484; *CA*, **96**, 67249p (*Ansamitocin PHO*)
Wallace, W.A. *et al., Org. Magn. Reson.*, 1982, **19**, 31 (*cmr*)
Hatano, K. *et al., Agric. Biol. Chem.*, 1984, **48**, 1721 (*Ansamitocins*)
Reider, P.J. *et al., Alkaloids (Academic Press)*, 1984, **23**, 71 (*rev*)
Isobe, M. *et al., J.A.C.S.*, 1984, **106**, 3252 (*synth*)
Suffness, M. *et al., Alkaloids (Academic Press)*, 1985, **25**, 145 (*pharmacol*)
Sakai, K. *et al., J. Nat. Prod.*, 1988, **51**, 845 (*15-Methoxyansamitocin P3*)
Rengaraju, S. *et al., CA*, 1989, **110**, 209019 (*Al-R2397*)
Benechie, M. *et al., J.O.C.*, 1996, **61**, 7133 (*synth*)

Cassady, J.M. *et al., Chem. Pharm. Bull.*, 2004, **52**, 1-26 (*rev*)
Lu, C. *et al., J. Antibiot.*, 2004, **57**, 348-350 (*Ansamitocinoside P2*)
Widdison, W.C. *et al., J. Med. Chem.*, 2006, **49**, 4392-4408 (*synth*)
Ma, J. *et al., Arch. Pharmacal Res.*, 2007, **30**, 670-673 (*Ansamitocinosides P1,P2*)
Snipes, C.E. *et al., J. Nat. Prod.*, 2007, **70**, 1578-1581 (*Ansamitocinoside P2*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, APE529

Mazethramycin A M-137

[68373-96-6]



$C_{17}H_{19}N_3O_4$ 329.355

Anthramycin-type antibiotic. Isol. from *Streptomyces thioluteus*. Active against bacteria and tumours. Light-yellow amorph. powder (Me_2CO aq.). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 181-193° dec. $[\alpha]_D^{21}$ +730 (c, 0.062 in DMF). λ_{max} 235 (ϵ 18200); 333 (ϵ 31800) (MeCN) (Derep). λ_{max} 220 (ϵ 34000); 235 (sh) (ϵ 30000); 335 (ϵ 39400) (MeOH) (Derep). λ_{max} 235 ; 335 (ϵ 39400) (MeCN) (Berdy).

▶ LD_{50} (mus, ivn) .8 mg/kg. UC6475850

Me ether: ***Mazethramycin B***
[68373-95-5]
$C_{18}H_{21}N_3O_4$ 343.382
From *Streptomyces thioluteus*. Active against gram-positive and -negative bacteria. Yellow needles (MeOH). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 245-279° dec. $[\alpha]_D^{23}$ +900 (c, 0.2 in DMF). λ_{max} 235 (ϵ 18200); 333 (ϵ 31800) (MeCN) (Derep). λ_{max} 220 (ϵ 34000); 235 (sh) (ϵ 30000); 335 (ϵ 39400) (MeOH) (Derep). λ_{max} 215 (ϵ 25600); 235 (ϵ 22200); 334 (ϵ 46100) (MeCN) (Berdy). λ_{max} 258 (ϵ 17200); 351 (ϵ 43400) (NaOH) (Berdy).

▶ LD_{50} (mus, ivn) .8 mg/kg. UC6475920

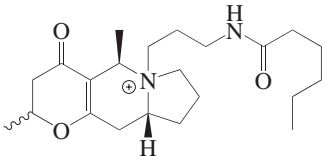
Et ether: ***Mazethramycin C***
[68373-94-4]
$C_{19}H_{23}N_3O_4$ 357.408
From *Streptomyces thioluteus*. Active against gram-positive and -negative bacteria. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 216-223° dec. $[\alpha]_D^{21}$ +450 (c, 0.067 in DMF). λ_{max} 235 (ϵ 18200); 333 (ϵ 31800) (MeCN) (Derep). λ_{max} 220 (ϵ 34000); 235 (sh) (ϵ 30000); 335 (ϵ 39400) (MeOH) (Derep). λ_{max} 217 (ϵ 25700); 235 (ϵ 19300); 333 (ϵ 43600) (MeCN) (Berdy).

11-Deoxy, 10,11-didehydro: Anhydromazethramycin
[68373-93-3]
$C_{17}H_{17}N_3O_3$ 311.34
Semisynthetic. Active against gram-positive and -negative bacteria. Light-yellow cryst. powder. Mp 252-262° dec. $[\alpha]_D^{22}$ +1940 (c, 0.05 in DMF). Log P -0.81 (uncertain value) (calc).

Kunimoto, S. *et al., J. Antibiot.*, 1980, **33**, 665

Mearsamine M-138

[960511-41-5]

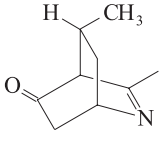


$C_{22}H_{37}N_2O_3^{\oplus}$ 377.546
Alkaloid from the leaves of *Peripentadenia mearsii*. Yellow gum (as trifluoroacetate). $[\alpha]_D^{23}$ -1.5 (c, 0.07 in MeOH) (trifluoroacetate). λ_{max} 202 (log ϵ 3.14); 265 (log ϵ 3.38) (MeOH) (trifluoroacetate).

Katavic, P.L. *et al., J. Nat. Prod.*, 2007, **70**, 1946-1950 (*isol, pmr, cmr, ms*)

Mearsine M-139

3,8-Dimethyl-2-azabicyclo[2.2.2]oct-2-en-5-one, 9CI



(–)– *form*

$C_9H_{13}NO$ 151.208
Unique isoquinuclidine alkaloid.

(+)-form [127911-13-1]
Synthetic. Mp 41.5-42°. $[\alpha]_D^{20}$ +32.1 (c, 0.5 in CH_2Cl_2).

Picrate:
Yellow prisms (MeOH). Mp 209-210° dec.

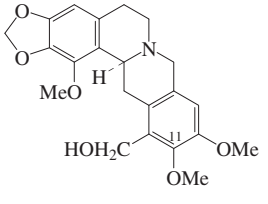
(-)-form [92446-42-9]
Minor alkaloid from *Peripentadenia mearsii* (Elaeocarpaceae). Mp 43-44°. $[\alpha]_D^{17}$ -34.5 (c, 0.495 in CH_2Cl_2).

Picrate: Mp 212-213°.

Robertson, G.B. *et al., Tet. Lett.*, 1984, **25**, 2695 (*isol, uv, ir, pmr, cryst struct*)
Crouse, J.R. *et al., J. Nat. Prod.*, 1989, **52**, 1227 (*synth, uv, ir, pmr, cmr, ms*)

Mecambridine M-140

Oreophiline



(*S*)-*form*

$C_{22}H_{25}NO_6$ 399.443

(S)-form [31098-60-9]
Alkaloid from *Meconopsis cambrica* and some *Papaver* spp. (Papaveraceae). Mp 179-180°. $[\alpha]_D^{24}$ -243 (c, 0.22 in $CHCl_3$).

Hydrochloride: Mp 224-225° dec.

Ac: Mp 119-120°.

N-*Me:* ***Mecambridine methosalt***
$C_{23}H_{28}NO_6^{\oplus}$ 414.477
Alkaloid from *Papaver pseudocanescens* (Papaveraceae). Cryst. (MeOH/Et_2O) (as iodide). Mp 203-206° (iodide). $[\alpha]_D^{23}$ -169 (c, 0.1 in MeOH).

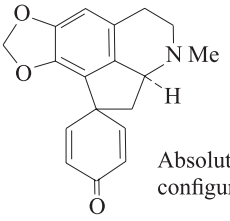
O^{11}-*De-Me:* ***Aryapavine***. *11-Demethylmecambrine*
[57129-99-4]
$C_{21}H_{23}NO_6$ 385.416
Alkaloid from the dry latex of *Papaver pseudo-orientale* (Papaveraceae). Cryst. (Me_2CO). Mp 156-157°. No opt. rotn. reported, abs. config. not confirmed.

(±)-form [27293-09-0]
Synthetic. Mp 158-160°.

Slavík, J. *et al., Coll. Czech. Chem. Comm.*, 1963, **28**, 1720 (*isol, uv, ir*)
Pfeifer, S. *et al., Tet. Lett.*, 1967, 83 (*uv, ir, ms, pmr, struct*)
Preininger, V. *et al., Tet. Lett.*, 1969, 2109 (*struct*)
Novák, V. *et al., Coll. Czech. Chem. Comm.*, 1974, **39**, 883 (*deriv*)
Kametani, T. *et al., Heterocycles*, 1974, **2**, 55 (*Aryapavine, synth, pmr*)
Kametani, T. *et al., J.C.S. Perkin 1*, 1974, 1954 (*synth, pmr, ms*)
Shafiee, A. *et al., J. Pharm. Sci.*, 1975, **64**, 1570 (*Aryapavine, isol, struct*)
Marek, R. *et al., Magn. Reson. Chem.*, 2002, **40**, 687-692 (*N-15 nmr, cryst struct*)

Mecambrine M-141

Fugapavine



Absolute configuration

$C_{18}H_{17}NO_3$ 295.337

(S)-form [1093-07-8]
Alkaloid from *Meconopsis cambrica, Papaver fugax, Papaver dubium* and *Papaver caucasicum* (Papaveraceae). Increases gastrointestinal motility in exptl. animals. Also shows antihistaminic and hypertensive props.; respiratory stimulant. Mp 178.5-179.5°. $[\alpha]_D$ -116 (-94) ($CHCl_3$).

▶ Toxic, LD_{50} 4.1 mg/kg (mus). OQ9950000

Hydrochloride: Mp 269-270°.

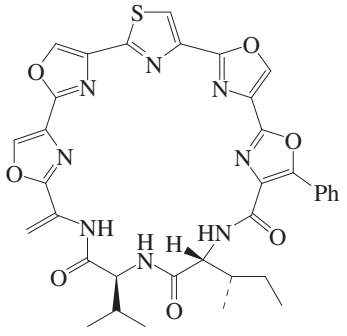
(±)-form [41590-24-3]
Synthetic. Mp 197-198°.

Slavík, J. *et al., Coll. Czech. Chem. Comm.*, 1965, **30**, 914 (*isol, struct*)
Snatzke, G. *et al., J.C.S.(C)*, 1966, 1681 (*config*)
Barton, D.H.R. *et al., J.C.S.(C)*, 1967, 2134 (*biosynth*)
Kametani, T. *et al., Tetrahedron*, 1971, **27**, 5375 (*synth, uv, ir, pmr, ms*)
Dolejš, L. *et al., Coll. Czech. Chem. Comm.*, 1974, **39**, 571 (*ms*)
Marek, R. *et al., Magn. Reson. Chem.*, 2002, **40**, 687-692 (*N-15 nmr, cryst struct*)

Sari, A. *et al., Nat. Prod. Res.*, 2004, **18**, 265-268 (*isol, cmr*)

Mechercharstatin A M-142

Mechercharmycin A. IB 01211
[822520-96-7]

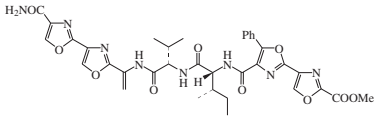


$C_{35}H_{32}N_8O_7S$ 708.753
Prod. by the marine-derived *Thermoactinomyces* sp. YM3-251. Cytotoxic. Powder. $[\alpha]_D^{25}$ +110 (c, 0.04 in DMSO). λ_{max} 223 (log ϵ 4.71); 260 (log ϵ 4.73); 300 (sh) (MeOH).

Kanoh, K. *et al., J. Antibiot.*, 2005, **58**, 289-292 (*isol, pmr, cmr, cryst struct*)
Hernández, D. *et al., Org. Lett.*, 2007, **9**, 809-811 (*synth*)

Mechercharstatin B M-143

Mechercharmycin B
[861231-28-9]

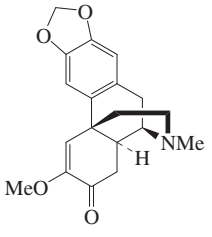


$C_{35}H_{36}N_8O_{10}$ 728.717
Prod. by the marine-derived *Thermoactinomyces* sp. YM3-251. Cytotoxic. Powder. $[\alpha]_D^{25}$ +56 (c, 0.06 in DMSO). λ_{max} 220 (log ϵ 4.65); 261 (log ϵ 4.62); 310 (sh) (MeOH).

Kanoh, K. *et al., J. Antibiot.*, 2005, **58**, 289-292 (*isol, pmr, cmr*)

Meconoquintupline M-144

Mecoquitupline
[623945-12-0]



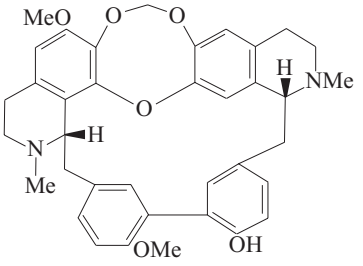
Relative Configuration

$C_{19}H_{21}NO_4$ 327.379
Alkaloid from the whole plant of *Meconopsis quintuplinervia*. Mp 192-194°. $[\alpha]_D^{22}$ -52.8 (c, 0.11 in $CHCl_3$).

Shang, X.Y. *et al., Chin. Chem. Lett.*, 2003, **14**, 597-598 (*isol, pmr, cmr*)

Medelline M-145

[102505-09-9]



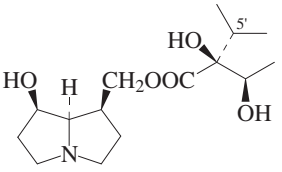
$C_{37}H_{38}N_2O_6$ 606.717
Minor alkaloid from the bark of *Pseudoxandra* aff. *lucida* (Annonaceae). Amorph. $[\alpha]_D$ -38 (c, 0.16 in MeOH). The first known example of a bisbenzylisoquinoline alkaloid with an intramolecular methyleneoxy bridge.

Ac: $[\alpha]_D$ -42 (c, 0.60 in $CHCl_3$).

Cortes, D. *et al., Heterocycles*, 1986, **24**, 607 (*uv, ir, pmr, cmr, ms, cd, struct*)

Megalanthonine M-146

Platynecine 9-viridiflorate
[215930-93-1]



$C_{15}H_{27}NO_5$ 301.382
Alkaloid from *Heliotropium megalanthum*. Insecticide. Oil. $[\alpha]_D$ -5 (c, 0.04 in EtOH).

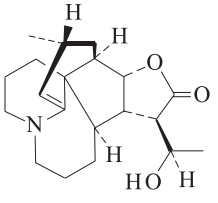
5′-Hydroxy: ***Leptanthine***†
$C_{15}H_{27}NO_6$ 317.381
Alkaloid from *Onosma leptantha*. Light brown oil. $[\alpha]_D^{25}$ -2 (c, 0.2 in MeOH).

5′-Hydroxy, N*-oxide:* ***Leptanthine* N*-oxide***
$C_{15}H_{27}NO_7$ 333.381
Alkaloid from *Onosma leptantha*. Amorph. powder. $[\alpha]_D^{25}$ +16.5 (c, 0.2 in MeOH).

Reina, M. *et al., J. Nat. Prod.*, 1998, **61**, 1418-1420 (*Megalanthonine*)
Kretsi, O. *et al., Helv. Chim. Acta*, 2003, **86**, 3136-3140 (*Leptanthine, Leptanthine N-oxide*)

Megastachine M-147

[72049-07-1]



Absolute configuration

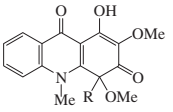
$C_{20}H_{29}NO_3$ 331.454
Alkaloid from *Lycopodium megastachyum* (Lycopodiaceae). Mp 167-169°.

Ac: Mp 140-142°.

Braekman, J.-C. *et al., Can. J. Chem.*, 1979, **57**, 1691 (*isol, ir, ms, pmr, cryst struct*)

Megistophylline I M-148

[261915-32-6]



R = $-CH_2CH{=}C(CH_3)_2$

$C_{21}H_{23}NO_5$ 369.416
Alkaloid from the bark of *Sarcomelicope megistophylla*. Amorph. solid. $[\alpha]_D^{25}$ +32.9 (c, 0.26 in $CHCl_3$). λ_{max} 301 (log ϵ 3.95); 342 (log ϵ 3.88); 407 (sh) (MeOH).

Papageorgiou, M. *et al., J. Nat. Prod.*, 2000, **63**, 385-386

Megistophylline II M-149

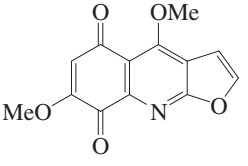
[261915-33-7]
As Megistophylline I, M-148 with
R = $-CH_2CH{=}C(CH_3)CH_2CH_2CH{=}C(CH_3)_2$

$C_{26}H_{31}NO_5$ 437.535
Alkaloid from the bark of *Sarcomelicope megistophylla*. Amorph. solid. $[\alpha]_D^{25}$ +11.3 (c, 0.1 in $CHCl_3$). λ_{max} 301 (log ϵ 4.36); 338 (log ϵ 3.88); 404 (sh) (MeOH).

Papageorgiou, M. *et al., J. Nat. Prod.*, 2000, **63**, 385-386

Megistoquinone I M-150

[449732-09-6]

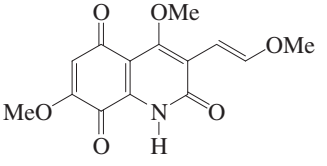


$C_{13}H_9NO_5$ 259.218
Alkaloid from the bark of *Sarcomelicope megistophylla*. Amorph. yellow solid. λ_{max} 258 (log ϵ 4.23); 291 (sh) ; 371 (log ϵ 3.37) (MeOH).

Fokialakis, N. *et al., Chem. Pharm. Bull.*, 2002, **50**, 413-414 (*isol, uv, pmr, cmr, ms*)

Megistoquinone II M-151

[449732-11-0]



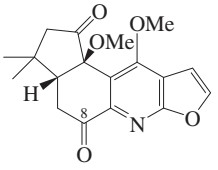
$C_{14}H_{13}NO_6$ 291.26
Alkaloid from the bark of *Sarcomelicope megistophylla*. Amorph. purple solid.

λ_{max} 278 (log ϵ 3.54); 315 (sh) ; 515 (log ϵ 2.33) (MeOH).

Fokialakis, N. *et al., Chem. Pharm. Bull.*, 2002, **50**, 413-414 (*isol, uv, pmr, cmr, ms*)

Megistosarconine M-152

[259822-41-8]



Relative Configuration

$C_{18}H_{19}NO_5$ 329.352

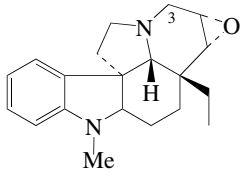
Alkaloid from *Sarcomelicope megistophylla*. Amorph. powder. $[\alpha]_D$ +162 (c, 0.2 in $CHCl_3$). λ_{max} 255 (log ϵ 4.26); 278 (sh) (MeOH).

8-Imide: ***Megistosarcimine***
[259822-39-4]
$C_{18}H_{20}N_2O_4$ 328.367
Alkaloid from *Sarcomelicope megistophylla*. Amorph. powder. $[\alpha]_D$ +131 (c, 0.2 in $CHCl_3$). V. unstable, readily converts to Megistosarconine. λ_{max} 252 (log ϵ 4.25); 275 (sh) (MeOH).

Fokialakis, N. *et al., Phytochemistry*, 1999, **52**, 1745-1748

Mehranine M-153

[88840-03-3]



(+)-*form*

$C_{20}H_{26}N_2O$ 310.438

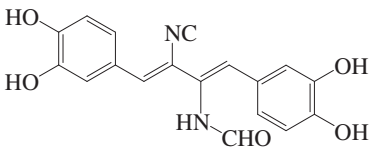
(+)-*form*
Alkaloid from the leaves of *Ervatamia coronaria* (Apocynaceae). Amorph. $[\alpha]_D$ +36 ($CHCl_3$).

(-)-*form* [168396-00-7]
Alkaloid from leaves of *Tabernaemontana divaricata* (double flower variety) (Apocyanaceae). Solid (Me_2CO). Mp 102-104°. $[\alpha]_D$ -49 (c, 0.831 in $CHCl_3$). Tentative struct. assignment based on biogenetic grounds.

3-Oxo: ***3-Oxomehranine***
[219758-22-2]
$C_{20}H_{24}N_2O_2$ 324.422
Alkaloid from *Tabernaemontana bovina*. Oil. $[\alpha]_D$ -19.1 (c, 0.4 in $CHCl_3$).

Atta-ur-Rahman, *et al., Z. Naturforsch., B*, 1983, **38**, 1700-1701 (*isol, uv, ir, pmr, ms, struct*)
Kam, T.-S. *et al., Phytochemistry*, 1995, **40**, 313-316 (*isol, uv, pmr, cmr, ms, struct*)
Lien, T.P. *et al., Phytochemistry*, 1998, **49**, 1457-1461 (*3-Oxomehranine*)
Merzweiler, K. *et al., J. Prakt. Chem.*, 1999, **341**, 69-71 (*cryst struct, abs config*)
Éles, J. *et al., J.O.C.*, 2002, **67**, 7255-7260 (*synth*)

Melanocin A M-154

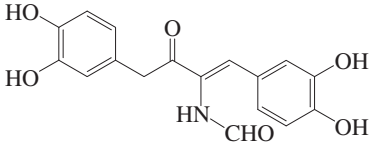


$C_{18}H_{14}N_2O_5$ 338.319

Related to Xanthocillin X, X-7. Prod. by *Eupenicillium shearii* F80695. Inhibitor of mushroom tyrosinase and melanin biosynth. Antioxidant. Yellow powder. Mp 212°. λ_{max} 220 (ϵ 32300); 336 (ϵ 13100) (MeOH).

Kim, J.-P. *et al., J. Antibiot.*, 2003, **56**, 993-999; 1000-1003 (*isol, pmr, cmr, activity*)

Melanocin B M-155

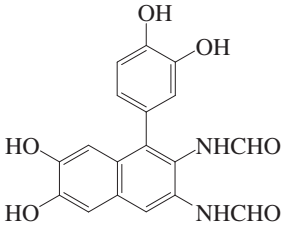


$C_{17}H_{15}NO_6$ 329.309

Prod. by *Eupenicillium shearii* F80695. Antioxidant. Dark brown powder. Mp 223°. λ_{max} 253 (ϵ 31400); 341 (ϵ 8300) (MeOH).

Kim, J.-P. *et al., J. Antibiot.*, 2003, **56**, 993-999; 1000-1003 (*isol, pmr, cmr, activity*)

Melanocin C M-156



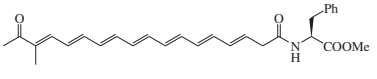
$C_{18}H_{14}N_2O_6$ 354.318

Prod. by *Eupenicillium shearii* F80695. Antioxidant. Dark brown powder. Mp 190-200° dec. λ_{max} 241 (ϵ 42650); 341 (ϵ 5150) (MeOH).

Kim, J.-P. *et al., J. Antibiot.*, 2003, **56**, 993-999; 1000-1003 (*isol, pmr, cmr, activity*)

Melanocrocin M-157

[364356-73-0]



Absolute Configuration

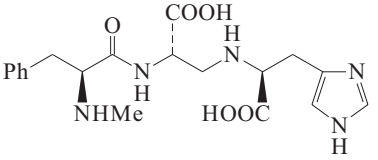
$C_{29}H_{33}NO_4$ 459.584

Pigment from *Melanogaster broomeianus*. Amorph. orange solid. λ_{max} 243 (log ϵ 3.88); 283 (log ϵ 3.89); 306 (log ϵ 3.91); 319 (log ϵ 3.9); 404 (log ϵ 4.31) (MeOH).

Aulinger, K. *et al., Z. Naturforsch., C*, 2001, **56**, 495-498

Melanostatin† M-158

BMY 28566. Antibiotic BMY 28566
[134019-80-0]



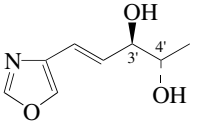
$C_{19}H_{25}N_5O_5$ 403.437

Peptide antibiotic. Prod. by *Streptomyces clavifer*. Melanin synthesis inhibitor. Amorph. powder. Sol. H_2O, MeOH, EtOH; fairly sol. DMSO; poorly sol. Me_2CO, $CHCl_3$, EtOAc. $[\alpha]_D^{29}$ +50 (c, 1 in H_2O). Dec. gradually above 155°. Similar to Feldamycin, F-33.

Oki, T. *et al., J. Antibiot.*, 1991, **44**, 25; 76 (*isol, pmr, cmr, ir, props, synth, abs config*)

Melanoxidin M-159

5-(4-Oxazolyl)-4-pentene-2,3-diol. 4-(3,4-Dihydroxy-1-pentenyl)oxazole. MR 93A. Antibiotic MR 93A. ATF 606. Antibiotic ATF 606
[169397-87-9]



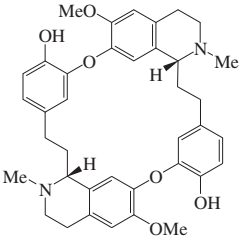
$C_8H_{11}NO_3$ 169.18

Most probable config. shown. Isol. from cultures of *Trichoderma harzianum* KCTC 0114BP and *Trichoderma* sp. ATF606. Melanin biosynthesis inhibitor. Needles (EtOAc/hexane). Mp 73-74°. $[\alpha]_D^{25}$ -6 (c, 0.1 in MeOH). $[\alpha]_D^{24}$ -20 (c, 0.1 in MeOH). λ_{max} 227 (ϵ 19800) (MeOH) (Derep).

3′-Ketone: 4-Hydroxy-1-(4-oxazolyl)-1-penten-3-one. 4-(4-Hydroxy-3-oxo-1-pentenyl)oxazole
[197768-84-6]
$C_8H_9NO_3$ 167.164
Prod. by an unidentified fungus. Needles. Mp 52°. $[\alpha]_D^{25}$ -34 (c, 1.2 in MeOH). λ_{max} 279 (ϵ 14700) (MeOH).

Hashimoto, R. *et al., J. Antibiot.*, 1995, **48**, 1052 (*Melanoxidin, isol, pmr, cmr*)
Lee, C. *et al., J. Nat. Prod.*, 1995, **58**, 1605 (*MR93A, isol, uv, cd, pmr, cmr, struct*)
Morimitsu, Y. *et al., Biosci., Biotechnol., Biochem.*, 1997, **61**, 1428-1433 (*isol, uv, pmr, cmr, ms*)

Melanthioidine M-160



(*R,R*)-*form*

$C_{38}H_{42}N_2O_6$ 622.76

Dimeric phenethylisoquinoline alkaloid.

(*R,R*)-*form* [4085-28-3]

Alkaloid from *Androcymbium melanthioides* var. *stricta* (Liliaceae). Prisms (EtOAc or Me_2CO). Mp 142-144°. $[\alpha]_D^{22}$ -63 (c, 0.82 in $CHCl_3$).

Dibenzyl ether: Mp 154-155°.

(*RS,RS*)-*form*

Di-O-*benzyl:* Mp 192-194°.

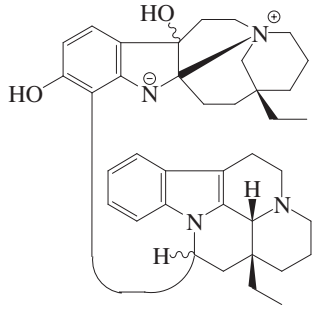
Hrbek, J. *et al., Coll. Czech. Chem. Comm.*, 1962, **27**, 255 (*isol, ir, uv*)

Battersby, A.R. *et al., J.C.S.(C)*, 1967, 1739 (*ms, pmr, ord, struct, synth*)

Kametani, T. *et al., Chem. Pharm. Bull.*, 1968, **16**, 663 (*synth, uv, ir, ms*)

Melaxillarinine M-161

[192331-99-0]



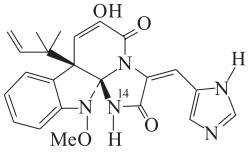
$C_{38}H_{48}N_4O_2$ 592.823

Alkaloid from the roots of *Melodinus axillaris*. Pale red powder. $[\alpha]_D$ -36.2 (c, 0.15 in MeOH). λ_{max} 210 (log ϵ 4.57); 230 (sh) (log ϵ 4.5); 290 (log ϵ 3.82) (no solvent reported).

Yan, K.X. *et al., Chin. Chem. Lett.*, 1997, **8**, 313-314

Meleagrin M-162

[71751-77-4]



Absolute configuration

$C_{23}H_{23}N_5O_4$ 433.466

Closely related to Neoxaline, N-149. Isol. from *Penicillium meleagrinum* and a marine- derived *Penicillium chrysogenum*. Shows structural similarity to tremorgenic mycotoxins. Pale yellow leaves ($CHCl_3$ or CH_2Cl_2). Mp 250° dec. $[\alpha]_D$ -116 (c, 0.088 in $CHCl_3$). λ_{max} 232 (ϵ 27500); 285 (sh) (ϵ 8320); 349 (ϵ 27500) (EtOH) (Derep). λ_{max} 230 (ϵ 24500); 345 (ϵ 26200) (MeOH) (Berdy).

O-*Ac:*

Pale yellow cryst. powder (C_6H_6/petrol).

N^{14}-*Me:*

Pale yellow needles (MeOH). Mp 212° dec.

Me ether: ***Oxaline***

[55623-37-5]

$C_{24}H_{25}N_5O_4$ 447.493

Isol. from cultures of the toxicogenic fungus *Penicillium oxalicum*, and from *Penicillium* sp. Fg-234. Also prod. by a marine-derived fungus isol. from *Gracilaria verrucosa*. Cryst. (Me_2CO or $MeNO_2$). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 220-221° Mp 230-232° dec. λ_{max} 228 (ϵ 21300); 345 (ϵ 25200) (MeOH) (Derep). λ_{max} 228 (ϵ 20890); 347 (ϵ 24550) (MeOH) (Berdy).

O,N^{14}-*Di-Me:*

Needles (hexane). Mp 217-218° (214-216°).

Nagel, D.W. *et al., Tetrahedron*, 1976, **32**, 2625 (*Oxaline, cryst struct*)

Nozawa, K. *et al., J. Nat. Prod.*, 1979, **42**, 374 (*isol*)

Vleggaar, R. *et al., Chem. Comm.*, 1980, 160; 1983, 560 (*cmr, biosynth*)

Konda, Y. *et al., Chem. Pharm. Bull.*, 1980, **28**, 2987 (*Oxaline*)

Kawai, K. *et al., Chem. Pharm. Bull.*, 1984, **32**, 94 (*cryst struct, abs config*)

Reshetilova, T.A. *et al., Food Addit. Contam.*, 1995, **12**, 461-466 (*occur*)

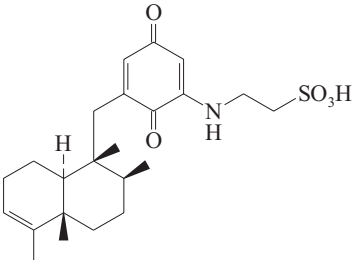
Li, Y. *et al., Arch. Pharmacal Res.*, 2003, **26**, 21-23 (*Oxaline, marine isol*)

Bringmann, G. *et al., Tetrahedron*, 2005, **61**, 7252-7265 (*marine isol*)

Overy, D.P. *et al., Biochem. Syst. Ecol.*, 2006, **34**, 345-348 (*isol, abs config*)

Melemeleone A M-163

[144587-55-3]



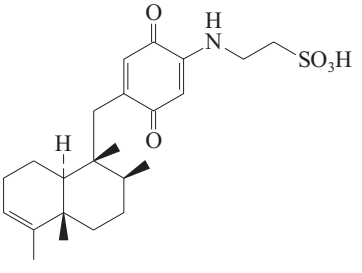
$C_{23}H_{33}NO_5S$ 435.583

Constit. of *Dysidea avara*. Red amorph. solid. Mp 110-115°. $[\alpha]_D^{20}$ -20.1 (c, 0.006 in CH_2Cl_2). λ_{max} 214 (ϵ); 290 (ϵ); 483 (ϵ) (MeOH) (Derep).

Alvi, K.A. *et al., J.O.C.*, 1992, **57**, 6604 (*isol, pmr, cmr*)

Melemeleone B M-164

[144587-56-4]



$C_{23}H_{33}NO_5S$ 435.583

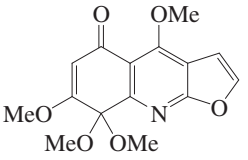
Constit. of *Dysidea avara*. Tyrosine kinase inhibitor. Red amorph. solid. Sol. MeOH. Mp 190-200°. $[\alpha]_D^{20}$ -22 (c, 0.01 in CH_2Cl_2). λ_{max} 214 (ϵ); 290 (ϵ); 483 (ϵ) (MeOH) (Derep).

Abvi, K.A. *et al., J.O.C.*, 1992, **57**, 6604 (*isol, pmr, cmr*)

Melicarpine M-165

*4,7,8,8-Tetramethoxy-5*H-*furo[2,3*-b*]quinolin-5(8*H*)-one*

[632335-15-0]



$C_{15}H_{15}NO_6$ 305.287

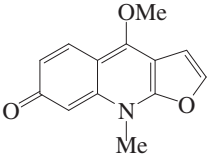
Alkaloid from the leaves of *Melicope semecarpifolia*. Needles (MeOH). Mp 211-213°. λ_{max} 207 (log ϵ 4.29); 242 (log ϵ 4.47); 287 (sh) (log ϵ 3.83) (EtOH).

Chen, J.-J. *et al., Planta Med.*, 2003, **69**, 542-546 (*isol, pmr, cmr, ms*)

Melicarpinone M-166

*4-Methoxy-9-methyl-7*H-*furo[2,3*-b*]quinolin-7(9*H*)-one*

[479415-37-7]

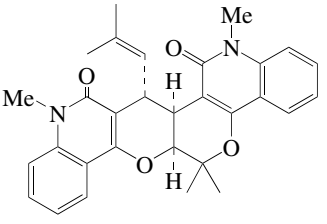


$C_{13}H_{11}NO_3$ 229.235

Alkaloid from the leaves of *Melicope semecarpifolia*. Pale yellow needles ($CHCl_3$/MeOH). Mp 145-147°. λ_{max} 204 (log ϵ 4.32); 234 (log ϵ 4.42); 276 (log ϵ 4.48); 320 (log ϵ 3.86); 339 (log ϵ 3.61); 399 (log ϵ 4.11) (EtOH).

Chen, J.-J. *et al., Planta Med.*, 2002, **68**, 790-793 (*isol, pmr, cmr, ms*)

Melicobisquinolinone A M-167



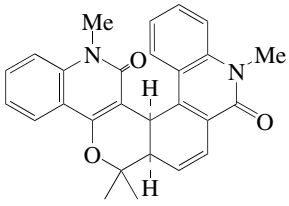
$C_{30}H_{30}N_2O_4$ 482.578

Dimer of *N*-methylflindersine in F-90. Alkaloid from *Melicope ptelefolia*. Amorph. λ_{max} 226 (log ϵ 4.92); 274 (log ϵ 4.14); 318 (log ϵ 4.13) (MeOH). λ_{max} 226 (ϵ 83170); 274 (ϵ 15500); 328 (ϵ 13500) (MeOH) (Berdy).

Kamperdick, C. *et al., Phytochemistry*, 1999,

50, 177-181 (*isol, uv, ir, pmr, cmr, ms*)

Melicobisquinolinone B M-168

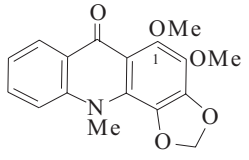


$C_{27}H_{24}N_2O_3$ 424.498
Alkaloid from *Melicope ptelefolia*. Amorph. Racemic. λ_{max} 229 (log ϵ 4.8); 322 (log ϵ 4.08) (MeOH). λ_{max} 229 (ϵ 63100); 322 (ϵ 12000) (MeOH) (Berdy).

Kamperdick, C. *et al., Phytochemistry*, 1999, **50**, 177-181 (*isol, uv, ir, pmr, cmr, ms*)

Melicopine M-169

4,5-Dimethoxy-11-methyl-1,3-dioxolo[4,5-c]acridin-6(11H)-one, 9CI. 1,2-Dimethoxy-10-methyl-3,4-methylenedioxyacridone
[568-01-4]



$C_{17}H_{15}NO_5$ 313.309
Alkaloid from *Melicope fareana*, *Evodia alata*, *Acronychia baueri*, *Teclea natalensis* and *Bauerella simplicifolia* (preferred genus name *Acronychia*) (Rutaceae). Mp 181-182° (173-175°). λ_{max} 270 (ϵ 55000); 301 (ϵ 13500) (EtOH) (Derep).

O^1-De-Me: 1-Hydroxy-2-methoxy-10-methyl-3,4-methylenedioxyacridone. ***O-Normelicopine***
[517-76-0]
$C_{16}H_{13}NO_5$ 299.282
Alkaloid from the bark of *Acronychia baueri* (Rutaceae). Orange needles. Mp 235°. Prob. an artifact.

Price, J.R. *et al., Aust. J. Sci. Res., Ser. A*, 1949, **2**, 249; *CA*, **46**, 4010d (*isol*)
Crow, W.D. *et al., Aust. J. Sci. Res., Ser. A*, 1949, **2**, 282; *CA*, **46**, 4014a (*struct*)
Bowie, J. *et al., Aust. J. Chem.*, 1967, **20**, 1179 (*ms*)
Prager, R.H. *et al., Aust. J. Chem.*, 1968, **21**, 229 (*synth, pmr, Normelicopine*)
Prager, R.H. *et al., Aust. J. Chem.*, 1969, **22**, 2627 (*biosynth*)
Pegel, K.H. *et al., J.C.S.(C)*, 1969, 2327 (*isol, uv, ir, pmr*)
Mester, I. *et al., Z. Naturforsch., B*, 1979, **34**, 516 (*cmr*)
Tillequin, F. *et al., J. Nat. Prod.*, 1980, **43**, 498 (*isol, uv, ir, ms, pmr*)

Melinonine I M-170

Struct. unknown. Alkaloid from the bark of *Strychnos melinoniana* (Loganiaceae). Mp 160-170° dec. (as picrate). Mol. formula not recorded.

Bächli, E. *et al., Helv. Chim. Acta*, 1957, **40**, 1167-1187 (*isol, uv*)

Melinonine H M-171

[1359-58-6]
$C_{20}H_{21}N_2O^{\oplus}$ 305.399
Struct. unknown. Approx. MF given (may be H_{23}). Quaternary alkaloid from the bark of *Strychnos melinoniana* (Loganiaceae). Mp 302-304° dec. (as perchlorate).

Bächli, E. *et al., Helv. Chim. Acta*, 1957, **40**, 1167-1187 (*isol, uv, ir*)

Melinonine K M-172

Struct. unknown. Alkaloid from the bark of *Strychnos melinoniana* (Loganiaceae). Mol. formula not recorded.

Chloride: Mp 210-212° dec.

Picrate: Mp 196-199° dec.

Bächli, E. *et al., Helv. Chim. Acta*, 1957, **40**, 1167-1187 (*isol, uv*)

Melinonine L M-173

$C_{22}H_{26}N_2O_4$ 382.458
Struct. unknown. Alkaloid from the bark of *Strychnos melinoniana* (Loganiaceae). Mp 248-250°.

Methopicrate: Mp 156-160° Mp 241-243° (double Mp).

Ac:
Needles ($CHCl_3/Et_2O$). Mp 220-223°.

Bächli, E. *et al., Helv. Chim. Acta*, 1957, **40**, 1167-1187 (*isol, uv*)

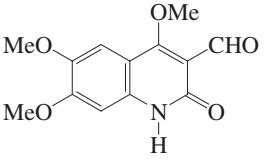
Melinonine M M-174

Struct. unknown. Alkaloid from the bark of *Strychnos melinoniana* (Loganiaceae). Mp 242-245° dec. (as picrate). Mol. formula not recorded.

Bächli, E. *et al., Helv. Chim. Acta*, 1957, **40**, 1167-1187 (*isol, uv*)

Melisemine M-175

1,2-Dihydro-4,6,7-trimethoxy-2-oxo-3-quinolinecarboxaldehyde. 3-Formyl-2-hydroxy-4,6,7-trimethoxyquinoline



$C_{13}H_{13}NO_5$ 263.249
Alkaloid from the leaves of *Melicope semecarpifolia*. Pale yellow needles ($CHCl_3$/MeOH). Mp 189-191°. λ_{max} 219 (log ϵ 4.32); 235 (log ϵ 4.38); 260 (sh) (log ϵ 4.12); 316 (log ϵ 3.9); 387 (log ϵ 3.78) (EtOH).

Chen, J.-J. *et al., Planta Med.*, 2002, **68**, 790-793 (*isol, pmr, ms*)

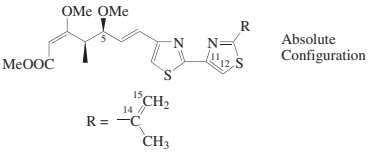
Melithiazole I M-176

[248938-52-5]
As Melithiazole B, M-177 with
R = $-CH_2CH(CH_3)_2$
$C_{21}H_{28}N_2O_4S_2$ 436.595
Prod. by *Myxococcus stipitatus.* Antifungal and cytotoxic. Oil. λ_{max} 223 ; 241 ; 312 (MeOH).

Böhlendorf, B. *et al., Eur. J. Org. Chem.*, 1999, 2601-2608 (*isol, struct*)
Sasse, F. *et al., J. Antibiot.*, 1999, **52**, 721-729 (*isol, props*)
Takayama, H. *et al., Eur. J. Org. Chem.*, 2006, 644-649 (*synth*)

Melithiazole B M-177

[170894-31-2]



$C_{20}H_{24}N_2O_4S_2$ 420.553
Prod. by *Archangium gephyra* and *Melittangium lichenicola*. Antifungal and cytotoxic agent. Oil. λ_{max} 235 (log ϵ 4.38); 307 (log ϵ 3.83) (MeCN).

O^5-De-Me: ***Cystothiazole D***
[214215-09-5]
$C_{19}H_{22}N_2O_4S_2$ 406.526
Prod. by *Cystobacter fuscus.* Antifungal agent. Powder. $[\alpha]_D^{23}$ +134 (c, 0.05 in $CHCl_3$). λ_{max} 235 (ϵ 37000); 306 (ϵ 11900) (MeOH).

14,15-Epoxide: ***Melithiazole N***
[248938-54-7]
$C_{20}H_{24}N_2O_5S_2$ 436.552
Prod. by *Archangium gephyra*.

11α,12-Dihydro: ***Melithiazole A***
[170894-30-1]
$C_{20}H_{26}N_2O_4S_2$ 422.568
Prod. by *Archangium gephyra* and *Melittangium lichenicola*. Antifungal and cytotoxic agent. Oil. $[\alpha]_D^{22}$ +0.3 (c, 1 in MeOH). λ_{max} 211 (sh) (log ϵ 4.33); 227 (log ϵ 4.47); 256 (sh) (log ϵ 4.28); 263 (sh) (log ϵ 4.11); 309 (sh) (log ϵ 3.27); 311 (sh) (log ϵ 3.27); 327 (sh) (log ϵ 3.07); 335 (sh) (log ϵ 2.83) (MeCN).

11α,12-Dihydro, 14,15-epoxide: ***Melithiazole K***
[248938-47-8]
$C_{20}H_{26}N_2O_5S_2$ 438.568
Prod. by *Archangium gephyra*. Oil. λ_{max} 217 (log ϵ 4.07); 239 (log ϵ 4.12); 305 (sh) (log ϵ 3.16) (MeOH).

14,15-Dihydro: ***Cystothiazole A***. *Antibiotic YSI 40-2*. *YSI 40-2*. *Melithiazole E*
[207399-36-8]
$C_{20}H_{26}N_2O_4S_2$ 422.568
Prod. by *Cystobacter fuscus* and *Myxococcus stipitatus.* Antifungal and cytotoxic agent. Needles. Mp 111-112°. $[\alpha]_D^{25}$ +109 (c, 0.2 in $CHCl_3$). λ_{max} 223 (ϵ 38200); 242 (ϵ 34500); 310 (ϵ 12400) (MeOH).

14,15-Dihydro, O^5-de-Me: ***Cystothiazole C***
[214215-07-3]
$C_{19}H_{24}N_2O_4S_2$ 408.542

Prod. by *Cystobacter fuscus*. Antifungal agent. Powder. $[\alpha]_D^{23}$ +145 (c, 0.2 in $CHCl_3$). λ_{max} 222 (ϵ 33900); 242 (ϵ 30500); 312 (ϵ 10400) (MeOH).

14,15-Dihydro, 14-hydroxy: ***Cystothiazole B***
[207399-38-0]
$C_{20}H_{26}N_2O_5S_2$ 438.568
Prod. by *Cystobacter fuscus*. Powder. $[\alpha]_D$ +139 (c, 0.09 in $CHCl_3$). λ_{max} 222 (ϵ 38400); 243 (ϵ 35700); 311 (ϵ 12000) (MeOH).

14,15-Dihydro, 15-hydroxy: ***Cystothiazole F***
$C_{20}H_{26}N_2O_5S_2$ 438.568
Prod. by *Cystobacter fuscus*. Antifungal agent. Powder. $[\alpha]_D^{23}$ +77 (c, 0.07 in $CHCl_3$). λ_{max} 222 (ϵ 30400); 242 (ϵ 26800); 311 (ϵ 9990) (MeOH).

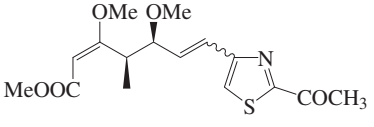
11α,12,14,15-Tetrahydro: ***Melithiazole D***
[248938-46-7]
$C_{20}H_{28}N_2O_4S_2$ 424.584
Prod. by *Archangium gephyra*. Oil. λ_{max} 215 ; 239 (MeOH).

11α,12,14,15-Tetrahydro, 15-methoxy: ***Melithiazole L***
[248938-48-9]
$C_{21}H_{30}N_2O_5S_2$ 454.61
Prod. by *Archangium gephyra*. Oil. λ_{max} 217 (log ϵ 4.07); 240 (log ϵ 4.11); 280 (sh) (log ϵ 3.53) (MeOH).

Ojika, M. *et al., J. Antibiot.*, 1998, **51**, 275-281 (*Cystothiazoles*)
Suzuki, Y. *et al., Tetrahedron*, 1998, **54**, 11399-11404 (*Cystothiazoles*)
Boehlendorf, B. *et al., Eur. J. Org. Chem.*, 1999, 2601-2608 (*Melithiazoles*)
Sasse, F. *et al., J. Antibiot.*, 1999, **52**, 721-729 (*Melithiazoles*)
Söker, U. *et al., Eur. J. Org. Chem.*, 2000, 1497-1502; 2021-2026 (*synth*)
Williams, D.R. *et al., J.O.C.*, 2001, **66**, 8463-8469 (*synth*)
Suzuki, Y. *et al., J. Antibiot.*, 2003, **56**, 372-378 (*biosynth*)
DeRoy, P.L. *et al., Org. Lett.*, 2003, **5**, 4163-4165 (*synth*)
Kato, K. *et al., Tetrahedron*, 2003, **59**, 2679-2685 (*synth*)
Sasaki, T. *et al., Chem. Pharm. Bull.*, 2004, **52**, 770-771 (*Cystothiazole B, synth, abs config*)
Shao, J. *et al., Org. Lett.*, 2004, **6**, 3083-3085 (*synth*)
Ojika, M. *et al., Tetrahedron*, 2004, **60**, 187-194 (*synth*)
Akita, H. *et al., Heterocycles*, 2005, **66**, 219-228 (*Melithiazole B, synth*)
Akita, H. *et al., Tetrahedron*, 2006, **62**, 11592-11598 (*synth*)
Iwaki, Y. *et al., Chem. Pharm. Bull.*, 2007, **55**, 1610-1614 (*synth*)
Gebauer, J. *et al., Eur. J. Org. Chem.*, 2008, 2701-2704 (*Cystothiazole A, synth*)

Melithiazole C M-178

[214420-47-0]



$C_{16}H_{21}NO_5S$ 339.412

Prod. by *Melittangium lichenicola*. Antifungal agent. Oil. Occurs as 6*E*/6*Z*-mixture which was not separated. λ_{max} 235 ; 329 (MeOH).

Boehlendorf, B. *et al., Eur. J. Org. Chem.*, 1999, 2601-2608 (*isol, pmr, cmr*)
Sasse, F. *et al., J. Antibiot.*, 1999, **52**, 721-729 (*isol, activity*)
Söker, U. *et al., Eur. J. Org. Chem.*, 2000, 1497-1502; 2021-2026 (*synth*)
Takayama, H. *et al., Heterocycles*, 2007, **71**, 75-85 (*synth*)
Gebauer, J. *et al., Org. Lett.*, 2007, **9**, 3425-3427 (*synth*)

Melithiazole F M-179

[248938-49-0]
As Melithiazole B, M-177 with
R = -CH_2Ph
$C_{24}H_{26}N_2O_4S_2$ 470.612
Prod. by *Myxococcus stipitatus*. Antifungal and cytotoxic. Oil. λ_{max} 223 (log ϵ 4.43); 241 (log ϵ 4.36); 312 (log ϵ 3.9) (MeOH).

Böhlendorf, B. *et al., Eur. J. Org. Chem.*, 1999, 2601-2608 (*isol, struct*)
Sasse, F. *et al., J. Antibiot.*, 1999, **52**, 721-729 (*isol, props*)
Takayama, H. *et al., Eur. J. Org. Chem.*, 2006, 644-649 (*synth*)

Melithiazole G M-180

[248938-50-3]
As Melithiazole B, M-177 with
R = -$CH_2(CH_3)CH_2CH_3$
$C_{21}H_{28}N_2O_4S_2$ 436.595
Prod. by *Myxococcus stipitatus*. λ_{max} 223 (log ϵ 4.28); 241 (log ϵ 4.24); 312 (log ϵ 3.8) (MeOH).

Böhlendorf, B. *et al., Eur. J. Org. Chem.*, 1999, 2601-2608 (*isol*)
Sasse, F. *et al., J. Antibiot.*, 1999, **52**, 721-729 (*isol, props*)

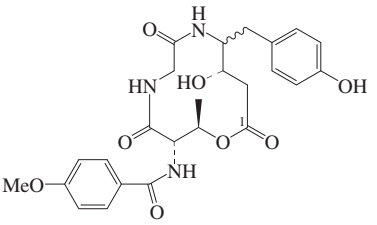
Melithiazole H M-181

Cystothiazole G
[248938-51-4]
As Melithiazole B, M-177 with
R = -$^{14}CH_2CH_3$
$C_{19}H_{24}N_2O_4S_2$ 408.542
Prod. by *Cystobacter fuscus* and *Myxococcus stipitatus*. Antifungal and cytotoxic. Solid. $[\alpha]_D^{24}$ +108 (c, 0.04 in $CHCl_3$). λ_{max} 226 (ϵ 33400); 244 (ϵ 34000); 312 (ϵ 12500) (MeOH).

14-Oxo: ***Melithiazole M***
[248938-53-6]
$C_{19}H_{22}N_2O_5S_2$ 422.525
Prod. by *Archangium gephyra*. Antifungal and cytotoxic. Oil. λ_{max} 217 (log ϵ 4.07); 239 (log ϵ 4.12); 305 (sh) (log ϵ 3.16) (MeOH).

Böhlendorf, B. *et al., Eur. J. Org. Chem.*, 1999, 2601-2608 (*Melithiazoles, isol*)
Sasse, F. *et al., J. Antibiot.*, 1999, **52**, 721-729 (*Melithiazoles, isol, props*)
Akita, H. *et al., Tetrahedron*, 2004, **60**, 4735-4738 (*Cystothiazole G*)
Akita, H. *et al., Heterocycles*, 2005, **66**, 219-228 (*Melithiazole M, synth*)

Melleumin A M-182



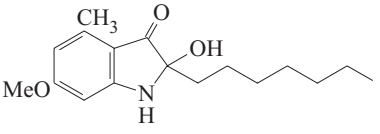
$C_{25}H_{29}N_3O_8$ 499.519
Prod. by the myxomycete *Physarum melleum*. Amorph. solid. $[\alpha]_D^{26}$ +27 (c, 0.15 in MeOH). λ_{max} 225 (ϵ 13000); 254 (ϵ 15000) (MeOH).

Parent hydroxyacid, Me ester: ***Melleumin B***
$C_{26}H_{33}N_3O_9$ 531.561
Prod. by the myxomycete *Physarum melleum*. Amorph. solid. λ_{max} 226 (ϵ 10000); 254 (ϵ 13000) (MeOH).

Nakatani, S. *et al., Tet. Lett.*, 2005, **46**, 267-271 (*isol, pmr, cmr*)

Melochicorine M-183

*2-Heptyl-1,2-dihydro-2-hydroxy-6-methoxy-4-methyl-3*H*-indol-3-one, 9CI. 2-Heptyl-2-hydroxy-6-methoxy-4-methylpseudooxindole*
[138615-21-1]

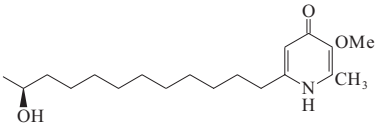


$C_{17}H_{25}NO_3$ 291.389
Alkaloid from the aerial parts of *Melochia corchorifolia* (Sterculiaceae). Viscous oil. $[\alpha]_D$ +56 ($CHCl_3$).

Bhakuni, R.J. *et al., Phytochemistry*, 1991, **30**, 3159 (*isol, uv, ir, pmr, cmr, ms, struct*)

Melochinine M-184

*6-(11-Hydroxydodecyl)-3-methoxy-2-methyl-4(1*H*)-pyridinone. 4-Hydroxy-6-(11-hydroxydodecyl)-3-methoxy-2-methylpyridine*
[70001-21-7]



$C_{19}H_{33}NO_3$ 323.475
Alkaloid from the leaves of *Melochia pyramidata*. Needles (MeOH/Et_2O). Mp 147°. $[\alpha]_D^{20}$ +11.2 (c, 0.1 in EtOH).

O-*β*-D-*Glucopyranoside:* [77795-03-0]
$C_{25}H_{43}NO_8$ 485.617
Alkaloid from the leaves of *Melochia pyramidata* (Apocynaceae). Cryst. (MeOH/Et_2O). Mp 143-145°.

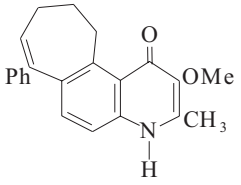
Ketone: ***Melochininone****. Melochinone*†
[70001-20-6]
$C_{19}H_{31}NO_3$ 321.459
Alkaloid from *Melochia pyramidata*.

Needles (Me_2CO). Mp 90°. Formerly named Melochinone, name changed to avoid confusion with Melochinone, M-185.

Medina, E. *et al., Chem. Ber.*, 1979, **112**, 376; 1981, **114**, 814 (*isol, uv, ir, pmr, cmr, ms, struct*)
Medina, E. *et al., Annalen*, 1981, 538 (*derivs*)
Spiteller, G. *et al., Annalen*, 1981, 2096
Voss, G. *et al., Annalen*, 1982, 1466 (*synth*)

Melochinone† M-185

[57609-68-4]

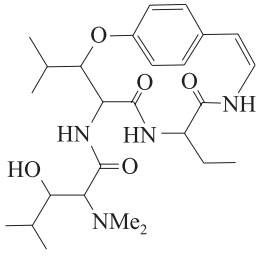


$C_{22}H_{21}NO_2$ 331.413
Alkaloid from *Melochia tomentosa* (Sterculiaceae). Mp 316-318° dec.

Kapadia, G.J. *et al., J.A.C.S.*, 1975, **97**, 6814 (*isol, ir, uv, ms, pmr, cmr, cryst struct*)

Melofoline M-186

[107316-95-0]



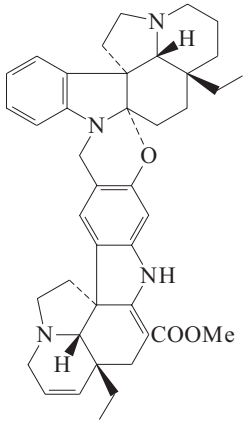
$C_{26}H_{40}N_4O_5$ 488.626
Alkaloid from the aerial parts of *Melochia corchorifolia* (Apocynaceae). Cryst. (MeOH). Mp 305-307°. $[\alpha]_D$ -252 ($CHCl_3$).

O-*Ac:* [107335-31-9]
Cryst. (MeOH). Mp 259-261°.

Bhakuni, R.S. *et al., Phytochemistry*, 1987, **26**, 324 (*isol, ir, pmr, ms, struct*)

Melomorsine M-187

[156280-90-9]

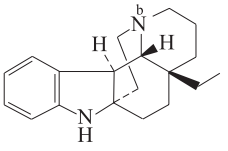


$C_{41}H_{48}N_4O_3$ 644.855
Alkaloid from aerial parts of *Melodinus morsei* (Apocynaceae). Reddish cryst. Mp 70-71°. $[\alpha]_D^{20}$ -197.64 (c, 0.635 in $CHCl_3$).

He, Y.-L. *et al., J. Nat. Prod.*, 1994, **57**, 411 (*isol, uv, ir, pmr, cmr, ms, struct*)

Melonine M-188

2,11-Cyclo-11,12-secoaspidospermidine, 9CI
[69771-89-7]



Absolute configuration

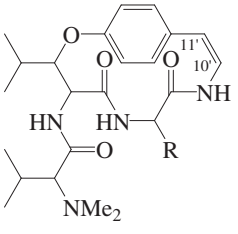
$C_{19}H_{26}N_2$ 282.428
Alkaloid from *Melodinus celastroides* (Apocynaceae). Mp 262° (as hydrochloride). $[\alpha]_D^{22}$ +82.

N^b-*Oxide:* ***N^b-Oxymelonine***
[69771-90-0]
$C_{19}H_{26}N_2O$ 298.427
Alkaloid from *Melodinus celastroides* (Apocynaceae). Mp 198°. $[\alpha]_D^{22}$ +110.

Baassou, S. *et al., Tet. Lett.*, 1983, **24**, 761 (*uv, cmr, struct*)

Melonovine A M-189

[64408-09-9]



R = $CH_2CH(CH_3)_2$

$C_{27}H_{42}N_4O_4$ 486.653
CAS numbering shown. Alkaloid from the roots of *Melochia tomentosa* and from *Zizyphus jujuba* var. *inermis*. Cryst. (Me_2CO). Mp 295° dec. $[\alpha]_D$ -285 ($CHCl_3$).

Stereoisomer (1): ***Pubescine A***
[75684-59-2]
$C_{27}H_{42}N_4O_4$ 486.653
Alkaloid from *Discaria pubescens* (Rhamnaceae). Needles (MeOH/petrol). Mp 247-250°. $[\alpha]_D$ -230 (c, 0.076 in MeOH). Conts. D-leucine (first report from a cyclopeptide alkaloid).

Stereoisomer (2): ***Daechuine S5***
$C_{27}H_{42}N_4O_4$ 486.653
Alkaloid from stem bark of *Zizyphus jujuba* var. *inermis* (Rhamnaceae). Mp 233-235°. $[\alpha]_D$ -421.3. No info. on stereochem. said in a review to be identical to Melonovine A.

Kapadia, G.J. *et al., Phytochemistry*, 1977, **16**, 1431 (*isol, ir, pmr, ms, struct*)
Tschesche, R. *et al., Phytochemistry*, 1980, **19**, 1000 (*Pubescine A*)
Han, B. *et al., Pure Appl. Chem.*, 1989, **61**, 443 (*Daechuine S5*)
Tan, N.H. *et al., Chem. Rev.*, 2006, **106**, 840-895 (*Daechuine S5, struct*)

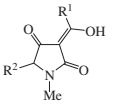
Melonovine B M-190

[64408-10-2]
As Melonovine A, M-189 with
R = 4-Hydroxybenzyl
$C_{30}H_{40}N_4O_5$ 536.67
Alkaloid from the roots of *Melochia tomentosa* (Apocynaceae). Cryst. (Me_2CO/C_6H_6). Mp 200-206°.

Deoxy, 10′,11′-dihydro, 11′-hydroxy: ***Pandaminine***
[10233-40-6]
$C_{30}H_{42}N_4O_5$ 538.686
Alkaloid from *Panda oleosa* (Pandaceae). Cryst. (EtOAc). Mp 272°. $[\alpha]_D$ -117 ($CHCl_3$).

Païs, M. *et al., Ann. Chim. (Paris)*, 1966, **11**, 83; *CA*, **65**, 9018a (*Pandaminine*)
Kapadia, G.J. *et al., Phytochemistry*, 1977, **16**, 1431-1433 (*Melonovine B*)
Païs, M. *et al., Phytochemistry*, 1979, **18**, 1869-1872 (*Pandaminine, cmr*)

Melophlins M-191



Melophlin	A	$R^1 = -(CH_2)_{14}CH_3$, $R^2 = H$
	B	$R^1 = -CH_2CH_2CH(CH_3)(CH_2)_7CH_3$, $R^2 = CH_3$
	C	$R^1 = -(CH_2)_3CH(CH_3)(CH_2)_6CH_3$, $R^2 = CH_3$
	D	$R^1 = -(CH_2)_{13}CH_3$, $R^2 = H$
	E	$R^1 = -(CH_2)_{12}CH(CH_3)_2$, $R^2 = H$
	F	$R^1 = -(CH_2)_{11}CH(CH_3)CH_2CH_3$, $R^2 = H$
	G	$R^1 = -(CH_2)_{12}CH_3$, $R^2 = H$
	H	$R^1 = -(CH_2)_{11}CH(CH_3)_2$, $R^2 = H$
	I	$R^1 = -(CH_2)_{10}CH(CH_3)CH_2CH_3$, $R^2 = H$
	J	$R^1 = -(CH_2)_{12}CH_3$, $R^2 = CH_3$
	K	$R^1 = -(CH_2)_{10}CH(CH_3)_2$, $R^2 = H$
	L	$R^1 = -(CH_2)_{11}CH_3$, $R^2 = CH_3$
	M	$R^1 = -(CH_2)_{10}CH_3$, $R^2 = CH_3$
	N	$R^1 = -(CH_2)_9CH(CH_3)_2$, $R^2 = CH_3$
	O	$R^1 = -(CH_2)_8CH(CH_3)CH_2CH_3$, $R^2 = CH_3$
	P	$R^1 = -(CH_2)_{14}CH_3$, $R^2 = CH_3$
	Q	$R^1 = -(CH_2)_{11}CH(CH_3)_2$, $R^2 = CH_3$
	R	$R^1 = -(CH_2)_{10}CH(CH_3)CH_2CH_3$, $R^2 = CH_3$
	S	$R^1 = -(CH_2)_3CH(CH_3)(CH_2)_8CH_3$, $R^2 = CH_3$

Tetramic acid derivs. Enolised β-triketones. Isol. from the marine sponge *Melophlus sarassinorum*.

Melophlin A

3-(1-Hydroxyhexadecylidene)-1-methyl-2,4-pyrrolidinedione, 9CI
[268745-62-6]
$C_{21}H_{37}NO_3$ 351.528
Cytotoxic agent. Oil. λ_{max} 244 (ε 9000); 284 (ε 15000) (MeOH).

Melophlin B

3-(1-Hydroxy-4-methyldodecylidene)-1,5-dimethyl-2,4-pyrrolidinedione
[268745-63-7]
$C_{19}H_{33}NO_3$ 323.475
Cytotoxic. $[\alpha]_D$ -12.4 (c, 1.2 in MeOH). Has *S*-config. at C-5. λ_{max} 245 (ε 13800); 285 (ε 17000) (MeOH).

Melophlin C
3-(1-Hydroxy-5-methyldodecylidene)-1,5-dimethyl-2,4-pyrrolidinedione
[499136-46-8]
$C_{19}H_{33}NO_3$ 323.475
Antibacterial agent. Yellow oil. $[\alpha]_D$ -5.8 (c, 0.35 in MeOH). Isol. as a 1:2 mixt. of 5*R*- and 5*S*-enantiomers. λ_{max} 248 (log ϵ 3.9); 286 (log ϵ 4.12) (MeOH).

Melophlin D
3-(1-Hydroxypentadecylidene)-1-methyl-2,4-pyrrolidinedione
[499136-47-9]
$C_{20}H_{35}NO_3$ 337.501
Yellow oil. λ_{max} 247 (log ϵ 3.74); 286 (log ϵ 3.93) (MeOH).

Melophlin E
3-(1-Hydroxy-14-methylpentadecylidene)-1-methyl-2,4-pyrrolidinedione
[499136-48-0]
$C_{21}H_{37}NO_3$ 351.528
Yellow oil. λ_{max} 246 (log ϵ 4.08); 286 (log ϵ 4.2) (MeOH).

Melophlin F
3-(1-Hydroxy-13-methylpentadecylidene)-1-methyl-2,4-pyrrolidinedione
[499136-49-1]
$C_{21}H_{37}NO_3$ 351.528
Yellow oil. λ_{max} 245 (log ϵ 3.06); 285 (log ϵ 3.15) (MeOH).

Melophlin G
3-(1-Hydroxytetradecylidene)-1-methyl-2,4-pyrrolidinedione
[499136-50-4]
$C_{19}H_{33}NO_3$ 323.475
Yellow oil. λ_{max} 247 (log ϵ 4); 285 (log ϵ 4.19) (MeOH).

Melophlin H
3-(1-Hydroxy-13-methyltetradecylidene)-1-methyl-2,4-pyrrolidinedione
[499136-52-6]
$C_{20}H_{35}NO_3$ 337.501
Yellow oil. λ_{max} 247 (log ϵ 4.01); 285 (log ϵ 4.25) (MeOH).

Melophlin I
3-(1-Hydroxy-12-methyltetradecylidene)-1-methyl-2,4-pyrrolidinedione
[499136-55-9]
$C_{20}H_{35}NO_3$ 337.501
Yellow oil. $[\alpha]_D^{20}$ -2.6 (c, 0.34 in MeOH). λ_{max} 245 (log ϵ 3.27); 286 (log ϵ 3.47) (MeOH).

Melophlin J
3-(1-Hydroxytetradecylidene)-1,5-dimethyl-2,4-pyrrolidinedione
[499136-60-6]
$C_{20}H_{35}NO_3$ 337.501
Yellow oil. $[\alpha]_D^{20}$ -2.6 (c, 0.31 in MeOH). Isol. as a partial racemate, approx. 3:2 5*R*/5*S*-. λ_{max} 246 (log ϵ 3.11); 285 (log ϵ 3.25) (MeOH).

Melophlin K
3-(1-Hydroxy-12-methyltridecylidene)-1-methyl-2,4-pyrrolidinedione
[499136-61-7]
$C_{19}H_{33}NO_3$ 323.475
Yellow oil. λ_{max} 243 (log ϵ 3.04); 286 (log ϵ 3.09) (MeOH).

Melophlin L
3-(1-Hydroxytridecylidene)-1,5-dimethyl-2,4-pyrrolidinedione
[499136-75-3]
$C_{19}H_{33}NO_3$ 323.475
Yellow oil. $[\alpha]_D^{20}$ -3.8 (c, 0.16 in MeOH). Isol. as a partial racemate, approx. 1:2 5*R*/5*S*-. λ_{max} 245 (log ϵ 3); 286 (log ϵ 3.03) (MeOH).

Melophlin M
3-(1-Hydroxydodecylidene)-1,5-dimethyl-2,4-pyrrolidinedione
[499136-76-4]
$C_{18}H_{31}NO_3$ 309.448
Yellow oil. $[\alpha]_D^{20}$ -5 (c, 0.4 in MeOH). Isol. as a partial racemate, approx. 1:2 5*R*/5*S*-. λ_{max} 248 (log ϵ 3.53); 286 (log ϵ 3.69) (MeOH).

Melophlin N
3-(1-Hydroxy-11-methyldodecylidene)-1,5-dimethyl-2,4-pyrrolidinedione
[499136-77-5]
$C_{19}H_{33}NO_3$ 323.475
Yellow oil. Isol. as a partial racemate, approx. 1:2 5*R*/5*S*-. λ_{max} 248 (log ϵ 3.79); 286 (log ϵ 3.99) (MeOH).

Melophlin O
3-(1-Hydroxy-10-methyldodecylidene)-1,5-dimethyl-2,4-pyrrolidinedione
[499136-81-1]
$C_{19}H_{33}NO_3$ 323.475
Yellow oil. Isol. a partial racemate, approx. 1:2 5*R*/5*S*-. λ_{max} 248 (log ϵ 3.79); 286 (log ϵ 3.99) (MeOH).

Melophlin P
3-(1-Hydroxyhexadecylidene)-1,5-dimethyl-2,4-pyrrolidinedione
$C_{22}H_{39}NO_3$ 365.555
Yellowish oil. Racemate. λ_{max} 245 (log ϵ 3.8); 282 (log ϵ 4.1) (MeOH).

Melophlin Q
3-(1-Hydroxy-13-methyltetradecylidene)-1,5-dimethyl-2,4-pyrrolidinedione
$C_{21}H_{37}NO_3$ 351.528
Yellowish oil. Racemate. λ_{max} 246 (log ϵ 4.1); 283 (log ϵ 4.2) (MeOH).

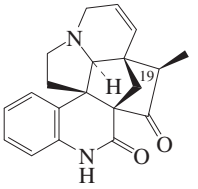
Melophlin R
3-(1-Hydroxy-12-methyltetradecylidene)-1,5-dimethyl-2,4-pyrrolidinedione
$C_{21}H_{37}NO_3$ 351.528
Yellowish oil. Racemate. λ_{max} 248 (log ϵ 4.2); 280 (log ϵ 4.2) (MeOH).

Melophlin S
3-(1-Hydroxy-5-methyltetradecylidene)-1,5-dimethyl-2,4-pyrrolidinedione
$C_{21}H_{37}NO_3$ 351.528
Yellowish oil. Racemate. λ_{max} 248 (log ϵ 3.8); 283 (log ϵ 4.5) (MeOH).

Aoki, S. *et al., Tetrahedron*, 2000, **56**, 1833-1836 (*Melophlins A,B*)
Wang, C.-Y. *et al., J. Nat. Prod.*, 2003, **66**, 51-56 (*Melophlins C-O*)
Xu, J. *et al., Chem. Pharm. Bull.*, 2006, **54**, 852-854 (*Melophlins P-S*)

Meloscandonine M-192

[28645-27-4]



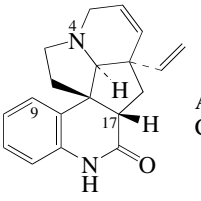
Absolute Configuration

$C_{20}H_{20}N_2O_2$ 320.39
Alkaloid from *Melodinus scandens* (Apocynaceae). Mp 318-320° (after change of cryst. form) (>300°). $[\alpha]_D^{20}$ +72 (c, 1 in $CHCl_3$).

19-Epimer: ***19-Epimeloscandonine***
[151636-21-4]
$C_{20}H_{20}N_2O_2$ 320.39
Alkaloid from aerial parts of *Melodinus hemsleyanus* (Apocynaceae). Amorph. $[\alpha]_D^{23}$ +41.6 (c, 0.1 in $CHCl_3$).

Plat, M. *et al., Tet. Lett.*, 1970, 3395 (*uv, ir, pmr, struct*)
Mehri, H. *et al., Ann. Pharm. Fr.*, 1971, **29**, 291 (*isol, uv, ir, ms*)
Daudon, M. *et al., J.O.C.*, 1975, **40**, 2838 (*cmr*)
Daudon, M. *et al., Acta Cryst. B*, 1978, **34**, 232 (*cryst struct*)
Guo, L.-W. *et al., Phytochemistry*, 1993, **34**, 563 (*19-Epimeloscandonine*)

Meloscine M-193



Absolute Configuration

$C_{19}H_{20}N_2O$ 292.38
Numbering systems differ. Alkaloid from *Melodinus scandens* (Apocynaceae). Mp 178-180°.

Methiodide: Mp 240-245° dec.

17-Epimer: ***3-Epimeloscine****. 17-Epimeloscine*
[24314-58-7]
$C_{19}H_{20}N_2O$ 292.38
Alkaloid from *Melodinus scandens* (Apocynaceae). Noncryst. $[\alpha]_D^{25}$ +238 (c, 0.2 in EtOH).

17-Epimer, picrate: Mp 210-215°.

17-Epimer, N^4*-oxide:* ***3-Epimeloscine* N-oxide**
[34210-64-5]
$C_{19}H_{20}N_2O_2$ 308.379
Alkaloid from *Melodinus scandens* (Apocynaceae). Mp 203-207°. $[\alpha]_D^{22}$ +310.

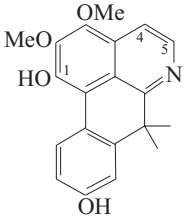
17-Epimer, 9-hydroxy: ***9-Hydroxyepimeloscine***
[169700-70-3]

$C_{19}H_{20}N_2O_2$ 308.379
Alkaloid from leaves of *Melodinus scandens* (Apocynaceae). $[\alpha]_D$ +206 (c,1 in $CHCl_3$).

Bernauer, K. *et al., Helv. Chim. Acta*, 1969, **52**, 1886 (*uv, ir, pmr, ms, ord*)
Oberhänsli, W.E. *et al., Helv. Chim. Acta*, 1969, **52**, 1905 (*cryst struct*)
Mehri, H. *et al., Ann. Pharm. Fr.*, 1971, **29**, 291 (*oxide*)
Daudon, M. *et al., J.O.C.*, 1975, **40**, 2838 (*cmr*)
Overman, L.E. *et al., J.A.C.S.*, 1991, **113**, 2598 (*synth*)
Mehri, H *et al., Phytochemistry*, 1995, **40**, 1005 (*9-Hydroxyepimeloscine*)

Melosmine M-194

*2,3-Dimethoxy-7,7-dimethyl-7*H*-dibenzo[*de,g*]quinoline-1,9-diol, 9CI*
[81525-68-0]



$C_{20}H_{19}NO_4$ 337.374
Alkaloid from the stem bark of *Guatteria melosma* and *Guatteria ouregou* (Annonaceae). Light-yellow cuboidal cryst. (EtOH). Mp 104°.

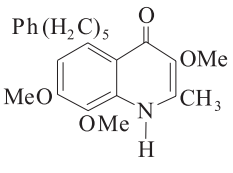
O^1*-Me:* ***Melosmidine***
[81525-72-6]
$C_{21}H_{21}NO_4$ 351.401
Alkaloid from the stem bark of *Guatteria melosma* (Annonaceae). Yellow amorph. solid. Mp 170-171°.

4,5-Dihydro: ***Dihydromelosmine***
[84391-88-8]
$C_{20}H_{21}NO_4$ 339.39
Alkaloid from the stem bark of *Guatteria ouregou* (Annonaceae). Amorph.

Leboeuf, M. *et al., C. R. Hebd. Seances Acad. Sci., Ser.* 2, 1982, **295**, 191 (*Dihydromelosmine*)
Zabel, V. *et al., J. Nat. Prod.*, 1982, **45**, 94 (*Melosmine,Melosmidine, isol, uv, ir, pmr, ms, struct*)
Hocquemiller, R. *et al., Tet. Lett.*, 1982, **23**, 4247 (*cmr*)
Leboeuf, M. *et al., Tetrahedron*, 1982, **38**, 2889 (*pmr, cmr*)
Leboeuf, M. *et al., Planta Med.*, 1983, **48**, 234 (*isol, uv, ir, pmr, struct, Dihydromelosmine*)

Melovinone M-195

[69905-17-5]

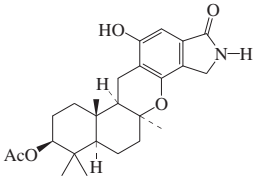


$C_{24}H_{29}NO_4$ 395.497
An open chain analogue of Melochinone, M-185. Alkaloid from the roots of *Melochia tomentosa* (Sterculiaceae). Cryst. (C_6H_6/petrol). Mp 134-136°.

Kapadia, G.J. *et al., Phytochemistry*, 1978, **17**, 1445 (*isol, ir, uv, ms, pmr, struct*)

Memnobotrin A M-196

[256235-08-2]



Absolute Configuration

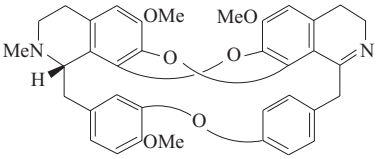
$C_{25}H_{33}NO_5$ 427.539
Prod. by *Memnoniella echinata*. Cytotoxic agent. Pale yellow glass. $[\alpha]_D^{25}$ +9.6 (c, 1.14 in MeOH). Dec. at 240-250°. λ_{max} 217 (ϵ 26200); 257 (ϵ 5600); 300 (ϵ 2300) (MeOH).

N-*(2-Hydroxyethyl):* ***Memnobotrin B***
[256235-09-3]
$C_{27}H_{37}NO_6$ 471.592
Prod. by *Memnoniella echinata*. Cytotoxic agent. Cream powder. Mp 186-192°. $[\alpha]_D^{25}$ +11.7 (c, 1.25 in MeOH). λ_{max} 218 (ϵ 37200); 259 (ϵ 10600); 302 (ϵ 3300) (MeOH).

Hinkley, S.F. *et al., J. Antibiot.*, 1999, **52**, 988-997 (*isol, uv, ir, pmr, cmr*)

Menisarine M-197

[6415-97-0]



$C_{36}H_{34}N_2O_6$ 590.674
Alkaloid from *Cocculus leaebe* and *Cocculus sarmentosus* (Menispermaceae). Mp 203°. $[\alpha]_D$ +149 ($CHCl_3$).

O-*De-Me:* ***Normenisarine***. O-*Demethylmenisarine*
$C_{35}H_{32}N_2O_6$ 576.648
Alkaloid from *Cocculus trilobus* (Menispermaceae). Mp 223°. Location of OH not determined.

Kondo, H. *et al., Yakugaku Zasshi*, 1930, **50**, 633-645; *Ann. Chim. Farm.*, 1935, **55**, 911; *CA*, **24**, 5302; **30**, 726 (*isol, Menisarine, Normenisarine*)
Sinha, A. *et al., J. Proc. Inst. Chem. (India)*, 1960, **32**, 250-252; *CA*, **55**, 18886b (*occur*)
Tomita, M. *et al., Tet. Lett.*, 1962, 635-636 (*struct*)
Tomita, M. *et al., Yakugaku Zasshi*, 1963, **83**, 190; *CA*, **59**, 3971h (*occur*)

Menismine M-198

[1359-64-4]

$C_{21}H_{28}NO_4^{\oplus}$ 358.456
Struct. unknown. Quaternary alkaloid from the root bark of *Cissampelos pareira* (Menispermaceae).

Chloride:
Amorph.

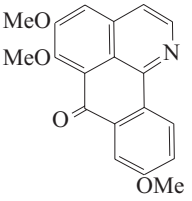
Iodide:
Cryst. (MeOH/EtOAc). Mp 140-142°. $[\alpha]_D^{20}$ +24 (c, 0.5 in MeOH).

Picrate:
Cryst. + ¾H_2O. Mp 116-117°.

Srivastava, R.M. *et al., Chem. Ber.*, 1964, **97**, 2732-2741 (*isol, uv, ir*)

Menisporphine M-199

*5,6,9-Trimethoxy-7*H*-dibenzo[*de,h*]quinolin-7-one, 9CI*
[83287-02-9]



$C_{19}H_{15}NO_4$ 321.332
Alkaloid from *Menispermum dauricum* (Menispermaceae). Yellow needles (CH_2Cl_2/Me_2CO). Mp 199.5-200.5°. λ_{max} 254 (log ϵ 4.72); 288 (sh) (log ϵ 4.13); 319 (log ϵ 3.97); 368 (log ϵ 3.91); 420 (log ϵ 3.97) (EtOH).

▶ HQ1787600

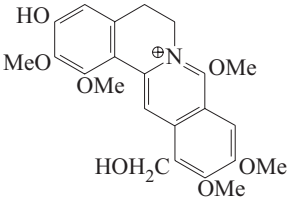
O^9*-De-Me:* ***Daurioxoisoporphine D***
[356047-67-1]
$C_{18}H_{13}NO_4$ 307.305
Alkaloid from the rhizomes of *Menispermum dauricum*. Amorph. yellow powder. λ_{max} 210 (log ϵ 4.32); 250 (log ϵ 3.42); 310 (log ϵ 2.43); 360 (log ϵ 2.42); 406 (log ϵ 3.34); 420 (log ϵ 4.33); 458 (log ϵ 3.43) (MeOH).

2,3-Dihydro: ***2,3-Dihydromenisporphine***
[100009-83-4]
$C_{19}H_{17}NO_4$ 323.348
Alkaloid from the rhizomes of *Menispermum dauricum* (Menispermaceae). Yellow needles (Me_2CO). Mp 177-180°. λ_{max} 225 (log ϵ 4.37); 255 (sh) (log ϵ 4.31); 274 (log ϵ 4.42); 372 (log ϵ 3.76) (EtOH).

Kunitomo, J. *et al., Chem. Pharm. Bull.*, 1982, **30**, 2659-2660 (*uv, ir, pmr, ms, struct, synth*)
Kunitomo, J. *et al., Tetrahedron*, 1983, **39**, 3261-3265 (*uv, ir, pmr, ms, struct, synth*)
Kunimoto, J. *et al., Chem. Pharm. Bull.*, 1985, **33**, 2778-2782 (*2,3-Dihydromenisporphine*)
Yu, B.-W. *et al., J. Nat. Prod.*, 2001, **64**, 968-970 (*Daurioxoisoporphine D*)

Mequinine M-200

[166990-19-8]

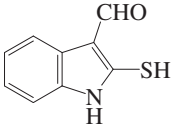


$C_{23}H_{26}NO_7^{\oplus}$ 428.461
Alkaloid from *Meconopsis quintuplinervia* (Papaveraceae).

Wang, M. *et al., Tianran Chanwu Yanjiu Yu Kaifa*, 1995, **7**, 32; *CA*, **123**, 138808j

2-Mercapto-1*H*-indole-3-carboxaldehyde, 9CI M-201

3-Formyl-2-mercaptoindole
[183946-30-7]



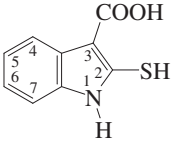
C_9H_7NOS 177.226
Solid.

S-*Me: 2-(Methylthio)-1*H*-indole-3-carboxaldehyde. 3-Formyl-2-(methylthio)indole.* ***Brassicanal A***
[113866-44-7]
$C_{10}H_9NOS$ 191.253
Alkaloid from Chinese cabbage (*Brassica campestris* ssp. *pekinensis*) inoculated with *Pseudomonas cichorii*. Phytoalexin. Mp 210-213°.

6-Methoxy, S-*Me: 6-Methoxy-2-(methylthio)-1*H*-indole-3-carboxaldehyde.* ***Capparine B***
$C_{11}H_{11}NO_2S$ 221.279
Alkaloid from *Capparis himalayensis*. Amorph. powder ($CHCl_3$/MeOH). Mp 202-204° dec. λ_{max} 192 (log ε 3.29); 223 (log ε 3.17); 247 (log ε 3.17); 284 (log ε 2.97); 333 (log ε 2.83) (MeOH).

Monde, K. *et al., Chem. Lett.*, 1990, 209 (*isol, uv, pmr, struct*)
Pedras, M.S.C. *et al., Chem. Comm.*, 1998, 1565-1566 (*synth*)
Pedras, M.S.C. *et al., J. Agric. Food Chem.*, 1999, **47**, 1196-1202 (*synth, pmr, cmr, ms*)
Li, Y.-Q. *et al., Chem. Pharm. Bull.*, 2008, **56**, 189-191 (*Capparine B*)

2-Mercapto-1*H*-indole-3-carboxylic acid, 9CI M-202



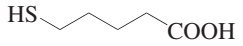
$C_9H_7NO_2S$ 193.226

S-*Me, Me ester:* ***Brassicanate A***
[330195-74-9]
$C_{11}H_{11}NO_2S$ 221.279
Alkaloid from *Brassica napus* ssp. *rapifera* (rutabaga). Phytoalexin. Needles (CH_2Cl_2/hexane). Mp 109-110° (105-107°). λ_{max} 206 (log ε 4.4); 238 (log ε 4.4); 268 (log ε 3.9); 301 (log ε 4) (no solvent reported).

Somei, M. *et al., Heterocycles*, 2001, **54**, 425-432 (*S-Me Me ester, synth*)
Pedras, M.S.C. *et al., J.O.C.*, 2004, **69**, 4471-4476 (*S-Me Me ester, isol*)

5-Mercaptopentanoic acid, 9CI M-203

5-Mercaptovaleric acid, 8CI
[30247-98-4]



$C_5H_{10}O_2S$ 134.199
Liq. or cryst. d_4^{20} 1.12. Mp 23.5-25°. $Bp_{0.3}$ 96°. n_D^{25} 1.4873.

Et ester: [70124-55-9]
$C_7H_{14}O_2S$ 162.252
Oil. d_4^{20} 1.16. Bp_4 82°. n_D^{25} 1.5305. n_D^{20} 1.4618.

S-*Me: 5-(Methylthio)pentanoic acid, 9CI*
[69082-95-7]
$C_6H_{12}O_2S$ 148.226
Liq. $Bp_{0.3}$ 107°. n_D^{27} 1.4800.

S-*Me,* S-*oxide: 5-(Methylsulfinyl)pentanoic acid, 9CI*
[69082-96-8]
$C_6H_{12}O_3S$ 164.225
Cryst. Mp 55-57°.

S-*Me,* S,S-*dioxide: 5-(Methylsulfonyl)-pentanoic acid, 9CI*
[69082-97-9]
$C_6H_{12}O_4S$ 180.224
Cryst. Mp 113-116°.

S-*Me, Me ester:* [69082-98-0]
$C_7H_{14}O_2S$ 162.252
Liq. Bp_7 92-95°.

S-*Me, Et ester:*
$C_8H_{16}O_2S$ 176.279
Liq. $Bp_{10.5}$ 65°. n_D^{25} 1.4594.

S-*Me, Et ester,* S,S-*dioxide:*
$C_8H_{16}O_4S$ 208.278
Liq. $Bp_{0.4}$ 148°. n_D^{25} 1.4608.

S-*Me, nitrile: 5-(Methylthio)pentanenitrile. 1-Cyano-4-(methylthio)butane. 4-(Methylthio)butyl cyanide*
[59121-25-4]
$C_6H_{11}NS$ 129.226
Hydrol. product from *Brassica* spp.

S-*Triphenylmethyl:*
$C_{24}H_{24}O_2S$ 376.518
Solid. Mp 124-125°.

Truce, W.E. *et al., J.A.C.S.*, 1955, **77**, 5063-5067 (*S-Me, S-Me Et ester*)
Petrova, R.G. *et al., Izv. Akad. Nauk SSSR, Ser. Khim.*, 1958, 290-295; *CA*, **52**, 12750d (*synth, Et ester*)
Buttery, R.G. *et al., J. Agric. Food Chem.*, 1976, **24**, 829-832 (*S-Me nitrile, isol*)
Buckingham, D.A. *et al., Chem. Comm.*, 1978, 705-707 (*S-Me oxides*)
Dawson, G.W. *et al., J. Biol. Chem.*, 1993, **268**, 27154-27159 (*S-Me nitrile, synth*)
Kuurahara, M. *et al., Chem. Pharm. Bull.*, 1995, **43**, 1505-1510 (*synth, ir, pmr, Et ester*)
Chiang, W.C.K. *et al., J. Agric. Food Chem.*, 1998, **46**, 1018 (*S-Me nitrile, isol*)
Majer, P. *et al., J. Med. Chem.*, 2003, **46**, 1989-1996 (*S-trityl, synth, pmr, cmr*)
Jessing, M. *et al., J.O.C.*, 2006, **71**, 6734-6741 (*synth*)

5-Mercapto-4-pentenoic acid M-204

$HSCH{=}CHCH_2CH_2COOH$
$C_5H_8O_2S$ 132.183

(E)-form

Nitrile, S-*[4-hydroxy-3-methoxy-*E*-cinnamoyl-(→6)-β-D-glucopyranosyl]:*
[923593-04-8]
$C_{21}H_{25}NO_8S$ 451.496
Constit. of the seeds of *Raphanus sativus* (radish). Yellow oil. λ_{max} 320 (log ε 3.8) (MeOH).

Nitrile, S-*[4-hydroxy-3,5-dimethoxy-*E*-cinnamoyl-(→6)-β-D-glucopyranosyl]:*
[923593-05-9]
$C_{22}H_{27}NO_9S$ 481.523
Constit. of the seeds of *Raphanus sativus* (radish). Yellow oil. λ_{max} 279 (sh) ; 330 (log ε 3.81) (MeOH).

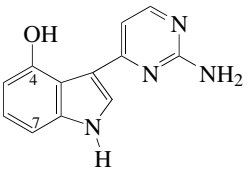
(Z)-form

Nitrile, S-*[4-hydroxy-3,5-dimethoxy-*E*-cinnamoyl-(→6)-β-D-glucopyranosyl]:*
[923593-06-0]
$C_{22}H_{27}NO_9S$ 481.523
Constit. of the seeds of *Raphanus sativus* (radish). Yellow oil. λ_{max} 279 (sh) ; 330 (log ε 3.81) (MeOH).

Duan, L.-X. *et al., Helv. Chim. Acta*, 2006, **89**, 2953-2957 (*isol, pmr, cmr*)

Meridianin A M-205

[213472-98-1]



$C_{12}H_{10}N_4O$ 226.237
Alkaloid from the tunicate *Aplidium meridianum*. Protein kinase inhibitor. Yellow needles (MeOH aq.). Mp 164-168°. λ_{max} 248 (log ε 3.68); 356 (log ε 3.58) ($CHCl_3$). λ_{max} 248 (ε 4786); 356 (ε 3800) (MeOH) (Berdy).

6-Bromo: ***Meridianin B***
[213472-99-2]
$C_{12}H_9BrN_4O$ 305.133
Alkaloid from *Aplidium meridianum*. Cytotoxic agent. Yellow powder (EtOAc). Mp 190° dec. λ_{max} 246 (log ε 3.87); 354 (log ε 3.71) ($CHCl_3$). λ_{max} 246 (ε 7413); 354 (ε 5128) (MeOH) (Berdy).

7-Bromo: ***Meridianin E***
[213473-03-1]
$C_{12}H_9BrN_4O$ 305.133
Alkaloid from *Aplidium meridianum*. Cytotoxic agent. Yellow cryst. (MeOH aq.). Mp 172-175°. λ_{max} 224 (log ε 4.2); 358 (log ε 3.85) (MeOH).

Deoxy: ***Meridianin G***
[289628-76-8]
$C_{12}H_{10}N_4$ 210.238
Alkaloid from *Aplidium meridianum*. Yellow needles (MeOH aq.). Mp 215° dec. λ_{max} 220 (ε 8530); 331 (ε 3530) (MeOH).

Deoxy, 5-bromo: ***Meridianin C***
[213473-00-8]
$C_{12}H_9BrN_4$ 289.134
Alkaloid from *Aplidium meridianum*.

Cytotoxic agent. Yellow powder (MeOH aq.). Mp 103-106°. λ_{max} 244 (log ϵ 4.06); 324 (log ϵ 4.1) ($CHCl_3$). λ_{max} 246 (ϵ 11480); 324 (ϵ 12590) (MeOH) (Berdy).

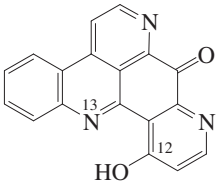
Deoxy, 6-bromo: ***Meridianin D***
[213473-01-9]
$C_{12}H_9BrN_4$ 289.134
Alkaloid from *Aplidium meridianum*. Cytotoxic agent. Yellow powder (EtOAc/MeOH). Mp 218-221°. λ_{max} 240 (log ϵ 4.17); 324 (log ϵ 4.14) ($CHCl_3$). λ_{max} 240 (ϵ 14790); 324 (ϵ 13800) (MeOH) (Berdy).

Deoxy, 5,6-dibromo: ***Meridianin F***
[690267-59-5]
$C_{12}H_8Br_2N_4$ 368.03
Alkaloid from *Aplidium meridianum*. Yellow needles (MeOH aq.). Mp 175°. λ_{max} 201 (ϵ 30440); 215 (ϵ 28825); 274 (ϵ 7220); 292 (ϵ 6180); 329 (ϵ 8260) (MeOH).

Franco, L.H. *et al., J. Nat. Prod.*, 1998, **61**, 1130-1132 (*isol, uv, ir, pmr, cmr*)
Jiang, B. *et al., Heterocycles*, 2000, **53**, 1489-1498 (*Meridianin D, synth*)
Fresneda, P.M. *et al., Tetrahedron*, 2001, **57**, 2355-2363 (*synth*)
Gompel, M. *et al., Bioorg. Med. Chem. Lett.*, 2004, **14**, 1703-1707 (*activity*)
Karpov, A.S. *et al., Angew. Chem., Int. Ed.*, 2005, **44**, 6951-6956 (*synth*)
Simon, G. *et al., J. Het. Chem.*, 2007, **44**, 793-801 (*Meridianin C, synth*)
Seldes, A.M. *et al., Nat. Prod. Res.*, 2007, **21**, 555-563 (*Meridianins F,G*)

Meridine M-206

*12(13*H*)-Meridinone*
[129722-90-3]



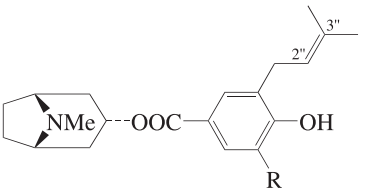
$C_{18}H_9N_3O_2$ 299.288
Tautomeric with the 12-oxo-13*H*-form, both tautomers isolable. Alkaloid from the ascidian *Amphicarpa meridiana* and the marine sponge *Corticium* sp. Cytotoxic. Exhibits antifungal activity. Yellow amorph. solid. Mp 250°.

Oxo-*form*
Isomeridine
Separately isolable, tautom. to Meridine after 1-2 d. in $CDCl_3$ soln.

[129722-91-4]

Schmitz, F.J. *et al., Pure Appl. Chem.*, 1990, **62**, 1393-1396 (*Isomeridine*)
Schmitz, F.J. *et al., J.O.C.*, 1991, **56**, 804-808 (*isol, pmr, cmr, cryst struct*)
McCarthy, P.J. *et al., J. Nat. Prod.*, 1992, **55**, 1664-1668 (*isol, props*)
Kitahara, Y. *et al., Chem. Pharm. Bull.*, 1994, **42**, 1363-1364 (*synth*)
Bontemps, N. *et al., Tetrahedron*, 1997, **53**, 1743-1750 (*synth*)
Kitahara, Y. *et al., Tetrahedron*, 1998, **54**, 8421-8432 (*synth, pmr, cmr*)

Merresectine C M-207



R = $-CH_2CH{=}C(CH_3)_2$

$C_{25}H_{35}NO_3$ 397.556
Alkaloid from the roots of *Merremia cissoides*, *Merremia dissecta* and *Merremia quinquefolia*. Oil.

O-*β*-D-*Glucopyranoside:* ***Merresectine B***
[219829-75-1]
$C_{31}H_{45}NO_8$ 559.698
Alkaloid from *Merremia cissoides*, *Merremia dissecta* and *Merremia quinquefolia*. Oil. $[\alpha]_D^{20}$ -10.2 (c, 0.1 in MeOH).

3-Epimer: ***3β-Merresectine C***
$C_{25}H_{35}NO_3$ 397.556
Alkaloid from *Merremia* spp.

Jenett-Siems, K. *et al., Phytochemistry*, 2005, **66**, 1448-1464 (*isol, pmr, cmr, ms*)

Merresectine D M-208

As Merresectine C, M-207 with R = -OMe

$C_{21}H_{29}NO_4$ 359.464
Alkaloid from *Merremia guerichii*, *Merremia kentrocaulos* and *Merremia quinata*. Merresectine G and Merresectine H also isol. but structs. not fully elucidated.

O-*β*-D-*Glucopyranoside: Merresectine D glucoside*
$C_{27}H_{39}NO_9$ 521.606
Alkaloid from *Merremia guerichii*. Oil.

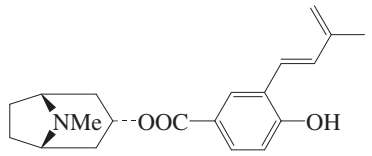
Demethoxy: ***Merresectine E***
$C_{20}H_{27}NO_3$ 329.438
Alkaloid from *Merremia dissecta* and *Merremia guerichii*.

Demethoxy, O-*β*-D-*glucopyranoside: Merresectine E glucoside*
$C_{26}H_{37}NO_8$ 491.58
Alkaloid from *Merremia* spp.

3-Epimer: ***3β-Merresectine D***
$C_{21}H_{29}NO_4$ 359.464
Alkaloid from *Merremia guerichii* and *Merremia kentrocaulos.*

Jenett-Siems, K. *et al., Phytochemistry*, 2005, **66**, 1448-1464 (*isol, pmr, cmr*)

Merresectine F M-209

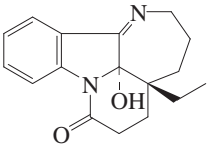


$C_{20}H_{25}NO_3$ 327.422
Alkaloid from *Merremia* spp.

3-Epimer: ***3β-Merresectine F***
$C_{20}H_{25}NO_3$ 327.422
Alkaloid from *Merremia* spp.

Jenett-Siems, K. *et al., Phytochemistry*, 2005, **66**, 1448-1464 (*isol, pmr, cmr*)

Mersicarpine M-210

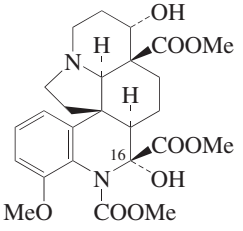


$C_{17}H_{20}N_2O_2$ 284.357
Poss. derived from Eburenine, E-3 by rearrangement and elimination of *C*-5 and *C*-6. Alkaloid from *Kopsia arborea* and *Kopsia fruticosa*. Oil. $[\alpha]_D$ -18 (c, 0.28 in $CHCl_3$). λ_{max} 204 ; 239 ; 246 ; 266 ; 275 ; 329 (EtOH).

Kam, T.-S. *et al., Tet. Lett.*, 2004, **45**, 5995-5998 (*isol, pmr, cmr*)
Magolan, J. *et al., Org. Lett.*, 2008, **10**, 1437-1440 (*synth*)

Mersidasine C M-211

[1011489-43-2]



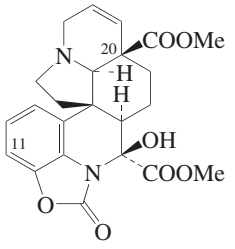
$C_{25}H_{32}N_2O_9$ 504.536
Alkaloid from the leaves of *Kopsia singapurensis*. Pale yellow oil. $[\alpha]_D$ +23 (c, 0.22 in $CHCl_3$). λ_{max} 209 (log ϵ 4.31); 234 (log ϵ 3.73); 284 (log ϵ 3.17) (EtOH).

16-Epimer: ***Mersidasine D***
[1011489-44-3]
$C_{25}H_{32}N_2O_9$ 504.536
Alkaloid from the leaves of *Kopsia singapurensis*. Oil. $[\alpha]_D$ -205 (c, 0.12 in $CHCl_3$). λ_{max} 218 (log ϵ 4.23); 244 (log ϵ 3.73); 284 (log ϵ 3.01) (EtOH).

Subramaniam, G. *et al., Tetrahedron*, 2008, **64**, 1397-1408 (*isol, pmr, cmr, ms*)

Mersifoline A M-212

[1011489-38-5]



$C_{23}H_{24}N_2O_7$ 440.452
Alkaloid from the leaves of *Kopsia*

singapurensis. Oil. $[\alpha]_D$ -19 (c, 0.26 in $CHCl_3$). λ_{max} 206 (log ϵ 4.02); 230 (log ϵ 3.36); 271 (log ϵ 3) (EtOH).

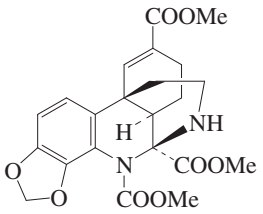
11-Methoxy: ***Mersifoline B***
[1011489-39-6]
$C_{24}H_{26}N_2O_8$ 470.478
Alkaloid from the leaves of *Kopsia singapurensis.* Oil. $[\alpha]_D$ -14 (c, 0.18 in $CHCl_3$). λ_{max} 211 (log ϵ 4.4); 229 (log ϵ 4.05); 270 (log ϵ 3.52) (EtOH).

20-Epimer: ***Mersifoline C***
[1011489-40-9]
$C_{23}H_{24}N_2O_7$ 440.452
Alkaloid from the leaves of *Kopsia singapurensis.* Oil. $[\alpha]_D$ +18 (c, 0.28 in $CHCl_3$). λ_{max} 211 (log ϵ 3.84); 230 (log ϵ 3.72); 273 (log ϵ 3.3) (EtOH).

Subramaniam, G. *et al., Tetrahedron*, 2008, **64**, 1397-1408 (*isol, pmr, cmr, ms*)

Mersilongine M-213

[705948-72-7]

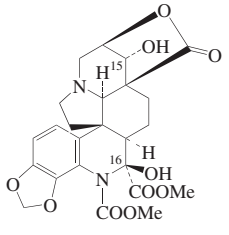


$C_{22}H_{24}N_2O_8$ 444.44
Probable abs. config. based on speculative biosynthesis. Alkaloid from the leaves of a Malayan *Kopsia* sp. Oil. $[\alpha]_D$ +106 (c, 0.17 in $CHCl_3$). λ_{max} 220 ; 250 (sh) ; 291 (no solvent reported).

Kam, T.-S. *et al., Tet. Lett.*, 2004, **45**, 3521-3524 (*isol, pmr, cmr*)

Mersiloscine M-214

[367943-78-0]



Absolute Configuration

$C_{24}H_{26}N_2O_{10}$ 502.477
Rearranged indole alkaloid. Alkaloid from the leaves of *Kopsia singapurensis.* Amorph. solid. Mp 185-188°. $[\alpha]_D$ -50 (c, 0.04 in $CHCl_3$). λ_{max} 215 (log ϵ 4.53); 242 (log ϵ 4.09); 291 (log ϵ 3.55) (EtOH).

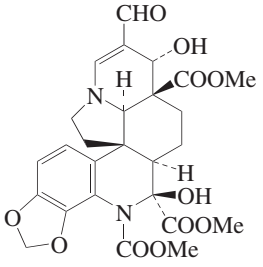
15-Epimer: ***Mersiloscine B***
$C_{24}H_{26}N_2O_{10}$ 502.477
Alkaloid from the leaves of *Kopsia singapurensis.* Amorph. solid. Mp 202-204°. $[\alpha]_D$ +24 (c, 0.2 in $CHCl_3$). λ_{max} 212 (log ϵ 3.93); 244 (log ϵ 3.44); 287 (log ϵ 2.98) (EtOH).

16-Epimer: ***Mersiloscine A***
$C_{24}H_{26}N_2O_{10}$ 502.477
Alkaloid from the leaves of *Kopsia singapurensis.* Oil. $[\alpha]_D$ -38 (c, 0.66 in $CHCl_3$). λ_{max} 213 (log ϵ 4.53); 235 (log ϵ 4.17); 289 (log ϵ 3.66) (EtOH).

Subramaniam, G. *et al., Tetrahedron*, 2008, **64**, 1397-1408 (*isol, pmr, cmr, ms*)

Mersinaline M-215

[953394-57-5]

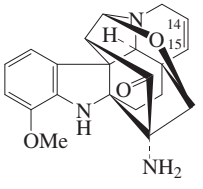


$C_{26}H_{28}N_2O_{11}$ 544.514
Alkaloid from *Kopsia singapurensis.* Pale yellow oil. $[\alpha]_D$ +98 (c, 0.15 in $CHCl_3$).

Subramaniam, G. *et al., Tet. Lett.*, 2007, **48**, 6677-6680 (*isol, pmr, cmr*)

Mersingine A M-216

[162616-54-8]



Absolute Configuration

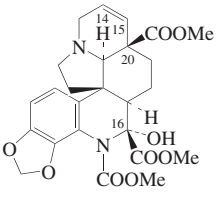
$C_{21}H_{21}N_3O_3$ 363.415
Novel cage struct.; see also Kopsinitarine A, K-79. Alkaloid from leaves of *Kopsia teoi* (Apocynaceae). $[\alpha]_D$ +88 (c, 0.058 in $CHCl_3$). Artifact. λ_{max} 213 (log ϵ 4.54); 247 (log ϵ 3.85); 290 (log ϵ 3.28) (EtOH).

14,15-Dihydro, 15α-hydroxy: ***Mersingine B***
[162665-99-8]
$C_{21}H_{23}N_3O_4$ 381.43
From a Malaysian *Kopsia teoi* (Apocynaceae). $[\alpha]_D$ -82 (c, 0.022 in $CHCl_3$). Artifact. λ_{max} 213 (log ϵ 4.72); 246 (log ϵ 4.05); 290 (log ϵ 3.52) (EtOH).

Kam, T.S. *et al., J. Nat. Prod.*, 1996, **59**, 1109-1112 (*isol, uv, pmr, cmr, ms, struct*)

Mersinine A M-217

[367943-76-8]



Absolute Configuration

$C_{25}H_{28}N_2O_9$ 500.504
Rearranged indole alkaloid. Alkaloid from the leaves of *Kopsia singapurensis.* Cryst. (petrol). Mp 204-205°. $[\alpha]_D$ -58 (c, 0.27 in $CHCl_3$). λ_{max} 213 (log ϵ 4.5); 239 (log ϵ 4.1); 289 (log ϵ 3.82) (EtOH).

14,15-Dihydro, 15α-hydroxy: ***Mersidasine A***
$C_{25}H_{30}N_2O_{10}$ 518.519
Alkaloid from the leaves of *Kopsia singapurensis.* Pale yellow oil. $[\alpha]_D$ -6 (c, 0.41 in $CHCl_3$). λ_{max} 211 (log ϵ 4.35); 236 (log ϵ 3.96); 286 (log ϵ 3.46) (EtOH).

16-Epimer: ***Mersinine B***
[367943-77-9]
$C_{25}H_{28}N_2O_9$ 500.504
Alkaloid from the leaves of *Kopsia singapurensis.* Oil. $[\alpha]_D$ -77 (c, 0.48 in $CHCl_3$). λ_{max} 214 (log ϵ 4.55); 241 (log ϵ 4.17); 287 (log ϵ 3.79) (EtOH).

16-Epimer, 14,15-dihydro,15α-hydroxy: ***Mersidasine B***
$C_{25}H_{30}N_2O_{10}$ 518.519
Alkaloid from the leaves of *Kopsia singapurensis.* Amorph. solid. Mp 215-217°. $[\alpha]_D$ -7 (c, 0.47 in $CHCl_3$). λ_{max} 214 (log ϵ 4); 240 (log ϵ 3.6); 287 (log ϵ 3.04); 293 (log ϵ 3.07) (EtOH).

16-Epimer, 14,15-dihydro, 14α,15β-dihydroxy: ***Mersidasine E***
$C_{25}H_{30}N_2O_{11}$ 534.519
Alkaloid from the leaves of *Kopsia singapurensis.* Pale yellow oil. $[\alpha]_D$ -7 (c, 0.37 in $CHCl_3$). λ_{max} 213 (log ϵ 4.63); 239 (log ϵ 4.25); 287 (log ϵ 3.76) (EtOH).

20-Epimer, 14,15-dihydro, 15α-hydroxy: ***Mersidasine F***
$C_{25}H_{30}N_2O_{10}$ 518.519
Alkaloid from the leaves of *Kopsia singapurensis.* Oil. $[\alpha]_D$ +33 (c, 0.15 in $CHCl_3$). λ_{max} 213 (log ϵ 4.18); 237 (log ϵ 3.75); 290 (log ϵ 3.25) (EtOH).

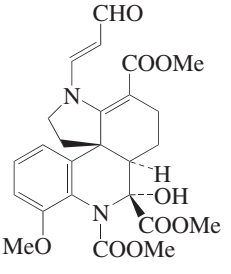
16,20-Diepimer: ***Mersinine C***
$C_{25}H_{28}N_2O_9$ 500.504
Alkaloid from the leaves of *Kopsia singapurensis.* Cryst. (petrol). Mp 108-110°. $[\alpha]_D$ +14 (c, 0.72 in $CHCl_3$). λ_{max} 217 (log ϵ 4.46); 244 (log ϵ 3.99); 288 (log ϵ 3.46) (EtOH).

16,20-Diepimer, 14,15-dihydro, 15α-hydroxy: ***Mersidasine G***
$C_{25}H_{30}N_2O_{10}$ 518.519
Alkaloid from the leaves of *Kopsia singapurensis.* Oil. $[\alpha]_D$ -30 (c, 0.33 in $CHCl_3$). λ_{max} 217 (log ϵ 4.33); 240 (log ϵ 3.94); 288 (log ϵ 3.39) (EtOH).

Subramaniam, G. *et al., Tetrahedron*, 2008, **64**, 1397-1408 (*isol, pmr, cmr, ms*)

Mersirachine M-218

[953394-56-4]



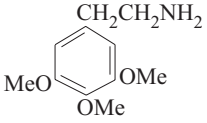
$C_{25}H_{28}N_2O_9$ 500.504

Alkaloid from *Kopsia singapurensis*. Oil. $[\alpha]_D$ -50 (c, 0.05 in $CHCl_3$).

Subramaniam, G. *et al., Tet. Lett.*, 2007, **48**, 6677-6680 (*isol, pmr, cmr*)

Mescaline M-219

3,4,5-Trimethoxybenzeneethanamine, 9CI. 3,4,5-Trimethoxyphenethylamine. Mezcaline. Hallucinex. TMPEA
[54-04-6]



$C_{11}H_{17}NO_3$ 211.26
Alkaloid from mescal (*Lophophora williamsii*), *Trichocereus* spp., *Gymnocalycium gibbosum, Opuntia cyclindrica* and other spp. in the Cactaceae. Hallucinogen; a psychotomimetic agent. Mp 35-36°. Bp_{12} 180°. Log P 0.18 (calc).

▶ Adverse systemic effects by ingestion etc. esp. on CNS. LD_{50} (mus, orl) 880 mg/kg, exp. reprod. and teratogenic effects. SI2625000

Hydrochloride: [832-92-8]
Mp 184°.

▶ LD_{50} (mus, orl) 912 mg/kg. SI2800000

N-*Formyl:* **N-*Formylmescaline***
$C_{12}H_{17}NO_4$ 239.271
Alkaloid from peyote cactus (*Lophophora williamsii*) (Cactaceae). Mp 68-69°.

N-*Ac:* **N-*Acetylmescaline***. N-*[2-(3,4,5-Trimethoxyphenyl)ethyl]acetamide, 9CI*
[4593-89-9]
$C_{13}H_{19}NO_4$ 253.297
Alkaloid from mescal (*Lophophora williamsii*). Metab. of Mescaline (Cactaceae). Mp 93-94°.

N-*Benzoyl:* **N-*Benzoylmescaline***
$C_{18}H_{21}NO_4$ 315.368
Alkaloid from *Pothomorphe umbellata*. Antibacterial agent. Mp 123-125°. λ_{max} 213 (ϵ 23000); 225 (sh) (ϵ 20000) (MeOH).

N-*(2,5-Dimethoxybenzoyl):* N-*(2,5-Dimethoxybenzoyl)mescaline.* ***Taiwanamide C***
[1000991-98-9]
$C_{20}H_{25}NO_6$ 375.421
Alkaloid from the stems of *Piper taiwanense*. Needles (hexane). Mp 95-97°. λ_{max} 239 (log ϵ 4.86); 314 (log ϵ 4.42) (MeOH).

N-*Me:* **N-*Methylmescaline***
[4838-96-4]
$C_{12}H_{19}NO_3$ 225.287
Alkaloid from *Alhagi pseudalhagi* and *Pelecyphora aselliformis* (Fabaceae, Cactaceae). Cryst. (MeOH/Et_2O) (as hydrochloride). Mp 201-202° (hydrochloride).

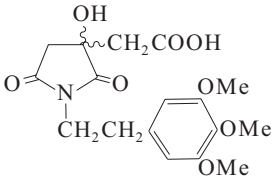
N,N-*Di-Me:* ***Trichocereine***
[529-91-9]
$C_{13}H_{21}NO_3$ 239.314
Alkaloid from *Trichocereus (Cereus) terscheckii* (Cactaceae). Shows plant growth inhibiting activity. Tremorigenic and respiratory paralytic agent in rats. Weak hypotensive. No noticeable hallucinogenic props. in humans. Liq. Mp 172° (as picrate).

N-*(Carboxymethyl):* N-*[2-(3,4,5-Trimethoxyphenyl)ethyl]glycine.* N-*(Carboxymethyl)mescaline.* ***Mescaloxylic acid***
[7738-40-1]
$C_{13}H_{19}NO_5$ 269.297
Trace constit. of peyote cactus *Lophophora williamsii (Anhalonium williamsii)* (Cactaceae). Cryst. (EtOH). Mp 187-189°.

N-*(1-Carboxyethyl):* N-*[2-(3,4,5-Trimethoxyphenyl)ethyl]alanine.* N-*(1-Carboxyethyl)mescaline.* ***Mescaloruvic acid***
[7738-43-4]
$C_{14}H_{21}NO_5$ 283.324
Trace constit. of peyote cactus *Lophophora williamsii (Anhalonium williamsii)* (Cactaceae). Cryst. (EtOH) (racemate). Mp 235-236.5° (racemate). Opt. rotn. not detd., identity with synthetic racemate detd. chromatographically and by ms.

Heffter, A. *et al., Ber.*, 1896, **29**, 216 (*isol*)
Späth, E. *et al., Ber.*, 1937, **70**, 2446; 1938, **71**, 1275 (*Acetylmescaline, Methylmescaline*)
Reti, L. *et al., J.A.C.S.*, 1951, **73**, 1767 (*Trichocereine*)
Bahnholzer, K. *et al., Helv. Chim. Acta*, 1952, **35**, 1577 (*synth*)
Kapadia, G.J. *et al., Chem. Comm.*, 1968, 1688 (*Formylmescaline*)
Kapadia, G.J. *et al., J. Pharm. Sci.*, 1970, **59**, 1699 (*rev*)
Lundström, J. *et al., Acta Chem. Scand.*, 1971, **25**, 3489 (*biosynth*)
Kapadia, G.J. *et al., J. Pharm. Sci.*, 1972, **61**, 1172 (*Mescaloxylic acid, Mescaloruvic acid*)
Smith, T.A. *et al., Phytochemistry*, 1977, **16**, 9 (*occur, rev*)
Doetsch, P.W. *et al., J. Chromatogr.*, 1980, **189**, 79 (*occur*)
Van Peteghem, C. *et al., Eur. J. Drug Metab. Pharmacokinet.*, 1982, **7**, 1 (*pharmacol*)
Bailey, K. *et al., Org. Magn. Reson.*, 1983, **21**, 391 (*cmr*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 1388
Isobe, T. *et al., Yakugaku Zasshi*, 2002, **122**, 291-294 (*N-Benzoylmescaline*)
Chen, I.-S. *et al., Fitoterapia*, 2007, **78**, 414-419 (*Taiwanamide C*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, MDI500; MDI750

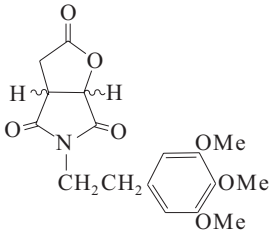
Mescaline citrimide M-220



$C_{17}H_{21}NO_8$ 367.355
Alkaloid from mescal (*Lophophora williamsii*) (Cactaceae).

Kapadia, G.J. *et al., J. Pharm. Sci.*, 1970, **59**, 1699-1727 (*isol, rev*)

Mescaline isocitrimide lactone M-221

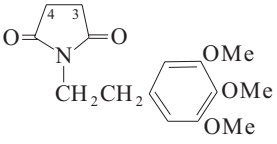


$C_{17}H_{19}NO_7$ 349.34
Alkaloid from mescal (*Lophophora williamsii*) (Cactaceae).

Kapadia, G.J. *et al., J. Pharm. Sci.*, 1970, **59**, 1699-1727

Mescaline succinimide M-222

1-[2-(3,4,5-Trimethoxyphenyl)ethyl]-2,5-pyrrolidinedione. N-*(3,4,5-Trimethoxyphenethyl)succinimide*



$C_{15}H_{19}NO_5$ 293.319
Alkaloids not named in the lit.; not registered by CA. Alkaloid from peyote cactus (*Lophophora williamsii*) (Cactaceae). Mp 125-126°.

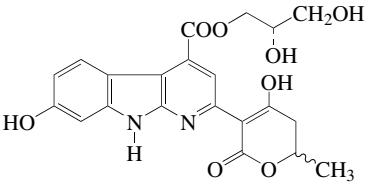
3-Hydroxy: ***Mescaline malimide***. N-*(3,4,5-Trimethoxyphenethyl)malimide*
$C_{15}H_{19}NO_6$ 309.318
Alkaloid from peyote cactus (*Lophophora williamsii*) (Cactaceae). Opt. rotn. not detd.

3,4-Didehydro: ***Mescaline maleimide***. N-*(3,4,5-Trimethoxyphenethyl)maleimide*
$C_{15}H_{17}NO_5$ 291.303
From peyote cactus (*Lophophora williamsii*) (Cactaceae). Poss. artifact.

Kapadia, G.J. *et al., Chem. Comm.*, 1968, 1688 (*occur, ms, synth*)

Mescengricin M-223

[191409-84-4]



$C_{21}H_{20}N_2O_8$ 428.398
First natural α-carboline. Prod. by *Streptomyces griseoflavus* 2853-SVS4. Neuronal cell protecting agent. L-Glutamate toxicity suppressor. Antioxidant. Sol. MeOH, Me_2CO, $CHCl_3$, EtOAc. Mp 247-249° dec. $[\alpha]_D^{20}$ -33 (c, 0.04 in MeOH). λ_{max} 210 (ϵ 10500); 256 (ϵ 5200); 284 (ϵ 6400); 400 (ϵ 4500) (MeOH). λ_{max} 238 (ϵ

10000); 410 (ϵ 4800) (MeOH/NaOH).

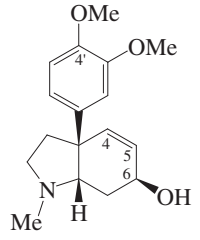
Kim, J.-S. *et al., Tet. Lett.*, 1997, **38**, 3431-3434 (*isol, uv, pmr, cmr*)

Kazuo, S.-Y. *et al., J. Asian Nat. Prod. Res.*, 2000, **2**, 121-132 (*isol, pmr, cmr*)

Martin, G.E. *et al., J. Nat. Prod.*, 2000, **63**, 543-585 (*N-15 nmr*)

Mesembrenol M-224

*3*a-*(3,4-Dimethoxyphenyl)-2,3,3*a*,6,7,7*a-*hexahydro-1-methyl-1*H*-indol-6-ol, 9CI*



(+)-*form*

$C_{17}H_{23}NO_3$ 289.374

(+)-*form* [25516-15-8]
Alkaloid from *Sceletium strictum* (Aïzoaceae). Prisms (EtOAc or Me_2CO). Mp 140°. $[\alpha]_D^{25}$ +91 (c, 0.0176 in $CHCl_3$). λ_{max} 230 (ϵ 9210); 279 (ϵ 3515); 284 (ϵ 2990) (EtOH).

Ac: **O-*Acetylmesembrenol***
[25516-16-9]
$C_{19}H_{25}NO_4$ 331.411
Alkaloid from *Sceletium strictum* (Aïzoaceae). Oil.

N-*De-Me:* **N-*Demethylmesembrenol***
[34084-31-6]
$C_{16}H_{21}NO_3$ 275.347
Alkaloid from *Sceletium strictum* (Aïzoaceae). Mp 63-65°. $[\alpha]_D$ +86.

O$^{4'}$-*De-Me:* ***4'*-O-*Demethylmesembrenol***
[25516-14-7]
$C_{16}H_{21}NO_3$ 275.347
Alkaloid from *Sceletium strictum* (Aïzoaceae). Prisms (MeOH). Mp 219-220°. $[\alpha]_{300}^{25}$ +533 (c, 0.083 in EtOH). λ_{max} 225 (log ϵ 3.44); 280 (log ϵ 3.44) (EtOH).

*6-Ketone:*Synthetic, by oxidn. of (+)-Mesembrenol. Oil. CD $[\theta]_{334}$ -4060°. V. readily racemised.

4,5-Dihydro, O$^{4'}$*-de-Me:* ***4'*-O-*Demethylmesembranol***
[25516-13-6]
$C_{16}H_{23}NO_3$ 277.363
Alkaloid from *Sceletium strictum* (Aïzoaceae). Prisms (MeOH). Mp 201°. $[\alpha]_{300}^{25}$ -199 (c, 0.71 in EtOH). λ_{max} 229 (log ϵ 3.62); 280 (log ϵ 3.38) (EtOH).

4,5-Dihydro, 6-ketone: see Mesembrine, M-226

(±)-*form*

6-Ketone: ***Mesembrenone****. Mesembrinine. Mesembrenine*
[80287-15-6]
[25516-12-5]
$C_{17}H_{21}NO_3$ 287.358
Alkaloid from *Sceletium namaquense* and *Sceletium strictum* (Aïzoaceae). Mp 88°. Prob. arises by racemisation. The name Mesembrenone is preferred as more descriptive of the struct.; it was originally called Mesembrenine (Mesembrinine).

6-Ketone, hydrochloride:
Plates (MeOH/Et_2O). Mp 192-193° (190-195°) dec.

6-Ketone, N-*de-Me,* N-*formyl:* **N-*Demethyl*-N-*formylmesembrenone***
[61921-43-5]
$C_{17}H_{19}NO_4$ 301.341
Alkaloid from *Sceletium strictum* (Aïzoaceae).

6-Ketone, O$^{4'}$*-de-Me:* ***4'*-O-*Demethylmesembrenone***
[51934-30-6]
$C_{16}H_{19}NO_3$ 273.331
Alkaloid present in *Sceletium strictum* and *Sceletium namaquense* (Aïzoaceae). Oil. λ_{max} 220 (log ϵ 4.04); 280 (log ϵ 3.59) (95% EtOH).

Popelak, A. *et al., Naturwissenschaften*, 1960, **47**, 231-232 (*Mesembrenone, isol*)

Jeffs, P.W. *et al., J.O.C.*, 1970, **35**, 3512-3515; 1974, **39**, 2703-2710 (*Mesembrenol, Mesembrenone, O-Acetylmesembrenol, 4'-O-demethyl derivs, isol, uv, ir, pmr, ms, struct, synth, cd*)

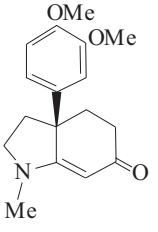
Kruger, P.E.J. *et al., J. S. Afr. Chem. Inst.*, 1971, **24**, 235-237 (N-*Demethylmesembrenol*)

Martin, N.H. *et al., Org. Mass Spectrom.*, 1976, **11**, 1-19 (*ms*)

Karle, J.M. *et al., Acta Cryst. B*, 1977, **33**, 185-188 (*N-Demethyl-N-formylmesembrenone*)

Δ^7-Mesembrenone M-225

*3*a-*(3,4-Dimethoxyphenyl)-1,2,3,3*a*,4,5-hexahydro-1-methyl-6*H*-indol-6-one, 9CI*



$C_{17}H_{21}NO_3$ 287.358

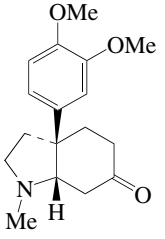
(*S*)-*form* [35714-44-4]
Alkaloid from *Sceletium namaquense* (Aïzoaceae). Oil.

Jeffs, P.W. *et al., J.O.C.*, 1974, **39**, 2703 (*isol, pmr, ir, uv, ord, synth, struct*)

Martin, N.H. *et al., Org. Mass Spectrom.*, 1976, **11**, 1 (*ms*)

Mesembrine M-226

*3*a-*(3,4-Dimethoxyphenyl)octahydro-1-methyl-6*H*-indol-6-one, 9CI. Mesembranone*



(-)-*form*

$C_{17}H_{23}NO_3$ 289.374
Sedative. Log P 1.25 (calc).

(-)-*form* [24880-43-1]
Alkaloid from *Sceletium tortuosum* and *Sceletium namaquense* (Aïzoaceae). Liq. $Bp_{0.3}$ 186-190°. $[\alpha]_D^{20}$ -55.4 (MeOH).

Hydrochloride: Mp 204.5-206° dec. $[\alpha]_D$ -8.8 (c, 0.632 in MeOH).

Deoxo: ***Mesembrane***
[510-80-5]
$C_{17}H_{25}NO_2$ 275.39
Minor alkaloid from *Sceletium namaquense* (Aïzoaceae). Oil.

6α-Alcohol: ***Mesembranol****. Mesembrinol*
[23544-42-5]
$C_{17}H_{25}NO_3$ 291.389
Alkaloid from *Sceletium tortuosum* and *Sceletium strictum* (Aïzoaceae), also obt. by redn. of (-)-Mesembrine. Mp 144-145°. $[\alpha]_D$ -32 ($CHCl_3$).

6α-Alcohol, N-*de-Me:* **N-*Demethylmesembranol***
$C_{16}H_{23}NO_3$ 277.363
Alkaloid from *Sceletium strictum* (Aïzoaceae). Mp 175-185°. $[\alpha]_D$ -13.

(+)-*form* [468-53-1]
Synthetic. Pale yellow oil. $[\alpha]_D^{20}$ +16.1 (c, 1.32 in MeOH).

Hydrochloride:
Needles (2-propanol). Mp 208-210.5°. $[\alpha]_D^{20}$ +7.3 (c, 0.465 in MeOH).

(±)-*form* [6023-73-0]
Synthetic. Oil. $Bp_{0.07}$ 178°.

Hydrochloride: Mp 179-181°.

Picrate:
Cryst. (EtOH/EtOAc). Mp 171.5-172.5°.

Popelak, A. *et al., Naturwissenschaften*, 1960, **47**, 156; 231 (*struct*)

Smith, E. *et al., Chem. Ind. (London)*, 1961, 402 (*Mesembranol*)

Stevens, R.V. *et al., J.A.C.S.*, 1968, **90**, 5580 (*synth, ir, pmr*)

Keely, S.L. *et al., J.A.C.S.*, 1968, **90**, 5584 (*synth*)

Jeffs, P.W. *et al., J.A.C.S.*, 1969, **91**, 3831 (*abs config*)

Oh-ishi, T. *et al., Chem. Pharm. Bull.*, 1970, **18**, 299 (*synth, ir, pmr*)

Otani, G. *et al., Chem. Pharm. Bull.*, 1973, **21**, 2130 (*synth, cd, ord, abs config*)

Capps, T.M. *et al., J.C.S. Perkin 2*, 1977, 1098 (*isol, uv, pmr, ms, cryst struct, Mesembrane*)

Jeffs, P.W. *et al., Phytochemistry*, 1978, **17**, 719 (*biosynth*)

Martin, S.F. *et al., J.O.C.*, 1979, **44**, 3391 (*synth*)

Strauss, H.F. *et al., Tet. Lett.*, 1979, 4495 (*synth*)

Takano, S. *et al., Tet. Lett.*, 1981, 4479 (*synth*)

Keck, G.E. *et al., J.O.C.*, 1982, **47**, 1302 (*synth*)

Jeffs, P.W. *et al., J.O.C.*, 1983, **48**, 3861 (*synth*)

Sánchez, I.H. *et al., Tet. Lett.*, 1983, **24**, 551 (*synth*)

Howard, A.S. *et al., Tet. Lett.*, 1983, **24**, 829 (*synth*)

Kochhar, K.S. *et al., Tet. Lett.*, 1983, **24**, 4785 (*synth*)

Meyers, A.I. *et al., J.A.C.S.*, 1985, **107**, 7776 (*synth*)

Gramain, J.-C. *et al., Tet. Lett.*, 1985, **26**, 4083 (*synth*)

Hackett, S. *et al., J.O.C.*, 1986, **51**, 1629 (*synth*)

Hoshino, O. *et al., Chem. Pharm. Bull.*, 1987, **35**, 2734 (*synth, ir, pmr*)
Winkler, J.D. *et al., J.A.C.S.*, 1988, **110**, 4831 (*synth*)
Shono, T. *et al., Chem. Lett.*, 1989, 1963 (*synth*)
Takano, S. *et al., Chem. Lett.*, 1990, 1239 (*synth*)
Bauermeister, S. *et al., J.C.S. Perkin 1*, 1991, 561 (*synth*)
Parkinson, C.J. *et al., J.C.S. Perkin 1*, 1991, 1053 (*synth*)
Ishibashi, H. *et al., J.O.C.*, 1991, **56**, 95 (*synth, Mesembranol*)
Gelas-Mialhe, Y. *et al., Heterocycles*, 1992, **34**, 37 (*synth*)
Michael, J.P. *et al., Tet. Lett.*, 1992, **33**, 6023 (*synth*)
Yokomatsu, T.Y. *et al., Tet. Lett.*, 1992, **33**, 6999 (*synth*)
Matsumura, Y. *et al., Tetrahedron*, 1993, **49**, 8503 (*synth*)
Kosugi, H. *et al., Tetrahedron: Asymmetry*, 1993, **4**, 1409 (*synth*)
Chida, N. *et al., Chem. Comm.*, 1994, 901 (*synth, Mesembranol*)
Nemoto, H. *et al., J.O.C.*, 1995, **60**, 6785 (*synth*)
Mori, M. *et al., J.O.C.*, 1997, **62**, 3263 (*synth*)
Kamikubo, T. *et al., Chem. Comm.*, 1998, 783-784 (*synth*)
Yamada, O. *et al., Tet. Lett.*, 1998, **39**, 7747-7750 (*synth*)
Dalko, P.I. *et al., Tet. Lett.*, 1998, **39**, 8979-8982 (*synth*)
Rigby, J.H. *et al., Org. Lett.*, 2000, **2**, 1673-1675 (*synth*)
Evarts, J.B. *et al., Tet. Lett.*, 2001, **42**, 3673-3675 (*Mesembranol, synth*)
Hayashi, M. *et al., Tet. Lett.*, 2002, **43**, 1461-1464 (*synth*)
Kulkarni, M.G. *et al., Tet. Lett.*, 2002, **43**, 2297-2298 (*synth*)
Chavan, S.P. *et al., Tet. Lett.*, 2004, **45**, 5263-5265 (*synth*)
Taber, D.F. *et al., J.O.C.*, 2005, **70**, 7711-7714 (*synth*)
Paul, T. *et al., Org. Lett.*, 2006, **8**, 4007-4010 (*synth*)
Arns, S. *et al., J.O.C.*, 2007, **72**, 9314-9322 (*synth*)
Saito, M. *et al., Tetrahedron*, 2007, **63**, 4865-4873 (*Mesembrane, synth*)
Roe, C. *et al., Tet. Lett.*, 2008, **49**, 650-653 (*synth*)

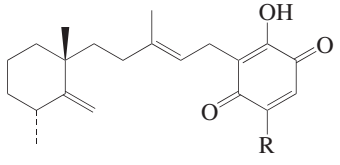
Mesembryanthemins M-227

Glycosides of Betanidin or Isobetanidin; see Betanidin, B-110. Structs. unknown. Pigments from *Mesembryanthemum conspicuum, Mesembryanthemum edule, Mesembryanthemum floribundum* and *Portulaca grandiflora* (Aizoaceae, Portulaceae). Mesembryanthemins I-III recognised.

Piattelli, M. *et al., Phytochemistry*, 1964, **3**, 547-557 (*occur*)

Metachromin G M-228

[143592-24-9]



R = -$NHCH_2CH_2Ph$

$C_{29}H_{37}NO_3$ 447.616

Constit. of *Hippospongia metachroma*. Purple oil. $[\alpha]_D^{20}$ -18 (c, 0.2 in C_6H_6). λ_{max} 211 (ϵ 29700); 324 (ϵ 14700); 508 (ϵ 800) (MeOH) (Berdy).

Kobayashi, J. *et al., J.O.C.*, 1992, **57**, 5773 (*isol, pmr, cmr*)

Metachromin H M-229

[143592-25-0]

As Metachromin G, M-228 with

R = -$NHCH_2CH_2CH(CH_3)_2$

$C_{26}H_{39}NO_3$ 413.599

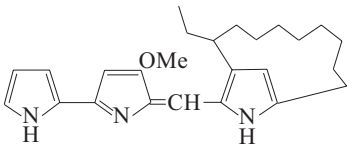
Constit. of *Hippospongia metachroma*. Purple oil. $[\alpha]_D^{19}$ -9 (c, 0.2 in C_6H_6). λ_{max} 324 (ϵ 12800); 512 (ϵ 700) (MeOH) (Berdy).

Kobayashi, J. *et al., J.O.C.*, 1992, **57**, 5773 (*isol, pmr, cmr*)

Metacycloprodigiosin M-230

Streptorubin A. NSC 76779

[22869-99-4]



$C_{25}H_{33}N_3O$ 391.555

Pigment from *Streptomyces longisporus ruber*. Orange-brown cryst. (petrol). Sol. MeOH, Et_2O; fairly sol. hexane; poorly sol. H_2O. Mp 208-209°. λ_{max} 273 (ϵ 3640); 297 (ϵ 6900); 362 (ϵ 5000); 500 (sh) (ϵ 31500); 530 (ϵ 75900) (MeOH/HCl) (Derep). λ_{max} 285 (ϵ 6050); 325 (ϵ 4850); 467 (ϵ 30600) (MeOH/KOH) (Derep). λ_{max} 273 (ϵ 3640); 297 (ϵ 6900); 362 (ϵ 5000); 500 (sh) (ϵ 31500); 530 (ϵ 75900) (hydrochloride) (Derep).

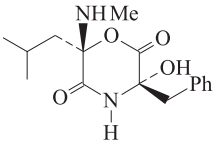
Hydrochloride: Mp 214-216°.

Wassermann, H.H. *et al., J.A.C.S.*, 1969, **91**, 1263; 1264 (*struct, synth*)
Wassermann, H.H. *et al., Tetrahedron*, 1976, **32**, 1855; 1867
Fürstner, A. *et al., J.O.C.*, 1999, **64**, 8281-8286 (*synth*)
Fürsner, A. *et al., Angew. Chem., Int. Ed.*, 2003, **42**, 3582-3603 (*rev*)

Metacytofilin M-231

3-Hydroxy-6-(methylamino)-6-(2-methylpropyl)-3-(phenylmethyl)-2,5-morpholinedione, 9CI

[145398-57-8]



Relative configuration

$C_{16}H_{22}N_2O_4$ 306.361

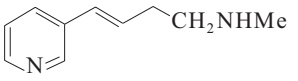
Prod. by *Metarhizium* sp. TA 2759. Immunomodulator. Prisms (MeOH aq.). Sol. MeOH, DMSO; poorly sol. $CHCl_3$, H_2O. Mp 201-202°. $[\alpha]_D^{27}$ +5.1 (c, 0.63 in MeOH). λ_{max} 252 (sh) (ϵ 182); 258 (sh) (ϵ 200); 264 (sh) (ϵ 151) (MeOH) (Derep).

Iijima, M. *et al., J. Antibiot.*, 1992, **45**, 1553 (*isol, struct, props*)

Metanicotine M-232

N-*Methyl-4-(3-pyridinyl)-3-buten-1-amine, 9CI. 3-[4-(Methylamino)-1-butenyl]pyridine, 8CI.* ***Rivanicline, INN****. RJR 2403. TC 2403*

[538-79-4]



$C_{10}H_{14}N_2$ 162.234

Alkaloid from leaves of *Duboisia hopwoodii* (Solanaceae). Also a pyrol. prod. of nicotine alkaloids present in tobacco smoke. CNS selective nicotinic agonist. Potential agent for the treatment of Alzheimer's. Used in the treatment of ulcerative colitis. $Bp_{3.7}$ 141°. (*E*)-form is pharmacol. active.

▶ Teratogen. UT5550000

Picrate: Mp 173-175°.

Galactarate: ***Rivanicline galactarate, USAN***

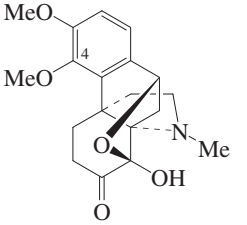
[675132-86-2]

[1129-68-6 , 183288-99-5 , 15585-43-0 , 180915-56-4]

Swain, M.L. *et al., J.A.C.S.*, 1949, **71**, 1341 (*synth, uv*)
Luanratana, O. *et al., Phytochemistry*, 1982, **21**, 449 (*occur, ms*)
Bencherif, M. *et al., J. Pharmacol. Exp. Ther.*, 1996, **279**, 1413-1429; 1422-1429 (*pharmacol*)
Pat. Coop. Treaty (WIPO), 1996, (*Reynolds*)96 20 599 (*synth, pharmacol*)
Bencherif, M. *et al., CNS Drug Rev.*, 1997, **3**, 325-345 (*rev, pharmacol*)
Papke, R.L. *et al., J. Pharmacol. Exp. Ther.*, 2002, **301**, 765-773 (*pharmacol*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, MDM750

Metaphanine M-233

8,10-Epoxy-8-hydroxy-3,4-dimethoxy-17-methylhasubanan-7-one, 9CI



(-)-*form*

$C_{19}H_{23}NO_5$ 345.394

(-)-*form* [1805-86-3]

Alkaloid from the roots and stems of *Stephania japonica*. Also isol. from *Stephania abyssinica* and *Stephania japonica* var. *australis* (Menispermaceae). Cryst.

($Me_2CO/CHCl_3$). Mp 233°. $[\alpha]_D^{25}$ -21 (c, 1.0 in $CHCl_3$). pK_a 6.03.

Hydrochloride:
Cryst. + ½ H_2O (Me_2CO). Mp 226°.

Hydroiodide:
Cryst. + ½ H_2O (THF). Mp 230° dec.

O^4*-De-Me:* ***Stephabyssine***. O^4*-Demethylmetaphanine*
[36871-84-8]
$C_{18}H_{21}NO_5$ 331.368
Alkaloid from the roots and rhizomes of *Stephania abyssinica* and roots and stems of *Stephania longa*. Also isol. from *Stephania japonica* var. *australis* (Menispermaceae). Cryst. (EtOH aq.). Mp 178-180°. $[\alpha]_D$ -58.9 (c, 0.87 in $CHCl_3$).

O^4*-De-Me, hydrochloride:*
Plates ($CHCl_3/CCl_4$). Mp 247-250° dec. $[\alpha]_D^{25}$ -32.5 (c, 0.41 in 60% EtOH).

7α-Alcohol, O^4*-de-Me:* ***Isostephaboline***
[863712-36-1]
$C_{18}H_{23}NO_5$ 333.383
Alkaloid from *Stephania longa*. Powder. $[\alpha]_D^{20}$ +26.7 (c, 0.3 in MeOH). λ_{max} 226 (log ϵ 3.63); 285 (log ϵ 3.23) (MeOH).

7β-Alcohol, O^4*-de-Me:* ***Stephaboline***
[36871-86-0]
$C_{18}H_{23}NO_5$ 333.383
Alkaloid from the roots and rhizomes of *Stephania abyssinica* and the roots and stems of *Stephania longa* (Menispermaceae). Cryst. (MeOH aq.). Mp 186-188° dec. $[\alpha]_D^{25}$ +34.7 (c, 0.47 in MeOH).

7β-Alcohol, O^4*-de-Me, methiodide:*
Cryst. (MeOH/EtOAc). Mp 230-232°. $[\alpha]_D^{25}$ +19.6 (c, 0.51 in MeOH).

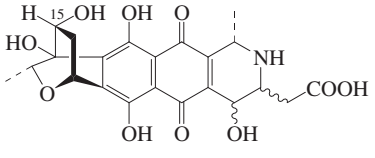
Me enol ether: see Prometaphanine, P-639

(±)-*form* [38305-47-4]
Synthetic. Prisms (Et_2O/MeOH). Mp 205-206°.

Tomita, M. *et al., Chem. Pharm. Bull.*, 1965, **13**, 695 (*ir, pmr, ms, struct*)
De Waal, H.L. *et al., Tet. Lett.*, 1966, 6169 (*uv, ir, pmr, struct*)
Kupchan, S.M. *et al., J.O.C.*, 1973, **38**, 151 (*Stephaboline, Metaphanine, isol, synth*)
Ibuka, T. *et al., Chem. Pharm. Bull.*, 1974, **22**, 907 (*synth, ir, pmr*)
Matsui, M. *et al., Phytochemistry*, 1979, **18**, 1087 (*Stephabyssine, isol*)
Zhang, H. *et al., J. Nat. Prod.*, 2005, **68**, 1201-1207 (*Stephaboline, Isostephaboline, Stephabyssine*)

Metenaticin C M-234

[866954-60-1]



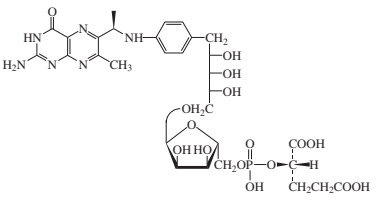
$C_{22}H_{23}NO_{10}$ 461.424
Prod. by *Streptomyces violaceoruber* Tü22.

*15-*O*-(2,3,6-Trideoxy-β-L-*threo*-hexopyranoside):* ***Metenaticin B***
[866954-24-7]
$C_{28}H_{33}NO_{12}$ 575.568
Prod. by *Streptomyces violaceoruber* Tü22.

Pham, L.H. *et al., Magn. Reson. Chem.*, 2005, **43**, 710-723 (*isol, uv, pmr, ms*)

Methanopterin M-235

[79484-89-2]

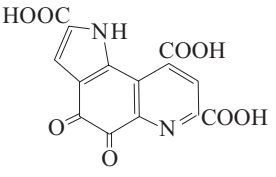


$C_{30}H_{41}N_6O_{16}P$ 772.658
Prod. by *Methanobacterium thermoautotrophicum*.

Van Beelen, P. *et al., Eur. J. Biochem.*, 1984, **138**, 563 (*isol, struct*)
Keltjens, J.T. *et al., Methods Enzymol.*, 1986, **122**, 412 (*rev*)
White, R.H. *et al., Biochemistry*, 1990, **29**, 5397 (*biosynth*)
White, R.H. *et al., Chirality*, 1996, **8**, 332 (*cd, abs config*)

Methoxatin M-236

*4,5-Dihydro-4,5-dioxo-1*H*-pyrrolo[2,3-f]quinoline-2,7,9-tricarboxylic acid. Coenzyme PQQ. PQQ. Pyrroloquinoline-quinone*
[72909-34-3]



$C_{14}H_6N_2O_8$ 330.21
Coenzyme of several bacterial alcohol dehydrogenases. Believed to be a mammalian redox-cofactor vitamin (B group). Oxidising agent. e.g. for amines and amino acids. Dark red solid. Sol. H_2O. λ_{max} 250 ; 332 (H_2O) (Berdy).

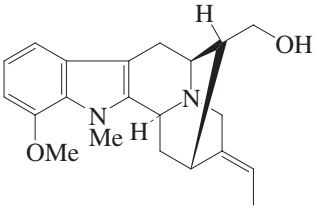
Tri-Me ester: [74447-88-4]
Orange-red solid. Mp 260-263° (>250°).

[122628-50-6]

Anthony, C. *et al., Biochem. J.*, 1967, **104**, 960 (*isol*)
Corey, E.J. *et al., J.A.C.S.*, 1981, **103**, 5599 (*synth*)
Gainor, J.A. *et al., J.O.C.*, 1982, **47**, 2833 (*synth*)
Buechi, G. *et al., J.A.C.S.*, 1985, **107**, 5555 (*synth*)
Hendrickson, J.B. *et al., J.O.C.*, 1985, **50**, 1688 (*synth*)
Itoh, S. *et al., Bull. Chem. Soc. Jpn.*, 1986, **59**, 1907 (*bibl*)
Duine, J.A. *et al., FEMS Microbiol. Rev.*, 1986, **32**, 165 (*rev*)
MacKenzie, A.R. *et al., Tetrahedron*, 1986, **42**, 3259 (*synth, bibl*)
Ameyama, M. *et al., BioFactors*, 1988, **1**, 51 (*rev*)
Flückiger, R. *et al., Biochem. Biophys. Res. Commun.*, 1988, **153**, 353-358 (*occur*)
Houen, G. *et al., Tetrahedron*, 1989, **45**, 4235 (*use*)
Kumazawa, T. *et al., Biochim. Biophys. Acta*, 1992, **1156**, 62-66 (*occur*)
Itoh, S. *et al., J.C.S. Perkin 2*, 1992, 1245 (*uv, bibl*)
Martin, P. *et al., Helv. Chim. Acta*, 1993, **76**, 988; 1996, **79**, 658 (***synth***)
Itoh, S. *et al., Chem. Comm.*, 1995, 2077 (*ester, synth, pmr, cmr, uv*)
Itoh, S. *et al., Nat. Prod. Rep.*, 1995, **12**, 45-53 (*rev*)
Kasahara, T. *et al., Nature (London)*, 2003, **422**, 832 (*vitamin*)
Magnusson, O.T. *et al., J.A.C.S.*, 2004, **126**, 5342-5343 (*biosynth*)

12-Methoxyaffinisine M-237

[457613-93-3]



$C_{21}H_{26}N_2O_2$ 338.449
Alkaloid from the bark of *Rauwolfia bahiensis*. Amorph. yellow solid. $[\alpha]_D^{20}$ +3 (c, 0.72 in $CHCl_3$). λ_{max} 274 (log ϵ 3.25) (MeOH).

17-Aldehyde: ***12-Methoxy-N^a-methylvellosimine***
[457613-91-1]
$C_{21}H_{24}N_2O_2$ 336.433
Alkaloid from the bark of *Rauwolfia bahiensis*. Amorph. yellow solid. $[\alpha]_D^{20}$ +14 (c, 0.6 in $CHCl_3$). λ_{max} 284 (log ϵ 3.1) (MeOH).

17-Aldehyde, N*-de-Me:* ***12-Methoxyvellosimine***
[457613-94-4]
$C_{20}H_{22}N_2O_2$ 322.406
Alkaloid from the bark of *Rauwolfia bahiensis*. Amorph. yellow solid. $[\alpha]_D^{20}$ +5 (c, 0.6 in $CHCl_3$). λ_{max} 230 (log ϵ 4.2); 254 (log ϵ 3.78) (MeOH).

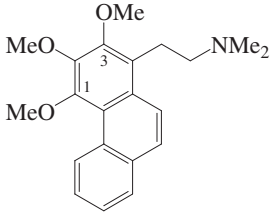
17-Carboxylic acid, N^4*-Me, Et ester:* ***Fuchsiaefoline***
[109269-75-2]
$C_{24}H_{31}N_2O_3^{\oplus}$ 395.52
Quaternary alkaloid from the stem bark of *Peschiera fuchsiaefolia*. Oil. $[\alpha]_D^{25}$ -55.7 (c, 0.9 in MeOH). Counter-ion not specified. λ_{max} 225 (log ϵ 4.66); 269 (log ϵ 3.9); 283 (log ϵ 3.8); 293 (log ϵ 3.73) (EtOH).

Braga, R.M. *et al., Phytochemistry*, 1987, **26**, 833-836 (*Fuchsiaefoline*)

Kato, L. *et al., Phytochemistry*, 2002, **60**, 315-320 (*isol, pmr, cmr, ms*)
Zhou, H. *et al., J.O.C.*, 2006, **71**, 251-259 (*synth*)

2-Methoxyatherosperminine M-238

2,3,4-Trimethoxy-N,N-*dimethyl-1-phenanthreneethanamine, 9CI. 1-(2-Dimethylaminoethyl)-2,3,4-trimethoxyphenanthrene*
[5635-94-9]



$C_{21}H_{25}NO_3$ 339.433
Aporphine-type numbering shown. Alkaloid from the bark of *Atherosperma moschatum* and from the root and stem bark of *Meiocarpidium lepidotum* (Monimiaceae, Annonaceae). Oil. Rapidly darkens upon exp. to air.

Picrate:
Cryst. (Me_2CO/MeOH). Mp 161-162°.

N-*Me:* Mp 243-245° dec. (as iodide).

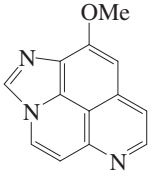
N-*Oxide:* ***2-Methoxyatherosperminine* N-oxide**
[67341-54-2]
$C_{21}H_{25}NO_4$ 355.433
Alkaloid from the root and stem bark of *Meiocarpidium lepidotum* (Annonaceae). Mp 189° (as picrate).

O^1,O^3-*Di-de-Me:* ***Stipitatine***
$C_{19}H_{21}NO_3$ 311.38
Alkaloid from *Unonopsis stipitata* (Annonaceae).

Bick, I.R.C. *et al., Aust. J. Chem.*, 1965, **18**, 1997 (*isol, uv, ir, pmr, struct, synth*)
Leboeuf, M. *et al., Plant. Med. Phytother.*, 1977, **11**, 284 (*isol, uv, pmr, ms, struct, deriv*)
El-Tohami, M. *et al., Chem. Biol. Isoquinoline Alkaloids, Int. Symp., Phytochem. Soc. Eur., Abstr. Pap.*, 1984, 17 (*Stipitatine*)
Guinaudeau, H. *et al., J. Nat. Prod.*, 1988, **51**, 389; 439 (*Stipitatine*)

10-Methoxybenzimidazo[6,7,1-*def*][1,6]naphthyridine, 9CI M-239

[597553-94-1]

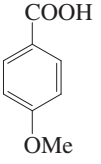


$C_{13}H_9N_3O$ 223.234
Alkaloid from a *Xestospongia* sp. Brown gum. λ_{max} 209 (ϵ 5845); 237 (ϵ 5250); 258 (ϵ 2980); 269 (ϵ 2770); 355 (ϵ 2015) (EtOH).

Calcul, L. *et al., Tetrahedron*, 2003, **59**, 6539-6544 (*isol, pmr, cmr*)

4-Methoxybenzoic acid, 9CI M-240

p-*Anisic acid, 8CI. Umbellinic acid. Dragonic acid. Badianic acid. FEMA 3945*
[100-09-4]
[1335-08-6]



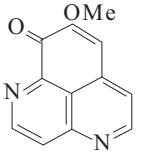
$C_8H_8O_3$ 152.149
Isol. from aniseed *Pimpinella anisum* (Apiaceae) and higher plants. Flavouring agent. Needles or prisms. Mp 184°. Bp 275-280°. pK_a 4.5 (25°).
▶ LD_{50} (mus, scu) 400 mg/kg. BZ4395000

Amide: 4-Methoxybenzamide. Anisamide
[3424-93-9]
$C_8H_9NO_2$ 151.165
Constit. of *Naravelia zeylanica*. Needles or tablets (H_2O). Mp 163°. Bp 295°.

Jaroszewski, J.W. *et al., Nat. Prod. Res.*, 2005, **19**, 291-294 (*amide, isol*)

8-Methoxy-9*H*-benzo[*de*][1,6]naphthyridin-9-one, 9CI M-241

Demethyloxyaaptamine
[88839-99-0]



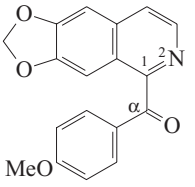
$C_{12}H_8N_2O_2$ 212.207
Alkaloid from the Okinawan marine sponge *Aaptos aaptos* and a *Xestospongia* sp. Cytotoxic. Exhibits potent antimicrobial activity against gram-positive and -negative bacteria. Fine bright yellow rods (EtOAc). Mp 210-212° (198-200° dec.). λ_{max} 235 (ϵ 10600); 308 (ϵ 1740); 360 (sh) (ϵ 5540); 373 (ϵ 5040); 415 (sh) (ϵ 2310) (H_2O) (Derep).

Di-Me acetal: ***8,9,9-Trimethoxy-9H-benzo[de][1,6]naphthyridine***
$C_{14}H_{14}N_2O_3$ 258.276
Alkaloid from a *Xestospongia* sp. Brown gum. λ_{max} 205 (ϵ 7045); 229 (ϵ 11330); 350 (ϵ 4560) (EtOH).

Nakamura, H. *et al., J.C.S. Perkin 1*, 1987, 173 (*isol, uv, ir, pmr, cmr, struct*)
Pelletier, J.C. *et al., J.O.C.*, 1987, **52**, 616 (*synth, ir, pmr*)
Coutinho, A.F. *et al., Heterocycles*, 2002, **57**, 1265-1272 (*isol, pmr, cmr*)
Calcul, L. *et al., Tetrahedron*, 2003, **59**, 6539-6544 (*isol, pmr, cmr*)

1-(4-Methoxybenzoyl)-6,7-methylenedioxyisoquinoline M-242

Pulcheotine A
[17656-61-0]



$C_{18}H_{13}NO_4$ 307.305
Alkaloid from the bark of *Ocotea pulchella* (Lauraceae). Cryst. (Me_2CO). Mp 152-153°.

α-*Alcohol:* ***1-(α-Hydroxy-4-methoxybenzyl)-6,7-methylenedioxyisoquinoline***
[151590-38-4]
$C_{18}H_{15}NO_4$ 309.321
Alkaloid from bark of *Ocotea pulchella* (Lauraceae). Cryst. (Me_2CO). Mp 138-139°. $[\alpha]_D^{25}$ +125 (c, 1.2 in $CHCl_3$). Unstable; converted spontaneously to the α-ketone in air.

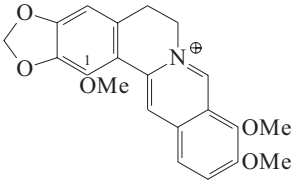
1,2-Dihydro: ***1,2-Dihydro-1-(4-methoxybenzoyl)-6,7-methylenedioxyisoquinoline***
[151590-39-5]
$C_{18}H_{15}NO_4$ 309.321
Alkaloid from bark of *Ocotea pulchella* (Lauraceae). Unstable in air.

1,2-Dihydro, α-alcohol: ***1,2-Dihydro-1-(α-hydroxy-4-methoxybenzyl)-6,7-methylenedioxyisoquinoline***
[151590-40-8]
$C_{18}H_{17}NO_4$ 311.337
Alkaloid from bark of *Ocotea pulchella* (Lauraceae). Unstable in air.

Marsaioli, A.J. *et al., Phytochemistry*, 1980, **19**, 995 (*cmr*)
Botega, C. *et al., Phytochemistry*, 1993, **32**, 1331 (*isol, ir, pmr, cmr, ms, struct*)
Wakchaure, P.B. *et al., Synthesis*, 2008, 2321-2322 (*synth, ir, pmr, cmr*)

1-Methoxyberberine M-243

[29133-52-6]



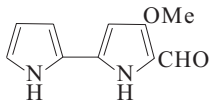
$C_{21}H_{20}NO_5^{\oplus}$ 366.393
Alkaloid from *Dactylicapnos torulosa* (Papaveraceae). Yellow needles (EtOAc/MeOH) (as chloride). Mp 185-190° dec. (chloride). CAS no. refers to chloride.

Šimánek, V. *et al., Coll. Czech. Chem. Comm.*, 1970, **35**, 1440 (*synth*)
Zhang, G.L. *et al., Yaoxue Xuebao*, 1990, **25**, 604; *CA*, **114**, 160667y (*isol*)

4-Methoxy-2,2′-bipyrrole-5-carboxaldehyde M-244

5-Formyl-4-methoxy-2,2′-bipyrrole. Tambjamine aldehyde

[10476-41-2]



$C_{10}H_{10}N_2O_2$ 190.201

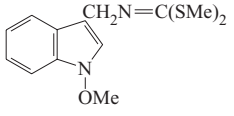
Isol. from the nembrothid nudibranchs *Roboastra tigris*, *Tambja eliora*, *Tambja abdere* and the bryozoan *Sessibugula translucens*. Cryst. (EtOH aq.). Mp 263-265° dec. Artifact. λ_{max} 251 (ϵ 14700); 361 (ϵ 40300) (MeOH).

Rapoport, H. *et al., J.A.C.S.*, 1962, **84**, 635-642 (*synth, uv*)

Carté, B. *et al., J.O.C.*, 1983, **48**, 2314-2318 (*isol, uv, ir, pmr*)

Methoxybrassenin A M-245

[142449-74-9]



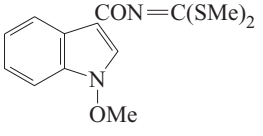
$C_{13}H_{16}N_2OS_2$ 280.414

Stress metabolite isol. from cabbage (*Brassica oleracea* var. *capitata*) inoculated with *Pseudomonas cichorii*. Phytoalexin. Gum. λ_{max} 205 (ϵ 25200); 220 (ϵ 23800); 290 (ϵ 3800) (MeOH) (Berdy).

Monde, K. *et al., Phytochemistry*, 1991, **30**, 3921-3922 (*isol, uv, ir, pmr, ms, struct*)

Methoxybrassenin B M-246

[142449-75-0]



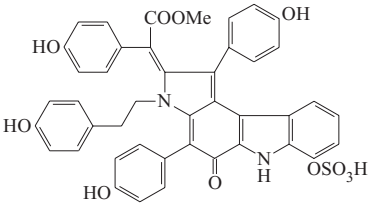
$C_{13}H_{14}N_2O_2S_2$ 294.398

Stress metabolite isol. from cabbage (*Brassica oleracea* var. *capitata*) inoculated with *Pseudomonas cichorii*. Mp 73-74°.

Monde, K. *et al., Phytochemistry*, 1991, **30**, 3921-3922 (*isol, uv, ir, pmr, cmr, ms, struct*)

37-(Methoxycarbonyl)dictyodendrine E M-247

[149444-92-8]



$C_{43}H_{32}N_2O_{11}S$ 784.799

Alkaloid from the marine sponge *Dictyodendrilla* sp. Potent aldose reductase inhibitor. Antidiabetic agent. Purple solid. Sol. MeOH, EtOAc. Mp 300°. λ_{max} 231 (ϵ 41000); 281 (ϵ 21000); 482 (ϵ 23200) (EtOH) (Derep).

De(methoxycarbonyl): ***Dictyodendrine E***
[510709-72-5 (Na salt)]
$C_{41}H_{30}N_2O_9S$ 726.762
Alkaloid from *Dictyodendrilla verongiformis*. Amorph. red solid (as Na salt). λ_{max} 230 (ϵ 33900); 280 (ϵ 17700); 464 (ϵ 20600) (MeOH) (Na salt).

Sato, A. *et al., J.O.C.*, 1993, **58**, 7632-7634 (*isol, uv, ir, pmr, cmr, struct*)

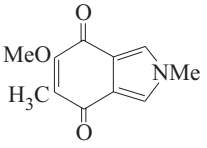
Warabi, K. *et al., J.O.C.*, 2003, **68**, 2765-2770 (*Dictyodendrin E*)

Fürstner, A. *et al., J.A.C.S.*, 2006, **128**, 8087-8094 (*synth*)

5-Methoxy-2,6-dimethyl-2*H*-isoindole-4,7-dione, 9CI M-248

2,5-Dimethyl-6-methoxy-4,7-isoindolequinone

[79664-59-8]



$C_{11}H_{11}NO_3$ 205.213

Found in *Reniera* sp. Active against gram-positive bacteria and marine pseudomonads. Mp 153-154° Mp 167-168° (synthetic). First naturally-occurring isoindole. λ_{max} 224 (ϵ 13600); 233 (ϵ 12000); 275 (ϵ 11000); 362 (ϵ 3030) (MeOH) (Derep).

Frincke, J.M. *et al., J.A.C.S.*, 1982, **104**, 265 (*isol, struct*)

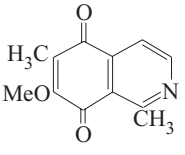
Parker, K.A. *et al., Tet. Lett.*, 1984, **25**, 4917 (*synth*)

Padwa, A. *et al., J.O.C.*, 1985, **50**, 4006 (*synth*)

Schubert-Zsilavecz, M. *et al., Annalen*, 1991, 973 (*synth*)

7-Methoxy-1,6-dimethyl-5,8-isoquinolinedione, 9CI M-249

[79664-58-7]



$C_{12}H_{11}NO_3$ 217.224

Isol. from an unidentified *Reniera* sponge and an undescribed *Xestospongia* sp. Shows insecticidal activity and weak activity against gram-positive bacteria. Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. Mp 188-190° dec. λ_{max} 223; 276; 283; 292 (MeOH) (Derep).

Frincke, J.M. *et al., J.A.C.S.*, 1982, **104**, 265 (*isol, uv, ir, pmr, cmr, ms, struct*)

Edrada, R.A. *et al., J. Nat. Prod.*, 1996, **59**, 973 (*isol, props*)

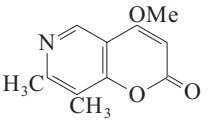
Molina, P. *et al., Synthesis*, 1997, 963-966 (*synth*)

Kuwabara, N. *et al., Tetrahedron*, 2004, **60**, 2943-2952 (*synth*)

4-Methoxy-7,8-dimethyl-2*H*-pyrano[4,3-*b*]pyridin-2-one, 9CI M-250

Acuminatopyrone

[135038-52-7]



$C_{11}H_{11}NO_3$ 205.213

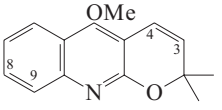
Struct. revised in 1994. Metab. of *Fusarium acuminatum*, *Fusarium chlamydosporum* and *Fusarium tricinctum*. Prisms (C_6H_6 or EtOAc). Mp 203-204° dec.

Grove, J.F. *et al., J.C.S. Perkin 1*, 1991, 997 (*isol*)

Visconti, A. *et al., J. Nat. Prod.*, 1994, **57**, 695 (*struct*)

5-Methoxy-2,2-dimethyl-2*H*-pyrano[2,3-*b*]quinoline, 9CI M-251

[88148-18-9]



$C_{15}H_{15}NO_2$ 241.289

Alkaloid from *Evodia pilulifera*. Needles (C_6H_6/petrol). Mp 69-70°.

*3,4-Dihydro: 3,4-Dihydro-5-methoxy-2,2-dimethyl-2*H*-pyrano[2,3-*b*]quinoline, 9CI*
[42522-05-4]
$C_{15}H_{17}NO_2$ 243.305
From *Evodia pilulifera*. Prisms (petrol). Mp 95-96°.

*8,9-Dimethoxy: 5,8,9-Trimethoxy-2,2-dimethyl-2*H*-pyrano[2,3-*b*]quinoline, 9CI*
[131524-75-9]
$C_{17}H_{19}NO_4$ 301.341
From *Evodia pilulifera*.

*8,9-Dimethoxy, 3,4-dihydro: 3,4-Dihydro-5,8,9-trimethoxy-2,2-dimethyl-2*H*-pyrano[2,3-*b*]quinoline, 9CI*
[131524-74-8]
$C_{17}H_{21}NO_4$ 303.357
From *Evodia pilulifera*.

3,4-Dihydro, 3-hydroxy: see Geibalansine, G-29

Bowman, R.M. *et al., J.C.S. Perkin 1*, 1973, 1055 (*synth*)

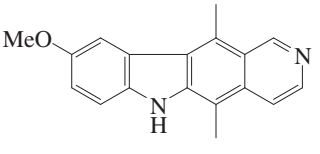
Ramesh, M. *et al., Heterocycles*, 1984, **22**, 125 (*synth*)

Goh, S.H. *et al., Bull. Singapore Natl. Inst. Chem.*, 1989, **17**, 21; *CA*, **114**, 39186n (*isol*)

9-Methoxyellipticine M-252

9-Methoxy-5,11-dimethylpyrido[4,3-b]carbazole

[10371-86-5]



$C_{18}H_{16}N_2O$ 276.337

Numbering systems vary. Alkaloid from *Ochrosia maculata*, *Ochrosia oppositifolia*, *Ochrosia elliptica*, *Strychnos dinklagei*, *Excavatia coccinea* (preferred genus name *Ochrosia*), *Bleekeria coccinea* (preferred genus name *Ochrosia*) and *Bleekeria vitiensis*. Powerful inhibitor of DNA synthesis (intercalating agent). Orally active antineoplastic agent. Antiparasitic. Mp 286-287° dec. Log P 4.32 (calc). λ_{max} 211 (ϵ 17000); 245 (ϵ 20400); 276 (ϵ 35500); 291 (ϵ 41700); 337 (ϵ 5130); 354 (ϵ 2820); 403 (ϵ 2750) (MeOH) (Derep). λ_{max} 211 ; 227 ; 237 ; 245 ; 275 ; 276 ; 286 ; 291 ; 295 ; 332 ; 337 ; 346 ; 354 ; 384 ; 403 (MeOH) (Berdy). λ_{max} 242 (ϵ 22400); 275 (ϵ 38600); 290 (ϵ 45700); 335 (ϵ 5130) (EtOH) (Berdy).

▶ LD_{50} (mus, ipr) 150 mg/kg. UU8840000

Hydrochloride: Mp 288-290° (cryst. transition at 255-265°).

Picrate: Mp 273-275°.

O-*De-Me:* ***9-Hydroxyellipticine***
[51131-85-2]
$C_{17}H_{14}N_2O$ 262.31
Alkaloid from the stem bark of *Strychnos dinklagei* and *Ochrosia* sp. Strongly active against gram-positive and gram-negative bacteria. Orange prisms ($CHCl_3$/MeOH). Mp > 300°. λ_{max} 225 (log ϵ 3.85); 245 (log ϵ 4.03); 263 (log ϵ 4.04); 278 (log ϵ 4.01); 317 (log ϵ 4.36); 356 (log ϵ 3.37); 366 (log ϵ 3.46) (EtOH/HCl). λ_{max} 260 (log ϵ 4.23); 272 (sh) (log ϵ 4.17); 298 (log ϵ 4.19); 311 (log ϵ 4.27) (EtOH/KOH). λ_{max} 245 (log ϵ 4.07); 277 (log ϵ 4.28); 294 (log ϵ 4.35); 310 (sh) (log ϵ 4.12); 338 (log ϵ 3.53); 352 (log ϵ 3.26); 400 (log ϵ 3.19) (EtOH).

▶ LD_{50} (mus, ipr) 68 mg/kg. Exp. reprod. and teratogenic effects. UU8886500

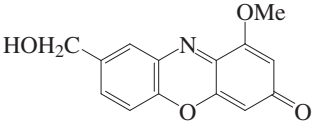
1,2-Dihydro: ***1,2-Dihydro-9-methoxyellipticine***
[41628-51-7]
$C_{18}H_{18}N_2O$ 278.353
Alkaloid from the leaves of *Ochrosia balansae* (Apocynaceae).

1,2,3,4-Tetrahydro: ***1,2,3,4-Tetrahydro-9-methoxyellipticine***
[41628-52-8]
$C_{18}H_{20}N_2O$ 280.369
Alkaloid from the leaves of *Ochrosia balansae* (Apocynaceae).

Goodwin, S. *et al., J.A.C.S.*, 1959, **81**, 1903 (*isol, uv*)
Dalton, L.K. *et al., Aust. J. Chem.*, 1967, **20**, 2715 (*synth, pmr*)
Bruneton, J. *et al., Ann. Pharm. Fr.*, 1972, **30**, 629 (*derivs*)
Michel, M.M.G. *et al., Rev. Inst. Pasteur Lyon*, 1975, **8**, 53-68 (*9-Hydroxyellipticine, activity*)
Rousselle, D. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1977, **284**, 377 (*synth*)
Ahond, A. *et al., Tetrahedron*, 1978, **34**, 2385 (*cmr*)
Michel, S. *et al., J. Nat. Prod.*, 1982, **45**, 489-494 (*9-Hydroxyellipticine, isol, uv*)
Miller, R.B. *et al., J.O.C.*, 1983, **48**, 886 (*synth, pmr*)
Suffness, M. *et al., Alkaloids (Academic Press)*, 1985, **25**, 116 (*rev, pharmacol*)
Gribble, G.W. *et al., J.O.C.*, 1992, **57**, 5891 (*synth*)
Plug, J.P.M. *et al., Synthesis*, 1992, 1221 (*9-Hydroxyellipticine, synth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, MEL775

1-Methoxy-8-hydroxymethyl-3*H*-phenoxazin-3-one M-253

Halxazone

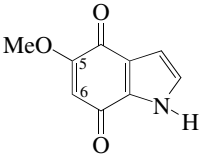


$C_{14}H_{11}NO_4$ 257.245
Prod. by *Streptomyces halstedii* 4029-SVS1. Neuronal cell protectant. Mp 201-202°. λ_{max} 204 (ϵ 18300); 254 (ϵ 13500); 365 (ϵ 10000); 456 (ϵ 4700) (MeOH).

Katoh, H. *et al., J. Antibiot.*, 2002, **55**, 508-510 (*isol, pmr, cmr*)

5-Methoxy-1*H*-indole-4,7-dione, 9CI M-254

[17606-06-3]



$C_9H_7NO_3$ 177.159
Alkaloid from the muricid gastropod *Drupella fragum*. Antimicrobial agent. Orange needles. Mp 198-200° (natural) Mp 205-208° (synthetic). λ_{max} 222 (ϵ 18200); 281 (ϵ 19400); 324 (ϵ 2540); 432 (ϵ 1120) (EtOH).

Fukuyama, Y. *et al., Tetrahedron*, 1998, **54**, 10007-10016 (*isol, synth, ir, uv, pmr, cmr*)

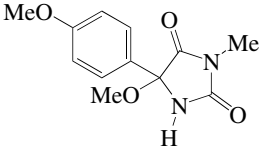
6-Methoxy-1*H*-indole-4,7-dione, 9CI M-255

[137542-70-2]

$C_9H_7NO_3$ 177.159
Alkaloid from the muricid gastropod *Drupella fragum*. Antimicrobial agent. Orange prisms. Mp 188-190° (natural) Mp 210-212° (synthetic). λ_{max} 222 (ϵ 17300); 282 (ϵ 16000); 326 (ϵ 3800); 424 (ϵ 880) (EtOH).

Fukuyama, Y. *et al., Tetrahedron*, 1998, **54**, 10007-10016 (*isol, synth, ir, uv, pmr, cmr*)

5-Methoxy-5-(4-methoxyphenyl)-3-methyl-2,4-imidazolidinedione M-256



$C_{12}H_{14}N_2O_4$ 250.254

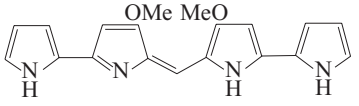
(±)-form

Metab. of Indian ocean ascidian *Polycarpa clavata*. Amorph. solid. Prob. artifact. CAS no. not found 13-14CI. λ_{max} 203 (log ϵ 4.01); 225 (log ϵ 3.79); 277 (log ϵ 3.28); 292 (log ϵ 3.19) (MeOH).

Kang, H. *et al., Tet. Lett.*, 1996, **37**, 2369-2372 (*isol, ir, uv, pmr, cmr, struct*)

4-Methoxy-5-[(3-methoxy-5-pyrrol-2-yl-2*H*-pyrrol-2-ylidene)-methyl]-2,2′-bipyrrole, 8CI M-257

[19369-65-4]
[19369-64-3]

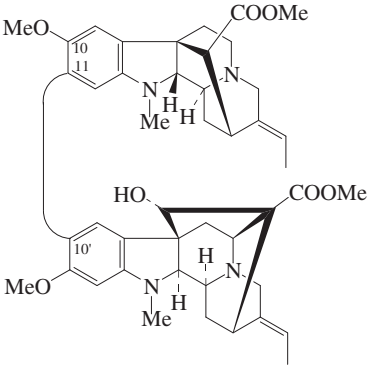


$C_{19}H_{18}N_4O_2$ 334.377
Pyrrole antibiotic. Pigment from an Australian ascidian and from the bryozoan *Bugula dentata*, also prod. by a mutant strain of the bacterium *Serratia marcescens*, from *Streptomyces coelicolor* and from *Nembrotha kubaryana*. Shows mild activity against gram-positive bacteria. Blue cryst. (CH_2Cl_2/petrol)(as hydrochloride). Mp 300° dec. (hydrochloride). Red colour in basic soln. λ_{max} 555 (sh); 588 (HCl salt) (Derep). λ_{max} 555 (sh); 588 (HCl salt) (Derep). λ_{max} 326 (ϵ 26300); 556 (ϵ 2840); 599 (ϵ 103000) ($CHCl_3$) (Berdy).

Wasserman, H.H. *et al., Tet. Lett.*, 1968, 641 (*isol, pmr, struct, synth*)
Kazlauskas, R. *et al., Aust. J. Chem.*, 1982, **35**, 215 (*isol, uv, ir, pmr, cmr, ms*)
Matsunaga, S. *et al., Experientia*, 1986, **42**, 84 (*isol, uv, pmr, cmr*)
Karuso, P. *et al., Molecules*, 2002, **7**, 1-6 (*isol, Nembrotha*)

10-Methoxy-11-[10-(11-methoxyvincamajinyl)]cathafoline M-258

[132242-27-4]



$C_{45}H_{54}N_4O_7$ 762.944
Alkaloid from the stem bark of *Tonduzia pittieri* (*Alstonia pittieri*) (Apocynaceae). Opt. inactive.

Morfaux, A.-M. *et al., Phytochemistry*, 1990, **29**, 3345 (*isol, uv, ir, pmr, cmr, ms, struct*)

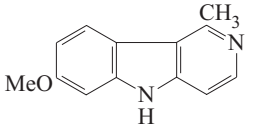
2-Methoxy-*N*-(3-methylbutyl)acetamide, 9CI M-259

N-*(Methoxyacetyl)-3-methylbutylamine*
[81164-06-9]
$MeOCH_2CONHCH_2CH_2CH(CH_3)_2$
$C_8H_{17}NO_2$ 159.228
Isol. from the rectal gland of male *Dacus* spp. $Bp_{0.2}$ 78-80°.

Baker, R. *et al., Experientia*, 1982, **38**, 232 (*isol*)
Perkins, M.V. *et al., J.C.S. Perkin 1*, 1990, 1111 (*synth*)

7-Methoxy-4-methyl-γ-carboline M-260

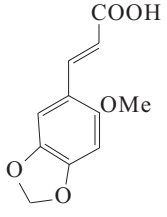
*7-Methoxy-1-methyl-5*H*-pyrido[4,3-*b*]indole, 9CI*. ***γ-Harmine***
[128508-19-0]



$C_{13}H_{12}N_2O$ 212.251
Alkaloid from the seeds of *Peganum harmala* (Zygophyllaceae). Cryst. (EtOH). Mp 238-240°. First example of a naturally occurring γ-carboline alkaloid. λ_{max} 205 (log ϵ 4.27); 245 (log ϵ 4.45); 260 (sh) (log ϵ 4.16); 265 (sh) (log ϵ 3.99); 303 (log ϵ 3.98); 323 (log ϵ 4.1); 365 (log ϵ 3.63) (MeOH).

Li, G. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 1989, **31**, 393-397; *CA*, **113**, 74723m (*isol, pmr, ms*)

2-Methoxy-4,5-methylenedioxycinnamic acid M-261



$C_{11}H_{10}O_5$ 222.197

(*E*)-*form*

Pyrrolidide: ***2-Methoxy-4,5-methylenedioxycinnamoyl pyrrolidide***
[82682-47-1]
$C_{15}H_{17}NO_4$ 275.304
Alkaloid from the roots of *Piper amalgo* (Piperaceae). Yellowish cryst. Mp 178°.

Piperidide: ***2-Methoxy-4,5-methylenedioxycinnamoyl piperidide***
[67879-91-8]
$C_{16}H_{19}NO_4$ 289.33
Alkaloid from the roots of *Piper amalgo* (Piperaceae). Yellowish plates (hexane/Me_2CO). Mp 120°.

2-Methylpropylamide: ***2-Methoxy-4,5-methylenedioxycinnamoyl isobutylamide***. *5′-Methoxyfagaramide*
[259258-85-0]
$C_{15}H_{19}NO_4$ 277.319
Alkaloid from the roots of *Piper amalago* var. *nigrinodum*. Cryst. Mp 150-152°.

(*Z*)-*form*

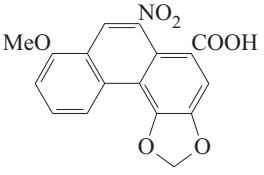
Pyrrolidide: [105705-79-1]
Minor alkaloid from the leaves of *Piper peepuloides* and from *Piper hispidum* (Piperaceae). Needles (EtOAc/petrol). Mp 118°.

Piperidide: [73885-65-1]
Alkaloid from *Piper peepuloides*. Cryst. (EtOAc/petrol). Mp 99°. λ_{max} 240 ; 275 ; 333 (MeOH).

Sehgal, C.K. *et al., Phytochemistry*, 1979, **18**, 1865-1867 (*cis-Piperidide*)
Domńguez, X.A. *et al., Phytochemistry*, 1986, **25**, 239 (*isol, uv, ir, pmr, ms, struct*)
Shah, S. *et al., Phytochemistry*, 1986, **25**, 1997-1998 (*cis-pyrrolidide*)
Jacobs, H. *et al., J. Indian Chem. Soc.*, 1999, **76**, 713-717 (*isobutylamide*)

8-Methoxy-3,4-methylenedioxy-10-nitro-1-phenanthrenecarboxylic acid M-262

*8-Methoxy-6-nitrophenanthro[3,4-*d*]-1,3-dioxole-5-carboxylic acid, 9CI*. ***Aristolochic acid I***. *Aristolochic acid A*. *Aristolochic acid*. *Isoaristolochic acid*. *Aristolochin*†. *Aristinic acid*. *Aristolochia yellow*. *Descresept*. *Tardolyt*. *TR 1736*
[313-67-7]



$C_{17}H_{11}NO_7$ 341.276
Alkaloid from a wide range of *Aristolochia* spp. Also found in the Chinese drug Fang-chi, *Asarum canadense* var. *reflexum*, *Bragantia wallichii* (preferred genus name *Thottea*), and in the butterflies *Pachlioptera aristolochiae* and *Battus archidamas*. Phospholipase A_2 inhibitor. Antineoplastic, antiseptic, antiinflammatory and bactericidal agent. Platelet aggregation inhibitor. Cytotoxic. Cryst. (DMF/EtOH, EtOH or MeOH/Et_2O). Sol. MeOH, EtOH, bases; poorly sol. hexane, H_2O. Mp 281-286° dec. (271-273°, 275-278°). Log P 3.48 (calc). H_2SO_4 → green colour. λ_{max} 241; 305; 340; 450 (EtOH/NaOH) (Derep). λ_{max} 221 (ϵ 29500); 255 (ϵ 32400); 283; 314 (ϵ 11200); 389 (ϵ 6030) (EtOH) (Derep). λ_{max} 223 (ϵ 1174); 227 (ϵ 1148); 250 (ϵ 1445); 318 (ϵ 478); 390 (ϵ 251) (MeOH) (Berdy). λ_{max} 221 (ϵ 29500); 250 (ϵ 32200); 317 (ϵ 11200); 390 (ϵ 6000) (EtOH) (Berdy).

▶ Nephrotoxic. Exp. carcinogen. LD_{50} (rat, orl) 184 mg/kg. LD_{50} (rat, ivn) 74 mg/kg. CF3325000

Me ester: ***Methyl aristolochate***
[1169-60-4]
$C_{18}H_{13}NO_7$ 355.303
Alkaloid from roots of *Asarum indica* and *Asarum argentina* (Aristolochiaceae). Cytotoxic. Yellow needles ($CHCl_3$/MeOH), cryst. ($CHCl_3$). Mp 285-286° (281-282°).

▶ SF8280000

O-*De-Me: 8-Hydroxy-3,4-methylenedioxy-10-nitro-1-phenanthrenecarboxylic acid.* ***Aristolochic acid Ia***
[38965-71-8]
$C_{16}H_9NO_7$ 327.25
Alkaloid from the roots of *Aristolochia argentina*, and the leaves and tender stems of *Aristolochia chilensis*. Also found in the butterflies *Zerynthia polyxena* and *Battus archidamas* (Aristolochiaceae). Orange-coloured solid (MeOH). Mp 278° dec.

▶ SF8276000

O-*De-Me, Me ester:* ***Aristolochic acid Ia methyl ester***
$C_{17}H_{11}NO_7$ 341.276
Alkaloid from *Aristolochia kaempferi*. Yellow syrup. λ_{max} 224 ; 251 ; 270 (sh) ; 288 (sh) ; 321 ; 391 (MeOH).

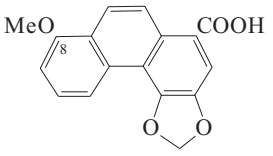
[10190-99-5]

Krishnaswamy, P.R. *et al., J. Indian Chem. Soc.*, 1935, **12**, 476 (*isol*)
Munjunath, B.L. *et al., J. Indian Chem. Soc.*, 1938, **15**, 646 (*isol*)
Pailer, M. *et al., Monatsh. Chem.*, 1956, **87**, 249; 1957, **88**, 367 (*isol, ir, uv, struct*)
Doskotch, R.W. *et al., J. Nat. Prod.*, 1967, **30**, 141 (*isol*)
v. Euw, J. *et al., Isr. J. Chem.*, 1968, **6**, 659 (*isol, ms*)
Kupchan, S.M. *et al., J.O.C.*, 1968, **33**, 3735 (*isol, pmr*)
Comer, F. *et al., Can. J. Chem.*, 1969, **47**, 481 (*isol, biosynth*)
Priestap, H.A. *et al., An. Asoc. Quim. Argent.*, 1971, **59**, 245; *CA*, **76**, 43943w (*isol, uv, ir*)
Rothschild, M. *et al., Insect Biochem.*, 1972, **2**, 334 (*Aristolochic acid Ia, isol, ms*)
Pakrashi, S.C. *et al., Phytochemistry*, 1977, **16**, 1103 (*isol, ir, ms, struct, ester*)
Martindale, The Extra Pharmacopoeia, 28th/29th edn., Pharmaceutical Press, 1982, 12391
Nakanishi, T. *et al., Phytochemistry*, 1982, **21**, 1759 (*pmr, ester*)
Priestap, H.A. *et al., Phytochemistry*, 1982, **21**, 2755 (*Me ester, O-de-Me, isol, uv, ir, pmr, ms*)
Urzúa, A. *et al., Coll. Czech. Chem. Comm.*, 1983, **48**, 1513 (*isol, uv, pmr, ms, O-de-Me*)
De Pascual Teresa, J. *et al., Phytochemistry*, 1983, **22**, 2745 (*isol, ir, pmr, ms, synth*)
Rosenthal, M.D. *et al., Biochim. Biophys. Acta*, 1989, **1001**, 1 (*pharmacol*)
Schmeiser, H.H. *et al., Cancer Res.*, 1990, **50**, 5464 (*tox*)
Mengs, U. *et al., Arch. Toxicol.*, 1993, **67**, 307 (*tox*)
Moreno, J.J. *et al., Immunopharmacology*, 1993, **26**, 1 (*pharmacol*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 1411
Leu, Y.-L. *et al., Phytochemistry*, 1998, **48**, 734-745 (*isol, uv, pmr, ms*)
Wu, T.S. *et al., Biol. Pharm. Bull.*, 2000, **23**, 1216-1219 (*Aristolochic acid Ia methyl ester*)
Wu, T.-S. *et al., Chem. Pharm. Bull.*, 2000, **48**, 1006-1009 (*activity*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, AQY250

8-Methoxy-3,4-methylenedioxy-1-phenanthrenecarboxylic acid M-263

*8-Methoxyphenanthro[3,4-*d*]-1,3-dioxole-5-carboxylic acid, 9CI.* ***Aristolic acid***

[35142-05-3]



$C_{17}H_{12}O_5$ 296.279

Constit. of *Aristolochia indica*. Mp 292°.

▶ SF8278000

Me ester: [35142-06-4]

$C_{18}H_{14}O_5$ 310.306

Constit. of *Aristolochia indica*. Mp 172°.

▶ SF8279000

Amide: ***Aristolamide***

[64543-56-2]

$C_{17}H_{13}NO_4$ 295.294

Constit. of *Aristolochia indica* and *Uvaria grandiflora*. Cryst. (Me_2CO). Mp 293-294°.

6-Hydroxy: 6-Hydroxy-8-methoxy-3,4-methylenedioxy-1-phenanthrenecarboxylic acid. ***Aristofolin D***

[64543-61-9]

$C_{17}H_{12}O_6$ 312.278

Constit. of *Aristolochia cucurbitifolia*. Yellow needles (MeOH). Mp >280°. λ_{max} 244 (sh) ; 259 ; 296 (sh) ; 331 ; 383 (MeOH).

6-Hydroxy, O-*β-*D*-glucopyranoside:* ***Aristofolin A***

[214132-42-0]

$C_{23}H_{22}O_{11}$ 474.42

Constit. of *Aristolochia kaempferi* and *Aristolochia cucurbitifolia*. Pale yellow powder ($CHCl_3$/MeOH). Mp >280°. Isol. from *A. cucurbitifolia* as the Na salt. λ_{max} 224 ; 244 (sh) ; 259 ; 295 ; 316 ; 330 ; 360 (MeOH).

7-Hydroxy: 7-Hydroxy-8-methoxy-3,4-methylenedioxy-1-phenanthrenecarboxylic acid. ***Aristofolin B***

[214132-44-2]

$C_{17}H_{12}O_6$ 312.278

Constit. of *Aristolochia cucurbitifolia*. Yellow needles (MeOH). Mp >280°. λ_{max} 227 ; 275 ; 297 ; 323 ; 377 (MeOH).

6-Methoxy: 6,8-Dimethoxy-3,4-methylenedioxy-1-phenanthrenecarboxylic acid. Aristolinic acid

[64543-59-5]

$C_{18}H_{14}O_6$ 326.305

Cryst. ($CHCl_3$/MeOH). Mp 284-285°.

6-Methoxy, Me ester: [64543-60-8]

$C_{19}H_{16}O_6$ 340.332

Constit. of *Aristolochia indica*. Cryst. ($CHCl_3$/MeOH). Mp 206-207°.

7-Methoxy, Me ester: ***Aristofolin C***

[214132-45-3]

$C_{19}H_{16}O_6$ 340.332

Constit. of *Aristolochia cucurbitifolia*. Yellow needles ($CHCl_3$). Mp 165-168°. λ_{max} 230 ; 277 ; 330 ; 378 (MeOH).

Pakrashi, S.C. *et al., Phytochemistry*, 1977, **16**, 1103-1104 (*isol, struct*)

Liao, Y. *et al., Zhongcaoyao*, 1996, **27**, 524-525; *CA*, **125**, 323022c (*amide, isol*)

Wu, T.-S. *et al., Chem. Pharm. Bull.*, 1998, **46**, 1301-1302 (*Aristofolins*)

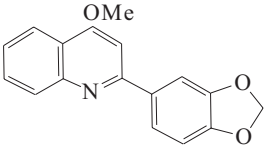
Wu, T.-S. *et al., Phytochemistry*, 1998, **49**, 2509-2510 (*Aristofolin A*)

Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, AQX825; MGQ525

4-Methoxy-2-(3,4-methylenedioxyphenyl)quinoline M-264

2-(1,3-Benzodioxol-5-yl)-4-methoxyquinoline, 9CI. ***Graveolinine***

[4179-37-7]



$C_{17}H_{13}NO_3$ 279.295

Alkaloid of *Ruta graveolens* (rue) and *Lunasia amara* (Rutaceae). Spasmolytic agent. Prisms (pentane/EtOAc). Mp 116-117°. Log P 3.97 (calc).

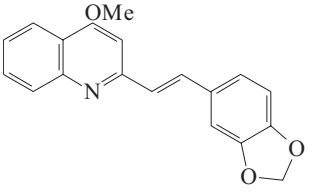
Goodwin, S. *et al., J.A.C.S.*, 1959, **81**, 6209 (*isol, ir, uv, struct*)

Chatterjee, A. *et al., Chem. Ind. (London)*, 1962, 1982 (*isol, ir, uv, synth*)

Reisch, J. *et al., Naturwissenschaften*, 1967, **54**, 200 (*synth*)

4-Methoxy-2-(3,4-methylenedioxystyryl)quinoline M-265

2-[2-(1,3-Benzodioxol-5-yl)ethenyl]-4-methoxyquinoline, 9CI



$C_{19}H_{15}NO_3$ 305.332

(***E*)-*form*** [124902-96-1]

Alkaloid from the stem bark of *Galipea longiflora* (Rutaceae). Amorph. Mp 178-180° (synthetic).

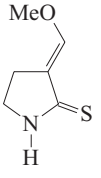
Fournet, A. *et al., Can. J. Chem.*, 1989, **67**, 2116 (*isol, uv, pmr, ms, struct*)

Caron, S. *et al., J. Nat. Prod.*, 1993, **56**, 138 (*synth, pmr, cmr, ms*)

3-(Methoxymethylene)-2-pyrrolidinethione M-266

Raphanusamide

[104730-65-6]



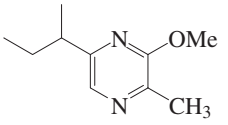
C_6H_9NOS 143.209

Originally assigned a 1,3-oxazepin-2-one struct. The 1997 *CA* Index Guide retains the erroneous nomencl. Isol. from Japanese radish (*Raphanus sativus* var. *hortensis* f. *gigantissimus*) (Brassicaceae). Growth inhibitor involved in phototropism of radish hypocotyls. Prisms (EtOAc/hexane). Mp 150-151°. λ_{max} 270 (ϵ 15800); 307 (ϵ 8200) (MeOH) (Derep).

Hasegawa, K. *et al., Plant Physiol.*, 1986, **81**, 976 (*isol*)

Harada, N. *et al., Tet. Lett.*, 1991, **32**, 6761 (*uv, ir, pmr, cmr, ms, cryst struct, bibl*)

3-Methoxy-2-methyl-5-(1-methylpropyl)pyrazine M-267



$C_{10}H_{16}N_2O$ 180.249

(ξ)-*form* [870543-96-7]

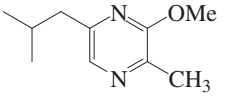
Prod. by *Chondromyces crocatus*.

Dickschat, J.S. *et al., Eur. J. Org. Chem.*, 2005, 4141-4153 (*isol, synth, pmr, cmr, ms*)

3-Methoxy-2-methyl-5-(2-methylpropyl)pyrazine M-268

5-Isobutyl-3-methoxy-2-methylpyrazine

[36329-96-1]



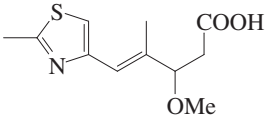
$C_{10}H_{16}N_2O$ 180.249

Prod. by *Chondromyces crocatus*.

Dickschat, J.S. *et al., Eur. J. Org. Chem.*, 2005, 4141-4153 (*isol, synth, pmr, cmr*)

3-Methoxy-4-methyl-5-(2-methyl-4-thiazolyl)-4-pentenoic acid M-269

[354817-91-7]



$C_{11}H_{15}NO_3S$ 241.31

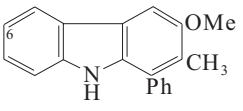
Prod. by *Sorangium cellulosum*. Precursor of Epothilones. Amorph. solid. $[\alpha]_D^{22}$ +11 (c, 1.2 in MeOH). λ_{max} 210 (ϵ 15900); 249 (ϵ 11800) (MeOH).

Hardt, I. *et al., J. Nat. Prod.*, 2001, **64**, 847-856

3-Methoxy-2-methyl-1-phenyl-9*H*-carbazole, 9CI M-270

Hyellazole

[74364-11-7]



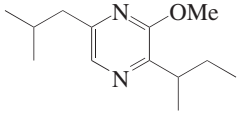
$C_{20}H_{17}NO$ 287.36
Alkaloid from the blue-green alga *Hyella caespitosa*. Mp 133-134°. λ_{max} 226 (sh) (ϵ 34000); 232 (ϵ 36500); 238 (sh) (ϵ 34500); 250 (sh) (ϵ 20000); 260 (sh) (ϵ 13500); 292 (sh) (ϵ 12500); 304 (ϵ 18500); 338 (ϵ 4500); 352 (ϵ 5000) (EtOH) (Derep).

*6-Chloro: 6-Chloro-3-methoxy-2-methyl-1-phenyl-9*H*-carbazole, 9CI.* ***Chlorohyellazole***
[74364-10-6]
$C_{20}H_{16}ClNO$ 321.805
Alkaloid from *Hyella caespitosa*. Mp 163-164°. λ_{max} 220 (ϵ 32600); 235 (ϵ 32600); 242 (ϵ 32700); 255 (sh) (ϵ 20000); 272 (sh) (ϵ 14600); 300 (sh) (ϵ 13200); 310 (ϵ 18000); 348 (ϵ 4400); 360 (ϵ 4200) (EtOH) (Derep).

Cardellina, J.H. *et al., Tet. Lett.*, 1979, 4915 (*isol, uv, ir, pmr, cmr, ms, cryst struct*)
Kano, S. *et al., Chem. Comm.*, 1980, 1241 (*synth, cmr*)
Takano, S. *et al., Heterocycles*, 1981, **16**, 1479 (*synth*)
Kano, S. *et al., J.O.C.*, 1981, **46**, 3856 (*synth, pmr, ms*)
Bergman, J. *et al., Tetrahedron*, 1988, **44**, 5215 (*synth*)
Kawasaki, T. *et al., Chem. Comm.*, 1989, 43 (*synth*)
Moody, C.J. *et al., J.C.S. Perkin 1*, 1989, 376; 2463 (*synth*)
Kawasaki, T. *et al., J.C.S. Perkin 1*, 1993, 1777 (*synth*)
Beccalli, E.M. *et al., J.C.S. Perkin 1*, 1994, 579 (*synth, Hyellazole, Chlorohyellazole*)
Knölker, H.-J. *et al., Tet. Lett.*, 1995, **36**, 5339 (*synth*)
Choshi, T. *et al., J.O.C.*, 1997, **62**, 2535 (*synth*)
Knoelker, H.-J. *et al., Tetrahedron*, 1999, **55**, 10391-10412 (*synth*)

3-Methoxy-2-(1-methylpropyl)-5-(2-methylpropyl)pyrazine M-271

[870543-98-9]

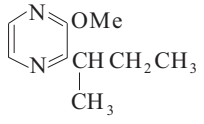


$C_{13}H_{22}N_2O$ 222.33
Prod. by *Chondromyces crocatus*.

Dickschat, J.S. *et al., Eur. J. Org. Chem.*, 2005, 4141-4153 (*isol, synth, pmr, cmr*)

2-Methoxy-3-(1-methylpropyl)pyrazine, 9CI M-272

*2-*sec*-Butyl-3-methoxypyrazine, 8CI. 2-Methoxy-3-*sec*-butylpyrazine. FEMA 3433*
[24168-70-5]



$C_9H_{14}N_2O$ 166.222
Volatile component of many vegetables, e.g. asparagus, carrot, celery, cucumber, parsnip, bell peppers, *Pisum sativum* (pea). Found in galbanum and petitgrain oils and ginger. Prod. by *Chondromyces crocatus* and a marine *Streptomyces* sp. GWS-BW-H5. Fragrance and flavour ingredient.

(±)-*form*
Bp_{10} 78-83°.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 842C (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 404C (*nmr*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 1560D (*ir*)
Bramwell, A.F. *et al., Tet. Lett.*, 1969, 3215
Murray, K.E. *et al., Chem. Ind. (London)*, 1970, 897
Murray, K.E. *et al., J. Sci. Food Agric.*, 1975, **26**, 973
Fenaroli's Handbook of Flavor Ingredients, 3rd edn., (ed. Burdock, G.A.), CRC Press, 1995, **2**, 459
Encyclopedia of Food and Color Additives, (ed. Burdock, G.A.), CRC Press, 1997, 1698 (*occur*)
Schulz, S. *et al., Tetrahedron*, 2004, **60**, 3863-3872 (*isol*)
Dickschat, J.S. *et al., Chem. Biodiversity*, 2005, **2**, 837-865 (*marine isol*)

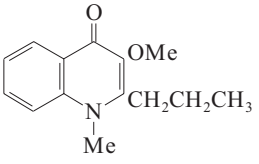
2-Methoxy-3-(2-methylpropyl)pyrazine, 9CI M-273

2-Isobutyl-3-methoxypyrazine, 8CI. Galbazine. FEMA 3132
[24683-00-9]
$C_9H_{14}N_2O$ 166.222
Occurs in petitgrain and galbanum oils. Potent component of bell-pepper (*Capsicum annuum*). Found in human urine. Fragrance and flavouring ingredient with powerful earthy flavour.
Odour threshold 2 parts per trillion in water.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 842D (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 405A (*nmr*)
Buttery, R.G. *et al., Chem. Ind. (London)*, 1969, 490-491 (*isol, synth, ir, pmr, ms*)
Murray, K.E. *et al., Chem. Ind. (London)*, 1970, 897-898 (*isol*)
Seifert, R.M. *et al., J. Agric. Food Chem.*, 1972, **20**, 135-137; *CA*, **76**, 44863g (*props, struct*)
Bramwell, A.F. *et al., J.C.S. Perkin 1*, 1972, 2004-2007 (*synth, pmr*)
Calabretta, P.J. *et al., Cosmet. Perfum.*, 1975, **90**, 74; 76; 79-80; *CA*, **83**, 183292c (*synth, use*)
Hawksworth, G.S. *et al., Xenobiotica*, 1975, **5**, 389-399; *CA*, **83**, 188835s (*metab*)

3-Methoxy-1-methyl-2-propyl-4(1*H*)-quinolinone M-274

Leiokinine A
[132587-63-4]

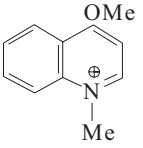


$C_{14}H_{17}NO_2$ 231.294
Alkaloid from the leaves of *Esenbeckia leiocarpa* (Rutaceae). Shows antifeedant activity against *Pectinophora gossypiella*. Needles. Mp 89-91.2°.

Nakatsu, T. *et al., J. Nat. Prod.*, 1990, **53**, 1508 (*isol, pmr, cmr, struct, synth*)

4-Methoxy-1-methylquinolinium(1+) M-275

Echinorine
[18095-64-2]



$C_{11}H_{12}NO^{\oplus}$ 174.222
Obtd. from leaves of *Echinops commutatus*, fruit of *Echinops ritro* and in *Echinops sphaerocephalus* (Asteraceae).

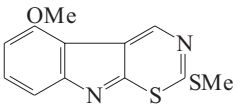
Iodide:
$C_{11}H_{12}INO$ 301.126
Mp 132-133°.

Perchlorate:
$C_{11}H_{12}ClNO_5$ 273.672
Mp 251-253°.

Schroeder, P. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1968, **301**, 39
Bereznegovskaya, L.N. *et al., CA*, 1970, **73**, 95486g (*biosynth*)
Barlin, G.B. *et al., J.C.S. Perkin 2*, 1975, 298 (*uv, nmr*)

5-Methoxy-2-(methylthio)-1,3-thiazino[6,5-*b*]indole, 9CI M-276

Dehydro-4-methoxycyclobrassinin
[154933-74-1]

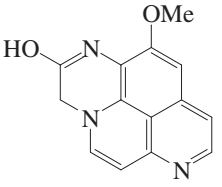


$C_{12}H_{10}N_2OS_2$ 262.356
Isol. from roots of the turnip *Brassica campestris* ssp. *rapa* (Brassicaceae) inoculated with *Pseudomonas cichorii*. Phytoalexin. Mp 142-143°.

Monde, K. *et al., Heterocycles*, 1994, **38**, 263 (*isol, uv, ir, pmr, cmr, ms, struct*)

11-Methoxy-3*H*-naphthridino[6,5,4-*def*]quinoxalin-2-ol M-277

*11-Methoxy-1*H*-naphthridino[6,5,4-*def*]-quinoxalin-2(3*H*)-one, 9CI*
[597553-92-9]

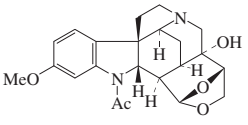


$C_{14}H_{11}N_3O_2$ 253.26

CAS name refers to *NH*-tautomer. Alkaloid from a *Xestospongia* sp. Brown gum. λ_{max} 210 (ϵ 5420); 222 (ϵ 4795); 238 (ϵ 4660); 260 (ϵ 2940); 271 (ϵ 2600); 357 (ϵ 1330); 371 (ϵ 1070) (EtOH).

Calcul, L. *et al., Tetrahedron*, 2003, **59**, 6539-6544 (*isol, pmr, cmr*)

11-Methoxyneooxydiaboline M-278
1-Acetyl-17,18:17,19-diepoxy-11-methoxycuran-20-ol, 9CI
[131984-92-4]

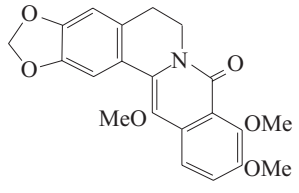


Absolute Configuration

$C_{22}H_{26}N_2O_5$ 398.458
Alkaloid from *Strychnos pungens* (Loganiaceae). $[\alpha]_D$ +149 (c, 0.82 in $CHCl_3$).

Thépenier, P. *et al., Phytochemistry*, 1990, **29**, 2384-2386 (*isol, uv, ir, pmr, cmr, ms, struct*)

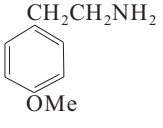
13-Methoxyoxoberberine M-279
13-Methoxy-8-oxyberberine
[56470-41-8]



$C_{21}H_{19}NO_6$ 381.384
Alkaloid from the stems of *Berberis darwinii* (Berberidaceae). Cryst. ($CHCl_3$/hexane). Mp 197-200° (194-195°).

Moniot, J.L. *et al., J.O.C.*, 1979, **44**, 4337 (*synth, ir, pmr*)
Valencia, E. *et al., Tetrahedron*, 1984, **40**, 3957 (*isol, uv, ir, pmr, ms, struct*)

2-(4-Methoxyphenyl)ethylamine M-280
4-Methoxybenzeneethanamine, 9CI. 4-Methoxyphenethylamine, 8CI. **O-*Methyltyramine*.** *Homoanisylamine*
[55-81-2]



$C_9H_{13}NO$ 151.208
Alkaloid detected in *Coryphantha ottonis, Coryphantha poselgeniana* and *Coryphantha cornifera* (Cactaceae). Bp_{20} 138-140° Bp_{12} 127-130°.

▶SH7875000

Hydrochloride: [645-58-9]
Mp 211°.

▶DA0301000

Picrate: Mp 177-178°.

N-*(3-Methyl-2-butenoyl):* **O-*Methyl*-N-*senecioyltyramine***
[924664-21-1]
$C_{14}H_{19}NO_2$ 233.31
Constit. of *Anabasis* sp.

N-*Benzoyl:* N-*[2-(4-Methoxyphenyl)ethyl]benzamide, 9CI.* **N-*Benzoyltyramine methyl ether*.** *Dihydroalatamide*
[3278-19-1]
$C_{16}H_{17}NO_2$ 255.316
Minor alkaloid from leaves of *Pleiospermium alatum* (Rutaceae) and from *Aniba riparia* and *Pleiospermium alatum*. Cryst. (Et_2O/C_6H_6). Mp 119-121°.

N-*(2-Hydroxybenzoyl):* **N-*(2-Hydroxybenzoyl)*-O-*methyltyramine***
[112356-53-3]
$C_{16}H_{17}NO_3$ 271.315
Constit. of the fruit of *Aniba riparia*. Cryst. (C_6H_6). Mp 111-112°. λ_{max} 225 (ϵ 5850); 240 (ϵ 3500); 305 (ϵ 1650) (MeOH).

N-*(2,6-Dihydroxybenzoyl):* N-*(2,6-Dihydroxybenzoyl)*-O-*methyltyramine.* ***Riparin***
[112356-54-4]
$C_{16}H_{17}NO_4$ 287.315
Constit. of the fruit of *Aniba riparia* and from *Salvia albocaerulea*. Antifungal and spasmolytic agent, smooth muscle relaxant. Cryst. (C_6H_6). Mp 131-133°. λ_{max} 220 (ϵ 14350); 255 (ϵ 6300); 312 (ϵ 2150) (MeOH).

N-*(2-Hydroxy-6-methoxybenzoyl):* **N-*(2-Hydroxy-6-methoxybenzoyl)*-O-*methyltyramine***
[112356-55-5]
$C_{17}H_{19}NO_4$ 301.341
Constit. of the bark of *Aniba riparia*. Cryst. (petrol). Mp 55-56°. λ_{max} 220 (ϵ 18050); 255 (ϵ 7650); 312 (ϵ 2850) (MeOH).

N-*(3,4-Dihydroxy*-E-*cinnamoyl):* **N-trans-*Caffeoyl*-O-*methyltyramine***
[189307-47-9]
$C_{18}H_{19}NO_4$ 313.352
Alkaloid from *Cuscuta reflexa*. α-Glucosidase inhibitor. Solid. λ_{max} 225 (log ϵ 4.12); 290 (log ϵ 3.96); 320 (log ϵ 4.43) (MeOH).

N-*Me:* N-*Methyl-4-methoxyphenethylamine. 4-Methoxy*-N-*methylbenzeneethanamine, 9CI*
[4091-50-3]
$C_{10}H_{15}NO$ 165.235
Alkaloid in *Coryphantha macromeris, Coryphantha ramilosa* and other spp. in Cactaceae. Bp_{19} 141-142°.

▶SH8110000

N-*Me; hydrochloride:* [35803-88-4]
Mp 181-182°.

N-*Me,* N-*(3,4-dimethoxy*-E-*cinnamoyl):* ***Beecheyamide***
$C_{21}H_{25}NO_4$ 355.433
Alkaloid from the stems of *Zanthoxylum beecheyanum*. Oil. λ_{max} 245 (log ϵ 4.4); 284 (log ϵ 4.28); 295 (log ϵ 4.11); 324 (log ϵ 4.21) (MeOH).

N,N-*Di-Me:* N,N-*Dimethyl-4-methoxyphenethylamine. 4-Methoxy*-N,N-*dimethylbenzeneethanamine, 9CI.* O-*Methylhordenine*
[775-33-7]
$C_{11}H_{17}NO$ 179.261
Alkaloid from bark of *Teclea simplicifolia* (Rutaceae). Centrally acting antihypertensive agent. Bp_9 117-120°.

N,N-*Di-Me; hydrochloride:* [50822-98-5]
Blades (EtOH). Mp 176.5° Mp 279-280° dec.

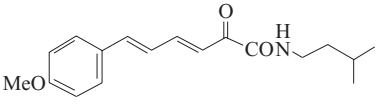
N,N,N-*Tri-Me:* **O-*Methylcandicine***
[777-74-2]
$C_{12}H_{20}NO^{\oplus}$ 194.296
Alkaloid from *Coryphantha greenwoodii* (Cactaceae).

N,N,N-*Tri-Me, chloride:* [90706-47-1]
$C_{12}H_{20}ClNO$ 229.749
Mp 206-207°.

N,N,N-*Tri-Me, iodide:*
$C_{12}H_{20}INO$ 321.201
Prisms. Mp 214-215° (204-206°).

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 1289A (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **2**, 610B (*nmr*)
Rosenmund, K.W. *et al., Ber.*, 1909, **42**, 4778-4783 (*synth*)
Barger, G. *et al., J.C.S.*, 1909, **95**, 1720-1724 (*synth*)
Badger, G.M. *et al., Aust. J. Chem.*, 1963, **16**, 734-735 (*N,N-Dimethyl-4-methoxyphenethylamine*)
Hornemann, K.M.K. *et al., J. Pharm. Sci.*, 1972, **61**, 41-45 (*occur*)
Smith, J.R.L. *et al., J.C.S. Perkin 1*, 1972, 228-234 (*synth, nmr*)
McLauchlin, J.L. *et al., J. Pharm. Sci.*, 1973, **62**, 408-411; 411-414 (*N-Me, isol, struct*)
Chatterjee, A. *et al., Aust. J. Chem.*, 1975, **28**, 457-460 (N-*Benzoyltyramine methyl ether*)
Bailey, K. *et al., Can. J. Pharm. Sci.*, 1975, **10**, 31-32 (*pmr*)
Meyer, B.N. *et al., J. Nat. Prod.*, 1983, **46**, 688-693 (*O-Methylcandicine*)
Barbosa-Filho, J.M. *et al., Phytochemistry*, 1987, **26**, 2615-2617 (*N-2-hydroxybenzoyl, N-2,6-dihydroxybenzoyl, N-2-hydroxy-6-methoxybenzoyl*)
Anis, E. *et al., Chem. Pharm. Bull.*, 2002, **50**, 112-114 (*N-Caffeoyl-O-methyltyramine*)
Cheng, M.-J. *et al., J. Chin. Chem. Soc. (Taipei)*, 2004, **51**, 1065-1072 (*Beecheyamide*)
Chen, H. *et al., Yaoxue Xuebao*, 2005, **40**, 248-251 (*O-Methyl-N-senecioyltyramine*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, CNH375; MFC500

6-(4-Methoxyphenyl)-*N*-(3-methylbutyl)-2-oxo-3,5-hexadienamide, 9CI M-281
5-(4-Methoxyphenyl)-2,4-hexadienoic acid isopentylamide

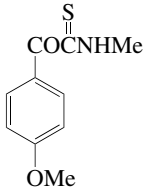


$C_{18}H_{23}NO_3$ 301.385

(***E,E*)-*form*** [75933-10-7]
Alkaloid from the aerial parts of *Ottonia ovata* (preferred genus name *Piper*) (Piperaceae).

Haensel, R. *et al., Planta Med.*, 1980, **40**, 161

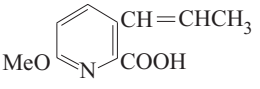
(4-Methoxyphenyl)-*N*-methyl-2-oxothioacetamide M-282
4-Methoxy-N-*methyl-α-oxobenzeneethanethioamide*



$C_{10}H_{11}NO_2S$ 209.268
Isol. from the ascidian *Polycarpa aurata*. Inhibitor of inosine monophosphate dehydrogenase. Yellow cryst. ($CHCl_3$/MeOH). Probable artifact. Not in CA.

Abas, S.A. *et al., J.O.C.*, 1996, **61**, 2709-2712 (*isol, ir, pmr, cmr, ms, cryst struct*)

6-Methoxy-3-(1-propenyl)-2-pyridinecarboxylic acid, 9CI M-283
[103972-05-0]



$C_{10}H_{11}NO_3$ 193.202
Alkaloid from the aerial parts of *Melochia corchorifolia* (Apocynaceae). Mp 196°.

Me ester: Mp 118°.

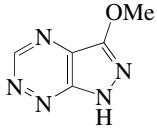
Bhakuni, R.S. *et al., Chem. Ind. (London)*, 1986, 464 (*isol, uv, ir, pmr, ms, struct*)

***N*-(2-Methoxy-2-propenyl)-trimethylammonium(1+)** M-284
(2-Methoxyallyl)trimethylammonium, 8CI
$H_2C{=}C(OMe)CH_2N^{\oplus}Me_3$
$C_7H_{16}NO^{\oplus}$ 130.21
Isol. from the marine sponge *Raspailia* sp. Counterion of natural compd not specified.

Bromide: ***Meprochol, BAN.*** *Esmodil*
[590-31-8]
$C_7H_{16}BrNO$ 210.114
Muscarinic agonist. Cryst. powder. Sol. H_2O, EtOH. Mp 169°.
▶ BR7167000

Ger. Pat., 1935, 614 462; *CA*, **29**, 5994 (*synth*)
Asakawa, H. *et al., Okayama Igakkai Zasshi*, 1939, **51**, 1020; *CA*, **37**, 682b (*pharmacol*)
Capon, R.J. *et al., Nat. Prod. Res.*, 2004, **18**, 305-309 (*isol, synth, pmr, cmr*)

3-Methoxypyrazolo[4,3-*e*][1,2,4]triazine, 9CI M-285
Fluviol A. *Normethylpseudoiodinine. Norpseudoiodinin*
[37526-53-7]



$C_5H_5N_5O$ 151.127
Prod. by *Pseudomonas fluorescens*. Yellow cryst. (MeOH). Mp 196-197°. Subl. at 150°. λ_{max} 233 (log ε 4.16); 280 (log ε 3.56); 283 (log ε 3.56); 375 (log ε 3.16) (EtOH).

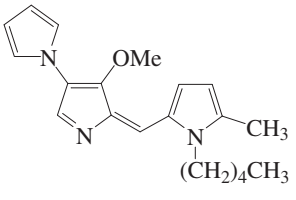
1H-form
N-*Ac:* [37526-54-8]
Mp 147°.
N-*Me: 3-Methoxy-1-methylpyrazolo[4,3-e][1,2,4]triazine*
[37526-55-9]
$C_6H_7N_5O$ 165.154
Mp 149°.
N-*Hydroxymethyl:* ***Fluviol B***
[195154-66-6]
$C_6H_7N_5O_2$ 181.154
Prod. by *Pseudomonas fluorescens*. Mp 141° dec. λ_{max} 206 (log ε 3.66); 233 (log ε 4.22); 280 (log ε 3.6); 284 (log ε 3.6); 290 (sh) (log ε 3.5); 375 (log ε 3.2); 402 (sh) (log ε 3.1) (EtOH).

6H-form
N-*Me: 3-Methoxy-6-methyl-6*H-*pyrazolo[4,3-e][1,2,4]triazine, 9CI.* ***Fluviol E***
[37526-57-1]
$C_6H_7N_5O$ 165.154
Prod. by *Pseudomonas fluorescens*. Unstable violet pigment.

7H-form
N-*Me: 3-Methoxy-7-methyl-7*H-*pyrazolo[4,3-e][1,2,4]triazine.* ***Fluviol C.*** ***Pseudoiodinine***
[37526-58-2]
$C_6H_7N_5O$ 165.154
Prod. by *Pseudomonas fluorescens* and *Pseudomonas fluorescens* var. *pseudoiodinum*. Cryst. (Me_2CO/hexane). Mp 142-144° dec. Subl. at 120-130°. Struct. of Pseudoiodinine revised in 2006. λ_{max} 236 (log ε 4.24); 291 (log ε 3.79); 298 (sh) (log ε 3.72); 401 (log ε 3.26); 430 (sh) (log ε 3.17) (EtOH).

Korth, H. *et al., Arch. Microbiol.*, 1971, **77**, 59
Lindner, H.J. *et al., Chem. Ber.*, 1972, **105**, 1949-1955 (*synth, cryst struct*)
Smirnov, V.V. *et al., FEMS Microbiol. Lett.*, 1997, **153**, 357-361 (*isol*)
Kelly, T.R. *et al., J.A.C.S.*, 2006, **128**, 5646-5647 (*synth*)

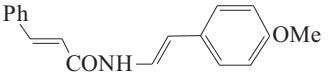
2-[[3-Methoxy-4-(1*H*-pyrrol-1-yl)-2*H*-pyrrol-2-ylidene]methyl]-5-methyl-1-pentyl-1*H*-pyrrole, 9CI M-286
[418767-73-4]



$C_{20}H_{25}N_3O$ 323.437
Related to Prodigiosin, P-636. Red pigment prod. by *Micrococcus* sp. Oil. λ_{max} 536 (MeOH).

Variyar, P.S. *et al., Indian J. Chem., Sect. B*, 2002, **41**, 232-233 (*isol, pmr, cmr, ms*)
Subramanian, M. *et al., Bioorg. Med. Chem.*, 2006, **14**, 2480-2486 (*activity*)

***N*-4-Methoxystyrylcinnamide** M-287
N-*[2-(4-Methoxyphenyl)ethenyl]-3-phenyl-2-propenamide, 9CI*

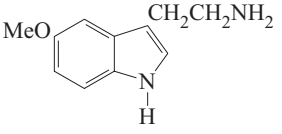


$C_{18}H_{17}NO_2$ 279.338

(E,E)-form [87596-53-0]
Alkaloid from the leaves of *Aegle marmelos* (bael fruit) (Rutaceae). Yellow needles (MeOH). Mp 191°.

Govindachari, T.R. *et al., Phytochemistry*, 1983, **22**, 755 (*isol, uv, ir, pmr, ms, struct*)

5-Methoxytryptamine M-288
*5-Methoxy-1*H-*indole-3-ethanamine. 3-(2-Aminoethyl)-5-methoxyindole*
[608-07-1]



$C_{11}H_{14}N_2O$ 190.244
See also refs. under 5-Hydroxytryptamine, H-755. Mp 120-121°.
▶ LD_{50} (mus, ipr) 176 mg/kg. NL4059000
Hydrochloride: Mexamine
[66-83-1]
Cryst. (EtOH). Mp 246-248°.
N^b-*Ac:* N-*[2-(5-Methoxy-1*H-*indol-3-yl)ethyl]acetamide, 9CI.* N-*Acetyl-5-methoxytryptamine.* ***Melatonin***
[73-31-4]
$C_{13}H_{16}N_2O_2$ 232.282
Isol. from bovine pineal glands. Product of tryptophan metabolism by the pineal gland. Potent effects on the control of seasonal reproduction in mammals. Synthesis and secretion subject to photoperiodic control. May influence circadian rhythms in humans. Tumour-inhibiting props. and role in immune system under investigation. Pale yellow leaflets (C_6H_6). Mp 116-118°. Low toxicity, non-mutagenic.
▶ AC5955000
N^b-*(4-Hydroxy-*E-*cinnamoyl):* N-E-p-*Coumaroyl-5-methoxytryptamine.* ***Centcyamine***
[366452-03-1]
$C_{20}H_{20}N_2O_3$ 336.39
Alkaloid from the seeds of *Centaurea cyanus*.
N^b-*(4-Hydroxy-Z-cinnamoyl):* N-Z-p-*Coumaroyl-5-methoxytryptamine.* **cis-*Centcyamine***
[365540-94-9]

$C_{20}H_{20}N_2O_3$ 336.39
Alkaloid from the seeds of *Centaurea cyanus*.

N^b-*Me:* ***5-Methoxy-N-methyltryptamine***
[2009-03-2]
$C_{12}H_{16}N_2O$ 204.271
Alkaloid from *Phalaris arundinacea* (Poaceae) and *Desmodium pulchellum* (Fabaceae). Prisms (MeOH/Et_2O) (as hydrochloride). Mp 166-167° (hydrochloride).

N^b,N^b-*Di-Me: 5-Methoxy*-N,N-*dimethyltryptamine.* **O-*Methylbufotenine***
[1019-45-0]
$C_{13}H_{18}N_2O$ 218.298
Alkaloid from *Phalaris tuberosa* (Poaceae), *Desmodium pulchellum* (Fabaceae) and many other spp. in many families. Toxic agent causing staggers-like poisoning of sheep fed on *Phalaris tuberosa* in Australia. Prisms (Et_2O/hexane). Mp 69°. Bp_4 208-210°.

▶ Toxic. LD_{50} (mus, ipr) 115 mg/kg.
NL7380000

N^b,N^b-*Di-Me, picrate:* [4006-02-4]
Orange-yellow cryst. (MeOH/Me_2CO). Mp 176-177°.

N^b,N^b-*Di-Me,* N^b-*oxide:* **O-*Methylbufotenine* N-*oxide***
$C_{13}H_{18}N_2O_2$ 234.297
Alkaloid from several *Desmodium* spp. (Fabaceae). Mp 158° (as picrate).

N^b,N^b-*Diisopropyl:* N,N-*Diisopropyl-5-methoxytryptamine. Foxy*
[4021-34-5]
$C_{17}H_{26}N_2O$ 274.405
Hallucinogen, mild euphoric, drug of abuse.

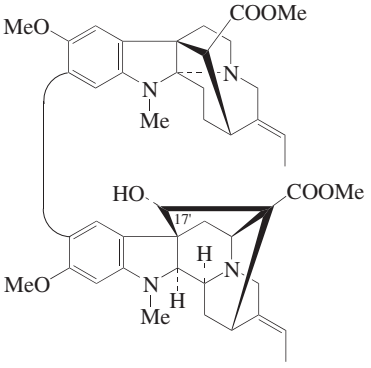
N^b,N^b-*Diisopropyl, hydrochloride:* [2426-63-3]
Cryst. (EtOH/Et_2O). Mp 180-181°.

[66-83-1]

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 663A
Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 677A (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 134B; 156C (*nmr*)
Wilkinson, S. *et al., J.C.S.*, 1958, 2079-2081 (*5-Methoxy-N-methyltryptamine, isol*)
Patchter, I.J. *et al., J.O.C.*, 1959, **24**, 1285-1289 (*5-Methoxy-N,N-dimethyltryptamine*)
Adlerova, I. *et al., Coll. Czech. Chem. Comm.*, 1960, **25**, 784; *CA*, **54**, 13095f
Szmuszkovicz, J. *et al., J.O.C.*, 1960, **25**, 857-859 (*Melatonin, synth, uv*)
Julia, M. *et al., Bull. Soc. Chim. Fr.*, 1965, 1411-1417 (*diisopropyl, synth*)
Ghosal, S. *et al., J.O.C.*, 1966, **31**, 2284-2288 (*5-Methoxy-N-methyltryptamine, 5-Methoxy-N,N-dimethyltryptamine, 5-Methoxy-N,N-dimethyltryptamine oxide*)
Quarles, W.G. *et al., Acta Cryst. B*, 1974, **30**, 99-103 (*Melatonin, cryst struct*)
Mattox, S.E. *et al., Biomed. Mass Spectrom.*, 1975, **2**, 272 (*synth, ms*)
Minneman, K.P. *et al., Life Sci.*, 1975, **17**, 1189-1199 (*rev, pharmacol*)
Glennon, R.A. *et al., Eur. J. Pharmacol.*, 1983, **86**, 453-459 (*diisopropyl, pharmacol*)
Skaltsounis, A.L. *et al., J. Nat. Prod.*, 1983, **46**, 732-735 (*N,N-di-Me, N,N-di-Me oxide*)
Arendt, J. *et al., Clin. Endocrinol. (Oxford)*, 1988, **29**, 205 (*Melatonin, rev*)
Neville, S. *et al., J. Pineal Res.*, 1989, **6**, 73-76 (*mutagenicity*)
Dubcovich, M.L. *et al., Adv. Pineal Res.*, 1991, **5**, 343-349 (*Melatonin, pharmacol*)
Reiter, R.J. *et al., Endocr. Rev.*, 1991, **12**, 151-180 (*Melatonin, rev*)
Guerrero, J.M. *et al., Endocr. Rev.*, 1992, **18**, 91 (*Melatonin*)
Vivien-Roels, B. *et al., Experientia*, 1993, **49**, 642-647 (*rev, Melatonin*)
Marais, W. *et al., Synth. Commun.*, 1998, **28**, 3681-3691 (*Melatonin*)
Martindale, The Extra Pharmacopoeia, 32nd edn., Pharmaceutical Press, 1999, 1599 (*Melatonin*)
Hwang, K.-J. *et al., Synth. Commun.*, 1999, **29**, 2099-2104 (*Melatonin, synth, pmr*)
Somei, M. *et al., Chem. Pharm. Bull.*, 2001, **49**, 87-89 (*Melatonin, synth*)
Sarker, S.D. *et al., Phytochemistry*, 2001, **57**, 1273-1276 (*Centcyamine*)
Amat, M. *et al., Synthesis*, 2001, 267-275 (*Melatonin*)
Hügel, H.M. *et al., Heterocycles*, 2003, **60**, 2349-2354 (*Melatonin, rev, synth*)
Thomson, D.W. *et al., Synth. Commun.*, 2003, **33**, 3631-3641 (*synth, Melatonin*)
Wilson, J.M. *et al., Forensic Sci. Int.*, 2005, **148**, 31-36 (*diisopropyl, pharmacol*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, MCB350; Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, MFT000; MFS400

11-[10-(11-Methoxyvincamajinyl)]vincorine M-289

[142795-96-8]



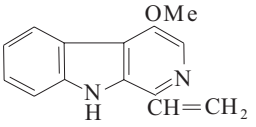
$C_{45}H_{54}N_4O_7$ 762.944
Alkaloid from the leaves of *Tonduzia pittieri* (*Alstonia pittieri*) (Apocynaceae).

Ac: ***11-[10-(11-Methoxyvincamedinyl)]-vincorine***
[142750-30-9]
$C_{47}H_{56}N_4O_8$ 804.981
Alkaloid from leaves of *Tonduzia pittieri* (Apocynaceae). $[\alpha]_D$ -58 (c, 1 in $CHCl_3$).

17′-Epimer: ***11-[10-(11-Methoxy-17-epivincamajinyl)]vincorine***
[142750-29-6]
$C_{45}H_{54}N_4O_7$ 762.944
Alkaloid from leaves of *Tonduzia pittieri* (Apocynaceae). $[\alpha]_D$ -37 (c, 1 in $CHCl_3$).
Morfaux, A.-M. *et al., Phytochemistry*, 1992, **31**, 1079 (*isol, uv, ir, pmr, cmr, ms, struct*)

4-Methoxy-1-vinyl-β-carboline M-290

*1-Ethenyl-4-methoxy-9*H-*pyrido[3,4-b]indole, 9CI.* ***Dehydrocrenatine***
[26585-13-7]



$C_{14}H_{12}N_2O$ 224.262
Alkaloid from *Picrasma javanica* and *Ailanthus malabarica* (Simaroubaceae). Antimalarial agent. Mp 146-147°.

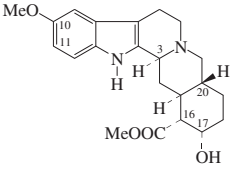
Dihydro: 1-Ethyl-4-methoxy-β-carboline. ***Crenatine***†
[26585-14-8]
$C_{14}H_{14}N_2O$ 226.277
Alkaloid from *Aeschrion crenata* (preferred genus name *Picrasma*) and *Quassia undulata* (Simaroubaceae). Mp 181-183°. λ_{max} 243 (ε 28200); 265 (ε 58000); 274 (ε 6500); 284 (ε 11700); 331 (ε 5500); 348 (ε 6200) (MeOH) (Berdy).

6-Hydroxy: 6-Hydroxy-4-methoxy-1-vinyl-β-carboline. ***6-Hydroxydehydrocrenatine***
[115910-13-9]
$C_{14}H_{12}N_2O_2$ 240.261
Alkaloid from *Picrasma javanica*. Antimalarial agent. Cryst. (EtOH).

Johns, S.R. *et al., Aust. J. Chem.*, 1970, **23**, 629 (*isol, pmr, ms, struct*)
Sánchez, E. *et al., Phytochemistry*, 1971, **10**, 2155 (*deriv*)
Joshi, B.S. *et al., Heterocycles*, 1977, **7**, 193 (*isol, uv, pmr*)
Cain, M. *et al., J.O.C.*, 1982, **47**, 4933 (*synth*)
Koike, K. *et al., Org. Magn. Reson.*, 1984, **22**, 471-473 (*cmr*)
Pavanand, K. *et al., Phytother. Res.*, 1988, **2**, 33-36 (*6-Hydroxydehydrocrenatine*)
Hagen, T.J. *et al., J.O.C.*, 1989, **54**, 2170 (*synth, Crenatine*)
Holt, E.M. *et al., J. Crystallogr. Spectrosc. Res.*, 1990, **20**, 261 (*cryst struct, Crenatine*)
Murakami, Y. *et al., Chem. Pharm. Bull.*, 1991, **39**, 2189 (*synth, Crenatine*)

10-Methoxyyohimbine M-291

Methyl 17-hydroxy-10-methoxyyohimban-16-carboxylate. 16-Epiexcelsinine
[15266-53-2]



Absolute Configuration

$C_{22}H_{28}N_2O_4$ 384.474
Alkaloid from bark of *Aspidosperma*

pruinosum (Apocynaceae). Amorph. solid. $[\alpha]_D^{25}$ +56.6 (c, 1.2 in EtOH). λ_{max} 225 (log ϵ 4.46); 279 (log ϵ 3.92); 294 (log ϵ 3.87) (EtOH).

Hydrochloride: [16218-82-9]
Mp 275° dec. $[\alpha]_D$ +77 (EtOH).

16-Epimer. ***Excelsinine****. 10-Methoxycorynanthine*
[15218-17-4]
$C_{22}H_{28}N_2O_4$ 384.474
Alkaloid from *Aspidosperma excelsum* (Apocynaceae). Cryst. (MeOH). Mp 199-201° dec. $[\alpha]_D$ -63.4 (Py).

16-Epimer, hydrochloride: [15218-18-5]
$[\alpha]_D$ -54.5. No def. Mp.

16-Epimer, O-*Ac:* [16179-94-5]
Mp 225° dec. $[\alpha]_D$ -54.8 (Py).

17-Epimer. ***10-Methoxy-β-yohimbine***
[88607-64-1]
$C_{22}H_{28}N_2O_4$ 384.474
Alkaloid from the seeds of *Aspidosperma oblongum* (Apocynaceae). Amorph. $[\alpha]_D$ +29 (c, 0.31 in MeOH).

16,20-Diepimer: ***10-Methoxy-α-yohimbine***
[88668-49-9]
$C_{22}H_{28}N_2O_4$ 384.474
Alkaloid from the seeds of *Aspidosperma oblongum* (Apocynaceae). Amorph. $[\alpha]_D$ -13 (c, 0.71 in MeOH).

17,20-Diepimer: ***10-Methoxy-17-epialloyohimbine***
[88644-43-3]
$C_{22}H_{28}N_2O_4$ 384.474
Alkaloid from the seeds of *Aspidosperma oblongum* (Apocynaceae). Amorph. $[\alpha]_D$ +4 (c, 0.53 in MeOH). Rare stereochem. not yet encountered among the yohimbine stereoisomers.

3,16,20-Triepimer: ***10-Methoxy-3-epi-α-yohimbine***
[121154-13-0]
$C_{22}H_{28}N_2O_4$ 384.474
Alkaloid from the stem bark of *Alstonia coriacea* (Apocynaceae). $[\alpha]_D$ -66 (c, 1 in $CHCl_3$). λ_{max} 227 ; 285 ; 310 ; 335 (MeOH).

16,17,20-Triepimer, O-*10-de-Me:* ***Powerine***
[1360-57-2]
$C_{21}H_{26}N_2O_4$ 370.447
Alkaloid from leaves of *Ochrosia poweri* (Apocynaceae). Plates + 1MeOH (MeOH/Me_2CO). Mp 188-189° dec. $[\alpha]_D$ -216 (c, 0.33 in Me_2CO).

Doy, F.A. *et al., Aust. J. Chem.*, 1962, **15**, 548-554 (*Powerine*)
Benoin, P.R. *et al., Can. J. Chem.*, 1967, **45**, 725-730 (*Excelsinine*)
Kowala, C. *et al., J. Cryst. Mol. Struct.*, 1977, **7**, 1 (*Powerine, cryst struct*)
Robert, G.M.T. *et al., J. Nat. Prod.*, 1983, **46**, 708-722 (*10-Methoxy-α-yohimbine, 10-Methoxy-17-epialloyohimbine, 10-Methoxy-β-yohimbine*)
Cherif, A. *et al., Phytochemistry*, 1989, **28**, 667-670 (*10-Methoxy-3-epi-α-yohimbine*)
Nunes, D.S. *et al., Phytochemistry*, 1992, **31**, 2507-2511 (*10-Methoxyyohimbine*)

11-Methoxyyohimbine M-292

[65025-21-0]

$C_{22}H_{28}N_2O_4$ 384.474

Alkaloid from bark of *Rauwolfia capuroni* and from *Rauwolfia nitida* root bark (Apocynaceae). Mp 200-202° (block). $[\alpha]_D^{20}$ +90 (c, 0.5 in Py).

O-*Ac:* ***Poweridine***
[1360-56-1]
$C_{24}H_{30}N_2O_5$ 426.511
Alkaloid from leaves of *Ochrosia poweri* (Apocynaceae). Needles + 1MeOH (Me_2CO/MeOH). Mp 226° dec. $[\alpha]_D^{22}$ -4.9 (c, 3.0 in Me_2CO).

3-Epimer: ***11-Methoxypseudoyohimbine***
[65025-20-9]
$C_{22}H_{28}N_2O_4$ 384.474
Alkaloid from bark of *Rauwolfia capuroni* (Apocynaceae). Mp 267-268° (block). $[\alpha]_D^{20}$ +30 (c, 1 in Py).

16,20-Diepimer: ***11-Methoxy-α-yohimbine***
[84710-88-3]
$C_{22}H_{28}N_2O_4$ 384.474
Alkaloid from the leaves of *Neisosperma glomerata* (Apocynaceae). Shows weak α_2-adrenoceptor blocking activity. Cryst. (MeOH). Mp 218°. $[\alpha]_D^{20}$ -46 (c, 0.5 in EtOH).

3,16,20-Triepimer: ***Quaternatine****. 11-Methoxy-3-epi-α-yohimbine*
[57499-04-4]
$C_{22}H_{28}N_2O_4$ 384.474
Alkaloid from *Alstonia quaternata* (Apocynaceae). Shows weak α_2-adrenocepter blocking activity. Cryst. (MeOH/Me_2CO). Mp 168°. $[\alpha]_D^{20}$ -105 (c, 0.35 in Py). λ_{max} 227 (log ϵ 4.39); 271 (log ϵ 3.7); 297 (log ϵ 3.79) (EtOH).

3,16,20-Triepimer, O-*Ac:*
Cryst. (Me_2CO). Mp 174°.

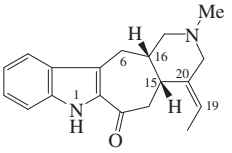
16,17,20-Triepimer: ***17-Epi-11-methoxy-α-yohimbine****. 11-Methoxy-17-epi-α-yohimbine*
[84710-89-4]
$C_{22}H_{28}N_2O_4$ 384.474
Alkaloid from the leaves of *Neisosperma glomerata* (Apocynaceae). Cryst. (MeOH). Mp 223°. $[\alpha]_D^{20}$ -68 (c, 1 in EtOH).

Isomer: **Alstonia quaternata** ***Alkaloid 3***
[57605-18-2]
$C_{22}H_{28}N_2O_4$ 384.474
Minor alkaloid from *Alstonia quaternata* (Apocynaceae). Shows weak α_2-adrenoceptor blocking activity. Noncryst. This is an *ar*-methoxyyohimbine of undetd. regio- and stereochemistry.

Doy, F.A. *et al., Aust. J. Chem.*, 1962, **15**, 548-554 (*Poweridine, isol, uv, ir, struct*)
Johns, S.R. *et al., Aust. J. Chem.*, 1975, **28**, 1627-1629 (*Poweridine, pmr, cmr, ms, stereochem*)
Mamatas-Kalamaras, S. *et al., Phytochemistry*, 1975, **14**, 1849-1854 (*Alstonia quaternata constits*)
Miet, C. *et al., Phytochemistry*, 1977, **16**, 803-805 (*11-Methoxyyohimbine, 11-Methoxypseudoyohimbine, isol, uv, ir, pmr, struct*)
Amer, M.A. *et al., Phytochemistry*, 1981, **20**, 2569-2573 (*isol*)
Seguin, E. *et al., J. Nat. Prod.*, 1982, **45**, 738-744 (*11-Methoxy-α-yohimbine, 11-Methoxy-17-epi-α-yohimbine*)

Methuenine M-293

4-Ethylidene-1,3,4,4a,5,7,12,12a-octahydro-2-methylpyrido[3′,4′:4,5]cyclohepta[1,2-b]indol-6(2H)-one, 9CI
[63425-00-3]



Absolute Configuration

$C_{19}H_{22}N_2O$ 294.396
Alkaloid from *Ervatamia officinalis*, *Hazunta* spp. and *Pandaca boiteaui*. Anticholinergic agent. Cryst. (MeOH). Mp 205°. $[\alpha]_D$ +21 (c, 1 in $CHCl_3$). Log P 3.12 (calc). λ_{max} 238 (ϵ 13800); 314 (ϵ 19700) (MeOH).

N^{18}-*Oxide:* ***Methuenine*** $\mathbf{N^{18}}$***-oxide***
[96391-95-6]
$C_{19}H_{22}N_2O_2$ 310.395
Alkaloid from *Pterotaberna inconspicua*. Amorph. λ_{max} 236 (log ϵ 4.14); 311 (log ϵ 4.27) (MeOH).

19,20α-Dihydro: ***20-Episilicine***
$C_{19}H_{24}N_2O$ 296.411
Alkaloid from *Ervatamia officinalis* and *Hazunta modesta* var. *methuenii* subvar. *methuenii*. Cryst. (MeOH). Mp 190°. $[\alpha]_D^{20}$ -57.8 (c, 0.12 in $CHCl_3$).

19,20β-Dihydro: ***Silicine****. 16-Demethoxycarbonyl-20-epiervatamine*
[60426-50-8]
$C_{19}H_{24}N_2O$ 296.411
Alkaloid from *Rauwolfia discolor, Hazunta modesta* and *Hazunta siliciola*. Cryst. (MeOH). Mp 112°. $[\alpha]_D$ -18 (c, 1 in $CHCl_3$). Revised struct. Originally descr. as a vobasine alkaloid. λ_{max} 239 (ϵ 15200); 314 (ϵ 22300) (EtOH).

6,16-Didehydro, 19,20α-dihydro: ***6,16-Didehydro-20-episilicine***
$C_{19}H_{22}N_2O$ 294.396
Alkaloid from *Ervatamia officinalis.* Yellow powder. $[\alpha]_D$ +76.7 (c, 0.21 in $CHCl_3$). λ_{max} 217 (log ϵ 4.4); 236 (log ϵ 4.4); 252 (log ϵ 4.45); 326 (log ϵ 4.06) (MeOH).

6-Oxo: ***6-Oxomethuenine***
[63425-01-4]
$C_{19}H_{20}N_2O_2$ 308.379
Alkaloid from *Hazunta* spp. Mp 260°. $[\alpha]_D$ -15 (c, 1 in Py). λ_{max} 227 (ϵ 20400); 260 (ϵ 19500); 336 (ϵ 14000) (EtOH).

6-Oxo, 19,20β-dihydro: ***6-Oxosilicine***
[63492-71-7]
$C_{19}H_{22}N_2O_2$ 310.395
Alkaloid from *Hazunta modesta* and *Hazunta siliciola*. Mp 257-258°. $[\alpha]_D^{20}$ -21 (c, 0.16 in Py). λ_{max} 227 (ϵ 19200); 260 (ϵ 17700); 335 (ϵ 13200) (EtOH).

N^1-*Methoxy:* $\mathbf{N^1}$***-Methoxymethuenine***
[130263-08-0]
$C_{20}H_{24}N_2O_2$ 324.422
Alkaloid from the leaves and stem bark of *Ervatamia malaccensis.*

16-Epimer: ***Isomethuenine****. 16-Epimethuenine*

[72748-32-4]
$C_{19}H_{22}N_2O$ 294.396
Alkaloid from *Hazunta* spp., the root bark of *Pterotaberna inconspicua* and the leaves of *Tabernaemontana dichotoma*. Mp 251° (as hydrochloride). $[\alpha]_D^{20}$ -178 (c, 0.1 in $CHCl_3$). λ_{max} 240 ; 315 (MeOH).

16-Epimer, N-*oxide:* ***16-Epimethuenine* N-*oxide***
[84306-85-4]
$C_{19}H_{22}N_2O_2$ 310.395
Alkaloid from the root bark of *Pterotaberna inconspicua*. Amorph.

16-Epimer, 19,20α-dihydro: ***16,20-Diepisilicine***
$C_{19}H_{24}N_2O$ 296.411
Alkaloid from *Ervatamia officinalis*. Amorph. powder. $[\alpha]_D^{20}$ -67.1 (c, 0.23 in $CHCl_3$). λ_{max} 236 (log ϵ 4.36); 312 (log ϵ 4.42) (MeOH).

16-Epimer, 19,20β-dihydro: ***16-Episilicine***. *Alkaloid J*†
[169871-26-5]
$C_{19}H_{24}N_2O$ 296.411
Alkaloid from stem bark, root bark and leaves of *Pandaca caducifolia*. Mp 153°. $[\alpha]_D$ +20 (c, 1 in $CHCl_3$). λ_{max} 238 ; 314 (no solvent reported).

16-Epimer, 6-oxo, 19,20α-dihydro: ***6-Oxo-16,20-diepisilicine***
$C_{19}H_{22}N_2O_2$ 310.395
Alkaloid from *Ervatamia officinalis*. Yellow powder. $[\alpha]_D^{20}$ -46.2 (c, 0.13 in $CHCl_3$). λ_{max} 220 (log ϵ 4.52); 257 (log ϵ 4.37); 330 (log ϵ 4.24) (MeOH).

16-Epimer, 6-oxo, 19,20β-dihydro: ***16-Epi-6-oxosilicine***. *6-Oxo-16-episilicine*
[76231-43-1]
[186246-58-2]
$C_{19}H_{22}N_2O_2$ 310.395
Alkaloid from root bark and stem bark of *Hazunta modesta* var. *modesta* subvar. *montana*.

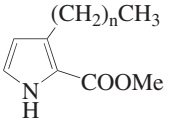
Combes, G. *et al., Phytochemistry*, 1968, **7**, 477-483 (*Silicine, uv, ir, pmr, ms*)
Zèches, M. *et al., Phytochemistry*, 1975, **14**, 1122-1124 (*Alkaloid J*)
Shafiee, A. *et al., Tet. Lett.*, 1976, 921-924 (*Silicine, cryst struct*)
Reis, F. *et al., Tet. Lett.*, 1976, 1085-1088 (*6-Oxosilicine*)
Riche, C. *et al., Acta Cryst. B*, 1977, **33**, 133-135 (*Silicine, cryst struct*)
Bui, A.-M. *et al., Phytochemistry*, 1977, **16**, 703; 1979, **18**, 1329-1331 (*Methuenine, Silicine, isol, uv, ir, pmr, ms, struct, 6-oxo derivs*)
Vecchietti, V. *et al., Phytochemistry*, 1978, **17**, 835-836 (*Silicine, pmr, cmr*)
Bui, A.M. *et al., Phytochemistry*, 1980, **19**, 1473-1475 (*6-Oxo-16-episilicine*)
Morfaux, A.M. *et al., Phytochemistry*, 1982, **21**, 1767-1769 (*16-Epimethuenine, 16-Epimethuenine N-oxide, isol, uv, ir, pmr, ms, struct*)
Perera, P. *et al., Planta Med.*, 1983, **47**, 148-150 (*isol, uv, ir, pmr, ms, epimer*)
Bakana, P. *et al., Planta Med.*, 1984, **50**, 331-334 (*Methuenine, N-oxide*)
Clivio, P. *et al., Phytochemistry*, 1990, **29**, 2693-2696; 1995, **40**, 987-990 (N^1-*Methoxymethuenine, 16-Episilicine*)
Bennasar, M.L. *et al., Eur. J. Org. Chem.*, 2000, 3919-3925 (*6-Oxo-16-episilicine, synth*)
Zhang, H. *et al., Helv. Chim. Acta*, 2005, **88**, 2537-2542 (*Ervatamia officinalis alkaloids*)

Methyl [(acetylamino)oxy]acetate, 9CI M-294

Methyl acethydroxamylacetate
[35404-96-7]
$AcNHOCH_2COOMe$
$C_5H_9NO_4$ 147.13
Metab. of *Irpex pachyodon*. Cryst. Mp 89-91°.

Nano, G.M. *et al., Tet. Lett.*, 1972, 1195 (*isol, synth, pmr, ir, ms*)

Methyl 3-alkylpyrrole-2-carboxylates M-295



Isol. as a mixt. of n = 18 (29%), n = 19 (24%), n = 20 (40%) and n = 22 (7%). Metab. from the marine sponge *Oscarella lobularis*.

Methyl 3-nonadecyl-1*H*-pyrrole-2-carboxylate [57992-59-3]
$C_{25}H_{45}NO_2$ 391.636
n = 18.

Methyl 3-eicosyl-1*H*-pyrrole-2-carboxylate [57992-60-6]
$C_{26}H_{47}NO_2$ 405.663
n = 19.

Methyl 3-heneicosyl-1*H*-pyrrole-2-carboxylate [57992-61-7]
$C_{27}H_{49}NO_2$ 419.69
n = 20.

*Didehydro: Methyl 3-heneicosenyl-1*H*-pyrrole-2-carboxylate*
[58018-93-2]
$C_{27}H_{47}NO_2$ 417.674
Metab. from the marine sponge *Oscarella lobularis*. Posn. of double bond in side-chain not determined. Isol. in admixture with the tricosenyl homologue.

Methyl 3-tricosyl-1*H*-pyrrole-2-carboxylate [57992-62-8]
$C_{29}H_{53}NO_2$ 447.743
n = 22.

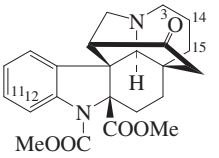
Didehydro: ***Methyl 3-tricosenyl-1*H*-pyrrole-2-carboxylate***
[58018-92-1]
$C_{29}H_{51}NO_2$ 445.727
Metab. of *Oscarella lobularis*. Isol. in admixture with its lower homologue. Posn. of double bond in side-chain undetermined.

*Tetradehydro: Methyl 3-(tricosadienyl)-1*H*-pyrrole-2-carboxylate*
[58018-98-7]
$C_{29}H_{49}NO_2$ 443.712
Metab. from the marine sponge *Oscarella lobularis*. Posn. of 2 double bonds in side chain undetermined.

Cimino, G. *et al., Experientia*, 1975, **31**, 1387-1389 (*isol, uv, ir, pmr, ms, struct*)

Methyl chanofruticosinate M-296

Dimethyl 21-oxo-11,21-cycloaspidopermidine-1,2-dicarboxylate, 9CI. Chanofruticosine methyl ester
[14050-92-1]



Absolute Configuration

$C_{23}H_{26}N_2O_5$ 410.469
Alkaloid from *Kopsia officinalis* (Apocynaceae). Mp 165-166°. $[\alpha]_D$ +103.7 ($CHCl_3$). Forms MeOH solvate, softening at 140-143°.

N-*De(methoxycarbonyl):* ***Methyl* N^1*-demethoxycarbonylchanofruticosinate***
[80151-89-9]
$C_{21}H_{24}N_2O_3$ 352.432
Obt. from *Kopsia officinalis* and leaves of *Kopsia arborea* (Apocynaceae). Mp 202-203°. $[\alpha]_D$ +246.7 ($CHCl_3$).

3-Oxo, 14,15-didehydro, N-*de(methoxycarbonyl):* ***Methyl* N^1*-demethoxycarbonyl-3-oxo-*$\Delta^{14,15}$*-chanofruticosinate***
$C_{21}H_{20}N_2O_4$ 364.4
Alkaloid from the leaves of *Kopsia officinalis*. Powder. $[\alpha]_D^{26}$ +167.5 (c, 0.24 in $CHCl_3$). λ_{max} 192 ; 241 ; 289 ($CHCl_3$).

*15*S*-Hydroxy,* N-*de(methoxycarbonyl): Methyl 15-hydroxy-*N^1*-demethoxycarbonylchanofruticosinate. Flavisiamine A*. ***Prunifoline D***
[1007552-36-4]
$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from the leaves of *Kopsia arborea* and *Kopsia flavida*. Amorph. solid. $[\alpha]_D$ +214 (c, 0.3 in $CHCl_3$). λ_{max} 205 (log ϵ 4.4); 236 (log ϵ 3.8); 293 (log ϵ 3.43) (EtOH).

12-Methoxy: ***Methyl 12-methoxychanofruticosinate***
[352276-74-5]
$C_{24}H_{28}N_2O_6$ 440.495
Alkaloid from *Kopsia flavida*. λ_{max} 215 (log ϵ 4.24); 246 (log ϵ 3.65); 289 (log ϵ 2.9) (EtOH).

12-Methoxy, N-*de(methoxycarbonyl):* ***Methyl 12-methoxy-*N^1*-demethoxycarbonylchanofruticosinate***
[352276-73-4]
$C_{22}H_{26}N_2O_4$ 382.458
Alkaloid from *Kopsia flavida*. λ_{max} 210 (log ϵ 4.53); 293 (log ϵ 3.52) (EtOH).

12-Methoxy, 14,15-didehydro, N-*de(methoxycarbonyl): Methyl 12-methoxy-*N^1*-demethoxycarbonyl-*$\Delta^{14,15}$*-chanofruticosinate.* ***Prunifoline C***
[605666-56-6]
$C_{22}H_{24}N_2O_4$ 380.443
Alkaloid from the leaves of *Kopsia arborea*. Oil. $[\alpha]_D$ +226 (c, 0.51 in $CHCl_3$). λ_{max} 206 (log ϵ 4.48); 235 (log ϵ 3.88); 292 (log ϵ 3.39) (EtOH).

12-Methoxy, 3-oxo: Methyl 12-methoxy-3-oxochanofruticosinate. ***Prunifoline A***
[1007552-34-2]

$C_{24}H_{26}N_2O_7$ 454.479
Alkaloid from the leaves of *Kopsia arborea*. Oil. $[\alpha]_D$ +230 (c, 0.15 in $CHCl_3$). λ_{max} 214 (log ϵ 4.77); 250 (log ϵ 4.13); 290 (log ϵ 3.53) (EtOH).

12-Methoxy, 3-oxo, 14,15-didehydro, N-*de(methoxycarbonyl):* ***Methyl 12-methoxy-N^1-demethoxycarbonyl-3-oxo-Δ^{14,15}-chanofruticosinate***
[605666-54-4]
$C_{22}H_{22}N_2O_5$ 394.426
Alkaloid from the leaves of *Kopsia flavida*. Amorph. yellow powder. λ_{max} 210 (log ϵ 4.33); 293 (log ϵ 3.3) (MeOH).

*12-Methoxy, 15*S*-hydroxy,* N-*de(methoxycarbonyl): Methyl 15-hydroxy-12-methoxy-*N^1*-demethoxycarbonylchanofruticosinate. Flavisiamine C.* ***Prunifoline F***
[1007552-38-6]
$C_{22}H_{26}N_2O_5$ 398.458
Alkaloid from the leaves of *Kopsia arborea* and *Kopsia flavida*. Amorph. solid. $[\alpha]_D$ +261 (c, 0.12 in $CHCl_3$). λ_{max} 208 (log ϵ 4.38); 238 (log ϵ 3.68); 293 (log ϵ 3.19) (EtOH).

11,12-Dimethoxy: ***Methyl 11,12-dimethoxychanofruticosinate***
[352276-75-6]
$C_{25}H_{30}N_2O_7$ 470.521
Alkaloid from *Kopsia flavida* (Apocynaceae). λ_{max} 221 (log ϵ 4.04); 279 (log ϵ 2.95) (EtOH).

11,12-Dimethoxy, 14,15-didehydro: Methyl 11,12-dimethoxy-Δ^{14,15}-chanofruticosinate. ***Prunifoline B***
[1007552-35-3]
$C_{25}H_{28}N_2O_7$ 468.505
Alkaloid from the leaves of *Kopsia arborea*. Oil. $[\alpha]_D$ +51 (c, 0.07 in $CHCl_3$). λ_{max} 220 (log ϵ 4.45); 247 (log ϵ 3.93); 280 (log ϵ 3.22) (EtOH).

11,12-Methylenedioxy: ***Methyl 11,12-methylenedioxychanofruticosinate***
[80151-90-2]
$C_{24}H_{26}N_2O_7$ 454.479
Alkaloid from *Kopsia officinalis* and leaves of *Kopsia arborea* (Apocynaceae). Mp 252-258° dec. $[\alpha]_D$ +145 (c, 0.27 in $CHCl_3$).

11,12-Methylenedioxy, N-*de(methoxycarbonyl):* ***Methyl 11,12-methylenedioxy-N^1-demethoxycarbonylchanofruticosinate***
[147089-77-8]
$C_{22}H_{24}N_2O_5$ 396.442
Alkaloid from leaves of *Kopsia arborea* (Apocynaceae). $[\alpha]_D$ +193 (c, 0.14 in $CHCl_3$).

11,12-Methylenedioxy, 14,15-didehydro, N-*de(methoxycarbonyl):* ***Methyl 11,12-methylenedioxy-N^1-demethoxycarbonyl-Δ^{14,15}-chanofruticosinate***
[147089-78-9]
$C_{22}H_{22}N_2O_5$ 394.426
Alkaloid from leaves of *Kopsia arborea* (Apocynaceae). $[\alpha]_D$ +198 (c, 0.32 in $CHCl_3$).

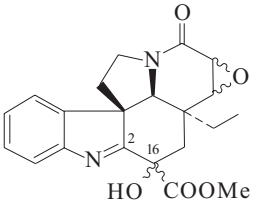
11,12-Methylenedioxy, 3-oxo, 14,15-didehydro, N-*de(methoxycarbonyl):* ***Methyl 11,12-methylenedioxy-N^1-demethoxycarbonyl-3-oxo-Δ^{14,15}-chanofruticosinate***
[605666-55-5]
$C_{22}H_{20}N_2O_6$ 408.41
Alkaloid from the leaves of *Kopsia flavida*. Amorph. orange powder. λ_{max} 218 (log ϵ 4.37); 246 (log ϵ 3.65) (MeOH).

*11,12-Methylenedioxy, 15*S*-hydroxy,* N-*de(methoxycarbonyl): Methyl 15-hydroxy-11,12-methylenedioxy-*N^1*-demethoxycarbonylchanofruticosinate. Flavisiamine D.* ***Prunifoline E***
[1007552-37-5]
$C_{22}H_{24}N_2O_6$ 412.441
Alkaloid from the leaves of *Kopsia arborea* and *Kopsia flavida*. Amorph. solid. $[\alpha]_D$ +166 (c, 0.33 in $CHCl_3$). λ_{max} 219 (log ϵ 4.16); 239 (log ϵ 3.93); 285 (log ϵ 3) (EtOH).

Guggisberg, A. *et al., Helv. Chim. Acta*, 1966, **49**, 2321-2337 (*synth, uv, ir, ms*)
Wei-Shin, C. *et al., Annalen*, 1981, 1886-1892 (*isol, 11,12-dimethoxy, N′-de(methoxycarbonyl)*)
Kam, T.-S. *et al., Phytochemistry*, 1993, **32**, 489-491 (*Kopsia arborea constits*)
Husain, K. *et al., Phytochemistry*, 2001, **57**, 603-606 (*Kopsia flavida constits*)
Husain, K. *et al., J. Asian Nat. Prod. Res.*, 2003, **5**, 63-67 (*Kopsia flavida 3-oxo derivs*)
Zhou, H. *et al., Helv. Chim. Acta*, 2006, **89**, 515-519 (*Kopsia officinalis 3-oxo deriv*)
Sekiguchi, M. *et al., Heterocycles*, 2008, **75**, 2283-2288 (*Flavisiamine A-D*)
Lim, K.-H. *et al., Phytochemistry*, 2008, **69**, 558-561 (*Prunifolines A-F*)

Methyl 1,2-didehydro-6,7-epoxy-3-hydroxy-8-oxoaspidospermidine-3-carboxylate, 9CI M-297

16-Carbomethoxy-16-hydroxy-14,15-epoxy-3-oxo-1,2-dehydroaspidospermidine
[67332-48-3]

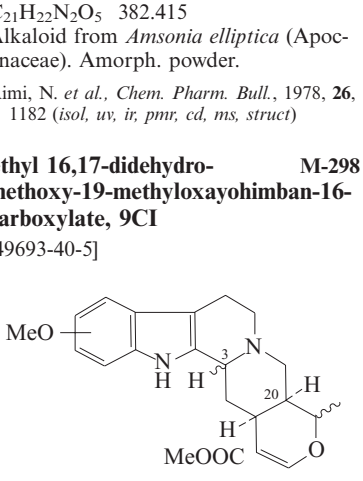


$C_{21}H_{22}N_2O_5$ 382.415
Alkaloid from *Amsonia elliptica* (Apocynaceae). Amorph. powder.

Aimi, N. *et al., Chem. Pharm. Bull.*, 1978, **26**, 1182 (*isol, uv, ir, pmr, cd, ms, struct*)

Methyl 16,17-didehydro-19-methyloxayohimban-16-carboxylate, 9CI M-298

[49693-40-5]

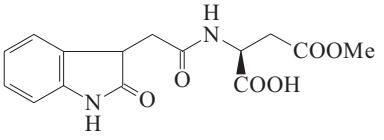


$C_{22}H_{26}N_2O_4$ 382.458
Alkaloid from *Rauwolfia suaveolens* (Apocynaceae). Full struct. not determined. Mol. formula incorrectly given as $C_{22}H_{22}N_2O_4$ in the paper. λ_{max} 214 ; 225 ; 284 (sh) (EtOH).

Majumdar, S.P. *et al., Phytochemistry*, 1973, **12**, 1167-1169 (*isol, uv, ir, ms*)

4-Methyl *N*-[(2,3-dihydro-2-oxo-1*H*-indol-3-yl)acetyl]aspartate M-299

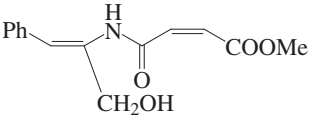
[115082-62-7]



$C_{15}H_{16}N_2O_6$ 320.301
Isol. from pistils and stamens of *Hibiscus moscheutos*. Prisms. Mp 187-189°.

Ohmoto, T. *et al., Chem. Pharm. Bull.*, 1988, **36**, 578-581 (*isol, uv, ir, pmr, cmr, ms, struct*)

Methyl 4-[(1-hydroxymethyl-2-phenylethenyl)amino]-4-oxobutenoate M-300

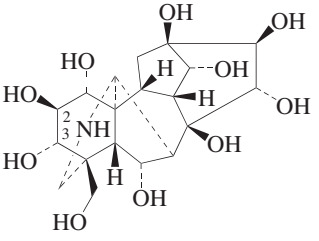


$C_{14}H_{15}NO_4$ 261.277

(Z,Z)-form
Prod. by *Aspergillus niger* Ta1. Yellow powder. λ_{max} 205 ; 244 ; 291 (MeOH).

Yuan, W. *et al., Nat. Prod. Res.*, 2006, **20**, 573-577 (*isol, pmr, cmr*)

4-Methylaconitane-1,2,3,6,8,13,14,15,16,18-decol M-301

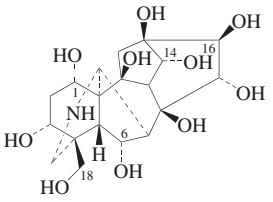


$C_{19}H_{29}NO_{10}$ 431.439

(1α,2β,3α,5β,6α,14α,15α,16β)-*form*
O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14-benzoyl, 8-Ac:* ***Altaconitine****. 2-Hydroxyaconitine*
[171090-87-2]
$C_{34}H_{47}NO_{12}$ 661.745
Alkaloid from aerial parts of *Aconitum altaicum*. Mp 235-237° dec.

Butbayer, N. *et al., Khim. Prir. Soedin.*, 1993, **29**, 47; *Chem. Nat. Compd. (Engl. Transl.)*, 1993, **29**, 38 (*Altaconitine*)

4-Methylaconitane-1,3,6,8,10,13,14,15,16,18-decol M-302



$C_{19}H_{29}NO_{10}$ 431.439

(1α,3α,5β,6α,14α,15α,16β)-*form*

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Me, 14-benzoyl, 8-Ac:* ***Beiwutine***
[76918-93-9]
$C_{33}H_{45}NO_{12}$ 647.718
Alkaloid from *Aconitum kusnezoffii* (Ranunculaceae). Mp 196-198°.

► CT3577000

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Me, 14-benzoyl, 3,8-di-Ac:* ***3-O-Acetylbeiwutine***
[147677-09-6]
$C_{35}H_{47}NO_{13}$ 689.755
Alkaloid from roots of *Aconitum liaotungeuse* (Ranunculaceae). Cryst. Mp 187°. $[\alpha]_D$ +25.8 (c, 0.95 in EtOH).

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14-benzoyl, 8-Ac: 10-Hydroxyaconitine.* ***Aconifine****. Nagarine*†
[41849-35-8]
$C_{34}H_{47}NO_{12}$ 661.745
Alkaloid from tubers of *Aconitum karakolicum* and roots of *Aconitum nagarum* var. *lasiandrum* (Ranunculaceae). Mp 198-200°. $[\alpha]_D^{19}$ +30.6 (c, 1.10 in $CHCl_3$).

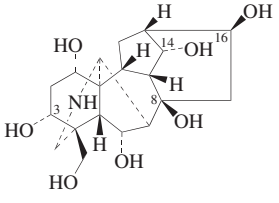
► AR5550000

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14-benzoyl, 8-Ac, hydrobromide:* Mp 209°.

O^8-*Et,* O^1,O^6,O^{16},O^{18}-*tetra-Me,* N-*Me, 14-benzoyl:* ***Beiwucine***
$C_{33}H_{47}NO_{11}$ 633.734
Alkaloid from *Aconitum kusnezoffii*. Cryst. (Me_2CO). Mp 164-167°.

Sultankhodzhaev, M.N. *et al., Khim. Prir. Soedin.*, 1973, **9**, 127; 1980, **16**, 665; *Chem. Nat. Compd. (Engl. Transl.)*, 1973, **9**, 129; 1980, **16**, 481 (*Aconifine*)
Wang, Y.-G. *et al., Yaoxue Xuebao*, 1980, **15**, 526; *CA*, **94**, 117772k (*Beiwutine*)
Wang, H. *et al., Huaxue Xuebao*, 1981, **39**, 869; *CA*, **97**, 107080f (*Aconifine*)
Zhu, Y. *et al., Heterocycles*, 1982, **17**, 607 (*struct, rev*)
Zhu, D.-Y. *et al., Phytochemistry*, 1993, **32**, 767 (*3-O-Acetylbeiwutine*)
Yu, H. *et al., Yaoxue Xuebao*, 2000, **35**, 232-234 (*Beiwucine*)

4-Methylaconitane-1,3,6,8,14,16,18-heptol M-303



$C_{19}H_{29}NO_7$ 383.441

(1α,3α,6α,14α,16β)-*form*

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et:* ***Ezochasmanine***
[77757-07-04]
$C_{25}H_{41}NO_7$ 467.601
Minor alkaloid from *Aconitum yesoense* (Ranunculaceae). Cryst. + $^1/_3H_2O$ (Et_2O). Mp 115-118°. $[\alpha]_D^{21}$ +40.3 ($CHCl_3$).

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14-benzoyl: Deacetylhemsleyanine.* ***13-Deoxyludaconitine***
[77757-11-0]
$C_{32}H_{45}NO_8$ 571.709
Alkaloid from the roots of *Aconitum hemsleyanum* var. *pengzhouense*. Amorph. solid. $[\alpha]_D^{17}$ +22.2 (c, 0.5 in $CHCl_3$).

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14-benzoyl, 8-Ac:* ***Hemsleyanine****. 13,15-Dideoxyaconitine. 8-Acetyl-14-benzoylezochasmanine*
[77757-14-3]
$C_{34}H_{47}NO_9$ 613.747
Alkaloid from roots of *Aconitum sungpanense* and from *Aconitum hemsleyanum* (Ranunculaceae). Cryst. Mp 167-169°. $[\alpha]_D^{25}$ +16.4 (c, 0.07 in EtOH).

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14-(4-methoxybenzoyl):* ***Austroconitine B***
[128717-96-4]
$C_{33}H_{47}NO_9$ 601.736
Alkaloid from the roots of *Aconitum austroyunnanense* (Ranunculaceae).

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14-(4-methoxybenzoyl), 8-Ac:* ***Vilmorrianine A****. 3α-Hydroxyforesaconitine*
[1361-96-2]
$C_{35}H_{49}NO_{10}$ 643.773
Alkaloid from the roots of *Aconitum vilmorrianum* and *Aconitum kongboense* (Ranunculaceae). Prisms (EtOAc/hexane). Mp 169°. $[\alpha]_D^{25}$ +24.1 ($CHCl_3$).

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14-(4-methoxybenzoyl), 3,8-di-Ac:* ***3-Acetylvilmorrianine A***
[80787-50-4]
$C_{37}H_{51}NO_{11}$ 685.81
Alkaloid from *Aconitum* sp. (Ranunculaceae).

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14-(3,4-dimethoxybenzoyl):* ***Falconerine***
[102358-18-9]
$C_{34}H_{49}NO_{10}$ 631.762
Alkaloid from the Indian crude drug Mitha telia (roots of *Aconitum falconeri*) (Ranunculaceae). Amorph. solid. $[\alpha]_D^{30}$ +40.3 (c, 0.55 in $CHCl_3$).

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14-(3,4-dimethoxybenzoyl), 8-Ac:* ***Falconerine 8-acetate***
[102386-46-9]
$C_{36}H_{51}NO_{11}$ 673.799
Alkaloid from *Aconitum falconeri* (Ranunculaceae). Cryst. (hexane). Mp 162-163°. $[\alpha]_D^{30}$ +13.7 (c, 1.05 in $CHCl_3$).

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 8-*E-*cinnamoyl, 14-Ac:* ***Leueantine A***
[499969-75-4]
$C_{36}H_{49}NO_9$ 639.784
Alkaloid from the roots of *Aconitum hemsleyanum* var. *leueanthus*. Amorph. powder. $[\alpha]_D^{20}$ +13.4 (c, 0.5 in $CHCl_3$).

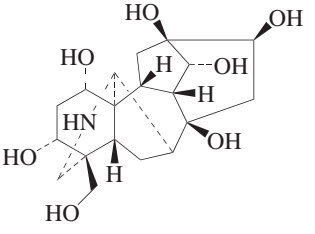
O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14-*E-*cinnamoyl:* ***Deacetylsungpaconitine***
[327028-19-3]
$C_{34}H_{47}NO_8$ 597.747
Alkaloid from the roots of *Aconitum hemsleyanum* var. *pengzhouense*. Amorph. solid. $[\alpha]_D^{17}$ +38 (c, 0.45 in $CHCl_3$).

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14-*E-*cinnamoyl, 8-Ac:* ***Sungpaconitine***
[114358-55-3]
$C_{36}H_{49}NO_9$ 639.784
Alkaloid from roots of *Aconitum sungpanense* (Ranunculaceae). Needles. Mp 127-129°. $[\alpha]_D^{20}$ +17.4 (c, 0.87 in $CHCl_3$).

18-Aldehyde, O^6,O^{16}-*di-Me,* N-*Et, 8,14-di-Ac:* ***Staphisadrine***
[132236-91-0]
$C_{27}H_{39}NO_9$ 521.606
Alkaloid from the seeds of *Delphinium staphisagria* (Ranunculaceae). Amorph. $[\alpha]_D$ +6.3 (c, 0.175 in $CHCl_3$).

Takayama, H. *et al., Heterocycles*, 1981, **15**, 403 (*Ezochasmanine, synth, cd*)
Yang, C.-R. *et al., Huaxue Xuebao*, 1981, **39**, 147-152; 445; *CA*, **95**, 58094m; **96**, 82689a (*Vilmorrianine A, 3-Acetylvilmorrianine A*)
Wang, F. *et al., Yaoxue Tongbao*, 1982, **17**, 395; *CA*, **97**, 195756j (*Ezochasmanine*)
Wang, R. *et al., Planta Med.*, 1987, **53**, 544 (*Sungpaconitine*)
Liu, L. *et al., Yaoxue Xuebao*, 1988, **23**, 460; *CA*, **109**, 208259t (*13,15-Dideoxyaconitine*)
Jiang, Z. *et al., Yunnan Zhiwu Yanjiu*, 1989, **11**, 461; *CA*, **113**, 74751 (*Austroconitine B*)
Liang, X. *et al., J. Nat. Prod.*, 1990, **53**, 1307-1311 (*Staphisadrine*)
Ding, L. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 1994, **36**, 901; *CA*, **122**, 235277x (*Hemsleyanine*)
Peng, C.S. *et al., J. Asian Nat. Prod. Res.*, 2000, **2**, 245-249 (*13-Deoxyludaconitine, Deacetylsungpaconitine*)
Li, L.-Y. *et al., J. Nat. Prod.*, 2003, **66**, 269-271 (*Leueantine A*)

4-Methylaconitane-1,3,8,13,14,16,18-heptol M-304



$C_{19}H_{29}NO_7$ 383.441

(1α,3α,14α,16β)-*form*

O^1,O^{18}-*Di-Me,* N-*Et, 16-*O-*(4-methoxybenzoyl):* ***Circinasine C***
[939972-77-7]
$C_{31}H_{43}NO_9$ 573.682
Alkaloid from the roots of *Aconitum*

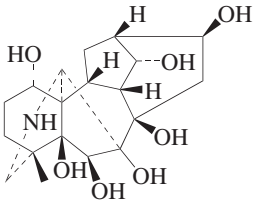
hemsleyanum var. *circinatum*. Amorph. powder. $[\alpha]_D^{20}$ +43.8 (c, 1 in $CHCl_3$).

O^1,O^{16},O^{18}-*Tri-Me,* N-*Et:* ***Circinadine B***
$C_{24}H_{39}NO_7$ 453.575
Alkaloid from the roots of *Aconitum hemsleyanium* var. *circinacum*. Amorph. powder. Mp 92-93°. $[\alpha]_D^{20}$ -32.3 (c, 1 in $CHCl_3$).

O^1,O^{16},O^{18}-*Tri-Me,* N-*Et, 14*-O-*(4-methoxybenzoyl):* ***Circinadine A***
$C_{32}H_{45}NO_9$ 587.709
Alkaloid from the roots of *Aconitum hemsleyanium* var. *circinacum*. Amorph. powder. Mp 102-103°. $[\alpha]_D^{20}$ -69.2 (c, 1 in $CHCl_3$).

Gao, F. *et al., Chem. Pharm. Bull.*, 2006, **54**, 117-118 (*Circinadines A,B*)
Gao, F. *et al., J. Nat. Prod.*, 2007, **70**, 876-879 (*Circinasine C*)

4-Methylaconitane-1,5,6,7,8,14,16-heptol M-305



$C_{19}H_{29}NO_7$ 383.441

(1α,5β,6β,14α,16β)-*form*

7,8-Methylene, O^1,O^{14}-*di-Me ether,* N-*Et, 6-Ac:* ***Nordhagenine C***
$C_{26}H_{39}NO_8$ 493.596
Alkaloid from *Delphinium nordhagenii*. Amorph. solid. $[\alpha]_D^{30}$ -4.3 (c, 0.7 in $CHCl_3$).

7,8-Methylene, O^{14},O^{16}-*di-Me,* N-*Et:* ***Laxicymisine***
[1008106-59-9]
$C_{24}H_{37}NO_7$ 451.559
Alkaloid from *Delphinium laxicymosum* var. *pilostachyum*. Cryst. Mp 161-163°. $[\alpha]_D^{20}$ -23.6 (c, 0.5 in $CHCl_3$).

7,8-Methylene, O^1,O^{14},O^{16}-*tri-Me ether,* N-*Me:* ***Bonvalol***
[93961-23-0]
$C_{24}H_{37}NO_7$ 451.559
Alkaloid from the roots of *Delphinium bonvalotii* (Ranunculaceae). Mp 165-166°. $[\alpha]_D^{32}$ -26.3 (c, 0.4 in $CHCl_3$).

7,8-Methylene, O^1,O^{14},O^{16}-*tri-Me ether,* N-*Me, 6-Ac:* ***Bonvalotine***
[93961-22-9]
$C_{26}H_{39}NO_8$ 493.596
Alkaloid from the roots of *Delphinium bonvalotii* (Ranunculaceae). Mp 218-220°. $[\alpha]_D^{32}$ -35.7 (c, 0.6 in $CHCl_3$).

7,8-Methylene, O^1,O^{14},O^{16}-*tri-Me ether,* N-*Et:* ***Bonvalotidine B***
[929019-26-1]
$C_{25}H_{39}NO_7$ 465.586
Alkaloid from the roots of *Delphinium bonvalotii*.

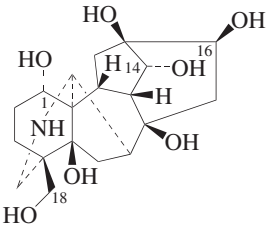
7,8-Methylene, O^1,O^{14},O^{16}-*tri-Me ether,* N-*Et, 6-Ac:* ***Bonvalotidine A***
[929019-25-0]
$C_{27}H_{41}NO_8$ 507.623
Alkaloid from the roots of *Delphinium bonvalotii*.

6-Ketone, 7,8-methylene, O^1,O^{14},O^{16}-*tri-Me ether,* N-*Me:* ***Bonvalone***
[93961-24-1]
$C_{24}H_{35}NO_7$ 449.543
Alkaloid from the roots of *Delphinium bonvalotii* (Ranunculaceae). Mp 235-236°. $[\alpha]_D^{32}$ -89.3 (c, 0.3 in $CHCl_3$).

6-Ketone, 7,8-methylene, O^1,O^{14},O^{16}-*tri-Me ether,* N-*Et:* ***Bonvalotidine C***
[929019-27-2]
$C_{25}H_{37}NO_7$ 463.57
Alkaloid from the roots of *Delphinium bonvalotii*.

Jiang, Q.P. *et al., Heterocycles*, 1984, **22**, 2429-2432 (*Bonvalol, Bonvalotine, Bonvalone*)
Shaheen, F. *et al., J. Nat. Prod.*, 2006, **69**, 823-825 (*Nordhagenine C*)
He, Y. *et al., Nat. Prod. Commun.*, 2006, **1**, 357-362 (*Bonvalotidines A-C*)
Tang, P. *et al., Chin. Chem. Lett.*, 2007, **18**, 700-703 (*Laxicymisine*)

4-Methylaconitane-1,5,8,13,14,16,18-heptol M-306



$C_{19}H_{29}NO_7$ 383.441

(1α,14α,16β)-*form*

O^1,O^{18}-*Di-Me,* N-*Et:* ***Circinasine A***
[939972-75-5]
$C_{23}H_{37}NO_7$ 439.548
Alkaloid from the roots of *Aconitum hemsleyanum* var. *circinatum*. Amorph. powder. $[\alpha]_D^{20}$ -32 (c, 1 in $CHCl_3$).

O^1,O^{18}-*Di-Me, 14*-O-*(4-methoxybenzoyl),* N-*Et:* ***Isohemsleyanidine****. Isohemsleyanisine (incorr.)*
[178960-60-6]
[939972-83-5]
$C_{31}H_{43}NO_9$ 573.682
Alkaloid from the roots of *Aconitum hemsleyanum* var. *circinatum*. Amorph. powder. $[\alpha]_D$ +14.6 (c, 1 in $CHCl_3$). Struct. revised in 2007.

O^1,O^{18}-*Di-Me, 16*-O-*(4-methoxybenzoyl),* N-*Et:* ***Hemsleyanidine****. Hemsleyanisine (incorr.)*
[178960-59-3]
[939972-82-4]
$C_{31}H_{43}NO_9$ 573.682
Alkaloid from the roots of *Aconitum hemsleyanum* var. *circinatum*. Amorph. powder. $[\alpha]_D$ -8.9 (c, 0.71 in $CHCl_3$). Struct. revised in 2007.

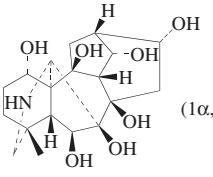
O^1,O^{16},O^{18}-*Tri-Me,* N-*Et:* ***Hemsleyanine B***
$C_{24}H_{39}NO_7$ 453.575
Alkaloid from the roots of *Aconitum hemsleyanum* var. *circinatum*. Amorph. powder. Mp 92-93°. $[\alpha]_D^{20}$ -35.2 (c, 1 in $CHCl_3$).

O^1,O^{16},O^{18}-*Tri-Me, 14-(4-hydroxybenzoyl),* N-*Et:* ***Hemsleyanine A***
$C_{31}H_{43}NO_9$ 573.682
Alkaloid from the roots of *Aconitum hemsleyanum* var. *circinatum*. Amorph. powder. Mp 126-127.5°. $[\alpha]_D^{20}$ +23.6 (c, 1 in $CHCl_3$).

O^1,O^{16},O^{18}-*Tri-Me, 14-(4-methoxybenzoyl),* N-*Et:* ***Hemsleyadine***
[183245-57-0]
$C_{32}H_{45}NO_9$ 587.709
Alkaloid from the roots of *Aconitum hemsleyanum* var. *circinatum*. Amorph. powder. Mp 106-107°. $[\alpha]_D^{20}$ +56.4 (c, 1 in $CHCl_3$). Struct. revised in 2005.

Xu, Q.Y. *et al., Chin. Chem. Lett.*, 1996, **7**, 723-724; *CA*, **125**, 322994j (*Hemsleyadine*)
Gao, F. *et al., Heterocycles*, 2005, **65**, 365-370 (*Hemsleyanines A,B, Hemsleyadine, cryst struct*)
Gao, F. *et al., J. Nat. Prod.*, 2007, **70**, 876-879 (*Circinasine A, Hemsleyanidine, Isohemsleyanidine*)

4-Methylaconitane-1,6,7,8,10,14,16-heptol M-307



(1α,6β,14α,16α)-*form*

$C_{19}H_{29}NO_7$ 383.441

(1α,6β,14α,16α)-*form*

7,8-Methylene, O^1,O^{14}-*di-Me,* N-*Et, 6-Ac:* ***Nordhagenine B****. 16-Epielasine*
$C_{26}H_{39}NO_8$ 493.596
Alkaloid from *Delphinium nordhagenii*. Cryst. (hexane/Me_2CO). Mp 200-203°. $[\alpha]_D^{30}$ -3.7 (c, 0.4 in $CHCl_3$).

(1α,6β,14α,16β)-*form*

O^6,O^{16}-*Di-Me,* N-*Et, 14-benzoyl:* ***Gadenine***
[89384-03-2]
$C_{30}H_{41}NO_8$ 543.656
Alkaloid from *Delphinium pentagynum* (Ranunculaceae). Mp 147-150°.

O^1,O^6,O^{16}-*Tri-Me,* N-*Et:* ***10-Hydroxynudicaulidine***
[532993-24-1]
$C_{24}H_{39}NO_7$ 453.575
Alkaloid from *Delphinium excelsum*. $[\alpha]_D^{20}$ +26.3 ($CHCl_3$).

O^1,O^{14},O^{16}-*Tri-Me,* N-*Et:* ***Demethyleneeldelidine***
[63596-60-1]
$C_{24}H_{39}NO_7$ 453.575
Alkaloid from roots of *Delphinium dictyocarpum* (Ranunculaceae). Mp 98-100°.

O^1,O^6,O^{14},O^{16}-*Tetra-Me,* N-*Et:* ***Delterine***
[107814-38-0]
$C_{25}H_{41}NO_7$ 467.601
Alkaloid from the aerial parts of *Delphinium ternatum* (Ranunculaceae).

Cryst. (Et_2O/hexane). Mp 73-75°.

7,8-Methylene, O^1,O^{14}*-di-Me,* N-*Et, 6-Ac:* ***Elasine****. 16-Demethyldeltaline*
[123064-65-3]
$C_{26}H_{39}NO_8$ 493.596
Alkaloid from seeds of *Delphinium elatum* (Ranunculaceae). Cryst. (hexane/petrol). Mp 116-118°. $[\alpha]_D^{27}$ -55.7 (c, 0.51 in $CHCl_3$).

7,8-Methylene, O^1,O^{14}*-di-Me,* N-*Et, 6,16-di-Ac:* ***Delretine****. Delpetine*
[123064-66-4]
$C_{28}H_{41}NO_9$ 535.633
Alkaloid from *Delphinium retropilosum*. Cryst. (hexane). Mp 218-219°. Synonym misspelt as Delpetine in CA abstract.

7,8-Methylene, O^1,O^{16}*-di-Me,* N-*Et:* ***Dictyocarpinine***
[50657-27-7]
$C_{24}H_{37}NO_7$ 451.559
Alkaloid from *Delphinium iliense* and the aerial parts of *Delphinium glaucescens.* Hydrol. prod. of Dictyocarpine (Ranunculaceae). Cryst. (hexane/Me_2CO). Mp 199.5-202°. $[\alpha]_D^{21}$ -4.6 (c, 0.8 in MeOH).

7,8-Methylene, O^1,O^{16}*-di-Me,* N-*Et, 6-Ac:* ***Dictyocarpine****. 6-Acetyldictyocarpinine*
[59989-92-3]
$C_{26}H_{39}NO_8$ 493.596
Alkaloid from the aerial parts of *Delphinium dictyocarpum, Delphinium glaucescens* and *Aconitum columbianum* ssp. *columbianum* (Ranunculaceae). Cryst. (hexane/Me_2CO). Mp 214.5-216.5° (201-203°). $[\alpha]_D^{24}$ -14.7 (c, 0.97 in $CHCl_3$). $[\alpha]_D^{22}$ -12.8 (c, 1.04 in MeOH).

7,8-Methylene, O^1,O^{16}*-di-Me,* N-*Et, 6,14-di-Ac:* ***14-Acetyldictyocarpine***
[75659-26-6]
$C_{28}H_{41}NO_9$ 535.633
Alkaloid from aerial parts of *Delphinium barbeyi* (Ranunculaceae). Amorph. solid. Mp 64-69.5°. $[\alpha]_D^{28}$ -46.6 (c, 1.0 in $CHCl_3$). $[\alpha]_D^{19}$ -50.9 (c, 0.369 in $CHCl_3$) (natural).

7,8-Methylene, O^1,O^{16}*-di-Me,* N-*Et, 14-*O*-(2-methylpropanoyl), 6-Ac:* ***Glaucerine****. 14-Isobutyryldictyocarpine*
[78018-29-8]
$C_{30}H_{45}NO_9$ 563.687
Alkaloid from the aerial parts of *Delphinium glaucescens* (Ranunculaceae). Amorph. $[\alpha]_D^{28}$ -48.5 (c, 1.5 in $CHCl_3$). $[\alpha]_D^{27}$ -27.5 (c, 1.13 in EtOH).

7,8-Methylene, O^1,O^{16}*-di-Me,* N-*Et, 14-*O*-(2*R*-methylbutanoyl), 6-Ac:* ***Glaucenine****. 14-(2-Methylbutyryl)dictyocarpine*
[78018-27-6]
$C_{31}H_{47}NO_9$ 577.714
Alkaloid from *Delphinium barbeyi*, *Delphinium glaucescens* and *Delphinium occidentale* (Ranunculaceae). Amorph.; cryst. (MeOH/hexane) (as perchlorate). Mp 227.5-232.5° (perchlorate). $[\alpha]_D^{26}$ -45 (c, 0.58 in $CHCl_3$).

7,8-Methylene, O^1,O^{16}*-di-Me,* N-*Et, 14-benzoyl, 6-Ac:* ***Glaucephine****. 14-Benzoyldictyocarpine. 6-Acetyl-14-benzoyldictyocarpinine*
[78018-30-1]
$C_{33}H_{43}NO_9$ 597.704
Alkaloid from the aerial parts of *Delphinium glaucescens* and aboveground parts of *Delphinium dictyocarpum* (Ranunculaceae). Amorph. $[\alpha]_D^{28}$ -33.6 (c, 0.76 in $CHCl_3$).

7,8-Methylene, O^1,O^{14},O^{16}*-tri-Me,* N-*Et:* ***Deltamine****. Eldelidine*
[6836-10-8]
$C_{25}H_{39}NO_7$ 465.586
Alkaloid from *Delphinium elatum, Delphinium bonvalotii* and *Delphinium dictyocarpum* (Ranunculaceae). Cryst. (EtOH). Mp 226-228°. $[\alpha]_D$ -17.08 (MeOH).

7,8-Methylene, O^1,O^{14},O^{16}*-tri-Me,* N-*Et, 6-Ac:* ***Deltaline****. Delphelatine. Eldeline*
[6836-11-9]
$C_{27}H_{41}NO_8$ 507.623
Alkaloid from *Delphinium occidentale, Delphinium elatum, Delphinium bonvalotii, Delphinium dictyocarpum, Delphinium glaucescens, Delphinium iliense* and *Aconitum columbianum* ssp. *columbianum* (Ranunculaceae). Cryst. (Et_2O). Mp 186.5-188° (180-181°). $[\alpha]_D^{26}$ -30 (c, 1.1 in MeOH).

▶ AK5544000

7,8-Methylene, O^1,O^6,O^{10},O^{14},O^{16}*-penta-Me,* N-*Et:* ***Terdeline***
[119152-46-4]
$C_{27}H_{43}NO_7$ 493.639
Alkaloid from aerial parts of *Delphinium ternatum* (Ranunculaceae).

6-Ketone, 7,8-methylene, O^1,O^{14},O^{16}*-tri-Me,* N-*Et:* ***Dehydroeldelidine****. Dehydrodeltamine*
[51856-91-8]
$C_{25}H_{37}NO_7$ 463.57
Alkaloid from *Delphinium ternatum* (Ranunculaceae).

Rabinovich, M.S. *et al., Zh. Obshch. Khim.*, 1952, **22**, 1702-1710; *CA*, **47**, 9336e (*Deltamine*)

Kuzovkov, A.D. *et al., J. Gen. Chem. USSR (Engl. Transl.)*, 1959, **29**, 2746-2749 (*Deltamine*)

Narzullaev, A.S. *et al., Khim. Prir. Soedin.*, 1972, **8**, 498-502; 1973, **9**, 443-444; *Chem. Nat. Compd. (Engl. Transl.)*, 1972, **8**, 491-493; 1973, **9**, 424-425 (*isol, ir, pmr, struct, Dictyocarpine, Dictyocarpinine, Deltamine, Deltaline*)

Salimov, B.T. *et al., Khim. Prir. Soedin.*, 1977, **13**, 128-129; 1978, **14**, 235-241; *Chem. Nat. Compd. (Engl. Transl.)*, 1977, **13**, 120-121; 1978, **14**, 194-198 (*Demethyleneeldelidine*)

Pelletier, S.W. *et al., Can. J. Chem.*, 1980, **58**, 1875-1879 (*cmr*)

Pelletier, S.W. *et al., J.A.C.S.*, 1981, **103**, 6536-6538 (*config*)

Pelletier, S.W. *et al., J.O.C.*, 1981, **46**, 3284-3293 (*Delphinium glaucescens constits*)

Finer-Moore, J. *et al., J.O.C.*, 1981, **46**, 3399-3406 (*cmr, struct, Glaucephine, Glaucerine, Glaucenine, Dictyocarpine*)

Salimov, B.T. *et al., Khim. Prir. Soedin.*, 1981, 530-531; *CA*, **96**, 100872m (*isol, ir, pmr, ms, struct, Glaucephine*)

Edwards, O.E. *et al., Can. J. Chem.*, 1982, **60**, 2661-2667 (*config*)

González, A.G. *et al., Heterocycles*, 1984, **22**, 17-20 (*Gadenine*)

Pelletier, S.W. *et al., J. Nat. Prod.*, 1984, **47**, 643-647 (*Dictyocarpine, cryst struct*)

Pelletier, S.W. *et al., Heterocycles*, 1985, **23**, 331-338 (*Deltaline, Dictyocarpine*)

Matveev, V.M. *et al., Khim. Prir. Soedin.*, 1985, **21**, 131-132; *Chem. Nat. Compd. (Engl. Transl.)*, 1985, **21**, 133-134 (*Dehydroeldelidine*)

Narzullaev, A.S. *et al., Khim. Prir. Soedin.*, 1986, **22**, 802-803; 1988, **32**, 739-742; *Chem. Nat. Compd. (Engl. Transl.)*, 1986, **22**, 745-746; 1988, **24**, 335-338 (*Delterine, Terdeline*)

Pelletier, S.W. *et al., Phytochemistry*, 1989, **28**, 1521-1525 (*14-Acetyldictyocarpine*)

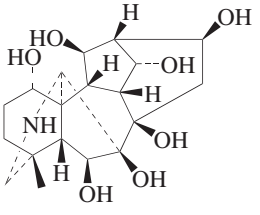
Pelletier, S.W. *et al., Tetrahedron*, 1989, **45**, 1887-1892 (*Elasine, Deltaline*)

Saidkhodzhaeva, S.A. *et al., Khim. Prir. Soedin.*, 1996, **32**, 739-742; *Chem. Nat. Compd. (Engl. Transl.)*, 1996, **32**, 720-722 (*Delretine, Elasine*)

Batbayar, N. *et al., Phytochemistry*, 2003, **62**, 543-550 (*10-Hydroxynudicaulidine, Delterine, isol, cmr*)

Shaheen, F. *et al., J. Nat. Prod.*, 1986, **69**, 823-825 (*Nordhagenine B*)

4-Methylaconitane-1,6,7,8,12,14,16-heptol M-308



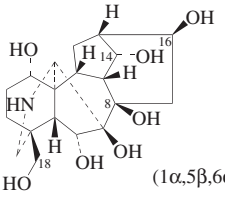
$C_{19}H_{29}NO_7$ 383.441

(1α,5β,6β,12β,14α,16β)-*form*

O^6,O^{16}*-Di-Me,* N-*Et, 14-benzoyl:* ***Gracinine***
[107040-83-5]
$C_{30}H_{41}NO_8$ 543.656
Minor alkaloid from *Delphinium gracile* (Ranunculaceae). Resin. $[\alpha]_D$ +37.6 (c, 0.15 in $CHCl_3$).

González, A.G. *et al., Heterocycles*, 1986, **24**, 2753 (*ir, pmr, cmr, ms, struct*)

4-Methylaconitane-1,6,7,8,14,16,18-heptol M-309



(1α,5β,6α,14α,16β)-*form*

$C_{19}H_{29}NO_7$ 383.441

(1α,5β,6α,14α,16β)-*form*

O^8,O^{16}*-Di-Me,* N-*Et:* ***14-Deacetyl-18-demethylpubescenine***
[194149-13-8]
$C_{23}H_{37}NO_7$ 439.548
Alkaloid from aerial parts of *Aconitella hohenackeri* (*Consolida hohnackeri*). Cryst. (EtOAc/MeOH). Mp 139-140°. $[\alpha]_D$ -10.8 (c, 0.37 in MeOH).

O^{8},O^{16}-*Di-Me,* N-*Et, 14-Ac:* ***18-Demethylpubescenine***
[446859-91-2]
$C_{25}H_{39}NO_8$ 481.585
Alkaloid from *Consolida orientalis*. Amorph. solid. $[\alpha]_D^{23}$ +8 (c, 0.1 in $CHCl_3$). λ_{max} 202 (log ϵ 3.72); 287 (log ϵ 2.93); 321 (sh) (log ϵ 2.75) (MeOH).

O^{8},O^{16}-*Di-Me,* N-*Et, 18-benzoyl:* ***14-Deacetyl-18-benzoyl-18-demethylpubescenine***
$C_{30}H_{41}NO_8$ 543.656
Alkaloid from *Consolida orientalis*. Amorph. solid. $[\alpha]_D^{25}$ +23.3 (c, 0.15 in $CHCl_3$).

O^{8},O^{16},O^{18}-*Tri-Me,* N-*Et:* ***14-O-Deacetylpubescenine***
$C_{24}H_{39}NO_7$ 453.575
Alkaloid from *Consolida orientalis*. Light yellow oil. $[\alpha]_D^{25}$ +17.6 (c, 1 in $CHCl_3$).

O^{8},O^{16},O^{18}-*Tri-Me,* N-*Et, 14-Ac:* ***Pubescenine***†
[116339-93-6]
$C_{26}H_{41}NO_8$ 495.612
Alkaloid from *Consolida pubescens* (Ranunculaceae) and *Consolida oliveriana*. Cryst. (EtOAc). Mp 227-229°. $[\alpha]_D$ -1.3 (c, 0.15 in EtOH).

O^{8},O^{14},O^{16},O^{18}-*Tetra-Me,* N-*Et:* ***Consolidine***†. *14-Deacetylpubescenine 14-methyl ether*
[181798-46-9]
$C_{25}H_{41}NO_7$ 467.601
Alkaloid from aerial parts of *Consolida oliveriana*. Amorph. $[\alpha]_D$ +11.8 (c, 0.17 in $CHCl_3$).

(1α,5β,6β,14α,16β)-*form*

O^{6},O^{16}-*Di-Me,* N-*Et:* ***Takaosamine***. *18-*O*-Demethyldelcosine*
[71239-56-0]
$C_{23}H_{37}NO_7$ 439.548
Alkaloid from the roots of *Aconitum japonicum* (Ranunculaceae). Mp 178-180°. $[\alpha]_D^{23}$ +61.3 (c, 0.2 in $CHCl_3$).

O^{6},O^{16}-*Di-Me,* N-*Et, 14-Ac:* ***14-Acetyltakaosamine***
[725747-04-6]
$C_{25}H_{39}NO_8$ 481.585
Alkaloid from the aerial parts of *Consolida orientalis*. Amorph. solid. $[\alpha]_D^{25}$ +25.3 (c, 0.4 in $CHCl_3$).

O^{6},O^{16}-*Di-Me,* N-*Et, 14-benzoyl:* ***14-O-Benzoyltakaosamine***
$C_{30}H_{41}NO_8$ 543.656
Alkaloid from *Consolida orientalis*. Amorph. powder. $[\alpha]_D^{25}$ +34 (c, 0.12 in $CHCl_3$).

O^{6},O^{18}-*Di-Me,* N-*Et:* ***Macrocentridine***
[121747-79-3]
$C_{23}H_{37}NO_7$ 439.548
Alkaloid from *Delphinium macrocentrum* (Ranunculaceae). Amorph. off-white solid. $[\alpha]_D^{23}$ +27 (c, 1.0 in EtOH).

O^{16},O^{18}-*Di-Me,* N-*Et:* ***Delphinifoline***
[78346-68-6]
$C_{23}H_{37}NO_7$ 439.548
Minor alkaloid from *Aconitum delphinifolium* (Ranunculaceae). Mp 218-220°.

O^{1},O^{6},O^{16}-*Tri-Me,* N-*Et:* ***Delectinine***
[58480-82-3]
$C_{24}H_{39}NO_7$ 453.575
Alkaloid from *Delphinium dictyocarpum* (Ranunculaceae). Alkaline hydrol. product of Ajadine. Mp 167-169°. $[\alpha]_D$ +42 (c, 0.67 in $CHCl_3$).

O^{1},O^{6},O^{16}-*Tri-Me,* N-*Et, 14-Ac:* ***14-O-Acetyldelectinine***
[130756-24-0]
$C_{26}H_{41}NO_8$ 495.612
Alkaloid from *Delphinium nuttallianum* (Ranunculaceae).

O^{1},O^{6},O^{16}-*Tri-Me,* N-*Et, 18-*O*-(2-aminobenzoyl):* ***Delectine***
[58485-71-5]
$C_{31}H_{44}N_2O_8$ 572.697
Alkaloid from the roots and aerial parts of *Delphinium dictyocarpum* (Ranunculaceae). Mp 107-109°.

O^{1},O^{6},O^{16}-*Tri-Me,* N-*Et, 18-*O*-(2-aminobenzoyl), 14-Ac:* ***14-Acetyldelectine***. *Andersonidine*
[66408-08-0]
$C_{33}H_{46}N_2O_9$ 614.734
Alkaloid from *Delphinium dictyocarpum* and *Delphinium andersonii*. Mp 127-130°. $[\alpha]_D^{27}$ +39.1 (c, 0.565 in $CHCl_3$).

O^{1},O^{6},O^{16}-*Tri-Me,* N-*Et, 18-*O*-(2-aminobenzoyl), 14-*O*-(2-methylpropanoyl):* ***Trifoliolasine A***
[740815-33-2]
$C_{35}H_{50}N_2O_9$ 642.788
Alkaloid from *Delphinium trifoliolatum*. Cryst. Mp 125-127°. $[\alpha]_D^{20}$ +44.2 (c, 0.53 in $CHCl_3$).

O^{1},O^{6},O^{16}-*Tri-Me,* N-*Et, 18-*O*-(2-aminobenzoyl), 14-*O*-(2*R*-methylbutanoyl):* ***Jiufengdine***
[486429-07-6]
$C_{36}H_{52}N_2O_9$ 656.815
Alkaloid from the roots of *Delphinium potaninii* var. *jiufengshanense*. Amorph. powder. $[\alpha]_D$ +63.8 (c, 0.5 in $CHCl_3$).

O^{1},O^{6},O^{16}-*Tri-Me,* N-*Et, 18-*O*-(2-acetamidobenzoyl):* **N-*Acetyldelectine***. *14-Deacetylajadine*
[63596-61-2]
$C_{33}H_{46}N_2O_9$ 614.734
Alkaloid from the aerial parts of *Delphinium dictyocarpum* and *Delphinium formosum*. Mp 116-118°. $[\alpha]_D$ +8 (c, 1.0 in $CHCl_3$). Opt. rotn. refers to the *Delphinium formosum* isolate which was erroneously claimed to be novel.

O^{1},O^{6},O^{16}-*Tri-Me,* N-*Et, 18-*O*-(2-acetamidobenzoyl), 14-Ac:* ***Ajadine***
[58480-81-2]
$C_{35}H_{48}N_2O_{10}$ 656.772
Alkaloid from seeds of *Consolida ambigua* (formerly *Delphinium ajacis*). Cryst. (Me_2CO/hexane). Mp 134-136° dec. (sinters at 115°). $[\alpha]_D^{21}$ +43.9 (c, 1.0 in EtOH).

O^{1},O^{6},O^{16}-*Tri-Me,* N-*Et, 18-*O*-(2-acetamidobenzoyl), 14-*O*-(2-methylpropanoyl):* ***14-Deacetyl-14-isobutyrylajadine***
[254876-72-7]
$C_{37}H_{52}N_2O_{10}$ 684.825
Alkaloid from the roots of *Delphinium stapeliosum*. Amorph. $[\alpha]_D^{20}$ +22.9 (c, 0.31 in $CHCl_3$).

O^{1},O^{6},O^{16}-*Tri-Me,* N-*Et, 18-*O*-(2-acetamidobenzoyl), 14-*O*-(2-hydroxy-2-methylbutanoyl):* ***Ajanine***†
[152606-90-1]
$C_{38}H_{54}N_2O_{11}$ 714.851
Alkaloid from leaves of *Delphinium ajacis* (Ranunculaceae). Amorph. $[\alpha]_D$ +47.37 (c, 0.1 in $CHCl_3$).

O^{1},O^{14},O^{16}-*Tri-Me,* N-*Et, 18-*O*-(2-aminobenzoyl):* ***Acoseptrinine***. *6-Demethylanthranoyllycoctonine*
[146001-07-2]
$C_{31}H_{44}N_2O_8$ 572.697
Alkaloid from roots of *Aconitum septentrionale* (Ranunculaceae). Mp 220-222°. $[\alpha]_D$ -14.3 (c, 0.063 in $CHCl_3$).

O^{1},O^{6},O^{16}-*Tri-Me,* N-*Et, 18-*O*-[(2S-methylbutanoylamino)benzoyl], 14-Ac:* ***Delajadine***
[152606-89-8]
$C_{38}H_{54}N_2O_{10}$ 698.852
Alkaloid from leaves of *Delphinium ajacis* (Ranunculaceae). Amorph. $[\alpha]_D$ +54 (c, 0.1 in $CHCl_3$).

O^{1},O^{16},O^{18}-*Tri-Me,* N-*Et:* ***Vaginatine***†
[106982-85-8]
$C_{24}H_{39}NO_7$ 453.575
Alkaloid from the roots of *Aconitum scaposum* var. *vaginatum* (Ranunculaceae). Mp 86-88°. $[\alpha]_D^{28}$ +25.3 (c, 0.1 in $CHCl_3$).

O^{1},O^{16},O^{18}-*Tri-Me,* N-*Et, 6-Ac:* ***Alboviolaconitine A***
[138822-60-3]
$C_{26}H_{41}NO_8$ 495.612
Alkaloid from roots of *Aconitum alboviolaceum* (Ranunculaceae). Mp 125-126°. $[\alpha]_D^{28}$ +16.2 (c, 2.0 in $CHCl_3$).

O^{6},O^{8},O^{16}-*Tri-Me,* N-*Et:* ***Potanine***
[160568-11-6]
$C_{24}H_{39}NO_7$ 453.575
Alkaloid from roots of *Delphinium potaninii*.

O^{6},O^{14},O^{16}-*Tri-Me,* N-*Et:* ***Gigactonine***. *Paniculine*†
[65967-20-6]
$C_{24}H_{39}NO_7$ 453.575
Minor alkaloid from the roots of *Aconitum gigas* and from *Consolida regalis* ssp. *paniculata* (Ranunculaceae). Cryst. + 0.2 Me_2CO. Mp 168-169°. $[\alpha]_D^{22}$ +49 (c, 1 in EtOH). Paniculine appears to be identical with Gigactonine (ref. inaccessible). The CA abstract omits the 14-OMe group.

O^{6},O^{14},O^{16}-*Tri-Me,* N-*Et, 18-Ac:* ***1-O-Demethyltricornine***
$C_{26}H_{41}NO_8$ 495.612
Alkaloid from *Consolida orientalis*. Amorph. solid. $[\alpha]_D^{25}$ +18.7 (c, 0.16 in $CHCl_3$).

O^{6},O^{14},O^{16}-*Tri-Me,* N-*Et, 18-*O*-(2-aminobenzoyl):* ***Isodelectine***
[133034-09-0]
$C_{31}H_{44}N_2O_8$ 572.697
Alkaloid from *Delphinium vestitum* (Ranunculaceae). Amorph. $[\alpha]_D$ +54 (c, 0.345 in $CHCl_3$).

O^{6},O^{14},O^{18}-*Tri-Me,* N-*Et:* ***16-O-Demethyldelsoline***

[239479-43-7]
$C_{24}H_{39}NO_7$ 453.575
Alkaloid from *Delphinium fangshanense*. Amorph. powder. $[\alpha]_D$ +41.5 (c, 0.4 in $CHCl_3$).

O^6,O^{16},O^{18}-*Tri-Me,* N-*Et:* ***Delcosine***. *Iliensine*†. *Lucaconine. Alkaloid C*†. *Takaobase I. Takawobase I. Delphamine*
[545-56-2]
$C_{24}H_{39}NO_7$ 453.575
Alkaloid from *Delphinium consolida, Delphinium biternatum, Delphinium glaucescens, Delphinium tatsienense, Aconitum ibukiense, Aconitum japonicum, Consolida ambigua* (*Delphinium ajacis*), and others (Ranunculaceae). Fine cryst. (EtOH). Mp 204-205°. $[\alpha]_D^{23}$ +54.1 (c, 0.8 in $CHCl_3$).

▶ AR5564000

O^6,O^{16},O^{18}-*Tri-Me,* N-*Et, hydroiodide:* Mp 196-197°.

O^6,O^{16},O^{18}-*Tri-Me,* N-*Et, 14-Ac:* ***14-Acetyldelcosine***. *Alkaloid B*†
[50676-21-6]
$C_{26}H_{41}NO_8$ 495.612
Alkaloid from the seeds of *Consolida ambigua* (formerly *Delphinium ajacis*) (Ranunculaceae). Cubes (Et_2O/petrol). Mp 193-194°. $[\alpha]_D$ +30.4 (c, 1.0 in EtOH).

O^6,O^{16},O^{18}-*Tri-Me,* N-*Et, 14-benzoyl:* ***14-Benzoyldelcosine***
[66891-16-5]
$C_{31}H_{43}NO_8$ 557.683
Alkaloid from the aerial parts of *Delphinium biternatum* (Ranunculaceae). Mp 147-149°. $[\alpha]_D$ +50.

O^8,O^{16},O^{18}-*Tri-Me,* N-*Et:* ***Deacetyl-6-epipubescenine***
[130774-03-7]
$C_{24}H_{39}NO_7$ 453.575
Minor alkaloid from *Delphinium nuttallianum*.

O^8,O^{16},O^{18}-*Tri-Me,* N-*Et, 14-Ac:* ***6-Epipubescenine***
[125263-90-3]
$C_{26}H_{41}NO_8$ 495.612
Minor alkaloid from *Delphinium nuttallianum* (Ranunculaceae). Amorph. solid. $[\alpha]_D^{23}$ +23 ($CHCl_3$).

O^{14},O^{16},O^{18}-*Tri-Me,* N-*Et:* ***Exceconitine***
[229159-16-4]
$C_{24}H_{39}NO_7$ 453.575
Alkaloid from *Aconitum excelsum*. Cryst. Mp 202-204°.

O^{14},O^{16},O^{18}-*Tri-Me,* N-*Et, 6-Ac:* ***6-O-Acetyl-14-O-methyldelphinifoline***
[229159-13-1]
$C_{26}H_{41}NO_8$ 495.612
Alkaloid from the flowers of *Aconitum lycoctonum*. Oil.

O^1,O^6,O^{14},O^{16}-*Tetra-Me:* ***Davidisine A***. N-*Deethyldelsine.* N-*Deethyllycoctonine*
[26871-62-5]
$C_{23}H_{37}NO_7$ 439.548
Alkaloid from *Delphinium davidii*.

O^1,O^6,O^{14},O^{16}-*Tetra-Me,* N-*formyl:* ***Potanisine A***. *Davidisine B*
[187653-15-2]
[936116-23-3 (Davidisine B)]
$C_{24}H_{37}NO_8$ 467.558
Alkaloid from *Delphinium davidii* and *Delphinium potaninii*. Amorph. powder. $[\alpha]_D$ +53.9 (c, 1.78 in $CHCl_3$).

O^1,O^6,O^{14},O^{16}-*Tetra-Me,* N-*Et:* ***Lycoctonine***. *Delsine. Royline. Lycoctinine*
[26000-17-9]
$C_{25}H_{41}NO_7$ 467.601
Alkaloid from *Delphinium barbeyi, Delphinium tricorne, Inula royleana, Aconitum lycoctonum* and many other *Delphinium* and *Aconitum* spp. (Ranunculaceae, Asteraceae). Mp 151-153°. $[\alpha]_D^{20}$ +50 (+53) (EtOH).

O^1,O^6,O^{14},O^{16}-*Tetra-Me,* N-*Et, hydrochloride:* Mp 165°.

O^1,O^6,O^{14},O^{16}-*Tetra-Me,* N-*Et, 18-Ac:* ***Tricornine***
[26871-60-3]
$C_{27}H_{43}NO_8$ 509.639
Alkaloid from *Delphinium tricorne* (whole plant) (Ranunculaceae). Mp 187-189° dec. $[\alpha]_D^{22}$ +47.3 (c, 1.3 in EtOH).

O^1,O^6,O^{14},O^{16}-*Tetra-Me, 18-*O-*(2-aminobenzoyl):* N-*Deethylanthranoyllycoctonine.* ***Jiufengtine***
[486429-11-2]
$C_{30}H_{42}N_2O_8$ 558.67
Alkaloid from the roots of *Delphinium potaninii* var. *jiufengshanense*. Amorph. powder. $[\alpha]_D$ +46 (c, 0.5 in $CHCl_3$).

O^1,O^6,O^{14},O^{16}-*Tetra-Me,* N-*Et, 18-*O-*(2-aminobenzoyl):* ***Anthranoyllycoctonine***. *Inuline*†
[22413-78-1]
$C_{32}H_{46}N_2O_8$ 586.724
Alkaloid from *Inula royleana, Delphinium consolida, Delphinium barbeyi, Delphinium elisabethae, Delphinium grandiflorum, Delphinium tamarae, Delphinium biternatum, Delphinium cashmirianum, Delphinium dictyocarpum, Delphinium glaucescens, Delphinium confusum, Consolida ambigua (Delphinium ajacis), Aconitum umbrosum* and others (Asteraceae, Ranunculaceae). Amorph. solid. Mp 160-165° (132-135°, 145-154° dec.). $[\alpha]_D^{20.5}$ +50.6 (c, 0.67 in $CHCl_3$). $[\alpha]_D^{27}$ +51.2 (c, 0.519 in EtOH).

O^1,O^6,O^{14},O^{16}-*Tetra-Me,* N-*Et, 18-*O-*(2-acetamidobenzoyl):* ***Ajacine***
[509-17-1]
$C_{34}H_{48}N_2O_9$ 628.761
Alkaloid from *Delphinium orientale, Delphinium belladonna, Consolida ambigua* (*Delphinium ajacis*) and *Aconitum umbrosum* (Ranunculaceae). Cryst. (EtOH aq.). Mp 142-143° (137-139°). $[\alpha]_D$ +50 (EtOH).

O^1,O^6,O^{14},O^{16}-*Tetra-Me,* N-*Et, 18-*O-*[2-(ethoxycarbonylamino)benzoyl]:* ***Omeienine***
[180338-87-8]
$C_{35}H_{50}N_2O_{10}$ 658.787
Alkaloid from roots of *Delphinium omeiense*. Amorph. powder. $[\alpha]_D$ +40.4 (c, 0.5 in $CHCl_3$).

O^1,O^6,O^{14},O^{16}-*Tetra-Me,* N-*Et, 18-*O-*(2-methylaminobenzoyl):* ***Septerine***
[192992-36-2]
$C_{33}H_{48}N_2O_8$ 600.751
Alkaloid from *Aconitum septentrionale* (Ranunculaceae). Powder (as perchlorate).

O^1,O^6,O^{14},O^{16}-*Tetra-Me,* N-*Et, 18-*O-*[(2-methylpropanoylamino)benzoyl]:* ***Delajacirine***
[152606-88-7]
$C_{36}H_{52}N_2O_9$ 656.815
Alkaloid from leaves of *Delphinium ajacis* (Ranunculaceae). Amorph. $[\alpha]_D$ +39.62 (c, 0.2 in $CHCl_3$).

O^1,O^6,O^{14},O^{16}-*Tetra-Me,* N-*Et, 18-*O-*[2-(2*S*-methylbutanoylamino)benzoyl]:* ***Conambine***. *Delajacine*
[152606-87-6]
$C_{37}H_{54}N_2O_9$ 670.842
Alkaloid from the seeds of *Consolida ambigua* and leaves of *Delphinium ajacis*. Cryst. Mp 127-129° Mp 73-76°. $[\alpha]_D$ +47.3 (c, 0.3 in $CHCl_3$) (Conambine). $[\alpha]_D$ +58.9 (c, 0.1 in $CHCl_3$) (Delajacine). Conambine and Delajacine not compared. Higher Mp refers to Conambine from *C. ambigua*.

O^1,O^6,O^{14},O^{18}-*Tetra-Me,* N-*Et:* ***Delbiterine***. *16-Demethyldelphatine*
[66891-14-3]
$C_{25}H_{41}NO_7$ 467.601
Alkaloid from the roots of *Delphinium biternatum* (Ranunculaceae). Mp 137-138°.

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*formyl:* ***α-Oxobrowniine***. N-*Deethyl*-N-*formylbrowniine*
[128341-39-9]
$C_{24}H_{37}NO_8$ 467.558
Alkaloid from the rhizomes of *Aconitum yesoense* var. *macroyesoense* (Ranunculaceae). Amorph. $[\alpha]_D$ +70.7 (c, 0.15 in EtOH). The name α-Oxobrowniine is misleading.

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et:* ***Brownіine***
[5140-42-1]
$C_{25}H_{41}NO_7$ 467.601
Alkaloid from *Delphinium brownii*, *Delphinium biternatum*, *Delphinium carolinianum*, *Delphinium glaucescens*, *Delphinium iliense*, *Delphinium virescens,Delphinium tatsienense* and *Consolida ambigua* (formerly *Delphinium ajacis*) (Ranunculaceae). Amorph. solid; cryst. (as hydroiodide). Mp 193-196° hydroiodide. $[\alpha]_D^{25}$ +40.2 (c, 2.5 in EtOH).

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14-Ac:* ***14-Acetylbrowniine***
[65601-04-9]
$C_{27}H_{43}NO_8$ 509.639
Alkaloid from the aerial portions of *Delphinium brownii* (both early shoots and mature flowering stages), the above-ground parts of *Delphinium oreophilum*, and from the seeds of *Consolida ambigua* (*Delphinium ajacis*) (Ranunculaceae). Cryst. (hexane). Mp 123-124° (115-116°). $[\alpha]_D^{27}$ +27.8 (c, 1.0 in $CHCl_3$).

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et,* O^{14}-*(2-methylpropanoyl):* ***Occidentalidine***
[116199-47-4]

$C_{29}H_{47}NO_8$ 537.692
Alkaloid from the aerial parts of *Delphinium occidentale* (Ranunculaceae). Mp 137-140°. $[\alpha]_D^{22}$ +31.3 (c, 0.32 in $CHCl_3$).

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et,* O^{14}-*(2*S-*methylbutanoyl): **Glaucedine**. 14-(2-Methylbutyryl)browniine*
[78039-66-4]
$C_{30}H_{49}NO_8$ 551.719
Alkaloid from the aerial parts of *Delphinium glaucescens* (Ranunculaceae). Cryst. (Me_2CO/hexane). Mp 117-120°. $[\alpha]_D^{27}$ +36.4 (c, 0.81 in MeOH).

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14-benzoyl: **14-Benzoylbrowniine***
[66891-15-4]
$C_{32}H_{45}NO_8$ 571.709
Alkaloid from the aerial parts of *Delphinium biternatum* (Ranunculaceae).

O^1,O^{14},O^{16},O^{18}-*Tetra-Me,* N-*Et: **6-Demethyldelphatine**. Demethylenedelcorine. Acosanine*
[52358-56-2]
$C_{25}H_{41}NO_7$ 467.601
Alkaloid from roots of *Aconitum septentrionale* and *Aconitum sajanense* (Ranunculaceae). Amorph. $[\alpha]_D$ +19.3 (c, 0.295 in $CHCl_3$).

O^1,O^{14},O^{16},O^{18}-*Tetra-Me,* N-*Et, 6-Ac: **Leucostine A**. 6*-O-*Acetyldemethylenedelcorine*
[173075-39-3]
$C_{27}H_{43}NO_8$ 509.639
Alkaloid from roots of *Aconitum leucostomum* and flowers of *Aconitum lycoctonum*. Amorph. powder or oil. Leucostine A and 6-Acetyldemethylenedelcorine not compared.

O^6,O^8,O^{16},O^{18}-*Tetra-Me,* N-*Et: **Deltatsine***
[92631-66-8]
$C_{25}H_{41}NO_7$ 467.601
Alkaloid from *Consolida orientalis* and *Delphinium tatsienense*. Amorph. powder + $1H_2O$. $[\alpha]_D^{20}$ +28.6 (c, 2.4 in EtOH).

O^6,O^8,O^{14},O^{16}-*Tetra-Me,* N-*Et, 18*-O-*(2-aminobenzoyl): **Delvestine***
[99815-77-7]
$C_{32}H_{46}N_2O_8$ 586.724
Alkaloid from the aerial parts of *Delphinium vestitum* (Ranunculaceae). Mp 185-187°. $[\alpha]_D^{27}$ +18.6 (c, 0.8 in $CHCl_3$).

O^6,O^8,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14-Ac: **Delbonine***
[95066-33-4]
$C_{27}H_{43}NO_8$ 509.639
Alkaloid from *Consolida orientalis* and *Delphinium bonvalotii*. Amorph. solid. $[\alpha]_D^{16}$ +41.1 (c, 0.1 in $CHCl_3$).

O^6,O^{14},O^{16},O^{18}-*Tetra-Me,* N-*Et: **Delsoline**. 14*-O-*Methyldelcosine. 18*-O-*Methylgigactonine. Acomonine*
[509-18-2]
$C_{25}H_{41}NO_7$ 467.601
Alkaloid from *Delphinium consolida, Delphinium orientale, Delphinium biternatum, Delphinium yunnanense, Aconitum finetianum, Aconitum monticola, Aconitum karakolicum, Consolida ambigua* (*Delphinium ajacis*) and others (Ranunculaceae). Cryst. (MeOH). Mp 212-213°. $[\alpha]_D^{24}$ +54.3 (c, 1.0 in $CHCl_3$).

▶AR5569490
$O^1,O^6,O^8,O^{16},O^{18}$-*Penta-Me,* N-*Et: **Deacetylambiguine***
[74690-96-3]
$C_{26}H_{43}NO_7$ 481.628
Alkaloid from roots of *Delphinium tatsienense*. Amorph. $[\alpha]_D^{25}$ +36.6 (c, 0.38 in EtOH).

$O^1,O^6,O^8,O^{14},O^{16}$-*Penta-Me,* N-*Et, 18*-O-*(2-aminobenzoyl): **Delvestidine***
[99815-78-8]
$C_{33}H_{48}N_2O_8$ 600.751
Alkaloid from the aerial parts of *Delphinium vestitum* (Ranunculaceae). Amorph. $[\alpha]_D^{26}$ +22.1 (c, 0.515 in $CHCl_3$).

$O^1,O^6,O^8,O^{16},O^{18}$-*Penta-Me,* N-*Et, 14-Ac: **Ambiguine***
[68388-52-3]
$C_{28}H_{45}NO_8$ 523.665
Minor alkaloid from seeds of *Consolida ambigua* (formerly *Delphinium ajacis*). Mp 106-108°. $[\alpha]_D^{25}$ +38 (c, 1.0 in $CHCl_3$).

$O^1,O^6,O^{14},O^{16},O^{18}$-*Penta-Me:* **N-*Deethyldelphatine***
[173559-78-9]
$C_{24}H_{39}NO_7$ 453.575
Alkaloid from aerial parts of *Aconitum orientale* (Ranunculaceae). $[\alpha]_D$ +52 (c, 1 in $CHCl_3$).

$O^1,O^6,O^{14},O^{16},O^{18}$-*Penta-Me,* N-*Et: **Delphatine**. Delsonine. 18*-O-*Methyllycoctonine*
[25488-62-4]
$C_{26}H_{43}NO_7$ 481.628
Alkaloid from the roots, seeds and aerial parts of *Delphinium biternatum*, from *Delphinium consolida* and from the seeds of *Consolida ambigua*, (formerly *Delphinium ajacis*) (Ranunculaceae). Amorph. solid. $[\alpha]_D^{29}$ +38.2 (c, 2.95 in $CHCl_3$). Identity of Delsonine (from *Delphinium consolida*) with Delphatine is not conclusively establ.

$O^1,O^6,O^{14},O^{16},O^{18}$-*Penta-Me,* N-*Et, perchlorate:* Mp 212-214° (205-207°). $[\alpha]_D^{32}$ +23 (c, 0.412 in MeOH).

$O^6,O^7,O^8,O^{16},O^{18}$-*Penta-Me,* N-*Et: **Delosine***
[68463-98-9]
$C_{26}H_{43}NO_7$ 481.628
Alkaloid from *Delphinium ajacis.*

$O^6,O^7,O^8,O^{16},O^{18}$-*Penta-Me,* N-*Et, 14-Ac: **14-Acetyldelosine***
[67983-95-3]
$C_{28}H_{45}NO_8$ 523.665
Alkaloid from *Consolida ambigua.*

$O^6,O^8,O^{14},O^{16},O^{18}$-*Penta-Me,* N-*Et: **Delbotine***
[92631-67-9]
$C_{26}H_{43}NO_7$ 481.628
Alkaloid from the roots of *Delphinium bonvalotii*. Mp 155-157°. $[\alpha]_D^{18}$ +13.6 (c, 0.1 in $CHCl_3$).

Hepta-Me ether, N-*Et: **Delcoline***
[68463-99-0]
$C_{28}H_{47}NO_7$ 509.682
Alkaloid from *Delphinium confusum.*

7,8-Methylene, O^6,O^{16}-*di-Me,* N-*Et: **Campylotine***
[960201-80-3]
$C_{24}H_{37}NO_7$ 451.559
Alkaloid from *Delphinium campylocentrum.*

7,8-Methylene ether, O^{14},O^{18}-*di-Me,* N-*Et: **Delcorinine***
[404945-91-1]
$C_{24}H_{37}NO_7$ 451.559
Alkaloid from *Delphinium corymbosum*. Cryst. (Me_2CO). Mp 226-228°.

7,8-Methylene ether, O^{16},O^{18}-*di-Me,* N-*Et: **Delbruninol***
[244619-04-3]
$C_{24}H_{37}NO_7$ 451.559
Alkaloid from *Delphinium brunonianum*. $[\alpha]_D^{25}$ -3.6 (c, 0.01 in $CHCl_3$).

7,8-Methylene ether, O^1,O^{16},O^{18}-*tri-Me,* N-*Et: **Delcoridine***
[76971-29-4]
$C_{25}H_{39}NO_7$ 465.586
Alkaloid from the aerial parts of *Delphinium iliense* (Ranunculaceae). Mp 222-223° (as perchlorate).

7,8-Methylene ether, O^6,O^{16},O^{18}-*tri-Me,* N-*Et: **Delbrunine***
[106982-83-6]
$C_{25}H_{39}NO_7$ 465.586
Alkaloid from the whole plant of *Delphinium brunonianum* (Ranunculaceae). Mp 178°. $[\alpha]_D^{17}$ 0 (c, 0.085 in EtOH).

7,8-Methylene ether, O^1,O^6,O^{16},O^{18}-*tetra-Me,* N-*Et: **Delbruline***
[106982-82-5]
$C_{26}H_{41}NO_7$ 479.612
Alkaloid from *Delphinium brunonianum* (Ranunculaceae). Mp 129-131°. $[\alpha]_D^{17}$ 0 (c, 0.09 in $CHCl_3$).

7,8-Methylene ether, O^1,O^{14},O^{16},O^{18}-*tetra-Me,* N-*Me, 6-Ac: **Soulidine***
[259653-97-9]
$C_{27}H_{41}NO_8$ 507.623
Alkaloid from *Delphinium souliei.* Cryst. (EtOH). Mp 90-91°. $[\alpha]_D^{24}$ +35 (c, 0.2 in $CHCl_3$).

7,8-Methylene ether, O^1,O^{14},O^{16},O^{18}-*tetra-Me,* N-*Et: **Delcorine***
[52358-55-1]
$C_{26}H_{41}NO_7$ 479.612
Alkaloid from the aerial parts of *Delphinium corumbosum (corymbosum), Delphinium iliense* and *Delphinium ternatum* (Ranunculaceae). Mp 200-202°. $[\alpha]_D$ -18 ($CHCl_3$).

7,8-Methylene ether, O^1,O^{14},O^{16},O^{18}-*tetra-Me,* N-*Et, 6-Ac: **Tortumine***
[51856-89-4]
$C_{28}H_{43}NO_8$ 521.65
Alkaloid from *Consolida hohenackeri* (Ranunculaceae).

7,8-Methylene ether, $O^1,O^6,O^{14},O^{16},O^{18}$-*penta-Me,* N-*Et: **Delbrusine**. 6*-O-*Methyldelcorine*
[76971-31-8]
$C_{27}H_{43}NO_7$ 493.639
Alkaloid from *Aconitum septentrionale* and *Delphinium brunonianum* (Ranun-

culaceae). Mp 141°. $[\alpha]_D^{17}$ +16.8 (c, 0.57 in $CHCl_3$).

6-Ketone, O^1,O^{14},O^{16},O^{18}*-tetra-Me,* N-*Et:* ***Dehydroacosanine***
[192386-07-5]
$C_{25}H_{39}NO_7$ 465.586
Alkaloid from *Aconitum sajanense* (Ranunculaceae) and *Aconitum leucostomum*. Cryst. (MeOH/hexane). Mp 140-141°.

6-Ketone, 7,8-methylene ether, O^1,O^{16},O^{18}*-tri-Me,* N-*Et:* ***Ilidine***
[66921-48-0]
$C_{25}H_{37}NO_7$ 463.57
Alkaloid from above ground parts of *Delphinium iliense* (Ranunculaceae). Mp 141-143°.

6-Ketone, 7,8-methylene ether, O^{14},O^{16},O^{18}*-tri-Me,* N-*Et:* ***Glandulosine***†
[123715-13-9]
$C_{25}H_{37}NO_7$ 463.57
Alkaloid from *Consolida glandulosum* (Ranunculaceae).

6-Ketone, 7,8-methylene ether, O^1,O^{14},O^{16},O^{18}*-tetra-Me,* N-*Et:* ***6-Dehydrodelcorine***
[51856-90-7]
$C_{26}H_{39}NO_7$ 477.597
Alkaloid from the aerial parts of *Delphinium iliense* (Ranunculaceae). Mp 133-134°.

14-Ketone, O^1,O^{16},O^{18}*-tri-Me,* N-*Et:* ***Vaginaline***
[106982-86-9]
$C_{24}H_{37}NO_7$ 451.559
Alkaloid from *Aconitum scaposum* var. *vaginatum* (Ranunculaceae). Mp 209-213° dec. $[\alpha]_D^{18.5}$ +28.6 (c, 0.1 in EtOH).

14-Ketone, O^6,O^{16},O^{18}*-tri-Me,* N-*Et:* ***14-Dehydrodelcosine****. Shimoburo base II. 14-Dehydroiliensine*
[1361-18-8]
$C_{24}H_{37}NO_7$ 451.559
Alkaloid from *Aconitum japonicum*, roots of *Aconitum ibukiense* and aerial parts of *Delphinium biternatum* (Ranunculaceae). Mp 208-213°. $[\alpha]_D$ +25.2 ($CHCl_3$).

14-Ketone, O^1,O^6,O^{16},O^{18}*-tetra-Me,* N-*Et:* ***14-Dehydrobrowniine***
[4829-56-5]
$C_{25}H_{39}NO_7$ 465.586
Alkaloid from *Delphinium cardinale*, the aerial parts of *Delphinium biternatum* and *Delphinium glaucescens*, and roots of *Aconitum ibukiense* (Ranunculaceae). Small prisms (Et_2O). Mp 161-163°. $[\alpha]_D^{27}$ +19 (EtOH).

6,14-Diketone, O^1,O^{16},O^{18}*-tri-Me,* N-*Et:* ***Vaginadine***
[106982-87-0]
$C_{24}H_{35}NO_7$ 449.543
Alkaloid from *Aconitum scaposum* var. *vaginatum* (Ranunculaceae). Mp 147-149°. $[\alpha]_D^{18.5}$ -49.4 (c, 0.1 in EtOH).

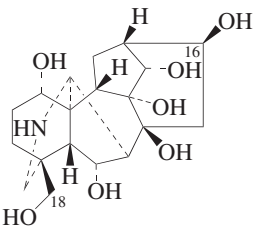
(1β,5β,6β,14α,16β)-*form*

7,8-Methylene ether, O^1,O^6,O^{16},O^{18}*-tetra-Me,* N-*Et:* ***Corepanine***
[119459-59-5]
$C_{26}H_{41}NO_7$ 479.612
Alkaloid from epigeal parts of *Consolida regalis* ssp. *paniculata* (Ranunculaceae). The CAS abstract diag. omits the 14-OH group.

Goodson, J.A. *et al., J.C.S.*, 1945, 245-246 (*Delcosine, 14-Acetyldelcosine, isol*)
Marion, L. *et al., J.A.C.S.*, 1947, **69**, 2010-2014 (*Delsonine*)
Cook, W.B. *et al., J.A.C.S.*, 1952, **74**, 1411-1415 (*Anthranoyllycoctonine*)
Taylor, W.I. *et al., Can. J. Chem.*, 1954, **32**, 780-784 (*14-Acetyldelcosine, struct*)
Abubakirov, N.K. *et al., CA*, 1955, **49**, 5495 (*Delphatine*)
Przybylska, M. *et al., Can. J. Chem.*, 1956, **34**, 185-187 (*Lycoctonine*)
Edwards, O.E. *et al., Can. J. Chem.*, 1956, **34**, 1315-1328; 1959, **37**, 1187-1190; 1982, **60**, 2661-2667 (*Anthranoyllycoctonine, struct, config*)
Sparatore, F. *et al., Tetrahedron*, 1958, **4**, 157-168 (*Delsoline*)
Kuzovkov, A.D. *et al., J. Gen. Chem. USSR (Engl. Transl.)*, 1959, **29**, 2746-2749 (*Anthranoyllycoctonine, Ajacine*)
Skarić, V. *et al., Can. J. Chem.*, 1960, **38**, 2433-2440 (*Delcosine, Delsoline, struct*)
Benn, M.H. *et al., Can. J. Chem.*, 1963, **41**, 477-452; 1966, **44**, 1-8 (*Browniine, 14-Acetylbrowniine, Dehydrobrowniine*)
Yunusov, M.S. *et al., Khim. Prir. Soedin.*, 1970, **6**, 334-339; 1975, **11**, 770-775; *Chem. Nat. Compd. (Engl. Transl.)*, 1970, **6**, 9; 1975, **11**, 791-794 (*Delphatine, Delcosine, ir, pmr, ms, struct*)
Jones, A.J. *et al., Can. J. Chem.*, 1973, **51**, 486-499 (*Browniine, cmr*)
Narzullaev, A.S. *et al., Khim. Prir. Soedin.*, 1973, **9**, 497-501; *Chem. Nat. Compd. (Engl. Transl.)*, 1973, **9**, 468-471 (*Delcorine*)
Salimov, B.T. *et al., Khim. Prir. Soedin.*, 1975, **11**, 665-666; 1977, **13**, 128-129; 716; 1978, **14**, 235-241; *Chem. Nat. Compd. (Engl. Transl.)*, 1975, **11**, 704-705; 1977, **13**, 120-121; 1978, **14**, 194-198 (*Delectinine, Delectine, 14-Acetyldelectine*)
Pelletier, S.W. *et al., Heterocycles*, 1977, **7**, 327-329; 1983, **20**, 1347-1354 (*Delcosine, Delsoline, 14-Acetylbrowniine, Lycoctonine, cmr*)
Sakai, S. *et al., Heterocycles*, 1977, **8**, 207-210 (*Gigactonine*)
Zhamierashvili, M.G. *et al., Khim. Prir. Soedin.*, 1977, **13**, 836-838; 1980, **16**, 663-665; *Chem. Nat. Compd. (Engl. Transl.)*, 1977, **13**, 704-706; 1980, **16**, 479-480 (*Delcorine, Delcoridine, 6-Dehydrodelcorine, Ilidine*)
Kazlikhin, V.G. *et al., Khim. Prir. Soedin.*, 1977, **13**, 869; *Chem. Nat. Compd. (Engl. Transl.)*, 1977, **13**, 737-738 (*14-Acetylbrowniine*)
Pelletier, S.W. *et al., Phytochemistry*, 1977, **16**, 1464 (*Tricornine*)
Waller, G.R. *et al., CA*, 1978, **89**, 176315 (*Delosine*)
Pelletier, S.W. *et al., Heterocycles*, 1978, **9**, 463-468 (*Delectinine, cmr*)
Salimov, B.T. *et al., Khim. Prir. Soedin.*, 1978, **14**, 106-111; *Chem. Nat. Compd. (Engl. Transl.)*, 1978, **14**, 84-88 (*14-Benzoylbrowniine, 14-Benzoyldelcosine, 14-Dehydrodelcosine, Delbiterine*)
Aiyar, V.N. *et al., Phytochemistry*, 1978, **17**, 1453-1454 (*14-Acetylbrowniine*)
Pelletier, S.W. *et al., Can. J. Chem.*, 1979, **57**, 1652-1655 (*Browniine, cmr*)
Pelletier, S.W. *et al., J. Nat. Prod.*, 1979, **42**, 615-623; 1980, **43**, 395-406 (*14-Acetylbrowniine, 14-Acetyldelcosine, Delphatine, Delsoline, Ambiguine, Ajacine, Anthranoyllycoctonine, Browniine*)
Sakai, S. *et al., Yakugaku Zasshi*, 1979, **99**, 647-656; *CA*, **91**, 105185w (*Takaosamine*)
Pelletier, S.W. *et al., J.A.C.S.*, 1981, **103**, 6536-6538 (*Delcorine, Delsoline, Deltatsine, cmr, config*)
Pelletier, S.W. *et al., J.O.C.*, 1981, **46**, 3284-3293 (*Glaucedine*)
Finer-Moore, J. *et al., J.O.C.*, 1981, **46**, 3399-3406 (*Delcosine, cmr, struct*)
Pelletier, S.W. *et al., Tet. Lett.*, 1981, **22**, 207-210 (*Delsoline, 14-Dehydrodelcosine*)
Aiyar, V.N. *et al., Tet. Lett.*, 1981, **22**, 483-484 (*Delphinifoline*)
Kerr, K.A. *et al., Acta Cryst. B*, 1982, **38**, 1237-1241 (*Delphinifoline, cryst struct*)
Pelletier, S.W. *et al., Heterocycles*, 1983, **20**, 1347-1354 (*Deacetylambiguine*)
Matveev, V.M. *et al., Khim. Prir. Soedin.*, 1983, **19**, 657-658; *Chem. Nat. Compd. (Engl. Transl.)*, 1983, **19**, 627-628 (*Delcorine*)
Joshi, B.S. *et al., Heterocycles*, 1984, **22**, 2037-2042 (*Deltatsine*)
Pelletier, S.W. *et al., J. Nat. Prod.*, 1984, **47**, 643-647 (*Browniine, cryst struct*)
Sakai, S. *et al., Yakugaku Zasshi*, 1984, **104**, 222-237; *CA*, **101**, 69329k (*isol, Dehydrobrowniine*)
Jiang, Q.P. *et al., Heterocycles*, 1985, **23**, 11-15; 1986, **24**, 877-879 (*Delbonine, Delbotine, Vaginatine, Vaginaline, Vaginadine*)
Desai, H.K. *et al., Heterocycles*, 1985, **23**, 2483-2487 (*Delvestine, Delvestidine*)
Deng, W. *et al., Heterocycles*, 1986, **24**, 873-876 (*Delbrunine, Delbrusine, Delbruline*)
Pelletier, S.W. *et al., Heterocycles*, 1987, **26**, 2835-2840 (*Delbruline, Delbrunine, synth*)
Vaisov, Z.M. *et al., Khim. Prir. Soedin.*, 1987, **23**, 869-872; *Chem. Nat. Compd. (Engl. Transl.)*, 1987, **23**, 725-727 (*Delcoline*)
Sener, B. *et al., CA*, 1988, **110**, 111674g; **111**, 211906y; 1990, **112**, 175528 (*Paniculine, Glandulosine, Corepanine, Tortumine*)
Kulanthaivel, P. *et al., Heterocycles*, 1988, **27**, 339-342 (*Occidentalidine*)
De la Fuente, G. *et al., Tet. Lett.*, 1988, **29**, 2723-2736 (*Pubescenine, isol, ir, pmr, cmr, ms, cryst struct*)
Pelletier, S.W. *et al., Heterocycles*, 1989, **28**, 107-110 (*Andersonidine*)
Bai, Y. *et al., Heterocycles*, 1989, **29**, 1017-1021; 1990, **31**, 1233-1236 (*14-Acetyldelectinine, Pubescenine, 6-Epipubescenine, Deacetyl-6-epipubescenine*)
Wada, K. *et al., Heterocycles*, 1989, **29**, 2141-2148 (*α-Oxobrowniine*)
Benn, M.H. *et al., Phytochemistry*, 1989, **28**, 919-922 (*Macrocentridine*)
Bhandary, K.K. *et al., Acta Cryst. C*, 1990, **46**, 1704-1707 (*Delvestine, cryst struct*)
Desai, H.K. *et al., J. Nat. Prod.*, 1990, **53**, 1606-1608 (*Isodelectine*)
Chen, D. *et al., Huaxue Xuebao*, 1992, **50**, 1211-1218; *CA*, **118**, 230146m (*Alboviolaconitine A*)
Joshi, B.S. *et al., J. Crystallogr. Spectrosc. Res.*, 1992, **22**, 477-483 (*Delsoline, cryst struct*)
Sayed, H.M. *et al., J. Nat. Prod.*, 1992, **55**, 1595-1606 (*6-Demethyldelphatine, Acoseptrinine*)
Vaisov, Z.M. *et al., Khim. Prir. Soedin.*, 1992, **28**, 531-534; *Chem. Nat. Compd. (Engl. Transl.)*, 1992, **28**, 463-466 (*6-Dehydroacosanine*)
Lu, J. *et al., J. Nat. Prod.*, 1993, **56**, 2098-2103 (*Ajanine, Delajacine, Delajadine, Delajacirine*)
Pu, H.Y. *et al., Chin. Chem. Lett.*, 1994, **5**, 939-940; *CA*, **122**, 106208b (*Potanine*)
Ulubelen, A. *et al., J. Nat. Prod.*, 1995, **58**, 1555-1561; 1996, **59**, 907-910 (*Lycoctonone, Consolidine, pmr, cmr*)
Xu, Q.Y. *et al., Chin. Chem. Lett.*, 1996, **7**, 555-556 (*Omeienine*)

Yue, J. *et al., J. Nat. Prod.*, 1996, **59**, 277-279 (*Leucostines*)
Usmanova, S.K. *et al., Khim. Prir. Soedin.*, 1996, **32**, 225-228; *Chem. Nat. Compd. (Engl. Transl.)*, 1996, **32**, 198-200 (*Septerine*)
Ulubelen, A. *et al., Phytochemistry*, 1996, **41**, 957-961 (*N-Deethyldelphatine*)
Meriçli, F. *et al., Phytochemistry*, 1996, **42**, 1249-1251 (*N-Acetyldelectine*)
Pu, H. *et al., Planta Med.*, 1996, **62**, 462-464 (*Potanisine A*)
Wei, X. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 1996, **38**, 995-997 (*Dehydroacosanine*)
Almanza, G. *et al., Phytochemistry*, 1997, **45**, 1079-1085 (*14-Deacetyl-18-demethylpubescenine*)
Desai, H.K. *et al., Heterocycles*, 1998, **48**, 1343-1346 (*Conambine*)
Zhang, S.X. *et al., Chin. Chem. Lett.*, 1999, **10**, 133-134 (*Exceconitine*)
He, L. *et al., Chin. Chem. Lett.*, 1999, **10**, 1027-1028 (*Soulidine*)
Ulubelen, A. *et al., Heterocycles*, 1999, **51**, 1897-1903 (*Delbruninol*)
Chen, Y. *et al., J. Nat. Prod.*, 1999, **62**, 798-799 (*6-O-Acetyldemethylenedelcorine, 6-O-Acetyl-14-O-methyldelphinifoline*)
Zhang, S. *et al., Phytochemistry*, 1999, **51**, 333-336 (*16-Demethyldelsoline*)
Wada, K. *et al., Chem. Pharm. Bull.*, 2000, **48**, 660-665 (*Delcosine, ms*)
Shrestha, P.M. *et al., J. Nat. Prod.*, 2000, **63**, 2-5; 2004, **67**, 1574-1576 (*Ajadine, Deacetylisobutyrylajadine, Delbonine, Deltatsine, cmr*)
Salimov, B.T. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2001, **37**, 272-273 (*Delcorinine*)
Shen, X.-L. *et al., Chem. Pharm. Bull.*, 2002, **50**, 1265-1267 (*Glaucedine, Jiufengtine, Jiufengdine*)
Hohman, J. *et al., J. Nat. Prod.*, 2002, **65**, 1069-1072 (*Gigactonine, Takaosamine, 18-Demethylpubescenine*)
Zhou, X.-L. *et al., Chem. Pharm. Bull.*, 2004, **52**, 381-383 (*Trifoliolasine A, Glaucedine, Occidentalidine, cmr*)
Alva, A. *et al., Chem. Pharm. Bull.*, 2004, **52**, 530-534 (*Delbonine, 14-Acetyltakaosamine*)
Alva, A. *et al., Helv. Chim. Acta*, 2004, **87**, 2110-2119 (*14-Deacetylpubescenine, 14-Deacetyl-18-benzoyl-18-demethylpubescenine, 1-Demethyltricornine, 14-Benzoyltakaosamine*)
Csupor, D. *et al., Helv. Chim. Acta*, 2004, **87**, 2125-2130 (*Lycoctonine, pmr, cmr*)
Shrestha, P.M. *et al., J. Nat. Prod.*, 2004, **67**, 1574-1576 (*Delectinine, pmr, cmr, ms*)
Shaheen, F. *et al., Phytochemistry*, 2005, **66**, 935-940 (*Lycoctonine, cmr*)
Li, X. *et al., Chin. Chem. Lett.*, 2006, **17**, 1466-1468 (*Davidisines A,B*)
Song, L. *et al., Chem. Pharm. Bull.*, 2007, **55**, 918-921 (*Delcorine*)
Yan, L.-P. *et al., Youji Huaxue*, 2007, **27**, 976-980; *CA*, **148**, 74053r (*Campylotine*)

4-Methylaconitane-1,6,8,9,14,16,18-heptol M-310

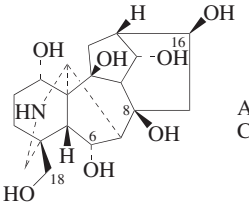


$C_{19}H_{29}NO_7$ 383.441

(1α,5β,6α,14α,16β)-*form*

O^{16},O^{18}-*Di-Me,* N-*Et:* ***9-Hydroxysenbusine A***
$C_{23}H_{37}NO_7$ 439.548
Alkaloid from the roots of *Aconitum balfourii*. Amorph. solid. $[\alpha]_D$ +5.4 ($CHCl_3$).
Khetwal, K.S. *et al., Nat. Prod. Res.*, 2004, **18**, 129-133 (*isol*)

4-Methylaconitane-1,6,8,10,14,16,18-heptol M-311



Absolute Configuration

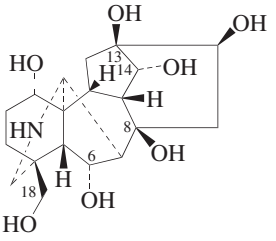
$C_{19}H_{29}NO_7$ 383.441

(1α,5β,6α,14α,16β)-*form*

O^{6},O^{16},O^{18}-*Tri-Me,* N-*Et:* ***10-Hydroxyneoline***
[132362-42-6]
$C_{24}H_{39}NO_7$ 453.575
Alkaloid from the roots of *Aconitum fukutomei* (Ranunculaceae). Cryst. (C_6H_6). Mp 75-79°. $[\alpha]_D^{26}$ +35.8 (c, 0.41 in $CHCl_3$).

O^{6},O^{16},O^{18}-*Tri-Me,* N-*Et,* O^{14}-*Ac:* ***14-Acetyl-10-hydroxyneoline***
[132309-20-7]
$C_{26}H_{41}NO_8$ 495.612
Alkaloid from the roots of *Aconitum fukutomei* (Ranunculaceae). Amorph. $[\alpha]_D^{23}$ +37.1 (c, 0.52 in $CHCl_3$).
Takayama, H. *et al., J. Nat. Prod.*, 1990, **53**, 936 (*isol*)

4-Methylaconitane-1,6,8,13,14,16,18-heptol M-312



$C_{19}H_{29}NO_7$ 383.441

(1α,5β,6α,14α,16β)-*form*

O^{1},O^{16},O^{18}-*Tri-Me,* N-*Et:* ***Lasiansine***
$C_{24}H_{39}NO_7$ 453.575
Alkaloid from the roots of *Aconitum nagarum* var. *lasiandrum*. Amorph. powder. Mp 94-96°. $[\alpha]_D^{20}$ +5.5 (c, 0.5 in $CHCl_3$).

O^{1},O^{6},O^{16},N-*Tetra-Me, 14-benzoyl, 8-Ac:* ***Delstaphigine***
[119347-25-0]
$C_{32}H_{43}NO_9$ 585.693
Alkaloid from seeds of *Delphinium staphisagria* (Ranunculaceae). Amorph. $[\alpha]_D^{18}$ +4.2 (c, 0.4 in $CHCl_3$).

$O^{1},O^{6},O^{16},O^{18}$-*Tetra-Me, 14-benzoyl, 8-Ac,* N-*formyl:* ***α-Oxodelphinine***
[466-25-1]
$C_{33}H_{43}NO_{10}$ 613.703
Alkaloid from seeds of *Delphinium staphisagria* (Ranunculaceae). Cryst. ($CHCl_3$/hexane). Mp 217.5-219.5°. $[\alpha]_D^{27}$ -62.8 (c, 0.28 in EtOH).

$O^{1},O^{6},O^{16},O^{18}$-*Tetra-Me, 14-*O-*(4-methoxybenzoyl), 8-Ac:* ***Habaenine B***
[947594-23-2]
$C_{33}H_{45}NO_{10}$ 615.719
Alkaloid from *Aconitum habaense*. Amorph. solid. $[\alpha]_D^{15}$ -14.9 (c, 0.14 in $CHCl_3$). λ_{max} 259 (log ϵ 4.57); 336 (log ϵ 3.82); 387 (log ϵ 3.1) ($CHCl_3$).

$O^{1},O^{6},O^{16},O^{18}$-*Tetra-Me,* N-*Et: Bikhaconine*
[38146-48-4]
Semisynthetic, formed by alkaloid hydrol. of Bikhaconitine. Gum. $[\alpha]_D^{24}$ +33 (c, 0.60 in EtOH).

$O^{1},O^{6},O^{16},O^{18}$-*Tetra-Me,* N-*Et, 14-benzoyl, 8-Ac:* ***Chasmaconitine***. N-*Ethyl*-N-*desmethyldelphinine*
[6846-46-4]
$C_{34}H_{47}NO_9$ 613.747
Alkaloid from roots of *Aconitum chasmanthum, Aconitum ferox, Aconitum franchetii* and *Aconitum forrestii* (Ranunculaceae). Cryst. (Et_2O or hexane). Mp 181-182° dec. (167°).

$O^{1},O^{6},O^{16},O^{18}$-*Tetra-Me,* N-*Et, 14-*O-*(4-methoxybenzoyl):* ***Forestine***
[91794-14-8]
$C_{33}H_{47}NO_9$ 601.736
Alkaloid from the roots of *Aconitum forrestii* (Ranunculaceae). Amorph.

$O^{1},O^{6},O^{16},O^{18}$-*Tetra-Me,* N-*Et, 14-*O-*(4-methoxybenzoyl), 8-*O-*acyl:* ***Lipoforestine***. *Lipo-14-*O-*anisoylbikhaconine*
Alkaloid from processed tubers of *Aconitum carmichaeli*. Oil. $[\alpha]_D^{23}$ +18.7 (c, 0.13 in $CHCl_3$). C-8 Acylating group is a mixt. of C-16 and C-18 alkanoyl and alkenoyl groups.

$O^{1},O^{6},O^{16},O^{18}$-*Tetra-Me,* N-*Et, 14-*O-*(4-methoxybenzoyl), 8-Ac:* ***Crassicauline A***. *Crassicauline I*
[79592-91-9]
$C_{35}H_{49}NO_{10}$ 643.773
Alkaloid from the roots of *Aconitum crassicaule, Aconitum forrestii*, *Aconitum pseudogeniculatum* and *Aconitum dolichorhynchum* var. *subglabratum* (Ranunculaceae). Needles (Me_2CO). Mp 162.5-164.5°. $[\alpha]_D^{23}$ +31.5 (c, 0.57 in $CHCl_3$).

$O^{1},O^{6},O^{16},O^{18}$-*Tetra-Me,* N-*Et, 14-*O-*(4-methoxybenzoyl), 8-hexadecanoyl:* ***Dolichotine E***
[128341-12-8]
$C_{49}H_{77}NO_{10}$ 840.148
Minor alkaloid from roots of *Aconitum dolichorhynchum* var. *subglabratum* (Ranunculaceae). Amorph.

$O^{1},O^{6},O^{16},O^{18}$-*Tetra-Me,* N-*Et, 8,14-bis-*O-*(4-methoxybenzoyl):* ***Liwaconitine***

[86408-15-3]
$C_{41}H_{53}NO_{11}$ 735.87
Alkaloid from the roots of *Aconitum forrestii* (Ranunculaceae). Cryst. (Et_2O). Mp 201-202.5°. $[\alpha]_D^{22}$ +133.3 (c, 0.63 in $CHCl_3$).

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14*-O-*(3,4-dimethoxybenzoyl):* ***Veratroylbikhaconine***
[140188-63-2]
$C_{34}H_{49}NO_{10}$ 631.762
Alkaloid from *Aconitum balfourii* and *Aconitum ferox* (Ranunculaceae). Amorph. Mp 90-92°. $[\alpha]_D^{25}$ +55.2 (c, 0.51 in $CHCl_3$) (+46.5).

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14*-O-*(3,4-dimethoxybenzoyl), 8-Ac:* ***Bikhaconitine***
[6078-26-8]
$C_{36}H_{51}NO_{11}$ 673.799
Alkaloid from the roots of *Aconitum spicatum, Aconitum ferox* and *Aconitum violaceum* (Ranunculaceae). Needles (Et_2O or EtOH aq.). Mp 105-110° (hydrate). $[\alpha]_D$ +16 (c, 1.6 in EtOH).

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14*-O-*(3,4-dimethoxybenzoyl), 8-Ac, hydrobromide:*
Prisms (Et_2O). Mp 174-175°. $[\alpha]_D$ -8.5 (c, 1.2 in H_2O).

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14*-O-*(3,4-dimethoxybenzoyl), 8-Ac, perchlorate:*
Needles (EtOH). Mp 240-242°. $[\alpha]_D$ -5.2 (c, 1.6 in $CHCl_3$).

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14*-O-*(3,4-dimethoxybenzoyl), 8-acyl: Lipobikhaconitine*
Alkaloid from root tubers of *Aconitum ferox* (Ranunculaceae). Oil. $[\alpha]_D^{25}$ +2 (c, 0.4 in $CHCl_3$). The esterifying group on C-8 is a mixt. of long-chain acyl (linoleoyl, palmitoyl and stearoyl).

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14-(*E-*cinnamoyl), 8-Ac:* ***Chasmanthinine***
[6846-47-5]
$C_{36}H_{49}NO_9$ 639.784
Alkaloid from the roots of *Aconitum chasmanthum* (Ranunculaceae). Needles (hexane or Et_2O). Mp 160-161° dec. $[\alpha]_D^{25}$ +9.6 (c, 1.09 in EtOH).

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* O^8,N-*di-Et, 14-benzoyl:* ***Kongboenine****. 14*-O-*Benzoyl-8*-O-*ethylbikhaconine*
[129748-09-0]
$C_{34}H_{49}NO_8$ 599.763
Alkaloid from the *Aconitum chasmanthum* and *Aconitum kongboense* (Ranunculaceae). Prisms (MeOH). Mp 191-192°.

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* O^8,N-*di-Et, 14*-O-*(4-methoxybenzoyl):* ***Acoforestine***
[110011-75-1]
$C_{35}H_{51}NO_9$ 629.789
Alkaloid from roots of *Aconitum forrestii* (Ranunculaceae). Mp 203-204°. $[\alpha]_D$ +23.4 (c, 0.56 in EtOH).

O^1,O^6,O^{16},O^{18},N-*Penta-Me: Delphonine*
[466-23-9]
Semisynthetic obt. by alkaline hydrol. of Delphinine or 14-*O*-Benzoyldelphonine. Mp 76-78°. $[\alpha]_D^{24}$ +37.5 (c, 3.2 in EtOH). $[\alpha]_D^{27}$ +36 (c, 0.6 in $CHCl_3$).

O^1,O^6,O^{16},O^{18},N-*Penta-Me, 14-benzoyl:* ***14-O-Benzoyldelphonine****. Deacetyldelphinine*
[119347-23-8]
$C_{31}H_{43}NO_8$ 557.683
Alkaloid from the seeds of *Delphinium staphisagria* (Ranunculaceae). Amorph. $[\alpha]_D^{24}$ +60.1 (c, 0.2 in $CHCl_3$).

O^1,O^6,O^{16},O^{18},N-*Penta-Me, 14-benzoyl, 8-Ac:* ***Delphinine***
[561-07-9]
$C_{33}H_{45}NO_9$ 599.72
Alkaloid from the seeds of *Delphinium staphisagria* and the roots of *Atragene sibirica* (preferred genus name *Clematis*) (Ranunculaceae). Plates (EtOH). Mp 198-200°. $[\alpha]_D^{25}$ +25 (EtOH).

▶ Poisonous.

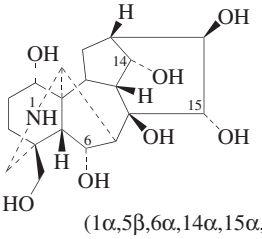
O^1,O^6,O^{16},O^{18},N-*Penta-Me, 14-benzoyl, 8-Ac, hydrochloride:* Mp 208-210° dec.

$O^1,O^6,O^8,O^{16},O^{18}$-*Penta-Me,* N-*Et, 14-benzoyl:* ***8-O-Deethyl-8-O-methylkongboenine****. 14*-O-*Benzoyl-8*-O-*methylbikhaconine*
[212467-12-4]
$C_{33}H_{47}NO_8$ 585.736
Alkaloid from *Aconitum chasmanthum*.

$O^1,O^6,O^8,O^{16},O^{18}$-*Penta-Me,* N-*Et, 14*-O-*(4-methoxybenzoyl):* ***Crassicausine***
[109305-85-3]
$C_{34}H_{49}NO_9$ 615.762
Alkaloid from roots of *Aconitum crassicaule* (Ranunculaceae). Amorph. $[\alpha]_D^{23}$ +32.7 (c, 0.20 in $CHCl_3$).

Dunstan, W.R. *et al., J.C.S.*, 1905, **87**, 1636 (*isol, Bikhaconitine*)
Jacobs, W.A. *et al., J. Biol. Chem.*, 1939, **127**, 361 (*isol, Delphinine*)
Craig, L.C. *et al., J. Biol. Chem.*, 1949, **154**, 293 (*Delphonine*)
Schneider, W. *et al., Chem. Ber.*, 1956, **89**, 768 (*ir, Delphonine*)
Jacobs, W.A. *et al., J.O.C.*, 1957, **22**, 1428 (*Delphonine*)
Wiesner, K. *et al., Tetrahedron*, 1960, **9**, 254 (*struct, Delphinine*)
Achmatowicz, O. *et al., Can. J. Chem.*, 1964, **42**, 154 (*Chasmanthinine, Chasmaconitine*)
Birnbaum, K.B. *et al., Acta Cryst. B*, 1972, **28**, 1551 (*config*)
Klásek, A. *et al., J. Nat. Prod.*, 1972, **35**, 55 (*Bikhaconitine, Chasmaconitine*)
Pelletier, S.W. *et al., J.A.C.S.*, 1976, **98**, 2626 (*cmr*)
Tiwari, K.P. *et al., J. Indian Chem. Soc.*, 1977, **54**, 924 (*isol, Bikhaconitine*)
Krasnov, E.A. *et al., Khim. Prir. Soedin.*, 1981, **17**, 806; *Chem. Nat. Compd. (Engl. Transl.)*, 1981, **17**, 598 (*isol, Delphinine*)
Wang, F. *et al., Planta Med.*, 1981, **42**, 375 (*Crassicauline A*)
Pelletier, S.W. *et al., J.O.C.*, 1982, **47**, 5290 (*cryst struct, cmr, Delphinine*)
Wang, C. *et al., Planta Med.*, 1983, **48**, 55 (*Liwaconitine*)
Pelletier, S.W. *et al., J. Nat. Prod.*, 1984, **47**, 474 (*Forestine*)
Pelletier, S.W. *et al., Heterocycles*, 1987, **25**, 365 (*Acoforestine*)
Ross, S.A. *et al., Heterocycles*, 1987, **26**, 2895 (*α-Oxodelphinine*)
Wang, F.-P. *et al., J. Nat. Prod.*, 1987, **50**, 55 (*Crassicausine*)
Pelletier, S.W. *et al., Heterocycles*, 1988, **27**, 2467 (*14-O-Benzoyldelphonine, Delstaphigine*)
Huiling, L. *et al., Heterocycles*, 1989, **29**, 2317 (*Crassicauline A, Dolichotine E*)
Yue, J.-M. *et al., Phytochemistry*, 1990, **29**, 2379-2380 (*Kongboenine*)
Khetwal, K.S. *et al., Heterocycles*, 1992, **34**, 441 (*Veratroylbikhaconine*)
Hanuman, J.B. *et al., J. Nat. Prod.*, 1993, **56**, 801; 1994, **57**, 105 (*Veratroylbikhaconine, Lipobikhaconitine*)
Nair, M.M. *et al., Spectrosc. Lett.*, 1997, **30**, 213-222 (*pmr, cmr, Delphinine*)
Parvez, M. *et al., Acta Cryst. C*, 1998, **54**, 125-126; 236-238; 790-792 (*Chasmaconitine, Chasmanthinine, 8-Deethyl-8-methylkongboenine, cryst struct*)
Shim, S.H. *et al., Chem. Pharm. Bull.*, 2003, **51**, 999-1002 (*Lipoforestine*)
Ji, H. *et al., J. Asian Nat. Prod. Res.*, 2006, **8**, 619-624 (*Lasiansine*)
Yang, S. *et al., Helv. Chim. Acta*, 2007, **90**, 1160-1164 (*Habaenine B*)

4-Methylaconitane-1,6,8,14,15,16,18-heptol M-313



(1α,5β,6α,14α,15α,16β)-*form*

$C_{19}H_{29}NO_7$ 383.441

(1α,5β,6α,14α,15α,16β)-*form*

O^6,O^{16},O^{18}-*Tri-Me,* N-*Et:* ***Senbusine C****. 15-Hydroxyneoline. 15-Epinagarine. Fuziline*
[80665-72-1]
$C_{24}H_{39}NO_7$ 453.575
Alkaloid from the roots of *Aconitum carmichaeli, Aconitum japonicum, Aconitum napellus* and *Aconitum ibukiense* (Ranunculaceae). Cryst. (MeOH, Me_2CO or EtOAc). Mp 214-216° (193-194°). $[\alpha]_D$ +6.7 (c, 0.21 in MeOH). $[\alpha]_D^{22.5}$ +19.3 ($CHCl_3$). $[\alpha]_D^{26}$ +11.6 (c, 1.0 in $CHCl_3$).

O^6,O^{16},O^{18}-*Tri-Me,* N-*Et, 8-Ac:* ***Tauренine****. 8-Acetyl-15-hydroxyneoline*
[172616-86-3]
$C_{26}H_{41}NO_8$ 495.612
Alkaloid from *Aconitum tauricum*. Also isol. from aphids feeding on *Aconitum napellus*. Cryst. (petrol/$CHCl_3$). Mp 100-102°. $[\alpha]_D^{22}$ +4.1 (c, 0.07 in $CHCl_3$).

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Me, 14-benzoyl, 8-Ac:* ***Isodelphinine***
[1357-96-6]
$C_{33}H_{45}NO_9$ 599.72
Alkaloid from the roots of *Aconitum miyabei* and *Aconitum carmichaeli* (Ranunculaceae). Needles (Et_2O/petrol). Mp 167-168°. $[\alpha]_D^{20}$ +20.1 (c, 2.05 in EtOH).

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14-benzoyl, 8-Ac:* ***Penduline***†
[81362-34-7]
$C_{34}H_{47}NO_9$ 613.747
Alkaloid from roots of *Aconitum*

pendulum (Ranunculaceae). Mp 166-167°.

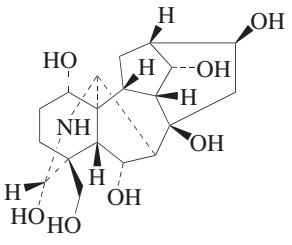
(1α,5β,6α,14α,15β,16β)-*form*

O^6,O^{16},O^{18}-*Tri-Me,* N-*Et:* ***Nagarine***†. *15-Episenbusine C. 15-Epifuziline. Crassicaulisine. 3-Deoxycrassicaulidine. Bullatine F*
[80665-73-2]
$C_{24}H_{39}NO_7$ 453.575
Alkaloid from roots of *Aconitum nagarum* var. *heterotrichum* and *Aconitum crassicaule* (Ranunculaceae). Cryst. (Me_2CO). Mp 190-191°. $[\alpha]_D^{21}$ +55.4 (c, 1.0 in EtOH). $[\alpha]_D^{21}$ +20.4 (c, 0.88 in $CHCl_3$).

O^6,O^{16},O^{18}-*Tri-Me,* N-*Et, 8,15*-O-*isopropylidene:* ***Bullatine E***
[1354-88-7]
$C_{27}H_{43}NO_7$ 493.639
Alkaloid from *Aconitum bullatifolium* var. *homotrichum* (Ranunculaceae). Mp 182-183°. $[\alpha]_D^{24}$ +79.6 (Me_2CO).

Suginome, H. *et al., Bull. Chem. Soc. Jpn.*, 1959, **32**, 604 (*Isodelphinine, isol*)
Katsui, N. *et al., Bull. Chem. Soc. Jpn.*, 1959, **32**, 774
Chu, J.-H. *et al., Huaxue Xuebao*, 1965, **31**, 222-228; *CA*, **63**, 16400a (*Bullatine E*)
Pelletier, S.W. *et al., Tet. Lett.*, 1977, 4027 (*Isodelphinine, ir, pmr, cmr, struct*)
Takayama, H. *et al., Chem. Pharm. Bull.*, 1981, **29**, 3078; 1982, **30**, 386 (*pmr, cmr, ms, struct, synth*)
Zhu, Y. *et al., Heterocycles*, 1981, **16**, 1723 (*Penduline*)
Mody, N.V. *et al., Heterocycles*, 1982, **17**, 91 (*Nagarine*)
Pelletier, S.W. *et al., Heterocycles*, 1982, **18**, 47 (*ir, pmr, cmr, cryst struct*)
Konno, C. *et al., J. Nat. Prod.*, 1982, **45**, 128-133 (*Senbusine C*)
Zhang, D. *et al., Zhongcaoyao*, 1982, **13**, 481; *CA*, **98**, 149496x (*occur*)
Hikino, H. *et al., J. Nat. Prod.*, 1983, **46**, 178; 1984, **47**, 190 (*isol, ir, pmr*)
Wang, F. *et al., Planta Med.*, 1983, **47**, 39 (*Nagarine*)
Liu, L. *et al., Yaoxue Xuebao*, 1983, **18**, 39; *CA*, **99**, 67495c (*Penduline*)
Sakai, S. *et al., Yakugaku Zasshi*, 1984, **104**, 222; *CA*, **101**, 69329k (*isol*)
Yang, P. *et al., Huaxue Xuebao*, 1988, **46**, 827; *CA*, **109**, 226747e (*Bullatine E, struct*)
Tel′nov, V.A. *et al., Khim. Prir. Soedin.*, 1992, **28**, 108-112; *Chem. Nat. Compd. (Engl. Transl.)*, 1992, **28**, 91-94 (*Taurenine*)
Liu, H. *et al., J. Nat. Prod.*, 1996, **59**, 135-138 (*Taurenine*)

4-Methylaconitane-1,6,8,14,16,18,19-heptol M-314



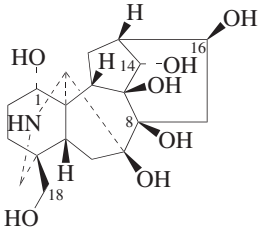
$C_{19}H_{29}NO_7$ 383.441

(1α,6α,14α,16β,19*S*)-*form*

O^1,O^6,O^{14},O^{16}-*Tetra-Me,* N-*Et:* ***Aconitilearine***
$C_{25}H_{41}NO_7$ 467.601
Alkaloid from the aerial parts of *Aconitum cochleare.* $[\alpha]_D$ +55 (c, 0.11 in $CHCl_3$).

Meriçli, A.H. *et al., Helv. Chim. Acta*, 2006, **89**, 210-217 (*Aconitilearine*)

4-Methylaconitane-1,7,8,9,14,16,18-heptol M-315



$C_{19}H_{29}NO_7$ 383.441

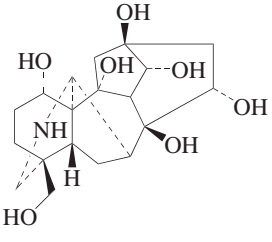
(1α,5β,14α,16β)-*form*

7,8-Methylene ether, O^1,O^{14},O^{18}-*tri-Me,* N-*Et:* ***Molline***
[163634-09-1]
$C_{25}H_{39}NO_7$ 465.586
Alkaloid from aerial parts of *Delphinium mollipilum* (Ranunculaceae).

7,8-Methylene ether, O^1,O^{14},$O^{16}O^{18}$-*tetra-Me,* N-*Et:* ***Talitine B***
[110081-93-1]
$C_{26}H_{41}NO_7$ 479.612
Alkaloid from the roots of *Delphinium taliense* (Ranunculaceae). Also isol. from whole herb of *Delphinium caeruleum*. Cryst. (MeOH). Mp 98-100°.

Chen, S. *et al., Yunnan Zhiwu Yanjiu*, 1986, **8**, 81; *CA*, **107**, 112626t (*Talitine B, struct*)
Zhang, S.M. *et al., Chin. Chem. Lett.*, 1995, **6**, 101; *CA*, **123**, 5584m (*Molline*)
Wang, Y. *et al., Phytochemistry*, 1996, **42**, 569 (*Talitine B*)

4-Methylaconitane-1,8,10,13,14,15,18-heptol M-316



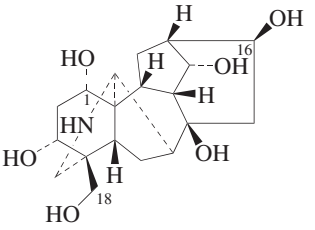
$C_{19}H_{29}NO_7$ 383.441

(1α,5β,14α,15α)-*form*

O^1,O^{18}-*Di-Me,* N-*Et, 14*-O-*(4-methoxybenzoyl):* ***Guayewuanine A***
[83145-44-2]
$C_{31}H_{43}NO_9$ 573.682
Alkaloid from the roots of *Aconitum hemsleyanum* (Ranunculaceae). Mp 120°.

Zhang, H. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 1982, **24**, 259; *CA*, **97**, 159517y (*isol, ir, pmr, ms, struct*)

4-Methylaconitane-1,3,8,14,16,18-hexol M-317



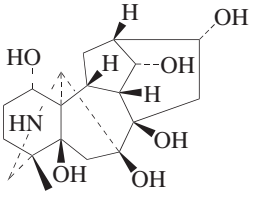
$C_{19}H_{29}NO_6$ 367.441

(1α,3α,14α,16β)-*form*

O^1,O^{16},O^{18}-*Tri-Me,* N-*Et:* ***3α-Hydroxytalatizamine***
$C_{24}H_{39}NO_6$ 437.575
Alkaloid from above-ground parts of *Aconitum nasutum*. Amorph. $[\alpha]_D$ -14.3 (c, 0.3 in $CHCl_3$).

Meriçli, A.H. *et al., Phytochemistry*, 1996, **42**, 909-911 (*isol, pmr, cmr*)

4-Methylaconitane-1,5,7,8,14,16-hexol M-318



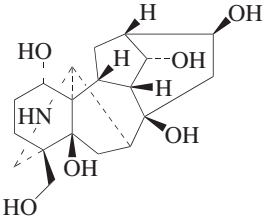
$C_{19}H_{29}NO_6$ 367.441

(1α,14α,16α)-*form*

7,8-Methylene, O^1,O^{14},O^{16}-*tri-Me,* N-*Et:* ***Nordhagenine A***
$C_{25}H_{39}NO_6$ 449.586
Alkaloid from *Delphinium nordhagenii*. Cryst. (hexane/Me_2CO). Mp 178-180°. $[\alpha]_D^{30}$ -3.2 (c, 0.4 in $CHCl_3$).

Shaheen, F. *et al., J. Nat. Prod.*, 2006, **69**, 823-825 (*isol, pmr, cmr, cryst struct*)

4-Methylaconitane-1,5,8,14,16,18-hexol M-319



$C_{19}H_{29}NO_6$ 367.441

(1α,5β,14α,16β)-*form*

O^1,O^{18}-*Di-Me,* N-*Et:* ***Circinasine E***
[939972-79-9]

$C_{23}H_{37}NO_6$ 423.548
Alkaloid from the roots of *Aconitum hemsleyanum* var. *circinatum*. Amorph. powder. $[\alpha]_D^{20}$ +36.5 (c, 1 in $CHCl_3$).

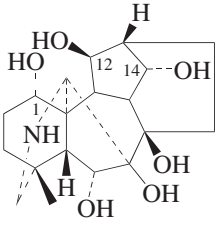
O^1,O^{18}-*Di-Me, 14*-O-*(4-methoxybenzoyl),* N-*Et:* ***Circinasine D***
[939972-78-8]
$C_{31}H_{43}NO_8$ 557.683
Alkaloid from the roots of *Aconitum hemsleyanum* var. *circinatum*. Amorph. powder. $[\alpha]_D^{20}$ +15.8 (c, 1 in $CHCl_3$).

O^1,O^{16},O^{18}, N-*Et:* ***Hemsleyanine C***
$C_{24}H_{39}NO_6$ 437.575
Alkaloid from the roots of *Aconitum hemsleyanum* var. *circinacum*. Amorph. powder. Mp 74-75°. $[\alpha]_D^{20}$ -48.8 (c, 1 in $CHCl_3$).

O^1,O^{16},O^{18}-*Tri-Me, 14*-O-*(4-methoxybenzoyl),* N-*Et:* ***Hemsleyanine D***
$C_{32}H_{45}NO_8$ 571.709
Alkaloid from the roots of *Aconitum hemsleyanum* var. *circinacum*. Amorph. powder. Mp 89-90°. $[\alpha]_D^{20}$ +12.8 (c, 1 in $CHCl_3$).

Gao, F. *et al., Arch. Pharmacal Res.*, 2007, **30**, 1497-1500 (*Hemsleyanines C,D*)
Gao, F. *et al., J. Nat. Prod.*, 2007, **70**, 876-879 (*Circinasines D-E*)

4-Methylaconitane-1,6,7,8,12,14-hexol M-320



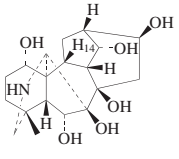
$C_{19}H_{29}NO_6$ 367.441

(1α,6α,12β,14α)-*form*

N-*Et, 14-benzoyl, 6,12-di-Ac:* ***Aconitinine***
[192200-74-1]
$C_{32}H_{41}NO_9$ 583.677
Alkaloid from *Consolida aconiti*.

Martin, G.D.L.P. *et al., Bol. Soc. Quim. Peru*, 1997, **63**, 44-49; *CA*, **127**, 106630m

4-Methylaconitane-1,6,7,8,14,16-hexol M-321



(1α,5β,6α,14α,16β)-*form*

$C_{19}H_{29}NO_6$ 367.441

(1α,5β,6α,14α,16β)-*form*

O^{16}-*Me,* N-*Et:* ***Consolarine***
[205646-92-0]
$C_{22}H_{35}NO_6$ 409.522
Alkaloid from *Consolida armeniaca* (Ranunculaceae). Amorph. $[\alpha]_D$ +0.6 (c, 0.8 in $CHCl_3$).

O^8,O^{16}-*Di-Me,* N-*Et:* ***8-O-Methylconsolarine***
$C_{23}H_{37}NO_6$ 423.548
Alkaloid from *Consolida orientalis*. Light yellow oil. $[\alpha]_D^{25}$ +15 (c, 0.3 in $CHCl_3$).

O^8,O^{16}-*Di-Me,* N-*Et, 14-Ac:* ***18-Demethoxypubescenine***
$C_{25}H_{39}NO_7$ 465.586
Alkaloid from the aerial parts of *Consolida orientalis*. Amorph. solid. $[\alpha]_D^{25}$ +1.1 (c, 0.4 in $CHCl_3$).

O^1,O^7,O^8,O^{16}-*Tetra-Me,* N-*Et, 14-benzoyl, 6-Ac:* ***Delphiperegrine***
[142609-22-1]
$C_{34}H_{47}NO_8$ 597.747
Alkaloid from aerial parts of *Delphinium peregrinum* (Ranunculaceae). $[\alpha]_D^{22}$ +5.6 (c, 0.2 in MeOH).

1-Ketone, O^7,O^8,O^{16}*-tri-Me, 6,14-di-Ac:* ***Pergilone***
[142609-20-9]
$C_{26}H_{37}NO_8$ 491.58
Alkaloid from aerial parts of *Delphinium peregrinum* (Ranunculaceae). $[\alpha]_D^{25}$ +4.2 (c, 0.1 in MeOH).

(1α,5β,6β,14α,16β)-*form*

O^6,O^{16}-*Di-Me,* N-*Et:* ***Dihydrogadesine***
[70420-63-2]
$C_{23}H_{37}NO_6$ 423.548
Alkaloid from *Delphinium pentagynum* and from the aerial parts of *Delphinium peregrinum* var. *elongatum* collected during the flowering period (Ranunculaceae). Cryst. (petrol/EtOAc). Mp 136-138°. $[\alpha]_D$ +54 (c, 0.1 in EtOH).

O^6,O^{16}-*Di-Me,* N-*Et, 14-Ac:* ***14-Acetyldihydrogadesine***
[84306-87-6]
$C_{25}H_{39}NO_7$ 465.586
Alkaloid from *Delphinium pentagynum* (Ranunculaceae). Resin.

O^6,O^{16}-*Di-Me,* N-*Et, 14-benzoyl:* ***14-Benzoyldihydrogadesine***
[103976-34-7]
$C_{30}H_{41}NO_7$ 527.656
Alkaloid from *Delphinium cardiopetalum* (Ranunculaceae). Cryst. (EtOAc). Mp 199-202°.

O^1,O^6,O^{16}-*Tri-Me,* N-*Et:* ***Nudicaulidine***
[99815-81-3]
$C_{24}H_{39}NO_6$ 437.575
Alkaloid from *Delphinium nudicaule* (Ranunculaceae). Amorph. $[\alpha]_D$ +42 (c, 0.15 in $CHCl_3$).

O^1,O^6,O^{16}-*Tri-Me,* N-*Et, 14-Ac:* ***14-Acetylnudicaulidine***
[99815-82-4]
$C_{26}H_{41}NO_7$ 479.612
Alkaloid from *Delphinium andersonii* and *Delphinium confusum* (Ranunculaceae). Mp 206-208°. $[\alpha]_D^{26}$ +18.9 (c, 0.54 in $CHCl_3$).

O^1,O^6,O^{16}-*Tri-Me,* N-*Et, 14*-O-*(2-methylpropanoyl):* ***14-Isobutyrylnudicaulidine***
[195153-55-0]
$C_{28}H_{45}NO_7$ 507.666
Alkaloid from *Delphinium cardiopetalum* (Ranunculaceae). Resin. $[\alpha]_D$ +31 (c, 0.1 in EtOH).

O^1,O^6,O^{16}-*Tri-Me,* N-*Et, 14*-O-*(2-methylbutanoyl):* ***14-(2-Methylbutanoyl)nudicaulidine***
[195246-59-4]
$C_{29}H_{47}NO_7$ 521.693
Alkaloid from *Delphinium cardiopetalum* (Ranunculaceae). Resin. $[\alpha]_D$ +44.5 (c, 0.05 in EtOH).

O^1,O^6,O^{16}-*Tri-Me,* N-*Et, 14-benzoyl:* ***14-Benzoylnudicaulidine***
[195153-54-9]
$C_{31}H_{43}NO_7$ 541.683
Alkaloid from *Delphinium cardiopetalum* (Ranunculaceae). Cryst. (EtOAc/hexane). Mp 199-202°. $[\alpha]_D$ +48.6 (c, 0.22 in EtOH).

O^1,O^6,O^{16}-*Tri-Me,* N-*Et, 14*-E-*cinnamoyl:* ***14-trans-Cinnamoylnudicaulidine***
[195153-57-2]
$C_{33}H_{45}NO_7$ 567.721
Alkaloid from *Delphinium cardiopetalum* (Ranunculaceae). Resin. $[\alpha]_D$ +72.1 (c, 0.26 in EtOH).

O^1,O^6,O^{16}-*Tri-Me,* N-*Et, 14*-Z-*cinnamoyl:* ***14-cis-Cinnamoylnudicaulidine***
[195153-56-1]
$C_{33}H_{45}NO_7$ 567.721
Alkaloid from *Delphinium cardiopetalum* (Ranunculaceae). Resin. $[\alpha]_D$ +4 (c, 0.125 in EtOH).

O^1,O^{14},O^{16}-*Tri-Me,* N-*Et:* ***Demethylenedelpheline***
[122279-79-2]
$C_{24}H_{39}NO_6$ 437.575
Alkaloid from aerial parts of *Delphinium corumbosum* (Ranunculaceae). Solid (petrol). Mp 78-80°.

O^1,O^6,O^{14},O^{16}-*Tetra-Me,* N-*Et:* ***18-Deoxylycoctonine***
[41547-37-9]
$C_{25}H_{41}NO_6$ 451.602
Alkaloid from *Delphinium confusum* (Ranunculaceae). Mp 73-75°.

7,8-Methylene ether, O^{16}*-Me,* N-*Et:* ***Delmenzine****. Blacknine. 1,14-Didemethyldelpheline.* O^1*-Demethyldelelatine.* O^{14}*-Demethylpacidine*
[139768-08-4]
$C_{23}H_{35}NO_6$ 421.533
Alkaloid from *Delphinium menziesii* and whole plants of *Delphinium elatum* var. black night (Ranunculaceae). Amorph. $[\alpha]_D$ -5.13 (c, 0.887 in $CHCl_3$).

7,8-Methylene ether, O^1,O^{14}*-di-Me,* N-*Et:* ***Eladine***
[123064-69-7]
$C_{24}H_{37}NO_6$ 435.559
Alkaloid from the seeds of *Delphinium elatum* (Ranunculaceae). Amorph. $[\alpha]_D^{23}$ -57.5 (c, 0.89 in $CHCl_3$).

7,8-Methylene ether, O^1,O^{16}*-di-Me,* N-*Et:* ***Delelatine***
[119371-58-3]
$C_{24}H_{37}NO_6$ 435.559

Alkaloid from seeds of *Delphinium elatum* and from *Delphinium tatsienense* (Ranunculaceae). Cryst. (Et_2O). Mp 84.5-86.5°.

7,8-Methylene ether, O^{14},O^{16}*-di-Me,* N-*Et:* ***Pacidine***
[142748-53-6]
$C_{24}H_{37}NO_6$ 435.559
Alkaloid from seeds of *Delphinium elatum* hybrid pacific giant (Ranunculaceae). Amorph. solid. $[\alpha]_D^{20}$ -14.3 (c, 0.49 in $CHCl_3$).

7,8-Methylene ether, O^{14},O^{16}*-di-Me,* N-*Et, 6-Ac:* ***Tiantaishannine***
[959843-31-3]
$C_{26}H_{39}NO_7$ 477.597
Alkaloid from the roots of *Delphinium tiantaishanense*. Amorph. powder. Mp 206-208°. $[\alpha]_D^{20}$ -23.9 (c, 0.73 in $CHCl_3$).

7,8-Methylene ether, O^{1},O^{6},O^{16}*-tri-Me,* N-*Et:* ***Isodelpheline***. *Tongoline*
[123064-67-5]
$C_{25}H_{39}NO_6$ 449.586
Alkaloid from the seeds of *Delphinium elatum* and *Delphinium tongolense.* Cryst. Mp 217-218°. $[\alpha]_D^{26}$ -1.2 (c, 1 in $CHCl_3$).

7,8-Methylene ether, O^{1},O^{14},O^{16}*-tri-Me,* N-*Et:* ***Delpheline***
[509-28-4]
$C_{25}H_{39}NO_6$ 449.586
Alkaloid from the seeds of *Delphinium elatum* and from the roots and aerial parts of *Delphinium ternatum* (Ranunculaceae) also from *Delphinium occidentale*. Prisms (EtOH aq.). Mp 227° (210-212°, 216-219°). $[\alpha]_D^{15}$ -25.8 (c, 2 in $CHCl_3$).

7,8-Methylene ether, O^{1},O^{14},O^{16}*-tri-Me,* N-*Et, hydrochloride:*
Prisms + $1H_2O$ (Me_2CO aq.). Mp 219° (frothing). $[\alpha]_D^{20}$ -42.8 (c, 2 in H_2O).

7,8-Methylene ether, O^{1},O^{6},O^{14},O^{16}*-tetra-Me,* N-*Et:* ***Paciline***. *6*-O-*Methyldelpheline*
[122384-95-6]
$C_{26}H_{41}NO_6$ 463.613
Alkaloid from seeds of the *Delphinium* hybrid pacific giant (Ranunculaceae). Amorph. $[\alpha]_D$ -7.2 (c, 1.0 in $CHCl_3$).

6-Ketone, 7,8-methylene ether, O^{1},O^{16}*-di-Me,* N-*Et:* ***Yunnadelphinine***
[90718-33-5]
$C_{24}H_{35}NO_6$ 433.544
Alkaloid from *Delphinium yunnanense* (Ranunculaceae).

6-Ketone, 7,8-methylene ether, O^{1},O^{16}*-di-Me,* N-*Et, 14-Ac:* ***Barbinidine***
[123519-72-2]
$C_{26}H_{37}NO_7$ 475.581
Alkaloid from aerial parts of *Delphinium barbeyi* (Ranunculaceae). Cryst. (Me_2CO/hexane). Mp 215-216°.

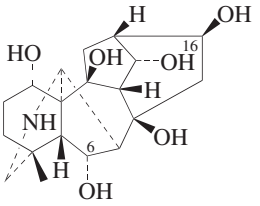
6-Ketone, 7,8-methylene ether, O^{1},O^{14},O^{16}*-tri-Me,* N-*Et:* ***Pacinine***. *6-Dehydrodelpheline*
[60223-97-4]
$C_{25}H_{37}NO_6$ 447.57
Alkaloid from seeds of the *Delphinium* hybrid pacific giant (Ranunculaceae). Mp 133-135.5°. $[\alpha]_D$ -58 (c, 1.0 in MeOH).

(1β,5β,6β,14α,16β)-*form*

7,8-Methylene ether, O^{1},O^{14},O^{16}*-tri-Me,* N-*Et, 6-Ac:* ***Souline C***. *6-Acetyldelpheline (incorr.)*
[42907-15-3]
$C_{27}H_{41}NO_7$ 491.623
Alkaloid from *Delphinium souliei*, *Delphinium barbeyi* and aerial parts of *Delphinium occidentale* (Ranunculaceae). Prisms (EtOH aq.). Mp 125° (120-122°) Mp 170-171°. $[\alpha]_D^{18}$ -44.5 (c, 0.67 in $CHCl_3$). $[\alpha]_D^{20}$ -34.5 (c, 2 in EtOH).

Goodson, J.A. *et al., J.C.S.*, 1943, 139; 1944, 665 (*Delpheline, isol, struct*)
Cookson, R.C. *et al., J.C.S.*, 1956, 2689; 3121 (*Delpheline, isol, uv, struct*)
Edwards, O.E. *et al., Can. J. Chem.*, 1958, **36**, 1097 (*Delpheline, struct*)
Carmack, M. *et al., J.A.C.S.*, 1958, **80**, 497 (*struct*)
Pelletier, S.W. *et al., J.A.C.S.*, 1981, **103**, 6536 (*Delpheline, config*)
González, A.G. *et al., Phytochemistry*, 1982, **21**, 1781-1782 (*Dihydrogadesine, Acetyldihydrogadesine*)
Luo, S. *et al., CA*, 1984, **101**, 35860m (*Yunnaldelphinine*)
Jiang, Q.P. *et al., Heterocycles*, 1984, **22**, 2429 (*Delpheline, cmr*)
Kulanthaivel, P. *et al., Heterocycles*, 1985, **23**, 2515-2520 (*Nudicaulidine*)
González, A.G. *et al., Heterocycles*, 1986, **24**, 1513-1516 (*Dihydrogadesine, Benzoyldihydrogadesine*)
Ross, S.A. *et al., Phytochemistry*, 1988, **27**, 3719 (*Delpheline, isol, ir, pmr, cmr, ms, struct*)
Pelletier, S.W. *et al., Heterocycles*, 1989, **28**, 107-110 (*14-Acetylnudicaulidine*)
Bando, H. *et al., Heterocycles*, 1989, **29**, 1293 (*Paciline, Pacinine*)
Narzullaev, A.S. *et al., Khim. Prir. Soedin.*, 1989, **25**, 48-50; 50-51; 1991, **27**, 547-549; *Chem. Nat. Compd. (Engl. Transl.)*, 1989, **25**, 41-42; 43; 1991, **27**, 478-479 (*Demethylenedelpheline, 14-Acetylnudicaulidine, 18-Deoxylycoctonine*)
Pelletier, S.W. *et al., Phytochemistry*, 1989, **28**, 1521 (*Barbinidine*)
Pelletier, S.W. *et al., Tetrahedron*, 1989, **45**, 1887 (*Isodelpheline, Eladine*)
Sun, F. *et al., Heterocycles*, 1991, **32**, 1963 (*Delmenzine*)
Joshi, B.S. *et al., Tetrahedron*, 1991, **47**, 4299 (*Delpheline, pmr, cmr*)
Ulubelen, A. *et al., Phytochemistry*, 1992, **31**, 1019-1022 (*Delphiperegrine, Pergilone*)
Wada, K. *et al., Phytochemistry*, 1992, **31**, 2135 (*Pacidine*)
Park, J.C. *et al., J. Nat. Prod.*, 1995, **58**, 291 (*Blacknine*)
He, L. *et al., Chin. Chem. Lett.*, 1996, **7**, 557-560 (*Tongoline*)
Reina, M. *et al., Phytochemistry*, 1997, **45**, 1707-1711 (*14-acylnudicaulidines*)
Mericli, A.H. *et al., Heterocycles*, 1998, **47**, 329-335 (*Consolarine*)
Zhang, K. *et al., Planta Med.*, 1998, **64**, 580-581 (*Souline C*)
Alva, A. *et al., Chem. Pharm. Bull.*, 2004, **52**, 530-534 (*18-Demethoxypubescenine*)
Alva, A. *et al., Helv. Chim. Acta*, 2004, **87**, 2110-2119 (*8-O-Methylconsolarine*)
Li, J. *et al., Molecules*, 2007, **12**, 353-360 (*Tiantaishannine*)

4-Methylaconitane-1,6,8,10,14,16-hexol M-322



$C_{19}H_{29}NO_6$ 367.441

(1α,5β,6α,14α,16β)-*form*

O^{6},O^{16}*-Di-Me,* N-*Et, 14-benzoyl:* ***Pentagyline***
[89384-05-4]
$C_{30}H_{41}NO_7$ 527.656
Alkaloid from *Delphinium pentagynum* (Ranunculaceae). Mp 199-200°.

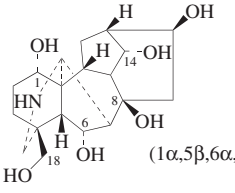
(1α,5β,6β,14α,16β)-*form*

O^{1},O^{8},O^{16}*-Tri-Me,* N-*Et:* ***6-Deacetyl-10-hydroxyperegrine***
[160884-37-7]
$C_{24}H_{39}NO_6$ 437.575
Alkaloid from *Delphinium peregrinum* (Ranunculaceae).

O^{1},O^{8},O^{16}*-Tri-Me,* N-*Et, 6-Ac:* ***10-Hydroxyperegrine***
[167559-25-3]
$C_{26}H_{41}NO_7$ 479.612
Alkaloid from aerial parts of *Delphinium munzianum* (Ranunculaceae). Amorph. $[\alpha]_D$ +15 (c, 0.18 in $CHCl_3$).

González, A.G. *et al., Heterocycles*, 1984, **22**, 17 (*Pentagyline*)
Ulubelen, A. *et al., Nat. Prod. Lett.*, 1994, **5**, 135 (*6-Deacetyl-10-hydroxyperegrine*)
de La Fuente, G. *et al., Phytochemistry*, 1995, **39**, 1467 (*10-Hydroxyperegrine*)

4-Methylaconitane-1,6,8,14,16,18-hexol M-323



(1α,5β,6α,14α,16β)-*form*

$C_{19}H_{29}NO_6$ 367.441

(1α,5β,6α,14α,16β)-*form*

O^{6},O^{16}*-Di-Me,* N-*Et:* ***Neolinine***
[112515-37-4]
$C_{23}H_{37}NO_6$ 423.548
Alkaloid from the seeds of *Delphinium staphisagria* (Ranunculaceae). Mp 226-228.5°. $[\alpha]_D^{26}$ +29.3 (c, 0.19 in $CHCl_3$).

O^{6},O^{16}*-Di-Me,* N-*Et, 8,14-di-Ac:* ***Delstaphisagrine***
[102686-12-4]
$C_{27}H_{41}NO_8$ 507.623
Alkaloid from seeds of *Delphinium staphisagria* (Ranunculaceae). Amorph. $[\alpha]_D^{23}$ +3.8 (c, 0.6 in EtOH).

O^{6},O^{18}*-Di-Me,* N-*Et, 8,14-di-Ac:* ***Delsta-***

phisine
[102686-13-5]
$C_{27}H_{41}NO_8$ 507.623
Alkaloid from seeds of *Delphinium staphisagria* (Ranunculaceae). Plates (Me_2CO/hexane). Mp 182-184°. $[\alpha]_D^{25}$ -11 (c, 1.35 in EtOH).

O^{16},O^{18}-*Di-Me,* N-*Et:* ***Senbusine A***. *Bataconine*
[82202-95-7]
$C_{23}H_{37}NO_6$ 423.548
Alkaloid from the roots of *Aconitum carmichaeli, Aconitum napellus* and *Aconitum ibukiense* (Ranunculaceae). Amorph. powder or cryst. (Me_2CO). Mp 96-99°. Bataconine not proved identical with Senbusine A. Mp refers to Bataconine.

O^{16},O^{18}-*Di-Me,* N-*Et, 14-Ac:* ***14-O-Acetylsenbusine A***
[158784-70-4]
$C_{25}H_{39}NO_7$ 465.586
Alkaloid from root tubers of *Aconitum ferox* (Ranunculaceae). Mp 88-90°. $[\alpha]_D^{25}$ +6 (c, 0.5 in EtOH).

O^{16},O^{18}-*Di-Me,* N-*Et, 8,14-di-Ac:* ***Delstaphisinine***
[116139-60-7]
$C_{27}H_{41}NO_8$ 507.623
Alkaloid from seeds of *Delphinium staphisagria* (Ranunculaceae). Cryst. (Et_2O/hexane). Mp 158-160°. $[\alpha]_D^{25}$ -14.1 (c, 0.15 in $CHCl_3$).

O^{16},O^{18}-*Di-Me,* N-*Et, 1,6,14-tribenzoyl:* ***1,6,14-Tribenzoylsenbusine A***
$C_{44}H_{49}NO_9$ 735.872
Alkaloid from *Delphinium montanum*. CAS no. not found 8-14CI.

O^1,O^6,O^{16}-*Tri-Me,* N-*Et:* ***Leucanthumsine C***
[947591-61-9]
$C_{24}H_{39}NO_6$ 437.575
Alkaloid from the roots of *Aconitum sungpanense* var. *leucanthum*. Amorph. powder. Mp 152-154°. $[\alpha]_D^{20}$ +53 (c, 1 in $CHCl_3$).

O^1,O^{16},O^{18}-*Tri-Me,* N-*Et:* ***6-Epiforesticine***
[321338-28-7]
$C_{24}H_{39}NO_6$ 437.575
Alkaloid from *Aconitum hemsleyanum* var. *pengzhouense*. Needles (Et_2O/hexane). Mp 114-116°. $[\alpha]_D^{24}$ +43 (c, 0.73 in $CHCl_3$).

O^1,O^{16},O^{18}-*Tri-Me,* N-*Et, 14-benzoyl:* ***Kongboentine B***
$C_{31}H_{43}NO_7$ 541.683
Alkaloid from the roots of *Aconitum kongboense*. Amorph. powder. Mp 96-98°. CAS no. not found 8-14CI.

O^1,O^{16},O^{18}-*Tri-Me,* N-*Et, 14-benzoyl, 8-Ac:* ***Patentine***
[132185-72-9]
$C_{33}H_{45}NO_8$ 583.72
Alkaloid from the roots of *Aconitum vilmorrianum* var. *patentipilum* (Ranunculaceae). Amorph. solid.

O^1,O^{16},O^{18}-*Tri-Me,* N-*Et, 14-*O-*(4-methoxybenzoyl):* ***Geniconitine***
[99713-74-3]
$C_{32}H_{45}NO_8$ 571.709
Alkaloid from roots of *Aconitum geniculatum* (Ranunculaceae).

O^1,O^{16},O^{18}-*Tri-Me,* N-*Et, 14-*E-*cinnamoyl:* ***Leueantine D***
[499969-78-7]
$C_{33}H_{45}NO_7$ 567.721
Alkaloid from the roots of *Aconitum hemsleyanum* var. *leueanthus*. Amorph. powder. $[\alpha]_D^{20}$ +34 (c, 0.5 in $CHCl_3$).

O^6,O^{16},O^{18}-*Tri-Me,* N-*Me, 8,14-di-Ac:* ***Pictumine***†
[123213-56-9]
$C_{27}H_{41}NO_8$ 507.623
Alkaloid from the seeds of *Delphinium pictum* ssp. *pictum* (Ranunculaceae). Amorph.

O^6,O^{16},O^{18}-*Tri-Me,* N-*Et:* ***Neoline***. *Bullatine B*
[466-26-2]
$C_{24}H_{39}NO_6$ 437.575
Alkaloid from *Aconitum bullatifolium* var. *homotrichum*, *Aconitum napellus*, *Aconitum nagarum*, *Aconitum sczukini*, *Aconitum soongoricum*, *Aconitum sachalinense* var. *compactum*, *Aconitum carmichaeli*, *Aconitum karakolicum*, *Aconitum teipeicum* and *Aconitum ibukiense* (Ranunculaceae). Mp 159-161°. $[\alpha]_D^{26}$ +22 (c, 4.3 in EtOH).

▶AR5569450

O^6,O^{16},O^{18}-*Tri-Me,* N-*Et, 8-Ac:* ***Delphidine***. *8-Acetylneoline*
[60158-58-9]
$C_{26}H_{41}NO_7$ 479.612
Alkaloid from the seeds of *Delphinium staphisagria* (Ranunculaceae). Mp 98-100° (slight softening at 90°). $[\alpha]_D^{27}$ +16.6 (c, 1.3 in EtOH).

O^6,O^{16},O^{18}-*Tri-Me,* N-*Et, 14-Ac:* ***Bullatine C***. *14-Acetylneoline. Delstaphisagnine*
[1354-86-5]
$C_{26}H_{41}NO_7$ 479.612
Alkaloid from *Aconitum bullatifolium* var. *homotrichum, Aconitum nagarum, Aconitum napellus, Aconitum jinyangense* and *Aconitum yesoense* (Ranunculaceae). Also descr. as Delstasphisagnine from *Delphinium staphisagria*. Needles (Me_2CO/Et_2O) or amorph. solid. Mp 200°. $[\alpha]_D^{25}$ +20 (c, 0.85 in EtOH). Opt. rotn. refers to amorph. Delstaphisagnine.

O^6,O^{16},O^{18}-*Tri-Me,* N-*Et, 1,14-di-Ac:* ***1,14-Diacetylneoline***
[60158-60-3]
$C_{28}H_{43}NO_8$ 521.65
Alkaloid from above-ground parts of *Aconitum napellus* ssp. *castellanum* (Ranunculaceae). Resin. $[\alpha]_D$ +15 (c, 0.68 in EtOH).

O^6,O^{16},O^{18}-*Tri-Me,* N-*Et, 8,14-di-Ac:* ***Delphisine***. *8,14-Diacetylneoline*
[1399-07-1]
$C_{28}H_{43}NO_8$ 521.65
Alkaloid from the seeds of *Delphinium staphisagria* (Ranunculaceae). Cryst. (Me_2CO/hexane). Mp 122-123°. $[\alpha]_D^{26}$ +7.1 (c, 4.0 in EtOH).

O^6,O^{16},O^{18}-*Tri-Me,* N-*Et, tri-Ac:* ***1-Acetyldelphisine***
[55085-41-1]
$C_{30}H_{45}NO_9$ 563.687
Alkaloid from the seeds of *Delphinium staphisagria* (Ranunculaceae). Cryst. (Me_2CO/hexane). Mp 151-153°. $[\alpha]_D^{25}$ -8.8 (c, 0.63 in $CHCl_3$).

O^6,O^{16},O^{18}-*Tri-Me,* N-*Et, 14-benzoyl:* ***14-Benzoylneoline***
[99633-05-3]
$C_{31}H_{43}NO_7$ 541.683
Alkaloid from rhizomes of *Aconitum subcuneatum* (Ranunculaceae). Amorph. powder. $[\alpha]_D^{18}$ +9.1 (c, 0.11 in MeOH).

O^6,O^{16},O^{18}-*Tri-Me,* N-*Et, 14-(4-methoxybenzoyl):* ***14-Anisoylneoline***. *14-(4-Methoxybenzoyl)neoline*
[640282-28-6]
$C_{32}H_{45}NO_8$ 571.709
Alkaloid from processed tubers of *Aconitum carmichaeli*. Amorph. powder (MeOH). $[\alpha]_D^{22}$ +22.3 (c, 0.7 in $CHCl_3$).

O^6,O^{16},O^{18}-*Tri-Me,* N-*Et, 8-*O-*(3,4-dimethoxybenzoyl):* ***Acotoxinine***. *8-Veratroylneoline. 8-(3,4-Dimethoxybenzoyl)neoline*
$C_{33}H_{47}NO_9$ 601.736
Alkaloid from the roots of *Aconitum toxicum*. Amorph. solid. $[\alpha]_D^{25}$ +32 (c, 0.05 in $CHCl_3$).

O^6,O^{16},O^{18}-*Tri-Me,* N-*Et, 14-*O-*(3,4-dimethoxybenzoyl):* ***Geniculatine B***. *14-Veratroylneoline. 14-(3,4-Dimethoxybenzoyl)neoline*
[359798-73-5]
$C_{33}H_{47}NO_9$ 601.736
Alkaloid from processed tubers of *Aconitum carmichaeli* and from *Aconitum geniculatum*. Amorph. powder (MeOH). $[\alpha]_D^{23}$ +22.1 (c, 0.75 in $CHCl_3$).

O^6,O^{16},O^{18}-*Tri-Me,* N-*Et, 14-*O-*(4-methoxybenzoyl), 8-Ac:* ***Geniculatine A***
[359798-72-4]
$C_{34}H_{47}NO_9$ 613.747
Alkaloid from the roots of *Aconitum geniculatum*. Amorph. solid. $[\alpha]_D$ +19.3 (c, 0.5 in $CHCl_3$).

O^6,O^{16},O^{18}-*Tri-Me,* N-*Et, 8-cinnamoyl:* ***8-O-trans-Cinnamoylneoline***
[674365-50-5]
$C_{33}H_{45}NO_7$ 567.721
Alkaloid from the flower buds of *Aconitum carmichaeli*. Amorph. powder. $[\alpha]_D^{20}$ +20.4 (c, 1 in EtOH). λ_{max} 203 (log ϵ 4.48); 217 (log ϵ 4.46); 223 (log ϵ 4.44); 278 (log ϵ 4.6) (EtOH).

O^6,O^{16},O^{18}-*Tri-Me,* N-*Et, 14-*E-*cinnamoyl:* ***14-Cinnamoylneoline***
[640282-27-5]
$C_{33}H_{45}NO_7$ 567.721
Alkaloid from processed tubers of *Aconitum carmichaeli*. Amorph. powder (MeOH). $[\alpha]_D^{23}$ +9.7 (c, 0.35 in $CHCl_3$).

O^1,O^6,O^{14},O^{16}-*Tetra-Me,* N-*Et:* ***Acoseptriginine***
[144049-70-7]
$C_{25}H_{41}NO_6$ 451.602
Alkaloid from roots of *Aconitum septentrionale* (Ranunculaceae). Amorph.

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et:* ***Chasma-***

nine. *Tokoro-base II*
[5066-78-4]
$C_{25}H_{41}NO_6$ 451.602
Alkaloid from *Aconitum chasmanthum*, *Aconitum subcuneatum*, *Aconitum yesoense*, *Aconitum crassicaule*, *Aconitum franchetii*, *Aconitum teipeicum*, *Aconitum sachalinense* var. *compactum*, *Aconitum forrestii*, *Aconitum pseudogeniculatum* and others (Ranunculaceae). Fine needles (hexane). Mp 90-91°. $[\alpha]_D^{25}$ +23.6 (c, 2.5 in EtOH).

▶AR5543000
O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14-Ac:* ***14-Acetylchasmanine***
[77757-06-3]
$C_{27}H_{43}NO_7$ 493.639
Alkaloid from *Delphinium uncinatum*.

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 8,14-di-Ac:* ***1-O-Methyldelphisine***. *8,14-Diacetylchasmanine*
[5066-80-8]
$C_{29}H_{45}NO_8$ 535.676
Alkaloid from aerial parts of *Consolida hellespontica* (Ranunculaceae). Mp 138-139°.

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 8-benzoyl, 14-Ac:* ***Ezochasmaconitine***. *14-Acetyl-8-benzoylchasmanine*
[77757-04-1]
$C_{34}H_{47}NO_8$ 597.747
Minor alkaloid from *Aconitum yesoense* (Ranunculaceae). Prisms (Me_2CO). Mp 163-165°.

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14-benzoyl, 8-Ac:* ***Crassicaudine***. *8-Acetyl-14-benzoylchasmanine*
[4296-54-2]
$C_{34}H_{47}NO_8$ 597.747
Alkaloid from underground parts of *Aconitum crassicaule*, *Aconitum sungpanense* and *Aconitum longtounense* (Ranunculaceae). Cryst. (Et_2O). Mp 148-150° (143-145°). $[\alpha]_D^{27}$ +15 (c, 0.32 in $CHCl_3$).

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 8-O-(4-methoxybenzoyl), 14-Ac:* ***Anisoezochasmaconitine***. *14-Acetyl-8-anisoylchasmanine*
[77757-05-2]
$C_{35}H_{49}NO_9$ 627.773
Minor alkaloid from *Aconitum yesoense* (Ranunculaceae). Cryst. (Et_2O). Mp 136-138.5°.

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14-O-(4-methoxybenzoyl):* ***Acoforesticine***
[110011-76-2]
$C_{33}H_{47}NO_8$ 585.736
Alkaloid from roots of *Aconitum forrestii* (Ranunculaceae). Amorph. $[\alpha]_D$ +40.5 (c, 0.92 in EtOH).

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14-O-(4-methoxybenzoyl), 8-Ac:* ***Foresaconitine***. *Vilmorrianine C*
[73870-35-6]
$C_{35}H_{49}NO_9$ 627.773
Alkaloid from roots of *Aconitum forrestii*, *Aconitum vilmorrianum* and *Aconitum pseudogeniculatum* (Ranunculaceae). Cryst. (Me_2CO/MeOH). Mp 153-154°. $[\alpha]_D^{20}$ +30.5 ($CHCl_3$).

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14-O-(4-methoxybenzoyl), 8-hexadecanoyl:* ***Dolichotine D***. *8-Deacetyl-8-palmitoylvilmorrianine C*
[128364-24-9]
$C_{49}H_{77}NO_9$ 824.149
Minor alkaloid from roots of *Aconitum dolichorhynchum* var. *subfabratum* (Ranunculaceae). Amorph.

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14-O-(3,4-dimethoxybenzoyl):* ***Falconeridine***. *14-Veratroylchasmanine*
[121880-22-6]
$C_{34}H_{49}NO_9$ 615.762
Alkaloid from roots of *Aconitum falconeri* (Ranunculaceae). Amorph. $[\alpha]_D^{23}$ +50.8 (c, 0.191 in $CHCl_3$).

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14-O-(3,4-dimethoxybenzoyl), 8-Ac:* ***Falconericine***. *8-Acetyl-14-veratroylchasmanine*
[121880-21-5]
$C_{36}H_{51}NO_{10}$ 657.8
Alkaloid from the roots of *Aconitum falconeri* (Ranunculaceae). Amorph. solid. $[\alpha]_D^{24}$ +16.7 (c, 0.336 in $CHCl_3$).

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 8*-E-*cinnamoyl, 14-Ac:* ***Leucentine B***
[499969-76-5]
$C_{36}H_{49}NO_8$ 623.785
Alkaloid from the roots of *Aconitum hemsleyanum* var. *leucenthus*. Amorph. powder. $[\alpha]_D^{20}$ +19 (c, 0.5 in $CHCl_3$).

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14*-E-*cinnamoyl:* ***Leucanthumsine B***
[947591-60-8]
$C_{34}H_{47}NO_7$ 581.748
Alkaloid from the roots of *Aconitum sungpanense* var. *leucanthum*. Amorph. powder. Mp 97-98°. $[\alpha]_D^{20}$ +41.7 (c, 1 in $CHCl_3$).

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14*-E-*cinnamoyl, 8-Ac:* ***Leucanthumsine A***
[947591-59-5]
$C_{36}H_{49}NO_8$ 623.785
Alkaloid from the roots of *Aconitum sungpanense* var. *leucanthum*. Amorph. powder. Mp 100-102°. $[\alpha]_D^{20}$ +12.1 (c, 1 in $CHCl_3$).

O^1,O^{14},O^{16},O^{18}-*Tetra-Me,* N-*Et:* ***14-O-Methyl-6-epiforesticine***
[146028-68-4]
$C_{25}H_{41}NO_6$ 451.602
Alkaloid from roots of *Aconitum septentrionale* (Ranunculaceae). Cryst. (Me_2CO). Mp 127-129°. $[\alpha]_D$ +20.9 (c, 0.134 in $CHCl_3$).

O^1,O^{14},O^{16},O^{18}-*Tetra-Me,* N-*Et, 6-Ac:* ***Acoseptrigine***. *6-Acetyl-14-O-methylforesticine*
[144074-86-2]
$C_{27}H_{43}NO_7$ 493.639
Alkaloid from roots of *Aconitum septentrionale* (Ranunculaceae). Amorph. $[\alpha]_D$ +20.4 (c, 0.35 in $CHCl_3$).

O^6,O^8,O^{16},O^{18}-*Tetra-Me,* N-*Et:* ***Consolinine***
[226697-96-7]
$C_{25}H_{41}NO_6$ 451.602
Alkaloid from *Consolida hohenackeri*. $[\alpha]_D$ +184 (c, 2 in MeOH).

$O^1,O^6,O^8,O^{14},O^{16}$-*Penta-Me,* N-*Et:* ***Heconsoline***
[226697-95-6]
$C_{26}H_{43}NO_6$ 465.629
Alkaloid from *Consolida hohenackeri*. $[\alpha]_D$ +27 (c, 1.2 in $CHCl_3$).

$O^1,O^6,O^8,O^{16},O^{18}$-*Penta-Me,* N-*Et:* ***Homochasmanine***
[3512-83-2]
$C_{26}H_{43}NO_6$ 465.629
Alkaloid from the roots of *Aconitum chasmanthum* (Ranunculaceae). Prisms (hexane). Mp 105-107°. $[\alpha]_D^{25}$ +19.2 (c, 2.4 in EtOH). Unstable and dec. gradually at r.t.

$O^1,O^6,O^{14},O^{16},O^{18}$-*Penta-Me,* N-*Et:* ***6,14-Di-O-methyl-6-epiforesticine***
[91794-17-1]
$C_{26}H_{43}NO_6$ 465.629
Alkaloid from roots of *Aconitum leucostomum*. Amorph. solid.

1-Ketone, O^6,O^{16},O^{18}-*tri-Me,* N-*Et, 6,14-di-Ac:* ***1-Dehydrodelphisine***. *1-Ketodelphisine*
[55085-42-2]
$C_{28}H_{41}NO_8$ 519.634
Alkaloid from seeds of *Delphinium staphisagria* (Ranunculaceae), also obt. by oxidn. of Delphisine. Prisms (Me_2CO/Et_2O). Mp 170-171° (168-170°).

16-Ketone, O^6,O^{18}-*di-Me,* N-*Et:* ***Staphisadrinine***
[132210-59-4]
$C_{23}H_{35}NO_6$ 421.533
Alkaloid from the seeds of *Delphinium staphisagria* (Ranunculaceae). Amorph. $[\alpha]_D^{19}$ -19.1 (c, 0.15 in $CHCl_3$).

(1α,5β,6β,14α,16β)-*form*

O^6,O^{16}-*Di-Me,* N-*Et:* ***6-Epineolinine***
[125263-89-0]
$C_{23}H_{37}NO_6$ 423.548
Minor alkaloid from *Delphinium nuttallianum* (Ranunculaceae). Gum. $[\alpha]_D^{23}$ +50 ($CHCl_3$). Plain positive dispersion curve to 365 nm.

O^1,O^{16},O^{18}-*Tri-Me,* N-*Et:* ***Foresticine***. *Longtouconitine B*. *6β-Hydroxytalatizamine*
[91794-15-9]
$C_{24}H_{39}NO_6$ 437.575
Alkaloid from the roots of *Aconitum forrestii* and *Aconitum longtounense* (Ranunculaceae). Mp 79-80°. $[\alpha]_D^{21}$ -1.9 (c, 1 in $CHCl_3$). C-6 config. revised in 2000.

O^6,O^{16},O^{18}-*Tri-Me,* N-*Et:* ***Subcusine***. *Deacetylsubcumine*. *6-Epineoline*
[81037-25-4]
$C_{24}H_{39}NO_6$ 437.575
Alkaloid from the roots of *Aconitum japonicum* (Ranunculaceae). Cryst. (Me_2CO/hexane). Mp 194-196°. $[\alpha]_D$ +33.3 (c, 0.3 in $CHCl_3$).

O^6,O^{16},O^{18}-*Tri-Me,* N-*Et, 14-Ac:* ***Subcumine***
[119152-45-3]
$C_{26}H_{41}NO_7$ 479.612
Alkaloid from roots of *Aconitum japonicum* (Ranunculaceae). Cryst. (Me_2CO/hexane). Mp 200-202°. $[\alpha]_D$ +18.3 (c, 0.48 in $CHCl_3$).

O^{8},O^{16},O^{18}-*Tri-Me,* N-*Et, 14-Ac:* ***Nuttalianine****. 7-Deoxypubescenine*
[125263-87-8]
$C_{26}H_{41}NO_7$ 479.612
Minor alkaloid from *Delphinium nuttallianum* (Ranunculaceae). Needles. Mp 84-86°. Plain -ve ORD dispersion curve. Config. of C-6 OH revised in 1994.

O^{1},O^{6},O^{16},O^{18}-*Tetra-Me,* N-*Et:* ***6-Epichasmanine***
[178699-06-4]
$C_{25}H_{41}NO_6$ 451.602
Alkaloid from roots of *Aconitum kusnezoffii.*

(1β,5β,6α,14α,16β)-*form*

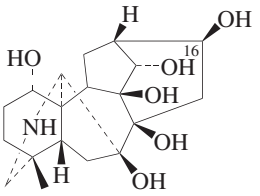
O^{6},O^{16},O^{18}-*Tri-Me,* N-*Et:* ***Delphirine****. 1-Epineoline*
[60208-28-8]
$C_{24}H_{39}NO_6$ 437.575
Minor alkaloid from the seeds of *Delphinium staphisagria* (Ranunculaceae). Cryst. (C_6H_6). Mp 95-100°. $[\alpha]_D^{26}$ +3.8 (c, 1.0 in EtOH).

O^{6},O^{16},O^{18}-*Tri-Me,* N-*Et, 14-Ac:* ***14-Acetylepineoline***
[123795-80-2]
$C_{26}H_{41}NO_7$ 479.612
Alkaloid from the seeds of *Delphinium staphisagria* (Ranunculaceae). Amorph. $[\alpha]_D^{25}$ +4.8 (c, 0.2 in EtOH aq.).

O^{1},O^{6},O^{16},O^{18}-*Tetra-Me,* N-*Et, 14-benzoyl, 8-Ac:* ***1-Epicrassicaudine***
[163083-76-9]
$C_{34}H_{47}NO_8$ 597.747
Alkaloid from roots of *Aconitum hemsleyanum* var. *pengshinese* (Ranunculaceae). CAS abstract diag. shows the 1,6-diepimeric struct.

Achmatowicz, O. *et al., Can. J. Chem.*, 1964, **42**, 154; 1965, **43**, 825-839; 1093-1095 (*Homochasmanine, Chasmanine*)
Chu, J.-H. *et al., Huaxue Xuebao*, 1964, **30**, 139; *CA*, **61**, 8128e (*Neoline, Bullatine C, isol*)
Pelletier, S.W. *et al., J.A.C.S.*, 1974, **96**, 7817-7818; 1976, **98**, 2617-2625; 2626-2636 (*struct, abs config, stereochem, cmr, Neoline, Delphisine, Chasmanine, Homochasmanine*)
Pelletier, S.W. *et al., Chem. Comm.*, 1976, 253-254 (*Chasmanine, cryst struct*)
Tsai, T.Y.R. *et al., Heterocycles*, 1977, **7**, 217-226 (*Chasmanine, synth*)
Pelletier, S.W. *et al., Phytochemistry*, 1977, **16**, 404-405 (*Delphidine*)
Wiesner, K. *et al., Can. J. Chem.*, 1978, **56**, 1451-1454 (*Chasmanine, synth*)
Chen, W. *et al., Chem. Ber.*, 1981, **114**, 394-397 (*Foresaconitine*)
Takayama, H. *et al., Heterocycles*, 1981, **15**, 403-408 (*Ezochasmaconitine, Anisoezochasmaconitine*)
Yang, C.R. *et al., Huaxue Xuebao*, 1981, **39**, 147-152; *CA*, **95**, 58094m (*Foresaconitine*)
Konno, C. *et al., J. Nat. Prod.*, 1982, **45**, 128-133 (*Senbusine A, isol, ir, pmr, cmr, struct*)
Hikino, H. *et al., J. Nat. Prod.*, 1983, **46**, 178-182; 1984, **47**, 190 (*Neoline, Senbusine A, 14-Acetylneoline*)
Pelletier, S.W. *et al., J. Nat. Prod.*, 1984, **47**, 474-477 (*Foresticine*)
Sakai, S. *et al., Yakugaku Zasshi*, 1984, **104**, 222-237; *CA*, **101**, 69329k (*Senbusine A, isol*)
Wada, K. *et al., Chem. Pharm. Bull.*, 1985, **33**, 3658-3661 (*14-Benzoylneoline*)
Pelletier, S.W. *et al., Heterocycles*, 1985, **23**, 2873-2883 (*Delstaphisine, Delstaphisagnine, Delstaphisagrine*)
Luo, S. *et al., Huaxue Xuebao*, 1985, **43**, 577-580; *CA*, **103**, 157320x (*Longtouconitine B*)
Hao, X. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 1985, **27**, 504-509; *CA*, **104**, 31721f (*Geniconitine*)
Luo, S. *et al., Planta Med.*, 1986, 412-413 (*8-Acetyl-14-benzoylchasmanine*)
Pelletier, S.W. *et al., Heterocycles*, 1987, **25**, 365-376 (*Acoforesticine*)
Ross, S.A. *et al., Heterocycles*, 1987, **26**, 2895-2904 (*Neolinine*)
Wang, F.-D. *et al., J. Nat. Prod.*, 1987, **50**, 55-62 (*Crassicaudine*)
Pelletier, S.W. *et al., J. Nat. Prod.*, 1987, **50**, 381-385 (*1-Dehydrodelphisine*)
De la Fuente, G. *et al., Heterocycles*, 1988, **27**, 1109-1113 (*1,14-Diacetylneoline*)
Bando, H. *et al., Heterocycles*, 1988, **27**, 2167-2174 (*Subcumine, Subcusine*)
Ross, S.A. *et al., J. Nat. Prod.*, 1988, **51**, 572-577 (*Delstaphisinine, 1-Acetyldelphisine*)
Batbayar, N. *et al., Khim. Prir. Soedin.*, 1988, **24**, 237-239; *Chem. Nat. Compd. (Engl. Transl.)*, 1984, **24**, 200-202 (*Bataconine*)
De la Fuente, G. *et al., Heterocycles*, 1989, **29**, 205 (*Pictumine*)
Desai, H.K. *et al., Heterocycles*, 1989, **29**, 225-230 (*Falconeridine, Falconericine*)
Bai, Y. *et al., Heterocycles*, 1989, **29**, 1017-1021 (*Nuttalianine, 6-Epineolinine*)
Huiling, L. *et al., Heterocycles*, 1989, **29**, 2317-2326 (*Dolichotine D*)
Liang, X. *et al., J. Nat. Prod.*, 1990, **53**, 1307-1311 (*14-Acetylepineoline, Staphisadrinine*)
Ding, L.-S. *et al., Phytochemistry*, 1990, **29**, 3694-3696 (*Patentine*)
Sayed, H.M. *et al., J. Nat. Prod.*, 1992, **55**, 1595-1606 (*14-O-Methyl-6-epiforesticine*)
Ross, S.A. *et al., Tetrahedron*, 1992, **48**, 1183-1192 (*Acoseptrigine, Acoseptriginine*)
Desai, H.K. *et al., Heterocycles*, 1993, **36**, 1081-1089 (*1-O-Methyldelphisine*)
Yunosov, M.S. *et al., Nat. Prod. Rep.*, 1993, **10**, 471-486 (*rev, 1,6,14-Tribenzoylsenbusine A*)
Hanuman, J.B. *et al., Phytochemistry*, 1994, **36**, 1527-1535 (*14-O-Acetylsenbusine A*)
Bai, Y. *et al., Phytochemistry*, 1994, **37**, 1717-1724 (*Senbusine A, Nuttalianine, config*)
Wang, F.P. *et al., Chin. Chem. Lett.*, 1995, **6**, 109; *CA*, **122**, 291232r (*1-Epicrassicaudine*)
Wei, X. *et al., Zhongcaoyao*, 1995, **26**, 344-346; *CA*, **124**, 170554e (*6,14-Di-O-methyl-6-epiforesticine*)
Li, Z.B. *et al., Chin. Chem. Lett.*, 1996, **7**, 443-444; *CA*, **125**, 86949a (*6-Epichasmanine*)
Kolak, U.S. *et al., Sci. Pharm.*, 1998, **66**, 381-385 (*14-Acetylchasmanine*)
Ulubelen, A. *et al., Phytochemistry*, 1999, **50**, 909-912 (*Consolinine, Hoheconsoline*)
Wada, K. *et al., Chem. Pharm. Bull.*, 2000, **48**, 660-668 (*ms*)
Wang, F.P. *et al., Chin. Chem. Lett.*, 2000, **11**, 1003-1004 (*Foresticine, 6-Epiforesticine*)
Li, Z.-B. *et al., J. Asian Nat. Prod. Res.*, 2001, **3**, 131-137 (*Geniculatines A,B*)
Shim, S.H. *et al., Chem. Pharm. Bull.*, 2003, **51**, 999-1002 (*14-Anisoylneoline, 14-Cinnamoylneoline, 14-Veratroylneoline*)
Li, L.-Y. *et al., J. Nat. Prod.*, 2003, **66**, 269-271 (*Leueantines B,D*)
Taki, M. *et al., Planta Med.*, 2003, **69**, 800-803 (*8-Cinnamoylneoline*)
Ping, A. *et al., J. Asian Nat. Prod. Res.*, 2004, **6**, 151-154 (*Kongboentine B*)
Csupor, D. *et al., Helv. Chim. Acta*, 2006, **89**, 2981-2986 (*Acotoxinine*)
Yan, H. *et al., Helv. Chim. Acta*, 2007, **90**, 1133-1140 (*Leucanthumsines A-C*)

4-Methylaconitane-1,7,8,9,14,16-hexol M-324



$C_{19}H_{29}NO_6$ 367.441

(1α,5β,14α,16β)-*form*

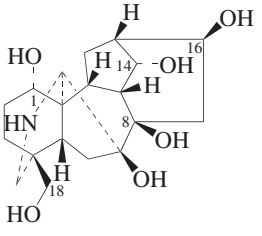
O^{16}-*Me,* N-*Et:* ***Tatsinine***
[90038-21-4]
$C_{22}H_{35}NO_6$ 409.522
Alkaloid from the roots of *Delphinium tatsienense* (Ranunculaceae). Mp 163-164°. $[\alpha]_D$ +9 (EtOH).

O^{16}-*Me,* N-*Et, perchlorate:* Mp 132-133°.

7,8-Methylene ether, O^{16}-*Me,* N-*Et:* ***Tatsidine***
[126617-62-7]
$C_{23}H_{35}NO_6$ 421.533
Alkaloid from the roots of *Delphinium tatsienense* (Ranunculaceae). Cryst. (CH_2Cl_2/hexane). Mp 191.5-193.5°.

Glinski, J.A. *et al., Tet. Lett.*, 1984, **25**, 1211 (*Tatsinine, ir, pmr, cmr, struct*)
Maddry, J.A. *et al., J. Nat. Prod.*, 1986, **49**, 674 (*Tatsinine, cryst struct*)
Snyder, J.K. *et al., Magn. Reson. Chem.*, 1989, **27**, 1057 (*Tatsidine, pmr, cmr*)
Joshi, B.S. *et al., Phytochemistry*, 1990, **29**, 357 (*Tatsidine, isol, pmr, cmr, struct*)

4-Methylaconitane-1,7,8,14,16,18-hexol M-325



$C_{19}H_{29}NO_6$ 367.441

(1α,5β,14α,16β)-*form*

O^{16}-*Me,* N-*Et:* ***1-Demethylwinkleridine****. 18-Demethylvirescenine*
[194149-12-7]
$C_{22}H_{35}NO_6$ 409.522
Alkaloid from aerial parts of *Aconitella hohenackeri* (*Consolida hohenackeri*). Cryst. (EtOAc/MeOH). Mp 204-205°. $[\alpha]_D$ +25.6 (c, 0.43 in MeOH).

O^{1},O^{16}-*Di-Me,* N-*Et:* ***Winkleridine***
[128700-88-9]
$C_{23}H_{37}NO_6$ 423.548
Alkaloid from *Delphinium winkleranum* (Ranunculaceae). Rhombic cryst. (MeOH). Mp 215-217°.

O^{8},O^{16}-*Di-Me,* N-*Et, 14-Ac:* ***Ajadelphine***
[142808-41-1]
$C_{25}H_{39}NO_7$ 465.586

Alkaloid from roots of *Delphinium ajacis* (Ranunculaceae). Amorph. $[\alpha]_D$ +2 (c, 0.13 in $CHCl_3$).

O^{16},O^{18}-*Di-Me,* N-*Et:* ***Virescenine***
[71609-78-4]
$C_{23}H_{37}NO_6$ 423.548
Alkaloid from *Delphinium virescens* (whole plant) (Ranunculaceae). Cryst. (Et_2O/hexane). Mp 68-70°. $[\alpha]_D^{24}$ +16.9 (c, 1.0 in EtOH).

O^{16},O^{18}-*Di-Me,* N-*Et, 14-Ac:* ***14-Acetylvirescenine***
[71609-79-5]
$C_{25}H_{39}NO_7$ 465.586
Alkaloid from *Delphinium virescens* (whole plant) (Ranunculaceae). Cryst. (Et_2O/hexane). Mp 157-159°. $[\alpha]_D^{24}$ +31.8 (c, 0.5 in $CHCl_3$).

O^{1},O^{16},O^{18}-*Tri-Me,* N-*Et:* ***Racemuloline A***
[463933-00-8]
$C_{24}H_{39}NO_6$ 437.575
Alkaloid from *Aconitum racemulosum* var. *pengzhouense.* Amorph. powder. $[\alpha]_D^{17}$ +11.2 (c, 0.5 in $CHCl_3$).

O^{14},O^{16},O^{18}-*Tri-Me,* N-*Et:* ***Umbrosine.*** *Paniculatine*†
[63201-50-3]
$C_{24}H_{39}NO_6$ 437.575
Alkaloid from the roots of *Aconitum umbrosum* and from *Consolida regalis* ssp. *paniculata* (Ranunculaceae). Mp 150-151°. Identity of Paniculatine with Umbrosine not apparently definitely establ. although CA gives them the same reg. no. Ref. for Paniculatine inaccessible: the CA abstract shows it with undefined C(1) config. and omits the C-14 OMe group.

7,8-Methylene, O^{16}-*Me,* N-*Et:* ***Ajadelphinine***
[142808-42-2]
$C_{23}H_{35}NO_6$ 421.533
Alkaloid from roots of *Delphinium ajacis* (Ranunculaceae). Amorph. $[\alpha]_D$ -22.6 (c, 0.32 in $CHCl_3$).

7,8-Methylene, O^{16},O^{18}-*di-Me,* N-*Et:* ***Winkleriline***
[128700-86-7]
$C_{24}H_{37}NO_6$ 435.559
Alkaloid from the whole plant of *Delphinium winklerianum* (Ranunculaceae). Rhombic cryst. (Me_2CO/petrol). Mp 131-134° (as di-Ac). $[\alpha]_D^{21}$ +89.7 (c, 0.39 in $CHCl_3$).

7,8-Methylene, O^{1},O^{14},O^{16}-*tri-Me,* N-*Et:* ***Hohenackerine***
[126223-69-6]
$C_{25}H_{39}NO_6$ 449.586
Alkaloid from the aerial parts of *Consolida hohenackeri* (Ranunculaceae).

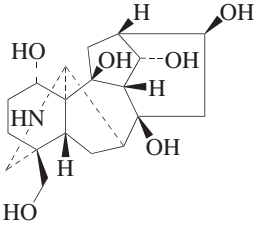
7,8-Methylene, O^{1},O^{14},O^{18}-*tri-Me,* N-*Et:* ***Corumdefine***
[98752-03-5]
$C_{25}H_{39}NO_6$ 449.586
Alkaloid from *Delphinium corumbosum* (Ranunculaceae). Powder.

7,8-Methylene, O^{1},O^{16},O^{18}-*tri-Me,* N-*Et:* ***Nudicaulamine***
[99815-84-6]
$C_{25}H_{39}NO_6$ 449.586
Alkaloid from *Delphinium nudicaule* (whole plant) (Ranunculaceae). Non-cryst.; cryst. (as perchlorate). Mp 212-214° (perchlorate). $[\alpha]_D$ -27 (c, 0.36 in $CHCl_3$).

7,8-Methylene, O^{1},O^{14},O^{16},O^{18}-*tetra-Me,* N-*Et:* ***Deoxydelcorine***
[54387-74-5]
$C_{26}H_{41}NO_6$ 463.613
Alkaloid from *Delphinium corumbosum* (Ranunculaceae). Mp 93-95°.

Narzullaev, A.S. *et al., Khim. Prir. Soedin.*, 1974, **10**, 412; *Chem. Nat. Compd. (Engl. Transl.)*, 1974, **10**, 420 (*Nudicaulamine, Deoxydelcorine*)
Tel'nov, V.A. *et al., Khim. Prir. Soedin.*, 1976, **12**, 675; *Chem. Nat. Compd. (Engl. Transl.)*, 1976, **12**, 610 (*Umbrosine*)
Pelletier, S.W. *et al., Heterocycles*, 1979, **12**, 779-782 (*Virescenine, 14-Acetylvirescenine*)
Kulanthaivel, P. *et al., Heterocycles*, 1985, **23**, 2515 (*Nudicaulamine, Deoxydelcorine*)
Salimov, B.T. *et al., Khim. Prir. Soedin.*, 1985, **21**, 95; *Chem. Nat. Compd. (Engl. Transl.)*, 1985, **21**, 91 (*Corumdefine*)
Sener, B. *et al., CA*, 1988, **110**, 111674g; 1990, **112**, 175528 (*Paniculatine, Hohenackerine*)
Chen, Y.Z. *et al., Phytochemistry*, 1990, **29**, 1016-1019 (*Winkleridine, Winkleriline*)
Pelletier, S.W. *et al., J. Nat. Prod.*, 1992, **55**, 736 (*Ajadelphine, Ajadelphinine*)
Almanza, G. *et al., Phytochemistry*, 1997, **45**, 1079-1085 (*1-Demethylwinkleridine*)
Peng, C.-S. *et al., Heterocycles*, 2002, **57**, 1117-1120 (*Racemuloline A*)
Khairitdinova, E.D. *et al., Russ. Chem. Bull. (Engl. Transl.)*, 2003, **52**, 2078-2080 (*Virescenine, isol, cmr*)

4-Methylaconitane-1,8,10,14,16,18-hexol M-326



$C_{19}H_{29}NO_6$ 367.441

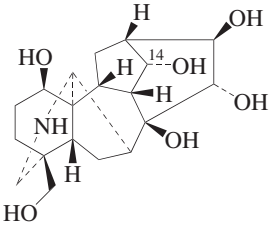
(1α,14α,16β)-*form*
O^{16},O^{18}-*Di-Me,* N-*Et:* ***10-Hydroxyisotalatizidine***
[121687-87-4]
$C_{23}H_{37}NO_6$ 423.548
Alkaloid from aerial parts of *Aconitum sanyoense* var. *tonenze* (Ranunculaceae). Amorph. solid. $[\alpha]_D^{14}$ +7 (c, 0.28 in $CHCl_3$).

O^{1},O^{16},O^{18}-*Tri-Me,* N-*Et:* ***10-Hydroxytalatizamine***
[121687-88-5]
$C_{24}H_{39}NO_6$ 437.575
Alkaloid from aerial parts of *Aconitum sanyoense* var. *tonenze* (Ranunculaceae). Amorph. solid. $[\alpha]_D^{20}$ +6.4 (c, 0.33 in $CHCl_3$).

14-Ketone, O^{16},O^{18}-*di-Me,* N-*Et:* ***Genicunine C***
[287186-11-2]
$C_{23}H_{35}NO_6$ 421.533
Alkaloid from the roots of *Aconitum geniculatum*. $[\alpha]_D^{24}$ -14.7 (c, 1 in $CHCl_3$).

Takayama, H. *et al., Chem. Pharm. Bull.*, 1992, **40**, 2927 (*10-Hydroxyisotalatizidine, 10-Hydroxytalatizamine*)
Wang, F.P. *et al., Huaxue Xuebao*, 2002, **58**, 576-579 (*Genicunine C*)

4-Methylaconitane-1,8,14,15,16,18-hexol M-327

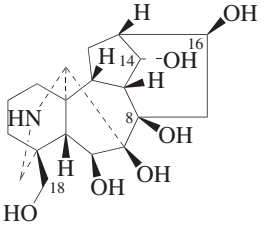


$C_{19}H_{29}NO_6$ 367.441

(1β,5β,14α,15α,16β)-*form*
O^{16},O^{18}-*Di-Me,* N-*Et:* ***Senbusine B.*** *15-Hydroxyisotalatizidine*
[82202-97-9]
$C_{23}H_{37}NO_6$ 423.548
Alkaloid from the roots of *Aconitum carmichaeli* (Ranunculaceae). Amorph. powder.

Konno, C. *et al., J. Nat. Prod.*, 1982, **45**, 128 (*isol, ir, pmr, cmr, struct*)

4-Methylaconitane-6,7,8,14,16,18-hexol M-328

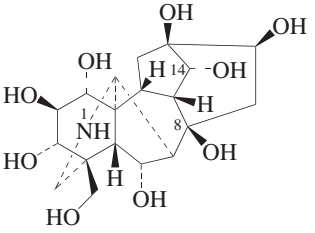


$C_{19}H_{29}NO_6$ 367.441

(5β,6β,14α,16β)-*form*
O^{6},O^{14},O^{16},O^{18}-*Tetra-Me,* N-*Et:* ***Deoxydelsoline***
[58111-35-6]
$C_{25}H_{41}NO_6$ 451.602
Alkaloid from the aerial parts of *Aconitum monticola* (Ranunculaceae).

Ametova, E.F. *et al., Khim. Prir. Soedin.*, 1982, **18**, 504-507; *Chem. Nat. Compd. (Engl. Transl.)*, 1982, **18**, 472-474 (*Deoxydelsoline*)

4-Methylaconitane-1,2,3,6,8,13,14,16,18-nonol M-329



$C_{19}H_{29}NO_9$ 415.439

(1α,2β,3α,5β,6α,14α,16β)-*form*

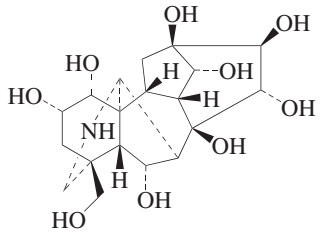
O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14-benzoyl, 8-Ac:* ***Atropurpursine***
[1007889-96-4]
$C_{34}H_{47}NO_{11}$ 645.745
Alkaloid from the roots of *Aconitum hemsleyanum* var. *atropurpureum*. Amorph. powder. Mp 224-226°. $[\alpha]_D^{20}$ +25.5 (c, 1 in $CHCl_3$).

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14-O-(4-methoxybenzoyl), 8-Ac:* ***Transconitine B***
[175992-66-2]
$C_{35}H_{49}NO_{12}$ 675.772
Alkaloid from roots of *Aconitum transsectum*. Amorph. $[\alpha]_D^{20}$ +12.3 (c, 0.02 in $CHCl_3$).

Zheng, S. *et al., Phytochemistry*, 1997, **46**, 951-954 (*Transconitine B*)

Tang, P. *et al., Chin. Chem. Lett.*, 2007, **18**, 704-707 (*Atropurpursine*)

4-Methylaconitane-1,2,6,8,13,14,15,16,18-nonol M-330



$C_{19}H_{29}NO_9$ 415.439

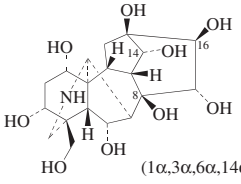
(1α,2α,5β,6α,14α,15α,16β)-*form*

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14-benzoyl, 8-Ac:* ***Karaconitine****. 2-Hydroxy-3-deoxyaconitine*
[178960-46-8]
$C_{34}H_{47}NO_{11}$ 645.745
Alkaloid from roots of *Aconitum karakolium*. Mp 222-224°. $[\alpha]_D$ +7.96 (c, 0.47 in MeOH).

Lao, A. *et al., Heterocycles*, 1996, **43**, 1267-1270 (*Karaconitine*)

4-Methylaconitane-1,3,6,8,13,14,15,16,18-nonol M-331

[107965-53-7]



(1α,3α,6α,14α,15α,16β)-*form*

$C_{19}H_{29}NO_9$ 415.439

▶ AR5560000

(1α,3α,6α,14α,15α,16β)-*form*

O^1,O^6,O^{16},O^{18}-*Tetra-Me, 14-benzoyl, 8-Ac:* **N-*Deethylaconitine***
[3327-35-3]
$C_{32}H_{43}NO_{11}$ 617.692
Alkaloid from the roots of *Aconitum napellus* ssp. *vulgare* (Ranunculaceae).

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Me, 14-benzoyl: 14-Benzoylmesaconine.* ***Hokbusine A***
[86500-43-8]
$C_{31}H_{43}NO_{10}$ 589.681
Alkaloid from roots of *Aconitum napellus* and *Aconitum carmichaeli* (Ranunculaceae). Amorph. powder. $[\alpha]_D$ +11.4 (c, 0.23 in MeOH).

▶ AR5569200

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Me, 14-benzoyl, 8-Ac:* ***Mesaconitine****.* N-*Desethyl-*N-*methylaconitine. Japaconitine A. Japaconitine B*
[2752-64-9]
$C_{33}H_{45}NO_{11}$ 631.719
Alkaloid from *Aconitum manschuricum* and many other *Aconitum* spp. (Ranunculaceae). Mp 208-209° dec. $[\alpha]_D^{17}$ +25.4 ($CHCl_3$).

▶ AR5563000

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Me, 14-benzoyl, 8-acyl:* ***Lipomesaconitine***
[81941-16-4 , 158584-86-2]
From *Aconitum carmichaeli* (Ranunculaceae). Oil. $[\alpha]_D^{13}$ +13.8 ($CHCl_3$). Analogue of Mesaconitine with a mixt. of long-chain acyl groups replacing Ac.

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Me, 14-benzoyl, 3,8-di-Ac:* ***Tuberanine***
[121897-29-8]
$C_{35}H_{47}NO_{12}$ 673.756
Alkaloid from the roots of *Aconitum tuberosum*. Cryst. (Me_2CO). Mp 253-255°.

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et:* ***Aconine****. Jesaconine*
[509-20-6]
$C_{25}H_{41}NO_9$ 499.6
Alkaloid from the roots of *Aconitum soongoricum* (Ranunculaceae), also obt. by hydrol. of Aconitine, A-104. Possesses gastric anaesthetic props. Febrifuge. Amorph. Sol. H_2O, insol. Et_2O. Mp 132°. $[\alpha]_D$ +23 (H_2O). Log P -7.18 (uncertain value) (calc).

▶ Poisonous.

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, hydrochloride:* Mp 175-176°. $[\alpha]_D$ -8 (H_2O).

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 8-O-(9Z,12Z-octadecadienoyl):* ***Aconine 8-linoleate***
[1005031-40-2]
$C_{43}H_{71}NO_{10}$ 762.035
Alkaloid from the roots of *Aconitum flavum*.

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Me, 8,14-dibenzoyl:* ***Manshuritine***
$C_{38}H_{47}NO_{11}$ 693.789
Alkaloid from the roots of *Aconitum manshuricum*. Amorph. powder. $[\alpha]_D$ +38 (c, 0.67 in $CHCl_3$).

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14-benzoyl: 14-Benzoylaconine.* ***Picraconitine***
[466-24-0]
$C_{32}H_{45}NO_{10}$ 603.708
Alkaloid from the roots of *Aconitum carmichaeli* and *Aconitum polyschistum* (Ranunculaceae). Also isol. from the processed aconite "Kako-bushi-matsu", produced by autoclaving the crude drug ("bushi") obt. from the roots of some *Aconitum* spp. Amorph. Mp 130°. $[\alpha]_D$ +5 (EtOH).

▶ TJ7849250

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14-benzoyl, 3-Ac: 3-Acetyl-14-benzoylaconine.* ***Polyschistine D***
[119347-26-1]
$C_{34}H_{47}NO_{11}$ 645.745
Alkaloid from the roots of *Aconitum polyschistum* (Ranunculaceae). Needles (EtOAc). Mp 251-252°. $[\alpha]_D$ +11.4 ($CHCl_3$).

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14-benzoyl, 8-Ac:* see Aconitine, A-104

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14-benzoyl, 8-*O-*(3*E*-hexenoyl):* ***Brachyaconitine***
[173220-47-8]
$C_{38}H_{53}NO_{11}$ 699.837
Alkaloid from aphids *Brachycaudus aconiti* and *Brachycaudus napelli* feeding on *Aconitum napellus*. Oil. $[\alpha]_D^{22}$ 0 (c, 0.07 in $CHCl_3$).

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14-benzoyl, 8-(8-carboxyoctanoyl):* ***8-O-Azaloyl-14-benzoylaconine***
[869496-03-7]
$C_{41}H_{59}NO_{13}$ 773.916
Alkaloid form the roots of *Aconitum karacolicum*. Zwitterionic.

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14-benzoyl, 8-acyl:* ***Lipoaconitine***
[81941-14-2 , 158584-72-6 , 158584-73-7]
Alkaloid from Aconiti tuber *Aconitum carmichaeli* (Ranunculaceae). Oil. $[\alpha]_D^{13}$ +6 ($CHCl_3$). Analogue of Aconitine, A-104 in which the esterifying group on C_8 is a mixt. of long-chain acyl (linoleoyl, palmitoyl, oleoyl, stearoyl, linolenoyl) instead of acetyl.

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14-O-(4-methoxybenzoyl):* ***14-Anisoylaconine***
[121923-73-7]
$C_{33}H_{47}NO_{11}$ 633.734
Alkaloid from the processed aconite "Kako-bushi-matsu". Amorph. Mp 183-184°.

▶ AR5562580

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14-O-(4-methoxybenzoyl), 8-Ac:* ***Jesaconitine***
[16298-90-1]
$C_{35}H_{49}NO_{12}$ 675.772
Alkaloid from *Aconitum fischeri, Aconitum subcuneatum, Aconitum sachalinense, Aconitum yesoense* and *Aconitum mitakense* (Ranunculaceae). Amorph. Mp 128-131°.

▶ AR5562540

O^1,O^6,O^{16},O^{18}-*Tetra-Me, 8,15-*O-*isopropylidene,* N-*Me, 14-benzoyl:* ***Tubermesaconitine***
[405157-68-8]
$C_{34}H_{47}NO_{10}$ 629.746
Alkaloid from the roots of *Aconitum tuberosum*. Amorph. solid.

O^1,O^6,O^{16},O^{18}-*Tetra-Me, 8,15*-O-*isopropylidene,* N-*Et, 14-benzoyl:* ***Tuberaconitine***
[405157-67-7]
$C_{35}H_{49}NO_{10}$ 643.773
Alkaloid from the roots of *Aconitum tuberosum*.

$O^1,O^6,O^8,O^{16},O^{18}$-*Penta-Me,* N-*Et, 14-benzoyl:* ***14-Benzoyl-8-O-methylaconine***
[93772-68-0]
$C_{33}H_{47}NO_{10}$ 617.735
Alkaloid from *Aconitum pseudostapfianum*. Component of Ni Yu Long Wu Tou. Amorph. $[\alpha]_D^{20}$ -2.4 (c, 0.72 in $CHCl_3$).

$O^1,O^6,O^8,O^{16},O^{18}$-*Penta-Me,* N-*Et, 14*-O-*(4-methoxybenzoyl):* ***Aljesaconitine A***
[101247-23-8]
$C_{34}H_{49}NO_{11}$ 647.761
Alkaloid from the roots of *Aconitum japonicum* (Ranunculaceae). Also obt. from Jesaconitine + MeOH at r.t. Amorph. powder. $[\alpha]_D^{20}$ +7.5 (c, 0.93 in EtOH).

▶AR5568500

O^8-*Et,* O^1,O^6,O^{16},O^{18}-*tetra-Me,* N-*Et, 14-benzoyl:* ***Spicatine A***. *14-Benzoyl-8*-O-*ethylaconine*
[124256-81-1]
$C_{34}H_{49}NO_{10}$ 631.762
Alkaloid from aerial parts of *Aconitum napellus* and the roots of *Aconitum spicatum* (Ranunculaceae). Amorph. powder. Mp 139-141°. $[\alpha]_D$ -3 (c, 0.10 in EtOH). $[\alpha]_D^{27}$ -1 (c, 1 in $CHCl_3$). Possibly an artifact.

O^8-*Et,* O^1,O^6,O^{16},O^{18}-*tetra-Me,* N-*Et, 14-benzoyl, 3-Ac:* ***Polyschistine A***. *Szechenyine*
[96562-88-8]
$C_{36}H_{51}NO_{11}$ 673.799
Alkaloid from the roots of *Aconitum polyschistum* and *Aconitum szechenyianum* (Ranunculaceae). Mp 265-266°.

O^8-*Et,* O^1,O^6,O^{16},O^{18}-*tetra-Me,* N-*Et, 3,14,15-tribenzoyl:* ***8-O-Ethyl-3,14,15-tribenzoylaconine***
$C_{48}H_{57}NO_{12}$ 839.978
Alkaloid from *Delphinium montanum*.

O^8-*Et,* O^1,O^6,O^{16},O^{18}-*tetra-Me,* N-*Et, 14*-O-*(4-methoxybenzoyl):* ***Aljesaconitine B***
[101247-24-9]
$C_{35}H_{51}NO_{11}$ 661.788
Alkaloid from roots of *Aconitum japonicum* (Ranunculaceae). Also obt. from Jesaconitine + EtOH. Amorph. powder. $[\alpha]_D^{20}$ +5.8 (c, 1.18 in EtOH).

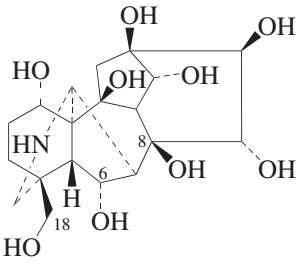
▶AR5565200

(1β,3α,6α,14α,15α,16β)-*form*

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14-benzoyl:* ***De-O-acetyl-1-epiaconitine***
[303154-28-1]
$C_{32}H_{45}NO_{10}$ 603.708
Alkaloid from the roots of *Aconitum nemorum*. Cryst. Mp 215-217°. $[\alpha]_D^{25}$ -21.2 (c, 0.25 in MeOH).

Makoshi, K. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1909, **247**, 243; *CA*, **3**, 2707; **5**, 674 (*Jesaconitine, isol*)
Morio, S. *et al., Annalen*, 1929, **476**, 181 (*Mesaconitine*)
Nath, B. *et al., J. Indian Chem. Soc.*, 1955, **32**, 75 (*Aconine, synth, ir*)
Schneider, W. *et al., Annalen*, 1959, **628**, 114 (*Aconine, struct*)
Keith, L.H. *et al., J.O.C.*, 1968, **33**, 2497 (*Jesaconitine, pmr, struct*)
Yunusov, M.S. *et al., Khim. Prir. Soedin.*, 1969, **5**, 515; *Chem. Nat. Compd. (Engl. Transl.)*, 1969, **5**, 434 (*Aconine, ms*)
Birnbaum, K.B. *et al., Tet. Lett.*, 1971, 867 (*config*)
Pelletier, S.W. *et al., J.A.C.S.*, 1976, **98**, 2626 (*Mesaconitine, cmr*)
Pelletier, S.W. *et al., Can. J. Chem.*, 1979, **57**, 1652 (*Aconine, cmr*)
Pelletier, S.W. *et al., Cryst. Struct. Commun.*, 1979, **8**, 299 (*Jesaconitine, cryst struct*)
Zhamierashvili, M.G. *et al., CA*, 1982, **97**, 107014n (*Aconine, occur*)
Kitagawa, I. *et al., Chem. Pharm. Bull.*, 1982, **30**, 758-761 (*Lipoaconitine, Lipomesaconitine*)
Hikino, H. *et al., J. Nat. Prod.*, 1983, **46**, 178; 1984, **47**, 190 (*Hokbusine A*)
Hikino, H. *et al., Shoyakugaku Zasshi*, 1983, **37**, 68; *CA*, **99**, 110568t (*Picraconitine*)
Bando, H. *et al., Chem. Pharm. Bull.*, 1985, **33**, 4717 (*Aljesaconitines*)
Wang, H. *et al., Heterocycles*, 1985, **23**, 803; 1988, **27**, 1615 (*Polyschistines*)
Arlandini, E. *et al., J. Nat. Prod.*, 1987, **50**, 937 (*N-Deethylaconitine*)
Kobayashi, K. *et al., Anal. Sci.*, 1989, **5**, 237; *CA*, **112**, 21173e (*Benzoyldeoxyaconine, cryst struct*)
Mori, T. *et al., Heterocycles*, 1989, **29**, 873 (*14-Anisoylaconine, Benzoylaconine*)
De la Fuente, G. *et al., Heterocycles*, 1989, **29**, 1577 (*8-O-Ethylbenzoylaconine*)
Desai, H.K. *et al., J. Nat. Prod.*, 1989, **52**, 720 (*Hokbusine A, synth*)
Sun, W.J. *et al., Yaoxue Xuebao*, 1989, **24**, 71; *CA*, **111**, 74778s (*Szechenyine*)
Yunosov, M.S. *et al., Nat. Prod. Rep.*, 1993, **10**, 471 (*8-O-Ethyl-3,14,15-tribenzoylaconine*)
Liu, H. *et al., J. Nat. Prod.*, 1996, **59**, 135 (*Brachyaconitine*)
Ying, C. *et al., Zhongcaoyao*, 1996, **27**, 5 (*14-Benzoyl-8-methylaconine*)
Sultankhodzhaev, M.N. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1999, **35**, 201-203 (*Tuberanine*)
Sun, W. *et al., Planta Med.*, 1999, **65**, 432-436 (*Lipoaconitine, Lipomesaconitine*)
Wei, X. *et al., Heterocycles*, 2000, **53**, 2027-2031 (*Deacetyl-1-epiaconitine*)
Boronova, Z.S. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2001, **37**, 269-271 (*Tubermesaconitine, Tuberaconitine*)
Chodoeva, A. *et al., Bioorg. Med. Chem.*, 2005, **13**, 6493-6501 (*8-Azeloyl-14-benzoylaconine*)
Gao, L.M. *et al., Chin. Chem. Lett.*, 2005, **16**, 475-478 (*Spicatine A*)
Ishimi, K. *et al., J. Nat. Med. (Tokyo)*, 2006, **60**, 255-257 (*Manshuritine*)
Zhang, F. *et al., Zhongguo Yaoxue Zazhi*, 2006, **41**, 1851-1854; *CA*, **148**, 210217b (*Aconine 8-linoleate*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, ADG500; PIC250

4-Methylaconitane-1,6,8,10,13,14,15,16,18-nonol M-332



$C_{19}H_{29}NO_9$ 415.439

(1α,6α,14α,15α,16β)-*form*

O^6,O^{16},O^{18}-*Tri-Me, 14-benzoyl, 8-Ac:* ***Flavaconitine***
[83145-43-1]
$C_{31}H_{41}NO_{11}$ 603.665
Alkaloid from the roots of *Aconitum flavum* (Ranunculaceae).

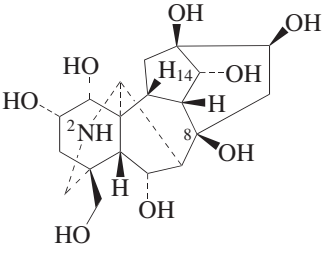
O^6,O^{16},O^{18}-*Tri-Me, 14-benzoyl, 8-Ac,* N-*formyl:* ***Flavaconidine***. N-*Formylflavaconitine*
[125286-17-1]
$C_{32}H_{41}NO_{12}$ 631.675
Alkaloid from *Aconitum flavum* (Ranunculaceae). Mp 186.5-189°. $[\alpha]_D$ -49 (c, 0.568 in DMF).

O^6,O^{16},O^{18}-*Tri-Me, 14-benzoyl, 8,*N-*di-Ac:* **N-*Acetylflavaconitine***
[125263-91-4]
$C_{33}H_{43}NO_{12}$ 645.702
Alkaloid from *Aconitum flavum* (Ranunculaceae). Mp 274.5-275.5°. $[\alpha]_D^{13}$ -45.6 (c, 1.54 in MeOH).

$O^1,O^6,O^{16}O^{18}$-*Tetra-Me,* N-*Et, 14-benzoyl, 8-Ac:* ***Polyschistine B***. *10-Hydroxy-3-deoxyaconitine*
[96562-89-9]
$C_{34}H_{47}NO_{11}$ 645.745
Alkaloid from the roots of *Aconitum polyschistum* (Ranunculaceae). Mp 182-185°.

Liu, Y. *et al., Yaoxue Tongbao*, 1982, **17**, 243; *CA*, **97**, 141679t (*Flavaconitine*)
Wang, H. *et al., Heterocycles*, 1985, **23**, 803 (*Polyschistine B*)
Chen, Z. *et al., Heterocycles*, 1989, **29**, 997 (*Flavaconidine, N-Acetylflavaconitine*)

4-Methylaconitane-1,2,6,8,13,14,16,18-octol M-333

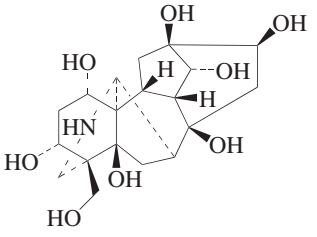


$C_{19}H_{29}NO_8$ 399.44

(1α,2α,5β,6α,14α,16β)-*form*

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14*-O-*(4-methoxybenzoyl), 8-Ac:* ***Ouvrardiantine***
[951765-86-9]
$C_{35}H_{49}NO_{11}$ 659.772
Alkaloid from the roots of *Aconitum ouvrardianum*. Amorph. powder. $[\alpha]_D^{20}$ +25 (c, 0.8 in $CHCl_3$).
Hou, L.-H. *et al., Chem. Pharm. Bull.*, 2007, **55**, 1090-1092 (*Ouvrardiantine*)

4-Methylaconitane-1,3,5,8,13,14,16,18-octol M-334



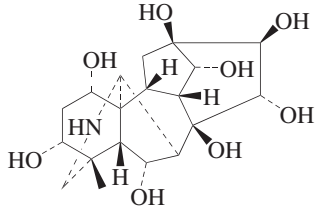
$C_{19}H_{29}NO_8$ 399.44

(1α,3α,5β,14α,16β)-*form*

O^1,O^{18}-*Di-Me, 14*-O-*(4-methoxybenzoyl),* N-*Et:* ***Circinasine B***
[939972-76-6]
$C_{31}H_{43}NO_{10}$ 589.681
Alkaloid from the roots of *Aconitum hemsleyanum* var. *circinatum*. Amorph. powder. $[\alpha]_D^{20}$ +52.3 (c, 1 in $CHCl_3$).

O^1,O^{16},O^{18}-*Tri-Me,* N-*Et:* ***Circinasine F***
[939972-80-2]
$C_{24}H_{39}NO_8$ 469.574
Alkaloid from the roots of *Aconitum hemsleyanum* var. *circinatum*. Cubic cryst. (Me_2CO). Mp 239-240°. $[\alpha]_D^{20}$ +24.8 (c, 1 in $CHCl_3$).
Gao, F. *et al., J. Nat. Prod.*, 2007, **70**, 876-879 (*isol, pmr, cmr, cryst struct*)

4-Methylaconitane-1,3,6,8,13,14,15,16-octol M-335

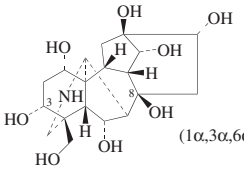


$C_{19}H_{29}NO_8$ 399.44

(1α,3α,6α,14α,15α,16β)-*form*

O^1,O^6,O^8,O^{16}-*Tetra-Me,* N-*Et, 14-benzoyl:* ***Acofamine B***
$C_{32}H_{45}NO_9$ 587.709
Alkaloid from the aerial parts of *Aconitum karakolicum*. Amorph. $[\alpha]_D^{20}$ +28 (c, 0.1 in $CHCl_3$). λ_{max} 201 (log ϵ 4.18); 230 (log ϵ 4.24); 275 (log ϵ 2.86) (MeOH).
Atta-ur-Rahman, *et al., Nat. Prod. Res.*, 2005, **19**, 713-718 (*Acofamine B*)

4-Methylaconitane-1,3,6,8,13,14,16,18-octol M-336



$C_{19}H_{29}NO_8$ 399.44
▶AR5566300

(1α,3α,6α,14α,16α)-*form*

O^6,O^{16},O^{18}-*Tri-Me,* N-*Et, 14-benzoyl, 8-Ac:* ***Leucanthumsine E***
[947412-91-1]
$C_{33}H_{45}NO_{10}$ 615.719
Alkaloid from the roots of *Aconitum sungpanense* var. *leucanthum*. Amorph. powder. Mp 95-96°. $[\alpha]_D^{20}$ +13.2 (c, 1 in $CHCl_3$).

(1α,3α,6α,14α,16β)-*form*

O^1,O^6,O^{16},O^{18}-*Tetra-Me, 14*-O-*(3,4-dimethoxybenzoyl), 8-Ac,* N-*formyl:* ***Faleoconitine***
[307495-69-8]
$C_{35}H_{47}NO_{13}$ 689.755
Alkaloid from *Aconitum falconeri.* Cryst. (MeOH). Mp 205°. $[\alpha]_D^{25}$ -28 (c, 0.14 in MeOH). Exhibits atropisomerism. λ_{max} 220 (log ϵ 3.29); 263 (log ϵ 3.01); 292 (log ϵ 2.75) (MeOH).

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et:* ***Pseudaconine***
[38146-89-3]
$C_{25}H_{41}NO_8$ 483.601
Alkaloid from *Aconitum ferox*. Mp 90-92°.

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14-benzoyl:* ***Ludaconitine***
[82144-72-7]
$C_{32}H_{45}NO_9$ 587.709
Alkaloid from the roots of *Aconitum francheti* (Ranunculaceae).

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14-benzoyl, 8-Ac:* ***Indaconitine***
[4491-19-4]
$C_{34}H_{47}NO_{10}$ 629.746
Alkaloid from roots of *Aconitum chasmanthum*, *Aconitum ferox*, *Aconitum falconeri*, *Aconitum franchetti* and *Aconitum violaceum* (Ranunculaceae). Cryst. (Et_2O). Mp 200-203° (190-191°). $[\alpha]_D$ +18.3 (c, 2.0 in EtOH).
▶AR5569430

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14-benzoyl, 8-acyl: Lipoindaconitine*
Alkaloid from root tubers of *Aconitum ferox* (Ranunculaceae). Oil. $[\alpha]_D^{25}$ +1.1 (c, 0.5 in $CHCl_3$). The esterifying group on C-8 is a mixt. of long-chain acyl groups (linoleoyl, palmitoyl and stearoyl).

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14*-O-*(4-methoxybenzoyl):* ***8-Deacetylyunaconitine***
[93460-55-0]
$C_{33}H_{47}NO_{10}$ 617.735
Alkaloid from the roots of *Aconitum austroyunnanense*, *Aconitum forrestii* and *Aconitum dolichorhynchum* var. *subglabratum* (Ranunculaceae). Amorph. powder. Mp 101-105°.

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14*-O-*(4-methoxybenzoyl), 8-Ac:* ***Yunaconitine****. Guayewuanine B. Isoaconitine. 8-Acetyl-14-anisoylpseudaconine. 3α,13-Dihydroxyforesaconitine. Vilmorrianine B*
[70578-24-4]
$C_{35}H_{49}NO_{11}$ 659.772
Alkaloid from *Aconitum delavayi*, *Aconitum vilmorrianum*, *Aconitum crassicaule*, *Aconitum forrestii*, *Aconitum hemsleyanum*, *Aconitum teipeicum*, *Aconitum pseudogeniculatum* and *Aconitum dolichorhynchum* var. *subglabratum* (Ranunculaceae). Mp 141-144° (98-103°). $[\alpha]_D^{21}$ +20 (c, 0.9 in $CHCl_3$). Identity with 3,13-Dihydroxyforesaconitine appears probable despite its lower Mp.
▶AR5566500

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14*-O-*(4-methoxybenzoyl), 8-acyl: Lipoyunaconitine*
Alkaloid from root tubers of *Aconitum ferox* (Ranunculaceae). Oil. $[\alpha]_D^{25}$ +12 (c, 0.5 in $CHCl_3$). The esterifying group on C-8 is a mixt. of long-chain acyl groups (linoleoyl, palmitoyl and stearoyl).

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14*-O-*(4-methoxybenzoyl), 3,8-di-Ac:* ***3-Acetylyunaconitine***
[80787-51-5]
$C_{37}H_{51}NO_{12}$ 701.809
Alkaloid from *Aconitum* sp.

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14*-O-*(3,4-dimethoxybenzoyl):* ***Veratroylpseudaconine***
[53905-17-2]
$C_{34}H_{49}NO_{11}$ 647.761
Alkaloid from the roots of *Aconitum ferox* and *Aconitum falconeri* (Ranunculaceae). Prisms (MeOH/Et_2O). Mp 212-214°. $[\alpha]_D$ +38.5 (c, 0.9 in EtOH). $[\alpha]_D$ +54.1 (c, 1.5 in $CHCl_3$).

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14*-O-*(3,4-dimethoxybenzoyl), 8-Ac:* ***Pseudaconitine****. Pseudoaconitine*
[127-29-7]
$C_{36}H_{51}NO_{12}$ 689.798
Alkaloid from the roots of *Aconitum ferox*, *Aconitum falconeri*, *Aconitum balfourii*, *Aconitum deinorrhizum* and *Aconitum spicatum* (Ranunculaceae). Prisms (MeOH). Mp 211-213° (203-205°). $[\alpha]_D$ +24 (c, 2.5 in $CHCl_3$).
▶Highly toxic.

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14*-O-*(3,4-dimethoxybenzoyl), 8-acyl: Lipopsudaconitine*
Alkaloid from root tubers of *Aconitum ferox* (Ranunculaceae). Oil. $[\alpha]_D^{25}$ +12.4 (c, 0.5 in $CHCl_3$). The esterifying group on C-8 is a mixt. of long-chain acyl groups (linoleoyl, palmitoyl and stearoyl).

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14*-O-*(3,4-dimethoxybenzoyl), 3,8,13-tri-Ac:* ***Diacetylpseudaconitine***
[53905-18-3]

$C_{40}H_{55}NO_{14}$ 773.873
Alkaloid from the roots of *Aconitum ferox* (Ranunculaceae). Needles (Me_2CO/hexane). Mp 230° (227-229°). $[\alpha]_D$ +17 (c, 2.8 in $CHCl_3$).

$O^1,O^6,O^8,O^{16},O^{18}$-*Penta-Me,* N-*Et, 14*-O-*(4-methoxybenzoyl):* ***Crassicautine***
[109333-61-1]
$C_{34}H_{49}NO_{10}$ 631.762
Alkaloid from the roots of *Aconitum crassicaule* (Ranunculaceae). Amorph. $[\alpha]_D^{24}$ +26.1 (c, 0.18 in $CHCl_3$).

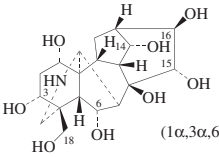
$O^1,O^6,O^8,O^{16},O^{18}$-*Penta-Me,* N-*Et, 14*-O-*(3,4-dimethoxybenzoyl):* ***8-O-Methylveratroylpseudaconine***
[141695-34-3]
$C_{35}H_{51}NO_{11}$ 661.788
Alkaloid from *Aconitum balfourii* (Ranunculaceae). Amorph.

O^8-*Et,* O^1,O^6,O^{16},O^{18}-*tetra-Me,* N-*Et, 14*-O-*(4-methoxybenzoyl):* ***Acoforestinine***
[110011-77-3]
$C_{35}H_{51}NO_{10}$ 645.789
Alkaloid from the roots of *Aconitum forrestii* (Ranunculaceae). Amorph. $[\alpha]_D$ +27.3 (c, 0.71 in EtOH).

O^8-*Et,* O^1,O^6,O^{16},O^{18}-*tetra-Me,* N-*Et, 14*-O-*(3,4-dimethoxybenzoyl):* ***3′-Methoxyacoforestinine***
[307321-72-8]
$C_{36}H_{53}NO_{11}$ 675.815
Alkaloid from *Aconitum falconeri.* Amorph. solid. $[\alpha]_D^{25}$ +37 (c, 0.03 in MeOH). λ_{max} 207 (log ϵ 5.2); 218 (log ϵ 5.2); 260 (log ϵ 4.91) (MeOH).

Dunstan, W.R. *et al., J.C.S.*, 1905, **87**, 1620-1636 (*Indaconitine, isol*)
Henry, T.A. *et al., J.C.S.*, 1928, 1105-1121 (*Pseudaconitine, isol*)
Gilman, R.E. *et al., Tet. Lett.*, 1962, 923-925 (*Indaconitine, Pseudaconitine, struct*)
Tsuda, Y. *et al., Can. J. Chem.*, 1963, **41**, 1485-1489; 3055-3062 (*Pseudaconitine, isol, struct, synth*)
Miana, G.A. *et al., Phytochemistry*, 1971, **10**, 3320-3322 (*Indaconitine, isol, ir, pmr*)
Birnbaum, K.B. *et al., Tet. Lett.*, 1971, 867-870 (*Ludaconitine*)
Klásek, A. *et al., J. Nat. Prod.*, 1972, **35**, 55-66 (*Pseudaconitine, isol, uv, ir*)
Purushothaman, K.K. *et al., Phytochemistry*, 1974, **13**, 1975-1977 (*Veratroylpseudaconine, Diacetylpseudaconitine*)
Pelletier, S.W. *et al., Heterocycles*, 1977, **7**, 327-339 (*cmr*)
Pelletier, S.W. *et al., Phytochemistry*, 1977, **16**, 623-624 (*Pseudaconitine, Veratroylpseudaconine*)
Chen, S.-Y. *et al., Huaxue Xuebao*, 1979, **37**, 15-20; *CA*, **91**, 20833f (*Yunaconitine*)
Yang, C. *et al., Huaxue Xuebao*, 1981, **39**, 445-452; *CA*, **96**, 82689a (*3-Acetylyunaconitine*)
Wang, F. *et al., Planta Med.*, 1981, **42**, 375-379 (*Yunaconitine*)
Zhang, H. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 1982, **24**, 259-263; *CA*, **97**, 159517y (*Yunaconitine*)
Chen, D. *et al., Zhongcaoyao*, 1982, **13**, 8-12; *CA*, **97**, 88655d
Wang, C. *et al., Planta Med.*, 1983, **48**, 55 (*Yunaconitine, occur*)
Pelletier, S.W. *et al., J. Nat. Prod.*, 1984, **47**, 474-477 (*Yunaconitine*)
Chen, S. *et al., Yunnan Zhiwu Yanjiu*, 1984, **6**, 338-340; *CA*, **102**, 3240p (*8-Deacetylyunaconitine*)
Chen, D. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 1984, **26**, 82-84; *CA*, **101**, 51713w (*Yunaconitine*)
Chen, W. *et al., Annalen*, 1985, 1297-1301 (*Dihydroxyforesaconitine*)
Pelletier, S.W. *et al., Heterocycles*, 1987, **25**, 365-376 (*Acoforestinine*)
Wang, F.-P. *et al., J. Nat. Prod.*, 1987, **50**, 55-62 (*Crassicautine*)
Huiling, L. *et al., Heterocycles*, 1989, **29**, 2317-2326 (*Yunaconitine, 8-Deacetylyunaconitine*)
Khetwal, K.S. *et al., Heterocycles*, 1992, **34**, 441-444 (*8-O-Methylveratroylpseudaconine*)
Hanuman, J.B. *et al., J. Nat. Prod.*, 1994, **57**, 105 (*Lipoindaconitine, Lipoyunaconitine, Lipopseudaconitine*)
Hanuman, J.B. *et al., Phytochemistry*, 1994, **36**, 1527-1535 (*Pseudaconine*)
Atta-ur-Rahman, *et al., J. Nat. Prod.*, 2000, **63**, 1393-1395 (*Faleoconitine, 3′-Methoxyacoforestinine*)
Zhou, X.-L. *et al., Chem. Pharm. Bull.*, 2003, **51**, 592-594 (*Pseudaconine, cmr*)
Li, Z.Y. *et al., Helv. Chim. Acta*, 2004, **87**, 2085-2087 (*Yunaconitine, cmr*)
Yan, H. *et al., Helv. Chim. Acta*, 2007, **90**, 1133-1140 (*Leucanthumsine E*)

4-Methylaconitane-1,3,6,8,14,15,16,18-octol M-337



(1α,3α,6α,14α,15α,16β)-*form*

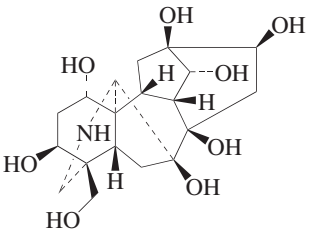
$C_{19}H_{29}NO_8$ 399.44

(1α,3α,6α,14α,15α,16β)-*form*
O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14-benzoyl:* ***Acofamine A***
$C_{32}H_{45}NO_9$ 587.709
Alkaloid from the aerial parts of *Aconitum karakolicum.* Amorph. $[\alpha]_D^{20}$ +21 (c, 0.06 in $CHCl_3$). λ_{max} 201 (log ϵ 4.13); 230 (log ϵ 4.18); 273 (log ϵ 2.94) (MeOH).

(1α,3α,6α,14α,15β,16β)-*form*
O^6,O^{16},O^{18}-*Tri-Me,* N-*Et:* ***Crassicaulidine***
[83704-07-8]
$C_{24}H_{39}NO_8$ 469.574
Alkaloid from the roots of *Aconitum crassicaule.* Mp 206-209°.

Wang, F. *et al., Planta Med.*, 1983, **47**, 39-42 (*Crassicaulidine*)
Atta-ur-Rahman, *et al., Nat. Prod. Res.*, 2005, **19**, 713-718 (*Acofamine A*)

4-Methylaconitane-1,3,7,8,13,14,16,18-octol M-338

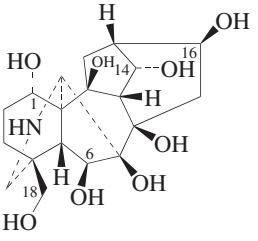


$C_{19}H_{29}NO_8$ 399.44

(1α,3β,5β,14α,16β)-*form*
O^1,O^{16},O^{18}-*Tri-Me,* N-*Et, 14*-O-*(4-methoxybenzoyl):* ***Hemsleyasine***
[189316-13-0]
$C_{32}H_{45}NO_{10}$ 603.708
Alkaloid from the roots of *Aconitum hemsleyanum* var. *circinatum.* Amorph. powder. $[\alpha]_D$ +44.7 (c, 0.5 in $CHCl_3$).

Xu, Q.Y. *et al., Chin. Chem. Lett.*, 1997, **8**, 137-140 (*isol, pmr, cmr*)

4-Methylaconitane-1,6,7,8,10,14,16,18-octol M-339



$C_{19}H_{29}NO_8$ 399.44

(1α,6β,14α,16β)-*form*
O^6,O^{16},O^{18}-*Tri-Me,* N-*Et:* ***Turcosine***
[168922-20-1]
$C_{24}H_{39}NO_8$ 469.574
Alkaloid from aerial parts of *Aconitum turczaninowi.* Cryst. (Me_2CO). Mp 206-208°.

O^1,O^6,O^{14},O^{16}-*Tetra-Me,* N-*Et:* ***Swatinine***
$C_{25}H_{41}NO_8$ 483.601
Alkaloid from the aerial parts of *Aconitum laeve.* Amorph. powder. $[\alpha]_D^{30}$ +12.5 (c, 2 in $CHCl_3$).

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et:* ***Delcaroline***
[77996-00-0]
$C_{25}H_{41}NO_8$ 483.601
Major alkaloid from *Delphinium carolinianum* (Ranunculaceae). Mp 160-162° (as perchlorate). $[\alpha]_D^{23.5}$ +49.8 (c, 0.49 in MeOH).

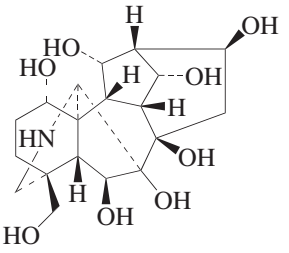
O^6,O^{14},O^{16},O^{18}-*Tetra-Me,* N-*Et:* ***10-Hydroxydelsoline****. Turlosine*
[159394-69-1]
$C_{25}H_{41}NO_8$ 483.601
Alkaloid from above-ground parts of *Aconitum vulparia* ssp. *neapolitanum* (Ranunculaceae). Cryst. (hexane/EtOAc). Mp 240-243°. $[\alpha]_D$ +51.4 (c, 0.14 in $CHCl_3$).

$O^1,O^6,O^{14},O^{16},O^{18}$-*Penta-Me,* N-*Et:* ***18-Methoxydelterine****. 14*-O-*Methyldelcaroline*
$C_{26}H_{43}NO_8$ 497.628
Alkaloid from *Delphinium excelsum.* Amorph.

Pelletier, S.W. *et al., Heterocycles*, 1981, **16**, 747 (*Delcaroline*)
Pelletier, S.W. *et al., J.A.C.S.*, 1981, **103**, 6536-6538 (*config*)
Batbayar, N. *et al., Khim. Prir. Soedin.*, 1992, **28**, 594; 1993, **29**, 60; *Chem. Nat. Compd.*

(*Engl. Transl.*), 1992, **28**, 521-522; 1993, **29**, 48 (*Turlosine, Turcosine*)
De la Fuente, G. *et al., Phytochemistry*, 1994, **37**, 271-274 (*10-Hydroxydelsoline*)
Batbayar, N. *et al., Phytochemistry*, 2003, **62**, 543-550 (*8-Methoxydelterine*)
Shaheen, F. *et al., Phytochemistry*, 2005, **66**, 935-940 (*Swatinine*)

4-Methylaconitane-1,6,7,8,12,14,16,18-octol M-340



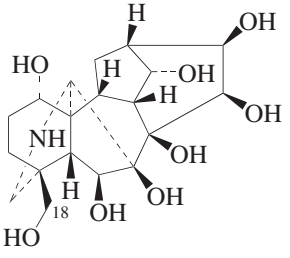
$C_{19}H_{29}NO_8$ 399.44

(1α,5β,6β,12α,14α,16β)-*form*

O^6,O^{16},O^{18}-*Tri-Me,* N-*Et:* ***Leucostine B****. 12-Hydroxydelcosine*
[173075-40-6]
$C_{24}H_{39}NO_8$ 469.574
Alkaloid from roots of *Aconitum leucostomum*. Needles (MeOH). Mp 263-264°.

Yue, J.M. *et al., J. Nat. Prod.*, 1996, **59**, 277-279

4-Methylaconitane-1,6,7,8,14,15,16,18-octol M-341



$C_{19}H_{29}NO_8$ 399.44

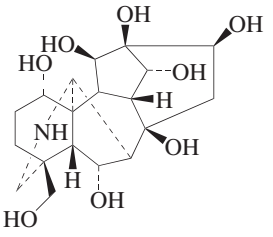
(1α,5β,6β,14α,15β,16β)-*form*

$O^1,O^6,O^8,O^{14},O^{16}$-*Penta-Me,* N-*formyl:* ***Potanisine C***
[182262-34-6]
$C_{25}H_{39}NO_9$ 497.584
Alkaloid from roots of *Delphinium potaninii*. Amorph. powder. $[\alpha]_D$ +45.5 (c, 1.10 in $CHCl_3$).

$O^1,O^6,O^8,O^{14},O^{16}$-*Penta-Me,* N-*formyl, 18*-O-*(2-aminobenzoyl):* ***Potanisine D***
[182262-35-7]
$C_{32}H_{44}N_2O_{10}$ 616.707
From roots of *Delphinium potaninii*. Amorph. powder. $[\alpha]_D$ +32.1 (c, 0.70 in $CHCl_3$).

Pu, H.-Y. *et al., Phytochemistry*, 1996, **43**, 287 (*isol, pmr, cmr, struct*)

4-Methylaconitane-1,6,8,12,13,14,16,18-octol M-342



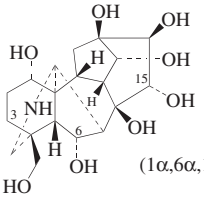
$C_{19}H_{29}NO_8$ 399.44

(1α,5β,6α,12β,14α,16β)-*form*

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14-benzoyl, 8-Ac:* ***Duclouxine****. 12-Hydroxychasmaconitine*
[96681-55-9]
$C_{34}H_{47}NO_{10}$ 629.746
Alkaloid from roots of *Aconitum duclauxii* (Ranunculaceae). Mp 168-169°.

Wang, C. *et al., Yaoxue Xuebao*, 1984, **19**, 445; *CA*, **102**, 218381w

4-Methylaconitane-1,6,8,13,14,15,16,18-octol M-343



(1α,6α,14α,15α,16β)-*form*

$C_{19}H_{29}NO_8$ 399.44

▶AR5565000

(1α,6α,14α,15α,16β)-*form*

O^6,O^{16},O^{18}-*Tri-Me, 14-benzoyl, 8-Ac:* ***Spicatine B****. 10-Deoxyflavaconitine. 10-Dehydroxyflavaconitine*
[863887-61-0]
$C_{31}H_{41}NO_{10}$ 587.666
Alkaloid from the roots of *Aconitum spicatum* and *Aconitum nagarum*. Needles. Mp 130-132° (126-127°). $[\alpha]_D^{27}$ +39 (c, 1 in $CHCl_3$). $[\alpha]_D^{25}$ +48 (c, 0.1 in $CHCl_3$).

O^6,O^{16},O^{18}-*Tri-Me, 14-benzoyl, 8,*N-*di-Ac:* ***Flavaconijine***
[125263-92-5]
$C_{33}H_{43}NO_{11}$ 629.703
Alkaloid from *Aconitum flavum* (Ranunculaceae). Mp 248.5-249.5°. $[\alpha]_D$ -55.5 (c, 0.492 in DMF).

O^6,O^{16},O^{18},N-*Tetra-Me, 14-benzoyl, 8-Ac:* ***1-Demethylhypaconitine***
[110081-95-3]
$C_{32}H_{43}NO_{10}$ 601.692
Alkaloid from the roots of *Aconitum flavum* (Ranunculaceae). Mp 180-182°. $[\alpha]_D$ +19.9 (c, 0.38 in $CHCl_3$).

O^1,O^6,O^{16},O^{18}-*Tetra-Me, 14-benzoyl, 8-Ac,* N-*formyl:* ***Aldohypaconitine***
[159602-66-1]
$C_{33}H_{43}NO_{11}$ 629.703
Alkaloid from O-Zhang-Ye fuzi (cultivated *Aconitum carmichaeli*) (Ranunculaceae). Cryst. Mp 262-264°. $[\alpha]_D^{20}$ -56.9 (c, 0.3 in $CHCl_3$).

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 8*-O-*(9Z,12Z-octadecadienoyl):* ***3-Deoxyaconine 8-linoleate***
[1005031-38-8]
$C_{43}H_{71}NO_9$ 746.035
Alkaloid from the roots of *Aconitum-flavum*.

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14-benzoyl:* ***Benzoyldeoxyaconine***
[78715-16-9]
$C_{32}H_{45}NO_9$ 587.709
Alkaloid from the roots of *Aconitum polyschistum* (Ranunculaceae). Mp 232-234°. $[\alpha]_D$ -15.4 ($CHCl_3$).

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14-benzoyl, 8-Ac:* ***Deoxyaconitine***
[3175-95-9]
$C_{34}H_{47}NO_{10}$ 629.746
Alkaloid from numerous *Aconitum* spp. (Ranunculaceae); contaminant in crude aconitine. Prisms (Et_2O). Mp 177-180°. $[\alpha]_D^{25}$ +15.5 (c, 1.4 in EtOH).

▶AR5569100

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14-benzoyl, 8-acyl:* ***Lipodeoxyaconitine***
Lipoalkaloid from *Aconitum carmichaeli* (Ranunculaceae). Oil. $[\alpha]_D^{13}$ +12.4 ($CHCl_3$). Analogue of Deoxyaconitine with a mixt. of long-chain acyl groups at C-8 in place of Ac.

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14-(4-methoxybenzoyl), 8-Ac:* ***Deoxyjesaconitine***
[69787-27-5]
$C_{35}H_{49}NO_{11}$ 659.772
Alkaloid from the rhizomes of *Aconitum subcuneatum* (Ranunculaceae). Needles (Me_2CO). Mp 174-176°. $[\alpha]_D$ +52 (c, 0.065 in MeOH).

▶AR5569130

O^1,O^6,O^{16},O^{18},N-*Penta-Me:* ***Hypaconine***
[63238-68-6]
$C_{24}H_{39}NO_8$ 469.574
Alkaloid from *Aconitum* spp.

O^1,O^6,O^{16},O^{18},N-*Penta-Me, 14-benzoyl:* ***Benzoylhypaconine****. Deacetylhypaconitine*
[63238-66-4]
$C_{31}H_{43}NO_9$ 573.682
Alkaloid from the roots of *Aconitum carmichaeli* (Ranunculaceae). Also isol. from the processed aconite "Kako-bushi-matsu', produced by autoclaving the crude drug ('bushi") obt. from the roots of some *Aconitum* spp.

▶AR5569370

O^1,O^6,O^{16},O^{18},N-*Penta-Me, 14-benzoyl, 8-Ac:* ***Hypaconitine****. Deoxymesaconitine. Japaconitine B_1. Japaconitine C. Japaconitine C_1*
[6900-87-4]
$C_{33}H_{45}NO_{10}$ 615.719
Alkaloid from *Aconitum senanense*, *Aconitum carmichaeli*, *Aconitum koreanum*, *Aconitum bullatifolium* var. *homotrichum*, *Aconitum callianthum*,

Aconitum ibukiense, *Aconitum tortuosum*, *Aconitum hakusanense* and many other *Aconitum* spp. (Ranunculaceae). Prisms (MeOH). Mp 197-198° dec. $[\alpha]_D^{17}$ +22.4 ($CHCl_3$).

O^1,O^6,O^{16},O^{18},N-*Penta-Me, 14-benzoyl, 8-Ac; hydrobromide:*
Cryst. + 2.5H_2O (EtOH/Et_2O). Mp 178-179° dec. $[\alpha]_D$ -19 (H_2O).

O^1,O^6,O^{16},O^{18},N-*Penta-Me, 14-benzoyl, 8-acyl:* ***Lipohypaconitine***
[81941-15-3]
From *Aconitum carmichaeli* (Ranunculaceae). Oil. $[\alpha]_D^{22}$ +13.5 ($CHCl_3$). Analogue of Hypaconitine with a mixt. of long-chain acyl groups at C-8 in place of Ac.

$O^1,O^6,O^8,O^{16},O^{18}$-*Penta-Me,* N-*Et, 14-benzoyl:* ***Neojiangyouaconitine***
[126266-35-1]
$C_{33}H_{47}NO_9$ 601.736
Alkaloid from *Aconitum carmichaeli*. Cryst. Mp 201-204°. $[\alpha]_D^{14}$ -9.5 (c, 0.22 in MeOH).

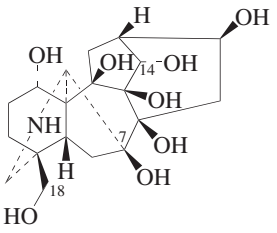
$O^1,O^6,O^8,O^{16},O^{18}$,N-*Hexa-Me:* ***8-O-Methylhypaconine***
[949118-97-2]
$C_{25}H_{41}NO_8$ 483.601
Alkaloid from an *Aconitum* sp. Needles ($CHCl_3$/MeOH). Mp 225-228°. $[\alpha]_D^{23}$ +4.4 (c, 0.3 in MeOH).

(1β,6α,14α,15α,16β)-*form*

O^1,O^6,O^{16},O^{18},N-*Penta-Me, 14-benzoyl, 8-Ac:* ***Ipaconitine***
[111612-41-0]
$C_{33}H_{45}NO_{10}$ 615.719
Alkaloid from *Aconitum napellus* (Ranunculaceae).

Majima, R. *et al., Annalen*, 1929, **476**, 171-181 (*Hypaconitine, isol*)
Tsuda, Y. *et al., Annalen*, 1964, **680**, 88-92 (*Hypaconitine, Deoxyaconitine*)
Birnbaum, K.B. *et al., Tet. Lett.*, 1971, 867-870 (*config*)
Pelletier, S.W *et al., Can. J. Chem.*, 1979, **57**, 1652-1655 (*cmr*)
Kitagawa, I. *et al., Chem. Pharm. Bull.*, 1982, **30**, 758-761 (*Lipodeoxyaconitine, Lipohypaconitine, isol*)
Mori, T. *et al., Chem. Pharm. Bull.*, 1983, **31**, 2884-2886 (*Deoxyjesaconitine*)
Hikino, H. *et al., Shoyakugaku Zasshi*, 1983, **37**, 68-72; *CA*, **99**, 110568t (*Benzoylhypaconine*)
Chen, Z., *et al., Heterocycles*, 1987, **26**, 1455-1460; 1989, **29**, 997-1002 (*1-Demethylhypaconitine, Flavaconijine*)
Wang, H. *et al., Heterocycles*, 1988, **27**, 1615-1621 (*Benzoyldeoxyaconine*)
Mori, T. *et al., Heterocycles*, 1989, **29**, 873-885 (*Benzoylhypaconine*)
Zhang, W.D. *et al., Yaoxue Xuebao*, 1992, **27**, 670-673 (*Neojiangyouaconitine*)
Wang, X.K. *et al., Chin. Chem. Lett.*, 1994, **5**, 671-672 (*Aldohypaconitine*)
Sun, W. *et al., Planta Med.*, 1999, **65**, 432-436 (*Lipodeoxyaconitine, Lipohypaconitine, ms*)
Gao, L.M. *et al., Chin. Chem. Lett.*, 2005, **16**, 475-478 (*Spicatine B*)
Zhang, F. *et al., Chin. Chem. Lett.*, 2005, **16**, 1043-1046 (*10-Deoxyflavaconitine*)
Zhang, F. *et al., Zhongguo Yaoxue Zazhi*, 2006, **41**, 1851-1854; *CA*, **148**, 210217b (*3-Deoxyaconine 8-linoleate*)
Lee, S.Y. *et al., Arch. Pharmacal Res.*, 2007, **30**, 691-694 (*8-O-Methylhypaconine*)

4-Methylaconitane-1,7,8,9,10,14,16,18-octol M-344



$C_{19}H_{29}NO_8$ 399.44

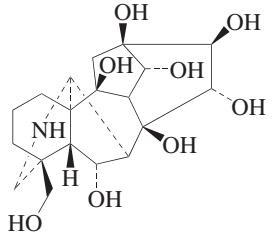
(1α,5β,14α,16β)-*form*

7,8-Methylene ether, O^{14},O^{16},O^{18}-*tri-Me,* N-*Et, 1-Ac:* ***Talitine C***
[110081-94-2]
$C_{27}H_{41}NO_9$ 523.622
Alkaloid from the roots of *Delphinium taliense* (Ranunculaceae).

7,8-Methylene ether, O^1,O^{14},O^{16},O^{18}-*tetra-Me,* N-*Et:* ***Talitine A***
[110120-83-7]
$C_{26}H_{41}NO_8$ 495.612
Alkaloid from *Delphinium taliense* (Ranunculaceae).

Chen, S. *et al., Yunnan Zhiwu Yanjiu*, 1986, **8**, 81; 1987, **9**, 365; *CA*, **107**, 112626t; **108**, 147146j (*isol, ir, pmr, struct*)

4-Methylaconitane-6,8,10,13,14,15,16,18-octol M-345



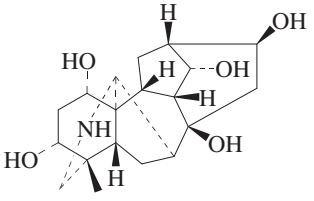
$C_{19}H_{29}NO_8$ 399.44

(5β,6α,14α,15α,16β)-*form*

O^6,O^{16},O^{18}-*Tri-Me, 14-benzoyl, 8-Ac:* ***Polyschistine C***
[96562-90-2]
$C_{31}H_{41}NO_{10}$ 587.666
Alkaloid from the roots of *Aconitum polyschistum* (Ranunculaceae). Amorph. solid.

Wang, H. *et al., Heterocycles*, 1985, **23**, 803 (*pmr, cmr, struct*)

4-Methylaconitane-1,3,8,14,16-pentol M-346



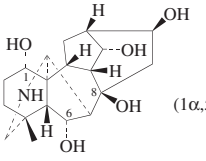
$C_{19}H_{29}NO_5$ 351.442

(1α,3α,5β,14α,16β)-*form*

O^8,O^{16}-*Di-Me,* N-*Et:* ***Crispulidine***
$C_{23}H_{37}NO_5$ 407.549
Alkaloid from *Delphinium crispulum*. Racemic.

Ulubelen, A. *et al., Phytochemistry*, 1999, **50**, 513-516 (*isol, ir, pmr, cmr, ms*)

4-Methylaconitane-1,6,8,14,16-pentol M-347



(1α,5β,6α,14α,16β)-*form*

$C_{19}H_{29}NO_5$ 351.442

C-6 Configs. for alkaloids covered by this entry follows from the revised struct. of Peregrine based X-ray anal. of Peregrine alcohol (1994).

(1α,5β,6α,14α,16β)-*form*

O^1,O^6,O^{16}-*Tri-Me,* N-*Et:* ***Royleinine***
$C_{24}H_{39}NO_5$ 421.576
Alkaloid from *Delphinium roylei*. Amorph. powder.

(1α,5β,6β,14α,16β)-*form*

O^{16}-*Me,* N-*Et:* ***Bicolorine***†
[41478-10-8]
$C_{22}H_{35}NO_5$ 393.522
Minor alkaloid from *Delphinium bicolor* (Ranunculaceae). Hydrol. prod. of Bicoloridine. Mp 190-191°. $[\alpha]_D^{24}$ +16 ($CHCl_3$).

O^{16}-*Me,* N-*Et, 6-Ac:* ***Bicolorine 6-O-acetate***
$C_{24}H_{37}NO_6$ 435.559
Alkaloid from *Delphinium bicolor* (Ranunculaceae). Cryst. (CH_2Cl_2/hexane). Mp 165-167°. $[\alpha]_D$ +19 (c, 0.2 in $CHCl_3$).

O^{16}-*Me,* N-*Et, 14-Ac:* ***Bicolorine 14-O-acetate***
[130774-04-8]
$C_{24}H_{37}NO_6$ 435.559
Alkaloid from *Delphinium nuttallianum* (Ranunculaceae).

O^{16}-*Me,* N-*Et, 1,8-di-Ac:* ***Souline A***
[244246-51-3]
$C_{26}H_{39}NO_7$ 477.597
Alkaloid from *Delphinium souliei*. Cryst.

O^1,O^{16}-*Di-Me,* N-*Et:* ***Regaline***. *Munzianine*
[119459-58-4]
$C_{23}H_{37}NO_5$ 407.549
Alkaloid from epigeal parts of *Consolida regalis* ssp. *paniculata* and *Delphinium munzianum* (Ranunculaceae). Cryst. (hexane/EtOAc). Mp 154-157°. $[\alpha]_D$ +3.8 (c, 0.2 in $CHCl_3$). The CA abstract diag. omits the 14-OH group. Regaline and Munzianine not compared but same struct. assigned. Physical data refer to Munzianine.

O^{6},O^{16}-*Di-Me,* N-*Et:* ***Dihydropentagynine***
[84306-88-7]
$C_{23}H_{37}NO_5$ 407.549
Alkaloid from *Delphinium pentagynum* (Ranunculaceae). Mp 150-154°. $[\alpha]_D$ +43 (c, 0.12 in EtOH).

O^{8},O^{16}-*Di-Me,* N-*Et:* ***Bicoloridine alcohol***. *6-Deacetylbicoloridine*
$C_{23}H_{37}NO_5$ 407.549
Alkaloid from epigeal parts of *Delphinium peregrinum* var. *elongatum* (Ranunculaceae). Resin. $[\alpha]_D$ -3.3 (c, 0.24 in $CHCl_3$).

O^{8},O^{16}-*Di-Me,* N-*Et, 6-Ac:* ***Bicoloridine***
[41710-20-7]
$C_{25}H_{39}NO_6$ 449.586
Minor alkaloid from *Delphinium bicolor* (Ranunculaceae). Also isol. from the aerial parts of *Delphinium peregrinum* var. *elongatum* collected during flowering. Noncryst. Mp 240° (as hydroiodide). $[\alpha]_D^{24}$ +10 ($CHCl_3$).

O^{1},O^{8},O^{16}-*Tri-Me,* N-*Et:* ***Peregrine alcohol***. *6-O-Deacetylperegrine*
[113689-39-7]
$C_{24}H_{39}NO_5$ 421.576
Alkaloid from aerial parts of *Delphinium peregrinum*, *Delphinium davidii* and *Delphinium gueneri* (Ranunculaceae). $[\alpha]_D^{25}$ +14 (c, 0.12 in MeOH).

O^{1},O^{8},O^{16}-*Tri-Me,* N-*Et, 6-Ac:* ***Peregrine***
[113689-38-6]
$C_{26}H_{41}NO_6$ 463.613
Alkaloid from aerial parts of *Delphinium peregrinum* var. *elongatum* (Ranunculaceae). Cryst. (EtOAc/hexane). Mp 124-125°. $[\alpha]_D$ +12 (c, 0.34 in EtOH).

O^{1},O^{8},O^{16}-*Tri-Me,* N-*Et, 6,14-di-Ac:* ***14-O-Acetylperegrine***
$C_{28}H_{43}NO_7$ 505.65
Alkaloid from aerial parts of *Delphinium munzianum* and from *Delphinium davisii* (Ranunculaceae). Resin. $[\alpha]_D$ -49.6 (c, 0.24 in $CHCl_3$).

O^{1},O^{8},O^{16}-*Tri-Me,* N-*Et, 14-benzoyl, 6-Ac:* ***14-O-Benzoylperegrine***
$C_{33}H_{45}NO_7$ 567.721
Alkaloid from aerial parts of *Delphinium munzianum* (Ranunculaceae). Cryst. (hexane/EtOAc). Mp 112-114°. $[\alpha]_D$ -21 (c, 0.1 in $CHCl_3$).

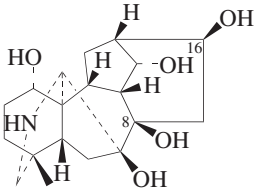
O^{1},O^{8},O^{14},O^{16}-*Tetra-Me, 6-Ac:* ***N-Deethyl-14-O-methylperegrine***
$C_{25}H_{39}NO_6$ 449.586
Alkaloid from aerial parts of *Delphinium gueneri* (Ranunculaceae). $[\alpha]_D^{22}$ -38.4 (c, 0.1 in MeOH).

O^{1},O^{8},O^{14},O^{16}-*Tetra-Me,* N-*Et, 6-Ac:* ***14-O-Methylperegrine***
$C_{27}H_{43}NO_6$ 477.64
Alkaloid from aerial parts of *Delphinium gueneri* (Ranunculaceae). $[\alpha]_D^{22}$ -28.9 (c, 0.2 in MeOH).

6-Ketone, O^{1},O^{8},O^{16}*-tri-Me,* N-*Et:* ***Munzianone***
[167782-16-3]
$C_{24}H_{37}NO_5$ 419.56
Alkaloid from aerial parts of *Delphinium munzianum* (Ranunculaceae). Cryst. (hexane/EtOAc). Mp 117-118°. $[\alpha]_D$ -25 (c, 0.17 in $CHCl_3$).

Jones, A.J. *et al., Can. J. Chem.*, 1973, **51**, 486 (*Bicolorine, isol*)
Pelletier, S.W. *et al., Tet. Lett.*, 1976, 3025 (*Bicolorine, cmr, struct*)
Codding, P.W. *et al., Acta Cryst. B*, 1981, **37**, 379 (*Bicoloridine, cryst struct*)
González, A.G. *et al., Phytochemistry*, 1982, **21**, 1781 (*Dihydropentagynine*)
Kulanthaivel, P. *et al., Phytochemistry*, 1986, **25**, 1511 (*Bicolorine 6-O-acetate*)
Sener, B. *et al., CA*, 1988, **110**, 111674g (*Regaline*)
de la Fuente, G. *et al., Heterocycles*, 1988, **27**, 1 (*Bicoloridine, Peregrine*)
Bai, Y. *et al., Heterocycles*, 1990, **31**, 1233 (*Bicolorine 14-O-acetate*)
Ulubelen, A. *et al., Phytochemistry*, 1992, **31**, 1019; 1993, **33**, 213 (*Peregrine alcohol, 14-O-Methylperegrine, N-Deethyl-14-O-methylperegrine*)
De la Fuente, G. *et al., Helv. Chim. Acta*, 1994, **77**, 1768 (*Peregrine, struct*)
De la Fuente, G. *et al., Phytochemistry*, 1995, **39**, 1459-1465; 1467-1473 (*Bicoloridine alcohol, Munzianine, Munzianone, 14-O-Acetylperegrine, 14-O-Benzoylperegrine*)
Ulubelen, A. *et al., J. Nat. Prod.*, 1996, **59**, 300 (*14-O-Acetylperegrine, 6-O-Deacetylperegrine*)
Pan, X. *et al., Chin. Chem. Lett.*, 1998, **9**, 57-59 (*Souline A*)
Ulubelen, A. *et al., Heterocycles*, 2000, **53**, 2279-2282 (*Royleinine*)

4-Methylaconitane-1,7,8,14,16-pentol M-348



$C_{19}H_{29}NO_5$ 351.442

(1α,5β,14α,16β)-*form*

O^{16}-*Me,* N-*Et:* ***Leroyine***
[145249-70-3]
$C_{22}H_{35}NO_5$ 393.522
Alkaloid from *Delphinium leroyi* (Ranunculaceae). Amorph. solid.

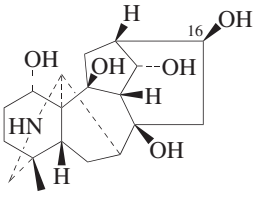
O^{16}-*Me,* N-*Et, 14-Ac:* ***Leroyine 14-acetate***
[145204-93-9]
$C_{24}H_{37}NO_6$ 435.559
Alkaloid from whole plants of *Delphinium leroyi* (Ranunculaceae). Amorph. solid.

O^{8},O^{16}-*Di-Me,* N-*Et:* ***Blacknidine***
[164176-13-0]
$C_{23}H_{37}NO_5$ 407.549
Alkaloid from whole plants of *Delphinium elatum* var. "black night" (Ranunculaceae). Amorph. solid. $[\alpha]_D$ +8.05 (c, 0.642 in $CHCl_3$).

7,8-Methylene ether, O^{1},O^{14},O^{16}*-tri-Me,* N-*Et:* ***Occidentaline***. *6-Deoxydelpheline*
[113707-10-1]
$C_{25}H_{39}NO_5$ 433.587
Alkaloid from *Delphinium barbeyi* and *Delphinium occidentale* (Ranunculaceae). Mp 119.5-120.5° (112-115°).

Kulanthaivel, P. *et al., Heterocycles*, 1988, **27**, 339-342 (*Occidentaline*)
Joshi, B.S. *et al., Tet. Lett.*, 1988, **29**, 2397-2400 (*6-Deoxydelpheline*)
Bai, Y. *et al., Phytochemistry*, 1992, **31**, 3243-3245 (*Leroyine, Leroyine 14-acetate*)
Park, J.C. *et al., J. Nat. Prod.*, 1995, **58**, 291 (*Blacknidine*)

4-Methylaconitane-1,8,10,14,16-pentol M-349



$C_{19}H_{29}NO_5$ 351.442

(1α,14α,16β)-*form*

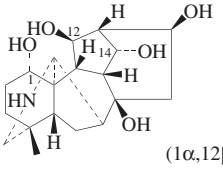
O^{16}-*Me,* N-*Et:* ***Karakolidine***. *Karacolidine. 10β-Hydroxykarakoline*
[41655-13-4]
$C_{22}H_{35}NO_5$ 393.522
Alkaloid from tubers of *Aconitum karakolicum* (Ranunculaceae). Cryst. (MeOH). Mp 222-224°.

O^{1},O^{16}-*Di-Me,* N-*Et:* ***Genicunine B***
[287186-10-1]
$C_{23}H_{37}NO_5$ 407.549
Alkaloid from *Aconitum geniculatum* and *Aconitum variegatum*. $[\alpha]_D^{24}$ +3.4 (c, 0.6 in $CHCl_3$).

O^{1},O^{16}-*Di-Me,* N-*Et,* O^{14}-*Ac:* ***14-O-Acetylgenicunine B***
[852381-85-2]
$C_{25}H_{39}NO_6$ 449.586
Alkaloid from *Aconitum variegatum*. Amorph. solid. $[\alpha]_D^{20}$ +24.2 (c, 0.55 in $CHCl_3$).

Sultankhodzhaev, M.N. *et al., Khim. Prir. Soedin.*, 1975, **11**, 481; *Chem. Nat. Compd. (Engl. Transl.)*, 1975, **11**, 498 (*Karakolidine*)
Diaz, J.G. *et al., Phytochemistry*, 2005, **66**, 837-846 (*Genicunine B, 14-O-Acetylgenicunine B*)

4-Methylaconitane-1,8,12,14,16-pentol M-350



(1α,12β,14α,16β)-*form*

$C_{19}H_{29}NO_5$ 351.442

(1α,12β,14α,16β)-*form*

O^{14},O^{16}-*Di-Me,* N-*Et:* ***12β-Hydroxykarasamine***
[161993-26-6]
$C_{23}H_{37}NO_5$ 407.549
Minor alkaloid from *Delphinium nuttallianum* (Ranunculaceae). Amorph. solid.

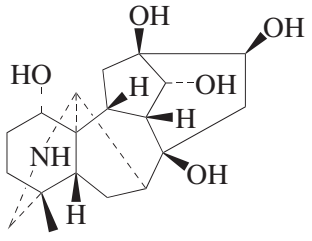
O^{14},O^{16}-*Di-Me,* N-*Et,* O^{8}-*Ac:* ***12β-Hydroxykarasamine 8-O-acetate***
[161993-23-3]
$C_{25}H_{39}NO_6$ 449.586
Minor alkaloid from *Delphinium nuttallianum*. Amorph. solid.

(1β,12β,14α,16β)-*form*

O^{14},O^{16}-*Di-Me,* N-*Et:* ***1-Epi-12β-hydroxykarasamine***
[161993-24-4]
$C_{23}H_{37}NO_5$ 407.549
Minor alkaloid from *Delphinium nuttallianum* (Ranunculaceae). Amorph. solid.

Bai, Y. *et al., Phytochemistry*, 1994, **37**, 1717-1724 (*isol*)

4-Methylaconitane-1,8,13,14,16-pentol M-351



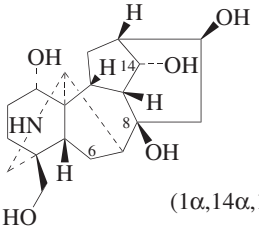
$C_{19}H_{29}NO_5$ 351.442

(1α,5β,14α,16β)-*form*

O^{1},O^{16}-*Di-Me,* N-*Et:* ***Conaconitine***
[128357-74-4]
$C_{23}H_{37}NO_5$ 407.549
Alkaloid from the roots of *Aconitum contortum* (Ranunculaceae).

Wang, S. *et al., Huaxue Xuebao*, 1989, **47**, 1101; *CA*, **113**, 55802

4-Methylaconitane-1,8,14,16,18-pentol M-352



(1α,14α,16β)-*form*

$C_{19}H_{29}NO_5$ 351.442
► AR5541000

(1α,14α,16β)-*form*

O^{16}-*Me,* N-*Et:* ***Columbianine***
[90579-23-0]
$C_{22}H_{35}NO_5$ 393.522
Minor alkaloid from the aerial parts of *Aconitum columbianum* (Ranunculaceae). Cryst. (MeOH). Mp 202-205°. $[\alpha]_D$ -6 (c, 0.5 in EtOH).

O^{16}-*Me,* N-*Et, 18*-O-*(2-aminobenzoyl):* ***Acoseptridinine***
[146001-06-1]
$C_{29}H_{40}N_2O_6$ 512.645
Alkaloid from roots of *Aconitum septentrionale*. Amorph. solid. $[\alpha]_D$ +1.5 (c, 0.345 in $CHCl_3$).

O^{16}-*Me,* N-*Et, 8*-O-*(2-hydroxyphenyl), 18*-O-*[2-(methoxycarbonylamino)benzoyl]:* ***Linearilobine***
[914475-08-4]
$C_{37}H_{46}N_2O_9$ 662.778
Alkaloid from the roots of *Delphinium linearilobum*. Amorph. solid. λ_{max} 222 (log ϵ 4.5); 252 (log ϵ 3.6); 308 (log ϵ 2) (MeOH).

O^{1},O^{16}-*Di-Me,* N-*Et:* ***Cammaconine***. *Aconoridine*
[32152-70-8]
$C_{23}H_{37}NO_5$ 407.549
Alkaloid from the above-ground parts of *Aconitum variegatum*, roots of *Aconitum forrestii* and *Aconitum dolichorhynchum* var. *subglabratum* and the aerial parts of *Aconitum columbianum* (Ranunculaceae). Also isol from *Notopterygium incisium*. Rods (MeOH). Mp 136-138°. $[\alpha]_D$ 0 (c, 1.0 in $CHCl_3$). pK_a 9.55 (50% MeOH). Struct. revised in 1980.

O^{1},O^{16}-*Di-Me,* N-*Et, hydroiodide:* Mp 225-227°.

O^{1},O^{16}-*Di-Me,* N-*Et, 18-Ac:* ***18-Acetylcammaconine***
$C_{25}H_{39}NO_6$ 449.586
Alkaloid from the roots of *Aconitum piepunense*. Amorph. powder. Mp 123-125°. $[\alpha]_D^{20}$ -1.7 (c, 0.5 in $CHCl_3$).

O^{1},O^{16}-*Di-Me,* N-*Et, 14*-O-*(3,4-dimethoxybenzoyl):* ***Geniculatine D***
[359798-76-8]
$C_{32}H_{45}NO_8$ 571.709
Alkaloid from *Aconitum geniculatum*. Amorph. solid. $[\alpha]_D$ +7.3 (c, 0.6 in $CHCl_3$).

O^{1},O^{16}-*Di-Me,* N-*Et, 18*-O-*(2-aminobenzoyl):* ***Acobretine E***
[158734-29-3]
$C_{30}H_{42}N_2O_6$ 526.672
Alkaloid from roots of *Aconitum brevicalcaratum* (Ranunculaceae).

O^{1},O^{16}-*Di-Me,* N-*Et, 18*-O-*(2-acetamidobenzoyl):* ***Aconorine***
[58969-45-2]
$C_{32}H_{44}N_2O_7$ 568.709
Alkaloid from *Aconitum orientale* and *Aconitum columbianum* (Ranunculaceae). Amorph. Mp 237° (as perchlorate).

O^{8},O^{16}-*Di-Me,* N-*Et:* ***Raveyine***. *8*-O-*Methylcolumbianine*
[199273-28-4]
$C_{23}H_{37}NO_5$ 407.549
Alkaloid from the aerial parts of *Consolida raveyi* and from *Consolida oliveriana* (Ranunculaceae). Amorph. solid. $[\alpha]_D$ -4.1 (c, 1 in $CHCl_3$). $[\alpha]_D^{25}$ -2.9 (c, 0.1 in $CHCl_3$).

O^{16},O^{18}-*Di-Me,* N-*Et:* ***Isotalatizidine***
[7633-68-3]
$C_{23}H_{37}NO_5$ 407.549
Alkaloid from the roots of *Aconitum carmichaeli*, *Aconitum talassicum* and *Delphinium denudatum*, the aerial parts of *Aconitum columbianum*, and from *Aconitum japonicum* (Ranunculaceae). Cryst. (Et_2O/hexane). Mp 116-117° Mp 140-142°.

O^{16},O^{18}-*Di-Me,* N-*Et, 14-Ac:* ***Condelphine***. *14-Acetylisotalatizidine*
[7633-69-4]
$C_{25}H_{39}NO_6$ 449.586
Alkaloid from *Delphinium denudatum*, *Delphinium confusum*, *Delphinium oreophilum*, *Delphinium iliense*, *Delphinium poltoratzkii* and *Aconitum japonicum* (Ranunculaceae). Cryst. (Et_2O/MeOH). Mp 158-159°. $[\alpha]_D^{30}$ +21.3 ($CHCl_3$).

O^{16},O^{18}-*Di-Me,* N-*Et, 8,14-di-Ac:* ***8-Acetylcondelphine***
[211358-75-7]
$C_{27}H_{41}NO_7$ 491.623
Alkaloid from *Delphinium pyrimadale*. $[\alpha]_D$ -28.5 (c, 1.5 in $CHCl_3$).

O^{16},O^{18}-*Di-Me,* N-*Et, 8*-O-*(3,4-dimethoxybenzoyl), 14-Ac:* ***Geniculatine C***
[359798-74-6]
$C_{34}H_{47}NO_9$ 613.747
Alkaloid from *Aconitum geniculatum*. Amorph. solid. $[\alpha]_D$ +50 (c, 0.7 in $CHCl_3$).

O^{16},O^{18}-*Di-Me,* N-*Et, 14*-O-*(3,4-dimethoxycinnamoyl):* ***Gymnaconitine***
[103956-41-8]
$C_{34}H_{47}NO_8$ 597.747
Alkaloid from *Aconitum gymnandrum* (Ranunculaceae). Cryst. Mp 110-111°. $[\alpha]_D^{17}$ +18.2.

O^{1},O^{14},O^{16}-*Tri-Me,* N-*Et:* ***Scaconine***
[156310-13-3]
$C_{24}H_{39}NO_5$ 421.576
Alkaloid from *Aconitum scaposum* var. *vaginatum* and *Aconitum brevicalcaratum*. Amorph.

O^{1},O^{14},O^{16}-*Tri-Me,* N-*Et, 18*-O-*(2-aminobenzoyl):* **N-*Deacetylscaconitine***
[155653-05-7]
$C_{31}H_{44}N_2O_6$ 540.698
Alkaloid from *Aconitum scaposum* var. *vaginatum* and *Aconitum brevicalcaratum*. Amorph.

O^{1},O^{14},O^{16}-*Tri-Me,* N-*Et, 18*-O-*(2-acetamidobenzoyl):* ***Scaconitine***
[156310-14-4]
$C_{33}H_{46}N_2O_7$ 582.736
Alkaloid from *Aconitum scaposum* var. *vaginatum* and *Aconitum brevicalcaratum*. Amorph.

O^{1},O^{16},O^{18}-*Tri-Me,* N-*Et:* ***Talatizamine***. *Talatisamine*
[20501-56-8]
$C_{24}H_{39}NO_5$ 421.576
Alkaloid from *Aconitum talassicum*, *Aconitum nemorum*, *Aconitum carmichaeli*, *Aconitum variegatum*, *Aconitum franchetii*, *Aconitum forrestii*, *Aconitum columbianum*, *Aconitum saposhnikovii*, *Aconitum pseudogeniculatum* and others. Mp 145-146° (142-143°). $[\alpha]_D$ 0 (c, 1.0 in EtOH).

O^{1},O^{16},O^{18}-*Tri-Me,* N-*Et, 14-Ac:* ***14-Acetyltalatizamine***
[71239-55-9]
$C_{26}H_{41}NO_6$ 463.613
Alkaloid from *Aconitum japonicum*,

the aerial parts of *Aconitum columbianum* and the roots of *Aconitum carmichaeli* (Ranunculaceae). Amorph. powder. $[\alpha]_D^{20}$ +19.7 (c, 0.36 in $CHCl_3$).

O^1,O^{16},O^{18}-*Tri-Me,* N-*Et, 8-benzoyl, 14-Ac:* ***Transconitine A***. *14-Acetyl-8-benzoyltalatizamine*
[175923-71-4]
$C_{33}H_{45}NO_7$ 567.721
Alkaloid from roots of *Aconitum transsectum* (Ranunculaceae). Amorph. $[\alpha]_D^{20}$ +16.9 (c, 0.002 in $CHCl_3$).

O^1,O^{16},O^{18}-*Tri-Me,* N-*Et, 14-benzoyl:* ***14-Benzoyltalatizamine***
[11037-59-5]
$C_{31}H_{43}NO_6$ 525.684
Alkaloid from roots of *Aconitum kongboense* (Ranunculaceae) and *Aconitum nemorum*. Cryst. (hexane/Me_2CO). Mp 104-105°. Erroneously claimed to be novel by Sultankhodzhaev.

O^1,O^{16},O^{18}-*Tri-Me,* N-*Et, 8*-O-*(4-methoxybenzoyl), 14-Ac:* ***Dolichotine A***. *14-Acetyl-8-anisoyltalatizamine*
[128364-21-6]
$C_{34}H_{47}NO_8$ 597.747
Minor alkaloid from roots of *Aconitum dolichorhynchum* var. *subglabratum* (Ranunculaceae). Amorph. $[\alpha]_D$ +15.2 ($CHCl_3$).

O^1,O^{16},O^{18}-*Tri-Me,* N-*Et, 14*-O-*(4-methoxybenzoyl):* ***14-Anisoyltalatizamine***
[592528-66-0]
$C_{32}H_{45}NO_7$ 555.71
Alkaloid from the roots of *Aconitum bulleyanum*. Amorph. $[\alpha]_D^{20}$ +12.5 (c, 0.15 in $CHCl_3$).

O^1,O^{14},O^{16}-*Tri-Me,* N-*Et, 18*-O-*(2-aminobenzoyl), 8-Ac:* ***Acobretine A***
[156318-68-2]
[158734-30-6]
$C_{33}H_{46}N_2O_7$ 582.736
Alkaloid from roots of *Aconitum brevicalcaratum* (Ranunculaceae).

O^1,O^{14},O^{16}-*Tri-Me,* N-*Et, 18*-O-*(2-acetamidobenzoyl), 8-Ac:* ***Acobretine D***
[155653-03-5]
$C_{35}H_{48}N_2O_8$ 624.773
Alkaloid from roots of *Aconitum brevicalcaratum* (Ranunculaceae).

O^1,O^{16},O^{18}-*Tri-Me,* N-*Et, 14*-O-*(4-methoxybenzoyl), 8-Ac:* ***8-Acetyl-14-anisoyltalatizamine***
[592528-65-9]
$C_{34}H_{47}NO_8$ 597.747
Alkaloid from the roots of *Aconitum bullayanum*. Amorph. $[\alpha]_D^{20}$ +14.3 (c, 0.15 in $CHCl_3$).

O^1,O^{16},O^{18}-*Tri-Me,* N-*Et, 8*-O-*(3,4-dimethoxybenzoyl), 14-Ac:* ***Dolichotine B***. *14-Acetyl-8-veratroyltalatizamine. Vilmorinine*
[128364-22-7]
$C_{35}H_{49}NO_9$ 627.773
Minor alkaloid from roots of *Aconitum dolichorhynchum* var. *subglabratum* and of *Aconitum vilmorianum* (Ranunculaceae). Amorph. $[\alpha]_D$ 0 ($CHCl_3$). Dolichotine B and Vilmorinine appear identical. Props. refer to Dolichotine B.

O^1,O^{16},O^{18}-*Tri-Me,* N-*Et, 14*-O-E-*cinnamoyl: 14*-O-trans-*Cinnamoyltalatizamine.* ***Leueantine C***
[499969-77-6]
$C_{33}H_{45}NO_6$ 551.722
Alkaloid from the roots of *Aconitum hemsleyanum* var. *leueanthus*. Amorph. powder. $[\alpha]_D^{20}$ +34.6 (c, 0.5 in $CHCl_3$).

O^1,O^{16},O^{18}-*Tri-Me,* N-*Et, 8*-O-E-*cinnamoyl, 14-Ac:* ***Dolichotine C***. *14-Acetyl-8*-trans-*cinnamoyltalatizamine*
[128364-23-8]
$C_{35}H_{47}NO_7$ 593.759
Minor alkaloid from roots of *Aconitum dolichorhynchum* var. *subglabratum* (Ranunculaceae). Amorph.

O^1,O^{16},O^{18}-*Tri-Me,* N-*Et, 14*-O-*(3,4-dimethoxycinnamoyl):* ***Methylgymnaconitine***
[103956-42-9]
$C_{35}H_{49}NO_8$ 611.774
Alkaloid from *Aconitum gymnandrum* (Ranunculaceae). Amorph. powder. $[\alpha]_D^{21}$ +33.2.

O^8,O^{14},O^{16}-*Tri-Me,* N-*Et, 18*-O-*(2-methoxybenzoyl):* ***Cyphoplectine***
[244616-82-8]
$C_{32}H_{45}NO_7$ 555.71
Alkaloid from *Delphinium cyphoplectrum*. Amorph. Racemic.

O^{14},O^{16},O^{18}-*Tri-Me,* N-*Et:* ***14-Methylisotalatizidine***
[114622-07-0]
$C_{24}H_{39}NO_5$ 421.576
Alkaloid from aerial parts of *Delphinium confusum* (Ranunculaceae). Cryst. (Me_2CO). Mp 136-137°.

O^1,O^8,O^{16},O^{18}-*Tetra-Me,* N-*Et:* ***8-O-Methyltalatizamine***
[90579-28-5]
$C_{25}H_{41}NO_5$ 435.603
Alkaloid from the aerial parts of *Aconitum columbianum* (Ranunculaceae). Amorph. $[\alpha]_D^{29.5}$ -4 (c, 1.16 in $CHCl_3$).

O^8-*Et,* O^1,O^{16}-*di-Me,* N-*Et, 18*-O-*(2-acetamidobenzoyl):* ***Talassicumine A***. *8*-O-*Ethylaconorine*
[160824-50-0]
$C_{34}H_{48}N_2O_7$ 596.762
Alkaloid from roots of *Aconitum talassicum* (Ranunculaceae). Amorph. powder.

O^8-*Et,* O^1,O^{14},O^{16}-*tri-Me,* N-*Et, 18*-O-*(2-aminobenzoyl):* ***Acobretine B***
[156310-15-5]
$C_{33}H_{48}N_2O_6$ 568.752
Alkaloid from roots of *Aconitum brevicalcaratum* (Ranunculaceae).

O^8-*Et,* O^1,O^{14},O^{16}-*tri-Me,* N-*Et, 18*-O-*(2-acetamidobenzoyl):* ***Acobretine C***
[156310-16-6]
$C_{35}H_{50}N_2O_7$ 610.789
Alkaloid from roots of *Aconitum brevicalcaratum* (Ranunculaceae).

O^8-*Et,* O^1,O^{16},O^{18}-*tri-Me,* N-*Et:* ***Columbidine***
[95690-58-7]
$C_{26}H_{43}NO_5$ 449.629
Alkaloid from the aerial parts of *Aconitum columbianum* ssp. *columbianum* and roots of *Aconitum dolichorhynchum* var. *subglabratum* (Ranunculaceae). Amorph. $[\alpha]_D^{25}$ -6.4 (c, 1.4 in $CHCl_3$).

O^8-*Et,* O^1,O^{16},O^{18}-*tri-Me,* N-*Et, 14-Ac:* ***Acoforine***. *14-Acetylcolumbidine*
[95690-59-8]
$C_{28}H_{45}NO_6$ 491.667
Alkaloid from the roots of *Aconitum forrestii* (Ranunculaceae). Amorph. $[\alpha]_D$ -35.3 (c, 0.57 in EtOH).

14-Ketone, O^1,O^{16},O^{18}-*tri-Me,* N-*Et:* ***14-Dehydrotalatizamine***
[36069-44-0]
$C_{24}H_{37}NO_5$ 419.56
Alkaloid from *Aconitum saposhnikovii*. Mp 128-130° (124-127°).

19-Oxo, O^1,O^{16},O^{18}-*tri-Me:* ***Piepunensine A***
$C_{22}H_{33}NO_6$ 407.506
Alkaloid from the roots of *Aconitum piepunense*. Amorph. powder. Mp 94-96°. $[\alpha]_D^{20}$ -16.9 (c, 0.5 in $CHCl_3$).

(1β,14α,16β)-*form*

O^{16},O^{18}-*Di-Me,* N-*Et:* ***Talatizidine***. *Talatisidine*
[7633-67-2]
$C_{23}H_{37}NO_5$ 407.549
Alkaloid from the roots of *Aconitum talassicum* and aerial parts of *Aconitum columbianum* (Ranunculaceae). Mp 218-219°. $[\alpha]_D$ -20 (MeOH).

O^{16},O^{18}-*Di-Me,* N-*Et, hydrochloride:* Mp 186.9°.

Konowalowa, R.A. *et al., Bull. Soc. Chim. Fr.*, 1940, **7**, 95-105; *CA*, **34**, 5450 (*Talatizidine, isol*)

Rabinovich, M.S. *et al., Zh. Obshch. Khim.*, 1942, **12**, 329-335; *CA*, **37**, 3098 (*Condelphine, isol*)

Khaimova, M.A. *et al., Dokl. Bulg. Akad. Nauk*, 1967, **20**, 193-196; *CA*, **67**, 54296c (*Cammaconine, isol*)

Pelletier, S.W. *et al., J.A.C.S.*, 1967, **89**, 4146-4157 (*Condelphine, Talatizidine, Isotalatizidine, occur, uv, ir, pmr, struct, synth*)

Brutko, L.I. *et al., CA*, 1968, **69**, 30133n (*Condelphine*)

Yunusov, M.S. *et al., Khim. Prir. Soedin.*, 1969, **5**, 515-519; *Chem. Nat. Compd. (Engl. Transl.)*, 1969, **5**, 434-437 (*Talatizamine, Talatizidine, ms*)

Khaimova, M.A. *et al., Tetrahedron*, 1971, **27**, 819-822 (*Talatisamine*)

Wiesner, K. *et al., J.A.C.S.*, 1974, **96**, 4990-4992 (*Talatisamine, synth*)

Tel'nov, V.A. *et al., Khim. Prir. Soedin.*, 1975, **11**, 814-815; *Chem. Nat. Compd. (Engl. Transl.)*, 1975, **11**, 830-831 (*Aconorine*)

Wiesner, K. *et al., Pure Appl. Chem.*, 1975, **41**, 93-112 (*Talatisamine, synth, rev*)

Pelletier, S.W. *et al., J.A.C.S.*, 1976, **98**, 2626-2636 (*cmr*)

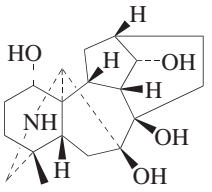
Pelletier, S.W. *et al., Acta Cryst. B*, 1977, **33**, 716-722 (*Condelphine, cryst struct, abs config*)

Sakai, S. *et al., Yakugaku Zasshi*, 1979, **99**, 647-656; *CA*, **91**, 105185w (*14-Acetyltalatizamine*)

Mody, N.V. *et al., Heterocycles*, 1980, **14**, 1751-1752 (*Cammaconine*)

Finer-Moore, J. *et al., J.O.C.*, 1981, **46**, 3399-3406 (*cmr*)
Konno, C. *et al., J. Nat. Prod.*, 1982, **45**, 128-133 (*14-Acetyltalatizamine*)
Sultankhodzhaev, M.N. *et al., Khim. Prir. Soedin.*, 1982, **18**, 265-266; *Chem. Nat. Compd. (Engl. Transl.)*, 1982, **18**, 249-250 (*14-Dehydrotalatizamine*)
Wang, C. *et al., Planta Med.*, 1983, **48**, 55 (*Cammaconine, occur*)
Boido, V. *et al., Can. J. Chem.*, 1984, **62**, 778-784 (*Talatizidine, 8-O-Methyltalatizamine, 14-Acetyltalatizamine, 14-Dehydrotalatizamine, Columbianine*)
Pelletier, S.W. *et al., Heterocycles*, 1985, **23**, 331-338; 1987, **25**, 365-376 (*8-O-Methyltalatizamine, Columbidine, 14-Dehydrotalatizamine, Acoforine*)
Hao, X.J. *et al., Yunnan Zhiwu Yanjiu*, 1985, **7**, 217 (*Scaconine, Scaconitine, N-Deacetylscaconitine*)
Liang, X.-T. *et al., Pure Appl. Chem.*, 1986, **58**, 711-718 (*Gymnaconitine, Methylgymnaconitine*)
Jiang, S. *et al., Yaoxue Xuebao*, 1986, **21**, 279-284; *CA*, **105**, 94502b (*Gymnaconitine, Methylgymnaconitine*)
Vaisov, Z.M. *et al., Khim. Prir. Soedin.*, 1987, **23**, 869-872; *Chem. Nat. Compd. (Engl. Transl.)*, 1987, **23**, 725-727 (*14-Methylisotalatizidine*)
Huiling, L. *et al., Heterocycles*, 1989, **29**, 2317-2326 (*Dolichotines*)
Yunusov, M.S. *et al., Nat. Prod. Rep.*, 1991, **8**, 499-526 (*Scaconine, Scaconitine, N-Deacetylscaconitine*)
Ding, L. *et al., Huaxue Xuebao*, 1992, **50**, 405-408; *CA*, **117**, 108100f (*Vilmorinine*)
Sayed, H.M. *et al., J. Nat. Prod.*, 1992, **55**, 1595-1606 (*Acoseptridinine*)
Li, Y. *et al., Huaxue Xuebao*, 1994, **52**, 204-208; *CA*, **121**, 78248y (*Scaconine, Scaconitine, N-Deacylscaconitine, Acobretines A-C*)
Yue, J.-M. *et al., Phytochemistry*, 1994, **35**, 829-831; **37**, 1467-1470 (*14-Benzoyltalatizamine, Talassicumine A*)
Li, Y. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 1994, **36**, 148-152; *CA*, **121**, 251236t (*Acobretines D,E*)
Sultankhodzhaev, M.N. *et al., Khim. Prir. Soedin.*, 1995, 283-284; *Chem. Nat. Compd. (Engl. Transl.)*, 1995, 233-234 (*14-Benzoyltalatizamine*)
Gao, L.M. *et al., Chin. Chem. Lett.*, 1996, **7**, 135-138 (*Transconitine A*)
Meriçli, A.H. *et al., Heterocycles*, 1997, **45**, 1955-1965; 1999, **51**, 1843-1848 (*Raveyine, Cyphoplectine*)
Zheng, S. *et al., Phytochemistry*, 1997, **46**, 951-954 (*Transconitine A*)
Ulubelen, A. *et al., Phytochemistry*, 1998, **48**, 385-388 (*8-Acetylcondelphine, Isotalatizidine*)
Meriçli, A.H. *et al., Heterocycles*, 1999, **51**, 1843-1848 (*Cyphoplectine*)
Li, Z.-B. *et al., J. Asian Nat. Prod. Res.*, 2001, **3**, 131-137 (*Geniculatines*)
Grandez, M. *et al., J. Nat. Prod.*, 2002, **65**, 513-516 (*8-O-Methylcolumbianine*)
Jiang, S.-H. *et al., Planta Med.*, 2002, **68**, 1147-1149 (*14-Anisoyltalatizamine, 8-Acetyl-14-anisoyltalatizamine*)
Li, L.-Y. *et al., J. Nat. Prod.*, 2003, **66**, 269-271 (*Leueantine C*)
Tashkhodzhaev, B. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2005, **41**, 611-612 (*Talatisamine, cryst struct*)
Cai, L. *et al., Chem. Pharm. Bull.*, 2006, **54**, 779-781 (*18-Acetylcammaconine, Cammaconine, Piepunensine A*)
Kolak, U. *et al., Phytochemistry*, 2006, **67**, 2170-2175 (*Linearilobine*)

4-Methylaconitane-1,7,8,14-tetrol M-353



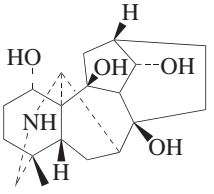
$C_{19}H_{29}NO_4$ 335.442

(1α,5β,14α)-*form*

N-*Et:* ***Cardiopetalidine***
[75375-44-9]
$C_{21}H_{33}NO_4$ 363.496
Alkaloid from *Delphinium cardiopetalum* (*Delphinium verdunense*) (Ranunculaceae). Mp 223-227°. $[\alpha]_D$ +1.1 (c, 0.18 in EtOH).

González, A.G. *et al., Tet. Lett.*, 1980, **21**, 1155-1158 (*ir, pmr, ms, cryst struct*)
Khairitdinova, E.D. *et al., Russ. Chem. Bull. (Engl. Transl.)*, 2003, **52**, 2078-2080 (*isol, cmr*)

4-Methylaconitane-1,8,10,14-tetrol M-354



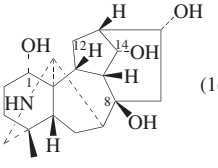
$C_{19}H_{29}NO_4$ 335.442

(1α,14α)-*form*

O^1-*Me,* N-*Et:* ***Racemuloline B***
$C_{22}H_{35}NO_4$ 377.523
Alkaloid from *Aconitum racemulosum* var. *pengzhouense*. Amorph. powder. $[\alpha]_D^{17}$ +20.5 (c, 0.55 in $CHCl_3$).

Peng, C.-S. *et al., Heterocycles*, 2002, **57**, 1117-1120 (*isol, pmr, cmr*)

4-Methylaconitane-1,8,14,16-tetrol M-355



(1α,14α,16α)-*form*

$C_{19}H_{29}NO_4$ 335.442

▶AR5569480

(1α,14α,16α)-*form*

O^1-*Me,* N-*Et:* ***Genicunine A***
[287186-09-8]
$C_{22}H_{35}NO_4$ 377.523
Alkaloid from the roots of *Aconitum geniculatum*. $[\alpha]_D^{24}$ -6 (c, 0.6 in $CHCl_3$). There is confusion over the stereochem. of the C-16 position.

(1α,14α,16β)-*form*

N-*Et:* ***16-Hydroxycardiopetaline***
$C_{21}H_{33}NO_4$ 363.496
Alkaloid from *Aconitum variegatum*. Amorph. solid. $[\alpha]_D^{20}$ -11.3 (c, 0.15 in $CHCl_3$).

N-*Et, 16-Ac:* ***16-Acetoxycardiopetaline***
[160884-40-2]
$C_{23}H_{35}NO_5$ 405.533
Alkaloid from seeds of *Aconitum napellus* ssp. *vulgare* (Ranunculaceae).

O^1-*Me,* N-*Et:* ***Kongboensine***. *16-Demethylsachaconitine*
[163734-40-5]
$C_{22}H_{35}NO_4$ 377.523
Alkaloid from roots of *Aconitum kongboense* (Ranunculaceae).

O^{16}-*Me, 14-Ac:* ***Hokbusine B***
[86500-46-1]
$C_{22}H_{33}NO_5$ 391.506
Alkaloid from the roots of *Aconitum carmichaeli* (Ranunculaceae). Prisms (MeOH). Mp 183-185°.

O^{16}-*Me,* N-*Et:* ***Karakoline***. *Karacoline. Carmichaeline*
[39089-30-0]
$C_{22}H_{35}NO_4$ 377.523
Alkaloid from the tubers of *Aconitum carmichaeli*, the tubers and aerial parts of *Aconitum karakolicum*, and from *Delphinium pentagynum* (Ranunculaceae). Cryst. (Me_2CO). Mp 183-184°. $[\alpha]_D^{17}$ -10 (c, 0.3 in MeOH).

O^{16}-*Me,* N-*Et, 14-Ac:* ***14-Acetylkarakoline***
[86538-27-4]
$C_{24}H_{37}NO_5$ 419.56
Alkaloid from the aerial parts of *Delphinium confusum* (Ranunculaceae). Cryst. (Me_2CO). Mp 99-100°.

O^{16}-*Me,* N-*Et, tri-Ac:* Mp 165-169°.

O^1,O^{16}-*Di-Me,* N-*Et:* ***Sachaconitine***. *Vilmorrianine D*
[1361-02-0]
$C_{23}H_{37}NO_4$ 391.55
Alkaloid from roots of *Aconitum vilmorrianum* and *Aconitum miyabei* and aerial parts of *Aconitum columbianum* (Ranunculaceae). Plates (EtOH). Mp 129-130°. $[\alpha]_D^{20}$ -13.08 (c, 2.35 in EtOH).

O^1,O^{16}-*Di-Me,* N-*Et; hydrochloride:* Needles (Me_2CO/EtOH). Mp 203-204°. $[\alpha]_D^{20}$ -30.43 (c, 0.78 in EtOH).

O^1,O^{16}-*Di-Me,* N-*Et, 14-Ac:* ***14-Acetylsachaconitine***. *Austroconitine A*
[102719-98-2]
$C_{25}H_{39}NO_5$ 433.587
Alkaloid from *Aconitum delphinifolium* (Ranunculaceae). Amorph. solid; cryst. (as perchlorate). Mp 182-184° (perchlorate). $[\alpha]_D$ +24.8 (c, 0.6 in $CHCl_3$).

O^1,O^{16}-*Di-Me,* N-*Et, 14-benzoyl:* ***14-Benzoylsachaconitine***
$C_{30}H_{41}NO_5$ 495.658
Alkaloid from the roots of *Aconitum nagarum* var. *lasiandrum*. Amorph. powder. $[\alpha]_D^{25}$ +33.3 (c, 0.005 in $CHCl_3$).

O^{1},O^{16}-*Di-Me,* N,O^{8}-*di-Et:* ***8-O-Ethylsachaconitine***
$C_{25}H_{41}NO_4$ 419.603
Alkaloid from *Aconitum variegatum*. Amorph. solid. $[\alpha]_D^{25}$ -17.6 (c, 0.08 in $CHCl_3$).

O^{8},O^{16}-*Di-Me,* N-*Et:* ***8-O-Methylkarakoline***. *8-Methoxykarakoline (incorr.)*
[1015699-82-7]
$C_{23}H_{37}NO_4$ 391.55
Alkaloid from *Delphinium gracile*. Amorph. solid. $[\alpha]_D$ +12.5 (c, 0.032 in $CHCl_3$).

O^{14},O^{16}-*Di-Me,* N-*Et:* ***Karasamine***
[84714-33-0]
$C_{23}H_{37}NO_4$ 391.55
Alkaloid from the aerial parts of budding *Aconitum karakolicum* (Ranunculaceae).

O^{14},O^{16}-*Di-Me,* N-*Et, 8-Ac:* ***8-O-Acetylkarasamine***
[161993-25-5]
$C_{25}H_{39}NO_5$ 433.587
Minor alkaloid from *Delphinium nuttallianum* (Ranunculaceae). Amorph. solid.

O^{14},O^{16}-*Di-Me,* N-*Et, 1-benzoyl:* ***1-Benzoylkarasamine***
[84732-43-4]
$C_{30}H_{41}NO_5$ 495.658
Alkaloid from the aerial parts of budding *Aconitum karakolicum* (Ranunculaceae).

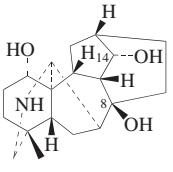
O^{1},O^{8},O^{16}-*Tri-Me,* N-*Et:* ***8-O-Methylsachaconitine***
[195153-58-3]
$C_{24}H_{39}NO_4$ 405.576
Alkaloid from *Delphinium cardiopetalum* (Ranunculaceae). Resin. $[\alpha]_D$ +7 (c, 0.06 in EtOH).

O^{8},O^{14},O^{16}-*Tri-Me,* N-*Et:* ***8-O-Methylkarasamine***
[125263-88-9]
$C_{24}H_{39}NO_4$ 405.576
Minor alkaloid from *Delphinium nuttallianum* (Ranunculaceae). Amorph. solid. $[\alpha]_D^{23}$ -5.

1-Deoxy, 1,2-didehydro, O^{16}-*Me,* N-*Et:* ***Delpoline***
$C_{22}H_{33}NO_3$ 359.508
Alkaloid from the roots of *Delphinium poltoratskii*. Cryst. (Me_2CO). Mp 192-195°.

Suginome, H. *et al., Bull. Chem. Soc. Jpn.*, 1959, **32**, 604 (*Sachaconitine, isol, uv*)
Iwasa, J. *et al., Yakugaku Zasshi*, 1966, **86**, 585; *CA*, **65**, 10629e (*Karakoline, isol*)
Sultankhodzhaev, M.N. *et al., Khim. Prir. Soedin.*, 1973, **9**, 199; *Chem. Nat. Compd. (Engl. Transl.)*, 1973, **9**, 194 (*Karakoline, isol, ir, pmr, ms, struct*)
Pelletier, S.W. *et al., Tet. Lett.*, 1977, 4027 (*Sachaconitine, ir, pmr, cmr, struct*)
Sultankhodzhaev, M.N. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1982, **18**, 629-630 (*Karasamine, 1-Benzoylkarasamine*)
Konno, C. *et al., J. Nat. Prod.*, 1982, **45**, 128 (*Karakoline, isol, ir, pmr, cmr*)
Hikino, H. *et al., J. Nat. Prod.*, 1983, **46**, 178 (*Hokbusine B*)
González, A.G. *et al., Tet. Lett.*, 1983, **24**, 959 (*occur*)
Vaisov, Z.M. *et al., Khim. Prir. Soedin.*, 1986, **22**, 801; *Chem. Nat. Compd. (Engl. Transl.)*, 1986, **22**, 744 (*14-Acetylkarakoline*)
Aiyar, V.N. *et al., Phytochemistry*, 1986, **25**, 973 (*14-Acetylsachaconitine*)
Jiang, Z. *et al., Yunnan Zhiwu Yanjiu*, 1988, **10**, 317-323; *CA*, **110**, 151273g (*14-Acetylsachaconitine, Austroconitine A*)
Bai, Y. *et al., Heterocycles*, 1989, **29**, 1017 (*8-O-Methylkarasamine*)
Liu, H. *et al., Nat. Prod. Lett.*, 1994, **5**, 147 (*16-Acetoxycardiopetaline*)
Bai, Y. *et al., Phytochemistry*, 1994, **37**, 1717 (*8-O-Acetylkarasamine*)
Chen, Y. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 1994, **36**, 970; *CA*, **123**, 5616y (*Kongboensine*)
Yusupova, I.M. *et al., Khim. Prir. Soedin.*, 1996, **32**, 109-111; *Chem. Nat. Compd. (Engl. Transl.)*, 1996, **32**, 91-93 (*Karakoline, cryst struct*)
Reina, M. *et al., Phytochemistry*, 1997, **45**, 1707 (*8-O-Methylsachaconitine*)
Boronova, Z.S. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2000, **36**, 390-392 (*Delpoline*)
Dong, J.Y. *et al., Chin. Chem. Lett.*, 2000, **11**, 1005-1006 (*14-Benzoylsachaconitine*)
Wang, F.P. *et al., Huaxue Xuebao*, 2000, **58**, 576-579; *CA*, **133**, 147501 (*Genicunine A*)
Zhou, X.-L. *et al., Chem. Pharm. Bull.*, 2004, **52**, 456-458 (*Genicunine A, pmr, cmr*)
Diaz, J.G. *et al., Phytochemistry*, 2005, **66**, 837-846 (*16-Hydroxycardiopetaline, 8-O-Ethylsachaconitine*)
Reina, M. *et al., Nat. Prod. Res.*, 2007, **21**, 1048-1055 (*8-O-Methylkarakoline*)

4-Methylaconitane-1,8,14-triol M-356



(1α,5β,14α)-*form*

$C_{19}H_{29}NO_3$ 319.443

(1α,5β,14α)-*form*

N-*Et:* ***Cardiopetaline***
[75375-43-8]
$C_{21}H_{33}NO_3$ 347.497
Minor alkaloid from *Delphinium cardiopetalum* (*Delphinium verdunense*) (Ranunculaceae). Mp 179-181°. $[\alpha]_D$ -16 (c, 0.22 in EtOH).

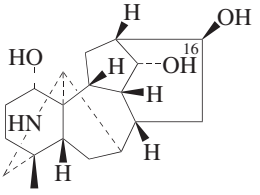
O^{1}-*Me,* N-*Et:* ***Giraldine I***
$C_{22}H_{35}NO_3$ 361.523
Alkaloid from the roots of *Delphinium giraldii*. Amorph. powder. Mp 78-80°. $[\alpha]_D^{20}$ -15.6 (c, 1 in $CHCl_3$).

(1β,5β,14α)-*form*

O^{1}-*Me,* N-*Et:* ***Souline D***
[214191-29-4]
$C_{22}H_{35}NO_3$ 361.523
Alkaloid from *Delphinium souliei*. Cryst. Mp 110-112°. $[\alpha]_D^{24}$ -14.9 (c, 0.47 in $CHCl_3$). Incorrect name assigned in CA.

González, A.G. *et al., Tet. Lett.*, 1980, **21**, 1155 (*Cardiopetaline, ir, pmr, ms, cryst struct*)
Zhang, K. *et al., Planta Med.*, 1998, **64**, 580-581 (*Souline D*)
Zhou, X.-L. *et al., Chem. Pharm. Bull.*, 1994, **52**, 456-458 (*Giraldine I*)

4-Methylaconitane-1,14,16-triol M-357



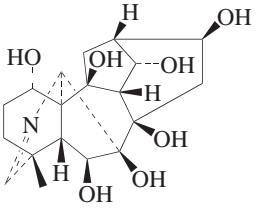
$C_{19}H_{29}NO_3$ 319.443

(1α,14α,16β)-*form*

O^{16}-*Me,* N-*Et:* ***Souline E***
[244616-33-9]
$C_{22}H_{35}NO_3$ 361.523
Alkaloid from *Delphinium souliei*. Cryst. (EtOH). Mp 77-78°. $[\alpha]_D^{24}$ -8 (c, 0.05 in $CHCl_3$).

He, L. *et al., Chin. Chem. Lett.*, 1999, **10**, 395-396 (*isol, pmr, cmr*)
He, L. *et al., Indian J. Chem., Sect. B*, 2001, **40**, 1285-1286 (*isol, pmr, cmr*)

4-Methylaconit-19(*N*)-ene-1,6,7,8,10,14,16-heptol M-358



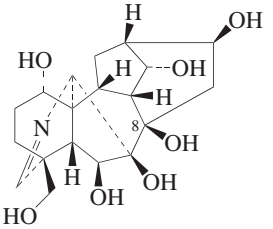
$C_{19}H_{27}NO_7$ 381.425

(1α,5β,6β,14α,16β)-*form*

7,8-Methylene ether, O^{1},O^{14},O^{16}-*tri-Me, 6-Ac:* ***Barbeline***
[116199-46-3]
$C_{25}H_{35}NO_8$ 477.553
Alkaloid from *Delphinium barbeyi* (Ranunculaceae). Mp 265-267.5°. $[\alpha]_D^{22}$ +45.03 (c, 0.31 in $CHCl_3$).

Joshi, B.S. *et al., Tet. Lett.*, 1988, **29**, 2397 (*isol, ir, pmr, cmr, cryst struct*)

4-Methylaconit-19(*N*)-ene-1,6,7,8,14,16,18-heptol M-359



$C_{19}H_{27}NO_7$ 381.425

(1α,5β,6β,14α,16β)-*form*

O^{1},O^{6},O^{16}-*Tri-Me, 18-*O-*(2-acetamidobenzoyl), 14-Ac:* ***Ajadinine***
[157566-48-8]

$C_{33}H_{42}N_2O_{10}$ 626.702
Alkaloid from seeds of *Delphinium ajacis* (Ranunculaceae). Amorph. $[\alpha]_D$ +83.7 (c, 0.166 in $CHCl_3$).

O^1,O^6,O^{14},O^{16}-*Tetra-Me:* ***Acovulparine***
$C_{23}H_{35}NO_7$ 437.532
Alkaloid from *Aconitum vulparia*. Amorph. solid. $[\alpha]_D^{29}$ +25.3 (c, 2 in $CHCl_3$).

O^1,O^6,O^{14},O^{16}-*Tetra-Me, 18*-O-*(2-aminobenzoyl):* ***Pacifidine***
[142748-52-5]
$C_{30}H_{40}N_2O_8$ 556.655
Alkaloid from seeds of *Delphinium elatum* cv. Pacific giant (Ranunculaceae). Amorph. solid. $[\alpha]_D$ +40.7 (c, 2.47 in $CHCl_3$).

O^1,O^6,O^{14},O^{16}-*Tetra-Me, 18*-O-*[2-(4-amino-3-methyl-4-oxobutanoylamino)-benzoyl]:* ***Bulleyanitine A***
[128717-97-5]
$C_{35}H_{47}N_3O_{10}$ 669.77
Alkaloid from the roots of *Delphinium bulleyanum* (Ranunculaceae). C-1 Config. revised in 1990.

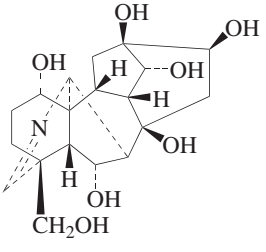
$O^1,O^6,O^8,O^{14},O^{16}$-*Penta-Me, 18*-O-*(2-aminobenzoyl):* ***Acoseptridine***
[146028-67-3]
$C_{31}H_{42}N_2O_8$ 570.681
Alkaloid from roots of *Aconitum septentrionale* (Ranunculaceae). Amorph. $[\alpha]_D$ +65 (c, 0.1 in $CHCl_3$).

$O^1,O^6,O^8,O^{16},O^{18}$-*Penta-Me, 14-Ac:* ***Olividine***
$C_{26}H_{39}NO_8$ 493.596
Alkaloid from *Consolida oliveriana*. Amorph. solid. $[\alpha]_D^{25}$ +96 (c, 0.8 in $CHCl_3$).

$O^1,O^6,O^{14},O^{16},O^{18}$-*Penta-Me:* ***Olivimine***
$C_{24}H_{37}NO_7$ 451.559
Alkaloid from *Consolida oliveriana*. Amorph. solid. $[\alpha]_D^{25}$ +77 (c, 1.1 in $CHCl_3$).

Wei, X. *et al., Yunnan Zhiwu Yanjiu*, 1989, **11**, 453; *CA*, **113**, 74750 (*Bulleyanitine A*)
Joshi, B.S. *et al., J. Nat. Prod.*, 1990, **53**, 1028 (*Bulleyanitine A, config*)
Sayed, H.M. *et al., J. Nat. Prod.*, 1992, **55**, 1595 (*Acoseptridine*)
Wada, K. *et al., Phytochemistry*, 1992, **31**, 2135 (*Pacifidine*)
Desai, H.K. *et al., J. Nat. Prod.*, 1994, **57**, 677 (*Ajadinine*)
Grandez, M. *et al., J. Nat. Prod.*, 2002, **65**, 513-516 (*Olividine, Olivimine*)
Csupor, D. *et al., Helv. Chim. Acta*, 2004, **87**, 2125-2130 (*Acovulparine*)

4-Methylaconit-19(*N*)-ene-1,6,8,13,14,16,18-heptol M-360



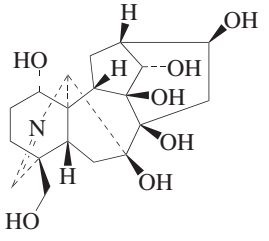
$C_{19}H_{27}NO_7$ 381.425

(1α,5β,6α,14α,16β)-*form*

O^1,O^6,O^{16},O^{18}-*Tetra-Me, 14*-O-*(4-methoxybenzoyl), 8-Ac:* ***Macrorhynine B***
[199339-82-7]
$C_{33}H_{43}NO_{10}$ 613.703
Alkaloid from the roots of *Aconitum macrorhynchum*. Amorph. solid. $[\alpha]_D^{25}$ -50.7 (c, 0.12 in $CHCl_3$). λ_{max} 234 (log ϵ 4.4); 257 (log ϵ 4.5) ($CHCl_3$).

Yang, X.-D. *et al., Helv. Chim. Acta*, 2008, **91**, 569-574 (*isol, pmr, cmr, ms*)

4-Methylaconit-19(*N*)-ene-1,7,8,9,14,16,18-heptol M-361



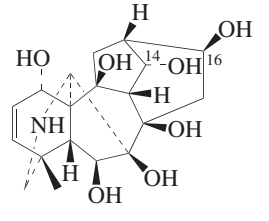
$C_{19}H_{27}NO_7$ 381.425

(1α,5β,14α,16β)-*form*

7,8-Methylene ether, O^1,O^{14},O^{16},O^{18}-*tetra-Me:* ***Caerunine***
[175923-73-6]
$C_{24}H_{35}NO_7$ 449.543
Alkaloid from *Delphinium caeruleum*. Amorph. powder. $[\alpha]_D^{20}$ -4.2 (c, 0.25 in $CHCl_3$).

Wang, Y. *et al., Phytochemistry*, 1996, **42**, 569 (*isol, ir, pmr, cmr, struct*)

4-Methylaconit-2-ene-1,6,7,8,10,14,16-heptol M-362



$C_{19}H_{27}NO_7$ 381.425

(1α,5β,6β,14α,16β)-*form*

7,8-Methylene, 1,14-di-Me ether, N-*Me, 6-Ac:* ***Siwanine D***
[164230-59-5]
$C_{25}H_{35}NO_8$ 477.553
From *Delphinium siwanense* var. *leptogen* (Ranunculaceae). Cryst. (EtOH). Mp 226-228°. $[\alpha]_D$ +30.2 (c, 0.1 in $CHCl_3$).

7,8-Methylene, 1,14-di-Me ether, N-*Et, 6-Ac:* ***Siwanine B***
[159903-63-6]
$C_{26}H_{37}NO_8$ 491.58
From *Delphinium siwanense* var. *leptogen* (Ranunculaceae). Amorph. solid (EtOH). Mp 194-195°. $[\alpha]_D$ -35.4 (c, 5.9 in $CHCl_3$). Incorrect struct. in CA.

7,8-Methylene, 1,14-di-Me ether, N-*Et, 6,16-di-Ac: 16-Acetyl-2,3-dehydroelasine.* ***Siwanine E***
[195247-83-7]
$C_{28}H_{39}NO_9$ 533.617
Alkaloid from *Delphinium siwanense* (Ranunculaceae). Resin. $[\alpha]_D$ +20.8 (c, 0.7 in $CHCl_3$).

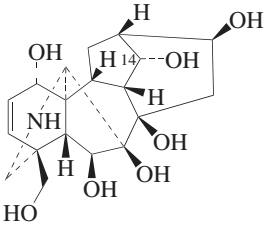
7,8-Methylene, 1,16-di-Me ether, N-*Et, 6-Ac: 2,3-Dehydrodictyocarpine.* ***Siwanine F***
[195631-62-0]
$C_{26}H_{37}NO_8$ 491.58
Alkaloid from *Delphinium siwanense* (Ranunculaceae). Powder. Mp 208-210°. $[\alpha]_D$ +34.1 (c, 1.5 in $CHCl_3$).

7,8-Methylene, 1,14,16-tri-Me ether, N-*Et:* ***Deacetylsiwanine A***
[297137-06-5]
$C_{25}H_{37}NO_7$ 463.57
Alkaloid from *Delphinium orthocentrum*. Needles. Mp 225-227°. $[\alpha]_D^{20}$ +56 (c, 0.25 in $CHCl_3$).

7,8-Methylene, 1,14,16-tri-Me ether, N-*Et, 6-Ac:* ***Siwanine A***
[159903-64-7]
$C_{27}H_{39}NO_8$ 505.607
Alkaloid from *Delphinium siwanense* var. *leptogen* (Ranunculaceae). Amorph. powder (EtOH). Mp 172-174°. $[\alpha]_D$ +27.1 (c, 4.8 in $CHCl_3$).

Zhang, S.M. *et al., Phytochemistry*, 1997, **45**, 1713-1716; 1998, **48**, 191-196 (*Siwanines, pmr, cmr, ms, cryst struct*)
Ding, L.S. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 2000, **42**, 523-525 (*Deacetylsiwanine A*)

4-Methylaconit-2-ene-1,6,7,8,14,16,18-heptol M-363



$C_{19}H_{27}NO_7$ 381.425

(1α,5β,6β,14α,16β)-*form*

O^{16},O^{18}-*Di-Me,* N-*Et:* ***Ibukinamine****. 2,3-Dehydro-6-*O-*demethyldelcosine*
[88142-58-9]
$C_{23}H_{35}NO_7$ 437.532
Alkaloid from the roots of *Aconitum ibukiense* (Ranunculaceae). Mp 243-246°. $[\alpha]_D^{19}$ +71.7 (c, 0.12 in MeOH).

O^6,O^{16},O^{18}-*Tri-Me,* N-*Et:* ***2,3-Dehydrodelcosine***
[119237-52-4]
$C_{24}H_{37}NO_7$ 451.559
Alkaloid from the roots of *Aconitum japonicum* var. *montanum* (Ranunculaceae). Amorph. solid. $[\alpha]_D^{12}$ +86.2 (c, 0.09 in $CHCl_3$).

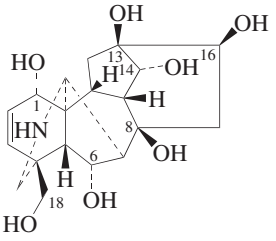
O^6,O^{14},O^{16},O^{18}-*Tetra-Me,* N-*Et:* ***Giraldine E***

$C_{25}H_{39}NO_7$ 465.586
Alkaloid from the roots of *Delphinium giraldii*. Amorph. powder. Mp 51-53°. $[\alpha]_D^{20}$ +16 (c, 0.8 in $CHCl_3$).

14-Ketone, O^6,O^{16},O^{18}*-tri-Me,* N-*Et:* ***Takaonine***
[71264-39-6]
$C_{24}H_{35}NO_7$ 449.543
Alkaloid from *Aconitum japonicum* and from the roots of *Aconitum ibukiense* (Ranunculaceae). Mp 186-187.5°. $[\alpha]_D^{19}$ +52 (c, 0.22 in $CHCl_3$).

Sakai, S. *et al., Yakugaku Zasshi*, 1979, **99**, 647; 1984, **104**, 222 (*Takaonine*)
Sakai, S. *et al., Chem. Pharm. Bull.*, 1983, **31**, 3338 (*Ibukinamine, ir, pmr, ms, cryst struct*)
Takayama, H. *et al., Chem. Pharm. Bull.*, 1988, **36**, 3210 (*2,3-Dehydrodelcosine*)
Zhou, X.-L. *et al., Heterocycles*, 2004, **63**, 123-128 (*Giraldine E*)

4-Methylaconit-2-ene-1,6,8,13,14,16,18-heptol M-364



$C_{19}H_{27}NO_7$ 381.425

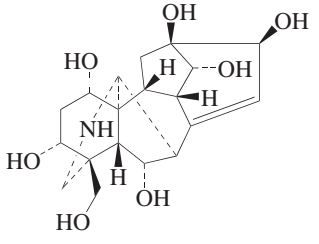
O^1,O^6,O^{16},O^{18}*-Tetra-Me,* N-*Et, 14-(4-methoxybenzoyl), 8-Ac:* ***Liaconitine A***
$C_{35}H_{47}NO_{10}$ 641.757
Alkaloid from *Aconitum episcopale*. Needles. Mp 146-147.3°. $[\alpha]_D^{11}$ +53.8 (c, 0.26 in $CHCl_3$).

O^1,O^6,O^{16},O^{18}*-Tetra-Me,* N-*Et, 8,14-bis(4-methoxybenzoyl):* ***Liaconitine B***
[221347-29-1]
$C_{41}H_{51}NO_{11}$ 733.854
Alkaloid from *Aconitum episcopale*. Amorph. powder. $[\alpha]_D^{13}$ -2.3 (c, 0.77 in $CHCl_3$).

O^1,O^6,O^{16},O^{18}*-Tetra-Me,* N,O^8*-di-Et, 14-(4-methoxybenzoyl):* ***Liaconitine C***
$C_{35}H_{49}NO_9$ 627.773
Alkaloid from *Aconitum episcopale*. Amorph. powder. $[\alpha]_D^{13}$ +46 (c, 0.36 in $CHCl_3$).

Yang, J.H. *et al., Phytochemistry*, 1999, **50**, 345-348

4-Methylaconit-8(15)-ene-1,3,6,13,14,16,18-heptol M-365



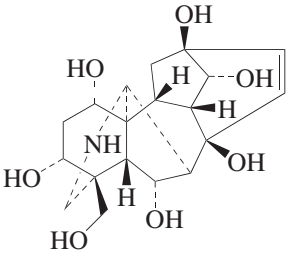
$C_{19}H_{27}NO_7$ 381.425

(1α,3α,5β,6α,14α,16β)-*form*
O^1,O^6,O^{16},O^{18}*-Tetra-Me,* N-*Et, 14-benzoyl:* ***Mithaconitine***
[62926-58-3]
$C_{32}H_{43}NO_8$ 569.694
Minor alkaloid from the roots of *Aconitum falconeri* (Ranunculaceae). Amorph. $[\alpha]_D^{28}$ +94 (c, 1.0 in EtOH).

O^1,O^6,O^{16},O^{18}*-Tetra-Me,* N-*Et, 14-*O*-(3,4-dimethoxybenzoyl):* ***Falaconitine***
[62926-57-2]
$C_{34}H_{47}NO_{10}$ 629.746
Alkaloid from the roots of *Aconitum falconeri* (Ranunculaceae). Amorph. $[\alpha]_D^{28}$ +111.5 (c, 1.0 in EtOH).

Pelletier, S.W. *et al., Chem. Comm.*, 1977, 12 (*ir, pmr, cmr, struct*)
Pelletier, S.W. *et al., Heterocycles*, 1977, **7**, 327 (*cmr*)

4-Methylaconit-15-ene-1,3,6,8,13,14,18-heptol M-366

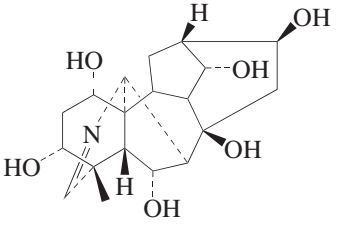


$C_{19}H_{27}NO_7$ 381.425

(1α,3α,5β,6α,14α)-*form*
O^1,O^6,O^{18}*-Tri-Me,* N-*Et, 14-*O*-(3,4-dimethoxybenzoyl):* ***Balfourine***
[142808-40-0]
$C_{33}H_{45}NO_{10}$ 615.719
Alkaloid from roots of *Aconitum balfourii* (Ranunculaceae). Amorph. First naturally occurring isopyroditerpenoid alkaloid.

Khewal, K.S. *et al., Heterocycles*, 1992, **34**, 441 (*isol, pmr, cmr, struct*)

4-Methylaconit-19(*N*)-ene-1,3,6,8,14,16-hexol M-367

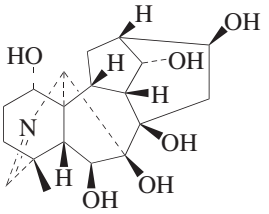


$C_{19}H_{27}NO_6$ 365.425

(1α,3α,5β,6α,14α,16β)-*form*
O^1,O^8,O^{14},O^{16}*-Tetra-Me, 6-Ac:* ***Guenerine***
[149998-33-4]
$C_{25}H_{37}NO_7$ 463.57
Alkaloid from aerial parts of *Delphinium gueneri* (Ranunculaceae). $[\alpha]_D^{22}$ -23.3 (c, 0.1 in MeOH).

Ulubelen, A. *et al., Phytochemistry*, 1993, **33**, 213 (*isol, ir, pmr, cmr, ms, struct*)

4-Methylaconit-19(*N*)-ene-1,6,7,8,14,16-hexol M-368

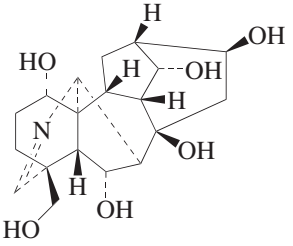


$C_{19}H_{27}NO_6$ 365.425

(1α,5β,6β,14α,16β)-*form*
7,8-Methylene ether, O^1,O^{14},O^{16}*-tri-Me, 6-Ac:* ***Tiantaishanmine***
[959843-32-4]
$C_{25}H_{35}NO_7$ 461.554
Alkaloid from the roots of *Delphinium tiantaishanense*. Amorph. powder. Mp 251-253°. $[\alpha]_D^{20}$ +24.2 (c, 0.26 in $CHCl_3$).

Li, J. *et al., Molecules*, 2007, **12**, 353-360 (*isol, pmr, cmr*)

4-Methylaconit-19(*N*)-ene-1,6,8,14,16,18-hexol M-369



$C_{19}H_{27}NO_6$ 365.425

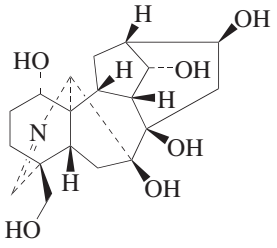
(1α,5β,6α,14α,16β)-*form*
O^1,O^6,O^{16},O^{18}*-Tetra-Me:* ***Leucanthumsine D***
[947591-62-0]
$C_{23}H_{35}NO_6$ 421.533
Alkaloid from the roots of *Aconitum sungpanense* var. *leucanthum*. Amorph. powder. Mp 150-152°. $[\alpha]_D^{20}$ +64.1 (c, 1 in $CHCl_3$).

O^1,O^6,O^{16},O^{18}*-Tetra-Me, 14-*O*-(4-methoxybenzoyl), 8-Ac:* ***Macrorhynine A***
[1019744-40-1]
$C_{33}H_{43}NO_9$ 597.704
Alkaloid from the roots of *Aconitum macrorhynchum*. Amorph. solid. $[\alpha]_D^{25}$ -9.1 (c, 0.11 in $CHCl_3$). λ_{max} 232 (log ϵ 4.48); 259 (log ϵ 4.58) ($CHCl_3$).

Yan, H. *et al., Helv. Chim. Acta*, 2007, **90**, 1133-1140 (*Leucanthumsine D*)

Yang, X.-D. *et al., Helv. Chim. Acta*, 2008, **91**, 569-574 (*Macrorhynine A*)

4-Methylaconit-19(*N*)-ene-1,7,8,14,16,18-hexol M-370



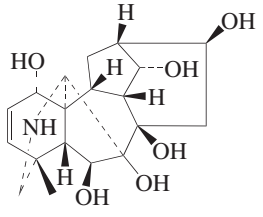
$C_{19}H_{27}NO_6$ 365.425

(1α,5β,14α,16β)-*form*

O^1,O^{14},O^{16},O^{18}-*Tetra-Me:* ***Tongolenine C***
[198754-25-5]
$C_{23}H_{35}NO_6$ 421.533
Alkaloid from *Delphinium tongolense* (Ranunculaceae). Powder. $[\alpha]_D$ +44.4 (c, 0.5 in $CHCl_3$). Mp. >350°.

He, L. *et al., Chin. Chem. Lett.*, 1997, **8**, 791-792 (*isol, pmr, cmr, struct*)
He, L. *et al., Indian J. Chem., Sect. B*, 1997, **8**, 791-792

4-Methylaconit-2-ene-1,6,7,8,14,16-hexol M-371



$C_{19}H_{27}NO_6$ 365.425

(1α,5β,6β,14α,16β)-*form*

O^{16}-*Me,* N-*Et:* ***Glabredelphinine***
[132160-37-3]
$C_{22}H_{33}NO_6$ 407.506
Alkaloid from *Delphinium kamaonense* var. *glabrescens* (Ranunculaceae). Cryst. Mp 201-203°.

O^6,O^{16}-*Di-Me,* N-*Et:* ***Giraldine A***
$C_{23}H_{35}NO_6$ 421.533
Alkaloid from the roots of *Delphinium giraldii*. Amorph. powder ($CHCl_3$/MeOH). Mp 79-80°. $[\alpha]_D^{20}$ +75.3 (c, 0.55 in $CHCl_3$).

O^6,O^{16}-*Di-Me,* N-*Et, 14-Ac:* ***Giraldine B***
$C_{25}H_{37}NO_7$ 463.57
Alkaloid from the roots of *Delphinium giraldii*. Amorph. powder ($CHCl_3$/MeOH). Mp 76-78°. $[\alpha]_D^{20}$ +37.5 (c, 0.45 in $CHCl_3$).

O^6,O^{16}-*Di-Me,* N-*Et, 14-benzoyl:* ***Giraldine C***
$C_{30}H_{39}NO_7$ 525.641
Alkaloid from the roots of *Delphinium giraldii*. Amorph. powder ($CHCl_3$/MeOH). Mp 58-59°. $[\alpha]_D^{20}$ +36.5 (c, 0.4 in $CHCl_3$).

O^6,O^8,O^{16}-*Tri-Me,* N-*Et:* ***Giraldine D***
$C_{24}H_{37}NO_6$ 435.559
Alkaloid from the roots of *Delphinium giraldii*. Amorph. powder. Mp 159-160°. $[\alpha]_D^{20}$ +38.5 (c, 0.3 in $CHCl_3$).

7,8-Methylene ether, O^1,O^{14},O^{16}-*tri-Me,* N-*Me, 6-Ac:* ***Siwanine C***
[164176-43-6]
$C_{26}H_{37}NO_7$ 475.581
Alkaloid from *Delphinium siwanense* var. *leptogen*. Amorph. solid. $[\alpha]_D$ +9.6 ($CHCl_3$).

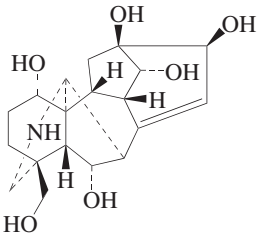
7,8-Methylene ether, O^1,O^{14},O^{16}-*tri-Me,* N-*Et: Deacetyltatsiensine*
[86695-19-4]
Plates (EtOH). Mp 236-238°. $[\alpha]_D^{25}$ +28.8 (c, 0.34 in EtOH).

7,8-Methylene ether, O^1,O^{14},O^{16}-*tri-Me,* N-*Et, 6-Ac:* ***Tatsiensine***
[86695-18-3]
$C_{27}H_{39}NO_7$ 489.608
Alkaloid from the roots of *Delphinium kamaonense*, *Delphinium siwanense* var. *leptogen* and *Delphinium tatsienense* (Ranunculaceae). Amorph. $[\alpha]_D^{25}$ +17.4 (c, 0.3 in EtOH).

14-Ketone, O^6,O^{16}-*di-Me,* N-*Et:* ***Giraldine F***
$C_{23}H_{33}NO_6$ 419.517
Alkaloid from the roots of *Delphinium giraldii*. Amorph. powder. Mp 55-57°. $[\alpha]_D^{20}$ +12.3 (c, 0.7 in $CHCl_3$).

Pelletier, S.W. *et al., Heterocycles*, 1983, **20**, 1347-1354 (*Tatsiensine*)
Ding, L.-S. *et al., Yaoxue Xuebao*, 1990, **25**, 438-440 (*Glabredphinine*)
Zhang, S.M. *et al., Phytochemistry*, 1998, **48**, 191-196 (*Siwanine C, Tatsiensine*)
Zhou, X.-L. *et al., Chin. J. Chem.*, 2003, **21**, 871-874 (*Giraldines A-C*)
Zhou, X.-L. *et al., Heterocycles*, 2004, **63**, 123-128 (*Giraldines D,F*)

4-Methylaconit-8(15)-ene-1,6,13,14,16,18-hexol M-372



$C_{19}H_{27}NO_6$ 365.425

(1α,5β,6α,14α,16β)-*form*

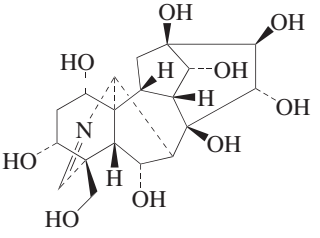
O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Me, 14-benzoyl:* ***Pyrodelphinine***
[60050-12-6]
$C_{31}H_{41}NO_7$ 539.667
Alkaloid from the seeds of *Delphinium staphisagria* (Ranunculaceae). Also a pyrolysis prod. of Delphinine. Cryst. (MeOH). Mp 208-212°. Not an artifact.

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14-benzoyl:* ***Pyrochasmaconitine***
[156401-00-2]
$C_{32}H_{43}NO_7$ 553.694
Alkaloid from roots of *Aconitum kongboense* (Ranunculaceae). Cryst. (hexane/Me_2CO). Mp 159-160°.

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et, 14-O-(4-methoxybenzoyl):* ***Pyrocrassicauline A***
[156401-01-3]
$C_{33}H_{45}NO_8$ 583.72
Alkaloid from roots of *Aconitum kongboense* (Ranunculaceae). Cryst. (hexane/Me_2CO). Mp 132-134°.

Pelletier, S.W. *et al., Heterocycles*, 1977, **7**, 327 (*cmr*)
Pelletier, S.W. *et al., J.O.C.*, 1982, **47**, 5290 (*Pyrodelphinine, synth, cmr, cryst struct*)
Liang, X. *et al., J. Nat. Prod.*, 1990, **53**, 1307 (*Pyrodelphinine, isol*)
Yue, J.-M. *et al., Phytochemistry*, 1994, **35**, 829 (*Pyrochasmaconitine, Pyrocrassicauline A*)

4-Methylaconit-19(*N*)-ene-1,3,6,8,13,14,15,16,18-nonol M-373



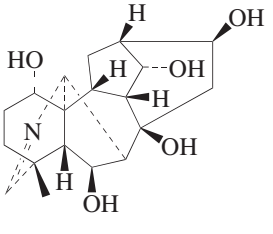
$C_{19}H_{27}NO_9$ 413.424

(1α,3α,5β,6α,14α,15α,16β)-*form*

O^1,O^6,O^{16},O^{18}-*Tetra-Me, 14-benzoyl, 8-Ac:* ***Merckonine***
$C_{32}H_{41}NO_{11}$ 615.676
Alkaloid from Aconitine Potent Merck (*Aconitum napellus*). Amorph. $[\alpha]_D$ -29.9 (c, 0.3 in $CHCl_3$).

Desai, H.K. *et al., Heterocycles*, 1998, **48**, 1107-1110 (*isol, ir, pmr, cmr*)

4-Methylaconit-19(*N*)-ene-1,6,8,14,16-pentol M-374



$C_{19}H_{27}NO_5$ 349.426

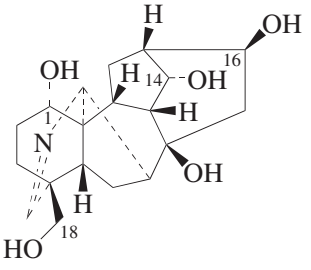
(1α,5β,6β,14α,16β)-*form*

O^1,O^8,O^{16}-*Tri-Me, 6-Ac:* ***Peregrinine***† [168010-53-5]
$C_{24}H_{35}NO_6$ 433.544
Alkaloid from epigeal parts of *Delphi-*

nium peregrinum var. *elongatum* (Ranunculaceae). Amorph. $[\alpha]_D$ +66.7 (c, 0.1 in $CHCl_3$).

De la Fuente, G. *et al., Phytochemistry*, 1995, **39**, 1459 (*isol, ir, pmr, cmr, ms, struct*)

4-Methylaconit-19(*N*)-ene-1,8,14,16,18-pentol M-375



$C_{19}H_{27}NO_5$ 349.426

(1α,14α,16β)-*form*

O^1,O^{16},O^{18}-*Tri-Me:* ***Nagadine****. Pengshenine B*
$C_{22}H_{33}NO_5$ 391.506
Alkaloid from the roots of *Aconitum nagarum* var. *lasiandrum* and *Aconitum hemsleyanum* var. *penzhouense.* Amorph. powder. $[\alpha]_D^{25}$ +43 (c, 0.003 in $CHCl_3$).

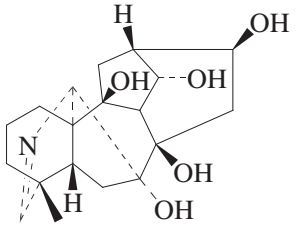
O^1,O^{16},O^{18}-*Tri-Me, 8-hexadecanoyl, 14-Ac:* ***Transconitine C***
[175923-72-5]
$C_{40}H_{65}NO_7$ 671.956
Alkaloid from the roots of *Aconitum transsectum*. Amorph. $[\alpha]_D^{20}$ +40 (c, 0.02 in $CHCl_3$).

Zheng, S. *et al., Phytochemistry*, 1997, **46**, 951-954 (*Transconitine C*)

Dong, J.Y. *et al., Chin. Chem. Lett.*, 2000, **11**, 1005-1006 (*Nagadine*)

Peng, C.S. *et al., Chin. Chem. Lett.*, 2002, **13**, 233-236 (*Pengshenine B*)

4-Methylaconit-19(*N*)-ene-7,8,10,14,16-pentol M-376

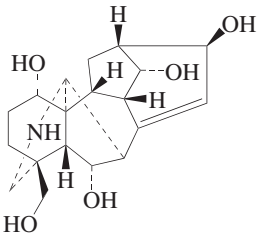


$C_{19}H_{27}NO_5$ 349.426

O^8,O^{14},O^{16}-*Tri-Me:* ***Orthocentrine***
[297137-05-4]
$C_{22}H_{33}NO_5$ 391.506
Alkaloid from *Delphinium orthocentrum*. Cryst. Mp 224-226°. $[\alpha]_D^{20}$ -94 (c, 0.07 in $CHCl_3$).

Ding, L.-S. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 2000, **42**, 523-525 (*isol, pmr, cmr, ms*)

4-Methylaconit-8(15)-ene-1,6,14,16,18-pentol M-377



$C_{19}H_{27}NO_5$ 349.426

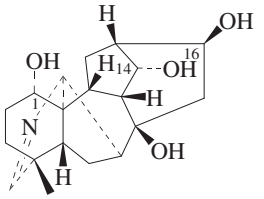
(1α,5β,6α,14α,16β)-*form*

O^1,O^6,O^{16},O^{18}-*Tetra-Me,* N-*Et:* ***Pyrochasmanine***
[5066-77-3]
$C_{25}H_{39}NO_5$ 433.587
Alkaloid from *Aconitum yesoense* (Ranunculaceae). Prisms (hexane). Mp 126-129°.

Achmatowicz, O. *et al., Can. J. Chem.*, 1965, **43**, 825 (*synth, ir, pmr*)

Takayama, H. *et al., Yakugaku Zasshi*, 1982, **102**, 245; *CA*, **97**, 36082v (*isol*)

4-Methylaconit-19(*N*)-ene-1,8,14,16-tetrol M-378



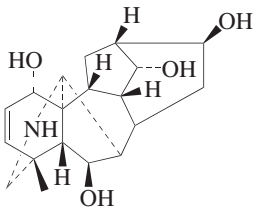
$C_{19}H_{27}NO_4$ 333.427

(1α,14α,16β)-*form*

O^1,O^{16}-*Di-Me:* **N-*Deethyl*-N,*19-didehydrosachaconitine***
$C_{21}H_{31}NO_4$ 361.48
Alkaloid from *Aconitum variegatum*. Amorph. solid. $[\alpha]_D^{25}$ +181.8 (c, 0.11 in $CHCl_3$).

Diaz, J.G. *et al., Phytochemistry*, 2005, **66**, 837-846 (*isol, pmr, cmr, ms*)

4-Methylaconit-2-ene-1,6,14,16-tetrol M-379



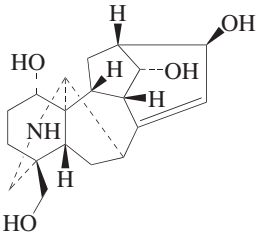
$C_{19}H_{27}NO_4$ 333.427

(1α,5β,6β,14α,16β)-*form*

O^{14},O^{16}-*Di-Me,* N-*Et, 6-Ac:* ***Caeruline***
[147468-47-1]
$C_{25}H_{37}NO_5$ 431.571
Minor alkaloid from *Delphinium caerulum* (Ranunculaceae). Amorph. powder. $[\alpha]_D^{17}$ +13.5 (c, 0.5 in MeOH).

Pan, Y.-J. *et al., Planta Med.*, 1993, **59**, 83 (*isol, ir, pmr, cmr, ms, struct*)

4-Methylaconit-8(15)-ene-1,14,16,18-tetrol M-380



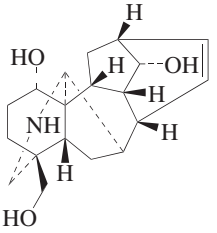
$C_{19}H_{27}NO_4$ 333.427

(1α,5β,14α,16β)-*form*

O^{14},O^{16},O^{18}-*Tri-Me,* N-*Et:* ***Aconasutine***
[179598-81-3]
$C_{24}H_{37}NO_4$ 403.561
Alkaloid from aerial parts of *Aconitum nasutum*.

Mericli, A.H. *et al., Turk. J. Chem.*, 1996, **20**, 164-167 (*isol, pmr, cmr*)

4-Methylaconit-15-ene-1,14,18-triol M-381



$C_{19}H_{27}NO_3$ 317.427

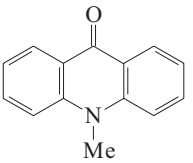
(1α,5β,14α)-*form*

O^1-*Me,* N-*Et, 18*-O-*(2-acetamidobenzoyl):* ***Talassicumine C***
[160824-51-1]
$C_{31}H_{40}N_2O_5$ 520.667
Alkaloid from roots of *Aconitum talassicum* (Ranunculaceae). Amorph. powder.

Yue, J. *et al., Phytochemistry*, 1994, **37**, 1467 (*isol, uv, ir, pmr, cmr, ms, struct*)

10-Methylacridone M-382

*10-Methyl-9(10*H*)-acridinone, 9CI. 10-Methyl-9-acridanone, 8CI.* N-*Methylacridone*
[719-54-0]



$C_{14}H_{11}NO$ 209.247
Constit. of the roots of *Citrus deliciosa* (Italian tangerine) and *Thamnosma montana* (Rutaceae). Cryst. (MeOH). Mp 199-200°.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 93A (*ir*)
Gilman, H. *et al., J.O.C.*, 1952, **17**, 860 (*synth*)
Schumann, D. *et al., Chem. Ber.*, 1969, **102**, 3192 (*ms*)
Chang, P.T.O. *et al., J. Nat. Prod.*, 1976, **39**, 134 (*isol, uv, ir, pmr, ms*)
Potescu, I.D. *et al., J. Prakt. Chem.*, 1976, **318**, 515 (*synth*)
Beak, P. *et al., J.A.C.S.*, 1976, **98**, 171 (*uv*)
Adams, J.H. *et al., J.C.S. Perkin 1*, 1977, 2173 (*synth*)
Grignon-Dubois, M. *et al., Synth. Commun.*, 1995, **25**, 2999 (*synth*)
El-Shafae, A.M. *et al., Pharmazie*, 1998, **53**, 640-643 (*cmr*)

Methylamine, 8CI M-383

Methanamine, 9CI. Aminomethane. Carbinamine
[74-89-5]
$MeNH_2$
CH_5N 31.057
Found in fish oils and plants, e.g. *Mercurialis annua, Mercurialis perennis.* Fairly widespread in fungi. Refrigerant, nucleophile in org. synth., solvent. Flammable gas with strong ammoniacal odour. Freq. encountered as strong aq. soln. V. sol. H_2O. d_4^{10} 0.7. Mp -93.5°. Bp -6.3° Bp_{200} -32.4° Bp_{10} -73.8°. Crit. pt. 156.9°/73.6 atm.

▶ Extremely flammable, fl. p. -18°, autoignition temp. 430°. Eye, skin and respiratory tract irritant (and aq. soln.). OES: long-term 10 ppm. PF6300000

Monohydrate:
Liq. $d^{13.9}$ 0.9.

Trihydrate: Mp -35.8°.

Hydrochloride: [593-51-1] Used in tanning industry.
Plates (EtOH). Sol. EtOH; insol. Me_2CO, Et_2O, $CHCl_3$. Mp 227-228°. Bp_{15} 225-230°.

▶ PA0603000

Di-Ac: Methyldiacetamide
[1113-68-4]
$C_5H_9NO_2$ 115.132
Misc. H_2O; insol. Et_2O. Bp 192°.

N-*(2-Methylpropylidene):* N-*Isobutylidenemethylamine, 8CI*
[6898-70-0]
$C_5H_{11}N$ 85.149
Bp 69.5°.

Nitrate: Methylammonium nitrate
[22113-87-7]
$CH_6N_2O_3$ 94.07
Sensitiser for slurry and emulsion explosives containing ammonium nitrate. V. hygroscopic cryst. (EtOH). Mp 110.5-111.5°.

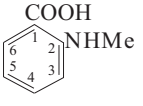
▶ Explosive.

[7436-22-8 , 17000-00-9 , 14779-52-3 , 14779-55-6]

Aldrich Library of NMR Spectra, 2nd edn., 1983, **1**, 237B (*nmr*)
Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 279A; 279B (*ir*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 363D (*ir*)
Org. Synth., Coll. Vol., 2, 1943, 374 (*synth*)
Tiollais, R. *et al., Bull. Soc. Chim. Fr.*, 1947, 708 (*Isobutylidenemethylamine*)
Cottrell, T.L. *et al., J.C.S.*, 1951, 1798-1800 (*nitrate, synth*)
Hesse, G. *et al., Annalen*, 1957, **607**, 24 (*synth*)
von Kamienski, E.S. *et al., CA*, 1958, **52**, 5551,6502 (*occur*)
Suhr, H. *et al., Chem. Ber.*, 1963, **96**, 1720 (*pmr*)
Fr. Pat., 1968, 1 525 149; *CA*, **71**, 80663 (*synth*)
Jayasooriya, U.A. *et al., J. Chem. Soc., Faraday Trans.*, 1992, 1631-1636 (*nitrate, ir, Raman*)
Kurniadi, W. *et al., J.O.C.*, 1994, **59**, 5502-5505 (*nitrate, synth, props*)
Ethel Browning's Toxicity and Metabolism of Industrial Solvents, 2nd edn., (ed. Snyder, R.), Elsevier, Volume 2, 1990, 113
Bretherick, L. *et al., Handbook of Reactive Chemical Hazards, 4th edn., Butterworths*, 1990, 0469
Luxon, S.G. *et al., Hazards in the Chemical Laboratory, 5th edn., Royal Society of Chemistry*, 1992, 825; 826
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, MGC250

2-(Methylamino)benzoic acid, 9CI M-384

N-*Methylanthranilic acid, 8CI*
[119-68-6]



$C_8H_9NO_2$ 151.165
Isol. from grapefruit peel oil. Plates (EtOH or petrol). Mp 178-179° (175-182°). $Bp_{0.01}$ 80°. pK_{a1} 2; pK_{a2} 5.34 (22°, 0.1*M* KCl). Amphoteric. Sublimes.

▶ Eye irritant. CB3300000

Hydrochloride:
Needles. Mp 141°. No CAS no. found 8-14CI.

Me ester: Methyl N-*methylanthranilate. FEMA 2718*
[85-91-6]
$C_9H_{11}NO_2$ 165.191
Constit. of mandarin peel oil (*Citrus madurensis*), hyacinth oil, petitgrain oil and oil of *Kaempferia ethelae* bulbs. Flavouring agent. Cryst. (petrol) with apple-like flavour at low conc. Mp 19°. Bp 256° Bp_{15} 130-131°.

▶ CB3500000

Me ester, hydrochloride:
Needles (EtOH). Mp 218°.

Et ester: [35472-56-1]
$C_{10}H_{13}NO_2$ 179.218
Mp 39°. Bp_{45} 172-175°.

Ph ester: [31358-73-3]
$C_{14}H_{13}NO_2$ 227.262
Yellow needles (EtOH aq.). Mp 70-71°.

Amide: 2-(Methylamino)benzamide
[7505-81-9]
$C_8H_{10}N_2O$ 150.18
Alkaloid from the fruit of *Evodia rutaecarpa* and the flowers of *Glycosmis pentaphylla*. Plates (EtOH). Mp 162-163°.

▶ CV5570450

N-*Ac:* [78944-67-9]
$C_{10}H_{11}NO_3$ 193.202
Needles. Mp 192-193°.

N-*(3-Phenylpropanoyl): 2-[Methyl(3-phenylpropanoyl)amino]benzoic acid*
[207305-65-5]
$C_{17}H_{17}NO_3$ 283.326
Prod. by the marine *Streptomyces* sp. B7747. Antimicroalgal agent. Cryst. (Et_2O). Mp 107°.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 189B (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **2**, 1066C (*nmr*)
Houben, J. *et al., Ber.*, 1906, **39**, 3233-3240; 1909, **42**, 3188-3196 (*synth, Ph ester*)
Cosulich, D.B. *et al., J.A.C.S.*, 1948, **70**, 1922-1926 (*synth*)
Tomita, K. *et al., Yakugaku Zasshi*, 1951, **71**, 1100-1112; *CA*, **46**, 50456 (*synth, esters*)
Freifelder, M. *et al., J. Phys. Chem.*, 1965, **69**, 3645-3648 (*pmr*)
Pant, L.M. *et al., Acta Cryst. B*, 1972, **28**, 647-649 (*cryst struct*)
Lewis, R.J. *et al., Food Additives Handbook*, Van Nostrand Reinhold International, New York, 1989, MGQ250
Sinhababu, A. *et al., Asian J. Chem.*, 1995, **7**, 221-222 (*amide, isol*)
Biabani, M.A.F. *et al., J. Antibiot.*, 1998, **51**, 333-340 (*3-phenylpropanoyl*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, MGQ000; MGQ250

[(Methylamino)carbonyl]carbamic acid M-385

ω-*Methylallophanic acid*
[114728-45-9]
MeNHCONHCOOH
$C_3H_6N_2O_3$ 118.092
Isol. from *Echinops echinatus.*

Me ester: Methyl [(methylamino)carbonyl]carbamate, 9CI. ***Monospermin***
[83225-61-0]
$C_4H_8N_2O_3$ 132.119
Alkaloid from *Butea monosperma* seeds (Fabaceae). Cryst. (EtOH). Mp 161-163°. Formerly assigned an incorrect imidazolone struct.

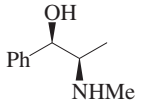
N^2-*Hydroxy: Hydroxy[(methylamino)carbonyl]carbamic acid, 9CI.* ***2-Hydroxy-ω-methylallophanic acid***
[115909-20-1]
$C_3H_6N_2O_4$ 134.091
Isol. from *Butea monosperma*. Shining needles (MeOH) (as Me ester). Mp 171-172° (Me ester).

Mehta, B. *et al., Chem. Ind. (London)*, 1981, 98 (*isol*)
Dhar, K.L. *et al., Chem. Ind. (London)*, 1982, 862 (*struct*)
Mochalin, V.B. *et al., Zh. Org. Khim.*, 1982, **18**, 1202 (*synth*)
Porwal, M. *et al., Indian J. Chem., Sect. B*, 1988, **27**, 281 (*isol, deriv*)

2-(Methylamino)-1-phenyl-1-propanol M-386

α-[1-(Methylamino)ethyl]benzenemethanol, 9CI

[53214-57-6]



(1*R*,2*R*)-*form*

$C_{10}H_{15}NO$ 165.235

Resolving agent for aldehydes and ketones *via* chiral oxazolidine formn. Used as 0.2% soln. in $CHCl_3$ for photometric detn. of As. Orally active sympathomimetic agent. Weaker but longer-acting than adrenaline. Hypertensive, cardiac stimulant, bronchodilator, hyperglycaemic agent. Low toxicity. Has been used clinically against bronchial asthma, hay fever, whooping cough, myasthenia gravis, dysmenorrhea and heart block (Stokes-Adam syndrome). Log P 0.89 (calc).

▶ DO9500000

(1*R*,2*R*)-*form*

(-)-ψ-Ephedrine

[321-97-1]

Synthetic. Mp 118-118.5°. $[\alpha]_D^{20}$ -52 (EtOH).

▶ UL5750500

(1*R*,2*S*)-*form*

Ephedrine, BAN

[299-42-3]

Main alkaloid from the Chinese drug "Ma-Huang", and from many *Ephedra* spp., also in *Aconitum napellus, Catha edulis, Taxus baccata, Sida cordifolia, Roemeria refracta* and some other spp. (Ephedraceae, Ranunculaceae, Celastraceae, Taxaceae, Malvaceae, Papaveraceae). Sol. $CHCl_3$. Mp 40°. Bp 225°. $[\alpha]_D$ -6.3 (EtOH). pK_a 9.52 (25°). Log P 0.89 (calc). More pharmacol. active isomer.

▶ Adverse effects reported when used therapeutically. LD_{50} (rat, orl) 600 mg/kg. Exp. teratogen. KB0700000

Hydrochloride: ***Ephedrine hydrochloride, JAN, USAN***

[50-98-6]

Mp 218°. $[\alpha]_D^{20}$ -37 (H_2O). Component of Amesec, Bronkotabs, Primatene M, Primatene P, Quadrinal, Quibron Plus and Tedral.

▶ Adverse effects when used therapeutically. KB1750000

Sulfate: ***Ephedrine sulfate, USAN****. Isofedrol*

[134-72-5] Component of Wyanoids.

▶ Adverse effects when used therapeutically. LD_{50} (rat, orl) 404 mg/kg. KB2625000

N-*Me:* see 2-Dimethylamino-1-phenyl-1-propanol, D-738

N-*Ac:* [52305-20-1]

$C_{12}H_{17}NO_2$ 207.272

Mp 85-86°. $[\alpha]_D^{20}$ +8 (EtOH). $[\alpha]_D^{20}$ -63 ($CHCl_3$).

Compd. with theophylline: see Theophylline, T-360

Nitrate salt: [81012-98-8]

Mp 126-128°. $[\alpha]_D^{21}$ -31 (c, 5 in H_2O).

(1*S*,2*S*)-*form*

ψ-Ephedrine*. Pseudoephedrine, BAN, INN. Isoephedrine*

[90-82-4]

Alkaloid from *Ephedra vulgaris* var. *helvetica* and many other *Ephedra* spp., and from *Roemeria refracta* and *Sida cordifolia* (Ephedraceae, Papaveraceae, Malvaceae). Shows somewhat similar pharmacol. activity to Ephedrine but has less pressor activity and CNS effects. Used for illicit production of methamphetamine. Since 2005, banned for use in OTC formulations in USA. Mp 117-118°. $[\alpha]_D$ +52 (EtOH). pK_a 9.57 (30°). Log P 0.89 (calc). Also used as a copolymer with sulfonated styrene-divinylbenzene (Pseudoephedrine polistirex, USAN) as a nasal decongestant.

▶ Adverse effects when used therapeutically. LD_{50} (rat, orl) 660 mg/kg. UL5800000

Hydrochloride: ***Pseudoephedrine hydrochloride, USAN***

[345-78-8] Adrenergic (vasoconstrictor). Mp 182-182.5°. $[\alpha]_D^{20}$ -62 (H_2O). Component of Actifed, Novafed, Sudafed, Sinutab, Demazin, Phenergan and numerous proprietary formulations. In some formulations, replaced by phenylephrine.

▶ Human systemic effects if ingested. LD_{50} (mus, orl) 371 mg/kg. UL5950000

Sulfate: ***Pseudoephedrine sulfate, USAN****. Afrinol. D-Isoephedrine sulfate, JAN*

[7460-12-0] Component of Disophrol and Drixoral.

N-*De-Me:* see 2-Amino-1-phenyl-1-propanol, A-869

N-*Me:* see 2-Dimethylamino-1-phenyl-1-propanol, D-738

(1*S*,2*R*)-*form*

(+)-Ephedrine

[321-98-2]

Synthetic. Resolving agent for aldehydes and ketones. Shows about 1/3 the pharmacol. activity of (-)-ephedrine. Mp 40-40.5°.

▶ LD_{50} (mus, ipr) 255 mg/kg. KB0600000

Hydrochloride: [24221-86-1]

Mp 217-218°. $[\alpha]_D^{20}$ +34 (H_2O).

▶ KB1925000

(1*RS*,2*RS*)-*form*

(±)-ψ-Ephedrine. ***Racephedrine, BAN, INN***

[4125-58-0]

Synthetic. Sympathomimetic agent. Mp 118°.

(1*RS*,2*SR*)-*form*

(±)-Ephedrine

[90-81-3]

Mp 76°.

▶ KB0610000

Hydrochloride: [134-71-4]

Mp 188-189.5°.

▶ KB1575000

N-*Ac:*

$C_{12}H_{17}NO_2$ 207.272

Mp 77-78.5°.

[50906-05-3 , 670-40-6 , 56979-55-6]

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 1277C; 1278A (*ir*)

Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **2**, 578C; 579A; 579B; 586A; 586B; 586C; 587A; 587B (*nmr*)

Emde, H. *et al., Helv. Chim. Acta*, 1929, **12**, 365; 405 (*struct, rel config*)

Freudenberg, K. *et al., J.A.C.S.*, 1932, **54**, 234

Freudenberg, K. *et al., Annalen*, 1934, **510**, 223 (*abs config*)

Phillips, D.C. *et al., Acta Cryst.*, 1954, **7**, 159 (*rel config*)

Kopp, J.F. *et al., Anal. Chem.*, 1973, **45**, 1786 (*use, Ephedrine*)

Milne, J.W.A. *et al., Anal. Chem.*, 1973, **45**, 1952 (*ms*)

Yamasaki, K. *et al., Phytochemistry*, 1973, **12**, 2877 (*biosynth*)

Furlei, R.R. *et al., CA*, 1974, **80**, 144 913z (*ms*)

Fieser and Fieser's Reagents for Organic Synthesis, Wiley, 1975, **5**, 289; 1981, **9**, 209; 1984, **11**, 230; 1989, **14**, 159; 1990, **15**, 154 (*use*)

Ghosal, S. *et al., Phytochemistry*, 1975, **14**, 830 (*isol*)

Lovgren, K. *et al., Acta Pharm. Suec.*, 1977, **14**, 30 (*pmr*)

Smith, T.A. *et al., Phytochemistry*, 1977, **16**, 9 (*occur*)

Benzezra, S.A. *et al., Anal. Profiles Drug Subst.*, 1979, **8**, 489 (*rev, uv, ir, pmr, ms, anal, Pseudoephedrine*)

Baudet, M. *et al., Analyst (London)*, 1979, **12**, 641 (*cmr*)

Ali, S.L. *et al., Anal. Profiles Drug Subst.*, 1986, **15**, 255 (*rev, uv, ir, ms, pmr, anal*)

Encyclopaedia of Reagents for Organic Synthesis, (ed. Paquette, L.A.), Wiley, 1995, **4**, 2321-2325 (*use*)

Reddy, G.V. *et al., Tet. Lett.*, 2000, **41**, 953-954 (*synth*)

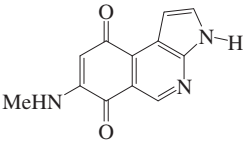
Kim, H.K. *et al., Chem. Pharm. Bull.*, 2003, **51**, 1382-1385 (*pmr, anal*)

Eccles, R. *et al., Br. J. Clin. Pharmacol.*, 2007, **63**, 10-14 (*use*)

Martindale, The Extra Pharmacopoeia, 35th edn., Pharmaceutical Press, 2007, 1417

Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, EAW000; EAX000; EAY000; POH000; POH250; EAW500; EAY500; POH500; EAX500

7-(Methylamino)-3*H*-pyrrolo[2,3-*c*]isoquinoline-6,9-dione M-387



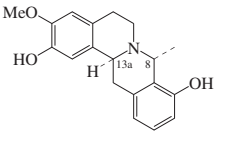
$C_{12}H_9N_3O_2$ 227.222

Prod. by the marine-derived *Streptomyces* sp. B1848. Dark red solid. λ_{max} 233 ; 287 ; 295 (sh) ; 372 ; 422 (sh) ; 481 (sh) (MeOH).

Shaaban, M. *et al., Dissertation*, Univ. of Göttingen, 2004, (*isol, pmr, cmr, ms*)

8-Methylanibacanine M-388

[151757-09-4]



Absolute Configuration

$C_{19}H_{21}NO_3$ 311.38

Alkaloid from the stem bark of *Aniba*

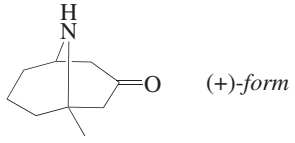
canelilla (Lauraceae). $[\alpha]_D$ -60 (c, 0.7 in MeOH). λ_{max} 225 (log ϵ 3.98); 281 (log ϵ 3.61) (MeOH).

Oger, J.-M. *et al., Can. J. Chem.*, 1993, **71**, 1128-1135 (*isol, uv, pmr, cmr, ms, struct*)

1-Methyl-9-azabicyclo[3.3.1]-nonan-3-one, 9CI M-389

Euphococcinine

[45977-26-2]



(+)-*form*

$C_9H_{15}NO$ 153.224

(+)-*form* [15486-23-4]

Main alkaloid from *Euphorbia atoto* (Euphorbiaceae). Component of the defence secretion of the ladybird *Cryptolaemus montrouzieri* and the Mexican bean beetle *Epilachna varivestis*. Active against gram-negative bacteria. Mp 30° (28°). $[\alpha]_D$ +3 (c, 2.0 in $CHCl_3$). $[\alpha]_D$ +6 (c, 2.0 in MeOH).

Picrate: Mp 240° dec.

N-*Me: 1,9-Dimethyl-9-azabicyclo[3.3.1]-nonan-3-one, 9CI*. **N-*Methyleuphococcinine***. *1-Methylgranatan-3-one*
[219756-74-8]
$C_{10}H_{17}NO$ 167.25
Trace alkaloid from *Picea pungens*. $[\alpha]_D^{23}$ +22 (c, 0.2 in $CHCl_3$).

(-)-*form* [84026-78-8]

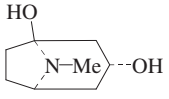
Synthetic. Powder (CH_2Cl_2). Mp 32°. $[\alpha]_D^{20}$ -6.5 (c, 1.80 in MeOH).

(±)-*form*

Oil. Mp 230° (as picrate). $Bp_{0.001}$ 50°.

Alder, K. *et al., Annalen*, 1959, **620**, 73-87 (*synth*)
Hart, N.K. *et al., Aust. J. Chem.*, 1967, **20**, 561-563 (*isol, ir, pmr, ms*)
Brown, W.V. *et al., Aust. J. Chem.*, 1982, **35**, 1255-1261 (*isol*)
Hill, R.K. *et al., Tetrahedron*, 1982, **38**, 1958-1963 (*synth*)
Gnecco Medina, D.H. *et al., Tet. Lett.*, 1983, **24**, 2099-2102 (*synth*)
Eisner, T. *et al., Experientia*, 1986, **42**, 204-207 (*isol*)
Yue, C. *et al., J.O.C.*, 1992, **57**, 4211-4214 (*synth, abs config*)
Tawara, J.N. *et al., J.O.C.*, 1993, **58**, 4813-4818 (*activity*)
Davison, E.C. *et al., Tet. Lett.*, 1995, **36**, 9047-9050 (*synth*)
Tawara, J.N. *et al., J. Nat. Prod.*, 1999, **62**, 321-323 (*N-Methyleuphococcinine*)
Murahashi, S. *et al., Heterocycles*, 2000, **52**, 557-561 (*synth*)
Mechelke, M.F. *et al., Tet. Lett.*, 2000, **41**, 4339-4342 (*synth*)

8-Methyl-8-azabicyclo[3.2.1]octane-1,3-diol M-390



$C_8H_{15}NO_2$ 157.212

(1R,3R)-*form*

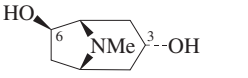
3-O-*Benzoyl:* ***1-Hydroxytropacocaine***
[156497-23-3]
$C_{15}H_{19}NO_3$ 261.32
Alkaloid from the leaves of *Erythroxylum novogranatense* (2 varieties).

Moore, J.M. *et al., Phytochemistry*, 1994, **36**, 357-360

8-Methyl-8-azabicyclo[3.2.1]octane-3,6-diol, 9CI M-391

3,6-Tropanediol. 3,6-Dihydroxytropane

[41164-06-1]



(3*R*,6*R*)-*form*

$C_8H_{15}NO_2$ 157.212

(1*R*,3*R*,6*R*)-*form* [7688-72-4]

Alkaloid from *Datura* spp. (Solanaceae). Mp 211°. $[\alpha]_D^{20}$ +24 (c, 2 in EtOH).

3-Ac: ***3-Acetoxytropan-6-ol***
[34446-04-3]
$C_{10}H_{17}NO_3$ 199.249
Alkaloid from leaves of *Peripentadenia mearsii* (Elaeocarpaceae). Needles (Me_2CO). Mp 105-106°. $[\alpha]_D$ +16 (c, 0.31 in $CHCl_3$).

3,6-Di-Ac:
Noncryst. Mp 192-193° (as picrate). $[\alpha]_D$ +17 (c, 2.4 in EtOH).

6-O-(3-Methylbutanoyl): ***6-Isovaleroyloxytropan-3-ol***
[152128-83-1]
$C_{13}H_{23}NO_3$ 241.33
Alkaloid from the stem bark *Erythroxylum zambesiacum*.

6-Angeloyl: ***6-Angeloyloxytropan-3-ol***
[77123-13-8]
$C_{13}H_{21}NO_3$ 239.314
Alkaloid from *Schizanthus hookeri* (Solanaceae). Oil. Mp 168-169° (as hydrobromide). $[\alpha]_D$ -18 (c, 0.2 in EtOH).

3-Tigloyl, 6-Ac: ***6-Acetoxy-3-tigloyloxytropane***
[7688-71-3]
$C_{15}H_{23}NO_4$ 281.351
Alkaloid from leaves of *Datura sanguinea* (Solanaceae). Mp 184-184.5° (as picrate). $[\alpha]_D^{20}$ -11.5 (c, 12.4 in EtOH).

3-Tigloyl, 6-propanoyl: ***6-Propanoyloxy-3-tigloyloxytropane***
[54354-59-5]
$C_{16}H_{25}NO_4$ 295.378
Alkaloid from *Datura innoxia* (Solanaceae). Gum. Mp 163° (as picrate). $[\alpha]_D^{23}$ 0.

6-Tigloyl: ***6-Tigloyloxytropan-3-ol***
[20399-77-3]
$C_{13}H_{21}NO_3$ 239.314
Alkaloid from *Datura cornigera* leaves and from *Schizanthus hookeri* (Solanaceae). Gum; needles (as hydrobromide). Mp 185° (hydrobromide). $[\alpha]_D^{20}$ -28.1 (c, 1.64 in $CHCl_3$).

Ditigloyl: ***3,6-Ditigloyloxytropane***. *3,6-Ditigloyltropanediol*
[23517-33-1]
$C_{18}H_{27}NO_4$ 321.416
Alkaloid from *Datura innoxia*, *Datura stramonium*, *Mandragora autumnalis* and *Mandragora* sp. (Solanaceae). Noncryst.; filamentous needles (as picrate). Mp 150-151° (picrate). $[\alpha]_D$ -21.5 (c, 3.1 in EtOH).

3-O-*(3-Methyl-2-butenoyl):* ***3-Senecioyloxytropan-6-ol***
[20399-78-4]
$C_{13}H_{21}NO_3$ 239.314
Alkaloid from *Schizanthus hookeri* (Solanaceae). Solid (EtOH aq.). Mp 79-80°. $[\alpha]_D$ -17.6 (c, 0.08 in EtOH).

6-O-*(3-Methyl-2-butenoyl):* ***6-Senecioyloxytropan-3-ol***
[20399-79-5]
$C_{13}H_{21}NO_3$ 239.314
Alkaloid from the leaves of *Schizanthus litoralis*. Oil. $[\alpha]_D$ -23 (c, 0.31 in EtOH).

3-O-*Phenylacetyl:* ***Tropane-3,6-diol 3-phenylacetate***
[104086-64-8]
$C_{16}H_{21}NO_3$ 275.347
Alkaloid from root bark of *Erythroxylum hypericifolium* (Erythroxylaceae). Cryst. (EtOH). Mp 85°. $[\alpha]_D^{20}$ +4.3 (c, 1.5 in EtOH).

3-O-*Phenylacetyl, 6-Ac:* ***Tropane 3,6-diol 3-phenylacetate 6-acetate***
[97345-82-9]
$C_{18}H_{23}NO_4$ 317.384
Alkaloid from root bark of *Erythroxylum hypericifolium* (Erythroxylaceae). Mp 133° (as picrate).

3-O-*(3-Methoxycarbonyl-2*E*-butenoyl),* 6-O-*(3-methyl-2-butenoyl):* [182015-07-2]
$C_{19}H_{27}NO_6$ 365.425
Alkaloid from the leaves of *Schizanthus litoralis*. Brown oil. $[\alpha]_D^{25}$ -18.7 (c, 0.15 in $CHCl_3$). λ_{max} 216 (log ϵ 4.09) (EtOH).

3-O-*(3-Methoxycarbonyl-2*E*-butenoyl),* 6-O-E-*cinnamoyl:* [182015-08-3]
$C_{23}H_{27}NO_6$ 413.469
Alkaloid form the leaves of *Schizanthus litoralis*.

3-Benzoyl: ***3-Benzoyloxytropan-6-ol***
[99562-18-2]
$C_{15}H_{19}NO_3$ 261.32
Major alkaloid from the leaves of *Erythroxylum sideroxyloides* (Erythroxylaceae). Mp 110° (as picrate).

6-Benzoyl: ***3-Hydroxy-6-benzoyloxytropane***
[77096-53-8]
$C_{15}H_{19}NO_3$ 261.32
Alkaloid from *Erythroxylum cuneatum*, *Erythroxylum zambesiacum* and *Knightia strobilina*. Amorph. $[\alpha]_D^{20}$ +8 ($CHCl_3$).

3-O-*(3,4,5-Trimethoxybenzoyl):* ***3-(3,4,5-Trimethoxybenzoyloxy)tropan-6-ol***
[111509-20-7]
$C_{18}H_{25}NO_6$ 351.399
Alkaloid from *Erythroxylum zambe-*

siacum (Erythroxylaceae). Rods (EtOH aq.) (as picrate). Mp 214° (picrate). $[\alpha]_D^{20}$ +3.5 (c, 1.5 in EtOH).

3-O-*(3,4,5-Trimethoxybenzoyl), 6-Ac:* ***Erythrozeylanine A***
$C_{20}H_{27}NO_7$ 393.436
Alkaloid from *Erythroxylum zeylanicum*. Semisolid. $[\alpha]_D^{25}$ -22.1 (c, 0.3 in $CHCl_3$).

3-Cinnamoyl: ***3-Cinnamoyloxytropan-6-ol***
[77062-74-9]
$C_{17}H_{21}NO_3$ 287.358
Alkaloid from the leaves of *Knightia strobilina* (Proteaceae). Viscous oil. Abs. config. not detd., may belong to the (3*S*,6*S*)-form.

3-O-*(3,4,5-Trimethoxy*-E-*cinnamoyl):* ***Pervilleine G***
$C_{20}H_{27}NO_6$ 377.436
Alkaloid from the stem bark of *Erythroxylum pervillei*. Amorph. solid. $[\alpha]_D$ +24.5 (c, 0.19 in $CHCl_3$). λ_{max} 311 (log ϵ 4.42) ($CHCl_3$).

3-O-*(3,4,5-Trimethoxy*-E-*cinnamoyl), 6-benzoyl:* ***Tropane 3,6-diol 3-(3,4,5-trimethoxycinnamate) 6-benzoate****. Tropan-6-yl benzoate-3-yl-3,4,5-trimethoxycinnamate*
[58721-83-8]
[60873-17-8 , 60894-58-8]
$C_{27}H_{31}NO_7$ 481.544
Alkaloid from *Erythroxylum monogynum* and *Erythroxylum rotundifolium*. Amorph. solid. Mp 54-55°. $[\alpha]_D$ +39 (c, 1 in $CHCl_3$). Abs. config. not determined. Synth. as racemate.

6-O-*(3,4,5-Trimethoxy*-E-*cinnamoyl), 3*-O-*(3,4,5-trimethoxybenzoyl):* ***Pervilleine B***
$C_{30}H_{37}NO_{10}$ 571.623
Alkaloid from the roots of *Erythroxylum pervillei*. Amorph. solid. Mp 40-42°. $[\alpha]_D$ -22.5 (c, 0.25 in $CHCl_3$). Abs. config. not determined. λ_{max} 302 (log ϵ 4.31) (MeOH).

6-O-*(3,4,5-Trimethoxy*-Z-*cinnamoyl), 3*-O-*(3,4,5-trimethoxybenzoyl):* **cis-*Pervilleine B***
$C_{30}H_{37}NO_{10}$ 571.623
Alkaloid from the stem bark of *Erythroxylum pervillei*. Amorph. solid. $[\alpha]_D$ -25.2 (c, 0.28 in $CHCl_3$). λ_{max} 299 (log ϵ 4.16) ($CHCl_3$).

3-O-*(4-Hydroxy-3-methyl-2*E-*butenoyl), 6-angeloyl: 6-Angeloyl-3-(*trans-*4-hydroxysenecioyl)tropane*
$C_{18}H_{27}NO_5$ 337.415
Alkaloid from *Schizanthus tricolor*. ACE inhibitor.

3-O-*(4-Hydroxy-3-methyl-2*E-*butenoyl), 6*-O-*(3-methyl-2-butenoyl): 3-(*trans-*4-Hydroxysenecioyl)-6-senecioyltropane*
$C_{18}H_{27}NO_5$ 337.415
Alkaloid from *Schizanthus tricolor*. ACE inhibitor.

3-Ketone: 6-Hydroxy-8-methyl-8-azabicyclo[3.2.1]octan-3-one. 6-Hydroxy-3-tropanone
[5932-53-6]
[110061-26-2]
$C_8H_{13}NO_2$ 155.196
Alkaloid from the stem bark *Erythroxylum zambesiacum*.

3-Ketone, 6-benzoyl: 6-Benzoyloxy-3-tropanone
[133613-86-2]
$C_{15}H_{17}NO_3$ 259.304
Alkaloid from the stem bark of *Erythroxylum zambesiacum*.

(1*R*,3*S*,6*S*)-*form* [4839-11-6]
Alkaloid in *Anthocercis* spp. (Solanaceae). Mp 212°. $[\alpha]_D^{27}$ -23.3 (c, 2 in EtOH).

Di-Ac, hydrobromide: Mp 219-220°.

3-O-*(2-Methylpropanoyl):* ***3-Isobutyryloxytropan-6-ol***
[78886-99-4]
$C_{12}H_{21}NO_3$ 227.303
Alkaloid from aerial parts of *Anthocercis albicans* (Solanaceae).

3-O-*(3-Methylbutanoyl):* ***Valeroidine***
[490-96-0]
$C_{13}H_{23}NO_3$ 241.33
Alkaloid from *Datura sanguinea* and *Duboisia myoporoides* (Solanaceae). Mp 85°. $[\alpha]_D^{20}$ -9 (c, 5 in EtOH).

3-O-*(3-Methylbutanoyl); hydrobromide:* Mp 170-172°. $[\alpha]_D^{20}$ +5 (c, 20 in H_2O).

6-O-*Benzoyl:* Alkaloid from the stems of *Erythroxylum rotundifolium*. Amorph. solid. Mp 155-157°. $[\alpha]_D$ -11 (c, 0.7 in $CHCl_3$). λ_{max} 217 (log ϵ 3.89); 272 (log ϵ 3.41); 294 (log ϵ 3.35) (MeOH).

3-O-E-*Cinnamoyl, 6-Ac:*
$C_{19}H_{23}NO_4$ 329.395
Alkaloid from *Erythroxylum zeylanicum*.

3-O-Z-*Cinnamoyl, 6-Ac:* ***Erythrozeylanine C***
$C_{19}H_{23}NO_4$ 329.395
Alkaloid from *Erythroxylum zeylanicum*. Isol. as a mixt. with the (*E*)-isomer. Poss. artifact.

Bis-O-*(3,4,5-trimethoxy*-E-*cinnamoyl):* ***Pervilleine C***
[392232-10-9]
$C_{32}H_{39}NO_{10}$ 597.661
Alkaloid from the roots of *Erythroxylum pervillei*. Amorph. solid. Mp 55-57°. $[\alpha]_D$ +29 (c, 0.1 in $CHCl_2$).

(1*RS*,3*RS*,6*RS*)-*form* [65941-67-5]
Synthetic. Mp 179-180°.

Hydrobromide: Mp 267° dec.

3-Ac: [7688-76-8]
$C_{10}H_{17}NO_3$ 199.249
Alkaloid from *Bellendena montana* (Proteaceae). Noncryst. Mp 182-184° (as picrate). Opt. inactive.

3-O-*(2-Methylpropanoyl), 6-Ac:* ***6-Acetoxy-3-isobutyryloxytropane***
[72362-51-7]
[72362-53-9]
$C_{14}H_{23}NO_4$ 269.34
Alkaloid from *Bellendena montana* (Proteaceae). Mp 145-147° (as picrate). Opt. inactive.

6-O-*(2-Methylpropanoyl), 3-Ac:* ***3-Acetoxy-6-isobutyryloxytropane***
[72362-49-3]
[72362-50-6]
$C_{14}H_{23}NO_4$ 269.34
Alkaloid from *Bellendena montana* (Proteaceae). Noncryst. Mp 113-115° (as picrate). Opt. inactive.

3-O-*(3-Hydroxy-2-phenylpropanoyl):* see 6-Hydroxyhyoscyamine, H-521

3-Tigloyl: ***(±)-3-O-Tigloyloxytropan-6β-ol***
[7688-74-6]
$C_{13}H_{21}NO_3$ 239.314
Alkaloid from *Duboisia suaveolens* and from *Schizanthus hookeri* (stereochem. undetd.) (Solanaceae). Mp 167-171° (as picrate).

3-Tigloyl, 6-O-*(2-methylbutanoyl):* ***6-(α-Methylbutyryloxy)-3-tigloyloxytropane***
$C_{18}H_{29}NO_4$ 323.431
Alkaloid from *Duboisia suaveolens* (Solanaceae). Noncryst. Mp 168-170° (as picrate). No opt. rotn. mentioned, may be opt. active.

Dibenzoyl: ***3,6-Dibenzoyloxytropane***
[117005-28-4]
$C_{22}H_{23}NO_4$ 365.428
Principal alkaloid from leaves of *Erythroxylum cuneatum* (Erythroxylaceae). Plates (EtOH aq.) (as picrate). Mp 240° (picrate).

3-O-*(3,4-Dimethoxybenzoyl), 6-Ac:* ***Convolacine***
[169626-32-8]
$C_{19}H_{25}NO_6$ 363.41
Alkaloid from *Convolvulus subhirsutus*.

3-O-*(4-Methoxyphenylacetyl):* ***Physochlaine***
[54357-41-4]
$C_{17}H_{23}NO_4$ 305.373
Alkaloid from *Physochlaina alaica* (Solanaceae). Mp 75-76°. Opt. inactive.

(1*R*,3*R*,6*R*)-*form*

6-Tigloyl, 3-formyl: 3-Formyloxy-6-tigloyloxytropane
[855784-81-5]
$C_{14}H_{21}NO_4$ 267.324
Alkaloid from *Datura stramonium*.

3-O-*(Phenylacetyl), 6*-O-*(3,4,5-trimethoxy*-E-*cinnamoyl):* ***Pervilleine F***
$C_{28}H_{33}NO_7$ 495.571
Alkaloid from the roots of *Erythroxylum pervillei*. Amorph. solid. Mp 95-97°. $[\alpha]_D$ +12 (c, 0.12 in $CHCl_3$). λ_{max} 304 (log ϵ 4.24) (MeOH).

3-O-*(Phenylacetyl), 6*-O-*(3,4,5-trimethoxy*-Z-*cinnamoyl):* **cis-*Pervilleine F***
$C_{28}H_{33}NO_7$ 495.571
Alkaloid from the stem bark of *Erythroxylum pervillei*. Amorph. solid. $[\alpha]_D$ +4 (c, 0.23 in $CHCl_3$). λ_{max} 308 (log ϵ 4.18) ($CHCl_3$).

3-O-*(3-Hydroxyphenylacetyl), 6*-O-*(3,4,5-trimethoxy*-E-*cinnamoyl):* ***Pervilleine E***
$C_{28}H_{33}NO_8$ 511.571
Alkaloid from the roots of *Erythroxylum pervillei*. Amorph. solid. Mp 82-84°. $[\alpha]_D$ +28 (c, 0.12 in $CHCl_3$). λ_{max} 302 (log ϵ 4.25) (MeOH).

Bis-O-*(4-methoxybenzoyl):* ***Merredissine***
$C_{24}H_{27}NO_6$ 425.48
Alkaloid from *Merremia dissecta*. Oil. $[\alpha]_D^{20}$ -8.6 (c, 0.2 in MeOH).

3-O-*(3,4,5-Trimethoxybenzoyl), 6*-O-*benzoyl:* ***Catuabine B***
[65862-79-5]
$C_{25}H_{29}NO_7$ 455.507
Alkaloid from *Erythroxylum vacciniifolium*.

3-O-*(3,4,5-Trimethoxy-Z-cinnamoyl), 6*-O-*benzoyl:*
$C_{27}H_{31}NO_7$ 481.544
Alkaloid from the stems of *Erythroxylum rotundifolium*. Amorph. solid. Mp 33-35°. $[\alpha]_D$ +4 (c, 0.17 in $CHCl_3$). λ_{max} 207 (log ϵ 4.49); 228 (log ϵ 4.54); 304 (log ϵ 3.85) (MeOH).

3-Phenylacetyl, 6-propanoyl: Tropane-3,6-diol 3-phenylacetate 6-propanoate
[855784-80-4]
$C_{19}H_{25}NO_4$ 331.411
Alkaloid from *Datura stramonium*.

3-O-*(1-Methyl-2-pyrrolecarbonyl):* ***Catuabine I***
$C_{14}H_{20}N_2O_3$ 264.324
Alkaloid from the bark of *Erythroxylum vacciniifolium*.

3-O-*(1-Methyl-2-pyrrolecarbonyl), 6*-O-*(2-pyrrolecarbonyl):* ***Catuabine D***
$C_{19}H_{23}N_3O_4$ 357.408
Alkaloid from the bark of *Erythroxylum vacciniifolium*. Amorph. solid. $[\alpha]_D$ -32 (c, 0.58 in EtOH). λ_{max} 267 (log ϵ 4.38) (EtOH).

6-O-*(1-Methyl-2-pyrrolecarbonyl):* ***Catuabine H***
$C_{14}H_{20}N_2O_3$ 264.324
Alkaloid from the bark of *Erythroxylum vacciniifolium*. Amorph. solid. $[\alpha]_D^{20}$ -9.6 (c, 0.46 in EtOH). λ_{max} 267 (log ϵ 4.1) (EtOH).

6-O-*(1-Methyl-2-pyrrolecarbonyl), 3*-O-*(3,4,5-trimethoxybenzoyl):* ***Catuabine A***
[65862-78-4]
$C_{24}H_{30}N_2O_7$ 458.51
Alkaloid from *Erythroxylum vacciniifolium*.

6-O-*(1-Methyl-2-pyrrolecarbonyl), 3*-O-*(4-hydroxy-3,5-dimethoxybenzoyl):* ***Catuabine F***
$C_{23}H_{28}N_2O_7$ 444.483
Alkaloid from the bark of *Erythroxylum vacciniifolium*. Amorph. solid. $[\alpha]_D$ -32.8 (c, 0.46 in EtOH). λ_{max} 221 (log ϵ 4.27); 270 (log ϵ 4.3); 293 (sh) (log ϵ 3.85) (EtOH).

6-O-*(1-Methyl-2-pyrrolecarbonyl), 3*-O-*(2-pyrrolecarbonyl):* ***Catuabine C***
[65862-80-8]
$C_{19}H_{23}N_3O_4$ 357.408
Alkaloid from *Erythroxylum vacciniifolium*.

Bis-O-*(1-methyl-2-pyrrolecarbonyl):* ***Catuabine E***
$C_{20}H_{25}N_3O_4$ 371.435
Alkaloid from the bark of *Erythroxylum vacciniifolium*. Amorph. solid. $[\alpha]_D$ -35.4 (c, 0.57 in EtOH). λ_{max} 268 (log ϵ 4.38) (EtOH).

Bis-O-*(1-methyl-2-pyrrolecarbonyl),* N-*oxide:* ***Catuabine E* N-*oxide***
$C_{20}H_{25}N_3O_5$ 387.435
Alkaloid from the bark of *Erythroxylum vacciniifolium*. Amorph. solid. $[\alpha]_D^{20}$ -7.3 (c, 0.33 in EtOH). λ_{max} 268 (log ϵ 4.43) (EtOH).

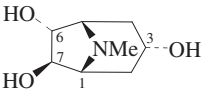
(1R,3R,6S)-form

6-O-*(1-Methyl-2-pyrrolecarbonyl):* ***3-Epicatuabine H***. *3α*H-*Catuabine H*
$C_{14}H_{20}N_2O_3$ 264.324
Alkaloid from the bark of *Erythroxylum vacciniifolium*. Amorph. solid. $[\alpha]_D^{20}$ -8 (c, 0.41 in EtOH). λ_{max} 267 (log ϵ 3.96) (EtOH).

Fodor, G. *et al., J.C.S.*, 1953, 2341; 1961, 3219; 1965, 6830 (*synth, abs config, Valeroidine, Ditigloyloxytropane, tigloyloxy*)
Evans, W.C. *et al., J.C.S.*, 1958, 1991; 1963, 4348 (*tigloyl esters*)
Evans, W.C. *et al., J.C.S.(C)*, 1966, 1621 (*Tigloyloxyacetoxytropane*)
Mandava, N. *et al., Can. J. Chem.*, 1968, **46**, 2761 (*pmr*)
Johns, S.R. *et al., Aust. J. Chem.*, 1971, **24**, 2399 (*acetate*)
Evans, W.C. *et al., Phytochemistry*, 1972, **11**, 3293; 1981, **20**, 497 (*isol, pmr, ms, esters*)
Mirzamatov, R.T. *et al., Khim. Prir. Soedin.*, 1974, **10**, 415; *Chem. Nat. Compd. (Engl. Transl.)*, 1974, **10**, 426 (*Physochlaine*)
Beresford, P.J. *et al., Phytochemistry*, 1974, **13**, 1249; 1975, **14**, 2205 (*Propanoyloxytigloyloxytropane, biosynth*)
Agar, J.T.H. *et al., J. Pharm. Pharmacol.*, 1975, **27**, 85P (*benzoate-trimethoxycinnamate*)
Agar, J.T.H. *et al., J.C.S. Perkin 1*, 1976, 1550 (*trimethoxycinnamate-benzoate*)
Graf, E. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1978, **311**, 139-152 (*Catuabines A-C*)
Bick, I.R.C. *et al., Aust. J. Chem.*, 1979, **32**, 1827 (*acetoxyisobutyryloxytropanes*)
Lounasmaa, M. *et al., Phytochemistry*, 1980, **19**, 949 (*3-cinnamate, 6-benzoate*)
Gambaro, V. *et al., Phytochemistry*, 1980, **19**, 2007; 1983, **22**, 1838 (*tiglate, angelate, senecioate*)
Al-Said, M.S. *et al., J.C.S. Perkin 1*, 1986, 957 (*phenylacetates*)
Al-Said, M.S. *et al., Phytochemistry*, 1986, **25**, 851 (*3α-Benzoyloxytropanol*)
El-Iman, Y.M.A. *et al., Phytochemistry*, 1987, **26**, 2385-2389; 1988, **27**, 2181-2184 (*trimethoxybenzoate, 6-benzoate*)
Aripova, S.F. *et al., Khim. Prir. Soedin.*, 1993, **29**, 88-90; *Chem. Nat. Compd. (Engl. Transl.)*, 1993, **29**, 74-75 (*Convolacine*)
Christen, P. *et al., Phytochemistry*, 1993, **34**, 1147-1151 (*Erythroxylum zambesiacum tropanes*)
Muñoz, O. *et al., Phytochemistry*, 1996, **43**, 709-713 (*Schizanthus litoralis tropanes*)
Bringmann, G. *et al., Phytochemistry*, 2000, **53**, 409-416 (*Erythrozeylanines*)
Silva, G.L. *et al., J. Nat. Prod.*, 2001, **64**, 1514-1520 (*Pervilleines*)
Chavez, D. *et al., J. Nat. Prod.*, 2002, **65**, 606-610 (*Erythroxylum rotundifolium esters*)
Zanolari, B. *et al., J. Nat. Prod.*, 2003, **66**, 497-502; 2005, **68**, 1153-1158 (*Catuabines*)
Kletter, C. *et al., Planta Med.*, 2004, **70**, 993-1000 (*Catuabine D*)
Doncheva, T. *et al., CA*, 2005, **143**, 74802f (*Datura stramonium constits*)
Jenett-Siems, K. *et al., Phytochemistry*, 2005, **66**, 1448-1464 (*Merredissine*)
Chin, Y.-W. *et al., J. Nat. Prod.*, 2006, **69**, 414-417 (*Pervilleine G, cis-Pervilleines B,F*)
Humam, M. *et al., Planta Med.*, 2006, **72**, 969 (*Schizanthus tricolor constits*)
Humam, M. *et al., Chirality*, 2008, **20**, 20-25 (*3-4-Hydroxysenecioyl-6-senecioyltropane, cd, abs config*)
Kulkami, K. *et al., Synlett*, 2008, 2209-2212 (*Pervilleine C, synth, abs config*)

8-Methyl-8-azabicyclo[3.2.1]octane-3,6,7-triol, 9CI M-392

3,6,7-Tropanetriol. 3,6,7-Trihydroxytropane



(1*R**,3*S**,6*R**,7*R**)-*form*

$C_8H_{15}NO_3$ 173.211
The alkaloids are named here as given in the lit., but the numbering of positions 6 and 7, which is irregular in the lit., has been corrected. Mp 169-170° (hydrate).

(1R,3S,6R,7R)-form
(3α,6α,7β)-form
Chiral stereoisomer.

3-O-*(3,4,5-Trimethoxy*-E-*cinnamoyl), 6*-O-*(3,4,5-trimethoxybenzoyl):* ***Erythrorotundine***
[307334-87-8]
$C_{30}H_{37}NO_{11}$ 587.622
Alkaloid from *Erythroxylon rotundifolium*. Cryst. (EtOH). Mp 176°. $[\alpha]_D^{25}$ -20.8 (c, 0.1 in EtOH).

(1R,3S,6S,7R)-form
(3α,6β,7β)-form. Teloidine
[575-62-2]
Mp 169-172° (hydrate). A *meso*-stereoisomer but 6-mono- and 3,6-disubstd. derivs. are chiral. There is currently no data on abs. configs.

Hydrochloride:
Prisms (EtOH). Mp 300°.

Hydrobromide: Mp 295°.

3-O-*(2-Methylbutanoyl):* ***3-(2-Methylbutanoyloxy)tropane-6,7-diol***
[152187-24-1]
$C_{13}H_{23}NO_4$ 257.329
Alkaloid from *Erythroxylum monogynum* and *Erythroxylum zambesiacum*.

3-O-*Tigloyl:* ***Meteloidine***
[526-13-6]
$C_{13}H_{21}NO_4$ 255.313
Alkaloid from *Datura meteloides*, *Datura suaveolens*, *Datura ferox* and many other *Datura* spp. and *Erythroxylum australe* (Solanaceae, Erythroxylaceae). Mp 141-142°. *Meso*-. Shows no marked physiological activity.

3-Tigloyl, 6-propanoyl: ***7-Propanoyloxy-3-tigloyloxytropan-6-ol***
$C_{16}H_{25}NO_5$ 311.377
Alkaloid from hairy root cultures of *Datura stramonium*.

3-O-*Tigloyl, 6*-O-*(3-methylbutanoyl):* ***7-Isovaleryloxy-3-tigloyloxytropan-6-ol***
[21030-84-2]
[21030-91-1]
$C_{18}H_{29}NO_5$ 339.431
Alkaloid from *Datura sanguinea* (Solanaceae). Prisms (Et_2O/EtOH) (as hydrobromide). Mp 182-883° (hydrobromide).

6-O-*Tigloyl:* ***Isometeloidine****. 7-Tigloyloxytropane-3,6-diol*
[39972-69-5]
$C_{13}H_{21}NO_4$ 255.313

Alkaloid from *Datura candida* and *Datura suaveolens* (Solanaceae). Mp 247° (as hydrobromide).

3,6-Di-O-*tigloyl:* ***3,6-Ditigloyloxytropan-7-ol***
[7159-86-6]
$C_{18}H_{27}NO_5$ 337.415
Alkaloid present in *Datura suaveolens*, *Datura cornigera*, *Datura meteloides* and *Cyphomandra betacea* (tree tomato) (Solanaceae). Mp 215° (as hydrobromide).

3-O-*Benzoyl:* ***6,7-Dihydroxytropan-3-yl benzoate***. *3*-O-*Benzoylteloidine*
[66759-80-6]
$C_{15}H_{19}NO_4$ 277.319
Alkaloid from the roots of *Erythroxylum australe* (Erythroxylaceae). Mp 290° dec. (as hydrobromide). *Meso*-.

6-O-*Benzoyl:* ***7-Benzoyloxytropane-3,6-diol***
[111509-23-0]
$C_{15}H_{19}NO_4$ 277.319
Alkaloid from the root bark of *Erythroxylum zambesiacum* (Erythroxylaceae). Plates (EtOH/Et_2O) (as picrate). Mp 213° (picrate).

3,7-Dibenzoyl: ***Alaternifoline***. *3,7-Dibenzoyloxytropan-6-ol*
[307334-86-7]
$C_{22}H_{23}NO_5$ 381.427
Alkaloid from *Erythroxylon alaternifolium*. Cryst. (EtOH). Mp 220°. $[\alpha]_D^{25}$ +10 (c, 0.1 in EtOH).

3-O-*(3,4,5-Trimethoxybenzoyl):* ***Tropane-3,6,7-triol 3-(3,4,5-trimethoxybenzoate)***
[60820-76-0]
$C_{18}H_{25}NO_7$ 367.398
Alkaloid from the root bark of *Erythroxylum monogynum* and *Erythroxylum zambesiacum* (Erythroxylaceae). Cryst. solid. Mp 112°. *Meso*-.

3-O-*Phenylacetyl:* ***Tropane-3,6,7-triol 3-phenylacetate***
[104086-63-7]
$C_{16}H_{21}NO_4$ 291.346
Minor alkaloid from the root bark of *Erythroxylum hypericifolium* (Erythroxylaceae). Cryst. *Meso*-.

3-O-*(3-Hydroxyphenylacetyl):* ***Catuabine G***
$C_{16}H_{21}NO_5$ 307.346
Alkaloid from the bark of *Erythroxylum vacciniifolium*. Amorph. solid. *Meso*-. λ_{max} 218 (log ε 4.35); 276 (log ε 3.85) (EtOH).

3-O-*(2-Hydroxy-3-phenylpropanoyl)(*R-*):* ***6,7-Dihydroxylittorine***
[62083-54-9]
$C_{17}H_{23}NO_5$ 321.372
Minor alkaloid from leaves of *Datura candida* (Solanaceae). Feathery needles (Et_2O/EtOH) (as hydrobromide). Mp 184° (hydrobromide). $[\alpha]_D^{25}$ -6 (c, 5.0 in H_2O).

6-O-*(3ξ-Hydroxy-2ξ-methyl-3-phenylpropanoyl):* ***6-(3-Hydroxy-2-methyl-3-phenylpropanoyloxy)-3,7-tropanediol***
$C_{18}H_{25}NO_5$ 335.399
Alkaloid from the leaves of *Erythroxylum moonii*. Light yellow powder. $[\alpha]_D^{25}$ -27.4 (c, 0.17 in $CHCl_3$). λ_{max} 216 (log ε 4.1); 273 (log ε 2.38) (MeOH).

3-O-*Cinnamoyl:* ***3-Cinnamoyloxy-6,7-tropanediol***
[117005-30-8]
$C_{17}H_{21}NO_4$ 303.357
Alkaloid from root bark of *Erythroxylum australe* (Erythroxylaceae). Stereochem. of cinnamoyl residue not determined. Detected by ms.

3-O-*(3,4,5-Trimethoxy*-E-*cinnamoyl):* ***Pervilleine H***
$C_{20}H_{27}NO_7$ 393.436
Alkaloid from the stem bark of *Erythroxylum pervillei*. Amorph. solid. λ_{max} 312 (log ε 4.15) ($CHCl_3$).

3-O-*(3,4,5-Trimethoxy*-E-*cinnamoyl), 6*-O-*benzoyl:* ***7-Benzoyloxy-3-(3,4,5-trimethoxycinnamoyloxy)tropan-6-ol***
[111509-24-1]
$C_{27}H_{31}NO_8$ 497.544
Alkaloid from *Erythroxylum rotundifolium* and *Erythroxylum zambesiacum* (Erythroxylaceae). Needles. Mp 184-187°. $[\alpha]_D$ +16 (c, in $CHCl_3$).

3-O-*(3,4,5-Trimethoxy*-E-*cinnamoyl), 6*-O-*benzoyl, 7-Ac:* ***6-Acetoxy-7-benzoyloxy-3-(3,4,5-trimethoxycinnamoyloxy)tropane***
[111534-76-0]
$C_{29}H_{33}NO_9$ 539.581
Alkaloid from *Erythroxylum rotundifolium* and *Erythroxylum zambesiacum*. Cryst. Mp 56-58°. $[\alpha]_D$ +2.1 (c, 0.9 in $CHCl_3$).

3-O-*(3,4,5-Trimethoxy*-E-*cinnamoyl), 6*-O-*(3,4,5-trimethoxybenzoyl):* ***7-(3,4,5-Trimethoxybenzoyloxy)-3-(3,4,5-trimethoxycinnamoyloxy)tropan-6-ol***
$C_{30}H_{37}NO_{11}$ 587.622
Alkaloid from the stems of *Erythroxylum rotundifolium*. Amorph. solid. Mp 179-180°. $[\alpha]_D$ +9 (c, 0.1 in $CHCl_3$). λ_{max} 214 (log ε 4.65); 233 (sh) (log ε 4.3); 272 (log ε 4.18); 306 (log ε 4.3) (MeOH).

6-O-*(3,4,5-Trimethoxy*-E-*cinnamoyl), 3*-O-*(3,4,5-trimethoxybenzoyl):* ***Pervilleine A***
$C_{30}H_{37}NO_{11}$ 587.622
Alkaloid from the roots of *Erythroxylum pervillei*. Amorph. solid. $[\alpha]_D$ -0.6 (c, 0.18 in $CHCl_3$). Softens at 46-48°. λ_{max} 302 (log ε 4.39) (MeOH).

6-O-*(3,4,5-Trimethoxy*-E-*cinnamoyl), 3*-O-*(3,4,5-trimethoxybenzoyl),* N-*oxide:* ***Pervilleine A* N-*oxide***
$C_{30}H_{37}NO_{12}$ 603.622
Alkaloid from the roots of *Erythroxylum pervillei*. Amorph. solid. Mp 118-121°. $[\alpha]_D$ +1.5 (c, 0.28 in $CHCl_3$). Softens at 114°. λ_{max} 303 (log ε 4.24) (MeOH).

3,6-Bis-O-*(3,4,5-trimethoxy*-E-*cinnamoyl):* ***Pervilleine D***
$C_{32}H_{39}NO_{11}$ 613.66
Alkaloid from the roots of *Erythroxylum pervillei*. Amorph. solid. Mp 59-61°. $[\alpha]_D$ +9 (c, 0.1 in $CHCl_3$). λ_{max} 305 (log ε 4.5) (MeOH).

3-O-*(1-Methyl-2-pyrrolecarbonyl):* ***7β-Hydroxycatuabine I***
$C_{14}H_{20}N_2O_4$ 280.323
Alkaloid from the bark of *Erythroxylum vacciniifolium*. Amorph. solid. λ_{max} 267 (log ε 4.13) (EtOH).

3-O-*(1-Methyl-2-pyrrolecarbonyl), 6*-O-*(2-pyrrolecarbonyl):* ***7β-Hydroxycatuabine D***
$C_{19}H_{23}N_3O_5$ 373.408
Alkaloid from the bark of *Erythroxylum vacciniifolium*. Amorph. solid. $[\alpha]_D$ -2.8 (c, 0.4 in EtOH). λ_{max} 267 (log ε 3.92) (EtOH).

6-O-*(1-Methyl-2-pyrrolecarbonyl):* ***7β-Hydroxycatuabine H***
$C_{14}H_{20}N_2O_4$ 280.323
Alkaloid from the bark of *Erythroxylum vacciniifolium*. Amorph. solid. $[\alpha]_D^{20}$ -1.5 (c, 0.53 in EtOH). λ_{max} 267 (log ε 4.04) (EtOH).

6-O-*(1-Methyl-2-pyrrolecarbonyl), 3*-O-*(4-hydroxy-3,5-dimethoxybenzoyl):* ***7β-Hydroxycatuabine F***
$C_{23}H_{28}N_2O_8$ 460.483
Alkaloid from the bark of *Erythroxylum vacciniifolium*. Amorph. solid. $[\alpha]_D$ -2.6 (c, 0.44 in EtOH). λ_{max} 221 (log ε 4.16); 269 (log ε 4.13); 293 (sh) (log ε 3.71) (EtOH).

3,6-Bis-O-*(1-methyl-2-pyrrolecarbonyl):* ***7β-Hydroxycatuabine E***
$C_{20}H_{25}N_3O_5$ 387.435
Alkaloid from the bark of *Erythroxylum vacciniifolium*. Amorph. solid. $[\alpha]_D$ +0.8 (c, 0.57 in EtOH). λ_{max} 267 (log ε 4.41) (EtOH).

3,6-Bis-O-*(1-methyl-2-pyrrolecarbonyl), 7-Ac:* ***7β-Acetoxycatuabine E***
$C_{22}H_{27}N_3O_6$ 429.472
Alkaloid from the bark of *Erythroxylum vacciniifolium*. Amorph. solid. $[\alpha]_D$ -36.8 (c, 0.56 in EtOH). λ_{max} 268 (log ε 4.45) (EtOH).

(1*R,3*S**,6*S**,7*S**)-*form***

3-O-*Tigloyl, 6*-O-*propanoyl:* [821787-78-4]
$C_{16}H_{25}NO_5$ 311.377
Alkaloid from *Datura innoxia* and *Datura stramonium*.

6-O-*(1-Methyl-2-pyrrolecarbonyl):* ***7α-Hydroxycatuabine H***
$C_{14}H_{20}N_2O_4$ 280.323
Alkaloid from the bark of *Erythroxylum vacciniifolium*. Amorph. solid. $[\alpha]_D^{20}$ -40.7 (c, 0.57 in EtOH). λ_{max} 268 (log ε 4.11) (EtOH).

(1ξ,3ξ,6ξ,7ξ)-*form*

3-O-*(2-Hydroxy-3-phenylpropanoyl), 6-tigloyl,* N-*de-Me:* ***6-Hydroxy-7-tigloyloxynortropan-3-yl 2-hydroxy-3-phenylpropionate***
[66759-84-0]
$C_{21}H_{27}NO_6$ 389.447
Alkaloid from aerial parts of *Erythroxylon australe*. Mp 225° (as hydrobromide). $[\alpha]_D^{25}$ +5 (c, 0.03 in H_2O). Tentative struct.

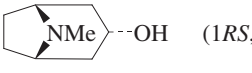
[21030-92-2 , 62058-54-2]

Schöpf, C. *et al., Annalen*, 1947, **558**, 109 (*synth*)
Sheehan, J.C. *et al., J.A.C.S.*, 1952, **74**, 3825 (*synth*)

Zeile, K. *et al., Z. Naturforsch., B*, 1957, **12**, 661 (*synth, Meteloidine*)
Evans, W.C. *et al., J.C.S.(C)*, 1968, 2775-2778 (*Isovaleryloxytigloyloxytropanol*)
Evans, W.C. *et al., Phytochemistry*, 1972, **11**, 3293 (*derivs*)
Beresford, P.J. *et al., Phytochemistry*, 1975, **14**, 2205 (*biosynth*)
Griffin, W.J. *et al., Aust. J. Chem.*, 1976, **29**, 2329-2332; 1978, **31**, 1161-1165 (*Teloidine, Isometeloidine, Benzoylteloidine, Dihydroxylittorine, Hydroxytigloyloxynortropanyl 2-hydroxy-3-phenylpropionate*)
Agar, J.T.H. *et al., J.C.S. Perkin 1*, 1976, 1550 (*isol, pmr, ms, trimethoxybenzoate*)
Al-Said, M.S. *et al., J.C.S. Perkin 1*, 1986, 957-959 (*phenylacetate*)
El-Imam, Y.M.A. *et al., Phytochemistry*, 1987, **26**, 2385-2389; 1988, **27**, 2181-2184 (*3-cinnamoyl, 3-benzoyl, 6-benzoyl, 3-tigloyl*)
Christen, P. *et al., Phytochemistry*, 1993, **34**, 1147-1151 (*2-methylbutanoyl*)
Payo-Hill, A.L. *et al., Phytochemistry*, 2000, **54**, 927-932 (*Alaternifoline, Erythrorotundine*)
Silva, G.L. *et al., J. Nat. Prod.*, 2001, **64**, 1515-1520 (*Pervilleines, 3-phenylacetate*)
Chavez, D. *et al., J. Nat. Prod.*, 2002, **65**, 606-610 (*Erythroxylum rotundifolium ester*)
Khattak, K.F. *et al., J. Nat. Prod.*, 2002, **65**, 929-931 (*3-hydroxy-2-methyl-3-phenylpropanoate*)
Zanolari, B. *et al., J. Nat. Prod.*, 2003, **66**, 497-502 (*Catuabines*)
Berkov, S. *et al., Z. Naturforsch., C*, 2003, **58**, 42-45 (*7-Propanoyl-3-tigloyltropan-6-ol*)
Kletter, C. *et al., Planta Med.*, 2004, **70**, 993-1000 (*7-Hydroxycataubine E*)
Berkov, S. *et al., Z. Naturforsch., C*, 2004, **59**, 184-186 (*3-tigloyl 6-propanoyl*)
Zanolari, B. *et al., J. Nat. Prod.*, 2005, **68**, 1153-1158 (*7-Hydroxycataubines H,I*)
Chin, Y.-W. *et al., J. Nat. Prod.*, 2006, **69**, 414-417 (*Pervilleine H*)

8-Methyl-8-azabicyclo[3.2.1]octan-3-ol, 9CI M-393

3-Tropanol. 3-Hydroxytropane



(1*RS*,3*RS*)-*form*

$C_8H_{15}NO$ 141.213

(1*RS*,3*RS*)-*form*
endo-*form*. ***Tropine***. *Tropeine*
[120-29-6]
Alkaloid from *Atropa belladonna*, *Hyoscyamus niger*, *Datura* spp. and several other genera, nearly in all the Solanaceae; from hydrolysis of ester alkaloids such as Tropine tropate, T-632. Mp 63°. Bp 229°. pK_a 10.33 (25°).
► Highly toxic. YM3875000

Picrate: Mp 290-295° (275°).

Ac: ***Tropine acetate***
[3423-27-6]
$C_{10}H_{17}NO_2$ 183.25
Alkaloid from *Duboisia myoporoides*, *Datura sanguinea* and *Bruguiera* spp. (Solanaceae, Rhizophoraceae). Bp 235-237°.

O-*Propanoyl:* ***Tropine propionate***
$C_{11}H_{19}NO_2$ 197.277
Alkaloid from *Bruguiera sexangula* and *Bruguiera exaristata* (Rhizophoraceae). Isol. by glc and identified by glc and ms comparison with an authentic sample.

O-*(2-Methylpropanoyl):* ***Butropine***. *Tropine isobutyrate*
[495-80-7]
$C_{12}H_{21}NO_2$ 211.303
Alkaloid from *Duboisia leichhardtii* (Solanaceae). Oil; prisms (as hydrobromide). Mp 242° (hydrobromide). n_D^{15} 1.4726. Confused in one review with Poroidine in A-1597.

O-*(2-Phenylpropanoyl):* see Apoatropine, A-1359

O-*Butanoyl:* ***3-Butyryloxytropane***. *Tropine butyrate*
[19038-34-7]
$C_{12}H_{21}NO_2$ 211.303
Alkaloid from a ssp. of *Anthocercis albicans*, also detected in *Bruguiera sexangula* and *Bruguiera exaristata* (Solanaceae, Rhizophoraceae). Mp 194° (as picrate).

O-*Nonanoyl:* ***Tropine nonanoate***
[146018-90-8]
$C_{17}H_{31}NO_2$ 281.437
Alkaloid from leaves of *Duboisia myoporoides* (Solanaceae).

O-*(*S*-2-Methylbutanoyl):* ***Valtropine***
[495-82-9]
$C_{13}H_{23}NO_2$ 225.33
Alkaloid from *Duboisia leichhardtii* and other *Duboisia* spp. (Solanaceae). Oil. Mp 212° (as hydrobromide). $[\alpha]_D$ +8.3 (neat). n_D^{15} 1.4725. Confused in one review with Isoporoidine in A-1597.

O-*(3-Methylbutanoyl):* ***Tropan-3-yl isovalerate***. *Tropine isovalerate*
[23768-69-6]
$C_{13}H_{23}NO_2$ 225.33
Alkaloid from the root-bark of *Erythroxylum deckindtii*, also detected (probably) in *Bruguiera sexangula* and *Bruguiera exaristata* (Erythroxylaceae, Rhizophoraceae). Plates (EtOH aq.) (as picrate). Mp 230° (picrate).

O-*(3-Methyl-2-butenoyl):* ***Tropanyl senecioate***. *3-Senecioyloxytropane*
[81943-54-6]
$C_{13}H_{21}NO_2$ 223.314
Alkaloid from aerial parts of *Schizanthus hookeri* and *Schizanthus grahamii* (Solanaceae). Antihypothermic agent of potential utility against parkinsonism. Oil.

O-*Tigloyl:* see 3-Tigloyloxytropane, T-404

O-*(2-Hydroxy-3-phenylpropanoyl):* see Littorine, L-216

O-*(3-Hydroxy-2-phenylpropanoyl):* see Tropine tropate, T-632

O-*(Phenylacetyl):* ***Tropanyl phenylacetate***
[1690-22-8]
$C_{16}H_{21}NO_2$ 259.347
Alkaloid from the root-bark of *Erythroxylum deckindtii* (Erythroxylaceae). Not obt. pure; picrate obt. as 1:1 mixt. with the picrate of the isovalerate.

O-*(3-Hydroxyphenylacetyl):* ***Tropan-3-yl 3-hydroxyphenylacetate***
[104086-65-9]
$C_{16}H_{21}NO_3$ 275.347
Alkaloid from the root bark of *Erythroxylum hypericifolium* (Erythroxylaceae). Mp 157° (as picrate).

O-*(4-Hydroxyphenylacetyl):* ***3-(4-Hydroxyphenylacetoxy)tropane***
$C_{16}H_{21}NO_3$ 275.347
Alkaloid from the root bark of *Erythroxylum australe* (Erythroxylaceae).

O-*Benzoyl:* ***Benzoyltropein***. *Tropine benzoate*
[19145-60-9]
$C_{15}H_{19}NO_2$ 245.321
Alkaloid from *Erythroxylum coca*, *Crossostylis sebertii*, *Bruguiera sexangula* and *Bruguiera exaristata* (Erythroxylaceae, Rhizophoraceae). Mp 41-42° (anhyd.) Mp 56° (dihydrate).

O-*(3-Hydroxybenzoyl):* m-*Hydroxybenzoyltropine. 3-(*m-*Hydroxybenzoyloxy)tropane.* ***Cochlearine***
[52418-07-2]
$C_{15}H_{19}NO_3$ 261.32
Alkaloid from *Cochlearia arctica* (Brassicaceae). Mp 235-236°.

O-*(3-Hydroxybenzoyl), hydrochloride:* Cryst. (EtOH aq.). Mp 307° dec.

O-*(4-Hydroxybenzoyl):* ***3α-(4-Hydroxybenzoyloxy)tropane***
$C_{15}H_{19}NO_3$ 261.32
Alkaloid from *Merremia* spp.

O-*(4-Methoxybenzoyl):* ***Datumetine***
[67078-20-0]
$C_{16}H_{21}NO_3$ 275.347
Alkaloid from *Datura metel* and *Merremia dissecta*. Prismatic plates ($CHCl_3/Et_2O$). Mp 84°.

O-*(3,4-Dimethoxybenzoyl):* see Convolvine, C-633

O-E-*Cinnamoyl:* ***Tropanyl* trans-*cinnamate***
[35721-92-7]
$C_{17}H_{21}NO_2$ 271.358
Alkaloid from *Crossostylis sebertii* and *Erythroxylum hypericifolium*.

O-Z-*Cinnamoyl:* ***Tropanyl* cis-*cinnamate***
$C_{17}H_{21}NO_2$ 271.358
Alkaloid from the leaves of *Erythroxylum moonii*. Amorph. powder. λ_{max} 275 (log ϵ 4.36) (MeOH).

O-*(4-Hydroxy-3-methoxycinnamoyl):* ***Tropanyl 3-hydroxy-4-methoxycinnamate***. *Tropan-3-yl ferulate*
[86702-58-1]
$C_{18}H_{23}NO_4$ 317.384
Alkaloid from *Crossostylis multiflora* (Rhizophoraceae).

O-*(3,4,5-Trimethoxycinnamoyl):* ***Tropine 3,4,5-trimethoxycinnamate***
[27303-60-2]
$C_{20}H_{27}NO_5$ 361.437
Alkaloid from *Erythroxylum ellipticum* leaves and *Erythroxylum monogynum* root bark (Erythroxylaceae). Prisms (Me_2CO). Mp 165-166°.

O-*(2-Furoyl):* ***Tropanyl furoate***
[72594-46-8]
[72594-47-9]

$C_{13}H_{17}NO_3$ 235.282
Alkaloid from the root bark of *Erythroxylum deckindtii* (Erythroxylaceae). Mp 66°.

O-*(3-Pyridinecarbonyl):* ***3α-Nicotinoyloxytropane***
$C_{14}H_{18}N_2O_2$ 246.308
Alkaloid from *Cochlearia* spp. and *Merremia vitifolia*.

O-*(1,2-Thiolane-3-carboxylate):* see Brugine, B-369

(1*RS*,3*SR*)-*form*
exo-*form*. *Pseudotropine*. *ψ-3-Tropanol*. ***ψ-Tropine***
[135-97-7]
Alkaloid from *Datura innoxia*, several other *Datura* spp. and from several other genera, nearly all in the Solanaceae. Mp 108-109°. Bp 240-241°. pK_a 9.86 (25°).
▶ YM3875010

Hydrochloride: Mp 280-282° dec. (sinters at 250°).

Ac: ***3α-Acetoxytropane***
[3423-26-5]
$C_{10}H_{17}NO_2$ 183.25
Alkaloid from *Datura sanguinea* leaves and stems (Solanaceae). Mp 217° (as picrate).

O-*Tigloyl:* see 3-Tigloyloxytropane, T-404

O-*Benzoyl:* ***Tropacocaine***
[537-26-8]
$C_{15}H_{19}NO_2$ 245.321
Alkaloid from *Erythroxylum coca*, other *Erythroxylum* spp., *Babylonia japonica* and *Peripentadenia mearsii* (Erythroxylaceae, Elaeocarpaceae). Antinicotinic and mydriatic agent, neurotoxic poison, sodium ion influx blocker. Mp 49°. pK_a 9.88 (15°).
▶ Neurotoxin. LD_{50} (mus, ivn) 69 mg/kg. YM4200000

O-*Benzoyl; hydrochloride:* [637-23-0]
Mp 283° dec. λ_{max} 220 ; 282 (MeOH) (Berdy).
▶ YM4201000

O-*Benzoyl, picrate:* Mp 243-245°.

O-*(4-Hydroxybenzoyl):* ***3β-(4-Hydroxybenzoyloxy)tropane***
$C_{15}H_{19}NO_3$ 261.32
Alkaloid from *Merremia* spp.

O-*(4-Hydroxy-3-methoxybenzoyl):* ***Concneorine***. *3β-Vanilloyloxytropane*
$C_{16}H_{21}NO_4$ 291.346
Alkaloid from *Convolvulus cneorum* and *Merremia* spp.

O-E-*Cinnamoyl:*
$C_{17}H_{21}NO_2$ 271.358
Alkaloid from *Erythroxylum hypericifolium* and *Erythroxylum zeylanicum*. Cryst. (as picrate). Mp 215° (picrate).

O-Z-*Cinnamoyl:* ***Erythrozeylanine B***
$C_{17}H_{21}NO_2$ 271.358
Alkaloid from *Erythroxylum zeylanicum*. Isol. as a mixt. with (*E*)-isomer. Possible artifact.

O-*(2S,3-Dihydroxy-2-phenylpropanoyl):* *3-(2-Hydroxytropoyloxy)tropane*
$C_{17}H_{23}NO_4$ 305.373
Alkaloid from the seeds of *Datura stramonium*. Config. not confirmed.

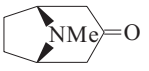
O-*(3-Hydroxy-2-methylbutanoyl):* ***Astrimalvine B***
[953384-48-0]
$C_{13}H_{23}NO_3$ 241.33
Alkaloid from the root bark of *Astripomoea malvacea*. Yellow oil.

O-*(2-Methyl-3-tigloyloxybutanoyl),* N-*oxide:* ***Astrimalvine A* N-*oxide***
[953384-47-9]
$C_{18}H_{29}NO_5$ 339.431
Alkaloid from the root bark of *Astripomoea malvacea*. Yellow oil.

Willstätter, R. *et al., Ber.*, 1901, **34**, 3165; 1902, **35**, 1870 (*synth*)
Hardegger, E. *et al., Helv. Chim. Acta*, 1953, **36**, 1186 (*config*)
Leete, E. *et al., Can. J. Chem.*, 1954, **32**, 1116 (*biosynth*)
Rosenblum, E.I. *et al., J. Pharm. Pharmacol.*, 1954, **6**, 410 (*Butropine, Valtropine*)
Evans, W.C. *et al., J.C.S.*, 1959, 1406 (*isol*)
Platonova, T.F. *et al., CA*, 1964, **60**, 8350 (*Cochlearine*)
Evans, W.C. *et al., J.C.S.(C)*, 1966, 1621 (*3α-Acetoxytropane*)
Schenk, H. *et al., Acta Cryst.*, 1967, **23**, 423 (*cryst struct*)
Loder, J.W. *et al., Aust. J. Chem.*, 1969, **22**, 1271 (*isol, esters*)
Johns, S.R. *et al., Aust. J. Chem.*, 1970, **23**, 421 (*trimethoxycinnamate*)
Chappell, G.S. *et al., J. Pharm. Sci.*, 1973, **62**, 414 (*pmr*)
Libisch, H.W. *et al., Z. Chem.*, 1973, **13**, 372 (*Cochlearine, biosynth*)
Agar, J.T.H. *et al., J.C.S. Perkin 1*, 1976, 1551 (*trimethoxycinnamate*)
Hamor, T.A. *et al., J.C.S. Perkin 2*, 1976, 1359-1363 (*O-benzoyl, cryst struct*)
Hanish, P. *et al., J.C.S. Perkin 2*, 1977, 1202 (*cmr, conformn*)
Grützmacher, H.-F. *et al., Chem. Ber.*, 1978, **111**, 1962 (*ms*)
Hayakawa, Y. *et al., J.A.C.S.*, 1978, **100**, 1786 (*synth*)
Tufariello, J.J. *et al., J.A.C.S.*, 1979, **101**, 2435 (*synth*)
Sharova, S.F. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1980, **16**, 487 (*Phyllalbine*)
Evans, W.C. *et al., Phytochemistry*, 1981, **20**, 497 (*butyrate*)
Gambaro, V. *et al., Bol. Soc. Chil. Quim.*, 1982, **27**, 296; *CA*, **97**, 3737u (*senecioate*)
Martindale, The Extra Pharmacopoeia, 28th/29th edn., Pharmaceutical Press, 1982, 422; 12406
Gnecco Medina, D.H. *et al., J. Nat. Prod.*, 1983, **46**, 398 (*cinnamate, 3-hydroxy-4-methoxycinnamate*)
Iida, H. *et al., J.O.C.*, 1985, **50**, 1818 (*synth*)
Siddiqui, S. *et al., J. Nat. Prod.*, 1986, **49**, 511 (*Datumetine*)
Al-Said, M.S. *et al., J.C.S. Perkin 1*, 1986, 957 (*3-hydroxyphenylacetate*)
Lounasmaa, M. *et al., Alkaloids (Academic Press)*, 1988, **33**, 1 (*synth, rev*)
El-Imam, Y.M.A. *et al., Phytochemistry*, 1988, **27**, 2181 (*4-hydroxyphenylacetyl*)
Al-Said, M.S. *et al., Phytochemistry*, 1989, **28**, 3211 (*E-cinnamoyl*)
Shukla, Y.N. *et al., Phytochemistry*, 1992, **31**, 4389 (*Tropine nonanoate*)
Bringmann, G. *et al., Phytochemistry*, 2000, **53**, 409-416 (*Erythrozeylanine B*)
Khattak, K.F. *et al., J. Nat. Prod.*, 2002, **65**, 929-931 (*Tropanyl cis-cinnamate*)
Philipov, S. *et al., Z. Naturforsch., C*, 2002, **57**, 559-561 (*3-2-Hydroxytropoyloxytropane*)
Jenett-Siems, K. *et al., Phytochemistry*, 2005, **66**, 1448-1464 (*Datumetine, Phyllalbine, Concneorine, Merremia constits*)
Ott, S.C. *et al., Z. Naturforsch., B*, 2007, **62**, 285-288 (*Astrimalvines*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, TNS200

8-Methyl-8-azabicyclo[3.2.1]octan-3-one, 9CI M-394

Tropinone. *3-Tropanone*
[532-24-1]



$C_8H_{13}NO$ 139.197
Alkaloid from *Nicandra physaloides* (Solanaceae). Needles (petrol). Mp 42°. Bp_{13} 103-104°. Co-occurs with Hygrine, H-759.

Hydrochloride: [4827-85-4]
Mp 188-0° 188-189° dec.
▶ LD_{50} (mus, ipr) 430 mg/kg. YM6235000

Picrate: Mp 217-218°.

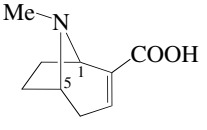
N-*Oxide:*
$C_8H_{13}NO_2$ 155.196
Mp 217-218°.

Oxime:
$C_8H_{14}N_2O$ 154.211
Mp 114°. Chiral, has been resolved.

Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 725A (*nmr*)
Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 462D (*ir*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 547D (*ir*)
Robinson, R. *et al., J.C.S.*, 1917, **111**, 706 (*synth*)
Romeike, A. *et al., Naturwissenschaften*, 1966, **53**, 82 (*isol*)
Singh, H. *et al., Tet. Lett.*, 1966, 3243; 6502 (*resoln, oxime*)
Ohashi, M. *et al., Chem. Comm.*, 1971, 34 (*pmr*)
Halpern, A.M. *et al., J.A.C.S.*, 1976, **98**, 3242 (*uv*)
Katritzky, A.R. *et al., Org. Magn. Reson.*, 1979, **12**, 357 (*cmr, conformn*)
Lounasmaa, M. *et al., Alkaloids (Academic Press)*, 1988, **33**, 1 (*rev*)

8-Methyl-8-azabicyclo[3.2.1]oct-2-ene-2-carboxylic acid M-395

Anhydroecgonine. Ecgonidine



(1*R*)-*form*

$C_9H_{13}NO_2$ 167.207
Topical anaesthetic. pK_{a1} 3.8; pK_{a2} 9.8.

(1*R*)-*form*
(-)-form
[484-93-5]
Obt. semisynthetically from Cocaine, C-537. Cryst. (MeOH/EtOH). Mp 235° dec. $[\alpha]_D^{14}$ -84.6.

Hydrochloride: [74242-55-0]
Needles (EtOH) or tablets (H_2O). Mp 240-241°. $[\alpha]_D^{25}$ -62.7 (H_2O).

Me ester: ***Anhydroecgonine methyl ester***
[43021-26-7]
$C_{10}H_{15}NO_2$ 181.234

Alkaloid from *Erythroxylum coca* and *Erythroxylum emarginatum*. Amorph. powder. Bp_7 107°. $[\alpha]_D^{25}$ -23 (c, 1.1 in $CHCl_3$).

Me ester, N-*oxide:* ***Anhydroecgonine methyl ester* N-*oxide***
$C_{10}H_{15}NO_3$ 197.233
Alkaloid from the bark of *Erythroxylum emarginatum*. Amorph. powder. $[\alpha]_D^{25}$ +36 (c, 0.1 in $CHCl_3$).

Et ester: [73045-45-1]
$C_{11}H_{17}NO_2$ 195.261
Sol. cold H_2O, spar. sol. hot. Bp_{16} 136-139°.

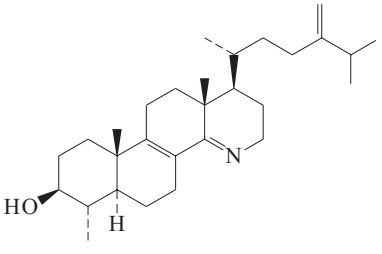
(1*S*)-*form*
(+)-form
Cryst. + $1H_2O$ (MeOH or MeOH/Et_2O). Sol. H_2O; spar. sol. EtOH. Mp 226-230°.

Me ester: [50373-10-9]
$Bp_{1.9}$ 87°. $n_D^{23.2}$ 1.5026.

Matchett, J.R. *et al., J.A.C.S.*, 1941, **63**, 2444-2446 (*Me ester, isol*)
Grundman, C. *et al., Annalen*, 1957, **605**, 24 (*synth, resoln, bibl*)
Holmquist, C.R. *et al., Org. Prep. Proced. Int.*, 1997, **29**, 308 (*Me ester, synth*)
Nishiyama, Y. *et al., J. Nat. Med. (Tokyo)*, 2007, **61**, 56-58 (*isol, pmr, cmr*)

4-Methyl-15-azasterol M-396

4-Methyl-15-aza-D-homoergosta-8,14,24(28)-trien-3-ol, 9CI. Azx. Antibiotic Azx
[128500-61-8]

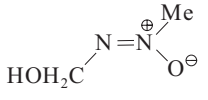


$C_{29}H_{47}NO$ 425.696
The CA name is defective. Isol. from *Calcarisporium thermophilum* ATCC11485. Antifungal agent.

Chrisp, P. *et al., Z. Naturforsch., C*, 1990, **45**, 179 (*isol*)

Methylazoxymethanol M-397

(Methyl-ONN-*azoxy)methanol, 9CI. MAM*



$C_2H_6N_2O_2$ 90.082
▶ PC2625000

(*Z*)-*form* [590-96-5]
Toxic constit. of the nuts of *Cycas circinalis*. $Bp_{0.6}$ 51°.
▶ Exp. carcinogen and teratogen. PC2625000

O-*β-D-Glucopyranoside:* ***Cycasin***. *β-D-Glucosyloxyazoxymethane*
[14901-08-7]
$C_8H_{16}N_2O_7$ 252.224
Alkaloid from seeds of the false sago *Cycas circinalis* and sago cycas *Cycas revoluta* (Cycadaceae). Carcinogen of significance in human nutrition. Mp 154° dec. (144-145° dec.). $[\alpha]_D^{18}$ -44 (c, 0.62 in H_2O). λ_{max} 218 (ϵ 7240); 275 (sh) (ϵ 50) (H_2O) (Derep).
▶ Exp. teratogen. Possible human carcinogen (IARC 2B). LZ5950000

O-*β-D-Glucopyranoside, tetra*-O-*Ac:* Mp 137°. $[\alpha]_D^{18}$ -27 (c, 1 in $CHCl_3$).

O-*[β-D-Xylopyranosyl-(1→6)-D-glucopyranoside]:* ***Macrozamin***
[6327-93-1]
$C_{13}H_{24}N_2O_{11}$ 384.339
Constit. of *Macrozamia riedlei* and *Macrozamia spiralis*. Prisms (EtOH aq.). Mp 202-203° dec. $[\alpha]_D^{23}$ -71.3 (c, 0.4 in H_2O). λ_{max} 217 (ϵ 7940); 275 (sh) (ϵ 50) (H_2O) (Derep).

O-*[β-D-Glucopyranosyl-(1→3)-β-D-glucopyranoside]:* ***Neocycasin A***
[2288-32-6]
$C_{14}H_{26}N_2O_{12}$ 414.366
Isol. from *Cycas revoluta*. Cryst. + $1H_2O$. Mp 162-163° dec. $[\alpha]_D^{29}$ -35.1. λ_{max} 217 (ϵ 7940); 275 (sh) (ϵ 50) (H_2O) (Derep).
▶ QO7500000

O-*[β-D-Glucopyranosyl-(1→4)-β-D-glucopyranoside]:* ***Neocycasin E***
$C_{14}H_{26}N_2O_{12}$ 414.366
Alkaloid from *Cycas revoluta* (Cycadaceae). Mp 156-158° dec. $[\alpha]_D^{15}$ -29.2 (c, 0.9 in H_2O).

O-*[α-D-Glucopyranosyl-(1→6)-β-D-glucopyranoside]:* ***Neocycasin B$_\alpha$***
[97673-88-6]
$C_{14}H_{26}N_2O_{12}$ 414.366
Isol. from seeds of *Cycas revoluta*.

O-*[β-D-Glucopyranosyl-(1→6)-β-D-glucopyranoside]:* ***Neocycasin B***
[2697-20-3]
$C_{14}H_{26}N_2O_{12}$ 414.366
Isol. from *Cycas revoluta*. λ_{max} 217 (ϵ 7940); 275 (sh) (ϵ 50) (H_2O) (Derep).

O-*[β-D-Glucopyranosyl-(1→3)-β-D-glucopyranosyl-(1→3)-β-D-glucopyranosyl (1→3)-β-D-glucopyranoside]:* ***Neocycasin C***
[2288-31-5]
$C_{26}H_{46}N_2O_{22}$ 738.65
Isol. from *Cycas revoluta*.

O-*[β-D-Glucopyranosyl-(1→4)-β-D-glucopyranosyl-(1→3)-β-D-glucopyranoside]: Neocycasin H*
[102770-23-0]
$C_{20}H_{36}N_2O_{17}$ 576.508
Isol. from *Cycas revoluta*. Artifact formed from Neocycasin A by enzymic tranglycosylation.

O-*[β-D-Glucopyranosyl-(1→6)-β-D-glucopyranosyl-(1→3)-β-D-glucopyranoside]:* ***Neocycasin G***
[2288-28-0]
$C_{20}H_{36}N_2O_{17}$ 576.508
Isol. from seeds of *Cycas circinalis*.

O-*[β-D-Glucopyranosyl-(1→6)-[β-D-glucopyranosyl-(1→3)]-β-D-glucopyranoside]: Neocycasin I*
[102770-22-9]
$C_{20}H_{36}N_2O_{17}$ 576.508
Artifact of tranglycosylation by incubation of *Cycas* sp. with β-glucosidase.

O-*[β-D-Glucopyranosyl-(1→3)-[β-D-xylopyranosyl-(1→6)]-β-D-glucopyranoside]:* ***Neocycasin J***
[102770-21-8]
$C_{19}H_{34}N_2O_{16}$ 546.481
Isol. from leaves of *Cycas revoluta*.

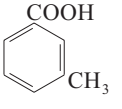
Ac: [592-62-1]
$C_4H_8N_2O_3$ 132.119
Bp 191° $Bp_{0.45}$ 49°.
▶ LD_{50} (rat, orl) 270 mg/kg. Possible human carcinogen. Exp. carcinogen and teratogen. PC2800000

[106251-55-2]

Riggs, N.V. *et al., Chem. Ind. (London)*, 1956, 926 (*isol, uv, struct*)
Nagahama, T. *et al., Agric. Biol. Chem.*, 1961, **25**, 937 (*Neocycasin E*)
Korsch, B.H. *et al., Tet. Lett.*, 1964, 523 (*pmr, struct*)
Kobayashi, A. *et al., Arch. Biochem. Biophys.*, 1965, **110**, 373 (*isol*)
Palekar, R.S. *et al., Nature (London)*, 1965, **206**, 1363
IARC Monog., 1976, **10**, 131; *Suppl.*, **7**, 66 (*tox, rev, Ac*)
Baldwin, J.E. *et al., J.O.C.*, 1978, **43**, 2427 (*synth*)
Cannon, J.R. *et al., Aust. J. Chem.*, 1980, **33**, 2229 (*Macrozamin*)
Moretti, A. *et al., Phytochemistry*, 1981, **20**, 1415 (*occur*)
Yagi, F. *et al., Agric. Biol. Chem.*, 1983, **47**, 137; 1985, **49**, 1531; 2985 (*Neocycasins*)
Matsumoto, H. *et al., CRC Handb. Nat. Occurring Food Toxicants*, 1983, 39 (*rev*)
Zedeck, M.S. *et al., ACS Monogr.*, No. 182, 1984, (*rev*)
Hoffmann, G.R. *et al., Environ. Mutagen.*, 1984, **6**, 103 (*rev*)
Tate, M.E. *et al., Aust. J. Chem.*, 1995, **48**, 1059 (*cryst struct*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, COU000; HMG000; MGS750

3-Methylbenzoic acid M-398

m-*Toluic acid*
[99-04-7]
[25567-10-6]



$C_8H_8O_2$ 136.15
Prisms (MeOH or H_2O). Mod. sol. hot H_2O. Mp 111°. Bp 263°. pK_a 4.25 (25°). Sublimes, steam-volatile.
▶ LD_{50} (mus, orl) 1630 mg/kg. XU1200000

Diethylamide: ***Diethyltoluamide, BAN, BSI, ISO, USAN***. *Metadelphene. Detamide†. Deet, ESA. Off*
[134-62-3]
[26545-51-7]
$C_{12}H_{17}NO$ 191.272
Isol. from the female pink bollworm moth *Pectinophora gossypiella*. Insect repellant esp. effective against Culicidae. Colourless to amber liq. Insol. H_2O. d_4^{20} 1. Bp_{19} 160° Bp_1 111°.

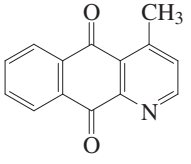
n_D^{20} 1.5206.

▶ Irritant. Can affect CNS by skin absorption. LD_{50} (rat, orl) 2000 mg/kg.
XS3675000

McCabe, E.T. *et al., J.O.C.*, 1954, **19**, 493 (*synth, diethylamide*)
Jones, W.A. *et al., Science (Washington, D.C.)*, 1968, **159**, 99-100 (*diethylamide, isol*)
Shioiri, T. *et al., Tetrahedron*, 1976, **32**, 2211 (*synth, ir, pmr, diethylamide*)
McIver, S.B. *et al., J. Med. Entomol.*, 1981, **18**, 357 (*rev, diethylamide*)
Robbins, P.J. *et al., J. Toxicol. Environ. Health*, 1986, **18**, 503 (*diethylamide*)
LeFevre, J.W. *et al., J. Chem. Educ.*, 1990, **67**, A278 (*diethylamide*)

4-Methylbenzo[*g*]quinoline-5,10-dione, 9CI M-399

Cleistopholine
[96889-94-0]



$C_{14}H_9NO_2$ 223.231
Systematic numbering shown. Has also been numbered as an anthraquinone. Alkaloid from *Cananga odorata*, *Meiogyne virgata*, *Annona hayesii*, root bark of *Cleistopholis patens*, seeds of *Annona cherimolia* and stem bark of *Oncodostigma monosperma* (Annonaceae). Pale yellow amorph. solid. Mp 185-190°.

*7-Methoxy: 7-Methoxy-4-methylbenzo[*g*]quinoline-5,10-dione.* ***7-Methoxycleistopholine****. 6-Methoxycleistopholine*
[190127-27-6]
$C_{15}H_{11}NO_3$ 253.257
Alkaloid from *Porcelia macrocarpa*. Amorph. powder. λ_{max} 234 (log ϵ 3.41); 262 (log ϵ 3.44); 302 (log ϵ 3.46); 366 (log ϵ 3.22) (MeOH).

*7-Methoxy, 6-hydroxy: 6-Hydroxy-7-methoxy-4-methylbenzo[*g*]quinoline-5,10-dione.* ***6-Hydroxy-7-methoxycleistopholine****. 5-Hydroxy-6-methoxycleistopholine*
[330579-53-8]
$C_{15}H_{11}NO_4$ 269.256
Alkaloid from *Porcelia macrocarpa*. Amorph. powder. λ_{max} 214 (log ϵ 2.43); 246 (log ϵ 3.65); 260 (log ϵ 3.49); 430 (log ϵ 2.75) (MeOH).

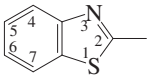
*6,7-Dimethoxy: 6,7-Dimethoxy-4-methylbenzo[*g*]quinoline-5,10-dione.* ***6,7-Dimethoxycleistopholine****. 5,6-Dimethoxycleistopholine*
[330579-50-5]
$C_{16}H_{13}NO_4$ 283.283
Alkaloid from *Porcelia macrocarpa*. Amorph. powder. λ_{max} 208 (log ϵ 3.76); 234 (log ϵ 3.79); 282 (log ϵ 3.91); 374 (log ϵ 2.95) (MeOH).

*7,8-Dimethoxy, 6-hydroxy: 6-Hydroxy-7,8-dimethoxy-4-methylbenzo[*g*]quinoline-5,10-dione.* ***6-Hydroxy-7,8-dimethoxycleistopholine****. 5-Hydroxy-6,7-dimethoxycleistopholine*
[330579-56-1]
$C_{16}H_{13}NO_5$ 299.282
Alkaloid from *Porcelia macrocarpa*. Amorph. solid. λ_{max} 212 (log ϵ 4.3); 242 (log ϵ 4.27); 282 (log ϵ 4.35); 400 (log ϵ 3.8) (MeOH).

Waterman, P.G. *et al., Phytochemistry*, 1985, **24**, 523-527 (*isol, uv, ir, pmr, cmr, ms, struct*)
Bracher, F. *et al., Annalen*, 1989, 87-88 (*synth, uv, ir, pmr, cmr, ms*)
Koyama, J. *et al., Heterocycles*, 1989, **29**, 1649-1654 (*synth*)
Bou-Abdallah, E. *et al., J. Nat. Prod.*, 1989, **52**, 273-278 (*isol*)
Ríos, J.L. *et al., Planta Med.*, 1989, **55**, 321-323 (*isol*)
Chaves, M.H. *et al., J. Nat. Prod.*, 2001, **64**, 240-242 (*Porcelia derivs*)

2-Methylbenzothiazole, 9CI M-400

[120-75-2]



C_8H_7NS 149.216
Prod. by a *Micrococcus* sp. found in *Tedania ignis*. Also known as an aroma constit. of tea leaves. Mp 14°. Bp 238° Bp_{15} 150-151°. pK_a 2.06 (H_2O). pK_a 8.63 (MeCN).

▶ LD_{50} (mus, ipr) 300 mg/kg. DL5600000

Picrate: Mp 153.5°.

N-*Oxide:* [23808-61-9]
C_8H_7NOS 165.215
Light yellow cryst. + $2H_2O$ (MeCN aq.). Mp 46-48°.

N-*Et: 1-Ethyl-2-methylthiazolium(1+)*
[3119-93-5 (iodide)]
$C_{10}H_{12}NS^{\oplus}$ 178.278
Needles (EtOH) (as iodide). Mp 196° (iodide).

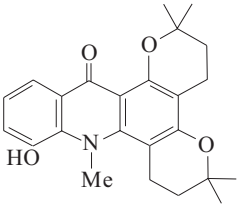
N-*Propyl: 2-Methyl-1-propylthiazolium(1+)*
[60126-29-6 (iodide)]
$C_{11}H_{14}NS^{\oplus}$ 192.304
Precursor in synth. of carbocyanine dyes. Mp 173-176° (as iodide).

[14933-76-7]

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 699D (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 200B; 201B (*nmr*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 1511B (*ir*)
Hofmann, A.W. *et al., Ber.*, 1880, **13**, 8-22; 1223-1238 (*synth*)
Mills, W.H. *et al., J.C.S.*, 1922, **121**, 455-466 (*N-Et*)
Clark, L.M. *et al., J.C.S.*, 1928, 2313-2320 (*synth*)
Brooker, L.G.S. *et al., J.A.C.S.*, 1935, **57**, 2480 (*N-propyl, synth, use*)
Millard, B.J. *et al., Org. Mass Spectrom.*, 1968, **1**, 285 (*ms*)
Schweizer, E.E. *et al., J.O.C.*, 1978, **43**, 2972 (*synth*)
Sawhney, S.N. *et al., J.O.C.*, 1979, **44**, 1136 (*cmr*)
Peyronel, G. *et al., Spectrochim. Acta A*, 1981, **37**, 71 (*ir*)
Bowman, W.R. *et al., Tet. Lett.*, 1982, **23**, 5093 (*synth*)
Wanner, K.T. *et al., Annalen*, 1984, 1100 (*synth*)
Stefaniak, L. *et al., Org. Magn. Reson.*, 1984, **22**, 215 (*N-15 nmr*)
Kolb, B. *et al., J. Agric. Food Chem.*, 1985, **33**, 999 (*isol*)
Alyea, E.C. *et al., J. Het. Chem.*, 1985, **22**, 1325 (*synth*)
Stierle, A.A. *et al., Tet. Lett.*, 1991, **32**, 4847 (*isol*)
Kamila, S. *et al., Heterocycles*, 2005, **65**, 2119-2126 (*synth, pmr, cmr*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, MHI750

N-Methylbicycloatalaphylline M-401

*3,4,6,7,8,9-Hexahydro-10-hydroxy-2,2,6,6,9-pentamethyl-2*H*,14*H*-dipyrano[2,3-*a*:2′,3′-*c*]acridin-14-one, 9CI*
[35096-35-6]

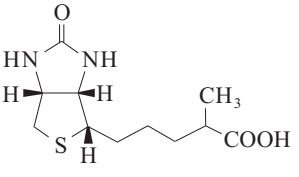


$C_{24}H_{27}NO_4$ 393.482
Alkaloid from the root bark of *Atalantia monophylla* (Rutaceae). Yellow needles (C_6H_6). Mp 185°.

Basu, D. *et al., J.O.C.*, 1972, **37**, 3035 (*isol, uv, ir, pmr, ms, struct*)

α-Methylbiotin, 8CI M-402

*Hexahydro-2-oxo-α-methyl-1*H*-thieno[3,4-*d*]imidazole-4-pentanoic acid, 9CI*
[30868-27-0]

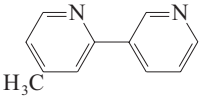


$C_{11}H_{18}N_2O_3S$ 258.341
Prod. by *Streptomyces lydicus*. Antimetabolite antibiotic. Cryst. Sol. H_2O; fairly sol. Me_2CO. Mp 251.5-252°.

Martin, D.G. *et al., Tet. Lett.*, 1971, 3791 (*isol, struct, ms, pmr*)
Hanka, L.J. *et al., Antimicrob. Agents Chemother.*, 1972, **1**, 135 (*isol, biosynth*)

4-Methyl-2,3′-bipyridine, 9CI M-403

[38840-05-0]



$C_{11}H_{10}N_2$ 170.213
Present in burley tobacco (*Nicotiana tabacum*). Liq. Bp_1 166°.

Picrate:
Cryst. (EtOH). Mp 202-203°.
Frank, R.L. *et al., Bull. Soc. Chim. Fr.*, 1958, 419 (*synth*)
Warfield, A.H. *et al., Phytochemistry*, 1972, **11**, 3371 (*isol, synth, ir, ms*)
Ishikura, M. *et al., Synthesis*, 1984, 936 (*synth*)

4-Methyl-3,3′-bipyridine, 9CI M-404

[38840-06-1]

$C_{11}H_{10}N_2$ 170.213
Isol. from burley tobacco (*Nicotiana tabacum*).

Warfield, A.H. *et al., Phytochemistry*, 1972, **11**, 3371 (*isol, synth, ir, pmr*)

5-Methyl-2,3′-bipyridine M-405

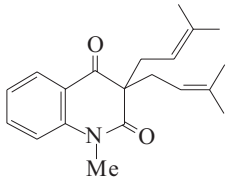
[26844-80-4]

$C_{11}H_{10}N_2$ 170.213
Alkaloid from burley tobacco *Nicotiana tabacum* (Solanaceae).

Warfield, A.H. *et al., Phytochemistry*, 1972, **11**, 3371 (*isol, uv, ir, pmr, ms, struct, synth*)

1-Methyl-3,3-bis(3-methyl-2-butenyl)-2,4(1*H*,3*H*)-quinolinedione, 9CI M-406

1-Methyl-3,3-diprenyl-2,4-quinolinedione
[57931-85-8]

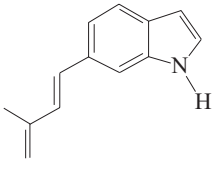


$C_{20}H_{25}NO_2$ 311.423
Alkaloid from the wood of *Esenbeckia flava*. Oil. λ_{max} 235 (ϵ 3400); 258 (ϵ 450); 342 (ϵ 250) (EtOH).

Dreyer, D.L. *et al., Phytochemistry*, 1980, **19**, 941-944 (*isol, uv, ir, pmr, ms*)
Nunes, F.M. *et al., Magn. Reson. Chem.*, 2005, **43**, 180-183 (*pmr, cmr*)

6-(3-Methyl-1,3-butadienyl)-1*H*-indole, 9CI M-407

[36948-68-2]

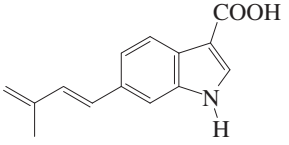


$C_{13}H_{13}N$ 183.252

(E)-form [40863-49-8]
Alkaloid from seeds of *Monodora tenuifolia* (Annonaceae). Leaflets (hexane). Mp 124-127°.

(Z)-form [85864-10-4]
Synthetic. Unstable oil.
Nwaji, M.N. *et al., Chem. Comm.*, 1972, 327 (*isol, pmr, uv, struct*)
Ishii, H. *et al., Tet. Lett.*, 1973, 355 (*synth, config*)
Onyiruka, S.O. *et al., J. Chem. Res., Synop.*, 1983, 21 (*synth*)
Somei, M. *et al., Chem. Pharm. Bull.*, 1986, **34**, 4109 (*synth, pmr*)

6-(3-Methyl-1,3-butadienyl)-1*H*-indole-3-carboxylic acid M-408



$C_{14}H_{13}NO_2$ 227.262

(E)-form
Antibiotic TMC 205. *TMC 205*
[403646-00-4]
Prod. by the unidentified fungal strain TC 1630. Transcriptional up-regulator of SV40 promotor. Cytotoxic. Pale yellow powder. λ_{max} 205 (log ϵ 4.03); 210 (sh) (log ϵ 4.02); 271 (log ϵ 4.27); 305 (log ϵ 4.15) (MeOH).
Sakurai, M. *et al., J. Antibiot.*, 2001, **54**, 628-634

3-Methylbutanoic acid M-409

Isovaleric acid. Viburnum acid. Baldrianic acid. Phocenic acid. Isopropylacetic acid. Isopentanoic acid. FEMA 3102
[503-74-2]
$(H_3C)_2CHCH_2COOH$
$C_5H_{10}O_2$ 102.133
Constit. of tobacco, hops, cheese etc. Widespread in plants, in free state and esp. as esters. Prod. by *Xanthomonas campestris* (Oryzae). Flavouring agent. Simple esters are used in flavourings and perfumes. Histone deacylase inhibitor. Phytotoxic. Oil with disagreeable, rancid-cheese aroma, acid taste. Mod. sol. H_2O. d_4^{18} 0.93. Mp -37.6°. Bp 176.7° (183°). n_D^{15} 1.4064. pK_a 4.8.
▶ Skin and eye irritant. LD_{50} (rat, orl) 2000 mg/kg. Fl. p. 79°, autoignition temp. 416/418°. NY1400000

Amide: 3-Methylbutanamide. Isovaleramide, USAN. NPS 1776
[541-46-8]
$C_5H_{11}NO$ 101.148
Constit. of *Rhizoclonium hieroglyphicum*. Anticonvulsant agent used to treat epilepsy and other neurological and psychiatric disorders. Mp 131°.
▶ EJ3650000
Dembitsky, V.M. *et al., Phytochemistry*, 2000, **54**, 965-967 (*isol, amide*)

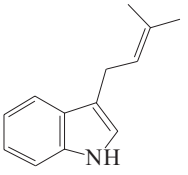
N-(3-Methyl-2-butenyl)guanidine M-410

N-*Prenylguanidine*. ***Galegine***
[543-83-9]
$HN{=}C(NH_2)NHCH_2CH{=}C(CH_3)_2$
$C_6H_{13}N_3$ 127.189
Toxic principle from *Verbesina encelioides, Galega officinalis* (goat's rue) etc. (Asteraceae, Fabaceae). Antihyperglycaemic agent. Shows antidiabetic props. V. hygroscopic cryst. Mp 60-65°. Log P 0 (calc).
▶ Pulmonary toxicant. MF3687000

Sulfate:
Needles (H_2O). Mp 223-225°.
Tanret, G. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1914, **158**, 1182
Schreiber, K. *et al., Annalen*, 1964, **671**, 147; 154 (*isol, synth*)
Reuter, G. *et al., Planta Med.*, 1965, **13**, 494 (*biosynth*)
Eichholzer, J.V. *et al., Phytochemistry*, 1982, **21**, 97-99 (*isol, pmr, ms*)
Huxtable, C.R. *et al., Aust. Vet. J.*, 1993, **70**, 169 (*isol, tox*)
Monache, G.D. *et al., Bioorg. Med. Chem. Lett.*, 1999, **9**, 3249-3254 (*isol, pmr, cmr*)

3-(3-Methyl-2-butenyl)-1*H*-indole, 9CI M-411

3-(γ,γ-Dimethylallyl)indole. 3-Prenylindole
[17771-42-5]



$C_{13}H_{15}N$ 185.268
Alkaloid from the stem bark of *Monodora tenuifolia* (Annonaceae). Antibacterial and antifungal agent. Cryst. (hexane). Sol. MeOH, $CHCl_3$; fairly sol. hexane; poorly sol. H_2O. Mp 45-47° (43-45°). λ_{max} 225 ; 282 ; 292 (MeOH) (Berdy).
Bocchi, V. *et al., Tetrahedron*, 1978, **34**, 929 (*synth*)
Adeoye, A.O. *et al., J. Nat. Prod.*, 1986, **49**, 534 (*isol, uv, ir, pmr, cmr, ms, synth*)

5-(3-Methyl-2-butenyl)-1*H*-indole, 9CI M-412

5-Prenylindole
[32962-26-8]
$C_{13}H_{15}N$ 185.268
Alkaloid from roots of *Esenbeckia leiocarpa*. Oil.

$\Delta^{3'}$-Isomer, 1′,2′-didehydro: ***5-(3-Methyl-1,3-butadienyl)-1H-indole***
$C_{13}H_{13}N$ 183.252
Alkaloid from the stem bark of *Isolona cauliflora*.
Delle Monache, F. *et al., Gazz. Chim. Ital.*, 1989, **119**, 435 (*isol, uv, pmr, cmr, ms*)
Nkunya, M.H.H. *et al., Nat. Prod. Res.*, 2004, **18**, 253-258 (*$\Delta^{3'}$-isomer didehydro*)

6-(3-Methyl-2-butenyl)-1*H*-indole M-413

6-Prenylindole. Antibiotic 434B
[23158-16-9]
$C_{13}H_{15}N$ 185.268

Alkaloid from the liverworts *Riccardia sinuata* and *Riccardia incurvata* (Hepaticae) and from roots of *Esenbeckia leiocarpa*. Prod. by *Streptomyces hygroscopicus* and *Streptomyces* sp. TP-A595. Antitumour agent. Mp 33-34° (30.5-31°). Bp_2 120-130°. Log P 4.13 (calc). Also descr. as pale brown oil. λ_{max} 269 ; 279 ; 293 (MeOH) (Berdy). λ_{max} 269 ; 280 ; 291 (MeOH/HCl) (Berdy). λ_{max} 270 ; 280 ; 292 (MeOH/NaOH) (Berdy).

1,3,5-Trinitrobenzene complex: Mp 106°.

Benešová, V. *et al., Coll. Czech. Chem. Comm.*, 1969, **34**, 1807 (*isol, uv, ir, pmr, struct*)
Pleininger, H. *et al., Chem. Ber.*, 1971, **104**, 2027 (*synth*)
Huneck, S. *et al., CA*, 1972, **79**, 29523 (*isol*)
Ishii, H. *et al., Tetrahedron*, 1975, **31**, 933 (*synth*)
Japan. Pat., 1979, 79 135 300; *CA*, **92**, 126908 (*isol*)
Achenbach, H. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1985, **318**, 1147 (*synth*)
Delle Monache, F. *et al., Gazz. Chim. Ital.*, 1989, **119**, 435 (*isol*)
Sasaki, T. *et al., J. Antibiot.*, 2002, **55**, 1009-1012 (*isol, synth*)

7-(3-Methyl-2-butenyl)-1*H*-indole M-414

7-Prenylindole
[23158-14-7]

$C_{13}H_{15}N$ 185.268

Alkaloid from the liverworts *Riccardia sinuata* and *Riccardia incurvata*, and from the stem bark of *Anonidium mannii* (Annonaceae) and roots of *Esenbeckia leiocarpa* (Rutaceae). Mp 43-44° (ca. 20°).

1,3,5-Trinitrobenzene complex: Mp 110.5-111°.

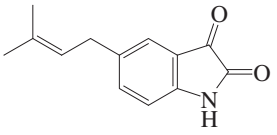
*1′-Oxo: 1-(1*H*-Indol-7-yl)-3-methyl-2-buten-1-one, 9CI. 7-(3-Methyl-2-butenoyl)-1*H*-indole.* ***Leiocarpone***
[105205-52-5]
$C_{13}H_{13}NO$ 199.252
Isol. from the roots of *Esenbeckia leiocarpa*. Air- and light-sensitive cryst.

*1′-Hydroxy, 3′,4′-epoxide: α-(3,3-Dimethyloxiranyl)-1*H*-indole-7-methanol, 9CI.* ***Leiocarpol***
[126365-18-2]
$C_{13}H_{15}NO_2$ 217.267
Alkaloid from roots of *Esenbeckia leiocarpa*. Amorph. solid. $[\alpha]_D^{20}$ -1.5 (c, 1.1 in $CHCl_3$).

Benešová, V. *et al., Coll. Czech. Chem. Comm.*, 1969, **34**, 1807 (*isol, uv, ir, pmr*)
Achenbach, H. *et al., Heterocycles*, 1985, **23**, 2075 (*isol, uv, ir, pmr, cmr, ms*)
Muratake, H. *et al., Heterocycles*, 1986, **24**, 261 (*synth*)
Moyer, M.P. *et al., J.O.C.*, 1986, **51**, 5106 (*synth, pmr, Leiocarpone*)
Somei, M. *et al., Heterocycles*, 1987, **26**, 1783 (*synth*)
Delle Monache, F. *et al., Gazz. Chim. Ital.*, 1989, **119**, 435; 1990, **120**, 387 (*Leiocarpol, Leiocarpone*)
Xiong, X. *et al., J.O.C.*, 2007, **72**, 5832-5834 (*synth*)

5-(3-Methyl-2-butenyl)-1*H*-indole-2,3-dione, 9CI M-415

5-Prenylisatin. 5-Isopentenylisatin. ***Prenisatin****. 2-Hydroxy-5-(3-methyl-2-butenyl)-3*H*-indol-3-one*
[177957-18-5]



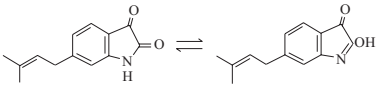
$C_{13}H_{13}NO_2$ 215.251

Likely to be tautomeric with the Δ^1-enone form. Prod. by *Chaetomium globosum*. Orange solid. λ_{max} 247 (log ε 4.28); 299 (log ε 3.59); 422 (log ε 2.82) (MeOH).

Breinholt, J. *et al., Acta Chem. Scand.*, 1996, **50**, 443-445

6-(3-Methyl-2-butenyl)-1*H*-indole-2,3-dione, 9CI M-416

*6-Prenylisatin. 6-Isopentenylisatin. 2-Hydroxy-6-(3-methyl-2-butenyl)-3*H*-indol-3-one*
[101023-73-8]



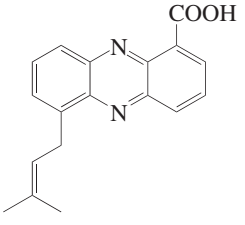
$C_{13}H_{13}NO_2$ 215.251

Isol. from *Streptomyces albus*. Shows weak activity against gram-positive bacteria. Yellow cryst. (MeOH). Sol. EtOAc, MeOH, $CHCl_3$; poorly sol. H_2O. Mp 109-110°.

Graefe, U. *et al., J. Antibiot.*, 1986, **39**, 162 (*isol*)

6-(3-Methyl-2-butenyl)-1-phenazinecarboxylic acid M-417

6-Prenyl-1-phenazinecarboxylic acid
[85223-60-5]



$C_{18}H_{16}N_2O_2$ 292.337

Isol. from *Streptomyces cinnamonensis*. Weakly active against gram-positive bacteria. Cryst. ($CHCl_3$/hexane). Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. Mp 168-170°. λ_{max} 255 (ε 65000); 367 (ε 14000) (MeOH) (Berdy).

6-Deoxy-α-L-talopyranosyl ester: ***Phenazoviridin***
[155233-15-1]
$C_{24}H_{26}N_2O_6$ 438.479
Prod. by *Streptomyces* sp. HR04. Free radical scavenger, lipid peroxidation inhibitor, shows antidementia props. Pale greenish powder. Sol. MeOH, Me_2CO, $CHCl_3$, EtOAc, EtOH; poorly sol. H_2O, hexane. Mp 71-73° dec. λ_{max} 253 (ε 71700); 348 (ε 11600); 366 (ε 16900) (MeOH).

$\Delta^{1''}$-Isomer (E-), 3′′-hydroxy: ***6-(3-Hydroxy-3-methyl-1-butenyl)-1-phenazinecarboxylic acid***
[129083-43-8]
$C_{18}H_{16}N_2O_3$ 308.336
Prod. by *Streptomyces cinnamonensis*.

Tax, J. *et al., Coll. Czech. Chem. Comm.*, 1983, **48**, 527 (*isol, struct, spectra*)
Beran, M. *et al., Folia Microbiol. (Prague)*, 1990, **35**, 172-175 (*Streptomyces cinnamonensis constits*)
Kato, S. *et al., J. Antibiot.*, 1993, **46**, 1485-1493 (*Phenazoviridin*)

9-(3-Methyl-2-butenyl)-1-phenazinecarboxylic acid M-418

9-Prenyl-1-phenazinecarboxylic acid. ***Endophenazine A***

$C_{18}H_{16}N_2O_2$ 292.337

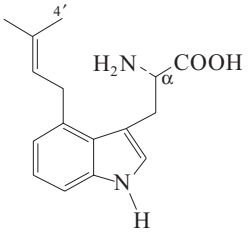
Prod. by various strains of the endosymbiotic *Streptomyces anulatus*. Active against gram-positive bacteria and some fungi. Yellow solid. λ_{max} 255 (log ε 4.81); 365 (log ε 4.06) (MeOH).

5,10-Dihydro, N^5-Me: 5,10-Dihydro-5-methyl-9-(3-methyl-2-butenyl)-1-phenazinecarboxylic acid. ***Endophenazine C***
$C_{19}H_{20}N_2O_2$ 308.379
Prod. by *Streptomyces anulatus*. Active against gram-positive bacteria and some fungi. Green solid (probably as a complex with a paramagnetic metal). Orange solid (as Me ester). λ_{max} 254 (log ε 4.47); 410 (log ε 3.77) (MeOH) (complex). λ_{max} 248 (log ε 4.09); 323 (log ε 2.6); 432 (log ε 3.28) (MeOH) (Me ester).

Gebhardt, K. *et al., J. Antibiot.*, 2002, **55**, 794-800; 801-806 (*isol, pmr, cmr, activity*)
Bringmann, G. *et al., J.O.C.*, 2007, **72**, 4198-4202 (*biosynth*)

4-(3-Methyl-2-butenyl)tryptophan M-419

4-(3,3-Dimethylallyl)tryptophan. 4-Prenyltryptophan
[5017-33-4]



$C_{16}H_{20}N_2O_2$ 272.346

(S)-form [29702-35-0]
Occurs in a *Pennisetum* type of ergot strain producing mainly Elymoclavine. Important intermed. in biosynth. of ergot alkaloids. Cryst. (DMF aq.). Mp 210°.

N^{α}-*Me:* N-***Methyl-4-dimethylallyltryptophan***
[75917-16-7]
$C_{17}H_{22}N_2O_2$ 286.373
Isol. from *Claviceps fusiformis* and *Lotus subglauca*. Needles (MeOH). Mp 232°. λ_{max} 274 ; 280 ; 295 (MeOH).

4′-Hydroxy: ***4-(4-Hydroxy-3-methyl-2-butenyl)tryptophan***
[53774-59-7]
$C_{16}H_{20}N_2O_3$ 288.346
Alkaloid from cultures of *Claviceps purpurea*. Config. of double bond not established. Identified by ms.

Plieninger, H. *et al., Chem. Ber.*, 1963, **96**, 1618-1629 (*synth*)
Agurell, S. *et al., Tet. Lett.*, 1968, 5127-5128 (*occur, ms*)
Anderson, J.A. *et al., Tet. Lett.*, 1974, 2107-2108 (N^{α}-*Me, isol*)
Barrow, K.D. *et al., Tet. Lett.*, 1975, 4269-4270 (N^{α}-*Me, isol*)
Petroski, R.J. *et al., FEBS Lett.*, 1977, **82**, 55-57 (*biosynth*)

3-Methyl-1-butylamine M-420

3-Methyl-1-butanamine, 9CI. 1-Amino-3-methylbutane. Isoamylamine. Isopentylamine. FEMA 3219
[107-85-7]
$(H_3C)_2CHCH_2CH_2NH_2$
$C_5H_{13}N$ 87.164
Present in roasted cocoa beans. Widespread in fungi and higher plants e.g. apple, banana, wine grape, swede, rhubarb, porcini (*Boletus edulis*). Protein degradn. product. Liq. Misc. H_2O. Bp 95° Bp 232°.

▶ Highly flammable, fl. p. <21°, irritant.

N-*Ac:* N-*(3-Methylbutyl)acetamide.* N-*Isopentylacetamide.* N-*Isoamylacetamide*
[13434-12-3]
$C_7H_{15}NO$ 129.202
Constit. of the pheromones of *Dacus* and *Vespa* spp. (wasp). Also found in wines and tobacco. Bp 238°.

N-*Me:* [4104-44-3]
$C_6H_{15}N$ 101.191
Found in tobacco. Bp_{759} 108-110°.

N-*Me; hydrochloride:* [2419-59-2]
Plates (Me_2CO). V. sol. H_2O, insol. Et_2O. Mp 181° (178°).

N-*Et:* [21035-52-9]
$C_7H_{17}N$ 115.218
Bp 127°.

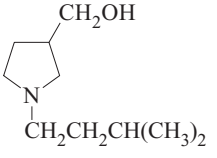
N-*Et; hydrochloride:* Mp 205-206°.

N-*Propyl:* 3-*Methyl*-N-*propylbutylamine, 9CI. Isopentylpropylamine*
[78579-58-5]
$C_8H_{19}N$ 129.245
Bp 148-149° Bp_{200} 106-107°.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 286D (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 458C (*nmr*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 370C (*ir*)
Erickson, J.L.E. *et al., Ber.*, 1926, **59**, 2665 (*synth*)
Nicholas, H.O. *et al., J.A.C.S.*, 1926, **48**, 2174 (*synth*)
Campbell, K.N. *et al., J.A.C.S.*, 1944, **66**, 82 (*N-propyl*)
Dornow, A. *et al., Annalen*, 1954, **588**, 62-71 (*N-Et*)
Cope, A.C. *et al., J.A.C.S.*, 1957, **79**, 4750 (*N-propyl*)
von Kamienski, E.S. *et al., CA*, 1958, **52**, 5551; 6502 (*occur*)
Richardson, M. *et al., Phytochemistry*, 1966, **5**, 23 (*biosynth*)
Demole, E. *et al., Helv. Chim. Acta*, 1972, **55**, 1866-1882 (*N-Ac, isol*)
Eggert, H. *et al., J.A.C.S.*, 1973, **95**, 3710 (*cmr*)
Ger. Pat., 1976, 2 456 006; *CA*, **85**, 62631v (*synth*)
Heath, R.R. *et al., Experientia*, 1988, **44**, 82 (*isol, synth*)
Perkins, M.V. *et al., J.C.S. Perkin 1*, 1990, 1111-1117 (*N-Ac, isol, bibl*)
Granvogl, M. *et al., J. Agric. Food Chem.*, 2006, **54**, 1730-1739 (*detn, cocoa*)
Sax, N.I. *et al., Dangerous Properties of Industrial Materials, 5th edn., Van Nostrand Reinhold*, 1979, 748

1-(3-Methylbutyl)-3-pyrrolidinemethanol, 9CI M-421

3-Hydroxymethyl-1-isopentylpyrrolidine
[163315-02-4]

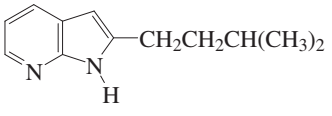


$C_{10}H_{21}NO$ 171.282
Trace alkaloid from poison glands of the ants *Harpagoxenus sublaevis, Leptothorax acervorum* and *Leptothorax muscorum*. Bp_1 52°.

Reder, E. *et al., Helv. Chim. Acta*, 1995, **78**, 73 (*isol, pmr, cmr, ms, synth, struct*)

2-(3-Methylbutyl)-1*H*-pyrrolo[2,3-*b*]pyridine M-422

2-Isopentyl-7-azaindole
[946-18-9]

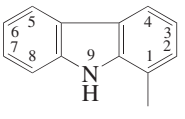


$C_{12}H_{16}N_2$ 188.272
Constit. of chicken eggs. Antifungal agent. Cryst. Mp 150-151°.

Tsuji, K. *et al., Yakugaku Zasshi*, 1976, **96**, 475-478 (*isol*)
Landor, S.R. *et al., J.C.S. Perkin 1*, 1979, 2289-2293 (*synth*)

1-Methyl-9*H*-carbazole, 9CI M-423

[6510-65-2]



$C_{13}H_{11}N$ 181.237
Isol. from the sponge *Tedania ignis*. also from *Ailanthus melabrica*. Toxic to brine shrimp, shows insecticidal props. Plates (petrol). Mp 120.5°. λ_{max} 242 (ϵ 10715); 250 (ϵ 11700); 262 (ϵ 12300); 283 (ϵ 8317); 305 (ϵ 8317); 375 (ϵ 7050) (MeOH) (Berdy).

Campaigne, E. *et al., J.O.C.*, 1959, **24**, 478 (*synth*)
Kuroki, M. *et al., J. Het. Chem.*, 1981, **18**, 709 (*synth, bibl*)
Clancy, M.G. *et al., J.C.S. Perkin 1*, 1984, 429 (*synth*)
Dillman, R.L. *et al., J. Nat. Prod.*, 1991, **54**, 1056 (*isol, pmr, cmr*)

3-Methyl-9*H*-carbazole, 9CI M-424

[4630-20-0]

$C_{13}H_{11}N$ 181.237
Alkaloid from the roots of *Clausena heptaphylla* and *Clausena indica* and from the rootbark of *Glycosmis pentaphylla* (Rutaceae). Plates (CH_2Cl_2/hexane). Mp 206-208°. Pale green soln. in H_2SO_4, which becomes deep green on addn. of HNO_3.

Picrate: Mp 176°.

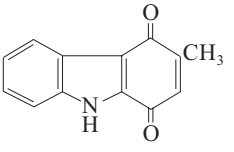
N-*Formyl: 3-Methyl-9*H*-carbazole-9-carboxaldehyde. 9-Formyl-3-methyl-9*H*-carbazole*
$C_{14}H_{11}NO$ 209.247
Alkaloid from the roots of *Murraya koenigii* (curryleaf tree) (Rutaceae). Off-white solid. Mp 58-60°. λ_{max} 222 ; 267 ; 291 (sh) ; 315 (EtOH).

N-*(Ethoxycarbonyl): Ethyl 3-methyl-9*H*-carbazole-9-carboxylate. 9-Carbethoxy-3-methyl-9*H*-carbazole*
$C_{16}H_{15}NO_2$ 253.3
Alkaloid from the roots of *Murraya koenigii* (curryleaf tree) (Rutaceae). Needles (MeOH). Mp 122-123°. λ_{max} 229 ; 251 ; 262 ; 278 (sh) ; 287 ; 304 ; 315 (EtOH).

Campaigne, E. *et al., J.O.C.*, 1959, **24**, 478
Islam, A. *et al., Chem. Comm.*, 1972, 537 (*synth*)
Joshi, B.S. *et al., Indian J. Chem.*, 1974, **12**, 437 (*isol, uv*)
Roy, S. *et al., Phytochemistry*, 1974, **13**, 1017 (*isol, uv, ir*)
Åkermark, B. *et al., J.O.C.*, 1975, **40**, 1365 (*synth*)
Clancy, M.G. *et al., Chem. Comm.*, 1980, 1112 (*synth*)
Bhattacharyya, P. *et al., Chem. Comm.*, 1984, 1668 (*synth*)
Chowdhury, B.K. *et al., Phytochemistry*, 1987, **26**, 2138 (*isol*)
Luo, J.K. *et al., J. Het. Chem.*, 1989, **26**, 1213 (*synth, pmr*)
Chakrabarty, M. *et al., Phytochemistry*, 1997, **46**, 751-755 (*isol, derivs, pmr, cmr*)
Liu, Z. *et al., Tetrahedron*, 2007, **63**, 347-355 (*synth*)

3-Methyl-1*H*-carbazole-1,4(9*H*)-dione, 9CI M-425

Murrayaquinone A
[100108-66-5]

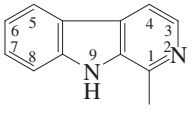


$C_{13}H_9NO_2$ 211.22
Alkaloid from root bark of *Murraya euchrestifolia* (Rutaceae). Also obt. by photooxidn. of Murrayafoline A or oxidn. of 1-Hydroxy-3-methylcarbazole with Fremy's salt. Cytotoxic agent. Exhibits cardiotonic activity. Brown prisms (Me_2CO). Mp 246-247° (240-241°).

Wu, T.-S. *et al., Heterocycles*, 1983, **20**, 1267 (*uv, ir, pmr, cmr, struct*)
Furukawa, H. *et al., Chem. Pharm. Bull.*, 1985, **33**, 4132 (*isol, uv, ir, pmr, cmr, synth, struct*)
Ramesh, K. *et al., Chem. Ind. (London)*, 1986, 614 (*synth*)
Martin, T. *et al., J.C.S. Perkin 1*, 1988, 235 (*synth, uv, ir, pmr, ms*)
Takeya, K. *et al., Eur. J. Pharmacol.*, 1989, **169**, 137 (*pharmacol*)
Yogo, M. *et al., Chem. Pharm. Bull.*, 1991, **39**, 328 (*synth*)
Miki, Y. *et al., Synlett*, 1993, 333 (*synth*)
Wada, A. *et al., Chem. Pharm. Bull.*, 1994, **42**, 416 (*synth*)
Matsuo, K. *et al., Chem. Pharm. Bull.*, 1994, **42**, 1325 (*synth*)
Hagiwara, H. *et al., Chem. Pharm. Bull.*, 1998, **46**, 1948-1949 (*synth*)
Murakami, Y. *et al., Heterocycles*, 1998, **49**, 127-132 (*synth*)
Murphy, W.S. *et al., J.C.S. Perkin 1*, 1998, 4115-4119 (*synth*)
Itoigawa, M. *et al., J. Nat. Prod.*, 2000, **63**, 893-897 (*activity*)
Knölker, H.-J. *et al., Heterocycles*, 2003, **60**, 1049-1052 (*synth*)
Scott, T.L. *et al., Tetrahedron*, 2003, **59**, 6323-6232 (*synth*)
Mal, D. *et al., Tetrahedron*, 2007, **63**, 3768-3781 (*synth*)

1-Methyl-β-carboline M-426

*1-Methyl-9*H*-pyrido[3,4-*b*]indole, 9CI*. ***Harman***. *Loturine. Passiflorine*†. *Zygofabagine. Aribine*
[486-84-0]



$C_{12}H_{10}N_2$ 182.224
Present in tobacco smoke and espresso coffee. Alkaloid from *Arariba rubra* (preferred genus name *Simira*) (Rubiaceae), *Passiflora incarnata* (Passifloraceae) and many other *Passiflora* spp., and a wide range of spp. in several families. Prod. by *Nocardia* sp. and *Streptomyces* sp. Also a trace constit. of the fluorescent dinoflagellate *Noctiluca miliaris*. Isol. from *Costaticella hastata*. Cytotoxic intercalating agent. Plant growth and enzyme inhibitor. Sedative. Hallucinogen. Mp 237-238° (228°). Log P 3.06 (calc).

▶ A comutagen with aromatic amines active towards bacteria. LD_{50} (mus, ipr) 50 mg/kg. UV0280000

Hydrochloride: Mp 292-295°.

Picrate: Mp 250-255°.

N-*Oxide:* ***Harmanine***
[2506-09-4]
$C_{12}H_{10}N_2O$ 198.224
Alkaloid from *Calligonum minimum* and *Ophiorrhiza rosacea*. Needles (EtOAc/MeOH); cryst. (H_2O) (as picrate). Mp 182-184° subl Mp 239-248° (picrate).

N^b-*Me:* ***Melinonine F***
[6801-22-5]
$C_{13}H_{13}N_2^{\oplus}$ 197.259
Quaternary alkaloid from *Strychnos melinoniana* and *Strychnos usambaerensis* (Loganiaceae). Antimitotic agent. Poorly sol. hexane. Mp 288° dec. (as chloride).

*3,4-Dihydro: 4,9-Dihydro-1-methyl-3*H*-pyrido[3,4-*b*]indole.* ***3,4-Dihydro-1-methyl-β-carboline***. ***Harmalan***. *Dihydroharman*
[525-41-7]
$C_{12}H_{12}N_2$ 184.24
Alkaloid from *Flindersia laevicarpa*, *Elaeagnus angustifolia* (Russian olive), *Strychnos dale* and *Burkea africana* (Flindersiaceae, Eleagnaceae, Loganiaceae, Fabaceae). Cream needles (Me_2CO). Mp 183-185° dec. λ_{max} 237 (log ϵ 3.89); 241 (sh) ; 319 (log ϵ 3.86); 346 (sh) (log ϵ 3.62) (MeOH).

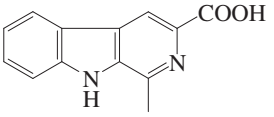
3,4-Dihydro, picrate:
Yellow needles ($CHCl_3$/MeOH). Mp 245° dec. (234-235° dec.).

3,4-Dihydro, N^b*-oxide: Harmalan* N^b*-oxide*
$C_{12}H_{12}N_2O$ 200.24
Alkaloid from stem bark of *Burkea africana*. Probable struct.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 682A (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 165B (*nmr*)
Manske, R.H.F. *et al., J.C.S.*, 1927, 1-14 (*Harmalan, synth*)
Bächli, E. *et al., Helv. Chim. Acta*, 1957, **40**, 1167-1187 (*Melinonine F, isol, uv, ir*)
Kanaoka, Y. *et al., Chem. Pharm. Bull.*, 1967, **15**, 101-107 (*Harmalan, synth, uv, ir*)
Kametani, T. *et al., J.C.S.(C)*, 1968, 1006-1007 (*synth, pmr*)
Ferreira, M.A. *et al., Garcia de Orta, Ser. Farmacogn.*, 1973, **2**, 23-32; *CA*, **81**, 166304z (*Harmalan oxide*)
Phillipson, J.D. *et al., J. Chromatogr.*, 1975, **105**, 163-178 (*tlc, glc, uv, ms*)
Picker, K. *et al., Aust. J. Chem.*, 1976, **29**, 2023-2036 (*Harmalan, isol, uv, ir, pmr, ms*)
Inoue, S. *et al., Chem. Lett.*, 1980, 297-298 (*isol, dinoflagellate*)
Han, B.H. *et al., Arch. Pharmacal Res.*, 1986, **9**, 21; *CA*, **105**, 57927y (N^a*-Formylharman, isol*)
Yomosa, K. *et al., Agric. Biol. Chem.*, 1987, **51**, 921-922 (*isol, bibl*)
Hardiman, J. *et al., Bioorg. Chem.*, 1987, **15**, 213-223 (*cryst struct*)
Blackman, A.J. *et al., J. Nat. Prod.*, 1987, **50**, 494-496 (*isol, Costaticella*)
Bracher, F. *et al., Annalen*, 1993, 1335-1337 (*synth, pmr, cmr*)
Seki, H. *et al., Chem. Pharm. Bull.*, 1993, **41**, 1169-1172 (*pmr, cmr*)
Rocca, P. *et al., Tetrahedron*, 1993, **49**, 3325-3342 (*synth*)
Dachriyanus, *et al., Aust. J. Chem.*, 2000, **53**, 221-224 (*oxide*)
Kitajima, M. *et al., Chem. Pharm. Bull.*, 2000, **48**, 1410-1412 (*Harmalan, pmr, cmr*)
Nakano, K. *et al., Mutat. Res.*, 2000, **470**, 141-146 (*comutagenicity, pmr*)
Ivanov, I. *et al., Heterocycles*, 2005, **65**, 2483-2492 (*synth, Harmalan, pmr*)
Alves, R.C. *et al., J. Agric. Food Chem.*, 2007, **55**, 1832-1838 (*isol, coffee*)
Huang, W. *et al., Synth. Commun.*, 2007, **37**, 2137-2143 (*synth, ir, pmr*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, MPA050

1-Methyl-β-carboline-3-carboxylic acid M-427

*1-Methyl-9*H*-pyrido[3,4-*b*]indole-3-carboxylic acid, 9CI*. ***Harman-3-carboxylic acid***
[22329-38-0]



$C_{13}H_{10}N_2O_2$ 226.234
Alkaloid from the bark of *Aspidosperma polyneuron* and *Aspidosperma exalatum* (Apocynaceae). Mp 305-306°.

Me ester: ***Methyl harman-3-carboxylate***. *3-Carbomethoxyharman*
[16641-82-0]
$C_{14}H_{12}N_2O_2$ 240.261
Alkaloid from bark of *Nauclea diderrichii* (Rubiaceae). Cryst. (MeOH). Mp 252-253° (245°, 249-253° dec.).

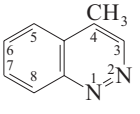
▶ UU9780400

Et ester: ***Ethyl harman-3-carboxylate***. *3-Carbethoxyharman*
[33821-71-5]
$C_{15}H_{14}N_2O_2$ 254.288
Alkaloid from bark of *Aspidosperma exalatum* (Apocynaceae).

Snyder, H.R. *et al., J.A.C.S.*, 1948, **70**, 219 (*synth*)
Antonaccio, L.D. *et al., Monatsh. Chem.*, 1962, **93**, 962 (*isol*)
Sanchez, W.E.L. *et al., Ann. Acad. Bras. Cinc.*, 1971, **43**, 603-605; *CA*, **78**, 55312a (*isol, deriv*)
McLean, S. *et al., Can. J. Chem.*, 1972, **50**, 1478 (*isol, ir, pmr, ms*)
Cardoso, C.L. *et al., J. Nat. Prod.*, 2004, **67**, 1882-1885 (*isol, cmr*)
Zhao, M. *et al., Bioorg. Med. Chem.*, 2006, **14**, 6996-7010 (*synth, ir, pmr*)

4-Methylcinnoline, 9CI M-428

[14722-38-4]



$C_9H_8N_2$ 144.176
Identified in cigarette smoke condensate and yeast extract. Pale yellow needles (petrol), orange needles (hexane). Mp 76-77° (73-74°). Deep red colour in acid soln.

▶ GE3630000

Picrate:
Aggregates of green needles (EtOH). Mp 179-180° (176-177°).

1-Oxide: [5580-86-9]
$C_9H_8N_2O$ 160.175

Mp 95-96°.

2-Oxide: [5580-85-8]
$C_9H_8N_2O$ 160.175
Mp 150-151° (147-148°).

1,2-Dioxide:
$C_9H_8N_2O_2$ 176.174
Mp 171-172°.

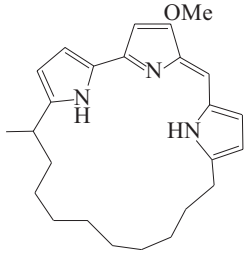
1,2-Dihydro:
$C_9H_{10}N_2$ 146.191
Needles (petrol). Mp 64-65°. $Bp_{0.2}$ 94-99°. Also descr. as a liq.

[82000-09-7 , 66169-64-0]

Atkinson, C.M. *et al., J.C.S.*, 1947, 808 (*synth, derivs*)
Castle, R.N. *et al., J.O.C.*, 1953, **18**, 1706 (*synth*)
Castle, R.N. *et al., J. Am. Pharm. Assoc.*, 1959, **48**, 135 (*ir*)
Klemm, L.H. *et al., J. Chromatogr.*, 1966, **23**, 428 (*tlc*)
Palmer, M.H. *et al., J.C.S.(C)*, 1968, **21**, 2621 (*synth, pmr, derivs*)
Elkins, J.R. *et al., J. Het. Chem.*, 1968, **5**, 639 (*ms, pmr*)
Palmer, M.H. *et al., Org. Mass Spectrom.*, 1969, **2**, 1265 (*ms*)
Witanowski, M. *et al., Tetrahedron*, 1971, **27**, 3129 (*N-14 nmr*)
Van Hummel, G.J. *et al., Acta Cryst. B*, 1979, **35**, 516 (*cryst struct*)
Castellano, A. *et al., J. Chem. Res., Synop.*, 1979, **2**, 70 (*epr*)

Methylcyclodecylprodigiosin M-429

Cyclomethyldecylprodiginine
[34852-33-0]

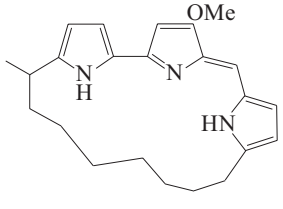


$C_{25}H_{33}N_3O$ 391.555
Pyrrole antibiotic. Isol. from *Actinomadura pelletieri* (*Nocardia pelletieri*). Active against *Staphylococcus aureus*, fungi and protozoa. λ_{max} 539 (EtOH/HCl) (Berdy). λ_{max} 549 (hexane) (Berdy).

Gerber, N.N. *et al., Appl. Microbiol.*, 1969, **18**, 1; *J. Antibiot.*, 1971, **24**, 636; *J. Het. Chem.*, 1973, **10**, 925 (*isol, uv, ir, pmr, ms*)

Methylcyclooctylprodigiosin M-430

R 39FF. Antibiotic R 39FF
[52589-16-9]



$C_{23}H_{29}N_3O$ 363.502
Pyrrole antibiotic. Prod. by *Actinomadura madurae*. Active against gram-positive bacteria. Yellow solid. λ_{max} 551 ($CHCl_3$) (Berdy). λ_{max} 543 (EtOH/HCl) (Berdy).

Gerber, N.N. *et al., J. Het. Chem.*, 1973, **10**, 925-929 (*isol*)

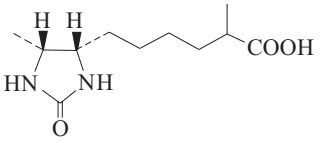
N-(9-Methyldecyl)sulfamic acid M-431

[1025324-20-2]
$(H_3C)_2CH(CH_2)_7CH_2NHSO_3H$
$C_{11}H_{25}NO_3S$ 251.389
Isol. from *Daphnia pulex*. Kairomone.

Yasumoto, K. *et al., Chem. Pharm. Bull.*, 2008, **56**, 133-136 (*isol, pmr*)

α-Methyldethiobiotin M-432

α,5-Dimethyl-2-oxo-4-imidazolidinehexanoic acid, 9CI, 8CI. Libramycin A
[31602-99-0]



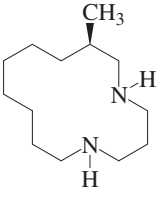
$C_{11}H_{20}N_2O_3$ 228.291
From *Streptomyces lydicus, Streptomyces lavendulae* and *Streptomyces* sp. 72192. Antimetabolite antibiotic. Cryst. (Me_2CO). Mp 161.5-162.5°.

[51746-00-0]

Martin, D.G. *et al., Tet. Lett.*, 1971, 3791 (*isol, struct, ms, pmr*)
Hanka, L.J. *et al., Antimicrob. Agents Chemother.*, 1972, **1**, 135 (*isol, biosynth*)
Okami, Y. *et al., J. Antibiot.*, 1974, **27**, 143; 656

7-Methyl-1,5-diazacyclotetradecane M-433

Haliclorensin
[202747-72-6]



(*R*)-*form*

$C_{13}H_{28}N_2$ 212.378
Struct. revised in 2001.

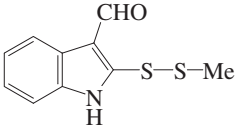
(*R*)-*form*
Oil. $[\alpha]_D$ +20 (c, 2 in MeOH).

(*S*)-*form*
Alkaloid from the marine sponge *Haliclona tulearensis*. Oil. $[\alpha]_D$ -2.2 (c, 1.3 in MeOH) (natural). $[\alpha]_D$ -18.5 (c, 0.6 in MeOH) (synthetic). Nat. prod. is a partial racemate of 75% o.p.

Koren-Goldshlager, G. *et al., J. Nat. Prod.*, 1998, **61**, 282 (*isol, pmr, cmr, ms*)
Heinrich, M.R. *et al., Tetrahedron*, 2001, **57**, 9973-9978 (*synth, cd, pmr, cmr, struct*)
Zheng, J.-F. *et al., Org. Lett.*, 2004, **6**, 1139-1142 (*synth*)

2-(Methyldithio)-1*H*-indole-3-carboxaldehyde M-434

3-Formyl-2-(methyldithio)indole. 3-Formylindolyl methyl disulfide. ***Caulilexin A***



$C_{10}H_9NOS_2$ 223.319
Alkaloid from *Brassica oleracea* var. *botrytis* (cauliflower). Phytoalexin. Pale yellow solid. Mp 114-116°. λ_{max} 213 (log ϵ 4.4); 252 (log ϵ 4.2); 307 (log ϵ 4) (MeOH).

Pedras, M.S.C. *et al., Phytochemistry*, 2006, **67**, 1503-1509 (*isol, synth, pmr, cmr, ms*)

2-Methyl-2,6-eicosadienoic acid M-435

$H_3C(CH_2)_{12}CH{=}CHCH_2CH_2CH{=}C(CH_3)COOH$
$C_{21}H_{38}O_2$ 322.53

(2E,6E)-form

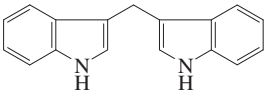
(2-Hydroxyethyl)amide: ***Semiplenamide A***
[630100-41-3]
$C_{23}H_{43}NO_2$ 365.598
Alkaloid from *Lyngbya semiplena*. Amorph. solid. λ_{max} 206 (ϵ 5100) (MeOH).

(2-Acetoxyethyl)amide: ***Semiplenamide B***
[630100-42-4]
$C_{25}H_{45}NO_3$ 407.635
Alkaloid from *Lyngbya semiplena*. Oil. λ_{max} 203 (ϵ 5900) (MeOH).

Han, B. *et al., J. Nat. Prod.*, 2003, **66**, 1364-1368 (*isol, pmr, cmr*)

3,3′-Methylenebisindole, 9CI M-436

3,3′-Methylenediindole. Di-3-indolylmethane. ***Arundine***
[1968-05-4]



$C_{17}H_{14}N_2$ 246.311
Alkaloid from the roots of *Arundo donax*. Prod by the marine bacterium *Vibrio parahaemolyticus* Bio249. Major digestive prod. of 1*H*-Indole-3-methanol, I-98. Exhibits various potent anticancer props. Needles (EtOH aq.). Mp 165-166°.

N-*Me:* ***Ardine***
[174545-80-3]
$C_{18}H_{16}N_2$ 260.338
Alkaloid from *Arundo donax*. Amorph.

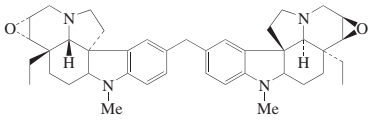
N,N′-*Di-Me:*
$C_{19}H_{18}N_2$ 274.365
Plates (EtOH). Mp 110-112°.

Thesing, J. *et al., Chem. Ber.*, 1954, **87**, 692-699 (*synth*)
Jackson, A.H. *et al., J.C.S. Perkin 1*, 1987, 2543-2551 (*synth, pmr*)

Khuzaev, V.U. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1994, **30**, 635; 1995, **31**, 277; 277; 1996, **32**, 190 (*isol, Arundine, Ardine*)
Veluri, R. *et al., J. Nat. Prod.*, 2003, **66**, 1520-1523 (*isol*)
Anderton, M.J. *et al., Clin. Cancer Res.*, 2004, **10**, 5233-5241 (*pharmacokinet*)
Pradhan, P.K. *et al., Synthesis*, 2005, 1779-1782 (*synth, ir, pmr, cmr*)
Wang, Z. *et al., Mol. Cancer Ther.*, 2007, **6**, 2757-2765; 2008, **7**, 341-349 (*pharmacol*)
Minich, D.M. *et al., Nutr. Rev.*, 2007, **65**, 259-267 (*rev*)

Methylenebismehranine M-437

[220327-18-4]



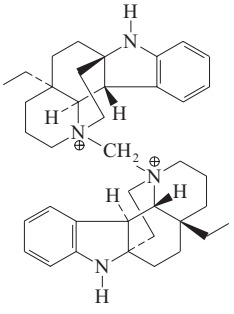
Absolute Configuration

$C_{41}H_{52}N_4O_2$ 632.887
Alkaloid from *Tabernaemontana bovina*. Oil. $[\alpha]_D^{28}$ -5.9 (c, 0.5 in MeOH).

Lien, T.P. *et al., Phytochemistry*, 1998, **49**, 1797-1799 (*isol, pmr, cmr*)

N^b,$N^{b'}$-Methylenebismelonium(2+) M-438

[135626-51-6]

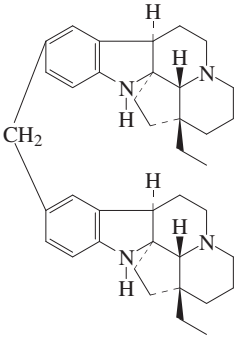


$C_{39}H_{54}N_4^{2\oplus}$ 578.882
Alkaloid from *Melodinus celastroides* (Apocynaceae). Amorph. $[\alpha]_D^{20}$ +71 (c,1 in $CHCl_3$). Poss. artifact. CAS no. refers to dichloride.

Mehri, H. *et al., J. Nat. Prod.*, 1991, **54**, 372-379 (*isol, uv, ir, pmr, ms, struct*)

10,10′-Methylenebis[norvallesamidine] M-439

[135626-50-5]

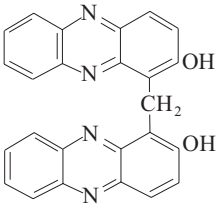


$C_{39}H_{52}N_4$ 576.867
Alkaloid from *Melodinus celastroides* (Apocynaceae). $[\alpha]_D^{20}$ +140 (c, 1 in $CHCl_3$).

Mehri, H. *et al., J. Nat. Prod.*, 1991, **54**, 372 (*isol, uv, ir, pmr, cmr, struct*)

1,1′-Methylenebis[2-phenazinol], 9CI M-440

Di(2-hydroxy-1-phenazinyl)methane
[73749-96-9]

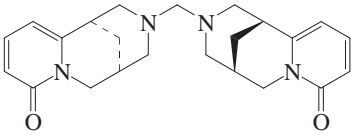


$C_{25}H_{16}N_4O_2$ 404.427
Isol. from *Pseudomonas aureofaciens*. Mp 300°.

Neuenhaus, W. *et al., Z. Naturforsch., B*, 1980, **35**, 385 (*synth*)

12,12′-Methylenedicytisine M-441

[121290-68-4]

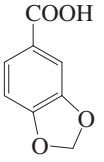


$C_{23}H_{28}N_4O_2$ 392.5
Alkaloid from *Maackia amurensis*.

Kubo, H. *et al., Thai J. Pharm. Sci.*, 1993, **17**, 171-173 (*isol*)
Wang, Y.-H. *et al., Chem. Pharm. Bull.*, 2000, **48**, 641-645 (*isol*)

3,4-Methylenedioxybenzoic acid M-442

1,3-Benzodioxole-5-carboxylic acid, 9CI. Piperonylic acid. Heliotropic acid
[94-53-1]



$C_8H_6O_4$ 166.133
Isol. from Paracoto bark, from *Cinnamomum kanahirai, Piper longum* (long pepper) and *Melicope simplex*. Needles (EtOH), cryst. (H_2O). Mp 229°. pK_a 4.5 (25°, 5% EtOH). Sublimes in prisms.

▶ DF4912765

Me ester: [326-56-7]
$C_9H_8O_4$ 180.16
Needles or leaflets (petrol). Mp 273-274° part. dec. Steam-volatile.

Et ester: [6951-08-2]
$C_{10}H_{10}O_4$ 194.187
Prisms. Mp 18.5°. Bp 285°.

Amide: 3,4-Methylenedioxybenzamide
[4847-94-3]
$C_8H_7NO_3$ 165.148
Constit. of *Naravelia zeylanica*. Prisms or needles (H_2O). Mp 169°.

*2-Phenylethylamide: 3,4-Methylenedioxy-N-phenethylbenzamide. **Nantoamide***
$C_{16}H_{15}NO_3$ 269.299
Alkaloid from the rhizomes of *Begonia nantoensis*. Syrup. λ_{max} 293 (log ϵ 2.88) (MeOH).

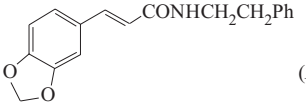
Chloride: [25054-53-9]
$C_8H_5ClO_3$ 184.578
Cryst. Mp 80°. Bp_{25} 155°.

Nitrile: 4-Cyano-1,2-methylenedioxybenzene
[4421-09-4]
$C_8H_5NO_2$ 147.133
Needles (H_2O). Mp 95°.

▶ TO2645000

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 212C; 457B (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **2**, 1111A; 1349B; 1533C (*nmr*)
Org. Synth., Coll. Vol., 2, 1943, 538 (*synth*)
Briggs, L.H. *et al., J.C.S.*, 1950, 2376 (*isol*)
Dobrowsky, A. *et al., Monatsh. Chem.*, 1955, **86**, 325 (*synth*)
Byrne, M.M. *et al., J.C.S.(B)*, 1968, 809
Šantavý, F. *et al., Coll. Czech. Chem. Comm.*, 1970, **35**, 2418 (*uv*)
Kobayashi, M. *et al., CA*, 1990, **112**, 171755k (*Asarumin D*)
Wu, P.-L. *et al., Chem. Pharm. Bull.*, 2004, **52**, 345-349 (*Nantoamide*)
Jiang, X. *et al., J.O.C.*, 2004, **69**, 2327-2331 (*amide, synth, pmr, cmr*)
Jaroszewski, J.W. *et al., Nat. Prod. Res.*, 2005, **19**, 291-294 (*amide, isol, synth*)
Li, J.-T. *et al., Acta Cryst. E*, 2006, **62**, 1893-1894 (*cryst struct*)

3,4-Methylenedioxycinnamic acid 2-phenylethylamide M-443



(*E*)–*form*

$C_{18}H_{17}NO_3$ 295.337

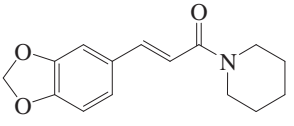
(E)-form [95925-01-2]
Constit. of *Critoniella acuminata*. Cryst. (Et_2O/petrol). Mp 131°.

(Z)-form [95925-02-3]
Constit. of *Critoniella acuminata*. Oil.

Bohlmann, F. *et al., Planta Med.*, 1984, **50**, 187-188 (*isol, uv, ir, pmr, ms*)

3,4-Methylenedioxycinnamoyl piperidide M-444

1-[3-(1,3-Benzodioxol-5-yl)-1-oxo-2-propenyl]piperidine, 9CI. 1-[3,4-(Methylenedioxy)cinnamoyl]piperidine, 8CI
[23434-86-8]



(*E*)-*form*

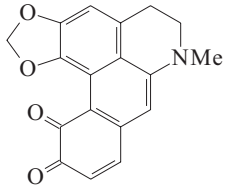
$C_{15}H_{17}NO_3$ 259.304
Anticonvulsant. Shows serotonergic activity. Log P 2.1 (calc).

(*E*)-*form*
Ilepcimide, USAN. *Antiepilepsirine*
[82857-82-7]
Alkaloid from the wood of *Piper novaehollandiae* (Piperaceae). Mp 89° (80-82°).
▶ LD_{50} (mus, orl) >1000 mg/kg.
TM4568500

(*Z*)-*form* [111479-04-0]
Constit. of the roots of *Piper nigrum* (pepper).
Scholtz, M. *et al., Ber.*, 1895, **28**, 1187 (*synth*)
Loder, J.W. *et al., Aust. J. Chem.*, 1969, **22**, 1531 (*isol, uv*)
Lin, G. *et al., CA*, 1982, **97**, 102148z (*cryst struct*)
Lin, G.Q. *et al., Biochem. Pharmacol.*, 1984, **33**, 3883 (*pharmacol*)
Yan, Q.-S. *et al., J. Pharmacol. Exp. Ther.*, 1992, **261**, 652 (*pharmacol*)
Shen, Y. *et al., Synth. Commun.*, 1992, **22**, 657 (*synth, pmr, ir*)
Wang, L. *et al., Epilepsy Res.*, 1993, **15**, 1 (*pharmacol*)
Pei, Y.Q. *et al., Res. Commun. Pharm. Toxicol.*, 1999, **4(II)**, 13-23 (*rev, pharmacol*)
Wei, K. *et al., J. Nat. Prod.*, 2004, **67**, 1005-1009 (*isol*)

1,2-Methylenedioxy-6*a*,7-dehydroaporphine-10,11-quinone M-445

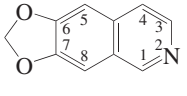
*6,7-Dihydro-7-methyl-5*H*-benzo[*g*]-1,3-benzodioxolo[6,5,4-*de*]quinoline-11,12-dione, 9CI*
[38973-13-6]



$C_{18}H_{13}NO_4$ 307.305
Constit. of *Corydalis cava* (Papaveraceae). Blue-green cryst. Mp 218-220°.
Cava, M.P. *et al., Tetrahedron*, 1972, **28**, 4299 (*synth*)
Preininger, V. *et al., J. Pharm. Sci.*, 1976, **65**, 294 (*isol*)

6,7-Methylenedioxyisoquinoline M-446

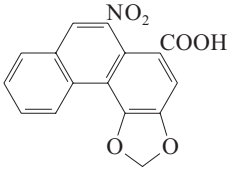
*1,3-Dioxolo[4,5-*g*]isoquinoline, 9CI, 8CI*. ***Papraline***
[269-44-3]



$C_{10}H_7NO_2$ 173.171
Alkaloid from aerial parts of *Fumaria indica* (Papaveraceae). Mp 127-128°.
Picrate: Mp 240-241°.
N-*Oxide:* [62761-43-7]
$C_{10}H_7NO_3$ 189.17
Beige flakes + 0.5 H_2O. Mp 221-224° (hemihydrate).
N-*Me: 6,7-Methylenedioxy*-N-*methylisoquinolinium(1+)*
$C_{11}H_{10}NO_2^{\oplus}$ 188.206
Alkaloid from the stem bark of *Cryptocarya chinensis*. Yellow syrup. Counterion not specified. λ_{max} 253 ; 287 ; 296 ; 338 (MeOH).
1,2,3,4-Tetrahydro, N-*Me:* see Hydrohydrastinine, H-398
Späth, E. *et al., Monatsh. Chem.*, 1929, **51**, 190
Boger, D.L. *et al., Tetrahedron*, 1981, **37**, 3977 (*synth*)
Peet, N.P. *et al., J. Het. Chem.*, 1987, **24**, 715 (*ms*)
Vollhardt, P.C. *et al., Synthesis*, 1993, 579
Atta-ur-Rahman, *et al., Phytochemistry*, 1995, **40**, 593 (*isol*)
Lin, F.-W. *et al., Chem. Pharm. Bull.*, 2002, **50**, 157-159 (*N-Me*)

3,4-Methylenedioxy-10-nitro-1-phenanthrenecarboxylic acid M-447

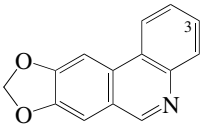
*6-Nitrophenanthro[3,4-*d*]-1,3-dioxole-5-carboxylic acid, 9CI*. ***Aristolochic acid II***. *Aristolochic acid B. Noraristolochic acid*
[475-80-9]



$C_{16}H_9NO_6$ 311.25
Alkaloid from *Aristolochia argentina, Aristolochia clematitis, Aristolochia esperanzae, Aristolochia longa, Aristolochia manshuriensis, Aristolochia rotunda, Aristolochia pallida, Aristolochia sipho* (*Aristolochia durior*) and from the Chinese drugs Ching-Mu-Hsiang (roots of *Aristolochia debilis*) and Fang-chi (Aristolochiaceae). Yellow plates (MeOH/EtOAc), orange-yellow cryst. (Me_2CO). Mp 270-272° (264-268° dec.). λ_{max} 241; 305; 340; 450 (EtOH/NaOH) (Derep). λ_{max} 221 (ϵ 29500); 255 (ϵ 32400); 283; 314 (ϵ 11200); 389 (ϵ 6030) (EtOH) (Derep).
▶ SF8281600
Me ester: ***Aristolochic acid II methyl ester***
[3580-54-9]
$C_{17}H_{11}NO_6$ 325.277
Alkaloid from the roots of *Aristolochia argentina* (Aristolochiaceae). Yellow needles (MeOH), cryst. ($CHCl_3$). Mp 277° (274-275°).
Alanine amide: ***2-(Phenanthro[3,4-*d*]-1,3-dioxole-6-nitro-5-carboxamido)propanoic acid, 9CI***
$C_{19}H_{14}N_2O_7$ 382.329
Alkaloid from the roots of *Aristolochia longa* (Aristolochiaceae). Pale yellow cryst. (MeOH)(as Me ester). Mp 252-253° dec. (Me ester). $[\alpha]_D$ -133 (c, 0.57 in $CHCl_3$) (Me ester).
Tseng, K.-F. *et al., Huaxue Xuebao*, 1957, **23**, 156; *CA*, **52**, 13188g (*isol*)
Pailer, M. *et al., Monatsh. Chem.*, 1957, **88**, 367; 1965, **96**, 863 (*uv, ms, struct*)
Kupchan, S.M. *et al., J.O.C.*, 1965, **30**, 3792 (*synth, uv, ir, ester*)
Schunack, W. *et al., Pharmazie*, 1965, **20**, 685 (*isol*)
Carboni, S. *et al., Gazz. Chim. Ital.*, 1966, **96**, 641 (*isol, ir*)
Priestap, H.A. *et al., An. Asoc. Quim. Argent.*, 1971, **59**, 245; *CA*, **76**, 43943w (*isol*)
Ruecker, G. *et al., Planta Med.*, 1975, **27**, 68 (*isol*)
Cisowski, W. *et al., Pol. J. Chem. (Rocz. Chem.)*, 1977, **51**, 2125 (*isol, uv, ir*)
Halm, I. *et al., Herba Hung.*, 1980, **19**, 179; *CA*, **93**, 245336n (*isol*)
Podolesov, B. *et al., Acta Pharm. Jugosl.*, 1981, **31**, 249; *CA*, **98**, 82732j (*isol, uv*)
Priestap, H.A. *et al., Phytochemistry*, 1982, **21**, 2755 (*isol, ester*)
De Pascual Teresa, J. *et al., Phytochemistry*, 1983, **22**, 2745 (*isol, ir, pmr, ms, synth, amide*)
Nascimento, I.R. *et al., Phytochemistry*, 2003, **63**, 953-957 (*isol, pmr, cmr*)

8,9-Methylenedioxyphenanthridine M-448

*[1,3]Dioxolo[4,5-*j*]phenanthridine, 9CI*. ***Trisphaeridine***. *Trispheridine*
[224-11-3]



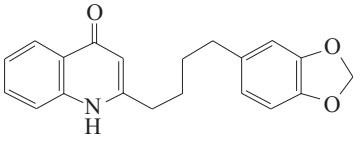
$C_{14}H_9NO_2$ 223.231
Alkaloid from the bulbs and leaves of *Ungernia trisphaera*, aerial parts of *Pancratium maritimum* and from *Pancratium foetidum* (Amaryllidaceae). Mp 140-141° (138°). λ_{max} 210 ; 270 ; 337 ; 375 (MeOH) (Berdy).
N-*Me: 5-Methyl[1,3]dioxolo[4,5-*j*]phenanthridinium(1+), 9CI. 5-Methyl-8,9-methylenedioxyphenanthridinium(1+)*. ***Bicolorine***†
[129225-25-8]
$C_{15}H_{12}NO_2^{\oplus}$ 238.265
Alkaloid from bulbs of *Narcissus bicolor* and bulbs and leaves of *Lapiedra martinezii* (Amaryllidaceae). Yellow cryst. + $2H_2O$ ($MeOH/Me_2CO$) (as chloride). Mp 250-252° (chloride). Counterion not specified. The prev. descr. alkaloid 5,6-Dihydrobicolorine has been shown identical with Ismine, I-186.
3-Hydroxy: 3-Hydroxy-8,9-methylenedioxyphenanthridine. ***3-Hydroxytrisphaeridine***
$C_{14}H_9NO_3$ 239.23
Alkaloid from whole plants of *Crinum firmifolium* var. *hygrophilum* (Amaryllidaceae). Needles (MeOH). Mp 215-218° dec.
3-Methoxy, 3,4-dihydro: 3,4-Dihydro-3-methoxy-8,9-methylenedioxyphenanthridine. ***3,4-Dihydro-3-methoxytrisphaeridine***
$C_{15}H_{13}NO_3$ 255.273
Alkaloid from the bulbs of *Hymenocallis* x *festalis*. Amorph. solid. $[\alpha]_D^{25}$ -13 (c, 0.01 in $CHCl_3$). λ_{max} 252 (log ϵ 4.29); 300 (log ϵ 3.63); 312 (log ϵ 3.64); 329 (sh) (log ϵ 3.48); 346 (sh) (log ϵ

3.35) (MeOH).

Allayarov, K. *et al., Uzb. Khim. Zh.*, 1964, **8**, 46; *CA*, **61**, 4407a (*isol*)
Kessar, S.V. *et al., Tetrahedron*, 1973, **29**, 177 (*synth*)
Krohn, K. *et al., Annalen*, 1978, 608 (*synth, uv, pmr*)
Prabhakar, S. *et al., Chem. Comm.*, 1978, 884 (*synth*)
Vdovin, A.D. *et al., Khim. Prir. Soedin.*, 1981, **17**, 356; *Chem. Nat. Compd. (Engl. Transl.)*, 1981, **17**, 279 (*isol, uv, ir, pmr, ms*)
Viladomat, F. *et al., Phytochemistry*, 1990, **29**, 1307 (*Bicolorine*)
Suau, R. *et al., Phytochemistry*, 1990, **29**, 1710 (*Bicolorine*)
Banwell, M.G. *et al., Aust. J. Chem.*, 1994, **47**, 2235 (*synth*)
Cowden, C.J. *et al., J. Nat. Prod.*, 1994, **57**, 1746
Razafimbelo, J. *et al., Phytochemistry*, 1996, **41**, 323 (*3-Hydroxytrisphaeridine*)
Shao, H.W. *et al., Chin. Chem. Lett.*, 1997, **8**, 493-496 (*synth*)
Harayama, T. *et al., J.C.S. Perkin 1*, 2001, 523-528 (*synth*)
Hohmann, J. *et al., Fitoterapia*, 2002, **73**, 749-751 (*3,4-Dihydro-3-methoxytrisphaeridine*)

2-[4-(3,4-Methylenedioxyphenyl)butyl]-4(1*H*)-quinolinone M-449

[17889-77-9]

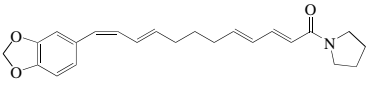


$C_{20}H_{19}NO_3$ 321.375
Alkaloid from *Ruta graveolens* (rue) (Rutaceae). Cryst. (MeOH). Mp 224°.

Novák, I. *et al., Pharmazie*, 1965, **20**, 654 (*isol, ir, pmr, ms, struct*)
Reisch, J. *et al., Naturwissenschaften*, 1967, **54**, 517 (*synth*)

1-[12-(3,4-Methylenedioxyphenyl)-2,4,9,11-dodecatetraenoyl]-pyrrolidine M-450

12-(3,4-Methylenedioxyphenyl)-2,4,9,11-dodecatetraenoic acid pyrrolidide



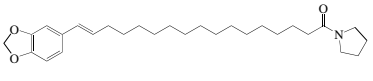
$C_{23}H_{27}NO_3$ 365.471

(2*E*,4*E*,9*E*,11*Z*)-*form* [144205-85-6]
Alkaloid from *Piper guineense*.

Gbewonyo, W.S.K. *et al., J. Chromatogr.*, 1992, **607**, 105-111 (*isol*)

1-[17-(3,4-Methylenedioxyphenyl)-16-heptadecenoyl]pyrrolidine M-451

17-(3,4-Methylenedioxyphenyl)-16-heptadecenoic acid pyrrolidide



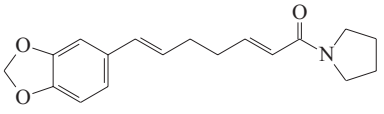
$C_{28}H_{43}NO_3$ 441.653

(*E*)-*form* [102965-08-2]
Alkaloid from *Piper amalago*.

Achenbach, H. *et al., Planta Med.*, 1986, **52**, 12-18 (*isol*)

1-[7-(3,4-Methylenedioxyphenyl)-2,6-heptadienoyl]pyrrolidine M-452

1-[7-(1,3-Benzodioxol-5-yl)-1-oxo-2,6-heptadienyl]pyrrolidine, 9CI. 7-(3,4-Methylenedioxyphenyl)-2,6-heptadienoic acid pyrrolidide



(2*E*,6*E*)–*form*

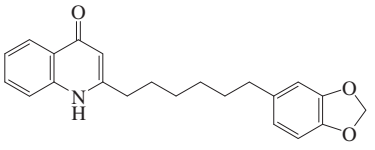
$C_{18}H_{21}NO_3$ 299.369

(2*E*,6*E*)-*form*
***Piperamide-C7:2* (2E,6E)**.
Sarmentosine†
[112448-68-7]
Constit. of the fruits of pepper (*Piper nigrum*) and cha-plu (*Piper sarmentosum*) (Piperaceae). Exhibits larvicidal activity. Antihepatotoxic agent. Mp 77.5-79.5°.

2,3-Dihydro: 1-[7-(1,3-Benzodioxol-5-yl)-1-oxo-6-heptenyl]pyrrolidine, 9CI. 1-[7-(3,4-Methylenedioxyphenyl)-6-heptenoyl]pyrrolidine. 7-(3,4-Methylenedioxyphenyl)-6-heptenoic acid pyrrolidide. ***Piperamide-C7:1* (6E)**
[117137-66-3]
$C_{18}H_{23}NO_3$ 301.385
Constit. of pepper fruits (*Piper nigrum*) (Piperaceae). Exhibits larvicidal activity. Oil.

Likhitwitayawuid, K. *et al., Tetrahedron*, 1987, **43**, 3689 (*Sarmentosine*)
Kiuchi, F. *et al., Chem. Pharm. Bull.*, 1988, **36**, 2452 (*isol, uv, ir, pmr, ms, struct*)
Strunz, G.M. *et al., Phytochemistry*, 1995, **39**, 731 (*synth, Sarmentosine*)
Bari, S.S. *et al., J. Indian Chem. Soc.*, 1996, **73**, 520 (*synth, Sarmentosine*)

2-[6-(3,4-Methylenedioxyphenyl)hexyl]-4(1*H*)-quinolinone M-453



$C_{22}H_{23}NO_3$ 349.429
Alkaloid from the roots of *Ruta chalepensis*. Needles ($CHCl_3$). Mp 163°. λ_{max} 235 (log ε 2.61); 290 (log ε 1.97); 315 (log ε 2.14); 328 (log ε 2.12) (MeOH).

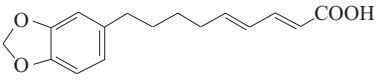
N-*Me: 1-Methyl-2-[6-(3,4-methylenedioxyphenyl)hexyl]-4(1*H*)-quinolinone*
$C_{23}H_{25}NO_3$ 363.455
Alkaloid from the leaves of *Ruta graveolens* (rue). Antifungal agent. Cryst. Mp 167-168°.

OH-form
Me ether: 4-Methoxy-2-[6-(3,4-methylenedioxyphenyl)hexyl]quinoline
$C_{23}H_{25}NO_3$ 363.455
Alkaloid from the roots of *Ruta chalepensis*. Oil. λ_{max} 227 (log ε 3.49); 285 (log ε 3.43); 311 (log ε 2.64) (MeOH).

El Sayed, K. *et al., J. Nat. Prod.*, 2000, **63**, 995-997 (*isol, pmr, cmr*)
Oliva, A. *et al., J. Agric. Food Chem.*, 2003, **51**, 890-896 (*N-Me*)
Back, T.G. *et al., J.O.C.*, 2003, **68**, 2223-2233 (*synth*)

9-(3,4-Methylenedioxyphenyl)-2,4-nonadienoic acid M-454

9-Piperonyl-2,4-nonadienoic acid



$C_{16}H_{18}O_4$ 274.316

(*E*,*E*)-*form*

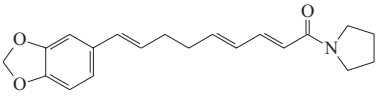
2-Methylpropylamide:
$C_{20}H_{27}NO_3$ 329.438
Isol. from root and stems of *Ottonia anisum* (preferred genus name *Piper*).

2,3,4,5-Tetrahydro: 1,3-Benzodioxole-5-nonanoic acid. 9-(3,4-Methylenedioxyphenyl)nonanoic acid. 9-Piperonylnonanoic acid
$C_{16}H_{22}O_4$ 278.347
Constit. of *Virola surinamensis*. Viscous oil.

Giesbrecht, A.M. *et al., Planta Med.*, 1981, **43**, 375; *CA*, **96**, 119009
Lopes, N.P. *et al., Chem. Pharm. Bull.*, 2004, **52**, 1255-1257 (*Methylenedioxyphenylnonanoic acid*)

1-[9-(3,4-Methylenedioxyphenyl)-2,4,8-nonatrienoyl]pyrrolidine M-455

1-[9-(1,3-Benzodioxol-5-yl)-1-oxo-2,4,8-nonatrienyl]pyrrolidine, 9CI. 9-(3,4-Methylenedioxyphenyl)-2,4,8-nonatrienoic acid pyrrolidide



$C_{20}H_{23}NO_3$ 325.407

(2*E*,4*E*,8*E*)-*form*
***Piperamide-C9:3* (2E,4E,8E)**
[117137-68-5]
Constit. of pepper fruits (*Piper nigrum*, Piperaceae). Yellow needles. Mp 105-106°.

4,5-Dihydro: 1-[9-(1,3-Benzodioxol-5-yl)-1-oxo-2,8-nonadienyl]pyrrolidine, 9CI. 1-[9-(3,4-Methylenedioxyphenyl)-2,8-nonadienoyl]pyrrolidine. 9-(3,4-Methylenedioxyphenyl)-2,8-nonadienoic acid pyrrolidide. ***Piperamide-C9:2* (2E,8E)**. *Brachyamide B*
[117137-67-4]
$C_{20}H_{25}NO_3$ 327.422
Constit. of pepper fruits (*Piper nigrum*) and *Piper brachystachyum* (Piperaceae). Exibits larvicidal activity. Oil.

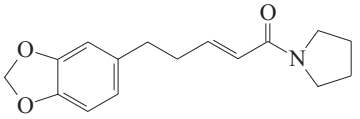
2,3,4,5-Tetrahydro: 1-[9-(1,3-Benzodiox-

ol-5-yl)-1-oxo-8-nonenyl]pyrrolidine, 9CI. 1-[9-(3,4-Methylenedioxyphenyl)-8-nonenoyl]pyrrolidine. 9-(3,4-Methylenedioxyphenyl)-8-nonenoic acid pyrrolidide. ***Piperamide-C9:1 (8E)****. Tricholein*
[62510-52-5]
$C_{20}H_{27}NO_3$ 329.438
Constit. of pepper (*Piper nigrum*) and *Piper trichostachyon* (Piperaceae). Exibits larvicidal activity. Oil.

Singh, J. *et al., Phytochemistry*, 1976, **15**, 2018 (*Piperamide-C9:1*)
Vig, O.P. *et al., Indian J. Chem., Sect. B*, 1979, **17**, 560 (*Piperamide-C9:1*)
Kiuchi, F. *et al., Chem. Pharm. Bull.*, 1988, **36**, 2452 (*isol, uv, ir, pmr, cmr, ms, struct*)
Koul, S.K. *et al., Phytochemistry*, 1988, **27**, 3523 (*Piperamide-C9:2*)
Strunz, G.M. *et al., Can. J. Chem.*, 1996, **74**, 419 (*synth*)

1-[5-(3,4-Methylenedioxyphenyl)-2-pentenoyl]pyrrolidine M-456

5-(3,4-Methylenedioxyphenyl)-2-pentenoic acid pyrrolidide



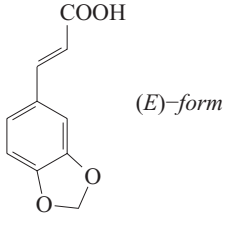
$C_{16}H_{19}NO_3$ 273.331

(*E*)-*form*
Piperamide-C5:1 (2E)
[117137-65-2]
Constit. of pepper fruits (*Piper nigrum*, Piperaceae). Oil.

Kiuchi, F. *et al., Chem. Pharm. Bull.*, 1988, **36**, 2452; 2647 (*isol, uv, ir, pmr, ms, struct*)
Alecio, A.C. *et al., J. Nat. Prod.*, 1998, **61**, 637-639 (*isol, pmr, cmr*)

3-(3,4-Methylenedioxyphenyl)-2-propenoic acid M-457

3-(1,3-Benzodioxol-5-yl)-2-propenoic acid, 9CI. 3,4-Methylenedioxycinnamic acid, 8CI. 3-(3,4-Methylenedioxyphenyl)acrylic acid. Piperonylideneacetic acid
[2373-80-0]



(*E*)–*form*

$C_{10}H_8O_4$ 192.171

(*E*)-*form* [38489-76-8]
Isol. from leaves of *Piper tuberculatum*. Also isol. from *Brombya platynema*. Needles (EtOH). Mp 247° (242°). pK_a 4.6 (25°).

Me ester: [40918-96-5]
$C_{11}H_{10}O_4$ 206.198
Plates (MeOH). Mp 133-134°.

Amide:
$C_{10}H_9NO_3$ 191.186
Needles (EtOH). Mp 184-185°.

2-Methylpropylamide: 3-(1,3-Benzodioxol-5-yl)-N-(2-methylpropyl)-2-propenamide. N-*Isobutyl-3,4-methylenedioxycinnamide.* **trans-*Fagaramide***
[495-86-3]
$C_{14}H_{17}NO_3$ 247.293
Alkaloid from the bark of *Zanthoxylum macrophylla* and *Anthocleista vogelii*, the root of *Fagara tessmannii*, the root bark of *Fagara zanthoxyloides* and the wood of *Piper novae-hollandiae* (Rutaceae, Piperaceae). Plates (EtOAc). Mp 119.5° (softens at 105°).

Pentylamide: **N-*(3,4-Methylenedioxycinnamoyl)pentylamine*.** *3,4-Methylenedioxy*-N-*pentylcinnamide*
[73073-94-6]
$C_{15}H_{19}NO_3$ 261.32
Alkaloid from *Piper amalago*. Config. not determined but most probably *E*-.

3-Methylbutylamide: **N-*(3,4-Methylenedioxycinnamoyl)isopentylamine*.** N-*Isopentyl-3,4-methylenedioxycinnamide*
[23795-28-0]
$C_{15}H_{19}NO_3$ 261.32
Alkaloid from *Piper amalago*. Config. not determined but most probably *E*-.

Piperidide: see 3,4-Methylenedioxycinnamoyl piperidide, M-444

(*Z*)-*form*
Cryst. (CS_2). Mp 99-100°. pK_a 4.94 (25°).

Amide:
Plates (Et_2O). Mp 131°.

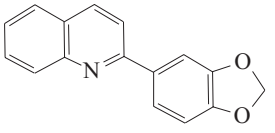
2-Methylpropylamide: **cis-*Fagaramide***
[92449-51-9]
$C_{14}H_{17}NO_3$ 247.293
Alkaloid from the leaves of *Zanthoxylum schinifolium*, *Fagara macrophylla* and *Fagara zanthoxyloides*. Light yellow needles (Et_2O). Mp 113-115°. λ_{max} 217 (log ϵ 3.72); 274 (log ϵ 3.56); 309 (log ϵ 3.58) (MeOH).

[16386-34-8]

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 183D (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **2**, 1057A (*nmr*)
Thoms, H. *et al., Ber.*, 1911, **44**, 3717 (*isol, struct, synth, derivs*)
Roth, W.A. *et al., Ber.*, 1913, **46**, 260
Goodson, J.A. *et al., Biochem. J.*, 1921, **15**, 123 (*Fagaramide*)
Pearl, I.A. *et al., J.O.C.*, 1951, **16**, 216 (*synth, uv*)
Simmonds, N.W. *et al., Nature (London)*, 1956, **178**, 752 (*isol*)
Loder, J.W. *et al., Aust. J. Chem.*, 1969, **22**, 1531 (*Fagaramide*)
Santavy, F. *et al., Coll. Czech. Chem. Comm.*, 1972, **37**, 1825 (*uv*)
Takemoto, T. *et al., Chem. Pharm. Bull.*, 1975, **23**, 1161 (*synth, ir, pmr*)
Okorie, D.A. *et al., Phytochemistry*, 1976, **15**, 1799 (*Fagaramide, isol, ir, pmr, ms*)
Coutrot, P. *et al., Synthesis*, 1978, 133 (*synth*)
Nagao, Y. *et al., Tet. Lett.*, 1980, **21**, 841 (*Fagaramide, synth*)
Achenbach, H. *et al., Planta Med.*, 1986, **52**, 12-18 (*isol, amides*)
Terada, S. *et al., Chem. Pharm. Bull.*, 1987, **35**, 2437 (*synth*)
Patra, A. *et al., Magn. Reson. Chem.*, 1987, **25**, 734 (*cmr*)
Parsons, I.C. *et al., Phytochemistry*, 1993, **33**, 479 (*isol, pmr*)
Cheng, M.-J. *et al., J. Chin. Chem. Soc. (Taipei)*, 2002, **49**, 125-128 (*cis-Fagaramide*)
Chaaib, F. *et al., Planta Med.*, 2003, **69**, 316-320 (*cis-Fagaramide*)

2-(3,4-Methylenedioxyphenyl)quinoline M-458

2-(1,3-Benzodioxol-5-yl)quinoline, 9CI. ***Dubamine***
[6808-65-7]



$C_{16}H_{11}NO_2$ 249.268
Alkaloid from *Haplophyllum dubium* and *Haplophyllum latifolium* (Rutaceae).
Cryst. (MeOH). Mp 96-97°.

Sidyakin, G.P. *et al., Uzb. Khim. Zh.*, 1962, **6**, 56-59; *CA*, **58**, 4608 (*isol, synth*)
Koyama, J. *et al., Chem. Express*, 1991, **6**, 197-200; 1992, **7**, 321-324 (*synth*)
Ali, N.M. *et al., Tetrahedron*, 1992, **48**, 8117-8126 (*synth*)
Mahanty, J.S. *et al., Tetrahedron*, 1997, **53**, 13397-13418 (*synth, ir, uv, pmr*)
Koyama, J. *et al., Chem. Pharm. Bull.*, 1999, **47**, 1038-1039 (*synth, ir, pmr*)

2-Methylene-4-oxopentanedioic acid M-459

α-Keto-γ-methyleneglutamic acid
[55601-65-5]
$H_2C{=}C(^1COOH)CH_2COCOOH$
$C_6H_6O_5$ 158.11
Found in tulip *Tulipa gesneriana, Lilium* spp. and peanut (*Arachis hypogaea*).

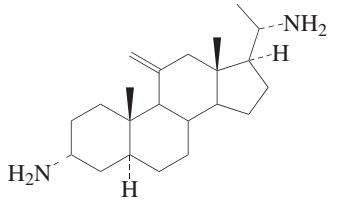
2,4-Dinitrophenylhydrazone: Mp 228° dec.

1-Amide:
$C_6H_7NO_4$ 157.126
Found in *Tulipa gesneriana*. Called the 5-amide in the original lit.

Towers, G.H.N. *et al., J.A.C.S.*, 1954, **76**, 1959
Fowden, L. *et al., Biochem. J.*, 1955, **59**, 228

11-Methylenepregnane-3,20-diamine M-460

3,20-Diamino-11-methylenepregnane



$C_{22}H_{38}N_2$ 330.556

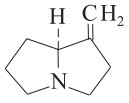
(3α,5α,20*S*)-*form*
N^3,N^{20},N^{20}-*Tri-Me,* N^3-*benzoyl:* ***11-Methylenepachysamine H***
[282726-60-7]

$C_{32}H_{48}N_2O$ 476.744
Alkaloid from *Pachysandra procumbens*. Needles (MeOH). Mp 185°. $[\alpha]_D^{20}$ +60.2 (c, 0.04 in $CHCl_3$). λ_{max} 241 (log ϵ 3.86) (MeOH).

Chang, L.C. *et al., Tetrahedron*, 2000, **56**, 3133-3138 (*11-Methylenepachysamine H*)

1-Methylenepyrrolizidine M-461

*Hexahydro-1-methylene-1*H*-pyrrolizine, 8CI*
[6029-70-5]



(*S*)-*form*

$C_8H_{13}N$ 123.197

(*S*)-(?)-*form* [34539-78-1]
Alkaloid from *Crotalaria anagyroides, Crotalaria damarensis, Crotalaria rhodesiae, Crotalaria stolzii, Crotalaria verrucosa, Crotalaria lachnophora* and *Crotalaria natalitia* (Fabaceae). Hygroscopic liq. Bp_{170} 120°. $[\alpha]_D^{20}$ -100 (c, 0.68 in EtOH). Alkaloid from *C. damarensis* was opt. pure, but samples from *C. anagyroides* were partly racemic (Fabaceae).

Picrate: Mp 217-218°. $[\alpha]_D$ -14.9 (c, 0.94 in Me_2CO).

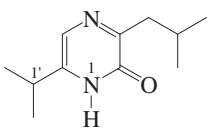
N-*Oxide:* ***1-Methylenepyrrolizidine* N-*oxide***
[81649-43-6]
$C_8H_{13}NO$ 139.197
Alkaloid from seeds of *Crotalaria anagyroides* (Fabaceae).

(±)-*form*
Bp_{168} 114-116°. n_D^{20} 1.4880.

Culvenor, C.C.J. *et al., Aust. J. Chem.*, 1959, **12**, 255; 1962, **15**, 328 (*isol, ir, uv, resoln*)
Kochetkov, N.K. *et al., Tet. Lett.*, 1961, 92 (*synth, resoln*)
Sethi, M.L. *et al., Planta Med.*, 1964, **12**, 173 (*isol*)
Culvenor, C.C.J. *et al., J.C.S.(C)*, 1971, 3652 (*cd*)
Rastogi, R. *et al., Pharmazie*, 1982, **37**, 75 (*isol, oxide*)
Keusenkothen, P.F. *et al., J.C.S. Perkin 1*, 1994, 2485 (*synth*)

6-(1-Methylethyl)-3-(2-methylpropyl)-2(1*H*)-pyrazinone M-462

*3-Isobutyl-6-isopropyl-2(1*H*)-pyrazinone. **Deoxydehydromutaaspergillic acid***



$C_{11}H_{18}N_2O$ 194.276
Metab. of *Aspergillus flavus*. Mp 111°.

1-Hydroxy: ***1-Hydroxy-6-(1-methylethyl)-3-(2-methylpropyl)-2(1*H*)-pyrazinone**. 1-Hydroxy-3-isobutyl-6-isopropyl-2(1*H*)-pyrazinone*
$C_{11}H_{18}N_2O_2$ 210.275
Metab. from *Aspergillus sojae*. Mp 94-95°. λ_{max} 232 ; 326 (MeOH) (Berdy).
▶ LD_{50} (mus, ipr) 62.5 mg/kg.

1′-Hydroxy: ***Deoxymutaaspergillic acid***
$C_{11}H_{18}N_2O_2$ 210.275
Metab. of *Aspergillus sojae*. Mp 133-134.5°.

*1,1′-Dihydroxy: 1-Hydroxy-6-(1-hydroxy-1-methylethyl)-3-(2-methylpropyl)-2(1*H*)-pyrazinone.* ***Mutaaspergillic acid***
[15272-17-0]
$C_{11}H_{18}N_2O_3$ 226.275
Metab. of *Aspergillus oryzae*. Antibiotic. Pale yellow needles. Sol. MeOH, C_6H_6; fairly sol. Et_2O; poorly sol. H_2O, hexane. Mp 173-174° (167-168°) dec. pK_a 4.8. λ_{max} 232 (ϵ 12500); 332 (ϵ 7300) (MeOH) (Berdy). λ_{max} 233 (ϵ 6100); 334 (ϵ 7200) (EtOH) (Berdy). λ_{max} 242 (ϵ 5100); 335 (ϵ 8600) (H_2O) (Berdy).
▶ LD_{50} (mus, ipr) 100 mg/kg. UQ4405500

Sugiyama, M. *et al., Tet. Lett.*, 1967, 845 (*Mutaaspergillic acid, struct, synth*)
Ohta, A. *et al., Chem. Pharm. Bull.*, 1983, **31**, 20 (*synth*)
Yamamoto, Y. *et al., Alkaloids (Academic Press)*, 1986, **29**, 185 (*rev, bibl, derivs*)
Okada, Y. *et al., Chem. Pharm. Bull.*, 1996, **44**, 2259-2262 (*synth*)

N-Methylformamide, 9CI, 8CI M-463

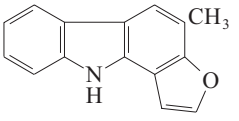
Formylmethylamine. NSC 3051
[123-39-7]
HCONHMe
C_2H_5NO 59.068
Isol. from the red alga *Erythrophyllum delesserioides*. Antineoplastic agent. Sol. H_2O, EtOH; insol. Et_2O. d^{19} 1.01. Mp -3.8°. Bp 180-185°. n_D^{20} 1.4319.
▶ Highly flammable, fl. p. <22°. Eye irritant. LD_{50} (rat, orl) 4000 mg/kg. Exp. reprod. and teratogenic effects. Hepatotoxic. LQ3000000

N-*Bromo:* N-*Bromo*-N-*methylformamide*
C_2H_4BrNO 137.964
Mp 81-83°.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 753D (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 1227C (*nmr*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 778D (*ir*)
Gautier, A. *et al., Annalen*, 1869, **151**, 241 (*synth*)
U.K. Pat., 1926, 252 460; *CA*, **21**, 2273 (*synth*)
Russell, R.A. *et al., Spectrochim. Acta*, 1956, **8**, 138 (*ir*)
Suzuki, I. *et al., Bull. Chem. Soc. Jpn.*, 1962, **35**, 540 (*ir*)
LaPlanche, L.A. *et al., J.A.C.S.*, 1964, **86**, 337 (*pmr*)
Nielsen, E.B. *et al., J. Phys. Chem.*, 1967, **71**, 2297 (*uv*)
Dorman, D.E. *et al., J.O.C.*, 1973, **38**, 1719 (*cmr*)
Warren, J.P. *et al., J. Phys. Chem.*, 1974, **78**, 2507 (*N-15 nmr*)
Izac, R.R. *et al., Phytochemistry*, 1982, **21**, 229 (*isol*)
Ohtaki, H. *et al., Bull. Chem. Soc. Jpn.*, 1986, **59**, 271 (*struct, props, bibl*)
Ettinger, D.S. *et al., Invest. New Drugs*, 1990, **8**, 183-185 (*phase II study, pharmacol*)
McGuire, W.P. *et al., Invest. New Drugs*, 1990, **8**, 191-194; 195-197 (*phase II study, pharmacol*)
Fujisaki, S. *et al., Bull. Chem. Soc. Jpn.*, 1993, **66**, 2426 (*N-bromo*)
Ethel Browning's Toxicity and Metabolism of Industrial Solvents, 2nd edn., (ed. Snyder, R.), Elsevier, Volume 2, 1990, 169
Bretherick, L. *et al., Handbook of Reactive Chemical Hazards, 4th edn., Butterworths*, 1990, 0813
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, MKG500

4-Methyl-10*H*-furo[3,2-*a*]carbazole, 9CI M-464

Furostifoline
[133740-44-0]

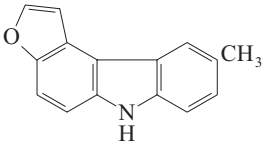


$C_{15}H_{11}NO$ 221.258
Alkaloid from the root bark of *Murraya euchrestifolia* (Rutaceae). Cryst. (cyclohexane). Mp 174-175° (synthetic).

Ito, C. *et al., Chem. Pharm. Bull.*, 1990, **38**, 1548 (*isol, uv, ir, ms, pmr, struct*)
Hagiwara, H. *et al., Chem. Pharm. Bull.*, 1998, **46**, 1948-1949 (*synth, pmr*)
Beccalli, E.M. *et al., Tetrahedron*, 1998, **54**, 11675-11682 (*synth*)
Soos, T. *et al., Tet. Lett.*, 1999, **40**, 8607-8609 (*synth*)
Knölker, H.-J, *et al., Synthesis*, 2000, 2131-2136 (*synth, ir, uv, pmr, cmr, ms*)
Yasuhara, A. *et al., Chem. Pharm. Bull.*, 1998, **50**, 143-145 (*synth*)

9-Methyl-6*H*-furo[2,3-*c*]carbazole, 9CI M-465

Eustifoline D
[133740-43-9]



$C_{15}H_{11}NO$ 221.258
Alkaloid from the root bark of *Murraya euchrestifolia* (Rutaceae). Oil.

Ho, C. *et al., Chem. Pharm. Bull.*, 1990, **38**, 1548 (*isol, pmr, cmr, struct*)
Lebold, T.P. *et al., Org. Lett.*, 2007, **9**, 1883-1886 (*synth*)

N-Methylguanidine M-466

[471-29-4]
HN═C(NH_2)NHMe
$C_2H_7N_3$ 73.097
Prod. of putrefaction. Solid. Easily dec. Strong base.
▶ MF3683000

Hydrochloride: [22661-87-6]
V. hygroscopic cryst.

Nitrate: [546-82-7]
Cryst. (EtOH). Mp 151°.

Sulfate salt (2:1): [598-12-9]
Cryst. (H_2O). Mp 239-240°.

Picrate: [1609-02-5]
Yellow plates or needles (H_2O). Mp 200°.

Ac:
$C_4H_9N_3O$ 115.135
Mp 172° (as hydrochloride).

N-*Nitroso:* N-*Methyl*-N-*nitrosoguanidine*
[4262-56-0]
$C_2H_6N_4O$ 102.096
In former use as synth. precursor of Diazomethane.

▶ Exp. carcinogen.

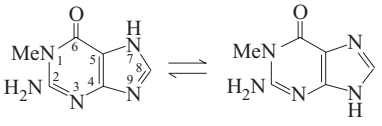
N-*(4-Methoxybenzoyl):* N-*(4-Methoxybenzoyl)*-N′-*methylguanidine*
[387867-99-4]
$C_{10}H_{13}N_3O_2$ 207.232
Isol. from the ascidian *Polycarpa aurata*. Oil. λ_{max} 276 (ϵ 4754) (MeOH).

[21770-81-0]

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 818D (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 1328B (*nmr*)
Werner, E.A. *et al., J.C.S.*, 1922, **121**, 1790-1794 (*synth*)
Phillipi, E. *et al., Ber.*, 1927, **60**, 2120-2122 (*synth*)
Davis, T.L. *et al., J.A.C.S.*, 1937, **59**, 2112-2115 (*synth*)
Spasskaya, R.I. *et al., CA*, 1968, **68**, 39059 (*synth*)
Beynon, J.H. *et al., Org. Mass Spectrom.*, 1968, **1**, 169-187 (*ms*)
Wessels, M. *et al., J. Nat. Prod.*, 2001, **64**, 1556-1558 (*4-methoxybenzoyl, isol*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, MKI750

1-Methylguanine, 8CI M-467

*2-Amino-1,7-dihydro-1-methyl-6*H-*purin-6-one, 9CI*
[938-85-2]



7H–form *9H–form*

$C_6H_7N_5O$ 165.154
Isol. from RNA hydrolysates, e.g from yeast, *Saccharomyces cerevisiae*. Present in Chinese cabbage, *Brassica chinensis*, and other plants. Plates or needles (AcOH aq.). Mp 350°.

7*H-form*

7-Me: 1,7-Dimethylguanine
[26758-00-9]
$C_7H_9N_5O$ 179.181
Cryst. (EtOH aq.). Mp 338-340° (330-331°).

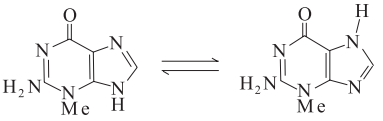
9*H-form*

9-Me: 1,9-Dimethylguanine
[42484-34-4]
$C_7H_9N_5O$ 179.181
Needles (EtOH). Mp 287°.

Traube, W. *et al., Ber.*, 1913, **46**, 3845 (*synth*)
Dunn, D.B. *et al., Biochem. J.*, 1959, **72**, 294; 1963, **88**, 34P (*isol*)
Pfleiderer, W. *et al., Annalen*, 1961, **647**, 167 (*synth*)
Elion, G.B. *et al., J.O.C.*, 1962, **27**, 2478 (*synth*)
Rice, J.M. *et al., J.A.C.S.*, 1967, **89**, 2719 (*ms*)
Le Breton, P.R. *et al., J.A.C.S.*, 1990, **112**, 2138 (*synth, pmr, uv, cmr*)
Kasende, O.E. *et al., Spectrosc. Lett.*, 1997, **30**, 415-431 (*Dimethylguanines, ir, Raman*)

3-Methylguanine, 8CI M-468

*2-Amino-3,7-dihydro-3-methyl-6*H-*purin-6-one, 9CI*
[2958-98-7]



9H-form *7H-form*

$C_6H_7N_5O$ 165.154
Cryst. (H_2O). Mp 375-377°.

7*H-form*

7-Me: 3,7-Dimethylguanine
[19143-67-0]
$C_7H_9N_5O$ 179.181
Isol. from the sponge *Zyzzya fuliginosa*. Cryst. (EtOH aq.). Mp 327-333° dec.

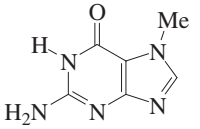
9*H-form*

9-Me: 3,9-Dimethylguanine
[67513-75-1]
$C_7H_9N_5O$ 179.181
Cryst. (H_2O). Mp 326°.

Townsend, L.B. *et al., J.A.C.S.*, 1962, **84**, 3008 (*synth, uv*)
Elion, G.B. *et al., J.O.C.*, 1962, **27**, 2478 (*synth*)
Rice, J.M. *et al., J.A.C.S.*, 1967, **89**, 2719 (*ms*)
Wiley, D.W. *et al., J.O.C.*, 1976, **41**, 1889 (*synth, uv, nmr*)
Abola, J.E. *et al., Tet. Lett.*, 1976, 3483 (*cryst struct*)
Itaya, T. *et al., Chem. Pharm. Bull.*, 1982, **30**, 3392 (*synth, uv, nmr*)
Tasdemir, D. *et al., Chem. Pharm. Bull.*, 2001, **49**, 1628-1630 (*3,7-Dimethylguanine, isol, pmr, cmr, N-15 nmr*)

7-Methylguanine, 9CI M-469

*2-Amino-1,7-dihydro-7-methyl-6*H-*purin-6-one, 9CI. Epiguanine*
[578-76-7]



1H-form

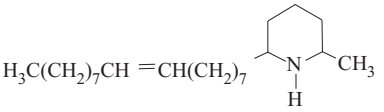
$C_6H_7N_5O$ 165.154
Present in biol. systems, prob. as a dec. prod. of 7-Methylguanosine. Urinary marker of exposure to methylating agents. Needles (H_2O). Mp 370°.

▶ MF8464000

N^2,N^2-*Di-Me:* **N^2,N^2,7-*Trimethylguanine***
[92333-92-1]
$C_8H_{11}N_5O$ 193.208
Isol. from the ascidian *Lissoclinum notti*. Cryst. (H_2O). Mp 320° dec. λ_{max} 252 (log ϵ 3.8); 294 (log ϵ 3.6) (MeOH).

Fischer, E. *et al., Ber.*, 1898, **31**, 544 (*synth*)
Gulland, J.M. *et al., J.C.S.*, 1938, 692 (*synth*)
Bredereck, H. *et al., Chem. Biol.*, 1962, **95**, 1812-1819 (N^2,N^2,*7-Trimethylguanine, synth*)
Rice, J.M. *et al., J.A.C.S.*, 1967, **89**, 2719 (*ms*)
Shuker, D.E.G. *et al., Arch. Toxicol.*, Suppl., 1989, **13**, 55 (*use*)
Pearce, A.N. *et al., Nat. Prod. Lett.*, 2001, **15**, 237-241 (N^2,N^2,*7-Trimethylguanine, isol*)

2-Methyl-6-(8-heptadecenyl)-piperidine M-470

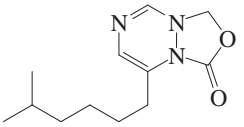


$C_{23}H_{45}N$ 335.615
Minor component of the venoms of *Solenopsis* spp. ants. See also refs. under 2-Methyl-6-tridecylpiperidine, M-580 and 2-Methyl-6-undecylpiperidine, M-584.

Jones, T.H. *et al., Tetrahedron*, 1982, **38**, 1949 (*isol, struct, bibl*)

8-(5-Methylhexyl)-1*H*,3*H*-[1,3,4]oxadiazolo[3,4-*a*][1,2,4]triazin-1-one, 9CI M-471

[897363-61-0]

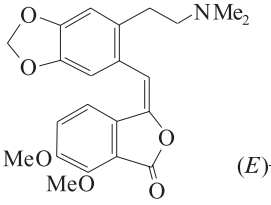


$C_{12}H_{19}N_3O_2$ 237.301
Prod. by a myxobacterium sp. HK1. Cytotoxic.

Lee, H.-K. *et al., J. Microbiol. Biotechnol.*, 2005, **15**, 734-739 (*isol, struct*)

N-Methylhydrastine M-472

*3-[[6-[2-(Dimethylamino)ethyl]-1,3-benzodioxol-5-yl]methylene]-6,7-dimethoxy-1(3*H*)-isobenzofuranone, 9CI*



(*E*)–*form*

$C_{22}H_{23}NO_6$ 397.427

(*E*)-*form* [55922-35-5]
Alkaloid from *Fumaria parviflora*, *Fumaria vaillantii*, *Fumaria schleicheri* and *Corydalis lutea* (Papaveraceae). Mp 156°.

May be an artifact.

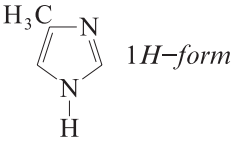
(*Z*)-*form* [76202-53-4]
Cryst. ($CHCl_3$). Mp 155-156°.

Forgacs, P. *et al., C. R. Hebd. Seances Acad. Sci. Ser. D*, 1973, **276**, 105; 1974, **279**, 855 (*synth, occur*)

Blaskó, G. *et al., J.O.C.*, 1982, **47**, 880 (*synth, uv, ir, pmr, ms, struct*)

4(5)-Methylimidazole, 9CI M-473

[822-36-6]



$C_4H_6N_2$ 82.105
Isol. from flowers of *Sophora flavescens*. Cryst. Sol. H_2O, EtOH. Mp 56°. Bp 263° $Bp_{0.2}$ 120-125°. pK_a 7.52 (25°). Prob. an artifact.

▶ LD_{50} (mus, orl) 370 mg/kg. NI7350000

Picrate:
Yellow cryst. (H_2O). Mp 159-160°.

1*H*-*form*

N-*Benzoyl:*
$C_{11}H_{10}N_2O$ 186.213
Needles. V. sol. EtOH, Me_2CO, C_6H_6, sol. petrol. Mp 54-55°.

N-*Me: 1,4-Dimethyl-1*H-*imidazole*
[6338-45-0]
$C_5H_8N_2$ 96.132
Bp 198-200°.

1-Me; hydrochloride: Mp 168-169°.

N-*Hydroxy: 1-Hydroxy-4-methyl-1*H-*imidazole*
$C_4H_6N_2O$ 98.104
Semi cryst.

3*H*-*form*

N-*Me: 1,5-Dimethyl-1*H-*imidazole*
[10447-93-5]
$C_5H_8N_2$ 96.132
Bp 220-222°.

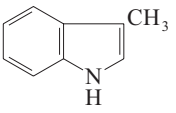
N-*Me; hydrochloride:* Mp 194-195°.

N-*Hydroxy: 1-Hydroxy-5-methyl-1*H-*imidazole*
$C_4H_6N_2O$ 98.104
Cryst. Mp 159-160°.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 613A (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 76C (*nmr*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 1484C (*ir*)
Gabriel, S. *et al., Ber.*, 1893, **26**, 2205
Pyman, F.L. *et al., J.C.S.*, 1922, **121**, 2621 (*synth, deriv*)
Turner, R.A. *et al., J.A.C.S.*, 1949, **71**, 2801
Bowie, J.H. *et al., Aust. J. Chem.*, 1967, **20**, 1613 (*ms*)
Martin, P.K. *et al., J.O.C.*, 1968, **33**, 3758 (*synth, pmr, ms, derivs*)
Matthews, H.R. *et al., J.A.C.S.*, 1973, **95**, 2297 (*nmr, derivs*)
Sattler, H.J. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1975, **308**, 795 (*cmr, tautom*)
Murakoshi, I. *et al., Phytochemistry*, 1982, **21**, 2379 (*isol*)
Eriksen, B.L. *et al., J.O.C.*, 2001, **66**, 8344-8348 (*N-hydroxy derivs, synth, pmr, cmr*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, MKU000

3-Methyl-1*H*-indole, 9CI M-474

β-Methylindole. Scatole. Skatole. FEMA 3019
[83-34-1]



C_9H_9N 131.177
Occurs in coal tar, tobacco smoke, various plants and faeces. Ubiquitous as a bacterial dec. prod. of proteins; may also occur in plants as a genuine alkaloid. Odour enhancer in perfumery. A major contributor to boar taint in meat products from uncastrated male pigs. Gut flora tryptophan metabolite. Causes acute bovine pulmonary oedema and emphysema. Leaflets (petrol) with faecal odour at high levels becoming warm and fruity at low concns. Mp 95°. Bp_{755} 265-266°. pK_{a1} -4.55; pK_{a2} 16.6 (25°,acid, KOH aq.).

▶ LD_{50} (rat, orl) 3450 mg/kg. Exp. pneumotoxic and splenotoxic. Ruminants are particularly sensitive. NM0350000

Picrate: Mp 174°.

N-*Ac:* [23543-66-0]
$C_{11}H_{11}NO$ 173.214
Mp 68°.

▶ NL3677500

N-*Me: 1,3-Dimethyl-1*H-*indole, 9CI*
[875-30-9]
$C_{10}H_{11}N$ 145.204
Liq. Bp 257-260° Bp_7 119-120°. pK_a -3.37 (25°, $HClO_4$ aq.).

N-*Me, picrate:*
Cryst. Mp 145°.

N-*Ph: 3-Methyl-1-phenyl-1*H-*indole*
[112817-88-6]
$C_{15}H_{13}N$ 207.274
Bp_2 150°.

N-*Carboxy: 3-Methyl-1*H-*indole-1-carboxylic acid, 9CI*
[65610-64-2]
$C_{10}H_9NO_2$ 175.187
Cryst. Mp 129° dec. Decarboxylates at Mp.

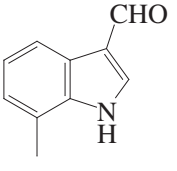
N-*Methoxycarbonyl:*
$C_{11}H_{11}NO_2$ 189.213
Bp 289° $Bp_{0.5}$ 101-102°.

N-*Ethoxycarbonyl:*
$C_{12}H_{13}NO_2$ 203.24
$Bp_{0.5}$ 105-110°.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 653D (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 122A (*nmr*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 1497D (*ir*)
Fischer, E. *et al., Annalen*, 1886, **236**, 126 (*synth*)
Snyder, H.R. *et al., J.A.C.S.*, 1948, **70**, 1703 (*N-Me*)
Andrisano, R. *et al., Gazz. Chim. Ital.*, 1957, **87**, 949 (*uv*)
Stowe, B.B. *et al., Prog. Chem. Org. Nat. Prod.*, 1959, **17**, 254 (*occur*)
Rees, C.W. *et al., J.C.S.*, 1964, 938 (*N-carboxy*)
Safe, S. *et al., Org. Mass Spectrom.*, 1972, **6**, 33 (*ms*)
Opdyke, D.L.J. *et al., Food Cosmet. Toxicol.*, 1976, **14**, 863 (*rev, tox*)
Bergman, J. *et al., J. Het. Chem.*, 1977, **14**, 1123 (*N-carboxy*)
Janda, M. *et al., Coll. Czech. Chem. Comm.*, 1981, **46**, 3278 (*N-Me*)
Ito, Y. *et al., Bull. Chem. Soc. Jpn.*, 1984, **57**, 73 (*synth*)
Carlson, J.R. *et al., J. Toxicol., Toxin Rev.*, 1986, **5**, 217 (*rev*)
Nishio, T. *et al., J.O.C.*, 1988, **53**, 1323 (*deriv, synth, ir, pmr, cmr*)
Yost, G.S. *et al., Chem. Res. Toxicol.*, 1989, **2**, 273 (*tox, rev*)
Tsuji, Y. *et al., J.O.C.*, 1990, **55**, 580 (*synth, pmr, cmr*)
Updyke, L.W. *et al., Toxicol. Appl. Pharmacol.*, 1991, **109**, 375 (*tox*)
Black, D.St.C. *et al., Aust. J. Chem.*, 1992, **45**, 1879 (*N-Me, pmr, ms*)
Bray, T.M. *et al., Annu. Rev. Pharmacol. Toxicol.*, 1994, **34**, 91 (*rev*)
Fenaroli's Handbook of Flavor Ingredients, 3rd edn., (ed. Burdock, G.A.), CRC Press, 1995, **2**, 726
Tokmakov, G.P. *et al., Tetrahedron*, 1995, **51**, 2091 (*N-Ph*)
Encyclopedia of Food and Color Additives, (ed. Burdock, G.A.), CRC Press, 1997, 2513-2514
Baek, C. *et al., J. Agric. Food Chem.*, 1997, **45**, 2332-2340 (*occur*)
Larock, R.C. *et al., J.O.C.*, 1998, **63**, 7652-7662 (*N-Ac, synth, cmr*)
Barluenga, J. *et al., Chem. Eur. J.*, 2002, **8**, 2034-2046 (*N-Me, synth, pmr, cmr*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, MKV750

7-Methyl-1*H*-indole-3-carboxaldehyde M-475

3-Formyl-7-methylindole
[4771-50-0]



$C_{10}H_9NO$ 159.187
Cryst. (CH_2Cl_2/EtOAc or EtOH). Mp 212-214° (206-208°).

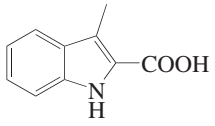
N-*Me: 1,7-Dimethyl-1*H-*indole-3-carboxaldehyde. 3-Formyl-1,7-dimethylindole*
[164353-61-1]
$C_{11}H_{11}NO$ 173.214
Metab. of the marine cyanobacterium *Lyngbya majuscula*.

Boyd, W.J. *et al., Biochem. J.*, 1935, **29**, 555-561 (*synth*)

Belg. Pat., 1964, 628 441; *CA*, **60**, 13226 (*synth*)
Heath-Brown, B. *et al., J.C.S.*, 1965, 7165-7178 (*synth*)
Todd, J.S. *et al., J. Nat. Prod.*, 1995, **58**, 586 (*isol, uv, ir, pmr, cmr, struct, deriv*)

3-Methyl-1*H*-indole-2-carboxylic acid, 9CI M-476

Skatole-2-carboxylic acid
[10590-73-5]



$C_{10}H_9NO_2$ 175.187
Prod. by *Micromonospora* sp. P1068. Needles (AcOH). Sol. EtOH, Et_2O, C_6H_6, spar. sol. H_2O, petrol. Mp 164-165°.

Me ester: [104711-29-7]
$C_{11}H_{11}NO_2$ 189.213
Cryst. (MeOH). Mp 148°.

Et ester: [26304-51-8]
$C_{12}H_{13}NO_2$ 203.24
Needles (EtOH). Sol. Et_2O, C_6H_6. Mp 133-134°.

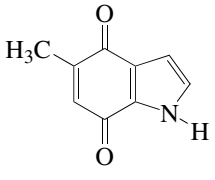
N-*Me, Me ester:* [69913-90-2]
$C_{12}H_{13}NO_2$ 203.24
Cryst. solid (petrol). Mp 76-78°.

N-*Benzyl, Me ester:*
$C_{18}H_{17}NO_2$ 279.338
Cryst. solid (petrol). Mp 43-45°.

Perkin, W.H. *et al., J.C.S.*, 1921, **119**, 1602-1642 (*synth*)
Whalley, W.B. *et al., J.C.S.*, 1954, 1651-1653 (*synth*)
Andrisano, R. *et al., Gazz. Chim. Ital.*, 1957, **87**, 949-970 (*uv*)
Jones, C.D. *et al., J.O.C.*, 1972, **37**, 3624-3625 (*synth*)
Wadia, M.S. *et al., Synthesis*, 1987, 401-404 (*Et ester, synth, ir, pmr*)
Katritzky, A.R. *et al., Synth. Commun.*, 1988, **18**, 1151-1158 (*Me ester, synth, ir, pmr*)
Murakami, Y. *et al., Chem. Pharm. Bull.*, 1997, **45**, 1739-1744 (*Et ester, synth, ir, pmr*)
Bashford, K.E. *et al., J.C.S. Perkin 1*, 2002, 1672-1687 (*N-Me Me ester, N-benzyl Me ester, synth, ir, pmr*)
Gutierrez-Lugo, M.-T. *et al., Nat. Prod. Res.*, 2005, **19**, 645-652 (*isol, pmr, cmr*)

5-Methyl-1*H*-indole-4,7-dione, 9CI M-477

[213040-66-5]

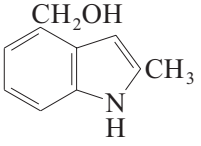


$C_9H_7NO_2$ 161.16
Alkaloid from the muricid gastropod *Drupella fragum*. Antimicrobial agent. Orange prisms. Mp 202-204°. λ_{max} 228 (ϵ 8060); 250 (ϵ 2010); 316 (ϵ 4180); 470 (ϵ 790) (EtOH).

Fukuyama, Y. *et al., Tetrahedron*, 1998, **54**, 10007-10016 (*isol, uv, ir, pmr, cmr*)

2-Methyl-1*H*-indole-4-methanol, 9CI M-478

*4-(Hydroxymethyl)-2-methyl-1*H*-indole*
[154523-21-4]



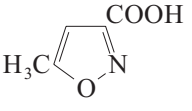
$C_{10}H_{11}NO$ 161.203
Alkaloid from fruit bodies of the mushrooms *Tricholoma sciodes* and *Tricholoma virgatum*. Yellow oil (natural). Mp 80-81° (synthetic). λ_{max} 222 (ϵ 25400); 279 (ϵ 6100) (EtOH).

Me ether: ***4-(Methoxymethyl)-2-methylindole***
[154523-22-5]
$C_{11}H_{13}NO$ 175.23
From *Tricholoma sciodes* and *Tricholoma virgatum*. Yellow oil.

Garlaschelli, L. *et al., Tetrahedron*, 1994, **50**, 3571-3574 (*isol, uv, ir, pmr, cmr, ms*)
Söderberg, B.C. *et al., J.O.C.*, 1999, **64**, 9731-9734 (*synth*)

5-Methyl-3-isoxazolecarboxylic acid, 9CI M-479

[3405-77-4]



$C_5H_5NO_3$ 127.099
Prisms or plates (H_2O). Mp 176°.

Me ester: ***Premnazole***
[19788-35-3]
$C_6H_7NO_3$ 141.126
Constit. of the leaves of *Gmelina arborea* and *Premna integrifolia*. Anti-inflammatory. Cryst. (C_6H_6). Mp 98-99°.

Et ester: [3209-72-1]
$C_7H_9NO_3$ 155.153
Bp_{15} 140°.

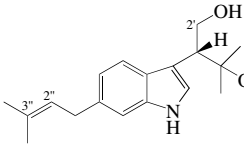
Amide: [3445-52-1]
$C_5H_6N_2O_2$ 126.115
Mp 166°.

Nitrile: 3-Cyano-5-methylisoxazole
[57351-99-2]
$C_5H_4N_2O$ 108.099
Bp_{25} 87-88°.

Good, R.H. *et al., J.C.S. Perkin 1*, 1972, 2441
Barik, B.R. *et al., Fitoterapia*, 1992, **63**, 295 (*Premnazole*)
Khanna, I.K. *et al., J. Med. Chem.*, 2000, **43**, 3168-3185 (*nitrile, synth, pmr*)

3-Methyl-2-[6-(3-methyl-2-butenyl)-1*H*-indol-3-yl]-1,3-butanediol, 9CI M-480

3-(2-Hydroxy-1-hydroxymethyl-2-methylpropyl)-6-prenylindole
[93822-67-4]



(*R*)-*form*

$C_{18}H_{25}NO_2$ 287.401
λ_{max} 227 (ϵ 50120); 283 (ϵ 7940); 293 (ϵ 7940) (MeOH) (Berdy).

(R)-form [165604-40-0]
Alkaloid from the stem bark of *Hexalobus crispiflorus* (Annonaceae). Oil. $[\alpha]_D^{21}$ -16 (c, 0.8 in $CHCl_3$). Poss. artifact.

O$^{2'}$*-Hexadecanoyl:* ***3-Hydroxy-3-methyl-2-[6-(3-methyl-2-butenyl)-1H-indol-3-yl]butyl hexanoate, 9CI***
[165604-36-4]
[93822-69-6]
$C_{34}H_{55}NO_3$ 525.813
Alkaloid from the stem bark of *Hexalobus crispiflorus* and *Isolona maitlandii* (Annonaceae). Oil. $[\alpha]_D^{21}$ -19 (c, 1.3 in $CHCl_3$). Poss. artifact. λ_{max} 227 (ϵ 50118); 283 (ϵ 7940); 293 (ϵ 7940) (MeOH) (Berdy).

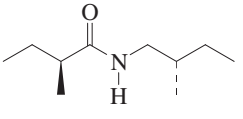
O$^{2'}$*-(9Z-Octadecenoyl):* ***3-Hydroxy-3-methyl-2-[6-(3-methyl-2-butenyl)-1H-indol-3-yl]butyl 9Z-octadecenoate, 9CI***
[93822-70-9]
$C_{36}H_{57}NO_3$ 551.851
Alkaloid from the stem bark of *Hexalobus crispiflorus* and *Isolona maitlandii* (Annonaceae). Oil. $[\alpha]_D^{21}$ -20 (c, 1.9 in $CHCl_3$). Poss. artifact.

O$^{2'}$*-(9Z,12Z-Octadecadienoyl):* ***3-Hydroxy-3-methyl-2-[6-(3-methyl-2-butenyl)-1H-indol-3-yl]butyl 9Z,12Z-octadecadienoate, 9CI***
[93822-71-0]
$C_{36}H_{55}NO_3$ 549.835
Alkaloid from the stem bark of *Hexalobus crispiflorus* and *Isolona maitlandii* (Annonaceae). Oil. $[\alpha]_D^{21}$ -20 (c, 1.7 in $CHCl_3$). Poss. artifact.

Achenbach, H. *et al., Annalen*, 1995, 1327-1337 (*isol, uv, ir, pmr, cmr, ms, struct*)
Achenbach, H. *et al., Phytochemistry*, 1995, **40**, 967-973 (*isol, ms*)

2-Methyl-*N*-(2-methylbutyl)-butanamide, 9CI M-481

[158964-24-0]



$C_{10}H_{21}NO$ 171.282
All 4 stereoisomers have been synthesised.

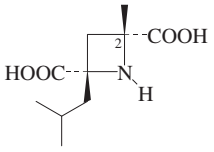
(S,S)-form [179826-31-4]

Sex pheromone of the longhorn beetle *Migdolus fryanus*. Oil. $[\alpha]_D^{20}$ +27.8 (c, 3.2 in Et_2O).

Leal, W.S. *et al., Experientia*, 1994, **50**, 853-856 (*isol, ms*)
Santangelo, E.M. *et al., Synth. Commun.*, 2001, **31**, 3685-3698 (*stereoisomers, synth*)

2-Methyl-4-(2-methylpropyl)-2,4-azetidinedicarboxylic acid, 9CI M-482

2-Isobutyl-4-methyl-2,4-azetidinedicarboxylic acid. ***Monascumic acid***



(2*R**,4*S**)-*form*

$C_{10}H_{17}NO_4$ 215.249

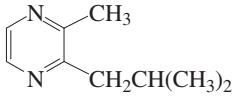
(2*R*,4*S*)-*form*
Isol. from *Monascus pilosus*-fermented rice (red-mould rice). Needles. Mp 122-123°. $[\alpha]_D^{25}$ +3.7 (c, 0.39 in Me_2CO).

(2*S*,4*R*)-*form*
Isol. from *Monascus pilosus*-fermented rice (red-mould rice). Needles. Mp 122-123°. $[\alpha]_D^{25}$ -4.4 (c, 0.36 in Me_2CO).

Akihisa, T. *et al., J. Nat. Prod.*, 2004, **67**, 479-480; 2005, **68**, 1444 (*isol, pmr, cmr, ms*)

2-Methyl-3-(2-methylpropyl)pyrazine, 9CI M-483

2-Isobutyl-3-methylpyrazine, 8CI. FEMA 3133
[13925-06-9]

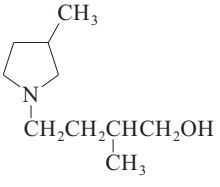


$C_9H_{14}N_2$ 150.223
Present in seed oils of red pepper and pumpkin. Bp_{10} 74°.

Flament, I. *et al., Helv. Chim. Acta*, 1967, **50**, 694-705 (*isol, synth, ms*)
Takken, H.J. *et al., J. Agric. Food Chem.*, 1975, **23**, 638-642 (*props, occur*)
U.S. Pat., 1976, 3 989 713; *CA*, **86**, 43556d (*synth, use*)
Stofberg, J. *et al., Perfum. Flavor.*, 1984, **9**, 53-56; 58-59; 62; 65-72; 78-83 (*use*)
Buchbauer, G. *et al., Ernaehrung (Vienna)*, 1998, **22**, 246-249 (*detn, pumpkin oil*)
Jung, M.Y. *et al., J. Agric. Food Chem.*, 1999, **47**, 1700-1704 (*detn, pepper oil*)

2-Methyl-4-(3-methyl-1-pyrrolidinyl)-1-butanol M-484

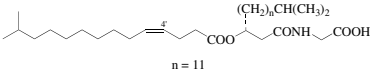
β,3-Dimethyl-1-pyrrolidinebutanol, 9CI
[163315-01-3]



$C_{10}H_{21}NO$ 171.282
Trace alkaloid from poison glands of the ants *Harpagoxenus sublaevis, Leptothorax acervorum, Leptothorax muscorum* and *Doronomyrmex goesswaldi*. Oil.

Reder, E. *et al., Helv. Chim. Acta*, 1995, **78**, 73 (*isol, pmr, cmr, ms, synth, struct*)
Koob, R. *et al., Helv. Chim. Acta*, 1997, **80**, 267-272 (*config*)

***N*-[15-Methyl-3-(13-methyl-4-tetradecenoyloxy)hexadecanoyl]-glycine** M-485



n = 11

$C_{34}H_{63}NO_5$ 565.875

(*R*)-(*Z*)-*form* [193825-66-0]
Prod. by a marine *Cytophaga* sp. N-type calcium channel blocker. Leaflets (hexane/CH_2Cl_2). Mp 71-72°. $[\alpha]_D^{25}$ +0.45 (c, 8 in $CHCl_3$).

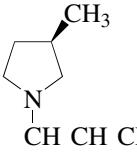
4′,5′-Dihydro: N-*[15-Methyl-3-(13-methyltetradecanoyloxy)hexadecanoyl]glycine.* ***Topostin B 567***. *Cytolipin*
[103196-73-2]
$C_{34}H_{65}NO_5$ 567.891
Prod. by the marine *Cytophaga johnsonae* and *Flexibacter topostinus*. N-type calcium channel blocker. Topoisomerase inhibitor. Leaflets (hexane/CH_2Cl_2). $[\alpha]_D^{22}$ +1.9 (c, 0.2 in $CHCl_3$).

(±)-(*Z*)-*form* [183167-45-5]
Cryst. (hexane/CH_2Cl_2). Mp 84-85°.

Suzuki, K. *et al., J. Antibiot.*, 1990, **43**, 154-157; 158-162 (*Topostin*)
Morishita, T. *et al., J. Antibiot.*, 1997, **50**, 457-468 (*isol, synth, ir, pmr, cmr*)
Nemoto, T. *et al., Tetrahedron*, 1998, **54**, 2683-2690 (*isol, Topostin*)
Shioiri, T. *et al., Tetrahedron*, 1998, **54**, 15701-15710 (*synth*)

3-Methyl-1-[3-(methylthio)propyl]pyrrolidine, 9CI M-486

[163315-03-5]



(*R*)-*form*

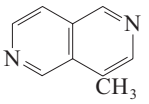
$C_9H_{19}NS$ 173.322

(*R*)-*form*
Trace alkaloid from the poison glands of the ants *Harpagoxenus sublaevis, Leptothorax acervorum* and *Leptothorax muscorum*. Oil.

Reder, E. *et al., Helv. Chim. Acta*, 1995, **78**, 73 (*isol, pmr, cmr, ms, synth, struct*)
Koob, R. *et al., Helv. Chim. Acta*, 1997, **80**, 267-272 (*abs config*)

4-Methyl-2,6-naphthyridine, 9CI M-487

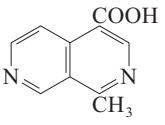
[31121-65-0]



$C_9H_8N_2$ 144.176
Constit. of *Antirrhinum majus* and several other *Antirrhinum* spp. Needles (EtOH). Mp 78°.

Harkins, K.J. *et al., Planta Med.*, 1971, **20**, 108 (*isol, spectra*)
Taurins, A. *et al., Can. J. Chem.*, 1974, **52**, 843 (*synth*)

1-Methyl-2,7-naphthyridine-4-carboxylic acid M-488



$C_{10}H_8N_2O_2$ 188.185

Me ester: 4-Methoxycarbonyl-1-methyl-2,7-naphthyridine. ***Neozeylanicine***
[112561-62-3]
$C_{11}H_{10}N_2O_2$ 202.212
Alkaloid from the wood of *Neonauclea zeylanica* (Rubiaceae) and from *Strychnos cocculoides* and *Strychnos spinosa*. Light yellow amorph. solid. Mp 110°.

Atta-ur-Rahman, *et al., Planta Med.*, 1988, **54**, 461-462 (*Me ester, isol, uv, ir, pmr, ms, struct*)
Delaude, C. *et al., Bull. Soc. R. Sci. Liege*, 1992, **61**, 429-440 (*Me ester, isol*)
Bracher, F. *et al., Annalen*, 1995, 645-647 (*synth, ir, pmr, cmr, ms*)

5-Methyl-2,7-naphthyridine-4-carboxylic acid M-489

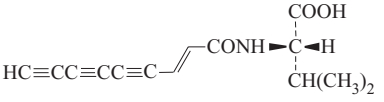
$C_{10}H_8N_2O_2$ 188.185

Me ester: 5-Methoxycarbonyl-4-methyl-2,7-naphthyridine
[149155-02-2]
$C_{11}H_{20}N_2O_2$ 212.291
Alkaloid from *Strychnos cocculoides* and *Strychnos spinosa*. No phys. props. reported.

Delaude, C. *et al., Bull. Soc. R. Sci. Liege*, 1992, **61**, 429-440 (*Me ester, isol, pmr, ms*)

3-Methyl-2-[(2-nonene-4,6,8-triynoyl)amino]butanoic acid M-490

N-*(2-Nonene-4,6,8-triynoyl)valine*



$C_{14}H_{13}NO_3$ 243.262

(*S*,*E*)-*form*
L-trans-*form*
Metab. of *Poria sinuosa*.

Me ester.

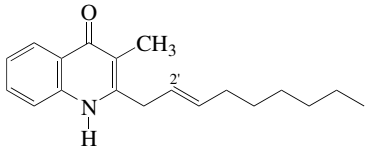
Unstable oil.

Cambie, R.C. *et al., J.C.S.*, 1963, 2056 (*isol, uv, ir, struct*)

3-Methyl-2-(2-nonenyl)-4(1*H*)-quinolinone M-491

4-Hydroxy-3-methyl-2-(2-nonenyl)quinoline. 3-Methyl-2-(2-nonenyl)-4-quinolinol. ***Antibiotic SF 2420B****. SF 2420B. PSC-D. NMQ. PC 3*

[147348-69-4]



$C_{19}H_{25}NO$ 283.413

Prod. by an unknown strain SF 2420B and by *Pseudomonas cepacia* PC II. Lipoxygenase inhibitor. Cryst. (MeOH aq.). Mp 197-198°. λ_{max} 214 ; 243 ; 321 ; 334 (MeOH) (Berdy).

2′,3′-Dihydro: ***3-Methyl-2-nonyl-4(1H)-quinolinone****. PSC-E*

$C_{19}H_{27}NO$ 285.428

From *Pseudomonas cepacia* PC II. Cryst. (MeOH aq.). Mp 215-216°. λ_{max} 214 ; 239 ; 322 ; 335 (MeOH) (Berdy).

NH-form [130772-03-1]

N-*Hydroxy: 1-Hydroxy-3-methyl-2-(2-nonenyl)-4(1*H*)-quinolinone.* ***Antibiotic YM 30059****. YM 30059. YL 02729S. Antibiotic YL 02729S*

[162382-62-9]

$C_{19}H_{25}NO_2$ 299.412

Prod. by *Arthrobacter* sp. Antibacterial agent. Cryst. (formerly descr. as yellow syrup). Mp 101-103°. λ_{max} 250 (ϵ 18000); 337 (ϵ 6300); 348 (ϵ 6200) (MeOH).

Homma, Y. *et al., Soil Biol. Biochem.*, 1989, **21**, 723-728 (*isol*)

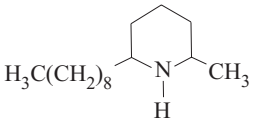
Minowa, N. *et al., CA*, 1993, **118**, 212735 (*synth*)

Kamigiri, K. *et al., J. Antibiot.*, 1996, **49**, 823-825 (*YM 30059*)

Moon, S.-S. *et al., Phytochemistry*, 1996, **42**, 365-368 (*isol, uv, ir, pmr, cmr, ms, struct*)

Tatsuta, K. *et al., J. Antibiot.*, 2000, **53**, 418-421 (*synth, pmr, cmr*)

2-Methyl-6-nonylpiperidine M-492



$C_{15}H_{31}N$ 225.417

Minor component of venoms of *Solenopsis* spp. ants. See also references under 2-Methyl-6-tridecylpiperidine, M-580 and 2-Methyl-6-undecylpiperidine, M-584.

N-*Me:* **N,2-Dimethyl-6-nonylpiperidine**

[33444-22-3]

$C_{16}H_{33}N$ 239.443

Isol. from the venom of *Solenopsis steinheili* and *Solenopsis* sp. PR. Stereochem. not detd.

[52084-40-9 , 52084-39-6]

Jones, T.H. *et al., Tetrahedron*, 1982, **38**, 1949 (*isol, struct, bibl*)

N-(8-Methylnonyl)sulfamic acid M-493

[1040631-00-2]

$(H_3C)_2CH(CH_2)_6CH_2NHSO_3H$

$C_{10}H_{23}NO_3S$ 237.363

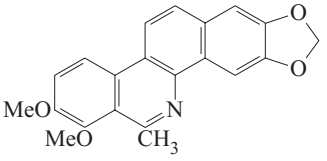
Isol. from *Daphniapulex*. Kairomone.

Yasumoto, K. *et al., Chem. Pharm. Bull.*, 2008, **56**, 133-136 (*isol, pmr*)

8-Methylnorchelerythrine M-494

1,2-Dimethoxy-13-methyl[1,3]benzodioxolo[5,6-c]phenanthridine, 9CI

[154490-59-2]



$C_{21}H_{17}NO_4$ 347.37

Alkaloid from root bark of *Zanthoxylum simulans* (Szechuan pepper) (Rutaceae). Prisms ($CHCl_3$/MeOH). Mp 198-200°.

Chen, I.-S. *et al., J. Nat. Prod.*, 1994, **57**, 1206 (*isol, uv, ir, pmr, ms, struct*)

7-Methyl-2,4-octadienoic acid M-495

$(H_3C)_2CHCH_2CH{=}CHCH{=}CHCOOH$

$C_9H_{14}O_2$ 154.208

(2E,4E)-form

Amide: 7-Methyl-2,4-octadienamide

[918637-54-4]

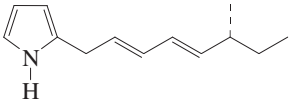
$C_9H_{15}NO$ 153.224

Prod. by the marine-derived *Streptomyces* strain CNQ-085. Solid. λ_{max} 262 (log ϵ 4.12) (MeOH).

Asolkar, R.N. *et al., J. Nat. Prod.*, 2006, **69**, 1756-1759 (*isol, pmr, cmr*)

2-(6-Methyl-2,4-octadienyl)-1*H*-pyrrole M-496

Axinellamine A†



$C_{13}H_{19}N$ 189.3

(2′E,4′E,6R)-form [213269-06-8]

Alkaloid from the marine sponge *Axinella* sp. Pale yellow gum. $[\alpha]_D$ -45.4 (c, 0.2 in $CHCl_3$). λ_{max} 227 (ϵ 8000) (MeOH).

Bascombe, K.C. *et al., Heterocycles*, 1998, **48**, 1461-1464 (*isol, uv, ir, pmr, cmr, ms*)

Seki, M. *et al., Eur. J. Org. Chem.*, 2001, 503-506 (*synth, abs config*)

N-(7-Methyloctyl)sulfamic acid M-497

[1040631-01-3]

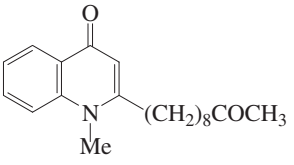
$(H_3C)_2CH(CH_2)_5CH_2NHSO_3H$

$C_9H_{21}NO_3S$ 223.336

Isol. from *Daphnia pulex*. Kairomone.

Yasumoto, K. *et al., Chem. Pharm. Bull.*, 2008, **56**, 133-136 (*isol, pmr, cmr*)

1-Methyl-2-(9-oxodecyl)-4(1*H*)-quinolinone, 9CI M-498



$C_{20}H_{27}NO_2$ 313.439

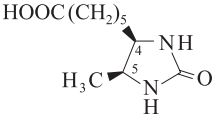
Alkaloid from *Ruta montana*. λ_{max} 215 (log ϵ 4.1); 236 (log ϵ 4.5); 320 (log ϵ 3.8); 330 (log ϵ 3.7) (MeOH).

Touati, D. *et al., Phytochemistry*, 2000, **53**, 277-279

5-Methyl-2-oxo-4-imidazolidinehexanoic acid, 8CI M-499

7,8-Ureylenenonanoic acid. Desthiobiotin. Dethiobiotin

[15720-25-9]



(4*R*,5*S*)–*form*

$C_{10}H_{18}N_2O_3$ 214.264

(4R,5S)-form

(+)-cis-*form*

[533-48-2]

Prod. by various microorganisms, e.g. *Penicillium chrysogenum, Corynebacterium xerosis* and *Phycomyces blakesleeanus.* Intermed. in biotin biosynth. Cryst. Mp 160-162°. $[\alpha]_D^{17}$ +10.4 (c, 0.57 in EtOH).

Me ester: [6020-51-5]

Cryst. Mp 69-70°. $[\alpha]_D^{23}$ +2.6 (c, 2 in $CHCl_3$).

(4RS,5SR)-form

(±)-cis-*form*

[636-20-4]

Cryst. Mp 162-163°.

Me ester:

Cryst. Mp 72°. $Bp_{0.5}$ 170°.

(4RS,5RS)-form

(±)-trans-*form*

[34879-36-2]

Cryst. Mp 156°.

du Vigneaud, V. *et al., J. Biol. Chem.*, 1942, **146**, (*synth*)

Duschinsky, R. *et al., J.A.C.S.*, 1945, **67**, 2079 (*synth*)

Kuzuhara, H. *et al., Tet. Lett.*, 1970, 1185 (*synth*)

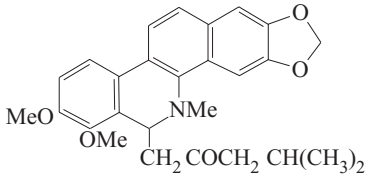
Parry, R.J. *et al., Chem. Comm.*, 1975, 321 (*synth*)

Guillerm, G. *et al., J.O.C.*, 1977, **42**, 3776 (*synth, pmr, ms*)

Okabe, N. *et al., Chem. Pharm. Bull.*, 1994, **42**, 2143 (*cryst struct*)
Lucet, D. *et al., Eur. J. Org. Chem.*, 2000, 3575-3579 (*synth*)

8-(4-Methyl-2-oxopentyl)dihydrochelerythrine M-500

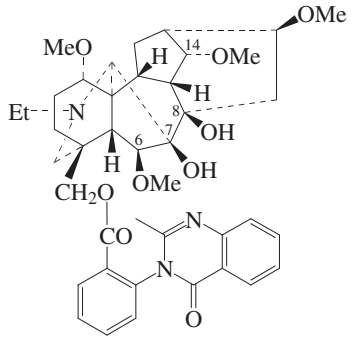
[112899-81-7]



$C_{27}H_{29}NO_5$ 447.53
Alkaloid from the stem bark of a *Zanthoxylum* sp. collected in Grand Cayman (*Zanthoxylum spinosum* or *Zanthoxylum coriaceum*) (Rutaceae).

Ng, K.M. *et al., Phytochemistry*, 1987, **26**, 3251-3254 (*isol, uv, ir, pmr, cmr, ms, struct*)

18-*O*-[2-(2-Methyl-4-oxo-4*H*-quinazolin-3-yl)benzoyl]lycoctonine M-501



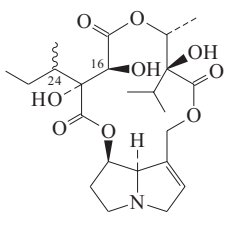
$C_{41}H_{51}N_3O_9$ 729.869
Alkaloid from the roots of *Aconitum pseudo-laeve* var. *erectum*. Amorph. powder (MeOH). $[\alpha]_D^{21}$ +65 (c, 3.5 in MeOH).

6-Demethoxy, 7-deoxy, O^{14}-de-Me, O^8-Me, 14-Ac: ***14-O-Acetyl-8-O-methyl-18-O-[2-(2-methyl-4-oxo-4H-quinazolin-3-yl)benzoyl]cammaconine***
$C_{42}H_{51}N_3O_8$ 725.88
Alkaloid from the roots of *Aconitum pseudo-laeve* var. *erectum*. Amorph. powder (MeOH). $[\alpha]_D^{21}$ -10.4 (c, 1.3 in MeOH).

Shim, S.H. *et al., J. Nat. Prod.*, 2006, **69**, 400-402 (*isol, pmr, cmr, ms*)

17-Methylparsonsianidine M-502

[135637-68-2]



$C_{23}H_{35}NO_9$ 469.531
Alkaloid from leaves of *Parsonsia laevigata* (Apocynaceae). Cryst. Mp 195-205° dec. $[\alpha]_D^{29}$ +31.3 (c, 0.3 in MeOH).

Stereoisomer (?): ***Spiranine***
[77156-23-1]
$C_{23}H_{35}NO_9$ 469.531
Alkaloid from *Parsonsia spiralis* (Apocynaceae). Identified by nmr and ms. Same gross struct. as 17-methylparsonsianidine but with less stereochem. defined. May be identical with it (no reference to comparison of spectra).

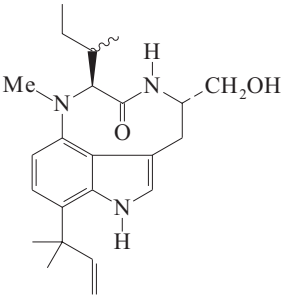
24ξ-Hydroxy: ***Spiracine***
[77156-24-2]
$C_{23}H_{35}NO_{10}$ 485.53
Alkaloid from *Parsonsia spiralis* (Apocynaceae). Identified by nmr and ms. No stereochem. attributed to necic acid residue.

16-Deoxy, stereoisomer: ***Heterophylline***†
[77156-22-0]
$C_{23}H_{35}NO_8$ 453.531
Alkaloid from *Parsonsia heterophylla* and *Parsonsia spiralis* (Apocynaceae). Noncryst. $[\alpha]_D^{20}$ +57.6 (c, 0.38 in MeOH). No stereochem. attributed to necic acid residue.

Edgar, J.A. *et al., Tet. Lett.*, 1980, 2657 (*Spiranine, Spiracine, Heterophylline*)
Abe, F. *et al., Phytochemistry*, 1991, **30**, 1737 (*17-Methylparsonsianidine*)

16-Methylpendolmycin M-503

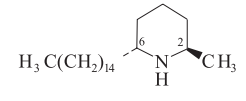
[138590-60-0]



$C_{23}H_{33}N_3O_2$ 383.533
Isol. from a *Nocardiopsis* sp. Protein kinase C inhibitor. Mp 174-178°. $[\alpha]_D$ -76 (c, 0.57 in MeOH). λ_{max} 230 (ϵ 18000); 289 (ϵ 6200); 299 (ϵ 6500) (MeOH) (Berdy).

Sun, H.H. *et al., J. Nat. Prod.*, 1991, **54**, 1440 (*isol, uv, ir, pmr, cmr, cd, struct*)

2-Methyl-6-pentadecylpiperidine, 9CI M-504


(2*R**,6*R**)–*form*

$C_{21}H_{43}N$ 309.577
See also refs. under 2-Methyl-6-tridecylpiperidine, M-580 and 2-Methyl-6-undecylpiperidine, M-584.

(2*R,6*R**)-*form***
trans-*form*. ***Solenopsine C***
[32778-79-3]
Major component of venoms of both red and black forms of the fire ant (*Solenopsis saevissima*). Also present in venom of *Solenopsis invicta*. Oil.

6′,7′-Didehydro(Z-): 2-Methyl-6-(6-pentadecenyl)piperidine, 9CI. ***Dehydrosolenopsin C***
[32778-78-2]
Major component of venom of red form of *Solenopsis saevissima*, only present in minor amounts in black form. Also from *Solenopsis invicta* venom. $Bp_{0.01}$ 80°.

(2*R,6*S**)-*form***
cis-*form*
[35285-28-0]
Minor component of venoms of red and black forms of *Solenopsis saevissima*. Also present in venom of *Solenopsis invicta*. Oil.

6′,7′-Didehydro(Z-): Minor component of venom of red form of *Solenopsis saevissima*.

[35285-32-6]

MacConnell, J.G. *et al., Tetrahedron*, 1971, **27**, 1129 (*isol, synth, ir, ms, pmr*)
Jouvenaz, D.P. *et al., Antimicrob. Agents Chemother.*, 1972, **2**, 291
Brand, J.M. *et al., Toxicon*, 1972, **10**, 259 (*ms*)
Jones, T.H. *et al., Tetrahedron*, 1982, **38**, 1949 (*isol, struct, bibl*)

4-Methylpentanoic acid, 9CI M-505

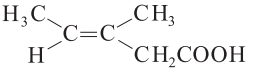
4-Methylvaleric acid. Isocaproic acid. Isohexanoic acid. Isobutylacetic acid. FEMA 3463
[646-07-1]
$(H_3C)_2CHCH_2CH_2COOH$
$C_6H_{12}O_2$ 116.16
Found in bananas and lime oil. Oil, with sour penetrating odour. d_4^{20} 0.92. Mp -33°. Bp 199.1° $Bp_{2.5}$ 69°. n_D^{20} 1.4144.
► Fl. p. 89°. Eye and skin irritant.
NR2975000

Amide: 4-Methylpentanamide
[1119-29-5]
$C_6H_{13}NO$ 115.175
Isol. from *Rhizoclonium hieroglyphicum*. Mp 120-121°.

Dembitsky, V.M. *et al., Phytochemistry*, 2000, **54**, 965-967 (*isol, amide*)

3-Methyl-3-pentenoic acid, 9CI M-506

3-Ethylidenebutyric acid. 2-Methyl-2-butene-1-carboxylic acid
[16313-37-4]


(*E*)–*form*

$C_6H_{10}O_2$ 114.144

(*E*)-*form*
trans-*form*
[41653-93-4]
Mp 35°.

Me ester: [41654-12-0]
$C_7H_{12}O_2$ 128.171
Bp_{50} 74°.

Amide:
$C_6H_{11}NO$ 113.159
Isol. from *Senecio rivularis*. Cryst. (EtOAc). Mp 130-132°.

(*Z*)-*form*
cis-*form*
[41653-94-5]
Oil.

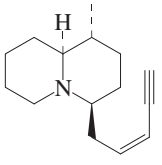
Et ester:
$C_8H_{14}O_2$ 142.197
Bp_{13} 61°.

Amide:
Plates (C_6H_6/pentane). Mp 126-127°.

Kon, G.A.R. *et al., J.C.S.*, 1925, **127**, 623 (*synth*)
Wagner, R.B. *et al., J.A.C.S.*, 1949, **71**, 3214 (*synth*)
Klásek, A. *et al., Chem. Ind. (London)*, 1969, 987

1-Methyl-4-(2-penten-4-ynyl)quinolizidine M-507

*Octahydro-1-methyl-4-(2-penten-4-ynyl)-2*H*-quinolizine, 9CI*. Dendrobates *Alkaloid 217A*. *Quinolizidine 217A*
[151805-13-9]



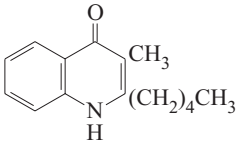
$C_{15}H_{23}N$ 217.353
Alkaloid from the frogs *Epipedobates tricolor*, *Mantella madagascariensis* and *Mantella baroni*. $[\alpha]_D$ +75 (c, 0.15 in MeOH). λ_{max} 287 (ϵ 16900) (MeOH).

1-Epimer: [219796-70-0]
$C_{15}H_{23}N$ 217.353
Occurs in a Madagascan frog. Pale yellow oil. Unpublished work.

Jain, P. *et al., J. Nat. Prod.*, 1996, **59**, 1174-1178 (*isol*)
Pearson, W.H. *et al., J.O.C.*, 1998, **63**, 9910-9918 (*synth*)
Maloney, K.M. *et al., Org. Lett.*, 2005, **7**, 3115-3118 (*synth*)

3-Methyl-2-pentyl-4(1*H*)-quinolinone M-508

4-Hydroxy-3-methyl-2-pentylquinoline. 3-Methyl-2-pentyl-4-quinolinol. PSC-A
[178955-99-2]

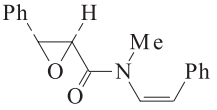


$C_{15}H_{19}NO$ 229.321
Alkaloid from *Pseudomonas cepacia* PC-II. Shows plant growth promoting and fungicidal activity. Cryst. (MeOH aq.). Mp 222-223°. λ_{max} 213 ; 239 ; 321 ; 334 (MeOH) (Berdy).

Moon, S.-S. *et al., Phytochemistry*, 1996, **42**, 365 (*isol, uv, ir, pmr, cmr, ms, struct*)

N-Methyl-*N*-(2-phenylethenyl)-3-phenyl-2-oxiranecarboxamide M-509

SB 204900
[173220-67-2]



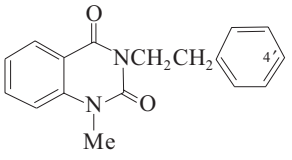
Relative configuration

$C_{18}H_{17}NO_2$ 279.338
Isol. from leaves of *Clausena lansium* (wampee). Mp 59-60°. $[\alpha]_D^{25}$ +14 (c, 1.0 in $CHCl_3$).

Milner, P.H. *et al., J. Nat. Prod.*, 1996, **59**, 400 (*isol, uv, ir, pmr, cmr, ms, cryst struct*)
Stefanuti, I. *et al., Tet. Lett.*, 2000, **41**, 3735-3738 (*synth*)

1-Methyl-3-(2-phenylethyl)-2,4(1*H*,3*H*)-quinazolinedione, 9CI M-510

[75652-62-9]



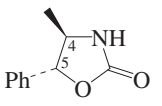
$C_{17}H_{16}N_2O_2$ 280.326
Alkaloid from the leaves and seed husks of *Zanthoxylum arborescens* (Rutaceae). Cryst. (MeOH or EtOAc/petrol). Mp 100-102°.

4′-Methoxy: ***3-[2-(4-Methoxyphenyl)ethyl]-1-methyl-2,4(1*H*,3*H*)-quinazolinedione, 9CI***
[75652-63-0]
$C_{18}H_{18}N_2O_3$ 310.352
Alkaloid from leaves, bark and seed husks of *Zanthoxylum arborescens* (Rutaceae). Cryst. (MeOH aq. or EtOAc/petrol). Mp 135-136°.

Dreyer, D.L. *et al., Phytochemistry*, 1980, **19**, 935-939 (*isol, synth, uv, ir, pmr, cmr, ms*)
Grina, J.A. *et al., J.O.C.*, 1982, **47**, 2648 (*isol*)
Rivero, I.A. *et al., Molecules*, 2004, **9**, 609-616 (*synth, pmr, cmr*)

4-Methyl-5-phenyl-2-oxazolidinone M-511

[54418-69-8]



(4*R*,5*R*)-*form*

$C_{10}H_{11}NO_2$ 177.202

(4*R*,5*R*)-*form*
(-)-trans-*form*
[125133-96-2]
Cryst. (EtOAc/hexane). Mp 117-119°. $[\alpha]_D^{21}$ -29.5 (c, 2.3 in $CHCl_3$).

(4*R*,5*S*)-*form*
(+)-cis-*form*
[77943-39-6] Chiral auxiliary.
Cryst. (toluene or petrol/CH_2Cl_2). Mp 121-122°. $[\alpha]_D$ +177.2 (c, 2.21 in $CHCl_3$).

(4*S*,5*R*)-*form*
(-)-cis-*form*
[16251-45-9]
Needles (hexane). Mp 116-117°. $[\alpha]_D^{20}$ -170 (c, 1.2 in $CHCl_3$). $[\alpha]_D^{25}$ -168 (c, 2 in $CHCl_3$) (98% ee).

N-*Me: 3,4-Dimethyl-5-phenyl-2-oxazolidinone.* ***Ephedroxane***
[16251-46-0]
Alkaloid from the aerial parts of *Ephedra intermedia* (Ephedraceae). Needles (EtOH). Mp 79-81°.

(4*S*,5*S*)-*form*
(+)-trans-*form*
[17097-67-5]
Mp 120-121°. $[\alpha]_D^{26}$ +25.9 (c, 0.34 in $CHCl_3$).

N-*Me:* [16251-47-1]
Prisms (EtOH). Mp 50-51°. $[\alpha]_D$ +36.7 (c, 0.98 in $CHCl_3$).

(4*RS*,5*SR*)-*form*
(±)-cis-*form*
[39663-75-7]
Cryst. (C_6H_6). Mp 148-149°.

(4*RS*,5*RS*)-*form*
(±)-trans-*form*
[149055-02-7]
[28044-23-7]
Cryst. (EtOH). Mp 96-96.5° (96°).

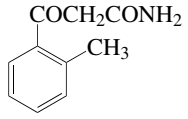
[28044-22-6]

Stratton, J.M. *et al., J.C.S.*, 1932, 1133 (*synth*)
Close, W.J. *et al., J.O.C.*, 1950, **15**, 1131 (*synth*)
Fodor, G. *et al., Monatsh. Chem.*, 1967, **98**, 1027 (*synth, N-Me*)
Auerbach, R.A. *et al., Org. Mass Spectrom.*, 1970, **4**, 41 (*ms*)
Spassov, S.L. *et al., Chem. Ber.*, 1972, **105**, 2462 (*pmr*)
Caccia, G. *et al., J.O.C.*, 1973, **38**, 2264 (*synth*)
Konno, C. *et al., Phytochemistry*, 1979, **18**, 697-698 (*N-Me, isol, ir, pmr, synth*)
Klyne, W. *et al., Tetrahedron*, 1979, **35**, 2009-2012 (*cd, abs config*)
Heathcock, C.H. *et al., J.O.C.*, 1980, **45**, 1066 (*synth, pmr*)
Wainer, I.W. *et al., J. Chromatogr.*, 1983, **268**, 107-111 (*chromatog, resoln*)
Evans, D.A. *et al., J.O.C.*, 1985, **50**, 1830 (*4R,5S-form, synth, ir, pmr, cmr*)
Kano, S. *et al., Tet. Lett.*, 1987, **28**, 6331 (*synth*)
Jephcote, V.J. *et al., J.C.S. Perkin 1*, 1989, 1529 (*4R,5R-form, synth*)
Ku, T.W. *et al., J.O.C.*, 1989, **54**, 3487 (*synth, pmr*)
Brimble, M.A. *et al., Aust. J. Chem.*, 1990, **43**, 1035 (*4R,5S-form, synth*)
Robinson, P.D. *et al., Acta Cryst. C*, 1993, **49**, 1238 (*4S,5S-form, cryst struct*)
Moreno-Manas, M. *et al., J. Het. Chem.*, 1993, **30**, 1235-1239 (*N-Me*)
Cainelli, G. *et al., Tetrahedron*, 1993, **49**, 3809-3826 (*synth, ms, ir, pmr, cmr*)
Davies, S.G. *et al., Tetrahedron: Asymmetry*, 1993, **4**, 2513 (*4R,5S-form, ir, pmr, ms*)
Pettit, G.R. *et al., Synthesis*, 1996, 719 (*4R,5S-form, synth, pmr, ir*)
Cutugno, S. *et al., Eur. J. Org. Chem.*, 2001, 517-522 (*4S,5R-form, synth*)
Alouane, N. *et al., Synthesis*, 2006, 885-889 (*4S,5R-form, 4S,5S-form, N-Me, synth, ir, pmr, cmr*)

3-(2-Methylphenyl)-3-oxopropanamide M-512

3-Hydroxy-3-(2-methylphenyl)-2-propenamide, 9CI. 2-Methyl-β-oxobenzenepropanamide. USF 142A. Antibiotic USF 142A

[156281-39-9]



$C_{10}H_{11}NO_2$ 177.202

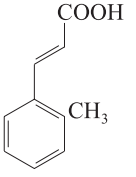
Partially enolised. Prod. by *Streptomyces* sp. USF-142. Antioxidant. Needles (EtOAc/hexane). Mp 83-84°. λ_{max} 245 (ϵ 3980); 271 (ϵ 8690) (MeOH).

Hirota, A. *et al., Biosci., Biotechnol., Biochem.*, 1994, **58**, 792 (*isol, uv, ir, pmr, cmr*)

3-(2-Methylphenyl)-2-propenoic acid, 9CI M-513

o-*Methylcinnamic acid, 8CI. 3*-o-*Tolylacrylic acid*

[2373-76-4]



(*E*)-*form*

$C_{10}H_{10}O_2$ 162.188

pK_a 4.5.

(*E*)-*form* [939-57-1]

Cryst. (EtOH or C_6H_6). Mp 175-176°.

Et ester: [24393-48-4]

$C_{12}H_{14}O_2$ 190.241

Oil. $Bp_{2.2}$ 114-117° $Bp_{1.2}$ 148°.

Amide: 3-(2-Methylphenyl)-2-propenamide. U 77863. Antibiotic U 77863

$C_{10}H_{11}NO$ 161.203

Prod. by *Streptomyces griseoluteus*. Exhibits antitumour props. Cryst. (MeOH). Mp 151-153°. λ_{max} 208 (ϵ 17300); 220 (ϵ 14900); 225 (sh) (ϵ 12000); 276 (ϵ 16500) (MeOH) (Derep). λ_{max} 208 (ϵ 17320); 220 (ϵ 14900); 276 (ϵ 16540) (MeOH) (Berdy).

(*Z*)-*form* [41397-71-1]

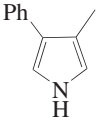
Mp 91-92° (89-90°).

[83716-65-8 , 16366-23-7]

Cope, A.C. *et al., J.A.C.S.*, 1957, **79**, 240 (*synth*)
Craig, J. *et al., Aust. J. Chem.*, 1959, **12**, 447 (*synth*)
Norcross, B.E. *et al., J.O.C.*, 1977, **42**, 369 (*synth*)
Schaldach, B. *et al., Org. Mass Spectrom.*, 1980, **15**, 182 (*ms*)
Galamb, V. *et al., Tet. Lett.*, 1983, **24**, 2965 (*synth*)
Suzuki, H. *et al., Chem. Lett.*, 1986, 403 (*ester*)
Liu, J.-M. *et al., J.O.C.*, 1986, **51**, 1120 (*synth, pmr*)
Robinson, C.N. *et al., J.O.C.*, 1986, **51**, 3535 (*cmr, ester*)
Harper, D.E. *et al., J. Antibiot.*, 1992, **45**, 1827 (*U 77863*)
Berry, J.M. *et al., J.C.S. Perkin 1*, 1997, 1147-1156 (*synth, pmr*)

3-Methyl-4-phenyl-1*H*-pyrrole M-514

[116267-86-8]



$C_{11}H_{11}N$ 157.215

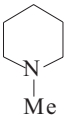
Isol. from the ant *Anochetus kempfi*. Oil.

Van Leusen, D. *et al., J.O.C.*, 1992, **57**, 2245 (*synth, ir, pmr*)
Jones, T.H. *et al., J. Nat. Prod.*, 1999, **62**, 1343-1345 (*isol, synth*)

1-Methylpiperidine, 9CI M-515

Methylpiperidylamine

[626-67-5]



$C_6H_{13}N$ 99.175

Isol. from *Girgensohnia diptera* and *Girgensohnia oppositiflora* (Chenopodiaeae). d_4^{20} 0.82. Bp 107°. n_D^{22} 1.4378. pK_a 10.38 (25°, 0.2*M* NaCl).

▶ Highly flammable, fl. p. 3°. LD_{50} (mus, ipr) 400 mg/kg. TN1225000

Hydrochloride: [17874-59-8]

V. hygroscopic needles. Mp 185°.

▶ TN1275600

Methiodide:

Prisms (EtOH). Dec. at 334°.

Picrate: [18953-36-1]

Mp 223-224° (148°).

N-*Oxide:* **N-*Methylpiperidine oxide***

[17206-00-7]

$C_6H_{13}NO$ 115.175

Alkaloid from *Vandopsis longicaulis* (Orchidaceae). Hygroscopic solid by subl. pK_a 5.26.

N-*Oxide; hydrochloride:*

Cryst. ($CHCl_3$). Mp 180-200° dec.

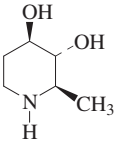
N-*Oxide, picrate:*

Yellow plates (Me_2CO). Mp 194-208° dec.

Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 564A (*nmr*)
Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 360B (*ir*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 450C (*ir*)
Yurashevskii, N.K. *et al., CA*, 1946, **40**, 6754 (*isol*)
Lukeš, R. *et al., CA*, 1947, **41**, 4150a (*synth*)
Weitkamp, H. *et al., Chem. Ber.*, 1962, **95**, 2896 (*pmr*)
Bild, N. *et al., Helv. Chim. Acta*, 1967, **50**, 1885 (*ms, oxide*)
Ferris, J.P. *et al., J.O.C.*, 1968, **33**, 3493
Allan, G.G. *et al., Tappi*, 1968, **51**, 224 (*synth*)
Lanum, W.J. *et al., J. Chem. Eng. Data*, 1969, **14**, 93 (*props*)
Brandänge, S. *et al., Acta Chem. Scand.*, 1970, **24**, 353 (*isol, synth, oxide*)
Fr. Pat., 1971, 2 017 634; *CA*, **74**, 124791f
Katritzky, A.R. *et al., J.C.S.(B)*, 1971, 1330 (*synth, conformn, oxide*)
Vernot, A. *et al., Bull. Soc. Chim. Fr.*, 1972, 4736 (*synth*)
Eliel, E.L. *et al., J.A.C.S.*, 1975, **97**, 2424 (*nmr*)
Lambert, J.B. *et al., J.A.C.S.*, 1976, **98**, 3778 (*cmr, oxide*)
Chastanet, J. *et al., J.O.C.*, 1985, **50**, 2910 (*oxide, synth, ms, pmr, use*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, MOG500

2-Methyl-3,4-piperidinediol, 9CI M-516

3,4-Dihydroxy-2-methylpiperidine



$C_6H_{13}NO_2$ 131.174

(2*R*,3*R*,4*R*)-*form*

6-Deoxyfagomine

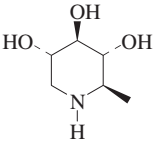
[197449-09-5]

Alkaloid from the roots of *Lycium chinense* (Chinese boxthorn). $[\alpha]_D$ -11.1 (c, 0.1 in H_2O).

Asano, N. *et al., Eur. J. Biochem.*, 1997, **248**, 296-303 (*6-deoxyfagomine, isol, pmr, cmr, ms*)

2-Methyl-3,4,5-piperidinetriol, 9CI M-517

3,4,5-Trihydroxy-2-methylpiperidine. 1,5-Imino-1,5,6-trideoxyhexitol



$C_6H_{13}NO_3$ 147.174

(2*R*,3*R*,4*R*,5*S*)-*form*

1,5-Imino-1,5,6-trideoxy-D-glucitol. ***1,6-Dideoxynojirimycin***

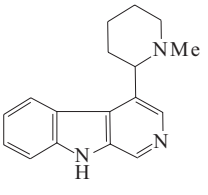
Alkaloid from the pods of *Angylocalyx pynaertii*. $[\alpha]_D$ +37.8 (c, 0.26 in H_2O).

Yasuda, K. *et al., J. Nat. Prod.*, 2002, **65**, 198-202 (*isol, pmr, cmr*)
Rengasamy, R. *et al., J.O.C.*, 2008, **73**, 2898-2901 (*synth*)

4-(1-Methyl-2-piperidinyl)-β-carboline M-518

*4-(1-Methyl-2-piperidinyl)-9*H*-pyrido[3,4-*b*]indole, 9CI*

[71005-06-6]

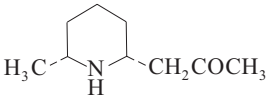


$C_{17}H_{19}N_3$ 265.357

In the review by Allen *et al* this compd. is shown. with a C-1 Me group and named Homobrevicolline. Alkaloid from *Carex brevicollis* (Cyperaceae).

Sharipov, I.N. *et al., CA*, 1979, **91**, 87295a
Allen, J.R.F. *et al., Phytochemistry*, 1980, **19**, 1573

1-(6-Methyl-2-piperidinyl)-2-propanone, 9CI M-519

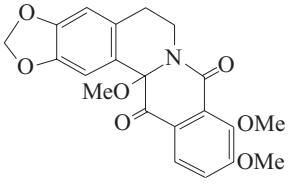


$C_9H_{17}NO$ 155.239

(R*,R*)-form
cis-*form*
[83285-66-9]
Alkaloid from the Australian mealybug ladybird *Cryptolaemus montrouzieri*.

Brown, W.V. *et al., Aust. J. Chem.*, 1982, **35**, 1255

O-Methylprechilenine M-520



$C_{21}H_{19}NO_7$ 397.384

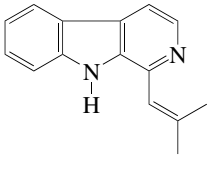
Me ether of the hitherto hypothetical alkaloid prechilenine.

(±)-*form* [95585-80-1]
Alkaloid from the stems of *Berberis darwinii* (Berberidaceae). Amorph. Unstable.

Valencia, E. *et al., Tetrahedron*, 1984, **40**, 3957 (*isol, uv, ir, pmr, ms, struct*)

1-(2-Methyl-1-propenyl)-β-carboline M-521

*1-(2-Methyl-1-propenyl)-9*H*-pyrido[3,4-*b*]indole.* ***Vulcanine****. 1-Isobutenyl-β-carboline*
[185140-85-6]



$C_{15}H_{14}N_2$ 222.289
Alkaloid from *Haplophyllum vulcanium*. Mp 103° (as hydrochloride). λ_{max} 212 (log ε 4.58); 239 (log ε 4.7); 260 (sh) (log ε 4.43); 292 (log ε 4.36); 345 (sh) (log ε 3.98); 355 (log ε 4.01) (MeOH).

1,2,3,4-Tetrahydro, N^b*-Me: 2,3,4,9-Tetrahydro-2-methyl-1-(2-methyl-1-propenyl)-1*H*-pyrido[3,4-*b*]indole. 1,2,3,4-Tetrahydro-1-isobutenyl-2-methyl-β-carboline.* ***Borrerine***
[51076-19-8]
$C_{16}H_{20}N_2$ 240.347
Alkaloid from *Borreria verticillata* (Rubiaceae). Mp 107-108° (102-103°) (synthetic) Mp 73° (natural). Racemic. λ_{max} 226 (log ε 4.69); 283 (log ε 4.01) (EtOH).

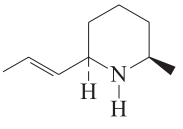
*1,1′,2,2′,3,4-Hexahydro(±): 1,2,3,4-Tetrahydro-1-(2-methylpropyl)-9*H*-pyrido[3,4-*b*]indole.* ***1,2,3,4-Tetrahydro-1-isobutyl-β-carboline***
[6649-77-0]
[26962-07-2]
$C_{15}H_{20}N_2$ 228.336
Alkaloid from the root bark of *Elaeagnus commutata* (Elaegnaceae). Cryst. (MeOH)(as hydrochloride). Mp 257-259° (hydrochloride). Racemic. λ_{max} 223 ; 273 ; 279 ; 289 (EtOH) (as hydrochloride).

1,1′,2,2′,3,4-Hexahydro, N^b*-Me:* Mp 92°.

Δ$^{2'}$-Isomer, 1,2,3,4-tetrahydro, N^b*-Me:* ***Isoborrerine***
[76177-24-7]
$C_{16}H_{20}N_2$ 240.347
Alkaloid from *Flindersia fournieri* (Flindersiaceae). Amorph. $[\alpha]_D^{20}$ 0 ($CHCl_3$). Racemic. λ_{max} 225 (log ε 4.06); 282 (log ε 3.51); 290 (log ε 3.48) (EtOH).

Slywka, G.W.A. *et al., Tet. Lett.*, 1969, 4635-4638 (*Tetrahydroisobutylcarboline*)
Pousset, J.L. *et al., Phytochemistry*, 1973, **12**, 2308-2310 (*Borrerine, isol, uv, ms, pmr, struct*)
Tillequin, F. *et al., Phytochemistry*, 1980, **19**, 1282-1283 (*Isoborreine, isol, uv, ir, pmr, ms, struct, synth*)
Yamanaka, E. *et al., Heterocycles*, 1984, **22**, 371-374 (*Borrerine, synth, pmr, cmr, ms*)
Somei, M. *et al., Heterocycles*, 1988, **27**, 1585-1587 (*Borrerine, synth*)
Goezler, T. *et al., Phytochemistry*, 1996, **43**, 1425-1426 (*Vulcanine, isol, uv, ir, pmr, cmr, ms, cryst struct*)
Somei, M. *et al., Heterocycles*, 2007, **73**, 537-554 (*synth*)

2-Methyl-6-(1-propenyl)piperidine, 9CI M-522



(2*R*,6*R*)–*form*

$C_9H_{17}N$ 139.24

(2R,6R)-form
Pinidine
[501-02-0]
Alkaloid from *Pinus sabiniana, Pinus jeffreyi* and *Pinus torreyana* (Pinaceae). Bp_{751} 176-177°. $[\alpha]_D^{25}$ -10.5.

Hydrochloride: [55399-22-9]
Mp 244-246°. $[\alpha]_D^{24}$ -9.6 (c, 0.25 in EtOH).

Methiodide: Mp 214-218°.

(2S,6S)-form
ent-*3-(+)-Pinidine*
[55448-42-5]
Synthetic. Oil. $[\alpha]_D^{24}$ +10.2 (c, 0.32 in EtOH).

Hydrochloride: [55399-24-1]
Needles (EtOH/Et_2O). Mp 246-248°.

(2RS,6RS)-form [55399-23-0]
Bp_{762} 175-177°.

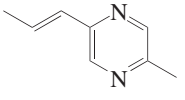
Hydrochloride: Mp 192-193°.

[96894-80-3]

Tallent, W.H. *et al., J.A.C.S.*, 1955, **77**, 6361; 1956, **78**, 4467 (*isol, ir, struct*)
Hill, R.K. *et al., Tetrahedron*, 1965, **21**, 147; 1977, **33**, 1569 (*struct, abs config*)
Leete, E. *et al., J.O.C.*, 1975, **40**, 2151 (*synth*)
Leete, E. *et al., Tet. Lett.*, 1975, 3779 (*biosynth*)
Arseniyadis, S. *et al., Tet. Lett.*, 1985, **26**, 729 (*synth*)
Yamazaki, N. *et al., J.A.C.S.*, 1989, **111**, 1396 (*synth, pmr, cmr, ms*)
Dolle, R.E. *et al., Tet. Lett.*, 1991, **32**, 5029 (*synth*)
Takahata, H. *et al., Tetrahedron: Asymmetry*, 1992, **3**, 607 (*synth*)
Oppolzer, W. *et al., Helv. Chim. Acta*, 1993, **76**, 957 (*synth*)
Kirihara, M. *et al., Tetrahedron*, 1999, **55**, 2911-2926 (*synth*)
Davison, E.C. *et al., J.C.S. Perkin 1*, 2002, 1494-1514 (*synth*)

2-Methyl-5-(1-propenyl)pyrazine, 9CI M-523

[108653-51-6]
[55138-66-4 , 18217-82-8]



$C_8H_{10}N_2$ 134.18
Constit. of roasted green tea, roast peanut, coffee and cooked beef. Present in okra pods. Characterised spectroscopically.

Bondarovich, H.A. *et al., J. Agric. Food Chem.*, 1967, **15**, 1093-1099 (*occur, coffee, ms, ir, uv*)
Tas, A.C. *et al., Riechst., Aromen, Koerperpflegem.*, 1974, **24**, 326; 328; 331-332; *CA*, **82**, 57645m (*synth, ms, pmr, ir*)
Ames, J.M. *et al., Phytotherapia*, 1990, **29**, 1201-1207 (*occur, okra*)

2-Methyl-6-(1-propenyl)pyrazine, 9CI M-524

[104638-11-1]
[18217-81-7 , 55138-67-5]

$C_8H_{10}N_2$ 134.18
Constit. of coffee, roasted sesame, roasted green tea and cooked beef. Present in okra pods. Characterised spectroscopically.

Bondarovich, H.A. *et al., J. Agric. Food Chem.*, 1967, **15**, 1093-1099 (*occur, coffee, ir, ms, uv*)
Tas, A.C. *et al., Riechst., Aromen, Koerperpflegem.*, 1974, **24**, 326; 328; 331-332; *CA*, **82**, 57645m (*synth, ms, pmr, ir*)
Shimoda, M. *et al., J. Agric. Food Chem.*, 1997, **45**, 3193-3196 (*occur, sesame*)

2-Methyl-1-propylamine M-525

2-Methyl-1-propanamine, 9CI. Isobutylamine, 8CI. Valamine†

[78-81-9]

$(H_3C)_2CHCH_2NH_2$

$C_4H_{11}N$ 73.138

Found in foodstuffs and tobacco smoke. Present in fungi. Liq. Misc. H_2O, EtOH, Et_2O. d_4^{20} 0.74. Fp -84.6. Bp 68-69°. n_D^{20} 1.3970. pK_a 10.48 (25°).

▶ Highly flammable, fl. p. -9°, autoignition temp. 378°. Very irritating to eyes, skin and mucous membranes. A vesicant. Inhalation can cause headache and dryness of nose and throat. LD_{50} (rat, orl) 228 mg/kg. NP9900000

Hydrochloride: [5041-09-8]
Cryst. (EtOH/Et_2O). Mp 177-178° (168-171°).

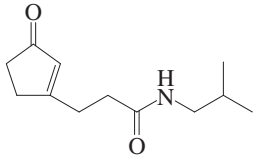
N-*Propyl: 2-Methyl*-N-*propyl-1-propylamine, 9CI*. N-*Propylisobutylamine. Isobutylpropylamine*
[39190-66-4]
$C_7H_{17}N$ 115.218
Found in foodstuffs and is a metabolite of *Streptococcus lactis*. Liq. with odour resembling fusel oil. Spar. sol. H_2O. Bp 123-125° (120°).

N-*Propyl, hydrochloride:*
Plates (EtOH/Et_2O). Mp 135°.

Dornow, A. *et al., Annalen*, 1954, **588**, 62 (*derivs*)
Cope, A.C. *et al., J.A.C.S.*, 1957, **79**, 4720 (*derivs*)
Feeney, J. *et al., J.C.S.*, 1961, 1123 (*pmr*)
Faure, R. *et al., Org. Magn. Reson.*, 1980, **14**, 20 (*cmr*)
Harrison, A.G. *et al., Can. J. Chem.*, 1986, **64**, 1652 (*ms*)
Smirnov, Y.D. *et al., Zh. Org. Khim.*, 1992, **28**, 461; *J. Org. Chem. USSR (Engl. Transl.)*, 1992, **28**, 374 (*N-alkyl derivs*)

N-(2-Methylpropyl)-3-(3-oxo-1-cyclopenten-1-yl)propanamide M-526

[878633-76-2]



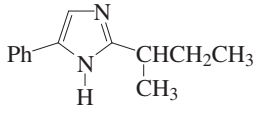
$C_{12}H_{19}NO_2$ 209.288

Prod. by *Streptomyces* sp. GT-20026114 isol. from the mangrove plant *Aegiceras comiculatum*. Amorph. powder. λ_{max} 242 (MeOH).

Lin, W. *et al., J. Antibiot.*, 2005, **58**, 594-598 (*isol, pmr, cmr*)

2-(1-Methylpropyl)-5-phenyl-1*H*-imidazole M-527

Catharsitoxin E



$C_{13}H_{16}N_2$ 200.283

Named in CAS as the 3*H*- (4-phenyl) isomer. In the paper it is shown as the 5-Ph isomer illus.

(ξ)-*form* [376587-14-3]

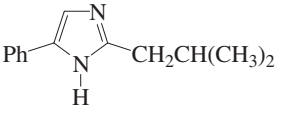
Isol. from the Chinese remedy Qiung laug prepd. from the beetle *Catharsius molossus*. Oil.

Suenaga, K. *et al., Tet. Lett.*, 2001, **42**, 7079-7081 (*isol, pmr*)

2-(2-Methylpropyl)-5-phenyl-1*H*-imidazole M-528

*2-Isobutyl-5-phenyl-1*H*-imidazole.* ***Catharsitoxin D***

[376587-13-2]



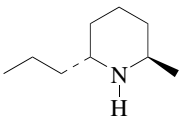
$C_{13}H_{16}N_2$ 200.283

Named in CAS as the 3*H* (4-phenyl) isomer. In the paper it is shown as the 5-Ph isomer illus. Isol. from the Chinese remedy Qiung laug prepd. from the beetle *Catharsius molossus*. Oil.

Suenaga, K. *et al., Tet. Lett.*, 2001, **42**, 7079-7081 (*isol, synth, pmr, cmr*)

2-Methyl-6-propylpiperidine, 9CI M-529

[68170-79-6]



(2*R*,6*R*)-*form*

$C_9H_{19}N$ 141.256

(2*R*,6*R*)-*form*
Epidihydropinidine
[135910-40-6]
Alkaloid from *Picea* spp. and *Pinus engelmannii*. Free base is unstable.

Hydrochloride: [135968-13-7]
Cryst. (2-propanol/EtOAc). Mp 171-173° (162-163°). $[\alpha]_D^{20}$ +5.1 (c, 0.4 in EtOH).

(2*R*,6*S*)-*form* [65266-41-3]
Oil. Bp 175-180°.

Hydrochloride: [115014-58-9]
Mp 245-247°. $[\alpha]_D^{20}$ +14.2 (c, 1.05 in EtOH).

(2*S*,6*R*)-*form*
Dihydropinidine
[65337-41-9]
Alkaloid from the beetle *Epilachna varivestis*. Oil. Bp 175-180°.

Hydrochloride: [65375-67-9]
Needles (Et_2O). Mp 239-240°. $[\alpha]_D$ -13 (c, 0.07 in EtOH).

(2*RS*,6*RS*)-*form*
(±)-trans-*form*
[84367-22-6]
[151851-20-6]

Hydrochloride: [175478-17-8]
Cryst. (Et_2O/MeOH). Mp 134-135°.

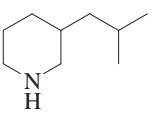
(2*RS*,6*SR*)-*form*
(±)-cis-*form*
[65337-42-0]
[109583-97-3]
Oil. Bp 176-177°.

Hydrochloride: [121963-72-2]
[109583-96-2]
Needles (EtOAc/EtOH). Mp 215-217° (212-213°).

Waelchli, P.C. *et al., Helv. Chim. Acta*, 1978, **61**, 921-928 (*cd*)
Bonin, M. *et al., Tet. Lett.*, 1982, 3369-3372 (*synth*)
Husson, H.P. *et al., J. Nat. Prod.*, 1985, **48**, 894-906 (*rev, synth*)
Ryckman, D.M. *et al., J.O.C.*, 1987, **52**, 4274-4279 (*2RS,6SR-form, synth, ir, pmr, cmr, ms*)
Watanabe, Y. *et al., J.O.C.*, 1989, **54**, 4088-4097 (*synth*)
Momose, T. *et al., Chem. Lett.*, 1990, 1319-1322 (*2R,6S-form, synth*)
Schneider, M.J. *et al., J. Nat. Prod.*, 1991, **54**, 905-909 (*2R,6R-form, isol, pmr, cmr*)
Comins, D.L. *et al., J.O.C.*, 1991, **56**, 2506-2512 (*synth, bibl*)
Tawara, J.N. *et al., J.O.C.*, 1993, **58**, 4813-4818 (*2R,6R-form, isol, cryst struct, abs config*)
Chênevert, R. *et al., J.O.C.*, 1996, **61**, 3332 (*synth*)
Amat, M. *et al., Tetrahedron: Asymmetry*, 1996, **7**, 977 (*synth, bibl*)
Takahara, H. *et al., Tetrahedron: Asymmetry*, 1996, **7**, 3047-3054 (*2R,6R-form, synth, ir, pmr, cmr*)
Muraoka, O. *et al., J.C.S. Perkin 1*, 1997, 113-119 (*2R,6S-form, synth*)
Weymann, M. *et al., Synthesis*, 1997, 1151-1160 (*synth, pmr, cmr*)
Bubnov, Y.N. *et al., Tet. Lett.*, 1997, **38**, 4631 (*synth*)
Yamauchi, T. *et al., Chem. Pharm. Bull.*, 1998, **46**, 384-389 (*2S,6R-form, synth, pmr*)
Davis, F.A. *et al., Tet. Lett.*, 1998, **39**, 5951-5954 (*synth*)
Adamo, M.F.A. *et al., Synth. Commun.*, 1999, **29**, 1747-1756 (*2R,6R-form, synth*)
Wilkinson, T.J. *et al., Org. Lett.*, 2000, **2**, 155-158 (*2R,6R-form, synth*)
Loh, T.-P. *et al., Tet. Lett.*, 2000, **41**, 7779-7783 (*synth*)
Dondas, H.A. *et al., Tetrahedron*, 2002, **58**, 161-173 (*synth*)
Shu, C. *et al., J.A.C.S.*, 2003, **125**, 2878-2879 (*2S,6R-form, synth*)
Yamauchi, S. *et al., Biosci., Biotechnol., Biochem.*, 2004, **68**, 676-684 (*synth*)
Wang, X. *et al., J.O.C.*, 2005, **70**, 1897-1900 (*2S,6R-form, synth*)

3-(2-Methylpropyl)piperidine M-530

3-Isobutylpiperidine



$C_9H_{19}N$ 141.256

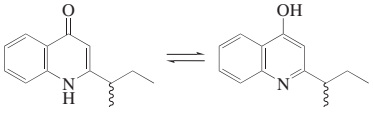
(ξ)-*form*
N-*Et: 1-Ethyl-3-(2-methylpropyl)piperi-*

dine. 1-Ethyl-3-isobutylpiperidine. ***Norstenusine***
[934416-51-0]
$C_{11}H_{23}N$ 169.309
Found in beetles *Stenus* spp.

(±)-*form*
N-Et: Bp_{15} 69°.
Gedig, T. *et al., Tetrahedron*, 2007, **63**, 2670-2674 (*synth, pmr, cmr, ms*)

2-(1-Methylpropyl)-4(1*H*)-quinolinone M-531

2-(1-Methylpropyl)-4-quinolinol. 4-Hydroxy-2-(1-methylpropyl)quinoline

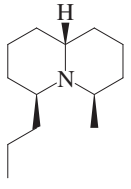


$C_{13}H_{15}NO$ 201.268

NH-form
N-*Me:* ***1-Methyl-2-(1-methylpropyl)-4(1H)-quinolinone***
[1008099-97-5]
$C_{14}H_{17}NO$ 215.294
Alkaloid from *Boronia ternata* var. *elongata*. Brownish oil. $[\alpha]_D$ +2 (c, 1 in $CHCl_3$). λ_{max} 214 (log ε 4.62); 238 (log ε 4.67); 322 (log ε 4.14); 330 (log ε 3.97) (MeOH).
Agier, C. *et al., Nat. Prod. Res.*, 2007, **21**, 698-703 (*isol, pmr, cmr, ms*)

4-Methyl-6-propylquinolizidine M-532

*Octahydro-4-methyl-6-propyl-2*H*-quinolizine, 9CI*



Relative Configuration

$C_{13}H_{25}N$ 195.347

(4*S*,6*R*,9a*R*)-*form*
Dendrobates *Alkaloid 195C*. *Quinolizidine 195C*
[120037-60-7]
[232602-07-2 , 232602-08-3 , 232602-06-1]
Trace alkaloid from skin extracts of an undescribed *Dendrobates* sp. from Panama (Dendrobatidae) and from the Madagascan frog *Mantella madagascariensis* (Ranidae, subfamily Mantelinae).
Daly, J.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 205 (*ms, rev*)
Jones, T.H. *et al., J. Chem. Ecol.*, 1999, **25**, 1179-1193 (*synth, struct*)
Garraffo, H.M. *et al., Rapid Commun. Mass Spectrom.*, 1999, **13**, 1553-1563 (*ms, struct*)

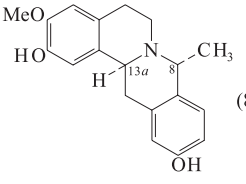
2-(2-Methylpropyl)thiazole, 9CI M-533

2-Isobutylthiazole, 8CI
[18640-74-9]



$C_7H_{11}NS$ 141.237
Preorbital gland secretion of grey duiker *Sylvicapra grimmia*. Occurs in tomatoes. Liq. with tomato leaf odour. d_4^{25} 1. Bp 180° (172°) Bp_{10} 66°. n_D^{25} 1.4939.
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 109B (*nmr*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 1492C (*ir*)
Aldrich Library of Infrared Spectra, 3rd edn., 1981, 1232D (*ir*)
Cottet, R. *et al., Bull. Soc. Chim. Fr.*, 1967, 4499-4502 (*synth, ir, pmr, uv*)
Viani, R. *et al., Helv. Chim. Acta*, 1969, **52**, 887-891 (*isol*)
Buttery, R.G. *et al., J. Agric. Food Chem.*, 1971, **19**, 524-529; *CA*, **75**, 18920n (*isol*)
Tabacchi, R. *et al., Helv. Chim. Acta*, 1974, **57**, 324-336 (*ms*)
Pittet, A.O. *et al., J. Agric. Food Chem.*, 1974, **22**, 264-269; *CA*, **80**, 120827y (*synth, ms, props*)
Dubs, P. *et al., Synthesis*, 1974, 294-295 (*synth, ir, pmr, ms*)
Dirinck, P. *et al., J. Sci. Food Agric.*, 1976, **27**, 499-508 (*isol*)
Burger, B.V. *et al., Z. Naturforsch., C*, 1988, **43**, 731-736 (*isol*)

8-Methylpseudomanibacanine M-534



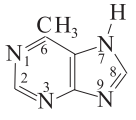
(8*R*,13a*S*)-*form*

$C_{19}H_{21}NO_3$ 311.38

(8*R*,13a*S*)-*form* [151757-08-3]
Alkaloid from the stem bark of *Aniba canelilla* (Lauraceae). $[\alpha]_D$ -61 (c, 1.1 in MeOH).

(8*S*,13a*S*)-*form* [151851-40-0]
Alkaloid from stem bark of *Aniba canelilla* (Lauraceae). $[\alpha]_D$ -62 (c, 0.3 in MeOH).
Oger, J.-M. *et al., Can. J. Chem.*, 1993, **71**, 1128 (*isol, uv, pmr, cmr, ms, struct*)

6-Methylpurine M-535



7*H-form*

$C_6H_6N_4$ 134.14
7*H*-Form predominates. Cryst. Sol. H_2O, butanol. Mp 236-237°.
▶ LD_{50} (mam, skn) 200 mg/kg. UO8700000

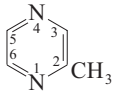
1*H-form* [2004-03-7]
*1-Me: 1,6-Dimethyl-1*H*-purine, 9CI*
[80888-49-9]
$C_7H_8N_4$ 148.167
Solid (as hydroiodide). Mp 239-241° (hydroiodide).

7*H-form*
Isol. from *Collybia maculata* and *Collybia dryophila*. Melanin biosynthesis inhibitor. Mp 235°. Isol. paper draws prod. as 9*H*-form.
*7-Me: 6,7-Dimethyl-7*H*-purine, 9CI*
[66122-65-4]
$C_7H_8N_4$ 148.167
Cryst. Mp 228-230°.

9*H-form*
*9-Me: 6,9-Dimethyl-9*H*-purine, 9CI*
[14675-46-8]
$C_7H_8N_4$ 148.167
Cryst. Mp 108-108.5°. pK_a 3.16 (20°).
*9-Ph: 6-Methyl-9-phenyl-9*H*-purine, 9CI*
[140421-33-6]
$C_{12}H_{10}N_4$ 210.238
Needles. Mp 155-156°.
Aldrich Library of NMR Spectra, 2nd edn., 1983, **2**, 582B (*nmr*)
Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 707D (*ir*)
Gabriel, S. *et al., Ber.*, 1901, **34**, 1234-1257 (*synth*)
Heiss, J. *et al., Org. Mass Spectrom.*, 1970, **3**, 181-190 (*ms*)
Thorpe, M.C. *et al., J. Magn. Reson.*, 1974, **15**, 98-112 (*cmr*)
Taylor, E.C. *et al., J.A.C.S.*, 1974, **96**, 8095-8102 (*synth*)
Leonhardt, K. *et al., Z. Naturforsch., C*, 1987, **42**, 420-424 (*isol*)
Tanji, K. *et al., Chem. Pharm. Bull.*, 1992, **40**, 227-229 (*9-Ph*)
Thines, E. *et al., Z. Naturforsch., C*, 1995, **50**, 813-819 (*isol, activity*)

Methylpyrazine, 9CI, 8CI M-536

FEMA 3309
[109-08-0]



$C_5H_6N_2$ 94.116
Isol. from an arctic marine bacterium. Flavouring agent. Liq. with disagreeable picoline-like odour. Misc. H_2O, EtOH, Et_2O. d_4^{20} 1.03. Bp 136-137°. n_D^{20} 1.4953. pK_{a1} 1.41; pK_{a2} -4.89 (25°, H_2O).
▶ Emits highly toxic fumes when heated to dec. Flammable, fl. p. 50° (oc). UQ3675000

Picrate:
Yellow prisms (EtOH). Mp 133°.
Methiodide: [34260-05-4]
Leaflets and needles (EtOH). V. sol. H_2O. Mp 129-130°.
1-Oxide: [31396-35-7]
$C_5H_6N_2O$ 110.115
Mp 93-95°.
4-Oxide: [25594-37-0]
$C_5H_6N_2O$ 110.115

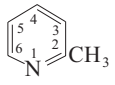
Mp 69-71°.

1,4-Dioxide: [32046-26-7]
$C_5H_6N_2O_2$ 126.115
Cryst. (MeOH). Mp 230-231°.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 840A (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 397C (*nmr*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 1555D (*ir*)
Jones, R.G. *et al., J.A.C.S.*, 1950, **72**, 3539 (*synth*)
Kitchen, L.J. *et al., J.A.C.S.*, 1951, **73**, 1838 (*synth*)
Cox, R.H. *et al., J. Phys. Chem.*, 1968, **72**, 1646 (*pmr*)
Uchimaru, F. *et al., J. Het. Chem.*, 1971, **8**, 99 (*ms*)
Sanyal, N.K. *et al., J. Mol. Spectrosc.*, 1979, **78**, 335 (*uv*)
Matsuo, M. *et al., Org. Magn. Reson.*, 1980, **13**, 172 (*cmr*)
Gumbley, S.J. *et al., J. Het. Chem.*, 1985, **22**, 1143 (*props*)
Dickschat, J.S. *et al., Chem. Biodiversity*, 2005, **2**, 318-353 (*marine isol*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, MOW750

2-Methylpyridine, 9CI M-537

α-Picoline
[109-06-8]
[1333-41-1]



C_6H_7N 93.128
Isol. from leaves of *Rumex obtusifolius* (Polygonaceae). Found in coal tar oil. Manuf. by gas-phase catalytic reaction of acetaldehyde and ammonia. Used in manuf. of 2-Vinylpyridine and pharmaceuticals. Oil with strong unpleasant odour. d_4^{15} 0.95. Mp -70°. Bp 129°. n_D^{17} 1.5029. pK_a 7.98 (25°). pK_a 5.96 (25°).

▶ Flammable, fl. p. 28°, autoignition temp. 535/538°. Toxic, irritant. Skin and severe eye irritant. Adverse CNS effects by inhalation. LD_{50} (rat, orl) 790 mg/kg. LD_{50} (rbt, skn) 410 mg/kg. TJ4900000

Hydrochloride: [14401-91-3]
Hygroscopic cryst. + ½H_2O. Mp 200° (anhyd.).

Hydrobromide, Br_2 addn. compd.:
[135862-25-8]
Red cryst. Mp 76°.

Methiodide: 1,2-Dimethylpyridinium iodide, 9CI. 2-Picoline methiodide
[872-73-1]
$C_7H_{10}IN$ 235.067
Reagent for the detn. of aromatic aldehydes (forms 2-stilbazole methiodide). Needles (EtOH). Mp 229-231°.

▶ TJ7700000

Ethobromide: 1-Ethyl-2-methylpyridinium bromide, 9CI
[32353-50-7]
Red solid. Mp 65° Mp 97°.

Ethiodide: 1-Ethyl-2-methylpyridinium iodide, 9CI
[19760-15-7]
Mp 123°.

▶ TJ7696000

Picrate: [15938-03-1]
Needles. Mp 169-171°.

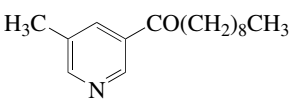
N-*Oxide:* [931-19-1]
C_6H_7NO 109.127
Hygroscopic oil or solid. Mp 48-50°. Bp_{15} 123-124°. Anhydrous samples crystallise to a low-melting solid, which rapidly liquefies on exp. to air.

[18241-33-3]

Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 241C (*nmr*)
Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 912D (*ir*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 1514D; 1575C (*ir, N-oxide*)
Heap, T. *et al., J.A.C.S.*, 1921, **43**, 1936 (*isol*)
Wilkie, K. *et al., J. Soc. Chem. Ind., London*, 1927, **46**, 469 (*purifn*)
Cartwright, C.H. *et al., C. R. Hebd. Seances Acad. Sci.*, 1935, **200**, 914 (*ir*)
Cullinane, N.M. *et al., J. Soc. Chem. Ind., London*, 1948, **67**, 142 (*synth*)
Boekelheide, V. *et al., J.A.C.S.*, 1954, **76**, 1286 (*N-oxide, synth*)
Coulson, E.A. *et al., J.C.S.*, 1954, 1957 (*purifn*)
Kosower, E.M. *et al., J.A.C.S.*, 1956, **78**, 3493 (*synth, methiodide*)
Wilkinson, S. *et al., Nature (London)*, 1958, **181**, 636 (*isol*)
Weissberger, A. *et al., Chem. Heterocycl. Compd.*, 1960, **14**, 99
Salsmans, R. *et al., Org. Mass Spectrom.*, 1974, **8**, 357 (*ms*)
Bist, H.D. *et al., Indian J. Pure Appl. Phys.*, 1983, **21**, 236 (*ir, Raman*)
Denisov, A.Y. *et al., Khim. Geterotsikl. Soedin.*, 1984, 1223; *Chem. Heterocycl. Compd. (Engl. Transl.)*, 1984, 1000 (*pmr, cmr*)
Kosmidis, A. *et al., J. Mol. Spectrosc.*, 1986, **120**, 11 (*uv*)
Tarek, M. *et al., Anal. Lett.*, 1987, **20**, 2049; 1989, **22**, 3091 (*use, methiodide*)
Cook, I.B. *et al., Aust. J. Chem.*, 1989, **42**, 1493 (*cmr*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, MOY000
Ethel Browning's Toxicity and Metabolism of Industrial Solvents, 2nd edn., (ed. Snyder, R.), Elsevier, Volume 2, 1990, 218
Bretherick, L. *et al., Handbook of Reactive Chemical Hazards, 4th edn., Butterworths*, 1990, 2211
Luxon, S.G. *et al., Hazards in the Chemical Laboratory, 5th edn., Royal Society of Chemistry*, 1992, 868

1-(5-Methyl-3-pyridinyl)-1-decanone M-538

3-Decanoyl-5-methylpyridine
[194345-50-1]

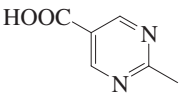


$C_{16}H_{25}NO$ 247.38
Constit. of *Piper retrofractum* (Javanese long pepper). Cryst. ($CHCl_3$). Mp 208°.

Pande, A. *et al., Indian J. Chem., Sect. B*, 1997, **36**, 377-379 (*isol, ir, pmr, ms*)

2-Methyl-5-pyrimidinecarboxylic acid, 9CI M-539

[5194-32-1]



$C_6H_6N_2O_2$ 138.126
Light tan solid or solid (H_2O). Mp 197-198°.

Me ester: [5571-03-9]
$C_7H_8N_2O_2$ 152.152
Cryst. Mp 78°.

Et ester: [2134-38-5]
$C_8H_{10}N_2O_2$ 166.179
$Bp_{0.45}$ 70-71°.

Amide: [5194-33-2]
$C_6H_7N_3O$ 137.141
Solid (butanol). Mp 218-219°.

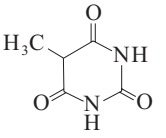
Methylamide: N,*2-Dimethyl-5-pyrimidinecarboxamide*
$C_7H_9N_3O$ 151.168
Prod. by an unidentified marine bacterium.

Nitrile: 5-Cyano-2-methylpyrimidine
[5506-97-8]
$C_6H_5N_3$ 119.126
Solid by subl. Mp 72°.

May, C.D. *et al., J.C.S.(C)*, 1966, 649-653 (*synth, Me ester, Et ester, amide, nitrile*)
Kress, T.J. *et al., Heterocycles*, 1994, **38**, 1375-1382 (*synth, uv, pmr*)
Laatsch, H. *et al., Dissertation*, Univ. of Göttingen, 2005, (*methylamide*)

5-Methyl-2,4,6(1*H*,3*H*,5*H*)-pyrimidinetrione, 9CI M-540

5-Methylbarbituric acid
[2417-22-3]

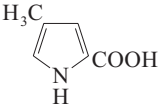


$C_5H_6N_2O_3$ 142.114
Metab. of Thymine catabolism in bacteria. Cryst. (H_2O). Mp 203°.

Doumas, B. *et al., J. Biol. Chem.*, 1962, **237**, 2306 (*synth*)
Arct, B. *et al., CA*, 1967, **67**, 54098 (*synth*)

4-Methyl-1*H*-pyrrole-2-carboxylic acid, 9CI M-541

[18711-59-6]



$C_6H_7NO_2$ 125.127
Mp 203-204°. pK_{a1} 4.6.

Me ester: ***Methyl 4-methylpyrrole-2-carboxylate***
[34402-78-3]
$C_7H_9NO_2$ 139.154
Trail pheromone of *Atta texana*. Cryst.

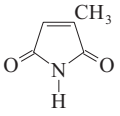
(hexane). Mp 73-74°.

Et ester: [40611-85-6]
$C_8H_{11}NO_2$ 153.18
Cryst. (EtOH aq.). Mp 37-38°.

Rapoport, J. *et al., J.O.C.*, 1964, **29**, 2727
Tumlinson, J.H. *et al., Nature (London)*, 1971, **234**, 348
Sonnet, P.E. *et al., J. Med. Chem.*, 1972, **15**, 97
Alonso Garrido, D.O. *et al., J.O.C.*, 1988, **53**, 403 (*ester, synth, cmr*)
Cornforth, J. *et al., J.C.S. Perkin 1*, 1990, 1459 (*synth, Me ester, pmr*)
Lash, T.D. *et al., J. Het. Chem.*, 1991, **28**, 1671 (*synth*)
Zimmer, R. *et al., Annalen*, 1992, 709 (*synth, Me ester*)
Tehrani, K.A. *et al., Tetrahedron*, 1999, **55**, 4133-4152 (*synth*)

3-Methyl-1*H*-pyrrole-2,5-dione, 9CI M-542

2-Methylmaleimide. Citraconimide, 8CI
[1072-87-3]



$C_5H_5NO_2$ 111.1
Prod. of chromic acid oxidation of tetrapyrroles. Cryst. (C_6H_6 or Et_2O/petrol). Mp 103-104° Mp 108° (107°). *N*-substituted derivs. undergo radical homo- and copolym.

5-Oxime: 3-Methylmaleimide 5-oxime
$C_5H_6N_2O_2$ 126.115
Isol. from the sponges *Cliona patera* and *Pseudoceratina purpurea*. Cryst. (MeOH). Mp 170-172°.

N-*Me: 1,3-Dimethyl-1*H*-pyrrole-2,5-dione, 9CI*
[4050-34-4]
$C_6H_7NO_2$ 125.127
Oil. Bp_{10} 86°. n_D^{26} 1.4970. *N*-Alkylcitraconimides polym. by a radical mechanism to give linear systems with the imide rings intact. Q/e values for radical polym., Q 0.87, e +1.59.

N-*Ph: 3-Methyl-1-phenyl-1*H*-pyrrole-2,5-dione, 9CI*
[3120-04-5]
$C_{11}H_9NO_2$ 187.198
Mp 99°.

Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **2**, 1454B (*nmr*)
Protopopescu, L. *et al., CA*, 1944, **38**, 3958h (*synth*)
Brown, P.M. *et al., J.C.S.*, 1957, 2882 (*synth*)
Sheremeteva, T.V. *et al., CA*, 1959, **53**, 4127h (*N-Me*)
Kojima, K. *et al., J. Polym. Sci., Part A*, 1966, **4**, 1121 (*synth*)
Sheremeteva, T.V. *et al., J. Polym. Sci., Part C*, 1967, **16**, 1631 (*polym, derivs*)
Ellsworth, R.K. *et al., Arch. Biochem. Biophys.*, 1968, **124**, 358
Chenon, M.T. *et al., J. Het. Chem.*, 1973, **10**, 427 (*cmr*)
Gossauer, A. *et al., Annalen*, 1974, 1496 (*synth*)
Hebenbrock, K.-F. *et al., Annalen*, 1978, 320 (*derivs*)
Earl, R.A. *et al., J. Het. Chem.*, 1978, **15**, 1479 (*synth, pmr, imide*)
Greenley, R.Z. *et al., J. Macromol. Sci., Part A: Chem.*, 1980, **14**, 427 (*Q/e values, deriv*)
Pyriadi, T.M. *et al., J. Polym. Sci., Polym. Chem. Ed.*, 1980, **18**, 2535 (*derivs*)
Martin, J. *et al., Tetrahedron*, 1980, **36**, 3261 (*synth, ms*)
Oishi, T. *et al., Polym. J. (Tokyo)*, 1981, **13**, 65 (*polym, reactivity, derivs*)
Yogo, M. *et al., J.C.S. Perkin 1*, 1984, 2097 (*synth, ir, uv, pmr, imides*)
Bestmann, H.J. *et al., Chem. Ber.*, 1985, **118**, 2640 (*deriv*)
Otsu, T. *et al., Polym. Bull. (Berlin)*, 1990, **24**, 475 (*polym, derivs*)
Gill, G.B. *et al., J.C.S. Perkin 1*, 1993, 2567 (*synth, ir, pmr, cmr*)
Kijjoa, A. *et al., Z. Naturforsch., B*, 2005, **60**, 904-908 (*5-oxime, isol, pmr, cmr*)

1-Methylpyrrolidine, 9CI M-543

[120-94-5]



$C_5H_{11}N$ 85.149
Minor alkaloid from tobacco (*Nicotiana tabacum*), also found in *Atropa belladonna* (Solanaceae). Liq. Misc. H_2O. Bp_{750} 80-81°. n_D^{20} 1.4311. pK_a 10.32 (25°). Volatile in Et_2O vapour.

▶ Highly flammable, fl. p. -14°. Corrosive and irritating to skin, eyes and mucous membranes. UY1420500

Methobromide: [23827-15-8]
Cryst. (EtOAc/EtOH). Mp 225°.

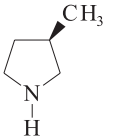
Picrate:
Yellow plates (EtOH). Mp 224°.

N-*Oxide:* [7529-17-1]
$C_5H_{11}NO$ 101.148
Cryst. Mp 60°.

Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 558A (*nmr*)
Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 354B (*ir*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 443A (*ir*)
Späth, E. *et al., Ber.*, 1939, **72**, 1809 (*isol*)
Org. Synth., Coll. Vol., 3, 1955, 159 (*synth*)
Yasumatsu, N. *et al., CA*, 1965, **63**, 18668a (*isol*)
U.S. Pat., 1966, 3 239 535; *CA*, **64**, 17815f (*oxide*)
Ferles, M. *et al., Coll. Czech. Chem. Comm.*, 1968, **33**, 2121 (*synth*)
Osman, S. *et al., Org. Mass Spectrom.*, 1969, **2**, 977 (*ms*)
Hawthorne, D.G. *et al., Aust. J. Chem.*, 1976, **29**, 515 (*cmr*)
Leung, J. *et al., Org. Magn. Reson.*, 1977, **9**, 333 (*cmr*)
Beecroft, R.A. *et al., J.C.S. Perkin 2*, 1985, 1063 (*uv*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, MPB250

3-Methylpyrrolidine, 9CI M-544

[34375-89-8]



(R)–form

$C_5H_{11}N$ 85.149

(R)-form
Bp 103°. $[\alpha]_D^{22}$ +17.2 (c, 0.9 in EtOH). n_D^{22} 1.4420. Abs. config. assignment contradictory before 1978.

Hydrochloride: $[\alpha]_D^{20}$ +6.9 (c, 1.67 in MeOH) (>98% ee).

N-*Benzoyl:*
$C_{12}H_{15}NO$ 189.257
Solid (hexane). Mp 64-65°. $[\alpha]_D^{20}$ +70.2 (c, 1.03 in CH_2Cl_2).

N-*(2-Phenylethyl):* ***3-Methyl-1-(2-phenylethyl)pyrrolidine***
[163315-04-6]
$C_{13}H_{19}N$ 189.3
Trace alkaloid from poison glands of *Harpagoxenus sublaevis*, *Leptothorax acervorum*, *Leptothorax muscorum* and *Doronomyrmex goesswaldi*. Oil.

N-*(2-Methylbutyl):* ***3-Methyl-1-(2-methylbutyl)pyrrolidine***
[163315-00-2]
$C_{10}H_{21}N$ 155.283
Trace alkaloid from poison glands of ants *Harpagoxenus sublaevis*, *Leptothorax acervorum* and *Leptothorax muscorum*. Abs. config. of the side-chain not known (1997).

N-*(3-Methylbutyl): 3-Methyl-1-(3-methylbutyl)pyrrolidine.* ***Leptothoracine***
[163314-99-6]
$C_{10}H_{21}N$ 155.283
Trace alkaloid from poison glands of the ants *Harpagoxenus sublaevis*, *Leptothorax acervorum*, *Leptothorax muscorum* and *Doronomyrmex goesswaldi*.
Bp_{30} 88°.

(S)-form [69498-25-5]
Bp 103°. $[\alpha]_D^{22}$ -18.7 (c, 1.4 in EtOH).

N-*Nitroso:* $[\alpha]_D^{22}$ -42 (c, 1 in EtOH). n_D^{22} 1.4813.

▶ Exp. carcinogen.

(±)-form
Liq. with odour resembling piperidine. Bp 103-105°. V. air-sensitive.

Picrate:
Cryst. (EtOH). Mp 106°.

N-*Me: 1,3-Dimethylpyrrolidine*
[45470-22-2]
$C_6H_{13}N$ 99.175
Liq. d_4^{15} 0.79. Mp 181-182° (picrate) Mp 110-115° (picrate). Bp 96-97°. Picrate is dimorphous.

N-*Isopropyl: 1-Isopropyl-3-methylpyrrolidine. 3-Methyl-1-(1-methylethyl)pyrrolidine, 9CI*
$C_8H_{17}N$ 127.229
Liq. Sol. Et_2O. Bp 150-165°.

N-*Isopropyl, picrate:*
Yellow needles (EtOH). Mp 140-141°.

Löffler, K. *et al., Ber.*, 1910, **43**, 2044 (*N-Me*)
Elderfield, R.C. *et al., J.A.C.S.*, 1950, **72**, 1334 (*N-isopropyl*)
Ringdahl, B. *et al., Acta Pharm. Suec.*, 1978, **15**, 255 (*abs config*)
Lin, T. *et al., J. Het. Chem.*, 1984, **21**, 1871 (*synth, ir, pmr, derivs*)
Budrham, R.S. *et al., Org. Prep. Proced. Int.*, 1986, **18**, 295 (*synth, pmr*)
Reder, E. *et al., Helv. Chim. Acta*, 1995, **78**, 73 (*alkaloids*)
Koob, R. *et al., Helv. Chim. Acta*, 1997, **80**, 267-272 (*abs config, alkaloids*)

Veith, H.J. *et al., Liebigs Ann./Recl.*, 1997, 391 (*synth, pmr*)
Andrés, C. *et al., J.O.C.*, 1999, **64**, 4273-4281 (*R-form, S-form, synth, pmr, cmr*)
Zhang, X. *et al., Nat. Prod. Lett.*, 2002, **16**, 53-56 (*Leptothoracine, synth*)

5-Methyl-2-pyrrolidinecarboxylic acid M-545

5-Methylproline, 9CI
[16639-15-9]



(2*S*,5*R*)–*form*

$C_6H_{11}NO_2$ 129.158

(2*S*,5*R*)-*form*

Et ester:
$C_8H_{15}NO_2$ 157.212
Oil. $[\alpha]_D^{25}$ -38.9 (c, 0.95 in $CHCl_3$).

(2*S*,5*S*)-*form*

tert-*Butyl ester:* [599191-13-6]
$C_{10}H_{19}NO_2$ 185.266
Oil. $[\alpha]_D^{23}$ -11.8 (c, 0.74 in $CHCl_3$).

(2*R,5*R**)-*form***

cis-*form*
Isol. from hydrolysates of Actinomycin Z.

(2*RS*,5*RS*)-*form*

(±)-cis-*form*
Et ester: Bp_3 59°.

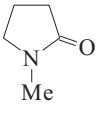
(2*RS*,5*SR*)-*form*

(±)-trans-*form*
Mp 207° (197-199°).

Sakurai, H. *et al., Bull. Chem. Soc. Jpn.*, 1969, **42**, 3524 (*synth*)
Katz, E. *et al., Biochem. Biophys. Res. Commun.*, 1973, **52**, 819 (*isol*)
Collado, I. *et al., J.O.C.*, 1995, **60**, 5011 (*Et ester, synth, ir, pmr, cmr*)
Mota, A.J. *et al., Eur. J. Org. Chem.*, 2003, 4187-4198 (*2S,5S-form, tert-butyl ester*)

1-Methyl-2-pyrrolidinone, 9CI M-546

N-*Methylpyrrolidone*
[872-50-4]
[51013-18-4]



C_5H_9NO 99.132
Alkaloid from *Melicope hayesii*. Dipolar aprotic solvent, with low oral acute tox. Weakly basic, good proton acceptor from strong acids. Sol. H_2O, most org. solvs. d_4^{20} 1.03. Mp -17° (-24°). Bp 202° Bp_{10} 85°. n_D^{25} 1.4690. pK_a -0.92 (H_2SO_4 aq.). Steam-volatile. Forms hydrates.
▶ Fl. p. 96° (oc), autoignition temp. 346°. Severe eye irritant. Exp. reprod. and teratogenic effects. OES: long-term 100 ppm. UY5790000

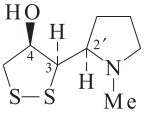
Hydrochloride: [16889-93-3]
Mp 79-81°.

Oxime: [35197-40-1]
$C_5H_{10}N_2O$ 114.147
Mp 98-99°.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 789C (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 1286A (*nmr*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 788D (*ir*)
Fery, L.P.A. *et al., Bull. Soc. Chim. Belg.*, 1960, **69**, 63 (*synth*)
Blicke, F.F. *et al., J.O.C.*, 1961, **26**, 1826 (*synth*)
Metzger, H. *et al., Angew. Chem., Int. Ed.*, 1963, **2**, 624 (*synth*)
Falbe, J. *et al., Chem. Ber.*, 1965, **98**, 1928 (*synth*)
Basch, H. *et al., J. Chem. Phys.*, 1968, **49**, 5007 (*uv*)
Fieser and Fieser's Reagents for Organic Synthesis, Wiley, 1969, **2**, 281 (*use*)
Fronza, G. *et al., J.C.S. Perkin 2*, 1977, 1746 (*N-15 nmr, cmr*)
Kirk-Othmer Encycl. Chem. Technol., 3rd edn., Wiley, 1978, **19**, 514
Cerioni, G. *et al., Spectrochim. Acta A*, 1983, **39**, 929 (*pmr, cmr*)
Ruostesuo, P. *et al., Spectrochim. Acta A*, 1985, **41**, 739 (*cmr, N-15 nmr, O-17 nmr*)
Ermakov, A.I. *et al., Zh. Org. Khim.*, 1985, **21**, 1986 (*ms*)
Tyman, J. *et al., Synth. Commun.*, 1989, **19**, 179 (*use*)
Encyclopaedia of Reagents for Organic Synthesis, (ed. Paquette, L.A.), Wiley, 1995, **5**, 3580-3581 (*use*)
Latip, J. *et al., Phytochemistry*, 1999, **51**, 107-110 (*isol, pmr, cmr*)
Herler, S. *et al., Acta Cryst. E*, 2007, **63**, o3991 (*cryst struct*)
Chemical Hazards of the Workplace, 2nd edn., (eds. Proctor, N.H. et al), J.B. Lippincott, 1988, 344
Luxon, S.G. *et al., Hazards in the Chemical Laboratory, 5th edn., Royal Society of Chemistry*, 1992, 869
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, MPF200

3-(1-Methyl-2-pyrrolidinyl)-1,2-dithiolan-4-ol, 9CI M-547

1-Methyl-2-(4-hydroxy-1,2-dithiolan-3-yl)pyrrolidine



(2′*R**,3*R**,4*R**)–*form*

$C_8H_{15}NOS_2$ 205.345
CA numbering shown.

(2′*R,3*R**,4*R**)-*form***

cis,erythro-*form*. ***Guinesine A***
[121702-91-8]
Alkaloid from the bark of *Cassipourea guianensis* (Rhizophoraceae). Exhibits insecticidal activity. Yellowish oil. $[\alpha]_D^{24}$ +80.5 (c, 0.71 in $CHCl_3$). λ_{max} 242; 330 (solvent not reported) (Derep).

(2*R,3*S**,4*S**)-*form***

cis,threo-*form*. ***Guinesine B***
[121702-92-9]
Alkaloid from the bark of *Cassipourea guianensis* (Rhizophoraceae). Exhibits insecticidal activity. Needles. Mp 61-62°. $[\alpha]_D^{24}$ -36.5 (c, 0.34 in $CHCl_3$). λ_{max} 242; 330 (solvent not reported) (Derep).

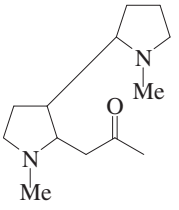
(2′*R,3*R**,4*S**)-*form***

trans,erythro-*form*. ***Guinesine C***
[121702-93-0]
Alkaloid from the bark of *Cassipourea guianensis* (Rhizophoraceae). Needles. Mp 76-77°. $[\alpha]_D^{24}$ -4.8 (c, 0.48 in $CHCl_3$). λ_{max} 242; 330 (solvent not reported) (Derep).

Kato, A. *et al., Tet. Lett.*, 1989, **30**, 3671 (*isol, uv, ir, pmr, cmr, ms, cryst struct*)
Mitsudera, H. *et al., J. Het. Chem.*, 1990, **27**, 1361 (*synth*)

2′,3-(*N*-Methylpyrrolidinyl)-hygrine M-548

1-(1,1′-Dimethyl[2,3′-bipyrrolidin]-2′-yl)-2-propanone, 9CI

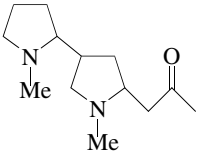


$C_{13}H_{24}N_2O$ 224.345
Alkaloid from *Merremia* spp. Oil.

Jenett-Siems, K. *et al., Phytochemistry*, 2005, **66**, 1448-1464 (*isol, synth, pmr, cmr, ms*)

2′,4-(*N*-Methylpyrrolidinyl)-hygrine M-549

1-(1,1′-Dimethyl[2,3′-bipyrrolidin]-5′-yl)-2-propanone, 9CI
[110024-53-8]
[130404-24-9 , 137328-59-7]

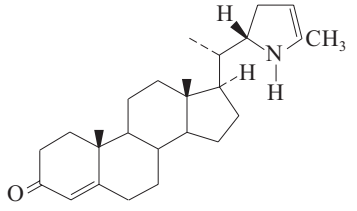


$C_{13}H_{24}N_2O$ 224.345
Alkaloid from *Datura innoxia*, *Datura candida*, *Erythroxylum lucidum*, *Hyoscyamus albus* and *Merremia* spp. Oil. Isol. as a mixture of stereoisomers.

Witte, L. *et al., Planta Med.*, 1987, **53**, 192-197 (*isol, ms*)
Brachet, A. *et al., Phytochemistry*, 1997, **46**, 1439-1442 (*isol*)
Jenett-Siems, K. *et al., Phytochemistry*, 2005, **66**, 1448-1464 (*isol, synth, pmr, cmr, ms*)

20-(2-Methyl-1-pyrrolin-5-yl)pregn-4-en-3-one M-550

*20-(3,4-Dihydro-5-methyl-2*H*-pyrrol-2-yl)pregn-4-en-3-one, 9CI. 22,25-Epimino-27-norcholesta-4,24-dien-3-one*
[55486-07-2]

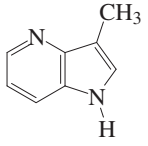


$C_{26}H_{39}NO$ 381.6
Alkaloid from aerial parts of *Veratrum album* ssp. *lobelianum* (Liliaceae). Shows *in vitro* cytotoxicity against leukaemia P388 cells. Cryst. (Et_2O). Mp 153-157°. $[\alpha]_D^{24}$ +107 (c, 0.64 in $CHCl_3$). Stereochem. assigned from subsequently determined x-ray struct. of Veracintine, V-57.

Vassová, A. *et al., Coll. Czech. Chem. Comm.*, 1975, **40**, 695-698 (*isol, pmr, uv, struct*)
Tomko, J. *et al., CA*, 1981, **94**, 205391r (*isol*)
Fuska, J. *et al., CA*, 1982, **96**, 173914m (*pharmacol*)

3-Methyl-1*H*-pyrrolo[3,2-*b*]pyridine, 9CI M-551

4-Azaskatole
[25796-94-5]

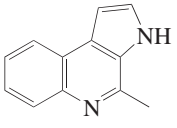


$C_8H_8N_2$ 132.165
Isol. from fish meal tar. Antifungal agent. Cryst. (C_6H_6). Mp 228-230°. λ_{max} 225 (ϵ 21950); 292 (ϵ 6950) (MeOH) (Berdy).

Kelly, A.H. *et al., J.C.S.(C)*, 1970, 303-307 (*synth*)
Wakabayashi, K. *et al., Yakugaku Zasshi*, 1978, **98**, 898-903 (*isol*)
Fontan, R. *et al., Heterocycles*, 1981, **16**, 1473-1474 (*synth*)

4-Methyl-3*H*-pyrrolo[2,3-*c*]quinoline M-552

Marinoquinoline A
[920317-36-8]

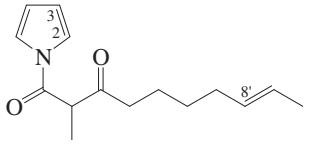


$C_{12}H_{10}N_2$ 182.224
Alkaloid from the marine-derived gliding bacterium *Rapidithrix thailandica* GB009. Acetylcholinesterase inhibitor. Needles ($Me_2CO/CHCl_3$/hexane).

Kanjana-opas, A. *et al., Acta Cryst. E*, 2006, **62**, o2728-o2730 (*cryst struct*)
Sangnoi, Y. *et al., Mar. Drugs*, 2008, **6**, 578-586 (*activity*)

2-Methyl-1-(1*H*-pyrrol-1-yl)-8-decene-1,3-dione M-553

*1-(2-Methyl-3-oxo-8-decenoyl)-1*H*-pyrrole, 9CI*
[217461-35-3]



$C_{15}H_{21}NO_2$ 247.336
Alkaloid from *Penicillium brevicompactum*. Oil. $[\alpha]_D^{20}$ +23 (c, 0.2 in $CHCl_3$).

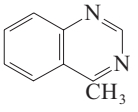
*2,3-Dihydro: 1-(2,3-Dihydro-1*H*-pyrrol-1-yl)-2-methyl-8-decene-1,3-dione. 2,3-Dihydro-1-(2-methyl-3-oxo-8-decenoyl)-1*H*-pyrrole, 9CI*
[220568-62-7]
$C_{15}H_{23}NO_2$ 249.352
Prod. by *Penicillium brevicompactum*.

*8′,9′-Dihydro: 2-Methyl-1-(1*H*-pyrrol-1-yl)-1,3-decanedione, 9CI. N-(2-Methyl-3-oxodecanoyl)-1*H*-pyrrole*
[217461-49-9]
$C_{15}H_{23}NO_2$ 249.352
Prod. by *Penicillium brevicompactum*. Oil. $[\alpha]_D^{19}$ +14 (c, 0.14 in $CHCl_3$).

Cantin, A. *et al., J. Agric. Food Chem.*, 1998, **46**, 4748-4753 (*isol, 8′,9′-dihydro*)
Cantin, A. *et al., Eur. J. Org. Chem.*, 1999, 221-226 (*2,3-dihydro, isol, ir, pmr, cmr, ms*)
Castillo, M.-A. *et al., J. Agric. Food Chem.*, 1999, **47**, 2120-2124 (*2,3-dihydro*)
Clark, D. *et al., Tetrahedron*, 2000, **56**, 6181-6184 (*synth*)

4-Methylquinazoline, 9CI M-554

[700-46-9]

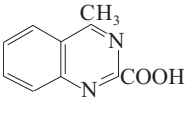


$C_9H_8N_2$ 144.176
Alkaloid prod. by the bacteria *Pseudomonas aeruginosa, Sarcina lutea* and (in trace amounts) *Pseudomonas fluorescens* and *Pseudomonas putida*. Pale-yellow prisms. Mp 36-37°. Bp 260° $Bp_{0.15}$ 78°. pK_{a1} 2.35; pK_{a2} -4.4 (20°, H_2SO_4 aq.).

Picrate:
Yellow-green flakes (EtOH). Mp 182-183.5°.

Bogert, M.T. *et al., J.A.C.S.*, 1924, **46**, 1702; 1932 (*synth*)
Elderfield, R.C. *et al., J.O.C.*, 1951, **16**, 1669 (*synth*)
Schofield, K. *et al., J.C.S.*, 1952, 1924 (*synth*)
Mann, S. *et al., Arch. Mikrobiol.*, 1967, **56**, 324
Batterham, T.J. *et al., J.C.S.(B)*, 1967, 892 (*ms*)
Kant, J. *et al., J. Het. Chem.*, 1985, **22**, 1313 (*synth*)
Uff, B.C. *et al., J.C.S. Perkin 1*, 1986, 2295 (*synth, pmr*)

4-Methyl-2-quinazolinecarboxylic acid M-555



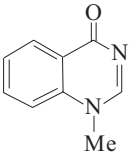
$C_{10}H_8N_2O_2$ 188.185
Trace metab. prod. by the bacterium *Pseudomonas aeruginosa*.

Amide: ***4-Methyl-2-quinazolinecarboxamide.*** *2-Carbamoyl-4-methylquinazoline*
[13535-92-7]
$C_{10}H_9N_3O$ 187.201
Metab. of *Pseudomonas aeruginosa*. Cryst. (EtOH). Mp 235.5°.

Bogert, M.T. *et al., J.A.C.S.*, 1924, **46**, 1702 (*synth*)
Mann, S. *et al., Arch. Mikrobiol.*, 1967, **56**, 324 (*occur*)

1-Methyl-4(1*H*)-quinazolinone, 9CI M-556

Glycorine
[3476-68-4]



$C_9H_8N_2O$ 160.175
Minor alkaloid from the leaves of *Glycosmis arborea* (Rutaceae). Mp 145-147°.

▶ VA3676800

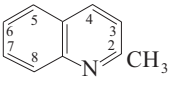
Hydrochloride:
Needles + $^2/_3$ H_2O (EtOH/Me_2CO). Mp 242° dec.

Picrate: Mp 249° dec.

Pakrashi, S.C. *et al., Tetrahedron*, 1963, **19**, 1011-1026 (*uv, ir, pmr, ms, struct, synth*)
Kametani, T. *et al., J.C.S. Perkin 1*, 1977, 2347-2349 (*synth*)
Bhattacharyya, P. *et al., Chem. Ind. (London)*, 1978, 532 (*synth*)
Bhattacharyya, J. *et al., Heterocycles*, 1980, **14**, 1469-1473 (*cmr*)
Ozaki, K. *et al., Chem. Pharm. Bull.*, 1983, **31**, 2234-2243 (*synth*)

2-Methylquinoline, 9CI M-557

Quinaldine, 8CI
[91-63-4]
[27601-00-9]



$C_{10}H_9N^{\oplus}$ 143.188
Present in coal tar and shale oil. Chemical scent constituent of the urine of the red fox *Vulpes vulpes*. Used as soln. in dil. H_2SO_4 for gravimetric detn. of Bi. Oil; turns reddish brown in air. Insol. H_2O; sol. Et_2O, $CHCl_3$. d_4^{20} 1.06. Mp -2°. Bp 248° Bp_{100} 171.5°. n_D^{20} 1.6126. pK_a 5.71 (22°). pK_a 5.65 (25°).

▶ Fl. p. 110°. Skin and severe eye irritant. LD_{50} (rat, orl) 1230 mg/kg. UZ9625000

Hydrochloride: [62763-89-7]
Needles (EtOH/Et_2O). Mp 224°.

Hydrobromide:
Cryst. (EtOH). Mp 227°.

Hydroiodide: [43101-13-9]
Needles (EtOH). Mp 186°.

Perchlorate: [41439-52-5]
Mp 131°.

N-*Et:* [606-55-3]
$C_{12}H_{14}N$ 172.249
Mp 244° dec. (iodide). CAS no. refers to iodide.

▶ VA0740000

Picrate: [1773-07-5]
Yellow needles. Spar. sol. H_2O, EtOH. Mp 193-194°.

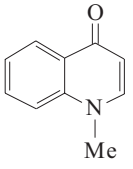
N-*Oxide:* [1076-28-4]

$C_{10}H_9NO$ 159.187
Needles (H_2O) (hydrated). Sol. dil. acids. Mp 77-78°.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 853C (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 421B; 421C (*nmr*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 1565B (*ir*)
Doebner, O. *et al., Ber.*, 1883, **16**, 2464 (*synth*)
Mills, W.H. *et al., J.C.S.*, 1921, 1294 (*synth*)
Welcher, F.J. *et al., Organic Analytical Reagents*, Van Nostrand, New York, 1947, **3**, 62 (*detn, Bi*)
Cervinka, O. *et al., Coll. Czech. Chem. Comm.*, 1963, **28**, 535 (*synth*)
Draper, P.M. *et al., Can. J. Chem.*, 1968, **46**, 1487 (*ms*)
Ghersetti, S. *et al., Spectrosc. Lett.*, 1973, **6**, 167 (*ir*)
Johns, S.R. *et al., Aust. J. Chem.*, 1976, **29**, 1617 (*cmr*)
Jorgenson, J.W. *et al., Science (Washington, D.C.)*, 1978, **199**, 796
Whitten, W.K. *et al., J. Chem. Ecol.*, 1980, **6**, 49
Song, Z. *et al., J. Het. Chem.*, 1993, **30**, 17 (***synth***)
Horaguchi, T. *et al., J. Het. Chem.*, 2002, **39**, 61-67 (*synth, pmr, cmr*)
Kitamura, M. *et al., Synthesis*, 2003, 2415-2426 (*synth, ir, pmr, cmr*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, QEJ000

1-Methyl-4(1*H*)-quinolinone, 9CI M-558

Echinopsine
[83-54-5]



$C_{10}H_9NO$ 159.187
Alkaloid from the seeds of *Echinops ritro* and several other *Echinops* spp. (Asteraceae). Needles (C_6H_6). Mp 152°. pK_a 2.36 (30°).

▶ VC8618000

Hydrochloride:
Cryst. (MeOH/Me_2CO). Mp 185-186°.

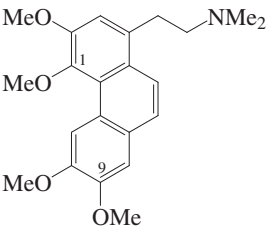
Picrate:
Cryst. (EtOH). Mp 223-224°.

Imine: ***Echinopsidine***
$C_{10}H_{10}N_2$ 158.202
Alkaloid from the aerial parts of *Echinops echinatus* (Asteraceae). Amorph.; cryst. (MeOH)(as hydrochloride). Mp 214-215° dec. (hydrochloride).

Greshoff, M. *et al., Rec. Trav. Chim. (J. R. Neth. Chem. Soc.)*, 1900, **19**, 360 (*isol*)
Späth, E. *et al., Monatsh. Chem.*, 1922, **43**, 469 (*struct, synth*)
Avramova, B. *et al., Khim. Prir. Soedin.*, 1970, **6**, 98; *Chem. Nat. Compd. (Engl. Transl.)*, 1970, **6**, 92 (*synth, Echinopsidine*)
Merchant, J.R. *et al., Chem. Ind. (Dekker).*, 1979, 320 (*synth*)
Chaudhuri, P.K. *et al., Phytochemistry*, 1987, **26**, 587 (*Echinopsidine*)

N-Methylsecoglaucine M-559

*3,4,6,7-Tetramethoxy-*N,N*-dimethyl-1-phenanthreneethanamine, 9CI. 1-(2-Dimethylaminoethyl)-3,4,6,7-tetramethoxyphenanthrene. Glaucine methyl methine*
[66396-10-9]



$C_{22}H_{27}NO_4$ 369.46
Aporphine-type numbering shown. Alkaloid from *Platycapnos spicata* and *Sarcocapnos enneaphylla* (Papaveraceae). Amorph. solid; cryst. (MeOH/Et_2O) (as hydrochloride). Mp 249-251° (hydrochloride).

N-*Me:* [10313-69-6]
Mp 278° (273-274°).

N-*De-Me: 1-(2-Methylaminoethyl)-3,4,6,7-tetramethoxyphenanthrene. Coryphenanthrine.* ***Secoglaucine***
[66190-61-2]
$C_{21}H_{25}NO_4$ 355.433
Alkaloid from the aerial parts of *Corydalis yanhusuo* (Papaveraceae).

O^1-*De-Me:* ***Thaliporphinemethine***
[100009-99-2]
$C_{21}H_{25}NO_4$ 355.433
Alkaloid from *Illigera pentaphylla* (Hernandiaceae). Amorph.

O^9-*De-Me:* ***Secoxanthoplanine***
[104385-49-1]
$C_{21}H_{25}NO_4$ 355.433
Alkaloid from leaves of *Dehaasia triandra*. Amorph. solid.

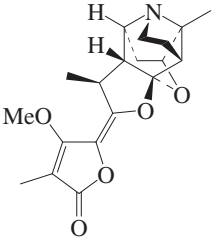
N,O^9-*Di-de-Me,* N-*Ac: 1-(*N-*Acetyl-*N-*methylamino)ethyl-7-hydroxy-3,4,6-trimethoxyphenanthrene.* **N-*Acetylseco*-N-*methyllaurotetanine***
[143084-45-1]
$C_{22}H_{25}NO_5$ 383.443
Alkaloid from heartwood of *Aromadendron elegans* (preferred genus name *Magnolia*) (Magnoliaceae). Needles (EtOAc/hexane). Mp 210-211°.

O^1,O^2-*Di-de-Me, 1,2-methylene ether:* ***Dicentrine methine***
$C_{21}H_{23}NO_4$ 353.417
Alkaloid from *Atherosperma* sp. Cytotoxic agent. Shows antiplatelet and vasorelaxing activity.

N,N,O^1-*Tri-de-Me: 1-(2-Aminoethyl)-3,6,7-trimethoxy-4-phenanthrenol.* ***Hemiargine C***
[710948-56-4]
$C_{19}H_{21}NO_4$ 327.379
Constit. of the leaves of *Croton hemiargyreus* var. *gymnodiscus.*

Bremner, J.B. *et al., Aust. J. Chem.*, 1978, **31**, 313 (*synth*)
Ross, S.A. *et al., J. Nat. Prod.*, 1985, **48**, 835 (*Thaliporphinemethine*)
Hu, T. *et al., Nanjing Yaoxueyuan Xuebao*, 1985, **16**, 7; *CA*, **103**, 175443u
Wu, Y.C. *et al., Planta Med.*, 1989, **55**, 163-165 (*Dicentrine methine*)
Blanco, O. *et al., Heterocycles*, 1990, **31**, 1077 (*isol, struct, synth*)
Tojo, E. *et al., Phytochemistry*, 1991, **30**, 1005 (*isol*)
Goh, S.H. *et al., Phytochemistry*, 1992, **31**, 2495 (*deriv*)
Blanco, O.M. *et al., Phytochemistry*, 1993, **32**, 1055 (*isol, pmr, cmr, ms*)
Chen, K.-S. *et al., J. Nat. Prod.*, 1996, **59**, 531-534 (*Dicentrine methine, activity*)
Lee, S.-S. *et al., Tetrahedron*, 1996, **52**, 6561 (*Secoxanthoplanine*)
Lin, W.-H. *et al., J. Chin. Pharm. Sci.*, 2003, **12**, 117-122 (*Hemiargine C*)

Methylstemofoline M-560

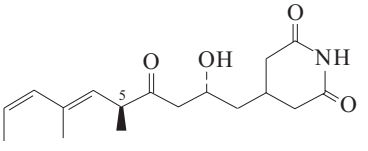


$C_{19}H_{23}NO_5$ 345.394
Lower homologue of Stemofoline, S-515. Alkaloid from an unidentified *Stemona* sp. Yellow gum. $[\alpha]_D^{23}$ +125 (c, 0.24 in $CHCl_3$).

Sastraruji, T. *et al., J. Nat. Prod.*, 2005, **68**, 1763-1767 (*isol, pmr, cmr*)

9-Methylstreptimidone M-561

4-(2-Hydroxy-5,7-dimethyl-4-oxo-6,8-decadienyl)-2,6-piperidinedione, 9CI. S 632A_2. TS 885. Antibiotic S 632A_2. Antibiotic TS 885
[51867-94-8]



$C_{17}H_{25}NO_4$ 307.389
Glutarimide-type antibiotic. Prod. by *Streptomyces hygroscopicus* S632 and *Streptomyces* sp. S-885. Antiviral and antifungal agent. NF-κB inhibitor. Pale-yellow oil. Sol. MeOH, EtOAc, CH_2Cl_2, $CHCl_3$, bases, C_6H_6; fairly sol. Et_2O; poorly sol. H_2O, acids, hexane, bases. Bp_1 135-140°. $[\alpha]_D$ +109.6 (c, 15 in $CHCl_3$). λ_{max} 232 (ϵ 23100); 291 (ϵ 790) (EtOH) (Derep). λ_{max} 231 (ϵ 15350); 283 (ϵ 1260); 291 (ϵ 1230) (EtOH) (Berdy).

▶ LD_{50} (mus, ivn) 210 mg/kg, LD_{50} (mus, ipr) 280 mg/kg. TM7510000

8,9-Epoxide: 8,9-Epoxy-9-methylstreptimidone. ***Antibiotic S 632B_1.*** *S 632B_1*
[121995-32-2 , 122620-15-9]
$C_{17}H_{25}NO_5$ 323.388
Prod. by *Streptomyces hygroscopicus* S632. Active against *Saccharomyces* spp. Cytotoxic. Pale yellow oil. Sol. MeOH, $CHCl_3$, EtOAc; poorly sol.

H_2O. $[\alpha]_D^{25}$ +68 (c, 1 in $CHCl_3$). λ_{max} 206 (ϵ 14500); 282 (ϵ 450) (EtOH) (Derep).

5-Hydroxy: ***5-Hydroxy-9-methylstreptimidone***
[162901-85-1]
$C_{17}H_{25}NO_5$ 323.388
Prod. by a *Streptomyces* sp. HIL Y-9065404. Shows herbicidal props. Solid. Sol. $CHCl_3$, MeOH, EtOAc. $[\alpha]_D$ -52.3 (c, 0.4 in $CHCl_3$). λ_{max} 238 (ϵ 23000); 290 (ϵ 790) (MeOH) (Derep).

8E-Isomer: ***Antibiotic S 632A$_3$***. *S 632A$_3$*
$C_{17}H_{25}NO_4$ 307.389
Prod. by *Streptomyces hygroscopicus* S632. Antitumour agent. Pale yellow oil. $[\alpha]_D^{28}$ +58.7 (c, 0.15 in $CHCl_3$). λ_{max} 233 ; 289 (MeOH).

Stereoisomer, 8,9-epoxide: ***Antibiotic S 632B$_2$***. *S 632B$_2$*
$C_{17}H_{25}NO_5$ 323.388
From *Streptomyces hygroscopicus* S632. Similar activity as S 632B$_1$. Pale yellow oil. Sol. MeOH, EtOAc, $CHCl_3$; poorly sol. H_2O. $[\alpha]_D^{25}$ +73 (c, 1 in $CHCl_3$). λ_{max} 206 (ϵ 14500); 282 (ϵ 450) (EtOH) (Derep).

Saito, N. *et al., J. Antibiot.*, 1974, **27**, 206-214 (*isol, struct*)
Allen, M.S. *et al., Aust. J. Chem.*, 1976, **29**, 673 (*isol, uv, ir, pmr, ms, biosynth*)
Becker, A.M. *et al., Helv. Chim. Acta*, 1976, **59**, 2393 (*ir, uv, ms, pmr, abs config*)
Otani, T. *et al., J. Antibiot.*, 1989, **42**, 647-653; 654-661 (*S 632B*)
Chatterjee, S. *et al., J. Antibiot.*, 1995, **48**, 271-273 (*5-Hydroxy-9-methylstreptimidone*)
Wang, Z.C. *et al., Heterocycles*, 2006, **69**, 377-383 (*isol, pmr, cmr, activity*)
Cheng, C.-L. *et al., J. Asian Nat. Prod. Res.*, 2006, **8**, 55-60 (*S 632A$_3$*)

Methylsuccirubine M-562

[1361-39-3]

$C_{20}H_{26}N_2O_3$ 342.437

Struct. unknown. Alkaloid from the bark of *Cinchona succirubra* (Rubiaceae). Mp 171-172°. $[\alpha]_D^{30}$ -87 (EtOH).

Qudrat-i-Khuda, M. *et al., Sci. Res. (Dacca)*, 1965, **2**, 1-7; *CA*, **63**, 12004g

10-(Methylsulfonyl)decanoic acid, 9CI M-563

$MeSO_2(CH_2)_9COOH$

$C_{11}H_{22}O_4S$ 250.358

► HD6420000

Amide: 10-(Methylsulfonyl)decanamide. ***Rorifamide***
[53078-91-4]
$C_{11}H_{23}NO_3S$ 249.374
Alkaloid from *Rorippa montana*.

Nitrile: 10-(Methylsulfonyl)decanenitrile. 9-Cyanononyl methyl sulfone. ***Rorifone***
Isol. from *Rorippa montana*. Antitussive, expectorant. Chinese folk remedy. Prisms (EtOH). Mp 45-46°. Bp_1 188-192°. Log P 1.2 (calc).

► LD_{50} (mus, orl) 355 mg/kg.

Shanghai Inst. of Materia Medica, *et al., Sci. Sin. (Engl. Edn.)*, 1973, **16**, 506; *CA*, **80**, 112554s (*amide, nitrile*)
Liang, Y. *et al., Zhongguo Yaoli Xuebao (Acta Pharmacol. Sin.)*, 1987, **8**, 147; *CA*, **106**, 207133y (*nitrile, occur*)
Liang, Y. *et al., Drugs of the Future*, 1988, **13**, 128 (*nitrile, rev*)

9-(Methylsulfonyl)nonylamine M-564

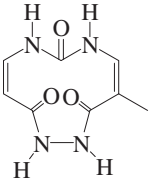
9-(Methylsulfonyl)nonanamine, 9CI. 9-Amininononyl methyl sulfone. ***Roripamine***
[166546-98-1]
$MeSO_2(CH_2)_8CH_2NH_2$
$C_{10}H_{23}NO_2S$ 221.363
Isol. from the whole herb of *Rorippa indica* (Brassicaceae). Pale yellow needles. Mp 153-155°.

N-*Ac:* [166406-57-1]
$C_{12}H_{25}NO_3S$ 263.4
Mp 130-132°.

Lin, Y.-L. *et al., Phytochemistry*, 1995, **39**, 919 (*isol, ir, pmr, ms, synth, struct*)

4-Methyl-1,2,6,8-tetraazacycloundeca-4,9-diene-3,7,11-trione, 9CI M-565

[246167-60-2]

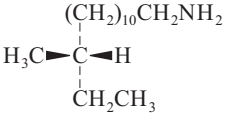


$C_8H_{10}N_4O_3$ 210.192
Isol. from the marine brown alga *Sargassum vachellianum*. Cryst. (MeOH). Mp 228-230°.

Xu, S.H. *et al., Chin. Chem. Lett.*, 1999, **10**, 401-402

12-Methyl-1-tetradecylamine M-566

12-Methyl-1-tetradecanamine, 9CI. 1-Amino-12-methyltetradecane. ***Medelamine B***



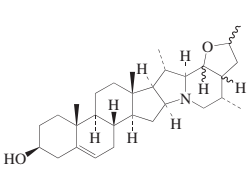
$C_{15}H_{33}N$ 227.432

(S)-form [168706-10-3]
Prod. by *Streptomyces* sp. NK14819. Cytotoxic agent. Sol. MeOH, EtOAc, $CHCl_3$; poorly sol. H_2O.

Morino, T. *et al., J. Antibiot.*, 1995, **48**, 904 (*isol, props*)

(2-Methyltetrahydrofuran)solanidine M-567

[868273-72-7]

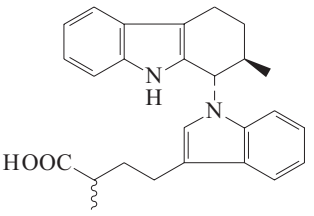


Absolute Configuration

$C_{30}H_{47}NO_2$ 453.707
Related to Solanidine, S-345. Alkaloid from the aerial parts of *Solanum cornifolium*.

Luis, E.C.S. *et al., Rev. Colomb. Quim.*, 2004, **33**, 7-12; *CA*, **143**, 418926m (*isol*)

α-Methyl-1-(2,3,4,9-tetrahydro-2-methyl-1*H*-carbazol-1-yl)-1*H*-indole-3-butanoic acid, 9CI M-568



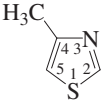
$C_{26}H_{28}N_2O_2$ 400.519

Me ester: [131669-95-9]
$C_{27}H_{30}N_2O_2$ 414.546
Alkaloid from the roots of *Murraya gleinei* (Rutaceae). Gum. $[\alpha]_D$ -7.5.

Kumar, V. *et al., Tet. Lett.*, 1990, **31**, 5217 (*isol, struct*)

4-Methylthiazole, 9CI M-569

FEMA 3716
[693-95-8]



C_4H_5NS 99.156
Present in asparagus and coffee. Flavouring ingredient. Liq. with nutty, green odour. Misc. H_2O. d_4^{25} 1.11. Bp 130-133° Bp_{59} 70-71°. n_D^{20} 1.5234. pK_a 3.15 (25°).

► XJ5096000

Picrate: Mp 181°.

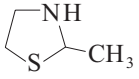
N-*Me:*
$C_5H_8NS^{\oplus}$ 114.191
Cryst. (EtOH/Et_2O) (as iodide). Mp 117-118.5° (iodide).

N-*Et:*
$C_6H_{10}NS^{\oplus}$ 128.218
Cryst. (EtOH/Et_2O) (as iodide). Mp 169-171° (iodide).

Aldrich Library of NMR Spectra, 2nd edn., 1983, **2**, 510D (*nmr*)
Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 643A (*ir*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 1491D (*ir*)
Bergen, G. *et al., Acta Chem. Scand.*, 1966, **20**, 2593 (*pmr*)
Vincent, E.J. *et al., Bull. Soc. Chim. Fr.*, 1966, 3524 (*nmr*)
Colebourne, N. *et al., J.C.S.(C)*, 1967, 685 (*synth*)
Gisele, D. *et al., Spectrochim. Acta A*, 1967, **23**, 2669 (*ir, Raman*)
Haag, A. *et al., Org. Mass Spectrom.*, 1976, **11**, 511 (*ms*)
Galy, J.P. *et al., Can. J. Chem.*, 1978, **56**, 46 (*cmr*)

Amato, J.S. *et al., Heterocycles*, 1984, **22**, 1947 (*synth*)
Bordwell, F.G. *et al., J.A.C.S.*, 1991, **113**, 985 (*deriv, synth*)
Pavlik, J.W. *et al., J.O.C.*, 1993, **58**, 3407 (*synth*)
Encyclopedia of Food and Color Additives, (ed. Burdock, G.A.), CRC Press, 1997, 1861-1862 (*occur, props*)

2-Methylthiazolidine, 9CI M-570
Tetrahydro-2-methylthiazole. 2-Methyltetrahydrothiazole
[24050-16-6]



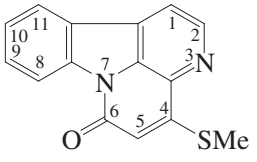
C_4H_9NS 103.188
► LD_{50} (mus, ipr) 250 mg/kg. XJ6061000

(±)-*form*
Used as aroma additive for food and tobacco.
Liq. Bp_{36} 76-78° Bp_5 37°.

(ξ)-*form*
Sex pheromone of cockroach *Nauphoeta cinerea*.

Surzur, J.-M. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1969, **268**, 2109 (*synth*)
Hillers, S. *et al., CA*, 1969, **71**, 70554y (*synth*)
Asinger, F. *et al., Monatsh. Chem.*, 1970, **101**, 1298 (*synth*)
Yasuhara, A. *et al., Agric. Biol. Chem.*, 1989, **53**, 2273 (*synth, ms, pmr*)
Barbry, D. *et al., J.C.S. Perkin 2*, 1990, 133 (*pmr, cmr, N-15 nmr*)
Sirugue, D. *et al., J. Chem. Ecol.*, 1992, **18**, 2261 (*occur*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, MPR000

4-(Methylthio)canthin-6-one M-571
*4-Methylthio-6*H*-indolo[3.2.1*-de*][1,5]-naphthyridin-6-one, 9CI. Alkaloid C*†
[157770-30-4]



$C_{15}H_{10}N_2OS$ 266.323
Alkaloid from the bark of *Pentaceras australis* and root bark of *Quassia africana*. Isol. from the mushroom *Boletus curtisii*. Antineoplastic agent. Needles ($CHCl_3$/EtOH). Mp 257-258°. Log P 3.07 (uncertain value) (calc). Incorr. indexed by CAS as 5-methylthio (1993).

Ayafor, J.F. *et al., Bull. Chem. Soc. Ethiop.*, 1993, **7**, 121; *CA*, **121**, 175195m (*isol, pmr, cmr, ms*)
Bröckelmann, M.G. *et al., Eur. J. Org. Chem.*, 2004, 4856-4863 (*isol, uv, ir, pmr, cmr, ms*)

5-(Methylthio)canthin-6-one M-572
*5-Methylthio-6*H*-indolo[3.2.1*-de*][1,5]-naphthyridin-6-one, 9CI*
$C_{15}H_{10}N_2OS$ 266.323
Alkaloid from the mushroom *Boletus curtisii*. Yellow solid. Mp 198-200°. λ_{max} 252 (log ε 4.27); 258 (log ε 4.28); 306 (log ε 3.9); 344 (sh) (log ε 3.77); 360 (log ε 4.07); 378 (log ε 4.23); 396 (log ε 4.05) ($CHCl_3$).

Bröckelmann, M.G. *et al., Eur. J. Org. Chem.*, 2004, 4856-4863 (*isol, uv, ir, pmr, cmr, ms*)

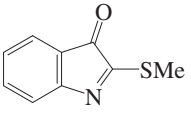
9-(Methylthio)canthin-6-one M-573
*9-Methylthio-6*H*-indolo[3.2.1*-de*][1,5]-naphthyridin-6-one, 9CI*
$C_{15}H_{10}N_2OS$ 266.323
Alkaloid from the mushroom *Boletus curtisii*. Yellow solid. λ_{max} 208 (log ε 1); 284 (log ε 0.47); 318 (log ε 0.33); 362 (log ε 0.4) ($CHCl_3$).

Bröckelmann, M.G. *et al., Eur. J. Org. Chem.*, 2004, 4856-4863 (*isol, uv, pmr, cmr, ms*)

11-(Methylthio)canthin-6-one M-574
*11-Methylthio-6*H*-indolo[3.2.1*-de*][1,5]-naphthyridin-6-one, 9CI*
$C_{15}H_{10}N_2OS$ 266.323
Alkaloid from the mushroom *Boletus curtisii*. Lemon-yellow solid. Mp 211-214°. λ_{max} 244 (log ε 4.04); 268 (log ε 4.05); 328 (sh) (log ε 3.72); 340 (log ε 3.75); 368 (log ε 3.75); 386 (log ε 3.87); 400 (sh) (log ε 3.71) ($CHCl_3$).

Bröckelmann, M.G. *et al., Eur. J. Org. Chem.*, 2004, 4856-4863 (*isol, uv, ir, pmr, cmr, ms*)

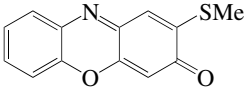
2-(Methylthio)-3*H*-indol-3-one M-575
[35524-66-4]



C_9H_7NOS 177.226
Constit. of egg masses of muricid molluscs, *Ceratostoma erinaceum* and *Trunculariopsis trunculus*. Red needles (petrol). Mp 133-134°. λ_{max} 249 (ε 30300); 284 (ε 6500); 328 (ε 1440); 344 (ε 500); 428 (ε 1970); 450 (ε 2030) (no solvent reported).

Baker, J.T. *et al., Aust. J. Chem.*, 1972, **25**, 2467-2475 (*synth, uv, ir*)
Benkendorff, K. *et al., Molecules*, 2001, **6**, 70-78 (*isol*)

2-(Methylthio)-3*H*-phenoxazin-3-one, 9CI M-576
[115695-20-0]



$C_{13}H_9NO_2S$ 243.286
Isol. from cultures of the mushroom *Calocybe gambosa* (St George's mushroom).

Kuchen, A. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1988, **321**, 363-365

3-(Methylthio)-2-propenoic acid, 9CI M-577
3-(Methylthio)acrylic acid, 8CI
[26995-94-8]
MeSCH═CHCOOH
$C_4H_6O_2S$ 118.156
Possesses antimicrobial props.

(*E*)-*form* [26398-93-6]
Metab. of *Streptomyces lincolnensis*. Cryst. (CCl_4). Mp 138-141° Mp 137°.

S-*Oxide, (±)-form: 3-(Methylsulfinyl)-2-propenoic acid*
[121949-97-1]
$C_4H_6O_3S$ 134.156

S,S-*Dioxide: 3-(Methylsulfonyl)-2-propenoic acid*
[63068-43-9]
$C_4H_6O_4S$ 150.155
Cryst. (EtOAc). Mp 111-113°.

Benzyl ester: ***Isotachin A***
[98259-97-3]
$C_{11}H_{12}O_2S$ 208.281
Constit. of *Isotachis japonica* and *Balantiopsis rosea*.

2-Methoxybenzyl ester: ***Isotachin C***
[107584-57-6]
$C_{12}H_{14}O_3S$ 238.307
From *Balantiopsis rosea*. Oil.

2-Phenylethyl ester: ***Isotachin B***
[98259-98-4]
$C_{12}H_{14}O_2S$ 222.307
From *Balantiopsis rosea*.

4-Bromophenacyl ester: Mp 110-111°.

Amide: 3-(Methylthio)-2-propenamide. 3-(Methylthio)acrylamide
[36846-63-6]
C_4H_7NOS 117.171
Alkaloid from *Clinacanthus siamensis* and metab. of *Streptomyces sioyaensis*. Needles ($CHCl_3$). Mp 117-118°.

Methylamide: N-*Methyl-3-(methylthio)-2-propenamide.* ***Penangine***
[150071-78-6]
C_5H_9NOS 131.198
Alkaloid from the leaves of *Glycosmis chlorosperma* and *Glycosmis citrifolia*. Cryst. (Et_2O). Mp 70-71°. λ_{max} 230 (sh) ; 261 (Et_2O).

Methylamide, S-*oxide:* ***Glycothiomin A***
[167504-55-4]
$C_5H_9NO_2S$ 147.198
Isol. from leaves of *Glycosmis citrifolia* (Rutaceae). Needles ($CHCl_3$). Mp 160-161°. λ_{max} 205 ; 260 (MeOH).

(*Z*)-*form* [70424-09-8]
Mp 99-100° Mp 123-123.9°.

Methylamide: ***Isopenangine***
[150036-28-5]
Alkaloid from the leaves of *Glycosmis chlorosperma*. Cryst. (Et_2O). Mp 120-121°.

Methylamide, S-*oxide:* ***Glycothiomin B***
[167504-56-5]
From leaves of *Glycosmis citrifolia* (Rutaceae). Yellow oil. λ_{max} 211 ; 251 (sh) ; 293 (sh) (MeOH).

[63068-05-3]

Stoll, A. *et al., Experientia*, 1956, **12**, 361 (*synth*)
Novotny, L. *et al., Coll. Czech. Chem. Comm.*, 1964, **29**, 2182 (*synth*)
Hart, N.K. *et al., Aust. J. Chem.*, 1966, **19**, 1259
Yagi, S. *et al., Agric. Biol. Chem.*, 1972, **36**, 336 (*isol*)
Surette, R. *et al., J. Antibiot.*, 1976, **29**, 646 (*biosynth*)
Topek, K. *et al., Coll. Czech. Chem. Comm.*, 1978, **43**, 2395 (*synth*)
Asakawa, Y. *et al., Phytochemistry*, 1985, **24**, 1505; 1986, **25**, 2543 (*Isotachins*)
Ikegami, F. *et al., Phytochemistry*, 1989, **28**, 881 (*oxide*)
Deshmukh, A.R.A.S. *et al., Synth. Commun.*, 1990, **20**, 2259 (*synth, Isotachin C*)
De Medeiros, E.F. *et al., J.C.S. Perkin 1*, 1991, 2725 (*synth*)
Greger, H. *et al., Phytochemistry*, 1993, **32**, 933-936 (*Penangin, Isopenangin*)
Hinterberger, S. *et al., Tetrahedron*, 1994, **50**, 6279-6286 (*Penangin, Isopenangin, synth*)
Wu, T.S. *et al., Phytochemistry*, 1995, **39**, 1453-1457 (*Glycothiomins*)
Hinterberger, S. *et al., Tetrahedron*, 1998, **54**, 487-496 (*dioxide, synth, pmr, cmr, ms*)
Tuntiwachwuttikul, P. *et al., Chem. Pharm. Bull.*, 2003, **51**, 1423-1425 (*amide*)

3-(Methylthio)propylamine, 8CI M-578

3-(Methylthio)propanamine, 9CI. 3-Methylmercaptopropylamine. 3-Aminopropyl methyl sulfide
[4104-45-4]
$H_2NCH_2CH_2CH_2SMe$
$C_4H_{11}NS$ 105.204
Constit. of roasted cocoa beans. Formed by *Streptomyces* from Methionine. Constit. of *Iberis amara* and from the brown alga *Desmarestia aculeata*. Steam-volatile liq. Misc. H_2O, EtOH, Et_2O. Bp 170° Bp_{14} 66-67°.

Hydrochloride: [2419-62-7]
Hygroscopic needles (Me_2CO). Mp 144°.
▶ UI4100000

Picrate:
Cryst. Mp 126-127°.

S-*Oxide* (R-*): 3-(Methylsulfinyl)propylamine*
[15813-61-3]
[3470-43-7]
$C_4H_{11}NOS$ 121.203
Found in *Iberis amara*. Cryst. Mp 27°. $Bp_{0.04}$ 90-91°. $[\alpha]_D^{19}$ +117.8 (c, 1.04 in EtOH).

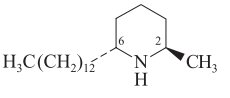
S,S-*Dioxide: 3-(Methylsulfonyl)propylamine*
[26209-83-6]
$C_4H_{11}NO_2S$ 137.202
Hygroscopic cryst. Mp 44°. Bp_6 165-168°.

Schneider, W. *et al., Annalen*, 1910, **375**, 207-254 (*S,S-dioxide, synth*)
Karrer, P. *et al., Helv. Chim. Acta*, 1950, **33**, 1237-1245; 1951, **34**, 1392-1399 (*synth, R-S-oxide*)
Dose, K. *et al., Chem. Ber.*, 1957, **90**, 1251 (*synth*)
Suyama, T. *et al., Yakugaku Zasshi*, 1964, **84**, 1012; *CA*, **62**, 6552 (*synth*)
Cheung, K.K. *et al., Chem. Comm.*, 1965, 100-102 (*R-S-oxide, abs config*)
Hartmann, T. *et al., Naturwissenschaften*, 1968, **55**, 391 (*isol*)
Pesch, R. *et al., Org. Mass Spectrom.*, 1974, **9**, 861 (*ms*)
Dalgaard, L. *et al., Phytochemistry*, 1977, **16**, 931-932 (*R-S-oxide, isol*)
Granvogl, M. *et al., J. Agric. Food Chem.*, 2006, **54**, 1730-1739 (*detn, cocoa*)

12-Methyl-1-tridecylamine M-579

12-Methyl-1-tridecanamine, 9CI. 1-Amino-12-methyltridecane. ***Medelamine A***
[168706-09-0]
$(H_3C)_2CH(CH_2)_{10}CH_2NH_2$
$C_{14}H_{31}N$ 213.406
Prod. by *Streptomyces* sp. NK14819. Cytotoxic agent. Sol. MeOH, EtOAc, $CHCl_3$; poorly sol. H_2O.
▶ LD_{50} (mus, ipr) 25-50 mg/kg.
Morino, T. *et al., J. Antibiot.*, 1995, **48**, 904 (*isol, props*)

2-Methyl-6-tridecylpiperidine, 9CI M-580



(2*R**,6*R**)*-form*

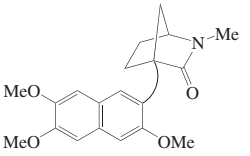
$C_{19}H_{39}N$ 281.524

(2R*,6R*)-form
trans-*form.* ***Solenopsine B***
[32778-77-1]
Minor component of the venom of the red form of the fire ant (*Solenopsis saevissima*). Also present in the venom of *Solenopsis invicta*. Oil.

*4′,5′-Didehydro (Z-): **2-Methyl-6-(4-tridecenyl)piperidine.** Dehydrosolenopsin B*
[32778-76-0]
$C_{19}H_{37}N$ 279.508
Major component of venom of *Solenopsis saevissima*, also found in *Solenopsis xyloni* and *Solenopsis geminata*. Dehydrosolenopsin B is the 2,6-*trans*-form but the *cis*-form also occurs.

(2R*,6S*)-form
cis-*form*
[35285-26-8]
Minor component of the venoms of both red and black forms of *Solenopsis saevissima, Solenopsis xyloni* and *Solenopsis geminata*. Trace component of the venom of *Solenopsis aurea*. Oil.
MacConnell, J.G. *et al., Tetrahedron*, 1971, **27**, 1129 (*isol, synth, ms*)
Maruoka, K. *et al., J.A.C.S.*, 1983, **105**, 2831 (*synth*)
Taber, D.F. *et al., J.O.C.*, 1988, **53**, 2968 (*synth, ir, pmr, cmr, ms, Solenopsin B*)
Kotsuki, H. *et al., Tet. Lett.*, 1991, **32**, 4159 (*synth*)

2-Methyl-4-(3,6,7-trimethoxy-2-naphthalenyl)-2-azabicyclo[2.2.1]heptan-3-one M-581



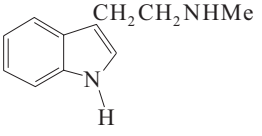
Relative Configuration

$C_{20}H_{23}NO_4$ 341.406

(+)-form [288847-45-0]
Alkaloid from *Delphinium caeruleum*.
Pan, Y.-J. *et al., CA*, 2000, **133**, 190514f (*isol*)

N-Methyltryptamine M-582

N-*Methyl-1*H-*indole-3-ethanamine, 9CI. 3-(2-Methylaminoethyl)indole.* ***Dipterine***
[61-49-4]



$C_{11}H_{14}N_2$ 174.245
Alkaloid from *Virola theiodora, Girgensohnia diptera, Acacia maidenii, Arthrophytum leptocladum, Zanthoxylum arborescens* and others (Myristicaceae, Chenopodiaceae, Fabaceae, Rutaceae). Prisms (petrol). Mp 90° (87-88°). λ_{max} 229 ; 275 ; 284 ; 292 (EtOH).
▶ NM0450000

Hydrochloride: Mp 180°.

Picrate:
Red needles. Mp 193-195° (190°).

N^b-*Formyl:* ***N^b-Formyl-N^b-methyltryptamine***
[54268-27-8]
$C_{12}H_{14}N_2O$ 202.255
Isol. from *Acacia simplicifolia, Testulea gabonensis* and *Virola sebifera*. Oil; orange needles (as picrate). Mp 107.5-109.5° (picrate).

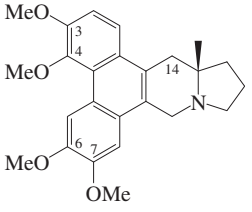
N^b-*Ac:* ***N^b-Acetyl-N^b-methyltryptamine***
[91821-04-4]
$C_{13}H_{16}N_2O$ 216.282
Alkaloid from stems of *Limonia acidissima* (wood apple) (Rutaceae). Amorph.

N^b-*(3-Methylbutanoyl):* ***Methylmadugin***
[190850-86-3]
$C_{16}H_{22}N_2O$ 258.363
Alkaloid from leaves of *Clausena indica*. Oil. λ_{max} 224 ; 274 (sh) ; 283 ; 292 (Et_2O).

N^b-*(2-Methylaminobenzoyl):* ***Evodiamide.*** N-*Methyl*-N-*(2-methylaminobenzoyl)tryptamine*
[116965-70-9]
$C_{19}H_{21}N_3O$ 307.394
Alkaloid from the fruits of *Evodia rutaecarpa*. Prisms (C_6H_6). Mp 208-209°. λ_{max} 221 (log ϵ 4.65); 250 (log ϵ 4); 284 (log ϵ 3.84); 291 (log ϵ 3.82); 311 (log ϵ 3.44) (EtOH).

N^b-*Hydroxy:* **N^b-*Hydroxy*-N^b-*methyltryptamine***
[57383-99-0]
$C_{11}H_{14}N_2O$ 190.244
Alkaloid from the roots of *Desmanthus illinoensis* (Fabaceae). Prisms (C_6H_6). Mp 100-101°.
Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 661A (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 132A (*nmr*)
Yurashevskii, N.K. *et al., J. Gen. Chem. USSR (Engl. Transl.)*, 1940, **10**, 1781-1783; *CA*, **35**, 4016 (*isol, struct*)
Cohen, L.A. *et al., J.A.C.S.*, 1960, **82**, 2184-2187 (*synth, pmr*)
Fitzgerald, J.S. *et al., Aust. J. Chem.*, 1965, **18**, 433-434 (*isol, struct*)
Nakagawa, M. *et al., Tetrahedron*, 1974, **30**, 2591-2600 (*N-formyl*)
Nakagawa, M. *et al., J.A.C.S.*, 1975, **97**, 6496-6501 (*N-Hydroxy-N-methyltryptamine*)
Poupat, C. *et al., Phytochemistry*, 1976, **15**, 2019-2020 (*N-formyl*)
Grina, J.A. *et al., J.O.C.*, 1982, **47**, 2648-2651 (*isol, uv, pmr, ms*)
Zarga, M.H.A. *et al., J. Nat. Prod.*, 1986, **49**, 901-904 (*N^b-Acetyl-N^b-methyltryptamine*)
Thompson, A.C. *et al., J. Agric. Food Chem.*, 1987, **35**, 361-365 (*N-Hydroxy-N-methyltryptamine*)
Shoji, N. *et al., J. Nat. Prod.*, 1988, **51**, 791-792 (*Evodiamide*)
Riemer, B. *et al., Phytochemistry*, 1997, **45**, 337-341 (*Methylmadugin*)

13*a*-Methyltylohirsutine M-583



(*S*)-*form*

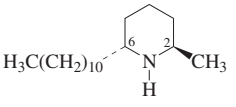
$C_{25}H_{29}NO_4$ 407.508

(*S*)-*form*
O^4-*De-Me:* ***14-Desoxy-13*a*-methyltylohirsutinidine***
$C_{24}H_{27}NO_4$ 393.482
Minor alkaloid from aerial parts of *Tylophora hirsuta* (Asclepiadaceae). Light-yellow flakes (Me_2CO). Mp 180-182°. $[\alpha]_D^{18}$ +14.66 (c, 0.2 in MeOH).
O^4-*De-Me, Ac:* Mp 187-188°.
O^4,O^6-*Di-de-Me:* ***Tyloindicine C***
[126624-15-5]
$C_{23}H_{25}NO_4$ 379.455
Alkaloid from the aerial parts of *Tylophora indica* (Asclepiadaceae). Brown beads (Me_2CO). Mp 223-225°. $[\alpha]_D^{35}$ +16 (c, 0.25 in MeOH).
O^4,O^6-*Di-de-Me, di-Ac:* Mp 176-177°.
14ξ-Hydroxy: Mp 200-201°.
14ξ-Hydroxy, O^4-*de-Me:* ***13*a*-Methyltylohirsutinidine***
[95066-43-6]
$C_{24}H_{27}NO_5$ 409.481
Alkaloid from the aerial parts of *Tylophora hirsuta* (Asclepiadaceae). Flakes (Me_2CO). Mp 213-214°. $[\alpha]_D^{25}$ +120 (c, 0.6 in $CHCl_3$).

(ξ)-*form*
Alkaloid from the aerial parts of *Tylophora hirsuta* (Asclepiadaceae). Light-yellow flakes (Me_2CO). Mp 196-198°. Prob. racemic. λ_{max} 254 (log ε 4.6); 262 (log ε 4.4); 278 (log ε 3.4); 284 (log ε 3.1); 304 (log ε 2.6); 315 (log ε 2.5); 343 (log ε 1.9); 360 (log ε 1.8) (MeOH).
Bhutani, K.K. *et al., Phytochemistry*, 1984, **23**, 1765-1769 (*13a-Methyltylohirsutine, 13a-Methyltylohirsutinidine*)
Ali, M. *et al., Phytochemistry*, 1987, **26**, 2089-2092; 1989, **28**, 3513-3517 (*14-Desoxy-13a-methyltylohirsutinidine, Tyloindicine C*)

2-Methyl-6-undecylpiperidine, 9CI M-584

[83709-88-0]
[35285-24-6 , 76094-26-3 , 92619-72-2]



(2*R*,6*R*)-*form*

$C_{17}H_{35}N$ 253.47

(2*R*,6*R*)-*form*
trans-*form*. ***Solenopsine A***
[137038-57-4]
One of the major components of the venoms of fire ants spp. *Solenopsis xyloni, Solenopsis geminata, Solenopsis aurea*. Minor component of venoms of both red and black forms of *Solenopsis saevissima*. Also present in *Solenopsis invicta*. Oil. $[\alpha]_D^{20}$ -1.3 (c, 1.3 in MeOH).
Hydrochloride: Mp 147-150° (141-142°). $[\alpha]_D^{20}$ -7.7 (c, 0.51 in $CHCl_3$).
1,2-Didehydro: 2,3,4,5-Tetrahydro-6-methyl-2-undecylpyridine. ***1-Methyl-6-undecyl-Δ^2-piperidine***
$C_{17}H_{33}N$ 251.454
From *Solenopsis* spp.

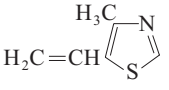
(2*R*,6*S*)-*form*
cis-*form*. ***Isosolenopsin A***
[137038-58-5]
One of the major components of the venoms of *Solenopsis xyloni, Solenopsis geminata* and *Solenopsis aurea*. Minor component in venoms of both red and black forms of *Solenopsis saevissima*. Oil. $[\alpha]_D^{22}$ -10.6 (c, 0.33 in $CHCl_3$) (as hydrochloride).

(2*RS*,6*RS*)-*form*
(±)-trans-*form*
[28720-60-7]
[63950-17-4]
Oil. Mp 114° (as hydrochloride).

(2*RS*,6*SR*)-*form*
(±)-cis-*form*
[63950-16-3]
Oil. $Bp_{0.02}$ 91-96°.
Hydrochloride: [128561-86-4]
Cryst. (hexane/EtOH). Mp 155°.
MacConnell, J.G. *et al., Tetrahedron*, 1971, **27**, 1129-1139 (*isol, synth, ms, ir, pmr*)
Moriyama, Y. *et al., Tet. Lett.*, 1977, 825-828 (*synth, ms, cmr*)
Maruoka, K. *et al., J.A.C.S.*, 1983, **105**, 2831 (*synth*)
Wasserman, H.H. *et al., Tet. Lett.*, 1988, **29**, 4977 (*synth*)
Nagasaka, T. *et al., Heterocycles*, 1989, **29**, 2157-2166 (*synth*)
Adams, D.R. *et al., J.C.S. Perkin 1*, 1989, 1507-1513 (*synth*)
Comins, D.L. *et al., J.O.C.*, 1991, **56**, 2506-2512 (*synth*)
Jefford, C.W. *et al., Tet. Lett.*, 1993, **34**, 2911-2914 (*synth, nmr*)
Leclerq, S. *et al., Tetrahedron*, 1994, **50**, 8465-8478 (*synth, cmr, abs config*)
Chackalamannil, S. *et al., Tetrahedron*, 1997, **53**, 11203-11210 (*synth*)
Reding, M.T. *et al., J.O.C.*, 1998, **63**, 6344-6347 (*synth*)
Poerwono, H. *et al., Tetrahedron*, 1998, **54**, 13955-13970 (*synth*)
Amat, M. *et al., Tetrahedron: Asymmetry*, 1998, **9**, 2419-2422 (*synth*)
Wilkinson, T.J. *et al., Org. Lett.*, 2000, **2**, 155-158 (*synth*)
Wang, X. *et al., J.O.C.*, 2005, **70**, 1897-1900 (*synth*)

4-Methyl-5-vinylthiazole, 8CI M-585

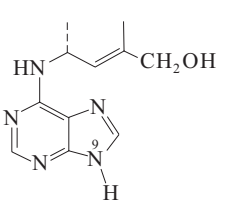
5-Ethenyl-4-methylthiazole. FEMA 3313
[1759-28-0]



C_6H_7NS 125.194
Found in passion fruit and garlic. Meat flavouring ingredient. d_{25}^{25} 1.09. Bp_{25} 78-80° Bp_{19} 78-82° (lit. gives a pressure range).
▶ LD_{50} (mus, orl) 400 mg/kg. XJ5104000
Picrate:
Needles (AcOH). Mp 162-163°.
Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 643B (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 111A (*nmr*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 1493C (*ir*)
Buchman, E.R. *et al., J.A.C.S.*, 1945, **67**, 395-399 (*synth*)
Bachmann, G.B. *et al., J.A.C.S.*, 1949, **71**, 1985-1988 (*synth*)
Murav'eva, K.M. *et al., Zh. Obshch. Khim.*, 1963, **33**, 3723-3725; *J. Gen. Chem. USSR (Engl. Transl.)*, 1963, **33**, 3655-3657 (*synth*)
Schilling, C.L. *et al., Macromolecules*, 1968, **1**, 445-451 (*pmr*)
Fr. Pat., 1974, 2 329 309; *CA*, **82**, 170885c (*synth*)
Strauss, C.R. *et al., Chem. Ind. (London)*, 1978, 232-233 (*occur*)
Fenaroli's Handbook of Flavor Ingredients, 3rd edn., (ed. Burdock, G.A.), CRC Press, 1995, **2**, 583 (*rev*)
Encyclopedia of Food and Color Additives, (ed. Burdock, G.A.), CRC Press, 1997, 1884 (*rev*)

1′-Methylzeatin M-586

*2-Methyl-4-(1*H*-purin-6-ylamino)-2-penten-1-ol, 9CI. 6-(4-Hydroxy-1,3-dimethyl-2-butenylamino)purine*



$C_{11}H_{15}N_5O$ 233.272

(*R*)-*form* [101512-26-9]
Isol. from the culture filtrate of *Pseudomonas syringae* p.v. *savastanoi*. Sol. H_2O. Mp 201-202°. $[\alpha]_D^{26}$ -109 (c, 0.153 in EtOH) (-52.6). λ_{max} 270 (ϵ 11359) (EtOH) (Berdy). λ_{max} 269 (ϵ 11842) (H_2O) (Berdy). λ_{max} 272 (ϵ 17900); 275 (ϵ 11912) (pH 10 buffer) (Berdy). λ_{max} 275 (ϵ 17400) (pH 1 buffer) (Berdy).

9-β-D-Ribofuranosyl: [98211-30-4]
$C_{16}H_{23}N_5O_5$ 365.388
Isol. from *Pseudomonas syringae* p.v. *savastanoi*. Cytokinin. Cryst. + ½H_2O. Sol. MeOH. Mp 130-132°. $[\alpha]_D^{14}$ -117 (c, 0.102). λ_{max} 265 (ϵ 19200) (pH 1 H_2O) (Derep). λ_{max} 269 (ϵ 19400) (pH 13 H_2O) (Derep). λ_{max} 270 (ϵ 18400) (95% EtOH) (Derep).

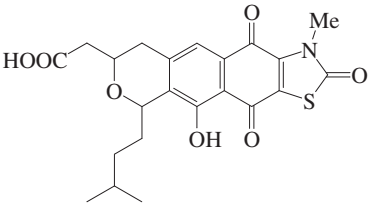
2-Hydroxy: ***2-Hydroxy-1′-methylzeatin***
[137592-13-3]
$C_{11}H_{15}N_5O_2$ 249.272
Prod. by *Alternaria brassicae* and isol. from marine green algae (NIO-143). Shows cytokinin activity. Plant growth stimulator. Sol. MeOH. Mp 300°. $[\alpha]_D^{19}$ +41.6 (c, 0.288 in MeOH). Darkens at 275°. Probable abs. config. λ_{max} 232 ; 242 ; 262 ; 282 (MeOH) (Berdy). λ_{max} 256 ; 288 (MeOH/HCl) (Berdy). λ_{max} 257 ; 288 (MeOH/NaOH) (Berdy).

(±)-*form* [127516-55-6]
Prisms (H_2O). Mp 175.5-176.5°.

Surico, G. *et al., Phytochemistry*, 1985, **24**, 1499-1502 (*isol, pmr, cmr, ms, uv*)
Evidente, A. *et al., Phytochemistry*, 1986, **25**, 525-526 (*isol, pmr, cmr, uv, ms*)
Itaya, T. *et al., Tet. Lett.*, 1986, **27**, 6349 (*synth, cd, abs config*)
Fujii, T. *et al., Chem. Pharm. Bull.*, 1989, **37**, 3119-3121; 1990, **38**, 2702-2706 (*synth, uv, pmr, cmr*)
Ohba, M. *et al., Heterocycles*, 1990, **31**, 599-602 (*cmr*)
Farooqi, A.H.A. *et al., Phytochemistry*, 1990, **29**, 2061-2063 (*isol, 2-hydroxy*)
Dahiya, J.S. *et al., Phytochemistry*, 1991, **30**, 2825-2828 (*isol, 2-hydroxy*)
Fujii, T. *et al., Heterocycles*, 1992, **34**, 21-24 (*2-hydroxy, synth, abs config*)
Fujii, T. *et al., Heterocycles*, 1997, **46**, 659-671 (*rev*)

Mevashuntin M-587

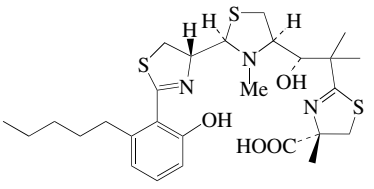
[848940-01-2]



$C_{22}H_{23}NO_7S$ 445.492
Prod. by *Streptomyces prunicolor* 1884-SVT2 treated with Pravastatin. Orange powder. Mp 166-167°. $[\alpha]_D^{21}$ -415.5 (c, 0.03 in $CHCl_3$). λ_{max} 245 (ϵ 22200); 264 (ϵ 31100); 326 (ϵ 9300); 434 (ϵ 6500) (MeOH). λ_{max} 242 (ϵ 33200); 290 (sh) (ϵ 9300); 326 (ϵ 9300); 420 (sh) (ϵ 2900); 565 (ϵ 6700) (MeOH/NaOH).

Shin-ya, K. *et al., Tet. Lett.*, 2005, **46**, 1273-1276 (*isol, uv, pmr, cmr*)

Micacocidins M-588



$C_{27}H_{39}N_3O_4S_3$ 565.821
The Micacocidins are octahedral η^6 metallocomplexes of the organic ligand shown (in an anionic form). Antifungal agent.

Zn complex: ***Micacocidin A***. *Antibiotic B057-250A. B057-250A*
[176950-36-0]
$C_{27}H_{37}N_3O_4S_3Zn$ 629.195
Prod. by a *Pseudomonas* sp. No. 57-250. Active against *Mycoplasma* spp. Orange powder or rhombic cryst. (MeOH/EtOAc). Sol. MeOH, CH_2Cl_2, $CHCl_3$, EtOH; fairly sol. EtOAc; poorly sol. H_2O, butanol, hexane. Mp 226-228°. $[\alpha]_D^{24}$ +53.2 (c, 1 in MeOH). λ_{max} 238 (ϵ 19900); 264 (sh) (ϵ 12900); 336 (ϵ 5530) (MeOH). λ_{max} 221 ; 265 (MeOH/HCl) (Berdy). λ_{max} 275 ; 375 (MeOH/NaOH) (Berdy).

Cu complex: ***Micacocidin B***. *Antibiotic B057-250B. B057-250B*
[176950-35-9]
$C_{27}H_{37}CuN_3O_4S_3$ 627.351
Prod. by *Pseudomonas* sp. No. 57-250. Active against *Mycoplasma* spp. Green cryst. or orange powder. Sol. MeOH, $CHCl_3$, CH_2Cl_2, EtOH, DMSO; fairly sol. EtOAc; poorly sol. H_2O, hexane, butanol. Mp 251-253°. $[\alpha]_D^{24}$ -1369.2 (c, 0.1 in MeOH). λ_{max} 223 (ϵ 22000); 275 (ϵ 14000); 375 (ϵ 2400) (MeOH). λ_{max} 221 ; 265 (MeOH/HCl) (Berdy). λ_{max} 275 ; 375 (MeOH/NaOH) (Berdy).

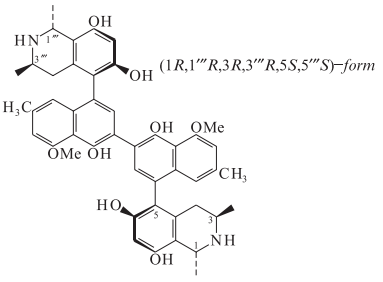
Fe complex: ***Micacocidin C***. *Antibiotic B057-250C. B057-250C*
[176950-37-1]
$C_{27}H_{36}FeN_3O_4S_3$ 618.644
Prod. by *Pseudomonas* sp. No. 57-250. Active against *Mycoplasma* spp. Red-brown powder. Sol. MeOH, $CHCl_3$, EtOH, CH_2Cl_2, DMSO; fairly sol. EtOAc; poorly sol. H_2O, hexane, butanol. λ_{max} 218 ; 239 (MeOH). λ_{max} 221 ; 242 (MeOH/HCl) (Berdy). λ_{max} 219 ; 239 (MeOH/NaOH) (Berdy).

Co complex: ***Antibiotic B057-250D***. *B057-250D*
[176950-38-2]
$C_{27}H_{37}CoN_3O_4S_3$ 622.738
Prod. by a *Pseudomonas* sp. No. 57-250. Yellow powder. Sol. MeOH, $CHCl_3$, EtOH, CH_2Cl_2; poorly sol. H_2O, hexane, butanol. Mp 251-253°. $[\alpha]_D^{23}$ +28.4 (c, 0.95 in MeOH). λ_{max} 202 (ϵ 22800); 237 (ϵ 25500); 265 (ϵ 18300); 337 (ϵ 5600) (MeOH). λ_{max} 221 ; 265 (MeOH/HCl) (Berdy). λ_{max} 275 ; 375 (MeOH/NaOH) (Berdy).

Ni complex: ***Antibiotic B057-250E***. *B057-250E*
[176950-39-3]
$C_{27}H_{37}N_3NiO_4S_3$ 622.495
Prod. by a *Pseudomonas* sp. No. 57-250. Yellow powder. Sol. MeOH, EtOH, $CHCl_3$, CH_2Cl_2; poorly sol. H_2O, butanol, hexane. Mp 287-288°. $[\alpha]_D^{23}$ +197.6 (c, 0.49 in MeOH). λ_{max} 202 (ϵ 21300); 235 (ϵ 24800); 265 (ϵ 15600); 370 (ϵ 4700) (MeOH). λ_{max} 221 ; 265 (MeOH/HCl) (Berdy). λ_{max} 275 ; 375 (MeOH/NaOH) (Berdy).

Pat. Coop. Treaty (WIPO), 1996, 96 4 262; *CA*, **125**, 8683v
Kobayashi, S. *et al., J. Antibiot.*, 1998, **51**, 323-327; 328-332 (*isol, uv, ir, pmr, cmr, ms, cryst struct*)
Ino, A. *et al., Tetrahedron*, 1999, **55**, 10271-10282; 10283-10294 (*synth*)
Kobayashi, S. *et al., J. Antibiot.*, 2000, **53**, 532-539 (*synth, activity*)

Michellamine M-589



$C_{46}H_{48}N_2O_8$ 756.894

(1*R*,1‴*R*,3*R*,3‴*R*,5*R*,5‴*R*)-*form*
Michellamine C
[143168-23-4]
Alkaloid from *Ancistrocladus korupensis* (Ancistrocladaceae). Shows anti-HIV-cytopathic activity. $[\alpha]_D$ -16.8 (c, 0.14 in MeOH).

(1*R*,1‴*R*,3*R*,3‴*R*,5*R*,5‴*S*)-*form*
Michellamine B
[137893-48-2]
Alkaloid from *Ancistrocladus abbreviatus* and *Ancistrocladus korupensis* (Ancistrocladaceae). Shows anti-HIV-cytopathic activity. $[\alpha]_D$ -14.8 (c, 0.74 in MeOH). Stereoisomeric (atropisomeric) with Michellamine A at one of the biaryl functions. λ_{max} 230 (ϵ 25118); 262 (ϵ 12590); 287 (ϵ 6310); 312 (ϵ 6310); 333 (ϵ 6310); 344 (ϵ 6310) (MeOH) (Berdy).

Diacetate salt: NSC 661755
[185310-27-4 , 185310-28-5] Anti-HIV agent.

8‴-Me ether: ***Michellamine D***
[191539-52-3]

$C_{47}H_{50}N_2O_8$ 770.921
Alkaloid from *Ancistrocladus korupensis* (Ancistrocladaceae). Amorph. solid. $[\alpha]_D$ -13.7 (c, 0.04 in MeOH) (as acetate salt). λ_{max} 207 (log ϵ 4.86); 230 (log ϵ 4.82); 264 (log ϵ 4.55); 331 (log ϵ 4.24); 344 (log ϵ 4.25) (MeOH).

1‴,2‴-Didehydro, 8‴-Me ether: ***Michellamine F***
[191539-54-5]
$C_{47}H_{48}N_2O_8$ 768.905
Alkaloid from *Ancistrocladus korupensis*. $[\alpha]_D$ +55 (c, 0.06 in MeOH). λ_{max} 205 (log ϵ 4.89); 233 (log ϵ 4.9); 238 (log ϵ 4.9); 261 (log ϵ 4.68); 331 (log ϵ 4.45); 347 (log ϵ 4.51) (MeOH).

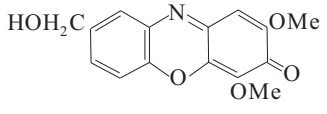
(1R,1‴R,3R,3‴R,5S,5‴S)-form
Michellamine A
[137793-81-8]
Alkaloid from *Ancistrocladus abbreviatus* and *Ancistrocladus korupensis* (Ancistrocladaceae). Exhibits anti-HIV-cytopathic activity. $[\alpha]_D$ -10.5 (c, 0.38 in MeOH). λ_{max} 230 (ϵ 25000); 262 (ϵ 12500); 287 (ϵ 6300); 312 (ϵ 6300); 331 (ϵ 6300); 344 (ϵ 6300) (MeOH) (Berdy).

(1R,1‴R,3S,3‴R,5R,5‴S)-form
N^2-*Me:* ***Michellamine E***
[191539-53-4]
$C_{47}H_{50}N_2O_8$ 770.921
Alkaloid from *Ancistrocladus korupensis*. Light brown solid. $[\alpha]_D$ +33.6 (c, 0.07 in MeOH). λ_{max} 207 (log ϵ 4.84); 230 (log ϵ 4.8); 263 (log ϵ 4.54); 331 (log ϵ 4.22); 345 (log ϵ 4.24) (MeOH).

Manfredi, K.P. *et al., J. Med. Chem.*, 1991, **34**, 3402 (*isol, uv, ir, pmr, cmr, struct*)
Boyd, M.R. *et al., J. Med. Chem.*, 1994, **37**, 1740 (*Michellamine C, abs config*)
Kelly, T.R. *et al., Tet. Lett.*, 1994, **35**, 7621 (*synth*)
Hoye, T.R. *et al., Tet. Lett.*, 1994, **35**, 8747 (*synth*)
Bringmann, G. *et al., Tetrahedron*, 1994, **50**, 7807 (*cd*)
Supko, J.G. *et al., Antimicrob. Agents Chemother.*, 1995, **39**, 9-14 (*Michellamine B, pharmacol*)
Bringmann, G. *et al., Annalen*, 1996, 2045-2058 (*synth*)
Hobbs, P.D. *et al., Chem. Comm.*, 1996, 923 (*synth*)
Hallock, Y.F. *et al., J. Nat. Prod.*, 1997, **60**, 677 (*isol, uv, ir, cd, pmr, cmr*)
Bringmann, G. *et al., J.O.C.*, 1998, **63**, 1090-1097 (*synth*)
Hoye, T.R. *et al., J.O.C.*, 1999, **64**, 7184-7201 (*synth*)
Bringmann, G. *et al., Synthesis*, 2000, 1843-1847 (*Michellamine A, Michellamine C*)
Bringmann, G. *et al., Tetrahedron*, 2003, **59**, 1245-1253 (*cd, conformn*)

Michigazone M-590

*8-(Hydroxymethyl)-2,4-dimethoxy-3*H*-phenoxazin-3-one, 9CI*
[62267-63-4]



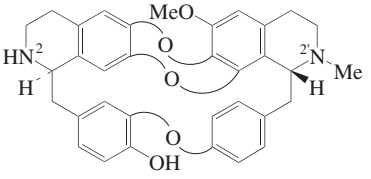
$C_{15}H_{13}NO_5$ 287.271
Isol. from *Streptomyces michiganensis*. Purple-red needles (MeOH). λ_{max} 226 (ϵ 28800); 261 (ϵ 13800); 384 (ϵ 20000); 460 (ϵ 6460) (MeOH) (Derep).

*4-Demethoxy: 8-(Hydroxymethyl)-2-methoxy-3*H*-phenoxazin-3-one, 9CI.* ***4-Demethoxymichigazone***
$C_{14}H_{11}NO_4$ 257.245
Prod. by *Streptomyces halstedii*. Neuronal cell protecting agent. Orange powder. Sol. MeOH, EtOAc; poorly sol. H_2O. Mp 193-194°. λ_{max} 222 (ϵ 17600); 251 (ϵ 10600); 390 (ϵ 11400); 444 (ϵ 5900) (MeOH) (Berdy).

Achenbach, H. *et al., Chem. Ber.*, 1977, **110**, 12 (*pmr, synth*)
Kunigami, T. *et al., J. Antibiot.*, 1996, **49**, 312 (*Demethoxymichigazone*)

Micranthine M-591

[36104-64-0]



Absolute Configuration

$C_{34}H_{32}N_2O_5$ 548.637
Alkaloids covered by this entry belong to the enantiomeric series with respect to those in Isotrilobine, I-339 and are diastereomeric with those in Apateline, A-1331. Alkaloid from the bark of *Daphnandra micrantha* and from the leaves and terminal twigs of an unnamed *Daphnandra* sp. (Monimiaceae). Oedematous agent on injection, vasodilator, respiratory paralytic. Cryst. (MeOH). Mp 190-194° dec. $[\alpha]_D^{16}$ -221 (c, 1.3 in $CHCl_3$).

Me ether: **O-*Methylmicranthine***
[40225-93-2]
$C_{35}H_{34}N_2O_5$ 562.664
Alkaloid from the bark of *Daphnandra micrantha* and *Daphnandra* sp. Dt-7, and from the leaves and terminal twigs of an unnamed *Daphnandra* sp. (Monimiaceae). Cryst. + ½ H_2O (C_6H_6). Mp 163-165° dec. $[\alpha]_D^{20}$ -208 ($CHCl_3$).

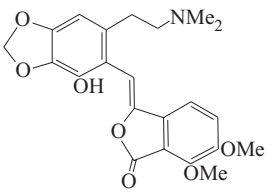
Me ether, N-*Ac:*
Cryst. + 0.67 CCl_4 ($CHCl_3/CCl_4$). Mp 174-179° dec. $[\alpha]_D^{22}$ -203 ($CHCl_3$).

Me ether, N-*Me:* N,O-*Dimethylmicranthine*
[36296-04-5]
$C_{36}H_{36}N_2O_5$ 576.691
Alkaloid from the bark of *Daphnandra micrantha* and *Daphnandra* sp. Dt-7, and from the leaves and terminal twigs of an unnamed *Daphnandra* sp. (Monimiaceae). Cryst. + 0.25$CHCl_3$. Mp 210-214° dec. $[\alpha]_D^{19}$ -230 ($CHCl_3$).

Bick, I.R.C. *et al., J.C.S. Perkin 1*, 1972, 2884-2889 (*Micranthine, O-Methylmicranthine*)
Bick, I.R.C. *et al., Tet. Lett.*, 1975, 2219-2220 (*N,O-Dimethylmicranthine*)
Bhakuni, D.S. *et al., J.C.S. Perkin 1*, 1978, 121-125 (*biosynth*)
Bick, I.R.C. *et al., Heterocycles*, 1981, **16**, 2105-2108 (*Micranthine*)

Microcarpine† M-592

[93552-71-7]



$C_{22}H_{23}NO_7$ 413.426
Alkaloid from *Fumaria microcarpa* (Papaveraceae).

Sener, B. *et al., Int. J. Crude Drug Res.*, 1984, **22**, 45; *CA*, **102**, 3212f

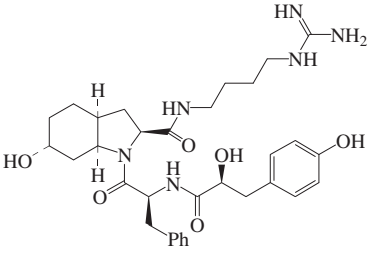
Microcin B17 M-593

McB17
[84286-90-8]
Polypeptide antibiotic. Large depsipeptide containing 20 aminoacid residues interspersed with 8 heterocyclic residues (4 oxazole, 4 thiazole), including oxazole-thiazole bonds. Prod. by *Escherichia coli* LP 17. DNA gyrase inhibitor. Active against gram-negative bacteria.

Bayer, A. *et al., Angew. Chem., Int. Ed.*, 1993, **32**, 1336-1339 (*struct*)
Videnov, G. *et al., Angew. Chem., Int. Ed.*, 1996, **35**, 1506-1508 (*synth*)

Microcin SF608 M-594

[248582-51-6]



$C_{32}H_{44}N_6O_6$ 608.736
Isol. from *Microcystis* sp. Trypsin inhibitor. $[\alpha]_D^{25}$ -19.1 (c, 1 in MeOH). λ_{max} 229 (ϵ 4360); 278 (ϵ 1040) (MeOH).

Banker, R. *et al., Tetrahedron*, 1999, **55**, 10835-10844
Valls, N. *et al., J.O.C.*, 2002, **67**, 4945-4950 (*synth*)

Micrococcin M M-595

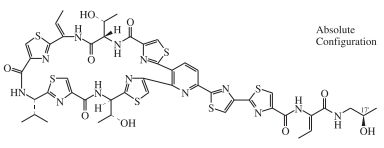
[57036-15-4]
[57036-14-3 , 57036-16-5]

Thiazole-peptide antibiotic complex. Struct. unknown. Prod. by *Staphylococcus aureus*. Mp 221-224°. $[\alpha]_D$ +66.6 (EtOH). λ_{max} 216 ; 345 (EtOH).

Breiter, J. *et al., Arzneim.-Forsch.*, 1975, **25**, 1244-1248
Hameister, W. *et al., Arzneim.-Forsch.*, 1975, **25**, 1365-1369

Micrococcin P_1 M-596

[67401-56-3]



$C_{48}H_{49}N_{13}O_9S_6$ 1144.393

Struct. revised in 1999. Isol. from *Bacillus pumilus*. Peptide antibiotic. Shows broad spectrum *in vitro* activity. Cryst. Sol. MeOH, Py, $CHCl_3$, EtOH, Me_2CO, EtOH; poorly sol. H_2O, C_6H_6, Et_2O, EtOAc, hexane. Mp 252° dec. $[\alpha]_D^{21}$ +116 (c, 0.10 in 90% EtOH aq.). Major component of Micrococcin P complex. Similar to Thiocillin I, T-383. λ_{max} 344 (MeOH) (Berdy). λ_{max} 346 (E1%/1cm 210) (EtOH) (Berdy). λ_{max} 320 (ϵ 57500) (HCl) (Berdy).

▶ LD_{50} (mus, scu) 1500 mg/kg. PY4591000

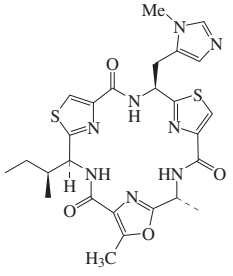
17′-Ketone: ***Micrococcin P_2***
[67401-55-2]
$C_{48}H_{47}N_{13}O_9S_6$ 1142.377
From *Bacillus pumilus*. λ_{max} 345 (EtOH) (Berdy).

[1392-46-7]

Fuller, A.T. *et al., Nature (London)*, 1955, **175**, 722 (*isol*)
Pestka, S. *et al., Antibiotics (N.Y.)*, 1975, **3**, 480-486 (*rev*)
Walker, J. *et al., Chem. Comm.*, 1977, 706-708 (*cmr*)
Bycroft, B.W. *et al., Chem. Comm.*, 1978, 256-258 (*struct, pmr, cmr, biosynth*)
Kelly, T.R. *et al., Tet. Lett.*, 1991, **32**, 4263-4266 (*synth*)
Shin, C.-G. *et al., Chem. Lett.*, 1998, 139-140 (*synth*)
Okumura, K. *et al., Bull. Chem. Soc. Jpn.*, 1999, **72**, 1561-1569; 2483-2490 (*synth, pmr, cmr*)
Ciufolini, M. *et al., Org. Lett.*, 1999, **1**, 1843-1846 (*struct*)
Fenet, B. *et al., Tet. Lett.*, 2002, **43**, 2367-2370 (*pmr, cmr, struct*)
Bagley, M.C. *et al., J. Antibiot.*, 2004, **57**, 829-831 (*stereochem*)
Bagley, M.C. *et al., Chem. Rev.*, 2005, **105**, 685-714 (*rev*)

Microcyclamide M-597

[297730-40-6]

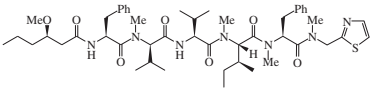


$C_{26}H_{30}N_8O_4S_2$ 582.706

Abs. config. revised in 2002. Isol. from *Microcystis aeruginosa*. Moderate cytotoxic agent. Amorph. solid. $[\alpha]_D^{23}$ -46.3 (c, 0.1 in MeOH). λ_{max} 231 (ϵ 26500) (MeOH).

Ishida, K. *et al., J. Nat. Prod.*, 2000, **63**, 1315-1317 (*isol, pmr, cmr*)
Fujii, K. *et al., Tetrahedron*, 2002, **58**, 6873-6879 (*isol, pmr, abs config*)
Ziemert, N. *et al., Appl. Environ. Microbiol.*, 2008, **74**, 1791-1797 (*biosynth*)

Micromide M-598

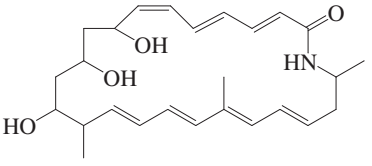


$C_{49}H_{73}N_7O_7S$ 904.224

Isol. from a *Symploca* sp. Cytotoxic. Amorph. powder. $[\alpha]_D^{21}$ -28 (c, 0.5 in MeOH). λ_{max} 201 (log ϵ 4.4); 225 (log ϵ 3.8); 274 (log ϵ 2.4) (MeOH).

Williams, P.G. *et al., J. Nat. Prod.*, 2004, **67**, 49-53 (*isol, pmr, cmr*)

Micromonosporin A M-599



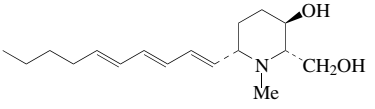
$C_{26}H_{37}NO_4$ 427.583

Prod. by *Micromonospora* sp. (strain TT1-11). Off-white powder. Mp 146° dec. $[\alpha]_D^{25}$ -248.4 (c, 0.1 in MeOH). λ_{max} 281 (log ϵ 4.7); 291 (log ϵ 4.77); 306 (log ϵ 4.51); 322 (log ϵ 4.33) (MeOH).

Thawai, C. *et al., Chem. Biodiversity*, 2004, **1**, 640-645 (*isol, biosynth, pmr, cmr*)

Micropine M-600

6-(1,3,5-Decatrienyl)-3-hydroxy-1-methyl-2-piperidinemethanol, 9CI. 6-(1,3,5-Decatrienyl)-3-hydroxy-2-hydroxymethyl-1-methylpiperidine
[129011-71-8]



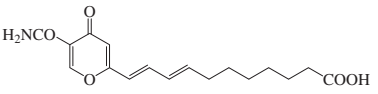
Absolute
Configuration

$C_{17}H_{29}NO_2$ 279.422

Alkaloid from the leaves of *Microcos philippinensis*. Off-white plates (MeOH). Mp 146-148°. $[\alpha]_D^{20}$ -63 (c, 0.15 in EtOH). λ_{max} 250 (ϵ 24000); 258 (ϵ 39000); 268 (ϵ 47000); 280 (ϵ 414000); 299 (ϵ 4200); 315 (ϵ 3300) (EtOH).

Aguinaldo, A.M. *et al., Phytochemistry*, 1990, **29**, 2309-2313 (*isol, uv, ir, pmr, cmr, ms*)
Bayquen, A.V. *et al., Tetrahedron*, 1996, **52**, 13467-13482 (*synth, abs config*)

Microsphaerone B M-601



$C_{17}H_{21}NO_5$ 319.357

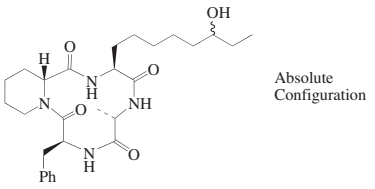
Prod. by the fungus *Microsphaeropsis* sp. isol. from the sponge *Aplysina aerophoba*. Yellow powder (MeOH). λ_{max} 211 (log ϵ 3.65); 231 (log ϵ 3.63); 313 (log ϵ 3.71) (MeOH).

N-*(3*S*-Carboxybutanoyl):* ***Microsphaerone A***
$C_{22}H_{27}NO_8$ 433.457
Prod. by a *Microsphaeropsis* sp. from *Aplysina aerophoba*. Yellow powder (MeOH). $[\alpha]_D^{20}$ -8.9 (c, 0.56 in MeOH). λ_{max} 229 (log ϵ 3.77); 312 (log ϵ 3.63) (MeOH).

Wang, C.-Y. *et al., J. Nat. Prod.*, 2002, **65**, 772-775 (*isol, pmr, cmr, ms*)

Microsporin B M-602

[945491-39-4]



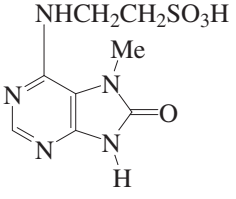
$C_{28}H_{42}N_4O_5$ 514.664

Prod. by the marine-derived fungus *Microsporum* cf. *gypseum*. Histone deacetylase inhibitor. Oil. $[\alpha]_D$ -39.8 (c, 0.44 in CH_2Cl_2). λ_{max} 242 (ϵ 13260) ($CHCl_3$).

6′-Ketone: ***Microsporin A***
[945491-38-3]
$C_{28}H_{40}N_4O_5$ 512.648
Prod. by *Microsporum* cf. *gypseum*. Oil. $[\alpha]_D$ +11.6 (c, 0.17 in CH_2Cl_2). λ_{max} 242 (ϵ 1670); 270 (ϵ 3510) ($CHCl_3$).

Gu, W. *et al., Tetrahedron*, 2007, **63**, 6535-6541 (*isol, synth, pmr, cmr*)

Microxine M-603



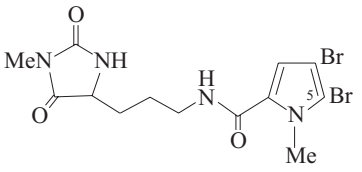
$C_8H_{11}N_5O_4S$ 273.272

Isol. from the sponge *Microxina* sp. Weak cdc2 kinase inhibitor. Amorph. solid. λ_{max} 210 (ϵ 12890); 274 (ϵ 8410) (H_2O).

Killday, K.B. *et al., J. Nat. Prod.*, 2001, **64**, 525-526 (*isol*)

Midpacamide M-604

4,5-Dibromo-1-methyl-N-*[3-(1-methyl-2,5-dioxo-4-imidazolidinyl)propyl]-1*H-*pyrrole-2-carboxamide, 9CI*
[66067-05-8]

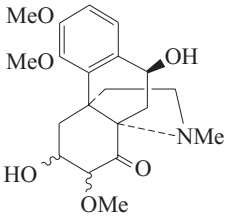


$C_{13}H_{16}Br_2N_4O_3$ 436.102
Isol. from an unidentified marine sponge and from the sponge *Agelas mauritiana*. Cryst. (MeCN). Mp 93-95°. λ_{max} 206 (ϵ 5010); 239 (ϵ 7940); 276 (ϵ 11200) (MeOH) (Derep).

5-Debromo: ***5-Debromomidpacamide***
[114216-89-6]
$C_{13}H_{17}BrN_4O_3$ 357.206
Isol. from the marine sponge *Agelas mauritiana*. Mp 116-119°.

Chevolot, L. *et al., Heterocycles*, 1977, **7**, 891 (*isol, pmr, cmr, struct*)
Fathi-Afshar, R. *et al., Can. J. Chem.*, 1988, **66**, 45 (*isol, ir, pmr, cmr, ms, deriv*)
Lindel, T. *et al., Liebigs Ann./Recl.*, 1997, 1525-1528 (*synth, pmr, cmr, ms*)
Fresneda, P.M. *et al., Tet. Lett.*, 2001, **42**, 851-854 (*synth*)

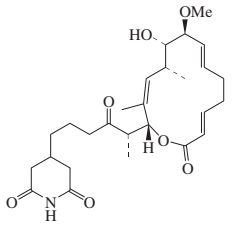
Miersine M-605



$C_{20}H_{27}NO_6$ 377.436
Minor alkaloid from *Stephania japonica* (Menispermaceae). Mp 222°.

Thornber, C.W. *et al., Phytochemistry*, 1970, **9**, 157 (*ir, uv, pmr, struct*)

Migrastatin M-606



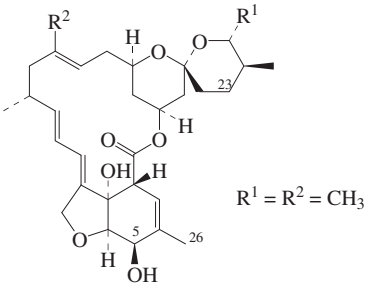
Absolute Configuration

$C_{27}H_{39}NO_7$ 489.608
Prod. by *Streptomyces* sp. MK929-43F1. Strictly a shunt metab. of Isomigrastatin, I-245. Inhibitor of tumour cell migration. Powder. Mp 54-55°. $[\alpha]_D^{27}$ +17.9 (c, 3.2 in MeOH). Related to Antibiotic BR 040, A-1139.

Nakae, K. *et al., J. Antibiot.*, 2000, **53**, 1130-1136; 1228-1230
Takemoto, Y. *et al., J. Antibiot.*, 2001, **54**, 1104-1107 (*activity*)
Nakamura, H. *et al., J. Antibiot.*, 2002, **55**, 442-444 (*abs config*)
Gaul, C. *et al., J.A.C.S.*, 2003, **125**, 6042-6043 (*synth*)
Ju, J. *et al., J.A.C.S.*, 2005, **127**, 1622-1623 (*biosynth*)
Ju, J. *et al., Org. Lett.*, 2006, **8**, 5865-5868 (*synth*)
Reymond, S. *et al., Tetrahedron*, 2007, **63**, 5918-5929 (*synth*)

Milbemycin α1 M-607

B 41A$_3$. Antibiotic B 41A$_3$. Milbemycin A$_3$. Milbemectin
[51596-10-2]



$C_{31}H_{44}O_7$ 528.684
Macrolide antibiotic. Isol. from *Streptomyces hygroscopicus*. Anthelmintic agent. Cryst. (hexane). Mp 193-195°. $[\alpha]_D^{20}$ +106 (c, 0.25 in Me_2CO). λ_{max} 238 (sh) (ϵ 27800); 244 (ϵ 30500); 253 (sh) (ϵ 22000) (EtOH) (Derep).

5-Me ether: ***Milbemycin α2****. B 41B$_2$. Antibiotic B 41B$_2$. Milbemycin B$_2$*
[51596-12-4]
$C_{32}H_{46}O_7$ 542.711
Prod. by *Streptomyces hygroscopicus*. Anthelmintic agent. Mp 139-142°. $[\alpha]_D^{20}$ +131 (c, 0.25 in Me_2CO). λ_{max} 238 (sh) (ϵ 27800); 244 (ϵ 30500); 253 (sh) (ϵ 22000) (EtOH).

5-Ketone: ***Milbemycin J***
[86691-98-7]
$C_{31}H_{42}O_7$ 526.669
Prod. by a *Streptomyces hygroscopicus* ssp. *aureolacrimosus* mutant. Shows insecticicdal and acaricidal props. Mp 213-215°. $[\alpha]_D^{27}$ +40 (c, 0.25 in Me_2CO). λ_{max} 240 (ϵ 28000) (EtOH).

*23*S*-Hydroxy, 5-Me ether:* ***23-Hydroxymilbemycin α2***
[106313-99-9]
$C_{32}H_{46}O_8$ 558.711
Prod. by *Streptomyces* sp. NCIB 11867. Anthelmintic, pesticide. Sol. MeOH, Me_2CO, $CHCl_3$; poorly sol. H_2O. λ_{max} 239 ; 244 (MeOH) (Berdy).

26-Hydroxy: ***Milbemycin α26****. 26-Hydroxymilbemycin α1*
[86629-93-8]
$C_{31}H_{44}O_8$ 544.684
Prod. by *Streptomyces* sp. KSB 1939 and *Streptomyces hygroscopicus* ssp. *aureolacrimosus*. Amorph. powder. Sol. MeOH, Me_2CO; poorly sol. H_2O. λ_{max} 244 (MeOH).

26-Hydroxy, 5-Me ether: ***Milbemycin α24****. 26-Hydroxymilbemycin α2*
[133656-16-3]
$C_{32}H_{46}O_8$ 558.711
Prod. by *Streptomyces* sp. KSB 1939 and *Streptomyces hygroscopicus* ssp. *aureolacrimosus*. Insecticide, acaricide. Amorph. powder. Sol. MeOH, Me_2CO; poorly sol. H_2O. λ_{max} 244 (MeOH).

26-(Propanoyloxy): ***Milbemycin α22***
$C_{34}H_{48}O_9$ 600.748
Prod. by *Streptomyces hygroscopicus* ssp. *aureolacrimosus*. Amorph. powder.

26-(3-Methylbutanoyloxy): ***Milbemycin α12***
[123071-17-0]
$C_{36}H_{52}O_9$ 628.801
Prod. by *Streptomyces hygroscopicus* ssp. *aureolacrimosus*. $[\alpha]_D^{23}$ +118.3 (c, 1 in $CHCl_3$). Stereochem. not explicitly given but by implication is the same as for other milbemycins. λ_{max} 238 (ϵ 750); 244 (ϵ 810); 253 (sh) (EtOH).

26-(Tigloyloxy): ***Milbemycin α20***
$C_{36}H_{50}O_9$ 626.786
Prod. by *Streptomyces hygroscopicus* ssp. *aureolacrimosus*. Amorph. powder.

26-(3-Methyl-2-butenoyloxy): ***Milbemycin α11****. MI 198Z1. KSB 1939H3. Antibiotic KSB 1939H3. Antibiotic MI 198Z1*
[119053-92-8]
$C_{36}H_{50}O_9$ 626.786
Prod. by *Streptomyces hygroscopicus* ssp. *aureolacrimosus*. $[\alpha]_D^{23}$ +104.3 (c, 1.05 in $CHCl_3$). Stereochem. not explicitly given but by implication is the same as for other milbemycins. λ_{max} 230 (sh) ; 238 (ϵ 990); 244 (ϵ 990); 252 (sh) (EtOH).

26-(3-Methyl-2-pentenoyloxy): ***Milbemycin α13****. MI 19827. KSB 193944. Antibiotic KSB 193944. Antibiotic MI 19827*
[123123-62-6]
$C_{37}H_{52}O_9$ 640.812
Prod. by *Streptomyces hygroscopicus* ssp. *aureolacrimosus*. $[\alpha]_D^{23}$ +91.6 (c, 0.89 in $CHCl_3$). Stereochem. not explicitly given but by implication is the same as for other milbemycins.

26-(2-Pyrrolylcarbonyloxy): ***Milbemycin α9****. B 41C$_1$. Antibiotic B 41C$_1$. Milbemycin C$_1$*
[51596-14-6]
$C_{36}H_{47}NO_9$ 637.769
Prod. by *Streptomyces hygroscopicus*. Anthelmintic. $[\alpha]_D^{20}$ +57 (c, 0.25 in Me_2CO). λ_{max} 238 (ϵ 31300); 245 (ϵ 35000); 253 (ϵ 31000); 266 (sh) (ϵ 15000) (EtOH).

Ger. Pat., 1973, 2 329 486; *CA*, **80**, 131682 (*synth*)
Japan. Pat., 1975, 75 29 742; *CA*, **83**, 127530 (*synth*)
U.S. Pat., 1976, 3 992 551; *CA*, **86**, 70107 (*synth*)
U.S. Pat., 1977, 4 144 352; *CA*, **90**, 210144 (*props*)
Takiguchi, Y. *et al., J. Antibiot.*, 1980, **33**, 1120-1127 (*Milbemycins α2,B2, isol, uv, ir, ms*)

Ono, M. *et al., J. Antibiot.*, 1983, **36**, 438-441; 509-515; 980-990 (*Milbemycins α2,J*)
U.K. Pat., 1986, 2 170 499; *CA*, **106**, 133823z (*23-Hydroxymilbemycin α2*)
Japan. Pat., 1991, 91 17 082; *CA*, **114**, 245968x (*26-Hydroxymilbemycins*)
Takahashi, S. *et al., J. Antibiot.*, 1993, **46**, 1364-1371 (*Milbemycins α11,α12,α13*)
Ley, S.V. *et al., Tet. Lett.*, 1993, **34**, 7479-7482 (*synth*)
Nonaka, K. *et al., J. Antibiot.*, 2000, **53**, 694-704 (*Milbemycins α20,α22,α24,α26*)
Tsukiyama, T. *et al., J. Antibiot.*, 2002, **55**, 993-1003 (*synth*)

Milbemycin α3 M-608

B 41A$_4$. Antibiotic B 41A$_4$. Milbemycin A$_4$
[51596-11-3]
As Milbemycin α1, M-607 with $R^1 = CH_2CH_3$, $R^2 = CH_3$
$C_{32}H_{46}O_7$ 542.711
Macrolide antibiotic. Isol. from *Streptomyces hygroscopicus*. Anthelmintic agent. Cryst. Sol. MeOH, hexane; poorly sol. H_2O. Mp 212-215°. $[\alpha]_D^{20}$ +106 (c, 0.25 in Me_2CO). λ_{max} 238 (sh) (ε 27800); 244 (ε 30500); 253 (sh) (ε 22000) (EtOH) (Derep).

5-Me ether: ***Milbemycin α4***. *B 41B$_3$. Antibiotic B 41B$_3$. Milbemycin B$_3$*
[51596-13-5]
$C_{33}H_{48}O_7$ 556.738
Prod. by *Streptomyces hygroscopicus*. Anthelmintic agent. Amorph. powder. $[\alpha]_D^{20}$ +126 (c, 0.25 in Me_2CO). λ_{max} 238 (sh) (ε 27800); 244 (ε 30500); 253 (sh) (ε 22000) (EtOH).

5-Ketone: ***Milbemycin K***
[86691-97-6]
$C_{32}H_{44}O_7$ 540.695
Prod. by *Streptomyces hygroscopicus* ssp. *aureolacrimosus* mutant. Shows insecticidal and acaricidal props. Cryst. (hexane) or amorph. Mp 215-218°. $[\alpha]_D^{27}$ +42 (c, 0.25 in Me_2CO). λ_{max} 240 (ε 28000) (EtOH).

*23*S-*Hydroxy:* ***Milbemycin α19***. *23-Hydroxymilbemycin α3*
[122006-28-4]
$C_{32}H_{46}O_8$ 558.711
Prod. by *Streptomyces hygroscopicus* ssp. *aureolacrimosus*. Antiparasitic agent, miticide. Sol. MeOH, Me_2CO, MeCN; fairly sol. hexane; poorly sol. H_2O. λ_{max} 244 (ε 27500) (EtOH) (Berdy).

*23*S-*Hydroxy, 5-ketone:* ***Milbemycin α18***
[122006-27-3]
$C_{32}H_{44}O_8$ 556.695
Prod. by *Streptomyces hygroscopicus* ssp. *aureolacrimosus*. Antiparasitic agent, miticide. Powder. Sol. MeOH, Me_2CO, MeCN; fairly sol. hexane; poorly sol. H_2O. λ_{max} 240 (ε 29500) (EtOH). λ_{max} 240 (ε 29500) (EtOH) (Berdy).

26-Hydroxy: ***Milbemycin α27***. *26-Hydroxymilbemycin α3*
[86629-94-9]
$C_{32}H_{46}O_8$ 558.711
Prod. by *Streptomyces* sp. KSB 1939 and *Streptomyces hygroscopicus* ssp. *aureolacrimosus*. Insecticide, acaricide. Amorph. powder. Sol. MeOH, Me_2CO; poorly sol. H_2O. λ_{max} 244 (MeOH) (Berdy).

26-Hydroxy, 5-Me ether: ***Milbemycin α25***
[205525-19-5]
$C_{33}H_{48}O_8$ 572.737
Prod. by *Streptomyces hygroscopicus* ssp. *aureolacrimosus*. Amorph. powder.

26-(Propanoyloxy): ***Milbemycin α23***
[205525-18-4]
$C_{35}H_{50}O_9$ 614.775
Prod. by *Streptomyces hygroscopicus* ssp. *aureolacrimosus*. Amorph. powder.

26-(3-Methylbutanoyloxy): ***Milbemycin α15***
[125602-42-8]
$C_{37}H_{54}O_9$ 642.828
Prod. by *Streptomyces hygroscopicus* ssp. *aureolacrimosus*. λ_{max} 230 (sh) ; 238 (sh) ; 244 (990); 252 (sh) (EtOH).

26-(Tigloyloxy): ***Milbemycin α21***
[119053-97-3]
$C_{37}H_{52}O_9$ 640.812
Prod. by *Streptomyces hygroscopicus* ssp. *aureolacrimosus*. Amorph. powder.

26-(3-Methyl-2-butenoyloxy): ***Milbemycin α14***
[119053-94-0]
$C_{37}H_{52}O_9$ 640.812
Prod. by *Streptomyces hygroscopicus* ssp. *aureolacrimosus*. λ_{max} 230 (sh) ; 238 (ε 990); 244 (ε 990); 252 (sh) (EtOH).

26-(2-Pyrrolylcarbonyloxy): ***Milbemycin α10***. *BC 41C$_2$. Antibiotic BC 41C$_2$. Milbemycin C$_2$*
[51596-15-7]
$C_{37}H_{49}NO_9$ 651.795
Prod. by *Streptomyces hygroscopicus*. Anthelmintic. Amorph. powder. $[\alpha]_D^{20}$ +54 (c, 0.25 in Me_2CO). λ_{max} 238 (ε 31300); 245 (ε 35000); 266 (sh) (ε 15000) (EtOH).

Ger. Pat., 1973, 2 329 486; *CA*, **80**, 131682 (*synth*)
Japan. Pat., 1975, 75 29 742; *CA*, **83**, 127530 (*synth*)
U.S. Pat., 1976, 3 992 551; *CA*, **86**, 70107 (*synth*)
U.S. Pat., 1977, 4 144 352; *CA*, **90**, 210144 (*props*)
Takiguchi, Y. *et al., J. Antibiot.*, 1980, **33**, 1120-1127 (*Milbemycin α4, isol, uv, ir, ms*)
Ono, M. *et al., J. Antibiot.*, 1983, **36**, 438-441; 509-515 (*Milbemycins α4,K, isol*)
Japan. Pat., 1988, 88 227 590; *CA*, **111**, 76530d (*Milbemycins α18,α19*)
Japan. Pat., 1991, 91 17 082; *CA*, **114**, 245968x (*26-Hydroxymilbemycin α3*)
Takahashi, S. *et al., J. Antibiot.*, 1993, **46**, 1364-1371 (*Milbemycins α14,α15*)
Nonaka, K. *et al., J. Antibiot.*, 1999, **52**, 109-116 (*Milbemycin α14, biosynth*)
Nonaka, K. *et al., J. Antibiot.*, 2000, **53**, 694-704 (*Milbemycin α21,α23,α25,α27*)
Tsukiyama, T. *et al., J. Antibiot.*, 2002, **55**, 993-1003 (*synth*)

Milbemycin D M-609

B 41D. Antibiotic B 41D
[77855-81-3]
As Milbemycin α1, M-607 with $R^1 = -CH(CH_3)_2$, $R^2 = CH_3$
$C_{33}H_{48}O_7$ 556.738
Macrolide antibiotic. Isol. from *Streptomyces hygroscopicus*. Antiparasitic and pesticidal agent. Needles (hexane/EtOAc). Sol. MeOH, EtOAc; fairly sol. hexane; poorly sol. H_2O. Mp 186-188°. $[\alpha]_D^{27}$ +107 (c, 0.25 in Me_2CO). λ_{max} 238 (sh) (ε 27800); 244 (ε 30500); 253 (sh) (ε 22000) (EtOH) (Derep). λ_{max} 243 (ε 30500); 244 (ε 31000) (EtOH) (Berdy).

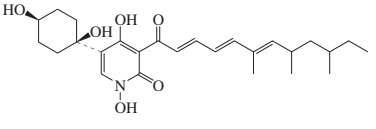
▶ PY5788000

O^5-*Me:* ***Milbemycin G***. *B 41G. Antibiotic B 41G*
[83471-31-2]
$C_{34}H_{50}O_7$ 570.765
Prod. by *Streptomyces hygroscopicus*. Antiparasitic and pesticidal agent. Amorph. $[\alpha]_D^{27}$ +108 (c, 0.25 in Me_2CO). λ_{max} 238 (sh) (ε 27800); 244 (ε 30500); 253 (sh) (ε 22000) (EtOH).

26-O-*(2-Pyrrolylcarbonyloxy):* ***Milbemycin F***. *B 41F. Antibiotic B 41F*
[83177-49-5]
$C_{38}H_{51}NO_9$ 665.822
Prod. by *Streptomyces hygroscopicus*. Antiparasitic and pesticidal agent. Amorph. λ_{max} 238 (ε 31300); 253 (ε 31000); 254 (ε 35000); 266 (sh) (ε 15000) (EtOH).

Takeguchi, Y. *et al., J. Antibiot.*, 1983, **36**, 438; 502; 980; 991 (*isol, struct, uv, ir, cmr*)
Ono, M. *et al., J. Antibiot.*, 1983, **36**, 438; 502; 980 (*Milbemycin F, Milbemycin G*)
Mrozik, H. *et al., Tet. Lett.*, 1983, 5333 (*synth, uv, pmr*)
Crimmins, M.T. *et al., J.A.C.S.*, 1996, **118**, 7513 (*synth*)
Bailey, S. *et al., Org. Biomol. Chem.*, 2005, **3**, 3654-3677 (*Milbemycin G, synth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, MQT600

Militarinone A M-610

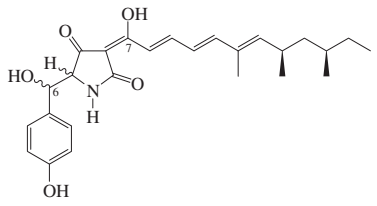


$C_{26}H_{37}NO_6$ 459.581
Isol. from *Paecilomyces militaris* RCEF 0095. Neurotrophic agent. Yellow solid. $[\alpha]_D^{25}$ -14.6 (c, 1.3 in MeOH). λ_{max} 261 (log ε 3.98); 388 (log ε 4.65) (MeOH).

N-*Deoxy:* **N-*Deoxymilitarinone A***
$C_{26}H_{37}NO_5$ 443.582
Isol. from *Paecilomyces farinosus* RCEF 0097. Amorph. yellow solid. $[\alpha]_D^{24}$ +33.3 (c, 1.8 in MeOH). λ_{max} 253 (log ε 4.02); 391 (log ε 4.46) (MeOH).

Schmidt, K. *et al., Org. Lett.*, 2002, **4**, 197-199 (*isol, pmr, cmr*)
Schmidt, K. *et al., J. Nat. Prod.*, 2003, **66**, 378-383 (*biosynth*)
Cheng, Y. *et al., J. Nat. Prod.*, 2006, **69**, 436-438 (*N-Deoxymilitarinone A*)

Militarinone B M-611



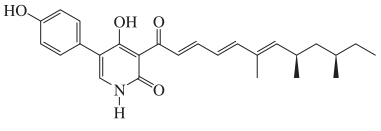
$C_{26}H_{33}NO_5$ 439.55

Tetramic acid deriv. Isol. from *Paecilomyces militaris* RCEF 0095. Amorph. yellow powder. Mp 135-139°. $[\alpha]_D^{25}$ -553.2 (c, 0.19 in MeOH). Occurs in soln. as equilibrium mixture with (7*Z*)-isomer. λ_{max} 259 (log ϵ 4.14); 358 (log ϵ 4.53) (MeOH).

6-Deoxy: ***Militarinone C***
$C_{26}H_{33}NO_4$ 423.551
Isol. from *Paecilomyces militaris* RCEF 0095. Amorph. yellow powder. Mp 86-92°. $[\alpha]_D^{25}$ -430.2 (c, 0.17 in MeOH). Occurs in soln. as equilibrium mixture with (7*Z*)-isomer. λ_{max} 258 (log ϵ 4.14); 359 (log ϵ 4.57) (MeOH).

Schmidt, K. *et al., J. Nat. Prod.*, 2003, **66**, 378-383 (*isol, uv, pmr, cmr, ms*)

Militarinone D M-612

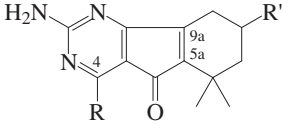


$C_{26}H_{31}NO_4$ 421.535
Isol. from *Paecilomyces militaris* RCEF 0095. Cytotoxic. Amorph. yellow powder. Mp 132-138°. $[\alpha]_D^{25}$ -74.4 (c, 0.24 in MeOH). λ_{max} 253 (log ϵ 4.43); 384 (log ϵ 4.55) (MeOH).

Schmidt, K. *et al., J. Nat. Prod.*, 2003, **66**, 378-383 (*isol, uv, pmr, cmr, ms*)

Millaurine† M-613

[152606-57-0]



R = CH_3, R' = OH

$C_{14}H_{17}N_3O_2$ 259.307

Rel. configs. only detd. Alkaloid from the seeds of *Millettia laurentii*. Yellow needles (MeOH). Mp 248-249°. $[\alpha]_D^{21}$ +20.6 (c, 0.18 in MeOH).

8-Ac: **O-*Acetylmillaurine***
[152307-09-0]
$C_{16}H_{19}N_3O_3$ 301.344
Alkaloid from seeds of *Millettia laurentii*. Yellow needles (EtOH). Mp 218-219°. $[\alpha]_D^{21}$ +51.3 (c, 0.34 in MeOH).

9aβ-Hydroxy, 5aβ,9a-dihydro: ***5a,9a-Dihydro-5a-hydroxymillaurine***
[158150-01-7]
$C_{14}H_{19}N_3O_3$ 277.322
Alkaloid from seeds of *Millettia laurentii*. Needles (EtOH). Mp 259-260°. $[\alpha]_D^{21}$ +6.8 (c, 0.2 in MeOH).

Ngamga, D. *et al., J. Nat. Prod.*, 1993, **56**, 2126-2132; 1994, **57**, 1022-1024 (*isol, ir, pmr, cmr, ms, cryst struct*)

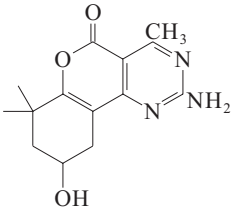
Millaurine A† M-614

[946051-22-5]
As Millaurine, M-613 with
R = H, R′ = OMe
$C_{14}H_{17}N_3O_2$ 259.307
Alkaloid from the seeds of *Millettia laurentii*. Needles. Mp 136-137°. $[\alpha]_D$ +46.7 (c, 0.2 in MeOH).

Ngamga, D. *et al., Fitoterapia*, 2007, **78**, 276-277 (*isol, pmr, cmr, ms*)

Millettonine M-615

[159509-32-7]

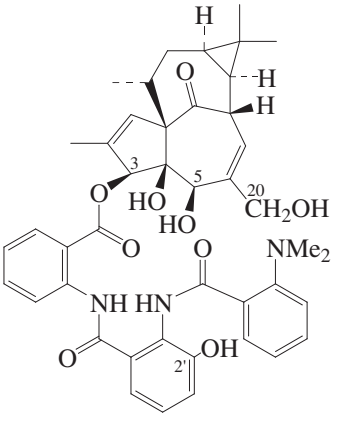


$C_{14}H_{17}N_3O_3$ 275.307
Alkaloid from the stem bark of *Millettia laurentii* (Fabaceae). Needles (hexane). Mp 170°. $[\alpha]_D^{21}$ +46.2 (c, 0.71 in MeOH).

Kamnaing, P. *et al., Phytochemistry*, 1994, **36**, 1561 (*isol, ir, pmr, cmr, ms, struct*)

Milliamine C M-616

[49620-09-9]



$C_{43}H_{47}N_3O_9$ 749.859
Alkaloid from *Euphorbia milii* (Euphorbiaceae). Amorph. solid. $[\alpha]_D^{22}$ +11 (c, 1 in $CHCl_3$). λ_{max} 220 (ϵ 48170); 260 (ϵ 19130); 312 (ϵ 14060) (MeOH).

5-Ac: ***Milliamine E***
[88524-60-1]
$C_{45}H_{49}N_3O_{10}$ 791.896
Alkaloid from *Euphorbia milii*. Amorph. powder. Mp 135-138°. $[\alpha]_D$ +34.6 (c, 0.24 in $CHCl_3$). λ_{max} 226 (ϵ 45200); 258 (ϵ 19200); 309 (ϵ 15820) (MeOH).

20-Ac: ***Milliamine A***
[34391-10-1]
$C_{45}H_{49}N_3O_{10}$ 791.896
Main alkaloid from *Euphorbia milii* (Euphorbiaceae). Mp 134-136°. $[\alpha]_D$ +11.6 (c, 1 in $CHCl_3$). CAS no. refers to the hydrochloride. λ_{max} 232 (ϵ 37300); 260 (ϵ 21900); 315 (ϵ 14100); 342 (ϵ 4800) (MeOH) (Berdy). λ_{max} 219 (ϵ 44930); 260 (ϵ 17640); 314 (ϵ 14110) (EtOH) (Berdy). λ_{max} 225 (ϵ 35590); 260 (ϵ 15820); 308 (ϵ 13450) (MeOH).

▶ DG8736000

20-Ac, N-*de-Me:* ***Milliamine J***
[152135-64-3]
$C_{44}H_{47}N_3O_{10}$ 777.869
Alkaloid from *Euphorbia milii*. Amorph. yellow powder. Mp 112-116°. $[\alpha]_D$ +9.1 (c, 0.3 in $CHCl_3$). λ_{max} 223 (ϵ 44130); 256 (ϵ 19900); 310 (ϵ 18800); 365 (ϵ 8080) (MeOH).

N$^{1'}$*-Deacyl, 20-Ac:* ***Milliamine L***
[152135-61-0]
$C_{36}H_{40}N_2O_9$ 644.72
Alkaloid from *Euphorbia milii*. Amorph. powder. Mp 108-111°. $[\alpha]_D$ +3 (c, 1.4 in $CHCl_3$). λ_{max} 224 (ϵ 50500); 264 (ϵ 17870); 347 (ϵ 14700) (MeOH).

N$^{1'}$*-Deacyl,* N$^{1'}$*-tigloyl, 20-Ac:* ***Milliamine K***
[153133-63-2]
$C_{41}H_{46}N_2O_{10}$ 726.822
Alkaloid from *Euphorbia milii*. Amorph. powder. Mp 120-123°. λ_{max} 221 (ϵ 54900); 266 (ϵ 23800); 313 (ϵ 21000) (MeOH).

De(dimethylamino): ***Milliamine G***
[88524-63-4]
$C_{41}H_{42}N_2O_9$ 706.791
Alkaloid from *Euphorbia milii*. Amorph.

3-O-*Deacyl-5*-O-*acyl isomer, 20-Ac:* ***Milliamine D***
[88524-59-8]
$C_{45}H_{49}N_3O_{10}$ 791.896
Alkaloid from *Euphorbia milii*. Amorph. powder. Mp 136-139°. $[\alpha]_D$ -15 (c, 0.24 in $CHCl_3$). λ_{max} 228 (ϵ 46800); 260 (ϵ 23730); 315 (ϵ 18270) (MeOH).

3-O-*Deacyl-5*-O-*acyl isomer,* N$^{1'}$*-deacyl, 20-Ac:* ***Milliamine M***
[152135-62-1]
$C_{36}H_{40}N_2O_9$ 644.72
Alkaloid from *Euphorbia milii*. Amorph. powder. Mp 112-115°. $[\alpha]_D$ +12.6 (c, 1 in $CHCl_3$). λ_{max} 224 (ϵ 50500); 264 (ϵ 19400); 348 (ϵ 19420) (MeOH).

3-O-*Deacyl-5*-O-*acyl isomer,* N$^{1'}$*-deacyl, 3,20-di-Ac:* ***Milliamine N***
[152135-63-2]
$C_{38}H_{42}N_2O_{10}$ 686.757
Alkaloid from *Euphorbia milii*.

Amorph. powder. Mp 116-120°. $[\alpha]_D$ -25.2 (c, 1 in $CHCl_3$). λ_{max} 225 (ε 42880); 265 (ε 15350); 349 (ε 13050) (MeOH).

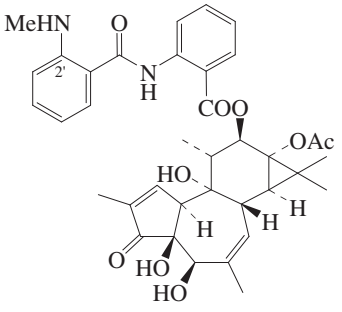
3-O-*Deacyl-5*-O-*acyl isomer, de(dimethylamino), 20-Ac:* ***Milliamine F***
[88524-61-2]
$C_{43}H_{44}N_2O_{10}$ 748.828
Alkaloid from *Euphorbia milii*. Amorph.

3-O-*Deacyl-20*-O-*acyl isomer:* ***Milliamine B***
[34420-84-3]
$C_{43}H_{47}N_3O_9$ 749.859
Alkaloid from *Euphorbia milii* (Euphorbiaceae). λ_{max} 227 (ε 43800); 260 (ε 18800); 315 (ε 14600); 342 (ε 5000) (MeOH) (Berdy). λ_{max} 217 (ε 34480); 260 (ε 12950); 312 (ε 10940) (EtOH) (Berdy).

Uemura, D. *et al., Bull. Chem. Soc. Jpn.*, 1977, **50**, 2005-2009 (*isol, uv, ir, pmr, struct*)
Marston, A. *et al., Planta Med.*, 1983, **47**, 141-147; 1984, **48**, 319-322 (*isol, uv, ir, pmr, ms*)
Zani, C.L. *et al., Phytochemistry*, 1993, **34**, 89-95 (*isol, uv, ir, pmr, cmr, ms*)

Milliamine H M-617

[91197-53-4]



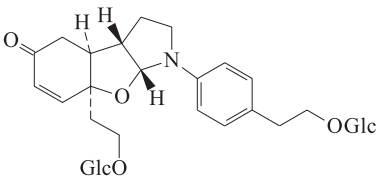
$C_{37}H_{42}N_2O_9$ 658.747
Alkaloid from *Euphorbia milii*. Pale yellow glass. λ_{max} 212 (ε 47300); 228 (ε 53460); 257 (ε 19530); 325 (ε 6890); 368 (ε 12130) (MeOH).

2′-De(methylamino), 2′-hydroxy: ***Milliamine I***
[91197-54-5]
$C_{36}H_{39}NO_{10}$ 645.705
Alkaloid from *Euphorbia milii*. Glass. λ_{max} 212 (ε 42090); 237 (ε 23080); 260 (ε 12220); 322 (ε 12060) (MeOH).

Marston, A. *et al., Planta Med.*, 1984, **50**, 319-322

Millingtonine M-618

[172924-27-5]

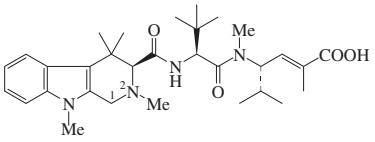


$C_{32}H_{45}NO_{14}$ 667.706
Alkaloid from flower buds of *Millingtonia hortensis* (Bignoniaceae). Powder + $1H_2O$. Sol. MeOH, $CHCl_3$; poorly sol. cyclohexane. Racemic. λ_{max} 209 (E1%/1cm 362); 226 (E1%/1cm 371); 257 (E1%/1cm 329); 497 (E1%/1cm 169) (MeOH) (Berdy).

Hase, T. *et al., Phytochemistry*, 1996, **41**, 317-321 (*isol, pmr, cmr, struct*)

Milnamide A M-619

[156430-97-6]



$C_{31}H_{46}N_4O_4$ 538.729
Peptide antibiotic. Alkaloid from Papua New Guinean collections of the marine sponge *Auletta* cf. *constricta*. Cytotoxic agent, microtubule formation inhibitor. Amorph. solid. Sol. MeOH, $CHCl_3$. $[\alpha]_D^{27}$ +28.8 (c, 0.5 in CH_2Cl_2). λ_{max} 223 (ε 14700); 285 (ε 2810); 294 (ε 3070); 304 (ε 3030); 380 (ε 1260) (MeOH).

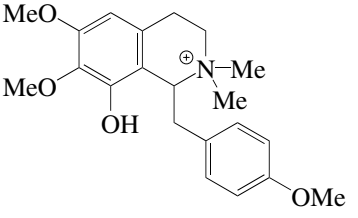
*1(2*N*)-Dehydro:* ***Milnamide D***
$C_{31}H_{45}N_4O_4^{\oplus}$ 537.721
Quaternary alkaloid from a *Cymbastela* sp. Cytotoxic agent. CAS No. not found 8-14CI.

1-Oxo: ***Milnamide C***
[675875-88-4]
$C_{31}H_{44}N_4O_5$ 552.712
Alkaloid from an *Auletta* sp. Cytotoxic. Yellow solid.

Crews, P. *et al., J.O.C.*, 1994, **59**, 2932-2934 (*isol, uv, ir, pmr, cmr*)
Chevallier, C. *et al., Org. Lett.*, 2003, **5**, 3737-3739 (*Milnamide D*)
Liu, C. *et al., Angew. Chem., Int. Ed.*, 2004, **43**, 5951-5954 (*synth*)
Sonnenschein, R.N. *et al., Org. Lett.*, 2004, **6**, 779-782 (*Milnamide C*)

Miltanthine M-620

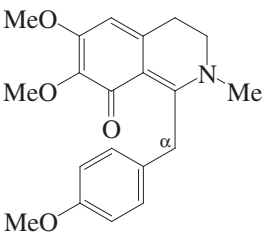
[201136-33-6]



$C_{21}H_{28}NO_4^{\oplus}$ 358.457
Quaternary alkaloid from *Papaver triniifolium*. Amorph. solid (as iodide). $[\alpha]_D$ +97 (c, 0.4 in $CHCl_3$). λ_{max} 218 (log ε 4.13); 283 (log ε 3.34) (MeOH). λ_{max} 283 (log ε 3.34) (iodide).

Wang, B.-G. *et al., Planta Med.*, 1997, **63**, 577-578 (*isol, uv, ir, pmr*)

Miltanthoridine M-621



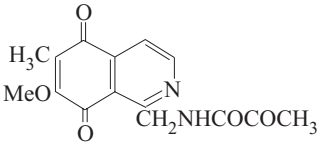
$C_{20}H_{23}NO_4$ 341.406
Alkaloid from *Papaver triniifolium*. Amorph. yellow solid. λ_{max} 280 ; 332 ; 420 (MeOH).

α-Oxo: ***Miltanthoridinone***
$C_{20}H_{21}NO_5$ 355.39
Alkaloid from *Papaver triniifolium*. Orange solid. λ_{max} 286 ; 342 ; 432 (MeOH).

Sari, A. *et al., Nat. Prod. Res.*, 2006, **20**, 493-496 (*isol, pmr, cmr, ms*)

Mimocin M-622

[76177-28-1]

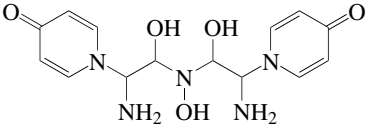


$C_{15}H_{14}N_2O_5$ 302.286
Benzoquinone antibiotic. Isol. from *Streptomyces lavendulae*. Active against *Bacillus subtilis*. Yellow prisms (Et_2O). Mp 189-191° dec. λ_{max} 243 (ε); 322 (ε) (MeOH) (Derep). λ_{max} 243 ; 322 (MeOH) (Berdy).

Kubo, A. *et al., Tet. Lett.*, 1980, **21**, 3207-3208 (*uv, ir, pmr, ms, struct, synth*)
Matsuo, K. *et al., Chem. Pharm. Bull.*, 1982, **30**, 4170-4174 (*synth*)
Kubo, A. *et al., Chem. Pharm. Bull.*, 1983, **31**, 341-343; 1985, **33**, 823-830; 1988, **36**, 4355-4363 (*synth, cmr*)
Saito, N. *et al., Chem. Pharm. Bull.*, 1989, **37**, 1493-1499 (*synth*)
Kuwabara, N. *et al., Tetrahedron*, 2004, **60**, 2943-2952 (*synth*)

Mimopudine M-623

*1,1′-[(Hydroxyimino)bis(1-amino-2-hydroxy-2,1-ethanediyl)]bis[4(1*H*)-pyridinone], 9CI*
[221056-52-6]

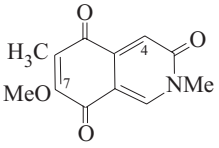


$C_{14}H_{19}N_5O_5$ 337.335
Alkaloid from *Mimosa pudica*. Leaf-opening substance. Yellow powder.

Ueda, M. *et al., Tetrahedron*, 1999, **55**, 10937-10948 (*isol, pmr, cmr, ms*)

Mimosamycin M-624

7-Methoxy-2,6-dimethyl-3,5,8(2H)-isoquinolinetrione, 9CI
[59493-94-6]



$C_{12}H_{11}NO_4$ 233.223

Benzoquinone-type antibiotic. Isol. from *Streptomyces lavendulae* and from the sponges *Reniera*, *Xestospongia* and *Petrosia* spp.; also from *Oceanapia* sp. Mainly active against mycobacteria. Also exhibits antifungal activity. Yellow prisms (MeOH). Mp 227-231° (219-221°). $[\alpha]_D^{24}$ -1.8 (c, 1 in $CHCl_3$). λ_{max} 230 (sh) (ϵ 14500); 317 (ϵ 14500); 396 (ϵ 3630) (MeOH) (Derep).

▶ NX5123400

O^7*-De-Me,* O^7*-Et: 7-Ethoxy-2,6-dimethyl-3,5,8(2H)-isoquinolinetrione, 9CI.* ***Cribrostatin 2***
[144279-36-7]
$C_{13}H_{13}NO_4$ 247.25
Alkaloid from the blue sponge *Cribrochalina* sp. Shows activity against P388 lymphocytic leukaemia. Shows broad spectrum antibacterial activity. Golden-yellow solid. Mp 194-195°.

4-Hydroxy: ***4-Hydroxymimosamycin***
[224558-89-8]
$C_{12}H_{11}NO_5$ 249.223
Isol. from the sponge *Haliclona cribricutis.* Orange-red cryst. Mp 225°. λ_{max} 227 (log ϵ 4.05); 485 (log ϵ 3.58) (MeOH).

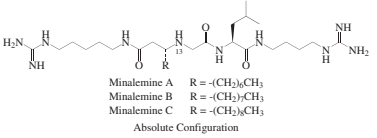
1,4-Dihydroxy: ***1,4-Dihydroxymimosamycin***
[224558-92-3]
$C_{12}H_{11}NO_6$ 265.222
Isol. from the sponge *Haliclona cribricutis.* λ_{max} 220 (log ϵ 4.11); 255 (log ϵ 3.75); 500 (log ϵ 3.58) (MeOH).

4-Amino: ***4-Aminomimosamycin***
[157227-53-7]
$C_{12}H_{12}N_2O_4$ 248.238
Isol. from the Indian Sea sponge, *Petrosia* sp. cAMP inhibitor. Deep red needles. Mp 250-251°. λ_{max} 350 (ϵ 2187); 483 (ϵ 3800) (MeOH) (Berdy).

7-Demethoxy, 7-amino: ***7-Amino-7-demethoxymimosamycin***
[157227-54-8]
$C_{11}H_{10}N_2O_3$ 218.212
Isol. from the sponge *Petrosia* sp. cAMP inhibitor. Light brown solid. Mp 300°. λ_{max} 250 (ϵ 3715); 327 (ϵ 4677); 434 (ϵ 812) (MeOH) (Berdy).

Arai, T. *et al., J. Antibiot.*, 1976, **29**, 398-407 (*isol, uv, ir, pmr*)
Mishima, H. *et al., Heterocycles*, 1977, **6**, 1652-1657 (*synth*)
Hata, T. *et al., Acta Cryst. B*, 1978, **34**, 2899-2901 (*cryst struct*)
Mishima, H. *et al., Chem. Pharm. Bull.*, 1978, **26**, 2175-2180 (*synth*)
Fukumi, H. *et al., J. Antibiot.*, 1978, **31**, 847-849 (*isol, pmr, cmr, ms*)
Frincke, J.M. *et al., J.A.C.S.*, 1982, **104**, 265-269 (*isol*)
Thomson, R.H. *et al., Naturally Occurring Quinones III, Recent Advances*, Chapman and Hall, 1987, 634 (*synth*)
Parker, K.A. *et al., J.O.C.*, 1988, **53**, 2847-2850 (*synth*)
Pettit, G.R. *et al., Can. J. Chem.*, 1992, **70**, 1170-1175 (*Cribrostatin 2*)
Kobayashi, M. *et al., J. Chem. Res., Synop.*, 1994, 282-283 (*Petrosia constits*)
Edrada, R.A. *et al., J. Nat. Prod.*, 1996, **59**, 973-976 (*isol, props*)
Parameswaran, P.S. *et al., Indian J. Chem., Sect. B*, 1998, **37**, 1258-1263 (*1,4-Dihydroxymimosamycin, 4-Hydroxymimosamycin*)
Pettit, G.R. *et al., J. Nat. Prod.*, 2000, **63**, 793-798 (*Cribrostatin 2, activity*)
Kesteleyn, B. *et al., J.O.C.*, 2000, **65**, 635-639 (*synth*)
Fontana, A. *et al., Tetrahedron*, 2000, **56**, 7305-7308 (*isol*)

Minalemines M-625



Isol. from the marine tunicate *Didemnum rodriguesi*.

Minalemine A [210828-85-6]
$C_{29}H_{60}N_{10}O_3$ 596.858
$[\alpha]_D$ -22.8 (c, 0.002 in MeOH). λ_{max} 222 (MeOH).

N^{13}*-Sulfate:* ***Minalemine D***
[210828-88-9]
$C_{29}H_{60}N_{10}O_6S$ 676.922
λ_{max} 272 (EtOH).

Minalemine B [210828-86-7]
$C_{30}H_{62}N_{10}O_3$ 610.885
$[\alpha]_D$ -21.2 (c, 0.001 in MeOH). λ_{max} 222 (MeOH).

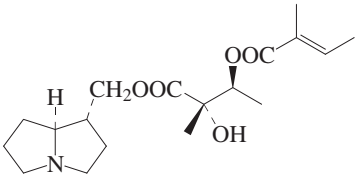
N^{13}*-Sulfate:* ***Minalemine E***
[210828-89-0]
$C_{30}H_{62}N_{10}O_6S$ 690.949
λ_{max} 272 (EtOH).

Minalemine C [210828-87-8]
$C_{31}H_{64}N_{10}O_3$ 624.912
$[\alpha]_D$ -23.3 (c, 0.001 in MeOH). λ_{max} 222 (MeOH).

N^{13}*-Sulfate:* ***Minalemine F***
[210828-90-3]
$C_{31}H_{64}N_{10}O_6S$ 704.976
λ_{max} 272 (EtOH).

Exposito, M.A. *et al., Tetrahedron*, 1998, **54**, 7539-7550 (*isol, uv, pmr, cmr, ms*)
Exposito, M.A. *et al., J.O.C.*, 2001, **66**, 4206-4213 (*synth, uv, cd, abs config*)

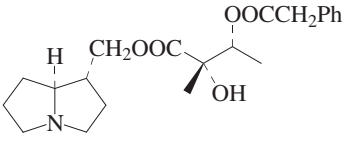
Minalobine O M-626



$C_{18}H_{29}NO_5$ 339.431
Alkaloid from *Ipomoea cristulata*. Yellow oil. Many other Minalobines were isol. but not fully characterised.

Jenett-Siems, K. *et al., Phytochemistry*, 2005, **66**, 223-231 (*isol, pmr, cmr, ms*)

Minalobine R M-627

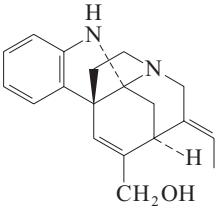


$C_{21}H_{29}NO_5$ 375.464
Alkaloid from *Ipomoea lobata*. Yellow oil. $[\alpha]_D^{20}$ -35 (c, 0.15 in MeOH). Many other Minalobines were isol. but not fully characterised.

Jenett-Siems, K. *et al., Phytochemistry*, 2005, **66**, 223-231 (*isol, pmr, cmr, ms*)

Minfiensine M-628

[125362-84-7]

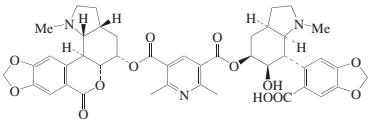


$C_{19}H_{22}N_2O$ 294.396
Alkaloid from *Strychnos minfiensis.* Amorph. solid. $[\alpha]_D$ +134 (c, 0.82 in $CHCl_3$).

Massiot, G. *et al., Heterocycles*, 1989, **29**, 1435-1438 (*isol, uv, ir, pmr, cmr, ms*)
Shen, L. *et al., Angew. Chem., Int. Ed.*, 2008, **47**, 3618-3621 (*synth*)
Dounay, A.B. *et al., J.A.C.S.*, 2008, **130**, 5368-5377 (*synth*)

Miniatine M-629

[26723-35-3]



$C_{43}H_{45}N_3O_{13}$ 811.841
Alkaloid from *Clivia miniata* (Amaryllidaceae). Mp 206°. $[\alpha]_D$ +8 (c, 0.2 in DMF). Possibly an extraction artifact.

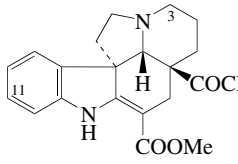
Lactone: ***Clivimine***
[7096-85-7]
$C_{43}H_{43}N_3O_{12}$ 793.826
Alkaloid from the leaves and rhizomes of *Clivia miniata* (Amaryllidaceae). Prisms (C_6H_6). Mp 264-266° dec. $[\alpha]_D^{25}$ +32 (c, 0.25 in $CHCl_3$).

Lactone; perchlorate:
Cryst. + $2H_2O$ (H_2O). Mp 305-307° dec.

Boit, H.-G. *et al., Naturwissenschaften*, 1961, **48**, 603 (*Clivimine, isol, ir*)
Döpke, W. *et al., Tet. Lett.*, 1967, 451; 1970, 745 (*Clivimine, Miniatine, pmr, ms, struct, stereochem, bibl*)
Kobayashi, S. *et al., Chem. Pharm. Bull.*, 1980, **38**, 1827 (*Clivimine, isol, ir, pmr*)
Wagner, J. *et al., Tetrahedron*, 1996, **52**, 6591 (*Clivimine, cd*)

Minovincine M-630

Methyl 2,3-didehydro-20-oxoaspidospermidine-3-carboxylate, 9CI. Minoricine



(+)-*form*

$C_{21}H_{24}N_2O_3$ 352.432

(+)-*form* [15622-69-2]
Alkaloid from *Tabernaemontana riedelii* (Apocynaceae). Noncryst. $[\alpha]_D^{26}$ +340 (c, 1 in EtOH).

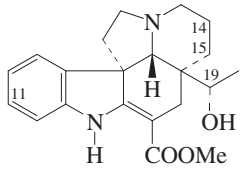
(-)-*form* [6792-12-7]
Alkaloid from *Vinca minor* (Apocynaceae). Noncryst. $[\alpha]_D^{20}$ -504 (c, 0.5 in EtOH). $[\alpha]_D$ -534 (MeOH).

11-Methoxy: ***Minoriceine****. 11-Methoxyminovincine*
[22341-30-6]
Alkaloid from *Vinca minor* (Apocynaceae). Amorph. Mp 141°. $[\alpha]_D^{20}$ -414 (c, 0.03 in EtOH).

Plat, M. *et al., Bull. Soc. Chim. Fr.*, 1962, 2237 (*isol, uv, ir, pmr, ms, struct, deriv*)
Zachystalová, D. *et al., Chem. Ind. (London)*, 1963, 610 (*Minoriceine*)
Cava, M.P. *et al., J.O.C.*, 1968, **33**, 1055 (*isol, uv, ir, pmr, ms, deriv*)
Döpke, W. *et al., Tet. Lett.*, 1968, 605; 1971, 1287 (*Minoriceine*)
Kuehne, M. *et al., Tetrahedron*, 1983, **39**, 3707; 3715 (*synth*)
Kalaus, G. *et al., J.O.C.*, 1997, **62**, 9188-9191 (*synth*)

Minovincinine M-631

Methyl 2,3-didehydro-20-hydroxyaspidospermidine-3-carboxylate, 9CI. Alkaloid V3



(+)-*form*

$C_{21}H_{26}N_2O_3$ 354.448

(+)-*form* [6801-25-8]
Alkaloid from *Alstonia venenata* (Apocynaceae). Noncryst. $[\alpha]_D$ +338 ($CHCl_3$). $[\alpha]_D$ +441 (EtOH).

O-*Ac:* ***Echitovenine***
[4697-85-2]
$C_{23}H_{28}N_2O_4$ 396.485
Alkaloid from *Alstonia venenata* (Apocynaceae). Mp 170-172°. $[\alpha]_D$ +690 ($CHCl_3$).

19-Epimer, O-*(3,4,5-trimethoxybenzoyl):* ***19-Epi-(+)-echitoveniline***
$C_{31}H_{36}N_2O_7$ 548.635
Alkaloid from the leaves of *Alstonia venenata* (Apocynaceae). Prisms (EtOAc/petrol). Mp 168-169°. $[\alpha]_D$ +462 (EtOH).

(-)-*form*
Alkaloid from *Vinca minor, Catharanthus longifolius* and *Catharanthus trichophyllus* (Apocynaceae). Noncryst. $[\alpha]_D^{20}$ -418 (c, 1 in EtOH). $[\alpha]_D^{22}$ -473 (c, 0.85 in EtOH) (synthetic). λ_{max} 225 (log ϵ 4.02); 297 (log ϵ 4); 328 (log ϵ 4.09) (no solvent reported).

O-*(3-Methyl-2-butenoyl):* ***Echitovenidine***
[7222-35-7]
$C_{26}H_{32}N_2O_4$ 436.55
Alkaloid from *Alstonia venenata* (Apocynaceae). Mp 162-163°. $[\alpha]_D$ -580 ($CHCl_3$). Cooccurrence with Echitovenine is remarkable.

▶ CJ0145000

O-*(3,4,5-Trimethoxybenzoyl):* ***Echitoveniline***
[72855-79-9]
$C_{31}H_{36}N_2O_7$ 548.635
Alkaloid from *Alstonia venenata* (Apocynaceae). Amorph. $[\alpha]_D$ -263 ($CHCl_3$).

O-*(3-Methoxy-4,5-methylenedioxybenzoyl):* ***Echitoserpidine***
[52718-36-2]
$C_{30}H_{32}N_2O_7$ 532.592
Alkaloid from the fruits of *Alstonia venenata* (Apocynaceae). Cryst. (MeOH). Mp 110°. $[\alpha]_D$ -427 ($CHCl_3$).

11-Methoxy: ***11-Methoxyminovincinine***
[22341-28-2]
$C_{22}H_{28}N_2O_4$ 384.474
Alkaloid from *Vinca minor* (Apocynaceae). Amorph. $[\alpha]_D^{24}$ -395 (c, 0.2 in $CHCl_3$).

11-Methoxy, O-*Ac:* ***Echitovenaldine***
[52358-57-3]
$C_{24}H_{30}N_2O_5$ 426.511
Minor alkaloid from the leaves of *Alstonia venenata* (Apocynaceae). Mp 148°. $[\alpha]_D$ -485 ($CHCl_3$).

11-Methoxy, O-*(3,4,5-trimethoxybenzoyl):* ***11-Methoxyechitoveniline****. 16-Methoxyechitoveniline*
[72855-80-2]
Alkaloid from *Alstonia venenata* (Apocynaceae). Amorph. $[\alpha]_D$ -388 (EtOH).

11-Methoxy, O-*(3-Methyl-2-butenoyl):* ***11-Methoxyechitovenidine***
[72855-81-3]
$C_{27}H_{34}N_2O_5$ 466.576
Alkaloid from *Alstonia venenata* (Apocynaceae). Plates (MeOH). Mp 140°. $[\alpha]_D$ -325 ($CHCl_3$).

11-Methoxy, O-*(3-methoxy-4,5-methylenedioxybenzoyl):* ***Echitoserpine***
[55870-82-1]
$C_{31}H_{34}N_2O_8$ 562.618
Alkaloid from the fruits of *Alstonia venenata* (Apocynaceae). Cryst. (MeOH). Mp 154°. $[\alpha]_D$ -444.5 ($CHCl_3$).

19-Epimer: ***19-Epiminovincinine***
[26568-42-3]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from *Vinca minor* (Apocynaceae). Mp 135°. $[\alpha]_D$ -580 (c, 0.2 in EtOH).

19-Epimer, 14-oxo: ***Baloxine****. 20S-Hydroxy-7-oxovincadifformine*
[38225-09-1]
$C_{21}H_{24}N_2O_4$ 368.432
Minor alkaloid from *Melodinus balansae* (Apocynaceae). Noncryst. $[\alpha]_D$ -120 (c, 0.1 in $CHCl_3$).

[34020-05-8]

Plat, M. *et al., Bull. Soc. Chim. Fr.*, 1962, 2237-2241 (*isol, uv, ir, pmr, ms, struct*)
Das, B. *et al., Tet. Lett.*, 1966, 2483 (*uv, ir, pmr, ms, struct*)
Döpke, W. *et al., Tet. Lett.*, 1968, 6065; 1970, 749; 1971, 1287 (*16-Methoxyminovincinine, 16-Epiminovincinine*)
Mehri, M.H. *et al., Bull. Soc. Chim. Fr.*, 1972, 3291-3292 (*Baloxine*)
Majumder, P.L. *et al., Chem. Ind. (London)*, 1973, 1032 (*Echitovenaldine*)
Majumder, P.L. *et al., Phytochemistry*, 1974, **13**, 645 (*Echitoserpidine*)
Majumder, P.L. *et al., Tetrahedron*, 1974, **30**, 2761; tet, 1979, **35**, 1151; 1981, **37**, 1243 (*16-Methoxyminovincinine, Echitoserpine, 11-Methoxyechitovenidine, Echitoveniline, 19-Epi-(+)-echitoveniline*)
Langlois, N. *et al., J.O.C.*, 1979, **44**, 2468 (*synth*)
Caron, C. *et al., Heterocycles*, 1981, **16**, 645-646 (*Baloxine, synth, abs config*)

Minpeimine M-632

$C_{27}H_{43}NO_2$ 413.642

Struct. unknown. Alkaloid from the Chinese drug Pei-mu (*Fritillaria* sp.) (Liliaceae). Mp 210-212°. Contains a carbonyl group.

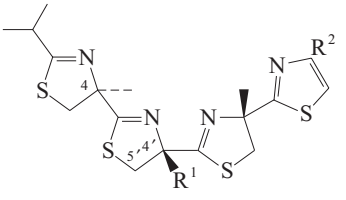
Chu, T.-T. *et al., CA*, 1959, **53**, 647

Minpeiminine M-633

Struct. unknown. Alkaloid from the Chinese drug Pei-mu (*Fritillaria* sp.) (Liliaceae), occurring with Minpeimine, M-632. Mp 215-216°.

Chu, T.T. *et al., CA*, 1959, **53**, 647

Mirabazole A M-634



R^1 = H, R^2 = CH_3

$C_{18}H_{24}N_4S_4$ 424.678

4′,5′-Didehydro: ***Didehydromirabazole A***
[135432-51-8]
$C_{18}H_{22}N_4S_4$ 422.663
Isol. from the terrestrial blue-green alga *Scytonema mirabile*. Cytotoxic agent. $[\alpha]_D$ -26 (c, 0.44 in $CHCl_3$). May be an artifact formed from Mirabazole A. Config. of ring-A stereocentre revised in 1994.

Carmeli, S. *et al., Tet. Lett.*, 1991, **32**, 2593-2596 (*isol, pmr, struct*)
Pattenden, G. *et al., J.C.S. Perkin 1*, 1993, 1629-1636 (*synth, Didehydromirabazole A*)
Boyce, R.J. *et al., Synlett*, 1994, 587-588 (*synth, config, Didehydromirabazole A*)

Mirabazole B M-635

[135459-34-6]
As Mirabazole A, M-634 with
$R^1 = R^2 = CH_3$
$C_{19}H_{26}N_4S_4$ 438.705
Isol. from the blue-green alga *Scytonema mirabile*. Cytotoxic agent. $[\alpha]_D$ -166 (c, 0.09 in $CHCl_3$). 12CI name is incorrect.

Carmeli, S. *et al., Tet. Lett.*, 1991, **32**, 2593 (*isol, pmr, struct*)
Walker, M.A. *et al., J.O.C.*, 1992, **57**, 5566 (*synth*)
Parsons, R.L. *et al., Tet. Lett.*, 1994, **35**, 1383 (*synth*)
Kuriyama, N. *et al., Tetrahedron*, 1997, **53**, 8323 (*synth, pmr*)

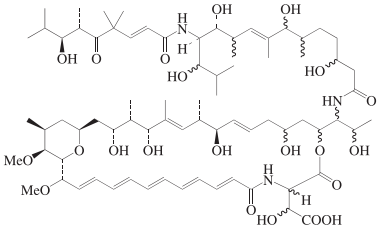
Mirabazole C M-636

[135432-52-9]
As Mirabazole A, M-634 with
$R^1 = CH_3$, $R^2 = H$
$C_{18}H_{24}N_4S_4$ 424.678
Config. of ring-A stereocentre revised in 1994. Isol. from the terrestrial blue-green alga *Scytonema mirabile*. Cytotoxic. $[\alpha]_D$ -113 (c, 0.024 in $CHCl_3$). 12CI name is incorrect.

Carmeli, S. *et al., Tet. Lett.*, 1991, **32**, 2593 (*isol, pmr, struct*)
Walker, M.A. *et al., J.O.C.*, 1992, **57**, 5566 (*synth*)
Parsons, R.L. *et al., Tet. Lett.*, 1994, **35**, 1379 (*config, synth*)
Akaji, K. *et al., J.O.C.*, 1996, **61**, 3350 (*synth*)

Mirabilin† M-637

[1009368-84-6]

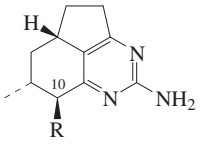


$C_{76}H_{123}N_3O_{22}$ 1430.815
Alkaloid from *Siliquariaspongia mirabilis*. Antitumour agent. Pale yellow powder. $[\alpha]_D^{25}$ -14 (c, 0.05 in MeOH). λ_{max} 350 (log ϵ 3.96) (MeOH).

Plaza, A. *et al., J. Nat. Prod.*, 2008, **71**, 473-477 (*isol, pmr, cmr*)

Mirabilin B M-638

[182266-75-7]



Relative Configuration

R = $-CH_2CH_2CH_2CH_3$

$C_{15}H_{23}N_3$ 245.367
Alkaloid from the sponges *Arenochalina mirabilis*, *Batzella* sp. and *Monanchora unguifera*. Antifungal agent. Cryst. $[\alpha]_D$ +41.6 (c, 0.48 in MeOH). λ_{max} 236 ; 302 ; 375 (MeOH).

N-*Ac:*
Pale yellow oil. $[\alpha]_D$ +89 (c, 0.40 in $CHCl_3$). λ_{max} 244 (ϵ 11800); 275 (ϵ 400) (MeOH).

Barrow, R.A. *et al., Aust. J. Chem.*, 1996, **49**, 767-773 (*isol, pmr, cmr, ms*)
Patil, A.D. *et al., J. Nat. Prod.*, 1997, **60**, 704-707 (*isol, pmr, cmr*)
Hua, H.-M. *et al., Bioorg. Med. Chem.*, 2004, **12**, 6461-6464 (*isol*)
Yu, M. *et al., J.O.C.*, 2008, **73**, 9065-9074 (*synth, pmr, cmr*)

Mirabilin C M-639

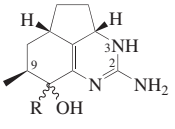
[182266-76-8]
As Mirabilin B, M-638 with
R = $-CH_2CH{=}CHCH_2CH_2CH_3$ (*Z*)
$C_{17}H_{25}N_3$ 271.405
Alkaloid from the Australian marine sponge *Arenochalina mirabilis*. Pale yellow oil (as *N*-Ac). $[\alpha]_D$ +153 (c, 0.57 in $CHCl_3$) (*N*-Ac). Isol. and characterised as the monoacetate. λ_{max} 244 (ϵ 12400); 274 (ϵ 4500) (MeOH) (*N*-Ac) (Berdy).

10-Epimer: ***Mirabilin A***
[182145-37-5]
$C_{17}H_{25}N_3$ 271.405
From *Arenochalina mirabilis*. Pale yellow oil (as *N*-Ac). $[\alpha]_D$ +12.8 (c, 0.74 in $CHCl_3$) (*N*-Ac). λ_{max} 206 (ϵ 5500); 244 (ϵ 1300); 275 (ϵ 4400) (MeOH) (*N*-Ac) (Berdy).

Barrow, R.A. *et al., Aust. J. Chem.*, 1996, **49**, 767 (*isol, uv, ir, pmr, cmr, ms, struct*)

Mirabilin D M-640

[182145-57-9]



Relative Configuration

R = $-CH_2CH{=}CHCH_2CH_2CH_3$ (*Z*)

$C_{17}H_{27}N_3O$ 289.42
Alkaloid from the Australian marine sponge *Arenochalina mirabilis*. Pale yellow oil (as di-Ac). $[\alpha]_D$ +285 (c, 0.3 in $CHCl_3$) (di-Ac). λ_{max} 204 (ϵ 4600); 246 (ϵ 3600); 287 (ϵ 3750) (MeOH) (di-Ac) (Berdy). λ_{max} 246 (ϵ 3600); 287 (ϵ 3750) (EtOH) (di-Ac).

Barrow, R.A. *et al., Aust. J. Chem.*, 1996, **49**, 767 (*isol, uv, ir, pmr, cmr, ms, struct*)

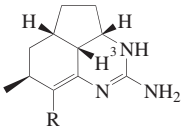
Mirabilin E M-641

[182145-71-7]
As Mirabilin D, M-640 with
R = $-CH_2CH_2CH_2CH_3$
$C_{15}H_{25}N_3O$ 263.382
Alkaloid from the Australian marine sponge *Arenochalina mirabilis*. Pale yellow oil (as di-Ac). $[\alpha]_D$ +332 (c, 0.05 in $CHCl_3$) (di-Ac). Relative stereochem. about C9 not detd. λ_{max} 202 (ϵ 2100); 241 (ϵ 1650); 285 (ϵ 1250) (EtOH) (di-Ac).

Barrow, R.A. *et al., Aust. J. Chem.*, 1996, **49**, 767 (*isol, uv, ir, pmr, cmr, ms, struct*)

Mirabilin F M-642

[182145-74-0]



Relative Configuration

R = $-CH{=}CHCH_2CH_3$(*E*-)

$C_{15}H_{23}N_3$ 245.367
Appears to be a didehydro deriv. of Ptilocaulin, P-773; shown with different tautomerism of the cyclic guanidine system. Alkaloid from the Australian marine sponge *Arenochalina mirabilis*. Pale yellow oil (as *N*-Ac). $[\alpha]_D$ +384 (c, 0.2 in $CHCl_3$) (*N*-Ac). λ_{max} 241 (ϵ 3278); 295 (ϵ 3150) (no solvent reported) (Berdy). λ_{max} 241 (ϵ 5278); 295 (ϵ 3150) (EtOH) (*N*-Ac).

Barrow, R.A. *et al., Aust. J. Chem.*, 1996, **49**, 767-773 (*isol, uv, ir, pmr, cmr, ms, struct*)

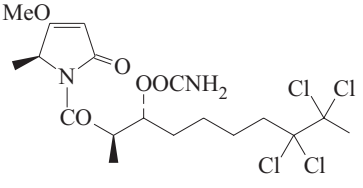
Mirabilin G M-643

As Mirabilin F, M-642 with
R = $-CH{=}CH(CH_2)_3CH_3$(*E*-)
$C_{17}H_{27}N_3$ 273.42
Alkaloid from the Australian marine sponge *Clathria* sp. Pale yellow oil. $[\alpha]_D$ +49 (c, 0.1 in $CHCl_3$). λ_{max} 241 (log ϵ 3.7); 295 (log ϵ 3.4) (EtOH).

Capon, R.J. *et al., J. Nat. Prod.*, 2001, **64**, 643-644 (*isol, uv, pmr, cmr, ms*)

Mirabimide E M-644

[159903-50-1]

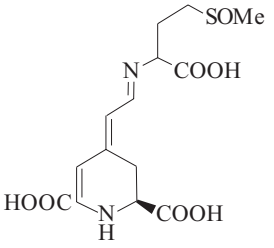


$C_{18}H_{26}Cl_4N_2O_5$ 492.225
Isol. from the terrestrial blue-green alga *Scytonema mirabile*. Cytotoxic. $[\alpha]_D$ +6.5 (c, 0.9 in $CHCl_3$).

Paik, S. *et al., J.A.C.S.*, 1994, **116**, 8116 (*isol, ir, pmr, cmr, synth, struct*)

Miraxanthin I M-645

4-[[[1-Carboxy-3-(methylsulfinyl)propyl]imino]ethylidene]-1,2,3,4-tetrahydro-2,6-pyridinedicarboxylic acid, 9CI. 4-[[N-[1-Carboxy-3-(methylsulfinyl)propyl]formimido]methylene]-1,2,3,4-tetrahydro-2,6-pyridinedicarboxylic acid, 8CI
[5296-79-7]

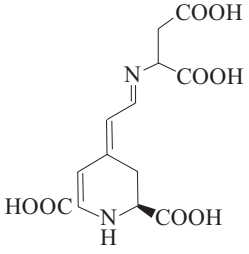


$C_{14}H_{18}N_2O_7S$ 358.371
Yellow pigment of flowers of *Mirabilis jalapa* (Nyctaginaceae). Yellow solid.

Piattelli, M. *et al., Phytochemistry*, 1965, **4**, 817 (*isol, struct, uv, synth*)

Miraxanthin II M-646

4-[[(1,2-Dicarboxyethyl)imino]ethylidene]-1,2,3,4-tetrahydro-2,6-pyridinedicarboxylic acid, 9CI. Aspartic acid betaxanthin
[5375-63-3]

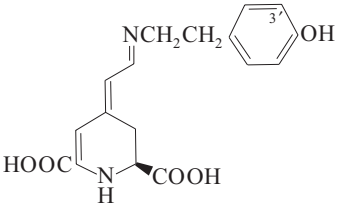


$C_{13}H_{14}N_2O_8$ 326.262
Yellow pigment of flowers of *Mirabilis jalapa* (Nyctaginaceae). Yellow solid.

Piattelli, M. *et al., Phytochemistry*, 1965, **4**, 817 (*isol, struct, uv, synth*)

Miraxanthin III M-647

1,2,3,4-Tetrahydro-4-[[[2-(4-hydroxyphenyl)ethyl]imino]ethylidene]-2,6-pyridinedicarboxylic acid, 9CI. Tyraminebetaxanthin
[5589-85-5]



$C_{17}H_{18}N_2O_5$ 330.34
Yellow pigment of flowers of *Mirabilis jalapa* (Nyctaginaceae). Yellow solid. L-Config. probable on biosynth. grounds.

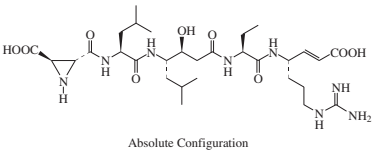
3′-Hydroxy: Dopaminebetaxanthin. ***Miraxanthin V***
[5375-64-4]
$C_{17}H_{18}N_2O_6$ 346.339
Yellow pigment from *Mirabilis jalapa* (Nyctaginaceae). Yellow solid.

3′-Methoxy: ***3-Methoxytyraminebetaxanthin***
$C_{18}H_{20}N_2O_6$ 360.366
Yellow pigment from *Celosia argentea*.

Piattelli, M. *et al., Phytochemistry*, 1965, **4**, 817 (*isol, struct, uv, synth*)
Kobayashi, N. *et al., Phytochemistry*, 2001, **56**, 429-436 (*biosynth*)
Schliemann, W. *et al., Phytochemistry*, 2001, **58**, 159-165 (*3-Methoxytyraminebetaxanthin*)
Stintzing, F.C. *et al., Helv. Chim. Acta*, 2006, **89**, 1008-1016 (*Miraxanthin V, pmr, cmr*)

Miraziridine A M-648

[312322-94-4]



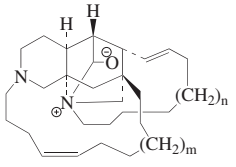
Absolute Configuration

$C_{30}H_{52}N_8O_9$ 668.789
Isol. from the marine sponge *Theonella* aff. *mirabilis*. Cysteine protease inhibitor. Also amino-proteinase and serine-proteinase inhibitor. $[\alpha]_D^{20}$ -74 (c, 0.085 in MeOH). λ_{max} 205 (ϵ 14000) (MeOH).

Nakao, Y. *et al., J.A.C.S.*, 2000, **122**, 10462-10463 (*isol, cmr, pmr*)
Schaschke, N. *et al., Bioorg. Med. Chem. Lett.*, 2004, **14**, 855-857 (*pharmacol*)
Konno, H. *et al., Tetrahedron*, 2007, **63**, 9502-9513 (*synth*)

Misenine M-649

[202075-41-0]



Relative Configuration

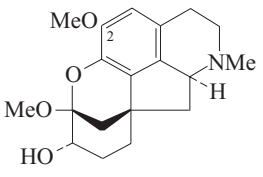
m + n = 6

$C_{33}H_{54}N_2O$ 494.802
Alkaloid from the sponge *Reniera* sp. Oil. $[\alpha]_D$ +6.4 (c, 2.2 in $CHCl_3$).

Guo, Y. *et al., Tetrahedron*, 1998, **54**, 541-550 (*isol, ir, pmr, cmr*)

Misramine M-650

[94801-27-1]



$C_{19}H_{25}NO_4$ 331.411
Alkaloid from the above-ground parts of *Roemeria hybrida* and *Roemeria dodecandra* (Papaveraceae). Cryst. (MeOH). Mp 103-105°. $[\alpha]_D^{25}$ -23 (c, 0.1 in MeOH). $[\alpha]_D^{25}$ -26 (c, 0.1 in C_6H_6). $[\alpha]_D^{25}$ -22 (c, 0.1 in Me_2CO). The first pentacyclic proaporphine alkaloid. Probably derived biogenetically from a diastereomer of Orientalinone, O-112.

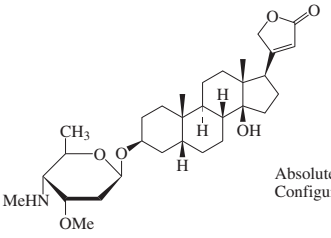
O²-De-Me: ***Labrandine****. Misrametine*
[128581-42-0]
$C_{18}H_{23}NO_4$ 317.384
Alkaloid from *Roemeria hybrida* (Papaveraceae). Amorph. $[\alpha]_D$ -120 (c, 0.22 in MeOH). $[\alpha]_D$ -145 (c, 0.12 in $CHCl_3$).

O²-De-Me, di-Ac:
Amorph. $[\alpha]_D$ -120 (c, 0.12 in MeOH).

El-Masry, S. *et al., J.O.C.*, 1985, **50**, 729 (*uv, ir, pmr, ms, cd, struct*)
El-Masry, S. *et al., Alexandria J. Pharm. Sci.*, 1990, **4**, 90; *CA*, **114**, 160639 (*Misrametine*)
Gözler, B. *et al., Heterocycles*, 1990, **31**, 149 (*Labrandine*)

Mitiphylline M-651

[22214-87-5]



Absolute Configuration

$C_{31}H_{49}NO_6$ 531.731
Alkaloid from leaves of *Holarrhena mitis* (Apocynaceae). Noncryst. $[\alpha]_D$ +20 (c, 1 in $CHCl_3$).

N-*Ac:* **N-*Acetylmitiphylline***
$C_{33}H_{51}NO_7$ 573.768
Alkaloid from leaves of *Holarrhena mitis* (Apocynaceae). Cryst. (Me_2CO). Mp 126-128°. $[\alpha]_D$ +38 (c, 2 in $CHCl_3$).

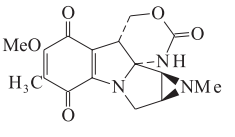
N-*De-Me:* **N-*Demethylmitiphylline***
$C_{30}H_{47}NO_6$ 517.704
Alkaloid from leaves of *Holarrhena mitis* (Apocynaceae). Amorph. $[\alpha]_D^{20}$ +9 ($CHCl_3$).

N-*De-Me,* N-*Ac:*
Cryst. (MeOH). Mp 253-256°. $[\alpha]_D^{20}$ +16 ($CHCl_3$). Cryst. with difficulty.

Janot, M.-M. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1968, **267**, 1050 (*isol, uv, ir, pmr, ms, struct*)
Leboeuf, M. *et al., Phytochemistry*, 1972, **11**, 843 (*isol, struct, derivs*)

Mitiromycin A M-652

[27164-43-8]



Absolute configuration

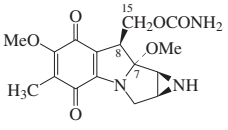
$C_{16}H_{17}N_3O_5$ 331.327
Isol. from *Streptomyces verticillatus*. Antibiotic active against gram-positive and -negative bacteria and certain tumours. Red-purple needles. Sol. MeOH, $CHCl_3$; poorly sol. hexane. Mp 124-126°. Related to the Mitomycins. λ_{max} 227 (ϵ 8920); 322 (ϵ 7580); 530 (ϵ 1030) (MeOH) (Berdy).

▶ CN1065000

Lefemine, D.V. *et al., J.A.C.S.*, 1962, **84**, 3184 (*isol, uv*)
Morton, G.O. *et al., J.A.C.S.*, 1970, **92**, 2588 (*struct, ir, pmr, ms*)
Kono, M. *et al., J. Antibiot.*, 1991, **44**, 309 (*abs config*)

Mitomycin A M-653

Mitiromycin B
[4055-39-4]



Absolute Configuration

$C_{16}H_{19}N_3O_6$ 349.343
Isol. from *Streptomyces caespitosus*. Antitumour agent, selectively inhibits DNA synthesis. Antibiotic. Purple needles. Mp 159-161° dec. $[\alpha]_D^{25}$ -143 (c, 0.1 in MeOH). λ_{max} 235; 285; 335; 435 (MeOH/HCl) (Derep). λ_{max} 360; 555 (MeOH/NaOH) (Derep). λ_{max} 215 (ϵ 15000); 317 (ϵ 9300); 528 (ϵ 1300) (MeOH) (Derep).

▶ LD_{50} (mus, ivn) 1 mg/kg. CN1050000

1-N-*Me:* ***Mitomycin F***. *1-Methylmitomycin A*
[18209-14-8]
$C_{17}H_{21}N_3O_6$ 363.369
From *Streptomyces caespitosus*. Antitumour agent. Reddish-purple cryst. Mp 145°. λ_{max} 220 (ϵ 12050); 324 (ϵ 7580); 520 (ϵ 850) (MeOH) (Berdy).

▶ LD_{50} (mus, ivn) 4.3 mg/kg.

De(carbamoyloxy), 8,15-didehydro, 1-N-*Me:* ***Mitomycin K***
[74148-45-1]
$C_{16}H_{18}N_2O_4$ 302.329
Prod. by *Streptomyces caespitosus*. Antitumour agent. Purple cryst.

8-Epimer, 1-N-*Me:* ***Mitomycin J***
[74985-82-3]
$C_{17}H_{21}N_3O_6$ 363.369
From *Streptomyces caespitosus*. Antitumour agent. Sol. MeOH, $CHCl_3$. λ_{max} 219 (ϵ 12550); 324 (ϵ 10200); 539 (ϵ 1230) (MeOH) (Berdy).

▶ CN0736000

8-Epimer, O^7*-de-Me, 1*-N-*Me:* ***Mitomycin B***. *Miltiromycin C*
[4055-40-7]
$C_{16}H_{19}N_3O_6$ 349.343
Isol. from *Streptomyces verticillatus* and *Streptomyces caespitosus*. Antitumour agent. Purple-blue needles. $[\alpha]_D$ -835 (c, 0.012 in MeOH). Dec. without melting. λ_{max} 235; 285; 335; 435 (MeOH/HCl) (Derep). λ_{max} 360; 555 (MeOH/NaOH) (Derep). λ_{max} 215 (ϵ 15000); 317 (ϵ 9300); 528 (ϵ 1300) (MeOH) (Derep).

▶ LD_{50} (mus, ivn) 3 mg/kg. CN0875000

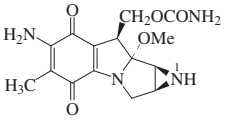
Stereoisomer: ***Antibiotic A***
[87139-13-7]
$C_{16}H_{19}N_3O_6$ 349.343
From *Streptomyces caespitosus*. Active against gram-positive and -negative bacteria. Cryst. Sol. MeOH, Me_2CO; poorly sol. H_2O, hexane. Mp 130° grad. dec. $[\alpha]_D^{26}$ -27 (c, 0.5 in $CHCl_3$). Stereochem. undefined. λ_{max} 215 (ϵ 10000); 288 (ϵ 6000) (MeOH) (Berdy).

Demethoxy, 7,8-didehydro, 1-N-*Me: 7-Methoxy-1,2-(*N-*methylaziridino)mitosene*
[37394-29-9]
$C_{16}H_{17}N_3O_5$ 331.327
Biologically active redn. prod. from Mitomycin B. Antitumour antibiotic. Orange plates (DMF or Py). $[\alpha]_D^{25}$ +36.4 (c, 0.99 in DMSO). Does not melt but loses birefringence at 230°.

Webb, J.S. *et al., J.A.C.S.*, 1962, **84**, 3185-3187; 3187-3188 (*struct, ir, uv, ms, nmr*)
Tulinsky, A. *et al., J.A.C.S.*, 1962, **84**, 3188-3190; 1967, **89**, 2905-2911 (*cryst struct*)
Patrick, J.B. *et al., J.A.C.S.*, 1964, **86**, 1889-1890 (*7-Methoxy-1,2-(N-methylaziridino)mitosene*)
v. Lear, G.E. *et al., Tetrahedron*, 1970, **26**, 2587-2597 (*struct, ms*)
Kinoshita, S. *et al., J. Med. Chem.*, 1971, **14**, 103-107 (*synth, activity*)
Hornemann, U. *et al., J. Antibiot.*, 1975, **28**, 841-843 (*biosynth*)
Yahashi, R. *et al., J. Antibiot.*, 1976, **29**, 104-106 (*cryst struct, Mitomycin B*)
Fukuyama, T. *et al., Tet. Lett.*, 1977, 4295-4298 (*synth*)
Urakawa, C. *et al., J. Antibiot.*, 1981, **34**, 243-244; 1152-1156 (*1-N-Me, derivs*)
Shirahata, K. *et al., J.A.C.S.*, 1983, **105**, 7199-7200 (*abs config*)
Japan. Pat., 1983, 83 89 189; *CA*, **99**, 138160 (*Antibiotic A*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, MQX500; MQX750

Mitomycin C, JAN M-654

Mitomycin, BAN, INN, USAN. *Mitomycin S. Mitiromycin E. Ametycine. Mitocin C. Mutamycin. NSC 26980*
[50-07-7]



Absolute Configuration

$C_{15}H_{18}N_4O_5$ 334.331
Benzoquinone antibiotic. Struct. revised in 1983. Isol. from *Streptomyces caespitosus*. Antineoplastic antibiotic. Deep blue-violet cryst. Sol. MeOH, $CHCl_3$, Me_2CO, acids; fairly sol. H_2O, C_6H_6, Et_2O; poorly sol. hexane. Mp 360°. Log P -3.04 (uncertain value) (calc). Mitomycin S was shown to be a mixt. of Mitomycin C with NaCl. λ_{max} 217 (ϵ 24600); 245 (sh) (ϵ 11000); 360 (ϵ 23000); 558 (ϵ 209) (MeOH) (Derep). λ_{max} 216 (ϵ 21880); 254 ; 360 (ϵ 21400); 420 ; 555 (ϵ 235) (MeOH) (Berdy).

▶ Adverse systemic effects reported when used therapeutically incl. bone-marrow depression, gastrointestinal, renal, pulmonary and cardiac toxicity. A possible human carcinogen. LD_{50} (rat, orl) 30 mg/kg. LD_{50} (mus, ivn) 5 mg/kg. LD_{50} (mus, ipr) 9 mg/kg. Exp. carcinogen. Exp. reprod. and teratogenic effects. CN0700000

N-*Me:* ***Porfiromycin, BAN, INN, USAN***. *Mitiromycin D. NSC 56410. Methylmitomycin C*
[801-52-5]
$C_{16}H_{20}N_4O_5$ 348.358
Isol. from the fermentation broth of *Streptomyces ardus*. Antibacterial and antineoplastic agent. Purple triclinic cryst. Fairly sol. H_2O, C_6H_6, $CHCl_3$, Me_2CO; poorly sol. Et_2O, hexane. Mp 201-201.5° dec. $[\alpha]_D^{25}$ +275 (c, 0.1 in MeOH). Log P -2.18 (uncertain value) (calc). λ_{max} 217 (ϵ 24600); 245 (sh) (ϵ 11000); 360 (ϵ 23000); 558 (ϵ 209) (MeOH) (Derep).

▶ LD_{50} (rat, orl) 68 mg/kg ; LD_{50} (mus, ipr) 20 mg/kg. CN0525000

N^1*-(3-Oxobutyl):* ***Antibiotic MMC 4***. *MMC 4*. N-*(3-Oxobutyl)mitomycin C*
[183997-07-1]
$C_{19}H_{24}N_4O_6$ 404.422
Prod. by *Streptoverticillium* sp. A1143. Antitumour agent. Red-violet cryst. Sol. MeOH, EtOAc; poorly sol. H_2O. $[\alpha]_D$ +270 (MeOH). λ_{max} 216 (E1%/1cm 547); 360 (E1%/1cm 505) (MeOH) (Berdy).

O-*De-Me,* N-*Me:* ***Mitomycin D***. *6-Amino-6-demethoxymitomycin B*
[10169-34-3]
$C_{15}H_{18}N_4O_5$ 334.331
Also semisynthetic. From *Streptomyces caespitosus*. Shows antileukaemic props. Dark bluish-purple prisms (C_6H_6/MeOH). Mp 234-236°. λ_{max} 217 ; 361 ; 558 (MeOH) (Berdy).

▶ CN0726000

8-Epimer, N-*Me:* ***Mitomycin E***
[74707-94-1]
$C_{16}H_{20}N_4O_5$ 348.358
Semisynthetic. Shows antileukaemic props. λ_{max} 217 (ϵ 17800); 361 (ϵ 19100); 558 (ϵ 215) (MeOH) (Berdy).

Stereoisomer: [87139-12-6]
$C_{15}H_{18}N_4O_5$ 334.331
Prod. by *Streptomyces caespitosus* and *Micromonospora* sp. Active against gram-positive and -negative bacteria. Cryst. Sol. MeOH, Me_2CO; poorly sol. H_2O, hexane. Mp 120° (grad. dec.). $[\alpha]_D^{26}$ +34.7 (c, 0.3 in $CHCl_3$). λ_{max} 243 (ϵ 5000); 344 (ϵ 6300) (MeOH) (Berdy).

[52081-33-1]

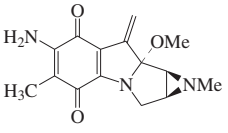
Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 1068A (*ir*)
Webb, J.S. *et al., J.A.C.S.*, 1962, **84**, 3185-3187; 3187-3188 (*struct, ir, uv, ms, pmr*)
Uzu, K. *et al., Agric. Biol. Chem.*, 1964, **28**, 394-402 (*isol, struct*)
Carter, S.K. *et al., Cancer Chemother. Rep.*, Suppl., 1968, **1**, 81 (*Porfiromycin, rev, pharmacol*)
v. Lear, G.E. *et al., Tetrahedron*, 1970, **26**, 2587-2597 (*struct, ms*)
Lown, J.W. *et al., Can. J. Chem.*, 1974, **52**, 2331-2336 (*ir, uv, ms, pmr, cmr, struct*)

Hornemann, U. *et al., J. Antibiot.*, 1975, **28**, 841-843 (*biosynth*)
IARC Monog., 1976, **10**, 171; *Suppl.* 7, 67 (*rev, tox*)
Nakatsubo, F. *et al., J.A.C.S.*, 1977, **99**, 8115-8116 (*Porfiromycin, synth, ir, pmr*)
Fukuyama, T. *et al., Tet. Lett.*, 1977, 4295-4298 (*synth*)
Crooke, S.T. *et al., Cancer Chemother.*, 1981, **3**, 49 (*rev, pharmacol*)
Iyengar, B.S. *et al., J. Med. Chem.*, 1981, **24**, 975-981 (*analogs, bibl*)
Andrews, P.A. *et al., J. Chromatogr.*, 1983, **262**, 231 (*Porfiromycin, hplc, ms*)
Shirahata, K. *et al., J.A.C.S.*, 1983, **105**, 7199-7200 (*abs config*)
Japan. Pat., 1985, 85 89 189; *CA*, **99**, 138160 (*stereoisomer*)
Danishefsky, S.J. *et al., J.A.C.S.*, 1986, **108**, 4648-4650 (*props*)
Beijnen, J.H. *et al., Anal. Profiles Drug Subst.*, 1987, **16**, 361-401 (*rev, pharmacol, synth, anal*)
Fukuyama, T. *et al., J.A.C.S.*, 1989, **111**, 8303-8304 (*synth*)
Japan. Pat., 1996, 96 245 626; *CA*, **126**, 6558e (*MMC 4*)
Martindale, The Extra Pharmacopoeia, 32nd edn., Pharmaceutical Press, 1999, 552
Abraham, L.M. *et al., Drugs*, 2006, **66**, 321-340 (*rev*)
Grüschow, S. *et al., J.A.C.S.*, 2007, **129**, 6470-6476 (*biosynth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, AHK500; MLY000

Mitomycin G M-655

10-Decarbamoyloxy-9-dehydroporfiromycin

[74148-46-2]



Absolute Configuration

$C_{15}H_{17}N_3O_3$ 287.318

Isol. from cultures of *Streptomyces caespitosus*. Green needles. Mp 270°. λ_{max} 222 (ϵ 10500); 289 (ϵ 10700); 373 (ϵ 17800); 602 (ϵ 234) (MeOH) (Berdy).

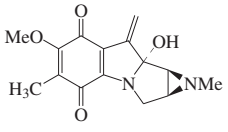
► CN0731000

Japan. Pat., 1980, 80 118 396; 80 120 587; *CA*, **94**, 82164; 103338 (*isol, synth*)

Mitomycin H M-656

10-Decarbamoyloxy-9-dehydromitomycin B

[74148-44-0]



Absolute Configuration

$C_{15}H_{16}N_2O_4$ 288.302

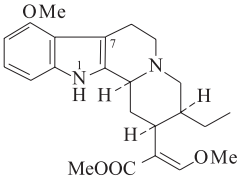
Quinone antibiotic. Isol. from *Streptomyces caespitosus*. Active against gram-positive bacteria and tumours. Bluish-purple needles. Mp 125°. λ_{max} 226 (ϵ 12000); 291 (ϵ 11700); 578 (ϵ 1100) (MeOH) (Berdy).

► LD_{50} (mus, ipr) 210 mg/kg. CN0740650

Japan. Pat., 1980, 80 118 396; *CA*, **94**, 82164 (*isol*)
Urakawa, C. *et al., J. Antibiot.*, 1981, **34**, 243; 1152-1156 (*isol*)

Mitragynine M-657

[4098-40-2]



Absolute configuration

$C_{23}H_{30}N_2O_4$ 398.501

Alkaloid from *Mitragyna speciosa* and from the genus *Uncaria* (Rubiaceae). Analgesic and antitussive agent. General depressant, anaesthetic. Noncryst. $[\alpha]_D$ -127 ($CHCl_3$). Log P 3.93 (calc).

Hydrochloride: Mp 243°.

Picrate: Mp 223-224°.

*3,*N*-Didehydro:* ***3-Dehydromitragynine***
[107286-93-1]
$C_{23}H_{29}N_2O_4^{\oplus}$ 397.493
Alkaloid from the leaves of *Mitragyna speciosa* (Rubiaceae).

*3,5,6-*N*-Tetradehydro:* ***3,4,5,6-Dehydromitragynine****. 3,4,5,6-Tetradehydromitragynine*
$C_{23}H_{27}N_2O_4^{\oplus}$ 395.477
Quaternary alkaloid from the leaves of *Mitragyna speciosa*. Dark orange powder. $[\alpha]_D^{18}$ -410 (c, 0.4 in $CHCl_3$). λ_{max} 220 ; 258 ; 314 ; 366 (MeOH).

*Δ^1-Isomer, 7*S*-hydroxy:* ***7-Hydroxymitragynine***
$C_{23}H_{30}N_2O_5$ 414.5
Alkaloid from leaves of *Mitragyna speciosa* (Rubiaceae). Amorph. powder. $[\alpha]_D$ +47.9 (c, 0.55 in $CHCl_3$).

3-Epimer, Δ^1-isomer, 7β-hydroxy: ***7-Hydroxyspeciociliatine***
Alkaloid from the fruit of *Mitragyna speciosa*. Amorph. yellow solid. λ_{max} 221 (log ϵ 4.49); 240 (sh) (log ϵ 4.25); 294 (log ϵ 3.67) (MeOH).

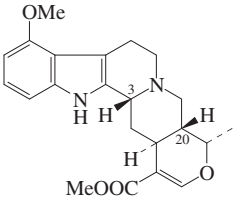
3,20-Diepimer: ***Mitraciliatine***
[14509-92-3]
$C_{23}H_{30}N_2O_4$ 398.501
Alkaloid from *Mitragyna ciliata, Mitragyna tubulosa, Mitragyna speciosa* and *Uncaria* spp. (Rubiaceae). Mp 140-141°.

3,20-Diepimer, perchlorate:
Yellow prisms (Et_2O/EtOH). Mp 229-230°.

Beckett, A.H. *et al., J. Pharm. Pharmacol., Suppl.*, 1963, **15**, 166T; 267T (*Mitraciliatine*)
Zacharias, D.E. *et al., Acta Cryst.*, 1965, **18**, 1039 (*cryst struct*)
Lee, C.M. *et al., Tetrahedron*, 1967, **23**, 375 (*config, uv, ir, pmr, cd, ord*)
Beckett, A.H. *et al., Tetrahedron*, 1969, **25**, 5961 (*ms*)
Phillipson, J.D. *et al., J. Chromatogr.*, 1975, **105**, 163 (*occur*)
Nakagura, N. *et al., J.C.S. Perkin 1*, 1979, 2308 (*biosynth*)
Houghton, P.J. *et al., Phytochemistry*, 1986, **25**, 2910 (*3-Dehydromitragynine*)
Ponglux, D. *et al., Planta Med.*, 1994, **60**, 580 (*7-Hydroxy-7*H*-mitragynine*)
Takayama, H. *et al., Tet. Lett.*, 1995, **36**, 9337 (*synth*)
Takayama, H. *et al., Tetrahedron*, 1998, **54**, 8433-8440 (*Dehydromitragynine*)
Takayama, H. *et al., Chem. Pharm. Bull.*, 2004, **52**, 916-928 (*rev*)
Kitajima, M. *et al., J. Nat. Med. (Tokyo)*, 2006, **60**, 28-35 (*7-Hydroxyspeciociliatine*)
Ma, J. *et al., Org. Lett.*, 2007, **9**, 3491-3494 (*synth*)

Mitrajavine M-658

[13062-04-9]



Absolute Configuration

$C_{22}H_{26}N_2O_4$ 382.458

Alkaloid from *Mitragyna javanica, Mitragyna hirsuta* and *Uncaria* spp. (Rubiaceae). Mp 117°. $[\alpha]_D^{23}$ -37.6 (c, 0.26 in $CHCl_3$). λ_{max} 227 (log ϵ 4.47); 265 (log ϵ 3.89); 292 (log ϵ 3.73) (EtOH).

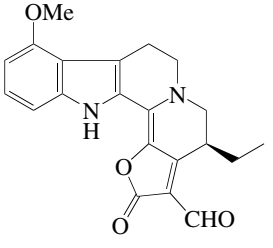
Hydrobromide:
Cryst. + $1H_2O$. Mp 230°.

3,20-Diepimer, O*-de-Me,* O*-β-*D*-glucopyranoside:* ***9-β-D-Glucopyranosyloxytetrahydroalstonine***
[191481-02-4]
$C_{27}H_{34}N_2O_9$ 530.574
Alkaloid from seeds of *Tabernaemontana cymosa*. Amorph. $[\alpha]_D$ -16 (c, 0.2 in MeOH). λ_{max} 226 (log ϵ 4.42); 266 (sh) (log ϵ 3.8); 291 (sh) (log ϵ 3.66) (MeOH).

Shellard, E.J. *et al., J. Pharm. Pharmacol.*, 1966, **18**, 553-555 (*uv, ir, pmr, struct*)
Phillipson, J.D. *et al., Phytochemistry*, 1973, **12**, 1507 (*isol, ms*)
Phillipson, J.D. *et al., J. Chromatogr.*, 1975, **105**, 163-178 (*occur*)
Achenbach, H. *et al., Phytochemistry*, 1997, **45**, 325-335 (*9-Glucosyloxytetrahydroalstonine*)

Mitralactonal M-659

[212264-09-0]



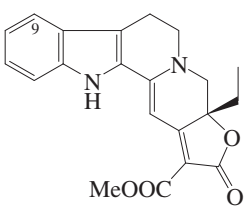
$C_{21}H_{20}N_2O_4$ 364.4

Abs. config. not definitely determined, but assigned as prob. *S*- (illus.) on biogenetic grounds. Alkaloid from the

leaves of *Mitragyna speciosa*. Dark orange powder. $[\alpha]_D^{18}$ -50 (c, 0.06 in $CHCl_3$). λ_{max} 258 ; 265 ; 363 ; 496 (MeOH).

Takayama, H. *et al., Tetrahedron*, 1998, **54**, 8433-8440 (*isol, uv, cd, pmr, cmr, ms*)

Mitralactonine M-660



$C_{21}H_{20}N_2O_4$ 364.4

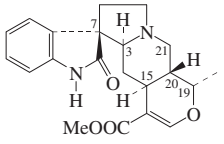
(*R*)-*form* [223264-23-1]
Alkaloid from *Mitragyna speciosa*. Amorph. orange solid. $[\alpha]_D^{26}$ -16.5 (c, 0.17 in $CHCl_3$). λ_{max} 223 (log ϵ 4.24); 262 (sh) (log ϵ 3.79); 344 (log ϵ 3.78); 434 (sh) (log ϵ 4.37); 460 (log ϵ 4.49) (MeOH).

9-Methoxy: ***9-Methoxymitralactonine***
$C_{22}H_{22}N_2O_5$ 394.426
Alkaloid from *Mitragyna speciosa*. Dark orange powder. $[\alpha]_D^{25}$ -123 (c, 0.19 in $CHCl_3$) (natural). $[\alpha]_D$ -838 (c, 0.1 in $CHCl_3$) (synthetic). Partial racemate. λ_{max} 220 (log ϵ 4.21); 267 (sh) ; 340 (log ϵ 3.72); 435 (sh) ; 462 (log ϵ 4.51) (MeOH).

Takayama, H. *et al., J.O.C.*, 1999, **64**, 1772-1773 (*isol, synth, uv, pmr, cmr, ms*)
Takayama, H. *et al., Tetrahedron*, 2000, **56**, 3145-3151 (*9-Methoxymitralactonine*)

Mitraphylline M-661

Ajmalicine oxindole B. Rubradinine
[509-80-8]



Absolute Configuration

$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from *Mitragyna hirsuta*, some other *Mitragyna* spp. and some *Uncaria* spp. (Rubiaceae). Hypotensive agent, general depressant. Mp 275-276° (265-266°). $[\alpha]_D$ -7 ($CHCl_3$) (-3). $[\alpha]_D$ -10 (EtOH). $[\alpha]_D$ +11 (Py). $[\alpha]_D^{24}$ -3 (c, 1.3 in $CHCl_3$). λ_{max} 243 (log ϵ 4.22); 280 (sh) (log ϵ 3.18) (EtOH).

Perchlorate: Mp 240°.

Picrate: Mp 207-209°.

N-*Oxide:* ***Mitraphylline* N-*oxide***
[51920-99-1]
$C_{21}H_{24}N_2O_5$ 384.431
Alkaloid from *Uncaria orientalis* and *Uncaria longiflora* (Rubiaceae).

16ξ,17-Dihydro, 17β-hydroxy: ***16,17-Dihydro-17-hydroxymitraphylline***
$C_{21}H_{26}N_2O_5$ 386.447
Alkaloid from the leaves of *Mitragyna parvifolia*. Viscous solid. λ_{max} 209 ; 256 ; 286 ; 321 (no solvent reported).

Parent acid: ***Mitraphyllic acid***
[10126-00-8]
$C_{20}H_{22}N_2O_4$ 354.405
Alkaloid from stems of *Uncaria sinensis* (Rubiaceae). Mp 234-236° dec. $[\alpha]_D$ -32.8 (c, 0.07 in MeOH). λ_{max} 242 (log ϵ 4.27); 280 (log ϵ 3.5) (EtOH).

Parent acid, β-D-glucopyranosyl ester: Mitraphyllic acid glucopyranosyl ester
[152696-77-0]
$C_{26}H_{32}N_2O_9$ 516.547
Alkaloid from leaves of *Uncaria sinensis* (Nauclaceae).

7-Epimer: ***Isomitraphylline****. Ajmalicine oxindole A*
[4963-01-3]
$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from *Mitragyna* and *Uncaria* spp. (Rubiaceae). Amorph. $[\alpha]_D$ +18 ($CHCl_3$). pK_a 4.6.

7-Epimer, picrate:
Yellow prisms (MeOH). Mp 223° dec.

7-Epimer, N-*oxide:* ***Isomitraphylline* N-*oxide***
[51920-98-0]
$C_{21}H_{24}N_2O_5$ 384.431
Alkaloid from *Mitragyna hirsuta*, *Uncaria longiflora* and *Uncaria orientalis*.

7-Epimer, 16ξ,17-dihydro, 17β-hydroxy: ***16,17-Dihydro-17-hydroxyisomitraphylline***
$C_{21}H_{26}N_2O_5$ 386.447
Alkaloid from the leaves of *Mitragyna parvifolia*. Viscous solid. λ_{max} 211 ; 256 ; 286 ; 322 (no solvent reported).

7-Epimer, parent acid: ***Isomitraphyllic acid***
[152887-08-6]
$C_{20}H_{22}N_2O_4$ 354.405
From leaves of *Uncaria sinensis* (Nauclaceae).

7-Epimer, parent acid, β-D-glucopyranosyl ester: ***Isomitraphyllic acid β-D-glucopyranosyl ester***
[152595-58-9]
$C_{26}H_{32}N_2O_9$ 516.547
From leaves of *Uncaria sinensis* (Nauclaceae). Mp 206-209°.

19-Epimer: ***Uncarine B****. Formosanine*
[6883-35-8]
$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from *Uncaria* spp. and *Ouruparia formosana* (preferred genus name *Uncaria*) (Rubiaceae). Plates or needles. Mp 215-216°. $[\alpha]_D$ +91 ($CHCl_3$).

19-Epimer, hydrochloride: Mp 227-228° dec.

20-Epimer: ***Uncarine C****. Isospeciophylline. Pteropodine*
[5629-60-7]
$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from *Mitragyna* and *Uncaria* spp.(Rubiaceae). Fine needles (C_6H_6). Mp 212-213°. $[\alpha]_D$ -109 ($CHCl_3$).

20-Epimer, picrate: Mp 143-144°.

20-Epimer, N-*oxide:* ***Pteropodine* N-*oxide***
[40242-13-5]
$C_{21}H_{24}N_2O_5$ 384.431
Isol. from *Uncaria bernaysii, Uncaria orientalis* and *Uncaria longiflora* (Rubiaceae). Identified by tlc only.

20-Epimer, parent acid: ***Maruquine****. Pteropodic acid*
[13897-75-1]
$C_{20}H_{22}N_2O_4$ 354.405
Alkaloid from the leaves of *Hamelia patens* and stems of *Uncaria sinensis*. Cryst. (EtOH). Mp 227-229° dec. (Pteropodic acid) Mp 245-247° (Maruquine). $[\alpha]_D$ -126 (c, 0.1 in MeOH) (Pteropodic acid). $[\alpha]_D^{20}$ +247 (c, 0.16 in EtOH) (Maruquine). The radically different opt rotns. reported indicate that the two isolates are different. λ_{max} 244 (log ϵ 4.24); 280 (log ϵ 3.24) (EtOH) (Pteropodic acid).

3,20-Diepimer: ***Uncarine F***
[14019-66-0]
$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from *Mitragyna* and *Uncaria* spp. (Rubiaceae). Amorph. $[\alpha]_D$ +85 ($CHCl_3$).

3,20-Diepimer, N-*oxide:* ***Uncarine F* N-*oxide***
[40242-12-4]
$C_{21}H_{24}N_2O_5$ 384.431
Isol. from *Mitragyna parvifolia, Uncaria bernaysii* and *Uncaria orientalis* (Rubiaceae). Identified by tlc only.

7,19-Diepimer: ***Uncarine A****. Isoformosanine*
[6899-73-6]
$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from *Uncaria* spp. and *Ouruparia formosana* (Rubiaceae). Amorph. Mp 120-130°. $[\alpha]_D$ +106.5.

7,19-Diepimer, hydrochloride:
Needles + ½ H_2O. Mp 231° dec.

7,20-Diepimer: ***Uncarine E****. Isopteropodine*
[5171-37-9]
$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from *Mitragyna parvifolia* and *Uncaria* spp. (Rubiaceae). Also isol. from the marine mollusc *Nerita albicilla*. Needles (C_6H_6 or MeOH). Mp 209-211°. $[\alpha]_D$ -111 ($CHCl_3$).

7,20-Diepimer, hydrochloride: Mp 181-183°. $[\alpha]_D$ -124.

7,20-Diepimer, N-*oxide:* ***Isopteropodine* N-*oxide***
$C_{21}H_{24}N_2O_5$ 384.431
Isol. from *Uncaria bernaysii, Uncaria orientalis* and *Uncaria longiflora* (Rubiaceae). Identified by tlc only.

7,20-Diepimer, parent acid: ***Isomaruquine****. Isopteropodic acid*
[13897-74-0]
$C_{20}H_{22}N_2O_4$ 354.405
Alkaloid from the leaves of *Hamelia patens* and stems of *Uncaria sinensis*. Cryst. (hexanol). Mp 223-224° dec. (Isopteropodic acid) Mp 188-189° (Isomaruquine). $[\alpha]_D$ -130.2 (c, 0.04 in MeOH) (Isopteropodic acid). $[\alpha]_D^{20}$ -78.9 (c, 0.136 in $CHCl_3$) (Isomaruquine). Props. refer to Isopteropodic acid. The two isolates not compared. λ_{max} 242 (log ϵ 4.03); 280 (log ϵ 3.11) (MeOH) (Isopteropodic acid).

3,7,20-Triepimer: ***Uncarine D****. Speciophylline*
[4697-68-1]
$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from *Mitragyna* and *Uncaria* spp. Needles (EtOAc or Et_2O). Mp 183-184°. $[\alpha]_D^{21}$ +91 (c, 0.21 in $CHCl_3$).

3,7,20-Triepimer, picrate:
Cryst. (EtOH). Mp 215°.

3,7,20-Triepimer, N*-oxide:* ***Speciophylline N-oxide***
[40242-11-3]
$C_{21}H_{24}N_2O_5$ 384.431
Alkaloid from *Uncaria bernaysii, Uncaria orientalis, Uncaria longiflora* and *Mitragyna parvifolia* (Rubiaceae). Identified by tlc only.

7,19,20-Triepimer: ***Rauniticine oxindole A***
[17507-91-4]
$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from the leaves of *Uncaria elliptica* (Rubiaceae). λ_{max} 212 ; 242 ; 290 (MeOH).

Stereoisomer (1): ***Gambirdine***
[19775-85-0]
$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from *Uncaria gambir* (Rubiaceae). Mp 199-201°. $[\alpha]_D^{21}$ +84.8 (c, 0.02 in $CHCl_3$). Stereochem. unknown. λ_{max} 244 (log ϵ 4.19); 280 (sh) (log ϵ 3.13) (EtOH).

Stereoisomer (2): ***Isogambirdine***
[19775-86-1]
$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from *Uncaria gambir* (Rubiaceae). Oil. Mp 179-181° dec. (as hydrochloride). $[\alpha]_D^{21}$ +115.5 (c, 0.02 in $CHCl_3$). Stereochem. unknown. λ_{max} 244 (log ϵ 4.24); 280 (sh) (log ϵ 3.18) (EtOH).

Stereoisomer, 21-oxo: Hamelia patens *Alkaloid A*
[82564-37-2]
$C_{21}H_{22}N_2O_5$ 382.415
Alkaloid from the aerial parts of *Hamelia patens* (Rubiaceae). Mp 210-212°. λ_{max} 209 ; 242 (sh) ; 280 (EtOH).

Seaton, J.C. *et al., Can. J. Chem.*, 1958, **36**, 1031-1038 (*Mitraphylline*)
Finch, N. *et al., J.A.C.S.*, 1962, **84**, 3871-3877 (*Isomitraphylline*)
Gilbert, B. *et al., J.A.C.S.*, 1963, **85**, 1523-1528 (*ms*)
Chan, K.C. *et al., J.C.S.(C)*, 1966, 2245-2249 (*Pteropodine, Isopteropodine, isol, pmr, ir*)
Johns, S.R. *et al., Tet. Lett.*, 1966, 4883-4888 (*pmr, config*)
Shamma, M. *et al., J.A.C.S.*, 1967, **89**, 1739-1740 (*stereochem, pmr*)
Beecham, A.F. *et al., Aust. J. Chem.*, 1968, **21**, 491-504 (*Uncarines A-F, stereochem*)
Chan, K.C. *et al., Tet. Lett.*, 1968, 3403-3406 (*Gambirdine, Isogambirdine*)
Winterfeldt, E. *et al., Chem. Ber.*, 1969, **102**, 3558-3572 (*Formosanine, synth*)
Phillipson, J.D. *et al., Phytochemistry*, 1973, **12**, 1481; 2791-2794; 1975, **14**, 1855-1863 (*oxides*)
Shellard, E.J. *et al., Planta Med.*, 1974, **25**, 172-174 (*Speciophylline N-oxide, Uncarine F N-oxide*)
Phillipson, J.D. *et al., J. Chromatogr.*, 1975, **105**, 163-178 (*tlc, glc, ms*)
Ban, Y. *et al., Chem. Pharm. Bull.*, 1976, **24**, 736-751 (*synth*)
Borges del Castillo, J. *et al., An. Quim., Ser. C*, 1980, **76**, 294-295; 1982, **78**, 126-128; 180-183; *CA*, **94**, 171040h; **97**, 39200t; 141710w (*Maruquine, Isomaruquine, Hamelia patens Alkaloid A*)
Phillipson, J.D. *et al., Phytochemistry*, 1983, **22**, 1809-1813 (*Rauniticine oxindole A*)
Martin, G.E. *et al., J. Nat. Prod.*, 1986, **49**, 406-411 (*Isopteropodine, isol, pmr, cmr*)
Seki, H. *et al., Chem. Pharm. Bull.*, 1993, **41**, 2077-2086 (*stereoisomers, pmr, cmr, conformn*)
Liu, H.-M. *et al., Phytochemistry*, 1993, **33**, 707-710 (*Mitraphyllic acid, Pteropodic acid, Isopteropodic acid*)
Liu, H.-M. *et al., Yaoxue Xuebao*, 1993, **28**, 849; *CA*, **120**, 102001q (*Mitraphyllic acid, Isomitraphyllic acid, glucosides*)
Laus, G. *et al., Helv. Chim. Acta*, 2003, **86**, 181-187 (*Mitraphylline, Speciophylline, cryst struct*)
García, R. *et al., Z. Naturforsch., C*, 2005, **60**, 385-388 (*Uncarine E, cmr, ms*)
Pandey, R. *et al., Phytochemistry*, 2006, **67**, 2164-2169 (*Dihydrohydroxymitraphylline, Dihydrohydroxyisomitraphylline*)
Kitajima, M. *et al., J. Nat. Med. (Tokyo)*, 2007, **61**, 192-195 (*Isomitraphylline N-oxide*)

Mitraspecine M-662

$C_{28}H_{36}N_2O_5$ 480.603

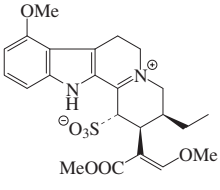
Struct. unknown. Alkaloid from *Mitragyna speciosa* bark (Rubiaceae). Platelets (MeOH). Mp 244-245°. $[\alpha]_D^{23}$ -59.15. Conts. 3 OMe groups.

Picrate: Mp 136°.

Denis, P. *et al., Bull. Cl. Sci., Acad. R. Belg.*, 1938, **24**, 653-658; *CA*, **33**, 1741 (*isol*)
Raymond-Hamet, M. *et al., Ann. Pharm. Fr.*, 1950, **8**, 482-490

Mitrasulgynine M-663

[212264-12-5]



Absolute Configuration

$C_{23}H_{28}N_2O_7S$ 476.549
Alkaloid from the leaves of *Mitragyna speciosa*. Yellow powder. $[\alpha]_D^{18}$ +413 (c, 0.09 in $CHCl_3$). Abs. config. proposed on biogenetic grounds. λ_{max} 241 ; 359 ; 438 (MeOH).

Takayama, H. *et al., Tetrahedron*, 1998, **54**, 8433-8440 (*isol, uv, cd, pmr, cmr, ms*)

Mitraversine M-664

[1400-34-6]

$C_{22}H_{26}N_2O_4$ 382.458

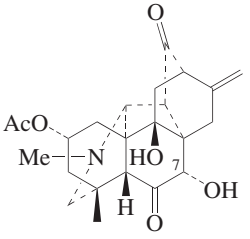
Struct. unknown. Alkaloid from *Mitragyna diversifolia* (Rubiaceae). Mp 237° Mp 263.5-264.5°. Conts. 2 OMe groups.

Hydrochloride:
Leaflets. Mp 208-210°.

Field, E. *et al., J.C.S.*, 1921, **119**, 887-891
Raymond-Hamet, *et al., J. Pharm. Chim.*, 1937, **25**, 391-398; *Analyst (London)*, 1937, **62**, 472

Miyaconitine M-665

2-(Acetyloxy)-7,9-dihydroxy-21-methyl-6,21-secohetisan-6,13-dione, 9CI
[28330-59-8]



$C_{23}H_{29}NO_6$ 415.485
Alkaloid from *Aconitum miyabei* (Ranunculaceae). Mp 218° dec. $[\alpha]_D$ -87.8 ($CHCl_3$).

7-Ketone: ***Miyaconitinone***
[28604-00-4]
$C_{23}H_{27}NO_6$ 413.469
Alkaloid from *Aconitum miyabei* (Ranunculaceae). Mp 285° dec. $[\alpha]_D$ -27.6 (AcOH).

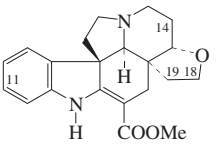
9-Deoxy, 7-ketone: ***Vilmorrianone****. Delphatambine*
[135626-83-4]
$C_{23}H_{27}NO_5$ 397.47
Alkaloid from the roots of *Aconitum vilmorrianum* and *Delphinium denudatum*. Cryst. (MeOH). Mp 253-255°. $[\alpha]_D$ -22 (c, 0.2 in MeOH).

[36059-80-0]

Kakimoto, S. *et al., Bull. Chem. Soc. Jpn.*, 1959, **32**, 1153 (*uv, ir, struct*)
Ichinohe, Y. *et al., Tet. Lett.*, 1970, 2323 (*uv, ir, pmr, struct*)
Shimanouchi, H. *et al., Tet. Lett.*, 1970, 2327 (*cryst struct*)
Ding, L. *et al., Planta Med.*, 1991, **57**, 275-277 (*Vilmorrianone, isol, uv, ir, pmr, cmr, ms, cryst struct*)
Atta-ur-Rahman, *et al., Turk. J. Chem.*, 1997, **21**, 13-20 (*Delphatambine*)

Modestanine M-666

Methyl 2,3-didehydro-6,21-epoxyaspidospermidine-3-carboxylate. Deoxoapodine. Demethoxyvandrikine
[57932-88-4]



Absolute Configuration

$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from *Hazunta modesta* and *Tabernaemontana armeniaca* (Apocynaceae). Amorph.

*18*R*-Hydroxy:* ***Hedrantherine***
[38739-18-3]
$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from the leaves of *Hedranthera barteri* (Apocynaceae). Noncryst. $[\alpha]_D^{24}$ -459 (c, 1 in DMF). $[\alpha]_D^{24}$ -484 (c, 0.81 in DMSO).

*11,18*R*-Dihydroxy:* ***11-Hydroxyhe-***

dranthine. *17-Hydroxyhedranthine*
[38741-26-3]
$C_{21}H_{24}N_2O_5$ 384.431
Alkaloid from the leaves of *Hedranthera barteri* (Apocynaceae). Cryst. ($CHCl_3$/Me_2CO). Mp 245° dec.

18-Oxo (lactone): ***Apodine***
[57932-86-2]
$C_{21}H_{22}N_2O_4$ 366.416
Alkaloid from *Tabernaemontana armeniaca* (Apocynaceae). Noncryst.

18-Oxo, hydrochloride: Mp 176° dec. $[\alpha]_D^{22}$ -520 (c, 2 in MeOH).

18-Oxo(lactone), 14ξ-hydroxy: ***Apodinine***
[77017-02-8]
$C_{21}H_{22}N_2O_5$ 382.415
Alkaloid from *Tabernaemontana apoda*.

11-Methoxy: ***Vandrikine***
[50656-91-2]
$C_{22}H_{26}N_2O_4$ 382.458
Minor alkaloid from a number of *Aspidosperma* spp. (Apocynaceae).

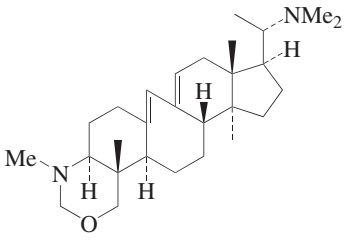
*11-Methoxy, 18*R*-hydroxy:* [38741-28-5] Noncryst. $[\alpha]_D^{22}$ -502 (c, 1.26 in DMSO).

11-Methoxy, 19ξ-hydroxy: ***19-Hydroxyvandrikine***. *20-Hydroxyvandrikine*
[76989-82-7]
$C_{22}H_{26}N_2O_5$ 398.458
Alkaloid from the root bark of *Craspidospermum verticillatum* (Apocynaceae). Mp 214°. $[\alpha]_D^{20}$ -388 (c, 1 in $CHCl_3$).

Naranjo, J. *et al., Helv. Chim. Acta*, 1972, **55**, 1849 (*Hedrantherine, 11-Hydroxyhedrantherine*)
Wenkert, E. *et al., J.A.C.S.*, 1973, **95**, 4990 (*Vandrikine*)
Iglesias, R. *et al., Rev. CENIC, Cienc. Fis.*, 1975, **6**, 135; 141; *CA*, **84**, 44502d; 44503e (*Apodine*)
Iglesias, R. *et al., Rev. CENIC, Cienc. Fis.*, 1979, **10**, 357-362; *CA*, **94**, 136123 (*Apodinine*)
Lounasmaa, M. *et al., Acta Chem. Scand., Ser. B*, 1980, **34**, 379 (*19-Hydroxyvandrikine*)
Bui, A.M. *et al., Phytochemistry*, 1980, **19**, 1473 (*Modestanine*)
Overman, L.E. *et al., J.A.C.S.*, 1991, **113**, 2598 (*Apodine, Deoxoapodine, synth*)

Moenjodaramine M-667

[36357-45-6]



$C_{28}H_{46}N_2O$ 426.684
It appears that these alkaloids all have the 4*S*-config. shown, although the structs. of Harappamine, *N*-Formylharappamine and Papillamidine were publ. as 4*R*- and have not since been amended. The C-28 oxygenation pattern (4*S*-) is usual for steroidal alkaloids (Sangare *et al*). Alkaloid from *Buxus papilosa* and *Buxus hyrcana*. Acetylcholinesterase inhibitor. Mp 177°. $[\alpha]_D$ +33.3 ($CHCl_3$). $[\alpha]_D$ +61 (synthetic).

N^{20}*-De-Me:* ***Harappamine***
[84679-85-6]
$C_{27}H_{44}N_2O$ 412.657
Alkaloid from the leaves of *Buxus papilosa* (Buxaceae). Gum.

N^{20}*-De-Me,* N^{20}*-formyl:* **N-*Formylharappamine***
[115713-24-1]
$C_{28}H_{44}N_2O_2$ 440.668
Alkaloid from the leaves of *Buxus papilosa* (Buxaceae). Amorph. $[\alpha]_D$ +40 (c, 0.50 in $CHCl_3$). λ_{max} 225 (log ϵ 3.96); 238 (log ϵ 4.04); 245 (log ϵ 4.03); 254 (log ϵ 3.9) (MeOH).

N^3,N^{20}*-Di-de-Me:* ***Papilinine***
[96910-88-2]
$C_{26}H_{42}N_2O$ 398.631
Alkaloid from the leaves of *Buxus papilosa* (Buxaceae). Gum. $[\alpha]_D$ +29.4 ($CHCl_3$). C-20-Config. not determined but almost certainly as given.

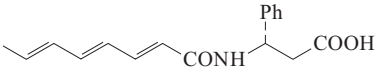
N^{20},N^{20}*-Di-de-Me:* **N^b-*Demethylharappamine***
[145385-76-8]
$C_{26}H_{42}N_2O$ 398.631
Alkaloid from roots of *Buxus papilosa* (Buxaceae). Amorph. solid. $[\alpha]_D^{20}$ +12.4 ($CHCl_3$). λ_{max} 238 ; 246 (MeOH).

N^{20},N^{20}*-Di-de-Me,* N^{20}*-formyl:* ***Papillamidine***. N-*Formyl*-N-*demethylharappamine*
[113689-37-5]
$C_{27}H_{42}N_2O_2$ 426.641
Alkaloid from the leaves of *Buxus papilosa* (Buxaceae). Amorph. $[\alpha]_D$ 0 ($CHCl_3$). λ_{max} 228 ; 238 ; 246 ; 254 (MeOH).

Khuong-Huu, F. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1971, **273**, 558-560 (*Moenjodaramine, synth, pmr*)
Sangare, M. *et al., Tet. Lett.*, 1975, **16**, 1791-1794 (*stereochem*)
Atta-ur-Rahman, *et al., Planta Med.*, 1983, **49**, 126 (*Moenjodaramine*)
Atta-ur-Rahman, *et al., Z. Naturforsch., B*, 1984, **39**, 524-527; 1985, **40**, 565-566 (*Harappamine, Papilinine*)
Atta-ur-Rahman, *et al., Heterocycles*, 1988, **27**, 89-92 (*Papillamidine*)
Choudhary, M.I. *et al., Phytochemistry*, 1988, **27**, 1561-1562 (*N-Formylharappamine*)
Atta-ur-Rahman, *et al., J. Nat. Prod.*, 1992, **55**, 1063-1066 (N^b*-Demethylharappamine*)

Moiramide A M-668

[124731-96-0]

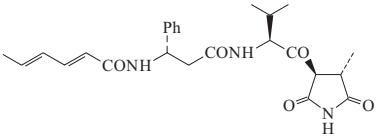


$C_{17}H_{19}NO_3$ 285.342
Metab. of a marine *Pseudomonas fluorescens*. Amorph. solid. Sol. MeOH, EtOAc. λ_{max} 294 (ϵ 27421) (MeOH). λ_{max} 293 (ϵ 27421) (MeOH) (Berdy).

Needham, J. *et al., J.O.C.*, 1994, **59**, 2059-2063 (*Moiramide A*)

Moiramide B M-669

[155233-31-1]

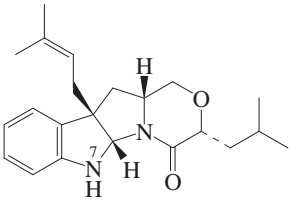


$C_{25}H_{31}N_3O_5$ 453.537
Metab. of a marine *Pseudomonas fluorescens*. Amorph. solid. Similar to Andrimide, A-1004.

Needham, J. *et al., J.O.C.*, 1994, **59**, 2059-2063 (*Moiramide B*)
Davies, S.G. *et al., J.C.S. Perkin 1*, 1998, 2635-2643 (*synth*)

Mollenine A M-670

[205693-72-7]



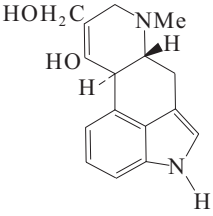
$C_{22}H_{28}N_2O_3$ 368.475
Alkaloid from *Eupenicillium molle* NRRL13062. Exhibits moderate antibacterial and cytotoxic properties. Oil. $[\alpha]_D$ -410 (c, 1 in CH_2Cl_2). λ_{max} 240 (ϵ 4900); 295 (ϵ 1700) (CH_2Cl_2).

N^7*-Formyl:* ***Mollenine B***
[205692-57-5]
$C_{23}H_{28}N_2O_4$ 396.485
Alkaloid from *Eupenicillium molle* NRRL13062. Oil. $[\alpha]_D$ -180 (c, 1 in CH_2Cl_2). λ_{max} 251 (ϵ 9000); 282 (ϵ 2000) (CH_2Cl_2).

Wang, H.-J. *et al., J. Nat. Prod.*, 1998, **61**, 804-807 (*isol, uv, ir, pmr, cmr, ms*)

Molliclavine M-671

9-Hydroxyelymoclavine
[6858-92-0]



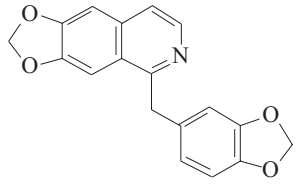
$C_{16}H_{18}N_2O_2$ 270.33
Tentative struct.; seems improbable (an enol). Alkaloid from ergot (*Claviceps purpurea*), *Argyreia nervosa, Rivea cor-*

ymbosa and *Ipomoea muelleri* (Convolvulaceae). Mp 253° dec. $[\alpha]_D^{15}$ +30 (c, 0.2 in Py).

Abe, M. *et al., Nippon Nogei Kagaku Kaishi*, 1959, **33**, 249-252; *CA*, **59**, 2879d (*isol, struct*)
Chao, J.-M. *et al., J. Polym. Sci.*, 1973, **62**, 588-591 (*occur*)
Chao, J.-M. *et al., Phytochemistry*, 1973, **12**, 2435-2440 (*occur*)

Mollinedine M-672

5-(1,3-Benzodioxol-5-ylmethyl)-1,3-dioxolo[4,5-g]isoquinoline, 9CI. 6,7-Methylenedioxy-1-(3,4-methylenedioxybenzyl)isoquinoline
[16658-48-3]



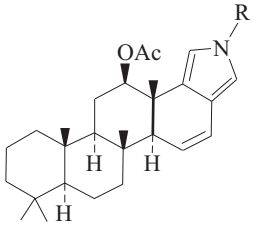
$C_{18}H_{13}NO_4$ 307.305
Alkaloid from the wood of *Mollinedia costaricensis* (Monimiaceae). Needles (C_6H_6 or MeOH). Mp 170-172° (158-160°).

N-*Me:* ***Escholamine***
[30331-75-0]
$C_{19}H_{16}NO_4^{\oplus}$ 322.34
Quaternary alkaloid from the above-ground parts of *Eschscholtzia* sp. (?*Eschscholtzia oregana*) (Papaveraceae). Pale yellow needles (H_2O)(as iodide). Mp 265-266° (iodide).

Buck, J.S. *et al., J.C.S.*, 1925, 1462 (*synth*)
Schlittler, E. *et al., Helv. Chim. Acta*, 1949, **23**, 1880 (*synth*)
Slavḱová, L. *et al., Coll. Czech. Chem. Comm.*, 1966, **31**, 3362 (*Escholamine, isol, uv, ir, struct*)
Birch, A.J. *et al., J.C.S. Perkin 1*, 1974, 2190 (*Escholamine, synth, pmr*)
López, J.A. *et al., J. Nat. Prod.*, 1988, **51**, 754 (*isol, uv, ir, pmr, cmr, ms, synth*)
Marek, R. *et al., Magn. Reson. Chem.*, 1999, **37**, 195-202 (*Escholamine, N-15 nmr*)

Molliorin A M-673

[63693-18-5]



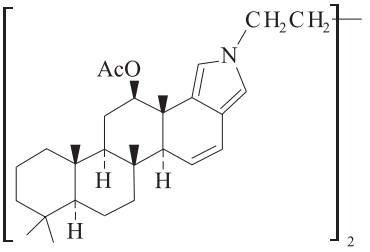
R = $CH_2CH(CH_3)CH_2CH_3$

$C_{32}H_{49}NO_2$ 479.745
Constit. of the marine sponge *Cacospongia mollior*. Mp 102-105°. $[\alpha]_D$ +51.7 (c, 1 in $CHCl_3$).

Cafieri, F. *et al., Tet. Lett.*, 1977, 477 (*isol, ir, pmr, uv, ms, struct*)

Molliorin B M-674

[64421-20-1]



$C_{58}H_{84}N_2O_4$ 873.313
Constit. of the marine sponge *Cacospongia mollior*. Cryst. (petrol). Mp 173-174°. $[\alpha]_D$ +14.6 (c, 1.2 in $CHCl_3$).

Cafieri, F. *et al., Experientia*, 1977, **33**, 994 (*isol, uv, synth, struct*)

Molliorin C M-675

[66648-53-1]
As Molliorin A, M-673 with
R = $-CH_2CH(CH_3)_2$
$C_{31}H_{47}NO_2$ 465.718
Minor alkaloid from the marine sponge *Cacospongia mollior*. Amorph. solid. $[\alpha]_D$ -46.9 (c, 0.9 in $CHCl_3$). λ_{max} 257 (ϵ 11900) (EtOH).

Cafieri, F. *et al., Experientia*, 1978, **34**, 300 (*isol, ms, pmr, synth*)

Molliorin D M-676

[70022-71-8]
As Molliorin A, M-673 with
R = $-CH_2CH_2Ph$
$C_{35}H_{47}NO_2$ 513.762
Minor alkaloid from the marine sponge *Cacospongia mollior*. $[\alpha]_D$ +11.6. λ_{max} 262 (ϵ 11760) (EtOH).

Cafieri, F. *et al., Experientia*, 1979, **35**, 157 (*isol, struct, ir, pmr, ms, synth*)

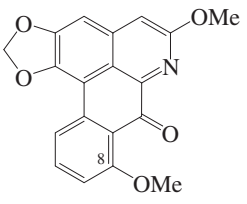
Molliorin E M-677

[69819-82-5]
As Molliorin A, M-673 with
R = Me
$C_{28}H_{41}NO_2$ 423.637
Minor alkaloid from the marine sponge *Cacospongia mollior*. $[\alpha]_D$ +6.5. λ_{max} 263 (ϵ 11900) (EtOH).

Cafieri, F. *et al., Experientia*, 1979, **35**, 157 (*isol, struct, ir, pmr, ms, synth*)

Mollisine† M-678

[160568-08-1]



$C_{19}H_{13}NO_5$ 335.315

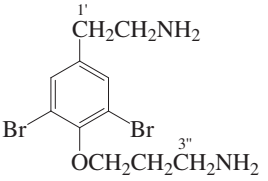
Alkaloid from bark of *Alphonsea mollis* (Annonaceae).

8-O-*De-Me:* ***8-O-Demethylmollisine***
$C_{18}H_{11}NO_5$ 321.289
Alkaloid from *Alphonsea mollis*. Orange needles. Mp 264-267° (dec.).

Xie, N. *et al., Zhongguo Yaoke Daxue Xuebao*, 1994, **25**, 205; *CA*, **122**, 101554b
Xie, N. *et al., Chin. Chem. Lett.*, 1999, **10**, 675-676 (*8-O-Demethylmollisine*)

Molokaiamine M-679

4-(3-Aminopropoxy)-3,5-dibromobenzeneethanamine, 9CI
[151345-09-4]



$C_{11}H_{16}Br_2N_2O$ 352.068
Metab. from the marine sponge *Pseudoceratina purpurea*, also from *Psammaplysilla* sp. and *Aplysinella* sp. Cytotoxic. Off-white powder (MeOH) (as dihydrochloride). λ_{max} 206 (ϵ 28000); 284 (ϵ 600) (MeOH).

$N^{3''}$-*(Cyanoformyl):* ***Ceratinamine***. *Pseudoceramine*
[175993-07-4]
$C_{13}H_{15}Br_2N_3O_2$ 405.088
Metab. from *Pseudoceratina purpurea* and *Aplysinella* sp. Cytotoxic against P388 murine leukaemia cells. Antifouling substance. Solid (presumably as hydrochloride). Sol. MeOH. First report of a cyanoformamide nat. prod. λ_{max} 207 (ϵ 37800); 276 (ϵ 850) (MeOH) (Berdy).

$N^{2'}$-*Me:* **N′-*Methylmolokaiamine***
$C_{12}H_{18}Br_2N_2O$ 366.095
Isol. from a *Hexadella* sp. Powder. λ_{max} 277 (ϵ 340); 284 (ϵ 330) (MeOH).

$N^{2'}$-*Me,* $N^{3''}$-*(cyanoformyl):* **N-*Methylceratinamine***
[256448-59-6]
$C_{14}H_{17}Br_2N_3O_2$ 419.115
Metab. of an undescribed Verongid sponge. λ_{max} 278 (log ϵ 3.76); 285 (log ϵ 3.77) (MeOH).

$N^{3''}$-*Me,* $N^{2'}$-*methoxycarbonyl:*
$C_{14}H_{20}Br_2N_2O_3$ 424.132
Alkaloid from *Psammaplysilla purpurea*. Brown semisolid. λ_{max} 250 (ϵ 2210) (MeOH).

$N^{3''}$,$N^{3''}$-*Di-Me:* ***Purpurealidin E***
[260437-59-0]
$C_{13}H_{20}Br_2N_2O$ 380.122
Metab. of the sponge *Psammaplysilla purpurea*. Oil. Mp 148° (as 2′-Ac, hydrochloride). Not indexed in CA **141**. λ_{max} 223 (ϵ 5770); 275 (ϵ 950); 280 (ϵ 944) (MeOH) (2′-Ac, hydrochloride).

$N^{3''}$,$N^{3''}$-*Di-Me,* $N^{2'}$-*Ac:* [215942-07-7]
$C_{15}H_{22}Br_2N_2O_2$ 422.159
Isol. from *Psammaplysilla purpurea*.

$N^{3''}$,$N^{3''}$-*Di-Me,* $N^{2'}$-*methoxycarbonyl: Methyl 3,5-dibromo-4-[[3-(dimethylamino)propoxy]phenylethyl]carbamate*
$C_{15}H_{22}Br_2N_2O_3$ 438.158
Alkaloid from *Psammaplysilla purpurea*. Brown solid. Mp 160-162°. Also isol. as the monohydrochloride, Mp 170-173°. Not indexed in CA **141**.

$N^{2'}$,$N^{2'}$,$N^{3''}$-*Tri-Me:* ***Purealidin F***
[145205-29-4]
$C_{14}H_{22}Br_2N_2O$ 394.149
Alkaloid from the Okinawan sponge *Psammaplysilla purpurea*. Inhibitor of Na/K-ATPase. Oil (as dihydrochloride). Sol. MeOH. CAS no. refers to hydrochloride. λ_{max} 218 (ϵ 12000); 274 (ϵ 800); 285 (ϵ 1000) (MeOH) (hydrochloride). λ_{max} 218 (ϵ 12000); 274 (ϵ 800); 285 (ϵ 1000) (MeOH) (Berdy).

$N^{2'}$,$N^{3''}$,$N^{3''}$-*Tri-Me:* ***Purealidin G***
[145196-30-1]
$C_{14}H_{22}Br_2N_2O$ 394.149
Alkaloid from *Psammaplysilla purpurea*. Na/K-ATPase inhibitor. Sol. MeOH. CAS no. refers to dihydrochloride. λ_{max} 214 (ϵ 14000); 276 (ϵ 800); 288 (ϵ 1100) (MeOH) (hydrochloride).

$N^{2'}$,$N^{2'}$,$N^{3''}$,$N^{3''}$-*Tetra-Me:* ***Aplysamine 1***
[159026-30-9]
[125547-38-8]
$C_{15}H_{24}Br_2N_2O$ 408.175
Metab. of an Australian marine sponge *Aplysina* sp. Pale yellow semicryst. solid (as hydrochloride). Mp 122-123° (hydrochloride). Biol. inactive against several test bacteria and fungi.

$N^{2'}$-*Cyano,* $N^{2'}$-*Me:* ***N′-Cyano-N′-methylmolokaiamine***
$C_{13}H_{17}Br_2N_3O$ 391.105
Isol. from a *Hexadella* sp. Amorph. solid. λ_{max} 277 (ϵ 440); 284 (ϵ 440) (MeOH).

1″-Hydroxy, $N^{3''}$-*(cyanocarbonyl):* ***7-Hydroxyceratinamine***
[230295-94-0]
$C_{13}H_{15}Br_2N_3O_3$ 421.088
Isol. from *Aplysinella* sp. Amorph. solid. $[\alpha]_D$ +3 (c, 0.8 in MeOH).

1′ξ-Hydroxy, $N^{3''}$,$N^{3''}$-*di-Me:* ***Purpurealidin F***
[799246-90-5]
$C_{13}H_{20}Br_2N_2O_2$ 396.121
Isol. from *Psammaplysilla purpurea*. Oil. λ_{max} 277 (ϵ 925); 282 (ϵ 950) (MeOH).

1′ξ-Hydroxy, $N^{3''}$,$N^{3''}$-*di-Me,* $N^{2'}$-*propanoyl:* ***Purpurealidin G***
[799246-91-6]
$C_{16}H_{24}Br_2N_2O_3$ 452.185
Isol. from *Psammaplysilla purpurea*. Oil. λ_{max} 277 (ϵ 925); 282 (ϵ 950) (MeOH).

Xynas, R. *et al., Aust. J. Chem.*, 1989, **42**, 1427-1433 (*Aplysamine 1*)
Tsuda, M. *et al., J. Nat. Prod.*, 1992, **55**, 1325-1327 (*Purealidins*)
Hamann, M.T. *et al., J.O.C.*, 1993, **58**, 6565-6569 (*isol, uv, pmr, cmr, ms, N-Methylceratinamine*)
Tsukamoto, S. *et al., J.O.C.*, 1996, **61**, 2936-2937 (*Ceratinamine*)
Tsukamoto, S. *et al., Tetrahedron*, 1996, **52**, 8181-8186 (*isol, props*)
Venkateswarlu, Y. *et al., J. Nat. Prod.*, 1998, **61**, 1388-1389; 1999, **62**, 893-894 (*Psammaplysilla purpurea constits*)
Schoenfeld, R.C. *et al., Tet. Lett.*, 1998, **39**, 4147-4150 (*synth*)
Rao, M.R. *et al., Indian J. Chem., Sect. B*, 1999, **38**, 1301-1303 (*N-di-Me-N$^{2'}$-Ac*)
Fu, X. *et al., J. Nat. Prod.*, 1999, **62**, 1072-1073 (*7-Hydroxyceratinamine*)
Lacy, C. *et al., J. Nat. Prod.*, 2000, **63**, 119-121 (*N-Methylceratinamine*)
Schoenfeld, R.C. *et al., Bioorg. Med. Chem. Lett.*, 2002, **12**, 823-825 (*synth*)
Tilvi, S. *et al., Tetrahedron*, 2004, **60**, 10207-10215 (*Purpurealidin A-H*)
Ravinder, K. *et al., ARKIVOC*, 2005, **iii**, 51-55 (*N-Me N′-methoxycarbonyl*)
Matsunaga, S. *et al., J.O.C.*, 2005, **70**, 1893-1896 (*N′-Methylmolokaiamine, N′-Cyano-N′-methylmolokaiamine*)
Yoshida, M. *et al., Chem. Pharm. Bull.*, 2008, **56**, 1362-1363 (*Aplysamine 1, Purpurealidin E, synth*)

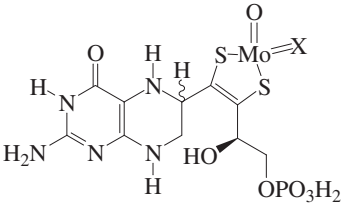
Mololipids M-680

A series of fatty acid lipids with a core containing Molokaiamine, M-679. Isol. from a Hawaiian sponge of the order Verongidae. Active against HIV-1. Waxy solid. λ_{max} 240 (ϵ 1900); 277 (ϵ 650); 284 (ϵ 620) (MeOH).

Ross, S.A. *et al., J. Nat. Prod.*, 2000, **63**, 501-503 (*isol*)

Molybdenum cofactor M-681

Molybdoenzyme molybdenum cofactor, 9CI. Molybdopterin. MOCO



Molybdenum cofactor can be released from molybdoenzymes by treatment with denaturing reagents. Catalyses oxidative hydroxylation or reductive dehydroxylation at C,N, or S atoms. During these redox reactions Mo undergoes changes between oxidn. states of Mo^{VI} and Mo^{IV}, possibly linked to changes in the pyrazine ring oxidn. level. Molybdenum cofactor functions as a prosthetic metal in the 12 or so Mo-containing enzymes discovered, except nitrogenase which has its own FebMo cofactor. Air-sensitive ($t_{½}$ 15 min, 3.5°). Oxidative degradation involves labilisation of the metal and oxidn. of the reduced pterin. Stable under anaerobic conditions in presence of stabilising agents, e.g. sodium dithionite, or in DMSO (activity loss 3%/24 h at 20-25°).

Dioxomolybdate-*form* [104676-61-1]
[73508-07-3]

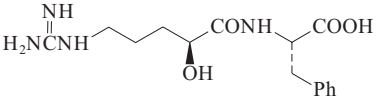
X = O. Isol. from purified milk xanthine oxidase. Molybdenum cofactor functions as a prosthetic metal in the 12 or so Mo-containing enzymes discovered, except nitrogenase which has its own FebMo cofactor.
Stable at pH 5.9 under anaerobic conditions.

Oxothioxomolybdate-*form* [104676-62-2]
X = S.

Johnson, J.L. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 1982, **79**, 6856-6860 (*isol, struct*)
Hawkes, T.R. *et al., Biochem. J.*, 1984, **219**, 481-493 (*anal*)
Johnson, J.L. *et al., J. Biol. Chem.*, 1984, **259**, 5414-5422 (*isol, props*)
Burgmayer, S.J.N. *et al., J. Chem. Educ.*, 1985, **62**, 943 (*Dioxomolybdate, rev*)
Kramer, S.P. *et al., J. Biol. Chem.*, 1987, **262**, 16357-16363 (*struct, props*)
Taylor, E.C. *et al., J.O.C.*, 1988, **53**, 5839-5847 (*Dioxomolybdate, synth, bibl*)
Deistung, J. *et al., Biochem. J.*, 1989, **263**, 477-483 (*isol, props, bibl*)
Taylor, E.C. *et al., J.A.C.S.*, 1989, **111**, 285-291 (*Dioxomolybdate, synth, bibl*)
Larsen, L. *et al., J.C.S. Perkin 1*, 1989, 2311-2316; 2317-2327 (*Dioxomolybdate, synth, bibl*)
Rajagopalan, K.V. *et al., Adv. Enzymol. Relat. Areas Mol. Biol.*, 1991, **64**, 215-289 (*rev*)
Stiefel, E.I. *et al., ACS Symp. Ser.*, 1993, **535**, (*rev*)
Taylor, E.C. *et al., Adv. Exp. Med. Biol.*, 1993, **338**, 363-367 (*Dioxomolybdate, rev, synth*)
Goswami, S. *et al., Heterocycles*, 1993, **35**, 1551-1570 (*Dioxomolybdate, rev*)
Bradshaw, B. *et al., J.C.S. Perkin 1*, 2001, 3232-3238; 3239-3244 (*Dioxomolybdate, synth*)
Metal Ions in Biology, Vol. 7: Molybdenum Enzymes, (ed. Spiro, T.G.), John Wiley, N.Y., 1985, (*Dioxomolybdate, book*)
Coughlan, M.P. *et al., Molybdenum Molybdenum-Containing Enzymes. 1980*, Pergamon, N.Y., 1980, (*Dioxomolybdate, book*)

Monamidocin M-682

N-*(5-Guanidino-2-hydroxypentanoyl)phenylalanine*
[171864-90-7]

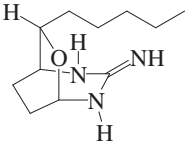


$C_{15}H_{22}N_4O_4$ 322.363
Dipeptide antibiotic. Prod. by *Streptomyces* sp. NR 0637. Fibrinogen receptor antagonist, platelet aggregation inhibitor. Powder (as monohydrochloride). Sol. MeOH, H_2O, DMSO; poorly sol. hexane. $[\alpha]_D^{24}$ +21.5 (c, 0.5 in MeOH) (HCl salt).

Kamiyama, T. *et al., J. Antibiot.*, 1995, **48**, 1221; 1226 (*isol, ir, pmr, cmr, synth*)

Monanchorin M-683

[723335-95-3]



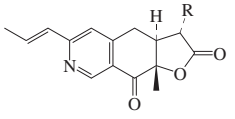
$C_{11}H_{21}N_3O$ 211.306

Isol. from the sponge *Monanchora unguiculata*. Light yellow oil. $[\alpha]_D^{25}$ +39 (c, 3.9 in MeOH).

Meragelman, K.M. *et al., J. Nat. Prod.*, 2004, **67**, 1165-1167 (*isol, pmr, cmr*)

Monascopyridine A M-684

[604786-54-1]



Absolute Configuration

R = -$CO(CH_2)_4CH_3$

$C_{21}H_{25}NO_4$ 355.433

Similar to Rubropunctamine, R-152. Prod. by *Monascus purpureus* DSM1379 and DSM1603 on rice. Needles (EtOH). Mp 161°.

Wild, D. *et al., J. Agric. Food Chem.*, 2003, **51**, 5493-5496 (*isol, cd, pmr, cmr, ms*)

Monascopyridine B M-685

[604786-55-2]

As Monascopyridine A, M-684 with

R = -$CO(CH_2)_6CH_3$

$C_{23}H_{29}NO_4$ 383.486

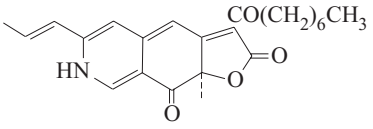
Related to Monascorubramine, M-686. Prod. by *Monascus purpureus* DSM1379 and DSM1603 on rice. Needles (EtOH). Mp 124°.

Wild, D. *et al., J. Agric. Food Chem.*, 2003, **51**, 5493-5496 (*isol, cd, pmr, cmr, ms*)

Monascorubramine M-686

*9*a-*Methyl-3-(1-oxooctyl)-6-(1-propenyl)furo[3,2-*g*]isoquinoline-2,9(7*H*,9a*H*)-dione, 9CI. Monascamine*

[3627-51-8]



$C_{23}H_{27}NO_4$ 381.471

Fungal pigment of *Monascus* spp. Purple needles (C_6H_6). Mp 198° dec.

N-*(1*R*-Carboxyethyl):* [186649-31-0]
$C_{26}H_{31}NO_6$ 453.534
Prod. by a *Monascus* sp. Amorph. red solid. $[\alpha]_D^{20}$ -3100 (c, 0.003 in MeOH). λ_{max} 202 ; 248 ; 295 ; 420 ; 510 (MeOH).

N-*(1*S*-Carboxyethyl):* [186649-30-9]
$C_{26}H_{31}NO_6$ 453.534
Prod. by a *Monascus* sp. Amorph. red solid. $[\alpha]_D^{20}$ -2900 (c, 0.003 in MeOH). λ_{max} 202 ; 248 ; 292 ; 420 ; 498 (MeOH).

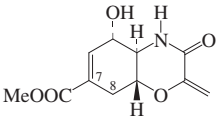
N-*(1*R*,2-Dicarboxyethyl):* [186649-35-4]
$C_{27}H_{31}NO_8$ 497.544
Prod. by a *Monascus* sp. Amorph. red solid. $[\alpha]_D^{20}$ -2600 (c, 0.003 in MeOH). λ_{max} 204 ; 250 ; 295 ; 418 ; 505 (MeOH).

N-*(1*S*,2-Dicarboxyethyl):* [186649-34-3]
$C_{27}H_{31}NO_8$ 497.544
Prod. by a *Monascus* sp. Amorph. red solid. $[\alpha]_D^{20}$ -2000 (c, 0.003 in MeOH). λ_{max} 204 ; 248 ; 278 ; 418 ; 490 (MeOH).

(Z)-Isomer, N-*(2-hydroxyethyl):* **N-*(2-Hydroxyethyl)monascorubramine*. *PP-R***
[340014-04-2]
$C_{25}H_{31}NO_5$ 425.524
Prod. by *Penicillium* sp. AZ. Amorph. red solid.

Fielding, B.C. *et al., J.C.S.*, 1961, 4579 (*isol*)
Nakanishi, K. *et al., Tetrahedron*, 1962, **18**, 1171; 1185 (*struct*)
Sato, K. *et al., Chem. Pharm. Bull.*, 1997, **45**, 227-229 (*N-carboxyethyl derivs*)
Ogihara, J. *et al., J. Biosci. Bioeng.*, 2001, **91**, 44-47 (*PP-R*)

Monocillinol A M-687



Relative Configuration

$C_{11}H_{13}NO_5$ 239.227
Prod. by a *Monocillium* sp. Amorph. solid. $[\alpha]_D$ -33.5 (c, 0.02 in MeOH). λ_{max} 205 (log ϵ 4.08); 218 (log ϵ 4.14) (EtOH).

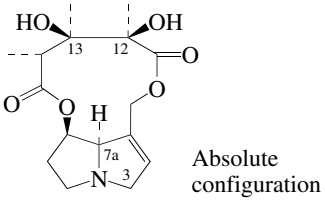
Δ^7-Isomer: ***Monocillinol B***
$C_{11}H_{13}NO_5$ 239.227
Prod. by a *Monocillium* sp. Amorph. solid. $[\alpha]_D$ +53 (c, 0.02 in MeOH). λ_{max} 207 (log ϵ 4.06); 217 (log ϵ 4.01) (EtOH).

Biswas, M.H.U. *et al., Tet. Lett.*, 2000, **41**, 7177-7180

Monocrotaline M-688

14,19-Dihydro-12,13-dihydroxy-20-norcrotalanan-11,15-dione, 9CI

[315-22-0]



Absolute configuration

$C_{16}H_{23}NO_6$ 325.361

Cyclic ester of retronecine in T-188 with Monocrotalic acid. Alkaloid from *Crotalaria retusa, Crotalaria spectabilis, Crotalaria aegyptiaca, Crotalaria burhia* and *Lindelofia spectabilis* (Fabaceae, Boraginaceae). Hepatotoxin. Causative agent of much seneciosis, e.g. accidental poisoning by *S.* by weed residues in bread, and characterised by venoocculosive disease. Shows antineoplastic activity esp. vs. adenocarcinoma. Male insect sterilant. Used in China as an antineoplastic agent. Prisms (EtOH). Mp 202-203° (197-198° dec.). $[\alpha]_D^{26}$ -54.7 ($CHCl_3$). Log P -1.44 (uncertain value) (calc). λ_{max} 217 (ϵ 20500) (MeOH) (Berdy).

▶ Exp. carcinogen. Possible human carcinogen. LD_{50} (rat, orl) 66 mg/kg. Hepatotoxic. QB3140000

Hydrochloride:
Prisms (MeOH/$CHCl_3$). Mp 184° dec. $[\alpha]_D^{28}$ -38.4 (H_2O).

Methiodide:
Prisms (MeOH/$CHCl_3$). Mp 205° dec. $[\alpha]_D^{28}$ +23.4 (c, 3.1 in MeOH).

N-*Oxide:* ***Monocrotaline* N-*oxide***
[35337-98-5]
$C_{16}H_{23}NO_7$ 341.36
Isol. from *Crotalaria sagittalis* (Fabaceae).

▶ RC1295000

O^{13}-*Ac:* ***Spectabiline***†. *Acetylmonocrotaline*
[520-55-8]
$C_{18}H_{25}NO_7$ 367.398
Prisms (EtOH). Mp 185.5-186°. $[\alpha]_D^{20}$ +121 (c, 1.7 in $CHCl_3$). $[\alpha]_D^{20}$ +143 (c, 1.38 in EtOH). Spectabiline is also a synonym for Lemobiline, L-88.

▶ RC1260000

O^{13}-*(2-Methylbutanoyl):* ***Grahamine***†
[24583-56-0]
$C_{21}H_{31}NO_7$ 409.478
Alkaloid from *Crotalaria grahamiana* seeds (Fabaceae). Mp 163°. $[\alpha]_D^{20}$ +100 (c, 1.05 in EtOH).

12,13-Cyclic acetaldehyde acetal: ***Monocrotalinine***
[64595-67-1]
$C_{18}H_{25}NO_6$ 351.399
Alkaloid from *Crotalaria grahamiana* (Fabaceae). Cryst. (Et_2O). Mp 160-161° dec. $[\alpha]_D$ +125.2 (EtOH). Prob. artifact.

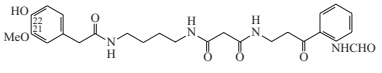
*3,7*a-*Didehydro: Dehydromonocrotaline. Monocrotaline pyrrole*
[23291-96-5]
$C_{16}H_{21}NO_6$ 323.345
Metab. of monocrotaline. Pneumotoxic agent. Needles (petrol). Mp 85-90° dec. $[\alpha]_D^{18}$ +109.4 (c, 1.1 in EtOH).

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 681B (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 1080C (*nmr*)
Neal, W.M. *et al., J.A.C.S.*, 1935, **57**, 2560 (*isol*)
Adams, R. *et al., J.A.C.S.*, 1939, **61**, 2815; 2819; 1950, **72**, 158 (*struct*)
Culvenor, C.C.J. *et al., Aust. J. Chem.*, 1957, **10**, 474; 1958, **11**, 97 (*Spectabiline*)
Neuner-Jehle, M. *et al., Monatsh. Chem.*, 1965, **96**, 321 (*ms*)
Atal, C.K. *et al., Aust. J. Chem.*, 1969, **22**, 1773 (*Grahamine*)
Simanek, V. *et al., Coll. Czech. Chem. Comm.*, 1969, **34**, 1832 (*uv*)
Culvenor, C.C.J. *et al., Aust. J. Chem.*, 1970, **23**, 1853-1857 (*Dehydromonocrotaline*)
Robins, D.J. *et al., J.C.S.(C)*, 1970, 1334; 1336 (*config*)
Culvenor, C.C.J. *et al., J.C.S.(C)*, 1971, 3653 (*cd*)
Willette, R.E. *et al., J. Pharm. Sci.*, 1972, **61**, 122 (*Monocrotaline N-oxide*)
Robins, D.J. *et al., J.C.S. Perkin 1*, 1974, 2082 (*biosynth*)

IARC Monog., 1976, **10**, 291; *Suppl.* 7, 67 (*rev, tox*)
Rajagopalan, T.R. *et al., Indian J. Chem., Sect. B*, 1977, **15**, 455 (*Monocrotalinine*)
Stoeckli-Evans, H. *et al., Acta Cryst. B*, 1979, **35**, 231 (*cryst struct*)
Matsumoto, T. *et al., Bull. Chem. Soc. Jpn.*, 1979, **52**, 3329 (*synth, abs config*)
Mody, N.V. *et al., J. Nat. Prod.*, 1979, **42**, 417 (*cmr*)
Jones, A.J. *et al., Aust. J. Chem.*, 1982, **35**, 1173 (*cmr*)
Wang, S. *et al., CA*, 1982, **97**, 19843o (*cryst struct, Spectabiline*)
Molyneux, R.J. *et al., Phytochemistry*, 1982, **21**, 439 (*cmr*)
Mackay, M.F. *et al., Acta Cryst. C*, 1984, **40**, 473-476 (*cryst struct, Dehydromonocrotaline*)
Mattocks, A.R. *et al., Chemistry and Toxicology of Pyrrolizidine Alkaloids*, 1986, (*tox, rev*)
Vedejs, E. *et al., J.O.C.*, 1987, **52**, 3937 (*synth*)
Niwa, H. *et al., Tet. Lett.*, 1988, **29**, 5139 (*synth*)
Jackson, G.E. *et al., Spectrosc. Lett.*, 1990, **23**, 971 (*pmr, cmr*)
Niwa, H. *et al., Tetrahedron*, 1992, **48**, 10531 (*synth*)
Yan, C.C. *et al., Toxicol. Appl. Pharmacol.*, 1994, **127**, 58-63 (*rev, tox*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, MRH000

Monodontamide B M-689

[152273-62-6]



$C_{26}H_{32}N_4O_7$ 512.561
Alkaloid from the marine gastropod mollusc *Monodonta labio*. Serine protease inhibitor. Amorph. solid. λ_{max} 231 (ϵ 26600); 259 (ϵ 9830); 318 (ϵ 3930) (MeOH) (Berdy).

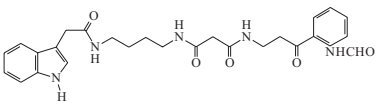
Deformyl: ***Monodontamide C***
[152273-63-7]
$C_{25}H_{32}N_4O_6$ 484.551
From *Monodonta labio*. Serine protease inhibitor. Amorph. solid. λ_{max} 226 (ϵ 32300); 256 (ϵ 6990); 281 (ϵ 3720); 365 (ϵ 6000) (MeOH) (Berdy).

21-Demethoxy, 22-deoxy: ***Monodontamide A***
[152273-61-5]
$C_{25}H_{30}N_4O_5$ 466.536
Alkaloid from *Monodonta labio*. Serine protease inhibitor. Amorph. solid. λ_{max} 229 (ϵ 15300); 258 (ϵ 6020); 318 (ϵ 2900) (MeOH) (Berdy).

Niwa, H. *et al., Tetrahedron*, 1994, **50**, 6805-6818 (*isol, uv, ir, pmr, cmr, struct, synth*)

Monodontamide D M-690

[156401-06-8]



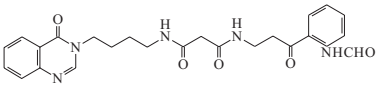
$C_{27}H_{31}N_5O_5$ 505.572
Alkaloid from the marine gastropod mollusc *Monodonta labio*. Amorph. solid.

Deformyl: ***Monodontamide E***
[156401-05-7]
$C_{26}H_{31}N_5O_4$ 477.562
From *Monodonta labio*. Amorph. solid.

Niwa, H. *et al., Tetrahedron*, 1994, **50**, 6805-6818 (*isol, uv, ir, pmr, cmr, struct, synth*)

Monodontamide F M-691

[156401-04-6]

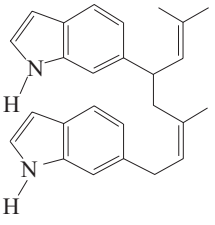


$C_{25}H_{27}N_5O_5$ 477.519
Alkaloid from the marine gastropod mollusc *Monodonta labio*. Plates (MeOH). Mp 129-132°.

Niwa, H. *et al., Tetrahedron*, 1994, **50**, 6805-6818 (*isol, uv, ir, pmr, cmr, struct, synth*)

Monodoroindole M-692

*6,6′-[3-Methyl-5-(2-methyl-1-propenyl)-2-pentene-1,5-diyl]bis-1*H*-indole, 9CI. 1,5-Di-6-indolyl-3,7-dimethyl-2,6-octadiene*
[110892-13-2]

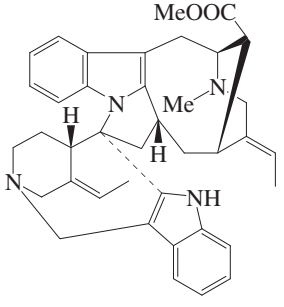


$C_{26}H_{28}N_2$ 368.521
Alkaloid from the seeds of *Monodora myristica* (Annonaceae).

Muhammad, I. *et al., J. Bangladesh Acad. Sci.*, 1987, **11**, 1-7; *CA*, **107**, 172452t

Monogagaine, 9CI M-693

Alkaloid 6F. Alkaloid 20A
[98360-63-5]

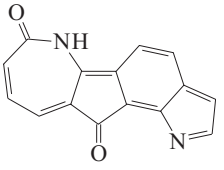


$C_{39}H_{44}N_4O_2$ 600.802
Minor alkaloid from the root bark of *Tabernaemontana chippii* and from the stem bark of *Tabernaemontana dichotoma*. Also isol. from a callus culture of *Tabernaemontana elegans* (Apocynaceae). Sol. MeOH; poorly sol. H_2O. λ_{max} 222 ; 288 (MeOH) (Berdy).

van Beek, T.A. *et al., J. Nat. Prod.*, 1985, **48**, 400 (*isol. uv, pmr, ms*)
Perera, P. *et al., Phytochemistry*, 1985, **24**, 2097 (*isol, uv, ir, pmr, ms*)
van Beek, T.A. *et al., Z. Naturforsch., B*, 1985, **40**, 693 (*uv, pmr, cmr, ms, cd, struct*)
van der Heijden, R. *et al., Phytochemistry*, 1986, **25**, 843 (*isol*)

Monomargine M-694

*6*H*-Azepino[3′,2′:4,5]cyclopent[1,2-*g*]indole-7,11-dione, 9CI*
[148717-63-9]

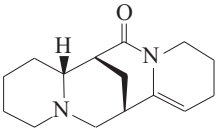


$C_{15}H_8N_2O_2$ 248.24
Pigment from the stem bark of *Monocarpia marginalis*. Cytotoxic. Orange amorph. solid. λ_{max} 229 ; 445 (MeOH) (Berdy).

Mahmood, K. *et al., Tet. Lett.*, 1993, **34**, 1795-1796 (*isol, uv, ir, pmr, cmr*)

Monspessulanine M-695

[3921-73-1]



$C_{15}H_{22}N_2O$ 246.352
Stereoisomer of Aphyllidine, A-1336. Alkaloid from *Cytisus monopessulanus* (Fabaceae). Cryst. (Me_2CO aq.). Mp 102°. $[\alpha]_D^{20}$ +168 (c, 1 in EtOH). $[\alpha]_D$ +176 (EtOH).

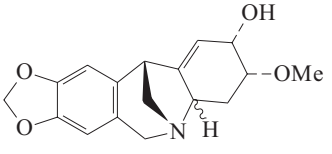
Perchlorate:
Cryst. (H_2O). Mp 213°.

Picrate:
Cryst. (EtOH). Mp 242° dec.

White, E.P. *et al., N.Z. J. Sci. Technol., Sect. B*, 1946, **27**, 339; 1951, **33**, 54 (*isol*)
White, E.P. *et al., J.C.S.*, 1964, 4613 (*ir, uv, pmr, struct*)
Bohlmann, F. *et al., Tet. Lett.*, 1965, 2433 (*synth*)

Montabuphine M-696

[168611-77-6]



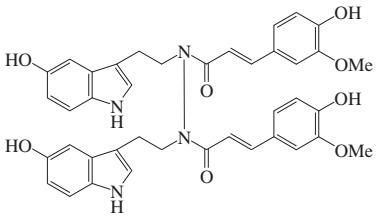
$C_{17}H_{19}NO_4$ 301.341
Structure has been shown to require revision. Alkaloid from bulbs of *Boo-*

phone flava. Mp 162-164°. $[\alpha]_D^{22}$ +157 (c, 0.106 in EtOH).

Viladomat, F. *et al., Phytochemistry*, 1995, **40**, 307-311 (*isol, ir, pmr, cmr, ms, cd, struct*)
Matveenko, M. *et al., Org. Lett.*, 2008, **10**, 4693-4696 (*struct*)

Montamine M-697

[917098-78-3]

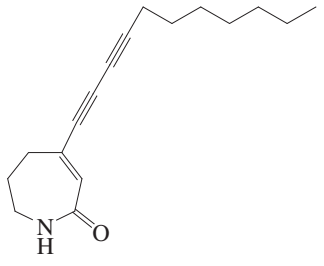


$C_{40}H_{38}N_4O_8$ 702.762
Dimer of Moschamine in H-755. Alkaloid from the seeds of *Centaurea montana*. Cytotoxic. Gum. λ_{max} 213 ; 271 ; 274 (MeOH).

Shoeb, M. *et al., Tetrahedron*, 2006, **62**, 11172-11177 (*isol, pmr, cmr*)

Montiporyne E M-698

1,5,6,7-Tetrahydro-4-(1,3-undecadiynyl)-2H-azepin-2-one

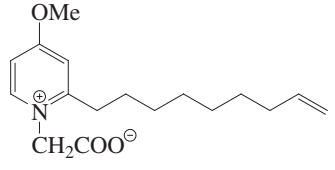


$C_{17}H_{23}NO$ 257.375
Isol. from the stony coral *Montipora* sp. Cytotoxic agent. Pale yellow gum.

Bae, B.H. *et al., J. Nat. Prod.*, 2000, **63**, 1511-1514
Collison, C.G. *et al., Synthesis*, 2006, 2319-2322 (*synth, ir, pmr, cmr*)

Montipyridine M-699

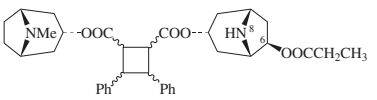
1-Carboxymethyl-4-methoxy-2-(8-nonenyl)pyridinium (1+)
[352230-21-8]



$C_{17}H_{25}NO_3$ 291.389
Alkaloid from the stony coral *Montipora* sp. Light brown solid.

Alam, N. *et al., J. Nat. Prod.*, 2001, **64**, 956-957 (*isol, pmr, cmr*)
Fürstner, A. *et al., J.A.C.S.*, 2002, **124**, 13856-13863 (*synth*)

Mooniine A M-700



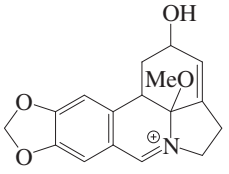
$C_{36}H_{44}N_2O_6$ 600.753
Alkaloid from the leaves of *Erythroxylum moonii*. Solid. λ_{max} 201 ; 227 ; 272 ($CHCl_3$).

N^8*-Me,* O*-depropanoyl, Ac:* ***Mooniine B***
$C_{36}H_{44}N_2O_6$ 600.753
Alkaloid from the leaves of *Erythroxylum moonii*. Solid. λ_{max} 200 ; 221 ; 272 ($CHCl_3$).

Atta-ur-Rahman, *et al., Phytochemistry*, 1998, **48**, 377-383 (*isol, uv*)

Mooreine M-701

[342008-06-4]

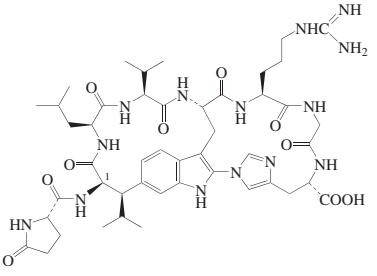


$C_{17}H_{18}NO_4^{\oplus}$ 300.334
Tentative struct. Quaternary alkaloid from *Crinum moorei*. Amorph. Counterion not specified.

Elgorashi, E.E. *et al., Phytochemistry*, 2001, **56**, 637-640

Moroidin M-702

[104041-75-0]



Absolute Configuration

$C_{47}H_{66}N_{14}O_{10}$ 987.126
Constit. of *Celosia argentea* and *Laportea moroides*. Tubulin polymn. inhibitor. Antimitotic agent. Needles (MeOH aq.). $[\alpha]_D^{24}$ -55 (c, 0.3 in MeOH aq.). Dec.at 280°. λ_{max} 215; 275 (solvent not reported) (Derep).

1-Epimer, L*-aspartic acid amide:* ***Celogentin E***
[602308-61-2]
$C_{51}H_{71}N_{15}O_{13}$ 1102.215
Constit. of the seeds of *Celosia argentea*. Tubulin polymn. inhibitor. Amorph. solid. $[\alpha]_D^{22}$ -39 (c, 0.5 in MeOH aq.). λ_{max} 225 (log ϵ 4.2); 282 (log ϵ 3.6) (MeOH).

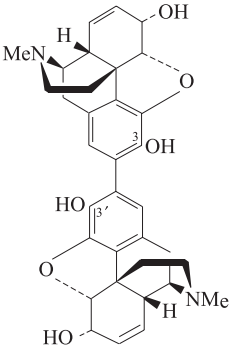
1-Epimer, L*-arginine amide:* ***Celogentin F***
[602308-62-3]
$C_{53}H_{78}N_{18}O_{11}$ 1143.313
Constit. of the seeds of *Celosia argentea*. Tubulin polymn. inhibitor. Amorph. solid. $[\alpha]_D^{22}$ -31 (c, 0.5 in MeOH aq.). λ_{max} 225 (log ϵ 4.2); 282 (log ϵ 3.6) (MeOH).

[119528-95-9 , 119528-96-0 , 119616-50-1 , 119616-51-2]

Leung, T.-W.C. *et al., Tetrahedron*, 1986, **42**, 3333-3348 (*isol, pmr, cmr*)
Kahn, S.D. *et al., J.O.C.*, 1989, **54**, 1901-1904; 2000, **65**, 8406 (*pmr, struct*)
Morita, H. *et al., Bioorg. Med. Chem. Lett.*, 2000, **10**, 469-471 (*activity, isol, pmr, cmr, abs config*)
Suzuki, H. *et al., Tetrahedron*, 2003, 5307-5315 (*Celogentins*)
Suzuki, H. *et al., Tetrahedron*, 2004, **60**, 2489-2495 (*cryst struct*)

ψ-Morphine M-703

7,7′,8,8′-Tetrahydro-4,5:4′,5′-diepoxy-17,17′-dimethyl[2,2′-bimorphinan], 9CI. Pseudomorphine. 2,2′-Bimorphine. Dehydromorphine. Oxydimorphine. Oxymorphine
[125-24-6]



Absolute configuration

$C_{34}H_{36}N_2O_6$ 568.668
Alkaloid from opium poppies and opium, also obt. by mild oxidn. of Morphine, M-704. Rods + $1H_2O$. Insol. MeOH. Mp 330° dec.

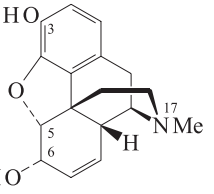
Tetra-Ac:
Prisms (MeOH). Mp 294-296°.

3,3′-Di-Me ether: Mp 155-156°.

Bentley, K.W. *et al., J.C.S.*, 1959, 2574 (*synth, struct, uv*)
Mushinskaya, S.Kh. *et al., Khim. Prir. Soedin.*, 1971, **7**, 855; *Chem. Nat. Compd. (Engl. Transl.)*, 1971, **7**, 845 (*isol*)

Morphine, BAN M-704

7,8-Didehydro-4,5-epoxy-17-methylmorphinan-3,6-diol, 9CI. Meconium. Morfine



(–)*–form*

$C_{17}H_{19}NO_3$ 285.342
Log P 0.24 (uncertain value) (calc).

(-)-*form* [57-27-2]

Principal alkaloid of opium (*Papaver somniferum*) (Papaveraceae). Also found in traces in other plants (e.g. lettuce) and mammalian tissues, apparently as a result of genuine biosynth. Powerful opioid analgesic. Psychotomimetic agent, antitussive, antiemetic. A drug of abuse. Acts as a stimulant to horses, has been used in horse doping. Prisms + $1H_2O$ (EtOH aq.), anhyd. prisms (anisole). V. sol. EtOAc, Me_2CO; sol. EtOH; spar. sol. H_2O, Et_2O, $CHCl_3$. Mp 254-256.4° dec. (anhyd.). $[\alpha]_D^{23}$ -130.9 (MeOH). pK_{a1} 8.2; pK_{a2} 9.9 (25°).

► Gastrointestinal effects when used therapeutically. Human and exp. reprod. effects. Abuse leads to habituation or addiction. Larger doses produce respiratory depression leading to coma. Can cause death. LD_{50} (rat, orl) 335 mg/kg. QC7875000

Hydrochloride: [52-26-6]
[6055-06-7]
Silky needles + $3H_2O$ (dil. HCl). Sol. H_2O; v. spar. sol. EtOH. Mp 200°. $[\alpha]_D^{18}$ -97.9 (H_2O).

► Abuse leads to habituation or addiction. Exp. reprod. and teratogenic effects. LD_{50} (rat, orl) 335 mg/kg. QC8575000

Sulfate: ***Morphine sulfate, JAN, USAN.*** *Astramorph P/F. Duramorph. Infumorph. MS Contin. Oramorph SR*
[6211-15-0]
Solid + $5H_2O$.

N-*Oxide:* ***Morphine* N-*oxide.*** *Genomorphine*
[639-46-3]
$C_{17}H_{19}NO_4$ 301.341
Alkaloid from *Papaver somniferum* (opium poppy) (Papaveraceae). Mp 272-273°. Metab. of Morphine, M-704.

3-O-*β*-D-*Glucuronopyranoside:* [20290-09-9]
$C_{23}H_{27}NO_9$ 461.468
Needles + 2.5 H_2O (H_2O). Mp 243-246° dec. (hydrate). $[\alpha]_D^{28}$ -132 (c, 0.5 in H_2O). Human metabolite of morphine.

6-O-*α*-D-*Glucuronopyranoside:* [150949-28-3]
$C_{23}H_{27}NO_9$ 461.468
Mp 310° dec. $[\alpha]_D^{20}$ -86.9 (c, 1 in DMSO).

6-O-*β*-D-*Glucuronopyranoside:* ***Morphine glucuronide, INN.*** *M6G*
[20290-10-2]
$C_{23}H_{27}NO_9$ 461.468
Active metab. of morphine associated with less respiratory depression than morphine. Analgesic. Cryst. + $2H_2O$ (EtOH aq.). Mp 254-256° dec. (dihydrate). $[\alpha]_D^{28}$ -172 (c, 0.5 in H_2O). Human metabolite of morphine.

3,6-Di-O-*β*-D-*glucuronopyranoside:*
[64947-41-7]
$C_{29}H_{35}NO_{15}$ 637.593
Cryst. + $3H_2O$ (MeOH aq.). Mp 243-244° dec. (trihydrate). $[\alpha]_D$ -188 (c, 10 in H_2O).

6-Ac: [2784-73-8]
Mp 187° (as hydrochloride). $[\alpha]_D^{23}$ -163 (H_2O).

3-Benzoyl: [105092-16-8]
$C_{24}H_{23}NO_4$ 389.45
Cryst. (EtOH). Mp 180-182°.

6-Benzoyl: Mp 269-270°.

3-Me ether: see Codeine, C-555

6-Me ether: ***Heterocodeine***
[639-47-4]
$C_{18}H_{21}NO_3$ 299.369
Narcotic analgesic, preanaesthetic, antitussive, antiperistaltic agent. Mp 242-243°.

6-Me ether, 3-Ac:
Cryst. (EtOH). Mp 133.5-134°.

Di-Me ether: ***6*-O-*Methylcodeine***
[2859-16-7]
$C_{19}H_{23}NO_3$ 313.396
Impurity in Codeine, C-555 prod. by methylation of morphine. Minor alkaloid of *Papaver somniferum* (opium poppy). Prisms or plates. Mp 140-141°. $[\alpha]_D$ -188.5 (c, 1.09 in 95% EtOH).

3-Et ether: ***Ethylmorphine, BAN***
[76-58-4]
$C_{19}H_{23}NO_3$ 313.396
Analgesic, antitussive, mydriatic. Mp 199-201°. Log P 1.35 (uncertain value) (calc).

► Addictive. LD_{50} (rat, orl) 810 mg/kg. QD0850000

3-Et ether; hydrochloride: Codethyline. Dionina
[125-30-4]
Bitter-tasting powder. Mp 123° dec.

► LD_{50} (rat, orl) 950 mg/kg. QD0874000

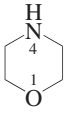
(+)-*form* [65165-99-3]
Synthetic. $[\alpha]_D^{25}$ +118 (c, 0.25 in $CHCl_3$).

[16206-77-2 , 64-31-3]

Bentley, K.W. *et al., Chemistry of the Morphine Alkaloids*, Oxford Univ. Press, 1954, (*isol, bibl, uv*)
Gates, M. *et al., J.A.C.S.*, 1956, **78**, 1380-1393 (*synth*)
Kelentei, B. *et al., Arzneim.-Forsch.*, 1957, **7**, 594-597 (*oxide, synth, pharmacol*)
Brochmann-Hanssen, E. *et al., J. Pharm. Sci.*, 1965, **54**, 1393 (*di-Me ether, isol, ir, pmr*)
Wheeler, D.M.S. *et al., J.A.C.S.*, 1967, **89**, 4494-4501 (*ms*)
Yoshimura, H. *et al., Chem. Pharm. Bull.*, 1968, **16**, 2114-2119 (*glucopyranosiduronates*)
Fridrichsons, J. *et al., Tet. Lett.*, 1968, 2887-2890 (*cryst struct, abs config*)
Fennessy, M.R. *et al., Eur. J. Pharmacol.*, 1969, **8**, 261 (*pharmacol*)
Kametani, T. *et al., J.C.S.(C)*, 1969, 2030-2033 (*synth*)
de Angelis, G.G. *et al., Tetrahedron*, 1969, **25**, 5099-5112 (*ord*)
Bentley, K.W. *et al., Alkaloids (Academic Press)*, 1971, **13**, 1-163 (*rev, bibl*)
Heimans, R.L.H. *et al., J. Pharm. Pharmacol.*, 1971, **23**, 831-836 (*metab*)
Barber, R.B. *et al., J. Med. Chem.*, 1975, **18**, 1074-1077 (*di-Me ether, Heterocodeine, synth*)
Battersby, A.R. *et al., Tet. Lett.*, 1975, 1873-1876 (*biosynth*)
Bye, E. *et al., Acta Chem. Scand., Ser. B*, 1976, **30**, 549-554 (*cryst struct*)
Carroll, F.I. *et al., J.O.C.*, 1976, **41**, 996-1001 (*cmr*)
Phillipson, J.D. *et al., Phytochemistry*, 1976, **15**, 1297-1301 (*oxide*)
Thenot, J.P.G. *et al., Methods Biochem. Anal.*, 1977, **24**, 1-38 (*rev, glc*)
Factors Affecting Action Narc. [Proc. Meet.], Raven Press, N.Y., 1978, 103; 233; 565; 595 (*rev, pharmacol*)
Brochmann-Hanssen, E. *et al., J. Nat. Prod.*, 1980, **43**, 731-735 (*Heterocodeine*)
Hazum, E. *et al., Science (Washington, D.C.)*, 1981, **213**, 1010-1012 (*pharmacol*)
Allen, A.C. *et al., J.O.C.*, 1983, **48**, 3951-3954 (*oxide, synth*)
Rice, K.C. *et al., Chem. Biol. Isoquinoline Alkaloids, Int. Symp., Phytochem. Soc. Eur., Abstr. Pap.*, 1985, 191 (*rev, synth*)
Goldstein, A. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 1985, **82**, 5203-5207 (*isol*)
Toth, J.E. *et al., J.O.C.*, 1987, **52**, 473-475 (*synth*)
Muhtadi, F.J. *et al., Anal. Profiles Drug Subst.*, 1988, **17**, 259 (*rev*)
Toth, J.E. *et al., J.O.C.*, 1988, **53**, 4694-4708 (*synth*)
Parker, K.A. *et al., J.A.C.S.*, 1992, **114**, 9688-9689 (*synth*)
Hong, C.Y. *et al., J.A.C.S.*, 1993, **115**, 11028-11029 (*synth*)
Negwer, M. *et al., Organic-Chemical Drugs and their Synonyms, 7th edn., Akademie-Verlag*, 1994, 5800 (*synonyms*)
Hong, C.Y. *et al., Tet. Lett.*, 1994, **35**, 3453-3456 (*synth*)
Opium Poppy: Botany, Chemistry and Pharmacology, Pharmaceutical Products Press, 1995,
Mulzer, J. *et al., Angew. Chem., Int. Ed.*, 1996, **35**, 2830-2832 (*synth*)
White, J.D. *et al., J.O.C.*, 1997, **62**, 5250-5253 (*synth*)
Mulzer, J. *et al., Chirality*, 1999, **11**, 475-482 (*synth*)
Meuzelaar, G.J. *et al., Eur. J. Org. Chem.*, 1999, 2315-2321 (*synth*)
Martindale, The Extra Pharmacopoeia, 32nd edn., Pharmaceutical Press, 1999, 26-27; 56-60
Rukhman, I. *et al., Synthesis*, 2000, 1241-1246 (*3-benzoyl*)
Brown, R.T. *et al., Tetrahedron*, 2000, **56**, 7591-7594 (*3,6-diglucuronoside*)
Rukhman, I. *et al., Tetrahedron*, 2001, **57**, 1083-1092 (*glucuronosides*)
Blakemore, P.R. *et al., Chem. Comm.*, 2002, 1159-1168 (*rev*)
Taber, D.F. *et al., J.A.C.S.*, 2002, **124**, 12416-12417; 15399 (*synth*)
Romberg, R. *et al., Anesthesiology*, 2003, **99**, 788-798 (*6-glucuronopyranoside, pharmacol*)
Okura, T. *et al., Br. J. Pharmacol.*, 2003, **140**, 211-217 (*6-glucuronopyranoside, pharmacol*)
Trost, B.M. *et al., J.A.C.S.*, 2005, **127**, 14785-14803 (*synth*)
Parker, K.A. *et al., J.O.C.*, 2006, **71**, 449-455 (*synth*)
Uchida, K. *et al., Org. Lett.*, 2006, **8**, 5311-5313 (*synth*)
Tanimoto, H. *et al., Tet. Lett.*, 2008, **49**, 358-362 (*synth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, ENK000; MRO500; MRO0750

Morpholine, 9CI M-705

1-Oxa-4-azacyclohexane. Tetrahydro-1,4-oxazine. Drewamine
[110-91-8]



C_4H_9NO 87.121

Solvent for resins, waxes and dyes. Permitted (FDA) in edible coatings for fruit and vegetables. Synthetic reagent. Anal. reagent for α,β-unsatd. compds. and for anhydrides. Food contaminant arising from its use as a boiler water additive. Hygroscopic oil with ammoniacal odour and caustic props. Misc. H_2O. d_4^{20} 1. Mp -4.9°. Bp 128.9° Bp_6 20°. n_D^{20} 1.4545. pK_a 8.49 (25°). Steam-volatile.

▶ Flammable, fl. p. 37°(oc)/38°(oc), auto-ignition temp. 310°/290°. Corrosive and irritating to skin, eyes and mucous membranes. LD_{50} (rbt, orl) 1050 mg/kg. LD_{50} (rbt, skn) 500 mg/kg. Exp. nephrotoxic. OES: long-term 20 ppm; short-term 30 ppm (Sk). QD6475000

Hydrochloride: [10024-89-2]
Cryst. (HCl aq.). Mp 175-176°.

▶ QE5075000

Picrate: Mp 225°.

N-*Formyl: 4-Morpholinecarboxaldehyde*
[4394-85-8]
$C_5H_9NO_2$ 115.132
Formylating reagent. Liq. Mp 17.5°. Bp 234°.

▶ QD9694000

N-*Ac:* [1696-20-4]
$C_6H_{11}NO_2$ 129.158
Sol. H_2O. d_{20}^{20} 1.12. Mp 14.5°. Bp_{50} 152° Bp_{12} 118°. n_D^{20} 1.4827.

▶ Eye irritant. QD7000000

N-*Propanoyl: 1-Morpholino-1-propanone*
[30668-14-5]
$C_7H_{13}NO_2$ 143.185
Liq. $Bp_{1.1}$ 83-86°.

N-*Benzoyl:* [1468-28-6]
$C_{11}H_{13}NO_2$ 191.229
Cryst. (Et_2O). Mp 74-75°.

▶ QD8050000

N-*(4-Methylbenzenesulfonyl):*
$C_{11}H_{15}NO_3S$ 241.31
Mp 147°.

N-*Me:* **N-*Methylmorpholine***
[109-02-4]
$C_5H_{11}NO$ 101.148
Isol. from seeds of *Cassia occidentalis.* Base used in mixed anhydride peptide synth. which minimises racemisation. Bp 116-117°.

▶ Corrosive and irritating to skin, eyes and mucous membranes. LD_{50} (rat, orl) 1970 mg/kg. QE5775000

N-*Me; hydrochloride:* [3651-67-0]
Mp 207-211°.

N-*Me,* N-*oxide:* [7529-22-8]
$C_5H_{11}NO_2$ 117.147
Catalyst for oxidn. of alcohols. Dipolar aprotic solv.; in conjunction with DMSO completely dissolves plant wall polysaccharides. Used in the manuf. of Tencel from cellulose (Courtaulds). Oxidises halides to alcohols/ketones. Monohydrate. Mp 73-76°.

N-*Et:* [100-74-3]
$C_6H_{13}NO$ 115.175
Solvent. Dissolves $LiAlH_4$. Bp 138-139°.

▶ Skin and severe eye irritant. LD_{50} (rat, orl) 1780 mg/kg. QE4025000

N-*Et, borane complex: (4-Ethylmorpholino-*N^4*)trihydroboron*
[88996-22-9]
$C_6H_{16}BNO$ 129.01
d 0.94. n_D^{20} 1.4680. Mp -10 to -8°.

N-*(2-Propenyl):* [696-57-1]
$C_7H_{13}NO$ 127.186
d_{25}^{25} 0.93. Mp 118° (as picrate). Bp 156-158°.

N-*Butyl:* [1005-67-0]
$C_8H_{17}NO$ 143.228
Bp_{98} 110-115°.

N-*(2-Methylpropyl): 4-(2-Methylpropyl)morpholine, 9CI*
[10315-98-7]
$C_8H_{17}NO$ 143.228
Bp_{19} 66°. n_D^{20} 1.4391.

N-*(2-Methylpropyl), picrate:* [10315-99-8]
Needles (EtOH). Mp 139°.

N-*Ph:* [92-53-5]
$C_{10}H_{13}NO$ 163.219
Dehydrohalogenating reagent. Mp 57°. Bp 270°.

▶ Toxic by skin absorption. Eye irritant. LD_{50} (rat, orl) 930 mg/kg. LD_{50} (rbt, skn) 360 mg/kg. QE8575000

N-*(2-Hydroxyethyl): 4-Morpholineethanol, 9CI, 8CI*
[622-40-2]
$C_6H_{13}NO_2$ 131.174
Liq. d_4^{20} 1.08. Bp_{757} 227°.

▶ QE3510000

N-*(2-Hydroxypropyl): α-Methyl-4-morpholineethanol, 9CI*
[2109-66-2]
$C_7H_{15}NO_2$ 145.201
Bp_{20} 98-102°.

N-*(2-Chloroethyl):* [3647-69-6]
$C_6H_{12}ClNO$ 149.62
Mp 184-186° (as hydrochloride). CAS no. refers to hydrochloride.

▶ QE0260000

N-*Nitroso:* [59-89-2]
$C_4H_8N_2O_2$ 116.119

▶ Possible human carcinogen (IARC 2B). LD_{50} (rat, orl) 282 mg/kg. Exp. carcinogen. QE7525000

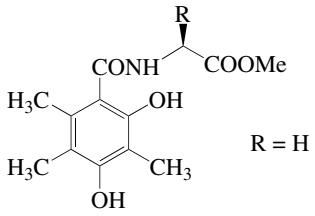
N-*Nitro: 4-Nitromorpholine, 9CI*
[4164-32-3]
$C_4H_8N_2O_3$ 132.119
Cryst. Mp 52-54°.

▶ QE7392000

N-*Amino: 4-Morpholinamine, 9CI. 4-Aminomorpholine, 8CI*
[4319-49-7]
[56677-61-3]
$C_4H_{10}N_2O$ 102.136
Liq.; cryst. (as hydrochloride). Mp 167° (hydrochloride). Bp 163-165°.

Aldrich Library of NMR Spectra, 2nd edn., 1983, **2**, 1009C
Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 382A; 382D; 382C; 383D; 383C; 764D; 765A; 1311A; **2**, 907C; 1129B (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 597A; 597C; 598A; 599C; 1250C; 1251A; **2**, 653C (*nmr*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 472A; 472C; 472D; 473D; 785D; 1178B (*ir*)
Jones, L.W. *et al., J.A.C.S.*, 1925, **47**, 2966 (*synth*)
Medard, M.L. *et al., Bull. Soc. Chim. Fr.*, 1936, 1343 (*deriv, synth*)
Hampton, B.L. *et al., J.A.C.S.*, 1936, **58**, 2338 (*synth*)
Butler, G.B. *et al., J.A.C.S.*, 1949, **71**, 3120 (*N-2-propenyl*)
Reynolds, D.D. *et al., J.A.C.S.*, 1950, **72**, 1597 (*N-butyl*)
Adv. Chem. Ser., 1955, **15**, 515 (***props***)
Johnson, J.B. *et al., Anal. Chem.*, 1955, **27**, 1464 (*use*)
Diamond, L.H. *et al., J.A.C.S.*, 1955, **77**, 3131 (*N-amino*)
Critchfield, F.E. *et al., Anal. Chem.*, 1956, **28**, 76 (*use*)
Opitz, G. *et al., Annalen*, 1963, **665**, 101 (*N-2-methylpropyl*)
Chapman, N.B. *et al., J.C.S.*, 1963, 1385 (*N-2-hydroxypropyl*)
Fieser and Fieser's Reagents for Organic Synthesis, Wiley, 1967, **1**, 383; 705; 1969, **2**, 278; 1979, **7**, 244 (*N-Me, N-Et, use*)
Potnis, S.P. *et al., Chem. Process. Eng. (Bombay)*, 1969, **3**, 27 (*rev*)
Kim, H.L. *et al., J. Agric. Food Chem.*, 1971, **19**, 198 (*isol*)
Bark, L.S. *et al., Analyst (London)*, 1972, **97**, 783 (*use*)
Org. Synth., Coll. Vol., 5, 1973, 839 (*nitro*)
Takeuchi, Y. *et al., J.C.S. Perkin 2*, 1974, 1927 (*cmr*)
Van Rheenen, V. *et al., Tet. Lett.*, 1976, 1973 (*N-Me N-oxide*)
Kirk-Othmer Encycl. Chem. Technol., 3rd edn., Wiley, 1978, **2**, 295 (*rev*)
Org. Synth., 1978, **58**, 43 (*deriv*)
Calderbank, K.E. *et al., J.C.S. Perkin 2*, 1979, 869 (*nitro*)
Otargaliev, T. *et al., Uzb. Khim. Zh.*, 1981, 81; *CA*, **95**, 24951y (*N-2-hydroxyethyl*)
Brown, H.C. *et al., Inorg. Chem.*, 1984, **23**, 2746 (*N-Et borane complex, synth*)
Lunn, G. *et al., J.O.C.*, 1984, **49**, 3470-3473 (*N-amino, synth, ir, pmr, cmr, ms*)
Olah, G.A. *et al., J.O.C.*, 1984, **49**, 3856 (*deriv, use*)
IARC Monog., 1989, **47**, 199 (*rev, tox*)
Griffith, W.P. *et al., Synth. Commun.*, 1992, **22**, 1967 (*use, deriv*)
Encyclopaedia of Reagents for Organic Synthesis, (ed. Paquette, L.A.), Wiley, 1995, **5**, 3545-3547 (*N-Me N-oxide, use*)
Encyclopaedia of Reagents for Organic Synthesis, (ed. Paquette, L.A.), Wiley, 1995, **5**, 3671-3673 (*use*)
Turnbull, M.M. *et al., Acta Cryst. C*, 1997, **53**, 818-820 (*cryst struct, N-Me hydrochloride*)
Encyclopedia of Food and Color Additives, (ed. Burdock, G.A.), CRC Press, 1997, 1912
Org. Synth., 2007, **84**, 22-31 (*N-propanoyl*)
IARC Monog. (Web), (*N-nitroso*)
Patty's Ind. Hyg. Toxicol. (3rd Rev. edn.), Vol. 2, Wiley, 1980, 2693
Ethel Browning's Toxicity and Metabolism of Industrial Solvents, 2nd edn., (ed. Snyder, R.), Elsevier, Volume 2, 1990, 244
Bretherick, L. *et al., Handbook of Reactive Chemical Hazards, 4th edn., Butterworths*, 1990, 1555
Luxon, S.G. *et al., Hazards in the Chemical Laboratory, 5th edn., Royal Society of Chemistry*, 1992, 879
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, ACR750; NKZ000; ENL000; CHE000; MMA250; MRQ500; MRQ600; PFS750; MRP750

Mortivinacin B M-706



$C_{13}H_{17}NO_5$ 267.281
Prod. by *Mortierella vinacea*. Pale yellow glass. λ_{max} 212 (ϵ 5200); 258 (ϵ 1200); 304 (ϵ 400) (MeOH). λ_{max} 212 (ϵ 5200); 258 (ϵ 1200); 304 (ϵ 400) (MeOH) (Berdy).

Soman, A.G. *et al., J. Nat. Prod.*, 1999, **62**, 386-388 (*isol, uv, ir, pmr, cmr, ms*)

Mortivinacin C M-707

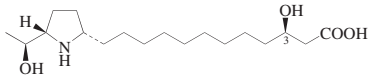
As Mortivinacin B, M-706 with R = CH_3

$C_{14}H_{19}NO_5$ 281.308
Prod. by *Mortierella vinacea*. Pale yellow glass. $[\alpha]_D$ -16 (c, 1.9 in $CHCl_3$). λ_{max} 210 (ϵ 3300); 258 (ϵ 1300); 304 (ϵ 400) (MeOH). λ_{max} 210 (ϵ 3300); 258 (ϵ 1300); 304 (ϵ 400) (MeOH) (Berdy).

Soman, A.G. *et al., J. Nat. Prod.*, 1999, **62**, 386-388 (*isol, uv, ir, pmr, cmr, ms*)

Morusimic acid B M-708

[455949-43-6]



Absolute Configuration

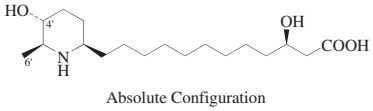
$C_{18}H_{35}NO_4$ 329.479
Alkaloid from the fruit of *Morus alba*. Powder. $[\alpha]_D$ +8.8 (c, 0.42 in MeOH).

3-O-*β*-*D*-*Glucopyranoside:* ***Morusimic acid A***
[455949-42-5]
$C_{24}H_{45}NO_9$ 491.621
Alkaloid from the fruit of *Morus alba*. Powder. $[\alpha]_D$ +15.3 (c, 0.18 in MeOH).

Kusano, G. *et al., Chem. Pharm. Bull.*, 2002, **50**, 185-192 (*isol, pmr, cmr*)
Bouillon, M.E. *et al., Tetrahedron*, 2007, **63**, 2712-2723 (*synth*)

Morusimic acid D M-709

[455949-45-8]



Absolute Configuration

$C_{18}H_{35}NO_4$ 329.479
Alkaloid from the fruit of *Morus alba*. Powder. $[\alpha]_D$ -14.6 (c, 0.25 in MeOH).

3-O-*β*-*D*-*Glucopyranoside:* ***Morusimic acid C***
[455949-44-7]
$C_{24}H_{45}NO_9$ 491.621
Alkaloid from the fruit of *Morus alba*. Powder. $[\alpha]_D$ -20.3 (c, 0.24 in MeOH).

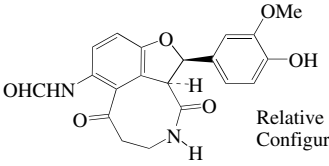
6′-Hydroxy, 3-O-*β*-*D*-*glucopyranoside:* ***Morusimic acid E***
[455949-46-9]
$C_{24}H_{45}NO_{10}$ 507.62
Alkaloid from the fruit of *Morus alba*. Powder. $[\alpha]_D$ -17.2 (c, 0.61 in MeOH).

4′-Epimer: ***Morusimic acid F***
[455949-47-0]
$C_{18}H_{35}NO_4$ 329.479
Alkaloid from the fruit of *Morus alba*. Powder. $[\alpha]_D$ +6.4 (c, 0.28 in MeOH).

Kusano, G. *et al., Chem. Pharm. Bull.*, 2002, **50**, 185-192 (*isol, pmr, cmr*)

Moschamide M-710

[205234-95-3]



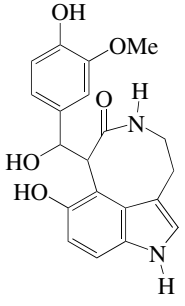
Relative Configuration

$C_{20}H_{18}N_2O_6$ 382.372
Alkaloid from the seeds of *Centaurea moschata*. Amorph. yellow solid. λ_{max} 236 (log ϵ 3.93); 271 (log ϵ 3.53); 320 (log ϵ 2.98); 354 (log ϵ 3.01) (MeOH).

Sarker, S.D. *et al., Tet. Lett.*, 1998, **39**, 1421-1424 (*isol, uv, ir, pmr, cmr, ms*)

Moschamindolol M-711

[193225-06-8]

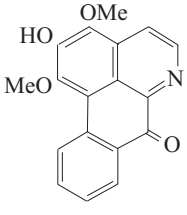


$C_{20}H_{20}N_2O_5$ 368.388
Alkaloid from the seeds of *Centaurea moschata* (Asteraceae). Amorph. yellow solid. Related to Serotobenine, S-252. λ_{max} 228 (log ϵ 4.11); 286 (log ϵ 3.85); 311 (log ϵ 3.6); 322 (log ϵ 3.54) (MeOH).

Sarker, S.D. *et al., Nat. Prod. Lett.*, 1997, **9**, 189-199 (*isol, uv, ir, pmr, cmr, ms*)

Moschatoline M-712

*2-Hydroxy-1,3-dimethoxy-7*H-*dibenzo[*de,g*]quinolin-7-one, 9CI*
[5574-23-2]



$C_{18}H_{13}NO_4$ 307.305
Alkaloid from *Atherosperma moschatum* (Monimiaceae). Noncryst.

Ac:
Yellow cryst. Mp 190-200°.

Me ether: **O-*Methylmoschatoline***. *Homomoschatoline. Liridine*
[5140-38-5]
$C_{19}H_{15}NO_4$ 321.332
Alkaloid from *Guatteria subsessilis* and several other genera in the Annonaceae (*Annona, Duguetia, Cleistopholis, Enantia, Polyalthia*), also from the Magnoliaceae (*Liriodendron*) and Menispermaceae (*Abuta, Triclisia*). Mp 188° dec.

Me ether, O^3*-De-Me:* ***Isomoschatoline***
[83375-15-9]
$C_{18}H_{13}NO_4$ 307.305
Alkaloid from the stem bark of *Guatteria melosma* and from *Cleistopholis patens* (Annonaceae). Red cuboidal cryst. (MeOH). Mp 245°.

Me ether, O^3*-De-Me, Ac:*
Fine yellow needles. Mp 193-194° dec.

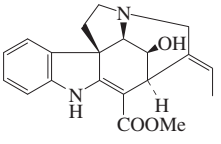
O^3*-De-Me,* O^2*-Me,* N-*Me: 1-Hydroxy-2,3-dimethoxy-6-methyl-7-oxo-7*H-*dibenzo*[de,g*]quinolinium inner salt*. ***Teliglazine***
[199333-21-6]
$C_{19}H_{15}NO_4$ 321.332
Alkaloid from *Telitoxicum glaziovii* (Menispermaceae). Dark green needles ($CHCl_3$). Mp 229-232°. Inner salt with negative charge on O^3. λ_{max} 246 (sh) (log ϵ 3.24); 318 (log ϵ 3.43); 430 (log ϵ 2.53); 648 (log ϵ 2.55) (EtOH).

11-Hydroxy, O^3*-de-Me,* O^2*-Me,* N-*Me:* ***Sciaferine***
$C_{19}H_{15}NO_5$ 337.331
Alkaloid from *Sciadotenia toxifera*. Dark green needles (CH_2Cl_2/MeOH). Mp >293°. λ_{max} 240 (sh) (log ϵ 2.96); 318 (log ϵ 2.84); 422 (log ϵ 2.09); 632 (log ϵ 1.94) (EtOH).

Bick, I.R.C. *et al., Aust. J. Chem.*, 1967, **20**, 1403 (*Moschatoline*)
Cava, M.P. *et al., Tetrahedron*, 1975, **31**, 1667 (*synth*)
Marsaioli, A.J. *et al., Phytochemistry*, 1980, **19**, 995 (O-*Methylmoschatoline*)
Abd-El Atti, S. *et al., J. Nat. Prod.*, 1982, **45**, 476 (*Isomoschatoline*)
Tavanaiepour, I. *et al., Acta Cryst. C*, 1987, **43**, 2230 (*O-Acetylisomoschatoline, cryst struct*)
Menachery, M.D. *et al., J. Nat. Prod.*, 1997, **60**, 1328-1330 (*Teliglazine*)
Freyer, A.J. *et al., Heterocycles*, 1999, **51**, 2221-2226 (*Sciaferine*)

Mossambine M-713

Methyl 2,16,19,20-tetrahydro-14-hydroxycuran-17-oate, 9CI. 14-Hydroxyakuammicine. Diplorrhyncine
[30735-22-9]



Absolute Configuration

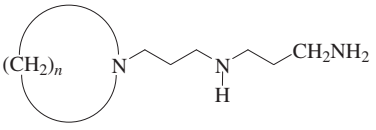
$C_{20}H_{22}N_2O_3$ 338.405
Alkaloid from *Diplorhynchus condylocarpon* ssp. *mossambicensis* (Apocynaceae). Cryst. (MeOH). Mp 240°. $[\alpha]_D$ -498 ($CHCl_3$). $[\alpha]_D^{20}$ -470 (c, 0.40 in $CHCl_3$).

Hydrochloride: Mp 225-228° dec.

Stauffacher, D. *et al., Helv. Chim. Acta*, 1961, **44**, 2006 (*isol, ir, uv*)
Monseur, X. *et al., Bull. Soc. Chim. Fr.*, 1962, 1088 (*uv, ir, ms, pmr, struct*)
Kuehne, M.E. *et al., J.O.C.*, 1996, **61**, 7873 (*synth, resoln*)

Motuporamine A M-714

N-*(3-Azacyclotridec-1-ylpropyl)-1,3-propanediamine, 9CI*
[211566-77-7]



n = 12

$C_{18}H_{39}N_3$ 297.526
Alkaloid from the sponge *Xestospongia exigua*. Cytotoxic agent. Oil (as di-Ac).

Goldring, W.P.D. *et al., Org. Lett.*, 1999, **1**, 1471-1473 (*synth, struct*)
Baldwin, J.E. *et al., Tet. Lett.*, 1999, **40**, 5401-5404 (*synth*)
Williams, D.E *et al., J.O.C.*, 2002, **67**, 245-258 (*isol, pmr, cmr, activity*)

Motuporamine B M-715

N-*(3-Azacyclotetradec-1-ylpropyl)-1,3-propanediamine*
[211566-78-8]
As Motuporamine A, M-714 with n = 13

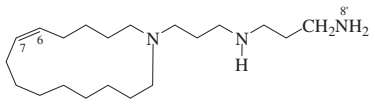
$C_{19}H_{41}N_3$ 311.553
Alkaloid from the sponge *Xestospongia exigua*. Cytotoxic agent. Oil (as di-Ac).

5Z,6-Didehydro: ***Motuporamine D***
[398144-67-7]
$C_{19}H_{39}N_3$ 309.537
Alkaloid from *Xestospongia exigua*. Oil.

Williams, D.E. *et al., J.O.C.*, 1998, **63**, 4838-4841; 2002, **67**, 245-258 (*Motuporamines B,D, isol, pmr, cmr, activity*)
Goldring, W.P.D. *et al., Org. Lett.*, 1999, **1**, 1471-1473 (*synth, struct*)
Baldwin, J.E. *et al., Tet. Lett.*, 1999, **40**, 5401-5404 (*synth*)

Motuporamine C M-716

[211569-34-5]



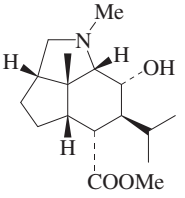
$C_{20}H_{41}N_3$ 323.564
Alkaloid from the sponge *Xestospongia exigua*. Cytotoxic agent. Oil (as di-Ac).

N$^{8'}$-Formyl: ***Motuporamine F***
[398144-69-9]
$C_{21}H_{41}N_3O$ 351.574
Alkaloid from *Xestospongia exigua*. Oil (as di-Ac).

9Z,10-Didehydro: ***Motuporamine E***
[398144-68-8]
$C_{20}H_{39}N_3$ 321.548
Alkaloid from *Xestospongia exigua*. Oil.

Williams, D.E. *et al., J.O.C.*, 1998, **63**, 4838-4841; 2002, **67**, 245-258 (*Motuporamines C,E,F, isol, pmr, cmr, activity*)
Goldring, W.P.D. *et al., Org. Lett.*, 1999, **1**, 1471-1473 (*synth, struct*)
Fuerstner, A. *et al., J.O.C.*, 2000, **65**, 2608-2611 (*synth*)

Mubironine C M-717



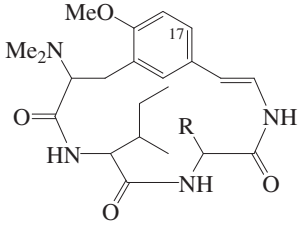
Absolute Configuration

$C_{17}H_{29}NO_3$ 295.421
Alkaloid from *Dendrobium* Snowflake "Red Star". Solid. $[\alpha]_D^{23}$ -5 (c, 0.6 in MeOH).

Morita, H. *et al., Tetrahedron*, 2000, **56**, 5801-5805

Mucronine A M-718

12-(Dimethylamino)-15-methoxy-9-(1-methylpropyl)-6-(phenylmethyl)-4,7,10-triazabicyclo[12.3.1]octadeca-1(18),2,14,16-tetraene-5,8,11-trione, 9CI
[38840-25-4]



R = CH_2Ph

$C_{29}H_{38}N_4O_4$ 506.644
Alkaloid from the bark, leaves and branches of *Zizyphus mucronata* and the bark of *Zizyphus abyssinica* (Rhamnaceae). Needles ($CHCl_3$/Et_2O or CH_2Cl_2/petrol). Mp 235°. $[\alpha]_D^{20}$ -28.3 (c, 0.06 in $CHCl_3$).

Dihydro:
Needles (Me_2CO). Mp 237-239°. $[\alpha]_D^{25}$ +57 (c, 0.06 in $CHCl_3$).

N-*De-Me:* ***Mucronine B***
[38840-26-5]
$C_{28}H_{36}N_4O_4$ 492.617
Alkaloid from the bark of *Zizyphus mucronata* and *Zizyphus abyssinica* (Rhamnaceae). Fine needles (Me_2CO/petrol). Mp 222-224°. $[\alpha]_D^{25}$ +175 (c, 0.2 in $CHCl_3$).

N-*De-Me, dihydro:*
Needles (Me_2CO). Mp 245-247°. $[\alpha]_D^{25}$ +32.5 (c, 0.2 in $CHCl_3$).

Bis-N-*de-Me:* ***Mucronine H***
[55856-96-7]
$C_{27}H_{34}N_4O_4$ 478.59
Alkaloid from bark and leaves of *Zizyphus mucronata* (Rhamnaceae). Shows antibacterial and antifungal props. Amorph. $[\alpha]_D^{20}$ +5 (c, 0.1 in MeOH).

Bis-N-*de-Me,* N-*Ac:*
Needles (Me_2CO). Mp 315-317°. $[\alpha]_D^{20}$ -24.3 (c, 0.074 in MeOH/$CHCl_3$ 1:1).

Fehlhaber, H.-W. *et al., Annalen*, 1972, **759**, 195 (*isol, ir, uv, cd, ms, pmr, struct*)
Tschesche, R. *et al., Annalen*, 1974, 1915 (*isol, uv, ir, pmr, ms, struct, Mucronine H*)
Tschesche, R. *et al., Phytochemistry*, 1974, **13**, 2328 (*occur, Mucronine H*)
Schmidt, U. *et al., Angew. Chem., Int. Ed.*, 1983, **22**, 152 (*synth, Mucronine B*)

Mucronine C M-719

12-(Dimethylamino)-15-methoxy-9-(1-methylpropyl)-6-(2-methylpropyl)-4,7,10-triazabicyclo[12.3.1]octadeca-1(18),2,14,16-tetraene-5,8,11-trione, 9CI
[38840-27-6]
As Mucronine A, M-718 with R = $CH_2CH(CH_3)_2$

$C_{26}H_{40}N_4O_4$ 472.626
Alkaloid from the leaves and branches of *Zizyphus mucronata* and the bark of *Zizyphus abyssinica* (Rhamnaceae). Needles (CH_2Cl_2/petrol). Mp 257°. $[\alpha]_D^{20}$ -39.4 (c, 0.09 in $CHCl_3$).

N-*De-Me:* ***Abyssenine A***. *Abyssinine A*
[54519-14-1]
$C_{25}H_{38}N_4O_4$ 458.6
Alkaloid from the bark of *Zizyphus mucronata* and *Zizyphus abyssinica* and from the stem bark of *Zizyphus oenoplia* (Rhamnaceae). Needles (Me_2CO/petrol). Mp 237-239°. $[\alpha]_D^{20}$ +160 (c, 0.22 in $CHCl_3$). $[\alpha]_D^{20}$ -58 (c, 0.1 in MeOH).

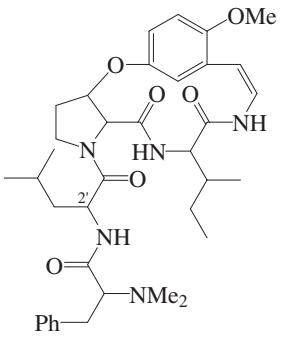
17-Methoxy, N-*de-Me:* ***Mucronine E***
[55856-87-6]
$C_{26}H_{40}N_4O_5$ 488.626
Alkaloid from the bark of *Zizyphus mucronata*. Needles (Me_2CO/petrol). Mp 232-234°. $[\alpha]_D^{20}$ -89 (c, 0.084 in MeOH). Stereochem. determined in 2007.

17-Methoxy, N-*di-de-Me:* ***Mucronine F***
[55856-90-1]
$C_{25}H_{38}N_4O_5$ 474.599
Alkaloid from the bark of *Zizyphus mucronata* (Rhamnaceae). Cryst. ($CHCl_3$/MeOH). Mp 208-214°. $[\alpha]_D^{20}$ +17.4 (c, 0.092 in MeOH).

Fehlhaber, H.-W. *et al., Annalen*, 1972, **759**, 195-207 (*Mucronine C*)
Tschesche, R. *et al., Annalen*, 1974, 1915-1928 (*Mucronines E,F, Abyssinine A*)
Tschesche, R. *et al., Phytochemistry*, 1974, **13**, 2328 (*Abyssinine A, occur*)
Cassels, B.K. *et al., Tetrahedron*, 1974, **30**, 2461-2466 (*Zizyphus oenoplia constit*)
Toumi, M. *et al., J.O.C.*, 2007, **72**, 9003-9009 (*Abyssenine A, synth*)
Wang, J. *et al., Tet. Lett.*, 2007, **48**, 6717-6721 (*Mucronine E, synth*)

Mucronine D M-720

Daechuine S9
[38496-00-3]



$C_{37}H_{51}N_5O_6$ 661.84
Alkaloid from the stem or root bark of *Zizyphus mucronata*, *Zizyphus mucronata*, *Zizyphus sativa*, *Zizyphus nummularia*, *Zizyphus jujuba* and *Zizyphus jujuba* var. *inermis* (Rhamnaceae). Amorph. $[\alpha]_D^{20}$ -487 (c, 0.12 in $CHCl_3$).

N-*De-Me:* ***Nummularine A***. N-*Demethylnummularine D*
[53947-95-8]
$C_{36}H_{49}N_5O_6$ 647.813
Alkaloid from the root bark of *Zizyphus nummularia* and the stem bark of *Zizyphus jujuba* (Rhamnaceae). Needles (MeOH). Mp 235-240° dec. $[\alpha]_D^{20}$ -397 (c, 0.2 in $CHCl_3$).

O-*De-Me:* **O-*Demethylmucronine D***
[155656-07-8]
$C_{36}H_{49}N_5O_6$ 647.813
Alkaloid from roots of *Zizyphus mucronata* (Rhamnaceae). $[\alpha]_D^{20}$ -191 (c, 0.3 in $CHCl_3$).

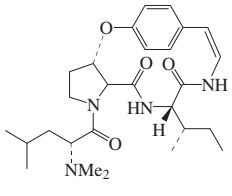
$N^{2'}$-*Deacyl,* $N^{2'}$,$N^{2'}$-*di-Me:* [155656-06-7]
$C_{28}H_{42}N_4O_5$ 514.664
Alkaloid from roots of *Zizyphus mucronata* (Rhamnaceae). Needles (MeOAc/hexane). Mp 153-154°. $[\alpha]_D^{20}$ -418 (c, 1.1 in $CHCl_3$).

10,11-Dihydro:
Needles (CH_2Cl_2/Et_2O). Mp 250-252° (247°). $[\alpha]_D^{20}$ -225 (c, 0.17 in $CHCl_3$).

Tschesche, R. *et al., Chem. Ber.*, 1972, **105**, 3106-3114; 1974, **107**, 3180-3185 (*Mucronine D, Nummularine A, isol, uv, cd, ir, pmr, ms, struct*)
Tschesche, R. *et al., Phytochemistry*, 1976, **15**, 541-542; 1979, **18**, 702-704 (*isol*)
Han, B.H. *et al., Pure Appl. Chem.*, 1989, **61**, 443-448 (*Nummularine A*)
Barboni, L. *et al., Phytochemistry*, 1994, **35**, 1579-1582 (*O-Demethylmucronine D, N-deacyl-N-di-Me*)

Mucronine J M-721

[177714-94-2]



Absolute Configuration

$C_{27}H_{40}N_4O_4$ 484.637
Alkaloid from root bark of *Zizyphus mucronata* and roots of *Paliurus ramosissimus*. Amorph. powder. $[\alpha]_D^{21}$ -236 (c, 1 in $CHCl_3$). λ_{max} 219 (log ϵ 4.5) (MeOH).

Auvin, C. *et al., J. Nat. Prod.*, 1996, **59**, 676-678 (*isol, ir, pmr, cmr, ms, struct*)
Lim, H.Y. *et al., Helv. Chim. Acta*, 2003, **86**, 127-138 (*isol, config*)

Mucuadine M-722

Struct. unknown. Alkaloid from *Mucuna pruriens* (Fabaceae). Lemon-yellow pungent liq. which gradually turns brown. Bp 239-240°. $[\alpha]_D^{30}$ +2.5 (EtOH). n^{30} 1.446.

Picrate:
Cryst. (EtOH). Mp 110-111°.

Majumdar, D.N. *et al., Indian Pharm.*, 1954, **10**, 79-84; *CA*, **49**, 9881a (*isol*)

Mucuadinine M-723

Struct. unknown. MW 215.6. Alkaloid from *Mucuna pruriens* (Fabaceae). Light-brown pungent liq. Mp 5-7°. Bp 300°. $[\alpha]_D^{30}$ +3.1 (EtOH). n^{30} 1.459.

Picrate: Mp 114-115°.

Majumdar, D.N. *et al., Indian Pharm.*, 1954, **10**, 79-84; *CA*, **49**, 9881a (*isol*)

Mucuadininine M-724

Struct. unknown. Alkaloid from *Mucuna pruriens* (Fabaceae). Flakes. Mp 300°.

Picrate: Mp 106-107°.

Majumdar, D.N. *et al., Indian Pharm.*, 1954, **10**, 79-84; *CA*, **49**, 9881a (*isol*)

Mucunadine M-725

Struct. unknown. Alkaloid from the seeds of *Mucuna pruriens* (Fabaceae). Brown powder ($CHCl_3$). Mp 201-202°.

Hydrochloride:
Microcryst. powder. Dec. >300°.

Santra, D.K. *et al., Indian J. Pharm.*, 1953, **15**, 60-61; *CA*, **48**, 8793h (*isol*)

Mucunine M-726

Struct. unknown. Alkaloid from the seeds of *Mucuna pruriens* (Fabaceae). Brown amorph. solid (Et_2O). Mp 220-221°.

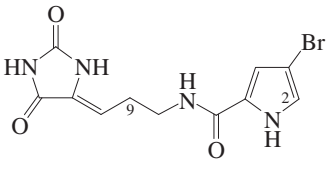
Hydrochloride:
Needles. Mp 300°.

Picrate:
Yellowish powder. Mp 245-247°.

Santra, D.K. *et al., Indian J. Pharm.*, 1953, **15**, 60-61; *CA*, **48**, 8793h (*isol*)

Mukanadin B M-727

[250782-32-2]



$C_{11}H_{11}BrN_4O_3$ 327.137
Similar to Midpacamide, M-604. Isol. from the sponges *Agelas nakamurai* and *Axinella verrucosa*. Amorph. solid. λ_{max} 274 (ϵ 6700) (MeOH).

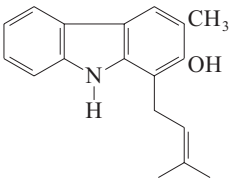
9-Hydroxy: ***9-Hydroxymukanadin B***
$C_{11}H_{11}BrN_4O_4$ 343.136
Isol. from *Axinella verrucosa*.

2-Bromo: ***Mukanadin D***
[193619-42-0]
$C_{11}H_{10}Br_2N_4O_3$ 406.033
Isol. from the sponge *Didiscus oxeata*.

Lindel, T. *et al., Liebigs Ann./Recl.*, 1997, 1525-1528 (*synth*)
Uemoto, H. *et al., J. Nat. Prod.*, 1999, **62**, 1581-1583 (*isol, pmr, cmr*)
Hu, J.-F. *et al., J. Chem. Res., Synop.*, 2005, 427-428 (*Mukanadin D*)
Aiello, A. *et al., Bioorg. Med. Chem.*, 2006, **14**, 17-24 (*9-Hydroxymukanadin B*)

Mukoenine A M-728

2-Hydroxy-3-methyl-1-prenylcarbazole. 3-Methyl-1-(3-methyl-2-butenyl)-9H-carbazol-2-ol, 9CI. Girinimbilol
[155519-81-6]



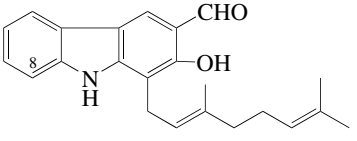
$C_{18}H_{19}NO$ 265.354
Alkaloid from stem bark and roots of *Murraya koenigii* (curryleaf tree) (Rutaceae). Needles (hexane/CH_2Cl_2) or prisms. Mp 106° (104-107°). Mukoenine A and Girinimbilol have not been directly compared but they appear to be identical.

O-*Ac:*
Needles (hexane/CH_2Cl_2). Mp 172-174°.

Ito, C. *et al., Chem. Pharm. Bull.*, 1993, **41**, 2096 (*isol, uv, ir, pmr, ms, struct*)
Reisch, J. *et al., Phytochemistry*, 1994, **36**, 1073 (*isol, uv, ir, pmr, cmr, ms, struct*)

Mukoenine B M-729

1-(3,7-Dimethyl-2,6-octadienyl)-2-hydroxy-9H-carbazole-3-carboxaldehyde, 9CI. 3-Formyl-1-geranyl-2-hydroxycarbazole. Clausenatine A
[155519-82-7]



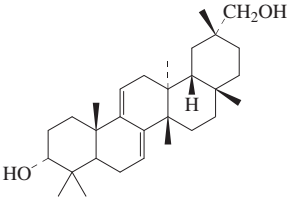
$C_{23}H_{25}NO_2$ 347.456
Alkaloid from *Clausena excavata* and *Murraya koenigii* (curryleaf tree) (Rutaceae). Yellowish powder (Me_2CO). Mp >280°.

8-Hydroxy: 3-Formyl-1-geranyl-2,8-dihydroxycarbazole. ***Clauszoline F***
[185508-06-9]

$C_{23}H_{25}NO_3$ 363.455
Alkaloid from the stem bark of *Clausena excavata*. Yellow powder. λ_{max} 204 ; 216 ; 242 ; 276 ; 291 ; 300 (sh) ; 354 (MeOH).

Ito, C. *et al., Chem. Pharm. Bull.*, 1993, **41**, 2096; 1996, **44**, 2231-2235 (*isol, uv, ir, pmr, ms, struct*)
Wu, T.S. *et al., Phytochemistry*, 1999, **52**, 523-527 (*Clausenatine A*)

7,9(11)-Multifloradiene-3,29-diol M-730



3α-*form*

$C_{30}H_{48}O_2$ 440.708

3α-form
Karounidiol
[118117-31-0]
Constit. of *Trichosanthes kirilowii*. Cryst. Mp 201-203°.

3-O-*Benzoyl:* [118117-32-1]
$C_{37}H_{52}O_3$ 544.816
Constit. of *Trichosanthes kirilowii*. Cryst. Mp 119-122°.

Dibenzoyl: [389122-01-4]
$C_{44}H_{56}O_4$ 648.924
Constit. of *Gymnopetalum integrifolium* fruits. Cryst. (hexane). Mp 149-152°. λ_{max} 228 (log ϵ 4.48) (hexane).

3-O-*(4-Aminobenzoyl):* ***Debenzoylzucchini factor B***
[308811-93-0]
$C_{37}H_{53}NO_3$ 559.831
Constit. of *Cucurbita pepo* seeds. Gum. $[\alpha]_D^{25}$ -111 (c, 0.9 in MeOH). λ_{max} 290 (MeOH).

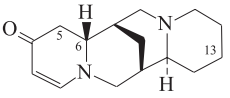
3-O-*(4-Aminobenzoyl), 29*-O-*benzoyl:* ***Zucchini factor B***
[246248-10-2]
$C_{44}H_{57}NO_4$ 663.939
Constit. of seeds of pumpkin (*Cucurbita maxima*) and squash (*Cucurbita pepo*). Powder (Et_2O). Mp 204-206°. $[\alpha]_D^{25}$ -130 (c, 0.9 in $CHCl_3$). λ_{max} 240 (sh) ; 290 (log ϵ 4.06) (EtOH).

3β-form
3-Epikarounidiol
Constit. of *Trichosanthes kirilowii*. Cryst. Mp 225-226°. λ_{max} 232 (ϵ 11200); 236 (ϵ 12600); 247 (ϵ 3180) (EtOH) (Derep).

Akihisa, T. *et al., J.C.S. Perkin 1*, 1988, 439 (*isol, pmr, cmr, cryst struct*)
Akihisa, T. *et al., Chem. Pharm. Bull.*, 1994, **42**, 1101 (*isol, pmr, cmr*)
Appendino, G. *et al., Phytochemistry*, 1999, **51**, 1021-1026 (*Cucurbita ester*)
Appendino, G. *et al., Fitoterapia*, 2000, **71**, 258-263 (*Debenzoylzucchini factor B*)
Sekine, T. *et al., Chem. Pharm. Bull.*, 2002, **50**, 645-648 (*dibenzoyl*)

Multiflorine M-731

*4-Oxo-2,3-didehydrosparteine. Base LV1. 1,7,7*a*,8,9,10,11,13,14,14*a*-Decahydro-7,14-methano-2*H*,6*H*-dipyrido[1,2-*a*:1′,2′-*e*][1,5]diazocin-2-one, 9CI*
[529-80-6]



Absolute configuration

$C_{15}H_{22}N_2O$ 246.352
Alkaloid from *Lupinus multiflorus*, *Lupinus varius*, *Lupinus albus*, *Lupinus mutabilis* and *Cadia ellisiana* (Fabaceae). CNS depressant. Mp 108-109°. $[\alpha]_D^{22}$ -317 (c, 0.4 in MeOH).

Perchlorate: Mp 160-162° dec.

Picrolonate: Mp 204°.

16-N-*Oxide:* ***Multiflorine* N-*oxide***
[137453-21-5]
$C_{15}H_{22}N_2O_2$ 262.351
Constit. of *Lupinus hirsutus*. Oil. $[\alpha]_D^{23}$ -145.8 (c, 0.07 in EtOH).

5,6-Didehydro: ***5-Dehydromultiflorine***
[66216-62-4]
$C_{15}H_{20}N_2O$ 244.336
Constit. of *Lupinus hirsutus* and *Lupinus termis*. Oil. $[\alpha]_D^{25}$ -94.4 (c, 0.015 in CH_2Cl_2).

Didehydro: ***Dehydromultiflorine***
$C_{15}H_{20}N_2O$ 244.336
Alkaloid present in seeds and leaves of *Lupinus albescens* (Fabaceae). Provisional identification. Posn. of double bond unknown (ms spectrum differs significantly from that of 5-dehydromultiflorine above). CAS No. not found to 2008.

13α-Hydroxy: ***13α-Hydroxymultiflorine****. Alkaloid* X_1
[71657-64-2]
$C_{15}H_{22}N_2O_2$ 262.351
Minor alkaloid from *Lupinus albus* and *Lupinus cosentinii* seeds (as esters) (Fabaceae). Highly hygroscopic gum. $[\alpha]_D^{25}$ -335 (c, 1 in MeOH). Obt. from *L. cosentinii* as an ester mixt.(Alkaloid LC3) of which the benzoate was the only positively identified component.

13α-Tigloyloxy: ***13α-Tigloyloxymultiflorine***
[136396-56-0]
$C_{20}H_{28}N_2O_3$ 344.453
Alkaloid from *Lupinus hirsutus* (Fabaceae). Oil. $[\alpha]_D^{23}$ -292 (c, 0.1 in EtOH).

13α-Hydroxy, 5,6-didehydro: ***Δ⁵-Dehydro-13-hydroxymultiflorine****. Alkaloid* X_2
[220672-15-1]
$C_{15}H_{20}N_2O_2$ 260.335
Alkaloid from *Lupinus albus* (Fabaceae). Highly hygroscopic, obt. only in small amt.

13α-Hydroxy, 5,6-didehydro, N^{16}*-oxide:* ***Δ⁵-Dehydro-13-hydroxymultiflorine* N-*oxide***
[220672-13-9]
$C_{15}H_{20}N_2O_3$ 276.335
Alkaloid from *Lupinus albus*.

13β-Hydroxy: ***13β-Hydroxymultiflorine***
[197297-28-2]
$C_{15}H_{22}N_2O_2$ 262.351
Alkaloid from *Lupinus varius* (Fabaceae). Yellow oil. $[\alpha]_D^{25}$ -304 (c, 0.1 in $CHCl_3$). λ_{max} 327 (log ϵ 4.14) (MeOH).

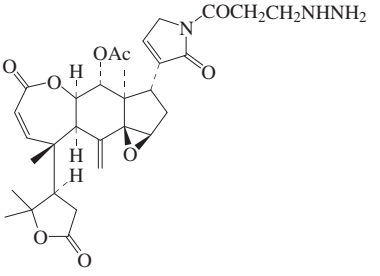
13-Methoxy: ***13-Methoxymultiflorine***
[149817-78-7]
$C_{16}H_{24}N_2O_2$ 276.378
Trace alkaloid in seeds and leaves of *Lupinus albescens* (Fabaceae). Provisional identification.

[74867-85-9 , 74902-86-6]

Crow, W.D. *et al., Aust. J. Chem.*, 1955, **8**, 136-139; 1959, **12**, 474-482 (*isol, uv, ir, struct, pmr*)
Comin, J. *et al., Aust. J. Chem.*, 1959, **12**, 468-473 (*isol, uv, ir, struct*)
Wiewiorowski, M. *et al., Bull. Acad. Pol. Sci., Ser. Sci. Chim.*, 1961, **9**, 715-719 (*isol, ir, struct, 13α-hydroxy, 13α-hydroxy 5,6-didehydro*)
Goldberg, S.I. *et al., J.O.C.*, 1976, **32**, 1832-1837 (*cd, abs config*)
Beck, A.B. *et al., J. Nat. Prod.*, 1979, **42**, 385-398 (*13-Hydroxymultiflorine*)
Pyzalska, D. *et al., Acta Cryst. B*, 1980, **36**, 1602-1606; 1685-1687 (*cryst struct, 5-Dehydromultiflorine*)
Wink, M. *et al., Planta Med.*, 1981, **43**, 342-352 (*isol, ms*)
Hatzold, T. *et al., J. Agric. Food Chem.*, 1983, **31**, 934-938 (*Lupinus mutabilis constit*)
Wysocka, W. *et al., Croat. Chem. Acta*, 1989, **62**, 109 (*cd*)
Wyrzykiewicz, E. *et al., Org. Mass Spectrom.*, 1990, **25**, 453-456 (*ms*)
Takamatsu, S. *et al., Heterocycles*, 1991, **32**, 1167-1171 (*N-oxide*)
Takamatsu, S. *et al., J. Nat. Prod.*, 1991, **54**, 477-482 (*13-Tigloyloxymultiflorine*)
Planchuelo-Ravelo, A.M. *et al., Z. Naturforsch., C*, 1993, **48**, 414-416 (*13-Methoxymultiflorine, Dehydromultiflorine*)
Mohamed, M.H. *et al., Phytochemistry*, 1997, **46**, 365-369 (*13-Hydroxymultiflorines*)
Mohamed, M.H. *et al., CA*, 1999, **130**, 179920c (*Dehydrohydroxymultiflorine N-oxide*)

Munroniamide M-732

[632340-19-3]

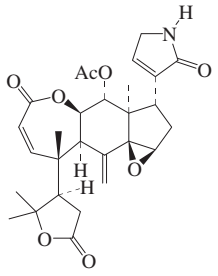


$C_{31}H_{39}N_3O_9$ 597.664
Alkaloid from *Munronia henryi*. Moderate insect antifeedant. Powder. Mp 338-339°. $[\alpha]_D^{27}$ -3.7 (c, 0.27 in Py). λ_{max} 209 (log ϵ 4.39) (MeOH).

Qi, S.-H. *et al., J. Agric. Food Chem.*, 2003, **51**, 6949-6952 (*isol, pmr, cmr*)

Munronin D M-733

[590400-77-4]

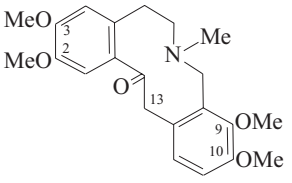


$C_{28}H_{33}NO_8$ 511.571
Constit. of *Munronia henryi*. Powder. $[\alpha]_D^{26}$ +5.9 (c, 0.34 in Py). Mp >350°. λ_{max} 208 (log ϵ 4) (MeOH).

Qi, S.-H. *et al., Tetrahedron*, 2003, **59**, 4193-4199 (*isol, pmr, cmr*)

Muramine M-734

*5,7,8,14-Tetrahydro-3,4,10,11-tetramethoxy-6-methyldibenz[*c,g*]azecin-13(6*H*)-one, 9CI. Cryptopalmatine*
[2292-20-8]



$C_{22}H_{27}NO_5$ 385.459
Alkaloid from *Papaver nudicaule* var. *amurense*, several other *Papaver* spp., *Glaucium vitellinum, Argemone munita* and *Argemone squarrosa* (Papaveraceae). Cryst. (Me_2CO or MeOH). Mp 176-177°.

Hydroiodide: Mp 176-177° dec.

O^9*-De-Me:* ***Protothalipine***
[60332-15-2]
$C_{21}H_{25}NO_5$ 371.432
Alkaloid from *Thalictrum rugosum* (Ranunculaceae). Needles (MeOH). Mp 195-196° dec.

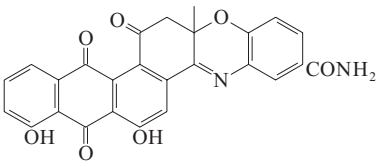
O^2,O^3*-Di-de-Me:* ***Vaillantine***
[53964-96-8]
$C_{20}H_{23}NO_5$ 357.405
Alkaloid from *Fumaria vaillantii* (Papaveraceae). Cryst. (Me_2CO/MeOH). Mp 165-167°.

13-Oxo: ***13-Oxomuramine****. Alpinone*†
$C_{22}H_{25}NO_6$ 399.443
Trace alkaloid from *Papaver nudicaule* var. *croceum* (Papaveraceae). Yellow prisms (Me_2CO). Mp 173-180° Mp 204-205°.

Haworth, R.D. *et al., J.C.S.*, 1927, 2261 (*synth*)
Boit, H.-G. *et al., Naturwissenschaften*, 1960, **47**, 180 (*isol, ir*)
Stermitz, F.R. *et al., J.O.C.*, 1966, **31**, 2925 (*isol*)
Flentje, H. *et al., Pharmazie*, 1966, **21**, 321 (*uv, ir, 13-Oxomuramine*)
Giacopello, D. *et al., Tet. Lett.*, 1966, 2859 (*struct, synth*)
Hanuš, V. *et al., Coll. Czech. Chem. Comm.*, 1967, **32**, 1759 (*synth, ms, 13-Oxomuramine*)
Hruban, L. *et al., Coll. Czech. Chem. Comm.*, 1967, **32**, 3414 (*uv*)
Stermitz, F.R. *et al., J. Pharm. Sci.*, 1967, **56**, 760 (*isol*)
Nakashima, T.T. *et al., Org. Magn. Reson.*, 1973, **5**, 9 (*cmr*)
Ibragimova, M.U. *et al., Khim. Prir. Soedin.*, 1974, **10**, 476; *Chem. Nat. Compd. (Engl. Transl.)*, 1974, **10**, 481 (*isol, uv, ir, pmr, ms, struct, Vaillantine*)
Wu, W.-N. *et al., J. Nat. Prod.*, 1976, **39**, 65 (*isol, uv, ir, pmr, ms, struct, Protothalipine*)
Shafiee, A. *et al., J. Nat. Prod.*, 1977, **40**, 352 (*isol*)
Moniot, J.L. *et al., Heterocycles*, 1978, **9**, 145 (*pmr, Muramine, Protothalipine*)

Murayaanthraquinone M-735

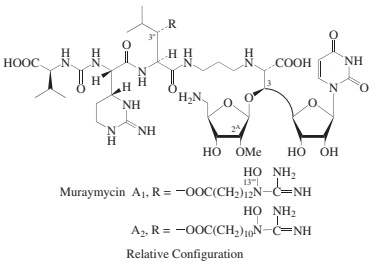
[162382-63-0]



$C_{26}H_{16}N_2O_7$ 468.422
Metab. from *Streptomyces murayamaensis.* Orange-yellow cryst.

Hassan, A.M. *et al., Bioorg. Med. Chem. Lett.*, 1995, **5**, 191 (*isol, ir, pmr, cmr, cryst struct*)

Muraymycin A M-736



Relative Configuration

Muraymycin A_1

$C_{52}H_{90}N_{14}O_{19}$ 1215.365
Prod. by a *Streptomyces* sp. Peptidoglycan biosynth. inhibitor.

13‴-N-*Deoxy:* ***Muraymycin A_3***
$C_{52}H_{90}N_{14}O_{18}$ 1199.366
Prod. by a *Streptomyces* sp.

2^A-O-*De-Me:* ***Muraymycin A_4***
$C_{51}H_{88}N_{14}O_{19}$ 1201.339
Prod. by a *Streptomyces* sp.

3-O-*Deglycosyl:* ***Muraymycin A_5***
$C_{46}H_{79}N_{13}O_{16}$ 1070.208
Prod. by a *Streptomyces* sp.

Muraymycin A_2

$C_{50}H_{86}N_{14}O_{19}$ 1187.312
Prod. by a *Streptomyces* sp. Peptidoglycan biosynth. inhibitor.

McDonald, L.A. *et al., J.A.C.S.*, 2002, **124**, 10260-10261 (*struct*)
Yamashita, A. *et al., Bioorg. Med. Chem. Lett.*, 2003, **13**, 3345-3350 (*synth, sar*)

Muraymycin C_1 M-737

As Muraymycin A, M-736 with R = OH

$C_{38}H_{63}N_{11}O_{17}$ 945.979
Prod. by a *Streptomyces* sp. Peptidoglycan biosynth. inhibitor.

3″-O-*(6-Methylheptanoyl):* ***Muraymycin B_6***
$C_{46}H_{77}N_{11}O_{18}$ 1072.177
Prod. by a *Streptomyces* sp.

3″-O-*(6-Methyloctanoyl):* ***Muraymycin B_3***
$C_{47}H_{79}N_{11}O_{18}$ 1086.204
Prod. by a *Streptomyces* sp.

3″-O-*(7-Methyloctanoyl):* ***Muraymycin B_4***
$C_{47}H_{79}N_{11}O_{18}$ 1086.204
Prod. by a *Streptomyces* sp.

3″-O-*(8-Methylnonanoyl):* ***Muraymycin B_2***
$C_{48}H_{81}N_{11}O_{18}$ 1100.231
Prod. by a *Streptomyces* sp.

3″-O-*(8-Methyldecanoyl):* ***Muraymycin B_1***
$C_{49}H_{83}N_{11}O_{18}$ 1114.258
Peptidoglycan biosynth. inhibitor.

2^A-O-*De-Me:* ***Muraymycin C_2***
$C_{37}H_{61}N_{11}O_{17}$ 931.952
Prod. by a *Streptomyces* sp.

2^A-O-*De-Me, 3″*-O-*(6-methylheptanoyl):* ***Muraymycin B_7***
$C_{45}H_{75}N_{11}O_{18}$ 1058.15
Prod. by a *Streptomyces* sp.

2^A-O-*De-Me, 3″*-O-*(7-methyloctanoyl):* ***Muraymycin B_5***
$C_{46}H_{77}N_{11}O_{18}$ 1072.177
Prod. by a *Streptomyces* sp.

3″-Deoxy: ***Muraymycin D_1***
$C_{38}H_{63}N_{11}O_{16}$ 929.98
Prod. by a *Streptomyces* sp. Peptidoglycan biosynth. inhibitor.

3″-Deoxy, 2^A-O-*de-Me:* ***Muraymycin D_2***
$C_{37}H_{61}N_{11}O_{16}$ 915.953
Prod. by a *Streptomyces* sp.

2^A*-Demethoxy:* ***Muraymycin C_3***
$C_{37}H_{61}N_{11}O_{16}$ 915.953
Prod. by a *Streptomyces* sp.

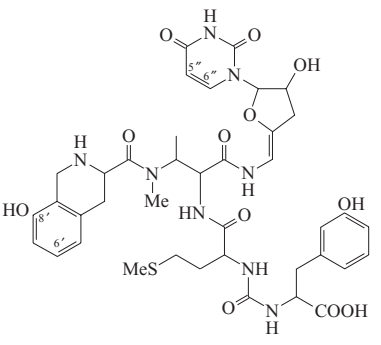
2^A*-Demethoxy, 3″-deoxy:* ***Muraymycin D_3***
$C_{37}H_{61}N_{11}O_{15}$ 899.954
Prod. by a *Streptomyces* sp.

3-O-*Deglycosyl:* ***Muraymycin C_4***
$C_{32}H_{52}N_{10}O_{14}$ 800.821
Prod. by a *Streptomyces* sp.

McDonald, L.A. *et al., J.A.C.S.*, 2002, **124**, 10260-10261 (*struct*)
Yamashita, A. *et al., Bioorg. Med. Chem. Lett.*, 2003, **13**, 3345-3350 (*synth, sar*)

Mureidomycin E M-738

[126049-02-3]



$C_{39}H_{48}N_8O_{12}S$ 852.921

Nucleoside peptide antibiotic. Prod. by *Streptomyces flavidovirens*. Active aginst *Pseudomonas aeruginosa*. Powder. Sol. H_2O, MeOH; fairly sol. Me_2CO; poorly sol. EtOAc, hexane. $[\alpha]_D$ -34.2 (c, 1.17 in MeOH aq.). Amphoteric. Similar to Mureidomycin A. λ_{max} 258 (ϵ 21000) (pH 2) (Derep). λ_{max} 240 (ϵ 36800); 265 (sh) (ϵ 20000); 295 (sh) (ϵ 6820) (pH 9) (Derep). λ_{max} 258 (ϵ 21500) (pH 7) (Derep). λ_{max} 258 (E1%/1cm 252) (H_2O) (Berdy). λ_{max} 258 (E1%/1cm 247) (HCl) (Berdy). λ_{max} 240 (E1%/1cm 432) (NaOH) (Berdy).

6′-Hydroxy, 8′-deoxy: ***Mureidomycin F.*** *Napsamycin A*
[126049-03-4]
$C_{39}H_{48}N_8O_{12}S$ 852.921
Prod. by *Streptomyces flavidovirens*, *Streptomyces candidus* and *Streptomyces* spp. HIL Y82, 11372. Active against *P. aeruginosa*. Powder. Mp 190° dec. $[\alpha]_D$ -40.3 (c, 1.05 in MeOH aq.). Amphoteric. λ_{max} 258 (ϵ 21000) (pH 2) (Derep). λ_{max} 240 (ϵ 36800); 265 (sh) (ϵ 20000); 295 (sh) (ϵ 6820) (pH 9) (Derep). λ_{max} 258 (ϵ 21500) (pH 7) (Derep).

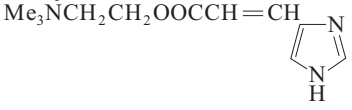
6′-Hydroxy, 8′-deoxy, 5″,6″-dihydro: ***Napsamycin C***
[144379-26-0]
$C_{39}H_{50}N_8O_{12}S$ 854.936
Prod. by *Streptomyces candidus* and *Streptomyces* spp. HIL Y82, 11372. Active against *P.* sp. Sol. H_2O, DMSO, MeOH-H_2O; poorly sol. EtOAc, hexane. λ_{max} 256 (H_2O) (Berdy). λ_{max} 254 (HCl) (Berdy). λ_{max} 242 ; 294 (NaOH) (Berdy).

[144408-85-5]

Eur. Pat., 1992, 487 756; *CA*, **117**, 232207 (*Napsamycins*)
Isono, F. *et al., J. Antibiot.*, 1993, **46**, 1203 (*Mureidomycins*)
Chattarjee, S. *et al., J. Antibiot.*, 1994, **47**, 595 (*isol, pmr, ms*)

Murexine M-739

*2-[[3-(1*H*-Imidazol-4-yl)-1-oxo-2-propenyl]oxy]-*N,N,N*-trimethylethanaminium(1+), 9CI. Choline imidazole-4-acrylate. Choline urocanate*
[20284-40-6]



$C_{11}H_{18}N_3O_2^{\oplus}$ 224.282
Found in large amts. in the hypobranchial glands of molluscs, esp. *Murex* spp., incl. *Murex trunculus*, *Murex fulvescens* and *Murex brandaris*, and also *Concholepas concholepas* and *Tritonalia erinacea*. Muscle relaxant with strong curariform action. Cholinesterase inhibitor. Sol. H_2O. pK_a 4.6. λ_{max} 285 (ϵ 16700) (pH 4.5 buffer) (Berdy).

Chloride: [6209-43-4]
$C_{11}H_{18}ClN_3O_2$ 259.735
Hygroscopic cryst. + $1H_2O$. Unstable, instantly hydrol. by H_2O.

Chloride; hydrochloride:
Hygroscopic microcryst. powder + $^1/_2$ H_2O. Mp 219-221° dec.

Dipicrate:
Yellow needles (H_2O). Mp 221-222° dec.

N-*Me:* **N-*Methylmurexine***
$C_{12}H_{20}N_3O_2^{\oplus}$ 238.309
Reported to occur in the marine gastropod mollusc *Nucella emarginata*. Struct. assignment incorr. A recent unambiguous synth. of the two possible *N*-Me derivs. of Murexine indicates that the nat. compd. is neither of these (Duke *et al* 1981).

1-Me, iodide: [70346-56-4]
Synthetic. Cryst. (MeOH). Mp 224-225°.

3-Me, iodide: [70346-59-7]
Synthetic. Mp 224°.

Erspamer, V. *et al., Arch. Int. Pharmacodyn. Ther.*, 1947, **74**, 263-285; *CA*, **43**, 1491b (*isol*)
Pasini, C. *et al., Annalen*, 1952, **578**, 6-10 (*synth, uv*)
Roseghini, M. *et al., Eur. J. Biochem.*, 1970, **12**, 468 (*isol*)
Bender, J.A. *et al., Comp. Gen. Pharmacol.*, 1974, **5**, 191 (*N-Me*)
Duke, C.C. *et al., Aust. J. Chem.*, 1981, **34**, 1739-1744 (*N-Me, synth*)

Muricine M-740

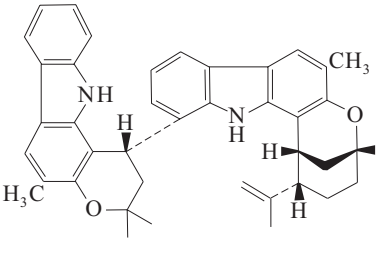
$C_{19}H_{21}NO_4$ 327.379

Struct. unknown. Alkaloid from *Annona muricata* (soursop) (Annonaceae). Conts. 3OMe groups and no NMe group. Suggested to be identical with De-*N*-methylcorydine (see Norcorydine in C-682).

Hydrobromide: Mp 242-243°.

Manske, R.H.F. *et al., Alkaloids (Academic Press)*, 1954, **4**, 142

Murrafoline A M-741

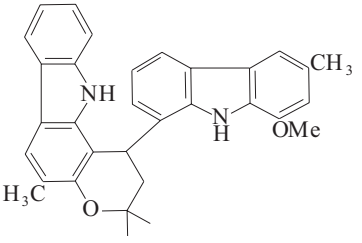


$C_{41}H_{42}N_2O_2$ 594.795

(±)-*form* [88939-34-8]
Alkaloid from *Murraya euchrestifolia* (Rutaceae). Mp 260-262° (sinters at 170°).

McPhail, A.T. *et al., Tet. Lett.*, 1983, **24**, 5377 (*uv, ir, pmr, ms, cryst struct*)

Murrafoline B M-742

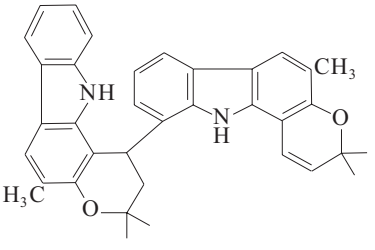


$C_{32}H_{30}N_2O_2$ 474.601

(±)-*form* [98260-38-9]
Alkaloid from *Murraya euchrestifolia* (Rutaceae). Needles (MeOH). Mp 234-237°.

Furukawa, H. *et al., Chem. Pharm. Bull.*, 1985, **33**, 2611 (*uv, pmr, ms, struct*)

Murrafoline C M-743

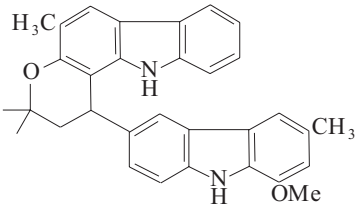


$C_{36}H_{34}N_2O_2$ 526.677

(±)-*form* [98260-37-8]
Alkaloid from *Murraya euchrestifolia* (Rutaceae). Oil.

Furukawa, H. *et al., Chem. Pharm. Bull.*, 1985, **33**, 2611 (*uv, ir, pmr, ms, struct*)

Murrafoline D M-744



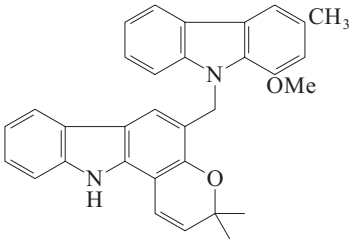
$C_{32}H_{30}N_2O_2$ 474.601

(±)-*form* [98260-39-0]
Alkaloid from *Murraya euchrestifolia* (Rutaceae).

Furukawa, H. *et al., Chem. Pharm. Bull.*, 1985, **33**, 2611 (*uv, pmr, synth*)

Murrafoline E M-745

*3,11-Dihydro-5-[(1-methoxy-3-methyl-9*H*-carbazol-9-yl)methyl]-3,3-dimethyl-pyrano[3,2-*a*]carbazole, 9CI*
[117591-98-7]

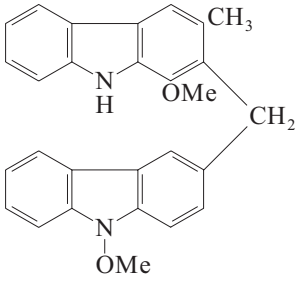


$C_{32}H_{28}N_2O_2$ 472.585
Alkaloid from the root bark of *Murraya euchrestifolia* (Rutaceae). Oil.

Ito, C. *et al., Chem. Pharm. Bull.*, 1988, **36**, 2377 (*isol, uv, ir, pmr, ms, struct*)

Murrafoline F M-746

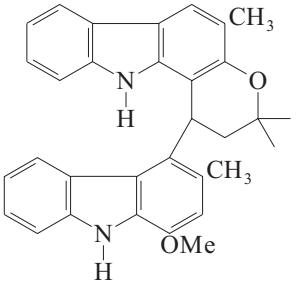
*1-Methoxy-2-[(9-methoxy-9*H*-carbazol-3-yl)methyl]-3-methyl-9*H*-carbazole, 9CI*
[117592-00-4]



$C_{28}H_{24}N_2O_2$ 420.51
Alkaloid from the root bark of *Murraya euchrestifolia* (Rutaceae). Oil.

Ito, C. *et al., Chem. Pharm. Bull.*, 1988, **36**, 2377 (*isol, uv, ir, pmr, cmr, ms, struct*)

Murrafoline G M-747



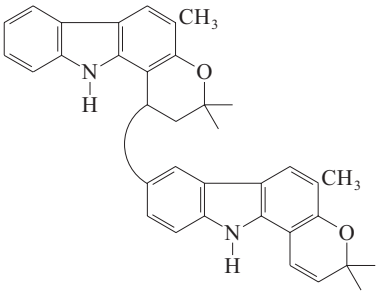
$C_{32}H_{30}N_2O_2$ 474.601

(±)-*form* [98260-40-3]
Alkaloid from root bark of *Murraya euchrestifolia* (Rutaceae). Oil.

Furukawa, H. *et al., Chem. Pharm. Bull.*, 1993, **41**, 1249 (*isol, uv, pmr, cmr, struct*)

Murrafoline H M-748

*1,2,3,3′,11,11′-Hexahydro-3,3,3′,3′,5,5′-hexamethyl-1,8′-bipyrano[3,2-*a*]carbazole*



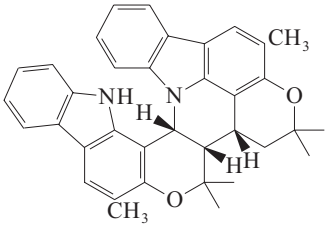
$C_{36}H_{34}N_2O_2$ 526.677

(±)-*form* [98260-36-7]
Alkaloid from root bark of *Murraya euchrestifolia* (Rutaceae). Oil.

Furukawa, H. *et al., Chem. Pharm. Bull.*, 1993, **41**, 1249 (*isol, uv, pmr, ms, struct*)

Murranimbine M-749

[161068-68-4]

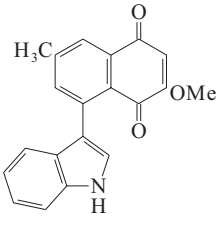


$C_{36}H_{34}N_2O_2$ 526.677
Unsymmetrical dimer of Girinimbine, G-81. Alkaloid from *Murraya euchrestifolia* (Rutaceae). Pale yellow oil. Racemic.

Ito, C. *et al., Chem. Pharm. Bull.*, 1991, **39**, 1355 (*isol, pmr, cmr, struct*)

Murrapanine M-750

*8-(1*H*-Indol-3-yl)-2-methoxy-6-methyl-1,4-naphthalenedione, 9CI*
[128508-22-5]

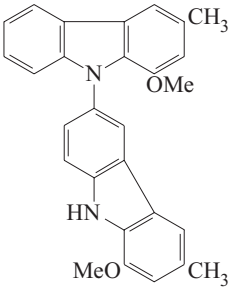


$C_{20}H_{15}NO_3$ 317.343
First example of a naturally occurring indole-naphthoquinone alkaloid. Alkaloid from the root bark of *Murraya paniculata* var. *omphalocarpa* (Rutaceae). Exhibits significant cytotoxicity. Deep purplish prisms (Et_2O). Mp 278-280°. λ_{max} 221 (ϵ 36300); 246 (ϵ 17800); 281 (ϵ 20900); 323 (ϵ 5370) (MeOH) (Derep).

Wu, T.-S. *et al., Tet. Lett.*, 1989, **30**, 6649 (*isol, uv, ir, pmr, cmr, ms, synth, cryst struct*)
Sheu, J.-H. *et al., J.O.C.*, 1993, **58**, 5784 (*synth*)
Sheu, J.H. *et al., Heterocycles*, 1996, **43**, 1751 (*synth*)
Sheu, J.H. *et al., J.C.S. Perkin 1*, 1998, 1959-1965 (*synth*)

Murrastifoline A M-751

*1′,8-Dimethoxy-3′,6-dimethyl-3,9′-bi-9*H*-carbazole, 9CI*
[129748-48-7]

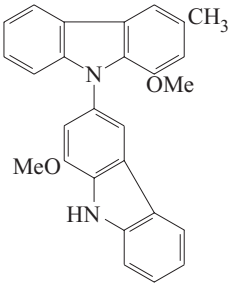


$C_{28}H_{24}N_2O_2$ 420.51
The *N*,6′-dimer of 1-Hydroxy-3-methyl-9*H*-carbazole, H-583. Alkaloid from the root bark of *Murraya euchrestifolia* (Rutaceae). Oil.

Ito, C. *et al., Chem. Pharm. Bull.*, 1990, **38**, 1143 (*isol, uv, ir, pmr, ms, struct*)
Kitawaki, T. *et al., Heterocycles*, 2005, **65**, 1561-1567 (*synth*)

Murrastifoline B M-752

*1,1′-Dimethoxy-3′-methyl-3,9′-bi-9*H*-carbazole, 9CI*
[129748-49-8]

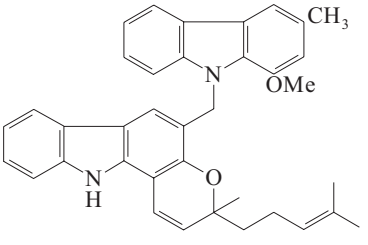


$C_{27}H_{22}N_2O_2$ 406.483
Alkaloid from the root bark of *Murraya euchrestifolia* (Rutaceae). Oil.

Ito, C. *et al., Chem. Pharm. Bull.*, 1990, **38**, 1143 (*isol, uv, ir, pmr, ms, struct*)

Murrastifoline C M-753

*3,11-Dihydro-5-[(1-methoxy-3-methyl-9*H*-carbazol-9-yl)methyl]-3-methyl-3-(4-methyl-3-pentenyl)pyrano[3,2-*a*]carbazole, 9CI*
[129777-58-8]

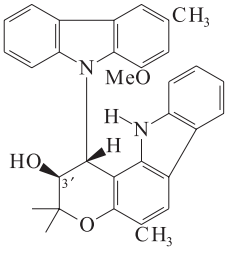


$C_{37}H_{36}N_2O_2$ 540.704
Alkaloid from the root bark of *Murraya euchrestifolia* (Rutaceae). Oil. Racemic.

Ito, C. *et al., Chem. Pharm. Bull.*, 1990, **38**, 1143 (*isol, uv, ir, pmr, ms, struct*)

Murrastifoline D M-754

*1,2,3,11-Tetrahydro-1-(1-methoxy-3-methyl-9*H*-carbazol-9-yl)-3,3,5-trimethylpyrano[3,2-*a*]carbazol-2-ol, 9CI*
[129777-59-9]



Relative configuration

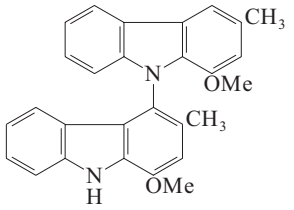
$C_{32}H_{30}N_2O_3$ 490.601
Alkaloid from the root bark of *Murraya euchrestifolia* (Rutaceae). Oil. Racemic.

3′-Deoxy: ***Murrastifoline E***
[133740-45-1]
$C_{32}H_{30}N_2O_2$ 474.601
Alkaloid from the root bark of *Murraya euchrestifolia* (Rutaceae). Oil. $[\alpha]_D$ -5.7 (c, 0.035 in $CHCl_3$).

Ito, C. *et al., Chem. Pharm. Bull.*, 1990, **38**, 1143; 1548 (*isol, uv, ir, pmr, cmr, ms, struct*)

Murrastifoline F M-755

*1,1′-Dimethoxy-3,3′-dimethyl-4,9′-bi-9*H*-carbazole, 9CI*
[155519-85-0]

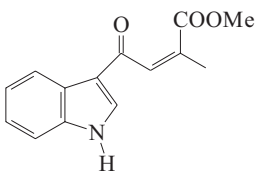


$C_{28}H_{24}N_2O_2$ 420.51
Alkaloid from roots of *Murraya koenigii* (curryleaf tree) (Rutaceae). Oil. Isol. as a mixture of atropisomers.

Ito, C. *et al., Chem. Pharm. Bull.*, 1993, **41**, 2096 (*isol, uv, ir, pmr, ms, struct*)
Bringmann, G. *et al., J.A.C.S.*, 2001, **123**, 2703-2711 (*synth,cd*)

Murrayacarine M-756

[125288-14-4]

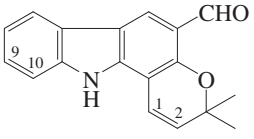


$C_{14}H_{13}NO_3$ 243.262
Alkaloid from root bark of *Murraya paniculata* var. *omphalocarpa*. Pale yellow needles ($CHCl_3$). Mp 146-148°. λ_{max} 208 (log ϵ 4.17); 247 (log ϵ 3.73); 268 (log ϵ 3.68); 275 (sh) (log ϵ 3.65) (MeOH).

Wu, T.-S. *et al., Phytochemistry*, 1989, **28**, 2873-2874 (*isol, uv, pmr, ms*)
Boumendjel, A. *et al., Bull. Soc. Chim. Fr.*, 1990, 645 (*synth, cmr, config*)
Johnson, A.-L. *et al., Heterocycles*, 2006, **68**, 2165-2170 (*synth*)

Murrayacine M-757

*3,11-Dihydro-3,3-dimethylpyrano[3,2-*a*]carbazole-5-carboxaldehyde, 9CI*
[27300-29-4]



$C_{18}H_{15}NO_2$ 277.322
CAS numbering shown. Alternative numbering freq. used in which C-9 becomes C-7. Alkaloid from the stem bark of *Murraya koenigii* (curryleaf tree) and the roots of *Clausena heptaphylla* (Rutaceae). Cryst. (EtOAc). Mp 244-245°. $Bp_{0.05}$ 180° subl. λ_{max} 226 (log ϵ 4.6); 282 (log ϵ 4.57); 301 (log ϵ 4.58) (EtOh).

2,4-Dinitrophenylhydrazone: Mp 280°.

1,2-Dihydro: Cycloheptaphylline. Dihydromurrayacine
[17750-37-7]
Cryst. (MeOH). Mp 250° (176°).

1,2-Dihydro, 2ξ,10-dihydroxy: ***Clauszoline E***
[185508-05-8]
$C_{18}H_{17}NO_4$ 311.337
Alkaloid from the stem bark of *Clausena excavata*. Yellow powder. $[\alpha]_D^{25}$ 0 (c, 0.1 in $CHCl_3$). λ_{max} 204 ; 213 ; 242 ; 273 ; 292 ; 358 (MeOH).

10-Hydroxy: ***Clauszoline G***
[185508-07-0]
$C_{18}H_{15}NO_3$ 293.321
Alkaloid from the stem bark of *Clausena excavata*. Yellow powder. λ_{max} 204 ; 234 ; 245 (sh) ; 278 ; 300 ; 361 (MeOH).

10-Hydroxy, 1,2-dihydro: ***Heptazolicine****. Cycloheptazoline*
[32042-36-7]
$C_{18}H_{17}NO_3$ 295.337
Alkaloid from the roots of *Clausena heptaphylla* (Rutaceae). Cryst. ($CHCl_3$). Mp 285° dec. λ_{max} 242 (log ϵ 4.65); 275 (log ϵ 4.62); 300 (log ϵ 4.4) (EtOH).

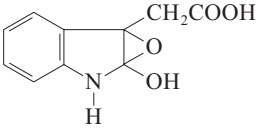
10-Hydroxy, 1,2-dihydro, O*-Ac:*
Cryst. (C_6H_6). Mp 230°.

9-Methoxy: ***7-Methoxymurrayacine***
[132160-51-1]
$C_{19}H_{17}NO_3$ 307.348
Alkaloid from *Murraya siamensis* (Rutaceae). Mp 211-213°. Numbering systems vary. λ_{max} 306 (log ϵ 4.58); 354 (log ϵ 4.09) (EtOH).

Chakraborty, D.P. *et al., J.O.C.*, 1971, **36**, 725-727; 1973, **38**, 2728-2729 (*isol, uv, ir, pmr, ms, struct, synth*)
Anwer, F. *et al., Indian J. Chem.*, 1973, **11**, 1314-1315 (*synth*)
Oikawa, Y. *et al., Heterocycles*, 1976, **5**, 233-238 (*synth, ms*)
Roy, S. *et al., Phytochemistry*, 1976, **15**, 356 (*isol, uv, ir*)
Bhattacharyya, P. *et al., Phytochemistry*, 1984, **23**, 2409-2410 (*Heptazolicine, isol, uv, ir, pmr, ms, struct*)
Chakraborty, D.P. *et al., J. Indian Chem. Soc.*, 1985, **62**, 602-603 (*Heptazolicine, synth*)
Ruangrungsi, N. *et al., J. Nat. Prod.*, 1990, **53**, 946-952 (*7-Methoxymurrayacine*)
Ito, C. *et al., Chem. Pharm. Bull.*, 1996, **44**, 2231-2235 (*Clauszolines*)
Knölker, H.J. *et al., Tet. Lett.*, 1996, **37**, 7947-7950 (*synth*)

Murrayaculatine M-758

*2,3-Epoxy-2,3-dihydro-2-hydroxy-1*H*-indole-3-acetic acid. 1*a*,2-Dihydro-1*a*-hydroxy-6*bH*-oxireno[*b*]indole-6*b*-acetic acid, 9CI*
[159934-09-5]

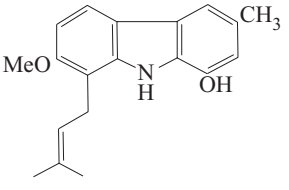


$C_{10}H_9NO_4$ 207.185
Alkaloid from fresh flowers of *Murraya paniculata* (Rutaceae). Needles (Me_2CO). Mp 168-170°. $[\alpha]_D$ +17.2 (c, 0.027 in $CHCl_3$).

Wu, T.-S. *et al., Phytochemistry*, 1994, **37**, 287 (*isol, uv, ir, pmr, cmr, ms, struct*)

Murrayafoline B M-759

*7-Methoxy-3-methyl-8-(3-methyl-2-butenyl)-9*H*-carbazol-1-ol, 9CI. 1-Hydroxy-7-methoxy-3-methyl-8-prenylcarbazole*
[100108-68-7]

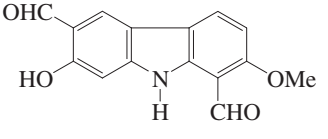


$C_{19}H_{21}NO_2$ 295.38
Alkaloid from the root bark of *Murraya euchrestifolia* (Rutaceae). Syrup.

Furukawa, H. *et al., Chem. Pharm. Bull.*, 1985, **33**, 4132 (*isol, uv, ir, pmr, ms, struct*)

Murrayaline C M-760

*7-Hydroxy-2-methoxy-9*H*-carbazole-1,6-dicarboxaldehyde*
[139726-43-5]



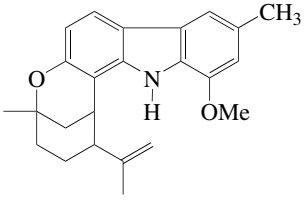
$C_{15}H_{11}NO_4$ 269.256

Alkaloid from the stem bark of *Murraya euchrestifolia*. Pale yellow powder. λ_{max} 239 (sh) ; 251 (sh) ; 267 ; 307 (sh) ; 329 (MeOH).

Ito, C. *et al., Chem. Pharm. Bull.*, 1991, **39**, 2525-2528

Murrayamine F M-761

[183130-86-1]



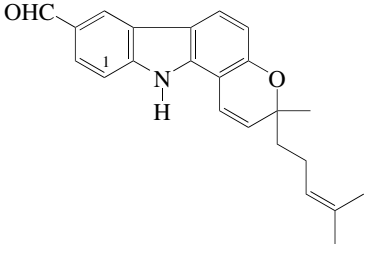
$C_{24}H_{27}NO_2$ 361.483
Alkaloid from leaves of *Murraya euchrestifolia*. Oil. λ_{max} 221 ; 244 ; 256 (sh) ; 303 ; 316 (sh) ; 328 (sh) (MeOH).

Demethoxy: ***Murrayamine G***
[183130-89-4]
$C_{23}H_{25}NO$ 331.457
From leaves of *Murraya euchrestifolia*. Needles (MeOH). Mp 173-176°. λ_{max} 221 ; 241 ; 262 ; 303 ; 307 (MeOH).

Wu, T.-S. *et al., Phytochemistry*, 1996, **43**, 785 (*isol, uv, ir, pmr, ms, struct*)

Murrayamine J M-762

[175669-20-2]



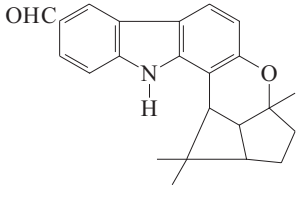
$C_{23}H_{23}NO_2$ 345.44
Alkaloid from leaves of *Murraya euchrestifolia*. Oil.

1-Methoxy: ***Murrayamine N***
$C_{24}H_{25}NO_3$ 375.466
From leaves of *Murraya euchrestifolia*. Oil. Erroneously descr. as C_{23} in paper.

Wu, T.-S. *et al., Phytochemistry*, 1996, **41**, 1433-1435 (*isol, uv, ir, pmr, ms, struct*)

Murrayamine M M-763

[175669-22-4]



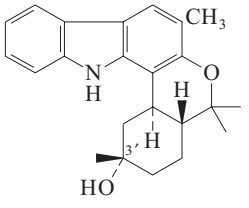
$C_{23}H_{23}NO_2$ 345.44

Closely related to Bicyclomahanimbine, B-122. Alkaloid from leaves of *Murraya euchrestifolia*. Oil.

Wu, T.-S. *et al., Phytochemistry*, 1996, **41**, 1433 (*isol, uv, ir, pmr, ms, struct*)

Murrayamine O M-764

[166990-10-9]



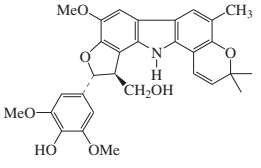
$C_{23}H_{27}NO_2$ 349.472
Alkaloid from root bark of *Murraya euchrestifolia* (Rutaceae). Plates (MeOH). Mp 130-132°. $[\alpha]_D$ -137.6 (c, 0.07 in $CHCl_3$).

3′-Epimer: ***Murrayamine P***
[167077-71-6]
$C_{23}H_{27}NO_2$ 349.472
Alkaloid from root bark of *Murraya euchrestifolia* (Rutaceae). Plates (MeOH). Mp 116-118°. $[\alpha]_D$ +92 (c, 0.015 in $CHCl_3$).

Wu, T.-S. *et al., Tet. Lett.*, 1995, **36**, 5385 (*isol, uv, ir, pmr, cmr, ms, struct*)

Murrayanine† M-765

[500725-15-5]



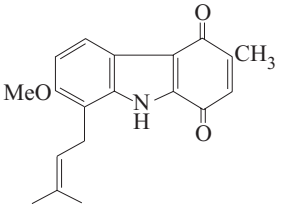
Relative Configuration

$C_{30}H_{31}NO_7$ 517.577
Not to be confused with Murrayanine in H-447. Alkaloid from *Murraya koenigii*. Brown powder. $[\alpha]_D^{25}$ +8 (c, 0.74 in MeOH). λ_{max} 206 ; 225 ; 238 ; 300 ; 342 (MeOH).

Wang, Y.-S. *et al., J. Nat. Prod.*, 2003, **66**, 416-418 (*isol, pmr, cmr, ms*)

Murrayaquinone B M-766

*7-Methoxy-3-methyl-8-(3-methyl-2-butenyl)-1*H*-carbazole-1,4(9*H*)-dione, 9CI. 7-Methoxy-3-methyl-8-prenyl-1,4-carbazolequinone*
[86695-16-1]



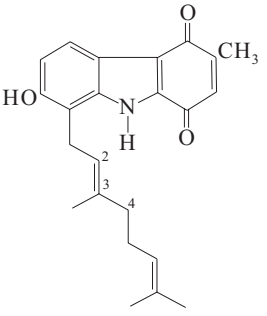
$C_{19}H_{19}NO_3$ 309.364
Alkaloid from root bark of *Murraya euchrestifolia* (Rutaceae). Also obt. by photooxidn. of Murrayafoline B. Deep purple needles (Me_2CO). Mp 221-223°.

O-*De-Me:* ***Murrayaquinone E***
[139726-47-9]
$C_{18}H_{17}NO_3$ 295.337
Alkaloid from the stem bark of *Murraya euchrestifolia*. Brown oil. λ_{max} 232 ; 262 ; 406 (MeOH).

Wu, T.-S. *et al., Heterocycles*, 1983, **20**, 1267 (*uv, ir, pmr, cmr, struct*)
Furukawa, H. *et al., Chem. Pharm. Bull.*, 1985, **33**, 4132 (*isol, uv, ir, pmr, cmr, ms, synth, struct*)
Martin, T. *et al., J.C.S. Perkin 1*, 1988, 241 (*synth, uv, ir, pmr, ms*)
Ito, C. *et al., Chem. Pharm. Bull.*, 1991, **39**, 2525-2528 (*Murrayaquinone E*)

Murrayaquinone D M-767

*8-(3,7-Dimethyl-2,6-octadienyl)-7-hydroxy-3-methyl-1*H*-carbazole-1,4(9*H*)-dione, 9CI. 8-Geranyl-7-hydroxy-3-methylcarbazole-1,4-quinone*
[100108-67-6]



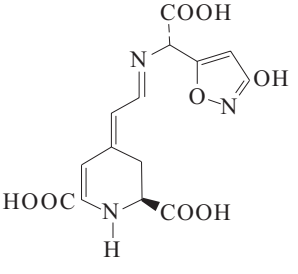
$C_{23}H_{25}NO_3$ 363.455
Alkaloid from the root bark of *Murraya euchrestifolia* (Rutaceae). Violet needles. Mp 164-168°.

Me ether: ***Murrayaquinone C****. 8-(3,7-Dimethyl-2,6-octadienyl)-7-methoxy-3-methyl-1*H*-carbazole-1,4(9*H*)-dione, 9CI*
[86695-17-2]
$C_{24}H_{27}NO_3$ 377.482
Alkaloid from root bark of *Murraya euchrestifolia* (Rutaceae). Violet needles (Et_2O). Mp 158-159°.

Wu, T.S. *et al., Heterocycles*, 1983, **20**, 1267 (*occur, pmr, struct*)
Furukawa, H. *et al., Chem. Pharm. Bull.*, 1985, **33**, 4132 (*isol, uv, ir, pmr, ms, struct, synth*)

Muscaaurin I M-768

4-[[[Carboxy(2,3-dihydro-3-oxo-5-isoxazolyl)methyl]imino]ethylidene]-1,2,3,4-tetrahydro-2,6-pyridinedicarboxylic acid, 9CI
[52012-51-8]

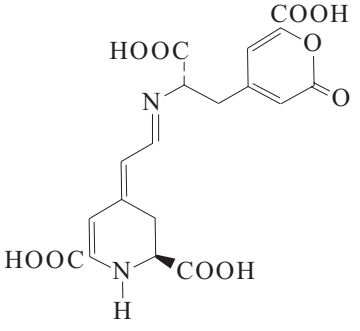


$C_{14}H_{13}N_3O_8$ 351.272
Pigment from *Amanita muscaria*. Hydrol. gives Betalamic acid, B-109 and Ibotenic acid, I-8. λ_{max} 245 (sh) ; 295 (sh) ; 465 ; 475 (no solvent reported).

Doepp, H. *et al., Chem. Ber.*, 1973, **106**, 3473 (*isol, uv, cd*)
Doepp, H. *et al., Annalen*, 1982, 254 (*struct*)

Muscaaurin II M-769

*4-[[[1-Carboxy-2-(6-carboxy-2-oxo-2*H*-pyran-4-yl)ethyl]imino]ethylidene]-1,2,3,4-tetrahydro-2,6-pyridinedicarboxylic acid, 9CI*
[12624-17-8]

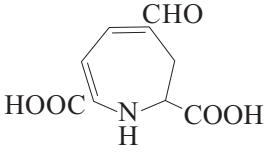


$C_{18}H_{16}N_2O_{10}$ 420.332
Pigment from *Amanita muscaria*. λ_{max} 478, 462 sh, 301, 261, λ_{min} 360, 278, 242 nm. Hydrol. gives Betalamic acid and Stizolobic acid. Further Muscaaurins having different residues are descr. but owing to misprints it is not clear what their structs. are and they are not indexed by CA.

Doepp, H. *et al., Chem. Ber.*, 1973, **106**, 3473 (*isol, uv, cd*)
Doepp, H. *et al., Annalen*, 1982, 254 (*struct*)

Muscaflavin M-770

*4-Formyl-2,3-dihydro-1*H*-azepine-2,7-dicarboxylic acid, 9CI*
[12624-18-9]



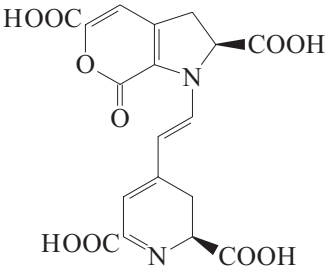
$C_9H_9NO_5$ 211.174
Unstable pigment from the skin of *Amanita muscaria*. Yellow cryst. Sol. H_2O. An incorrect struct. was previously assigned. λ_{max} 238 ; 420 (H_2O) (Berdy).

Di-Me ester: [70991-04-7]
Cryst. ($MeOH/Et_2O$). Mp 98-98.5°.

Barth, H. *et al., Annalen*, 1981, 2164 (*struct, synth*)

Muscapurpurin M-771

[12624-19-0]

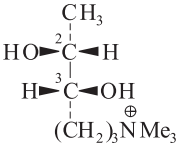


$C_{18}H_{14}N_2O_{10}$ 418.316
The struct. shown is given in CA but there are no refs. on the CA database to support it. Violet pigment from *Amanita muscaria*. λ_{max} 540, 303, λ_{min} 380, 262 nm.

Döpp, H. *et al., Chem. Ber.*, 1973, **106**, 3473 (*isol, uv, ir, cd*)

Muscaridine M-772

4,5-Dihydroxy-N,N,N-*trimethyl-1-hexanaminium(1+), 9CI*


(2*R*,3*R*)–*form*

$C_9H_{22}NO_2^{\oplus}$ 176.278
Present in *Amanita muscaria*. Mp 129-131° dec. (as tetrachloroaurate). $[\alpha]_D$ +20.5 (tetrachloroaurate). Stereochem. of the nat. prod. could not be confirmed. It was claimed to have the *erythro*-config. but props. do not coincide with those of the well-characterised synthetic stereoisomers later obt.

(2*R*,3*R*)-*form*
D-threo-*form*
Iodide: Mp 98-100°. $[\alpha]_D$ +14.2 (c, 2.8 in H_2O).
Tetrachloroaurate: Mp 98-101°. $[\alpha]_D^{20}$ +6.2 (c, 0.5 in H_2O).

(2*R*,3*S*)-*form*
D-erythro-*form*
Iodide:
$C_9H_{22}INO_2$ 303.183
Mp 101-103°. $[\alpha]_D$ +14.7 (c, 2.3 in H_2O).
Tetrachloroaurate: Mp 128-130°. $[\alpha]_D$ -9.

(2*S*,3*R*)-*form*
L-erythro-*form*
Iodide: Mp 101-103°. $[\alpha]_D^{20}$ +14.7 (c, 1 in H_2O).

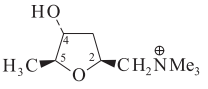
(2*S*,3*S*)-*form*
L-threo-*form*
Iodide: Mp 97-98°. $[\alpha]_D$ -14.9 (c, 1.2 in H_2O).

(2*RS*,3*RS*)-*form*
(±)-threo-*form*
Tetrachloroaurate: Mp 97-102°.

(2*RS*,3*SR*)-*form*
(±)-erythro-*form*
[6801-43-0]
Tetrachloroaurate: Mp 127-131° dec.
Salemink, C.A. *et al., Rec. Trav. Chim. (J. R. Neth. Chem. Soc.)*, 1963, **82**, 21 (*isol, bibl, ir, synth, resoln*)
Pedersen, C. *et al., Acta Chem. Scand.*, 1993, **47**, 885 (*synth, cmr, bibl*)

Muscarine† M-773

Tetrahydro-4-hydroxy-N,N,N,*5-tetramethyl-2-furanmethanaminium(1+), 9CI*
[7619-12-7]


(2*S*,4*R*,5*S*)–*form*

$C_9H_{20}NO_2^{\oplus}$ 174.262
All 8 stereoisomers have been synthesised.

(2*S*,4*R*,5*S*)-*form* [300-54-9]
Toxic constit. of the fly fungus *Amanita muscaria* and various *Inocybe*, *Boletus* and *Clitocybe* spp. Cholinergic agent. V. powerful parasympathomimetic agent causing hypotension and bronchoconstriction. Sol. EtOH; fairly sol. $CHCl_3$, Et_2O. V. hygroscopic. Stereoisomers show only a fraction of the biol. activity.
▶ V. toxic if swallowed. Can cause convulsions, coma, death. LD_{50} (mus, ivn) 0.23 mg/kg. Antidote atropine sulfate. QG3325000

Chloride: [2303-35-7]
$C_9H_{20}ClNO_2$ 209.715
Needles. Mp 181.5-182°, (179-180°). $[\alpha]_D$ +7.4 (c, 3.1 in H_2O).
▶ QG3500000

Iodide: [24570-49-8]
$C_9H_{20}INO_2$ 301.167
Needles ($MeCN/Me_2CO$). Mp 149-149.5°. $[\alpha]_D$ +6.3 (c, 1.1 in H_2O). Turns yellow within a few hours.

Tetraphenylborate: [104487-60-7]
$C_{33}H_{40}BNO_2$ 493.495
Mp 193°. $[\alpha]_D$ +9.7 (c, 1.34 in Me_2CO).

Ketone: Tetrahydro-N,N,N,*5-tetramethyl-4-oxo-2-furanmethanaminium(1+). Muscarone*
[4780-69-2]
$C_9H_{18}NO_2^{\oplus}$ 172.247
Acetylcholine mimic.

(2*R*,4*R*,5*S*)-*form*
5-Allomuscarine
[6252-44-4]
[35119-38-1]
Constit. of numerous Agaricales incl. *Amanita* spp. and *Clitocybe* spp. Shows similar biol. activity to Muscarine. Mp 130.8° (as iodide). $[\alpha]_D$ -37.7 (c, 0.8 in H_2O).

(2*R*,4*S*,5*R*)-*form* [92981-62-9]
[35119-35-8]
Mp 179-180° (as chloride). $[\alpha]_D$ -8.4 (EtOH).

(2*R*,4*S*,5*S*)-*form*
3-Epi-5-allomuscarine
[6836-06-2]
[5487-32-1]
Mp 199.2° (as iodide). $[\alpha]_D$ 0 (c, 1 in H_2O).

(2*S*,4*S*,5*S*)-*form*
3-Epimuscarine
[6836-08-4]
[93226-49-4]
Constit. of various Agaricales incl. *Amanita* spp. and *Clitocybe* spp. Cryst. (2-propanol) (as iodide). Mp 170.4° (iodide). $[\alpha]_D$ +43.2 (c, 0.6 in EtOH).

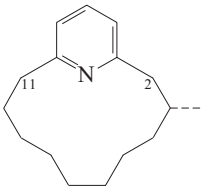
(2*RS*,4*SR*,5*RS*)-*form* [71-06-7]
[6032-87-7]
Mp 119-120° (as tetrachloroaurate).

[2936-25-6]

Hardegger, E. *et al., Helv. Chim. Acta*, 1957, **40**, 2383-2389 (*2S,4R,5S-form, synth, abs config*)
Wilkinson, S. *et al., Q. Rev., Chem. Soc.*, 1961, **15**, 153-171 (*rev*)
Eugster, C.H. *et al., Helv. Chim. Acta*, 1969, **52**, 708-715 (*occur, glc*)
Matsumoto, T. *et al., Tetrahedron*, 1969, **25**, 5889-5892 (*(±)-forms, synth*)
Bollinger, H. *et al., Helv. Chim. Acta*, 1971, **54**, 2704-2730 (*synth, stereoisomers, abs config, cd*)
Whiting, J. *et al., Can. J. Chem.*, 1972, **50**, 3322-3325 (*synth, pmr*)
Stadelmann, R.J. *et al., Helv. Chim. Acta*, 1976, **59**, 2432-2436 (*occur, stereoisomers*)
Nitta, K. *et al., Helv. Chim. Acta*, 1977, **60**, 1747-1753 (*biosynth*)
Wang, P.-C. *et al., Alkaloids (Academic Press)*, 1984, **23**, 327-380 (*rev*)
Mulzer, J. *et al., Annalen*, 1987, 7-14 (*2S,4R,5S-form, synth, pmr, ir*)
Pirrung, M.C. *et al., Tet. Lett.*, 1988, **29**, 159-162 (*synth, bibl*)
Takano, S. *et al., Chem. Comm.*, 1989, 1371-1372 (*2S,4R,5S-form, synth*)
Adams, J. *et al., Tet. Lett.*, 1989, **30**, 1753 (*synth, pmr, cmr*)
De Amici, M. *et al., J.O.C.*, 1991, **56**, 67-72 (***synth, stereoisomers, bibl***)
Frydenvang, K. *et al., Acta Cryst. C*, 1992, **48**, 469; 1993, **49**, 985; 1834 (*cryst struct, Muscarone*)
Chan, T.H. *et al., Can. J. Chem.*, 1992, **70**, 2726-2729 (*2S,4R,5S-form, synth*)
Mantell, S.J. *et al., J.C.S. Perkin 1*, 1992, 3023-3027 (*2S,4R,5S-form synth, bibl*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 1391
Knight, D.W. *et al., Synlett*, 1994, 295-296 (*(-)-Muscarine, synth*)
Norild, J.C. *et al., Synthesis*, 1997, 1128-1130 (*Allomuscarine*)
Popsavin, V. *et al., Carbohydr. Lett.*, 1998, **3**, 1-8 (*synth, Epimuscarine*)
Hartung, J. *et al., Eur. J. Org. Chem.*, 2000, 1677-1683 (*synth*)
Kang, K.H. *et al., Tet. Lett.*, 2000, **41**, 8137-8140 (*synth*)
Popsavin, V. *et al., Tetrahedron*, 2000, **56**, 5929-5940 (*synth*)
Knight, D.W. *et al., Tet. Lett.*, 2002, **43**, 6771-6773 (*synth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, MRW250

Muscopyridine M-774

3-Methyl-16-azabicyclo[10.3.1]hexadeca-1(16),12,14-triene, 9CI



$C_{16}H_{25}N$ 231.38
CA numbering shown.

(*R*)-*form* [501-08-6]
Alkaloid from the scent gland of the musk deer (*Moschus moschiferus*). Liq. Bp_{12} 155-160°. $[\alpha]_D^{23}$ +17.4 (c, 1.92 in $CHCl_3$).

Picrolonate: Mp 163-166° dec.

11-Hydroxy: ***Hydroxymuscopyridine A***
[89368-39-8]
$C_{16}H_{25}NO$ 247.38
Alkaloid from *Moschus moschiferus.*

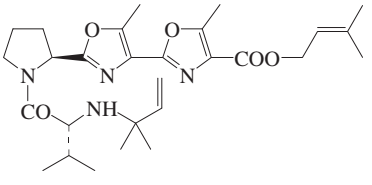
2-Hydroxy: ***Hydroxymuscopyridine B***
[89368-40-1]
$C_{16}H_{25}NO$ 247.38
Alkaloid from *Moschus moschiferus.*

(±)-*form* [56912-83-5]
Synthetic. Mp 163-166° dec. (as picrolonate).

Schinz, H. *et al., Helv. Chim. Acta*, 1946, **29**, 1524 (*isol, uv*)
Biemann, K. *et al., J.A.C.S.*, 1957, **79**, 5558 (*synth, struct*)
Tamao, K. *et al., J.A.C.S.*, 1975, **97**, 4405 (*synth*)
Hiyama, T. *et al., Bull. Chem. Soc. Jpn.*, 1981, **54**, 2747 (*synth*)
Yu, D. *et al., Planta Med.*, 1983, **49**, 183 (*Hydroxymuscopyridines*)
Hadj-Abo, F. *et al., Helv. Chim. Acta*, 1992, **75**, 1834 (*synth*)
Olofsson, K. *et al., J.O.C.*, 2000, **65**, 7235-7239 (*synth, pmr, cmr, abs config*)
Fürstner, A. *et al., Angew. Chem., Int. Ed.*, 2003, **42**, 308-311 (*synth*)
Suwa, K. *et al., Tet. Lett.*, 2008, **49**, 1510-1513 (*synth*)

Muscoride A M-775

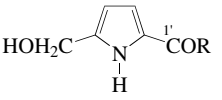
[164672-63-3]



$C_{28}H_{40}N_4O_5$ 512.648
Alkaloid from the terrestrial freshwater cyanobacterium *Nostoc muscorum*. Shows weak antibacterial activity. Amorph. solid. $[\alpha]_D^{23}$ -89.4 (c, 0.70 in MeOH). λ_{max} 252 (ϵ 14600) (MeOH) (Derep). λ_{max} (MeOH) (Berdy).

Nagatsu, A. *et al., Tet. Lett.*, 1995, **36**, 4097 (*isol, ir, pmr, cmr, struct*)
Muir, J.C. *et al., Synthesis*, 1998, 613-618 (*synth*)
Coqueron, P.-Y. *et al., Angew. Chem., Int. Ed.*, 2003, **42**, 1411-1414 (*synth*)

Mycalazoles M-776



Mycalazole	R
1	$(CH_2)_5(CH{=}CHCH_2)_6CH_3$
2	$(CH_2)_{10}(CH{=}CHCH_2)_3CH_3$
3	$(CH_2)_9(CH{=}CHCH_2)_4CH_3$
4	$(CH_2)_{12}(CH{=}CH(CH_2)_3CH_3$
7	$(CH_2)_{14}CH(CH_3)_2$
10	$(CH_2)_{12}CH{=}CH(CH_2)_5CH_3$

All double bonds have *Z*-config. Metabs. from the sponge *Mycale micracanthoxea*. Cytotoxic agents.

Mycalazole 1
*1-[5-(Hydroxymethyl)-1*H*-pyrrol-2-yl]-7,10,13,16,19,22-pentacosahexaen-1-one, 9CI*
[185387-05-7]
$C_{30}H_{43}NO_2$ 449.675
Oil. λ_{max} 201 (ϵ 4170); 247 (ϵ 1581); 294 (ϵ 7656) (MeOH).

*7′,8′-Dihydro: 1-[5-(Hydroxymethyl)-1*H*-pyrrol-2-yl]-10,13,16,19,22-pentacosapentaen-1-one, 9CI.* ***Mycalazole 5***
[185389-23-5]
$C_{30}H_{45}NO_2$ 451.691
Oil. λ_{max} 204 (ϵ 11230); 250 (ϵ 2122); 296 (ϵ 10003) (MeOH).

*7′,8′,10′,11′-Tetrahydro: 1-[5-(Hydroxymethyl)-1*H*-pyrrol-2-yl]-13,16,19,22-pentacosatetraen-1-one, 9CI.* ***Mycalazole 9***
[185389-50-8]
$C_{30}H_{47}NO_2$ 453.707
Oil. λ_{max} 203 (ϵ 10145); 251 (ϵ 1580); 293 (ϵ 13110) (MeOH).

Mycalazole 2
*1-[5-(Hydroxymethyl)-1*H*-pyrrol-2-yl]-12,15,18-heneicosatrien-1-one, 9CI*
[185387-07-9]
$C_{26}H_{41}NO_2$ 399.615
Oil. λ_{max} 202 (ϵ 8490); 238 (ϵ 6912); 296 (ϵ 16584) (MeOH).

*18′,19′-Dihydro: 1-[5-(Hydroxymethyl)-1*H*-pyrrol-2-yl]-12,15-heneicosadien-1-one, 9CI.* ***Mycalazole 6***
[185389-27-9]
$C_{26}H_{43}NO_2$ 401.631
Oil. λ_{max} 204 (ϵ 7452); 294 (ϵ 9470) (MeOH).

Mycalazole 3
*1-[5-(Hydroxymethyl)-1*H*-pyrrol-2-yl]-11,14,17,20-tricosatetraen-1-one, 9CI*
[185388-42-5]
$C_{28}H_{43}NO_2$ 425.653
Oil. λ_{max} 206 (ϵ 11045); 246 (ϵ 2332); 295 (ϵ 10106) (MeOH).

*11′,12′-Dihydro: 1-[5-(Hydroxymethyl)-1*H*-pyrrol-2-yl]-14,17,20-tricosatrien-1-one, 9CI.* ***Mycalazole 8***
[185389-47-3]
$C_{28}H_{45}NO_2$ 427.669
Oil. λ_{max} 201 (ϵ 9128); 240 (ϵ 4312); 295 (ϵ 16348) (MeOH).

*11′,12′,20′,21′-Tetrahydro: 1-[5-(Hydroxymethyl)-1*H*-pyrrol-2-yl]-14,17-tricosadien-1-one, 9CI.* ***Mycalazole 12***
[185389-63-3]
$C_{28}H_{47}NO_2$ 429.685
Oil. λ_{max} 203 (ϵ 7852); 295 (ϵ 8864) (MeOH).

Mycalazole 4
*1-[5-(Hydroxymethyl)-1*H*-pyrrol-2-yl]-14-nonadecen-1-one, 9CI*
[185389-09-7]
$C_{24}H_{41}NO_2$ 375.593
Cryst. (MeOH). Mp 68-70°. λ_{max} 206 (ϵ 10492); 252 (ϵ 1106); 292 (ϵ 13105) (MeOH).

*14′,15′-Dihydro: 1-[5-(Hydroxymethyl)-1*H*-pyrrol-2-yl]-1-nonadecanone, 9CI.* ***Mycalazole 11***
[185389-61-1]
$C_{24}H_{43}NO_2$ 377.609
Amorph. powder. λ_{max} 204 (ϵ 7452); 294 (ϵ 9470) (MeOH).

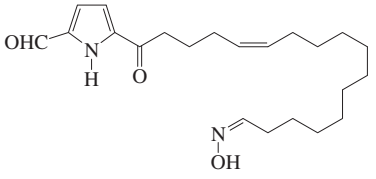
Mycalazole 7
*1-[5-(Hydroxymethyl)-1*H*-pyrrol-2-yl]-16-methyl-1-heptadecanone, 9CI*
[185389-45-1]
$C_{23}H_{41}NO_2$ 363.582
Oil. λ_{max} 204 (ϵ 7452); 294 (ϵ 9470) (MeOH).

Mycalazole 10
*1-[5-(Hydroxymethyl)-1*H*-pyrrol-2-yl]-14-heneicosen-1-one, 9CI*
[185389-60-0]
$C_{26}H_{45}NO_2$ 403.647
Cryst. (MeOH). Mp 74-76°. λ_{max} 204 (ϵ 10978); 252 (ϵ 925); 296 (ϵ 12940) (MeOH).

Ortega, M.J. *et al., Tetrahedron*, 1997, **53**, 331-340 (*isol, uv, ir, pmr, cmr, ms, struct*)
Nabbs, B.K. *et al., Bioorg. Med. Chem. Lett.*, 1999, **9**, 505-508 (*Mycalazole 11, synth*)
Hansen, T.V. *et al., Tet. Lett.*, 2004, **45**, 2809-2811 (*Mycalazole 5, synth*)

Mycaleoxime M-777

[290825-58-0]

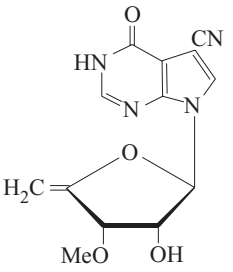


$C_{22}H_{34}N_2O_3$ 374.522
Isol. from the sponge *Mycale tenuispiculata*. Viscous liq. λ_{max} 232 (ϵ 8228); 304 (ϵ 19640) (MeCN).

Venketesham, U. *et al., J. Nat. Prod.*, 2000, **63**, 1318-1320 (*isol, ir, uv, pmr, cmr, ms*)

Mycalisine B M-778

*5-Cyano-7-(3-*O*-methyl-5-deoxy-β-D-*erythro*-pent-4-enofuranosyl)pyrrolo[2,3-*d*]pyrimidin-4-one*
[98890-72-3]

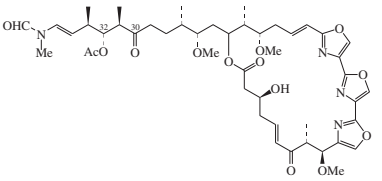


$C_{13}H_{12}N_4O_4$ 288.262
Isol. from *Mycale* sp., Japanese marine sponge. Oil. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. $[\alpha]_D^{21}$ -75.9 (c, 0.26 in EtOH). Unstable at r.t. λ_{max} 214 (ϵ 3000); 265 (ϵ 3000) (pH 2 EtOH) (Derep). λ_{max} 265 (sh) (ϵ) (pH 12 EtOH) (Derep). λ_{max} 210 (ϵ 6000); 265 (ϵ 3000) (pH 7 EtOH) (Derep).

Kato, Y. *et al., Tet. Lett.*, 1985, **26**, 3483 (*isol, ir, pmr, cmr, uv*)

Mycalolide A M-779

[121038-36-6]



$C_{47}H_{64}N_4O_{14}$ 909.041
Isol. from the sponge *Mycale* sp. Cytotoxic and antifungal agent. Yellowish gum. Sol. MeOH, Et_2O; poorly sol. H_2O. $[\alpha]_D$ -60.3 (c, 0.5 in $CHCl_3$). λ_{max} 230 (ϵ 30000) (MeOH) (Derep).

O-*De-Ac:* ***32-Hydroxymycalolide A***
[216770-61-5]
$C_{45}H_{62}N_4O_{13}$ 867.004
Isol. from *Mycale magellanica*. Cytotoxic agent. $[\alpha]_D^{27}$ -90 (c, 0.1 in MeOH). Misleading synonym. λ_{max} 230 (ϵ 26000) (MeOH).

*30*R-*Alcohol:* ***30-Hydroxymycalolide A***
[216770-57-9]
$C_{47}H_{66}N_4O_{14}$ 911.057
Isol. from *Mycale magellanica*. Cytotoxic agent. $[\alpha]_D^{27}$ -86.9 (c, 0.1 in MeOH). Misleading synonym. λ_{max} 230 (ϵ 27000) (MeOH).

*30*R-*Alcohol, 30*-O-*(2*R*,3-dimethoxypropanoyl):* ***Mycalolide B***
[122752-21-0]
$C_{52}H_{74}N_4O_{17}$ 1027.173
Isol. from the sponge *Mycale* sp. Cytotoxic and antifungal agent. Yellowish gum. $[\alpha]_D$ -53.4 (c, 1.3 in $CHCl_3$). λ_{max} 230 (ϵ 31000) (MeOH).

*30*R-*Alcohol, 30*-O-*(3*R*-hydroxy-2-methoxypropanoyl):* ***38-Hydroxymycalolide B***
[216770-65-9]
$C_{51}H_{72}N_4O_{17}$ 1013.146
Isol. from the sponge *Mycale magellanica*. Cytotoxic agent. $[\alpha]_D^{27}$ -80.9 (c, 0.1 in MeOH). Misleading synonym. λ_{max} 230 (ϵ 25000) (MeOH).

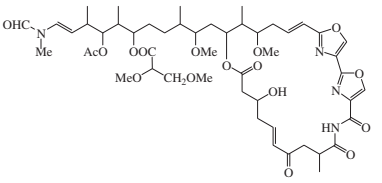
*30*R-*Alcohol, 30*-O-*(2*R*-methoxypropanoyl):* ***Mycalolide C***
[122752-20-9]
$C_{51}H_{72}N_4O_{16}$ 997.147
Isol. from the sponge *Mycale* sp. and from the stony coral *Tubastrea faulkneri*. Cytotoxic and antifungal agent. Yellowish gum. $[\alpha]_D$ -62.1 (c, 3.7 in $CHCl_3$). λ_{max} 230 (ϵ 31000) (MeOH).

*30*R-*Alcohol,* O-*de-Ac:* ***30,32-Dihydroxymycalolide A***
[442690-43-9]
$C_{45}H_{64}N_4O_{13}$ 869.02
Isol. from *Mycale izuensis*. $[\alpha]_D^{22}$ -68.7 (c, 0.1 in MeOH). λ_{max} 231 (ϵ 33055) (MeOH).

Fusetani, N. *et al., Tet. Lett.*, 1989, **30**, 2809-2812 (*isol, uv, ir, pmr, cmr, struct*)
Rashid, M.A. *et al., J. Nat. Prod.*, 1995, **58**, 1120-1125 (*Mycalolides C-E, isol*)
Matsunaga, S. *et al., J. Nat. Prod.*, 1998, **61**, 1164-1167 (*Mycale magellanica constits*)
Matsunaga, S. *et al., J.A.C.S.*, 1999, **121**, 5605-5606; 8969 (*abs config*)
Liu, P. *et al., J.A.C.S.*, 2000, **122**, 1235-1236 (*synth*)
Phuwapraisirisan, P. *et al., J. Nat. Prod.*, 2002, **65**, 942-943 (*30,32-Dihydroxymycalolide A*)

Mycalolide D M-780

[168301-18-6]

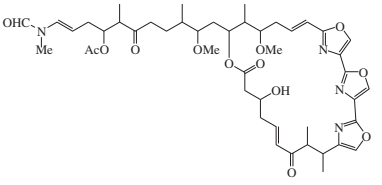


$C_{50}H_{72}N_4O_{17}$ 1001.135
Isol. from the stony coral *Tubastrea faulkneri*. Cytotoxic. Gum. $[\alpha]_D$ -19.5 (c, 0.5 in $CHCl_3$). λ_{max} 228 (ϵ 47700); 260 (MeOH) (Berdy).

Rashid, M.A. *et al., J. Nat. Prod.*, 1995, **58**, 1120 (*isol, uv, ir, pmr, cmr, struct*)

Mycalolide E M-781

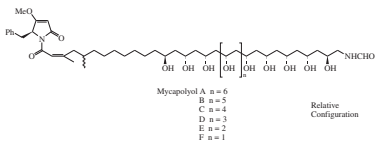
[168301-19-7]



$C_{46}H_{62}N_4O_{13}$ 879.015
Minor constit. of the stony coral *Tubastrea faulkneri*. Cytotoxic. Gum. $[\alpha]_D$ -39 (c, 0.1 in $CHCl_3$). λ_{max} 231 (ϵ 33200); 254 (ϵ 30800) (MeOH) (Berdy).

Rashid, M.A. *et al., J. Nat. Prod.*, 1995, **58**, 1120 (*isol, uv, ir, pmr, struct*)

Mycapolyols M-782



Isol. from the marine sponge *Mycale izuensis*. Cytotoxic.

Mycapolyol A
$C_{55}H_{94}N_2O_{18}$ 1071.35
Powder. $[\alpha]_D^{21}$ +101.1 (c, 0.34 in MeOH aq.). λ_{max} 259 (log ϵ 4.15) (MeOH aq.).

Mycapolyol B
$C_{53}H_{90}N_2O_{17}$ 1027.297
Powder. $[\alpha]_D^{27}$ +104.7 (c, 0.22 in MeOH aq.). λ_{max} 259 (log ϵ 4.6) (MeOH aq.).

Mycapolyol C
$C_{51}H_{86}N_2O_{16}$ 983.244
Powder. $[\alpha]_D^{27}$ +105.7 (c, 0.32 in MeOH aq.). λ_{max} 259 (log ϵ 4.09) (MeOH aq.).

Mycapolyol D
$C_{49}H_{82}N_2O_{15}$ 939.191
Powder. $[\alpha]_D^{27}$ +100.6 (c, 0.25 in MeOH aq.). λ_{max} 259 (log ϵ 4.18) (MeOH aq.).

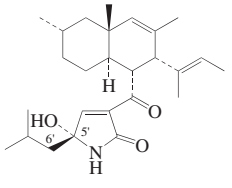
Mycapolyol E
$C_{47}H_{78}N_2O_{14}$ 895.138
Powder. $[\alpha]_D^{21}$ +117.7 (c, 0.27 in MeOH aq.). λ_{max} 258 (log ϵ 4.15) (MeOH aq.).

Mycapolyol F
$C_{45}H_{74}N_2O_{13}$ 851.085
Powder. $[\alpha]_D^{21}$ +120.1 (c, 0.2 in MeOH aq.). λ_{max} 257 (log ϵ 4) (MeOH aq.).

Phuwapraisirisan, P. *et al., Org. Lett.*, 2005, **7**, 2233-2236 (*isol, pmr, cmr, ms*)

Myceliothermophin A M-783

[955083-86-0]



Relative Configuration

$C_{26}H_{39}NO_3$ 413.599
Prod. by *Myceliophthora thermophila*. Cytotoxic. Powder. $[\alpha]_D^{20}$ -135 (c, 0.2 in $CHCl_3$).

5′-Me ether: ***Myceliothermophin C***
[955083-88-2]
$C_{27}H_{41}NO_3$ 427.626
Prod. by *Myceliophthora thermophila*. Cytotoxic. Powder. $[\alpha]_D^{20}$ -120 (c, 0.1 in $CHCl_3$).

5′-Deoxy, 5′,6′-didehydro: ***Myceliothermophin E***
[955083-90-6]
$C_{26}H_{37}NO_2$ 395.584
Prod. by *Myceliophthora thermophila*. Powder. $[\alpha]_D^{20}$ -40 (c, 0.2 in $CHCl_3$).

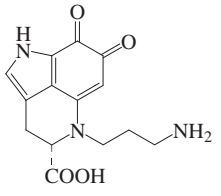
5′-Epimer: ***Myceliothermophin B***
[955083-87-1]
$C_{26}H_{39}NO_3$ 413.599
Prod. by *Myceliophthora thermophila*. Powder. $[\alpha]_D^{20}$ -100 (c, 0.4 in $CHCl_3$).

5′-Epimer, 5′-Me ether: ***Myceliothermophin D***
[955083-89-3]
$C_{27}H_{41}NO_3$ 427.626
Prod. by *Myceliophthora thermophila*. Powder. $[\alpha]_D^{20}$ -55 (c, 0.2 in $CHCl_3$).

Yang, Y.-L. *et al., Chem. Eur. J.*, 2007, **13**, 6985-6991 (*isol, pmr, cmr, ms*)

Mycenarubin A M-784

[939403-53-9]



Absolute Configuration

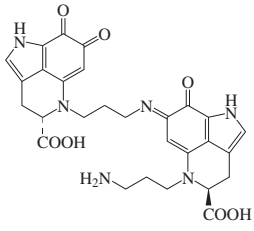
$C_{14}H_{15}N_3O_4$ 289.29
Alkaloid from *Mycena haematopus* (blood mycena) and *Mycena rosea*. Red solid. Mp 126° dec. $[\alpha]_D^{25}$ +1190 (c, 0.008 in H_2O). λ_{max} 244 (log ϵ 4.12); 358 (log ϵ 3.94); 539 (log ϵ 2.82) (H_2O).

3′-Deamino, 3′-hydroxy: ***Mycenarubin F***
$C_{14}H_{14}N_2O_5$ 290.275
Alkaloid from *Mycena haematopus* (blood mycena). Red solid.

Peters, S. *et al., Eur. J. Org. Chem.*, 2007, 1571-1576; 2008, 319-323 (*isol, cd, pmr, cmr, ms*)

Mycenarubin B M-785

[939403-54-0]



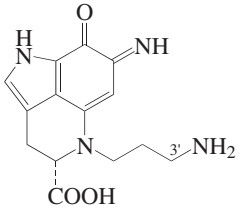
Absolute Configuration

$C_{28}H_{28}N_6O_7$ 560.565
Isol. from *Mycena rosea*. Red solid. $[\alpha]_D^{25}$ +170 (c, 0.006 in H_2O). λ_{max} 245 (log ϵ 4.19); 354 (log ϵ 3.89); 534 (log ϵ 3.01) (H_2O).

Peters, S. *et al., Eur. J. Org. Chem.*, 2007, 1571-1576 (*isol, cd, pmr, cmr, ms*)

Mycenarubin D M-786

[1032121-81-5]



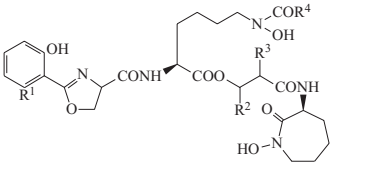
$C_{14}H_{16}N_4O_3$ 288.305
Alkaloid from *Mycena haematopus* (blood mycena). Red solid. $[\alpha]_D^{25}$ +630 (c, 0.007 in H_2O). λ_{max} 242 (log ϵ 4.06); 368 (log ϵ 3.96); 544 (log ϵ 2.85) (H_2O).

3′-Deamino, 3′-hydroxy: ***Mycenarubin E***
[1032121-82-6]
$C_{14}H_{15}N_3O_4$ 289.29
Alkaloid from *Mycena haematopus* (blood mycena). Red solid. $[\alpha]_D^{25}$ +1010 (c, 0.005 in H_2O). λ_{max} 243 (log ϵ 4.04); 368 (log ϵ 3.94); 548 (log ϵ 2.86) (H_2O).

Peters, S. *et al., Eur. J. Org. Chem.*, 2008, 319-323 (*isol, cd, pmr, cmr, ms*)

Mycobactin M-787

[1400-46-0]



A R^1 = R^2 = CH_3, R^3 = H, R^4 = $CH{=}CH(CH_2)_{10}CH_3$
J R^1 = H, R^2 = $CH(CH_3)_2$, R^3 = CH_3, R^4 = $CH{=}CH(CH_2)_{12}CH_3$
P R^1 = R^3 = CH_3, R^2 = CH_2CH_3, R^4 = $CH{=}CH(CH_2)_{14}CH_3$
R R^1 = H, R^2 = CH_2CH_3, R^3 = CH_3, R^4 = $CH{=}CH(CH_2)_{16}CH_3$
S R^1 = R^3 = H, R^2 = CH_3, R^4 = $CH{=}CH(CH_2)_{14}CH_3$

A family of modified lipopeptide siderophores with varying stereochem. Prod. by *Mycobacterium johnei*, *Mycobacterium paratuberculosis*, *Mycobacterium phlei* and other *Mycobacterium* spp. Growth factor complex able to chelate metals (shows strong selectivity for Fe).

Mycobactin A [28338-75-2]
$C_{41}H_{63}N_5O_{10}$ 785.976

Mycobactin J
Mycobactin J1
[80941-50-0]
$C_{45}H_{71}N_5O_{10}$ 842.083

Mycobactin P [1264-66-0]
$C_{47}H_{75}N_5O_{10}$ 870.137
Major component of complex. Powder. Mp 165-165.5°. $[\alpha]_D^{25}$ -19 (c, 4.9 in $CHCl_3$). λ_{max} 250 ; 311 (MeOH) (Berdy).

Picrate:
Noncryst. Mp 150-152°.

Di-Ac:
Noncryst. Mp 134-135.5°. $[\alpha]_D^{15}$ -6.7 (c, 4 in $CHCl_3$).

Mycobactin R [28338-74-1]
$C_{48}H_{77}N_5O_{10}$ 884.164

Mycobactin S [26769-11-9]
$C_{44}H_{69}N_5O_{10}$ 828.057

[78245-01-9 , 28338-74-1 , 78245-02-0 , 28338-75-2 , 84028-50-2]

Snow, G.A. *et al., J.C.S.*, 1954, 2588; 4080
White, A.J. *et al., Biochem. J.*, 1968, **108**, 593 (*isol, ms, struct*)
Snow, G.A. *et al., Biochem. J.*, 1969, **115**, 1031 (*isol, props*)

Greatbanks, D. *et al., Biochem. J.*, 1969, **115**, 1047 (*nmr*)
Snow, G.A. *et al., Bacteriol. Rev.*, 1970, **34**, 99 (*rev*)
Hough, E. *et al., Biochem. Biophys. Res. Commun.*, 1974, **57**, 73 (*cryst struct*)
McCullough, W.G. *et al., Curr. Microbiol.*, 1982, **7**, 337 (*Mycobactin J*)
Barclay, R. *et al., J. Bacteriol.*, 1985, **164**, 896 (*Mycobactin S*)
MacCordick, H.J. *et al., Nouv. J. Chim.*, 1985, **9**, 535 (*struct*)
Hu, J. *et al., J.A.C.S.*, 1997, **119**, 3462-3468 (*Mycobactin S, synth*)
Schwartz, B.D. *et al., Tet. Lett.*, 2001, **42**, 3653-3655 (*Mycobactin J, abs config*)

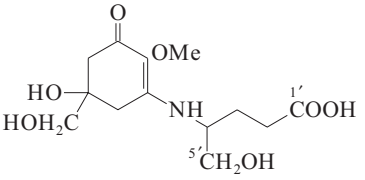
Mycobactin T M-788

As Mycobactin, M-787 with $R^1 = R^3 = H$, $R^2 = CH_3$, $R^4 = C_{17}$-C_{20}
Prod. by *Mycobacterium tuberculosis.* Siderophore and growth factor complex.

White, A.J. *et al., Biochem. J.*, 1968, **108**, 593-597
Hu, J. *et al., J.A.C.S.*, 1997, **119**, 3462-3468

Mycosporin glutamicol M-789

5-Hydroxy-4-[[5-hydroxy-5-(hydroxymethyl)-2-methoxy-3-oxo-1-cyclohexen-1-yl]amino]pentanoic acid, 9CI
[77101-66-7]



$C_{13}H_{21}NO_7$ 303.311
Metab. of the fungi *Ascochyta* sp., *Gnomonia* sp., *Morchella* sp. and *Pyronema* sp.

5′-O-β-D-Glucopyranoside: [81543-07-9]
$C_{19}H_{31}NO_{12}$ 465.453
Metab. of *Ascochyta* spp. *Cladosporium* sp. and *Septoria* sp.

Amide: ***Mycosporin glutaminol***
[85769-64-8]
$C_{13}H_{22}N_2O_6$ 302.327
Widespread mycosporine reduced glutamine. Unstable.

1′-Amide, 5′-O-β-D-glucopyranoside:
[85769-65-9]
$C_{19}H_{32}N_2O_{11}$ 464.469
Widespread mycosporine reduced glutamine.

5′-Carboxylic acid: ***Mycosporin-Glu***
[83031-20-3]
$C_{13}H_{19}NO_8$ 317.295
Metab. of *Glomerella* sp. and *Helvella* sp.

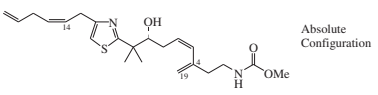
5′-Carboxylic acid, 1′-amide: ***Mycosporin-Gln***
[92632-66-1]
$C_{13}H_{20}N_2O_7$ 316.31
Metab. of *Glomerella* sp. and *Pyronema* sp.

5′-Carboxylic acid, 1′-amide, O*-de-Me:* ***Normycosporin-Gln***
[77101-67-8]
$C_{12}H_{18}N_2O_7$ 302.283
Metab. of *Pyronema omphalodes.*
[126643-34-3]

Lunel, M.-C. *et al., Tet. Lett.*, 1980, **21**, 4715 (*Normycosporin-Gln*)
Bouillant, M.L. *et al., Phytochemistry*, 1981, **20**, 2705-2707; 2709-2710 (*isol, pmr*)
Young, H. *et al., Phytochemistry*, 1982, **21**, 1075 (*Mycosporine-Glu*)
Pittet, J.-L. *et al., Tet. Lett.*, 1983, **24**, 65 (*amide*)
Bernillon, J. *et al., Phytochemistry*, 1984, **23**, 1083 (*isol, glc, ms*)
Favre-Bonvin, J. *et al., Phytochemistry*, 1987, **26**, 2509 (*isol, amide*)
White, J.D. *et al., J.O.C.*, 1995, **60**, 3601
Bandaranayake, W.M. *et al., Nat. Prod. Rep.*, 1998, **15**, 159-172 (*rev*)

Mycothiazole M-790

[114582-75-1]



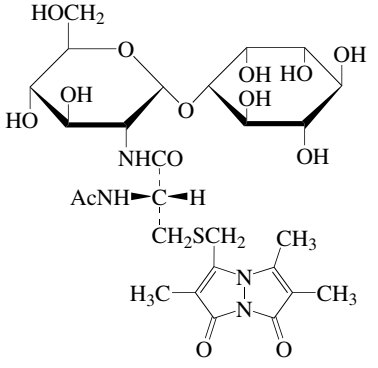
$C_{22}H_{32}N_2O_3S$ 404.572
Isol. from the marine sponge *Cacospongia mycofijiensis* and the sea slug *Chromodoris lochi*. Exhibits anthelminthic activity (*in vitro*). Highly toxic to mice. Viscous oil. Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. $[\alpha]_D^{20}$ -3.8 (c, 2.9 in $CHCl_3$). $[\alpha]_D^{27}$ -13.7 (c, 0.6 in MeOH). C-14 config. revised in 2006. λ_{max} 235 (ϵ 5270); 290 (ϵ 1780) (MeOH) (Berdy).

4,19-Dihydro, 4ξ,19-dihydroxy: ***Mycothiazole-4,19-diol***
$C_{22}H_{34}N_2O_5S$ 438.587
Isol. from *Cacospongia mycofijiensis.* Powder. $[\alpha]_D^{27}$ -2.5 (c, 0.04 in MeOH).

Crews, P. *et al., J.A.C.S.*, 1988, **110**, 4365-4368 (*isol, uv, ir, pmr, cmr, ms, struct*)
Sugiyama, H. *et al., Tetrahedron*, 2003, **59**, 6579-6593 (*synth, abs config*)
Le Flohic, A. *et al., Org. Lett.*, 2005, **7**, 339-342 (*synth*)
Sonnenschein, R.N. *et al., J. Nat. Prod.*, 2006, **69**, 145-147 (*Mycothiazole-4,19-diol*)

Mycothiol bimane M-791

[158761-05-8]

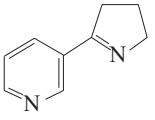


$C_{27}H_{40}N_4O_{14}S$ 676.697
Prod. by *Streptomyces clavuligerus* and other *Streptomyces* spp., *Micrococcus* sp., *Nocardia* sp., *Rhodococcus* sp., *Actinomadura* sp. and *Nocardiopsis* sp. Antioxidant. Formaldehyde dehydrogenase cofactor.

Spies, H.S.C. *et al., Eur. J. Biochem.*, 1994, **224**, 203-213 (*isol*)
Nicholas, G.M. *et al., J.A.C.S.*, 2002, **124**, 3492-3493 (*synth, cd*)
Mahadevan, J. *et al., J.O.C.*, 2003, **68**, 3380-3386 (*pmr, conformn*)

Myosmine M-792

*3-(3,4-Dihydro-2*H*-pyrrol-5-yl)pyridine, 9CI. 3-(1-Pyrrolin-2-yl)pyridine, 8CI. 2-(3-Pyridyl)-1-pyrroline*
[532-12-7]



$C_9H_{10}N_2$ 146.191
Present in tobacco smoke. Alkaloid from *Nicotiana* spp. (Solanaceae). Present in hazelnuts, peanuts, potato, tomato, carrot, apple, pineapple, kiwi fruit, cow's milk and cereals. Mp 40.5-42°. $Bp_{0.1}$ 55-60°. pK_a 5.26 (24°).

▶ LD_{50} (rat, orl) 1875 mg/kg. UT7660000

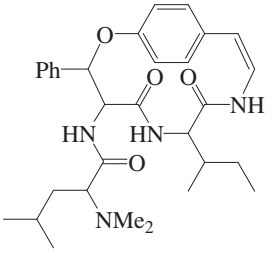
Dipicrate: Mp 184-185°.

Dipicrolonate: Mp 213°.

Swain, M.L. *et al., J.A.C.S.*, 1949, **71**, 1341 (*uv*)
Eddy, C.R. *et al., Anal. Chem.*, 1954, **26**, 1428 (*ir*)
Witkop, B. *et al., J.A.C.S.*, 1954, **76**, 5597 (*ir, struct*)
Pople, J.A. *et al., High Resolution Nuclear Magnetic Resonance*, McGraw-Hill, N.Y., 1959, 281 (*pmr*)
Duffield, A.M. *et al., J.A.C.S.*, 1965, **87**, 2926 (*ms*)
Leete, E. *et al., J.O.C.*, 1972, **37**, 4465 (*synth*)
Fejer-Kossey, O. *et al., Phytochemistry*, 1972, **11**, 415 (*isol*)
Brandänge, S. *et al., Acta Chem. Scand., Ser. B*, 1976, **30**, 93 (*synth*)
Spitzner, D. *et al., Synthesis*, 1977, 242 (*synth*)
Glenn, D.F. *et al., J.O.C.*, 1978, **43**, 2860 (*ms*)
Mahboobi, S. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1988, **321**, 175 (*synth, pmr*)
Zwickenflug, W. *et al., J. Agric. Food Chem.*, 1998, **46**, 2703-2706; 2002, **50**, 4909-4915 (*glc, anal, occur*)

Myrianthine A M-793

*2-(Dimethylamino)-4-methyl-*N*-[7-(1-methylpropyl)-5,8-dioxo-3-phenyl-2-oxa-6,9-diazabicyclo[10.2.2]hexadeca-10,12,14,15-tetraen-4-yl]pentanamide, 9CI*
[24532-76-1]

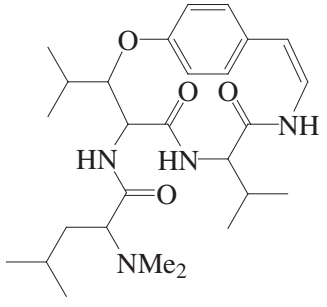


$C_{31}H_{42}N_4O_4$ 534.697
Alkaloid from the leaves of *Myrianthus arboreus* and from *Discaria americana*. Mp 286°. $[\alpha]_D$ -263 (c, 1 in $CHCl_3$).

Marchand, J. *et al., Ann. Pharm. Fr.*, 1968, **26**, 771-778; *CA*, **71**, 42203q (*isol, uv, ir, pmr, struct*)

Myrianthine C M-794

N-*[3,7-Bis(1-methylethyl)-5,8-dioxo-2-oxa-6,9-diazabicyclo[10.2.2]hexadeca-10,12,14,15-tetraen-4-yl]-2-(dimethylamino)-4-methylpentanamide, 9CI*
[24532-78-3]



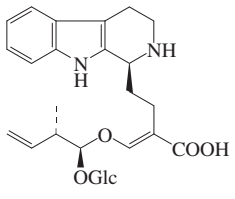
$C_{27}H_{42}N_4O_4$ 486.653
Alkaloid from the leaves of *Myrianthus arboreus* (Urticaceae) and aerial parts of *Plectronia odorata* (preferred genus name *Olinia*) (Oliniaceae). Mp 294° dec. $[\alpha]_D$ -228 ($CHCl_3$).

N-*De-Me:* **N-*Demethylmyrianthine C***
[123115-06-0]
$C_{26}H_{40}N_4O_4$ 472.626
Alkaloid from aerial parts of *Plectronia odorata* (Oliniaceae). Noncryst. $[\alpha]_D^{20}$ -103 (c, 1 in $CHCl_3$).

Marchand, J. *et al., Ann. Pharm. Fr.*, 1968, **26**, 771-778; *CA*, **71**, 42203q (*isol, uv, ir, pmr, struct*)
Gournelis, D. *et al., J. Nat. Prod.*, 1989, **52**, 306-316 (*N-Demethylmyrianthine C*)

Myrianthosine M-795

[934766-78-6]



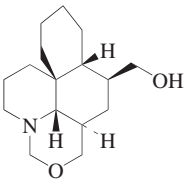
Absolute Configuration

$C_{27}H_{36}N_2O_9$ 532.589
Alkaloid from the aerial parts of *Psychotria myriantha*. Amorph. powder. $[\alpha]_D^{25}$ +80.8 (c, 0.1 in MeOH).

Simões-Pires, C.A. *et al., Nat. Prod. Commun.*, 2006, **1**, 1101-1106 (*isol, pmr, cmr*)

Myrioneurinol M-796

[957199-81-4]



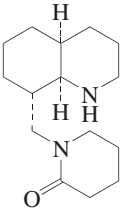
Absolute Configuration

$C_{16}H_{27}NO_2$ 265.395
Alkaloid from the leaves of *Myrioneuron nutans*. Cryst. (Et_2O/EtOH). Mp 145-146°. $[\alpha]_D^{20}$ +63 (c, 1 in MeOH).

Pham, V.C. *et al., Tetrahedron*, 2007, **63**, 11244-11249 (*isol, pmr, cmr, ms*)

Myrionine M-797

[951681-61-1]



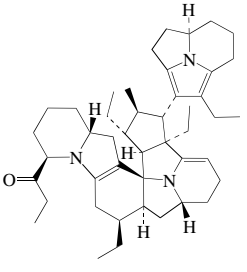
Absolute Configuration

$C_{15}H_{26}N_2O$ 250.383
Alkaloid from the leaves of *Myrioneuron nutans*. Oil. $[\alpha]_D^{20}$ -16.1 (c, 1 in MeOH).

Pham, V.C. *et al., Org. Lett.*, 2007, **9**, 3531-3534 (*isol, synth, pmr, cmr, cryst struct*)

Myrmicarin 663 M-798

[183127-15-3]



Relative Configuration

$C_{45}H_{65}N_3O$ 664.028
Alkaloid from the poison gland secretion of the African ant *Myrmicaria opaciventris*.

Schröder, F. *et al., Tetrahedron*, 1996, **52**, 13539 (*isol, ms*)
Schröder, F. *et al., Angew. Chem., Int. Ed.*, 1997, **36**, 77 (*pmr, cmr*)

Myrmicarin 233A M-799

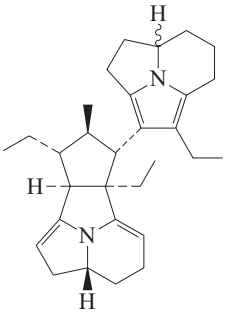
[183185-10-6]

$C_{15}H_{23}NO$ 233.353
Struct. unknown. Prob. an indolizidine alkaloid and a struct. has been tentatively proposed. Trace alkaloid from the poison gland secretion of the African ant *Myrmicaria opaciventris*.

Schröder, F. *et al., Tetrahedron*, 1996, **52**, 13539 (*isol, ms*)
Michael, J.P. *et al., Nat. Prod. Rep.*, 1998, **15**, 571-594 (*struct*)

Myrmicarin 430A M-800

[183122-49-8]

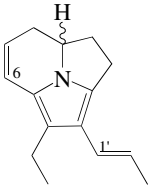


$C_{30}H_{42}N_2$ 430.675
Constit. of poison gland secretion of the African ant *Myrmicaria opaciventris*. Dec. rapidly in air.

Schröder, F. *et al., Chem. Comm.*, 1996, 2139 (*isol, pmr, cmr*)
Schröder, F *et al., Tetrahedron*, 1996, **52**, 13539 (*isol, ms*)

Myrmicarin 213B M-801

[183254-01-5]



$C_{15}H_{19}N$ 213.322
Alkaloid from the poison gland secretion of the African ant *Myrmicaria opaciventris*.

Z-Isomer: ***Myrmicarin 213A***
[183126-24-1]
$C_{15}H_{19}N$ 213.322
From *Myrmicaria opaciventris*.

6,7-Dihydro: ***Myrmicarin 215B***
[183253-97-6]
$C_{15}H_{21}N$ 215.338
From *Myrmicaria opaciventris*. Isol. as a 1:2 inseparable mixt. with Myrmicarin 215A.

6,7-Dihydro, Z-isomer: ***Myrmicarin 215A***
$C_{15}H_{21}N$ 215.338
From *Myrmicaria opaciventris*. Isol. as an inseparable mixt. with Myrmicarin 215B.

1′,2′-Dihydro: ***Myrmicarin 215C***
[183124-40-5]
$C_{15}H_{21}N$ 215.338
From *Myrmicaria opaciventris*.

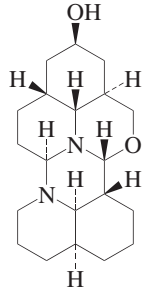
1′,2′,6,7-Tetrahydro: ***Myrmicarin 217***
[183122-85-2]
$C_{15}H_{23}N$ 217.353
From *Myrmicaria opaciventris*.

Schröder, F. *et al., Tetrahedron*, 1996, **52**,

13539 (*isol, pmr, cmr, ms, struct*)
Schroeder, F. *et al., Tetrahedron*, 1998, **54**, 5259-5264 (*synth, Myrmicarin 217*)
Sayah, B. *et al., J.O.C.*, 2000, **65**, 2824-2826 (*synth, Myrmicarin 217*)
Movassaghi, M. *et al., Org. Lett.*, 2005, **7**, 4423-4426 (*synth*)

Myrobotinol M-802

[960510-92-3]



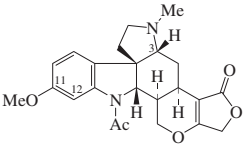
Absolute Configuration

$C_{20}H_{32}N_2O_2$ 332.485
Alkaloid from the leaves of *Myrioneuron nutans*. Cryst. (hexane/Et_2O). Mp 225-226°. $[\alpha]_D^{20}$ +36.4 (c, 0.4 in MeOH).

Pham, V.C. *et al., J.O.C.*, 2007, **72**, 9826-9829 (*isol, biosynth, pmr, cmr, ms*)

Myrtoidine M-803

[243464-91-7]



Absolute Configuration

$C_{23}H_{26}N_2O_5$ 410.469
Alkaloid from the stem bark of *Strychnos myrtoides*. Cryst. (EtOAc/cyclohexane). $[\alpha]_D^{20}$ -46.6 (c, 0.5 in CH_2Cl_2). Dec. without melting. λ_{max} 220 (log ϵ 4.1); 242 (sh) (log ϵ 3.72); 289 (log ϵ 3.18) (MeOH).

Demethoxy: ***11-Demethoxymyrtoidine***
[243464-93-9]
$C_{22}H_{24}N_2O_4$ 380.443
Alkaloid from the stem bark of *Strychnos myrtoides*. Cryst. (EtOAc/hexane). Mp 237-240°. $[\alpha]_D^{20}$ -28.9 (c, 0.4 in CH_2Cl_2). λ_{max} 207 (log ϵ 4); 241 (log ϵ 3.74); 277 (sh) (log ϵ 2.96) (MeOH).

3-Epimer: ***3-Epimyrtoidine***
[349493-74-9]
$C_{23}H_{26}N_2O_5$ 410.469
Alkaloid from *Strychnos diplotricha* and *Strychnos myrtoides*. Cryst. (EtOAc/cyclohexane). Mp 105-107°. $[\alpha]_D^{20}$ +24.7 (c, 0.2 in $CHCl_3$). λ_{max} 220 (log ϵ 4.48); 241 (log ϵ 4.1); 294 (log ϵ 3.67) (MeOH).

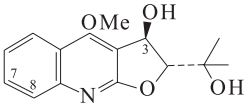
3-Epimer, demethoxy: ***11-Demethoxy-3-epimyrtoidine***
[349493-75-0]
$C_{22}H_{24}N_2O_4$ 380.443
Alkaloid from *Strychnos diplotricha* and *Strychnos myrtoides*. Cryst. (EtOAc/cyclohexane). Mp 103-105°. $[\alpha]_D^{20}$ +37.6 (c, 0.2 in $CHCl_3$). λ_{max} 210 (log ϵ 4.45); 244 (log ϵ 4.18); 276 (log ϵ 3.5) (MeOH).

3-Epimer, demethoxy, 12-hydroxy: ***12-Hydroxy-11-demethoxy-3-epimyrtoidine***
[349493-76-1]
$C_{22}H_{24}N_2O_5$ 396.442
Alkaloid from *Strychnos diplotricha* and *Strychnos myrtoides*. Cryst. (EtOAc/cyclohexane). Mp 230-232°. $[\alpha]_D^{20}$ -184.5 (c, 0.2 in $CHCl_3$). λ_{max} 217 (log ϵ 4.43); 247 (log ϵ 3.96); 288 (log ϵ 3.44) (MeOH).

Martin, M.-T. *et al., Phytochemistry*, 1999, **51**, 479-486 (*isol, uv, cd, pmr, cmr, ms*)
Rasoanaivo, P. *et al., Phytochemistry*, 2001, **56**, 863-867 (*isol, 3-epimers*)

Myrtopsine M-804

[60623-06-5]



Relative configuration

$C_{15}H_{17}NO_4$ 275.304
Alkaloid from *Myrtopsis sellingii, Haplophyllum foliosum* and *Zanthoxylum integrifoliolum* (Rutaceae). Beige cryst. ($CHCl_3$). Mp 208°. $[\alpha]_D$ -5 (c, 1 in MeOH).

O^3-Ac:
Cryst. (Et_2O). Mp 178°.

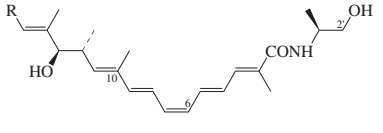
Di-Ac:
Noncryst.

7,8-Dimethoxy: ***7,8-Dimethoxymyrtopsine***
[142741-28-4]
$C_{17}H_{21}NO_6$ 335.356
Alkaloid from stem bark of *Dutaillyea baudounii* (Rutaceae).

3-Deoxy: see Platydesmine, P-515

Hifnawy, M.S. *et al., Phytochemistry*, 1977, **16**, 1035-1039 (*isol*)
Akhmedzhanova, V.I. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1981, **17**, 447-449 (*isol, struct*)
Ishii, H. *et al., Yakugaku Zasshi*, 1982, **102**, 182; *CA*, **97**, 69240y (*isol*)
Muyard, F. *et al., Phytochemistry*, 1992, **31**, 1087-1089 (*7,8-Dimethoxymyrtopsine*)
Chen, I.-S. *et al., J. Nat. Prod.*, 2001, **64**, 1143-1147 (*7,8-Dimethoxymyrtopsine, cmr*)
Snider, B.B. *et al., Heterocycles*, 2006, **70**, 279-294 (*synth*)

Myxalamides M-805



Myxalamide A; R = $CH(CH_3)CH_2CH_3$
B; R = $CH(CH_3)_2$
C; R = CH_2CH_3
D; R = CH_3

Myxalamide A [86934-09-0]
$C_{26}H_{41}NO_3$ 415.615
Prod. by *Myxococcus xanthus* Mx x12 (GBF) and *Stigmatella aurantiaca*. Sol. MeOH, CH_2Cl_2, $CHCl_3$; fairly sol. CCl_4, Et_2O, C_6H_6; poorly sol. hexane, H_2O. $[\alpha]_D^{20}$ -71.2 (c, 0.2 in MeOH). λ_{max} 207 (ϵ 24000); 263 (ϵ 11000); 340 (sh); 357 (ϵ 46800); 370 (sh) (EtOH).
► RG0181000

Myxalamide B [86934-10-3]
$C_{25}H_{39}NO_3$ 401.588
Prod. by *Myxococcus xanthus* Mx x12 (GBF) and *Stigmatella aurantiaca*. Electron transport inhibitor. Sol. MeOH, CH_2Cl_2; fairly sol. CCl_4, C_6H_6, Et_2O; poorly sol. hexane, H_2O. $[\alpha]_D^{20}$ -61.6 (c, 0.25 in MeOH). λ_{max} 207 (ϵ 24000); 263 (ϵ 11000); 340 (sh); 357 (ϵ 46800); 370 (sh) (EtOH).
► LD_{50} (mus, scu) 211 mg/kg, LD_{50} (mus, orl) 613 mg/kg. MI3000000

Myxalamide C [86934-11-4]
$C_{24}H_{37}NO_3$ 387.561
Prod. by *Myxococcus xanthus* Mx x12 (GBF) and *Stigmatella aurantiaca*. Electron transport inhibitor. Sol. MeOH, $CHCl_3$, CH_2Cl_2; fairly sol. CCl_4, C_6H_6; poorly sol. hexane, H_2O. $[\alpha]_D^{20}$ -35.7 (c, 0.4 in $CHCl_3$). λ_{max} 207 (ϵ 24000); 263 (ϵ 11000); 340 (sh); 357 (ϵ 46800); 370 (sh) (EtOH).
► LD_{50} (mus, scu) 211 mg/kg, LD_{50} (mus, orl) 613 mg/kg. MI3010000

Myxalamide D [86934-12-5]
$C_{23}H_{35}NO_3$ 373.534
Prod. by *Myxococcus xanthus* Mx x12 (GBF) and *Stigmatella aurantiaca*. Electron transport inhibitor. Sol. MeOH, $CHCl_3$, CH_2Cl_2; fairly sol. CCl_4, C_6H_6; poorly sol. H_2O, hexane. $[\alpha]_D^{20}$ -14.6 (c, 0.25 in $CHCl_3$). λ_{max} 207 (ϵ 24000); 263 (ϵ 11000); 340 (sh); 357 (ϵ 46800); 370 (sh) (EtOH).
► ML8000000

2′-Me ether: ***2′-O-Methylmyxalamide D***
$C_{24}H_{37}NO_3$ 387.561
Isol. from *Cystobacter fuscus*. Pale yellow oil. $[\alpha]_D^{21}$ -27 (c, 0.04 in MeOH). λ_{max} 260 (ϵ 6000); 340 (sh) ; 355 (ϵ 30000) (MeOH).

*6*E*-Isomer, 2′-Me ether:* ***(6E)-2′-O-Methylmyxalamide D***
$C_{24}H_{37}NO_3$ 387.561
Isol. from *Cystobacter fuscus*. Pale yellow oil. $[\alpha]_D^{21}$ -31 (c, 0.02 in MeOH). λ_{max} 257 (ϵ 3000); 340 (sh) ; 356 (ϵ 30000) (MeOH).

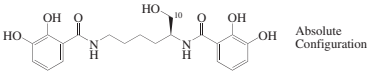
*(6*E*,10*Z*)-Isomer, 2′-Me ether:* ***(6E,10Z)-2′-O-Methylmyxalamide D***
$C_{24}H_{37}NO_3$ 387.561
Isol. from *Cystobacter fuscus*. Pale yellow oil. $[\alpha]_D^{21}$ -12 (c, 0.03 in MeOH). λ_{max} 260 (ϵ 6000); 340 (sh) ; 355 (ϵ 30000) (MeOH).

Jansen, R. *et al., Annalen*, 1983, 1081-1095; 1984, 78-84 (*isol, pmr, cmr, abs config*)

Mapp, A.K. *et al., J.O.C.*, 1999, **64**, 23-27 (*synth*)
Kundim, B.A. *et al., Tetrahedron*, 2004, **60**, 10217-10221 (*2′-O-Methylmyxalamide D isomers*)
Feng, Z. *et al., Biosci., Biotechnol., Biochem.*, 2006, **70**, 699-705 (*2′-O-Methlmyxalamide D, biosynth*)
Coleman, R.S. *et al., J.A.C.S.*, 2007, **129**, 3826-3827 (*2′-O-Methylmyxalamide D, synth*)

Myxochelin A M-806

N,N′-[1-(Hydroxymethyl)-1,5-pentanediyl]bis[2,3-dihydroxybenzamide], 9CI. N^2,N^6-Bis(2,3-dihydroxybenzoyl)lysinol
[120243-02-9]



$C_{20}H_{24}N_2O_7$ 404.419
Prod. by *Angiococcus disciformis* strain An d30 and *Nonomuraea pusilla* TP-A0861. Siderophore. Amorph. solid. Sol. MeOH, $CHCl_3$, EtOAc; fairly sol. Et_2O; poorly sol. hexane. $[\alpha]_D^{21}$ -16.5 (c, 0.85 in MeOH). Related to N^2,N^6-Bis(2,3-dihydroxybenzoyl)lysine. λ_{max} 210 (ϵ 57500); 245 (sh) (ϵ 20000); 310 (ϵ 7940) (MeOH) (Derep).

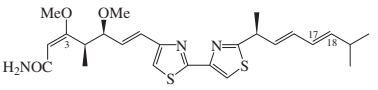
10-Deoxy, 10-amino: ***Myxochelin B***
[201535-34-4]
[201612-28-4]
$C_{20}H_{25}N_3O_6$ 403.434
Prod. by *Myxococcus xanthus*. Siderophore. $[\alpha]_D^{20}$ -10 (c, 1 in 6*M* HCl).

10-Deoxy, 10-(2,3-dihydroxybenzoylamino): ***Myxochelin C***
[179751-76-9]
[201535-64-0]
$C_{27}H_{29}N_3O_9$ 539.541
Prod. by *Myxococcus xanthus*. Siderophore. Plates. Mp 115°. $[\alpha]_D^{20}$ +9.1 (c, 0.35 in MeOH).

Kunze, B. *et al., J. Antibiot.*, 1989, **42**, 14-17 (*Myxochelin A, isol, activity*)
Ambrosi, H.-D. *et al., Eur. J. Org. Chem.*, 1998, 541-551 (*Myxochelins B,C*)
Miyanaga, S. *et al., J. Antibiot.*, 2006, **59**, 698-703 (*Myxochelin A, isol, synth, pmr, cmr, abs config*)
Li, Y. *et al., J.A.C.S.*, 2008, **130**, 7554-7555 (*biosynth*)

Myxothiazole A M-807

7-[2′-(1,6-Dimethyl-2,4-heptadienyl)[2,4′-bithiazol]-4-yl]-3,5-dimethoxy-4-methyl-2,6-heptadienamide, 9CI
[76706-55-3]



$C_{25}H_{33}N_3O_3S_2$ 487.686
Isol. from *Myxococcus fulvus*. Active against filamentous fungi. Needles (Et_2O/heptane). Mp 79°. $[\alpha]_D^{25}$ +43.4 (c, 6.0 in MeOH). λ_{max} 234 (ϵ 47000); 313 (ϵ 10500) (MeOH) (Derep).

▶ QH7580000

17,18-Epoxide: ***17,18-Epoxymyxothiazole***
$C_{25}H_{33}N_3O_4S_2$ 503.685
Prod. by *Myxococcus flavus*. Amorph. solid. $[\alpha]_D^{25}$ +28 (c, 0.1 in MeOH). Possesses *trans*-epoxide config. λ_{max} 208 (ϵ 9700); 224 (ϵ 8910); 310 (ϵ 1600) (MeOH).

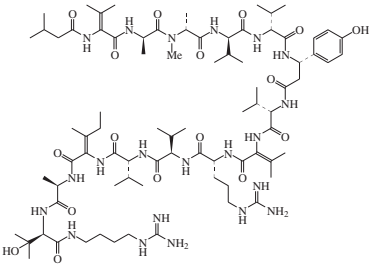
O^3*-De-Me, 2,3-dihydro, 3-ketone:* ***Demethylmyxothiazole A***. *Desmethylmyxothiazole A*
$C_{24}H_{31}N_3O_3S_2$ 473.659
Prod. by *Myxococcus fulvus*. Amorph. solid. λ_{max} 245 (ϵ 31600); 312 (ϵ 10450) (MeOH).

Parent acid, Me ester: ***Myxothiazole Z***. *Antibiotic KR 025. KR 025*
[222850-18-2]
$C_{26}H_{34}N_2O_4S_2$ 502.698
Isol. from *Myxococcus fulvus*. Cytotoxic. Oil. $[\alpha]_D^{25}$ +152 (c, 0.67 in MeOH). λ_{max} 232 (log ϵ 4.63); 312 (log ϵ 3.99) (MeOH).

17Z-Isomer: ***17Z-Myxothiazole A***
$C_{25}H_{33}N_3O_3S_2$ 487.686
Prod. by *Myxococcus fulvus*. Amorph. solid. $[\alpha]_D^{25}$ +77.4 (c, 0.2 in MeOH). Struct. incorrectly drawn in ref. λ_{max} 245 (ϵ 33880); 312 (ϵ 11480) (MeOH).

Gerth, K. *et al., J. Antibiot.*, 1980, **33**, 1474-1479; 1480-1490 (*isol, struct*)
Thierbach, G. *et al., Antimicrob. Agents Chemother.*, 1981, **19**, 504-507 (*props*)
Trowitzsch, W. *et al., Tet. Lett.*, 1981, **22**, 3829-3832 (*abs config*)
Trowitzsch-Kienast, W. *et al., Annalen*, 1986, 93-98 (*biosynth*)
Conradt, P. *et al., J. Antibiot.*, 1989, **42**, 1158-1162 (*props*)
Martin, B.J. *et al., Tet. Lett.*, 1993, **34**, 5151-5154 (*synth*)
Ahn, J.-W. *et al., J. Nat. Prod.*, 1999, **62**, 495-496 (*KR 025*)
Backhaus, D. *et al., Tet. Lett.*, 2000, **41**, 2087-2090 (*synth*)
Steinmetz, H. *et al., Tetrahedron*, 2000, **56**, 1681-1684 (*Myxothiazole Z*)
Clough, J.M. *et al., Org. Biomol. Chem.*, 2006, **4**, 2906-2911 (*synth*)
Ahn, J.-W. *et al., Chem. Pharm. Bull.*, 2007, **55**, 477-479 (*17Z-Myxothiazole, 17,18-Epoxymyxothiazole*)
Iwaki, Y. *et al., Tet. Lett.*, 2008, **49**, 7024-7026 (*synth*)

Myxovalargin M-808



Polypeptide antibiotic complex. Struct. of Myxovalargin A shown. Other components are lower homologues of A but their structs. are not fully known. Prod. by *Myxococcus fulvus*. Protein biosynthesis inhibitor. Antibacterial agent.

Myxovalargin A [82658-75-1]
$C_{81}H_{137}N_{21}O_{17}$ 1677.104
Powder. Sol. MeOH, butanol, DMSO; fairly sol. H_2O. λ_{max} 226 (MeOH). λ_{max} 226 (E1%/1cm 1.47) (MeOH) (Berdy).
▶ LD_{50} (mus, scu) 10 mg/kg.

Myxovalargin B [85568-63-4]
Powder. Sol. MeOH, DMSO, butanol; fairly sol. H_2O. λ_{max} 226 (MeOH). λ_{max} 222 ; 275 (MeOH) (Berdy).

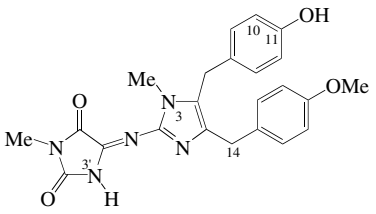
Myxovalargin C [85568-64-5]
Sol. MeOH, butanol. λ_{max} 226 (MeOH). λ_{max} 222 ; 275 (MeOH) (Berdy).

Myxovalargin D [85568-65-6]
Sol. MeOH, butanol. λ_{max} 226 (MeOH). λ_{max} 222 ; 275 (MeOH) (Berdy).

Irschik, H. *et al., J. Antibiot.*, 1983, **36**, 6-12; 1985, **38**, 1237-1245 (*isol, activity*)
Steinmetz, H. *et al., Chem. Pept. Proteins*, 1989, **4**, 13-18 (*pmr, cmr, ms, struct*)

Naamidine A N-1

[110189-06-5]



$C_{23}H_{23}N_5O_4$ 433.466

Extensive tautomerism possible in all Naamidines. Alkaloid from the Red Sea sponge *Leucetta chagosensis* and from *Notodoris citrina*. Antagonist of the epidermal growth factor receptor. Yellow foaming oil. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. λ_{max} 240 (ϵ 1160); 281 (ϵ 4330); 366 (ϵ 10500); 392 (ϵ 13500); 416 (ϵ 10700) ($CHCl_3$) (Derep). λ_{max} 225 (ϵ 21400); 276 (ϵ 4800); 384 (ϵ 10060) (MeOH) (Berdy).

Zn complex: ***Bis(naamidinato A)zinc(II)***
[171114-02-6]
$C_{46}H_{44}N_{10}O_8Zn$ 930.306
From *Leucetta* sp. Yellow amorph. solid. MF erroneously given as $C_{46}H_{44}N_{10}O_{10}Zn$ in CAS.

$N^{3'}$*-Me:* ***Naamidine C***
[121819-69-0]
$C_{24}H_{25}N_5O_4$ 447.493
Alkaloid from *Leucetta chagosensis*. Exists as $\Delta^{4'(N)}$-isomer.

O^{11}*-Me:* ***Naamidine G***
[171784-01-3]
$C_{24}H_{25}N_5O_4$ 447.493
From *Leucetta* sp. Yellow solid (EtOAc). Mp 94°.

O^{11}*-Me, Zn complex:* ***Bis(naamidinato G)zinc(II)***
[171114-03-7]
$C_{48}H_{48}N_{10}O_8Zn$ 958.359
From *Leucetta* sp. Yellow amorph. solid. MF erroneously given as $C_{48}H_{48}N_{10}O_{10}Zn$ in CAS.

O^{11}*-Me, Zn complex with naamidine A:* ***(Naamidinato A)(naamidinato G)zinc(II)***
[171114-04-8]
$C_{47}H_{46}N_{10}O_8Zn$ 944.333
From *Leucetta* sp. Yellow amorph. solid. First naturally occurring mixed-ligand metal complex. MF erroneously given as $C_{47}H_{46}N_{10}O_{10}Zn$ in CAS.

O^{11}*-Me,* N^3*-De-Me:* ***Naamidine D***
[121819-71-4]
$C_{23}H_{23}N_5O_4$ 433.466
Trace alkaloid from *Leucetta chagosensis*. λ_{max} 240 (ϵ 8800); 268 (ϵ 305); 386 (ϵ 6500) ($CHCl_3$/MeOH) (Derep). λ_{max} 240 (ϵ 8800); 268 (ϵ 3050); 386 (ϵ 6500) (MeOH-$CHCl_3$) (Berdy).

10-Hydroxy, O^{11}*-Me:* ***Naamidine B***
[121819-68-9]
$C_{24}H_{25}N_5O_5$ 463.492
Alkaloid from *Leucetta chagosensis*.

14-Hydroxy, O^{11}*-Me:* ***14-Hydroxynaamidine G***
[171114-06-0]
$C_{24}H_{25}N_5O_5$ 463.492
From *Leucetta* sp. $[\alpha]_D^{25}$ -8 (c, 0.2 in MeOH).

14-Hydroxy: ***14-Hydroxynaamidine A***
[171114-05-9]
$C_{23}H_{23}N_5O_5$ 449.465
Alkaloid from a calcareous sponge, *Leucetta* sp., of the Coral Sea. $[\alpha]_D^{25}$ +6 (c, 0.3 in MeOH).

14-Methoxy: ***14-Methoxynaamidine A***
[171114-07-1]
$C_{24}H_{25}N_5O_5$ 463.492
From *Leucetta* sp. Isol. as a 12:88 mixt. with Naamidine A.

14-Methoxy, O^{11}*-Me:* ***14-Methoxynaamidine G***
[171114-08-2]
$C_{25}H_{27}N_5O_5$ 477.519
From *Leucetta* sp. $[\alpha]_D^{25}$ +4 (c, 0.3 in MeOH).

10,12-Dimethoxy: ***Naamidine H***
[952512-59-3]
$C_{25}H_{27}N_5O_6$ 493.518
Isol. from *Leucetta chagosensis*. Amorph. yellow solid. λ_{max} 225 (sh) (log ϵ 4.27); 278 (log ϵ 3.77); 382 (log ϵ 3.97) (MeOH).

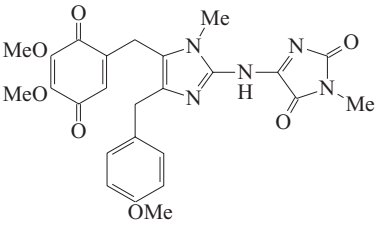
*10,12-Dimethoxy, 2′-(*N*-methylimide):* ***Naamidine I***
[952512-60-6]
$C_{26}H_{30}N_6O_5$ 506.56
Isol. from *Leucetta chagosensis*. Amorph. yellow solid. λ_{max} 225 (sh) (log ϵ 4.29); 275 (log ϵ 3.85); 384 (log ϵ 3.91) (MeOH).

14-Oxo, O^{11}*-Me:* ***14-Oxonaamidine G***
[171114-09-3]
$C_{24}H_{23}N_5O_5$ 461.476
From *Leucetta* sp.

Carmely, S. *et al., Tetrahedron*, 1989, **45**, 2193-2200 (*isol, uv, ir, pmr, cmr, ms, struct*)
Mancini, I. *et al., Helv. Chim. Acta*, 1995, **78**, 1178 (*derivs*)
Copp, B.R. *et al., J. Med. Chem.*, 1998, **41**, 3909-3911 (*isol, use*)
Ohta, S. *et al., Heterocycles*, 2000, **53**, 1939-1955 (*synth*)
Aberle, N.S. *et al., Org. Lett.*, 2006, **8**, 419-421 (*synth*)
Tsukamoto, S. *et al., J. Nat. Prod.*, 2007, **70**, 1658-1660 (*Naamidines H,I*)

Naamidine F N-2

[152273-85-3]

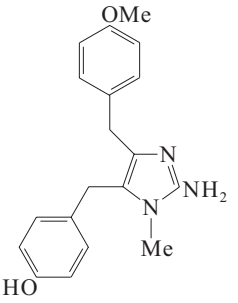


$C_{25}H_{25}N_5O_7$ 507.502
Alkaloid from the sponge *Leucetta* sp. Weakly cytotoxic. Yellow needles. Mp 172-174°.

Carroll, A.R. *et al., Aust. J. Chem.*, 1993, **46**, 1229 (*isol, uv, ir, pmr, cmr, ms, struct*)

Naamine A N-3

*4-[[2-Amino-4-[(4-methoxyphenyl)-methyl]-1-methyl-1*H*-imidazol-5-yl]-methyl]phenol, 9CI. 2-Amino-5-(*p*-hydroxybenzyl)-4-(*p*-methoxybenzyl)-1-methylimidazole*
[110189-03-2]

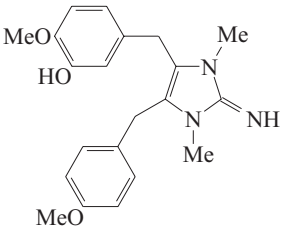


$C_{19}H_{21}N_3O_2$ 323.394
Alkaloid from the Red Sea sponge *Leucetta chagosensis* and from *Notodoris citrina*. Also obt. by acid treatment of Naamidine A, N-1. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 185-187.5° (as picrate). λ_{max} 226 (ϵ 17000); 260 (ϵ 11600); 282 (ϵ 6000); 290 (ϵ 5500); 302 (ϵ 4700) (dioxan) (Derep).

Carmely, S. *et al., Tetrahedron*, 1989, **45**, 2193 (*isol, uv, ir, pmr, cmr, ms, struct*)
Ohta, S. *et al., Heterocycles*, 2000, **53**, 1939-1955 (*synth*)

Naamine B N-4

[121849-79-4]

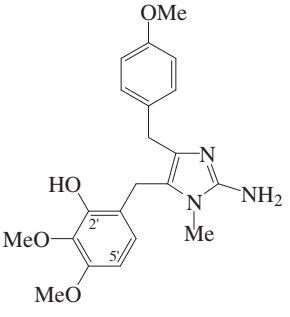


$C_{21}H_{25}N_3O_3$ 367.447
Alkaloid from the Red Sea sponge *Leucetta chagosensis* with *Notodoris citrina*.

Carmely, S. *et al., Tetrahedron*, 1989, **45**, 2193 (*isol, ir, pmr, cmr, ms, struct*)
Kawasaki, I. *et al., J.C.S. Perkin 1*, 2001, 3095-3099 (*synth*)

Naamine C N-5

[189825-81-8]



$C_{21}H_{25}N_3O_4$ 383.446
Alkaloid from the Micronesian sponge *Leucetta chagosensis*. Yellow powder. λ_{max} 228 ; 276 ; 368 (MeOH).

*2′-Deoxy, 5′-hydroxy, 3′-*O*-de-Me:* ***Naamine E***
[454472-13-0]
$C_{20}H_{23}N_3O_4$ 369.419
Alkaloid from *Leucetta* cf. *chagosensis*. Amorph. yellow solid. λ_{max} 233 (ϵ 21600); 277 (ϵ 6090) (MeOH).

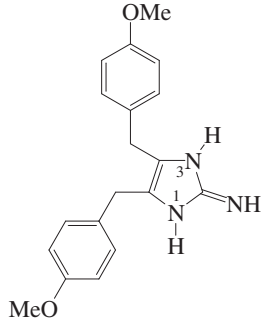
*5′-Methoxy, 2′-deoxy, 4′-*O*-de-Me:* ***Naamine G***
[700813-14-5]
$C_{21}H_{25}N_3O_4$ 383.446
Alkaloid from *Leucetta chagosensis*. Antifungal agent. Yellow-brown oil. λ_{max} 230 ; 276 (MeOH).

*2′-Deoxy, 4′-*O*-de-Me:* ***Naamine F***
$C_{20}H_{23}N_3O_3$ 353.42
Alkaloid from *Leucetta chagosensis*. Dark brown solid. CAS No. not found 8-14CI. λ_{max} 226 ; 279 (MeOH).

Fu, X. *et al., J. Nat. Prod.*, 1997, **60**, 497-498 (*Naamine C*)
Gross, H. *et al., J. Nat. Prod.*, 2002, **65**, 1190-1193 (*Naamine E*)
Nakamura, S. *et al., J.C.S. Perkin 1*, 2002, 1061-1066 (*synth, pmr*)
Hassan, W. *et al., J. Nat. Prod.*, 2004, **67**, 817-822 (*Naamines F,G*)

Naamine D N-6

*4,5-Bis[(4-methoxyphenyl)methyl]-1*H*-imidazol-2-amine, 9CI*
[316814-71-8]



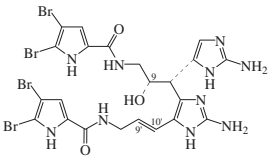
$C_{19}H_{21}N_3O_2$ 323.394
Alkaloid from the sponge *Leucetta* cf. *chagosensis*. Antifungal and nitric oxide synthase inhibitory agent. Amorph. powder. λ_{max} 230 (ϵ 15400); 262 (ϵ 1290); 299 (ϵ 3300) ($CHCl_3$).

N^1,*N*^{3}*-Di-Me:* **N^1,N^3-Dimethylnaamine D**
[496954-15-5]
$C_{21}H_{25}N_3O_2$ 351.447
Alkaloid from a *Leucetta* sp. Amorph. amber solid. λ_{max} 205 (log ϵ 4.25); 281 (log ϵ 3.75); 312 (log ϵ 3.58) (MeOH).

Dunbar, D.C. *et al., Tetrahedron*, 2000, **56**, 8795-8798 (*isol, pmr, cmr, ir, uv*)
Crews, P. *et al., J. Nat. Prod.*, 2003, **66**, 177-182 (*N,N-Dimethylnaamine D*)

Nagelamide B N-7

[690627-55-5]



Relative Configuration

$C_{22}H_{22}Br_4N_{10}O_3$ 794.097
Alkaloid from the sponge *Agelas* sp. Antibacterial agent. Amorph. solid. λ_{max} 202 (ϵ 19200); 282 (ϵ 16000) (MeOH).

9-Deoxy: ***Nagelamide A***
[690627-54-4]
$C_{22}H_{22}Br_4N_{10}O_2$ 778.098
Alkaloid from an *Agelas* sp. Antibacterial agent. Amorph. solid. λ_{max} 202 (ϵ 29800); 279 (ϵ 27800) (MeOH).

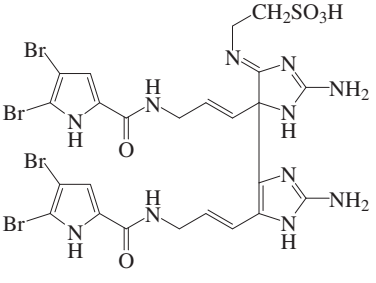
*9-Deoxy, 9,10-didehydro(*E*-):* ***Nagelamide C***
[690627-56-6]
$C_{22}H_{20}Br_4N_{10}O_2$ 776.082
Alkaloid from an *Agelas* sp. Antibacterial agent. Amorph. solid. λ_{max} 202 (ϵ 21200); 280 (ϵ 19700) (MeOH).

9-Deoxy, 9′,10′-dihydro: ***Nagelamide D***
[690627-57-7]
$C_{22}H_{24}Br_4N_{10}O_2$ 780.113
Alkaloid from an *Agelas* sp. Antibacterial agent. Amorph. solid. λ_{max} 202 (ϵ 16500); 280 (ϵ 14900) (MeOH).

Endo, T. *et al., J. Nat. Prod.*, 2004, **67**, 1262-1267 (*isol, pmr, cmr*)

Nagelamide H N-8

[690627-61-3]

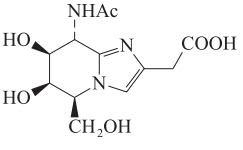


$C_{24}H_{25}Br_4N_{11}O_5S$ 899.214
Related to Mauritiamine, M-124. Alkaloid from the sponge *Agelas* sp. Amorph. solid. λ_{max} 221 (ϵ 34900); 279 (ϵ 28300) (MeOH).

Endo, T. *et al., J. Nat. Prod.*, 2004, **67**, 1262-1267 (*isol, pmr, cmr*)

Nagstatin N-9

*8-(Acetylamino)-5,6,7,8-tetrahydro-6,7-dihydroxy-5-(hydroxymethyl)imidazo[1,2-*a*]pyridine-2-acetic acid*
[126844-81-3]



Relative configuration

$C_{12}H_{17}N_3O_6$ 299.283
Prod. by *Streptomyces amakusaensis*. Inhibitor of *N*-acetyl-β-D-glucosaminidase. Immunopotentiator. Powder. Sol. H_2O, DMSO, MeOH; fairly sol. butanol; poorly sol. $CHCl_3$, hexane. Mp 190-195°. $[\alpha]_D^{25}$ +46.2 (c, 0.5 in H_2O). λ_{max} 225 (ϵ 3310) (MeOH) (Derep). λ_{max} 225 (ϵ 3311) (H_2O) (Berdy).

▶ NJ5198400

Aoyagi, T. *et al., J. Antibiot.*, 1992, **45**, 1404; 1557 (*isol, pmr, cmr, struct, props*)
Tatsuta, K. *et al., Tet. Lett.*, 1995, **36**, 6721 (*synth*)

Nairomycin N-10

Niromycin
Glutarimide-type antibiotic complex. Struct. unknown. Prod. by *Streptomyces albus*. Antiviral agent.

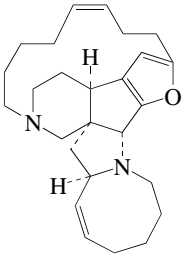
Nairomycin A
Cryst. Sol. MeOH, $CHCl_3$, H_2O; fairly sol. Et_2O, C_6H_6; poorly sol. hexane. Mp 98-105°.
▶ LD_{50} (mus, ivn) 40 - 60 mg/kg.

Nairomycin B
Cryst. Sol. MeOH, H_2O, $CHCl_3$; fairly sol. Et_2O, C_6H_6; poorly sol. hexane. Mp 47-67°.
▶ LD_{50} (mus, ivn) 48 mg/kg.

Japan. Pat., 1960, 60 16 997; *CA*, **55**, 20325i (*isol*)

Nakadomarin A N-11

[199483-01-7]



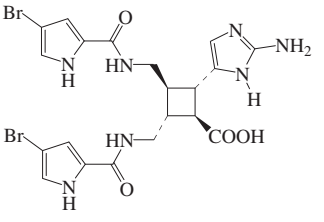
Relative Configuration

$C_{26}H_{36}N_2O$ 392.583
Alkaloid from the sponge *Amphimedon* sp. Cyclin-dependent kinase inhibitor. Amorph. solid. $[\alpha]_D^{25}$ -16 (c, 0.1 in MeOH). λ_{max} 206 (ϵ 11000); 228 (ϵ 10000) (MeOH).

Kobayashi, J. *et al., J.O.C.*, 1997, **62**, 9236-9239 (*isol, uv, ir, pmr, cmr*)
Nagata, T. *et al., J.A.C.S.*, 2003, **125**, 7484-7485; 13618 (*synth*)
Ono, K. *et al., Angew. Chem., Int. Ed.*, 2004, **43**, 2020-2023 (*synth*)
Young, I.S. *et al., J.A.C.S.*, 2007, **129**, 1465-1469 (*synth*)

Nakamuric acid N-12

[247145-39-7]



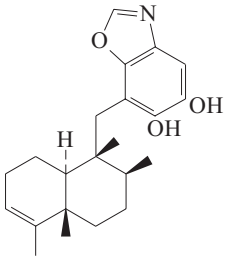
$C_{20}H_{21}Br_2N_7O_4$ 583.238
Isol. from the sponge *Agelas nakamurai*. Antibacterial agent. Amorph. brown solid. $[\alpha]_D$ -9.9 (c, 0.26 in MeOH). Incorr. MF in ref. λ_{max} 213 (log ϵ 4.02); 269 (log ϵ 4.08) (MeOH).

Me ester: [247113-88-8]
$C_{21}H_{23}Br_2N_7O_4$ 597.265
Isol. from *Agelas nakamurai*. Amorph. brown solid. $[\alpha]_D$ -4.1 (c, 0.3 in MeOH). Possible artifact. λ_{max} 213 (log ϵ 4.04); 269 (log ϵ 4.09) (MeOH).

Eder, C. *et al., J. Nat. Prod.*, 1999, **62**, 1295-1297 (*isol, pmr, cmr, uv*)
O'Malley, D.P. *et al., J.A.C.S.*, 2007, **129**, 4762-4775; 7702 (*synth*)

Nakijinol N-13

[166990-20-1]

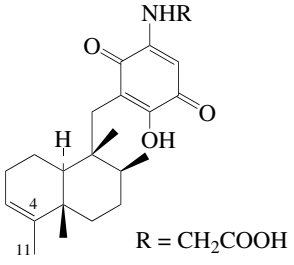


$C_{22}H_{29}NO_3$ 355.476
Constit. of an Okinawan sponge of the family Spongiidae. Amorph. powder. $[\alpha]_D^{20}$ -172 (c, 0.03 in MeOH). λ_{max} 300 (ϵ 3600); 332 (ϵ 2000) (MeOH) (Berdy).

Kobayashi, J. *et al., Tet. Lett.*, 1995, **36**, 5589 (*isol, pmr, cmr, uv, ir*)

Nakijiquinone A N-14

[157207-60-8]



$C_{23}H_{31}NO_5$ 401.502
Constit. of an Okinawan marine sponge. Protein -tyrosine kinase inhibitor. Red solid. Mp 156-158°. $[\alpha]_D^{20}$ -71.7 (c, 1 in MeOH). Related to Avarol, A-1560. λ_{max} 317 (ϵ 11800); 488 (ϵ 860) (MeOH) (Berdy).

Shigemori, H. *et al., Tetrahedron*, 1994, **50**, 8347 (*isol, pmr, cmr*)
Stahl, P. *et al., J.A.C.S.*, 2001, **123**, 11586-11593 (*synth*)

Nakijiquinone B N-15

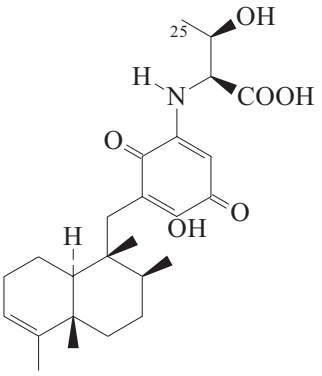
[157232-59-2]
As Nakijiquinone A, N-14 with
R = CH(COOH)CH(CH$_3$)$_2$(*S*-)

$C_{26}H_{37}NO_5$ 443.582
Constit. of an Okinawan marine sponge. Protein-tyrosine kinase inhibitor. Red solid. $[\alpha]_D^{20}$ -282.3 (c, 0.13 in $CHCl_3$). λ_{max} 320 (ϵ 12000); 492 (ϵ 910) (MeOH) (Berdy).

Shigemori, H. *et al., Tetrahedron*, 1994, **50**, 8347 (*isol, pmr, cmr*)
Stahl, P. *et al., J.A.C.S.*, 2001, **123**, 11586-11593 (*synth*)

Nakijiquinone D N-16

[169438-44-2]



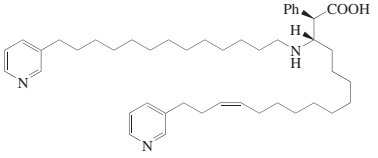
$C_{25}H_{35}NO_6$ 445.555
Constit. of a marine sponge. Protein-tyrosine kinase inhibitor. Red amorph. solid. $[\alpha]_D^{20}$ -172 (c, 0.2 in EtOH). λ_{max} 317 (ϵ 12600); 490 (ϵ 1000) (MeOH) (Berdy).

25-Demethyl: ***Nakijiquinone C***
[169438-43-1]
$C_{24}H_{33}NO_6$ 431.528
Constit. of a marine sponge. Protein-tyrosine kinase inhibitor. Red amorph. solid. $[\alpha]_D^{20}$ -73 (c, 0.03 in EtOH). λ_{max} 321 (ϵ 12100); 498 (ϵ 920) (MeOH) (Berdy).

Kobayashi, J. *et al., Tetrahedron*, 1995, **51**, 10867 (*isol, pmr, cmr*)
Stahl, P. *et al., J.A.C.S.*, 2001, **123**, 11586-11593 (*synth*)

Nakinadine A N-17

[945979-01-1]

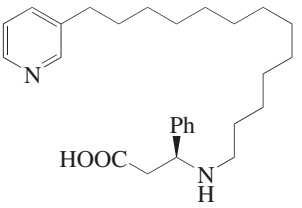


Relative Configuration

$C_{45}H_{67}N_3O_2$ 682.043
Alkaloid from an *Amphimedon* sp. (SS-1059). Oil. $[\alpha]_D^{23}$ -3 (c, 1 in $CHCl_3$). λ_{max} 257 (ϵ 3700); 263 (ϵ 4100); 269 (ϵ 3600) (MeOH).

Kubota, T. *et al., Tet. Lett.*, 2007, **48**, 4983-4985 (*isol, pmr, cmr*)

Nakinadine B N-18

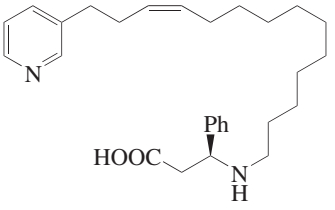


$C_{27}H_{40}N_2O_2$ 424.625

(S)-form [1021487-41-1]
Alkaloid from an *Amphimedon* sp. (SS-1059). Cytotoxic. Oil. λ_{max} 257 (ϵ 3100); 263 (ϵ 3300); 270 (ϵ 2900) (MeOH).

Nishi, T. *et al., Tetrahedron*, 2008, **64**, 3127-3132 (*isol, pmr, cmr*)

Nakinadine C N-19



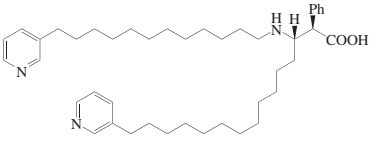
$C_{28}H_{40}N_2O_2$ 436.636

(S)-form [1021486-53-2]
Alkaloid from an *Amphimedon* sp. (SS-1059). Cytotoxic. Oil. λ_{max} 258 (ϵ 3200); 263 (ϵ 3300); 269 (ϵ 3000) (MeOH).

Nishi, T. *et al., Tetrahedron*, 2008, **64**, 3127-3132 (*isol, pmr, cmr, ms*)

Nakinadine D N-20

[1021486-55-4]



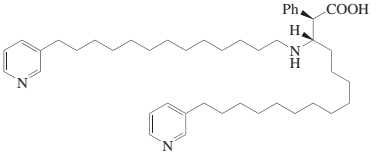
Relative Configuration

$C_{43}H_{65}N_3O_2$ 656.005
Alkaloid from an *Amphimedon* sp. (SS-1059). Oil. λ_{max} 258 (ϵ 4700); 263 (ϵ 5000); 270 (ϵ 4400) (MeOH).

Nishi, T. *et al., Tetrahedron*, 2008, **64**, 3127-3132 (*isol, pmr, cmr, ms*)

Nakinadine E N-21

[1021486-57-6]



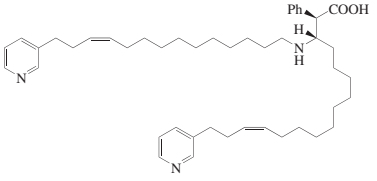
$C_{44}H_{67}N_3O_2$ 670.032

Alkaloid from an *Amphimedon* sp. (SS-1059). Oil. λ_{max} 259 (ϵ 4900); 263 (ϵ 5100); 269 (ϵ 4500) (MeOH).

Nishi, T. *et al., Tetrahedron*, 2008, **64**, 3127-3132 (*isol, pmr, cmr, ms*)

Nakinadine F N-22

[1021486-59-8]



Relative Configuration

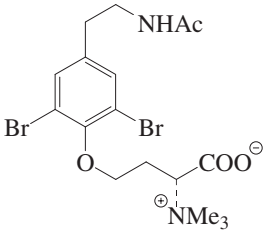
$C_{46}H_{67}N_3O_2$ 694.054

Alkaloid from an *Amphimedon* sp. (SS-1059). Oil. λ_{max} 258 (ϵ 4900); 264 (ϵ 5200); 270 (ϵ 4600) (MeOH).

Nishi, T. *et al., Tetrahedron*, 2008, **64**, 3127-3132 (*isol, pmr, cmr, ms*)

Nakirodine A N-23

[473304-17-5]



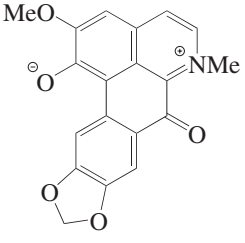
$C_{17}H_{24}Br_2N_2O_4$ 480.196

Isol. from a Verongid sponge. Oil. $[\alpha]_D^{25}$ +35 (c, 0.1 in MeOH). λ_{max} 283 (ϵ 880) (MeOH).

Tsuda, M. *et al., J. Nat. Prod.*, 2002, **65**, 1670-1671 (*isol, pmr, cmr, ms*)

Nandazurine N-24

[49679-20-1]



$C_{19}H_{13}NO_5$ 335.315

Alkaloid from the bark of *Nandina domestica* and from *Corydalis bulbosa* (Nandinaceae, Papaveraceae). Dark-green amorph. powder. Mp 350°.

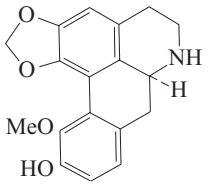
Kunitomo, J. *et al., Experientia*, 1973, **29**, 518 (*uv, ir, pmr, struct*)

Kupchan, S.M. *et al., Chem. Comm.*, 1973, 915 (*synth*)

Kiryakov, H.G. *et al., Planta Med.*, 1981, **43**, 51 (*isol, ir, pmr, synth*)

Nandigerine N-25

*6,7,7a,8-Tetrahydro-12-methoxy-5*H*-benzo[*g*]-1,3-benzodioxolo[6,5,4-*de*]quinolin-11-ol, 9CI. 10-Hydroxy-11-methoxy-1,2-methylenedioxynoraporphine. Hernangerine*



$C_{18}H_{17}NO_4$ 311.337

(*S*)-*form* [31520-97-5]

Alkaloid from *Hernandia ovigera, Hernandia cordigera, Hernandia jamaicensis, Hernandia catalpifolia, Hernandia papuana* and *Laurus nobilis* (Hernandiaceae). Shows anti-platelet aggregation activity. Needles (MeOH). Mp 176-177°. $[\alpha]_D$ +248 (EtOH). Forms MeOH solvate, Mp 99-100°.

Hydrochloride: Mp 245-247° dec.

Hydrobromide:
Cryst. (MeOH/Me_2CO). Mp 227-230° dec.

N-*Formyl:* **N-*Formylnandigerine***.
N-*Formylhernangerine*
[176679-16-6]
$C_{19}H_{17}NO_5$ 339.347
Alkaloid from trunk bark of *Hernandia nymphaeifolia*. Prisms + ½H_2O (MeOH). Mp 233-235°. $[\alpha]_D^{24}$ +461 (c, 0.10 in $CHCl_3$). Exists in soln. as a mixt. of amide bond rotamers.

N-*Me:* **N-*Methylnandigerine***. *10-Hydroxy-11-methoxy-1,2-methylenedioxyaporphine.* N-*Methylhernangerine. Isobulbocapnine*
[5544-68-3]
$C_{19}H_{19}NO_4$ 325.363
Alkaloid from *Lindera oldhamii, Hernandia ovigera, Hernandia jamaicensis, Hernandia catalpifolia* and *Hernandia peltata* (Lauraceae, Hernandiaceae). Shows antiplatelet aggregation activity. Mp 169-170°. $[\alpha]_D^{32}$ +300 (c, 1 in $CHCl_3$).

N-*Me, hydrobromide:* Mp 243-245° dec. $[\alpha]_D$ +170 (H_2O).

N-*Me,* N-*oxide (β-):* **N-*Methylnandigerine β*-N-*oxide***
[122331-85-5]
$C_{19}H_{19}NO_5$ 341.363
Alkaloid from the leaves of *Polyalthia longifolia* (Annonaceae). Light greyish needles (MeOH). Mp 218-220°. $[\alpha]_D$ +252 (c, 0.1 in MeOH).

N-*Hydroxy:* **N-*Hydroxynandigerine***. N-*Hydroxyhernangerine*
$C_{18}H_{17}NO_5$ 327.336
Alkaloid from trunk back of *Hernandia nymphaeifolia* (Hernandiaceae). Prisms ($CHCl_3$/MeOH). Mp 99-101°. $[\alpha]_D^{24}$ +182 (c, 0.08 in $CHCl_3$). λ_{max} 223 (log ϵ 4.39); 269 (log ϵ 4.11); 309 (log ϵ 3.77) (EtOH).

(±)-*form*

N-*Me:*Synthetic. Tablets (EtOH/Et_2O). Mp 165-166°.

Hey, D.H. *et al., J.C.S.*, 1954, 2246 (*N-Me, synth*)

Cava, M.P. *et al., Tet. Lett.*, 1966, 1577; 4279 (*Nandigerine, N-Methylnandigerine, uv, pmr, struct*)

Cava, M.P. *et al., Tetrahedron*, 1971, **27**, 2639 (*isol*)

Lu, S.-T. *et al., Yakugaku Zasshi*, 1972, **92**, 910; *CA*, **77**, 101949m (*N-Methylnandigerine*)

Ringdahl, B. *et al., J. Nat. Prod.*, 1981, **44**, 80 (*cd*)

Wu, Y.-C. *et al., Heterocycles*, 1989, **29**, 463 (*N-Methylnandigerine β-N-oxide*)

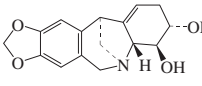
Chen, I.-S. *et al., Planta Med.*, 1995, **61**, 537-539 (*Nandigerine, N-Methylnandigerine, activity*)

Chen, I.-S. *et al., Heterocycles*, 1996, **43**, 799 (*N-formyl*)

Chen, I.-S. *et al., Planta Med.*, 1997, **63**, 154-157 (*N-hydroxy*)

Nangustine N-26

[474794-31-5]



Absolute Configuration

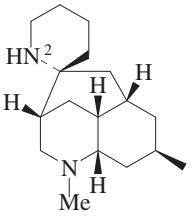
$C_{16}H_{17}NO_4$ 287.315

Alkaloid from fresh bulbs of *Narcissus angustifolius* ssp. *transcarpathicus.* Mp 261°. $[\alpha]_D^{20}$ -69.6 (c, 0.35 in MeOH).

Labraña, J. *et al., Phytochemistry*, 2002, **60**, 847-852 (*isol, ir, cd, pmr, cmr, ms, abs config*)

Kokas, O.J. *et al., Tetrahedron*, 2008, **64**, 6444-6451 (*synth*)

Nankakurine A N-27



$C_{17}H_{30}N_2$ 262.437

Stereochem. revised in 2006. Alkaloid from *Lycopodium hamiltonii.* Amorph. solid. $[\alpha]_D^{21}$ +16 (c, 0.4 in MeOH).

N^2-*Me:* ***Nankakurine B***
$C_{18}H_{32}N_2$ 276.464
Alkaloid from *Lycopodium hamiltonii.* Amorph. solid. $[\alpha]_D^{19}$ +12 (c, 1 in MeOH).

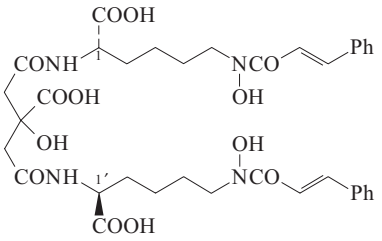
Hirasawa, Y. *et al., Org. Lett.*, 2004, **6**, 3389-3391 (*isol, pmr, cmr*)

Hirasawa, Y. *et al., Heterocycles*, 2006, **68**, 2357-2362 (*isol, pmr, cmr, abs config*)

Nilsson, B.L. *et al., J.A.C.S.*, 2008, **130**, 11297-11299 (*synth, abs config*)

Nannochelin C N-28

[133705-26-7]



$C_{36}H_{44}N_4O_{13}$ 740.763

Isol. from the myxobacterium *Nannocystis exedens*. Siderophore. Sol. H_2O, MeOH, EtOAc, Me_2CO; fairly sol. $CHCl_3$, Et_2O; poorly sol. H_2O. $[\alpha]_D$ -0.5 (c, 0.5 in MeOH aq.). λ_{max} 280 (ϵ 25100) (MeOH) (Derep). λ_{max} 280 (ϵ 25000) (MeOH) (Berdy).

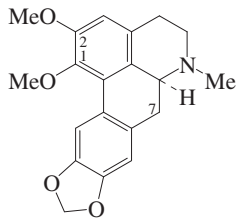
1-Me ester: ***Nannochelin B***
[133705-27-8]
$C_{37}H_{46}N_4O_{13}$ 754.789
Isol. from *Nannocystis exedens*. Siderophore. $[\alpha]_D$ -5.3 (c, 1 in MeOH aq.). λ_{max} 280 (ϵ 25100) (MeOH) (Derep).

1,1′-Di-Me ester: ***Nannochelin A***
[133705-25-6]
$C_{38}H_{48}N_4O_{13}$ 768.816
Isol. from *Nannocystis exedens*. Siderophore. $[\alpha]_D$ -13 (c, 0.9 in MeOH). Possibly an artifact. λ_{max} 280 (ϵ 25100) (MeOH) (Derep).

Kunze, B. *et al., J. Antibiot.*, 1992, **45**, 147 (*isol, uv, ir, props*)
Mulqueen, G.C. *et al., Tetrahedron*, 1993, **49**, 9137 (*synth*)
Sakamoto, T. *et al., J.O.C.*, 1996, **61**, 8496 (*synth*)

Nantenine N-29

*5,6,6*a*,7-Tetrahydro-1,2-dimethoxy-6-methyl-4*H*-benzo[*de*][1,3]benzodioxolo[5,6-*g*]quinoline, 9CI. 1,2-Dimethoxy-9,10-methylenedioxyaporphine. Domestine. Epidicentrine.* O-*Methyldomesticine*
[42971-15-3]



(*S*)-*form*

$C_{20}H_{21}NO_4$ 339.39

► CE0450000

(R)-form
Mp 138-139°. $[\alpha]_D^{18}$ -101 ($CHCl_3$).

(S)-form
Alkaloid from *Nandina domestica* and *Cassytha pubescens*, also from *Ocotea, Corydalis* and *Papaver* spp. (Nandinaceae, Lauraceae, Papaveraceae). Mp 139-141°. $[\alpha]_D$ +93 (c, 0.17 in $CHCl_3$). λ_{max} 217 (log ϵ 4.52); 234 (sh) (log ϵ 4.3); 273 (sh) (log ϵ 3.92); 282 (log ϵ 3.96); 309 (log ϵ 4.05); 318 (sh) (log ϵ 4.01) (95% EtOH).

N-*Me:* **N-*Methylnantenine***
[56799-50-9]
$C_{21}H_{24}NO_4^{\oplus}$ 354.425
Quaternary alkaloid from *Thalictrum polygamum* and *Thalictrum sachalinense* (Ranunculaceae). Mp 213-214° (as chloride). $[\alpha]_D$ +39 (EtOH) (chloride). λ_{max} 225 (log ϵ 4.24); 278 (sh) (log ϵ 3.65); 285 (log ϵ 3.78); 310 (log ϵ 3.94); 320 (sh) (log ϵ 3.84) (EtOH).

N-*De-Me: 1,2-Dimethoxy-9,10-methylenedioxynoraporphine.* ***Nornantenine***
[15401-66-8]
$C_{19}H_{19}NO_4$ 325.363
Alkaloid from *Nandina domestica*, *Cassytha racemosa*, *Laurelia sempervirens*, *Laurelia philippiana*, *Xylopia danguyella*, *Hernandia nymphaefolia*, *Hernandia cordigera* and *Hernandia peltata* (Nandinaceae, Lauraceae, Annonaceae, Hernandiaceae). Shows antimicrobial activity. Prisms (Me_2CO/petrol). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 163-164°. $[\alpha]_D$ +85 (c, 0.75 in $CHCl_3$). λ_{max} 218 (log ϵ 4.61); 282 (log ϵ 4.06); 308 (log ϵ 4.15) (no solvent reported).

N-*De-Me,* N-*formyl:* **N-*Formylnornantenine***
[123715-09-3]
$C_{20}H_{19}NO_5$ 353.374
Alkaloid from *Cyclea atjehensis* (Menispermaceae). Cryst. (MeOH). Mp 232°. $[\alpha]_D$ +292 (c, 0.13 in MeOH). Exists in $CDCl_3$ soln. as a mixt. of rotamers about the amide bond.

N-*De-Me,* N-*Ac:* **N-*Acetylnornantenine***
[15401-67-9]
$C_{21}H_{21}NO_5$ 367.401
Alkaloid from the heartwood of *Liriodendron tulipifera* (Magnoliaceae). Needles (EtOH). Mp 294° (283-284°). $[\alpha]_D$ +349 (c, 0.44 in $CHCl_3$). λ_{max} 215 (log ϵ 4.61); 281 (log ϵ 4.04); 307 (log ϵ 4.12) (MeOH).

O^1-*De-Me: 1-Hydroxy-2-methoxy-9,10-methylenedioxyaporphine.* ***Domesticine***
[476-71-1]
$C_{19}H_{19}NO_4$ 325.363
Alkaloid from *Nandina domestica* and *Cassytha pubescens*, also present in *Corydalis* and *Glaucium* spp. (Nandinaceae, Lauraceae, Papaveraceae). Mp 115-117°. $[\alpha]_D$ +44.4 (c, 0.6 in $CHCl_3$). (*R*)-enantiomer also known (synthetic). λ_{max} 221 (log ϵ 4.5); 283 (log ϵ 4.01); 310 (log ϵ 4.17) (EtOH).

O^1-*De-Me,* N-*Me:* **N-*Methyldomesticine***
[96400-62-3]
$C_{20}H_{22}NO_4^{\oplus}$ 340.398
Quaternary alkaloid from the aerial parts of *Glaucium oxylobum* (Papaveraceae). Thin prisms (MeOH) (as iodide). Mp 255-256° (iodide). CAS no. refers to iodide. λ_{max} 224 (log ϵ 4.64); 284 (log ϵ 3.95); 311 (log ϵ 4.06) (no solvent reported) (as iodide).

O^1-*De-Me,* N-*de-Me: 1-Hydroxy-2-methoxy-9,10-methylenedioxynoraporphine.* ***Nordomesticine***
[14787-35-0]
$C_{18}H_{17}NO_4$ 311.337
Alkaloid from *Corydalis pubescens* (Papaveraceae). Amorph. $[\alpha]_D$ +31.4 (c, 0.83 in $CHCl_3$).

O^1-*De-Me,* N-*de-Me,* N,O-*di-Ac:*
Cryst. (EtOH). Mp 252-254° (235-236°). $[\alpha]_D$ +326.4 (c, 0.4 in $CHCl_3$).

O^2-*De-Me: 2-Hydroxy-1-methoxy-9,10-methylenedioxyaporphine.* ***Isodomesticine***
[70560-83-7]
$C_{19}H_{19}NO_4$ 325.363
Alkaloid from *Nandina domestica* and from the leaves of *Laurus nobilis* (bay laurel) (Nandinaceae, Lauraceae). Amorph. Mp 85°. λ_{max} 216 (log ϵ 4.55); 283 (log ϵ 3.99); 310 (log ϵ 4.07) (EtOH).

O^2-*De-Me,* N-*de-Me: 2-Hydroxy-1-methoxy-9,10-methylenedioxynoraporphine.* ***Norisodomesticine***
[80151-84-4]
$C_{18}H_{17}NO_4$ 311.337
Alkaloid from the leaves of *Xylopia danguyella* and *Laurus nobilis* (bay laurel) (Annonaceae). Amorph.

6a,*7-Didehydro:* ***Dehydronantenine****. Alkaloid CC 1*
[55898-15-2]
$C_{20}H_{19}NO_4$ 337.374
Alkaloid from *Ocotea macrophylla*, *Nandina domestica*, *Corydalis cava*, *Corydalis marshalliana*, *Corydalis bulbosa* and *Corydalis slivenensis* (Lauraceae, Nandinaceae, Papaveraceae). Yellow needles (C_6H_6/cyclohexane). Mp 197°. λ_{max} 258 (log ϵ 4.51); 295 (log ϵ 3.95); 333 (log ϵ 3.82) (EtOH).

6a,*7-Didehydro,* N-*de-Me,* N-*formyl:* ***6a,7-Dehydro*-N-*formylnornantenine***
[163404-70-4]
$C_{20}H_{17}NO_5$ 351.358
Alkaloid from rhizomes of *Aristolochia brevipes* (Aristolochiaceae). Cryst. Mp 223-227°. Exhibits E/Z-stereoisomerism of the *N*-formyl group.

3-Chloro, N-*de-Me,* N-*formyl:* ***3-Chloro*-N-*formylnornantenine***
[276689-73-7]
$C_{20}H_{18}ClNO_5$ 387.819
Alkaloid from *Lindera glauca*. Needles ($CHCl_3$). $[\alpha]_D^{24}$ +165 (c, 0.1 in MeOH). Mp >300°. λ_{max} 272 (sh) ; 281 ; 302 ; 312 (sh) (no solvent reported).

*4*R*-Hydroxy,* N-*de-Me: 4-Hydroxynornantenine*
[69128-21-8]
$C_{19}H_{19}NO_5$ 341.363
Alkaloid from the bark of *Laurelia philippiana*. Also present in the wood of *Laurelia sempervirens* (Peruvian nutmeg) (Monimiaceae). Oil which darkens rapidly on contact with air; cryst. (EtOH) (di-Ac). Mp 179-181° (as di-Ac).

7-Hydroxy: ***Hydroxynantenine***
[53694-46-5]
$C_{20}H_{21}NO_5$ 355.39
Alkaloid from *Nandina domestica* (Nandinaceae).

(±)-*form*
Mp 142°.

Hydrochloride: Mp 265-270°.

N-*De-Me:* [65732-35-6]
Synthetic. Cryst. (Me_2CO). Mp 160°.

N-*De-Me,* N-*Ac:* [40042-35-1]
Synthetic. Needles (EtOH). Mp 255-256° (244-245°).

O^1-*De-Me:* [24316-05-0]
Synthetic. Needles (MeOH). Mp 185-186° (181-183°).

O^1-*De-Me,* N-*de-Me:*Synthetic. Cryst. (CH_2Cl_2/hexane). Mp 205-207°.

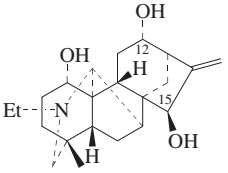
O^2-*De-Me:*Synthetic. Cream-coloured cryst. (Et_2O/hexane). Mp 180-183° dec.

O^2-*De-Me, hydrochloride:*
Tan-coloured cryst. + ½ MeOH (MeOH/Et_2O). Mp 245-250° dec.

Tomita, M. *et al., Yakugaku Zasshi*, 1961, **81**, 1090-1093 (*Domesticine, Nantenine, isol*)
Craig, J.C. *et al., Tetrahedron*, 1965, **21**, 395-399 (*uv, abs config*)
Johns, S.R. *et al., Aust. J. Chem.*, 1966, **19**, 2331-2338; 1967, **20**, 1457-1462 (*Nordomesticine, Nantenine, Nornantenine, isol, pmr, uv, struct*)
Govindachari, T.R. *et al., Indian J. Chem., Sect. B*, 1969, **7**, 841-843; 1970, **8**, 16-18 (*Domesticine, Isodomesticine, synth*)
Kametani, T. *et al., J.C.S.(C)*, 1971, 2446-2448; 2712-2714 (*Domesticine, synth*)
Ghosal, C.R. *et al., Chem. Ind. (London)*, 1972, 889-890 (*N-Acetylnornantenine, synth*)
Hufford, C.D. *et al., J. Pharm. Sci.*, 1974, **63**, 1338-1339; 1975, **64**, 789-798 (*N-Acetylnornantenine*)
Kunitomo, J. *et al., Yakugaku Zasshi*, 1974, **94**, 1149-1153 (*Hydroxynantenine*)
Hoshino, O. *et al., Chem. Pharm. Bull.*, 1975, **23**, 2048-2053; 1978, **26**, 3920 (*Domesticine, Isodomesticine, synth*)
Shamma, M. *et al., Heterocycles*, 1975, **3**, 297-300 (*N-Methylnantenine*)
Franca, N.C. *et al., Phytochemistry*, 1975, **14**, 1671-1672 (*Dehydronantenine, isol, struct*)
Manikumar, G. *et al., Indian J. Chem., Sect. B*, 1977, **15**, 740-741 (*Nornantenine, synth*)
Umarova, D. *et al., Khim. Prir. Soedin.*, 1978, **14**, 594-597; *Chem. Nat. Compd. (Engl. Transl.)*, 1978, **14**, 511-513 (*N-Methylnantenine*)
Urzúa, A. *et al., Tet. Lett.*, 1978, 2649-2652 (*4-Hydroxynornantenine*)
Zabel, V. *et al., Acta Cryst. B*, 1979, **35**, 3126-3129 (*4-Hydroxynornantenine, cryst struct*)
Guinaudeau, H. *et al., J. Nat. Prod.*, 1979, **42**, 325; 329 (*Domesticine, rev, cmr*)
Hoquemiller, R. *et al., J. Nat. Prod.*, 1981, **44**, 551-556 (*Norisodomesticine*)
Pech, B. *et al., J. Nat. Prod.*, 1982, **45**, 560-563 (*Isodomesticine*)
Villar, A. *et al., Farm. Tijdschr. Belg.*, 1984, **61**, 300 (*activity*)
Slavíková, L. *et al., Coll. Czech. Chem. Comm.*, 1985, **50**, 854-860 (*N-Methyldomesticine*)
Tantisewie, B. *et al., J. Nat. Prod.*, 1989, **52**, 652-654 (*N-Formylnornantenine*)
Ribár, B. *et al., Acta Cryst. C*, 1991, **47**, 2500-2501 (*cryst struct*)
Ozaki, Y. *et al., Chem. Pharm. Bull.*, 1993, **41**, 481-483 (*Nantenine, synth*)
Achenbach, H. *et al., Planta Med.*, 1995, **61**, 189-190 (*6a,7-Dehydro-N-formylnornantenine*)
Hara, H. *et al., Tetrahedron: Asymmetry*, 1995, **6**, 1683-1692 (*Nordomesticine, synth*)
Zhang, G.-L. *et al., Planta Med.*, 1998, **64**, 165-171 (*N-Methylnantenine, cmr*)
Chang, Y.-C. *et al., J. Chin. Chem. Soc. (Taipei)*, 2000, **47**, 373-380 (*3-Chloro-N-formylnornantenine*)

Napelline N-30

21-Ethyl-4-methyl-16-methylene-7,20-cycloveatchane-1,12,15-triol, 9CI. Luciculine
[5008-52-6]



Absolute Configuration

$C_{22}H_{33}NO_3$ 359.508
Alkaloid from *Aconitum napellus*, *Aconitum karakolicum* and *Aconitum yesoense* (Ranunculaceae). Cryst. + $1H_2O$. Mp 117-118.5°. $[\alpha]_D^{21}$ -13 (MeOH).

Hydrochloride: Mp 220-222° dec. $[\alpha]_D^{22}$ -93.9 (c, 5 in H_2O). Probably contains solvent of crystallisation.

Hydrobromide:
Cryst. (MeOH/Et_2O). Mp 229° dec. (darkens at 200°). $[\alpha]_D^{23}$ -42.7 (c, 6 in H_2O).

N-*Oxide:* ***Napelline* N-*oxide***. *Flavamine. Luciculine* N-*oxide*
[74047-88-4]
$C_{22}H_{33}NO_4$ 375.507
Alkaloid from the above-ground parts of *Aconitum karakolicum* (Ranunculaceae) and *Aconitum flavum*. Mp 224-226°. $[\alpha]_D^{22}$ -30.5 (c, 0.61 in MeOH).

1-Ac: ***1-Acetylnapelline***. *1-Acetylluciculine*
[68676-52-8]
$C_{24}H_{35}NO_4$ 401.545
Alkaloid from *Aconitum yesoense*. Amorph. $[\alpha]_D^{21}$ +3.6 (c, 0.28 in MeOH).

12-Ac: ***12-Acetylnapelline***. *12-Acetyllusiculine*
[62511-84-6]
$C_{24}H_{35}NO_4$ 401.545
Alkaloid from *Aconitum karakolicum* (Ranunculaceae). Mp 205-206°.

12-Ac, N-*oxide:* ***12-Acetylnapelline* N-*oxide***
[83019-08-3]
$C_{24}H_{35}NO_5$ 417.544
Alkaloid from the above-ground parts of *Aconitum karakolicum* (Ranunculaceae). Mp 235°.

15-Ac: ***Lucidusculine***
[5008-49-1]
$C_{24}H_{35}NO_4$ 401.545
Alkaloid from the roots of *Aconitum luciduscul*um (Ranunculaceae). Plates (MeOH). Mp 170-171°. $[\alpha]_D$ -95.5 ($CHCl_3$).

15-Ac, hydrochloride: Mp 245-265° dec.

15-Ac, N-*oxide:* ***Flavadine***
[119188-45-3]
$C_{24}H_{35}NO_5$ 417.544
Alkaloid from the roots of *Aconitum flavum* (Ranunculaceae). Mp 198-200°.

12,15-Di-Ac: ***12-Acetyllusiculiscusculine***
$C_{26}H_{37}NO_5$ 443.582
Alkaloid from roots of *Aconitum flavum*, and rhizomes of *Aconitum yesoense* var. *macroyesoense* (Ranunculaceae). Mp 132-134° Mp 144-147°. $[\alpha]_D$ -19.2 (c, 0.5 in EtOH).

N-*De-Et,* N-*Me:* ***Finetianine***
[112543-24-5]
$C_{21}H_{31}NO_3$ 345.481
Alkaloid from roots of *Aconitum finetianum* (Ranunculaceae).

12-Ketone: ***Songorine***. *Napellonine. Bullatine G. Shimoburo base I. Zongorine*
[509-24-0]
$C_{22}H_{31}NO_3$ 357.492
Alkaloid from the roots of *Aconitum soongoricum* and *Aconitum monticola*, the above-ground parts of *Aconitum karakolicum*, and from the Chinese drug "Fuzi" (*Aconitum carmichaeli*) (Ranunculaceae). Cryst. (MeOH). Mp 212° (201-203°). $[\alpha]_D$ -140.
▶ LD_{50} (rat, ipr) 408 mg/kg. WG0780000

12-Ketone, hydrochloride:
Cryst. (MeOH). Mp 257-258°. $[\alpha]_D$ -114 (H_2O).

12-Ketone, N-*oxide:* ***Songorine* N-*oxide***
[66921-56-0]
$C_{22}H_{31}NO_4$ 373.491
Alkaloid from above-ground parts of *Aconitum monticola* (Ranunculaceae). Mp 253-255°.

12-Ketone, N-*de-Et:* ***Norsongorine***. N-*Deethylsongorine*
[29722-71-2]
$C_{20}H_{27}NO_3$ 329.438
Alkaloid from the roots of *Aconitum monticola* (Ranunculaceae). Mp 284-286°. $[\alpha]_D$ -86 (MeOH).

12-Ketone, 1 or 15-Ac: ***Acetylsongorine***
[82621-08-7]
$C_{24}H_{33}NO_4$ 399.529
Alkaloid from the roots of *Aconitum soongoricum*.

12-Ketone, O^1-*Me:* ***Liangshanone***
[137031-52-8]
$C_{23}H_{33}NO_3$ 371.519
Alkaloid from *Aconitum liangshanium* (Ranunculaceae). Amorph. $[\alpha]_D^{22.5}$ -101 (c, 1.1 in $CHCl_3$).

1,12-Diketone: ***1-Dehydrosongorine***. *1-Deoxy-1-oxosongorine*
[112515-31-8]
$C_{22}H_{29}NO_3$ 355.476
Alkaloid from roots of *Aconitum finetianum* (Ranunculaceae).

16β,17-Dihydro, 12-ketone: ***Dihydrosongorine***
[29603-32-5]
$C_{22}H_{33}NO_3$ 359.508
Alkaloid from aerial parts of *Aconitum karakolicum* (Ranunculaceae). Cryst. (EtOH). Mp 202-204°.

11β-Hydroxy: ***Turpelline***
[169626-33-9]
$C_{22}H_{33}NO_4$ 375.507

Alkaloid from above-ground parts of *Aconitum turczaninowii*. Mp 268-271°.

1-Epimer: ***1-Epinapelline***
[110064-70-5]
$C_{22}H_{33}NO_3$ 359.508
Alkaloid from roots of *Aconitum flavum* (Ranunculaceae). Mp 87-89°. $[\alpha]_D$ -11.7 (c, 1.19 in MeOH).

12-Epimer: ***12-Epinapelline***
[110064-71-6]
$C_{22}H_{33}NO_3$ 359.508
Alkaloid from the roots of *Aconitum flavum* and aerial parts of *Aconitum karakolicum* (Ranunculaceae). Also present in aerial parts of *Aconitum baicalense*. Cryst. (Me_2CO). Mp 72-73.5°. $[\alpha]_D^{21}$ -40.2 (c, 1.03 in $CHCl_3$).

12-Epimer, N-*oxide:* ***12-Epinapelline* N-*oxide***
[169336-56-5]
[169336-57-6]
$C_{22}H_{33}NO_4$ 375.507
Alkaloid from aerial parts of *Aconitum baicalense*. Cryst. (H_2O) (as perchlorate). Mp 224-225° (perchlorate).

12-Epimer, 12-Ac: ***12-Acetyl-12-epinapelline***
$C_{24}H_{35}NO_4$ 401.545
Alkaloid from *Aconitum soongoricum*. Cryst. (Me_2CO). Mp 198.5-200.5°.

12-Epimer, 15-Ac: ***12-Epilucidusculine***
[137120-52-6]
$C_{24}H_{35}NO_4$ 401.545
Alkaloid from *Aconitum liangshanium* (Ranunculaceae). Prisms. Mp 160-164°. $[\alpha]_D^{21.5}$ -100 (c, 0.91 in $CHCl_3$).

12-Epimer, N-*de-Et,* N-*Me:* ***12-Epifinetianine***. N-*Deethyl*-N-*methyl-12-epinapelline*
$C_{21}H_{31}NO_3$ 345.481
Alkaloid from the roots of *Aconitum nagorum* var. *lasiandrum*. Powder. Mp 187-188°. $[\alpha]_D^{20}$ -40 (c, 0.1 in $CHCl_3$).

12-Epimer, O^1-*Me:* ***Liangshanine***†
[137031-43-7]
$C_{23}H_{35}NO_3$ 373.534
Alkaloid from *Aconitum liangshanium* (Ranunculaceae). Amorph. $[\alpha]_D^{10.5}$ -16.4 (c, 1.5 in $CHCl_3$).

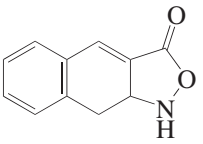
12-Epimer, 16β,17-dihydro, 15-ketone: ***Karakomine***
[142768-81-8]
$C_{22}H_{33}NO_3$ 359.508
Alkaloid from the roots of *Aconitum karakolicum* (Ranunculaceae). Yellow powder. $[\alpha]_D$ -18.7 (c, 0.27 in EtOH).

12-Epimer, 3α-hydroxy: ***3α-Hydroxy-12-epinapelline***
$C_{22}H_{33}NO_4$ 375.507
Alkaloid from the roots of *Aconitum brunneum*. Cryst. Mp 201-202°. $[\alpha]_D^{27}$ -11.6 (c, 0.5 in $CHCl_3$).

Majima, R. *et al., Ber.*, 1932, **65**, 599 (*Lucidusculine, isol*)
Freudenberg, W. *et al., J.A.C.S.*, 1937, **59**, 2572 (*isol*)
Sugasawa, T. *et al., Chem. Pharm. Bull.*, 1956, **4**, 6; 1961, **9**, 889; 897 (*Songorine, struct*)
Wiesner, K. *et al., Experientia*, 1958, **14**, 167 (*Songorine, Napelline, struct*)
Kuzovkov, A.D. *et al., J. Gen. Chem. USSR (Engl. Transl.)*, 1958, **28**, 2320; 1959, **29**, 1706 (*Songorine, struct*)
Suginome, H. *et al., Bull. Chem. Soc. Jpn.*, 1959, **32**, 352; 824 (*Lucidusculine, struct*)
Amiya, T. *et al., Bull. Chem. Soc. Jpn.*, 1959, **32**, 1133; 1960, **33**, 1175; 1961, **34**, 898 (*Lucidusculine, struct, uv, ir*)
Suzuki, A. *et al., Bull. Chem. Soc. Jpn.*, 1961, **34**, 455 (*Lucidusculine, pmr*)
Okamoto, T. *et al., Chem. Pharm. Bull.*, 1965, **13**, 1270 (*cryst struct, abs config*)
Yoshino, A. *et al., Acta Cryst.*, 1966, **21**, 57 (*Lucidusculine, cryst struct, abs config*)
Yunusov, M.S. *et al., Khim. Prir. Soedin.*, 1970, **6**, 101; *Chem. Nat. Compd. (Engl. Transl.)*, 1970, **6**, 95 (*Songorine, isol, ms, synth*)
Wiesner, K. *et al., Can. J. Chem.*, 1973, **51**, 3978; 1974, **52**, 2355 (*synth*)
Nezhevenko, V.E. *et al., Khim. Prir. Soedin.*, 1974, **10**, 409; *Chem. Nat. Compd. (Engl. Transl.)*, 1974, **10**, 416 (*Songorine, Norsongorine*)
Sultankhodzhaev, M.N. *et al., Khim. Prir. Soedin.*, 1976, **12**, 681; 1978, **14**, 479; 1982, **18**, 265; 660; *Chem. Nat. Compd. (Engl. Transl.)*, 1976, **12**, 617; 1978, **14**, 407; 1982, **18**, 249; 629 (*isol, struct, derivs*)
Ametova, E.F. *et al., Khim. Prir. Soedin.*, 1977, **13**, 867; *Chem. Nat. Compd. (Engl. Transl.)*, 1977, **13**, 735 (*Songorine N-oxide*)
Zhamerashvili, M.E. *et al., CA*, 1982, **97**, 107014n (*Acetylsongorine*)
Pelletier, S.W. *et al., Heterocycles*, 1982, **18**, 47 (*occur*)
Sultankhodzhaev, M.N. *et al., Khim. Prir. Soedin.*, 1982, **18**, 265; 660; 1987, **23**, 917; *Chem. Nat. Compd. (Engl. Transl.)*, 1982, **18**, 249; 629; 1987, **23**, 772 (*Songorine, Dihydrosongorine*)
Takayama, H. *et al., Yakugaku Zasshi*, 1982, **102**, 245-247 (*1-Acetylnapelline*)
Bando, H. *et al., Heterocycles*, 1987, **20**, 2623 (*Lucidusculine, 12-Acetyllucidusculine, isol, ir, ms, pmr, struct*)
Chen, Z. *et al., Heterocycles*, 1987, **26**, 1455 (*1-Epinapelline, 12-Epinapelline*)
Tian, R. *et al., Huaxue Xuebao*, 1987, **45**, 776; *CA*, **108**, 72040j (*Finetianine, 1-Dehydrosongorine*)
Chen, Z.-G. *et al., Planta Med.*, 1988, **54**, 318 (*Flavadine*)
Takayama, H. *et al., Chem. Pharm. Bull.*, 1991, **39**, 1644 (*Liangshanine, Liangshanone, 12-Epilucidusculine*)
Huang, B. *et al., Heterocycles*, 1991, **32**, 2429 (*Karakomine*)
Batbayar, N. *et al., Khim. Prir. Soedin.*, 1993, **29**, 740; *Chem. Nat. Compd. (Engl. Transl.)*, 1993, **29**, 658 (*Turpelline*)
Zhapova, Ts. *et al., Khim. Prir. Soedin.*, 1993, **29**, 888; *Chem. Nat. Compd. (Engl. Transl.)*, 1993, **29**, 791 (*12-Epinapelline N-oxide, isol, pmr, cmr, ir*)
Salimov, B.T. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2004, **40**, 151-155 (*12-Acetyl-12-epinapelline*)
Gao, L. *et al., Heterocycles*, 2004, **63**, 1181-1184 (*3α-Hydroxy-12-epinapelline*)
Atta-ur-Rahman, *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2005, **41**, 609-610 (*12-Epinapelline, cryst struct*)
Zhang, F. *et al., Planta Med.*, 2005, **71**, 1073-1076 (*12-Epifinetianine*)
Csupor, D. *et al., Helv. Chim. Acta*, 2006, **89**, 2981-2986 (*Songorine, synth*)

Naphthisoxazole A N-31

*9,9*a-*Dihydronaphtho[2,3-*c*]isoxazol-3(1*H*)-one*

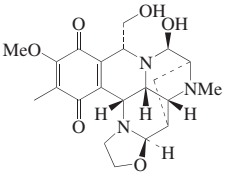


$C_{11}H_9NO_2$ 187.198

(ξ)-*form*
Alkaloid from the roots of *Glehnia littoralis*. Yellowish oil. $[\alpha]_D^{25}$ -62.6 (c, 0.57 in MeOH). λ_{max} 213 ; 278 (MeOH).
Li, G.Q. *et al., Fitoterapia*, 2008, **79**, 238-239 (*isol, pmr, cmr*)

Naphthyridinomycin A N-32

[54913-26-7]



Absolute Configuration

$C_{21}H_{27}N_3O_6$ 417.461
Benzoquinone-type antibiotic. Poss. artifact. Further attempts to reisolate this compd. gave Bioxalomycin β2 in B-140. U. Isol. from *Streptomyces lucitanus* NRRL 8034. Antitumour agent. Ruby-red orthorhombic cryst. (Et_2O). Sol. MeOH, Et_2O, H_2O; poorly sol. hexane. Mp 108-110° dec. $[\alpha]_D^{25}$ +69.4 (c, 1 in $CHCl_3$). λ_{max} 270 (ε 10400) (MeOH) (Derep).

O-*De-Me: Antibiotic SF 1739HP. SF 1739HP*
[72146-18-0]
$C_{20}H_{25}N_3O_6$ 403.434
Prod. semisynthetically from Antibiotic SF 1739, A-1254 on treatment with mineral acid. Shows marked activity against gram-negative bacteria and tumours with low toxicity. Stable form of SF 1739. Purple powder. $[\alpha]_D^{25}$ +64 (c, 0.5 in MeOH). λ_{max} 275 (E1%/1cm 165); 330 (sh) (MeOH).

Kluepfel, D. *et al., J. Antibiot.*, 1975, **25**, 497-502 (*isol, uv, ir, pmr, struct*)
Sygusch, J. *et al., Acta Cryst. B*, 1976, **32**, 1139-1142 (*cryst struct*)
Zmijewski, M.J. *et al., Antimicrob. Agents Chemother.*, 1982, **21**, 787-793 (*props*)
Itoh, I. *et al., J. Antibiot.*, 1982, **35**, 642-644 (*SF 1739HP*)
Zmijewski, M.J. *et al., J.A.C.S.*, 1982, **104**, 4969-4971 (*biosynth*)
Fukuyama, T. *et al., Adv. Heterocycl. Nat. Prod. Synth.*, 1992, **2**, 189-249 (*rev, synth, abs config*)
Zaccardi, J. *et al., J.O.C.*, 1994, **59**, 4045-4047 (*abs config, bibl*)
Scott, J.D. *et al., Chem. Rev.*, 2002, **102**, 1669-1730 (*rev*)

Naphthyridinomycin B N-33

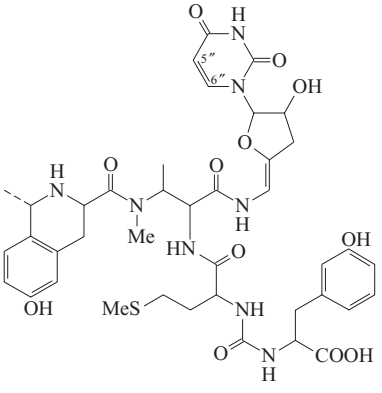
[62046-88-2]

Struct. unknown. Prod. by *Streptomyces lusitanus*. Antibacterial agent. Yellow powder. λ_{max} 282 (MeOH).

U.S. Pat., 1977, 4 003 902; *CA*, **86**, 119256d (*isol*)

Napsamycin B N-34

[144408-86-6]



$C_{40}H_{50}N_8O_{12}S$ 866.947

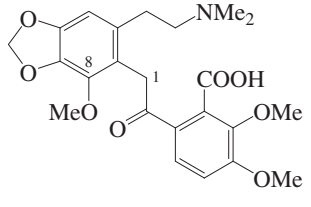
Prod. by *Streptomyces candidus* and *Streptomyces* sp. HIL Y82, 11372. Active against *Pseudomonas* sp. Sol. H_2O, DMSO, MeOH-H_2O; poorly sol. EtOAc, hexane. Mp 190° (dec.). λ_{max} 240 (ϵ 36000); 292 (ϵ 6800) (dil. NaOH) (Derep). λ_{max} 256 (ϵ 21000) (H_2O) (Derep). λ_{max} 256 (HCl) (Berdy).

5″,6″-Dihydro: ***Napsamycin D***
[144379-27-1]
$C_{40}H_{52}N_8O_{12}S$ 868.963
Prod. by *Streptomyces candidus* and *Streptomyces* sp. HIL Y82, 11372. Active against *P.* sp. Sol. H_2O, DMSO, MeOH-H_2O; poorly sol. EtOAc, hexane. Mp 190° (dec.). λ_{max} 240 (ϵ 36000); 292 (ϵ 6800) (dil. NaOH) (Derep). λ_{max} 256 (ϵ 21000) (H_2O) (Derep). λ_{max} 256 (HCl) (Berdy).

Eur. Pat., 1992, 487 756; *CA*, **117**, 232207 (*isol*)
Chattarjee, S. *et al., J. Antibiot.*, 1994, **47**, 595 (*isol, pmr, ms*)

Narceine N-35

6-[[6-[2-(Dimethylamino)ethyl]-4-methoxy-1,3-benzodioxol-5-yl]acetyl]-2,3-dimethoxybenzoic acid, 9CI
[131-28-2]



$C_{23}H_{27}NO_8$ 445.468

Alkaloid from *Papaver somniferum* (opium poppy) (Papaveraceae). Respiratory stimulant, antitussive agent. Shows no analgesic activity. Antihypertensive agent. Intestinal smooth muscle. Cryst. (MeOH/Et_2O or H_2O). Mp 145° (anhyd.) Mp 176-178° (trihydrate). pK_{a1} 3.5; pK_{a2} 9.3 (15°). Log P -1.79 (uncertain value) (calc).

▶ YX5210000

Hydrochloride: Mp 192-193°.

Picrate: Mp 195°.

N-*Me:* Mp 207° (as iodide).

N-*De-Me:* ***Nornarceine***. *Oxynarcotine*
[483-89-6]
$C_{22}H_{25}NO_8$ 431.441
Alkaloid from *Papaver somniferum* (opium poppy) (Papaveraceae). Cryst. (EtOH). Mp 229° (223-225°). Prob. artifact of demethylation of Narcotine. λ_{max} 209 (ϵ 55700); 230 (sh) (ϵ 22000); 273 (ϵ 14500) (EtOH).

1-Oxo: ***Narceinone***
[125187-48-6]
$C_{23}H_{25}NO_9$ 459.452
Alkaloid from unlanced dried capsules of *Papaver somniferum* (opium poppy) (Papaveraceae). Cryst. (MeOH). Mp 162°.

8-Demethoxy: **N-*Methylhydrasteine***
[31971-15-0]
$C_{22}H_{25}NO_7$ 415.442
Alkaloid from *Fumaria parviflora*, *Fumaria vaillantii*, *Fumaria schleicheri*, *Corydalis lutea*, *Dactylicapnos torulosa* and *Corydalis solida* (Papaveraceae). Cryst. (EtOH, H_2O or $CHCl_3$/MeOH). Mp 146-147° Mp 150° (hydrate) Mp 223°. Poss. artifact. A uv spectrum has been reported but contains a typographical error. See also Coryrutine, C-698.

8-Demethoxy, Me ester: **N-*Methylhydrasteine methyl ester***
[80243-94-3]
$C_{23}H_{27}NO_7$ 429.469
Isol. from *Dactylicapnos torulosa*. Powder. Mp 93-94°. May be an artifact. λ_{max} 208 (log ϵ 4.45); 226 (log ϵ 4.33); 273 (log ϵ 4.11); 293 (log ϵ 4.13); 377 (log ϵ 3.78) (MeOH).

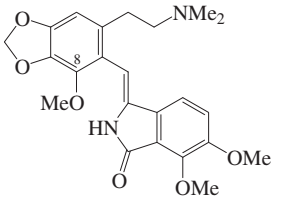
8-Demethoxy, 1-oxo: **N-*Methyloxohydrasteine***
[41515-85-9]
$C_{22}H_{23}NO_8$ 429.426
Alkaloid from *Fumaria microcarpa* and *Fumaria officinalis* (Papaveraceae). Cryst. ($CHCl_3$/MeOH, H_2O or MeOH). Mp 234-235° Mp 203° (hydrate) Mp 168° (MeOH solvate). See also Oxocoryrutine in C-698.

8-Demethoxy, 1-oxo, Et ester: ***Papracine***
[144525-63-3]
$C_{24}H_{27}NO_8$ 457.479
Alkaloid from whole plants of *Fumaria indica* (Papaveraceae).

Rabe, P. *et al., Annalen*, 1910, **377**, 223-258 (*struct, bibl*)
Addinall, C.R. *et al., J.A.C.S.*, 1933, **55**, 1202-1209; 2153-2163 (*isol, synth*)
Briggs, L.H. *et al., Anal. Chem.*, 1957, **29**, 904-911 (*ir*)
Klötzer, W. *et al., Monatsh. Chem.*, 1972, **103**, 1210-1212 (*Nornarceine, synth, uv, ir, pmr*)
Forgacs, P. *et al., C. R. Hebd. Seances Acad. Sci. Ser. D*, 1973, **276**, 105-108; 1974, **279**, 855-857 (*N-Methylhydrasteine, N-Methyloxohydrasteine*)
Blaskó, G. *et al., J.O.C.*, 1982, **47**, 880-885 (*synth, uv, pmr*)
Chaudhuri, P.K. *et al., Phytochemistry*, 1989, **28**, 2002-2003 (*Narceinone*)
Atta-ur-Rahman, *et al., Fitoterapia*, 1992, **63**, 129-135 (*Papracine*)
Rucker, G. *et al., Phytochemistry*, 1994, **36**, 519-523 (*N-Methylhydrasteine methyl ester*)
Baggio, R. *et al., Acta Cryst. C*, 1996, **52**, 703-705 (*cryst struct*)

Narceine imide N-36

*3-[[6-[2-(Dimethylamino)ethyl]-4-methoxy-1,3-benzodioxol-5-yl]methylene]-2,3-dihydro-6,7-dimethoxy-1*H*-isoindol-1-one, 9CI*
[38952-67-9]



(*Z*)-*form*

$C_{23}H_{26}N_2O_6$ 426.468

(*E*)-*form* [75794-87-5]
Cryst. (Me_2CO/cyclohexane). Mp 142-144°.

(*Z*)-*form* [55968-77-9]
Alkaloid from *Papaver somniferum* (opium poppy) (Papaveraceae). Cryst. (Me_2CO). Mp 151-152°. May be an artifact of work-up.

Hydrochloride:
Cryst. (H_2O). Mp 239-240° Mp 249-251°.

Picrate:
Cryst. (EtOH). Mp 249-251°.

N-*Oxide:* [75794-90-0]
Cryst. (Me_2CO aq.). Mp 158-159°.

(ξ)-*form*

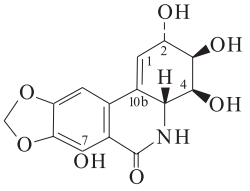
8-Demethoxy: ***Fumaridine***. *Hydrastine imide*
[30341-98-1]
$C_{22}H_{24}N_2O_5$ 396.442
Alkaloid from *Fumaria parviflora, Fumaria schleicheri* and *Fumaria vaillantii* (Papaveraceae). Mp 191°. May be an artifact of work-up.

8-Demethoxy, picrate: Mp 204-205°.

Hodková, J. *et al., J. Nat. Prod.*, 1972, **35**, 61 (*isol, ir, uv, pmr, synth*)
Shamma, M. *et al., Chem. Comm.*, 1975, 89 (*Fumaridine, uv, ir, pmr, struct*)
Trojánek, J. *et al., Coll. Czech. Chem. Comm.*, 1975, **40**, 681 (*synth, uv, ir*)
Proksa, B. *et al., Coll. Czech. Chem. Comm.*, 1980, **45**, 2125 (*uv, ir, ms, struct*)
Hussain, S.F. *et al., J. Nat. Prod.*, 1981, **44**, 169 (*Fumaridine, isol, pmr, ms*)
Rys, V. *et al., Tetrahedron*, 2003, **59**, 6615-6619 (*Fumaridine, synth*)
Lamblin, M. *et al., Org. Biomol. Chem.*, 2007, **5**, 1466-1471 (*synth*)

Narciclasine N-37

Lycoricidinol
[29477-83-6]



Absolute configuration

$C_{14}H_{13}NO_7$ 307.259
Alkaloid from *Narcissus incomparabilis*, all *Narcissus* spp. examined, and present in many other Amaryllidaceae spp. Also found in the Texas grasshopper *Brachystola magna*. Protein synthesis inhibitor. Antimitotic agent. Possesses antiviral props. Most active antineoplastic agent of the Amaryllidaceae alkaloids. Light yellowish needles with yellow-green fluor. Mp 232-234° dec. $[\alpha]_D$ +145 (c, 1.5 in EtOH). Log P -2.75 (uncertain value) (calc). Easily dehydrates in acid. λ_{max} 252 (ϵ 25600); 303 (ϵ 6400); 330 (sh) (EtOH) (Derep).

► LD_{50} (mus, scu) 5 mg/kg. JI5000000

2-O-β-D-Glucopyranoside: ***Kalbreclasine***
[98900-01-7]
$C_{20}H_{23}NO_{12}$ 469.401
Alkaloid from roots of *Haemanthus kalbreyeri* (Amaryllidaceae). Hygroscopic solvated straw-coloured solid; microcryst. (Me_2CO)(as hexa-*O*-Ac). Mp 198-201° (hexa-Ac). $[\alpha]_D^{22}$ +78.14 (c, 0.7 in MeOH).

4-O-β-D-Glucopyranoside: ***Narciclasine 4-O-glucoside***
[141544-37-8]
$C_{20}H_{23}NO_{12}$ 469.401
Alkaloid from the bulbs of *Pancratium maritimum* (Amaryllidaceae). Needles (MeOH). Mp 210-211°. λ_{max} 252 ; 285 (MeOH) (Berdy).

1,10bα-Dihydro: **trans-*Dihydronarciclasine***
[40042-05-5]
$C_{14}H_{15}NO_7$ 309.275
Alkaloid from *Zephyranthes candida* (Amaryllidaceae). Cytotoxic agent. Cryst. (MeOH). Mp 290-291°. $[\alpha]_D^{20}$ +4.7 (c, 0.27 in THF). Data given is for synthetic compd. λ_{max} 231 (ϵ 10960); 239 (ϵ 10200); 280 (ϵ 5620); 310 (ϵ 2140) (MeOH) (Derep).

1,10bβ-Dihydro: cis-*Dihydronarciclasine*
[40042-04-4]
Synthetic. Cryst. (MeOH). Mp 293-294°. $[\alpha]_D^{20}$ +56 (c, 0.18 in THF).

7-Deoxy: ***Lycoricidine****. 7-Deoxynarciclasine. Margetine*
[19622-83-4]
[58207-40-2]
$C_{14}H_{13}NO_6$ 291.26
Alkaloid from *Hymenocallis littoralis* and *Lycoris radiata*. Cytotoxic; inhibits division of Ehrlich ascites cells. Plant growth regulator. Mp 214.5-215.5° dec. $[\alpha]_D^{20}$ +180 (c, 0.45 in Py) (synthetic). λ_{max} 233 (ϵ 13800); 248 (ϵ 14100); 302 (ϵ 5620) (MeOH).

7-Deoxy, O,O,O-*tri-Ac:* Mp 200-201°.

7-Deoxy, O,O,O,N-*tetra-Ac:* Mp 229-231°.

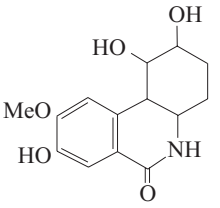
7-Deoxy, 1,10bα-dihydro: ***7-Deoxy-trans-dihydronarciclasine***
$C_{14}H_{15}NO_6$ 293.276
Alkaloid from bulbs of *Hymenocallis littoralis*, *Hymenocallis caribaea*, *Hymenocallis latifolia* and an unidentified *Hymenocallis* sp. Cytotoxic. Also shows activity against a series of RNA viruses. Needles. Mp 303-304° (320-322°, synthetic). $[\alpha]_D^{25}$ +138 (c, 0.96 in DMSO). λ_{max} 217 (ϵ 5000); 260 (ϵ 2800); 304 (ϵ 3460) (EtOH).

Okamoto, T. *et al., Chem. Pharm. Bull.*, 1968, **16**, 1860; 1976, **24**, 2977 (*Lycoricidine, isol, uv, ir, pmr, struct, synth*)
Piozzi, F. *et al., Tetrahedron*, 1968, **24**, 1119 (*uv, ir, pmr, ms, struct*)
Piozzi, F. *et al., Phytochemistry*, 1969, **8**, 1745 (*isol*)
Fuganti, C. *et al., Chem. Comm.*, 1972, 239 (*biosynth*)
Immirzi, A. *et al., Chem. Comm.*, 1972, 240 (*cryst struct*)
Mondon, A. *et al., Chem. Ber.*, 1975, **108**, 445 (*pmr, config*)
Paulsen, H. *et al., Annalen*, 1983, 535 (*Lycoricidine, synth*)
Suffness, M. *et al., Alkaloids (Academic Press)*, 1985, **25**, 205 (*antitumour props*)
Ghosal, S. *et al., Phytochemistry*, 1985, **24**, 1825 (*Kalbreclasine*)
Pettit, G.R. *et al., J. Nat. Prod.*, 1990, **53**, 176; 1993, **56**, 1682 (*Dihydronarciclasine, 7-Deoxydihydronarciclasine*)
Abou-Donia, A.H. *et al., Phytochemistry*, 1991, **30**, 3445 (*4-glucoside*)
Evidente, A. *et al., Planta Med.*, 1991, **57**, 293 (*pmr, cmr*)
Gabrielson, B. *et al., J. Nat. Prod.*, 1992, **55**, 1569 (*7-Deoxydihydronarciclasine, props*)
Hudlicky, T. *et al., J.A.C.S.*, 1992, **114**, 9694 (*Lycoricidine, synth*)
Martin, S.F. *et al., Heterocycles*, 1993, **35**, 85 (*Lycoricidine, synth*)
Chida, N. *et al., J.O.C.*, 1993, **58**, 4441 (*Lycoricidine, synth*)
Chida, N. *et al., Heterocycles*, 1996, **43**, 1385 (*7-Deoxydihydronarciclasine, synth*)
Rigby, J.H. *et al., J.A.C.S.*, 1997, **119**, 12655-12656; 2000, **122**, 6624-6628 (*synth*)
Keck, G.E. *et al., J.A.C.S.*, 1999, **121**, 5176-5190 (*synth*)
Gonzalez, D. *et al., Tet. Lett.*, 1999, **40**, 3077-3080 (*synth*)
Elango, S. *et al., J.O.C.*, 2002, **67**, 6954-6959 (*synth*)
Hudlicky, T. *et al., J.O.C.*, 2002, **67**, 8726-8743 (*synth*)
Elango, S. *et al., Tetrahedron*, 2002, **58**, 7335-7338 (*Lycoricidine, synth*)
Pettit, G.R. *et al., J. Nat. Prod.*, 2005, **68**, 207-211; 1256-1258; 2006, **69**, 7-13 (*isol, synth, Lycoricidine, cryst struct*)
Zhang, H. *et al., Org. Lett.*, 2006, **8**, 247-250 (*Lycoricidine, synth*)
Shin, I.-J. *et al., Angew. Chem., Int. Ed.*, 2007, **46**, 2303-2305 (*Dihydronarciclasine, synth*)
Wang, Y.-H. *et al., J. Nat. Prod.*, 2007, **70**, 1458-1461 (*7-Deoxydihydronarciclasine*)
Matveenko, M. *et al., Org. Lett.*, 2007, **9**, 3683-3685 (*Lycoricidine, synth*)
Kornienko, A. *et al., Chem. Rev.*, 2008, **108**, 1982-2014 (*rev, chem, biol*)
Cho, Y.-S. *et al., Tetrahedron*, 2008, **64**, 2172-2177 (*Dihydronarciclasine, synth*)
Matveenko, M. *et al., Tetrahedron*, 2008, **64**, 4817-4826 (*synth*)

Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, LJC000

Narcicrinine N-38

[92138-21-1]



$C_{14}H_{17}NO_5$ 279.292
Alkaloid from the leaves of *Crinum oliganthum* (Amaryllidaceae).

Döpke, W. *et al., Z. Chem.*, 1984, **24**, 184 (*uv, ir, ms, struct*)

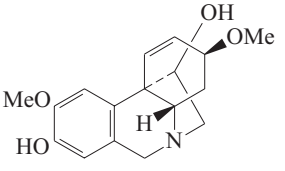
Narcicriptine N-39

Amaryllidaceae alkaloid. Struct. unknown. Alkaloid from *Narcissus* sp. (Amaryllidaceae). No other information recorded.

Fuganti, C. *et al., Chim. Ind. (Milan)*, 1967, **49**, 1196-1197

Narcidine N-40

[139083-10-6]

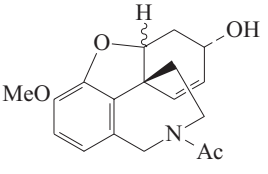


$C_{17}H_{21}NO_4$ 303.357
11-Config. is *R*- (difficult to show unambiguously). Alkaloid from the bulbs of *Narcissus pseudonarcissus* (Amaryllidaceae). $[\alpha]_D$ +16 (c, 0.11 in MeOH).

Tojo, E. *et al., J. Nat. Prod.*, 1991, **54**, 1387 (*isol, uv, ir, pmr, ms, struct*)

Narcisine N-41

[107894-72-4]



$C_{18}H_{21}NO_4$ 315.368
Alkaloid from bulbs of *Narcissus tazetta* (Amaryllidaceae). Needles (MeOH). Mp 158-160°. $[\alpha]_D^{20}$ -18 (c, 0.5 in $CHCl_3$).

Abdallah, O.M. *et al., Phytochemistry*, 1993, **34**, 1447-1448 (*isol, uv, ir, pmr, cmr, struct*)

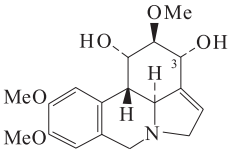
Narcisline N-42

Amaryllidaceae alkaloid. Struct. unknown. Alkaloid from *Narcissus* sp. (Amaryllidaceae). No other information recorded.

Fuganti, C. *et al., Chim. Ind. (Milan)*, 1967, **49**, 1196-1197

Narcissidine N-43

[27857-07-4]



Absolute configuration

$C_{18}H_{23}NO_5$ 333.383
Alkaloid from *Narcissus poeticus* and many other spp. in the Amaryllidaceae. Mp 218-219° dec. $[\alpha]_D$ -32 ($CHCl_3$).

Picrate: Mp 192° dec.

O^3*-Ac:* ***3*-O-*Acetylnarcissidine***
[137760-70-4]
$C_{20}H_{25}NO_6$ 375.421
Alkaloid from *Hippeastrum puniceum* and bulbs of *Leucojum autumnale* (Amaryllidaceae). Cubes ($C_6H_6/CHCl_3$) or amorph. solid. Mp 191-192.5° (cubes). $[\alpha]_D^{25}$ -154.2 (c, 0.25 in $CHCl_3$). A lower opt. rotn. of -46 was recorded for the amorphous isolate.

O^3*-Ac,* N-*oxide:* ***3*-O-*Acetylnarcissidine* N-*oxide***
[162521-23-5]
$C_{20}H_{25}NO_7$ 391.42
Alkaloid from bulbs of *Leucojum autumnale* (Amaryllidaceae). Pillars (Me_2CO/MeOH). Mp 150-152° dec. $[\alpha]_D^{22}$ -102.3 (c, 0.11 in EtOH).

Di-Ac: Mp 170-172° dec.

N-*(Chloromethyl):* ***N*-*Chloromethylnarcissidinium***
[132406-98-5]
$C_{19}H_{25}ClNO_5^{\oplus}$ 382.863
Alkaloid from *Lapiedra martinezii* (Amaryllidaceae). Prob. an artifact of the isol. process. CAS No. refers to the chloride.

O^2*-De-Me:* ***Parkacine***
[27857-08-5]
$C_{17}H_{21}NO_5$ 319.357
Alkaloid from *Amaryllis parkeri*. Fine needles (Me_2CO). Mp 222-223° dec. $[\alpha]_D^{24}$ +58 (c, 0.2 in $CHCl_3$).

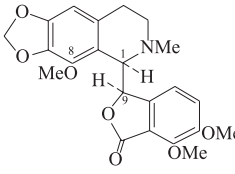
O^2*-De-Me, perchlorate:*
Prisms (H_2O). Mp 240° dec.

O^2*-De-Me, Ac:* Mp 198° dec.

Fales, H.M. *et al., J.A.C.S.*, 1958, **80**, 4395 (*uv, struct*)
Döpke, W. *et al., Naturwissenschaften*, 1963, **50**, 645 (*Parkacine*)
Kinstle, T.H. *et al., Tet. Lett.*, 1966, 4659 (*ms, struct*)
Clardy, J.C. *et al., J.A.C.S.*, 1970, **92**, 1781 (*cryst struct, ir*)
Fuganti, C. *et al., Chem. Comm.*, 1974, 350 (*biosynth*)
Suau, R. *et al., An. Quim.*, 1990, **86**, 672; *CA*, **114**, 98281n (*N-Chloromethylnarcissidinium*)
Quirion, J.C. *et al., J. Nat. Prod.*, 1991, **54**, 1112 (*3-O-Acetylnarcissidine*)
Kihara, M. *et al., Chem. Pharm. Bull.*, 1995, **43**, 318 (*3-O-Acetylnarcissidine, 3-O-Acetylnarcissidine N-oxide*)

Narcotine N-44

6,7-Dimethoxy-3-(5,6,7,8-tetrahydro-4-methoxy-6-methyl-1,3-dioxolo[4,5-g]isoquinolin-5-yl)-1(3H)-isobenzofuranone, 9CI. ***Noscapine, BAN, INN.*** *Anarkotin. Gnoscopine. Opianine. Tusscapine. NSC 5366. Many other names*



(1*R*,9*R*)*-form*

$C_{22}H_{23}NO_7$ 413.426
pK_a 5.86 (24°).

(1*R*,9*R*)*-form*
(-)-β-Narcotine
[3860-46-6]
Synthetic. Mp 181-182° (176°). $[\alpha]_D^{22}$ -100 (c, 1 in dioxan). $[\alpha]_D^{20}$ -87.5 (c, 1 in $CHCl_3$).
▶ LD_{50} (mus, orl) 840 mg/kg. NP7224500

(1*R*,9*S*)*-form*
(-)-α-Narcotine. Longatin
[128-62-1]
Alkaloid from *Corydalis cava* (*Corydalis tuberosa*), *Papaver fugax*, *Papaver paeoniflorum, Papaver persicum* and *Papaver somniferum* (opium poppy). Byprod. in extraction of morphine from opium. One of the first alkaloids to be isol. (Papaveraceae).
Reference material used in elemental microanalysis. Antitussive agent, of similar potency to and poss. with some advantages over codeine. Mod. effective smooth muscle relaxant. Stout needles (EtOH). Mp 176°. $[\alpha]_D$ -200 ($CHCl_3$). Log P 2.74 (uncertain value) (calc). Polymorphic. This is prob. the only nat. occurring stereoisomer but it readily epimerises to (-) β-Narcotine which may be isol. as an artifact. Opt. rotn. highly solv. and concn. dependent. λ_{max} 209 (ϵ 72500); 291 (ϵ 4000); 309 (ϵ 4900) (EtOH) (Berdy).
▶ LD_{50} (mus, ivn) 83 mg/kg. LD_{50} (rat, orl) 1520 mg/kg. Mutagenic props. RD2625000

Hydrochloride: [912-60-7]
▶ LD_{50} (mus, orl) 853 mg/kg. Mutagenic props. NP7225000

Picrate: Mp 174°.

N-*Oxide:*
Hygroscopic solid. V. sol. H_2O. $[\alpha]_D$ +135 ($CHCl_3$).

O^8*-De-Me:* ***Narcotoline***
[521-40-4]
$C_{21}H_{21}NO_7$ 399.399
Alkaloid from straw of *Papaver somniferum* (opium poppy) (Papaveraceae). Rods (MeOH aq.). Mp 202° (189°). $[\alpha]_D$ -189 ($CHCl_3$).

O^8*-De-Me, Ac:* Mp 208-209°.

(1*S*,9*R*)*-form*
(+)-α-Narcotine
[35933-64-3]
Obt. by resoln. of synthetic (±)-narcotine. Cryst. (EtOH). $[\alpha]_D$ +199.9.

N-*Me:* ***(+)-N-Methyl-α-narcotine***
$C_{23}H_{26}NO_7^{\oplus}$ 428.461
Alkaloid from *Papaver cylindricum* (Papaveraceae).

N-*Me, iodide:* [51606-51-0]
$C_{23}H_{26}INO_7$ 555.365
Amorph. $[\alpha]_D$ +42 (c, 0.16 in MeOH).

(1*RS*,9*RS*)*-form*
(±)-β-Narcotine. β-Gnoscopine
[35933-63-2]
Synthetic. Cryst. (EtOH). Mp 184-186° (180°).

Hydrochloride: Mp 224-226°. Epimerises readily.

(1*RS*,9*SR*)*-form*
(±)-α-Narcotine. α-Gnoscopine
[6035-40-1]
Formed in opium, prob. as an artifact. Cryst. (EtOH). V. spar. sol. EtOH. Mp 230-233° (227-230°).
▶ LD_{50} (rat, ipr) 750 mg/kg. QN5600000

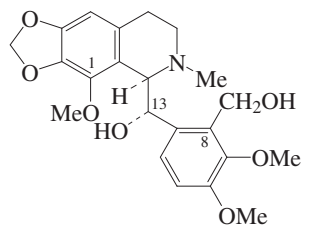
Hydrochloride:
Cryst. + $3H_2O$. Mp 220° Mp 238°.

Picrate: Mp 188° (185°).

Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **2**, 1304B (*nmr*)
Robiquet, M. *et al., Ann. Chim. (Paris)*, 1817, **5**, 275 (*isol*)
Perkin, W.H. *et al., J.C.S.*, 1911, **99**, 775 (*synth, resoln*)
Ohta, M. *et al., Tet. Lett.*, 1963, 859 (*abs config*)
Ohta, M. *et al., Chem. Pharm. Bull.*, 1964, **12**, 1080 (*isol*)
Battersby, A.R. *et al., J.C.S.*, 1965, 1087 (*abs config*)
Snatzke, G. *et al., Tetrahedron*, 1969, **25**, 5059 (*ord*)
Analyst (London), 1972, **97**, 740 (*microanal*)
Kametani, T. *et al., J.C.S. Perkin 1*, 1977, 374 (*synth*)
Al-Yahya, M.A. *et al., Anal. Profiles Drug Subst.*, 1982, **11**, 407 (*rev, synth, props, anal*)
Blaskó, G. *et al., J. Nat. Prod.*, 1982, **45**, 105 (*occur*)
Shono, T. *et al., J.O.C.*, 1983, **48**, 1621 (*synth*)
Moss, D.S. *et al., Acta Cryst. C*, 1984, **40**, 1960 (*cryst struct*)
Johansson, M. *et al., J. Chromatogr.*, 1988, **459**, 301 (*hplc*)
Sariyar, G. *et al., J. Nat. Prod.*, 1990, **53**, 1302 (*N-Methyl-α-narcotine*)
Janssen, R.H.A.M. *et al., Phytochemistry*, 1990, **29**, 3331 (*pmr, cmr, conformn*)
Porter, R. *et al., Mutagenesis*, 1992, **7**, 205
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 750
Tiveron, C. *et al., Mutagenesis*, 1993, **8**, 311
Negwer, M. *et al., Organic-Chemical Drugs and their Synonyms, 7th edn., Akademie-Verlag*, 1994, 8884 (*synonyms*)
Baradarani, M.M. *et al., Tet. Lett.*, 1999, **40**, 7403-7406 (*epimerisation*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, NBP275; NOA000; NOA500

Narcotinediol N-45

[2725-94-2]



$C_{22}H_{27}NO_7$ 417.458

Protoberberine-type numbering shown. Minor alkaloid from the capsules of *Papaver pseudo-orientale* (Papaveraceae). Amorph. $[\alpha]_D^{25}$ -14.1 (c, 0.08 in MeOH). $[\alpha]_D$ +53.1 (c, 0.16 in $CHCl_3$). λ_{max} 236 (log ϵ 4.02); 281 (log ϵ 3.52) (MeOH).

13-Ac: ***Papaveroxinoline***
[106982-93-8]
$C_{24}H_{29}NO_8$ 459.495
Minor alkaloid from capsules of *Papaver pseudo-orientale* (Papaveraceae). Cryst. (MeOH). Mp 177-180° Mp 181-184°. $[\alpha]_D$ -7.3 (c, 1.04 in MeOH) (natural). $[\alpha]_D^{18}$ +15.8 (c, 1 in MeOH) (synthetic). Synthetic material is dextrorotatory in contrast to the nat. prod. for which a negative specific rotn. has been recorded. Yet the identity of these 2 compds. seems to be beyond any doubt. λ_{max} 234 (log ϵ 4.18); 281 (log ϵ 3.56) (MeOH).

8-Aldehyde, 13-Ac: ***Papaveroxine***
[106982-92-7]
$C_{24}H_{27}NO_8$ 457.479
Main alkaloid from aerial parts of *Papaver fugax* (Papaveraceae). Cryst. (Et_2O). Mp 130-131°. $[\alpha]_D^{25}$ -35 (c, 0.13 in MeOH). λ_{max} 238 (log ϵ 3.95); 282 (log ϵ 3.54) (MeOH).

8-Carboxylic acid, 13-Ac: ***Papaveroxidine***
[116988-08-0]
$C_{24}H_{27}NO_9$ 473.479
Alkaloid from the stems, leaves and capsules of *Papaver pseudo-orientale* (Papaveraceae). Cryst. (Et_2O). Mp 164°. $[\alpha]_D$ -139.5 (c, 0.13 in MeOH). λ_{max} 237 (sh) (log ϵ 4.09); 283 (log ϵ 4.09) (MeOH).

13-Deoxy: ***Macrantaline***
[62818-76-2]
$C_{22}H_{27}NO_6$ 401.458
A major alkaloid from the aerial parts of *Papaver pseudo-orientale* (Papaveraceae). Cryst. (MeOH). Mp 140-141° Mp 144.5-145.5°. $[\alpha]_D$ +13.3 (c, 0.16 in MeOH). $[\alpha]_D^{18}$ +18.4 (c, 1 in MeOH). λ_{max} 238 (sh) (log ϵ 4.04); 385 (log ϵ 3.64) (MeOH).

13-Deoxy, 8-Ac:
Cryst. (Et_2O). Mp 105°.

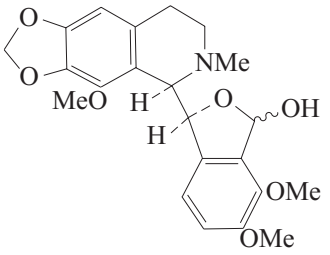
13-Deoxy, O[1]-de-Me: ***Narcotolinol***
[106982-94-9]
$C_{21}H_{25}NO_6$ 387.432
Minor alkaloid from capsules of *Papaver pseudo-orientale* (Papaveraceae). Cryst. (Et_2O). Mp 190-191°. $[\alpha]_D^{25}$ -13 (c, 0.1 in MeOH). λ_{max} 232 (log ϵ 4.15); 283 (log ϵ 3.56) (MeOH).

13-Deoxy, 8-aldehyde: ***Macrantaldehyde***
[106982-91-6]
$C_{22}H_{25}NO_6$ 399.443
Alkaloid from capsules of *Papaver pseudo-orientale* (Papaveraceae). Amorph. $[\alpha]_D^{25}$ +4.8 (c, 0.4 in MeOH). λ_{max} 241 (log ϵ 3.98); 283 (log ϵ 3.59) (MeOH).

13-Deoxy, 8-carboxylic acid: ***Macrantoridine***
[65560-20-5]
$C_{22}H_{25}NO_7$ 415.442
Minor alkaloid from the aerial parts of *Papaver pseudo-orientale* (Papaveraceae). Cryst. ($CHCl_3$/heptane). Mp 114°.

Sariyar, G. *et al., Phytochemistry*, 1977, **16**, 2009-2013; 1986, **25**, 2403-2406 (*Macrantaline, Narcotinediol, Papaveroxinoline, Papaveroxine, Narcotolinol*)
Sariyar, G. *et al., J. Nat. Prod.*, 1988, **51**, 802-803 (*Papaveroxidine*)
Rozwadowska, M.D. *et al., Annalen*, 1991, 1357-1359 (*Macrantaline, Papaveroxinoline, synth, cmr*)

Narcotinehemiacetal N-46

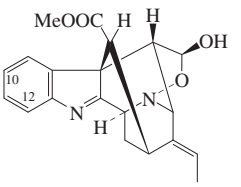


$C_{22}H_{25}NO_7$ 415.442
Alkaloid from the aerial parts of *Papaver fugax* and the capsules of *Papaver pseudo-orientale* (Papaveraceae). Cryst. (MeOH). Mp 155-158°. $[\alpha]_D^{25}$ -220 (c, 0.092 in MeOH). $[\alpha]_D^{25}$ -286 (c, 0.2 in $CHCl_3$).

Sariyar, G. *et al., Phytochemistry*, 1986, **25**, 2403 (*isol, pmr, ms, struct*)

Nareline N-47

Methyl 4,5-epoxy-5-hydroxy-6,21-cyclo-4,5-secoakuammilan-17-oate, 9CI
[63950-46-9]



Absolute Configuration

$C_{20}H_{20}N_2O_4$ 352.389
Alkaloid from the leaves of *Alstonia scholaris*. Prisms ($CHCl_3$/MeOH). Mp 275° dec. $[\alpha]_D$ -71 (c, 0.12 in $CHCl_3$/MeOH 1:1).

O-*Ac:*
Cryst. (MeOH). Mp 186°.

Me ether: **O-*Methylnareline***
[63964-36-3]
$C_{21}H_{22}N_2O_4$ 366.416
Alkaloid from leaves of *Alstonia scholaris*. Cryst. (MeOH). Mp 223°.

Et ether: **O-*Ethylnareline***
[194091-57-1]
$C_{22}H_{24}N_2O_4$ 380.443
Alkaloid from leaves of *Alstonia scholaris*. Needles ($CHCl_3$/EtOAc). Mp 225-227°. $[\alpha]_D$ -72 (c, 0.066 in $CHCl_3$). λ_{max} 216 (log ϵ 3.93); 256 (log ϵ 3.45) (EtOH).

10,11-Dimethoxy: ***10,11-Dimethoxynareline***
[683239-97-6]
$C_{22}H_{24}N_2O_6$ 412.441
Alkaloid from the leaves of *Alstonia macrophylla*. Light yellowish oil. $[\alpha]_D$ -56 (c, 1.6 in $CHCl_3$). λ_{max} 232 (log ϵ 4.38); 294 (log ϵ 3.81) (EtOH).

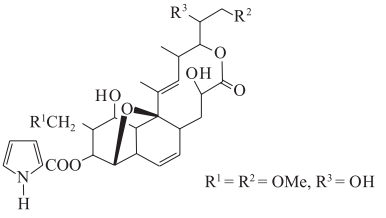
10,12-Dimethoxy: ***10,12-Dimethoxynareline***
[162289-01-2]
$C_{22}H_{24}N_2O_6$ 412.441
Alkaloid from twigs and leaves of *Tabernaemontana glandulosa*. Cryst. ($CHCl_3$/MeOH, 1:1). Mp 224-228°. $[\alpha]_D$ -89 (c, 0.9 in $CHCl_3$).

5-Epimer, Et ether: ***5-Epinareline ethyl ether***
[194091-58-2]
$C_{22}H_{24}N_2O_4$ 380.443
From leaves of *Alstonia scholaris*. Light yellow oil. $[\alpha]_D$ -57 (c, 0.037 in $CHCl_3$). λ_{max} 216 (log ϵ 4.07); 256 (log ϵ 3.58) (EtOH).

Morita, Y. *et al., Helv. Chim. Acta*, 1977, **60**, 1419-1432 (*isol, ord, uv, ir, pmr, cmr, ms, cryst struct*)
Achenbach, H. *et al., Phytochemistry*, 1994, **37**, 1737-1743 (*10,12-Dimethoxynareline*)
Kam, T.-S. *et al., Phytochemistry*, 1997, **45**, 1303-1305 (*Et ethers*)
Kam, T.-S. *et al., J. Nat. Prod.*, 2004, **67**, 547-552 (*10,11-Dimethoxynareline*)

Nargenicin B_1 N-48

CP 51467. Antibiotic CP 51467
[75923-01-2]



$C_{29}H_{39}NO_{10}$ 561.628

Cyclic polyketide related to Nargenicin A_1 in N-276. Prod. by *Nocardia argentinensis* ATCC31306. Active against *Staphylococcus*. Amorph. solid. Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. $[\alpha]_D^{25}$ +80.9 (c, 1 in MeOH). λ_{max} 264 (MeOH).

Tone, J. *et al., Intersci. Conf. Antimicrob. Agents Chemoth., 20th*, 1980, Abstr. 62
U.S. Pat., 1980, 4 224 314; *CA*, **94**, 28881

Nargenicin B_2 **N-49**

CP 52726. Antibiotic CP 52726
[75923-02-3]
As Nargenicin B_1, N-48 with R^1 = OMe, R^2 = OH, R^3 = H

$C_{28}H_{37}NO_9$ 531.602

Cyclic polyketide. Prod. by *Nocardia argentinensis* ATCC31306. Active against *Staphylococcus*. Off-white amorph. solid. Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. Mp 116-124°. λ_{max} 265 (MeOH) (Berdy).

Tone, J. *et al., Intersci. Conf. Antimicrob. Agents Chemoth., 20th*, 1980, Abstr. 62
U.S. Pat., 1980, 4 224 314; *CA*, **94**, 28881

Nargenicin B_3 **N-50**

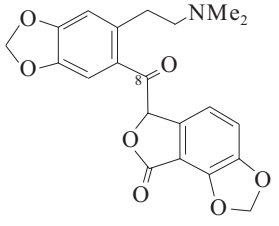
CP 52748. Antibiotic CP 52748
[75923-03-4]
As Nargenicin B_1, N-48 with R^1 = H, R^2 = OMe, R^3 = OH

$C_{28}H_{37}NO_9$ 531.602
Prod. by *Nocardia argentinensis* ATCC31306. Active against *Straphylococcus*. Off-white amorph. solid. λ_{max} 235 (MeOH) (Berdy).

Tone, J. *et al., Intersci. Conf. Antimicrob. Agents Chemoth., 20th*, 1980, Abstr. 62
U.S. Pat., 1980, 4 224 314; *CA*, **94**, 28881

Narlumidine **N-51**

6-[[6-[2-(Dimethylamino)ethyl]-1,3-benzodioxol-5-yl]carbonyl]furo[3,4-e]-1,3-benzodioxol-8(6H)-one, 9CI. Paprarine
[73710-86-8]



$C_{21}H_{19}NO_7$ 397.384

Struct. of Paprarine given as the enol form of Narlumidine - claimed as a new alkaloid. Isol. from same plant. Alkaloid from *Fumaria indica* (Papaveraceae). Mp 248-250°.

8-Alcohol: ***Narlumicine***
[73710-85-7]
$C_{21}H_{21}NO_7$ 399.399
Alkaloid from stems of *Fumaria indica* (Papaveraceae). Also obt. by $NaBH_4$ redn. of Narlumidine. Granules (MeOH). Mp 163-165°.

Seth, K.K. *et al., Chem. Ind. (London)*, 1979, 744 (*uv, ir, ms, pmr, struct*)
Tripathi, V.K. *et al., Phytochemistry*, 1992, **31**, 2188 (*Narlumicine*)
Atta-ur-Rahman, *et al., Phytochemistry*, 1995, **40**, 593 (*Paprarine*)
Chrzanowska, M. *et al., Heterocycles*, 1998, **47**, 501-504 (*Narlumicine, synth*)
Tykarska, E. *et al., Pol. J. Chem. (Rocz. Chem.)*, 1998, **72**, 433-438 (*cryst struct, Narlumicine*)

Narzettine **N-52**

$C_{20}H_{23}NO_6$ 373.405

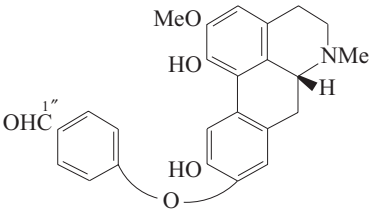
Amaryllidaceae alkaloid. Struct. unknown. Isol. from *Narcissus* sp. (Amaryllidaceae). Cryst. (MeOH or EtOH). Mp 224-226°. $[\alpha]_D^{25}$ -90 (c, 0.2 in $CHCl_3$).

Methiodide:
Needles (H_2O). Mp 256-258°.

Boit, H.-G. *et al., Chem. Ber.*, 1956, **89**, 2462-2465 (*isol*)

Natalinine **N-53**

[101219-60-7]



$C_{25}H_{23}NO_5$ 417.46
Alkaloid from *Berberis empetrifolia* (Berberidaceae).

1″-Alcohol: ***Natalamine***
[123715-10-6]
$C_{25}H_{25}NO_5$ 419.476
Alkaloid from above-ground parts of *Berberis empetrifolia* (Berberidaceae). $[\alpha]_D$ -5 (c, 0.15 in MeOH).

Fajardo, V. *et al., Rev. Latinoam. Quim.*, 1985, **16**, 59; *CA*, **104**, 145471e (*Natalinine*)
Hussain, S.F. *et al., J. Nat. Prod.*, 1989, **52**, 644 (*Natalamine*)

Natrine **N-54**

$C_{23}H_{38}NO$ 344.559

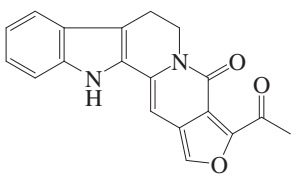
Struct. unknown. Alkaloid from the branches of *Solanum crispum* (Solanaceae). Cryst. (Me_2CO). Mp 172-173°. Opt. inactive.

Hydrochloride: Mp 288-289°.

Methiodide:
Platelets (MeOH). Mp 272-274°.

Bianchi, E. *et al., Ann. Chim. (Rome)*, 1953, **43**, 208-212; *CA*, **48**, 12142f (*isol, uv*)

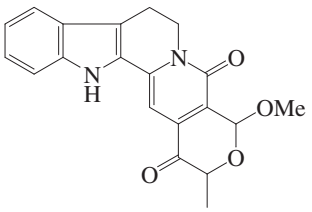
Naucleactonine A **N-55**



$C_{19}H_{14}N_2O_3$ 318.331
Alkaloid from *Nauclea officinalis*. Yellowish powder. λ_{max} 255 (log ϵ 4.35); 313 (log ϵ 4.34); 348 (log ϵ 4.26); 416 (log ϵ 4.26) (MeOH).

Xuan, W.-D. *et al., J. Asian Nat. Prod. Res.*, 2006, **8**, 719-722 (*isol, pmr, cmr, ms*)

Naucleactonine B **N-56**

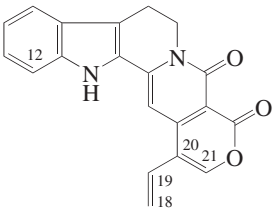


$C_{20}H_{18}N_2O_4$ 350.373
Alkaloid from *Nauclea officinalis*. Yellowish powder. $[\alpha]_D^{20}$ -1.9 (c, 0.52 in MeOH). λ_{max} 217 (log ϵ 4.03); 309 (log ϵ 4.1); 423 (log ϵ 4) (MeOH).

Xuan, W.-D. *et al., J. Asian Nat. Prod. Res.*, 2006, **8**, 719-722 (*isol, pmr, cmr, ms*)

Nauclealine A **N-57**

[359795-07-6]



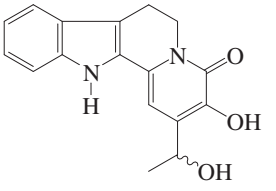
$C_{20}H_{14}N_2O_3$ 330.342
Alkaloid from the bark of *Nauclea orientalis*. Amorph. yellow solid (MeOH). Mp 267-268°. $[\alpha]_D^{22}$ -11.4. λ_{max} 206 (log ϵ 3.28); 288 (log ϵ 2.67); 424 (log ϵ 3.01) (MeOH).

*12-β-D-Glucopyranosyloxy, 18,19,20,21-tetrahydro, 19,20-didehydro (E-): **Naucleofficine B***
[1023699-68-4]
$C_{26}H_{26}N_2O_9$ 510.499
Alkaloid from the stems of *Nauclea officinalis*. Orange-yellow powder. Mp 178-179°. $[\alpha]_D^{20}$ -11.4 (c, 0.21 in MeOH). λ_{max} 225 (log ϵ 4.53); 296 (log ϵ 3.57) (MeOH).

Zhang, Z. *et al., J. Nat. Prod.*, 2001, **64**, 1001-1005 (*isol, pmr, cmr*)
Sun, J. *et al., Phytochemistry*, 2008, **69**, 1405-1410 (*Naucleofficine B*)

Nauclealine B **N-58**

[359795-08-7]



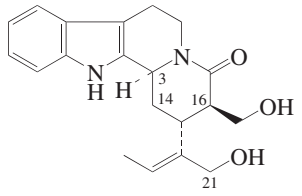
$C_{17}H_{16}N_2O_3$ 296.325

Truncated indole alkaloid, original skeleton uncertain. Alkaloid from the bark of *Nauclea orientalis*. Amorph. yellow solid (MeOH). Mp 222-223°. $[\alpha]_D^{22}$ -11.4 (c, 0.07 in MeOH). λ_{max} 214 (log ϵ 4.98); 290 (log ϵ 3.19); 374 (log ϵ 3.62); 394 (log ϵ 3.61) (MeOH).

Zhang, Z. *et al., J. Nat. Prod.*, 2001, **64**, 1001-1005

Naucleamide A N-59

[623531-11-3]



$C_{20}H_{24}N_2O_3$ 340.421
Alkaloid from the bark and wood of *Nauclea latifolia*. Amorph. solid. $[\alpha]_D^{23}$ -113 (c, 0.33 in MeOH). λ_{max} 225 (log ϵ 4.2); 282 (log ϵ 3.6) (MeOH).

3,14,15,16-Tetradehydro: ***Naucleamide D***
[623531-14-6]
$C_{20}H_{20}N_2O_3$ 336.39
Alkaloid from the bark and wood of *Nauclea latifolia*. Amorph. solid. λ_{max} 215 (log ϵ 4.18); 372 (log ϵ 4.08); 389 (log ϵ 4) (MeOH).

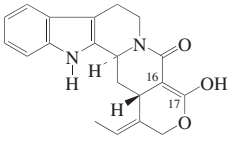
*3,14,15,16-Tetradehydro, 21-*O*-β-D-glucopyranoside:* ***Naucleofficine A***
$C_{26}H_{30}N_2O_8$ 498.532
Alkaloid from the stems of *Nauclea officinalis*. Orange-yellow powder. Mp 185-187°. $[\alpha]_D^{25}$ -12.3 (c, 0.24 in MeOH). λ_{max} 220 (log ϵ 4.45); 282 (log ϵ 3.51) (MeOH).

16-Epimer: ***Naucleamide B***
[623531-12-4]
$C_{20}H_{24}N_2O_3$ 340.421
Alkaloid from the bark and wood of *Nauclea latifolia*. Amorph. solid. $[\alpha]_D^{23}$ -42 (c, 0.27 in MeOH). λ_{max} 226 (log ϵ 4.26); 282 (log ϵ 3.6) (MeOH).

Shigemori, H. *et al., Chem. Pharm. Bull.*, 2003, **51**, 58-61 (*Naucleamides*)
Sun, J. *et al., Phytochemistry*, 2008, **69**, 58-61 (*Naucleofficine A*)

Naucleamide C N-60

[623531-13-5]



Relative Configuration

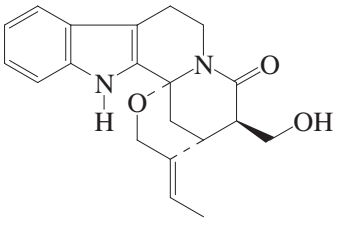
$C_{20}H_{20}N_2O_3$ 336.39
Enolised β-diketone. A heteroyohimbinoid. Alkaloid from the bark and wood of *Nauclea latifolia*. Amorph. solid. $[\alpha]_D^{23}$ -47 (c, 0.2 in MeOH). λ_{max} 224 (log ϵ 4.2); 281 (log ϵ 3.53) (MeOH).

16β,17β-Dihydro: ***Naucleofficine D***
$C_{20}H_{22}N_2O_3$ 338.405
Alkaloid from the stems of *Nauclea officinalis*. Yellowish cryst. Mp 253-255°. $[\alpha]_D^{25}$ -22.4 (c, 0.13 in MeOH). λ_{max} 221 (log ϵ 4.42); 277 (log ϵ 3.48) (MeOH).

Shigemori, H. *et al., Chem. Pharm. Bull.*, 2003, **51**, 58-61 (*Naucleamide C*)
Sun, J. *et al., Phytochemistry*, 2008, **69**, 1405-1410 (*Naucleofficine D*)

Naucleamide E N-61

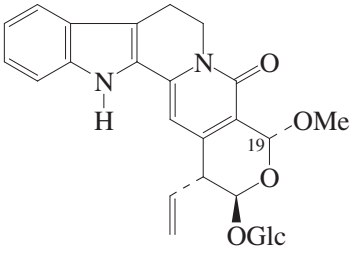
[623531-15-7]



$C_{20}H_{22}N_2O_3$ 338.405
A secoyohimbinoid. Alkaloid from the bark and wood of *Nauclea latifolia*. Amorph. solid. $[\alpha]_D^{24}$ -40 (c, 0.13 in MeOH). λ_{max} 225 (log ϵ 4.26); 275 (log ϵ 3.6) (MeOH).

Shigemori, H. *et al., Chem. Pharm. Bull.*, 2003, **51**, 58-61 (*isol, pmr, cmr*)

Naucleaorine N-62



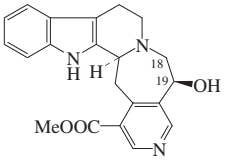
$C_{27}H_{30}N_2O_9$ 526.542
Alkaloid from the stems of *Nauclea orientalis*. Amorph. yellow powder. $[\alpha]_D^{20}$ -54.7 (c, 0.15 in MeOH). λ_{max} 208 (log ϵ 4.15); 280 (log ϵ 2.17); 369 (log ϵ 3.65); 387 (log ϵ 3.47) (MeOH).

19-Epimer: ***19-Epinaucleaorine****. Epimethoxynaucleaorine*
$C_{27}H_{30}N_2O_9$ 526.542
Alkaloid from the stems of *Nauclea orientalis*. Amorph. yellow powder. $[\alpha]_D^{20}$ +52.5 (c, 0.18 in MeOH). λ_{max} 215 (log ϵ 4.03); 285 (log ϵ 2.01); 367 (log ϵ 3.53); 386 (log ϵ 3.43) (MeOH).

He, Z.-D. *et al., Chem. Biodiversity*, 2005, **2**, 1378-1386 (*isol, pmr, cmr, ms*)

Nauclechine N-63

[38940-73-7]



Probable Structure Relative Configuration

$C_{21}H_{21}N_3O_3$ 363.415
Alkaloid from the bark of *Nauclea diderrichii* (Rubiaceae). Cryst. (EtOH). Mp 108-114°. λ_{max} 224 (ϵ 40700); 272 (ϵ 10050); 288 (sh) (MeOH).

Deoxy: ***16-Carbomethoxy-18,19-dihydronaufoline***
[149180-46-1]
$C_{21}H_{21}N_3O_2$ 347.416
Alkaloid from leaves of *Nauclea diderrichii* (Rubiaceae).

19-Deoxy, 18,19-didehydro: ***16-Carbomethoxynaufoline***
[149155-05-5]
$C_{21}H_{19}N_3O_2$ 345.4
Alkaloid from leaves of *Nauclea diderrichii* (Rubiaceae).

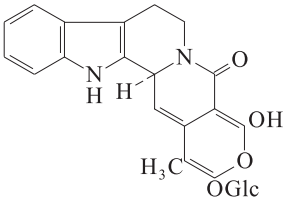
De(methoxycarbonyl): ***Decarbomethoxynauclechine***
[59785-76-1]
$C_{19}H_{19}N_3O$ 305.379
Alkaloid from the root bark of *Nauclea latifolia* (Rubiaceae). Cryst. (EtOAc). Mp 222°.

De(methoxycarbonyl), 19-deoxy, 18,19-didehydro: ***Naufoline***
[59785-75-0]
$C_{19}H_{17}N_3$ 287.363
Alkaloid from the root bark of *Nauclea latifolia* (Rubiaceae). Cryst. (MeOH). Mp 252°. λ_{max} 225 (log ϵ 4.48); 285 (log ϵ 4); 291 (log ϵ 4.03) (no solvent reported).

Murray, D.G. *et al., Can. J. Chem.*, 1972, **50**, 1486-1495 (*Nauclechine*)
Hotellier, F. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1976, **282**, 595-597 (*Naufoline, Decarbomethoxynauclechine*)
Shariff, A. *et al., Tet. Lett.*, 1982, **23**, 4895 (*Decarbomethoxynauclechine, synth*)
Richard, B. *et al., Bull. Soc. R. Sci. Liege*, 1992, **61**, 423-428; *CA*, **119**, 91170v (*16-Carbomethoxynaufoline, 16-Carbomethoxy-18,19-dihydronaufoline*)

Nauclecosidine N-64

[121880-13-5]



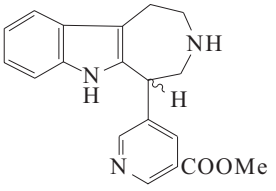
$C_{25}H_{26}N_2O_9$ 498.488
Alkaloid from the stems of *Nauclea officinalis* (Rubiaceae). Cryst. Mp 200-202°.

[121880-12-4]

Lin, M. *et al., Yaoxue Xuebao*, 1989, **24**, 32-36; *CA*, **111**, 74776q (*isol, struct*)

Naucleferine N-65

[38940-72-6]



$C_{19}H_{19}N_3O_2$ 321.378

Indole alkaloid of uncertain biogenetic origin.

(ξ)-*form*

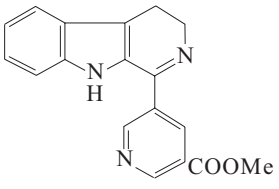
Alkaloid from *Nauclea diderrichii* (Rubiaceae). Mp 102-124° Mp 172-183° (double Mp, partial remelting). $[\alpha]_D^{26}$ -13 (c, 0.8 in $CHCl_3$) (0.0).

Murray, D.G. *et al., Can. J. Chem.*, 1972, **50**, 1486 (*uv, ir, ms, pmr, struct*)

MacLean, S. *et al., Can. J. Chem.*, 1976, **54**, 1262 (*synth*)

Naucledine N-66

[26238-84-6]



$C_{18}H_{15}N_3O_2$ 305.335

Indole alkaloid of uncertain biogenetic origin. Alkaloid from *Nauclea diderrichii* (Rubiaceae). Pale-yellow needles (MeOH). Mp 84-90° dec.

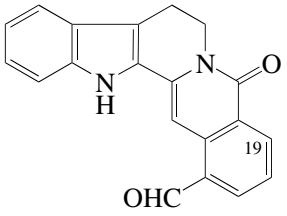
McLean, S. *et al., Can. J. Chem.*, 1970, **48**, 867 (*ir, ms, uv, pmr*)

Murray, D.G. *et al., Can. J. Chem.*, 1972, **50**, 1486 (*ms, pmr, synth*)

Naucleficine N-67

5,7,8,13-Tetrahydro-5-oxobenz[g]indolo[2,3-a]quinolizine-1-carboxaldehyde, 9CI

[96400-54-3]



$C_{20}H_{14}N_2O_2$ 314.343

Alkaloid from the stems of *Nauclea officinalis* (Rubiaceae). Orange-red cryst. (CH_2Cl_2/MeOH). Mp 290-291°.

19-Hydroxy: ***Nauclequiniine***

[192192-96-4]

$C_{20}H_{14}N_2O_3$ 330.342

Alkaloid from the roots of *Nauclea pobequinii* (Rubiaceae). Orange-red cryst. (CH_2Cl_2/MeOH). Mp 291-292°. λ_{max} 260 (log ϵ 4.25); 290 (log ϵ 3.92); 366 (log ϵ 4.39); 375 (log ϵ 4.39); 408 (log ϵ 4.18) (EtOH).

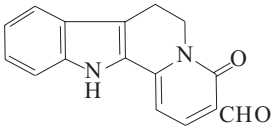
Lin, M. *et al., Planta Med.*, 1984, **50**, 459-461 (*isol, uv, ir, pmr, ms, struct*)

Naito, T. *et al., Chem. Pharm. Bull.*, 1991, **39**, 2216-2218 (*synth*)

Anam, E.M. *et al., Indian J. Chem., Sect. B*, 1997, **36**, 54-56 (*Nauclequiniine*)

Nauclefidine N-68

[96400-52-1]



$C_{16}H_{12}N_2O_2$ 264.283

Struct. revised in 1994. Alkaloid from the stems of *Nauclea officinalis* (Rubiaceae). Prob. derived biogenetically from Vincosamide, V-126. Orange-yellow cryst. Mp 307-309°. λ_{max} 439 (ϵ 4.44) (no solvent reported).

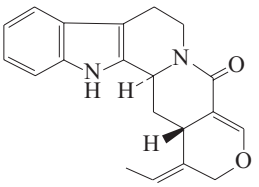
Lin, M. *et al., Planta Med.*, 1984, **50**, 459-461 (*isol, uv, ir, pmr, ms*)

Takayama, H. *et al., Tet. Lett.*, 1994, **35**, 8813-8816 (*synth, cmr, struct*)

Manna, R.K. *et al., Synth. Commun.*, 1998, **28**, 9-16 (*synth, ir, pmr, ms*)

Nauclefiline N-69

[102358-19-0]



$C_{20}H_{20}N_2O_2$ 320.39

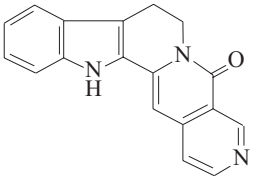
Alkaloid from *Nauclea officinalis* (Rubiaceae). Cryst. Mp 315-317°.

Lin, M. *et al., Yaoxue Xuebao*, 1985, **20**, 902-905 (*isol, struct*)

Nauclefine N-70

8,13-Dihydroindolo[2′,3′:3,4]pyrido[1,2-b][2,7]naphthyridin-5(7H)-one, 9CI. Parvine

[57103-51-2]



$C_{18}H_{13}N_3O$ 287.32

Alkaloid from the root bark of *Nauclea latifolia*, the bark of *Nauclea parva* and from *Nauclea orientalis* (Rubiaceae). Shows antileukaemic activity. Orange-coloured solid (MeOH aq.). Mp 292-294°. λ_{max} 203 (ϵ 31200); 250 (ϵ 10000); 288 (ϵ 78000); 364 (ϵ 78000) (EtOH) (Berdy).

Hotellier, F. *et al., Phytochemistry*, 1975, **14**, 1407 (*isol, uv, ir, pmr, ms, struct*)

Sainsbury, M. *et al., Phytochemistry*, 1975, **14**, 2691 (*isol, uv, ir, pmr, ms, struct, synth*)

Repke, D.B. *et al., Tetrahedron*, 1989, **45**, 2541 (*synth*)

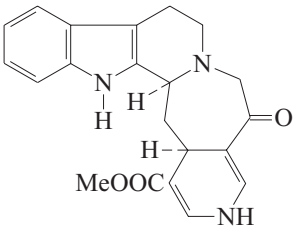
Laronze, J. *et al., Bull. Soc. Chim. Fr.*, 1992, **129**, 303 (*synth*)

Vohra, R. *et al., Heterocycles*, 1994, **39**, 445 (*synth*)

Lavilla, R. *et al., Eur. J. Org. Chem.*, 1999, 373-378 (*synth*)

Nauclefoline† N-71

[81149-29-3]



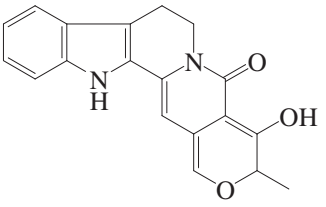
$C_{21}H_{21}N_3O_3$ 363.415

Alkaloid from the leaves of *Nauclea latifolia* (Rubiaceae). Mp 164-167°. $[\alpha]_D^{20}$ +468 (c, 0.08 in EtOH).

Hotellier, F. *et al., C. R. Hebd. Seances Acad. Sci. Ser. 2*, 1981, **293**, 577 (*isol*)

Nauclefoline† N-72

[96400-51-0]



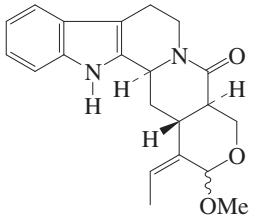
$C_{19}H_{16}N_2O_3$ 320.347

Struct. poss. erroneous. Resembles heteroyohimbinoid alkaloids such as Cadamine, C-6 but the E-ring skeleton is biogenetically unexpected and not derivable from Secologanin. Alkaloid from the stems of *Nauclea officinalis* (Rubiaceae). Pale-yellow cryst. (Me_2CO). Mp 270-272°. λ_{max} 244 (log ϵ 4.26); 295 (log ϵ 4.08); 306 (log ϵ 4.14); 348 (log ϵ 4.33); 366 (log ϵ 4.26) (EtOH).

Lin, M. *et al., Planta Med.*, 1984, **50**, 459-461 (*isol, uv, ir, pmr, ms, struct*)

Nauclefolinine N-73

[774603-00-8]



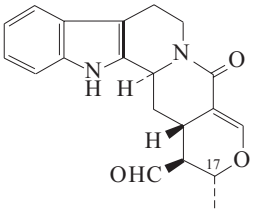
$C_{21}H_{24}N_2O_3$ 352.432

Alkaloid from the roots of *Nauclea latifolia*. Mp 115-116°. $[\alpha]_D^{25}$ +3 (c, 0.6 in CH_2Cl_2).

Ngnokam, D. *et al., Bull. Chem. Soc. Ethiop.*, 2003, **17**, 173-176; *CA*, **141**, 346483

Naucleidinal N-74

[77513-45-2]



$C_{20}H_{20}N_2O_3$ 336.39

Alkaloid from the root bark of *Nauclea latifolia* and the stems of *Nauclea officinalis* (Rubiaceae). Needles ($CHCl_3$). Mp 203° (192-194°). $[\alpha]_D^{20}$ +124 (c, 1.06 in EtOH). λ_{max} 226 (log ϵ 4.47); 282 (sh) (log ϵ 3.85); 290 (log ϵ 3.8) (EtOH).

17-Epimer: ***17-Epinaucleidinal***

[77513-46-3]

$C_{20}H_{20}N_2O_3$ 336.39

Alkaloid from *Nauclea latifolia* (Rubiaceae). Noncryst. Named 19-Epinaucleidinal in the paper.

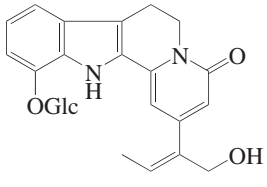
Hotellier, F. *et al., Phytochemistry*, 1980, **19**, 1884-1885 (*isol, uv, ir, pmr, ms, struct, epimer*)

Lin, M. *et al., Planta Med.*, 1984, **50**, 459-461 (*isol, uv, ir, pmr, ms*)

Takayama, H. *et al., Chem. Pharm. Bull.*, 1996, **44**, 2192-2194 (*synth, cmr, cd*)

Naucleofficine C N-75

[1023699-70-8]



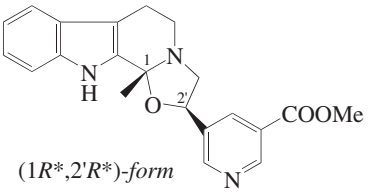
$C_{25}H_{28}N_2O_8$ 484.505

Alkaloid from the stems of *Nauclea officinalis*. Orange-yellow powder. Mp 175-177°. $[\alpha]_D^{20}$ -13.1 (c, 0.19 in MeOH). λ_{max} 222 (log ϵ 4.49); 285 (log ϵ 3.5) (MeOH).

Sun, J. *et al., Phytochemistry*, 2008, **69**, 1405-1410 (*isol, pmr, cmr*)

Naucleonidine N-76

Alkaloid ND 363C



(1*R**,2'*R**)-*form*

$C_{21}H_{21}N_3O_3$ 363.415

Indole alkaloid of unknown biogenesis. prob. secologanin-derived but details not known. β-Carboline numbering shown. Both natural and synthetic alkaloids were a mixt. of the two epimers (α- and β-Naucleonidines).

(1R,2'R)-form

β-Naucleonidine

[55221-44-8]

Alkaloid from the bark of *Nauclea diderrichii* (Rubiaceae). Noncryst. Not separately characterised, obt. only as a mixt. with α-Naucleonidine.

De(methoxycarbonyl): ***β-Naucleonine***

[55252-84-1]

$C_{19}H_{19}N_3O$ 305.379

Alkaloid from the bark of *Nauclea diderrichii* (Rubiaceae). Obt. only as a mixt., both naturally and synthetically with α-Naucleonine above.

(1R,2'S)-form

α-Naucleonidine

[37304-94-2]

Alkaloid from the bark of *Nauclea diderrichii* (Rubiaceae). Not separately characterised.

De(methoxycarbonyl): ***α-Naucleonine***. *Alkaloid ND 305B*

[37303-54-1]

$C_{19}H_{19}N_3O$ 305.379

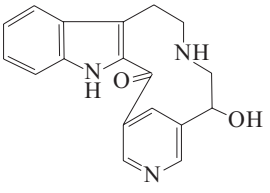
Alkaloid from the bark of *Nauclea diderrichii* (Rubiaceae). Syrup. Both natural and synthetic alkaloids were a mixt. of α- and β-Naucleonines.

Murray, D.G. *et al., Can. J. Chem.*, 1972, **50**, 1486 (*uv, ir, pmr, ms*)

MacLean, S. *et al., Can. J. Chem.*, 1976, **54**, 1262 (*struct, synth*)

Nauclexine N-77

[38940-74-8]



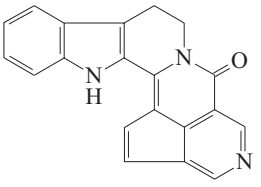
$C_{18}H_{17}N_3O_2$ 307.351

Alkaloid from the bark of *Nauclea diderrichii* (Rubiaceae). Needles (CH_2Cl_2/MeOH). Mp 229-232°.

Murray, D.G. *et al., Can. J. Chem.*, 1972, **50**, 1486-1495 (*uv, ir, pmr, ms, struct*)

Naulafine N-78

[70503-66-1]



$C_{20}H_{13}N_3O$ 311.342

Indole alkaloid, prob. strictosidine-derived. Alkaloid from leaves of *Nauclea latifolia* (Rubiaceae). Red-orange cryst. (CH_2Cl_2). Mp 300°.

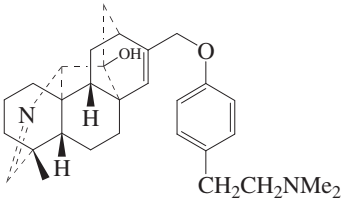
Hotellier, F. *et al., Planta Med.*, 1979, **35**, 242 (*isol, uv, ir, pmr, ms, struct*)

Repke, D.B. *et al., Tetrahedron*, 1989, **45**, 2541 (*synth*)

Lavilla, R. *et al., Eur. J. Org. Chem.*, 1999, 373-378 (*synth*)

Navirine N-79

[773850-94-5]



$C_{30}H_{40}N_2O_2$ 460.658

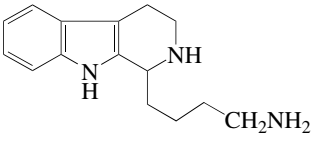
Isol. from *Aconitum naviculare*. Needles. Mp 175-176°. $[\alpha]_D^{19}$ +22 (c, 0.6 in $CHCl_3$).

Gao, L. *et al., J. Chem. Res., Synop.*, 2004, 307-308 (*isol, pmr, cmr, ms*)

Nazlinine N-80

2,3,4,9-Tetrahydro-1H-pyrido[3,4-b]indole-1-butanamide, 9CI. 1-(4-Aminobutyl)tetrahydro-β-carboline

[136945-81-8]



$C_{15}H_{21}N_3$ 243.351

Struct. revised in 1993.

(±)-form

Alkaloid from *Nitraria schoberi* (Zygophyllaceae). Possesses serotonergic activity. Amorph. powder. Mp 75-78°. λ_{max} 271 ; 280 ; 288 (MeOH) (Derep).

Corthout, J. *et al., Planta Med.*, 1989, **55**, 605 (*isol, ir, pmr*)

Ustunes, L. *et al., J. Nat. Prod.*, 1991, **54**, 959-966 (*isol, uv, ir, pmr, cmr, ms*)

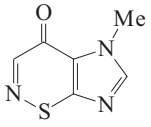
Wanner, M.J. *et al., Chem. Comm.*, 1993, 174-175 (*synth, struct*)

Mahboobi, S. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1994, **327**, 463-465 (*struct*)

Diker, K. *et al., J. Nat. Prod.*, 1997, **60**, 790-793 (*synth, ir, pmr, cmr*)

Neamphine N-81

5-Methylimidazo[4,5-e]-1,2-thiazin-4(5H)-one, 9CI
[135384-35-9]

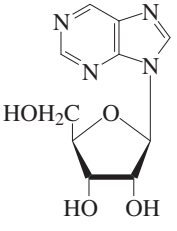


$C_6H_5N_3OS$ 167.191
Metab. of the marine sponge *Neamphius huxleyi*. Cytotoxic. Needles (hexane/$CHCl_3$).

de Silva, E.D. *et al., Tet. Lett.*, 1991, **32**, 2707 (*isol, cryst struct*)

Nebularine N-82

9-β-D-Ribofuranosyl-9H-purine, 9CI, 8CI. Purinosine
[550-33-4]



$C_{10}H_{12}N_4O_4$ 252.229
Nucleoside antibiotic. Isol. from the mushroom *Clitocybe nebularis* (clouded agaric), from *Streptomyces yokosukaensis* and *Microbispora* sp. nov. Shows tuberculostatic and antimitotic activity. Adenosine deaminase inhibitor. Investigated as an antileukaemic agent in combination therapies. Needles (MeOH). Mp 182-183°. $[\alpha]_D^{35}$ -46.8 (c, 2.0 in H_2O). λ_{max} 263 (ε 7020) (H_2). λ_{max} 263 (ε 5900) (1*M* HCl). λ_{max} 263 (ε 7110) (pH 9.2).

▶ LD_{50} (rat, scu) 220 mg/kg. UO9100000

2′,3′,5′-Tri-Ac: [15981-63-2]
$[\alpha]_D^{26}$ -10.8 (c, 1.5 in MeOH).

Isono, K. *et al., J. Antibiot., Ser. A*, 1960, **13**, 270-272 (*isol*)
Cory, J.G. *et al., Biochemistry*, 1965, **4**, 1729-1732 (*pharmacol*)
Iwamura, H. *et al., J.O.C.*, 1968, **33**, 1796-1799 (*synth, tri-Ac*)
Takeda, T. *et al., Acta Cryst. B*, 1974, **30**, 825-827 (*cryst struct*)
Ohno, M. *et al., J.A.C.S.*, 1974, **96**, 4326-4327 (*tri-Ac*)
Chenon, M.T. *et al., J.A.C.S.*, 1975, **97**, 4627-4636 (*cmr*)
Westhof, E. *et al., Z. Naturforsch., C*, 1975, **30**, 131-140 (*pmr*)
Gupta, P.K. *et al., Indian J. Chem., Sect. B*, 1981, **20**, 534-537 (*synth*)
Zavgorodnii, S.G. *et al., Bioorg. Khim.*, 1984, **10**, 1496-1507 (*conformn*)
Nair, V. *et al., Synthesis*, 1984, 401-402 (*synth, uv, pmr, cmr, ms*)
Cooper, R. *et al., J. Ind. Microbiol.*, 1986, **1**, 275-276 (*isol*)
Isono, K. *et al., J. Antibiot.*, 1988, **41**, 1711-1739 (*rev*)
Worner, K. *et al., Helv. Chim. Acta*, 1999, **82**, 2094-2104 (*synth, pmr*)
Francom, P. *et al., J.O.C.*, 2002, **67**, 6788-6796 (*tri-Ac, synth, pmr, ms*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, RJF000

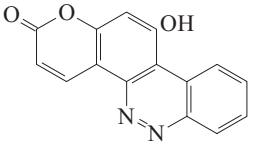
Neburnamine N-83

[1359-86-0]
Prob. a dimeric indole alkaloid. Struct. unknown. Alkaloid from *Hunteria eburnea* (Apocynaceae). Cryst. (CH_2Cl_2). Mp 290-292°. $[\alpha]_D$ -199 (MeOH).

Bartlett, M.F. *et al., J.O.C.*, 1963, **28**, 2197-2199

Necatorine N-84

11-Hydroxy-2H-benzo[c]pyrano[2,3-h]cinnolin-2-one, 9CI
[89915-35-5]



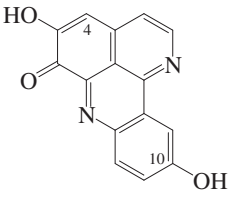
$C_{15}H_8N_2O_3$ 264.24
Alkaloid from the mushroom *Lactarius necator*. Cryst. Mp 220-225°. *L. necator* is considered edible in some countries e.g. Finland, however necatorine is only partially deactivated under cooking conditions.

▶ Highly mutagenic. DJ2622000

Suortti, T. *et al., J. Chromatogr.*, 1983, **255**, 529; 1984, **301**, 303-307 (*isol*)
Suortti, T. *et al., Phytochemistry*, 1983, **22**, 2873 (*pmr, ms, struct*)
Suortti, T. *et al., Food Chem. Toxicol.*, 1984, **22**, 579-581 (*stability*)

Necatorone N-85

5,10-Dihydroxy-6H-pyrido[4,3,2-kl]acridin-6-one, 9CI
[92631-70-4]



$C_{15}H_8N_2O_3$ 264.24
Alkaloidal pigment from the fruit-bodies of the gilled toadstool *Lactarius necator* and *Lactarius atroviridis*. Red needles (MeOH). Sol. DMSO, bases; fairly sol. MeOH, Me_2CO; poorly sol. C_6H_6, hexane. Mp 360°. λ_{max} 248 ; 270 (sh) ; 327 ; 400 ; 520 ; 610 (sh) (1*M* NH_3) (Derep). λ_{max} 212 (sh) (ε 24000); 233 (ε 39810); 265 (sh) (ε 13500); 293 (ε 7586); 310 (sh) (ε 7080); 431 (ε 13490) (MeOH) (Derep). λ_{max} 223 (ε 39810); 293 (ε 7595); 431 (ε 13490) (MeOH) (Berdy).

▶ Mutagenic agent.

4,4′-Dimer: ***4,4′-Binecatorone***
[126647-31-2]
$C_{30}H_{14}N_4O_6$ 526.464
Alkaloidal pigment from fruiting bodies of the toadstools *Lactarius necator* and *Lactarius atroviridis*. Dark brown or red cryst. (MeOH). Sol. MeOH, DMSO. Mp 360°. λ_{max} 236 ; 438 (MeOH) (Berdy).

▶ Mutagenic agent.

4,4′-Dimer, 10-deoxy: ***10-Deoxy-4,4′-binecatorone***
[126624-08-6]
$C_{30}H_{14}N_4O_5$ 510.464
Alkaloidal pigment from *Lactarius necator* and *Lactarius atroviridis*. Dark brown cryst. (MeOH). Sol. MeOH, DMSO. Mp 360°. λ_{max} 226 ; 264 ; 420 (MeOH) (Berdy).

▶ Mutagenic agent.

4,4′-Dimer, 10,10′-dideoxy: ***10,10′-Dideoxy-4,4′-binecatorone***
[126647-32-3]
$C_{30}H_{14}N_4O_4$ 494.465
Major alkaloid from *Lactarius atroviridis*. Blackish-green or orange cryst. (MeOH). Sol. MeOH, DMSO. Mp 360°. λ_{max} 223 ; 264 ; 358 ; 428 (MeOH) (Berdy).

▶ Mutagenic agent.

Fugmann, B. *et al., Tet. Lett.*, 1984, **25**, 3575 (*isol, uv, ir, pmr, cmr, ms, struct*)
Hilger, C.S. *et al., Tet. Lett.*, 1985, **26**, 5975 (*synth*)
Klamann, J.-D. *et al., Phytochemistry*, 1989, **28**, 3519 (*isol, uv, ir, pmr, cmr, ms, dimers*)

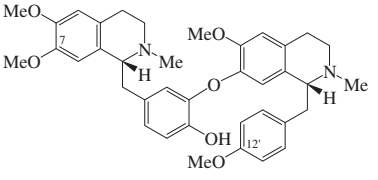
Senecio doria Necine base N-86

$C_7H_{13}NO_2$ 143.185
Pyrrolizidine alkaloid. Struct. unknown. Alkaloid from *Senecio doria* (aerial parts in bloom) (Asteraceae). Sol. H_2O. Mp 179-180°.

Constantinescu, E. *et al., Farmacia (Bucharest)*, 1961, **9**, 131; *CA*, **56**, 14396

Neferine N-87

12′-O-Methylliensinine
[2292-16-2]



$C_{38}H_{44}N_2O_6$ 624.775
Alkaloid from the seed embryo of *Nelumbo nucifera* (East Indian lotus) (Nelumbonaceae). Tumour promotor. Oil. $[\alpha]_D^{28}$ -37.8 (c, 1.43 in $CHCl_3$). $[\alpha]_D^{27}$ -100 (c, 0.24 in MeOH).

▶ Tumour promotor. SM9495000

Me ether, styphnate: Mp 139-140° (133-135°). $[\alpha]_D^{29}$ -93.3 (c, 0.6 in Me_2CO) (-81.5).

Methiodide: Carcinogen promotor. Mp 179-181°.

O⁷-De-Me: ***Isoliensinine***
[6817-41-0]
$C_{37}H_{42}N_2O_6$ 610.749
Alkaloid from the roots of *Cissampelos*

mucronata an the seed embryo of *Nelumbo nucifera* (East Indian lotus) (Nelumbonaceae). Tumour promotor. Oil. $[\alpha]_D^{22}$ +49.3 (Me_2CO). $[\alpha]_D^{29}$ -43.3 ($CHCl_3$).

▶ Tumour promotor.

O^7-*De-Me; hydrochloride (1:2):* Cryst. + $4H_2O$. Mp 185-186°.

O^7-*De-Me; perchlorate (1:2):* Cryst. + $1H_2O$. Mp 200-203°. $[\alpha]_D^{22}$ -70 (Me_2CO).

$O^{12'}$-*De-Me:* ***Liensinine***
[2586-96-1]
$C_{37}H_{42}N_2O_6$ 610.749
Alkaloid from seed embryo of *Nelumbo nucifera* (East Indian lotus) (Nelumbonaceae). Mp 95-99°. $[\alpha]_D^{31}$ +15.85 (c, 0.883 in Me_2CO).

$O^{12'}$-*De-Me; perchlorate (1:2):* Mp 212-214°.

$O^{12'}$-*De-Me, di-Ac:* Mp 124°.

Chao, Y.C. *et al., Sci. Sin. (Engl. Edn.)*, 1962, **11**, 215-219; *CA*, **57**, 7383i (*Liensinine*)
Hsieh, Y.Y. *et al., Sci. Sin. (Engl. Edn.)*, 1964, **12**, 2018-2019; *CA*, **62**, 9183h (*Liensinine, abs config*)
Tomita, M. *et al., Tet. Lett.*, 1964, **5**, 2637-2642 (*Isoliensinine*)
Furukawa, H. *et al., Yakugaku Zasshi*, 1965, **85**, 335-338; 353-354; *CA*, **63**, 4351 (*isol, ir, pmr, struct*)
Yang, T.-H. *et al., J. Chin. Chem. Soc. (Taipei)*, 1970, **17**, 235-242; *CA*, **74**, 100254g (*isol, uv, ir, pmr*)
Kametani, T. *et al., J. Het. Chem.*, 1970, **7**, 181-186 (*isol, pmr*)
Tshibangu, J.N. *et al., Phytochem. Anal.*, 2003, **14**, 13-22 (*Isoliensinine, isol, hplc*)
Yang, J. *et al., Magn. Reson. Chem.*, 2004, **42**, 994-997 (*Neferine, Isoliensinine, pmr, cmr*)

Neflexine N-88

[1359-87-1]

$C_{18}H_{21}NO_3$ 299.369

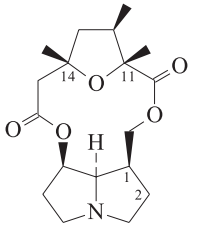
Amaryllidaceae alkaloid. Struct. unknown. Isol. from the bulbs of *Nerine flexuosa* (Amaryllidaceae). Mp 249-250° dec. $[\alpha]_D$ +65 (c, 0.25 in $CHCl_3$).

Picrate: Mp 195-196° dec.

Boit, H.-G. *et al., Naturwissenschaften*, 1960, **47**, 109 (*isol*)

Nemorensine N-89

[50906-96-2]



Absolute configuration

$C_{18}H_{27}NO_5$ 337.415
Alkaloid from *Senecio nemorensis* (several varieties) (Asteraceae). Cryst. (cyclohexane). $[\alpha]_D^{24}$ -58 (c, 2.35 in $CHCl_3$).

N-*Oxide:* ***Oxynemorensine***
[74209-54-4]
$C_{18}H_{27}NO_6$ 353.414
Alkaloid from *Senecio nemorensis* var. *subdecurrens* (Asteraceae). Cryst. (EtOAc). Mp 160-163°. $[\alpha]_D^{20}$ -35 (c, 1.0 in $CHCl_3$).

11,14-Diepimer: ***Mulgediifoline***
[172018-19-8]
$C_{18}H_{27}NO_5$ 337.415
Alkaloid from leaves of *Senecio mulgediifolius* (Asteraceae). Cryst. (hexane). Mp 102-104°. $[\alpha]_D$ -32.5 (c, 0.28 in $CHCl_3$).

11,14-Diepimer, 1,2-didehydro: ***Retroisosenine****. Alkaloid SN-A*
[62018-78-4]
$C_{18}H_{25}NO_5$ 335.399
Alkaloid from *Senecio nemorensis* and *Senecio mulgediifolius* (Asteraceae). Mp 127°. $[\alpha]_D^{24}$ +118 (c, 0.69 in $CHCl_3$).

11,14-Diepimer, 1,2-didehydro, N*-oxide:* ***Oxyretroisosenine****. Retroisosenine* N*-oxide*
[171927-39-2]
$C_{18}H_{25}NO_6$ 351.399
Alkaloid from leaves of *Senecio mulgediifolius* (Asteraceae). Light brown cryst. (EtOAc/hexane). Mp 128-131°. $[\alpha]_D$ +31.4 (c, 0.4 in $CHCl_3$).

*11,14-Diepimer, 1,2-didehydro, 12*S*-hydroxy:* ***12S-Hydroxyretroisosenine***
$C_{18}H_{25}NO_6$ 351.399
Alkaloid from *Senecio helodes* and *Senecio roseus* (Asteraceae). Cryst. (hexane/EtOAc). Mp 167-170°. $[\alpha]_D^{25}$ +88 (c, 2 in $CHCl_3$).

*11,14-Diepimer, 1,2-didehydro, 13*R*-hydroxy:* ***13R-Hydroxyretroisosenine***
$C_{18}H_{25}NO_6$ 351.399
Alkaloid from *Senecio roseus* (Asteraceae). Cryst. (hexane/Me_2CO). Mp 187-190°. $[\alpha]_D^{25}$ +116.4 (c, 2 in $CHCl_3$).

Klásek, A. *et al., Coll. Czech. Chem. Comm.*, 1973, **38**, 2504; 1980, **45**, 548 (*isol, ir, pmr, cmr, ms, struct, oxide*)
Nghia, N.T. *et al., Coll. Czech. Chem. Comm.*, 1975, **40**, 2952; 1976, **41**, 2952 (*Retroisosenine*)
Gencheva, E. *et al., CA*, 1979, **90**, 127593j (*chromatog*)
Klein, L.L. *et al., J.A.C.S.*, 1985, **107**, 2573 (*synth*)
Dillon, M.P. *et al., Chem. Comm.*, 1995, 1645 (*abs config*)
De Vivar, A.R. *et al., Tetrahedron*, 1995, **51**, 12521 (*Oxyretroisosenine, Mulgediifoline*)
Perez-Castorena, A.-L. *et al., J. Nat. Prod.*, 1997, **60**, 1322-1325 (*Hydroxyretroisosenines, Retroisosenine, abs config*)

Nemorine N-90

[1359-88-2]

$C_{24}H_{39}NO_4$ 405.576

Struct. unknown. Alkaloid from the tubers of *Aconitum nemorum* (Ranunculaceae). Mp 126-128°. $[\alpha]_D^{17}$ -4.5.

Oxalate: Mp 175-176°.

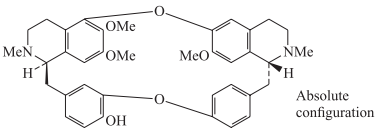
Picrate: Mp 105-106°.

O-*Ac:* Mp 110-113°.

Abubakirov, N.K. *et al., Zh. Obshch. Khim.*, 1959, **29**, 2454-2456; *J. Gen. Chem. USSR (Engl. Transl.)*, 1959, **29**, 2418

Nemuarine, 9CI N-91

[38739-62-7]



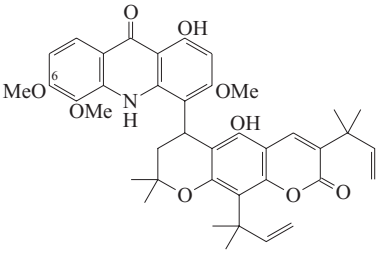
$C_{37}H_{40}N_2O_6$ 608.733
Alkaloid from leaves and twigs of *Nemuaron vieillardii* (Monimiaceae). Prisms + $1H_2O$ (MeOH). Mp 222-223° dec. $[\alpha]_D^{20}$ -42.7 ($CHCl_3$).

Me ether: Mp 154-156°. $[\alpha]_D^{20}$ -43.8 ($CHCl_3$).

Bick, I.R.C. *et al., Aust. J. Chem.*, 1973, **26**, 455 (*isol, uv, ms, pmr, struct*)

Neoacrimarine A N-92

[149301-45-1]



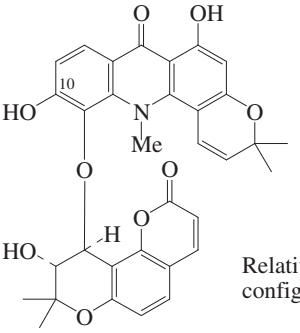
$C_{40}H_{43}NO_9$ 681.781
Alkaloid from roots of Yalaha [several hybrid seedlings resulting from a cross of Duncan grapefruit (*Citrus paradisii*) × Dancy tangerine (*Citrus tangerina*)] (Rutaceae). Yellow cubes (Me_2CO). Mp 225-230°. $[\alpha]_D$ 0 ($CHCl_3$).

O^6-*De-Me:* ***Neoacrimarine B***
[149301-47-3]
$C_{39}H_{41}NO_9$ 667.754
Alkaloid from Yalaha (Rutaceae). Yellow cubes (Me_2CO). Mp 240-243°. $[\alpha]_D$ 0 (Py).

Takemura, Y. *et al., Heterocycles*, 1993, **36**, 675 (*isol, uv, ir, pmr, cmr, struct*)

Neoacrimarine C N-93

[155519-79-2]



Relative configuration

$C_{33}H_{29}NO_9$ 583.593

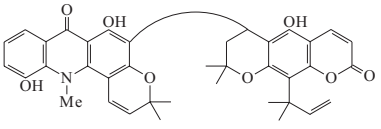
Alkaloid from roots of *Citrus hassaku* (Rutaceae). Yellow cubes. Mp 111-113°. $[\alpha]_D$ +42.3 (c, 0.026 in $CHCl_3$).

10-Deoxy: ***Neoacrimarine H***
[217199-06-9]
$C_{33}H_{29}NO_8$ 567.594
Alkaloid from the roots of *Citrus paradisi* (grapefruit). Yellow oil. $[\alpha]_D$ +80.6 (c, 0.07 in $CHCl_3$). λ_{max} 204 ; 265 ; 286 ; 294 (sh) ; 318 ; 343 (sh) ; 410 (MeOH).

Takemura, Y. *et al., Chem. Pharm. Bull.*, 1993, **41**, 1757-1759; 1998, **46**, 1518-1521 (*isol, uv, ir, pmr, cmr, ms, struct*)

Neoacrimarine D N-94

[155519-80-5]

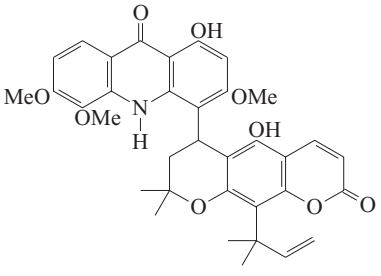


$C_{38}H_{37}NO_8$ 635.712
Alkaloid from roots of *Citrus hassaku* (Rutaceae). Yellow oil. Opt. inactive.

Takemura, Y. *et al., Chem. Pharm. Bull.*, 1993, **41**, 1757 (*isol, uv, ir, pmr, cmr, ms, struct*)

Neoacrimarine E N-95

[158182-13-9]

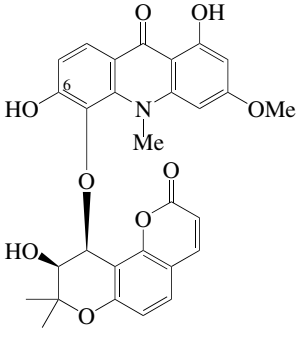


$C_{35}H_{35}NO_9$ 613.663
Alkaloid from roots of Yalaha [several hybrid seedlings resulting from a cross of Duncan grapefruit (*Citrus paradisi*) and Dancy tangerine (*Citrus tangerina*)] (Rutaceae). Yellow cubes (Me_2CO). Mp 212-215°. $[\alpha]_D$ -21.6 (c, 0.3 in $CHCl_3$).

Takemura, Y. *et al., Heterocycles*, 1994, **38**, 1937 (*isol, uv, ir, pmr, cmr, ms, struct*)

Neoacrimarine F N-96

[195057-36-4]



$C_{29}H_{25}NO_9$ 531.518
Alkaloid from the roots of *Citrus paradisi* (grapefruit) x *Citrus tangerina* (tangerine) (Rutaceae). Yellow cubes. Mp 218-220°. $[\alpha]_D$ +130.9 (c, 0.2 in MeOH). λ_{max} 220 (sh) ; 264 ; 295 (sh) ; 330 ; 369 (EtOH).

N-*De-Me:* ***Neoacrimarine J***
[217199-08-1]
$C_{28}H_{23}NO_9$ 517.491
Alkaloid from the roots of *Citrus paradisi* (grapefruit). Yellow oil. $[\alpha]_D$ -131.9 (c, 0.05 in $CHCl_3$). λ_{max} 203 ; 218 (sh) ; 263 ; 292 (sh) ; 327 ; 373 (sh) (MeOH).

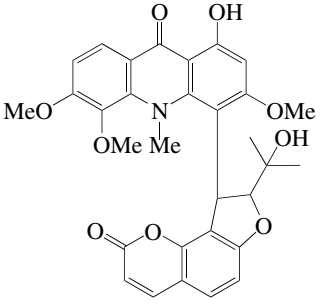
6-Me ether, N-*de-Me:* ***Neoacrimarine I***
[217199-07-0]
$C_{29}H_{25}NO_9$ 531.518
Alkaloid from the roots of *Citrus paradisi* (grapefruit). Yellow oil. $[\alpha]_D$ -157.3 (c, 0.27 in $CHCl_3$). λ_{max} 205 ; 255 (sh) ; 266 ; 292 (sh) ; 326 ; 381 (MeOH).

6-Deoxy: ***Neoacrimarine G***
[195057-37-5]
$C_{29}H_{25}NO_8$ 515.518
Alkaloid from the roots of *Citrus paradisi* (grapefruit) (Rutaceae). Yellow oil. $[\alpha]_D$ +130.2 (c, 0.03 in $CHCl_3$). λ_{max} 220 (sh) ; 262 ; 280 (sh) ; 315 ; 324 (MeOH).

Takemura, Y. *et al., Heterocycles*, 1997, **45**, 1411-1414 (*isol, uv, ir, pmr, cmr, ms*)
Takemura, Y. *et al., Chem. Pharm. Bull.*, 1998, **46**, 1518-1521 (*isol, uv, ir, pmr, cmr, ms*)

Neoacrimarine K N-97

[217199-09-2]

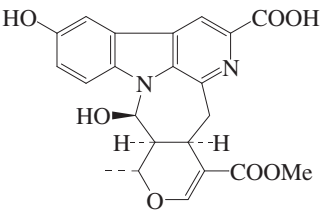


$C_{31}H_{29}NO_9$ 559.571
Alkaloid from the roots of *Citrus paradisi* (grapefruit). Yellow oil. Racemic. λ_{max} 204 ; 222 (sh) ; 261 (sh) ; 269 ; 334 ; 393 (MeOH).

Takemura, Y. *et al., Chem. Pharm. Bull.*, 1998, **46**, 1518-1521 (*isol, uv, ir, pmr, cmr, ms*)

Neoadifoline N-98

[250721-70-1]

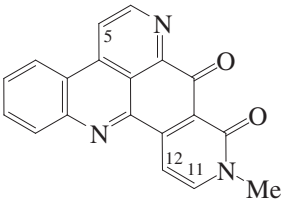


$C_{22}H_{20}N_2O_7$ 424.409
Alkaloid from the heartwood of *Adina cordifolia*. Pale yellow cryst. ($CHCl_3$). Mp. >350°.

Balazs, B. *et al., Magn. Reson. Chem.*, 1999, **37**, 751-753

Neoamphimedine N-99

*10-Methyl-8*H*-benzo[*b*]pyrido[4,3,2-de][1,8]phenanthroline-8,9(10*H*)-dione, 9CI*
[221456-55-9]



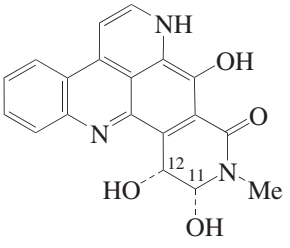
$C_{19}H_{11}N_3O_2$ 313.315
Alkaloid from *Xestospongia* cf. *carbonaria* and *Xestospongia* cf. *exigua*. Topoisomerase II inhibitor which catenates DNA. Yellow solid. Mp >300°. λ_{max} 205 (ϵ 26370); 226 (ϵ 23740); 278 (ϵ 16870); 371 (ϵ 10190) (EtOH).

5-Methoxy: ***5-Methoxyneoamphimedine***
[485817-61-6]
$C_{20}H_{13}N_3O_3$ 343.341
Alkaloid from *Xestospongia* cf. *carbonaria* and *Xestospongia* cf. *exigua*. Yellow solid.

De Guzman, F.S. *et al., J.O.C.*, 1999, **64**, 1400-1402 (*Neoamphimedine*)
Thale, Z. *et al., J.O.C.*, 2002, **67**, 9384-9391 (*5-Methoxyneoamphimedine*)
LaBarbera, D.V. *et al., J.O.C.*, 2007, **72**, 8501-8505 (*synth*)

Neoamphimedine Y N-100

[486992-27-2]



$C_{19}H_{15}N_3O_4$ 349.345
Alkaloid from *Xestospongia* cf. *carbonaria*. Purple solid. Turns brown on standing.

11,12-Di-Me ether: ***Neoamphimedine Z***
[486992-28-3]
$C_{21}H_{19}N_3O_4$ 377.399
Alkaloid from *Xestospongia* cf. *carbonaria*. Purple solid. Turns brown on standing.

Thale, Z. *et al., J.O.C.*, 2002, **67**, 9384-9391 (*isol, pmr, cmr*)

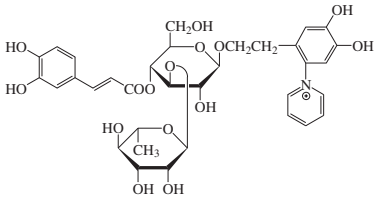
Neoberninamycin N-101

Antibiotic EM 5596. EM 5596
[115537-10-5]
Peptide antibiotic. Struct. not determined. Prod. by *Micrococcus luteus*. Active against gram-positive bacteria. Amorph. solid. Sol. MeOH, butanol; poorly sol. H_2O. λ_{max} 240 (MeCN). λ_{max} 230 ; 250 (MeCN) (Berdy).

Biskupiak, J.E. *et al., J. Antibiot.*, 1988, **41**, 684-688 (*isol, uv, ir, pmr, props*)

Neobudofficide B N-102

[219998-44-4]

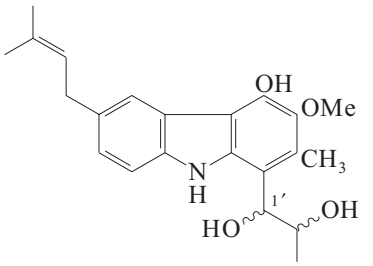


$C_{34}H_{40}NO_{15}^{\oplus}$ 702.688
Alkaloid from the flowers of *Buddleia officinalis*. Isol. as the chloride, to which registry number refers.

Li, J. *et al., J. Chin. Pharm. Sci.*, 1997, **6**, 178-181

Neocarazostatin A N-103

*1-(1,2-Dihydroxypropyl)-4-hydroxy-3-methoxy-2-methyl-6-prenyl-9*H*-carbazole*
[137767-81-8]



$C_{22}H_{27}NO_4$ 369.46
Prod. by *Streptomyces* sp. strain GP38. Free radical scavenger. Mp 141-143° dec. $[\alpha]_D^{25}$ -36 (c, 0.1 in MeOH). λ_{max} 230 (ϵ 43700); 250 (ϵ 65900); 271 (ϵ 23800); 292 (ϵ 26800); 331 (ϵ 6900); 345 (ϵ 8400) (MeOH) (Derep).

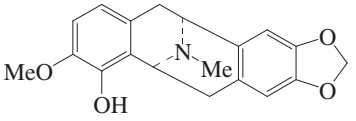
1′-Deoxy: ***Neocarazostatin B***
[137767-82-9]
$C_{22}H_{27}NO_3$ 353.46
From a *Streptomyces* sp. strain GP38. Free radical scavenger. Mp 55-57° dec. $[\alpha]_D^{25}$ -24 (c, 0.1 in MeOH). Possesses (*R*-) abs. config. λ_{max} 230 (ϵ 43700); 250 (ϵ 65900); 271 (ϵ 23800); 292 (ϵ 26800); 331 (ϵ 6900); 345 (ϵ 8400) (MeOH) (Derep).

1′-Me ether: ***Neocarazostatin C***
[137714-93-3]
$C_{23}H_{29}NO_4$ 383.486
From a *Streptomyces* sp. strain GP38. Free radical scavenger. Mp 80-82° dec. $[\alpha]_D^{25}$ -92 (c, 0.1 in MeOH). λ_{max} 230 (ϵ 43700); 250 (ϵ 65900); 271 (ϵ 23800); 292 (ϵ 26800); 331 (ϵ 6900); 345 (ϵ 8400) (MeOH) (Derep).

Kato, S. *et al., J. Antibiot.*, 1991, **44**, 903-907 (*isol, uv, pmr, cmr*)
Czerwonka, R. *et al., Chem. Comm.*, 2006, 711-713 (*Neocarazostatin B, synth, abs config*)

Neocaryachine N-104

5,6,11,12-Tetrahydro-9-methoxy-14-methylbenzo[5,6]cycloocta[1,2-f]-1,3-benzodioxol-5,11-imin-10-ol, 9CI. 1-Hydroxy-2-methoxy-8,9-methylenedioxypavinane
[131985-46-1]



$C_{19}H_{19}NO_4$ 325.363
Has been numbered the other way round the symmetrical ring-system, as 7-hydroxy-8-methoxy-2,3-methylenedioxy. Alkaloid from the bark of *Cryptocarya chinensis* (Lauraceae). Amorph. Mp 95-97°. $[\alpha]_D^{25}$ -197 (c, 0.36 in MeOH).

N-*Me:* ***Neocaryachine* N-*methosalt***. N-*Methylneocaryachinium*
$C_{20}H_{22}NO_4^{\oplus}$ 340.398
Quaternary alkaloid from callus cultures of *Cryptocarya chinensis*. $[\alpha]_D^{25}$ -40.1 (c, 0.01 in MeOH) (as perchlorate). λ_{max} 206 (log ϵ 4.53); 288 (log ϵ 3.64) (MeOH) (as perchlorate).

Me ether, N-*Me:* ***7-O-Methylneocaryachine* N-*methosalt***
$C_{21}H_{24}NO_4^{\oplus}$ 354.425
Quaternary alkaloid from *Eschscholtzia californica*. Amorph. solid. $[\alpha]_D^{23}$ -170 (c, 0.14 in MeOH).

Lee, S.-S. *et al., J. Nat. Prod.*, 1990, **53**, 1267-1271 (*isol, uv, pmr, cmr, ms*)
Chang, W.-T. *et al., Phytochemistry*, 1998, **48**, 119-124 (*N-metho salt*)
Gafner, S. *et al., J. Nat. Prod.*, 2006, **69**, 432-435 (*Me ether N-Me*)

Neochondocurarine N-105

Bisbenzylisoquinoline alkaloid. Struct. unknown. Alkaloid from Curare.

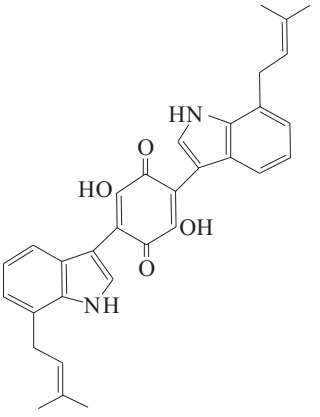
Nitrate: $[\alpha]_D^{20}$ +185 (c, 2 in H_2O).

Chloride: Mp 268° dec. $[\alpha]_D^{20}$ +179 (c, 2 in H_2O).

Bodendorf, K. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1954, **287**, 555-561; *CA*, **52**, 10119h (*isol*)

Neocochliodinol, 9CI N-106

[79921-14-5]



$C_{32}H_{30}N_2O_4$ 506.6
Isomeric with Cochliodinol, C-547. Pigment isol. from *Chaetomium amygdalisporum*. Mycotoxin and cytotoxic. Violet cryst. powder (C_6H_6/CH_2Cl_2). Poorly sol. hexane. Mp 285° dec. Related to Asterriquinones. λ_{max} 290 (ϵ 30200); 470 (ϵ 4270) (EtOH) (Derep).

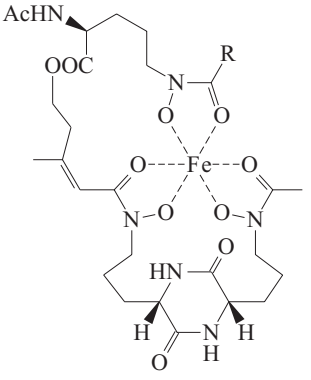
Di-O-*Ac:*
Violet needles (C_6H_6). Mp 214°.

Di-Me ether:
Violet cryst. powder. Mp 237°.

Sekita, S. *et al., Can. J. Microbiol.*, 1981, **27**, 766-772 (*isol, props*)
Sekita, S. *et al., Chem. Pharm. Bull.*, 1983, **31**, 2998-3001 (*uv, ir, pmr, struct*)

Neocoprogen I N-107

[94141-24-9]



R = —CH=C(CH$_3$)CH$_2$CH$_2$OH

$C_{31}H_{47}FeN_6O_{12}$ 751.592
Isol. from *Curvularia lunata*. Siderophore. Cryst. λ_{max} 428 (MeOH) (Berdy). λ_{max} 428 (ϵ 2730) (H_2O) (Berdy).

Hossain, M.B. *et al., J.A.C.S.*, 1987, **109**, 4948 (*isol, struct*)

Neocoprogen II N-108

[105250-32-6]

As Neocoprogen I, N-107 with

R = CH_3

$C_{27}H_{41}FeN_6O_{11}$ 681.501

Isol. from *Curvularia lunata*. Siderophore. Cryst. λ_{max} 422 (MeOH) (Berdy). λ_{max} 422 (ϵ 2612) (H_2O) (Berdy).

Hossain, M.B. *et al., J.A.C.S.*, 1987, **109**, 4948 (*isol, struct*)

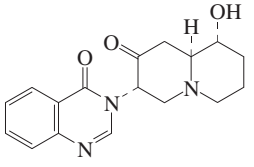
Neodaphniphylline N-109

Struct. unknown. Alkaloid from the leaves and bark of *Daphniphyllum macropodum* (Daphniphyllaceae). Mp 242-244° (as hydrochloride).

Sakabe, N. *et al., Tet. Lett.*, 1966, 963 (*isol*)

Neodichroine N-110

*3-(Octahydro-9-hydroxy-2-oxo-2*H*-quinolizin-3-yl)-4(3*H*)-quinazolinone, 9CI. Hydrachine A*



(+)-*form*

$C_{17}H_{19}N_3O_3$ 313.355

Struct. of Hydrachine A revised in 2003.

(+)-*form* [317832-22-7]

Alkaloid from the leaves of *Dichroa febrifuga*. $[\alpha]_D$ +198.8 (c, 0.17 in MeOH). Stereochem. possibly incorrect.

(-)-*form* [354819-61-7]

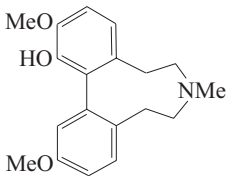
Alkaloid from the roots of *Hydrangea chinensis*. Semisolid. $[\alpha]_D$ -25.3 (c, 0.2 in MeOH). λ_{max} 224 (log ϵ 1.47); 230 (log ϵ 1.35); 233 (log ϵ 1.3); 265 (log ϵ 0.59); 302 (log ϵ 0.28) (MeOH).

Deng, Y. *et al., J. Chin. Pharm. Sci.*, 2000, **9**, 116-118 (*isol*)

Chang, F.-R. *et al., J. Nat. Prod.*, 2003, **66**, 1245-1248 (*struct*)

Neodihydrothebaine N-111

[15228-73-6]



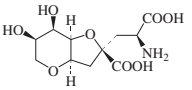
$C_{19}H_{23}NO_3$ 313.396

Alkaloid from the capsules of *Papaver bracteatum* (Papaveraceae). Mp 107°.

Theuns, H.G. *et al., Phytochemistry*, 1984, **23**, 1157 (*isol, pmr, ms, struct, synth*)

Neodysiherbaine A N-112

[342410-85-9]



Absolute Configuration

$C_{11}H_{17}NO_8$ 291.257

Isol. from *Dysidea herbacea*. Neurotoxin. Pale yellow solid. $[\alpha]_D^{23}$ -6.5 (c, 0.75 in H_2O).

Sakai, R. *et al., Org. Lett.*, 2001, **3**, 1479-1482 (*isol, synth, cd, pmr, cmr*)

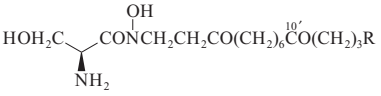
Lygo, B. *et al., Tet. Lett.*, 2005, **46**, 6629-6632 (*synth*)

Takahashi, K. *et al., J.O.C.*, 2006, **71**, 4227-4231 (*synth*)

Shoji, M. *et al., J.O.C.*, 2006, **71**, 5208-5220 (*synth*)

Neoenactin† N-113

*2-Amino-*N*-(3,10-dioxohexadecyl)-*N*,3-dihydroxypropanamide, 9CI*



Neoenactin			
	A	R =	$CH_2CH_2CH_3$
	B_1	R =	$CH(CH_3)CH_2CH_3$
	B_2	R =	$CH_2CH(CH_3)_2$
	NL_1	R =	CH_2CH_3
	NL_2	R =	$CH_2CH_2CH_2CH_3$

Antibiotic complex. Isol. from *Streptoverticillium olivoreticuli neoenacticus*. Antifungal agent. Sol. MeOH, Et_2O; poorly sol. H_2O, hexane. Not related to the nucleoside Neoenactins. Neoenactin M_1 is identical with Lipoxamycin, L-189. λ_{max} 208 (E1%/1cm 166) (MeOH) (Berdy). λ_{max} 208 (E1%/1cm 161) (MeOH/HCl) (Berdy).

Neoenactin A

Enactin IVb

[88231-85-0]

$C_{19}H_{36}N_2O_5$ 372.504

From *Streptomyces roseoviridis*. Fairly sol. MeOH, EtOH, H_2O; poorly sol. Me_2CO, Et_2O. λ_{max} 211 (ϵ 5900) (MeOH) (Berdy). λ_{max} 211 (ϵ 5900) (MeOH/HCl) (Berdy). λ_{max} 238 (ϵ 5900) (MeOH/NaOH) (Berdy).

Sulfate (2:1): Mp 144-145° dec.

10′-Alcohol: Neoenactin M_2. Enactin Vb

[108334-69-6]

$C_{19}H_{38}N_2O_5$ 374.52

From *Streptoverticillium olivoreticuli* ssp. *neoenactus* and *Streptomyces roseoviridis*.

3′-Alcohol; sulfate (2:1): Mp 166°.

Neoenactin B_1 [88231-86-1]

$C_{20}H_{38}N_2O_5$ 386.531

From *Streptomyces roseoviridis*. Sol. MeOH, acids; poorly sol. hexane, H_2O. λ_{max} 211 (ϵ 5000) (MeOH) (Berdy). λ_{max} 211 (ϵ 5000) (MeOH/HCl) (Berdy). λ_{max} 238 (ϵ 5800) (MeOH/NaOH) (Berdy).

Sulfate (2:1): Mp 139.4-141° dec.

15′-Hydroxy: ***Enactin Ib***

[137252-26-7]

$C_{20}H_{38}N_2O_6$ 402.53

Isol. from *Streptomyces roseoviridis*. Sol. MeOH, H_2O. Mp 128-129° dec. (as sulfate salt). Enactin Ib_1 and Enactin Ib_2 are diastereoisomers at C-15. λ_{max} 238 (ϵ 5550) (MeOH/NaOH) (Derep). λ_{max} 211 (ϵ 5500) (MeOH) (Derep). λ_{max} 213 (ϵ 4400) (MeOH) (Berdy).

Neoenactin B_2

Enactin VIb

[88231-87-2]

$C_{20}H_{38}N_2O_5$ 386.531

From *Streptomyces roseoviridis*. Sol. MeOH, acids; poorly sol. hexane, H_2O. λ_{max} 211 (ϵ 5400) (MeOH) (Berdy). λ_{max} 211 (ϵ 5500) (MeOH/HCl) (Berdy). λ_{max} 238 (ϵ 6000) (MeOH/NaOH) (Berdy).

Sulfate (2:1):

$C_{20}H_{38}N_2O_5$ 386.531

Mp 141-143° dec.

15′-Hydroxy: ***Enactin Ia***

[130640-30-1]

$C_{20}H_{38}N_2O_6$ 402.53

Isol. from *Streptomyces roseoviridis*. Sol. MeOH, H_2O. Mp 134.5° dec. (as sulfate salt). λ_{max} 238 (ϵ 5550) (MeOH/NaOH) (Derep). λ_{max} 211 (ϵ 5500) (MeOH) (Derep). λ_{max} 212 (ϵ 4100) (MeOH) (Berdy).

Neoenactin NL_1 [117193-00-7]

$C_{18}H_{34}N_2O_5$ 358.477

Biosynthetic prod. Sol. MeOH, acids; poorly sol. H_2O, hexane. λ_{max} 211 (ϵ 5200) (MeOH) (Berdy).

Sulfate (2:1):

Needles (MeOH). Mp 145°.

Neoenactin NL_2 [117193-01-8]

$C_{20}H_{38}N_2O_5$ 386.531

Biosynthetic prod. Sol. MeOH, acids; poorly sol. H_2O, hexane. λ_{max} 238 (ϵ 5550) (MeOH/NaOH) (Derep). λ_{max} 211 (ϵ 5500) (MeOH) (Derep).

Sulfate (2:1):

Needles (MeOH). Mp 145°.

[130668-40-5]

Kondo, H. *et al., J. Antibiot.*, 1979, **32**, 13 (*isol*)

Nishio, M. *et al., J. Antibiot.*, 1983, **36**, 1399 (*isol, uv, ir*)

Roy, S.K. *et al., J. Antibiot.*, 1986, **39**, 717; 1987, **40**, 266 (*isol, struct*)

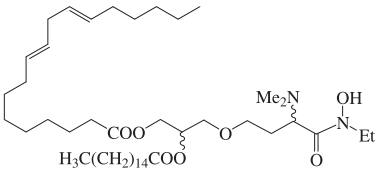
Okada, H. *et al., J. Antibiot.*, 1989, **42**, 276 (*NL_1, NL_2*)

Yamamoto, K. *et al., J. Antibiot.*, 1990, **43**, 1012 (*isol*)

Yamamoto, K. *et al., Chem. Pharm. Bull.*, 1991, **39**, 1436 (*isol, pmr, cmr, Enactin I*)

Darwish, I.S. *et al., J.O.C.*, 1994, **59**, 451 (*synth*)

Neoengleromycin N-114



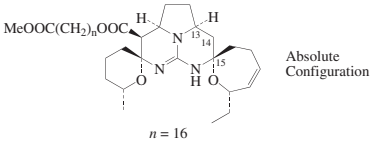
$C_{45}H_{84}N_2O_7$ 765.168
Prod. by fruiting bodies of *Engleromyces goetzei*. Oily solid. $[\alpha]_D^{20}$ +3.3 (c, 0.3 in $CHCl_3$).

N-*De-Et:* ***Vibratilicin***
$C_{43}H_{80}N_2O_7$ 737.114
Prod. by *Cortinarius vibratilis.* Yellow oily solid. $[\alpha]_D^{19}$ +8.6 (c, 1.3 in $CHCl_3$).

Jikai, L. *et al., Helv. Chim. Acta*, 2002, **85**, 1439-1442 (*Neoengleromycin*)
Wang, F. *et al., Helv. Chim. Acta*, 2004, **87**, 1912-1915 (*Vibratilicin*)

Neofolitispate 1 N-115

[229160-50-3]



$C_{40}H_{67}N_3O_6$ 685.986
Related to Ptilomycalin A, P-774. Alkaloid from the sponge *Neofolitispa dianchora*. Antiviral agent.

Lower homologue (n = 14): ***Neofolitispate 3***
[229160-52-5]
$C_{38}H_{63}N_3O_6$ 657.932
Alkaloid from *Neofolitispa dianchora*. Antiviral agent.

Lower homologue (n = 15): ***Neofolitispate 2***. *Crambescidin 657 methyl ester*
[229160-51-4]
$C_{39}H_{65}N_3O_6$ 671.959
Alkaloid from *Neofolitispa dianchora*. Antiviral agent. Oil. $[\alpha]_D$ -18 (c, 1 in $CHCl_3$).

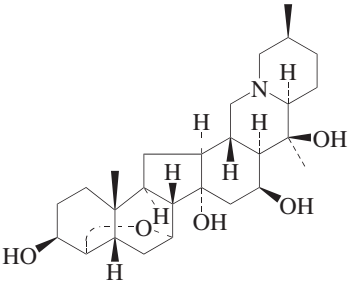
Lower homologue (n = 15), parent acid: ***Crambescidin 657***
[214215-58-4]
$C_{38}H_{63}N_3O_6$ 657.932
Alkaloid from *Crambe crambe*. Cytotoxic agent. Zwitterionic.

Lower homologue (n = 15), 13,14,15-triepimer, parent acid: ***Isocrambescidin 657***
[214215-60-8]
$C_{38}H_{63}N_3O_6$ 657.932
Alkaloid from *Crambe crambe*. Zwitterionic.

Venkateswarlu, Y. *et al., Indian J. Chem., Sect. B*, 1999, **38**, 254-256 (*isol*)
Coffey, D.S. *et al., J.A.C.S.*, 2000, **122**, 4893-4903; 4904-4914 (*synth*)

Neogermine N-116

4,7-Epoxy-3,14,16,20-cevanetetrol
[99211-68-4]

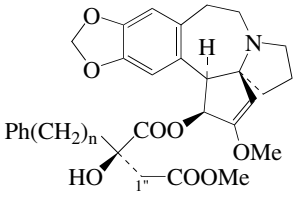


$C_{27}H_{43}NO_5$ 461.64
Alkaloid from the roots and rhizomes of *Veratrum japonicum*. Amorph. solid. Mp 188-190°. $[\alpha]_D^{20}$ -13.8 (c, 0.003 in $CHCl_3$).

Cong, Y. *et al., Planta Med.*, 2007, **73**, 1588-1591 (*isol, pmr, cmr*)

Neoharringtonine N-117

[142748-51-4]



n = 1

$C_{30}H_{33}NO_8$ 535.593
Alkaloid from *Cephalotaxus fortunei* and from *Cephalotaxus harringtonia* var. *drupacea*. Shows significant antileukaemic activity. Oil. $[\alpha]_D$ -148 (c, 0.48 in MeOH). λ_{max} 291 (log ϵ 3.61) (MeOH). λ_{max} 291 (ϵ 4073) (MeOH) (Berdy).

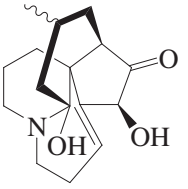
*1″*S-*Hydroxy:* ***1″-Hydroxyneoharringtonine***. *3′-Hydroxyneoharringtonine*
$C_{30}H_{33}NO_9$ 551.592
Isol. from leaves and stems of *Cephalotaxus harringtonia* var. *drupacea*. Shows antileukaemic activity. Oil. $[\alpha]_D$ -126 (c, 0.20 in MeOH). λ_{max} 291 (log ϵ 3.66) (MeOH). λ_{max} 291 (ϵ 4743) (MeOH) (Berdy).

Homologue (n=2): ***Homoneoharringtonine***
$C_{31}H_{35}NO_8$ 549.619
Isol. from leaves and stems of *Cephalotaxus harringtonia* var. *drupacea*. Shows antileukaemic activity. Oil. $[\alpha]_D$ -114 (c, 0.07 in MeOH). λ_{max} 291 (log ϵ 3.39) (MeOH). λ_{max} 291 (ϵ 3143) (MeOH) (Berdy).

Wang, D.Z. *et al., Yaoxue Xuebao*, 1992, **27**, 173; *CA*, **117**, 86698c
Takano, I. *et al., Phytochemistry*, 1997, **44**, 735 (*isol, uv, ir, pmr, cmr, ms, derivs*)

Neohuperzinine N-118

[677335-27-2]

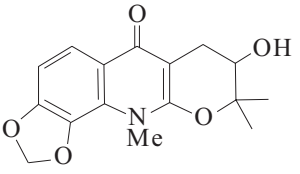


$C_{16}H_{23}NO_3$ 277.363
Alkaloid from *Huperzia serrata*. Cryst. ($CHCl_3$/Me_2CO). Mp 203-205°. $[\alpha]_D^{22}$ -48.2 (c, 0.1 in EtOH). λ_{max} 202 (log ϵ 3.7) (no solvent reported).

Yuan, S.-Q. *et al., Yaoxue Xuebao*, 2002, **37**, 946-949 (*isol, pmr, cmr, ms*)

Neohydroxylunine N-119

[55812-52-7]

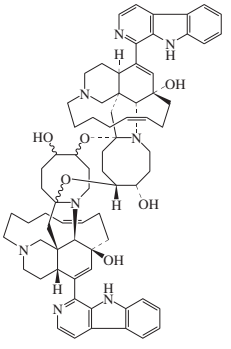


$C_{16}H_{17}NO_5$ 303.314
Alkaloid from *Ptelea trifoliata* (Rutaceae). Cryst. ($MeOH/Et_2O$). Mp 228-231°.

Mitscher, L.A. *et al., J. Nat. Prod.*, 1975, **38**, 117 (*isol, uv, ir, pmr, ms, struct*)
Neville, C.F. *et al., J.C.S. Perkin 1*, 1991, 259 (*synth*)

Neokauluamine N-120

[334491-54-2]

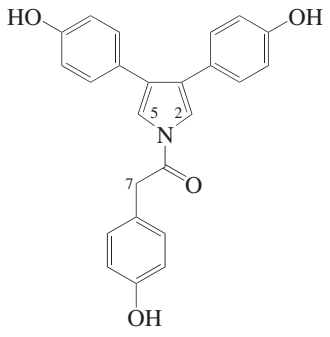


$C_{72}H_{88}N_8O_6$ 1161.537
Alkaloid from an undescribed sponge of the Petrosiidae. Cytotoxic. Needles (EtOH). Mp 184°. $[\alpha]_D^{25}$ +94.6 (c, 0.1 in $CHCl_3$). λ_{max} 252 (log ϵ 4.2); 357 (log ϵ 3.85) (MeOH).

El Sayed, K.A. *et al., J.A.C.S.*, 2001, **123**, 1804-1808 (*isol, pmr, cmr*)

Neolamellarin A N-121

[959860-11-8]



$C_{24}H_{19}NO_4$ 385.418
Alkaloid from *Dendrilla nigra*. Needles. Mp 144-146°. λ_{max} 210 (log ϵ 4.53); 250 (log ϵ 4.41); 285 (log ϵ 4.27) (MeOH).

7-Hydroxy: ***7-Hydroxyneolamellarin A***
[959662-26-1]
$C_{24}H_{19}NO_5$ 401.418
Alkaloid from *Dendrilla nigra*. Yellow oil. Racemic. λ_{max} 285 (log ϵ 4.34) (MeOH).

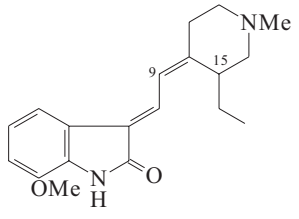
2,5-Dihydro, 2-oxo: ***Neolamellarin B***
[959860-12-9]
$C_{24}H_{19}NO_5$ 401.418
Alkaloid from *Dendrilla nigra*. Yellow oil. λ_{max} 224 (log ϵ 4.34); 330 (log ϵ 4.06) (MeOH).

2,5-Dihydro, 2-oxo, 5ξ-hydroxy: ***5-Hydroxyneolamellarin B***
[959662-29-4]
$C_{24}H_{19}NO_6$ 417.417
Alkaloid from *Dendrilla nigra*. Yellow powder. $[\alpha]_D^{25}$ +9.2 (c, 0.06 in Me_2CO). λ_{max} 224 (log ϵ 4.47); 285 (log ϵ 4.14); 330 (log ϵ 4.18) (MeOH).

Liu, R. *et al., J. Nat. Prod.*, 2007, **70**, 1741-1745 (*isol, pmr, cmr*)

Neolaugerine N-122

[149405-98-1]



$C_{19}H_{24}N_2O_2$ 312.411
Indole alkaloid plausibly derived from and Akuammicine type by bond cleavages and rearrangement. Alkaloid from root bark of *Neolaugeria resinosa* (Rubiaceae). Amorph. orange-red powder. $[\alpha]_D^{25}$ +89 (c, 0.60 in MeOH).

*9*E-*Isomer:* ***Isoneolaugerine***
[149355-67-9]
$C_{19}H_{24}N_2O_2$ 312.411
Alkaloid from root bark of *Neolaugeria resinosa* (Rubiaceae). Amorph. orange-red powder. $[\alpha]_D^{25}$ +34 (c, 0.80 in MeOH).

*9*E-*Isomer, 15-hydroxy:* ***15-Hydroxyisoneolaugerine***
[149355-68-0]
$C_{19}H_{24}N_2O_3$ 328.41
Alkaloid from root bark of *Neolaugeria resinosa* (Rubiaceae). Amorph. orange-red powder. $[\alpha]_D^{25}$ +3 (c, 0.20 in MeOH).

Weniger, B. *et al., Phytochemistry*, 1993, **32**, 1587 (*isol, uv, ir, pmr, cmr, ms, struct*)

Neoleurocristine N-123

[1359-90-6]

$C_{46}H_{56}N_4O_{12}$ 856.968
Bisindole alkaloid. Struct. unknown. Alkaloid from *Catharanthus roseus* (Apocynaceae). Plates (MeOH). Mp 188-196° dec. $[\alpha]_D^{26}$ -57.87 (c, 1 in $CHCl_3$).

Svoboda, G.H. *et al., J. Pharm. Sci.*, 1962, **51**, 518-523 (*isol, uv, ir*)

Neoleurosidine N-124

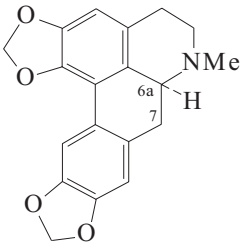
[1359-91-7]

$C_{48}H_{62}N_4O_{11}$ 871.038
Bisindole alkaloid. Struct. unknown. Alkaloid from *Catharanthus roseus* (Apocynaceae). Rods (MeOH). Mp 219-225° dec. $[\alpha]_D^{26}$ +41.6 (c, 1 in $CHCl_3$).

Svoboda, G.H. *et al., J. Pharm. Sci.*, 1962, **51**, 518-523 (*isol, uv, ir*)

Neolitsine N-125

1,2:9,10-Bis(methylenedioxy)aporphine



$C_{19}H_{17}NO_4$ 323.348

(S)-form [2466-42-4]
Alkaloid from the leaves of *Neolitsea pulchella* and *Laurus nobilis* (bay laurel), also from *Cassytha americana* (*Cassytha filiformis*) (Lauraceae). Needles (Me_2CO). Mp 149-150°. $[\alpha]_D$ +56.5 (c, 1.57 in $CHCl_3$).

Hydrochloride:
Cryst. (EtOH). Mp 219° (chars).

Picrate:
Cryst. (EtOH). Mp 186° dec.

N-*De-Me:* ***Cryptodorine****. 1,2:9,10-Bismethylenedioxynoraporphine. Norneolitsine*
[41787-55-7]
$C_{18}H_{15}NO_4$ 309.321
Alkaloid from the trunk bark of *Cryptocarya odorata* and leaves of *Laurus nobilis* (bay laurel) (Lauraceae). Unstable cryst.; cryst. + $2H_2O$ (as sulfate). Mp 219-221° (sulfate). $[\alpha]_D^{19}$ +61 ($CHCl_3$).

*6*a*,7-Didehydro:* ***Dehydroneolitsine***
[40158-86-9]
$C_{19}H_{15}NO_4$ 321.332
Alkaloid from *Guatteria goudotiana* (Annonaceae). Yellow cryst. (EtOH). Mp 201-203° (196-198°).

3-Methoxy, N-*de-Me: 3-Methoxy-1,2:9,10-bis(methylenedioxy)noraporphine.* ***Cassythidine***
[6081-07-8]
$C_{19}H_{17}NO_5$ 339.347
Alkaloid from *Cassytha filiformis* (*Cassytha americana*) (Lauraceae). Prisms ($CHCl_3$/MeOH). Mp 206-207°. $[\alpha]_D$ +15 (c, 0.64 in $CHCl_3$).

(±)-form
Synthetic. Needles (Me_2CO). Mp 148-150°.

N-*De-Me:* Synthetic. Cryst. (Me_2CO/Et_2O). Mp 169° dec.

Hui, W.H. *et al., J.C.S.*, 1965, 2285 (*isol, uv, ir, pmr, ms, struct*)
Johns, S.R. *et al., Aust. J. Chem.*, 1966, **19**, 297 (*Cassythidine*)
Cava, M.P. *et al., J.O.C.*, 1968, **33**, 2443 (*isol, uv*)
Bick, I.R.C. *et al., Bull. Soc. Chim. Fr.*, 1972, 4596 (*isol, uv, pmr, ms, struct, Cryptodorine*)
Moltrasio, G.Y. *et al., J.C.S. Perkin 1*, 1973, 349 (*synth, uv*)
Pai, B.R. *et al., Indian J. Chem., Sect. B*, 1977, **15**, 1042 (*synth, uv, pmr, ms, Cryptodorine*)
Ringdahl, B. *et al., J. Nat. Prod.*, 1981, **44**, 80 (*cd*)
Pech, B. *et al., J. Nat. Prod.*, 1982, **45**, 560 (*isol*)
Castedo, L. *et al., Phytochemistry*, 1991, **30**, 2781 (*Dehydroneolitsine*)

Neolitsinine N-126

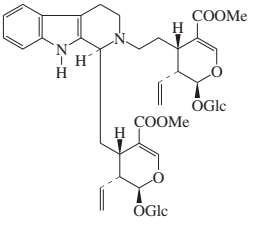
[1359-92-8]

$C_{19}H_{23}NO_3$ 313.396
Struct. unknown. Alkaloid from the leaves of *Neolitsea pulchella* (Lauraceae). Cryst. (Me_2CO). Mp 214-215°. $[\alpha]_D$ +94.7 (c, 2.31 in $CHCl_3$).

Hui, W.H. *et al., J.C.S.*, 1965, 2285-2286

Neonaucleoside A N-127

[539825-80-4]



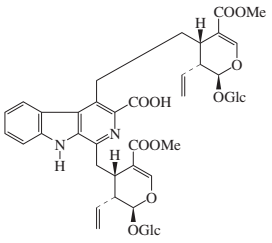
Absolute Configuration

$C_{44}H_{58}N_2O_{18}$ 902.945
Alkaloid from the dried roots of *Neonauclea sessilifolia*. Amorph. powder. $[\alpha]_D^{28}$ -133 (c, 1 in MeOH). λ_{max} 227 (log ϵ 4.54); 273 (log ϵ 3.73); 283 (sh) (log ϵ 3.72); 290 (sh) (log ϵ 3.64) (MeOH).

Itoh, A. *et al., Phytochemistry*, 2003, **62**, 359-369 (*isol, pmr, cmr*)

Neonaucleoside B N-128

[539825-81-5]



Absolute Configuration

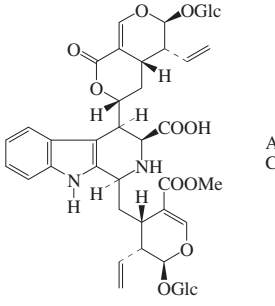
$C_{45}H_{54}N_2O_{20}$ 942.923

Alkaloid from the dried roots of *Neonauclea sessilifolia*. Amorph. powder. $[\alpha]_D^{28}$ -212 (c, 1 in MeOH). λ_{max} 238 (log ϵ 4.58); 263 (log ϵ 4.43); 290 (sh) (log ϵ 3.89); 304 (log ϵ 3.73); 335 (sh) (log ϵ 3.56); 349 (log ϵ 3.65); 387 (sh) (log ϵ 3.21) (MeOH).

Itoh, A. *et al., Phytochemistry*, 2003, **62**, 359-369 (*isol, pmr, cmr*)

Neonaucleoside C N-129

[539825-82-6]



Absolute Configuration

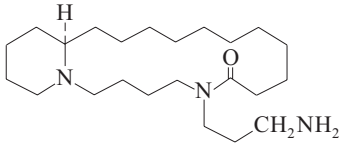
$C_{44}H_{54}N_2O_{20}$ 930.912

Alkaloid from the dried roots of *Neonauclea sessilifolia*. Cryst. (H_2O). $[\alpha]_D^{28}$ -326 (c, 0.2 in Py). Mp >300°. λ_{max} 220 (log ϵ 4.61); 243 (log ϵ 4.34); 282 (sh) (log ϵ 3.84); 288 (log ϵ 3.74) (MeOH).

Itoh, A. *et al., Phytochemistry*, 2003, **62**, 359-369 (*isol, pmr, cmr*)

Neooncinotine N-130

*10-(3-Aminopropyl)octadecahydro-2*H*-pyrido[1,2-*f*][1,6]diazacyclooctadecin-11(6*H*)-one, 9CI*



$C_{23}H_{45}N_3O$ 379.628

(ξ)-*form* [53602-28-1]

Alkaloid from the stem bark of *Oncinotis nitida* (Apocynaceae). Obt. only in admixture with Oncinotine, O-91.

[62107-29-3 ((±)-form)]

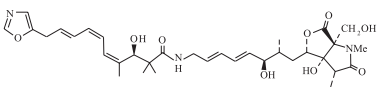
Guggisberg, A. *et al., Helv. Chim. Acta*, 1974, **57**, 414; 1976, **59**, 3013 (*struct, synth, ir, ms*)

Hou, D.-R. *et al., J.O.C.*, 2004, **69**, 6094-6099 (*synth*)

Neooxazolomycin N-131

Antibiotic AIL-B

[96851-27-3]



$C_{34}H_{47}N_3O_9$ 641.76

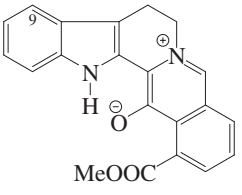
Polyene-type antibiotic. Prod. by *Streptomyces* sp. Y32026 and a *Penicillium* sp. Active against Ehrlich ascites tumour *in vivo*. Sol. $CHCl_3$, EtOAc, MeOH. λ_{max} 230 (ϵ 32000); 265 (ϵ 28000); 275 (ϵ 34000); 285 (ϵ 27000) (MeOH) (Derep).

[99745-19-4]

Japan. Pat., 1985, 85 81 184; *CA*, **104**, 49830 (*isol, struct, props*)
Takahashi, K. *et al., Tet. Lett.*, 1985, **26**, 1077 (*struct*)
Kawai, S. *et al., Agric. Biol. Chem.*, 1989, **53**, 1127 (*isol*)
Kende, A.S. *et al., J.A.C.S.*, 1990, **112**, 4070 (*synth*)
Onyango, E.O. *et al., Angew. Chem., Int. Ed.*, 2007, **46**, 6703-6705 (*synth*)

Neooxygambirtannine N-132

[23594-97-0]



$C_{21}H_{16}N_2O_3$ 344.369

Alkaloid from *Uncaria gambier (Ourouparia gambier)* (Rubiaceae). Red. Mp 220°. Artifact.

9-Methoxy, 5,6-didehydro: ***Anhydroalstonatine***

[63524-06-1]

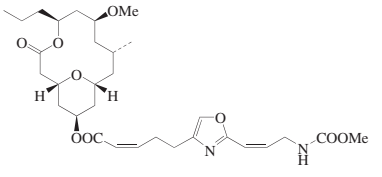
$C_{22}H_{16}N_2O_4$ 372.379

Alkaloid from the bark of *Alstonia venenata* (Apocynaceae). Red cryst. Mp 270-272°. λ_{max} 248 (log ϵ 4.5); 262 (log ϵ 4.49); 312 (log ϵ 4.52) (EtOH).

Merlini, L. *et al., Tetrahedron*, 1967, **23**, 3129-3145 (*Neooxygambirtannine*)
Chatterjee, A. *et al., Indian J. Chem., Sect. B*, 1977, **15**, 183-184 (*Anhydroalstonatine*)

Neopeltolide N-133

[934220-90-3]



Absolute Configuration

$C_{31}H_{46}N_2O_9$ 590.712

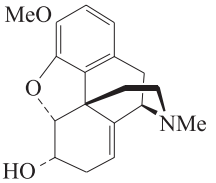
Stereochem. revised in 2007. Isol. from a sponge of the Neopeltidae. Cytotoxic and antifungal agent. Oil. $[\alpha]_D^{24}$ +24 (c, 0.24 in MeOH). λ_{max} 218 (log ϵ 4.54); 262 (log ϵ 4.29) (EtOH).

Youngsaye, W. *et al., Angew. Chem., Int. Ed.*, 2007, **46**, 9211-9214 (*synth, abs config*)
Wright, A.E. *et al., J. Nat. Prod.*, 2007, **70**, 412-416 (*isol, pmr, cmr*)
Fuwa, H. *et al., Angew. Chem., Int. Ed.*, 2008, **47**, 4737-4739 (*synth*)
Custar, D.W. *et al., J.A.C.S.*, 2008, **130**, 804-805 (*synth, abs config*)

Neopine N-134

8,14-Didehydro-4,5-epoxy-3-methoxy-17-methylmorphinan-6-ol, 9CI. β-Codeine

[467-14-1]



Absolute configuration

$C_{18}H_{21}NO_3$ 299.369

Minor alkaloid of opium (*Papaver somniferum*), also obt. from *Papaver bracteatum* (Papaveraceae). Has analgesic activity, less than that of Morphine, M-704. Long needles (cyclohexane). Mp 127.5-127.8°. $[\alpha]_D^{26}$ -28.1 (c, 7.7 in $CHCl_3$).

Hydrobromide:

Cryst. (H_2O). Mod. sol. H_2O. Mp 280-285° dec. (darkens at 240°). $[\alpha]_D^{20}$ +17.1 (c. 5.2 in H_2O).

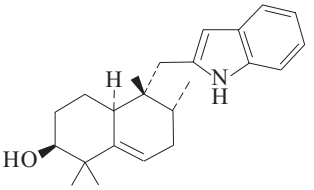
Sulfate:

Cryst. (Me_2CO). Sol. EtOH; v. sol. H_2O. Mp 166-167° dec. $[\alpha]_D^{28}$ +16.4 (c, 3 in H_2O). Slowly dec. in air.

Homeyer, A.H. *et al., J.O.C.*, 1947, **12**, 356 (*isol*)
Small, L. *et al., J.O.C.*, 1947, **12**, 359 (*struct*)
Conroy, H. *et al., J.A.C.S.*, 1955, **77**, 5960 (*synth*)
Brochmann-Hanssen, E. *et al., J. Pharm. Sci.*, 1964, **53**, 1549 (*glc, tlc*)
Batterham, T.J. *et al., Aust. J. Chem.*, 1965, **18**, 1799 (*pmr*)
Weiss, U. *et al., Bull. Soc. Chim. Fr.*, 1965, 3707 (*ord*)
Wheeler, D.M.S. *et al., J.A.C.S.*, 1967, **89**, 4494 (*ms*)
Kuppers, F.J.E.M. *et al., Phytochemistry*, 1976, **15**, 443 (*isol*)

Neopolyalthenol N-135

[99615-97-1]



$C_{23}H_{31}NO$ 337.504

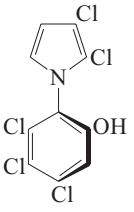
Alkaloid from *Polyalthia suaveolens* (Annonaceae). Cryst. (petrol). Mp 89°.

$[\alpha]_D$ -19 (c, 0.9 in EtOH).

Kunesch, N. *et al., Tet. Lett.*, 1985, **26**, 4937 (*uv, ir, pmr, cmr, ms, struct*)

Neopyrrolomycin N-136

*3,4,5-Trichloro-2-(2,3-dichloro-1*H*-pyrrol-1-yl)phenol, 9CI. 2,3-Dichloro-1-(2,3,4-trichloro-6-hydroxyphenyl)pyrrole*
[131956-34-8]



$C_{10}H_4Cl_5NO$ 331.411
Prod. by *Streptomyces* sp. MI424-38F1. Active against gram-positive and -negative bacteria and some fungi. Needles ($CHCl_3$/heptane) (as K salt). Sol. MeOH, Me_2CO, EtOAc, $CHCl_3$; poorly sol. H_2O. Mp 70-72° (K salt). $[\alpha]_D^{25}$ -4.8 (c, 0.5 in $CHCl_3$). λ_{max} 319 (ϵ 6030) (MeOH/NaOH) (Derep). λ_{max} 299 (ϵ 3715); 319 (ϵ 6025) (MeOH) (Berdy).

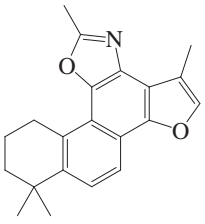
▶ LD_{50} (mus, ipr) 75 mg/kg. SL0533500

[132226-97-2]

Nogami, T. *et al., J. Antibiot.*, 1990, **43**, 1193 (*isol, struct*)
Tatsuta, K. *et al., Bull. Chem. Soc. Jpn.*, 1994, **67**, 1449 (*synth*)

Neosalvianene N-137

[790673-00-6]

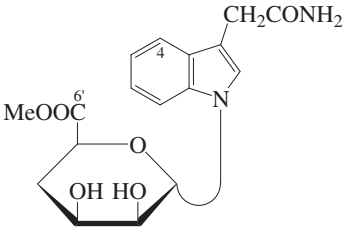


$C_{21}H_{21}NO_2$ 319.402
Alkaloid from the roots of *Salvia miltiorrhiza*. Needles (EtOAc/hexane). Mp 230-231° (213-215°). λ_{max} 201 (log ϵ 4.9); 255 (log ϵ 5.34); 263 (log ϵ 5.43) (MeOH).

Don, M.-J. *et al., J. Nat. Prod.*, 2005, **68**, 1066-1070 (*isol, synth, pmr, cmr, ms*)

Neosidomycin N-138

[72033-44-4]



$C_{17}H_{20}N_2O_6$ 348.355
Nucleoside-type antibiotic. Metab. from *Streptomyces hygroscopicus*. Weakly active against gram-negative bacteria. Amorph. powder + $\frac{1}{2}H_2O$. Sol. MeOH, butanol. Mp 93-103°. $[\alpha]_D^{26}$ +51 (c, 0.48 in MeOH). Similar to Antibiotic SF 2140, A-1255. λ_{max} 270 (ϵ 8130); 279 (ϵ 7760); 283 (sh) (ϵ 7410); 298 (ϵ 5750) (MeOH) (Derep).

Di-O-*Ac:* Mp 78-80°.

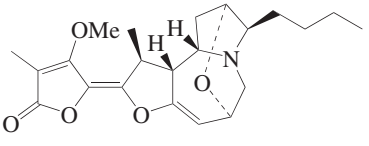
4-Methoxy: 4-Methoxyneosidomycin. ***Kahakamide A***
[362051-29-4]
$C_{18}H_{22}N_2O_7$ 378.381
Prod. by the marine *Nocardiopsis dassonvillei*. Stereochem. not confirmed. λ_{max} 222 ; 266 ; 286 ; 295 (no solvent reported).

4-Methoxy, 6′-parent acid, 6′-amide: ***Kahakamide B***
[362051-30-7]
$C_{17}H_{21}N_3O_6$ 363.369
Prod. by the marine *Nocardiopsis dassonvillei*. Stereochem. not confirmed.

Furuta, R. *et al., Tet. Lett.*, 1979, 1701-1704 (*isol, uv, ir, pmr, ms*)
Isono, K. *et al., J. Antibiot.*, 1988, **41**, 1711-1739 (*rev*)
Buchanan, J.G. *et al., J.C.S. Perkin 1*, 1994, 1417-1426 (*synth*)
Schumacher, R.W. *et al., Tet. Lett.*, 2001, **42**, 5133-5135 (*Kahakamides*)

Neostemofoline N-139

[1002109-44-5]

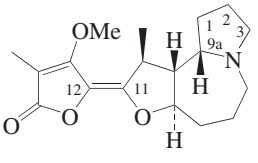


$C_{22}H_{29}NO_5$ 387.475
Alkaloid from *Stemona japonica*. Oil. $[\alpha]_D^{23}$ +230 (c, 0.11 in MeOH). λ_{max} 305 (log ϵ 4.32) (MeOH).

Tang, C.-P. *et al., J. Nat. Prod.*, 2008, **71**, 112-116 (*isol, pmr, cmr*)

Neostemonine N-140

[164124-85-0]



$C_{18}H_{25}NO_4$ 319.4
Alkaloid from the roots of *Stemona japonica*. Cryst. (EtOH) (as hydrochloride). Mp 198-200° (hydrochloride). $[\alpha]_D$ +245 (c, 1.3 in EtOH) (hydrochloride).

*1,2,3,9*a-*Tetradehydro:* ***Bisdehydroneostemonine***
[145701-16-2]
$C_{18}H_{21}NO_4$ 315.368
Alkaloid from the roots of *Stemona japonica*. Cryst. (Et_2O). Mp 218-221°. $[\alpha]_D$ +187 (c, 0.33 in EtOH).

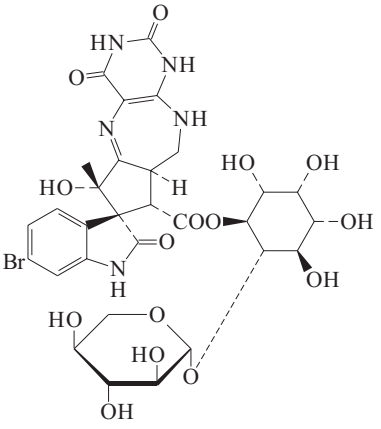
*Demethoxy, 11*S*,12*R*-dihydro:* ***Isoneostemocochinine***
[1003567-59-6]
$C_{17}H_{25}NO_3$ 291.389
Alkaloid from the roots of *Stemona cochinchinensis*. Isol. as a 1:1 mixt. with Neostemocochinine.

*Demethoxy, 11*S*,12*S*-dihydro:* ***Neostemocochinine***
[1003567-58-5]
$C_{17}H_{25}NO_3$ 291.389
Alkaloid from the roots of *Stemona cochinchinensis*. Isol. as a 1:1 mixt. with Isoneostemocochinine.

Ye, Y. *et al., Phytochemistry*, 1994, **37**, 1205-1208 (*isol, ir, pmr, cmr, ms*)
Lin, L.-G. *et al., Helv. Chim. Acta*, 2007, **90**, 2167-2175 (*Neostemocochinine, Isoneostemocochinine*)

Neosurugatoxin N-141

[80680-43-9]



$C_{30}H_{34}BrN_5O_{15}$ 784.527
Toxin from the mid-gut gland of *Babylonia japonica* (Japanese ivory shell) of dietary origin and from *Corynebacterium* sp. Shows powerful antimydriatic activity. Insecticide, nematocide. Prisms + $1H_2O$ (H_2O). Sol. H_2O-MeOH. Mp 331-335° dec. Extremely unstable in alkaline medium and fairly heat-labile. λ_{max} 220 (ϵ 44700); 282 (ϵ 15100); 310 (sh) (ϵ 9120); 325 (sh) (ϵ 6310) (H_2O) (Derep).

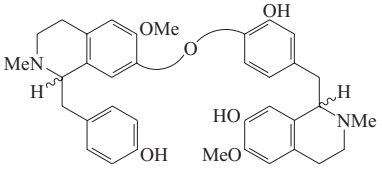
5′-O-*Dexylosyl:* ***Prosurugatoxin***
[99102-40-6]
$C_{25}H_{26}BrN_5O_{11}$ 652.411
Isol. from *Babylonia japonica*. Ganglion blocking agent, phycotoxin, mydriatic agent. λ_{max} 220 (ϵ 44700); 282 (ϵ 15100); 310 (sh) (ϵ 9120); 325 (sh) (ϵ 6310) (H_2O) (Derep).

Kosuge, T. *et al., Tet. Lett.*, 1981, **22**, 3417-3420 (*cryst struct*)

Kosuge, T. *et al., Chem. Pharm. Bull.*, 1982, **30**, 3255-3259; 1985, **33**, 2890-2895; 3059-3061 (*isol, Prosurgatoxin*)
Inoue, S. *et al., CA*, 1983, **100**, 191639 (*synth*)
Hayashi, E. *et al., J. Neurochem.*, 1984, **42**, 1491 (*props*)
Inoue, S. *et al., Tet. Lett.*, 1986, **27**, 5225 (*synth*)
Inoue, S. *et al., Yakugaku Zasshi*, 1987, **107**, 645 (*rev, synth*)
Wada, A. *et al., Methods Neurosci.*, 1992, **8**, 311 (*rev, props*)
Inoue, S. *et al., Tetrahedron*, 1994, **50**, 2753 (*synth*)

Neosutchuenenine N-142

[151271-91-9]

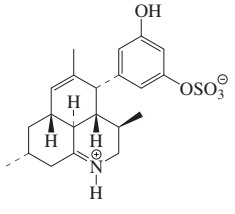


$C_{36}H_{40}N_2O_6$ 596.722
Alkaloid from roots of *Cyclea sutchuenensis* (Menispermaceae). Powder. $[\alpha]_D^{26}$ +7.8 (c, 0.158 in EtOH).

Wang, X.-K. *et al., Phytochemistry*, 1993, **33**, 1253 (*isol, uv, ir, pmr, cmr, ms, struct*)

Neosymbioimine N-143

[865093-33-0]

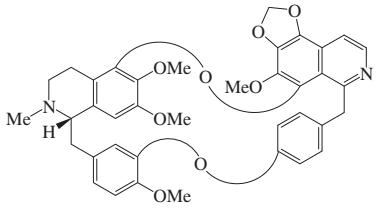


Absolute Configuration

$C_{21}H_{27}NO_5S$ 405.514
Alkaloid from the marine dinoflagellate *Symbiodinium* sp. Oil. $[\alpha]_D^{23}$ +149 (c, 0.1 in MeOH).

Kita, M. *et al., Bioorg. Med. Chem.*, 2005, **13**, 5253-5258 (*isol, pmr, cmr*)
Varseev, G.N. *et al., Org. Lett.*, 2007, **9**, 1461-1464 (*synth*)

Neothalfine N-144

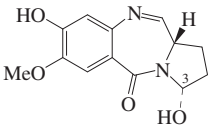


$C_{38}H_{36}N_2O_8$ 648.711
Alkaloid from the roots of *Thalictrum atriplex*. Amorph. powder. Mp 132-135°. $[\alpha]_D$ +36.4 (c, 0.5 in $CHCl_3$). λ_{max} 210 ; 240 (sh) ; 256 ; 340 (MeOH).

Gao, G.-Y. *et al., J. Asian Nat. Prod. Res.*, 2005, **7**, 805-809 (*isol, cd, pmr, cmr, ms*)

Neothramycin A, 9CI N-145

*1,2,3,11*a-*Tetrahydro-3,8-dihydroxy-7-methoxy-5*H-*pyrrolo[2,1-*c*][1,4]benzodiazepin-5-one, 9CI*
[59593-16-7]



Absolute Configuration

$C_{13}H_{14}N_2O_4$ 262.265
Isol. from *Streptomyces* spp. Antineoplastic agent showing less toxicity than other anthramycins. Amorph. powder. Sol. MeOH, dioxan, DMF, DMSO, $CHCl_3$; fairly sol. H_2O; poorly sol. C_6H_6, hexane. Mp 132-147° dec. $[\alpha]_D^{26}$ +272 (c, 0.52 in dioxan). Log P -0.64 (uncertain value) (calc). Coml. prod. Neothramycin is mixt. of epimers. λ_{max} 223 (ϵ 23200); 240 (sh) (ϵ); 265 (ϵ 7600); 320 (ϵ 3640) (90% MeOH/HCl) (Derep). λ_{max} 228 (ϵ 16700); 254 (ϵ 14800); 291 (ϵ 11100); 324 (ϵ 10800) (MeOH aq./NaOH) (Derep). λ_{max} 223 (ϵ 22400); 240 (sh) (ϵ); 265 (ϵ 7600); 318 (ϵ 4100) (90% MeOH) (Derep). λ_{max} 223 (E1%/1cm 936); 310 (E1%/1cm 178) (MeOH) (Berdy).

▶ LD_{50} (mus, ivn) 20 - 30 mg/kg, LD_{50} (mus, ipr) 20 - 50 mg/kg. UY8546000

3-Epimer: ***Neothramycin B***
[59593-15-6]
From *Streptomyces* spp. Antineoplastic agent. Amorph. powder. Sol. MeOH, DMF, DMSO, dioxan, $CHCl_3$; fairly sol. H_2O; poorly sol. C_6H_6, hexane. Mp 144-151° dec. $[\alpha]_D^{26}$ +314 (c, 0.48 in dioxan). Log P -0.64 (uncertain value) (calc). λ_{max} 223 (ϵ 23200); 240 (sh); 265 (ϵ 7600); 320 (ϵ 3640) (90% MeOH/HCl) (Derep). λ_{max} 228 (ϵ 16700); 254 (ϵ 14800); 291 (ϵ 11100); 324 (ϵ 10800) (MeOH aq./NaOH) (Derep). λ_{max} 223 (ϵ 22400); 240 (sh); 265 (ϵ 7600); 318 (ϵ 4100) (90% MeOH) (Derep). λ_{max} 223 (E1%/1cm 980); 310 (E1%/1cm 178) (MeOH) (Berdy). λ_{max} 224 (ϵ 26200); 320 (ϵ 4080) (MeOH-HCl) (Berdy). λ_{max} 228 (ϵ 20900); 254 (ϵ 19000); 291 (ϵ 11900); 324 (ϵ 12200) (MeOH-NAOH) (Berdy).

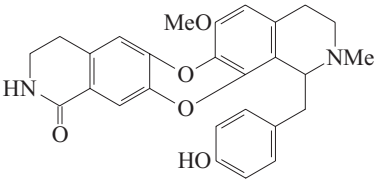
▶ LD_{50} (mus, ivn) 20 - 30 mg/kg, LD_{50} (mus, ipr) 28 - 40 mg/kg. UY8545700

[67298-49-1]

Takeuchi, T. *et al., J. Antibiot.*, 1976, **29**, 93 (*isol, nmr, ir, uv, ms*)
Ger. Pat., 1977, (*(Microbiochemical Research Foundation)*)2 645 528; *CA*, **87**, 51624k (*manuf*)
Miyamoto, M. *et al., J. Antibiot.*, 1977, **30**, 340 (*synth, struct, uv, pmr, cmr*)
Kusama, T. *et al., J. Antibiot.*, 1981, **34**, 845 (*hplc*)
Fujita, H. *et al., J. Antibiot.*, 1982, **35**, 1093 (*pharmacokinet, exp, human*)
Tanaka, N. *et al., Antibiotics (N.Y.)*, 1983, **6**, 136 (*rev*)
Mori, M. *et al., Chem. Comm.*, 1986, 841 (*synth*)
Andriamialisoa, R.Z. *et al., Tet. Lett.*, 1986, 841 (*synth*)
Fukuyama, T. *et al., J.A.C.S.*, 1990, **112**, 7050 (*synth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, NCM275

Neotrilobine N-146

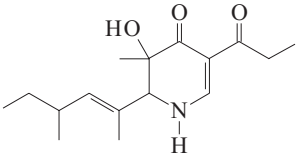
[158371-93-8]



$C_{27}H_{26}N_2O_5$ 458.513
Alkaloid from roots of *Cocculus trilobus* (Menispermaceae).

Chen, H.S. *et al., Chin. Chem. Lett.*, 1994, **5**, 385; *CA*, **121**, 226368e (*isol, struct*)

Neovasipyridone N-147



$C_{16}H_{25}NO_3$ 279.378

N-*Et:* ***Neovasipyridone E***
[184777-35-3]
$C_{18}H_{29}NO_3$ 307.432
Isol. from *Neocosmospora vasinfecta*. Oil. $[\alpha]_D^{20}$ +178 (c, 0.5 in EtOH). λ_{max} 201 (log ϵ 3.82); 262 (log ϵ 3.72); 322 (log ϵ 3.7) (EtOH).

N-*(2-Methylpropyl):* ***Neovasipyridone C***
[172430-71-6]
$C_{20}H_{33}NO_3$ 335.486
From *Neocosmospora vasinfecta*. Oil. $[\alpha]_D^{20}$ +383 (c, 1.0 in EtOH).

N-*(2-Methylbutyl):* ***Neovasipyridone A***
[172430-69-2]
$C_{21}H_{35}NO_3$ 349.512
Metab. from the fungus *Neocosmospora vasinfecta*. Oil. $[\alpha]_D^{20}$ +366 (c, 1.0 in EtOH).

N-*(3-Methylbutyl):* ***Neovasipyridone B***
[172430-70-5]
$C_{21}H_{35}NO_3$ 349.512
From *Neocosmospora vasinfecta*. Oil. $[\alpha]_D^{20}$ +392 (c, 1.0 in EtOH).

N-*(2-Phenylethyl):* ***Neovasipyridone D***
[184777-33-1]

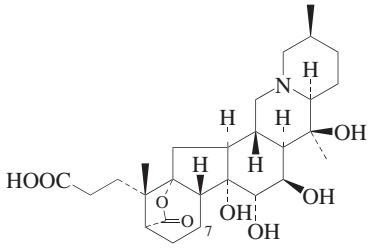
$C_{24}H_{33}NO_3$ 383.53
From *Neocosmospora vasinfecta*. Oil. $[\alpha]_D^{20}$ +188 (c, 1.0 in EtOH). λ_{max} 202 (log ϵ 3.91); 262 (log ϵ 3.88); 323 (log ϵ 3.93) (EtOH).

N-*(3-Carbamoylpropyl):* ***Neovasipyridone F***
[184777-36-4]
$C_{20}H_{32}N_2O_4$ 364.484
From *Neocosmospora vasinfecta*. Oil. $[\alpha]_D^{20}$ +260 (c, 0.2 in EtOH). λ_{max} 202 (log ϵ 3.61); 262 (log ϵ 3.91); 322 (log ϵ 3.9) (EtOH).

Nakajima, H. *et al., Phytochemistry*, 1995, **40**, 1643; 1996, **43**, 1015

Neoverataline A N-148

[603137-25-3]



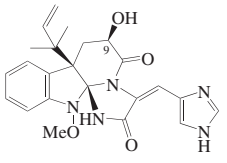
$C_{27}H_{41}NO_8$ 507.623
Alkaloid from the roots and rhizomes of *Veratrum taliense*. Antifungal agent. Cryst. (MeOH/EtOAc). Mp 220-222°. $[\alpha]_D^{25}$ +91.7 (c, 0.36 in MeOH).

7α-Hydroxy: ***Neoverataline B***
[603137-26-4]
$C_{27}H_{41}NO_9$ 523.622
Alkaloid from the roots and rhizomes of *Veratrum taliense*. Antifungal agent. Needles. Mp 265-267°. $[\alpha]_D^{25}$ -46.8 (c, 0.32 in MeOH).

Zhou, C.-X. *et al., Tetrahedron*, 2003, **59**, 5743-5747 (*isol, pmr, cmr*)

Neoxaline N-149

[71812-10-7]



Absolute Configuration

$C_{23}H_{25}N_5O_4$ 435.482
Closely related to Meleagrin, M-162. Prod. by *Aspergillus japonicus* Fg-551. Weak CNS stimulant, mycotoxin. Needles (C_6H_6). Mp 202° dec. $[\alpha]_D^{24}$ -16.3 (c, 1 in $CHCl_3$). λ_{max} 237 (ϵ 16000); 300 (sh); 310 (ϵ 28000); 320 (sh) (MeOH/HCl) (Derep). λ_{max} 245 (ϵ 17000); 310 (sh); 320 (ϵ 35000); 330 (sh) (MeOH/KOH) (Derep). λ_{max} 237 (ϵ 17600); 330 (ϵ 29600) (MeOH) (Derep).
► LD_{50} (mus, ipr) 200 - 400 mg/kg.
NJ5835000

9-Epimer: ***9-Epineoxaline***
$C_{23}H_{25}N_5O_4$ 435.482
Prod. by *Penicillium tulipae* IBT 3458. $[\alpha]_D$ +26.5 (c, 0.5 in MeOH). $[\alpha]_D$ +48 (c, 0.5 in $CHCl_3$).

Hirano, A. *et al., J. Antibiot.*, 1979, **32**, 781-785 (*isol, uv, ir, pmr*)
Konda, Y. *et al., Chem. Pharm. Bull.*, 1980, **28**, 2987-2993 (*cd, pmr, cmr*)
Overy, D.P. *et al., Biochem. Syst. Ecol.*, 2006, **34**, 345-348 (*9-Epineoxaline*)

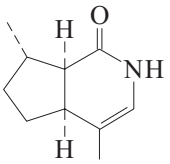
Neoyuzurimine N-150

Struct. unknown. Alkaloid from the leaves and bark of *Daphniphyllum macropodum* (Daphniphyllaceae). Mp 195-198° (as picrate).

Irikawa, H. *et al., Tet. Lett.*, 1966, 5363 (*isol*)

Nepetalactam N-151

[115421-73-3]

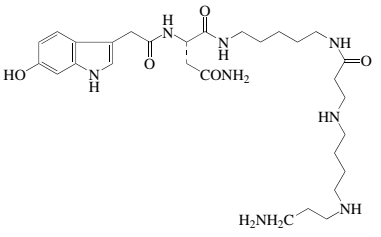


$C_{10}H_{15}NO$ 165.235
Isol. from a commercial sample of catnip oil (*Nepeta cataria*) (Lamiaceae). Excellent crystalline deriv. of nepetalactone. Cryst. Mp 95-96°. $[\alpha]_D^{25}$ -46.5 (c, 5 in $CHCl_3$). Artifact.

Eisenbraun, E.J. *et al., J.O.C.*, 1988, **53**, 3968-3972 (*isol, uv, ir, pmr, cmr, ms, struct*)

Nephilatoxin 1 N-152

NPTX 1
[119688-54-9]



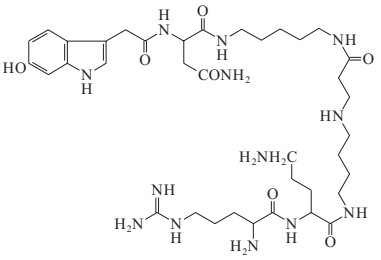
$C_{29}H_{48}N_8O_5$ 588.749
Isol. from the venom of the Joro spider (*Nephila clavata*).

Deoxy: ***Nephilatoxin 8***
[114355-41-8]
$C_{29}H_{48}N_8O_4$ 572.749
Isol. from *Nephila clavata* venom.

Toki, T. *et al., Biomed. Res.*, 1988, **9**, 421 (*isol*)
Asani, T. *et al., Pept. Chem.*, 1989, 833 (*synth*)
Miyashita, M. *et al., Tet. Lett.*, 1997, **38**, 8297-8298 (*synth*)
Nihei, K. *et al., Tetrahedron*, 2006, **62**, 8335-8350 (*synth*)

Nephilatoxin 2 N-153

[119613-48-8]

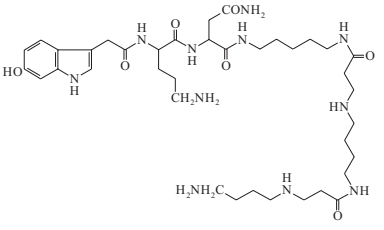


$C_{37}H_{63}N_{13}O_7$ 801.988
Isol. from the venom of the Joro spider (*Nephila clavata*).

Toki, T. *et al., Biomed. Res.*, 1988, **9**, 421 (*isol*)

Nephilatoxin 3 N-154

[119613-49-9]

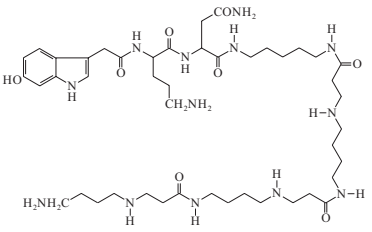


$C_{38}H_{65}N_{11}O_7$ 788.001
Isol. from the venom of the Joro spider (*Nephila clavata*).

Toki, T. *et al., Biomed. Res.*, 1988, **9**, 421 (*isol*)

Nephilatoxin 4 N-155

[119613-50-2]

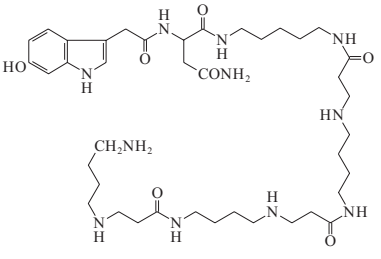


$C_{45}H_{79}N_{13}O_8$ 930.201
Isol. from the venom of the Joro spider (*Nephila clavata*).

Toki, T. *et al., Biomed. Res.*, 1988, **9**, 421 (*isol*)

Nephilatoxin 5 N-156

[119613-51-3]

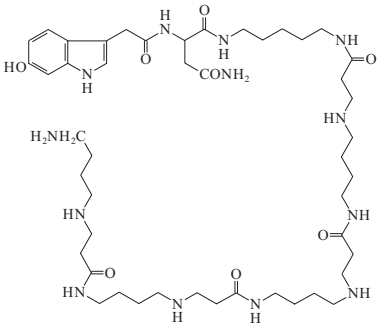


$C_{40}H_{69}N_{11}O_7$ 816.055
Isol. from the venom of the Joro spider (*Nephila clavata*).

Toki, T. *et al., Biomed. Res.*, 1988, **9**, 421 (*isol*)
Saito, H. *et al., Tet. Lett.*, 1998, **39**, 6479-6482 (*synth*)

Nephilatoxin 6 N-157

[119613-52-4]

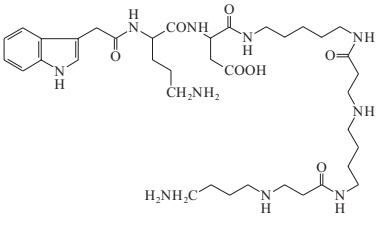


$C_{47}H_{83}N_{13}O_8$ 958.255
Isol. from the venom of the Joro spider (*Nephila clavata*).

Toki, T. *et al., Biomed. Res.*, 1988, **9**, 421 (*isol*)
Saito, H. *et al., Tet. Lett.*, 1998, **39**, 6479-6482 (*synth*)

Nephilatoxin 7 N-158

[114355-40-7]

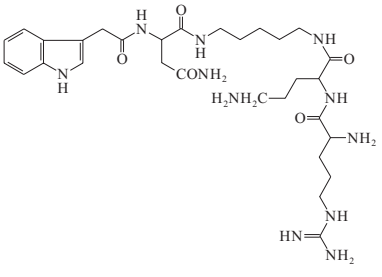


$C_{38}H_{64}N_{10}O_7$ 772.986
Isol. from the venom of the Joro spider (*Nephila clavata*).

Toki, T. *et al., Biomed. Res.*, 1988, **9**, 75; 421 (*isol*)

Nephilatoxin 9 N-159

[114355-42-9]



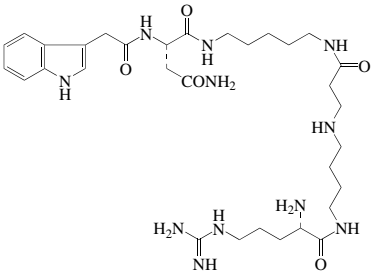
$C_{30}H_{49}N_{11}O_5$ 643.788
Isol. from the venom of the Joro spider (*Nephila clavata*).

Toki, T. *et al., Biomed. Res.*, 1988, **9**, 75; 421 (*isol*)

Miyashita, M. *et al., Tet. Lett.*, 1992, **33**, 2833 (*synth*)

Nephilatoxin 10 N-160

NPTX 10. Neurotoxin NPTX 10
[119613-53-5]

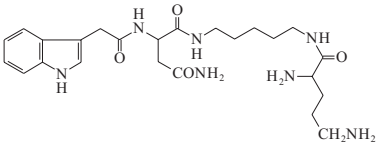


$C_{32}H_{53}N_{11}O_5$ 671.841
Isol. from the venom of the Joro spider (*Nephila clavata*).

Toki, T. *et al., Biomed. Res.*, 1988, **9**, 421 (*isol*)
Miyashita, M. *et al., Tet. Lett.*, 1992, **33**, 2833 (*synth*)

Nephilatoxin 11 N-161

[119613-54-6]

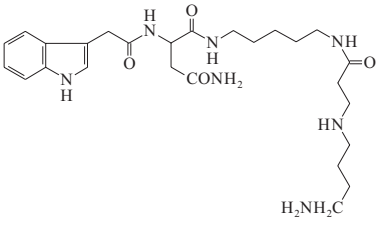


$C_{24}H_{37}N_7O_4$ 487.601
Isol. from the venom of the Joro spider (*Nephila clavata*).

Toki, T. *et al., Biomed. Res.*, 1988, **9**, 421 (*isol*)
Miyashita, M. *et al., Tet. Lett.*, 1992, **33**, 2837 (*synth*)

Nephilatoxin 12 N-162

[119613-55-7]

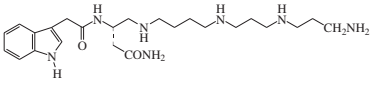


$C_{26}H_{41}N_7O_4$ 515.654
Isol. from the venom of the Joro spider (*Nephila clavata*).

Toki, T. *et al., Biomed. Res.*, 1988, **9**, 421 (*isol*)
Miyashita, M. *et al., Tet. Lett.*, 1992, **33**, 2837 (*synth*)

Nephilatoxin 473 N-163

NPTX 473



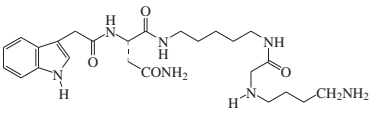
$C_{24}H_{41}N_7O_2$ 459.634

Isol. from the venom glands of the spider *Nephila* sp.

Nihei, K. *et al., Tetrahedron*, 2006, **62**, 8335-8350 (*synth*)

Nephilatoxin 501 N-164

NPTX 501

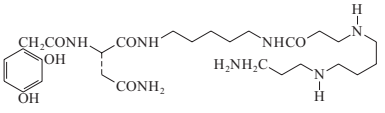


$C_{25}H_{39}N_7O_4$ 501.628
Isol. from the venom glands of the spider *Nephila* sp.

Nihei, K. *et al., Tetrahedron*, 2006, **62**, 8335-8350 (*synth*)

Nephilatoxin 565 N-165

Neurotoxin JSTX-3. JSTX-3. NPTX 565
[112163-33-4]



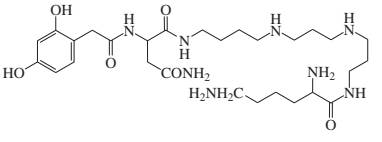
$C_{27}H_{47}N_7O_6$ 565.712
Isol. from the venom of the Joro spider *Nephila clavata*. Neurotoxin.

[113954-18-0]

Aramaki, Y. *et al., Biomed. Res.*, 1987, **8**, 241 (*isol*)
Hashimoto, Y. *et al., Tet. Lett.*, 1987, **28**, 3511 (*synth, pmr*)
Nason, D.M. *et al., Tet. Lett.*, 1989, **30**, 2337 (*synth*)
Nihei, K. *et al., Tetrahedron*, 2006, **62**, 8335-8350 (*synth*)

Nephilatoxin 594 N-166

NPTX 594

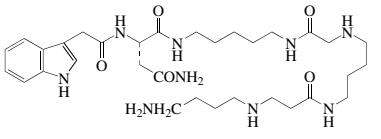


$C_{28}H_{50}N_8O_6$ 594.753
Isol. from the Joro spiders *Nephila clavipes* and *Nephila madagascariensis*.
$[\alpha]_D^{19}$ -7.9 (c, 1 in H_2O) (as hydrochloride).

Wakamiya, T. *et al., Bull. Chem. Soc. Jpn.*, 2001, **74**, 1743-1749 (*synth, pmr, ms*)

Nephilatoxin 643 N-167

NPTX 643
[205673-37-6]



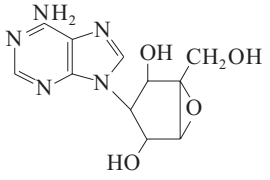
$C_{32}H_{53}N_9O_5$ 643.828
Isol. from the venom of the Madagascar

spider *Nephilengys borbonica*. Neurotoxin. $[\alpha]_D^{19}$ -1.9 (c, 0.1 in H_2O).

Itagaki, Y. *et al., Nat. Toxins*, 1997, **5**, 1-13 (*isol*)
Miyashita, M. *et al., Heterocycles*, 1998, **47**, 171-175 (*synth*)

Neplanocin B N-168

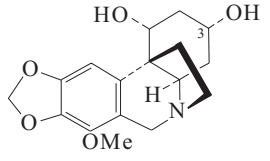
3-(6-Amino-9H-purin-9-yl)-1-(hydroxymethyl)-6-oxabicyclo[3.1.0]hexane-2,4-diol, 9CI
[72877-49-7]



$C_{11}H_{13}N_5O_4$ 279.255
Nucleoside antibiotic. Isol. from *Ampullariella regularis*. Weakly active against tumours. Platelets. Sol. H_2O, DMSO; poorly sol. EtOAc, hexane. Mp 269-272° dec. $[\alpha]_D^{24}$ -3.5 (c, 1 in DMSO). λ_{max} 260 (ϵ 15100) (H_2O at pH 2) (Derep). λ_{max} 262 (ϵ 15800) (H_2O) (Derep). λ_{max} 263 (E1%/1cm 522.7) (NaOH aq.) (Berdy).
▶ RN8990000
Ger. Pat., 1979, 2 917 000; *CA*, **92**, 109108 (*isol, props*)
Hayashi, M. *et al., Nucleic Acids Symp. Ser.*, 1980, **8**, 565 (*struct, props*)
Japan. Pat., 1981, 81 51 414; *CA*, **95**, 175791 (*isol, props*)
Isono, K. *et al., J. Antibiot.*, 1988, **41**, 1711 (*rev*)

Nerbowdine N-169

Haemanthine. Hemanthine. Buphanitine
[4673-18-1]



$C_{17}H_{21}NO_5$ 319.357
Alkaloid from the bulbs of *Boophone disticha*, *Nerine bowdenii*, *Crinum erubescens* and from unidentified *Brunsvigia* sp. (Amaryllidaceae). Cryst. ($CHCl_3$/Me_2CO or EtOH). Mp 230-232° Mp 244-245° dec. (dimorph.).

Hydrochloride:
Fine needles (EtOH aq.). Mp 254-265° dec. $[\alpha]_D^{23}$ -86.1 (c, 0.87 in H_2O).

Nitrate: Mp 222-224°.

3-Ac: ***3-O-Acetylnerbowdine***
[100196-22-3]
$C_{19}H_{23}NO_6$ 361.394
Alkaloid from the bulbs of *Brunsvigia disticha* and *Nerine crispa* (Amaryllidaceae). Cryst. (Et_2O). Mp 207-209°. $[\alpha]_D^{21}$ -116 (c, 0.40 in $CHCl_3$). $[\alpha]_D^{21}$ -45 (c, 0.395 in EtOH).

Di-Ac: Mp 151-152°. $[\alpha]_D^{25}$ -30.5 (c, 1.05 in $CHCl_3$).

Demethoxy: ***Cribetamine***
[97673-68-2]
$C_{16}H_{19}NO_4$ 289.33
Alkaloid isol. from *Crinum oliganthum*. Stereochem. at C-1 and C-3 not certain.

Lyle, R.E. *et al., J.A.C.S.*, 1960, **82**, 2620-2625 (*isol, uv*)
Goosen, A. *et al., J.C.S.*, 1960, 1094 (*isol*)
Hauth, H. *et al., Helv. Chim. Acta*, 1961, **44**, 491-502 (*isol, deriv*)
Lloyd, H.A. *et al., J.O.C.*, 1962, **27**, 373-377 (*struct*)
Döpke, W. *et al., Naturwissenschaften*, 1962, **49**, 469 (*3-Acetylnerbowdine*)
Hauth, H. *et al., Helv. Chim. Acta*, 1963, **46**, 491-502 (*3-Acetylnerbowdine*)
Wildman, W.C. *et al., J.O.C.*, 1968, **33**, 3749-3753 (*isol*)
Trimino, Z. *et al., Rev. Cubana Quim.*, 1997, **9**, 123-127 (*Cribetamine*)

Nerifline N-170

[1359-99-5]

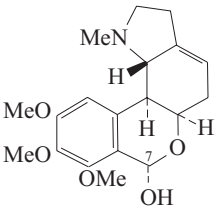
$C_{17}H_{21}NO_5$ 319.357
Amaryllidaceae alkaloid. Struct. unknown. Isol. from the bulbs of *Nerine flexuosa* (Amaryllidaceae). Mp 152°.

Hydroiodide: Mp 162-163°.

Boit, H.-G. *et al., Naturwissenschaften*, 1960, **47**, 109 (*isol*)

Nerinine N-171

[481-44-7]



$C_{19}H_{25}NO_5$ 347.41
Alkaloid from *Nerine sarniensis* and *Zephyranthes candida* (Amaryllidaceae). Cryst. (Me_2CO). Mp 209-210°. $[\alpha]_D$ +155 ($CHCl_3$). Oxid. to Albomaculine.

7-Ketone(lactone): ***Albomaculine***
[668-63-3]
$C_{19}H_{23}NO_5$ 345.394
Alkaloid from the bulbs of *Haemanthus albomaculatus* (Amaryllidaceae). Cryst. (EtOAc). Mp 178-179°. $[\alpha]_D^{16}$ +78 (c, 1.0 in $CHCl_3$).

7-Ketone(lactone), perchlorate:
Prisms (MeOH). Mp 285-289° dec.

Stereoisomer (?): ***Urceoline***
$C_{19}H_{25}NO_5$ 347.41
Alkaloid from bulbs of *Urceolina miniata* and *Hippeastrum brachyandrum* (Amaryllidaceae). Prisms (Me_2CO). Mp 189-190°. $[\alpha]_D^{25}$ +180 (c, 0.2 in $CHCl_3$). Tentative struct.

Stereoisomer, 7-ketone(lactone), (?): ***Urminine***
$C_{19}H_{23}NO_5$ 345.394
Alkaloid from bulbs of *Urceolina miniata* and *Amaryllis parkeri* (Amaryllidaceae). Prisms (Me_2CO). Mp 177-179°. $[\alpha]_D^{25}$ -40 (c, 0.2 in $CHCl_3$). Tentative struct.

Boit, H.-G. *et al., Chem. Ber.*, 1954, **87**, 1704; 1955, **88**, 1590; 1957, **90**, 57 (*isol*)
Briggs, C.K. *et al., J.A.C.S.*, 1956, **78**, 2899 (*Albomaculine*)
Boit, H.-G. *et al., Chem. Ber.*, 1957, **90**, 1827; 1959, **92**, 2578; 2582 (*Urceoline, Urminine*)
Hawksworth, W.A. *et al., J.C.S.*, 1965, 1991 (*struct, sterochem*)
Jeffs, P.W. *et al., J.O.C.*, 1966, **31**, 189 (*struct*)
Clardy, J. *et al., J.O.C.*, 1972, **37**, 49 (*config*)

Nerispine N-172

[1360-00-5]

$C_{17}H_{19}NO_4$ 301.341
Struct. unknown. Possibly the 8-methoxy isomer of Falcatine, F-7. Alkaloid from the bulbs of *Nerine undulata* (Amaryllidaceae). Cryst. (Me_2CO). Mp 194-195°. $[\alpha]_D^{22}$ -210 (c, 0.2 in $CHCl_3$).

Perchlorate:
Prisms (H_2O). Mp 230-235° dec.

Boit, H.-G. *et al., Chem. Ber.*, 1956, **89**, 1129-1134 (*isol*)
Boit, H.-G. *et al., Naturwissenschaften*, 1960, **47**, 109

Nerundine N-173

[1360-01-6]

$C_{18}H_{21}NO_5$ 331.368
Amaryllidaceae alkaloid. Struct. unknown. Isol. from the bulbs of *Nerine undulata* (Amaryllidaceae). Cryst. + $1H_2O$. Mp 256° dec. $[\alpha]_D$ -95 (c, 0.2 in $CHCl_3$).

Perchlorate: Mp 221° dec.

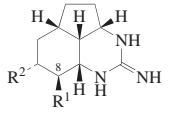
Picrate: Mp 168° dec.

Methiodide: Mp 286° dec.

Boit, H.-G. *et al., Naturwissenschaften*, 1959, **46**, 228 (*isol*)

Netamine A N-174

[910454-37-4]



Absolute Configuration

R^1 = -$(CH_2)_5$$\overset{6'}{C}H_3$, R^2 = $-CH_2CH_2CH_3$

$C_{19}H_{35}N_3$ 305.506
Stereochem. revised in 2008. Related to Ptilocaulin, P-773. Isol. from the sponge *Biemna laboutei*. Pale yellow oil. $[\alpha]_D^{20}$ +2.2 (c, 0.65 in CH_2Cl_2).

2′,3′-Didehydro(Z-): ***Netamine D***
[910454-40-9]
$C_{19}H_{33}N_3$ 303.49
Isol. from *Biemna laboutei*. Pale yellow oil. $[\alpha]_D^{25}$ -5.8 (c, 0.03 in MeOH).

Sorek, H. *et al., Tetrahedron*, 2006, **62**, 8838-8843 (*isol, pmr, cmr*)
Yu, M. *et al., J.O.C.*, 2008, **73**, 9065-9074 (*synth, abs config*)

Netamine B N-175

[910454-38-5]

As Netamine A, N-174 with

R^1 = -$CH(CH_3)(CH_2)_4CH_3$, R^2 = -CH_2CH_3

$C_{19}H_{35}N_3$ 305.506

Stereochem. revised in 2008. Isol. from *Biemna laboutei*. Pale yellow oil. $[\alpha]_D^{20}$ +5.3 (c, 0.05 in CH_2Cl_2).

Sorek, H. *et al., Tetrahedron*, 2006, **62**, 8838-8843 (*isol, pmr, cmr*)

Yu, M. *et al., J.O.C.*, 2008, **73**, 9065-9074 (*config*)

Netamine C N-176

[910454-39-6]

As Netamine A, N-174 with

R^1 = -$(CH_2)_5CH_3$, R^2 = CH_3

$C_{17}H_{31}N_3$ 277.452

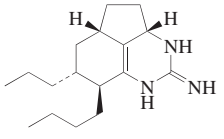
Stereochem. revised in 2008. Isol. from *Biemna laboutei*. Pale yellow oil. $[\alpha]_D^{25}$ +3.7 (c, 0.09 in MeOH).

Sorek, H. *et al., Tetrahedron*, 2006, **62**, 8838-8843 (*isol, pmr, cmr*)

Yu, M. *et al., J.O.C.*, 2008, **73**, 9065-9074 (*synth, config*)

Netamine E N-177

[910454-41-0]



Absolute Configuration

$C_{17}H_{29}N_3$ 275.436

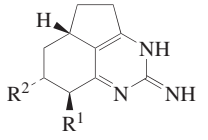
Stereochem. revised in 2008. Isol. from *Biemna laboutei*. Pale yellow oil. $[\alpha]_D^{21}$ +35 (c, 0.8 in CH_2Cl_2).

Sorek, H. *et al., Tetrahedron*, 2006, **62**, 8838-8843 (*isol, pmr, cmr*)

Yu, M. *et al., J.O.C.*, 2008, **73**, 9065-9074 (*synth, config*)

Netamine F N-178

[910454-42-1]



Absolute Configuration

R^1 = -CH_2CH_3, R^2 = CH_3

$C_{13}H_{19}N_3$ 217.313

Stereochem. revised in 2008. Isol. from *Biemna laboutei*. Pale yellow oil. $[\alpha]_D^{20}$ +108 (c, 0.05 in CH_2Cl_2).

Sorek, H. *et al., Tetrahedron*, 2006, **62**, 8838-8843 (*isol, pmr, cmr*)

Yu, M. *et al., J.O.C.*, 2008, **73**, 9065-9074 (*config*)

Netamine G N-179

[910454-43-2]

As Netamine F, N-178 with

R^1 = -$(CH_2)_3CH_3$, R^2 = -$CH_2CH_2CH_3$

$C_{17}H_{27}N_3$ 273.42

Stereochem. revised in 2008. Isol. from *Biemna laboutei*. Pale yellow oil. $[\alpha]_D^{21}$ +27 (c, 0.2 in CH_2Cl_2).

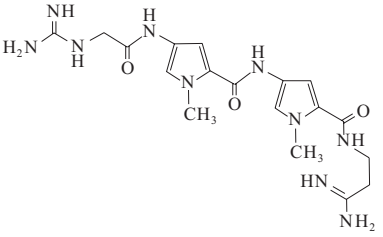
Sorek, H. *et al., Tetrahedron*, 2006, **62**, 8838-8843 (*isol, pmr, cmr*)

Yu, M. *et al., J.O.C.*, 2008, **73**, 9065-9074 (*synth, config*)

Netropsin N-180

*N′-(2-Carbamoylethyl)-4-[(2-guanidinoacetimidoyl)amino]-1,1′-dimethyl-*N*,4′-bi[pyrrole-2-carboxamide], 8CI. Congocidine. Sinanomycin. Antibiotic K 117. Antibiotic IA 887. Antibiotic T 1384. Antibiotic 2814A. Antibiotic CH 777A. K 117. IA 887. T 1384. CH 777A*

[1438-30-8]



$C_{18}H_{26}N_{10}O_3$ 430.469

Oligopeptide antibiotic. Lexitropsin (information-reading agent). Closely related to Distamycin A, D-866. Prod. by *Streptomyces netropsis*, *Streptomyces chromogenes* and *Streptomyces ambofaciens*. Shows antiviral and antimicrobial props. DNA minor groove-binding ligand with specificity for adenine and thymine base pairs. λ_{max} 235 (ϵ 25000); 297 (ϵ 27500) (0.1*M* HCl) (Derep). λ_{max} 301 (0.1*M* NaOH) (Derep).

▶ DW2973000

Hydrochloride:

Hygroscopic prisms. Mp 168-172° dec.

Sulfate:

Needles. Mp 224-225°.

Finlay, A.C. *et al., J.A.C.S.*, 1951, **73**, 341 (*isol*)

Julia, M. *et al., C. R. Hebd. Seances Acad. Sci.*, 1963, **257**, 1115 (*struct, synth, nmr*)

Patel, D.J. *et al., Eur. J. Biochem.*, 1979, **99**, 369-378 (*bibl, pharmacol*)

Lown, J.W. *et al., J.O.C.*, 1985, **50**, 3774 (*synth*)

Debart, F. *et al., J. Med. Chem.*, 1989, **32**, 1074-1083 (*bibl, sar*)

Lown, J.W. *et al., Antiviral Res.*, 1992, **17**, 179-196 (*rev*)

Chen, A.Y. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 1993, **90**, 8131-8135 (*pharmacol*)

Lown, J.W. *et al., J. Mol. Recognit.*, 1994, **7**, 79-88 (*lexitropsins, rev*)

Nunn, C.M. *et al., Biochemistry*, 1997, **36**, 4792-4799 (*DNA complex, cryst struct*)

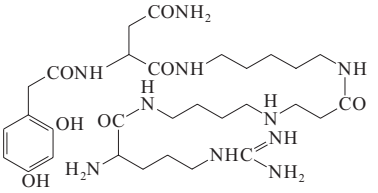
Singh, S.B. *et al., J.A.C.S.*, 1999, **121**, 3267-3271 (*DNA binding*)

Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, NCP875

Nephila maculata Neurotoxin 3 N-181

Neurotoxin NSTX 3. NSTX 3

[107288-22-2]



$C_{30}H_{52}N_{10}O_7$ 664.804

Toxic principle in the venom of *Nephila maculata*. $[\alpha]_D^{15}$ +4.3 (c, 0.51 in H_2O).

[125739-24-4]

Aromaki, Y. *et al., Pept. Chem.*, 1987, 163 (*isol*)

Nason, D.M. *et al., Tet. Lett.*, 1989, **30**, 2337 (*synth*)

Teshima, T. *et al., Tetrahedron*, 1991, **47**, 3305 (*synth*)

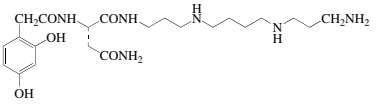
Nihei, K. *et al., Tetrahedron*, 2006, **62**, 8335-8350 (*synth*)

Nephila clavata Neurotoxin 1 JSTX-1 N-182

JSTX-1

[133698-34-7]

[112111-39-4]



$C_{22}H_{38}N_6O_5$ 466.579

Isol. from the venom of the spider *Nephila clavata*.

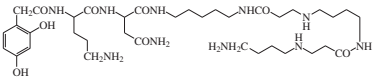
Hashimoto, Y. *et al., Tet. Lett.*, 1987, **28**, 3511-3514 (*synth, pmr*)

Toki, T. *et al., CA*, 1991, **114**, 201423m (*isol, struct*)

Nephila clavata Neurotoxin 2 JSTX-2 N-183

JSTX-2

[133658-52-3]



$C_{36}H_{64}N_{10}O_8$ 764.964

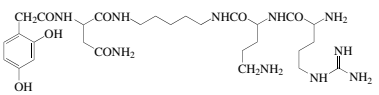
Isol. from the venom of the spider *Nephila clavata*.

Toki, T. *et al., CA*, 1991, **114**, 201423m (*isol*)

Nephila clavata Neurotoxin 4 JSTX-4 N-184

JSTX-4

[133689-61-9]



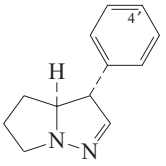
$C_{28}H_{48}N_{10}O_7$ 636.75

Isol. from the venom of the spider *Nephila clavata*.

Toki, T. *et al., CA*, 1991, **114**, 201423m (*isol, struct*)

Newbouldine† N-185

*3a,4,5,6-Tetrahydro-3-phenyl-3*H*-pyrrolo[1,2-b]pyrazole*
[155416-35-6]



$C_{12}H_{14}N_2$ 186.256
Alkaloid from the root bark of *Newbouldia laevis* (Bignoniaceae). Oil. Racemic.

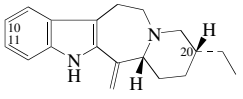
4′-Hydroxy: ***4′-Hydroxynewbouldine***
[155416-36-7]
$C_{12}H_{14}N_2O$ 202.255
Alkaloid from root bark of *Newbouldia laevis* (Bignoniaceae). Cryst. (Me_2CO). Mp 155-156°.

4′-Methoxy: ***4′-Methoxynewbouldine***
$C_{13}H_{16}N_2O$ 216.282
Alkaloid from the root bark of *Newbouldia laevis*. λ_{max} 227 (log ϵ 4.02); 278 (sh) (MeOH).

Adesanya, S.A. *et al., Phytochemistry*, 1994, **35**, 1053 (*isol, uv, ir, pmr, cmr, ms, struct*)
Aladesanmi, A.J. *et al., Planta Med.*, 1998, **64**, 90-91 (*4′-Methoxynewbouldine*)

Ngouniensine N-186

[83348-21-4]



Absolute Configuration

$C_{19}H_{24}N_2$ 280.412
Related to the Uleine-dasycarpidan group VX 5880 (3,16-cyclo). Main alkaloid from the stem bark and root bark of *Strychnos ngouniensis* (Loganiaceae). Amorph. $[\alpha]_D$ -44 (c, 1 in $CHCl_3$).

10- or 11-Glucosyloxy: ***Glucosylngouniensine***
[88852-55-5]
$C_{25}H_{34}N_2O_6$ 458.553
Alkaloid from root bark of *Strychnos ngouniensis* (Loganiaceae). $[\alpha]_D$ -107 (c, 0.26 in MeOH). Stereochem. not certain.

20-Epimer: ***Epingouniensine***
[88721-00-0]
$C_{19}H_{24}N_2$ 280.412
Alkaloid from the stem bark and root bark of *Strychnos ngouniensis* (Loganiaceae). $[\alpha]_D$ -32 (c, 0.5 in MeOH).

Stereoisomer, 10- or 11-glucosyloxy: ***Epiglucosylngouniensine***
[88775-09-1]
$C_{25}H_{34}N_2O_6$ 458.553
Alkaloid from the root bark of *Strychnos ngouniensis* (Loganiaceae). $[\alpha]_D$ -80 (c, 0.29 in MeOH).

Massiot, G. *et al., Tetrahedron*, 1983, **39**, 3645-3656 (*isol, uv, ir, cmr, ms, derivs, biosynth*)
Bosch, J. *et al., Tet. Lett.*, 1987, **28**, 231 (*synth*)
Bennasar, M.L. *et al., Heterocycles*, 1989, **29**, 381 (*synth*)
Hugel, G. *et al., J.O.C.*, 1997, **62**, 578 (*abs config*)

Nicaeensin N-187

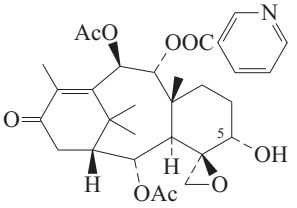
N-*[4-[[[(Aminoiminomethyl)amino]carbonyl]amino]butyl]*-N-*methylacetamide, 9CI. 1-(3-Amidinoureido)-4-(*N*-methylacetamido)butane*
[131669-98-2]
[131669-99-3 (picrate)]

$HN{=}C(NH_2)NHCONH(CH_2)_4NMeAc$
$C_9H_{19}N_5O_2$ 229.281
Isol. from the red alga *Schottera nicaeensis*. Powder; yellow cryst. (EtOH aq.) (as picrate). Mp 171-173° (picrate).

Chillemi, R. *et al., J. Nat. Prod.*, 1990, **53**, 1220 (*isol, pmr, cmr, ms, struct*)

Nicotaxine N-188

[126585-94-2]



$C_{30}H_{37}NO_9$ 555.624
Alkaloid from the bark of *Austrotaxus spicata* (Taxaceae). Amorph. $[\alpha]_D$ +112 (c, 0.21 in $CHCl_3$).

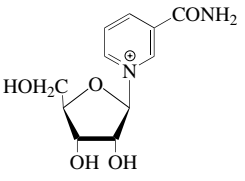
O^5*-(3-Amino-3-phenylpropanoyl):* ***5-(3-Amino-3-phenylpropanoyl)nicotaxine***
[126617-17-2]
$C_{39}H_{46}N_2O_{10}$ 702.8
From the bark of *Austrotaxus spicata* (Taxaceae). Amorph. $[\alpha]_D$ +93 (c, 0.41 in $CHCl_3$).

O^5*-(3-Methylamino-3-phenylpropanoyl):* ***5-(3-Methylamino-3-phenylpropanoyl)-nicotaxine***
[126585-95-3]
$C_{40}H_{48}N_2O_{10}$ 716.827
From the bark of *Austrotaxus spicata* (Taxaceae). Amorph. $[\alpha]_D$ +103 (c, 0.12 in $CHCl_3$).

Ettouati, L. *et al., Bull. Soc. Chim. Fr.*, 1989, 687-694 (*isol, pmr, cmr, struct*)

Nicotinamide ribonucleoside N-189

3-(Aminocarbonyl)-1-β-D-ribofuranosylpyridinium(1+), 9CI. Nicotinamide riboside
[1341-23-7]



$C_{11}H_{15}N_2O_5^{\oplus}$ 255.25

Bromide: [78687-39-5]
$C_{11}H_{15}BrN_2O_5$ 335.154
Amorph. hygroscopic powder. $[\alpha]_D^{20}$ -33 (c, 1.42 in H_2O).

5-O-Phosphate inner salt: Nicotinamide ribonucleotide. Nicotinamide ribotide. Nicotinamide mononucleotide
[1094-61-7]
$C_{11}H_{15}N_2O_8P$ 334.222
Intermed. in synth. of nicotinamide adenine nucleotide analogues. Subcomponent of coenzymes I and II. Amorph. powder. $[\alpha]_D^{20}$ -31.4 (c, 1.94 in H_2O).

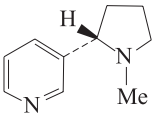
5′-O-(2ξ-Acetoxy-3ξ-methylpentanoyl):
[291525-83-2]
$C_{19}H_{27}N_2O_8^{\oplus}$ 411.431
Isol. from the chrysomelid beetle *Platyphora opima*. $[\alpha]_D^{25}$ -1.6 (c, 0.19 in MeOH). Counterion not specified. λ_{max} 210 (log ϵ 3.8); 260 (log ϵ 3.44) (MeOH).

[75414-16-3]

Haynes, L.J. *et al., J.C.S.*, 1957, 3727-3732 (*synth, phosphate*)
Mikhailopulo, I.A. *et al., Synthesis*, 1981, 388-389 (*synth, pmr, bibl, phosphate*)
Walt, D.R. *et al., J.A.C.S.*, 1984, **106**, 234-239 (*synth, use, phosphate, bibl*)
Micheli, V. *et al., Arch. Biochem. Biophys.*, 1990, **283**, 40-45 (*metab, phosphate*)
Liu, R. *et al., Nucleosides Nucleotides*, 1994, **13**, 1215-1216 (*synth, phosphate*)
Plasman, V. *et al., J. Nat. Prod.*, 2000, **63**, 1261-1264 (*isol*)

Nicotine, BSI, ISO N-190

3-(1-Methyl-2-pyrrolidinyl)pyridine, 9CI. 1-Methyl-2-(3-pyridyl)pyrrolidine
[75202-10-7]



(*S*)*–form*

$C_{10}H_{14}N_2$ 162.234
► Fl. p. >104°, autoignition temp. 240/244°.

(R)-form [25162-00-9]
Synthetic. Liq. Bp_{729} 245.5-246.5°.
► QS5260000

Dipicrate: Mp 224-225°.

N-*De-Me:* see 3-(2-Pyrrolidinyl)pyridine, P-957

(S)-form [54-11-5]
Alkaloid from *Nicotiana tabacum* and other *Nicotiana* spp., *Asclepias syriaca*, *Lycopodium* spp., and other spp. (Solanaceae, Asclepiadaceae, Crassulaceae). Rare spread of occurrence between angiosperms and cryptogametes. Ganglion blocking agent. Horticultural insecticide. Used in chewing gum and transdermally in cigarette smoking cessation programmes. $Bp_{730.5}$ 246.1°. $[\alpha]_D$ -166. Log P 1.32 (calc).
► OES: long-term 1 mg m^{-3}; short-term 3 mg m^{-3} (Sk). V. toxic in contact with skin. Causes respiratory paralysis. Adverse effects at lower doses esp. gastrointestinal and CNS. Human and exp. teratogen.

Exp. reprod. effects. LD_{50} (rat, orl) 50 mg/kg. LD_{50} (rbt, skn) 50 mg/kg. QS5250000

Hydroiodide: [6012-23-3]
Mp 195°.

Tartrate (1:2): ***Nicotine bitartrate, USAN***
[65-31-6]
Used in the treatment of smoking withdrawal syndrome. Cryst. + $2H_2O$. Mp 90° (dihydrate). $[\alpha]_D^{20}$ +26 (dihydrate).

Dipicrate: Mp 224° (218°).

2-Hydroxybenzoate salt: Eudermol. Nicotinyl salicylate
[29790-52-1]
Parasiticide for scabies. Hexagonal plates. Mp 118°. $[\alpha]_D^{20}$ +13.

▶ QS9600000

Compd. with methacrylic acid/divinyl benzene polymer: Nicotine polacrilex, USAN. Nicorette
[96055-45-7]
Used as a smoking deterrent.

1′-N-*Oxide:* ***Nicotine 1′-N-oxide****. Oxynicotine*
[491-26-9]
$C_{10}H_{14}N_2O$ 178.233
Alkaloid identified in the leaves, stems and roots of *Nicotiana tabacum*, *Nicotiana affinis* and *Nicotiana sylvestris* (Solanaceae). Red cryst. or oil. Mp 5-10°. Both diastereoisomers identified.

▶ QS9604100

N-*De-Me:* see 3-(2-Pyrrolidinyl)pyridine, P-957

(±)-*form* [22083-74-5]
Liq. pK_{a1} 8.02; pK_{a2} 3.12 (25°, as dihydrochloride).

▶ QS5257500

Dipicrate: Mp 218°.

Methiodide: Mp 219°.

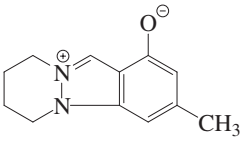
N-*De-Me:* see 3-(2-Pyrrolidinyl)pyridine, P-957

[6505-86-8 , 2624-48-8 , 65-31-6 , 65-30-5]

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 768B (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 294B (*nmr*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 1537B (*ir*)
Karrer, P. *et al., Helv. Chim. Acta*, 1925, **8**, 364 (*abs config*)
Swan, M.L. *et al., J.A.C.S.*, 1949, **71**, 1341 (*uv*)
Witkop, B. *et al., J.A.C.S.*, 1954, **76**, 5597 (*ir*)
Hellmann, H. *et al., Annalen*, 1964, **672**, 97 (*synth*)
Duffield, A.M. *et al., J.A.C.S.*, 1965, **87**, 2926 (*ms*)
Breuer, E. *et al., Tet. Lett.*, 1969, 3595 (*synth*)
Kim, H.S. *et al., Acta Cryst. B*, 1971, **27**, 1123 (*cryst struct, salicylate*)
Crain, W.O. *et al., J.A.C.S.*, 1971, **93**, 990 (*cmr*)
Phillipson, J.D. *et al., Phytochemistry*, 1975, **14**, 2683 (*oxide*)
Hutchinson, C.R. *et al., J.A.C.S.*, 1976, **98**, 6006 (*biosynth*)
Whidby, J.F. *et al., J.O.C.*, 1976, **41**, 1585 (*pmr, config*)
Enzell, C.R. *et al., Prog. Chem. Org. Nat. Prod.*, 1977, **34**, 44 (*rev*)
Wigle, I.D. *et al., Chem. Comm.*, 1982, 662 (*biosynth*)
Banerjee, A. *et al., Life Sci. Adv.*, 1982, **1**, 327 (*rev, pharmacol*)
Schievelbein, H. *et al., Pharmacol. Ther.*, 1982, **18**, 233 (*rev, metab*)
Aceto, M.D. *et al., CRC Handb. Stereoisomers: Drugs Psychopharmacol.*, 1984, 67 (*rev*)
Seeman, J.I. *et al., Heterocycles*, 1984, **22**, 165 (*rev*)
Slaven, R.W. *et al., J. Het. Chem.*, 1984, **21**, 1329 (*cmr, pmr*)
Domino, E.F. *et al., Psychopharmacol. Bull.*, 1986, **22**, 870 (*rev, pharmacol*)
Brunner, H. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1988, **321**, 73 (*synth, ir, pmr*)
Mahboobi, S. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1988, **321**, 175 (*synth, ir, pmr*)
Kyerematen, G.A. *et al., Drug Metab. Dispos.*, 1988, **16**, 125 (*pharmacol*)
Pesticide Manual, 9th edn., 1991, 8900
Agrochemicals Handbook, 3rd edn., Royal Society of Chemistry, 1992, A298
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 1393
Levin, E.D. *et al., Med. Chem. Res.*, 1993, **2**, 509; 522 (*revs, pharmacol*)
Nicotine and Related Alkaloids: Absorption, Distribution, Metabolism and Excretion, (Gorrod, J.W., ed.), Chapman and Hall, 1993, (*book*)
Schmidt, B. *et al., Synthesis*, 1998, 42-44 (*N-oxide*)
Djuric, V.J. *et al., Physiol. Behav.*, 1999, **67**, 533-537 (*pharmacol*)
Girard, S. *et al., Tet. Lett.*, 2000, **41**, 9245-9249 (R-*isomer, synth*)
Felpin, F.-X. *et al., J.O.C.*, 2001, **66**, 6305-6312 (*synth*)
Welter, C. *et al., Org. Biomol. Chem.*, 2005, **3**, 3266-3268 (*synth*)
Wagner, F.F. *et al., Tetrahedron*, 2007, **63**, 8065-8082 (*rev, synth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, NDN000; NDR000; NDR500; NDS500

Nigeglanine N-191

6,7,8,9-Tetrahydro-1-hydroxy-3-methylpyridazino[1,2-a]indazol-5-ium inner salt, 9CI

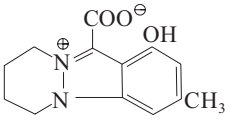


$C_{12}H_{14}N_2O$ 202.255
Alkaloid from the seeds of *Nigella glandulifera*. Solid. Mp 289-290°. λ_{max} 224 ; 270 ; 320 (MeOH).

Liu, Y.-M. *et al., Chem. Pharm. Bull.*, 2004, **52**, 454-455 (*isol, pmr, cmr*)
Elliot, E.L. *et al., Org. Lett.*, 2005, **7**, 2449-2451 (*synth*)

Nigellicine N-192

[98063-20-8]

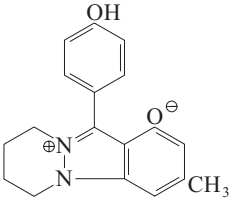


$C_{13}H_{14}N_2O_3$ 246.265
Alkaloid from the seeds of *Nigella sativa* (black cumin) (Ranunculaceae). Yellow cryst. (EtOH). Dec. over a wide temp. range. λ_{max} 240 (ϵ 20000); 288 (ϵ 3310); 296 (ϵ 3240); 353 (ϵ 3390) (EtOH) (Derep).

Atta-ur-Rahman, *et al., Tet. Lett.*, 1985, **26**, 2759-2762 (*isol, pmr, cmr, ms, cryst struct*)
Elliot, E.L. *et al., Org. Lett.*, 2005, **7**, 2449-2451 (*synth*)

Nigellidine N-193

6,7,8,9-Tetrahydro-1-hydroxy-11-(4-hydroxyphenyl)-3-methylpyridazino[1,2-a]indazol-5-ium inner salt, 9CI
[120993-86-4]

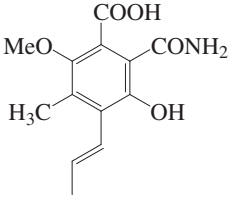


$C_{18}H_{18}N_2O_2$ 294.352
Alkaloid from seeds of *Nigella sativa* (black cumin) (Ranunculaceae). Related to Nigellicine, N-192. λ_{max} 230 ; 280 ; 328 (MeOH) (Derep).

Atta-ur-Rahman, *et al., Tet. Lett.*, 1995, **36**, 1993 (*isol, uv, ir, pmr, cmr, ms, cryst struct*)

Nigerloxin N-194

2-(Aminocarbonyl)-3-hydroxy-6-methoxy-5-methyl-4-(1-propenyl)benzoic acid

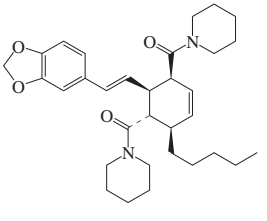


$C_{13}H_{15}NO_5$ 265.265
Prod. by *Aspergillus niger* CFR-W-105. Aldose reductase and lipoxygenase inhibitor. Antioxidant. Amorph. yellow powder. Dec. at 253°. λ_{max} 235 (ϵ 20700); 292 (ϵ 11600); 358 (ϵ 4400) (MeOH).

Rao, K.C.S. *et al., J. Antibiot.*, 2002, **55**, 789-793 (*isol, pmr, cmr, ms, activity*)

Nigramide I N-195

[847552-90-3]



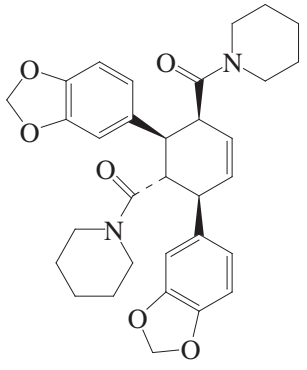
Relative Configuration

$C_{32}H_{44}N_2O_4$ 520.711
Alkaloid from the roots of *Piper nigrum* (pepper). Oil. Racemic. λ_{max} 208 (log ϵ 4.43); 270 (log ϵ 3.89) (MeOH).

Wei, K. *et al., J.O.C.*, 2005, **70**, 1164-1176 (*isol, pmr, cmr*)

Nigramide A N-196

[847552-82-3]

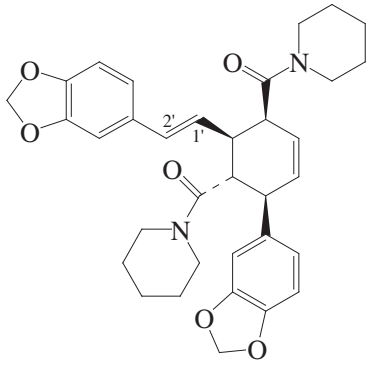


$C_{32}H_{36}N_2O_6$ 544.646
Alkaloid from the roots of *Piper nigrum* (pepper). Oil. Racemic. λ_{max} 207 (log ϵ 4.5); 287 (log ϵ 3.83) (MeOH).

Wei, K. *et al., J.O.C.*, 2005, **70**, 1164-1176 (*isol, pmr, cmr*)

Nigramide B N-197

[847552-83-4]



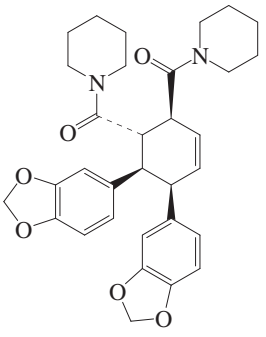
$C_{34}H_{38}N_2O_6$ 570.684
Alkaloid from the roots of *Piper nigrum* (pepper). Oil. Racemic. λ_{max} 211 (log ϵ 4.54); 271 (log ϵ 4.14) (MeOH).

1′,2′-Dihydro: ***Nigramide F***
[847552-87-8]
$C_{34}H_{40}N_2O_6$ 572.7
Alkaloid from the roots of *Piper nigrum* (pepper). Oil. λ_{max} 206 (log ϵ 4.61); 287 (log ϵ 3.96) (MeOH).

Wei, K. *et al., J.O.C.*, 2005, **70**, 1164-1176 (*isol, pmr, cmr*)

Nigramide C N-198

[847552-84-5]

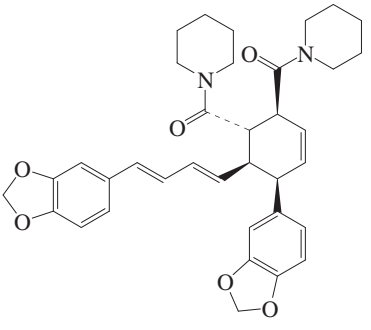


$C_{32}H_{36}N_2O_6$ 544.646
Alkaloid from the roots of *Piper nigrum* (pepper). Prisms (MeOH). Mp 182-183°. Racemic. λ_{max} 210 (log ϵ 4.44); 287 (log ϵ 3.85) (MeOH).

Wei, K. *et al., J.O.C.*, 2005, **70**, 1164-1176 (*isol, pmr, cmr, cryst struct*)

Nigramide D N-199

[847552-85-6]

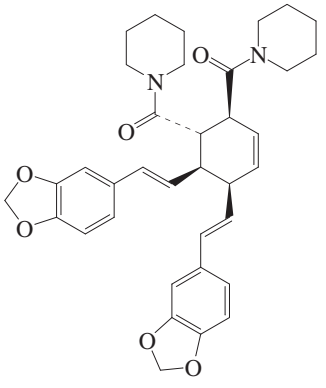


$C_{36}H_{40}N_2O_6$ 596.722
Alkaloid from the roots of *Piper nigrum* (pepper). Oil. Racemic. λ_{max} 208 (log ϵ 4.51); 285 (log ϵ 4.29) (MeOH).

Wei, K. *et al., J.O.C.*, 2005, **70**, 1164-1176 (*isol, pmr, cmr*)

Nigramide E N-200

[847552-86-7]

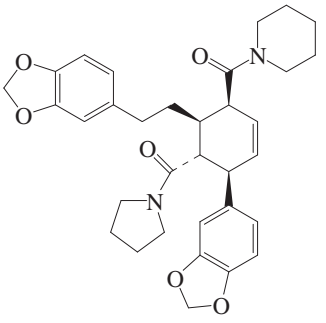


$C_{36}H_{40}N_2O_6$ 596.722
Alkaloid from the roots of *Piper nigrum* (pepper). Oil. Racemic. λ_{max} 211 (log ϵ 4.63); 264 (log ϵ 4.31) (MeOH).

Wei, K. *et al., J.O.C.*, 2005, **70**, 1164-1176 (*isol, pmr, cmr*)

Nigramide G N-201

[847552-88-9]

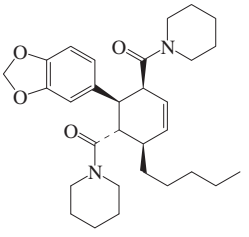


$C_{33}H_{38}N_2O_6$ 558.673
Alkaloid from the roots of *Piper nigrum* (pepper). Oil. Racemic. λ_{max} 206 (log ϵ 4.6); 287 (log ϵ 3.96) (MeOH).

Wei, K. *et al., J.O.C.*, 2005, **70**, 1164-1176 (*isol, pmr, cmr*)

Nigramide H N-202

[847552-89-0]



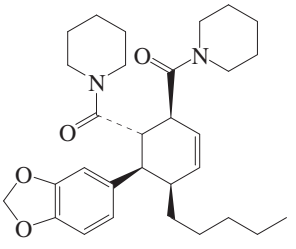
Relative Configuration

$C_{30}H_{42}N_2O_4$ 494.673
Alkaloid from the roots of *Piper nigrum* (pepper). Oil. Racemic. λ_{max} 206 (log ϵ 4.32); 286 (log ϵ 3.58) (MeOH).

Wei, K. *et al., J.O.C.*, 2005, **70**, 1164-1176 (*isol, pmr, cmr*)

Nigramide J N-203

[847552-91-4]



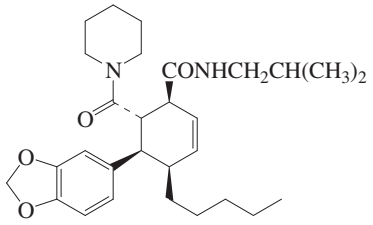
$C_{30}H_{42}N_2O_4$ 494.673
Alkaloid from the roots of *Piper nigrum*

(pepper). Oil. λ_{max} 205 (log ϵ 4.39); 287 (log ϵ 3.49) (MeOH).

Wei, K. *et al., J.O.C.*, 2005, **70**, 1164-1176 (*isol, pmr, cmr*)

Nigramide K N-204

[847552-92-5]

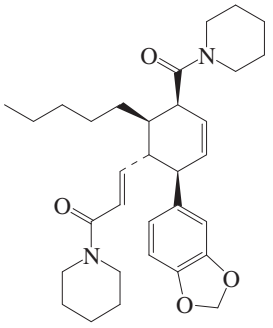


$C_{29}H_{42}N_2O_4$ 482.662
Alkaloid from the roots of *Piper nigrum* (pepper). Oil. Racemic. λ_{max} 205 (log ϵ 4.26); 286 (log ϵ 3.58) (MeOH).

Wei, K. *et al., J.O.C.*, 2005, **70**, 1164-1176 (*isol, pmr, cmr*)

Nigramide L N-205

[847552-93-6]

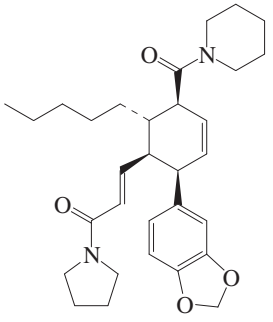


$C_{32}H_{44}N_2O_4$ 520.711
Alkaloid from the roots of *Piper nigrum* (pepper). Oil. Racemic. λ_{max} 209 (log ϵ 4.45) (MeOH).

Wei, K. *et al., J.O.C.*, 2005, **70**, 1164-1176 (*isol, pmr, cmr*)

Nigramide M N-206

[847552-94-7]

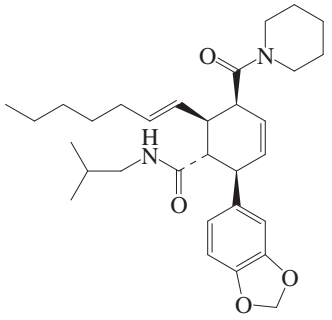


$C_{31}H_{42}N_2O_4$ 506.684
Alkaloid from the roots of *Piper nigrum* (pepper). Oil. Racemic. λ_{max} 208 (log ϵ 4.41) (MeOH).

Wei, K. *et al., J.O.C.*, 2005, **70**, 1164-1176 (*isol, pmr, cmr*)

Nigramide N N-207

[847552-95-8]

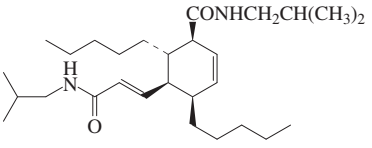


$C_{31}H_{44}N_2O_4$ 508.7
Alkaloid from the roots of *Piper nigrum* (pepper). Oil. Racemic. λ_{max} 206 (log ϵ 4.52) (MeOH).

Wei, K. *et al., J.O.C.*, 2005, **70**, 1164-1176 (*isol, pmr, cmr*)

Nigramide O N-208

[847552-96-9]

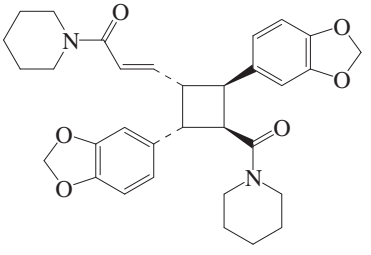


$C_{28}H_{50}N_2O_2$ 446.715
Alkaloid from the roots of *Piper nigrum* (pepper). Oil. Racemic. λ_{max} 216 (log ϵ 4.12) (MeOH).

Wei, K. *et al., J.O.C.*, 2005, **70**, 1164-1176 (*isol, pmr, cmr*)

Nigramide P N-209

[847552-97-0]

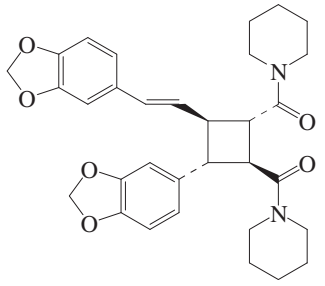


$C_{32}H_{36}N_2O_6$ 544.646
Alkaloid from the roots of *Piper nigrum* (pepper). Oil. Racemic. λ_{max} 207 (log ϵ 4.72); 287 (log ϵ 4.08) (MeOH).

Wei, K. *et al., J.O.C.*, 2005, **70**, 1164-1176 (*isol, pmr, cmr*)

Nigramide Q N-210

[847552-98-1]

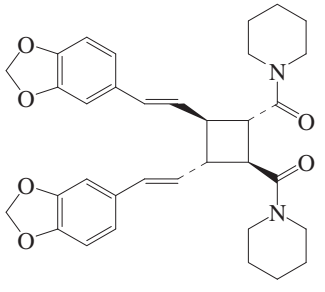


$C_{32}H_{36}N_2O_6$ 544.646
Alkaloid from the roots of *Piper nigrum* (pepper). Oil. Racemic. λ_{max} 209 (log ϵ 4.61); 273 (log ϵ 4.16) (MeOH).

Wei, K. *et al., J.O.C.*, 2005, **70**, 1164-1176 (*isol, pmr, cmr*)

Nigramide R N-211

[847552-99-2]

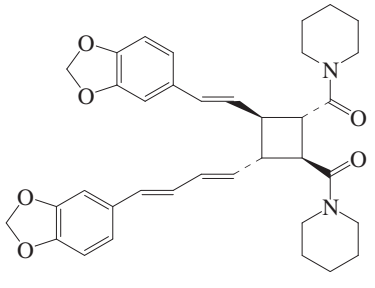


$C_{34}H_{38}N_2O_6$ 570.684
Alkaloid from the roots of *Piper nigrum* (pepper). Oil. Racemic. λ_{max} 213 (log ϵ 4.56); 267 (log ϵ 4.3) (MeOH).

Wei, K. *et al., J.O.C.*, 2005, **70**, 1164-1176 (*isol, pmr, cmr*)

Nigramide S N-212

[847553-00-8]

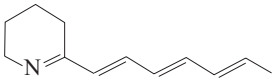


$C_{36}H_{40}N_2O_6$ 596.722
Alkaloid from the roots of *Piper nigrum* (pepper). Oil. Racemic. λ_{max} 211 (log ϵ 4.44); 274 (log ϵ 4.1) (MeOH).

Wei, K. *et al., J.O.C.*, 2005, **70**, 1164-1176 (*isol, pmr, cmr*)

Nigrifactin N-213

2-(1,3,5-Heptatrienyl)-3,4,5,6-tetrahydropyridine, 9CI
[23943-03-5]



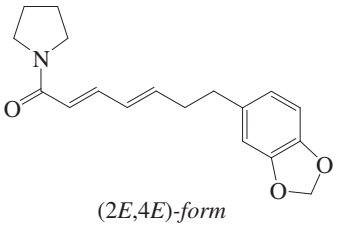
$C_{12}H_{17}N$ 175.273
Metab. from several *Streptomyces* strains. Shows antihistaminic props. and affects blood pressure. Extremely unstable. λ_{max} 354 (MeOH/HCl) (Derep). λ_{max} 300 (MeOH at pH 9.2) (Derep). λ_{max} 354 (ϵ 36700) (MeOH) (Derep). λ_{max} 354 (ϵ 36700) (MeOH) (Berdy).

Picrate: Mp 175.5-176° dec. $[\alpha]_D$ 0 (c, 0.5 in MeOH).

Kaneko, Y. *et al., Agric. Biol. Chem.*, 1968, **32**, 783 (*isol*)
Terashima, T. *et al., Tet. Lett.*, 1969, 2535 (*uv, ir, pmr, ms, struct*)
Gshwend, H.W. *et al., Tet. Lett.*, 1970, 2711 (*synth, config*)
Pailer, M. *et al., Monatsh. Chem.*, 1970, **101**, 508 (*synth*)
Terashima, T. *et al., Chem. Comm.*, 1973, 75 (*biosynth*)

Nigrinodine N-214

1-[7-(3,4-Methylenedioxyphenyl)-2,4-heptadienoyl]pyrrolidine. 7-(3,4-Methylenedioxyphenyl)-2,4-heptadienoic acid pyrrolidide



(2*E*,4*E*)-*form*

$C_{18}H_{21}NO_3$ 299.369

(2*E*,4*E*)-*form* [259654-51-8]
Alkaloid from the roots of *Piper amalago* var. *nigrinodum*. Yellow oil.

(2*Z*,4*Z*)-*form* [205507-49-9]
Alkaloid from the leaves of *Piper hispidum*. Antifungal agent. Amorph. solid. λ_{max} 262 (log ϵ 1.9) (MeOH). λ_{max} 262 (MeOH) (Berdy).

Alecio, A.C. *et al., J. Nat. Prod.*, 1998, **61**, 637-639 (*isol, uv, ir, pmr, cmr*)
Jacobs, H. *et al., J. Indian Chem. Soc.*, 1999, **76**, 713-717 (*isol, pmr, cmr*)

Nikanine N-215

$C_{18}H_{27}NO_5$ 337.415
Struct. unknown. Alkaloid from *Trichodesma incanum* (Boraginaceae).

Hydrochloride: Mp 199°.

Nitrate: Mp 182°.

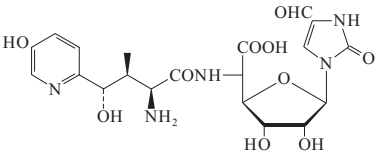
Chloroplatinate: Mp 154°.

N-*Oxide:* ***Nikanine* N-*oxide***
$C_{18}H_{27}NO_6$ 353.414
Alkaloid from *Trichodesma incanum* (Boraginaceae).

Yunusov, S.Yu. *et al., Dokl. Akad. Nauk UzSSR*, 1957, **No. 4**, 31-34; *CA*, **52**, 13017d

Nikkomycin X N-216

Neopolyoxin A
[72864-26-7]



$C_{20}H_{25}N_5O_{10}$ 495.445
Nucleoside antibiotic. Isol. from *Streptomyces tendae* and *Streptomyces cacaoi*. Chitin synthase inhibitor. Active against insects and fungi. Powder. Mp 204-207°. $[\alpha]_D^{21}$ +24.3 (c, 0.325 in H_2O). pK_{a1} 2.9; pK_{a2} 4.3; pK_{a3} 7.3; pK_{a4} 8.7; pK_{a5} 10.3. Amphoteric. λ_{max} 287 (MeOH) (Derep).

▶ BA2928600

4-Carboxylic acid: ***Neopolyoxin B***
[75005-71-9]
$C_{20}H_{25}N_5O_{11}$ 511.444
Nucleoside antibiotic. Prod. by *Streptomyces cacaoi* ssp. *asoensis*. Active against fungi and insects. Mp 192-196°. $[\alpha]_D^{21}$ +19 (c, 0.722 in H_2O). pK_{a1} 2.4; pK_{a2} 3; pK_{a3} 4.4; pK_{a4} 7.7; pK_{a5} 9.1; pK_{a6} 11.1. Has -COOH replacing -CHO.

▶ BA2927800

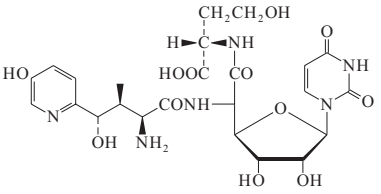
5‴-Deoxy: ***Nikkomycin L_X***
$C_{20}H_{25}N_5O_9$ 479.446
Prod. by a genetically engineered *Streptomyces tendae*. Antifungal agent. Lacks the OH group on the pyridine ring.

[75044-70-1]

Dahn, U. *et al., Arch. Microbiol.*, 1976, **107**, 143 (*isol*)
Hagenmaier, H. *et al., Annalen*, 1979, 1494 (*isol, struct*)
Brillinger, G.V. *et al., Arch. Microbiol.*, 1979, **121**, 71 (*props*)
Agric. Biol. Chem., 1980, 1709 (*Neopolyoxins*)
Ger. Pat., 1980, 2 900 591; *CA*, **95**, 19726 (*isol, use*)
Japan. Pat., 1980, 80 92 395; 1981, 80 26 900; *CA*, **93**, 202702; **95**, 22946 (*Neopolyoxins*)
Fielder, H. *et al., Biotechnol. Lett.*, 1981, **3**, 303 (*hplc*)
Uramoto, M. *et al., Tetrahedron*, 1982, **38**, 1599 (*Neopolyoxins, biosynth, ir, pmr, cmr, ms*)
Krainer, E. *et al., Biopolymers*, 1990, **29**, 1297 (*conformn*)
Baumberg, S. *et al., Tet. Lett.*, 1995, **36**, 2351 (*biosynth*)
Bormann, C. *et al., J. Antibiot.*, 1999, **52**, 582-585 (*Nikkomycin L_X*)

Nikkomycin Q_z N-217

[95259-50-0]

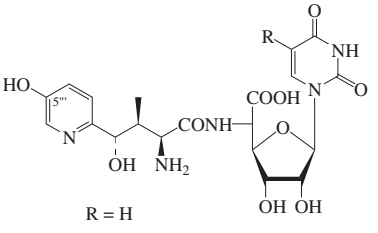


$C_{24}H_{32}N_6O_{12}$ 596.55
Nucleoside antibiotic. From *Streptomyces tendae*. Exhibits lower activity than other Nikkomycins. λ_{max} 264; 287 (sh) (MeOH) (Derep).

Bormann, C. *et al., J. Antibiot.*, 1985, **38**, 9 (*isol, props*)
Isono, K. *et al., J. Antibiot.*, 1991, **41**, 1711 (*rev*)

Nikkomycin Z N-218

Nikkomycin. Neopolyoxin C
[59456-70-1]



R = H

$C_{20}H_{25}N_5O_{10}$ 495.445
Nucleoside-type antibiotic. Metab. of *Streptomyces tendae* and from *Streptomyces cacaoi*. Antifungal agent which also inhibits chitin biosynth. Mp 194-197°. $[\alpha]_D^{21}$ +49.5 (c, 1 in H_2O). pK_{a1} 2.7; pK_{a2} 4.1; pK_{a3} 7.1; pK_{a4} 8.5; pK_{a5} 9.7. λ_{max} 264; 287 (sh) (MeOH) (Derep).

▶ BA2928200

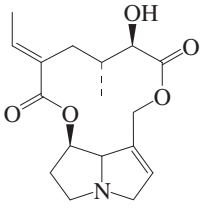
5‴-Deoxy: ***Nikkomycin L_Z***
$C_{20}H_{25}N_5O_9$ 479.446
Prod. by a genetically engineered *Streptomyces tendae*. Antifungal agent.

[75044-69-8]

Daehn, U. *et al., Arch. Microbiol.*, 1976, **107**, 143 (*isol, ir, uv, ms, nmr, struct*)
Koenig, W.A. *et al., Adv. Mass Spectrom.*, 1978, **7B**, 1530 (*ms*)
Kobinata, K. *et al., Agric. Biol. Chem.*, 1980, **44**, 1709 (*Neopolyoxin C*)
Koenig, W.A. *et al., Annalen*, 1980, 1728; 1984, 1216 (*config, struct*)
Hagenmaier, H. *et al., Annalen*, 1980, 1728 (*config*)
Fiedler, H. *et al., Biotechnol. Lett.*, 1981, **3**, 303 (*hplc*)
Hass, W. *et al., Annalen*, 1982, 1615 (*synth*)
Uramoto, M. *et al., Tetrahedron*, 1982, **38**, 1599 (*Neopolyoxin C*)
Fiedler, H.P. *et al., Clin. Dermatol.*, 1993, **7**, 325 (*rev*)
Bormann, C. *et al., J. Antibiot.*, 1999, **52**, 582-585 (*Nikkomycin L_Z*)

Nilgirine N-219

12-Hydroxy-18-norsenecionan-11,16-dione, 9CI
[21009-05-2]



$C_{17}H_{23}NO_5$ 321.372
Alkaloid from *Crotalaria mucronata*, *Crotalaria naragutensis*and *Crotalaria striata* (Fabaceae). Mp 127-128°. $[\alpha]_D^{18}$ +31.5 (EtOH).

Perchlorate: Mp 261-263° dec.

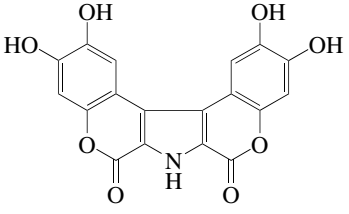
Ac: ***Crotastriatine***
[11051-94-8]
$C_{19}H_{25}NO_6$ 363.41
From *Crotalaria striata* (Fabaceae). Mp 133°.

Ac; perchlorate: Mp 245° dec.

Atal, C.K. *et al., Tet. Lett.*, 1968, 5605-5608 (*isol, pmr, ms, struct*)
Sawhney, R.S. *et al., Planta Med.*, 1972, **21**, 435-437 (*stereochem*)
Batra, V. *et al., Indian J. Chem.*, 1975, **13**, 989-990 (*Crotastriatine*)
Mattocks, A.R. *et al., Phytochemistry*, 1988, **27**, 3289-3291 (*isol, pmr, ms*)

Ningalin A N-220

[188111-67-3]

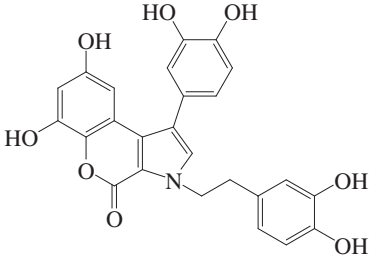


$C_{18}H_9NO_8$ 367.271
Alkaloid from the ascidian *Didemnum* sp. Amorph. yellow solid. λ_{max} 262 (ϵ 8650); 303 (ϵ 8450); 325 (sh) ; 370 (ϵ 2160) (DMSO/MeOH).

Kang, H. *et al., J.O.C.*, 1997, **62**, 3254 (*isol, uv, ir, pmr, cmr*)
Boger, D.L. *et al., J.A.C.S.*, 1999, **121**, 54-62 (*synth*)

Ningalin B N-221

[188111-68-4]

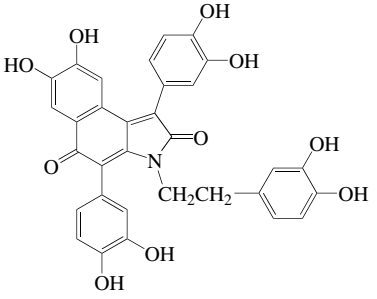


$C_{25}H_{19}NO_8$ 461.427
Alkaloid from the ascidian *Didemnum* sp. Multidrug-resistant reversal agent. Dark yellow solid. Mp 303° dec. λ_{max} 204 (ϵ 46000); 236 ; 289 (ϵ 10000); 332 (ϵ 8700) (MeOH).

Kang, H. *et al., J.O.C.*, 1997, **62**, 3254-3262 (*isol, uv, ir, pmr, cmr*)
Boger, D.L. *et al., J.O.C.*, 2000, **65**, 2479-2483 (*synth*)
Bullington, J.L. *et al., J.O.C.*, 2002, **67**, 9439-9442 (*synth*)
Iwao, M. *et al., Tet. Lett.*, 2003, **44**, 4443-4446 (*synth*)
Gupton, J.T. *et al., Tetrahedron*, 2003, **59**, 207-215 (*synth*)
Peschko, C. *et al., Synthesis*, 2006, 3048-3057

Ningalin C N-222

[188111-69-5]

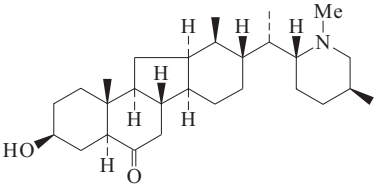


$C_{32}H_{23}NO_{10}$ 581.534
Alkaloid from the ascidian *Didemnum* sp. Amorph. red solid. λ_{max} 204 (ϵ 34000); 289 (ϵ 9400); 301 (sh) ; 355 (ϵ 5800); 450 (sh) (MeOH).

Kang, H. *et al., J.O.C.*, 1997, **62**, 3254 (*isol, uv, ir, pmr, cmr*)
Peschko, C. *et al., Tet. Lett.*, 2000, **41**, 9477-9481 (*synth*)
Namsa-aid, A. *et al., Org. Lett.*, 2002, **4**, 2633-2635 (*synth*)

Ningpeisine N-223

[117695-02-0]



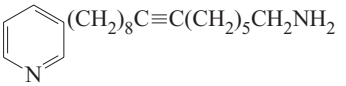
$C_{28}H_{47}NO_2$ 429.685
Alkaloid from the bulbs of *Fritillaria ningguoensis* (Liliaceae). Cryst. Mp 228-230°. $[\alpha]_D^{20}$ +20 (c, 0.5 in EtOH).

O-*β*-D-*Glucopyranoside:* ***Ningpeisinoside***
[139742-29-3]
$C_{34}H_{57}NO_7$ 591.827
From bulbs of *Fritillaria ningguoensis* (Liliaceae). Mp 284-286°. $[\alpha]_D^{20}$ +24 (c, 0.24 in $CHCl_3$/MeOH).

Li, Q.H. *et al., Yaoxue Xuebao*, 1988, **23**, 415-421; 1991, **26**, 794-797

Niphatesine B N-224

16-(3-Pyridinyl)-7-hexadecyn-1-amine, 9CI. 3-(16-Amino-9-hexadecynyl)pyridine
[132923-11-6]

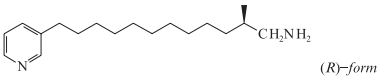


$C_{21}H_{34}N_2$ 314.513
Alkaloid from the marine sponge *Niphates* sp. Antineoplastic. Oil. λ_{max} 206 (ϵ 7800); 228 (ϵ 3300); 257 (ϵ 3100); 264 (ϵ 3400); 269 (ϵ 2500); 313 (ϵ 300) (MeOH) (Berdy).

Kobayashi, J. *et al., J.C.S. Perkin 1*, 1990, 3301 (*isol, uv, ir, ms, pmr, cmr, struct*)
Rao, A.V.R. *et al., Tet. Lett.*, 1993, **34**, 8329 (*synth*)

Niphatesine C N-225

β-Methyl-3-pyridinedodecanamine, 9CI. 2-Methyl-12-(3-pyridinyl)dodecylamine. 3-(12-Amino-11-methyldodecyl)pyridine



$C_{18}H_{32}N_2$ 276.464

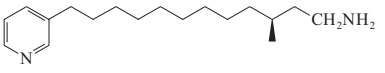
(R)-form [170716-95-7]
Synthetic. $[\alpha]_D^{20}$ -3.2 (c, 3.2 in MeOH).

(S)-form [132923-12-7]
Alkaloid from the marine sponge *Niphates* sp. Antineoplastic. Oil. $[\alpha]_D^{25}$ +9.4 (c, 0.053 in MeOH). $[\alpha]_D^{20}$ +2.4 (c, 0.5 in MeOH) (synthetic). λ_{max} 206 (ϵ 2600); 258 (ϵ 2400); 264 (ϵ 2700); 269 (ϵ 2200) (MeOH) (Berdy).

Kobayashi, J. *et al., J.C.S. Perkin 1*, 1990, 3301 (*isol, uv, ir, ms, pmr, cmr, struct*)
Rao, A.V.R. *et al., Tet. Lett.*, 1993, **34**, 8329 (*synth, abs config*)
Bracher, F. *et al., J.C.S. Perkin 1*, 1995, 2323 (*synth, abs config*)
Wang, Y. *et al., J.O.C.*, 2003, **68**, 3090-3098 (*synth*)
Krauss, J. *et al., Arch. Pharm. (Weinheim, Ger.)*, 2004, **337**, 371-375 (*synth*)

Niphatesine D N-226

γ-Methyl-3-pyridinedodecanamine, 9CI. 3-Methyl-12-(3-pyridinyl)dodecylamine. 3-(12-Amino-10-methyldodecyl)pyridine
[132923-13-8]

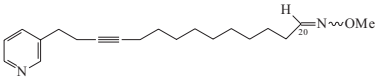


$C_{18}H_{32}N_2$ 276.464
The assignment of the configuration has been shown to be unreliable (2004). Alkaloid from the marine sponge *Niphates* sp. Antineoplastic. Oil. $[\alpha]_D^{25}$ +4.4 (c, 0.045 in MeOH). λ_{max} 207 (ϵ 4300); 259 (ϵ 2800); 264 (ϵ 3200); 270 (ϵ 2400) (MeOH) (Berdy).

Kobayashi, J. *et al., J.C.S. Perkin 1*, 1990, 3301 (*isol, uv, ir, ms, pmr, cmr, struct*)

Rao, A.V.R. *et al., Tet. Lett.*, 1993, **34**, 8329 (*synth, abs config*)
Romeril, S.P. *et al., Tet. Lett.*, 2004, **45**, 3273-3277 (*config*)

Niphatesine E **N-227**
14-(3-Pyridinyl)-11-tetradecynal O-*methyloxime*
[143052-05-5]



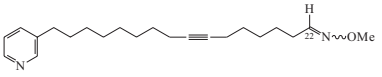
$C_{20}H_{30}N_2O$ 314.47
Isol. as a *ca*. 1.4:1 mixt. of *E* and *Z* isomers. Alkaloid from the Okinawan marine sponge *Niphates* sp. Exhibits cytotoxicity against murine leukaemia L1210 cells and human epidermoid carcinoma KB cells *in vitro*. Also shows antimicrobial activity against some fungi and gram-positive bacteria. Oil. λ_{max} 262 (ϵ 19000) (MeOH) (Berdy).

*20,*N-*Dihydro:* ***Niphatesine H***. N-*Methoxy-14-(3-pyridinyl)-11-tetradecyn-1-amine, 9CI*
[143052-08-8]
$C_{20}H_{32}N_2O$ 316.486
Alkaloid from *Niphates* sp. Exhibits cytotoxic and antimicrobial activities. Oil. λ_{max} 262 (ϵ 2500) (MeOH) (Berdy).

[143052-09-9]

Kobayashi, J. *et al., J.C.S. Perkin 1*, 1992, 1291-1294 (*Niphatesines E,H, struct*)

Niphatesine F **N-228**
16-(3-Pyridinyl)-7-hexadecynal O-*methyloxime, 9CI*
[143052-06-6]



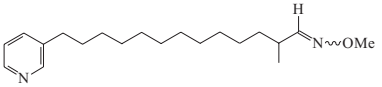
$C_{22}H_{34}N_2O$ 342.523
Isol. as a 1.7:1 mixt. of *E* and *Z* isomers. Alkaloid from the Okinawan marine sponge *Niphates* sp. Exhibits cytotoxicity against murine leukaemia L1210 cells and human epidermoid KB cells *in vitro*. Also shows antimicrobial activity against some fungi and gram-positive bacteria. Oil. λ_{max} 263 (ϵ 3100) (MeOH) (Berdy).

*22,*N-*Dihydro:* see Niphatyne A, N-233

[143052-10-2]

Kobayashi, J. *et al., J.C.S. Perkin 1*, 1992, 1291 (*isol, uv, ir, pmr, cmr, ms, struct*)

Niphatesine G **N-229**
α-Methyl-3-pyridinetridecanal O-*methyloxime, 9CI*
[143052-07-7]

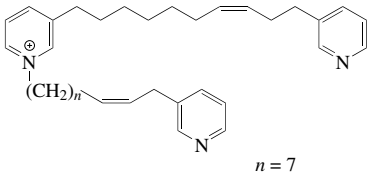


$C_{20}H_{34}N_2O$ 318.501
Isol. as a 3.2:1 mixt. of *E* and *Z* isomers. Alkaloid from the Okinawan marine sponge *Niphates* sp. Exhibits cytotoxicity against murine leukaemia L1210 cells and human epidermoid carcinoma KB cells *in vitro*. Also shows antimicrobial activity against some fungi and gram-positive bacteria. Oil. λ_{max} 263 (ϵ 1500) (MeOH) (Berdy).

[143120-50-7]

Kobayashi, J. *et al., J.C.S. Perkin 1*, 1992, 1291 (*isol, uv, ir, pmr, ms, struct*)

Niphatoxin A **N-230**
3-[10-(3-Pyridinyl)-7-decenyl]-1-[11-(3-pyridinyl)-8-decenyl]pyridinium(1+), 9CI
[142808-48-8]



n = 7

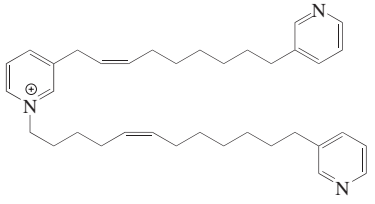
$C_{35}H_{48}N_3^{\oplus}$ 510.784
Incorrect struct. given in ref. Alkaloid from the Red Sea sponge *Niphates* sp. Ichthyotoxic and cytotoxic. Counterion not specified.

Talpir, R. *et al., Tet. Lett.*, 1992, **33**, 3033-3034 (*isol, pmr, cmr*)

Niphatoxin B **N-231**
3-[10-(3-Pyridinyl)-7-decenyl]-1-[11-(3-pyridinyl)-9-undecenyl]pyridinium(1+), 9CI
[142808-49-9]
As Niphatoxin A, N-230 with *n* = 8
$C_{36}H_{50}N_3^{\oplus}$ 524.811
Incorrect struct. given in 1992 ref. Alkaloid from the Red Sea sponge *Niphates* sp. Ichthyotoxic and cytotoxic. Counterion not specified.

Talpir, R. *et al., Tet. Lett.*, 1992, **33**, 3033-3034 (*isol, pmr, cmr*)
Kaiser, A. *et al., J.O.C.*, 1999, **64**, 3778-3782 (*synth, ir, pmr, cmr*)

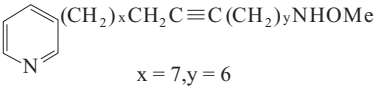
Niphatoxin C **N-232**
[1001439-38-8]



$C_{36}H_{50}N_3^{\oplus}$ 524.811
Alkaloid from a *Callyspongia* sp. Cytotoxic. Amorph. solid. Counterion not specified. λ_{max} 203 (log ϵ 4.14); 263 (log ϵ 3.84) (MeOH).

Buchanan, M.S. *et al., J. Nat. Prod.*, 2007, **70**, 2040-2041 (*isol, pmr, cmr*)

Niphatyne A **N-233**
N-*Methoxy-16-(3-pyridinyl)-7-hexadecyn-1-amine, 9CI*
[109741-36-8]



x = 7,y = 6

$C_{22}H_{36}N_2O$ 344.539
Isol. from the sponge *Niphates* sp. Cytotoxic agent. Sol. MeOH, $CHCl_3$. λ_{max} 260 (ϵ 2500); 265 (ϵ 3100); 270 (ϵ 2000) (MeOH) (Derep).

Quiñoà, E. *et al., Tet. Lett.*, 1987, **28**, 2467 (*isol, uv, ir, pmr, cmr, ms, struct*)

Niphatyne B **N-234**
N-*Methoxy-16-(3-pyridinyl)-5-hexadecyn-1-amine, 9CI*
[109741-37-9]
As Niphatyne A, N-233 with x = 9, y = 4
$C_{22}H_{36}N_2O$ 344.539
Isol. from the marine sponge, *Niphates* sp. Cytotoxic agent. Sol. MeOH, $CHCl_3$. Obt. contaminated with Niphatyne A, N-233. λ_{max} 260 (ϵ 2500); 265 (ϵ 3100); 270 (ϵ 2000) (MeOH) (Derep).

Quiñoà, E. *et al., Tet. Lett.*, 1987, **28**, 2468 (*isol, uv, ir, pmr, cmr, ms, struct*)

Niranin **N-235**
S-*Methyl methyl(2-phenylethyl)carbamothioate, 9CI*
[92886-90-3]
$Ph^3CH_2^2CH_2NMeCOSMe$
$C_{11}H_{15}NOS$ 209.312
Isol. from leaves of *Glycosmis* cf. *mauritiana*.

*2′,3′-Didehydro (*E-*):* ***Dehydroniranin A***
[184101-44-8]
$C_{11}H_{13}NOS$ 207.296
From leaves of *Glycosmis* cf. *cyanocarpa*. Exhibits pronounced insecticidal activity. Author's numbering. λ_{max} 216 (log ϵ 4.11); 279 (sh) (log ϵ 4.22); 286 (log ϵ 4.23); 302 (sh) (log ϵ 4.07) (Et_2O).

*2′,3′-Didehydro (*Z-*):* ***Dehydroniranin B***
[184101-51-7]
$C_{11}H_{13}NOS$ 207.296
From leaves of *Glycosmis cf. cyanocarpa*. Exhibits pronounced antifungal and insecticidal activity. λ_{max} 216 (log ϵ 4.05); 271 (log ϵ 4.1) (Et_2O).

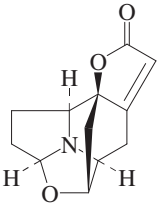
2′-Oxo: S-*Methyl methyl(phenylacetyl)carbamothioate, 9CI.* ***Ritigalin***
[163046-80-8]
$C_{11}H_{13}NO_2S$ 223.295
Isol. from the leaves of *Glycosmis mauritiana* and *Glycosmis parviflora*. Oil. λ_{max} 231 (MeOH). λ_{max} 210 ; 226 (Et_2O).

Hofer, O. *et al., Monatsh. Chem.*, 1995, **126**,

365-368 (*Ritigalin*)
Greger, H. *et al., J. Nat. Prod.*, 1996, **59**, 1163-1168 (*isol, uv, ir, pmr, cmr, ms, struct*)
Hinterberger, S. *et al., Tetrahedron*, 1998, **54**, 487-496 (*synth*)

Nirurine† N-236

[105801-14-7]



Relative Configuration

$C_{12}H_{13}NO_3$ 219.24

Related to the Securinega alkaloid skeleton. Alkaloid from the aerial parts of *Phyllanthus niruri* (Euphorbiaceae). Cryst. ($CHCl_3$/2-propanol). Mp 205-209°. $[\alpha]_D$ +196.

Petchnaree, P. *et al., J.C.S. Perkin 1*, 1986, 1551 (*isol, uv, ir, pmr, cmr, ms, cryst struct*)
Magnus, P. *et al., J.A.C.S.*, 1992, **114**, 382 (*synth*)
Magnus, P. *et al., Tetrahedron*, 1993, **49**, 8059 (*synth*)

Nishindine N-237

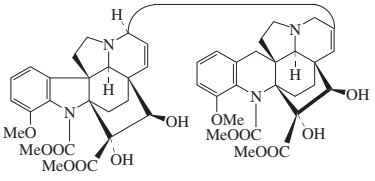
$C_{15}H_{21}NO$ 231.337

Struct. unknown. Alkaloid from *Vitex negundo* (Verbenaceae). Mp 266°.

Basu, N.K. *et al., Q. J. Pharm. Pharmacol.*, 1947, **20**, 136-137

Nitaphylline N-238

[190962-64-2]



$C_{48}H_{54}N_4O_{14}$ 910.973

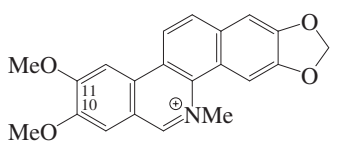
Alkaloid from the leaves of *Kopsia teoi* (Apocynaceae). Light yellow oil. $[\alpha]_D$ +136 (c, 1 in $CHCl_3$). λ_{max} 217 (log ϵ 4.55); 254 (log ϵ 4.05); 282 (log ϵ 3.51); 289 (log ϵ 3.49) (EtOH).

Kam, T.-S. *et al., Phytochemistry*, 1999, **50**, 171-175 (*isol, uv, pmr, cmr, ms*)

Nitidine N-239

2,3-Dimethoxy-12-methyl[1,3]benzodioxolo[5,6-c]phenanthridinium(1+), 9CI. Angolinine

[6872-57-7]



$C_{21}H_{18}NO_4^{\oplus}$ 348.377

Benzo[*c*]phenanthridine alkaloid numbering shown. Alkaloid from a wide variety of *Zanthoxylum* and *Fagara* spp. (Rutaceae). Antitumour agent showing unacceptable toxicity profile for clinical use. Inhibitor of reverse transcriptase activity in RNA oncogenic viruses; also inhibits other enzymes. Shows antifungal activity. λ_{max} 232 (ϵ 25700); 234 (ϵ 24550); 270 (ϵ 46770); 272 (ϵ 30200); 290 (ϵ 41680); 299 (ϵ 40740); 327 (ϵ 39800); 329 (ϵ 24000); 380 (ϵ 11750) (MeOH) (Berdy). λ_{max} 228 (ϵ 35300); 278 (ϵ 40700); 311 (ϵ 19600) (EtOH) (Berdy).

Chloride:
$C_{21}H_{18}ClNO_4$ 383.83
Yellow needles (MeOH or EtOH). Mp 220° Mp 238-240° Mp 277-278° (monohydrate) Mp 284-286° dec. (dihydrate). λ_{max} 232 (ϵ 21380); 236 (ϵ 22910); 272 (ϵ 40740); 292 (ϵ 37150); 301 (ϵ 36310); 330 (ϵ 36310); 386 (ϵ 1000) (MeOH) (Derep).

Nitrate:
$C_{21}H_{18}N_2O_7$ 410.382
Yellowish-green needles (6*M* HNO_3/EtOH). Mp 276-278° (239°, 269-270°).

Iodide:
$C_{21}H_{18}INO_4$ 475.282
Pale yellow needles (EtOH). Mp 284-285°.

N-*De-Me: 2,3-Dimethoxy[1,3]benzodioxolo[5,6-c]phenanthridine, 9CI. 8,9-Dimethoxy-2,3-methylenedioxybenzo[c]phenanthridine.* ***Nornitidine.*** N-*Desmethylnitidine.* N-*Demethylnitidine*
[18034-03-2]
$C_{20}H_{15}NO_4$ 333.343
Alkaloid from the bark of *Zanthoxylum microcarpum* and *Zanthoxylum myriacanthum*. Needles (Py or Py/EtOH). Mp 283-285°. λ_{max} 229 (log ϵ 4.36); 274 (log ϵ 4.73); 278 (sh) (log ϵ 4.71); 311 (log ϵ 4.15); 330 (sh) (log ϵ 3.89); 348 (log ϵ 3.6); 367 (log ϵ 3.46) (EtOH).

O^{10}-*De-Me:* ***Terihanine***
[112239-71-1]
[111181-33-0]
$C_{20}H_{16}NO_4^{\oplus}$ 334.351
Alkaloid from *Zanthoxylum nitidum*, *Zanthoxylum ovalifolium* and *Fagara nitida*. Yellow prisms (as chloride). Mp 280° (chloride). Melts and resolidifies at 240-245°.

O^{11}-*De-Me:* ***Isoterihanine***
[112239-70-0]
[111154-43-9]
$C_{20}H_{16}NO_4^{\oplus}$ 334.351
Alkaloid from *Zanthoxylum ovalifolium*. Yellow prisms (as chloride). Mp 243-247° (chloride).

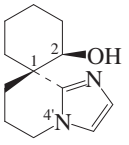
N,O^{10}-*Di-de-Me:* ***8-O-Demethylnornitidine***
[868247-40-9]
$C_{19}H_{13}NO_4$ 319.316
Alkaloid from *Zanthoxylum caudatum* and *Zanthoxylum quinduensis.* Pale yellow semi-solid. Mp 235-237°. λ_{max} 280 (log ϵ 6.29) (EtOH).

Arthur, H.R. *et al., J.C.S.*, 1959, 1840-1845; 4010-4012 (*isol, struct, synth*)
Gopinath, K.W. *et al., J.C.S.*, 1959, 4012-4014 (*Nornitidine, synth, uv*)
Kuck, A.M. *et al., Phytochemistry*, 1967, **6**, 1541-1550 (*isol*)
Calderwood, J.M. *et al., Phytochemistry*, 1970, **9**, 675 (*occur, uv*)
Fish, F. *et al., Phytochemistry*, 1971, **10**, 3322-3324; 3325-3327 (*isol*)
Vallejos, R.H. *et al., Biochem. Pharmacol.*, 1972, **21**, 1160-1167 (*activity*)
Kametani, T. *et al., J. Het. Chem.*, 1973, **10**, 31-33 (*synth*)
Zee-Cheng, K.-Y. *et al., J. Het. Chem.*, 1973, **10**, 85-88 (*synth, uv, ir, Nornitidine*)
Begley, W.J. *et al., J.C.S. Perkin 1*, 1977, 2324-2328 (*synth*)
Cushman, M. *et al., J.O.C.*, 1978, **43**, 286-288 (*synth, pmr, ms*)
Phillips, S.D. *et al., J. Het. Chem.*, 1981, **18**, 223-232 (*rev*)
Boulware, R.T. *et al., J. Nat. Prod.*, 1981, **44**, 200-205 (*Nornitidine, isol, uv, pmr, ms*)
Ishii, H. *et al., Chem. Pharm. Bull.*, 1985, **33**, 4139-4151 (*synth, bibl*)
Hanaoka, M. *et al., Chem. Pharm. Bull.*, 1987, **35**, 2348-2354 (*synth, uv, pmr, ms*)
Ishii, H. *et al., Chem. Pharm. Bull.*, 1987, **35**, 2717-2725 (*Terihanine, Isoterihanine, synth*)
Martin, G. *et al., J.O.C.*, 1992, **57**, 5907-5911 (*synth*)
Pérez, D. *et al., J.O.C.*, 1992, **57**, 5911-5917 (*synth*)
Minami, T. *et al., Tet. Lett.*, 1995, **36**, 9505-9508 (*synth*)
Green, G.R. *et al., J.C.S. Perkin 1*, 1996, 1647-1648 (*Nornitidine, synth*)
Harayama, T. *et al., Heterocycles*, 1998, **48**, 1989-1992 (*synth*)
Nissanka, A.P.K. *et al., Phytochemistry*, 2001, **56**, 857-861 (*8-O-Demethylnornitidine*)
Seckárová, P. *et al., Magn. Reson. Chem.*, 2002, **40**, 147-152 (*pmr, cmr*)
Halstead, C.W. *et al., Nat. Prod. Res.*, 2006, **20**, 940-945 (*Terihanine, Isoterihanine*)
Luo, Y. *et al., Tetrahedron*, 2006, **62**, 9131-9134 (*Nornitidine, synth*)

Nitrabirine N-240

6′,7′-Dihydrospiro[cyclohexane-1,8′(5′H)-imidazo[1,2-a]pyridin]-2-ol, 9CI

[86629-99-4]



$C_{12}H_{18}N_2O$ 206.287

Alkaloid from the aerial parts of *Nitraria sibirica* (Zygophyllaceae). Cryst. (MeOH). Mp 184-185°.

Hydrochloride: [86630-00-4]
Cryst. (EtOH). Mp 224-225°.

4′-N-*Oxide: Nitrabirine* N-*oxide*
[450336-23-9]
$C_{12}H_{18}N_2O_2$ 222.286
Alkaloid from the aerial parts of *Nitraria sibirica*. Cryst. (EtOH). Mp 235-236°. λ_{max} 213 (log ϵ 3.81) (EtOH).

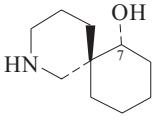
[86630-01-5]

Ibragimov, A.A. *et al., Khim. Prir. Soedin.*, 1983, **19**, 213-216; 1988, **24**, 82-91; *Chem. Nat. Compd. (Engl. Transl.)*, 1983, **19**, 202-

205; 1988, **24**, 71-78 (*isol, struct, pmr, cmr, abs config*)
Tulyaganov, T.S. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2001, **37**, 556-558 (*N-oxide*)

Nitramine N-241

2-Azaspiro[5.5]undecan-7-ol



$C_{10}H_{19}NO$ 169.266

Rel. configs. only appear to be known. The enantiomer shown is assigned by CAS.

(+)-*form* [49620-06-6]
Alkaloid from *Nitraria schoberi* (Zygophyllaceae). Liq. $[\alpha]_D^{20}$ +16.5 (c, 4.85 in $CHCl_3$).

Nitrate: [81149-19-1]
Mp 204-206°.

7-Epimer: ***Isonitramine***
[65620-67-9]
$C_{10}H_{19}NO$ 169.266
Alkaloid from *Nitraria sibirica* (Zygophyllaceae). Needles. Mp 101-103° subl. $[\alpha]_D^{25}$ -30 (c, 1.36 in $CHCl_3$).

(-)-*form*

N-*Me:* ***Sibirine***
[83023-77-2]
$C_{11}H_{21}NO$ 183.293
Alkaloid from the epigeal parts of *Nitraria sibirica* (Zygophyllaceae). $[\alpha]_D$ -22.5 (c, 0.81 in $CHCl_3$).

N-*Me; hydrochloride:* [83057-62-9]
Cryst. (Me_2CO/EtOH). Mp 191-192°.

(±)-*form* [82227-98-3]
Alkaloid from *Nitraria sibirica* leaves and stems (Zygophyllaceae).

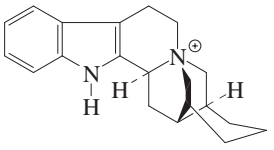
Hydrochloride: [89398-21-0]
Mp 225-228° (synthetic).

[81149-20-4 , 89460-82-2 , 98302-88-6 , 81149-21-5 , 81202-54-2]

Novgorodova, N.Y. *et al., Khim. Prir. Soedin.*, 1973, **9**, 196; *Chem. Nat. Compd. (Engl. Transl.)*, 1973, **9**, 191 (*isol*)
Osmanov, Z. *et al., Khim. Prir. Soedin.*, 1977, **13**, 720; *Chem. Nat. Compd. (Engl. Transl.)*, 1977, **13**, 607 (*isol, Isonitramine*)
Ibragimov, A.A. *et al., Khim. Prir. Soedin.*, 1981, **17**, 623; 1982, **18**, 126; *Chem. Nat. Compd. (Engl. Transl.)*, 1981, **17**, 458; 1982, **18**, 121 (*cmr, cryst struct*)
Osmanov, Z. *et al., Khim. Prir. Soedin.*, 1982, **18**, 225; *Chem. Nat. Compd. (Engl. Transl.)*, 1982, **18**, 206 (*Sibirine*)
Snider, B.B. *et al., J.O.C.*, 1984, **49**, 1688 (*synth*)
Kozikowski, A.P. *et al., Chem. Comm.*, 1985, 847 (*synth*)
Tanner, D. *et al., Tetrahedron*, 1989, **45**, 4309 (*synth*)
Imanishi, T. *et al., Chem. Comm.*, 1991, 1409 (*synth, Sibirine*)
Fujii, T. *et al., Chem. Lett.*, 1992, 1493 (*synth, Isonitramine, Sibirine*)
Keppens, M. *et al., Synlett*, 1994, 285 (*synth, Sibirine*)
Senboku, H. *et al., Heterocycles*, 1997, **46**, 413-420 (*synth*)

Nitraraidine N-242

[619282-56-3]

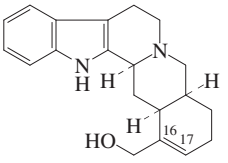


$C_{20}H_{25}N_2^{\oplus}$ 293.431
Quaternary alkaloid from *Nitraria sibirica*. Cryst. (EtOH). Mp 308-310°. Opt. inactive. Counterion not specified. λ_{max} 224 (log ϵ 4.05); 275 (log ϵ 3.59); 288 (sh) (log ϵ 3.47) (EtOH).

Tulyaganov, T.S. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2002, **38**, 602-604 (*isol, pmr, cmr*)

Nitraraine N-243

16,17-Didehydroyohimban-17-methanol, 9CI. 16-Hydroxymethylyohimb-16-ene
[101222-61-1]



$C_{20}H_{24}N_2O$ 308.422
Alkaloid from *Nitraria schoberi*. Mp 280-281°. Racemic. Has been synthesised chirally.

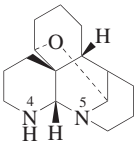
O-*Ac:* **O-*Acetylnitraraine***
$C_{22}H_{26}N_2O_2$ 350.46
Alkaloid from *Nitraria schoberi*. Cryst. (MeOH). Mp 93-95°. Racemic. λ_{max} 227 (log ϵ 4.55); 281 (log ϵ 4.01); 292 (sh) (log ϵ 3.91) (EtOH).

16α,17-Dihydro: ***Dihydronitraraine***
[101144-41-6]
$C_{20}H_{26}N_2O$ 310.438
Alkaloid from *Nitraria schoberi*. Cryst. by. subl. Mp 286-287°. Racemic. Has been synthesised chirally.

Ibragimov, A.A. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1985, **21**, 502-509; 510-512 (*isol, ir, ms, struct, Dihydronitraraine*)
Takano, S. *et al., Chem. Lett.*, 1989, 1777-1780 (*Nitraraine, Dihydronitraraine, synth*)
Yamaguchi, R. *et al., Synlett*, 1991, 719-720 (*synth*)
Paivio, E. *et al., Heterocycles*, 2000, **53**, 2241-2246 (*Dihydronitraraine, synth*)
Sakagami, H. *et al., Heterocycles*, 2001, **54**, 43-47 (*synth*)
Tulyaganov, T.S. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2005, **41**, 578-579 (*O-Acetylnitraraine*)

Nitraramine N-244

[57912-25-1]



$C_{15}H_{24}N_2O$ 248.367
Struct. revised in 1985. Alkaloid from epigeal parts of *Nitraria schoberi*. Mp 85-86°. Opt. inactive. Reported isol. of 1-Epinitraramine has been shown to be incorrect (2005).

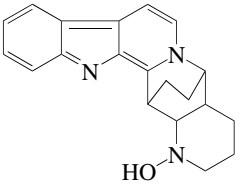
N^5-*Oxide:* ***Nitraramine* N-*oxide***. *Nitraroxine*
[57912-26-2]
$C_{15}H_{24}N_2O_2$ 264.367
Alkaloid from *Nitraria schoberi* and *Nitraria komarovii*. Cryst. (EtOH). Mp 251-252° (220-221°). $[\alpha]_D$ 0.

N^4-*(Phenylacetyl),* N^5-*oxide:* ***Nitraramidine***
[619282-52-9]
$C_{23}H_{30}N_2O_3$ 382.502
Alkaloid from *Nitraria sibirica*. Cryst. ($CHCl_3$/EtOH). Mp 225-226°. λ_{max} 209 (log ϵ 4.02); 249 (log ϵ 2.05) (EtOH).

Novgorodova, N.Yu. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1975, **11**, 455 (*isol, pmr, ms*)
Tashkhodzhaev, B. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1985, **21**, 649-655 (*cryst struct*)
Ibragimov, A.A. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1986, **22**, 620 (*Nitraroxine*)
Tulyaganov, T.S. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1993, **29**, 31 (*Nitraramine N-oxide*)
Wanner, W.J. *et al., J.O.C.*, 1995, **60**, 5634 (*synth, pmr, cmr, ms*)
Tulyaganov, T.S. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2002, **38**, 602-604 (*Nitraramidine*)
Gravel, E. *et al., Org. Lett.*, 2005, **7**, 2497-2499 (*synth*)

Nitraricine N-245

[176181-92-3]

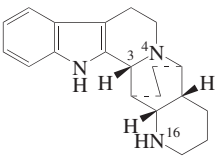


$C_{20}H_{21}N_3O$ 319.405
Alkaloid from aerial parts of *Nitraria komarovii*. Cryst. (EtOH/Me_2CO). Mp 214-215°. $[\alpha]_D$ 0. λ_{max} 208 (log ϵ 4.16); 253 (log ϵ 4.13); 310 (log ϵ 4.02); 365 (log ϵ 3.41) (EtOH).

Tulyaganov, T.S. *et al., Khim. Prir. Soedin.*, 1995, 95; *Chem. Nat. Compd. (Engl. Transl.)*, 1995, **31**, 76

Nitrarine N-246

[20069-03-8]



Relative Configuration

$C_{20}H_{25}N_3$ 307.438

Antispasmodic, antihypertensive agent. Log P 2.18 (calc).

(±)-*form*

Alkaloid from *Nitraria schoberi* (Zygophyllaceae). Mp 256-257°. λ_{max} 226 (log ϵ 4.52); 286 (log ϵ 4.01) (no solvent reported).

Hydrochloride (1:2): Mp 267°.

N^{16}-*Me:* **N-*Methylnitrarine***

$C_{21}H_{27}N_3$ 321.464

Alkaloid from the aerial parts of *Nitraria schoberi*. Cryst. (EtOH). Mp 263-264°. λ_{max} 220 (log ϵ 4.68); 269 (log ϵ 3.88); 280 (sh) (log ϵ 3.85); 288 (log ϵ 3.52) (EtOH).

N^{16}-*(2-Propenyl):* **N-*Allylnitarine***

$C_{23}H_{29}N_3$ 347.502

Alkaloid from the aerial parts of *Nitraria komarovii*. Cryst. (EtOH). Mp 269-271°. λ_{max} 222 (log ϵ 4.72); 268 (log ϵ 3.85); 280 (log ϵ 3.84); 388 (log ϵ 3.52) (EtOH).

1,3-Didehydro: ***Nitramidine***. *1,3-Didehydronitrarine, 9CI*

[56775-82-7]

$C_{20}H_{23}N_3$ 305.422

Alkaloid from *Nitraria schoberi* (Zygophyllaceae). Noncryst.; yellow cryst. (as hydrochloride). Mp 251-253° (hydrochloride). λ_{max} 250 (log ϵ 3.95); 263 (log ϵ 4.27) (EtOH).

5,6,15,16-Tetradehydro, N^4*-oxide:* ***Nitrarisine***. *Nitrarizine*

[176181-93-4]

$C_{20}H_{21}N_3O$ 319.405

Alkaloid from aerial parts of *Nitraria komarovii*. Cryst. (EtOH/Me_2CO). Mp 265-267°. $[\alpha]_D$ 0.

3-Epimer: ***Isonitrarine***. *3-Epinitrarine*

[57969-03-6]

$C_{20}H_{25}N_3$ 307.438

Alkaloid from *Nitraria schoberi* (Zygophyllaceae). Cryst. Mp 209°. λ_{max} 226 (log ϵ 4.46); 286 (log ϵ 3.84) (EtOH).

3-Epimer, hydrochloride: Mp 239°.

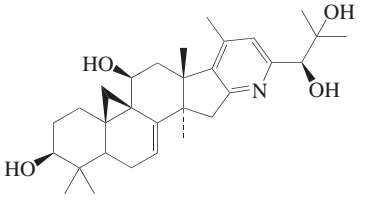
Ibragimov, A.A. *et al., Khim. Prir. Soedin.*, 1975, **11**, 273-274; 275; 276; *Chem. Nat. Compd. (Engl. Transl.)*, 1975, **11**, 293-294; 295-296; 298 (*Nitrarine, Nitramidine, Isonitrarine*)

Nasirov, S.-M. *et al., Khim. Prir. Soedin.*, 1976, **12**, 334-345; *Chem. Nat. Compd. (Engl. Transl.)*, 1976, **12**, 294-301 (*cryst struct*)

Vakhabov, A. *et al., CA*, 1980, **92**, 209116 (*rev, pharmacol*)

Tulyaganov, T.S. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1995, **31**, 95-395; 2000, **36**, 393-395; 396-398 (*Nitrarisine, N-Allylnitarine, N-Methylnitrarine*)

16,23-Nitrilocycloarta-7,16(*N*),17(20),22-tetraene-3,11,24,25-tetrol N-247



$C_{30}H_{43}NO_4$ 481.674

(3β,11β,24*S*)-*form*

3-O-β-D-Xylopyranoside: ***Cimicifine A***. *Cimicifugadine*

[936924-56-0]

$C_{35}H_{51}NO_8$ 613.79

Alkaloid from the rhizomes of *Cimicifuga foetida*. Amorph. solid. Mp 246-248° (Cimicifugadine) Mp 275-277° (Cimicifine A). $[\alpha]_D^{24}$ -12.7 (c, 0.2 in MeOH) (Cimicifine A). $[\alpha]_D^{25}$ +13 (c, 0.095 in MeOH) (Cimicifugadine). Cimicifine A and Cimicifugadine assigned same struct., although props. not identical. λ_{max} 271 (MeOH).

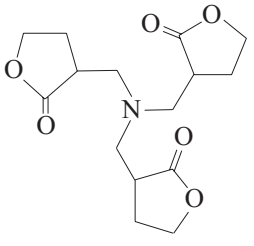
Sun, L.-R. *et al., Helv. Chim. Acta*, 2007, **90**, 1313-1318 (*Cimicifine A*)

Dan, C. *et al., Org. Lett.*, 2007, **9**, 1813-1816 (*Cimicifugadine*)

3,3′,3″-[Nitrilotris(methylene)]tris[dihydro-2(3*H*)furanone], 9CI N-248

Tri(α-methylene-γ-butyrolactonyl)amine

[102779-02-2]



$C_{15}H_{21}NO_6$ 311.334

Minor base from *Bellendena montana* (Proteaceae). Mp 186-187°. $[\alpha]_D^{19}$ +80 ($CHCl_3$).

Picrate: Mp 209-211°.

Diastereoisomer (?):

$C_{15}H_{21}NO_6$ 311.334

Artifact isol. from *Garnieria spathulaefolia* (Proteaceae). Cryst. (MeOH). Mp 184-186° dec.

Bick, I.R.C. *et al., Aust. J. Chem.*, 1979, **32**, 1827 (*isol*)

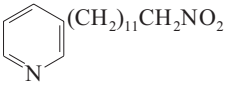
Lounasmaa, M. *et al., Heterocycles*, 1985, **23**, 939 (*isol, pmr, ir, cmr, ms, struct*)

Bick, I.R.C. *et al., Phytochemistry*, 1986, **25**, 972 (*uv, ir, pmr, cmr, struct*)

3-(12-Nitrododecyl)pyridine N-249

1-Nitro-12-(3-pyridinyl)dodecane. ***Untenine B***

[174624-22-7]



$C_{17}H_{28}N_2O_2$ 292.42

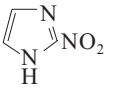
Alkaloid from the Okinawan marine sponge *Callyspongia* sp. Exhibits potent anti-microfouling activity.

Wang, G.-Y.-S. *et al., Tet. Lett.*, 1996, **37**, 1813 (*isol, pmr, cmr, struct*)

2-Nitroimidazole, 9CI N-250

Azomycin. *Amicin*

[527-73-1]



$C_3H_3N_3O_2$ 113.076

Produced by *Nocardia* spp., *Streptomyces eurocidicus* and *Pseudomonas fluorescens*. Antibiotic active against gram-positive organisms. Pale yellow cryst. (EtOH). Sol. MeOH, EtOAc, bases; fairly sol. $CHCl_3$, Et_2O; poorly sol. H_2O, $CHCl_3$, Me_2CO, hexane, Et_2O. Mp 282° dec Mp 287-288°. pK_{a1} -0.81; pK_{a2} 7.15 (50% MeOH). Log P -0.09 (calc). λ_{max} 223 (ϵ 3500); 365 (ϵ 10700) (EtOH/NaOH) (Derep). λ_{max} 219 (ϵ 3900); 315 (ϵ 8600) (95% EtOH) (Derep).

▶ LD_{50} (mus, orl) 316 mg/kg. LD_{50} (mus, ivn) 80 mg/kg. Mutagenic props. NI7875000

[36877-68-6]

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 618B (*ir*)

Aldrich Library of NMR Spectra, 2nd edn., 1983, **2**, 489D (*nmr*)

Nakamura, S. *et al., J. Antibiot., Ser. A*, 1955, **8**, 66 (*isol*)

Beaman, A.G. *et al., J.A.C.S.*, 1965, **87**, 389 (*synth*)

Nakane, A. *et al., J. Biol. Chem.*, 1977, **252**, 5267 (*biosynth*)

Agrawal, K.C. *et al., J. Med. Chem.*, 1979, **22**, 583 (*synth*)

Luijten, W.C. *et al., Org. Mass Spectrom.*, 1982, **17**, 299 (*ms*)

Nair, M.D. *et al., Prog. Drug Res.*, 1983, **27**, 163 (*rev, pharmacol*)

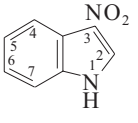
Larsen, I.K. *et al., Acta Cryst. C*, 1984, **40**, 285 (*cryst struct*)

Shoji, T. *et al., J. Antibiot.*, 1989, **42**, 1513 (*isol*)

Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, NHG000

3-Nitro-1*H*-indole N-251

[4770-03-0]



$C_8H_6N_2O_2$ 162.148

Yellow needles (C_6H_6). Mp 213-214°. pK_a 10.12 (25°). Prod. by the marine-derived *Salegentibacter* sp. T436.

N-*Ac:*

$C_{10}H_8N_2O_3$ 204.185

Tan cryst. (hexane/CH_2Cl_2). Mp 167-168°.

N-*Me:* [36728-89-9]

$C_9H_8N_2O_2$ 176.174

Cryst. (C_6H_6/hexane). Mp 156-157° (154°). Subl.2 140.

N-*Et:* [55543-24-3]

$C_{10}H_{10}N_2O_2$ 190.201

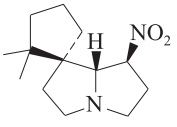
Yellow needles (petrol). Mp 102°.

N-*Benzyl:*
$C_{15}H_{12}N_2O_2$ 252.272
Tan cryst. (hexane/CH_2Cl_2). Mp 118-119°.

Noland, W.E. *et al., J.O.C.*, 1966, **31**, 70-77 (*synth, uv*)
Berti, G. *et al., J.C.S.(C)*, 1968, 2145-2151 (*synth*)
Pelkey, E.T. *et al., Synthesis*, 1999, 1117-1122 (*synth, derivs, ir, pmr, cmr, uv, ms*)
Gribble, G.W. *et al., Tetrahedron*, 2000, **56**, 10133-10140 (*synth, pmr, cmr, ms*)
Al-Zereini, W. *et al., J. Antibiot.*, 2007, **60**, 301-308 (*isol*)

Nitropolyzonamine N-252

*Hexahydro-2,2-dimethyl-7′-nitrospiro[cyclopentane-1,1′-[1*H*]pyrrolizine], 9CI. Spiropyrrolizidine 238*
[57308-84-6]



Absolute configuration

$C_{13}H_{22}N_2O_2$ 238.329
Component of the defence secretion of the millipede *Polyzonium rosalbum*. Mp 65.5-66.5°. $[\alpha]_D^{20}$ +12 ($CHCl_3$). Prob. formed from Loline, L-234 *in vivo*.

Meinwald, J. *et al., Tet. Lett.*, 1975, 2367 (*isol, ir, ms, cryst struct*)
Miller, R.W. *et al., J. Chem. Res., Synop.*, 1978, 76 (*cryst struct, abs config*)
Mori, K. *et al., Tet. Lett.*, 2000, **41**, 6623-6625 (*synth*)

Nitrosoxacin A N-253

N-*Hydroxy-14-methyl*-N-*nitrosopentadecanamine, 9CI*. N-*(14-Methylpentadecyl)*-N-*nitrosohydroxylamine*
[147317-96-2]
$(H_3C)_2CH(CH_2)_{13}N(OH)NO$
$C_{16}H_{34}N_2O_2$ 286.457
Prod. by *Streptomyces* sp. 5-Lipoxygenase inhibitor. Powder. Sol. DMSO, $CHCl_3$; fairly sol. MeOH, hexane; poorly sol. H_2O. Mp 44-44.5°. λ_{max} 230 (ϵ 6300) (MeOH/HCl) (Derep). λ_{max} 249 (ϵ 9900) (MeOH/NaOH) (Derep).

Nishio, M. *et al., J. Antibiot.*, 1993, **46**, 193 (*isol, struct*)

Nitrosoxacin B N-254

N-*Hydroxy*-N-*nitrosohexadecanamine, 9CI*. N-*Hexadecyl*-N-*nitrosohydroxylamine*
[147317-97-3]
$H_3C(CH_2)_{15}N(OH)NO$
$C_{16}H_{34}N_2O_2$ 286.457
Prod. by *Streptomyces* sp. 5-Lipoxygenase inhibitor. Powder. Sol. DMSO, $CHCl_3$; fairly sol. MeOH, hexane; poorly sol. H_2O. Mp 38.5-39.5°. λ_{max} 230 (ϵ 6300) (MeOH/HCl) (Derep). λ_{max} 249 (ϵ 9900) (MeOH/NaOH) (Derep).

Nishio, M. *et al., J. Antibiot.*, 1993, **46**, 193 (*isol, struct*)

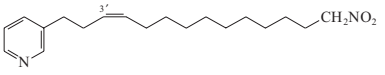
Nitrosoxacin C N-255

N-*Hydroxy-12-methyl*-N-*nitrosotridecanamine, 9CI*. N-*(12-Methyltridecyl)*-N-*nitrosohydroxylamine*
[147317-95-1]
$(H_3C)_2CH(CH_2)_{11}N(OH)NO$
$C_{14}H_{30}N_2O_2$ 258.403
Prod. by *Streptomyces* sp. 5-Lipoxygenase inhibitor. Powder. Sol. DMSO, $CHCl_3$; fairly sol. MeOH, hexane; poorly sol. H_2O. Mp 35.5-36°. λ_{max} 230 (ϵ 6300) (MeOH/HCl) (Derep). λ_{max} 249 (ϵ 9900) (MeOH/NaOH) (Derep).

Nishio, M. *et al., J. Antibiot.*, 1993, **46**, 193 (*isol, struct*)

3-(14-Nitro-3-tetradecenyl)-pyridine N-256

1-Nitro-14-(3-pyridinyl)-11-tetradecene



$C_{19}H_{30}N_2O_2$ 318.458

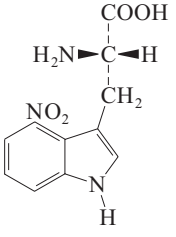
(*Z*)-*form*
Untenine A
[174756-37-7]
Alkaloid from the Okinawan marine sponge *Callyspongia* sp. Exhibits potent anti-microfouling activity.

3′,4′-Didehydro: 3-(14-Nitro-3-tetradecynyl)pyridine. 1-Nitro-14-(3-pyridinyl)-11-tetradecyne. ***Untenine C***
[174756-38-8]
$C_{19}H_{28}N_2O_2$ 316.442
From *Callyspongia* sp. Exhibits potent anti-microfouling activity.

Wang, G.-Y.-S. *et al., Tet. Lett.*, 1996, **37**, 1813 (*isol, pmr, cmr, synth, struct*)

4-Nitrotryptophan, 9CI N-257

*2-Amino-3-(4-nitro-1*H*-indol-3-yl)propanoic acid*



$C_{11}H_{11}N_3O_4$ 249.226

(*S*)-*form*
L-form
Prod. by *Streptomyces scabies*. Yellowish solid.

N-*Ac:* **N-*Acetyl-4-nitrotryptophan***
[168111-98-6]
$C_{13}H_{13}N_3O_5$ 291.263
Prod. by *Streptomyces scabies*. Yellow solid.

N-*Ac, Me ester:* [168029-89-8]
Yellow prisms. Mp 205-206°. λ_{max} 344 (ϵ 3480); 385 (ϵ 4070) (EtOH).

N-*Me:* **N-*Methyl-4-nitrotryptophan***
[168029-91-2]
$C_{12}H_{13}N_3O_4$ 263.252
Prod. by *Streptomyces scabies*. Yellow solid.

N-*Me, Me ester:* [168029-90-1]
Yellow solid. λ_{max} 346 (ϵ 3360); 384 (ϵ 3980) (EtOH).

(±)-*form*
Cryst. Mp 200° dec.

Hydrochloride:
Cryst. (EtOH). Mp 233-235°.

Et ester: [84590-30-7]
$C_{13}H_{15}N_3O_4$ 277.279
Cryst. Mp 96-98°.

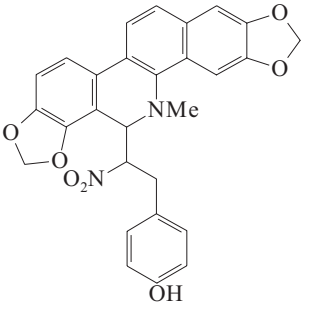
N-*Ac:*
$C_{13}H_{13}N_3O_5$ 291.263
Cryst. (EtOH). Mp 248-250°.

N-*Ac, Et ester:* [84590-31-8]
$C_{15}H_{17}N_3O_5$ 319.316
Yellow needles (EtOAc). Mp 162-164°.

Da Settimo, A. *et al., Ann. Chim. (Rome)*, 1962, **52**, 17 (*synth*)
Endo, Y. *et al., Tetrahedron*, 1986, **42**, 5905 (*Et ester, synth, ir, pmr*)
King, R.R. *et al., Phytochemistry*, 1995, **40**, 41 (*isol, N-Ac, N-Me*)
King, R.R. *et al., Phytochemistry*, 2003, **64**, 1091-1096 (*isol, pmr*)

Nitrotyrasanguinarine N-258

[123787-75-7]

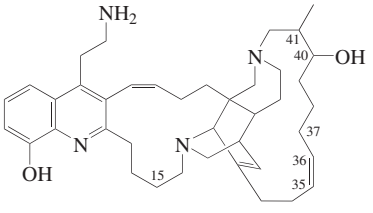


$C_{28}H_{22}N_2O_7$ 498.491
Alkaloid from *Hypecoum imberbe*, *Hypecoum pendulum* and *Hypecoum procumbens*. Amorph. Racemic. λ_{max} 232 (log ϵ 4.34); 281 (log ϵ 4.31); 324 (log ϵ 3.91) (MeOH).

Pabuççuoğlu, V. *et al., J. Nat. Prod.*, 1989, **52**, 716-719 (*isol, uv, ir, pmr, cmr, ms, struct*)

Njaoamine A N-259

[934220-47-0]



$C_{40}H_{56}N_4O_2$ 624.908
Alkaloid from a *Reniera* sp. Cytotoxic. Yellowish gum. $[\alpha]_D^{25}$ +61.2 (c, 0.11 in MeOH). λ_{max} 204 ; 252 ; 314 (MeOH).

40-Deoxy: ***Njaoamine D***
[934220-51-6]
$C_{40}H_{56}N_4O$ 608.909
Alkaloid from a *Reniera* sp. Yellowish gum. $[\alpha]_D^{25}$ +51.6 (c, 0.7 in MeOH). λ_{max} 204 ; 251 ; 312 (MeOH).

15-Methyl: ***Njaoamine B***
[934220-49-2]
$C_{41}H_{58}N_4O_2$ 638.935
Alkaloid from a *Reniera* sp. Yellowish gum. $[\alpha]_D^{25}$ +51.1 (c, 0.11 in MeOH). λ_{max} 204 ; 252 ; 312 (MeOH).

41-Demethyl, 40-deoxy: ***Njaoamine C***
[934220-50-5]
$C_{39}H_{54}N_4O$ 594.882
Alkaloid from a *Reniera* sp. Yellowish gum. $[\alpha]_D^{25}$ +65.7 (c, 0.6 in MeOH). λ_{max} 204 ; 252 ; 313 (MeOH).

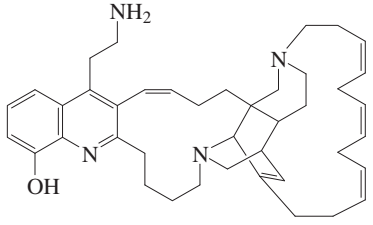
41-Demethyl, 40-deoxy, 35,36-dihydro, 36,36,37,37-tetradehydro: ***Njaoamine H***
[954418-81-6]
$C_{39}H_{52}N_4O$ 592.866
Alkaloid from a *Neopetrosia* sp. Pale yellow oil. $[\alpha]_D^{21}$ +20 (c, 0.8 in MeOH).

41-Demethyl, 9,40-dideoxy, 35,36-dihydro, 36,36,37,37-tetradehydro: ***Njaoamine G***
[954418-80-5]
$C_{39}H_{52}N_4$ 576.867
Alkaloid from a *Neopetrosia* sp. Cytotoxic. Pale yellow oil. $[\alpha]_D^{21}$ +22 (c, 0.8 in MeOH).

Sorek, H. *et al., Tet. Lett.*, 2007, **48**, 7691-7694 (*Njaoamines G,H*)
Reyes, F. *et al., Tetrahedron*, 2007, **63**, 2432-2438 (*Njaoamines A-D*)

Njaoamine E N-260

[934220-52-7]

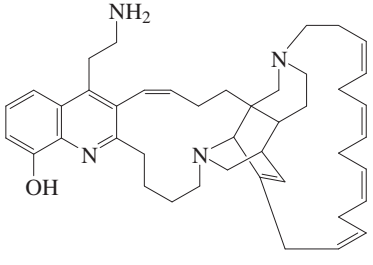


$C_{41}H_{54}N_4O$ 618.904
Alkaloid from a *Reniera* sp. Cytotoxic. Yellowish gum. $[\alpha]_D^{25}$ +24.7 (c, 0.1 in MeOH). λ_{max} 204 ; 252 (MeOH).

Reyes, F. *et al., Tetrahedron*, 2007, **63**, 2432-2438 (*isol, pmr, cmr*)

Njaoamine F N-261

[934220-53-8]

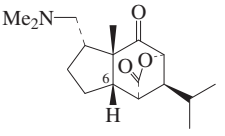


$C_{43}H_{56}N_4O$ 644.942
Alkaloid from a *Reniera* sp. Yellowish gum. $[\alpha]_D^{25}$ +20.1 (c, 0.1 in MeOH). λ_{max} 204 ; 252 (MeOH).

Reyes, F. *et al., Tetrahedron*, 2007, **63**, 2432-2438 (*isol, pmr, cmr*)

Nobiline† N-262

Nobilonine
[4684-24-6]



Absolute Configuration

$C_{17}H_{27}NO_3$ 293.405
Alkaloid from *Dendrobium nobile, Dendrobium hildebrandii* and *Dendrobium findlayanum* (Orchidaceae). Cryst. (hexane). Mp 86.5-88°. $[\alpha]_D^{23}$ +21 (c, 0.48 in $CHCl_3$). pK_a 8.5 (H_2O).

Hydrochloride: Mp 206-208°.

Picrate: Mp 172-175°.

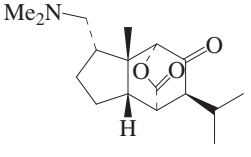
Methiodide: Mp 275-276°.

6-Hydroxy: ***6-Hydroxynobiline***
[32562-94-0]
$C_{17}H_{27}NO_4$ 309.405
Alkaloid from *Dendrobium hildebrandii* (Orchidaceae). Needles (C_6H_6). Mp 158-159.5°. $[\alpha]_D^{23}$ +62 (c, 0.58 in $CHCl_3$).

Yamamura, S. *et al., Tet. Lett.*, 1964, 79 (*ir, pmr, ms, ord, struct*)
Onaka, T. *et al., Chem. Pharm. Bull.*, 1965, **13**, 745 (*ir, pmr, ord, struct, abs config, synth*)
Granelli, I. *et al., Acta Chem. Scand.*, 1970, **24**, 1209 (*isol*)
Elander, M. *et al., Acta Chem. Scand.*, 1971, **25**, 717 (*isol, pmr, ir, ms, struct, abs config, deriv*)
Suzuki, M. *et al., Chem. Lett.*, 1975, 611 (*synth*)

δ-Nobilonine N-263

[40170-44-3]

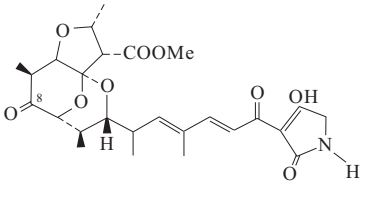


$C_{17}H_{27}NO_3$ 293.405
Constit. of *Dendrobium nobile*. Cryst. Mp 210-225°. $[\alpha]_D^{23}$ -76 (c, 0.45 in MeOH).

Behr, D. *et al., Acta Chem. Scand.*, 1972, **26**, 3196-3202; *Acta Chem. Scand., Ser. B*, 1976, **30**, 279-280 (*δ-Nobilonine*)

Nocamycin I N-264

BU 2313B. Antibiotic BU 2313B
[78339-49-8]



$C_{26}H_{33}NO_9$ 503.548
Isol. from *Microtetraspora caesia* and *Nocardia* sp. Active against gram-positive and -negative bacteria, tumours and trichomonads. Mp 160-162°. $[\alpha]_D^{26}$ -69.9 (c, 0.3 in MeOH). λ_{max} 238 (ϵ 8550); 355 (ϵ 33600); 359 (sh); 370 (sh) (ϵ 29200) (EtOH/HCl) (Derep). λ_{max} 255 (ϵ 17400); 286 (ϵ 20700); 295 (sh); 332 (ϵ 23500) (EtOH/NaOH) (Derep). λ_{max} 239 (ϵ 8550); 295 (sh) (ϵ 11300); 352 (ϵ 26400); 370 (sh) (ϵ 21100) (EtOH) (Derep).

8-Alcohol: ***Nocamycin II***
[78112-69-3]
$C_{26}H_{35}NO_9$ 505.564
From *Microtetraspora caesia* and *Nocardia* sp. Active against gram-positive and -negative bacteria, tumours and trichomonads. Pale-yellow cryst. Sol. MeOH, C_6H_6; poorly sol. H_2O. λ_{max} 238 (ϵ 8550); 355 (ϵ 33600); 359 (sh) (ϵ); 370 (sh) (ϵ 29200) (EtOH/HCl) (Derep). λ_{max} 255 (ϵ 17400); 286 (ϵ 20700); 295 (sh); 332 (ϵ 23500) (EtOH/NaOH) (Derep). λ_{max} 239 (ϵ 8550); 295 (sh) (ϵ 11300); 352 (ϵ 26400); 370 (sh) (ϵ 21100) (EtOH) (Derep). λ_{max} 230 (ϵ 9600); 352 (ϵ 36300) (EtOH) (Berdy).

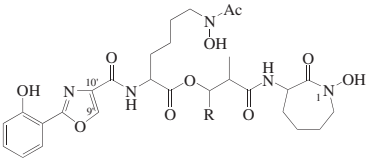
N-*Me:* ***Antibiotic BU 2313A***. *BU 2313A*
[69774-86-3]
$C_{27}H_{35}NO_9$ 517.575
From *Microtetraspora caesia*. Active against gram-positive and -negative bacteria and trichomonads. Pale-yellow cryst. Mp 116-118°. $[\alpha]_D^{26}$ -58 (c, 0.5 in MeOH). λ_{max} 238 (ϵ 8550); 355 (ϵ 33600); 359 (sh); 370 (sh) (ϵ 29200) (EtOH/HCl) (Derep). λ_{max} 255 (ϵ 17400); 286 (ϵ 20700); 295 (sh); 332 (ϵ 23500) (EtOH/NaOH) (Derep). λ_{max} 239 (ϵ 8550); 295 (sh) (ϵ 11300); 352 (ϵ 26400); 370 (sh) (ϵ 21100) (EtOH) (Derep).

▶ CB9394500

[63748-09-4 , 69774-87-4]

Horvath, G. *et al., J. Antibiot.*, 1979, **32**, 555
Tsukiura, H. *et al., J. Antibiot.*, 1980, **33**, 157; 166; 173; 1491 (*isol, struct, synth, props*)
Brazhnikova, M.G. *et al., Bioorg. Khim.*, 1981, **7**, 298 (*struct*)

Nocardimicin N-265



Nocardimicin A R = $-(CH_2)_8CH_3$
B R = $-(CH_2)_{10}CH_3$
D R = $-(CH_2)_{12}CH_3$
F R = $-(CH_2)_{14}CH_3$

Peptide antibiotic complex. Related to Amamistatin A, A-672 and Mycobactin, M-787. Prod. by *Nocardia* sp. TP-A0674. Siderophores. Muscarinic M3 receptor inhibitors.

Nocardimicin A [863507-42-0]
$C_{37}H_{55}N_5O_{10}$ 729.869

Pale yellow solid. Mp 115-118°. $[\alpha]_D^{25}$ -5.1 (c, 0.45 in MeOH). λ_{max} 263 (log ε 3.91); 275 (log ε 3.77); 308 (log ε 3.59) (MeOH).

Nocardimicin B [863507-43-1]

$C_{39}H_{59}N_5O_{10}$ 757.923
Pale yellow solid. Mp 133-137°. $[\alpha]_D^{25}$ -5.9 (c, 0.4 in MeOH). λ_{max} 262 (log ε 3.91); 274 (log ε 3.78); 309 (log ε 3.58) (MeOH).

N^1-*Deoxy:* ***Nocardimicin C***
[863507-44-2]
$C_{39}H_{59}N_5O_9$ 741.923
Prod. by *Nocardia* sp. TP-A0674. Pale yellow solid. Mp 46-49°. $[\alpha]_D^{25}$ -13.3 (c, 0.3 in MeOH). λ_{max} 263 (log ε 3.91); 275 (log ε 3.79); 309 (log ε 3.58) (MeOH).

Nocardimicin D [863507-45-3]

$C_{41}H_{63}N_5O_{10}$ 785.976
Pale yellow solid. Mp 126-129°. $[\alpha]_D^{25}$ -4.8 (c, 1 in MeOH). λ_{max} 262 (log ε 3.9); 274 (log ε 3.78); 309 (log ε 3.59) (MeOH).

N^1-*Deoxy:* ***Nocardimicin E***
[863507-46-4]
$C_{41}H_{63}N_5O_9$ 769.977
Prod. by *Nocardia* sp. TP-A0674. Pale yellow solid. Mp 48-52°. $[\alpha]_D^{25}$ -15.2 (c, 0.25 in MeOH). λ_{max} 263 (log ε 3.9); 275 (log ε 3.77); 308 (log ε 3.58) (MeOH).

9′,10′-Dihydro, N-*de-Ac,* N-*formyl:* ***Nocardimicin G****. A 77543*. *BMS 199687*. *Antibiotic A 77543*. *Antibiotic BMS 199687*
[878995-95-0]
$C_{40}H_{63}N_5O_{10}$ 773.965
Prod. by *Nocardia nova* JCM 6044, an unidentified *Nocardia* sp. and *Actinomadura ferruginea* WC 57581. Pale yellow solid. Mp 108-112° (Nocardimicin G) Mp 145° (BMS 199687). $[\alpha]_D^{25}$ -3.9 (c, 1 in MeOH) (Nocardimicin G). $[\alpha]_D^{25}$ -11.4 (c, 1 in $CHCl_3$) (BMS 199687). Identities of various isolates have not been demonstrated. Only gross structs. have been shown to be the same. λ_{max} 243 (log ε 4.02); 249 (log ε 4.03); 305 (log ε 3.64) (MeOH) (Nocardimicin G).

Nocardimicin F [863507-47-5]

$C_{43}H_{67}N_5O_{10}$ 814.03
Pale yellow solid. Mp 109-113°. $[\alpha]_D^{25}$ -9.7 (c, 0.3 in MeOH). λ_{max} 262 (log ε 3.91); 274 (log ε 3.78); 309 (log ε 3.58) (MeOH).

N-*De-Ac,* N-*formyl:* ***Nocardimicin H***
[878995-96-1]
$C_{42}H_{65}N_5O_{10}$ 800.003
Prod. by *Nocardia nova* JCM 6044. Pale yellow solid. Mp 152-155°. $[\alpha]_D^{25}$ -5.8 (c, 1 in MeOH). λ_{max} 243 (log ε 4.03); 249 (log ε 4.04); 305 (log ε 3.66) (MeOH).

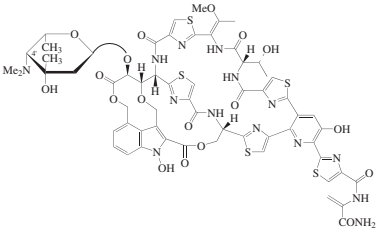
9′,10′-Dihydro, N-*de-Ac,* N-*formyl:* ***Brasilibactin A***
[850544-39-7]
$C_{42}H_{67}N_5O_{10}$ 802.019
Prod. by *Nocardia brasiliensis* IFM 0995. Cytotoxic. $[\alpha]_D^{22}$ -31 (c, 1 in $CHCl_3$). λ_{max} 244 (ε 7200); 250 (ε 6000); 260 (sh) (ε 2500); 306 (ε 3000) (EtOH).

Homologue (R = -$(CH_2)_{16}CH_3$), 9′,10′-dihydro, N-*de-Ac,* N-*formyl:* ***Nocardimicin I***
[878995-97-2]
$C_{44}H_{71}N_5O_{10}$ 830.072
Prod. by *Nocardia nova* JCM 6044. Pale yellow solid. Mp 132-136°. $[\alpha]_D^{25}$ -9.5 (c, 1 in MeOH). Some uncertainty over struct. λ_{max} 243 (log ε 4.02); 249 (log ε 4.03); 305 (log ε 3.65) (MeOH).

U.S. Pat., 1998, 5 811 440; *CA*, **129**, 239871d (*BMS 199687*)
Japan. Pat., 2000, 00 344 768; *CA*, **134**, 28530g (*A 77543*)
Ikeda, Y. *et al., J. Antibiot.*, 2005, **58**, 566-572 (*Nocardimicins G-I*)
Tsuda, M. *et al., J. Nat. Prod.*, 2005, **68**, 462-464 (*Brasilibactin A, isol*)
Ikeda, Y. *et al., J. Nat. Prod.*, 2005, **68**, 1061-1065 (*Nocardimicins A-E*)
Mitchell, J.M. *et al., Org. Lett.*, 2007, **9**, 1679-1681 (*Brasilibactin A, abs config*)
Ying, Y. *et al., Tet. Lett.*, 2007, **48**, 8104-8107 (*Brasilibactin A, synth, abs config*)

Nocathiacin I N-266

MJ 347-81F4-A. *Antibiotic MJ 347-81F4-A*
[214044-52-7]



Absolute Configuration

$C_{61}H_{60}N_{14}O_{18}S_5$ 1437.558
Cyclic thiazole-peptide antibiotic. Prod. by *Amycolatopsis fastidiosa* MA7344 and *Nocardia* sp. WW-12651. Active against gram-positive bacteria. Pale yellow amorph. solid. λ_{max} 222 (log ε 4.89); 290 (log ε 4.52); 364 (log ε 4.17) (MeOH).

4′-N-*De-Me: Antibiotic MJ 347-81F4-B*. *MJ 347-81F4-B*
[214044-53-8]
$C_{60}H_{58}N_{14}O_{18}S_5$ 1423.531
Prod. by *Amycolatopsis* sp. MJ347-81F4. Active against gram-positive bacteria.

4′-N-*De-Me, 4′*-N,*3′*-O-*methylene:* ***Thiazomycin***
$C_{61}H_{58}N_{14}O_{18}S_5$ 1435.542
Prod. by *Amycolatopsis fastidiosa* ATCC 202099. Active against gram-positive bacteria. Pale yellow powder. $[\alpha]_D^{23}$ +49.1 (c, 1.1 in MeOH). λ_{max} 222 (log ε 4.77); 288 (log ε 4.4); 358 (log ε 4.08) (MeOH).

N-*Deoxy:* ***Nocathiacin II***
[256230-46-3]
$C_{61}H_{60}N_{14}O_{17}S_5$ 1421.559
Prod. by *Nocardia* sp. WW-12651. Pale yellow solid. λ_{max} 220 (log ε 5.01); 295 (log ε 4.67); 364 (log ε 4.36) (MeOH).

N-*De(aminocarbonylethenyl): Nocathiacin IV*
$C_{58}H_{57}N_{13}O_{17}S_5$ 1368.495
Semisynthetic.

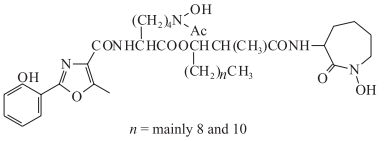
N-*De(aminocarbonylethenyl),* N-*deoxy: Nocathiacin V*
$C_{58}H_{57}N_{13}O_{16}S_5$ 1352.496
Semisynthetic. *S*-Analogue of Glycothiohexide α, G-126. λ_{max} 216 (log ε 5.07); 297 (log ε 4.7); 366 (log ε 4.41) (MeOH).

O-*Deglycosyl:* ***Nocathiacin III***
[256230-47-4]
$C_{52}H_{43}N_{13}O_{16}S_5$ 1266.319
Prod. by *Nocardia* sp. WW-12651. Buff-coloured solid. λ_{max} 224 (log ε 4.85); 290 (log ε 4.52); 364 (log ε 4.11) (MeOH).

Sasaki, T. *et al., J. Antibiot.*, 1998, **51**, 715-721 (*isol, activity*)
Pat. Coop. Treaty (WIPO), 2000, 03 722; *CA*, **132**, 121531b (*isol, pmr, cmr, struct*)
Constantine, K.L. *et al., J.A.C.S.*, 2002, **124**, 7284-7285 (*synth, abs config*)
Regueiro-Ren, A. *et al., J.O.C.*, 2002, **67**, 8699-8702 (*semisynth*)
Leet, J.E. *et al., J. Antibiot.*, 2003, **56**, 226-231; 232-242 (*isol, pmr, cmr, ms*)
Connolly, T.P. *et al., J. Nat. Prod.*, 2005, **68**, 550-553 (*Nocathiacin V*)
Jayasuriya, H. *et al., J. Antibiot.*, 2007, **60**, 554-564; 565-571 (*Thiazomycin*)
Singh, S.B. *et al., Tet. Lett.*, 2008, **49**, 6265-6268 (*biosynth*)

Nocobactin NA N-267

[53571-21-4]



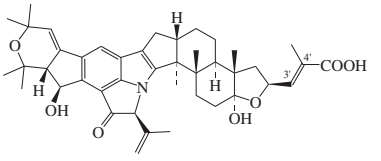
n = mainly 8 and 10

Isol. from *Nocardia asteroides*. Siderophore.
Related to Formobactin, F-130.

Ratlege, C. *et al., Biochem. J.*, 1974, **139**, 407 (*isol*)

Nodulisporic acid A_1 N-268

[163120-04-5]



$C_{43}H_{53}NO_7$ 695.894
Prod. by *Nodulisporium* sp. MF5954. Insecticide. $[\alpha]_D^{22}$ -10.5 (c, 0.6 in MeOH). λ_{max} 237 (ε 3883); 269 (ε 2767); 384 (ε 721) (MeOH).

*3′,4′-Dihydro, 3′-hydroxy (3′*R,*4′*S-*):* ***Nodulisporic acid A_2***
[163120-05-6]
$C_{43}H_{55}NO_8$ 713.909
Prod. by *Nodulisporium* sp. MF5954. Shows insecticidal activity. $[\alpha]_D^{22}$ -21.1 (c, 0.38 in MeOH). λ_{max} 238 (ε 2740); 267 (ε 2420); 384 (ε 500) (MeOH).

Deoxo: ***Nodulisporic acid B_1***
[478796-08-6]
$C_{43}H_{55}NO_6$ 681.911
Prod. by *Nodulisporium* sp. $[\alpha]_D^{23}$ -36 (c, 0.4 in MeOH)(as Na salt). λ_{max} 265 (ε

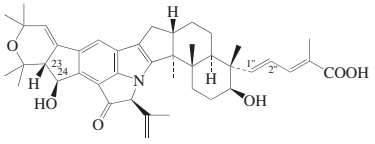
43700); 272 (ϵ 44000); 322 (ϵ 6900); 335 (ϵ 6700) (MeOH) (Na salt).

*Deoxo, 3′,4′-dihydro, 3′-hydroxy (3′*R*,4′*S*-): **Nodulisporic acid B_2***
[478796-09-7]
$C_{43}H_{57}NO_7$ 699.926
Prod. by *Nodulisporium* sp. $[\alpha]_D^{23}$ -30 (c, 0.4 in MeOH) (as Na salt). λ_{max} 264 (ϵ 47000); 272 (ϵ 49300); 322 (ϵ 7200); 335 (ϵ 7000) (MeOH) (Na salt).

Hensens, O.D. *et al., Tet. Lett.*, 1999, **40**, 5455-5458 (*isol, uv, ir, pmr, cmr*)
Ondeyka, J.G. *et al., Bioorg. Med. Chem. Lett.*, 2002, **12**, 2941-2944 (*deoxo derivs*)
Singh, S.B. *et al., J. Nat. Prod.*, 2004, **67**, 1496-1506 (*biosynth, config*)

Nodulisporic acid A N-269

Antibiotic L 954967. L 954967
[163120-03-4]



$C_{43}H_{53}NO_6$ 679.895
Prod. by *Nodulisporium* sp. MF5954. Insecticidal agent. Mp 250-255°. $[\alpha]_D^{22}$ +13 (c, 0.4 in $CHCl_3$). λ_{max} 241 (ϵ 43900); 265 (ϵ 49800); 385 (ϵ 7360) (MeOH).

*1″,2″-Dihydro: **Nodulisporic acid A_4***
[183161-27-5]
$C_{43}H_{55}NO_6$ 681.911
Prod. by *Nodulisporium* sp. MF6265. $[\alpha]_{578}^{23}$ +5.9 (c, 0.5 in MeOH). λ_{max} 236 ; 274 ; 396 (MeCN aq. / TFA).

*Deoxo: **Nodulisporic acid B***
[478796-07-5]
$C_{43}H_{55}NO_5$ 665.911
Prod. by a *Nodulisporium* sp. $[\alpha]_D^{23}$ -40 (c, 0.4 in MeOH) (as Na salt). λ_{max} 266 (ϵ 64700); 273 (ϵ 69000); 322 (ϵ 8600); 335 (ϵ 8000) (MeOH) (Na salt).

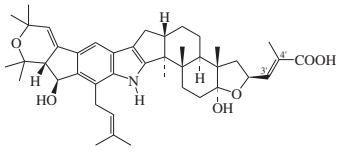
*24-Deoxy, 23,24-didehydro, 1″,2″-dihydro: **Δ^{23}-Nodulisporic acid A_4***
[766545-96-4]
$C_{43}H_{53}NO_5$ 663.895
Prod. by *Nodulisporium* sp. mutants. Yellow powder. λ_{max} 212 (ϵ 27250); 267 (ϵ 25415); 316 (sh) ; 429 (sh) (MeOH).

[315715-92-5 (Nodulisporic acid A Me ester), 478705-56-5 (Nodulisporic acid B Me ester)]

Ondeyka, J.G. *et al., J.A.C.S.*, 1997, **119**, 8809-8816 (*Nodulisporic acid A*)
Ondeyka, J.G. *et al., Bioorg. Med. Chem. Lett.*, 2002, **12**, 2941-2944 (*Nodulisporic acid B*)
Byrne, K.M. *et al., J.A.C.S.*, 2002, **124**, 7055-7060 (*biosynth*)
Singh, S.B. *et al., J. Nat. Prod.*, 2004, **67**, 1496-1506 (*Nodulisporic acids A_4,Δ^{23}-A_4*)

Nodulisporic acid C_1 N-270

[204205-72-1]



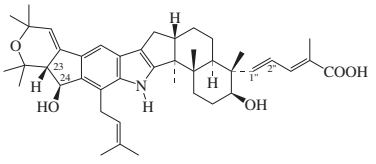
$C_{43}H_{57}NO_6$ 683.926
Prod. by *Nodulisporium* sp. MF5954 mutant. Insecticide. Off-white powder (as Na salt). $[\alpha]_D^{23}$ -30 (c, 0.4 in MeOH) (Na salt). λ_{max} 260 (ϵ 51980); 266 (ϵ 57300); 316 (ϵ 6830); 336 (ϵ 6400) (MeOH) (Na salt).

*3′,4′-Dihydro, 3′-hydroxy (3′*R*,4′*S*-): **Nodulisporic acid C_2***
[204205-71-0]
$C_{43}H_{59}NO_7$ 701.942
Prod. by *Nodulisporium* sp. MF5954 mutant. Off-white powder (as Na salt). $[\alpha]_D^{23}$ -42.5 (c, 0.4 in MeOH). λ_{max} 262 (ϵ 56560); 266 (ϵ 61100); 316 (ϵ 7240); 336 (ϵ 6340) (MeOH) (Na salt).

Ondeyka, J.G. *et al., J. Nat. Prod.*, 2003, **66**, 121-124; 2004, **67**, 1496-1506 (*isol, pmr, cmr, biosynth*)

Nodulisporic acid C N-271

[204205-66-3]



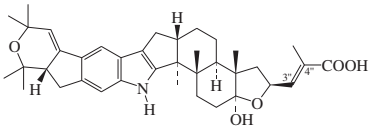
$C_{43}H_{57}NO_5$ 667.927
Prod. by *Nodulisporium* sp. MF5954 mutant. Insecticide. Off-white powder (as Na salt). $[\alpha]_D^{23}$ -42.5 (c, 0.4 in MeOH) (Na salt). λ_{max} 262 (ϵ 72400); 267 (ϵ 78800); 316 (ϵ 7240); 336 (ϵ 6460) (MeOH) (Na salt).

*24-Deoxy, 23,24-didehydro, 1″,2″-dihydro: **Δ^{23}-Nodulisporic acid C_4***
[766545-97-5]
$C_{43}H_{57}NO_4$ 651.928
Prod. by a *Nodulisporium* sp. mutant. Yellow powder. $[\alpha]_{578}^{23}$ +26.2 (c, 2.3 in MeOH). λ_{max} 212 ; 284 ; 306 (sh) ; 420 (sh) (MeCN aq./TFA).

Ondeyka, J.G. *et al., J. Nat. Prod.*, 2003, **66**, 121-124 (*Nodulisporic acid C*)
Singh, S.B. *et al., J. Nat. Prod.*, 2004, **67**, 1496-1506 (*Δ^{23}-Nodulisporic acid C_4*)

Nodulisporic acid D_1 N-272

[204205-64-1]



$C_{38}H_{49}NO_5$ 599.809
Prod. by *Nodulisporium* sp. MF6227. Amorph. solid. $[\alpha]_D^{23}$ -3 (c, 2 in MeOH). λ_{max} 214 (ϵ 27280); 260 (ϵ 46150); 312 (ϵ 6920); 324 (ϵ 6000) (MeOH).

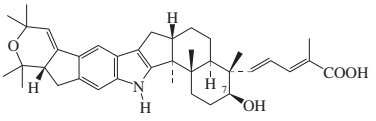
*3″,4′-Dihydro, 3″-hydroxy (3′*R*,4′*S*-): **Nodulisporic acid D_2***
[204205-65-2]
$C_{38}H_{51}NO_6$ 617.824
Prod. by *Nodulisporium* sp. MF6227. Amorph. solid. $[\alpha]_D^{23}$ -15.7 (c, 2.9 in MeOH). λ_{max} 210 (ϵ 18050); 260 (ϵ 45250); 310 (ϵ 7400); 336 (sh) (MeOH).

[766545-99-7 (Nodulisporic acid D_1 Me ester), 766546-00-3 (Nodulisporic acid D_2 Me ester)]

Singh, S.B. *et al., J. Nat. Prod.*, 2004, **67**, 1496-1506 (*isol, pmr, cmr*)

Nodulisporic acid D N-273

[204205-60-7]



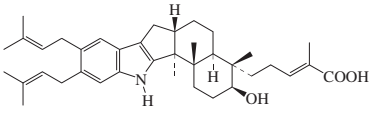
$C_{38}H_{49}NO_4$ 583.809
Prod. by *Nodulisporium* sp. MF6227. Amorph. solid. $[\alpha]_D^{23}$ -5.2 (c, 1.5 in MeOH). λ_{max} 206 (ϵ 18900); 262 (ϵ 58380); 316 (sh) ; 336 (sh) (MeOH).

*7-Ketone: **Nodulisporic acid D_3***
[766545-94-2]
$C_{38}H_{47}NO_4$ 581.794
Prod. by *Nodulisporium* sp. MF6227. Amorph. solid. $[\alpha]_D^{23}$ -53.8 (c, 0.13 in MeOH). λ_{max} 208 (ϵ 14550); 262 (ϵ 51060); 315 (sh) ; 330 (sh) (MeOH).

Singh, S.B. *et al., J. Nat. Prod.*, 2004, **67**, 1496-1506 (*isol, pmr, cmr*)

Nodulisporic acid E N-274

[766545-95-3]



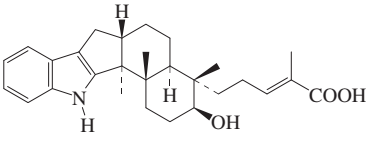
$C_{38}H_{53}NO_3$ 571.842
Prod. by *Nodulisporium* sp. MF6227. Amorph. solid. $[\alpha]_D^{23}$ +11.2 (c, 1.87 in MeOH). λ_{max} 234 (ϵ 41540); 280 (ϵ 9300) (MeOH).

[766546-01-4 (Nodulisporic acid E Me ester)]

Singh, S.B. *et al., J. Nat. Prod.*, 2004, **67**, 1496-1506 (*isol, pmr, cmr*)

Nodulisporic acid F N-275

[204205-61-8]

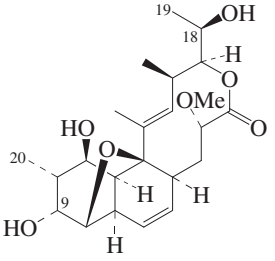


$C_{28}H_{37}NO_3$ 435.605
Prod. by *Nodulisporium* sp. MF5954. Powder. $[\alpha]_D^{23}$ +7.2 (c, 1.7 in MeOH). λ_{max} 230 ; 282 (MeCN aq./TFA).

Singh, S.B. *et al., J. Nat. Prod.*, 2004, **67**, 1496-1506 (*isol, pmr, cmr*)
Smith, A.B. *et al., J.O.C.*, 2007, **72**, 4596-4610 (*synth*)

Nodusmicin, 9CI N-276

U 59761. Antibiotic U 59761
[76265-48-0]
[78207-19-9]



$C_{23}H_{34}O_7$ 422.517

Cyclic polyketide. Isol. from *Saccharopolyspora hirsuta* and *Nocardia argentinensis*. Active against gram-positive and anaerobic bacteria. Cryst. Sol. MeOH, $CHCl_3$, EtOAc; poorly sol. H_2O, hexane. Mp 201-206°. $[\alpha]_D$ +121 (c, 0.76 in MeOH).

18-Ac: ***18-O-Acetylnodusmicin***
[88343-90-2]
$C_{25}H_{36}O_8$ 464.555
Prod. by *Nocardia argentinensis*. Powder. Sol. MeOH, $CHCl_3$; poorly sol. H_2O.

9-(1H-Pyrrole-2-carboxylate): ***Nargenicin A1***. *CP 47444. Antibiotic CP 47444. U 59760. Antibiotic U 59760*
[70695-02-2]
[80210-04-4]
$C_{28}H_{37}NO_8$ 515.602
Macrolide antibiotic. Prod. by *Nocardia argentinensis* and *Saccharopolyspora hirsuta*. Active against gram-positive bacteria. Amorph. solid. Mp 128-132°. $[\alpha]_D$ +49 (c, 1 in MeOH). λ_{max} 265 (ε 16500) (MeOH) (Derep).

9-(1H-Pyrrole-2-carboxylate), 18-Ac: ***18-O-Acetylnargenicin A1***
[74686-27-4]
$C_{30}H_{39}NO_9$ 557.639
Prod. by *Nocardia argentinensis*. Powder. Sol. MeOH, $CHCl_3$; poorly sol. H_2O.

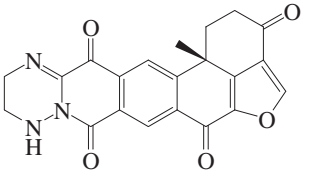
18-Deoxy, 9-(1H-pyrrole-2-carboxylate): ***18-Deoxynargenicin A1***. *U 61732. Antibiotic U 61732*
$C_{28}H_{37}NO_7$ 499.603
Prod. by *Saccharopolyspora hirsuta*. Active against gram-positive bacteria. Solid. $[\alpha]_D^{25}$ +71 (c, 0.975 in MeOH).

19,20-Dimethoxy, 9-(1H-pyrrole-2-carboxylate): ***Nargenicin C1***. *CP 57820. Antibiotic CP 57820*
[90928-02-2]
$C_{30}H_{41}NO_{10}$ 575.655
From *Nocardia* sp. Active against gram-positive bacteria. Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. λ_{max} 265 (E1%/1cm 291) (MeOH) (Berdy). λ_{max} 265 (E1%/1cm 290) (MeOH/HCl) (Berdy). λ_{max} 266 (E1%/1cm 291) (MeOH/NaOH) (Berdy).

U.S. Pat., 1979, 4 148 883; *CA*, **91**, 54595 (*isol*)
Tone, J. *et al., Intersci. Conf. Antimicrob. Agents Chemoth., 20th*, 1980, Abstr. 62
Celmer, W.D. *et al., J.A.C.S.*, 1980, **102**, 4203 (*Nargenicin, struct, pmr*)
Whaley, H.A. *et al., Tet. Lett.*, 1980, **21**, 3659 (*struct*)
Snyder, W.C. *et al., J.A.C.S.*, 1984, **106**, 784-787; 787-789 (*biosynth, cmr*)
U.S. Pat., 1984, 4 436 747; *CA*, **101**, 53332 (*isol*)
Cane, D.E. *et al., J. Antibiot.*, 1985, **38**, 423 (*biosynth, abs config*)
Ikeda, Y. *et al., J. Antibiot.*, 1985, **38**, 436 (*isol*)
Plata, D.J. *et al., J.A.C.S.*, 1988, **110**, 4041-4042 (*synth*)
Kallmerten, J. *et al., Stud. Nat. Prod. Chem.*, 1995, **17**, 283 (*rev*)

Noelaquinone N-277

[220503-29-7]



$C_{21}H_{15}N_3O_5$ 389.367
Alkaloid from a sponge *Xestospongia* sp. Yellow solid. $[\alpha]_D^{23}$ +53.6 (c, 0.25 in MeOH). Slow dec. >300°. λ_{max} 206 (ε 45000); 215 (ε 16660); 254 (ε 10620) (MeOH).

Zhu, Y. *et al., Heterocycles*, 1998, **49**, 355-360

Noformicin N-278

*5-Amino-*N*-(3-amino-3-iminopropyl)-3,4-dihydro-2*H*-pyrrole-2-carboxamide, 9CI. *N*-(2-Amidinoethyl)-5-imino-2-pyrrolidinecarboxamide, 8CI. MK 61. Antibiotic MK 61*
[155-38-4]



$C_8H_{15}N_5O$ 197.239
Pyrrole antibiotic.

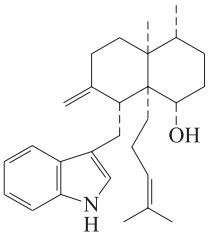
(+)-form
Produced by *Nocardia formica*. Shows antiviral and antibacterial props. Sol. MeOH, H_2O; poorly sol. Me_2CO, hexane. pK_a 9.4 (25°, H_2O).
▶ Toxic, LD_{50} (mus, ivn) 5 mg/kg; LD_{50} (mus, scu) 10 mg/kg.

Hydrochloride (1:2): [42373-21-7]
Cryst. (MeOH). Sol. H_2O. Mp 265° dec. $[\alpha]_D^{25}$ +7 (c, 1 in H_2O). $[\alpha]_D^{25}$ +8.8 (c, 1 in MeOH).

(±)-form
Hydrochloride (1:2): [42373-18-2]
Mp 253-254°.
Harris, D.A. *et al., Antibiot. Annu.*, 1953, 609 (*isol*)
Gray, R.A. *et al., Phytochemistry*, 1955, **45**, 281 (*isol*)
Diana, G.D. *et al., J. Med. Chem.*, 1973, **16**, 857 (*synth*)

Nominine† N-279

[120991-21-1]



Relative configuration

$C_{28}H_{39}NO$ 405.622
Isol. from the sclerotia of *Aspergillus nomius*, *Aspergillus flavus* NRRL 13462 and *Petromyces alliaceus*. Has insecticidal props. Off-white powder. Mp 54-55°. $[\alpha]_D$ +23.6 (c, 0.85 in MeOH). Biogenetically related to the Aflavinines. λ_{max} 224 (ε 20000); 251 (ε 3600); 285 (ε 3380) (MeOH) (Derep).

Gloer, J.B. *et al., J.O.C.*, 1989, **54**, 2530 (*isol, pmr, cmr, ms, struct*)

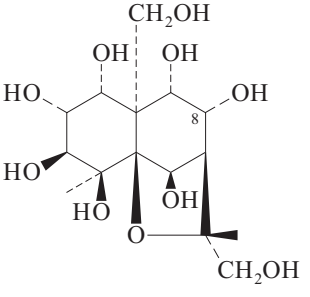
2,4-Nonadien-8-ynoic acid N-280

$HC{\equiv}CCH_2CH_2CH{=}CHCH{=}CHCOOH$

$C_9H_{10}O_2$ 150.177

(2E,4E)-form
2-Methylpropylamide: N-*(2-Methylpropyl)-2,4-nonadien-8-ynamide. 2,4-Nonadien-8-ynoic acid isobutylamide*
[18679-26-0]
$C_{13}H_{19}NO$ 205.299
Constit. of the dried leaves of *Acmella caulirhiza*.
Crouch, N.R. *et al., S. Afr. J. Bot.*, 2005, **71**, 228-230 (*isol*)

1,2,3,4,6,8,9,12,14-Nonahydroxydihydro-β-agarofuran N-281



$C_{15}H_{26}O_{10}$ 366.364

(1α,2α,3β,4β,6β,8α,9α,11α)-form
Euonyminol
[33376-82-8]
Formed by hydrol. of alkaloids from *Tripterygium wilfordii*. Cryst. (MeOH/Me_2CO). Mp 250°.

8-Ketone, 12-(3-pyridinecarbonyl), 3-(2-methylbutanoyl), 1,2,6,9,14-penta-Ac:
[339176-20-4]
$C_{36}H_{45}NO_{17}$ 763.748
Constit. of *Tripterygium wilfordii*. Amorph. powder. $[\alpha]_D^{25}$ +14.1 (c, 0.3 in

MeOH). λ_{max} 214 (log ϵ 4.31); 263 (log ϵ 3.71) (MeOH).

Duan, H.-Q. *et al., Phytochemistry*, 2001, **56**, 341-346 (*Tripterygium wilfordii constit*)

2-Nonene-6,8-diynoic acid, 9CI N-282

HC≡CC≡CCH$_2$CH$_2$CH=CHCOOH

$C_9H_8O_2$ 148.161

(*E*)-*form*

2-Phenylethylamide: **N-*(2-Phenylethyl)-2-nonene-6,8-diynamide***
[99615-84-6]
$C_{17}H_{17}NO$ 251.327
Isol. from *Acmella ciliata*.

(*Z*)-*form*

2-Methylpropylamide: **N-*(2-Methylpropyl)-2-nonene-6,8-diynamide***. *2-Nonene-6,8-diynoic acid isobutylamide*
[96602-65-2]
$C_{13}H_{17}NO$ 203.283
Isol. from roots of *Spilanthes oleracea*. Oil.

2-Phenylethylamide: [75872-74-1]
$C_{17}H_{17}NO$ 251.327
Isol. from *Spilanthes alba* and *Salmea scandens*. Oil. (*E*-) and (*Z*-)forms characterised from *S. alba*.

[75872-75-2 , 75872-77-4]

Bohlmann, F. *et al., Phytochemistry*, 1980, **19**, 1535; 1985, **24**, 595 (*isol, struct*)
Greger, H. *et al., Monatsh. Chem.*, 1985, **116**, 273 (*isol, struct, uv, ir, cmr, pmr*)
Martin, R. *et al., Phytochemistry*, 1985, **24**, 2295 (*isol, pmr*)

2-Nonene-4,6,8-triynoic acid, 9CI N-283

HC≡CC≡CC≡CCH=CHCOOH

$C_9H_4O_2$ 144.129

(*E*)-*form* [38152-85-1]
Metab. of *Poria sinuosa*, *Psilocybe sarcocephala* and *Lepista diemii*. Pale yellow cryst. (CH_2Cl_2/CCl_4). Dec. at 70° with ignition.

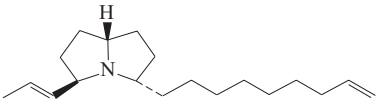
Me ester: [54981-65-6]
$C_{10}H_6O_2$ 158.156
Isol. from *Lepista glaucocana*. Pale yellow needles (hexane) or cryst. (petrol). Sol. C_6H_6, Et_2O. Mp 20° (dec. at 80° with ignition).

4-Carboxyanilide: 4-[(2-Nonene-4,6,8-triynoyl)amino]benzoic acid
$C_{16}H_9NO_3$ 263.252
Prod. by *Baeospora myosura*. Antibacterial agent. λ_{max} 248 ; 261 ; 325 ; 347 (MeOH).

Jones, E.R.H. *et al., Proc. Chem. Soc., London*, 1960, 180
Bohlmann, F. *et al., Chem. Ber.*, 1963, **96**, 2586 (*synth, ester*)
Cambie, R.C. *et al., J.C.S.*, 1963, 2056 (*isol, ester, ir, uv*)
Thaller, V. *et al., J.C.S. Perkin 1*, 1972, 2032 (*isol*)
Hearn, M.T. *et al., J.C.S. Perkin 1*, 1974, 2335 (*isol*)
Parish, C.A. *et al., J. Nat. Prod.*, 2004, **67**, 1900-1902 (*carboxyanilide*)

3-(8-Nonenyl)-5-(1-propenyl)pyrrolizidine N-284

[102492-05-7]

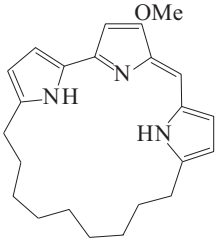


$C_{19}H_{33}N$ 275.476
Venom from the ant *Chelaner antarcticus*.

Jones, T.H. *et al., J.O.C.*, 1986, **51**, 2712 (*isol, pmr, ms, struct, synth*)

Nonylprodigiosin N-285

4-Methoxy-3,24,25-triazatetracyclo[18.2.1.1^{2,5}.1^{7,10}]pentacosa-2(25),3,5,7,9,20,22-heptaene, 9CI. Cyclononylprodigiosin. Cyclononylprodigiosin
[34852-35-2]



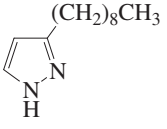
$C_{23}H_{29}N_3O$ 363.502
Pyrrole antibiotic. Isol. from *Actinomadura madurae* (*Nocardia madurae*). Active against *Staphylococcus aureus*, fungi and protozoa. Deep red solid (as hydrochloride). λ_{max} 551 ($CHCl_3$) (Berdy). λ_{max} 539 (EtOH/HCl) (Berdy). λ_{max} 549 (hexane) (Berdy).

[52288-99-0 , 249575-95-9]

Gerber, N.N. *et al., Tet. Lett.*, 1970, 809 (*isol, pmr, ms*)
Gerber, N.N. *et al., J. Antibiot.*, 1971, **24**, 636 (*isol, ir*)
Gerber, N.N. *et al., J. Het. Chem.*, 1973, **10**, 925 (*isol, uv, ms*)
Fürstner, A. *et al., ChemBioChem*, 2001, **1**, 60-68 (*synth, activity*)
Frstner, A. *et al., Angew. Chem., Int. Ed.*, 2003, **42**, 3582-3603 (*rev*)

3-Nonyl-1*H*-pyrazole, 9CI N-286

[72738-01-3]

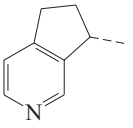


$C_{12}H_{22}N_2$ 194.319
Alkaloid from *Houttuynia cordata* (Yu Xing Cao). Antifungal agent. Cryst. Sol. Et_2O. Mp 47.5-49.5°. Bp_{22} 195° Bp_9 181°.

Kosuge, T. *et al., Yakugaku Zasshi*, 1952, **72**, 1227-1231; 1954, **74**, 819-820 (*synth*)
Kosuge, T. *et al., J. Biochem. (Tokyo)*, 1954, **41**, 183-186 (*isol*)
U.S. Pat., 1959, 2 883 392; *CA*, **53**, 16155e (*synth*)

Noractinidine N-287

*6,7-Dihydro-7-methyl-5*H*-2-pyrindine, 9CI*



$C_9H_{11}N$ 133.193

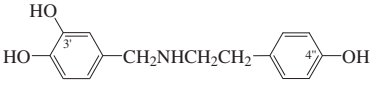
(*S*)-*form* [22324-97-6]
Alkaloid from *Pedicularis macrochila* (Scrophulariaceae) and *Tecoma stans* (Bignoniaceae). Oil. $[\alpha]_D^{24}$ +3 (c, 2.34 in $CHCl_3$). $[\alpha]_D$ +22 (EtOH).

Picrate:
Cryst. (MeOH). Mp 116-117° Mp 135-137° (dimorph.).

Dickinson, E.M. *et al., Tetrahedron*, 1969, **25**, 1523

Norbelladine N-288

4-[[[2-(4-Hydroxyphenyl)ethyl]amino]-methyl]-1,2-benzenediol, 9CI. 4-[[(p-Hydroxyphenethyl)amino]methyl]pyrocatechol, 8CI. N-*(3,4-Dihydroxybenzyl)-tyramine*
[6053-00-5]



$C_{15}H_{17}NO_3$ 259.304
Biosynth. precursor of Amaryllidaceae alkaloids. Has not been reported as an isol. alkaloid.

Hydrochloride:
Cryst. (EtOH/Et_2O). Mp 175-176°.

Picrate:
Cryst. (H_2O). Mp 102-117°.

4′-Me ether: **O-*Methylnorbelladine***
[4579-60-6]
$C_{16}H_{19}NO_3$ 273.331
Alkaloid from *Crinum asiaticum* and *Crinum augustum*, also obt. by reduction of Craugsodine, C-730. Biosynth. intermed. for Amaryllidaceae alkaloids. Mp 161-164°.

4′-Me ether, N-*Me:* **O,N-*Dimethylnorbelladine***
$C_{17}H_{21}NO_3$ 287.358
Alkaloid from bulbs of *Pancratium maritimum* (Amaryllidaceae). Mp 130-132°. Incorrectly indexed in CA.

3′,4′-Di-Me ether: ***Latisodine***. *4-[2-[[(3,4-Dimethoxyphenyl)methyl]amino]ethyl]phenol, 9CI*
[88205-07-6]
$C_{17}H_{21}NO_3$ 287.358
Alkaloid from the flower-stem exudate

of *Crinum latifolium*. Mp 205-207°. λ_{max} 220 (log ϵ 4.02); 277 (log ϵ 3.71); 288 (sh) (log ϵ 3.65) (MeOH).

3′,4′-Di-Me ether, O$^{4''}$-β-D-glucopyranoside: ***Latisoline***
[88205-08-7]
$C_{23}H_{31}NO_8$ 449.5
Alkaloid from the flower-stem exudate of *Crinum latifolium*. Amorph. solid. $[\alpha]_D^{22}$ -48.5 (c, 0.52 in MeOH). λ_{max} 275 (log ϵ 3.69); 280 (log ϵ 3.61) (MeOH).

Tri-Me ether: **N-*Demethylbelladine***
$C_{18}H_{23}NO_3$ 301.385
Alkaloid from the bulbs of *Nerine filifolia*. Light brown oil. λ_{max} 220 (log ϵ 14.63); 240 (log ϵ 5.95); 260 (log ϵ 3.82); 280 (log ϵ 5.11) (MeOH).

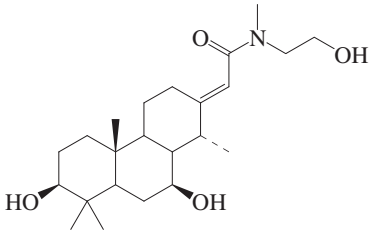
O,O,O,N-*Tetra-Me:* N-*[(3,4-Dimethoxyphenyl)methyl]-4-methoxy*-N-*methylbenzeneethanamine, 9CI. (3,4-Dimethoxybenzyl)(4-methoxyphenethyl)methylamine.* ***Belladine***
[501-06-4]
$C_{19}H_{25}NO_3$ 315.411
Alkaloid widespread in the family Amaryllidaceae. Liq. Mp 128-129.5° (as perchlorate).

3′′-Methoxy, tri-Me ether: ***Ryllistine***
[24997-85-1]
$C_{19}H_{25}NO_4$ 331.411
Alkaloid from the flower-stem fluid of *Amaryllis vittata*. Mp 86-88° (79-80°). λ_{max} 234 (log ϵ 4.3); 280 (log ϵ 3.77); 285 (sh) (log ϵ 3.68) (MeOH).

Surrey, A.R. *et al., J.A.C.S.*, 1949, **71**, 2421-2422 (*synth*)
Warnhoff, E.W. *et al., Chem. Ind. (London)*, 1957, 1385-1386 (*Belladine, uv, ir, struct*)
Barton, D.H.R. *et al., J.C.S.*, 1963, 4545-4558 (*Norbelladine, synth*)
Battersby, A.R. *et al., J.C.S.*, 1964, 1595-1609 (*Norbelladine, synth*)
Zetta, L. *et al., J.C.S. Perkin 2*, 1973, 1180-1184 (*Belladine, cmr*)
Fuganti, C. *et al., Alkaloids (Academic Press)*, 1975, **15**, 146-147 (*biochem, rev*)
Ghosal, S. *et al., J. Chem. Res., Synop.*, 1983, 238-239; 1984, 412-413 (*Latisodine, Latisoline, Ryllistine*)
Ghosal, S. *et al., Phytochemistry*, 1985, **24**, 2141-2156 (*O-Methylnorbelladine*)
Vázquez Tato, M.P. *et al., Heterocycles*, 1988, **27**, 2833-2838 (*O,N-Dimethylnorbelladine*)
Eichhorn, J. *et al., Phytochemistry*, 1998, **49**, 1037-1047 (*O-Methylnorbelladine, synth, biochem, bibl*)
Nair, J.J. *et al., Phytochemistry*, 2005, **66**, 373-382 (*Belladine,* N-*Demethylbelladine*)

Norcassaidide N-289

[52579-69-8]



$C_{23}H_{39}NO_4$ 393.565
Alkaloid from the bark of *Erythrophleum chlorostachys* (Fabaceae). Needles (MeOH/Et_2O). Mp 244°. $[\alpha]_D^{22}$ -61 (c, 0.9 in EtOH).

3-Ac: ***Norcassaidide 3-acetate***
$C_{25}H_{41}NO_5$ 435.603
Alkaloid from *Erythrophleum guineense* (Fabaceae).

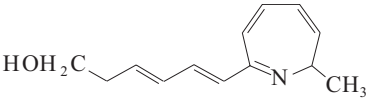
7-Ketone: ***Norcassaide****. Cassaide*
[35314-33-1]
$C_{23}H_{37}NO_4$ 391.55
Alkaloid from the bark of *Erythrophleum ivorense* (Fabaceae). Cryst. ($CHCl_3$/hexane). Mp 205-206°. The name Norcassaide is preferred since the alkaloid contains 1C less than the isomeric Cassaine.

*7-Ketone, 3-*O-*(3-hydroxy-3-methylbutanoyl):* ***Norcoumingide***
[59035-77-7]
$C_{28}H_{45}NO_6$ 491.667
Alkaloid from the bark of *Erythrophleum couminga* (Fabaceae). Cryst. (Et_2O/petrol) (as acetate). Mp 114-115° (acetate).

6-Oxo: ***Norerythrosuaveolide***
$C_{23}H_{37}NO_5$ 407.549
Alkaloid from the stem bark of *Erythrophleum suaveolens.*

Cronlund, A. *et al., Acta Pharm. Suec.*, 1971, **8**, 351 (*Norcassaide*)
Cronlund, A. *et al., Planta Med.*, 1973, **24**, 371 (*Norcassaidide 3-acetate*)
Loder, J.W. *et al., Aust. J. Chem.*, 1974, **27**, 179 (*Norcassaidide*)
Cronlund, A. *et al., Acta Pharm. Suec.*, 1975, **12**, 467 (*Norcoumingide*)
Ngounou, F.N. *et al., Bull. Chem. Soc. Ethiop.*, 2005, **19**, 221-226 (*Norerythrosuaveolide*)

Norchalciporol N-290



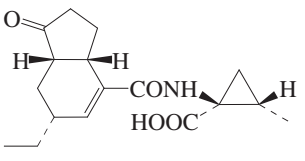
$C_{13}H_{17}NO$ 203.283

O-*Propanoyl:* ***Norchalciporyl propionate***
[112448-75-6]
$C_{16}H_{21}NO_2$ 259.347
Pungent principle from fruit-bodies of the edible pfefferröhrling mushroom (*Chalciporus piperatus*). Sl. yellow oil. Sol. MeOH, Et_2O; poorly sol. H_2O. $[\alpha]_D^{22}$ -290 (c, 0.2 in Et_2O). λ_{max} 246 (ϵ 15900) (EtOH) (Berdy).

Sterner, O. *et al., Tetrahedron*, 1987, **43**, 1075 (*isol, uv, ir, pmr, ms, struct*)

Norcoronatine N-291

[98043-42-6]

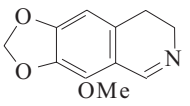


$C_{17}H_{23}NO_4$ 305.373
Prod. by *Pseudomonas syringae* pv. *glycinea*. Phytotoxin. Chlorosis inducer.

Mitchell, R.E. *et al., Phytochemistry*, 1985, **24**, 1485-1487 (*isol, pmr, ms*)

Norcotarnine N-292

7,8-Dihydro-4-methoxy-1,3-dioxolo[4,5-g]isoquinoline, 9CI. 3,4-Dihydro-8-methoxy-6,7-methylenedioxyisoquinoline
[484-30-0]



$C_{11}H_{11}NO_3$ 205.213
Yellow flocks (petrol). Mp 91-92°.

Picrate:
Yellow needles (EtOH). Mp 182-184°.

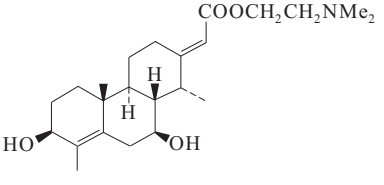
N-*Me:* ***Cotarnine***†
[20276-45-3]
$C_{12}H_{14}NO_3^{\oplus}$ 220.247
Alkaloid from *Papaver pseudo-orientale* (Papaveraceae). Mp 184-186° dec. (as iodide).

[30936-27-7]

Decker, H. *et al., Annalen*, 1913, **395**, 328
Beke, D. *et al., Acta Chim. Acad. Sci. Hung.*, 1958, **16**, 439; *CA*, **53**, 5267b
Schneider, W. *et al., Annalen*, 1958, **615**, 34
Korbonits, D. *et al., Chem. Ber.*, 1966, **99**, 273; 1970, **103**, 3605
Fleischhacker, W. *et al., Monatsh. Chem.*, 1989, **120**, 765 (*synth, Cotarnine*)
Sariyar, G. *et al., J. Nat. Prod.*, 1990, **53**, 1302 (*isol, pmr, struct*)
Sax, N.I. *et al., Dangerous Properties of Industrial Materials, 5th edn., Van Nostrand Reinhold*, 1979, 519

19-Nor-4-dehydrocassaidine N-293

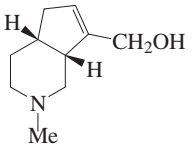
[61017-49-0]



$C_{23}H_{37}NO_4$ 391.55
Alkaloid from the bark of *Erythrophleum couminga* (Fabaceae). Needles (petrol). Mp 116°.

Oguakwa, J.U. *et al., J. Nat. Prod.*, 1976, **39**, 248 (*isol, ir, uv, pmr, ms, struct*)

4-Nor-7,8-dehydro-10-hydroxyskytanthine N-294



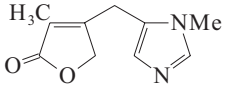
Relative Configuration

$C_{10}H_{17}NO$ 167.25
Alkaloid from the roots of *Argylia radiata*. Amorph. solid.

Bianco, A. *et al., Nat. Prod. Lett.*, 2002, **16**, 77-80 (*isol, pmr, ms*)

13-Nor-7(11)-dehydropilocarpine N-295

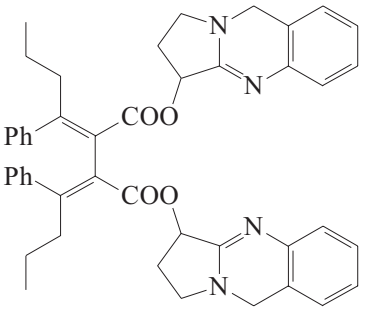
*3-Methyl-4-[(1-methyl-1*H*-imidazol-5-yl)methyl]-2(5*H*)-furanone, 9CI. 7(11)-Dehydro-13-norpilocarpine*
[177857-31-7]



$C_{10}H_{12}N_2O_2$ 192.217
Alkaloid from *Pilocarpus microphyllus* and *Pilocarpus trachyllophus*. Mp 156.1-156.3° (as nitrate).

Andrade-Neto, M. *et al., Phytochemistry*, 1996, **42**, 885-887 (*isol, pmr, cmr, ms, struct*)
Abreu, I.N. *et al., Rapid Commun. Mass Spectrom.*, 2007, **21**, 1205-1213 (*isol, ms*)

Nordine N-296

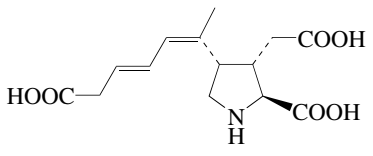


$C_{46}H_{46}N_4O_4$ 718.894
Red pigment from the bark of the Mexican tree Sangre de Drago (prob. *Croton lechleri*). Red solid. Mp 292°. Struct. not well founded.

Pallares, E.S. *et al., Arch. Biochem.*, 1946, **10**, 235 (*isol, struct*)

Nordomoic acid N-297

2-Carboxy-4-(5-carboxy-1-methyl-1,3-pentadienyl)pyrrolidineacetic acid, 9CI
[101899-43-8]

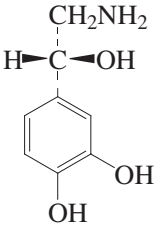


$C_{14}H_{19}NO_6$ 297.307
Constit. of the red alga *Chondria armata*. Insecticidal agent.

Maeda, M. *et al., CA*, 1986, **104**, 183260t (*isol*)

Norepinephrine, INN N-298

4-(2-Amino-1-hydroxyethyl)-1,2-benzenediol, 9CI. α-(Aminomethyl)-3,4-dihydroxybenzyl alcohol, 8CI. 2-Amino-1-(3,4-dihydroxyphenyl)ethanol. 4-(β-Amino-α-hydroxyethyl)catechol. ***Noradrenaline, BAN****. Arterenol*



(*R*)-*form*

$C_8H_{11}NO_3$ 169.18
Log P -0.99 (calc).

(*R*)-*form*
Levarterenol. Adrenor. Levophed. Norartrinal. Nor-Epirenan
[51-41-2] α,β_1-Adrenoceptor agonist, bronchodilator. Sympathomimetic. Vasopressor. Sol. H_2O. Mp 216.5-218°. $[\alpha]_D^{25}$ -37.3. pK_{a1} 8.6; pK_{a2} 9.8; pK_{a3} 12 (25°). Pharmacol. active isomer.
▶ LD_{50} (mus, orl) 20 mg/kg; LD_{50} (mus, ivn) 0.55 mg/kg. DN5950000

Hydrochloride: [329-56-6]
Cryst. (2-propanol). Mp 145-146°. $[\alpha]_D^{25}$ -40.

Tartrate (1:1): ***Norepinephrine bitartrate, USAN***
[51-40-1]
▶ Causes tissue necrosis if administered scu or ims. LD_{50} (rat, ivn) 0.21 mg/kg. DN6750000

N-*Ac:* **N-*Acetylnoradrenaline***
[30959-88-7]
[67083-59-4 , 34649-26-8]
$C_{10}H_{13}NO_4$ 211.217
Found in insect cuticle. Biol. precursor of sclerotised cuticle. Mp 77-79°.

N-*(3-Aminopropanoyl):* **N-*β-Alanylnoradrenaline***
[68299-73-0]
$C_{11}H_{16}N_2O_4$ 240.258
Degradn. prod. of Papiliochrome II. Found in insect cuticle. Biol. precursor of sclerotised cuticle. Mp 134-137°.

N-*Me:* see Adrenaline, A-152

3′-Me ether: see Normetanephrine, N-303

(*S*)-*form* [149-95-1]
Mp 215-217° dec. $[\alpha]_D^{25}$ +37.4.
▶ DN6125000

N-*(4-Methoxy*-E-*cinnamoyl):*
$C_{18}H_{19}NO_5$ 329.352
Alkaloid from *Salsola foetida*. Tyrosinase inhibitor and antioxidant. Amorph. yellow powder. Mp 218-220°. $[\alpha]_D^{25}$ -16 (c, 0.1 in MeOH). λ_{max} 217 (log ϵ 4.85); 324 (log ϵ 4.51); 327 (log ϵ 4.75) (MeOH).

N-*(3,4-Dimethoxy*-E-*cinnamoyl):*
$C_{19}H_{21}NO_6$ 359.378
Constit. of *Salsola foetida*. Tyrosinase inhibitor and antioxidant. Amorph. yellow powder. Mp 225-227°. $[\alpha]_D^{25}$ -24 (c, 0.06 in MeOH). λ_{max} 219 (log ϵ 4.6); 324 (log ϵ 4.29); 327 (log ϵ 4.35) (MeOH).

4′-Me ether, N-*(4-methoxy*-E-*cinnamoyl):*
$C_{19}H_{21}NO_5$ 343.379
Constit. of *Salsola foetida*. Tyrosinase inhibitor and antioxidant. Amorph. yellow powder. Mp 255-257°. $[\alpha]_D^{25}$ -20 (c, 0.04 in MeOH). λ_{max} 204 (log ϵ 4.56); 319 (log ϵ 4.48); 327 (log ϵ 4.53) (MeOH).

(±)-*form* [138-65-8]
Sl. sol. H_2O. Mp 191° dec.
▶ DN6300000

Hydrochloride: [55-27-6]
Mp 191°.
▶ LD_{50} (mus, ipr) 15.6 mg/kg. Exp. reprod. effects. DN6650000

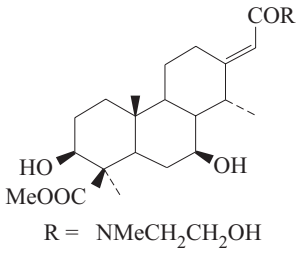
(ξ)-*form*
Alkaloid in *Albizzia julibrissin*, *Mimosa pudica*, *Phaseolus multiflorus*, *Samanea saman* (preferred genus name *Albizzia*), *Musa paradisiaca*, *Passiflora quadrangularis*, *Portulaca oleracea*, *Prunus domestica*, *Citrus sinensis*, *Aconitum napellus*, *Aconitum paniculatum* and *Solanum tuberosum* (Fabaceae, Musaceae, Passifloraceae, Portulacaceae, Rosaceae, Rutaceae, Ranunculaceae, Solanaceae).

[69815-49-2 , 5794-08-1]

Biel, J.H. *et al., J.A.C.S.*, 1954, **76**, 3149-3153 (*synth, pharmacol*)
Waalkes, T.P. *et al., Science (Washington, D.C.)*, 1958, **127**, 648-650 (*isol*)
Udenfriend, S. *et al., Arch. Biochem. Biophys.*, 1959, **85**, 487-490 (*detn, occur*)
Pratesi, P. *et al., J.C.S.*, 1959, 4062-4065 (*abs config*)
Levy, B. *et al., Drill's Pharmacol. Med.*, 4th edn., McGraw-Hill, New York, 1971, 627 (*rev, pharmacol*)
Karlson, P. *et al., Hoppe-Seyler's Z. Physiol. Chem.*, 1972, **327**, 86-94 (*isol, synth, N-Ac*)
Applewhite, P.B. *et al., Phytochemistry*, 1973, **12**, 191-192 (*occur*)
Donike, M. *et al., Chromatographia*, 1974, **7**, 651-654 (*ms*)
Andersen, A.M. *et al., Acta Chem. Scand., Ser. B*, 1975, **29**, 871-876 (*cryst struct*)
Rajan, K.S. *et al., Bioinorg. Chem.*, 1976, **6**, 93-117 (*uv*)
Smith, T.A. *et al., Phytochemistry*, 1977, **16**, 9-18 (*occur, bibl*)
Rembold, H. *et al., Z. Naturforsch., C*, 1978, **33**, 498-503 (*N-3-aminopropanoyl*)
Wilson, T.D. *et al., Anal. Profiles Drug Subst.*, 1982, **11**, 555 (*rev*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 1249
Khan, K.M. *et al., Helv. Chim. Acta*, 2003, **86**, 457-464 (*Salsola foetida cinnamates*)
Nagy, P.I. *et al., J.A.C.S.*, 2003, **125**, 2770-2785 (*conformn*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, ARL500; NNP050; NNO500; NNO699; ARL750

Norerythrostachamide N-299

[52579-70-1]



R = $NMeCH_2CH_2OH$

$C_{24}H_{39}NO_6$ 437.575

Alkaloid from the bark of *Erythrophleum chlorostachys* and *Erythrophleum africanum* (Fabaceae). Rearrangement product of Norerythrostachamine, N-300. Cryst. ($MeOH/Et_2O$). Mp 207°. $[\alpha]_D^{24}$ -31 (c, 0.6 in EtOH).

7-Ketone: ***Norerythrophlamide****. Erythrophlamide (obsol.)*
[35314-34-2]
$C_{24}H_{37}NO_6$ 435.559
Alkaloid from the bark of *Erythrophleum africanum, Erythrophleum chlorostachys, Erythrophleum ivorense* and *Erythrophleum suaveolens* (Fabaceae). Rearrangement product of Norerythrophlamine in N-300. Cryst. ($CHCl_3$/hexane). Mp 163-164°. The name Norerythrophlamide is preferred since it contains 1C less than the isomer Erythrophlamine.

3-Deoxy: ***Norcassamidide****. Norcassamidine (obsol.)*†
[40445-00-9]
$C_{24}H_{39}NO_5$ 421.576
Alkaloid from the bark of *Erythrophleum guineense* and *Erythrophleum chlorostachys* (Fabaceae). Rearrangement product of Norcassamidine in N-300. Cryst. ($EtOH/Et_2O$). Mp 115°. $[\alpha]_D^{23}$ -18.5 (c, 0.3 in EtOH). Originally named Norcassamidine based on an incorrect isomeric (ester) struct. assignment. The genuine Norcassamidine was later isol.

3-Deoxy, 7-ketone: ***Norcassamide****. Norcassamine (obsol.). Cassamide (obsol.)*
[35314-35-3]
$C_{24}H_{37}NO_5$ 419.56
Alkaloid from the bark of *Erythrophleum ivorense* and *Erythrophleum guineense* (Fabaceae). Cryst. ($CHCl_3$/hexane). Mp 134°. Originally erroneously thought to be an ester and named Norcassamine. Name then changed to Cassamide but Norcassamide is now preferred since it contains 1C less than Cassamine.

6-Oxo: ***3β-Hydroxynorerythrosuamide***
[58189-27-8]
$C_{24}H_{37}NO_7$ 451.559
Alkaloid from the bark of *Erythrophleum couminga* (Fabaceae). Cryst. (Et_2O/petrol) (as tri-Ac). Mp 171-172° (tri-Ac).

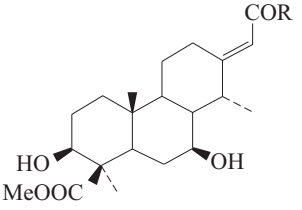
6-Oxo, 3-deoxy: ***Norerythrosuamide****. Norerythrosuamine (obsol.)*
[36150-74-0]
$C_{24}H_{37}NO_6$ 435.559
Minor alkaloid from the bark of *Erythrophleum guineense* (Fabaceae). Amorph. $[\alpha]_D^{20}$ -71.9 (c, 0.44 in EtOH). Originally, Norerythrosuamide and its dehydro deriv. were erroneously assigned ester structs. and named Norerythrosuamine and Dehydronorerythrosuamine.

6-Oxo, 3-deoxy, 7-ketone: ***Dehydronorerythrosuamide****. Dehydronorerythrosuamine*
[41758-73-0]
$C_{24}H_{35}NO_6$ 433.544
Minor alkaloid from the bark of *Erythrophleum guineense* (Fabaceae). Amorph. $[\alpha]_D^{20}$ -41 (c, 0.3 in EtOH).

Cronlund, A. *et al., Acta Pharm. Suec.*, 1971, **8**, 351-360; 1975, **12**, 467-478; *CA*, **76**, 11995y; **84**, 135892x (*Norcassamide, Norerythrophlamide, 3-Hydroxynorerythrosuamide*)
Friedrich-Fiechtl, J. *et al., Chem. Ber.*, 1971, **104**, 3535-3548 (*Norcassamidide, Norerythrosuamide, Dehydronorerythrosuamide, Norcassamide*)
Loder, J.W. *et al., Tet. Lett.*, 1972, 3645-3646; 5069-5072 (*struct, nomencl*)
Loder, J.W. *et al., Aust. J. Chem.*, 1974, **27**, 179-185 (*Norcassamidide, Norerythrophlamide, Norerythrostachamide*)
Falkiner, M.J. *et al., Aust. J. Chem.*, 1975, **28**, 645-650 (*Norcassamidide, isol, pmr*)
Jansson, S. *et al., Acta Pharm. Suec.*, 1976, **13**, 51-54; *CA*, **85**, 13671z (*Norerythrophlamide, Norerythrostachamide, isol, ir*)
Cronlund, A. *et al., Planta Med.*, 1976, **29**, 123-128 (*Norerythrophlamide, occur*)

Norerythrostachamine N-300

[52579-68-7]



R = OCH_2CH_2NHMe

$C_{24}H_{39}NO_6$ 437.575

Alkaloid from the bark of *Erythrophleum chlorostachys* (Fabaceae). Antineoplastic agent. Glass. Log P 2.4 (calc). Rearranges to the isomeric Norerythrostachamide, N-299 on standing or after chromatography on alumina.

3-Ac: ***Norerythrostachamine 3-acetate***
[55394-76-8]
$C_{26}H_{41}NO_7$ 479.612
Tentatively identified as a nat. product from *Erythrophleum chlorostachys* (Fabaceae).

19-Aldehyde: ***Norerythrostachaldine****. 19-Oxonorcassaidine*
[55729-25-4]
[55394-74-6 (hydrochloride)]
$C_{23}H_{37}NO_5$ 407.549
Alkaloid from the bark of *Erythrophleum chlorostachys* (Fabaceae). Strongly cytotoxic to KB cells. Gum; prisms (2-propanol/Me_2CO)(as hydrochloride). Mp 156° (as hydrochloride). $[\alpha]_D^{16}$ -93 (c, 1 in H_2O) (hydrochloride). Has -CHO in place of -COOMe. λ_{max} 225 (ϵ 16200) (H_2O) (Berdy).

19-Aldehyde, 3-Ac: ***Norerythrostachaldine 3-acetate***
[765842-22-6]
[55729-26-5 (hydrochloride)]
$C_{25}H_{39}NO_6$ 449.586
Alkaloid from the bark of *Erythrophleum chlorostachys* (Fabaceae). Strongly cytotoxic to KB cells. Gum; cryst. ($EtOH/Me_2CO$)(as hydrochloride). Mp 231-232° (hydrochloride). $[\alpha]_D^{16}$ -75 (c, 0.4 in H_2O) (hydrochloride). λ_{max} 225 (log ϵ 4.18) (EtOH) (hydrochloride).

7-Ketone: ***Norerythrophlamine***
[55394-77-9]
$C_{24}H_{37}NO_6$ 435.559
Alkaloid from the bark of *Erythrophleum chlorostachys* (Fabaceae). Gum; cryst. (Me_2CO) as hydrochloride. Mp 212° (hydrochloride).

7-Ketone, 3-Ac: ***Norerythrophlamine 3-acetate***
[55394-79-1]
$C_{26}H_{39}NO_7$ 477.597
Alkaloid from the bark of *Erythrophleum chlorostachys* (Fabaceae).

7-Ketone, N-*Me:* ***Erythrophlamine***
[511-00-2]
$C_{25}H_{39}NO_6$ 449.586
Alkaloid from the bark of *Erythrophleum guineense, Erythrophleum ivorense, Erythrophleum suaveolens, Erythrophleum africanum* and *Erythrophleum couminga* (Fabaceae). Antiseptic, cardiotonic agent. Needles (Et_2O/petrol). Mp 149-151°. $[\alpha]_D^{20}$ -62.5 (c, 0.911 in EtOH). Log P 2.41 (calc).

3-Deoxy: ***Norcassamidine***†*. Erythrophleine*
[36150-73-9]
$C_{24}H_{39}NO_5$ 421.576
Alkaloid from the bark of *Erythrophleum chlorostachys* (Fabaceae). Antiseptic, cardiotonic agent. Vasodilator, thermolytic agent. Glass. Log P 3.69 (calc).

▶ SF7325000

3-Deoxy, N-*Me:* ***Cassamidine***
[22260-35-1]
$C_{25}H_{41}NO_5$ 435.603
Alkaloid from the bark of *Erythrophleum guineense*, *Erythrophleum chlorostachys*, *Erythrophleum couminga*, *Erythrophleum ivorense* and *Erythrophleum africanum* (Fabaceae). Glass or oil; cryst. as hydrochloride. Mp 235-236° (as hydrochloride). $[\alpha]_D$ -47 (c, 1.0 in EtOH) (hydrochloride).

3-Deoxy, 7-ketone, N-*Me:* ***Cassamine***
[471-71-6]
$C_{25}H_{39}NO_5$ 433.587
Alkaloid from the bark of *Erythrophleum guineense*, *Erythrophleum couminga* and *Erythrophleum ivorense* (Fabaceae). Antiseptic, cardiac stimu-

lant. Cryst. (pentane). Mp 86-87°. $[\alpha]_D^{19}$ -56 (c, 0.84 in EtOH). Log P 3.7 (calc).

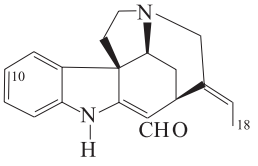
3-Deoxy, 7-ketone, N-*Me, hydrochloride:* Mp 214-217° dec. $[\alpha]_D^{17}$ -48 (c, 0.65 in H_2O).

3-Deoxy, 6α-hydroxy, 7-ketone, N-*Me:* ***Erythrophleguine***. *6-Hydroxycassamine*
[4829-28-1]
$C_{25}H_{39}NO_6$ 449.586
Alkaloid from the bark of *Erythrophleum guineense, Erythrophleum couminga, Erythrophleum ivorense* and *Erythrophleum suaveolens* (Fabaceae). Mp 77-78°. $[\alpha]_D$ -38 (c, 1.6 in EtOH).

Engel, B.G. *et al., Helv. Chim. Acta*, 1949, **32**, 2364-2381 (*Cassamine, Erythrophlamine, isol, uv*)
Mathieson, D.W. *et al., Experientia*, 1960, **16**, 404-406 (*Cassamine, Erythrophlamine, struct*)
Lindwall, O. *et al., Tet. Lett.*, 1965, 4203-4208 (*Erythrophleguine*)
Thorell, A. *et al., Acta Chem. Scand.*, 1968, **22**, 2835-2844 (*Cassamidine*)
Cronlund, A. *et al., Acta Pharm. Suec.*, 1971, **8**, 351-360; 1975, **12**, 467-478; *CA*, **76**, 11995y; **84**, 135892x (*Cassamine, Cassamidine*)
Clarke, R.L. *et al., Phytochemistry*, 1971, **10**, 851-856 (*isol, uv*)
Loder, J.W. *et al., Tet. Lett.*, 1972, 5069-5072; 1975, 2497-2498 (*struct, nomencl, cmr*)
Loder, J.W. *et al., Aust. J. Chem.*, 1974, **27**, 179-185; 1975, **28**, 651-656 (*Cassamidine, Norerythrostachaldine 3-acetate, Norcassamidine, Norerythrostachamine*)
Falkiner, M.J. *et al., Aust. J. Chem.*, 1975, **28**, 645-650 (*Norerythrostachamine 3-acetate, Noreryhrostachaldine, Norerythrophlamine, Norerythrophlamine 3-acetate*)
Cronlund, A. *et al., Planta Med.*, 1976, **29**, 123-128 (*Erythrophleguine, occur*)

Nor-*C*-fluorocurarine N-301

2,16,19,20-Tetradehydrocuran-17-al, 9CI. Vincanine. Vinervidine. Metvin



(–)-*form*

$C_{19}H_{20}N_2O$ 292.38

The synonym Vinervidine was applied to the (±)-form. Metvin (Russian) refers to the hydrochloride.

(-)-*form* [6880-54-2]
Alkaloid from *Diplorhynchus condylocarpon* ssp. *mossambiciensis, Vinca erecta, Amsonia tabernaemontana, Rhazya stricta, Leuconotis griffithii, Ochrosia elliptica, Strychnos dolichothyrsa, Tabernaemontana eglandulosa, Tabernaemontana ventricosa* and *Alstonia sphaerocapitata* (Apocynaceae, Loganiaceae). Cryst. (Me_2CO). Mp 184-186° dec. $[\alpha]_D^{20}$ -1248 (c, 0.027 in $CHCl_3$).

N^b-*Oxide:* ***Vincanine* N-*oxide***. *Norfluorocurarine* N-*oxide*
[52845-16-6]
$C_{19}H_{20}N_2O_2$ 308.379
Alkaloid from *Vinca erecta* and *Leuconotis griffithii*. Also isol. from *Ervatamia hirta* (Apocynaceae).
Amorph. $[\alpha]_D$ -690 (c, 1 in MeOH). Identity of all samples not certain. Opt. rotn. refers to a sample from *E. hirta*.

N^b-*Oxide; hydrobromide:*
Cryst. (MeOH). Mp 203-205°.

N^b-*Me:* **C-*Fluorocurarine***. C-*Curarine III*
[6866-39-3]
$C_{20}H_{23}N_2O^{\oplus}$ 307.414
Calabash curare alkaloid; also present in *Strychnos mitscherlichii* and many other *Strychnos* spp. (Loganiaceae). Weak curarising agent. Mp 270-274° dec. (as chloride). $[\alpha]_D^{20}$ -937 (H_2O).

N^b-*Me, picrate:* Mp 189°.

17-Alcohol, N^1-*hydroxyacetyl:* ***2,16-Didehydro-23-hydroxyretuline***. *23-Hydroxy-2,16-dehydroretuline*
[88721-03-3]
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from stem bark of *Strychnos longicaudata* (Loganiaceae). λ_{max} 213 ; 255 ; 283 ; 293 (EtOH).

10-Methoxy: ***10-Methoxynor*-C-*fluorocurarine***
[84575-23-5]
$C_{20}H_{22}N_2O_2$ 322.406
Alkaloid from *Alstonia lanceolifera* stem bark (Apocynaceae). $[\alpha]_D$ -405 (c, 0.25 in $CHCl_3$). Yellow colour with Ce(*IV*).

11-Methoxy, 12-hydroxy: ***12-Hydroxy-11-methoxynor*-C-*fluorocurarine***
[182745-06-8]
$C_{20}H_{22}N_2O_3$ 338.405
Alkaloid from root bark of *Strychnos panganensis*. $[\alpha]_D$ -688 (c, 0.47 in $CHCl_3$).

11-Methoxy, 12-hydroxy, N-*Ac, imine:* ***12-Hydroxy-11-methoxy*-N-*acetylnor*-C-*fluorocurarimine***
[182745-05-7]
$C_{22}H_{25}N_3O_3$ 379.458
Alkaloid from root bark of *Strychnos panganensis*. $[\alpha]_D$ -478 (c, 0.65 in $CHCl_3$).

12-Hydroxy: ***Vincanidine***. *12-Hydroxyvincanine*
[1630-41-7]
$C_{19}H_{20}N_2O_2$ 308.379
Alkaloid from roots of *Vinca erecta*. Major alkaloid of leaves of *Hazunta membranacea* (Apocynaceae). Cryst. (MeOH or EtOH). $[\alpha]_D^{30}$ -848.6 (c, 0.853 in MeOH). Chars without melting at 250-280°. Originally considered to be 11-hydroxyvincanine. λ_{max} 242 (log ϵ 3.95); 291 (log ϵ 3.26); 375 (log ϵ 4.13) (EtOH).

12-Hydroxy, methiodide:
Cryst. (EtOH). Mp 310-313°.

12-Methoxy: ***Vincanicine***
[32258-16-5]
$C_{20}H_{22}N_2O_2$ 322.406
Alkaloid from *Vinca erecta* (Apocynaceae). Amorph. $[\alpha]_D^{24}$ -438 (c, 0.6 in $CHCl_3$). Struct. revised in 1974. λ_{max} 248 (log ϵ 3.9); 293 (log ϵ 3.29); 376 (log ϵ 4.04) (EtOH).

12-Methoxy; methiodide:
Cryst. (MeOH). Mp 280-282°. $[\alpha]_D^{27}$ -615 (c, 0.715 in H_2O).

18-Hydroxy: ***18-Hydroxynorfluorocurarine***. *Strychnofluorine*
[88721-06-6]
$C_{19}H_{20}N_2O_2$ 308.379
Alkaloid from stem bark of *Strychnos ngouniensis* and root bark of *Strychnos gossweileri*, also from *Strychnos angolensis* (Loganiaceae). Exhibits low cytotoxic activity vs. B16 melanoma cells. $[\alpha]_D$ -280 (c, 0.3 in MeOH). λ_{max} 243 (ϵ 5750); 291 (ϵ 2090); 299 (ϵ 2400); 365 (ϵ 10200) (MeOH) (Berdy).

18-Acetoxy: ***18-Acetoxynorfluorocurarine***
[88721-05-5]
$C_{21}H_{22}N_2O_3$ 350.416
Alkaloid from stem bark of *Strychnos ngouniensis* (Loganiaceae).

(±)-*form* [27565-46-4]
Alkaloid from *Vinca erecta*. Mp 183-185°.

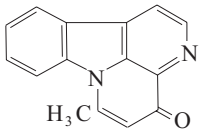
[1669-04-1]

Wieland, H. *et al., Annalen*, 1941, **547**, 140-155 (*C-Curarine III, isol*)
Schmid, H. *et al., Helv. Chim. Acta*, 1952, **35**, 1864-1879; 1953, **36**, 102-121 (*C-Fluorocurarine, isol, uv*)
Stauffacher, D. *et al., Helv. Chim. Acta*, 1961, **44**, 2006-2015 (*Nor-C-fluorocurarine, isol, ir, uv*)
Fritz, H. *et al., Annalen*, 1963, **663**, 150-156 (*Nor-C-fluorocurarine, synth*)
Yuldashev, P.Kh. *et al., Khim. Prir. Soedin.*, 1965, **1**, 34-42; 1974, **10**, 260-261; 1983, **19**, 210-212; *Chem. Nat. Compd. (Engl. Transl.)*, 1965, **1**, 25-42; 1974, **10**, 276-277; 1983, **19**, 199-201 (*Vincanidine, Vincanicine, cmr, struct, bibl*)
Pyuskyulev, B. *et al., Tet. Lett.*, 1967, 4559-4562 (*pmr, ms*)
Rakhimov, D.A. *et al., Khim. Prir. Soedin.*, 1969, **5**, 461-462; *Chem. Nat. Compd. (Engl. Transl.)*, 1969, **4**, 386-387 (*Vincanicine*)
Crawley, G.C. *et al., Chem. Comm.*, 1971, 685-686 (*C-Fluorocurarine, synth*)
Sharipov, M. *et al., Khim. Prir. Soedin.*, 1974, **10**, 263-264; *Chem. Nat. Compd. (Engl. Transl.)*, 1974, **10**, 281-283 (*Vincanine N-oxide*)
Ahmad, Y. *et al., J.A.C.S.*, 1977, **99**, 1943-1946 (*Nor-C-fluorocurarine, isol, synth*)
Bui, A.M. *et al., Phytochemistry*, 1977, **16**, 703-706 (*Vincanidine, isol*)
Coune, C.A. *et al., Herba Hung.*, 1980, **19**, 189-193; *CA*, **93**, 217906e (*18-Hydroxynorfluorocurarine*)
Ravao, T. *et al., Phytochemistry*, 1982, **21**, 2160-2161 (*10-Methoxynorfluorocurarine*)
Massiot, G. *et al., Tetrahedron*, 1983, **39**, 3645-3656 (*18-Hydroxynorfluorocurarine, 18-Acetoxynorfluorocurarine, 23-Hydroxy-2,16-dehydroretuline*)
Goh, S.H. *et al., Tet. Lett.*, 1984, **25**, 3483-3484 (*Nor-C-fluorocurarine N-oxide*)
Clivio, P. *et al., Phytochemistry*, 1991, **30**, 3785-3792 (*Vincanine N-oxide*)
Quetin-Leclercq, J. *et al., Phytochemistry*, 1992, **31**, 4347-4349 (*18-Hydroxynorfluorocurarine*)
Sole, D. *et al., J.O.C.*, 1996, **61**, 4194-4195 (*Nor-C-fluorocurarine, synth*)
Nuzillard, J.-M. *et al., Phytochemistry*, 1996, **43**, 897-902 (*12-Hydroxy-11-methoxynor-C-*

fluorocurarine, 12-Hydroxy-11-methoxy-N-acetylnor-C-fluorocurarimine)
Delaude, C. *et al., Bull. Soc. R. Sci. Liege*, 1997, **66**, 183-186 (*23-Hydroxy-2,16-dehydroretuline*)
Bonjoch, J. *et al., J.A.C.S.*, 1997, **119**, 7230-7240 (*Nor-C-fluorocurarine, synth*)

Norisotuboflavine N-302

*6-Methyl-4*H*-indolo[3,2,1*-de*]-1,5-naphthyridin-4-one, 9CI. 6-Methylcanthin-4-one*
[3464-65-1]



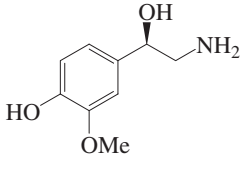
$C_{15}H_{10}N_2O$ 234.257
Alkaloid from *Pleiocarpa mutica* (Apocynaceae). Mp 298-300° (282-284°).

6-Ethyl analogue: 6-Ethylcanthin-4-one. ***Isotuboflavine***
[3464-64-0]
$C_{16}H_{12}N_2O$ 248.284
Alkaloid from the stem bark of *Pleiocarpa mutica* (Apocynaceae). Yellow needles (MeOH). Mp 263-265°.

Achenbach, H. *et al., J.A.C.S.*, 1965, **87**, 4177 (*isol, uv, ir, ms, struct*)
Rosenkranz, H.J. *et al., Helv. Chim. Acta*, 1968, **51**, 565 (*synth*)
McEvoy, F.J. *et al., J.O.C.*, 1969, **34**, 4199 (*synth, uv, ms*)

Normetanephrine N-303

α-(Aminomethyl)-4-hydroxy-3-methoxybenzenemethanol, 9CI. α-(Aminomethyl)vanillyl alcohol, 8CI. 2-Amino-1-(4-hydroxy-3-methoxyphenyl)ethanol. Normetadrenaline



(*R*)-*form*

$C_9H_{13}NO_3$ 183.207
Metab. of Norepinephrine, N-298. Used as a marker of autonomic nervous system dysfunction, and of phaeochromocytoma.

(*R*)-*form*
[13015-71-9 (hydrochloride)]
Cryst. (MeOH/Et_2O). Mp 192-194° dec. (as hydrochloride).

N-*Me:* ***Metanephrine****. Metadrenaline.* O^3-*Methyladrenaline*
[2282-54-4 , 105870-52-8]
$C_{10}H_{15}NO_3$ 197.233
Alkaloid from *Coryphantha macromeris* var. *runyonii* (Cactaceae). Also obt. from biol. sources e.g. urine. Sympathomimetic agent. Mp 158-159°. Opt. rotn. of nat. alkaloid not detd., but abs. config. v. prob. (*R*-).

(±)-*form*
Mp 192-195° (hydrochloride).

N-*(4-Hydroxy-3-methoxy-*E*-cinnamoyl):* **N-trans-*Feruloylnormetanephrine***
$C_{19}H_{21}NO_6$ 359.378
Alkaloid from the leaves of *Aptenia cordifolia*. Oil. λ_{max} 226 (log ϵ 2.9); 298 (log ϵ 1.2); 320 (log ϵ 1.1) (MeOH).

N-*Me:*
[881-95-8 (hydrochloride)]
Prisms (EtOH/Et_2O) (as hydrochloride). Mp 175° (hydrochloride).

N-*Isopropyl:* ***Metiprenaline****. 3-Methoxyisoprenaline. Egyt 402. Moxa*
[1212-03-9]
[1420-27-5]
$C_{12}H_{19}NO_3$ 225.287
Metab. of Isoprenaline. Antiallergic drug. Sympathomimetic agent. Mp 152° (as hydrochloride). Log P 0.6 (calc).
▶ LD_{50} (mus, ivn) 305 mg/kg. YW6120000

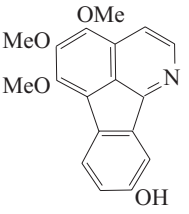
(ξ)-*form* [97-31-4]
Alkaloid from the leaves of potato *Solanum tuberosum*.

[1011-74-1 , 709-52-4 , 2282-53-3 , 35778-41-7 , 5001-33-2]

Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **2**, 625A (*nmr*)
Langecker, H. *et al., Naunyn-Schmiedebergs Arch. Exp. Pathol. Pharmakol.*, 1955, **226**, 493-504 (*pharmacol, tox*)
Axelrod, J. *et al., J. Biol. Chem.*, 1958, **233**, 697-701 (*isol, synth*)
Heacock, R.A. *et al., Chem. Ind. (London)*, 1961, 595 (*synth*)
Cession-Fossion, A. *et al., Arch. Int. Pharmacodyn. Ther.*, 1964, **150**, 160 (*pharmacol*)
Breese, G.R. *et al., J. Pharmacol. Exp. Ther.*, 1968, **165**, 9-13 (*metab*)
Pyrin, L. *et al., Pathol. Biol.*, 1968, **16**, 447-455 (*occur*)
Keller, W.J. *et al., J. Pharm. Sci.*, 1973, **62**, 408-411 (*N-Me, isol*)
Anhoury, M.-L. *et al., J.C.S. Perkin 1*, 1974, 1015-1017 (*synth, pmr*)
Manusadzhyan, V.G. *et al., Zh. Org. Khim.*, 1974, **10**, 145-149; *J. Org. Chem. USSR (Engl. Transl.)*, 1974, **10**, 147-150 (*ms*)
Pattanayek, R.R. *et al., Acta Cryst. C*, 1984, **40**, 294-297 (*cryst struct*)
Albert, L.S.R. *et al., J. Chromatogr.*, 1984, **312**, 357-385 (*isol, tlc*)
Hassel, P.G. *et al., CA*, 1987, **106**, 207727 (*hplc*)
Bryan, L.J. *et al., J. Chromatogr.*, 1989, **487**, 29-39 (*hplc*)
Gamache, P.H. *et al., Clin. Chem. (Winston-Salem, N.C.)*, 1993, **39**, 1825-1830 (*hplc*)
Peaston, R.T. *et al., J. Clin. Pathol.*, 1993, **46**, 734 (*use*)
Eisenhofer, G. *et al., Clin. Sci.*, 1995, **88**, 533-542 (*pharmacol*)
Szopa, J. *et al., Phytochemistry*, 2001, **58**, 315-320 (*Normetanephrine, ξ-form, isol, ms*)
Lenders, J.W.M. *et al., Ann. N.Y. Acad. Sci.*, 2002, **970**, 29-40 (*pharmacol, rev*)
Swiedrych, A. *et al., Plant Physiol. Biochem. (Paris)*, 2004, **42**, 593-600 (*ξ-form, isol*)
Oeltmann, T. *et al., CA*, 2005, **142**, 152734 (*rev, pharmacol*)
Mariola, J. *et al., J. Hypertens.*, 2006, **24**, 2331-2339 (*pharmacol, rev*)
DellaGreca, M. *et al., Tetrahedron*, 2006, **62**, 2877-2882 (*N-Feruloylnormetanephrine*)

Norrufescine N-304

*4,5,6-Trimethoxyindeno[1,2,3-*ij*]isoquinolin-9-ol, 9CI. 9-Hydroxy-4,5,6-trimethoxyindeno[1,2,3-*ij*]isoquinoline*
[58189-34-7]



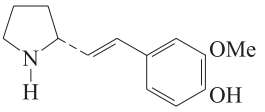
$C_{18}H_{15}NO_4$ 309.321
Alkaloid from the stems of *Abuta imene, Abuta rufescens* and *Telitoxicum peruvianum*. Also isol. from the roots and wood of *Cissampelos pareira* (Menispermaceae). Exhibits cytotoxicity against P388 cells. Orange-yellow cryst. (MeOH or MeOH/$CHCl_3$). Mp 235-238° dec. (232-234°). λ_{max} 208 (ϵ 25800); 252 (ϵ 32000); 300 (ϵ 21300); 308 (ϵ 19400); 340 (ϵ 2400) (MeOH) (Berdy).

Me ether: ***Rufescine***
[38366-04-0]
$C_{19}H_{17}NO_4$ 323.348
Alkaloid from *Abuta imene* and *Abuta rufescens* (Menispermaceae). Bright-yellow needle-shaped prisms (hexane/Et_2O). Mp 88-90°.

Cava, M.P. *et al., Tetrahedron*, 1975, **31**, 1667 (*isol, uv, ir, pmr, struct*)
Menachery, M.D. *et al., J. Nat. Prod.*, 1981, **44**, 320 (*isol*)
Menachery, M.D. *et al., Heterocycles*, 1982, **19**, 2255 (*synth*)
Boyer, D.L. *et al., J.O.C.*, 1984, **49**, 4050 (*synth, ir, pmr, ms, Rufescine*)
Morita, H. *et al., Chem. Pharm. Bull.*, 1993, **41**, 1307 (*isol, uv, ir, pmr, cmr*)

Norruspoline N-305

2-Methoxy-4-[2-(2-pyrrolidinyl)ethenyl]-phenol, 9CI. 2-(4-Hydroxy-3-methoxystyryl)pyrrolidine



(*R*)*–form*

$C_{13}H_{17}NO_2$ 219.283

(*R*)-*form* [132340-25-1]
Synthetic. Pale orange cryst. Mp 142°. $[\alpha]_D$ +132.9 (c, 0.8 in EtOH).

(±)-*form* [67270-82-0]
Alkaloid from seeds of *Ruspolia hypercrateriformis* (Acanthaceae). Red-brown gum.

N,O-*Di-Ac:*
Oil.

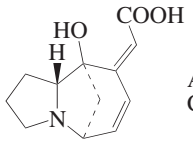
Me ether:
Oil.

Roessler, F. *et al., Helv. Chim. Acta*, 1978, **61**, 1200 (*isol, uv, ms, pmr, struct*)
Wanner, K.T. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1990, **323**, 977 (*synth*)

Brown, D.S. *et al., Tetrahedron*, 1991, **47**, 1311 (*synth*)

Norsecurinic acid N-306

[940274-57-7]



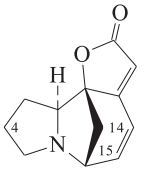
Absolute Configuration

$C_{12}H_{15}NO_3$ 221.255
Alkaloid from the roots of *Flueggea virosa*.

Gan, L.-S. *et al., Nat. Prod. Commun.*, 2006, **1**, 819-823 (*isol, pmr, cmr*)

Norsecurinine N-307

A-Norsecurinan-11-one, 9CI



(+)–*form*

$C_{12}H_{13}NO_2$ 203.24

(+)-*form* [25472-13-3]
Alkaloid from *Phyllanthus niruri* (Euphorbiaceae). Pale yellow oil. $[\alpha]_D$ +213 ($CHCl_3$). $[\alpha]_D$ +255.8 (c, 4.2 in MeOH).

Hydrochloride:
Plates (MeOH/Et_2O). Mp 275-276°. $[\alpha]_D^{20}$ +188.6 (c, 0.93 in H_2O).

4ξ-Methoxy: ***4-Methoxynorsecurinine***
$C_{13}H_{15}NO_3$ 233.266
Alkaloid from *Phyllanthus niruri* (Euphorbiaceae). $[\alpha]_D$ -47 (c, 0.3 in MeOH).

4ξ-Methoxy, 14,15-dihydro: ***4-Methoxydihydronorsecurinine***
[130968-99-9]
$C_{13}H_{17}NO_3$ 235.282
Alkaloid from *Phyllanthus niruri* (Euphorbiaceae). Yellow granules (EtOH). Mp 110-111°. Abs. config. not detd., assigned here on biogenetic probability.

(-)-*form* [2650-35-3]
Alkaloid from the root bark of *Securinega virosa* (Euphorbiaceae). Needles (petrol) (also descr. as water-sol. viscous liq.). Mp 81-82°. $[\alpha]_D^{20}$ -19.5 (c, 0.2 in EtOH). $[\alpha]_D$ -272 (c, 6.9 in EtOH). The low sp. rotn. quoted by Iketubosin *et al* suggests that their specimen was largely racemic.

Hydrochloride: Mp 223-225° dec. $[\alpha]_D^{20}$ -309 (c, 1.24 in EtOH).

Picrate:
Yellow needles (DMF). Mp 258-260° dec.

14S,15R-Epoxide: ***14,15-Epoxynorsecurinine***
$C_{12}H_{13}NO_3$ 219.24
Alkaloid from *Flueggea virosa*.

14,15-Dihydro: ***Dihydronorsecurinine***. *14,15-Dihydro-A-norsecurinan-11-one, 9CI. Virosine*†
[2650-34-2]
$C_{12}H_{15}NO_2$ 205.256
Minor alkaloid from the root bark of *Securinega virosa* (Euphorbiaceae). Rhombs (EtOAc). Mp 135-136°. $[\alpha]_D$ -13 (c, 1.0 in dioxan).

14,15-Dihydro; hydrochloride:
Needles (EtOH/Et_2O). Mp 228-230° dec.

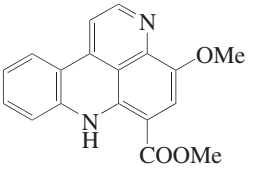
14,15-Dihydro, 15ξ-hydroxy: ***Fluggeainol***
[101899-47-2]
$C_{12}H_{15}NO_3$ 221.255
Alkaloid from *Flueggea virosa* (Euphorbiaceae).

14,15-Dihydro, 15ξ-hydroxy, dimeric ether: ***Fluggeaine ether***
[101899-48-3]
$C_{24}H_{28}N_2O_5$ 424.496
Alkaloid from *Flueggea virosa* (Euphorbiaceae).

Iketubosin, G.O. *et al., J. Pharm. Pharmacol.*, 1963, **15**, 810 (*isol, uv, ir, pmr, ms, struct*)
Saito, S. *et al., Yakugaku Zasshi*, 1964, **84**, 1126; *CA*, **62**, 5498d (*isol, Dihydronorsecurinine*)
Saito, S. *et al., Chem. Pharm. Bull.*, 1965, **13**, 614; 786 (*Norsecurinine, Dihydronorsecurinine*)
Rouffiac, R. *et al., Plant. Med. Phytother.*, 1969, **3**, 220 (*isol, uv, struct*)
Mulchandani, N.B. *et al., Planta Med.*, 1984, **50**, 104 (*4-Methoxynorsecurinine*)
Chen, M. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 1985, **27**, 625; *CA*, **104**, 183282b (*Fluggeainol, Fluggeaine ether*)
Joshi, B.S. *et al., J. Nat. Prod.*, 1986, **49**, 614 (*isol, uv, ir, pmr, cmr, ms, cd, ord, cryst struct*)
Heathcock, C.H. *et al., Heterocycles*, 1987, **25**, 75 (*synth*)
Hassarajani, S.A. *et al., Indian J. Chem., Sect. B*, 1990, **29**, 801 (*4-Methoxydihydronorsecurinine*)
Jacobi, P.A. *et al., J.A.C.S.*, 1991, **113**, 5384 (*synth*)
Magnus, P. *et al., J.A.C.S.*, 1992, **114**, 382 (*synth*)
Magnus, P. *et al., Tetrahedron*, 1993, **49**, 8059 (*synth*)
Dehmlow, E.V. *et al., Phytochemistry*, 1999, **52**, 1715-1716 (*14,15-Epoxynorsecurinine*)
Han, G. *et al., J.O.C.*, 2000, **65**, 6293-6306 (*synth*)
Alibés, R. *et al., Org. Lett.*, 2005, **7**, 5107-5109 (*synth*)

Norsegoline N-308

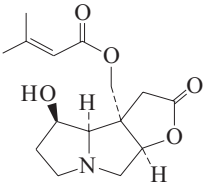
[117694-98-1]



$C_{18}H_{14}N_2O_3$ 306.32
Alkaloid from the Red Sea tunicate *Eudistoma* sp. λ_{max} 225 (ϵ 18900); 264 (ϵ 12000); 295 (ϵ 10900); 366 (ϵ 1500); 385 (ϵ 2300); 402 (ϵ 2300); 515 (ϵ 850) (MeOH/HCl) (Derep). λ_{max} 225 (ϵ 17300); 264 (ϵ 12700); 340 (ϵ 3000); 367 (ϵ 1500); 400 (ϵ 2800); 440 (ϵ 1200) (MeOH) (Derep).

Rudi, A. *et al., J.O.C.*, 1989, **54**, 5331 (*isol, uv, ir, pmr, cmr, struct*)
Dunn, S.H. *et al., J.C.S. Perkin 1*, 1993, 879 (*synth*)
Kitahara, Y. *et al., Nat. Prod. Lett.*, 1993, **2**, 159 (*synth*)
Nakahara, S. *et al., Heterocycles*, 2005, **65**, 1925-1929 (*synth*)

Norsenecicaudatin 9-*O*-senecioate N-309

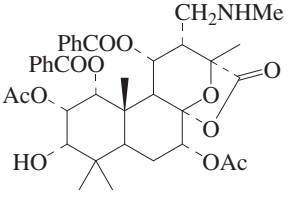


$C_{15}H_{21}NO_5$ 295.335
Alkaloid from *Senecio caudatus* (Asteraceae). The trivial name is somewhat misleading: compared with Senecicaudatin it lacks a $-C(CH_3)_2OH$ group.

Bohlmann, F. *et al., Phytochemistry*, 1986, **25**, 1151 (*isol, ir, ms, struct*)

Norstaminolactone A N-310

[460741-44-0]

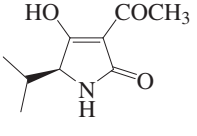


$C_{38}H_{45}NO_{12}$ 707.773
Constit. of *Orthosiphon stamineus*. Amorph. solid. $[\alpha]_D^{25}$ -18.3 (c, 0.25 in $CHCl_3$).

Awale, S. *et al., Tetrahedron*, 2002, **58**, 5503-5512 (*isol, pmr, cmr*)

Nortenuazonic acid N-311

Valyltenuazonic acid
[16820-44-3]
[707-84-6 , 2113-91-9]

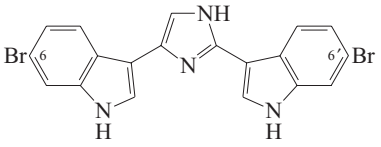


$C_9H_{13}NO_3$ 183.207
Tetramic acid deriv. Prod. by *Pyricularia oryzae*. Phytotoxin. $[\alpha]_D$ -160 (c, 0.2 in H_2O) (as Na salt). λ_{max} 240 (log ϵ 4.04); 280 (log ϵ 4.14) (H_2O) (Na salt). λ_{max} 240 (ϵ 11000); 280 (ϵ 13800) (H_2O) (Berdy).

Lebrun, M.H. *et al., Phytochemistry*, 1988, **27**, 77-84; 1990, **29**, 3777-3783 (*isol, synth*)

Nortopsentin A N-312

*3,3′-(1*H*-Imidazole-2,4-diyl)bis[6-bromo-1*H*-indole], 9CI. 2,4-Bis(6-bromo-3-indolyl)imidazole*
[134029-43-9]



$C_{19}H_{12}Br_2N_4$ 456.139
Alkaloid from the marine sponges *Spongosorites ruetzleri* and *Halichondria* sp. Exhibits cytotoxic and antifungal activities. Oil. λ_{max} 207 (ϵ 50300); 236 (ϵ 42300); 277 (ϵ 26400); 310 (sh) (MeOH) (Derep).

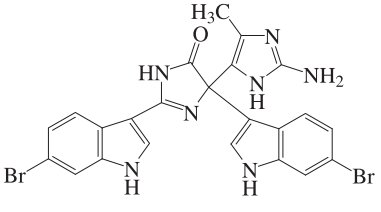
6-Debromo: ***Nortopsentin B***
[134029-44-0]
$C_{19}H_{13}BrN_4$ 377.242
Alkaloid from *Spongosorites ruetzleri* and *Halichondria* sp. Exhibits cytotoxic and antifungal activities. Plates (EtOAc/$CHCl_3$). Dec. at 250-270°. λ_{max} 206 (ϵ 50700); 232 (ϵ 45200); 278 (ϵ 25600); 310 (sh) (MeOH) (Derep).

6′-Debromo: ***Nortopsentin C***
[134029-45-1]
$C_{19}H_{13}BrN_4$ 377.242
Alkaloid from *Spongosorites ruetzleri* and *Halichondria* sp. Exhibits cytotoxic and antifungal activities. Oil. λ_{max} 206 (ϵ 50700); 232 (ϵ 45200); 278 (ϵ 25600); 310 (sh) (MeOH) (Derep). λ_{max} 207 (ϵ 50300); 280 (MeOH) (Berdy).

*6,6′-Bisdebromo: 3,3′-(1*H*-Imidazole-2,4-diyl)bis-1*H*-indole, 9CI.* ***Nortopsentin D***†
[134779-34-3]
$C_{19}H_{14}N_4$ 298.346
Prod. by *Halichondria* sp. λ_{max} 207 (ϵ 50300); 280 (MeOH) (Berdy).

Sun, H.H. *et al., CA*, 1991, **115**, 35701z
Sakemi, S. *et al., J.O.C.*, 1991, **56**, 4304 (*isol, uv, ir, pmr, cmr, ms, struct*)
Kawasaki, I. *et al., Chem. Pharm. Bull.*, 1996, **44**, 1831 (*synth*)
Miyake, F.Y. *et al., Org. Lett.*, 2000, **2**, 2121-2123 (*synth*)

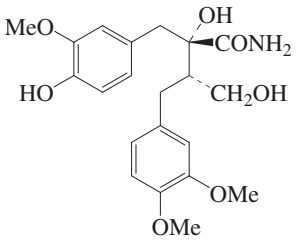
Nortopsentin D† N-313



$C_{23}H_{17}Br_2N_7O$ 567.242
Alkaloid from the sponge *Dragmacidon* sp. Amorph. solid. Not to be confused with Nortopsentin D in N-312. λ_{max} 276 (ϵ 28000); 294 (ϵ 22000); 360 (ϵ 15400) (MeOH). λ_{max} 276 (ϵ 2800); 334 (ϵ 210000) (MeOH/HCl) (Berdy). λ_{max} 283 (ϵ 28000); 352 (ϵ 6000) (MeOH/NaOH) (Berdy).

Mancini, I. *et al., Helv. Chim. Acta*, 1996, **79**, 2075-2082

Nortrachelogenin amide N-314

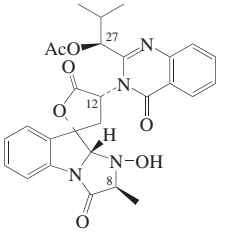


$C_{21}H_{27}NO_7$ 405.447
Alkaloid from *Trachelospermum jasminoides*. Amorph. solid. $[\alpha]_D^{25}$ -9 (c, 0.55 in MeOH).

Tan, X.-Q. *et al., Planta Med.*, 2005, **71**, 93-95 (*isol, pmr, cmr, ms*)

Nortryptoquivaline N-315

Tryptoquivaline D. Fumitremorgin D
[60676-56-4]



Absolute Configuration

$C_{28}H_{28}N_4O_7$ 532.552
The stereochemical information on some of the derivs. is not certain. Toxic metab. from *Aspergillus clavatus* and *Aspergillus fumigatus*. Tremorgenic toxin. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 256-258°. $[\alpha]_D^{25}$ +170 (c, 0.64 in $CHCl_3$). λ_{max} 228 (ϵ 3600); 279 (ϵ 10200); 306 (ϵ 4500); 319 (ϵ 3500) (MeOH) (Berdy).

Ac: [60676-59-7]
Prisms (Et_2O). Mp 155-157°. $[\alpha]_D^{25}$ +159 (c, 0.16 in $CHCl_3$).

27-Ketone, O-de-Ac: ***Nortryptoquivalone****. Tryptoquivaline B. Tryptoquivalone. FTB*
[55387-46-7]
$C_{26}H_{24}N_4O_6$ 488.499
Metab. of *Aspergillus clavatus*. Tremorgenic toxin. Prisms (CH_2Cl_2/hexane). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 208-209°. $[\alpha]_D^{25}$ +255 (c, 0.3 in $CHCl_3$). λ_{max} 234 (ϵ 35000); 292 (ϵ 9550); 320 (ϵ 6300) (EtOH) (Derep).

▶ Toxic.

N-*Deoxy:* **N-*Deoxynortryptoquivaline***
[60676-58-6]
$C_{28}H_{28}N_4O_6$ 516.552
Metab. of *Aspergillus clavatus*. Prisms (Et_2O). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 158-160°. $[\alpha]_D^{25}$ +69.5 (c, 0.82 in $CHCl_3$). λ_{max} 228 (ϵ 43900); 268 (ϵ 11700); 305 (ϵ 4100); 317 (ϵ 3300) (MeOH) (Berdy).

N-*Deoxy, 27-ketone, O-de-Ac:* ***Tryptoquivaline N****. Fumitremorgin N. Deoxynortryptoquivalone*
[60676-61-1]
$C_{26}H_{24}N_4O_5$ 472.499
Isol. from *Aspergillus fumigatus* and *Aspergillus clavatus*. Tremorgenic toxin. Needles (MeOH). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 193-197°. $[\alpha]_D^{23}$ +127 (c, 0.06 in DMSO). $[\alpha]_D^{25}$ +171 (c, 0.79 in $CHCl_3$). λ_{max} 232 (ϵ 32400); 288 (ϵ 9250) (MeOH) (Berdy).

▶ Toxic.

N-*Acetoxy,* N-*deoxy,* O-*de-Ac:* ***Norisotryptoquivaline***
[61897-84-5]
$C_{28}H_{28}N_4O_7$ 532.552
Metab. of *Aspergillus fumigatus*. Mp 224-225° dec. $[\alpha]_D^{28}$ +115 (c, 0.23 in $CHCl_3$).

12-Epimer: ***Tryptoquivaline M****. Fumitremorgin M*
[69575-59-3]
$C_{28}H_{28}N_4O_7$ 532.552
Isol. from *Aspergillus fumigatus*. Tremorgenic toxin. Plates (MeOH aq.). Mp 157-164°. $[\alpha]_D^{24}$ -154 (c, 0.5 in $CHCl_3$).

▶ Toxic.

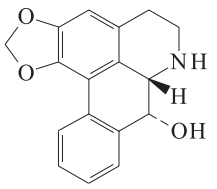
12-Epimer, O-*Ac:* [71658-07-6]
Amorph. solid. $[\alpha]_D^{21}$ -148 (c, 0.28 in $CHCl_3$).

27-Epimer: ***27-Epinortryptoquivaline***
[182967-48-2]
$C_{28}H_{28}N_4O_7$ 532.552
Metab. from *Corynascus setosus*. Tremorgenic agent. Needles (MeOH). Mp 236-238°. $[\alpha]_D^{18}$ +196 (c, 0.292 in $CHCl_3$). λ_{max} 209 (log ϵ 4.64); 290 (sh) (log ϵ 3.8); 307 (sh) (log ϵ 3.53); 318 (sh) (log ϵ 3.43) (MeOH).

Yamazaki, M. *et al., Tet. Lett.*, 1976, 2861-2864 (*Norisotryptoquivaline*)
Büchi, G. *et al., J.O.C.*, 1977, **42**, 244-246 (*Nortryptoquivaline, Deoxynortryptoquivaline, Nortryptoquivalone, isol, struct, uv, ir, pmr, ms, cd*)
Yamazaki, M. *et al., Chem. Pharm. Bull.*, 1979, **27**, 1611-1617 (*Tryptoquivalines M,N*)
Springer, J.P. *et al., Tet. Lett.*, 1979, **20**, 339-342 (*Nortryptoquivaline, cryst struct, abs config*)
Fujimoto, H. *et al., Chem. Pharm. Bull.*, 1996, **44**, 1843-1848 (*27-Epinortryptoquivaline*)
Handbook of Secondary Fungal Metabolites, (ed. Cole, R.J. *et al*), Academic Press, 2003, **1**, 383; 408

Norushinsunine N-316

Michelalbine. Normicheline A



(–)–*form*

$C_{17}H_{15}NO_3$ 281.31

(+)-form

N-*Me,* N-*oxide(β-):* ***(+)-Norushinsunine***

N-*oxide*
$C_{18}H_{17}NO_4$ 311.337
Alkaloid from *Cananga odorata* (ylang ylang). Cryst. Mp 177-179°. $[\alpha]_D^{24}$ +50.7 (c, 0.05 in $CHCl_3$). λ_{max} 271 (log ϵ 4.03); 283 (log ϵ 3.98); 320 (log ϵ 3.61) (EtOH).

(-)-*form* [3175-84-6]
Alkaloid from a wide variety of genera in the Annonaceae (*Annona*, *Asimina*, *Desmos*, *Melodorum*, *Polyalthia*), Magnoliaceae (*Liriodendron*, *Magnolia*, *Michelia*, *Elmerrillia*), Menispermaceae (*Sinomenium*), Eupomatiaceae (*Eupomatia*) and Monimiaceae (*Laurelia*). Shows antimicrobial activity. Mp 206-207°. $[\alpha]_D^{25}$ -103 (c, 0.60 in $CHCl_3$).

N,O-*Di-Ac:* [3327-33-1]
Mp 243-245°.

N-*Me:* ***Ushinsunine***. *Micheline A*
[3175-89-1]
$C_{18}H_{17}NO_3$ 295.337
Alkaloid from a variety of genera in the Annonaceae (*Asimina, Cananga, Polyalthia*), Lauraceae (*Litsea*), Magnoliaceae (*Michelia*) and Menispermaceae (*Stephania*). Shows antiplasmodial, antiamoebic and cytotoxic activities. Mp 122-123°. $[\alpha]_D$ -122 (c, 0.37 in MeOH).

▶CE1055600

N-*Me,* N-*oxide(β-):* ***Ushinsunine β*-N-*oxide***
$C_{18}H_{17}NO_4$ 311.337
Alkaloid from the rhizomes of *Stephania venosa* (Menispermaceae). Amorph. $[\alpha]_D$ -52 (c, 0.06 in MeOH).

N,N-*Di-Me:* **N-*Methylushinsunine***
[61619-44-1]
$C_{19}H_{20}NO_3^{\oplus}$ 310.372
Quaternary alkaloid from the bark of *Elmerrillia papuana*. Cryst. (Me_2CO aq.) (as iodide). Mp 235-237° (iodide). $[\alpha]_D$ -118 (c, 1 in $CHCl_3$).

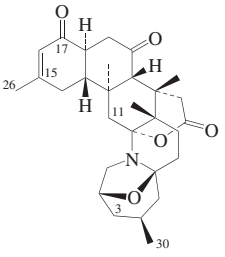
(±)-*form*
Synthetic. Mp 210-212° (202-203°).

N-*Me:*Synthetic. Mp 144-145°.

Yang, S.-S. *et al., Hua Hsueh*, 1961, 144; *CA*, **56**, 1489c (*N-Methylushinsunine*)
Yang, T.-H. *et al., Yakugaku Zasshi*, 1962, **82**, 811; 1963, **83**, 216 (*isol*)
Tomita, M. *et al., Yakugaku Zasshi*, 1965, **85**, 77 (*isol, uv, ir, ms, pmr*)
Lu, S.T. *et al., Yakugaku Zasshi*, 1969, **89**, 1313 (*uv, ir, pmr, deriv*)
Kunitomo, J. *et al., Chem. Pharm. Bull.*, 1971, **19**, 1502 (*synth, abs config*)
Cleaver, L. *et al., Aust. J. Chem.*, 1976, **29**, 2003 (*N-Methylushinsunine*)
Kessar, S.V. *et al., Tet. Lett.*, 1980, **21**, 3307 (*synth, Norushinsunine, Ushinsunine*)
Charles, B. *et al., J. Nat. Prod.*, 1987, **50**, 1113 (*Ushinsunine N-oxide*)
Yang, T.H. *et al., J. Chin. Chem. Soc. (Taipei)*, 1988, **35**, 305; *CA*, **110**, 111669j (*Ushinsunine N-oxide*)
Simeon, S. *et al., Pharmazie*, 1989, **44**, 593-597 (*activity*)
Hsieh, T.-J. *et al., J. Chin. Chem. Soc. (Taipei)*, 1999, **46**, 607-612 (*(+)-Ushinsunine N-oxide*)
Wright, C.W. *et al., J. Nat. Prod.*, 2000, **63**, 1638-1640 (*activity*)

Norzoanthamine N-317

[164991-65-5]



Absolute Configuration

$C_{29}H_{39}NO_5$ 481.631
Alkaloid from the colonial zoanthid *Zoanthus* sp. Cytotoxic agent. Active against osteoporosis. Cryst. Mp 282-285°. $[\alpha]_D$ +1.6 (c, 1 in $CHCl_3$).

3β-Hydroxy: ***3-Hydroxynorzoanthamine***
[231945-74-7]
$C_{29}H_{39}NO_6$ 497.63
Alkaloid from a zoanthid. Amorph. solid. $[\alpha]_D^{25}$ +12 (c, 0.075 in Et_2O).

11ξ-Hydroxy: ***11-Hydroxynorzoanthamine***
[231945-76-9]
$C_{29}H_{39}NO_6$ 497.63
Alkaloid from a zoanthid. Amorph. solid. $[\alpha]_D^{25}$ -11.5 (c, 0.13 in Et_2O).

11-Oxo: ***Norzoanthaminone***
[164991-66-6]
$C_{29}H_{37}NO_6$ 495.614
Alkaloid from the zoanthid *Zoanthus* sp. Interleukin-6 inhibitor, osteoporosis inhibitor.

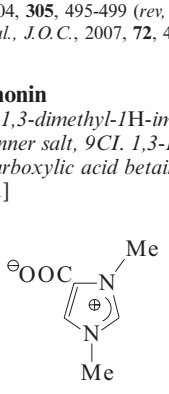
30-Hydroxy: ***30-Hydroxynorzoanthamine***
[231945-75-8]
$C_{29}H_{39}NO_6$ 497.63
Alkaloid from a zoanthid. Amorph. solid. $[\alpha]_D^{25}$ -1.1 (c, 0.27 in $CHCl_3$).

*$\Delta^{15,26}$-Isomer, 17*S*-alcohol:* ***Epinorzoanthamine***
[159509-37-2]
$C_{29}H_{41}NO_5$ 483.647
Alkaloid from *Zoanthus* sp. Misleading name.

Fukuzawa, S. *et al., Heterocycl. Commun.*, 1995, **1**, 207-214 (*isol*)
Kuramoto, M. *et al., Bull. Chem. Soc. Jpn.*, 1998, **71**, 771-779 (*isol, pmr, abs config, Norzoanthaminone, Epinorzoanthamine*)
Daranas, A.H. *et al., Tetrahedron*, 1999, **55**, 5539-5546 (*Hydroxyzoanthamines*)
Miyashita, M. *et al., Science (Washington, D.C.)*, 2004, **305**, 495-499 (*rev, synth*)
Juhl, M. *et al., J.O.C.*, 2007, **72**, 4644-4654 (*synth*)

Norzooanemonin N-318

*4-Carboxy-1,3-dimethyl-1*H*-imidazolium hydroxide inner salt, 9CI. 1,3-Dimethyl-4-imidazolecarboxylic acid betaine*
[51800-34-1]



$C_6H_8N_2O_2$ 140.141
Isol. from the sponges *Axinyssa* sp. and *Niphates* sp.; also from the Caribbean gorgonian *Pseudopterogorgia americana* and the hydroid *Tubularia larynx*. Also from *Cacospongia scalaris* and *Astrosclera willeyana*. Cryst. ($MeOH/Me_2CO$). Mp 260-263° (250-251°). λ_{max} 212 (ϵ 2005) (MeOH).

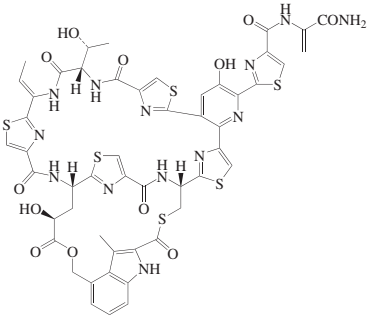
Hydrochloride:
Cryst. (MeOH). Mp 216-219° (213-217°).

Me ester:
$C_7H_{11}N_2O_2^{\oplus}$ 155.176
Isol. from various sponges incl. *Axinyssa* sp., *Axinella* sp., *Echinodictyum* sp. and *Niphates* sp. Counterion not specified. λ_{max} 264 (MeOH).

Weinheimer, A.J. *et al., Tetrahedron*, 1973, **29**, 3135-3136 (*isol, synth, ir, pmr, ms*)
Gupta, K.C. *et al., Experientia*, 1977, **33**, 1556 (*isol, cryst struct*)
Jahn, T. *et al., Tet. Lett.*, 1997, **38**, 3883-3884 (*isol, pmr, cmr*)
Capon, R.J. *et al., Org. Biomol. Chem.*, 2005, **3**, 118-122 (*Me ester*)

Nosiheptide, 9CI, BAN, INN, USAN N-319

Nosiheptine. Multhiomycin. Primofax. RP 9671
[56377-79-8]



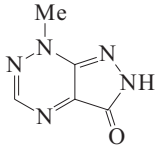
$C_{51}H_{43}N_{13}O_{12}S_6$ 1222.377
Prod. by *Streptomyces actuosus*, *Streptomyces antibioticus*, *Streptomyces glaucogriseus* and *Actinoplanes* sp. Shows broad-spectrum antibacterial activity *in vitro*. Veterinary growth stimulant. Yellow powder or prisms. Mp 310-320°. λ_{max} 292 (ϵ 31100); 406 (ϵ 16100) (MeOH/NaOH) (Derep). λ_{max} 328 (ϵ 26900); 420 (sh) (ϵ 2440) (MeOH) (Derep).

▶RD2685000

Pascard, C. *et al., J.A.C.S.*, 1977, **99**, 6418-6423 (*cryst struct*)
Depaire, H. *et al., Tet. Lett.*, 1977, **18**, 1395-1396; 1397-1402; 1401-1406; 1403 (*struct, nmr, ir, uv*)
Endo, T. *et al., J. Antibiot.*, 1978, **31**, 623-625 (*struct, ir, cmr*)
Benazet, F. *et al., Experientia*, 1980, **36**, 414-416 (*isol, props, activity*)
Japan. Pat., 1981, 81 127 092; *CA*, **96**, 33357 (*isol*)
Iwakawa, M. *et al., Chem. Lett.*, 1982, 1975-1978 (*synth*)
Eur. Pat., 1983, 73 329; *CA*, **99**, 37103 (*isol*)
Houck, D.R. *et al., J.A.C.S.*, 1987, **109**, 1250-1252; 1988, **110**, 5800-5806 (*biosynth*)

Mocek, U. *et al., J. Antibiot.*, 1989, **42**, 1643-1648 (*pmr, cmr, struct*)
Kirk-Othmer Encycl. Chem. Technol., 4th edn., Wiley, 1991, **3**, 281-282 (*rev*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 188

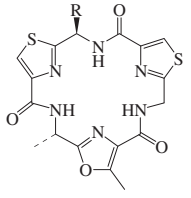
Nostocine A **N-320**
*2,7-Dihydro-7-methyl-3*H*-pyrazolo[4,3-*e*][1,2,4]triazin-3-one, 9CI*
[180128-24-9]



$C_5H_5N_5O$ 151.127
Metab. of the freshwater cyanobacterium *Nostoc spongiaeforme*. Exhibits a broad spectrum of growth inhibitory activity. Algicide. Phytotoxin. Allelophatic agent. Black needles (MeOH). Sol. MeOH, EtOAc; poorly sol. H_2O. Mp 171-172°. λ_{max} 239 (ε 6400); 277 (sh) (ε 3000); 555 (ε 900 br. (540-570 nm)) (MeOH).

Hirata, K. *et al., Heterocycles*, 1996, **43**, 1513 (*isol, uv, ir, pmr, cryst struct*)
Kelly, T.R. *et al., J.A.C.S.*, 2006, **128**, 5646-5647 (*synth*)

Nostocyclamide **N-321**
[170129-43-8]



R=-CH(CH$_3$)$_2$

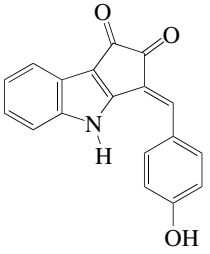
$C_{20}H_{22}N_6O_4S_2$ 474.564
Isol. from the freshwater cyanobacterium *Nostoc* sp. 31. Anticyanobacterial and antialgal agent. Toxic against the freshwater rotifer *Brachionus calyciflorus*. Cryst. (EtOAc/petrol). Sol. $CHCl_3$, CH_2Cl_2; fairly sol. MeOH; poorly sol. H_2O. Mp 255.8-256.9° dec Mp 259-260° (synthetic). $[\alpha]_D$ +25 ($CHCl_3$) (natural). $[\alpha]_D^{19}$ +51.3 (c, 0.84 in $CHCl_3$) (synthetic). λ_{max} 202 (ε 30900); 223 (ε 25120) (MeOH) (Berdy).

Todorova, A.K. *et al., J.O.C.*, 1995, **60**, 7891-7895 (*isol, uv, ir, pmr, cmr, ms, cryst struct*)
Moody, C.J. *et al., J.C.S. Perkin 1*, 1998, 601-607 (*synth, pmr, cmr*)
Bertram, A. *et al., Heterocycles*, 2002, **58**, 521-561 (*synth*)

Nostocyclamide M **N-322**
As Nostocyclamide, N-321 with R = CH_2CH_2SMe
$C_{20}H_{22}N_6O_4S_3$ 506.63
Isol. from the freshwater cyanobacterium *Nostoc* sp. 31. Allelopathic agent. Needles. λ_{max} 220 (ε 41000) (MeOH).

Juettner, F. *et al., Phytochemistry*, 2001, **57**, 613-619 (*isol, pmr, cmr*)

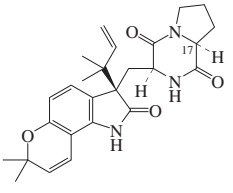
Nostodione A **N-323**
*3,4-Dihydro-3-[(4-hydroxyphenyl)methylene]cyclopent[*b*]indole-1,2-dione, 9CI*
[158182-28-6]



$C_{18}H_{11}NO_3$ 289.29
Isol. from the terrestrial blue-green alga *Nostoc commune*. Antimitotic agent. Orange powder. Mp 320° (dec.). λ_{max} 278 (ε 7500); 300 (ε 9000); 382 (ε 25000) (MeOH).

Kobayashi, A. *et al., Z. Naturforsch., C*, 1994, **49**, 464-470 (*isol, uv, ir, pmr, cmr*)

Notoamide C **N-324**
[937251-97-3]



Absolute Configuration

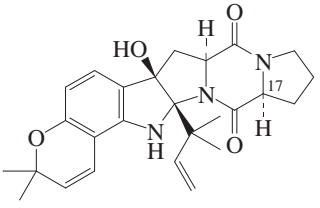
$C_{26}H_{31}N_3O_4$ 449.549
Prod. by a marine-derived *Aspergillus* sp. $[\alpha]_D^{27}$ +23 (c, 0.25 in MeOH). λ_{max} 247 (log ε 4.3); 283 (sh) (log ε 3.9); 294 (sh) (log ε 3.7); 319 (sh) (log ε 3.4) (MeOH).

17-Hydroxy: ***Norgeamide B***
[873934-44-2]
$C_{26}H_{31}N_3O_5$ 465.548
Prod. by a marine-derived *Aspergillus* sp.

17-Methoxy: ***Norgeamide A***
[873934-43-1]
$C_{27}H_{33}N_3O_5$ 479.575
Prod. by a marine-derived *Aspergillus* sp.

Kato, H. *et al., Angew. Chem., Int. Ed.*, 2007, **46**, 2254-2256 (*isol, struct*)
Grubbs, A.W. *et al., Angew. Chem., Int. Ed.*, 2007, **46**, 2257-2261; 2262-2265 (*synth*)

Notoamide D **N-325**
[937251-98-4]



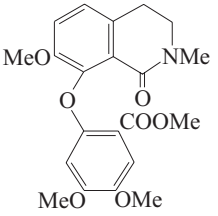
$C_{26}H_{31}N_3O_4$ 449.549
Prod. by a marine-derived *Aspergillus* sp. $[\alpha]_D^{27}$ -163 (c, 0.32 in MeOH). λ_{max} 237 (log ε 4.5); 286 (log ε 4); 331 (log ε 3.8) (MeOH).

17-Epimer: ***Norgeamide C***
[873934-45-3]
$C_{26}H_{31}N_3O_4$ 449.549
Prod. by a marine-derived *Aspergillus* sp.

17-Epimer, 17-hydroxy: ***Norgeamide D***
[873934-46-4]
$C_{26}H_{31}N_3O_5$ 465.548
Prod. by a marine-derived *Aspergillus* sp.

Kato, H. *et al., Angew. Chem., Int. Ed.*, 2007, **46**, 2254-2256 (*isol, pmr, cmr*)
Grubbs, A.W. *et al., Angew. Chem., Int. Ed.*, 2007, **46**, 2257-2261; 2262-2265 (*synth*)

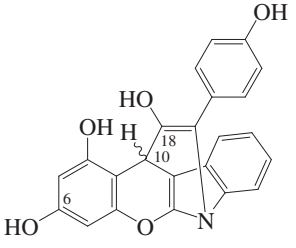
Noyaine **N-326**
[110815-78-6]



$C_{21}H_{23}NO_7$ 401.415
Alkaloid from *Corydalis claviculata* (Papaveraceae). Amorph. The first C-ring secocularine alkaloid.

Boente, J.M. *et al., Tet. Lett.*, 1986, **27**, 5535 (*uv, ir, pmr, cmr, ms, synth, struct*)

Nudicaulin aglycone **N-327**
*19-(4-Hydroxyphenyl)-10*H*-1,10-ethenochromeno[2,3-*b*]indole-6,8,18-triol*



$C_{23}H_{15}NO_5$ 385.375

*6-*O*-β-D-Glucopyranoside, 18-*O*-[β-D-glucopyranosyl-(1→2)-β-D-glucopyranoside]:* ***Nudicaulin I***
[875766-61-3]
$C_{41}H_{45}NO_{20}$ 871.801
Constit. of the flowers of *Papaver nudicaule*.

*6-*O*-β-D-Glucopyranoside, 18-*O*-[β-D-glucopyranosyl-(1→2)-6-*O*-malonyl-β-D-glucopyranoside]:* ***Nudicaulin IV***
[875766-64-6]
Constit. of the flowers of *Papaver nudicaule*.

6-O-*(6*-O-*Malonyl-β-D-glucopyranoside), 18*-O-*[β-D-glucopyranosyl-(1→2)-6*-O-*malonyl-β-D-glucopyranoside]:* ***Nudicaulin VII***
[875766-65-7]
$C_{47}H_{49}NO_{26}$ 1043.895
Constit. of the flowers of *Papaver nudicaule*. $[\alpha]_D^{26}$ -354 (c, 0.002 in MeOH aq.). λ_{max} 254 (log ϵ 4.17); 384 (log ϵ 3.96); 470 (log ϵ 3.68); 509 (log ϵ 3.52) (MeOH aq.). λ_{max} 224 (log ϵ 4.4); 256 (log ϵ 4.32); 338 (log ϵ 3.8); 461 (log ϵ 4.45) (AcOH/MeOH aq.).

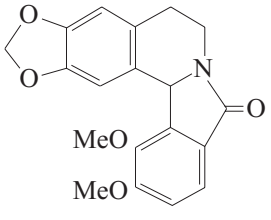
10-Epimer, 6-O-*β-D-glucopyranoside, 18*-O-*[β-D-glucopyranosyl-(1→2)-β-D-glucopyranoside]:* ***Nudicaulin II***
[875766-62-4]
$C_{41}H_{45}NO_{20}$ 871.801
Constit. of the flowers of *Papaver nudicaule*.

10-Epimer, 6-O-*β-D-glucopyranoside, 18*-O-*[β-D-glucopyranosyl-(1→2)-6*-O-*malonyl-β-D-glucopyranoside]:* ***Nudicaulin III***
[875766-63-5]
$C_{44}H_{47}NO_{23}$ 957.848
Constit. of the flowers of *Papaver nudicaule*.

10-Epimer, 6-O-*(6*-O-*malonyl-β-D-glucopyranoside), 18*-O-*[β-D-glucopyranosyl-(1→2)-6*-O-*malonyl-β-D-glucopyranoside]:* ***Nudicaulin VIII***
[875766-66-8]
$C_{47}H_{49}NO_{26}$ 1043.895
Constit. of the flowers of *Papaver nudicaule*. $[\alpha]_D^{26}$ +370 (c, 0.002 in MeOH aq.). λ_{max} 250 (log ϵ 4.06); 386 (log ϵ 3.9); 470 (log ϵ 3.64); 508 (log ϵ 3.45) (MeOH aq.). λ_{max} 228 (log ϵ 4.28); 256 (log ϵ 4.32); 337 (log ϵ 3.81); 464 (log ϵ 4.47) (AcOH/MeOH aq.).

Schliemann, W. *et al., Phytochemistry*, 2006, **67**, 191-201 (*isol, cd, uv, pmr, cmr, ms*)

Nuevamine N-328



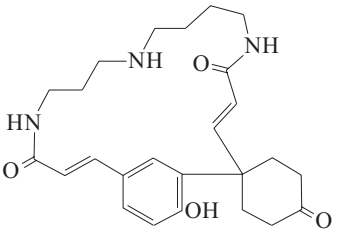
$C_{19}H_{17}NO_5$ 339.347

(±)-*form* [96443-59-3]
Minor alkaloid from *Berberis darwinii* (Berberidaceae). Cryst. (MeOH). Mp 212°. Struct. revised in 1985.

Valencia, E. *et al., Tet. Lett.*, 1984, **25**, 599 (*uv, ir, pmr, ms*)
Alonso, R. *et al., Tet. Lett.*, 1985, **26**, 2925 (*struct, synth*)
Moreau, A. *et al., Tetrahedron*, 2004, **60**, 6169-6176 (*synth*)

Numismine N-329

[38143-08-7]

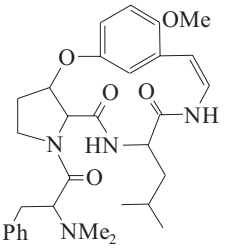


$C_{25}H_{33}N_3O_4$ 439.553
Alkaloid from the seeds of *Lunaria biennis* (Brassicaceae). Cryst. (Me_2CO). Mp 278-280°.

Potier, P. *et al., Bull. Soc. Chim. Fr.*, 1959, 201 (*uv, ir*)
Poupat, C. *et al., Tetrahedron*, 1972, **28**, 3087 (*uv, ir, pmr, struct*)

Nummularine C N-330

*1-[2-(Dimethylamino)-1-oxo-3-phenylpropyl]-1,2,3,3*a*,12,14,15,16*a*-octahydro-8-methoxy-14-(2-methylpropyl)-5,9-metheno-9*H*-pyrrolo[3,2-*b*][1,5,8]oxadiazacyclopentadecine-13,16-dione, 9CI*
[53947-97-0]

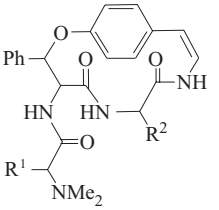


$C_{31}H_{40}N_4O_5$ 548.681
Alkaloid from the root bark of *Zizyphus nummularia* (Rhamnaceae). Needles (MeOH). Mp 278-280°. $[\alpha]_D^{20}$ -371 (c, 0.2 in $CHCl_3$).

Tschesche, R. *et al., Chem. Ber.*, 1974, **107**, 3180 (*isol, uv, ir, pmr, ms, struct*)

Nummularine E N-331

2-(Dimethylamino)-3-hydroxy-N-*[7-(2-methylpropyl)-5,8-dioxo-3-phenyl-2-oxa-6,9-diazabicyclo[10.2.2]hexadeca-10,12,14,16-tetraen-4-yl]butanamide, 9CI*
[58775-95-4]



R^1 = —CH(OH)CH_3
R^2 = —$CH_2CH(CH_3)_2$

$C_{29}H_{38}N_4O_5$ 522.643
Alkaloid from the root bark of *Zizyphus nummularia* and the bark of *Zizyphus hysodrica* (Rhamnaceae). Cryst. (MeOH). Mp 278-279°. $[\alpha]_D^{20}$ +12 (c, 0.02 in MeOH).

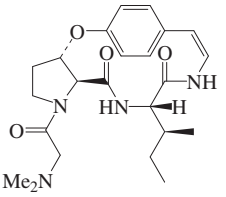
O-*Ac:*
Cryst. ($CHCl_3$). Mp 230-232°.

Dihydro:
Cryst. (MeOH). Mp 282°. $[\alpha]_D^{20}$ +14 (c, 0.02 in MeOH).

Tschesche, R. *et al., Tetrahedron*, 1975, **31**, 2944-2947 (*isol, uv, ir, pmr, ms, struct*)
Tschesche, R. *et al., Pharmazie*, 1981, **36**, 511 (*isol, uv, ir, pmr, ms*)

Nummularine F N-332

*1-[(Dimethylamino)acetyl]-2,3,3*a*,13,14,15*a*-hexahydro-13-(1-methylpropyl)-5,8-ethenopyrrolo[3,2-*b*][1,5,8]oxadiazacyclotetradecine-12,15(1*H*,11*H*)-dione, 9CI*
[58775-98-7]



Absolute Configuration

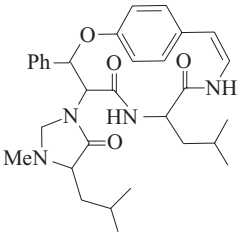
$C_{23}H_{32}N_4O_4$ 428.53
Alkaloid from the root bark of *Zizyphus nummularia* (Rhamnaceae). Cryst. (MeOH). Mp 120°. $[\alpha]_D^{20}$ -204 (c, 0.2 in MeOH).

Dihydro:
Cryst. (MeOH). Mp 175°. $[\alpha]_D^{20}$ -159 (c, 0.23 in MeOH).

Tschesche, R. *et al., Tetrahedron*, 1975, **31**, 2944-2947 (*isol, uv, ir, pmr, ms, struct*)
Heffner, R.J. *et al., J.A.C.S.*, 1992, **114**, 10181-10189 (*synth, cmr*)

Nummularine G N-333

4-[3-Methyl-4-(2-methylpropyl)-5-oxo-1-imidazolidinyl]-7-(2-methylpropyl)-3-phenyl-2-oxa-6,9-diazabicyclo[10.2.2]-hexadeca-10,12,14,15-tetraene-5,8-dione, 9CI
[64309-21-3]



$C_{31}H_{40}N_4O_4$ 532.681
Alkaloid from the bark of *Zizyphus nummularia* (Rhamnaceae). Light-yellow needles ($CHCl_3$/petrol). Mp 174-175°. $[\alpha]_D^{20}$ -133 (c, 0.085 in MeOH). Related to Sativanine B, S-93.

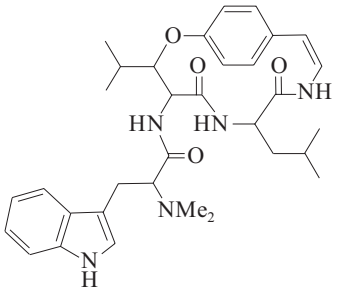
Dihydro:
Powder. Mp 206-209°. $[\alpha]_D^{20}$ -98 (c, 0.2 in MeOH).

Tschesche, R. *et al., Chem. Ber.*, 1977, **110**, 2649 (*isol, uv, ir, pmr, ms, struct*)

Nummularine K N-334

*α-(Dimethylamino)-*N*-[3-(1-methylethyl)-7-(2-methylpropyl)-5,8-dioxo-2-oxa-6,9-diazabicyclo[10.2.2]hexadeca-10,12,14,15-tetraen-4-yl]-1*H*-indole-3-propanamide, 9CI*

[64350-62-5]



$C_{33}H_{43}N_5O_4$ 573.734

Alkaloid from the bark of *Zizyphus nummularia* and from *Zizyphus xylopyra* and *Discaria longispina*. Powder (MeOH). Mp 237-239°. $[\alpha]_D^{20}$ -45 (c, 0.04 in MeOH).

Dihydro:

Powder. Mp 283-285°. $[\alpha]_D^{20}$ +12 (c, 0.08 in MeOH).

Stereoisomer(?): ***Discarine X***

[164577-53-1]

$C_{33}H_{43}N_5O_4$ 573.734

Alkaloid from root bark of *Discaria longispina* (Rhamnaceae). Mp 295-298°. $[\alpha]_D^{25}$ -184 (c, 0.5 in MeOH). No stereochem. determined. May be identical with Nummularine K.

Tschesche, R. *et al., Chem. Ber.*, 1977, **110**, 2649 (*Nummularine K*)

Machado, E.C. *et al., J. Nat. Prod.*, 1995, **58**, 548 (*Discarine X*)

Nummularine M N-335

[93754-86-0]

As Nummularine E, N-331 with

$R^1 = R^2 = -CH(CH_3)CH_2CH_3$

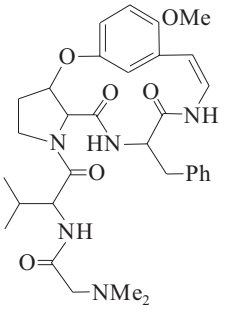
$C_{31}H_{42}N_4O_4$ 534.697

Alkaloid from the stem bark of *Zizyphus nummularia* (Rhamnaceae). Amorph. powder. Mp 263-265°. $[\alpha]_D$ -46.66 (c, 0.1 in $CHCl_3$).

Pandey, V.B. *et al., Phytochemistry*, 1984, **23**, 2118 (*isol, uv, ir, pmr, ms, struct*)

Nummularine N N-336

[93754-85-9]



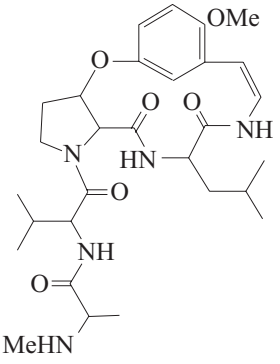
$C_{32}H_{41}N_5O_6$ 591.706

Alkaloid from the stem bark of *Zizyphus nummularia* (Rhamnaceae). Cryst. Mp 243-245°. $[\alpha]_D$ not reported. Mol. formula given as $C_{31}H_{41}N_5O_6$, apparently incorrectly, in the paper.

Pandey, V.B. *et al., Phytochemistry*, 1984, **23**, 2118 (*isol, uv, ir, pmr, ms, struct*)

Nummularine P N-337

[110187-25-2]



$C_{29}H_{43}N_5O_6$ 557.689

Alkaloid from the stem bark of *Zizyphus nummularia* and *Zizyphus rugosa* (Rhamnaceae). Mp 143-144°.

N$^{(\omega)}$-Formyl: ***Rugosanine A***

[110200-25-4]

$C_{30}H_{43}N_5O_7$ 585.699

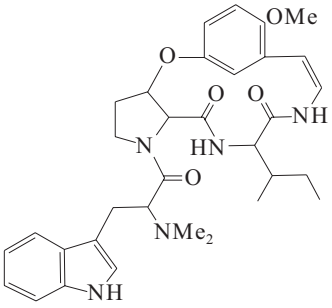
Alkaloid from stem bark of *Zizyphus nummularia* and *Zizyphus rugosa* (Rhamnaceae). Granules (MeOH). Mp 237-240° dec. Not correlated with Nummularine P, could differ stereochemically.

Dwivedi, S.P.D. *et al., J. Nat. Prod.*, 1987, **50**, 235 (*isol, uv, ir, pmr, struct*)

Pandey, V.B. *et al., Phytochemistry*, 1988, **27**, 1915 (*Rugosanine A*)

Nummularine R N-338

[113836-69-4]



$C_{33}H_{41}N_5O_5$ 587.717

Alkaloid from *Zizyphus nummularia* and *Zizyphus jujuba* var. *inermis* (Rhamnaceae). Mp 134-135°.

Stereoisomer (?): ***Daechuine S10***

[123089-24-7]

$C_{33}H_{41}N_5O_5$ 587.717

Alkaloid from stem bark of *Zizyphus jujuba* var. *inermis* (Rutaceae). Mp 126-128°. $[\alpha]_D$ -381.5. Could be identical with Nummularine R (similar Mp). Incorrectly registered by CAS with Tyr sidechain in place of Try.

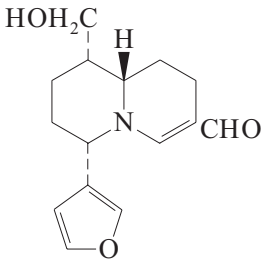
Devi, S. *et al., Phytochemistry*, 1987, **26**, 3374-3375 (*Nummularine R*)

Han, B.H. *et al., Pure Appl. Chem.*, 1989, **61**, 443-448 (*Daechuine S10*)

Nuphacristine N-339

*6-(3-Furanyl)-1,6,7,8,9,9*a*-hexahydro-9-(hydroxymethyl)-2*H*-quinolizine-3-carboxaldehyde, 9CI*

[119459-68-6]



$C_{15}H_{19}NO_3$ 261.32

Alkaloid from the rhizomes of *Nuphar luteum* (Nymphaeaceae). $[\alpha]_D^{20}$ +65.9 (EtOH).

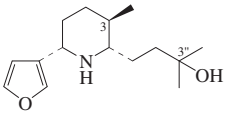
Cybulski, J. *et al., Phytochemistry*, 1988, **27**, 3339 (*isol, pmr, cmr, ms, struct*)

Nupharamine N-340

6-(3-Furanyl)-α,α,3-trimethyl-3-piperidinepropanol, 9CI

[17812-38-3]

[53956-48-2 (±)-form]



Absolute Configuration

$C_{15}H_{25}NO_2$ 251.368

Alkaloid from *Nuphar japonicum* (Nymphaeaceae). Bp_1 130-134°. $[\alpha]_D$ -35.4.

Picrolonate: Mp 168°.

Me ether: **O-*Methylnupharamine***

$C_{16}H_{27}NO_2$ 265.395

Minor alkaloid from *Nuphar japonicum* (Nymphaeaceae). Mp 48-50°. $[\alpha]_D^{26}$ -52.56 (EtOH).

Et ether: **O-*Ethylnupharamine***

$C_{17}H_{29}NO_2$ 279.422

Minor alkaloid from *Nuphar japonicum* (Nymphaeaceae). $Bp_{0.0001}$ 95-100°. $[\alpha]_D^{26}$ -48.25 (EtOH).

3″-Deoxy, 2″,3″-didehydro: ***Nuphenine***

[4850-01-5]

$C_{15}H_{23}NO$ 233.353

Major alkaloid from the rhizomes of the North American yellow water lily *Nuphar variegatum* (Nymphaeaceae). $[\alpha]_{Hg}^{25}$ -23 (MeOH).

*3″-Deoxy, 4″-hydroxy (3″*R*-): 6-(3-Furanyl)-β,3-dimethyl-2-piperidinebutanol.*

Secodihydrocastoramine
[56283-43-3]
$C_{15}H_{25}NO_2$ 251.368
Alkaloid from the roots of *Nuphar japonicum*.

*3′′-Deoxy, 2′′,3′′-didehydro, 4′′-hydroxy (2′′*E*-): 4-[6-(3-Furanyl)-3-methyl-2-piperidinyl]-2-methyl-2-buten-1-ol.* ***Nuphamine***
[1630-49-5]
$C_{15}H_{23}NO_2$ 249.352
Alkaloid from *Nuphar japonicum* and *Nuphar luteum* ssp. *variegatum* (Nymphaeaceae). Viscous liq. Bp_3 150-153°. $[\alpha]_D^{19}$ -60.5 ($CHCl_3$).

3-Epimer: ***3-Epinupharamine***
[31146-50-6]
[53956-49-3 (±)-form]
$C_{15}H_{25}NO_2$ 251.368
Alkaloid from the rhizomes of *Nuphar variegatum* (Nymphaeaceae). Pale yellow oil. $[\alpha]_D^{23}$ -24.8 (c, 1.45 in MeOH).

3-Epimer, N-*Ac:*
Cryst. (Me_2CO). Mp 107-109°.

3-Epimer, 3′′-deoxy, 2′′,3′′-didehydro: ***Anhydronupharamine***
[4849-88-1]
$C_{15}H_{23}NO$ 233.353
Alkaloid from the rhizomes of *Nuphar japonicum*. Dehydration product of (-)-Nupharamine (Nymphaeaceae). Bp_4 108-109°. $[\alpha]_D^{25}$ -62.5 (c, 1.0 in $CHCl_3$). $[\alpha]_D$ -59 (solvent not specified).

3-Epimer, 3′′-deoxy, 2′′,3′′-didehydro, 4′′-hydroxy: ***3-Epinuphamine***
[29073-35-6]
$C_{15}H_{23}NO_2$ 249.352
Minor alkaloid from the rhizomes of *Nuphar luteum* ssp. *variegatum* (Nymphaeaceae). $[\alpha]_D^{25}$ -47.5 (c, 0.52 in 95% EtOH).

Arata, Y. *et al., Yakugaku Zasshi*, 1959, **79**, 127-128; 729-734; 734-737; 1967, **87**, 1094-1095 (*Nupharamine, Anhydronupharamine, isol, ir, struct*)
Kawasaki, I. *et al., Bull. Chem. Soc. Jpn.*, 1963, **36**, 1474 (*config*)
Kotake, M. *et al., Nippon Kagaku Zasshi*, 1963, **84**, 160-162; *CA*, **60**, 6891a (*derivs*)
Arata, Y. *et al., Chem. Pharm. Bull.*, 1965, **13**, 1247; 1365 (*Nuphamine*)
Barchet, R. *et al., Tet. Lett.*, 1965, 4229-4232 (*Nuphenine*)
Wong, C.F. *et al., Phytochemistry*, 1970, **9**, 1851 (*3-Epinuphamine*)
Forrest, T.P. *et al., Can. J. Chem.*, 1971, **49**, 1774-1775 (*3-Epinupharamine*)
Khaleque, A. *et al., CA*, 1975, **82**, 28643d; 1979, **90**, 204316a (*Secodihydrocastoramine*)
Itatani, Y. *et al., Chem. Pharm. Bull.*, 1976, **24**, 2521-2524 (*cmr*)
Szychowski, J. *et al., Can. J. Chem.*, 1977, **55**, 3105-3110 (*synth*)
Sabat, M. *et al., Can. J. Chem.*, 1977, **55**, 3111-3117 (*3-Epinupharamine, cryst struct*)
Shimizu, I. *et al., Chem. Lett.*, 1990, 777-778 (*synth, cmr*)
Leniewski, A. *et al., Coll. Czech. Chem. Comm.*, 1991, **56**, 1309-1316 (*synth*)
Aoyagi, S. *et al., Tet. Lett.*, 1991, **32**, 4325-4328 (*synth, abs config*)
Honda, T. *et al., Chem. Comm.*, 1994, 499-500 (*synth*)
Miyazawa, M. *et al., J. Agric. Food Chem.*, 1998, **46**, 1059-1063 (*Nuphamine, isol, pmr, cmr, ms*)
Barluenga, J. *et al., J.O.C.*, 1999, **64**, 3736-3740 (*synth*)
Davies, F.A. *et al., J.O.C.*, 2006, **71**, 4222-4226 (*synth*)

α-Nupharidine N-341

$C_{15}H_{23}NO$ 233.353
Nuphar alkaloid; probably identical with Deoxynupharidine, D-227. Props. of characterisation derivs. agree, but status of 'dihydro deriv'. is not clear. Alkaloid from the rhizomes of *Nuphar luteum* (Nymphaeaceae). Viscous liq. Bp_2 121-121.5°. $[\alpha]_D^{18}$ -112.1.

Hydrochloride: Mp 258-259°.

Picrate: Mp 165-167°.

Dihydro: Mp 240-242° (as hydrochloride).

Achmatowicz, O. *et al., Pol. J. Chem. (Rocz. Chem.)*, 1939, **19**, 493-506 (*isol*)

β-Nupharidine N-342

$C_{15}H_{23}NO$ 233.353
Nuphar alkaloid. Struct. unknown. Alkaloid from the rhizomes of *Nuphar luteum* (Nymphaeaceae). Viscous liq. Bp_2 140°.

Hydrochloride: Mp 269-270°.

Picrate: Mp 152-153°.

Achmatowicz, O. *et al., Pol. J. Chem. (Rocz. Chem.)*, 1939, **19**, 493-506 (*isol*)

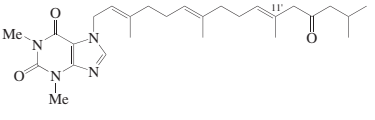
Nupharine† N-343

[1400-60-8]
$C_{18}H_{24}N_2O_2$ 300.4
Nuphar alkaloid. Struct. unknown. Alkaloid from the rhizomes of *Nuphar luteum* (Nymphaeaceae). Amorph. Mp 65°.

Grüning, W. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1882, **20**, 589 (*isol*)
Novikova, S.I. *et al., CA*, 1964, **60**, 2041g (*isol*)

Nuttingine A N-344

N^7*-(3,7,11,15-Tetramethyl-13-oxo-2,6,10-hexadecatrienyl)theophylline*
[945458-41-3]



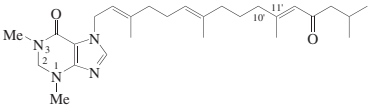
$C_{27}H_{40}N_4O_3$ 468.638
Alkaloid from *Euplexaura nuttingi*. Oil.

*Δ$^{11'}$-Isomer (*Z*-):* ***Nuttingine B***
[945458-42-4]
$C_{27}H_{40}N_4O_3$ 468.638
Alkaloid from *Euplexaura nuttingi*. Oil.

Sorek, H. *et al., J. Nat. Prod.*, 2007, **70**, 1104-1109 (*Nuttingins A,B*)

Nuttingine D N-345

[945458-44-6]



$C_{27}H_{42}N_4O_2$ 454.654
Alkaloid from *Euplexaura nuttingi*. Oil.

N,*2-Didehydro:* ***Nuttingine F***
[945458-46-8]
$C_{27}H_{41}N_4O_2^{\oplus}$ 453.647
Alkaloid from *Euplexaura nuttingi*. Oil. Positive charge delocalised over *N*-1 and *N*-3.

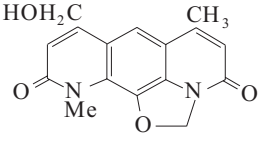
*Δ$^{10'}$-Isomer (*E*-):* ***Nuttingine C***
[945458-43-5]
$C_{27}H_{42}N_4O_2$ 454.654
Alkaloid from *Euplexaura nuttingi*. Oil.

11′Z-Isomer: ***Nuttingine E***
[945458-45-7]
$C_{27}H_{42}N_4O_2$ 454.654
Alkaloid from *Euplexaura nuttingi*. Oil.

Sorek, H. *et al., J. Nat. Prod.*, 2007, **70**, 1104-1109 (*isol, pmr, cmr*)

Nybomycin N-346

*8-(Hydroxymethyl)-6,11-dimethyl-2*H*,4*H*-oxazolo[5,4,3-*ij*]pyrido[3,2-*g*]quinoline-4,10(11*H*)-dione, 9CI, 8CI*
[30408-30-1]



$C_{16}H_{14}N_2O_4$ 298.298
Prod. by Streptomycete A 717 isol. from Missouri soil. Antibiotic showing antiphage and antibacterial props. Needles (AcOH). Sol. conc. acids; fairly sol. DMF; poorly sol. H_2O, MeOH, hexane. Mp 325-330°. Subl.15 250. λ_{max} 222 (ε 18400); 236 (sh) (ε 15000); 264 (ε 11150); 286 (ε 40500); 296 (sh) (ε 32100); 353 (ε 11900); 367 (ε 12200) (MeOH) (Derep).

► LD_{50} (mus, ipr) 650 mg/kg.

Ac:
Cryst. ($CHCl_3$/EtOH). Mp 236-237°.

Deoxy: ***Deoxynybomycin***. *6,8,11-Trimethyl-2*H*,4*H*-oxazolo[5,4,3-*ij*]pyrido[3,2-g]quinoline-4,10(11*H*)-dione, 9CI*
[27259-98-9]
$C_{16}H_{14}N_2O_3$ 282.298
From *Streptomyces hyalinium*. Antibiotic active against gram-positive organisms. Inhibits topoisomerase I. Apoptosis inducer. Selective anti-tumour agent. Needles. Fairly sol. AcOH; poorly sol. H_2O, MeOH, DMF, DMSO, hexane. Mp 335° dec.

λ_{max} 220 (ϵ 27550); 264 (ϵ 36300); 285 (ϵ 46800); 294 (sh) (ϵ 38900); 353 (ϵ 1200); 368 (ϵ 1290) (MeOH) (Derep).

► LD_{50} (mus, ipr) 650 mg/kg. RQ5836000

1′-Hydroxy: ***Hydroxynybomycin***

[63582-81-0]

$C_{16}H_{14}N_2O_5$ 314.297

From *Streptomyces* spp. Antibiotic active against gram-positive organisms. Pale yellow cryst. (DMF). Mp 360°.

Strelitz, F. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 1955, **41**, 620-624 (*isol*)

Rinehart, K.L. *et al., J.A.C.S.*, 1961, **83**, 3729-3731; 1970, **92**, 6994-6995 (*struct, ir, pmr*)

Naganawa, H. *et al., J. Antibiot.*, 1970, **23**, 365-368 (*Deoxynybomycin, isol*)

Forbis, R.M. *et al., J.A.C.S.*, 1973, **95**, 5003-5013 (*synth, uv, ir, ms, nmr, Deoxynybomycin*)

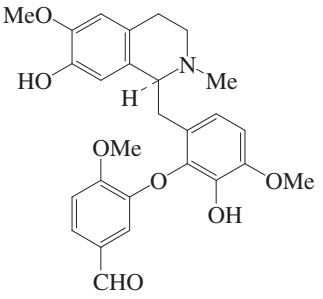
Nazdan, A.M. *et al., J. Antibiot.*, 1977, **30**, 523-524 (*Hydroxynybomycin*)

Nadzan, A.M. *et al., J.A.C.S.*, 1977, **99**, 4647-4654 (*biosynth, cmr*)

Egawa, K. *et al., Biol. Pharm. Bull.*, 2000, **23**, 1036-1040 (*activity*)

Nymphaedaline N-347

[385366-59-6]



$C_{27}H_{29}NO_7$ 479.529

Alkaloid from the bark of *Hernandia nymphaeifolia*. Amorph. powder. $[\alpha]_D^{25}$ +34 (c, 0.11 in $CHCl_3$). λ_{max} 204 (log ϵ 4.77); 230 (log ϵ 4.43); 279 (log ϵ 4.07); 309 (sh) (log ϵ 3.74) (EtOH).

Chen, J.-J. *et al., Planta Med.*, 2001, **67**, 593-598

Nympheine N-348

Nymphaeine

$C_{14}H_{23}NO_2$ 237.341

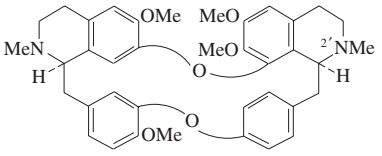
Struct. unknown. Alkaloid from the roots of *Nymphaea alba* (Nymphaeaceae). Amorph. Mp 76-77°.

Hydrochloride: Dec. at 230° without melting.

Bureš, E. *et al., Cas. Cesk. Lek.*, 1934, **14**, 129-135; *CA*, **28**, 5460 (*isol*)

Obaberine O-1

6,6′,7,12′-Tetramethoxy-2,2′-dimethyloxyacanthan, 9CI. O-*Methyloxyacanthine*
[1263-80-5]



$C_{38}H_{42}N_2O_6$ 622.76

Alkaloids in this entry have the 1*R*,1′*S*-configuration (Shamma-Moniot numbering convention; older CAS numbering put the primes on the opposite rings). Alkaloids in diastereomeric series are given in other entries; for enantiomeric alkaloids see Gyrolidine, G-235. Alkaloid from *Thalictrum lucidum*, *Thalictrum minus* Race B, *Thalictrum minus* var. *microphyllum*, *Thalictrum rugosum*, *Pycnarrhena longifolia*, *Berberis tschonoskyana*, *Berberis laurina*, *Dehaasia triandra*, *Mahonia repens* and *Albertisia papuana* (Ranunculaceae). Mp 139-140° Mp 199-200°. $[\alpha]_D^{26}$ +169 (c, 0.147 in MeOH). λ_{max} 280 (MeOH).

Hydrochloride (1:2):
Needles + $3H_2O$. Mp 260-261°.

Dipicrate:
Cryst. + $1H_2O$. Mp 178-180° dec.

$N^2,N^{2'}$*-Di-Me:*
Needles + $2H_2O$. Mp 256-258° dec.

N^2*-De-Me,* $N^{2'}$*-β-oxide:* ***2-Norobaberine 2′-β-N-oxide***
[149155-48-6]
$C_{37}H_{40}N_2O_7$ 624.732
Alkaloid from seeds of *Anisocycla cymosa* (Menispermaceae). Amorph. powder. $[\alpha]_D^{20}$ +158 (c, 0.31 in $CHCl_3$). λ_{max} 212 ; 284 (MeOH).

$N^{2'}$*-De-Me:* ***2′-Norobaberine***
[6016-52-0]
$C_{37}H_{40}N_2O_6$ 608.733
Alkaloid from the tubers of *Stephania pierrii* (Menispermaceae).

$O^{6'}$*-De-Me:* ***Stephibaberine***
[123930-97-2]
$C_{37}H_{40}N_2O_6$ 608.733
Alkaloid from the tubers of *Stephania pierrii* (Menispermaceae). $[\alpha]_D$ +207 (c, 0.17 in $CHCl_3$). λ_{max} 241 (sh) (log ϵ 4.36); 283 (log ϵ 4) (MeOH).

$O^{7'}$*-De-Me:* ***Homoaromoline****. Thalrugosamine. Homothalicrine.* N-*Methyldaphnandrine*
[17132-74-0]
$C_{37}H_{40}N_2O_6$ 608.733
Alkaloid from the stems of *Albertisia papuana* and *Abuta splendida*, the bark of *Doryphora aromatica*, the stems and roots of *Pycnarrhena longifolia* and *Arcangelisia flava*, the roots of *Thalictrum thunbergii, Thalictrum rugosum* and *Limaciopsis loangensis* and the tubers of *Stephania erecta* (Menispermaceae, Monimiaceae, Ranunculaceae). Cryst. (MeOH). Mp 235-237°. $[\alpha]_D^{19}$ +409 ($CHCl_3$). Epimer of Limacusine, L-175. Identity with Thalrugosamine established in 1984. λ_{max} 282 (log ϵ 3.91) (MeOH).

▶ MS9272000

$O^{7'}$*-De-Me,* N^2*-de-Me:* ***Daphnandrine****. 12-*O-*Methyldaphnoline*
[1183-76-2]
$C_{36}H_{38}N_2O_6$ 594.706
Alkaloid from the bark of *Daphnandra micrantha* and *Doryphora aromatica* (Monimiaceae). Cryst. ($CHCl_3$, MeOH or MeOH/Et_2O). Mp 280° (270° dec.). $[\alpha]_D^{16}$ +480 (c, 1.2 in $CHCl_3$). λ_{max} 284 (ϵ 8800) (MeOH) (Berdy).

O^{12}*-De-Me:* ***Oxyacanthine***
[548-40-3]
$C_{37}H_{40}N_2O_6$ 608.733
Alkaloid from a wide variety of *Berberis* and *Mahonia* spp., including *Berberis aquifolium*, *Berberis floribunda*, *Berberis integerrima*, *Berberis julianae*, *Berberis lambertii*, *Berberis oblonga*, *Berberis orthobotrys*, *Berberis thunbergii*, *Berberis tschonoskyana*, *Berberis vulgaris* (barberry), *Mahonia acanthifolia*, *Mahonia borealis*, *Mahonia fortunei*, *Mahonia griffithi*, *Mahonia leschenaultii*, *Mahonia manipurensis*, *Mahonia repens*, *Mahonia sikkimensis* and *Mahonia simonsii*; also occurs in *Albertisia papuana*, *Cocculus leaebe*, *Magnolia compressa*, *Thalictrum lucidum* and *Xanthorhiza simplicissima* (Berberidaceae, Menispermaceae, Magnoliaceae, Ranunculaceae). Shows antibacterial and antitubercular activity, and *in vitro* antineoplastic activity against HeLa-S_3 cells. Symphatholytic agent, adrenaline antagonist, vasodilator. Cryst. (petrol). Mp 212-214°. $[\alpha]_D^{29}$ +285.6 (c, 0.5 in $CHCl_3$). Log P 7.72 (uncertain value) (calc). Epimer of Repandine, R-46. λ_{max} 223 ; 283 (log ϵ 3.95) (MeOH) (Berdy).

▶ LD_{50} (mus, ipr) 50 mg/kg. RR6475000

O^{12}*-De-Me,* $N^{2'}$*-Me:* ***Oblongamine***
[63511-70-6]
[63504-42-7]
$C_{38}H_{43}N_2O_6^{\oplus}$ 623.767
Alkaloid from *Berberis oblonga* (Berberidaceae). Mp 198-200° (as iodide).

O^{12}*-De-Me,* N^2*-de-Me:* ***Sepeerine****. Ocoteamine. 7′-*O-*Methyldaphnoline*
[6787-93-5]
$C_{36}H_{38}N_2O_6$ 594.706
Alkaloid from the bark of *Ocotea rodiaei* (Lauraceae). Exhibits antiparasitic and cytotoxic activities. Platelets (MeOH). Mp 221.5-222.5°. $[\alpha]_D^{25}$ +392 (c, 0.29 in $CHCl_3$).

O^{12}*-De-Me,* $N^{2'}$*-de-Me:* ***2′-Noroxyacanthine***
$C_{36}H_{38}N_2O_6$ 594.706
Alkaloid from *Thalictrum cultratum*. Amorph. $[\alpha]_D$ +125 (c, 0.1 in MeOH).

$O^{6'},O^{12}$*-Di-de-Me:* ***Baluchistine***
[72154-62-2]
$C_{36}H_{38}N_2O_6$ 594.706
Alkaloid from *Berberis baluchistanica* (Berberidaceae). Cryst. (MeOH). Mp 222-224°. $[\alpha]_D^{26}$ +333 (c, 0.075 in MeOH). λ_{max} 283 (log ϵ 3.67) (EtOH).

$O^{7'},O^{12}$*-Di-de-Me:* ***Aromoline****. 2-*N-*Methyldaphnoline. Thalicrine*
[519-53-9]
Alkaloid from *Daphnandra aromatica*, *Daphnandra tenuipes*, *Doryphora aromatica*, *Triclisia patens*, *Thalictrum lucidum*, *Thalictrum thunbergii*, *Thalictrum rugosum, Berberis orthobotrys*, *Abuta splendida*, *Albertisia papuana* and *Pycnarrhena longifolia* (Monimiaceae, Menispermaceae, Ranunculaceae, Berberidaceae). Plates + $1CHCl_3$ or needles ($CHCl_3$). Mp 174-175° (solvate) Mp 198-202° (anhyd.). $[\alpha]_D^{22}$ +249.5 (c, 1.0 in Py). λ_{max} 208 (log ϵ 4.94); 228 (sh) (log ϵ 4.69); 285 (log ϵ 3.95) (MeOH).

▶ RR6425000

$O^{7'},O^{12}$*-Di-de-Me,* N^2*-de-Me:* ***Daphnoline***†*. Trilobamine*
[479-36-7]
$C_{35}H_{36}N_2O_6$ 580.679
Alkaloid from the bark of *Daphnandra micrantha*, *Daphnandra aromatica* and *Doryphora aromatica*, the roots and stems of *Pycnarrhena longifolia*, the stems of *Albertisia papuana*, and from *Cocculus trilobus* (Monimiaceae). Vasodilator, oedematous agent, CNS depressant and respiratory paralytic. Cryst. ($CHCl_3$). Mp 196-197°. $[\alpha]_D^{15}$ +356.6 (AcOH). λ_{max} 285 (log ϵ 3.95) (MeOH).

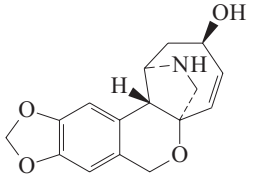
$O^{7'},O^{12}$*-Di-de-Me, di-*N*-de-Me:* ***N,N′-Bisnoraromoline***
[38962-93-5]
$C_{34}H_{34}N_2O_6$ 566.652
Alkaloid from leaves and stems of *Pycnarrhena ozantha* (Menispermaceae). Needles (Me_2CO). Sol. $CHCl_3$-MeOH; fairly sol. Me_2CO. Mp 206° (*in vacuo*). $[\alpha]_D^{25}$ +177 (c, 0.5 in 1M HCl). λ_{max} 285 (ϵ 7520) (EtOH).

Bick, I.R.C. *et al., J.C.S.*, 1949, 2767-2774; 1960, 4928-4931; 1961, 1896-1903 (*Daphnandrine, Daphnoline, Aromoline, isol, uv, pmr, struct*)
Fujita, E. *et al., Yakugaku Zasshi*, 1952, **72**, 213-216; *CA*, **47**, 6429a (*Obaberine, Oxyacanthine, struct, synth*)
Inubushi, Y. *et al., Pharm. Bull.*, 1955, **3**, 384-387 (*Trilobamine*)
Fujita, E. *et al., Bull. Inst. Chem. Res., Kyoto Univ.*, 1964, **42**, 235; *CA*, **62**, 5310 (*Aromoline, Homoaromoline*)
Hearst, P.J. *et al., J.O.C.*, 1964, **29**, 466-470 (*Sepeerine*)
Battersby, A.R. *et al., J.C.S.*, 1965, 2239-2247 (*Obaberine, Oxyacanthine, ord*)
Knapp, J.E. *et al., J. Pharm. Sci.*, 1967, **56**, 139-141 (*Oxyacanthine, uv, ir, pmr*)
Falco, M.R. *et al., Tet. Lett.*, 1968, 1953-1959 (*pmr*)
Loder, J.W. *et al., Aust. J. Chem.*, 1972, **25**, 2193-2197 (*Bisnoraromoline*)
Mitscher, L.A. *et al., Experientia*, 1972, **28**, 500 (*Thalrugosamine, uv, cd, pmr, ms*)
Baldas, J. *et al., J.C.S. Perkin 1*, 1972, 592-596 (*Obaberine, Oxyacanthine, ms*)
Kuroda, H. *et al., Chem. Pharm. Bull.*, 1976, **24**, 2413-2420 (*Oxyacanthine, pharmacol*)
Wu, W.-N. *et al., J. Nat. Prod.*, 1976, **39**, 378-379; 1978, **41**, 257-270; 1980, **43**, 143-150 (*Aromoline, Thalrugosamine, isol, synth*)
Saá, J.M. *et al., J.O.C.*, 1976, **41**, 317 (*Aromoline, Homoaromoline, ir, pmr, ms*)

Inubushi, Y. *et al., Chem. Pharm. Bull.*, 1977, **25**, 1636-1644 (*synth, pmr, ms*)
Karimov, A. *et al., Khim. Prir. Soedin.*, 1977, **13**, 80-83; *Chem. Nat. Compd. (Engl. Transl.)*, 1977, **13**, 68-70 (*Oblongamine*)
Bhakuni, D.S. *et al., J.C.S. Perkin 1*, 1978, 1318-1321 (*biosynth*)
Miana, G.A. *et al., Experientia*, 1979, **35**, 1137-1138 (*Baluchistine*)
Bick, I.R.C. *et al., Aust. J. Chem.*, 1980, **33**, 225-228 (*Aromoline, Daphnoline, Daphnandrine, Homoaromoline*)
Siwon, J. *et al., Phytochemistry*, 1981, **20**, 323 (*Aromoline, Homoaromoline, Daphnoline*)
Koike, L. *et al., J.O.C.*, 1982, **47**, 4351-4353 (*cmr*)
Nakova, E. *et al., Khim. Prir. Soedin.*, 1985, **21**, 86-91; 91-95; *Chem. Nat. Compd. (Engl. Transl.)*, 83-87; 88-91 (*synth*)
Herath, W.H.M.W. *et al., J. Nat. Prod.*, 1987, **50**, 721-725 (*2′-Noroxyacanthine*)
Tantisewie, B. *et al., J. Nat. Prod.*, 1989, **52**, 846-851 (*2′-Norobaberine, Stephibaberine*)
Kanyinda, B. *et al., J. Nat. Prod.*, 1993, **56**, 618-620 (*2-Norobaberine-2′-β-N-oxide*)
Sivý, J. *et al., Acta Cryst. C*, 1996, **52**, 1479-1482 (*Oxyacanthine, cryst struct*)
Schiff, P.L. *et al., J. Nat. Prod.*, 1997, **60**, 934-953 (*Thalrugosamine, pmr, cmr*)
Mahiou, V. *et al., Phytochemistry*, 2000, **54**, 709-716 (*Sepeerine, activity*)
Chen, C.-K. *et al., Chin. Pharm. J. (Taipei)*, 2003, **55**, 35-47 (*Aromoline, Daphnandrine, Daphnoline, Homoaromoline*)

Obesine O-2

[143114-83-4]

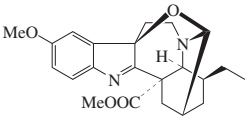


$C_{16}H_{17}NO_4$ 287.315
Alkaloid from aerial parts and bulbs of *Narcissus obesus* (Amaryllidaceae). $[\alpha]_D^{20}$ -5.6 (c, 0.69 in MeOH).

Viladomat, F. *et al., J. Nat. Prod.*, 1992, **55**, 804 (*isol, pmr, cmr, ms, struct*)

Obovamine O-3

[172670-51-8]



Absolute Configuration

$C_{22}H_{26}N_2O_4$ 382.458
Alkaloid from stem bark of *Stemmadenia obovata*. Amorph. $[\alpha]_D^{25}$ +134 (c, 0.10 in $CHCl_3$).

Madinaveitia, A. *et al., J. Nat. Prod.*, 1996, **59**, 185-189 (*isol, uv, ir, pmr, cmr, ms, struct*)

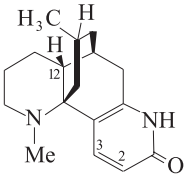
Obscuridine O-4

Struct. unknown. Alkaloid from the root bark of *Rauwolfia obscura* (Apocynaceae). Cryst. (EtOH). Mp 228° dec.

Roland, M. *et al., J. Pharm. Belg.*, 1959, **14**, 347-375; *CA*, **54**, 15834h

β-Obscurine O-5

[467-79-8]



Absolute configuration

$C_{17}H_{24}N_2O$ 272.389
Alkaloid from *Lycopodium selago*, *Lycopodium annotinum*, *Lycopodium flabelliforme* and *Lycopodium obscurum* var. *dendroideum* (Lycopodiaceae). Mp 322-323°.

Perchlorate: Mp 322° dec.

Picrate: Mp 254° dec.

N-*De-Me:* ***De*-N-*methyl-β-obscurine***
[107965-41-3]
$C_{16}H_{22}N_2O$ 258.363
Alkaloid from *Lycopodium obscurum* (Lycopodiaceae). Mp 290-293°. $[\alpha]_D$ -34 (c, 0.21 in MeOH).

2,3-Dihydro: ***α-Obscurine***
[596-55-4]
$C_{17}H_{26}N_2O$ 274.405
From *Lycopodium annotinum*, *Lycopodium clavatum*, *Lycopodium flabelliforme*, *Lycopodium obscurum* var. *dendroideum* and *Lycopodium selago* (Lycopodiaceae). Mp 283-284°.

2,3-Dihydro, picrate: Mp 135°.

2,3-Dihydro, N-*de-Me:* ***De*-N-*methyl-α-obscurine***
[34399-44-5]
$C_{16}H_{24}N_2O$ 260.378
Alkaloid from *Lycopodium clavatum*, *Lycopodium fawcettii*, *Lycopodium flabelliforme* and *Lycopodium alpinum* (Lycopodiaceae). Needles (Me_2CO). Mp 266-268°.

12-Hydroxy, 2,3-dihydro, N-*de-Me:* ***Hydroxy-de*-N-*methyl-α-obscurine***
$C_{16}H_{24}N_2O_2$ 276.378
Alkaloid from *Lycopodium flabelliforme*. Cryst. ($MeOH/Me_2CO$). Mp 300-305° dec.

12-Epimer, 2,3-dihydro: ***Sauroxine***
[3279-74-1]
$C_{17}H_{26}N_2O$ 274.405
From *Lycopodium saururus*. Mp 200-201°. $[\alpha]_D^{20}$ -72 (c, 0.79 in EtOH). pK_a 8.1 (50% MeOH).

Moore, B.P. *et al., Can. J. Chem.*, 1953, **31**, 952 (*isol, uv, ir*)
Ayer, W.A. *et al., Tetrahedron*, 1962, **18**, 567; 1965, **21**, 2169 (*isol, ir, pmr, struct, Sauroxine*)
Alam, S.N. *et al., Can. J. Chem.*, 1964, **42**, 2456 (*Hydroxy-de-N-methyl-α-obscurine*)
Schumann, D. *et al., Annalen*, 1983, 220 (*synth, α-Obscurine, De-N-methyl-α-obscurine*)
Ayer, W.A. *et al., Can. J. Chem.*, 1989, **67**, 1077 (*isol, pmr, ms, Des-N-methyl-β-obscurine*)

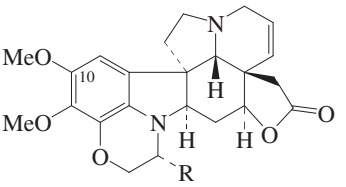
Obscurine† O-6

Struct. unknown. Alkaloid from the root bark of *Rauwolfia obscura* (Apocynaceae). Fine needles ($EtOH/NH_3$). Mp 255° dec. $[\alpha]_D^{21}$ +250.4 (c, 0.5 in $CHCl_3$).

Roland, M. *et al., J. Pharm. Belg.*, 1959, **14**, 347-375; *CA*, **54**, 15834h

Obscurinervidine O-7

[7168-67-4]



R = CH_3

$C_{24}H_{28}N_2O_5$ 424.496
Alkaloid from *Aspidosperma obscurinervium* (Apocynaceae). Cryst. (Me_2CO/hexane). Mp 206-207°. $[\alpha]_D^{25}$ -39 (c, 0.62 in $CHCl_3$).

14,15-Dihydro: ***Dihydroobscurinervidine***
$C_{24}H_{30}N_2O_5$ 426.511
From *Aspidosperma obscurinervium* (Apocynaceae). Mp 189-190° dec. $[\alpha]_D^{27}$ -44 (c, 0.85 in $CHCl_3$).

10-Demethoxy: ***Neblinine, 8CI***
[6872-64-6]
$C_{23}H_{26}N_2O_4$ 394.469
Alkaloid from *Aspidosperma neblinae* (Apocynaceae). Cryst. (hexane). Mp 256-258° dec. $[\alpha]_D^{27}$ -14 (c, 1.19 in $CHCl_3$).

Brown, K.S. *et al., J.A.C.S.*, 1964, **86**, 2451 (*Neblinine, isol, uv, ir, pmr, ms, struct*)
Kahrl, J. *et al., Tet. Lett.*, 1971, 2527 (*Obscurinervidine, cryst struct*)

Obscurinervine O-8

[7097-00-9]
As Obscurinervidine, O-7 with
R = CH_2CH_3

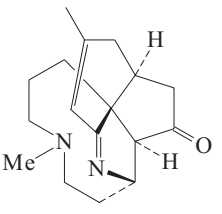
$C_{25}H_{30}N_2O_5$ 438.522
Alkaloid from *Aspidosperma obscurinervium* (Apocynaceae). Mp 203-205° dec. $[\alpha]_D^{27}$ -54 (c, 0.95 in $CHCl_3$).

14,15-Dihydro: ***Dihydroobscurinervine***
$C_{25}H_{32}N_2O_5$ 440.538
Alkaloid from *Aspidosperma obscurinervium* (Apocynaceae). Cryst. (Me_2CO/hexane). Mp 184-185° dec. $[\alpha]_D^{26}$ -61 (c, 0.92 in $CHCl_3$).

Brown, K.S. *et al., J.A.C.S.*, 1964, **86**, 2451 (*isol, uv, ir, pmr, ms, struct*)
Harper, J.K. *et al., J. Crystallogr. Spectrosc. Res.*, 1993, **23**, 1005 (*cryst struct, abs config, cmr*)
Harper, J.K. *et al., J.C.S. Perkin 2*, 1996, 91 (*pmr, cmr*)

Obscurinine O-9

[113883-30-0]

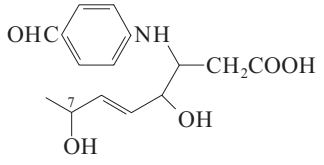


$C_{17}H_{24}N_2O$ 272.389
Alkaloid from *Lycopodium obscurum* (Lycopodiaceae). Off-white plates (Me_2CO/hexane). Mp 128-130° (124-125.2°). $[\alpha]_D$ +242 (c, 0.5 in MeOH). Possibly an artifact.

Hu, T. *et al., Tet. Lett.*, 1987, **28**, 5993 (*isol, ir, pmr, cmr, ms, cryst struct*)
Ayer, W.A. *et al., Can. J. Chem.*, 1989, **67**, 1077 (*isol, uv, ir, pmr, cmr, ms*)

Obscurolide $C_{2\alpha}$ O-10

[154272-84-1]

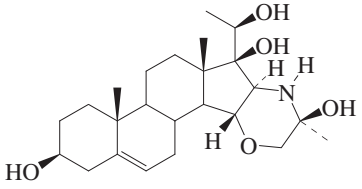


$C_{15}H_{19}NO_5$ 293.319
Prod. by *Streptomyces viridochromogenes*. Phosphodiesterase inhibitor. Yellow solid. Sol. MeOH, EtOH.

7-Epimer: ***Obscurolide $C_{2\beta}$***
[154334-89-1]
$C_{15}H_{19}NO_5$ 293.319
Prod. by *Streptomyces viridochromogenes*. Phosphodiesterase inhibitor. Yellow solid. Sol. MeOH, EtOH.

Ritzau, M. *et al., J. Antibiot.*, 1993, **46**, 1625-1628 (*isol, struct*)

Obtusine O-11

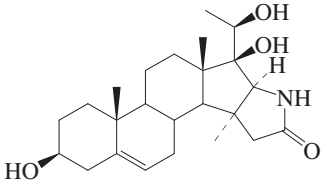


$C_{24}H_{39}NO_5$ 421.576

*3-*O*-[6-Deoxy-3-*O*-methyl-β-D-glucopyranosyl-(1→4)-2,6-dideoxy-3-*O*-methyl-β-D-*ribo*-hexopyranoside]:*
[263839-28-7]
$C_{38}H_{63}NO_{12}$ 725.915
Alkaloid from the roots of *Cryptolepis obtusa*. Powder.

Paulo, A. *et al., Phytochemistry*, 2000, **53**, 417-422

Obtusolactam O-12

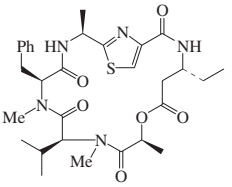


$C_{24}H_{37}NO_4$ 403.561
Parent not isol.

*3-*O*-[6-Deoxy-3-*O*-methyl-β-D-glucopyranosyl-(1→4)-2,6-dideoxy-3-*O*-methyl-β-D-*ribo*-hexopyranoside]:*
[263839-29-8]
$C_{38}H_{61}NO_{11}$ 707.9
Alkaloid from the roots of *Cryptolepis obtusa*. Powder.

Paulo, A. *et al., Phytochemistry*, 2000, **53**, 417-422

Obyanamide O-13

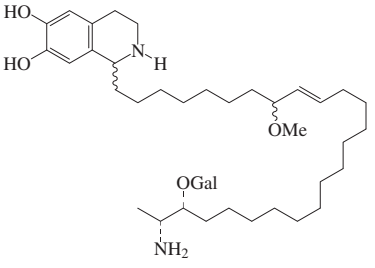


Absolute Configuration

$C_{30}H_{41}N_5O_6S$ 599.75
Depsipeptide antibiotic. Stereochem. revised in 2006. Isol. from *Lyngbya confervoides*. Cytotoxic. Powder. $[\alpha]_D^{27}$ +20 (c, 0.04 in MeOH). λ_{max} 210 (log ϵ 5.2); 222 (log ϵ 4.32) (MeOH).

Williams, P.G. *et al., J. Nat. Prod.*, 2002, **65**, 29-31 (*isol, pmr, cmr*)
Zhang, W. *et al., Tetrahedron*, 2006, **62**, 9966-9972 (*synth, struct*)

Oceanalin A O-14

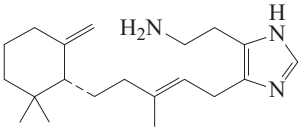


$C_{41}H_{72}N_2O_9$ 737.028
Isol. from the sponge *Oceanapia* sp. Antifungal agent. Amorph. solid. $[\alpha]_D$ -5.7 (c, 0.14 in EtOH). λ_{max} 238 (ϵ 7600); 288 (ϵ 7850) (MeOH).

Makarieva, T.N. *et al., Org. Lett.*, 2005, **7**, 2897-2900 (*isol, pmr, cmr*)

Oceanapamine O-15

[162857-98-9]

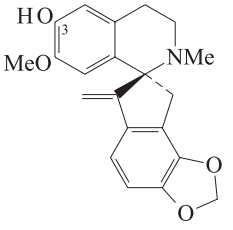


$C_{20}H_{33}N_3$ 315.501
Alkaloid from the Philippine sponge *Oceanapia* sp. Shows antimicrobial activity. Oil (as trifluoroacetate). $[\alpha]_D^{22}$ -6.4 (c, 3.1 in MeOH) (as trifluoroacetate). λ_{max} 202 (ϵ 14290); 220 (ϵ 6690) (MeOH) (Berdy).

Boyd, K.G. *et al., J. Nat. Prod.*, 1995, **58**, 302 (*isol, uv, ir, pmr, cmr, struct*)

Ochotensine O-16

*3′,4′,6,8-Tetrahydro-7′-methoxy-2′-methyl-6-methylenespiro[7*H*-indeno[4,5-*d*]-1,3-dioxole-7,1′(2′*H*)-isoquinolin]-6′-ol, 9CI. Alkaloid F17*



(*S*)–*form*

$C_{21}H_{21}NO_4$ 351.401

(S)-form [4959-88-0]
Alkaloid from *Corydalis ochotensis, Corydalis ochotensis* var. *raddeana, Corydalis sibirica, Corydalis solida, Corydalis vaginans* and *Dicentra cucullaria* (Papaveraceae). Prisms ($CHCl_3$). Mp 252°. $[\alpha]_D^{24}$ +51.7 (c, 0.2 in $CHCl_3$). $[\alpha]_D^{23}$ +63.9 (c, 2 in 0.1*M* HCl).
▶ LD_{50} (mus, ivn) 10600 µg/kg.
WH1312400

Methiodide:
Cryst. (MeOH). Mp 215°. Mp not well defined and depends on the rate of heating.

Me ether: ***Ochotensimine****. Alkaloid F48*
[4829-36-1]
$C_{22}H_{23}NO_4$ 365.428
Alkaloid from *Corydalis ochotensis, Corydalis ochotensis* var. *raddeana* and *Corydalis solida* (Papaveraceae). Syrup. $[\alpha]_D^{20}$ +46.3 (c, 0.54 in MeOH).

Me ether, hydroiodide: Mp 190°.

Me ether, perchlorate: Mp 172°.

Me ether, methiodide:
Cryst. (Et_2O/MeOH). Mp 225° dec. $[\alpha]_D^{22}$ +49.2 (c, 0.2 in MeOH).

O-*De-Me,* O^3*-Me:* ***Isoochotensine***
[112642-44-1]
$C_{21}H_{21}NO_4$ 351.401
Alkaloid from *Corydalis ochotensis* (Papaveraceae).

(±)-form [21008-78-6]
Synthetic. Prisms (Py/EtOH). Mp 241-243.5°.

Hydrochloride:
Cryst. (EtOH). Mp 205-212°.

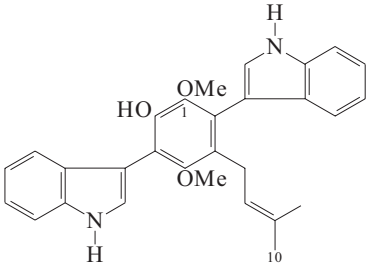
Me ether: [19893-94-8]
Synthetic. Oil; cryst. (as perchlorate). Mp 235-238° (perchlorate).

Manske, R.H.F. *et al., Can. J. Res., Sect. B*, 1936, **14**, 354; 1938, **16**, 81; 1940, **18**, 75 (*isol*)
McLean, S. *et al., Can. J. Chem.*, 1966, **44**, 2449 (*ir, ms, struct*)
MacDonald, A.C. *et al., J.C.S.(B)*, 1966, 929 (*cryst struct*)
Irie, H. *et al., J.C.S.(C)*, 1968, 3051 (*synth, pmr*)
Kelly, R.B. *et al., Can. J. Chem.*, 1969, **47**, 2501 (*synth, uv, ir*)
Shamma, M. *et al., Chem. Comm.*, 1972, 310 (*abs config*)
Holland, H.L. *et al., Can. J. Chem.*, 1974, **52**, 2818; 1979, **57**, 1588-1597 (*biosynth*)
Lu, S.T. *et al., J.C.S. Perkin 1*, 1976, 63 (*isol*)

Hughes, D.W. *et al., Can. J. Chem.*, 1977, **55**, 3304 (*cmr*)
Kametani, T. *et al., J.C.S. Perkin 1*, 1977, 390 (*isol*)
Manske, R.H.F. *et al., Can. J. Chem.*, 1978, **56**, 383 (*isol*)
Margvelashvili, N.N. *et al., Khim. Prir. Soedin.*, 1978, **14**, 592; *Chem. Nat. Compd. (Engl. Transl.)*, 1978, **14**, 509 (*occur*)
Wu, T.S. *et al., J. Chin. Chem. Soc. (Taipei)*, 1987, **34**, 157; *CA*, **108**, 72118r (*Isoochotensine*)
Meyers, A.I. *et al., Tet. Lett.*, 1997, **38**, 4195 (*synth, Isoochotensine*)

Ochrindole A O-17

[157414-83-0]



$C_{29}H_{28}N_2O_3$ 452.552
Isol. from the sclerotia of *Aspergillus ochraceus*. Shows moderate anti-insectan activity. $[\alpha]_D$ +9.2 (c, 0.13 in MeOH). λ_{max} 231 (ϵ 14000) (MeOH) (Berdy).

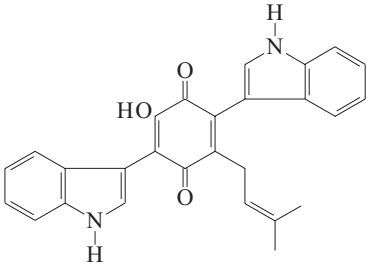
O^1-*De-Me:* ***Ochrindole C***
[157414-85-2]
$C_{28}H_{26}N_2O_3$ 438.525
From *Aspergillus ochraceus*.

10-Hydroxy: ***Ochrindole B***
[157414-84-1]
$C_{29}H_{28}N_2O_4$ 468.551
From *Aspergillus ochraceus*. Shows moderate anti-insectan activity. $[\alpha]_D$ +10 (c, 0.1 in MeOH). λ_{max} 225 (ϵ 25000); 284 (ϵ 9400) (MeOH) (Berdy).

De Guzman, F.S. *et al., J. Nat. Prod.*, 1994, **57**, 634 (*isol, uv, ir, pmr, cmr, ms, struct*)

Ochrindole D O-18

[157414-86-3]

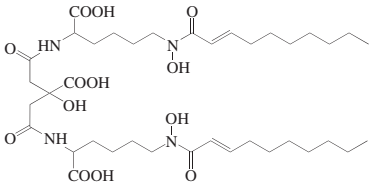


$C_{27}H_{22}N_2O_3$ 422.482
Alkaloid from the sclerotia of *Aspergillus ochraceus*. Shows moderate anti-insectan activity. λ_{max} 226 (ϵ 27000); 272 (ϵ 2000) (MeOH) (Berdy).

De Guzman, F.S. *et al., J. Nat. Prod.*, 1994, **57**, 634 (*isol, uv, ir, pmr, cmr, ms, struct*)

Ochrobactin C O-19

[906064-18-4]



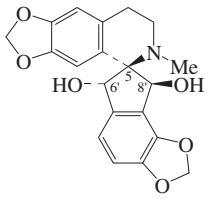
$C_{38}H_{64}N_4O_{13}$ 784.943
Isol. from *Ochrobactrum* sp. SP18 and *Vibrio* sp. DS40M5.

N-*Deacyl,* N-*octanoyl:* ***Ochrobactin B***
[906064-17-3]
$C_{36}H_{62}N_4O_{13}$ 758.905
Isol. from *Ochrobactrum* sp. SP18 and *Vibrio* sp. DS40M5.

N-*Deacyl,* N-*(2*E*-octenoyl):* ***Ochrobactin A***
[906064-16-2]
$C_{36}H_{60}N_4O_{13}$ 756.889
Isol. from *Ochrobactrum* sp. SP18. Siderophore.

Martin, J.D. *et al., J. Biol. Inorg. Chem.*, 2006, **11**, 633-641 (*isol, uv, pmr, cmr, ms*)

Ochrobirine, 9CI O-20



Absolute Configuration

$C_{20}H_{19}NO_6$ 369.373
Diastereoisomer of Severzinine, S-279.

(+)-form [24181-64-4]
Alkaloid from *Corydalis lutea, Corydalis ochroleuca, Corydalis sibirica* and *Corydalis vaginans* (Papaveraceae). Cryst. (MeOH or EtOH). Mp 204° (198°). $[\alpha]_D^{21}$ +35.9 (c, 0.4 in $CHCl_3$). Forms a methanolate, Mp 138-139°. λ_{max} 205 (log ϵ 4.8); 240 (log ϵ 3.94); 291 (log ϵ 3.91) (MeOH).

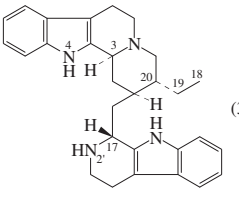
Di-Ac:
Cryst. (MeOH). Mp 179°.

N-*De-Me,* O^8-*Ac:* ***Lederine***
[76193-61-8]
$C_{21}H_{19}NO_7$ 397.384
Alkaloid from *Corydalis ledebouriana* and *Dicentra peregrina* (Papaveraceae). Mp 208-209°. $[\alpha]_D$ +13 (c, 0.84 in $CHCl_3$).

(±)-form [33805-02-6]
Synthetic. Cryst. (C_6H_6/hexane or MeOH). Mp 185-187° Mp 210° Mp 235° (prob. polymorph.).

Manske, R.H.F. *et al., Can. J. Res., Sect. B*, 1939, **17**, 89-94; 95-98 (*isol*)
Manske, R.H.F. *et al., Can. J. Chem.*, 1969, **47**, 3589-3592 (*uv, ir, pmr, struct*)
Kametani, T. *et al., Chem. Comm.*, 1971, 925-926 (*synth*)
Nalliah, B.C. *et al., Can. J. Chem.*, 1972, **50**, 1819-1824; 1979, **57**, 1545-1549 (*synth*)
Shamma, M. *et al., Chem. Comm.*, 1972, 310-311 (*uv, abs config*)
Margvelashvili, N.N. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1974, **10**, 848 (*isol*)
Mathew, M. *et al., Acta Cryst. B*, 1975, **31**, 2899-2901 (*cryst struct*)
Hughes, D.W. *et al., Can. J. Chem.*, 1977, **55**, 3304-3311 (*cmr*)
Israilov, I.A. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1980, **16**, 392-393 (*Lederine*)
Hanaoka, M. *et al., Chem. Pharm. Bull.*, 1982, **30**, 3446-3449 (*synth, ir, pmr, ms*)

Ochrolifuanines O-21



(3*S*,17*R*,20*R*)-*form*

$C_{29}H_{34}N_4$ 438.614

(3S,17R,20R)-form
Ochrolifuanine A
[35527-46-9]
Alkaloid from *Ochrosia lifuana*, *Ochrosia miana*, *Ochrosia confusa*, *Aspidosperma excelsum* and *Dyera costulata* (Apocynaceae). Also from *Strychnos potatorum*. Amorph. Sol. MeOH, $CHCl_3$, C_6H_6; poorly sol. H_2O, hexane. $[\alpha]_D^{20}$ +15 (c, 1 in EtOH). λ_{max} 228 (log ϵ 4.73); 284 (log ϵ 4.2); 291 (log ϵ 4.13) (MeOH).
▶ RC1224000

18,19-Didehydro: ***18-Dehydroochrolifuanine A***
$C_{29}H_{32}N_4$ 436.599
Isol. from the leaves of *Dyera costulata* (Apocynaceae). $[\alpha]_D$ +4 (c, 0.7 in EtOH). λ_{max} 226 ; 283 ; 290 (EtOH).

(3S,17S,20R)-form
Ochrolifuanine B
[35471-11-5]
Alkaloid from the leaves of *Ochrosia lifuana* and from *Ochrosia miana* (Apocynaceae). Amorph. $[\alpha]_D^{20}$ +0.1 (c, 1 in EtOH).
▶ RC1225000

N$^{2'}$-*Me:* ***Nigritanine****. 18,19-Dihydrousambarine*
[67657-99-2]
$C_{30}H_{36}N_4$ 452.641
Alkaloid from *Strychnos usambarensis*, *Strychnos nigritana*, *Strychnos potatorum* and *Strychnos barteri* (Loganiaceae). Shows cytotoxic and antimitotic activity. Cryst. (EtoAc/hexane). Mp 202-204°. Not correlated with Usambarine. λ_{max} 226 (log ϵ 4.76); 282 (log ϵ 4.16); 290 (log ϵ 4.09) (MeOH).

18,19-Didehydro, N$^{2'}$-*Me:* ***Usambarine****. 18,19-Dehydronigritanine*
[35226-29-0]
$C_{30}H_{34}N_4$ 450.625
Alkaloid from leaves of *Strychnos usambarensis*, also from *Strychnos nigritana*, *Strychnos barteri* and *Rauwolfia obscura* (Loganiaceae,

Apocynaceae). Microprisms (Et_2O) or cryst. (EtOAc/hexane). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 215-218° (block) Mp 226-228°. λ_{max} 226 (log ε 4.77); 282 (log ε 4.16); 290 (log ε 4.09) (MeOH).

10-Hydroxy, N$^{2'}$-Me: ***18,19-Dihydrousambaridine Vi****. 10-Hydroxy-18,19-dihydrousambarine. 10-Hydroxynigritanine*
[67658-02-0]
$C_{30}H_{36}N_4O$ 468.641
Alkaloid from leaves of *Strychnos barteri* and *Strychnos nigritana* (Loganiaceae). Cryst. (EtOAc). Mp 181-183°. OH group originally placed at the 12-posn. The Vi suffix refers to a violet colour reaction of the alkaloid. λ_{max} 226 (log ε 4.75); 282 (log ε 4.17); 290 (log ε 4.1); 310 (log ε 3.76) (MeOH).

10-Hydroxy, 18,19-didehydro, N$^{2'}$-Me: ***10-Hydroxyusambarine****. Usambaridine Vc. Usambaridine Vi. 10-Hydroxy-18,19-dehydronigritanine. 18-Dehydro-10-hydroxynigritanine*
[42814-43-7]
$C_{30}H_{34}N_4O$ 466.625
Alkaloid from leaves of *Strychnos usambarensis*, also from *Strychnos barteri*, *Strychnos nigritana* (Loganiaceae). Antimitotic agent. Cryst. (EtOAc/hexane). Mp 174-176°. OH group originally placed at the 12-posn.The Vc and Vi suffixes refer to colour reactions. λ_{max} 226 (log ε 4.74); 281 (log ε 4.2); 290 (log ε 4.12); 310 (log ε 3.76) (MeOH).

10-Hydroxy, 18,19-didehydro, N$^{2'}$,N^4-di-Me: ***N^4-Methyl-10-hydroxyusambarine***
[88607-20-9]
$C_{31}H_{37}N_4O^{\oplus}$ 481.659
Alkaloid from leaves and stem bark of *Strychnos usambarensis*.

10-Methoxy, 18,19-didehydro: ***Obscurifoline****. Alkaloid B1*
[55538-31-3]
$C_{30}H_{34}N_4O$ 466.625
Alkaloid from leaves of *Rauwolfia obscura* (Apocynaceae). Small cryst. Mp 160-162°. λ_{max} 226 (log ε 4.72); 280 (log ε 4.23); 289 (sh) (log ε 4.15); 307 (sh) (MeOH).

11-Hydroxy, N$^{2'}$-Me: ***18,19-Dihydrousambaridine Br****. 11-Hydroxy-18,19-dihydrousambarine*
[67658-01-9]
$C_{30}H_{36}N_4O$ 468.641
Alkaloid from leaves of *Strychnos usambarensis* (Loganiaceae). The Br subscript refers to a colour reaction of the alkaloid.

11-Hydroxy, 18,19-didehydro, N$^{2'}$-Me: ***Usambaridine Br****. 11-Hydroxyusambarine*
[67658-00-8]
$C_{30}H_{34}N_4O$ 466.625
Alkaloid from leaves of *Strychnos usambarensis* (Loganiaceae). The Br label refers to a colour reaction of the alkaloid.

11-Hydroxy, 18,19-didehydro, N$^{2'}$,N^4-di-Me: ***N^4-Methyl-11-hydroxyusambarine***
[88607-19-6]
$C_{31}H_{37}N_4O^{\oplus}$ 481.659
Alkaloid from leaves of *Strychnos usambarensis*.

(3*S*,17*S*,20*S*)-*form*
Ochrolifuanine C
51820-25-8]
Synthetic. $[\alpha]_D$ -62 (c, 1 in EtOH). λ_{max} 227 ; 283 ; 290 (EtOH).

(3*S*,17*R*,20*S*)-*form*
Ochrolifuanine D
51820-26-9]
Synthetic. $[\alpha]_D$ -23 (c, 1 in EtOH). λ_{max} 226 ; 282 ; 289 (EtOH).

(3*R*,17ξ,20ξ)(1)-*form*
Ochrolifuanine E
[87479-88-7]
Alkaloid from the leaves of *Dyera costulata* (Apocynaceae). Also from *Strychnos potatorum*. Active against gram-positive bacteria. $[\alpha]_D$ +50 (c, 0.86 in EtOH). λ_{max} 227 ; 283 ; 290 (EtOH) (Berdy).

18,19-Didehydro: ***18-Dehydroochrolifuanine E***
[87419-58-7]
$C_{29}H_{32}N_4$ 436.599
Isol. from the leaves of *Dyera costulata* (Apocynaceae). $[\alpha]_D$ +80 (c, 0.64 in EtOH).

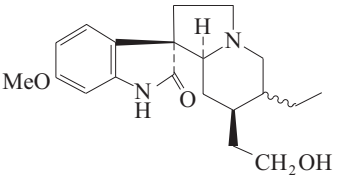
(3*R*,17ξ,20ξ)(2)-*form*
Ochrolifuanine F
[87479-89-8]
Alkaloid from the leaves of *Dyera costulata* (Apocynaceae). Active against gram-positive and -negative bacteria. $[\alpha]_D$ -37 (c, 0.92 in EtOH). λ_{max} 227 ; 283 ; 290 (EtOH) (Berdy).

18,19-Didehydro: ***18-Dehydroochrolifuanine F***
[87419-57-6]
$C_{29}H_{32}N_4$ 436.599
Isol. from the leaves of *Dyera costulata* (Apocynaceae). Active against gram-positive and gram-negative bacteria. $[\alpha]_D$ -57 (c, 1.06 in EtOH). λ_{max} 227 ; 283 ; 290 (EtOH) (Berdy).

Koch, M. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1971, **273**, 753-754 (*Usambarine, isol, uv, ir, pmr, struct*)
Peube-Locou, N. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1971, **273**, 905-906 (*Ochrolifuanines A,B, uv, ir, pmr, ms*)
Bruneton, J. *et al., Phytochemistry*, 1972, **11**, 2618 (*isol*)
Koch, M. *et al., Ann. Pharm. Fr.*, 1973, **31**, 45-48 (*Usambarine, isol, uv, ir, pmr, struct*)
Koch, M. *et al., Bull. Soc. Chim. Fr.*, 1973, 2868-2869 (*cd, struct*)
Préaux, N. *et al., Plant. Med. Phytother.*, 1974, **8**, 250-254; *CA*, **83**, 75339q (*isol*)
Koch, M. *et al., J.O.C.*, 1975, **40**, 2836-2838 (*cmr*)
Timmins, P. *et al., Planta Med.*, 1975, **27**, 105-111 (*Obscurifoline*)
Oguakwa, J.U. *et al., Gazz. Chim. Ital.*, 1978, **108**, 615-618 (*Strychnos nigritana constits*)
Coune, C. *et al., J. Pharm. Belg.*, 1978, **33**, 11-23; 284-286; 1982, **37**, 189-194 (*isol, cmr, struct, Strychnos usambarensis constits*)
Richard, C. *et al., Phytochemistry*, 1978, **17**, 539-541 (*Ochrolifuanines C,D, synth, uv, pmr, ms*)
Angenot, L. *et al., Phytochemistry*, 1978, **17**, 1687-1689 (*Usambarine, isol, uv, ir, pmr, ms, struct*)
Seguin, E. *et al., Planta Med.*, 1979, **37**, 175-177 (*Usambarine, synth, uv, ir, pmr, ms, struct*)
Nicoletti, M. *et al., Fitoterapia*, 1980, **51**, 131-134 (*Usambarine, Nigritanine, cmr*)
Caprasse, M. *et al., J. Pharm. Belg.*, 1983, **38**, 211-218; *CA*, **100**, 64988u (*N^4-Methyl-10-hydroxyusambarine, N^4-Methyl-11-hydroxyusambarine*)
Mirand, C. *et al., Phytochemistry*, 1983, **22**, 577-579 (*Dyera costulata constits*)
Caron, C. *et al., Planta Med.*, 1988, **54**, 409-412 (*activity*)
Quetin-Leclercq, J. *et al., Planta Med.*, 1991, **57**, 501 (*N^4-Methyl-10-hydroxyusambarine*)
Massiot, G. *et al., Phytochemistry*, 1992, **31**, 2873-2876 (*isol, Strychnos constits*)

Ochromianoxine O-22

[55322-95-7]

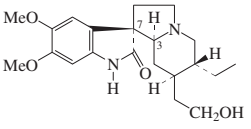


$C_{20}H_{28}N_2O_3$ 344.453
Alkaloid from the bark of *Ochrosia miana* (Apocynaceae). $[\alpha]_D^{20}$ +29 (c, 1 in EtOH). CAS assigns the 20-config. as 20*R*-, although it does not seem to have been determined. λ_{max} 226 (log ε 4.22); 258 (log ε 3.65); 285 (log ε 3.58); 294 (log ε 3.47) (EtOH).

Preaux, N. *et al., Phytochemistry*, 1974, **13**, 2607-2609 (*uv, ir, ms, cd, struct*)

Ochropposinine oxindole O-23

[77794-97-9]



Absolute Configuration

$C_{21}H_{30}N_2O_4$ 374.479
Alkaloid from the trunk bark of *Ochrosia moorei* (Apocynaceae). λ_{max} 217 ; 274 ; 304 (sh) (EtOH).

Ahond, A. *et al., J. Nat. Prod.*, 1981, **44**, 193-199 (*isol, uv, ir, pmr, ms, cd, struct*)

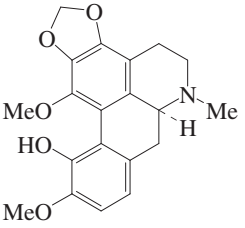
Ocodemerine O-24

$C_{37}H_{40}N_2O_6$ 608.733
Bisbenzylisoquinoline alkaloid. Struct. unknown. Alkaloid from the bark of *Nectandra rodiaei* (*Ocotea rodiaei*) (Lauraceae). Cryst. + $1.5H_2O$ (as dihydrochloride). Mp 275° (dihydrochloride). $[\alpha]_D$ -170 (c, 1.0 in H_2O) (dihydrochloride).

Hearst, P.J. *et al., J.O.C.*, 1964, **29**, 466 (*isol*)

Ocokryptine O-25

11-Hydroxy-1,10-dimethoxy-2,3-methylenedioxyaporphine
[19893-96-0]



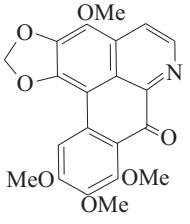
$C_{20}H_{21}NO_5$ 355.39
Alkaloid from an unidentified *Ocotea* sp. (Lauraceae). Cryst. (Et_2O). Mp 160-161°. $[\alpha]_D^{27}$ +164 (c, 0.4 in $CHCl_3$).

Me ether: 1,10,11-Trimethoxy-2,3-methylenedioxyaporphine
Mp 170-171°. $[\alpha]_D^{27}$ +156 (c, 1.1 in $CHCl_3$).

Cava, M.P. *et al., Tet. Lett.*, 1968, 2437 (*uv, pmr, struct*)

Ocominarone O-26

*4,9,10,11-Tetramethoxy-8*H*-benzo[*g*]-1,3-benzodioxolo[6,5,4-*de*]quinolin-8-one, 9CI*
[72170-13-9]

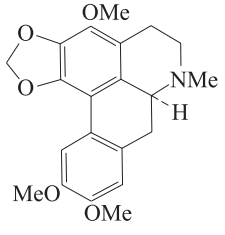


$C_{21}H_{17}NO_7$ 395.368
Alkaloid from the leaves of *Ocotea minarum* (Lauraceae). Mp 268-270°.

Vecchietti, V. *et al., Farmaco, Ed. Sci.*, 1979, **34**, 829 (*isol, uv, pmr, ms, struct*)

Ocoteine O-27

3,9,10-Trimethoxy-1,2-methylenedioxyaporphine. Thalicmine



(*S*)–*form*

$C_{21}H_{23}NO_5$ 369.416

(*S*)-*form* [3246-21-7]
Alkaloid from *Ocotea puberula* and *Thalictrum minus* (Lauraceae, Ranunculaceae). Antitussive, hypotensive, spasmolytic and adrenolytic agent in exptl. animals. Also shows antimicrobial and antiinflammatory activity. Mp 140-142°. $[\alpha]_D$ +33.3 (c, 1.02 in $CHCl_3$).

Hydroiodide: Mp 198-200°. $[\alpha]_D^{28}$ +22 (c, 0.215 in 50% EtOH).

N-*De-Me: 3,9,10-Trimethoxy-1,2-methylenedioxynoraporphine.* **O-*Methylcassyfiline*.** *Northalicmine*
[3984-10-9]
$C_{20}H_{21}NO_5$ 355.39
Alkaloid from *Cassytha filiformis* and *Thalictrum strictum* (Lauraceae, Ranunculaceae). Cryst. (Et_2O). Mp 150-152°. $[\alpha]_D^{15}$ +16.4 (c, 1 in $CHCl_3$).

O^9-*De-Me: 9-Hydroxy-3,10-dimethoxy-1,2-methylenedioxyaporphine*
Mp 210-211°. $[\alpha]_D^{21}$ +24.6 (c, 0.63 in $CHCl_3$).

O^9-*De-Me,* N-*de-Me: 9-Hydroxy-3,10-dimethoxy-1,2-methylenedioxynoraporphine.* ***Cassyfiline***. *Cassythine*
[4030-51-7]
$C_{19}H_{19}NO_5$ 341.363
Alkaloid from *Cassytha filiformis* (*Cassytha americana*) (Lauraceae). Cryst. ($CHCl_3$/EtOH). Mp 217-219° dec. $[\alpha]_D$ +24 (c, 0.56 in $CHCl_3$).

O^9-*De-Me,* N-*de-Me,* N-*(methoxycarbonyl):* ***Cathaformine***. N-*Methoxycarbonylcassyfiline*
$C_{21}H_{21}NO_7$ 399.399
Alkaloid from *Cassytha filiformis* (Lauraceae). Amorph. brown powder. Mp 122-124°. $[\alpha]_D$ +116.4 (c, 0.06 in $CHCl_3$). λ_{max} 237 ; 286 ; 307 (EtOH).

*6*a,*7-Didehydro:* ***Dehydroocoteine***. *Dehydrothalicmine. Didehydroocoteine*†
[38366-01-7]
$C_{21}H_{21}NO_5$ 367.401
Alkaloid from the bark of *Ocotea puberula* and the roots of *Thalictrum isopyroides*. Also present in the bark of *Nectandra saligna* (Lauraceae, Ranunculaceae). Shows antiplasmodial and amoebicide activities. Mp 203-204° (190-191°).

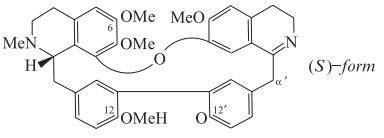
*4,5,6*a,*7-Tetradehydro: 4,10,11-Trimethoxy-7-methyl-5*H*-benzo[*g*]-1,3-benzodioxolo[6,5,4-*de*]quinoline.* ***Didehydroocoteine***†. *Tetradehydroocoteine*
[38366-02-8]
$C_{21}H_{19}NO_5$ 365.385
Alkaloid from *Ocotea puberula* (Lauraceae).

(±)-*form*
Hydroiodide: Mp 225°.

Iacobucci, G.A. *et al., Cienc. Invest.*, 1951, **7**, 48 (*Ocoteine, isol*)
Vernengo, M.J. *et al., Experientia*, 1963, **19**, 294 (*Ocoteine, struct*)
Govindachari, T.R. *et al., Tetrahedron*, 1964, **20**, 2895 (*Ocoteine, synth, uv, ir, pmr*)
Tomita, M. *et al., Yakugaku Zasshi*, 1965, **85**, 827 (*Cassyfiline*)
Johns, S.R. *et al., Aust. J. Chem.*, 1966, **19**, 297 (*Cassyfiline, isol, uv, pmr, struct*)
Cava, M.P. *et al., J.O.C.*, 1968, **33**, 2443 (*O-Methylcassyfiline*)
Ismailov, Z.F. *et al., Khim. Prir. Soedin.*, 1968, **4**, 196; *Chem. Nat. Compd. (Engl. Transl.)*, 1968, **4**, 169 (*Ocoteine, ms*)
Maekh, S.Kh. *et al., Khim. Prir. Soedin.*, 1971, **7**, 381; 1976, **12**, 560; *Chem. Nat. Compd. (Engl. Transl.)*, 1971, **7**, 363; 1976, **12**, 507 (*Dehydroocoteine, O-Methylcassyfiline*)
Baralle, F. *et al., Experientia*, 1972, **28**, 875 (*Dehydroocoteine, Didehydroocoteine*)
Gorovoi, P.G. *et al., Khim. Prir. Soedin.*, 1975, **11**, 533; *Chem. Nat. Compd. (Engl. Transl.)*, 1975, **11**, 568 (*O-Methylcassyfiline*)
Ringdahl, B. *et al., J. Nat. Prod.*, 1981, **44**, 80 (*cd*)
Dickman, D.A. *et al., Tet. Lett.*, 1986, **27**, 1465 (*synth*)
Wu, Y.C. *et al., Phytochemistry*, 1997, **46**, 181 (*Cathaformine*)
Nimgirawath, S. *et al., Aust. J. Chem.*, 2000, **53**, 527-529 (*Cathaformine, synth*)
Wright, C.W. *et al., J. Nat. Prod.*, 2000, **63**, 1038-1040 (*Dehydroocoteine, activity*)
Stévigny, C. *et al., Planta Med.*, 2002, **68**, 1042-1044 (*isol, pmr, cmr*)

Ocotosine O-28

[18529-51-6]



(*S*)–*form*

$C_{37}H_{38}N_2O_6$ 606.717

(*S*)-*form*
Alkaloid from the seeds of *Ocotea rodiaei* (*Nectandra rodiaei*) (Lauraceae). Plates (Me_2CO). $[\alpha]_D^{24}$ +291 (c, 1.0 in $CHCl_3$). The probable (*S*)-config. is assigned here on the basis of its (+)ve opt. rotn. (see Saez *et al*).

O^{12}-*De-Me,* $O^{12'}$-*Me:* ***Guattamine***
[116064-69-8]
$C_{37}H_{38}N_2O_6$ 606.717
Alkaloid from the stem bark of *Guatteria guianensis* (Annonaceae). $[\alpha]_D$ +142 (c, 0.67 in $CHCl_3$). Exists in $CDCl_3$ soln. as a 70:30 mixt. of two conformers.

α′-*Ketone,* O^{12}-*de-Me,* $O^{12'}$-*Me:* ***Guattaminone***
[116084-91-4]
$C_{37}H_{36}N_2O_7$ 620.701
Alkaloid from the stem bark of *Guatteria guianensis* (Annonaceae). $[\alpha]_D$ +78 (c, 0.26 in $CHCl_3$).

(*R*)-*form*
O^6-*De-Me:* ***Cordobimine***
[121892-86-2]
$C_{36}H_{36}N_2O_6$ 592.69
Alkaloid from the stem bark of an unidentified *Cremastosperma* sp. (Annonaceae). Amorph. $[\alpha]_D^{20}$ -185 (c, 0.5 in $CHCl_3$).

Chan, K.C. *et al., J.C.S.(C)*, 1967, 2479 (*Ocotosine*)
Berthou, S. *et al., Tetrahedron*, 1988, **44**, 2193 (*Guattamine, Guattaminone*)
Saez, J. *et al., Can. J. Chem.*, 1989, **67**, 275 (*Cordobimine*)

2,4-Octadecadienoic acid O-29

[76282-17-2]
$H_3C(CH_2)_{12}CH{=}CHCH{=}CHCOOH$
$C_{18}H_{32}O_2$ 280.45

(2*E*,4*E*)-*form* [59404-49-8]

Me ester: [86120-41-4]
$C_{19}H_{34}O_2$ 294.476
Oil.

2-Methylpropylamide: **N-*Isobutyl-2,4-octadecadienamide***
[54794-70-6]
$C_{22}H_{41}NO$ 335.572
Constit. of *Piper guineense* fruits and whole plants of *Piper argyrophyllum*. Mp 78-80° Mp 92-94°.

(2*E*,4*Z*)-*form*

2-Methylpropylamide: ***Pipericine***
$C_{22}H_{41}NO$ 335.572
Constit. of the fruit of *Piper nigrum* (pepper). Oil. λ_{max} 257 (EtOH).

(2ξ,4ξ)-*form*

Pyrrolidide: ***2,4-Octadecadienoic acid pyrrolidide***
[102934-33-8]
$C_{22}H_{39}NO$ 333.556
Constit. of leaves and fruit of *Piper guineense*.

Piperidide: ***2,4-Octadecadienoic acid piperidide***
[151391-73-0]
$C_{23}H_{41}NO$ 347.583
Isol. from the leaves and fruit of *Piper guineense*.

Okogun, J.I. *et al., J.C.S. Perkin 1*, 1974, 2195 (*isol, ms*)
Vig, O.P. *et al., Indian J. Chem.*, 1975, **13**, 1358 (*synth, deriv*)
Akimoto, A. *et al., Angew. Chem., Int. Ed.*, 1981, **20**, 90 (*synth*)
Cardillo, G. *et al., Tetrahedron*, 1986, **42**, 917 (*deriv, synth, ir, pmr, cmr, ms*)
Baneriji, A. *et al., Indian J. Chem., Sect. B*, 1988, **27**, 163 (*isol, uv, ir, pmr*)
Strunz, G.M. *et al., Can. J. Chem.*, 1996, **74**, 419 (*synth, isobutylamide*)
Siddiqui, B.S. *et al., Phytochemistry*, 1997, **45**, 1617 (*Pipericine*)
Adesina, S.K. *et al., Pharmazie*, 2003, **58**, 423-425 (*pyrrolidide, piperidide*)

2,12-Octadecadienoic acid O-30

$H_3C(CH_2)_4CH{=}CH(CH_2)_8CH{=}CHCOOH$

$C_{18}H_{32}O_2$ 280.45

(2*E*,12*Z*)-*form*

4-Methylpentylamide: N-*(4-Methylpentyl)-2,12-octadecadienamide.* ***Pipzorine***
[622405-49-6]
$C_{24}H_{45}NO$ 363.626
Alkaloid from the dried seeds of *Piper nigrum*. Amorph. powder. λ_{max} 209 (ε 6160) (MeOH).

Siddiqui, B.S. *et al., Helv. Chim. Acta*, 2003, **86**, 2760-2767 (*Pipzorine*)

2,4,8,10,12,16-Octadecahexaenoic acid O-31

$H_3CCH{=}CHCH_2CH_2CH{=}CHCH{=}CHCH{=}CHCH_2CH_2CH{=}CHCH{=}CHCOOH$

$C_{18}H_{24}O_2$ 272.386

2-Methylpropylamide: 2,4,8,10,12-Octadecapentaenoic isobutylamide. ***Heliopsin***
$C_{22}H_{33}NO$ 327.509
Isol. from seeds of *Heliopsis helianthoides* var. *scabra*. Light-yellow viscous oil. $Bp_{0.08}$ 198-200° part dec. Struct. not certain.

Jacobson, M. *et al., J.A.C.S.*, 1957, **79**, 356

Octadecanoic acid, 9CI O-32

Stearic acid. Bassinic acid. Lactaric acid. Stearophanic acid. Talgic acid. FEMA 3035
[57-11-4]
$H_3C(CH_2)_{16}COOH$
$C_{18}H_{36}O_2$ 284.481
Manuf. by hydrolysis of fats and oils. Constit. of most vegetable and animal fats, including the lipids of *Physalia physalis* (Portuguese-man-of-war). Acid and derivatives widely used as additives to industrial preparations. Used as EtOH soln. for nephelometric detn. of Ca. Used (with heptadecanoic acid) for amino acid sequencing in peptides. Used for surfactants, soaps and plasticisers. Pharmaceutical excipient (tablet lubricant; Ca and Mg salts are used similarly). Leaflets. Sol. EtOH, C_6H_6, $CHCl_3$; sl. sol. H_2O. Mp 69.7°. Bp 386° Bp_5 213°. Polymorphic, at least 4 cryst. forms are known.

▶ Skin irritant. Fl. p. 196°, autoignition temp. 395°. WI2800000

Amide: Octadecanamide. Stearamide. Amide C-18. Hidorin M7. Kemamide S
[124-26-5]
$C_{18}H_{37}NO$ 283.496
Alkaloid from *Zostera marina* (Zosteraceae) and *Rhizoclonium hieroglyphicum*. Cryst. (EtOH). Mp 109°. Bp_{12} 250-251°.

▶ RG0182000

[4568-28-9 , 593-29-3]

Kawasaki, W. *et al., Phytochemistry*, 1998, **47**, 27-29 (*amide*)

2,4,12-Octadecatrienoic acid O-33

$H_3C(CH_2)_4CH{=}CH(CH_2)_6CH{=}CHCH{=}CHCOOH$

$C_{18}H_{30}O_2$ 278.434

(2*E*,4*E*,12*Z*)-*form*

2-Methylpropylamide: 2,4,12-Octadecatrienoic acid isobutylamide. N-*Isobutyl-2,4,12-octadecatrienamide*
[151391-69-4]
$C_{22}H_{39}NO$ 333.556
Alkaloid from *Piper retrofractum* (Javanese long pepper). Oil. λ_{max} 263 (log ε 4.04) (MeOH).

4-Methylpentylamide: N-*(4-Methylpentyl)-2,4,12-octadecatrienamide.* ***Pipnoohine***
$C_{24}H_{43}NO$ 361.61
Alkaloid from the fruit of *Piper nigrum* (pepper). Amorph. powder. λ_{max} 261 (ε 24500) (MeOH).

Piperidide: 2,4,12-Octadecatrienoic acid piperidide. 1-(2,4,12-Octadecatrienoyl)piperidine
[151391-71-8]
$C_{23}H_{39}NO$ 345.567
Alkaloid from *Piper retrofractum* (Javanese long pepper).

Kikuzaki, H. *et al., Biosci., Biotechnol., Biochem.*, 1993, **57**, 1329-1333 (*isol, amides*)
Siddiqui, B.S. *et al., Chem. Pharm. Bull.*, 2004, **52**, 1349-1352 (*Pipnoohine*)

2,4,14-Octadecatrienoic acid O-34

[25448-03-7]

$H_3CCH_2CH_2CH{=}CH(CH_2)_8CH{=}CHCH{=}CHCOOH$

$C_{18}H_{30}O_2$ 278.434

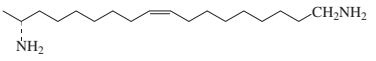
(2*E*,4*E*,14*Z*)-*form*

Piperidide: ***Piperoctadecalidine***
[144525-15-5]
$C_{23}H_{39}NO$ 345.567
Alkaloid from fruits of *Piper retofractum* (Piperaceae). Oil.

Ahn, J.W. *et al., Phytochemistry*, 1992, **31**, 3609

9-Octadecene-1,17-diamine, 9CI O-35

1,17-Diamino-9-octadecene



Absolute Configuration

$C_{18}H_{38}N_2$ 282.512

(9*Z*,17*R*)-*form*
Harmonine
Defence alkaloid from *Harmonia leis conformis* and other ladybug spp. Yellow oil. $[\alpha]_D$ -3.9 (c, 1 in C_6H_6) (>97%ee).

Braconnier, M.F. *et al., Experientia*, 1985, **41**, 519-521 (*isol*)
Enders, D. *et al., Annalen*, 1991, 569-574 (*synth*)

2-Octadecenoic acid O-36

[5340-63-6]

$H_3C(CH_2)_{14}CH{=}CHCOOH$

$C_{18}H_{34}O_2$ 282.465

(*E*)-*form* [2825-79-8]
Cryst. (EtOH or petrol). Mp 58.5°.

Me ester: [14663-11-7]
$C_{19}H_{36}O_2$ 296.492
Mp 36°.

Et ester: [97975-07-0]
$C_{20}H_{38}O_2$ 310.519
Cryst. (MeOH). Mp 25-26°. Bp 360°.

Amide:
$C_{18}H_{35}NO$ 281.481
Cryst. (EtOH). Mp 107-108°.

Piperidide: 1-(1-Oxo-2-octadecenyl)piperidine, 9CI. N-*(2-Octadecenoyl)piperidine.* ***Pipercitine***
[74267-81-5]
$C_{23}H_{43}NO$ 349.599
Alkaloid from the dried seeds of black pepper (*Piper nigrum*). Amorph. powder. λ_{max} 210 (ε 6450) (MeOH).

(*Z*)-*form* [2825-66-3]
Cryst. (petrol). Mp 50.5°.

Barve, J.A. *et al., Chem. Phys. Lipids*, 1971, **7**, 311-323 (*E-form, Z-form, synth*)

Davies, J.E.D. *et al., J.C.S. Perkin 2*, 1972, 1557-1561 (*ir, Raman*)
Howton, D.R. *et al., Org. Prep. Proced. Int.*, 1974, **6**, 175-178 (*E-form, synth*)
Gunstone, F.D. *et al., Chem. Phys. Lipids*, 1977, **18**, 115-129 (*cmr*)
Plate, M. *et al., Synthesis*, 1998, 1255-1258 (*Et ester*)
Siddiqui, B.S. *et al., Heterocycles*, 2002, **57**, 1653-1658 (*Pipercitine*)

9-Octadecenoic acid, 9CI O-37

[2027-47-6]
[26764-26-1]

$H_3C(CH_2)_7CH{=}CH(CH_2)_7COOH$
$C_{18}H_{34}O_2$ 282.465
Present in lipids of *Physalia physalis* (Portuguese-man-of-war).

(*E*)-*form*
Elaidic acid
[112-79-8]
[27251-59-8]
Minor constit. of plant oils. Cryst. (EtOH). Mp 45-45.5°. Bp_{15} 234° $Bp_{0.8}$ 180-185°. Dimorphic.
► LD_{50} (mus, ivn) 100 mg/kg. JX6125000
Amide: Elaidamide
[4303-70-2]
$C_{18}H_{35}NO$ 281.481
Cryst. (C_6H_6). Mp 93-94°.

(*Z*)-*form*
Oleic acid. Rapinic acid. Pamolyn 100. MYX 6121. FEMA 2815
[112-80-1]
[27104-13-8]
Major constit. of plant oils e.g. olive oil (*ca.* 80%), almond oil (*ca.* 80%) and many others, mainly as glyceride. Constit. of tall oil and present in fruits. Food additive. Used in manuf. of surfactants, soaps, plasticisers. Emulsifying agent in foods and pharmaceuticals. Skin penetrant. Herbicide, insecticide, fungicide. Oil. Insol. H_2O; sol. EtOH, Et_2O. d_4^{20} 0.9. Mp 12° (labile form) Mp 16° (stable form). Bp_5 203-205°. n_D^{20} 1.4595. Log P 7.75 (uncertain value) (calc). ^{125}I and ^{131}I labelled cpds. are used as radioactive agents (Oleotope). Undergoes BF_3-catalysed dimerisation.
► Skin irritant. LD_{50} (rat, orl) 74000 mg/kg. RG2275000
Amide: Oleamide. Kemamide O
[301-02-0]
$C_{18}H_{35}NO$ 281.481
Isol. from the cerebrospinal fluid of humans, cats and rats. Isol. from lichen *Stereocaulon alpinum* and from *Desmos cochinchinensis*. Sleep inducer. Shows activity against cyclooxygenase. Cannabinoid CB_1 receptor agonist. TRPV1 vanilloid receptor activator. Vasodilator. Scales (EtOH). Sol. MeOH. Mp 75-76°.

[2717-15-9 , 1555-53-9 , 557-07-3 , 142-17-6 , 2462-84-2 , 10402-16-1 , 544-60-5 , 688-37-9]

Lerner, R. *et al., Science (Washington, D.C.)*, 1995, **268**, 1506 (*isol, amide*)
Ingolfsdottir, K. *et al., Phytomedicine*, 1997, **4**, 331-334; *CA*, **128**, 158800g (*Oleamide, activity*)

2,4-Octadien-1-amine O-38

1-Amino-2,4-octadiene
$H_3CCH_2CH_2CH{=}CHCH{=}CHCH_2NH_2$
$C_8H_{15}N$ 125.213

(*E*,*E*)-*form*
N-*(2*R*-Hydroxyheptyl)*: ***Pseudodistamine***
[356522-64-0]
$C_{15}H_{29}NO$ 239.4
Isol. from a *Pseudodistoma* sp. Gum. $[\alpha]_D$ -3 (c, 0.1 in MeOH). λ_{max} 225 (log ϵ 3.72) (MeOH).
Rashid, M.A. *et al., Tetrahedron*, 2001, **57**, 5751-5755 (*Pseudodistamine, isol, pmr, cmr, uv*)

2,4-Octadienoic acid, 9CI O-39

[90435-12-4]
$H_3CCH_2CH_2CH{=}CHCH{=}CHCOOH$
$C_8H_{12}O_2$ 140.182

(2*E*,4*E*)-*form* [22329-75-5]
Leaflets (petrol). Mp 76°.
Me ester: [74418-28-3]
$C_9H_{14}O_2$ 154.208
Bp_{15} 101°.
Amide: 2,4-Octadienamide
[205311-23-5]
$C_8H_{13}NO$ 139.197
Alkaloid from *Phyllanthus fraternus*. Cryst. Mp 136-137°. λ_{max} 276 (log ϵ 4.44) (MeOH). λ_{max} 276 (ϵ 27540) (MeOH) (Berdy).
2-Methylpropylamide: **N-*Isobutyl-2,4-octadienamide***. N-*(2-Methylpropyl)-2,4-octadienamide. 2,4-Octadienoic acid isobutylamide*
[23512-47-2]
$C_{12}H_{21}NO$ 195.304
Alkaloid from the wood of *Piper novae-hollandiae* and from the leaves and stems of *Piper banksii* (Piperaceae). Cryst. (petrol). Mp 94° (88-90°).

(2*E*,4*Z*)-*form* [68676-76-6] Has been synthesised.
Et ester: [39924-38-4]
$C_{10}H_{16}O_2$ 168.235
Liq. $Bp_{0.05}$ 53°.
2-Methylpropylamide: [99615-85-7]
[100452-77-5]
Constit. of *Acmella ciliata*.

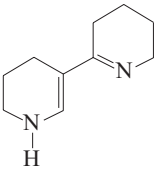
(2*Z*,4*E*)-*form*
2-Phenylethylamide: N-*(2-Phenyethyl)-2,4-octadienamide. 2,4-Octadienoic acid 2-phenylethylamide*
[99615-86-8]
$C_{16}H_{21}NO$ 243.348
Constit. of *Acmella ciliata*.

[108965-85-1 , 39924-38-4 , 60388-61-6 , 64713-73-1 , 88738-80-1 , 108965-83-9 , 39924-43-1 , 81798-18-7]

Jacobson, M. *et al., J.A.C.S.*, 1956, **78**, 5084 (*synth, uv*)
Loder, J.W. *et al., Aust. J. Chem.*, 1969, **22**, 1531 (*isobutylamide*)
Loder, J.W. *et al., Phytochemistry*, 1972, **11**, 2645 (*isobutylamide*)
Baumann, M. *et al., Synthesis*, 1977, 681 (*synth*)
Sakai, T. *et al., J.O.C.*, 1982, **47**, 1101 (*synth, ir, pmr, cmr*)
Tsuboi, S. *et al., J.O.C.*, 1982, **47**, 4478 (*synth, ir, pmr, cmr*)
Martin, R. *et al., Phytochemistry*, 1985, **24**, 2295-2300 (*phenylethylamides*)
Concepcion, A.B. *et al., Tetrahedron*, 1995, **51**, 4011 (*synth, pmr*)
Bellina, F. *et al., Synth. Commun.*, 1996, **26**, 3297 (*Me ester*)
Sittie, A.A. *et al., Planta Med.*, 1998, **64**, 192-193 (*isol, amide*)

1′,3,4,4′,5,5′,6,6′-Octahydro-2,3′-bipyridine, 9CI, 8CI O-40

Hystrine
[18017-50-0]
[18017-52-2]

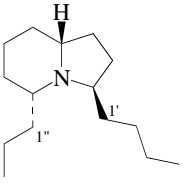


$C_{10}H_{16}N_2$ 164.25
Alkaloid from *Lupinus formosus, Genista hystrix* and *Genista hystrix* spp. *legionensis* (Fabaceae). Prisms (MeOH/Me_2-CO)(as hydrochloride). Mp 209° (hydrochloride).

N-*Ac:* **N-*Acetylhystrine***
$C_{12}H_{18}N_2O$ 206.287
Alkaloid in *Lupinus formosus* (Fabaceae). Oil, rapidly yellowing in air.
Steinegger, E. *et al., Pharm. Acta Helv.*, 1967, **42**, 177 (*isol*)
Steinegger, E. *et al., Helv. Chim. Acta*, 1968, **51**, 206 (*synth, ir, uv*)
Steinegger, E. *et al., Pharm. Acta Helv.*, 1970, **45**, 157; *CA*, **72**, 97301w (*biosynth*)
Fitch, W.L. *et al., J.A.C.S.*, 1974, **96**, 4917 (*ms*)
Fitch, W.L. *et al., J.O.C.*, 1974, **39**, 2974 (*N-Acetylhystrine*)

Octahydro-3-butyl-5-propyl-1*H*-indolizine O-41

3-Butyl-5-propylindolizidine. ***Indolizidine 223AB.*** Dendrobates *Alkaloid 223AB. Gephyrotoxin 223AB*



$C_{15}H_{29}N$ 223.401

(-)-*form* [67217-85-0]
Minor alkaloid from skin extracts of the neotropical poison-frog *Dendrobates histrionicus* (various populations) (Dendrobatidae). $[\alpha]_D^{16}$ -35 (c, 0.49 in MeOH). $[\alpha]_D^{20}$ -101 (c, 2.3 in hexane).
4′-Hydroxy: ***Indolizidine 239CD***. Dendrobates *Alkaloid 239CD. Gephyrotoxin 239CD*
[67217-87-2]
$C_{15}H_{29}NO$ 239.4

Major alkaloid in *Dendrobates histrionicus* and *Dendrobates occultator*. $[\alpha]_D^{16}$ -52 (c, 0.19 in MeOH).

3′′-Hydroxy: ***Indolizidine 239AB***. Dendrobates *Alkaloid 239AB. Gephyrotoxin 239AB*
[67217-86-1]
[142925-69-7]
$C_{15}H_{29}NO$ 239.4
Major to minor constit. of various populations of *Dendrobium histrionicus*; major constit. of *Dendrobium occulator*. $[\alpha]_D^{16}$ -38 (c, 1.0 in MeOH).

1′-Oxo: see 3-Butyloctahydro-5-propanoylindolizine, B-436

(±)-*form* [81076-50-8]
Synthetic. Noncryst.

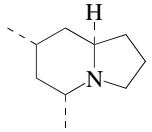
Hydrochloride:
Flat needles (EtOAc/Et_2O). Mp 131°.

Hydrobromide:
Flat needles (Me_2CO). Mp 147-150°.

Daly, J.W. *et al., Toxicon*, 1978, **16**, 163 (*isol, ms, rev*)
Spande, T.F. *et al., Experientia*, 1981, **37**, 1242 (*ms, cmr, struct*)
Daly, J.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 205 (*ms, rev*)
Iida, H. *et al., J.A.C.S.*, 1985, **107**, 5534 (*synth, cmr, ms*)
Royer, J. *et al., Tet. Lett.*, 1985, **26**, 1515 (*synth, cmr, ms, bibl*)
Pryzbylska, M. *et al., Acta Cryst. C*, 1986, **42**, 832 (*cryst struct*)
Daly, J.W. *et al., J. Nat. Prod.*, 1986, **49**, 265 (*isol, ms*)
Broka, C.A. *et al., J.O.C.*, 1986, **51**, 5043 (*synth, cmr, ms*)
Tokuyama, T. *et al., Tetrahedron*, 1986, **42**, 3453 (*isol, cmr*)
Edwards, O.E. *et al., Can. J. Chem.*, 1988, **66**, 1163 (*synth, pmr, cmr, ms*)
Brandi, A. *et al., J.O.C.*, 1989, **54**, 1748 (*synth, ir, pmr, cmr, ms*)
Watanabe, Y. *et al., J.O.C.*, 1989, **54**, 4088 (*synth, ir, pmr, cmr, ms*)
Machinaga, N. *et al., Chem. Comm.*, 1991, 405 (*synth, abs config, 239CD*)
Yang, T.-K. *et al., Heterocycles*, 1994, **38**, 1711 (*synth*)
Pilli, R.A. *et al., J.O.C.*, 1995, **60**, 717-722 (*synth, bibl*)
Momose, T. *et al., J.C.S. Perkin 1*, 1997, 1315 (*synth*)
Celimene, C. *et al., Tetrahedron*, 1998, **54**, 10457-10468 (*synth*)
Clark, R.B. *et al., Org. Lett.*, 1999, **1**, 349-351 (*synth, Indolizidine 239CD*)
Lee, E. *et al., Org. Lett.*, 2000, **2**, 2169-2171 (*synth*)
Kiewel, K. *et al., Tet. Lett.*, 2001, **42**, 6621-6623 (*synth*)
Toyooka, N. *et al., Heterocycles*, 2005, **66**, 549-555 (*synth*)
Smith, A.B. *et al., J.O.C.*, 2006, **71**, 2547-2557 (*synth*)

Octahydro-5,7-dimethylindolizine, 9CI O-42

5,7-Dimethylindolizidine



(5*R*,7*S*,8*aR*)-*form*
$C_{10}H_{19}N$ 153.267

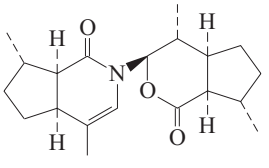
(5*R*,7*S*,8*aR*)-*form*
Dendroprimine
[40169-68-4]
Alkaloid from *Dendrobium primulinum* (Orchidaceae). Oil. $[\alpha]_D$ -38 (c, 1.0 in $CHCl_3$). n_D^{25} 1.4732.
Hydrochloride: Mp 194-195°.
Hydrobromide: Mp 206-207°.
Methiodide: Mp 263-264°.

(5*R*,7*S*,8*aS*)-*form*
8a-Epidendroprimine
Pale yellow oil (as hydrochloride). $[\alpha]_D^{20}$ -45.8 (c, 0.72 in $CHCl_3$). Could not be crystallised.

Lüning, B. *et al., Acta Chem. Scand.*, 1965, **19**, 1607-1611 (*isol, ir, pmr, ms, struct*)
Blomqvist, L. *et al., Acta Chem. Scand.*, 1972, **26**, 3203-3206 (*abs config*)
Diederich, M. *et al., Synthesis*, 1999, 286-289 (*8a-Epidendroprimine, synth*)
De Saboulin Bollena, A. *et al., J. Nat. Prod.*, 2004, **67**, 1029-1031 (*synth, pmr, cmr*)
Kobayashi, T. *et al., Org. Lett.*, 2006, **8**, 3813-3816 (*synth*)

2-[Octahydro-4,7-dimethyl-1-oxocyclopenta[*c*]pyran-3-yl]nepetalactam O-43

[115421-74-4]

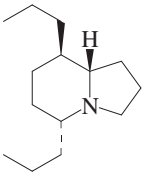


$C_{20}H_{29}NO_3$ 331.454
Mixed dimer of Nepetalactam, N-151 and Nepetalic acid. Isol. from a commercial sample of catnip oil (*Nepeta cataria*) (Lamiaceae). Cryst. (2-methylpentane). Mp 116-117°. $[\alpha]_D^{25}$ +3.8 (c, 5 in $CHCl_3$). Artifact.

Eisenbraun, E.J. *et al., J.O.C.*, 1988, **53**, 3968-3972 (*isol, uv, ir, pmr, cmr, ms, struct*)

Octahydro-5,8-dipropyl-1*H*-indolizine, 9CI O-44

5,8-Dipropylindolizidine. ***Indolizidine 209I***. Dendrobates *Alkaloid 209I*



(5*R*,8*R*,8*aS*)-*form*
$C_{14}H_{27}N$ 209.374

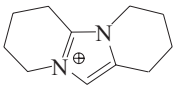
(5*R*,8*R*,8*aS*)-*form*
Oil. $[\alpha]_D^{24}$ -126.5 (c, 0.2 in Me_2CO). $[\alpha]_D^{22}$ -92.1 (c, 1 in $CHCl_3$).

(5ξ,8ξ,8αξ)-*form*
Alkaloid from a member of the Dendrobatidae. Isolation details inaccessible, stereochem. of nat. isolate not clear or may be a mixture.

Michel, P. *et al., J.O.C.*, 2000, **65**, 8908-8918 (*synth, pmr, cmr*)
Hu, S. *et al., J.O.C.*, 2005, **70**, 7364-7370 (*synth, pmr, cmr*)

1,2,3,4,6,7,8,9-Octahydrodipyrido[1,2-*a*:1′,2′-*c*]imidazol-10-ium(1+), 8CI O-45

Anosmine



$C_{11}H_{17}N_2^{\oplus}$ 177.269
Quaternary alkaloid from *Dendrobium anosmum* and *Dendrobium parishii* (Orchidaceae).

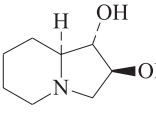
Chloride: [18813-73-5]
Mp 86-88.5° Mp 153-156° (double Mp). Hygroscopic.

Bromide: [18813-72-4]
Needles (Me_2CO). Mp 164-165°.

Leander, K. *et al., Tet. Lett.*, 1968, 905 (*isol, ir, uv, pmr, synth, struct*)
Söderberg, E. *et al., Acta Chem. Scand.*, 1970, **24**, 397 (*cryst struct*)
Hemscheidt, T. *et al., J. Nat. Prod.*, 1993, **56**, 1281 (*biosynth*)

Octahydro-1,2-indolizinediol, 9CI O-46

1,2-Dihydroxyindolizidine. 1-Azabicyclo[4.3.0]nonane-7,8-diol



(1*S*,2*S*,8a*S*)–*form*
$C_8H_{15}NO_2$ 157.212
Considerable confusion regarding the abs. config. of natural lentiginosine. The compd. isol. by Pastuszak *et al* ($[\alpha]_D$ -3.3) was attributed the (1*S*,2*S*,8*aS*) config. based on biogenetic reasoning. The (1*S*,2*S*,8*aS*) enantiomer synthesised independently by Yoda *et al* and Cordero *et al* had opt. rotns. of $[\alpha]_D$ = +0.19 and +3.2 respectively. The most recent research (Brandi *et al*, 1995) based on synth. of both enantiomers and their inhibition of amyloglucosidases, demonstrates that natural lentiginosine has the (1*S*,2*S*,8*aS*) config. and that it is dextrorotatory.

(1*R*,2*R*,8*aR*)-*form*
Synthetic. Mp 106-107°. $[\alpha]_D$ -2.6 (c, 1.0 in MeOH). $[\alpha]_D^{23}$ -1.6 (c, 0.24 in MeOH).

(1*S*,2*R*,8*aR*)-*form*
2,8-Diepilentiginosine
[108866-44-0]
Synthetic. Cryst. (hexane). Mp 109-111°. $[\alpha]_D^{24}$ -37.1 (c, 0.55 in MeOH).

*1,2-*O*-Isopropylidene: Octahydro-2,2-di-*

*methyl-1,3-dioxolo[4,5-*a*]indolizine, 9CI*
$C_{11}H_{19}NO_2$ 197.277
Solid. Mp 89-91°. $[\alpha]_D^{23}$ -38 (c, 0.95 in MeOH).

(1*S*,2*R*,8*aS*)-*form*
2-Epilentiginosine
Alkaloid from leaves of *Astragalus lentiginosus* and shoots of *Astragalus oxyphysus* (Fabaceae). Also isol. from the fungus *Rhizoctonia leguminicola*. Oil. $[\alpha]_D^{24}$ -32.5 (c, 0.13 in $CHCl_3$).

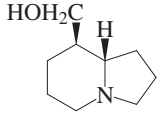
(1*S*,2*S*,8*aR*)-*form*
Solid (C_6H_6). Mp 137-138°. $[\alpha]_D^{27}$ -5.8 (c, 0.88 in MeOH).

(1*S*,2*S*,8*aS*)-*form*
Lentiginosine
[125279-72-3]
Alkaloid from leaves of *Astragalus lentiginosus* (Fabaceae). Potent inhibitor of the fungal α-glucosidase, amyloglucosidase (twice as potent as Castanospermine, C-188), but does not inhibit other α-glucosidases (e.g. sucrase, maltase, yeast α-glucosidase) nor any other glycosidases. Mp 108-109°. $[\alpha]_D^{25}$ +3.2 (c, 0.6 in MeOH).

Harris, T.M. *et al., J.O.C.*, 1987, **52**, 3094-3098 (*isol, cmr, 2,8-Diepilentiginosine, synth*)
Harris, C.M. *et al., Tet. Lett.*, 1988, **29**, 4815-4818 (*isol*)
Pastuszak, I. *et al., Biochemistry*, 1990, **29**, 1886 (*isol, pmr, cmr, ms*)
Yoda, H. *et al., Tetrahedron: Asymmetry*, 1993, **4**, 1455 (*synth*)
Cordero, F.M. *et al., Tet. Lett.*, 1994, **35**, 949 (*synth*)
Gurjar, M.K. *et al., Tet. Lett.*, 1994, **35**, 8871 (*synth, abs config*)
Brandi, A. *et al., J.O.C.*, 1995, **60**, 6806 (*synth, abs config*)
Paolucci, C. *et al., Synthesis*, 1997, 1415-1419 (*1S,2S,8aR-form*)
Ha, D.-C. *et al., J.O.C.*, 2000, **65**, 621-623 (*synth*)
Paolucci, C. *et al., J.O.C.*, 2001, **66**, 4787-4794 (*2,8-Diepilentiginosine, synth, pmr, cmr*)
Rasmussen, M.O. *et al., J.O.C.*, 2001, **66**, 5438-5443 (*synth, pmr, cmr, bibl*)
Yoda, H. *et al., Tet. Lett.*, 2001, **42**, 2509-2512 (*synth*)
Chandra, K.L. *et al., J.O.C.*, 2002, **67**, 4630-4633 (*Lentiginosine, synth*)
Feng, Z.-X. *et al., Tet. Lett.*, 2003, **44**, 497-498 (*Lentiginosine, synth*)
Sha, C.-K. *et al., Tet. Lett.*, 2003, **44**, 499-501 (*synth*)
Ayad, T. *et al., Org. Biomol. Chem.*, 2005, **3**, 2626-2631 (*Lentiginosine, synth*)
Kim, I.S. *et al., Org. Lett.*, 2006, **8**, 4101-4104 (*synth*)
Chaudhari, V.D. *et al., Tetrahedron*, 2006, **62**, 4349-4354 (*synth*)
Cardona, F *et al., Eur. J. Org. Chem.*, 2007, 1551-1565 (*Lentiginosine, rev*)
Angle, S.R. *et al., J.O.C.*, 2007, **72**, 5592-5597 (*Lentiginosine, synth*)
Chen, M.-J. *et al., Tet. Lett.*, 2007, **48**, 6271-6274 (*synth*)
Alam, M.A. *et al., Tet. Lett.*, 2008, **49**, 5534-5536 (*Lentiginosine, synth*)
Shi, G.-F. *et al., Tetrahedron*, 2008, **64**, 5005-5012 (*synth*)
Chandrasekhar, S. *et al., Tetrahedron: Asymmetry*, 2008, **19**, 746-750 (*Lentiginosine, synth*)

Octahydro-8-indolizinemethanol, 9CI O-47

8-Hydroxymethylindolizidine
[126371-98-0 , 154905-41-6]



(8*R*,8*aS*)-*form*

$C_9H_{17}NO$ 155.239

(8*R*,8*aS*)-*form* [111975-29-2]
Pale yellow oil. $[\alpha]_D^{22}$ -25.9 (c, 1.16 in EtOH).

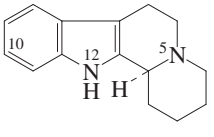
(8*S*,8*aR*)-*form*
Amorph. solid. Mp 35°. $[\alpha]_D^{20}$ +44.7 (c, 1.1 in EtOH).

(8*R,8*aS**)-*form***
Tashiromine
[128573-77-3]
Alkaloid from the stems of *Maackia tashiroi* (Fabaceae). Oil. No opt. rotn. was reported for the nat. prod., therefore the abs. config. cannot be assigned.

Ohmiya, S. *et al., Heterocycles*, 1990, **30**, 537 (*isol, pmr, cmr, ms, struct*)
Nagao, Y. *et al., J.O.C.*, 1990, **55**, 1148-1156 (*synth, ir, pmr, cmr*)
Paulvannen, K. *et al., J.O.C.*, 1994, **59**, 1613 (*synth*)
Gage, J.L. *et al., Tet. Lett.*, 1997, **38**, 7007-7010 (*synth*)
David, O. *et al., J.O.C.*, 1999, **64**, 3122-3131 (*synth, pmr, cmr*)
David, O. *et al., Heterocycles*, 2001, **55**, 1689-1701 (*Tashiromine, synth*)
Bates, R.W. *et al., J.C.S. Perkin 1*, 2001, 654-656 (*Tashiromine, synth*)
Dieter, R.K. *et al., Tet. Lett.*, 2002, **43**, 7725-7728 (*synth*)
Bélanger, G. *et al., J.O.C.*, 2006, **71**, 704-712 (*synth*)
Pohmakotr, M. *et al., Tetrahedron*, 2008, **64**, 2339-2347 (*synth*)

1,2,3,4,6,7,12,12*b*-Octahydroindolo[2,3-*a*]quinolizine, 9CI O-48

Indoloquinolizidine. *Tetramethylenetetrahydro-β-carboline*
[4802-79-3]



(*S*)-*form*

$C_{15}H_{18}N_2$ 226.321
Indole alkaloid, not secologanin-derived.

(*R*)-*form* [15051-70-4]
Mp 149-151°. $[\alpha]_D$ +84.8 (MeOH).

(*S*)-*form* [10252-12-7]
Main alkaloid from leaves of *Dracontomelon mangiferum* (Anacardiaceae). Also from *Nitraria schoberi*. Mp 149-151°. $[\alpha]_D$ -86.5 (MeOH). The alkaloid is partly racemic. λ_{max} 228 (log ϵ 4.43); 284 (log ϵ 3.5); 292 (log ϵ 3.43) (EtOH).

10-Bromo: ***Arborescidine A***
[147395-92-4]
$C_{15}H_{17}BrN_2$ 305.217
Alkaloid from the marine tunicate *Pseudodistoma arborescens*. Cryst. (MeOH). Mp 202°. $[\alpha]_D$ -85 (c, 1 in $CHCl_3$).

(±)-*form* [46798-86-1]
Alkaloid from *Dracontomelon mangiferum* (Anacardiaceae). Inhibitor of spontaneous motor activity, antiphlogistic agent. Mp 153-155° (148-151.5°). Many syntheses reported.

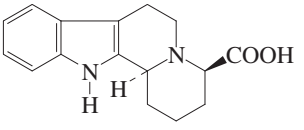
Hydrochloride: Mp 311-312°.

N^5-*Oxide* (cis-): [82484-93-3] [82484-94-4]
$C_{15}H_{18}N_2O$ 242.32
Alkaloid from *Nitraria komarovii*. Cryst. (Me_2CO). Mp 213-214°.

Groves, J.H. *et al., J.C.S.*, 1952, 650-661 (*synth*)
Johns, S.R. *et al., Aust. J. Chem.*, 1966, **19**, 1951-1954 (*S-form, isol, uv, ir, pmr, ms, struct*)
Pospíšek, J. *et al., Chem. Ind. (London)*, 1969, 25-26 (*resoln, ord, config*)
Pakhritdinov, B.M. *et al., Khim. Prir. Soedin.*, 1970, **6**, 641-642; *Chem. Nat. Compd. (Engl. Transl.)*, 1970, **6**, 663-664 (*S-form, isol, uv*)
Akimoto, H. *et al., Chem. Pharm. Bull.*, 1974, **22**, 2614-2623 (*synth*)
Gribble, G.W. *et al., J.O.C.*, 1974, **39**, 1845-1850; 1975, **40**, 3720-3725 (*ms, cmr*)
Nakagawa, M. *et al., Chem. Pharm. Bull.*, 1975, **23**, 304-312 (*synth, bibl*)
Rosenmund, P. *et al., Annalen*, 1979, 1643-1656 (*synth, uv*)
Meyers, A.I. *et al., J.O.C.*, 1986, **51**, 3108-3112 (*synth*)
Tulyaganov, T.S. *et al., Khim. Prir. Soedin.*, 1990, **26**, 560-561; *Chem. Nat. Compd. (Engl. Transl.)*, 1990, **26**, 478-479 (*N-oxide*)
Hua, D.H. *et al., J.O.C.*, 1991, **56**, 6998-7007 (*synth*)
Chbani, M. *et al., J. Nat. Prod.*, 1993, **56**, 99-104 (*Arborescidine A*)
Cheng, E. *et al., Tetrahedron*, 1996, **52**, 6725-6732 (*synth*)
Diker, K. *et al., J. Nat. Prod.*, 1997, **60**, 790-793 (*synth, ir, uv, pmr, cmr*)
Burm, B.E.A. *et al., Tetrahedron*, 1998, **54**, 6135-6146 (*Arborescidine A, synth*)
Santos, L.S. *et al., J.O.C.*, 2004, **69**, 1283-1289 (*Arborescidine A, synth*)
Allin, S.M. *et al., Eur. J. Org. Chem.*, 2005, 4179-4186 (*S-form, synth, pmr, cmr*)
King, F.D. *et al., J. Het. Chem.*, 2007, **44**, 1459-1463 (*synth, pmr, cmr*)
Szawkalo, J. *et al., Tetrahedron: Asymmetry*, 2007, **18**, 406-413 (*R-form, synth*)

1,2,3,4,6,7,12,12*b*-Octahydroindolo[2,3-*a*]quinolizine-4-carboxylic acid O-49

Indoloquinolizidine-4-carboxylic acid



$C_{16}H_{18}N_2O_2$ 270.33

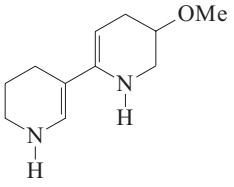
(4*R*,12*bS*)-*form*
*Nitrile: 1,2,3,4,6,7,12,12*b*-Octahydroindolo[2,3-*a*]quinolizine-4-carbonitrile.*

4-Cyanoindoloquinolizidine. ***Phoebegrandine E***
[909118-77-0]
$C_{16}H_{17}N_3$ 251.33
Alkaloid from the leaves of *Phoebe grandis.* Amorph. solid. $[\alpha]_D^{23}$ -38.4 (c, 0.17 in $CHCl_3$). λ_{max} 233 (log ϵ 3.95); 300 (log ϵ 3.6); 339 (log ϵ 3.87) (MeOH).

Awang, K. *et al., Nat. Prod. Res.*, 2006, **20**, 567-572 (*isol, pmr, cmr, ms*)

1,1′,4,4′,5,5′,6,6′-Octahydro-5-methoxy-2,3′-bipyridine, 9CI O-50

[139339-33-6]



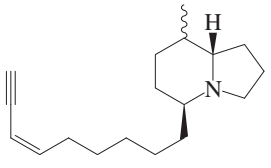
$C_{11}H_{18}N_2O$ 194.276

(ξ)-*form*
Alkaloid from the exudate of *Jatropha gossypifolia* (Euphorbiaceae). Mp 201-203°.

Ahmad, M.U. *et al., Indian J. Chem., Sect. B*, 1992, **31**, 67 (*isol, ir, pmr, cmr, ms, struct*)

Octahydro-8-methyl-5-(6-nonen-8-ynyl)-1*H*-indolizine, 9CI O-51

8-Methyl-5-(6-nonen-8-ynyl)indolizidine. ***Indolizidine 259B.*** Dendrobates *Alkaloid 259B*
[150044-82-9]

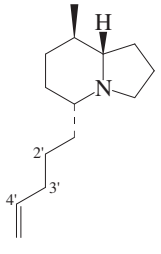


$C_{18}H_{29}N$ 259.434
Alkaloid from the poison frog *Dendrobates pumilio.*

Garraffo, H.M. *et al., J. Nat. Prod.*, 1993, **56**, 357-373 (*isol, ms*)

Octahydro-8-methyl-5-(4-pentenyl)-1*H*-indolizine O-52

8-Methyl-5-(4-pentenyl)indolizidine. Dendrobates *Alkaloid 207A.* ***Indolizidine 207A***
[141724-48-3]



$C_{14}H_{25}N$ 207.358
Alkaloid from skin extracts of *Dendrobates histrionicus* and *Dendrobates speciosus* (Dendrobatidae) and from the Madagascan frog *Mantella madagascariensis* (Ranidae, subfamily Mantellinae). Oil. $[\alpha]_D$ -85.25 (c, 0.174 in EtOH). Opt. rotn. refers to synthetic material.

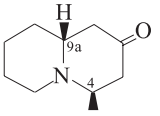
Dihydro: Octahydro-8-methyl-5-pentylindolizine. 8-Methyl-5-pentylindolizidine. Dendrobates *Alkaloid 209B.* ***Indolizidine 209B***
[117959-79-2]
[131319-70-5]
$C_{14}H_{27}N$ 209.374
Trace alkaloid from skin extracts of an undescribed *Dendrobates* sp. from Panama (Dendrobatidae). Mp 184-185° (as hydrochloride). $[\alpha]_D^{22}$ -94.3 (c, 1.85 in MeOH). Enantiomeric excess judged to be >95%. Opt. rotn. of natural 209B not reported.

*4′,5′-Didehydro: Octahydro-8-methyl-5-(4-pentynyl)-1*H*-indolizine. 8-Methyl-5-(4-pentynyl)indolizidine.* Dendrobates *Alkaloid 205A.* ***Indolizidine 205A***
[109175-46-4]
[130979-70-3 , 118015-96-6]
$C_{14}H_{23}N$ 205.342
Alkaloid from skin extracts of the Panamanian poison frog *Dendrobates pumilio.* $[\alpha]_D$ -35 (c, 0.24 in MeOH).

*2′,3′Z,4′,5′-Tetradehydro: Octahydro-8-methyl-5-(2-penten-4-ynyl)-1*H*-indolizine. 8-Methyl-5-(2-penten-4-ynyl)indolizidine.* Dendrobates *Alkaloid 203A.* ***Indolizidine 203A***
[120328-23-6]
$C_{14}H_{21}N$ 203.327
Alkaloid from skin extracts of *Dendrobates auratus.* $[\alpha]_D$ -23.3 (c, 0.3 in $CHCl_3$).

Daly, J.W. *et al., Toxicon*, 1978, **16**, 163 (*isol, ms, rev*)
Daly, J.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 205 (*ms, rev*)
Daly, J.W. *et al., Toxicon*, 1984, **22**, 905 (*isol, ms, nomencl*)
Tokuyama, T. *et al., Tetrahedron*, 1987, **43**, 643; 1991, **47**, 5401 (*isol, pmr, cmr, ms, struct, derivs*)
Edwards, M.W. *et al., J. Nat. Prod.*, 1988, **51**, 1188 (*isol, pmr, ms*)
Smith, A.L. *et al., J.A.C.S.*, 1988, **110**, 8696 (*synth*)
Gnecchо, D. *et al., Chem. Comm.*, 1991, 625-626 (*synth*)
Holmes, A.B. *et al., J.O.C.*, 1991, **56**, 1393 (*synth*)
Taber, D.F. *et al., J.O.C.*, 1995, **60**, 529 (*synth*)
Comins, D.L. *et al., J.O.C.*, 1997, **62**, 8182-8187 (*Indolizidine 205A, synth*)
Toyooka, N. *et al., Tetrahedron*, 1997, **53**, 9553 (*synth*)
Michael, J.P. *et al., J.C.S. Perkin 1*, 2000, 1919-1928 (*Indolizidine 209B, synth*)
Back, T.G. *et al., J.O.C.*, 2000, **65**, 4543-4552 (*synth*)
Michel, P. *et al., J.O.C.*, 2000, **65**, 8908-8918 (*synth*)
Shu, C. *et al., J.A.C.S.*, 2001, **123**, 12477-12487 (*Indolizidine 209B, synth*)
Song, Y. *et al., Tet. Lett.*, 2002, **43**, 8635-8637 (*Indolizidine 209B, synth*)
Davis, F.A. *et al., Org. Lett.*, 2003, **5**, 5011-5014 (*Indolizidene 209B, synth*)
Toyooka, N. *et al., Chem. Pharm. Bull.*, 2005, **53**, 555-560 (*synth*)

Octahydro-4-methyl-2*H*-quinolizin-2-one, 9CI O-53



(4*R*,9a*R*)–*form*

$C_{10}H_{17}NO$ 167.25

(4*R*,9*aR*)-*form*
Myrtine
[66835-10-7]
Alkaloid from *Vaccinium myrtillus* (bilberry) aerial parts (Ericaceae). Oil. $[\alpha]_D^{20}$ +3.1 (c, 2.1 in $CHCl_3$) (natural). $[\alpha]_D^{23}$ +11.3 (c, 2.7 in $CHCl_3$) (synthetic). Isol. sample has only 25% opt. purity. This is not due to isom. during isol.

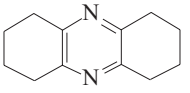
(4*R*,9*aS*)-*form*
Epimyrtine
[82111-02-2]
Alkaloid from *Vaccinium myrtillus* (bilberry) (Ericaceae). Oil. $[\alpha]_D^{20}$ -2.5 (c, 1.2 in $CHCl_3$) (natural). $[\alpha]_D^{23}$ -18 (c, 5.2 in $CHCl_3$) (synthetic). Low opt. purity.
Hydrochloride: Mp 211-213° dec. $[\alpha]_D^{23}$ -31.7.

(4*RS*,9*aRS*)-*form* [66900-13-8]
[82083-37-2]
Mp 196-198° dec. (as hydrochloride).

(4*RS*,9*aSR*)-*form* [66900-14-9]
[82083-36-1]
Mp 200-201° dec. (as hydrochloride).
Slosse, P. *et al., Tetrahedron*, 1981, **37**, 4287 (*isol, ir, ms, pmr, cmr, synth, resoln*)
Comins, D.L. *et al., J.O.C.*, 1992, **57**, 5807 (*synth*)
Gelas-Miakhe, Y. *et al., Tet. Lett.*, 1992, **33**, 73 (*synth*)
Pilli, R.A. *et al., J.O.C.*, 1995, **60**, 717 (*synth*)
Davis, F.A. *et al., J.O.C.*, 2003, **68**, 8061-8064 (*Epimyrtine, synth*)
Back, T.G. *et al., J.O.C.*, 2005, **70**, 967-972 (*synth*)
Amorde, S.M. *et al., Org. Lett.*, 2005, **7**, 2031-2033 (*synth*)

1,2,3,4,6,7,8,9-Octahydrophenazine O-54

Polycartine B
[4006-50-2]



$C_{12}H_{16}N_2$ 188.272
Minor constit. of scent gland of the Canadian beaver (*Castor fiber*). Also isol. from the fruits of *Idesia polycarpa* (Flacourtiaceae). Flavour enhancer. Mp 112-113° (106-108°). Bp_{11} 135-170°. λ_{max} 260; 323 (MeOH) (Derep).

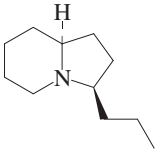
Hydrochloride: [42383-40-4]
Mp 160-162°.

N,N′-*Dioxide:* [24716-05-0]
$C_{12}H_{16}N_2O_2$ 220.271
Cryst. Mp 230°.

Schäffler, A. *et al., Chem. Ber.*, 1955, **88**, 767 (*synth, uv*)
Fellman, J.H. *et al., J.O.C.*, 1956, **21**, 713 (*synth*)
Wilen, S.H. *et al., Chem. Ind. (London)*, 1969, 237 (*synth*)
Smith, H.E. *et al., Chem. Comm.*, 1970, 1112 (*uv*)
Scheinbaum, M.L. *et al., J.O.C.*, 1970, **35**, 2790 (*oxide*)
Maurer, B. *et al., Helv. Chim. Acta*, 1976, **59**, 1169 (*isol*)
Moritake, M. *et al., Tet. Lett.*, 1987, **28**, 1425 (*isol*)

Octahydro-3-propylindolizine O-55

3-Propylindolizidine



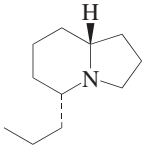
$C_{11}H_{21}N$ 167.294

(3*R,8*aS**)-*form*** [929631-64-1]
Isol. from the venom of *Myrmicaria melanogaster*.

Jones, T.H. *et al., J. Nat. Prod.*, 2007, **70**, 160-168 (*isol, synth, ir, ms*)

Octahydro-5-propylindolizine, 9CI O-56

5-Propylindolizidine. Dendrobates *Alkaloid 167B. Gephyrotoxin 167B.* ***Indolizidine 167B***



(5*R*,8*aR*)-*form*

$C_{11}H_{21}N$ 167.294

(5*R*,8*aR*)-*form*
(-)-trans-*form*
[120057-35-4]
Trace alkaloid from skin extracts of an undescribed *Dendrobates sp.* from Panama (Dendrobatidae). Oil. $[\alpha]_D^{20}$ -106.3 (c, 0.80 in hexane).

(5*S*,8*aR*)-*form*
(-)-cis-*form*
[129893-55-6]
Oil. $[\alpha]_D$ -1.7 (c, 1,1 in CH_2Cl_2).

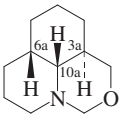
(5*S*,8*aS*)-*form*
(+)-trans-*form*
[168610-27-3]
Oil. $[\alpha]_D^{26}$ +28.1 (c, 1.125 in CH_2Cl_2).

(5*RS*,8*aRS*)-*form*
(±)-trans-*form*
[130884-95-6 (hydrochloride)]
Mp 167-169° (as hydrochloride).

[134357-40-7]

Daly, J.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 205 (*ms, rev*)
Smith, A.L. *et al., J.A.C.S.*, 1988, **110**, 8696 (*synth, struct*)
Polniaszek, R.P. *et al., J.O.C.*, 1990, **55**, 4688-4693 (*ir, pmr, cmr, synth*)
Jefford, C.W. *et al., J.A.C.S.*, 1991, **113**, 3513 (*synth, ms, pmr, cmr*)
Holmes, A.B. *et al., J.O.C.*, 1991, **56**, 1393 (*synth, ir, pmr, cmr, ms*)
Zeller, E. *et al., Synlett*, 1991, 44 (*synth*)
Takahata, H. *et al., Heterocycles*, 1995, **41**, 1797 (*synth, ir, pmr*)
Angle, S.R. *et al., J.O.C.*, 1997, **62**, 8549-8552 (*synth*)
Weymann, M. *et al., Synthesis*, 1997, 1151-1160 (*synth, pmr, cmr*)
Michael, J.P. *et al., Eur. J. Org. Chem.*, 1998, 865-870 (*synth*)
Chenevert, R. *et al., Heterocycles*, 1999, **51**, 593-598 (*synth*)
Chalard, P. *et al., Tet. Lett.*, 1999, **40**, 1661-1664 (*synth*)
Back, T. *et al., J.O.C.*, 2000, **65**, 4543-4552 (*synth*)
Yamazaki, N. *et al., Org. Lett.*, 2000, **2**, 465-467 (*synth*)
Yoda, H. *et al., Tet. Lett.*, 2001, **42**, 2509 (*synth*)
Peroche, S. *et al., Tet. Lett.*, 2001, **42**, 4617-4619 (*synth*)
Kiewel, K. *et al., Tet. Lett.*, 2001, **42**, 6621-6626 (*synth*)
Kim, G. *et al., Tetrahedron: Asymmetry*, 2001, **12**, 2073-2076 (*synth*)
Carbonnel, S. *et al., Heterocycles*, 2002, **57**, 1807-1830 (*synth*)
Corvo, M.C. *et al., Tet. Lett.*, 2002, **43**, 455-458 (*synth*)
Zaminer, J. *et al., Tet. Lett.*, 2002, **43**, 6739-6741 (*synth*)
Reddy, P.G. *et al., J.O.C.*, 2004, **69**, 3093-3101 (*synth*)
Guazzelli, G. *et al., Synthesis*, 2005, 3119-3123 (*synth*)
Chang, M.-Y. *et al., Heterocycles*, 2007, **71**, 933-940 (*synth*)
Kuhakarn, C. *et al., Tetrahedron*, 2008, **64**, 1663-1670 (*synth*)
Pohmakotr, M. *et al., Tetrahedron*, 2008, **64**, 2339-2347 (*synth*)

Octahydro-1*H*,3*H*-pyrido[3,2,1-*ij*]benzoxazine O-57



(3*aR*,6*aS*,10*aR*)-*form*

$C_{11}H_{19}NO$ 181.277

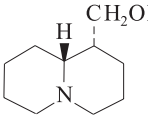
(3*aR*,6*aS*,10*aR*)-*form*
Myrioxazine A
[481012-19-5]
Alkaloid from the leaves of *Myrioneuron nutans.* Oil. $[\alpha]_D^{20}$ +21 (c, 1 in MeOH).

(3*aS*,6*aS*,10*aR*)-*form*
Myrioxazine B
[481012-21-9]
Alkaloid from the leaves of *Myrioneuron nutans.* Oil. $[\alpha]_D^{20}$ +9 (c, 1 in MeOH).

Pham, V.C. *et al., Tet. Lett.*, 2002, **43**, 7565-7568 (*isol, synth, pmr, cmr, abs config*)

Octahydro-2*H*-quinolizine-1-methanol, 9CI O-58

1-Hydroxymethylquinolizidine. ***Lupinine***



(–)–*form*

$C_{10}H_{19}NO$ 169.266
Insect antifeedant. Antiinflammatory, antiarrhythmic agnet. Oxytocic agent. Possesses cathartic, diuretic props. Log P 0.85 (calc).

(+)-*form*
Synthetic. Mp 68°. $[\alpha]_D$ +19.9.
(-)-Tartrate salt: Mp 167-168°. $[\alpha]_D$ -15.8 (H_2O).

(-)-*form* [486-70-4]
Alkaloid from *Anabasis aphylla*, *Lupinus luteus*, *Lupinus palmeri* and a few other *Lupinus* spp. (Chenopodiaceae, Fabaceae). Mp 70-71°. Bp 255-257°. $[\alpha]_D^{17}$ -20.4 (EtOH). Pharmacol. active isomer.
► LD_{50} (mus, ivn) 15 mg/kg. OK5802000

Hydrochloride: [6113-09-3]
Mp 212-213° (207-209°). $[\alpha]_D$ -14 (H_2O).

Picrate: [6113-13-9]
Mp 136-137° Mp 196-197° (dimorph.).

Butanoyl: ***Butanoyllupinine***
[38976-65-7]
$C_{14}H_{25}NO_2$ 239.357
Alkaloid from *Virgilia divaricata* and *Virgilia oroboides* (Fabaceae).

2-Methylbutanoyl: [135531-66-7]
$C_{15}H_{27}NO_2$ 253.384
Alkaloid from *Virgilia divaricata* and *Virgilia oroboides* (Fabaceae).

Benzoyl: [40179-92-8]
Mp 49-50°.

O-*4-Hydroxy*-E-*cinnamoyl:* ***(4-Hydroxycinnamoyl)lupinine***
$C_{19}H_{25}NO_3$ 315.411
Alkaloid from fresh seedlings of *Lupinus luteus* (Fabaceae).
Highly viscous oil. Mp 130-131° (as 4-nitrobenzoyl). The *Z*-isomer of this alkaloid (and its relatives) are present as artifacts in samples of the alkaloids.

O-*[β-D-Glucopyranosyl-(1→4)-4-hydroxy*-E-*cinnamoyl]:* ***(4′-β-D-Glucopyranosyloxycinnamoyl)lupinine***
[70155-14-5]
$C_{25}H_{35}NO_8$ 477.553
Alkaloid from *Lupinus luteus* seedlings (Fabaceae). Amorph. solid. $[\alpha]_D^{22}$ -58.9 (c, 0.3 in EtOH).

O-*[α-L-Rhamnopyranosyl-(1→4)-4-hydroxy*-E-*cinnamoyl]:* ***(4′-α-L-Rhamnosyloxycinnamoyl)lupinine***
[65526-78-5]
$C_{25}H_{35}NO_7$ 461.554

Alkaloid from *Lupinus luteus* seedlings (Fabaceae). $[\alpha]_D^{22}$ -105 (c, 1.16 in MeOH).

O-*(4-Hydroxy-3-methoxy*-E-*cinnamoyl): **ω-Feruloyloxylupinane***
[18161-87-0]
$C_{20}H_{27}NO_4$ 345.438
Alkaloid from green parts of *Lupinus luteus* (Fabaceae). Cryst. (C_6H_6). Mp 118° Mp 130° (dimorph.).

O-*[β-D-Glucopyranosyl-(1→4)-4-hydroxy-3-methoxy*-E-*cinnamoyl]: **(4′-O-β-D-Glucopyranosyloxy-3′-methoxycinnamoyl)lupinine***
[71926-09-5]
$C_{26}H_{37}NO_9$ 507.58
Alkaloid from fresh seedlings of *Lupinus luteus* (Fabaceae). Amorph. solid. $[\alpha]_D^{22}$ -48.9 (c, 0.06 in EtOH).

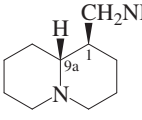
O-*[α-L-Rhamnopyranosyl-(1→4)-4-hydroxy-3-methoxy*-E-*cinnamoyl]: **(4′-α-L-Rhamnosyloxy-3′-methoxycinnamoyl)lupinine***
[70155-16-7]
$C_{26}H_{37}NO_8$ 491.58
Alkaloid from seedlings of *Lupinus luteus* (Fabaceae). $[\alpha]_D$ -78.3.

5-Epimer: see Epilupinine, E-95

(±)-*form* [10248-30-3]
Mp 63-64° (59°).
Picrate: Mp 127°.

Cassola, M. *et al., Annalen*, 1835, **13**, 308 (*isol*)
Karrer, P. *et al., Helv. Chim. Acta*, 1928, **11**, 1062 (*isol, struct*)
Couch, J.F. *et al., J.A.C.S.*, 1934, **56**, 2434 (*isol*)
Clemo, G.R. *et al., J.C.S.*, 1937, 965; 1938, 1574 (*synth, resoln*)
Cookson, R.C. *et al., Chem. Ind. (London)*, 1953, 337 (*abs config*)
Thomas, A.F. *et al., Can. J. Chem.*, 1955, **33**, 1290 (*ir*)
Podkowinska, H. *et al., Bull. Acad. Pol. Sci., Ser. Sci. Biol.*, 1965, **13**, 623; 1967, **15**, 467; *CA*, **64**, 18025h (*Feruloyloxylupinane*)
Goldberg, S.I. *et al., J.O.C.*, 1967, **32**, 1046 (*synth*)
Kappe, Th. *et al., Monatsh. Chem.*, 1967, **98**, 1852 (*synth*)
Schöpf, C. *et al., Annalen*, 1968, **712**, 168 (*synth*)
Ishbaev, A.I. *et al., Khim. Prir. Soedin.*, 1972, **8**, 328; *Chem. Nat. Compd. (Engl. Transl.)*, 1972, **8**, 322 (*ord*)
Bohlmann, F. *et al., Chem. Ber.*, 1975, **108**, 1043 (*cmr*)
Bohlmann, F. *et al., Phytochemistry*, 1975, **14**, 155 (*biosynth*)
Murakoshi, I. *et al., Phytochemistry*, 1975, **14**, 2714; 1977, **16**, 2046; 1978, **17**, 1817; 1979, **18**, 699 (*cinnamoyl derivs*)
Gerrans, G.C. *et al., Tet. Lett.*, 1975, 4147 (*synth*)
Tufariello, J.J. *et al., Tet. Lett.*, 1976, 4037 (*synth*)
Murakoshi, I. *et al., Chem. Pharm. Bull.*, 1977, **25**, 527 (*cinnamoyl derivs, biosynth*)
Murakoshi, I. *et al., Chem. Pharm. Bull.*, 1979, **27**, 144 (*glucosylcinnamoyl derivs*)
Iwashita, T. *et al., J.O.C.*, 1982, **47**, 230 (*synth, ir, pmr*)
Koziol, A.E. *et al., Acta Cryst. C*, 1983, **39**, 1375 (*cryst struct, abs config*)
Podkowinska, H. *et al., Org. Magn. Reson.*, 1984, **22**, 379 (*cmr*)
Golebiewski, W.M. *et al., Can. J. Chem.*, 1985, **63**, 2707 (*biosynth*)
Takahata, H. *et al., Chem. Pharm. Bull.*, 1986, **34**, 4523 (*synth*)
Aslanov, Kh.A. *et al., Alkaloids (Academic Press)*, 1987, **31**, 117 (*rev*)
Matsubara, Y. *et al., Chem. Pharm. Bull.*, 1988, **36**, 1597 (*synth*)
Grieco, P.A. *et al., J.O.C.*, 1988, **53**, 3325 (*synth, ir, pmr*)
Célérier, J.P. *et al., Tetrahedron*, 1989, **45**, 6161 (*synth*)
Morley, C. *et al., Tetrahedron: Asymmetry*, 1990, **1**, 147 (*synth*)
Veen, G. *et al., Phytochemistry*, 1991, **30**, 1891 (*esters*)
Hua, D.H. *et al., Synthesis*, 1991, 970 (*synth*)
Rycroft, D.S. *et al., Magn. Reson. Chem.*, (Spec. Issue), 1992, **30**, S15 (*pmr*)
Gesson, J.P. *et al., Tet. Lett.*, 1992, **33**, 3633 (*synth*)
Paulvannan, K. *et al., Tet. Lett.*, 1993, **34**, 215 (*synth*)
Morley, C. *et al., J.C.S. Perkin 1*, 1994, 2903 (*synth*)
Mangeney, P. *et al., Tetrahedron*, 1998, **54**, 10349-10362 (*synth*)

5-[[(Octahydro-2*H*-quinolizin-1-yl)methyl]amino]-5-oxopentanoic acid, 9CI O-59



(1*R*,9a*R*)-*form*

$C_{15}H_{26}N_2O_3$ 282.382

(1*R*,9a*R*)-*form*
Me ester: 11-(4-Carboxybutyramido)-11-deoxy-1-epilupinine methyl ester. 5-[(3-Methoxycarbonylbutyroyl)aminomethyl]quinolizidine
[18688-43-2]
$C_{16}H_{28}N_2O_3$ 296.409
Alkaloid from *Lamprolobium fruticosum* (Fabaceae). Cryst. Mp 77-78°. Considered to be an artifact derived from Lamprolobine, L-26 on MeOH treatment.

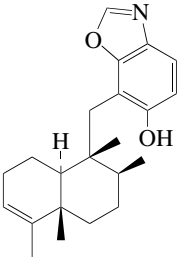
(1*R*,9a*S*)-*form*
Me ester, N-*oxide: **5-(3-Methoxycarbonylbutyroyl)aminomethyl*-trans-*quinolizidine* N-*oxide***
$C_{16}H_{28}N_2O_4$ 312.408
Trace alkaloid from *Sophora tomentosa* (Fabaceae). Amorph. solid. Prob. artifact derived from Epilamprolobine *N*-Oxide in L-26.

(1ξ,9a ξ)-*form*
*Butyl ester: **Sophorine**†*
[81037-26-5]
$C_{19}H_{34}N_2O_3$ 338.489
Alkaloid from *Sophora alopecuroides* (Fabaceae). Prob. biosynth. precursor of matrine and sparteine groups. Mp 59-60°. $[\alpha]_D^{23}$ -18.9 (c, 0.98 in EtOH). Probable struct., based on biogenetic considerations.

Hart, N.K. *et al., Aust. J. Chem.*, 1968, **21**, 1619 (*Me ester*)
Kuchkarov, S. *et al., Khim. Prir. Soedin.*, 1979, **15**, 413; *Chem. Nat. Compd. (Engl. Transl.)*, 1979, **15**, 364 (*Sophorine, isol*)
Kamaev, F.G. *et al., Khim. Prir. Soedin.*, 1981, **17**, 439; *Chem. Nat. Compd. (Engl. Transl.)*, 1981, **17**, 439 (*Sophorine, struct, pmr, cmr*)
Murakoshi, I. *et al., Phytochemistry*, 1981, **20**, 1725 (*Me ester N-oxide*)

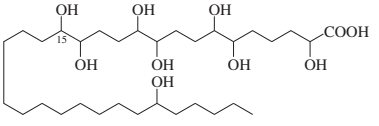
7-[(1,2,3,4,4*a*,7,8,8*a*-Octahydro-1,2,4*a*,5-tetramethyl-1-naphthalenyl)methyl]-6-benzoxazolol, 9CI O-60

[193157-85-6]



$C_{22}H_{29}NO_2$ 339.477
Not named in paper. Related to Avarol, A-1560. Constit. of a *Dysidea* sp. Oil.
Stewart, M. *et al., Aust. J. Chem.*, 1997, **50**, 341-347 (*isol, pmr, cmr*)

2,6,7,10,11,14,15,27-Octahydroxydotriacontanoic acid O-61

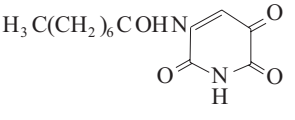


$C_{32}H_{64}O_{10}$ 608.852

*Amide, 15-*O-*sulfate: **Turbinamide***
[366788-20-7]
$C_{32}H_{65}NO_{12}S$ 687.931
Isol. from the tunicate *Sidnyum turbinatum*. Selective cytotoxic agent. Solid (as Na salt). $[\alpha]_D^{25}$ +7.1 (c, 0.003 in MeOH) (Na salt).
Aiello, A. *et al., Org. Lett.*, 2001, **3**, 2941-2944 (*isol, pmr, cmr*)

5-Octanoylamino-2,3,6(1*H*)-pyridinetrione O-62

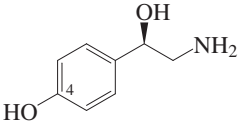
N-*(1,2,5,6-Tetrahydro-2,5,6-trioxo-3-pyridyl)octanamide*



$C_{13}H_{18}N_2O_4$ 266.296
Oxidn. prod. of pigment from *Pseudomonas lemmonieri*. Mp 162°. λ_{max} 208 (log ϵ 4.02), 261(4.14) and 348 nm (3.8) (EtOH).
Ferguson, G. *et al., Chem. Comm.*, 1965, 640 (*struct, ms, ir, pmr*)

Octopamine, INN O-63

*α-(Aminomethyl)-4-hydroxybenzenemethanol, 9CI. α-(Aminomethyl)-*p-*hydroxybenzyl alcohol, 8CI. 2-Amino-1-(4-hydroxyphenyl)ethanol.* p-*(β-Amino-α-hydroxyethyl)phenol. Norden. Norphen. Noroxedrine. Norsympathol. Norsynephrine. WIN 5512. Many other names*
[104-14-3]



(*R*)-*form*

$C_8H_{11}NO_2$ 153.18
The racemate and its enantiomers melt with dec. around 160° to form 2,5-bis(4-hydroxyphenyl)piperazine, which remelts around 250° or above.

► LD_{50} (rat, orl) 1240 mg/kg. LD_{50} (mus, ipr) 600 mg/kg. DN7350000

(*R*)-*form* [876-04-0]
Alkaloid from leaves of *Capsicum frutescens*, *Citrus* spp., *Cyperus rotundus*, *Cyperus papyrus* Occurs in many animal tissues; found in high concs. in the posterior salivary gland of *Octopus vulgaris* and in *Octopus apollyon*, *Octopus bimaculatus*, *Rhizoglyphus echinopus*, *Fascaplysinopsis reticulata*. Invertebrate neurotransmitter. In vertebrates, prob. a cotransmitter with noradrenaline. Adrenergic vasodilator. Cryst. (H_2O). Mp 160° approx. $[\alpha]_D^{25}$ -37.4 (c, 1 in H_2O). $[\alpha]_D$ -56 (c, 1 in 1*M* HCl).

N-*(4-Hydroxy-3-methoxy-*E*-cinnamoyl):* **N-trans-*Feruloyl*-R-*octopamine***
$C_{18}H_{19}NO_5$ 329.352
Constit. of the root bark of *Lycium chinense* (Chinese boxthorn). Antifungal agent.

N-*Me:* see Synephrine, S-659

O^4-*Me:* ***4-Methoxy-β-hydroxyphenethylamine.*** *α-(Aminomethyl)-4-methoxybenzenemethanol, 9CI. Alkaloid NP*
[46084-23-5]
[55275-61-1 ((±)-form)]
$C_9H_{13}NO_2$ 167.207
Minor alkaloid from *Coryphantha cornifera*, also detected in *Pereskia grandiflora* and *Pereskia chapistle* (Cactaceae). Shows weak vasoconstrictor and cardiac depressant props. Tentative identification, not obt. cryst. Opt. rotn. and abs. config. not detd.

(*S*)-*form* [826-01-7]
Synthetic. Less potent than (*R*)-form. Mp 160°. $[\alpha]_D^{25}$ +37.2 (c, 1 in H_2O). $[\alpha]_D^{25}$ +56.1 (c, 1 in 0.1*N* HCl).

N-*(4-Hydroxy-3-methoxy-*E*-cinnamoyl):* **N-trans-*Feruloyl*-S-*octopamine***
$C_{18}H_{19}NO_5$ 329.352
Alkaloid from the leaves of *Aptenia cordifolia*. Oil. $[\alpha]_D^{25}$ -3 (c, 0.12 in MeOH). λ_{max} 222 (log ϵ 3.9); 294 (log ϵ 2.5); 316 (log ϵ 2.4) (MeOH).

β-Me ether, N-*(4-hydroxy-3-methoxy-*E*-cinnamoyl):* **N-trans-*Feruloyl*-β-O-*methyloctopamine***
$C_{19}H_{21}NO_5$ 343.379
Alkaloid from *Isodon excisus*.
Amorph. yellow powder. $[\alpha]_D^{25}$ -2 (c, 1 in MeOH). λ_{max} 221 (log ϵ 4.44); 294 (log ϵ 4.36); 318 (log ϵ 4.43) (MeOH).

β-Propyl ether, N-*(4-hydroxy-3-methoxy-*E*-cinnamoyl):* **N-trans-*Feruloyl*-β-O-*propyloctopamine***
$C_{21}H_{25}NO_5$ 371.432
Alkaloid from the leaves of *Aptenia cordifolia*. Oil. $[\alpha]_D^{25}$ -2 (c, 0.08 in MeOH). λ_{max} 280 (log ϵ 3.1) (MeOH).

(±)-*form* [1915-83-9]
Mp 156-158°.

Hydrochloride: [770-05-8]
Cryst. Mp 177-179° dec.

N-*Me:* see Synephrine, S-659

4-Me ether: [55275-61-1]
Cryst. (C_6H_6/petrol). Mp 70° (sealed tube).

O^4,N-*Di-Me:* [125722-39-6]
[58777-87-0 (non-stereospecific), 57286-93-8 (*R*-form)]
$C_{10}H_{15}NO_2$ 181.234
Mp 106.5-107.5°.

Di-Me ether: 2-Methoxy-2-(4-methoxyphenyl)ethylamine
[31367-42-7]
$C_{10}H_{15}NO_2$ 181.234
Bp_{20} 158-160°.

Di-Me ether, N-*Me:*
$C_{11}H_{17}NO_2$ 195.261
Bp_5 129-130°.

(ξ)-*form*

N-*(*E*-Cinnamoyl):* N-*[2-Hydroxy-2-(4-hydroxyphenyl)ethyl]-3-phenyl-2-propenamide.* **N-*[2-Hydroxy-2-(4-hydroxyphenyl)ethyl]cinnamide.*** N-*Cinnamoyl-2,4′-dihydroxyphenethylamine.* N-*Cinnamoyloctopamine*
[87596-52-9]
$C_{17}H_{17}NO_3$ 283.326
Alkaloid from the leaves of *Aegle marmelos* (bael) (Rutaceae). Needles (MeOH). Mp 158° (solidifies and remelts at 228-231°).

N-*(4-Hydroxy-*E*-cinnamoyl):* **N-trans-p-*Coumaroyloctopamine***
[66648-45-1]
[152433-78-8 , 88700-34-9]
$C_{17}H_{17}NO_4$ 299.326
Alkaloid from roots of bell pepper (*Capsicum annuum* var. *grossum*), *Ophiopogon japonicus* and *Solanum khasianum*. Cryst. Mp 214-215°.

N-*(4-Hydroxy-*Z*-cinnamoyl):* **N-cis-p-*Coumaroyloctopamine***
[180050-82-2]
$C_{17}H_{17}NO_4$ 299.326
Alkaloid from *Solanum khasianum*.

N-*(4-Hydroxy-3-methoxy-*E*-cinnamoyl):* **N-trans-*Feruloyloctopamine***
[66648-44-0]
$C_{18}H_{19}NO_5$ 329.352
Constit. of *Antidesma membranaceum*, roots of bell pepper (*Capsicum annuum* var. *grossum*) and *Solanum khasianum*. Powder. Mp 164-165° (as tri-Ac).

N-*(4-Hydroxy-3-methoxy-*Z*-cinnamoyl):* **N-cis-*Feruloyloctopamine***
[180050-83-3]
[152433-77-7]
$C_{18}H_{19}NO_5$ 329.352
Constit. of *Antidesma membranaceum* and *Solanum khasianum*.

4-O-*(3-Methyl-2-butenyl),* N-*cinnamoyl:* N-*[2-Hydroxy-2-[4-[(3-methyl-2-butenyl)oxy]phenyl]ethyl]-3-phenyl-2-propenamide.* N-*2-Hydroxy-2-[4-(3,3-dimethylallyloxy)phenyl]ethylcinnamide.* ***Marmeline.*** N-*Cinnamoyl*-O-*prenyloctopamine*
[81532-00-5]
$C_{22}H_{25}NO_3$ 351.444
Alkaloid from the leaves and unripe fruits of *Aegle marmelos* (bael) (Rutaceae). Needles (MeOH or $CHCl_3$/hexane). Mp 159-161° (156-157°).

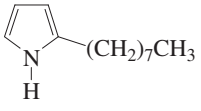
4-O-*(3-Methyl-2-butenyl), β-Me ether,* N-*(*E*-cinnamoyl):* Aegle marmelos *Alkaloid C*
[70546-92-8]
$C_{23}H_{27}NO_3$ 365.471
Alkaloid from leaves of *Aegle marmelos* (bael) (Rutaceae). Cryst. (C_6H_6/hexane). Mp 110°.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 1290D (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **2**, 613B (*nmr*)
Quelet, R. *et al., C. R. Hebd. Seances Acad. Sci.*, 1948, **226**, 1020-1022 (*di-Me ether, di-Me ether N-Me, synth*)
Bretschneider, H. *et al., Monatsh. Chem.*, 1949, **80**, 530 (*resoln*)
Bergmann, E.D. *et al., J.O.C.*, 1951, **16**, 84-89 (*O^4,N-di-Me, synth*)
Corrigan, J.R. *et al., J.A.C.S.*, 1953, **75**, 6258 (*synth*)
Ascher, M. *et al., Rec. Trav. Chim. (J. R. Neth. Chem. Soc.)*, 1953, **84**, 1021 (*synth*)
Adityachaudhury, N. *et al., J. Indian Chem. Soc.*, 1959, **36**, 585-589 (*4-Me ether, synth*)
Kappe, T. *et al., J. Med. Chem.*, 1964, **7**, 569-571 (*resoln, mp*)
Hardwick, B.C. *et al., Plant Physiol.*, 1969, **44**, 1745 (*ir, uv*)
Wheaton, T.A. *et al., Lloydia*, 1970, **33**, 244-254 (*occur*)
Kelley-Hornemann, K.M. *et al., J. Pharm. Sci.*, 1972, **61**, 41-45 (*O^4-Me, occur*)
Brandau, K. *et al., Naunyn-Schmiedeberg's Arch. Pharmacol.*, 1972, **273**, 123-133 (*biosynth*)
Hengstmann, J.H. *et al., Naunyn-Schmiedeberg's Arch. Pharmacol.*, 1974, **283**, 93 (*metab*)
Paxton, K. *et al., Acta Cryst. B*, 1977, **33**, 2143 (*cryst struct*)
Axelrod, J. *et al., Nature (London)*, 1977, **265**, 501 (*rev*)
Smith, T.A. *et al., Phytochemistry*, 1977, **16**, 9 (*occur*)
Manandhar, M.D. *et al., Phytochemistry*, 1978, **17**, 1814 (*Aegle marmelos Alkaloid C*)
Doetsch, P.W. *et al., J. Chromatogr.*, 1980, **189**, 79-85 (*Me ether, occur*)
Yoshihara, T. *et al., Agric. Biol. Chem.*, 1981, **45**, 2593-2598 (*cinnamoyl derivs*)
Sharma, B.R. *et al., Phytochemistry*, 1981, **20**, 2606 (*Marmeline*)
Govindachari, T.R. *et al., Phytochemistry*, 1983, **22**, 755 (*N-cinnamoyl*)
Redouane, K. *et al., Agressologie*, 1984, **25**, 3 (*rev*)

Negwer, M. *et al., Organic-Chemical Drugs and their Synonyms, 6th edn., Akademie-Verlag*, 1987, 945
Midgley, J.M. *et al., J.C.S. Perkin 2*, 1989, 963-964 (*cryst struct, abs config, bibl*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 1250
Matsuda, F. *et al., Biosci., Biotechnol., Biochem.*, 2000, **64**, 625-627 (*N-Coumaroyloctopamine*)
Lee, C. *et al., J. Nat. Prod.*, 2001, **64**, 659-660 (*N-Feruloyl-O-methyloctopamine*)
Lee, D.G. *et al., Biotechnol. Lett.*, 2004, **26**, 1125-1130 (*N-Feruloyl-R-octopamine*)
Lundell, K. *et al., Tetrahedron: Asymmetry*, 2004, **15**, 3723-3729 (*R-form, S-form*)
Sadyandy, R. *et al., ARKIVOC*, 2005, **iii**, 36-43 (*R-form, synth*)
DellaGreca, M. *et al., Tetrahedron*, 2006, **62**, 2877-2882 (*N-Feruloyl-S-octopamine*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, AKT250

2-Octylpyrrole, 9CI O-64

[158697-97-3]



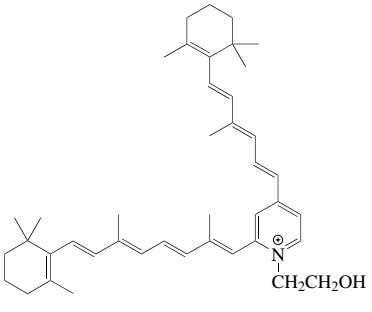
$C_{12}H_{21}N$ 179.305
No phys. props. reported.

N-*Sulfo: 2-Octylpyrrole sulfamate*
[587875-51-2]
$C_{12}H_{21}NO_3S$ 259.369
Alkaloid from the marine annelid *Cirriformia tentaculata*. Glass (as Na salt). CAS no. refers to Na salt.

Garrido, D.O.A. *et al., J.O.C.*, 1984, **49**, 2619-2622 (*synth*)
Barsby, T. *et al., J. Nat. Prod.*, 2003, **66**, 1110-1112 (*sulfamate*)

Ocular age pigment A2-E O-65

A2-E
[173449-96-2]

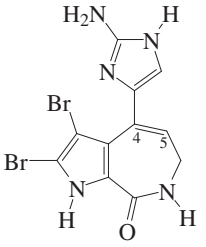


$C_{42}H_{58}NO^{\oplus}$ 592.926
Orange fluorescent pigment isol. from human eyes (>40 years).

Sakai, N. *et al., J.A.C.S.*, 1996, **118**, 1559
Ren, R.X.-F. *et al., J.A.C.S.*, 1997, **119**, 3619 (*synth*)
Tanaka, K. *et al., Org. Lett.*, 2000, **2**, 373-375 (*synth*)
Sicre, C. *et al., Org. Lett.*, 2005, **7**, 5737-5739 (*synth*)

Odiline O-66

Stevensine
[99102-22-4]



$C_{11}H_9Br_2N_5O$ 387.033
Metab. from the New Caledonian sponge *Pseudaxinyssa cantharella* and from *Ptilocaulis walpersi* and *Teichaxinella morchella*. Also isol. (as Stevensine) from an unidentified Micronesian sponge. Amorph. $[\alpha]_D$ +28 (c, 0.84 in MeOH).

4ξ,5-Dihydro: ***Hymenine***†
[105748-62-7]
$C_{11}H_{11}Br_2N_5O$ 389.049
Isol. from the Okinawan marine sponge *Hymeniacidon* sp. Potent α-adrenoceptor blocking agent. Amorph. solid. $[\alpha]_D^{25}$ -15 (c, 0.5 in MeOH). λ_{max} 274 (ϵ 9200) (MeOH) (Derep).

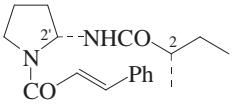
2-Debromo: ***2-Debromoodiline***. *2-Debromostevensine*
$C_{11}H_{10}BrN_5O$ 308.137
Isol. from the sponge *Stylissa carteri*. Amorph. orange solid. λ_{max} 232 (log ϵ 3.84); 263 (log ϵ 3.62); 288 (log ϵ 3.37) (MeOH).

2-Debromo, 4ξ,5-dihydro: ***2-Debromohymenine***
$C_{11}H_{12}BrN_5O$ 310.153
Isol. from the sponge *Stylissa carteri*. Amorph. brown solid. λ_{max} 220 (log ϵ 3.86); 269 (log ϵ 3.64) (MeOH).

Albizati, K.F. *et al., J.O.C.*, 1985, **50**, 4163-4164 (*isol, uv, ir, pmr, cmr*)
de Nanteuil, G. *et al., Tetrahedron*, 1985, **41**, 6019-6033 (*isol, cd, uv, ir, pmr, cmr, ms*)
Kobayashi, J. *et al., Experientia*, 1986, **42**, 1064-1065 (*Hymenine*)
Xu, Y.-Z. *et al., J.O.C.*, 1997, **62**, 456-464 (*Hymenine, Stevensine, synth*)
Eder, C. *et al., J. Nat. Prod.*, 1999, **62**, 184-187 (*2-Debromoodiline, 2-Debromohymenine*)
Andrade, P. *et al., Tet. Lett.*, 1999, **40**, 4775-4778 (*biosynth*)

Odorine O-67

2-Methyl-N-*[1-(1-oxo-3-phenyl-2-propenyl)-2-pyrrolidinyl]butanamide, 9CI*. N-*Cinnamoyl-2-(2-methylbutanoylamino)-pyrrolidine. Roxburghiline*
[72755-20-5]



(+)-*form*

$C_{18}H_{24}N_2O_2$ 300.4
λ_{max} 283 (ϵ 15800) (EtOH) (Derep). λ_{max} 283 (ϵ 15850) (MeOH) (Berdy).

(+)-*form*
Alkaloid from the leaves of *Aglaia odorata*. Also isol. from *Aglaia roxburghiana* (Meliaceae). Needles (C_6H_6). Mp 218-219°. $[\alpha]_D^{25}$ +72.4 (c, 0.03 in $CHCl_3$).

2,3-Didehydro: ***Dehydroodorine***
$C_{18}H_{22}N_2O_2$ 298.384
Alkaloid from leaves of *Aglaia formosana* (Meliaceae). Exhibits cytotoxicity against P-388 lymphocytic leukaemia system in cell culture. Needles (MeOH). Mp 167-168°. $[\alpha]_D^{18}$ +42.5 (c, 0.01 in $CHCl_3$). λ_{max} 282 (ϵ 66000) (MeOH) (Berdy).

2-Hydroxy: ***(-)-Odorinol***
[85761-62-2]
$C_{18}H_{24}N_2O_3$ 316.399
Alkaloid from *Aglaia odorata* (Meliaceae). Mp 209-211°. $[\alpha]_D$ -20 (EtOH). $[\alpha]_D$ -35 ($CHCl_3$). λ_{max} 283 (ϵ 15800) (EtOH) (Derep).

2′-Epimer: ***Epiodorine***
[73069-04-2]
$C_{18}H_{24}N_2O_2$ 300.4
Alkaloid from *Aglaia odorata*, *Aglaia pyramidata* and *Aglaia roxburghiana*. Cytotoxic agent. Cryst. $[\alpha]_D$ +34. Called 5′-epi in the lit.

(-)-*form*

2-Hydroxy: ***(+)-Odorinol***. *Hydroxyroxburghiline*
[72755-22-7]
$C_{18}H_{24}N_2O_3$ 316.399
Alkaloid from *Aglaia odorata* and *Aglaia roxburghiana* (Meliaceae). Inhibitor of P-388 lymphocytic leukaemia in mice. Needles (petrol). Sol. EtOH, $CHCl_3$; poorly sol. H_2O. Mp 166-168°. $[\alpha]_D^{25}$ +40.5 (c, 0.01 in $CHCl_3$). λ_{max} 283 (ϵ 15800) (EtOH) (Derep). λ_{max} 283 (ϵ 17780) (EtOH) (Berdy).

(±)-*form*
Synthetic. Needles (C_6H_6). Mp 187-190°.

N^2-*Deacyl,* N^2-*(3-methylbutanoyl):* ***Aglamide C***
[922149-09-5]
$C_{18}H_{24}N_2O_2$ 300.4
Alkaloid from the bark of *Aglaia edulis*. Amorph. powder. λ_{max} 205 (log ϵ 4.16); 219 (log ϵ 4.21); 283 (log ϵ 4.33) (MeOH).

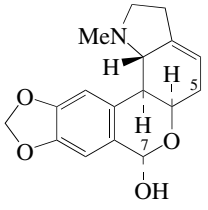
2-Epimer:
Synthetic. Needles (C_6H_6). Mp 174-177°.

Purushothaman, K.K. *et al., J.C.S. Perkin 1*, 1979, 3171-3174
Shiengthong, D. *et al., Tet. Lett.*, 1979, 2247 (*uv, ir, pmr, ms, struct*)
Babidge, P.J. *et al., Aust. J. Chem.*, 1980, **33**, 1841 (*isol, synth*)
Hayashi, N. *et al., Phytochemistry*, 1982, **21**, 2371-2373 (*uv, ir, pmr, cmr, ms, cryst struct, synth*)
Nagasaka, T. *et al., Heterocycles*, 1988, **27**, 2219 (*synth, ir, pmr*)
Saifah, E. *et al., J. Nat. Prod.*, 1993, **56**, 473-477 (*5′-Epiodorine*)

Duh, C.-Y. *et al., Phytochemistry*, 1993, **34**, 857 (*Dehydroodorine*)
Kim, S. *et al., J. Nat. Prod.*, 2006, **69**, 1769-1775 (*Aglamide C*)

Oduline O-68

[477-18-9]



$C_{17}H_{19}NO_4$ 301.341
Alkaloid from the bulbs of *Narcissus jonquilla* hybrids "Golden sceptre" and *Narcissus odorus* var. *rugulosus* (*Narcissus jonquilla* x *Narcissus poeticus*) (Amaryllidaceae). Prisms (Me_2CO). Mp 168°. $[\alpha]_D^{25}$ +239 (c, 0.35 in $CHCl_3$).

Picrate:
Cryst. + ½ H_2O (Me_2CO aq.). Mp 221° dec.

Me ether: **O-*Methyloduline***
[162411-70-3]
$C_{18}H_{21}NO_4$ 315.368
Alkaloid from bulbs of *Narcissus pseudonarcissus* ssp. *pseudonarcissus* cv. Carlton (Amaryllidaceae). Mp 164° (as picrate). $[\alpha]_D^{25}$ +148 (c, 0.13 in MeOH).

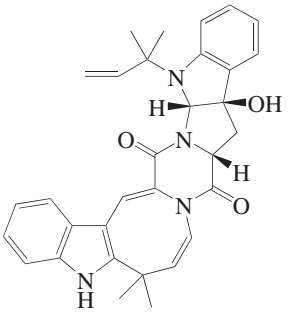
7-Ketone (lactone): ***Masonine***
[568-40-1]
$C_{17}H_{17}NO_4$ 299.326
Alkaloid from the bulbs of *Nerine masonorum*, from *Narcissus jonquilla* hybrid Golden Sceptre, and from *Galanthus nivalis* (Amaryllidaceae). Cryst. (EtOAc/Et_2O). Mp 180°. $[\alpha]_D^{25}$ +140 (c, 0.2 in $CHCl_3$).

7-Ketone, N-*de-Me:* **N-*Demethylmasonine***
[98764-82-0]
$C_{16}H_{15}NO_4$ 285.299
Alkaloid from the bulbs of *Narcissus pseudonarcissus* cv. Carlton. Mp 229° (as picrate). $[\alpha]_D^{25}$ +9.1 (c, 0.4 in $CHCl_3$).

Boit, H.-G. *et al., Chem. Ber.*, 1957, **90**, 725 (*isol, ir*)
Boit, H.G. *et al., Naturwissenschaften*, 1958, **45**, 85 (*Masonine, isol, ir, struct, occur*)
Döpke, W. *et al., Naturwissenschaften*, 1965, **52**, 60 (*Masonine, occur*)
Döpke, W. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1966, **299**, 994 (*Masonine, struct, stereochem*)
Döpke, W. *et al., Pharmazie*, 1966, **21**, 323; *CA*, **65**, 10632d (*struct*)
Schnoes, H.K. *et al., Tetrahedron*, 1968, **24**, 2825 (*ms*)
Clardy, J. *et al., J.O.C.*, 1972, **37**, 49 (*config*)
Battersby, A. *et al., J.C.S. Perkin 1*, 1973, 1609 (*biosynth, ir, pmr*)
Kreh, M. *et al., Phytochemistry*, 1995, **38**, 1533 (*O-Methyloduline, N-Demethylmasonine*)

Okaramine A O-68a

AK-40-I
[115444-43-4]



Absolute Configuration

$C_{32}H_{32}N_4O_3$ 520.63
Isol. from *Penicillium simplicissimum* (AK-40; ATCC90288). Mycotoxin. Insecticidal agent. Pale green needles (toluene). Sol. MeOH, EtOAc; fairly sol. toluene; poorly sol. H_2O. Mp 210-212° dec. $[\alpha]_D^{30}$ +101 (c, 0.09 in MeOH). λ_{max} 229 (ϵ 29900); 255 (ϵ 21100); 284 (ϵ 17400); 374(ϵ 19400) (MeOH) (Berdy).

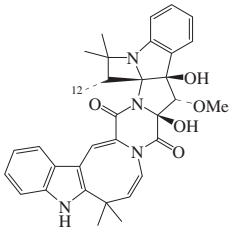
Ac:
$C_{34}H_{34}N_4O_4$ 562.667
Pale yellow needles (MeOH). Mp 190-193° dec. $[\alpha]_D^{22}$ +482 (c, 0.075 in MeOH).

N-De(1,1-dimethylpropenyl): ***Okaramine I***
[120717-00-2]
$C_{27}H_{24}N_4O_3$ 452.512
Prod. by *Aspergillus aculeatus* and *Penicillium simplicissimum*. Pale yellow powder. Mp 266-269°. $[\alpha]_D^{20}$ +645 (c, 0.09 in MeOH). λ_{max} 233 (ϵ 31000); 285 (ϵ 16600); 371 (ϵ 16600) (MeOH).

Hayashi, H. *et al., ABC.*, 1989, **53**, 461-469; (*isol, pmr, cmr, cryst struct*)
Hayashi, H. *et al., JNP*, 1999, **62**, 315-317 (*cmr, Okaramine I*)
Hewitt, P.R. *et al., OBCH*, 2004, **2**, 2415-2417 (*synth*)

Okaramine B O-69

AK-40-II
[117332-63-5]



Absolute Configuration

$C_{33}H_{34}N_4O_5$ 566.655
Isol. from *Penicillium simplicissimum* AK-40. Shows insecticidal activity. Toxic against *Artemia salina* (brine shrimp). Pale yellow needles (MeOH). Sol. MeOH, EtOAc; poorly sol. H_2O. Mp 295-298° dec. $[\alpha]_D^{20}$ +570 (c, 0.24 in Py). λ_{max} 233 (ϵ 27000); 288 (ϵ 12900); 375 (ϵ 17900) (MeOH) (Berdy).

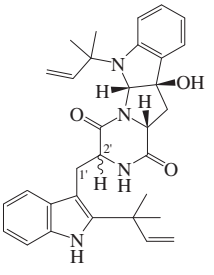
12-Hydroxy: ***Okaramine D***
[162413-54-9]
$C_{33}H_{34}N_4O_6$ 582.655
Prod. by *Penicillium simplicissimum* AK-40; ATCC90288. Shows insecticidal props. Pale yellow needles ($CHCl_3$). Mp 265° dec. $[\alpha]_D^{20}$ +480 (c, 0.16 in MeOH). λ_{max} 234 (ϵ 27500); 288 (ϵ 14500); 381 (ϵ 17200) (MeOH).

Demethoxy: ***Okaramine Q***
[263905-01-7]
$C_{32}H_{32}N_4O_4$ 536.629
Prod. by *Penicillium simplicissimum* ATCC90288. Yellow powder. Mp 243-246°. $[\alpha]_D^{20}$ +516 (c, 0.31 in MeOH). λ_{max} 234 (ϵ 26600); 288 (ϵ 13900); 376 (ϵ 15500) (MeOH).

Hayashi, H. *et al., Agric. Biol. Chem.*, 1988, **52**, 2131-2133; 1989, **53**, 461-469 (*isol, pmr, cmr, uv, ir, ms, cd, cryst struct*)
Hayashi, H. *et al., Biosci., Biotechnol., Biochem.*, 1995, **59**, 246-250 (*Okaramine D*)
Hayashi, H. *et al., Biosci., Biotechnol., Biochem.*, 1997, **61**, 914-916 (*Okaramine B, activity*)
Shiono, Y. *et al., Biosci., Biotechnol., Biochem.*, 2000, **64**, 103-110 (*Okaramine Q*)

Okaramine C O-70

[142677-16-5]



Absolute Configuration

$C_{32}H_{36}N_4O_3$ 524.661
Prod. by *Penicillium simplicissimum* AHU8402. Insecticide. Powder. $[\alpha]_D^{25}$ +19 (c, 0.2 in MeOH). λ_{max} 223 (ϵ 41400); 260 (ϵ 11100); 284 (ϵ 9210); 291 (ϵ 8690) (MeOH) (Derep).

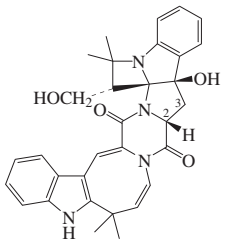
N-*Dealkyl,* N-*(3-methyl-2-butenyl):* ***Okaramine L***
[244071-73-6]
$C_{32}H_{36}N_4O_3$ 524.661
Prod. by *Penicillium simplicissimum*. Powder. Mp 130-133°. $[\alpha]_D^{20}$ +69 (c, 0.03 in MeOH). λ_{max} 223 (ϵ 48300); 284 (ϵ 11700); 291 (ϵ 11500) (MeOH).

1′,2′-Didehydro: ***Okaramine G***
[208719-70-4]
$C_{32}H_{34}N_4O_3$ 522.646
Prod. by *Penicillium simplicissimum* ATCC90288. Insecticide. Cryst. (CCl_4). Mp 145-147°. $[\alpha]_D^{20}$ +137 (c, 0.1 in MeOH). λ_{max} 223 (ϵ 31600); 246 (ϵ 19500); 286 (ϵ 9200); 290 (ϵ 9300); 340 (ϵ 10600) (MeOH).

Hayashi, H. *et al., Agric. Biol. Chem.*, 1991, **55**, 3143-3145 (*isol, pmr, cmr, struct*)
Hayashi, H. *et al., Biosci., Biotechnol., Biochem.*, 1998, **62**, 804-806 (*Okaramine G*)
Shiono, Y. *et al., Biosci., Biotechnol., Biochem.*, 1999, **63**, 1910-1920 (*Okaramine L*)

Okaramine E O-71

[162413-55-0]



Absolute Configuration

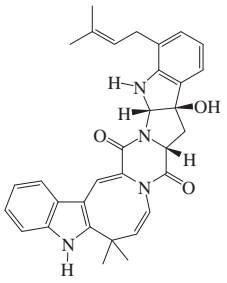
$C_{32}H_{32}N_4O_4$ 536.629
Prod. by *Penicillium simplicissimum*. Pale yellow powder. $[\alpha]_D^{18}$ +500 (c, 0.01 in MeOH). λ_{max} 234 (ϵ 24200); 284 (ϵ 12600); 373 (ϵ 13300) (MeOH).

2,3-Didehydro: ***Okaramine F***
[162413-56-1]
$C_{32}H_{30}N_4O_4$ 534.613
Prod. by *Penicillium simplicissimum*. Yellow powder. $[\alpha]_D^{18}$ -490 (c, 0.01 in MeOH). λ_{max} 230 (ϵ 26400); 289 (ϵ 14100); 402 (ϵ 15900) (MeOH).

Hayashi, H. *et al., Biosci., Biotechnol., Biochem.*, 1995, **59**, 246-250

Okaramine H O-72

[220525-10-0]



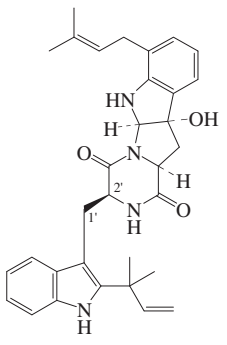
Absolute Configuration

$C_{32}H_{32}N_4O_3$ 520.63
Prod. by *Aspergillus aculeatus* KF428 and *Penicillium simplicissimum*. Yellow needles (toluene). Mp 204-206°. $[\alpha]_D^{20}$ +559 (c, 0.22 in MeOH). λ_{max} 233 (ϵ 30300); 286 (ϵ 18600); 374 (ϵ 19400) (MeOH).

Hayashi, H. *et al., J. Nat. Prod.*, 1999, **62**, 315-317 (*isol, uv, ir, pmr, cmr, ms*)

Okaramine J O-73

[244071-71-4]



Absolute Configuration

$C_{32}H_{36}N_4O_3$ 524.661
Prod. by *Penicillium simplicissimum*. Powder. Mp 151-153°. $[\alpha]_D^{20}$ +31 (c, 0.33 in MeOH). λ_{max} 220 (sh) ; 284 (ϵ 11800); 291 (ϵ 11300) (MeOH).

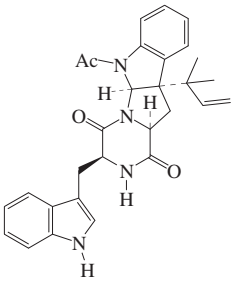
1′,2′-Didehydro: ***Okaramine K***
[244071-72-5]
$C_{32}H_{34}N_4O_3$ 522.646
Prod. by *Penicillium simplicissimum*. Powder. Mp 148-151°. $[\alpha]_D^{20}$ +100 (c, 0.06 in MeOH). λ_{max} 225 (sh) ; 290 (ϵ 9400); 342 (ϵ 11600) (MeOH).

Shiono, Y. *et al., Biosci., Biotechnol., Biochem.*, 1999, **63**, 1910-1920

Roe, J.M. *et al., Org. Lett.*, 2003, **5**, 2825-2827 (*synth*)

Okaramine M O-74

[244071-74-7]



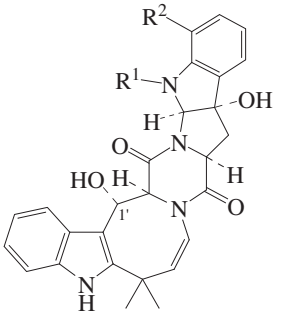
Absolute Configuration

$C_{29}H_{30}N_4O_3$ 482.581
Prod. by *Penicillium simplicissimum*. Powder. Mp 157-160°. $[\alpha]_D^{20}$ -39 (c, 0.33 in MeOH). λ_{max} 247 (ϵ 12500); 279 (ϵ 6900); 290 (ϵ 5200) (MeOH).

Shiono, Y. *et al., Biosci., Biotechnol., Biochem.*, 1999, **63**, 1910-1920

Okaramine O O-75

[244071-76-9]



R^1 = -$C(CH_3)_2CH{=}CH_2$, R^2 = H

$C_{32}H_{34}N_4O_4$ 538.645
The abs. config. was assigned as shown on biogenetic grounds only, but is the opposite to those assigned to other closely related okaramines. Prod. by *Penicillium simplicissimum* ATCC 90288. Powder. Mp 190-193°. $[\alpha]_D^{20}$ +275 (c, 0.04 in MeOH). λ_{max} 254 (ϵ 10800); 284 (ϵ 6800); 291 (ϵ 6600) (MeOH).

1′-Deoxy: ***Okaramine N***
[244071-75-8]
$C_{32}H_{34}N_4O_3$ 522.646
Prod. by *Penicillium simplicissimum* ATCC 90288. Powder. Mp 192-195°. $[\alpha]_D^{20}$ +284 (c, 0.15 in MeOH). λ_{max} 254 (ϵ 12000); 284 (ϵ 8200); 292 (ϵ 7600) (MeOH).

Shiono, Y. *et al., Biosci., Biotechnol., Biochem.*, 2000, **64**, 103-110 (*isol*)

Baran, P.S. *et al., J.A.C.S.*, 2003, **125**, 5628-5629 (*Okaramine N, synth*)

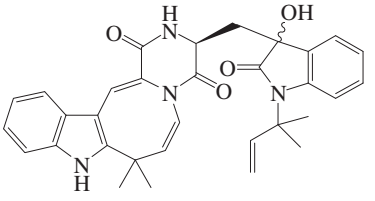
Okaramine P O-76

[244071-77-0]
As Okaramine O, O-75 with
R^1 = H, R^2 = -CH_2-CH=$C(CH_3)_2$
$C_{32}H_{34}N_4O_4$ 538.645
Prod. by *Penicillium simplicissimum* ATCC 90288. Powder. Mp 188-190°. $[\alpha]_D^{20}$ +254 (c, 0.22 in MeOH). λ_{max} 284 (ϵ 9300); 290 (ϵ 8600) (MeOH).

Shiono, Y. *et al., Biosci., Biotechnol., Biochem.*, 2000, **64**, 103-110

Okaramine R O-76a

[263905-02-8]

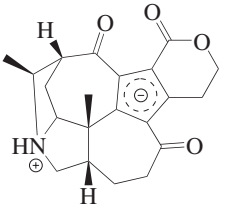


$C_{32}H_{32}N_4O_4$ 536.629
Prod. by *Penicillium simplicissimum* ATCC 90288. Yellow powder. Mp 185-187°. $[\alpha]_D^{20}$ m109 (c, 0.02 in MeOH). λ_{max} 232 (ϵ 29400); 286 (ϵ 16200) (MeOH).

Shiono, Y. *et al., BBB.*, 2000, **64**, 103-110 (*isol, ms, uv, pmr, cmr*)

Oldhamine A O-77

[1037404-79-7]

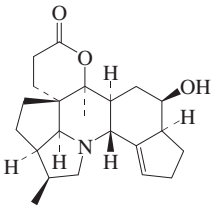


$C_{21}H_{23}NO_4$ 353.417
Alkaloid from the twigs of *Daphniphyllum oldhami*. Light yellow cryst. $[\alpha]_D^{20}$ +24.4 (c, 0.43 in MeOH). λ_{max} 229 (ϵ 1500); 295 (ϵ 5220); 360 (ϵ 2680) (MeOH).

Tan, C. *et al., Tet. Lett.*, 2008, **49**, 3376-3379 (*isol, pmr, cmr, cryst struct*)

Oldhamiphylline A O-78

[848490-57-3]



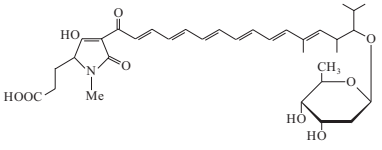
Relative Configuration

$C_{22}H_{31}NO_3$ 357.492
Alkaloid from *Daphniphyllum oldami*. Amorph. solid. $[\alpha]_D^{20}$ -41 (c, 1.5 in MeOH).

Chen, X. *et al., Chem. Biodiversity*, 2004, **1**, 1513-1518 (*isol, pmr, cmr*)

Oleficin, 8CI O-79

[12764-54-4]



$C_{34}H_{47}NO_9$ 613.747
Polyene antibiotic. Prod. by *Streptomyces parvulus*. Active against gram-positive organisms and Yoshida sarcoma. Dark red-black solid. Sol. MeOH, Et_2O; fairly sol. CCl_4; poorly sol. hexane, H_2O. Mp 96-98°. $[\alpha]_D^{30}$ -182 (c, 0.2 in EtOH). λ_{max} 262; 445; 475; 485 (MeOH/HCl) (Derep). λ_{max} 262; 415 (0.1*N* NaOH) (Derep). λ_{max} 262; 420 (ϵ 58200) (MeOH) (Derep).

▶ LD_{50} (mus, ivn) 40 mg/kg. UX9641800

Gyimesi, J. *et al., J. Antibiot.*, 1971, **24**, 277; 1978, **31**, 626 (*isol, ir, uv, pmr, ms, struct*)
Horváth, G. *et al., Tet. Lett.*, 1973, 3643 (*ir, uv, ms, nmr, struct*)
Kovac, L. *et al., Biochim. Biophys. Acta*, 1982, **721**, 349 (*props*)

Oleracins O-80

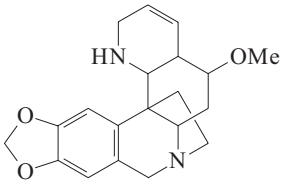
[57903-85-2 , 57903-84-1]

Structs. unknown. Betacyanin pigments from *Portulaca oleracea* (purslane) (Portulaceae) stems. Oleracins I and II recognised.

Piattelli, M. *et al., Phytochemistry*, 1964, **3**, 547-557 (*occur*)
Imperato, F. *et al., Phytochemistry*, 1975, **14**, 2091-2092 (*Oleracins I,II*)

Oliganine O-81

[85967-03-9]

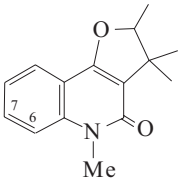


$C_{20}H_{24}N_2O_3$ 340.421
Alkaloid from *Crinum oliganthum* (Amaryllidaceae).

Döpke, W. *et al., Z. Chem.*, 1983, **23**, 101 (*isol, ir, pmr, ms, struct*)

Oligophyline O-82

3,5-Dihydro-2,3,3,5-tetramethylfuro[3,2-c]quinolin-4(2H)-one, 9CI
[86702-40-1]



$C_{15}H_{17}NO_2$ 243.305
Alkaloid from the roots of *Acronychia oligophylebia* and the heartwood of *Euxylophora paraënsis* (Rutaceae). Needles. Mp 90°. Opt. inactive. λ_{max} 218 (ϵ 46700); 231 (ϵ 48800); 282 (ϵ 7850); 292 (ϵ 9200); 317 (ϵ 8150); 330 (ϵ 6600) (MeOH) (Berdy).

N-*De-Me: 2,3,3-Trimethyl-2,3,4,5-tetrahydrofurano[3,2-c]quinolin-4-one.* **N-*Demethyloligophyline***
[86702-39-8]
$C_{14}H_{15}NO_2$ 229.278
Trace alkaloid from the heartwood of *Euxylophora paraënsis* (Rutaceae). Glistening needles (MeOH). Mp 200-201°.

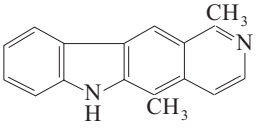
6-Methoxy, N-*de-Me,: 3,5-Dihydro-6-methoxy-2,3,3-trimethylfuro[3,2-c]quinolin-4(2H)-one, 9CI.* ***Oligophylicine***
[94482-45-8]
$C_{15}H_{17}NO_3$ 259.304
Alkaloid from the roots of *Acronychia oligophylebia* (Rutaceae). λ_{max} 213 (ϵ 36200); 236 (ϵ 36200); 282 (ϵ 10200); 292 (ϵ 11000); 320 (ϵ 4400); 333 (ϵ 3000) (MeOH) (Berdy).

6,7-Dimethoxy, N-*de-Me: 3,5-Dihydro-6,7-dimethoxy-2,3,3-trimethylfuro[3,2-c]quinolin-4(2H)-one.* ***Oligophylicidine***
[94443-42-2]
$C_{16}H_{19}NO_4$ 289.33
Alkaloid from the roots of *Acronychia oligophylebia* (Rutaceae).

Jurd, L. *et al., Aust. J. Chem.*, 1983, **36**, 759 (*isol, ir, pmr, cmr, ms, struct, deriv*)
Xu, W. *et al., Huaxue Xuebao*, 1984, **42**, 899; *CA*, **102**, 59257s

Olivacine O-83

1,5-Dimethyl-6H-pyrido[4,3-b]carbazole, 9CI. Guatambuinine
[484-49-1]



$C_{17}H_{14}N_2$ 246.311
Alkaloid from several *Aspidosperma* spp., from *Tabernaemontana psychotrifolia*, *Ochrosia*spp. and some other spp. in Apocynaceae. Antineoplastic agent. Shows v. strong cytotoxic activity *vs.* human carcinoma KB cells and L1210 leukaemia. Also shows antiprotozoal activity. Mp 318-326° dec. (315-320°). Log P 4.37 (calc). λ_{max} 224 (ϵ 30200); 237 (sh) (ϵ 26900); 245 (sh) (ϵ 21900); 275 (ϵ 57500); 285 (ϵ 75900); 293 (ϵ 70800); 331 (ϵ 7080); 346 (ϵ 5010); 380 (ϵ 3800); 400 (ϵ 3800) (EtOH) (Derep). λ_{max} 224 ; 238 ; 267 ; 276 ; 286 ; 292 ; 314 ; 318 ; 343 (EtOH) (Berdy). λ_{max} 242 ; 300 ; 348 (EtOH-HCl) (Berdy).

▶ UU8824900

N-*Oxide:* ***Olivacine* N-*oxide***
[2122-22-7]
$C_{17}H_{14}N_2O$ 262.31
Alkaloid from bark of *Aspidosperma nigricans* (Apocynaceae). Shows antineoplastic activity *vs.* walker 256 carcinosarcoma cells. Mp 304-305° dec. Log P 2.28 (calc).

9-Methoxy: ***9-Methoxyolivacine***
[16101-08-9]
$C_{18}H_{16}N_2O$ 276.337
Alkaloid from the bark of *Aspidosperma vargasii* (Apocynaceae). Pale yellow cryst. (MeOH). Mp 291-293° dec. Probable struct.

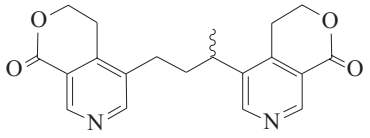
9-Methoxy; methiodide: Mp 340° dec.

1,2,3,4-Tetrahydro: see Guatambuine, G-211

Marini-Bettolo, G.B. *et al., Helv. Chim. Acta*, 1959, **42**, 2146 (*uv, ir, struct*)
Schmutz, J. *et al., Helv. Chim. Acta*, 1960, **43**, 793 (*synth, ir*)
Wenkert, E. *et al., J.A.C.S.*, 1962, **84**, 94 (*synth*)
Gilbert, B. *et al., Tetrahedron*, 1965, **21**, 1141 (*oxide*)
Burnell, R.H. *et al., Can. J. Chem.*, 1967, **45**, 89 (*9-Methoxyolivacine*)
Oikawa, Y. *et al., J.C.S. Perkin 1*, 1976, 1479 (*synth*)
Ahond, A. *et al., Tetrahedron*, 1978, **34**, 2385 (*cmr*)
Kano, S. *et al., Heterocycles*, 1981, **19**, 1673 (*synth*)
Besselièvre, R. *et al., Tetrahedron, Suppl.*, No. 1, 1981, 241 (*synth*)
Kutney, J.P. *et al., Can. J. Chem.*, 1982, **60**, 2426 (*synth*)
Murakami, Y. *et al., Tet. Lett.*, 1983, **24**, 2189 (*synth*)
Wanner, M.J. *et al., Tetrahedron*, 1983, **39**, 3673 (*synth*)
Suffness, M. *et al., Alkaloids (Academic Press)*, 1985, **25**, 89 (*rev, antitumour props*)
Narasimhan, N.S. *et al., Chem. Comm.*, 1985, 86 (*synth*)
Danieli, B. *et al., Alkaloids (Academic Press)*, 1986, **27**, 120 (*pharmacol*)
Naito, T. *et al., J.C.S. Perkin 1*, 1986, 99 (*synth, ir, pmr*)
Hibino, S. *et al., J. Het. Chem.*, 1990, **27**, 1751 (*synth*)
Yokoyama, Y. *et al., J.C.S. Perkin 1*, 1990, 1319 (*synth*)
Bäckvall, J.-E. *et al., J.O.C.*, 1990, **55**, 4528 (*synth*)
Gribble, G.W. *et al., J.O.C.*, 1992, **57**, 5891 (*synth*)
Tilve, S.G. *et al., Synth. Commun.*, 1996, **26**, 1921 (*synth*)

Oliveramine O-84

[41645-64-1]



$C_{20}H_{20}N_2O_4$ 352.389

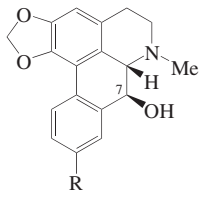
Alkaloid from *Gentiana olivieri* (Gentianaceae). Mp 144-145°. λ_{max} 273 (log ε 3.48) (EtOH).

Rakhmatullaev, T.U. *et al., Khim. Prir. Soedin.*, 1973, **9**, 64-67; *Chem. Nat. Compd. (Engl. Transl.)*, 1973, **9**, 56-58 (*ir, uv, pmr, ms, isol, struct*)

Oliveridine† O-85

7-Hydroxy-1,2-methylenedioxy-9-methoxyaporphine

[53602-02-1]



Absolute Configuration

R = OMe

$C_{19}H_{19}NO_4$ 325.363

Alkaloid from the trunk bark and leaves of *Polyalthia oliveri* and the trunk bark of *Polyalthia suaveolens*; also isol. from *Isolona campanulata* (Annonaceae). Causes transient hypotension followed by hypertension in rats. Needles (MeOH). Mp 95-100°. $[\alpha]_D$ -28 (c, 0.9 in $CHCl_3$).

Hydrochloride:
Cryst. (MeOH/Et_2O). Mp 251-253° dec.

N-*Oxide:* ***Oliveridine* N-*oxide***
[62173-00-6]
$C_{19}H_{19}NO_5$ 341.363
Alkaloid from the stem bark of *Enantia pilosa* and *Greenwayodendron suaveolens* (*Polyalthia suaveolens*) (Annonaceae). Mp 208-209°. $[\alpha]_D$ -51 (c, 0.6 in EtOH).

Ac: Mp 121-122°. $[\alpha]_D$ +26 (c, 0.5 in $CHCl_3$).

N-*De-Me:* ***Noroliveridine***
[64234-39-5]
$C_{18}H_{17}NO_4$ 311.337
Alkaloid from the leaves of *Polyalthia oliveri* (Annonaceae). Air- and light-sensitive amorph. powder.

Me ether: ***Oliverine*†**
[53602-03-2]
$C_{20}H_{21}NO_4$ 339.39
Alkaloid from trunk and stem barks of *Polyalthia suaveolens* and trunk bark and leaves of *Polyalthia oliveri*; also from *Isolona campanulata* (Annonaceae) and *Enantia pilosa*. Effective antiinflammatory agent. Noncryst.; cryst.(MeOH/Et_2O) (as hydrochloride). Mp 250° dec. (hydrochloride). $[\alpha]_D$ +70 (c, 0.7 in EtOH). λ_{max} 222 (log ε 4.22); 284 (log ε 4.2) (EtOH).

Me ether, N-*oxide:* ***Oliverine* N-*oxide***
[62172-99-0]
$C_{20}H_{21}NO_5$ 355.39
Alkaloid from the stem and root barks of *Enantia pilosa*, the stem bark of *Polyalthia suaveolens* and the bark of *Isolona campanulata* (Annonaceae). Fine beige needles (CH_2Cl_2). Mp 134° (110-114°). $[\alpha]_D$ +111 (c, 0.9 in EtOH).

Me ether, N-*de-Me:* ***Noroliverine***
[67627-74-1]
$C_{19}H_{19}NO_4$ 325.363
Alkaloid from the trunk bark of *Polyalthia suaveolens* (Annonaceae). Noncryst.; cryst. (MeOH/Et_2O) (as hydrochloride). Mp 280-282° dec. (hydrochloride). $[\alpha]_D$ +65 (c, 0.5 in EtOH).

O-*De-Me:* ***Roemerolidine***
[112494-61-8]
$C_{18}H_{17}NO_4$ 311.337
Alkaloid from *Duguetia spixiana* (Annonaceae). $[\alpha]_D$ -23 (c, 0.24 in EtOH).

O-*De-Me,* O^7-*Me:* ***Polysuavine***
[67627-72-9]
$C_{19}H_{19}NO_4$ 325.363
Alkaloid from the trunk bark and stem bark of *Polyalthia suaveolens* (Annonaceae). Noncryst.

7-Epimer, N-*de-Me:* ***Michelanugine***
[51059-63-3]
$C_{18}H_{17}NO_4$ 311.337
Alkaloid from the trunk bark of *Michelia lanuginosa*. Amorph.; cryst. (as hydrochloride). Mp 275° dec. (hydrochloride). $[\alpha]_D$ -105 (c, 0.62 in EtOH).

Hamonnière, M. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1974, **278**, 921-924 (*uv, pmr, ms, abs config*)
Talapatra, S.K. *et al., Tetrahedron*, 1975, **31**, 1105-1107 (*Michelanugine*)
Nieto, M. *et al., J. Nat. Prod.*, 1976, **39**, 350-356 (*Oliverine N-oxide, Oliveridine N-oxide*)
Hamonnière, M. *et al., Phytochemistry*, 1977, **16**, 1029-1034 (*isol, pmr, Oliverine, Noroliveridine*)
Hocquemiller, R. *et al., Plant. Med. Phytother.*, 1978, **12**, 230-234 (*isol, Oliveridine, Oliverine, Oliverine oxide*)
Cavé, A. *et al., Planta Med.*, 1978, **33**, 243-250 (*Noroliverine, Polysuavine*)
Jackman, L.M. *et al., J. Nat. Prod.*, 1979, **42**, 437-449 (*cmr*)
Kessar, S.V. *et al., Indian J. Chem., Sect. B*, 1981, **20**, 984; 1983, **22**, 321-324 (*synth, uv, pmr, ms*)
Hasan, C.M. *et al., J.C.S. Perkin 1*, 1982, 2807-2812 (*oxides*)
Rasamizafy, S. *et al., J. Nat. Prod.*, 1987, **50**, 674-679 (*Roemerolidine*)

Oliverine† O-86

$C_{20}H_{16}N_2O_4$ 348.357

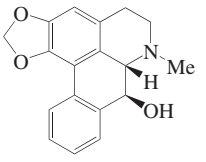
Monoterpene alkaloid. Struct. unknown. Alkaloid from the epigeous part of *Gentiana olivieri* (Gentianaceae). Cryst. (MeOH). Mp 206-207°.

Rakhmatullaev, T.U. *et al., Khim. Prir. Soedin.*, 1969, **5**, 608; *Chem. Nat. Compd. (Engl. Transl.)*, 1969, **5**, 531-532 (*isol*)
Rakhmatullaev, T.U. *et al., Khim. Prir. Soedin.*, 1972, 350-353; *Chem. Nat. Compd. (Engl. Transl.)*, 1974, **8**, 344-345 (*isol*)

Oliveroline O-87

7-Hydroxy-1,2-methylenedioxyaporphine

[62560-99-0]



Absolute Configuration

$C_{18}H_{17}NO_3$ 295.337

Alkaloid from the trunk bark and leaves of *Polyalthia oliveri*, the trunk bark of *Polyalthia suaveolens*, and the stem and root barks of *Pachypodanthium confine* (Annonaceae). Shows antiparkinsonian activity. Causes transient hypotension followed by hypertension in rats. Cryst. (MeOH). Mp 152°. $[\alpha]_D$ -64 (c, 0.5 in $CHCl_3$).

β-N-*Oxide:* ***Oliveroline β*-N-*oxide***
[64190-95-0]
$C_{18}H_{17}NO_4$ 311.337
Alkaloid from the leaves of *Polyalthia oliveri* and from *Polyalthia longifolia* (Annonaceae). Also isol. from *Guatteria sagotiana* (Annonaceae). Microcryst. powder (MeOH). Mp 138°. $[\alpha]_D$ -154 (c, 0.4 in EtOH). Stereochem. at *N*-oxide centre unequivocally detd. in 1989.

N-*De-Me: 7-Hydroxy-1,2-methylenedioxynoraporphine.* ***Noroliveroline***
[83730-14-7]
$C_{17}H_{15}NO_3$ 281.31
Alkaloid from the bark and leaves of *Polyalthia acuminata* (Annonaceae). Amorph.

N-*De-Me,* N,O-*di-Ac:* **N,O-*Diacetylnoroliveroline***
[83730-15-8]
$C_{21}H_{19}NO_5$ 365.385
Alkaloid from the rhizomes of *Lysichiton camtschatcense*. Light brown powder. $[\alpha]_D^{25}$ -221.3 (c, 0.18 in $CHCl_3$). λ_{max} 211 (log ε 4.36); 276 (log ε 3.98); 319 (log ε 3.44) (EtOH).

Me ether: 7-Methoxy-1,2-methylenedioxyaporphine. **N-*Methylpachypodanthine***
[60033-07-0]
$C_{19}H_{19}NO_3$ 309.364
Alkaloid from the bark of *Polyalthia staudtii* (Annonaceae). Mp 250° dec. (as hydrochloride). $[\alpha]_D$ +24 (c, 0.8 in EtOH).

Me ether, N-*oxide:* **N-*Methylpachypodanthine* N-*oxide***
[64190-96-1]
$C_{19}H_{19}NO_4$ 325.363
Alkaloid from the leaves and stem bark of *Polyalthia oliveri* (Annonaceae). Noncryst.

Me ether, N-*de-Me: 7-Methoxy-1,2-methylenedioxynoraporphine.* ***Pachypodanthine***
[60033-05-8]

$C_{18}H_{17}NO_3$ 295.337
Alkaloid from the trunk bark and root bark of *Pachypodanthium staudtii*, the leaves of *Polyalthia oliveri* and the trunk bark of *Polyalthia suaveolens* (Annonaceae). Needles (Et_2O). Mp 127°. $[\alpha]_D$ +38 (c, 0.8 in EtOH).

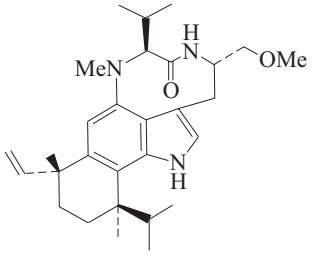
Me ether, N-*de-Me, hydrochloride:* Mp 255° dec.

Me ether, N-*de-Me,* N-*Ac:* **N-*Acetylpachypodanthine***
[60033-06-9]
$C_{20}H_{19}NO_4$ 337.374
Alkaloid from the bark of *Pachypodanthium confine*. Needles (MeOH) (synthetic); yellowish powder (natural). Mp 212-213° (synthetic). $[\alpha]_D$ -204 (c, 0.8 in EtOH) (synthetic). $[\alpha]_D^{20}$ -64.3 (c, 0.28 in EtOH) (natural). λ_{max} 277 (log ϵ 3.92) (MeOH) (natural).

Bévalot, F. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1976, **282**, 865 (*Pachypodanthine, uv, pmr, ms, struct*)
Bévalot, F. *et al., Ann. Pharm. Fr.*, 1977, **35**, 65; *CA*, **86**, 185953e (*isol*)
Hamonnière, M. *et al., Phytochemistry*, 1977, **16**, 1029 (*Oliveroline β-N-oxide, N-Methylpachypodanthine oxide*)
Bévalot, F. *et al., Plant. Med. Phytother.*, 1977, **11**, 315 (*N-Methylpachypodanthine*)
Cavé, A. *et al., Planta Med.*, 1978, **33**, 243 (*isol*)
Kessar, S.V. *et al., Tet. Lett.*, 1980, **21**, 3307 (*Oliveroline, Noroliveroline, synth*)
Zarga, M.H.A. *et al., J. Nat. Prod.*, 1982, **45**, 471 (*Noroliveroline*)
Rasamizafy, S. *et al., J. Nat. Prod.*, 1986, **49**, 1078 (*oxide*)
Wu, Y.-C. *et al., Heterocycles*, 1989, **29**, 463 (*config, oxide*)
Takatsu, H. *et al., J. Nat. Prod.*, 2005, **68**, 430-431 (*N,O-Diacetylnoroliveroline*)
Brastianos, H.C. *et al., J. Nat. Prod.*, 2007, **70**, 287-288 (*activity*)
Mathouet, H. *et al., Phytochemistry*, 2007, **68**, 1813-1818 (*N-Acetylpachypodanthine*)

Olivoretin C O-88

[90599-28-3]



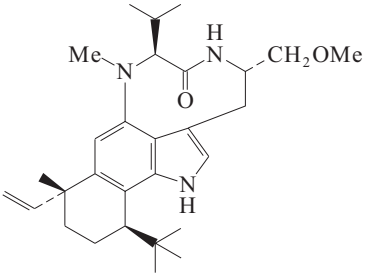
$C_{29}H_{43}N_3O_2$ 465.678
Isol. from *Streptoverticillium olivoreticuli* and *Streptoverticillium blastmyceticus*. Possesses strong vesicatory activity and possible tumour-promoting props. Prisms (EtOH). Sol. MeOH, $CHCl_3$. Mp 305-307°. $[\alpha]_D^{32}$ -256.6 (c, 0.07 in $CHCl_3$). λ_{max} 233 (ϵ 34700); 287 (ϵ 9770); 298 (sh) (ϵ 8130) (MeOH) (Derep). λ_{max} 233 (ϵ 36300); 289 (ϵ 9550) (MeOH) (Berdy).

O-*De-Me:* ***Des*-O-*methylolivoretin C***
[95013-42-6]
$C_{28}H_{41}N_3O_2$ 451.651
Minor metab. of *Streptoverticillium olivoreticuli*. Plates (C_6H_6). Mp 268-270°. λ_{max} 233 (ϵ 34700); 287 (ϵ 9770); 298 (sh) (ϵ 8130) (MeOH) (Derep).

Aimi, N. *et al., Chem. Pharm. Bull.*, 1984, **32**, 354; 358; 3774; 4233 (*isol, pmr, cmr, struct*)
Irie, K. *et al., Agric. Biol. Chem.*, 1985, **49**, 221 (*isol*)

Olivoretin E O-89

[110187-21-8]

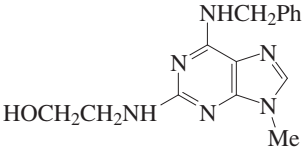


$C_{29}H_{43}N_3O_2$ 465.678
Prod. by *Streptoverticillium olivoreticuli*. Tumour promotor. Prisms. Mp 266-269° dec. Similar to Teleocidin B_1, T-63. λ_{max} 233 (ϵ 34700); 287 (ϵ 9770); 298 (sh) (ϵ 8130) (MeOH) (Derep).

Sakai, S. *et al., Chem. Pharm. Bull.*, 1986, **34**, 4883 (*isol, struct*)
Irie, K. *et al., Tetrahedron*, 1990, **46**, 2773 (*biosynth*)

Olomoucine O-90

2-[[9-Methyl-6-[(phenylmethyl)amino]-9H-purin-2-yl]amino]ethanol, 9CI. 6-(Benzylamino)-2-(2-hydroxyethylamino)-9-methylpurine
[101622-51-9]

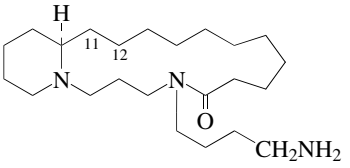


$C_{15}H_{18}N_6O$ 298.347
Constit. of the cotyledons of radish *Raphanus sativus*. Cytokinin. Cyclin-dependent kinase inhibitor. Cryst. (MeOH/EtOAc/petrol). Mp 126°. λ_{max} 232 (ϵ 23260); 290 (ϵ 12880) (EtOH aq.).

Parker, C.W. *et al., Phytochemistry*, 1986, **25**, 303-310 (*synth*)
Tao, G.Q. *et al., J. Plant Growth Regul.*, 1991, **10**, 179-185 (*isol*)
Schulze-Gahmen, U. *et al., Proteins*, 1995, **22**, 378-391 (*cryst struct with ATP*)
Havlicek, L. *et al., J. Med. Chem.*, 1997, **40**, 408-412 (*synth, activity*)
Nugiel, D.A. *et al., J.O.C.*, 1997, **62**, 201-203 (*synth*)
Krystof, V. *et al., Cell Mol. Life Sci.*, 2005, **62**, 1763-1771 (*pharmacol*)
Wan, Z.-K. *et al., Org. Lett.*, 2006, **8**, 2425-2428 (*synth*)
Tian, D.S. *et al., Brain Res.*, 2007, **1135**, 177-185; **1154**, 206-214 (*pharmacol*)

Oncinotine O-91

4-(4-Aminobutyl)octadecahydropyrido[1,2-e][1,5]diazacycloheptadecin-5(6H)-one, 9CI



$C_{23}H_{45}N_3O$ 379.628

(R)-form [21008-79-7]
Alkaloid from the stem bark of *Oncinotis nitida* (Apocynaceae). Oil. $[\alpha]_D$ -33 (c, 0.106 in MeOH). $[\alpha]_D$ -29 ($CHCl_3$).

11-Oxo: ***Oncinotin-11-one***
[181486-83-9]
$C_{23}H_{43}N_3O_2$ 393.612
Minor alkaloid from leaves of *Oncinotis tenuiloba*. Has (*S*)-config.

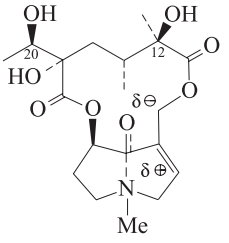
12-Oxo: Oncinotin-12-one
[181486-84-0]
$C_{23}H_{43}N_3O_2$ 393.612
From leaves of *Oncinotis tenuiloba*. Has (*S*)-config.

(±)-*form* [53648-98-9]
Synthetic. Noncryst.

Badawi, M.M. *et al., Helv. Chim. Acta*, 1968, **51**, 1813 (*struct*)
Guggisberg, A. *et al., Helv. Chim. Acta*, 1974, **57**, 414; 1976, **59**, 3013 (*isol, uv, ord, ir, ms, struct, synth, abs config*)
Schneider, F. *et al., Helv. Chim. Acta*, 1974, **57**, 434 (*synth, ir, ms*)
Bienz, S. *et al., Helv. Chim. Acta*, 1988, **71**, 1708 (*synth*)
Doll, M.K.-H. *et al., Helv. Chim. Acta*, 1996, **79**, 973; 1379 (*Oncinotin-11-one, Oncinotin-12-one*)
Ina, H. *et al., J.O.C.*, 1996, **61**, 1023 (*synth, pmr, cmr*)
Hou, D.-R. *et al., J.O.C.*, 2004, **69**, 6094-6099 (*synth*)

Onetine O-92

15,20-Dihydro-12,15,20-trihydroxy-4-methyl-4,8-secosenecionan-8,11,16-trione, 9CI
[41451-67-6]



Absolute configuration

$C_{19}H_{29}NO_8$ 399.44
Cyclic otonecine diester. Closely related to the Jacoline group. Alkaloid from *Senecio othonnae* (Asteraceae). Cryst. (EtOH). Mp 192-193°. $[\alpha]_D^{20}$ +73 (c, 2.5 in $CHCl_3$).

Flavianate:
Cryst. (EtOH). Mp 238-240°.

O^{12}-*Ac:* ***Floridanine***
[16958-31-9]
$C_{21}H_{31}NO_9$ 441.477
Alkaloid from *Senecio erraticus, Senecio orthonnae, Senecio aureus* and *Cacalia floridana* (Asteraceae). Prisms + $CHCl_3$. Mp 195-196°. $[\alpha]_D$ +66.5 (c, 0.8 in $CHCl_3$).

► VS3595000

O^{12},O^{20}-*Di-Ac:* ***Floricaline***
[16958-32-0]
$C_{23}H_{33}NO_{10}$ 483.514
Alkaloid from *Cacalia floridana* (Asteraceae). Solvated prisms (C_6H_6). Mp 120-122° Mp 177-178° (dried).

20-Deoxy, 20-chloro: ***Desacetyldoronine***
[120481-77-8]
$C_{19}H_{28}ClNO_7$ 417.885
Alkaloid from *Senecio inaequidens* (Asteraceae).

20-Deoxy, 20-chloro, O^{12}*-Ac:* ***Doronine****. 6′-Chlorodeoxyfloridanine*
[60367-00-2]
$C_{21}H_{30}ClNO_8$ 459.923
Alkaloid from *Doronicum macrophyllum* roots and from *Senecio abrotanifolius* and *Senecio clevelandii* (Asteraceae). Cryst. (C_6H_6/cyclohexane). Mp 113-114° dec. $[\alpha]_D$ +45.4 (c, 1.1 in $CHCl_3$).

► VS3585000

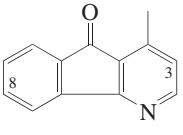
20-Deoxy, 20-chloro, O^{12}*-Ac, picrate:* Mp 235° dec.

[30512-07-3 , 7079-67-6 , 30484-73-2 , 7097-02-1]

Danilova, A.V. *et al., J. Gen. Chem. USSR (Engl. Transl.)*, 1962, **32**, 638 (*isol*)
Cava, M.P. *et al., J.O.C.*, 1968, **33**, 3570 (*Floridanine, Floricaline*)
Hrbek, J. *et al., Coll. Czech. Chem. Comm.*, 1972, **37**, 3918 (*cd, stereochem*)
Alieva, Sh.A. *et al., Khim. Prir. Soedin.*, 1976, 194; *Chem. Nat. Compd. (Engl. Transl.)*, 173 (*Doronine*)
Roeder, E. *et al., Planta Med.*, 1983, **49**, 57 (*isol, ms, pmr, cmr, Floridanine*)
Wong, R.Y. *et al., Acta Cryst. C*, 1984, **40**, 163 (*cryst struct, Doronine*)
Bicchi, C. *et al., J. Nat. Prod.*, 1989, **52**, 32 (*occur, ms, Desacetyldoronine*)

Onychine† O-93

*4-Methyl-5*H*-indeno[1,2-*b*]pyridin-5-one, 9CI. 1-Methyl-4-azafluorenone*
[58787-04-5]



$C_{13}H_9NO$ 195.22
Alkaloid from the trunkwood of *Onychopetalum amazonicum* and *Guatteria dielsiana*, and from the root bark of *Cleistopholis patens* (Annonaceae). Shows antiyeast activity. Pale yellow needles (EtOAc/petrol). Mp 136-138° (133-135°, 125-129°). Struct. firmly established by 1979. The erroneous formula, 4-methyl-1-azafluorenone, was retained several years later when Onychine was reisolated and the structs. of several other more oxygenated azafluorenes were based on it. See also Dielsinol, D-385 and 8,9-Dihydroxy-4-methyl-5*H*-indeno[1,2-*b*]pyridin-5-one, D-626. λ_{max} 253 (log ϵ 4.62); 279 (log ϵ 3.85); 289 (log ϵ 3.88); 308 (log ϵ 3.3) (EtOH).

*3-Hydroxy: 3-Hydroxy-4-methyl-5*H*-indeno[1,2-*b*]pyridin-5-one. 2-Hydroxy-1-methyl-4-azafluorenone.* ***2-Hydroxyonychine***
[942472-64-2]
$C_{13}H_9NO_2$ 211.22
Alkaloid from *Polyalthia nemoralis*. Amorph. yellow powder. λ_{max} 214 (log ϵ 3.99); 249 (log ϵ 4.1); 269 (log ϵ 4.12) (MeOH).

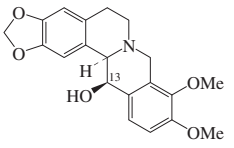
*8-Hydroxy: 8-Hydroxy-4-methyl-5*H*-indeno[1,2-*b*]pyridin-5-one. 6-Hydroxy-1-methyl-4-azafluorenone.* ***6-Hydroxyonychine****. Oxylopinine*
$C_{13}H_9NO_2$ 211.22
Alkaloid from *Oxandra xylopioides* (Annonaceae) and *Unonopsis spectabilis* (Annonaceae). Yellow needles. Mp 243-245°.

*8-Methoxy: 8-Methoxy-4-methyl-5*H*-indeno[1,2-*b*]pyridin-5-one. 6-Methoxy-1-methyl-4-azafluorenone.* ***6-Methoxyonychine***
[105418-67-5]
$C_{14}H_{11}NO_2$ 225.246
Alkaloid from the trunkwood of *Guatteria dielsiana*. Cryst. (EtOH) or gum. Mp 95-98° Mp 130-132°. Struct. revised in 1987; erroneously described as 6-methoxy-4-methyl-1-azafluorenone in the original lit. λ_{max} 252 (log ϵ 4.22); 280 (log ϵ 3.79); 292 (log ϵ 3.75); 312 (sh) (log ϵ 3.43) (EtOH).

Bowden, B.F. *et al., Aust. J. Chem.*, 1975, **28**, 2681-2701 (*synth, uv, ir, pmr, ms*)
De Almeida, M.E.L. *et al., Phytochemistry*, 1976, **15**, 1186-1187 (*isol, uv, ir, pmr, ms*)
Koyama, J. *et al., Heterocycles*, 1979, **12**, 1017-1019 (*synth, pmr*)
Waterman, P.G. *et al., Phytochemistry*, 1985, **24**, 523-527 (*isol, pmr, cmr*)
Goulart, M.O.F. *et al., Phytochemistry*, 1986, **25**, 1691-1695 (*6-Methoxyonychine, isol, uv, ir, pmr, ms*)
Zhang, J. *et al., J. Nat. Prod.*, 1987, **50**, 800-806 (*6-Hydroxyonychine, isol, synth*)
Hufford, C.D. *et al., J. Nat. Prod.*, 1987, **50**, 961-964 (*activity*)
Tadić, D. *et al., Phytochemistry*, 1987, **26**, 1551-1552 (*6-Methoxyonychine, struct, synth, uv, ir, pmr, ms*)
Irie, H. *et al., Chem. Pharm. Bull.*, 1988, **36**, 3134-3137 (*synth, 6-Methoxyonychine*)
Alves, T. *et al., Tet. Lett.*, 1988, **29**, 2135-2136 (*Onychine, 6-Methoxyonychine, synth*)
Cassels, B.K. *et al., J. Nat. Prod.*, 1989, **52**, 420-422 (*cmr*)
Nitta, M. *et al., J.C.S. Perkin 1*, 1991, 1115-1118 (*synth*)
Bracher, F. *et al., Synlett*, 1991, 95-96 (*synth, 6-Methoxyonychine*)
Tong, T.H. *et al., Synth. Commun.*, 1992, **22**, 1773-1782 (*synth*)
Bracher, F. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1994, **327**, 371-375 (*synth, 6-Methoxyonychine*)
Padwa, A. *et al., J.O.C.*, 2000, **65**, 2368-2378 (*synth, ir, pmr*)
He, X.-F. *et al., Helv. Chim. Acta*, 2007, **90**, 783-791 (*2-Hydroxyonychine*)

Ophiocarpine O-94

*5,8,13,13a-Tetrahydro-9,10-dimethoxy-6*H*-benzo[g]-1,3-benzodioxolo[5,6-a]quinolizin-13-ol, 9CI. 9,10-Dimethoxy-2,3-(methylenedioxy)berbin-13-ol, 8CI. 13-Hydroxycanadine*



(-)-*form*

$C_{20}H_{21}NO_5$ 355.39

(-)-*form* [478-13-7]
Alkaloid from *Corydalis cheilanthifolia, Corydalis ophiocarpa, Corydalis govaniana* and *Corydalis campulicarpa* (Papaveraceae). Shows cytotoxic and antimicrobial props. Prisms (MeOH). Mp 188°. $[\alpha]_D^{24}$ -283 (c, 1 in $CHCl_3$).

► DR9900000

β-N-*Oxide:* ***Carpoxidine****. Ophiocarpine* N-*oxide*
[66408-19-3]
$C_{20}H_{21}NO_6$ 371.389
Alkaloid from *Corydalis ophiocarpa* (Papaveraceae). Cryst. (MeOH). Mp 213-215° (207-208°). $[\alpha]_D$ -110 (c, 0.5 in $CHCl_3$). $[\alpha]_D^{25}$ -185 (c, 0.77 in C_6H_6/MeOH 2:1).

N-*Me:* Mp 272-273° dec. (as iodide). $[\alpha]_D$ -166 (c, 0.50 in EtOH) (as iodide).

Ac:
Cryst. (CH_2Cl_2/petrol). Mp 141-143° Mp 165-167°.

13-Ketone: ***Ophiocarpinone***
[83532-42-7]
$C_{20}H_{19}NO_5$ 353.374
Minor alkaloid from *Cocculus pendulus* (Menispermaceae). Cryst. (MeOH). Mp 217-218°. $[\alpha]_D$ +265 (c, 1.0 in $CHCl_3$).

13-Epimer: Epiophiocarpine
[5308-61-2]
Synthetic. Mp 161-162°. $[\alpha]_D$ -282 (c, 1.0 in $CHCl_3$).

(±)-*form* [18090-55-6]
Mp 248-252°.

Ac: Mp 176-177°.

13-Ketone: [83572-34-3]
Mp 232-234°.

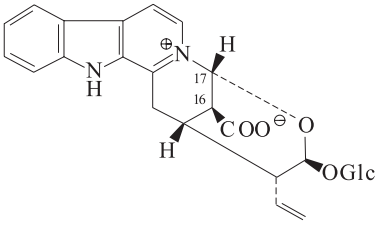
13-Epimer:
Cryst. ($CHCl_3$/MeOH). Mp 184-185° (178-179°).

Manske, R.H.F. *et al., Can. J. Res., Sect. B*, 1939, **17**, 51 (*isol*)
Govindachari, T.R. *et al., J.C.S.*, 1957, 557 (*synth*)
Ohta, M. *et al., Chem. Pharm. Bull.*, 1964, **12**, 1072 (*ir, pmr, abs config, synth*)

Elliott, I.W. *et al., J. Het. Chem.*, 1967, **4**, 639 (*synth*)
Jeffs, P.W. *et al., J.O.C.*, 1975, **40**, 644 (*ord*)
Taira, Z. *et al., Cryst. Struct. Commun.*, 1978, **7**, 71 (*cryst struct, oxide*)
Tani, C. *et al., Yakugaku Zasshi*, 1978, **98**, 1243 (*isol, oxide*)
Preininger, V. *et al., Planta Med.*, 1979, **36**, 213 (*isol, oxide*)
Bhakuni, D.S. *et al., Indian J. Chem., Sect. B*, 1982, **21**, 389 (*Ophiocarpinone, isol, ir, pmr, cd, abs config, synth*)
Iwasa, K. *et al., J.O.C.*, 1982, **47**, 4275 (*cmr, pmr, conformn*)

Ophiorine A O-95

[99615-91-5]



$C_{26}H_{28}N_2O_9$ 512.515

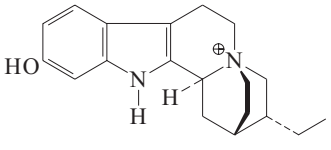
Alkaloid from the leaves of *Ophiorrhiza japonica* and *Ophiorrhiza kuroiwai* and from the bark of *Sickingia tinctoria* and *Sickingia williamsii* (preferred genus name *Simira*) (Rubiaceae). Pale-yellow needles. Mp 217-219°. $[\alpha]_D$ +51. Unique among the naturally occurring glucoindole alkaloids in possessing a C_{17}-N_b linkage.

16-Epimer. ***Ophiorine B***
[99631-26-2]
$C_{26}H_{28}N_2O_9$ 512.515
Alkaloid from the leaves of *Ophiorrhiza japonica* and *Ophiorrhiza kuroiwai* (Rubiaceae). Pale-yellow needles. Mp 188-191°. $[\alpha]_D$ +18.2.

Aimi, N. *et al., Tet. Lett.*, 1985, **26**, 5299 (*isol, uv, pmr, struct*)
Aquino, R. *et al., Phytochemistry*, 1994, **37**, 1471 (*isol, cmr*)

Ophiorrhizine O-96

11-Hydroxy-4,17-cyclocorynanium(1+)
[142750-49-0]



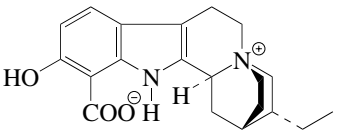
$C_{19}H_{25}N_2O^{\oplus}$ 297.419

Erroneously named 10-Hydroxy-4,17-cyclocorynanium in CAS. Alkaloid from aerial parts of *Ophiorrhiza major* (Rubiaceae). Plates + $1H_2O$ (MeOH/EtOAc)(as chloride). Mp 162-164° dec. (chloride). $[\alpha]_D^{20}$ -60 (c, 0.001 in MeOH). CAS no. refers to chloride.

Arbain, D. *et al., J.C.S. Perkin 1*, 1992, 663-664 (*isol, uv, pmr, cmr, cryst struct*)
Fujii, T. *et al., Chem. Pharm. Bull.*, 1995, **43**, 49-52 (*synth, cd, abs config*)

Ophiorrhizine-12-carboxylate O-97

[214403-96-0]



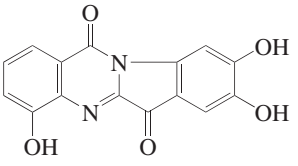
$C_{20}H_{24}N_2O_3$ 340.421

Alkaloid from *Ophiorrhiza blumeana*. Prisms + $2H_2O$ (MeOH/EtOAc). Mp 278-281° dec. $[\alpha]_D^{27}$ -52 (c, 0.001 in MeOH). λ_{max} 229 (ϵ 10800); 291 (ϵ 2900); 320 (ϵ 2900) (MeOH).

Arbain, D. *et al., J.C.S. Perkin 1*, 1998, 2537-2540 (*isol, uv, ir, cd, pmr, cmr, ms, cryst struct*)

Ophiuroidine O-98

*4,8,9-Trihydroxyindolo[2,1-*b*]quinazoline-6,12-dione*
[944822-48-4]



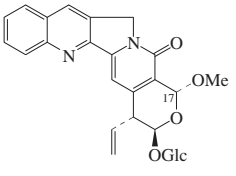
$C_{15}H_8N_2O_5$ 296.239

Isol. from *Ophiocoma riisei*. Orange powder. Mp > 300° dec. λ_{max} 224 (log ϵ 4.4); 254 (log ϵ 4.2); 284 (log ϵ 4.2); 312 (log ϵ 4.05); 320 (log ϵ 3.77); 399 (log ϵ 3.96) (EtOH). λ_{max} 240 (log ϵ 4.48); 320 (log ϵ 4.2); 500 (log ϵ 4.18) (EtOH/KOH).

Utkina, N.K. *et al., Tet. Lett.*, 2007, **48**, 4445-4447 (*isol, uv, pmr, cmr, ms*)

OPHR 17 O-99

[486394-19-8]



Absolute Configuration

$C_{27}H_{28}N_2O_9$ 524.526

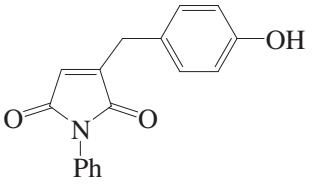
Alkaloid from hairy root cultures of *Ophiorrhiza pumila*. Amorph. λ_{max} 219 ; 254 ; 280 (sh) ; 363 (MeOH).

17-Epimer. ***OPHR 23***
[486394-18-7]
$C_{27}H_{28}N_2O_9$ 524.526
Alkaloid from hairy root cultures of *Ophiorrhiza pumila*. Amorph. λ_{max} 219 ; 254 ; 290 ; 362 (MeOH).

Kitajima, M. *et al., Tetrahedron*, 2002, **58**, 9169-9178 (*isol, uv, cd, pmr, cmr*)

Opuntine B O-100

*3-[(4-Hydroxyphenyl)methyl]-1-phenyl-1*H*-pyrrole-2,5-dione. 2-(4-Hydroxybenzyl)-*N*-phenylmaleimide*
[850008-92-3]



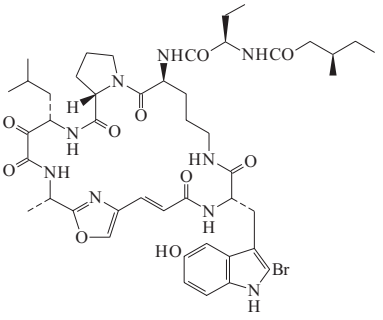
$C_{17}H_{13}NO_3$ 279.295

Alkaloid from the stems of *Opuntia vulgaris*. Cryst. (Me_2CO). Mp 213°. λ_{max} 229 (log ϵ 0.34); 322 (log ϵ 0.67) (MeOH).

Jiang, J.-Q. *et al., Yaoxue Xuebao*, 2003, **38**, 677-679 (*isol, pmr, cmr*)

Orbiculamide A O-101

[137041-28-2]



$C_{46}H_{62}BrN_9O_{10}$ 980.954

Cyclic peptide antibiotic. Constit. of the marine sponge *Theonella* sp. Cytotoxic agent. Powder. $[\alpha]_D^{23}$ -60 (c, 0.005 in MeOH). λ_{max} 203 (ϵ 14100); 220 (ϵ 10200); 269 (ϵ 6900); 303 (ϵ 1500) (MeOH) (Derep).

Fusetani, N. *et al., J.A.C.S.*, 1991, **113**, 7811 (*isol, uv, pmr, cmr*)

Orcein O-102

Archil. Orchil. C.I. Natural Red 28
[1400-62-0]

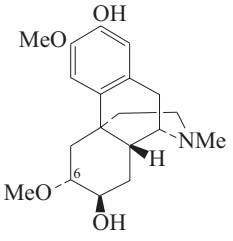
Reddish-brown dye; a mixt. of 14 compds. with a phenoxazone struct. Prepd. from the lichen *Rocella tinctoria*; obtained from 5-Methyl-1,3-benzenediol by the action of aq. NH_3 and air. Biological stain. Dark brown cryst.

Musso, H. *et al., Chem. Ber.*, 1956, **89**, 1659-1673; 1957, **90**, 1808-1814; 1968, **101**, 1510-1518 (*isol, struct*)
Musso, H. *et al., Planta Med.*, 1960, **8**, 431-446 (*struct*)

Beecken, H. *et al., Angew. Chem.*, 1961, **73**, 665-688 (*rev, struct*)

Oreobeiline O-103

[97400-76-5]



$C_{19}H_{27}NO_4$ 333.427

Alkaloid from the stem bark and wood of *Beilschmiedia oreophila* (Lauraceae). Prisms ($CHCl_3$). Mp 116-118°. $[\alpha]_D^{20}$ +39 (c, 1 in $CHCl_3$).

6-Epimer: ***6-Epioreobeiline***
[97400-78-7]
$C_{19}H_{27}NO_4$ 333.427
Alkaloid from the stem bark and wood of *Beilschmiedia oreophila* (Lauraceae). Needles (MeOH). Mp 207-209°. $[\alpha]_D^{20}$ +59 (c, 1 in $CHCl_3$).

Tillequin, F. *et al., Heterocycles*, 1985, **23**, 1357 (*uv, pmr, ms, abs config, epimer*)

Oreoline† O-104

[11004-92-5]

$C_{26}H_{43}NO_7$ 481.628

Diterpene alkaloid, struct. unknown, similar to Lycoctonine in M-309. Conts. NMe, -OCH_2O-, OH and 4 OMe groups. Alkaloid from underground parts of the Central Asiatic larkspur, *Delphinium oreophilum* (Ranunculaceae). Cryst. (Me_2CO or EtOH). Mp 211-213°. $[\alpha]_D$ -28 (c, 1.0 in $CHCl_3$). $[\alpha]_D$ +55.1 (c, 1.0 in EtOH).

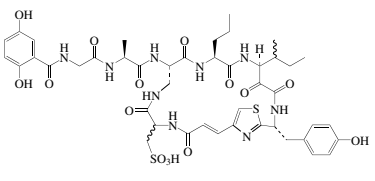
Hydrochloride:
Cryst. (EtOH/Et_2O). Mp 186-188°.

Perchlorate:
Cryst. (EtOH/Et_2O). Mp 139-142°.

Bocharnikova, A.V. *et al., J. Gen. Chem. USSR (Engl. Transl.)*, 1958, **28**, 2918 (*isol, ir*)

Oriamide O-105

[200182-07-6]

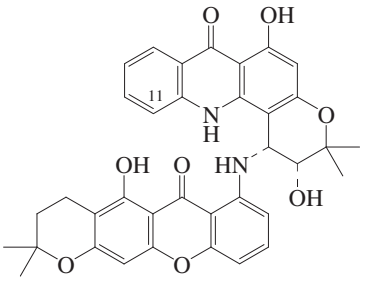


$C_{44}H_{55}N_9O_{15}S_2$ 1014.102

Cyclic peptide antibiotic. Isol. from the sponge *Theonella* sp. Cytotoxic agent. Amorph. powder (as Na salt).

Chill, L. *et al., Tetrahedron*, 1997, **53**, 16147-16152 (*isol, pmr, cmr, ms*)

Oriciacridone A O-106



$C_{36}H_{32}N_2O_9$ 636.657

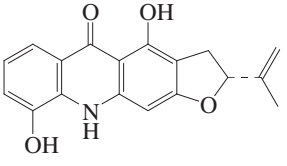
Alkaloid from the stem bark of *Oriciopsis glaberrima*. Yellow cryst. Mp 249°. $[\alpha]_D^{25}$ -45.7 (c, 0.07 in DMSO). λ_{max} 269 (log ϵ 4.84); 272 (log ϵ 4.85); 285 (log ϵ 4.62); 323 (log ϵ 4.28); 352 (log ϵ 4.15); 401 (log ϵ 4.14) (DMSO).

11-Hydroxy: ***Oriciacridone B***
$C_{36}H_{32}N_2O_{10}$ 652.656
Alkaloid from the stem bark of *Oriciopsis glaberrima*. Yellow cryst. Mp 309°. $[\alpha]_D^{25}$ -85.3 (c, 0.07 in DMSO). λ_{max} 239 (log ϵ 4.48); 257 (log ϵ 4.6); 275 (log ϵ 4.4); 278 (log ϵ 4.4); 295 (log ϵ 4.12); 312 (log ϵ 4.13); 372 (log ϵ 3.8); 404 (log ϵ 3.88) (DMSO).

Wansi, J.D. *et al., Phytochemistry*, 2006, **67**, 475-480 (*isol, pmr, cmr, ms*)

Oriciacridone D O-107

[886227-04-9]



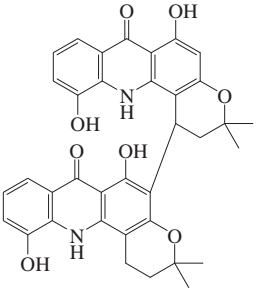
$C_{18}H_{15}NO_4$ 309.321

(R)-form
Alkaloid from the stem bark of *Oriciopsis glaberrima*. Yellow cryst. (MeOH). Mp 265-266°. $[\alpha]_D^{25}$ +87.4 (c, 0.5 in MeOH). λ_{max} 255 (log ϵ 6.05); 279 (log ϵ 5.62); 291 (log ϵ 5.6); 295 (log ϵ 5.67); 300 (log ϵ 5.58); 346 (log ϵ 4.58) (MeOH).

Wansi, J.D. *et al., Chem. Pharm. Bull.*, 2006, **54**, 292-296 (*isol, uv, cd, pmr, cmr*)

Oriciacridone F O-108

[886227-06-1]



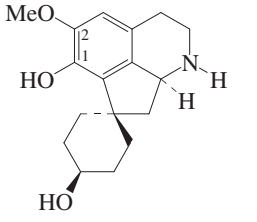
$C_{36}H_{32}N_2O_8$ 620.657

Alkaloid from the stem bark of *Oriciopsis glaberrima*. α-Glucosidase inhibitor. Yellow powder (MeOH). Mp 187-189°. $[\alpha]_D^{25}$ +35.6 (c, 0.62 in MeOH). λ_{max} 233 (log ϵ 1.69); 254 (log ϵ 2.06); 277 (log ϵ 1.84); 281 (log ϵ 1.85); 295 (log ϵ 1.62); 303 (log ϵ 1.64); 348 (log ϵ 0.93); 389 (log ϵ 1.18) (MeOH).

Wansi, J.D. *et al., Chem. Pharm. Bull.*, 2006, **54**, 292-296 (*isol, uv, pmr, cmr, ms*)

Oridine O-109

Oreoline†



(-)-*form*

$C_{17}H_{23}NO_3$ 289.374

(-)-form [17366-36-8]
Alkaloid from *Papaver oreophilum* (Papaveraceae). Mp 237-240°. $[\alpha]_D$ -88 (c, 0.88 in MeOH).

Hydrochloride:
Cryst. (EtOH/Et_2O). Mp 214-220°. $[\alpha]_D^{21}$ -71.6 (c, 1.06 in H_2O).

N-*Me:* **N-*Methyloreoline***. N-*Methyloridine*
$C_{18}H_{25}NO_3$ 303.4
Alkaloid from *Papaver oreophilum* (Papaveraceae). Mp 192-193° (186-188°). $[\alpha]_D$ -59.7 (c, 1 in $CHCl_3$) (synthetic).

Me ether, N-*Me:* Mp 265-270° subl. $[\alpha]_D$ -39.6 (c, 0.91 in H_2O).

O-*De-Me,* O^1-*Me:* ***Isooridine***. *Oridine 2*
[78416-82-7]
$C_{17}H_{23}NO_3$ 289.374
Alkaloid from *Papaver oreophilum* (Papaveraceae). Mp 166-168°. $[\alpha]_D^{20}$ -57.3 (c, 0.55 in MeOH). No stereochem. indicated but gives the same Me ether as Oridine.

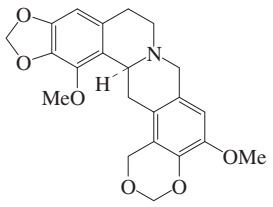
(±)-form
N-*Me:* [58166-04-4]
Synthetic. Cryst. (EtOAc). Mp 189-192°.

N-*Me, di-Ac:*
Cryst. (Et_2O). Mp 170-171°.

Bernauer, K. *et al., Helv. Chim. Acta*, 1964, **47**, 2122 (*synth*)
Pfeifer, S. *et al., Pharmazie*, 1966, **21**, 251; 1967, **22**, 124 (*isol*)
Mann, I. *et al., Pharmazie*, 1967, **22**, 124 (*isol, uv, struct, Oreoline, N-Methyloreoline*)
Santavý, F. *et al., Planta Med.*, 1967, **15**, 311 (*isol, ms, uv, pmr, struct*)
Casagrande, C. *et al., J.C.S. Perkin 1*, 1975, 1652 (*synth, uv, ir, pmr, N-Methyloreoline*)
Bindra, J.S. *et al., J.O.C.*, 1977, **42**, 910 (*synth, pmr, uv, ms, N-Methyloreoline*)
Věžník, F. *et al., Phytochemistry*, 1981, **20**, 347 (*Isooridine*)

Orientalidine O-110

*9,10,15*b*,16-Tetrahydro-5,15-dimethoxy-1*H*,7*H*-[1,3]-benzodioxino[5,6-g][1,3]benzodioxolo[5,6-*a*]quinolizine, 9CI. Bractavine*



(*S*)-*form*

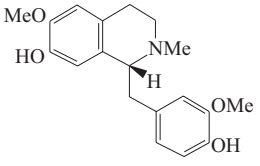
$C_{22}H_{23}NO_6$ 397.427

(*S*)-*form* [23943-90-0]
Alkaloid from *Papaver orientale, Papaver pseudo-orientale, Papaver bracteatum* and other *Papaver* spp. (Papaveraceae). Needles (EtOAc). Mp 196-198°. $[\alpha]_D^{22}$ -253 (c, 0.444 in $CHCl_3$). $[\alpha]_D^{21}$ -254 (c, 0.310 in MeOH).

(±)-*form* [22325-09-3]
Needles (EtOAc). Mp 190-192°.

Preininger, V. *et al., Coll. Czech. Chem. Comm.*, 1969, **34**, 875 (*isol, ir, pmr, uv, ms, struct*)
Šimánek, V. *et al., Tet. Lett.*, 1969, 2109 (*struct*)
Kametani, T. *et al., J.C.S. Perkin 1*, 1975, 1822 (*synth, pmr*)
Denisenko, O.N. *et al., Khim. Prir. Soedin.*, 1977, **13**, 547; *Chem. Nat. Compd. (Engl. Transl.)*, 1977, **13**, 456 (*isol*)
Israilov, I.A. *et al., Khim. Prir. Soedin.*, 1978, **14**, 474; 1984, **20**, 81; *Chem. Nat. Compd. (Engl. Transl.)*, 1978, **14**, 402; 1984, **20**, 76 (*isol*)
Slavik, J. *et al., Coll. Czech. Chem. Comm.*, 1980, **45**, 914 (*isol*)
Sariyar, G. *et al., Planta Med.*, 1980, **38**, 378 (*isol*)
Phillipson, J.D. *et al., Planta Med.*, 1981, **43**, 261 (*isol*)
Kerekes, P. *et al., CA*, 1982, **97**, 127857t (*synth*)

Orientaline† O-111



(*R*)-*form*

$C_{19}H_{23}NO_4$ 329.395

(*R*)-*form*
Synthetic.
Hydrochloride:
Noncryst. $[\alpha]_D^{21}$ -53.4 (c, 1.26 in H_2O).
Perchlorate: Mp 124-125°.

(*S*)-*form* [27003-74-3]
Alkaloid from seeds and pod-walls of *Erythrina arborescens* and leaves of *Erythrina abyssinica* (Fabaceae). Biosynthetic precursor of Isothebaine.
Hydrochloride:
Noncryst. $[\alpha]_D^{21}$ +53.5 (c, 1.28 in H_2O).
Perchlorate: Mp 128-130°.

Di-Me ether: see Laudanosine, L-69

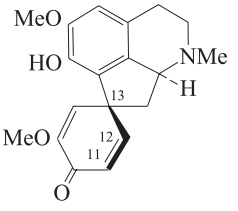
N-*De-Me:* **N-*Nororientaline***
$C_{18}H_{21}NO_4$ 315.368
Alkaloid from *Erythrina poeppigiana, Erythrina herbacea* and *Erythrina* x. *bidwillii* (Fabaceae). Cryst. (EtOAc). Mp 145-147°. $[\alpha]_D$ +42 (c, 0.18 in $CHCl_3$).

N-*De-Me; hydrochloride:* Mp 247-249°.

(±)-*form* [20938-53-8]
Synthetic.
Perchlorate: Mp 127°.

Kunitomo, J. *et al., Yakugaku Zasshi*, 1961, **81**, 1253 (*synth*)
Battersby, A.R. *et al., J.C.S.*, 1965, 4550 (*resoln*)
Ghosal, S. *et al., Phytochemistry*, 1972, **11**, 2101 (*isol*)
Barton, D.H.R. *et al., J.C.S. Perkin 1*, 1973, 874 (*isol, deriv*)
Tiwari, K.P. *et al., Phytochemistry*, 1979, **18**, 704 (*isol*)

Orientalinone O-112



(–)–*form*

$C_{19}H_{21}NO_4$ 327.379

(+)-*form*
Synthetic. Mp 184-186° dec. $[\alpha]_D^{21}$ +62.3 (c, 0.74 in $CHCl_3$).

(-)-*form* [2689-17-0]
Alkaloid from *Papaver orientale* (Papaveraceae). Intermediate in the biosynth. of aporphine alkaloids. Mp 183-184° dec. $[\alpha]_D^{21}$ -62.6 (c, 0.84 in $CHCl_3$).

Me ether: ***Roemerialinone***
$C_{20}H_{23}NO_4$ 341.406
Alkaloid from *Roemeria hybrida* (Papaveraceae). Amorph.

11,12-Dihydro: ***11,12-Dihydroorientalinone***
[112652-49-0]
$C_{19}H_{23}NO_4$ 329.395
Alkaloid from *Roemeria hybrida* (Papaveraceae). Amorph. $[\alpha]_D$ -81 (c, 0.08 in MeOH).

13-Epimer: ***Isoorientalinone***
[30389-03-8]
$C_{19}H_{21}NO_4$ 327.379
Trace alkaloid from *Roemeria hybrida*, in admixture with orientalinone.

13-Epimer, Me ether: ***Isoroemerialinone***
$C_{20}H_{23}NO_4$ 341.406
Alkaloid from *Roemeria hybrida*. Amorph. $[\alpha]_D$ -47 (c, 0.08 in $CHCl_3$).

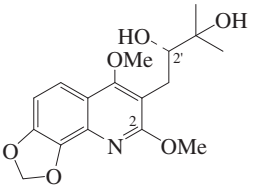
13-Epimer, 8,9-dihydro: ***8,9-Dihydroisoorientalinone***
[6392-31-0]
$C_{19}H_{23}NO_4$ 329.395
Minor alkaloid from *Papaver orientale* (Papaveraceae). Amorph. $[\alpha]_D$ +37 (c, 0.15 in $CHCl_3$) (+50). Originally described by Battersby *et al* as (+)-Dihydroorientalinone.

13-Epimer, 8,9-dihydro, Me ether: ***8,9-Dihydroisoroemerialinone***
$C_{20}H_{25}NO_4$ 343.422
Alkaloid from *Roemeria hybrida* (Papaveraceae). Amorph. $[\alpha]_D$ +23 (c, 0.07 in MeOH).

(±)-*form* [33458-68-3]
Synthetic. Mp 227-229° dec.

Battersby, A.R. *et al., J.C.S.*, 1965, 4550-4556 (*synth, ir, pmr*)
Battersby, A.R. *et al., Chem. Comm.*, 1966, 170-171 (*isol*)
Kametani, T. *et al., J.C.S. Perkin 1*, 1972, 1435-1441 (*synth*)
Kametani, T. *et al., J.A.C.S.*, 1977, **99**, 3805-3808 (*synth*)
Gözler, B. *et al., Tetrahedron*, 1987, **43**, 1765-1770 (*11,12-Dihydroorientalinone, Isoorientalinone, Roemerialinone, Isoroemerialinone, Dihydroisoroemerialinone, pmr, cd, abs config*)

Orixine O-113



(*S*)-*form*

$C_{17}H_{21}NO_6$ 335.356

(*S*)-*form* [17232-53-0]
Abs. config. revised in 2002. Alkaloid from the root bark of *Orixa japonica*. Mp 152.5°. $[\alpha]_D^{17}$ +83.3 ($CHCl_3$).

3′-Me ether: ***3′-O-Methylorixine***
$C_{18}H_{23}NO_6$ 349.383
Alkaloid from *Orixa japonica*. Oil. $[\alpha]_D^{23}$ +10.5 (c, 0.1 in $CHCl_3$). λ_{max} 254 (ϵ 43600); 297 (ϵ 3400); 316 (ϵ 3400) (MeOH).

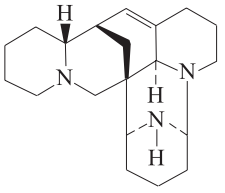
O^2-*De-Me:* ***Nororixine***
$C_{16}H_{19}NO_6$ 321.329
Alkaloid from the root bark of *Orixa japonica* (Rutaceae). Needles or prisms (EtOH). Mp 199-200°. Exists as 2(1*H*)-quinolinone tautomer.

3′-Deoxy, 2′-ketone: ***Orixinone***
[39027-00-4]
$C_{17}H_{19}NO_5$ 317.341
Alkaloid from the stems of *Orixa japonica*. Pale-yellow needles (Et_2O/petrol). Mp 102-103°.

Terasaka, M. *et al., Chem. Pharm. Bull.*, 1960, **8**, 523; 1142 (*isol, uv, ir, struct, Orixine, Nororixine*)
Bowman, R.M. *et al., J.C.S.(C)*, 1967, 2368 (*pmr, synth*)
Donnelly, W.J. *et al., J.C.S. Perkin 1*, 1972, 2116 (*isol, ir, pmr, ms, struct, synth, Orixinone*)
Funayama, S. *et al., Chem. Pharm. Bull.*, 1996, **44**, 1885-1889 (*abs config*)
Noshita, T. *et al., Biosci., Biotechnol., Biochem.*, 2001, **65**, 710-713 (*3′-O-Methylorixine*)
Boyd, D.R. *et al., Chem. Comm.*, 2002, 3070-3071 (*abs config*)

Ormojanine O-114

16,17-Didehydropanamine, 9CI
[4697-87-4]



Relative configuration

$C_{20}H_{31}N_3$ 313.485

Probable struct. CAS gives an absolute config., but there does not seem to be evidence for this. Alkaloid from *Ormosia jamaicensis* (Fabaceae). Mp 126°. $[\alpha]_D$ -143 (EtOH).

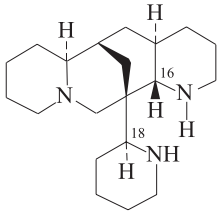
Perchlorate (1:2): Mp 256-257°.

Tripicrate: Mp 169-170°.

Hassall, C.H. *et al., J.C.S.*, 1964, 2657-2663 (*isol, uv*)
Valenta, Z. *et al., Can. J. Chem.*, 1966, **44**, 2525-2538; 2539-2551 (*struct, pmr, stereochem*)

Ormosanine O-115

Piptamine



(+)–*form*

$C_{20}H_{35}N_3$ 317.517

Stereoisomeric with Dasycarpine, D-85, Templetine, T-68 and Piptanthine, P-476.

(+)-*form*
Alkaloid from *Ormosia panamensis* (Fabaceae). Prisms. Mp 167-168°. $[\alpha]_D^{25}$ +3.3 (c, 1.04 in $CHCl_3$). (+)-Ormosanine has only been isol. once and in view of the weak opt. activity is doubtful. CAS No. not found to 2008.

Hydroiodide (1:2): Mp 249° dec.

16-Epimer: ***16-Epiormosanine***
[58560-21-7]
$C_{20}H_{35}N_3$ 317.517
Minor alkaloid from *Hovea linearis* (Fabaceae), also by hydrogenation of (–) Podopetaline. Prisms (Me_2CO). Mp 113-114°. $[\alpha]_D$ 0 (c, 0.30 in $CHCl_3$). $[\alpha]_D$ -2.3 (c, 0.30 in EtOH).

6,16-Diepimer: ***6-Epi-16-epiormosanine***
$C_{20}H_{35}N_3$ 317.517
Minor alkaloid from *Hovea linearis.* Mp 154-155°. $[\alpha]_D$ -28 (MeOH). Tentative struct. Rel. config. only. CAS No. not found to 2008.

(-)-*form* [5001-21-8]
Alkaloid from *Podopetalum ormondii*, (preferred genus name *Ormosia*), *Ormosia semicastrata* and *Ormosia jamaicensis* (Fabaceae). Mp 178-179°. $[\alpha]_D$ -9. Occurs as partial racemates and forms a quasiracemate with (-)-Podopetaline, in which form it was isol. from *P. ormondii*.

18-Epimer: ***18-Epiormosanine***
[33792-80-2]
Alkaloid from *Ormosia semicastrata* (Fabaceae). Mp 267° dec. $[\alpha]_D$ -10. Rel. config. only known.

(±)-*form* [34429-31-7]
Alkaloid from *Ormosia* spp. and from *Piptanthus nanus* (Fabaceae). Mp 183-184°.

Hydroiodide (1:2): Mp 249° dec.

[54292-99-8 , 58917-72-9]

Lloyd, H.A. *et al., J.A.C.S.*, 1958, **80**, 1506-1510 (*isol*)
Naegeli, P. *et al., Tet. Lett.*, 1963, 2069-2073 (*struct*)
Hassall, C.H. *et al., J.C.S.*, 1964, 2657-2663 (*isol*)
McLean, S. *et al., Can. J. Chem.*, 1971, **49**, 1976-1978; 1972, **50**, 1639-1641 (*isol, struct, epimer*)
Cannon, J.R. *et al., Tet. Lett.*, 1974, **15**, 1683-1686 (*abs config*)
Lamberton, J.A. *et al., Tet. Lett.*, 1975, **16**, 3875-3876 (*16-Epiormosanine*)
Liu, H.-J. *et al., Can. J. Chem.*, 1976, **54**, 97-109 (*synth*)
Mackay, M.F. *et al., J. Cryst. Mol. Struct.*, 1976, **6**, 125-137 (*16-Epiormosanine, cryst struct*)
McLean, S. *et al., Can. J. Chem.*, 1981, **59**, 34-37 (*isol, abs config, biosynth*)
Lamberton, J.A. *et al., Aust. J. Chem.*, 1982, **35**, 2577-2582 (*16-Epiormosanine, 6-Epi-16-epiormosanine*)
Bhacca, N.S. *et al., J.A.C.S.*, 1983, **105**, 2538-2544 (*cmr, pmr*)
Le, P.M. *et al., Magn. Reson. Chem.*, 2005, **43**, 283-293 (*pmr, cmr*)

Ormosine O-116

[1400-66-4]

$C_{20}H_{33}N_3$ 315.501

Poss. identical with Panamine, P-53. Struct. unknown. Alkaloid from seeds of *Ormosia dasycarpa* (Fabaceae). Shows analgesic props. Cryst. + 3-4H_2O. Mp 85-87°.

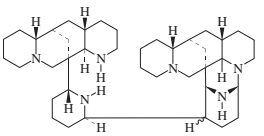
Dipicrate: Mp 178°.

Methiodide: Mp 245-250°.

Hess, K. *et al., Ber.*, 1919, **52**, 1976-1983 (*isol*)
Lloyd, H.A. *et al., J.A.C.S.*, 1958, **80**, 1506-1510

Ormosinine O-117

21-Ormosanin-20-ylpanamine, 9CI
[14350-67-5]



Absolute Configuration

$C_{40}H_{66}N_6$ 631.002

Dimer containing Panamine, P-53 and Ormosanine, O-115 units. Alkaloid from the seeds of *Ormosia dasycarpa, Ormosia panamensis* and *Ormosia jamaicensis*, detected in other *Ormosia* spp. (Fabaceae). Needles (EtOAc). Mp 219-220° (203-205°). $[\alpha]_D^{25}$ +8.9 ($CHCl_3$).

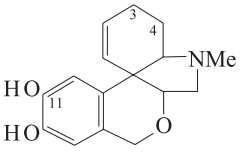
Dipicrate: Mp 146-148°. Could not be recryst.

Stereoisomer: ***Ormojine***
[11004-95-8]
$C_{40}H_{66}N_6$ 631.002
Alkaloid from *Ormosia jamaicensis* (Fabaceae). Mp 154-155°. $[\alpha]_D^{20}$ +24 (c, 1.46 in EtOH). Of unknown stereochem.; dimer of Ormosajine in P-53.

Hess, K. *et al., Ber.*, 1919, **52**, 1976-1983 (*isol*)
Lloyd, H.A. *et al., J.A.C.S.*, 1958, **80**, 1506-1510 (*isol*)
Hassall, C.H. *et al., J.C.S.*, 1964, 2657-2663 (*isol, Ormojine*)
Deslongchamps, P. *et al., Can. J. Chem.*, 1966, **44**, 2539-2551 (*struct*)
Davies, A.P. *et al., Tet. Lett.*, 1966, 6291-6294 (*struct, Ormojine*)
Bhacca, N.S. *et al., J.A.C.S.*, 1983, **105**, 2538-2544 (*cmr, pmr, struct*)

Ornazidine O-118

[69086-73-3]



Tentative structure

$C_{16}H_{19}NO_3$ 273.331
Alkaloid from the bulbs of *Crinum ornatum* (Amaryllidaceae). Mp 217°.

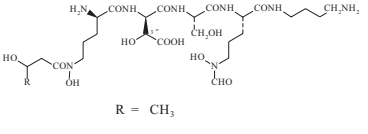
O^{11}-Ac: ***Ornazamine***
[69086-74-4]
$C_{18}H_{21}NO_4$ 315.368
Isol. from *Crinum ornatum* (Amaryllidaceae). Mp 218-220° dec.

3,4-Didehydro, di-Me ether: ***Ornamine***
[69086-75-5]
$C_{18}H_{21}NO_3$ 299.369
Isol. from *Crinum ornatum* (Amaryllidaceae). Mp 212-213°.

Onyiriuka, O.S. *et al., Isr. J. Chem.*, 1978, **17**, 185 (*isol, ms, struct, derivs*)

Ornibactin C4 O-119

[154071-68-8]



R = CH_3

$C_{26}H_{48}N_8O_{13}$ 680.711
Prod. by *Pseudomonas cepacia*. Siderophore.

Stephan, H. *et al., Biol. Met.*, 1993, **6**, 93

Ornibactin C6 O-120

[154071-69-9]
As Ornibactin C4, C-119 with
R = $–CH_2CH_2CH_3$
$C_{28}H_{52}N_8O_{13}$ 708.765
Prod. by *Pseudomonas cepacia*. Siderophore.

Stephan, H. *et al., Biol. Met.*, 1993, **6**, 93 (*isol*)

Ornibactin F O-121

Ornibactin C8
[147363-90-4]
As Ornibactin C4, O-119 with R = $-(CH_2)_4CH_3$

$C_{30}H_{56}N_8O_{13}$ 736.818

Gross structs. of Ornibactin C8 and Ornibactin F are the same but the stereochem. at C-3′′ may vary. Prod. by *Pseudomonas* sp. TVV 69. Siderophore.

[154170-72-6]

Stephan, H. *et al., Annalen*, 1993, 43 (*isol, struct*)
Stephan, H. *et al., Biol. Met.*, 1993, **6**, 93 (*isol, struct*)

Orobanchamine O-122

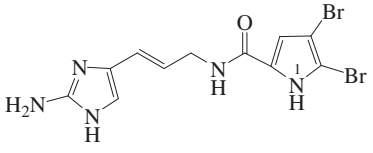
$C_{20}H_{31}NO_{14}$ 509.463

Struct. unknown. Alkaloid from *Orobanche lutea* (Orobanchaceae). Cryst. ($CHCl_3$/petrol). Mp 193-194°. $[\alpha]_D$ +33.92 (EtOH). No active hydrogens.

Rubinshtein, M.M. *et al., Zh. Obshch. Khim.*, 1953, **23**, 156; *CA*, **48**, 696

Oroidin O-123

N-*[3-(2-Amino-1*H*-imidazol-4-yl)-2-propenyl]-4,5-dibromo-1*H*-pyrrole-2-carboxamide, 9CI*
[34649-22-4]



$C_{11}H_{11}Br_2N_5O$ 389.049

Alkaloid from the sponges *Agelas oroides*, *Agelas conifera*, *Agelas longissima*, *Agelas mauritiana*, *Agelas clathrodes*, *Agelas wiedenmayeri*, *Agelas sceptrum*, *Axinella verrucosa*, *Axinella damicornis*, *Hymeniacidon* sp., *Pseudaxinyssa cantharella*, *Acanthella carteri* and *Acanthella aurantiaca*. Antiserotonergic, adrenergic antagonist, serotonin antagonist, anti-muscarinic, antifouling, antihistamine. Key intermed. in the biosynth. of the marine pyrrole-imidazole alkaloids. Noncryst. Poorly sol. hexane. λ_{max} 296 (ϵ 24500) (MeOH/KOH) (Derep). λ_{max} 278 (ϵ 21000) (MeOH) (Derep).

N-*Ac:* Mp 256-258°.

N^1-*Me:* ***Sventrine***
[392315-92-3]
$C_{12}H_{13}Br_2N_5O$ 403.076
Alkaloid from the sponge *Agelas sventres*. Light yellow powder. λ_{max} 274 (log ϵ 4.27) (MeOH).

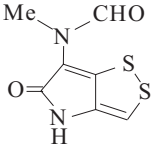
2-Debromo: ***Hymenidine***
[107019-95-4]
$C_{11}H_{12}BrN_5O$ 310.153
Isol. from the sponge *Hymeniacidon* sp. and *Agelas clathrodes*. Serotonin receptor antagonist. Antihypertensive, antimuscarinic, smooth muscle contractant. Amorph. solid. Sol. MeOH, butanol. λ_{max} 269 (ϵ 21400) (MeOH) (Derep). λ_{max} 270 (ϵ 23000) (MeOH) (Berdy).

2,3-Didebromo: ***Clathrodine***
[135383-64-1]
$C_{11}H_{13}N_5O$ 231.257
Isol. from the sponge *Agelas clathrodes*. Cholinergic receptor blocker, antiadrenergic, antimuscarinic neurotoxin. Amorph. solid. λ_{max} 272 (ϵ 24500) (MeOH) (Derep).

Forenza, S. *et al., Chem. Comm.*, 1971, 1129-1130 (*isol, uv, ir, pmr*)
Garcia, E.E. *et al., Chem. Comm.*, 1973, 78-79 (*struct*)
Walker, R.P. *et al., J.A.C.S.*, 1981, **103**, 6772-6773 (*isol*)
Kobayashi, J. *et al., Experientia*, 1986, **42**, 1176-1177 (*Hymenidine*)
Morales, J.J. *et al., J. Nat. Prod.*, 1991, **54**, 629-631 (*Clathrodine*)
Daninos-Zeghal, S. *et al., Tetrahedron*, 1997, **53**, 7605-7614 (*Hymenidine, synth*)
Koenig, G.M. *et al., Planta Med.*, 1998, **64**, 443-447 (*isol, pmr, cmr, ms*)
Lindel, T. *et al., J.O.C.*, 2000, **65**, 2806-2809 (*synth*)
Assmann, M. *et al., J. Nat. Prod.*, 2001, **64**, 1593-1595 (*Sventrine*)
Berré, F. *et al., Tet. Lett.*, 2002, **43**, 4935-4938 (*synth*)
Hoffmann, H. *et al., Synthesis*, 2003, 1753-1783 (*rev*)
Breckle, G. *et al., Z. Naturforsch., B*, 2003, **58**, 451-456 (*Sventrine, synth*)

Orosomycin O-124

*4,5-Dihydro-6-(*N*-methylformamido)-5-oxo-1,2-dithiolo[4,3-*b*]pyrrole. Thioaurin. HA 9. vD 844. Antibiotic HA 9. Antibiotic vD 844. Heyden Antibiotic 9. AK-Ps. Antibiotic AK-Ps*
[21787-65-5]
[67527-37-1]



$C_7H_6N_2O_2S_2$ 214.269

Identity with Thioaurin and with Ak-Ps is not certain. Isol. from an unidentified *Streptomyces* sp. and from *Streptomyces flavochromogenes iwayaensis* (in the case of AK-Ps). Active against gram-positive and -negative bacteria and fungi. Yellow needles (EtOAc). Mp 181-182°. λ_{max} 300 (ϵ 16500) (MeOH/NaOH) (Derep). λ_{max} 231 (ϵ 6600); 300 (sh) (ϵ 2500); 368 (ϵ 15800) (MeOH) (Derep).

▶ LQ2000600

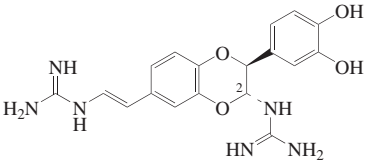
N-*De-Me:* ***Antibiotic vD 846***. *vD 846*
[21787-66-6]
$C_6H_4N_2O_2S_2$ 200.242
From a *Streptomyces* sp. Active against gram-positive and -negative bacteria. Orange prisms (Me_2CO). Sol. EtOAc, MeOH, $CHCl_3$; fairly sol. H_2O; poorly sol. hexane. Mp 270-280° dec. λ_{max} 247 (ϵ 5800); 301 (ϵ 3350); 387 (ϵ 11000) (EtOH) (Derep).

▶ LD_{50} (mus, ivn) 5 - 10 mg/kg. LQ3164500

Jensen, B. *et al., J. Antibiot.*, 1969, **22**, 231 (*cryst struct*)
v. Daehne, W. *et al., J. Antibiot.*, 1969, **22**, 233 (*isol, uv, struct*)
Jensen, B. *et al., Acta Cryst. B*, 1971, **27**, 392
Fabian, J. *et al., Z. Chem.*, 1972, **12**, 348 (*uv*)
Japan. Pat., 1978, 78 47 589; *CA*, **89**, 105898q (*AK-Ps*)

Orthidine A O-125

[1042101-21-2]



$C_{18}H_{20}N_6O_4$ 384.394

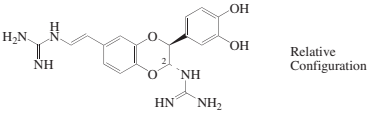
Dimer of Tubastrine, T-656. Alkaloid from *Aplidium orthium*. Pale yellow gum. Racemic. λ_{max} 207 (log ϵ 4.56); 226 (log ϵ 4.17); 284 (log ϵ 4.02); 311 (sh) (log ϵ 3.73) (MeOH).

2-Epimer: ***Orthidine B***
[1042101-23-4]
$C_{18}H_{20}N_6O_4$ 384.394
Alkaloid from *Aplidium orthium*. Pale yellow gum. Racemic. λ_{max} 205 (log ϵ 4.55); 226 (log ϵ 4.16); 284 (log ϵ 4.08); 308 (sh) (log ϵ 3.83) (MeOH).

Pearce, A.N. *et al., Tetrahedron*, 2008, **64**, 5748-5755 (*isol, pmr, cmr*)

Orthidine C O-126

[1042101-25-6]



$C_{18}H_{20}N_6O_4$ 384.394

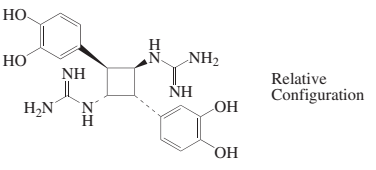
Dimer of Tubastrine, T-656. Alkaloid from *Aplidium orthium*. Pale yellow gum. Racemic. λ_{max} 205 (log ϵ 4.59); 224 (log ϵ 4.32); 284 (log ϵ 4.23); 311 (sh) (log ϵ 3.97) (MeOH).

2-Epimer: ***Orthidine D***
[1042101-28-9]
$C_{18}H_{20}N_6O_4$ 384.394
Alkaloid from *Aplidium orthium*. Pale yellow gum. λ_{max} 206 (log ϵ 4.59); 227 (log ϵ 4.23); 287 (log ϵ 4.25); 310 (sh) (log ϵ 4.01) (MeOH).

Pearce, A.N. *et al., Tetrahedron*, 2008, **64**, 5748-5755 (*isol, pmr, cmr*)

Orthidine E O-127

[1042101-31-4]



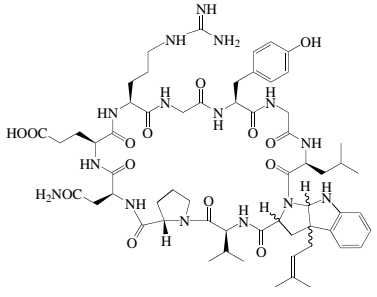
$C_{18}H_{22}N_6O_4$ 386.41

Dimer of Tubastrine, T-656. Alkaloid from *Aplidium orthium*. Pale yellow gum. λ_{max} 206 (log ϵ 4.45); 230 (log ϵ 3.83); 285 (log ϵ 3.45) (MeOH).

Pearce, A.N. *et al., Tetrahedron*, 2008, **64**, 5748-5755 (*isol, pmr, cmr*)

Oscillatorin O-128

[182261-00-3]

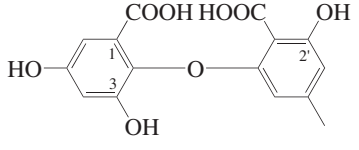


$C_{60}H_{85}N_{15}O_{14}$ 1240.424

Cyclic peptide antibiotic. Isol. from the cyanobacterium *Oscillatoria agardhii*. Chymotrypsin inhibitor. Amorph. solid. λ_{max} 283 (log ϵ 3.4) (H_2O).

Sano, T. *et al., Tet. Lett.*, 1996, **37**, 6873-6876 (*isol, uv, pmr, cmr*)

Osoic acid O-129



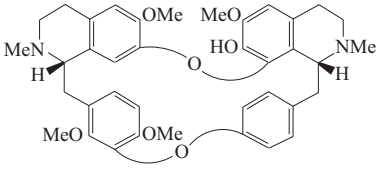
$C_{15}H_{12}O_8$ 320.255

2′,3-Di-Me ether, 1′-amide, 1-Me ester: ***Neoplaether***
$C_{18}H_{19}NO_7$ 361.351
Prod. by *Neoplaconema napellum* IFB-E016. Cytotoxic. Cryst. (DMSO). Mp 298-299°.

Feng, W. *et al., FEMS Microbiol. Lett.*, 2006, **261**, 218-223 (*Neoplaether*)

Osornine O-130

[89412-88-4]



$C_{38}H_{42}N_2O_7$ 638.759

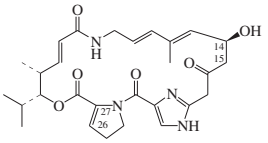
Represents a member of the oxyacanthan series diastereomeric with Thalrugosaminine, T-346 and derivs. Alkaloid from *Berberis buxifolia* (Berberidaceae). Mp 244-245°. $[\alpha]_D^{25}$ -151 (c, 0.36 in $CHCl_3$).

[89412-89-5]

Leet, J.E. *et al., J. Nat. Prod.*, 1983, **46**, 908-912 (*isol, uv, cd, pmr, ms, struct*)

Ostreogrycin A O-131

Mikamycin A. Pristinamycin II_A. Staphylomycin M_1. Streptogramin A. Syncothrecin A. Synergistin A_1. Virginiamycin M_1. Vernamycin A. E129A. PA 114A. 1745Z_3A. 547C. Antibiotic 14752-2. Antibiotic E129A. Antibiotic PA 114A. Antibiotic 1745Z_3A. Antibiotic 547C. Factor M
[21411-53-0]



Absolute Configuration

$C_{28}H_{35}N_3O_7$ 525.6

CAS numbering shown. Isol. from *Streptomyces pristinaespiralis*, *Streptomyces virginiae* and other *Streptomyces* spp. Active against gram-positive organisms. Cryst. (EtOAc). Mp 200° dec. $[\alpha]_D^{23}$ -209 (c, 1 in EtOH). Log P 0.39 (uncertain value) (calc). λ_{max} 303 (ϵ 15800) (EtOH/HCl) (Derep). λ_{max} 293 (ϵ 21900) (EtOH/NaOH) (Derep). λ_{max} 228 (ϵ 32400); 272 (sh) (ϵ 10000) (95% EtOH) (Derep).

Mixture with ca. *25% other Virginamycins:* ***Virginiamycin, BAN, INN, USAN****. Cebin V. Eskalin V. Eskamicin. Stafac. Stephylomycin. Mikamycin. Ostreogrycin. Patricin. Pristinamycin. Streptogramin. Vernamycin*
[11006-76-1] Antibacterial food additive. Powder. $[\alpha]_D$ -124 (c, 0.05 in EtOH). Dec. at 138-140°.

▶ LD_{50} (mus, orl) 2100 mg/kg. ZA4850000

*26,27*S*-Dihydro:* ***Ostreogrycin G****. Pristinamycin II_B. Virginiamycin M_2*
[21102-49-8]
$C_{28}H_{37}N_3O_7$ 527.616
Prod. by the soil organism *Streptomyces ostreogriseus*. Active against gram-positive bacteria. Pale-yellow solid. Sol. MeOH, Et_2O; fairly sol. C_6H_6; poorly sol. H_2O, hexane. Mp 122-127° dec. (after sintering at 90°). $[\alpha]_D^{21}$ +78 (c, 1.36 in EtOH). λ_{max} 215 (E1%/1cm 650) (MeOH) (Berdy). λ_{max} 235 (ϵ 15135); 295 (ϵ 11480) (EtOH/NaOH) (Berdy).

Deoxy: ***Antibiotic L 156588****. L 156588*
[118693-65-5]
$C_{28}H_{35}N_3O_6$ 509.601
From *Streptomyces olivaceus*. Gastrin and brain cholecystokinin antagonist. Sol. MeOH, EtOAc; poorly sol. H_2O, hexane. λ_{max} 212 (ϵ 28400); 275 (ϵ 38900) (MeOH) (Derep).

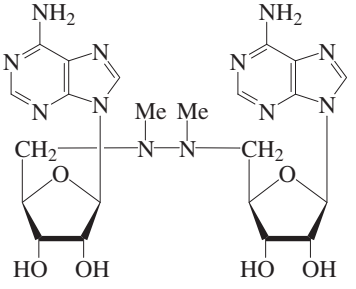
Deoxy, 14,15-epoxy: ***Antibiotic L 156587****. L 156587*
[119465-45-1]
$C_{28}H_{33}N_3O_7$ 523.585
From *Streptomyces olivaceus*. Gastrin and brain cholecystokinin antagonist. Sol. MeOH, EtOAc; poorly sol. H_2O, hexane. λ_{max} 212 (ϵ 27700); 325 (ϵ 21100) (MeOH) (Derep).

Deoxy, 14,15-epoxy, 16-alcohol: ***Antibiotic L 156586****. L 156586*
$C_{28}H_{35}N_3O_7$ 525.6
From *Streptomyces olivaceus*. Gastrin and brain cholecystokinin antagonist. Sol. MeOH, EtOAc; poorly sol. H_2O, hexane. The C-15 epimer Antibiotic L 156906 is semisynthetic. λ_{max} 212 (ϵ 28400); 275 (ϵ 38900) (MeOH) (Derep).

[118693-64-4 , 118759-89-0]

Ball, S. *et al., Biochem. J.*, 1958, **68**, 24P (*isol*)
Kingston, D.G.I. *et al., J.C.S.(C)*, 1966, 1669; 1856 (*nmr, ir, ms, struct*)
Delpierre, G.R. *et al., Tet. Lett.*, 1966, 369 (*struct*)
Preud'Homme, J. *et al., Bull. Soc. Chim. Fr.*, 1968, 585 (*isol, ms, struct*)
Crooy, P. *et al., J. Antibiot.*, 1972, **25**, 371
Bycroft, B.W. *et al., J.C.S. Perkin 1*, 1977, 2464 (*cmr, pmr, conformn*)
Ogata, K. *et al., J. Antibiot.*, 1978, **31**, 1313 (*isol, ir, nmr*)
Kingston, D.G.I. *et al., J.A.C.S.*, 1983, **105**, 5106 (*biosynth*)
Biot, A.M. *et al., Drugs Pharm. Sci.*, 1984, **22**, 695 (*rev*)
Lewis, R.J. *et al., Food Additives Handbook*, Van Nostrand Reinhold International, New York, 1989, VRF000
Paris, J.M. *et al., Recent Prog. Chem. Synth. Antibiot.*, 1990, 183 (*rev*)
Shepherd, M.J. *et al., Food Contaminants: Sources and Surveillance*, Royal Society of Chemistry, 1991, 175 (*anal*)
Lam, Y.K.T. *et al., J. Antibiot.*, 1991, **44**, 613 (*derivs*)
Kingston, D.G.I. *et al., Environ. Sci. Res.*, 1992, **44**, 105 (*rev, biosynth*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 224
Pechere, J.-C. *et al., Drugs*, (Suppl. 1), 1996, **51**, 13 (*rev*)
Schlessinger, R.H. *et al., J.A.C.S.*, 1996, **118**, 3301 (*synth*)
Breuilles, P. *et al., Tet. Lett.*, 1998, **39**, 3145-3148; 3149-3152 (*synth*)
Dang, J. *et al., Org. Biomol. Chem.*, 2004, 2919-2924 (*pmr, cmr, conformn*)
Mortensen, M.S. *et al., Org. Lett.*, 2007, **9**, 3105-3108 (*synth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, VRF000

Ostrerine A O-132



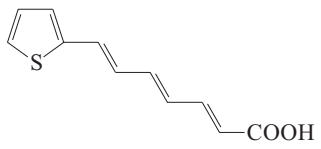
$C_{22}H_{30}N_{12}O_6$ 558.556

Isol. from the marine mollusc *Ostrea rivularis*. Amorph. powder. $[\alpha]_D^{21}$ +21 (c, 0.7 in MeOH).

Ouyang, M.-A. *et al., Nat. Prod. Res.*, 2006, **20**, 79-83 (*isol, pmr, cmr, ms*)

Otanthusic acid O-133

7-(2-Thienyl)-2,4,6-heptatrienoic acid. Otanthus acid



$C_{11}H_{10}O_2S$ 206.265

(E,E,E)-form

2-Methylpropylamide: **N-*Isobutylotanthusic acid amide***. N-*(2-Methylpropenyl)-7-(2-thienyl)-2,4,6-heptatrienamide, 9CI*
[52657-11-1]
$C_{15}H_{19}NO_2S$ 277.387
Alkaloid from the roots of *Otanthus maritimus* and from *Anacyclus tomentosus* (Asteraceae). Yellow cryst. (Et_2O). Mp 183°.

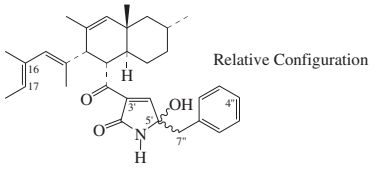
Piperidide: ***Otanthus acid piperidide***
[52657-10-0]
$C_{16}H_{19}NOS$ 273.398
Alkaloid from the roots of *Otanthus maritimus* (Asteraceae). Yellow cryst. (Et_2O). Mp 96°.

2,3-Didehydropiperidide: ***Otanthusic acid 2,3-dehydropiperidide***
[52657-09-7]
$C_{16}H_{17}NOS$ 271.382
Alkaloid from the roots of *Otanthus maritimus* (Asteraceae). Yellow cryst. (Et_2O/petrol). Mp 116°.

Bohlmann, F. *et al., Chem. Ber.*, 1974, **107**, 1038 (*isol, uv, ir, ms, pmr, struct*)
Bellassoued, M. *et al., Synth. Commun.*, 1997, **27**, 3103-3117 (*piperidide, synth*)

Oteromycin O-134

Antibiotic MF 5810. MF 5810
[170591-45-4]



$C_{32}H_{41}NO_3$ 487.681

Tetramic acid deriv. Prod. by unidentified fungal strains (ATCC 74201 and ATCC 74202). Endothelin receptor antagonist. Powder. $[\alpha]_D^{22}$ -60 (c, 0.5 in MeOH). λ_{max} 209 (ϵ 16250); 235 (sh) (MeOH).

5′-Deoxy, 4″-hydroxy, 5′,7″-didehydro(Z-), 16,17-dihydro: ***Talaroconvolutin A***
$C_{32}H_{41}NO_3$ 487.681
Prod. by *Talaromyces convolutus*. Antifungal agent. Yellow prisms (cyclohexane). Mp 142-144°. $[\alpha]_D^{20}$ -111 (c, 0.45 in $CHCl_3$). λ_{max} 255 (log ϵ 4.01); 414 (log ϵ 4.44) (EtOH).

Stereoisomer, 4″-hydroxy, 16,17-dihydro: ***Talaroconvolutin B***
$C_{32}H_{43}NO_4$ 505.696
Prod. by *Talaromyces convolutus*. Antifungal agent. Microcryst. (cyclohexane). Mp 112-114°. $[\alpha]_D^{20}$ -57 (c, 0.11 in EtOH). Stereoisomeric with ZG 1494α at C-5′ or C-16 or both. λ_{max} 226 (log ϵ 3.84); 273 (log ϵ 3.09) (EtOH).

4″-Hydroxy, 16,17-dihydro: ***Antibiotic ZG 1494α***. *ZG 1494α. Antibiotic 1494A. 1494A*
[182320-33-8]
$C_{32}H_{43}NO_4$ 505.696
Prod. by *Penicillium rubrum* and *Talaromyces convolutus*. Platelet-activating factor and acetyltransferase inhibitor. Antifungal agent. Powder. $[\alpha]_D^{25}$ -133 (c, 1 in EtOH). λ_{max} 206 ; 221 ; 266 (EtOH).

Singh, S.B. *et al., J.O.C.*, 1995, **60**, 7040-7042 (*isol, uv, ir, pmr, cmr*)
West, R.R. *et al., J. Antibiot.*, 1996, **49**, 967-973 (*ZG 1494α*)
U.S. Pat., 1996, 5 550 148; *CA*, **125**, 257170w (*ZG 1494α*)
Suzuki, S. *et al., J. Nat. Prod.*, 2000, **63**, 768-772 (*Talaroconvolutins, activity*)

Otocamine O-135

[11004-99-2]

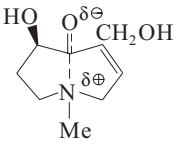
$C_{37}H_{40}N_2O_6$ 608.733

Bisbenzylisoquinoline alkaloid. Struct. unknown. Alkaloid from the bark of *Nectandra (Ocotea) rodiaei* (Lauraceae). Cryst. + $1H_2O$ (as dihydrochloride). Mp 281° (dihydrochloride). $[\alpha]_D$ +268 (c, 1.0 in H_2O) (dihydrochloride).

Hearst, P.J. *et al., J.O.C.*, 1964, **29**, 466-470 (*isol*)

Otonecine O-136

2,3,5,7a-Tetrahydro-1,7a-dihydroxy-7-(hydroxymethyl)-4-methyl-1H-pyrrolizinium, 9CI
[6887-34-9]
[7201-79-8]



$C_9H_{15}NO_3$ 185.222

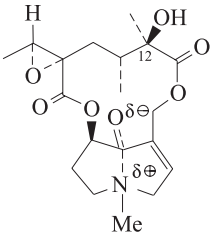
Necine base from several pyrrolizidine alkaloids. Hygroscopic cryst. (as hydrochloride). Mp 145-147° (137-138°)(hydrochloride). $[\alpha]_D^{23}$ -13 (c, 0.96 in EtOH). Hydrochloride difficult to crystallise.

▶ Highly toxic.

Zhdanovich, E.S. *et al., Zh. Obshch. Khim.*, 1941, **11**, 835
Briggs, L.H. *et al., J.C.S.*, 1965, 2492 (*ir*)
Culvenor, C.C.J. *et al., Aust. J. Chem.*, 1967, **20**, 801 (*struct, pmr*)
Šimánek, V. *et al., Coll. Czech. Chem. Comm.*, 1969, **34**, 1832 (*uv*)
Niwa, H. *et al., Tet. Lett.*, 1983, **24**, 5731 (*synth*)
Vedejs, E. *et al., J.A.C.S.*, 1998, **120**, 3613-3622 (*synth*)

Otosenine O-137

Tomentosine†. Othosenine
[16958-29-5]



$C_{19}H_{27}NO_7$ 381.425

Cyclic ester of Otonecine, O-136 and Jaconecic acid. Stereoisomeric with Petasitenine, P-277. Alkaloid from *Senecio cineraria, Senecio floridanus (Brachyglottis floridiana), Senecio fluviatilis, Senecio othonnae, Senecio renardi* and *Cacalia floridana* (Asteraceae). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 219° (232°). $[\alpha]_D$ +20.8 (+14) ($CHCl_3$). The (-)-enantiomer was reported from *S. jacobaea* but without proper identification.

▶ WH1306400

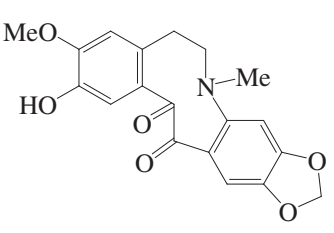
Ac: ***Florosenine***
[16958-30-8]
$C_{21}H_{29}NO_8$ 423.462
Alkaloid from *Senecio fluviatilis* and *Cacalia floridana* (Asteraceae). Flakes (cyclohexane/C_6H_6). Mp 101-103°. $[\alpha]_D$ +31.9 (c, 1.38 in $CHCl_3$).

▶ VS3595300

[981-42-0 , 30484-74-3]

Zhdanovich, E.S. *et al., J. Gen. Chem. USSR (Engl. Transl.)*, 1941, **11**, 835; *CA*, **36**, 4123 (*isol*)
Wunderlich, J.A. *et al., Chem. Ind. (London)*, 1962, 2089 (*struct*)
Cava, M.P. *et al., J.O.C.*, 1968, **33**, 3570 (*Florosenine*)
Akramov, S.T. *et al., Khim. Prir. Soedin.*, 1968, **4**, 258; *Chem. Nat. Compd. (Engl. Transl.)*, 1968, **4**, 221 (*(-)-form*)
Šimánek, V. *et al., Coll. Czech. Chem. Comm.*, 1969, **34**, 1832 (*uv*)
Hrbek, J. *et al., Coll. Czech. Chem. Comm.*, 1972, **37**, 3918 (*cd*)
Perez-Salazar, A. *et al., Acta Cryst. B*, 1977, **33**, 3525 (*cryst struct*)
Jones, A.J. *et al., Aust. J. Chem.*, 1982, **35**, 1173 (*cmr*)
Wiedenfeld, H. *et al., Acta Cryst. C*, 1990, **46**, 1345 (*cryst struct*)
Loizzo, M.R. *et al., Arch. Pharmacal Res.*, 2007, **30**, 701-707 (*isol, pmr, cmr*)

Oubatchensine O-138

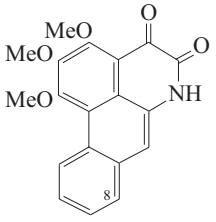


$C_{19}H_{17}NO_6$ 355.346
Secodibenzopyrrocoline. Alkaloid from the bark of *Cryptocarya oubatchensis*. Yellow-brown amorph. powder.

Toribio, A. *et al., Org. Lett.*, 2006, **8**, 3825-3828 (*isol, pmr, cmr, ms*)

Ouregidione O-139

[107633-70-5]



$C_{19}H_{15}NO_5$ 337.331
Alkaloid from the leaves of *Guatteria ouregou* (Annonaceae) and stem bark of *Artabotrys zeylanicus* (Annonaceae). Mp 280° (262-264°).

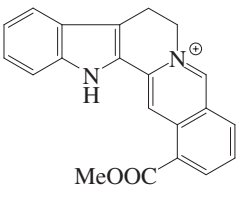
N-*Me:* ***3-Methoxycepharadione B****. 1,2,3-Trimethoxy-4,5-dioxo-6*a*,7-dehydroaporphine*
[104380-50-9]
$C_{20}H_{17}NO_5$ 351.358
Alkaloid from the bark of *Pseuduvaria macrophylla* and *Mitrephora* cf. *maingayi* (Annonaceae). Yellow needles (MeOH). Mp 198-201°.

8-Methoxy: ***8-Methoxyouregidione***
[180128-37-4]
$C_{20}H_{17}NO_6$ 367.357
Alkaloid from stem bark of *Artabotrys zeylanicus*. Orange powder (MeOH). Mp 276-277°.

Cortes, D. *et al., J. Nat. Prod.*, 1986, **49**, 878 (*isol, uv, ir, pmr, ms, struct*)
Mahmood, K. *et al., Phytochemistry*, 1986, **25**, 1509-1510 (*N-Me, isol, uv, ir, pmr, ms, struct*)
Wijeratne, E.M.K. *et al., Phytochemistry*, 1996, **42**, 1703 (*8-Methoxyouregidione*)
Lee, N.H.S. *et al., J. Nat. Prod.*, 1999, **62**, 1158-1159 (*N-Me, isol*)
Hoarau, C. *et al., Eur. J. Org. Chem.*, 2001, 2559-2567 (*N-Me, synth*)

Ourouparine O-140

*8,13-Dihydro-1-(methoxycarbonyl)-7*H*-benz[*g*]indolo[2,3-*a*]quinolizin-6-ium(1+), 9CI. 16-Carboxy-3,4,14,15,16,17,18,19,20,21-decadehydroyohimbanium methyl ester, 9CI. Demethoxyalstoniline*
[23594-96-9]



$C_{21}H_{17}N_2O_2^{\oplus}$ 329.377
Alkaloid from *Uncaria gambier (Ourouparia gambier)* and *Gelsemium sempervirens*. Yellowish powder. Mp > 280°. λ_{max} 242 ; 256 ; 284 ; 369 (MeOH).

Iodide: [18111-07-4]
$C_{21}H_{17}IN_2O_2$ 456.282
Orange needles (EtOH). Mp > 300° dec.

Perchlorate: [81362-36-9]
$C_{21}H_{17}ClN_2O_6$ 428.828
Mp 285-290° dec. (synthetic).

Picrate: [27655-44-3]
Mp 267°.

11-Methoxy: ***Alstoniline***
[6714-03-0]
$C_{22}H_{18}N_2O_3$ 358.396
Alkaloid from the bark of *Alstonia constricta*. Fine yellow-brown needles or fine yellow-brown needles + $1H_2O$ (MeOH aq.). Mp 372° (356°) dec. Autoxidises readily to the *N*-oxide, Mp 212-213°.

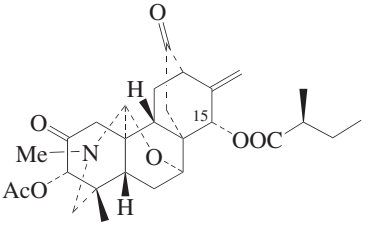
11-Methoxy, hydrochloride:
Fine red needles + $1H_2O$ (MeOH). No def. Mp.

11-Methoxy, picrate:
Red plates. Mp 294° dec.

Elderfield, R.C. *et al., J.O.C.*, 1942, **7**, 573-580; 1954, **19**, 683-692; 693-697 (*Alstoniline, isol, uv, struct*)
Ban, Y. *et al., Chem. Pharm. Bull.*, 1964, **12**, 1296-1301 (*Alstoniline, uv, ir, synth*)
Taylor, W.I. *et al., C. R. Hebd. Seances Acad. Sci. Ser. D*, 1966, **262**, 1141-1143 (*uv, struct*)
Merlini, L. *et al., Gazz. Chim. Ital.*, 1967, **97**, 1915-1920 (*synth*)
Beisler, J.A. *et al., Tetrahedron*, 1970, **26**, 1961-1965 (*synth*)
Frostell, E. *et al., Acta Chem. Scand., Ser. B*, 1981, **35**, 671-672 (*synth*)
Kogure, N. *et al., J. Nat. Med. (Tokyo)*, 2007, **61**, 208-212 (*isol, synth, pmr, cmr*)

Ouvrardiandine A O-141

[951765-87-0]



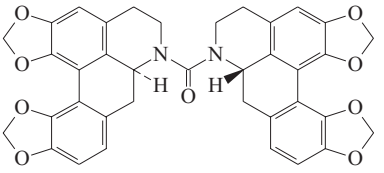
$C_{28}H_{37}NO_7$ 499.603
Alkaloid from the roots of *Aconitum ouvrardianum*. Amorph. powder. $[\alpha]_D^{20}$ -62 (c, 0.3 in $CHCl_3$).

15-O-*Deacyl, 15-benzoyl:* ***Ouvrardiandine B***
[951765-88-1]
$C_{30}H_{33}NO_7$ 519.593
Alkaloid from the roots of *Aconitum ouvrardianum*. Amorph. powder. $[\alpha]_D^{20}$ -17.6 (c, 0.2 in $CHCl_3$).

Hou, L.-H. *et al., Chem. Pharm. Bull.*, 2007, **55**, 1090-1092 (*isol, pmr, cmr*)

Ovigeridimerine O-142

[178765-67-8]

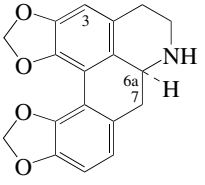


$C_{37}H_{28}N_2O_9$ 644.636
Alkaloid from trunk bark of *Hernandia nymphaeifolia*. Light brownish prisms (MeOH). Mp 207-210°. $[\alpha]_D^{22}$ +197 (c, 0.12 in $CHCl_3$).

Chen, J.-J. *et al., Phytochemistry*, 1996, **42**, 1479 (*isol, uv, ir, pmr, ms, struct*)

Ovigerine O-143

*6,7,7*a,*8-Tetrahydro-5*H*-bis[1,3]benzodioxolo[6,5,4-*de*:4′,5′-*g*]quinoline, 9CI. 1,2:10,11-Bismethylenedioxynoraporphine. Hernovine*†



(*S*)-*form*

$C_{18}H_{15}NO_4$ 309.321

(S)-form [6410-87-3]
Alkaloid from *Hernandia ovigera, Hernandia jamaicensis*, *Hernandia catalpifolia, Hernandia cordigera* and *Hernandia peltata* (Hernandiaceae). Shows anti-platelet aggregation activity. Amorph. Mp 300° dec. (as hydrochloride). $[\alpha]_D$ +177 (H_2O).

N-*Formyl:* **N-*Formylovigerine***
[176679-15-5]
$C_{19}H_{15}NO_5$ 337.331
Alkaloid from trunk bark of *Hernandia nymphaeifolia*. Prisms + $^1/_3H_2O$ (MeOH). Mp 105-107°. $[\alpha]_D^{24}$ +321 (c, 0.11 in $CHCl_3$). Exists in soln. as a mixt. of amide bond rotamers.

N-*Me: 1,2:10,11-Bis(methylenedioxy)aporphine.* **N-*Methylovigerine***
[13087-94-0]
$C_{19}H_{17}NO_4$ 323.348
Alkaloid from *Lindera oldhamii, Hernandia ovigera, Hernandia jamaicensis* and *Hernandia catalpifolia* (Hernandiaceae). Amorph., cryst. (as hydrobromide). Mp 243-245° dec. (hydrobromide). $[\alpha]_D^{28}$ +161 (c, 0.4 in MeOH).

N,N-*Di-Me:*
$C_{20}H_{21}NO_4^{\oplus}$ 339.39
Mp 252-253° dec. (as iodide).

N-*Hydroxy:* **N-*Hydroxyovigerine***
[176679-17-7]
$C_{18}H_{15}NO_5$ 325.32
Alkaloid from trunk bark of *Hernandia nymphaeifolia*. Greyish prisms + $^3/_4H_2O$ ($CHCl_3$/MeOH). Mp 102-104°.

$[\alpha]_D^{24}$ +184 (c, 0.10 in $CHCl_3$).

6a,7-Didehydro, N-*formyl:* **N-*Formyldehydroovigerine***
$C_{19}H_{13}NO_5$ 335.315
Alkaloid from the trunk bark of *Hernandia nymphaeifolia* (Hernandaceae). Prisms (MeOH). Mp 176-178°. λ_{max} 204 (log ε 4.52); 228 (log ε 4.28); 255 (sh) (log ε 4.26); 263 (log ε 4.34); 314 (log ε 3.73); 343 (log ε 3.66); 377 (log ε 3.27); 398 (log ε 3.28) (EtOH).

3-Methoxy: ***Oduocine***
[155944-21-1]
$C_{19}H_{17}NO_5$ 339.347
Alkaloid from roots of *Lindera myrrha* (Lauraceae). Needles (H_2O) (as hydrochloride). Mp 220° (hydrochloride). $[\alpha]_D^{20}$ +140 (c, 0.30 in MeOH).

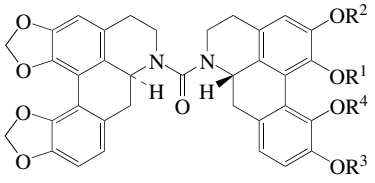
(±)-*form*
N-*Me:* [30048-26-1]
Synthetic. Amorph.

N,N-*Di-Me:* [30048-27-2]
$C_{20}H_{20}NO_4^{\oplus}$ 338.382
Cryst. (MeOH) (as iodide). Mp 241-243° dec. (iodide). CAS no. refers to iodide.

Cava, M.P. *et al., Tet. Lett.*, 1966, 1577; 4279 (*uv, pmr, struct, deriv*)
Cava, M.P. *et al., Tetrahedron*, 1970, **26**, 4649; 1971, **27**, 2639 (*deriv, synth*)
Lu, S.-T. *et al., Yakugaku Zasshi*, 1972, **92**, 910; *CA*, **77**, 101949m (*deriv*)
Ringdahl, B. *et al., J. Nat. Prod.*, 1981, **44**, 80 (*cd*)
Lavault, M. *et al., Planta Med.*, 1981, **42**, 50; 1982, **46**, 119 (*isol*)
Ba Hung Phan, *et al., Phytochemistry*, 1994, **35**, 1363 (*Oduocine*)
Chen, I.-S. *et al., Planta Med.*, 1995, **61**, 537-539 (*Ovigerine, activity*)
Chen, I.-S. *et al., Heterocycles*, 1996, **43**, 799 (*N-Formylovigerine, N-Hydroxyovigerine*)
Chen, I.-S. *et al., Planta Med.*, 1997, **63**, 154-157 (*N-Formyldehydroovigerine*)

Ovihernangerine O-144

[187530-46-7]



R^1,R^2 = —CH_2—
R^3 = H
R^4 = Me

$C_{37}H_{30}N_2O_9$ 646.652
Minor alkaloid from trunk bark of *Hernandia nymphaeifolia*. Prisms (MeOH). Mp 194-196°. $[\alpha]_D^{24}$ +310 (c, 0.08 in $CHCl_3$). λ_{max} 228 (log ε 4.84); 272 (log ε 4.49); 311 (log ε 4.2) (EtOH). λ_{max} 228 (ε 69180); 272 (ε 31000); 311 (ε 15720) (MeOH) (Berdy).

Chen, J.-J. *et al., Planta Med.*, 1996, **62**, 528 (*isol, uv, ir, pmr, ms, struct*)

Oviisocorydine O-145

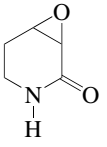
[187669-80-3]
As Ovihernangerine, O-144 with
$R^1 = R^2 = R^3$ = Me, R^4 = H

$C_{38}H_{34}N_2O_9$ 662.695
Minor alkaloid from trunk bark of *Hernandia nymphaeifolia*. Prisms (MeOH). Mp 168-170°. $[\alpha]_D^{24}$ +254 (c, 0.08 in $CHCl_3$). λ_{max} 225 (log ε 4.9); 271 (log ε 4.51); 309 (log ε 4.21) (EtOH). λ_{max} 225 (ε 79430); 271 (ε 32360); 309 (ε 16220) (MeOH) (Berdy).

Chen, J.-J *et al., Planta Med.*, 1996, **62**, 528 (*isol, uv, ir, pmr, ms, struct*)

7-Oxa-3-azabicyclo[4.1.0]-heptan-2-one, 9CI O-146

3,4-Epoxy-2-piperidone. 3,4-Epoxyvalerolactam. ***Tedanalactam***
[956710-49-9]
[159934-17-5 (3*R*,4*R*)-form]



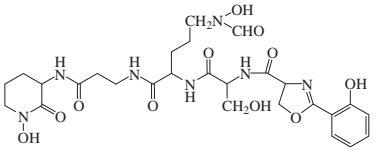
$C_5H_7NO_2$ 113.116
Isol. from the sponge *Tedania ignis* and the leaves of *Piper crassinervum*. Oil. $[\alpha]_D$ -8.9 (c, 0.3 in MeOH).

(-)-*form*
Isol. from the sponge *Tedania ignis.* Oil. $[\alpha]_D$ -8.9 (c, 0.3 in MeOH).

Cronan, J.M. *et al., Nat. Prod. Lett.*, 1994, **5**, 85-88; 141-146 (*isol, ir, pmr, cmr*)
Lago, J.H.G. *et al., Nat. Prod. Res.*, 2007, **21**, 910-914 (*isol, pmr, cmr*)

Oxachelin O-147

[853013-90-8]

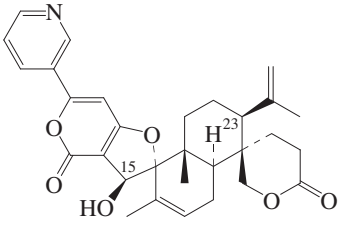


$C_{27}H_{37}N_7O_{11}$ 635.63
Prod. by *Streptomyces* sp. GW9/1258. Siderophore. Powder. λ_{max} 203 ; 245 ; 249 ; 255 (sh) ; 304 (MeCN aq.).

Sontag, B. *et al., J. Antibiot.*, 2006, **59**, 659-663 (*isol, pmr, cmr*)

Oxalicine A O-148

[125309-96-8]



$C_{30}H_{33}NO_6$ 503.594
Prod. by *Penicillium oxalicum* and *Penicillium thiersii*. Mp 193-198° (189-194°). $[\alpha]_D$ +142 (c, 0.3 in CH_2Cl_2). λ_{max} 232 (ε 17800); 329 (ε 6920) (MeOH) (Derep).

23-Hydroxy: ***Oxalicine B***
$C_{30}H_{33}NO_7$ 519.593
Prod. by *Penicillium thiersii*. Antiinsectan. Cryst. Mp 143-146°. $[\alpha]_D$ +92 (c, 0.1 in CH_2Cl_2). λ_{max} 232 (ε 17400); 271 (ε 6400); 317 (ε 4000) (MeOH).

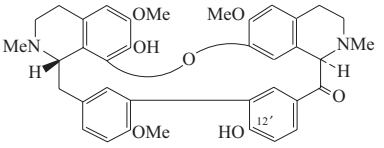
15-Deoxy: ***15-Deoxyoxalicine A***
$C_{30}H_{33}NO_5$ 487.594
Prod. by *Penicillium thiersii*. Oil. $[\alpha]_D$ +54 (c, 0.1 in CH_2Cl_2). λ_{max} 229 (ε 10200); 271 (ε 3900); 316 (ε 2200) (MeOH).

15-Deoxy, 23-hydroxy: ***15-Deoxyoxalicine B***
$C_{30}H_{33}NO_6$ 503.594
Prod. by *Penicillium decaturense.* Cryst. (MeCN aq.). Mp 165-167°. $[\alpha]_D$ +34 (c, 1 in CH_2Cl_2). λ_{max} 205 (ε 16000); 235 (ε 14000); 335 (ε 5600) (MeOH).

Ubillas, R. *et al., Chem. Comm.*, 1989, 1618-1619 (*isol, uv, ir, pmr, cmr, cryst struct*)
Zhang, Y. *et al., Org. Lett.*, 2003, **5**, 773-776 (*15-Deoxyoxalicine B*)
Li, C. *et al., J. Nat. Prod.*, 2005, **68**, 319-322 (*isol, pmr, cmr*)

Oxandrine O-149

[104778-24-7]

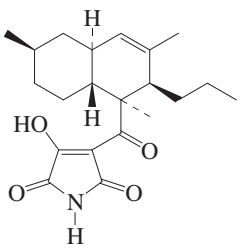


$C_{37}H_{38}N_2O_7$ 622.716
Alkaloid from the bark of *Pseudoxandra* aff. *lucida* (Annonaceae). Amorph. $[\alpha]_D$ -11 (c, 0.9 in $CHCl_3$). $[\alpha]_D$ +9 (c, 0.96 in MeOH).

12′-Me ether: ***Oxandrinine***
[104777-91-5]
$C_{38}H_{40}N_2O_7$ 636.743
Alkaloid from *Pseudoxandra* aff. *lucida* (Annonaceae). Amorph. $[\alpha]_D$ +60 (c, 0.5 in $CHCl_3$).

Cortes, D. *et al., Can. J. Chem.*, 1986, **64**, 1390 (*isol, uv, ir, pmr, cmr, ms, cd, struct, deriv*)

Oxasetin O-150



$C_{21}H_{29}NO_4$ 359.464
Tetramic acid deriv. Related to Equisetin,

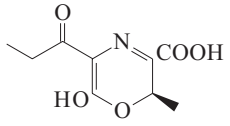
E-142. Prod. by *Vaginatispora aquatica* HK1821. Antibacterial agent. Oil. $[\alpha]_D$ -147.5 (c, 0.37 in MeOH). λ_{max} 225 ; 261 ; 345 (MeOH).

He, H. *et al., J. Antibiot.*, 2002, **55**, 821-825 (*isol, ir, pmr, cmr*)

Oxathinecarboxylic acid O-151

*6-Hydroxy-2-methyl-5-(1-oxopropyl)-2*H*-1,4-oxazine-3-carboxylic acid, 9CI. P 725C. Antibiotic P 725C*

[87979-96-2]



$C_9H_{11}NO_5$ 213.19

Isol. from *Penicillium thomii* IFO7984. Inhibits prostaglandin synthetase. Anti-inflammatory and analgesic. Cryst. Sol. EtOAc, MeOH; fairly sol. H_2O. Mp 115-120° dec. λ_{max} 289 (E1%/1cm 452); 352 (E1%/1cm 382) (MeOH) (Berdy). λ_{max} 283 (E1%/1cm 475) (MeOH/HCl) (Berdy). λ_{max} 289 (E1%/1cm 463); 352 (E1%/1cm 390) (MeOH/NaOH) (Berdy).

▶ RP6198010

Ca salt:

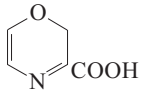
Cryst. + $4H_2O$. $[\alpha]_D^{20}$ +550 (c, 0.1 in MeOH).

Japan. Pat., 1983, 83 134 085; *CA*, **100**, 4785 (*isol*)

2*H*-1,4-Oxazine-3-carboxylic acid O-152

Codopiloic acid

[136945-75-0]

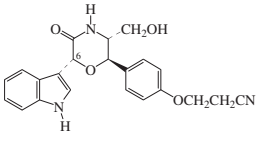


$C_5H_5NO_3$ 127.099

Constit. of *Codonopsis pilosula*.

Wang, H. *et al., Zhongcaoyao*, 1991, **22**, 195; *CA*, **115**, 214619

Oxazinine 1 O-153



Absolute Configuration

$C_{22}H_{21}N_3O_4$ 391.426

Stereochem. revised in 2006. Isol. from the digestive glands of *Mytilus galloprovincialis*. Cytotoxic. $[\alpha]_D^{25}$ +9 (MeOH). λ_{max} 216 (ε 46000); 270 (ε 5700); 277 (ε 5500); 286 (ε 3500) (MeOH).

O-*De(cyanoethyl):* ***Oxazinine 2***

$C_{19}H_{18}N_2O_4$ 338.362

Isol. from *Mytilus galloprovincialis*. $[\alpha]_D^{25}$ +8.7 (MeOH). λ_{max} 216 (ε 20400); 275 (ε 3200); 377 (ε 700) (MeOH).

6-Epimer: ***Oxazinine 4***

$C_{22}H_{21}N_3O_4$ 391.426

Isol. from *Mytilus galloprovincialis*. $[\alpha]_D^{25}$ +60 (c, 0.2 in MeOH).

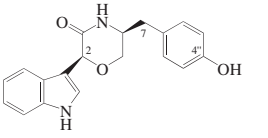
Ciminiello, P. *et al., Eur. J. Org. Chem.*, 2001, 49-53 (*isol, pmr, cmr, ms*)

Ciminiello, P. *et al., Tetrahedron*, 2006, **62**, 7738-7743 (*Oxazinine 4, abs config*)

Oxazinine 3 O-154

*5-[(4-Hydroxyphenyl)methyl]-2-(1*H*-indol-3-yl)-3-morpholinone, 9CI*

[331836-05-6]



Absolute Configuration

$C_{19}H_{18}N_2O_3$ 322.363

Isol. from the digestive glands of *Mytilus galloprovincialis*. $[\alpha]_D^{25}$ +12 (MeOH). λ_{max} 220 (ε 20600); 270 (ε 3100); 375 (ε 750) (MeOH).

*7*R*-Hydroxy, 4″*-O*-(2-cyanoethyl):* ***Oxazinine 6***

[1001439-32-2]

$C_{22}H_{21}N_3O_4$ 391.426

Isol. from *Mytilus galloprovincialis*.

*2-Epimer, 7*R*-hydroxy, 4″*-O*-(2-cyanoethyl):* ***Oxazinine 5***

[1001439-31-1]

$C_{22}H_{21}N_3O_4$ 391.426

Isol. from *Mytilus galloprovincialis*.

Ciminiello, P. *et al., Eur. J. Org. Chem.*, 2001, 49-53 (*Oxazinin 3, isol, pmr, cmr*)

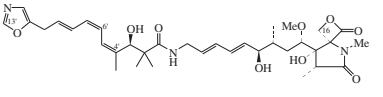
Couladouros, E.A. *et al., Tet. Lett.*, 2004, **45**, 7779-7781 (*Oxazinin 3, synth, abs config*)

Ciminiello, P. *et al., Eur. J. Org. Chem.*, 2007, 5434-5439 (*Oxazinins 5,6*)

Oxazolomycin O-155

Resistaphyllin. Diffusomycin

[89808-64-0]



$C_{35}H_{49}N_3O_9$ 655.787

Polyene-type antibiotic. Numbering systems vary. Prod. by *Streptomyces* sp. Active against gram-positive bacteria and P388 leukaemia. Oil. $[\alpha]_D^{18}$ +56.1 (c, 1 in MeOH). Identity of Oxazolomycin with Resistaphyllin not conclusively established. λ_{max} 230 (ε 33000); 267 (sh) (ε 28000); 275 (ε 34000); 285 (sh) (ε 27000) (MeOH) (Derep).

▶ LD_{50} (mus, ipr) 10.6 mg/kg.

*(6′*E*)-Isomer:* ***Oxazolomycin C***

[208342-70-5]

$C_{35}H_{49}N_3O_9$ 655.787

Prod. by *Streptomyces albus* JA3453. $[\alpha]_D^{22}$ +12.7 (c, 0.4 in MeOH). λ_{max} 230 (ε 18200); 265 (ε 10600); 275 (ε 13400); 285 (ε 11000) (MeOH).

*(4′*E*,6′*E*)-Isomer:* ***Oxazolomycin B***

[208342-69-2]

$C_{35}H_{49}N_3O_9$ 655.787

Prod. by *Streptomyces albus* JA3453. $[\alpha]_D^{22}$ -3.7 (c, 0.3 in MeOH). λ_{max} 230 (ε 18100); 265 (ε 12400); 275 (ε 15700); 285 (ε 12800) (MeOH).

13′-Methyl, 16-(methoxymethyl): ***Triedimycin A***

[135094-12-1]

$C_{38}H_{55}N_3O_{10}$ 713.867

Prod. by a *Streptomyces* sp. Antitumour agent. Powder. Sol. MeOH, Me_2CO, EtOAc, $CHCl_3$; poorly sol. C_6H_6, H_2O. Mp 70-80° (grad. dec.). $[\alpha]_D^{21}$ +71 (c, 1 in MeOH). λ_{max} 230 (E1%/1cm 670); 276 (E1%/1cm 668) (MeOH) (Berdy).

▶ LD_{50} (mus, ipr) 6.25-12.5 mg/kg. HE1780000

*16*R*-Methyl:* ***16*R*-Methyloxazolomycin***. *Antibiotic KSM 2690B. KSM 2690B*

$C_{36}H_{51}N_3O_9$ 669.814

Prod. by *Streptomyces* sp. KSM-2690. Pale yellow powder. Four other KSM 2690 components were isol. but not characterised. λ_{max} 230 ; 267 (sh) ; 278 ; 288 (sh) (no solvent reported).

*16*R*-Methyl, 6′*E*-isomer:* ***16*R*-Methyloxazolomycin C***. *Antibiotic KSM 2690C. KSM 2690C*

$C_{36}H_{51}N_3O_9$ 669.814

Prod. by *Streptomyces* sp. KSM-2690. Pale yellow powder.

*16*S*-Methyl:* ***16*S*-Methyloxazolomycin***

[202863-86-3]

$C_{36}H_{51}N_3O_9$ 669.814

Prod. by a *Streptomyces* sp. Cytotoxic agent. Pale yellow powder. $[\alpha]_D^{23}$ +3.6 (c, 0.5 in MeOH). λ_{max} 228 (ε 23000); 266 (ε 27200); 275 (ε 32000); 285 (ε 27000) (MeOH).

13′,16-Dimethyl: ***Triedimycin B***

[135094-13-2]

$C_{37}H_{53}N_3O_9$ 683.84

Prod. by a *Streptomyces* sp. Antitumour agent. Sol. MeOH, $CHCl_3$, Me_2CO, EtOAc; poorly sol. C_6H_6, H_2O. Mp 85-95° (grad. dec.). $[\alpha]_D^{21}$ +75 (c, 0.8 in MeOH). λ_{max} 226 (ε 39300); 266 (sh) (ε 32900); 275 (ε 39300); 284 (sh) (ε 30300) (MeOH) (Derep).

▶ HE1785000

[89808-66-2]

Takahashi, K. *et al., CA*, 1984, **100**, 167719 (*props, cryst struct*)

Mori, T. *et al., Tet. Lett.*, 1985, **26**, 1073-1076 (*struct, nmr*)

Kawai, S. *et al., Agric. Biol. Chem.*, 1989, **53**, 1127 (*isol, props*)

Ikeda, Y. *et al., J. Antibiot.*, 1991, **44**, 453 (*Triedimycin*)

Graefe, U. *et al., Annalen*, 1992, 429-432 (*biosynth*)

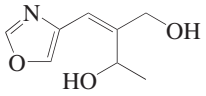
Ryu, G. *et al., J. Antibiot.*, 1997, **50**, 1064-1066; 1999, **52**, 193-197 (*16-Methyloxazolomycin*)

Kanzaki, H. *et al., Biosci., Biotechnol., Biochem.*, 1998, **62**, 438-442 (*Oxazolomycin B, Oxazolomycin C*)

Otani, T. *et al., J. Antibiot.*, 2000, **53**, 1397-1400 (*KSM 2690 derivs*)

4-(4-Oxazolyl)-3-(hydroxymethyl)-3-buten-2-ol O-156

2-[(4-Oxazolyl)methylene]-1,3-butanediol. ***Antibiotic MR 93B***. *MR 93B*
[192212-11-6]



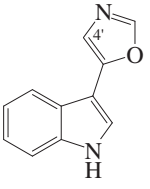
$C_8H_{11}NO_3$ 169.18
Metab. of *Trichoderma harzianum*. Tyrosinase inhibitor, melanin biosynth. inhibitor. Oil. $[\alpha]_D^{25}$ -4 (c, 0.1 in MeOH). Related to Melanoxidin, M-159. λ_{max} 230 (ϵ 15140) (MeOH).

1′-Aldehyde: 3-Hydroxy-2-(4-oxazolylmethylene)butanal, 9CI. *2-(1-Hydroxyethyl)-3-(4-oxazolyl)-2-butenal*. ***Melanoxazal***
[178275-98-4]
$C_8H_9NO_3$ 167.164
Prod. by *Trichoderma* sp. ATF-451. Melanin biosynth. inhibitor. Active against mushroom tyrosinase. Powder. Sol. MeOH, $CHCl_3$, EtOH, Me_2CO, EtOAc; poorly sol. H_2O, hexane. Mp 70-73°. $[\alpha]_D^{24}$ +38.9 (c,0.1 in MeOH). λ_{max} 274 (ϵ 7100) (MeOH).

Takahashi, S. *et al., J. Antibiot.*, 1996, **49**, 513-518 (*Melanoxazal*)
Lee, C.H. *et al., J. Antibiot.*, 1997, **50**, 469-473; 474-478 (*MR 93B, isol, uv, ir, pmr, cmr*)

3-(5-Oxazolyl)-1*H*-indole, 9CI O-157

5-(3-Indolyl)oxazole. ***Antibiotic SF 2583B***. *SF 2583B*
[120191-50-6]



$C_{11}H_8N_2O$ 184.197
Prod. by *Streptomyces* sp. SF 2583. Antiparasitic and nematocidal agent. Powder. Sol. MeOH, EtOAc. Mp 170-172°. λ_{max} 222 ; 265 ; 280 (MeOH).

N-*Me:* [848488-06-2]
$C_{12}H_{10}N_2O$ 198.224
Waxy solid.

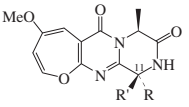
N-*Benzyl:* [848488-08-4]
$C_{18}H_{14}N_2O$ 274.321
Orange cryst. (petrol/CH_2Cl_2). Mp 106-108°.

N-*(4-Methylbenzenesulfonyl):* [848488-10-8]
$C_{18}H_{14}N_2O_3S$ 338.386
Pale yellow cryst. (petrol/CH_2Cl_2). Mp 144°.

4′-Chloro: 3-(4-Chloro-5-oxazolyl)-1H-indole, 9CI. *4-Chloro-5-(3-indolyl)oxazole*. ***Antibiotic SF 2583A***. *SF 2583A*
[120191-51-7]
$C_{11}H_7ClN_2O$ 218.642
Prod. by *Streptomyces* sp. SF 2583. Active against *Caenorhabditis elegans*.

Watabe, H. *et al., Meiji Seika Kenkyu Nenpo*, 1988, 55 (*isol, 4′-chloro*)
Chakrabarty, M. *et al., Tetrahedron*, 2005, **61**, 1793-1801 (*synth, 1-Me, 1-benzyl, 1-tosyl*)

Oxepinamide A O-158



Relative Configuration

R = $CH(CH_3)CH_2CH_3$, R' = OH

$C_{17}H_{21}N_3O_5$ 347.37
Isol. from an *Acremonium* sp. obt. from the tunicate *Ecteinascidia turbinata*. Antiinflammatory agent. Yellow oil. $[\alpha]_D$ +43 (c, 0.001 in $CHCl_3$). λ_{max} 250 (ϵ 6100); 345 (ϵ 4900) (MeOH).

11-Epimer: ***Oxepinamide B***
$C_{17}H_{21}N_3O_5$ 347.37
Isol. from an *Acremonium* sp. obt. from *Ecteinascidia turbinata*. Yellow oil. $[\alpha]_D$ +52 (c, 0.001 in $CHCl_3$). λ_{max} 252 (ϵ 4900); 347 (ϵ 2600) (MeOH).

Belofsky, G.N. *et al., Chem. Eur. J.*, 2000, **6**, 1355-1360

Oxepinamide C O-159

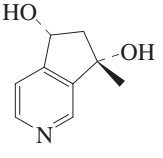
As Oxepinamide A, O-158 with R = $CH_2CH(CH_3)_2$, R′ = OMe

$C_{18}H_{23}N_3O_5$ 361.397
Isol. from an *Acremonium* sp. obt. from *Ecteinascidia turbinata*. Yellow oil. $[\alpha]_D$ -35 (c, 0.001 in $CHCl_3$). λ_{max} 250 (ϵ 3000); 345 (ϵ 2100) (MeOH).

Belofsky, G.N. *et al., Eur. J. Org. Chem.*, 2000, **6**, 1355-1360

Oxerine O-160

6,7-Dihydro-7-methyl-5H-2-pyrindine-5,7-diol, 9CI
[137181-67-0]

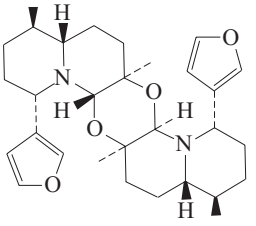


$C_9H_{11}NO_2$ 165.191
Absolute configuration is not certain. Alkaloid from the aerial parts of *Oxera morieri* (Verbenaceae). Amorph. solid. $[\alpha]_D^{20}$ -11 (c, 0.2 in MeOH).

Benkrief, R. *et al., Planta Med.*, 1991, **57**, 79-80 (*isol, uv, ir, pmr, ms, struct*)
Aoyagi, Y. *et al., Tetrahedron*, 1994, **50**, 13575-13582 (*synth*)
Jones, K. *et al., Tetrahedron*, 2000, **56**, 397-406 (*synth*)
Ohba, M. *et al., Chem. Pharm. Bull.*, 2006, **54**, 63-67 (*synth, bibl*)

6,7-Oxidodeoxynupharidine dimer O-161

[41758-68-3]

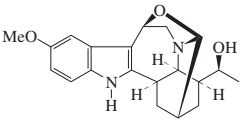


$C_{30}H_{42}N_2O_4$ 494.673
Alkaloid from the rhizomes of *Nuphar luteum* subsp. *macrophyllum* (Nymphaeaceae). Mp 165-172°. $[\alpha]_D^{25}$ -93 (c, 0.26 in CH_2Cl_2).

LaLonde, R.T. *et al., J.A.C.S.*, 1972, **94**, 8522 (*isol, ir, ord, pmr, ms, struct*)

3,6-Oxidoiboxygaine O-162

[77808-84-5]



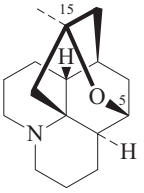
Absolute Configuration

$C_{20}H_{24}N_2O_3$ 340.421
Alkaloid from the trunk bark of *Tabernanthe pubescens* (Apocynaceae). Cryst. (MeOH). Mp 226°. $[\alpha]_D$ -5.6 (c, 0.53 in $CHCl_3$).

Deoxy: ***3,6-Oxidoibogaine***
[77795-11-0]
$C_{20}H_{24}N_2O_2$ 324.422
Alkaloid from root bark of *Tabernanthe pubescens* (Apocynaceae). Amorph. $[\alpha]_D$ -18.7 (c, 0.309 in $CHCl_3$).

Mulamba, T. *et al., J. Nat. Prod.*, 1981, **44**, 184 (*isol, uv, ir, pmr, ms, struct*)

5,15-Oxidolycopodane O-163

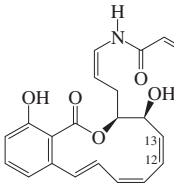


$C_{16}H_{25}NO$ 247.38
A component of Alkaloids L28 and L31. Alkaloid from *Lycopodium annotinum* var. *acrifolium* (Lycopodiaceae). $[\alpha]_D$ +51 (c, 0.019 in MeOH).

Ayer, W.A. *et al., Can. J. Chem.*, 1990, **68**, 1300 (*pmr, cmr, ms, struct*)

Oximidine II O-164

[220578-36-9]



Absolute Configuration

$C_{23}H_{24}N_2O_6$ 424.452

Prod. by *Pseudomonas* sp. Q52002. Antitumour agent. Powder. Mp 113-115°. $[\alpha]_D^{26}$ -141 (c, 0.75 in MeOH). λ_{max} 282 (ϵ 30300) (MeOH). λ_{max} 203 (ϵ 138000); 279 (ϵ 28200) (0.01*M* NaOH/MeOH).

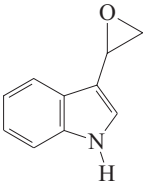
12α,13α-Epoxide: ***Oximidine I***
[220625-58-1]
$C_{23}H_{24}N_2O_7$ 440.452
Prod. by *Pseudomonas* sp. Q52002. Antitumour agent. Powder. Mp 104-106°. $[\alpha]_D^{22}$ -286 (c, 1 in MeOH). λ_{max} 272 (ϵ 30500) (MeOH). λ_{max} 203 (ϵ 112000); 270 (ϵ 30500) (0.1*M* NaOH/MeOH).

*17*E-*Isomer, 14-deoxy, 12α,13α-epoxide:* ***Oximidine III***
$C_{23}H_{24}N_2O_6$ 424.452
Prod. by *Pseudomonas* sp. QN05727. Antitumour agent. Powder. Mp 87-89°. $[\alpha]_D^{22}$ -80 (c, 0.03 in MeOH). λ_{max} 210 (ϵ 23400); 272 (ϵ 28000) (0.1*M* NaOH/MeOH). λ_{max} 276 (ϵ 26600) (MeOH).

Kim, J.W. *et al., J.O.C.*, 1999, **64**, 153-155 (*Oximidines I-II*)
Hayakawa, Y. *et al., J. Antibiot.*, 2003, **56**, 889-904; 905-908 (*Oximidine III*)

3-Oxiranyl-1*H*-indole, 9CI O-165

3-Indolylethylene oxide



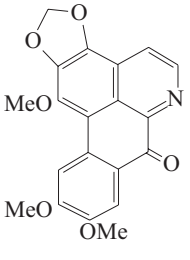
$C_{10}H_9NO$ 159.187

(-)-*form* [129225-30-5]
Alkaloid from leaves of *Moricandia arvensis* (Brassicaceae). $[\alpha]_D^{22}$ -40 (c, 1 in H_2O).

Belkhiri, A. *et al., Phytochemistry*, 1990, **29**, 1315 (*isol, uv, pmr, ms, struct*)

Oxobaicaline O-166

[105418-66-4]



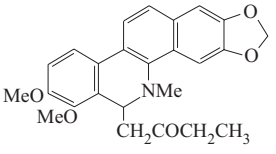
$C_{20}H_{15}NO_6$ 365.342

Alkaloid from the stems of *Thalictrum baicalense* (Ranunculaceae). Large needles (MeOH). Mp 240° dec.

Maekh, S.Kh. *et al., Khim. Prir. Soedin.*, 1986, **22**, 251; *Chem. Nat. Compd. (Engl. Transl.)*, 238 (*isol, uv, pmr, struct*)

8-(2-Oxobutyl)dihydrocheler-ythrine O-167

8-(Propionylmethyl)dihydrochelerythrine
[71627-29-7]



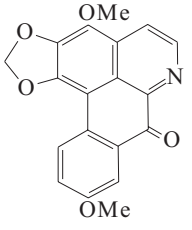
$C_{25}H_{25}NO_5$ 419.476

Probably an artifact. Alkaloid from the bark of *Fagara mayu*. Also obt. by heating Chelerythrine chloride in 2-butanone containing Na_2CO_3 (Rutaceae). Cryst. (EtOAc). Mp 206-208.5°.

Assem, E.M. *et al., Phytochemistry*, 1979, **18**, 511-512 (*isol, ir, pmr, ms, struct, synth*)

Oxobuxifoline O-168

*4,10-Dimethoxy-8*H-*benzo[*g*]-1,3-benzodioxolo[6,5,4-*de*]quinolin-8-one, 9CI*
[89368-27-4]



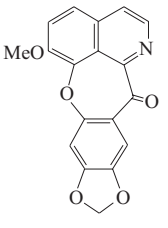
$C_{19}H_{13}NO_5$ 335.315

Minor alkaloid from the stem bark of *Duguetia obovata* (Annonaceae). Also isol. from stem bark of *Artabotrys zeylanicus* (Annonaceae) and from leaves and stems of *Cissampelos glaberrima*. Cryst. (MeOH). Mp 268°.

Roblot, F. *et al., J. Nat. Prod.*, 1983, **46**, 862 (*isol, uv, ir, pmr, ms, struct*)
Wijeratne, E.M.K. *et al., Phytochemistry*, 1996, **42**, 1703 (*isol*)
Barbosa-Filho, J.M. *et al., Phytochemistry*, 1997, **44**, 959 (*isol, cmr*)

Oxocompostelline O-169

*6-Methoxy-13*H-*[1,3]dioxolo[7,8][1]-benzoxepino[2,3,4-*ij*]isoquinolin-13-one, 9CI*
[86817-61-0]



$C_{18}H_{11}NO_5$ 321.289

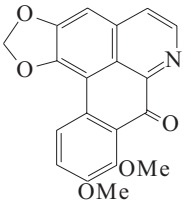
Compostelline is currently unknown. Alkaloid from *Sarcocapnos enneaphylla* (Papaveraceae). Yellow cryst. (EtOH). Mp 259°.

O-*De-Me:* ***Oxocularicine***
[133084-02-3]
$C_{17}H_9NO_5$ 307.262
Alkaloid from *Corydalis claviculata* (Papaveraceae). Amorph. The trivial name is somewhat misleading (Cularicine, C-804 is 1,2,3,4-tetrahydro).

Boente, J.M. *et al., Tet. Lett.*, 1983, **24**, 2295 (*uv, ir, pmr, ms, struct, synth*)
Allais, D.P. *et al., J. Nat. Prod.*, 1990, **53**, 1280 (*Oxocularicine*)

Oxocrebanine O-170

*9,10-Dimethoxy-8*H-*benzo[*g*]-1,3-benzodioxolo[6,5,4-*de*]quinolin-8-one, 9CI. 1,2-Methylenedioxy-8,9-dimethoxyoxoaporphine. 8,9-Dimethoxyliriodenine*
[38826-42-5]



$C_{19}H_{13}NO_5$ 335.315

Obt. by air oxidn. of Dehydrocrebanine in C-733 in the presence of an alkali catalyst, and from uthongine by chromatography on silica gel. Alkaloid from *Stephania sasakii* and from the stem-xylem of *Hernandia ovigera*. Tentatively identified in bark of *Uvariopsis guineensis*. Orange prisms (EtOH). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 265-269° (260-265°). λ_{max} 214 ; 238 ; 245 ; 375 (MeOH/NaOH) (Berdy).

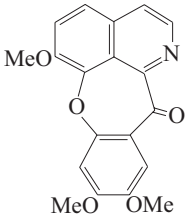
N-*Me:* ***Uthongine***
[81255-04-1]
$C_{20}H_{16}NO_5^{\oplus}$ 350.35
Quaternary alkaloid from the tuberous roots of *Stephania venosa* (*Stephania rotunda*). Partially decomposed by chromatography on silica gel to Oxocrebanine.

9-O-*De-Me:* ***Fissiceine***
[330832-88-7]
$C_{18}H_{11}NO_5$ 321.289
Alkaloid from *Fissistigma glaucescens*. Red needles ($CHCl_3$). Mp 238-240°. λ_{max} 261 (log ϵ 4.5); 292 (log ϵ 4.13); 361 (log ϵ 3.99) (EtOH).

Leboeuf, M. *et al., Phytochemistry*, 1972, **11**, 2833 (*isol*)
Yang, T.H. *et al., T'ai-wan Yao Hsueh Tsa Chih*, 1973, **25**, 8; *CA*, **86**, 127150e (*isol, struct*)
Kunitomo, J. *et al., Phytochemistry*, 1980, **19**, 2735 (*synth, uv, ir, pmr, ms*)
Guinaudeau, H. *et al., Chem. Comm.*, 1981, 1118 (*Uthongine, synth*)
Kunitomo, J. *et al., Yakugaku Zasshi*, 1981, **101**, 431 (*isol, uv, ir, pmr, ms*)
Lo, W.-L. *et al., J. Chin. Chem. Soc. (Taipei)*, 2000, **47**, 1251-1256 (*Fissiceine*)

Oxocularine O-171

*6,9,10-Trimethoxy-12*H*-[1]benzoxepino[2,3,4-ij]isoquinolin-12-one, 9CI*
[3395-23-1]



$C_{19}H_{15}NO_5$ 337.331

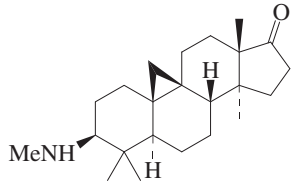
The trivial name is somewhat misleading (Cularine, C-805 is 1,2,3,4-tetrahydro). Alkaloid from *Corydalis claviculata* (Papaveraceae). Yellow cryst. (EtOH). Mp 198-199°.

O^7*-De-Me:* ***Oxocularidine***
[120481-42-7]
$C_{18}H_{13}NO_5$ 323.304
Alkaloid from *Sarcocapnos crassifolia* (Papaveraceae). Amorph. yellow powder. λ_{max} 254 (log ϵ 3.86); 266 (log ϵ 3.67); 304 (sh) (log ϵ 3.28); 350 (log ϵ 3.18); 410 (log ϵ 3.2) (EtOH).

Kametani, T. *et al., Yakugaku Zasshi*, 1965, **85**, 667; *CA*, **63**, 13229c (*synth, uv, ir*)
Allais, D.P. *et al., J. Nat. Prod.*, 1983, **46**, 881 (*isol, uv, ir, pmr, ms, struct, synth*)
Boente, J.M. *et al., Tet. Lett.*, 1983, **24**, 2295 (*pmr, ms*)
Castedo, L. *et al., Phytochemistry*, 1989, **28**, 251 (*Oxocularidine*)
García, A. *et al., Tetrahedron*, 1995, **51**, 8585 (*synth*)

17-Oxocycloprotobuxine O-172

[231628-57-2]



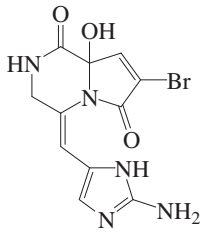
$C_{23}H_{37}NO$ 343.551

Misleading name assigned. Alkaloid from the roots of *Buxus sempervirens*. Gum. $[\alpha]_D^{20}$ +48 (c, 0.73 in $CHCl_3$). λ_{max} 203 (log ϵ 1.85) (MeOH).

Atta-ur-Rahman, *et al., J. Nat. Prod.*, 1999, **62**, 665-669 (*isol, uv, ir, pmr, cmr, ms*)

Oxocyclostylidol O-173

[910450-17-8]



$C_{11}H_{10}BrN_5O_3$ 340.136

Related to Cyclooroidin, C-887. Isol. from *Stylissa caribica*. Yellow powder. $[\alpha]_D^{23}$ -12 (c, 1 in MeOH). λ_{max} 224 ; 263 ; 320 (MeOH).

Grube, A. *et al., J. Nat. Prod.*, 2006, **69**, 1212-1214 (*isol, cd, pmr, cmr*)

6-Oxo-2,4-decadienoic acid O-174

$H_3C(CH_2)_3COCH{=}CHCH{=}CHCOOH$

$C_{10}H_{14}O_3$ 182.219

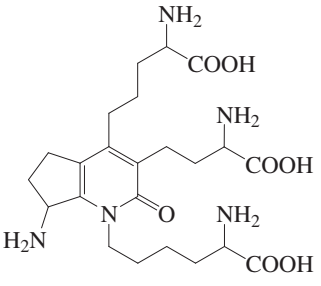
(2E,4E)-form

Piperidide: 1-(1,6-Dioxo-2,4-decadienyl)-piperidine. 6-Oxo-2,4-decadienoic acid piperidide. N-*(6-Oxo-2,4-decadienoyl)-piperidine*
$C_{15}H_{23}NO_2$ 249.352
Alkaloid from the roots of *Piper nigrum*. Oil. λ_{max} 275 (log ϵ 4.32) (MeOH).

Wei, K. *et al., J. Nat. Prod.*, 2004, **67**, 1005-1009 (*isol, pmr, cmr*)

Oxodesmosine O-175

[147044-49-3]



$C_{23}H_{37}N_5O_7$ 495.575

Cross-linking amino acid. Isol. from bovine aorta elastin.

Suyama, K. *et al., Bioorg. Med. Chem. Lett.*, 1992, **2**, 1767-1770 (*isol, pmr*)

12-Oxo-2,4,8,10-dodecatetraenoic acid O-176

11-Formyl-2,4,8,10-undecatetraenoic acid
$OHCCH{=}CHCH{=}CHCH_2CH_2CH{=}CHCH{=}CHCOOH$

$C_{12}H_{14}O_3$ 206.241

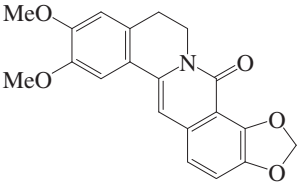
(all-E)-form

2-Methylpropylamide: N-*Isobutyl-12-oxo-2,4,8,10-dodecatetraenamide.* ***Lanyuamide V***
[350811-07-3]
$C_{16}H_{23}NO_2$ 261.363
Alkaloid from the fruit of *Zanthoxylum integrifoliolum*. Oil. λ_{max} 259 (sh) (log ϵ 4.23); 275 (log ϵ 4.3) (EtOH).

Tsai, I.-L. *et al., Helv. Chim. Acta*, 2001, **84**, 830-833

8-Oxoepiberberine O-177

8-Oxodihydroepiberberine
[19716-60-0]



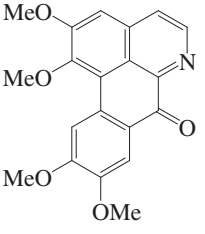
$C_{20}H_{17}NO_5$ 351.358

Alkaloid from the rhizomes of *Coptis japonica*. Powder. λ_{max} 226 ; 256 ; 331 ; 345 ; 377 (MeOH).

Min, Y.D. *et al., Arch. Pharmacal Res.*, 2006, **29**, 757-761 (*isol, pmr, cmr*)

Oxoglaucine O-178

*1,2,9,10-Tetramethoxy-7*H*-dibenzo[de,g]quinolin-7-one, 9CI. Liriodendron base.* O-*Methylatheroline*
[5574-24-3]



$C_{20}H_{17}NO_5$ 351.358

Alkaloid from *Liriodendron tulipifera* (Magnoliaceae), *Annona purpurea* (soncoya) (Annonaceae) and trunk wood of *Phoebe cinnamomifolia* (Lauraceae); also from the Papaveraceae and Menispermaceae. Shows antimicrobial activity. Mp 227-229° (195-197°).

O^1*-De-Me,* N^1*-Me, inner salt:* ***Corunnine****. Glauvine*
[34421-18-6]
$C_{20}H_{17}NO_5$ 351.358
Alkaloid from *Glaucium flavum* var. *vestitum*, the discoloured sapwood of *Liriodendron tulipifera* and the roots of *Thalictrum foetidum* (Papaveraceae, Magnoliaceae, Ranunculaceae). Violet needles (EtOH) (also descr. as green). Mp 255-257°.

O^1*-De-Me,* N^1*-Me, perchlorate:*
Purple needles. Mp 293-295°.

O^9*-De-Me:* ***Atheroline***
[5140-35-2]
$C_{19}H_{15}NO_5$ 337.331
Alkaloid from *Atherosperma moschatum*, *Dryadodaphne novoguineensis* and *Guatteria* spp. (Monimiaceae, Annonaceae). Mp 250-260° dec. λ_{max} 252 (ϵ 50100); 299 (ϵ 39800); 323 (ϵ 39800); 400 (ϵ 15800) (EtOH/KOH) (Derep). λ_{max} 242 (ϵ 39800); 272 (ϵ 39800); 292 (ϵ 25100); 352 (ϵ 12600); 380 (ϵ 10000); 433 (ϵ 5010) (EtOH) (Derep).

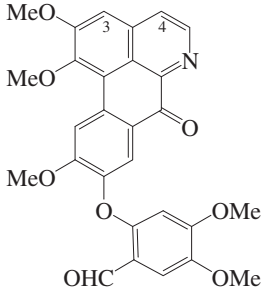
► RB6035000

O^{9}-*De-Me, Ac:*
Yellow needles (Py). Mp 190-195°.

Buchanan, M.A. *et al., J.O.C.*, 1960, **25**, 1389 (*isol, uv*)
Cohen, J. *et al., J.O.C.*, 1961, **26**, 4143 (*isol, uv, synth*)
Bick, I.R.C. *et al., Tet. Lett.*, 1965, 2399 (*Atheroline, isol, ir, pmr, uv*)
Bick, I.R.C. *et al., Aust. J. Chem.*, 1967, **20**, 1403 (*ms*)
Tomita, M. *et al., Yakugaku Zasshi*, 1968, **88**, 1143 (*isol, pmr*)
Ribas, I. *et al., Tet. Lett.*, 1971, 3093; 1973, 3617 (*Corunnine, uv, ir, pmr, struct, synth*)
Cava, M.P. *et al., J.O.C.*, 1972, **37**, 2936 (*Atheroline, synth, ir, pmr, uv*)
Yakhontova, L.D. *et al., Khim. Prir. Soedin.*, 1972, **8**, 214; *Chem. Nat. Compd. (Engl. Transl.)*, 1972, **8**, 212 (*Corunnine, uv, pmr*)
Kupchan, S.M. *et al., Chem. Comm.*, 1973, 915 (*Corunnine, synth*)
Castedo, L. *et al., Heterocycles*, 1975, **3**, 449; 1980, **14**, 1131 (*Corunnine, synth, struct*)
Chen, C.-L. *et al., Phytochemistry*, 1976, **15**, 1161 (*Corunnine, isol, uv, pmr*)
Kametani, T. *et al., Tetrahedron*, 1977, **33**, 1069 (*Atheroline, synth*)
Hufford, C.D. *et al., J. Pharm. Sci.*, 1980, **69**, 1180-1182 (*activity*)
Marsaioli, A.J. *et al., Phytochemistry*, 1980, **19**, 995 (*cmr*)
Saá, C. *et al., Tet. Lett.*, 1985, **26**, 4559 (*synth*)
Martínez, E. *et al., Planta Med.*, 1988, **54**, 361 (*isol, uv, ir, pmr, ms*)
Atanes, N. *et al., J.O.C.*, 1991, **56**, 2984 (*synth*)

7-Oxohernandaline O-179

[187530-48-9]



$C_{28}H_{23}NO_8$ 501.492
Minor alkaloid from trunk bark of *Hernandia nymphaeifolia* and from *Hernandia ovigera*. Yellowish prisms (EtOH). Mp 197-199°. λ_{max} 210 (log ε 4.65); 239 (log ε 4.57); 273 (log ε 4.51); 317 (log ε 4.14); 375 (sh) (log ε 3.86); 415 (sh) (log ε 3.68) (EtOH). λ_{max} 210 (ε 44668); 239 (ε 37150); 273 (ε 32360); 317 (ε 13800); 375 ; 415 (MeOH) (Berdy).

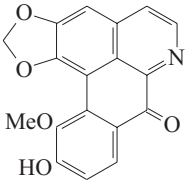
3-Methoxy: ***9-(2-Formyl-4,5-dimethoxyphenoxy)-1,2,3,10-tetramethoxyoxoaporphine***
$C_{29}H_{25}NO_9$ 531.518
Alkaloid from *Thalictrum elegans*. Orange-yellow powder (MeOH). Mp 136-138°.

4-Methoxy: ***4-Methoxyoxohernandaline***
[178765-69-0]
$C_{29}H_{25}NO_9$ 531.518
Alkaloid from trunk bark of *Hernandia nymphaeifolia*. Orange-reddish prisms ($CHCl_3$/MeOH). Mp 255-259°.

Chen, J.J. *et al., Phytochemistry*, 1996, **42**, 1479 (*4-Methoxyoxohernandaline*)
Chen, J.-J. *et al., Planta Med.*, 1996, **62**, 528 (*Oxohernandaline*)
Liang, Z.Y. *et al., Chin. J. Chem.*, 2005, **23**, 895-897 (*3-methoxy*)

7-Oxohernangerine O-180

[172274-07-6]



$C_{18}H_{11}NO_5$ 321.289
Alkaloid from stem bark of *Hernandia nymphaeifolia*. Orange prisms (MeOH). Mp 256-258°.

Ac: [172274-09-8]
Yellowish needles ($CHCl_3$/MeOH). Mp 213-215°.

Me ether: **O-*Methyl-7-oxohernangerine***
$C_{19}H_{13}NO_5$ 335.315
Alkaloid from the trunk bark of *Hernandia nymphaeifolia*. Orange-yellow prisms (CH_2Cl_2/Me_2CO). Mp 236-238°. λ_{max} 222 (log ε 4.72); 255 (log ε 4.56); 268 (sh) (log ε 4.5); 310 (sh) (log ε 3.99); 358 (log ε 4.13); 409 (log ε 4.12) (EtOH).

3-Methoxy: 3-Methoxy-7-oxohernangerine. ***Lindechunine A***
$C_{19}H_{13}NO_6$ 351.315
Alkaloid from the roots of *Lindera chunii*. Yellow powder. λ_{max} 220 ; 265 ; 365 (MeOH).

Chen, J.-J. *et al., J. Nat. Prod.*, 1996, **59**, 156-158 (*isol, uv, ir, pmr, ms, struct*)
Chen, J.-J. *et al., Planta Med.*, 2001, **67**, 593-598 (*O-Methyl-7-oxohernangerine*)
Zhang, C.-F. *et al., Chem. Pharm. Bull.*, 2002, **50**, 1195-1200 (*Lindechunine A*)

6-Oxo-2,4-hexadienoic acid O-181

OHCCH═CHCH═CHCOOH
$C_6H_6O_3$ 126.112

(2E,4E)-form

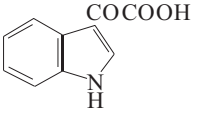
2-Phenylethylamide: [96917-24-7]
$C_{14}H_{15}NO_2$ 229.278
Constit. of *Salmea scandens*. Oil.

[88973-46-0]

Bohlmann, F. *et al., Phytochemistry*, 1985, **24**, 595-596 (*isol, amide*)

α-Oxo-1*H*-indole-3-acetic acid, 9CI O-182

2-(3-Indolyl)glyoxylic acid
[1477-49-2]



$C_{10}H_7NO_3$ 189.17
Yellow cryst. Mp 215° dec.

Me ester: [18372-22-0]
$C_{11}H_9NO_3$ 203.197
Alkaloid from a *Spongosorites* sp.
Cryst. (MeOH). Mp 230°.

Me ester, N-*Ac:* [66946-85-8]
$C_{13}H_{11}NO_4$ 245.234
Mp 130-132°.

Et ester: [51079-10-8]
$C_{12}H_{11}NO_3$ 217.224
Cryst. Mp 186°.

Chloride: [22980-09-2]
$C_{10}H_6ClNO_2$ 207.616
Mp 138-139°.

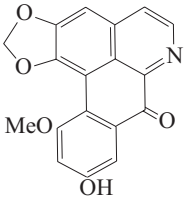
*Amide: α-Oxo-1*H*-indole-3-acetamide*
[5548-10-7]
$C_{10}H_8N_2O_2$ 188.185
Alkaloid from a *Spongosorites* sp. Mp 248° Mp 252° dec.

*Nitrile: α-Oxo-1*H*-indole-3-acetonitrile. 3-(Cyanocarbonyl)indole*
[19194-62-8]
$C_{10}H_6N_2O$ 170.17
Mp 224-226°.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 668D (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 140A (*nmr*)
Baker, J.W. *et al., J.C.S.*, 1940, 458 (*synth*)
Behr, D. *et al., Acta Chem. Scand.*, 1973, **27**, 2411-2414 (*Et ester*)
Janosik, T. *et al., Tetrahedron*, 2002, **58**, 2813-2819 (*nitrile*)
Bao, B. *et al., Mar. Drugs*, 2007, **5**, 31-39 (*Me ester, amide, isol, pmr, cmr, ms*)

Oxoisocalycinine O-183

*10-Hydroxy-12-methoxy-8*H*-benzo[g]-benzodioxolo[6,5,4-de]quinolin-8-one, 9CI. 9-Hydroxy-11-methoxy-1,2-methylenedioxyoxoaporphine*
[91174-08-2]



$C_{18}H_{11}NO_5$ 321.289
Alkaloid from the stem bark of *Guatteria discolor*. Cryst. (MeOH). Mp 280° dec.

9-Me ether: ***Oxodiscoguattine***
[921936-13-2]
$C_{19}H_{13}NO_5$ 335.315
Alkaloid from the stems of *Fissistigma oldhamii*. Amorph. red powder. λ_{max} 230 (log ε 4.62); 265 (log ε 4.45); 330 (log ε 4.06); 356 (log ε 4.03) (MeOH).

O^{11}-*De-Me, 9-Me ether:* ***Oxocalycinine***
[921936-14-3]
$C_{18}H_{11}NO_5$ 321.289
Alkaloid from the stems of *Fissistigma oldhamii*. Amorph. red powder. λ_{max} 225 (log ε 4.5); 267 (log ε 4.28); 356

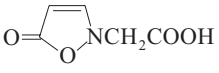
(log ϵ 4.01) (MeOH).

Hocquemiller, R. *et al., J. Nat. Prod.*, 1984, **47**, 353-362 (*Oxoisocalycinine*)

Zhang, Y.-N. *et al., Bioorg. Med. Chem.*, 2007, **15**, 988-996 (*Oxocalycinine, Oxodiscoguattine*)

5-Oxo-2(5*H*)-isoxazoleacetic acid, 9CI O-184

2-Carboxymethyl-3-isoxazolin-5-one
[51581-01-2]



$C_5H_5NO_4$ 143.099
Constit. of *Lathyrus odoratus.*

v. Rompuy, L. *et al., Biochem. Biophys. Res. Commun.*, 1974, **56**, 199

5-Oxo-2(5*H*)-isoxazolepropanoic acid, 9CI O-185

2-(2-Carboxyethyl)-3-isoxazolin-5-one
[92279-63-5]



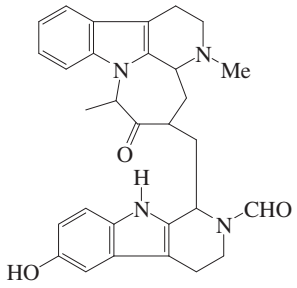
$C_6H_7NO_4$ 157.126
Alkaloid from the immature seeds and pods of *Lathyrus odoratus* (Fabaceae). Needles (Me_2CO aq.). Mp not recorded.

Nitrile: ***5-Oxo-2(5H)-isoxazolepropanenitrile, 9CI****. 2-(2-Cyanoethyl)-3-isoxazolin-5-one*
[51580-99-5]
$C_6H_6N_2O_2$ 138.126
Constit. of *Lathyrus odoratus* and *Pisum sativum* (peas).

v. Rompuy, L. *et al., J.C.S. Perkin 1*, 1973, 2503 (*synth*)

Ikegami, F. *et al., Chem. Pharm. Bull.*, 1984, **32**, 2450 (*isol, uv, ir, pmr, ms, struct*)

Oxojanussine O-186

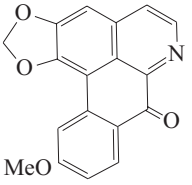


$C_{30}H_{32}N_4O_3$ 496.608
Isol. from *Strychnos johnsonii*. May be an oxidn. prod. of the Janussines (see Janussine A, J-22).

Massiot, G. *et al., Tet. Lett.*, 1985, **26**, 2441-2444 (*pmr, struct*)

Oxolaureline O-187

10-Methoxyliriodenine. Lauterine
[28200-65-9]



$C_{18}H_{11}NO_4$ 305.289
Alkaloid from the stem bark of *Guatteria elata* and *Laurelia novae-zelandiae* and from *Magnolia soulangeana* (Annonaceae, Monimiaceae, Magnoliaceae). Also isol. from roots of *Miliusa* cf. *banacea* (Annonaceae). Yellow needles ($CHCl_3$). Mp 301-303° dec. λ_{max} 247 ; 309 ; 343 ; 405 (MeOH) (Berdy).

O-*De-Me:* ***10-Hydroxyliriodenine****. Demethyloxolaureline. Demethyllauterine*
[154659-89-9]
$C_{17}H_9NO_4$ 291.262
Alkaloid from roots of *Miliusa* cf. *banacea* and from *Polyalthia* sp. (Annonaceae). Topoisomerase inhibitor. Orange amorph. solid. λ_{max} 246 ; 269 ; 280 ; 354 ; 420 (MeOH).

Govindachari, T.R. *et al., Indian J. Chem.*, 1970, **8**, 475 (*synth, uv*)

Ziyaev, R. *et al., Khim. Prir. Soedin.*, 1975, **11**, 528; *Chem. Nat. Compd. (Engl. Transl.)*, 1975, **11**, 560 (*isol*)

Urzúa, A. *et al., Heterocycles*, 1976, **4**, 1881 (*isol, ir, pmr*)

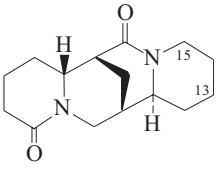
Hsu, C.C. *et al., J. Nat. Prod.*, 1977, **40**, 152 (*isol, uv, ir, pmr, ms*)

Harrigan, G.G. *et al., J. Nat. Prod.*, 1994, **57**, 68 (*10-Hydroxyliriodenine*)

Guinaudeau, H. *et al., J. Nat. Prod.*, 1994, **57**, 1033 (*10-Hydroxyliriodenine*)

17-Oxolupanine O-188

2,17-Dioxosparteine
[4697-83-0]



$C_{15}H_{22}N_2O_2$ 262.351
Alkaloid from *Chamaecytisus* spp., *Lupinus polyphyllus, Lupinus angustifolius* and other *Lupinus* spp. (Fabaceae). Cryst. (petrol). Mp 155.5°. $[\alpha]_D^{23}$ +139.

13ξ-Hydroxy: ***13-Hydroxy-17-oxolupanine***
[152406-63-8]
$C_{15}H_{22}N_2O_3$ 278.35
Minor alkaloid in leaves of *Lupinus linearis* and *Lupinus gibertianus* (Fabaceae). Tentative identification by glc/ms.

13-Angeloyloxy: ***13-Angeloyloxy-17-oxolupanine***
[152406-64-9]
$C_{20}H_{28}N_2O_4$ 360.452
Minor alkaloid in leaves of *Lupinus linearis* and *Lupinus gibertianus* (Fabaceae). Tentative identification by glc/ms.

13-Tigloyloxy: ***13-Tigloyloxy-17-oxolupanine***
[152406-65-0]
$C_{20}H_{28}N_2O_4$ 360.452
Minor alkaloid in leaves of *Lupinus linearis* and *Lupinus gibertianus* (Fabaceae). Tentative identification by glc/ms.

13-Benzoyloxy: ***13-Benzoyloxy-17-oxolupanine***
[152406-66-1]
$C_{22}H_{26}N_2O_4$ 382.458
Minor alkaloid in leaves of *Lupinus linearis* and *Lupinus gibertianus* (Fabaceae). Tentative identification by glc/ms.

13-(E)-Cinnamoyloxy: **trans-*13-Cinnamoyloxy-17-oxolupanine***
[152406-67-2]
$C_{24}H_{28}N_2O_4$ 408.496
Minor alkaloid in leaves of *Lupinus linearis* and *Lupinus gibertianus* (Fabaceae). Tentative identification by glc/ms.

13-(Z)-Cinnamoyloxy: **cis-*13-Cinnamoyloxy-17-oxolupanine***
[152434-59-8]
$C_{24}H_{28}N_2O_4$ 408.496
Minor alkaloid in leaves of *Lupinus linearis* and *Lupinus gibertianus* (Fabaceae). Tentative identification by glc/ms.

15β-Hydroxy: ***15-Hydroxy-17-oxolupanine***
[162229-97-2]
$C_{15}H_{22}N_2O_3$ 278.35
Alkaloid from seeds of *Lupinus albus* (Fabaceae). Fine needles. Mp 85-87°. $[\alpha]_D^{25}$ +4.5 (c, 0.15 in CH_2Cl_2).

Bratele, M.D. *et al., Pol. J. Chem. (Rocz. Chem.)*, 1959, **33**, 1187 (*isol*)

Bohlmann, F. *et al., Chem. Ber.*, 1960, **93**, 1956 (*isol*)

Schumann, D. *et al., Monatsh. Chem.*, 1968, **99**, 390 (*ms*)

Cho, Y.D. *et al., Anal. Biochem.*, 1971, **44**, 49 (*glc, ms*)

Daily, A. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1978, **311**, 889 (*occur*)

Kinghorn, A.D. *et al., Phytochemistry*, 1980, **19**, 1705 (*occur*)

Hatzold, T. *et al., J. Agric. Food Chem.*, 1983, **31**, 934 (*isol*)

Planchuelo-Ravelo, A. *et al., Z. Naturforsch., C*, 1993, **48**, 702 (*13-Hydroxy-17-oxolupanine, esters*)

Mohamed, M.H. *et al., Phytochemistry*, 1994, **37**, 1751 (*15β-Hydroxy-17-oxolupanine*)

5-Oxo-6,8-octadecadienoic acid O-189

$H_3C(CH_2)_8CH{=}CHCH{=}CHCO(CH_2)_3COOH$

$C_{18}H_{30}O_3$ 294.433

(E,E)-form

Constit. of the tubers of *Lepidium meyenii*. Gum. λ_{max} 224 (log ϵ 3.7); 274 (log ϵ 3.49) (MeOH).

Benzylamide: N-*Benzyl-5-oxo-6,8-octa-*

decadienamide. ***Macamide A***
$C_{25}H_{37}NO_2$ 383.573
Alkaloid from the tubers of *Lepidium meyenii* (maca). Gum. λ_{max} 210 (log ϵ 4.08); 276 (log ϵ 3.99) (MeOH).
Muhammad, I. *et al., Phytochemistry*, 2002, **59**, 105-110 (*isol, pmr, cmr*)

9-Oxo-12,15-octadecadienoic acid O-190

$H_3CCH_2CH{=}CHCH_2CH{=}CHCH_2CH_2CO(CH_2)_7COOH$
$C_{18}H_{30}O_3$ 294.433

(12Z,15Z)-form
Benzylamide: N-*Benzyl-9-oxo-12,15-octadecadienamide*
$C_{25}H_{37}NO_2$ 383.573
Alkaloid from the tubers of *Lepidium meyenii*. Powder. λ_{max} 210 (log ϵ 3.96); 274 (log ϵ 3.18) (MeOH).
Zhao, J.-P. *et al., J. Agric. Food Chem.*, 2005, **53**, 690-693 (*isol, pmr, cmr*)

13-Oxo-9,11-octadecadienoic acid O-191

[31385-09-8]
[26474-39-5 , 79790-32-2 , 119051-89-7]
$H_3C(CH_2)_4COCH{=}CHCH{=}CH(CH_2)_7COOH$
$C_{18}H_{30}O_3$ 294.433

(9E,11E)-form [29623-29-8]
Constit. of the processed leaves of *Artemisia argyi*. Also from *Monnina emarginata*. Powder. λ_{max} 276 (log ϵ 4.21) (MeOH).
2,3-Dihydroxypropyl ester:
$C_{21}H_{36}O_5$ 368.512
Isol. from the mushroom *Clitocybe clavipes.* Oil.
Benzylamide: N-*Benzyl-13-oxo-9,11-octadecadienamide*
$C_{25}H_{37}NO_2$ 383.573
Alkaloid from the tubers of *Lepidium meyenii* (maca). Gum. λ_{max} 208 (log ϵ 4.02); 276 (log ϵ 4.04) (MeOH).

(9Z,11E)-form [54739-30-9]
Constit. of the processed leaves of *Artemisia argyi*. Also from the alga *Gracilariopsis lemaneiformis.* Powder. λ_{max} 278 (log ϵ 4.15) (MeOH).
Phillips, B.E. *et al., Biochim. Biophys. Acta*, 1970, **210**, 353 (*isol, uv, ir, pmr*)
Jiang, Z.D. *et al., Phytochemistry*, 1991, **30**, 1187 (*isol*)
Yoshikawa, M. *et al., Chem. Pharm. Bull.*, 1996, **44**, 1656 (*isol, uv, ir, pmr, cmr, ms*)
Kawagishi, H. *et al., J. Nat. Prod.*, 2002, **65**, 1712-1714 (*dihydroxypropyl ester*)
Zhao, J.-P. *et al., J. Agric. Food Chem.*, 2005, **53**, 690-693 (*benzylamide*)

12-Oxooctadecanoic acid O-192

12-Oxostearic acid. Lycaonic acid
[925-44-0]
$H_3C(CH_2)_5CO(CH_2)_{10}COOH$
$C_{18}H_{34}O_3$ 298.465
Constit. of *Gracilaria verrucosa*. Mp 81.5°.
Semicarbazone: Mp 122°.
Me ester: [2380-27-0]
$C_{19}H_{36}O_3$ 312.492
Mp 46-48°. $Bp_{0.8}$ 178-180°.
Pyrrolidide: ***Lycaonic acid pyrrolidide****. 1-(1,12-Dioxooctadecyl)pyrrolidine*
[83182-47-2]
$C_{22}H_{41}NO_2$ 351.571
Alkaloid from the roots of *Achillea* spp. (Asteraceae). Mp 44°.
Piperidide: ***Lycaonic acid piperidide****. 1-(1,12-Dioxooctadecyl)piperidine*
[83182-45-0]
$C_{23}H_{43}NO_2$ 365.598
Alkaloid from the roots of *Achillea lycaonica* (Asteraceae). Mp 41°.
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 1105C (*nmr*)
Belopol'skii, M.P. *et al., CA*, 1937, **31**, 7397 (*synth*)
Tulloch, A.P. *et al., Can. J. Chem.*, 1977, **55**, 1135 (*cmr*)
Tulloch, A.P. *et al., Lipids*, 1977, **12**, 92 (*synth*)
Greger, H. *et al., Phytochemistry*, 1982, **21**, 1071 (*isol, ir, pmr, struct, pyrrolidide, piperidide*)
Bohlmann, F. *et al., Tetrahedron*, 1983, **39**, 123 (*synth*)
Dasaradlin, L. *et al., J.C.S. Perkin 2*, 1995, 221 (*Me ester, synth*)
Dang, H.T. *et al., J. Nat. Prod.*, 2008, **71**, 232-240 (*isol, ms*)

9-Oxo-12-octadecenoic acid O-193

$H_3C(CH_2)_4CH{=}CHCH_2CH_2CO(CH_2)_7COOH$
$C_{18}H_{32}O_3$ 296.449

(Z)-form
Benzylamide: N-*Benzyl-9-oxo-12-octadecenamide*
$C_{25}H_{39}NO_2$ 385.589
Alkaloid from the tubers of *Lepidium meyenii*. Powder. λ_{max} 212 (log ϵ 3.88); 274 (log ϵ 2.98) (MeOH).
Zhao, J.-P. *et al., J. Agric. Food Chem.*, 2005, **53**, 690-693 (*isol, pmr, cmr*)

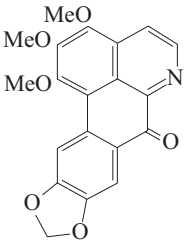
12-Oxo-2-octadecenoic acid O-194

2,3-Dehydrolycaonic acid
$H_3C(CH_2)_5CO(CH_2)_8CH{=}CHCOOH$
$C_{18}H_{32}O_3$ 296.449

(E)-form
Pyrrolidide: ***2,3-Dehydrolycaonic acid pyrrolidide****. 1-(1,12-Dioxo-2-octadecenyl)pyrrolidine*
[83182-46-1]
$C_{22}H_{39}NO_2$ 349.556
Alkaloid from the roots of *Achillea lycaonica* (Asteraceae). Mp 64°.
Piperidide: ***2,3-Dehydrolycaonic acid piperidide****. 1-(1,12-Dioxo-2-octadecenyl)piperidine*
[83182-44-9]
$C_{23}H_{41}NO_2$ 363.582
Alkaloid from the roots of *Achillea lycaonica* (Asteraceae). Mp 43°.
Greger, H. *et al., Phytochemistry*, 1982, **21**, 1071 (*isol, ir, pmr, ms, struct*)
Bohlmann, F. *et al., Tetrahedron*, 1983, **39**, 123 (*synth*)

Oxophoebine O-195

*1,2,3-Trimethoxy-7*H*-benzo[*de*][1,3]-benzodioxolo[5,6-*g*]quinolin-7-one, 9CI. 1,2,3-Trimethoxy-9,10-methylenedioxyoxoaporphine*
[109175-37-3]



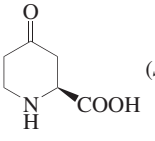
$C_{20}H_{15}NO_6$ 365.342
Alkaloid from the leaves of *Phoebe valeriana* and from *Xylopia aethiopica* (Lauraceae). Amorph. red solid. λ_{max} 211 ; 240 ; 274 ; 379 ; 477 (MeOH) (Berdy).

3-Demethoxy: 1,2-Dimethoxy-9,10-methylenedioxyoxoaporphine. ***Oxonantenine***
[15358-38-0]
$C_{19}H_{13}NO_5$ 335.315
Alkaloid from *Cassytha racemosa, Corydalis bulbosa, Nandina domestica, Laurelia sempervirens* (Peruvian nutmeg), *Siparuna gilgiana* and *Hernandia nymphaefolia* (Lauraceae, Papaveraceae, Nandinaceae, Monimiaceae, Hernandiaceae). Shows antimicrobial activity. Glistening yellow needles (EtOH). Mp 215-218° dec Mp 225-227° dec Mp 297-299°. λ_{max} 228 ; 242 ; 270 ; 285 ; 318 ; 360 (MeOH) (Berdy).

1,3-Bis(demethoxy): ***Hernanymphine***
[172924-21-9]
$C_{18}H_{11}NO_4$ 305.289
Alkaloid from stem bark of *Hernandia nymphaeifolia*. Yellowish prisms ($CHCl_3$/MeOH). Mp 263-265°. Rare substitution pattern (no oxygenation at C-1).
Johns, S.R. *et al., Aust. J. Chem.*, 1967, **20**, 1457 (*Oxonantenine, isol, uv, ir, pmr, ms, struct*)
Hufford, C.D. *et al., J. Pharm. Sci.*, 1980, **69**, 1180-1182 (*Oxonantenine, activity*)
Chiu, S.Y.C. *et al., J. Nat. Prod.*, 1982, **45**, 229 (*Oxonantenine, isol, uv, ir, pmr, ms*)
Castro, O. *et al., J. Nat. Prod.*, 1986, **49**, 1036 (*Oxophoebine, isol, uv, pmr, ms, struct*)
Harrigan, G.G. *et al., J. Nat. Prod.*, 1994, **57**, 68-73 (*Oxophoebine, isol*)
Chen, J.J. *et al., J. Nat. Prod.*, 1996, **59**, 156 (*Hernanymphine*)

4-Oxo-2-piperidinecarboxylic acid, 9CI O-196

4-Piperidone-2-carboxylic acid. 4-Oxopipecolic acid. 4-Ketopipecolic acid
[190005-81-3]



(*S*)-*form*

$C_6H_9NO_3$ 143.142

Exists predominantly as the covalent hydrate in aq. soln.

(*S*)-*form*

L-form

[65060-18-6]

Amino acid present in hydrolysates of the Ostreogrycin A, O-131 family of cyclodepsipeptide antibiotics. Prisms + $1H_2O$ (2-propanol). Mp 240° dec. $[\alpha]_D^{23}$ -19.2 (c, 0.5 in H_2O).

Hydrochloride: [116049-23-1]

[166043-02-3]

Plates (2-propanol). Mp 204° (191°). $[\alpha]_D^{22}$ +4.1 (c, 0.55 in H_2O).

N-tert-*Butyloxycarbonyl:* [198646-60-5]

$C_{11}H_{17}NO_5$ 243.259

Mp 127° dec. $[\alpha]_D^{25}$ -19 (c, 1 in $CHCl_3$).

N-*Benzyloxycarbonyl:* [3956-66-9]

$C_{14}H_{15}NO_5$ 277.276

Bright yellow oil. $[\alpha]_D^{25}$ -19.6 (c, 1 in $CHCl_3$).

(±)-*form*

Hydrochloride: [119945-10-7]

[99979-55-2]

Cryst. (Et_2O). Mp 139-142° dec.

N-*Me, Me ester:* [86251-51-6]

$C_8H_{13}NO_3$ 171.196

Oil.

[180675-07-4 , 189516-49-2]

Eastwood, F.W. *et al., J.C.S.*, 1960, 2286-2292 (*isol*)

Clark-Lewis, J.W. *et al., J.C.S.*, 1961, 189-201 (*synth*)

Essawy, M.Y. *et al., J. Het. Chem.*, 1983, **20**, 477-478 (*N-Me Me ester, synth, pmr*)

Hartmann, P. *et al., Synth. Commun.*, 1988, **18**, 553-557 (*synth, pmr*)

Machetti, F. *et al., Tet. Lett.*, 1996, **37**, 4205-4208 (*synth*)

Golubev, A.S. *et al., Tetrahedron*, 1996, **52**, 14757-14776 (*synth, pmr*)

Badorrey, R. *et al., Tet. Lett.*, 1997, **38**, 2547-2550 (*synth*)

Bonsquet, Y. *et al., Tetrahedron*, 1997, **53**, 15671-15680 (*N-tert-butyloxycarbonyl*)

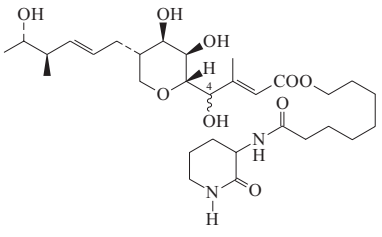
Org. Synth., Coll. Vol., 9, 1998, 526-530 (*synth, ir, pmr*)

Machetti, F. *et al., Tetrahedron*, 2001, **57**, 4995-4998 (*synth*)

Jung, J.-C. *et al., Tetrahedron: Asymmetry*, 2006, **17**, 2479-2486 (*S-form, benzyloxycarbonyl*)

8-[(2-Oxo-3-piperidinyl)amino]-8-oxooctyl 5,9-anhydro-2,3,8-trideoxy-8-(5-hydroxy-4-methyl-2-hexenyl)-3-methyl-DL-*glycero*-LD-*allo*-non-2-enoate, 9CI O-197

[147024-92-8]



$C_{30}H_{50}N_2O_9$ 582.733

Constit. of the marine bacterium *Alteromonas rava*. Antimicrobial agent. Oil. $[\alpha]_D$ -1.8 (c, 0.003 in MeOH). Related to Pseudomonic acid A. λ_{max} 220 (ϵ 14000) (MeOH) (Berdy).

4-Deoxy: BP 2. NSC 646282

[147024-96-2]

$C_{30}H_{50}N_2O_8$ 566.734

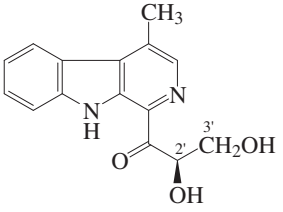
Constit. of *Alteromonas* sp. Antimicrobial agent. Oil. $[\alpha]_D$ -3.1 (c, 0.005 in MeOH). λ_{max} 220 (ϵ 14000) (MeOH) (Berdy).

Stierle, D.B. *et al., Experientia*, 1992, **48**, 1165 (*isol, pmr, cmr*)

Shiozawa, H. *et al., Annu. Rep. Sankyo Res. Lab.*, 1999, **51**, 45-72 (*rev*)

Oxopropaline D O-198

[152752-59-5]



$C_{15}H_{14}N_2O_3$ 270.287

Abs. config. revised in 2003.

(*R*)-*form*

Prod. by *Streptomyces* sp. G324. Cytotoxic agent. Pale yellow powder. Sol. MeOH, MeCN; poorly sol. hexane, H_2O. Mp 182-183° (synthetic). $[\alpha]_D^{20}$ +30 (c, 0.1 in MeOH). λ_{max} 219 (ϵ 31000); 264 (ϵ 10600); 287 (ϵ 16300); 381 (ϵ 6200) (MeOH).

2′-O-α-L-Rhamnopyranoside: ***Oxopropaline A***

[152752-57-3]

$C_{21}H_{24}N_2O_7$ 416.43

Prod. by *Streptomyces* sp. G324. Pale yellow powder. $[\alpha]_D^{20}$ +56 (c, 0.05 in MeOH). λ_{max} 220 (ϵ 43800); 265 (ϵ 15500); 288 (ϵ 22800); 381 (ϵ 9600) (MeOH).

3′-O-α-L-Rhamnopyranoside: ***Oxopropaline B***

[152752-58-4]

$C_{21}H_{24}N_2O_7$ 416.43

Prod. by *Streptomyces* sp. G324. Pale yellow powder. Sol. MeOH, MeCN; poorly sol. hexane, H_2O. $[\alpha]_D^{20}$ -39 (c, 0.02 in MeOH). λ_{max} 218 (ϵ 44900); 265 (ϵ 15100); 287 (ϵ 22300); 378 (ϵ 8000) (MeOH).

2′-Deoxy: ***Oxopropaline G***

[152752-61-9]

$C_{15}H_{14}N_2O_2$ 254.288

Prod. by *Streptomyces* sp. G324. Shows cytocidal activity. Pale yellow powder. Sol. MeOH, MeCN; poorly sol. hexane, H_2O. Mp 155-157° (synthetic). λ_{max} 218 (ϵ 33700); 263 (ϵ 12500); 284 (ϵ 18900); 375 (ϵ 7200) (MeOH).

2′-Deoxy, 3′-O-α-L-rhamnopyranoside: ***Oxopropaline E***

[152752-60-8]

$C_{21}H_{24}N_2O_6$ 400.43

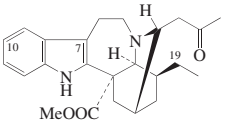
Prod. by *Streptomyces* sp. G324. Pale yellow powder. $[\alpha]_D^{20}$ -39 (c, 0.02 in MeOH). λ_{max} 218 (ϵ 32800); 262 (ϵ 11000); 284 (ϵ 16800); 377 (ϵ 6300) (MeOH).

Abe, N. *et al., J. Antibiot.*, 1993, **46**, 1672-1677; 1678-1686

Choshi, T. *et al., Chem. Pharm. Bull.*, 2000, **48**, 108-113; 2003, **51**, 20-23 (*synth, abs config, activity*)

3-(2-Oxopropyl)coronaridine O-199

[39967-45-8]



Absolute Configuration

$C_{24}H_{30}N_2O_3$ 394.513

Alkaloid from *Ervatamia coronaria* and *Tabernaemontana dichotoma* (Apocynaceae).

10-Methoxy: ***3-(2-Oxopropyl)voacangine***

[145130-77-4]

$C_{25}H_{32}N_2O_4$ 424.539

Minor alkaloid from roots of *Tabernaemontana pauciflora*. Powder. Mp 68-70°. $[\alpha]_{400}^{20}$ -20 (c, 0.16 in EtOH). Poss. artifact.

*19*R-*Hydroxy:* ***3-Ketopropyl-19R-heyneanine***

[99326-72-4]

$C_{24}H_{30}N_2O_4$ 410.512

Alkaloid from the stem bark of *Tabernaemontana dichotoma* (Apocynaceae). Sol. MeOH, butanol, $CHCl_3$; poorly sol. H_2O, hexane. Probably an artifact. λ_{max} 226 ; 286 ; 293 (EtOH) (Berdy).

Δ^1-Isomer, 7α-hydroxy: ***7-Hydroxy-Δ^1-3-(2-oxopropyl)coronaridine***

[909120-05-4]

$C_{24}H_{30}N_2O_4$ 410.512

Alkaloid from the roots of *Ervatamia hainanensis*. Called 9*S*-hydroxy-Δ^{16} in the lit.

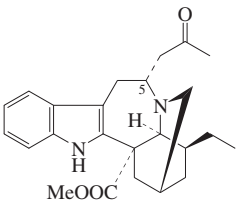
Delle Monache, G. *et al., Atti Accad. Naz. Lincei, Cl. Sci. Fis., Mat. Nat., Rend.*, 1972, **52**, 375; *CA*, **78**, 40468a (*3-(2-Oxopropyl)coronaridine*)

Perera, P. *et al., Phytochemistry*, 1985, **24**, 2097-2104 (*3-Ketopropyl-19R-heyneanine*)

Okuyama, E. *et al., Chem. Pharm. Bull.*, 1992, **40**, 2075-2079 (*2-Oxopropylvoacangine*)

Huang, J.P. *et al., Chin. Chem. Lett.*, 2006, **17**, 779-782 (*7-Hydroxy-Δ^1-oxopropylcoronaridine*)

5-(2-Oxopropyl)coronaridine O-200



(5*R*)-*form*

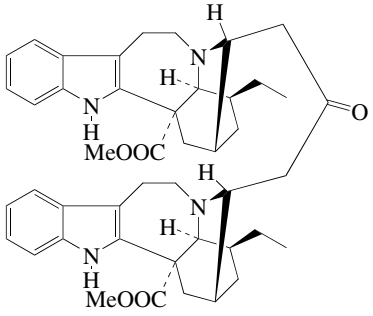
$C_{24}H_{30}N_2O_3$ 394.513

(5*R*)-*form* [145106-97-4]
Minor alkaloid from roots of *Tabernaemontana pauciflora*. Powder. Mp 52-57°. $[\alpha]_D^{20}$ -60 (c, 0.12 in EtOH). Poss. artifact. λ_{max} 225 (log ϵ 4.5); 286 (log ϵ 3.9); 293 (log ϵ 3.87) (EtOH).

(5*S*)-*form* [145106-98-5]
Minor alkaloid from roots of *Tabernaemontana pauciflora*. Powder. Mp 169-171°. $[\alpha]_D^{20}$ -72 (c, 0.051 in EtOH). Poss. artifact. λ_{max} 225 (log ϵ 4.53); 283 (log ϵ 3.9); 291 (log ϵ 3.85) (EtOH).

Delle Monache, G. *et al., Atti Accad. Naz. Lincei, Cl. Sci. Fis., Mat. Nat., Rend.*, 1972, **52**, 375-380; *CA*, **78**, 40468a (*isol*)
Okuyama, E. *et al., Chem. Pharm. Bull.*, 1992, **40**, 2075-2079 (*isol, uv, ir, pmr, cmr*)

3,3′-(Oxopropyl)dicoronaridine O-201



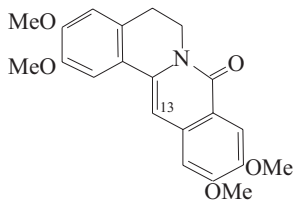
$C_{45}H_{54}N_4O_5$ 730.945
Minor alkaloid from roots of *Tabernaemontana pauciflora*. Powder. Mp 136-138°. $[\alpha]_{400}^{26}$ +23 (c, 0.13 in EtOH). Poss. artifact. CAS name and MF are defective.

[145106-99-6]

Okuyama, E *et al., Chem. Pharm. Bull.*, 1992, **40**, 2075-2079

8-Oxopseudopalmatine O-202

*5,6-Dihydro-2,3,10,11-tetramethoxy-8*H*-dibenzo[*a,g*]quinolizin-8-one, 9CI. 8-Oxypseudopalmatine*
[10211-78-6]



$C_{21}H_{21}NO_5$ 367.401
Alkaloid from the roots of *Stephania suberosa* (Menispermaceae). Orange cryst. (MeOH). Mp 198-199° (187-188°, 192-194°).

13,13′-Dimer: ***Ilicifoline***
[177481-46-8]

$C_{42}H_{40}N_2O_{10}$ 732.785
Alkaloid from roots of *Berberis ilicifolia*. Yellow cryst. Mp 260°.

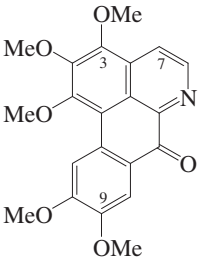
O^2*-De-Me:* ***Cerasonine***
[186424-51-1]
$C_{20}H_{19}NO_5$ 353.374
Alkaloid from stem bark of *Polyalthia cerasoides*. Amorph. solid. Mp > 200°. λ_{max} 229 (log ϵ 3.5); 260 (log ϵ 3.42); 333 (log ϵ 3.35) (EtOH).

O^2,O^{10}*-Di-de-Me:* ***Cerasodine***
[186424-27-1]
$C_{19}H_{17}NO_5$ 339.347
Alkaloid from stem bark of *Polyalthia cerasoides*. Oil. λ_{max} 238 (log ϵ 3.61); 262 (log ϵ 3.62); 336 (log ϵ 3.6) (EtOH).

Lenz, G.R. *et al., J.O.C.*, 1974, **39**, 2839 (*synth, uv, ir, pmr*)
Ninomiya, I. *et al., J.C.S. Perkin 1*, 1975, 1720 (*synth, ir, pmr*)
Kametani, T. *et al., Heterocycles*, 1976, **4**, 927 (*synth, uv, ir, pmr*)
Trifonov, L.S. *et al., Tet. Lett.*, 1985, 3159 (*synth*)
Patra, A. *et al., Phytochemistry*, 1987, **26**, 547 (*isol, pmr*)
Cobas, A. *et al., J.O.C.*, 1992, **57**, 6765 (*synth*)
Fajardo, V. *et al., Heterocycles*, 1996, **43**, 949 (*Ilicifoline*)
González, M.C. *et al., J. Nat. Prod.*, 1997, **60**, 108 (*Cerasodine, Cerasonine*)
Le, T.N. *et al., Chem. Pharm. Bull.*, 2008, **56**, 1026-1029 (*Cerasonine, synth*)

Oxopurpureine O-203

*1,2,3,9,10-Pentamethoxy-7*H*-dibenzo[de,g]quinolin-7-one, 9CI. 1,2,3,9,10-Pentamethoxyoxoaporphine*
[32845-27-5]



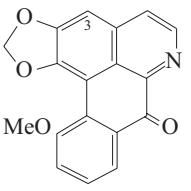
$C_{21}H_{19}NO_6$ 381.384
Alkaloid from *Annona purpurea*, *Liriodendron tulipifera* and *Phoebe cinnamomifolia*. Shows borderline antineoplastic activity. Cryst. + ½ toluene; yellow needles (EtOH). Mp 198-202° dec. (192-194°). Log P 2.34 (calc). λ_{max} 251 ; 282 ; 354 ; 394 ; 456 (MeOH) (Berdy). λ_{max} 215 (ϵ 3200); 248 (ϵ 2180); 278 (ϵ 3320); 389 (ϵ 640) (EtOH) (Berdy).

*9-*O*-De-Me, 9-*O*-(2-hydroxy-4,5-dimethoxybenzyl):* ***9-(2-Hydroxy-4,5-dimethoxybenzyloxy)-1,2,3,10-tetramethoxyoxoaporphine***
$C_{29}H_{27}NO_9$ 533.534
Alkaloid from *Thalictrum elegans*. Cryst. (MeOH). Mp 140-142°.

Sonnet, P.E. *et al., J. Pharm. Sci.*, 1971, **60**, 1254 (*isol, uv, ir, pmr, struct*)
Martinez, E. *et al., Planta Med.*, 1988, **54**, 361 (*isol, uv, ir, pmr, ms*)
Liang, Z.-Y. *et al., Chin. J. Chem.*, 2005, **23**, 895-897 (*Thalictrum elegans alkaloid*)

Oxoputerine O-204

Oxo-O-*methylpukateine*
[64040-72-8]



$C_{18}H_{11}NO_4$ 305.289
Alkaloid from the trunk wood of *Duguetia eximia*, the stem bark of *Duguetia calycina* and *Guatteria elata* and from the bark of *Laurelia novaezelandiae* (Annonaceae, Monimiaceae). Shows antimicrobial activity. Orange-yellow needles ($CHCl_3$). Mp 241-243° dec.

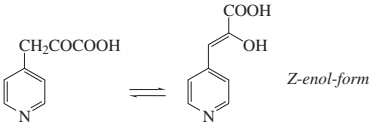
O-*De-Me:* ***Oxopukateine****. 11-Hydroxyliriodenine*
[67951-19-3]
$C_{17}H_9NO_4$ 291.262
Alkaloid from trunk wood of *Duguetia stelichantha* (Annonaceae). Yellow cryst. (C_6H_6). Mp 255-257°.

3-Methoxy: ***3-Methoxyoxoputerine***
[158018-14-5]
$C_{19}H_{13}NO_5$ 335.315
Alkaloid from stem bark of *Guatteria foliosa* (Annonaceae). Amorph.

Hsu, C.C. *et al., J. Nat. Prod.*, 1977, **40**, 152 (*isol, uv, ir, pmr, ms, struct*)
Gottlieb, O.R. *et al., Phytochemistry*, 1978, **17**, 837 (*isol, uv, ir, pmr, ms, struct*)
Roblot, F. *et al., Plant. Med. Phytother.*, 1978, **12**, 259; *CA*, **91**, 2517b (*isol*)
Marsaioli, A.J. *et al., Phytochemistry*, 1980, **19**, 995 (*cmr*)
Urzúa, A. *et al., Phytochemistry*, 1982, **21**, 773 (*isol, ir*)
Villar, A. *et al., Planta Med.*, 1986, **52**, 556-557 (*Oxoputerine, activity*)
Mahiou, V. *et al., J. Nat. Prod.*, 1994, **57**, 890 (*3-Methoxyoxoputerine*)

2-Oxo-3-(4-pyridinyl)propanoic acid O-205

2-Hydroxy-3-(4-pyridinyl)-2-propenoic acid. (4-Pyridinyl)pyruvic acid. ***Ascosonchine***



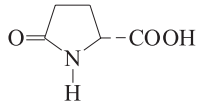
$C_8H_7NO_3$ 165.148
Exists mainly as *Z*-enol form. Prod. by *Ascochyta sonchi*. Selective phytotoxin. Amorph. solid. λ_{max} 230 (log ϵ 3.66); 305 (log ϵ 3.61) (MeOH).

Evidente, A. *et al., Phytochemistry*, 2004, **65**,

475-480 (*isol, pmr, cmr, ms*)

5-Oxo-2-pyrrolidinecarboxylic acid O-206

5-Oxoproline, 9CI. ***Pidolic acid, BAN, INN.*** *α-Aminoglutaric acid lactam. Glutimic acid lactam. Glutimic acid. Glutiminic acid. Pyroglutamic acid. 2-Pyrrolidone-5-carboxylic acid*



(R)–form

$C_5H_7NO_3$ 129.115

Antihyperlipidaemic agent. Log P -1.27 (calc).

(*S*)-*form*

L-form

[98-79-3]

Found in substantial amounts in brain tissue and other tissue in bound form, esp. skin. Also present in plant tissues. Isol. from the tunicate *Botryllus schlosseri*. Used in resoln. of amines. Cryst. (H_2O). Mp 156-157°. $[\alpha]_D^{20}$ -11.45 (c, 4.44 in H_2O).

Butyl ester: [4931-68-4]

$C_9H_{15}NO_3$ 185.222

Constit. of the bulbs of *Ornithogalum caudatum*.

2-Methylpropyl ester: Isobutyl pidolate

[849443-95-4]

$C_9H_{15}NO_3$ 185.222

Constit. of the roots of *Panax ginseng*.

(ξ)-*form*

N-*(2,3-Dibromo-4,5-dihydroxybenzyl):*

$C_{12}H_{11}Br_2NO_5$ 409.031

Isol. from the red alga *Rhodomela confervoides*. Cryst. (MeOH aq.). Mp 172-174°. $[\alpha]_D^{20}$ +24 (c, 5.7 in Me_2CO).

N-*(2,3-Dibromo-4,5-dihydroxybenzyl), Me ester:*

$C_{13}H_{13}Br_2NO_5$ 423.057

Isol. from *Rhodomela confervoides*. Cryst. (MeOH aq.). Mp 183-185°. $[\alpha]_D^{20}$ +7 (c, 5 in Me_2CO).

N-*[3-Bromo-2-(2,3-dibromo-4,5-dihydroxybenzyl)-4,5-dihydroxybenzyl], Me ester:*

$C_{20}H_{18}Br_3NO_7$ 624.077

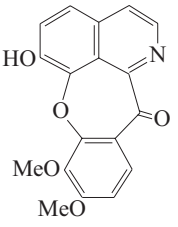
Isol. from *Rhodomela confervoides*. Cryst. (MeOH aq.). Mp 196-198°. $[\alpha]_D^{20}$ -30.9 (c, 9.7 in Me_2CO).

[28874-51-3]

Hardegger, E. *et al., Helv. Chim. Acta*, 1955, **38**, 312-320 (*S-form, synth, abs config*)
Gibian, H. *et al., Annalen*, 1961, **640**, 145-156 (*synth, bibl*)
Orlowski, M. *et al., The Enzymes*, 3rd Ed., Academic Press, N.Y., 1971, **4**, 123-151 (*rev*)
Cervinka, O. *et al., Coll. Czech. Chem. Comm.*, 1973, **38**, 897-901 (*cd*)
Pattabhi, V. *et al., J.C.S. Perkin 2*, 1974, 1085-1089 (*cryst struct*)
Voelter, W. *et al., Monatsh. Chem.*, 1974, **105**, 1110-1135 (*cmr*)
Taira, Z. *et al., Acta Cryst. B*, 1977, **33**, 3823-3827 (*cryst struct*)
Rigo, B. *et al., J. Het. Chem.*, 1995, **32**, 1489-1492 (*occur*)
Tang, Y. *et al., J. Chin. Pharm. Sci.*, 2001, **10**, 169-171 (*butyl ester*)
Tan, N. *et al., Yunnan Zhiwu Yanjiu*, 2003, **25**, 366-368; *CA*, **142**, 370710m (*isobutyl ester, isol*)
Zhao, J. *et al., J. Nat. Prod.*, 2005, **68**, 691-694 (*Rhodomela dibromobenzyl constits*)

Oxosarcophylline O-207

[95377-97-2]



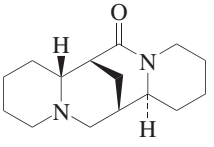
$C_{18}H_{13}NO_5$ 323.304

The triivial name is somewhat misleading (Sarcophylline, S-80 is 1,2,3,4-tetrahydro). Alkaloid from *Sarcocapnos enneaphylla* and *Sarcocapnos crassifolia* (Papaveraceae). Yellow needles (EtOH). Mp 170-171°.

Campello, M.J. *et al., Tet. Lett.*, 1984, **25**, 5933 (*uv, ir, pmr, ms, struct*)

17-Oxosparteine O-208

Oxopachycarpine, 8CI. Oxosparteine. Oxysparteine



(-)-form

$C_{15}H_{24}N_2O$ 248.367

Log P 1.38 (calc).

▶WG6390000

(+)-*form* [29882-72-2]

Alkaloid from aerial parts of *Genista involucrata* and *Genista albida*. Mp 82-84°. $[\alpha]_D$ +20 (EtOH). This appears to be the commonest form, but opt. rotns. of most samples are low or unrecorded.

(-)-*form* [489-72-5]

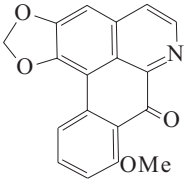
Alkaloid from leaves and fruits of *Chamaecytisus austriacus* and other *Chamaecytisus* spp. Also from *Thermopsis montana*, *Genista monosperma* and *Sophora pachycarpa* (Fabaceae). Hypertensive agent. Antiarrhythmic, oxytocic agent. Shows cathartic, diuretic activity. Mp 84-86°. $[\alpha]_D^{25}$ -5.6 (c, 0.47 in EtOH). Pharmacol. active isomer.

Sadykov, A.S. *et al., Dokl. Akad. Nauk SSSR, Ser. Khim.*, 1957, 15; *CA*, **53**, 9261
White, E.P. *et al., N.Z. J. Sci. Technol., Sect. B*, 1957, **38**, 712 (*isol, struct*)
Wiewiorowski, M. *et al., Can. J. Chem.*, 1967, **45**, 1447 (*ir, pmr, conformn*)
Keller, W.J. *et al., J. Nat. Prod.*, 1969, **32**, 498 (*isol*)
Iskandarov, S. *et al., Khim. Prir. Soedin.*, 1970, **6**, 494; *Chem. Nat. Compd. (Engl. Transl.)*, 1970, **6**, 519 (*ord*)
Cho, Y.D. *et al., Arch. Mass Spectral Data*, 1971, **2**, 736 (*ms*)
Bohlmann, F. *et al., Chem. Ber.*, 1975, **108**, 1043 (*cmr*)
Daily, A. *et al., Planta Med.*, 1977, **32**, 380; 1979, **35**, 188 (*isol*)
Daily, A. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1978, **311**, 889
Katrusiak, A. *et al., Acta Cryst. B*, 1980, **36**, 2442 (*cryst struct*)
Tosun, F. *et al., Planta Med.*, 1987, **53**, 499 (*isol*)
Katrusiak, A. *et al., Pol. J. Chem. (Rocz. Chem.)*, 1994, **68**, 65 (*cryst struct*)

Oxostephanine O-209

*9-Methoxy-8*H*-benzo[*g*]-1,3-benzodioxolo[6,5,4-*de*]quinolin-8-one, 9CI. NSC 383228*

[58262-58-1]



$C_{18}H_{11}NO_4$ 305.289

Alkaloid from *Stephania japonica, Stephania venosa* and *Greenwayodendron (Polyalthia) suaveolens* (Menispermaceae, Annonaceae). Shows antibacterial activity. Yellow pillars ($CHCl_3$). Mp 270-272°.

N-*Me: 9-Methoxy-7-methyl-8-oxo-8*H*-benzo[*g*]-1,3-benzodioxolo[6,5,4-*de*]-quinolinium(1+).* ***Thailandine***

[81255-03-0]

$C_{19}H_{14}NO_4^{\oplus}$ 320.324

Quaternary alkaloid from the tuberous roots of *Stephania venosa* (*Stephania rotunda*) (Menispermaceae). Partially dec. by chromatog. on silica gel to Oxostephanine.

O-*De-Me:* ***Oxostephanosine***

[98672-45-8]

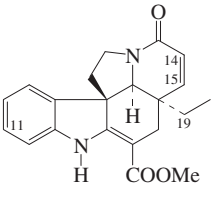
$C_{17}H_9NO_4$ 291.262

Alkaloid from leaves of *Stephania venosa* (Menispermaceae). Yellow.

Watanabe, Y. *et al., Phytochemistry*, 1975, **14**, 2522 (*uv, ir, pmr, ms, struct*)
Cavé, A. *et al., Planta Med.*, 1978, **33**, 243 (*isol*)
Guinaudeau, H. *et al., Chem. Comm.*, 1981, 1118 (*Oxostephanine, Thailandine, isol*)
Hasan, C.M. *et al., J.C.S. Perkin 1*, 1982, 2807 (*isol*)
Pharadai, K. *et al., J. Nat. Prod.*, 1985, **48**, 658 (*Oxostephanosine*)
Ferdous, A.J. *et al., Fitoterapia*, 1992, **63**, 549-550 (*Oxostephanine, activity*)

3-Oxotabersonine O-210

[67249-35-8]



Absolute Configuration

$C_{21}H_{22}N_2O_3$ 350.416
Constit. of the seeds of *Amsonia elliptica* (Apocynaceae). Prisms (EtOAc). Mp 151.5-153°. $[\alpha]_D^{18}$ -77.4 ($CHCl_3$). λ_{max} 297 (log ε 4.12); 331 (log ε 4.23) (MeOH).

14β,15β-Epoxide: ***3-Oxopachysiphine***
[116498-60-3]
$C_{21}H_{22}N_2O_4$ 366.416
Alkaloid from seeds of *Stemmadenia grandiflora*. Oil. $[\alpha]_D^{21}$ -205 (c, 0.14 in $CHCl_3$). May be identical with the subsequently descr. 3-Oxopachysiphine below. λ_{max} 296 (log ε 4.02); 328 (log ε 4.13) (MeOH).

14ξ,15ξ-Epoxide: ***14,15-Epoxy-3-oxovincadifformine***
[67249-36-9]
$C_{21}H_{22}N_2O_4$ 366.416
Alkaloid from seeds of *Amsonia elliptica* (Apocynaceae). Amorph. powder. Racemises on heating in soln. via a retro Diels-Alder cycloaddn. λ_{max} 222 (log ε 4.18); 297 (log ε 3.99); 328 (log ε 4.11) (MeOH).

14,15-Dihydro: ***3-Oxovincadifformine***
[55528-27-3]
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from seeds of *Stemmadenia grandiflora* (Apocynaceae). Oil. $[\alpha]_D^{21}$ -315 (c, 0.12 in $CHCl_3$).

19-Oxo, 14,15-dihydro: ***3-Oxominovincine***
$C_{21}H_{22}N_2O_4$ 366.416
Alkaloid from *Tabernaemontana riedelii* (Apocynaceae). Needles (MeOH). Mp 257.5-259.5°. $[\alpha]_D^{26}$ +268 (c, 0.1 in EtOH).

11-Methoxy: ***11-Methoxy-3-oxotabersonine***
[102719-84-6]
$C_{22}H_{24}N_2O_4$ 380.443
Alkaloid from stems and leaves of *Alstonia yunnanensis*. Light yellow cryst. $[\alpha]_D^{30}$ -67.4 ($CHCl_3$).

*19*S*-Acetoxy:* ***19-Acetoxy-3-oxotabersonine***
[108906-71-4]
$C_{23}H_{24}N_2O_5$ 408.453
Alkaloid from the endocarp and seeds of *Melodinus scandens* (Apocynaceae).

Aimi, N. *et al., Chem. Pharm. Bull.*, 1978, **26**, 1182-1187 (*8-Oxotabersonine, 14,15-Epoxy-3-oxovincadifformine*)
Levy, J. *et al., Tet. Lett.*, 1978, 1579-1580 (*8-Oxotabersonine*)
Chen, W. *et al., Yaoxue Xuebao*, 1985, **20**, 906-912; 1986, **21**, 187-190; *CA*, **105**, 3520s; 3558k (*19-Hydroxy-11-methoxytabersonine*)
Chazelet, I. *et al., Ann. Pharm. Fr.*, 1987, **44**, 355-362 (*19-Acetoxy-3-oxotabersonine*)
Torrenegra, R. *et al., Phytochemistry*, 1988, **27**, 1843 (*3-Oxopachysiphine*)
Kalaus, G. *et al., J.O.C.*, 1997, **62**, 9188-9191 (*3-Oxominovincine*)

8-Oxo-2,4-tetradecadienoic acid O-211

$H_3C(CH_2)_5COCH_2CH_2CH{=}CHCH{=}CHCOOH$

$C_{14}H_{22}O_3$ 238.326

(E,E)-form

2-Methylpropylamide: N-*Isobutyl-8-oxo-2,4-tetradecadienamide.* ***Lanyuamide I***
$C_{18}H_{31}NO_2$ 293.448
Alkaloid from the fruit of *Zanthoxylum integrifolium*. Oil. λ_{max} 259 (log ε 4) (EtOH).

2-Hydroxy-2-methylpropylamide: N-*(2-Hydroxy-2-methylpropyl)-8-oxo-2,4-tetradecadienamide. Hydroxylanyuamide I*
$C_{18}H_{31}NO_3$ 309.448
Constit. of the root bark of *Zanthoxylum ailanthoides*. Oil. λ_{max} 259 (log ε 3.57) (MeOH).

Chen, I.-S. *et al., Phytochemistry*, 1999, **52**, 357-360 (*Lanyuamide I*)
Cheng, M.-J. *et al., J. Chin. Chem. Soc. (Taipei)*, 2003, **50**, 1241-1246 (*Hydroxylanyamide I*)

12-Oxo-2,4,8-tetradecatrienoic acid O-212

$H_3CCH_2COCH_2CH_2CH{=}CHCH_2CH_2CH{=}CHCH{=}CHCOOH$

$C_{14}H_{20}O_3$ 236.31

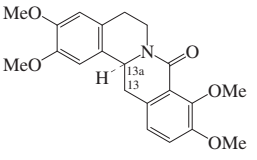
(2E,4E,8Z)-form

2-Methylpropylamide: N-*Isobutyl-12-oxo-2,4,8-tetradecatrienamide.* ***Lanyuamide II***
[249898-39-3]
$C_{18}H_{29}NO_2$ 291.433
Alkaloid from the fruit of *Zanthoxylum integrifolium*. Oil. λ_{max} 259 (log ε 3.58) (EtOH).

2-Hydroxy-2-methylpropylamide: N-*(2-Hydroxy-2-methylpropyl)-12-oxo-2,4,8-tetradecatrienamide.* ***Hydroxylanyuamide II***
$C_{18}H_{29}NO_3$ 307.432
Constit. of the root bark of *Zanthoxylum ailanthoides*. Oil. λ_{max} 260 (log ε 4.01) (MeOH).

Chen, I.-S. *et al., Phytochemistry*, 1999, **52**, 357-360 (*Lanyuamide II*)
Cheng, M.-J. *et al., J. Chin. Chem. Soc. (Taipei)*, 2003, **50**, 1241-1246 (*Hydroxylanyuamide II*)

8-Oxotetrahydropalmatine O-213



(*S*)-*form*

$C_{21}H_{23}NO_5$ 369.416

(S)-form

Alkaloid from the stem and roots of *Anamirta cocculus* (Menispermaceae).

*13,13*a*-Didehydro:* ***Oxypalmatine***
[19716-59-7]
$C_{21}H_{21}NO_5$ 367.401
Alkaloid from stems of *Coscinium fenestratum* (Menispermaceae). Noncryst.

*13,13*a*-Didehydro, 8ξ-alcohol:* ***8-Hydroxypalmatine.*** *7,8-Dihydro-8-hydroxypalmatine*
$C_{21}H_{23}NO_5$ 369.416
Alkaloid from *Berberis heteropoda* (Berberidaceae) and *Enantia chlorantha*. Yellow cryst. (MeOH). Mp 129-130° Mp 188-190°. $[\alpha]_D$ -35 (c, 0.08 in $CHCl_3$). Higher Mp. and opt rotn. value refer to 7,8-dihydro-8-hydroxypalmatine from *E. chlorantha*. λ_{max} 358 (log ε 3.97); 434 (log ε 4.17) (no solvent reported).

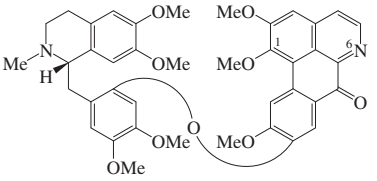
(±)-form

Synthetic. Pale yellow cryst. Mp 167-168°.

Verpoorte, R. *et al., J. Nat. Prod.*, 1981, **44**, 221 (*8-Oxotetrahydropalmatine*)
Pinho, P.M.M. *et al., Phytochemistry*, 1992, **31**, 1403 (*Oxypalmatine, isol, ir, pmr, cmr, ms, struct*)
Nimgirawath, S. *et al., Aust. J. Chem.*, 1994, **47**, 951 (*8-Oxotetrahydropalmatine, synth*)
Shakirov, R. *et al., Khim. Prir. Soedin.*, 1996, **32**, 244-342; *Chem. Nat. Compd. (Engl. Transl.)*, 1996, **32**, 320 (*8-Hydroxypalmatine*)
Wafo, P. *et al., Phytochemistry*, 1999, **50**, 279-281 (*8-Hydroxypalmatine*)
Marek, R. *et al., J. Nat. Prod.*, 2003, **66**, 481-486 (*8-Hydroxypalmatine, pmr, cmr, N-15 nmr*)
Wang, X.-L. *et al., Acta Cryst. E*, 2006, **62**, 498-499 (*cryst struct*)

Oxothalicarpine O-214

[64234-41-9]



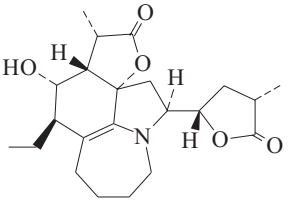
$C_{40}H_{40}N_2O_9$ 692.764
Alkaloid from *Hernandia ovigera* (Hernandiaceae). Mp 219-220° dec. $[\alpha]_D^{25}$ +115 (c, 0.1 in $CHCl_3$).

O^1*-De-Me,* *N*^{6}*-Me, inner salt:* ***Vilaportine***
[102487-23-0]
$C_{40}H_{40}N_2O_9$ 692.764
Alkaloid from the bark of *Hernandia peltata* (Hernandiaceae).

Yang, T.-H. *et al., J. Chin. Chem. Soc. (Taipei)*, 1977, **24**, 91; *CA*, **87**, 130466p (*Oxothalicarpine*)
Chalandre, M.C. *et al., Can. J. Chem.*, 1986, **64**, 123 (*Vilaportine*)

Oxotuberostemonine O-215

[20675-62-1]



$C_{22}H_{31}NO_5$ 389.491
Alkaloid from the roots of *Stemona tuberosa* and *Stemona sessilifolia* (Stemonaceae). Also prod. by autoxidn. of

Tuberostemonine, T-664. Needles (MeOH). Mp 222° (217°).

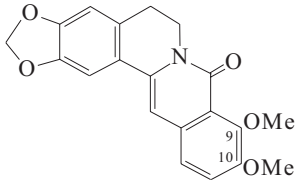
Perchlorate: Mp 200°.

Ac: Mp 233-234°.

Edwards, O.E. *et al., Can. J. Chem.*, 1962, **40**, 455 (*isol, uv, ir*)
Huber, C.P. *et al., Tet. Lett.*, 1968, 4081; *Acta Cryst. B*, 1972, **28**, 2015 (*cryst struct*)

Oxyberberine O-216

Berlambine
[549-21-3]



$C_{20}H_{17}NO_5$ 351.358
Alkaloid from *Arcangelisia gusanlung*, *Berberis lambertii*, other *Berberis* spp. and *Mahonia japonica*. Yellow needles (MeOH). Mp 198-200°. Genus name erroneously given as Acangelisia.

▶ DS0180000

O^9-*De-Me:* ***Oxyberberrubine***
[29580-82-3]
$C_{19}H_{15}NO_5$ 337.331
Alkaloid from stems of *Arcangelisia gusanlung* (Menispermaceae). Reddish-brown needles. Mp 240-241°.

O^{10}-*De-Me:* ***Oxythalifendine***
[164920-59-6]
$C_{19}H_{15}NO_5$ 337.331
Alkaloid from stems of *Arcangelisia gusanlung* (Menispermaceae). Light brown needles. Mp 286-287°.

8ξ-Alcohol: 7,8-Dihydro-8-hydroxyberberine. ***Berberinol***
[10134-52-8]
[84094-52-0]
$C_{20}H_{19}NO_5$ 353.374
Alkaloid from *Arcangelisia flava* and *Mahonia japonica*. Yellow needles (MeOH). Mp 188-190° (145°). Possibly an artifact. Props refer to synthetic racemate. Not clear if nat. alkaloid is a racemate.

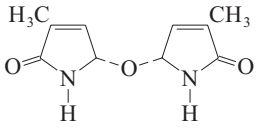
▶ DR9899000

8ξ-Alcohol, 8-Me ether: 7,8-Dihydro-8-methoxyberberine
$C_{21}H_{21}NO_5$ 367.401
Alkaloid from the stems of *Mahonia japonica*. Yellow needles (MeOH). Mp 140-142°. λ_{max} 255 ; 365 (EtOH).

Haworth, R.D. *et al., J.C.S.*, 1927, 548 (*synth*)
Pavelka, S. *et al., Coll. Czech. Chem. Comm.*, 1976, **41**, 3654 (*uv, ir*)
Cushman, M. *et al., J.O.C.*, 1979, **44**, 407 (*synth, ir, pmr, ms*)
Möhrle, H. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1982, **315**, 919 (*Berberinol, synth*)
Verpoorte, R. *et al., J. Nat. Prod.*, 1982, **45**, 582 (*Berberinol, isol, uv, pmr, ms*)
Zhang, J.-S. *et al., Phytochemistry*, 1995, **39**, 439-442 (*pmr, cmr, Oxyberberrubine, Oxythalifendine*)
Hsieh, T.-J. *et al., J. Chin. Chem. Soc. (Taipei)*, 2004, **51**, 443-446 (*Mahonia japonica berberines*)
Le, T.N. *et al., Bull. Korean Chem. Soc.*, 2006, **27**, 2093-2096 (*synth*)

5,5′-Oxybis[1,5-dihydro-3-methyl-2*H*-pyrrol-2-one], 9CI O-217

5,5′-Oxydi[3-methyl-3-pyrrolin-2-one]
[134296-37-0]

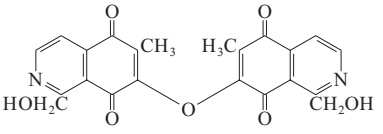


$C_{10}H_{12}N_2O_3$ 208.216

(5RS,5′SR)-form
meso-*form*
Alkaloid from the bulbs of *Lilium candidum* and *Lilium hansonii* (Liliaceae). Prisms (MeOH). Mp 213-215°.

Haladova, M. *et al., Coll. Czech. Chem. Comm.*, 1991, **56**, 436 (*isol, uv, ir, pmr, cmr, ms, struct*)
Ori, K. *et al., Phytochemistry*, 1992, **31**, 2767 (*isol, uv, ms*)

7,7′-Oxybis[6-methyl-5,8-dioxo-1-isoquinolinemethanol] O-218



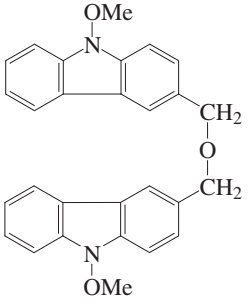
$C_{22}H_{16}N_2O_7$ 420.378
Antibacterial agent. Red cryst. λ_{max} 231 (ϵ 31850); 256 (ϵ 29970); 304 (ϵ 6250); 324 (ϵ 8000); 379 (ϵ 5140); 485 (ϵ 2170) (MeOH).

Diangeloyl: [153585-64-9]
$C_{32}H_{28}N_2O_9$ 584.581
Alkaloid from the sponge *Haliclona* sp.

Parameswaran, P.S. *et al., Oceanogr. Indian Ocean*, 1992, 417; *CA*, **120**, 187482v

3,3′-[Oxybis(methylene)]-bis[9-methoxy-9*H*-carbazole], 9CI O-219

*Bis(9-methoxy-9*H*-carbazol-3-ylmethyl) ether*

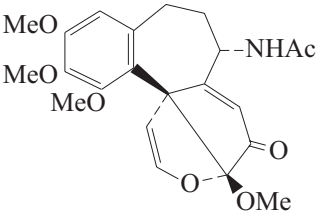


$C_{28}H_{24}N_2O_3$ 436.509
Alkaloid from the stem bark of *Murraya koenigii*. Brown gum. λ_{max} 237 (log ϵ 4.87); 264 (log ϵ 4.55); 293 (log ϵ 4.42); 329 (sh) (log ϵ 3.79) (MeOH).

Rahman, M.M. *et al., Phytochemistry*, 2005, **66**, 1601-1606 (*isol, pmr, cmr*)

10,11-Oxy-10,12*a*-cyclo-10,11-secocolchicine O-220

10,11-Epoxycolchicine (obsol.)
[61014-70-8]

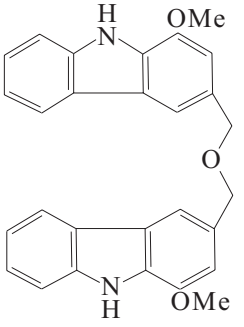


$C_{22}H_{25}NO_7$ 415.442
The synonym 10,11-Epoxycolchicine was based on an incorrect struct. assignment. Alkaloid from the seeds of *Colchicum latifolium* (Liliaceae). Cryst. (EtOAc or 2-propanol). Mp 251-253° (dec.). $[\alpha]_D^{22}$ -237 (c, 1.68 in $CHCl_3$). $[\alpha]_D^{22}$ -211 (c, 1 in $CHCl_3$).

Potěšilová, H. *et al., Coll. Czech. Chem. Comm.*, 1976, **41**, 3146; 1977, **42**, 1571 (*isol, uv, ir, pmr, ms*)
Brossi, A. *et al., Helv. Chim. Acta*, 1980, **63**, 406 (*synth, uv, ir, pmr, cmr, cryst struct*)
Hrbek, J. *et al., Coll. Czech. Chem. Comm.*, 1982, **47**, 2258 (*cd*)

Oxydimurrayafoline O-221

*3,3′-[Oxybis(methylene)]bis[1-methoxy-9*H*-carbazole], 9CI*
[107903-17-3]

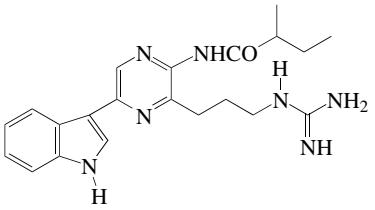


$C_{28}H_{24}N_2O_3$ 436.509
Alkaloid from the stem bark of *Murraya euchrestifolia* (Rutaceae). Oil. First example of a binary carbazole alkaloid having an ether linkage.

Ito, C. *et al., Chem. Pharm. Bull.*, 1987, **35**, 450 (*uv, pmr, ms, struct*)

Cypridina Oxyluciferin O-222

Cypridina oxyluciferin
[17297-78-8]



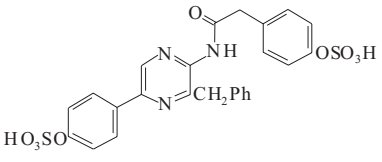
$C_{21}H_{27}N_7O$ 393.491
Isol. from *Cypridina luciferin*. Chemiluminescent agent.

[29066-77-1 , 29066-76-0]

Goto, T. *et al., Tet. Lett.*, 1968, 4035-4038 (*struct, uv, fluorescence*)
Sugiura, S. *et al., Yakugaku Zasshi*, 1970, **90**, 711-715 (*synth*)
Suzuki, N. *et al., Heterocycles*, 1983, **20**, 1027-1030 (*fluorescence*)

Watasenia Oxyluciferin O-223

Watasenia oxyluciferin
[54028-46-5]

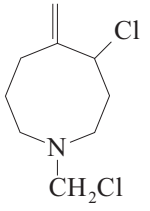


$C_{25}H_{21}N_3O_9S_2$ 571.588
Isol. from the light organs of the squid *Watasenia scintillans*. Possibly involved in bioluminescence.

Goto, T. *et al., Tet. Lett.*, 1974, 2321 (*isol, uv, pmr, struct, synth*)

Oxypterine O-224

4-Chloro-1-(chloromethyl)octahydro-5-methyleneazocine, 9CI
[143114-89-0]



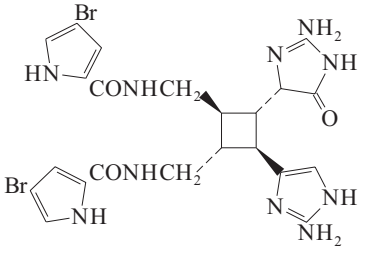
$C_9H_{15}Cl_2N$ 208.13

(+)-form
Alkaloid from the leaves and twigs of *Lotononis oxyptera*. Off-white cryst. solid. Mp 127-129°. $[\alpha]_D^{22}$ +19.6 (c, 2.6 in $CHCl_3$).

Verdoorn, G.H. *et al., Phytochemistry*, 1992, **31**, 1029-1032 (*isol, ir, pmr, cmr, ms*)

Oxysceptrine O-225

[117417-62-6]



$C_{22}H_{24}Br_2N_{10}O_3$ 636.305
Alkaloid from the marine sponge *Agelas* cf *nemoechinata*, *Agelas clathrodes*, *Agelas mauritiana* and *Agelas conifera*. Actomyosin ATPase activator. Possesses antiviral and antibacterial props. Antifouling agent. Amorph. solid. Sol. MeOH, EtOAc, $CHCl_3$; poorly sol. H_2O. $[\alpha]_D$ -19.7 (c, 1.02 in MeOH). λ_{max} 203 (ϵ 35100); 221 (ϵ 30700); 267 (ϵ 28100) (MeOH) (Derep). λ_{max} 214 (ϵ 21000); 268 (ϵ 21000) (MeOH) (Derep). λ_{max} 206 (ϵ 35100); 221 (ϵ 30100); 267 (ϵ 23100) (MeOH).

Di-Ac: [117417-63-7]
$[\alpha]_D^{25}$ +4.5 (c, 1.37 in MeOH).

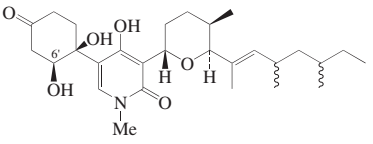
Monodebromo: ***Debromooxysceptrine***
[132911-41-2]
[117472-97-6]
$C_{22}H_{25}BrN_{10}O_3$ 557.409
Alkaloid from *Agelas conifera*, *Agelas clathrodes* and *Agelas mauritiana*. Possesses antiviral and antibacterial props. Sol. MeOH, $CHCl_3$, EtOAc; poorly sol. H_2O. $[\alpha]_D^{25}$ -25 (c, 0.108 in MeOH) (as di-Ac). λ_{max} 203 (ϵ 32400); 220 (ϵ 24600); 265 (ϵ 26600) (MeOH) (Derep).

[117468-53-8]

Kobayashi, J. *et al., Experientia*, 1991, **47**, 301-304 (*isol, uv, ir, pmr, cmr, ms*)
Keifer, P.A. *et al., J.O.C.*, 1991, **56**, 2965-2975 (*isol, pmr, cmr*)
O'Malley, D.P. *et al., J.A.C.S.*, 2007, **129**, 4762-4775; 7702 (*synth*)

Oxysporidinone O-226

[184871-55-4]



Relative Configuration

$C_{28}H_{43}NO_6$ 489.651
Prod. by *Fusarium oxysporum* strains CBS 330.95 and EPH2R_{AA}. Antifungal agent. Glass. $[\alpha]_D$ +97 (c, 0.2 in EtOH). Related to Funiculosin, F-197 and Sambutoxin, S-48. λ_{max} 291 (log ϵ 3.68) (MeOH).

4′-Di-Me acetal:
$C_{30}H_{49}NO_7$ 535.72
Prod. by *Fusarium oxysporum* strain N17B. Amorph. solid. $[\alpha]_D^{26}$ -30.6 (c, 0.1 in $CHCl_3$). λ_{max} 216 (log ϵ 3.62); 290 (log ϵ 3.45) ($CHCl_3$).

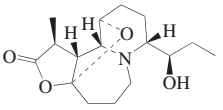
6′-Deoxy: ***6′-Deoxyoxysporidinone***
$C_{28}H_{43}NO_5$ 473.651
Prod. by *Fusarium oxysporum* strain EPH2R_{AA}. Cryst. Mp 130-131°. $[\alpha]_D^{25}$ -72 (c, 0.15 in MeOH). λ_{max} 220 (log ϵ 4.46); 296 (log ϵ 3.66) (MeOH).

2′-Epimer: ***2′-Epioxysporidinone***
$C_{28}H_{43}NO_6$ 489.651
Prod. by *Fusarium oxysporum* strain N17B. Antifungal agent. Needles (MeOH). Mp 176-178°. $[\alpha]_D^{26}$ -86.9 (c, 0.1 in $CHCl_3$). λ_{max} 220 (log ϵ 3.64); 296 (log ϵ 3.45) ($CHCl_3$).

Breinholt, J. *et al., J. Nat. Prod.*, 1997, **60**, 33-35 (*isol, uv, ir, pmr, cmr, ms*)
Jayasinghe, L. *et al., J. Nat. Prod.*, 2006, **69**, 439-442 (*2′-epimer, di-Me acetal*)
Zhan, J. *et al., J. Nat. Prod.*, 2007, **70**, 227-232 (*isol, pmr, cmr, ms*)

Oxystemokerrilactone O-227

[949092-27-7]

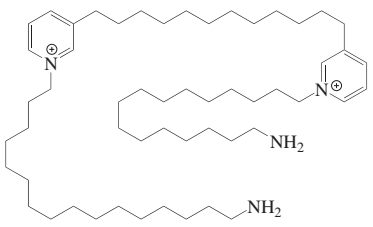


Relative Configuration

$C_{16}H_{25}NO_4$ 295.378
Alkaloid from the roots of *Stemona saxorum*. Light yellow powder. $[\alpha]_D^{20}$ -34 (c, 0.14 in MeOH).

Wang, Y.-Z. *et al., J. Nat. Prod.*, 2007, **70**, 1356-1359 (*isol, pmr, cmr*)

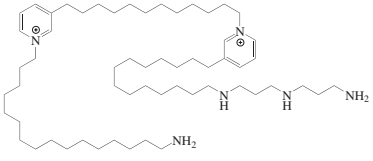
Pachychaline A P-1



$C_{54}H_{100}N_4^{2\oplus}$ 805.411
Isol. from a *Pachychalina* sp. Oil. Counterion not specified. λ_{max} 267 (ϵ 6600) (MeOH).

Laville, R. *et al., Eur. J. Org. Chem.*, 2008, 121-125 (*isol, synth, pmr, cmr, ms*)

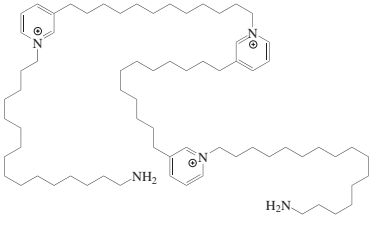
Pachychaline B P-2



$C_{58}H_{110}N_6^{2\oplus}$ 891.547
Isol. from a *Pachychalina* sp. Oil. Counterion not specified. λ_{max} 267 (ϵ 6800) (MeOH).

Laville, R. *et al., Eur. J. Org. Chem.*, 2008, 121-125 (*isol, pmr, cmr, ms*)

Pachychaline C P-3

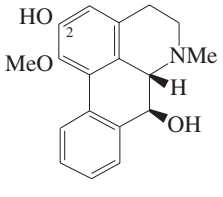


$C_{71}H_{128}N_5^{3\oplus}$ 1051.826
Isol. from a *Pachychalina* sp. Oil. Counterion not specified. λ_{max} 267 (ϵ 9700) (MeOH).

Laville, R. *et al., Eur. J. Org. Chem.*, 2008, 121-125 (*isol, pmr, cmr, ms*)

Pachyconfine P-4

5,6,6a,7-Tetrahydro-1-methoxy-6-methyl-4H-dibenzo[de,g]quinoline-2,7-diol, 9CI. 2,7-Dihydroxy-1-methoxyaporphine. 6-Hydroxyasimilobine
[62951-75-1]



$C_{18}H_{19}NO_3$ 297.353
Alkaloid from *Pachypodanthium confine* (Annonaceae). Mp 198° (as hydrochloride). $[\alpha]_D$ -150 (c, 0.7 in $CHCl_3$).

N-*Oxide:* ***Pachyconfine* N-*oxide***
[112494-70-9]
$C_{18}H_{19}NO_4$ 313.352
Alkaloid from bark of Colombian *Duguetia spixiana* (Annonaceae). Cryst. (MeOH). Mp 176-180°. $[\alpha]_D$ -164 (c, 0.41 in $CHCl_3$).

N-*De-Me: 2,7-Dihydroxy-1-methoxynoraporphine.* ***Norpachyconfine***
[112571-90-1]
$C_{17}H_{17}NO_3$ 283.326
Alkaloid from *Duguetia spixiana* (Annonaceae). Amorph. $[\alpha]_D$ -281 (c, 0.07 in $CHCl_3$).

O^2-*Me: 7-Hydroxy-1,2-dimethoxyaporphine.* ***Nuciferidine***
[107882-18-8]
$C_{19}H_{21}NO_3$ 311.38
Alkaloid from the trunk bark of *Guatteria sagotiana* (Annonaceae). Obt. impure. Negative opt. rotn.

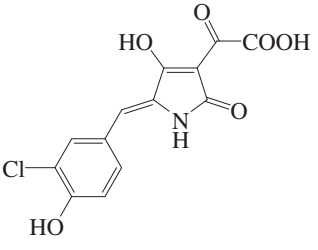
O^2-*Me,* N-*de-Me:* ***Nornuciferidine***
[112494-69-6]
$C_{18}H_{19}NO_3$ 297.353
Alkaloid from bark of *Duguetia spixiana* (Annonaceae). $[\alpha]_D$ -80 (c, 0.16 in EtOH).

O^2-*Me,* N-*de-Me,* O^7,N-*di-Ac:* **N,O-*Diacetylnornuciferidine***
$C_{22}H_{23}NO_5$ 381.427
Alkaloid from the rhizomes of *Lysichiton camtschatcense.* Yellow powder. $[\alpha]_D^{25}$ -227.7 (c, 0.24 in $CHCl_3$). λ_{max} 211 (log ϵ 4.39); 273 (log ϵ 4); 313 (log ϵ 3.4) (EtOH).

6-Epimer, N-*de-Me:* ***Anaxagoreine***
[77410-38-9]
$C_{17}H_{17}NO_3$ 283.326
Alkaloid from *Anaxagorea dolichocarpa*, *Anaxagorea prinoides* and *Cananga odorata* (ylang ylang). Amorph. Mp 198-200°. $[\alpha]_D$ -174 (c, 0.5 in EtOH).

Bévalot, F. *et al., Ann. Pharm. Fr.*, 1977, **35**, 65; *CA*, **86**, 185953e (*isol, uv, pmr, ms, struct*)
Hocquemiller, R. *et al., Planta Med.*, 1981, **41**, 48 (*Anaxagoreine*)
Rasamizafy, S. *et al., J. Nat. Prod.*, 1986, **49**, 1078; 1987, **50**, 674 (*Nuciferidine, Nornuciferidine*)
Debourges, D. *et al., J. Nat. Prod.*, 1987, **50**, 664 (*Norpachyconfine, Pachyconfine N-oxide*)
Kessar, S.V. *et al., Indian J. Chem., Sect. B*, 1994, **33**, 818 (*synth, Nuciferidine*)
Hsieh, T.J. *et al., J. Chin. Chem. Soc. (Taipei)*, 1999, **46**, 607-612 (*Anaxagoreine*)
Takatsu, H. *et al., J. Nat. Prod.*, 2005, **68**, 430-431 (*N,O-Diacetylnornuciferidine*)

Pachydermin P-5

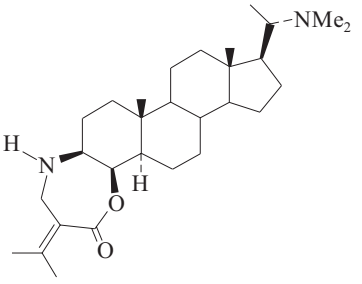


$C_{13}H_8ClNO_6$ 309.662
Tetramic acid deriv. Prod. by *Chamonixia pachydermis.* Amorph. yellow solid. λ_{max} 203 ; 254 ; 357 (TFA/MeCN aq.).

Lang, G. *et al., J. Nat. Prod.*, 2006, **69**, 151-153 (*isol, pmr, cmr*)

Pachysantermine A P-6

[15027-63-1]



$C_{29}H_{48}N_2O_2$ 456.71
Minor alkaloid from *Pachysandra terminalis* (Buxaceae). Mp 260-263°. $[\alpha]_D$ +43 ($CHCl_3$).

N^3-*Me:* Mp 258-261°.

Kikuchi, T. *et al., Chem. Pharm. Bull.*, 1967, **15**, 571 (*ir, uv, pmr, struct*)

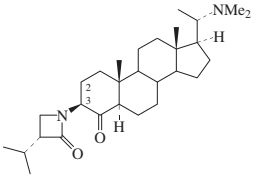
Pachysterine P-7

[1360-19-6]
Steroidal alkaloid. MF $C_{28-29}H_{48-50}N_2O_2$. Struct. unknown. Alkaloid from *Pachysandra terminalis.* Mp 220-224°. $[\alpha]_D$ +24 ($CHCl_3$).

Kikuchi, T. *et al., Tet. Lett.*, 1964, 1817-1823

Pachystermine A P-8

[6156-99-6]



Absolute Configuration

$C_{29}H_{48}N_2O_2$ 456.71
Major alkaloid of *Pachysandra terminalis* (Buxaceae). Cytotoxic for P388 cells. Mp 220-224°. $[\alpha]_D$ +24 ($CHCl_3$).

▶ CM4418000

4β-Alcohol: ***Pachystermine B***
[6157-00-2]
$C_{29}H_{50}N_2O_2$ 458.726
Alkaloid from *Pachysandra terminalis* (Buxaceae). Mp 256-259°. $[\alpha]_D^{20}$ -18 ($CHCl_3$).

2,3-Didehydro: ***20-(Dimethylamino)-3-(3-isopropyl-2-oxo-1-azetidinyl)pregn-2-en-4-one***
[214402-19-4]
Alkaloid from *Pachysandra procumbens.* Needles. Mp 208°. $[\alpha]_D^{20}$ +41.7 (c, 0.08 in $CHCl_3$). λ_{max} 221 (log ϵ 3.96); 270 (log ϵ 3.75) (MeOH).

16α-Hydroxy: ***20-(Dimethylamino)-16-***

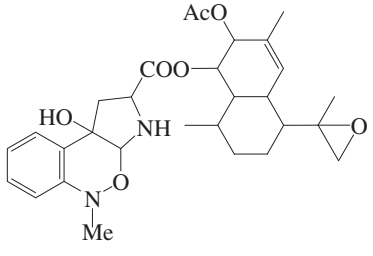
hydroxy-3-(3-isopropyl-2-oxo-1-azetidinyl)pregnan-4-one. *20-(Dimethylamino)-16-hydroxy-3-(3-isopropyllactam)-pregnan-4-one*
$C_{29}H_{48}N_2O_3$ 472.71
Alkaloid from *Pachysandra procumbens*. Needles. Mp 205°. $[\alpha]_D$ +67.4 (c, 0.05 in $CHCl_3$). λ_{max} 242 (log ϵ 3.39) (MeOH).

16α-Hydroxy, 2,3-didehydro: ***20-(Dimethylamino)-16-hydroxy-3-(3-isopropyl-2-oxo-1-azetidinyl)pregn-2-en-4-one***
[214402-20-7]
$C_{29}H_{46}N_2O_3$ 470.694
Alkaloid from *Pachysandra procumbens*. Needles. Mp 205°. $[\alpha]_D^{20}$ +26.1 (c, 0.07 in $CHCl_3$). λ_{max} 220 (log ϵ 3.83); 275 (log ϵ 3.5) (MeOH).

Kikuchi, T. *et al., Chem. Pharm. Bull.*, 1967, **15**, 549 (*ir, ms, pmr, struct*)
Kikuchi, T. *et al., Tet. Lett.*, 1968, 909 (*synth*)
Chang, L.C. *et al., J. Nat. Prod.*, 1998, **61**, 1257 (*2,3-didehydro derivs*)
Funayama, S. *et al., Biol. Pharm. Bull.*, 2000, **23**, 262 (*isol, activity*)
Chang, L.C. *et al., Tetrahedron*, 2000, **56**, 3133-3138 (*16-hydroxy*)

Paeciloxazine P-9

[677333-77-6]

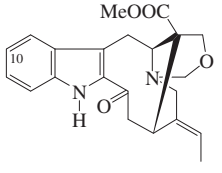


$C_{29}H_{38}N_2O_7$ 526.628
Related to Antibiotic CJ 12662, A-1141. Prod. by *Paecilomyces* sp. strain BAUA3058. Moderate nematocidal agent. Powder. Mp 158°. λ_{max} 248 (ϵ 7400); 285 (ϵ 1400) (MeOH).

Kanai, Y. *et al., J. Antibiot.*, 2004, **57**, 24-28 (*isol, pmr, cmr, activity*)

Pagicerine P-10

[99831-97-7]



Absolute Configuration

$C_{22}H_{24}N_2O_4$ 380.443
Alkaloid from the stem bark of *Pagiantha cerifera* (preferred genus name *Tabernaemontana*) (Apocynaceae). Amorph. solid. $[\alpha]_D^{20}$ -130 (c, 0.7 in $CHCl_3$).

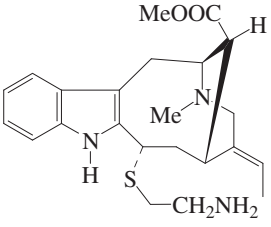
De(methoxycarbonyl): ***Amerovolficine.*** *16-Demethoxycarbonylpagicerine*
[123828-66-0]
$C_{20}H_{22}N_2O_2$ 322.406
Alkaloid from the stem bark of *Rauwolfia cubana* (Apocynaccae). Cryst. (MeOH). Mp. not recorded.

De(methoxycarbonyl), 10-methoxy: 10-Methoxy-16-demethoxycarbonylpagicerine. ***10-Methoxyamerovolficine***
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from the roots of *Rauwolfia yunnanensis*. Amorph. yellow solid. $[\alpha]_D^{24}$ -97 (c, 0.6 in Py). λ_{max} 209 (log ϵ 4.29); 322 (log ϵ 3.98) (MeOH).

Bert, M. *et al., Heterocycles*, 1985, **23**, 2505 (*Pagicerine, struct*)
Martinez, J.A. *et al., Planta Med.*, 1989, **55**, 283 (*Amerovolficine*)
Hu, X.-J. *et al., Helv. Chim. Acta*, 2006, **89**, 1344-1350 (*10-Methoxyamerovolficine*)

Pagisulfine P-11

[103956-35-0]

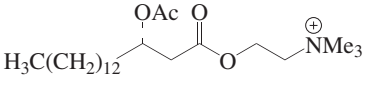


$C_{23}H_{31}N_3O_2S$ 413.583
Alkaloid from the stem bark of *Pagiantha cerifera* (preferred genus name *Tabernaemontana*) (Apocynaceae). Amorph. solid. $[\alpha]_D^{20}$ +42 (c, 1 in EtOH).

Bert, M. *et al., Heterocycles*, 1986, **24**, 1567 (*uv, ir, pmr, ms, struct, synth*)

Pahutoxin P-12

*2-[[3-(Acetyloxy)-1-oxohexadecyl]oxy]-*N,N,N*-trimethylethanaminium(1+), 9CI. 3-Acetoxyhexadecanoic acid choline ester*
[122767-82-2]



(*S*)-*form*

$C_{23}H_{46}NO_4^{\oplus}$ 400.621

(S)-form [27742-14-9]
Poison secreted by the blue dogfish (*Ostracion lentiginosus*). Needles (Me_2CO)(as chloride). Mp 74-75° (chloride). $[\alpha]_D^{22}$ +3.05 (c, 2.3 in MeOH). CAS no. refers to chloride.
▶ Toxic.

O-*De-Ac,* O-*propanoyl:* ***Homopahutoxin***
[109777-68-6]
$C_{24}H_{48}NO_4^{\oplus}$ 414.648
Isol. from the boxfish *Ostracion immaculatus*. Haemolytic agent.

(ξ)-form [116613-97-9]
Constit. of toxic skin secretions of the trunkfish, *Anoplocapros lenticularis*, *Aracana ornata*, *Lactoria fornasini*, *Ostracion cubicus*, *Rhinesomas reipublicae* and *Strophiurichthys robustus*. CAS no. refers to chloride. Genus name incorr. given as Anoplacapros.

O-*De-Ac:* [116613-93-5]
$C_{21}H_{44}NO_3$ 358.584
Constit. of toxic skin secretions of the trunkfish *Anoplocapros lenticularis*, *Aracana ornata*, *Lactoria fornasini* and *Ostracion cubicus*. CAS no. refers to chloride.

O-*De-Ac,* O-*propanoyl:* [116613-96-8]
$C_{24}H_{48}NO_4$ 414.648
Trace constit. of toxic skin secretions of the trunkfish *Lactoria fornasini* and *Rhinesomas reipublicae*. CAS no. refers to chloride.

O-*De-Ac,* O-*butanoyl:* [116613-95-7]
$C_{25}H_{50}NO_4$ 428.674
Constit. of toxic skin secretions of the trunkfish *Anoplocapros lenticularis* and *Strophiurichthys robustus*. CAS no refers to chloride.

O-*De-Ac,* O-*pentanoyl:* [116613-94-6]
$C_{26}H_{52}NO_4$ 442.701
Constit. of toxic skin secretions of the trunkfish *Anoplocapros lenticularis*, *Rhinesomas reipublicae* and *Strophiurichthys robustus*. CAS no. refers to chloride.

Boylan, D.B. *et al., Science (Washington, D.C.)*, 1967, **155**, 52-56
Fusetani, N. *et al., Toxicon*, 1987, **25**, 459-461 (*Homopahutoxin, isol*)
Goldberg, A.S. *et al., Toxicon*, 1988, **26**, 651-663 (*trunkfish constits*)
Yoshikawa, M. *et al., Agric. Biol. Chem.*, 1989, **53**, 37-40 (*synth, ir, pmr, abs config*)

Pahybrine P-13

[93585-77-4]

$C_{22}H_{30}N_2O_4$ 386.49
Struct. unknown. Alkaloid from *Papaver hybridum*. Amorph. yellow solid. Mp 204° dec. (as dihydrobromide). $[\alpha]_D$ +45 (H_2O) (dihydrobromide).

Platonova, T.F. *et al., Zh. Obshch. Khim.*, 1956, **26**, 173-180; *CA*, **50**, 13960e

Paipunine P-14

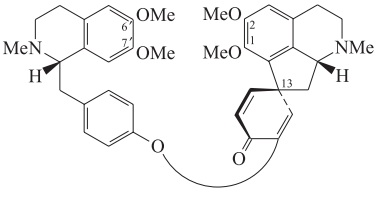
$C_{24}H_{37}NO_4$ 403.561
Struct. unknown. Alkaloid from the Chinese drug "Pai pu", stated to be derived from an unidentified *Stemona* sp. (Stemonaceae). Prisms (2-propanol). Mp 105.5-106.5°. $[\alpha]_D^{25}$ -53.7 (Me_2CO).

Hydrochloride:
▶ LD_{50} (mus, ivn) 39 mg/kg. RT1310000

Lee, H.M. *et al., J. Am. Pharm. Assoc.*, 1940, **29**, 391-394 (*isol, pharmacol*)

Pakistanamine P-15

[36506-66-8]



Absolute configuration

$C_{38}H_{42}N_2O_6$ 622.76
Alkaloid from *Berberis valdiviana*, the roots of *Berberis baluchistanica, Berberis calliobotrys* and *Berberis orthobotrys*, and from the seeds of *Berberis julianae* (Berberidaceae). Mp 93-94°. $[\alpha]_D$ +135 (c, 0.5 in MeOH). Dec. on heating >40° in soln. Rearr. in 3M HCl at 70° into 1-*O*-Methylpakistanine, 1-*O*-Methylkalashine and the monomeric (+)-Armepavine. In methanolic HCl, also forms 1,10-Di-*O*-methylpakistanine by methanolysis.

Hydrochloride:
Cryst. (MeOH). Mp 215°. $[\alpha]_D^{25}$ +20 (c, 0.34 in MeOH).

Picrate:
Yellow cryst. (EtOH). Mp 158-162° dec.

O^{1}*-De-Me:* ***Valdivianine***
[84423-01-8]
$C_{37}H_{40}N_2O_6$ 608.733
Alkaloid from *Berberis valdiviana* and *Berberis empetrifolia* (Berberidaceae). Amorph. $[\alpha]_D^{25}$ +120 (c, 0.2 in MeOH).

O$^{7'}$*-De-Me:* ***Patagonine***
[84423-06-3]
$C_{37}H_{40}N_2O_6$ 608.733
Alkaloid from *Berberis valdiviana* and *Berberis empetrifolia* (Berberidaceae). Amorph. $[\alpha]_D^{25}$ +192 (c, 0.2 in MeOH).

O^{1},O$^{6'}$*-Di-de-Me:* ***Berbivaldine***
[84423-04-1]
$C_{36}H_{38}N_2O_6$ 594.706
Alkaloid from *Berberis valdiviana* (Berberidaceae). Amorph. $[\alpha]_D$ +140 (c, 0.4 in MeOH). Undergoes acid-cat. rearr. to Porveniramine.

O^{1},O$^{7'}$*-Di-de-Me:* ***Valdiberine***
[84472-23-1]
$C_{36}H_{38}N_2O_6$ 594.706
Alkaloid from *Berberis valdiviana* (Berberidaceae). Amorph. $[\alpha]_D^{25}$ +91 (c, 0.4 in MeOH).

13-Epimer, O^{1}*-de-Me:* ***Epivaldivianine***
[98604-30-9]
$C_{37}H_{40}N_2O_6$ 608.733
Alkaloid from the stems of *Berberis valdiviana* (Berberidaceae). $[\alpha]_D^{25}$ +69.4 (c, 0.1 in MeOH).

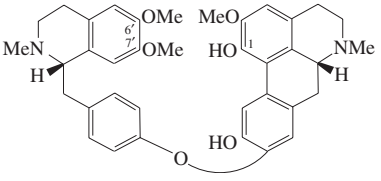
13-Epimer, O^{1},O^{6}*-di-de-Me:* ***Epiberbivaldine***
[96245-07-7]
$C_{36}H_{38}N_2O_6$ 594.706
Alkaloid from *Berberis actinacantha* (Berberidaceae). Amorph. $[\alpha]_D^{25}$ +45.7 (c, 0.12 in $CHCl_3$).

13-Epimer, O^{1},O$^{7'}$*-di-de-Me:* ***Epivaldiberine***
[84472-22-0]
$C_{36}H_{38}N_2O_6$ 594.706
Alkaloid from *Berberis valdiviana* (Berberidaceae). Amorph. $[\alpha]_D^{25}$ +31 (c, 0.1 in MeOH). Undergoes acid-cat. rearr. to Khyberine.

Shamma, M. *et al., J.A.C.S.*, 1972, **94**, 1381; 1973, **95**, 5742 (*isol, uv, ir, pmr, ms, ord, struct*)
Kametani, T. *et al., Heterocycles*, 1974, **2**, 159 (*synth*)
Hussain, S.F. *et al., Tet. Lett.*, 1980, **21**, 723; 3315; 4573
Hussain, S.F. *et al., Heterocycles*, 1981, **15**, 191 (*occur*)
Hussain, S.F. *et al., J. Nat. Prod.*, 1981, **44**, 274 (*isol*)
Guinaudeau, H. *et al., Chem. Comm.*, 1982, 1122 (*occur, stereochem, cd, pmr, derivs*)
Weiss, I. *et al., Heterocycles*, 1984, **22**, 2231 (*Epiberbivaldine*)
Firdous, S. *et al., J. Nat. Prod.*, 1985, **48**, 664 (*Epivaldivianine*)

Pakistanine P-16

[36506-69-1]



$C_{37}H_{40}N_2O_6$ 608.733
Alkaloid from the roots of *Berberis baluchistanica*, *Berberis calliobotrys* and *Berberis orthobotrys*, and from the stems and above-ground wood of *Berberis empetrifolia*, and from *Berberis valdiviana* (Berberidaceae). Needles (EtOH). Mp 154-156°. $[\alpha]_D^{25}$ +106 (c, 0.57 in MeOH).

N$^{2'}$*-De-Me:* ***2'-Norpakistanine***
[98618-06-5]
$C_{36}H_{38}N_2O_6$ 594.706
Alkaloid from the stems of *Berberis valdiviana* (Berberidaceae). Cryst. (MeOH). Mp 148°.

O^{1}*-Me:* ***1-O-Methylpakistanine***
[36418-13-0]
$C_{38}H_{42}N_2O_6$ 622.76
Alkaloid from the roots of *Berberis calliobotrys* and *Berberis orthobotrys* (Berberidaceae), also obt. by rearr. of Pakistanamine, P-15. Cryst. (Et_2O). Mp 117°. $[\alpha]_D^{25}$ +85 (c, 0.40 in MeOH).

Di-Me ether: Formed by heating Pakistanamine, P-15 in MeOH/HCl. Fine needles (Et_2O). Mp 139-141°. $[\alpha]_D^{25}$ +66 (c, 0.40 in MeOH).

O$^{6'}$*-De-Me:* ***Porveniramine***
[84423-08-5]
$C_{36}H_{38}N_2O_6$ 594.706
Alkaloid from *Berberis empetrifolia* (Berberidaceae), also obt. by acid-cat. rearr. of Berbivaldine (see Pakistanamine, P-15. $[\alpha]_D^{25}$ +40 (c, 0.1 in MeOH).

O$^{6'}$*-De-Me,* O^{1}*-Me:* ***Waziristanine****. 1-O-Methylporveniramine*
[96497-83-5]
$C_{37}H_{40}N_2O_6$ 608.733
Alkaloid from root bark of *Berberis waziristanica* (Berberidaceae). $[\alpha]_D^{25}$ +38 (c, 0.06 in MeOH).

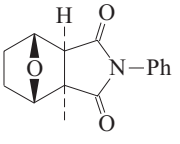
O$^{7'}$*-De-Me:* ***Chitraline***
[77754-91-7]
$C_{36}H_{38}N_2O_6$ 594.706
Alkaloid from *Berberis empetrifolia* and roots of *Berberis calliobotrys* and *Berberis orthobotrys* (Berberidaceae). Also obt. by dienone-phenol rearr. of Valdiberine (see Pakistanamine, P-15. Amorph. $[\alpha]_D^{25}$ +136 (c, 0.172 in MeOH).

O$^{7'}$*-De-Me,* O^{1}*-Me:* ***1-O-Methylchitraline***
[84423-09-6]
$C_{37}H_{40}N_2O_6$ 608.733
Alkaloid from the stems of *Berberis darwinii* (Berberidaceae). Also obt. by acid rearr. of Patagonine (see under Pakistanamine, P-15. Amorph. $[\alpha]_D^{25}$ +29 (c, 0.4 in MeOH).

Shamma, M. *et al., J.A.C.S.*, 1972, **94**, 1381; 1973, **95**, 5742 (*isol, uv, ord, pmr, ms, struct, abs config*)
Hussain, S.F. *et al., Tet. Lett.*, 1980, **21**, 4573 (*isol, uv, pmr*)
Hussain, S.F. *et al., Heterocycles*, 1981, **15**, 191 (*isol, uv, cd, pmr, ms, struct, Chitraline*)
Hussain, S.F. *et al., J. Nat. Prod.*, 1981, **44**, 274 (*isol, uv, pmr*)
Guinaudeau, H. *et al., Chem. Comm.*, 1982, 1122 (*occur, cd, pmr, synth*)
Fajardo, V. *et al., Tet. Lett.*, 1982, **23**, 39 (*occur*)
Firdous, S. *et al., J. Nat. Prod.*, 1985, **48**, 664 (*O-Methylchitraline, 2'-Norpakistanine*)
Atta-ur-Rahman, *et al., Phytochemistry*, 1992, **31**, 1835 (*Waziristanine*)

Palasimide P-17

*4,7-Epoxyhexahydro-3*a*-methyl-2-phenyl-1*H*-isoindole-1,3(2*H*)-dione*
[54382-61-5]

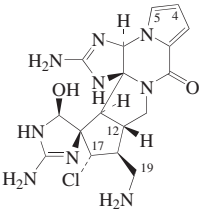


$C_{15}H_{15}NO_3$ 257.288
Alkaloid from the pods of *Butea monosperma*. Off-white fibrous needles (C_6H_6/petrol). Mp 204-205°. $[\alpha]_D$ -58.4 ($CHCl_3$).

Bochis, R.J. *et al., Tet. Lett.*, 1968, 1971 (*synth*)
Peter, M.G. *et al., Helv. Chim. Acta*, 1974, **57**, 32 (*synth*)
Guha, P.K. *et al., Phytochemistry*, 1990, **29**, 2017 (*isol, struct*)

Palauamine P-18

[148717-58-2]



Absolute Configuration

$C_{17}H_{22}ClN_9O_2$ 419.873
Stereochem. revised in 2007. Alkaloid from the sponge *Stylotella aurantium* and *Stylotella agminata*. Cytotoxic. Possesses immunosuppressive, antibiotic and

antifungal activities. Off-white amorph. powder. $[\alpha]_D^{24}$ -45.2 (c, 3.0 in MeOH). λ_{max} 273 (ϵ 4700) (MeOH) (Derep). λ_{max} 224 (ϵ 7800); 272 (ϵ 7900) (MeOH) (Derep).
▶ LD_{50} (mus, ipr) 13 mg/kg.

4-Bromo: ***4-Bromopalauamine***
[206069-58-1]
$C_{17}H_{21}BrClN_9O_2$ 498.769
Alkaloid from *Stylotella aurantium*. Amorph. tan solid. $[\alpha]_D$ -64.4 (c, 2.6 in MeOH).

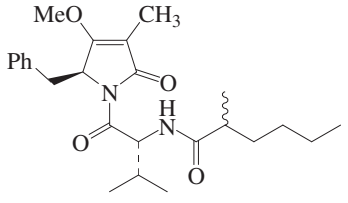
4-Bromo, N^{19}*-(4,5-dibromo-2-pyrrolecarbonyl):* ***Konbuacidin B***
[934338-16-6]
[934338-17-7 (TFA salt)]
$C_{22}H_{22}Br_3ClN_{10}O_3$ 749.646
Alkaloid from *Stylissa flabellata*. Amorph. solid. $[\alpha]_D^{24}$ -24 (c, 0.04 in MeOH). λ_{max} 281 (log ϵ 3.91) (MeOH).

4,5-Dibromo: ***4,5-Dibromopalauamine***
[206069-59-2]
$C_{17}H_{20}Br_2ClN_9O_2$ 577.665
Alkaloid from *Stylotella aurantium* and *Stylissa flabellata*. Solid. $[\alpha]_D$ -115.3 (c, 2.7 in MeOH). Dec. on heating.

12,17-Diepimer, 4-bromo, N^{19}*-(4,5-dibromo-2-pyrrolecarbonyl):* ***Konbuacidin A***
[200207-22-3]
$C_{22}H_{22}Br_3ClN_{10}O_3$ 749.646
The imidazole ring systems are delocalised. Alkaloid from the sponge *Hymeniacidon* sp. Cyclin dependent kinase 4 inhibitor. Amorph. solid. $[\alpha]_D^{24}$ -45 (c, 0.5 in MeOH). λ_{max} 277 (ϵ 13000) (MeOH).

Kobayashi, J. *et al., Tetrahedron*, 1997, **53**, 15681-15684 (*Konbuacidin A*)
Kinnel, R.B. *et al., J.O.C.*, 1998, **63**, 3281-3286 (*isol, uv, ir, pmr, cmr, ms, cd, struct, 4-bromo, dibromo*)
Jacquot, D.E.N. *et al., Curr. Org. Chem.*, 2005, **9**, 1551-1566 (*rev, synth*)
Wang, S. *et al., Tetrahedron*, 2006, **62**, 7155-7161 (*synth*)
Grube, A. *et al., Angew. Chem., Int. Ed.*, 2007, **46**, 2320-2324 (*config*)
Köck, M. *et al., Angew. Chem., Int. Ed.*, 2007, **46**, 6586-6594 (*rev*)
Buchanan, M.S. *et al., J.O.C.*, 2007, **72**, 2309-2317 (*Konbuacidin B, isol, config, dibromo*)
Buchanan, M.S. *et al., Tet. Lett.*, 2007, **48**, 4573-4574 (*abs config*)

Palauimide P-19

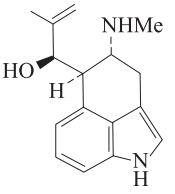


$C_{25}H_{36}N_2O_4$ 428.57
Isol. from a *Lyngbya* sp. Cytotoxic. Amorph. solid. $[\alpha]_D^{25}$ +50 (c, 0.33 in MeOH). CAS no. not found to CA 138. λ_{max} 201 (log ϵ 3.78); 252 (log ϵ 3.44) (MeOH).

Luesch, H. *et al., Tetrahedron*, 2002, **58**, 7959-7966 (*isol, pmr, cmr*)

Paliclavine P-20

[52052-66-1]



Absolute configuration

$C_{16}H_{20}N_2O$ 256.347

(+)-*form*
Alkaloid from *Claviceps paspali*. Cryst. (Me_2CO). Mp 177-179° dec. $[\alpha]_D^{20}$ +3 (c, 0.2 in Py). Yields Paspaclavine, P-106 on treatment with acetaldehyde.
O-*Ac:* Mp 149-150°. $[\alpha]_D^{20}$ -43 (c, 0.3 in Py).

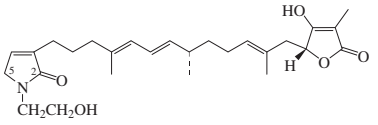
(±)-*form*
Synthetic. Cryst. (Me_2CO). Mp 175-177°.
Tscherter, H. *et al., Helv. Chim. Acta*, 1974, **57**, 113 (*isol, uv, ir, pmr, struct*)
Fehr, T. *et al., Helv. Chim. Acta*, 1975, **58**, 2484 (*synth*)
Oppolzer, W. *et al., Tetrahedron*, 1983, **39**, 3695 (*synth, ir, pmr, ms*)
Kozikowski, A.P. *et al., Tetrahedron*, 1984, **40**, 2345 (*synth*)

Palidimine P-21

Dimeric alkaloid, prob. containing Palinine in P-135 as one of its units.
Stuart, K.L. *et al., Tet. Lett.*, 1974, 3853-3856

Palinurine A† P-22

[254901-26-3]

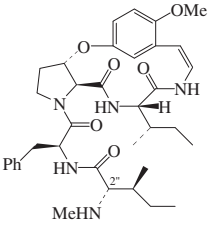


$C_{27}H_{39}NO_5$ 457.609
Microbial metab. of Palinurin prod. by *Cunninghamella* sp. NRRL 5695. Yellowish oil. $[\alpha]_D^{25}$ +69.9 (c, 0.25 in $CHCl_3$). λ_{max} 246 (log ϵ 2.87); 268 (log ϵ 2.67) (MeOH).

2-Deoxo, 5-oxo: ***Palinurine B***
[254901-27-4]
$C_{27}H_{39}NO_5$ 457.609
Prod. by *Cunninghamella* sp. NRRL 5695. Yellowish oil. $[\alpha]_D^{25}$ +58.5 (c, 0.38 in $CHCl_3$). λ_{max} 246 (log ϵ 2.87); 268 (log ϵ 2.67) (MeOH).
El Sayed, K.A. *et al., J.O.C.*, 1999, **64**, 9258-9260

Paliurine B P-23

[149183-88-0]



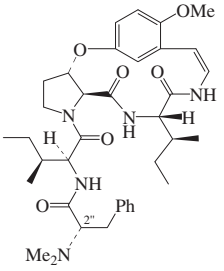
Absolute Configuration

$C_{36}H_{49}N_5O_6$ 647.813
Constit. of *Paliurus ramossisimus*. Ionophore. Amorph. solid. Mp 111-112°. $[\alpha]_D^{26}$ -391.3 (c, 0.76 in MeOH). λ_{max} 216 (log ϵ 4.81); 268 (log ϵ 4.71); 319 (log ϵ 4.56) (MeOH).

2″-N-*Me:* ***Paliurine A***
[298183-94-5]
$C_{37}H_{51}N_5O_6$ 661.84
Constit. of *Paliurus ramossisimus*. Amorph. powder. $[\alpha]_D^{26}$ -345 (c, 1 in MeOH). λ_{max} 216 (log ϵ 4.84); 269 (log ϵ 4.75); 318 (log ϵ 4.56) (MeOH).
Lin, H.-Y. *et al., J. Nat. Prod.*, 2000, **63**, 1338-1343 (*isol, uv, pmr, cmr*)

Paliurine C P-24

[298183-95-6]



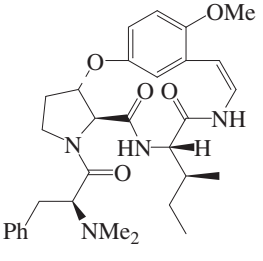
Absolute Configuration

$C_{37}H_{51}N_5O_6$ 661.84
Alkaloid from the roots of *Paliurus ramossisimus*. Amorph. solid. $[\alpha]_D^{26}$ -311 (c, 1 in MeCN). λ_{max} 214 (log ϵ 4.8); 268 (log ϵ 4.62); 318 (log ϵ 4.48) (MeOH).

2″-N-*De-Me:* ***Paliurine D***
[298183-96-7]
$C_{36}H_{49}N_5O_6$ 647.813
Alkaloid from the roots of *Paliurus ramossisimus*. $[\alpha]_D^{26}$ -164 (c, 1 in MeCN). λ_{max} 216 (log ϵ 4.56); 234 (log ϵ 4.31); 269 (log ϵ 4.34); 318 (log ϵ 4.13) (MeOH).
Lin, H.-Y. *et al., J. Nat. Prod.*, 2000, **63**, 1338-1343 (*isol, pmr, cmr, struct*)

Paliurine E P-25

Daechuine S6
[298184-60-8]
[123089-21-4]



$C_{31}H_{40}N_4O_5$ 548.681
Stereochemical identity of Paliurine E and Daechuine S6 is not certain. Alkaloid from the stem bark of the Daechu tree (*Zizyphus jujuba* var. *inermis*) and from *Paliurus ramossisimus*

(Rhamnaceae). Mp 192°. $[\alpha]_D$ -393.5.

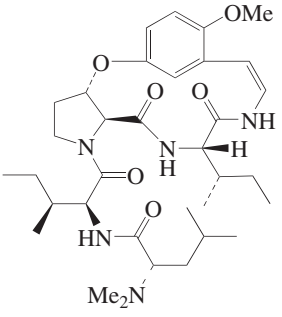
O-*De-Me:* ***Daechuine S26***. *Daechucyclopeptide I*
[115610-63-4]
$C_{30}H_{38}N_4O_5$ 534.654
Alkaloid from the stem bark of *Zizyphus jujuba* var. *inermis* (Rhamnaceae). Mp 114°. Daechuine S26 and Daechucyclopeptide I are given the same (planar) struct. Mp refers to Daechucyclopeptide I.

N,O-*Di-de-Me:* ***Lotusine F***
[163136-15-0]
$C_{29}H_{36}N_4O_5$ 520.627
Alkaloid from root bark of *Zizyphus lotus* (Rhamnaceae). $[\alpha]_D$ -244 (c, 0.5 in $CHCl_3$).

Han, B.H. *et al., Arch. Pharmacal Res.*, 1987, **10**, 208-211 (*Daechuine S26*)
Han, B.H. *et al., Pure Appl. Chem.*, 1989, **61**, 443-448 (*Daechuine S26*)
Ghedira, K. *et al., Phytochemistry*, 1995, **38**, 767-772 (*Lotusine F*)
Lin, H.-Y. *et al., J. Nat. Prod.*, 2000, **63**, 1338-1343 (*Paliurine E*)
Toumi, M. *et al., J.O.C.*, 2008, **73**, 1270-1281 (*synth*)

Paliurine F P-26

[298183-97-8]

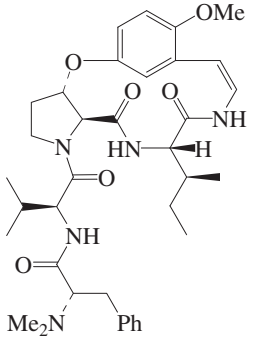


$C_{34}H_{53}N_5O_6$ 627.823
Alkaloid from the roots of *Paliurus ramossisimus*. $[\alpha]_D^{26}$ -323 (c, 1 in MeCN). λ_{max} 217 (log ϵ 4.62); 269 (log ϵ 4.56); 318 (log ϵ 4.38) (MeOH).

Lin, H.-Y. *et al., J. Nat. Prod.*, 2000, **63**, 1338-1343 (*isol, ir, cd, pmr, cmr*)
Toumi, M. *et al., Angew. Chem., Int. Ed.*, 2007, **46**, 572-575 (*synth*)

Paliurine G P-27

[403842-59-1]



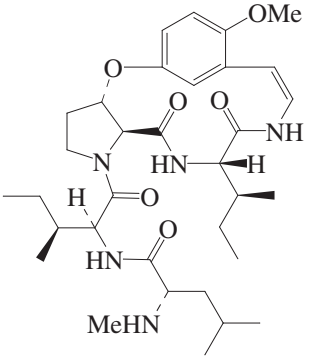
$C_{36}H_{49}N_5O_6$ 647.813
Alkaloid from the stems of *Paliurus ramossisimus*. Amorph. powder. $[\alpha]_D^{30}$ -335 (c, 0.33 in MeOH). λ_{max} 262 (log ϵ 4.79); 316 (log ϵ 4.18) (MeOH).

Stereoisomer(?): ***Jubanine D***
[164230-54-0]
$C_{36}H_{49}N_5O_6$ 647.813
Alkaloid from the root bark of *Zizyphus jujuba*. Same gross struct. as Paliurine G assigned, no stereochem. determined. Incorrect struct. shown in CAS.

Khokhar, I. *et al., CA*, 1995, **123**, 29540v (*Jubanine D*)
Lee, S.-S. *et al., Phytochemistry*, 2001, **58**, 1271-1276 (*Paliurine G*)

Paliurine H P-28

[403842-57-9]

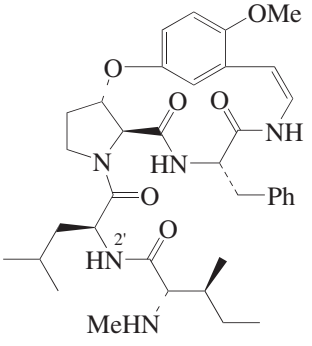


$C_{33}H_{51}N_5O_6$ 613.796
Alkaloid from the stems of *Paliurus ramossisimus*. Amorph. powder. $[\alpha]_D^{30}$ -412 (c, 0.24 in MeOH). λ_{max} 264 (log ϵ 4.32); 317 (log ϵ 4.05) (MeOH).

Lee, S.-S. *et al., Phytochemistry*, 2001, **58**, 1271-1276 (*isol, pmr, cmr*)

Paliurine I P-29

[403842-58-0]



$C_{36}H_{49}N_5O_6$ 647.813
Alkaloid from the stems of *Paliurus ramossisimus*. Amorph. powder. $[\alpha]_D^{30}$ -374.3 (c, 1.1 in MeOH). λ_{max} 266 (log ϵ 4.09); 317 (log ϵ 3.93) (MeOH).

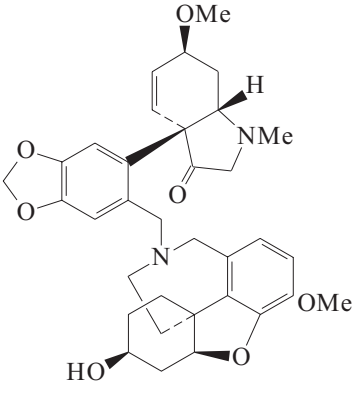
$N^{2'}$-*Deacyl:* ***Nummularine S***
[120396-83-0]
$C_{29}H_{36}N_4O_5$ 520.627
Alkaloid from the stem bark of *Zizyphus nummularia* (Rhamnaceae). Shows antibacterial and antifungal props. Mp 210-211°. Stereochem. not determined. May have different stereochem. to Paliurine I.

$N^{2'}$-*Deacyl,* $N^{2'}$-*di-Me:* ***Xylopyrine A***
[1010795-95-5]
$C_{31}H_{40}N_4O_5$ 548.681
Alkaloid from the root bark of *Zizyphus xylopyra*. Cryst. (MeOH). $[\alpha]_D^{25}$ -270 (c, 0.21 in $CHCl_3$). λ_{max} 270 (log ϵ 2.8); 320 (log ϵ 2.26) (MeOH).

Shah, A.H. *et al., Phytochemistry*, 1989, **28**, 305 (*Nummularine S*)
Lee, S.-S. *et al., Phytochemistry*, 2001, **58**, 1271-1276 (*Paliurine I*)
Singh, A.K. *et al., Nat. Prod. Res.*, 2007, **21**, 1114-1120 (*Xylopyrine A*)

Pallidiflorine† P-30

[133740-60-0]

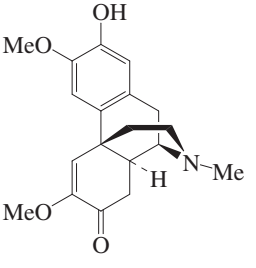


$C_{34}H_{40}N_2O_7$ 588.699
Alkaloid from the whole plant of *Narcissus pallidiflorus* (Amaryllidaceae). Yellow cryst.

Codina, C. *et al., Phytochemistry*, 1990, **29**, 2685 (*isol, ir, pmr, cmr, ms, struct*)

Pallidinine P-31

5,6-Didehydro-2-hydroxy-3,6-dimethoxy-17-methylmorphinan-7-one, 9CI



(+)-*form*

$C_{19}H_{23}NO_4$ 329.395

(+)-*form*
Alkaloid from the leaves of *Dehaasia longipedicellata*. $[\alpha]_D$ +45 (c, 1 in $CHCl_3$).

λ_{max} 205 (log ϵ 4.45); 228 (sh) ; 260 (log ϵ 3.99) (MeOH).

(-)-*form* [77485-11-1]
Alkaloid from *Ocotea acutangula* (Lauraceae). Mp 234-236°. $[\alpha]_D^{20}$ -80 (c, 0.5 in $CHCl_3$).

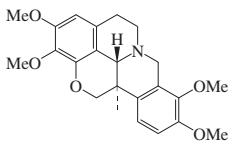
Me ether: **O-*Methylpallidinine***
[77485-12-2]
$C_{20}H_{25}NO_4$ 343.422
Alkaloid from *Ocotea acutangula* (Lauraceae). Noncryst. Mp 195-200° (as hydrochloride). $[\alpha]_D^{20}$ -50 (MeOH) (hydrochloride).

(±)-*form*
Me ether: [88199-99-9]
Synthetic. Mp 198-202° (as hydrochloride).

Vecchietti, V. *et al., J.C.S. Perkin 1*, 1981, 578 (*isol, uv, ir, pmr, ms, struct*)
McMurry, J.E. *et al., J.O.C.*, 1984, **49**, 3803 (*deriv, synth, ir, pmr, cmr*)
Kano, S. *et al., J.A.C.S.*, 1986, **108**, 6746 (*deriv, synth*)
Hanada, K. *et al., Org. Lett.*, 2002, **4**, 4515-4517 (*synth*)
Mukhtar, M.R. *et al., Fitoterapia*, 2004, **75**, 792-794 (*(+)-form, pmr, cmr*)

Pallimamine P-32

Taurine†
[123064-70-0]



Relative Configuration

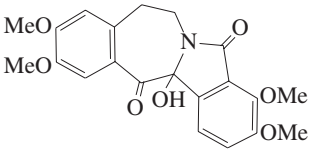
$C_{23}H_{27}NO_5$ 397.47

(-)-*form*
Alkaloid from *Corydalis solida* ssp. *tauricola*. Yellow cryst. Mp 179-182°. $[\alpha]_D^{22}$ -21.4 (c, 0.02 in $CHCl_3$).

(±)-*form*
Alkaloid from the whole herb of *Corydalis pallida* var. *sparsimamma*. Pale yellow prisms. Mp 203-207°.

Lu, S.-T. *et al., Phytochemistry*, 1989, **28**, 1245 (*isol, uv, ir, pmr, ms, cryst struct*)
Sener, B. *et al., Planta Med.*, 1990, **56**, 510 (*isol*)

Palmanine P-33



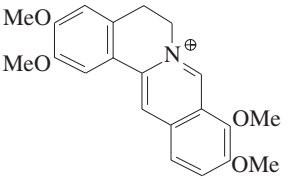
$C_{21}H_{21}NO_7$ 399.399

(±)-*form* [95456-42-1]
Alkaloid from the stems and twigs of *Berberis actinacantha* (Berberidaceae). Amorph.

Valencia, E. *et al., Tetrahedron*, 1984, **40**, 3957 (*isol, uv, ir, pmr, ms, struct*)

Palmatine P-34

5,6-Dihydro-2,3,9,10-tetramethoxydibenzo[a,g]quinolizinium(1+), 9CI. 7,8,13,13a-Tetradehydro-2,3,9,10-tetrahydroxyberbinium(1+), 8CI. Berbericinine. Hindarinine. Gindarinine
[3486-67-7]
[10605-02-4]



$C_{21}H_{22}NO_4^{\oplus}$ 352.409
Hindarinine is a variant of Gindarinine, via a Russian paper. Quaternary alkaloid from *Jateorhiza palmata* (Menispermaceae) and a large number of other spp., mostly in *Berberis* and *Mahonia* (Berberidaceae), but spread into many families. Uterine contractant. Shows bactericidal activity. Produces antiarrhythmic, inotropic, adrenocorticotropic, anticholinesterase and analgesic effects in exp. animals. Yellow needles (as chloride). Mp 205° dec. (chloride). λ_{max} 228 (ϵ 24400); 240 (sh) (ϵ 21000); 268 (ϵ 24100); 276 (sh) (ϵ 24000); 343 (sh) (ϵ 24400); 350 (ϵ 25000); 433 (ϵ 5100) (EtOH) (chloride).

▶ DR9890000

O^2-*De-Me: Dehydroisocorypalmine.* ***Columbamine***
[3621-36-1]
$C_{20}H_{20}NO_4^{\oplus}$ 338.382
Quaternary alkaloid from *Jateorhiza palmata*, several *Berberis* spp. (Menispermaceae, Berberidaceae) and some other spp. in several different families. Butyrylcholinesterinase inhibitor; shows anti-HIV activity. Antihypertensive agent. Possesses bactericidal, CNS depressant props. Shows antiplasmodial, antiamoebic and cytotoxic activities. Mp 239-240° (as chloride). Log P -0.57 (uncertain value) (calc). λ_{max} 225 (ϵ 6025); 263 (ϵ 5750); 275 (ϵ 5000); 346 (ϵ 4500); 425 (ϵ 1250) (MeOH) (Berdy).

O^3-*De-Me: Dehydrocorypalmine.* ***Jatrorrhizine.*** *Jateorhizine. Neprotine. Yatrorizine*
[3621-38-3]
$C_{20}H_{20}NO_4^{\oplus}$ 338.382
Quaternary alkaloid from the root of *Jateorhiza palmata*, many *Berberis* and *Mahonia* spp. and many other spp. in several families (Menispermaceae, Berberidaceae). Butyrylcholinesterinase inhibitor. Shows antibacterial activity *vs. Mycobacterium smegmatis.* Antiinflammatory, antihypertensive agent. Shows CNS stimulant props. Copper-coloured needles (as chloride). Mp 206° (chloride). Log P -0.57 (uncertain value) (calc). λ_{max} 228 (ϵ 23400); 241 (sh) (ϵ 20800); 267 (ϵ 22600); 275 (sh) (ϵ 21000); 352 (ϵ 25200); 440 (ϵ 5200) (EtOH) (chloride).

O^9-*De-Me:* ***Palmatrubine***
[16176-68-4]
[16705-04-7]
$C_{20}H_{20}NO_4^{\oplus}$ 338.382
Alkaloid from *Fibraurea chloroleuca* and *Stephania glabra* tubers (Menispermaceae). First known as a demethylation prod. of Palmatine, P-34. Shows anticancer activity. Derivs. are specific xanthine oxidase inhibitors. Mp 290-295° (as chloride).

O^{10}-*De-Me:* ***Dehydrocorydalmine***
[6877-27-6]
$C_{20}H_{20}NO_4^{\oplus}$ 338.382
Alkaloid from a *Corydalis* spp. (Papaveraceae) and from tubers of *Stephania glabra* (Menispermaceae). Cryst. + $1H_2O$ (as chloride). Mp 220-221° dec. (chloride).

O^2,O^3-*Di-de-Me:* ***Demethyleneberberine***
[25459-91-0]
[16705-03-6]
$C_{19}H_{18}NO_4^{\oplus}$ 324.355
Quaternary alkaloid from the stem, roots and tubers of *Stephania miyiensis* (Menispermaceae) and *Thalictrum javanicum* (Ranunculaceae). Mp 225° (as chloride). λ_{max} 235 (log ϵ 4.63); 270 (log ϵ 4.52); 325 (log ϵ 4.49) (MeOH) (chloride). λ_{max} 225 (log ϵ 4.68); 263 (log ϵ 4.56); 340 (log ϵ 4.51) (MeOH/HCl) (chloride). λ_{max} 238 (log ϵ 4.61); 274 (log ϵ 4.48); 330 (log ϵ 4.54) (MeOH/NaOH) (chloride).

O^2,O^9-*Di-de-Me:* ***Dehydroscoulerine***
[102694-43-9]
$C_{19}H_{18}NO_4^{\oplus}$ 324.355
Alkaloid from stem bark of *Pseuduvaria indochinensis* (Annonaceae). Orange-red needles (MeOH) (counterion not specified). Mp 275-276° dec. (counterion not specified). λ_{max} 229 (log ϵ 4.22); 279 (log ϵ 4.27); 350 (log ϵ 4.21) (MeOH).

O^2,O^{10}-*Di-de-Me:* ***Stepharanine.*** *Dehydrostepholidine*
[17369-30-1]
[13509-87-0]
$C_{19}H_{18}NO_4^{\oplus}$ 324.355
Alkaloid from tubers of *Stephania glabra* and from *Stephania intermedia* and *Tinospora capillipes* (Menispermaceae). Cryst. + $1H_2O$ (as chloride). Mp 274-275° (chloride).

O^3,O^9-*Di-de-Me: Jatrorrhizrubine. Jatrorubine*
[38695-43-1]
[78673-37-7] Synthetic.

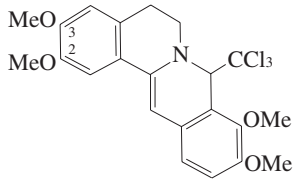
O^3,O^{10}-*Di-de-Me:* ***Dehydrodiscretamine***
[78134-82-4]
$C_{19}H_{18}NO_4^{\oplus}$ 324.355
Alkaloid from *Corydalis tashiroi* whole plants and twigs of *Fissistigma balansae* (Annonaceae). Pale orange needles (as chloride). Mp 217-220° dec. (chloride). λ_{max} 206 ; 230 ; 286 ;

356 (MeOH).

Feist, K. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1925, **263**, 294-305 (*Palmatrubine*)
Späth, E. *et al., Ber.*, 1925, **58**, 1939-1946 (*Columbamine, Jatrorrhizine, struct*)
Haworth, R.D. *et al., J.C.S.*, 1927, 548-554 (*Palmatine, synth*)
Cava, M.P. *et al., J. Nat. Prod.*, 1965, **28**, 73-83 (*isol, Columbamine, Jatrorrhizine*)
Doskotch, R.W. *et al., J.O.C.*, 1967, **32**, 3253-3254 (*Dehydrocorydalmine, Stepharanine*)
Skerl, A.R. *et al., Phytochemistry*, 1971, **10**, 2719-2721 (*biosynth*)
Jewers, K. *et al., J.C.S. Perkin 2*, 1972, 1393-1396 (*pmr*)
Pavelka, S. *et al., Coll. Czech. Chem. Comm.*, 1976, **41**, 3157-3169 (*uv*)
Patra, A. *et al., Planta Med.*, 1980, **40**, 333-336 (*Palmatrubine, Stepharanine*)
Tani, C. *et al., Planta Med.*, 1981, **41**, 403-405 (*Dehydrodiscretamine*)
Bahadur, S. *et al., J. Nat. Prod.*, 1983, **46**, 454-457 (*Demethyleneberberine*)
Bhakuni, D.S. *et al., Tetrahedron*, 1983, **39**, 4003 (*Stepharanine, biosynth*)
Zhong, S.-M. *et al., Phytochemistry*, 1988, **27**, 4004-4005 (*Dehydroscoulerine*)
Hussain, R.A. *et al., Heterocycles*, 1989, **29**, 2257-2260 (*pmr, cmr*)
Tan, G.T. *et al., J. Nat. Prod.*, 1991, **54**, 143-154 (*Columbamine, anti-HIV activity*)
Ghosh, R. *et al., Acta Cryst. C*, 1993, **49**, 1665-1667 (*Jatrorrhizine, cryst struct*)
Chia, Y.-C. *et al., Phytochemistry*, 1998, **48**, 367-369 (*Dehydrodiscretamine*)
Wright, C.W. *et al., J. Nat. Prod.*, 2000, **63**, 1638-1640 (*Columbamine, activity*)
Marek, R. *et al., Magn. Reson. Chem.*, 2002, **40**, 687-692 (*N-15 nmr*)
Grycová, L. *et al., Phytochemistry*, 2007, **68**, 150-175 (*rev*)

Palmatine chloroform P-35

[50932-23-5]



$C_{22}H_{22}Cl_3NO_4$ 470.778

Alkaloid artifact from the roots of *Berberis lycium* (Berberidaceae). Cryst. (C_6H_6). Mp 184°.

2,3-Di-O-*de-Me, 2,3-methylene ether: Berberine chloroform. 8-Trichloromethyldihydroberberine*
[50932-22-4]
$C_{21}H_{18}Cl_3NO_4$ 454.736
Alkaloid artifact from the roots of *Berberis lycium, Thalictrum longistylum, Thalictrum lucidum* and *Thalictrum podocarpum* and from stem bark of *Phellodendron wilsonii* (Berberidaceae, Ranunculaceae, Rutaceae). Yellow cryst. ($CHCl_3$). Mp 182-184° dec. (178°).

Miana, G.A. *et al., Phytochemistry*, 1973, **12**, 1822 (*isol, uv, pmr, struct*)
Wu, W.-N. *et al., J. Nat. Prod.*, 1976, **39**, 204; 249; 1977, **40**, 281; 384 (*isol, uv, ir, pmr, deriv*)
Khamidov, I.I. *et al., Khim. Prir. Soedin.*, 1996, **32**, 889-893; *Chem. Nat. Compd. (Engl. Transl.)*, 1996, **32**, 876-879 (*Berberine chloroform, cryst struct*)
Marek, R. *et al., J. Nat. Prod.*, 2003, **66**, 481-486 (*pmr, cmr, N-15 nmr*)

Palmatisine P-36

[1360-20-9]

$C_{22}H_{25}NO_6$ 399.443

Struct. unknown. Diterpenoid alkaloid. MF may be $C_{24}H_{27}NO_7$. Alkaloid from the roots of *Aconitum palmatum* (Ranunculaceae). Mp 285-286°.

Picrate: Mp 164°.

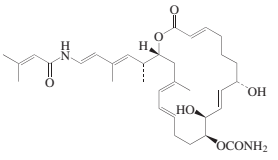
Reineckate: Mp 202° dec.

$AuCl_3$ complex: Mp 220-225°.

Singh, N. *et al., J. Indian Chem. Soc.*, 1965, **42**, 49-50 (*isol, uv, ir*)

Palmerolide A P-37

[863116-48-7]



Absolute Configuration

$C_{33}H_{48}N_2O_7$ 584.751

Macrolide antibiotic. Structure revised in 2007 by 3 different groups. Isol. from *Synoicum adareanum*. Cytotoxic. Amorph. solid. $[\alpha]_D^{24}$ -1.6 (c, 0.5 in MeOH). λ_{max} 224 (ε 2670); 242 (ε 2800); 296 (ε 1775) (MeOH).

Diyabalanage, T. *et al., J.A.C.S.*, 2006, **128**, 5630-5631 (*isol, pmr, cmr*)
Nicolaou, K.C. *et al., Angew. Chem., Int. Ed.*, 2007, **46**, 5896-5890 (*synth, struct*)
Jiang, X. *et al., J.A.C.S.*, 2007, **129**, 6386-6387 (*synth, struct*)
Lebar, M.D. *et al., Tet. Lett.*, 2007, **48**, 8009-8010 (*struct*)

Palmidrol, INN P-38

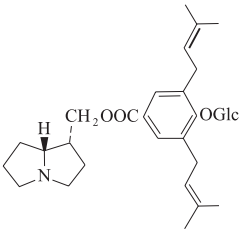
N-*(2-Hydroxyethyl)hexadecanamide, 9CI*. N-*(2-Hydroxyethyl)palmitamide. Impulsin. Palmitan. PEA*
[544-31-0]
$H_3C(CH_2)_{14}CONHCH_2CH_2OH$
$C_{18}H_{37}NO_2$ 299.496

Isol. from soybean lecithin, egg yolk and peanut meal. Antiinflammatory agent, immunostimulant. Cryst. (EtOH aq.). Mp 98-99°. Log P 6 (calc).

Roe, E.T. *et al., J.A.C.S.*, 1952, **74**, 3442 (*synth*)
Kuehl, F.A. *et al., J.A.C.S.*, 1957, **79**, 5577 (*isol*)
Benvenuti, F. *et al., Boll. Soc. Ital. Biol. Sper.*, 1968, **44**, 809; *CA*, **69**, 85237e (*pharmacol*)
Perlik, F. *et al., Acta Phytopathol. Acad. Sci. Hung.*, 1971, **39**, 395 (*pharmacol*)
Miyasaka, T. *et al., Chem. Lett.*, 1985, **6**, 701 (*synth*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 1397

Paludosine P-39

[34137-24-1]



Absolute configuration

$C_{31}H_{45}NO_8$ 559.698

Alkaloid from *Hammarbya paludosa* (Orchidaceae). Amorph. $[\alpha]_D^{23}$ +9 (c, 0.58 in EtOH). Hydrol. → Lindelofine in T-443.

N-*Me:* ***Kumokirine***
[21284-20-8]
$C_{32}H_{48}NO_8^{\oplus}$ 574.733
Quaternary alkaloid from *Liparis kurameri* and *Liparis kumokiri* (Orchidaceae). $[\alpha]_D^{20}$ -23.4 (as chloride).

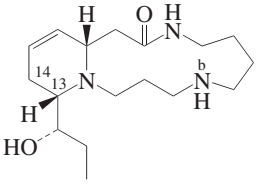
2″-O-*L-Arabinofuranosyl:* ***Nervosine***†
[23179-26-2]
$C_{36}H_{53}NO_{12}$ 691.814
Alkaloid from *Liparis nervosa*. Cryst. + $1H_2O$ (as picrate). Mp 130-131° (picrate). Conts. an arabinofuranosyl(1→2)glucosyl residue of undetd. anomeric config.

1-Epimer: ***Auriculine***†
[22595-00-2]
$C_{31}H_{45}NO_8$ 559.698
Alkaloid from *Liparis auriculata* and *Liparis loeselii* (Orchidaceae). Amorph. $[\alpha]_D^{20}$ -19.9 (MeOH). $[\alpha]_D^{20}$ -14 (c, 0.56 in EtOH). Hydrol. → Laburnine in H-629.

Leander, K. *et al., Tet. Lett.*, 1967, 3477 (*isol*)
Nishikawa, K. *et al., Tetrahedron*, 1969, **25**, 2723 (*isol, struct*)
Lindström, B. *et al., Acta Chem. Scand.*, 1971, **25**, 895 (*isol, struct*)

Palustrine† P-40

*1,4,5,6,7,8,9,10,11,13,14,16*a-*Dodecahydro-13-(1-hydroxypropyl)pyrido[2,1-*d*][1,5,9]triazacyclotridecin-2(3*H*)-one, 9CI*
[22324-44-3]



$C_{17}H_{31}N_3O_2$ 309.451

Struct. revised in 1984. Alkaloid from *Equisetum palustre*, *Equisetum arvense*, *Equisetum limosum*, *Equisetum silvaticum*

and *Equisetum ramossissimum* (Equisetaceae). Prisms (Et_2O). Mp 120-122°. $[\alpha]_D^{18}$ +15.8 (c, 1.2 in H_2O). $[\alpha]_D^{22}$ +19.4 (c, 1.6 in EtOH).

Monohydrochloride:
Cryst. + $1H_2O$. Mp 150-152°.

Dihydrochloride: Mp 188-190° dec. $[\alpha]_D^{18}$ +8.3 (c, 1.48 in H_2O).

Dipicrate:
Yellow prisms (Me_2CO aq.). Mp 150-150.5°.

N^8*-Formyl:* ***Palustridine***
[22324-43-2]
$C_{18}H_{31}N_3O_3$ 337.461
Alkaloid from *Equisetum palustre* (Equisetaceae). Cryst. (EtOH) (as hydrochloride). Mp 204° dec. (hydrochloride). $[\alpha]_D^{19}$ +50.2 (c, 1.235 in H_2O) (hydrochloride).

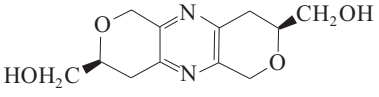
Deoxy: ***Deoxypalustrine****. Alkaloid P3*†
$C_{17}H_{31}N_3O$ 293.451
Minor alkaloid from *Equisetum palustre* (Equisetaceae). Struct. prob. follows from the revised struct. of Palustrine.

15,16-Dihydro, 13,14-didehydro, 1′-ketone: ***Albizzine A***
[163634-03-5]
$C_{17}H_{29}N_3O_2$ 307.435
Alkaloid from bark of *Albizzia myriophylla* (Fabaceae). Oil. λ_{max} 237 (no solvent reported).

Eugster, C.H. *et al., Helv. Chim. Acta*, 1953, **36**, 1387-1400 (*isol, ir*)
Green, C.L. *et al., Helv. Chim. Acta*, 1969, **52**, 673-678 (*Palustridine, ms, ir, pmr*)
Eugster, C.H. *et al., Heterocycles*, 1976, **4**, 51-105 (*Deoxypalustrine*)
Rüedi, P. *et al., Helv. Chim. Acta*, 1978, **61**, 899-904 (*cmr, struct*)
Mayer, C. *et al., Helv. Chim. Acta*, 1978, **61**, 905-921 (*struct*)
Wälchli, P.C. *et al., Helv. Chim. Acta*, 1978, **61**, 921-928 (*abs config*)
Natsume, M. *et al., Chem. Pharm. Bull.*, 1984, **32**, 3789-3791 (*synth, struct*)
Ito, A. *et al., Chem. Pharm. Bull.*, 1994, **42**, 1966-1967 (*Albizzine A*)
Hirai, Y. *et al., J.O.C.*, 1997, **62**, 776-777 (*synth*)

Palythazine P-41

1,3,4,6,8,9-Hexahydrodipyrano[3,4-b:3′,4′-e]pyrazine-3,8-dimethanol, 9CI
[72681-96-0]

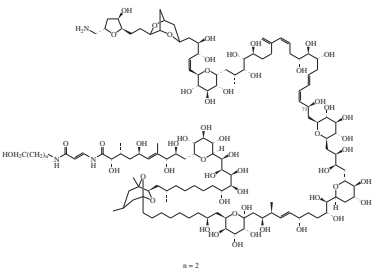


$C_{12}H_{16}N_2O_4$ 252.269
Isol. from the zoanthid *Palythoa tuberculosa*. Fp 169-170 (natural) Mp 223-225° (synthetic). $[\alpha]_D^{25}$ -199 (MeOH) (synthetic). The abs. config. of (-)-Palythazine is as shown but it is not known whether this is the natural enantiomer.

Uemura, D. *et al., Chem. Lett.*, 1979, 1481-1482 (*isol, uv, cmr, struct, synth*)
Jarglis, P. *et al., Angew. Chem., Int. Ed.*, 1982, **21**, 141-142 (*struct, synth*)

Palytoxin P-42

NSC 714361
[77734-91-9]



$C_{129}H_{223}N_3O_{54}$ 2680.168
Prod. by *Palythoa tuberculosa*, *Palythoa toxica* and *Radianthus macrodactylus*; also found in a variety of marine organisms that graze on coral reefs. Toxic. Na/K-ATPase inhibitor, sperm motility inhibitor, cardiotoxic and haemolytic agent, coronary vasoconstrictor. Sol. Py, DMSO, H_2O; fairly sol. MeOH, EtOH; poorly sol. $CHCl_3$, Me_2CO. 2 forms of Palytoxin are known, the one shown and an acetal form, $C_{129}H_{221}N_3O_{53}$. Struct. shown is for Palytoxin from a Tahitian *P.* sp. Palytoxins from *P. toxica* have slightly differing structs. λ_{max} 233 ; 263 (ϵ 23600) (H_2O) (Berdy).

▶ Highly toxic, LD_{50} 62.5 ng/kg (crab); LD_{50} (mus, ivn) 0.45 mg/kg; LD_{50} (mus, ipr) 0.05 mg/kg.

73-Deoxy: ***Deoxypalytoxin***
[96391-17-2]
$C_{129}H_{223}N_3O_{53}$ 2664.169
Prod. by *Palythoa tuberculosa*. λ_{max} 233 ; 263 (H_2O).

Homologue (n = 3): ***Homopalytoxin***
[96391-18-3]
$C_{130}H_{225}N_3O_{54}$ 2694.195
Prod. by *Palythoa tuberculosa*. λ_{max} 233 ; 263 (H_2O).

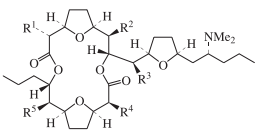
Homologue (n = 4): ***Bishomopalytoxin***
[96411-43-7]
$C_{131}H_{227}N_3O_{54}$ 2708.222
Prod. by *Palythoa tuberculosa*. λ_{max} 233 ; 263 (H_2O).

[11077-03-5]

Moore, R.E. *et al., J.A.C.S.*, 1981, **103**, 2491-2494; 1982, **104**, 3776-3779 (*struct, abs config*)
Beress, L. *et al., Toxicon*, 1983, **21**, 285 (*isol*)
Uemura, D. *et al., Tetrahedron*, 1985, **41**, 1007-1017 (*isol, struct, rev*)
Armstrong, R.W. *et al., J.A.C.S.*, 1989, **111**, 7525; 7530 (*synth*)
Kishi, Y. *et al., Pure Appl. Chem.*, 1993, **65**, 771-778 (*rev, conformn*)
Gleibs, S. *et al., Toxicon*, 1995, **33**, 1531-1537; 1999, **37**, 1521-1527 (*occur, distribution*)
Nicolaou, K.C. *et al., Classics in Total Synthesis, Targets, Strategies, Methods*, VCH, 1996, 711 (*bibl, synth*)
Food Sci. Technol., Seafood and Freshwater Toxins, (ed. Botana, L.M.), Marcel Dekker, 2000, **103**, (*revs*)
Kan, Y. *et al., Tet. Lett.*, 2001, **42**, 3197-3202 (*pmr, cmr*)
Kishi, Y. *et al., Tetrahedron*, 2002, **58**, 6239-6258 (*rev*)
Inuzuka, T. *et al., Org. Biomol. Chem.*, 2007, **5**, 897-899 (*struct*)
Inuzuka, T. *et al., Tetrahedron*, 2008, **64**, 7718-7723 (*pmr, conformn*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, PAF000

Pamamycin P-43

[71892-94-9]



Pamamycin 593 $R^1 = R^3 = R^4 = CH_3$, $R^2 = R^5 = H$
593B $R^1 = CH_2CH_3$, $R^2 = R^5 = H$, $R^3 = R^4 = CH_3$, *N*-de-Me
607 $R^1 = R^2 = R^3 = R^4 = CH_3$, $R^5 = H$
621A $R^1 = R^2 = R^3 = R^4 = R^5 = CH_3$
621B $R^1 = CH_2CH_3$, $R^2 = H$, $R^3 = R^4 = R^5 = CH_3$
621C $R^1 = R^2 = R^4 = CH_3$, $R^3 = CH_2CH_3$, $R^5 = H$
621D $R^1 = CH_2CH_3$, $R^2 = R^3 = R^4 = CH_3$, $R^5 = H$
635A $R^1 = R^2 = R^4 = R^5 = CH_3$, $R^3 = CH_2CH_3$
635B $R^1 = R^2 = R^3 = R^5 = CH_3$, $R^4 = CH_2CH_3$
635C $R^1 = CH_2CH_3$, $R^2 = R^3 = R^4 = R^5 = CH_3$
635D $R^1 = R^4 = CH_2CH_3$, $R^2 = R^3 = CH_3$, $R^5 = H$
635E $R^1 = R^2 = CH_3$, $R^3 = R^4 = CH_2CH_3$, $R^5 = H$
635F $R^1 = R^3 = CH_2CH_3$, $R^2 = R^4 = CH_3$, $R^5 = H$
649A $R^1 = R^3 = R^4 = CH_2CH_3$, $R^2 = CH_3$, $R^5 = H$
649B $R^1 = R^3 = CH_2CH_3$, $R^2 = R^4 = R^5 = CH_3$

Prod. by *Streptomyces* spp. Active against gram-positive and mycobacteria and fungi. Inhibits the membrane transportation of nucleosides. Ionophore. Sol. MeOH, hexane; poorly sol. H_2O.

Pamamycin 593 [171370-57-3]
$C_{34}H_{59}NO_7$ 593.843
Prod. by *Streptomyces alboniger*.

Pamamycin 593B
N-*Demethylpamamycin 593B*
[226722-70-9]
$C_{34}H_{59}NO_7$ 593.843
Prod. by *Streptomyces alboniger*.
Misleading synonym.

Pamamycin 607 [100905-89-3]
$C_{35}H_{61}NO_7$ 607.869
From *Streptomyces alboniger*. Oil. Sol. MeOH, C_6H_6, MeCN, Py; poorly sol. H_2O. $[\alpha]_D^{33}$ +22.8 (c, 0.26 in MeOH). λ_{max} 215 (ϵ 470) (MeOH).

N-*De-Me:* **N-*Demethylpamamycin 593A***. *Pamamycin 593A*
[226722-69-6]
$C_{34}H_{59}NO_7$ 593.843
Prod. by *Streptomyces alboniger*. Misleading synonym.

Pamamycin 621A [149146-57-6]
$C_{36}H_{63}NO_7$ 621.896
Prod. by *Streptomyces aurantiacus* and *Streptomyces alboniger*.

Pamamycin 621B [171370-58-4]
$C_{36}H_{63}NO_7$ 621.896
Prod. by *Streptomyces alboniger*.

Pamamycin 621C [171370-59-5]
$C_{36}H_{63}NO_7$ 621.896
Prod. by *Streptomyces alboniger*.

Pamamycin 621D [171370-60-8]
$C_{36}H_{63}NO_7$ 621.896
Prod. by *Streptomyces alboniger*.

Pamamycin 635A [135702-84-0]
$C_{37}H_{65}NO_7$ 635.923
From *Streptomyces alboniger*. Sol. EtOAc; poorly sol. H_2O.

Pamamycin 635B [135702-85-1]
$C_{37}H_{65}NO_7$ 635.923
From *Streptomyces alboniger*. Sol. EtOAc; poorly sol. H_2O.

Pamamycin 635C [171370-61-9]
$C_{37}H_{65}NO_7$ 635.923
Prod. by *Streptomyces alboniger*.

Pamamycin 635D [171370-62-0]
$C_{37}H_{65}NO_7$ 635.923
Prod. by *Streptomyces alboniger*.

Pamamycin 635E [171370-63-1]
$C_{37}H_{65}NO_7$ 635.923
Prod. by *Streptomyces alboniger*.

Pamamycin 635F [171370-64-2]
$C_{37}H_{65}NO_7$ 635.923
Prod. by *Streptomyces alboniger*.

Pamamycin 649A [135702-86-2]
$C_{38}H_{67}NO_7$ 649.95
From *Streptomyces alboniger*. Sol. EtOAc; poorly sol. H_2O.

Pamamycin 649B [135702-87-3]
$C_{38}H_{67}NO_7$ 649.95
From *Streptomyces alboniger*. Sol. EtOAc; poorly sol. H_2O.

Pamamycin 663
$C_{39}H_{69}NO_7$ 663.977
Prod. by *Streptomyces* sp. HKI-0118. Struct. not fully known. A higher homologue with variation in the *N*-containing side-chain.

Pamamycin 677
$C_{40}H_{71}NO_7$ 678.003
Prod. by *Streptomyces* sp. HKI-0118. Struct. not fully known. A higher homologue with variation in the *N*-containing side-chain.

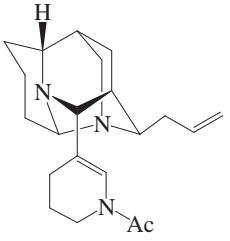
Pamamycin 691
$C_{41}H_{73}NO_7$ 692.03
Prod. by *Streptomyces* sp. HKI-0118. Struct. not fully known. A higher homologue with variation in the *N*-containing side-chain.

Pamamycin 705
$C_{42}H_{75}NO_7$ 706.057
Prod. by *Streptomyces* sp. HKI-0118. Struct. not fully known. A higher homologue with variation in the *N*-containing side-chain.

McCann, P.A. *et al., J. Antibiot.*, 1979, **32**, 673 (*Pamamycin*)
Chou, N.G. *et al., Antimicrob. Agents Chemother.*, 1981, **20**, 443 (*Pamamycin*)
U.S. Pat., 1981, 4 283 391; *CA*, **95**, 148706 (*Pamamycin*)
Kondo, S. *et al., Tet. Lett.*, 1987, **28**, 5861 (*Pamamycin 607*)
Kondo, S. *et al., J. Antibiot.*, 1988, **41**, 1196 (*Pamamycin 607*)
Natsume, M. *et al., Chem. Comm.*, 1989, 1911 (*Pamamycin 607*)
Natsume, M. *et al., Tet. Lett.*, 1991, **32**, 3087 (*isol, struct*)
Graefe, U. *et al., Nat. Prod. Lett.*, 1993, **3**, 265 (*Pamamycin 621*)
Natsume, M. *et al., J. Antibiot.*, 1995, **48**, 1159-1164 (*isol*)
Haertl, A. *et al., J. Antibiot.*, 1998, **51**, 1040-1046 (*homologues*)
Kozone, I. *et al., J. Antibiot.*, 1999, **52**, 329-331 (*N-Demethylpamamycin 593*)
Lee, E. *et al., J.A.C.S.*, 2001, **123**, 10131-10132 (*Pamamycin 607, synth*)
Germay, O. *et al., Tet. Lett.*, 2001, **42**, 4969-4974 (*Pamamycin 607, synth*)
Wang, Y. *et al., Tet. Lett.*, 2001, **42**, 7801-7804 (*Pamamycin 607, synth*)
Kang, S.H. *et al., Angew. Chem., Int. Ed.*, 2002, **41**, 1392-1395 (*Pamamycin 607, synth*)
Jeong, E.J. *et al., J.A.C.S.*, 2002, **124**, 14655-14662 (*Pamamycin 607, synth*)
Fischer, P. *et al., Angew. Chem., Int. Ed.*, 2005, **44**, 6231-6234 (*Pamamycin 621A, 635B, synth*)
Hashimoto, M. *et al., Biosci., Biotechnol., Biochem.*, 2005, **69**, 315-320 (*biosynth*)
Hashimoto, M. *et al., J. Antibiot.*, 2005, **58**, 722-730 (*biosynth*)

Panacosmine P-44

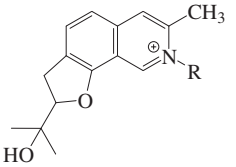
[250343-49-8]



$C_{21}H_{31}N_3O$ 341.495
Alkaloid from the seeds of *Acosmium panamense*. Amorph. yellow solid. $[\alpha]_D$ +45 (c, 1 in $CHCl_3$). λ_{max} 245 ; 318 (MeOH).

Nuzillard, J.-M. *et al., Tetrahedron*, 1999, **55**, 11511-11518

Panaefluoroline A P-45



R = -CH(COO$^{\ominus}$)CH(OH)CH$_3$

$C_{19}H_{23}NO_5$ 345.394
Isol. from the cultured mycobiont of the lichen *Amygdalaria panaeola*. Yellowish-green solid. $[\alpha]_D^{22}$ +265.6 (c, 0.4 in MeOH). λ_{max} 222 (log ϵ 4.08); 255 (log ϵ 4.14); 304 (log ϵ 3.46); 315 (log ϵ 3.38); 412 (log ϵ 3.71) (MeOH).

Kinoshita, K. *et al., Tet. Lett.*, 2003, **44**, 8009-8011 (*isol, pmr, cmr*)

Panaefluoroline B P-46

As Panaefluoroline A, P-45 with R = -CH$_2$COO$^{\ominus}$

$C_{17}H_{19}NO_4$ 301.341
Isol. from the cultured mycobiont of the lichen *Amygdalaria panaeola*. Yellowish-green solid. $[\alpha]_D^{22}$ +52.3 (c, 0.57 in MeOH). λ_{max} 218 (log ϵ 4.06); 256 (log ϵ 4.15); 305 (log ϵ 3.29); 317 (log ϵ 3.33); 412 (log ϵ 3.65) (MeOH).

Kinoshita, K. *et al., Tet. Lett.*, 2003, **44**, 8009-8011 (*isol, pmr, cmr*)

Panaefluoroline C P-47

As Panaefluoroline A, P-45 with R = -CH(CH$_3$)COO$^{\ominus}$

$C_{18}H_{21}NO_4$ 315.368
Isol. from the cultured mycobiont of the lichen *Amygdalaria panaeola*. Yellowish-green solid. $[\alpha]_D^{22}$ +264.7 (c, 1 in MeOH).

Kinoshita, K. *et al., Tet. Lett.*, 2003, **44**, 8009-8011 (*isol, pmr, cmr*)

Panaefluoroline D P-48

As Panaefluoroline A, P-45 with R = -CH(COO$^{\ominus}$)CH$_2$OH

$C_{18}H_{21}NO_5$ 331.368
Isol. from the cultured mycobiont of the lichen, *Amygdalaria panaeola*. Yellow cryst. ($CHCl_3$/MeOH/Me_2CO). Mp 152° dec. $[\alpha]_D^{25}$ +286.6 (c, 0.61 in MeOH). Relative config. has been determined. Fluorescent. λ_{max} 218 (log ϵ 4.49); 258 (log ϵ 4.55); 304 (log ϵ 3.7); 315 (log ϵ 3.67); 412 (log ϵ 4.01) (MeOH).

Kinoshita, K. *et al., J. Nat. Prod.*, 2005, **68**, 1723-1727 (*isol, pmr, cmr, cryst struct*)

Panaefluoroline E P-49

As Panaefluoroline A, P-45 with R = -CH(COO$^{\ominus}$)CH$_2$CH(CH$_3$)$_2$

$C_{21}H_{27}NO_4$ 357.449
Isol. from the cultured mycobiont of the lichen *Amygdalaria panaeola*. Amorph. yellow-green solid. $[\alpha]_D^{25}$ +197.4 (c, 0.27 in MeOH). Fluorescent. λ_{max} 211 (log ϵ 4.2); 260 (log ϵ 4.03); 304 (log ϵ 3.26); 317 (log ϵ 3.16); 413 (log ϵ 3.42) (MeOH).

Kinoshita, K. *et al., J. Nat. Prod.*, 2005, **68**, 1723-1727 (*isol, pmr, cmr*)

Panaefluoroline F P-50

As Panaefluoroline A, P-45 with R = -CH(COO$^{\ominus}$)CH(CH$_3$)$_2$

$C_{20}H_{25}NO_4$ 343.422
Isol. from the cultured mycobiont of the lichen *Amygdalaria panaeola*. Amorph. yellow-green solid. $[\alpha]_D^{25}$ +228.9 (c, 0.28 in MeOH). Fluorescent. λ_{max} 212 (log ϵ 4.21); 248 (sh) (log ϵ 3.97); 263 (log ϵ 4.03); 305 (sh) (log ϵ 3.35); 317 (sh) (log ϵ 3.22); 415 (log ϵ 3.45) (MeOH).

Kinoshita, K. *et al., J. Nat. Prod.*, 2005, **68**, 1723-1727 (*isol, pmr, cmr*)

Panaefluoroline G P-51

As Panaefluoroline A, P-45 with R = -CH(COO$^{\ominus}$)$CH_2C_6H_4OH$(*p*-)

$C_{24}H_{25}NO_5$ 407.465

Isol. from the cultured mycobiont of the lichen *Amygdalaria panaeola*. Amorph. yellow-green solid. $[\alpha]_D^{24}$ -110.3 (c, 0.31 in MeOH). Fluorescent. λ_{max} 214 (log ϵ 4.16); 258 (log ϵ 4.1); 313 (log ϵ 3.33); 414 (log ϵ 3.47) (MeOH).

Kinoshita, K. *et al., J. Nat. Prod.*, 2005, **68**, 1723-1727 (*isol, pmr, cmr*)

Panaefluoroline H P-52

As Panaefluoroline A, P-45 with R = -CH(COO$^{\ominus}$)CH_2CONH_2

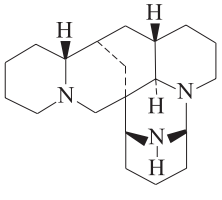
$C_{19}H_{22}N_2O_5$ 358.393

Isol. from the cultured mycobiont of the lichen *Amygdalaria panaeola*. Amorph. yellow-green solid. $[\alpha]_D^{25}$ +132.7 (c, 0.22 in MeOH). Fluorescent. λ_{max} 215 (log ϵ 4.27); 258 (log ϵ 4.26); 304 (sh) (log ϵ 3.35); 315 (sh) (log ϵ 3.3); 415 (log ϵ 3.62) (MeOH).

Kinoshita, K. *et al., J. Nat. Prod.*, 2005, **68**, 1723-1727 (*isol, pmr, cmr*)

Panamine, 9CI P-53

[2448-27-3]



(–)–*form*

$C_{20}H_{33}N_3$ 315.501

Alkaloid from *Ormosia* spp. (Fabaceae). Oil. Mp 285-287° (as diperchlorate). $[\alpha]_D$ -11. Autoxidises in air.

N-*Me:* Mp 103°. $[\alpha]_D$ +5.

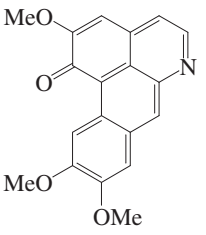
Stereoisomer: ***Ormosajine***
[11004-96-9]
$C_{20}H_{33}N_3$ 315.501
Alkaloid from *Ormosia jamaicensis* (Fabaceae). Cryst. + $4H_2O$. Mp 38-41°. $[\alpha]_D$ +23. Config. unknown.

Stereoisomer, dipicrate:
Cryst. + H_2O. Mp 178°.

Lloyd, H.A. *et al., J.A.C.S.*, 1958, **80**, 1506-1510 (*isol*)
Hassall, C.H. *et al., J.C.S.*, 1964, 2657-2663 (*isol, Ormosajine*)
Wilson, E.M. *et al., Tetrahedron*, 1965, **21**, 2561-2571 (*struct*)
Karle, I.L. *et al., Tet. Lett.*, 1966, 1659-1661 (*cryst struct*)
Davies, A.P. *et al., Tet. Lett.*, 1966, 6291-6294 (*struct, Ormosajine*)
Cannon, J.R. *et al., Tet. Lett.*, 1974, 1683-1686 (*abs config*)
Liu, H.-J. *et al., Can. J. Chem.*, 1976, **54**, 97-109 (*synth*)
Marcei, T.H. *et al., J. Magn. Reson.*, 1982, **48**, 158-163 (*cmr*)
Bhacca, N.S. *et al., J.A.C.S.*, 1983, **105**, 2538-2544 (*cmr, pmr*)

Pancoridine P-54

[39945-37-4]



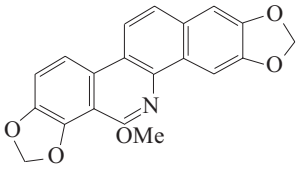
$C_{19}H_{15}NO_4$ 321.332

Alkaloid from the roots of *Corydalis paniculigera* and *Corydalis stricta*, and from the bark of *Popowia pisocarpa* (Papaveraceae, Annonaceae). Orange needles ($CHCl_3/Et_2O$). Mp 214° dec Mp 236-238°.

Kupchan, S.M. *et al., J.A.C.S.*, 1973, **95**, 4062 (*synth, uv, ir, pmr, ms*)
Cava, M.P. *et al., J.O.C.*, 1973, **38**, 2394 (*synth, uv, ir, pmr, ms*)
Alimova, M. *et al., Khim. Prir. Soedin.*, 1982, **18**, 727; *Chem. Nat. Compd. (Engl. Transl.)*, 1982, **18**, 689 (*isol*)
Irgashev, T. *et al., Khim. Prir. Soedin.*, 1983, **19**, 490; *Chem. Nat. Compd. (Engl. Transl.)*, 1983, **19**, 461 (*isol*)
Jossang, A. *et al., J. Nat. Prod.*, 1986, **49**, 1028 (*isol, pmr*)

Pancorine P-55

14-Methoxy[1,3]benzodioxolo[5,6-c]-1,3-dioxolo[4,5-i]phenanthridine, 9CI. 6-Methoxy-2,3;7,8-bis(methylenedioxy)-benzo[c]phenanthridine. 8-Methoxynorsanguinarine
[80559-46-2]



$C_{20}H_{13}NO_5$ 347.326

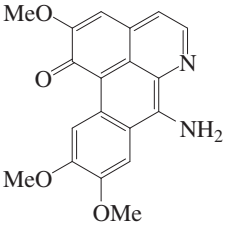
Doubtful structural assignment; spectral and physical props. of authentic synthetic 8-Methoxynorsanguinarine differ from those reported for natural Pancorine. Alkaloid from *Argemone mexicana* and *Corydalis paniculigera*. Cryst. ($CHCl_3$/EtOH). Mp 254-256°.

N-*Me:* ***8-Methoxysanguinarine***. N-*Methylpancorine*
$C_{21}H_{16}NO_5^{\oplus}$ 362.361
Quaternary alkaloid from the rhizomes of *Zanthoxylum nitidum*. Yellow powder (as chloride). Mp 172-183° (chloride). λ_{max} 235 (log ϵ 4.35); 285 (log ϵ 4.58); 324 (sh) (log ϵ 4.17); 343 (log ϵ 4.2); 355 (log ϵ 4.35); 419 (log ϵ 2.99); 508 (log ϵ 3.23) (EtOH).

Alimova, M. *et al., Khim. Prir. Soedin.*, 1981, **17**, 671; *CA*, **96**, 48970a
Suau, R. *et al., An. Quim., Ser. C*, 1988, **84**, 294
Chang, Y.-C. *et al., Z. Naturforsch., C*, 2003, **58**, 521-526 (*isol, pmr, ms*)
Cui, X.-G. *et al., Helv. Chim. Acta*, 2008, **91**, 155-158 (*8-Methoxysanguinarine*)

Pancorinine P-56

*7-Amino-2,9,10-trimethoxy-1*H*-dibenzo[de,g]quinolin-1-one, 9CI*
[85011-55-8]



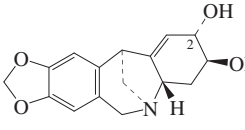
$C_{19}H_{16}N_2O_4$ 336.346

Unusual 7-aminoaporphine alkaloid. However studies by Kilmer *et al.* (2003) suggest a struct. revision is possible similar to that of Telazoline, T-62. Alkaloid from the roots of *Corydalis paniculigera* and *Corydalis stricta*. Cryst. ($CHCl_3$/MeOH). Mp 289-290°.

Alimova, M. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1982, **18**, 689 (*isol*)
Kilmer, L. *et al., J. Nat. Prod.*, 2003, **66**, 115-118 (*struct*)

Pancracine P-57

[21416-14-8]



(-)-*form*

$C_{16}H_{17}NO_4$ 287.315

Alkaloid from *Pancratium maritimum*, *Narcissus poeticus*, *Hippeastrum bifida* and *Hippeastrum vittatum* (Amaryllidaceae). Elongated prisms (MeOH). Mp 272-273°. $[\alpha]_D^{25}$ -74 (c, 0.02 in MeOH). λ_{max} 241 (log ϵ 3.64); 292 (log ϵ 3.72) (EtOH).

Perchlorate: Mp 163-166°.

Picrate: Mp 249-252°.

Di-Ac:
Cryst. (C_6H_6/petrol). Mp 163-165°.

O^2-*Me:* ***Montanine***†. O^2-*Methylpancracine*
[642-52-4]
$C_{17}H_{19}NO_4$ 301.341
Alkaloid from the bulbs of *Haemanthus montanus, Haemanthus amarylloides, Haemanthus coccineus* and two unidentified *Haemanthus* spp., *Haemanthus tigrinus* and *Hippeastrum bifida* (Amaryllidaceae). Weak hypotensive and convulsive agent (dog). Oil; microscopic needles + $1H_2O$ (H_2O). Mp 88-89° (hydrate). $[\alpha]_D^{26}$ -87.6 (c, 0.57 in $CHCl_3$). $[\alpha]_D^{26}$ -70.2 (c, 1.03 in $CHCl_3$). Also forms Me_2CO and $CHCl_3$ solvates, Mp 57-60° and 59-65° resp. λ_{max} 244 (log ϵ 3.65); 297 (log ϵ 3.71) (no solvent reported).

► LD_{50} (dog, ivn) 42 mg/kg.

O^2-*Me, perchlorate:*
Prisms. Mp 249-250° dec. $[\alpha]_D^{26}$ -18.17 (c, 1.23 in MeOH).

O^2-*Me, picrate:*
Yellow needles (H_2O). Mp 225-226° dec.

O^2-*Me, Ac:* **O-*Acetylmontanine***
$C_{19}H_{21}NO_5$ 343.379
Trace alkaloid from the bulbs of *Hippeastrum bifida* and *Rhodophiala bifida* (Amaryllidaceae). Mp 210-213° (as hydrochloride). CAS No not assigned to natural isomer to 14CI but refers to racemic material.

Di-Me ether: ***Manthine***
[606-51-9]
$C_{18}H_{21}NO_4$ 315.368
Alkaloid from *Haemanthus amaryloides* and *Haemanthus tigrinus* (Amaryllidaceae). Cryst. (Et_2O). Mp 114-116°. $[\alpha]_D^{26}$ -71.3 (c, 0.47 in $CHCl_3$). λ_{max} 243 (log ϵ 3.64); 294 (log ϵ 3.71) (no solvent reported).

2-Epimer, O^2-*Me:* ***Coccinine***
[485-57-4]
$C_{17}H_{19}NO_4$ 301.341
Alkaloid from *Haemanthus coccineus* and a few other *Haemanthus* spp. (Amaryllidaceae). Shows convulsive action in high dose. Mp 162-163°. $[\alpha]_D^{27}$ -189 (c, 1.9 in EtOH). λ_{max} 213 (log ϵ 4.25); 244 (log ϵ 3.58); 296 (log ϵ 3.64) (no solvent reported).

▶ Toxic, LD_{50} (dog, ivn) 17.5 mg/kg.

2-Epimer, O^2-*Me, perchlorate:* Mp 254-255° dec.

2-Epimer, O^2-*Me,* N-*Me:*
$C_{18}H_{22}NO_4^{\oplus}$ 316.376
Mp 223-224° (as iodide). $[\alpha]_D^{25}$ -60.5 (c, 1.4 in H_2O) (iodide).

3-Epimer: ***Brunsvigine***
[1354-81-0]
$C_{16}H_{17}NO_4$ 287.315
Alkaloid from *Brunsvigia cooperi* and *Brunsvigia radulosa* (Amaryllidaceae). Needles by subl. Mp 243°. $[\alpha]_D^{20}$ -76.6 (c, 1 in EtOH).

3-Epimer, picrate: Mp 219° (190°, 195-196° dec.).

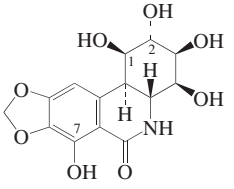
3-Epimer, di-Ac:
Needles (Et_2O/petrol). Mp 184°.

3-Epimer, O^2-*Me:* ***Manthidine***
[43208-82-8]
$C_{17}H_{19}NO_4$ 301.341
Isol. from *Hippeastrum coccineus* and from two unidentified *Hippeastrum* spp. Cryst. by subl. Mp 269-270°. $[\alpha]_D^{21.5}$ -26.6 (c, 0.6 in $CHCl_3$). λ_{max} 240 (log ϵ 3.63); 294 (log ϵ 3.72) (no solvent reported).

Wildman, W.C. *et al., J.A.C.S.*, 1955, **77**, 1248-1252 (*Manthine, Coccinine, Manthidine, Montanine, isol*)
Briggs, L.H. *et al., Anal. Chem.*, 1957, **29**, 904-911 (*Montanine, Manthidine, ir*)
Dry, L.J. *et al., J.C.S.*, 1958, 4701-4704 (*Brunsvigine, isol*)
Inubushi, Y. *et al., J.O.C.*, 1960, **25**, 2153-2164 (*Manthine, Montanine, Brunsvigine, struct*)
Duffield, A.M. *et al., J.A.C.S.*, 1965, **87**, 4902-4912 (*Coccinine, Montanine, ms*)
Wildman, W.C. *et al., Pharmazie*, 1967, **22**, 725 (*O-Acetylmontanine*)
Wildman, W.C. *et al., J.A.C.S.*, 1968, **90**, 6439-6446 (*Pancracine, Montanine, isol, uv, ms, struct, bibl*)
Fuganti, C. *et al., Chem. Comm.*, 1973, 430-431 (*Manthidine, biosynth*)
Clark, R.C. *et al., Tetrahedron*, 1975, **31**, 1855-1859 (*Brunsvigine, struct*)
Ali, A.A. *et al., Planta Med.*, 1984, **50**, 188-189 (*uv, pmr, cmr, cd, stereochem*)
Overman, L.E. *et al., J.O.C.*, 1991, **56**, 5005-5007 (*synth*)
Ishizaki, M. *et al., J.O.C.*, 1992, **57**, 7285-7295 (*Pancracine, Brunsvigine, Manthine, Coccinine, Montanine, O-Acetylmontanine, synth*)
Ishizaki, M. *et al., J.C.S. Perkin 1*, 1993, 101-110 (*Pancracine, Coccinine, Montanine, synth*)
Overman, L.E. *et al., J.O.C.*, 1993, **58**, 4662-4672 (*synth*)
Jin, J. *et al., J.A.C.S.*, 1997, **119**, 5773-5784 (*Montanine, Coccinine, Brunsvigine, synth*)
Labrana, J. *et al., Phytochemistry*, 2002, **60**, 847-852 (*isol, cmr*)
Pandey, G. *et al., Org. Lett.*, 2005, **7**, 3713-3716 (*synth*)
Banwell, M.G. *et al., Org. Lett.*, 2007, **9**, 3503-3506 (*synth*)
Hong, A.-W. *et al., J.O.C.*, 2008, **73**, 7580-7585 (*Brunsvigine, Manthine, synth*)

Pancratistatin P-58

NSC 349156
[96203-70-2]
[120962-18-7 ((±)-form)]



(+)-*form*

$C_{14}H_{15}NO_8$ 325.274
Alkaloid from the roots and bulbs of *Hymenocallis littoralis* (*Pancratium littorale*) and bulbs of *Haemanthus kalbreyeri*. Also isol. from the Texas grasshopper *Brachystola magna*. Possesses antineoplastic activity. Shows good activity against P-388 leukaemia cells and M5076 sarcoma. Cryst. (DMF/MeOH/Et_2O). Sol. DMSO; fairly sol. MeOH; poorly sol. Me_2CO, hexane. Mp 322-324°. $[\alpha]_D^{34}$ +48 (c, 1.0 in DMSO). λ_{max} 209 (sh) ; 219 (sh) ; 233 (ϵ 20900); 278 (ϵ 8130); 308 (sh) (MeOH) (Derep).

2-O-*β-D-Glucopyranoside:* ***Pancratiside***
[121849-70-5]
$C_{20}H_{25}NO_{13}$ 487.416
Alkaloid from the bulbs of *Haemanthus kalbreyeri* (Amaryllidaceae). Light brown hygroscopic solid. Mp 203-218° (foaming, dec.). $[\alpha]_D^{28}$ +22.5 (c, 1.2 in H_2O).

Penta-Ac: Mp 162-166°.

1-O-*(3-Hydroxybutanoyl):* ***1-(3-Hydroxybutanoyl)pancratistatine***
[212953-15-6]
$C_{18}H_{21}NO_{10}$ 411.365
Alkaloid from the bulbs of *Zephyranthes carinata*. Cytotoxic agent. $[\alpha]_D^{25}$ +19.2 (c, 0.2 in MeOH). λ_{max} 231 (log ϵ 4.05); 279 (log ϵ 3.7) (MeOH).

1-O-*(3-β-D-Glucopyranosyloxybutanoyl):* ***1-(3-Glucopyranosyloxybutanoyl)pancratistatine***
[212953-16-7]
$C_{24}H_{31}NO_{15}$ 573.507
Alkaloid from the bulbs of *Zephyranthes carinata*. Cytotoxic agent. $[\alpha]_D^{25}$ +20.7 (c, 0.5 in MeOH). λ_{max} 235 (log ϵ 3.84); 272 (log ϵ 3.57) (MeOH).

O^7-*Me:* Mp 294-298° dec. $[\alpha]_D^{25}$ +289.9 (c, 0.69 in DMSO).

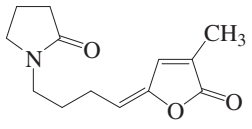
7-*Deoxy:* ***7-Deoxypancratistatine***
[83603-30-9]
$C_{14}H_{15}NO_7$ 309.275
Alkaloid from *Haemanthus kalbreyeri* (Amaryllidaceae). Phytotoxin. Straw-coloured solid. Mp 310-314° dec. $[\alpha]_D^{28}$ +53.7 (c, 0.42 in DMSO). λ_{max} 222 (ϵ 19950); 262 (sh) (ϵ 4700); 270 (ϵ 7580); 305 (ϵ 3235) (MeOH) (Berdy).

7-*Deoxy,* 1-O-*(2-acetamido-2-deoxy-β-D-glucopyranoside):* ***Telastaside***
[133056-61-8]
$C_{22}H_{28}N_2O_{12}$ 512.469
Alkaloid from the insect *Polytela gloriosa* which feeds on various Amaryllidaceae. Mp 214-218° (dec.) (as per-Ac). $[\alpha]_D^{28}$ +78.5 (c, 0.8 in H_2O). λ_{max} 222 (sh) ; 233 (log ϵ 4.02); 260 (sh) ; 272 (log ϵ 3.58); 305 (log ϵ 3.14) (MeOH).

Pettit, G.R. *et al., J. Nat. Prod.*, 1986, **49**, 995-1002; 1995, **58**, 37-43 (*Pancristatin, isol, uv, ir, pmr, ms, synth, cryst struct*)
Danishefsky, S. *et al., J.A.C.S.*, 1989, **111**, 4829-4837 (*synth, ir, pmr*)
Ghosal, S. *et al., Phytochemistry*, 1989, **28**, 611-613 (*Pancratiside, 7-Deoxypancratistatine*)
Ghosal, S. *et al., J. Chem. Res., Synop.*, 1990, 334-335 (*Telastaside*)
Tian, X. *et al., J.A.C.S.*, 1995, **117**, 3643-3644 (*synth*)
Trost, B.M. *et al., J.A.C.S.*, 1995, **117**, 10143-10144 (*synth*)
Tian, X. *et al., Synlett*, 1995, 1125-1126 (*synth, 7-Deoxypancratistatine*)
Chida, N. *et al., Heterocycles*, 1996, **43**, 1385-1390 (*7-Deoxypancratistatine, synth*)
Doyle, T.J. *et al., Tetrahedron*, 1997, **53**, 11153-11170 (*synth*)
Keck, G.E. *et al., J.O.C.*, 1998, **63**, 9164-9165 (*7-Deoxypancratistatine, synth*)
Kojima, K. *et al., Phytochemistry*, 1998, **48**, 1199-1202 (*butanoyl derivs*)
Magnus, P. *et al., Tetrahedron*, 1998, **54**, 15509-15524 (*synth*)
Grubb, L.M. *et al., Tet. Lett.*, 1999, **40**, 2691-2694 (*synth, bibl*)
Rigby, J.H. *et al., J.A.C.S.*, 2000, **122**, 6624-6628 (*synth*)
Pettit, G.R. *et al., J.O.C.*, 2001, **66**, 2583-2587 (*synth*)
Hudlicky, T. *et al., J.O.C.*, 2002, **67**, 8726-8743 (*synth*)
Ko, H. *et al., J.O.C.*, 2004, **69**, 112-121 (*synth*)
Pettit, G.R. *et al., J. Nat. Prod.*, 2005, **68**, 1256-1258 (*isol, cryst struct*)
Li, M. *et al., Tet. Lett.*, 2006, **47**, 3707-3710 (*synth*)
Pettit, G.R. *et al., J. Nat. Prod.*, 2007, **70**, 417-422 (*synth*)
Manpadi, M. *et al., Org. Prep. Proced. Int.*, 2008, **40**, 109-161 (*rev*)

Pandamarilactam 3x P-59

1-[4-(4-Methyl-5-oxo-2(5H)-furanylidene)butyl]-2-pyrrolidinone, 9CI
[189179-33-7]



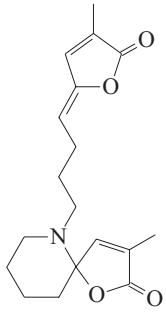
$C_{13}H_{17}NO_3$ 235.282
Alkaloid from *Pandanus amaryllifolius.* Food flavouring.

(Z)-Isomer: ***Pandamarilactam 3y***
[189179-35-9]
$C_{13}H_{17}NO_3$ 235.282
Alkaloid from *Pandanus amaryllifolius.* Food flavouring.

Sjaifullah, A. *et al., CA*, 1997, **126**, 297535w (*isol*)
Takayama, H. *et al., Heterocycles*, 1999, **50**, 75-78 (*synth*)

Pandamarilactone 1 P-60

[152606-63-8]

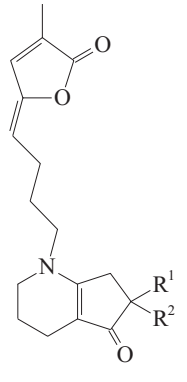


$C_{18}H_{23}NO_4$ 317.384
Alkaloid from leaves of *Pandanus amaryllifolius* (Pandanaceae). Food flavouring. Yellow amorph. solid. $[\alpha]_D$ -33 (c, 0.1 in MeOH).

Nonato, M.G. *et al., Phytochemistry*, 1993, **34**, 1159 (*isol, uv, ir, pmr, cmr, struct*)

Pandamarilactone 31 P-61

[152606-64-9]



R^1 = OMe, R^2 = CH_3

$C_{19}H_{25}NO_4$ 331.411
Alkaloid from leaves of *Pandanus amaryllifolius* (Pandanaceae). Food flavouring. Amorph. solid. $[\alpha]_D$ -2 (c, 0.1 in MeOH).

Nonato, M.G. *et al., Phytochemistry*, 1993, **34**, 1159 (*isol, uv, ir, pmr, cmr, struct*)

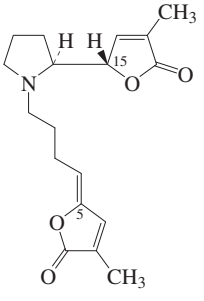
Pandamarilactone 32 P-62

[152606-65-0]
As Pandamarilactone 31, P-61 with
R^1R^2 = CH_2
$C_{18}H_{21}NO_3$ 299.369
Major alkaloid from leaves of *Pandanus amaryllifolius* (Pandanaceae). Food flavouring. Amorph. solid.

Nonato, M.G. *et al., Phytochemistry*, 1993, **34**, 1159 (*isol, uv, ir, pmr, cmr, struct*)

Pandamarilactonine A P-63

[303008-80-2]



Absolute Configuration

$C_{18}H_{23}NO_4$ 317.384
Relative config. revised in 2002. Alkaloid from *Pandanus amaryllifolius.* Food flavouring. Amorph. powder. $[\alpha]_D^{23}$ +35 (c, 4.4 in $CHCl_3$). Partial racemate. λ_{max} 207 (log ϵ 1.82); 232 (sh) ; 275 (log ϵ 2.43) (MeOH).

N-*Dealkyl: 3-Methyl-5-(2-pyrrolidinyl)-2(5H)-furanone.* ***Norpandamarilactonine A***
[367941-40-0]
$C_9H_{13}NO_2$ 167.207
Alkaloid from *Pandanus amaryllifolius.* Food flavouring. Amorph. powder. Racemic. λ_{max} 207 (log ϵ 2.29); 252 (log ϵ 0.35); 274 (log ϵ 0.44) (MeOH).

*5*E-*Isomer:* ***Pandamarilactonine C***
[477332-25-5]
$C_{18}H_{23}NO_4$ 317.384
Alkaloid from *Pandanus amaryllifolius.* Food flavouring. Amorph. powder. $[\alpha]_D^{23}$ +26.2 (c, 1 in $CHCl_3$). λ_{max} 201 (log ϵ 3.67); 220 (sh) ; 275 (log ϵ 4.23) (MeOH).

15-Epimer: ***Pandamarilactonine B***
[468097-76-9]
$C_{18}H_{23}NO_4$ 317.384
Alkaloid from *Pandanus amaryllifolius.* Food flavouring. Amorph. powder. Racemic. λ_{max} 207 (log ϵ 1.72); 232 (sh) ; 275 (log ϵ 2.49) (MeOH).

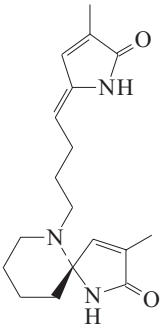
15-Epimer, N-*oxide:* ***Pandamarilactonine B* N-*oxide***
$C_{18}H_{23}NO_5$ 333.383
Alkaloid from *Pandanus amaryllifolius.* Amorph. solid. Dec. readily. Probable artifact.

15-Epimer, N-*dealkyl:* ***Norpandamarilactonine B***
[367941-41-1]
$C_9H_{13}NO_2$ 167.207
Alkaloid from *Pandanus amaryllifolius.* Food flavouring. Amorph. powder. Racemic. λ_{max} 207 (log ϵ 2.58); 253 (log ϵ 0.29); 274 (log ϵ 0.36) (MeOH).

*15-Epimer, 5*E-*isomer:* ***Pandamarilactonine D***
[477332-26-6]
$C_{18}H_{23}NO_4$ 317.384
Alkaloid from *Pandanus amaryllifolius.* Food flavouring. Amorph. powder. Racemic. λ_{max} 203 (log ϵ 4.3); 234 (sh) ; 276 (log ϵ 4.38) (MeOH).

Takayama, H. *et al., J.A.C.S.*, 2000, **122**, 8635-8639 (*isol*)
Takayama, H. *et al., J. Nat. Prod.*, 2001, **64**, 1224-1225 (*Norpandamarilactonines*)
Takayama, H. *et al., Chem. Pharm. Bull.*, 2002, **50**, 1303-1304 (*isol, synth, pmr, cmr*)
Blanco, P. *et al., Eur. J. Org. Chem.*, 2004, 48-53 (*synth*)
Salin, A.A. *et al., J. Nat. Prod.*, 2004, **67**, 54-57 (*Pandamarilactonine B N-oxide*)
Takayama, H. *et al., Tet. Lett.*, 2005, **46**, 5795-5797 (*synth, abs config*)
Honda, T. *et al., Tet. Lett.*, 2006, **47**, 6251-6254 (*synth*)

Pandamarine P-64



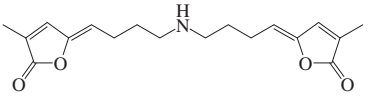
$C_{18}H_{25}N_3O_2$ 315.414

(±)-*form* [145940-69-8]
Major alkaloid from leaves of *Pandanus amaryllifolius* (Pandanaceae). Plates (MeOH/EtOAc/Et_2O). Mp 210-211°.

Byrne, L.T. *et al., Aust. J. Chem.*, 1992, **45**, 1903 (*isol, uv, ir, pmr, cmr, ms, cryst struct*)

Pandanamine P-65

5,5′-(Iminodi-4-butanyl-1-ylidene)bis[3-methyl-2(5H)-furanone], 9CI
[302914-53-0]



$C_{18}H_{23}NO_4$ 317.384
Alkaloid from *Pandanus amaryllifolius.* Food flavouring. Amorph. powder. λ_{max}

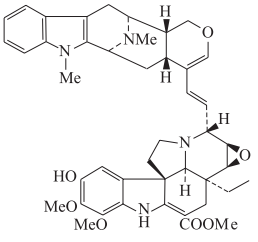
203 (log ϵ 1.86); 242 (sh) ; 273 (log ϵ 1.15) (MeOH).

*(*E,E*)-Isomer:* ***(E,E)-Pandanamine***
[657389-58-7]
$C_{18}H_{23}NO_4$ 317.384
Minor alkaloid from *Pandanus amaryllifolius.*

Takayama, H. *et al., J.A.C.S.*, 2000, **122**, 8635-8639 (*synth*)
Takayama, H. *et al., Tet. Lett.*, 2001, **42**, 2995-2996 (*Z,Z-isomer*)
Salim, A.A. *et al., J. Nat. Prod.*, 2004, **67**, 54-57 (*isol*)

Pandicine P-66

[76282-39-8]



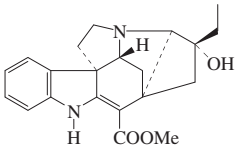
Probable absolute configuration

$C_{44}H_{50}N_4O_7$ 746.902
Alkaloid from the leaves of *Pandacastrum saccharatum* (preferred genus name *Tabernaemontana*) (Apocynaceae). Brown amorph. solid.

Kan-Fan, C. *et al., J.O.C.*, 1981, **46**, 1481 (*uv, ir, pmr, cmr, ms, struct*)

Pandine P-67

[55855-14-6]



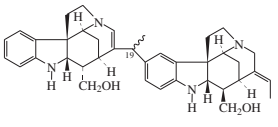
Absolute Configuration

$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from *Pandaca caducifolia* and other *Pandaca* spp.; also from *Ervatamia lifuana* and *Ervatamia orientalis* (Apocynaceae). Mp 108-113°. $[\alpha]_D$ +273 (MeOH).

Hoizey, M.J. *et al., Phytochemistry*, 1974, **13**, 1994 (*isol, ir, uv, pmr, ms*)
LeMen, J. *et al., Tet. Lett.*, 1974, 3119 (*ir, uv, pmr, cmr, struct*)
Ducruix, A. *et al., Acta Cryst. B*, 1977, **33**, 1990 (*cryst struct*)
Bruneton, J. *et al., Planta Med.*, 1980, **39**, 180 (*isol*)

Panganensine X P-68

[182745-08-0]



Absolute Configuration

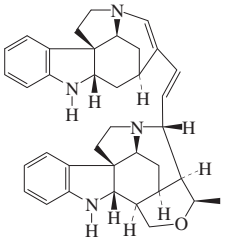
$C_{38}H_{46}N_4O_2$ 590.807
Alkaloid from root bark of *Strychnos panganensis.* $[\alpha]_D$ +14 (c, 0.18 in $CHCl_3$). The 16-configs. are opposite in the two halves of the molecule. λ_{max} 220 ; 247 ; 300 (MeOH).

19-Epimer: ***Panganensine Y***
[182966-44-5]
$C_{38}H_{46}N_4O_2$ 590.807
From root bark of *Strychnos panganensis.* $[\alpha]_D$ +34 (c, 0.48 in $CHCl_3$). λ_{max} 208 ; 247 ; 301 (MeOH).

Nuzillard, J.-M. *et al., Phytochemistry*, 1996, **43**, 897-902 (*isol, uv, ir, pmr, cmr, ms, struct*)

Panganensine R P-69

R-*Panganensine*
[182817-43-2]



Absolute Configuration

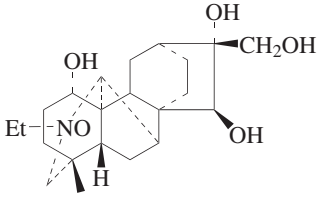
$C_{38}H_{44}N_4O_2$ 588.791
Curan dimer. Alkaloid from root bark of *Strychnos panganensis.* $[\alpha]_D$ +66 (c, 0.28 in $CHCl_3$). λ_{max} 207 ; 247 ; 292 (MeOH).

19′-Epimer: ***Panganensine S***. S-*Panganensine*
[182969-74-0]
$C_{38}H_{44}N_4O_2$ 588.791
From root bark of *Strychnos panganensis.* $[\alpha]_D$ +71 (c, 1.58 in $CHCl_3$). λ_{max} 206 ; 248 ; 295 (MeOH).

Nuzillard, J.-M. *et al., Phytochemistry*, 1996, **43**, 897-902 (*isol, uv, ir, pmr, cmr, ms, struct*)

Paniculamine P-70

[174545-79-0]



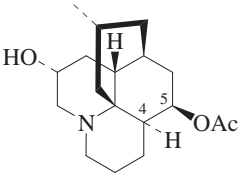
$C_{22}H_{35}NO_5$ 393.522
Alkaloid from roots of *Aconitum paniculatum*. Cryst. (MeOH or Py). Mp 222-224°.

*17-*O*-(3,4-Dimethoxybenzoyl),* N*-deoxy:*
$C_{31}H_{43}NO_7$ 541.683
Alkaloid from *Aconitum variegatum*. Amorph. solid. $[\alpha]_D^{25}$ +30 (c, 0.11 in $CHCl_3$).

Yusupova, I.M. *et al., Khim. Prir. Soedin.*, 1995, **31**, 277; *Chem. Nat. Compd. (Engl. Transl.)*, 1995, **31**, 228
Diaz, J.G. *et al., Phytochemistry*, 2005, **66**, 837-846 (*Aconitum variegatum alkaloid*)

Paniculine† P-71

10-Hydroxyacetyldihydrolycopodine. Alkaloid P2
[61328-14-1]



$C_{18}H_{29}NO_3$ 307.432
Alkaloid from *Lycopodium paniculatum* and *Lycopodium confertum* (Lycopodiaceae). Cryst. (Me_2CO). Mp 65-66°.

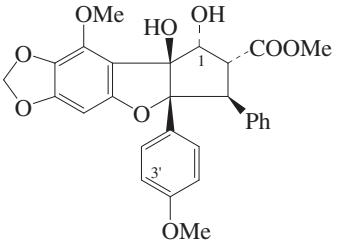
O-*De-Ac:* ***Deacetylpaniculine***
[73907-65-0]
$C_{16}H_{27}NO_2$ 265.395
Alkaloid from *Lycopodium paniculatum* and *Lycopodium confertum* (Lycopodiaceae). Cryst. (Me_2CO). Mp 172-174°.

Deacetoxy, 4,5-didehydro: ***Anhydrodeacetylpaniculine****. Alkaloid P5*
[61328-12-9]
$C_{16}H_{25}NO$ 247.38
Alkaloid from *Lycopodium paniculatum* (Lycopodiaceae). Cryst. (Me_2CO). Mp 175-185° dec.

Castillo, M. *et al., Can. J. Chem.*, 1976, **54**, 2900 (*isol, ir, pmr, ms, Anhydrodeacetylpaniculine*)
Morales, G. *et al., Phytochemistry*, 1979, **18**, 1719 (*Deacetylpaniculine*)
Muñoz, O. *et al., Heterocycles*, 1982, **19**, 2287 (*pmr, cmr, struct*)
Garland, M.T. *et al., J. Appl. Crystallogr.*, 1982, **15**, 112 (*Deacetylpaniculine, cryst struct*)
Manríquez, V. *et al., Acta Cryst. C*, 1988, **44**, 165 (*cryst struct*)
Muñoz, O.M. *et al., J. Nat. Prod.*, 1990, **53**, 200 (*pmr, cmr, Paniculine, Deacetylpaniculine*)

Pannellin P-72

[217481-12-4]



$C_{28}H_{26}O_9$ 506.508
Flavagline compd. Constit. of *Aglaia elaeagnoidea* and *Aglaia edulis.* Shows insecticidal and antifungal activities. Mp 102-104°. $[\alpha]_D^{20}$ -50 (c, 0.3 in

$CHCl_3$). λ_{max} 228 (sh) (log ϵ 4.11); 285 (sh) (log ϵ 3.64); 298 (log ϵ 3.73) (MeOH).

1-Ac: ***1*-O-*Acetylpannellin***
[217466-04-1]
$C_{30}H_{28}O_{10}$ 548.545
Constit. of *Aglaia elaeagnoidea*. Shows insecticidal activity. $[\alpha]_D^{20}$ -65 (c, 0.1 in $CHCl_3$). λ_{max} 228 (sh) (log ϵ 4.08); 285 (sh) (log ϵ 3.63); 298 (log ϵ 3.71) (MeOH).

Parent acid, dimethylamide: ***Aglaroxin A***
[176785-75-4]
$C_{29}H_{29}NO_8$ 519.55
Constit. of *Aglaia edulis* and *Aglaia roxburghiana*. Shows insecticidal and antifungal activities. $[\alpha]_D^{20}$ -81 (c, 0.4 in $CHCl_3$).

Parent acid, dimethylamide, 1-Ac: ***1*-O-*Acetylaglaroxin A***
$C_{31}H_{31}NO_9$ 561.587
Constit. of the bark of *Aglaia edulis*. Cytotoxic. Amorph. powder. $[\alpha]_D^{22}$ -69 (c, 0.1 in EtOH). λ_{max} 205 (log ϵ 4.84); 297 (log ϵ 3.73) (EtOH).

3′-Methoxy: ***3′-Methoxypannellin***
[217466-05-2]
$C_{29}H_{28}O_{10}$ 536.534
Constit. of *Aglaia elaeagnoidea*. $[\alpha]_D^{20}$ -45 (c, 0.1 in $CHCl_3$). λ_{max} 228 (sh) (log ϵ 3.74); 285 (log ϵ 3.75); 298 (sh) (log ϵ 3.67) (MeOH).

3′-Methoxy, parent acid, dimethylamide: ***Aglaroxin B***
[176785-76-5]
$C_{30}H_{31}NO_9$ 549.576
Constit. of *Aglaia roxburghiana*.

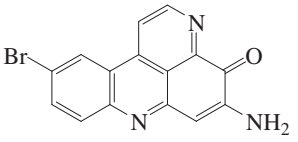
3′-Methoxy, parent acid, dimethylamide, 1-Ac: ***1*-O-*Acetyl-3′-methoxyaglaroxin A***
$C_{32}H_{33}NO_{10}$ 591.613
Constit. of the bark of *Aglaia edulis*. Cytotoxic. Amorph. powder. $[\alpha]_D^{22}$ -132 (c, 0.2 in MeOH). λ_{max} 208 (log ϵ 4.52); 284 (log ϵ 3.56) (MeOH).

3′-Methoxy, 2′-hydroxy, parent acid, dimethylamide: 2′-Hydroxyaglaroxin B. ***Aglaroxin F***
[251982-68-0]
$C_{30}H_{31}NO_{10}$ 565.576
Constit. of the stems of *Aglaia oligophylla* and *Aglaia roxburghiana*. Amorph. solid.

Pat. Coop. Treaty (WIPO), 1996, 96 04 284; *CA*, **124**, 335673h (*Aglaroxin B*)
Brader, G. *et al., J. Nat. Prod.*, 1998, **61**, 1482-1490 (*isol, uv, ir, pmr, cmr, ms, 1-Ac*)
Molleyres, L.-P. *et al., Pestic. Sci.*, 1999, **55**, 486-503 (*Aglaroxins*)
Bacher, M. *et al., Phytochemistry*, 1999, **52**, 253-263 (*Aglaroxin A*)
Engelmeier, D. *et al., J. Agric. Food Chem.*, 2000, **48**, 1400-1404 (*isol, activity*)
Dreyer, M. *et al., J. Nat. Prod.*, 2001, **64**, 415-420 (*Aglaroxin A, abs config*)
Bringmann, G. *et al., J. Nat. Prod.*, 2003, **66**, 80-85 (*2′-Hydroxyaglaroxin B*)
Koul, O. *et al., Entomol. Exp. Appl.*, 2005, **114**, 197-204 (*Aglaroxin A, activity*)
Kim, S. *et al., J. Nat. Prod.*, 2006, **69**, 1769-1775 (*1-Acetylaglaroxin A, 1-Acetyl-3′-methoxyaglaroxin A*)

Pantherinine P-73

[152606-66-1]

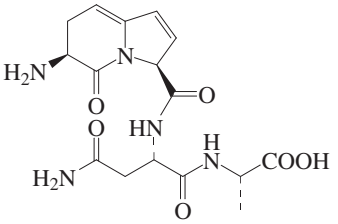


$C_{15}H_8BrN_3O$ 326.152
Alkaloid from the ascidian *Aplidium pantherinum*. Exhibits mild cytotoxicity against P388 murine leukaemia cells. Purple powder. λ_{max} 254 (ϵ 16110); 316 (ϵ 3950) (MeOH) (Berdy).

Ac:
Red glass.

Kim, J. *et al., J. Nat. Prod.*, 1993, **56**, 1813-1816 (*isol, uv, ir, pmr, cmr, ms, struct*)
Nakahara, S. *et al., Tet. Lett.*, 1998, **39**, 5531-5522 (*synth*)

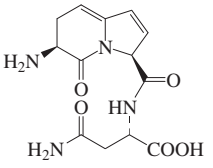
Pantocin A_2 P-74



$C_{16}H_{21}N_5O_6$ 379.372
Minor metab. of *Pantoea agglomerans*. Antibiotic. $[\alpha]_D^{25}$ -202 (c, 0.5 in H_2O). λ_{max} 201 (ϵ 9550); 273 (ϵ 4040) (no solvent reported).

Jin, M. *et al., Angew. Chem., Int. Ed.*, 2003, **42**, 2898-2901; 2902-2905 (*isol, pmr, cmr, ms*)

Pantocin A† P-75



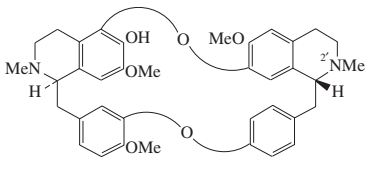
Absolute Configuration

$C_{13}H_{16}N_4O_5$ 308.293
Prod. by *Pantoea agglomerans* (formerly *Erwinia herbicola*). Antibiotic. $[\alpha]_D^{25}$ -291.1 (c, 1.8 in H_2O). λ_{max} 200 (ϵ 12090); 272 (ϵ 5450) (H_2O).

Jin, M. *et al., Angew. Chem., Int. Ed.*, 2003, **42**, 2898-2901; 2902-2905 (*isol, pmr, cmr, N-15 nmr*)

Panurensine P-76

[55701-99-0]



$C_{37}H_{40}N_2O_6$ 608.733
Alkaloid from the stems of *Abuta panurensis* (Menispermaceae). Cryst. (CH_2Cl_2/hexane). Mp 156-158°. $[\alpha]_D$ -245.6 (c, 0.5 in $CHCl_3$). Rapidly turns yellow on exp. to light and air. λ_{max} 225 (ϵ 25500); 240 (ϵ 39000); 288 (ϵ 20700) (EtOH/NaOH) (Derep). λ_{max} 224 (ϵ 24000); 239 (ϵ 35400); 286 (ϵ 16800) (EtOH) (Derep).

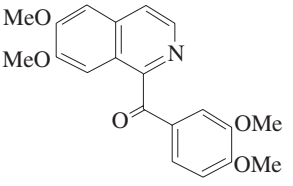
N$^{2'}$*-De-Me:* ***Norpanurensine****. 2′-Demethylpanurensine*
[55702-00-6]
$C_{36}H_{38}N_2O_6$ 594.706
Alkaloid from *Abuta panurensis* (Menispermaceae). Needles (MeOH). Mp 175°. $[\alpha]_D$ -250 (c, 0.1 in $CHCl_3$). λ_{max} 225 (ϵ 25500); 240 (ϵ 39000); 288 (ϵ 20700) (EtOH/NaOH) (Derep). λ_{max} 224 (ϵ 24000); 239 (ϵ 35400); 286 (ϵ 16800) (EtOH) (Derep).

Me ether:
Prisms (EtOAc/hexane). Mp 124-125°. $[\alpha]_D$ -210 (c, 0.05 in $CHCl_3$).

Cava, M.P. *et al., J.O.C.*, 1975, **40**, 2647 (*isol, uv, ir, pmr, ms, struct*)

Papaveraldine P-77

6,7-Dimethoxy-1-(3,4-dimethoxybenzoyl)isoquinoline. Xanthaline†
[522-57-6]



$C_{20}H_{19}NO_5$ 353.374
Isol. from *Papaver somniferum* preparations (opium) (Papaveraceae). Mp 210°. Probably an artifact.

Hydrochloride: Mp 198-199°.

Picrate: Mp 208-209°.

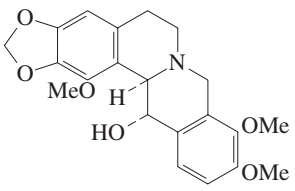
N-*Me:* **N-*Methylpapaveraldinium***. N-*Methylxanthalinium*
[7668-80-6]
$C_{21}H_{22}NO_5^{\oplus}$ 368.408
Quaternary alkaloid from *Stephania sasakii* (Menispermaceae). Mp 159.5-161° (as chloride). CAS no. refers to chloride.

3′-O-*De-Me,* N-*Me:* ***Thalprzewalskiinone***
[219915-63-6]
$C_{20}H_{20}NO_5^{\oplus}$ 354.382
Alkaloid from the roots of *Thalictrum przewalskii*. Yellow cryst. (as iodide). Mp 196-197° (iodide). Revised struct. (2001). λ_{max} 256 (log ϵ 4.38); 302 (log ϵ 3.89); 326 (log ϵ 3.94) (MeOH).

Noller, C.R. *et al., J.A.C.S.*, 1950, **72**, 17 (*uv*)
Guthrie, D.A. *et al., Can. J. Chem.*, 1955, **33**, 729 (*synth*)
Kunitomo, J. *et al., Yakugaku Zasshi*, 1966, **86**, 456; *CA*, **65**, 10633g (N-*Methylpapaveraldinium*)
Wu, W.-N. *et al., J. Nat. Prod.*, 1980, **43**, 143 (*ir, pmr, ms*)
Wasserman, H.H. *et al., Tet. Lett.*, 1989, **30**, 869 (*synth*)

Al-Howiriny, T.A. *et al., J. Nat. Prod.*, 2001, **64**, 823-826 (*Thalprzewalskiinone*)

Papaverberbine P-78



$C_{21}H_{23}NO_6$ 385.416

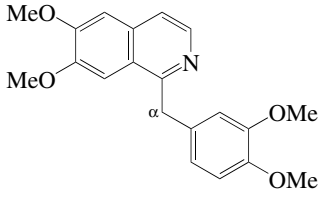
N-*Me (α-):* **N-*Methylpapaverberbine***
[131723-86-9]
$C_{22}H_{26}NO_6^{\oplus}$ 400.45
Alkaloid from *Papaver pseudo-orientale* (Papaveraceae). Amorph. (as iodide). $[\alpha]_D$ -133 (c, 0.09 in MeOH). CA no. refers to iodide.

[107118-04-7]

Sariyar, G. *et al., J. Nat. Prod.*, 1990, **53**, 1302 (*isol, uv, pmr, ms, struct*)

Papaverine, BAN P-79

6,7-Dimethoxy-1-(3,4-dimethoxybenzyl)-isoquinoline. Papaveroline tetramethyl ether. NSC 35443
[58-74-2]



$C_{20}H_{21}NO_4$ 339.39
Alkaloid from *Papaver somniferum* (opium poppy) and *Rauwolfia serpentina* (Papaveraceae, Apocynaceae). Used as 0.05*M* soln. in $CHCl_3$ for extraction-photometric detn. of Zr (λ_{max} 580 nm, ϵ 51000); flotation-photometric detn. of Te (with bromide). Antianginal, anticholinergic agent. Smooth muscle relaxant, vasodilator, antiasthmatic agent. Oral antispasmodic agent which has been used for treating gastrointestinal spasm. Shows anti-HIV activity. Prisms (EtOH/Et_2O). Mp 147-148°. pK_a 6.4 (25°). Log P 3.37 (calc). λ_{max} 239 (ϵ 67500); 279 (ϵ 7380); 314 (ϵ 4000); 327 (ϵ 4660) (EtOH) (Berdy).

▶ Gastrointestinal and other adverse effects reported when used therapeutically, can cause drowsiness and dizziness by ingestion. LD_{50} (rat, orl) 325mg/kg. NW8450000

Hydrochloride: Papaverine hydrochloride, USAN. Cerespan. Pavabid. Brovon
[61-25-6]
Rods (H_2O). Mp 221-222° dec. Component of Copavin.

▶ Adverse therapeutic effects similar to papaverine. LD_{50} (rat, orl) 360 mg/kg. Exp. teratogen. NW8575000

N-*Me:* ***Densiberine***. N-*Methylpapaverine*
[19716-71-3]
$C_{21}H_{24}NO_4^{\oplus}$ 354.425
Quaternary alkaloid from *Berberis densiflora*. Cryst. (EtOH) (as chloride). Mp 156-157° (chloride). CAS no. refers to chloride. λ_{max} 222 ; 256 ; 317 (EtOH).

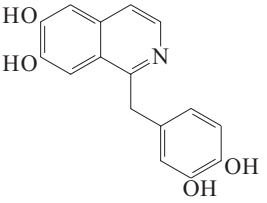
α-*Oxo:* see Papaveraldine, P-77

α-*Methoxy:* ***Setigerine***. α-*Methoxypapaverine*
[180386-76-9]
$C_{21}H_{23}NO_5$ 369.416
Minor alkaloid from *Papaver setigerum*. Racemic.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 878B (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 457C (*nmr*)
Hofmann, A. *et al., Helv. Chim. Acta*, 1954, **37**, 849-865 (*uv*)
Guthrie, D.A. *et al., Can. J. Chem.*, 1955, **33**, 729-742 (*synth*)
Popp, F.D. *et al., J.A.C.S.*, 1957, **79**, 3773-3777 (*synth*)
Saferstein, R. *et al., CA*, 1974, **80**, 44458m (*ms*)
Preininger, V. *et al., Alkaloids (Academic Press)*, 1975, **15**, 209-261 (*pharmacol, tox*)
Brochmann-Hanssen, E. *et al., J.C.S. Perkin 1*, 1975, 1531-1537 (*biosynth*)
Neuman, M. *et al., Drugs of Today (Barcelona)*, 1976, **12**, 278 (*rev*)
Shtokalo, M.I. *et al., Zh. Anal. Khim.*, 1976, **31**, 2366-2370; *J. Anal. Chem. USSR (Engl. Transl.)*, 1976, **31**, 1739-1742 (*detn, Zr*)
Whipple, G.H. *et al., Angiology*, 1977, **28**, 737-749 (*rev*)
Tomimatsu, T. *et al., CA*, 1977, **87**, 23573z (*pmr*)
Marsaioli, A.J. *et al., Phytochemistry*, 1978, **17**, 1655-1658 (*cmr*)
Wilen, G. *et al., J. Pharm. Pharmacol.*, 1982, **34**, 264-266 (*metab*)
Skripchuk, V.G. *et al., Zh. Anal. Khim.*, 1983, **38**, 2198-2201; *J. Anal. Chem. USSR (Engl. Transl.)*, 1983, **38**, 1696-1699 (*detn, Te*)
Negwer, M. *et al., Organic-Chemical Drugs and their Synonyms, 6th edn., Akademie-Verlag*, 1987, 5642 (*synonyms*)
Hifnawy, M.S. *et al., Anal. Profiles Drug Subst.*, 1988, **17**, 367-447 (*rev*)
Turano, A. *et al., AIDS Res. Hum. Retroviruses*, 1989, **5**, 183-192 (*anti-HIV activity*)
Janssen, R.H.A.M. *et al., Phytochemistry*, 1989, **28**, 2833-2839 (*pmr, cmr*)
Hirsenkorn, R. *et al., Tet. Lett.*, 1991, **32**, 1775-1778 (*synth*)
Slavík, J. *et al., Coll. Czech. Chem. Comm.*, 1996, **61**, 1047-1052 (*Setigerine*)
Marek, J. *et al., Z. Kristallogr., Kristallgeom., Kristallphys., Kristallchem.*, 1996, **211**, 649-650; 651-652 (*cryst struct, Papaverine, Setigerine*)
Khamidov, I.I. *et al., Khim. Prir. Soedin.*, 1997, **33**, 420-423; *Chem. Nat. Compd. (Engl. Transl.)*, 1997, **33**, 323-325 (*Densiberine*)
Marek, R. *et al., Magn. Reson. Chem.*, 1999, **37**, 195-202 (*N-15 nmr*)
Martindale, The Extra Pharmacopoeia, 32nd edn., Pharmaceutical Press, 1999, 1614-1615
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, PAH000; PAH250

Papaveroline, BAN, INN P-80

1-[(3,4-Dihydroxyphenyl)methyl]-6,7-isoquinolinediol, 9CI. 1-(3,4-Dihydroxybenzyl)-6,7-dihydroxyisoquinoline. Modus†. Udieci active substance
[574-77-6]



$C_{16}H_{13}NO_4$ 283.283
Vasodilator; also t-RNA transferase inhibitor (potential antineoplastic agent). Cryst. powder + $2H_2O$, becoming anhyd. at *ca.* 100°. Mp 150° dec. Log P 2.79 (calc).

Hydrochloride:
Needles + $1H_2O$. Sol. hot H_2O. Mp 250° (dec.).

Hydroiodide:
Needles + $2H_2O$ (H_2O). Mp 230°.

6-Me ether: 1-(3,4-Dihydroxybenzyl)-7-hydroxy-6-methoxyisoquinoline. ***Turcomanine***
[60372-11-4]
$C_{17}H_{15}NO_4$ 297.31
Alkaloid from *Berberis turcomanica* (Berberidaceae). Mp 247-248° (as hydrobromide). λ_{max} 236 ; 282 ; 312 (EtOH) (hydrobromide).

3′,6-Di-Me ether: 7-Hydroxy-1-(4-hydroxy-3-methoxybenzyl)-6-methoxyisoquinoline. ***Cristadine***
[82463-46-5]
$C_{18}H_{17}NO_4$ 311.337
Alkaloid from the leaves of *Erythrina crista-galli* (Legminosae). Pale yellow. Mp 210-211°. Mp. initially reported as 128-129° which is incorrect.

4′,6-Di-Me ether, N-*Me:* ***Tetradehydroreticuline***
[267006-18-8]
$C_{19}H_{20}NO_4^{\oplus}$ 326.371
Quaternary alkaloid from *Stephania cepharantha*. Cryst. (MeOH) (as perchlorate). Mp 231-233°. λ_{max} 232 (log ϵ 4.39); 257 (log ϵ 4.59); 280 (log ϵ 4.36); 318 (log ϵ 3.86); 367 (3.49) (MeOH).

6,7-Di-Me ether: 1-(3,4-Dihydroxybenzyl)-6,7-dimethoxyisoquinoline. ***Turcomanidine***
[16637-56-2]
$C_{18}H_{17}NO_4$ 311.337
Alkaloid from *Berberis turcomanica*. Cryst. (MeOH). Mp 199-200°.

6,7-Di-Me ether; hydrochloride: [16637-68-6]

Cryst. (EtOH). Mp 232-233°. λ_{max} 227 (sh) (ϵ 25400); 253 (ϵ 55200); 288 (ϵ 6800); 311 (ϵ 8300); 327 (sh) (ϵ 6600); 345 (sh) (ϵ 5000) (EtOH).

6,7-Di-Me ether, di-Ac: Mp 224-226°.

4′,6,7-Tri-Me ether: 1-(3-Hydroxy-4-methoxybenzyl)-6,7-dimethoxyisoquinoline. ***Palaudine***
[18694-10-5]
$C_{19}H_{19}NO_4$ 325.363
Minor alkaloid from opium (*Papaver somniferum*) (Papaveraceae). Prisms (EtOH). Mp 175-176°.

4′,6,7-Tri-Me ether, N-*Me:* **N-*Methylpalaudinium***
$C_{20}H_{22}NO_4^{\oplus}$ 340.398
Quaternary alkaloid from *Thalictrum polygamum*. Needles (MeOH/Me_2CO) (as chloride). Mp 232-233° (chloride).

Tetra-Me ether: see Papaverine, P-79

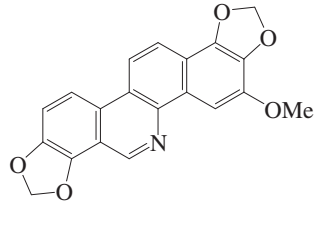
Bis(methylene) ether: see Mollinedine, M-672

[23740-72-9]

Kitasato, Z. *et al., J.C.S.*, 1932, 785 (*synth*)
Vitali, T. *et al., Chimica*, 1952, **7**, 409 (*synth*)
Brochmann-Hanssen, E. *et al., J. Pharm. Sci.*, 1968, **57**, 940 (*Palaudine*)
Brossi, A. *et al., J.O.C.*, 1970, **35**, 1684-1687 (*Turcomanidine, synth, uv, ir, pmr, derivs*)
Shamma, M. *et al., J. Pharm. Sci.*, 1972, **61**, 295-297 (*N-Methylpalaudinium*)
Cheng, C.C. *et al., J. Pharm. Sci.*, 1972, **61**, 645 (*use*)
Data, P.G. *et al., Farmaco, Ed. Sci.*, 1981, **36**, 302 (*pharmacol*)
Ju-ichi, M. *et al., Heterocycles*, 1982, **19**, 849 (*Cristadine*)
Kovács, L. *et al., Acta Chim. Hung.*, 1985, **120**, 103 (*synth, Cristadine*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 1312
Khamidov, I. *et al., Khim. Prir. Soedin.*, 1996, **32**, 74-76; 885-888; *Chem. Nat. Compd. (Engl. Transl.)*, 1996, **32**, 59-61; 873-875 (*Turcomanine, Turcomanidine*)
Tanahashi, T. *et al., Chem. Pharm. Bull.*, 2000, **48**, 370-373 (*Tetradehydroreticuline*)

Papavoriendine P-81

7-Methoxy[1,3]benzodioxolo[4,5-c]-1,3-dioxolo[4,5-c]phenanthridine, 9CI
[309275-04-5]

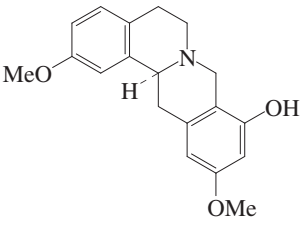


$C_{20}H_{13}NO_5$ 347.326
Alkaloid from the roots of *Papaver orientale*. Yellow-brown amorph. powder. Mp 158-160°. λ_{max} 215 ; 220 ; 240 ; 368 (EtOH).

Ma, W.G. *et al., Fitoterapia*, 2000, **71**, 527-534

Papavorientine P-82

*5,8,13,13*a-*Tetrahydro-2,11-dimethoxy-6*H-*dibenzo[*a,g*]quinolizin-9-ol*



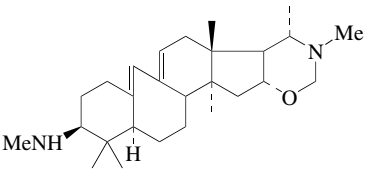
$C_{19}H_{21}NO_3$ 311.38

(S)-form
Alkaloid from the roots of *Papaver orientale*. Amorph. brown powder. Mp 169-171°. $[\alpha]_D$ -189 (c, 0.03 in EtOH). λ_{max} 206 ; 220 ; 229 ; 258 (EtOH).

Ma, W.G. *et al., Fitoterapia*, 2000, **71**, 527-534

Papillozine C P-83

[207793-40-6]

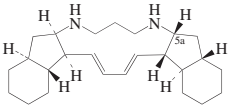


$C_{27}H_{44}N_2O$ 412.657
Alkaloid from the leaves of *Buxus papillosa*. Amorph. solid. $[\alpha]_D^{20}$ +23 (c, 0.5 in $CHCl_3$). λ_{max} 219 ; 237 ; 244 (MeOH).

Atta-ur-Rahman, *et al., Heterocycles*, 1998, **48**, 519-528 (*isol, uv, ir, pmr, cmr, ms*)

Papuamine P-84

[112455-84-2]



Absolute Configuration

$C_{25}H_{40}N_2$ 368.604
Alkaloid from a marine sponge *Haliclona* sp. Antifungal. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 167.5-169°. $[\alpha]_D$ -150 (c, 1.5 in MeOH). *C*$_2$-symmetric struct. λ_{max} 241 (ϵ 3000) (MeOH) (Derep). λ_{max} 236 ; 240 (ϵ 3000) (MeOH) (Berdy). λ_{max} 240 (MeOH/HCl) (Berdy).

Hydrochloride (1:2): Mp 230° dec. $[\alpha]_D$ -140 (c, 1.3 in MeOH).

*5*a-*Epimer:* ***Haliclonadiamine***
[117065-24-4]
$C_{25}H_{40}N_2$ 368.604
Alkaloid from a marine sponge *Haliclona* sp. Shows antimicrobial activity. Oil; cryst. as di-Ac. Sol. MeOH. Mp 96-98° (di-Ac). $[\alpha]_D$ -18.2. λ_{max} 241 (ϵ 3000) (MeOH) (Derep). λ_{max} 241 (ϵ 10700) (MeOH) (Berdy).

Baker, B.J. *et al., J.A.C.S.*, 1988, **110**, 965 (*isol, uv, ir, pmr, cmr, ms, struct*)
Fahy, E. *et al., Tet. Lett.*, 1988, **29**, 3427 (*Haliclonadiamine*)
Borzilleri, R.M. *et al., J.A.C.S.*, 1995, **117**, 10905 (*synth, abs config*)
Barrett, A.G.M. *et al., J.O.C.*, 1996, **61**, 685 (*synth, enantiomer*)
McDermott, T.S. *et al., J.O.C.*, 1996, **61**, 700 (*synth*)
Taber, D.F. *et al., J.A.C.S.*, 1997, **119**, 22 (*synth, Haliclonadiamine*)
Matzanke, N. *et al., Org. Prep. Proced. Int.*, 1998, **30**, 3-51 (*rev, synth*)
Adlington, R.M. *et al., Tetrahedron*, 2000, **56**, 623-628 (*synth*)

Papyraceabromine A P-85

[110313-17-2]

$C_{22}H_{17}Br_4N_3O_5$ 723.009

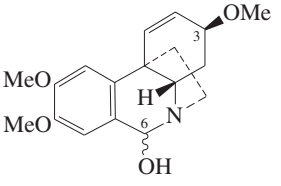
Struct. unknown. Metab. from the marine bryozoan *Flustra papyracea (Chartella papyracea)*. Wide-spectrum *in vitro* antibacterial alkaloid. Unstable. Minor alkaloids of structurally different type, Papyraceabromine B (with 5 bromine atoms) and Papyraceabromine C, were also isol.

[110313-18-3 (Papyraceabromine B), 110313-19-4 (Papyraceabromine C)]

Pietra, F. *et al., Gazz. Chim. Ital.*, 1985, **115**, 443-485 (*rev*)

Papyramine P-86

[81149-33-9]



$C_{18}H_{23}NO_4$ 317.384
Mixt. of C-6 epimers at r.t.
Alkaloid from the bulbs and aerial parts of *Narcissus papyraceus* (Amaryllidaceae).

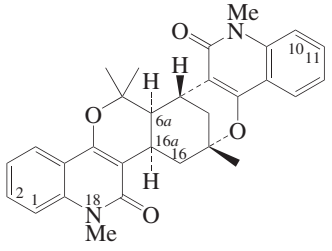
Me ether: **O-*Methylpapyramine***
[128517-01-1]
$C_{19}H_{25}NO_4$ 331.411
Alkaloid from aerial parts of *Narcissus papyraceus* (Amaryllidaceae). Amorph. $[\alpha]_D^{24}$ -31 (c, 0.1 in MeOH). Config. at C-6 is β (trans. to the ethane bridge).

3-Epimer: ***3-Epipapyramine****. 6-Hydroxy-3-*O*-methylepimaritidine*
$C_{18}H_{23}NO_4$ 317.384
Alkaloid from the bulbs of *Narcissus tazetta* var. *chinensis* (Amaryllidaceae). Pale-yellow cryst. $[\alpha]_D^{20}$ -10.2 (c, 0.45 in $CHCl_3$). Isol. as an inseparable mixt. of C-6 epimers.

Song, G. *et al., Fenxi Huaxue*, 1981, **9**, 520; *CA*, **96**, 162994m (*pmr, config*)
Hung, S. *et al., Huaxue Xuebao*, 1981, **39**, 529; *CA*, **96**, 139653r (*isol, struct*)
Ma, G.-E. *et al., Heterocycles*, 1986, **24**, 2089 (*epimer, uv, ir, pmr, ms*)
Suau, R. *et al., Heterocycles*, 1990, **31**, 517 (*O-Methylpapyramine*)

Paraensidimerine A P-87

[80450-21-1]



$C_{30}H_{30}N_2O_4$ 482.578

Alkaloid from the heartwood of *Euxylophora paraënsis* (Rutaceae). Needles (Me_2CO or $CHCl_3$/MeOH). Mp 311-312°. Racemic.

*16,16*a-*Didehydro:* ***Paraensidimerine G***
[86168-91-4]
$C_{30}H_{28}N_2O_4$ 480.562
Isol. from *Euxylophora paraënsis* (Rutaceae). Needles ($CHCl_3$/MeOH). Mp 280-281°.

1,2,10,11-Tetramethoxy: ***Vepridimerine A***
[82841-71-2]
$C_{34}H_{38}N_2O_8$ 602.683
Alkaloid from the bark of *Vepris louisii* (Rutaceae). Mp 343-345°. Racemic.

*1,2,10,11-Tetramethoxy, 16,16*a-*didehydro:* ***Araliopdimerine C***
[119089-42-8]
$C_{34}H_{36}N_2O_8$ 600.667
Alkaloid from the bark of *Araliopsis tabouensis* (Rutaceae). Needles (hexane/$CHCl_3$). Mp 254-255°. Racemic.

6a-*Epimer:* ***Paraensidimerine F***
[86196-11-4]
$C_{30}H_{30}N_2O_4$ 482.578
Isol. from *Euxylophora paraënsis* (Rutaceae). Small rhombic cryst. ($CHCl_3$/MeOH). Mp 310°. Racemic.

*16*a-*Epimer:* ***Paraensidimerine C***
[80450-23-3]
$C_{30}H_{30}N_2O_4$ 482.578
Isol. from *Euxylophora paraënsis* (Rutaceae). Cryst. (C_6H_6); cryst. + $1H_2O$ ($CHCl_3$/MeOH). Mp 210° (rapid heat) (hydrate). Racemic.

*16*a-*Epimer,* N^{18}*-de-Me:* **N-*Demethylparaensidimerine C***
[953393-39-0]
$C_{29}H_{28}N_2O_4$ 468.551
Alkaloid from the stem wood of *Zanthoxylum integrifoliolum*. Needles ($CHCl_3$/MeOH). Mp 197-199°. Racemic. λ_{max} 228 (log ϵ 4.65); 276 (log ϵ 3.85); 285 (log ϵ 3.84); 318 (log ϵ 3.86) (MeOH).

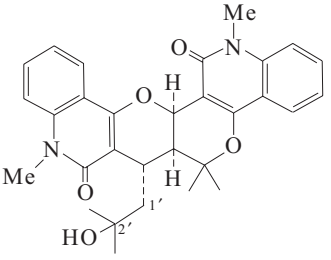
*16*a-*Epimer, 1,2,10,11-tetramethoxy:* ***Vepridimerine B***
[82864-60-6]
$C_{34}H_{38}N_2O_8$ 602.683
Alkaloid from the bark of *Vepris louisii* and *Oricia renieri* (Rutaceae). Mp 278-279°. Racemic.

6a,*16*a-*Diepimer:* ***Paraensidimerine E***
[80450-24-4]
$C_{30}H_{30}N_2O_4$ 482.578
Isol. from *Euxylophora paraënsis* (Rutaceae). Needles + $1H_2O$ (Py/MeOH). Mp 289-290°. Racemic.

Jurd, L. *et al., Aust. J. Chem.*, 1981, **34**, 1625; 1982, **35**, 2505; 1983, **36**, 759 (*isol, cryst struct, ir, pmr, cmr, ms*)
Ngadjui, T.B. *et al., Tet. Lett.*, 1982, **23**, 2041 (*Vepridimerines*)
Ayafor, J.F. *et al., Tet. Lett.*, 1985, **26**, 4529 (*Vepridimerines, synth*)
Ngadjui, B. *et al., Phytochemistry*, 1988, **27**, 2979 (*Araliopdimerine C*)
Ngadjui, B.T. *et al., J. Nat. Prod.*, 1989, **52**, 300 (*synth, Paraensidimerines A,C,F*)
Chen, J.-J. *et al., J. Nat. Prod.*, 2007, **70**, 1444-1448 (*N-Demethylparaensidimerine C*)

Paraensidimerine B P-88

[80450-22-2]



$C_{30}H_{32}N_2O_5$ 500.593

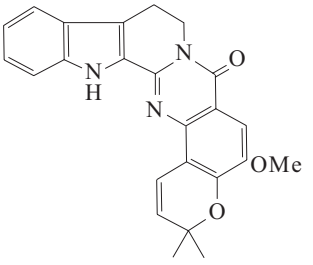
Alkaloid from the heartwood of *Euxylophora paraensis* (Rutaceae). Needles ($CHCl_3$/MeOH). Mp 286-287°. Possibly formed by the addition of water to the exocyclic double bond of Paraensidimerine D, below.

1′-Dehydro, 2′-Deoxy: Paraensidimerine D
[80357-91-1]
$C_{30}H_{30}N_2O_4$ 482.578
Alkaloid from *Euxylophora paraensis* (Rutaceae). Needles ($CHCl_3$/MeOH). Mp 259°. $[\alpha]_D^{20}$ -0.38 (c, 1.3 in $CHCl_3$).

Jurd, L. *et al., Aust. J. Chem.*, 1981, **34**, 1625; 1982, **35**, 2505; 1983, **36**, 759 (*isol, ir, pmr, cmr, ms, struct*)
Ngadjvi, B.T. *et al., J. Nat. Prod.*, 1989, **52**, 300 (*synth*)

Paraensine† P-89

*3,9,10,15-Tetrahydro-5-methoxy-3,3-dimethyl-7*H*-indolo[2′,3′:3,4]pyrido[2,1-*b*]pyrano[2,3-*h*]quinazolin-7-one, 9CI*
[38750-10-6]



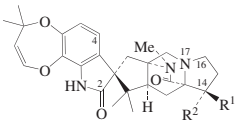
$C_{24}H_{21}N_3O_3$ 399.448

Alkaloid from the bark of *Euxylophora paraënsis* (Rutaceae). Cryst. (C_6H_6). Mp 281-282°.

Dihydro: [38750-12-8]
Cryst. (diisopropyl ether). Mp 305°.
Danieli, B. *et al., Experientia*, 1972, **28**, 249 (*uv, ir, pmr, ms, struct, synth*)

Paraherquamide A P-90

VM 29919. Antibiotic VM 29919
[77392-58-6]



Absolute Configuration

R^1 = OH, $R^2 = {}^{30}CH_3$

$C_{28}H_{35}N_3O_5$ 493.602

Alkaloid from *Penicillium paraherquei*, *Penicillium charlesii* and *Penicillium* sp. IMI332995. Nematocide, anthelmintic and insecticidal mycotoxin. Sol. MeOH, DMSO, EtOAc. Mp 244-247° dec. $[\alpha]_D^{22}$ -28 (c, 0.43 in MeOH). λ_{max} 226 (ϵ 32400); 260 (ϵ 6100); 290 (ϵ 1600) (EtOH) (Derep). λ_{max} 225 (log ϵ 4.5) (MeOH).

▶ Toxic to mice. RV0545000

N^{17}*-Oxide:* ***Paraherquamide A*** **N^{17}*-oxide***. *VM 55596. Antibiotic VM 55596*
[141137-59-9]
$C_{28}H_{35}N_3O_6$ 509.601
Prod. by a *Penicillium* sp. λ_{max} 226 (ϵ 32400); 260 (ϵ 6100); 290 (ϵ 1600) (EtOH) (Derep).

14-Deoxy: ***Paraherquamide E***. *VM 54159. Antibiotic VM 54159*
[125600-53-5]
$C_{28}H_{35}N_3O_4$ 477.602
Prod. by a *Penicillium* sp. Anthelmintic; possesses nematocidal props. λ_{max} 226 (ϵ 32400); 260 (ϵ 6100); 290 (ϵ 1600) (MeOH) (Derep). λ_{max} 225 (log ϵ 4.4) (MeOH).

14-Deoxy, N*-de-Me:* ***Antibiotic SB 200437***. *SB 200437*
[142449-76-1]
$C_{27}H_{33}N_3O_4$ 463.575
Prod. by *Aspergillus* sp. IMI 337664. Anthelmintic agent.

14-Deoxy, 4-hydroxy: ***Antibiotic SB 203105***. *SB 203105*
[199723-64-3]
$C_{28}H_{35}N_3O_5$ 493.602
Prod. by *Aspergillus* sp. IMI 337664. Anthelmintic agent.

14-Deoxy, 14,30-didehydro: ***Paraherquamide C***
[125439-04-5]
$C_{28}H_{33}N_3O_4$ 475.586
Alkaloid from *Penicillium charlesii*. Nematocide, insecticide, mycotoxin. Sol. MeOH, EtOAc, DMSO. λ_{max} 226 (ϵ 32400); 260 (ϵ 6100); 290 (ϵ 1600) (MeOH) (Derep). λ_{max} 225 (MeOH).

14-Deoxy, 14,30-epoxy: ***Paraherquamide D***
[125600-52-4]
$C_{28}H_{33}N_3O_5$ 491.586
Alkaloid from *Penicillium charlesii*. Acaricide, insecticide, nematocide, mycotoxin. Sol. MeOH, EtOAc, DMSO. λ_{max} 226 (ϵ 32400); 260

(ϵ 6100); 290 (ϵ 1600) (EtOH) (Derep). λ_{max} 225 (MeOH).

16-Oxo: ***16-Oxoparaherquamide A***. *VM 55597. Antibiotic VM 55597*
[120312-86-9]
$C_{28}H_{33}N_3O_6$ 507.585
Prod. by a *Penicillium* sp. IMI332995. Antiparasitic agent, mycotoxin. λ_{max} 225 (MeOH).

16-Oxo, 14-deoxy: ***Paraherquamide H***
[887478-34-4]
$C_{28}H_{33}N_3O_5$ 491.586
Prod. by *Penicillium cluniae* (CECT 2888). Amorph. solid. $[\alpha]_D$ -30 (c, 0.03 in MeOH). λ_{max} 222 (log ϵ 1) (MeOH).

16-Oxo, 14-deoxy, 14,15-didehydro: ***Paraherquamide I***
[887478-35-5]
$C_{28}H_{31}N_3O_5$ 489.57
Prod. by *Penicillium cluniae* (CECT 2888). Amorph. solid. $[\alpha]_D$ -25.1 (c, 0.04 in MeOH). λ_{max} 225 (log ϵ 1.01) (MeOH).

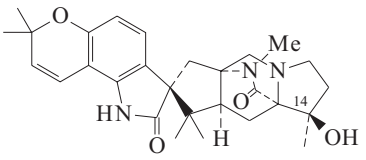
14-Demethyl, 14-deoxy: ***Paraherquamide B***. *UK 111866. Antibiotic UK 111866*
[125600-51-3]
$C_{27}H_{33}N_3O_4$ 463.575
Alkaloid from *Penicillium charlesii* and *Penicillium roqueforti*. Nematocide. λ_{max} 226 (ϵ 32400); 260 (ϵ 6100); 290 (ϵ 1600) (MeOH) (Derep). λ_{max} 225 (MeOH).

2-Deoxo: ***Derquantel, USAN***. *2-Deoxoparaherquamide A. PF 00520904. PNU 141962*
[187865-22-1]
$C_{28}H_{37}N_3O_4$ 479.618
Anthelmintic. Characterised by pmr.

Yamazaki, M. *et al., CA*, 1980, **95**, 19321 (*props*)
Yamazaki, M. *et al., Tet. Lett.*, 1981, 135-136 (*uv, ir, pmr, cryst struct*)
Eur. Pat., 1989, 322 937; *CA*, **112**, 117340 (*isol*)
Blizzard, T.A. *et al., J.O.C.*, 1989, **54**, 2657-2663 (*abs config*)
Ondeyka, J.G. *et al., J. Antibiot.*, 1990, **43**, 1375-1379 (*Paraherquamides B-E, isol*)
Liesch, J.M. *et al., J. Antibiot.*, 1990, **43**, 1380-1386 (*Paraherquamides B-E, struct, pmr, cmr*)
Blanchflower, S.E. *et al., J. Antibiot.*, 1991, **44**, 492; 1993, **46**, 1355-1363 (*Paraherquamide E, VM55596, VM55597*)
Banks, R.M. *et al., J. Antibiot.*, 1997, **50**, 840-846 (*Paraherquamide C, SB 203105, SB 200437*)
Lee, B.H. *et al., J.O.C.*, 1997, **62**, 1795-1798 (*synth*)
Pat. Coop. Treaty (WIPO), 1997, (*(Upjohn)*)97 039 88; *CA*, **126**, 211972 (*2-deoxo, synth, pharmacol*)
Stocking, E.M. *et al., J.A.C.S.*, 2000, **122**, 9089-9098 (*biosynth*)
Williams, R.M. *et al., Chem. Pharm. Bull.*, 2002, **50**, 711-740 (*rev, synth, biosynth*)
Lee, B.H. *et al., Curr. Top. Med. Chem.*, 2002, **2**, 779-793 (*2-deoxo, rev*)
Mauragis, M.A. *et al., Org. Process Res. Dev.*, 2002, **6**, 192-196 (*2-deoxo, synth*)
Williams, R.M. *et al., J.A.C.S.*, 2003, **125**, 12172-12178 (*synth*)
Domingo, L.R. *et al., J.O.C.*, 2003, **68**, 2895-2902 (*biosynth*)
Johnson, S.S. *et al., J. Vet. Pharmacol. Ther.*, 2004, **27**, 169-181 (*2-deoxo, pharmacol*)
López-Gresa, M.P. *et al., J. Agric. Food Chem.*, 2006, **54**, 2921-2925 (*Paraherquamides H,I*)

Paraherquamide G P-91

VM 54158. Antibiotic VM 54158
[125600-55-7]



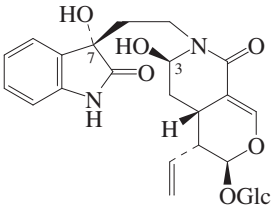
$C_{28}H_{35}N_3O_4$ 477.602
Alkaloid from *Penicillium charlesii*. Possesses nematocidal props. λ_{max} 245 (ϵ 28800) (MeOH) (Derep).

14-Deoxy: ***Paraherquamide F***. *VM 55594. Antibiotic VM 55594*
[125600-54-6]
$C_{28}H_{35}N_3O_3$ 461.603
From *Penicillium charlesii*. Possesses nematocidal props. λ_{max} 245 (ϵ 28800) (MeOH) (Derep).

Ondeyka, J.G. *et al., J. Antibiot.*, 1990, **43**, 1375; 1380 (*isol, pmr, cmr*)
Blanchflower, S.E. *et al., J. Antibiot.*, 1991, **44**, 492 (*isol, props*)
Williams, R.M. *et al., Chem. Pharm. Bull.*, 2002, **50**, 711-740 (*rev, synth, biosynth*)

Paratunamide D P-92

[914778-26-0]



$C_{26}H_{32}N_2O_{11}$ 548.546
Alkaloid from the bark of *Cinnamodendron axillare*. Amorph. solid. $[\alpha]_D^{24}$ -24.9 (c, 0.43 in MeOH). λ_{max} 205 (ϵ 30700); 232 (ϵ 13600) (MeOH).

3-Me ether. ***Paratunamide A***
[914778-23-7]
$C_{27}H_{34}N_2O_{11}$ 562.572
Alkaloid from the bark of *Cinnamodendron axillare*. Amorph. solid. $[\alpha]_D^{24}$ -98.5 (c, 0.15 in MeOH). λ_{max} 209 (ϵ 23600); 239 (ϵ 14700) (MeOH).

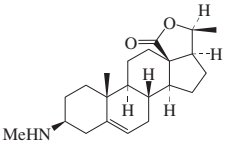
3-Ketone: ***Paratunamide B***
[914778-24-8]
$C_{26}H_{30}N_2O_{11}$ 546.53
Alkaloid from the bark of *Cinnamodendron axillare*. Amorph. solid. $[\alpha]_D^{24}$ -71.4 (c, 0.73 in MeOH). λ_{max} 212 (ϵ 22800); 249 (ϵ 12200) (MeOH).

7-Epimer, 3-ketone: ***Paratunamide C***
[914778-25-9]
$C_{26}H_{30}N_2O_{11}$ 546.53
Alkaloid from the bark of *Cinnamodendron axillare*. Amorph. solid. $[\alpha]_D^{24}$ -63.8 (c, 0.77 in MeOH). λ_{max} 208 (ϵ 37600); 246 (ϵ 14700) (MeOH).

Kagata, T. *et al., J. Nat. Prod.*, 2006, **69**, 1517-1521 (*isol, cd, pmr, cmr*)

Paravallarine P-93

20-Hydroxy-3-(methylamino)pregn-5-en-18,20-olide, 9CI
[510-31-6]



Absolute Configuration

$C_{22}H_{33}NO_2$ 343.508
Alkaloid from *Paravallaris microphylla* (Apocynaceae). Mp 181°. $[\alpha]_D^{20}$ -52 (c, 0.32 in $CHCl_3$).

Hydrochloride: Mp 295-298° dec. $[\alpha]_D^{20}$ -25.2 (c, 0.77 in MeOH).

N-*Ac:* Mp 258-260°.

N-*Me:* **N-*Methylparavallarine***
[3837-09-0]
$C_{23}H_{35}NO_2$ 357.535
Alkaloid from *Paravallaris microphylla* (Apocynaceae). Cryst. (EtOH). Mp 140°. $[\alpha]_D$ -37.7 (c, 0.398 in $CHCl_3$).

3-Epimer, N-*de-Me: 3-Aminopregn-5-en-18,20-olide.* ***Gitingensine***
[13084-70-3]
$C_{21}H_{31}NO_2$ 329.481
Alkaloid from the leaves of *Kibatalia gitingensis* (Apocynaceae). Shows antispasmodic activity. Prisms (Et_2O). Mp 161°. $[\alpha]_D^{31}$ -65 ($CHCl_3$).

7α-Hydroxy: ***7α-Hydroxyparavallarine***
[16137-30-7]
$C_{22}H_{33}NO_3$ 359.508
Alkaloid from *Paravallaris microphylla* (Apocynaceae). Mp 213°. $[\alpha]_D^{20}$ -113 ($CHCl_3$).

7β-Hydroxy: ***7β-Hydroxyparavallarine***
[24411-84-5]
$C_{22}H_{33}NO_3$ 359.508
Alkaloid from *Paravallaris microphylla* (Apocynaceae). Mp 210°. $[\alpha]_D^{20}$ -13.5 ($CHCl_3$).

11α-Hydroxy: ***11α-Hydroxyparavallarine***
[16137-32-9]
$C_{22}H_{33}NO_3$ 359.508
Alkaloid from *Paravallaris microphylla* (Apocynaceae). Mp 235°. $[\alpha]_D^{20}$ -55 ($CHCl_3$).

16α-Hydroxy: ***Paravallaridine***
[5716-99-4]
$C_{22}H_{33}NO_3$ 359.508
Alkaloid from *Paravallaris microphylla* (Apocynaceae). Mp 231°. $[\alpha]_D$ -48 ($CHCl_3$).

16α-Hydroxy, N-*Me:* **N-*Methylparavallaridine***
[25099-43-8]
$C_{23}H_{35}NO_3$ 373.534
Alkaloid from *Paravallaris microphylla* (Apocynaceae). Cryst. (EtOH). Mp 200°. $[\alpha]_D^{20}$ -49 (c, 0.29 in $CHCl_3$).

3-Epimer, N-*Me:* ***Kibataline***
[1244-02-6]
$C_{23}H_{35}NO_2$ 357.535
Alkaloid from *Kibatalia gitingensis* (Apocynaceae). Cryst. (hexane). Mp 171°. $[\alpha]_D$ -42 (c, 1.4 in $CHCl_3$).

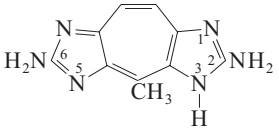
20-Epimer, N-*Me:* ***20-Epi-*N-*methylpara-***

vallarine. *20*-epi-*Kibataline*
[96443-60-6]
$C_{23}H_{35}NO_2$ 357.535
Alkaloid from *Kibatalia gitingensis*. Major alkaloid from leaves of *Paravallaris macrophylla* (Apocynaceae). Mp 191° Mp 220-224°. $[\alpha]_D$ -30 (c, 0.5 in $CHCl_3$).

Le Men, J. *et al., Bull. Soc. Chim. Fr.*, 1960, 860-864 (*isol, ir, struct*)
Le Men, J. *et al., Bull. Soc. Chim. Fr.*, 1963, 597-603; 1306-1310 (*Paravallaridine, N-Methylparavallaridine*)
Cavé, A. *et al., Bull. Soc. Chim. Fr.*, 1964, 2415-2418 (*Kibataline*)
Cavé, A. *et al., Bull. Soc. Chim. Fr.*, 1965, 2502-2505 (*20-Epi-N-methylparavallarine*)
Aguilar-Santos, G. *et al., Philipp. J. Sci.*, 1965, **94**, 217 (*Gitingensine*)
Aguilar-Santos, G. *et al., J.O.C.*, 1967, **32**, 2642-2644 (*Gitingensine, struct*)
Husson, H.P. *et al., Bull. Soc. Chim. Fr.*, 1969, 3162-3166 (*7-hydroxy, 11-hydroxy*)
Ngoc, P.H. *et al., Planta Med.*, 1984, **50**, 269-270 (*cryst struct, 20-epi-Kibataline*)
Kutschabsky, L. *et al., Cryst. Res. Technol.*, 1985, **20**, 365-369; *CA*, **103**, 71585a (*cryst struct, 20-epi-Kibataline*)

Parazoanthoxanthin A P-94

*4-Methyl-1*H-*cyclohepta[1,2*-d*:4,5-d′]diimidazole-2,6-diamine, 9CI. 2,6-Diamino-4-methyl-1*H-*cyclohepta[1,2*-d*:4,5-d′]diimidazole*
[53823-11-3]



$C_{10}H_{10}N_6$ 214.229
Complex tautomerism possible with 1*H* and 3*H* tautomers. The parent compd. is symmetrical by tautomerism between the two imidazole rings but substitution can destroy this symmetry. Fluorescent pigment from *Parazoanthus axinellae adriaticus, Zoanthus sociatus* and *Zoanthus* cfr. *pacificus*. Yellow cryst. (EtOH). Mp 310°.

3-Me: ***Parazoanthoxanthin B***
[53571-91-8]
$C_{11}H_{12}N_6$ 228.256
Isol. from *Parazoanthus axinellae adriaticus* and *Zoanthus* cfr. *pacificus*.

*3,*N^6*-Di-Me:* ***Parazoanthoxanthin G***
[71827-19-5]
$C_{12}H_{14}N_6$ 242.283
Isol. from *Parazoanthus axinellae adriaticus* and *Zoanthus sociatus*.

N^6,N^6*-Di-Me:* ***Parazoanthoxanthin D***
[53941-25-6]
$C_{12}H_{14}N_6$ 242.283
Constit. of *Parazoanthus axinellae adriaticus, Zoanthus sociatus, Zoanthus* cfr. *pacificus, Palythoa mammilosa* and *Palythoa tuberculosa*. Yellow needles (H_2O). Mp 303-304° dec. λ_{max} 255 (ϵ 13200); 300 (ϵ 39800); 394 (ϵ 15100) (MeOH/HCl) (Derep). λ_{max} 296 (sh) (ϵ 28800); 306 (ϵ 36300); 415 (ϵ 17800) (MeOH) (Derep).

N,N′*-Di-Me:* ***Parazoanthoxanthin C***
$C_{12}H_{14}N_6$ 242.283
Isol. from *Parazoanthus axinellae*. Exact struct. not determined. λ_{max} 302 ; 412 (MeOH). λ_{max} 297 ; 392 (MeOH/acid).

*1,*N^6,N^6*-Tri-Me:* ***Palyzoanthoxanthin A***
[55084-57-6]
$C_{13}H_{16}N_6$ 256.31
Pigment from *Palythoa mammilosa*, *Palythoa tuberculosa* and *Zoanthus pacificus*. Cryst. (MeOH). Mp 310°.

*3,*N^6,N^6*-Tri-Me:* ***Zoanthoxanthin***
[40451-47-6]
$C_{13}H_{16}N_6$ 256.31
Isol. from *Parazoanthus axinellae*. Yellow needles (MeOH). Mp 275-276°. Highly fluorescent. λ_{max} 259 (ϵ 7410); 293 (ϵ 17800); 392 (ϵ 8710) (1*M* HCl) (Derep). λ_{max} 293 (ϵ 33100); 427 (ϵ 22400) (MeOH) (Derep).

▶ GU3100500

N^2,N^2,N^6*-Tri-Me:* ***Epizoanthoxanthin A***
[55084-60-1]
$C_{13}H_{16}N_6$ 256.31
Pigment from *Parazoanthus axinellae* and *Zoanthus pacificus*. Orange-yellow needles (H_2O). Mp 191-192°.

*1,3,*N^6,N^6*-Tetra-Me:* ***Parazoanthoxanthin F***
[55084-58-7]
$C_{14}H_{18}N_6$ 270.336
Isol. from *Parazoanthus axinellae adriaticus* and *Palythoa mammilosa*. Cryst. (EtOH). Mp 310° (darkens above 220°). Conts. ═NH at C(2).

*1,*N^2,N^2,N^6*-Tetra-Me:* ***Epizoanthoxanthin B***
[55827-10-6]
$C_{14}H_{18}N_6$ 270.336
Pigment from *Parazoanthus axinellae* and *Palythoa mammilosa*. Amorph. yellow powder.

*3,*N^2,N^6,N^6*-Tetra-Me:* ***Parazoanthoxanthin E***
[55084-59-8]
$C_{14}H_{18}N_6$ 270.336
Isol. from *Parazoanthus axinellae*. Yellow cryst. (EtOH). Mp > 310° (darkens >220°). CAS gives incorrect struct.

N^2,N^2,N^6,N^6*-Tetra-Me:* ***Palyzoanthoxanthin B***
[55084-61-2]
$C_{14}H_{18}N_6$ 270.336
Pigment from *Palythoa tuberculosa*. Cryst. (EtOH). Mp 310° (darkens > 220°).

*3,*N^2,N^2,N^6,N^6*-Penta-Me:* ***Palyzoanthoxanthin C***
[71827-20-8]
$C_{15}H_{20}N_6$ 284.363
Pigment from *Palythoa mammilosa*. Cryst. (EtOH). Mp 180-181°.

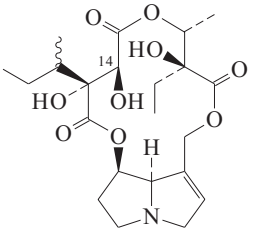
Cariello, L. *et al., Experientia*, 1974, **30**, 849 (*Zoanthoxanthin, cryst struct, Parazoanthoxanthins A-D*)
Cariello, L. *et al., Tetrahedron*, 1974, **30**, 3281-3287; 3611-3614; 4191-4196 (*Parazoanthoxanthins E-F, Palyzoanthoxanthins, Epizoanthoxanthins*)
Braun, M. *et al., J.A.C.S.*, 1976, **98**, 3049 (*Parazoanthoxanthin A*)
Cariello, L. *et al., Comp. Biochem. Physiol., B: Comp. Biochem.*, 1979, **63**, 77 (*occur*)
Jiménez, C. *et al., J. Nat. Prod.*, 1993, **56**, 9-14 (*Zoanthoxanthin, cmr*)

Paricine P-95

[1400-76-6]
$C_{16}H_{18}N_2O$ 254.331
Struct. unknown. Alkaloid from *Buena hexandra* (preferred genus name *Gonzalagunia*), *Cinchona lutea* and *Cinchona succirubra* (Rubiaceae). Amorph. yellow powder. Sol. H_2O. Mp 116°.
Hesse, O. *et al., Annalen*, 1873, **166**, 217 (*bibl*)

Parsonsianidine P-96

[135601-81-9]

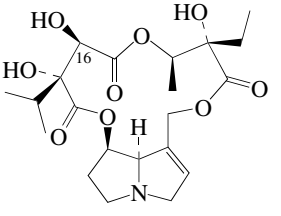


$C_{22}H_{33}NO_9$ 455.504
Alkaloid from the leaves of *Parsonsia laevigata* (Apocynaceae). Cryst. Mp 230-245° dec. $[\alpha]_D^{25}$ +17.3 (c, 0.4 in MeOH).

14-Deoxy: ***14-Deoxyparsonsianidine***
[136997-62-1]
$C_{22}H_{33}NO_8$ 439.505
Alkaloid from leaves of *Parsonsia laevigata* (Apocynaceae). Fine needles (MeOH). Mp 185-192° dec. $[\alpha]_D^{29}$ +25.3 (c, 0.50 in MeOH).
Abe, F. *et al., Chem. Pharm. Bull.*, 1991, **39**, 1576 (*14-Deoxyparsonianidine*)
Abe, F. *et al., Phytochemistry*, 1991, **30**, 1737 (*isol, pmr, cmr, struct*)

Parsonsianine P-97

16-Hydroxy-22-norparsonsine, 9CI
[131683-36-8]



$C_{21}H_{31}NO_9$ 441.477
CAS numbering shown. Alkaloid from the leaves of *Parsonsia laevigata* (Apocynaceae). Prisms (MeOH). Mp 235-245° dec. $[\alpha]_D^{24}$ +37.9 (c, 0.7 in MeOH).

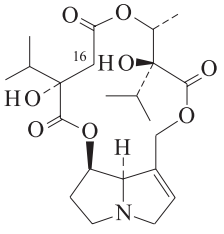
16-Deoxy: 22-Norparsonsine, 9CI. 16-Deoxyparsonsianine. 14-Deoxyparsonsianine. ***Ideamine B***
[136997-61-0]
$C_{21}H_{31}NO_8$ 425.478
Alkaloid from leaves of *Parsonsia laevigata* (Apocynaceae). Fine prisms (MeOH). Mp 159-164° dec. $[\alpha]_D^{30}$ +33.5 (c, 0.80 in MeOH). $[\alpha]_D^{31}$ +21 (c, 1 in EtOH).

16-Deoxy, N-*oxide:* ***Ideamine B* N-*oxide***
[137760-63-5]
$C_{21}H_{31}NO_9$ 441.477
Isol. from adult bodies of the Apocynaceae-feeding danaine butterfly *Idea leuconoe*. $[\alpha]_D^{32}$ +24 (c, 3.7 in MeOH).

Abe, F. *et al., Chem. Pharm. Bull.*, 1990, **38**, 2127-2129 (*isol, pmr, cmr, ms, cryst struct*)
Nishida, R. *et al., Agric. Biol. Chem.*, 1991, **55**, 1787-1792 (*Ideamine B*)
Abe, F. *et al., Chem. Pharm. Bull.*, 1991, **39**, 1576-1577 (*14-Deoxyparsonsianine*)

Parsonsine, 9CI P-98

[72213-98-0]



Absolute configuration

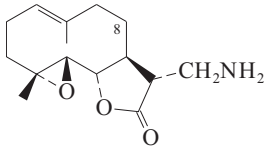
$C_{22}H_{33}NO_8$ 439.505
Retronecine cyclic diester of unusual type. Alkaloid from *Parsonsia heterophylla* and *Parsonsia spiralis* (Apocynaceae). Plates (C_6H_6). Mp 158° Mp 196° (dimorph.). See also 17-Methylparsonsianidine, M-502.

N-*Oxide:* ***Parsonsine* N-*oxide***
[137782-07-1]
$C_{22}H_{33}NO_9$ 455.504
Isol. from adult bodies of the Apocynaceae-feeding danaine butterfly *Idea leuconoe*. $[\alpha]_D^{31}$ -21 (c, 0.75 in MeOH).

16ξ-Hydroxy: ***Spiraline***
[77156-25-3]
$C_{22}H_{33}NO_9$ 455.504
Alkaloid from *Parsonsia spiralis* (Apocynaceae). Characterised by ms and nmr, stereochem. not proven.

Gainsford, G.J. *et al., Cryst. Struct. Commun.*, 1979, **8**, 597; 1980, **9**, 173 (*cryst struct*)
Edgar, J.A. *et al., Tet. Lett.*, 1980, 2657 (*isol, struct, pmr*)
Nishida, R. *et al., Agric. Biol. Chem.*, 1991, **55**, 1787 (*oxide*)

Parthenolidine P-99



$C_{15}H_{23}NO_3$ 265.352

N-*Ac:* **N-*Acetylparthenolidine***
[119766-96-0]
$C_{17}H_{25}NO_4$ 307.389
Constit. of *Michelia rajaniana* (Magnoliaceae). Oil. $[\alpha]_D^{24}$ +23 (c, 0.67 in $CHCl_3$).

8α-Hydroxy, N-*Ac:* **N-*Acetyl-8-hydroxyparthenolidine***
[119766-97-1]
$C_{17}H_{25}NO_5$ 323.388
Isol. from bark of *Michelia rajaniana* (Magnoliaceae). Mp 188-190°. $[\alpha]_D^{20}$ +51 (c, 0.75 in $CHCl_3$).

Ruangrungsi, N. *et al., J. Nat. Prod.*, 1988, **51**, 1220 (*isol, pmr, cmr*)

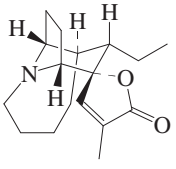
Parvifagarine P-100

$C_{23}H_{21}NO_4$ 375.423
Struct. unknown. Alkaloid from the root bark of *Fagara parvifolia*. Needles. Mp 165-166° Mp 185-186° (as hydrochloride).

Paris, R. *et al., Ann. Pharm. Fr.*, 1948, **6**, 409-421; *CA*, **43**, 5546e (*isol*)

Parvineostemonine P-101

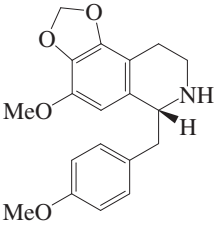
[539883-61-9]



$C_{17}H_{25}NO_2$ 275.39
Alkaloid from the stems and leaves of *Stemona parviflora*. Amorph. pale yellow solid.

Ke, C.Q. *et al., Chin. Chem. Lett.*, 2003, **14**, 173-175 (*isol, pmr, cmr*)

Parvinine P-102



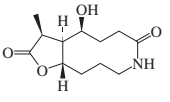
$C_{19}H_{21}NO_4$ 327.379

(***R*)-*form*** [920757-19-3]
Alkaloid from *Xylopia parviflora*. Amorph. powder. $[\alpha]_D^{22}$ +20 (c, 0.28 in $CHCl_3$). λ_{max} 278 (log ϵ 3.36); 284 (sh) ($CHCl_3$).

Nishiyama, Y. *et al., Phytochemistry*, 2006, **67**, 2671-2675 (*isol, pmr, cmr, ms*)

Parvistemoamide P-103

[139742-26-0]



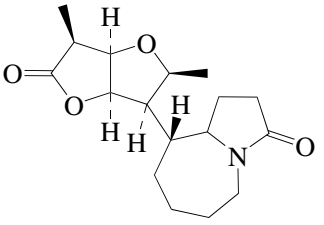
Absolute Configuration

$C_{12}H_{19}NO_4$ 241.286
Alkaloid from roots of *Stemona parviflora*.

Lin, W. *et al., Huaxue Xuebao*, 1991, **49**, 927; *CA*, **116**, 148198e

Parvistemoline P-104

[139766-99-7]

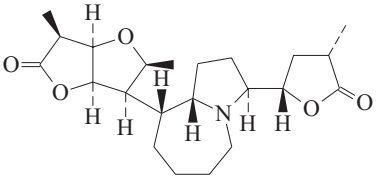


$C_{17}H_{25}NO_4$ 307.389
Alkaloid from roots of *Stemona parviflora*.

Lin, W. *et al., Huaxue Xuebao*, 1991, **49**, 927; *CA*, **116**, 148198e

Parvistemonine P-105

*Tetrahydro-3,5-dimethyl-6-[octahydro-3-(tetrahydro-4-methyl-5-oxo-2-furanyl)-1*H*-pyrrolo[1,2-*a*]azepin-9-yl]furo[3,2-*b*]furan-2(3*H*)-one, 9CI*
[131653-95-7]

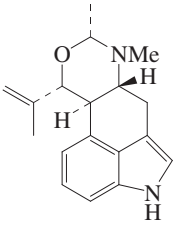


$C_{22}H_{33}NO_5$ 391.506
Alkaloid from the roots of *Stemona parviflora* (Stemonaceae).

Lin, W. *et al., Huaxue Xuebao*, 1990, **48**, 811-814; *CA*, **114**, 78639g (*isol, pmr, struct*)
Kaltenegger, E. *et al., Phytochemistry*, 2003, **63**, 803-816 (*isol, pmr, cmr*)

Paspaclavine P-106

[52052-65-0]



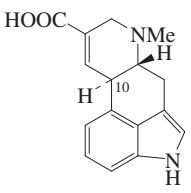
Absolute Configuration

$C_{18}H_{22}N_2O$ 282.385
Metab. of *Claviceps paspali*. Cryst. (Me_2CO). Mp 204-206° dec. $[\alpha]_D^{20}$ +88 (c, 0.2 in Py). Cleaved in acidic medium to Paliclavine, P-20 and acetaldehyde.

Tscherter, H. *et al., Helv. Chim. Acta*, 1974, **57**, 113 (*isol, uv, ir, pmr, ms, struct*)
Kozikowski, A.P. *et al., Tetrahedron*, 1984, **40**, 2345 (*synth*)

Paspalic acid P-107

6-Methyl-8-ergolene-8-carboxylic acid
[5516-88-1]



Absolute Configuration

$C_{16}H_{16}N_2O_2$ 268.315
Metab. from a strain of *Claviceps paspali* and *Claviceps purpurea*. Mp 245-247° dec. $[\alpha]_D$ -208 (c, 0.4 in 0.1*M* NaOH).

Hydrochloride: Mp 257-258° dec. $[\alpha]_D$ -176 (c, 0.4 in 0.1*M* HCl).

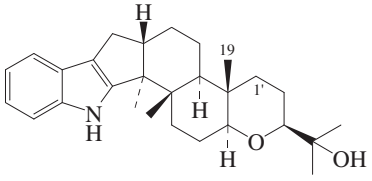
10-Hydroxy, amide: ***10-Hydroxy*-trans-*paspalic acid amide***
$C_{16}H_{17}N_3O_2$ 283.329
Alkaloid from *Claviceps paspali*.

10-Hydroxy, 10-epimer, amide: ***10-Hydroxy*-cis-*paspalic acid amide***
$C_{16}H_{17}N_3O_2$ 283.329
Alkaloid from *Claviceps paspali*.

Kobel, H. *et al., Helv. Chim. Acta*, 1964, **47**, 1052 (*isol, uv, ir, pmr, struct*)
Castagnoli, N. *et al., Nature (London)*, 1966, **211**, 859 (*occur*)
Flieger, M. *et al., J. Nat. Prod.*, 1993, **56**, 810 (*10-Hydroxypaspalic acid amide*)

Paspaline P-108

[11024-56-9]



$C_{28}H_{39}NO_2$ 421.622
Isol. from *Claviceps paspali*, *Albophoma yamauashiensis* Fo2546-Bp4406, *Penicillium paxilli* and the mangrove-derived *Penicillium* sp. HKI0459. Tremorgenic mycotoxin. Inhibitor of acyl-CoA:cholesterol acyltransferase (ACAT). Cryst. (MeOH or by subl.). Mp 264° (254°). $[\alpha]_D$ -23 (c, 0.36 in $CHCl_3$). $[\alpha]_D$ -38.5 (c, 0.47 in C_6H_6). λ_{max} 229 (ϵ 25120); 282 (ϵ 7940); 291 (ϵ 6300) (EtOH) (Berdy).

1′α-Hydroxy: ***Terpendole E***
[167427-23-8]
$C_{28}H_{39}NO_3$ 437.621
Prod. by *Albophoma yamanashiensis*. Acyl-CoA:cholesterol acyltransferase (ACAT) inhibitor. Cryst. Sol. MeOH, C_6H_6; poorly sol. H_2O. Mp 174-176°. $[\alpha]_D^{28}$ -36.4 (c, 1 in MeOH). λ_{max} 228 (ϵ 38600); 280 (ϵ 8700) (MeOH) (Berdy).

1′α,19-Dihydroxy: ***Terpendole F***
[167427-24-9]
$C_{28}H_{39}NO_4$ 453.62
Prod. by *Albophoma yamanashiensis*. Acyl-CoA:cholesterol acyltransferase (ACAT) inhibitor. Powder. Sol. MeOH, C_6H_6; poorly sol. H_2O. $[\alpha]_D^{28}$ -35.8 (c, 1 in MeOH). λ_{max} 228 (ϵ 48000); 280 (ϵ 10900) (MeOH) (Berdy).

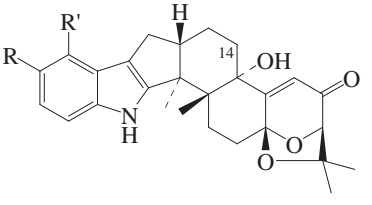
19-Oxo: ***Paspaline B***
[173268-84-3]
$C_{28}H_{37}NO_3$ 435.605
Isol. from *Penicillium paxilli*. Solid.

19-Oxo, 1′α-hydroxy: ***Terpendole G***
[167427-25-0]
$C_{28}H_{37}NO_4$ 451.605
Prod. by *Albophoma yamanashiensis*. Acyl-CoA:cholesterol acyltransferase (ACAT) inhibitor. Powder. Sol. MeOH, C_6H_6; poorly sol. H_2O. Mp 248-250° dec. $[\alpha]_D^{28}$ -28 (c, 1 in MeOH). λ_{max} 228 (ϵ 49400); 280 (ϵ 11800) (MeOH) (Berdy).

Fehr, T. *et al., Helv. Chim. Acta*, 1966, **49**, 1907 (*isol, uv, ir, pmr*)
Springer, J.P. *et al., Tet. Lett.*, 1980, 231 (*cryst struct*)
Smith, A.B. *et al., J.A.C.S.*, 1989, **111**, 5761 (*synth*)
Mewshaw, R.E. *et al., J.O.C.*, 1989, **54**, 3449 (*synth, ir, pmr*)
Tomoda, H. *et al., J. Antibiot.*, 1995, **48**, 793 (*Terpendoles*)
Munday-Finch, S.C. *et al., Phytochemistry*, 1996, **41**, 327-332 (*Paspaline B*)
Xu, M. *et al., Tetrahedron*, 2007, **63**, 435-444 (*isol, biosynth*)
Cole, R.J. *et al., Handbook of Toxic Fungal Metabolites*, Academic Press, 1981, 390

Paspalinine P-109

[63722-91-8]



R = R' = H

$C_{27}H_{31}NO_4$ 433.546
Isol. from *Claviceps paspali*, *Penicillium digitatum*, *Eupenicillium shearii* and *Aspergillus flavus*. Tremorgenic mycotoxin, shows insecticidal props. Sol. MeOH, $CHCl_3$. λ_{max} 232 (ϵ 25000); 250 (ϵ 14800); 274 (ϵ 8000) (MeOH) (Berdy).

Deoxy: ***Paspalicine***
[11024-55-8]
$C_{27}H_{31}NO_3$ 417.547
Isol. from *Claviceps paspali*. Tremorgenic mycotoxin. Large needles (Me_2CO). Mp *ca.* 240° (dec.). $[\alpha]_D$ +173 (c, 0.5 in $CHCl_3$). λ_{max} 231 (ϵ 47800); 275 (ϵ 12600) (EtOH) (Berdy).

▶ Toxic.

14α-Hydroxy: ***14-Hydroxypaspalinine***
[151341-77-4]
$C_{27}H_{31}NO_5$ 449.546
Isol. from the sclerotia of *Aspergillus nomius*. Tremorgenic mycotoxin. Exhibits insecticidal activity. $[\alpha]_D^{29}$ +127 (c, 0.11 in MeOH).

*14α-Hydroxy, 14-*O*-(2*S*-dimethylamino-3-methylbutanoyl):* ***14-(*N,N*-Dimethyl-L-valyloxy)paspalinine***
[151341-78-5]
$C_{34}H_{44}N_2O_6$ 576.731
Isol. from the sclerotia of *Aspergillus nomius*. Tremorgenic mycotoxin, shows insecticidal props. $[\alpha]_D^{26}$ +102 (c, 0.44 in MeOH). λ_{max} 228 (ϵ 15620); 279 (ϵ 3110) (MeOH) (Berdy).

Fehr, T. *et al., Helv. Chim. Acta*, 1966, **49**, 1907 (*isol, uv, ir, pmr*)
Cole, R.J. *et al., J. Agric. Food Chem.*, 1977, **25**, 826; 1197; 1981, **29**, 293 (*isol, deriv*)
Springer, J.P. *et al., Tet. Lett.*, 1980, 231 (*cryst struct*)
Gallagher, R.T. *et al., Tet. Lett.*, 1980, 235 (*cryst struct, uv, ir, pmr, cmr*)
Nozawa, K. *et al., Chem. Pharm. Bull.*, 1989, **37**, 626 (*isol*)
Smith, A.B. *et al., J.A.C.S.*, 1990, **112**, 8197 (*synth, Paspalicine, Paspalinine*)
Staub, G.M. *et al., Tet. Lett.*, 1993, **34**, 2569 (*14-Hydroxypaspalinine, 14-(N,N-Dimethyl-L-valyloxy)paspalinine*)
Cole, R.J. *et al., Handbook of Toxic Fungal Metabolites*, Academic Press, 1981, 394; 398

Paspalitrem A P-110

(3-Methyl-2-butenyl)paspalinine
[63722-90-7]
As Paspalinine, P-109 with R = $(H_3C)_2CH{=}CH^{1'}CH_2$-, R′ = H
$C_{32}H_{39}NO_4$ 501.664
Prod. by *Claviceps paspali* and the mangrove-derived *Penicillium* sp. HKI0459. Tremorgenic mycotoxin. λ_{max} 227 ; 248 (MeOH) (Berdy). λ_{max} 305 ; 335 (EtOH) (Berdy).

▶ LD_{50} (mus, ipr) <14 mg/kg.

Δ1′-Isomer, 3′-hydroxy: ***Paspalitrem B****. (3-Methyl-3-hydroxy-1-butenyl)paspalinine*
[63764-58-9]
$C_{32}H_{39}NO_5$ 517.664
Isol. from *Claviceps paspali*. Tremorgenic mycotoxin.

▶ LD_{50} (mus, ipr) <14 mg/kg.

Cole, R.J. *et al., J. Agric. Food Chem.*, 1977, **25**, 1197-1201 (*Paspalitrems A-B*)
Betina, V. *et al., Mycotoxins: Chemical, Biological and Environmental Aspects*, Elsevier, 1989, 383 (*tox*)
Xu, M. *et al., Tetrahedron*, 2007, **63**, 435-444 (*Paspalitrem A, isol, biosynth*)
Cole, R.J. *et al., Handbook of Toxic Fungal Metabolites*, Academic Press, 1981, 402

Paspalitrem C P-111

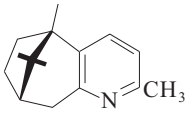
4-(3-Methyl-2-butenyl)paspalinine
[90866-61-8]
As Paspalinine, P-109 with R = H, R′ = $(H_3C)_2CH{=}CHCH_2$-
$C_{32}H_{39}NO_4$ 501.664
From *Claviceps paspali*. Tremorgenic mycotoxin. λ_{max} 234 (ϵ 35500); 278 (ϵ 10500) (MeOH) (Berdy).

Dorner, J.W. *et al., J. Agric. Food Chem.*, 1984, **32**, 1069-1071 (*isol, pmr, cmr*)

Patchoulipyridine P-112

*6,7,8,9-Tetrahydro-2,5,10,10-tetramethyl-5,8-methano-5*H*-cyclohepta[*b*]pyridine, 9CI*

[6517-97-1]



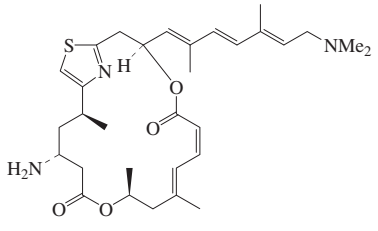
$C_{15}H_{21}N$ 215.338

Alkaloid from the essential oil of *Pogostemon patchouly* (Lamiaceae). Waxy needles. Mp 24-26.5°. $[\alpha]_D$ -31.3 (c, 5.06 in EtOH).

Büchi, G. *et al., J.A.C.S.*, 1966, **88**, 3109 (*isol, uv, ir, pmr*)
Cren, M.-C. *et al., Bull. Soc. Chim. Fr.*, 1970, 3020 (*synth, ms*)
Koyama, J. *et al., Chem. Pharm. Bull.*, 1991, **39**, 481 (*synth, pmr, cmr*)

Pateamine A P-113

[139220-18-1]



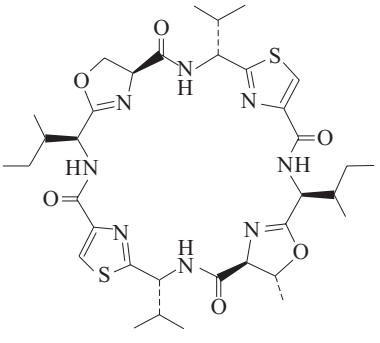
$C_{31}H_{45}N_3O_4S$ 555.78

Rare dilactone functionality. Isol. from the New Zealand marine sponge *Mycale* sp. Potent cytotoxin and immunosuppressant. $[\alpha]_D$ -253 (MeOH). λ_{max} 274 (ϵ 47000); 285 (ϵ 42000) (MeOH) (Berdy).

Northcote, P.T. *et al., Tet. Lett.*, 1991, **32**, 6411-6414 (*isol, uv, cd, ir, pmr, cmr, ms, struct*)
Stirling, D.J. *et al., Ph.D. Thesis*, 1996, (*activity*)
Remuiñán, M.J. *et al., Tet. Lett.*, 2000, **41**, 7367-7371 (*synth*)
Pattenden, G. *et al., Can. J. Chem.*, 2004, **82**, 353-365 (*synth*)
Romo, D. *et al., J.A.C.S.*, 2004, **126**, 10582-10588 (*synth*)

Patellamide A P-114

[81120-73-2]



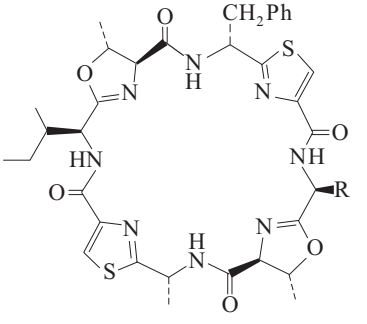
$C_{35}H_{50}N_8O_6S_2$ 742.962

Struct. revised in 1985. Cyclopeptide from the marine tunicate *Lissoclinum patella*. Shows selective metal binding props. Cytotoxic, shows antineoplastic props. MDR inhibitor. Cryst. (C_6H_6). Sol. MeOH, EtOAc; poorly sol. hexane, H_2O. Mp 228-229°. $[\alpha]_D^{24}$ +140.7 (c, 0.27 in $CHCl_3$) (+113.9). λ_{max} 232 (ϵ 21000) (MeOH) (Derep).

Ireland, C.M. *et al., J.O.C.*, 1982, **47**, 1807-1811 (*isol, ir, pmr, cmr*)
Biskupiak, J.E. *et al., J.O.C.*, 1983, **48**, 2302-2304 (*abs config*)
Hamada, Y. *et al., Tet. Lett.*, 1985, **26**, 6501-6504 (*synth*)
In, Y. *et al., Chem. Pharm. Bull.*, 1993, **41**, 1686-1690 (*conformn, cryst struct*)
In, Y. *et al., Acta Cryst. C*, 1994, **50**, 432-434 (*cryst struct*)
Morris, L.A. *et al., Tetrahedron*, 2001, **57**, 3185-3197 (*activity*)
Salomon, C.E. *et al., J. Nat. Prod.*, 2002, **65**, 689-692 (*isol*)
Schmidt, E.W. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 2005, **102**, 7315-7320 (*biosynth*)
Garcia-Reynaga, P. *et al., Org. Lett.*, 2008, **10**, 4621-4623 (*synth*)

Patellamide B P-115

[81098-23-9]



R = $CH_2CH(CH_3)_2$

$C_{38}H_{48}N_8O_6S_2$ 776.979

Cyclopeptide from the marine tunicate *Lissoclinum patella*. Cytotoxic, shows antineoplastic props. MDR inhibitor. Sol. MeOH, $CHCl_3$; poorly sol. hexane, H_2O. $[\alpha]_D$ +29.4 (c, 0.34 in CH_2Cl_2). λ_{max} 248 (ϵ 8000) (MeOH) (Derep).

Ireland, C.M. *et al., J.O.C.*, 1982, **47**, 1807-1811 (*isol, ir, pmr, cmr*)
Biskupiak, J.E. *et al., J.O.C.*, 1983, **48**, 2302-2304 (*abs config*)
Hamada, Y. *et al., Tet. Lett.*, 1985, **26**, 5155-5158; 5159-5162 (*synth, struct*)
Schmidt, U. *et al., Tet. Lett.*, 1986, **27**, 163-166; 179 (*synth, struct*)
Salomon, C.E. *et al., J. Nat. Prod.*, 2002, **65**, 689-692 (*isol*)

Patellamide C P-116

[81120-74-3]

As Patellamide B, P-115 with

R = $-CH(CH_3)_2$

$C_{37}H_{46}N_8O_6S_2$ 762.952

Cyclopeptide from the marine tunicate *Lissoclinum patella*. Shows selective metal binding props. Antineoplastic agent. MDR inhibitor. Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. $[\alpha]_D$ +19 (c, 0.21 in CH_2Cl_2). λ_{max} 248 (ϵ 8000) (MeOH) (Derep).

Ireland, C.M. *et al., J.O.C.*, 1982, **47**, 1807-1811; 1983, **48**, 2302-2304 (*isol, ir, pmr, cmr, abs config*)
Hamada, Y. *et al., Tet. Lett.*, 1985, **26**, 5155-5158; 5159-5162 (*synth, struct*)
Morris, L.A. *et al., Tetrahedron*, 2001, **57**, 3185-3197 (*activity*)
Salomon, C.E. *et al., J. Nat. Prod.*, 2002, **65**, 689-692 (*isol*)
Schmidt, E.W. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 2005, **102**, 7315-7320 (*biosynth*)

Patellamide D P-117

[120853-15-8]

As Patellamide B, P-115 with

R = $-CH(CH_3)CH_2CH_3$

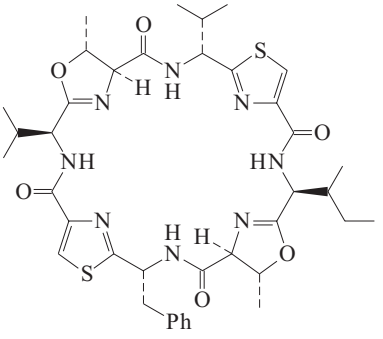
$C_{38}H_{48}N_8O_6S_2$ 776.979

Cyclopeptide from the ascidian *Lissoclinum patella*. Cytotoxic. Mp 144-145°. $[\alpha]_D$ +32 (c, 0.37 in $CHCl_3$).

Degnan, B.M. *et al., J. Med. Chem.*, 1989, **32**, 1349-1354 (*isol, pmr, cmr, struct*)
Schmitz, F.J. *et al., J.O.C.*, 1989, **54**, 3463-3472 (*isol, ir, pmr, cmr, cryst struct*)

Patellamide E P-118

[140430-46-2]



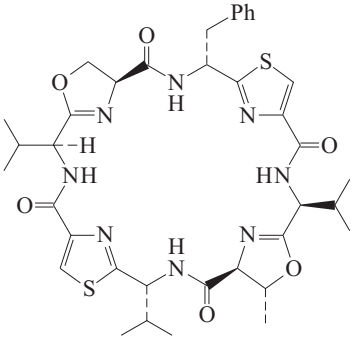
$C_{39}H_{50}N_8O_6S_2$ 791.006

Cyclic peptide antibiotic. Isol. from the ascidian *Lissoclinum patella*. Weakly cytotoxic. Amorph. $[\alpha]_D^{25}$ +48.6 (c, 0.58 in $CHCl_3$). λ_{max} 235 (ϵ 12300) (MeOH) (Berdy).

McDonald, L.A. *et al., J. Nat. Prod.*, 1992, **55**, 376-379 (*isol, cmr, struct*)

Patellamide F P-119

[164803-18-3]

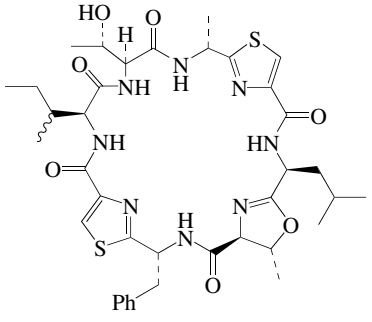


$C_{37}H_{46}N_8O_6S_2$ 762.952
Cyclopeptide from the marine tunicate *Lissoclinum patella*. Cytotoxic. Amorph. solid. Sol. MeOH. $[\alpha]_D$ +40 (c, 0.1 in MeOH). λ_{max} 235 (ϵ 13700) (MeOH) (Berdy).

Rashid, M.A. *et al., J. Nat. Prod.*, 1995, **58**, 594-597 (*isol, ir, pmr, cmr, struct*)

Patellamide G P-120

[218916-91-7]

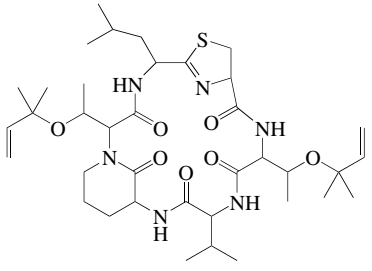


$C_{38}H_{50}N_8O_7S_2$ 794.994
Cyclic peptide. Isol. from the ascidian *Lissoclinum patella*. Amorph. solid. $[\alpha]_D$ +40.6 (c, 0.35 in MeOH).

Fu, X. *et al., J. Nat. Prod.*, 1998, **61**, 1547-1551 (*isol, ir, pmr, cmr, ms*)

Patellin 1 P-121

[181758-78-1]

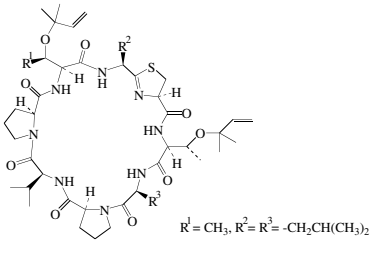


$C_{37}H_{60}N_6O_7S$ 732.983
Cyclic hexapeptide. Isol. from the ascidian *Lissoclinum patella*. Glass. λ_{max} 220 (ϵ 3800) (MeOH).

Carroll, A.R. *et al., Aust. J. Chem.*, 1996, **49**, 659-667 (*isol, uv, ir, pmr, cmr, ms*)

Patellin 3 P-122

[181758-79-2]



$C_{48}H_{78}N_8O_9S$ 943.258
Cyclic octapeptide. Isol. from the ascidian *Lissoclinum patella*. Oil. $[\alpha]_D$ -63 (c, 0.09 in $CHCl_3$). λ_{max} 242 (ϵ 10100) (EtOH).

Carroll, A.R. *et al., Aust. J. Chem.*, 1996, **49**, 659-667 (*isol, uv, ir, ms, struct*)

Patellin 4 P-123

[181758-80-5]
As Patellin 3, P-122 with
R^1=CH_3, R^2=-$CH(CH_3)_2$, R^3=-$CH_2CH(CH_3)_2$
$C_{47}H_{76}N_8O_9S$ 929.232
Cyclic octapeptide, stereochem. not assigned. Isol. from the ascidian *Lissoclinum patella*.

Carroll, A.R. *et al., Aust. J. Chem.*, 1996, **49**, 659-667 (*isol*)

Patellin 5 P-124

[181758-81-6]
As Patellin 3, P-122 with
R^1=H, R^2=-CH_2Ph, R^3=-$CH(CH_3)_2$
$C_{49}H_{72}N_8O_9S$ 949.222
Cyclic octapeptide. Isol. from the ascidian *Lissoclinum patella*. Oil. $[\alpha]_D$ -36 (c, 0.05 in $CHCl_3$). λ_{max} 245 (ϵ 12500) (EtOH).

Carroll, A.R. *et al., Aust. J. Chem.*, 1996, **49**, 659-667 (*isol, ur, ir, pmr, cmr, ms*)

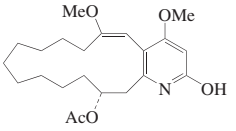
Patellin 6 P-125

[181758-82-7]
As Patellin 3, P-122 with
R^1=CH_3, R^2=-$CH(CH_3)_2$, R^3=-CH_2Ph
$C_{50}H_{74}N_8O_9S$ 963.249
Cyclic octapeptide. Isol. from the ascidian *Lissoclinum patella*. Oil. $[\alpha]_D$ -50 (c, 0.04 in $CHCl_3$). λ_{max} 248 (ϵ 12400) (EtOH).

Carroll, A.R. *et al., Aust. J. Chem.*, 1996, **49**, 659-667 (*isol, uv, ir, pmr, cmr, ms*)

Patungensine P-126

[951212-48-9]



Absolute Configuration

$C_{22}H_{33}NO_5$ 391.506
Alkaloid from *Lysimachia patungensis*. Needles (MeOH). Mp 111.5-112.5°. $[\alpha]_D$ +12.8 (c, 0.2 in MeOH). λ_{max} 221 (log ϵ 4.4); 257 (log ϵ 4.27); 290 (log ϵ 3.85) (EtOH).

Huang, X. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2007, **43**, 170-172 (*isol, pmr, cmr, ms*)

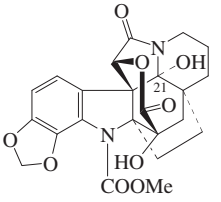
Paucicaline P-127

$C_{18}H_{27}NO_8$ 385.413
Pyrrolizidine alkaloid. Struct. unknown. Alkaloid from *Senecio pauciligulatus* (Asteraceae). Fine needles (EtOH). V. sol. H_2O. Mp 184° dec.

Pretorius, T.P. *et al., CA*, 1950, **44**, 3217f

Paucidactine A P-128

[178253-98-0]



Absolute Configuration

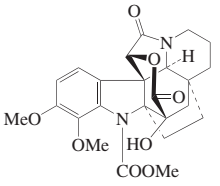
$C_{23}H_{22}N_2O_9$ 470.435
Alkaloid from *Kopsia pauciflora*. Light yellow cryst. Mp 279-280°. $[\alpha]_D$ +53.8 (c, 0.156 in $CHCl_3$).

21-Deoxy: ***Paucidactine B***
[178253-99-1]
$C_{23}H_{22}N_2O_8$ 454.435
Minor alkaloid from *Kopsia pauciflora*. $[\alpha]_D$ +1.2 (c, 0.017 in $CHCl_3$).

Kam, T.-S. *et al., Tet. Lett.*, 1996, **37**, 3603-3606 (*isol, uv, pmr, cmr, ms, cryst struct*)

Paucidactine C P-129

[949932-23-4]



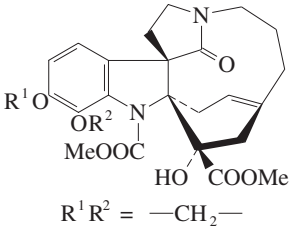
Absolute Configuration

$C_{24}H_{26}N_2O_8$ 470.478
Alkaloid from the stem bark of *Kopsia arborea*. Oil. $[\alpha]_D$ +250 (c, 0.01 in $CHCl_3$). λ_{max} 220 (log ϵ 4.64); 247 (log ϵ 3.93); 280 (log ϵ 3.36) (EtOH).

Lim, K.-H. *et al., J. Nat. Prod.*, 2007, **70**, 1302-1307 (*isol, pmr, cmr*)

Pauciflorine A P-130

[181486-81-7]



$C_{24}H_{26}N_2O_8$ 470.478
A 20,21-secoaspidofractine alkaloid. Alkaloid from leaves of *Kopsia pauciflora*. Melanin biosynthesis inhibitor. Amorph. $[\alpha]_D$ -50.7 (c, 2.0 in $CHCl_3$). λ_{max} 227 (log ϵ 4.62); 248 (log ϵ 4.17); 283 (log ϵ 3.14); 293 (log ϵ 3.02) (EtOH).

Kam, T.-S. *et al., Tet. Lett.*, 1996, **37**, 5765 (*isol, uv, pmr, cmr, ms, struct*)

Kuehne, M.E. *et al., Org. Lett.*, 1999, **1**, 1751-1753 (*synth*)

Pauciflorine B P-131

[181486-82-8]

As Pauciflorine A, P-130 with

$R^1 = R^2 = Me$

$C_{25}H_{30}N_2O_8$ 486.521

A secoaspidofractine alkaloid. Alkaloid from leaves of *Kopsia pauciflora*. Melanin biosynthesis inhibitor. $[\alpha]_D$ -25 (c, 0.4 in $CHCl_3$). λ_{max} 224 (log ϵ 4.49); 253 (log ϵ 3.83); 282 (log ϵ 3.04); 290 (log ϵ 3.01) (EtOH).

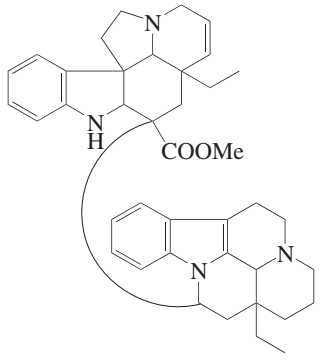
Kam, T.-S. *et al., Tet. Lett.*, 1996, **37**, 5765 (*isol, uv, pmr, cmr, ms, struct*)

Kuehne, M.E. *et al., Org. Lett.*, 1999, **1**, 1751-1753 (*synth*)

Magnus, P. *et al., Tetrahedron*, 2002, **58**, 3423-3443 (*synth*)

Paucivenine P-132

[69734-97-0]



$C_{40}H_{48}N_4O_2$ 616.845

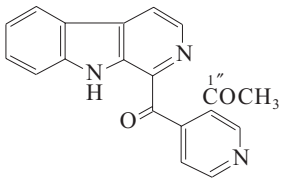
Alkaloid from the leaves and stems of *Melodinus balansae* var. *paucivenosus* (Apocynaceae). Amorph. λ_{max} 233 (log ϵ 3.52); 295 (log ϵ 2.98) (no solvent reported).

Mehri, M.H. *et al., Phytochemistry*, 1978, **17**, 1451-1452 (*uv, ir, ms, struct*)

Pauridianthine P-133

*1-[4-(9*H*-Pyrido[3,4-*b*]indol-1-ylcarbonyl)-3-pyridinyl]ethanone, 9CI*

[31482-18-5]



$C_{19}H_{13}N_3O_2$ 315.331

Alkaloid from the roots of *Pauridiantha callicarpoides* (Rubiaceae). Yellow prisms (MeOH). Mp 271°.

1″ξ-Alcohol: ***Pauridianthinol***

[52908-86-8]

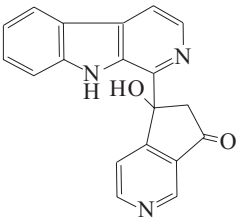
$C_{19}H_{15}N_3O_2$ 317.346

Alkaloid from the root and stem bark of *Pauridiantha lyalli* (Rubiaceae).

Pousset, J.-L. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1971, **272**, 665 (*uv, ir, ms, pmr, struct*)

Pousset, J.-L. *et al., Plant. Med. Phytother.*, 1974, **7**, 51 (*Pauridianthinol*)

Pauridianthinine P-134



$C_{19}H_{13}N_3O_2$ 315.331

(ξ)-*form* [31460-98-7]

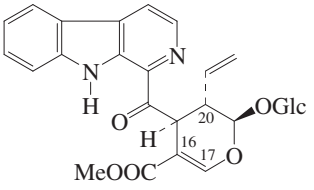
Alkaloid from the root bark of *Pauridiantha callicarpoides* (Rubiaceae).

Pousset, J.-L. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1971, **272**, 665 (*uv, ir, pmr, ms, struct*)

Pauridianthoside P-135

14-Oxolyaloside

[63238-69-7]



$C_{27}H_{28}N_2O_{10}$ 540.526

The name 14-Oxolyaloside is apparently incorrect because the stereochemistries are different, but this has not been confimed. Alkaloid from the leaves of *Pauridiantha lyalli* (Rubiaceae). Cryst. (Me_2CO). Mp 208-210°. $[\alpha]_D^{20}$ -264 (c, 0.5 in MeOH).

*Tetra-*O*-Ac:* Mp 143-145°. $[\alpha]_D$ -175 ($CHCl_3$).

20-Epimer: ***Isopauridianthoside***

[88644-38-6]

$C_{27}H_{28}N_2O_{10}$ 540.526

Alkaloid from the leaves of *Pauridiantha lyalli* (Rubiaceae). Fine needles (Et_2O/MeOH)(as tetra-*O*-Ac). Mp 167-169° (as tetra-*O*-Ac).

Stereoisomer, 17-hydroxy, 16,17-dihydro: ***Palinine***

[55856-84-3]

$C_{27}H_{32}N_2O_{10}$ 544.557

Alkaloid from *Palicourea alpina* (Rubiaceae). Mp 166.5-168°. $[\alpha]_D^{28}$ -252.3 (MeOH). No stereochem. determined.

Stuart, K.L. *et al., Tet. Lett.*, 1974, 3853-3856 (*Palinine*)

Lévesque, J. *et al., Fitoterapia*, 1977, **48**, 5-7 (*Pauridianthoside*)

Lévesque, J. *et al., J. Nat. Prod.*, 1983, **46**, 619-625 (*Isopauridianthoside*)

Pavanoline P-136

[12706-41-1]

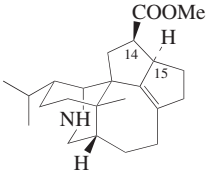
$C_{21}H_{25}NO_6$ 387.432

Struct. unknown. Alkaloid from *Papaver anomalum* (Papaveraceae). Mp 242-244°. $[\alpha]_D^{20}$ -226 (c, 0.16 in $CHCl_3$).

Pfeifer, S. *et al., Pharmazie*, 1967, **22**, 454; *CA*, **68**, 6130t

Paxdaphnidine A P-137

[676365-61-0]



Relative Configuration

$C_{23}H_{35}NO_2$ 357.535

Alkaloid from *Daphniphyllum paxianum*. Oil. $[\alpha]_D^{20}$ -17 (c, 0.27 in MeOH).

14,15-Diepimer: ***Caldaphnidine B***

[871261-41-5]

$C_{23}H_{35}NO_2$ 357.535

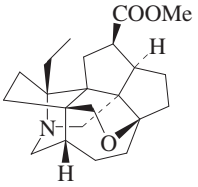
Alkaloid from *Daphniphyllum calycinum*. Oil. $[\alpha]_D^{20}$ -39 (c, 0.6 in MeOH).

Zhan, Z.-J. *et al., J.O.C.*, 2004, **69**, 1726-1729 (*Paxdaphnidine A*)

Zhan, Z.-J. *et al., Tetrahedron*, 2005, **61**, 11038-11045 (*Caldaphnidine B*)

Paxdaphnine A P-138

[919111-61-8]



Absolute Configuration

$C_{22}H_{31}NO_3$ 357.492

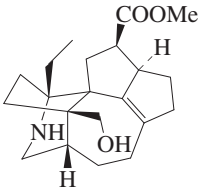
Alkaloid from *Daphniphyllum longeracemosum* and *Daphniphyllum paxianum*. Gum. $[\alpha]_D^{20}$ -71 (c, 0.18 in MeOH).

Li, C. *et al., Tet. Lett.*, 2007, **48**, 2737-2740 (*isol, pmr, cmr*)

Fan, C.Q. *et al., Tetrahedron*, 2007, **63**, 115-119 (*isol, pmr, cmr, ms, cryst stuct*)

Paxdaphnine B P-139

[919283-74-2]



Absolute Configuration

$C_{21}H_{31}NO_3$ 345.481

Alkaloid from the seeds of *Daphniphyllum paxianum*. Gum. $[\alpha]_D^{20}$ +23 (c, 0.12 in MeOH).

O-*Ac:* **O-*Acetylpaxdaphnine B***

[960604-06-2]

$C_{23}H_{33}NO_4$ 387.518

Alkaloid from the fruit of *Daphniphyllum macropodum*. Oil. $[\alpha]_D^{20}$ +49.7

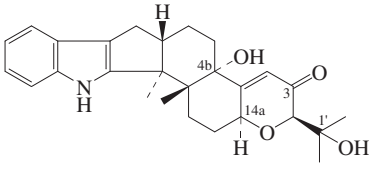
(c, 0.67 in MeOH).

N-*Hydroxy:* **N-*Hydroxypaxdaphnine B***
[960604-04-0]
$C_{21}H_{31}NO_4$ 361.48
Alkaloid from the fruit of *Daphniphyllum macropodum*. Amorph. solid. $[\alpha]_D^{20}$ +38.6 (c, 0.72 in MeOH).

Lu, Y.B. *et al., Acta Cryst. E*, 2007, **63**, o589-o591 (*Paxdaphnine B, cryst struct*)
Wang, X.-N. *et al., Helv. Chim. Acta*, 2007, **90**, 2156-2162 (*O-Ac, N-hydroxy*)
Fan, C.-Q. *et al., Tetrahedron*, 2007, **63**, 115-119 (*Paxdaphnine B*)

Paxilline P-140

[57186-25-1]



$C_{27}H_{33}NO_4$ 435.562
CAS numbering shown. Several schemes have been used. Metab. from *Penicillium paxilli*, *Eupenicillium shearii*, *Acremonium loliae*, *Emericella foveolata*, *Emericella desertorum*, *Emericella striata* and a marine-derived *Scopulariopsis brevicaulis.* Tremorgenic mycotoxin, muscle contractant. Plates (Me_2CO). Mp 252°. λ_{max} 231 (ϵ 41700); 280 (ϵ 9330); 290 (sh) (ϵ 8320) (EtOH) (Derep).
► LD_{50} (mus, orl) >227 mg/kg; produces tremors. DJ2830000

1′-Ac: ***1′-O-Acetylpaxilline***
[121998-08-1]
$C_{29}H_{35}NO_5$ 477.599
Isol. from the mycelium of *Emericella striata*. Mycotoxin. Tremorgenic agent. Needles (EtOAc). Subl. 262-265. λ_{max} 231 (ϵ 41700); 280 (ϵ 9330); 290 (sh) (ϵ 8320) (EtOH) (Derep).

3β-Alcohol, 3-Ac: ***PC-M5′***
[133613-75-9]
$C_{29}H_{37}NO_5$ 479.615
Metab. of *Penicillium crustosum*. Cryst. powder. Mp 162-164°.

*4*b-*Deoxy:* ***Dehydroxypaxilline***
[112900-05-7]
$C_{27}H_{33}NO_3$ 419.563
Metab. of *Emericella striata*. Leaflets (MeOH). Mp 232-234°.

*4*b-*Deoxy, 3β-alcohol:* ***PC-M6***. *10-Hydroxy-13-deoxypaxilline. 3-Hydroxy-4-deoxypaxilline*
[133613-76-0]
$C_{27}H_{35}NO_3$ 421.578
Metab. of *Penicillium crustosum*, *Penicillium paxilli* and *Acremonium lolii*. Tremorgenic mycotoxin. Cryst. powder. Mp 260-263° dec. Numbering systems vary.

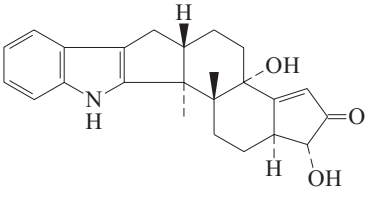
*14*a-*Hydroxy:* ***14a-Hydroxypaxilline***
[157530-30-8]
$C_{27}H_{33}NO_5$ 451.561
Metab. from *Penicillium paxilli*. Also identified chromatographically in *Acremonium lolii*. Apparently not tremorgenic.

*14*a-*Hydroxy, 4*b-*deoxy:* ***14a-Hydroxy-4b-deoxypaxilline***
[157530-29-5]
$C_{27}H_{33}NO_4$ 435.562
Metab. of *Penicillium paxilli* and *Acremonium lolii*.

Cole, R.J. *et al., Can. J. Microbiol.*, 1974, **20**, 1159 (*isol, uv, ir, pmr, ms*)
Springer, J.P. *et al., Tet. Lett.*, 1975, 2531; 1980, 231 (*pmr, cd, cryst struct, abs config*)
Weedon, C.M. *et al., Phytochemistry*, 1987, **26**, 969
Nozawa, K. *et al., J.C.S. Perkin 1*, 1988, 2607 (*Dehydroxypaxilline*)
Nozawa, K. *et al., Chem. Pharm. Bull.*, 1989, **37**, 1387 (*1′-O-Acetylpaxilline*)
Betina, V. *et al., Mycotoxins, Chemical, Biological and Environmental Aspects*, Elsevier, 1989, 365 (*rev*)
Hosoe, T. *et al., Chem. Pharm. Bull.*, 1990, **38**, 3473 (*PC-M5′, PC-M6*)
Antkowiak, R. *et al., Alkaloids (Academic Press)*, 1991, **40**, 249 (*isol, derivs*)
Mantle, P.G. *et al., Phytochemistry*, 1994, **36**, 1209 (*7-Hydroxypaxilline, 7-Hydroxy-13-deoxypaxilline, 10-Hydroxy-13-deoxypaxilline*)
Fueki, S. *et al., Org. Lett.*, 2004, **6**, 2697-2700 (*biosynth*)
Cole, R.J. *et al., Handbook of Toxic Fungal Metabolites*, Academic Press, 1981, 386

Paxinorol P-141

[168482-45-9]

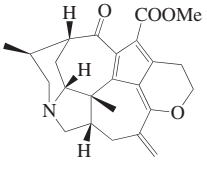


$C_{24}H_{27}NO_3$ 377.482
Formally derived from Paxilline, P-140 by loss of acetone. Prob. an artifact prod. during prolonged storage prior to isol. Trace contaminant of a paxilline-containing extract from the fungus *Penicillium paxilli*. Solid. Mp not detd. due to paucity of material.

Miles, C.O. *et al., J.O.C.*, 1995, **60**, 6067 (*isol, pmr, cmr, ms, struct*)

Paxiphylline A P-142

[1000410-97-8]



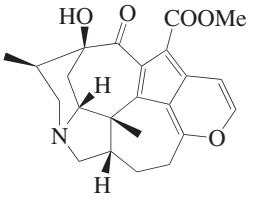
Relative Configuration

$C_{24}H_{27}NO_4$ 393.482
Alkaloid from the leaves of *Daphniphyllum paxianum*. Pale yellow solid. $[\alpha]_D^{23}$ -221.7 (c, 0.4 in MeOH). λ_{max} 275 (ϵ 9710); 354 (ϵ 10960) (MeOH).

Zhang, Y. *et al., Tet. Lett.*, 2007, **48**, 9104-9107 (*isol, pmr, cmr*)

Paxiphylline B P-143

[1000410-99-0]

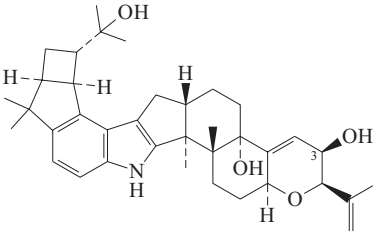


$C_{23}H_{25}NO_5$ 395.454
Alkaloid from the leaves of *Daphniphyllum paxianum*. Pale yellow solid. $[\alpha]_D^{22}$ -326.7 (c, 0.17 in MeOH). λ_{max} 275 (ϵ 26350); 331 (ϵ 4480) (MeOH).

Zhang, Y. *et al., Tet. Lett.*, 2007, **48**, 9104-9107 (*isol, pmr, cmr*)

PC-M4 P-144

[148717-76-4]

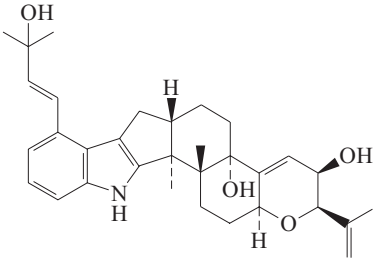


$C_{37}H_{49}NO_4$ 571.798
Metab. from *Penicillium crustosum*. Crystalline powder. Mp 269-272° dec.

Yamaguchi, T. *et al., Phytochemistry*, 1993, **32**, 1177 (*isol, uv, ir, pmr, cmr, cd, struct*)

PC-M5 P-145

[148717-75-3]



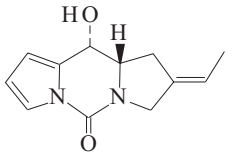
$C_{32}H_{41}NO_4$ 503.68
Metab. from *Penicillium crustosum*. Pale yellow needles (EtOAc). Mp 218-220° dec.

Yamaguchi, T. *et al., Phytochemistry*, 1993, **32**, 1177 (*isol, uv, ir, pmr, cmr, cd, struct*)

PD 125375 P-146

*1,2,10,10*a*-Tetrahydro-2-ethylidene-10-hydroxydipyrrolo[1,2-*c*:2′,1′-*f*]pyrimidin-5-one*

[106039-74-1]



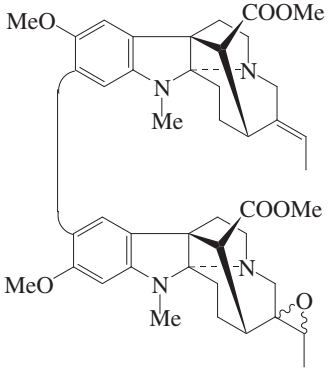
$C_{12}H_{14}N_2O_2$ 218.255

Structurally related to Tomaymycin, T-424. Isol. from a *Streptomyces* sp. Shows no antimicrobial or antitumour props. Needles (EtOAc). Sol. MeOH; poorly sol. H_2O. Mp 181-183°. $[\alpha]_D$ +89.8 (c, 0.52 in MeOH). λ_{max} 231 (ϵ 9505); 273 (ϵ 12100) (MeOH) (Berdy).

Rithner, C.D. *et al., J.O.C.*, 1987, **52**, 298 (*isol, cryst struct*)

Peceylanine P-147

[76202-54-5]



$C_{44}H_{54}N_4O_7$ 750.933

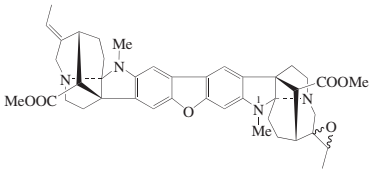
The epoxide and olefinic groups may be interchanged. Alkaloid from *Petchia ceylanica* (Apocynaceae). Cryst. (MeOH). Mp 157-158°. $[\alpha]_D$ -237 (c, 1 in $CHCl_3$).

Kunesch, N. *et al., Tet. Lett.*, 1980, **21**, 1727 (*cmr, struct*)

Cavé, A. *et al., J. Nat. Prod.*, 1987, **50**, 1178 (*isol, uv, ir, pmr, struct*)

Peceyline P-148

[76202-55-6]



$C_{42}H_{48}N_4O_6$ 704.864

The epoxide and olefinic groups may be interchanged. Alkaloid from *Petchia ceylanica* (Apocynaceae). Cryst. (MeOH/Et_2O). Mp 310° dec. $[\alpha]_D$ -355 (c, 1 in $CHCl_3$). λ_{max} 218 (log ϵ 4.42); 245 (log ϵ 4.38); 294 (log ϵ 4.2); 340 (sh) (log ϵ 4.15); 366 (log ϵ 4.41) (EtOH).

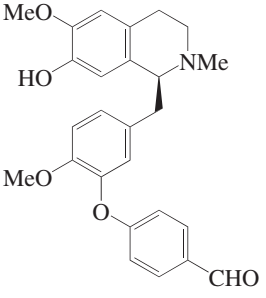
N^{1}-De-Me: ***Demethylpeceyline***
[115028-51-8]
$C_{41}H_{46}N_4O_6$ 690.838
Alkaloid from leaves of *Petchia ceylanica* (Apocynaceae). Amorph. $[\alpha]_D^{20}$ -120 (MeOH).

Kunesch, N. *et al., Tet. Lett.*, 1980, **21**, 1727-1730 (*cmr, struct*)

Cavé, A. *et al., J. Nat. Prod.*, 1987, **50**, 1178-1182 (*isol, uv, ir, pmr, struct*)

Atta-ur-Rahman, *et al., Planta Med.*, 1988, **54**, 37-40 (*Demethylpeceyline*)

Pecrassipine A P-149



$C_{26}H_{27}NO_5$ 433.503

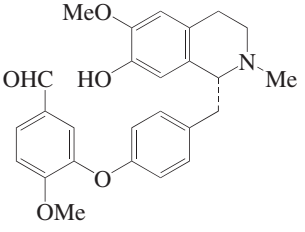
(S)-form
Alkaloid from the bark of *Phaeanthus crassipetalus*. Exhibits a vasorelaxant activity on isol. rat aorta ring. Brownish solid. $[\alpha]_D^{26}$ +27 (c, 0.4 in MeOH). λ_{max} 298 (ϵ 8200) (MeOH).

(ξ)-form
Me ether: ***Vietnamine***
[139232-16-9]
$C_{27}H_{29}NO_5$ 447.53
Alkaloid from the leaves of *Phaeanthus vietnamensis* (Annonaceae).

Nguyen Thi Nghia, *et al., Fitoterapia*, 1991, **62**, 315-318 (*Vietnamine*)

Awang, K. *et al., Heterocycles*, 2007, **71**, 2055-2061 (*Pecrassipine A*)

Pecrassipine B P-150



$C_{26}H_{27}NO_5$ 433.503

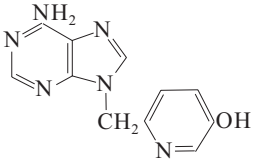
(R)-form [953395-30-7]
Alkaloid from the bark of *Phaeanthus crassipetalus*. Brownish solid. $[\alpha]_D^{26}$ -21 (c, 0.8 in MeOH). λ_{max} 296 (ϵ 8100) (MeOH).

Awang, K. *et al., Heterocycles*, 2007, **71**, 2055-2061 (*isol, cd, pmr, cmr*)

Pedatisectine A P-151

*6-[(6-Amino-9*H*-purin-9-yl)methyl]-3-pyridinol, 9CI*

[103823-31-0]

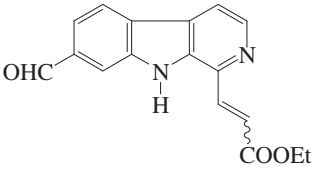


$C_{11}H_{10}N_6O$ 242.24
Alkaloid from *Pinellia pedatisecta* (Araceae). Mp 282-284°.

Qin, W. *et al., Zhongcaoyao*, 1986, **17**, 197; *CA*, **105**, 94501a

Pedatisectine C P-152

[103805-66-9]



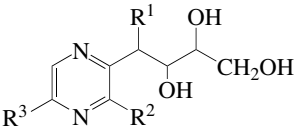
$C_{17}H_{14}N_2O_3$ 294.309
Alkaloid from *Pinellia pedatisecta* (Araceae). Mp 162-164°.

Qin, W. *et al., Zhongcaoyao*, 1986, **17**, 197; *CA*, **105**, 94501a

Pedatisectine D P-153

4-(3-Methylpyrazinyl)-1,2,3-butanetriol, 9CI. 2-Methyl-3-(2,3,4-trihydroxybutyl)-pyrazine

[163046-71-7]



$R^1 = R^3 = H$, $R^2 = CH_3$

$C_9H_{14}N_2O_3$ 198.221
Alkaloid from the rhizomes of *Pinellia pedatisecta* (Araceae). Cryst. Mp 110-112°.

Qin, W. *et al., Zhongcaoyao*, 1995, **26**, 3; *CA*, **122**, 298789m

Pedatisectine E P-154

1-(5-Methylpyrazinyl)-1,2,3,4-butanetetrol, 9CI. 2-Methyl-5-(1,2,3,4-tetrahydroxybutyl)pyrazine

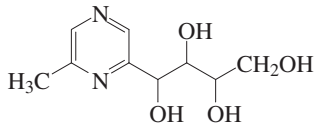
[163181-57-5]
As Pedatisectine D, P-153 with R^1 = OH, R^2 = H, R^3 = CH_3

$C_9H_{14}N_2O_4$ 214.221
Alkaloid from the rhizomes of *Pinellia pedatisecta* (Araceae). Cryst. Mp 202-203°. $[\alpha]_D^{17}$ -87.8 (c, 0.16 in DMSO).

Qin, W. *et al., Zhongcaoyao*, 1995, **26**, 3; *CA*, **122**, 298789m

Pedatisectine F P-155

1-(6-Methylpyrazinyl)-1,2,3,4-butanetetrol, 9CI. 2-Methyl-6-(1,2,3,4-tetrahydroxybutyl)pyridine
[206757-32-6]

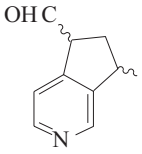


$C_9H_{14}N_2O_4$ 214.221
Alkaloid from the rhizomes of *Pinellia pedatisecta*.

Wang, R. *et al., CA*, 1998, **128**, 306181y

Pedicularidine P-156

[41645-65-2]



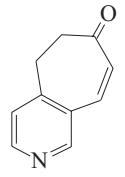
$C_{10}H_{11}NO$ 161.203
Alkaloid from *Pedicularis olgae* (Scrophulariaceae). Mp 211-212°. $[\alpha]_D$ +67.7.

Carboxylic acid: ***Pedicularine***
[28330-57-6]
$C_{10}H_{11}NO_2$ 177.202
Alkaloid from *Pedicularis olgae* (Scrophulariaceae). Mp 208-209° dec. $[\alpha]_D^{20}$ -15.3 (c, 0.78 in MeOH).

Khakimdzhanov, S. *et al., Khim. Prir. Soedin.*, 1969, **5**, 457; 1970, **6**, 142; 1973, **9**, 132; *Chem. Nat. Compd. (Engl. Transl.)*, 1969, **5**, 383; 1970, **6**, 142; 1973, **9**, 137 (*isol, uv, ir, ms, pmr, struct*)
Cordell, G.A. *et al., Alkaloids (Academic Press)*, 1977, **16**, 431; 468 (*rev*)

Pediculidine P-157

*5,6-Dihydro-7*H*-cyclohepta[c]pyridin-7-one, 9CI*
[33579-98-5]



$C_{10}H_9NO$ 159.187
Alkaloid from *Pedicularis olgae* (Scrophulariaceae). Mp 74-75°. Struct. not firmly established.

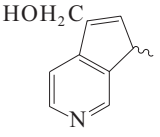
Picrate: Mp 211-212°.

8,9-Dihydro, 7-alcohol: ***Pediculinine***
[33605-28-6]
$C_{10}H_{13}NO$ 163.219
Alkaloid from *Pedicularis olgae* and *Verbascum nobile* (Scrophulariaceae). Mp 133-135°.

Abdusamatov, A. *et al., Khim. Prir. Soedin.*, 1971, **7**, 304; 306; *Chem. Nat. Compd. (Engl. Transl.)*, 1971, **7**, 292; 294 (*Pediculidine, Pediculinine, uv, ir, pmr, ms, isol, struct*)
Ninova, P. *et al., Khim. Prir. Soedin.*, 1971, **7**, 540; *Chem. Nat. Compd. (Engl. Transl.)*, 1971, **7**, 526 (*Pediculinine, isol*)
Cordell, G.A. *et al., Alkaloids (Academic Press)*, 1977, **16**, 431 (*rev*)

Pediculine P-158

[19772-84-0]

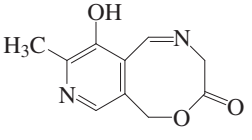


$C_{10}H_{11}NO$ 161.203
An impossible struct. has been assigned, and that shown is considered possible. Alkaloid from *Pedicularis olgae* (Scophulariaceae). Mp 188-189°. $[\alpha]_D^{25}$ +61.5 (c, 0.95 in EtOH).

Abdusamatov, A. *et al., Khim. Prir. Soedin.*, 1968, **4**, 136-137; *Chem. Nat. Compd. (Engl. Transl.)*, 1968, **4**, 117 (*isol, uv, ir, ms*)
Cordell, G.A. *et al., Alkaloids (Academic Press)*, 1977, **16**, 431 (*rev*)

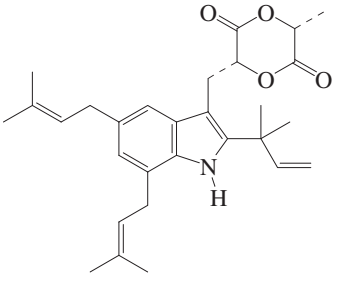
Pedoxin P-159

*3,6-Dihydro-10-hydroxy-9-methyl-4*H*-pyrido[4,3-f][1,4]oxazocin-4-one, 9CI*
[158365-17-4]



$C_{10}H_{10}N_2O_3$ 206.201
Isol. from the sea urchin *Toxopneustes pileolus*. Prosthetic group of the protein toxin, Peditoxin. Sedative, anaesthetic. Yellow cryst. λ_{max} 256 ; 330 (pH 2 buffer) (Berdy). λ_{max} 334 (pH 7 buffer) (Berdy).
▶ LD_{50} (mus, scu) 250 mg/kg.
Kuwabara, S. *et al., J. Biol. Chem.*, 1994, **269**, 26734-26738

Peduncin P-160



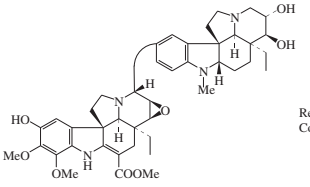
$C_{29}H_{37}NO_4$ 463.616

Alkaloid from *Pueraria peduncularis*. Platelets. Mp > 300°.

Li, N. *et al., Chin. Chem. Lett.*, 2001, **12**, 899-902

Peduncularidine P-161

[168922-22-3]



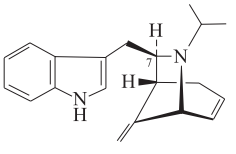
Relative Configuration

$C_{43}H_{54}N_4O_8$ 754.922
Alkaloid from leaves of *Ervatamia peduncularis* (Apocynaceae). Purple amorph. solid. λ_{max} 204 (sh) ; 208 ; 263 ; 307 ; 337 (MeOH).

Zèches-Hanrot, M. *et al., Phytochemistry*, 1995, **40**, 587-591 (*isol, uv, ir, pmr, cmr, ms, struct*)

Peduncularine P-162

Isopeduncularine
[34964-75-5]
[99396-15-3]



Absolute configuration

$C_{20}H_{24}N_2$ 292.423
Before 1992 Peduncularine was confused with the hydrochloride. Isopeduncularine was eventually found to be identical with Peduncularine. Alkaloid from the stem and root of *Aristotelia peduncularis* (Elaeocarpaceae). Shows weak antitumour activity. Small needles ($CHCl_3$). Mp 113-114°. $[\alpha]_D^{19}$ -53 (c, 1.2 in MeOH). $[\alpha]_D^{19}$ -40 (c, 4.1 in $CHCl_3$).

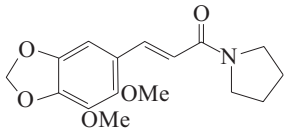
Hydrochloride:
Small needles ($CHCl_3$). Mp 155-157°.

7-Epimer: [119241-74-6]
$C_{20}H_{24}N_2$ 292.423
Mp 118-125°. $[\alpha]_D^{20}$ +4.1 (c, 0.435 in $CHCl_3$). $[\alpha]_D^{20}$ -13 (c, 0.425 in MeOH). This struct. was erroneously assigned to Isopeduncularine in 1985.

Bick, I.R.C. *et al., Chem. Comm.*, 1971, 1155-1156 (*pmr, ms*)
Ros, H.-P. *et al., Helv. Chim. Acta*, 1979, **62**, 481-487 (*isol, uv, ir, pmr, cmr, ms, struct*)
Klaver, W.J. *et al., J.A.C.S.*, 1989, **111**, 2588-2595 (*synth, ir, pmr, cmr, abs config, bibl*)
Dragar, C. *et al., Phytochemistry*, 1992, **31**, 3601-3603 (*pmr, cmr*)
Roberson, C.W. *et al., J.A.C.S.*, 2002, **124**, 11342-11348 (*synth*)
Washburn, D.G. *et al., Org. Lett.*, 2003, **5**, 3523-3525 (*synth*)
Kitamura, M. *et al., Bull. Chem. Soc. Jpn.*, 2006, **79**, 1552-1560 (*synth*)

Peepuloidine P-163

1-[3-(6,7-Dimethoxy-1,3-benzodioxol-5-yl)-1-oxo-2-propenyl]pyrrolidine, 9CI. 1-[2,3-Dimethoxy-4,5-(methylenedioxy)-cinnamoyl]pyrrolidine, 8CI. 2,3-Dimethoxy-4,5-methylenedioxycinnamic acid pyrrolididide



$C_{16}H_{19}NO_5$ 305.33

(*E*)-*form* [25990-52-7]

Alkaloid from the leaves of *Piper peepuloides* (Piperaceae). Cryst. (C_6H_6/petrol or EtOH). Mp 149-150°.

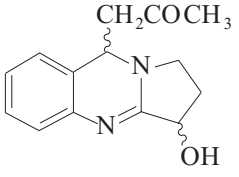
Atal, C.K. *et al., Tet. Lett.*, 1968, 1397 (*uv, ir, pmr, ms, struct*)

Dallacker, F. *et al., Chem. Ber.*, 1971, **104**, 1706 (*synth, uv, ir*)

Peganidine P-164

1-(1,2,3,9-Tetrahydro-3-hydroxypyrrolo[2,1-b]quinazolin-9-yl)-2-propanone, 9CI

[28463-17-4]



$C_{14}H_{16}N_2O_2$ 244.293

Alkaloid from *Peganum harmala* (Zygophyllaceae). Mp 189-190°.

Oxime: Mp 85-87°.

Semicarbazone: Mp 204-206°.

Deoxy: 1-(1,2,3,9-Tetrahydropyrrolo[2,1-b]quinazolin-9-yl)-2-propanone, 9CI. ***Deoxypeganidine***

[42405-57-2]

$C_{14}H_{16}N_2O$ 228.293

Alkaloid from *Peganum harmala* (Zygophyllaceae). Noncryst. Mp 76-79°.

Deoxy, picrate: Mp 176°.

Deoxy, oxime: Mp 177-179°.

Stereoisomer: ***Isopeganidine***

[53448-58-1]

$C_{14}H_{16}N_2O_2$ 244.293

Alkaloid from *Peganum harmala* (Zygophyllaceae). Mp 169-170°. Said to be a racemic diastereoisomer of Peganidine.

Khashimov, K.N. *et al., Khim. Prir. Soedin.*, 1969, **5**, 599; *Chem. Nat. Compd. (Engl. Transl.)*, 1969, **5**, 518 (*isol, uv, ir, pmr, ms, struct*)

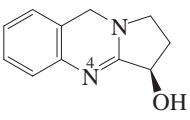
Zharekeev, B.K. *et al., Khim. Prir. Soedin.*, 1973, **9**, 279; 1974, **10**, 264-265; *Chem. Nat. Compd. (Engl. Transl.)*, 1973, **9**, 272; 1974, **10**, 282 (*Deoxypeganidine, Isopeganidine*)

Atta-ur-Rahman, *et al., Nat. Prod. Lett.*, 1997, **10**, 249-256 (*pmr*)

Peganine P-165

1,2,3,9-Tetrahydropyrrolo[2,1-b]quinazolin-3-ol, 9CI. 1,2,3,9-Tetrahydro-3-hydroxypyrrolo[2,1-b]quinoline. Vasicine. Linarine†

[50591-64-5]



(*R*)-*form*

$C_{11}H_{12}N_2O$ 188.229

Abs. config. reversed in 1996. Bronchodilator and respiratory stimulant. Shows antihypertensive props. Uterine stimulant and abortifacient. Expectorant.

(*R*)-*form*

Alkaloid from *Galega officinalis* (Fabaceae). Mp 203-205° dec. $[\alpha]_D^{24}$ +203 (+188, +163).

(*S*)-*form* [6159-55-3]

Alkaloid from the leaves of *Adhatoda vasica*, the roots of *Sida cordifolia*, and from several other *Sida* spp. and *Lunaria* spp. Also present in the seeds of *Peganum harmala* (Acanthaceae, Malvaceae, Brassicaceae, Zygophyllaceae). Mp 211-212°. $[\alpha]_D^{14}$ -254 (c, 2.44 in $CHCl_3$). Pharmacol. active isomer. Racemises slowly in acid or upon repeated subl.

▶ LD_{50} (rat, orl) 640 mg/kg. Exp. reprod. effects. UY9454000

Hydrochloride:

Cryst. + $2H_2O$. Mp 208° (anhyd.).

Picrate: Mp 199° dec.

7-Hydroxy: see Vasicinol, V-37

(±)-*form* [6159-56-4]

Major alkaloid of *Anisotes sessiliflorus*. Also present in the above-ground parts of *Peganum harmala* and the foliage of *Peganum nigellastrum* (Acanthaceae, Zygophyllaceae). Cryst. (Et_2O or MeOH/C_6H_6). Mp 211-212° (204-206°).

N^4-*Oxide:* ***Peganine* N-*oxide***

[170712-17-1]

$C_{11}H_{12}N_2O_2$ 204.228

Alkaloid from *Nitraria komarovii*. Cryst. (EtOH/Me_2CO). Mp 207-208°.

5-Methoxy: ***1,2,3,9-Tetrahydro-5-methoxypyrrolo[2,1-b]quinazolin-3-ol, 9CI***. *5-Methoxypeganine*

[100477-91-6]

$C_{12}H_{14}N_2O_2$ 218.255

Alkaloid from the leaves of *Adhatoda vasica* (Acanthaceae). Cryst. (EtOH). Mp 224-225°.

[7174-27-8 , 79378-22-6]

Späth, E. *et al., Ber.*, 1935, **68**, 1384 (*resoln*)

Leonard, J.N. *et al., Tet. Lett.*, 1960, **No. 25**, 44 (*synth*)

Schreiber, K. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1962, **295**, 271; *CA*, **57**, 12632e (*isol*)

Mehta, D.R. *et al., J.O.C.*, 1963, **28**, 445 (*isol*)

Bhatnagar, A.K. *et al., Indian J. Chem.*, 1966, **4**, 291 (*ms*)

Arndt, R.R. *et al., Tetrahedron*, 1967, **23**, 3521 (*isol, uv, pmr*)

Liljegren, D.R. *et al., Phytochemistry*, 1971, **10**, 2661 (*biosynth*)

Johne, S. *et al., Pharmazie*, 1973, **28**, 403 (*biosynth*)

Ghosal, S. *et al., Phytochemistry*, 1975, **14**, 830 (*isol*)

Szulzewsky, K. *et al., J. Prakt. Chem.*, 1976, **318**, 463 (*cryst struct, abs config*)

Johne, S. *et al., J. Prakt. Chem.*, 1977, **319**, 919 (*cmr*)

Sharma, R.L. *et al., Indian J. Chem., Sect. B*, 1979, **18**, 449 (*synth, pmr*)

Al-Shamma, A. *et al., J. Nat. Prod.*, 1981, **44**, 745 (*isol*)

Chowdhury, B.K. *et al., Phytochemistry*, 1985, **24**, 3080 (*5-methoxy*)

Johne, S. *et al., Alkaloids (Academic Press)*, 1986, **29**, 129 (*rev, pharmacol*)

Wasserman, H.H. *et al., Tet. Lett.*, 1991, **32**, 7131 (*synth*)

Tulyaganov, T.S. *et al., Khim. Prir. Soedin.*, 1994, **30**, 780-783; *Chem. Nat. Compd. (Engl. Transl.)*, 1994, **30**, 727-729 (*N-oxide*)

Turgunov, K.K. *et al., Khim. Prir. Soedin.*, 1995, **31**, 426-430; *Chem. Nat. Compd. (Engl. Transl.)*, 1995, **31**, 353-356 (*cryst struct*)

Joshi, B.S. *et al., Tetrahedron: Asymmetry*, 1996, **7**, 25 (*cryst struct, abs config*)

Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, VGA000

Peimidine P-166

$C_{27}H_{45}NO_2$ 415.658

Steroidal alkaloid. Struct. unknown. Alkaloid from *Fritillaria roylei* (Liliaceae), occurring with Peimisine, P-168. Mp 222°. $[\alpha]_D^{26}$ -74 (EtOH).

Chou, T.-Q. *et al., J. Am. Pharm. Assoc., Sci. Ed.*, 1947, **36**, 215-217

Peimiphine P-167

$C_{27}H_{46}NO_3$ 432.665

Steroidal alkaloid. Struct. unknown. Alkaloid from *Fritillaria roylei* (Liliaceae), isol. with Peimisine, P-168. Mp 127°. $[\alpha]_D^{21}$ -69 (EtOH).

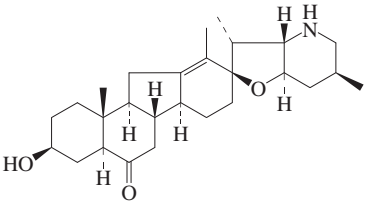
Hydrochloride: Mp 318°.

Chou, T.Q. *et al., J. Am. Pharm. Assoc., Sci. Ed.*, 1947, **36**, 215-217

Peimisine P-168

Alkaloid FR 5. Ebeiensine

[19773-24-1]



$C_{27}H_{41}NO_3$ 427.626

Alkaloid from *Fritillaria thunbergii*, *Fritillaria roylei*, *Fritillaria siechuanica* and *Petilium eduardii* (Liliaceae), and (as Ebeiensine) from *Fritillaria ebeiensis*, *Fritillaria pugiensis* and *Fritillaria ebeiensis* var. *purpurea*. Needles (MeOH). Mp 270° (255°). $[\alpha]_D$ -33.2 (c, 1 in $CHCl_3$). $[\alpha]_D^{25}$ -44.6 (c, 0.58 in EtOH).

Hydrochloride: Mp 257° (250-252°).

Di-Ac:

Fine needles (EtOAc/hexane). Mp 231-232°. $[\alpha]_D$ +7.2 (c, 1 in $CHCl_3$).

Cho, T.Q. *et al., J. Am. Pharm. Assoc., Sci. Ed.*, 1947, **36**, 215-217 (*isol*)
Nuriddinov, R.N. *et al., Khim. Prir. Soedin.*, 1967, **3**, 412-413; *Chem. Nat. Compd. (Engl. Transl.)*, 1967, **3**, 345-346 (*pmr, struct*)
Katajima, J. *et al., Heterocycles*, 1981, **15**, 791-796 (*isol, struct, ms*)
Wu, J. *et al., CA*, 1992, **116**, 170082j; 1993, **118**, 19193s (*Ebeiensine*)
Wang, I.P. *et al., Yaoxue Xuebao*, 1992, **27**, 273-278 (*struct*)

Peimitidine P-169

$C_{27}H_{44}NO_3$ 430.649

Steroidal alkaloid. Struct. unknown. Alkaloid from *Fritillaria roylei* (Liliaceae), occurring with Peimisine, P-168. Mp 188°. $[\alpha]_D^{20}$ -68 (EtOH).

Chou, T.Q. *et al., J. Am. Pharm. Assoc., Sci. Ed.*, 1947, **36**, 215-217

Peimunine P-170

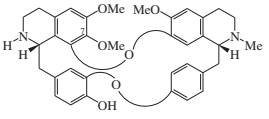
$C_{19}H_{30}NO_2$ 304.451

Tentative mol. formula, may be $C_{19}H_{32}NO_2$. Prob. a steroidal alkaloid. Struct. unknown. Alkaloid from the Chinese drug Pei-mu. Smooth muscle relaxant. Mp 223-224°. $[\alpha]_D^{26}$ -27.6.

Liu, S.K. *et al., CA*, 1937, **31**, 754
Li, S.Y. *et al., CA*, 1942, **36**, 1940

Peinamine P-171

[64625-88-3]



Absolute Configuration

$C_{36}H_{38}N_2O_6$ 594.706

Alkaloids covered by this entry (1*S*,1′*R*-series) are enantiomeric with those in Isotetrandrine, I-328 and diastereomeric with those in Tetrandrine, T-286 and Phaeanthine, P-301. Alkaloid from *Abuta grisebachii* (Menispermaceae) and a curare of the upper Orinoco. Mp 170-171°. $[\alpha]_D^{20}$ -109 ($CHCl_3$).

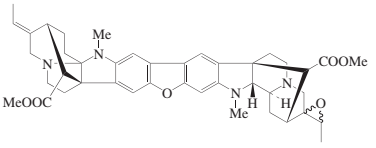
O^7-*De-Me:* ***7-O-Demethylpeinamine***
[66254-50-0]
$C_{35}H_{36}N_2O_6$ 580.679
Alkaloid from *Abuta grisebachii* (Menispermaceae). Mp 205-206°. $[\alpha]_D^{20}$ -86 (MeOH).

O^7-*De-Me,* N^2-*Me:* **N-*Methyl-7-O-demethylpeinamine***
[66254-51-1]
$C_{36}H_{38}N_2O_6$ 594.706
Alkaloid from *Abuta grisebachii* (Menispermaceae). Mp 187-190°. $[\alpha]_D^{20}$ -259 ($CHCl_3$).

Galeffi, C. *et al., Farmaco, Ed. Sci.*, 1977, **32**, 665; 853; *CA*, **87**, 180683c; **89**, 6465q (*isol, uv, ord, ms, struct*)

Pelankine P-172

[76202-56-7]



Absolute Configuration

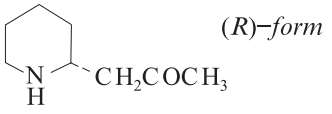
$C_{42}H_{48}N_4O_6$ 704.864

The epoxide and olefinic groups may be interchanged. Alkaloid from *Petchia ceylanica* (Apocynaceae). Amorph. $[\alpha]_D$ -214 (c, 0.44 in $CHCl_3$). λ_{max} 218 (log ϵ 4.34); 238 (log ϵ 4.29); 285 (log ϵ 4.08); 330 (log ϵ 4.05); 358 (log ϵ 4.19) (EtOH).

Kunesch, N. *et al., Tet. Lett.*, 1980, **21**, 1727-1730 (*cmr, struct*)
Cavé, A. *et al., J. Nat. Prod.*, 1987, **50**, 1178-1182 (*isol, uv, ir, pmr, struct*)

Pelletierine P-173

1-(2-Piperidinyl)-2-propanone, 9CI. 2-Acetonylpiperidine. Isopelletierine. 8-Methylnorlobelone
[4396-01-4]



(*R*)–*form*

$C_8H_{15}NO$ 141.213

Pelletierine was originally given the erroneous struct. of 3-(2-piperidinyl)propanal. The early use of the names Pelletierine and Isopelletierine is confusing. Anthelmintic agent. Log P 0.56 (calc).

(*R*)-*form* [2858-66-4]
Alkaloid from *Punica granatum* (pomegranate) (Punicaceae). Liq. $[\alpha]_D^{23}$ -18.1 (c, 8.18 in EtOH). The isoln. of the (*R*)-form is doubtful in view of its ready racemisation and of the fact that the opt. rotn. recorded for the isolate exceeded that of the resolved base.

▶ RX9625000

Picrate: Mp 131-132°.

N-*Me:* $[\alpha]_D^{14}$ -51.5 (c, 4.8 in EtOH).

(*S*)-*form* [2858-67-5]
Synthetic. Liq. $[\alpha]_D^{23}$ +17.9 (c, 9.41 in EtOH aq.).

(±)-*form* [539-00-4]
Alkaloid from pomegranate (*Punica granatum*), *Duboisia myoporoides* and *Sedum acre* (Punicaceae, Solanaceae, Crassulaceae). Bp_{14} 91-92°. pK_a 9.45 (15°). Readily oxid. in air.

▶ RX9635000

Hydrochloride: [5984-61-2]
Needles. Mp 143°.

Picrate: Mp 150-151° (147-149°).

N-*Benzoyl:*
$C_{15}H_{19}NO_2$ 245.321
Prisms or plates. Mp 75°.

N-*Me:* ***Methylisopelletierine***. α-N-*Methylpelletierin-β-one. Methylpelletierine*
$C_9H_{17}NO$ 155.239
Alkaloid from pomegranate (*Punica granatum*), *Lupinus formosus, Sedum purpureum, Sedum hybridum* and *Sedum aizoon* (Fabaceae, Crassulaceae). Misc. H_2O. Bp_{26} 114-117°. Strong base. The isoln. of this alkaloid in opt. active form was reported by Tanret (1880), but this has not been repeated.

N-*Me; hydrochloride:* Mp 158°.

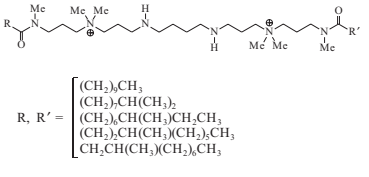
N-*Me; hydrobromide:* Mp 151-153°.

N-*Me, picrate:* Mp 158°.

Hess, K. *et al., Ber.*, 1917, **50**, 1192 (*isol*)
Galinowsky, F. *et al., Monatsh. Chem.*, 1951, **82**, 551; 1953, **84**, 1221; 1954, **85**, 1012 (*struct*)
Mortimer, P.I. *et al., J.C.S.*, 1957, 3967 (*isol*)
Franck, B. *et al., Chem. Ber.*, 1958, **91**, 2803 (*isol*)
Kuwata, S. *et al., Bull. Chem. Soc. Jpn.*, 1960, **33**, 1668; 1672 (*isol, struct, bibl*)
Gilman, R.E. *et al., Bull. Soc. Chim. Fr.*, 1961, 1993 (*struct*)
Khanna, K.L. *et al., J. Pharm. Sci.*, 1962, **51**, 1194 (*isol*)
Drillien, G. *et al., Bull. Soc. Chim. Fr.*, 1963, 2393 (*rev*)
Beyerman, H.C. *et al., Rec. Trav. Chim. (J. R. Neth. Chem. Soc.)*, 1967, **86**, 80 (*abs config*)
Fitch, W.L. *et al., J.O.C.*, 1974, **39**, 2974 (*isol, deriv*)
Hanaoka, M. *et al., Yakugaku Zasshi*, 1974, **94**, 531; *CA*, **81**, 13670r (*synth*)
Krasnov, E.A. *et al., Khim. Prir. Soedin.*, 1977, 585; *Chem. Nat. Compd. (Engl. Transl.)*, 492 (*isol, deriv*)
Cymerman Craig, J. *et al., J.O.C.*, 1978, **43**, 347 (*cd*)
Quick, J. *et al., J.O.C.*, 1979, **44**, 573 (*synth*)
Nagasaka, T. *et al., Heterocycles*, 1989, **29**, 155 (*synth, ir, pmr*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, PAO500

Penaramides P-174

Penaresamides



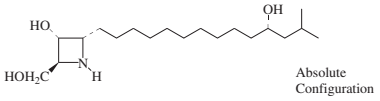
R, R′ = $(CH_2)_9CH_3$; $(CH_2)_7CH(CH_3)_2$; $(CH_2)_6CH(CH_3)CH_2CH_3$; $(CH_2)_2CH(CH_3)(CH_2)_5CH_3$; $CH_2CH(CH_3)(CH_2)_6CH_3$

Inseparable mixt. The simplest component Penaramide A has been synthesised. Isol. from the marine sponge *Penares* aff. *incrustans.* Inhibits binding of ω-Conotoxin GVIA to N-type Ca channels. Yellowish oil. $[\alpha]_D^{20}$ -11 (c, 0.39 in $CHCl_3$/MeOH 1:1).

Ushio-Sata, N. *et al., Tet. Lett.*, 1996, **37**, 225 (*isol, ir, pmr, cmr, synth, struct*)

Penaresidin B P-175

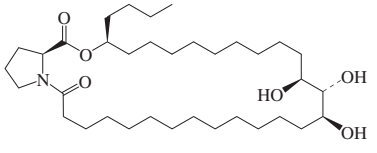
3-Hydroxy-4-(hydroxymethyl)-α-(2-methylpropyl)-2-azetidineundecanol, 9CI
[135574-63-9]



$C_{19}H_{39}NO_3$ 329.522
Alkaloid from the marine sponge *Penares* sp. Potent ATPase activator. Isol. as an inseparable mixt. with Penaresidin A.

Kobayashi, J. *et al., J.C.S. Perkin 1*, 1991, 1135-1137 (*isol, struct*)
Kobayashi, J. *et al., Tet. Lett.*, 1996, **37**, 6775-6776 (*abs config*)
Takikawa, H. *et al., J.C.S. Perkin 1*, 1997, 97-111 (*synth*)
Yoda, H. *et al., Tet. Lett.*, 1997, **38**, 3283-3284 (*synth*)
Liu, D.-G. *et al., Tet. Lett.*, 1999, **40**, 337-340 (*synth*)
Yoda, H. *et al., Tet. Lett.*, 2003, **44**, 977-979 (*synth*)

Penarolide A_1 P-176

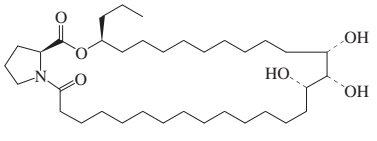


$C_{35}H_{65}NO_6$ 595.902

Tri-O-*sulfate:* ***Penarolide sulfate A_1***
[329019-71-8]
$C_{35}H_{65}NO_{15}S_3$ 836.094
Isol. from the marine sponge *Penares* sp. α-Glucosidase inhibitor. Amorph. solid (as tri-Na salt). $[\alpha]_D^{29}$ -25.7 (c, 0.5 in MeOH) (tri-Na salt). λ_{max} 204 (ϵ 9100) (MeOH) (tri-Na salt).

Nakao, Y. *et al., Tetrahedron*, 2000, **56**, 8977-8987

Penarolide A_2 P-177

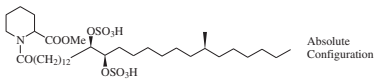


$C_{35}H_{65}NO_6$ 595.902

Tri-O-*sulfate:* ***Penarolide sulfate A_2***
[329019-70-7]
$C_{35}H_{65}NO_{15}S_3$ 836.094
Isol. from the marine sponge *Penares* sp. α-Glucosidase inhibitor. Amorph. solid (as tri-Na salt). $[\alpha]_D^{29}$ -25.2 (c, 0.3 in MeOH) (tri-Na salt). λ_{max} 205 (ϵ 9000) (MeOH) (tri-Na salt).

Nakao, Y. *et al., Tetrahedron*, 2000, **56**, 8977-8987

Penasulfate A P-178

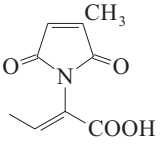


$C_{36}H_{69}NO_{11}S_2$ 756.073
Isol. as a 4:1 mixt. of 2*R*- and 2*S*-stereoisomers. Alkaloid from the sponge *Penares* sp. α-Glucosidase inhibitor. Amorph. solid (as di-Na salt). $[\alpha]_D^{29}$ +10 (c, 0.03 in MeOH) (di-Na salt). λ_{max} 203 (ϵ 9700) (MeOH) (di-Na salt).

Nakao, Y. *et al., J. Nat. Prod.*, 2004, **67**, 1346-1350

Pencolide P-179

*α-Ethylidene-2,5-dihydro-3-methyl-2,5-dioxo-1*H*-pyrrole-1-acetic acid, 9CI*



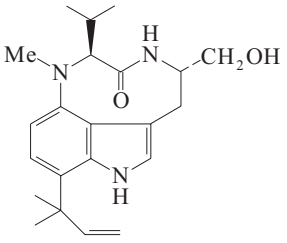
$C_9H_9NO_4$ 195.174

(Z)-form [61464-52-6]
Fungal metab. of *Penicillium multicolor* and *Trichoderma album*. Rosettes (Et_2O/petrol). Mp 135.5° (113-118°). Formerly assigned the (*E*)-config.

Birkinshaw, J.H. *et al., Biochem. J.*, 1963, **86**, 237 (*isol, uv, ir, pmr*)
Strunz, G.M. *et al., Can. J. Chem.*, 1976, **54**, 2862 (*synth, config, bibl*)
Ren, W.Y. *et al., Diss. Abstr. Int., B*, 1978, **39**, 1293 (*isol, synth*)

Pendolmycin P-180

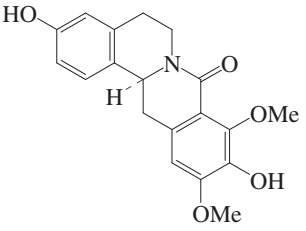
[119375-01-8]



$C_{22}H_{31}N_3O_2$ 369.506
Isol. from *Nocardiopsis* sp. SA 1715. Induces erythema in human skin. Exhibits weak antibacterial activity. Tumour promoter. Protein kinase activator. Cryst. Sol. MeOH, $CHCl_3$, Me_2CO; poorly sol. H_2O, hexane. Mp 124-126°. $[\alpha]_D$ -154 (c, 0.1 in MeOH). Related to Lyngbyatoxin A, L-367 and Teleocidin B_1, T-63. λ_{max} 214 (ϵ 11800); 230 (ϵ 19400); 287 (ϵ 7900); 298 (ϵ 7970) (MeOH) (Derep).

Yamashita, T. *et al., J. Nat. Prod.*, 1988, **51**, 1184 (*isol, pmr, cmr, struct*)
Okabe, K. *et al., Tetrahedron*, 1990, **46**, 5113; 1991, **47**, 7615 (*synth*)
Muratake, H. *et al., Tetrahedron*, 1991, **47**, 8535; 8545; 8559 (*synth*)

Pendulamine A P-181



$C_{19}H_{19}NO_5$ 341.363

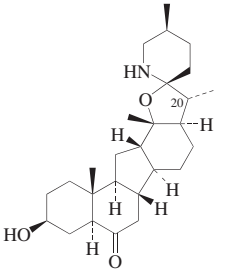
(S)-form
Alkaloid from the roots of *Polyalthia longifolia* var. *pendula*. Brown solid. $[\alpha]_D^{26}$ -25 (c, 0.4 in $CHCl_3$). λ_{max} 204 ; 226 ; 282 ; 322 ; 366 (MeOH).

13,14-Didehydro: ***Pendulamine B***
$C_{19}H_{17}NO_5$ 339.347
Alkaloid from the roots of *Polyalthia longifolia* var. *pendula*. Reddish-brown gum. λ_{max} 207 ; 224 ; 262 ; 335 ; 366 ; 388 (MeOH).

Faizi, S. *et al., Planta Med.*, 2003, **69**, 350-355 (*isol, pmr, cmr, ms*)

Pengbeimine A P-182

[909114-88-1]



$C_{27}H_{43}NO_3$ 429.642
Alkaloid from the bulbs of *Fritillaria monatha*. Needles (Me_2CO).

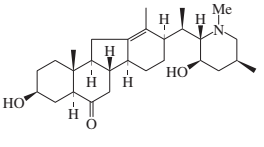
N-*Me:* ***Pengbeimine B***
[1016260-11-9]
$C_{28}H_{45}NO_3$ 443.668
Alkaloid from the bulbs of *Fritillaria monatha*. Cryst. (MeOH). Mp 275-276°.

20-Epimer, N-*Me:* ***Pengbeimine D***
[1016260-12-0]
$C_{28}H_{45}NO_3$ 443.668
Alkaloid from the bulbs of *Fritillaria monatha*. Cryst. Mp 259-261°.

Liu, H.-N. *et al., Chin. Chem. Lett.*, 2006, **17**, 631-634 (*Pengbeimine A, cryst struct*)
Liu, H.-N. *et al., J. Asian Nat. Prod. Res.*, 2007, **9**, 563-567 (*Pengbeimines B,D*)

Pengbeimine C P-183

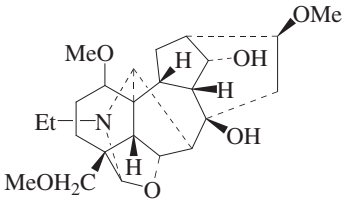
[909114-89-2]



$C_{28}H_{45}NO_3$ 443.668
Alkaloid from the bulbs of *Fritillaria monatha*. Needles (Me_2CO).

Liu, H.-N. *et al., Chin. Chem. Lett.*, 2006, **17**, 631-634 (*isol, pmr, cmr, cryst struct*)

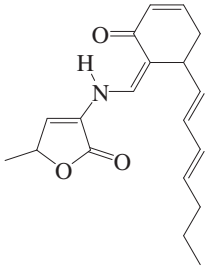
Pengshenine A P-184



$C_{24}H_{37}NO_6$ 435.559
Alkaloid from the roots of *Aconitum hemsleyanum* var. *penzhouense*. Needles. Mp 189-191°. $[\alpha]_D$ +26 (c, 0.5 in $CHCl_3$).

Peng, C.S. *et al., Chin. Chem. Lett.*, 2002, **13**, 233-236

Peniamidienone P-185

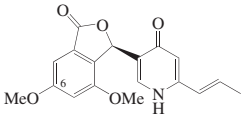


$C_{19}H_{23}NO_3$ 313.396
Prod. by *Penicillium* sp. No. 13. Yellow oil. $[\alpha]_D^{25}$ -141 (c, 0.41 in MeOH). λ_{max} 204 (log ϵ 3.66); 227 (log ϵ 3.8); 260 (log ϵ 3.16); 370 (log ϵ 2.72) (EtOH).

Kimura, Y. *et al., Phytochemistry*, 2000, **53**, 829-831

Penicidone A P-186

[1005327-87-6]



Absolute Configuration

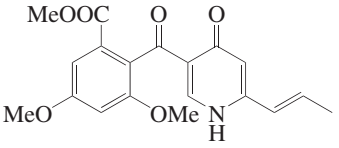
$C_{18}H_{17}NO_5$ 327.336
Prod. by *Penicillium* sp. IFB-E022. Cytotoxic. Amorph. powder. $[\alpha]_D^{20}$ -98.3 (c, 0.11 in $CHCl_3$). λ_{max} 206 (log ϵ 4.6); 237 (log ϵ 3.1) (MeOH).

O⁶-De-Me: ***Penicidone B***
[1005327-88-7]
$C_{17}H_{15}NO_5$ 313.309
Prod. by *Penicillium* sp. IFB-E022. Cytotoxic agent. Amorph. powder. $[\alpha]_D^{20}$ -87.4 (c, 0.2 in $CHCl_3$). λ_{max} 209 (log ϵ 4.4); 239 (log ϵ 4) (MeOH).

Ge, H.M. *et al., Phytochemistry*, 2008, **69**, 571-576 (*isol, pmr, cmr*)

Penicidone C P-187

[1005327-89-8]

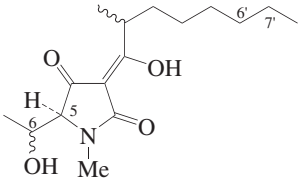


$C_{19}H_{19}NO_6$ 357.362
Prod. by *Penicillium* sp. IFB-E022. Cytotoxic. Amorph. powder. λ_{max} 215 (log ϵ 4.1); 253 (log ϵ 4.3) (MeOH).

Ge, H.M. *et al., Phytochemistry*, 2008, **69**, 571-576 (*isol, pmr, cmr*)

Penicillenol A_1 P-188

[1039041-76-3]



$C_{16}H_{27}NO_4$ 297.394
Tetramic acid deriv. Prod. by *Penicillium* sp. GQ-7. Cytotoxic. Yellow oil. $[\alpha]_D^{25}$ -864.5 (c, 0.155 in MeOH). λ_{max} 223 ; 279 (MeOH).

*6′,7′-Didehydro(*E-*):* ***Penicillenol C_1***
[1039041-80-9]
$C_{16}H_{25}NO_4$ 295.378
Prod. by *Penicillium* sp. GQ-7. Yellow oil. $[\alpha]_D^{25}$ -47.2 (c, 0.12 in MeOH). λ_{max} 224 ; 280 (MeOH).

*6-Deoxy, 5,6-didehydro(*E-*):* ***Penicillenol B_2***
[1039041-79-6]
$C_{16}H_{25}NO_3$ 279.378
Prod. by *Penicillium* sp. GQ-7. Yellow oil. $[\alpha]_D^{25}$ -15.9 (c, 0.13 in MeOH). λ_{max} 256 (MeOH).

*6-Deoxy, 5,6-didehydro(*Z-*):* ***Penicillenol B_1***
[1039041-78-5]
$C_{16}H_{25}NO_3$ 279.378
Prod. by *Penicillium* sp. GQ-7. Cytotoxic. Yellow oil. $[\alpha]_D^{25}$ -7.8 (c, 0.23 in MeOH). λ_{max} 256 (MeOH).

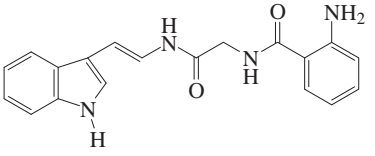
5-Epimer: ***Penicillenol A_2***
[1039041-77-4]
$C_{16}H_{27}NO_4$ 297.394
Prod. by *Penicillium* sp. GQ-7. Yellow oil. $[\alpha]_D^{25}$ +386.7 (c, 0.13 in MeOH). λ_{max} 223 ; 279 (MeOH).

*5-Epimer, 6′,7′-didehydro(*Z-*):* ***Penicillenol C_2***
[1039041-81-0]
$C_{16}H_{25}NO_4$ 295.378
Prod. by *Penicillium* sp. GQ-7. Yellow oil. $[\alpha]_D^{25}$ +32 (c, 0.2 in MeOH). λ_{max} 224 ; 280 (MeOH).

Lin, Z.-J. *et al., Chem. Pharm. Bull.*, 2008, **56**, 217-221 (*isol, cd, pmr, cmr*)

Penidiamide P-189

*2-Amino-*N*-[2-[[2-(1*H*-indol-3-yl)ethenyl]amino]-2-oxoethyl]benzamide, 9CI*
[206049-48-1]

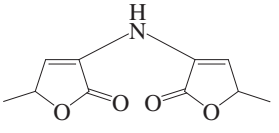


$C_{19}H_{18}N_4O_2$ 334.377
Prod. by *Penicillium* sp. 62-92. Inhibitor of synovial phospholipase A_2. Oil. λ_{max} 279 (ϵ 13900); 303 (ϵ 16300) (MeOH).

Witter, L. *et al., Z. Naturforsch., C*, 1998, **53**, 60-64 (*isol, pmr, cmr*)

Penidilamine P-190

*3,3′-Iminobis[5-methyl-2(5*H*)-furanone], 9CI*
[279679-13-9]

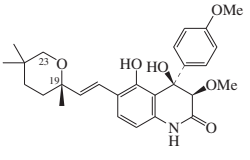


$C_{10}H_{11}NO_4$ 209.201
Prod. by *Penicillium* sp. No. 13. Cryst. (hexane/Me_2CO). Mp 187-189°. $[\alpha]_D^{25}$ +33 (c, 0.31 in MeOH). λ_{max} 207 (log ϵ 3.83); 260 (log ϵ 3.5); 278 (log ϵ 3.64) (EtOH).

Kimura, Y. *et al., Phytochemistry*, 2000, **53**, 829-831 (*isol*)

Penigequinolone A P-191

[180045-91-4]
[184046-64-8]



Relative Configuration

$C_{27}H_{33}NO_6$ 467.561
Isol. as an inseparable mixt. with Penigequinolone B (to which data refers). Prod. by *Penicillium* sp. No. 410 and *Penicillium* cf. *simplicissimum*. Pollen growth inhibitor. Powder. Mp 111-113°. $[\alpha]_D^{20}$ +97.8 (c,0.4 in EtOH).

23-Hydroxy: ***Yaequinolone D***
$C_{27}H_{33}NO_7$ 483.56
Prod. by *Penicillium* sp. FKI-2140. Insecticidal agent. Pale yellow powder. $[\alpha]_D^{23}$ +56 (c, 0.1 in EtOH). Stereochem. of side chain not determined. λ_{max} 221 (ϵ 20700); 279 (ϵ 12600); 288 (ϵ 9500); 324 (ϵ 10700) (EtOH).

19-Epimer: ***Penigequinolone B***
[180185-69-7]
[184046-66-0]
$C_{27}H_{33}NO_6$ 467.561
Prod. by *Penicillium* sp. No. 410 and *Penicillium* cf. *simplicissimum*. Pollen growth inhibitor.
Kimura, Y. *et al., Tet. Lett.*, 1996, **37**, 4961-4964 (*isol, ir, pmr, cmr, struct*)
Kusano, M. *et al., Biosci., Biotechnol., Biochem.*, 2000, **64**, 2559-2568 (*isol, pmr, cmr*)
Uchida, R. *et al., J. Antibiot.*, 2006, **59**, 646-651; 652-658 (*Yaequinolone D*)

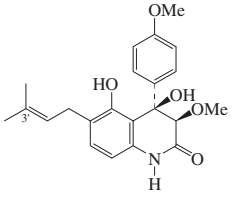
Penimide P-192

N-*Methyl*-N-*[3-(methylthio)-1-oxo-2-propenyl]benzeneacetamide, 9CI*
MeSCH═CHCONMeCOCH$_2$Ph
$C_{13}H_{15}NO_2S$ 249.333
Originally reported as the isomeric compds. with the phenyl and methylthio groups exchanged.

(*E*)-*form*
Penimide A
[150036-29-6]
Isol. from leaves of *Glycosmis chlorosperma* (Rutaceae). Oil.

(*Z*)-*form*
Penimide B
[150036-30-9]
From leaves of *Glycosmis chlorosperma* (Rutaceae). Mp 85-87°.
Greger, H. *et al., Phytochemistry*, 1993, **32**, 933-936 (*isol, uv, ir, pmr, cmr, ms*)
Hinterberger, S. *et al., Tetrahedron*, 1994, **50**, 6279-6286 (*synth, struct*)

Peniprequinolone P-193



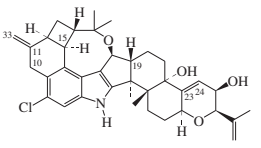
Relative Configuration

$C_{22}H_{25}NO_5$ 383.443
Prod. by *Penicillium* cf. *simplicissimum* and a marine-derived *Penicillium janczewski*. Cytotoxic. Pale yellowish solid. Mp 191-194°. $[\alpha]_D^{20}$ -0.3 (c, 0.6 in $CHCl_3$). λ_{max} 206 (ϵ 74000); 222 (ϵ 65000); 302 (ϵ 19000) (EtOH).

*$\Delta^{3'}$-Isomer, 1′,2′-didehydro(*E-*):* ***Yaequinolone E***
$C_{22}H_{23}NO_5$ 381.427
Prod. by *Penicillium* sp. FKI-2140. Insecticidal agent. Pale yellow powder. $[\alpha]_D^{23}$ +51.2 (c, 0.1 in EtOH). λ_{max} 223 (ϵ 18800); 280 (ϵ 8400); 291 (ϵ 8300); 324 (ϵ 6800) (EtOH).
Kusano, M. *et al., Biosci., Biotechnol., Biochem.*, 2000, **64**, 2559-2568 (*isol, cd, pmr, cmr, ms*)
Hu, J. *et al., J. Nat. Prod.*, 2005, **68**, 1397-1399 (*isol*)
Uchida, R. *et al., J. Antibiot.*, 2006, **59**, 646-651; 652-658 (*Yaequinolone E*)

Penitrem C P-194

[37318-84-6]



Absolute Configuration

$C_{37}H_{44}ClNO_4$ 602.212
Metab. from cultures of *Penicillium crustosum*, *Penicillium granulatum*, *Penicillium puberulum*, *Penicillium palitans* and *Penicillium cyclopium* NRRL3476. Neurotoxic, tremorgenic substance. Insecticide. Amorph. solid. λ_{max} 232 (ϵ 38200); 292 (ϵ 12500) (MeOH) (Derep).

23α,24α-Epoxide: ***Penitrem F***
[78213-65-7]
$C_{37}H_{44}ClNO_5$ 618.211
Isol. from *Penicillium crustosum*. Tremorgenic agent. Amorph. powder. λ_{max} 233 (ϵ 37000); 295 (ϵ 11600) (MeOH) (Derep). λ_{max} 232 ; 292 (MeOH) (Berdy).

15-Hydroxy, 23α,24α-epoxide: ***Penitrem A***. *Tremortin A*
[12627-35-9]
[147382-80-7]
$C_{37}H_{44}ClNO_6$ 634.21
Metab. from cultures of *Penicillium crustosum*. Potassium BK_{Ca} channel blocker. Tremorgenic metab. Amorph. solid. Sol. MeOH, Me_2CO, $CHCl_3$; poorly sol. H_2O, hexane. Mp 237-239°. λ_{max} 233 (ϵ 37000); 295 (ϵ 11600) (MeOH) (Derep). λ_{max} 233 (ϵ 31500); 295 (ϵ 10200) (MeOH) (Berdy).
▶ Toxic. LD_{50} (mus, ipr) 1.1 mg/kg. RY7535000

Bromo analogue, 15-hydroxy, 23α,24α-epoxide: ***6-Bromopenitrem E***. *6-Bromo-6-dechloropenitrem A*
[86271-57-0]
$C_{37}H_{44}BrNO_6$ 678.662
Isol. from *Penicillium simplicissimum* AK-40. λ_{max} 233 ; 295 (MeOH) (Berdy).

Dechloro: ***Penitrem D***
[78213-64-6]
$C_{37}H_{45}NO_4$ 567.767
Metab. from cultures of *Penicillium crustosum*, *Penicillium palitans* and *Penicillium cyclopium* NRRL3476. Tremorgenic mycotoxin. Needles (C_6H_6). Mp 300° dec. λ_{max} 220 (ϵ 31900); 286 (ϵ 11900) (MeOH) (Derep).

Dechloro, 23α,24α-epoxide: ***Penitrem B***
[11076-67-8]
$C_{37}H_{45}NO_5$ 583.766
Isol. from *Penicillium crustosum* and *Penicillium palitans*. Tremorgenic agent. Needles (EtOH). Mp 185-195° dec. λ_{max} 220 (ϵ 31900); 286 (ϵ 11900) (MeOH) (Derep). λ_{max} 227 ; 286 (MeOH) (Berdy). λ_{max} 222 ; 286 ; 297 (EtOH) (Berdy).
▶ LD_{50} (mus, ipr) 5.8 mg/kg. RY7537000

Dechloro, 15-hydroxy, 23α,24α-epoxide: ***Penitrem E***. *6-Dechloropenitrem A*
[78213-66-8]
$C_{37}H_{45}NO_6$ 599.766
Isol. from *Penicillium crustosum*. Tremorgenic. Amorph. powder. λ_{max} 220 (ϵ 31900); 286 (ϵ 11900) (MeOH) (Derep).

Dechloro, 19-hydroxy: ***Penitrem G***
$C_{37}H_{45}NO_5$ 583.766
Prod. by *Penicillium crustosum*. Amorph. solid. $[\alpha]_D^{25}$ -67.5 (c, 1.1 in $CHCl_3$). λ_{max} 231 (log ϵ 4.06); 285 (log ϵ 3.82) (MeOH).

Dechloro, 10-oxo, 11,33-dihydro: ***Penitremone C***
[164124-59-8]
$C_{37}H_{45}NO_5$ 583.766
Metab. from *Penicillium* sp. (IBT 13163). Tremorgenic mycotoxin. The paper erroneously omits a double bond in the penitremones and shows them as 2,3-dihydroindoles. This causes registration and MF errors in CAS. λ_{max} 270 (MeOH) (Berdy).

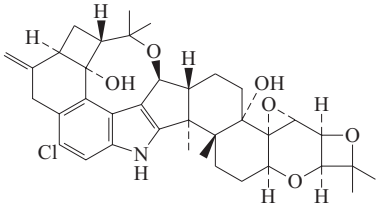
Dechloro, 10-oxo, 11α,33-dihydro, 23α,24α-epoxide: ***11,33-Dihydro-10-oxopenitrem B***. *Penitremone A*
[151434-31-0]
[164124-57-6 (Penitremone A)]
$C_{37}H_{45}NO_6$ 599.766
Prod. by *Aspergillus sulphureus* and *Penicillium* sp. IB 13163. Tremorgenic agent. Light yellow solid. $[\alpha]_D$ -78.6. Identity of the two isolates based on uv and chromatographic props.

Dechloro, 10-oxo, 15-hydroxy, 11,33-dihydro, 23α,24α-epoxide: ***Penitremone B***
[164124-58-7]
$C_{37}H_{45}NO_7$ 615.765
From *Penicillium* sp. (IBT 13163). Tremorgenic mycotoxin. See note under Penitremone C above. λ_{max} 260 ; 288 (MeOH) (Berdy).

Wilson, B.J. *et al., Nature (London)*, 1968, **220**, 77-78 (*Penitrem A, isol*)
Norms, P.J. *et al., J. Neurochem.*, 1980, **34**, 33 (*Penitrem A, activity*)
Fellows, P.N. *et al., Org. Mass Spectrom.*, 1981, **16**, 403-404 (*Penitrem A, Penitrem C, ms*)
Mantle, P.G. *et al., Appl. Environ. Microbiol.*, 1983, **45**, 1486-1490 (*biosynth*)
De Jesus, A.E. *et al., J.C.S. Perkin 1*, 1983, 1847-1856; 1857-1861; 1863 (*Penitrems, isol, biosynth, uv, ir, cd, pmr, cmr, abs config*)
Hayashi, H. *et al., Chem. Express*, 1993, **8**, 233-236; *CA*, **118**, 251158g (*6-Bromopenitrem E*)
Laakso, J.A. *et al., J. Agric. Food Chem.*, 1993, **41**, 973-975 (*Dihydrooxopenitrem B*)
Naik, J.T. *et al., J.C.S. Perkin 1*, 1995, 1121-1125 (*Penitremones*)
Gonzalez, M.C. *et al., J. Agric. Food Chem.*, 2003, **51**, 2156-2160 (*Penitrem G*)
Smith, A.B. *et al., J.A.C.S.*, 2003, **125**, 8228-8237 (*Penitrem D, synth*)
Cole, R.J. *et al., Handbook of Toxic Fungal Metabolites*, Academic Press, 1981, 382; 385
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, PAR250

Pennigritrem P-195

[139682-30-7]

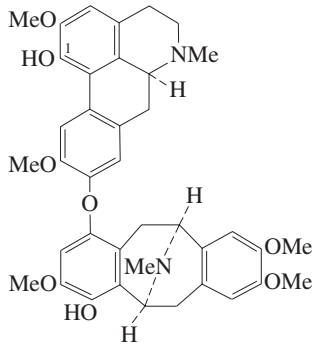


$C_{37}H_{44}ClNO_6$ 634.21
Prod. by *Penicillium nigricans*. Tremorgenic toxin; less active than Penitrem A in P-194. Amorph. solid. λ_{max} 235 (ϵ 35700); 295 (ϵ 10300) (MeOH) (Berdy).

Penn, J. *et al., J.C.S. Perkin 1*, 1992, 23 (*isol, pmr, cmr*)

Pennsylpavoline P-196

[53416-83-4]



$C_{39}H_{42}N_2O_8$ 666.769
Alkaloid from *Thalictrum polygamum* (Ranunculaceae). Cryst. (Et_2O). Mp 145-146°. $[\alpha]_D^{25}$ -245 (c, 0.66 in MeOH).

Di-Ac:
Cryst. (Et_2O). Mp 188-189°.

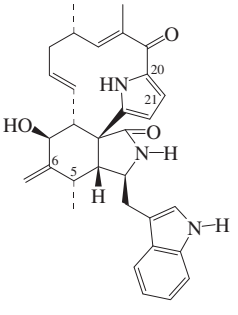
O^1-Me: ***Pennsylpavine***
[53416-82-3]
$C_{40}H_{44}N_2O_8$ 680.796
Alkaloid from *Thalictrum polygamum* (Ranunculaceae). Cryst. (Et_2O). Mp 122-123°. $[\alpha]_D^{25}$ -174 (c, 0.6 in MeOH).

O^1-Me, Ac:
Cryst. (Et_2O). Mp 203-204°.

Shamma, M. *et al., J.A.C.S.*, 1974, **96**, 3338 (*uv, pmr, ms, struct*)

Penochalasin C P-197

[173792-72-8]



$C_{32}H_{35}N_3O_3$ 509.647
Prod. by a marine *Penicillium* sp. Mycotoxin. Powder. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 173-178°. $[\alpha]_D$ -6.2 (c, 0.1 in $CHCl_3$). λ_{max} 208 (log ϵ 4.5); 222 (log ϵ 4.59); 284 (log ϵ 3.92); 293 (log ϵ 3.96); 315 (log ϵ 3.87) (EtOH).

$\Delta^{5,6}$-Isomer: ***Penochalasin B***
[173792-71-7]
$C_{32}H_{35}N_3O_3$ 509.647
Prod. by a marine *Penicillium* sp. Mycotoxin. Powder. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 177-179°. $[\alpha]_D$ -6.2 (c, 0.2 in $CHCl_3$). λ_{max} 206 (log ϵ 4.1); 222 (log ϵ 4.1); 284 (log ϵ 4.08); 293 (log ϵ 4.5); 312 (log ϵ 4.45) (EtOH).

7-Deoxy, 6,12-dihydro, 6β,7β-epoxide: ***Penochalasin A***
[173792-70-6]
$C_{32}H_{35}N_3O_3$ 509.647
Prod. by a marine *Penicillium* sp. Mycotoxin. Needles (Me_2CO). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 222-224°. $[\alpha]_D$ -10 (c, 0.2 in $CHCl_3$). λ_{max} 206 (log ϵ 4.58); 222 (log ϵ 4.66); 285 (log ϵ 4.4); 292 (log ϵ 4.09); 313 (log ϵ 4.13) (EtOH).

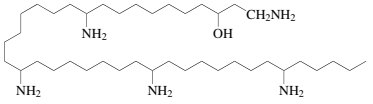
7-Deoxy, 6,12,20β,21-tetrahydro, 6β,7β-epoxide: ***Penochalasin D***
$C_{32}H_{37}N_3O_3$ 511.663
Prod. by a marine *Penicillium* sp. Cytotoxic. Oil. $[\alpha]_D$ +10.8 (c, 0.2 in $CHCl_3$). λ_{max} 221 (log ϵ 4.33); 242 (sh) (log ϵ 3.72); 280 (log ϵ 3.58); 292 (log ϵ 3.48) (EtOH).

Numata, A. *et al., J.C.S. Perkin 1*, 1996, 239-245 (*Penochalasins A-C*)

Iwamoto, C. *et al., Tetrahedron*, 2001, **57**, 2997-3004 (*Penochalasin D*)

1,11,19,27,35-Pentaamino-3-tetracontanol, 9CI P-198

Echcin I
[187844-18-4]



$C_{40}H_{87}N_5O$ 654.16
Prod. by *Erwinia chrysanthemi*. Antibiotic.

Liu, J. *et al., CA*, 1997, **126**, 197207x (*isol, uv, ir, pmr, cmr, ms*)

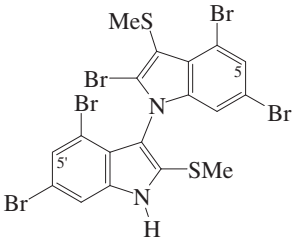
4,8,12,16,20-Pentaazatricosane-1,23-diamine, 9CI P-199

1,5,9,13,17,21,25-Heptaazapentacosane.
Caldoheptamine
[100009-88-9]
$H_2N(CH_2)_3NH(CH_2)_3NH(CH_2)_3NH(CH_2)_3NH(CH_2)_3NH(CH_2)_3NH_2$
$C_{18}H_{45}N_7$ 359.6
Prod. by *Thermotoga maritima*.

[106395-90-8]

Zellner, G. *et al., Arch. Microbiol.*, 1993, **159**, 473-476 (*isol*)

2,4,4′,6,6′-Pentabromo-2′,3-bis(methylthio)-1,3′-bi-1*H*-indole P-200



$C_{18}H_{11}Br_5N_2S_2$ 718.95
Alkaloid from *Laurencia brongniartii*. Plates (hexane/EtOAc). Mp 243-245°. λ_{max} 231 (ϵ 83300); 302 (ϵ 28300) (MeOH).

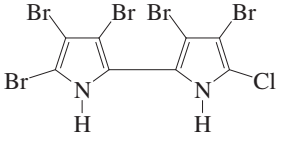
*5-Bromo: 2,4,4′,5,6,6′-Hexabromo-2′,3-bis(methylthio)-1,3′-bi-1*H*-indole*
$C_{18}H_{10}Br_6N_2S_2$ 797.846
Alkaloid from *Laurencia brongniartii*. λ_{max} 233 (ϵ 51800); 303 (ϵ 16200) (MeOH).

*5′-Bromo: 2,4,4′,5′,6,6′-Hexabromo-2′,3-bis(methylthio)-1,3′-bi-1*H*-indole*
$C_{18}H_{10}Br_6N_2S_2$ 797.846
Alkaloid from *Laurencia brongniartii*. λ_{max} 233 (ϵ 89400); 300 (ϵ 26700) (MeOH).

*5,5′-Dibromo: 2,4,4′,5,5′,6,6′-Heptabromo-2′,3-bis(methylthio)-1,3′-bi-1*H*-indole*
$C_{18}H_9Br_7N_2S_2$ 876.743
Alkaloid from *Laurencia brongniartii*. λ_{max} 236 (ϵ 43700); 298 (ϵ 10200) (MeOH).

Kubota, N.K. *et al., Heterocycles*, 2005, **65**, 2675-2682 (*isol, pmr, cmr, ms, cryst struct*)

3,3′,4,4′,5-Pentabromo-5′-chloro-2,2′-bi-1*H*-pyrrole P-201



$C_8H_2Br_5ClN_2$ 561.09

*N,N′-Di-Me: 3,3′,4,4′,5-Pentabromo-5′-chloro-1,1′-dimethyl-2,2′-bi-1*H*-pyrrole. DBP-Br_5Cl*
[400767-00-2]
$C_{10}H_6Br_5ClN_2$ 589.144
Marine natural product of unknown biogenic origin. Present in marine or freshwater fish, shrimps, seabirds and seal blubber.

Tittlemier, S.A. *et al., Environ. Pollut.*, 2002, **116**, 85-93 (*N,N′-di-Me, occur, detn*)

Tittlemier, S.A. *et al., J. Agric. Food Chem.*, 2004, **52**, 2010-2015 (*N,N′-di-Me, occur*)

2,9-Pentadecadiene-12,14-diynoic acid P-202

$HC{\equiv}CC{\equiv}CCH_2CH{=}CH(CH_2)_5CH{=}CHCOOH$
$C_{15}H_{18}O_2$ 230.306

(2E,9Z)-form

2-Methylpropylamide: ***2,9-Pentadecadiene-12,14-diynoic acid isobutylamide.*** N-*(2-Methylpropyl)-2,9-pentadecadiene-12,14-diynamide, 9CI*
[87797-75-9]
$C_{19}H_{27}NO$ 285.428
Alkaloid from *Echinacea angustifolia* and *Echinacea purpurea*. Gum.

2-Hydroxy-2-methylpropylamide: ***2,9-Pentadecadiene-12,14-diynoic acid (2-hydroxyisobutyl)amide.*** N-*(2-Hydroxy-2-methylpropyl)-2,9-pentadecadiene-12,14-diynamide, 9CI*
[87797-77-1]
$C_{19}H_{27}NO_2$ 301.428
Alkaloid from *Echinacea purpurea* (Asteraceae). Gum.

Bohlmann, F. *et al., Phytochemistry*, 1983, **22**, 1173-1175 (*isol, ir, pmr, ms*)
Bauer, R. *et al., Phytochemistry*, 1989, **28**, 505-508 (*isol, pmr*)

1-Pentadecylamine P-203

1-Pentadecanamine, 9CI. 1-Aminopentadecane
[2570-26-5]
$H_3C(CH_2)_{13}CH_2NH_2$
$C_{15}H_{33}N$ 227.432
Cryst. Mp 36.5° (33.5°). Bp 298-301° Bp_1 120.5°. pK_a 10.61 (25°).

► LD_{50} (mus, orl) 520 mg/kg. RZ2120000

Hydrochloride: [1838-05-7]
Cryst. (EtOH). Mp 199°.

► RZ2134000

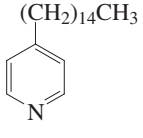
N-*Ac:*
$C_{17}H_{35}NO$ 269.47
Cryst. (petrol). Mp 72°.

N-*Benzyl,* N-*Me:* N-*Benzyl*-N-*methyl-1-pentadecylamine.* ***Piptamine***
$C_{23}H_{41}N$ 331.584
Isol. from the mushroom *Piptoporus betulinus.* Active against various bacteria, yeasts and fungi. Waxy solid.

Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 454B (*nmr*)
Aldrich Library of Infrared Spectra, 3rd edn., 1981, 167A (*ir*)
Naegeli, C. *et al., Helv. Chim. Acta*, 1929, **12**, 227 (*synth*)
Ralston, A.W. *et al., Ind. Eng. Chem.*, 1940, **32**, 1093
Murr, B.L. *et al., J.A.C.S.*, 1955, **77**, 1684 (*synth*)
Krivschich, S.Y. *et al., Toksikol. Nov. Prom. Khim. Veshchestv*, 1968, **10**, 124; *CA*, **71**, 47807 (*tox*)
Schlegel, B. *et al., J. Antibiot.*, 2000, **53**, 973-974 (*Piptamine*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, PBA000

4-Pentadecylpyridine P-204

[98771-51-8]

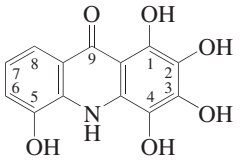


$C_{20}H_{35}N$ 289.503
Isol. from plums infected with *Taphrina pruni*. Competitive polyphenoloxidase inhibitor. $Bp_{0.01}$ 150°.

Hardy, D.R. *et al., Rapid Commun. Mass Spectrom.*, 1988, **2**, 16-18 (*ms*)
Fuchs, C.T. *et al., Z. Naturforsch., C*, 1995, **50**, 766-768; 1997, **52**, 761-765 (*isol, synth, pmr*)

1,2,3,4,5-Pentahydroxyacridone P-205

*1,2,3,4,5-Pentahydroxy-9*H*-acridin-9-one*



$C_{13}H_9NO_6$ 275.217

2,3,4-Tri-Me ether, N-*Me: 1,5-Dihydroxy-2,3,4-trimethoxy-10-methylacridone.* ***Citbrasine***
[86680-34-4]
$C_{17}H_{17}NO_6$ 331.324
Alkaloid from the root bark of *Citrus sinensis* var. *brasiliensis* (navel orange) (Rutaceae). Red plates (Et_2O). Mp 154-156°.

Wu, T.-S. *et al., Chem. Pharm. Bull.*, 1983, **31**, 901 (*isol, uv, ir, pmr, ms, struct*)

1,2,3,5,6-Pentahydroxyacridone P-206

*1,2,3,5,6-Pentahydroxy-9*H*-acridin-9-one*
$C_{13}H_9NO_6$ 275.217

2,3-Di-Me ether, N-*Me:* ***2,3-Dimethoxy-1,5,6-trihydroxy-10-methylacridone***
[126622-17-1]
$C_{16}H_{15}NO_6$ 317.298
Alkaloid from the root bark of *Pleiospermium alatum* (Rutaceae). Yellow cryst. Mp 118-119°.

2,5-Di-Me ether, N-*Me: 1,3,6-Trihydroxy-2,5-dimethoxy-10-methylacridone.* ***Citramine***
[119459-67-5]
$C_{16}H_{15}NO_6$ 317.298
Alkaloid from roots of *Citrus natsudaidai* and roots of Ogonkan (a *Citrus* hybrid) (Rutaceae). Light-yellow prisms. Mp 277-279°.

2,3,5-Tri-Me ether, N-*Me:* ***1,6-Dihydroxy-2,3,5-trimethoxy-10-methylacridone***
[101330-64-7]
$C_{17}H_{17}NO_6$ 331.324
Alkaloid from the stems of *Pleiospermium alatum* (Rutaceae). Yellow needles ($CHCl_3$/petrol). Mp 181-182°.

2,5,6-Tri-Me ether, N-*Me: 1,3-Dihydroxy-2,5,6-trimethoxy-10-methylacridone.* ***Atalafoline***
[107259-49-4]
$C_{17}H_{17}NO_6$ 331.324
Alkaloid from the chinese drug Tung-Feng-Jie (roots of *Atalantia buxifolia* (Rutaceae)).

2,3,5,6-Tetra-Me ether: 1-Hydroxy-2,3,5,6-tetramethoxyacridone. ***Cuspanine***
[143438-94-2]
$C_{17}H_{17}NO_6$ 331.324
Alkaloid from leaves of *Angostura paniculata* (Rutaceae). Exhibits moderate molluscicidal activity and moderate cytotoxicity against several carcinoma cell lines. Yellow cryst. (MeOH). Mp 164-166°. λ_{max} 212 (ϵ 6950); 256 (ϵ 70000); 324 (ϵ 4000); 384 (ϵ 6000) (MeOH) (Berdy).

2,3,5,6-Tetra-Me ether, N-*Me:* ***1-Hydroxy-2,3,5,6-tetramethoxy-10-methylacridone***
[101330-63-6]
$C_{18}H_{19}NO_6$ 345.351
Alkaloid from the root bark of *Pleiospermium alatum* (Rutaceae). Yellow needles ($CHCl_3$/petrol); cryst. (hexane/EtOAc). Mp 198-200° (170°).

1,2,3,5,6-Penta-Me ether: 1,2,3,5,6-Pentamethoxyacridone. ***Cusculine***
[143438-95-3]
$C_{18}H_{19}NO_6$ 345.351
Alkaloid from leaves of *Atalantia paniculata* (Rutaceae). Exhibits moderate molluscicidal activity and moderate cytotoxicity against several carcinoma cell lines. Yellow cryst. (MeOH). Mp 223-224°. λ_{max} 220 (ϵ 7400); 264 (ϵ 74000); 312 (ϵ 3800); 372 (ϵ 6350) (MeOH) (Berdy).

Bowen, I.H. *et al., Phytochemistry*, 1986, **25**, 429 (*isol, uv, ir, pmr, ms, struct*)
Qin, D. *et al., Yaoxue Xuebao*, 1986, **21**, 683; *CA*, **106**, 135228h (*Atalafoline*)
Ju-Ichi, M. *et al., Heterocycles*, 1988, **27**, 2197 (*Citramine*)
Bandara, B.M.R. *et al., Phytochemistry*, 1990, **29**, 297 (*isol, uv, ir, pmr, ms, struct*)
Vieira, P.C. *et al., J. Nat. Prod.*, 1992, **55**, 1112 (*Cuspanine, Cusculine*)

1,3,4,5,6-Pentahydroxyacridone P-207

$C_{13}H_9NO_6$ 275.217

3,6-Di-Me ether, N-*Me: 1,4,5-Trihydroxy-3,6-dimethoxy-10-methylacridone.* ***Atalafoline B***
[114216-93-2]
$C_{16}H_{15}NO_6$ 317.298
Alkaloid from the roots of *Atalantia buxifolia* (Rutaceae).

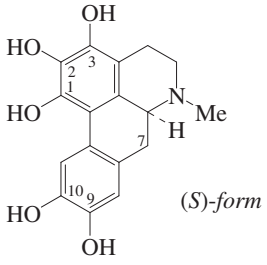
4,5-Di-Me ether, N-*Me: 1,3,6-Trihydroxy-4,5-dimethoxy-10-methylacridone.* ***Buxifoliadine H***
[263007-72-3]
$C_{16}H_{15}NO_6$ 317.298
Alkaloid from the root bark of *Severinia buxifolia*. Yellow needles (Me_2CO). Mp 215-217°. λ_{max} 221 (log ϵ 2.94); 234 (log ϵ 2.6); 260 (log ϵ 3.45); 269 (sh) (log ϵ 3.41); 313 (log ϵ 2.67); 332 (log ϵ 2.93); 390 (log ϵ 2.53) (MeOH).

3,4,5-Tri-Me ether, N-*Me: 1,6-Dihydroxy-3,4,5-trimethoxy-10-methylacridone.* ***Glycofolinine***
[172335-06-7]
$C_{17}H_{17}NO_6$ 331.324
Alkaloid from root bark and stem bark of *Glycosmis citrifolia* (Rutaceae). Yellow prisms. Mp 161-163°.

Gu, G. *et al., Yaoxue Xuebao*, 1987, **22**, 886-888; *CA*, **108**, 183612s
Ono, T. *et al., J. Nat. Prod.*, 1995, **58**, 1629-1631 (*Glycofolinine*)
Wu, T.-S. *et al., Chem. Pharm. Bull.*, 2000, **48**, 85-90 (*Buxifoliadine H*)

1,2,3,9,10-Pentahydroxy-aporphine P-208

5,6,6a,7-Tetrahydro-6-methyl-4H-dibenzo[de,g]quinoline-1,2,3,9,10-pentol, 9CI



(*S*)-*form*

$C_{17}H_{17}NO_5$ 315.325

(*S*)-*form*

1,2,10-Tri-Me ether: 3,9-Dihydroxy-1,2,10-trimethoxyaporphine. ***Delporphine***
[67253-86-5]
$C_{20}H_{23}NO_5$ 357.405
Alkaloid from *Delphinium dictyocarpum*. Mp 116-117°. $[\alpha]_D$ +68 (c, 0.25 in MeOH).

2,3,10-Tri-Me ether, N-*de-Me: 1,9-Dihydroxy-2,3,10-trimethoxynoraporphine.* ***Nordelporphine***
[109175-40-8]
$C_{19}H_{21}NO_5$ 343.379
Alkaloid from the leaves of *Phoebe valeriana* (Lauraceae). Amorph. solid. Opt. rotn. not recorded.

1,2,3,10-Tetra-Me ether: 9-Hydroxy-1,2,3,10-tetramethoxyaporphine. ***Thalisopynine***. *Thalisopinine*
[24314-86-1]
$C_{21}H_{25}NO_5$ 371.432
Alkaloid from the roots *Thalictrum isopyroides* (Ranunculaceae). $[\alpha]_D$ +45 (c, 0.13 in MeOH).

1,2,9,10-Tetra-Me ether: 3-Hydroxy-1,2,9,10-tetramethoxyaporphine. ***Thalbaicalidine***. O-*Demethylpurpureine. 3-Hydroxyglaucine*
[66186-95-6]
$C_{21}H_{25}NO_5$ 371.432
Alkaloid from the stems and leaves of *Annona purpurea* (?), from *Ocotea bucherii* leaves and twigs and from *Thalictrum baicalense* (Annonaceae, Lauraceae, Ranunculaceae). Cryst. (Et_2O or MeOH aq.). Mp 193-195°. $[\alpha]_D^{24}$ +74.1 (c, 0.6 in MeOH). Identity of 3-Hydroxyglaucine from *O. bucherii* and Thalbaicalidine with *O*-Demethylpurpureine from *A. purpurea*, which was not fully characterised, is not certain.

1,2,9,10-Tetra-Me ether, N-*de-Me: 3-Hydroxy-1,2,9,10-tetramethoxynoraporphine.* ***Thalbaicaline***
[88187-19-3]
$C_{20}H_{23}NO_5$ 357.405
Alkaloid from *Thalictrum baicalense* (Ranunculaceae). Cryst. (EtOAc). $[\alpha]_D$ +61 (MeOH).

2,3,9,10-Tetra-Me ether: 1-Hydroxy-2,3,9,10-tetramethoxyaporphine. ***Preocoteine***
[18161-86-9]
$C_{21}H_{25}NO_5$ 371.432
Alkaloid from *Thalictrum fendleri* (whole plant) and the roots of *Thalictrum strictum*, also present in the bark of *Phoebe molicella* (Ranunculaceae, Lauraceae). Oil. $[\alpha]_D^{25}$ +26 (EtOH).

2,3,9,10-Tetra-Me ether, N-*oxide:* ***Preocoteine* N-*oxide***
[41607-14-1]
$C_{21}H_{25}NO_6$ 387.432
Alkaloid from the roots of *Thalictrum minus* (Ranunculaceae). Mp 199-200° dec.

2,3,9,10-Tetra-Me ether, N-*de-Me: 1-Hydroxy-2,3,9,10-tetramethoxynoraporphine.* ***Norpreocoteine***
[89412-82-8]
$C_{20}H_{23}NO_5$ 357.405
Alkaloid from the bark of *Phoebe molicella* (Lauraceae). Brownish oil.

Penta-Me ether: 1,2,3,9,10-Pentamethoxyaporphine. ***Thalicsimidine***. *Purpureine*†. O-*Methylpreocoteine*
[19775-47-4]
$C_{22}H_{27}NO_5$ 385.459
Alkaloid from the roots of *Thalictrum simplex* and *Thalictrum strictum*. Also present in *Thalictrum filamentosum* and in the stems and leaves of *Annona purpurea* and the bark of *Phoebe molicella* (Ranunculaceae, Annonaceae, Lauraceae). Cryst. (Me_2CO). Mp 131-132°. $[\alpha]_D$ +66.9 (c, 1.42 in EtOH).

Penta-Me ether, picrate: Mp 141° dec. (131-132°).

Penta-Me ether, N-*oxide:* ***Thalicsimidine* N-*oxide***
[177413-36-4]
$C_{22}H_{27}NO_6$ 401.458
Alkaloid from aerial parts of *Thalictrum simplex*. $[\alpha]_D^{22}$ +46 (c, 0.02 in MeOH).

Penta-Me ether, N-*Me:* **N-*Methylthalicsimidine***. N-*Methylpurpureine*
Quaternary alkaloid from the bark and roots of *Xylopia parviflora*. Mp 227-229° (as iodide) Mp 187.5-190° (as perchlorate). $[\alpha]_D^{22}$ +25.1 (0.5 in MeOH) (perchlorate). λ_{max} 281 (log ϵ 4.01); 303 (log ϵ 4) (MeOH).

Penta-Me ether, N-*de-Me: 1,2,3,9,10-Pentamethoxynoraporphine.* ***Norpurpureine***
[34272-09-8]
$C_{21}H_{25}NO_5$ 371.432
Alkaloid from the stems and leaves of *Annona purpurea* and the bark of *Phoebe molicella* (Annonaceae, Lauraceae). Mp 115-117°. $[\alpha]_D^{25}$ -70.4 (c, 0.2 in $CHCl_3$).

Penta-Me ether, N-*de-Me,* N-*formyl:* **N-*Formylnorpurpureine***. N-*Formylpurpureine (incorr.)*
$C_{22}H_{25}NO_6$ 399.443
Alkaloid from the leaves of *Annona purpurea*. Brown amorph. powder. Mp 212-213°. $[\alpha]_D^{24}$ -135 (c, 0.2 in $CHCl_3$). Exists as a mixt. of *E*- and *Z*-hydroximine zwitterions. λ_{max} 225 ; 268 ; 290 ; 316 (EtOH).

Penta-Me ether, N-*de-Me,* N-*methoxycarbonyl:* ***Romucosine G***
$C_{23}H_{27}NO_7$ 429.469
Alkaloid from *Annona purpurea*. Needles. Mp 135-136°. $[\alpha]_D^{25}$ +44 (c, 0.08 in $CHCl_3$). λ_{max} 233 (log ϵ 4.33); 282 (log ϵ 4.04); 303 (log ϵ 3.54) (EtOH).

6a,7-Didehydro, penta-Me ether: ***Dehydrothalicsimidine***
[125236-63-7]
$C_{22}H_{25}NO_5$ 383.443
Alkaloid from *Thalictrum inchengense* (Ranunculaceae).

7-Oxo, penta-Me ether: ***7-Hydroxydehydrothalicsimidine***
$C_{22}H_{25}NO_6$ 399.443
Alkaloid from *Annona purpurea*. Platelet aggregation inhibitor. Amorph. green powder. Mp 223-224°. Exists in the enol (7-hydroxy-6*a*,7-didehydro) form. λ_{max} 215 ; 256 ; 270 (sh) ; 340 (EtOH).

1,2-Methylene, 3,9,10-tri-Me ether: see Ocoteine, O-27

(±)-*form*

Penta-Me ether:
Synthetic. Cryst. + ¼ H_2O or yellowish-brown viscous syrup. Mp 121-122°.

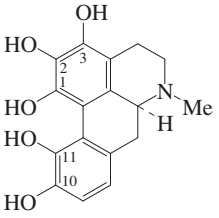
Penta-Me ether, perchlorate:
Prisms (MeOH/Et_2O). Mp 220-225°.

Shamma, M. *et al., Tetrahedron*, 1967, **23**, 2887 (*Preocoteine*)
Shamma, M. *et al., J. Pharm. Sci.*, 1968, **57**, 262 (*Preocoteine*)
Ismailov, Z.F. *et al., Khim. Prir. Soedin.*, 1968, **4**, 136; 196; 202; *Chem. Nat. Compd. (Engl. Transl.)*, 1968, **4**, 117; 169; 175 (*struct, ms, pmr*)
Umarov, K.S. *et al., Khim. Prir. Soedin.*, 1970, **6**, 224; *Chem. Nat. Compd. (Engl. Transl.)*, 1970, **6**, 219 (*isol*)
Sonnet, P.E. *et al., J. Pharm. Sci.*, 1971, **60**, 1254 (*isol, uv, pmr, derivs*)
Kametani, T. *et al., J.C.S.(C)*, 1971, 1032; 3617 (*synth, uv, pmr*)
Doskotch, R.W. *et al., J.O.C.*, 1971, **36**, 2409 (*synth, uv, pmr*)
Khozdaev, V.G. *et al., Khim. Prir. Soedin.*, 1972, **8**, 631; *Chem. Nat. Compd. (Engl. Transl.)*, 1972, **8**, 599 (*Preocoteine N-oxide*)
Maekh, S.K. *et al., Khim. Prir. Soedin.*, 1976, **12**, 560; 1983, **19**, 537; 1986, **22**, 251; *Chem. Nat. Compd. (Engl. Transl.)*, 1976, **12**, 238; 1983, **19**, 507; 1986, **22**, 511 (*Thalbaicaline, Thalbaicalidine*)
Umarova, D. *et al., Khim. Prir. Soedin.*, 1976, **12**, 788; *Chem. Nat. Compd. (Engl. Transl.)*, 1976, **12**, 706 (*isol*)
Mollov, N. *et al., Chem. Ber.*, 1978, **111**, 554 (*synth, uv, pmr*)
Salimov, B.T. *et al., Khim. Prir. Soedin.*, 1978, **14**, 235; *Chem. Nat. Compd. (Engl. Transl.)*, 1978, **14**, 194 (*Delporphine*)
Abdizhabbarova, S. *et al., Khim. Prir. Soedin.*, 1978, **14**, 472; *Chem. Nat. Compd. (Engl. Transl.)*, 1978, **14**, 400 (*Thalisopynine*)
Rönsch, H. *et al., Annalen*, 1983, 744 (*3-Hydroxyglaucine*)
Stermitz, F.R. *et al., J. Nat. Prod.*, 1983, **46**, 913 (*Norpurpureine, Norpreocoteine, cmr*)

Hara, H. *et al., Chem. Pharm. Bull.*, 1986, **34**, 1946 (*synth*)
Castro, O. *et al., J. Nat. Prod.*, 1986, **49**, 1036 (*Nordelporphine*)
Wu, Z. *et al., Shoyakugaku Zasshi*, 1989, **43**, 195; *CA*, **112**, 73781w (*Dehydrothalicsimidine*)
Velcheva, M.P. *et al., Phytochemistry*, 1996, **42**, 535 (*oxide*)
Chang, F.R. *et al., J. Nat. Prod.*, 1998, **61**, 1457-1461 (*N-Formylnorpurpureine*)
Chang, F.-R. *et al., Phytochemistry*, 1998, **49**, 2015-2018 (*7-Hydroxydehydrothalicisimidime*)
Chang, F.R. *et al., J. Nat. Prod.*, 2000, **63**, 746-748 (*Romucosine G*)
Nishiyama, Y. *et al., Phytochemistry*, 2004, **65**, 939-944 (*N-Methylthalicsimidine*)

1,2,3,10,11-Pentahydroxyaporphine P-209

*5,6,6a,7-Tetrahydro-6-methyl-4*H*-dibenzo[*de,g*]quinoline-1,2,3,10,11-pentol, 9CI*



(*S*)-*form*

$C_{17}H_{17}NO_5$ 315.325

(*S*)-*form*

1,2,10-Tri-Me ether: 3,11-Dihydroxy-1,2,10-trimethoxyaporphine. **N-*Methyldanguyelline***
[122297-36-3]
$C_{20}H_{23}NO_5$ 357.405
Alkaloid from the whole plant of *Thalictrum pedunculatum* (Ranunculaceae). $[\alpha]_D$ +96 (c, 0.25 in $CHCl_3$).

1,2,10-Tri-Me ether, N-*de-Me: 3,11-Dihydroxy-1,2,10-trimethoxynoraporphine.* ***Danguyelline***
[80151-80-0]
$C_{19}H_{21}NO_5$ 343.379
Alkaloid from the trunk bark of *Xylopia danguyella* (Annonaceae). Cryst. (MeOH). Mp 190°.

1,2,3,10-Tetra-Me ether: 11-Hydroxy-1,2,3,10-tetramethoxyaporphine. ***Oconovine***
[19893-97-1]
$C_{21}H_{25}NO_5$ 371.432
Alkaloid from an unidentified *Ocotea* sp. and from *Thalictrum urbaini* (Lauraceae, Ranunculaceae). Amorph. $[\alpha]_D^{27}$ +156 (c, 0.2 in $CHCl_3$).

1,2,3,10-Tetra-Me ether, N-*Me:* Mp 204-205° (as iodide). $[\alpha]_D^{27}$ +70 (c, 0.2 in $CHCl_3$) (iodide).

1,2,3,10-Tetra-Me ether, N-*de-Me: 11-Hydroxy-1,2,3,10-tetramethoxynoraporphine.* ***Noroconovine***
[69477-65-2]
$C_{20}H_{23}NO_5$ 357.405
Alkaloid from the trunk bark of *Polyalthia oligosperma* (Annonaceae). λ_{max} 221 ; 274 ; 307 (sh) (EtOH).

2,3,10,11-Tetra-Me ether: 1-Hydroxy-2,3,10,11-tetramethoxyaporphine. ***Isooconovine***
[72170-11-7]
$C_{21}H_{25}NO_5$ 371.432
Alkaloid from the leaves of *Ocotea minarum* (Lauraceae). Mp 98-99°. $[\alpha]_D$ +155 (c, 1.0 in MeOH).

1,2-Methylene, 3,10-di-Me ether, N-*de-Me: 11-Hydroxy-3,10-dimethoxy-1,2-methylenedioxynoraporphine.* ***Cassyformine***
[208252-24-8]
$C_{19}H_{19}NO_5$ 341.363
Alkaloid from *Cassytha filiformis.* Amorph. yellow powder ($CHCl_3$). Mp 135-137°. $[\alpha]_D^{25}$ +30 (c, 0.2 in $CHCl_3$). λ_{max} 215 (log ϵ 4.03); 284 (log ϵ 4.1); 302 (log ϵ 3.77) (MeOH).

1,2-Methylene, 3,11-di-Me ether, N-*de-Me: 10-Hydroxy-3,11-dimethoxy-1,2-methylenedioxynoraporphine.* ***Hernandine***†
[15583-41-2]
$C_{19}H_{19}NO_5$ 341.363
Alkaloid from *Hernandia bivalvis.* Mp 240-241°. $[\alpha]_D^{27}$ +347.

1,2-Methylene, 3,10,11-tri-Me ether, N-*de-Me: 3,10,11-Trimethoxy-1,2-methylenedioxynoraporphine.* **O-*Methylcassyformine***
[14050-90-9]
$C_{20}H_{21}NO_5$ 355.39
Alkaloid from *Cassytha filiformis.* λ_{max} 226 ; 277 (MeOH).

(±)-*form*

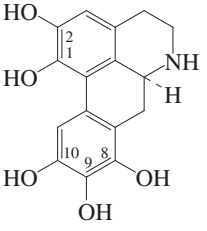
1,2,3,10-Tetra-Me ether: [23740-41-2]
Synthetic.

1,2,3,10-Tetra-Me ether, N-*Me:* Mp 228° (as iodide).

1,2-Methylene, 3,11-di-Me ether, N-*de-Me:*Synthetic. Mp 227-228° dec.

Soh, K.S. *et al., Tet. Lett.*, 1966, **7**, 5279-5283; 1968, **9**, 19-22 (*Hernandine, pmr, struct, synth*)
Cava, M.P. *et al., J.O.C.*, 1970, **35**, 1867-1869 (*Oconovine*)
Guinaudeau, H. *et al., Plant. Med. Phytother.*, 1978, **12**, 166-172 (*Noroconovine*)
Vecchietti, V. *et al., Farmaco, Ed. Sci.*, 1979, **34**, 829-840 (*Isooconovine*)
Hocquemiller, R. *et al., J. Nat. Prod.*, 1981, **44**, 551-556 (*Danguyelline*)
Hussain, S.F. *et al., J. Nat. Prod.*, 1989, **52**, 428-429 (*Danguyelline, N-Methyldanguyelline*)
Chang, F.-R. *et al., J. Nat. Prod.*, 1998, **61**, 863-866 (*Cassyformine*)
Tsai, T.-H. *et al., J. Nat. Prod.*, 2008, **71**, 289-291 (*O-Methylcassyformine*)

1,2,8,9,10-Pentahydroxyaporphine P-210



$C_{17}H_{17}NO_5$ 315.325

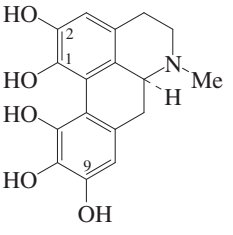
(*S*)-*form*

1,8,9,10-Tetra-Me ether: 2-Hydroxy-1,8,9,10-tetramethoxyaporphine. ***Acutifolidine***†
[126595-93-5]
$C_{21}H_{25}NO_5$ 371.432
Alkaloid from roots of *Thalictrum acutifolium*. Mp 183-184°. $[\alpha]_D$ +77 (c, 1 in MeOH).

1,2:8,9-Bis(methylene), 10-Me ether: 10-Methoxy-1,2:8,9-bis(methylenedioxy)aporphine. ***Ocominarine***
[72170-09-3]
$C_{20}H_{19}NO_5$ 353.374
Alkaloid from the leaves of *Ocotea minarum* (Lauraceae). Mp 133-135°. $[\alpha]_D$ +65 (c, 0.5 in $CHCl_3$).

Vecchietti, V. *et al., Farmaco, Ed. Sci.*, 1979, **34**, 829 (*Ocominarine, isol, uv, pmr, ms, struct*)
Lin, C. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 1989, **31**, 449; *CA*, **112**, 175576a (*Acutifolidine, isol*)
Guinaudeau, H. *et al., J. Nat. Prod.*, 1994, **57**, 1033 (*Acutifolidine, rev, uv, ir, pmr, ms*)

1,2,9,10,11-Pentahydroxyaporphine P-211



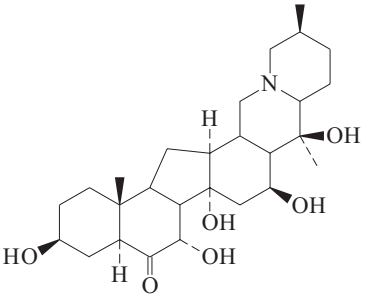
$C_{17}H_{17}NO_5$ 315.325

(*S*)-*form*

1,2:9,10-Bis(methylene) ether, N-*de-Me: 11-Hydroxy-1,2:9,10-bis(methylenedioxy)noraporphine.* ***Lindechunine B***
$C_{18}H_{15}NO_5$ 325.32
Alkaloid from the roots of *Lindera chunii*. Greyish powder. $[\alpha]_D^{26}$ +43 (c, 0.01 in MeOH). λ_{max} 222 ; 280 (MeOH).

Zhang, C.-F. *et al., Chem. Pharm. Bull.*, 2002, **50**, 1195-1200 (*Lindechunine B*)

3,7,14,16,20-Pentahydroxycevan-6-one, 9CI P-212



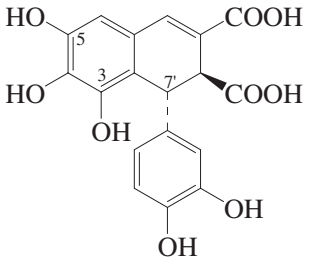
$C_{27}H_{43}NO_6$ 477.64

(3β,5α,7α,16β)-*form*

Pingpeimine C. *Pengbeimine C*
[128585-96-6]
Alkaloid from the bulbs of *Fritillaria ussuriensis* (Liliaceae). Mp 171.5-173°. $[\alpha]_D^{25}$ -24.6 (c, 1.1 in MeOH).

Xu, D.M. *et al., Yaoxue Xuebao*, 1990, **25**, 127-130; *CA*, **113**, 74794 (*isol, struct*)

3,3′,4,4′,5-Pentahydroxy-2,7′-cyclolign-7-ene-9,9′-dioic acid P-213



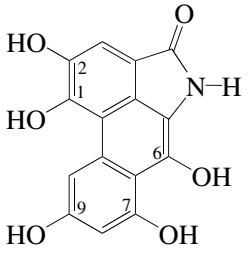
$C_{18}H_{14}O_9$ 374.303

(7′R,8′S)-form

3,5-Di-Me ether, bis[2-(4-hydroxyphenyl)ethylamide]: [200135-06-4]
$C_{36}H_{36}N_2O_9$ 640.688
Alkaloid from *Porcelia macrocarpa*. Amorph. powder. $[\alpha]_D^{25}$ -12 (c, 0.08 in MeOH). λ_{max} 203 (log ϵ 4.85); 249 (log ϵ 4.49); 283 (log ϵ 4.22); 332 (log ϵ 4.24) (EtOH).

Chaves, M.H. *et al., Phytochemistry*, 1997, **46**, 879-881 (*isol, uv, pmr, cmr*)

1,2,6,7,9-Pentahydroxydibenz[*cd*,*f*]indol-4(5*H*)-one, 9CI P-214



$C_{15}H_9NO_6$ 299.239

CAS numbering shown. Alternative (phenanthrene) numbering freq. encountered in which 1,2,6,7,9- are 4,3,9,8,6 respectively.

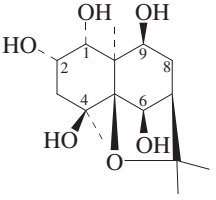
1,2-Methylene, 6,7,9-tri-Me ether: ***9-Methoxyaristolactam IV***
[133462-31-4]
$C_{19}H_{15}NO_6$ 353.331
Alkaloid from *Asarum petelotii* and *Aristolochia auricularia*. Pale yellow solid.

Houghton, P.J. *et al., Phytochemistry*, 1991, **30**, 253

Ding, Z. *et al., Yunnan Zhiwu Yanjiu*, 1994, **16**, 305; *CA*, **122**, 101604t

1,2,4,6,9-Pentahydroxydihydro-β-agarofuran P-215

2,4-Dihydroxycelorbicol



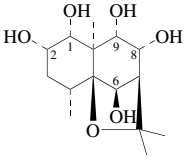
$C_{15}H_{26}O_6$ 302.367

(1α,2β,4β,6β,9β)-*form*

6-(3-Pyridinecarbonyl), 1-cinnamoyl, 9-Ac: ***Rzedowskin D***
[117677-26-6]
$C_{32}H_{37}NO_9$ 579.646
Alkaloid from the aerial parts of *Orthosphenia mexicana* and *Rzedowskia tolantonguensis* (Celastraceae). Amorph. solid. Mp 143-145°.

Jiménez, M. *et al., Phytochemistry*, 1988, **27**, 2213 (*Rzedowskins*)

1,2,6,8,9-Pentahydroxydihydro-β-agarofuran P-216



(1α,2α,6β,8α,9α)-*form*

$C_{15}H_{26}O_6$ 302.367

(1α,2α,6β,8α,9α)-*form*

1-(3-Pyridinecarbonyl), 2,9-dibenzoyl, 8-(2-methylbutanoyl), 6-Ac: ***Triptogelin A5***
[135118-41-1]
$C_{42}H_{47}NO_{11}$ 741.833
Constit. of *Tripterygium wilfordii*. Amorph. powder. $[\alpha]_D^{25}$ +200.1 (c, 0.17 in $CHCl_3$).

1-(3-Pyridinecarbonyl), 2,8,9-tribenzoyl, 6-Ac: ***Triptogelin A10***
[135118-33-1]
$C_{44}H_{43}NO_{11}$ 761.824
Constit. of *Tripterygium wilfordii* var. *regelii*. Amorph. powder. $[\alpha]_D^{23}$ +77.6 (c, 0.52 in MeOH).

8-(3-Pyridinecarbonyl), 9-benzoyl, 6-Ac: ***Triptogelin A7***
[135118-43-3]
$C_{30}H_{35}NO_9$ 553.608
Constit. of *Tripterygium wilfordii*. Amorph. powder. $[\alpha]_D^{23}$ +63.1 (c, 0.5 in MeOH).

8-(3-Pyridinecarbonyl), 1,9-dibenzoyl, 2-hexanoyl, 6-Ac: ***Triptogelin A9***
[135118-45-5]
$C_{43}H_{49}NO_{11}$ 755.86
Constit. of *Tripterygium wilfordii*. Amorph. powder. $[\alpha]_D^{23}$ +12.1 (c, 1 in MeOH).

8-(3-Pyridinecarbonyl), 1,2,9-tribenzoyl, 6-Ac: ***Triptogelin A6***
[135118-42-2]
$C_{44}H_{43}NO_{11}$ 761.824
Constit. of *Tripterygium wilfordii*. Amorph. powder. $[\alpha]_D^{25}$ +31.5 (c, 0.21 in $CHCl_3$).

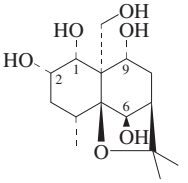
(1α,2α,6β,8β,9β)-*form*

2-(3-Pyridinecarbonyl), 1,9-dibenzoyl, 6,8-di-Ac: [389865-20-7]
$C_{39}H_{41}NO_{11}$ 699.753
Constit. of *Maytenus magellanica*. Amorph. solid. $[\alpha]_D^{25}$ +31 (c, 0.19 in $CHCl_3$). λ_{max} 229 ; 264 (EtOH).

Takaishi, Y. *et al., Phytochemistry*, 1990, **29**, 3869-3873; 1991, **30**, 1561-1566; 1567-1572 (*Triptogelins*)

Kennedy, M.L. *et al., J. Med. Chem.*, 2001, **44**, 4668-4676 (*Maytenus magellanica constit*)

1,2,6,9,14-Pentahydroxydihydro-β-agarofuran P-217



(1α,2α,6β,9α)-*form*

$C_{15}H_{26}O_6$ 302.367

(1α,2α,6β,9β)-*form*

3,4-Dihydroxymaytol
Amorph. solid. $[\alpha]_D^{23}$ -2.5 (c, 0.12 in MeOH).

2-(3-Pyridinecarbonyl), 6,9-dibenzoyl, 1,14-di-Ac: [389865-23-0]
$C_{39}H_{41}NO_{11}$ 699.753
Constit. of *Maytenus chubutensis*. Amorph. solid. $[\alpha]_D^{25}$ +70 (c, 0.39 in $CHCl_3$). λ_{max} 229 ; 264 (EtOH).

9-(3-Pyridinecarbonyl), 1,2,6,14-tetra-Ac:
$C_{29}H_{37}NO_{11}$ 575.611
Constit. of *Euonymus nanus* and *Euonymus sachalinensis*. Amorph. solid.

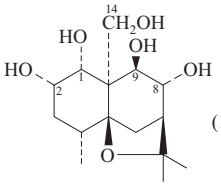
9-(3-Pyridinecarbonyl), 1-O-(2S-methylbutanoyl), 2,6,14-tri-Ac: ***Ever 1***
$C_{32}H_{43}NO_{11}$ 617.692
Alkaloid from *Euonymus verrucosus* (Celastraceae). Cryst. (MeOH aq.). Mp 189-192°.

9-(3-Pyridinecarbonyl), 2-benzoyl, 1,6-di-Ac: ***Maymyrsine***
[93772-06-6]
$C_{32}H_{37}NO_{10}$ 595.645
Alkaloid from the fruits of *Maytenus myrsinoides* (Celastraceae). Prisms (EtOH). Mp 185-187°. $[\alpha]_D$ +93 (c, 1 in $CHCl_3$).

9-(3-Pyridinecarbonyl), 2-benzoyl, 1,6,14-tri-Ac: ***Acetylmaymyrsine***
[93772-07-7]
$C_{34}H_{39}NO_{11}$ 637.682
Alkaloid from the fruits of *Maytenus myrsinoides* (Celastraceae). Amorph. solid. $[\alpha]_D^{20}$ +92 (c, 1 in $CHCl_3$).

Baudouin, G. *et al., Heterocycles*, 1984, **22**, 2221-2226 (*Maymyrsine, Acetylmaymyrsine, cryst struct*)
Begley, M.J. *et al., J.C.S. Perkin 1*, 1986, 535-539 (*Ever 1, cryst struct*)
González, A.G. *et al., J. Nat. Prod.*, 1990, **53**, 474-478 (*Maytenus chubutensis constits*)
Hohmann, J. *et al., J. Nat. Prod.*, 1995, **58**, 1192-1199 (*Euonymus sachalinensis constits*)
Kennedy, M.L. *et al., J. Med. Chem.*, 2001, **44**, 4668-4676 (*Maytenus chubutensis constit*)

1,2,8,9,14-Pentahydroxydihydro-β-agarofuran P-218



(1α,2α,8α,9β)–*form*

$C_{15}H_{26}O_6$ 302.367

(1α,2α,8α,9β)-*form*

14-(3-Pyridinecarbonyl), 9-benzoyl, 1,2-di-Ac: ***Cathedulin E8***. *Cathedulin Y8*
[61166-34-5]
$C_{32}H_{37}NO_{10}$ 595.645
Alkaloid from *Catha edulis* (Celastraceae). Gum. May be an artifact of isol. since the 4-nicotinoyl group of Cathedulin E2 is labile.

8,14-Bis(3-pyridinecarbonyl), 9-benzoyl, 1,2-di-Ac: ***Cathedulin E2***. O^4*-Nicotinoylcathedulin E8*. *Cathedulin 2*
[61231-06-9]
$C_{38}H_{40}N_2O_{11}$ 700.741
Alkaloid from *Catha edulis* (Celastraceae). Cryst. (Et_2O/petrol). Mp 149-151° (transition at 137-140°). $[\alpha]_D^{31}$ -74 (c, 0.22 in $CHCl_3$).

(1α,2α,8β,9α)-*form*

1-Benzoyl, 2,8,9,14-tetra-Ac: ***Kupitengester 3***
[149252-08-4]
$C_{30}H_{38}O_{11}$ 574.624
Constit. of *Celastrus angulatus*.

9-Benzoyl, 1,2,8,14-tetra-Ac: ***Angulatueoid B***
[145042-01-9]
$C_{30}H_{38}O_{11}$ 574.624
Constit. of *Celastrus angulatus*. Cryst. (MeOH). Mp 219-219.5° (214 - 215°). $[\alpha]_D^{23}$ +59 (c, 0.505 in $CHCl_3$).

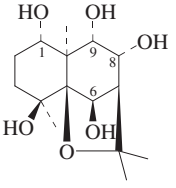
14-(2-Pyridinecarbonyl), 9-benzoyl, 1,2,8-tri-Ac: ***Angulatueoid A***. *Angulatusine A*
[144425-15-0]
$C_{34}H_{39}NO_{11}$ 637.682
Constit. of *Celastrus angulatus* (Celastraceae). Mp 227-230°. Unusual 2-pyridinecarbonyl residue, struct. proved by x-ray crystallography.

14-(3-Pyridinecarbonyl), 9-benzoyl, 1,2,8-tri-Ac: [154741-50-1]
$C_{34}H_{39}NO_{11}$ 637.682
Constit. of *Celastrus angulatus*. Cryst. (Me_2CO/petrol). Mp 213-214°. λ_{max} 218 (log ϵ 5.04); 229 (log ϵ 5.04); 264 (log ϵ 3.68) (MeOH).

9,14-Bis(3-pyridinecarbonyl), 1,2,8-tri-Ac: [147167-66-6]
$C_{33}H_{38}N_2O_{11}$ 638.67
Constit. of *Celastrus angulatus*. Cryst. (MeOH). Mp 183-184°. $[\alpha]_D^{23}$ +64.8 (c, 0.515 in $CHCl_3$).

Baxter, R.L. *et al., J.C.S. Perkin 1*, 1979, 2965-2970; 2972-2975 (*Cathedulins*)
Wu, D.G. *et al., J. Nat. Prod.*, 1992, **55**, 982-985 (*Angulatusine A, cryst struct*)
Chunquan, C. *et al., Phytochemistry*, 1992, **31**, 2777-2780 (*Angulatueoids, cryst struct*)
Wang, G. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 1992, **34**, 777-780 (*Kupitengester 3*)
Tu, Y. *et al., Chin. Chem. Lett.*, 1993, **4**, 219 (*deriv, cryst struct*)
Yongqing, T. *et al., Phytochemistry*, 1993, **32**, 458-459 (*Celastrus angulatus constits*)

1,4,6,8,9-Pentahydroxydihydro-β-agarofuran P-219



(1α,6β,8α,9α)-*form*

$C_{15}H_{26}O_6$ 302.367

(1α,6β,8β,9α)-*form*

6-O-(3-Pyridinecarbonyl), 1-benzoyl, 9-Ac: ***9-Acetoxy-1-benzoyloxy-4,8-dihydroxy-6-nicotinoyloxydihydro-β-agarofuran***
[110559-19-8]
$C_{30}H_{35}NO_9$ 553.608
Alkaloid from the aerial parts of *Orthosphenia mexicana* (Celastraceae). Mp 184-186°.

6-O-(3-Pyridinecarbonyl), 1-benzoyl, 8,9-di-Ac: ***8,9-Diacetoxy-1-benzoyloxy-4-hydroxy-6-nicotinoyloxydihydro-β-agarofuran***
[110559-18-7]
$C_{32}H_{37}NO_{10}$ 595.645
Alkaloid from the root bark of *Rzedowskia tolantonguensis* (Celastraceae). Mp 114-116°.

6-O-(3-Pyridinecarbonyl), 1,9-dibenzoyl, 4,8-di-Ac:
$C_{39}H_{41}NO_{11}$ 699.753
Constit. of *Rzedowskia tolantonguensis*.

(1α,6β,8β,9β)-*form*

6-O-(3-Pyridinecarbonyl), 1-benzoyl, 9-Ac:
$C_{30}H_{35}NO_9$ 553.608
Alkaloid from the aerial parts of *Orthosphenia mexicana* and the root bark of *Rzedowskia tolantonguensis* (Celastraceae). Mp 139-148°.

6-O-(1,6-Dihydro-1-methyl-6-oxo-3-pyridinecarbonyl), 9-benzoyl, 8-Ac: ***Reissantin G***
[910651-21-7]
$C_{31}H_{37}NO_{10}$ 583.634
Constit. of *Reissantia buchananii*. Powder. Mp 168-169°. $[\alpha]_D^{24}$ +33.6 (c, 0.55 in $CHCl_3$). λ_{max} 277 (log ϵ 3.66) (MeOH).

6-O-(1,6-Dihydro-1-methyl-6-oxo-3-pyridinecarbonyl), 9-benzoyl, 1,8-di-Ac: ***Reissantin A***
[628290-35-7]
$C_{33}H_{39}NO_{11}$ 625.671
Constit. of *Reissantia buchananii*. Amorph. powder. Mp 218-220°. $[\alpha]_D^{25}$ +42.44 (c, 0.69 in $CHCl_3$). λ_{max} 211 (log ϵ 4.62); 234 (log ϵ 4.2); 263 (log ϵ 4.37); 300 (log ϵ 3.72) (MeOH).

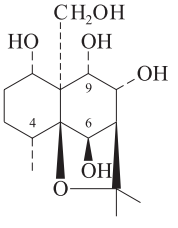
8-O-(1,6-Dihydro-1-methyl-6-oxo-3-pyridinecarbonyl), 1,9-bis(3-furancarbonyl), 6-Ac: ***Reissantin C***
[628290-37-9]
$C_{34}H_{37}NO_{13}$ 667.665
Constit. of *Reissantia buchananii*. Wax. $[\alpha]_D^{25}$ +36.4 (c, 0.37 in $CHCl_3$). λ_{max} 200 (log ϵ 3.94); 221 (log ϵ 3.91); 267 (log ϵ 4.13) (MeOH).

1-Ketone: 4,6,8,9-Tetrahydroxydihydro-β-agarofuran-1-one
$C_{15}H_{24}O_6$ 300.351

1-Ketone, 8-O-(1,6-dihydro-1-methyl-6-oxo-3-pyridinecarbonyl), 9-O-(2-hydroxybenzoyl), 6-benzoyl: ***Reissantin H***
[910651-22-8]
$C_{36}H_{37}NO_{11}$ 659.688
Constit. of *Reissantia buchananii*. Oil. $[\alpha]_D^{21}$ -50.1 (c, 0.36 in MeOH). λ_{max} 268 (log ϵ 3.52) (MeOH).

González, A.G. *et al., Phytochemistry*, 1997, **46**, 309-311 (*Rzedowskia tolantonguensis ester*)
Chang, F.-R. *et al., J. Nat. Prod.*, 2003, **66**, 1416-1420 (*Reissantins*)
Chang, F.-R. *et al., Planta Med.*, 2006, **72**, 92-96 (*Reissantins G,H*)

1,6,8,9,14-Pentahydroxydihydro-β-agarofuran P-220



(1α,6β,8α,9α)–*form*

$C_{15}H_{26}O_6$ 302.367

(1α,6β,8α,9α)-*form*

3-Pyridinecarbonyl, benzoyl, tri-Ac: ***Ejap 13***
$C_{34}H_{39}NO_{11}$ 637.682
Isol. from *Euonymus japonicus*. Amorph. Posn. of ester groups not detd.

(1α,6β,8α,9β)-*form*

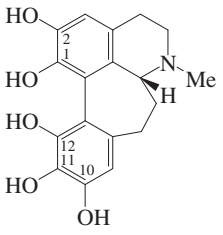
9-(3-Pyridinecarbonyl), 1,6,8,14-tetra-Ac: ***Ejap 14***
[122475-51-8]
$C_{29}H_{37}NO_{11}$ 575.611
Isol. from *Euonymus japonicus*. Amorph.

(1α,6β,8β,9α)-*form*

14-(3-Pyridinecarbonyl), 6-benzoyl, tri-Ac: ***Kupitengester 1***

[135063-89-7]
$C_{34}H_{39}NO_{11}$ 637.682
Constit. of *Euonymus kupieng*.
Rózsa, Z. *et al., J.C.S. Perkin 1*, 1989, 1079-1087 (*Ejaps*)
Wang, G. *et al., Chin. Sci. Bull.*, 1991, **36**, 206; *CA*, **115**, 71924h (*Kupiengester 1*)

1,2,10,11,12-Pentahydroxy-homoaporphine P-221



(*R*)-*form*

$C_{18}H_{19}NO_5$ 329.352

(*R*)-*form*

2,10,11-Tri-Me ether: ***Alkaloid CC 24***
[35320-73-1]
$C_{21}H_{25}NO_5$ 371.432
Alkaloid from the corms of *Colchicum cornigerum* (Liliaceae). Mp 245-249°. λ_{max} 221 (log ε 4.45); 281 (log ε 3.6) (EtOH).

2,10,12-Tri-Me ether: ***Multifloramine***
[22324-15-8]
$C_{21}H_{25}NO_5$ 371.432
Alkaloid from *Kreysigia multiflora* and *Colchicum szovitsii* (Liliaceae). Mp 215-216°. $[\alpha]_D^{25}$ -111.5 (MeOH). λ_{max} 221 (log ε 4.45); 259 (log ε 3.95); 289 (log ε 3.62); 298 (log ε 3.55) (EtOH).

2,11,12-Tri-Me ether: ***Floramultine***
[21305-36-2]
$C_{21}H_{25}NO_5$ 371.432
Alkaloid from *Kreysigia multiflora* (Liliaceae). Mp 230-231° dec. $[\alpha]_D^{18}$ -77 (c, 1.19 in $CHCl_3$). λ_{max} 220 (ε 45100); 259 (ε 13400); 287 (ε 6500) (no solvent reported).

2,10,11,12-Tetra-Me ether: ***(-)-Kreysigine***
[23117-57-9]
$C_{22}H_{27}NO_5$ 385.459
Alkaloid from *Colchicum cornigerum* and *Bulbocodium vernum* (Liliceae). Mp 112-113° (122-124°). $[\alpha]_D^{15}$ -65 (c, 0.40 in $CHCl_3$). λ_{max} 218 (log ε 4.62); 257 (log ε 4.1); 293 (log ε 3.67) (EtOH).

(*S*)-*form*

1,2,11-Tri-Me ether: ***Baytopine***
[120947-99-1]
$C_{21}H_{25}NO_5$ 371.432
Alkaloid from the leaves and flowers of *Merendera kurdica* (Liliaceae). Amorph. solid. $[\alpha]_D^{20}$ +74 (c, 0.28 in $CHCl_3$). λ_{max} 215 (log ε 4.55); 257 (log ε 4.02); 287 (sh) (log ε 3.67); 296 (sh) (log ε 3.62) (EtOH).

1,10,12-Tri-Me ether: ***Merobustinine***
$C_{21}H_{25}NO_5$ 371.432
Alkaloid from *Merendera robusta*. Cryst. (Me_2CO). Mp 216-218°. $[\alpha]_D$ +42 (c, 0.50 in $CHCl_3$). CAS no. not found 8-14CI. λ_{max} 258 ; 292 (MeOH).

1,11,12-Tri-Me ether: ***Androbine***
[125326-08-1]
$C_{21}H_{25}NO_5$ 371.432
Alkaloid from the bulbs of *Androcymbium palaestinum* (Liliaceae). $[\alpha]_D$ +39 (c, 0.12 in MeOH). λ_{max} 215 (log ε 4.44); 262 (log ε 3.98); 289 (sh) (log ε 3.65) (MeOH).

1,11,12-Tri-Me ether, N-*de-Me:* ***Norandrobine***
[125326-10-5]
$C_{20}H_{23}NO_5$ 357.405
Minor alkaloid from the bulbs of *Androcymbium palaestinum* (Liliaceae). $[\alpha]_D$ +20 (c, 0.10 in MeOH). λ_{max} 218 (log ε 3.89); 258 (log ε 3.42); 291 (sh) (log ε 3.1) (MeOH).

2,10,11-Tri-Me ether: ***Merobustine****. Decaisnine*
[170554-73-1]
$C_{21}H_{25}NO_5$ 371.432
Alkaloid from *Merendera robusta* and tubers of *Colchicum decaisnei*. Cryst. (Me_2CO). Mp 241-242°. $[\alpha]_D$ +76 (c, 0.6 in $CHCl_3$). Enantiomer of CC 24. λ_{max} 219 ; 288 (MeOH).

2,10,12-Tri-Me ether: (+)-Multifloramine
[22324-16-9]
Alkaloid from the tubers of *Colchicum decaisnei*. Mp 214-215° (synthetic). $[\alpha]_D^{25}$ +112 (synthetic). $[\alpha]_D$ +112 (c, 0.2 in $CHCl_3$) (natural).

2,11,12-Tri-Me ether: ***Merenderine****. Bechuanine*
[1354-66-1]
$C_{21}H_{25}NO_5$ 371.432
Alkaloid from *Iphigenia bechuanica*, *Iphigenia indica*, *Iphigenia pallida*, *Merendera raddeana* and *Merendera trigina* (Liliaceae). Mp 232-235° dec. $[\alpha]_D^{22}$ +76 (c, 0.79 in $CHCl_3$). Enantiomer of Floramultine. λ_{max} 218 (log ε 4.6); 260 (log ε 4.11); 291 (log ε 3.71) (95% EtOH).

2,11,12-Tri-Me ether, N-*oxide:* ***Merenderine* N-*oxide***
[142542-98-1]
$C_{21}H_{25}NO_6$ 387.432
Alkaloid from leaves and stems of *Merendera raddeana* (Liliaceae). Cryst. (Me_2CO). Mp 251-252°. $[\alpha]_D$ +125 (c, 0.94 in MeOH). λ_{max} 260 (log ε 4.16); 290 (log ε 3.77) (MeOH).

1,2,10,11-Tetra-Me ether: ***Szovitsamine***
[56596-02-2]
$C_{22}H_{27}NO_5$ 385.459
Alkaloid from *Colchicum decaisnei*, *Colchicum szovitsii* and *Androcymbium palaestinum* (Liliaceae). Cryst. (Et_2O). Mp 188-190°. $[\alpha]_D$ +55 (c, 0.10 in MeOH). $[\alpha]_D^{20}$ +86 (c, 1.4 in $CHCl_3$). λ_{max} 218 (log ε 4.29); 260 (log ε 3.78); 286 (sh) (log ε 3.5) (MeOH).

1,2,10,11-Tetra-Me ether, N-*oxide(β-):* ***Szovitsamine* N-*oxide***
[172685-49-3]
$C_{22}H_{27}NO_6$ 401.458
Alkaloid from *Colchicum ritchii*. Amorph. $[\alpha]_D^{25}$ +54 (c, 0.35 in MeOH). λ_{max} 217 (log ε 4.87); 222 (log ε 4.83); 292 (log ε 4.1) (MeOH).

1,2,11,12-Tetra-Me ether: ***Androcimine***
[125326-07-0]
$C_{22}H_{27}NO_5$ 385.459
Alkaloid from the bulbs of *Androcymbium palaestinum* (Liliaceae). $[\alpha]_D$ +51 (c, 0.11 in MeOH). λ_{max} 218 (log ε 4.47); 260 (log ε 3.94); 291 (sh) (log ε 3.6) (MeOH).

1,10,11,12-Tetra-Me ether: ***Androcine***
[125326-06-9]
$C_{22}H_{27}NO_5$ 385.459
Alkaloid from the bulbs of *Androcymbium palaestinum* (Liliaceae). $[\alpha]_D$ +39 (c, 0.10 in MeOH). λ_{max} 217 (log ε 4.47); 260 (log ε 3.99); 292 (sh) (log ε 3.93) (MeOH).

2,10,11,12-Tetra-Me ether: ***(+)-Kreysigine***
[26287-94-5]
$C_{22}H_{27}NO_5$ 385.459
Alkaloid from *Androcymbium palaestimum* and *Colchicum decaisnei* (Liliaceae). Mp 112-113°. $[\alpha]_D^{15}$ +60 (c, 0.40 in $CHCl_3$). $[\alpha]_D$ +64 (c, 0.11 in MeOH). λ_{max} 216 (log ε 3.94); 257 (log ε 3.49); 287 (sh) (log ε 3.24) (MeOH).

2,10,11,12-Tetra-Me ether, N-*oxide(β-):* ***Kreysigine* N-*oxide***
[142542-96-9]
$C_{22}H_{27}NO_6$ 401.458
Alkaloid from *Merendera raddeana* (Liliaceae) and *Colchicum ritchii*. Mp 143-145°. $[\alpha]_D^{25}$ +32 (c, 0.42 in MeOH). Oxide stereochem. is probable. λ_{max} 219 (log ε 4.9); 258 (log ε 4.34); 294 (log ε 4.03) (MeOH).

Penta-Me ether: **O-*Methylkreysigine***
[58116-30-6]
$C_{23}H_{29}NO_5$ 399.486
Alkaloid from *Androcymbium palaestimum* and *Merendera raddeana* (Liliaceae). Oil. $[\alpha]_D$ +68 (c, 0.10 in MeOH). $[\alpha]_D$ +81 ($CHCl_3$). Szovitsine was an inseparable mixt. of homoaporphine isomers methylated to this penta-Me ether. λ_{max} 220 (log ε 4.44); 260 (log ε 3.95); 289 (sh) (log ε 3.46) (MeOH).

Penta-Me ether, N-*oxide:* **O-*Methylkreysigine* N-*oxide***
[142542-97-0]
$C_{23}H_{29}NO_6$ 415.485
Alkaloid from *Merendera raddeana* (Liliaceae). Mp 161-163°.

Penta-Me ether, N-*de-Me:* ***Nor*-O-*methylkreysigine***
[125326-09-2]
$C_{22}H_{27}NO_5$ 385.459
Alkaloid from *Androcymbium palaestinum* (Liliaceae). $[\alpha]_D$ +27 (c, 0.07 in MeOH). λ_{max} 218 (log ε 4.37); 259 (log ε 3.88); 292 (sh) (log ε 3.38) (MeOH).

(±)-*form*

2,10,12-Tri-Me ether: [16845-28-6]
Mp 190-192° dec.

2,10,11,12-Tetra-Me ether: ***(±)-Kreysigine***
[31735-22-5]

$C_{22}H_{27}NO_5$ 385.459
Alkaloid from *Kreysigia multiflora* (Liliaceae). Cryst. (EtOH). Mp 187-188°. λ_{max} 221 (ϵ 53890); 260 (ϵ 15600); 293 (ϵ 6600) (no solvent reported).

Penta-Me ether: [32689-00-2]
Mp 152.3° (as methiodide).

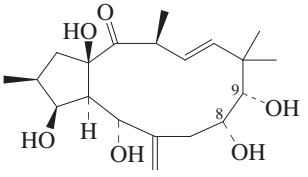
(ξ)-*form*

1,10,11-Tri-Me ether: ***Szovitsinine***
[65022-65-3]
$C_{21}H_{25}NO_5$ 371.432
Alkaloid from *Colchicum szovitsii* (Liliaceae). No phys. props. reported.

2,11,12-Tri-Me ether, N-*Me:* **N-*Methylmerenderine***
[664994-43-8]
$C_{22}H_{28}NO_5^{\oplus}$ 386.467
Alkaloid from *Merendera robusta*. Amorph. (as hydroxide).

Badger, G.M. *et al., J.C.S.*, 1960, 445-447 (*Floramultine, isol, uv, ir*)
Potesilová, H. *et al., Coll. Czech. Chem. Comm.*, 1969, **34**, 3540-3552 (*Alkaloid CC 24*)
Brossi, A. *et al., Helv. Chim. Acta*, 1969, **52**, 678-689 (*Multifloramine, synth, ir, uv, abs config*)
Šantavý, F. *et al., Helv. Chim. Acta*, 1971, **54**, 1084-1095 (*Kreysigine, isol, ir, uv, struct*)
Battersby, A.R. *et al., J.C.S.(C)*, 1971, 3514-3518 (*Alkaloid CC 24, uv, ir, pmr, struct*)
Kametani, T. *et al., J.C.S. Perkin 1*, 1972, 2160-2162 (*Kreysigine, synth*)
Santavý, F. *et al., Coll. Czech. Chem. Comm.*, 1973, **38**, 1712-1713 (*Floramultine, Bechuanine, isol, uv*)
Hoshino, O. *et al., Chem. Pharm. Bull.*, 1974, **22**, 1307-1312 (*Kreysigine, synth, ir, pmr, ms*)
Battersby, A.R. *et al., J.C.S. Perkin 1*, 1974, 1394-1399; 1399-1402 (*Kreysigine, Multifloramine, Floramultine, isol, uv, ir, pmr, ms, biosynth, synth, struct*)
Yusupov, M.K. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1975, **11**, 127-128 (*Szovitzamine*)
Trozyan, A.A. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1975, **11**, 557 (*Merenderine*)
Kasimov, A.K. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1977, **13**, 197-200 (*Szovitsinine, Szovitsamine, ms, pmr, struct*)
Kupchan, S.M. *et al., J.O.C.*, 1978, **43**, 4076-4081 (*Multifloramine, synth*)
Tojo, E. *et al., J. Nat. Prod.*, 1989, **52**, 1055-1059 (*O-Methylkreysigine, Nor-O-methylkreysigine, Androbine, Androcimine, Androcine, Norandrobine, Szovitsamine, isol, uv, ir, pmr, ms, cd, struct*)
Husek, A, *et al., Phytochemistry*, 1989, **28**, 3217-3219 (*Baytopine, isol, uv, ir, pmr, cmr, ms, cd, struct*)
Yusupov, M.K. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1991, **27**, 75-79 (*Kreysigine N-oxide, O-Methylkreysigine N-oxide, Merenderine N-oxide, isol*)
Alikulov, R.V. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1993, **29**, 767-770 (*Merobustine, Merobustinine*)
Abu Zarga, M.H. *et al., J. Prakt. Chem.*, 1995, **337**, 675-679 (*Colchicum decaisnei constits*)
Herbert, R.B. *et al., Tet. Lett.*, 1995, **36**, 5649-5650 (*Kreysigine, synth*)
Abu Zarga, M.H. *et al., Z. Naturforsch., B*, 1995, **50**, 1424-1427 (*Kreysigine N-oxide, Methylkreysigine N-oxide, Szovitsamine N-oxide*)
Alikulov, R.V. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2003, **39**, 212-214 (*N-Methylmerenderine*)
Itoh, T. *et al., Chem. Pharm. Bull.*, 2003, **51**, 951-955 (*O-Methylkreysigine, synth*)

3,5,8,9,15-Pentahydroxy-6(17),11-jatrophadien-14-one P-222



$C_{20}H_{32}O_6$ 368.469

(2β,3β,5α,8α,9α,11*E*,13β,15β)-*form*

9-(3-Pyridinecarbonyl), 3-benzoyl, 5,8-di-Ac: ***Euphocharacin E***
[777896-19-2]
$C_{37}H_{43}NO_{10}$ 661.747
Constit. of *Euphorbia characias*. Amorph. solid. $[\alpha]_D^{25}$ -16.7 (c, 0.1 in $CHCl_3$).

9-(3-Pyridinecarbonyl), 3-benzoyl, 5,8,15-tri-Ac: ***Euphocharacin F***
[777896-21-6]
$C_{39}H_{45}NO_{11}$ 703.785
Constit. of *Euphorbia characias*. Amorph. solid. $[\alpha]_D^{25}$ -2.1 (c, 0.1 in $CHCl_3$).

9-(3-Pyridinecarbonyl), 3-(2-methylpropanoyl), 5,8-di-Ac: ***Euphocharacin G***
[777896-23-8]
$C_{34}H_{45}NO_{10}$ 627.73
Constit. of *Euphorbia characias*. Amorph. solid. $[\alpha]_D^{25}$ -25 (c, 0.1 in $CHCl_3$).

9-(3-Pyridinecarbonyl), 3-(2-methylpropanoyl), 5,8,15-tri-Ac: ***Euphocharacin H***
[777896-25-0]
$C_{36}H_{47}NO_{11}$ 669.767
Constit. of *Euphorbia characias*. Amorph. solid. $[\alpha]_D^{25}$ -17.3 (c, 0.1 in $CHCl_3$).

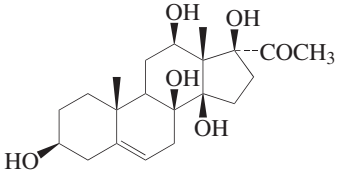
9-(3-Pyridinecarbonyl), 3-propanoyl, 5,8,15-tri-Ac: ***Euphocharacin I***
[777896-27-2]
$C_{35}H_{45}NO_{11}$ 655.741
Constit. of *Euphorbia characias*. Amorph. solid. $[\alpha]_D^{25}$ -22 (c, 0.1 in $CHCl_3$).

9-(3-Pyridinecarbonyl), 3,5,8,15-tetra-Ac: ***Euphocharacin J***
[777896-29-4]
$C_{34}H_{43}NO_{11}$ 641.714
Constit. of *Euphorbia characias*. Amorph. solid. $[\alpha]_D^{25}$ -46 (c, 0.1 in $CHCl_3$).

9-(3-Pyridinecarbonyl), 3-(2-methylbutanoyl), 8,15-di-Ac: ***Euphocharacin K***
[777896-31-8]
$C_{35}H_{47}NO_{10}$ 641.757
Constit. of *Euphorbia characias*. Amorph. solid. $[\alpha]_D^{25}$ -19.33 (c, 0.1 in $CHCl_3$).

Corea, G. *et al., Planta Med.*, 2004, **70**, 657-665 (*isol, pmr, cmr*)

3,8,12,14,17-Pentahydroxypregn-5-en-20-one P-223



(3β,12β,14β,17β*OH*)-*form*

$C_{21}H_{32}O_6$ 380.48

(3β,12β,14β,17β*OH*)-*form*

Deacetylmetaplexigenin
[3513-04-0]
Constit. of *Cynanchum wallichii* and *Marsdenia globifera*. Cryst. (Me_2CO). Mp 220-224°.

12-(3-Pyridinecarbonyl): ***Rostratamine****. 12-*O*-Nicotinoyldeacetylmetaplexigenin*
[50299-46-2]
$C_{27}H_{35}NO_7$ 485.576
Alkaloid from *Marsdenia rostrata* and *Leptadenia hastata*. Needles (MeOH/Et_2O). Mp 277-279° (198-203°). $[\alpha]_D^{22}$ -32 (c, 1.0 in MeOH). $[\alpha]_D^{25}$ +178 (c, 1.0 in MeOH).

*12-(3-Pyridinecarbonyl), 3-*O*-[β-D-oleandropyranosyl-(1→4)-β-D-cymaropyranosyl-(1→4)-β-D-cymaropyranoside]:* [174097-87-1]
$C_{48}H_{71}NO_{16}$ 918.086
Constit. of *Cynanchum caudatum*. Amorph. powder. $[\alpha]_D^{20}$ -3.8 (c, 1.2 in MeOH).

*12-*O*-(3-Pyridinecarbonyl), 3-*O*-[β-D-thevetopyranosyl-(1→4)-β-D-cymaropyranosyl-(1→4)-β-D-cymaropyranoside]:* ***Stemucronatoside F***
[869768-73-0]
$C_{48}H_{71}NO_{17}$ 934.085
Constit. of *Stephanotis mucronata*. Amorph. powder.

*12-(3-Pyridinecarbonyl), 3-*O*-[α-L-cymaropyranosyl-(1→4)-β-D-oleandropyranosyl-(1→4)-β-D-cymaropyranosyl-(1→4)-β-D-cymaropyranoside]:* [174097-98-4]
$C_{55}H_{83}NO_{19}$ 1062.256
Constit. of *Cynanchum caudatum*. Amorph. powder. $[\alpha]_D^{20}$ -34.2 (c, 0.59 in MeOH).

*12-(3-Pyridinecarbonyl), 3-*O*-[6-deoxy-3-*O*-methyl-β-D-allopyranosyl-(1→4)-β-D-oleandropyranosyl-(1→4)-β-D-oleandropyranosyl-(1→4)-β-D-cymaropyranoside]:* [175667-85-3]
$C_{55}H_{83}NO_{20}$ 1078.255
Constit. of *Leptadenia hastata*. Amorph. powder. $[\alpha]_D^{25}$ +157 (c, 1 in MeOH).

*12-(3-Pyridinecarbonyl), 3-*O*-[β-D-oleandropyranosyl-(1→4)-β-D-digitoxopyranosyl-(1→4)-β-D-digitoxopyranosyl-(1→4)-β-D-digitoxopyranoside]:* [267422-68-4]
$C_{52}H_{77}NO_{19}$ 1020.176
Constit. of *Asclepias incarnata*. Amorph. powder. $[\alpha]_D^{24}$ -4.6 (c, 0.61 in

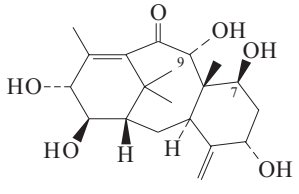
MeOH). λ_{max} 218 (log ϵ 3.97); 258 (log ϵ 3.39); 263 (log ϵ 3.42); 270 (sh) (MeOH).

*12-(3-Pyridinecarbonyl), 3-*O*-[β-D-oleandropyranosyl-(1→4)-β-D-oleandropyranosyl-(1→4)-β-D-cymaropyranosyl-(1→4)-β-D-cymaropyranoside]:*
[174097-95-1]
$C_{55}H_{83}NO_{19}$ 1062.256
Constit. of *Cynanchum caudatum*. Amorph. powder. $[\alpha]_D^{20}$ -6.1 (c, 0.4 in MeOH).

*12-(3-Pyridinecarbonyl), 3-*O*-[β-D-thevetopyranosyl-(1→4)-β-D-cymaropyranosyl-(1→4)-β-D-cymaropyranosyl-(1→4)-β-D-cymaropyranoside]:*
[646063-90-3]
$C_{55}H_{83}NO_{20}$ 1078.255
Constit. of *Araujia sericifera*. Amorph. powder. $[\alpha]_D^{23}$ +10 (c, 0.36 in MeOH). λ_{max} 202 (log ϵ 4.25); 217 (log ϵ 4.18); 250 (log ϵ 3.71); 255 (log ϵ 3.74); 260 (log ϵ 3.7) (MeOH).

Gellert, E. *et al., Aust. J. Chem.*, 1973, **26**, 1835 (*Rostratamine*)
Warashina, T. *et al., Chem. Pharm. Bull.*, 1995, **43**, 977-982; 1734-1737; 1996, **44**, 358-363 (*Cynanchum caudatum saponins*)
Aquino, R. *et al., J. Nat. Prod.*, 1995, **58**, 672; 1996, **59**, 555 (*Rostratamine glycosides*)
Aquino, R. *et al., J. Nat. Prod.*, 1996, **59**, 555-564 (*Leptadenia hastata saponins*)
Warashina, T. *et al., Chem. Pharm. Bull.*, 2000, **48**, 99-107 (*Asclepias incarnata saponins*)
Warashina, T. *et al., Phytochemistry*, 2000, **53**, 485-488 (*Asclepias incarnata saponins*)
Warashina, T. *et al., Chem. Pharm. Bull.*, 2003, **51**, 1036-1045 (*Araujia sericifera saponins*)

5,7,9,13,14-Pentahydroxy-4(20),11-taxadien-10-one P-224



$C_{20}H_{30}O_6$ 366.453

(5α,7β,9α,13α,14β)-*form*

7,9-Di-Ac: [126585-89-5]
$C_{24}H_{34}O_8$ 450.528
From the bark of *Austrotaxus spicata*. Amorph. $[\alpha]_D$ +11 (c, 0.59 in $CHCl_3$).

*5-*O*-(3ξ-Dimethylamino-3-phenylpropanoyl), 7,9,13,14-tetra-Ac:* ***2′-Deacetoxyaustrotaxine***
[119777-74-1]
$C_{39}H_{51}NO_{11}$ 709.832
From the leaves of *Austrotaxus spicata* (Taxaceae). Amorph. $[\alpha]_D$ -37 (c, 0.5 in $CHCl_3$).

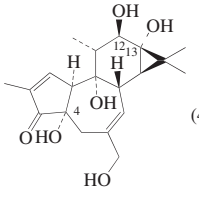
*5-*O*-(3ξ-Dimethylamino-2ξ-hydroxy-3-phenylpropanoyl), 7,9-di-Ac:* ***2′,13,14-Trideacetylaustrotaxine***
[126585-88-4]
$C_{35}H_{47}NO_{10}$ 641.757
From the bark of *Austrotaxus spicata* (Taxaceae). Amorph. $[\alpha]_D$ -21 (c, 0.86 in $CHCl_3$).

*5-*O*-(3ξ-Dimethylamino-2ξ-hydroxy-3-phenylpropanoyl), 7,9,13,14-tetra-Ac:* ***2′-Deacetylaustrotaxine***
[119777-73-0]
$C_{39}H_{51}NO_{12}$ 725.831
From the leaves of *Austrotaxus spicata* (Taxaceae). Amorph. $[\alpha]_D$ -41 (c, 0.3 in $CHCl_3$).

*5-*O*-(2ξ-Acetoxy-3ξ-dimethylamino-3-phenylpropanoyl), 7,9,13,14-tetra-Ac:* ***Austrotaxine***
[119789-82-1]
$C_{41}H_{53}NO_{13}$ 767.869
Alkaloid from the leaves of *Austrotaxus spicata* (Taxaceae). Amorph. $[\alpha]_D$ -49 (c, 0.4 in $CHCl_3$).

Ettouati, L. *et al., Bull. Soc. Chim. Fr.*, 1988, 749-755; 1989, 687-694 (*isol, pmr, cmr, struct*)

4,9,12,13,20-Pentahydroxy-1,6-tigliadien-3-one P-225



(4α,9α,12β,13α)-*form*

$C_{20}H_{28}O_6$ 364.438

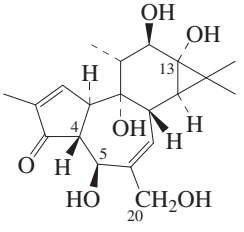
(4α,9α,12β,13α)-*form*
Isophorbol. *4α-Phorbol*
[26241-63-4]
Constit. of croton oil. Hygroscopic cryst. (EtOAc). Mp 135-150°.

*12-*O*-(2-Methylaminobenzoyl), 13-Ac:*
[82042-11-3]
$C_{30}H_{37}NO_8$ 539.624
Constit. of *Sapium indicum*.

[71295-86-8 , 16675-05-1 , 25405-85-0 , 57716-89-9 , 24928-17-4 , 37558-16-0 , 24928-15-2 , 61557-88-8]

Taylor, S.E. *et al., J. Nat. Prod.*, 1981, **44**, 729-731 (*Sapintoxin D*)
Taylor, S.E. *et al., J. Pharm. Pharmacol.*, Suppl., 1981, **33**, 54P (*Sapintoxin D, activity*)
Evans, F.J. *et al., Prog. Chem. Org. Nat. Prod.*, 1983, **44**, 1-99 (*rev*)
Naturally Occurring Phorbol Esters, (ed., Evans, F.J.), CRC Press, 1986, (*book*)

5,9,12,13,20-Pentahydroxy-1,6-tigliadien-3-one P-226



$C_{20}H_{28}O_6$ 364.438
Esters show varying degrees of antiplatelet activity.

(4β,5β,9α,12β,13α)-*form*

12-(2,4,6-Decatrienoyl)(2Z,4E,6ξ-), 13-Ac: ***Sapatoxin B***
[82345-49-1]
$C_{32}H_{42}O_8$ 554.679
Constit. of *Sapium indicum*.

*12-*O*-(2-Methylaminobenzoyl), 13-Ac:* ***Sapintoxin B***
[81345-29-1]
$C_{30}H_{37}NO_8$ 539.624
Constit. of *Sapium indicum*.

Taylor, S.E. *et al., J. Pharm. Pharmacol.*, 1981, **33 (Suppl.)**, 54P (*Sapintoxin B, isol*)
Taylor, S.E. *et al., Phytochemistry*, 1981, **20**, 2749-2751; 1982, **21**, 405-407 (*Sapatoxin B, Sapintoxin B, isol, uv, ir, pmr*)
Edwards, M.C. *et al., Acta Pharmacol. Toxicol.*, 1983, **53**, 177-187 (*isol, props*)

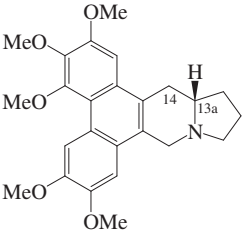
Pentalupine P-227

$C_{16}H_{30}N_2O$ 266.426
Struct. unknown. Alkaloid from *Lupinus palmeri* (Fabaceae). Yellow oil with strong greenish fluor. Bp_2 175-182°. $[\alpha]_D$ -3.2 (EtOH) (impure). $n_D^{29.5}$ 1.5155. No cryst. derivs. could be obt.

Couch, J.F. *et al., J.A.C.S.*, 1934, **56**, 2434-2436

2,3,4,6,7-Pentamethoxyphenanthroindolizidine P-228

9,11,12,13,13a,14-Hexahydro-2,3,4,6,7-pentamethoxydibenzo[f,h]pyrrolo[1,2-b]isoquinoline, 8CI. Alkaloid E†
[30062-26-1]



(*S*)-*form*

$C_{25}H_{29}NO_5$ 423.508

(*S*)-*form*

*14*S*-Hydroxy, β-*N*-oxide:* ***Ficuseptine A***
$C_{25}H_{29}NO_7$ 455.507
Alkaloid from the leaves of *Ficus septica*. Cytotoxic. Pale yellow powder. Mp 210° dec. $[\alpha]_D$ +30.3 (c, 0.03 in MeOH). λ_{max} 214 (log ϵ 4.35); 263 (log ϵ 4.19); 282 (log ϵ 4); 359 (log ϵ 3.11); 405 (log ϵ 2.79) (MeOH).

(ξ)-*form*
Alkaloid from *Tylophora crebriflora* (Asclepiadaceae).

14ξ-Hydroxy: ***14-Hydroxy-2,3,4,6,7-pentamethoxyphenanthroindolizidine***. *Alkaloid D*†
[30062-25-0]
$C_{25}H_{29}NO_6$ 439.507
Alkaloid from *Tylophora crebriflora* (Asclepiadaceae). Cryst. (Et_2O/diisopropyl ether) (as Ac). Mp 188-190° (Ac).

Rao, K.V. *et al., J. Pharm. Sci.*, 1970, **59**, 1608-1611 (*Alkaloid D, Alkaloid E*)

Wu, P.-L. *et al., Heterocycles*, 2002, **57**, 2401-2408 (*Ficuseptine A*)

1,5-Pentanediamine, 9CI P-229

Pentamethylenediamine. 1,5-Diaminopentane. ***Cadaverine***

[462-94-2]

$H_2NCH_2(CH_2)_3CH_2NH_2$

$C_5H_{14}N_2$ 102.179

Found in nature as bacterial decarboxylation prod. of Lysine, e.g. in putrefaction. Anal sac secretion of the red fox *Vulpes vulpes*. Occurs in *Anthocidaris crassispina* and *Halocynthia roretzi*. Monomer for polyamides. Syrupy fuming liq. d^{20} 0.84. Bp 178-180°. n_D^{20} 1.4582. pK_{a1} 10.92; pK_{a2} 10.05 (25°, 0.5*M* KNO_3).

▶ Skin irritant. SA0200000

Hydrochloride (1:2): [1476-39-7]
Needles (H_2O). Mp 226° Mp 260-262°.

N-*Benzoyl:* [29833-52-1]
$C_{12}H_{18}N_2O$ 206.287
Oil. $Bp_{0.5}$ 202°.

N,N′-*Dibenzoyl:* [31991-79-4]
$C_{19}H_{22}N_2O_2$ 310.395
Cryst. (C_6H_6). Mp 135°.

N,N′-*Bis(4-nitrobenzoyl):* [81852-10-0]
Cryst. (Me_2CO aq.). Mp 185-185.5°.

N-tert-*Butyloxycarbonyl:* [51644-96-3]
$C_{10}H_{22}N_2O_2$ 202.296
Oil.

N-*Me:* [32752-52-6]
$C_6H_{16}N_2$ 116.206
Liq. Bp 177-178° Bp_{12} 55°.

N,N′-*Di-Me:* [56992-95-1]
$C_7H_{18}N_2$ 130.233
Liq. Bp 190° Bp_{10} 74°.

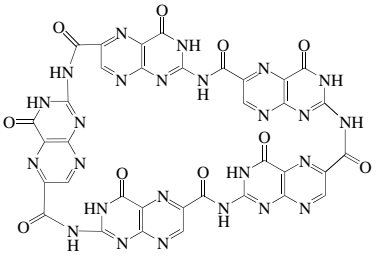
N,N,N-*Tri-Me: 5-Amino*-N,N,N-*trimethylpentanaminium(1+), 9CI.* ***Ascophylline***
[83524-44-1]
[4175-13-7 , 30835-02-0]
$C_8H_{21}N_2^{\oplus}$ 145.267
Constit. of the alga *Ascophyllum nodosum* and isol. from the beetle *Platyphora opima*.

N,N,N′,N′-*Tetra-Me:* [44994-28-7]
$C_9H_{22}N_2$ 158.286
Liq. Bp 192-194° Bp_{15} 85-95°.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 292B (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 466A (*nmr*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 376B (*ir*)
Putochin, N. *et al., Ber.*, 1926, **59**, 625-630 (*synth*)
Korshak, V.V. *et al., Izv. Akad. Nauk SSSR, Ser. Khim.*, 1955, 756; *Bull. Acad. Sci. USSR, Div. Chem. Sci. (Engl. Transl.)*, 1955, 673 (*polyamides*)
Ger. Pat., 1971, 2 043 141; *CA*, **75**, 6884 (*N-Me*)
Sarneski, J.E. *et al., Anal. Chem.*, 1975, **47**, 2116-2124 (*cmr*)
Mayerl, F. *et al., Helv. Chim. Acta*, 1976, **59**, 127-133 (*ms*)
Albone, E.S. *et al., J. Chem. Ecol.*, 1976, **2**, 167-175 (*occur*)
Richter, R. *et al., J.O.C.*, 1978, **43**, 4150-4154 (*synth*)
Battersby, A.R. *et al., J.C.S. Perkin 1*, 1982, 449-453 (*biosynth*)
Blunden, G. *et al., Magn. Reson. Chem.*, 1986, **24**, 965-971 (*Ascophylline*)
Hamana, K. *et al., Comp. Biochem. Physiol., B: Comp. Biochem.*, 1991, **100**, 59-62 (*occur*)
Blunden, G. *et al., Biochem. Syst. Ecol.*, 1992, **20**, 373-388 (*Ascophylline, occur*)
Thalladi, V.R. *et al., Angew. Chem., Int. Ed.*, 2000, **39**, 918-922 (*cryst struct*)
Gardner, R. *et al., J. Med. Chem.*, 2004, **47**, 4933-4940 (*N-Boc*)
Pospieszna-Markiewicz, I. *et al., Acta Cryst. C*, 2006, **62**, o399-o401 (*dihydrochloride, cryst struct*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, PBK500

Racophorus Pentapteridinyl skin pigment P-230

[116360-71-5]

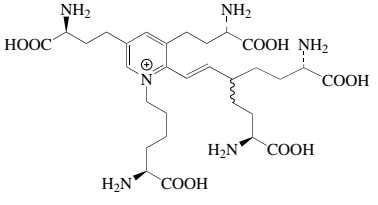


$C_{35}H_{15}N_{25}O_{10}$ 945.665
Proposed struct. shown. Isol. from the skin of the frog of *Rhacophorus* sp. Black-violet pigment. λ_{max} 480 ; 500 (HCOOH).

Suga, T. *et al., J. Nat. Prod.*, 1988, **51**, 713 (*isol, uv, ir, pmr*)

Pentasine P-231

[108133-63-7]



$C_{30}H_{49}N_6O_{10}^{\oplus}$ 653.751
Cross-linking amino acid isol. from bovine ligament elastin.

Starcher, B. *et al., Connect. Tissue Res.*, 1987, **16**, 15-25; *CA*, **106**, 191359p

1-Pentene-1,5-diamine P-232

1,5-Diamino-1-pentene
$H_2NCH_2CH_2CH_2CH{=}CHNH_2$
$C_5H_{12}N_2$ 100.163

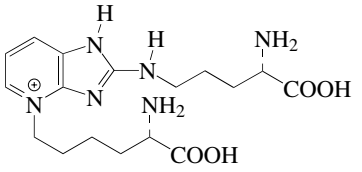
(E)-form

N,N,N-*Tri-Me: 5-Amino*-N,N,N-*trimethyl-1-pentenaminium(1+).* N,N,N-*Trimethyl-1,2-dehydrocadaverine*
$C_8H_{19}N_2^{\oplus}$ 143.252
Isol. from the beetle *Platyphora opima*. Solid. Counterion not specified. λ_{max} 204 (log ϵ 3.52) (MeOH).

Plasman, V. *et al., J. Nat. Prod.*, 2000, **63**, 1261-1264

Pentosidine P-233

*α-Amino-2-[(4-amino-4-carboxybutyl)amino]-4*H*-imidazo[4,5-*b*]pyridine-4-hexanoic acid, 9CI*
[124505-87-9]

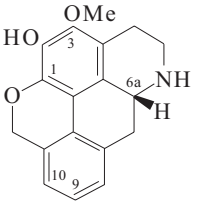


$C_{17}H_{27}N_6O_4^{\oplus}$ 379.438
Isol. from the human extracellular matrix of skin and tendon. Produces pentose-mediated protein crosslinking. $[\alpha]_D^{24}$ +16.5 (c, 0.26 in MeOH) (as trifluoroacetate). Fluorescent.

Sell, D.R. *et al., J. Biol. Chem.*, 1989, **264**, 21597-21602 (*isol, activity*)
Yokokawa, F. *et al., Tetrahedron*, 2001, **57**, 4759-4766 (*synth, pmr, cmr*)

Pentouregine P-234

[99964-90-6]



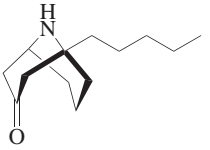
$C_{18}H_{17}NO_3$ 295.337
Alkaloid from the leaves of *Guatteria ouregou* (Annonaceae). Amorph. powder. $[\alpha]_D$ -61 (c, 0.14 in EtOH). λ_{max} 224 (log ϵ 4.31); 284 (log ϵ 4.14); 303 (sh) (log ϵ 3.98) (EtOH).

Cortès, D. *et al., Phytochemistry*, 1985, **24**, 2776-2777 (*isol, pmr, ms, struct*)

1-Pentyl-9-azabicyclo[3.3.1]-nonan-3-one P-235

Adaline

[41267-60-1]



Absolute Configuration

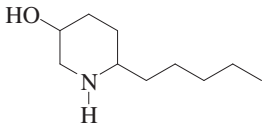
$C_{13}H_{23}NO$ 209.331
Alkaloid from *Adalia bipunctata* (European ladybug). Mp 204-205° (as hydrochloride). $[\alpha]_D$ -13 ($CHCl_3$).

Tursch, B. *et al., Bull. Soc. Chim. Belg.*, 1973, **82**, 699 (*abs config, synth*)
Tursch, B. *et al., Tet. Lett.*, 1973, 201 (*ir, pmr, isol, cryst struct*)
Hill, R.K. *et al., Tetrahedron*, 1982, **38**, 1959-1963 (*synth*)
Gnecco Medina, D.H. *et al., Tet. Lett.*, 1983, **24**, 2099-2102 (*synth*)

Yue, C. *et al., J.O.C.*, 1992, **57**, 4211-4214 (*synth, abs config*)
Davison, E.C. *et al., Tet. Lett.*, 1995, **36**, 9047-9050 (*synth*)
Laurent, P. *et al., Tetrahedron*, 2001, **57**, 3403-3412 (*biosynth*)
Itoh, T. *et al., Org. Lett.*, 2002, **4**, 2469-2472 (*synth*)

6-Pentyl-3-piperidinol, 9CI P-236

5-Hydroxy-2-pentylpiperidine
[220088-35-7]

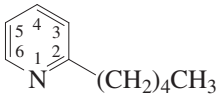


$C_{10}H_{21}NO$ 171.282
Alkaloid from *Conium maculatum*.

Lang, D.G. *et al., CA*, 1999, **130**, 136554u

2-Pentylpyridine, 9CI P-237

FEMA 3383
[2294-76-0]



$C_{10}H_{15}N$ 149.235
Present in cooked foods. Present in bell peppers and coriander seed oil. Oil with fatty tallow-like odour and throat-catching greasy taste. d_4^{20} 0.88. Bp_{12} 86-88° $Bp_{8.5}$ 82.5-84.5°. n_D^{16} 1.4890. n_D^{20} 1.4834. Flavour threshold 1.2×10^{-5} ppm in H_2O.

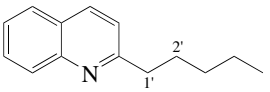
Picrate: [23692-26-4]
Mp 73°.

[65307-85-9]

Osuch, C. *et al., J.A.C.S.*, 1956, **78**, 1723-1725 (*synth*)
Cuvigny, T. *et al., Bull. Soc. Chim. Fr.*, 1964, 2000-2009; 1965, 1881-1888 (*synth*)
Miyadera, T. *et al., Chem. Pharm. Bull.*, 1964, **12**, 1344-1351 (*synth*)
Waldradt, J.P. *et al., J. Agric. Food Chem.*, 1971, **19**, 972-979 (*occur, peanuts*)
Buttery, R.G. *et al., J. Agric. Food Chem.*, 1977, **25**, 1227-1229 (*occur, glc, ms, lamb fat*)
Tang, J. *et al., J. Agric. Food Chem.*, 1983, **31**, 1287-1292 (*occur*)
Mottram, D.S. *et al., J. Sci. Food Agric.*, 1985, **36**, 377-382 (*detn, pork*)
Lamparsky, D. *et al., Perfum. Flavor.*, 1988, **13**, 17-18 (*occur, coriander oil*)
Sutherland, M.M. *et al., J. Sci. Food Agric.*, 1995, **69**, 403-413 (*occur*)
Takeoka, G. *et al., J. Agric. Food Chem.*, 1996, **44**, 654-660 (*occur*)
Kim, Y.-S. *et al., J. Agric. Food Chem.*, 1996, **44**, 3906-3908 (*formn*)
Lambrechts, S. *et al., Flavour Fragrance J.*, 1997, **12**, 439-442 (*synth, props*)
Boatright, W.L. *et al., J. Am. Oil Chem. Soc.*, 1997, **74**, 1575-1581; 1998, **75**, 1379-1383 (*occur, glc, soybean*)
Kim, Y.-S. *et al., J. Food Lipids*, 1997, **4**, 239-244; 1998, **5**, 173-182 (*occur*)

2-Pentylquinoline, 9CI P-238

[93005-16-4]



$C_{14}H_{17}N$ 199.295
Constit. of alkaloids of *Cusparia trifoliata* (preferred genus name *Angostura*) and from stems of *Galipea bracteata* (Rutaceae). Molluscicide, plant growth inhibitor. Oil. Bp_8 150-154°.

Picrate:
Cryst. (MeOH). Mp 108.5°.

1′,2′-Didehydro: 2-(1-Pentenyl)quinoline
[128396-36-1]
$C_{14}H_{15}N$ 197.279
Alkaloid from *Galipea bracteata* stems. Molluscicide, plant growth inhibitor. Oil.

1,2,3,4-Tetrahydro, N-*Me: 1,2,3,4-Tetrahydro-1-methyl-2-pentylquinoline.* ***Angustureine***
[246511-34-2 ((-)-form)]
$C_{15}H_{23}N$ 217.353
Alkaloid from the bark of *Galipea officinalis*. Oil. $[\alpha]_D$ -7.2 ($CHCl_3$). λ_{max} 259 (log ϵ 3.7); 311 (log ϵ 3.15) ($CHCl_3$).

Späth, E. *et al., Monatsh. Chem.*, 1930, **55**, 352-357 (*isol*)
Gautier, J.A. *et al., Bull. Soc. Chim. Fr.*, 1961, 2092-2098 (*synth*)
Tertov, B.A. *et al., CA*, 1963, **59**, 9978 (*synth*)
Vieira, P.C. *et al., Phytochemistry*, 1990, **29**, 813-815 (*isol, pmr, cmr, ir, ms*)
Koyama, J. *et al., Chem. Pharm. Bull.*, 1998, **46**, 332-334 (*synth*)
Jacquemond-Collet, I. *et al., Phytochemistry*, 1999, **51**, 1167-1169 (*Angustureine*)
Cho, C.S. *et al., Tetrahedron*, 2003, **59**, 7997-8002 (*synth, pmr, cmr*)
O'Byrne, A. *et al., Tetrahedron*, 2008, **64**, 8067-8072 (*Angustureine, synth*)

Pepuline P-239

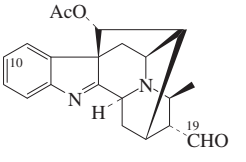
Struct. unknown. Alkaloid from the bark of *Zanthoxylum rhetsa* (Rutaceae). Spasmolytic and cardiotonic agent. Yellow cryst. Mp 179-180°.

Hydrochloride:
Cryst. (EtOH). Mp 222°.

Mehta, C.R. *et al., Curr. Sci.*, 1960, **29**, 95 (*isol*)

Perakine P-240

17-(Acetyloxy)-1,2-didehydro-1-demethyl-21-methyl-18-norajmalan-19-al, 9CI. Raucaffrine
[4382-56-3]



Absolute Configuration

$C_{21}H_{22}N_2O_3$ 350.416
Alkaloid from *Rauwolfia perakensis, Rauwolfia caffra, Rauwolfia vomitoria, Rauwolfia volkensii* and *Voacanga africana* (Apocynaceae). Cryst. (Me_2CO or EtOAc/petrol). Mp 186-189°. $[\alpha]_D^{24}$ +132. $[\alpha]_D^{24}$ +112 (c, 0.85 in $CHCl_3$). Possibly an artifact.

Di-Me acetal: Perakine dimethyl acetal
$C_{23}H_{28}N_2O_4$ 396.485
From leaves of *Rauwolfia sellowii* (Apocynaceae). No phys. data reported. Prob. an artifact of the isol. procedure.

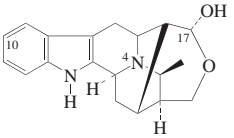
19-Alcohol: ***Raucaffrinoline***
[36285-11-7]
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from root bark of *Rauwolfia caffra* and *Rauwolfia nitida* and leaves of *Rauwolfia vomitoria* (Apocynaceae). Rods (CH_2Cl_2). Mp 236° dec Mp 249-251°.

10-Methoxy: ***10-Methoxyperakine***
[163461-45-8]
$C_{22}H_{24}N_2O_4$ 380.443
Alkaloid from aerial parts of *Vinca major* (Apocynaceae). $[\alpha]_D$ -43 (c, 0.003 in $CHCl_3$).

Kiang, A.K. *et al., J.C.S.*, 1960, 1394 (*isol, uv, ir, pmr, struct*)
Ulshafer, P.R. *et al., Tet. Lett.*, 1961, 363 (*isol, uv, ir, pmr, struct*)
Taylor, W.I. *et al., Helv. Chim. Acta*, 1962, **45**, 611 (*synth*)
Thomas, D.W. *et al., J. Nat. Prod.*, 1968, **31**, 1 (*isol, ms*)
Khan, M.A. *et al., Experientia*, 1972, **28**, 127 (*Perakine, Raucaffrinoline, isol, uv, ir, pmr, ms, struct*)
Habib, M.S. *et al., Phytochemistry*, 1974, **13**, 661 (*isol, uv, ir, ms*)
Libot, F. *et al., Phytochemistry*, 1980, **19**, 989 (*Raucaffrinoline, uv, cmr, struct*)
Amer, M.M. *et al., Phytochemistry*, 1980, **19**, 1833; 1981, **20**, 2569 (*Perakine, Raucaffrinoline, isol*)
Khan, M.A. *et al., Z. Naturforsch., B*, 1982, **37**, 494 (*isol, cmr*)
Atta-ur-Rahman, *et al., Phytochemistry*, 1995, **38**, 1057 (*10-Methoxyperakine*)
Batista, C.V.F. *et al., Phytochemistry*, 1996, **41**, 969 (*Perakine dimethyl acetal*)
Lounasmaa, M. *et al., J. Nat. Prod.*, 2000, **63**, 1456-1460 (*rev*)
Sabino, J.R. *et al., Acta Cryst. E*, 2006, **62**, 3181-3183 (*Raucaffrinoline, cryst struct*)

Peraksine P-241

17,19-Epoxy-19,20-dihydro-21-methyl-18-norsarpagan-17-ol, 9CI. Vomifoline. Alkaloid RP5
[15527-80-7]



Absolute Configuration

$C_{19}H_{22}N_2O_2$ 310.395
Alkaloid from *Rauwolfia perakensis* and several other *Rauwolfia* spp. (Apocynaceae). Cryst. (MeOH). Mp 196-198° (186°). $[\alpha]_D^{25}$ +44 (c, 0.86 in EtOH). Probable artifact.

O-*Ac:* Mp 142°.

17-Epimer: ***Alkaloid RB20***
[20911-77-7]

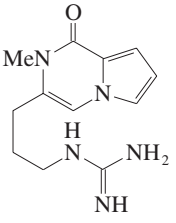
$C_{19}H_{22}N_2O_2$ 310.395
Alkaloid from *Rauwolfia verticillata* (Apocynaceae). Prisms ($CHCl_3$/MeOH trace). Mp 196-197°. $[\alpha]_D$ +19 (c, 0.48 in MeOH).

10-Hydroxy, N4-Me: ***Verticillatine***†
[98243-58-4]
$C_{20}H_{25}N_2O_3^{\oplus}$ 341.429
Quaternary alkaloid from the roots of *Rauwolfia verticillata* f. *rubrocarpa* (Apocynaceae). Ganglionic blocking agent. Cryst.(as chloride). Mp 324-326° dec. (chloride).

Kiang, A.K. *et al., Tetrahedron*, 1966, **22**, 3293-3300 (*uv, ms, pmr, cryst struct*)
Arthur, H.R. *et al., Aust. J. Chem.*, 1968, **21**, 1399-1401 (*ms, pmr, struct, Alkaloid RB20*)
Habib, M.S. *et al., Phytochemistry*, 1974, **13**, 661-662 (*isol, uv, ir, ms*)
Pousset, J.-L. *et al., Phytochemistry*, 1977, **16**, 153-154 (*uv, ir, pmr, ms, struct*)
Lin, M. *et al., Yaoxue Xuebao*, 1985, **20**, 198-202; *CA*, **103**, 138514x (*Verticillatine, cryst struct*)
Lounasmaa, M. *et al., J. Nat. Prod.*, 2000, **63**, 1456-1460 (*rev*)

Peramine P-242

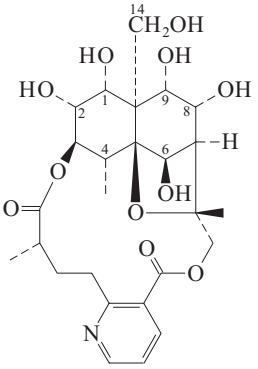
3-(1,2-Dihydro-2-methyl-1-oxopyrrolo[1,2-a]pyrazin-3-yl)propylguanidine, 9CI
[102482-94-0]
[105749-70-0 (di-Ac)]



$C_{12}H_{17}N_5O$ 247.299
Isol. from *Lolium perenne* infected *Acremonium loliae*. Insect deterrent and antifeedant. Cryst. (as di-Ac). Sol. MeOH; fairly sol. Me_2CO. Mp 141-142° (di-Ac). λ_{max} 231 (ϵ 33100); 237 ; 285 (MeOH) (Berdy).

Rowan, D.D. *et al., Chem. Comm.*, 1986, 935 (*uv, ir, pmr, cmr, ms, struct*)
Rowan, D.D. *et al., J. Nat. Prod.*, 1989, **52**, 193 (*isol*)
Brimble, M.A. *et al., J.C.S. Perkin 1*, 1990, 311 (*synth*)

Per(deacyl)alatusamine P-243



$C_{26}H_{35}NO_{11}$ 537.563

1,2,6,8,9,14-Hexa-Ac: ***Alatusamine***
[89945-80-2]
$C_{38}H_{47}NO_{17}$ 789.786
Alkaloid from the fruits of *Euonymus alatus* forma *striatus* (Celastraceae). Amorph. solid. $[\alpha]_D^{22}$ -11 (c, 3.0 in $CHCl_3$).

1,2,6,8,9,14-Hexa-Ac, picrate: Mp 138-144°.

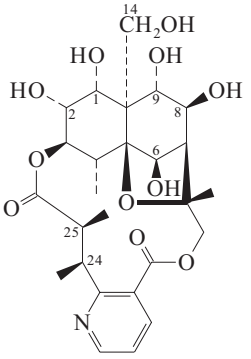
1-Benzoyl, 6,8,9,14-tetra-Ac: ***Euojaponin J***
[128397-46-6]
$C_{41}H_{47}NO_{16}$ 809.819
Alkaloid from the root bark of *Euonymus japonica* (Celastraceae). Needles (EtOH). Mp 243°. $[\alpha]_D^{25}$ +26.2 (c, 0.042 in $CHCl_3$).

2-Benzoyl, 1,6,8,9,14-penta-Ac: ***Neowilforine***. *Chuchuhuanine WI*
[121880-18-0]
$C_{43}H_{49}NO_{17}$ 851.857
Alkaloid from *Tripterygium wilfordii* and root bark of *Maytenus chuchuhuasca* (Celastraceae). Amorph. solid. Mp 149-154°. $[\alpha]_D$ +14.8 (c, 0.68 in $CHCl_3$).

1-(3-Pyridinecarbonyl), 2-benzoyl, 6,8,9,14-tetra-Ac: ***Euojaponin N***
[199442-94-9]
$C_{47}H_{50}N_2O_{17}$ 914.915
Alkaloid from *Euonymus japonica*. Mp 161-163°. $[\alpha]_D^{28}$ +31.6 (c, 0.1 in EtOH).

Ishiwata, H. *et al., Phytochemistry*, 1983, **22**, 2839 (*Alatusamine*)
He, Z. *et al., Huaxue Xuebao*, 1989, **47**, 178; *CA*, **111**, 74780m (*Neowilforine*)
Han, B.H. *et al., J. Nat. Prod.*, 1990, **53**, 909 (*Euojaponin J*)
Shirota, O. *et al., Heterocycles*, 1994, **38**, 2219 (*Norwilforine*)
Ryu, J.-H. *et al., CA*, 1998, **128**, 20569g (*Euojaponin N*)

Per(deacyl)chuchuhuanine P-244



$C_{26}H_{35}NO_{11}$ 537.563
24 and 25 configs. not defined for the Chuchuhuanines. Given here as (24*S*,25*S*) in uniformity with related alkaloids.

1,2,8,9,14-Penta-Ac: ***Chuchuhuanine EIV***
$C_{36}H_{45}NO_{16}$ 747.749
From root bark of *Maytenus chuchuhuasca* (Celastraceae). Amorph. solid. Mp 162-166°. $[\alpha]_D$ -9.3 (c, 0.51 in $CHCl_3$).

1,6,8,9,14-Penta-Ac: ***Chuchuhuanine EV***
$C_{36}H_{45}NO_{16}$ 747.749
From root bark of *Maytenus chuchuhuasca* (Celastraceae). Amorph. solid. Mp 154-160°. $[\alpha]_D$ -18.3 (c, 0.45 in $CHCl_3$).

1,2,6,8,9,14-Hexa-Ac: ***Chuchuhuanine EI***
$C_{38}H_{47}NO_{17}$ 789.786
Alkaloid from root bark of *Maytenus chuchuhuasca* (Celastraceae). Plates. Mp 247-250°. $[\alpha]_D$ -23.3 (c, 0.77 in $CHCl_3$).

1-Benzoyl, 2,6,8,9,14-penta-Ac: ***Chuchuhuanine EII***
$C_{43}H_{49}NO_{17}$ 851.857
From root bark of *Maytenus chuchuhuasca* (Celastraceae). Amorph. solid. Mp 158-160°. $[\alpha]_D$ -8.5 (c, 0.46 in $CHCl_3$).

2-Benzoyl, 1,6,8,9,14-penta-Ac: ***Chuchuhuanine EIII***
$C_{43}H_{49}NO_{17}$ 851.857
From root bark of *Maytenus chuchuhuasca* (Celastraceae). Amorph. solid. Mp 156-160°. $[\alpha]_D$ -412.5 (c, 0.04 in $CHCl_3$).

1,2-Dibenzoyl, 6,8,9,14-tetra-Ac: ***Chuchuhuanine EVI***
$C_{48}H_{51}NO_{17}$ 913.927
Alkaloid from the bark of *Maytenus chuchuhuasca*. Amorph. solid. λ_{max} 229 (log ϵ 4.48); 265 (log ϵ 3.69) (MeOH).

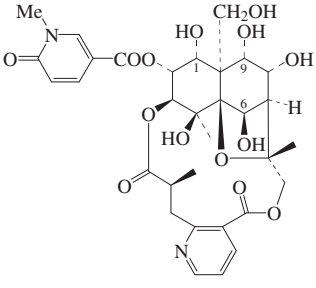
1,8-Dibenzoyl, 2,6,9,14-tetra-Ac: ***Chuchuhuanine EVII***
$C_{48}H_{51}NO_{17}$ 913.927
Alkaloid from the bark of *Maytenus chuchuhuasca*. Amorph. solid. λ_{max} 230 (log ϵ 4.49); 265 (log ϵ 3.67) (MeOH).

8-Epimer, 1,2,6,8,9,14-hexa-Ac: ***4-Deoxyeuonymine***
$C_{38}H_{47}NO_{17}$ 789.786
From root bark of *Maytenus chuchuhuasca* (Celastraceae). Amorph. solid. Mp 138-142°. $[\alpha]_D$ -13.6 (c, 1.41 in $CHCl_3$).

8-Epimer, 1-benzoyl, 2,6,8,9,14-penta-Ac: ***Ebenifoline EIV***. *4-Deoxymayteine*
$C_{43}H_{49}NO_{17}$ 851.857
Alkaloid from stem bark of *Maytenus ebenifolia* (Celastraceae). Amorph. solid. Mp 143-146°. $[\alpha]_D$ -7.8 (c, 0.25 in $CHCl_3$).

Itokawa, H. *et al., J.C.S. Perkin 1*, 1993, 1247 (*Ebenifoline EIV*)
Shirota, O. *et al., Heterocycles*, 1994, **38**, 2219 (*isol, uv, ir, pmr, ms, cd, struct*)
Shirota, O. *et al., Heterocycles*, 2004, **63**, 1891-1896 (*Chuchuahuanines EVI, EVII*)

Per(deacyl)-24-demethylemarginatine P-245



$C_{32}H_{38}N_2O_{14}$ 674.657

Parent struct. related to Per(deacyl)emarginatine, P-246 lacking the C-24 methyl group.

1,6,8,9,14-Penta-Ac:
$C_{42}H_{48}N_2O_{19}$ 884.843
Alkaloid from the stem bark of *Hippocratea excelsa*. Powder. Mp 177-184°. $[\alpha]_D$ +1.8 (c, 0.66 in $CHCl_3$). λ_{max} 269 (log ϵ 4.43) (no solvent reported).

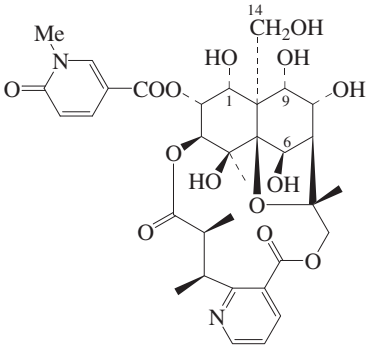
14-(2-Methylpropanoyl), 1,6,8,9-tetra-Ac:
$C_{44}H_{52}N_2O_{19}$ 912.897
Alkaloid from the stem bark of *Hippocratea excelsa*. Powder. Mp 178-192°. $[\alpha]_D$ +4.2 (c, 0.7 in $CHCl_3$). λ_{max} 269 (log ϵ 4.39) (no solvent reported).

8,14-Bis(2-methylpropanoyl), 1,6,9-tri-Ac:
$C_{46}H_{56}N_2O_{19}$ 940.95
Alkaloid from the stem bark of *Hippocratea excelsa*. Powder. Mp 161-164°. $[\alpha]_D$ +2.6 (c, 0.4 in $CHCl_3$). λ_{max} 268 (log ϵ 4.33) (no solvent reported).

Furukawa, M. *et al., Phytochemistry*, 2002, **59**, 767-777

Per(deacyl)emarginatine P-246

Perdeacylhippocrateine



$C_{33}H_{40}N_2O_{14}$ 688.684

1,6,8,9-Tetra-Ac: ***Emarginatine H***
[168434-00-2]
$C_{41}H_{48}N_2O_{18}$ 856.833
Alkaloid from leaves of *Maytenus diversifolia* (Celastraceae). Amorph. powder. Mp 313-316°. $[\alpha]_D$ +35 (c, 0.05 in $CHCl_3$).

1,6,8,14-Tetra-Ac: ***Emarginatine C***
[156280-96-5]
$C_{41}H_{48}N_2O_{18}$ 856.833
Alkaloid from stems of *Maytenus emarginata* (Celastraceae). Needles. Mp 312-315°. $[\alpha]_D$ +16 (c, 0.05 in $CHCl_3$).

6,8,9,14-Tetra-Ac: ***Emarginatine D***
[156280-97-6]
$C_{41}H_{48}N_2O_{18}$ 856.833
Alkaloid from stems of *Maytenus emarginata* (Celastraceae). Needles. Mp 192-202°. $[\alpha]_D$ +51 (c, 0.033 in $CHCl_3$).

1,6,8,9,14-Penta-Ac: ***Emarginatine A***
[125227-50-1]
$C_{43}H_{50}N_2O_{19}$ 898.87
Alkaloid from *Hippocratea excelsa* and *Maytenus emarginata* (Hippocrataceae). Cytotoxic agent. Sol. MeOH, C_6H_6; poorly sol. H_2O. Mp 312-313°. $[\alpha]_D^{22}$ +70 (c, 0.32 in $CHCl_3$). λ_{max} 266 (MeOH) (Berdy).

8-(2-Methylpropanoyl), 1,6,9,14-tetra-Ac:
$C_{45}H_{54}N_2O_{19}$ 926.924
Alkaloid from the stem bark of *Hippocratea excelsa*. Powder. Mp 300-307°. $[\alpha]_D$ +15.3 (c, 1 in $CHCl_3$). λ_{max} 268 (log ϵ 4.3) (no solvent reported).

9-(2-Methylpropanoyl), 6,8,14-tri-Ac:
$C_{43}H_{52}N_2O_{18}$ 884.886
Alkaloid from the stem bark of *Hippocratea excelsa*. Powder. Mp 194-198°. $[\alpha]_D$ -4.3 (c, 1 in $CHCl_3$). λ_{max} 269 (log ϵ 4.31) (no solvent reported).

14-(2-Methylpropanoyl), 1,6,8,9-tetra-Ac:
$C_{45}H_{54}N_2O_{19}$ 926.924
Alkaloid from the stem bark of *Hippocratea excelsa*. Powder. Mp 246-249°. $[\alpha]_D$ +15.5 (c, 3 in $CHCl_3$). λ_{max} 268 (log ϵ 4.34) (no solvent reported).

1,9-Bis(2-methylpropanoyl), 6,8,14-tri-Ac:
$C_{47}H_{58}N_2O_{19}$ 954.977
Alkaloid from the stem bark of *Hippocratea excelsa*. Powder. Mp 177-183°. $[\alpha]_D$ -2.3 (c, 0.9 in $CHCl_3$). λ_{max} 268 (log ϵ 4.37) (no solvent reported).

1-(2-Methyl-2-butenoyl), 6,8,9,14-tetra-Ac: ***Emarginatine G***
[155944-13-1]
$C_{46}H_{54}N_2O_{19}$ 938.935
Alkaloid from stems of *Maytenus emarginata* (Celastraceae). Needles. Mp 315-318°. $[\alpha]_D^{20}$ +200 (c, 0.02 in $CHCl_3$). Incorrect struct. given in CA.

1-O-*Benzoyl, 6,8,9,14-tetra-Ac:* ***Hippocrateine I***
[132185-31-0]
$C_{48}H_{52}N_2O_{19}$ 960.941
Alkaloid from roots and stem bark of *Hippocratea excelsa* (Hippocrataceae). Cryst. Mp 300°. $[\alpha]_D$ +50 (c, 0.33 in $CHCl_3$).

1-O-*Benzoyl, 14*-O-*(2-methylbutanoyl), 6,8,9-tri-Ac:* ***Hippocrateine II***
[132209-62-2]
$C_{51}H_{58}N_2O_{19}$ 1003.021
Alkaloid from the roots and stem bark of *Hippocratea excelsa* (Hippocrataceae). Mp 308°. λ_{max} 265 ($CHCl_3$) (Berdy).

8-Epimer, 6,8,14-tri-Ac: ***Emarginatine E***
[156280-98-7]
$C_{39}H_{46}N_2O_{17}$ 814.796
Alkaloid from stems of *Maytenus emarginata* (Celastraceae). Exhibits cytotoxicity against human KB cells. Needles. Mp 240-242°. $[\alpha]_D$ -36 (c, 0.07 in $CHCl_3$). λ_{max} 266 (ϵ 13400) (MeOH) (Berdy).

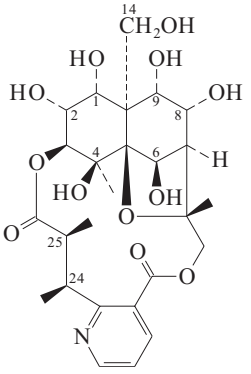
8-Epimer, 1-benzoyl, 6,9,14-tri-Ac: ***Emarginatine F***
[155944-12-0]
$C_{46}H_{50}N_2O_{18}$ 918.904
Alkaloid from stems of *Maytenus emarginata* (Celastraceae). Cytotoxic. Needles. Mp 221-223°. $[\alpha]_D^{20}$ +600 (c, 0.01 in $CHCl_3$). λ_{max} 266 (ϵ 12200) (MeOH) (Berdy).

8-Epimer, 9-benzoyl, 1,6,8,14-tetra-Ac: ***Emarginatine B***
[128718-53-6]
$C_{48}H_{52}N_2O_{19}$ 960.941
Alkaloid from *Maytenus emarginata*. Cytotoxic agent. Needles. Mp 191-194°. $[\alpha]_D$ +26 (c, 0.03 in $CHCl_3$). λ_{max} 266 (ϵ 12200) (no solvent reported).

[132209-61-1 , 125227-49-8]

Kuo, Y.H. *et al., Heterocycles*, 1989, **29**, 1465 (*Emarginatine A*)
Kuo, Y.-H. *et al., J. Nat. Prod.*, 1990, **53**, 422; 1994, **57**, 263; 1995, **58**, 1103 (*Emarginatines B,F,G,H*)
Mata, R. *et al., J. Nat. Prod.*, 1990, **53**, 1212 (*Hippocrateines*)
Kuo, Y.H. *et al., Phytochemistry*, 1994, **35**, 803 (*Emarginatines C,D,E*)
Furukawa, M. *et al., Phytochemistry*, 2002, **59**, 767-777 (*Hippocratea excelsa alkaloids*)
Li, Y. *et al., Heterocycles*, 2006, **68**, 1241-1247 (*Emarginatine A, cmr*)

Per(deacyl)euojaponin P-247



$C_{26}H_{35}NO_{12}$ 553.562

1,2,8,9,14-Penta-Ac: ***Neoeuonymine***
[33510-25-7]
$C_{36}H_{45}NO_{17}$ 763.748
Alkaloid from *Euonymus sieboldianus* (Celastraceae). Cryst. (MeOH). Mp 259-262°. $[\alpha]_D^{20}$ -11 (c, 0.49 in $CHCl_3$).

1,6,8,9,14-Penta-Ac: ***4-Hydroxy-7-epichuchuhuanine EV***
$C_{36}H_{45}NO_{17}$ 763.748
Alkaloid from the roots of *Peritassa campestris*. Amorph. solid. $[\alpha]_D^{20}$ -37.4 (c, 0.002 in $CHCl_3$). λ_{max} 201 (log ϵ 3.92); 223 (log ϵ 3.61); 265 (log ϵ 3.24) (MeOH).

1,2,6,8,9,14-Hexa-Ac: ***Euonymine***†
[33458-82-1]
$C_{38}H_{47}NO_{18}$ 805.785
Alkaloid from *Euonymus alatus* and fruits of *Euonymus sieboldianus* (Celastraceae). Shows antitumour promoting activity. Amorph.

8-O-*(2-Methylpropanoyl), 1,6,9,14-tetra-Ac:* ***Paniculatine A***
[906067-33-2]
$C_{38}H_{49}NO_{17}$ 791.802
Alkaloid from the stems of *Celastrus paniculatus*. Amorph. powder ($CHCl_3$). Mp 199-201°. $[\alpha]_D^{25}$ -9.5 (c, 0.6 in

$CHCl_3$). λ_{max} 218 (log ϵ 5.12); 264 (log ϵ 2.81) (MeOH).

9-O-(2-Hydroxy-2-methylpropanoyl), 1,6,8-tri-Ac: ***Cathedulin K15***
[68419-30-7]
$C_{36}H_{47}NO_{17}$ 765.764
Alkaloid from *Catha edulis* (Celastraceae). Cryst. (Et_2O/hexane). Mp 191-194°.

9-O-(2-Acetoxy-2-methylpropanoyl), 1,6,8-tri-Ac: ***Cathedulin K6***
[68419-28-3]
$C_{38}H_{49}NO_{18}$ 807.801
Alkaloid from *Catha edulis* (Celastraceae). Mp 176-180°.

9-O-(2-Acetoxy-2-methylpropanoyl), 1,6,8,14-tetra-Ac: ***Cathedulin K2***
[68419-27-2]
$C_{40}H_{51}NO_{19}$ 849.838
Major alkaloid from *Catha edulis* (Celastraceae). Needles (Et_2O/hexane). Mp 181-184°. $[\alpha]_D^{20}$ -17.8 (c, 1.9 in $CHCl_3$).

9-O-(2-Acetoxy-2-methylpropanoyl), 1,2,6,8,14-penta-Ac: ***Cathedulin K1***. *Cathedulin Y1*
[68423-03-0]
$C_{42}H_{53}NO_{20}$ 891.875
Alkaloid from *Catha edulis* (Celastraceae). Mp 165-168°.

1-O-(2-Methyl-2-butenoyl)(ξ-), 2,6,8,9,14-penta-Ac: ***Laevisine A***
$C_{41}H_{51}NO_{18}$ 845.85
Alkaloid from the bark of *Maytenus laevis*. Amorph. solid. Mp 171-173°. $[\alpha]_D^{25}$ +97.3 (c, 0.1 in $CHCl_3$). λ_{max} 223 (log ϵ 3.61); 265 (log ϵ 3.24) (EtOH).

1-Benzoyl, 2,8,9,14-tetra-Ac: ***Euojaponin A***
[133740-14-4]
$C_{41}H_{47}NO_{17}$ 825.819
Alkaloid from the root bark of *Euonymus japonica* (Celastraceae). Mp 273-275°. $[\alpha]_D^{25}$ +24.67 (c, 0.3 in EtOH).

1-Benzoyl, 6,8,9,14-tetra-Ac: ***Ebenifoline EI***
[143439-10-5]
$C_{41}H_{47}NO_{17}$ 825.819
Alkaloid from stem bark of *Maytenus ebenifolia* (Celastraceae). Amorph. solid (EtOH). Mp 183-185°.

1-Benzoyl, 2,6,8,9,14-penta-Ac: ***Mayteine***
[104736-05-2]
$C_{43}H_{49}NO_{18}$ 867.856
Alkaloid from the roots of *Maytenus guaianensis* and stem bark of *Maytenus ebenifolia* (Celastraceae). Amorph. solid. Mp 172-175°. $[\alpha]_D^{25}$ -9.36 (c, 0.47 in $CHCl_3$).

2-Benzoyl, 1,6,8,9,14-penta-Ac: ***Forrestine***
[146439-78-3]
$C_{43}H_{49}NO_{18}$ 867.856
Isol. from *Tripterygium forrestii*. Exhibits anti-HIV activity. Cryst. (MeOH). Mp 113-115°.

6-Benzoyl, 1,8,9,14-tetra-Ac: ***Wilfornine F***
$C_{41}H_{47}NO_{17}$ 825.819
Alkaloid from *Tripterygium wilfordii*. Amorph. powder. $[\alpha]_D$ +18.2 (c, 0.4 in MeOH). λ_{max} 229 (log ϵ 4.16); 264 (log ϵ 3.54) (MeOH).

6-Benzoyl, 1,2,8,9,14-penta-Ac: ***Cangorinine EI***
[155944-24-4]
$C_{43}H_{49}NO_{18}$ 867.856
Alkaloid from root bark of *Maytenus ilicifolia* (Celastraceae). Amorph. solid. Mp 98-101°. $[\alpha]_D$ -25.4 (c, 0.36 in $CHCl_3$). C-24 and C-25 config. not defined.

9-Benzoyl, 1,2,6,8,14-penta-Ac: ***Horridine***
[102865-30-5]
$C_{43}H_{49}NO_{18}$ 867.856
Alkaloid from the root bark of *Maytenus horrida* (Celastraceae). Amorph. powder.

14-Benzoyl, 1,6,8,9-tetra-Ac: ***2-De-O-acetylhyponine C***
$C_{41}H_{47}NO_{17}$ 825.819
Alkaloid from the bark of *Maytenus laevis*. Amorph. powder. $[\alpha]_D$ +4.3 (c, 0.2 in $CHCl_3$/MeOH).

14-Benzoyl, 1,2,6,8,9-penta-Ac: ***Hyponine C***
[192998-84-8]
$C_{43}H_{49}NO_{18}$ 867.856
Alkaloid from root bark of *Tripterygium hypoglaucum*. Amorph. powder. $[\alpha]_D^{25}$ -15.5 (c, 0.8 in $CHCl_3$). λ_{max} 228 (ϵ 15000); 265 (ϵ 3600) (MeOH).

1,6-Dibenzoyl, 8,9,14-tri-Ac: ***Euojaponin C***
[133740-15-5]
$C_{46}H_{49}NO_{17}$ 887.89
Alkaloid from the root bark of *Euonymus japonica* (Celastraceae). Mp 172-175°. $[\alpha]_D^{25}$ +11.4 (c, 0.5 in MeOH).

1,6-Dibenzoyl, 2,8,9,14-tetra-Ac: ***Ebenifoline EII***. *Euoverrine A*
[133740-16-6]
$C_{48}H_{51}NO_{18}$ 929.927
Alkaloid from stem bark of *Maytenus ebenifolia* (Celastraceae) and from *Euonymus verrucosides*. Amorph. solid (EtOH). Mp 174-177°. $[\alpha]_D$ -13.2 (c, 2.777 in $CHCl_3$). The C-24 config. in these two isolates is not clear.

1,6-Dibenzoyl, 8-propanoyl, 9,14-di-Ac: ***Euophelline***
[496865-96-4]
$C_{47}H_{51}NO_{17}$ 901.916
Alkaloid from the root bark of *Euonymus phellomana*. Amorph. powder. Mp 168-169°. $[\alpha]_D^{24}$ +2.2 (c, 0.45 in $CHCl_3$). λ_{max} 231 ; 265 (MeOH).

1,9-Dibenzoyl, 2,8,14-tri-Ac: ***Ebenifoline EV***
[150375-28-3]
$C_{46}H_{49}NO_{17}$ 887.89
Alkaloid from stem bark of *Maytenus ebenifolia* (Celestraceae). Amorph. solid. Mp 165-169°. $[\alpha]_D$ -27.5 (c, 0.27 in $CHCl_3$).

1,9-Dibenzoyl, 2,6,8,14-tetra-Ac: ***Ebenifoline EIII***
[150375-26-1]
$C_{48}H_{51}NO_{18}$ 929.927
Alkaloid from *Euonymus ebenifolia* (Celastraceae). Amorph. solid. Mp 174-177°. $[\alpha]_D$ -25.8 (c, 0.67 in $CHCl_3$).

1,6,9-Tribenzoyl, 2,8,14-tri-Ac: ***Celahinine A***
[172889-43-9]
$C_{53}H_{53}NO_{18}$ 991.998
Alkaloid from stems of *Celastrus hindsii*. Amorph. Mp > 300°.

2-(3-Furancarbonyl), 1,6,8,9,14-penta-Ac: ***Hyponine F***
$C_{41}H_{47}NO_{19}$ 857.818
Alkaloid from the root bark of *Tripterygium hypoglaucum*. Amorph. powder. $[\alpha]_D^{25}$ +7 (c, 1 in MeOH). λ_{max} 227 (log ϵ 4); 260 (log ϵ 3.58) (MeOH).

6-(3-Furancarbonyl), 1,2,8,9,14-penta-Ac: ***Hyponine A***
[192998-39-3]
$C_{41}H_{47}NO_{19}$ 857.818
Alkaloid from root bark of *Tripterygium hypoglaucum*. Exhibits anti-HIV activity. Amorph. powder. $[\alpha]_D^{25}$ -27.5 (c, 0.7 in $CHCl_3$). λ_{max} 222 (ϵ 10000); 253 (ϵ 5000) (MeOH).

14-(3-Furancarbonyl), 1,2,6,8,9-penta-Ac: ***Hyponine B***
[192998-73-5]
$C_{41}H_{47}NO_{19}$ 857.818
Alkaloid from root bark of *Tripterygium hypoglaucum*. Exhibits anti-HIV activity. Amorph. powder. $[\alpha]_D^{25}$ -19.5 (c, 1.0 in $CHCl_3$). λ_{max} 222 (ϵ 8800); 249 (ϵ 4000) (MeOH).

1-(3-Pyridinecarbonyl), 6,8,9,14-tetra-Ac: ***Euojaponin M***
[133740-19-9]
$C_{40}H_{46}N_2O_{17}$ 826.807
Alkaloid from the root bark of *Euonymus japonica* (Celastraceae). Mp 188-190°. $[\alpha]_D^{25}$ +12.57 (c, 0.46 in EtOH).

1-(3-Pyridinecarbonyl), 2,6,8,9,14-penta-Ac: ***Euojaponin I***
[133740-17-7]
$C_{42}H_{48}N_2O_{18}$ 868.844
Alkaloid from the root bark of *Euonymus japonica* (Celastraceae). Mp 168-171°. $[\alpha]_D^{25}$ +4.35 (c, 0.6 in EtOH).

1-(3-Pyridinecarbonyl), 6-benzoyl, 8,9,14-tri-Ac: ***Euojaponin L***
[133740-18-8]
$C_{45}H_{48}N_2O_{17}$ 888.877
Alkaloid from the root bark of *Euonymus japonica* (Celastraceae). Mp 195-197°. $[\alpha]_D^{25}$ +11.24 (c, 0.5 in EtOH).

1-(3-Pyridinecarbonyl), 6-benzoyl, 2,8,9,14-tetra-Ac: ***Paniculatine B***
[906067-34-3]
$C_{47}H_{50}N_2O_{18}$ 930.915
Alkaloid from the stems of *Celastrus paniculatus*. Amorph. powder ($CHCl_3$). Mp 178-181°. $[\alpha]_D^{25}$ -11 (c, 0.8 in $CHCl_3$). λ_{max} 221 (log ϵ 4.39); 266 (log ϵ 3.83) (MeOH).

2-(3-Pyridinecarbonyl), 8-(2-methylpropanoyl), 1,6,9,14-tetra-Ac: ***Angulatamine***
[148245-79-8]
$C_{44}H_{52}N_2O_{18}$ 896.897
Constit. of *Catha angulatus* (Celastraceae). Amorph. solid. $[\alpha]_D^{25}$ +13.7 (c, 0.5 in MeOH).

2-(3-Pyridinecarbonyl), 6-benzoyl, 1,8,9,14-tetra-Ac: ***Hyponine D***
$C_{47}H_{50}N_2O_{18}$ 930.915
Alkaloid from the root bark of *Tripterygium hypoglaucum*. Amorph.

powder. $[\alpha]_D^{25}$ +5.2 (c, 1.1 in MeOH). λ_{max} 226 (log ϵ 4.39); 264 (log ϵ 3.83) (MeOH).

8-(3-Pyridinecarbonyl), 6-(3-furancarbonyl), 1,2,9,14-tetra-Ac: ***Hyponine E***
$C_{45}H_{48}N_2O_{19}$ 920.876
Alkaloid from the root bark of *Tripterygium hypoglaucum*. Amorph. powder. $[\alpha]_D^{25}$ -4.2 (c, 1 in MeOH). λ_{max} 222 (log ϵ 4.25); 263 (log ϵ 3.79) (MeOH).

8-(3-Pyridinecarbonyl), 1,2,6,9,14-penta-Ac: ***Wilfornine G****. Putterine A*
$C_{42}H_{48}N_2O_{18}$ 868.844
Alkaloid from *Tripterygium wilfordii* and the roots of *Maytenus putterlickoides*. Amorph. powder. $[\alpha]_D$ +11 (c, 0.7 in MeOH). λ_{max} 222 (log ϵ 4.26); 260 (log ϵ 3.8) (MeOH).

8-(3-Pyridinecarbonyl), 2-(2-methylpropanoyl), 1,6,9,14-tetra-Ac: ***Putterine B***
$C_{44}H_{52}N_2O_{18}$ 896.897
Alkaloid from the roots of *Maytenus putterlickoides*. Amorph. solid.

14-(3-Pyridinecarbonyl), 9-(2-acetoxy-2-methylpropanoyl), 8-(3,4,5-trimethoxybenzoyl), 1,2,6-tri-Ac: ***Cathedulin K12***
[68419-29-4]
$C_{54}H_{62}N_2O_{23}$ 1107.083
Alkaloid from *Catha edulis* (Celastraceae). Cryst. (Et_2O). Mp 268-272°.

14-(3-Pyridinecarbonyl), 9-(2-acetoxy-2-methylpropanoyl), 8-(3,4,5-trimethoxybenzoyl), 1-benzoyl, 2-Ac: ***Cathedulin E6***
[61230-23-7]
$C_{57}H_{62}N_2O_{22}$ 1127.117
Alkaloid from *Catha edulis* (Celastraceae). Amorph. solid.

14-(3-Pyridinecarbonyl), 9-(2-acetoxy-2-methylpropanoyl), 8-(3,4,5-trimethoxybenzoyl), 1-benzoyl, 2,6-di-Ac: ***Cathedulin E5***
[61230-24-8]
$C_{59}H_{64}N_2O_{23}$ 1169.154
Alkaloid from *Catha edulis* (Celastraceae). Amorph. solid.

1-(1,6-Dihydro-1-methyl-6-oxo-3-pyridinecarbonyl), 6,8,9,14-tetra-Ac:
$C_{41}H_{48}N_2O_{18}$ 856.833
Alkaloid from the stem bark of *Hippocratea excelsa*. Powder. Mp 192-199°. $[\alpha]_D$ -22.8 (c, 0.3 in $CHCl_3$). λ_{max} 268 (log ϵ 4.34) (no solvent reported).

1-(1,6-Dihydro-1-methyl-6-oxo-3-pyridinecarbonyl), 2,6,8,9,14-penta-Ac:
$C_{43}H_{50}N_2O_{19}$ 898.87
Alkaloid from the stem bark of *Hippocratea excelsa*. Powder. Mp 154-178°. $[\alpha]_D$ -11.6 (c, 0.7 in $CHCl_3$). λ_{max} 268 (log ϵ 4.1) (no solvent reported).

8-Ketone: see Per(deacyl)evonine, P-248

8-Epimer, 1,2,9,14-tetra-Ac: ***Acanthothamine***
[107651-98-9]
$C_{34}H_{43}NO_{16}$ 721.711
Alkaloid from the stems of *Acanthothamnus aphyllus* (Celastraceae). Cryst. (CH_2Cl_2). Mp 287-290°.

8-Epimer, 1,6,9,14-tetra-Ac: ***Aquifoliunine EII***
$C_{34}H_{43}NO_{16}$ 721.711
Alkaloid from the root bark of *Maytenus aquifolium* (tea). Amorph. $[\alpha]_D$ -17.2 (c, 3 in $CHCl_3$).

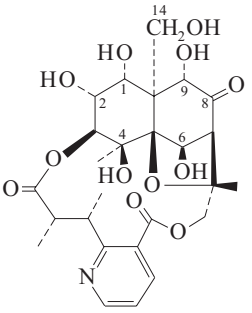
8-Epimer, 1,2,6,9,14-penta-Ac: ***Aquifoliunine EIII***
[220751-20-2]
$C_{36}H_{45}NO_{17}$ 763.748
Alkaloid from *Maytenus aquifolium* (tea). Amorph. solid. $[\alpha]_D$ -20.8 (c, 3.3 in $CHCl_3$).

8-Epimer, 8-benzoyl, 1,2,6,9,14-penta-Ac: ***Aquifoliunine EI***
$C_{43}H_{49}NO_{18}$ 867.856
Alkaloid from the root bark of *Maytenus aquifolium* (tea). Amorph. solid. $[\alpha]_D$ -3.1 (c, 3.2 in $CHCl_3$).

8-Epimer, 8-(3-pyridinecarbonyl), 1,2,6,9,14-penta-Ac: ***Aquifoliunine EIV***
[220751-22-4]
$C_{42}H_{48}N_2O_{18}$ 868.844
Alkaloid from *Maytenus aquifolium* (tea). $[\alpha]_D$ -15.2 (c, 2.9 in $CHCl_3$).

Sugiura, K. *et al., Tet. Lett.*, 1971, 2733 (*Euonymine*)
Yamada, K. *et al., Tetrahedron*, 1977, **33**, 1725; 1978, **34**, 1915 (*Euonymine, Neoeuonymine*)
Baxter, R.L. *et al., J.C.S. Perkin 1*, 1979, 2965; 2976; 2982; 2986 (*Cathedulins*)
González, A.G. *et al., Heterocycles*, 1986, **24**, 1295 (*Horridine*)
Soriano-Garcia, M. *et al., J. Crystallogr. Spectrosc. Res.*, 1986, **16**, 507; *CA*, **106**, 156743m (*cryst struct, Acancothamine*)
De Sousa, J.R. *et al., Phytochemistry*, 1986, **25**, 1776 (*Mayteine*)
Sánchez, A.A. *et al., Phytochemistry*, 1986, **25**, 2647 (*Acancothamine*)
Han, B.H. *et al., Phytochemistry*, 1990, **29**, 2303 (*Euojaponins*)
Itokawa, H. *et al., Heterocycles*, 1992, **34**, 885 (*Ebenifolines*)
Chunquan, C. *et al., Phytochemistry*, 1992, **31**, 4391 (*Forrestine*)
Itokawa, H. *et al., J.C.S. Perkin 1*, 1993, 1247 (*Ebenifolines*)
Jikai, L. *et al., Phytochemistry*, 1993, **32**, 487 (*Angulatamine*)
Shirota, O. *et al., Heterocycles*, 1994, **38**, 2219 (*Cangorinine*)
Kuo, Y.H. *et al., J. Nat. Prod.*, 1995, **58**, 1735-1738 (*Celahinine A*)
Duan, H. *et al., Phytochemistry*, 1997, **45**, 617-621; 1999, **52**, 1735-1738 (*Hyponines*)
Corsino, J. *et al., Phytochemistry*, 1998, **48**, 137-140; **49**, 2181-2183 (*Aquifoliunines*)
Piacente, S. *et al., J. Nat. Prod.*, 1999, **62**, 161-163 (*Laevisine A*)
Gonzaler, A.G. *et al., Bioorg. Med. Chem.*, 2000, **8**, 1773-1778 (*activity, Euonymine*)
Duan, H. *et al., J. Nat. Prod.*, 2000, **63**, 357 (*isol, activity*)
Duan, H. *et al., J. Nat. Prod.*, 2001, **64**, 582-587 (*Wilfornine F,G*)
Schaneberg, B.T. *et al., J. Nat. Prod.*, 2001, **64**, 624-626 (*Putterines*)
Liao, L.M. *et al., Phytochemistry*, 2001, **58**, 1205-1207 (*4-Hydroxy-7-epichuchuhuanine EV*)
Furukawa, M. *et al., Phytochemistry*, 2002, **59**, 767-777 (*Hippocratea excelsa alkaloids*)
Jinbo, Z. *et al., Phytochemistry*, 2002, **61**, 699-704 (*Euoverrine A, Euophelline*)
Nakagawa, H. *et al., J. Nat. Prod.*, 2004, **67**, 1919-1924 (*2-Deacetylhyponine C*)
Lu, Y. *et al., Heterocycles*, 2006, **68**, 1241-1247 (*Euonymine, Wilfornine F, Paniculatines A,B*)

Per(deacyl)evonine **P-248**
O^1,O^2,O^6,O^9,O^5-Pentadeacylevonine, 9CI
[33376-79-3]



$C_{26}H_{33}NO_{12}$ 551.546

1,2,14-Tri-Ac: ***Evozine***
[35721-62-1]
$C_{32}H_{39}NO_{15}$ 677.658
Alkaloid from the seeds of *Euonymus europaeus* (Celastraceae). Cryst. (MeOH/Et_2O). Mp 288-290°. $[\alpha]_D^{22}$ +13 (c, 0.92 in $CHCl_3$).

1,9,14-Tri-Ac: ***O^2,O^6-Dideacetylevonine***
[36072-68-1]
$C_{32}H_{39}NO_{15}$ 677.658
Minor alkaloid from the seeds of *Euonymus europaeus* (Celastraceae). Cryst. (EtOH). Mp 141°.

2,9,14-Tri-Ac: ***1,6-Dideacetylevonine***
$C_{32}H_{39}NO_{15}$ 677.658
Alkaloid from the seeds of *Euonymus europaeus*. Oil. $[\alpha]_D^{25}$ +20 (c, 0.13 in $CHCl_3$).

1,2,9,14-Tetra-Ac: ***Evorine****. Neoevonine*
[33540-08-8]
$C_{34}H_{41}NO_{16}$ 719.695
Alkaloid from *Euonymus alatus*, the fruits of *Euonymus sieboldianus* and the seeds of *Euonymus europaeus* (Celastraceae). Cryst. (MeOH, Et_2O/petrol or petrol/Me_2CO). Mp 266-268° (257-259°). $[\alpha]_D^{22}$ +20 (c, 1.11 in $CHCl_3$). $[\alpha]_D^{22}$ +41 (c, 1.13 in MeOH).

1,6,9,14-Tetra-Ac: ***O^2-Deacetylevonine***
[36017-57-9]
$C_{34}H_{41}NO_{16}$ 719.695
Minor alkaloid from the seeds of *Euonymus europaeus* (Celastraceae). Cryst. (EtOH). Mp 135°.

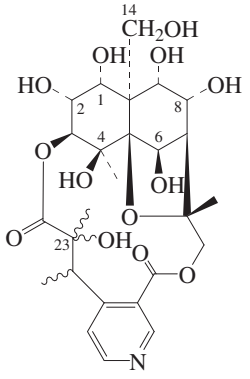
1,2,4,9,14-Penta-Ac: ***Evonine, 9CI***
[33458-64-9]
$C_{36}H_{43}NO_{17}$ 761.732
Alkaloid from *Euonymus alatus*, *Euonymus europaeus* and *Euonymus sieboldianus* (Celastraceae). Cryst. (EtOH or petrol/Me_2CO). Mp 184-190°. $[\alpha]_D$ -8.4 (c, 1.5 in $CHCl_3$). $[\alpha]_D$ +21.1 (c, 1.46 in EtOH).

4-Deoxy, 1,6,9,14-tetra-Ac: ***Evonoline****. 4-Desoxyevonine*
[36017-50-2]
$C_{36}H_{43}NO_{16}$ 745.733
Alkaloid from the seeds of *Euonymus europaeus* (Celastraceae). Cryst. (petrol/Me_2CO). Mp 150-158°. $[\alpha]_D^{20}$ +6 (c, 3.2 in $CHCl_3$).

Klásek, A. *et al., Helv. Chim. Acta*, 1971, **54**, 2144 (*isol, uv, ir, ms*)

Pailer, M. *et al., Monatsh. Chem.*, 1971, **102**, 1873 (*isol, uv, ir, pmr, ms, struct, synth*)
Wada, H. *et al., Tet. Lett.*, 1971, 3131 (*stereochem*)
Sasaki, K. *et al., J.C.S. Perkin 2*, 1972, 1268 (*Evonine, Evorine, cryst struct, abs config*)
Klásek, A. *et al., Tet. Lett.*, 1972, 941 (*Evorine, Dideacetylevonine, pmr, struct*)
Budzikiewicz, H. *et al., Z. Naturforsch., B*, 1972, **27**, 800 (*Evonine, Evonoline, Evorine, isol, uv, ir, pmr, ms, struct*)
Dubravkova, L. *et al., Coll. Czech. Chem. Comm.*, 1973, **38**, 2132 (*Evonine, Evonoline, isol, uv, ord, ir, pmr, ms*)
Crombie, L. *et al., Phytochemistry*, 1973, **12**, 703 (*Evonine, Dideacetylevonine, O^2-Deacetylevonine*)
Shizuri, Y. *et al., Tetrahedron*, 1973, **29**, 1773 (*Evonine, Evorine, isol, uv, ir, pmr, struct*)
Sugiura, K. *et al., Chem. Lett.*, 1975, 579 (*synth*)
Popik, P. *et al., Pharmacol. Rev.*, 1995, **47**, 235 (*rev, pharmacol, history*)
Descoins, C. *et al., Chem. Pharm. Bull.*, 2002, **50**, 199-202 (*1,6-Dideacetylevonine*)

Per(deacyl)hypoglaunine P-249



$C_{26}H_{35}NO_{13}$ 569.561

1,6,8,9,14-Penta-Ac: ***Wilfordlongine***
$C_{36}H_{45}NO_{18}$ 779.747
Alkaloid from *Tripterygium wilfordii*. Mp 179-181°. λ_{max} 233 (log ϵ 3.92); 278 (log ϵ 3.59) (EtOH).

1,2,6,8,9,14-Hexa-Ac: ***Wilfordinine B***
$C_{38}H_{47}NO_{19}$ 821.785
Alkaloid from *Tripterygium wilfordii*. Amorph. powder. $[\alpha]_D^{25}$ +43.5 (c, 1.1 in MeOH). λ_{max} 262 (log ϵ 3.39) (MeOH).

1-Benzoyl, 2,6,8,9,14-penta-Ac: ***Wilfordinine C***
$C_{43}H_{49}NO_{19}$ 883.855
Alkaloid from *Tripterygium wilfordii*. Amorph. solid. $[\alpha]_D^{25}$ +39.1 (c, 1 in MeOH). λ_{max} 228 (log ϵ 4.11); 263 (log ϵ 3.5) (MeOH).

2-Benzoyl, 1,6,8,9,14-penta-Ac: ***Hypoglaunine C****. Wilfordsine*
[220750-99-2]
[171090-83-8]
$C_{43}H_{49}NO_{19}$ 883.855
Alkaloid from *Tripterygium hypoglaucum* and *Tripterygium wilfordii*. Amorph. powder. $[\alpha]_D^{25}$ +56.7 (c, 1 in MeOH). λ_{max} 230 (log ϵ 4.26); 265 (log ϵ 3.65) (MeOH).

2,6-Dibenzoyl, 1,8,9,14-tetra-Ac: ***Wilfordinine I***
$C_{48}H_{51}NO_{19}$ 945.926
Alkaloid from *Tripterygium wilfordii*. Amorph. powder. $[\alpha]_D$ +63 (c, 0.2 in MeOH). λ_{max} 230 (log ϵ 4.53); 262 (log ϵ 3.77) (MeOH).

*2-*O*-(2-Furancarbonyl), 1,6,8,9,14-penta-Ac:* ***Hypoglaunine B***
[220750-98-1]
$C_{41}H_{47}NO_{20}$ 873.817
Alkaloid from *Tripterygium hypoglaucum*. Amorph. powder. $[\alpha]_D^{25}$ +46.2 (c, 0.8 in MeOH). λ_{max} 262 (log ϵ 3.82) (MeOH).

*2-*O*-(3-Furancarbonyl), 1,6,8,9,14-penta-Ac:* ***Isowilfortrine***
[159028-40-7]
$C_{41}H_{47}NO_{20}$ 873.817
Alkaloid from *Tripterygium wilfordii*. Cryst. Mp 329-331°.

*8-*O*-(3-Furancarbonyl), 1,6,9,14-tetra-Ac:* ***Wilfordconine***
$C_{39}H_{45}NO_{19}$ 831.78
Alkaloid from *Tripterygium wilfordii*. Cryst. (CH_2Cl_2/MeOH). Mp 192-193°. MF and struct. do not match in ref. λ_{max} 228 (ϵ 8760); 258 (ϵ 48010) (EtOH).

*14-*O*-(3-Furancarbonyl), 1,2,6,8,9-penta-Ac:* ***Hypoglaunine A****. Hypoglaunine*
[220750-97-0]
$C_{41}H_{47}NO_{20}$ 873.817
Alkaloid from *Tripterygium hypoglaucum*. Amorph. powder. $[\alpha]_D^{25}$ +42.8 (c, 1 in MeOH). λ_{max} 256 (log ϵ 3.86) (MeOH).

23-Deoxy, 1,2,8,9,14-penta-Ac: ***Tripfordine C***
$C_{36}H_{45}NO_{17}$ 763.748
Alkaloid from the roots of *Tripterygium wilfordii*. Amorph. powder. Mp 137-141°. $[\alpha]_D^{25}$ -5.8 (c, 0.02 in MeOH). λ_{max} 237 (log ϵ 2.93) (MeOH).

23-Deoxy, 1,6,8,9,14-penta-Ac: ***Wilfordinine A***
$C_{36}H_{45}NO_{17}$ 763.748
Alkaloid from *Tripterygium wilfordii*. Amorph. powder. $[\alpha]_D^{25}$ -11 (c, 0.9 in MeOH). λ_{max} 220 (log ϵ 3.89); 263 (log ϵ 3.5) (MeOH).

23-Deoxy, 2,6,8,9,14-penta-Ac: ***Wilfordinine J***
$C_{36}H_{45}NO_{17}$ 763.748
Alkaloid from *Tripterygium wilfordii*. Amorph. powder. $[\alpha]_D$ -8.1 (c, 0.7 in MeOH). λ_{max} 222 (log ϵ 3.85); 263 (log ϵ 3.46) (MeOH).

23-Deoxy, 1,2,6,8,9,14-hexa-Ac: ***Peritassine A***
[150881-01-9]
$C_{38}H_{47}NO_{18}$ 805.785
Alkaloid from stems and bark of *Peritassa compta* (Celastraceae). Cryst. Mp 116-117°. $[\alpha]_D$ +24.6 (c, 0.7 in $CHCl_3$). The abs. config. at C-22/C-23 in the peritassines need not be the same as in the hypoglaunines.

*23-Deoxy, 8-*O*-(2-methylpropanoyl), 1,2,6,9,14-penta-Ac:*
$C_{40}H_{51}NO_{18}$ 833.839
Alkaloid from the stem bark of *Hippocratea excelsa*. Powder. Mp 162-164°. $[\alpha]_D$ -36.8 (c, 0.5 in $CHCl_3$). λ_{max} 266 (log ϵ 3.46) (no solvent reported).

23-Deoxy, 8-benzoyl, 1,2,6,9,14-penta-Ac: ***Peritassine B***
[150881-29-1]
$C_{43}H_{49}NO_{18}$ 867.856
Alkaloid from stems and bark of *Peritassa compta* (Celastraceae). Amorph. powder. Mp 148-150°. $[\alpha]_D$ -39.2 (c, 0.13 in $CHCl_3$).

*23-Deoxy, 14-*O*-(2-furancarbonyl), 1,2,6,8,9-penta-Ac:* ***Hypoglaunine D***
[220751-00-8]
$C_{41}H_{47}NO_{19}$ 857.818
Alkaloid from *Tripterygium hypoglaucum*. Amorph. powder. $[\alpha]_D^{25}$ -15.3 (c, 0.9 in MeOH). λ_{max} 226 (log ϵ 3.82); 264 (log ϵ 3.42) (MeOH).

*23-Deoxy, 2-*O*-(1,6-dihydro-1-methyl-6-oxo-3-pyridinecarbonyl), 8-*O*-(2-methylpropanoyl), 1,6,9,14-tetra-Ac:*
$C_{45}H_{54}N_2O_{19}$ 926.924
Alkaloid from the stem bark of *Hippocratea excelsa*. Powder. Mp 189-196°. $[\alpha]_D$ +2.3 (c, 1.1 in $CHCl_3$). λ_{max} 269 (log ϵ 3.97) (no solvent reported).

*23-Deoxy, 2-*O*-(1,6-dihydro-1-methyl-6-oxo-3-pyridinecarbonyl), 8,14-bis(2-methylpropanoyl), 1,6-di-Ac:*
$C_{45}H_{56}N_2O_{18}$ 912.94
Alkaloid from the stem bark of *Hippocratea excelsa*. Powder. Mp 171-176°. $[\alpha]_D$ +12.5 (c, 0.73 in $CHCl_3$). λ_{max} 270 (log ϵ 4.44) (no solvent reported).

*23-Deoxy, 2-*O*-(1,6-dihydro-1-methyl-6-oxo-3-pyridinecarbonyl), 8,14-bis(2-methylpropanoyl), 1,6,9-tri-Ac:*
$C_{47}H_{58}N_2O_{19}$ 954.977
Alkaloid from the stem bark of *Hippocratea excelsa*. Powder. Mp 179-187°. $[\alpha]_D$ +6.6 (c, 1.1 in $CHCl_3$). λ_{max} 269 (log ϵ 4.39) (no solvent reported).

*23-Deoxy, 2-*O*-(1,6-dihydro-1-methyl-6-oxo-3-pyridinecarbonyl), 1,9,14-tris(2-methylpropanoyl), 6,8-di-Ac:*
$C_{49}H_{62}N_2O_{19}$ 983.031
Alkaloid from the stem bark of *Hippocratea excelsa*. Powder. Mp 206-210°. $[\alpha]_D$ -16 (c, 1.1 in $CHCl_3$). λ_{max} 268 (log ϵ 4.35) (no solvent reported).

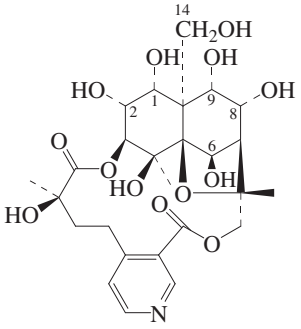
*23-Deoxy, 2-*O*-(1,6-dihydro-1-methyl-6-oxo-3-pyridinecarbonyl), 8,9,14-tris(2-methylpropanoyl), 6-Ac:*
$C_{47}H_{60}N_2O_{18}$ 940.994
Alkaloid from the stem bark of *Hippocratea excelsa*. Powder. Mp 189-194°. $[\alpha]_D$ -21.7 (c, 0.9 in $CHCl_3$). λ_{max} 269 (log ϵ 4.38) (no solvent reported).

*23-Deoxy, 2-*O*-(1,6-dihydro-1-methyl-6-oxo-3-pyridinecarbonyl), 8,9,14-tris(2-methylpropanoyl), 1,6-di-Ac:*
$C_{49}H_{62}N_2O_{19}$ 983.031
Alkaloid from the stem bark of *Hippocratea excelsa*. Powder. Mp 186-190°. $[\alpha]_D$ -18.6 (c, 0.86 in $CHCl_3$). λ_{max} 268 (log ϵ 3.83) (no solvent reported).

Klass, J. *et al., J. Nat. Prod.*, 1993, **56**, 946-948 (*Peritassines*)

Lin, S. *et al., Yaoxue Xuebao*, 1994, **29**, 599-602; 1995, **30**, 513-516 (*Isowilfortrine, Wilfordsine*)
Duan, H. *et al., Phytochemistry*, 1998, **49**, 2185-2189 (*Hypoglaunines*)
Li, W. *et al., Phytochemistry*, 1999, **50**, 1091-1093 (*isol, pmr, cmr*)
Duan, H. *et al., J. Nat. Prod.*, 2000, **63**, 357-361; 2001, **64**, 582-587 (*Wilfordinines*)
Lin, S. *et al., Yaoxue Xuebao*, 2001, **36**, 116-119; 2002, **37**, 128-130 (*Wilfordconine, Wilfordlongine*)
Furukawa, M. *et al., Phytochemistry*, 2002, **59**, 767-777 (*Hippocratea excelsa alkaloids*)
Horiuch, M. *et al., J. Nat. Prod.*, 2006, **69**, 1271-1274 (*Tripfordine C*)

Per(deacyl)isowilfordine P-250



$C_{26}H_{35}NO_{13}$ 569.561

1,6,8,9,14-Penta-Ac: ***Wilfordsuine***
$C_{36}H_{45}NO_{18}$ 779.747
Alkaloid from *Tripterygium wilfordii*. Mp 173-175°. $[\alpha]_D^{25}$ -3.8 (c, 1.1 in Me_2CO). λ_{max} 234 (log ϵ 3.94); 278 (log ϵ 3.6) (EtOH).

2-Benzoyl, 1,6,8,9,14-penta-Ac: ***Isowilfordine***
[134306-16-4]
$C_{43}H_{49}NO_{19}$ 883.855
Alkaloid from *Tripterygium wilfordii* (Celastraceae). Cryst. (MeOH). Mp 165-167°.

2-(3-Furancarbonyl), 1,6,8,9,14-penta-Ac: ***Wilfordinine H***
$C_{41}H_{47}NO_{20}$ 873.817
Alkaloid from *Tripterygium wilfordii* (Celastraceae). Amorph. powder. $[\alpha]_D^{25}$ +1.4 (c, 0.7 in MeOH). λ_{max} 227 (log ϵ 4.1); 262 (log ϵ 3.57) (MeOH).

8-Ketone, 1,2,6,9,14-penta-Ac: ***Wilfordinine G***
$C_{36}H_{43}NO_{18}$ 777.732
Alkaloid from *Tripterygium wilfordii* (Celastraceae). Amorph. powder. $[\alpha]_D^{25}$ +4.3 (c, 1.1 in MeOH). λ_{max} 221 (log ϵ 3.89); 263 (log ϵ 3.47) (MeOH).

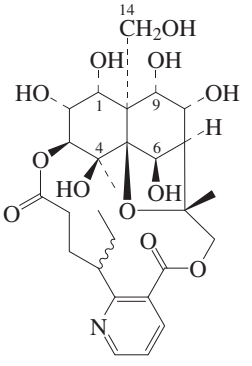
26-Deoxy, 1,2,6,8,9,14-penta-Ac: ***Wilfordinine E***
$C_{38}H_{47}NO_{18}$ 805.785
Alkaloid from *Tripterygium wilfordii* (Celastraceae). Amorph. powder. $[\alpha]_D^{25}$ -0.6 (c, 0.7 in MeOH). λ_{max} 225 (log ϵ 3.98); 264 (log ϵ 3.5) (MeOH).

26-Deoxy, 2-benzoyl, 1,6,8,9,14-penta-Ac: ***Wilfordinine F***
$C_{43}H_{49}NO_{18}$ 867.856
Alkaloid from *Tripterygium wilfordii* (Celastraceae). Amorph. powder. $[\alpha]_D^{25}$ +16.2 (c, 0.9 in MeOH). λ_{max} 230 (log ϵ 4.32); 265 (log ϵ 3.55) (MeOH).

26-Deoxy, 2-(3-furancarbonyl), 1,6,8,9,14-penta-Ac: ***Wilfordinine D***
$C_{41}H_{47}NO_{19}$ 857.818
Alkaloid from *Tripterygium wilfordii* (Celastraceae). Amorph. powder. $[\alpha]_D^{25}$ +14.6 (c, 0.4 in MeOH). λ_{max} 227 (log ϵ 4.06); 261 (log ϵ 3.57) (MeOH).

Ya, L. *et al., Phytochemistry*, 1991, **30**, 719 (*Isowilfordine*)
Duan, H. *et al., Chem. Pharm. Bull.*, 1999, **47**, 1664-1667 (*Wilfordinines*)
Lin, S. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 2001, **43**, 647-649 (*Wilfordsuine*)

Per(deacyl)oppositine A P-251



$C_{27}H_{37}NO_{12}$ 567.589

The ethyl group config. need not necessarily be the same in all of these alkaloids.

1-Benzoyl, 2,6,8,9,14-penta-Ac: ***Oppositine A***
[917952-11-5]
$C_{44}H_{51}NO_{18}$ 881.883
Alkaloid from *Pleurostylia opposita*. Pale yellow glass. $[\alpha]_D^{26}$ +20.3 (c, 0.13 in MeOH). λ_{max} 206 (log ϵ 4.08); 230 (log ϵ 4.14); 270 (log ϵ 3.47) (MeOH).

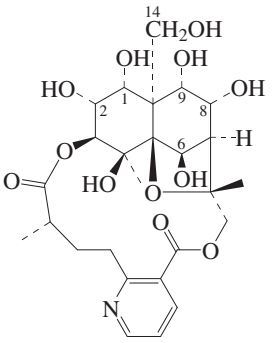
8-Ketone, 1,2,6,9,14-penta-Ac: ***Orthosphenine***
[126622-36-4]
$C_{37}H_{45}NO_{17}$ 775.759
Minor alkaloid from the roots of *Orthosphenia mexicana* (Celastraceae). Pale-yellow amorph. solid.

4-Deoxy, 1-benzoyl, 2,6,8,9,14-penta-Ac: ***Oppositine B***
[917952-12-6]
$C_{44}H_{51}NO_{17}$ 865.883
Alkaloid from *Pleurostylia opposita*. Pale yellow glass. $[\alpha]_D^{26}$ +19.5 (c, 0.07 in MeOH). λ_{max} 204 (log ϵ 4.27); 228 (log ϵ 4.35); 268 (log ϵ 3.68) (MeOH).

4-Deoxy, 6-benzoyl, 1,2,8,9,14-penta-Ac: ***Cassinine***
[62948-58-7]
$C_{44}H_{51}NO_{17}$ 865.883
Alkaloid from the root bark of *Cassine metabelica*. Mp 295-298°.

Wagner, H. *et al., Tet. Lett.*, 1977, **18**, 125-128 (*Cassinine*)
González, A.G. *et al., J. Nat. Prod.*, 1989, **52**, 1338 (*Orthosphenine*)
Whitson, E.L. *et al., J. Nat. Prod.*, 2006, **69**, 1833-1835 (*Oppositines*)

Per(deacyl)wilforine P-252



$C_{26}H_{35}NO_{12}$ 553.562

▶ LF0195000

1,2,6,9,14-Penta-Ac: ***8-O-Deacetyleuonine***
$C_{36}H_{45}NO_{17}$ 763.748
Constit. of the roots of *Austroplenckia populnea* var. *ovata*. Amorph. solid ($CHCl_3$/MeOH). Mp 153-155°.

*1,2,8,9,14-Penta-Ac: 6-*O*-Deacetyleuonine.* ***Tripfordine B***
$C_{36}H_{45}NO_{17}$ 763.748
Alkaloid from the roots of *Tripterygium wilfordii*. Amorph. solid. Mp 132-133°. $[\alpha]_D^{25}$ -15.4 (c, 0.13 in MeOH). λ_{max} 267 (log ϵ 3.55) (MeOH).

1,6,8,9,14-Penta-Ac: ***Wilforjine****. 2-*O*-Deacetyleuonine*
[147362-40-1]
$C_{36}H_{45}NO_{17}$ 763.748
Alkaloid from the roots of *Austroplenckia populnea* var. *ovata* and *Tripterygium wilfordii*. Mp 156-158° (147-149°).

1,2,6,8,9,14-Hexa-Ac: ***Euonine****. Wilformine*
[41758-69-4]
$C_{38}H_{47}NO_{18}$ 805.785
Minor alkaloid from the seeds of *Euonymus sieboldianus* and *Tripterygium wilfordii* (Celastraceae). Mp 149-153°. $[\alpha]_D$ -2.5 (c, 6.4 in $CHCl_3$).

1-Benzoyl, 2,8,9,14-tetra-Ac: ***Euojaponin D***
[128397-42-2]
$C_{41}H_{47}NO_{17}$ 825.819
Alkaloid from *Euonymus japonica* (Celastraceae). Mp 253°. $[\alpha]_D^{25}$ +28.6 (c, 0.287 in $CHCl_3$).

1-Benzoyl, 6,8,9,14-tetra-Ac: ***Euojaponin K***
[128397-44-4]
$C_{41}H_{47}NO_{17}$ 825.819
Alkaloid from root bark of *Euonymus japonica* (Celastraceae). Powder. Mp 188°. $[\alpha]_D^{25}$ +26.2 (c, 0.37 in $CHCl_3$).

1-Benzoyl, 2,6,8,9,14-penta-Ac: ***Euojaponin F***
[128397-43-3]
$C_{43}H_{49}NO_{18}$ 867.856
Alkaloid from root bark of *Euonymus japonica* (Celastraceae). Powder. Mp 142°. $[\alpha]_D^{25}$ +9 (c, 0.3 in $CHCl_3$).

2-Benzoyl, 1,8,9,14-tetra-Ac: ***Wilforzine***
[37239-46-6]

$C_{41}H_{47}NO_{17}$ 825.819
Alkaloid from the roots of *Tripterygium wilfordii* (Celastraceae). Needles (Me_2CO/MeOH). Mp 177-178°. $[\alpha]_D^{25}$ +6 (Me_2CO).

2-Benzoyl, 1,6,8,9,14-penta-Ac: ***Wilforine***†
[11088-09-8]
$C_{43}H_{49}NO_{18}$ 867.856
Alkaloid from *Tripterygium wilfordii* and *Maytenus senegalensis* (Celastraceae). Shows insecticidal props. Plates (Me_2CO/MeOH). Mp 169-170°. $[\alpha]_D^{25}$ +30 (Me_2CO).

1,2-Dibenzoyl, 8,9,14-tri-Ac: ***Ebenifoline WII***
[150384-28-4]
$C_{46}H_{49}NO_{17}$ 887.89
Alkaloid from stem bark of *Maytenus ebenifolia* (Celastraceae). Amorph. solid. Mp 118-122°. $[\alpha]_D$ +61.1 (c, 0.18 in $CHCl_3$).

1,2-Dibenzoyl, 6,8,9,14-tetra-Ac: ***Ebenifoline WI***
[143439-09-2]
$C_{48}H_{51}NO_{18}$ 929.927
Alkaloid from stem bark of *Maytenus ebenifolia* and *Peritassa compta* (Celastraceae). Amorph. solid (EtOH). Mp 222-224°. $[\alpha]_D$ +47.1 (c, 0.29 in $CHCl_3$).

2,6-Dibenzoyl, 1,8,9,14-tetra-Ac: ***Cangorinine WI***
[155964-94-6]
$C_{48}H_{51}NO_{18}$ 929.927
Alkaloid from root bark of *Maytenus ilicifolia* (Celastraceae). Amorph. solid. Mp 149-151°. $[\alpha]_D$ +14.4 (c, 0.57 in $CHCl_3$).

2-O-(3-Furancarbonyl), 1,6,8,9,14-penta-Ac: ***Wilforgine***
[37239-47-7]
$C_{41}H_{47}NO_{19}$ 857.818
Alkaloid from the roots of *Tripterygium hypoglaucum* (Celastraceae). Shows insecticidal props. Plates (Me_2CO/MeOH). Mp 211°. $[\alpha]_D^{25}$ +25 (Me_2CO).

▶ LF0195500

1-O-(3-Pyridinecarbonyl), 2,6,8,9,14-penta-Ac: ***Laevisine B***
$C_{42}H_{48}N_2O_{18}$ 868.844
Alkaloid from the bark of *Maytenus laevis*. Amorph. solid. Mp 148-150°. $[\alpha]_D^{25}$ +31.2 (c, 0.1 in $CHCl_3$). λ_{max} 220 (log ϵ 4.2); 262 (log ϵ 3.74) (EtOH).

2-O-(3-Pyridinecarbonyl), 1,6,8,9,14-penta-Ac: ***Wilfornine****. 2-Debenzoyl-2-nicotinoylwilforine*
[112899-84-0]
$C_{42}H_{48}N_2O_{18}$ 868.844
Alkaloid from *Tripterygium wilfordii* (Celastraceae). Immunosuppressant. Mp 177-178°.

6-O-(3-Pyridinecarbonyl), 1-benzoyl, 2,8,9,14-tetra-Ac: ***Euojaponin G***
[128397-45-5]
$C_{47}H_{50}N_2O_{18}$ 930.915
Constit. of *Euonymus japonica*.

6-O-(3-Pyridinecarbonyl), 2-benzoyl, 1,8,9,14-tetra-Ac: ***Cangorinine WII***
[155944-25-5]
$C_{47}H_{50}N_2O_{18}$ 930.915
Alkaloid from bark of *Maytenus ilicifolia* (Celastraceae). Amorph. solid. Mp 153-158°. $[\alpha]_D$ +7.9 (c, 0.24 in $CHCl_3$).

2-O-(1,6-Dihydro-1-methyl-6-oxo-3-pyridinecarbonyl), 1,6,8,9,14-penta-Ac:
$C_{43}H_{50}N_2O_{19}$ 898.87
Alkaloid from the stem bark of *Hippocratea excelsa*. Powder. Mp 178-182°. $[\alpha]_D$ +23.6 (c, 1 in $CHCl_3$). λ_{max} 269 (log ϵ 4.3) (no solvent reported).

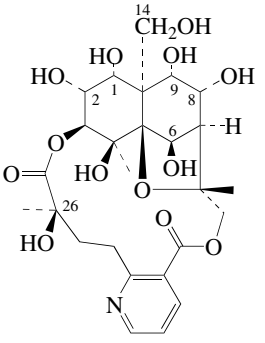
8-Ketone, 1,2,6,9,14-penta-Ac: ***Evonimine****. Isoevonine*
[41758-54-7]
$C_{36}H_{43}NO_{17}$ 761.732
Alkaloid from the seeds of *Euonymus europaeus* and *Euonymus sieboldianus* (Celastraceae). Amorph. $[\alpha]_D$ +21 (c, 1.5 in $CHCl_3$). $[\alpha]_D$ +30.5 (c, 0.9 in EtOH).

9-Deoxy, 8-ketone, 6,14-di-Ac: ***Austronine***
$C_{30}H_{37}NO_{13}$ 619.621
Alkaloid from the roots of *Austroplenckia populnea* var. *ovata*. Amorph. solid ($CHCl_3$/MeOH). Mp 169-172°.

8-Epimer, 1-benzoyl, 2,6,8,9,14-penta-Ac: ***Euoverrine B***
$C_{43}H_{49}NO_{18}$ 867.856
Alkaloid from the root barks of *Euonymus fortunei* and *Euonymus verrucosides*. Amorph. powder. Mp 148-149°. $[\alpha]_D^{24}$ +10.9 (c, 0.55 in $CHCl_3$). λ_{max} 232 ; 266 (MeOH).

Beroza, M. *et al., J.A.C.S.*, 1951, **73**, 3656; 1952, **74**, 1585; 1953, **75**, 2136 (*isol, uv, Wilforzine*)
Tin-Wa, M. *et al., J. Nat. Prod.*, 1971, **34**, 79 (*isol*)
Dubrakova, L. *et al., Coll. Czech. Chem. Comm.*, 1973, **38**, 2132 (*Evonimine*)
Sugiura, K. *et al., Tet. Lett.*, 1973, 113 (*Evonimine, Euonine*)
Zhang, Z. *et al., Jiegou Huaxue*, 1986, **5**, 83; *CA*, **107**, 237078x (*Wilforgine*)
He, Z. *et al., Huaxue Xuebao*, 1987, **45**, 510; *CA*, **107**, 130906p
Deng, F. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 1987, **29**, 523; *CA*, **108**, 87738s (*Wilfornine*)
Han, B.H. *et al., Arch. Pharmacal Res.*, 1989, **12**, 306-309; *CA*, **113**, 55832e (*Euojaponins*)
Ya, L. *et al., Can. J. Chem.*, 1990, **68**, 371 (*Wilfornine*)
Han, B.H. *et al., J. Nat. Prod.*, 1990, **53**, 909 (*Euojaponins*)
Shi, J. *et al., Chin. Sci. Bull.*, 1991, **36**, 1266-1270; *CA*, **116**, 255847n (*Euonine, cryst struct*)
Itokawa, H. *et al., Heterocycles*, 1992, **34**, 885 (*Ebenifoline WI*)
Deng, F. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 1992, **34**, 618-621 (*Wilforjine*)
Klass, J. *et al., J. Nat. Prod.*, 1993, **56**, 946 (*Ebenifoline WI*)
Itokawa, H. *et al., J.C.S. Perkin 1*, 1993, 1247 (*Ebenifoline WII*)
Shirota, O. *et al., Heterocycles*, 1994, **38**, 383 (*Cangorinines*)
Piacente, S. *et al., J. Nat. Prod.*, 1999, **62**, 161-163 (*Laevisine B*)
Furukawa, M. *et al., Phytochemistry*, 2002, **59**, 767-777 (*Hippocratea excelsa alkaloid*)
Jinbo, Z. *et al., Phytochemistry*, 2002, **61**, 699-704 (*Euoverrine B*)
De Sousa, J.R. *et al., J. Nat. Prod.*, 2006, **69**, 1225-1227 (*Austronine, 2- and 8-Deacetyleuonine*)
Horiuch, M. *et al., J. Nat. Prod.*, 2006, **69**, 1271-1274 (*Tripfordine B*)

Per(deacyl)wilfortrine P-253



$C_{26}H_{35}NO_{13}$ 569.561
CAS numbering shown; some authors' schemes differ.

▶ LF0195550

1,6,8,9,14-Penta-Ac: ***Wilforidine****. Tripfordine A*
[98618-76-9]
$C_{36}H_{45}NO_{18}$ 779.747
Alkaloid from *Tripterygium wilfordii*. Amorph. solid. Mp 172-174°. $[\alpha]_D^{25}$ +4.5 (c, 0.03 in MeOH). λ_{max} 260 (log ϵ 2.91) (MeOH).

1,2,6,8,9,14-Hexa-Ac: ***Alatusinine***
[89945-79-9]
$C_{38}H_{47}NO_{19}$ 821.785
Alkaloid from the fruits of *Euonymus alatus* (Celastraceae). Amorph. solid. $[\alpha]_D^{26}$ -16 (c, 0.6 in $CHCl_3$).

2-Benzoyl, 6,8,9,14-tetra-Ac: 1-Deacylwilfordine
[128666-73-9]
$C_{41}H_{47}NO_{18}$ 841.818
Alkaloid from *Tripterygium wilfordii* (Celastraceae). Mp 182-184°.

2-Benzoyl, 1,6,8,9,14-penta-Ac: ***Wilfordine***
[37239-51-3]
$C_{43}H_{49}NO_{19}$ 883.855
Alkaloid from *Tripterygium wilfordii* and *Euonymus alatus* (Celastraceae). Shows insecticidal props. Cryst. (Me_2CO/MeOH). Mp 170-176°. $[\alpha]_D^{22}$ +5 (c, 5.0 in $CHCl_3$). λ_{max} 232 (ϵ 22600); 271 (ϵ 4400) (MeOH) (Berdy).

6-Benzoyl, 1,8,9,14-tetra-Ac: ***5-Benzoyl-5-deacetylwilfordidine***
[183008-61-9]
$C_{41}H_{47}NO_{18}$ 841.818
Alkaloid from stemwood of *Maytenus buchananii*. Cryst. (EtOAc). Mp 187-189°.

26-Benzoyl, 1,2,8,9,14-penta-Ac: ***Wilfornine B***
$C_{43}H_{49}NO_{19}$ 883.855
Alkaloid from *Tripterygium wilfordii*. Amorph. powder. $[\alpha]_D$ -17.8 (c, 0.8 in

MeOH). λ_{max} 228 (log ϵ 4.17); 265 (log ϵ 3.6) (MeOH).

26-Benzoyl, 1,2,6,8,9,14-hexa-Ac: ***Wilfornine A***
$C_{45}H_{51}NO_{20}$ 925.893
Alkaloid from *Tripterygium wilfordii*. Amorph. powder. $[\alpha]_D$ -41.9 (c, 1 in MeOH). λ_{max} 228 (log ϵ 4.27); 267 (log ϵ 3.68) (MeOH).

1,2-Dibenzoyl, 6,8,9,14-tetra-Ac: ***Chiapenine ES I***
$C_{48}H_{51}NO_{19}$ 945.926
Alkaloid from the leaves of *Maytenus chiapensis*. Lacquer. $[\alpha]_D^{20}$ +15 (c, 1.3 in $CHCl_3$). λ_{max} 201 (log ϵ 4.57); 229 (log ϵ 4.5); 268 (log ϵ 3.82) (EtOH).

6,26-Dibenzoyl, 1,2,8,9,14-penta-Ac: ***Wilfornine C***
$C_{50}H_{53}NO_{20}$ 987.963
Alkaloid from *Tripterygium wilfordii*. Amorph. powder. $[\alpha]_D$ -50 (c, 1.1 in MeOH). λ_{max} 231 (log ϵ 4.51); 267 (log ϵ 3.74) (MeOH).

*2-*O*-(3-Furancarbonyl), 6,8,9,14-tetra-Ac:* ***1-Desacetylwilfortrine***
[128638-35-7]
$C_{39}H_{45}NO_{19}$ 831.78
Alkaloid from *Tripterygium wilfordii* (Celastraceae). Mp 179-182°.

*2-*O*-(3-Furancarbonyl), 1,6,8,9,14-penta-Ac:* ***Wilfortrine***
[37239-48-8]
$C_{41}H_{47}NO_{20}$ 873.817
Alkaloid from the roots of *Tripterygium wilfordii* (Celastraceae). Shows insecticidal props. Plates (Me_2CO/MeOH). Mp 237.5-238°. $[\alpha]_D^{25}$ +10 (Me_2CO).

*2-*O*-(3-Furancarbonyl), 26-*O*-benzoyl, 1,6,8,9,14-penta-Ac:* ***Triptonine A***†. *18-*O*-Benzylwilfortrine*
[168009-84-5]
$C_{48}H_{51}NO_{21}$ 977.925
Alkaloid from root bark of *Tripterygium wilfordii* (Celastraceae). Needles (EtOH). Mp 163-164°. $[\alpha]_D^{27}$ -36 (c, 0.21 in Me_2CO). λ_{max} 224 ; 264 (MeOH) (Berdy).

26-(3-Furancarbonyl), 1,2,6,8,9,14-hexa-Ac: ***Wilfornine D***
$C_{43}H_{49}NO_{21}$ 915.854
Alkaloid from *Tripterygium wilfordii*. Amorph. powder. $[\alpha]_D$ -21.1 (c, 0.8 in MeOH).

*2,26-Bis-*O*-(3-furancarbonyl), 1,6,8,9,14-penta-Ac:* ***Triptonine B***†. *18-*O*-(3-Furoyl)wilfortrine*
[168009-85-6]
$C_{46}H_{49}NO_{22}$ 967.887
Alkaloid from root bark of *Tripterygium wilfordii* (Celastraceae). Needles (EtOH). Mp 160-161°. $[\alpha]_D^{30}$ -13 (c, 0.20 in Me_2CO).

2-(1,6-Dihydro-1-methyl-6-oxo-3-pyridinecarbonyl), 1,6,8,9,14-penta-Ac: ***Emarginatinine***
[156280-99-8]
$C_{43}H_{50}N_2O_{20}$ 914.869
Alkaloid from *Maytenus emarginata*. Cytotoxic agent. Needles. Mp 238-241°. $[\alpha]_D$ -130 (c, 0.3 in $CHCl_3$). λ_{max} 266 (ϵ 12600) (MeOH).

8-Ketone, 1,6,9,14-tetra-Ac: ***Chiapenine ES IV***
$C_{34}H_{41}NO_{17}$ 735.694
Alkaloid from the leaves of *Maytenus chiapensis*. Lacquer. $[\alpha]_D^{20}$ +7.9 (c, 0.43 in $CHCl_3$). λ_{max} 201 (log ϵ 4.11); 220 (log ϵ 3.89); 264 (log ϵ 3.52) (EtOH).

8-Ketone, 1,2,6,9,14-penta-Ac: ***Wilfornine E***
$C_{36}H_{43}NO_{18}$ 777.732
Alkaloid from *Tripterygium wilfordii*. Amorph. powder. $[\alpha]_D$ +1.1 (c, 0.5 in MeOH). λ_{max} 222 (log ϵ 3.82); 267 (log ϵ 3.45) (MeOH).

8-Ketone, 1-benzoyl, 6,9,14-tri-Ac: ***Chiapenine ES III***
$C_{39}H_{43}NO_{17}$ 797.765
Alkaloid from the leaves of *Maytenus chiapensis*. Lacquer. $[\alpha]_D^{20}$ +29.3 (c, 0.41 in $CHCl_3$). λ_{max} 201 (log ϵ 4.11); 230 (log ϵ 3.98); 269 (log ϵ 3.37) (EtOH).

8-Ketone, 2-benzoyl, 1,9,14-tri-Ac: ***Neoalatamine***
[89945-78-8]
$C_{39}H_{43}NO_{17}$ 797.765
Alkaloid from the fruits of *Euonymus alata* forma *striatus* (Celastraceae). Amorph. solid. $[\alpha]_D^{26}$ +42 (c, 1.1 in $CHCl_3$).

8-Ketone, 2-benzoyl, 1,6,9,14-tetra-Ac: ***Alatamine***
[41855-33-8]
$C_{41}H_{45}NO_{18}$ 839.802
Alkaloid from *Euonymus alatus* (Celastraceae). Cryst. (MeOH). Mp 185-193°. $[\alpha]_D^{22}$ +44 (c, 1.08 in $CHCl_3$).

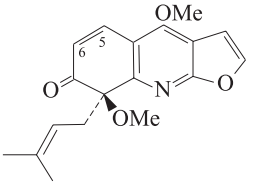
8-Ketone, 1,2-dibenzoyl, 6,9,14-tri-Ac: ***Chiapenine ES II***
$C_{46}H_{47}NO_{18}$ 901.873
Alkaloid from the leaves of *Maytenus chiapensis*. Lacquer. $[\alpha]_D^{20}$ +60.9 (c, 4.71 in $CHCl_3$). λ_{max} 201 (log ϵ 4.5); 230 (log ϵ 4.5); 269 (log ϵ 3.8) (EtOH).

26-Deoxy: see Per(deacyl)wilforine, P-252

Beroza, M. *et al., J.A.C.S.*, 1951, **73**, 3656; 1952, **74**, 1585 (*Wilfordine, Wilfortrine, isol, ir, uv*)
Shizuri, Y. *et al., Tet. Lett.*, 1973, 741 (*Wilfordine*)
Yamada, K. *et al., Tetrahedron*, 1978, **34**, 1915 (*Alatamine*)
Ishiwata, H. *et al., Phytochemistry*, 1983, **22**, 2839 (*Alatusinine, Neoalatamine*)
He, Z. *et al., Huaxue Xuebao*, 1985, **43**, 593; *CA*, **103**, 157321y (*Wilforidine*)
He, Z. *et al., Huaxue Xuebao*, 1989, **47**, 178; *CA*, **111**, 74780m
Ya, L. *et al., Can. J. Chem.*, 1990, **68**, 371 (*1-Deacetylwilfortrine, 1-Deacetylwilfordine*)
Kuo, Y.H. *et al., Phytochemistry*, 1994, **35**, 803-807 (*Emarginatinine*)
Morota, T. *et al., Phytochemistry*, 1995, **39**, 1219 (*Triptonines*)
Sekar, K.V.S. *et al., Planta Med.*, 1996, **62**, 368-370 (*5-Benzoyl-5-deacetylwilforidine*)
Duan, H. *et al., J. Nat. Prod.*, 2001, **64**, 582-587 (*Wilfornines*)
Nunez, M.J. *et al., J. Nat. Prod.*, 2004, **67**, 14-18 (*Chiapenines*)
Horiuch, M. *et al., J. Nat. Prod.*, 2006, **69**, 1271-1274 (*Wilforidine*)

Perfamine P-254

4,8-Dimethoxy-8-(3-methyl-2-butenyl)-furo[2,3-b]quinolin-7(8H)-one, 9CI



(R)–form

$C_{18}H_{19}NO_4$ 313.352

(R)-form [59557-95-8]
Alkaloid from *Haplophyllum perforatum* and *Haplophyllum glabrinum* (Rutaceae). Prisms (hexane/Me_2CO). Mp 175-178° (164-165°). $[\alpha]_{Hg}^{26.5}$ -20 (c, 1.00 in $CHCl_3$). $[\alpha]_D$ +53.4.

5,6-Dihydro: ***Dihydroperfamine***
[105705-87-1]
$C_{18}H_{21}NO_4$ 315.368
Alkaloid from the roots of *Haplophyllum glabrinum* (Rutaceae). Prisms (hexane/Me_2CO). Mp 179-183°. $[\alpha]_{Hg}^{26.5}$ -640 (c, 1.00 in $CHCl_3$).

(S)-form

5,6-Dihydro: ***(+)-Dihydroperfamine***
[141902-17-2]
$C_{18}H_{21}NO_4$ 315.368
Alkaloid from *Haplophyllum tuberculatum* (Rutaceae).

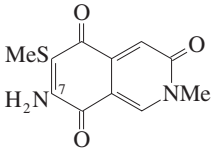
(ξ)-form

5-Hydroxy: ***Sarcomegistine***
[161068-67-3]
$C_{18}H_{19}NO_5$ 329.352
Alkaloid from aerial parts of *Sarcomelicope megistophylla*.

Razakova, D.M. *et al., Khim. Prir. Soedin.*, 1975, **11**, 812; *Chem. Nat. Compd. (Engl. Transl.)*, 1975, **11**, 828 (*isol*)
Grina, J.A. *et al., J.O.C.*, 1982, **47**, 2648 (*struct*)
Rózsa, Zs. *et al., Phytochemistry*, 1986, **25**, 2005 (*isol, uv, pmr, cmr, ms, deriv*)
Al-yahah, M.A. *et al., Int. J. Pharm.*, 1991, **29**, 268; *CA*, **117**, 23293w (*(+)-Dihydroperfamine*)
Skaltsounis, A.L. *et al., Nat. Prod. Lett.*, 1995, **5**, 281 (*Sarcomegistine*)

Perfragilin A P-255

7-Amino-2-methyl-6-(methylthio)-3,5,8(2H)-isoquinolinetrione, 9CI
[129722-94-7]



$C_{11}H_{10}N_2O_3S$ 250.278
Alkaloid from the bryozoan *Membranipora perfragilis*. Cytotoxic agent. Red needles. Mp 219-220°. λ_{max} 212 (ϵ 12616); 248 (ϵ 7000); 330 (ϵ 15140); 362

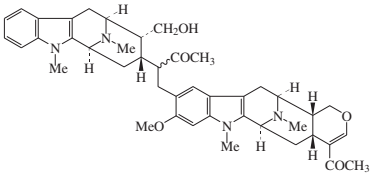
(ϵ 8785); 440 (ϵ 2224) (EtOH) (Berdy).

Deamino: ***2-Methyl-6-(methylthio)-3,5,8(2H)-isoquinolinetrione***
$C_{11}H_9NO_3S$ 235.263
Isol. from bryozoan *Biflustra perfragilis*. Yellow powder. λ_{max} 367 (ϵ 10594) (no solvent reported).

7-Deamino, 7-(methylthio): 2-Methyl-6,7-bis(methylthio)-3,5,8(2H)-isoquinolinetrione, 9CI. ***Perfragilin B***
[146764-79-6]
$C_{12}H_{11}NO_3S_2$ 281.356
Alkaloid from *Membranipora perfragilis* and *Biflustra perfragilis*. Cytotoxic (considerably more potent than Perfragilin A). Red needles or orange plates. Mp 163° Mp 170-172°. Also obt. as a metastable green powder. λ_{max} 214 (ϵ 14941); 235 (ϵ 10504); 332 (ϵ 8227); 382 (ϵ 5946); 465 (ϵ 1848) (EtOH) (Berdy).

Rizvi, S.K. *et al., Acta Cryst. C*, 1993, **49**, 151 (*cryst struct*)
Blackman, A.J. *et al., Aust. J. Chem.*, 1993, **46**, 213-220 (*7-deamino, 7-deamino-7-methylthio, isol, cryst struct*)
Choi, Y.-H. *et al., J. Nat. Prod.*, 1993, **56**, 1431-1433 (*isol, uv, ir, pmr, cmr, ms, struct*)
Ferreira, V.F. *et al., Tetrahedron*, 2003, **59**, 1349-1357 (*synth*)

Perhentinine P-256

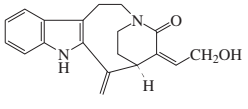


$C_{43}H_{52}N_4O_5$ 704.908
Alkaloid from the bark of *Alstonia macrophylla*. Cytotoxic. Light yellow oil. $[\alpha]_D$ -61 (c, 1.2 in $CHCl_3$). λ_{max} 231 (log ϵ 4.25); 298 (log ϵ 3.45) (EtOH).

Kam, T.-S. *et al., Tetrahedron*, 2004, **60**, 3957-3966 (*isol, pmr, cmr, ms*)

Pericidine P-257

[926927-39-1]



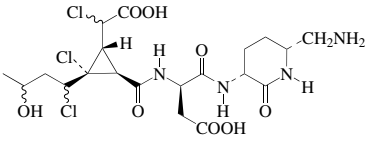
Absolute Configuration

$C_{19}H_{20}N_2O_2$ 308.379
Indole alkaloid prob. most closely related to the Apparicine group. Alkaloid from the stem bark of *Kopsia arborea*. Oil. $[\alpha]_D$ +85 (c, 0.12 in $CHCl_3$). λ_{max} 223 (log ϵ 4.4); 283 (log ϵ 3.76) (EtOH).

Lim, K.-H. *et al., Helv. Chim. Acta*, 2007, **90**, 31-35 (*isol, pmr, cmr, ms*)

Periconin B P-258

[145569-96-6]

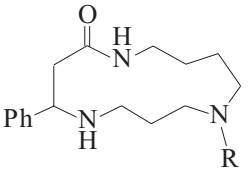


$C_{20}H_{29}Cl_3N_4O_8$ 559.829
Prod. by the fungal pathogen *Periconia circinata*. λ_{max} 215 (ϵ 1300) (H_2O).

Macko, V. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 1992, **89**, 9574-9578 (*isol, uv, cd, ir, pmr, cmr*)

Perimargine P-259

[64667-16-9]



R undetermined. MW of R group 149, total MW 423. Alkaloid from the leaves of *Peripterygia marginata* (Celastraceae). Amorph. Obt. only in admixture with Dihydroperimargine.

Dihydro: ***Dihydroperimargine***
Alkaloid from the leaves of *Peripterygia marginata* (Celastraceae). Amorph. MW 425.

Hocquemiller, R. *et al., Tetrahedron*, 1977, **33**, 645-651 (*isol, uv, ir, pmr, ms*)

Perimivine P-260

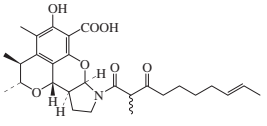
[1360-37-8]

$C_{21}H_{22}N_2O_4$ 366.416
Vobasine alkaloid. Struct. unknown. Alkaloid from the roots of *Catharanthus lanceus* and *Catharanthus roseus* (Apocynaceae). Needles (MeOH), blades ($CHCl_3$). Mp 292-293° dec. $[\alpha]_D^{25}$ -98.71 (c, 1 in $CHCl_3$). Isomer of Perivine, P-268.

Svoboda, G.H. *et al., J. Nat. Prod.*, 1964, **27**, 203-213 (*isol, ir*)
Blomster, R.N. *et al., J. Nat. Prod.*, 1964, **27**, 480-485 (*isol*)

Perinadine A P-261

[866924-03-0]



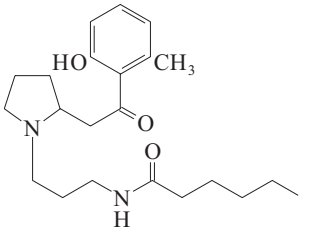
Absolute Configuration

$C_{28}H_{37}NO_7$ 499.603
Prod. by a marine-derived *Penicillium citrinum* strain N055. Amorph. solid. $[\alpha]_D^{22}$ -33 (c, 1 in $CHCl_3$). λ_{max} 215 (ϵ 16000); 252 (ϵ 3600); 315 (ϵ 1700) (MeOH).

Sasaki, M. *et al., Org. Lett.*, 2005, **7**, 4261-4264 (*isol, pmr, cmr, ms*)

Peripentadenine P-262

N-*[3-[2-[2-(2-Hydroxy-6-methylphenyl)-2-oxoethyl]-1-pyrrolidinyl]propyl]-hexanamide, 9CI*
[87201-37-4]



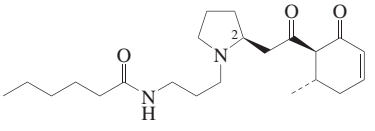
$C_{22}H_{34}N_2O_3$ 374.522
Major alkaloid from the bark and leaves of *Peripentadenia mearsii* (Elaeocarpaceae).

N-*Dehexanoyl,* N-*butanoyl:* ***Dinorperipentadenine***
[100595-84-4]
$C_{20}H_{30}N_2O_3$ 346.469
Minor alkaloid from the bark of *Peripentadenia mearsii* (Elaeocarpaceae). Yellow gum.

Lamberton, J.A. *et al., J. Nat. Prod.*, 1983, **46**, 235-247 (*isol, uv, ir, pmr, ms, struct*)
Bick, I.R.C. *et al., Tetrahedron*, 1985, **41**, 5627-5631 (*Dinorperipentadenine, cmr*)
Michael, J.P. *et al., Tetrahedron*, 1996, **52**, 2199-2216 (*Peripentadenine, Dinorperipentadenine, synth*)
Katavic, P.L. *et al., J. Nat. Prod.*, 2007, **70**, 1946-1950 (*isol, pmr, cmr*)

Peripentonine A P-263

[960511-38-0]



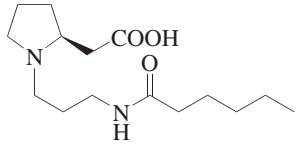
$C_{22}H_{36}N_2O_3$ 376.538
Tautomeric. Alkaloid from the leaves of *Peripentadenia mearsii*. Yellow gum (as trifluoroacetate). $[\alpha]_D^{23}$ +19 (c, 0.13 in MeOH) (trifluoroacetate). Isol. as a mixt. with Peripentonine B to which data refers. λ_{max} 226 (log ϵ 3.45); 339 (log ϵ 2.81) (MeOH) (trifluoroacetate).

2-Epimer: ***Peripentonine B***
[960511-39-1]
$C_{22}H_{36}N_2O_3$ 376.538
Alkaloid from the leaves of *Peripentadenia mearsii*.

Katavic, P.L. *et al., J. Nat. Prod.*, 2007, **70**, 1946-1950 (*isol, pmr, cmr, ms*)

Peripentonine C P-264

[960511-40-4]



$C_{15}H_{28}N_2O_3$ 284.398

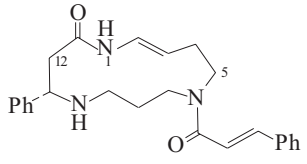
Alkaloid from the leaves of *Peripentadenia mearsii*. Yellow gum (as trifluoroacetate). $[\alpha]_D^{23}$ -5.8 (c, 0.07 in MeOH) (trifluoroacetate). λ_{max} 204 (log ϵ 2.62); 269 (log ϵ 2.05); 339 (log ϵ 1.73) (MeOH) (trifluoroacetate).

Katavic, P.L. *et al., J. Nat. Prod.*, 2007, **70**, 1946-1950 (*isol, pmr, cmr*)

Periphylline P-265

9-(1-Oxo-3-phenyl-2-propenyl)-4-phenyl-1,5,9-triazacyclotridec-12-en-2-one, 9CI. 9-Cinnamoyl-4-phenyl-1,5,9-triazacyclotridec-12-en-2-one

[11082-66-9]



$C_{25}H_{29}N_3O_2$ 403.523

Alkaloid from leaves of *Peripterygia marginata* (Celastraceae). Cryst. (MeOH or Me_2CO). Mp 165°. $[\alpha]_D^{20}$ -291 (c, 1 in $CHCl_3$).

2,3-Dihydro: ***Dihydroperiphylline***
[65094-32-8]
$C_{25}H_{31}N_3O_2$ 405.539
Alkaloid from the leaves of *Peripterygia marginata* (Celastraceae). $[\alpha]_D^{23}$ +3.5 (c, 0.4 in $CHCl_3$) (synthetic). The originally reported opt. rotn. value (-21°) for natural material is erroneous.

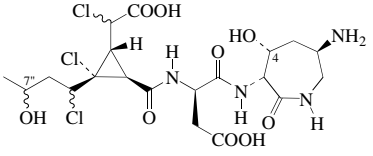
(Z)-Cinnamoyl isomer: ***Isoperiphylline***
[11082-67-0]
$C_{25}H_{29}N_3O_2$ 403.523
Alkaloid from the leaves of *Peripterygia marginata* (Celastraceae). Cryst. (Me_2CO). Mp 197°. $[\alpha]_D^{20}$ -120 (c, 1 in $CHCl_3$).

2Z-Isomer: ***Neoperiphylline***
[65094-31-7]
$C_{25}H_{29}N_3O_2$ 403.523
Alkaloid from the leaves of *Peripterygia marginata* (Celastraceae). Amorph. $[\alpha]_D^{20}$ -34 (c, 0.5 in $CHCl_3$). Struct. revised in 2003.

Hocquemiller, R. *et al., Tetrahedron*, 1977, **33**, 645-651; 653-656 (*isol, uv, ir, pmr, ms, struct*)
Wasserman, H.H. *et al., J.A.C.S.*, 1981, **103**, 461-462 (*Dihydroperiphylline, synth, ir, pmr*)
Kaseda, T. *et al., Tet. Lett.*, 1989, **30**, 4539-4542 (*Dihydroperiphylline, synth*)
Begley, M.J. *et al., J.C.S. Perkin 1*, 1993, 2027-2046 (*Dihydroperiphylline, synth*)
Ishihara, K. *et al., Synlett*, 1995, 41-42 (*Dihydroperiphylline, synth*)
Matsuyama, H. *et al., Chem. Lett.*, 2000, 1104-1105 (*Dihydroperiphylline, synth*)
Sergeyev, S.A. *et al., Helv. Chim. Acta*, 2002, **85**, 161-167; 2003, **86**, 465-473 (*Dihydroperiphylline, Neoperiphylline, struct, synth*)

Peritoxin A P-266

[145585-98-4]



$C_{20}H_{29}Cl_3N_4O_9$ 575.829

Prod. by the fungal pathogen *Periconia circinata*. Mycotoxin. λ_{max} 215 (ϵ 4400) (H_2O).

4-Deoxy: ***Periconin A***
[145586-00-1]
$C_{20}H_{29}Cl_3N_4O_8$ 559.829
Prod. by *Periconia circinata*. λ_{max} 215 (ϵ 1500) (H_2O). λ_{max} 215 (ϵ 11100) (H_2O) (Berdy).

7″-Deoxy: ***Peritoxin B***
[145585-99-5]
$C_{20}H_{29}Cl_3N_4O_8$ 559.829
Prod. by *Periconia circinata*. Mycotoxin. λ_{max} 215 (ϵ 2100) (H_2O).

Macko, V. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 1992, **89**, 9574-9578 (*isol, uv, ir, cd, pmr, cmr*)
Dunkle, L.D. *et al., Can. J. Bot.*, Suppl. 1, 1995, **73**, 444-452 (*rev*)

Perividine P-267

[1360-38-9]

$C_{20}H_{22}N_2O_4$ 354.405

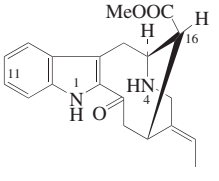
Poss. a 2-acylindole alkaloid. Struct. unknown. Minor alkaloid from *Catharanthus roseus* (Apocynaceae). Blades (MeOH). Mp 271-279° dec. λ_{max} 240 (ϵ 17800); 286 (ϵ 29600); 315 (ϵ 15600) (EtOH) (Berdy).

Svoboda, G.H. *et al., J. Nat. Prod.*, 1963, **26**, 243-246 (*isol, ir, uv*)
Weisbach, J.A. *et al., J. Nat. Prod.*, 1964, **27**, 374-388

Perivine P-268

Methyl 4-demethyl-3-oxovobasan-17-oate, 9CI

[2673-40-7]



Absolute Configuration

$C_{20}H_{22}N_2O_3$ 338.405

Alkaloid from *Catharanthus roseus*, *Catharanthus longifolius*, *Gabunia eglandulosa* and several *Tabernaemontana* spp. Antineoplastic agent. Mod. cytotoxic agent. Local anaesthetic potentiator. Active against gram-positive bacteria. Mp 180-181°. $[\alpha]_D$ -121 (c, 1 in $CHCl_3$). Log P 1.97 (calc). λ_{max} 314 (E1%/1cm 2.67) (MeOH) (Berdy).

▶ ZB1740000

N^4*-Formyl:* ***Periformyline****. Methyl 3,22-dioxovobasan-17-oate, 9CI*
[2779-18-2]
$C_{21}H_{22}N_2O_4$ 366.416
Alkaloid from *Catharanthus lanceus*, *Catharanthus roseus* and *Catharanthus trichophyllus*. Cryst. (MeOH). Mp 206-209° dec. λ_{max} 240 (ϵ 16600); 315 (ϵ 20800) (EtOH) (Berdy).

N^4*-Me:* ***Vobasine***
[2134-83-0]
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from *Voacanga africana* and a wide range of spp. in the Apocynaceae. Weak CNS depressant, also showing analgesic and antipyretic action. Mp 111-113°. $[\alpha]_D^{23}$ -158 (c, 1 in $CHCl_3$).

N^4*-Me; hydrochloride:* Mp 245-248° dec. $[\alpha]_D^{22}$ -120 (c, 1 in MeOH).

N^4*-Me,* N^4*-oxide:* ***Vobasine*** $\mathbf{N^4}$***-oxide***
[51666-18-3]
$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from the leaves and stem bark of *Ervatamia polyneura* (Apocynaceae). $[\alpha]_D$ -130 (c, 1 in MeOH).

N^1,N^4*-Di-Me:* ***Ochropamine***
[2134-97-6]
$C_{22}H_{26}N_2O_3$ 366.459
Alkaloid from *Cabucala erythrocarpa*, *Striolaria* sp. and the stem bark of *Ochrosia poweri*. Rhombs (MeOH aq.). Mp 134°. $[\alpha]_D^{22}$ -158 (c, 1 in Me_2CO). λ_{max} 243 ; 315 (EtOH) (Berdy).

▶ LD_{50} (mus, ivn) 39 mg/kg.

N^1,N^4*-Di-Me, picrate:*
Bright yellow plates (Me_2CO/EtOH). Mp 225° dec.

11-Methoxy, N^1,N^4*-di-Me:* ***Ochropine***
[2299-25-4]
$C_{23}H_{28}N_2O_4$ 396.485
Alkaloid from the stem bark of *Ochrosia poweri* (Apocynaceae). Rhombs (MeOH aq.). Mp 146°. $[\alpha]_D^{22}$ -229 (c, 1 in Me_2CO).

11-Methoxy, N^1,N^4*-di-Me, picrate:*
Orange-yellow rhombs (Me_2CO/EtOH). Mp 235° dec.

16-Epimer, N^4*-Me:* ***16-Epivobasine***
[6836-00-6]
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from leaves and stems of *Ervatamia polyneura* (Apocynaceae). Mp 175-178°. $[\alpha]_D$ -50 (c, 0.66 in $CHCl_3$).

16-Epimer, parent acid, N^4*-Me:* ***16-Epivobasinic acid***
[13281-24-8]
$C_{20}H_{22}N_2O_3$ 338.405
Alkaloid from *Tabernaemontana psychotrifolia* (Apocynaceae). Needles (MeOH). Mp 195° dec.

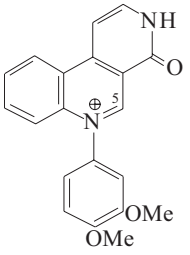
19,20-Dihydro, N^4*-Me:* see Dregamine, D-935

Svoboda, G.H. *et al., J. Pharm. Sci.*, 1958, **47**, 834 (*isol, uv, ir*)
Budzikiewicz, H. *et al., Bull. Soc. Chim. Fr.*, 1963, 1899 (*ms*)

Renner, U. *et al., Helv. Chim. Acta*, 1963, **46**, 2186 (*Vobasine, isol, uv, ir, ms, struct*)
Cava, M.P. *et al., Tet. Lett.*, 1963, 53 (*pmr*)
Douglas, B. *et al., Aust. J. Chem.*, 1964, **17**, 246 (*Ochropamine, Ochropine*)
Jaggi, H. *et al., Chimia*, 1964, **18**, 173 (*Vobasine, cryst struct*)
Gorman, M. *et al., Tet. Lett.*, 1964, 3105 (*uv, pmr, struct*)
Maloney, E.M. *et al., J. Pharm. Sci.*, 1965, **54**, 1166 (*Periformyline, isol, uv, ir, ms, struct, synth*)
Abraham, D.J. *et al., Tet. Lett.*, 1965, 317 (*Periformyline, struct*)
Battersby, A.R. *et al., Chem. Comm.*, 1966, 810; 812; 888; 890 (*biosynth*)
Burnell, R.H. *et al., Can. J. Chem.*, 1971, **49**, 307 (*16-Epivobasinic acid*)
Bláha, K. *et al., Coll. Czech. Chem. Comm.*, 1973, **38**, 929 (*Periformyline, Vobasine, Ochropamine, cd, uv, abs config*)
Taylor, W.I. *et al., Catharanthus Alkaloids*, Marcel Dekker, 1975, (*rev*)
Ahond, A. *et al., J.O.C.*, 1976, **41**, 1878 (*Vobasine, Ochropamine, cmr*)
Kingston, D.G.I. *et al., J. Pharm. Sci.*, 1978, **67**, 272 (*cytotoxicity*)
Hernandez, N.M.R. *et al., Rev. Cubana Med. Trop.*, 1979, **31**, 199-204 (*activity*)
Sakai, S. *et al., Chem. Pharm. Bull.*, 1980, **28**, 3454 (*Ochropine, synth, abs config*)
Mukhopadhyay, S. *et al., J. Nat. Prod.*, 1981, **44**, 335 (*Periformyline, isol, uv, ir, pmr, ms*)
Clivio, P. *et al., Phytochemistry*, 1990, **29**, 3007 (*Vobasine N^4-oxide, 16-Epivobasine*)
Pereira, P.S. *et al., Quim. Nova*, 2008, **31**, 20-24 (*Vobasine, pmr, cmr*)

Perloline P-269

6-(3,4-Dimethoxyphenyl)-3,4-dihydro-4-oxobenzo[c][2,7]naphthyridinium(1+), 9CI
[7344-94-7]

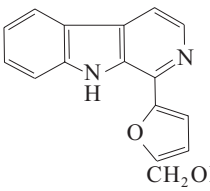


$C_{20}H_{17}N_2O_3^{\oplus}$ 333.366
Alkaloid from *Lolium perenne* (perennial rye grass) (Poaceae). Mp 270° dec. (slow heat)(as perchlorate) Mp 280-290° dec. (rapid heat)(perchlorate). pK_a 8.54 (18°). Forms a covalent hydroxide.

Jeffreys, J.A.D. *et al., J.C.S.*, 1964, 4504 (*isol, uv, pmr, ir, struct*)
Ferguson, G. *et al., J.C.S.(B)*, 1966, 454 (*cryst struct*)
Ridley, A.B. *et al., Aust. J. Chem.*, 1987, **40**, 631 (*synth*)

Perlolyrine P-270

5-(9H-Pyrido[3,4-b]indol-1-yl)-2-furanmethanol, 9CI. 2-(β-Carbolin-1-yl)-5-hydroxymethylfuran. Tribulusterine. Alkaloid YS
[29700-20-7]
[234750-74-4]



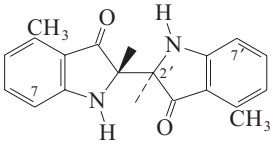
$C_{16}H_{12}N_2O_2$ 264.283
Struct. of Tribulusterine shown to be same as Perlolyrine in 2004. Alkaloid from *Lolium perenne, Lolium chuanxiong* and *Tribulus terrestris*. Found in Korean ginseng and Japanese soy sauce. Yellow cryst. Mp 183° (179-181°). λ_{max} 233 (sh) ; 252 (sh) ; 288 ; 366 ; 375 (MeOH).

Hydrochloride:
Yellow needles. Mp 204-233° dec.

Jeffreys, J.A.D. *et al., J.C.S.(C)*, 1970, 1091 (*isol, uv, ir, pmr, ms, cryst struct, synth*)
Nakatsuka, S. *et al., Tet. Lett.*, 1986, **27**, 3399 (*isol, pmr*)
Gessner, W.P. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1988, **321**, 95 (*synth, uv*)
Bracher, F. *et al., Annalen*, 1992, 1315 (*synth, ir, pmr, cmr, ms*)
Bremner, J.B. *et al., Aust. J. Chem.*, 2004, **57**, 273-276 (*synth, pmr, cmr, struct*)

Peronatin B P-271

1,1′,2,2′-Tetrahydro-2,2′,4,4′-tetramethyl[2,2′-bi-3H-indole]-3,3′-dione, 9CI
[157536-39-5]



$C_{20}H_{20}N_2O_2$ 320.39
Isol. from injured fruit bodies of *Collybia peronata* (sometimes also present in small amounts in intact specimens). Yellow cryst. Mp 213° dec.

7-Hydroxy, 7′-methoxy: ***7-Hydroxy-7′-methoxyperonatin B***
[157201-78-0]
$C_{21}H_{22}N_2O_4$ 366.416
Isol. from injured fruit bodies of *Tricholoma scalpturatum* (not present in intact specimens). Yellow solid. Mp 203-204°.

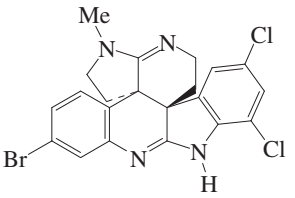
7,7′-Dimethoxy: ***7,7′-Dimethoxyperonatin B***
[157201-79-1]
$C_{22}H_{24}N_2O_4$ 380.443
From injured fruit bodies of *Tricholoma scalpturatum* (not present in intact specimens). Yellow solid. Mp 224-225°.

2′-Epimer: ***Peronatin A***
[157536-38-4]
$C_{20}H_{20}N_2O_2$ 320.39
From injured fruit bodies of *Collybia peronata* (sometimes also present in small amounts in intact specimens). Yellow oil.

Pang, Z. *et al., J. Nat. Prod.*, 1994, **57**, 852-857 (*isol, uv, ir, pmr, cmr, struct*)
Stachel, S.J. *et al., J.O.C.*, 1997, **62**, 4756-4762 (*synth*)

Perophoramidine P-272

[474779-75-4]



$C_{21}H_{17}BrCl_2N_4$ 476.202
Alkaloid from the Philippine ascidian *Perophora namei*. Cytotoxic. Amorph. off-white solid. λ_{max} 220 (ϵ 13300); 240 (sh) (ϵ 10300); 298 (sh) (ϵ 5800); 308 (ϵ 6800); 338 (ϵ 4600) (MeOH).

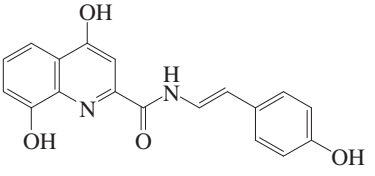
Verbitski, S.M. *et al., J.O.C.*, 2002, **67**, 7124-7126 (*isol, uv, cd, pmr, cmr, ms*)
Fuchs, J.R. *et al., J.A.C.S.*, 2004, **126**, 5068-5069 (*synth*)

Perosine P-273

Struct. unknown. Alkaloid from the roots of *Catharanthus roseus* (Apocynaceae). Blades (MeOH)(as sulfate salt). Mp 219-225° (sulfate).

Svoboda, G. *et al., J. Nat. Prod.*, 1963, **26**, 141 (*isol, uv, ir*)

Perspicamide A P-274



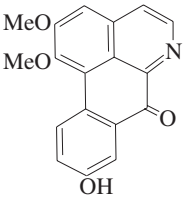
$C_{18}H_{14}N_2O_4$ 322.32
Isol. from *Botrylloides perspicum*. Pale yellow solid. λ_{max} 230 (ϵ 15830); 246 (ϵ 16000); 314 (ϵ 6620); 349 (ϵ 7460) (MeOH).

Z-Isomer: ***Perspicamide B***
$C_{18}H_{14}N_2O_4$ 322.32
Isol. from *Botrylloides perspicum*. Pale yellow solid. λ_{max} 221 (ϵ 17725); 246 (ϵ 16645); 315 (ϵ 6800); 347 (ϵ 7680) (MeOH).

McKay, M.J. *et al., J. Nat. Prod.*, 2005, **68**, 1776-1778 (*isol, pmr, cmr, ms*)

Peruvianine P-275

9-Hydroxy-1,2-dimethoxy-7H-dibenzo[de,g]quinolin-7-one, 9CI
[78416-87-2]



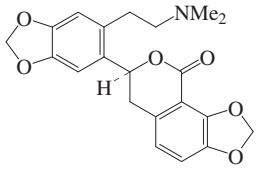
$C_{18}H_{13}NO_4$ 307.305

Alkaloid from the woody stems of *Telitoxicum peruvianum* (Menispermaceae). Red-orange prisms (MeOH). Mp 252-255°.

Menachery, M.D. *et al., J. Nat. Prod.*, 1981, **44**, 320 (*isol, uv, pmr, struct*)
Buck, K.T. *et al., Heterocycles*, 1993, **36**, 2489 (*synth*)

Peshawarine P-276

*7-[6-[2-(Dimethylamino)ethyl]-1,3-benzodioxol-5-yl]-6,7-dihydro-9*H*-1,3-dioxolo[4,5-*h*][2]benzopyran-9-one, 9CI*



(*S*)-*form*

$C_{21}H_{21}NO_6$ 383.4

(*S*)-*form* [61224-21-3]
Alkaloid from *Hypecoum parviflorum* (Papaveraceae). Cryst. (MeOH). Mp 190-191°. $[\alpha]_D^{25}$ -109 (c, 0.2 in MeOH).

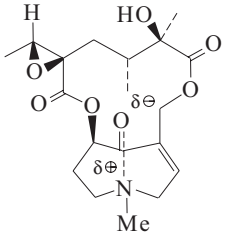
(±)-*form* [63950-18-5]
Synthetic. Cryst. (MeOH). Mp 196-198° (182-183°).

N-*Me:*
Cryst. (MeOH)(as iodide). Mp 210° (iodide).

Šimánek, V. *et al., Heterocycles*, 1977, **6**, 711 (*synth, ms*)
Shamma, M. *et al., Tetrahedron*, 1978, **34**, 635 (*isol, uv, cd, ir, pmr, ms, struct, synth*)
Chrzanowska, M. *et al., Tetrahedron*, 1986, **42**, 6021 (*synth, ir, pmr, ms*)
Fitzgerald, J.J. *et al., J.O.C.*, 1994, **59**, 4117 (*synth, pmr, cmr*)

Petasitenine P-277

Fukinotoxin
[60102-37-6]



$C_{19}H_{27}NO_7$ 381.425

Cyclic ester of Otonecine, O-136 and Petasinecic acid. Stereoisomer of Otosenine, O-137. Alkaloid from *Petasites japonicus* (sweet coltsfoot) (Asteraceae). Cryst. (C_6H_6/hexane or Me_2CO). Mp 129-130°. $[\alpha]_D$ +63.8 ($CHCl_3$).

► Carcinogen, hepatotoxin. SE5085000

Ac: ***Neopetasitenine***
[60409-51-0]
[61303-14-8]

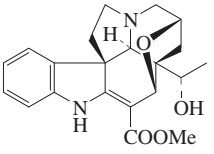
$C_{21}H_{29}NO_8$ 423.462
Alkaloid from *Petasites japonicus* (sweet coltsfoot) (Asteraceae). Amorph. solid; cryst. (as hydrochloride). Mp 212° (as hydrochloride). $[\alpha]_D^{19}$ +49 (c, 1.19 in EtOH).

[60132-19-6 , 60409-53-2]

Yamada, K. *et al., Chem. Lett.*, 1976, 461 (*isol, struct*)
Furuya, T. *et al., Chem. Pharm. Bull.*, 1976, **24**, 1120 (*isol, ir, pmr, cd, cryst struct*)
Iwao, H. *et al., J. Natl. Cancer Inst.*, 1977, **58**, 1155; *CA*, **87**, 976u (*tox*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, PCQ750

Petchicine P-278

[125547-41-3]



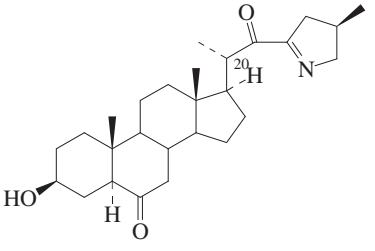
Absolute Configuration

$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from the stem bark of *Petchia ceylanica* (Apocynaceae). Amorph. solid. $[\alpha]_D$ -380 (c, 0.1*M* MeOH).

Atta-ur-Rahman, *et al., Phytochemistry*, 1989, **28**, 3221 (*isol, uv, ir, pmr, cmr, ms, struct*)

Petisidine P-279

*21-(3,4-Dihydro-3-methyl-2*H*-pyrrol-5-yl)-3-hydroxy-20-methylpregnane-6,21-dione, 9CI. 3-Hydroxy-23,26-epimino-cholest-23(*N*)-ene-6,22-dione*
[79805-74-6]



$C_{27}H_{41}NO_3$ 427.626
Alkaloid from *Petilium raddeana* and bulbs of *Fritillaria persica* (Liliaceae). Cryst. (Me_2CO). Mp 150-152°. $[\alpha]_D^{29}$ +18.4 (c, 0.50 in $CHCl_3$).

O-β-D-Glucopyranoside: [145867-02-3]
$C_{33}H_{51}NO_8$ 589.768
From bulbs of *Fritillaria persica* (Liliaceae). Amorph. powder + $1H_2O$. $[\alpha]_D^{29}$ -19.6 (c, 0.50 in MeOH).

3-Ketone: ***Petisidinone***
[107316-97-2]

$C_{27}H_{39}NO_3$ 425.61
Alkaloid from aerial parts of *Petilium raddeana* (Liliaceae). Cryst. (hexane/Me_2CO). Mp 217-219°. $[\alpha]_D$ 0 (c, 0.169 in $CHCl_3$).

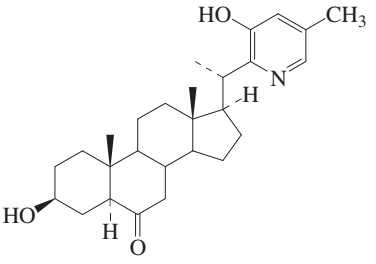
20-Epimer: [145920-88-3]
$C_{27}H_{41}NO_3$ 427.626
Isol. from the bulbs of *Fritillaria persica* (Liliaceae). Amorph. powder. $[\alpha]_D^{29}$ +1.6 (c, 0.50 in $CHCl_3$).

20-Epimer, O-β-D-glucopyranoside: [145867-03-4]
$C_{33}H_{51}NO_8$ 589.768
From bulbs of *Fritillaria persica* (Liliaceae). Needles + $2H_2O$ (MeOH). Mp 214-215°. $[\alpha]_D^{29}$ -13.2 (c, 0.50 in MeOH).

Nabiev, A. *et al., Khim. Prir. Soedin.*, 1982, 528-529; *Chem. Nat. Compd. (Engl. Transl.)*, 1983, **18**, 502-503 (*isol, uv, ms, pmr, struct*)
Nabiev, A. *et al., Khim. Prir. Soedin.*, 1986, 620-622; *Chem. Nat. Compd. (Engl. Transl.)*, 1986, **22**, 583-584 (*Petisidinone*)
Ori, K. *et al., Phytochemistry*, 1992, **31**, 4337-4341 (*isol, uv, ir, pmr, cmr, ms, struct*)

Petisidinine P-280

3,23-Dihydroxy-16,28-secosolanida-22,24,26(28)-trien-6-one, 9CI. 3-Hydroxy-20-(5-hydroxy-3-methyl-6-pyridinyl)-pregnan-6-one
[89783-63-1]



$C_{27}H_{39}NO_3$ 425.61
Alkaloid from aerial parts and bulbs of *Petasites raddeana* (Asteraceae). Cryst. (MeOH). Mp 290-292°.

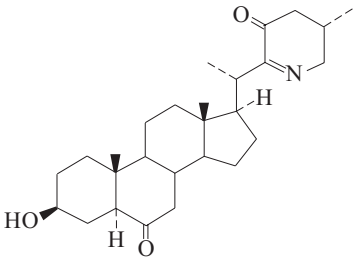
3-Ac: ***Verdinine***
$C_{29}H_{41}NO_4$ 467.647
Alkaloid from *Veratrum lobelianum*. Cryst. (Me_2CO). Mp 265-267°. Has not been interconverted with Petisidinine.

3-Epimer: ***Fetisinine***
[571167-92-5]
$C_{27}H_{39}NO_3$ 425.61
Alkaloid from the bulbs of *Fritillaria imperialis*. Amorph. powder. $[\alpha]_D^{25}$ -118 (c, 0.1 in MeOH). λ_{max} 202 (log ϵ 3.85); 220 (log ϵ 3.38); 287 (log ϵ 3.48) (MeOH).

Nakhatov, I. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1983, **19**, 710-712 (*Petisinidine*)
Shakirov, R. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1995, **31**, 79-82 (*Verdinine*)
Akhtar, M.N. *et al., Phytochemistry*, 2003, **63**, 115-122 (*Fetisinine*)

Petisine P-281

3-Hydroxy-16,28-secosolanid-22(28)-ene-6,23-dione, 9CI. Petizine
[79805-75-7]



$C_{27}H_{41}NO_3$ 427.626
Alkaloid from *Petilium raddeana* (Liliaceae). Cryst. (Me_2CO). Mp 221-222°.

3-O-β-D-Glucopyranosyl: ***Petisinine****. Petizinine*
[80981-47-1]
$C_{33}H_{51}NO_8$ 589.768
Alkaloid from *Petilium raddeana* (Liliaceae). Cryst. (MeOH). Mp 232-234°. $[\alpha]_D$ -35 (c, 0.48 in $CHCl_3$).

Nakhatov, I. *et al., Khim. Prir. Soedin.*, 1981, **17**, 616; *Chem. Nat. Compd. (Engl. Transl.)*, 1981, **17**, 450
Moiseeva, G.P. *et al., Khim. Prir. Soedin.*, 1986, **22**, 345-347; *Chem. Nat. Compd. (Engl. Transl.)*, 1986, **22**, 319-321 (*config*)

Petomine P-282

[1360-40-3]

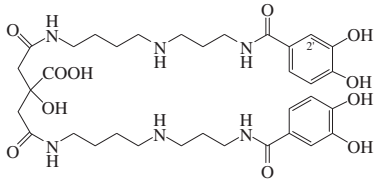
$C_{17}H_{21}NO_6$ 335.356

Amaryllidaceae alkaloid. Struct. unknown. Isol. from *Narcissus* sp. and *Amaryllis parkeri* (Amaryllidaceae). Cryst. (Me_2CO or MeOH/Et_2O). Mp 253-254° dec. $[\alpha]_D^{25}$ 0 (c, 0.1 in $CHCl_3$).

Boit, H.-G. *et al., Chem. Ber.*, 1957, **90**, 2197-2202; 1959, **92**, 2578-2582 (*isol*)

Petrobactin P-283

[545434-89-7]



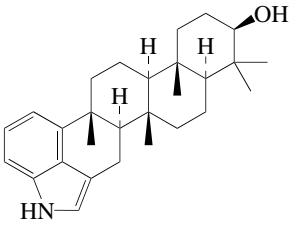
$C_{34}H_{50}N_6O_{11}$ 718.803
Struct. revised in 2003; formerly assigned as bis(2,3-dihydroxybenzoyl). Prod. by *Marinobacter hydrocarbonoclasticus*. Photoreactive siderophore.

2′-Sulfo: ***Petrobactin sulfonate***
$C_{34}H_{50}N_6O_{14}S$ 798.867
Prod. by *Marinobacter hydrocarbonoclasticus*. Amorph. solid. $[\alpha]_D^{20}$ -2.5 (c, 0.013 in DMSO). λ_{max} 229 (log ε 3.95); 253 (log ε 3.83); 291 (log ε 3.74) (DMSO).

Barbeau, K. *et al., J.A.C.S.*, 2002, **124**, 378-379 (*isol, pmr, cmr, ms*)
Bergeron, R.J. *et al., Tetrahedron*, 2003, **59**, 2007-2014 (*synth, struct*)
Hickford, S.J.H. *et al., J. Nat. Prod.*, 2004, **67**, 1897-1899 (*Petrobactin sulfonate*)
Gardner, R.A. *et al., J.O.C.*, 2004, **69**, 3530-3537; 2007, **72**, 3158 (*synth, pmr, cmr*)
Abergel, R.J. *et al., J.A.C.S.*, 2008, **130**, 2124-2125 (*coord chem*)
Koppisch, A.T. *et al., J.O.C.*, 2008, **73**, 5759-5765 (*biosynth*)

Petromindole P-284

[198992-51-7]

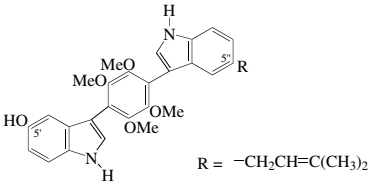


$C_{28}H_{39}NO$ 405.622
Alkaloid from the ascostromata of *Petromyces muricatus*. Plates (Me_2CO). Mp >300°. λ_{max} 226 (log ε 4.24); 282 (log ε 3.65); 293 (log ε 3.56) (dioxan).

Ooike, M. *et al., Chem. Pharm. Bull.*, 1997, **45**, 1694-1696 (*isol, uv, ir, pmr, cmr, cryst struct*)

Petromurin A P-285

[194608-26-9]



$C_{31}H_{32}N_2O_5$ 512.604
Isol. from the ascostromata of *Petromyces muricatus*. Microcryst. ($CDCl_3$). Mp 100° dec. λ_{max} 225 (log ε 4.66); 278 (log ε 4.32) (MeOH).

5′-Deoxy: ***Petromurin B***
[194608-28-1]
$C_{31}H_{32}N_2O_4$ 496.605
Isol. from the ascostromata of *Petromyces muricatus*. Microcryst. (MeOH). Mp 200°. λ_{max} 224 (log ε 4.76); 282 (log ε 4.39) (MeOH).

Ooike, M. *et al., Can. J. Chem.*, 1997, **75**, 625-628 (*isol, uv, ir, pmr, cmr*)

Petromurin C P-286

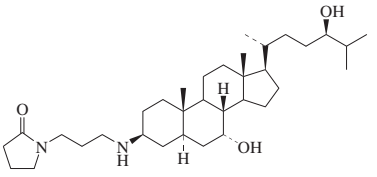
[194608-29-2]
As Petromurin A, P-285 with
R = H
$C_{26}H_{24}N_2O_5$ 444.486
Isol. from the ascostromata of *Petromyces muricatus*. Microcryst. ($CDCl_3$). Mp 240° dec. λ_{max} 223 (log ε 4.76); 281 (log ε 4.33) (MeOH).

5″-Methoxy: ***Petromurin D***
[194608-30-5]
$C_{27}H_{26}N_2O_6$ 474.512
Isol. from the ascostromata of *Petromyces muricatus*. Microcryst. ($CDCl_3$). Mp 127-128°. λ_{max} 223 (log ε 4.7); 278 (log ε 4.36) (MeOH).

Ooike, M. *et al., Can. J. Chem.*, 1997, **75**, 625-628 (*isol, uv, ir, pmr, cmr*)

Petromyzonamine P-287

[871332-07-9]



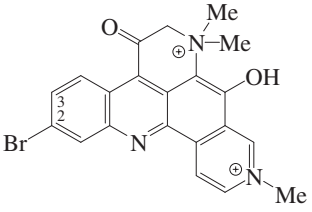
$C_{34}H_{60}N_2O_3$ 544.86

7,24-Disulfate: ***Petromyzonamine disulfate***
[871543-67-8]
$C_{34}H_{60}N_2O_9S_2$ 704.988
Pheromone of the sea lamprey (*Petromyzon marinus*).

Sorensen, P.W. *et al., Nat. Chem. Biol.*, 2005, **1**, 324-328 (*isol*)
Hoye, T.R. *et al., J.O.C.*, 2007, **72**, 7544-7550 (*pmr, cmr, struct*)

Petrosamine P-288

[113403-19-3]



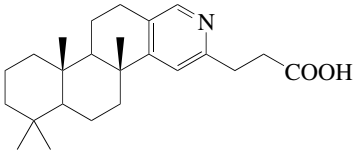
$C_{21}H_{18}BrN_3O_2^{2\oplus}$ 424.296
Minor struct. revision in 2005. Originally descr. as the 5-oxo monocation tautomer. Props. given refer to the chloride, which should presumably be reassigned as dichloride (or chloride-hydrochloride). Alkaloidal pigment from the marine sponge *Petrosia* sp. Dark green cryst. (CH_2Cl_2/MeOH) (as dichloride). Mp 330° (chloride). λ_{max} 284 (ε 32000); 345 (ε 10900); 574 (ε 4700) (H_2O). λ_{max} 289 (ε 42600); 346 (ε 12400); 414 (sh) (ε 6900); 595 (ε 5300) (MeOH).

Debromo, 3-bromo: ***Petrosamine B***
$C_{21}H_{18}BrN_3O_2^{2\oplus}$ 424.296
Alkaloid from the Australian sponge *Oceanapia* sp. Weak inhibitor of aspartyl semialdehyde dehydrogenase. Blue solid (as bis(trifluoroacetate)). λ_{max} 205 (ε 34610); 288 (ε 30460); 378 (ε 15845); 609 (ε 4385) (MeOH) (bis(trifluoroacetate)).

Molinski, T.F. *et al., J.O.C.*, 1988, **53**, 1340-1341 (*isol, uv, ir, pmr, cmr, cryst struct*)
Carroll, A.R. *et al., J. Nat. Prod.*, 2005, **68**, 804-806 (*tautom, Petrosamine B*)

Petrosaspongiolide L P-289

[194148-99-7]



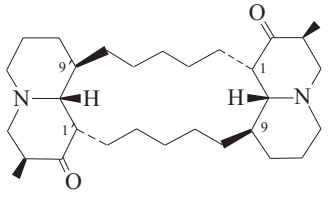
$C_{24}H_{35}NO_2$ 369.546
Alkaloid from the sponge *Petrosaspongia nigra*. Cytotoxic agent. $[\alpha]_D$ -33.3 (c, 0.001 in MeOH). λ_{max} 210 (ϵ 5545); 266 (ϵ 2375) (no solvent reported).

N-*(Carboxymethyl)*: ***Spongidine C***
$C_{26}H_{38}NO_4^{\oplus}$ 428.591
Alkaloid from a *Spongia* sp. Inhibits human phospholipase A_2. $[\alpha]_D$ -10 (c, 0.01 in MeOH). Counterion not specified. CAS no. not found 14CI.

Paloma, L.G. *et al., Tetrahedron*, 1997, **53**, 10451-10458 (*isol, uv, pmr, cmr*)
De Marino, S. *et al., J. Nat. Prod.*, 2000, **63**, 323-326 (*Spongidine C*)

Petrosine P-290

[84679-41-4]



$C_{30}H_{50}N_2O_2$ 470.737
Alkaloid from the Papua-New Guinean marine sponge *Petrosia seriata* and from an Okinawan sponge *Xestospongia* sp. Ichthyotoxin. Mp 215-216°. Petrosine C and Petrosine D are synthetic diastereoisomers of Petrosin A and B.

1,9-Diepimer: ***Petrosine B***
[95189-04-1]
$C_{30}H_{50}N_2O_2$ 470.737
From *Petrosia seriata*. Ichthyotoxin. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. $[\alpha]_D$ -12 (c, 0.79 in CH_2Cl_2).

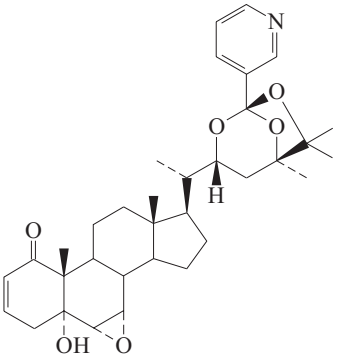
1,3,9,10-Tetraepimer: ***Petrosine A***
[95189-03-0]
$C_{30}H_{50}N_2O_2$ 470.737
From *Petrosia seriata* and the *Xestospongia* sp. Ichthyotoxin. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Struct. revised in 1988. Originally described as the 1,1′,9,9′-tetraepimer. Opt. inactive (*meso* compd.). The low opt. rotn. originally reported refers to a sample contaminated with traces of Petrosine B.

3,3′,9,10-Tetraepimer: ***Xestosine A***
[290820-78-9]
$C_{30}H_{50}N_2O_2$ 470.737
Alkaloid from *Xestospongia exigua*. Prisms (CH_2Cl_2/hexane). Mp 175-177°.

Braekman, J.C. *et al., Tet. Lett.*, 1982, **23**, 4277-4280 (*isol*)
Braekman, J.C. *et al., Bull. Soc. Chim. Belg.*, 1984, **93**, 941-944; 1988, **97**, 519-524 (*isol, pmr, cmr, cryst struct*)
Kobayashi, M. *et al., Tet. Lett.*, 1989, **30**, 4149-4152 (*isol, pmr, cmr, struct, Petrosine, Petrosine A*)
Heathcock, C.H. *et al., J.O.C.*, 1998, **63**, 5001-5012; 5013-5030 (*synth*)
Matzanke, N. *et al., Org. Prep. Proced. Int.*, 1998, **30**, 3-51 (*rev, synth*)
Iwagawa, T. *et al., J. Nat. Prod.*, 2000, **63**, 1310-1311 (*Xestosine A*)

Petunianine A P-291

[140447-10-5]

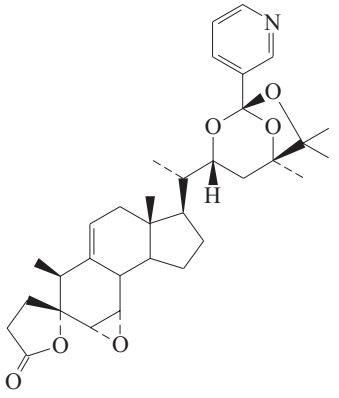


$C_{34}H_{45}NO_6$ 563.733
Alkaloid from the leaves of *Petunia inflata* (Solanaceae). Cryst. (heptane/EtOAc). Mp 198-200°. $[\alpha]_D$ +76 (c, 0.25 in $CHCl_3$).

Elliger, C.A. *et al., J.C.S. Perkin 1*, 1992, 5 (*isol, uv, ir, pmr, cmr, cryst struct*)
Elliger, C.A. *et al., Phytochemistry*, 1993, **33**, 471 (*isol, pmr, cmr*)

Petunianine B P-292

[140475-14-5]

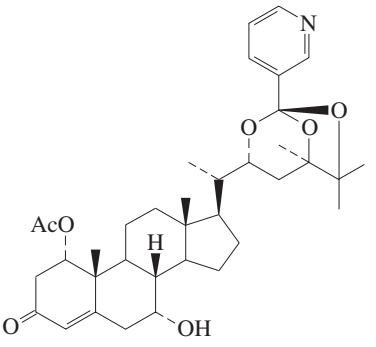


$C_{33}H_{43}NO_6$ 549.706
Alkaloid from the leaves of *Petunia inflata* (Solanaceae). Possesses insecticidal activity. Cryst. (EtOAc/2,3,3-trimethylpentane). Mp 260-262°. $[\alpha]_D$ +30 (c, 1 in $CHCl_3$).

Elliger, C.A. *et al., J.C.S. Perkin 1*, 1992, 5 (*isol, uv, ir, pmr, cmr, struct*)
Elliger, C.A. *et al., Phytochemistry*, 1993, **33**, 471 (*isol, pmr, cmr*)

Petunianine C P-293

[149725-28-0]

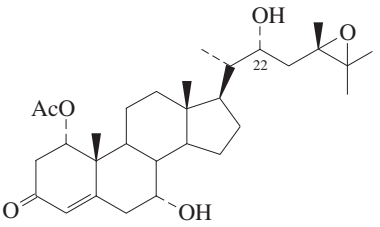


$C_{36}H_{49}NO_7$ 607.786
Constit. of *Petunia inflata*. Cryst. (EtOAc/heptane). Mp 182-184°. $[\alpha]_D$ +80 (c, 1 in $CHCl_3$).

Elliger, C.A. *et al., Phytochemistry*, 1993, **33**, 471 (*isol, pmr, cmr*)

Petuniasterone B P-294

1-Acetoxy-24,25-epoxy-7,22-dihydroxyergost-4-en-3-one
[114176-00-0]



$C_{30}H_{46}O_6$ 502.69
Constit. of *Petunia hybrida*. Cryst. (EtOAc/heptane). Mp 191-192°. $[\alpha]_D^{21}$ +88.8 ($CHCl_3$).

*22-Ac: Petuniasterone B 22-*O*-acetate*
$C_{32}H_{48}O_7$ 544.727
Constit. of *Petunia hybrida*. Cryst. (EtOAc/heptane). Mp 195-196°. $[\alpha]_D^{21}$ +39.5 ($CHCl_3$).

*22-*O*-[(Methylthio)carbonyl]acetyl: Petuniasterone-B 22-*O*-[(Methylthio)carbonyl]acetate*
$C_{34}H_{50}O_8S$ 618.83
Constit. of *Petunia hybrida*. Cryst. (MeOH). Mp 182-183°. $[\alpha]_D^{21}$ +65.7 ($CHCl_3$).

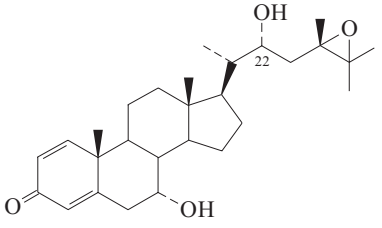
22-(3-Pyridinecarbonyl): Petuniasterone B 22-nicotinate
$C_{36}H_{49}NO_7$ 607.786
Constit. of *Petunia inflata*. $[\alpha]_D$ +68 (c, 1 in $CHCl_3$).

7,22-Bis-(3-pyridinecarbonyl): Petuniasterone B 7,22-dinicotinate
$C_{42}H_{52}N_2O_8$ 712.881
Constit. of *Petunia inflata*. $[\alpha]_D$ +21 (c, 0.45 in $CHCl_3$).

Elliger, C.A. *et al., J.C.S. Perkin 1*, 1988, 711
Elliger, C.A. *et al., Phytochemistry*, 1993, **33**, 471 (*derivs*)

Petuniasterone C P-295

24,25-Epoxy-7,22-dihydroxyergosta-1,4-dien-3-one, 9CI
[114176-01-1]



$C_{28}H_{42}O_4$ 442.637
Constit. of *Petunia hybrida*. Cryst. (EtOAc/heptane). Mp 183-185°. $[\alpha]_D^{21}$ +31.7 ($CHCl_3$).

22-Ac: [114176-06-6]
$C_{30}H_{44}O_5$ 484.675
Constit. of *Petunia hybrida*. Oil. Sol. MeOH. $[\alpha]_D^{21}$ +40.3 ($CHCl_3$). λ_{max} 246 (ϵ 21900) (MeOH) (Berdy).

7,22-Di-Ac:
$C_{32}H_{46}O_6$ 526.712
Constit. of *Petunia inflata*. $[\alpha]_D$ -27 (c, 0.13 in $CHCl_3$).

22-(Methylmalonyl): [201229-21-2]
$C_{32}H_{46}O_7$ 542.711
Constit. of *Petunia hybrida*.

22-O-[(Methylthio)carbonyl]acetyl: Petuniasterone C 22-O-[(methylthio)carbonyl]acetate
[114176-05-5]
$C_{32}H_{46}O_6S$ 558.778
Constit. of *Petunia hybrida*. Cryst. (EtOAc/heptane). Mp 141-142°. $[\alpha]_D^{21}$ +17.4 ($CHCl_3$).

22-(3-Pyridinecarbonyl): Petuniasterone C 22-nicotinate
$C_{34}H_{45}NO_5$ 547.733
Constit. of *Petunia inflata*. $[\alpha]_D^{20}$ +25 (c, 0.2 in $CHCl_3$).

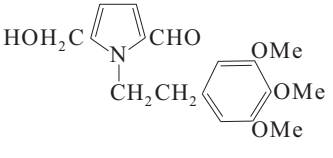
22-(3-Pyridinecarbonyl), 7-Ac: Petunaisterone C 22-nicotinate-7-acetate
$C_{36}H_{47}NO_6$ 589.77
Constit. of *Petunia inflata*. $[\alpha]_D$ -15 (c, 0.5 in $CHCl_3$).

7,22-Bis-(3-pyridinecarbonyl): Petuniasterone C 7,22-dinicotinate
$C_{40}H_{48}N_2O_6$ 652.829
Constit. of *Petunia inflata*. $[\alpha]_D$ +24 (c, 0.25 in $CHCl_3$).

Elliger, C.A. *et al., J.C.S. Perkin 1*, 1988, 711
Elliger, C.A. *et al., Phytochemistry*, 1993, **33**, 471 (*derivs*)
Moser, D. *et al., Pharm. Pharmacol. Lett.*, 1997, **7**, 148-151; *CA*, **128**, 99856e (*methylmalonyl*)

Peyoglunal P-296

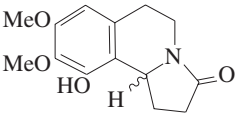
5-Hydroxymethyl-1-[2-(3,4,5-trimethoxyphenyl)ethyl]-2-pyrrolecarboxaldehyde



$C_{17}H_{21}NO_5$ 319.357
Alkaloid from mescal (*Lophophora williamsii*) (Cactaceae).

Kapadia, G.J. *et al., J. Pharm. Sci.*, 1970, **59**, 1699-1727 (*isol, rev*)

Peyoglutam P-297



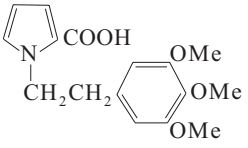
$C_{14}H_{17}NO_4$ 263.293
Alkaloid from peyote (*Lophophora williamsii*) (Cactaceae). Mp 217-219°.

Me ether: ***Mescalotam***
$C_{15}H_{19}NO_4$ 277.319
Alkaloid from *Lophophora williamsii* (Cactaceae).

Kapadia, G.J. *et al., Chem. Comm.*, 1968, 1688

Peyonine P-298

1-[2-(3,4,5-Trimethoxyphenyl)ethyl]-1H-pyrrole-2-carboxylic acid, 9CI
[19717-25-0]

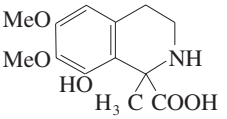


$C_{16}H_{19}NO_5$ 305.33
Alkaloid from peyote (*Lophophora williamsii* and other *Lophophora* spp.) (Cactaceae). Mp 131-133.5°.

Kapadia, G.J. *et al., J. Pharm. Sci.*, 1968, **57**, 191 (*isol, uv, ir, ms, pmr, synth*)

Peyoruvic acid P-299

1,2,3,4-Tetrahydro-8-hydroxy-6,7-dimethoxy-1-methyl-1-isoquinolinecarboxylic acid, 9CI
[29194-00-1]



$C_{13}H_{17}NO_5$ 267.281

(±)-*form*
Synthetic. Needles (MeOH). Mp 233-234° dec.

Me ether: [41303-72-4]
Synthetic. Mp 245-246° dec.

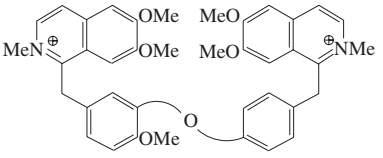
(ξ)-*form*
Trace component of *Lophophora williamsii* (peyote cactus) (Cactaceae). The nat. prod. was identified by glc-mass spectrometry in comparison with synthetic racemic matl.

Me ether: 1,2,3,4-Tetrahydro-6,7,8-trimethoxy-1-methyl-1-isoquinolinecarboxylic acid, 9CI. **O-*Methylpeyoruvic acid***
$C_{14}H_{19}NO_5$ 281.308
Trace component of *Lophophora williamsii* (Cactaceae).

Kapadia, G.J. *et al., J.A.C.S.*, 1970, **92**, 6943 (*isol, ir, pmr, ms, synth, struct*)
Kapadia, G.J. *et al., J. Het. Chem.*, 1973, **10**, 135 (*O-Methylpeyoruvic acid*)

Phaeantharine P-300

Pheantharine
[27670-80-0]



$C_{39}H_{40}N_2O_6^{2\oplus}$ 632.755
Struct. revised in 1983. Alkaloid from the bark of *Phaeanthus ebracteolatus* (Annonaceae). λ_{max} 228 ; 256 ; 282 ; 316 (MeOH) (Berdy). λ_{max} 228 ; 256 ; 282 ; 316 (MeOH-NaOH) (Berdy).

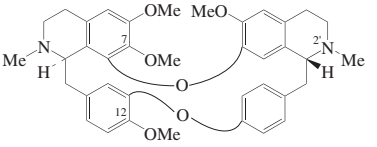
Diperchlorate:
Cryst. (EtOH). Mp 180-184°.

Dipicrate:
Yellow amorph. solid. Mp 124-130°.

v. Bruchhausen, F. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1957, **290**, 232 (*isol*)
Van Beek, T.A. *et al., J. Nat. Prod.*, 1983, **46**, 226 (*struct, uv, pmr, cmr, ms*)
Knabe, J. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1984, **317**, 92; 1986, **319**, 950 (*synth*)

Phaeanthine P-301

Pheanthine
[1263-79-2]



Absolute Configuration

$C_{38}H_{42}N_2O_6$ 622.76
Alkaloids covered by this entry (abs. config. *R,R*-) are enantiomeric with those included in Tetrandrine, T-286 and diastereomeric with those included under Isotetrandrine, I-328 (1*R*,1′*S*-) and Peinamine, P-171 (1*S*,1′*R*-). Alkaloid from *Gyrocarpus americanus* (*Gyrocarpus jacquini*), *Phaeanthus ebracteolatus*, an unidentified *Phaeanthus* sp. (possibly *Phaeanthus macropodus*), *Triclisia patens, Pycnarrhena manillensis* and *Pycnarrhena novoguineensis* (Gyrocarpacea, Annonaceae, Menispermaceae). Needles (Me_2CO or MeOH). Mp 222-224° (210°, 213-216°). $[\alpha]_D^{17}$ -284 (c, 4.015 in $CHCl_3$). Log P 8.3 (uncertain value) (calc). λ_{max} 218 (ϵ 31600); 240 (sh) (ϵ 15800); 282 (ϵ 12600) (MeOH) (Derep).
▶ LD_{50} (mus, ivn) 60 mg/kg. SF6850000

Dipicrate: Mp 263° dec. (*in vacuo*).

$N^{2'}$-*α-Oxide:* ***Phaeanthine 2′α-N-oxide***
$C_{38}H_{42}N_2O_7$ 638.759
Alkaloid from roots and stems of *Pycnarrhena manillensis* (Menispermaceae). Needles (Me_2CO). Mp 193-195°.

$[\alpha]_D^{27}$ -253 (c, 0.17 in $CHCl_3$). λ_{max} 282 (log ϵ 3.95) (MeOH).

$N^2,N^{2'}$-*Di-de-Me:* ***2,2′-Bisnorphaeanthine***
[110360-02-6]
$C_{36}H_{38}N_2O_6$ 594.706
Alkaloid from *Albertisia* cf. *Albertisia papuana* (Menispermaceae). $[\alpha]_D$ -272 (c, 0.1 in $CHCl_3$).

$N^2,N^{2'}$-*Di-Me:* Mp 267-268° dec. (as diiodide).

O^6-*De-Me:* ***Gyroamericine***
[102487-17-2]
$C_{37}H_{40}N_2O_6$ 608.733
Alkaloid from the stem bark of *Gyrocarpus americanus* (Hernandiaceae). Cryst. (MeOH). Mp 210°. $[\alpha]_D$ -238 (c, 1 in $CHCl_3$).

O^7-*De-Me:* ***Limacine***
[10172-02-8]
$C_{37}H_{40}N_2O_6$ 608.733
Alkaloid from *Limacia cuspidata, Limacia oblonga, Cyclea barbata, Pycnarrhena longifolia, Pycnarrhena novoguineensis, Colubrina faralaotra, Arcangelisia flava, Curarea candicans* and from a *Phaeanthus* sp. (possibly *Phaeanthus macropodus*) (Menispermaceae, Annonaceae). Cryst. (C_6H_6/Me_2CO). Mp 154-156°. $[\alpha]_D$ -212 ($CHCl_3$). λ_{max} 284 (MeOH).

O^7-*De-Me,* N^2-*β-oxide:* ***Limacine 2β-N-oxide***
[99883-66-6]
$C_{37}H_{40}N_2O_7$ 624.732
Alkaloid from the roots of *Curarea candicans* (Menispermaceae). $[\alpha]_D$ -191 (c, 0.09 in $CHCl_3$).

O^7-*De-Me,* $N^{2'}$-*α-oxide:* ***Limacine 2′α-N-oxide***
[99877-67-5]
$C_{37}H_{40}N_2O_7$ 624.732
Alkaloid from the roots of *Curarea candicans* (Menispermaceae). $[\alpha]_D$ -170 (c, 0.16 in $CHCl_3$).

O^7-*De-Me,* $N^{2'}$-*β-oxide:* ***Limacine 2′β-N-oxide***
[99877-66-4]
$C_{37}H_{40}N_2O_7$ 624.732
Alkaloid from the roots of *Curarea candicans* (Menispermaceae). $[\alpha]_D$ -154 (c, 0.1 in $CHCl_3$).

O^7-*De-Me,* N^2-*de-Me:* ***2-Norlimacine***
$C_{36}H_{38}N_2O_6$ 594.706
Alkaloid from *Caryomene olivascens* (Menispermaceae). $[\alpha]_D$ -193 (c, 0.13 in $CHCl_3$).

O^7-*De-Me,* $N^{2'}$-*de-Me:* ***2′-Norlimacine***
[152697-37-5]
$C_{36}H_{38}N_2O_6$ 594.706
Alkaloid from roots of *Cyclea barbata* (Menispermaceae). $[\alpha]_D$ -125 (c, 0.13 in $CHCl_3$).

O^{12}-*De-Me:* ***Pycnamine***
[569-16-4]
$C_{37}H_{40}N_2O_6$ 608.733
Alkaloid from the bark of *Gyrocarpus americanus* (*Gyrocarpus jacquini*), the roots of *Pycnarrhena manillensis*, the stems of *Pycnarrhena novoguineensis*, and the stems and roots of *Triclisia patens* (Hernandiaceae, Menispermaceae). Cryst. (EtOH). Mp 186-187°. $[\alpha]_D^{25}$ -283 ($CHCl_3$).

O^{12}-*De-Me, dipicrate:*
Amorph. solid + $2H_2O$. Mp 218-220°.

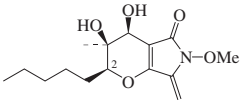
O^{12}-*De-Me,* $N^2,N^{2'}$-*di-Me:*
Prisms + $6H_2O$ (H_2O). Mp 248-250°. $[\alpha]_D^{30}$ -164.4 (c, 0.365 in MeOH).

O^7,O^{12}-*Di-de-Me:* ***Krukovine***
[57377-42-1]
$C_{36}H_{38}N_2O_6$ 594.706
Alkaloid from the stems of *Abuta splendida* and roots of *Pycnarrhena longifolia* (Menispermaceae). Prisms ($CHCl_3$). Mp 182-183° (173-178° dec.). $[\alpha]_D$ -180 (c, 0.06 in $CHCl_3$).

McKenzie, A.W. *et al., Aust. J. Chem.*, 1953, **6**, 180-185 (*Phaeanthine*)
Kidd, D.A.A. *et al., J.C.S.*, 1954, 669-677 (*struct*)
Row, L.R. *et al., J. Sci. Ind. Res., Sect. B*, 1962, **21**, 581-582; *CA*, **59**, 690h (*Phaeanthine*)
Battersby, A.R. *et al., J.C.S.*, 1965, 2239-2247 (*ord, cd*)
Johns, S.R. *et al., Aust. J. Chem.*, 1968, **21**, 1387-1388 (*Phaeanthine*)
Baldas, J. *et al., J.C.S. Perkin 1*, 1972, 592-596 (*ms*)
Saá, J.M. *et al., J.O.C.*, 1976, **41**, 317-319 (*Krukovine*)
Koike, L. *et al., Tet. Lett.*, 1979, 3765-3768 (*cmr*)
Bhakuni, D.S. *et al., Phytochemistry*, 1980, **19**, 2347-2350 (*biosynth*)
Moulis, C. *et al., J. Nat. Prod.*, 1981, **44**, 101-103 (*isol, uv, ir, pmr, ms*)
Siwon, J. *et al., Phytochemistry*, 1981, **20**, 323-325 (*Limacine*)
Lavault, M. *et al., J. Chem. Res., Synop.*, 1985, 248-249; *J. Chem. Res., Miniprint*, 1985, 2786-2793 (*Limacine oxides*)
Lavault, M. *et al., Chem. Pharm. Bull.*, 1986, **34**, 1148-1152 (*2-Norlimacine*)
Chalandre, M.C. *et al., J. Nat. Prod.*, 1986, **49**, 101-105 (*Gyroamericine*)
Lavault, M. *et al., Can. J. Chem.*, 1987, **65**, 343-347 (*Bisnorphaeanthine*)
Regalado, J.C. *et al., Heterocycles*, 1987, **26**, 2573-2578 (*Phaeanthine 2′-oxide*)
Guinaudeau, H. *et al., J. Nat. Prod.*, 1993, **56**, 1989-1992 (*2′-Norlimacine*)
Wang, G. *et al., Life Sci.*, 1994, **56**, 295 (*pharmacol, rev*)
Liu, Q.Y. *et al., J. Pharmacol. Exp. Ther.*, 1995, **273**, 32 (*pharmacol*)
Schiff, P.L. *et al., J. Nat. Prod.*, 1997, **60**, 934-953 (*Limacine, pmr, cmr*)
Mousa, S.A. *et al., Cardiovasc. Drug Rev.*, 1998, **16**, 48-61 (*rev, pharmacol*)

Phaeosphaeride A P-302

3,4,6,7-Tetrahydro-3,4-dihydroxy-6-methoxy-3-methyl-7-methylene-2-pentylpyrano[2,3-c]pyrrol-5(2H)-one, 9CI
[910050-51-0]



Relative Configuration

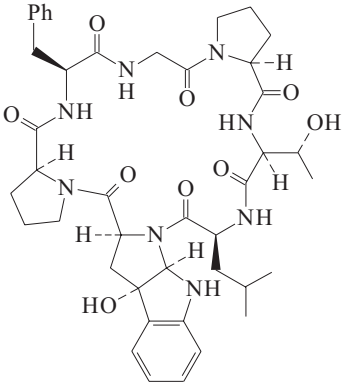
$C_{15}H_{23}NO_5$ 297.35
Similar to Curvupallide A, C-816. Prod. by an endophytic fungus closely related to *Phaeosphaeria avenaria*. Inhibitor of STAT3-dependent signalling. Yellow glass. $[\alpha]_D^{25}$ -93.6 (c, 2 in CH_2Cl_2). λ_{max} 262 (MeCN).

2-Epimer: ***Phaeosphaeride B***
[910050-52-1]
$C_{15}H_{23}NO_5$ 297.35
Prod. by an endophytic fungus closely related to *Phaeosphaeria avenaria*. Orange glass. $[\alpha]_D^{25}$ -157.2 (c, 2 in CH_2Cl_2). λ_{max} 262 (MeCN).

Maloney, K.N. *et al., Org. Lett.*, 2006, **8**, 4067-4070 (*isol, pmr, cmr*)

Phakellistatin 3, 9CI P-303

[153603-87-3]

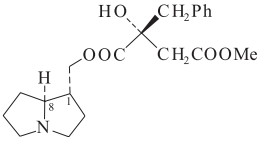


$C_{42}H_{54}N_8O_9$ 814.937
Isol. from the Western Indian ocean sponge *Phakellia carteri*. Shows significant cytotoxicity against murine P388 lymphocytic leukaemia. Amorph. powder. Sol. MeOH, $CHCl_3$. Mp 178-180°. $[\alpha]_D^{24}$ -147 (c, 0.22 in MeOH). New type of cycloheptapeptide containing an amino acid unit apparently derived from a photooxidn. prod. of Tryptophan, T-640. λ_{max} 211 (ϵ 25700); 238 (ϵ 8130); 295 (ϵ 2340) (no solvent reported) (Derep). λ_{max} 214 (ϵ 14800); 234 (ϵ 11000); 291 (ϵ 3310) (MeOH) (Derep).

cis-*Isomer:* ***Isophakellistatin 3***
[153667-40-4]
$C_{42}H_{54}N_8O_9$ 814.937
From *Phakellia carteri*. Cryst. (Me_2CO). Sol. MeOH, $CHCl_3$. Mp 218-220°. $[\alpha]_D^{23}$ -138 (c, 0.21 in MeOH). Isomeric at the photo-Trp indole ring juncture. Does not show cytotoxicity against P388 cell line. λ_{max} 211 (ϵ 25700); 238 (ϵ 8130); 295 (ϵ 2340) (no solvent reported) (Derep). λ_{max} 214 (ϵ 14800); 234 (ϵ 11000); 291 (ϵ 3310) (MeOH) (Derep). λ_{max} 211 (ϵ 25700); 238 (ϵ 8130); 295 (ϵ 2344) (MeOH) (Berdy).

Pettit, G.R. *et al., J.O.C.*, 1994, **59**, 1593 (*isol, uv, ir, cryst struct*)
Greeman, K.L. *et al., Org. Lett.*, 2004, **6**, 1713-1716 (*synth*)

Phalaenopsines P-304



(1*R*,8*S*)–*form*

$C_{20}H_{27}NO_5$ 361.437

Diastereoisomers formed by esterification of isomeric hydroxymethylpyrrolizidines with (*R*)-methyl 2-benzylmalate.

(1*R*,8*S*)-*form*
Phalaenopsine T
[23412-97-7]
Alkaloid from *Phalaenopsis amabilis, Phalaenopsis aphrodite, Phalaenopsis fimbriata, Phalaenopsis sanderiana, Phalaenopsis stuartiana* and other *Phalaenopsis* spp. (often as mixt. with Phalaenopsine La) (Orchidaceae). Plant growth inhibitor. Cryst. (EtOH). Mp 104-105°. $[\alpha]_D^{20}$ -15 (c, 1.6 in EtOH). Derived from Trachelanthamidine.

Hydrochloride: [23412-98-8]
Mp 155-156°.

(1*S*,8*R*)-*form*
Phalaenopsine La
[23412-99-9]
Alkaloid from *Phalaenopsis mannii*, *Phalaenopsis amboinensis*, *Phalaenopsis sanderiana*, *Phalaenopsis schilleriana*, other *Phalaenopsis* spp. and from *Kingiella taenialis* (preferred genus name *Kingidium*) (Orchidaceae). Cryst. (EtOH). Mp 125-135°. $[\alpha]_D^{20}$ +10 (c, 1.1 in EtOH). Derived from Laburnine. Readily transesterifies during isol.

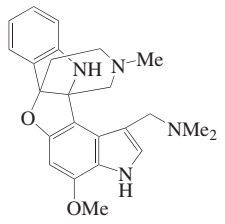
Hydrochloride: [23413-00-5]
Mp 131-132°.

(1*S*,8*S*)-*form*
Phalaenopsine Is
[41451-64-3]
Alkaloid from *Phalaenopsis equestris* (Orchidaceae). $[\alpha]_D^{22}$ -42 (c, 1.5 in EtOH). Derived from Isoretronecanol.

Brandänge, S. *et al., Acta Chem. Scand.*, 1969, **23**, 1151-1154; 1970, **24**, 354; 1972, **26**, 2558-2560 (*Phalaenopsines La and Is, isol, struct, uv, ms, pmr*)
Brandänge, S. *et al., Acta Chem. Scand.*, 1973, **27**, 3668-3672 (*abs config*)
Fujieda, K. *et al., Phytochemistry*, 1988, **27**, 1564-1566 (*Phalaenopsine T, isol, pmr, cmr, props*)

Phalarine P-305

[237078-85-2]
[934839-53-9 ((±)-form)]



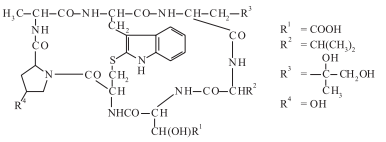
Relative Configuration

$C_{24}H_{28}N_4O_2$ 404.511
Alkaloid from *Phalaris coerulescens*. Pale yellow oil. $[\alpha]_D^{20}$ -92 (c, 0.007 in MeOH).

Anderton, N. *et al., Phytochemistry*, 1999, **51**, 153-157 (*isol, pmr, cmr, ms*)
Li, C. *et al., Angew. Chem., Int. Ed.*, 2007, **46**, 1448-1450 (*synth*)

Phallacidin, 9CI P-306

[26645-35-2]



$C_{37}H_{50}N_8O_{13}S$ 846.914
Cyclic peptide. A phallotoxin. Toxin from *Amanita phalloides* and *Amanita virosa*.
▶ Hepatotoxin, LD_{50} (mus, ipr) 2 mg/kg. Human toxic effects occur within 2-5 hr of administration (*cf.* amatoxins).
GT8943000

Wieland, T. *et al., Annalen*, 1962, **657**, 218 (*isol, uv, struct*)
Wieland, Th. *et al., Prog. Chem. Org. Nat. Prod.*, 1967, **25**, 214 (*rev*)
Faulstich, H. *et al., Eur. J. Biochem.*, 1971, **22**, 79 (*ord*)
Faulstich, H. *et al., Z. Naturforsch., C*, 1974, **29**, 86 (*anal*)
Faulstich, H. *et al., Annalen*, 1975, 2324 (*isol*)
Malak, S.H.A. *et al., Planta Med.*, 1976, **29**, 80 (*occur*)
Wieland, T. *et al., Crit. Rev. Biochem.*, 1978, **5**, 185 (*rev*)
Beutler, J.A. *et al., J. Nat. Prod.*, 1981, **44**, 422 (*anal*)
Wieland, T. *et al., Peptides of Poisonous Amanita Mushrooms*, Springer-Verlag, 1986, (*book*)
Bönzli, P. *et al., J.A.C.S.*, 1990, **112**, 3719 (*pmr, conformn*)
Antkowiak, R. *et al., Alkaloids (Academic Press)*, 1991, **40**, 189 (*rev*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 12350 (*mushroom toxins*)

Phallacin P-307

3-(4-Hydroxy-D-leucine)phallacidin, 9CI
[53568-40-4]
As Phallacidin, P-306 with R^1 = COOH, R^2 = $CH(CH_3)_2$, R^3 = $CH(CH_3)CH_2OH$, R^4 = OH

$C_{37}H_{50}N_8O_{12}S$ 830.914
A phallotoxin. Toxin from *Amanita phalloides*.
▶ Human toxic effects occur within 2-5 hr of administration (*cf.* amatoxins). Hepatotoxic, gastrointestinal effects by ingestion. LD_{50} (mus, ipr) 2 mg/kg.
SE9744000

Faulstich, H. *et al., Z. Naturforsch., C*, 1974, **29**, 86
Faulstich, H. *et al., Annalen*, 1975, 2324 (*isol*)
Wieland, T. *et al., Crit. Rev. Biochem.*, 1978, **5**, 185 (*rev*)
Wieland, T. *et al., Peptides of Poisonous Amanita Mushrooms*, Springer-Verlag, 1986, (*book*)
Antkowiak, R. *et al., Alkaloids (Academic Press)*, 1991, **40**, 189 (*rev*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 1390 (*mushroom toxins*)

Phallin B P-308

[57107-81-0]
As Phalloidin, P-311 with R^1 = CH_3, R^2 = -CH_2Ph, R^3 = -$C(OH)(CH_3)_2$, R^4 = H

$C_{41}H_{52}N_8O_9S$ 832.976
Struct. found in CA Index Guide (1994). Exptl. evidence for struct. could not be found in lit. Isol. from *Amanita phalloides*.

Commercially available and/or commonly cited compound for which no useful literature data are available, 1998,

Phallisacin P-309

3-[4,5-Dihydroxy-4-(hydroxymethyl)-L-norvaline]phallacidin, 9CI. Phallasacin
[58286-46-7]
As Phallacidin, P-306 with R^1 = COOH, R^2 = $CH(CH_3)_2$, R^3 = $C(OH)(CH_2OH)_2$, R^4 = OH

$C_{37}H_{50}N_8O_{14}S$ 862.913
Phallasacin appears to be a CA misprint. Toxin from *Amanita phalloides*.
▶ SE9740000

Faulstich, H. *et al., Annalen*, 1975, 2324 (*isol, struct*)
Wieland, T. *et al., Crit. Rev. Biochem.*, 1978, **5**, 185 (*rev*)

Phallisin P-310

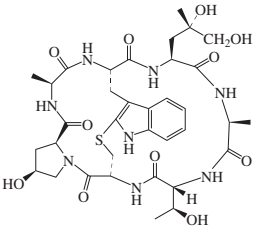
7-[4,5-Dihydroxy-4-(hydroxymethyl)-L-norvaline]phalloidin, 9CI
[19774-69-7]
As Phallacidin, P-306 with R^1 = R^2 = CH_3, R^3 = -$C(OH)(CH_2OH)_2$, R^4 = OH

$C_{35}H_{48}N_8O_{12}S$ 804.877
A phallotoxin. Toxin from *Amanita phalloides*, also found in *Amanita virosa*.
▶ LD_{50} (mus, ipr) 3 mg/kg. Gastrointestinal effects within 2-5h of ingestion (*cf.* amatoxins). Hepatotoxic. NJ8331000

Wieland, T. *et al., Crit. Rev. Biochem.*, 1978, **5**, 185 (*rev*)
Lampe, K.F. *et al., Annu. Rev. Pharmacol. Toxicol.*, 1979, **19**, 85 (*tox, rev*)
Wieland, T. *et al., Peptides of Poisonous Amanita Mushrooms*, Springer-Verlag, 1986, (*book*)
Antkowiak, R. *et al., Alkaloids (Academic Press)*, 1991, **40**, 189 (*rev*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 1390

Phalloidin P-311

[17466-45-4]



Absolute Configuration

$C_{35}H_{48}N_8O_{11}S$ 788.877
Phallotoxin. Isol. from *Amanita phalloides*, *Amanita verna* and *Amanita virosa*. Potassium (K_v) channel blocker. Pharmacol. tool. Cryst. +6 H_2O (H_2O). Sol. MeOH, H_2O, Py, EtOH. Mp 280-282°. Log P -1.64 (uncertain value) (calc). λ_{max} 290 (MeOH) (Berdy). λ_{max} 295 (H_2O) (Berdy).

►Adverse human effects by ingestion occur within 2-5 hr of administration (*cf.* amatoxins). Hepatotoxic, gastrointestinal effects by ingestion. LD_{50} (mus, ipr) 2 mg/kg. LD_{50} (mus, ims) 0.003 mg/kg. SE9800000

Lynen, F. *et al., Annalen*, 1938, **533**, 93 (*isol*)
Wieland, T. *et al., Annalen*, 1955, **593**, 157; 1962, **657**, 225 (*isol, uv, struct*)
Faulstich, H. *et al., Eur. J. Biochem.*, 1971, **22**, 79 (*ord*)
Patel, D.J. *et al., J. Mol. Biol.*, 1973, **79**, 185 (*pmr, conformn*)
Faulstich, H. *et al., Z. Naturforsch., C*, 1974, **29**, 86 (*anal*)
Malak, S.H.A. *et al., Planta Med.*, 1976, **29**, 80 (*occur*)
Munekata, E. *et al., J.A.C.S.*, 1977, **99**, 6151 (*cd, synth, analogues*)
Wieland, T. *et al., Crit. Rev. Biochem.*, 1978, **5**, 185 (*rev*)
Beutler, J.A. *et al., J. Nat. Prod.*, 1981, **44**, 422 (*anal*)
Fuerlinger, E. *et al., Biochim. Biophys. Acta*, 1983, **760**, 411 (*uv, fluorescence*)
Wieland, T. *et al., Int. J. Pept. Protein Res.*, 1983, **21**, 3 (*analogues, synth*)
Faulstich, H. *et al., Klin. Wochenschr.*, *Supp.* 7, 1986, **64**, 66 (*tox*)
Wieland, T. *et al., Peptides of Poisonous Amanita Mushrooms*, Springer-Verlag, 1986, (*book*)
Wieland, T. *et al., Naturwissenschaften*, 1987, **74**, 367 (*rev*)
Enjalbert, F. *et al., J. Chromatogr.*, 1989, **462**, 442 (*anal*)
Antkowiak, R. *et al., Alkaloids (Academic Press)*, 1991, **40**, 189 (*rev*)
Kessler, H. *et al., Annalen*, 1991, 179 (*struct, bibl, nmr, conformn*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 1390
Anderson, M.O. *et al., J.O.C.*, 2005, **70**, 4578-4584 (*synth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, PCU350

Phalloin P-312

7-(4-Hydroxy-L-leucine)phalloidin, 9CI
[28227-92-1]
As Phallacidin, P-306 with $R^1 = R^2 = CH_3$, $R^3 = -C(CH_3)_2OH$, $R^4 = OH$

$C_{35}H_{48}N_8O_{10}S$ 772.878
Toxin from *Amanita phalloides*. Cryst. (H_2O). Mp 250-280° dec.

►SF0350000

Wieland, T. *et al., Angew. Chem.*, 1957, **69**, 389 (*isol, uv*)
Wieland, T. *et al., Annalen*, 1958, **617**, 152; 1962, **657**, 225 (*isol, struct*)
Faulstich, H. *et al., Eur. J. Biochem.*, 1971, **22**, 79 (*isol*)
Faulstich, H. *et al., Z. Naturforsch., C*, 1974, **29**, 86 (*anal*)
Beutler, J.A. *et al., J. Nat. Prod.*, 1981, **44**, 422 (*anal*)
Wieland, T. *et al., Annalen*, 1981, 2318 (*cd*)

Phascoline P-313

3-[(Aminoiminomethyl)amino]-N-*(2-hydroxyheptyl)propanamide, 9CI*. N-*(3-Guanidinopropionyl)-2-hydroxyheptylamine*
$H_3C(CH_2)_4CH(OH)CH_2NHCOCH_2CH_2NHC(NH_2)=NH$

$C_{11}H_{24}N_4O_2$ 244.336

(-)-*form* [50767-84-5]
Constit. of the sipunculid worm *Phascolion strombi*. Oil; yellow needles (as picrate). Mp 73° (picrate). $[\alpha]_D^{25}$ -8.7 (H_2O).
Guillou, Y. *et al., J. Biol. Chem.*, 1973, **248**, 5668 (*isol*)

Phascolosomine P-314

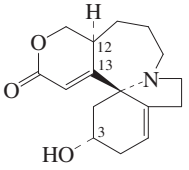
3-[(Aminoiminomethyl)amino]-N-*(2-methoxyheptyl)-2-methylpropanamide, 9CI*. N-*(3-Guanidinoisobutyryl)-2-methoxyheptylamine*
[50767-86-7]
$H_3C(CH_2)_4CH(OMe)CH_2NHCOCH(CH_3)CH_2NHC(NH_2)=NH$

$C_{13}H_{28}N_4O_2$ 272.39

(-)-*form*
[50767-87-8 (picrate)]
Constit. of the marine sipunculan worm *Phascolion strombi*. Oil; yellow needles (as picrate). Mp 152° (picrate). $[\alpha]_D^{25}$ -37 (H_2O).
Guillou, Y. *et al., J. Biol. Chem.*, 1973, **248**, 5668 (*isol*)

Phellibiline P-315

1,6-Didehydro-12,17-dihydro-3-hydroxy-C-homo-16(15H)-oxaerythrinan-15-one, 11CI. O-*Demethyl-2,7-dihydro*-C-*homo-α-erythroidine, 10CI, 9CI*
[28305-80-8]



Absolute Configuration

$C_{16}H_{21}NO_3$ 275.347
Alkaloid from *Phelline billiardieri* (Phellinaceae). Mp 160-161°. $[\alpha]_D$ +260 ($CHCl_3$). Possibly an artifact.

Δ^{12}-Isomer: ***Isophellibiline***
[30519-45-0]
$C_{16}H_{21}NO_3$ 275.347
Alkaloid from *Phelline billiardieri* (Phellinaceae). Mp 186-188°. $[\alpha]_D$ +143 ($CHCl_3$). Isom. to Phellibiline on chromatog. over alumina.

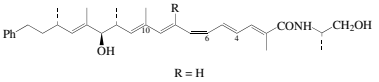
Δ^{12}-Isomer, Me ether: **O-*Methylisophellibiline***. *2,7-Dihydrohomo-β-erythroidine*
[30519-68-7]
$C_{17}H_{23}NO_3$ 289.374
Alkaloid from *Phelline billiardieri* and from leaves of *Phelline* sp. aff. *Phelline lucida* (Phellinaceae). Mp 133°. $[\alpha]_D$ +140 ($CHCl_3$).

12-Hydroxy, O^3-Me: ***Phellibilidine***
[76177-26-9]
$C_{17}H_{23}NO_4$ 305.373
Alkaloid from *Phelline billiardieri* (Phellinaceae). Cryst. (Me_2CO). Mp 114°. $[\alpha]_D$ -11 (c, 1.1 in $CHCl_3$).

Hoang Nhu Mai, *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1970, **270**, 2154-2156 (*Phellibiline, Isophellibiline, O-Methylisophellibiline, ir, ms, struct*)
Riche, C. *et al., Acta Cryst. B*, 1974, **30**, 1386-1390 (*cryst struct, stereochem*)
Séguineau, M.-F. *et al., Phytochemistry*, 1980, **19**, 1279-1281 (*Phellibilidine, isol, uv, ir, cmr, pmr, ms, struct*)
Langlois, N. *et al., Heterocycles*, 1984, **22**, 2453-2457 (*O-Methylisophellibiline*)

Phenalamide A1 P-316

Stipiamide
[135383-02-7]



$C_{32}H_{45}NO_3$ 491.712
Polyene-type antibiotic. Prod. by *Myxococcus stipitatus*. Inhibits the growth of KB cells. Exhibits anti-HIV and antifungal activities. Yellowish oil. $[\alpha]_D^{23}$ -115.1 (c, 1.45 in MeOH). $[\alpha]_D^{25}$ -189 (c, 1 in MeOH). λ_{max} 359 (ε 58900) (MeOH) (Derep). λ_{max} 209 (ε 32200); 264 (ε 6780); 359 (ε 31300) (MeOH/NaOH) (Derep). λ_{max} 207 (ε 9820); 264 (ε 6730); 359 (ε 31500) (MeOH) (Derep).

(6E)-Isomer: ***Phenalamide A2***
[140695-41-6]
$C_{32}H_{45}NO_3$ 491.712
Prod. by *Myxococcus stipitatus*. Oil. Sol. MeOH, EtOAc. $[\alpha]_D^{25}$ +3 (c, 1 in MeOH). λ_{max} 355 (log ε 4.78) (MeOH). λ_{max} 355 (ε 60256) (MeOH) (Berdy).

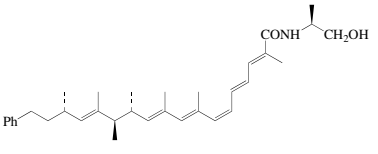
(4Z,6E)-Isomer: ***Phenalamide A3***
[140695-42-7]
$C_{32}H_{45}NO_3$ 491.712
Prod. by *Myxococcus stipitatus*. Oil. Sol. MeOH, EtOAc. $[\alpha]_D$ -40.3 (c, 0.3 in MeOH). λ_{max} 353 (log ε 4.76) (MeOH). λ_{max} 353 (ε 57540) (MeOH) (Berdy).

10ξ,11ξ-Epoxide (6E-): ***Phenalamide C***
[140633-83-6]
$C_{32}H_{45}NO_4$ 507.712
Prod. by *Myxococcus stipitatus*. Oil. Sol. MeOH, EtOAc. $[\alpha]_D^{25}$ -56 (c, 0.5 in MeOH). λ_{max} 328 (log ε 4.63) (MeOH). λ_{max} 328 (ε 42657) (MeOH) (Berdy).

Kim, Y.J. *et al., J. Antibiot.*, 1991, **44**, 553 (*isol, pmr, cmr, struct*)
Trowitzch-Kienast, W. *et al., Annalen*, 1992, 659 (*isol, uv, ir, pmr, cmr, ms*)
Andrus, M.B. *et al., J.A.C.S.*, 1997, **119**, 2327; 1999, 12159-12169 (*synth*)
Hoffmann, R.W. *et al., Org. Lett.*, 1999, **1**, 1713-1715 (*synth, Phenalamide A2*)

Phenalamide B P-317

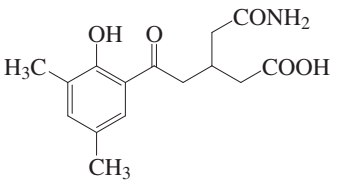
[140633-82-5]



$C_{33}H_{47}NO_3$ 505.739
Prod. by *Myxococcus stipitatus*. Oil. Sol. MeOH, EtOAc. $[\alpha]_D^{25}$ +60.9 (c, 0.7 in MeOH). λ_{max} 350 (log ε 4.41) (MeOH). λ_{max} 349 (ε 25700) (MeOH) (Berdy).

Trowitzsch-Kienast, W. *et al., Annalen*, 1992, 659 (*isol, uv, ir, pmr, cmr, ms*)

Phenatic acid A P-318

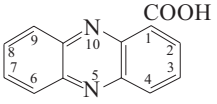


$C_{15}H_{19}NO_5$ 293.319
Prod. by *Streptomyces* sp. K03-0132. Potentiator of miconazole antifungal activity. Needles. Mp 147-149°. $[\alpha]_D^{26}$ +2.5 (c, 0.1 in MeOH). λ_{max} 217 (ϵ 12500); 262 (ϵ 6700); 345 (ϵ 2300) (MeOH).

Fukuda, T. *et al., J. Antibiot.*, 2005, **58**, 252-259 (*isol, pmr, cmr*)

1-Phenazinecarboxylic acid, 9CI P-319

Tubermycin B. *X-Pigment*
[2538-68-3]



$C_{13}H_8N_2O_2$ 224.218
Prod. by *Pseudomonas* spp., *Streptomyces cinnamonensis, Streptomyces misakiensis*, *Bacillus* sp. B-6 and *Actinomadura dassonvillei*. Weakly active against gram-positive bacteria and *Candida albicans*. Inhibits acyl-CoA synthetase. Greenish-yellow needles (EtOH). Mp 241-242° (237-239°). λ_{max} 251 (ϵ 97000); 364 (sh) (ϵ 10000); 370 (ϵ 19000) (CH_2Cl_2/pH 2) (Derep). λ_{max} 250 (ϵ 84900); 364 (ϵ 13400) (MeOH/pH 11) (Derep). λ_{max} 248 (ϵ 65000); 354 (sh) ; 364 (ϵ 13400) (MeOH) (Derep).

► LD_{50} (mus, ipr) 400 mg/kg. SG1576000

5-Oxide: [27210-90-8]
$C_{13}H_8N_2O_3$ 240.218
Photographic bleaching agent. Mp 223°.

10-Oxide:
$C_{13}H_8N_2O_3$ 240.218
Yellow needles (AcOH). Mp 233-234°.

Me ester: Methyl 1-phenazinecarboxylate
[3225-19-2]
$C_{14}H_{10}N_2O_2$ 238.245
Isol. from *Streptomyces luteoreticuli*. Active against mycobacteria. Mp 123-124°.

Amide: 1-Phenazinecarboxamide. ***Oxychlororaphine***. *Xanthoraphine*
[550-89-0]
$C_{13}H_9N_3O$ 223.234
Prod. by *Pseudomonas chlororaphis* and *Pseudomonas aeruginosa*. Active against phytopathogenic fungi and *Candida albicans*. Yellow needles. Mp 245-246° (237°).

► SG1575530

Nitrile: 1-Cyanophenazine
$C_{13}H_7N_3$ 205.218
Needles. Mp 171-172°.

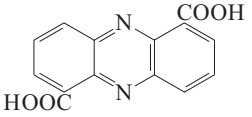
5,10-Dihydro, carboxymethyl ester: Carboxymethyl 5,10-dihydro-1-phenazinecarboxylate. ***Endophenazine D***
$C_{15}H_{12}N_2O_4$ 284.271
Prod. by various strains of the endosymbiotic *Streptomyces anulatus*. Active against gram-positive bacteria. Amorph. solid. λ_{max} 293 (log ϵ 3.82); 351 (log ϵ 3.63) (MeOH).

5,10-Dihydro, amide; amide (1:3 complex): ***Chlororaphin***
[13397-28-9]
$C_{52}H_{38}N_{12}O_4$ 894.95
Isol. from *Pseudomonas chloroaphis* and *Pseudomonas aeruginosa*. Active against gram-positive organisms. Green cryst. Mp 227°. Quinhydrone-type complex.

Kögl, F. *et al., Annalen*, 1930, **480**, 280 (*deriv*)
Birkofer, L. *et al., Chem. Ber.*, 1947, **80**, 212 (*Chlororaphin, isol, synth*)
Vivian, D.L. *et al., J.O.C.*, 1955, **20**, 797 (*synth*)
Isono, K. *et al., J. Antibiot., Ser. A*, 1958, **11**, 264 (*struct*)
Carter, R.E. *et al., J.A.C.S.*, 1961, **83**, 495 (*Chlororaphin, biosynth*)
Morgan, L.R. *et al., J.O.C.*, 1962, **27**, 4092 (*Chlororaphin, biosynth*)
Chaim, S. *et al., Spectrochim. Acta*, 1963, **19**, 1625 (*ir*)
Levitch, M.E. *et al., Arch. Biochem. Biophys.*, 1964, **106**, 194 (*biosynth*)
Mokrushin, V.S. *et al., CA*, 1970, **72**, 31750 (*synth*)
Hollstein, U. *et al., J.O.C.*, 1972, **37**, 3510 (*synth*)
Breitmaier, E. *et al., J.O.C.*, 1976, **41**, 2104 (*cmr*)
Kiprianova, E.A. *et al., CA*, 1978, **88**, 11570 (*use*)
Kamer, D. *et al., J. Bacteriol.*, 1978, **134**, 690 (*Chlororaphin, isol*)
Tax, J. *et al., Coll. Czech. Chem. Comm.*, 1983, **48**, 527 (*isol*)
Brisbane, P.G. *et al., Antimicrob. Agents Chemother.*, 1987, **31**, 1967 (*isol, struct*)
Rewcastle, G.W. *et al., Synth. Commun.*, 1987, **17**, 1171 (*synth*)
Jones, G.P. *et al., Acta Cryst. C*, 1988, **44**, 2220 (*cryst struct*)
Ji, X. *et al., Acta Cryst. C*, 1992, **48**, 109 (*cryst struct*)
Jayatilake, G.S. *et al., J. Nat. Prod.*, 1996, **59**, 293-296 (*isol, pmr, cmr*)
Kim, K.-J. *et al., Yakhak Hoeji*, 1998, **42**, 552-557; *CA*, **130**, 14939z (*isol, activity*)
Kim, K.-J. *et al., J. Biochem. Mol. Biol.*, 2000, **33**, 332-336 (*occur, activity*)
Gebhardt, K. *et al., J. Antibiot.*, 2002, **55**, 794-800; 801-806 (*Endophenazine D*)
Sax, N.I. *et al., Dangerous Properties of Industrial Materials, 5th edn., Van Nostrand Reinhold*, 1979, 898
Hazards in the Chemical Laboratory, 3rd edn., (ed. Bretherick, L.), Royal Society of Chemistry, 1981, 437

1,6-Phenazinedicarboxylic acid P-320

[23462-25-1]



$C_{14}H_8N_2O_4$ 268.228
Phenazine antibiotic. Fermentation prod. of *Pseudomonas* and *Streptomyces* spp. Inhibits xanthine oxidase. Shows antibiotic props. by interacting with RNA. Intermed. in the biosynth. of Lomofungin, L-241 and other phenazines. Green cryst. Sol. EtOH, $CHCl_3$. Mp 325° dec. λ_{max} 250 ; 370 (MeOH) (Berdy).

Mono-Me ester: ***Phencomycin***
$C_{15}H_{10}N_2O_4$ 282.255
Prod. by a *Streptomyces* sp. Shows antibacterial and antitumour props. Yellow cryst. or yellow-green needles ($CHCl_3$/MeOH). Sol. MeCN, $CHCl_3$, MeOH, CH_2Cl_2, EtOAc, DMSO; fairly sol. MeOH; poorly sol. acids, hexane. Mp 263°. λ_{max} 256 (log ϵ 4.87); 368 (log ϵ 4.2) (MeOH). λ_{max} 250 ; 371 (MeOH/HCl) (Berdy). λ_{max} 258 ; 366 (MeOH/NaOH) (Berdy).

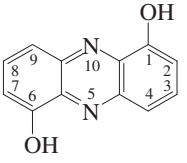
Di-Me ester: [23531-24-0]
$C_{16}H_{12}N_2O_4$ 296.282
Mp 228-230°.

5,10-Dihydro, di-Me ester: ***5,10-Dihydrophencomycin methyl ester***
$C_{16}H_{14}N_2O_4$ 298.298
Prod. by a marine *Streptomyces* sp. Orange needles ($CHCl_3$/MeOH). Mp 231°. λ_{max} 216 (log ϵ 4.51); 245 (log ϵ 4.48); 450 (log ϵ 4.04) (MeOH).

Gerber, N.N. *et al., J. Het. Chem.*, 1969, **6**, 297 (*isol, synth, uv*)
Breitmaier, E. *et al., J.O.C.*, 1976, **41**, 2104 (*synth, uv, cmr*)
Kimura, Y. *et al., Tet. Lett.*, 1977, 4515 (*biosynth*)
Messenger, A.J. *et al., Biochem. Soc. Trans.*, 1978, **6**, 1326 (*biosynth*)
Buckland, P.R. *et al., J. Chem. Res., Synop.*, 1981, 362 (*biosynth*)
Roemer, A. *et al., Org. Magn. Reson.*, 1982, **19**, 118 (*nmr*)
Chatterjee, S. *et al., J. Antibiot.*, 1995, **48**, 1353 (*Phencomycin*)
Pusecker, K. *et al., J. Antibiot.*, 1997, **50**, 479 (*Phencomycin, Dihydrophencomycin*)
Maul, C. *et al., J. Antibiot.*, 1999, **52**, 1124-1134 (*activity*)

1,6-Phenazinediol, 9CI P-321

1,6-Dihydroxyphenazine. ***Crystalloidinine B***
[69-48-7]



$C_{12}H_8N_2O_2$ 212.207
Isol. from *Streptomyces thioluteus, Brevibacterium crystalloiodinum, Pseudomonas iodina* and various other bacteria. Active against gram-positive bacteria and fungi. Golden-yellow prisms (dioxan or EtOAc). Mp 280-281° (274°). λ_{max} 262 (ϵ 13000); 291 (ϵ 30000) (HCl) (Derep). λ_{max} 291 (ϵ 91160); 525 (ϵ 3820) (0.1*N* NaOH) (Derep). λ_{max} 272 (ϵ 135000); 337 (ϵ 3130); 371 (ϵ 5200); 442 (ϵ 3500) (MeOH) (Derep).

► SG1579650

5-Oxide: [69-86-3]
$C_{12}H_8N_2O_3$ 228.207
Isol. from cultures of *Brevibacterium iodinum, Streptomyces thioluteus,*

Microbispora aerata, *Nocardiopsis dassonvillei* and a *Nocardia* strain. Red triangular platelets or cryst. (dioxan aq.). Sol. MeOH, Me_2CO, C_6H_6; poorly sol. H_2O. Mp 248-250° (218°) dec. λ_{max} 299; 575 (EtOH/NaOH) (Derep). λ_{max} 282 (ϵ 112000); 395 (ϵ 1710); 485 (ϵ 4260) (EtOH) (Derep). λ_{max} 283 (E1%/1cm 4900); 393 (E1%/1cm 75); 487 (E1%/1cm 107) (DMSO) (Berdy).

5,10-Dioxide: 1,6-Phenazinediol 5,10-dioxide. ***Iodinine****. Crystalloiodinine A*
[68-81-5]
$C_{12}H_8N_2O_4$ 244.206
Pigment in *Chromobacterium iodinium, Streptomyces thioluteus*, *Nocardiopsis dassonvillei*, *Arthrobacter paraffinens*, *Streptosporangium album*, *Streptosporangium amethystogenes*, *Microbispora amethystogenes*, *Microbispora parva*, *Microbispora aerata*, *Brevibacterium stationis*, *Brevibacterium crystalloiodinum*, *Actinomadura dassonvillei*, *Waksmania aerata*, *Pseudomonas iodina*, *Sorangium* sp. and other microorganisms. Active against gram-positive bacteria, fungi and yeasts. Purple cryst. ($CHCl_3$). Sol. C_6H_6, toluene, bases, EtOAc, $CHCl_3$; poorly sol. MeOH, EtOH, butanol, AcOH, H_2O, hexane, acids. Mp 236° dec. Stable to acid, dec. by bases. λ_{max} 303; 368; 415; 615 (EtOH/NaOH) (Derep). λ_{max} 290 (ϵ 91000); 351 (ϵ 6600); 534 (ϵ 6100) (MeOH) (Berdy). λ_{max} 291 (E1%/1cm 6100); 352 (E1%/1cm 250); 535 (E1%/1cm 245) ($CHCl_3$) (Berdy).

▶ May explode when dry.

Di-Ac: [14031-12-0]
$C_{16}H_{12}N_2O_4$ 296.282
Yellow needles (EtOH). Mp 233-235° Mp 240-241°.

Mono-Me ether: ***1-Hydroxy-6-methoxyphenazine****. 6-Methoxy-1-phenazinol*
[13129-58-3]
$C_{13}H_{10}N_2O_2$ 226.234
From *Streptomyces thioluteus*. Active against mycobacteria. Yellow cryst. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 190-193°. λ_{max} 271 (ϵ 67300); 371 (ϵ 2780); 438 (ϵ 1880) (EtOH) (Berdy).

Mono-Me ether, 5,10-dioxide: 6-Methoxy-1-phenazinol 5,10-dioxide. ***Myxin****. 3C-Antibiotic*
[13925-12-7]
$C_{13}H_{10}N_2O_4$ 258.233
Isol. from *Sorangium* spp., *Lysobacter antibioticus* and *Pseudomonas* sp. Broad spectrum antibacterial and antifungal agent. Red needles (Me_2CO). Sol. MeOH, Et_2O; fairly sol. H_2O, hexane. Mp 130-135° dec. λ_{max} 283 (ϵ 97000); 340 (ϵ 5400); 505 (ϵ 6500) (0.1*M* HCl) (Derep). λ_{max} 278 (ϵ 25200); 304 (ϵ 26200); 410 (ϵ 7440); 605 (ϵ 3360) (EtOH/NaOH) (Derep). λ_{max} 285 (ϵ 70400); 350 (ϵ 6500); 390 (sh) (ϵ 5000); 407 (ϵ 2900); 502 (ϵ 6500) (EtOH) (Derep).

▶ May explode on drying with heat. LD_{50} (mus, ipr) 133 mg/kg ; LD_{50} (mus, ipr) 40 mg/kg. SG1660000

Di-Me ether: ***1,6-Dimethoxyphenazine***
[13398-79-3]
$C_{14}H_{12}N_2O_2$ 240.261
From *Streptomyces thioluteus* and *Streptomyces luteoreticuli*. Active against *Sarcina lutea* and mycobacteria. Yellow needles. Mp 249-250°.

Di-Me ether, 5,10-dioxide:
$C_{14}H_{12}N_2O_4$ 272.26
Orange-red cryst. (C_6H_6/pentane). Mp 180-182°.

Clemo, G.R. *et al., J.C.S.*, 1950, 1481-1485 (*synth, di-Me ether*)
Serebryani, S.B. *et al., J. Gen. Chem. USSR (Engl. Transl.)*, 1952, **22**, 765 (*synth, di-Ac*)
Yoshioka, I. *et al., Yakugaku Zasshi*, 1952, **72**, 847-848 (*synth, di-Ac, di-Me ether*)
Akabori, H. *et al., J. Antibiot., Ser. A*, 1959, **12**, 17 (*isol*)
Irie, T. *et al., Bull. Chem. Soc. Jpn.*, 1960, **33**, 1057-1059 (*isol, 5,10-dioxide isol, di-Ac, synth*)
Gerber, N.N. *et al., Biochemistry*, 1964, **3**, 598; 1965, **4**, 176; 1966, **5**, 3824; 1970, **9**, 4611 (*isol*)
Peterson, E.A. *et al., Can. J. Microbiol.*, 1966, **12**, 221 (*isol, Myxin*)
Edwards, O.E. *et al., Tet. Lett.*, 1966, 4867; 6502 (*struct, uv, ir, pmr, synth, Myxin*)
Grunberg, E. *et al., Chemotherapia*, 1967, **12**, 272 (*activity, Myxin*)
Sigg, H.P. *et al., Helv. Chim. Acta*, 1967, **50**, 716-718 (*mono-Me ether 5,10-dioxide, di-Me ether 5,10-dioxide, synth*)
Gerber, N.N. *et al., J.O.C.*, 1967, **32**, 4055 (*isol, mono-Me ether, uv*)
Leimgruber, W. *et al., Proc. Int. Symp. Drug Res., 1967*, 1967, 240; 242 (*rev, Myxin*)
Weigele, M. *et al., Tet. Lett.*, 1967, 715 (*synth, uv, pmr, ms, Myxin*)
Hanson, A.W. *et al., Acta Cryst. B*, 1968, **24**, 1084; 1969, **25**, 1766 (*cryst struct, oxides*)
Japan. Pat., 1969, 79 86 694; *CA*, **91**, 156043 (*isol, Myxin*)
Breitmaier, E. *et al., J.O.C.*, 1976, **41**, 2104-2108 (*cmr*)
Albini, A. *et al., J.C.S. Perkin 1*, 1978, 299-303 (*di-Ac, synth*)
Herbert, R.B. *et al., J.C.S. Perkin 1*, 1979, 2411 (*biosynth*)
Tsujibo, H. *et al., Agric. Biol. Chem.*, 1988, **52**, 301 (*isol*)
Alonso, A.M. *et al., Org. Biomol. Chem.*, 2005, **3**, 2832-2841 (*synth, pmr*)

1,8-Phenazinediol, 9CI P-322

1,8-Dihydroxyphenazine
[18258-40-7]
$C_{12}H_8N_2O_2$ 212.207
Obt. from bacterial fermentation (*Pseudomonas phenazinium*). Yellow-brown solid. Mp 236° (230°).

10-Oxide: [23448-76-2]
$C_{12}H_8N_2O_3$ 228.207
Prod. by *Pseudomonas phenazinium*. Dark red solid. Sol. MeOH. Mp 235-240° dec. λ_{max} 285 ; 405 ; 540 (EtOH). λ_{max} 283 ; 403 ; 470 (EtOH/HCl) (Berdy). λ_{max} 295 ; 440 ; 550 (EtOH/NaOH) (Berdy).

Di-Ac: [18336-66-8]
$C_{16}H_{12}N_2O_4$ 296.282
Mp 178-181°.

Di-Me ether: 1,8-Dimethoxyphenazine
[14265-35-1]
$C_{14}H_{12}N_2O_2$ 240.261
Yellow cryst. Mp 154-155° (151-152°).

Yoshioka, I. *et al., Pharm. Bull.*, 1953, **1**, 66; *CA*, **49**, 12492
Gerber, N.N. *et al., J. Het. Chem.*, 1969, **6**, 297 (*isol*)
Byng, G.S. *et al., Biochem. Soc. Trans.*, 1975, **3**, 742-744 (*oxide*)

1,9-Phenazinediol, 9CI P-323

1,9-Dihydroxyphenazine
[23663-24-3]
$C_{12}H_8N_2O_2$ 212.207
Produced by bacteria. Orange needles or orange-red plates. Mp 296-297° dec.

Di-Ac: [23663-39-0]
$C_{16}H_{12}N_2O_4$ 296.282
Yellow cryst. (C_6H_6). Mp 258-259°.

Di-Me ether: 1,9-Dimethoxyphenazine
$C_{14}H_{12}N_2O_2$ 240.261
Yellow needles. Mp 254° Mp 259-260°.

Clemo, G.R. *et al., J.C.S.*, 1950, 1481
Serebryanyi, S.B. *et al., Zh. Obshch. Khim.*, 1952, **22**, 702; *CA*, **47**, 5408
Otomasu, H. *et al., Chem. Pharm. Bull.*, 1958, **6**, 77

2,3-Phenazinediol, 9CI P-324

2,3-Dihydroxyphenazine
[19220-18-9]
$C_{12}H_8N_2O_2$ 212.207
Isol. from *Pseudomonas aureofaciens*. Orange needles (EtOH). Mp 249-251° Mp 340°.

5,10-Dioxide: [24890-65-1]
$C_{12}H_8N_2O_4$ 244.206
Mp 250°.

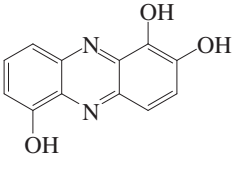
Di-Ac: [29453-85-8]
$C_{16}H_{12}N_2O_4$ 296.282
Yellow plates (C_6H_6 or xylene). Mp 230° (239-240°).

Di-Me ether: 2,3-Dimethoxyphenazine
$C_{14}H_{12}N_2O_2$ 240.261
Cryst. (petrol). Mp 226°.

Fischer, O. *et al., Ber.*, 1890, **23**, 841 (*synth*)
Slack, P. *et al., Nature (London)*, 1947, **160**, 437 (*synth*)
Yoshioka, I. *et al., Pharm. Bull.*, 1954, **2**, 53 (*synth*)
Chernetskii, V.P. *et al., Zh. Obshch. Khim.*, 1957, **27**, 2888; *CA*, **52**, 8147a (*synth*)
Otomasu, H. *et al., Chem. Pharm. Bull.*, 1958, **6**, 77 (*synth*)
Römer, A. *et al., Tet. Lett.*, 1979, 509 (*isol, uv, pmr*)

1,2,6-Phenazinetriol P-325

1,2,6-Trihydroxyphenazine



$C_{12}H_8N_2O_3$ 228.207

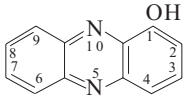
Tri-Me ether: 1,2,6-Trimethoxyphenazine, 9CI. ***Mycomethoxin A***
[39039-75-3]
$C_{15}H_{14}N_2O_3$ 270.287
Isol. from *Streptomyces luteoreticuli*. Active against mycobacteria. Orange needles. Mp 187-188°.

Yamanaka, S. *et al., CA*, 1972, **77**, 162986

(*Mycomethoxin A*)

2,3,7-Phenazinetriol, 9CI **P-326**
2,3,7-Trihydroxyphenazine
[71670-85-4]
$C_{12}H_8N_2O_3$ 228.207
Isol. from *Pseudomonas aureofaciens.*
Römer, A. *et al., Tet. Lett.*, 1979, 509-512 (*pmr, struct*)

1-Phenazinol, 9CI **P-327**
1-Hydroxyphenazine. Hemipyocyanine
[528-71-2]



$C_{12}H_8N_2O$ 196.208
Prod. by *Pseudomonas aeruginosa*, *Pseudomonas pyocyanea*, *Pseudomonas aurantiaca* and *Streptomyces thioluteus.* Active against gram-positive bacteria and fungi. Shows some antiviral activity. Algicide. Fluffy yellow needles (EtOH aq.). Sol. MeOH, bases, Et_2O, Py, phenol; fairly sol. EtOH, $CHCl_3$; poorly sol. H_2O, hexane. Mp 157-159°. pK_{a1} 1.61; pK_{a2} 8.33 (15°). λ_{max} 264 ; 368 (MeOH) (Berdy). λ_{max} 264 ; 352 ; 360 ; 384 ; 425 (hexane) (Berdy). λ_{max} 263 ; 358 (EtOH) (Berdy). λ_{max} 298 (MeOH/NaOH) (Berdy).
► LD_{50} (mus, ipr) 500 mg/kg. SG1647000

5-Oxide: [6479-82-9]
$C_{12}H_8N_2O_2$ 212.207
Yellow. Mp 190-191°.

10-Oxide: ***1-Hydroxyphenazine 10-oxide***
[14994-67-3]
$C_{12}H_8N_2O_2$ 212.207
Prod. by microorganisms, e.g. *Brevibacterium iodinum*, *Microbispora aerata*, *Actinomadura dassonvillei.* Active against gram-positive bacteria. Orange cryst. Sol. $CHCl_3$; poorly sol. hexane. Mp 165-167°. λ_{max} 279 ; 326 ; 334 ; 368 ; 380 ; 387 ; 468 (ε 2120) (EtOH) (Berdy).

5,10-Dioxide: [18274-55-0]
$C_{12}H_8N_2O_3$ 228.207
Red. Mp 185-186°.

Ac: [6033-10-9]
$C_{14}H_{10}N_2O_2$ 238.245
Mp 120°.

Benzoyl: [6055-50-1]
$C_{19}H_{12}N_2O_2$ 300.316
Mp 173°.

5-Me: see Pyocyanine, P-833

Me ether: ***1-Methoxyphenazine***
[2876-17-7]
$C_{13}H_{10}N_2O$ 210.235
From *Streptomyces luteoreticuli.* Active against mycobacteria. Cryst. (Py). Mp 167-169°. λ_{max} 261 (ε 60250); 395 (ε 8310); 407 (ε 3020) (MeOH) (Berdy).

Me ether, 5-Me: 1-Methoxy-5-methylphenazinium(1+)
[65162-13-2]
$C_{14}H_{13}N_2O^{\oplus}$ 225.27
Synthetic electron carrier for redox mediated enzymatic reactions. Red cryst. (EtOAc/EtOH) (methanesulfonate). Mp 171-172° (as methanesulfonate salt). CAS no. refers to the methanesulfonate salt.

Et ether: 1-Ethoxyphenazine
[23169-51-9]
$C_{14}H_{12}N_2O$ 224.262
Mp 126-127°.

(Methoxycarbonylmethyl) ether: (Methoxycarbonylmethoxy)phenazine. Antibiotic K_3-Ye. K_3-Ye
[159068-58-3]
$C_{15}H_{12}N_2O_3$ 268.271
Isol. from the culture of a genetically engineered *Streptomyces* sp. Inhibitor of nucleoside transport.

5-Me: see Pyocyanine, P-833

Hays, E.E. *et al., J. Biol. Chem.*, 1945, **159**, 725 (*isol*)
Badger, G.M. *et al., J.C.S.*, 1951, 3204
Org. Synth., Coll. Vol., 3, 1955, 753-756 (*1-methoxy-5-Me*)
Gerber, N.N. *et al., Biochemistry*, 1966, **5**, 3824-3829 (*10-oxide*)
Gerber, N.N. *et al., J.O.C.*, 1967, **32**, 4055 (*isol, props*)
Wake, S. *et al., Tet. Lett.*, 1970, 2415 (*synth*)
Kiprianova, E.A. *et al., Mikrobiol. Zh. (Kiev)*, 1971, **33**, 12; *CA*, **84**, 130344 (*isol, props*)
Breitmaier, E. *et al., J.O.C.*, 1976, **41**, 2104 (*cmr*)
Hisada, R. *et al., J. Biochem. (Tokyo)*, 1977, **82**, 1469-1473 (*1-methoxy-5-Me, synth, pmr, props*)
Issidorides, C.H. *et al., Tetrahedron*, 1979, **34**, 217 (*synth*)
Chen, W.P. *et al., Yaoxue Xuebao*, 1994, **29**, 585 (*K_3-Ye*)

2-Phenazinol, 9CI **P-328**
2-Hydroxyphenazine. 2(10H)-Phenazinone
[4190-95-8]
$C_{12}H_8N_2O$ 196.208
Formed by *Pseudomonas aureofaciens.* Dark red cryst. + $1H_2O$ (EtOH), anhyd. at 100°. Mp 253-254° dec. (>200° dec.). pK_{a1} 2.47; pK_{a2} 7.24 (15°).

10-Oxide: [18274-41-4]
$C_{12}H_8N_2O_2$ 212.207
Mp 258° dec.

OH-form

Ac: [18258-47-4]
$C_{14}H_{10}N_2O_2$ 238.245
Cryst. (EtOH or C_6H_6). Mp 151-152°.

Benzoyl: [35605-70-0]
$C_{19}H_{12}N_2O_2$ 300.316
Mp 144-145°.

Me ether: 2-Methoxyphenazine
[2876-18-8]
$C_{13}H_{10}N_2O$ 210.235
Cryst. (H_2O). Mp 126°.

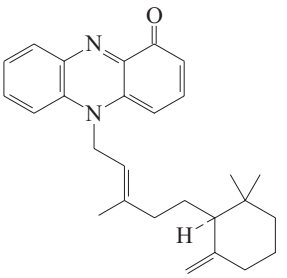
O-*(3ξ,7,11,15,19-Pentamethyl-6E,10E,14E,18-eicosatetraenyl): **Methanophenazine***
[207606-29-9]
$C_{37}H_{50}N_2O$ 538.815
Isol. from *Methanosarcina mazei* Go1. Cofactor. $[\alpha]_D$ -3.7 (c, 1 in C_6H_6) (synthetic *S*-enantiomer).

NH-form

N-*Me: 10-Methyl-2(10H)-phenazinone, 9CI. Methylaposafranone*
[63508-56-5]
$C_{13}H_{10}N_2O$ 210.235
Redox indicator. Dark red needles (H_2O). Mp 202-204°. E° + 0.197 V (30°).

Priesler, P.W. *et al., J.A.C.S.*, 1937, **59**, 141 (*N-Me, synth, ind*)
Levitch, M.E. *et al., Biochemistry*, 1966, **5**, 689 (*isol, uv, ir, synth*)
Pietra, S. *et al., Ann. Chim. (Rome)*, 1971, **61**, 290 (*synth*)
Inoue, H. *et al., Bull. Chem. Soc. Jpn.*, 1971, **44**, 3101 (*synth*)
Flood, M.E. *et al., J.C.S. Perkin 1*, 1972, 622 (*isol*)
Neuenhaus, W. *et al., Z. Naturforsch., B*, 1980, **35**, 385 (*synth*)
Sugimoto, A. *et al., J. Het. Chem.*, 1999, **36**, 1057-1064 (*N-Me*)
Beifuss, U. *et al., Tet. Lett.*, 2000, **41**, 9759-9763 (*Methanophenazine*)

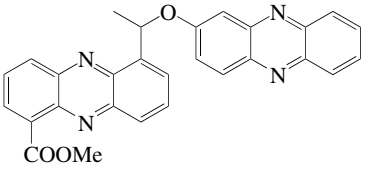
Phenazinomycin **P-329**
[122898-63-9]



$C_{27}H_{32}N_2O$ 400.563
Antibiotic from the mycelial extracts of *Streptomyces* sp. WK-2057. Exhibits antibacterial activity against gram-positive bacteria *in vitro*, direct cytotoxic activity against $HeLaS_3$, P388 and P388 doxorubicin-resistant cells *in vitro* and antitumour activity against experimental murine tumours *in vivo.* Dark-blue needles. Sol. MeOH, EtOAc, Me_2CO, $CHCl_3$; poorly sol. H_2O, hexane. Mp 113-118°. $[\alpha]_D^{25}$ -49 (c, 0.45 in MeOH). Related to Lavanducyanin, L-76. λ_{max} 240 (ε 24500); 321 (ε 27200); 745 (ε 6100) (MeOH) (Derep). λ_{max} 238 (E1%/1cm 2500); 321 (E1%/1cm 2800); 730 (E1%/1cm 800) (MeOH) (Berdy).

Omura, S. *et al., J. Antibiot.*, 1989, **42**, 1037 (*isol, uv, ir, cmr, props*)
Funayama, S. *et al., Tet. Lett.*, 1989, **30**, 3151 (*uv, ir, pmr, cmr, ms, struct*)
Kinoshita, Y. *et al., Tet. Lett.*, 1997, **38**, 4993 (*synth*)

Phenazostatin A **P-330**
[185614-22-6]

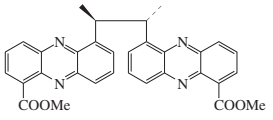


$C_{28}H_{20}N_4O_3$ 460.491
Prod. by *Streptomyces* sp. 833. Neuronal cell protecting agent and free radical scavenger. Yellow cryst. Racemic. λ_{max} 252 (ϵ 86000); 365 (ϵ 18000) (MeOH).

Kim, W.-G. *et al., J. Antibiot.*, 1997, **50**, 715-721 (*isol, uv, ir, pmr*)

Phenazostatin B P-331

Dimethyl 6,6′-(1,2-dimethyl-1,2-ethanediyl)bis[1-phenazinecarboxylate], 9CI
[73649-05-5]



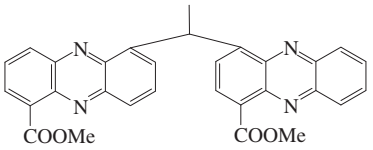
Relative Configuration

$C_{32}H_{26}N_4O_4$ 530.582
Prod. by *Streptomyces* sp. 833 and *Streptomyces* sp. ME679m4. Neuronal cell protecting agent and free radical scavenger. Phosphodiesterase inhibitor. Yellow cryst. Racemic. λ_{max} 253 (ϵ 89000); 366 (ϵ 19000) (MeOH).

Epimer: ***Phenazostatin D***
[639512-19-9]
$C_{32}H_{26}N_4O_4$ 530.582
Prod. by the marine *Pseudonocardia* sp. B6273. Yellow solid. *meso*-form. λ_{max} 256 (log ϵ 3.95); 350 (sh) (log ϵ 3.16); 366 (log ϵ 3.34); 385 (sh) (log ϵ 2.92) ($CHCl_3$).

Japan. Pat., 1980, 80 03733; *CA*, **92**, 213541p (*isol*)
Kim, W.-G. *et al., J. Antibiot.*, 1997, **50**, 715-721 (*isol, uv, ir, pmr*)
Maskey, R.P. *et al., Z. Naturforsch., B*, 2003, **58**, 692-694 (*Phenazostatin D*)

Phenazostatin C P-332

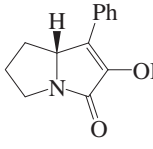


$C_{30}H_{22}N_4O_4$ 502.528
Prod. by *Streptomyces* sp. 833. Neuronal cell protecting agent. Antioxidant. Yellow cryst. (MeOH). Racemic. λ_{max} 249 (ϵ 109000); 365 (ϵ 26000) (MeOH).

Kim, W.-G. *et al., J. Antibiot.*, 1999, **52**, 758-761

Phenopyrrozin P-333

*5,6,7,7*a*-Tetrahydro-2-hydroxy-1-phenyl-3*H*-pyrrolizin-3-one. Antibiotic FO 2047. FO 2047*



(*R*)-*form*

$C_{13}H_{13}NO_2$ 215.251

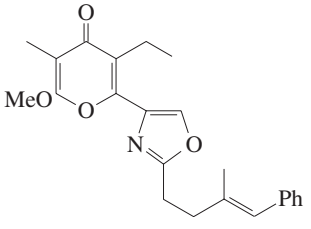
(*R*)-*form* [172923-76-1]
Prod. by *Penicillium* sp. FO-2047 and the marine-derived *Chromocleista* sp. strain R721. Radical scavenger. Antioxidant. Powder. Sol. MeOH, $CHCl_3$, EtOAc; poorly sol. H_2O. Mp 147-152°. $[\alpha]_D$ -10.2 (c, 0.6 in MeOH). λ_{max} 206 (ϵ 7960); 215 (ϵ 7850); 225 (sh) (ϵ 5810); 240 (ϵ 3870); 295 (ϵ 3810); 340 (sh) (ϵ 650) (EtOH).

(*S*)-*form*
*4′-Hydroxy: 5,6,7,7*a*-Tetrahydro-2-hydroxy-1-(4-hydroxyphenyl)-3*H*-pyrrolizin-3-one.* **p-*Hydroxyphenopyrrozin***
[887602-12-2]
$C_{13}H_{13}NO_3$ 231.251
Prod. by the marine-derived *Chromocleista* sp. strain R721. Amorph. solid. $[\alpha]_D^{25}$ +34 (c, 0.34 in MeOH). λ_{max} 198 (log ϵ 4.5); 222 (log ϵ 1.3); 307 (log ϵ 1.8) (MeOH).

Shiomi, K. *et al., J. Antibiot.*, 1995, **48**, 1413-1418 (*isol, uv, pmr, cmr*)
Japan. Pat., 1996, 96 127 583; *CA*, **125**, 112919n
Park, Y.C. *et al., J. Nat. Prod.*, 2006, **69**, 580-584 (*isol, Chromocleista*)

Phenoxan P-334

*3-Ethyl-6-methoxy-5-methyl-2-[2-(3-methyl-4-phenyl-3-butenyl)-4-oxazolyl]-4*H*-pyran-4-one, 9CI*
[134332-63-1]

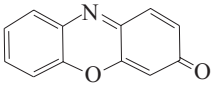


$C_{23}H_{25}NO_4$ 379.455
Isol. from *Polyangium* sp. Inhibitor of HIV-1 infection. NADH: ubiquinone oxidoreductase (Class II) inhibitor. Cryst. Mp 92-93°. Log P 4.19 (calc). λ_{max} 204 (ϵ 75300); 229 (ϵ 53800); 244 (ϵ 42700); 252 (ϵ 42700); 262 (sh); 274 (sh) (MeOH) (Derep). λ_{max} 204 ; 229 (ϵ 53900); 244 (ϵ 42600); 252 (ϵ 42600) (MeOH) (Berdy).

Jansen, R. *et al., Annalen*, 1991, 707 (*isol, pmr, struct*)
Kunze, B. *et al., J. Antibiot.*, 1992, **45**, 1549 (*props*)
Friedrich, L.T. *et al., Eur. J. Biochem.*, 1994, **219**, 691 (*activity*)
Garey, D. *et al., J.O.C.*, 1996, **61**, 4853 (*synth, pmr, cmr*)
Zhang, X. *et al., J. Het. Chem.*, 1997, **34**, 1061-1064 (*synth*)

3*H*-Phenoxazin-3-one, 9CI P-335

3-Phenoxazone
[1916-63-8]



$C_{12}H_7NO_2$ 197.193
Isol. from *Pycnoporus sanguineus*. Orange cryst. Mp 217-219° dec.

Kehrmann, F. *et al., Ber.*, 1902, **35**, 341 (*synth*)
Musso, H. *et al., Chem. Ber.*, 1957, **90**, 1814 (*uv*)
Corbett, J.F. *et al., Spectrochim. Acta*, 1965, **21**, 1411 (*synth, ir*)
Musso, H. *et al., Chem. Ber.*, 1978, **111**, 3012 (*synth*)
Bolognese, A. *et al., J. Het. Chem.*, 1986, **23**, 1003 (*synth, uv, pmr*)
Barret, R. *et al., Synth. Commun.*, 1990, **20**, 1543 (*synth*)
Achenbach, H. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1991, **324**, 3 (*isol*)
Bolognese, A. *et al., J. Organomet. Chem.*, 2002, **45**, 5205-5216 (*synth, uv, pmr*)

Phenylacetic acid P-336

Benzeneacetic acid, 9CI. Phenylethanoic acid. α-Toluic acid. FEMA 2878
[103-82-2]
$PhCH_2COOH$
$C_8H_8O_2$ 136.15
Found in essential oils, e.g. neroli, rose oil, free and as esters, and in many fruits. Also prod. by microorganisms, e.g. by *Fusarium oxysporum*, *Glomerella cingulata* and a marine derived *Streptomyces* sp. Volatile component of tail gland secretion from red deer *Cervus elaphus*. Used as 1*M* soln. in $CHCl_3$ for selective extraction separation of Cu and U ($CHCl_3$). Important industrial intermediate. Perfumery and flavouring ingredient. Incorporation in fermentation of penicillin results in production of Benzylpenicillin. Phytotoxin, germination inhibitor. Plates (petrol) with sweet taste at low conc. and rose-like odour. Mp 77-78.5°. Bp 265.5° $Bp_{0.01}$ 65-70°. pK_a 4.31 (H_2O).

▶ Fl. p. 102°. LD_{50} (rat, orl) 2250 mg/kg. Exp. teratogenic effects. AJ2430000

Amide: Benzeneacetamide, 9CI. Phenacetamide
[103-81-1]
C_8H_9NO 135.165
Produced by *Actinomyces* spp., sponge *Halichondria* sp., *Streptomyces albo-niger*, *Streptoverticillium olivoreticuli*, *Tedania anhelans*. Constit. of the leaves of *Allophylus cobbe*. Plant growth regulator. Plates or leaflets (C_6H_6). Mp 157-158°.

▶ AC7705000

Diethylamide: N,N-*Diethylbenzeneacetamide, 9CI*
[2431-96-1]
$C_{12}H_{17}NO$ 191.272
Found in various plant oils, e.g. garden cress (*Lepidium sativum*). Mp 86°. Bp 297°.

▶ AB7410000

Benzylamide: N-*Benzylbenzeneacetamide.* N-*Benzyl-2-phenylacetamide*
[7500-45-0]
$C_{15}H_{15}NO$ 225.29
Constit. of the stems of *Salvadora persica*. Cryst. (EtOH). Mp 121.5°.

Nitrile: Benzeneacetonitrile, 9CI. Benzyl cyanide. Benzyl nitrile. (Cyanomethyl)benzene. Cyanophenylmethane.

Phenylacetonitrile
[140-29-4]
C_8H_7N 117.15
Isol. from thick-tailed galago *Galago crassicaudatus*, oil of *Lepidium sativum* and other plant oils. Used in the detection of nitro compds. Liq. d_{15}^{15} 1.02. Bp 234° Bp_{12} 107°. n_D^{25} 1.5211.
▶ Explosive reaction with NaOCl + $H^{\oplus}$. Skin irritant. LD_{50} (rat, orl) 270 mg/kg. LD_{50} (rbt, skn) 270 mg/kg. AM1400000

[114-70-5]

Kotera, A. *et al., J.A.C.S.*, 1955, **77**, 6183-6186 (*benzylamide*)
Org. Synth., Coll. Vol., 4, 1963, 760 (*amide*)
Crewe, R.M. *et al., J. Chem. Ecol.*, 1979, **5**, 861-868 (*nitrile, isol*)
Strauss, C.R. *et al., Org. Prep. Proced. Int.*, 1995, **27**, 552 (*amide*)
Khalil, A.T. *et al., Arch. Pharmacal Res.*, 2006, **29**, 952-956 (*benzylamide, isol*)

N-(Phenylacetyl)-2-butenediamide, 9CI P-337

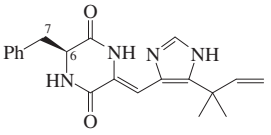
$PhCH_2CONHCOCH{=}CHCONH_2$
$C_{12}H_{12}N_2O_3$ 232.238

(*E*)-*form*
N-*Phenylacetylfumaramide*. ***Fumaramidmycin***. *C 9154*. *Ro 09-0049*. *Antibiotic C 9154*. *Antibiotic Ro 09-0049*
[57687-92-0]
Isol. from *Streptomyces kurssanovii* (grown on agar plates, not obt. from submerged cultures). Active against gram-positive and -negative bacteria. Mp 202-203° dec. λ_{max} 212 (sh) (ϵ 20000); 225 (ϵ 23400) (EtOH) (Derep).
▶ LD_{50} (mus, orl) 1250 mg/kg. EM4300000

Maruyama, H.B. *et al., J. Antibiot.*, 1975, **28**, 636; 648 (*isol, struct*)
Suhara, Y. *et al., J. Antibiot.*, 1975, **28**, 648
Hasegawa, T. *et al., J. Antibiot.*, 1975, **28**, 713
Japan. Pat., 1976, 76 32 789; *CA*, **85**, 61412n (*synth*)

Phenylahistin P-338

NSCL-96F037
[200815-37-8]
[200925-27-5 , 200815-38-9]



(*S*)-*form*

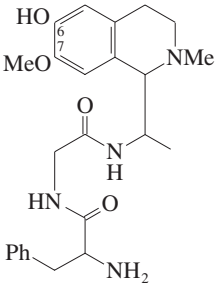
$C_{20}H_{22}N_4O_2$ 350.419
Prod. by *Aspergillus ustus* NSC-F038. Cytotoxic agent (*S*-isomer only). Mammalian cell cycle inhibitory agent. Inhibits tubulin polym. Amorph. powder. Mp 233-236°. $[\alpha]_D^{22}$ +123 (c, 0.1 in MeOH). Obt. as a partial racemate, *R*:*S* 3:1. λ_{max} 202 (log ϵ 4.38); 233 (sh) (log ϵ 4.05); 320 (log ϵ 4.43) (MeOH).

6,7-Didehydro: Dehydrophenylahistin
$C_{20}H_{20}N_4O_2$ 348.404
Synth. by enzymic dehydrogenation. Potent cytotoxic agent. Mixture of *E*/*Z*-isomers.

Kanoh, K. *et al., Bioorg. Med. Chem. Lett.*, 1997, **7**, 2847-2852 (*isol, uv, ir, pmr, cmr*)
Kanoh, K. *et al., J. Antibiot.*, 1999, **52**, 134-141 (*activity*)
Hayashi, Y. *et al., J.O.C.*, 2000, **65**, 8402-8405 (*synth*)
Kanzaki, H. *et al., J. Antibiot.*, 2002, **55**, 1042-1047 (*Dehydrophenylahistin*)

Phenylalanyl-*N*-[1-(1,2,3,4-tetrahydro-6-hydroxy-7-methoxy-2-methyl-1-isoquinolinyl)ethyl]glycinamide, 9CI P-339

[147471-63-4]



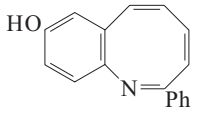
$C_{24}H_{32}N_4O_4$ 440.541
Tentative struct. Similar to Amphibine I, A-934. Alkaloid from flowers of *Hibiscus rosa* (Malvaceae).

O^7-*De-Me,* O^6-*Me:* α-*Amino*-N-*[2-oxo-2-[[1-(1,2,3,4-tetrahydro-7-hydroxy-6-methoxy-2-methyl-1-isoquinolinyl)ethyl]amino]ethyl]benzenepropanamide, 9CI*
[147455-43-4]
$C_{24}H_{32}N_4O_4$ 440.541
From flowers of *Hibiscus rosa* (Malvaceae). Tentative struct.

Khokhar, I. *et al., Sci. Int. (Lahore)*, 1992, **4**, 147; *CA*, **118**, 230140e (*isol, struct*)

2-Phenyl-1-benzazocin-8-ol, 9CI P-340

8-Hydroxy-2-phenyl-1-benzazocine. ***Hypodematine***
[134746-11-5]

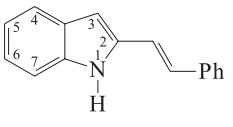


$C_{17}H_{13}NO$ 247.296
Alkaloid from fern *Hypodematium sinense*. Light yellow cryst. Mp 156-158°.

Chen, Y. *et al., Chin. Chem. Lett.*, 1990, **1**, 221; *CA*, **115**, 131977q (*isol, pmr, cmr, struct*)
Chen, Y. *et al., J. Chin. Pharm. Sci.*, 1992, **1**, 1; *CA*, **118**, 209429w

2-(2-Phenylethenyl)indole, 9CI P-341

2-Styrylindole
[60986-51-8]



(*E*)–*form*

$C_{16}H_{13}N$ 219.285

(*E*)-*form* [29475-88-5]
Cryst. (EtOAc/petrol). Mp 211-212° (207°).

(*Z*)-*form*
Ipomine A
[128263-26-3]
Alkaloid from the hairy roots of *Ipomoea batatas*.

Alper, H. *et al., Chem. Comm.*, 1976, 483 (*synth*)
Frannicolo, F. *et al., Tet. Lett.*, 1984, **25**, 3101
Eitel, M. *et al., Synthesis*, 1989, 364-367 (*synth, pmr*)
Nagarathnam, D. *et al., Synthesis*, 1992, 743-745 (*synth*)
Hudkins, R.L. *et al., J.O.C.*, 1995, **60**, 6218 (*synth, pmr*)
Yuan, S. *et al., Yaoxue Xuebao*, 2004, **39**, 818-830 (*isol*)

2-Phenylethylamine P-342

Benzeneethanamine, 9CI. Phenethylamine, 8CI. β-Aminoethylbenzene. FEMA 3220. β-Phenethylamine
[64-04-0]
$PhCH_2CH_2NH_2$
$C_8H_{11}N$ 121.182
Very widely distributed alkaloid, esp. in *Acacia* spp. and *Crataegus* spp. Also present in animal tissues, some algae, fungi and cacti (Fabaceae, Rosaceae, Cactaceae). Metab. of *Prosopis alba*. Prod. by *Streptomyces* 699-A3. Shows DNA binding activity. Monoamine oxidase inhibitor. Liq. with a fish odour. d_4^{24} 0.96. Bp 197-198° Bp_7 70-71°. n_D^{25} 1.5290. Absorbs CO_2 from air.
▶ Fl. p. 84°. Skin irritant and possible sensitiser. SG8750000

Hydrochloride: [156-28-5]
Leaflets (EtOH). Mp 223-224° (217°).
▶ SH7175000

N-*Formyl: (2-Phenylethyl)formamide, 9CI. 2-Phenethylformamide*
[23069-99-0]
$C_9H_{11}NO$ 149.192
Oil.

N-*Ac:* N-*(2-Phenylethyl)acetamide.* N-*Phenethylacetamide*
[877-95-2]
$C_{10}H_{13}NO$ 163.219
Prod. by *Streptomyces* sp. Lz531 and a limnic bacterial strain. Needles. Mp 51-52°. Bp 305-306° Bp_2 154°.
▶ AC7740000

N-*Propanoyl:* N-*(2-Phenylethyl)propanamide.* N-*Phenethylpropionamide*
[6283-04-1]
$C_{11}H_{15}NO$ 177.246
Prod. by the limnic bacterial strain GW90a. Amorph. Mp 52°.

N-*(2-Methylpropanoyl): 2-Methyl*-N-*(2-phenylethyl)propanamide.* N-*Phenethylisobutyramide*
[71022-62-3]
$C_{12}H_{17}NO$ 191.272
Prod. by the limnic bacterial strain GW90a. Amorph. Mp 80-81°.

N-*(2-Methylbutanoyl): 2-Methyl*-N-*(2-phenylethyl)butanamide. 2-Methyl*-N-

phenethylbutyramide
[53181-99-0]
$C_{13}H_{19}NO$ 205.299
Prod. by a limnic bacterial strain GW90a. Amorph. Mp 57-58°.

N-*(3-Methylbutanoyl): 3-Methyl*-N-*(2-phenylethyl)butanamide. 3-Methyl*-N-*phenethylbutyramide.* N-*Phenethylisovaleramide*
$C_{13}H_{19}NO$ 205.299
Prod. by a North sea bacterium *Cytophaga marinoflava* sp. AM13.1. Also prod. by a limnic bacterial strain GW90a. Amorph. Mp 64°.

N-*Hexanoyl:* N-*(2-Phenylethyl)hexanamide.* N-*Phenethylhexanamide*
[10264-26-3]
$C_{14}H_{21}NO$ 219.326
Prod. by the limnic bacterial strain GW90a. Amorph. Mp 57-58°.

N-*(13-Methyltetradecanoyl): 13-Methyl*-N-*(2-phenylethyl)tetradecanamide*
[921607-14-9]
$C_{23}H_{39}NO$ 345.567
Prod. by *Streptomyces* sp. Lz531. Powder. $[\alpha]_D^{23}$ +7.1 (c, 0.6 in $CHCl_3$). Unexplained opt. rotation.

N-*(7-Methoxy-4-tetradecenoyl)(4E,7S-): **Hermitamide A***
[286012-62-2]
$C_{23}H_{37}NO_2$ 359.551
Alkaloid from *Lyngbya majuscula*. Cytotoxic agent. Pale yellow oil. $[\alpha]_D^{26}$ -9.3 (c, 0.45 in $CHCl_3$). λ_{max} 216 (ϵ 5700) (EtOH).

N-*Hexadecanoyl:* N-*(2-Phenylethyl)hexadecanamide. Hexadecanoic acid 2-phenylethylamide*
[10015-69-7]
$C_{24}H_{41}NO$ 359.594
Alkaloid from the edible mushroom *Laetiporus sulphureus.* Amorph. powder. Mp 180-181°. λ_{max} 259 (MeOH).

N-*(9-Hydroxyhexadecanoyl): 9-Hydroxy*-N-*(2-phenylethyl)hexadecanamide*
[172303-93-4]
$C_{24}H_{41}NO_2$ 375.593
Isol. from *Telesto riisei*. Mildly cytotoxic to murine leukaemia cells (P-388) in culture. Cryst. Mp 78°. $[\alpha]_D^{25}$ -2.68 (c, 0.41 in $CHCl_3$). Erroneous struct. diag. in paper.

N-*(9-Oxohexadecanoyl): 9-Oxo*-N-*(2-phenylethyl)hexadecanamide*
[172303-92-3]
$C_{24}H_{39}NO_2$ 373.578
Isol. from the coelenterate *Telesto riisei*. Mildly cytotoxic to murine leukaemia cells (P-388) in culture. Cryst. Mp 85°. Erroneous struct. diag. in paper.

N-*Benzoyl:* N-*(2-Phenylethyl)benzamide.* N-*Phenethylbenzamide*
[3278-14-6]
$C_{15}H_{15}NO$ 225.29
Alkaloid from *Haplophyllum tuberculatum*, *Oxytropis muriceta* and *Oxytropis pseudoglandulosa*. Leaflets (EtOH). Mp 117-118°.

N-*(4-Hydroxy*-E-*cinnamoyl):* N-trans-p-*Coumaroyl-2-phenylethylamine*
[103197-54-2]
$C_{17}H_{17}NO_2$ 267.327
Alkaloid from *Anomianthus dulcis.* Cryst. Mp 146-148°. λ_{max} 217 (log ϵ 4.49); 223 (log ϵ 4.47); 277 (log ϵ 4.51); 330 (sh) (log ϵ 4.12) (MeOH).

N-*Me:* N-*Methylphenethylamine*
[589-08-2]
$C_9H_{13}N$ 135.208
Main alkaloid from *Acacia aduncа*, also present in other *Acacia* spp., *Eria jarensis* and in *Arthrophytum leptocladum* (Fabaceae, Chenopodiaceae). Bp 205° Bp_{38} 112.5-115° (lit. gives a pressure range).

▶ SH9625000

N-*Me, hydrochloride:* [4104-43-2]
Plates (cyclohexane). Mp 162-164°.

N,N-*Di-Me:* N,N-*Dimethylphenethylamine*
[1126-71-2]
$C_{10}H_{15}N$ 149.235
Isol. from defensive secretions of Daddy long legs *Sclerobunus robustus.* Alkaloid from *Eria jarensis* (Orchidaceae). Bp 205° Bp_6 66-68°.

N,N-*Di-Me, hydrochloride:* [10275-21-5]
Flakes (EtOH/EtOAc/hexane). Mp 164-165°.

N,N,N-*Tri-Me:* N,N,N-*Trimethylbenzeneethanaminium(1+), 9CI. Trimethylphenethylammonium(1+), 8CI*
[772-63-4]
$C_{11}H_{18}N^{\oplus}$ 164.27
Quaternary alkaloid from *Eria jarensis* (Orchidaceae).

N-*Et:* [22002-68-2]
$C_{10}H_{15}N$ 149.235
Bp_{14} 99°.

N,N-*Di-Et:* [5300-21-0]
$C_{12}H_{19}N$ 177.289
Bp 226° Bp_2 88-90°.

N-*Benzyl: Benzyl-2-phenylethylamine. Benethenamine*
[3647-71-0]
$C_{15}H_{17}N$ 211.306
Bp_{16} 162-165°.

[62510-53-6 , 1077-11-8 , 6068-85-5 , 75337-06-3]

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 1269D; 1270A; 1275D (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **2**, 570C; 571A; 583C; 584A (*nmr*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 1164C; 1166D (*ir*)
Sadtler Standard C-13 NMR Spectra, 68 (*cmr*)
Org. Synth., Coll. Vol., 3, 1955, 720-722 (*synth*)
Fitzgerald, J.S. *et al., Aust. J. Chem.*, 1964, **17**, 160-162 (*isol, pmr, N-Methylphenethylamine*)
Hedman, K. *et al., Acta Chem. Scand.*, 1969, **23**, 3261 (*Eria jarensis constits*)
Mosnaim, A. *et al., Clin. Chim. Acta*, 1973, **46**, 407-413 (*ir, ms*)
Smith, T.A. *et al., Phytochemistry*, 1977, **16**, 9-18 (*rev, occur*)
Iwase, H. *et al., Chem. Pharm. Bull.*, 1979, **27**, 1009-1014 (*glc, ms*)
Doetsch, P.W. *et al., J. Chromatogr.*, 1980, **189**, 79-85 (*occur*)
Keller, W.J. *et al., Phytochemistry*, 1982, **21**, 2851-2852 (*N-Methylphenethylamine, biosynth*)
Ekpa, O. *et al., Tet. Lett.*, 1984, **25**, 1315-1318 (*Dimethylphenethylamine, isol*)
Purchase, C.F. *et al., J.O.C.*, 1991, **56**, 457-459 (*synth, ir, pmr*)
Ding, C.Z. *et al., J. Med. Chem.*, 1993, **36**, 1711-1715 (*Dimethylphenethylamine, synth, pmr, cmr*)
Fenaroli's Handbook of Flavor Ingredients, 3rd edn., (ed. Burdock, G.A.), CRC Press, 1995, **2**, 648
Liyanage, G.K. *et al., J. Nat. Prod.*, 1996, **59**, 148-151 (*9-oxohexadecanoyl, 9-hydroxyhexadecanoyl*)
Encyclopedia of Food and Color Additives, (ed. Burdock, G.A.), CRC Press, 1997, 2155-2156
Sinz, A. *et al., Phytochemistry*, 1999, **50**, 1069-1072 (*Coumaroylphenylethylamine*)
Luis-Astudillo, S. *et al., Planta Med.*, 1999, **65**, 161-162 (*activity*)
Tan, L.T. *et al., J. Nat. Prod.*, 2000, **63**, 952-955 (*Hermitamide A*)
Al-Rehaily, A.J. *et al., Phytochemistry*, 2001, **57**, 597-602 (*N-Phenethylbenzamide, isol*)
Maskey, R.P. *et al., J. Antibiot.*, 2002, **55**, 643-649 (*phenethylamides, isol*)
Elliot, M.C. *et al., Org. Biomol. Chem.*, 2003, **1**, 3038-3047 (*N-formyl, synth, pmr, cmr*)
Shabaan, M. *et al., Dissertation*, Univ. of Göttingen, 2004, (*Cytophaga marinoflava amide*)
Shiono, Y. *et al., Nat. Prod. Res.*, 2005, **19**, 363-366 (*N-hexadecanoyl*)
Virolleaud, M.-A. *et al., Tet. Lett.*, 2006, **47**, 5127-5130 (*Hermitamide A, synth*)
Zhao, P.-J. *et al., Chem. Biodiversity*, 2007, **4**, 899-904 (*13-methyltetradecanoyl, Ac*)
Frost, C.G. *et al., Org. Biomol. Chem.*, 2008, **6**, 4340-4347 (*Hermitamide A, synth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, PDE250; PDE500

N-(2-Phenylethyl)carbamic acid P-343

[152435-36-4]
$PhCH_2CH_2NHCOOH$
$C_9H_{11}NO_2$ 165.191

Me ester: Methyl N-*(2-phenylethyl)carbamate*
[26011-68-7]
$C_{10}H_{13}NO_2$ 179.218
Solid (petrol) or oil. Mp 30°. $Bp_{0.8}$ 120-123°.

Et ester: Ethyl N-*(2-phenylethyl)carbamate*
[6970-83-8]
$C_{11}H_{15}NO_2$ 193.245
Isol. from a culture medium of the marine bacterium *Cytophaga* sp. Inhibitor of biofilm formation and marine fouling. Isol. and props. not fully descr.

Butyl ester: Butyl N-*(2-phenylethyl)carbamate. TMC 49A. Antibiotic TMC 49A*
[205594-32-7]
$C_{13}H_{19}NO_2$ 221.299
Prod. by *Streptomyces* sp. AS1345. Transcriptional up-regulator of low density lipoprotein receptor. Oil. Sol. MeOH, EtOAc, DMSO, $CHCl_3$; poorly sol. H_2O, Me_2CO. Mp 6-7°. Bp 120-122°. λ_{max} 260 (ϵ 270) (MeOH).

Rinkes, I.J. *et al., Rec. Trav. Chim. (J. R. Neth. Chem. Soc.)*, 1927, **40**, 268-277 (*Me ester*)
Shriner, R.L. *et al., J.A.C.S.*, 1952, **74**, 549-550 (*butyl ester, synth*)
Yamada, A. *et al., Bull. Chem. Soc. Jpn.*, 1997, **70**, 3061-3069 (*Et ester, isol*)

Koguchi, Y. *et al., J. Antibiot.*, 1998, **51**, 107-111 (*butyl ester, isol, pmr, cmr, ms*)
Salvatore, R.N. *et al., Tetrahedron*, 2002, **58**, 3329-3347 (*Me ester*)

N-2-Phenylethylcinnamamide P-344

3-Phenyl-N-*(2-phenylethyl)-2-propenamide, 9CI*. N-*Cinnamoylphenethylamine*
[55030-23-4]
PhCH=CHCONHCH$_2$CH$_2$Ph
$C_{17}H_{17}NO$ 251.327

(*E*)-*form* [103188-43-8]
Alkaloid from the leaves of *Spilanthes ocymifolia* and aerial parts of *Simsia cronquistii* (Asteraceae), from leaves of *Clausena indica* and from *Oxytropis pseudoglandulosa* (Fabaceae). Needles (cyclohexane). Mp 125-126°.

N-*Me*: ***Lansiumamide C***. N-*Methyl*-N-*phenylethylcinnamamide*
[121817-38-7]
$C_{18}H_{19}NO$ 265.354
Alkaloid from seeds of *Clausena lansium* (wampee) (Rutaceae). Yellowish plates (Et_2O). Mp 58-59°.

2,3-Dihydro: 3-Phenyl-N-*(2-phenylethyl)propanamide*
[10264-31-0]
$C_{17}H_{19}NO$ 253.343
Isol. from *Simsia cronquistii*. Cryst. Mp 94-96°.

Borges-del-Castillo, J. *et al., Phytochemistry*, 1984, **23**, 2671 (*isol, ir, pmr, cmr, ms, struct*)
Huneck, S. *et al., Fitoterapia*, 1986, **57**, 523 (*isol*)
Lin, J.H. *et al., Phytochemistry*, 1989, **28**, 621 (*Lansiumamide C*)
Maldonado, E. *et al., Phytochemistry*, 1992, **31**, 1413 (*3-Phenyl-N-(2-phenylethyl)propanamide*)
Riemer, B. *et al., Phytochemistry*, 1997, **45**, 337 (*isol, uv, ir, pmr*)
Stefanuti, I. *et al., Tet. Lett.*, 2000, **41**, 3735-3738 (*synth, Lansiumamide C*)

16-Phenyl-2,4-hexadecadienoic acid P-345

Ph(CH$_2$)$_{11}$CH=CHCH=CHCOOH
$C_{22}H_{32}O_2$ 328.494

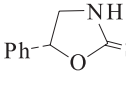
(2*E*,4*E*)-*form*

2-Methylpropylamide: N-*Isobutyl-16-phenyl-2,4-hexadecadienamide*
[108331-97-1]
$C_{26}H_{41}NO$ 383.616
Constit. of *Piper brachystachyum* (*Piper mullesua*). Viscous solid. λ_{max} 218 ; 260 (MeOH).

Srivastava, S. *et al., J. Indian Chem. Soc.*, 2000, **77**, 305-306 (*isol, pmr, cmr*)

5-Phenyl-2-oxazolidinethione, 9CI P-346

Barbarin. *Resedinine*



(*R*)–*form*

C_9H_9NOS 179.242

(*R*)-*form* [3433-15-6]
Isol. from *Barbarea* spp. Hydrol. prod. from Glucobarbarin. Tyrosinase inhibitor. Prims (EtOH aq.). Mp 128-129°. $[\alpha]_D^{23}$ -69.3 (c, 2 in MeOH). λ_{max} 243 (log ε 4.26) (MeOH).

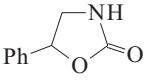
(*S*)-*form* [31456-67-4]
Hydrol. prod. isol. from genera *Reseda* and *Sibara*. Mp 126°. $[\alpha]_D^{23}$ +71 (c, 2 in MeOH).

(±)-*form* [85549-01-5]
Mp 139°.

Kjaer, A. *et al., Acta Chem. Scand.*, 1957, **11**, 906; 1958, **12**, 1693; 1970, **24**, 3031
Tazzhibaev, M.M. *et al., CA*, 1976, **85**, 108843 (*isol*)
Hirao, T. *et al., Bull. Chem. Soc. Jpn.*, 1982, **55**, 1163 (*synth, ir, pmr*)
Mieczkowski, J.B. *et al., Bull. Pol. Acad. Sci., Chem.*, 1986, **34**, 109; *CA*, **107**, 78122p (*synth*)
Moreno-Mañas, M. *et al., J. Het. Chem.*, 1993, **30**, 1235 (*synth, pmr*)
Seo, B. *et al., Planta Med.*, 1999, **65**, 683-686 (*isol*)

5-Phenyl-2-oxazolidinone, 9CI P-347

Resedine
[7693-77-8]



$C_9H_9NO_2$ 163.176
▶ LD_{50} (mus, ivn) 316 mg/kg. RQ3710000

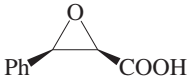
(±)-*form* [60426-44-0]
Constit. of *Reseda luteola*. Cryst. (C_6H_6), needles (EtOAc/hexane). Mp 88-89° Mp 120-121°.

3-Ph: 3,5-Diphenyl-2-oxazolidinone
[7426-72-4]
$C_{15}H_{13}NO_2$ 239.273
Needles ($CHCl_3$/petrol). Mp 78-79°.

Poos, G. *et al., J. Med. Chem.*, 1963, **6**, 266 (*synth*)
Foglia, T.A. *et al., J.O.C.*, 1967, **32**, 75 (*synth*)
Irwin, W.J. *et al., J.C.S.(C)*, 1971, 3166 (*deriv, synth,ir, ms*)
Tadzhibaev, M.M. *et al., Khim. Prir. Soedin.*, 1976, **12**, 270; *Chem. Nat. Compd. (Engl. Transl.)*, 1976, **12**, 245 (*isol*)
Filenko, N.I. *et al., CA*, 1979, **91**, 39376 (*synth*)
Pirkle, W.H. *et al., J.O.C.*, 1983, **48**, 2520 (*synth, pmr*)
Shibata, I. *et al., J.O.C.*, 1986, **51**, 2177 (*deriv, synth*)
Shen, Y.-M. *et al., Eur. J. Org. Chem.*, 2004, 3080-3089 (*synth, pmr, cmr*)

3-Phenyloxiranecarboxylic acid, 9CI P-348

2,3-Epoxy-3-phenylpropanoic acid. β-Phenylglycidic acid
[5694-02-0]
[121-39-1]



(2*R*,3*R*)-*form*

$C_9H_8O_3$ 164.16

(2ξ,3ξ)-*form*

Methylamide: N-*Methyl-3-phenyloxiranecarboxamide, 9CI*. ***Clausamide II***
[189315-54-6]
$C_{10}H_{11}NO_2$ 177.202
Alkaloid from the leaves of *Clausena lansium*.

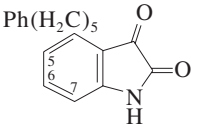
N-*Methyl*-N-*(2-phenylethenyl)amide:* ***Clausamide I***
[189315-53-5]
[183812-58-0 , 183812-57-9]
$C_{18}H_{17}NO_2$ 279.338
Alkaloid from the leaves of *Clausena lansium*.

[1566-68-3 , 73610-79-4]

Li, S.H. *et al., Chin. Pharm. J. (Taipei)*, 1996, **48**, 367-373 (*Clausamides*)

4-(5-Phenylpentyl)-1*H*-indole-2,3-dione P-349

4-(5-Phenylpentyl)isatin. ***Melosatin B***
[64838-03-5]



$C_{19}H_{19}NO_2$ 293.365
Alkaloid from *Melochia tomentosa* (Sterculiaceae). Noncryst.

7-Methoxy: ***Melosatin C***
[77410-47-0]
$C_{20}H_{21}NO_3$ 323.391
From *Melochia tomentosa* (Sterculiaceae). Red needles (C_6H_6/petrol). Mp 124-125°.

6,7-Dimethoxy: ***Melosatin A***
[64838-04-6]
$C_{21}H_{23}NO_4$ 353.417
From *Melochia tomentosa* (Sterculiaceae). Mp 119-121°.

6,7-Dimethoxy, 5-hydroxy: ***Melosatin D***
[155210-49-4]
$C_{21}H_{23}NO_5$ 369.416
From *Melochia tomentosa* (Sterculiaceae). Red needles. Mp 128-130°.

Kapadia, G.J. *et al., Chem. Comm.*, 1977, 535 (*uv, ir, pmr, ms, struct*)
Kapadia, G.J. *et al., Tetrahedron*, 1980, **36**, 2441 (*Melosatin C*)
Kapadia, G.J. *et al., Planta Med.*, 1993, **59**, 568 (*Melosatin D*)

3-Phenylpropanoic acid P-350

Benzenepropanoic acid, 9CI. Benzylacetic acid. Hydrocinnamic acid. Homotoluic acid. Dihydrocinnamic acid
[501-52-0]
PhCH$_2$CH$_2$COOH
$C_9H_{10}O_2$ 150.177
Prod. by *Clostridium butyricum*, also isol. from cultures of *Nicotiana tabacum*. Volatile component of tail gland secretion of red deer *Cervus elaphus*. Prisms (petrol). V. spar. sol. H_2O. Mp 48.5°. Bp 280° Bp_6 125-129°. pK_a 4.66 (H_2O). Steam-volatile.
▶ LD_{50} (mus, ivn) 3000-5000 mg/kg. DA8600000

Nitrile: Benzenepropanenitrile. Hydrocinnamonitrile. 1-Cyano-2-phenylethane

[645-59-0]
C_9H_9N 131.177
Constit. of *Brassica napus* and *Nasturtium officinale* (preferred genus name *Rorippa*). Bp 261° Bp_{18} 114-118°.
▶ LD_{50} (mus, orl) 116 mg/kg. MW5604750
Gould, S.J. *et al., J. Nat. Prod.*, 1993, **56**, 1239-1245 (*nitrile, isol*)

N-(3-Phenylpropanoyl)pyrrole P-351

*1-(1-Oxo-3-phenylpropyl)-1*H*-pyrrole, 9CI. 3-Phenylpropanoic acid pyrrolidide*
[112448-69-8]



$C_{13}H_{13}NO$ 199.252
Alkaloid from the fruit of *Piper sarmentosum*. Mp 48.5-50°.

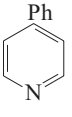
*4″-Hydroxy: 1-[3-(4-Hydroxyphenyl)-1-oxopropyl]-1*H*-pyrrole.* N*-[3-(4-Hydroxyphenyl)propanoyl]pyrrole. 3-(4-Hydroxyphenyl)propanoic acid pyrrolidide.* ***Piperlotine E***
[958296-14-5]
$C_{13}H_{13}NO_2$ 215.251
Alkaloid from the leaves of *Piper lolot*. Syrup. λ_{max} 229 ; 235 (sh) (MeOH).

*3″,4″-Dimethoxy: 1-[3-(3,4-Dimethoxyphenyl)-1-oxopropyl]-1*H*-pyrrole.* N*-[3-(3,4-Dimethoxyphenyl)propanoyl]pyrrole. 3-(3,4-Dimethoxyphenyl)propanoic acid pyrrolidide*
[204587-76-8]
$C_{15}H_{17}NO_3$ 259.304
Alkaloid from *Piper brachystachyum*. Needles (petrol/$CHCl_3$). Mp 108°. λ_{max} 285 (MeOH).

Likhitwitayawuid, K. *et al., Tetrahedron*, 1987, **43**, 3689-3694 (*isol, synth, uv, ir, pmr, cmr, ms*)
Kumar, R. *et al., Acta Cryst. C*, 1998, **54**, 363-365 (*dimethoxy deriv*)
Parmar, V.S. *et al., Phytochemistry*, 1998, **49**, 1069-1078 (*dimethoxy deriv*)
Li, C.-Y. *et al., J. Agric. Food Chem.*, 2007, **55**, 9436-9442 (*Piperlotine E*)

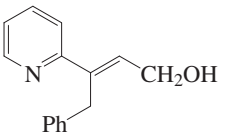
4-Phenylpyridine, 9CI P-352

[939-23-1]



$C_{11}H_9N$ 155.199
Occurs in tea and peppermint. Plates (H_2O). Sol. hot H_2O. Mp 77-78°. Bp 274-275°. pK_a 5.35 (25°).
▶ LD_{50} (mus, ivn) 89 mg/kg. UT7141000
Picrate:
Orange needles. Mp 195-196°.
1-Oxide: [1131-61-9]
$C_{11}H_9NO$ 171.198
Prisms (C_6H_6). Mp 152°.
1-Me: see 1-Methyl-4-phenylpyridinium(1+), #GVC30-V
Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 739A; 917B (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 249B (*nmr*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 1519B (*ir*)
Elks, J. *et al., J.C.S.*, 1943, 441 (*synth*)
Saeki, S. *et al., Chem. Pharm. Bull.*, 1984, **32**, 1780 (*synth*)
Godin, C.S. *et al., Drug Metab. Dispos.*, 1989, **17**, 180 (*metab*)
Hassan, M.N. *et al., Adv. Neurol.*, 1990, **53**, 219-223 (*pharmacol*)
Gromov, S.P. *et al., Eur. J. Org. Chem.*, 2002, 4123-4126 (*synth, pmr*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, PGE750

4-Phenyl-3-(2-pyridinyl)-2-buten-1-ol P-353

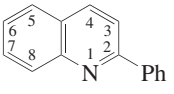


$C_{15}H_{15}NO$ 225.29

(E)-form [915138-94-2]
Prod. by *Streptomyces* sp. KACC91010. Antiproliferative agent.
Shin, C. *et al., Bioorg. Med. Chem. Lett.*, 2006, **16**, 5643-5645 (*isol, pmr, cmr*)

2-Phenylquinoline, 9CI P-354

[612-96-4]



$C_{15}H_{11}N$ 205.259
Alkaloid from the stem bark of *Galipea longiflora* (Rutaceae). Needles (EtOH aq.), cryst. (hexane). Sol. Et_2O, C_6H_6; spar. sol. H_2O; v. spar. sol. petrol. Mp 84°. Bp_6 194-198°. Triboluminescent.

Methiodide: [14886-84-1]
Orange-red cryst. (EtOH/Et_2O). Mp 200°.
Picrate: [5278-66-0]
Yellow leaflets (EtOH). Mp 191-192°.
N-*Oxide:* [5659-33-6]
$C_{15}H_{11}NO$ 221.258
Cryst. (EtOAc). Mp 144°.
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 425A (*nmr*)
Filippi, J. *et al., Bull. Soc. Chim. Fr.*, 1968, 268-275 (*synth, uv, ir*)
Koch, C.W. *et al., J. Het. Chem.*, 1974, **11**, 475-479 (*ms*)
Crisp, G.T. *et al., Aust. J. Chem.*, 1989, **42**, 279-285 (*synth, cmr*)
Fournet, A. *et al., Can. J. Chem.*, 1989, **67**, 2116-2118 (*isol, uv, pmr, ms*)
Koyama, J. *et al., Chem. Express*, 1991, **6**, 197-200; 1992, **7**, 321-324 (*synth*)
Ali, N.M. *et al., Tetrahedron*, 1992, **37**, 8117-8126 (*synth*)
Koyama, J. *et al., Chem. Pharm. Bull.*, 1999, **47**, 1038-1039 (*synth, ir, pmr*)
Horaguchi, T. *et al., J. Het. Chem.*, 2002, **39**, 61-67 (*synth, pmr, cmr*)
Shi, D. *et al., Synthesis*, 2005, 717-724 (*synth, ir, pmr, cmr*)
Han, R. *et al., Heterocycles*, 2006, **68**, 1675-1684 (*synth, ir, pmr, cmr*)
Korn, T.J. *et al., Synthesis*, 2006, 3547-3574 (*synth, ir, pmr, cmr, ms*)
Okuma, K. *et al., Bull. Chem. Soc. Jpn.*, 2007, **80**, 1824-1827 (*synth*)
Hill, M.D. *et al., Synthesis*, 2007, 1115-1119 (*synth, ir, pmr*)
Cho, S.-D. *et al., Tetrahedron*, 2007, **63**, 1345-1352 (*synth*)

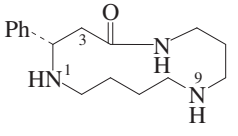
3-Phenylquinoline, 9CI P-355

[1666-96-2]

$C_{15}H_{11}N$ 205.259
Alkaloid from *Peganum nigellastrum*. Plates (Et_2O). Sol. EtOH, Et_2O, $CHCl_3$, C_6H_6. Mp 49-52°. Bp 205-207° $Bp_{0.1}$ 134°. Spar. steam-volatile.

Picrate:
Yellow cryst. (EtOH). Mp 205°.
Methiodide:
Yellow needles (MeOH). Mp 224°.
Cadogan, J.I.G. *et al., J.C.S.*, 1962, 4257-4258 (*synth*)
Sobczyk, L. *et al., CA*, 1963, **59**, 7345a (*uv*)
Sakamoto, T. *et al., Tetrahedron*, 1993, **49**, 9713-9720 (*synth, pmr*)
Cacchi, S. *et al., Tetrahedron*, 1996, **52**, 10225-10240 (*synth, pmr, ir*)
Koyama, J. *et al., Chem. Pharm. Bull.*, 1998, **46**, 332-334 (*synth, ir, pmr*)
Ma, Z.-Z. *et al., Phytochemistry*, 2000, **53**, 1075-1078 (*isol*)
Fahkfakh, M.A. *et al., Synth. Commun.*, 2002, **32**, 2863-2875 (*synth, ir, pmr, cmr*)

2-Phenyl-1,5,9-triazacyclotridecan-4-one, 9CI P-356



(*S*)-*form*

$C_{16}H_{25}N_3O$ 275.393

(S)-form
N^9-*Ac:* **N-*Acetyl*-N-*deoxymayfoline***
$C_{18}H_{27}N_3O_2$ 317.43
Alkaloid from leaves of *Maytenus buxifolia* (Celastraceae). Cryst. (EtOAc). Mp 177-178°. $[\alpha]_D^{22}$ -17.8 (c, 1.01 in $CHCl_3$). Called N^1-acetyl-N^1-deoxy in the lit.
N^9-*Benzoyl:* ***Celabenzine***
[53938-08-2]
$C_{23}H_{29}N_3O_2$ 379.501
Alkaloid from *Tripterygium wilfordii* and *Maytenus mossambicensis* var. *mossambicensis* (Celastraceae). Cryst. (EtOAc). Mp 163-167° (156-158°). No detectable opt. activity. λ_{max} 258 (sh) (ϵ 1390); 264 (sh) (ϵ 935); 270 (sh) (ϵ 685) (95% EtOH) (Derep).
N^9-E-*Cinnamoyl:* ***Celacinnine***
[53938-05-9]
$C_{25}H_{31}N_3O_2$ 405.539
Alkaloid from *Maytenus arbutifolia*,

Maytenus serrata, *Maytenus heterophylla*, *Tripterygium wilfordii* and *Pleurostylia africana* (Celastraceae). Needles (hexane/$CHCl_3$). Mp 203-204°. $[\alpha]_D^{25}$ +19 (c, 0.16 in $CHCl_3$). λ_{max} 223 (sh) (ϵ 16000); 277 (ϵ 23000) (MeOH) (Derep).

N^9-E-*Cinnamoyl,* N^1*-Ac:* ***Viburnine***
[171236-03-6]
$C_{27}H_{33}N_3O_3$ 447.576
Alkaloid from *Viburnum rhytidophyllum*. Mp 115-118°. $[\alpha]_D^{24}$ +67.7 (c, 0.939 in $CHCl_3$) (synthetic). $[\alpha]_D$ -2.6 (MeOH) (natural).

N^9-*Z-Cinnamoyl:* ***Celallocinnine***
[53990-48-0]
$C_{25}H_{31}N_3O_2$ 405.539
Alkaloid from *Maytenus arbutifolia, Maytenus serrata* and *Pleurostylia africana* (Celastraceae). Needles (EtOAc/Et_2O/hexane). Mp 172-173°. $[\alpha]_D^{25}$ -24 (c, 0.23 in $CHCl_3$). λ_{max} 255 (ϵ 11800); 264 (sh) (MeOH) (Derep).

N^9*-(3-Furancarbonyl):* ***Celafurine***
[53938-09-3]
[79435-41-9]
$C_{21}H_{27}N_3O_3$ 369.463
Alkaloid from the roots of *Tripterygium wilfordii* (Celastraceae). Cryst. (EtOAc). Mp 154-155°. $[\alpha]_D^{25}$ -11 (c, 0.11 in $CHCl_3$). λ_{max} 222 (sh) (ϵ); 232 (sh); 285 (ϵ 1230) (95% EtOH) (Derep).

N^9*-Hydroxy: Mayfoline*
[74133-16-7]
$C_{16}H_{25}N_3O_2$ 291.392
Alkaloid from the aerial parts of *Maytenus buxifolia* (Celastraceae). Cryst. (EtOAc). Mp 200-204°. $[\alpha]_D^{22}$ -52.3 (c, 0.636 in $CHCl_3$) (the original reported value of +10.6 is considered erroneous).

3S-Hydroxy, N^9-E-*cinnamoyl:* ***3-Hydroxycelacinnine***
[145199-54-8]
$C_{25}H_{31}N_3O_3$ 421.538
Minor alkaloid from leaves of *Pleurostylia opposita* (Celastraceae). Amorph. $[\alpha]_D$ 0 (c, 1 in $CHCl_3$). Abs. config. is (2*R*,3*S*) owing to change in *R,S*-priorities.

(±)-*form*

N^9*-Benzoyl:* [73465-25-5]
Synthetic. Cryst. (EtOAc). Mp 190-194° (softens then solidifies at 147-148°) (170-173°).

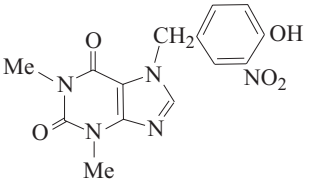
N^9-E-*Cinnamoyl:*
Synthetic. Cryst. (EtOAc/hexane or C_6H_6). Mp 166-169° Mp 178-181°.

N^9-*Z-Cinnamoyl:* [79435-40-8]
Synthetic. No Mp recorded.

Kupchan, S.M. *et al., J.O.C.*, 1977, **42**, 3660 (*Celabenzine, Celafurine, Celacinnine, isol, uv, cd, ir, pmr, ms, struct*)
McManis, J.S. *et al., J.O.C.*, 1980, **45**, 2041 (*Celabenzine, Celacinnine, synth*)
Ripperger, H. *et al., Phytochemistry*, 1980, **19**, 162 (*Mayfoline*)
Wasserman, H.H. *et al., Tet. Lett.*, 1980, **21**, 3493 (*Celacinnine, synth, ir, pmr*)
Wagner, H. *et al., Helv. Chim. Acta*, 1981, **64**, 283; 1982, **65**, 739 (*Celabenzine, Celacinnine, uv, ir, pmr, cmr, ms, synth*)
Yamamoto, H. *et al., J.A.C.S.*, 1981, **103**, 6133 (*synth, ir, pmr, ms*)
Diaz, M. *et al., Phytochemistry*, 1982, **21**, 255 (*Mayfoline, N-Acetyl-N-deoxymayfoline*)
Iida, H. *et al., Tet. Lett.*, 1986, **27**, 207 (*Celabenzine, synth, ir, pmr, cd*)
Séguineau, C. *et al., Helv. Chim. Acta*, 1992, **75**, 2283 (*3-Hydroxycelacinnine*)
Tawil, B.F. *et al., Tetrahedron*, 1992, **48**, 3775 (*N-Acetyl-N-deoxymayfoline, synth*)
Begley, M.J. *et al., J.C.S. Perkin 1*, 1993, 2027 (*Celabenzine, synth*)
Itoh, N. *et al., Heterocycles*, 1995, **41**, 415 (*Celacinnine, synth*)
Abdallah, O.M. *et al., CA*, 1996, **124**, 4885u (*Viburnine*)
Kuehne, P. *et al., Helv. Chim. Acta*, 1996, **79**, 1085; 1997, **80**, 1802-1808 (*Celabenzine, Mayfoline, N-Acetyl-N-deoxymayfoline, Celafurine, Celacinnine, synth*)
Matsuyama, H. *et al., J.C.S. Perkin 1*, 2001, 2924-2930 (*Celacinnine, synth*)
Khanjin, N.A. *et al., Helv. Chim. Acta*, 2003, **86**, 2028-2057 (*3-Hydroxycelacinnine, synth, abs config*)

Phidolopin P-357

*3,7-Dihydro-7-[(4-hydroxy-3-nitrophenyl)methyl]-1,3-dimethyl-1*H*-purine-2,6-dione, 9CI.* N^7*-(4-Hydroxy-3-nitrobenzyl)theophylline*
[92014-27-2]



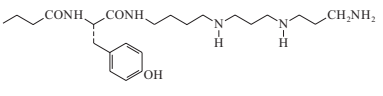
$C_{14}H_{13}N_5O_5$ 331.287
Found in the marine bryozoan *Phidolopora pacifica*. Shows antifungal and antialgal props. Cryst. (MeOH). Sol. MeOH, EtOAc; poorly sol. H_2O. Mp 226-227°. λ_{max} 275 (ϵ 16800); 353 (ϵ 3300) (MeCN) (Derep).

N^1,N^3*-Di-de-Me:* ***Desmethylphidolopin***
[103545-34-2]
$C_{12}H_9N_5O_5$ 303.234
From the marine bryozoans *Phidolopora pacifica* and *Diaperoecia californica*. Antifungal agent. Yellow amorph. powder.

Ayer, S.W. *et al., J.O.C.*, 1984, **49**, 3869-3870 (*isol, uv, ir, pmr, ms, cryst struct*)
Hirota, K. *et al., Tet. Lett.*, 1985, **26**, 2355 (*synth*)
Tischler, M. *et al., Comp. Biochem. Physiol., B: Comp. Biochem.*, 1986, **84**, 43 (*deriv*)
Avasthi, K. *et al., Indian J. Chem., Sect. B*, 1996, **35**, 437 (*synth, pmr, cmr, ms*)

Philanthotoxin 433 P-358

δ Philanthotoxin. PhTX-433
[115976-91-5]

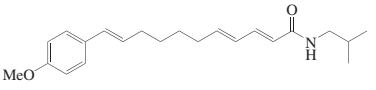


$C_{23}H_{41}N_5O_3$ 435.609
Isol. from the venom of the solitary digger wasp *Philanthus triangulum*. Glutamate receptor inhibitor. Oil or amorph. powder.

Eldefrawi, A.T. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 1988, **85**, 4910 (*isol, pharmacol*)
Rozental, R. *et al., J. Pharmacol. Exp. Ther.*, 1989, **249**, 123-130 (*pharmacol*)
Nakanishi, K. *et al., Pure Appl. Chem.*, 1990, **62**, 1223 (*isol, synth*)
Goodnow, R. *et al., Tetrahedron*, 1990, **46**, 3267 (*synth*)
Wang, F. *et al., Org. Lett.*, 2000, **2**, 1581-1583 (*synth*)
Chhabra, S.R. *et al., Tet. Lett.*, 2000, **41**, 1095-1098; 1099-1102 (*synth*)
Stromgard, K. *et al., Magn. Reson. Chem.*, 2006, **44**, 1013-1022 (*cmr*)

Philippinamide P-359

*11-(4-Methoxyphenyl)-*N*-(2-methylpropyl)-2,4,10-undecatrienamide. 11-(4-Methoxyphenyl)-2,4,10-undecatrienoic acid isobutylamide*

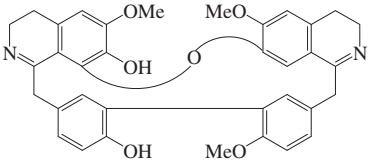


$C_{22}H_{31}NO_2$ 341.492

(E,E,E)-form [949102-31-2]
Alkaloid from the stems of *Piper philippinum*. Needles (MeOH). Mp 135.5-136.5°. λ_{max} 261 (log ϵ 3.62) (MeOH).

Chen, Y.-C. *et al., Phytochemistry*, 2007, **68**, 2101-2111 (*isol, pmr, cmr, ms*)

Philogaline P-360

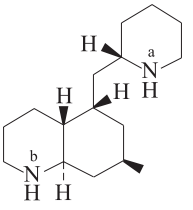


$C_{35}H_{32}N_2O_6$ 576.648
Alkaloid from *Guatteria boliviana*. Amorph. λ_{max} 205 (log ϵ 4.38); 231 (sh) (log ϵ 4.26); 284 (log ϵ 3.89) (EtOH).

Mahiou, V. *et al., Phytochemistry*, 2000, **54**, 709-716

Phlegmarine P-361

[66834-87-5]



Probable relative configuration

$C_{16}H_{30}N_2$ 250.426
Alkaloid from *Lycopodium phlegmaria* (Lycopodiaceae). Noncryst.

N^a-*Me:* **N^a-*Methylphlegmarine***
[66834-88-6]
$C_{17}H_{32}N_2$ 264.453
Alkaloid from *Lycopodium cernuum* (Lycopodiaceae). Oil.

N^b-*Me:* **N^b-*Methylphlegmarine***
[66834-89-7]
$C_{17}H_{32}N_2$ 264.453
Alkaloid from *Lycopodium phlegmaria* (Lycopodiaceae). Oil.

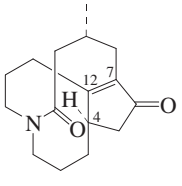
N^b-*Me,* N^a-*Ac:* **N^a-*Acetyl*-N^b-*methylphlegmarine***
$C_{19}H_{34}N_2O$ 306.49
Alkaloid from *Lycopodium clavatum* var. *borbonicum* (Lycopodiaceae). Oil. $[\alpha]_D$ -11 (c, 0.7 in $CHCl_3$).

N,N′-*Di-Me:* **N,N′-*Dimethylphlegmarine***
[66834-90-0]
$C_{18}H_{34}N_2$ 278.48
Alkaloid from *Lycopodium phlegmaria*, also present in *Lycopodium clavatum*. Oil. $[\alpha]_D$ -21 (c, 1.13 in $CHCl_3$) (synthetic). Alkaloid L18 from *L. clavatum* was a mixt. of *N,N*-Dimethylphlegmarine and an isomeric compd.

Nyembo, L. *et al., Can. J. Chem.*, 1978, **56**, 851 (*isol, ir, pmr, ms, struct*)
Leniewski, A. *et al., Can. J. Chem.*, 1981, **59**, 2479; 2695 (*N^a-Methylphlegmarine, synth, config*)
Inubushi, Y. *et al., Yakugaku Zasshi*, 1982, **102**, 434; *CA*, **97**, 107030q (*N,N-Dimethylphlegmarine*)
Ayer, W.A. *et al., Can. J. Chem.*, 1990, **68**, 1300 (*Alkaloid L18*)
Comins, D.L. *et al., J.O.C.*, 1999, **64**, 2184-2185 (*synth*)

Phlegmariurine A P-362

[93754-82-6]



Absolute Configuration

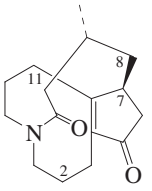
$C_{16}H_{23}NO_2$ 261.363
Alkaloid from *Phlegmariurus fordii* whole plant (preferred genus name *Huperzia*) (Lycopodiaceae).

4-Hydroxy: ***Lycoposerramine E***
[481048-27-5]
$C_{16}H_{23}NO_3$ 277.363
Alkaloid from *Lycopodium serratum*. Needles (EtOH). Mp 259-262° subl.

Tong, S. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 1984, **26**, 411-415; *CA*, **102**, 3253v (*isol, struct*)
Wan, Z. *et al., Kexue Tongbao (Foreign Lang. edn.)*, (Foreign Lang. Ed.), 1986, **31**, 489-492; *CA*, **106**, 5290m (*cryst struct, abs config*)
Takayama, H. *et al., Tet. Lett.*, 2002, **43**, 8307-8311 (*cmr, Lycoposerramine E*)

Phlegmariurine B P-363

[93754-83-7]



$C_{16}H_{23}NO_2$ 261.363
Alkaloid from *Phlegmariurus fordii* (preferred genus name *Huperzia*) and *Huperzia serrata*. Prisms (Me_2CO). Mp 110-111°.

2α-Hydroxy: ***2α-Hydroxyphlegmariurine B***
$C_{16}H_{23}NO_3$ 277.363
Alkaloid from *Huperzia serrata*. Prisms (Me_2CO). Mp 240-241°. $[\alpha]_D^{25}$ -0.2 (c, 0.17 in $CHCl_3$).

7-Hydroxy: ***7-Hydroxyphlegmariurine B***
$C_{16}H_{23}NO_3$ 277.363
Alkaloid from *Huperzia serrata*. Prisms (Me_2CO). Mp 214-216°. $[\alpha]_D^{25}$ -2.2 (c, 0.17 in MeOH).

7-Hydroperoxy: ***7-Hydroperoxyphlegmariurine B***
$C_{16}H_{23}NO_4$ 293.362
Alkaloid from *Huperzia serrata*. Prisms (Me_2CO/MeOH). Mp 188-190°. $[\alpha]_D^{25}$ -1.8 (c, 0.67 in MeOH).

8β-Hydroxy: ***8β-Hydroxyphlegmariurine B***
$C_{16}H_{23}NO_3$ 277.363
Alkaloid from *Huperzia serrata*. $[\alpha]_D^{25}$ -205 (c, 0.2 in EtOH).

11α-Hydroxy: ***11α-Hydroxyphlegmariurine B***
$C_{16}H_{23}NO_3$ 277.363
Alkaloid from *Huperzia serrata*. Prisms (Me_2CO/MeOH). Mp 246-248°. $[\alpha]_D^{25}$ -1.2 (c, 0.67 in MeOH).

11α-Hydroperoxy: ***11α-Hydroperoxyphlegmariurine B***
$C_{16}H_{23}NO_4$ 293.362
Alkaloid from *Huperzia serrata*. Prisms (Me_2CO/MeOH). Mp 164-166°. $[\alpha]_D^{25}$ -2.9 (c, 0.58 in MeOH).

7,11α-Dihydroxy: ***7,11α-Dihydroxyphlegmariurine B***
$C_{16}H_{23}NO_4$ 293.362
Alkaloid from *Huperzia serrata*. Prisms (Me_2CO/MeOH). Mp 265-267°. $[\alpha]_D^{25}$ -1.7 (c, 0.42 in MeOH).

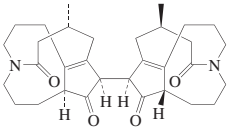
2-Oxo: ***2-Oxophlegmariurine B***
$C_{16}H_{21}NO_3$ 275.347
Alkaloid from *Huperzia serrata*. Amorph. powder. $[\alpha]_D^{25}$ -2.2 (c, 0.03 in $CHCl_3$).

11-Oxo: ***11-Oxophlegmariurine B***
$C_{16}H_{21}NO_3$ 275.347
Alkaloid from *Huperzia serrata*. Prisms (Me_2CO/petrol). Mp 233-235°. $[\alpha]_D^{25}$ -5.1 (c, 0.35 in $CHCl_3$).

Tan, C.-H. *et al., J. Asian Nat. Prod. Res.*, 2002, **4**, 227-231 (*isol, cd, pmr, cmr*)
Tan, C.-H. *et al., Planta Med.*, 2002, **68**, 188-190 (*isol, cd, pmr, cmr*)
Tan, C.-H. *et al., Acta Bot. Sin.*, 2003, **45**, 118-121 (*7-Hydroperoxyphlegmariurine B, 11-Hydroperoxyphlegmariurine B*)
Yuan, S.-Q. *et al., Yaoxue Xuebao*, 2003, **38**, 596-598 (*8-Hydroxyphlegmariurine B*)

Phlegmariurine C P-364

[115491-58-2]

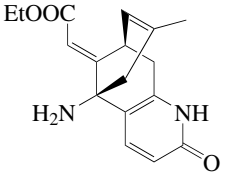


Relative Configuration

$C_{32}H_{44}N_2O_4$ 520.711
The full struct. shown does not appear to have been publ., but is given on a Scripps internal website. Alkaloid from whole plants of *Phlegmariurus fordii* (preferred genus name *Huperzia*). Mp 151-152°.
Chu, B.M. *et al., Yaoxue Xuebao*, 1988, **23**, 115-121; *CA*, **109**, 70347m (*isol*)

Phlegmariurine M P-365

[125287-10-7]

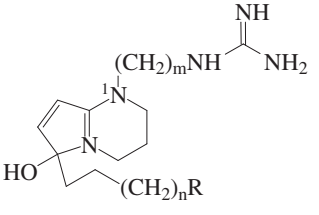


$C_{17}H_{20}N_2O_3$ 300.357
Alkaloid from *Phlegmariurus fordii* (preferred genus name *Huperzia*) (Lycopodiaceae).

Miao, Z. *et al., Huaxue Xuebao*, 1989, **47**, 702; *CA*, **112**, 115700b

Phloeodictyne A P-366

Phloeodictine A



Naming system and numbering revised in 2004. Under the revised numbering scheme, the number before the comma indicates *m*, the number after the comma indicates *n*, and the suffix *a* or *i* indicates the end-group *R* (*a* = allyl, $-CH_2CH{=}CH_2$, *i* = isopropyl, $-CH(CH_3)_2$). The +ve charge is delocalised over the two ring nitrogens. Isol. from the New Caledonian deep water sponge *Phloeodictyon* sp. and shallow-water sponge *Oceanapia fistulosa* (*Phloeodictyon fistulosa*). Shows *in vitro* antibacterial activity and mod. cytotoxicity against KB cells. Shows antiplasmodial props.

Phloeodictyne 4,5a

Phloeodictine A4
[155070-26-1]
$C_{22}H_{41}N_5O$ 391.599
λ_{max} 224 (ϵ 6700); 274 (ϵ 2200) (MeOH) (Berdy).

Phloeodictyne 4,5i
$C_{22}H_{43}N_5O$ 393.615

Phloeodictyne 4,6a
$C_{23}H_{43}N_5O$ 405.626

Phloeodictyne 4,6i
$C_{23}H_{45}N_5O$ 407.641

Phloeodictyne 4,7a
Phloeodictine A2
[155070-28-3]
$C_{24}H_{45}N_5O$ 419.652
Amorph. solid (as dichloride). Mixt. with Phloeodictine A1. λ_{max} 224 (ϵ 6700); 274 (ϵ 2200) (MeOH) (Berdy).

Phloeodictyne 4,7i
$C_{24}H_{47}N_5O$ 421.668

Phloeodictyne 4,8a
$C_{25}H_{47}N_5O$ 433.679

Phloeodictyne 4,8i
Phloeodictine A7
[155070-24-9]
$C_{25}H_{49}N_5O$ 435.695
λ_{max} 224 (ϵ 6700); 274 (ϵ 2200) (MeOH) (Berdy).

Phloeodictyne 4,9a
Phloeodictine A (obsol.)†
[142260-80-8]
$C_{26}H_{49}N_5O$ 447.706
Amorph. solid (as dichloride). λ_{max} 224 (ϵ 6700); 274 (ϵ 2200) (MeOH) (Derep).

Phloeodictyne 4,10a
$C_{27}H_{51}N_5O$ 461.733

Phloeodictyne 4,10i
$C_{27}H_{53}N_5O$ 463.749

Phloeodictyne 4,11a
$C_{28}H_{53}N_5O$ 475.76

Phloeodictyne 5,4a
Phloeodictine A5
[155070-27-2]
$C_{22}H_{41}N_5O$ 391.599
λ_{max} 224 (ϵ 6700); 274 (ϵ 2200) (MeOH) (Berdy).

Phloeodictyne 5,4i
$C_{22}H_{43}N_5O$ 393.615

Phloeodictyne 5,5a
Phloeodictine A3
[155112-61-1]
$C_{23}H_{43}N_5O$ 405.626
Amorph. solid (as dichloride). Initially isol. as a *ca.* 2.6:0.7:0.3 insep. mixt. with Phloeodictines A4 and A5. λ_{max} 224 (ϵ 6700); 274 (ϵ 2200) (MeOH) (Berdy).

Phloeodictyne 5,5i
$C_{23}H_{45}N_5O$ 407.641

Phloeodictyne 5,6i
$C_{24}H_{47}N_5O$ 421.668

Phloeodictyne 5,7a
Phloeodictine A1
[155070-29-4]
$C_{25}H_{47}N_5O$ 433.679
Amorph. solid (as dichloride). Isol. as a *ca.* 2.6:1 insep. mixt. with Phloeodictine A2. λ_{max} 224 (ϵ 6700); 274 (ϵ 2200) (MeOH) (Berdy).

Phloeodictyne 5,7i
$C_{25}H_{49}N_5O$ 435.695

Phloeodictyne 5,8a [690654-91-2]
$C_{26}H_{49}N_5O$ 447.706

Phloeodictyne 5,8i
Phloeodictine A6
[155070-25-0]
$C_{26}H_{51}N_5O$ 449.722
Amorph. solid (as dichloride). Initially isol. as a *ca.* 1:1.4 insep. mixt. with Phloeodictine A7. λ_{max} 224 (ϵ 6700); 274 (ϵ 2200) (MeOH) (Berdy).

Phloeodictyne 5,9a
$C_{27}H_{51}N_5O$ 461.733

Phloeodictyne 5,9i
$C_{27}H_{53}N_5O$ 463.749

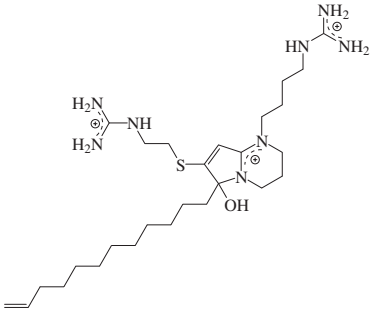
Phloeodictyne 5,10a
$C_{28}H_{53}N_5O$ 475.76

Phloeodictyne 5,10i
$C_{28}H_{55}N_5O$ 477.775

Kourany-Lefoll, E. *et al., Tetrahedron*, 1994, **50**, 3415-3426 (*isol*)
Neubert, B.J. *et al., Org. Lett.*, 2003, **5**, 765-768 (*synth*)
Mancini, I. *et al., Org. Biomol. Chem.*, 2004, **2**, 783-787 (*isol, ms*)

Phloeodictyne B P-367

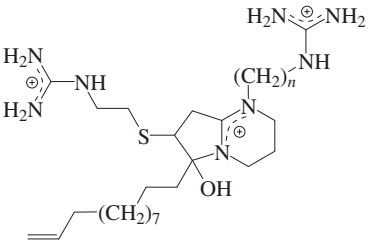
[142260-81-9]



$C_{27}H_{53}N_8OS^{3\oplus}$ 537.835
Isol. from a New Caledonian sponge *Phloeodictyon* sp. Amorph. solid (as trichloride). CAS no. refers to trichloride. λ_{max} 202 (ϵ 5500); 279 (ϵ 7100) (MeOH) (Derep).

Kourany-Lefoll, E. *et al., J.O.C.*, 1992, **57**, 3832 (*isol, uv, pmr, cmr, cd, struct*)

Phloeodictyne C P-368



Phloeodictyne C1, $n = 5$
C2, $n = 4$

Exhibits *in vitro* antibacterial activity and is moderately cytotoxic against KB cells.

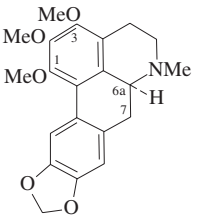
Phloeodictyne C1 [155070-23-8]
$C_{28}H_{57}N_8OS$ 553.877
Alkaloid from the New Caledonian sponge *Phloeodictyon* sp. Amorph. solid (as trichloride) (mixt. with C2). Isol. as a *ca.* 1:1 insep. mixt. of homologues. λ_{max} 219 (ϵ 9100) (MeOH) (Berdy).

Phloeodictyne C2 [155070-22-7]
$C_{27}H_{55}N_8OS$ 539.85
From *Phloeodictyon* sp. Amorph. solid (as trichloride) (mixt. with C1). λ_{max} 219 (ϵ 9100) (MeOH) (Berdy).

Kourany-Lefoll, E. *et al., Tetrahedron*, 1994, **50**, 3415 (*isol, uv, ir, pmr, cmr, struct*)

Phoebine P-369

1,2,3-Trimethoxy-9,10-methylenedioxyaporphine



$C_{21}H_{23}NO_5$ 369.416

(S)-form
Major alkaloid from the leaves of *Phoebe valeriana* (Lauraceae). Cryst. (Me_2CO). Mp 114°. $[\alpha]_D^{24}$ +49.6 (c, 6.2 in $CHCl_3$).

N-*Me:* **N-*Methylphoebine***
$C_{22}H_{26}NO_5^{\oplus}$ 384.451
Quaternary alkaloid from the bark and roots of *Xylopia parviflora*. Amorph. powder (as perchlorate). $[\alpha]_D^{22}$ +37.1 (c, 0.7 in MeOH). λ_{max} 283 (log ϵ 4.03); 309 (log ϵ 4.02) (MeOH).

N-*De-Me,* N-*Ac: 6-Acetyl-1,2,3-trimethoxy-9,10-methylenedioxynoraporphine.* ***3-Methoxy*-N-*acetylnornantenine***
[53452-28-1]
$C_{22}H_{23}NO_6$ 397.427
Alkaloid from the heartwood of *Liriodendron tulipifera* (Magnoliaceae). Cryst. (EtOH). Mp 216-217°. $[\alpha]_D^{26}$ +271 (c, 0.37 in $CHCl_3$).

O^3,N-*Di-de-Me:* ***3-Hydroxy-1,2-dimethoxy-9,10-methylenedioxynoraporphine***

$C_{19}H_{19}NO_5$ 341.363
Alkaloid from the leaves of *Phoebe valeriana* (Lauraceae). Amorph. solid. Opt. rotn. not reported. It is likely that the *N*-Me deriv. of this alkaloid is also present in the plant.

6a,7-Didehydro: ***1,2,3-Trimethoxy-9,10-methylenedioxydehydroaporphine***
$C_{21}H_{21}NO_5$ 367.401
Alkaloid from the leaves of *Phoebe valeriana* (Lauraceae). Amorph. solid.

(±)-*form*

N-*De-Me,* N-*Ac:* [57236-56-3]
Synthetic. Cryst. (EtOH). Mp 174-175°.

(ξ)-*form*

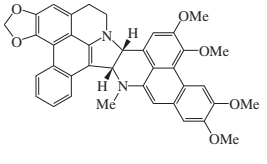
N-*De-Me:* ***1,2,3-Trimethoxy-9,10-methylenedioxynoraporphine***
[95523-04-9]
$C_{20}H_{21}NO_5$ 355.39
Alkaloid from the wood of *Phoebe pittieri* (Lauraceae). Oil. Not opt. rotn. recorded.

O^1,N-*Di-de-Me: 1-Hydroxy-2,3-dimethoxy-9,10-methylenedioxynoraporphine.* ***3-Methoxynordomesticine***
$C_{19}H_{19}NO_5$ 341.363
Alkaloid from bark of *Nectandra sinuata* (Lauraceae). Yellow oil. No info. on opt. rotn. or abs. config.

O^2,N-*Di-de-Me: 2-Hydroxy-1,3-dimethoxy-9,10-methylenedioxynoraporphine.* ***Xyloguyelline***
[80151-83-3]
$C_{19}H_{19}NO_5$ 341.363
Alkaloid from the trunk bark of *Xylopia danguyella* (Annonaceae). Tentative struct; the 2-OMe, 3-OH struct. (see above) cannot be excluded.

Hufford, C.D. *et al., J. Pharm. Sci.*, 1974, **63**, 1338; 1975, **64**, 789 (*isol, uv, ir, pmr, cd, struct, 3-Methoxy-N-acetylnornantenine*)
Hufford, C.D. *et al., J.O.C.*, 1976, **41**, 375 (*synth, 3-Methoxy-N-acetylnornantenine*)
Hocquemiller, R. *et al., J. Nat. Prod.*, 1981, **44**, 551 (*Xyloguyelline*)
Castro, C.O. *et al., Phytochemistry*, 1985, **24**, 203 (*1,2,3-Trimethoxy-9,10-methylenedioxynoraporphine*)
Castro, O. *et al., J. Nat. Prod.*, 1986, **49**, 1036 (*isol, uv, pmr, cmr, ms, struct, derivs*)
Castro, O. *et al., Fitoterapia*, 1991, **62**, 72 (*3-Methoxynordomesticine*)
Nishiyama, Y. *et al., Phytochemistry*, 2004, **65**, 939-944 (*N-Methylphoebine*)

Phoenicanthusine P-370



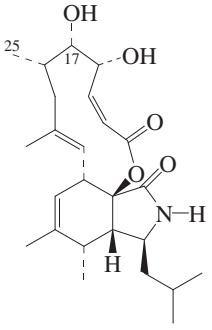
Relative Configuration

$C_{38}H_{32}N_2O_6$ 612.681
Dimeric aporphine. Alkaloid from the stem bark of *Phoenicanthus obliqua*. Pale yellow cryst. Mp 261-263°. λ_{max} 214 (log ϵ 4.24); 264 (log ϵ 4.6); 328 (log ϵ 3.28) (EtOH).

Kithsiri Wijeratne, E.M. *et al., J. Nat. Prod.*, 2001, **64**, 1465-1467

Phomacin A P-371

[187847-10-5]



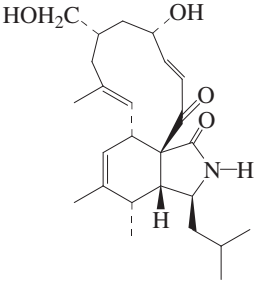
$C_{25}H_{37}NO_5$ 431.571
Isol. from the fungus *Phoma* sp. Powder. Sol. MeOH, EtOAc. Mp 130-133°. $[\alpha]_D$ -91 (c, 1 in $CHCl_3$).

17-Deoxy, 25-hydroxy: ***Phomacin B***
[187847-11-6]
$C_{25}H_{37}NO_5$ 431.571
Isol. from a *Phoma* sp. Powder. Mp 98-100°. $[\alpha]_D$ -51.2 (c, 1 in $CHCl_3$).

Alvi, K.A. *et al., J.O.C.*, 1997, **62**, 2148-2151 (*isol, ir, pmr, cmr*)

Phomacin C P-372

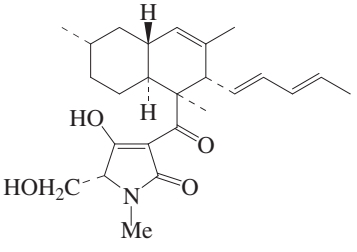
[187847-12-7]



$C_{25}H_{37}NO_4$ 415.572
Isol. from the fungus *Phoma* sp. Powder. Mp 112-114°. $[\alpha]_D$ -74.6 (c, 1 in $CHCl_3$).

Alvi, K.A. *et al., J.O.C.*, 1997, **62**, 2148-2151 (*isol, ir, pmr, cmr*)

Phomasetin P-373

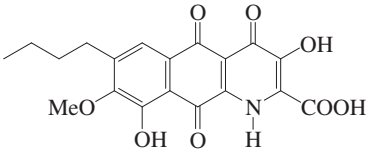


$C_{25}H_{35}NO_4$ 413.556
Tetramic acid antibiotic. Related to Equisetin, E-142, but possessing opposite stereochemistry. Enolised triketone. Prod. by a *Phoma* sp. Inhibitor of HIV-1 integrase. Cryst. (C_6H_6). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 140-143°. $[\alpha]_D^{22}$ +93.9 (c, 1 in $CHCl_3$). λ_{max} 235 (ϵ 7540); 290 (ϵ 5420) (MeOH). λ_{max} 235 (ϵ 7541); 290 (ϵ 5422) (MeOH) (Berdy).

Singh, S.B. *et al., Tet. Lett.*, 1998, **39**, 2243-2246 (*isol, uv, ir, cd, pmr, cmr, ms*)
Hazuda, D. *et al., Antiviral Chem. Chemother.*, 1999, **10**, 63-70 (*isol, activity*)

Phomazarine P-374

[10088-99-0]



$C_{19}H_{17}NO_8$ 387.345
Struct. has been revised twice. Metab. of fungus *Phoma terrestris.* Orange needles (Py). Mp 196° dec. λ_{max} 231 (ϵ 34673); 277 (ϵ 58884); 430 (ϵ 8317) (MeOH) (Berdy).

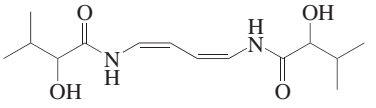
Me ester:
Orange-bronze needles. Mp 213°.

Tri-Ac:
Cryst. (petrol). Mp 160-170° dec.

Kogl, F. *et al., Rec. Trav. Chim. (J. R. Neth. Chem. Soc.)*, 1940, **59**, 1180; 1944, **63**, 251; 1945, **64**, 33
Boger, D.L. *et al., J.A.C.S.*, 1999, **121**, 2471-2477 (*synth, struct*)

Phomoenamide P-375

N,N′-(1,3-Butadiene-1,4-diyl)bis[2-hydroxy-3-methylbutanamide]
[1015078-56-4]

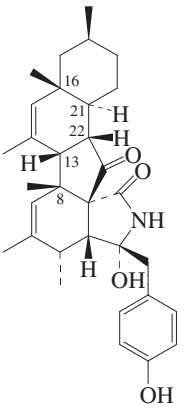


$C_{14}H_{24}N_2O_4$ 284.355
Prod. by *Phomopsis* sp. PSU-D15. Gum. $[\alpha]_D^{26}$ +32.6 (c, 0.13 in $CHCl_3$). λ_{max} 260 (log ϵ 3.97) (MeOH).

Rukachaisirikul, V. *et al., Phytochemistry*, 2008, **69**, 783-787 (*isol, pmr, cmr, ms*)

Phomopsichalasin P-376

[163597-03-3]



Relative Configuration

$C_{32}H_{41}NO_4$ 503.68

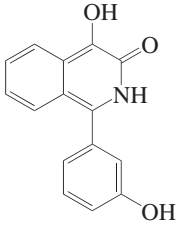
Unique cytochalasin-type struct. Isol. from an endophytic *Phomopsis* sp. Antimicrobial agent, mycotoxin. Oil. $[\alpha]_D^{25}$ -7.16. λ_{max} 225 (ϵ 1152); 245 (ϵ 2782) (MeOH) (Berdy).

8,13,16,21,22-Pentaepimer: ***Diaporthichalasin***
$C_{32}H_{41}NO_4$ 503.68
Isol. from *Diaporthe* sp. Bkk3. Potent CYP3A4 inhibitor. Mp 169-170°. $[\alpha]_D^{20}$ -135 (c, 0.14 in MeOH). λ_{max} 233 (log ϵ 3.51); 277 (log ϵ 3.04) (MeOH).

Horn, W.S. *et al., Tetrahedron*, 1995, **51**, 3969-3978 (*Phomopsichalasin*)
Pornpakakul, S. *et al., Tet. Lett.*, 2007, **48**, 651-655 (*Diaporthichalasin*)

Phomopsin A† P-377

*4-Hydroxy-1-(3-hydroxyphenyl)-3(2*H*)-isoquinolinone*

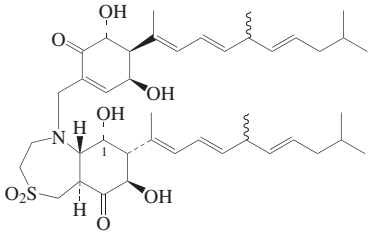


$C_{15}H_{11}NO_3$ 253.257
Prod. by the mangrove fungus *Phomopsis* sp. ZZ08. Amorph. solid. Mp 250-252°. λ_{max} 222 (log ϵ 3.62); 286 (log ϵ 2.91); 308 (log ϵ 2.91); 318 (2.99); 330 (log ϵ 2.86) (MeOH).

Tao, Y. *et al., Magn. Reson. Chem.*, 2008, **46**, 501-505 (*isol, pmr, cmr*)

Phorbasin E P-378

[1023993-34-1]



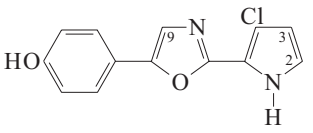
$C_{42}H_{63}NO_8S$ 742.028
Alkaloid from a *Phorbas* sp. Amorph. solid. $[\alpha]_D^{22}$ -27.9 (c, 0.16 in MeOH). λ_{max} 242 (log ϵ 4.52) (MeOH).

1-Ac: ***Phorbasin F***
[1023993-35-2]
$C_{44}H_{65}NO_9S$ 784.065
Alkaloid from a *Phorbas* sp. Amorph. solid. $[\alpha]_D^{22}$ -10.1 (c, 0.1 in MeOH). λ_{max} 242 (log ϵ 4.39) (MeOH).

Zhang, H. *et al., Org. Lett.*, 2008, **10**, 1959-1962 (*isol, pmr, cmr*)

Phorbazole D P-379

[156280-94-3]



$C_{13}H_9ClN_2O_2$ 260.679
Isol. from the marine sponge *Phorbas* aff. *clathrata*. Immunomodulator. Amorph. powder. Mp 210°.

3-Chloro: ***Phorbazole C***
[156280-93-2]
$C_{13}H_8Cl_2N_2O_2$ 295.124
From *Phorbas* aff. *clathrata*. Immunomodulator. Amorph. powder. Mp 240°.

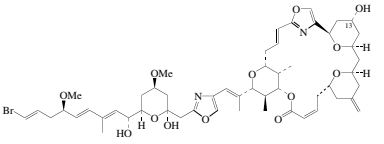
2,3-Dichloro: ***Phorbazole B***
[156280-92-1]
$C_{13}H_7Cl_3N_2O_2$ 329.569
From *Phorbas* aff. *clathrata*. Immunomodulator. Amorph. off-white powder. Mp 270°.

3,9-Dichloro: ***Phorbazole A***
[156280-91-0]
$C_{13}H_7Cl_3N_2O_2$ 329.569
From *Phorbas* aff. *clathrata*. Immunomodulator. Powder. Mp 240°.

Rudi, A. *et al., Tet. Lett.*, 1994, **35**, 2589 (*isol, ir, pmr, cmr, struct*)

Phorboxazole A P-380

[165883-76-1]

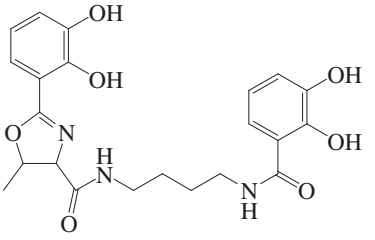


$C_{53}H_{71}BrN_2O_{13}$ 1024.054
Isol. from the sponge *Phorbas* sp. Antifungal and cytostatic agent. Pale yellow solid. $[\alpha]_D$ +44.8 (c,1 in MeOH). λ_{max} 235 (log ϵ 4.9) (MeOH).

13-Epimer: ***Phorboxazole B***
[165689-31-6]
$C_{53}H_{71}BrN_2O_{13}$ 1024.054
Isol. from *Phorbas* sp. Antifungal and cytostatic agent. Pale yellow solid. $[\alpha]_D$ +44.4 (c, 1 in MeOH). λ_{max} 235 (log ϵ 4.8) (MeOH).

Searle, P.A. *et al., J.A.C.S.*, 1995, **117**, 8126 (*isol, uv, ir, pmr, cmr, ms*)
Searle, P.A. *et al., J.A.C.S.*, 1996, **118**, 9422 (*abs config*)
Molinski, T.F. *et al., Tet. Lett.*, 1996, **37**, 7879 (*abs config*)
Evans, D.A. *et al., J.A.C.S.*, 2000, **122**, 10033-10046 (*synth*)
Smith, A.B. *et al., J.A.C.S.*, 2001, **123**, 10942-10953 (*synth, bibl*)
Williams, D.R. *et al., Angew. Chem., Int. Ed.*, 2003, **42**, 1258-1262 (*synth*)
Haustedt, L.O. *et al., Angew. Chem., Int. Ed.*, 2003, **42**, 2711-2716 (*rev, synth*)
Pattenden, G. *et al., Org. Biomol. Chem.*, 2003, **1**, 4173-4208 (*synth*)
Li, D.-R. *et al., Chem. Eur. J.*, 2006, **12**, 1185-1204 (*synth*)
White, J.D. *et al., Org. Lett.*, 2006, **8**, 6043-6046 (*synth*)
Lucas, B.S. *et al., Angew. Chem., Int. Ed.*, 2007, **46**, 769-772 (*Phorboxazole B, synth*)
Smith, A.B. *et al., J.O.C.*, 2008, **73**, 1192-1200; 1201-1208 (*synth*)

Photobactin P-381

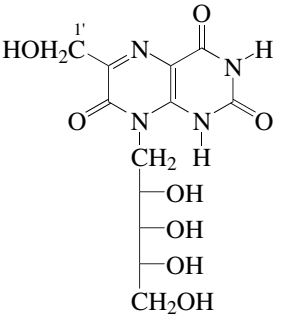


$C_{22}H_{25}N_3O_7$ 443.455
Prod. by the bacterium *Photorhabdus luminescens* associated with the nematode *Heterorhabditis bacteriophora*. Catechol siderophore.

Ciche, T.A. *et al., Appl. Environ. Microbiol.*, 2003, **69**, 4706-4713 (*isol, pmr, cmr*)

Photolumazine B P-382

*1-Deoxy-1-[1,3,4,7-tetrahydro-6-(hydroxymethyl)-2,4,7-trioxo-8(2*H*)-pteridinyl]-D-ribitol, 9CI*
[50868-45-6]



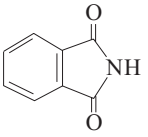
$C_{12}H_{16}N_4O_8$ 344.28
Prod. by *Photobacterium phosphoreum*. Inhibitor of riboflavine synthetase.

1′-Deoxy: ***Photolumazine C****. 7-Oxolumazine*
[17879-89-9]
$C_{12}H_{16}N_4O_7$ 328.281
Prod. by *Photobacterium phosphoreum, Pseudomonas ovalis* and *Russula* sp. Inhibitor of riboflavine synthetase. Needles. Mp 260° (dec.).

Rowan, T. *et al., J.C.S.(C)*, 1968, 452-458 (*synth, uv*)
Suzuki, A. *et al., Bull. Chem. Soc. Jpn.*, 1971, **44**, 1869-1872 (*isol*)
Suzuki, A. *et al., Biochim. Biophys. Acta*, 1973, **313**, 229-234 (*isol*)
Iten, P.X. *et al., Helv. Chim. Acta*, 1984, **67**, 550-569 (*isol, uv, cmr*)

Phthalimide, 8CI P-383

1H-Isoindole-1,3(2H)-dione, 9CI
[85-41-6]



$C_8H_5NO_2$ 147.133
Constit. of egg masses of muricid mollusc *Ceratostoma erinaceum*. Source of "protected" ammonia in primary amine synth. (Gabriel). Needles (H_2O); prisms (AcOH); leaflets by subl. Insol. C_6H_6, petrol. Mp 238°. Forms salts with bases.

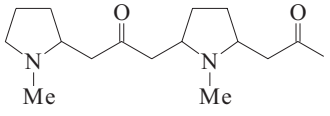
► LD_{50} (mus, orl) 5000 mg/kg. Exp. reprod. and teratogenic effects. TI3920000

N-*Benzyl:* **N-*Benzylphthalimide***
[2142-01-0]
$C_{15}H_{11}NO_2$ 237.257
Isol. from curare *Chondrodendron tomentosum*. Cryst. (EtOH). Mp 115-116°. Considered not to be an artifact.

Bick, I.R.C. *et al., J.C.S.*, 1960, 2402-2407 (*N-benzyl, isol*)

Phygrine P-384

[148139-97-3]



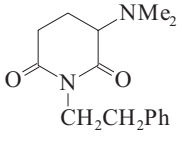
$C_{16}H_{28}N_2O_2$ 280.409
Alkaloid from roots and aerial parts of *Physalis alkekengi* (winter cherry), the famine food *Physalis angulata* (cutleaf ground cherry), *Physalis philadelphica* (tomatillo), *Physalis peruviana* (Cape gooseberry), *Physalis minima, Physalis pubescens* (ground cherry), *Physalis viscosa* and *Physalis pruinosa* (strawberry tomato) (Solanaceae). Gum.

Dipicrate: [148218-52-4]
Mp 189° dec.

Basey, K. *et al., Phytochemistry*, 1992, **31**, 4173 (*isol, ir, pmr, cmr, ms, struct*)

Phyllanthimide P-385

3-(Dimethylamino)-1-(2-phenylethyl)-2,6-piperidinedione, 9CI



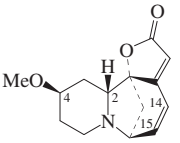
$C_{15}H_{20}N_2O_2$ 260.335

(±)-*form* [116174-65-3]
Alkaloid from the leaves and stems of *Phyllanthus sellowianus* (Euphorbiaceae).

Tempesta, M.S. *et al., J. Nat. Prod.*, 1988, **51**, 617 (*isol, uv, ir, pmr, cmr, ms, struct*)

Phyllanthine† P-386

4-Methoxysecurinan-11-one, 9CI. 4-Methoxysecurinine
[20072-02-0]



Absolute Configuration

$C_{14}H_{17}NO_3$ 247.293
Alkaloid from the roots of *Phyllanthus discoides* (Euphorbiaceae). Yellow cryst. (Me_2CO/diisopropyl ether). Mp 96-98°. $[\alpha]_D$ -898 (c, 0.98 in $CHCl_3$). pK_a 5.28.

O-*De-Me:* ***4-Hydroxysecurinine***
[130969-00-5]
$C_{13}H_{15}NO_3$ 233.266
Alkaloid from *Phyllanthus niruri* (Euphorbiaceae). Gum. C4-config. not determined.

12,13β-Dihydro: ***4-Methoxytetrahydrosecurinine***
[131063-47-3]
$C_{14}H_{21}NO_3$ 251.325
Alkaloid from *Phyllanthus niruri* (Euphorbiaceae). Orange-yellow powder (EtOH). Mp 59-60°. C4-config. not determined.

12,13β,14,15-Tetrahydro: Mp 66-68°. $[\alpha]_D$ -8.5 (c, 0.94 in $CHCl_3$).

4-Epimer: ***4-Epiphyllanthine***
[138876-93-4]
$C_{14}H_{17}NO_3$ 247.293
Alkaloid from bark of *Margaritaria indica* (Euphorbiaceae). Yellow needles (EtOAc/hexane). Mp 82-84°. $[\alpha]_D^{20}$ -753 (c, 0.06 in EtOH).

2,4-Diepimer: ***Securitinine***
[13861-71-7]
$C_{14}H_{17}NO_3$ 247.293
Alkaloid from the root bark of *Securinega suffruticosa* (Euphorbiaceae). Yellow plates (EtOAc). Mp 129-130°. $[\alpha]_D$ -952.3 (c, 1 in EtOH).

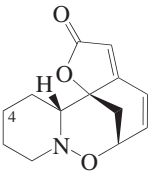
2,4-Diepimer, 14,15-dihydro:
Needles (diisopropyl ether). Mp 118-119°.

2,4-Diepimer, 14,15-dihydro, 15α-methoxy: ***Secuamamine B***
[1004529-76-3]
$C_{15}H_{21}NO_4$ 279.335
Alkaloid from the wood of *Securinega suffruticosa* var. *amamiensis*. Amorph. solid. $[\alpha]_D^{25}$ +42.6 (c, 0.54 in $CHCl_3$). λ_{max} 230 (log ε 3.27); 262 (sh) (log ε 2.92) (MeOH).

Horii, Z. *et al., Chem. Pharm. Bull.*, 1966, **14**, 917-918; 1967, **15**, 1633-1640 (*Phyllanthine, Securitinine, isol, uv, ord, ir, pmr, ms, struct*)
Parello, J. *et al., Bull. Soc. Chim. Fr.*, 1968, 1117-1129 (*isol, uv, ir, pmr, ms, struct*)
Hassarajani, S.A. *et al., Indian J. Chem., Sect. B*, 1990, **29**, 801 (*4-Hydroxysecurinine, 4-Methoxytetrahydrosecurinine*)
Arbain, D. *et al., J.C.S. Perkin 1*, 1991, 1863-1869 (*4-Epiphyllanthine*)
Ohsaki, A. *et al., J. Nat. Prod.*, 2007, **70**, 2003-2005 (*Secuamamine B*)

Phyllantidine P-387

10,11,12,12a-Tetrahydro-9H-6,12b-methanofuro[2,3-d]pyrido[1,2-b][1,2]oxazocin-2(6H)-one, 9CI



(+)-*form*

$C_{13}H_{15}NO_3$ 233.266

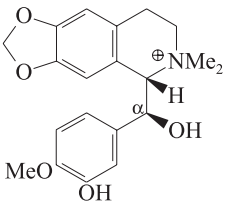
(+)-*form* [146074-64-8]
Alkaloid from *Breynia coronata* and *Securinega suffruticosa*. Pale yellow needles (Et_2O). Mp 166-168°. $[\alpha]_D$ +333 ($CHCl_3$). This enantiomer has been referred to as *ent*-Phyllantidine.

(-)-*form* [38836-07-6]
Alkaloid from the roots of *Phyllanthus discoides*. Mp 169-170°. $[\alpha]_D$ -450 (c, 0.33 in $CHCl_3$). λ_{max} 258 (log ε 4.2) (EtOH).

4α-Methoxy: ***Secuamamine D***
[1004529-78-5]
$C_{14}H_{17}NO_4$ 263.293
Alkaloid from *Securinega suffruticosa* var. *amamiensis*. Amorph. solid. $[\alpha]_D^{25}$ -303.9 (c, 0.26 in $CHCl_3$). λ_{max} 212 (sh) (log ε 3.33); 261 (log ε 3.62) (MeOH).

Parello, J. *et al., C. R. Hebd. Seances Acad. Sci.*, 1965, **260**, 337-340 (*isol*)
Horii, Z. *et al., Tet. Lett.*, 1972, **13**, 1877-1880 (*synth, uv, ir, pmr, ms*)
Lajis, N.H. *et al., Aust. J. Chem.*, 1992, **45**, 1893-1897 (*(+)-form*)
Carson, C.A. *et al., Angew. Chem., Int. Ed.*, 2006, **45**, 6560-6563 (*synth*)
Ohsaki, A. *et al., J. Nat. Prod.*, 2007, **70**, 2003-2005 (*Secuamamine D*)
Yuan, W. *et al., Nat. Prod. Res.*, 2007, **21**, 234-242 (*(+)-form, isol, pmr, cmr*)

Phyllocryptonine P-388



(+)–*form*

$C_{20}H_{24}NO_5^{\oplus}$ 358.413

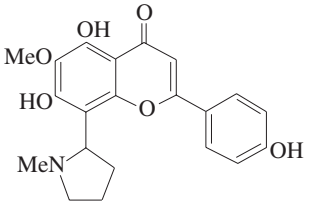
(+)-*form* [126262-26-8]
Alkaloid from the leaves, twigs, roots, fruit and bark of *Cryptocarya phyllostemon* (Lauraceae). Fine cryst. (Me_2CO) (as chloride). Mp 230-231° (chloride). $[\alpha]_D$ +36 (c, 1.0 in EtOH).

(±)-*form*
Synthetic. Fine cryst. (Et_2O)(as chloride). Mp 189° (chloride).

Cavé, A. *et al., Aust. J. Chem.*, 1989, **42**, 2243 (*isol, uv, pmr, cmr, ms, cd, synth, struct*)

Phyllospadine P-389

4′,5,7-Trihydroxy-6-methoxy-8-(1-methyl-2-pyrrolidyl)flavone
[76540-48-2]

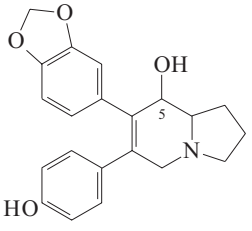


$C_{21}H_{21}NO_6$ 383.4
Alkaloid from the sea-grass *Phyllospadix iwatensis*. Needles (as tri-Ac). Mp 199° (tri-Ac).

Takagi, M. *et al., Agric. Biol. Chem.*, 1980, **44**, 3019 (*isol, uv, pmr, struct*)

Phyllosteminine P-390

[126262-23-5]

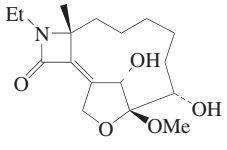


$C_{21}H_{21}NO_4$ 351.401
Alkaloid from the leaves, twigs, roots and fruit of *Cryptocarya phyllostemon* (Lauraceae). Cryst. ($CHCl_3$). Mp 207-209° dec. $[\alpha]_D$ -49 (c, 0.4 in EtOH).

Cavé, A. *et al., Aust. J. Chem.*, 1989, **42**, 2243-2263 (*isol, uv, ir, pmr, ms, struct*)

Phyllostictine A P-391

[1007346-21-5]



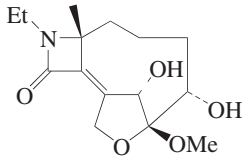
Absolute Configuration

$C_{17}H_{27}NO_5$ 325.404
Prod. by *Phyllosticta cirsii*. Phytotoxin. Oil. $[\alpha]_D^{25}$ -87.5 (c, 0.2 in $CHCl_3$). λ_{max} 263 (log ϵ 4.07) (MeCN).

Evidente, A. *et al., Tetrahedron*, 2008, **64**, 1612-1619 (*isol, pmr, cmr, ms*)

Phyllostictine B P-392

[1007346-22-6]

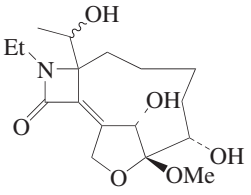


$C_{15}H_{23}NO_5$ 297.35
Prod. by *Phyllosticta cirsii*. Oil. $[\alpha]_D^{25}$ -99.8 (c, 0.07 in $CHCl_3$). λ_{max} 262 (log ϵ 4.13) (MeCN).

Evidente, A. *et al., Tetrahedron*, 2008, **64**, 1612-1619 (*isol, pmr, cmr, ms*)

Phyllostictine C P-393

[1007346-23-7]

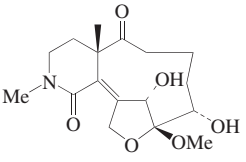


$C_{17}H_{27}NO_6$ 341.403
Prod. by *Phyllosticta cirsii*. Oil. $[\alpha]_D^{25}$ -45.5 (c, 0.1 in $CHCl_3$). λ_{max} 262 (log ϵ 3.6) (MeCN).

Evidente, A. *et al., Tetrahedron*, 2008, **64**, 1612-1619 (*isol, pmr, cmr, ms*)

Phyllostictine D P-394

[1007346-24-8]

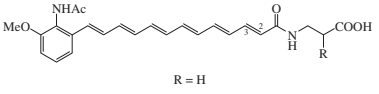


Absolute Configuration

$C_{17}H_{25}NO_6$ 339.388
Prod. by *Phyllosticta cirsii*. Oil. $[\alpha]_D^{25}$ -70.2 (c, 0.2 in $CHCl_3$). λ_{max} 262 (log ϵ 3.25) (MeCN).

Evidente, A. *et al., Tetrahedron*, 2008, **64**, 1612-1619 (*isol, pmr, cmr, ms*)

Physarigin A P-395



R = H

$C_{25}H_{28}N_2O_5$ 436.507
Isol. from the myxomycete *Physarum rigidum*. Amorph. yellow solid. λ_{max} 403 (ϵ 26000); 426 (ϵ 22000) (MeOH).

2,3-Dihydro, 3-hydroxy: ***Physarigin C***
$C_{25}H_{30}N_2O_6$ 454.522
Isol. from *Physarum rigidum*. Amorph. yellow solid. $[\alpha]_D^{22}$ +15 (c, 1.2 in MeOH). λ_{max} 351 (ϵ 9200); 368 (ϵ 12000); 390 (ϵ 10000) (MeOH).

Misono, Y. *et al., Tet. Lett.*, 2003, **44**, 4479-4481 (*isol, pmr, cmr*)

Physarigin B P-396

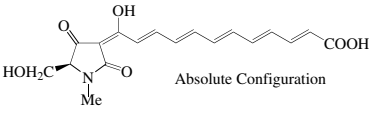
As Physarigin A, P-395 with
R = CH_3

$C_{26}H_{30}N_2O_5$ 450.533
Isol. from the myxomycete *Physarum rigidum*. Amorph. yellow solid. $[\alpha]_D^{22}$ -6.8 (c, 0.5 in MeOH). λ_{max} 403 (ϵ 23000); 426 (ϵ 20000) (MeOH).

Misono, Y. *et al., Tet. Lett.*, 2003, **44**, 4479-4481 (*isol, pmr, cmr*)

Physarorubinic acid A P-397

[196621-49-5]



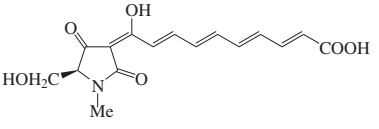
Absolute Configuration

$C_{18}H_{19}NO_6$ 345.351
Tetramic acid deriv. Pigment from the slime mold *Physarum polycephalum*. Amorph. orange-red powder. Similar to Fuligorubin A, F-165. λ_{max} 252 (log ϵ 3.46); 404 (log ϵ 3.96) (MeOH).

Nowak, A. *et al., Liebigs Ann./Recl.*, 1997, 1817-1821 (*isol, uv, ir, cd, pmr, cmr, ms*)
Dixon, D.J. *et al., J.C.S. Perkin 1*, 1999, 2231-2232 (*synth*)

Physarorubinic acid B P-398

[220422-56-0]

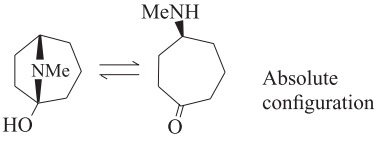


$C_{16}H_{17}NO_6$ 319.313
Enolised β-tricarbonyl compd. Isol. from *Physarum polycephalum*. $[\alpha]_D$ -146.8 (c, 0.02 in MeOH). λ_{max} 247 (log ϵ 3.67); 286 (log ϵ 3.67); 393 (log ϵ 4.37); 409 (sh) (MeOH).

Nowak, A. *et al., Angew. Chem., Int. Ed.*, 1998, **37**, 3139-3141 (*isol, uv, ir, pmr, cmr*)

Physoperuvine P-399

8-Methyl-8-azabicyclo[3.2.1]octan-1-ol, 9CI. 4-(Methylamino)cycloheptanone, 9CI. 1-Hydroxytropane. 1-Tropanol
[60723-27-5]



Absolute configuration

$C_8H_{15}NO$ 141.213
Free base tautomeric. Alkaloid from *Physalis peruviana* (Cape gooseberry) (Solanaceae). Mp 47-48° Mp 68-70°. May be a partial racemate.
▶ Mod. toxic.

Hydrochloride: Mp 153°. $[\alpha]_D$ -0.8 (c, 1 in MeOH). Tropane bicyclic struct.

N-*Benzoyl:*
$C_{15}H_{19}NO_2$ 245.321
Mp 136-137°. Monocyclic struct.

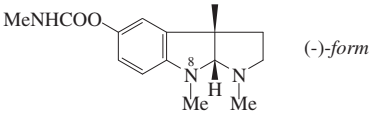
[82748-86-5]

Ray, A.B. *et al., Heterocycles*, 1982, **19**, 1233 (*cryst struct, cmr, pmr, cd, abs config*)

McPhail, A.T. *et al., Tetrahedron*, 1984, **40**, 1661 (*cryst struct, synth, resoln*)
Boyer, F.-D. *et al., Synlett*, 1992, 357 (*synth*)
Justice, D.E. *et al., J.C.S. Perkin 1*, 1994, 2559 (*synth*)
Hiroya, K. *et al., Chem. Comm.*, 1995, 2205 (*synth*)
Majewski, M. *et al., Synlett*, 1996, 785 (*synth*)
Hodgson, D.M. *et al., Tet. Lett.*, 1999, **40**, 8637-8640 (*synth*)
Hall, A. *et al., J.C.S. Perkin 1*, 2000, 329-343 (*synth*)

Physostigmine, BAN, USAN P-400

*1,2,3,3*a*,8,8*a*-Hexahydro-1,3*a*,8-trimethylpyrrolo[2,3-*b*]indol-5-ol methylcarbamate (ester), 9CI. Eserine. Fysostigmine. Physostol. Cogmine. Synapton*
[57-47-6]



(-)-*form*

$C_{15}H_{21}N_3O_2$ 275.35
Main alkaloid from the Calabar bean (*Physostigma venenosum*) (Fabaceae). Also prod. by *Streptomyces* sp. AH-4 and *Streptomyces pseudogriseolus*. Anticholinesterase used as miotic and to decrease intraocular pressure in glaucoma. Cognition activator. Mp 86-87° Mp 105-106° (dimorph.). $[\alpha]_D$ -82 ($CHCl_3$). Log P 2.21 (calc). The claimed alkaloid Calabarine was prob. a mixt. of decomposition prods. of Physostigmine. λ_{max} 253 (ϵ 12100); 311 (ϵ 2800) (EtOH).

▶ Adverse effects reported when used therapeutically. Can cross blood-brain barrier. Exp. reprod. effects. LD_{50} (mus, orl) 3 mg/kg.

Hydrobromide (1:2): Mp 224-226°.

Sulfate (2:1): ***Physostigmine sulfate, USAN***
[64-47-1]
Scales. Mp 140°.

▶ UY8585000

Salicylate (1:1): ***Physostigmine salicylate, USAN***. *Antilirium. Eserocil. Esromistin. Fisostin. Zem-Eserine. Many other names*
[57-64-7]
Mp 184-186°.

▶ Adverse systemic effects when used therapeutically. LD_{50} (mus, orl) 2.5 mg/kg. Exp. reprod. effects. TJ2450000

Methiodide: Mp 188°.

N^1*-De-Me,* N^1*-Ac:* ***Antibiotic TAN 1169A***. *TAN 1169A*
[132663-94-6]
$C_{16}H_{21}N_3O_3$ 303.36
Prod. by *Streptomyces* sp. (AI2052; IFO14833; BP2328). Acetylcholinesterase inhibitor. Shows antiamnesic props. Cryst. $[\alpha]_D$ -376 (MeOH). Abs. config. not certain. λ_{max} 254 (E1%/1cm 473); 310 (E1%/1cm 105) (MeOH) (Berdy).

N^1*-De-Me,* N^1*-(methylaminocarbonyl):* ***Eseramine***
[6091-57-2]
$C_{16}H_{22}N_4O_3$ 318.375
Alkaloid from *Physostigma venenosum* (Fabaceae). Acetylcholinesterase inhibitor. Needles (EtOH). Mp 240-242° dec. (216-218°). $[\alpha]_D^{23}$ -289 (EtOH). λ_{max} 256 (ϵ 13050); 311 (ϵ 2680) (EtOH).

N^8*-De-Me:* ***N^8-Norphysostigmine***
[19573-10-5]
$C_{14}H_{19}N_3O_2$ 261.323
Isol. from *Streptomyces* sp. AH-4 and *Physostigma venenosum*. Shows insecticidal props. Powder. Sol. MeOH, EtOAc; poorly sol. H_2O, hexane. Mp 151.5°. $[\alpha]_D^{30}$ -64.4 (c, 0.45 in MeOH). Log P 1.35 (calc). λ_{max} 245 (ϵ 4900); 303 (ϵ 1300) (MeOH) (Berdy).

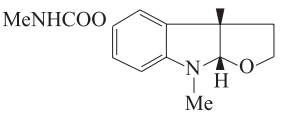
N^1,N^8*-Di-de-Me,* N^1*-Ac:* ***Antibiotic TAN 1169B***. *TAN 1169B*
[132663-95-7]
$C_{15}H_{19}N_3O_3$ 289.333
Prod. by *Streptomyces* sp. (AI2052; IFO14833; BP2328). Acetylcholinesterase inhibitor. Shows antiamnesic props. Cryst. $[\alpha]_D$ -382 (MeOH). Abs. config. not certain. λ_{max} 243 (E1%/1cm 345); 300 (E1%/1cm 98) (MeOH) (Berdy).

[8006-41-5 (Calabarine)]

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 1065C (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 612B (*nmr*)
Harley-Mason, J. *et al., J.C.S.*, 1954, 3651-3654 (*synth*)
Robinson, B. *et al., Chem. Ind. (London)*, 1964, 459-460 (*Eseramine, uv, ir, pmr, ms struct*)
Robinson, B. *et al., J.C.S.*, 1965, 3336-3339 (*Eseramine, synth*)
Bild, N. *et al., Helv. Chim. Acta*, 1967, **50**, 1885-1892 (*ms*)
Robinson, R. *et al., Alkaloids (Academic Press)*, 1968, **10**, 383-400 (*rev*)
Newkome, G.R. *et al., Chem. Comm.*, 1969, 385 (*pmr, config*)
Longmore, R.B. *et al., Chem. Ind. (London)*, 1969, 622-623 (*Eseramine, abs config*)
Hill, R.K. *et al., Tetrahedron*, 1969, **25**, 1249-1260 (*config*)
Pauling, P. *et al., J.C.S. Perkin 2*, 1973, 1342-1345 (*cryst struct*)
U.S. Pat., 1973, 3 734 832; *CA*, **79**, 30496q (*manuf*)
Crooks, P.A. *et al., Phytochemistry*, 1974, **15**, 1092-1093 (*Eseramine, cmr*)
Granacher, R.P. *et al., Clin. Neuropharmacol.*, 1976, **1**, 63-79 (*rev, pharmacol*)
Slenberg, V.I. *et al., J. Het. Chem.*, 1977, **14**, 407-410 (*cmr, N-15 nmr*)
Bose, A.K. *et al., Anal. Biochem.*, 1978, **89**, 284-291 (*ms*)
Wijnberg, J.B.P.A. *et al., Tetrahedron*, 1978, **34**, 2399-2404 (*synth*)
Iwasa, T. *et al., CA*, 1981, **95**, 148651 (*isol*)
Stoeckel, H. *et al., CA*, 1982, **97**, 138642 (*book*)
Nieminen, A.O.K. *et al., J. Het. Chem.*, 1983, **20**, 515-517 (*cmr*)
Murao, S. *et al., Agric. Biol. Chem.*, 1986, **50**, 523-524 (*isol, N^8-Norphysostigmine, activity*)
Yu, Q.-S. *et al., Heterocycles*, 1988, **27**, 745-750; 1709-1712 (*synth*)
Muhtadi, F.J. *et al., Anal. Profiles Drug Subst.*, 1989, **18**, 289-350 (*rev*)
Japan. Pat., 1990, 90 270 875; *CA*, **114**, 120278r (*TAN 1169A, TAN 1169B*)
Horne, S. *et al., J.C.S. Perkin 1*, 1991, 3047-3051 (*synth*)
Lee, T.B.K. *et al., J.O.C.*, 1991, **56**, 872-875 (*synth*)
Takano, S. *et al., J.O.C.*, 1991, **56**, 5982-5984 (*synth*)
Marino, J.P. *et al., J.A.C.S.*, 1992, **114**, 5566-5572 (*synth*)
Grieco, P.A. *et al., Tet. Lett.*, 1992, **33**, 4401-4404 (*synth*)
Ashimori, A. *et al., J.O.C.*, 1993, **58**, 6949-6951 (*synth*)
Yu, Q.-S. *et al., Heterocycles*, 1994, **39**, 519-525 (*synth*)
Negwer, M. *et al., Organic-Chemical Drugs and their Synonyms, 7th edn., Akademie-Verlag*, 1994, 4767 (*synonyms*)
Brossi, A. *et al., Aust. J. Chem.*, 1996, **49**, 171-181 (***synth, rev***)
Node, M. *et al., Chem. Pharm. Bull.*, 1996, **44**, 715-719 (*synth*)
Morales-Rós, M.S. *et al., Tetrahedron*, 1996, **52**, 5339-5348 (*synth*)
Triggle, D.J. *et al., CNS Drug Rev.*, 1998, **4**, 87-136
Witkop, B. *et al., Heterocycles*, 1998, **49**, 9-27 (*rev*)
Matsuura, T. *et al., J.A.C.S.*, 1998, **120**, 6500-6503 (*synth*)
Martindale, The Extra Pharmacopoeia, 32nd edn., Pharmaceutical Press, 1999, 1395; 1396
Kawahara, M. *et al., Org. Lett.*, 2000, **2**, 675-678; 953-955 (*synth*)
ElAzab, A.S. *et al., Org. Lett.*, 2000, **2**, 2757-2759 (*synth*)
Ishibashi, H. *et al., Tetrahedron*, 2000, **56**, 1469-1473 (*synth*)
Santos-Sanchez, N.F. *et al., Magn. Reson. Chem.*, 2001, **39**, 696-700 (*pmr, conformn*)
Tanaka, K. *et al., Tet. Lett.*, 2001, **42**, 1049-1052 (*synth*)
Robinson, B. *et al., Heterocycles*, 2002, **57**, 1327-1352 (*rev, synth*)
Morales-Rós, M.S. *et al., J. Nat. Prod.*, 2002, **65**, 136-141 (*synth*)
Rege, P.D. *et al., J.O.C.*, 2003, **68**, 6133-6139 (*synth*)
Santos, P.F. *et al., Tetrahedron*, 2005, **61**, 9147-9156 (*synth*)
Trost, B.M. *et al., J.A.C.S.*, 2006, **128**, 4590-4591 (*synth*)
Mukai, C. *et al., Org. Lett.*, 2006, **8**, 83-86 (*synth*)
Asakawa, K. *et al., Heterocycles*, 2008, **76**, 183-190 (*synth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, PIA500; PIB000; PIA750

Physovenine P-401

*3,3*a*,8,8*a*-Tetrahydro-3*a*,8-dimethyl-2H-furo[2,3-*b*]indol-5-ol methyl carbamate (ester), 9CI*



(−)-*form*

$C_{14}H_{18}N_2O_3$ 262.308
Log P 1.71 (calc).

(-)-*form* [6091-05-0]
Alkaloid from *Physostigma venenosum* (Fabaceae). Powerful miotic agent, ACH potentiator. Mp 123°. $[\alpha]_D^{22}$ -92 (EtOH). Pharmacol. active isomer. λ_{max} 252 (ϵ 13200); 310 (ϵ 3300) (EtOH).

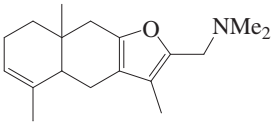
(+)-*form* [29347-11-3]
Synthetic. Also obt. by resoln. of the racemate. Yellow cryst. (EtOAc). Mp 127-128° (122-124°). $[\alpha]_D$ +93.5 (c, 0.5 in EtOH).

(±)-*form* [2520-34-5]
Synthetic. Prisms (Et_2O/petrol). Mp 142-143° (with subl. from 139°).

Robinson, B. *et al., J.C.S.*, 1964, 1503-1506 (*isol, uv, ir, pmr, struct*)
Longmore, R.B. *et al., Chem. Ind. (London)*, 1966, 1638-1639; 1969, 622-623 (*synth, pmr, abs config*)
Crooks, P.A. *et al., Phytochemistry*, 1976, **15**, 1092-1093 (*cmr*)
Luo, Y. *et al., Heterocycles*, 1990, **31**, 283-287 (*synth*)
Shishido, K. *et al., Tet. Lett.*, 1990, **31**, 219-220 (*synth*)
Yu, Q.-S. *et al., Helv. Chim. Acta*, 1991, **74**, 761-766 (*synth, resoln*)
Horne, S. *et al., J.C.S. Perkin 1*, 1991, 3047-3051 (*synth*)
Takano, S. *et al., J.O.C.*, 1991, **56**, 5982-5984 (*synth*)
Clark, A.J. *et al., Tetrahedron*, 1992, **48**, 6875-6882 (*synth*)
Yu, Q.-S. *et al., Heterocycles*, 1994, **39**, 519-525 (*synth*)
Node, M. *et al., Chem. Pharm. Bull.*, 1996, **44**, 715-719 (*synth*)
Matsuura, T. *et al., J.A.C.S.*, 1998, **120**, 6500-6503 (*synth*)
Ishibashi, H. *et al., Tetrahedron*, 2000, **56**, 1469-1473 (*synth*)
Tanaka, K. *et al., Tet. Lett.*, 2001, **42**, 1049-1052 (*synth*)
Morales-Rios, M.S. *et al., J. Nat. Prod.*, 2002, **65**, 136-141 (*synth*)
Zhang, T.Y. *et al., Tet. Lett.*, 2002, **43**, 1363-1365 (*synth*)
Sunazuka, T. *et al., Tet. Lett.*, 2005, **46**, 1459-1461 (*synth*)

Piccolamine P-402

[139742-31-7]



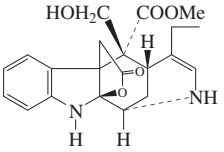
$C_{18}H_{27}NO$ 273.417
Isol. from the Senegalese gorgonian *Leptogorgia piccola*. $[\alpha]_D$ -22 (c, 0.022 in $CHCl_3$). λ_{max} 204 (ϵ 10500); 208 (ϵ 8600); 228 (ϵ 3250) (MeOH).

N-*Oxide:* ***Piccolamine* N-*oxide***
[139742-32-8]
$C_{18}H_{27}NO_2$ 289.417
Isol. from the gorgonian *Leptogorgia piccola*. $[\alpha]_D$ -47 (c, 0.012 in $CHCl_3$). λ_{max} 204 (ϵ 11200); 207 (ϵ 3100) (MeOH).

Roussis, V. *et al., New J. Chem.*, 1991, **15**, 959-961 (*isol, pmr, cmr, struct*)

Picranitine P-403

[534592-56-8]



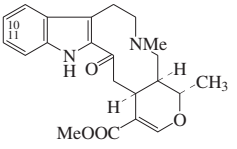
Absolute Configuration

$C_{21}H_{24}N_2O_5$ 384.431
Constit. of the seeds of *Picralima nitida*.

Tane, P. *et al., Bull. Chem. Soc. Ethiop.*, 2002, **16**, 165-168 (*isol*)

Picraphylline P-404

[2447-72-5]



Absolute Configuration

$C_{22}H_{26}N_2O_4$ 382.458
Minor alkaloid from leaves of *Picralima nitida* (Apocynaceae). Mp 255°. $[\alpha]_D^{20}$ -37 ($CHCl_3$). λ_{max} 238 (log ϵ 4.14); 313 (log ϵ 3.98) (no solvent reported).

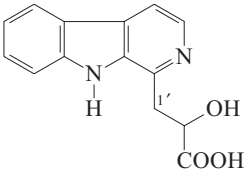
11-Methoxy: ***11-Methoxypicraphylline***
[77809-92-8]
$C_{23}H_{28}N_2O_5$ 412.485
Alkaloid from the trunk bark of *Ochrosia moorei* (Apocynaceae). λ_{max} 223 ; 267 (sh) ; 281 ; 291 ; 336 (EtOH). λ_{max} 225 ; 270 (sh) ; 282 ; 289 ; 299 (sh) (EtOH/HCl).

10,11-Dimethoxy: ***10,11-Dimethoxypicraphylline***
[36151-14-1]
$C_{24}H_{30}N_2O_6$ 442.511
Alkaloid from *Aspidosperma marcgravianum* and *Ochrosia balansae* (Apocynaceae). Cryst. (Et_2O). Mp 183-185°. $[\alpha]_D$ -50 (c, 1 in $CHCl_3$). λ_{max} 214 (log ϵ 4.46); 342 (log ϵ 4.2) (EtOH).

Lévy, J. *et al., Bull. Soc. Chim. Fr.*, 1964, 1917-1924 (*uv, ir, ms, pmr, struct*)
Le Men, J. *et al., J. Nat. Prod.*, 1964, **27**, 456-469 (*isol*)
Bruneton, J. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1971, **273**, 442-444 (*Dimethoxypicraphylline*)
Ahond, A. *et al., J. Nat. Prod.*, 1981, **44**, 193-199 (*11-Methoxypicraphylline*)
Verpoorte, R. *et al., Planta Med.*, 1982, **46**, 149-152 (*Dimethoxypicraphylline*)

Picrasidine X P-405

[155416-26-5]



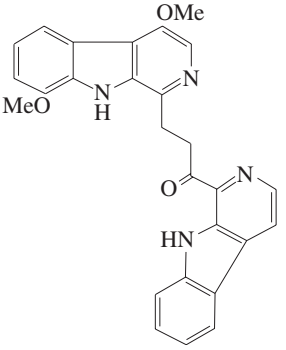
$C_{14}H_{12}N_2O_3$ 256.26
Alkaloid from the wood of *Picrasma quassioides* (Simaroubaceae). Pale yellow solid (MeOH). Mp 180-181°. $[\alpha]_D^{22}$ -37 (c, 0.4 in Py). Config. at 2′ posn. not determined. λ_{max} 250 (log ϵ 4.58); 290 (log ϵ 4.23); 303 (sh) (log ϵ 4.27); 352 (log ϵ 3.79); 370 (sh) (log ϵ 3.71) (MeOH).

1′-Hydroxy: ***Picrasidine Y***
[155416-27-6]
$C_{14}H_{12}N_2O_4$ 272.26
From wood of *Picrasma quassioides* (Simaroubaceae). Pale yellow solid (MeOH). Mp 184-185°. $[\alpha]_D^{22}$ -33.2 (c, 0.5 in Py). Stereochem. at 1′ and 2′ posn. not determined. λ_{max} 250 (log ϵ 4.51); 290 (log ϵ 4.21); 302 (log ϵ 4.27); 352 (log ϵ 3.6); 370 (sh) (log ϵ 3.51) (MeOH).

Li, H.-Y. *et al., Chem. Pharm. Bull.*, 1993, **41**, 1807-1811 (*isol, uv, ir, pmr, cmr, ms, struct*)

Picrasidine A P-406

*3-(4,8-Dimethoxy-9*H*-pyrido[3,4-*b*]indol-1-yl)-1-(9*H*-pyrido[3,4-*b*]indol-1-yl)-1-propanone, 9CI. β-Carbolin-1-yl 4,8-dimethoxy-β-carbolin-1-ylethyl ketone*
[82652-20-8]

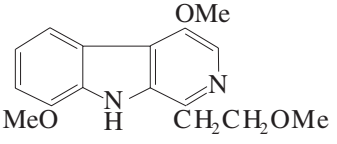


$C_{27}H_{22}N_4O_3$ 450.496
Alkaloid from the roots of *Picrasma quassioides* (Simaroubaceae). Cryst. ($CHCl_3$/MeOH). Mp 263-264° dec.

Ohmoto, T. *et al., Chem. Pharm. Bull.*, 1982, **30**, 1204; 1984, **32**, 3579 (*pmr, cmr, ms, struct, nomencl*)

Picrasidine B P-407

*4,8-Dimethoxy-1-(2-methoxyethyl)-9*H*-pyrido[3,4-*b*]indole, 9CI. 4,8-Dimethoxy-1-(2-methoxyethyl)-β-carboline*
[82652-19-5]

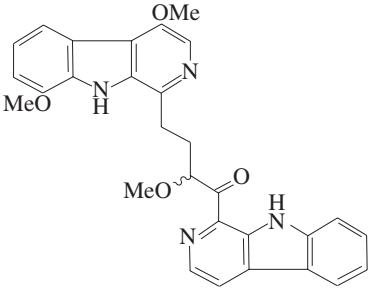


$C_{16}H_{18}N_2O_3$ 286.33
Alkaloid from the roots of *Picrasma quassioides* (Simaroubaceae). Prisms (Me_2CO). Mp 201-202°.

Ohmoto, T. *et al., Chem. Pharm. Bull.*, 1982, **30**, 1204 (*isol, uv, ir, pmr, cmr, ms, struct*)

Picrasidine C P-408

β-Carbolin-1-yl 3-(4,8-dimethoxy-β-carbolin-1-yl)-1-methoxypropyl ketone
[88142-61-4]

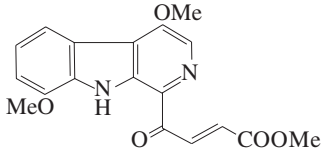


$C_{29}H_{26}N_4O_4$ 494.549
Alkaloid from the wood of *Picrasma quassioides* (Simaroubaceae). Cryst. (MeOH). Mp 121-122°.

Ohmoto, T. *et al., Chem. Pharm. Bull.*, 1983, **31**, 3198; 1984, **32**, 3579 (*isol, uv, ir, pmr, cmr, ms, struct, nomencl*)

Picrasidine E P-409

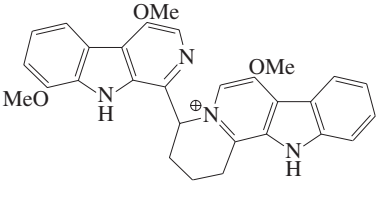
[94530-77-5]



$C_{18}H_{16}N_2O_5$ 340.335
Alkaloid from the wood of *Picrasma quassioides* (Simaroubaceae). Yellow needles (Me_2CO). Mp 220°.

Ohmoto, T. *et al., Chem. Pharm. Bull.*, 1984, **32**, 3579 (*isol, uv, ir, pmr, cmr, ms, struct*)

Picrasidine F P-410



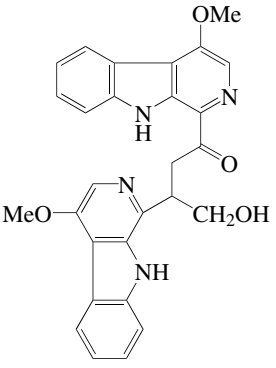
$C_{29}H_{27}N_4O_3^{\oplus}$ 479.557
Plates + ½MeOH (MeOH) (as chloride). Mp 265-267° dec, (chloride).

(±)-*form* [109225-38-9]
Quaternary alkaloid from the root bark of *Picrasma quassioides* (Simaroubaceae).

Koike, K. *et al., Chem. Pharm. Bull.*, 1986, **34**, 3228 (*isol, uv, ir, pmr, cmr, ms, cryst struct*)

Picrasidine H P-411

[105608-30-8]



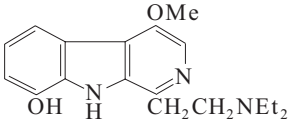
$C_{28}H_{24}N_4O_4$ 480.522
Revised struct; probable struct (1997). Alkaloid from the root bark of *Picrasma quassioides* (Simaroubaceae). Needles (MeOH). Mp 218-220° dec. $[\alpha]_D^{25}$ -63.1 (c, 1.3 in DMSO).

O-*Ac:*
Needles (MeOH). Mp 158-159°.

Koike, K. *et al., Chem. Pharm. Bull.*, 1986, **34**, 2090 (*isol, uv, ir, pmr, cmr, ms*)
Suzuki, H. *et al., Heterocycles*, 1997, **46**, 57-60 (*struct*)

Picrasidine K P-412

*1-[2-(Dimethylamino)ethyl]-4-methoxy-9*H*-pyrido[3,4-*b*]indol-8-ol, 9CI. 1-(2-Diethylaminoethyl)-8-hydroxy-4-methoxy-β-carboline*
[100234-63-7]



$C_{18}H_{23}N_3O_2$ 313.399
Alkaloid from the bark of *Picrasma quassioides* (Simaroubaceae). Plates (MeOH). Mp 169-171°.

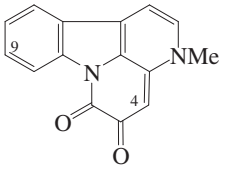
O-*Ac; hydrochloride:*
Pale-yellow needles. Mp 189-190°.

Me ether, hydrochloride:
Pale-yellow needles. Mp 223-225°.

Ohmoto, T. *et al., Chem. Pharm. Bull.*, 1985, **33**, 3356 (*isol, uv, ir, pmr, cmr, ms, struct*)

Picrasidine L P-413

*3-Methyl-3*H*-indolo[3,2,1-*de*][1,5]-naphthyridine-5,6-dione, 9CI. 3-Methylcanthin-5,6-dione*
[96405-70-8]



$C_{15}H_{10}N_2O_2$ 250.256
Struct. revised in 1985. Alkaloid from the wood and root bark of *Picrasma quassioides* (Simaroubaceae). Orange-red needles. Mp 330°. λ_{max} 242 (log ε 4.33); 250 (log ε 4.3); 287 (log ε 3.87); 345 (log ε 3.55); 444 (log ε 4.1); 462 (log ε 4.1) (EtOH).

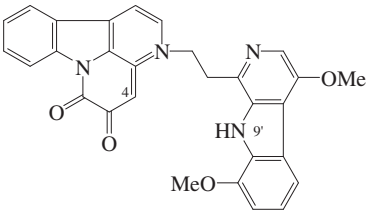
*4-Methoxy: 4-Methoxy-3-methyl-3*H*-indolo[3,2,1-*de*][1,5]naphthyridine-5,6-dione. 4-Methoxy-3-methyl-5,6-canthinedione.* ***Picrasidine O***
[101219-63-0]
$C_{16}H_{12}N_2O_3$ 280.282
Alkaloid from the root wood of *Picrasma quassioides* (Simaroubaceae). Red needles. Mp 274° dec. λ_{max} 242 (log ε 4.28); 250 (sh) (log ε 4.27); 290 (log ε 4.2); 360 (log ε 3.54); 480 (log ε 4.04); 500 (log ε 4) (EtOH).

9-Methoxy: ***9-Methoxy-3-methyl-5,6-canthindione***
[119935-09-0]
$C_{16}H_{12}N_2O_3$ 280.282
Alkaloid from the wood of *Eurycoma longifolia* (Simaroubaceae). Yellow needles. Mp 300°.

Ohmoto, T. *et al., Chem. Pharm. Bull.*, 1982, **30**, 1204-1209; 1985, **33**, 3847-3851; 4901 (*Picrasidines, isol, uv, ir, pmr, cmr, ms, struct, synth*)
Mitsunaga, K. *et al., Phytochemistry*, 1994, **35**, 799 (*9-methoxy*)

Picrasidine M P-414

[99964-79-1]



$C_{29}H_{22}N_4O_4$ 490.517
Alkaloid from the root bark of *Picrasma quassioides* (Simaroubaceae). Orange needles (DMSO). Mp 294-295° dec. λ_{max} 240 (log ε 4.3); 284 (log ε 3.65); 338 (log ε 3.42); 444 (log ε 3.52); 464 (log ε 3.52) (EtOH).

4-Methoxy: ***Picrasidine U***
[118636-90-1]
$C_{30}H_{24}N_4O_5$ 520.543
Alkaloid from root wood of *Picrasma quassioides*. Red needles (MeOH). Mp 199-200° dec. λ_{max} 221 (log ε 4.73); 286 (log ε 4.19); 344 (log ε 3.93); 472 (log ε 3.87); 500 (log ε 3.83) (EtOH).

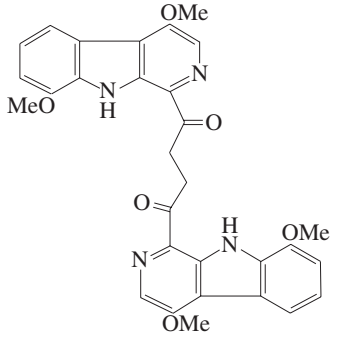
8′-Demethoxy, $N^{9'}$*-methoxy:* ***Picrasidine N***
[101219-62-9]
$C_{29}H_{22}N_4O_4$ 490.517
Alkaloid from the root wood of *Picrasma quassioides* (Simaroubaceae). Orange needles ($CHCl_3$/MeOH). Mp 171-172° dec. λ_{max} 232 (log ε 4.25); 241 (log ε 4.25); 284 (log ε 3.87); 342 (log ε

3.52); 442 (log ϵ 3.59); 466 (log ϵ 3.59) (EtOH).

Ohmoto, T. *et al., Chem. Pharm. Bull.*, 1985, **33**, 3847-3851; 4901-4905 (*Picrasidines M,N*)
Koike, K. *et al., Phytochemistry*, 1988, **27**, 3029-3030 (*Picrasidine U*)

Picrasidine R P-415

[106154-68-1]

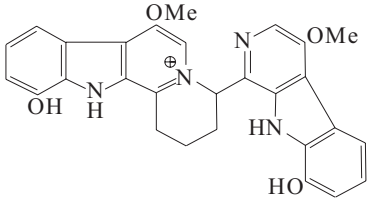


$C_{30}H_{26}N_4O_6$ 538.559
Alkaloid from the root bark of *Picrasma quassioides* (Simaroubaceae). Needles (MeOH). Mp 297-300° dec.

Koike, K. *et al., Chem. Pharm. Bull.*, 1986, **34**, 2090 (*isol, uv, ir, pmr, cmr, ms, struct*)

Picrasidine T P-416

[113808-03-0]



$C_{28}H_{25}N_4O_4^{\oplus}$ 481.53

(±)-form
Alkaloid from the bark of *Picrasma quassioides* (Simaroubaceae). Pale yellow needles (MeOH) (as chloride). M.p. >300° (chloride). CAS no. refers to chloride.

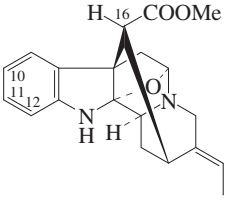
Di-Me ether: ***Picrasidine S***
[112503-87-4]
$C_{30}H_{29}N_4O_4^{\oplus}$ 509.583
Alkaloid from the root bark of *Picrasma quassioides* (Simaroubaceae). Mp 215-217° dec. (chloride). Pale yellow needles (MeOH) (as chloride).

Dideoxy: ***Picrasidine G***
[112503-90-9]
$C_{28}H_{25}N_4O_2^{\oplus}$ 449.531
Alkaloid from the root bark of *Picrasma quassioides* and from *Picrasma javanica* (Simaroubaceae). Shows anti-ulcer props. Pale yellow needles (MeOH) (as chloride). Mp 272-273° dec. (chloride). λ_{max} 248 (ϵ 22387); 316 (ϵ 5754); 342 (ϵ 3715); 372 (ϵ 1996) (EtOH) (Berdy). λ_{max} 240 (ϵ 19054); 279 (ϵ 28153); 328 (ϵ 4786); 400 (ϵ 1737) (EtOH-NaOH) (Berdy).

Koike, K. *et al., Chem. Pharm. Bull.*, 1987, **35**, 3305 (*isol, uv, ir, pmr, cmr, ms, struct*)
Koike, K. *et al., Phytochemistry*, 1987, **26**, 3375 (*isol, uv, ir, pmr, ms, struct*)
Liu, J. *et al., Magn. Reson. Chem.*, 1993, **31**, 1091 (*pmr, cmr, Picrasidine G*)

Picrinine P-417

Methyl 2,5-epoxy-1,2-dihydroakuammilan-17-oate, 9CI. Deacetyldeformylpicraline. Vincaridine
[4684-32-6]



Absolute Configuration

$C_{20}H_{22}N_2O_3$ 338.405
Alkaloid from *Amsonia brevifolia*, *Alstonia scholaris*, *Alstonia macrophylla*, *Vinca minor*, *Vinca erecta*, *Vinca libanotica*, *Rauwolfia vomitoria*, *Rauwolfia cumminsii* and *Rauwolfia oreogiton*. Needles (Me_2CO). Mp 223-225° dec. $[\alpha]_D^{25}$ -44 ($CHCl_3$). pK_a 5.72 (EtOH aq.). λ_{max} 237 (ϵ 7950); 287 (ϵ 3230) (EtOH).

Picrate: Mp 172-174° dec.

Methiodide: Mp 235-237° dec.

N^1-*Me:* ***Ervincine***
[18223-72-8]
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from *Vinca erecta* (Apocynaceae). Mp 156-157°. $[\alpha]_D$ +93 (c, 0.2 in $CHCl_3$). λ_{max} 246 (log ϵ 3.39); 295 (log ϵ 3.5) (EtOH).

10-Methoxy: ***Vincaricine****. 12-Demethoxytabernulosine*
[22223-13-8]
[82260-04-6]
$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from *Vinca erecta* and *Tabernaemontana glandulosa*. Cryst. (C_6H_6) (Vincaricine) or oil (12-Demethoxytabernulosine). Mp 187-189° (Vincaricine). $[\alpha]_D^{22}$ 0 (c, 0.6 in $CHCl_3$) (Vincaricine). $[\alpha]_D^{20}$ -21 (c, 0.2 in $CHCl_3$) (12-Demethoxytabernulosine). Struct. revised in 1985. Same struct. assigned to Vincaricine and 12-Demethoxytabernulosine although the reported props. are different. λ_{max} 236 (log ϵ 3.85); 308 (log ϵ 3.48) (EtOH). λ_{max} 237 (log ϵ 3.65); 306 (log ϵ 3.3) (MeOH).

ar-*Methoxy,* N^1-*Me:* ***Quaternidine***
[57515-71-6]
$C_{22}H_{26}N_2O_4$ 382.458
Alkaloid from *Alstonia quaternata* (Apocynaceae). Oil. $[\alpha]_D^{20}$ -85 (c, 0.4 in $CHCl_3$). Exact posn. of OMe subn. not detd. λ_{max} 241 (log ϵ 4.2); 308 (log ϵ 3.79) (EtOH).

10,11-Dimethoxy: ***Volkensine***†. N^a-*Demethylquaternine. Norquaternine*
[74991-69-8]
$C_{22}H_{26}N_2O_5$ 398.458
Alkaloid from the leaves of *Rauwolfia oreogiton* and *Rauwolfia volkensii* and the trunk bark of *Alstonia legouixiae* (Apocynaceae). Needles. Mp 280°. $[\alpha]_D^{20}$ -63.4 (c, 0.1 in $CHCl_3$). λ_{max} 213 (log ϵ 4.3); 244 (log ϵ 4); 303 (log ϵ 3.9) (MeOH).

10,11-Dimethoxy, N^1-*Me:* ***Quaternine****. Alstopicralamine*
[57499-02-2]
$C_{23}H_{28}N_2O_5$ 412.485
Alkaloid from *Alstonia quaternata*, the leaves of *Rauwolfia oreogiton, Rauwolfia volkensii*, the trunk bark of *Alstonia legouixiae* and from leaves of *Alstonia macrophylla* (Apocynaceae). Cryst. (MeOH). Mp 153°. $[\alpha]_D^{20}$ -27 (c, 0.4 in $CHCl_3$). $[\alpha]_D^{20}$ +3.33. Samples not compared. The +ve opt. rotn. refers to Alstopicralamine. λ_{max} 249 (log ϵ 3.92); 304 (log ϵ 3.78) (EtOH). λ_{max} 232 (log ϵ 3.9); 272 (log ϵ 3.3) (MeOH).

10,12-Dimethoxy: ***Tabernulosine***
[74627-72-8]
$C_{22}H_{26}N_2O_5$ 398.458
Alkaloid from the stems and leaves of *Tabernaemontana glandulosa* (Apocynaceae). Platelets (MeOH). Mp 190-191° dec. $[\alpha]_D^{20}$ -27 (c, 1.0 in $CHCl_3$). λ_{max} 240 (log ϵ 3.9); 301 (log ϵ 3.55) (MeOH).

16-Epimer: ***Picralstonine***
[38801-86-4]
$C_{20}H_{22}N_2O_3$ 338.405
Alkaloid from the leaves of *Alstonia macrophylla* (Apocynaceae). Granules (Me_2CO). Mp 200°. $[\alpha]_D^{25}$ -90 ($CHCl_3$). λ_{max} 234 (log ϵ 3.81); 286 (log ϵ 3.4) (EtOH).

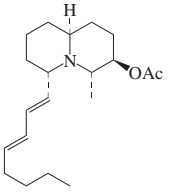
[27501-23-1]

Britten, A.Z. *et al., J.C.S.*, 1963, 3850-3854 (*Picrinine, synth, uv, ir*)
Chatterjee, A. *et al., Tet. Lett.*, 1965, 3633-3637 (*Picrinine, uv, pmr, ms*)
Rakhimov, D.A. *et al., Khim. Prir. Soedin.*, 1967, **3**, 354-355; 1969, **5**, 521-524; *Chem. Nat. Compd. (Engl. Transl.)*, 1967, **3**, 300-301; 1969, **5**, 440-443 (*Ervincine, Vincaridine*)
Il'yasova, Kh.T. *et al., Khim. Prir. Soedin.*, 1968, **4**, 327-328; *Chem. Nat. Compd. (Engl. Transl.)*, 1968, **4**, 278 (*Vincaricine*)
Rakhimov, D.A. *et al., Khim. Prir. Soedin.*, 1969, **5**, 521-524; *Chem. Nat. Compd. (Engl. Transl.)*, 1969, **5**, 440-443 (*Vincaricine*)
Banerji, A. *et al., Phytochemistry*, 1972, **11**, 2605-2607 (*Picralstonine*)
Grossmann, E. *et al., Phytochemistry*, 1973, **12**, 2058 (*uv, ms, pmr*)
Mamatas-Kalamaras, S. *et al., Phytochemistry*, 1975, **14**, 1849-1854 (*Quaternidine, Quaternine*)
Akinloye, B.A. *et al., Phytochemistry*, 1980, **19**, 307-311 (*Volkensine, Quaternine*)
Lewin, G. *et al., Ann. Pharm. Fr.*, 1981, **39**, 273-275 (*Volkensine*)
Achenbach, H. *et al., Annalen*, 1982, 830-844 (*Tabernulosine, 12-Demethoxytabernulosine*)
Yagudaev, M.R. *et al., Khim. Prir. Soedin.*, 1985, **21**, 129-130; *Chem. Nat. Compd. (Engl. Transl.)*, 1985, **21**, 131-132 (*Vincaricine*)
Cherif, A. *et al., Heterocycles*, 1987, **26**, 3055-3058 (*Norquaternine, cmr*)
Ghosh, R. *et al., Acta Cryst. C*, 1988, **44**, 2151-2154 (*cryst struct*)
Atta-ur-Rahman, *et al., Heterocycles*, 1988, **27**, 961-965 (*Alstopicralamine*)

Pictamine P-418

Octahydro-4-methyl-6-(1,3-octadienyl)-2H-quinolizin-3-ol acetate, 9CI

[136945-62-5]



Absolute Configuration

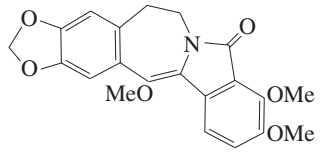
$C_{20}H_{33}NO_2$ 319.486

Alkaloid from the tunicate *Clavelina picta*. Oil. $[\alpha]_D$ -87 (c, 0.1 in EtOAc). λ_{max} 230 (ϵ 19000) (EtOH) (Derep). λ_{max} 231 (MeOH) (Berdy).

Kong, F. *et al., Tet. Lett.*, 1991, **32**, 3667-3668 (*isol, uv, ir, pmr, cmr, ms, struct*)
Toyooka, N. *et al., Tetrahedron*, 1999, **55**, 15209-15224 (*synth, abs config*)
Yu, S. *et al., Org. Lett.*, 2006, **8**, 3179-3182 (*synth*)

Pictonamine P-419

[95456-40-9]



$C_{21}H_{19}NO_6$ 381.384

Alkaloid from the stems of *Berberis darwinii* (Berberidaceae). Yellow cryst. (MeOH). Mp 231-232° (228-230°). Methyl enol ether of 13-Deoxychilenine in C-375.

Moniot, J.L. *et al., J.O.C.*, 1979, **44**, 4347 (*synth, uv, pmr*)
Valencia, E. *et al., Tetrahedron*, 1984, **40**, 3957 (*isol, uv, ir, pmr, ms*)

Pictumine† P-420

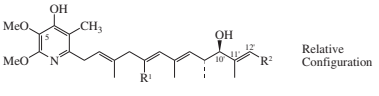
[39292-54-1]

$C_{14}H_{23}NO_4$ 269.34

Pyrrolizidine alkaloid. Struct. unknown. Alkaloid from *Cynoglossum pictum* (Boraginaceae). Cryst. (Me_2CO). Mp 158-159°. Contains α,β-unsatd. ester and tertiary OH groups.

Man'ko, I.V. *et al., Khim. Prir. Soedin.*, 1972, **8**, 655-656; *Chem. Nat. Compd. (Engl. Transl.)*, 630

Piericidin P-421



Relative Configuration

Piericidin A_1, R^1 = H, R^2 = CH_3
A_2, R^1 = R^2 = CH_3
A_3, R^1 = H, R^2 = $CH(CH_3)_2$
A_4, R^1 = CH_3, R^2 = $CH(CH_3)_2$
A_5, R^1 = H, R^2 = CH_2CH_3
A_6, R^1 = CH_3, R^2 = CH_2CH_3
Antibiotic IT 143A, R^1 = CH_3, R^2 = -C(CH_3)=$CHCH_3$(*E*-)
IT 143B, R^1 = H, R^2 = -C(CH_3)=$CHCH_3$(*E*-)

Pyridine antibiotic family. Sol. MeOH, hexane; poorly sol. H_2O. λ_{max} 205 (ϵ 40800); 237 (ϵ 41800); 267 (ϵ 6600) (MeOH) (Berdy).

▶ LD_{50} (mus, ipr) 0.87 mg/kg.

Piericidin A_1

Shaoguanmycin B. MT 1882-I. Antibiotic MT 1882-I. SN 198E. Antibiotic SN 198E. IT 143D. Antibiotic IT 143D

[2738-64-9]

$C_{25}H_{37}NO_4$ 415.572

Isol. from *Streptomyces pactum* and other spp. Inhibits NADH oxidase of oxheart mitochondria in the absence of bovine serum albumen. Also shows insecticidal activity. Viscous oil. Sol. MeOH, hexane; poorly sol. H_2O. $[\alpha]_D^{20}$ -0.9. λ_{max} 232 (ϵ 39500); 239 (ϵ 40500); 268 (ϵ 5300) (MeOH) (Derep).

▶ YD4588000

4-O-D-Glucopyranoside: ***Glucopiericidin B***

[108073-61-6]

$C_{31}H_{47}NO_9$ 577.714

From *Streptomyces pactum*. More biol. active than Piericidin A_1. Amorph. Sol. MeOH, Et_2O, $CHCl_3$, Py, DMSO; poorly sol. H_2O. $[\alpha]_D^{20}$ -10 (c, 0.9 in MeOH). λ_{max} 203 (ϵ 39700); 232 (ϵ 40050); 237 (ϵ 40200); 275 (ϵ 8300) (MeOH) (Derep).

▶ LD_{50} (mus, ivn) 10-30 mg/kg. LZ5902300

10′-O-β-D-Glucopyranoside: ***Glucopiericidin A***. *MT 1882-II. Antibiotic MT 1882-II*

[108073-65-0]

$C_{31}H_{47}NO_9$ 577.714

From *Streptomyces pactum* and *Streptomyces* sp. OM-5689. Hypotensive agent, antibody formation Inhibitor, bleb formation Inhibitor. More biol. active than Piericidin A_1. Amorph. Sol. MeOH, EtOAc; poorly sol. H_2O. $[\alpha]_D^{20}$ -26.4 (c, 1 in $CHCl_3$). λ_{max} 203 (ϵ 45400); 233 (ϵ 40000); 237 (ϵ 40800); 267 (ϵ 6100) (MeOH) (Derep).

▶ LD_{50} (mus, ivn) 10-30 mg/kg. LZ5901300

4-O-L-Rhamnopyranoside: ***4-Rhamnopiericidin A_1***. *SN 198C. Antibiotic SN 198C*

[131622-62-3]

$C_{31}H_{47}NO_8$ 561.714

From *Streptomyces* sp. SN-198. Active against gram-negative bacteria and fungi. Shows antitumour props. Amorph. Sol. MeOH, DMSO, $CHCl_3$; poorly sol. H_2O, hexane. $[\alpha]_D^{25}$ -44 (c, 0.1 in MeOH). Grad. changes to oil > 82°. Named as 3′-rhamnosyl deriv. in paper. λ_{max} 231 (ϵ 39300); 237 (ϵ 37700); 276 (ϵ 7200) (MeOH) (Berdy). λ_{max} 232 (ϵ 37000); 238 (ϵ 37800); 277 (ϵ 6700) (EtOH) (Berdy).

4-O-(6-Deoxy-β-D-talopyranoside): ***3′-Deoxytalopiericidin A_1***. *DTPA*

[134876-72-5]

$C_{31}H_{47}NO_8$ 561.714

Isol. from an unconfirmed *Streptomyces* sp. Antitumour agent. Pale yellow oil. Poorly sol. H_2O. Lit. uses different numbering system. λ_{max} 235 ; 275 (MeOH) (Berdy).

11′,12′-Epoxide: ***Piericidin C_1***

[58947-79-8]

$C_{25}H_{37}NO_5$ 431.571

Isol. from *Streptomyces pactum*. NADH oxidase inhibitor. Sol. MeOH, Et_2O, hexane; poorly sol. H_2O. λ_{max} 239 (ϵ 40000); 269 (ϵ 5000) (MeOH) (Berdy). λ_{max} 235 (ϵ 40000); 273 (ϵ 12000) (MeOH/HCl) (Berdy).

▶ LD_{50} (mus, ipr) 3.24 mg/kg.

10′-Me ether: ***Piericidin B_1***

[16891-54-6]

$C_{26}H_{39}NO_4$ 429.598

No phys. props. reported. λ_{max} 232 (ϵ 31300); 237 (ϵ 31900); 267 (ϵ 5101) (MeOH).

10′-Me ether, 11′,12′-epoxide: ***Piericidin D_1***

[58947-82-3]

$C_{26}H_{39}NO_5$ 445.598

From *Streptomyces pactum*. NADH oxidase inhibitor. Sol. MeOH, hexane; poorly sol. H_2O. λ_{max} 232 (ϵ 38000); 239 (ϵ 40000); 270 (ϵ 9000) (MeOH) (Berdy). λ_{max} 235 (ϵ 35000); 275 (ϵ 12000) (MeOH/HCl) (Berdy).

▶ LD_{50} (mus, ipr) 3.62 mg/kg.

O^5*-De-Me:* ***Antibiotic NK 170204A***. *NK 170204A*

[161161-45-1]

$C_{24}H_{35}NO_4$ 401.545

Prod. by *Streptomyces* sp. NK 170204. Relationship with Piericidin A is tentative; stereochem. not fully descr. and their interconversion not reported.

13′-Hydroxy, 10′-O-β-D-glucopyranoside: ***13-Hydroxyglucopiericidin A***

[132150-13-1]

$C_{31}H_{47}NO_{10}$ 593.713

From *Streptomyces* sp. OM-5689. Shows antitumour props. Yellow oil. Sol. EtOH, EtOAc; poorly sol. H_2O. $[\alpha]_D^{20}$ +20 (c, 0.2 in MeOH). λ_{max} 239 (ϵ 40000); 268 (ϵ 5300) (MeOH) (Derep).

5-Demethoxy: ***Antibiotic Mer-A 2026B***. *Mer-A 2026B*

[144357-07-3]

$C_{24}H_{35}NO_3$ 385.545

From *Streptomyces karnatakensis* and *Streptomyces pactum*. Vasodilator, vasodepressor. Yellow oil. Sol. MeOH, butanol; poorly sol. H_2O. $[\alpha]_D^{24}$ -1.1 (c, 0.4 in MeOH). Abs. config. not determined. λ_{max} 204 (ϵ 32700); 235 (ϵ 35000); 274 (ϵ 12000) (MeOH/HCl) (Derep). λ_{max} 235 (sh) (ϵ 40500); 240 (ϵ 42000); 272 (ϵ 5800) (MeOH/NaOH) (Derep). λ_{max} 223 (ϵ 33400); 235 (sh) (ϵ 35000); 238 (ϵ 37600); 264 (sh) (ϵ 11000) (MeOH) (Derep).

Piericidin A_2

IT 143C. Antibiotic IT 143C

[58947-74-3]

$C_{26}H_{39}NO_4$ 429.598

From *Streptomyces pactum*. Inhibits NADH oxidase. Sol. MeOH, hexane; poorly sol. H_2O. λ_{max} 235 (ϵ 20500); 272 (ϵ 10000) (MeOH/HCl) (Derep). λ_{max} 238 (sh) (ϵ 24000) (MeOH/NaOH) (Derep). λ_{max} 225 (ϵ 20500); 265 (sh) (ϵ 6000) (MeOH) (Derep). λ_{max} 204 (ϵ 42400); 229 (ϵ 23200) (MeOH) (Berdy).

10′-Me ether: ***Piericidin B_2***

[58947-76-5]

$C_{27}H_{41}NO_4$ 443.625
No phys. props. reported. λ_{max} 225 (ϵ 20500); 265 (sh) (ϵ 6000) (MeOH).

11′,12′-Epoxide: ***Piericidin C₂***
[58947-81-2]
$C_{26}H_{39}NO_5$ 445.598
From *Streptomyces pactum* and *Streptomyces piericidicus*. NADH oxidase inhibitor. Sol. MeOH, Et_2O; poorly sol. H_2O. λ_{max} 235 (ϵ 20500); 272 (ϵ 10000) (MeOH/HCl) (Derep). λ_{max} 238 (sh) (ϵ 24000) (MeOH/NaOH) (Derep). λ_{max} 225 (ϵ 20500); 265 (sh) (ϵ 6000) (MeOH) (Derep). λ_{max} 235 (ϵ 21000); 275 (ϵ 11000) (MeOH/HCl) (Berdy).

▶ LD_{50} (mus, ipr) 2.26 mg/kg.

10′-Me ether, 11′,12′-epoxide: ***Piericidin D₂***
[58947-72-1]
$C_{27}H_{41}NO_5$ 459.625
From *Streptomyces pactum* and *Streptomyces piericidicus*. NADH oxidase inhibitor. Sol. MeOH, hexane; poorly sol. H_2O. λ_{max} 235 (ϵ 20500); 272 (ϵ 10000) (MeOH/HCl) (Derep). λ_{max} 238 (sh) (ϵ 24000) (MeOH/NaOH) (Derep). λ_{max} 225 (ϵ 20500); 265 (sh) (ϵ 6000) (MeOH) (Derep). λ_{max} 225 (ϵ 20000) (MeOH) (Berdy).

Piericidin A_3
Shaoguanmycin A
[58947-78-7]
$C_{27}H_{41}NO_4$ 443.625
From *Streptomyces pactum* and *Streptomyces flaveolus shaoguanensis*. Inhibits NADH oxidase. λ_{max} 232 (ϵ 39500); 239 (ϵ 40500); 268 (ϵ 5300) (MeOH) (Derep).

10′-Me ether: ***Piericidin B₃***
[58947-71-0]
$C_{28}H_{43}NO_4$ 457.652
No phys. props. reported.

11′,12′-Epoxide: ***Piericidin C₃***
[58947-84-5]
$C_{27}H_{41}NO_5$ 459.625
From *Streptomyces pactum* and *Streptomyces piericidicus*. NADH oxidase inhibitor. Sol. MeOH, Et_2O; poorly sol. H_2O. λ_{max} 239 (ϵ 40000); 269 (ϵ 5000) (MeOH) (Berdy). λ_{max} 235 ; 272 (EtOH) (Berdy).

▶ LD_{50} (mus, ipr) 2.26 mg/kg.

10′-Me ether, 11′,12′-epoxide: ***Piericidin D₃***
[58947-75-4]
$C_{28}H_{43}NO_5$ 473.651
From *Streptomyces pactum* and *Streptomyces piericidicus*. NADH oxidase inhibitor. Sol. MeOH, hexane; poorly sol. H_2O. λ_{max} 232 ; 239 (ϵ 40000); 270 (MeOH) (Berdy).

5-Demethoxy: ***Antibiotic Mer-A 2026A***. *Mer-A 2026A*
[144357-08-4]
$C_{26}H_{39}NO_3$ 413.599
From *Streptomyces karnatakensis* and *Streptomyces pactum*. Vasodilator. Yellow oil. Sol. MeOH, butanol; poorly sol. H_2O. $[\alpha]_D^{22}$ -12.3 (c, 1.8 in MeOH). Abs. config. not determined. λ_{max} 204 (ϵ 32700); 235 (ϵ 35000); 274 (ϵ 12000) (MeOH/HCl) (Derep). λ_{max} 235 (sh) (ϵ 40500); 240 (ϵ 42000); 272 (ϵ 5800) (MeOH/NaOH) (Derep). λ_{max} 223 (ϵ 33700); 235 (sh) (ϵ 35000); 239 (ϵ 37400) (MeOH) (Derep).

▶ LD_{50} (mus, ivn) 0.5 mg/kg, LD_{50} (mus, ivn) 250-500 mg/kg.

Piericidin A_4 [58947-77-6]
$C_{28}H_{43}NO_4$ 457.652
From *Streptomyces pactum* and *Streptomyces piericidicus*. Inhibits NADH oxidase. Sol. MeOH, hexane; poorly sol. H_2O. λ_{max} 225 (ϵ 20000); 269 (MeOH) (Berdy).

11′,12′-Epoxide: ***Piericidin C₄***
[58947-80-1]
$C_{28}H_{43}NO_5$ 473.651
From *Streptomyces pactum* and *Streptomyces piericidicus*. NADH oxidase inhibitor. λ_{max} 225 (ϵ 20000) (MeOH) (Berdy). λ_{max} 235 (ϵ 21000); 275 (ϵ 11000) (MeOH/HCl) (Berdy).

▶ LD_{50} (mus, ipr) 3.62 mg/kg.

10′-Me ether: Piericidin B₄
[58966-77-1]
$C_{29}H_{45}NO_4$ 471.679
No phys. props. reported.

10′-Me ether, 11′,12′-epoxide: ***Piericidin D₄***
[58947-73-2]
$C_{29}H_{45}NO_5$ 487.678
From *Streptomyces pactum* and *Streptomyces piericidicus*. NADH oxidase inhibitor. Sol. MeOH, hexane; poorly sol. H_2O. λ_{max} 225 (ϵ 20000) (MeOH) (Berdy).

Piericidin A_5
$C_{26}H_{39}NO_4$ 429.598
This component not yet characterised.

10′-Me ether: ***Piericidin B₅***
[149598-65-2]
$C_{27}H_{41}NO_4$ 443.625
Pale yellow oil. $[\alpha]_D^{24}$ -12.5 (c, 0.2 in MeOH). λ_{max} 232 (ϵ 31300); 237 (ϵ 31900); 267 (ϵ 5010) (MeOH).

10′-Me ether, N*-oxide:* ***Piericidin B₅N-oxide***
[149665-01-0]
From a *Streptomyces* sp. Pale yellow oil. $[\alpha]_D^{24}$ -8 (c, 0.2 in MeOH). λ_{max} 226 (ϵ 34100); 238 (ϵ 29700); 246 (sh) (ϵ 20800); 267 (ϵ 7570) (MeOH).

*11′*R*,12′*R*-Epoxide:* ***Piericidin C₅***
$C_{26}H_{39}NO_5$ 445.598
Prod. by a marine-derived *Streptomyces* sp. Cell division inhibitor. Pale yellow oil. $[\alpha]_D^{25}$ +7 (c, 0.12 in MeOH). λ_{max} 231 (ϵ 32000); 236 (ϵ 32300); 267 (ϵ 5100) (MeOH).

Piericidin A_6
$C_{27}H_{41}NO_4$ 443.625
Component not yet characterised.

*11′*R*,12′*R*-Epoxide:* ***Piericidin C₆***
$C_{27}H_{41}NO_5$ 459.625
Prod. by a marine-derived *Nocardioides* sp. Cell division inhibitor. Pale yellow oil. $[\alpha]_D^{25}$ +34 (c, 0.03 in MeOH). λ_{max} 225 (ϵ 20600); 267 (ϵ 6000) (MeOH).

Antibiotic IT143A
IT 143A
[183485-32-7]
$C_{29}H_{43}NO_4$ 469.663
Prod. by *Streptomyces* sp. IT 143. Pale yellow oil. $[\alpha]_D$ -13.9 (c, 0.2 in MeOH). Stereochem. not confirmed. λ_{max} 204 (ϵ 45600); 235 (ϵ 34300) (MeOH).

11S,12S*-Epoxide:* ***Piericidin C₈***
[939994-97-5]
$C_{29}H_{43}NO_5$ 485.662
Prod. by the marine-derived *Streptomyces* sp. YM14-060. Cytotoxic. Oil. $[\alpha]_D^{23}$ +13 (c, 0.37 in MeOH). λ_{max} 225 (ϵ 21600); 267 (ϵ 6000) (MeOH).

Antibiotic IT 143B
IT 143B
[183485-34-9]
$C_{28}H_{41}NO_4$ 455.636
Prod. by *Streptomyces* sp. IT 143. Pale yellow oil. $[\alpha]_D$ -26.3 (c, 0.1 in MeOH). Stereochem. not confirmed. λ_{max} 204 (ϵ 47600); 239 (ϵ 48100) (MeOH).

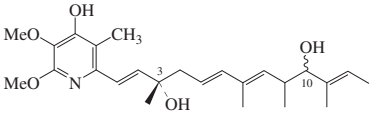
11S,12S*-Epoxide:* ***Piericidin C₇***
[939994-96-4]
$C_{28}H_{41}NO_5$ 471.636
Prod. by a marine-derived *Streptomyces* sp. YM14-060. Cytotoxic. Oil. $[\alpha]_D^{23}$ +7 (c, 0.21 in MeOH). λ_{max} 231 (ϵ 30000); 237 (ϵ 30400); 269 (ϵ 3800) (MeOH).

5-Demethoxy: 5-Demethoxy IT 143B. ***Antibiotic JBIR-02***. *JBIR-02*
$C_{27}H_{39}NO_3$ 425.61
Prod. by *Actinomyces* sp. Stamm K 17/9 and *Streptomyces* sp. ML55. Nuclear export inhibitor. Brown oil or solid. Mp 41-50°. $[\alpha]_D^{20}$ -17 (c, 0.1 in MeOH). λ_{max} 223 (log ϵ 4.4); 240 (log ϵ 4.45); 265 (sh) ; 294 (sh) (MeOH).

Takahashi, N. *et al., Agric. Biol. Chem.*, 1963, **27**, 583; 798 (*isol*)
Gutman, M. *et al., Biochem. Biophys. Res. Commun.*, 1969, **37**, 615
Tanabe, M. *et al., J.O.C.*, 1970, **35**, 2087 (*biosynth*)
Yoshida, S. *et al., Agric. Biol. Chem.*, 1977, **41**, 587; 849; 855 (*isol, pmr, cmr, ms*)
Jansen, R. *et al., Tet. Lett.*, 1983, **24**, 5485 (*stereochem*)
Liu, J. *et al., CA*, 1984, **100**, 171237 (*isol, struct*)
Matsumoto, M. *et al., J. Antibiot.*, 1987, **40**, 149-156 (*Glucopiericidins A-B*)
Mori, H. *et al., J. Antibiot.*, 1990, **43**, 1329-1331 (*13-Hydroxyglucopiericidin A*)
Kimura, K. *et al., J. Antibiot.*, 1990, **43**, 1341-1343 (*4′-Rhamnopiericidin A_1*)
Iwasaki, H. *et al., J. Antibiot.*, 1991, **44**, 451-452 (*3′-Deoxytalopiericidin A_1*)
Nishioka, H. *et al., J. Antibiot.*, 1991, **44**, 1283-1285; 1993, **46**, 564-568 (*Piericidin B_1 N-oxide, Piericidin B_5, Piericidin B_5 N-oxide*)
Japan. Pat., 1994, 94 293 736; *CA*, **122**, 158767c (*NK 170204A*)
Kominato, K. *et al., J. Antibiot.*, 1995, **48**, 99; 103 (*Mer-A 2026*)
Kimura, K. *et al., J. Antibiot.*, 1996, **49**, 697 (*SN 198*)
Urakawa, A. *et al., J. Antibiot.*, 1996, **49**, 1052-1055 (*IT 143*)
Kubota, N.K. *et al., Bioorg. Med. Chem.*, 2003, **11**, 4569-4575 (*Piericidins C_5,C_6*)
Ströch, K. *et al., Dissertation*, Univ. of Göttingen, 2003, (*5-Demethoxy IT 143B*)

Schnermann, M.J. *et al., J.A.C.S.*, 2006, **128**, 11799-11807 (*Piericidins A_1,B_1, synth*)
Hayakawa, Y. *et al., J. Antibiot.*, 2007, **60**, 196-200; 201-203 (*Piericidins C_7,C_8*)
Ueda, J. *et al., J. Antibiot.*, 2007, **60**, 459-462 (*JBIR-02*)

Piericidinol A_1 P-422



$C_{25}H_{37}NO_5$ 431.571

10-O-*β*-D-*Glucopyranoside:* ***Glucopiericidinol A_1***
[125535-05-9]
$C_{31}H_{47}NO_{10}$ 593.713
From *Streptomyces* sp. OM-5689. Active against *Piricularia oryzae*. Cytotoxic. Yellow oil. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. $[\alpha]_D^{18}$ +38 (c, 0.08 in $CHCl_3$). λ_{max} 226 ; 290 (MeOH/HCl) (Derep). λ_{max} 212; 234 (sh); 290 (MeOH/NaOH) (Derep). λ_{max} 220; 240 (sh); 293 (MeOH) (Derep). λ_{max} 222 ; 296 (MeOH) (Berdy). λ_{max} 230 ; 290 (MeOH-HCl) (Berdy). λ_{max} 218 ; 280 (MeOH-NAOH) (Berdy).

3-Epimer, 10-O-*β*-D-*glucopyranoside:* ***Glucopiericidinol A_2***
[125591-38-0]
$C_{31}H_{47}NO_{10}$ 593.713
Prod. by *Streptomyces* sp. OM-5689. Active against *P. oryzae*. Cytotoxic. Yellow oil. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. $[\alpha]_D^{18}$ -20 (c, 0.06 in $CHCl_3$). λ_{max} 226; 290 (MeOH/HCl) (Derep). λ_{max} 212; 234 (sh); 290 (MeOH/NaOH) (Derep). λ_{max} 220; 240 (sh); 293 (MeOH) (Derep). λ_{max} 216 ; 290 (MeOH) (Berdy). λ_{max} 230 ; 290 (MeOH-HCl) (Berdy). λ_{max} 218 ; 292 (MeOH-NaOH) (Berdy).

Funayama, S. *et al., J. Antibiot.*, 1989, **42**, 1734-1740 (*isol, struct*)

Pillijanine P-423

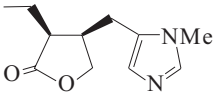
$C_{15}H_{20}N_2O$ 244.336

Struct. unknown. Alkaloid from *Lycopodium saururus* (Lycopodiaceae). Mp 64-65°.

Arata, P.N. *et al., Gazz. Chim. Ital.*, 1892, **22**, 146-157 (*isol*)

Pilocarpine, BAN, USAN P-424

*3-Ethyldihydro-4-(1-methyl-1*H*-imidazol-5-yl)methyl-2(3*H*)-furanone, 9CI. Ocucarpine. Ocusert P 20. Ocusert Pilo 40. Pilocarpol. Syncarpine*
[92-13-7]



$C_{11}H_{16}N_2O_2$ 208.26
Alkaloid from *Pilocarpus microphyllus* and several other *Pilocarpus* spp. (Rutaceae). Cholinergic muscarinic agonist used as a miotic, especially for glaucoma, and in the treatment of nephritis. Exp. convulsant. Used in animal models of epilepsy. Mp 34°. Bp_5 260°. $[\alpha]_D^{20}$ +100.5 (H_2O). pK_{a1} 7.15; pK_{a2} 12.57 (20°). Log P -0.2 (calc).

▶ Adverse ocular effects reported when used therapeutically. LD_{50} (rat, orl) 402 mg/kg.

Hydrochloride: Pilocarpine hydrochloride, USAN. Akarpine. Almocarpin. Pilomiotin. Pilopine VS. Pilovisc
[54-71-7]
Cryst. (EtOH). Mp 204-205°. $[\alpha]_D^{18}$ +91. Component of Pilocar.

▶ Human systemic effect from ocular administration. Adverse ocular effects reported when used therapeutically. LD_{50} (mus, orl) 200 mg/kg, exp. reprod. and teratogenic effects. TK1450000

Nitrate: Licarpin. Pilofrin. Pilagan
[148-72-1]
Mp 173-174° (dec.). $[\alpha]_D$ +77.

▶ TK1455000

Picrate: Mp 159-160°.

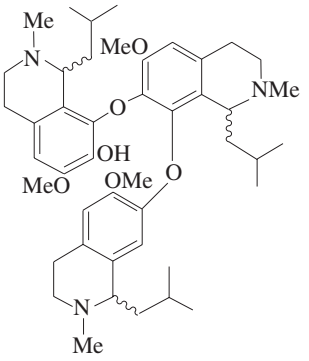
N-*De-Me:* ***Pilocarpidine***
[127-67-3]
$C_{10}H_{14}N_2O_2$ 194.233
Alkaloid from the leaves of *Pilocarpus jaborandi* (Rutaceae). Pharmacol. resembles that of Pilocarpine, but weaker. Syrup. Sol. H_2O. $[\alpha]_D$ +81.3 (H_2O). Dec. on dist.

N-*De-Me; nitrate:* Mp 137°. $[\alpha]_D$ +73.2 (H_2O).

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 624C (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 86C (*nmr*)
Jowett, H.A.D. *et al., J.C.S.*, 1900, **77**, 473; 851 (*struct*)
Späth, E. *et al., Ber.*, 1925, **58**, 513 (*struct, Pilocarpidine*)
Burtles, R. *et al., J.C.S.*, 1925, **127**, 581 (*struct, Pilocarpidine*)
Preobrashenski, N.A. *et al., Ber.*, 1933, **66**, 1536; 1936, **69**, 1835 (*synth, Pilocarpidine*)
Hill, R.K. *et al., Tetrahedron*, 1966, **22**, 2889 (*abs config*)
Ben-Bassat, A. *et al., Isr. J. Chem.*, 1972, **10**, 385 (*uv, ir, pmr, ms*)
de Graw, J.I. *et al., Tetrahedron*, 1972, **28**, 967 (*synth*)
Simeral, L. *et al., Org. Magn. Reson.*, 1974, **6**, 26 (*cmr*)
Brochmann-Hanssen, E. *et al., Planta Med.*, 1975, **28**, 1-5 (*biosynth*)
Noordam, A. *et al., Rec. Trav. Chim. (J. R. Neth. Chem. Soc.)*, 1981, **100**, 441 (*synth*)
Martindale, The Extra Pharmacopoeia, 28th/29th edn., Pharmaceutical Press, 1982, 4526; 4525
Al-Badr, A.A. *et al., Anal. Profiles Drug Subst.*, 1983, **12**, 385 (*rev, uv, ir, pmr, cmr, ms, anal*)
Turski, L. *et al., Synapse (N.Y.)*, 1989, **3**, 154 (*pharmacol, rev*)
Belletire, J.L. *et al., J. Nat. Prod.*, 1992, **55**, 194 (*synth*)
Shapiro, G. *et al., Tet. Lett.*, 1992, **33**, 2447 (*synth*)
Gaggelli, E. *et al., Can. J. Chem.*, 1993, **71**, 738 (*pmr, cmr*)
Horne, D.A. *et al., J.O.C.*, 1993, **58**, 62 (*synth*)
Dener, J.M. *et al., J.O.C.*, 1993, **58**, 1159 (*synth*)
Wiseman, L.R. *et al., Drugs*, 1995, **49**, 143 (*rev*)
Lei, A. *et al., J.A.C.S.*, 2002, **124**, 8198-8199 (*synth*)
Abreu, I.N. *et al., Rapid Commun. Mass Spectrom.*, 2007, **21**, 1205-1213 (*biosynth, ms*)
Sawaya, A.C.H.F. *et al., Molecules*, 2008, **13**, 1518-1529 (*ms, chromatog*)
Csuk, R. *et al., Tetrahedron*, 2008, **64**, 9384-9387 (*synth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, PIF000; PIF250; PIF500

Pilocereine P-425

[2552-47-8]



$C_{45}H_{65}N_3O_6$ 744.025
Alkaloid from *Lophocereus australis*, *Lophocereus schottii* (various forms), *Lophocereus gatesii*, *Pachycereus marginatus* and *Pilocereus sargentianus* (said to be synonymous with *Cereus sargentianus* but taxonomically difficult to reconcile) (Cactaceae). Antineoplastic agent. Cryst. (EtOAc). Mp 176.5-177°. Log P 10.25 (uncertain value) (calc). Opt. inactive. λ_{max} 284 (ϵ 7000) (MeOH) (Berdy).

Hydrochloride (1:3):
Cryst. + $3H_2O$. Mp 228-232° dec.

O-Ac:
Cryst. (Et_2O/Me_2CO). Mp 186-186.5°.

Me ether:
Cryst. (hexane). Mp 103-105° Mp 153.5-154.5° (double Mp).

Diastereoisomer: ***Piloceredine***
$C_{45}H_{65}N_3O_6$ 744.025
Alkaloid from *Lophocereus schottii* (Cactaceae). Cryst. (Me_2CO). Mp 165-166°. Opt. inactive.

Diastereoisomer, Ac:
Cryst. (petrol). Mp 133-134°.

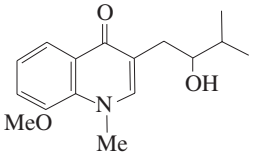
Diastereoisomer, Me ether:
Cryst. (hexane). Mp 150-152°.

Heyl, G. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1901, **239**, 451 (*isol*)
Djerassi, C. *et al., J.A.C.S.*, 1953, **75**, 3632; 1954, **76**, 3215; 1956, **79**, 2203; 1962, **84**, 3210 (*isol, uv, ir, struct*)
Djerassi, C. *et al., Tetrahedron*, 1958, **2**, 58 (*Piloceredine*)
Tomita, M. *et al., Chem. Pharm. Bull.*, 1963, **11**, 1477; 1484 (*uv, ir, struct*)
Bessho, K. *et al., Chem. Pharm. Bull.*, 1963, **11**, 1491; 1500; 1504; 15 (*struct*)

Franck, B. *et al., Annalen*, 1965, **685**, 207 (*synth, uv, ir, pmr, ms*)
O'Donovan, D.G. *et al., J.C.S.(C)*, 1971, 2398 (*biosynth*)
West, L.G. *et al., Phytochemistry*, 1975, **14**, 291 (*isol*)

Pilokeanine P-426

3-(2-Hydroxy-3-methylbutyl)-8-methoxy-1-methyl-4(1H)-quinolinone



$C_{16}H_{21}NO_3$ 275.347
Alkaloid from the leaves of *Platydesma campanulata* (Rutaceae). Noncryst.; cryst. (EtOH)(as picrate). Mp 216° dec.(picrate).

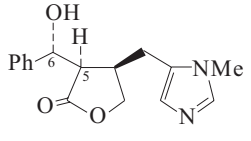
Werny, F. *et al., Tetrahedron*, 1963, **19**, 1293 (*isol, uv, ir, struct*)

Pilosamycin P-427

Closely related to Ferrimycin A_1, F-37. Prod. by *Streptomyces galilaeus* and *Streptomyces griseoflavus*. Siderophore. Antibacterial agent. Orange powder. Sol. MeOH, DMF, H_2O; fairly sol. EtOAc; poorly sol. butanol, hexane. λ_{max} 229 (E1%/1cm 317); 319 (E1%/1cm 28.3); 430 (E1%/1cm 26.4) (H_2O) (Berdy).
► LD_{50} (mus, scu) 1200 mg/kg.
Ger. Pat., 1960, 1 089 122; *CA*, **55**, 27768f

Pilosine P-428

Carpidine
[13640-28-3]



$C_{16}H_{18}N_2O_3$ 286.33
Alkaloid from *Pilocarpus microphyllus* (Rutaceae). Narcotic to mammals. Other pharmacol. resembles that of Pilocarpine, P-424 but much weaker. Mp 101-104° (dihydrate) Mp 171-172° (anhyd.) (187°). This alkaloid was difficult to purify and pharmacol. activity was prob. investigated on impure samples.

Sulfate (2:1): Mp 194-195°. $[\alpha]_D$ +21 (c, 4.5 in H_2O).

6-Ketone: ***Pilosinone***
[942060-99-3]
$C_{16}H_{16}N_2O_3$ 284.314
Alkaloid from *Pilocarpus microphyllus*. Stereochem. not determined.

6-Deoxy, 5,6-didehydro(Z-): ***Anhydropilosine***
[53336-50-8]
$C_{16}H_{16}N_2O_2$ 268.315
Constit. of *Pilocarpus microphyllus*.

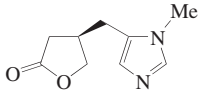
5-Epimer: ***Isopilosine****. Carpiline*
[491-88-3]
$C_{16}H_{18}N_2O_3$ 286.33
Alkaloid from *Pilocarpus microphyllus* (Rutaceae). Cryst. (EtOH). Mp 182-183°. $[\alpha]_D^{20}$ +37.6 (c, 1 in EtOH).

5,6-Diepimer: ***Epiisopilosine***
[38993-92-9]
$C_{16}H_{18}N_2O_3$ 286.33
Alkaloid from *Pilocarpus microphyllus* (Rutaceae). Cryst. (MeOH). Mp 179-180°. $[\alpha]_D^{20}$ -44 (c, 1 in EtOH).

Link, H. *et al., Helv. Chim. Acta*, 1972, **55**, 1053; 1974, **57**, 2199 (*synth, ir, pmr, ms, abs config, bibl*)
Löwe, W. *et al., Annalen*, 1973, 1476 (*struct, pmr*)
Tedeschi, E. *et al., J.O.C.*, 1974, **39**, 1864 (*uv, pmr, ms, struct*)
Sarel, S. *et al., Tet. Lett.*, 1975, 97 (*ir, struct, Isopilosine*)
Abreu, I.N. *et al., Rapid Commun. Mass Spectrom.*, 2007, **21**, 1205-1213 (*Anhydropilosine, Pilosinone*)
Sawaya, A.C.H.F. *et al., Molecules*, 2008, **13**, 1518-1529 (*ms, chromatog*)

Pilosinine P-429

[38993-86-1]



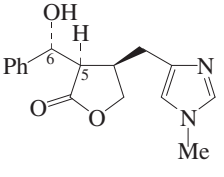
Absolute Configuration

$C_9H_{12}N_2O_2$ 180.206
Alkaloid from *Pilocarpus microphyllus*.

Shapiro, G. *et al., Tet. Lett.*, 1992, **33**, 2447-2450 (*synth*)
Abreu, I.N. *et al., Rapid Commun. Mass Spectrom.*, 2007, **21**, 1205-1213 (*isol*)

Piloturine P-430

[69433-49-4]



$C_{16}H_{18}N_2O_3$ 286.33
Related to Pilosine, P-428. Alkaloid from *Pilocarpus microphyllus*. Isoln. not certain.

5,6-Diepimer: ***Epiisopiloturine***
[69460-80-6]
$C_{16}H_{18}N_2O_3$ 286.33
Alkaloid from *Pilocarpus microphyllus*. Cryst. (EtOH). Mp 218-219°. $[\alpha]_D^{20}$ -11 (c, 0.5 in EtOH).

Voigtlaender, H.W. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1978, **311**, 927-935

Pimpinellidine P-431

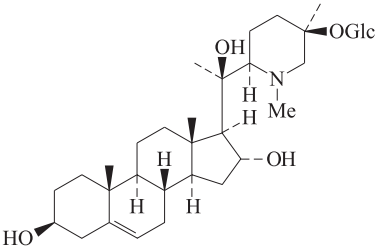
[42613-57-0]

$C_{27}H_{45}NO_3$ 431.657
Steroidal alkaloid, prob. of Solanum type. Struct. unknown but may be 23-Hydroxytomatidine. Aglycone from hydrol. of leaves and stems of *Lycopersicon pimpinellifolium* (currant tomato) and from *Solanum eryanthum* (Solanaceae). Needles (MeOH aq.). Mp 172-173°. $[\alpha]_D^{20}$ +14.3 (c, 0.7 in MeOH).

Schreiber, K. *et al., Phytochemistry*, 1966, **5**, 707 (*isol, ir*)

Pingbeidinoside P-432

[125309-97-9]

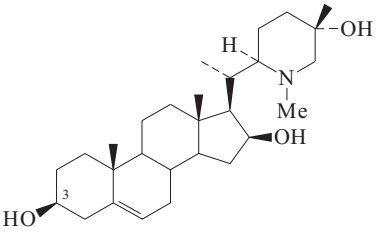


$C_{34}H_{57}NO_9$ 623.826
Alkaloid from the stem and leaf of *Fritillaria ussuriensis*. Cryst. Mp 242-243°. $[\alpha]_D^{25}$ +6.9 (c, 0.14 in MeOH).

Xu, D.M. *et al., Yaoxue Xuebao*, 1989, **24**, 668-672; *CA*, **112**, 95507p (*isol, struct*)

Pingbeinine P-433

28-Methyl-16,28-secosolanid-5-ene-3,16,25-triol, 9CI
[131984-89-9]



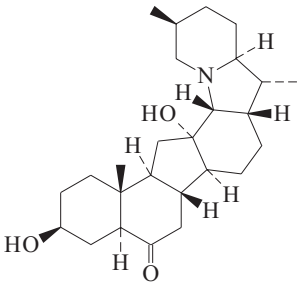
$C_{28}H_{47}NO_3$ 445.684
Alkaloid from the leaves of *Fritillaria ussuriensis* (Liliaceae). Needles (MeOH). Mp 223-235°. $[\alpha]_D$ -32.8 (c, 0.09 in MeOH).

3-O-β-D-Glucopyranoside: ***Pingbeininoside***
[131984-90-2]
$C_{34}H_{57}NO_8$ 607.826
Alkaloid from the leaves of *Fritillaria ussuriensis* (Liliaceae). Needles (MeOH). Mp 244-246°. $[\alpha]_D$ -4.57 (c, 0.164 in MeOH).

Xu, D.-M. *et al., J. Nat. Prod.*, 1990, **53**, 549 (*isol, ir, pmr, cmr, ms, struct*)

Pingbeinone P-434

[125292-91-3]



$C_{26}H_{41}NO_3$ 415.615

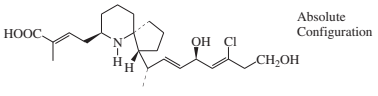
Alkaloid from *Fritillaria ussuriensis* (Liliaceae). Needles (MeOH). Mp 200-202°. $[\alpha]_D$ -22 (c, 0.8 in $CHCl_3$). New subgroup of steroidal alkaloids.

[125356-74-3]

Kitamura, Y. *et al., Tetrahedron*, 1989, **45**, 7281 (*isol, pmr, cmr, struct*)

Pinnaic acid P-435

[178115-91-8]



Absolute Configuration

$C_{23}H_{36}ClNO_4$ 425.994

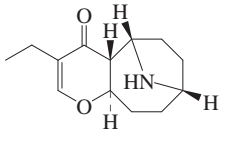
Alkaloid from the Okinawan bivalve *Pinna muricata*. Phospholipase A2 inhibitor. Antiinflammatory agent.

2-Sulfoethylamide: ***Tauropinnaic acid***
[178115-92-9]
$C_{25}H_{41}ClN_2O_6S$ 533.127
Alkaloid from *Pinna muricata*. Phospholipase A2 inhibitor. Antiinflammatory agent.

Chou, T. *et al., Tet. Lett.*, 1996, **37**, 3871-3874 (*isol, pmr, cmr, struct*)
Carson, M.W. *et al., Angew. Chem., Int. Ed.*, 2001, **40**, 4450-4452; 4453-4456 (*synth, abs config*)
Hayakawa, I. *et al., Heterocycles*, 2003, **59**, 441-444 (*synth*)
Kuramoto, M. *et al., Mar. Drugs*, 2004, **2**, 39-54 (*rev, biosynth*)
Matsumura, Y. *et al., Org. Lett.*, 2004, **6**, 965-968 (*synth*)
Andrade, R.B. *et al., Org. Lett.*, 2005, **7**, 5733-5735 (*synth*)
Xu, S. *et al., Angew. Chem., Int. Ed.*, 2007, **46**, 5746-5749 (*synth*)
Wu, H. *et al., Tetrahedron*, 2007, **63**, 6454-6461 (*synth*)

Pinnamine P-436

[298197-30-5]



Absolute Configuration

$C_{13}H_{19}NO_2$ 221.299

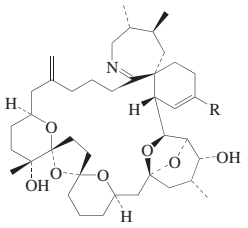
Alkaloid from the Okinawan bivalve *Pinna muricata*. Toxin. Oil. $[\alpha]_D^{27}$ +71.2 (c, 0.04 in MeOH) (synthetic).

▶ Highly toxic, LD_{99} 0.5mg/kg (mus).

Takada, N. *et al., Tet. Lett.*, 2000, **41**, 6425-6428 (*isol, abs config*)
Kigoshi, H. *et al., Tet. Lett.*, 2001, **42**, 7469-7471 (*synth*)
Kuramoto, M. *et al., Mar. Drugs*, 2004, **2**, 39-54 (*tox*)

Pinnatoxin A P-437

[160759-36-4]



R = COOH

Absolute Configuration

$C_{41}H_{61}NO_9$ 711.934

Exists as zwitterion. Neutral form shown. Principal toxin from the bivalves *Pinna muricata*, *Pinna attenuata* and *Pinna atropurpurea*. Calcium channel activating agent, smooth muscle contractant showing tetrodotoxin-like effect. λ_{max} 216 (EtOH) (Berdy).

▶ Highly toxic, LD_{50} 2.7µg/MU (mus, ip).

Uemura, D. *et al., J.A.C.S.*, 1995, **117**, 1155-1158 (*isol, pmr, cmr*)
Chou, T. *et al., Tet. Lett.*, 1996, **37**, 4023-4026 (*stereochem*)
McCauley, J.A. *et al., J.A.C.S.*, 1998, **120**, 7647-7648 (*synth*)
Falk, M. *et al., Tetrahedron*, 2001, **57**, 8659-8665 (*abs config*)
Sakamoto, S. *et al., Angew. Chem., Int. Ed.*, 2004, **43**, 6505-6510 (*synth*)
Kuramoto, M. *et al., Mar. Drugs*, 2004, **2**, 39-54 (*rev, tox*)
Stivala, C.E. *et al., J.A.C.S.*, 2008, **130**, 3774-3776 (*synth*)

Pinnatoxin B P-438

[160903-44-6]

As Pinnatoxin A, P-437 with
R = - $^{34}CH(NH_2)COOH(S\text{-})$

$C_{42}H_{64}N_2O_9$ 740.976

Exists as a zwitterion. Minor toxin from *Pinna muricata*.

▶ Highly toxic, LD_{50} (mus, ipr) 0.99 µg/MU as mixture with Pinnatoxin C.

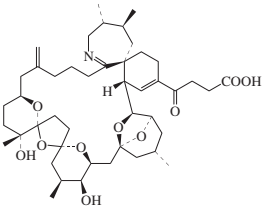
34-Epimer: ***Pinnatoxin C***
[167228-66-2]
$C_{42}H_{64}N_2O_9$ 740.976
Minor toxin from *Pinna muricata*.

▶ Highly toxic.

Takada, N. *et al., Tet. Lett.*, 2001, **42**, 3491-3494 (*isol*)
Kuramoto, M. *et al., Mar. Drugs*, 2004, **2**, 39-54 (*rev, tox*)
Matsuura, F. *et al., Org. Lett.*, 2006, **8**, 3327-3330 (*synth, abs config*)

Pinnatoxin D P-439

[167228-67-3]



Absolute Configuration

$C_{45}H_{67}NO_{10}$ 782.025

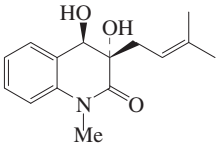
Exists as zwitterion. Neutral form shown. Toxin from the bivalves *Pinna muricata*, *Pinna attenuata* and *Pinna atropurpurea*. Calcium channel activating agent. Less toxic to mammals than the other pinnatoxins but the most potent against murine leukaemia. Solid. $[\alpha]_D$ +42.5 (c, 0.5 in MeOH). λ_{max} 226 (MeOH).

▶ Highly toxic, LD_{50} (mus, ipr) >10µg/MU.

Chou, T. *et al., Tet. Lett.*, 1996, **37**, 4023-4026; 4027-4030 (*isol, uv, pmr, cmr, struct*)
Falk, M. *et al., Tetrahedron*, 2001, **57**, 8659-8665 (*abs config*)
Kuramoto, M. *et al., Mar. Drugs*, 2004, **2**, 39-54 (*rev, tox*)

Pinolinone P-440

3,4-Dihydro-3,4-dihydroxy-1-methyl-3-(3-methyl-2-butenyl)-2(1H)-quinolinone



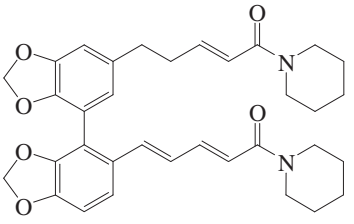
Relative Configuration

$C_{15}H_{19}NO_3$ 261.32

Alkaloid from the roots of *Boronia pinnata*. Oil. $[\alpha]_D$ -9.4 (c, 0.13 in $CHCl_3$). λ_{max} 211 ; 258 (MeOH).

Ito, C. *et al., J. Nat. Prod.*, 2000, **63**, 1344-1348

Pipbinine P-441

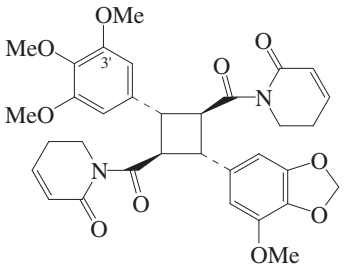


$C_{34}H_{38}N_2O_6$ 570.684

Alkaloid from the fruit of *Piper nigrum* (pepper). Amorph. powder. λ_{max} 250 (ϵ 11600); 266 (ϵ 12800); 298 (ϵ 25200); 316 (ϵ 26900); 323 (ϵ 33400); 355 (ϵ 40500); 372 (ϵ 45000) (MeOH).

Siddiqui, B.S. *et al., Helv. Chim. Acta*, 2004, **87**, 660-666 (*isol, pmr, cmr, ms*)

Piperarborenine C P-442

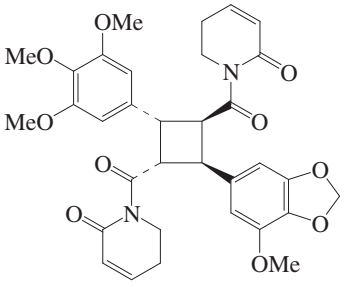


$C_{33}H_{34}N_2O_{10}$ 618.639
Alkaloid from the stems of *Piper arborescens*. Brownish oil. Racemic. λ_{max} 219 (log ϵ 4.58); 260 (sh) (log ϵ 3.94); 280 (sh) (log ϵ 3.56) (MeOH).

3′-Demethoxy: ***Piperarborenine E***
$C_{32}H_{32}N_2O_9$ 588.613
Alkaloid from the stems of *Piper arborescens*. Brownish oil. Racemic. λ_{max} 210 (log ϵ 4.5); 280 (sh) (log ϵ 3.56) (MeOH).

Tsai, I.-L. *et al., Planta Med.*, 2005, **71**, 535-542 (*isol, pmr, cmr, ms*)

Piperarboresine P-443

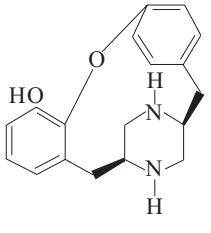


$C_{33}H_{34}N_2O_{10}$ 618.639
Alkaloid from the stems and leaves of *Piper arborescens*. Needles (MeOH). Mp 182-184°. λ_{max} 213 (log ϵ 4.55); 240 (sh) (log ϵ 4.11) (MeOH).

Lee, F.-P. *et al., Helv. Chim. Acta*, 2004, **87**, 463-468 (*isol, pmr, cmr*)

Piperazinomycin P-444

13-Oxa-4,20-diazatetracyclo[12.2.2.2^{3,6}.1^{8,12}]heneicosa-8,10,12(19),14,16,17-hexaen-11-ol, 9CI. Neoenactin C
[83858-82-6]

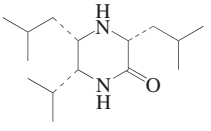


$C_{18}H_{20}N_2O_2$ 296.368
Isol. from *Streptoverticillium olivoreticuli* subsp. *neoenacticus*. Active against fungi and yeasts esp. *Trichophyton*. Amorph. powder. Sol. MeOH, Py, 4-methyl-2-pentanone; fairly sol. Me_2CO, $CHCl_3$; poorly sol. H_2O, hexane. Mp 102-104°. $[\alpha]_D^{23}$ +31.1 (c, 0.74 in MeOH). λ_{max} 214 (ϵ 11200); 280 (ϵ 2040); 290 (sh) (ϵ 1690) (MeOH) (Derep).

Tamai, S. *et al., J. Antibiot.*, 1982, **35**, 1130 (*isol*)
Kaneda, M. *et al., J. Antibiot.*, 1982, **35**, 1137 (*cryst struct*)
Jung, M.E. *et al., J.O.C.*, 1985, **50**, 4909 (*synth*)
Nishiyama, S. *et al., Tet. Lett.*, 1986, **27**, 4481 (*synth*)
Boger, D.L. *et al., J.A.C.S.*, 1993, **115**, 11426; 1994, **116**, 1601 (*synth*)

Piperazirum P-445

6-(1-Methylethyl)-3,5-bis(2-methylpropyl)-2-piperazinone. 3,5-Diisobutyl-6-isopropyl-2-piperazinone
[943985-04-4]



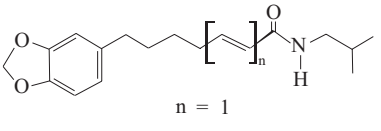
Relative Configuration

$C_{15}H_{30}N_2O$ 254.415
Alkaloid from the leaves of *Arum palaestinum*. Cytotoxic. Amorph. powder. $[\alpha]_D$ +50 (c, 0.02 in MeOH).

El-Desouky, S.K. *et al., Tet. Lett.*, 2007, **48**, 4015-4017 (*isol, pmr, cmr*)

Pipercallosidine P-446

[83029-38-3]



n = 1

$C_{18}H_{25}NO_3$ 303.4
Alkaloid from roots of *Piper callosum* (Piperaceae). Cryst. (cyclohexane). Mp 80-82°.

Pring, B.G. *et al., J.C.S. Perkin 1*, 1982, 1493 (*isol, synth, uv, ir, pmr, ms, struct*)

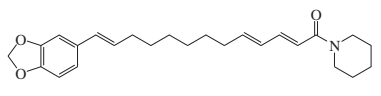
Pipercallosine P-447

[83029-39-4]
As Pipercallosidine, P-446 with
n = 2
$C_{20}H_{27}NO_3$ 329.438
Alkaloid from roots of *Piper callosum* (Piperaceae). Cryst. (cyclohexane or EtOH aq.). Mp 114-115°.

Pring, B.G. *et al., J.C.S. Perkin 1*, 1982, 1493 (*isol, synth, uv, ir, ms, pmr, struct*)

Piperchabamide C P-448

1-[13-(1,3-Benzodioxol-5-yl)-1-oxo-2,4,12-tridecatrienyl]piperidine, 9CI. 13-(3,4-Methylenedioxyphenyl)-2,4,12-tridecatrienoic acid piperidide

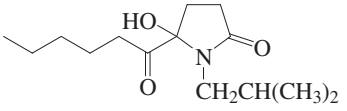


$C_{25}H_{33}NO_3$ 395.541
Alkaloid from the fruit of *Piper chiba* (Javanese long pepper). Oil. λ_{max} 265 (log ϵ 4.52) (EtOH).

Morikawa, T. *et al., Planta Med.*, 2004, **70**, 152-159 (*isol, pmr, cmr, ms*)

Pipercyclamide P-449

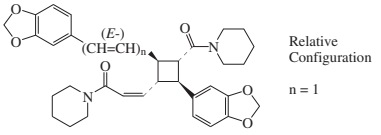
*5-Hydroxy-1-(2-methylpropyl)-5-(1-oxohexyl)-2-pyrrolidinone. 5-Hexanoyl-5-hydroxy-*N*-isobutyl-2-pyrrolidinone*



$C_{14}H_{25}NO_3$ 255.356
Alkaloid from the roots of *Piper nigrum* (pepper). Oil. Racemic.

Wei, K. *et al., J. Nat. Prod.*, 2004, **67**, 1005-1009 (*isol, pmr, cmr*)

Pipercyclobutanamide A P-450



Relative Configuration
n = 1

$C_{34}H_{38}N_2O_6$ 570.684
Alkaloid from the fruit of *Piper nigrum* (pepper). Amorph. powder. λ_{max} 265 ; 271 ; 289 (hexane).

Fujiwara, Y. *et al., Tet. Lett.*, 2001, **42**, 2497-2499

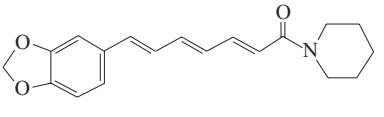
Pipercyclobutanamide B P-451

As Pipercyclobutanamide A, P-450 with n = 2
$C_{36}H_{40}N_2O_6$ 596.722
Alkaloid from the fruit of *Piper nigrum* (pepper). Amorph. powder. λ_{max} 285 ; 296 ; 309 (hexane).

Fujiwara, Y. *et al., Tet. Lett.*, 2001, **42**, 2497-2499

Piperettine P-452

1-[7-(1,3-Benzodioxol-5-yl)-1-oxo-2,4,6-heptatrienyl]piperidine, 9CI. 1-[7-(3,4-Methylenedioxyphenyl)heptatrienoyl]piperidine
[583-34-6]



$C_{19}H_{21}NO_3$ 311.38
Alkaloid from the dried fruits of *Piper aurantiacum* and *Piper nigrum* (pepper) (Piperaceae). Yellow needles (C_6H_6/hexane). Mp 148°.

4,5-Dihydro: 1-[7-(3,4-Methylenedioxyphenyl)-2,6-heptadienoyl]piperidine.

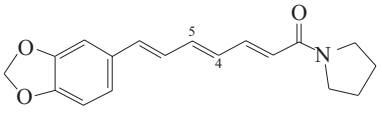
Pipersintenamide. *4,5-Dihydropiperettine*
$C_{19}H_{23}NO_3$ 313.396
Alkaloid from the whole plant of *Piper sintenense*. Cytotoxic. Needles (MeOH). Mp 116-118°. λ_{max} 215 (log ϵ 4.27); 261 (log ϵ 4.06) (EtOH).

6,7-Dihydro: 1-[7-(1,3-Benzodioxol-5-yl)-1-oxo-2,4-heptadienyl]piperidine, 9CI. 1-[7-(3,4-Methylenedioxyphenyl)-2,4-heptadienoyl]piperidine. ***Piperdardine***. *Piperarboricoline. 6,7-Dihydropiperettine*
[188426-70-2]
$C_{19}H_{23}NO_3$ 313.396
Constit. of *Piper sintenense* and *Piper tuberculatum* var. *tuberculatum*. Pale yellow oil. λ_{max} 205 (log ϵ 3.9); 266 (log ϵ 4.04) (EtOH).

Spring, F.S. *et al., J.C.S.*, 1950, 1177 (*isol, struct, synth*)
Rao, J.M. *et al., Curr. Sci.*, 1974, **43**, 76 (*isol*)
Dehmlow, E.V. *et al., J. Chem. Res., Synop.*, 1981, 106 (*synth*)
De Araujo-Junior, J.X. *et al., Phytochemistry*, 1997, **44**, 559 (*Piperdardine*)
De Araujo-Junior, J.X. *et al., Synth. Commun.*, 2001, **31**, 117-123 (*Piperdardine*)
Chen, J.-J. *et al., Planta Med.*, 2002, **68**, 980-985 (*Pipersintenamide, Piperarboricoline*)

1-Piperettylpyrrolidine P-453

1-[7-(1,3-Benzodioxol-5-yl)-1-oxo-2,4,6-heptatrienyl]pyrrolidine, 9CI. 7-(3,4-Methylenedioxyphenyl)-2,4,6-heptatrienoic acid pyrrolidide. ***Piperettyline***



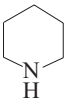
$C_{18}H_{19}NO_3$ 297.353

(*E,E,E*)-*form* [52812-40-5]
Alkaloid from the stems of *Piper trichostachyon* (Piperaceae). Yellow needles (EtOAc/petrol). Mp 147-149°.

Singh, J. *et al., Phytochemistry*, 1974, **13**, 677 (*isol, uv, ir, pmr, ms, struct*)
Vig, O.P. *et al., Indian J. Chem.*, 1975, **13**, 1015 (*synth*)
Likhitwitayawuid, K. *et al., Tetrahedron*, 1987, **43**, 3689 (*isol, uv, ir, pmr, cmr, ms, struct*)
Kaga, H. *et al., Synlett*, 1994, 607 (*synth*)

Piperidine, 9CI P-454

Hexahydropyridine. Azacyclohexane. FEMA 2908
[110-89-4]



$C_5H_{11}N$ 85.149
Present in free state in plants, e.g. *Psilocaulon absimile, Petrosimonia monandra, Glycine max*. Residue present in piperidine alkaloids. Present in black pepper (*Piper nigrum*). Useful base in org. synth. Used for detn. of Co, Ni, Pt, Pd, Rh, Ir. Liq. with characteristic odour and a burning, peppery taste. Misc. H_2O; sol. org. solvs. d_4^{20} 0.86. Mp -9°. Bp 106° Bp_{20} 17.7°. n_D^{20} 1.4534. pK_a 11.12 (25°). Forms a hydrate, Mp -14°.

▶ Skin, eye and respiratory tract irritant. LD_{50} (rat, orl) 400 mg/kg. LD_{50} (rbt, skn) 320 mg/kg. Exp. reprod. and teratogenic effects (by inhalation). Highly flammable, fl. p. 3/16°. OES: long-term 1 ppm (Sk). TM3500000

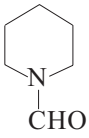
Hydrochloride: [6091-44-7]
Prisms (EtOH). Mp 244-245°.

▶ LD_{50} (rat, orl) 133 mg/kg. TN0400000

Späth, E. *et al., Ber.*, 1935, **68**, 2218 (*occur*)
Lambert, J.B. *et al., J.O.C.*, 1983, **48**, 3982 (*cmr*)
Rubiralta, M. *et al., Piperidine: Structure, Preparation, Reactivity and Synthetic Applications of Piperidine*, (Std. Org. Chem. Vol. 43), Elsevier, Amsterdam, 1991, (*book*)

1-Piperidinecarboxaldehyde, 9CI, 8CI P-455

N-*Formylpiperidine*
[2591-86-8]



$C_6H_{11}NO$ 113.159
Alkaloid from *Piper nigrum*. Liq. Bp 222° Bp_{10} 97-100°.

▶ TN0380000

Hydrobromide: Mp 103.5°.

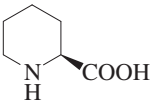
Oxime: [18600-89-0]
$C_6H_{12}N_2O$ 128.174
Mp 49-50°.

Di-Me acetal: 1-(Dimethoxymethyl)piperidine
[5211-86-9]
$C_8H_{17}NO_2$ 159.228
Liq. Bp_{15} 83°.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 763D (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 1248A (*nmr*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 785A (*ir*)
de Benneville, P.L. *et al., J.O.C.*, 1956, **21**, 772 (*synth*)
Nefedov, B.L. *et al., Bull. Acad. Sci. USSR, Div. Chem. Sci. (Engl. Transl.)*, 1973, 2652 (*synth, bibl*)
De Brauwere, J. *et al., Bull. Soc. Chim. Belg.*, 1975, **84**, 167-177 (*isol*)
Nair, R.S. *et al., Fundam. Appl. Toxicol.*, 1992, **18**, 96 (*tox*)
Encyclopaedia of Reagents for Organic Synthesis, (ed. Paquette, L.A.), Wiley, 1995, **4**, 2599-2600 (*use*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, FOH000

2-Piperidinecarboxylic acid, 9CI P-456

Pipecolic acid. *Hexahydropicolinic acid. Pipecolinic acid. Homoproline*†
[535-75-1]



(*S*)-*form*

$C_6H_{11}NO_2$ 129.158

▶ TK6021000

(*S*)-*form*
L-form
[3105-95-1]
Present in beans and other legumes, and in lesser quantities in other plants including barley, hops, teak and mushrooms. Also from the red alga *Amphiroa beauvoisii*. Needles (MeOH/Et_2O). Sol. H_2O. Mp 259-260°. $[\alpha]_D^{20}$ -30.6 (c, 1 in H_2O).

Hydrochloride: [2133-33-7]
Mp 261-264°. $[\alpha]_D^{25}$ -10.3 (c, 0.2 in H_2O) (91% ee).

N-*γ-Glutamyl:* ***γ-L-Glutamyl-L-pipecolic acid***
$C_{11}H_{18}N_2O_5$ 258.274
Isol. from the seeds of *Gleditsia caspica* (Caspian locust). Cryst. (H_2O). $[\alpha]_D^{20}$ -66.8 (c, 0.5 in H_2O).

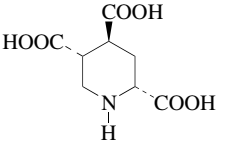
N-*(4-Hydroxycinnamoyl)*(E-): ***Cirsiumamide***. N-p-*Coumaroylpipecolic acid*
[158238-37-0]
$C_{15}H_{17}NO_4$ 275.304
Alkaloid from *Cirsium brevicaule-irmutiense*. Shows antioxidant props.

[41994-45-0]

Dardenne, G. *et al., Phytochemistry*, 1974, **13**, 1515 (*Glutamylpipecolic acid*)
Sawaguchi, K. *et al., CA*, 1994, **121**, 251185a (*Cirsiumamide*)
Agami, C. *et al., Synth. Commun.*, 2000, **30**, 2565-2572 (*S-form, synth, pmr*)
Watanabe, L.A. *et al., Tetrahedron: Asymmetry*, 2005, **16**, 903-908 (*R-form, S-form, synth*)
Hou, D.-R. *et al., Tetrahedron: Asymmetry*, 2005, **16**, 3858-3864 (*R-form, S-form, synth, pmr, cmr*)
Chang, M.-Y. *et al., Heterocycles*, 2006, **68**, 2365-2373 (*S-form, synth*)

2,4,5-Piperidinetricarboxylic acid, 9CI P-457

Hexahydroberberonic acid



Relative Configuration

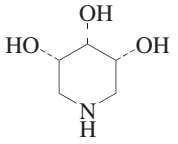
$C_8H_{11}NO_6$ 217.178
Various stereoisomers have been synthesised.

(2*R,4*S**,5*R**)-*form*** [160699-23-0]
Isol. from fruit bodies of the poisonous mushroom *Clitocybe acromelalga*.

Yamano, K. *et al., Z. Naturforsch., C*, 1994, **49**, 707-711 (*isol, pmr, cmr, struct*)
Hashimoto, K. *et al., Heterocycles*, 1997, **46**, 581-588 (*synth, pmr*)

3,4,5-Piperidinetriol, 9CI P-458

3,4,5-Trihydroxypiperidine. 1-Deoxy-5-nornojirimycin. 1,5-Dideoxy-1,5-imino-pentitol
[152689-94-6]



(3α,4α,5α)-*form*

$C_5H_{11}NO_3$ 133.147

(3α,4α,5α)-*form*
cis,cis-*form. 1,5-Dideoxy-1,5-iminoribitol*
[172588-13-5]
[176597-75-4] β-Glucosidase inhibitor. Cryst. (MeOH aq.) (as hydrochloride). Mp 161-163° (dec.) Mp 185-187° (hydrochloride). *meso*-.

N-*Benzyl:* [177767-33-8]
$C_{12}H_{17}NO_3$ 223.271
Cryst. (EtOAc). Mp 133.8-134.8°.

[3*R*-(3α,4α,5β)]-*form*
(-)-cis,trans-*form. 1,5-Dideoxy-1,5-imino-D-arabinitol. 1,5-Dideoxy-1,5-imino-D-lyxitol*
[130549-94-9] α-L-Fucosidase inhibitor. Cryst. (MeOH/Et_2O). Mp 182-185° (dec.). $[\alpha]_D^{22}$ -71 (c, 0.6 in MeOH).
Hydrochloride: [187144-38-3]
Cryst. (MeOH). Mp 194-195°. $[\alpha]_D^{20}$ -22 (c, 0.8 in MeOH).

[3*S*-(3α,4α,5β)]-*form*
(+)-cis,trans-*form. 1,5-Dideoxy-1,5-imino-L-arabinitol. 1,5-Dideoxy-1,5-imino-L-lyxitol*
[130693-66-2]
[187144-40-7]
Cryst. (MeOH aq.) (as hydrochloride). Mp 195.5-196°. $[\alpha]_D^{20}$ +22.7 (c, 0.8 in MeOH).

N-*Me: 1-Methyl-3,4,5-piperidinetriol, 9CI. 3,4,5-Trihydroxy*-N-*methylpiperidine*
[260354-31-2]
$C_6H_{13}NO_3$ 147.174
Constit. of the leaves of *Eugenia uniflora* (nangapiry). Viscous oil. $[\alpha]_D$ +19.1 (c, 1.6 in H_2O).

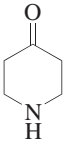
[(±)-(3α,4α,5β)]-*form*
(±)-cis,trans-*form*
[130114-77-1]
Oil.
Tetra-Ac: [130271-87-3]
$C_{13}H_{19}NO_7$ 301.296
Cryst. (EtOAc/diisopropyl ether). Mp 102-103°.
N-*Me:* [155549-47-6]
$C_6H_{13}NO_3$ 147.174
Oil.

(3α,4β,5α)-*form*
trans,trans-*form. 1,5-Dideoxy-1,5-iminoxylitol*
[13042-55-2]
[4451-19-8] β-Glucosidase inhibitor. Cryst. (MeOH/EtOAc/H_2O). Mp 126.5-127.5°. *meso*-.

Paulsen, H. *et al., Chem. Ber.*, 1967, **100**, 2467-2473 (*3α,4β,5α-form*)
Bernotas, R.C. *et al., Tet. Lett.*, 1990, **31**, 3393-3396 (*synth, pmr, cmr*)
Tschamber, T. *et al., Tetrahedron*, 1994, **50**, 1135-1152 (*3α,4α,5β-form, synth, ir, pmr, tetra-Ac, N-Me*)
Legler, G. *et al., Carbohydr. Res.*, 1995, **272**, 17-30 (*3R-(3α,4α,5β)-form, synth, pmr, cmr*)
Godskesen, M. *et al., Bioorg. Med. Chem.*, 1996, **4**, 1857-1865 (*synth, pmr, cmr, biochem*)
Igarashi, Y. *et al., Bioorg. Med. Chem. Lett.*, 1996, **6**, 553-558 (*3α,4α,5α-form, synth, pmr, cmr, biochem*)
Kim, D.K. *et al., J.C.S. Perkin 1*, 1996, 803 (*3α,4α,5α-form, synth, pmr, cmr*)
Matsumura, T. *et al., Pharm. Biol.*, 2000, **38**, 302-307 (*N-Me*)
Reddy, M.S. *et al., Tetrahedron*, 2007, **63**, 291-298 (*3R-(3α,4α,5β)-form, synth, pmr, cmr*)

4-Piperidinone, 9CI P-459

γ-Piperidone
[41661-47-6]



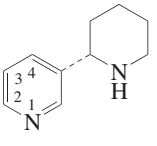
C_5H_9NO 99.132
Alkaloid from leaves and twigs of *Dichilus strictus, Dichilus reflexus, Dichilus lebeckioides, Dichilus pilosus* and *Dichilus gracilis* (Fabaceae). Yellow oil. pK_a 8.6 (25°,H_2O). Cannot be distilled.

Covalent hydrate: 4,4-Piperidinediol
[40064-34-4]
$C_5H_{11}NO_2$ 117.147
Mp 94-96° (as hydrochloride).
Hydrochloride: [41979-39-9]
Cryst. + 1½ EtOH (EtOH/Et_2O) or cryst. + 1H_2O. Mp 147-149° (anhyd.).
[73390-11-1]

McElvain, S.M. *et al., J.A.C.S.*, 1949, **71**, 901 (*props*)
Dickerman, S.C. *et al., J.O.C.*, 1949, **14**, 530 (*synth*)
Van Wyk, B.-E. *et al., Biochem. Syst. Ecol.*, 1988, **16**, 471 (*occur*)

3-(2-Piperidinyl)pyridine, 9CI P-460

*2-(3-Pyridinyl)piperidine. **Anabasine, JMAF**. Nicotimine. Neonicotine*
[40774-73-0]



(*S*)-*form*

$C_{10}H_{14}N_2$ 162.234
The name neonicotine refers primarily to the racemate.

(*R*)-*form* [34366-21-7]
Isol. from *Malacocarpus crithmifolius*. Oil. Bp_{15} 145-150°. $[\alpha]_D^{20}$ +10.1 (neat). n_D^{20} 1.5412. Clearly of low opt. purity.

(*S*)-*form* [494-52-0]
Alkaloid from *Anabasis aphylla, Nicotiana tabacum*, many other *Nicotiana* spp. and many other spp. in several families. Also in marine ribbon worms and a component of the venon of ants *Aphaenogaster* spp. and *Messor* spp. Insecticide. Now superseded. Sol. H_2O. Mp 25-30°. Bp 276° Bp_2 104-105°. $[\alpha]_D^{24}$ -79.2 (c, 0.5 in MeOH) (synthetic). $[\alpha]_D^{24}$ -41.5 (c, 1.0 in C_6H_6). pK_{a1} 11; pK_{a2} 3.21 (30°).
► Exp. reprod. effects and teratogen. LD_{50} (gpg, scu) 22 mg/kg. BV4375000
Dipicrate: Mp 205°.
N-*Ac:* [3350-86-5]
$C_{12}H_{16}N_2O$ 204.271
Used as 0.5*M* aq. soln. for extraction-photometric detn. of Ti. Cryst. Sol. EtOH; sl. sol. H_2O.
N-*Me:* **N-*Methylanabasine***
[24380-92-5]
$C_{11}H_{16}N_2$ 176.261
Occurs in traces in crude nicotine and in *Anabasis aphylla*. Oil. Bp_{12} 127-128°. $[\alpha]_D^{15}$ -85.1.
N-*Me, picrate:*
Cryst. (EtOH). Mp 287-288° dec.
1,2,3,4-Tetrahydro: ***Tetrahydroanabasine***
[64191-30-6]
$C_{10}H_{18}N_2$ 166.266
Alkaloid from *Adenocarpus complicatus* ssp. *aureus* (Fabaceae). Important biosynth. intermed. for Nitraria and lupine alkaloids.

(±)-*form* [13078-04-1]
Alkaloid from *Duboisia myoporoides, Nicotiana glauca* and other spp. (Solanaceae). Bp_{775} 280-282° Bp 106-108°.
Dipicrate: Mp 213-214°.
N-*Me:* [2055-12-1]
$Bp_{0.4}$ 62°.
N-*Me, dipicrate:*
Yellow needles (EtOH). Mp 237-239°.
[15251-47-5]

Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 295A (*nmr*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 1537D (*ir*)
Orechoff, A. *et al., Ber.*, 1931, **64**, 266-274; 1932, **65**, 232-234 (*isol*)
Späth, E. *et al., Ber.*, 1937, **70**, 70-72 (*resoln*)
Otroshchenko, O.S. *et al., J. Gen. Chem. USSR (Engl. Transl.)*, 1954, **24**, 1847-1849; *Zh. Obshch. Khim.*, 1954, **24**, 1884-1886 (*N-Ac, synth*)
Linnell, R.H. *et al., J.A.C.S.*, 1954, 1391-1393 (*uv*)
Lukeš, R. *et al., Coll. Czech. Chem. Comm.*, 1962, **27**, 751-756 (*config*)
Talipov, S.T. *et al., Zh. Anal. Khim.*, 1963, **18**, 178-181; *J. Anal. Chem. USSR (Engl. Transl.)*, 1963, **18**, 161-164 (*N-Ac, use*)
Duffield, A.M. *et al., J.A.C.S.*, 1965, **87**, 2926-2932 (*ms*)
Zharekeev, V.Kh. *et al., Khim. Prir. Soedin.*, 1971, **7**, 538-539; *Chem. Nat. Compd. (Engl. Transl.)*, 1971, **7**, 524 (*R-form, isol*)
Aslanov, Kh.A. *et al., Khim. Prir. Soedin.*, 1972, **8**, 324-328; *Chem. Nat. Compd. (Engl. Transl.)*, 1972, **8**, 319-321 (*isol, manuf*)

Testa, B. *et al., Mol. Pharmacol.*, 1973, **9**, 10-16 (*cd*)
Fitch, W.L. *et al., J.O.C.*, 1974, **39**, 2974-2979 (*S-form, isol*)
Leete, E. *et al., Chem. Comm.*, 1975, 9-10 (*biosynth*)
Nehme, M. *et al., An. Quim.*, 1977, **73**, 307-308; *CA*, **87**, 114689h (*Tetrahydroanabasine*)
Alberici, G.F. *et al., Tet. Lett.*, 1983, **24**, 1937-1940 (*synth*)
Strunz, G.M. *et al., Alkaloids (Academic Press)*, 1985, **26**, 89-183 (*rev*)
Pfrengle, W. *et al., J.O.C.*, 1989, **54**, 4261-4263 (*S-form, synth*)
Pesticide Manual, 9th edn., 1991, No. 380 (*Anabasine*)
Hattori, K. *et al., Tetrahedron*, 1993, **49**, 1749-1760 (*S-form, synth*)
Wanner, M.J. *et al., J.O.C.*, 1996, **61**, 5581-5586 (*Tetrahydroanabasine, biosynth, bibl*)
Wanner, M.J. *et al., Pure Appl. Chem.*, 1996, **68**, 2051-2056 (*Tetrahydroanabasine*)
Deo, N.M. *et al., Tet. Lett.*, 1996, **37**, 1137-1140 (*synth*)
Yang, C.-M. *et al., Can. J. Chem.*, 1997, **75**, 616-620 (*synth, ir, pmr, cmr, ms*)
Leclerq, S. *et al., J. Chem. Ecol.*, 2001, **27**, 945-952 (*isol, abs config*)
Felpin, F.-X. *et al., J.O.C.*, 2001, **66**, 6305-6312 (*synth*)
Castro, A. *et al., Heterocycles*, 2007, **71**, 2699-2708 (*synth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, AON875

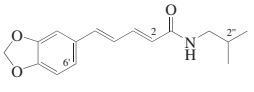
Piperlongine P-461

Struct. unknown. Constit. of *Piper longum* roots (long pepper) (Piperaceae). Oil. Bp_3 110-115° (lit. gives a pressure range). Not characterised. May not be an alkaloid.

Chatterjee, A. *et al., Tetrahedron*, 1967, **23**, 1769-1781 (*isol*)

Piperlonguminine P-462

*5-(1,3-Benzodioxol-5-yl)-*N*-(2-methylpropyl)-2,4-pentadienamide, 9CI. 5-(3,4-Methylenedioxyphenyl)-2,4-pentadienoic acid isobutylamide*



(2*E*,4*E*)-form

$C_{16}H_{19}NO_3$ 273.331

(2*E*,4*E*)-*form* [5950-12-9]
Alkaloid from *Ottonia corcovadensis* roots (preferred genus name *Piper*), *Piper longum*, *Piper nepalense, Piper sylvaticum* and other *Piper* spp. (Piperaceae). Cryst. (C_6H_6/petrol). Mp 167-169°.

*2,3-Dihydro: 5-(1,3-Benzodioxol-5-yl)-*N*-(2-methylpropyl)-4-pentenamide, 9CI.* N*-Isobutyl-5-(3,4-methylenedioxyphenyl)-4-pentenamide.* ***Isodihydropiperlonguminine***
$C_{16}H_{21}NO_3$ 275.347
Alkaloid from the fruits of *Piper longum* (long pepper). Yellow solid. Mp 78°.

*4,5-Dihydro: 5-(1,3-Benzodioxol-5-yl)-*N*-(2-methylpropyl)-2-pentenamide, 9CI.* N*-Isobutyl-5-(3,4-methylenedioxyphenyl)-2-pentenamide, 8CI.* ***4,5-Dihydropiperlonguminine****. $\Delta^{\alpha,\beta}$-Dihydropiperlonguminine*
[23512-53-0]
$C_{16}H_{21}NO_3$ 275.347
Alkaloid from fruits of *Piper guineense* and *Piper longum* (long pepper). Also isol. from *Fagara macrophylla*. Insect growth inhibitor. Cryst. (C_6H_6 or C_6H_6/petrol). Mp 90-94° (natural) Mp 110° (synthetic).

2″-Acetoxy: ***Corcovadine***
[79097-20-4]
$C_{18}H_{21}NO_5$ 331.368
Alkaloid from the roots of *Ottonia corcovadensis* (preferred genus name *Piper*). Mp 141-144°. λ_{max} 244 (log ϵ 4.19); 252 (log ϵ 4.19); 307 (log ϵ 4.4); 342 (log ϵ 4.65) (MeOH).

6′-Methoxy: 5-(6-Methoxy-3,4-methylenedioxyphenyl)-2,4-pentadienoic acid isobutylamide. ***6-Methoxypiperoylisobutylamine***
[102934-25-8]
$C_{17}H_{21}NO_4$ 303.357
Alkaloid from *Piper amalago.*

(2*E*,4*Z*)-*form*
Scutifoliamide A
[1000390-09-9]
Alkaloid from the leaves of *Piper scutifolium*. Amorph. solid. λ_{max} 241 (log ϵ 3.2); 293 (log ϵ 3); 308 (log ϵ 3); 337 (log ϵ 3) ($CHCl_3$).

2″-Acetoxy: ***Scutifoliamide B***
[1000390-10-2]
$C_{18}H_{21}NO_5$ 331.368
Alkaloid from the leaves of *Piper scutifolium*. Amorph. solid. λ_{max} 241 (log ϵ 3.7); 296 (log ϵ 3.5); 310 (log ϵ 3.5); 342 (log ϵ 3.6) ($CHCl_3$).

(2*Z*,4*E*)-*form*
Hoffmannseggiamide A
[1000390-08-8]
Alkaloid from the leaves of *Piper hoffmannseggianum*. Amorph. solid.

2″-Acetoxy: ***Hoffmannseggiamide B***
[1000390-11-3]
$C_{18}H_{21}NO_5$ 331.368
Alkaloid from the leaves of *Piper hoffmannseggianum*. Amorph. solid.

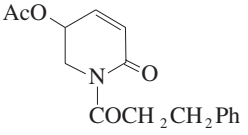
(2*Z*,4*Z*)-*form*
Isopiperlonguminine
[79097-19-1]
Alkaloid from the roots of *Ottonia corcovadensis* (Piperaceae). Mp 140-143°.

2″-Acetoxy: ***Isocorcovadine***
[79097-21-5]
$C_{18}H_{21}NO_5$ 331.368
Alkaloid from the roots of *Ottonia corcovadensis*. Mp 80-85°. λ_{max} 245 (log ϵ 4.39); 254 (log ϵ 4.41); 310 (log ϵ 4.38); 327 (log ϵ 4.48) (MeOH).

Chatterjee, A. *et al., Tetrahedron*, 1967, **23**, 1769 (*isol, uv, pmr, ms, synth*)
Loder, J.W. *et al., Aust. J. Chem.*, 1969, **22**, 1531 (*synth, 4,5-Dihydropiperlonguminine*)
Gupta, O.P. *et al., Phytochemistry*, 1972, **11**, 2646 (*isol*)
Mahanta, P.K. *et al., J. Pharm. Sci.*, 1974, **63**, 1160 (*uv, ir, pmr*)
Okogun, J.I. *et al., J.C.S. Perkin 1*, 1974, 2195 (*isol, uv, ir, pmr, ms, synth*)
Patra, A. *et al., Phytochemistry*, 1974, **13**, 2889 (*isol*)
Dwuma-Badu, D. *et al., Phytochemistry*, 1976, **15**, 822 (*4,5-Dihydropiperlonguminine*)
Olsen, R.A. *et al., J. Agric. Food Chem.*, 1981, **29**, 942 (*synth, uv, ir, pmr*)
Soares Costa, S. *et al., Phytochemistry*, 1981, **20**, 1305-1307 (*Piperlonguminine, Isopiperlonguminine, Corcovadine, Isocorcovadine*)
Kubo, I. *et al., Experientia*, 1984, **40**, 340 (*4,5-Dihydropiperlonguminine*)
Achenbach, H. *et al., Planta Med.*, 1986, **52**, 12-18 (*6′-methoxy*)
Kaga, H. *et al., Synlett*, 1994, 607 (*synth*)
Anuradha, V. *et al., Nat. Prod. Res.*, 2004, **18**, 245-251 (*Isodihydropiperlonguminine*)
Min, K.R. *et al., Planta Med.*, 2004, **70**, 1115-1118 (*isol, pmr, cmr*)
Marques, J.V. *et al., J. Nat. Prod.*, 2007, **70**, 2036-2039 (*Scutifoliamides A-B, Hoffmannseggiamides A-B*)

Pipermethystine P-463

*5-Acetoxy-5,6-dihydro-1-(3-phenylpropanoyl)-2(1*H*)-pyridinone*
[71627-22-0]



$C_{16}H_{17}NO_4$ 287.315
Alkaloid from the leaves of *Piper methysticum* (kava). Oil. $[\alpha]_D^{23}$ -176.4 (c, 0.5 in Me_2CO).

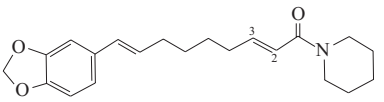
3,4-Epoxide: ***3,4-Epoxypipermethystine***
$C_{16}H_{17}NO_5$ 303.314
Alkaloid from the aerial parts of *Piper methysticum*. Needles (hexane). Mp 59°. $[\alpha]_D^{22}$ -98.8 (c, 0.5 in Me_2CO). Possesses 3α,4α,5β-config.

*Deacetoxy: 5,6-Dihydro-1-(3-phenylpropanoyl)-2(1*H*)-pyridinone.* ***Piperchabamide A***
$C_{14}H_{15}NO_2$ 229.278
Alkaloid from the fruit of *Piper chaba* (Javanese long pepper). Oil. λ_{max} 243 (log ϵ 3.72) (EtOH).

Smith, R.M. *et al., Tetrahedron*, 1979, **35**, 437-439 (*isol, uv, ir, pmr, cmr, ms*)
Gomez, R. *et al., Org. Lett.*, 2001, **3**, 3381-3383 (*synth*)
Dragull, K. *et al., Phytochemistry*, 2003, **63**, 193-198 (*3,4-Epoxypipermethystine*)
Morikawa, T. *et al., Planta Med.*, 2004, **70**, 152-159 (*Piperchabamide A*)

Pipernonaline P-464

1-[9-(1,3-Benzodioxol-5-yl)-1-oxo-2,8-nonadienyl]piperidine, 9CI. 9-(3,4-Methylenedioxyphenyl)-2,8-nonadienoic acid piperidide
[88660-10-0]



$C_{21}H_{27}NO_3$ 341.449
Alkaloid from the fruits of *Piper longum* (long pepper). Cryst. (EtOAc/hexane). Mp 54-55.5°.

2,3-Dihydro: ***Piperolein B****. 9-(3,4-Methylenedioxyphenyl)-8-nonenoic acid piperidide*
[30505-89-6]
$C_{21}H_{29}NO_3$ 343.465
Alkaloid from *Piper nigrum* (black pepper). Oil. λ_{max} 214 (ϵ 28000); 260 (ϵ 16600); 268 (ϵ 16100); 305 (ϵ 10800) (MeOH) (Derep).

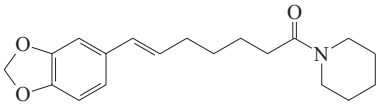
4,5-Didehydro: 9-(3,4-Methylenedioxyphenyl)-2,4,8-nonatrienoic acid piperidide. ***Dehydropipernonaline***
[107584-38-3]
$C_{21}H_{25}NO_3$ 339.433
Alkaloid from the fruits of *Piper longum* (long pepper). Possesses coronary vasodilating activity. Plates (hexane/Me_2CO). Mp 98-99°.

*2,3-Dihydro, 4,5,6,7-tetradehydro(*E,E-*),: 9-(3,4-Methylenedioxyphenyl)-4,6,8-nonatrienoic acid piperidide.* ***Piptigrine***
$C_{21}H_{25}NO_3$ 339.433
Alkaloid from the seeds of *Piper nigrum* (black pepper). Insecticidal agent. Dark yellow rods ($CHCl_3$/MeOH). Mp 159-161°. λ_{max} 260 (ϵ 10100); 313 (ϵ 19500); 331 (ϵ 35200); 363 (ϵ 42500) (MeOH).

Grewe, R. *et al., Chem. Ber.*, 1970, **103**, 3752 (*isol, uv, ir, pmr, ms, synth, Piperolein B*)
Tabuneng, W. *et al., Chem. Pharm. Bull.*, 1983, **31**, 3562 (*isol, pmr, cmr, ir, uv, ms, struct*)
Shoji, N. *et al., J. Pharm. Sci.*, 1986, **75**, 1188-1189 (*Dehydropipernonaline*)
Kaga, H. *et al., Synlett*, 1994, 607 (*Pipernonaline, Dehydropipernonaline, synth*)
Strunz, G.M. *et al., Can. J. Chem.*, 1996, **74**, 419 (*Dehydropipernonaline, synth*)
Yang, Y.-C. *et al., J. Agric. Food Chem.*, 2002, **50**, 3765-3767 (*isol, pmr, cmr*)
Siddiqui, B.S. *et al., Nat. Prod. Res.*, 2004, **18**, 473-477 (*Piptigrine*)

Piperolein A P-465

1-[7-(1,3-Benzodioxol-5-yl)-1-oxo-6-heptenyl]piperidine, 9CI. 1-[7-(3,4-Methylenedioxyphenyl)-6-heptenoyl]piperidine



$C_{19}H_{25}NO_3$ 315.411
λ_{max} 214 (ϵ 28000); 260 (ϵ 16600); 268 (ϵ 16100); 305 (ϵ 10800) (MeOH) (Derep).

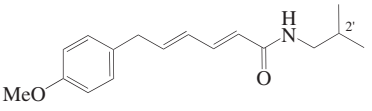
(*E*)-*form* [30505-92-1]
Minor constit. of *Piper nigrum* (pepper) (Piperaceae). Pale yellow oil.

2,3-Didehydro, 6,7-dihydro: ***Piperine S****. 1-[7-(1,3-Benzodioxol-5-yl)-1-oxo-2-heptenyl]piperidine. 1-[7-(3,4-Methylenedioxyphenyl)-2-heptenoyl]piperidine*
[156970-11-5]
$C_{19}H_{25}NO_3$ 315.411
Isol. from stems and leaves of *Piper puberulum* (Piperaceae). Yellow needles. Mp 52-54°. λ_{max} 202 ; 232 (sh) ; 280 (MeOH).

Grewe, R. *et al., Chem. Ber.*, 1970, **103**, 3752 (*isol, synth, struct*)
Wu, Q. L. *et al., Phytochemistry*, 1997, **44**, 727; *CA*, **121**, 104122z (*Piperine S*)
Chaves, M.C. de O. *et al., Fitoterapia*, 2003, **74**, 181-183 (*Piperine S*)

Piperovatine P-466

*6-(4-Methoxyphenyl)-*N*-(2-methylpropyl)-2,4-hexadienamide, 9CI.* N*-Isobutyl-6-*p*-methoxyphenylsorbamide. 6-(4-Methoxyphenyl)-2,4-hexadienoic acid isobutylamide*



$C_{17}H_{23}NO_2$ 273.374

(*E*,*E*)-*form* [25090-18-0]
Alkaloid from *Ottonia vahlii* (preferred genus name *Piper*) and *Ottonia corcovadensis* (Piperaceae). Cryst. (Et_2O). Mp 120-121° (115-119°).

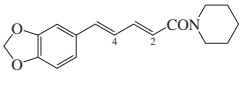
Demethoxy: [99083-23-5]
$C_{16}H_{21}NO$ 243.348
Isol. from *Dinosperma erythrococca*. Shows activity against house fly (*Musca domestica*). Needles. Mp 116°. λ_{max} 258 (MeOH).

2′-Hydroxy, demethoxy: [120262-71-7]
$C_{16}H_{21}NO_2$ 259.347
Isol. from *Dinosperma erythrococca*. Shows lethal activity against tobacco budworm (*Heliothis virescens*). Yellow waxy solid. Mp 77°. λ_{max} 257 (MeOH).

Price, S.J. *et al., J.O.C.*, 1970, **35**, 2568-2571 (*isol, uv, ir, pmr, ms, synth*)
Vig, B. *et al., J. Indian Chem. Soc.*, 1974, **51**, 817-818 (*synth, uv, ir, pmr*)
Soares Costa, S. *et al., Phytochemistry*, 1981, **20**, 1305-1307 (*isol, uv, ir, pmr, ms*)
Latif, Z. *et al., J. Nat. Prod.*, 1998, **61**, 614-619 (*demethoxy derivs*)
Rendon, W. *et al., Spectroscopy (Amsterdam)*, 1998, **14**, 35-40 (*pmr, cmr*)

1-Piperoylpiperidine P-467

1-[5-(1,3-Benzodioxol-5-yl)-1-oxo-2,4-pentadienyl]piperidine, 9CI. 1-[5-(3,4-Methylenedioxyphenyl)-2,4-pentadienoyl]piperidine. 5-(3,4-Methylenedioxyphenyl)-2,4-pentadienoic acid piperidide



(2*E*,4*E*)-*form*

$C_{17}H_{19}NO_3$ 285.342

(2*E*,4*E*)-*form*
Piperine*. FEMA 2909*
[94-62-2]
Constit. of pepper (*Piper nigrum*) and many other *Piper* spp. (Piperaceae). Responsible for the hot taste of pepper. Flavouring agent, insecticide. Analeptic, bactericidal agent. Sol. EtOH; poorly sol. H_2O. Mp 129°. pK_a 1.98 (15°). Log P 2.7 (calc).
▶ LD_{50} (rat, orl) 514 mg/kg. Exp. reprod. and teratogenic effects. TN2321500

4,5-Dihydro: 1-[5-(1,3-Benzodioxol-5-yl)-1-oxo-2-pentenyl]piperidine. 5-(3,4-Methylenedioxyphenyl)-2-pentenoic acid piperidide. ***Piperanine****. β-Hydropiperylpiperidine. $\Delta^{\alpha,\beta}$-Dihydropiperine*
[23512-46-1]
$C_{17}H_{21}NO_3$ 287.358
Alkaloid from *Piper nigrum, Piper guineense* and *Piper novae-hollandiae* (Piperaceae). Cryst. (EtOAc or petrol). Mp 79-80°. λ_{max} 232 (ϵ 11800); 285 (ϵ 4350) (MeOH).

2,3,4,5-Tetrahydro: 1-[5-(3,4-Methylenedioxyphenyl)pentanoyl]piperidine. ***Tetrahydropiperine***
$C_{17}H_{23}NO_3$ 289.374
Alkaloid from the fruit of *Piper longum* (long pepper).

(2*E*,4*Z*)-*form*
Isochavicine
[30511-77-4]
Constit. of pepper (*Piper nigrum*) (Piperaceae). Cryst. ($CHCl_3$/hexane). Mp 110° (103°).

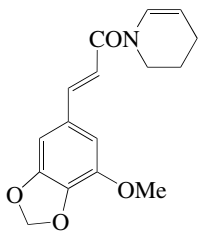
(2*Z*,4*E*)-*form*
Isopiperine
[30511-76-3]
Constit. of pepper (*Piper nigrum*) (Piperaceae). Cryst. ($CHCl_3$/hexane). Mp 89° (86°).

(2*Z*,4*Z*)-*form*
Chavicine
[495-91-0]
Constit. of pepper (*Piper nigrum*) (Piperaceae). Oil. $Bp_{0.0001}$ 110°.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 362C (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **2**, 1379B (*nmr*)
Rügheimer, L. *et al., Ber.*, 1882, **15**, 1390 (*synth, Piperine*)
Loder, J.W. *et al., Aust. J. Chem.*, 1969, **22**, 1531 (*Piperanine*)
Grewe, R. *et al., Chem. Ber.*, 1970, **103**, 3752 (*isol, uv, ir, pmr, synth*)
Traxler, J.T. *et al., J. Agric. Food Chem.*, 1971, **19**, 1135 (*Piperanine*)
Wenkert, E. *et al., J.A.C.S.*, 1971, **93**, 6271 (*pmr, cmr, Piperine*)
Grynpas, M. *et al., Acta Cryst. B*, 1975, **31**, 2663 (*cryst struct, Piperine*)
DeCleyn, R. *et al., Chromatographia*, 1975, **8**, 342 (*isol, uv*)
Addae-Mensah, I. *et al., Phytochemistry*, 1977, **16**, 483 (*Piperanine*)
Tsuboi, S. *et al., Tet. Lett.*, 1979, 1043 (*synth, Piperine, Isochavicine*)
Schulze, A. *et al., Annalen*, 1981, 1725 (*synth*)
Kaga, H. *et al., Synlett*, 1994, 607 (*synth, Piperine*)
De Araujo-Junior, J.X. *et al., Phytochemistry*, 1997, **44**, 559 (*pmr, cmr*)
Madhusudhan, P. *et al., Biochem. Syst. Ecol.*, 2001, **29**, 537-538 (*Tetrahydropiperine*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, PIV600

Piperpense P-468

[193225-26-2]

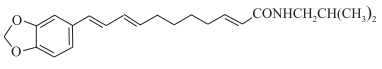


$C_{16}H_{17}NO_4$ 287.315
Alkaloid from *Piper ponapense* (Piperaceae). Cryst. (EtOAc/hexane).

Patil, A.D. *et al., Nat. Prod. Lett.*, 1997, **9**, 217-223 (*isol, uv, pmr, cmr, cryst struct*)

Piperstachine P-469

*11-(1,3-Benzodioxol-5-yl)-*N*-(2-methylpropyl)-2,8,10-undecatrienamide, 9CI. 11-(3,4-Methylenedioxyphenyl)-2,8,10-undecatrienoic acid isobutylamide*



$C_{22}H_{29}NO_3$ 355.476

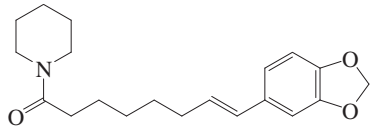
(E,E,E)-form [57155-80-3]
Alkaloid from the stems of *Piper trichostachyon* (Piperaceae). Cryst. (CH_2Cl_2/hexane). Mp 153°. λ_{max} 216 (ϵ 34700); 283 (ϵ 21900); 293 (ϵ 24500); 315 (ϵ 18200) (EtOH).

8,9-Dihydro: 11-(3,4-Methylenedioxyphenyl)-2,10-undecadienoic acid isobutylamide. ***Piperchabamide D***
$C_{22}H_{31}NO_3$ 357.492
Alkaloid from the fruit of *Piper chaba* (Javanese long pepper). Oil. λ_{max} 261 (log ϵ 4.12) (EtOH).

Joshi, B.S. *et al., Helv. Chim. Acta*, 1975, **58**, 1551 (*isol, uv, ir, pmr, cmr, ms, struct*)
Viswanathan, N. *et al., Helv. Chim. Acta*, 1975, **58**, 2026 (*synth, uv, ir, ms*)
Vig, O.P. *et al., Indian J. Chem., Sect. B*, 1980, **19**, 276 (*synth, uv, ir, pmr*)
Morikawa, T. *et al., Planta Med.*, 2004, **70**, 152-159 (*Piperchabamide D*)

Pipertipine P-470

1-[8-(1,3-Benzodioxol-5-yl)-1-oxo-7-octadecenyl]piperidine, 9CI. 1-[8-(3,4-Methylenedioxyphenyl)-7-octadecenoyl]-piperidine
[485794-76-1]

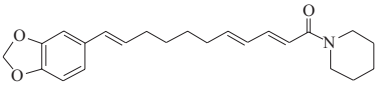


$C_{20}H_{27}NO_3$ 329.438
Alkaloid from the dried seeds of pepper *Piper nigrum*. Yellow wax. λ_{max} 263 (ϵ 13400); 270 (ϵ 12800); 310 (ϵ 5850); 322 (sh) (MeOH).

Siddiqui, B.S. *et al., Heterocycles*, 2002, **57**, 1653-1658 (*isol, pmr, cmr, ms*)

Piperundecalidine P-471

1-[11-(1,3-Benzodioxol-5-yl)-1-oxo-2,4,10-undecatrienyl]piperidine, 9CI. 11-(3,4-Methylenedioxyphenyl)-2,4,10-undecatrienoic acid piperidide
[88660-11-1]



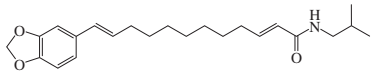
$C_{23}H_{29}NO_3$ 367.487
Alkaloid from the fruits of *Piper longum* (long pepper) (Piperaceae). Cryst. (EtOAc/hexane). Mp 64.5-65.5°.

4,5-Dihydro: 11-(3,4-Methylenedioxyphenyl)-2,10-undecadienoic acid piperidide. ***Piperchabamide B***
$C_{23}H_{31}NO_3$ 369.503
Alkaloid from the fruit of *Piper chaba* (Javanese long pepper). Oil. λ_{max} 260 (log ϵ 4.24) (EtOH).

Tabuneng, W. *et al., Chem. Pharm. Bull.*, 1983, **31**, 3562 (*isol, uv, ir, pmr, cmr, ms, struct*)
Morikawa, T. *et al., Planta Med.*, 2004, **70**, 152-159 (*Piperchabamide B*)

Pipgulzarine P-472

[622405-48-5]

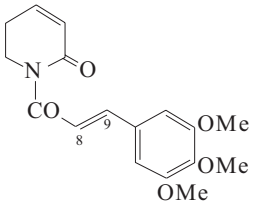


$C_{23}H_{33}NO_3$ 371.519
Alkaloid from the dried seeds of *Piper nigrum* (pepper). Yellow needles ($CHCl_3$/MeOH). Mp 98-100°. λ_{max} 263 (ϵ 5450); 313 (ϵ 14200) (MeOH).

Siddiqui, B.S. *et al., Helv. Chim. Acta*, 2003, **86**, 2760-2767 (*isol, pmr, cmr, ms*)

Piplartine P-473

*5,6-Dihydro-1-[1-oxo-3-(3,4,5-trimethoxyphenyl)-2-propenyl]-2(1*H*)-pyridinone, 9CI.* N*-(3,4,5-Trimethoxycinnamoyl)-Δ³-piperidin-2-one. 5,6-Dihydro-1-(3,4,5-trimethoxycinnamoyl)-2(1*H*)-pyridinone. Piperlongumine*
[20069-09-4]



$C_{17}H_{19}NO_5$ 317.341
Alkaloid from the roots of *Piper longum* (long pepper) and *Piper sylvaticum* (Piperaceae). Also isol. from leaves of *Piper tuberculatum*. Effective drug for treatment of asthma and chronic bronchitis. Needles ($EtOH/Et_2O$). Mp 124°. Isomeric Δ^5 struct. originally proposed. λ_{max} 222 ; 240 ; 325 (MeOH) (Berdy). λ_{max} 225 (ϵ 11000); 324 (ϵ 10000) (EtOH) (Berdy).

*4′-*O*-De-Me:* ***4′-O-Demethylpiplartine***
$C_{16}H_{17}NO_5$ 303.314
Alkaloid from *Piper cenocladum*. Yellow oil. λ_{max} 220 (sh) (log ϵ 4.74); 270 (log ϵ 4.62); 345 (log ϵ 4.5) (MeOH).

8,9-Dihydro: ***8,9-Dihydropiplartine***
[137760-69-1]
$C_{17}H_{21}NO_5$ 319.357
Alkaloid from the aerial parts of *Piper rugosum* (Piperaceae). Semi-solid.

8,9-Dihydro, 3,4-epoxide: ***3,4-Epoxy-8,9-dihydropiplartine***
[174544-87-7]
$C_{17}H_{21}NO_6$ 335.356
Alkaloid from leaves and twigs of *Piper verrucosum*. Cryst. (Me_2CO/petrol). Mp 85-87°. $[\alpha]_D$ -121.6 (c, 0.020 in $CHCl_3$).

Tetrahydro:
Prisms (Et_2O). Mp 83-84°.

3′-Demethoxy: N*-(3,4-Dimethoxycinnamoyl)-Δ³-piperidin-2-one.* ***3′-Demethoxypiplartine***
[130263-10-4]
$C_{16}H_{17}NO_4$ 287.315
Alkaloid from the stems of *Piper arborescens* (Piperaceae) and leaves of *Piper tuberculatum*. Displays significant activity as a repellent to the leafcutter ant *Atta cephalotes*. Pale yellow needles (MeOH). Mp 116-117°. λ_{max} 222 (ϵ 45710); 338 (ϵ 53700) (MeOH) (Berdy).

*3′-Demethoxy, 8,9-dihydro: 1-[3-(3,4-Dimethoxyphenyl)propanoyl]-5,6-dihydro-2(1*H*)-pyridinone. 8,9-Dihydro-3′-demethoxypiplartine.* ***Sintenpyridone***
$C_{16}H_{19}NO_4$ 289.33
Alkaloid from the whole plant of *Piper sintenense*. Cytotoxic. Needles ($CHCl_3$/MeOH). Mp 125-127°. λ_{max} 220 (log ϵ 4.68); 276 (log ϵ 4.03) (EtOH).

3′-Demethoxy, 8,9-dihydro, 3,4-epoxide: ***Piplaroxide***
[179382-48-0]
$C_{16}H_{19}NO_5$ 305.33
Alkaloid from leaves of *Piper tuberculatum*. Displays significant activity as a repellent to the leafcutter ant *Atta cephalotes*. Small needles (MeOH/$CHCl_3$). Mp 91-92°. $[\alpha]_D^{25}$ +67.7 (c, 0.8 in $CHCl_3$).

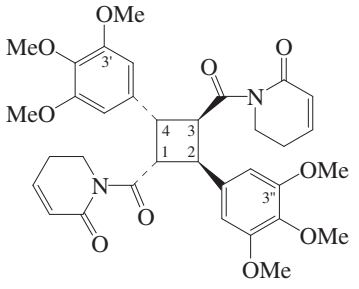
(Z)-Isomer: **cis-*Piplartine***
$C_{17}H_{19}NO_5$ 317.341
Alkaloid from *Piper tuberculatum*. Amorph. solid. λ_{max} 332 ($CHCl_3$).

Chatterjee, A. *et al., Tetrahedron*, 1967, **23**, 1769 (*isol, uv, ir, pmr*)
Joshi, B.S. *et al., Tet. Lett.*, 1968, 2395 (*pmr, struct*)
Banerji, J. *et al., Phytochemistry*, 1974, **13**, 2327 (*isol*)
Banerjee, T. *et al., Can. J. Chem.*, 1986, **64**, 876 (*cryst struct*)
Duh, C.-Y. *et al., Phytochemistry*, 1990, **29**, 2689 (*3′-Demethoxypiplartine*)
Maxwell, A. *et al., J. Nat. Prod.*, 1991, **54**, 1150 (*8,9-Dihydropiplartine*)
Seeram, N.P. *et al., J. Nat. Prod.*, 1996, **59**, 436 (*3,4-Epoxy-8,9-dihydropiplartine*)

Capron, M.A. *et al., J. Nat. Prod.*, 1996, **59**, 794 (*Piplaroxide*)
Dodson, C.D. *et al., Phytochemistry*, 2000, **53**, 51-54 (*4′-O-Demethylpiplartine*)
Navickiene, H.M.D. *et al., Phytochemistry*, 2000, **55**, 621-626 (*cis-Piplartine*)
Chen, J.-J. *et al., Planta Med.*, 2002, **68**, 980-985 (*Sintenpyridone*)

Piplartine dimer A P-474

*1,1′-[[2,4-Bis(3,4,5-trimethoxyphenyl)-1,3-cyclobutanediyl]dicarbonyl]bis[5,6-dihydro-2(1*H*)-pyridone]*
[80248-71-1]



$C_{34}H_{38}N_2O_{10}$ 634.682
Alkaloid from *Piper arborescens*, *Piper rugosum* and *Piper tuberculatum*. Cytotoxic. Cryst. (MeOH). Mp 269-270° (262-264°). λ_{max} 214 (log ϵ 4.53); 240 (sh) (log ϵ 4.25) (MeOH).

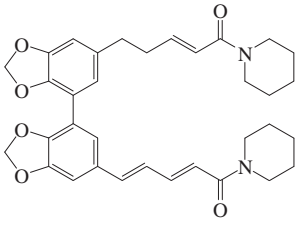
3′-Demethoxy: ***Piperarborenine B***
$C_{33}H_{36}N_2O_9$ 604.655
Alkaloid from the stems of *Piper arborescens*. Needles (MeOH). Mp 158-162°. λ_{max} 214 (log ϵ 4.52); 240 (sh) (log ϵ 4.31); 280 (sh) (log ϵ 3.67) (MeOH).

3′,3″-Bis(demethoxy): ***Piperarborenine A***
$C_{32}H_{34}N_2O_8$ 574.629
Alkaloid from the stems of *Piper arborescens*. Needles (MeOH). Mp 220-222°. $[\alpha]_D^{25}$ +5.5 (c, 0.05 in $CHCl_3$). λ_{max} 212 (log ϵ 4.53); 240 (sh) (log ϵ 4.34); 280 (sh) (log ϵ 3.92) (MeOH).

1,2-Diepimer, 3′-demethoxy: ***Piperarborenine D***
$C_{33}H_{36}N_2O_9$ 604.655
Alkaloid from the stems of *Piper arborescens*. Brownish oil. λ_{max} 217 (log ϵ 4.55); 240 (sh) (log ϵ 4.33); 280 (sh) (log ϵ 3.73) (MeOH).

Filho, R.B. *et al., Phytochemistry*, 1981, **20**, 345-346 (*isol, synth, ir, pmr, cmr, ms*)
Maxwell, A. *et al., J. Nat. Prod.*, 1991, **54**, 1150-1152 (*isol*)
Lee, F.-P. *et al., Helv. Chim. Acta*, 2004, **87**, 463-468 (*Piperarborenines A-B*)
Tsai, I.-L. *et al., Planta Med.*, 2005, **71**, 535-542 (*Piperarborenine D*)

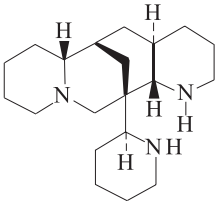
Pipsaeedine P-475



$C_{34}H_{38}N_2O_6$ 570.684
Alkaloid from the fruit of *Piper nigrum* (pepper). Amorph. powder. λ_{max} 254 (ϵ 11900); 264 (ϵ 13000); 301 (ϵ 25000); 314 (ϵ 24200); 321 (ϵ 35000); 357 (ϵ 41000); 373 (ϵ 45200) (MeOH).

Siddiqui, B.S. *et al., Helv. Chim. Acta*, 2004, **87**, 660-666 (*isol, pmr, cmr, ms*)

Piptanthine P-476



(–)–*form*

$C_{20}H_{35}N_3$ 317.517
Stereoisomeric with Ormosanine, O-115, Dasycarpine, D-85 and Templetine, T-68.

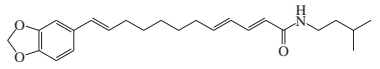
(-)-*form* [7344-67-4]
Alkaloid from *Piptanthus nanus* (Fabaceae). Mp 142-146° (136-137°). $[\alpha]_D$ -24.
N,N′-*Di-Ac:*
Cryst. by subl. Mp 218-221°.
N-*Me:* Mp 114-115°.

(+)-*form*
Obt. by redn. of Panamine, P-53. Mp 136-137°. $[\alpha]_D$ +23.

(±)-*form*
Minor alkaloid from leaves and stems of *Hovea linearis* and from *Templetonia retusa, Ormosia semicastrata* and *Ammopiptanthus mongolicus* (Fabaceae). Cryst. (MeOH). Mp 220-222°.

Konovalova, R.A. *et al., Dokl. Akad. Nauk SSSR, Ser. Khim.*, 1951, **78**, 705; **81**, 1069 (*isol*)
Eisner, U. *et al., Coll. Czech. Chem. Comm.*, 1959, **24**, 2348-2355 (*purifn*)
Deslongchamps, P. *et al., Tet. Lett.*, 1964, 3893-3898 (*struct, abs config*)
McLean, S. *et al., Can. J. Chem.*, 1971, **49**, 1976-1978; 1972, **50**, 1639-1641 (*isol*)
Cannon, J.R. *et al., Tet. Lett.*, 1974, 1683-1686 (*isol, abs config*)
Liu, H.-J. *et al., Can. J. Chem.*, 1976, **54**, 97-109 (*synth*)
Lamberton, J.A. *et al., Aust. J. Chem.*, 1982, **35**, 2577-2582 (*isol*)
Le, P.M. *et al., Magn. Reson. Chem.*, 2005, **43**, 283-293 (*pmr, cmr*)

Pipyahyine P-477



$C_{24}H_{33}NO_3$ 383.53
Alkaloid from the dried fruits of *Piper nigrum* (pepper). Needles (petrol/EtOAc). Mp 109-110.5°. λ_{max} 265 (ϵ 38500); 315 (ϵ 3500) (MeOH).

Siddiqui, B.S. *et al., Chem. Pharm. Bull.*, 2004, **52**, 1349-1352 (*isol, pmr, cmr, ms*)

Piricularin P-478

Toxin B. Pyricularin
[56283-47-7]

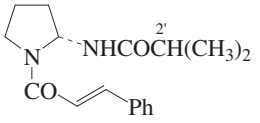
$C_{18}H_{30}N_2O_5$ 354.445

Phenazine antibiotic. Struct. unknown. Isol. from *Piricularia oryzae*. Active against gram-positive bacteria and fungi. Needles. Sol. MeOH, EtOAc; fairly sol. H_2O; poorly sol. Et_2O, hexane. Mp 73°. $[\alpha]_D$ -19 (H_2O). λ_{max} 240 (E1%/1cm 2824); 308 (E1%/1cm 350) (MeOH) (Berdy).

Tamari, K. *et al., Nippon Nogei Kagaku Kaishi*, 1954, **28**, 254-258; *CA*, **50**, 41086 (*isol*)
Umetsu, N. *et al., Agric. Biol. Chem.*, 1974, **38**, 1867-1874 (*isol, uv, ir, ms*)

Piriferine P-479

*2-Methyl-*N*-[1-(1-oxo-3-phenyl-2-propenyl)-2-pyrrolidinyl]propanamide, 9CI*. N-*Cinnamoyl-2-(2-methylpropanoylamino)-pyrrolidine*
[113689-36-4]

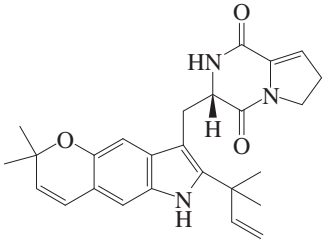


$C_{17}H_{22}N_2O_2$ 286.373
Abs. config. unknown. (*R*)-form illus. by analogy with Odorine, O-67. Major alkaloid from the leaves of *Aglaia pirifera* (Meliaceae). Cryst. (Et_2O/$CHCl_3$). Mp 164-165.5°. $[\alpha]_D^{28}$ +30 (c, 0.01 in EtOH).

2′-Hydroxy: ***Piriferinol***
$C_{17}H_{22}N_2O_3$ 302.372
Alkaloid from *Aglaia elaeagnoidea*. $[\alpha]_D^{20}$ +8 (c, 0.1 in $CHCl_3$). λ_{max} 284 (log ϵ 4.16) (MeOH).

Saifah, E. *et al., J. Nat. Prod.*, 1988, **51**, 80-82; 1993, **56**, 473-477 (*isol, uv, ir, pmr, cmr, ms, struct*)
Brader, G. *et al., J. Nat. Prod.*, 1998, **61**, 1482-1490 (*Piriferinol*)

Piscarinine A P-480

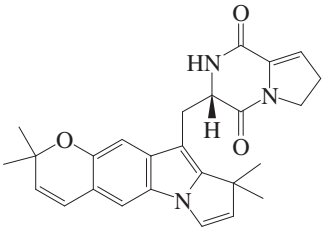


$C_{26}H_{29}N_3O_3$ 431.533

(*S*)-*form* [312956-60-8]
Prod. by *Penicillium piscarium* NKM F-691. Waxy solid. $[\alpha]_D^{25}$ +14 (c, 1 in MeOH). λ_{max} 216 ; 244 ; 262 (MeOH).

Kozlovsky, A. *et al., Nat. Prod. Lett.*, 2000, **14**, 333-340 (*isol, uv, ms, pmr, cmr*)

Piscarinine B P-481



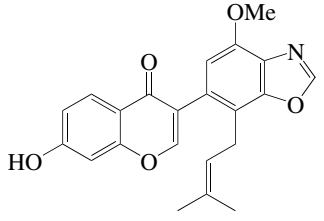
$C_{26}H_{27}N_3O_3$ 429.518

(*S*)-*form* [312956-61-9]
Prod. by *Penicillium piscarium*. Waxy solid. $[\alpha]_D^{25}$ +132 (c, 1 in MeOH). λ_{max} 218 ; 240 ; 265 (MeOH).

Kozlovsky, A. *et al., Nat. Prod. Lett.*, 2000, **14**, 333-340 (*isol, uv, ms, pmr, cmr*)

Piscerythoxazole P-482

[151590-43-1]

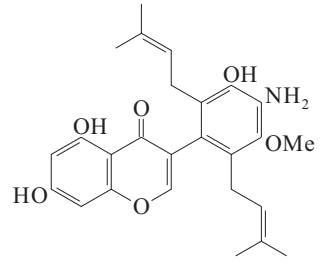


$C_{22}H_{19}NO_5$ 377.396
Constit. of the root bark of *Piscidia erythrina*. λ_{max} 203 ; 218 ; 242 (sh) ; 250 ; 295 ; 305 (sh) (MeOH).

Moriyama, M. *et al., Phytochemistry*, 1993, **32**, 1317 (*isol, uv, pmr, cmr, ms*)

Piscerythramine P-483

*2-[4-Amino-3-hydroxy-5-methoxy-2,6-bis(3-methyl-2-butenyl)phenyl]-5,7-dihydroxy-4*H*-1-benzopyran-4-one, 9CI. 4′-Amino-3′,5,7-trihydroxy-5′-methoxy-2′,6′-diprenylisoflavone*
[132923-36-5]

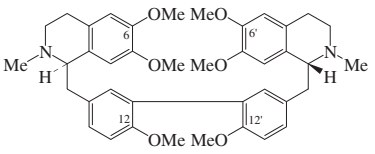


$C_{26}H_{29}NO_6$ 451.518
The first naturally occurring aminoisoflavone. Isol. from the root bark of *Piscidia erythrina*. Pale yellow gum. λ_{max} 213 ; 260 ; 294 (broad maximum) (MeOH).

Moriyama, M. *et al., Phytochemistry*, 1993, **32**, 1317 (*isol, uv, pmr, cmr*)

Pisopowine P-484

[107913-08-6]



Absolute Configuration

$C_{40}H_{48}N_2O_6$ 652.829
Alkaloid from the bark of *Popowia pisocarpa* (Annonaceae). Amorph. $[\alpha]_D$ -152 (c, 0.4 in MeOH).

6-O-*De-Me:* ***Pisopowidine***
[107882-04-2]
$C_{39}H_{46}N_2O_6$ 638.802
Alkaloid from the bark of *Popowia pisocarpa* (Annonaceae). Amorph. $[\alpha]_D$ -137 (c, 1.2 in MeOH).

6,6′-Di-O-*de-Me:* ***Pisopowiarine***
[107882-05-3]
$C_{38}H_{44}N_2O_6$ 624.775
Alkaloid from the bark of *Popowia pisocarpa* (Annonaceae). Cryst. (Me_2CO). Mp 187-188°. $[\alpha]_D$ -112 (c, 1 in MeOH).

12,12′-Di-O-*de-Me:* ***Pisopowetine***
[107882-06-4]
$C_{38}H_{44}N_2O_6$ 624.775
Alkaloid from the bark of *Popowia pisocarpa* (Annonaceae). Amorph. $[\alpha]_D$ -80 (c, 0.2 in MeOH).

12,12′-Di-O-*de-Me, 2′*-N-*de-Me:* ***Pisopowamine***
[107882-08-6]
$C_{37}H_{42}N_2O_6$ 610.749
Alkaloid from the bark of *Popowia pisocarpa* (Annonaceae). Amorph. $[\alpha]_D$ -68 (c, 0.15 in MeOH).

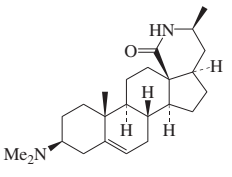
6,6′,12′-Tri-O-*de-Me:* ***Pisopowiaridine***
[107882-07-5]
$C_{37}H_{42}N_2O_6$ 610.749
Alkaloid from the bark of *Popowia pisocarpa* (Annonaceae). Cryst. (MeOH). Mp 184-185°. $[\alpha]_D$ -78 (c, 1 in MeOH).

6,6′,12′-Tri-O-*de-Me, 2′*-N-*de-Me:* ***2′-Norpisopowiaridine***
[107882-09-7]
$C_{36}H_{40}N_2O_6$ 596.722
Alkaloid from the bark of *Popowia pisocarpa* (Annonaceae). Amorph. $[\alpha]_D$ -46 (c, 0.33 in MeOH).

Jossang, A. *et al., J. Nat. Prod.*, 1986, **49**, 1018 (*isol, uv, pmr, cmr, ms, cd, struct*)

Pistacimidelor P-485

[935854-05-0]



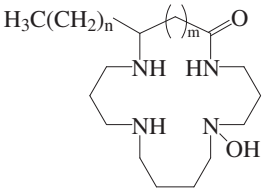
Absolute Configuration

$C_{24}H_{38}N_2O$ 370.577
Alkaloid from the leaves of *Pistacia atlantica* ssp. *mutica*.

Meshkatalsadat, M.H. *et al., Asian J. Chem.*, 2007, **19**, 1599-1601 (*isol, struct*)

Pithecolobine P-486

[22368-82-7]



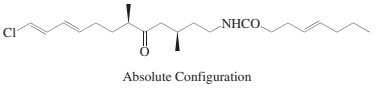
A mixt. of homologues and analogues. Estimated percentages of the 3 main components are: m = 3, n = 6: 24-30%; m = 1, n = 8: 40-49%; m = 1, n = 10: 13.5-16.5%. Closely related to the Budmunchiamines. Alkaloid from *Samanea saman* (*Pithecolobium saman*) (Fabaceae). Pale-yellow oil which slowly crystallises but cannot be recryst. Taxonomy of the source plant is complex. Authors give alt. genera Samanea or Pithecolobium (Pithecellobium). Kew system refers Samanea to Albizzia.

Picronolate salt:
Cryst. (Me_2CO/MeOH). Mp 134-135°.

Wiesner, K. *et al., Can. J. Chem.*, 1968, **46**, 1881; 3617 (*struct, bibl*)

Pitiamide A P-487

[198416-38-5]



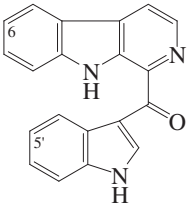
Absolute Configuration

$C_{22}H_{36}ClNO_2$ 381.985
Isol. from a mixt. of *Lyngbya majuscula* and *Microcoleus* sp. growing on coral. $[\alpha]_D$ -10.3 (c, 3 in $CHCl_3$). λ_{max} 223 (MeOH).

Nagle, D.G. *et al., Tet. Lett.*, 1997, **38**, 6969-6972 (*isol, uv, ir, pmr, cmr*)
Ribe, S. *et al., J.A.C.S.*, 2000, **122**, 4608-4617 (*synth, cd, ir, pmr, abs config*)

Pityriacitrin P-488

*1-(1*H*-Indole-3-carbonyl)-9*H*-pyrido[3,4-b]indole. 1-(1*H*-Indole-3-carbonyl)-β-carboline*
[244295-64-5]



$C_{20}H_{13}N_3O$ 311.342
Prod. by the yeast *Malassezia furfur* and

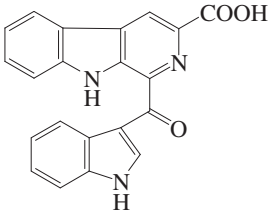
the marine bacterium *Paracoccus* sp. Uv protectant. Mp 227-230°. λ_{max} 193 (log ϵ 4.24); 216 (log ϵ 4.47); 262 (sh) (log ϵ 3.91); 281 (sh) (log ϵ 3.95); 289 (log ϵ 3.99); 310 (log ϵ 3.86); 389 (log ϵ 3.88) (MeCN).

*5′,6-Dihydroxy: 1-(5-Hydroxy-1*H*-indole-3-carbonyl)-9*H*-pyrido[3,4-*b*]indol-6-ol.* ***Hyrtiosulawesine***
[452067-33-3]
$C_{20}H_{13}N_3O_3$ 343.341
Isol. from the sponge *Hyrtios erectus*. Phospholipase A_2 inhibitor. λ_{max} 217 (ϵ 145000); 260 (sh) ; 305 (ϵ 53000); 325 (sh) ; 403 (ϵ 22700) (MeOH).

Japan. Pat., 1999, 99 269 175; *CA*, **131**, 242087z (*isol, activity*)
Mayser, P. *et al., Arch. Dermatol. Res.*, 2002, **294**, 131-134 (*isol, ir, pmr, cmr, ms*)
Salmoun, M. *et al., J. Nat. Prod.*, 2002, **65**, 1173-1176 (*Hyrtiosulawesine*)
Sauleau, P. *et al., J. Nat. Prod.*, 2006, **69**, 1676-1679 (*Hyrtiosulawesine*)

Pityriacitrin B P-489

*1-(1*H*-Indol-3-ylcarbonyl)-9*H*-pyrido[3,4-*b*]indole-3-carboxylic acid. 1-(1*H*-Indole-3-carbonyl)-β-carboline-3-carboxylic acid*
[863766-95-4]

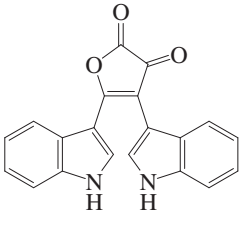


$C_{21}H_{13}N_3O_3$ 355.352
Alkaloid from the yeast *Malassezia furfur*. Yellow solid. Mp > 300° dec. λ_{max} 214 (log ϵ 4.49); 266 (log ϵ 4.18); 280 (log ϵ 4.17); 289 (log ϵ 4.17); 391 (log ϵ 3.74) (MeOH).

Irlinger, B. *et al., Helv. Chim. Acta*, 2005, **88**, 1472-1485 (*isol, ir, pmr, cmr*)

Pityrialactone P-490

*4,5-Di-1*H*-indol-3-yl-2,3-furandione*

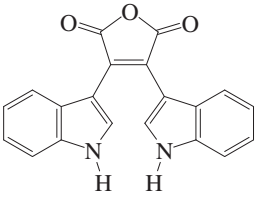


$C_{20}H_{12}N_2O_3$ 328.326
Isol. from the yeast *Malassezia furfur*. Pale yellow powder. Mp >250°. λ_{max} 224 (log ϵ 4.07); 292 (sh) (log ϵ 3.55); 356 (log ϵ 3.55) (MeOH).

Irlinger, B. *et al., Angew. Chem., Int. Ed.*, 2004, **43**, 1098-1100 (*isol, pmr, cmr, ms*)

Pityrianhydride P-491

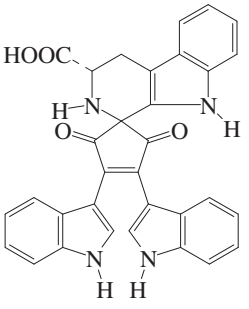
*3,4-Di-1*H*-indol-3-yl-2,5-furandione, 9CI. 3,4-Bis(1*H*-indol-3-yl)maleic anhydride*
[115684-57-6]



$C_{20}H_{12}N_2O_3$ 328.326
Isol. from the yeast *Malassezia furfur*. Orange solid. Mp 227-230°.

Brenner, M. *et al., Tetrahedron*, 1988, **44**, 2887-2892 (*synth, pmr*)
Irlinger, B. *et al., Angew. Chem., Int. Ed.*, 2004, **43**, 1098-1100 (*isol*)

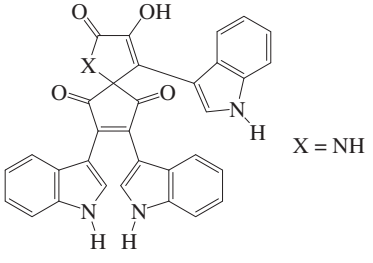
Pityriarubin A P-492



$C_{32}H_{22}N_4O_4$ 526.55
Isol. from the yeast *Malassezia furfur*. Orange-red powder. $[\alpha]_D^{25}$ -80 (c, 0.05 in MeCN). Mp >200° dec. λ_{max} 198 (log ϵ 4.46); 219 (log ϵ 4.43); 277 (log ϵ 4.04); 385 (log ϵ 3.63); 436 (log ϵ 3.68) (MeCN).

Irlinger, B. *et al., Angew. Chem., Int. Ed.*, 2004, **43**, 1098-1100 (*isol, pmr, cmr, cd*)

Pityriarubin B P-493



$C_{32}H_{20}N_4O_4$ 524.534
Isol. from the yeast *Malassezia furfur*. Orange powder. Mp 180-183° dec. λ_{max} 196 (log ϵ 4.38); 218 (log ϵ 4.34); 277 (log ϵ 4.05); 382 (log ϵ 3.55); 446 (log ϵ 3.61) (MeCN).

Irlinger, B. *et al., Angew. Chem., Int. Ed.*, 2004, **43**, 1098-1100 (*isol, pmr, cmr, ms*)

Pityriarubin C P-494

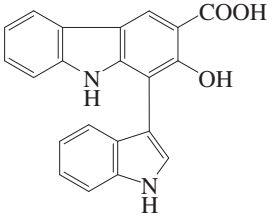
As Pityriarubin B, P-493 with X = O

$C_{32}H_{19}N_3O_5$ 525.519
Isol. from the yeast *Malassezia furfur*. Red solid. Mp 125-130° dec. λ_{max} 195 (log ϵ 4.66); 218 (log ϵ 4.6); 277 (log ϵ 4.37); 323 (sh) (log ϵ 4.08); 394 (log ϵ 3.74); 462 (log ϵ 3.83) (MeCN).

Irlinger, B. *et al., Angew. Chem., Int. Ed.*, 2004, **43**, 1098-1100 (*isol, pmr, cmr, ms*)

Pityriazole P-495

*2-Hydroxy-1-(1*H*-indol-3-yl)-9*H*-carbazole-3-carboxylic acid*
[454222-42-5]

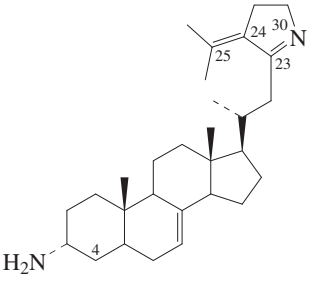


$C_{21}H_{14}N_2O_3$ 342.353
Alkaloid from the yeast *Malassezia furfur*. Amorph. solid. Mp > 250°. λ_{max} 221 (log ϵ 3.77); 279 (log ϵ 3.52); 336 (sh) (log ϵ 2.95) (MeOH).

Irlinger, B. *et al., Helv. Chim. Acta*, 2005, **88**, 1472-1485 (*isol, pmr, cmr, ms*)
Forke, R. *et al., Org. Biomol. Chem.*, 2008, **6**, 2481-2483 (*synth*)

Plakinamine A P-496

[93474-13-6]



$C_{29}H_{46}N_2$ 422.696
Alkaloid from a sponge *Plakina* sp. Active against *Staphylococcus aureus* and *Candida albicans*. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 120-130° dec. $[\alpha]_D$ +16 (c, 1.02 in $CHCl_3$). First report of a steroidal alkaloid from a marine organism. Acetylation causes rearrangement and ring opening of the pyrroline system. λ_{max} 246 (ϵ 7100) (MeOH) (Derep).

24,25-Dihydro: ***24,25-Dihydroplakinamine A***
[224576-02-7]
$C_{29}H_{48}N_2$ 424.712
Alkaloid from a *Corticium* sp. Cytotoxic agent. $[\alpha]_D$ +7.4 (c, 0.01 in $CHCl_3$/MeOH). C-24 config. not de-

termined.

23ξ,24ξ,25,30-Tetrahydro: ***Tetrahydroplakinamine A***
[454476-89-2]
$C_{29}H_{50}N_2$ 426.727
Alkaloid from a *Corticium* sp. Gum. $[\alpha]_D^{22}$ +23.2 (c, 0.19 in MeOH).

23ξ,24ξ,25,30-Tetrahydro, N^{30}*-Me:*
[224576-05-0]
$C_{30}H_{52}N_2$ 440.754
Alkaloid from a *Corticium* sp. Cytotoxic agent. $[\alpha]_D$ +23 (c, 0.02 in $CHCl_3$/MeOH).

4β-Acetoxy, 23ξ,30-dihydro, N^3*-Me:* ***Plakinamine K***
[64734-88-9]
$C_{32}H_{52}N_2O_2$ 496.775
Alkaloid from the sponge *Corticium niger*. Cytotoxic. Oil. $[\alpha]_D$ +38.4 (c, 0.25 in MeOH). λ_{max} 203 (ϵ 59200); 246 (ϵ 1200) (MeOH).

4β-Acetoxy, 23ξ,24ξ,25,30-tetrahydro, N^3*-Me:* ***Dihydroplakinamine K***
[640734-89-0]
$C_{32}H_{54}N_2O_2$ 498.791
Alkaloid from the sponge *Corticium niger*. Cytotoxic. Oil (as dihydrochloride). $[\alpha]_D$ +5.7 (c, 0.05 in MeOH) (dihydrochloride). λ_{max} 203 (ϵ 54800); 247 (ϵ 1350) (MeOH) (dihydrochloride).

3-Epimer, 4-oxo, N^3,N^3*-di-Me:* ***Plakinamine F***
[383859-60-7]
$C_{31}H_{48}N_2O$ 464.733
Alkaloid from an undescribed sponge of the genus *Corticium*. Gum. $[\alpha]_D^{25}$ +8.4 (c, 0.1 in MeOH). λ_{max} 245 (log ϵ 3.97) (MeOH).

3-Epimer, 4β-hydroxy, N^3*-Ac:* ***Lokysterolamine B***
[159934-15-3]
$C_{31}H_{48}N_2O_2$ 480.732
Alkaloid from the sponge *Corticium* sp. Immunosuppressive agent. Semicryst. solid. $[\alpha]_D^{26}$ -3.1 (c, 1.6 in $CHCl_3$). λ_{max} 247 (ϵ 8750) (MeOH) (Berdy).

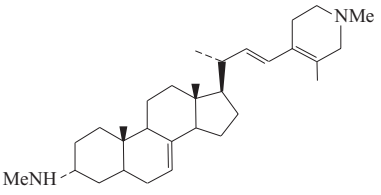
3-Epimer, 4β-hydroxy, N^3,N^3*-di-Me:* ***Lokysterolamine A***
[159934-14-2]
$C_{31}H_{50}N_2O$ 466.749
Alkaloid from an undescribed sponge of the genus *Corticium*. Immunosuppressant. Oil. $[\alpha]_D^{25}$ +17.7 (c, 0.1 in MeOH). λ_{max} 247 (log ϵ 3.91) (MeOH).

3-Epimer, 4β-hydroxy, N^3,N^3*-di-Me,* N^{30}*-oxide:* ***Plakinamine E***. *Lokysterolamine A* N^{30}*-oxide*
[383859-59-4]
$C_{31}H_{50}N_2O_2$ 482.748
Alkaloid from an undescribed sponge of the genus *Corticium*. Gum. $[\alpha]_D^{25}$ +9.3 (c, 0.2 in MeOH). λ_{max} 249 (log ϵ 3.85); 279 (sh) (log ϵ 3.56) (MeOH).

Rosser, R.M. *et al., J.O.C.*, 1984, **49**, 5157-5160 (*isol, ir, uv, pmr, cmr, struct*)
Jurek, J. *et al., J. Nat. Prod.*, 1994, **57**, 1004-1007 (*Lokysterolamines*)
De Marino, S. *et al., Eur. J. Org. Chem.*, 1999, 697-701 (*derivs*)
Lee, H.-S. *et al., J. Nat. Prod.*, 2001, **64**, 1474-1476 (*Plakinamine E, Plakinamine F*)
Borbone, N. *et al., J. Nat. Prod.*, 2002, **65**, 1206-1209 (*Tetrahydroplakinamine A*)
Ridley, C.P. *et al., J. Nat. Prod.*, 2003, **66**, 1536-1539 (*Plakinamine K, Dihydroplakinamine K*)

Plakinamine B P-497

[93474-14-7]



$C_{31}H_{50}N_2$ 450.749
Alkaloid from a marine sponge *Plakina* sp. Active against *Staphylococcus aureus* and *Candida albicans*. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 180-200° dec. (as hydrochloride). $[\alpha]_D$ +29 (c, 1.19 in MeOH). λ_{max} 241 (ϵ 2700) (MeOH) (Derep).

4α-Hydroxy, N^3*-de-Me:* ***4α-Hydroxy-N³-demethylplakinamine B***
$C_{30}H_{48}N_2O$ 452.722
Alkaloid from the sponge *Corticium* sp. Gum. $[\alpha]_D^{22}$ +6.7 (c, 0.09 in MeOH). λ_{max} 241 (log ϵ 3.8) (MeOH).

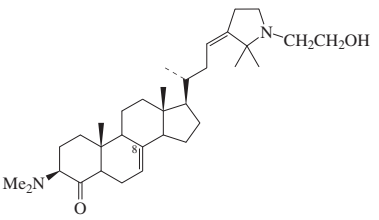
3-Epimer, 4-oxo, N^3*-Me:* ***N³-Methyl-4-oxo-3-epiplakinamine B***
$C_{32}H_{50}N_2O$ 478.76
Alkaloid from the sponge *Corticium* sp. Cytotoxic agent. $[\alpha]_D$ +35.4 (c, 0.01 in $CHCl_3$/MeOH).

3-Epimer, 4-oxo, N^{27}*-de-Me,* N^3*-Me:* ***Plakinamine H***
$C_{31}H_{48}N_2O$ 464.733
Alkaloid from a *Corticium* sp. Gum. $[\alpha]_D^{22}$ +29 (c, 0.1 in MeOH). λ_{max} 250 (log ϵ 3.77) (MeOH).

Rosser, R.M. *et al., J.O.C.*, 1984, **49**, 5157-5160 (*isol, ir, uv, pmr, cmr, struct*)
De Marino, S. *et al., Eur. J. Org. Chem.*, 1999, 697-701 (*deriv, pmr, cmr*)
Borbone, N. *et al., J. Nat. Prod.*, 2002, **65**, 1206-1209 (*4-Hydroxy-N³-demethylplakinamine B, Plakinamine H*)

Plakinamine C P-498

[224575-95-5]



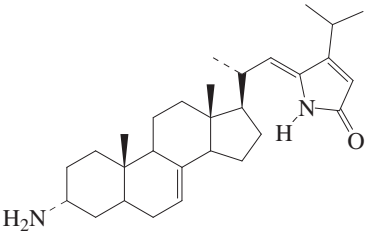
$C_{33}H_{54}N_2O_2$ 510.802
Alkaloid from the sponge *Corticium* sp. Cytotoxic agent. $[\alpha]_D$ +29.4 (c, 0.02 in $CHCl_3$/MeOH).

Δ⁸-Isomer: ***Plakinamine D***
[224575-99-9]
$C_{33}H_{54}N_2O_2$ 510.802
Alkaloid from *Corticium* sp. Cytotoxic agent. $[\alpha]_D$ +25.2 (c, 0.01 in $CHCl_3$/MeOH).

De Marino, S. *et al., Eur. J. Org. Chem.*, 1999, 697-701 (*isol, pmr, cmr*)

Plakinamine G P-499

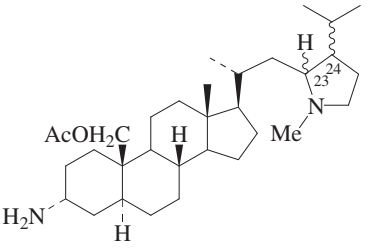
[454476-87-0]



$C_{29}H_{44}N_2O$ 436.679
Alkaloid from the sponge *Corticium* sp. Gum. $[\alpha]_D^{22}$ -24.4 (c, 0.09 in MeOH). λ_{max} 276 (log ϵ 4.11) (MeOH).

Borbone, N. *et al., J. Nat. Prod.*, 2002, **65**, 1206-1209 (*isol, pmr, cmr*)

Plakinamine I† P-500

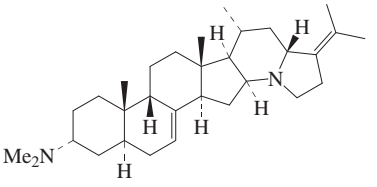


$C_{32}H_{56}N_2O_2$ 500.807
Alkaloid from the sponge *Corticium* sp. Gum. $[\alpha]_D^{25}$ -18.3 (c, 0.03 in MeOH). Rel. config. of C-23/C-24 is *trans*-.

Zampella, A. *et al., Eur. J. Org. Chem.*, 2005, 4359-4363 (*isol, pmr, cmr*)

Plakinamine I† P-501

[640734-86-7]

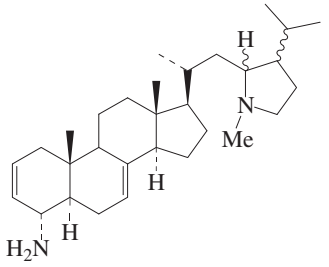


$C_{31}H_{50}N_2$ 450.749
Alkaloid from the sponge *Corticium niger*. Cytotoxic. Oil (as dihydrochloride). $[\alpha]_D$ +45.2 (c, 0.32 in MeOH) (dihydrochloride). λ_{max} 202 (ϵ 49800); 247 (ϵ 1500) (MeOH) (dihydrochloride).

Ridley, C.P. *et al., J. Nat. Prod.*, 2003, **66**, 1536-1539 (*isol, pmr, cmr*)

Plakinamine J P-502

[640734-87-8]



$C_{30}H_{50}N_2$ 438.738

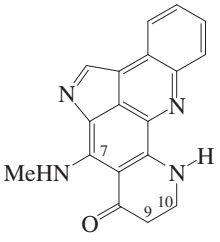
Alkaloid from the sponge *Corticium niger*. Cytotoxic. Oil (as dihydrochloride). $[\alpha]_D$ +25 (c, 0.1 in MeOH) (dihydrochloride). λ_{max} 203 (ϵ 56800); 249 (ϵ 2030) (MeOH) (dihydrochloride).

Ridley, C.P. *et al., J. Nat. Prod.*, 2003, **66**, 1536-1539 (*isol, pmr, cmr*)

Plakinidine A P-503

*10,11-Dihydro-7-(methylamino)benzo[*b*]-pyrrolo[4,3,2-*de*][1,10]phenanthrolin-8(9*H*)-one, 9CI*

[124512-44-3]



$C_{18}H_{14}N_4O$ 302.335

First reported natural pyrrolo[2,3,4-*kl*]acridines. Alkaloid from the sponge *Plakortis* sp. Exhibits *in vitro* activity against the parasite *Hippostrongylus brasiliensis* and shows weak activity against reverse transcriptase. Flat purple plates ($CHCl_3$). Fairly sol. AcOH; poorly sol. MeOH, hexane. Mp 248-250°. λ_{max} 226 (ϵ 15800); 247 (ϵ 20400); 279 (ϵ 11600); 336 (ϵ 22700); 378 (ϵ 6200); 537 (ϵ 3600) (MeOH) (Derep).

N^7-*Me:* ***Plakinidine B***

[124512-45-4]

$C_{19}H_{16}N_4O$ 316.362

Alkaloid from the sponge *Plakortis* sp. Exhibits *in vitro* activity against the parasite *Nocardia brasiliensis*. Reverse transcriptase inhibitor. Purple oil. Fairly sol. AcOH; poorly sol. MeOH, hexane. λ_{max} 226 (ϵ 13800); 248 (ϵ 17500); 283 (ϵ 9100); 347 (ϵ 19700); 383 (ϵ 4700); 544 (ϵ 4000) (MeOH) (Derep).

9,10-Didehydro: ***Plakinidine C***

[129744-15-6]

$C_{18}H_{12}N_4O$ 300.319

Alkaloid from the sponge *Plakortis* sp. Cytotoxic, anthelmintic. Reverse transcriptase inhibitor. λ_{max} 244 (ϵ 42800); 254 (ϵ 39100); 323 (ϵ 25200); 370 (ϵ 10900); 508 (ϵ 13800); 541 (ϵ 11400) (MeOH) (Derep).

N^7-*De-Me:* ***Plakinidine D***

[197234-19-8]

$C_{17}H_{12}N_4O$ 288.308

Alkaloid from *Didemnum rubeum* and an unidentified *Didemnum* sp. Dark red solid. λ_{max} 250 (ϵ 4770); 282 (ϵ 3500); 328 (ϵ 2980); 388 (ϵ 1940); 436 (ϵ 820); 514 (ϵ 926) ($CHCl_3$/MeOH).

Inman, W.D. *et al., J.A.C.S.*, 1990, **112**, 1 (*isol, pmr, cmr, ms, struct*)

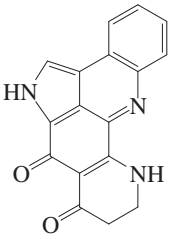
West, R.R. *et al., Tet. Lett.*, 1990, **31**, 3271 (*isol, uv, ir, pmr, cmr, struct*)

Smith, C.J. *et al., J. Nat. Prod.*, 1997, **60**, 1048-1050 (*Plakinidine D*)

Ford, P.W. *et al., J. Nat. Prod.*, 1997, **60**, 1051-1053 (*Plakinidine D*)

Plakinidine E P-504

[928673-36-3]



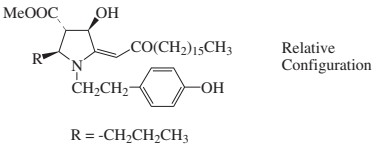
$C_{17}H_{11}N_3O_2$ 289.293

Alkaloid from *Plakortis quasiamphiaster*. Dark red-purple solid.

Ralifo, P. *et al., J. Nat. Prod.*, 2007, **70**, 95-99 (*isol, pmr, cmr*)

Plakoridine A P-505

[155944-28-8]



R = -$CH_2CH_2CH_3$

$C_{35}H_{57}NO_5$ 571.839

Alkaloid from the Okinawan marine sponge *Plakortis* sp. Weakly cytotoxic against murine lymphoma L1210 cells *in vitro*. Oil. $[\alpha]_D^{19}$ -0.4 (c, 0.5 in $CHCl_3$). λ_{max} 317 (ϵ 22000) (MeOH) (Derep).

Takeuchi, S. *et al., J.O.C.*, 1994, **59**, 3712-3713 (*isol, uv, ir, pmr, cmr, ms*)

Ma, D. *et al., Tet. Lett.*, 2000, **41**, 1947-1950 (*synth*)

Etchells, L.L. *et al., Tetrahedron*, 2006, **62**, 10914-10927 (*synth*)

Plakoridine B P-506

[164415-61-6]

As Plakoridine A, P-505 with

R = -$(CH_2)_{14}CH_3$

$C_{47}H_{81}NO_5$ 740.161

Alkaloid from an Okinawan sponge *Plakortis* sp. Oil. λ_{max} 224 (ϵ 12200); 318 (ϵ 16000) (MeOH).

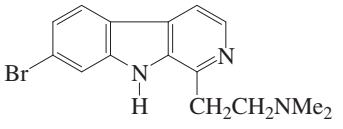
Takeuchi, S. *et al., Tetrahedron*, 1995, **51**, 5979-5986 (*isol, pmr, cmr*)

Etchells, L.L. *et al., Tetrahedron*, 2006, **62**, 10914-10927 (*synth*)

Plakortamine A P-507

*7-Bromo-*N,N*-dimethyl-9*H*-pyrido[3,4-*b*]indole-1-ethanamine. 7-Bromo-1-[2-(dimethylamino)ethyl]-β-carboline*

[467419-71-2]



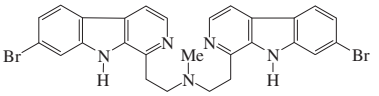
$C_{15}H_{16}BrN_3$ 318.216

Alkaloid from the sponge *Plakortis nigra*. Cytotoxic. Pale yellow oil. λ_{max} 243 (ϵ 20000); 295 (ϵ 11700) (MeOH).

Sandler, J.S. *et al., J. Nat. Prod.*, 2002, **65**, 1258-1261 (*isol, pmr, cmr*)

Plakortamine C P-508

[467419-73-4]

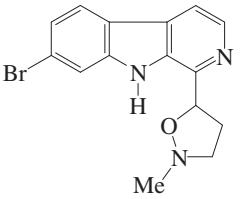


$C_{27}H_{23}Br_2N_5$ 577.32

Alkaloid from the sponge *Plakortis nigra*. Cytotoxic. Pale yellow gum. λ_{max} 243 (ϵ 57400); 296 (ϵ 29000) (MeOH).

Sandler, J.S. *et al., J. Nat. Prod.*, 2002, **65**, 1258-1261 (*isol, pmr, cmr*)

Plakortamine D P-509



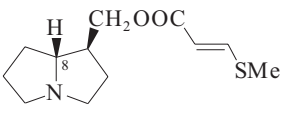
$C_{15}H_{14}BrN_3O$ 332.199

(ξ)-*form* [467419-74-5]

Alkaloid from the sponge *Plakortis nigra*. Cytotoxic agent. Pale yellow oil. $[\alpha]_D$ -2.1 (c, 0.6 in MeOH). λ_{max} 243 (ϵ 26600); 296 (ϵ 14700) (MeOH).

Sandler, J.S. *et al., J. Nat. Prod.*, 2002, **65**, 1258-1261 (*isol, pmr, cmr*)

Planchonelline P-510



$C_{12}H_{19}NO_2S$ 241.354

Ester of laburnine with 3-(Methylthio)-2-propenoic acid, M-577. A major alkaloid from the leaves of *Planchonella thyrsoidea*

(preferred genus name *Pouteria*) and *Planchonella anteridifera* (Sapotaceae). Oil. $[\alpha]_D$ +9 (c, 0.85 in EtOH).

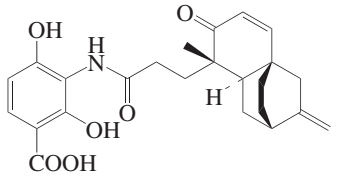
8-Epimer: ***Isoretronecyl* trans-*β*-methylthioacrylate**
$C_{12}H_{19}NO_2S$ 241.354
Alkaloid from leaves of an unidentified *Planchonella* sp. (Sapotaceae). Pale yellow oil. $[\alpha]_D$ -57.2 (c, 1.52 in EtOH). Ester of isoretronecanol with 3-(Methylthio)-2-propenoic acid, M-577.

8-Epimer, picrate:
Yellow needles (EtOH). Mp 111-113°.

Hart, N.K. *et al., Aust. J. Chem.*, 1966, **19**, 1259; 1968, **21**, 1393 (*isol, uv, ir, struct, synth*)

Platencin P-511

[869898-86-2]



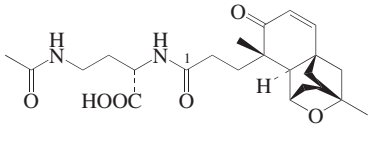
$C_{24}H_{27}NO_6$ 425.48

Closely related to Platensimycin, P-513. The abs. config. is prob. as shown. Prod. by *Streptomyces platensis* MA 7339. FabH and FabF dual inhibitor. Broad spectrum antibiotic. Amorph. powder. $[\alpha]_D^{23}$ -7 (c, 0.85 in MeOH). λ_{max} 226 (ϵ 16840); 296 (ϵ 2660) (MeOH).

Jayasuriya, H. *et al., Angew. Chem., Int. Ed.*, 2007, **46**, 4684-4688 (*isol, pmr, cmr, ms*)
Wang, J. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 2007, **104**, 7612-7616 (*isol, activity*)
Nicolaou, K.C. *et al., Angew. Chem., Int. Ed.*, 2008, **47**, 1780-1783 (*synth*)
NIcolaou, K.C. *et al., J.A.C.S.*, 2008, **130**, 11292-11293; 14016 (*synth*)
Austin, K.A.B. *et al., Org. Lett.*, 2008, **10**, 4465-4468 (*synth*)
Herath, K. *et al., Tet. Lett.*, 2008, **49**, 5755-5758 (*biosynth*)

Platensimide A P-512

[1022904-20-6]



$C_{23}H_{32}N_2O_6$ 432.516
Prod. by *Streptomyces platensis* MA7327. Gum. $[\alpha]_D^{23}$ +29.2 (c, 1.3 in MeOH). λ_{max} 230 (ϵ 4867) (MeOH).

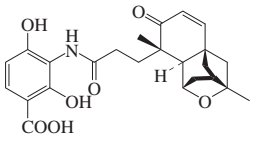
1-Parent acid: ***Platensic acid***
[1023284-62-9]
$C_{17}H_{22}O_4$ 290.358
Prod. by *Streptomyces platensis* MA7327. Amorph. powder. $[\alpha]_D^{23}$ -30 (c, 1.5 in MeOH). λ_{max} 234 (ϵ 8405) (MeOH).

1-Parent acid, Me ester: ***Methyl platensinoate***
[1022904-19-3]
$C_{18}H_{24}O_4$ 304.385
Prod. by *Streptomyces platensis* MA7327. Gum. $[\alpha]_D^{23}$ -26.6 (c, 3.5 in MeOH). λ_{max} 234 (ϵ 10078) (MeOH).

Herath, K.B. *et al., Org. Lett.*, 2008, **10**, 1699-1702 (*isol, pmr, cmr*)

Platensimycin P-513

[835876-32-9]



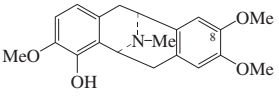
Absolute Configuration

$C_{24}H_{27}NO_7$ 441.48
Prod. by *Streptomyces platensis* isol. from soil. Inhibitor of cellular lipid biosynth. Active against gram-positive bacteria incl. MRSA. Cryst. ($MeNO_2$). Mp 220-222°. $[\alpha]_D^{23}$ -51.1 (c, 0.135 in MeOH). λ_{max} 227 (ϵ 28167); 240 (sh) ; 296 (ϵ 4825) (MeOH).

Singh, S.B. *et al., J.A.C.S.*, 2006, **128**, 11916-11920; 15547 (*isol, struct, abs config*)
Wang, J. *et al., Nature (London)*, 2006, **441**, 358-361 (*isol, pmr, cmr, cryst struct*)
Nicolaou, K.C. *et al., Angew. Chem., Int. Ed.*, 2007, **46**, 3942-3945; 2008, **47**, 944-946 (*synth*)
Nicolaou, K.C. *et al., Chem. Comm.*, 2007, 1922-1923 (*synth*)
Zou, Y. *et al., Org. Lett.*, 2007, **9**, 1825-1828 (*synth*)
Matsuo, J. *et al., Org. Lett.*, 2008, **10**, 4049-4052 (*synth*)

Platycerine P-514

5,6,11,12-Tetrahydro-3,8,9-trimethoxy-13-methyldibenzo[a,e]cycloocten-5,11-imin-4-ol, 9CI. 1-Hydroxy-2,8,9-trimethoxypavinane



(-)-*form*

$C_{20}H_{23}NO_4$ 341.406

(-)-form [18826-68-1]
Alkaloid from the above-ground parts of *Argemone gracilenta*, the roots and above-ground parts of *Argemone platyceras*, and the tops of *Thalictrum revolutum* (Papaveraceae, Ranunculaceae). Cryst. (Et_2O). $[\alpha]_D^{21}$ -267 (c, 0.24 in $CHCl_3$). $[\alpha]_D^{28}$ -305 (c, 0.2 in MeOH).

Picrate: Mp 155-160°.

N-*Me:* ***Platycerine* N-*methosalt***
$C_{21}H_{26}NO_4^{\oplus}$ 356.441
Quaternary alkaloid from the aerial parts of *Argemone platyceras* (Papaveraceae). Cryst. (MeOH)(as chloride). Mp 165° (chloride). $[\alpha]_D^{25}$ -258 (c, 0.47 in MeOH).

Me ether: **O-*Methylplatycerine***. O,O-*Dimethylmunitagine*
[7688-85-9]
$C_{21}H_{25}NO_4$ 355.433
Alkaloid from *Argemone platyceras*. Cryst. (Et_2O/pentane). Mp 124-125.5°. $[\alpha]_D^{27}$ -292 (c, 0.35 in $CHCl_3$).

O^8-*De-Me: 1,8-Dihydroxy-2,9-dimethoxypavinane.* ***Munitagine***
[7691-07-8]
Alkaloid from the above-ground parts of *Argemone gracilenta* and *Argemone munita* var. *rotundata* (Papaveraceae). Needles (MeOH/Et_2O). Mp 167-169°. $[\alpha]_D^{27}$ -239 (c, 0.5 in $CHCl_3$). Has also been named as 2,7-dihydroxy-3,8-dimethoxy.

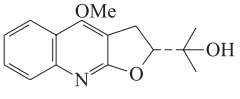
(±)-form [38863-79-5]
Synthetic. Noncryst.

O^8-*De-Me:* [55903-28-1]
Synthetic. Powder (MeOH/Et_2O). Mp not recorded.

Slavḱ, J. *et al., Coll. Czech. Chem. Comm.*, 1963, **28**, 1728 (*isol, uv, ir*)
Stermitz, F.R. *et al., J.O.C.*, 1966, **31**, 2925; 1969, **34**, 555; 1973, **38**, 1761 (*Munitagine, Platycerine, isol, pmr, ms, synth, struct*)
Slavḱ, J. *et al., Coll. Czech. Chem. Comm.*, 1973, **38**, 2513; 1976, **41**, 285 (*Platycerine, Platycerine N-methosalt, isol, uv, ir, ms, synth, struct*)
Stermitz, F.R. *et al., Indian J. Chem.*, 1974, **12**, 1249 (*Munitagine, synth, uv*)
Wu, J. *et al., J. Nat. Prod.*, 1977, **40**, 593; 1980, **43**, 270 (*Platycerine, isol, uv, cd, pmr*)
Israilov, I.A. *et al., Khim. Prir. Soedin.*, 1986, **22**, 204-206; *Chem. Nat. Compd. (Engl. Transl.)*, 1986, **22**, 189-192 (*O-Methylplatycerine*)
Lee, S.S. *et al., J. Nat. Prod.*, 1999, **62**, 803-810 (*Munitagine, ed, pmr, cmr*)

Platydesmine P-515

2,3-Dihydro-4-methoxy-α,α-dimethylfuro[2,3-b]quinoline-2-methanol, 9CI



(*R*)–*form*

$C_{15}H_{17}NO_3$ 259.304
Absolute configuration revised in 2000.

(R)-form [318465-89-3]
Alkaloid from the leaves of *Choisya ternata*. Mp 137-138°. $[\alpha]_D$ -47 (c, 0.76 in MeOH).

N-*Me:*
$C_{16}H_{20}NO_3^{\oplus}$ 274.339
Alkaloid from the leaves, roots and stems of *Choisya ternata*. Mp 180° (as perchlorate). $[\alpha]_D$ -24.3 (c, 0.11 in MeOH) (perchlorate).

(S)-form [2824-86-4]
Alkaloid from *Platydesma campanulata, Geijera salicifolia* and *Zanthoxylum belizense* (Rutaceae). Needles (C_6H_6/petrol). Mp 137-138°. $[\alpha]_D$ +47 (c, 0.7 in MeOH).

Ac: **O-*Acetylplatydesmine***
$C_{17}H_{19}NO_4$ 301.341
Minor alkaloid from the leaves of *Geijera salicifolia* (Rutaceae). Prisms (Me_2CO/Et_2O). Mp 126-127°. $[\alpha]_D^{23}$ +23 (c, 1.8 in $CHCl_3$).

N-*Me:* ***Platydesminium***
$C_{16}H_{20}NO_3^{\oplus}$ 274.339
Alkaloid from *Skimmia japonica*, *Ruta*

graveolens (rue) and many other Rutaceae spp. Mp 192-196° (as chloride). $[\alpha]_D$ +31 (c, 0.74 in MeOH) (as iodide).

(±)-*form* [7764-73-0]
Alkaloid from the leaves of *Melicope perspicuinervia* (Rutaceae). Plates (C_6H_6/petrol). Mp 137-138°.

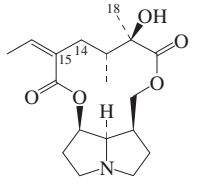
Ac:
Synthetic. Needles (C_6H_6). Mp 126-127°.

N-*Me:*
Prisms (MeOH/diisopropyl ether). Mp 156-158° dec.

Wernhey, F. *et al., Tetrahedron*, 1963, **19**, 1293 (*isol, struct, ir, uv, ms*)
Johns, S.R. *et al., Aust. J. Chem.*, 1966, **19**, 1991 (*isol, pmr*)
Bowman, R.M. *et al., J.C.S.(C)*, 1966, 1504 (*synth, pmr*)
Murphy, S.T. *et al., Aust. J. Chem.*, 1974, **27**, 187 (*isol*)
Rideau, M. *et al., Phytochemistry*, 1979, **18**, 155 (*isol, ms*)
Ramesh, M. *et al., Heterocycles*, 1984, **22**, 125 (*synth, ir, pmr*)
Boyd, D.R. *et al., J.C.S. Perkin 1*, 2000, 3397-3405 (*synth, abs config*)
Boyd, D.R *et al., Org. Biomol. Chem.*, 2007, **5**, 2983-2991 (*isol*)

Platyphylline P-516

1,2-Dihydro-12-hydroxysenecionan-11,16-dione, 9CI. Platifillin
[480-78-4]



Absolute Configuration

$C_{18}H_{27}NO_5$ 337.415
Alkaloid from *Senecio platyphyllus*, *Senecio adnatus*, *Senecio hygrophyllus*, other *Senecio* spp., *Adenostyles* spp. (preferred genus name *Cacalia*) and *Petasites laevigatus* (Asteraceae). Shows atropine-like activity. Antispasmodic, mydriatic agent. Has been used in the USSR for treatment of gastrointestinal hypermotility and peptic ulceration. Used as tartrate. Needles (H_2O). Spar. sol. hot H_2O, petrol. Mp 129° (124-125°). $[\alpha]_D$ -56 ($CHCl_3$). $[\alpha]_D$ -59 (EtOH). Log P 0.45 (uncertain value) (calc). Rel. nontoxic; lacks hepatotoxicity of other pyrrolizidine alkaloids.
► LD_{50} (rat, ipr) 252 mg/kg. TP2518000

Methiodide:
Needles (EtOH). Mp 216-217°. $[\alpha]_D$ -31.3.

N-*Oxide:* ***Platyphylline* N-*oxide***
$C_{18}H_{27}NO_6$ 353.414
Alkaloid from *Senecio* spp. The form in which Platyphylline is present in *Senecio hygrophyllus*, and propably in other spp. (Asteraceae). Mp 180-181°. $[\alpha]_D$ -44.6 ($CHCl_3$). $[\alpha]_D$ -59 (H_2O).

1α-Hydroxy: ***Hadiensine***
$C_{18}H_{27}NO_6$ 353.414
Alkaloid from *Senecio hadiensis* (Asteraceae). Gum; cryst. (MeOH/EtOH)(as perchlorate). Mp 279-280° (perchlorate). $[\alpha]_D$ -83 (c, 1.6 in MeOH).

1α-Hydroxy, 12-Ac: ***12*-O-*Acetylhadiensine***
$C_{20}H_{29}NO_7$ 395.452
Alkaloid from *Senecio hadiensis* (Asteraceae). Gum.

14α-Hydroxy: ***Hygrophylline***
[3573-82-8]
$C_{18}H_{27}NO_6$ 353.414
Alkaloid from *Senecio hygrophyllus* (Asteraceae). Prisms (Me_2CO). Mp 176° (173-174°). $[\alpha]_D^{20}$ -67.3 (c, 2.9 in EtOH). Hydrol. gives platynecine and hygrophyllinecic acid.

18-Hydroxy: ***Dihydroretrorsine***
$C_{18}H_{27}NO_6$ 353.414
Alkaloid from the roots of *Senecio subulatus* var. *erectus* (Asteraceae). Needles ($CHCl_3$/MeOH). Mp 62-63°. $[\alpha]_D^{20}$ -2.68 (c, 0.078 in $CHCl_3$).

2α,18-Dihydroxy: ***Petitianine***
[137760-49-7]
$C_{18}H_{27}NO_7$ 369.414
Alkaloid from *Senecio hadiensis* (Asteraceae). Powder (MeOH). Mp 207-209°. $[\alpha]_D$ -60 (c, 0.5 in MeOH).

(15E)-Isomer: ***Neoplatyphylline***
[20361-76-6]
$C_{18}H_{27}NO_5$ 337.415
Alkaloid from *Senecio platyphyllus* and *Senecio rhombifolius* (Asteraceae). Mp 131-133°. $[\alpha]_D$ +1.95.

(15E)-Isomer, N-*oxide:* ***Neoplatyphylline* N-*oxide***
[153323-56-9]
$C_{18}H_{27}NO_6$ 353.414
Alkaloid from roots of *Cacalia hupehensis* (Asteraceae).

(15E)-Isomer, 1α-hydroxy, 12-Ac: ***12*-O-*Acetylneohadiensine***
$C_{20}H_{29}NO_7$ 395.452
Alkaloid from *Senecio hadiensis* (Asteraceae). Pale yellow oil.

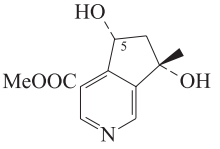
12-Epimer: ***Ligularinine***
[90364-90-2]
$C_{18}H_{27}NO_5$ 337.415
Alkaloid from the roots of *Ligularia dentata* (Asteraceae). Prisms (Et_2O). Mp 103-104°. $[\alpha]_D^{24}$ -88 (c, 0.82 in $CHCl_3$).

[1257-59-6]

Richardson, M.F. *et al., J.C.S.*, 1943, 452 (*isol, Hygrophylline*)
Koekemoer, M.J. *et al., J.C.S.*, 1951, 66; 1955, 63 (*isol, oxide, struct*)
Warren, F.L. *et al., Prog. Chem. Org. Nat. Prod.*, 1955, **12**, 198 (*bibl, Platyphylline*)
Schlosser, F.D. *et al., J.C.S.*, 1965, 5707 (*isol, struct, Hygrophylline*)
Culvenor, C.C.J. *et al., Aust. J. Chem.*, 1968, **21**, 1671 (*Neoplatyphylline*)
Aasen, A.J. *et al., J.O.C.*, 1969, **34**, 4137 (*struct, pmr*)
Hrbek, J. *et al., Coll. Czech. Chem. Comm.*, 1972, **37**, 3918 (*cd*)
Abdullaev, U.A. *et al., Khim. Prir. Soedin.*, 1974, **10**, 538 (*ms*)
Drewes, S.E. *et al., J.C.S. Perkin 1*, 1981, 287 (*cmr*)
Jones, A.J. *et al., Aust. J. Chem.*, 1982, **35**, 1173 (*cmr*)
Molyneux, R.J. *et al., Phytochemistry*, 1982, **21**, 439 (*cmr*)
Asada, Y. *et al., Chem. Pharm. Bull.*, 1984, **32**, 475 (*Ligularinine*)
Mackay, M.F. *et al., Acta Cryst. C*, 1985, **41**, 395 (*cryst struct, Hygrophylline*)
Pestchanker, M.J. *et al., Planta Med.*, 1985, 165 (*Dihydroretrorsine*)
Mattocks, A.R. *et al., Chemistry and Toxicology of Pyrrolizidine Alkaloids*, Academic Press, 1986, 318 (*pharmacol*)
Were, O. *et al., J. Nat. Prod.*, 1991, **54**, 491; 1415 (*Hadiensine, Petitianine*)
Miao, Z. *et al., Bopuxue Zazhi*, 1993, **10**, 55; *CA*, **120**, 164605y (*Neoplatyphylline N-oxide*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 431

Plectrodorine P-517

[123085-04-1]



Relative configuration

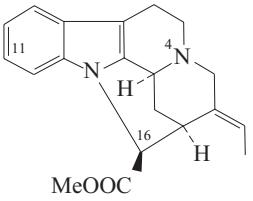
$C_{11}H_{13}NO_4$ 223.228
Alkaloid from aerial parts of *Plectronia odorata* (preferred genus name *Olinia*) (Oliniaceae). Noncryst. $[\alpha]_D^{20}$ 0 (c, 1 in MeOH).

5-Epimer: ***Isoplectrodorine***
[123164-26-1]
$C_{11}H_{13}NO_4$ 223.228
Alkaloid from aerial parts of *Plectronia odorata* (Oliniaceae). Noncryst. $[\alpha]_D^{20}$ 0 (c, 1 in MeOH). Rel. config.

Gournelis, D. *et al., J. Nat. Prod.*, 1989, **52**, 306-316 (*isol, uv, ir, pmr, ms*)
Ohba, M. *et al., Chem. Pharm. Bull.*, 2006, **54**, 63-67 (*synth, bibl*)

Pleiocarpamine P-518

Methyl 19,20-didehydro-1,16-cyclocorynan-17-oate, 9CI
[6393-66-4]



$C_{20}H_{22}N_2O_2$ 322.406
Alkaloid from *Pleiocarpa mutica, Pleiocarpa pycnantha, Pleiocarpa tubicina*, *Kopsia dasyrachis* some *Alstonia* spp. and some other spp. in Apocynaceae. Also from *Hunteria eburnea* bark. Cryst. (Et_2O). Mp 164-165°. $[\alpha]_D^{20}$ +152.5 (c, 0.04 in $CHCl_3$). pK_a 7.3. λ_{max} 230 (ε 29600); 285 (ε 8200); 294 (sh) (ε 6700) (EtOH).

N^4-*Me:* **N-*Methylpleiocarpamine***
[2574-48-3]
$C_{21}H_{25}N_2O_2^{\oplus}$ 337.441
Alkaloid from *Hunteria eburnea* (Apocynaceae). Mp 242-243° dec. (as

chloride). $[\alpha]_D$ +165 (c, 0.5 in MeOH aq.). λ_{max} 223 (log ϵ 4.47); 274 (log ϵ 3.92); 283 (sh) (log ϵ 3.87); 292 (sh) (log ϵ 3.75) (EtOH).

11-Hydroxy: ***11-Hydroxypleiocarpamine***
[32101-16-9]
$C_{20}H_{22}N_2O_3$ 338.405
Alkaloid from *Vinca erecta* (Apocynaceae). Cryst. (Me_2CO). Mp 228-229°. $[\alpha]_D^{30}$ +71 (c, 0.7 in MeOH). λ_{max} 233 (log ϵ 4.25); 285 (log ϵ 3.64) (no solvent reported).

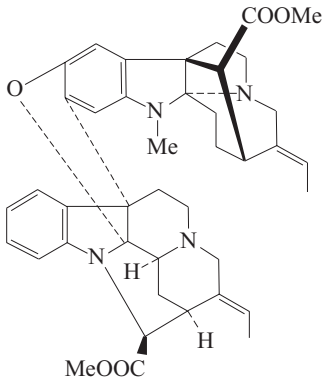
16-Epimer, N^4*-oxide:* ***Epipleiocarpamine N^4-oxide***
[69930-64-9]
$C_{20}H_{22}N_2O_3$ 338.405
Alkaloid from the leaves of *Vinca minor* (Apocynaceae). Amorph.; cryst. (EtOH) (as tartrate salt). Mp 150-153° (tartrate). $[\alpha]_D^{23}$ +4.5 (c, 1 in MeOH) (tartrate).

16-Hydroxymethyl: 16-Hydroxymethylpleiocarpamine
[180869-66-3]
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from stem bark of *Kopsia deverrei*. $[\alpha]_D^{20}$ +115 (c, 0.35 in $CHCl_3$). λ_{max} 227 (log ϵ 4.29); 284 (log ϵ 3.79) (EtOH).

Kump, W.G. *et al., Helv. Chim. Acta*, 1961, **44**, 1503-1516 (*isol, uv*)
Bartlett, M.F. *et al., J.O.C.*, 1963, **28**, 2197-2199 (*isol, uv*)
Hesse, M. *et al., Helv. Chim. Acta*, 1964, **47**, 878-911 (*uv, ir, pmr, ms, struct*)
Il'yasova, Kh.T. *et al., Khim. Prir. Soedin.*, 1970, **6**, 717-719; *Chem. Nat. Compd. (Engl. Transl.)*, 728-729 (*11-Hydroxypleiocarpamine*)
Burnell, R.H. *et al., Can. J. Chem.*, 1974, **52**, 2327-2330 (*N-Methylpleiocarpamine*)
Votický, Z. *et al., Coll. Czech. Chem. Comm.*, 1979, **44**, 123-127 (*Epipleiocarpamine N-oxide*)
Kan, C. *et al., Nat. Prod. Lett.*, 1995, **7**, 275-281 (*16-Hydroxymethylpleiocarpamine*)
Keawpradab, N. *et al., Planta Med.*, 1997, **63**, 97-101 (*isol, pmr, cmr*)

Pleiocorine, 9CI P-519

[55732-60-0]



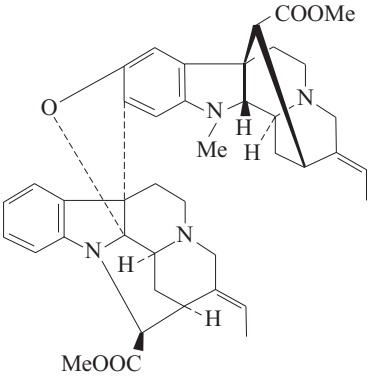
$C_{41}H_{46}N_4O_5$ 674.838
Alkaloid from the stems and leaves of *Alstonia deplanchei* and from the leaves of *Alstonia odontophora* (Apocynaceae). $[\alpha]_D^{22}$ +142 (c, 1.04 in $CHCl_3$). Dec. slowly above 300° without melting.

N-*De-Me:* **N-*Demethylpleiocorine***
[74045-65-1]
$C_{40}H_{44}N_4O_5$ 660.811
Isol. from the leaves of *Alstonia odontophora* (Apocynaceae). Amorph. $[\alpha]_D$ +80 (c, 1.0 in $CHCl_3$).

Das, B.C. *et al., Tet. Lett.*, 1974, 4299 (*uv, ir, pmr, cmr, ms, struct*)
Vercauteren, J. *et al., Phytochemistry*, 1979, **18**, 1729 (*deriv*)

Pleiocraline, 9CI P-520

[62509-84-6]

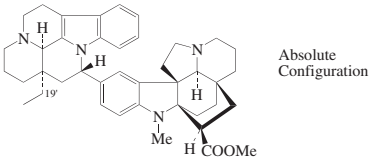


$C_{41}H_{46}N_4O_5$ 674.838
Alkaloid from *Alstonia deplanchei* and the leaves of *Alstonia odontophora* (Apocynaceae). Plates (MeOH). $[\alpha]_D^{20}$ +124 (c, 1 in $CHCl_3$). Dec. >300°. Stereochem. of interunit link not proven.

Das, B.C. *et al., J.O.C.*, 1977, **42**, 2785-2786 (*ir, uv, pmr, cmr, ms, struct*)
Vercauteren, J. *et al., Phytochemistry*, 1979, **18**, 1729 (*isol*)

Pleiomutine P-521

Methyl 15-(14,15-dihydroburnamenin-14-yl)-1-methylaspidofractinine-3-carboxylate, 9CI
[5263-34-3]



$C_{41}H_{50}N_4O_2$ 630.872
Minor alkaloid from *Pleiocarpa mutica* and from *Kopsia dasyrachis*. Cryst. ($MeOH/CHCl_3$). Mp 225° dec. $[\alpha]_D^{26}$ -111 (c, 1.93 in $CHCl_3$). Thomas and Lavaud show the wrong abs. config. of the pleiocarpinine half of the molecule. λ_{max} 230 (log ϵ 4.5); 263 (log ϵ 4.2); 285 (log ϵ 3.97); 292 (log ϵ 3.97) (MeOH).

Dipicrate:
Cryst. (2-propanol/Me_2CO or Me_2CO/Et_2O). Dec. >230° without melting.

N-*De-Me:* ***Norpleiomutine***. *Kopsoffine*
[82529-52-0]
[89783-67-5]
$C_{40}H_{48}N_4O_2$ 616.845
Alkaloid from the stem bark of *Hunteria zeylanica* and from *Kopsia dasyrachis* and *Kopsia officinalis* (Apocynaceae). Amorph. Mp 240°. $[\alpha]_D$ -65 (c, 0.5 in $CHCl_3$). $[\alpha]_D$ +4 (c, 1.1 in $CHCl_3$). MP. and lower opt. rotn. refer to Kopsoffine. Higher opt. rotn. refers to Norpleiomutine, descr. as amorph.

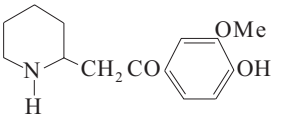
N-*De-Me, parent acid:* [96935-24-9]
$C_{39}H_{46}N_4O_2$ 602.818
Alkaloid from the stem bark of *Kopsia pauciflora* (Apocynaceae). Cryst. (Me_2CO). Mp 260°. $[\alpha]_D^{20}$ -130 (c, 0.54 in $CHCl_3$).

19′ξ-Hydroxy, N-*de-Me:* ***Kopsoffinol***
[96935-25-0]
$C_{40}H_{48}N_4O_3$ 632.844
Alkaloid from the stem-bark of *Kopsia pauciflora* and *Kopsia dasyrachis* (Apocynaceae). Cryst. (Me_2CO). Mp 250°. $[\alpha]_D^{20}$ +21.1 (c, 1 in $CHCl_3$).

Kump, W.G. *et al., Helv. Chim. Acta*, 1961, **44**, 1503-1516 (*isol, uv*)
Hesse, M. *et al., Helv. Chim. Acta*, 1966, **49**, 964-974 (*ms, struct, synth*)
Thomas, D.W. *et al., J.A.C.S.*, 1966, **88**, 1537-1544 (*isol, uv, ir, pmr, ms, struct, synth*)
Lavaud, C. *et al., Phytochemistry*, 1982, **21**, 445-447 (*isol, uv, ir, pmr, ms, struct, Norpleiomutine*)
Feng, X.Z. *et al., J. Nat. Prod.*, 1984, **47**, 117-122 (*Kopsoffine*)
Magnus, P. *et al., Chem. Comm.*, 1985, 184-188 (*Norpleiomutine*)
Kan-Fan, C. *et al., J. Nat. Prod.*, 1985, **48**, 124-127 (*Kopsoffinol, N-de-Me parent acid*)
Kam, T.-S. *et al., Phytochemistry*, 1999, **51**, 159-169 (*Kopsoffine, isol, pmr, cmr*)

Pleurospermine P-522

1-(4-Hydroxy-3-methoxyphenyl)-2-(2-piperidinyl)ethanone, 9CI. 4′-Hydroxy-3′-methoxy-2-(2-piperidyl)acetophenone, 8CI. 2-(4-Hydroxy-3-methoxyphenacyl)-piperidine
[7363-20-4]



$C_{14}H_{19}NO_3$ 249.309
Alkaloid from leaves of *Cryptocarya pleurosperma* (Lauraceae). Prob. a biosynth. precursor of Cryptopleurine, the bark alkaloid. Cryst. (H_2O). Mp 177° dec. $[\alpha]_D$ +44. pK_a 8 (50% EtOH aq.). The positive opt. rotn. reported could not be substantiated. On reexamination, the original isolate was found to be racemic, and only racemic Pleurospermine could be obt. from fresh plant. This could however, be a case of v. ready racemisation (cf. Pelletierine, P-173).

Hydrochloride:
Cryst. (EtOH). Mp 219-220°.

Picrate:
Cryst. (Me_2CO). Mp 166° dec. Dec. from 150°.

Me ether: ***3,4-Dimethoxy-ω-(2-piperidyl)acetophenone***
[23837-54-9]

$C_{15}H_{21}NO_3$ 263.336
Alkaloid from *Boehmeria cylindrica* var. *drummondii, Boehmeria platyphylla* and *Boehmeria cylindrica* (Urticaceae). Shows strong activity against *Candida albicans*. Needles (Me_2CO). Poorly sol. hexane. Mp 81-82°. Opt. inactive.

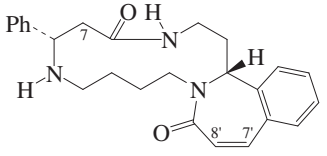
2′-Methoxy: 4′-Hydroxy-2′,3′-dimethoxy-2-(2-piperidyl)acetophenone. ***Caulophyllumine A***
$C_{15}H_{21}NO_4$ 279.335
Alkaloid from the roots of *Caulophyllum thalictroides* (blue cohosh). Brown powder. $[\alpha]_D^{28}$ -11.6 (c, 0.27 in MeOH). Possesses (*S*)-config. λ_{max} 280 (log ϵ 3.04) (MeOH).

Demethoxy, N-*Me: 4′-Hydroxy-2-(1-methylpiperidin-2-yl)acetophenone.* ***Thalictroidine***
[248259-06-5]
$C_{14}H_{19}NO_2$ 233.31
Alkaloid from the rhizomes of *Caulophyllum thalictroides* (blue cohosh). Glassy solid.

Gellert, E. *et al., Aust. J. Chem.*, 1959, **12**, 90-96 (*isol, ir*)
Loder, J.W. *et al., Aust. J. Chem.*, 1962, **15**, 296-300 (*synth, struct*)
Hart, N.K. *et al., Aust. J. Chem.*, 1968, **21**, 1397-1398; 1969, **22**, 1805-1807 (*Me ether, isol, pmr, struct*)
Al-Shamma, A. *et al., Phytochemistry*, 1982, **21**, 485-487 (*Me ether, isol, pharmacol*)
Kennelly, E.J. *et al., J. Nat. Prod.*, 1999, **62**, 1385-1389 (*Thalictroidine*)
Ali, Z. *et al., Phytochemistry*, 2008, **69**, 1037-1042 (*Caulophyllumine A*)

Pleurostyline P-523

*2,3,6,7,8,9,10,11-Octahydro-6-phenyl-1*H*-[1,5,9]triazacyclotridecino[2,1-*a*][2]benzazepine-4,13(5*H*,19*bH*)-dione, 9CI*
[67257-79-8]



Probable Absolute Configuration

$C_{25}H_{29}N_3O_2$ 403.523
Alkaloid from *Pleurostylia africana* (Celastraceae). Mp 246-247°. $[\alpha]_D^{25}$ -194 (c, 0.825 in $CHCl_3$).

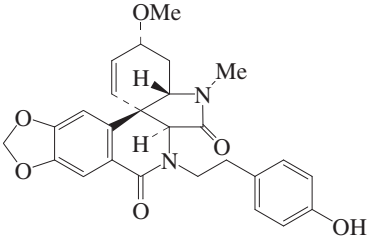
*7*R*-Hydroxy:* ***7-Hydroxypleurostyline***
[145199-53-7]
$C_{25}H_{29}N_3O_3$ 419.522
Minor alkaloid from leaves of *Pleurostylia opposita* (Celastraceae). Amorph. $[\alpha]_D$ -110 (c, 1 in $CHCl_3$).

7′,8′-Dihydro, 7′-hydroxy: ***7′-Hydroxy-7′,8′-dihydropleurostyline***
[145199-55-9]
$C_{25}H_{31}N_3O_3$ 421.538
Minor alkaloid from leaves of *Pleurostylia opposita* (Celastraceae). Amorph. $[\alpha]_D$ 0 (c, 1 in $CHCl_3$).

Wagner, H. *et al., Helv. Chim. Acta*, 1981, **64**, 283 (*uv, ir, pmr, cmr, ms, struct*)
Séguineau, C. *et al., Helv. Chim. Acta*, 1992, **75**, 2283 (*7-Hydroxypleurostyline, 7′-Hydroxy-7′,8′-dihydropleurostyline*)
Khanjin, N.A. *et al., Helv. Chim. Acta*, 2001, **84**, 1253 (*abs config*)

Plicamine P-524

[232597-76-1]

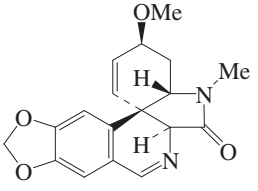


$C_{26}H_{26}N_2O_6$ 462.501
Alkaloid from *Galanthus plicatus* ssp. *byzantinus*. Amorph. solid. $[\alpha]_D$ +74.4 (c, 0.12 in MeOH). λ_{max} 226 (log ϵ 4.41); 265 (sh) (log ϵ 3.71); 299 (log ϵ 3.49) (MeOH).

Unver, N. *et al., Phytochemistry*, 1999, **50**, 1255-1261 (*isol, uv, ir, cd, pmr, cmr*)
Baxendale, I.R. *et al., Tetrahedron*, 2002, **58**, 6285-6304 (*synth*)

Plicane P-525

[343983-02-8]

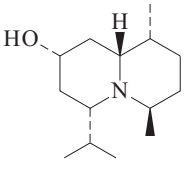


$C_{18}H_{18}N_2O_4$ 326.351
Alkaloid from *Galanthus plicatus* ssp. *byzantinus*. Amorph. solid. $[\alpha]_D$ +205.9 (c, 0.12 in MeOH). λ_{max} 231 (log ϵ 4.3); 285 (log ϵ 3.35); 319 (log ϵ 3.18) (MeOH).

Unver, N. *et al., Heterocycles*, 2001, **55**, 641-652 (*isol, pmr, cmr, uv*)

Plumerinine P-526

*Octahydro-6,9-dimethyl-4-(1-methylethyl)-2*H*-quinolizin-2-ol, 9CI. Octahydro-8-hydroxy-6-isopropyl-1,4-dimethylquinolizine*
[125797-64-0]

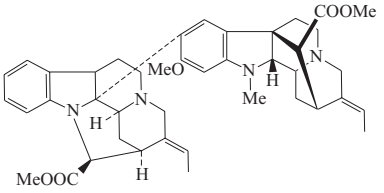


$C_{14}H_{27}NO$ 225.373
Struct. in doubt after 2002 synthesis. Alkaloid from the stems of *Plumeria rubra* (Apocynaceae). Light brown viscous oil. $[\alpha]_D^{20}$ +14.4 (c, 0.31 in MeOH).

Najam-ul-Hussain Kazmi, S. *et al., Heterocycles*, 1989, **29**, 1901 (*isol, uv, ir, pmr, cmr, ms, struct*)
Comins, D.L. *et al., Org. Lett.*, 2002, **4**, 1611-1613 (*synth*)

Plumocraline P-527

[79123-75-4]

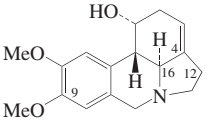


$C_{42}H_{50}N_4O_5$ 690.881
Alkaloid from the root bark of *Alstonia plumosa* (Apocynaceae). Cryst. ($CHCl_3$). $[\alpha]_D$ +20 (c, 1 in $CHCl_3$). Dec. above 300° without melting.

Massiot, G. *et al., C. R. Hebd. Seances Acad. Sci. Ser. 2*, 1981, **292**, 191 (*uv, ir, pmr, cmr, ms, struct*)
Jacquier, M.J. *et al., Phytochemistry*, 1982, **21**, 2973 (*isol, uv, ir, pmr, ms, struct*)

Pluviine P-528

[548-11-8]



Absolute Configuration

$C_{17}H_{21}NO_3$ 287.358
Alkaloid from *Lycoris radiata*, several *Narcissus* spp. and some other spp. in the Amaryllidaceae. Mp 225-227°. $[\alpha]_D$ -171 (c, 0.18 in EtOH).

Perchlorate: Mp 260° dec.

Ac: Mp 184°.

O^9-De-Me: ***9-Norpluviine***
[517-99-7]
$C_{16}H_{19}NO_3$ 273.331
Isol. from *Lycoris radiata*, "Texas" daffodils and *Pancratium maritimum* (Amaryllidaceae). Plates (MeOH). Mp 239-241° (274-275°) dec. $[\alpha]_D$ -232 (c, 0.056 in MeOH). $[\alpha]_D$ -160 (c, 0.15 in MeOH).

O^9-De-Me, O^1-Ac: ***1-O-Acetyl-9-norpluviine.*** *1-O-Acetyl-9-O-demethylpluviine*
$C_{18}H_{21}NO_4$ 315.368
Alkaloid from the bulbs of *Brunsvigia radulosa* and *Ammocharis coranica*. Amorph. powder (Me_2CO/hexane). Mp 185-187° (173°). $[\alpha]_D^{22}$ -67 (c, 0.25 in EtOH).

O^9-De-Me, di-Ac:
Cubes (petrol). Mp 150-151°.

O^{10}-De-Me: ***10-Norpluviine***
[162411-72-5]
$C_{16}H_{19}NO_3$ 273.331
Alkaloid from bulbs of *Narcissus pseudonarcissus* ssp. *pseudonarcissus* cv. Carlton. Mp 148° (dec. >136°). $[\alpha]_D^{25}$

+61 (c, 2.4 in MeOH).

O^{10}-De-Me, O^{1}-Ac: ***1-O-Acetyl-10-norpluviine***
[162411-71-4]
$C_{18}H_{21}NO_4$ 315.368
From bulbs of *Narcissus pseudonarcissus* ssp. *pseudonarcissus* cv. Carlton. Mp 203° (dec. >180°). $[\alpha]_D^{25}$ +38 (c, 1.0 in MeOH).

O^{10}-De-Me, di-Ac: ***1,10-Diacetyl-10-norpluviine***
[170172-02-8]
$C_{20}H_{23}NO_5$ 357.405
From bulbs of *Narcissus pseudonarcissus* ssp. *pseudonarcissus* cv. Carlton. Cryst. (EtOH). Mp 147°. $[\alpha]_D^{25}$ +8.3 (c, 1.1 in MeOH).

16-Epimer, O^9-de-Me: ***Fortucine***
[115730-50-2]
$C_{16}H_{19}NO_3$ 273.331
Alkaloid from the leaves of *Narcissus* sp. Mp 160-162°. $[\alpha]_D$ +66.7 (c, 0.23 in EtOH).

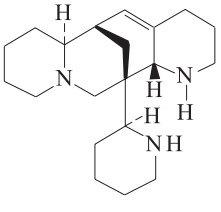
16-Epimer, O^9-de-Me; hydrochloride: Mp 208-209°.

$\Delta^{4,12}$-Isomer, O^9-de-Me: ***Kirkine***
$C_{16}H_{19}NO_3$ 273.331
Alkaloid from the bulbs of *Crinum kirkii*. Mp 170-172°. $[\alpha]_D^{22}$ +59.6 (c, 0.57 in MeOH). Struct. revised in 2008, originally assigned same struct. as Fortucine.

Boit, H.-G. *et al., Chem. Ber.*, 1957, **90**, 363 (*uv, ir, struct*)
Fales, H.M. *et al., J.A.C.S.*, 1958, 4395 (*struct*)
Uyeo, S. *et al., J.C.S.*, 1959, 172 (*deriv*)
Kirby, G.W. *et al., J.C.S.(C)*, 1966, 676 (*deriv, biosynth, uv, pmr*)
Sandberg, F. *et al., Acta Pharm. Suec.*, 1968, **5**, 61; *CA*, **69**, 25043d (*deriv*)
Bruce, I.T. *et al., Chem. Comm.*, 1968, 207 (*deriv, biosynth*)
Razakov, R. *et al., Khim. Prir. Soedin.*, 1968, **4**, 19; *Chem. Nat. Compd. (Engl. Transl.)*, 1968, **4**, 15 (*ms*)
Harken, R.D. *et al., J.O.C.*, 1976, **41**, 2450 (*biosynth*)
Tokhtabaeva, G.M. *et al., Khim. Prir. Soedin.*, 1987, **23**, 872; *Chem. Nat. Compd. (Engl. Transl.)*, 1987, **23**, 727 (*Fortucine*)
Bastida, J. *et al., Phytochemistry*, 1995, **40**, 1291-1293 (*Kirkine*)
Kreh, M. *et al., Phytochemistry*, 1995, **40**, 1303 (*10-Norpluviine, 1-O-Acetyl-10-norpluviine, 1,10-Diacetyl-10-norpluviine*)
Campbell, W.E. *et al., Phytochemistry*, 2000, **53**, 587-591 (*1-O-Acetyl-9-norpluviine*)
Koorbanally, N. *et al., Phytochemistry*, 2000, **54**, 93-97 (*1-Acetyl-9-norpluviine*)
Biechy, A. *et al., Angew. Chem., Int. Ed.*, 2008, **47**, 1436-1438 (*Fortucine, Kirkine, synth*)

Podopetaline P-529

16,17-Didehydroormosanine, 9CI. Ormocastrine
[38966-20-0]



Absolute configuration

$C_{20}H_{33}N_3$ 315.501
Ormocastrine was actually identical with Podopetaline hydrochloride. Major alkaloid from *Podopetalum ormondii* (preferred genus name *Ormosia*), also isol. from *Ormosia semicastrata* (Fabaceae). Mp 77.5-79°. $[\alpha]_D$ -48 (c, 0.95 in MeOH).

Hydrobromide: Mp 253-256°.

6-Epimer: see Epipodopetaline, E-99

Hart, N.K. *et al., Tet. Lett.*, 1972, 5333 (*isol*)
McLean, S. *et al., Can. J. Chem.*, 1972, **50**, 1639; 1974, **52**, 1907 (*isol, struct*)
Mackay, M.F. *et al., Tetrahedron*, 1975, **31**, 1295 (*cryst struct*)

Poecillanosine P-530

2-Acetoxy-1-(hydroxynitrosoamino)heptadecane
[200564-72-3]
$H_3C(CH_2)_{14}CH(OAc)CH_2N(OH)NO$
$C_{19}H_{38}N_2O_4$ 358.52
Isol. from the sponge *Poecillastra* spec. aff. *tenuilaminaris*. Cytotoxic agent and free radical scavenger. Solid. $[\alpha]_D^{25}$ -20.2 (c, 0.1 in MeOH). Ref. states abs. config. as (*R*)- in text but shows (*S*)- in diag. λ_{max} 232 (ε 5700) (MeOH).

Natori, T. *et al., Tet. Lett.*, 1997, **38**, 8349-8350 (*isol, uv, ir, pmr, cmr*)
Xian, M. *et al., Tet. Lett.*, 2007, **48**, 1209-1212 (*synth*)

Poetamine P-531

[1360-49-2]
$C_{29}H_{32}N_2O_7$ 520.581
Amaryllidaceae alkaloid. Struct. unknown. Isol. from the bulbs of *Narcissus poeticus* var. *ornatus* (Amaryllidaceae). Prisms (MeOH). Mp 258-260° dec. $[\alpha]_D^{24}$ -160 (c, 0.2 in EtOH).

Perchlorate: Mp 248° dec.

Picrate: Mp 246° dec.

Methiodide: Mp 191° dec.

Döpke, W. *et al., Naturwissenschaften*, 1963, **50**, 354 (*isol, ir*)

Poetaricine P-532

$C_{16}H_{17}NO_4$ 287.315
Amaryllidaceae alkaloid. Struct. unknown. Isol. from *Narcissus poeticus* var. *ornatus* (Amaryllidaceae). Prisms (MeOH). Mp 273° dec. $[\alpha]_D^{23}$ -60 (c, 0.2 in EtOH).

Perchlorate:
Prisms (H_2O). Mp 228-230° dec.

Picrate:
Fine needles (MeOH). Mp 190° dec.

Ac:
Prisms (MeOH). Mp 165°.

Döpke, W. *et al., Naturwissenschaften*, 1963, **50**, 595 (*isol, ir*)

Poeticine P-533

$C_{20}H_{23}NO_6$ 373.405
Amaryllidaceae alkaloid. Struct. unknown. Isol. from the bulbs of *Narcissus poeticus* (Amaryllidaceae). Needles (Me_2CO). Mp 209-210°. $[\alpha]_D^{25}$ -89 (c, 0.3 in $CHCl_3$).

Boit, H.-G. *et al., Chem. Ber.*, 1956, **89**, 2462-2465 (*isol*)

Pogonopamine P-534

Struct. unknown. No analytical data recorded. Alkaloid from the bark of *Pogonopus tubulosis* (Rubiaceae).

Dalma, G. *et al., CA*, 1949, **43**, 5548i

Pogonopeine P-535

Struct. unknown. No analytical data recorded. Alkaloid from the bark of *Pogonopus tubulosis* (Rubiaceae).

Dalma, G. *et al., CA*, 1949, **43**, 5548i

Pogonopidine P-536

Struct. unknown. No analytical data recorded. Alkaloid from the bark of *Pogonopus tubulosis* (Rubiaceae).

Dalma, G. *et al., CA*, 1949, **43**, 5548i

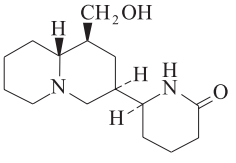
Pogonopine P-537

Struct unknown. No analytical data recorded. Alkaloid from the bark of *Pogonopus tubulosis* (Rubiaceae).

Dalma, G. *et al., CA*, 1949, **43**, 5548i

Pohakuline P-538

[60394-95-8]



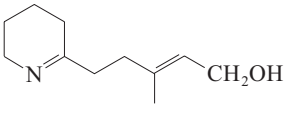
Relative configuration

$C_{15}H_{26}N_2O_2$ 266.383
Trace alkaloid from the bark of *Sophora chrysophylla* (Fabaceae). Cryst. (Me_2CO). Mp 170-171°. $[\alpha]_D^{25}$ -17.2 (c, 0.82 in EtOH).

Kadooka, M.M. *et al., Tetrahedron*, 1976, **32**, 919 (*isol, ir, pmr, ms, cryst struct*)

Polonicumtoxin C P-539

[120693-76-7]



$C_{11}H_{19}NO$ 181.277
Alkaloid from cultured cells of the freshwater dinoflagellate *Peridinium polonicum*. Ichthyotoxin. Ichthyotoxin.
► LD_{50} (mus, ipr) 2 mg/kg.

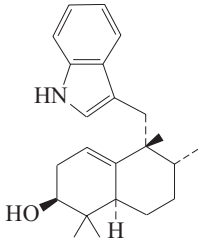
O-*Ac:* ***Polonicumtoxin B***
[120693-75-6]
$C_{13}H_{21}NO_2$ 223.314
From *Peridinium polonicum*. Ichthyotoxin.

O-*(3-Butenoyl):* ***Polonicumtoxin A***
[120693-74-5]
$C_{15}H_{23}NO_2$ 249.352
From *Peridinium polonicum*. Ichthyotoxin.
► LD_{50} (mus, ipr) 1.5 mg/kg.

Oshima, Y. *et al., CA*, 1989, **110**, 209003n
Yotsu-Yamashita, M. *et al., Heterocycles*, 1998, **48**, 79-93 (*synth, pmr, cmr*)
Van, T.N. *et al., Tetrahedron*, 2000, **56**, 7969-7973 (*synth*)

Polyalthenol P-540

[62121-09-9]

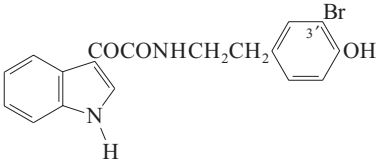


$C_{23}H_{31}NO$ 337.504
Alkaloid from *Greenwayodendron oliveri* (*Polyalthia oliveri*) (Annonaceae). Mp 149-150°. $[\alpha]_D$ +50 (c, 0.4 in EtOH). λ_{max} 226 (ϵ 33100); 285 (ϵ 5750); 292 (ϵ 5370) (EtOH) (Derep).

Leboeuf, M. *et al., Tet. Lett.*, 1976, 3559 (*uv, pmr, cmr, ms, struct*)

Polyandrocarpamide A P-541

N-*[2-(3-Bromo-4-hydroxyphenyl)ethyl]-α-oxo-1*H-*indole-3-acetamide, 9CI*
[129369-41-1]



$C_{18}H_{15}BrN_2O_3$ 387.232
Alkaloid from the marine ascidian *Polyandrocarpa* sp. Needles. Mp 178-179°. λ_{max} 207 (ϵ 58500); 247 (ϵ 1600); 266 (ϵ 9900); 272 (ϵ 8600); 309 (ϵ 9800) (MeOH/NaOH) (Derep). λ_{max} 205 (ϵ 41400); 255 (ϵ 10300); 267 (ϵ 9900); 274 (ϵ 9600); 290 (ϵ 5000); 324 (ϵ 8400) (MeOH) (Derep).

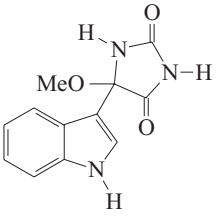
Debromo: ***Polyandrocarpamide C***
[107610-00-4]
$C_{18}H_{16}N_2O_3$ 308.336
Alkaloid from *Polyandrocarpa* sp. Amorph. solid. λ_{max} 205 (ϵ 21400); 246 (ϵ 8300); 266 (ϵ 6100); 272 (ϵ 5300); 318 (ϵ 4600) (MeOH/NaOH) (Derep). λ_{max} 205 (ϵ 19200); 254 (ϵ 6400); 266 (ϵ 6100); 272 (ϵ 5700); 285 (sh) ; 324 (ϵ 4600) (MeOH) (Derep).

3′-Debromo, 3′-iodo: ***Polyandrocarpamide B***
[129369-42-2]
$C_{18}H_{15}IN_2O_3$ 434.233
Alkaloid from *Polyandrocarpa* sp. λ_{max} 203 (ϵ 79100); 247 (ϵ 13200); 267 (sh) ; 274 (ϵ 7600); 311 (ϵ 8200) (MeOH/NaOH) (Derep). λ_{max} 205 (ϵ 50000); 230 (sh) ; 254 (ϵ 9100); 267 (sh) ; 274 (ϵ 8200); 325 (ϵ 6600) (MeOH) (Derep).

Da Settimo, A. *et al., Farmaco, Ed. Sci.*, 1987, **42**, 17-26 (*synth*)
Lindquist, N. *et al., Tet. Lett.*, 1990, **31**, 2521-2524 (*isol, uv, ir, pmr, cmr, struct*)

Polyandrocarpamide D P-542

*5-(1*H*-Indol-3-yl)-5-methoxy-2,4-imidazolidinedione, 9CI*



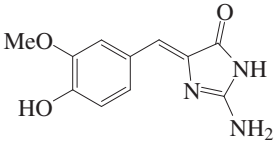
$C_{12}H_{11}N_3O_3$ 245.237

(±)-*form* [129369-43-3]
Alkaloid from the marine ascidian *Polyandrocarpa* sp. and from the sponge *Zyzza massalis*. Exhibits antibacterial and antifungal activity. Yellow amorph. solid. Artifact. λ_{max} 212 (ϵ 27500); 268 (ϵ 5000); 276 (ϵ 400); 287 (ϵ 3800) (MeOH) (Derep). λ_{max} 204 (ϵ 44800); 217 (sh); 268 (ϵ 4600); 277 (ϵ 4600); 289 (ϵ 3700) (MeOH/NaOH) (Derep).

Lindquist, N. *et al., Tet. Lett.*, 1990, **31**, 2521-2524 (*isol, uv, ir, pmr, cmr, struct*)
Mancini, I. *et al., Helv. Chim. Acta*, 1994, **77**, 1886-1894 (*isol, pmr, cmr*)

Polyandrocarpamine A P-543

[444106-74-5]



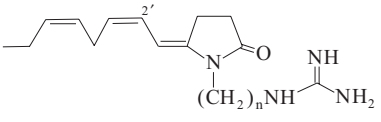
$C_{11}H_{11}N_3O_3$ 233.226
Isol. from the Fijian ascidian *Polyandrocarpa* sp. Yellow solid. λ_{max} 246 (ϵ 2000); 352 (ϵ 2000) (MeOH).

O-*De-Me:* ***Polyandrocarpamine B***
[444106-75-6]
$C_{10}H_9N_3O_3$ 219.199
Isol. from *Polyandrocarpa* sp. Yellow solid. λ_{max} 248 (ϵ 2000); 352 (ϵ 2000) (MeOH).

Davis, R.A. *et al., Tetrahedron*, 2002, **58**, 3263-3269 (*isol, synth, uv, ir, pmr, cmr*)

Polyandrocarpidine A P-544

[5-[2-(2,5-Octadienylidene)-5-oxo-1-pyrrolidinyl]pentyl]guanidine, 9CI
[68838-36-8]



n = 5

$C_{18}H_{30}N_4O$ 318.461
The polyandrocarpidines constitute a 9:1 mixt. of homologues, each homologue being a mixt. of isomers with isomer ratios varying from 4:1 to 1:1. Polyandrocarpidines A and B correspond to the former Polyandrocarpidine I, and the minor polyandrocarpidines C and D to the former Polyandrocarpidine II. Isol. from a marine tunicate *Polyandrocarpa* sp. Shows antimicrobial and cytotoxic props. λ_{max} 275 (MeOH) (Berdy).

*(2′*E*)-Isomer:* ***Polyandrocarpidine B***
[84453-26-9]
$C_{18}H_{30}N_4O$ 318.461
From *Polyandrocarpa* sp. Shows antimicrobial and cytotoxic props. Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. λ_{max} 276 (ϵ 1000) (MeOH) (Berdy).

Cheng, M.T. *et al., J.A.C.S.*, 1978, **100**, 7409-7411 (*isol*)
Carté, B. *et al., Tet. Lett.*, 1982, **23**, 3863-3866 (*isol, uv, pmr, cmr, struct*)
Rinehart, K.L. *et al., Tet. Lett.*, 1983, **24**, 1593-1596 (*struct*)

Polyandrocarpidine C P-545

[4-[2-(2,5-Octadienylidene)-5-oxo-1-pyrrolidinyl]butyl]guanidine, 9CI
[68838-37-9]
As Polyandrocarpidine A, P-544 with n = 4

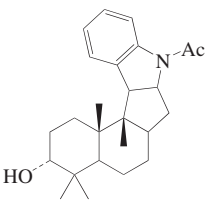
$C_{17}H_{28}N_4O$ 304.434
See note under Polyandrocarpidine A, P-544. Constit. of a marine tunicate *Polyandrocarpa* sp. Shows antimicrobial and cytotoxic props. Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. λ_{max} 275 (MeOH) (Berdy).

*(2′*E*)-Isomer:* ***Polyandrocarpidine D***
[84453-27-0]
$C_{17}H_{28}N_4O$ 304.434
From *Polyandrocarpa* sp. Shows antimicrobial and cytotoxic props. Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. λ_{max} 275 (MeOH) (Berdy).

Cheng, M.T. *et al., J.A.C.S.*, 1978, **100**, 7409-7411 (*isol*)
Carté, B. *et al., Tet. Lett.*, 1982, **23**, 3863-3866 (*isol, uv, pmr, cmr, struct*)
Rinehart, K.L. *et al., Tet. Lett.*, 1983, **24**, 1593-1596 (*struct*)

Polyavolinamide P-546

[81525-54-4]



Relative Configuration

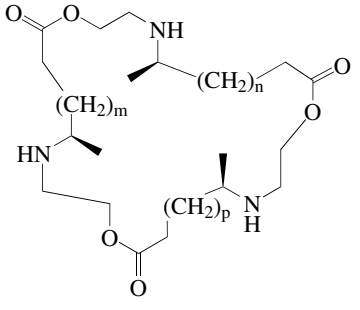
$C_{25}H_{35}NO_2$ 381.557

Alkaloid from the root bark and stem of *Greenwayodendron suaveolens* (*Polyalthia suaveolens*) (Annonaceae). Cryst. ($CHCl_3$/MeOH). Mp 249-251°. λ_{max} 217 (log ε 4.1); 255 (log ε 4.02); 285 (log ε 3.42); 293 (log ε 3.34) (MeOH). λ_{max} 262 (log ε 3.89); 285 (log ε 3.48); 293 (log ε 3.4) (MeOH/NaOH).

Ac:
Cryst. ($CHCl_3$/MeOH). Mp 246-248°. λ_{max} 222 (log ε 3.66); 261 (log ε 3.94); 282 (log ε 3.76); 290 (log ε 3.68) (MeOH).

Okorie, D.A. *et al., Phytochemistry*, 1981, **20**, 2575-2578 (*isol, uv, ir, pmr, ms, struct*)

Epilachna borealis Polyazamacrolides P-547



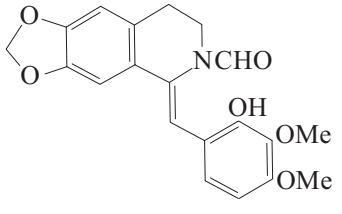
m, n, p, = 5, 6 or 7

A large family of lactonic ring structures derived from a small group of (2-hydroxyethylamino)alkanoic acids. Example shown contains 3 acids. Constit. of the pupal defensive secretion of the coccinellid beetle *Epilachna borealis*. Cited as a case of natural combinatorial chemistry.

Schroeder, F.C. *et al., Science (Washington, D.C.)*, 1998, **281**, 428-431 (*isol, struct*)
Schroeder, F.C. *et al., Tet. Lett.*, 1998, **39**, 6625-6628 (*abs config*)
Garcia-Rubio, S. *et al., J.O.C.*, 2001, **66**, 1082-1096 (*synth*)

Polyberbine P-548

[73777-77-2]

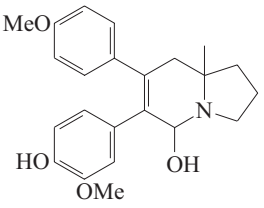


$C_{20}H_{19}NO_6$ 369.373
Alkaloid from *Berberis valdiviana* (Berberidaceae). Amorph.

Murugesan, N. *et al., Tet. Lett.*, 1979, 4521 (*synth, uv, ir, pmr, ms*)
Firdous, S. *et al., J.A.C.S.*, 1984, **106**, 6099 (*occur, uv, ir, pmr, ms*)

Polycanthidine P-549

[155416-31-2]

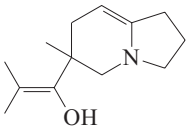


$C_{23}H_{27}NO_4$ 381.471
Alkaloid from *Astragalus polycanthus* (Fabaceae).

Gupta, R.K. *et al., Indian Drugs*, 1993, **30**, 595; *CA*, **120**, 319334k (*isol, struct*)

Polycanthisine P-550

Alkaloid APAL-VII
[161068-62-8]

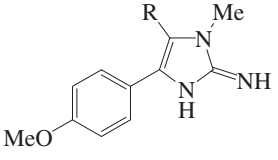


$C_{13}H_{21}NO$ 207.315
Alkaloid from aerial parts of *Astragalus polycanthus* (Fabaceae). Cryst. Mp 160-161°. $[\alpha]_D^{30}$ +16 (c, 0.75 in MeOH). Enol, with OH group strongly H-bonded to N. Is not acetylated under usual conditions.

Gupta, R.K. *et al., Indian Drugs*, 1993, **30**, 651 (*isol*)
Gupta, R.K. *et al., Indian J. Chem., Sect. B*, 1995, **34**, 76 (*uv, ir, pmr, ms, struct*)

Polycarpaurine B P-551

[921987-38-4]



R = -SO_3H

$C_{11}H_{13}N_3O_4S$ 283.307
Related to Polycarpine, P-553. Isol. from *Polycarpa aurata*. Powder. λ_{max} 222 (log ε 4.51); 261 (log ε 4.38) (MeOH).

Wang, W. *et al., Tetrahedron*, 2007, **63**, 409-412 (*isol, pmr, cmr, ms*)

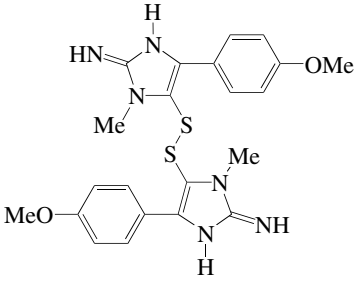
Polycarpaurine C P-552

[921987-39-5]
As Polycarpaurine B, P-551 with
R = -S-SO_3H
$C_{11}H_{13}N_3O_4S_2$ 315.373
Isol. from *Polycarpa aurata*. Pale yellow powder. λ_{max} 242 (log ε 4.27); 300 (log ε 4.12) (MeOH).

Wang, W. *et al., Tetrahedron*, 2007, **63**, 409-412 (*isol, pmr, cmr, ms*)

Polycarpine† P-553

[175669-17-7]



$C_{22}H_{24}N_6O_2S_2$ 468.603
Neutral form illus. The nat. prod. appears to be the dication. Alkaloid from the ascidians *Polycarpa clavata* and *Polycarpa aurata*. Cytotoxic against the human colon tumour cell line HCT-116. Red rods (MeOH/CH_2Cl_2) or orange amorph. solid. Mp 201-204°. λ_{max} 226 (ε 21820); 264 (ε 23708); 364 (ε 9323) (no solvent reported).

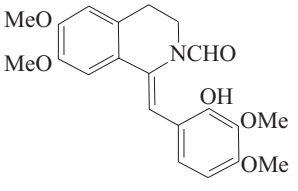
Hydrochloride (1:2): [175669-29-1]
Orange rods. Mp 201-203°. Delocalised charges within the two iminoimidazole residues. λ_{max} 202 (log ε 4.45); 259 (log ε 4.28); 394 (log ε 3.58) (MeOH).

Monosulfide analogue: ***Polycarpaurine A***
$C_{22}H_{24}N_6O_2S$ 436.537
Isol. from *Polycarpa aurata*. Amorph. yellow powder (as bistrifluoroacetate salt). λ_{max} 228 (log ε 4.59); 281 (log ε 4.52) (MeOH) (bistrifluoroacetate).

Abbas, S.A. *et al., J.O.C.*, 1996, **61**, 2709-2712 (*isol, uv, ir, pmr, cmr, ms, cryst struct*)
Kang, H. *et al., Tet. Lett.*, 1996, **37**, 2369-2372 (*isol, uv, ir, pmr, cmr, struct*)
Radchenko, O.S. *et al., Tet. Lett.*, 1997, **38**, 3581-3584 (*synth*)
Wang, W. *et al., Tetrahedron*, 2007, **63**, 409-412 (*Polycarpaurine A*)

Polycarpine† P-554

3,4-Dihydro-1-[(2-hydroxy-3,4-dimethoxyphenyl)methylene]-6,7-dimethoxy-2(1H)-isoquinolinecarboxaldehyde, 9CI
[63490-92-6]



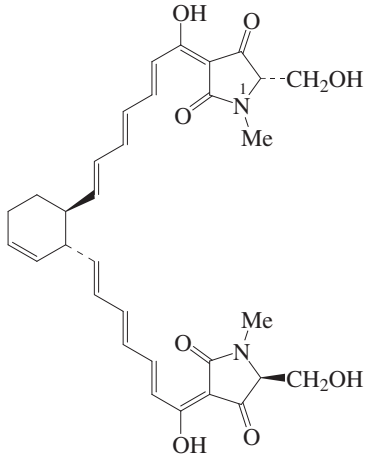
$C_{21}H_{23}NO_6$ 385.416
Alkaloid from *Enantia polycarpa* trunk bark (Annonaceae). Cryst. (MeOH). Sol. MeOH, H_2O. Mp 179-180°. Unique alkaloid which prob. arises in the plant by hydroperoxide attack on a protoberberinium precursor. λ_{max} 202 (ε 28183); 259 (ε 19054); 394 (ε 8710) (MeOH) (Berdy). λ_{max} 203 (ε 42660); 278 (ε 12300) (MeOH-NaOH) (Berdy).

Jössang, A. *et al., C. R. Hebd. Seances Acad.*

Sci. Ser. C, 1977, **284**, 467 (*isol, cryst struct, pmr*)
Murugesan, N. *et al., Tet. Lett.*, 1979, 4521 (*synth, biosynth*)

Polycephalin C P-555

[220422-37-7]



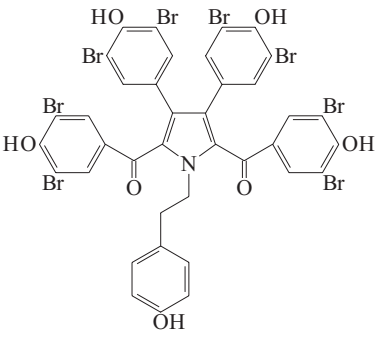
$C_{32}H_{36}N_2O_8$ 576.645
Tetramic acid deriv. Information on abs. config. is confused. That shown is assigned by Blumenthal *et al.* Longbottom *et al* have assigned the opposite abs. configs. at the cyclohexane ring positions. Both sets of authors call their configs. *R,R*-; Longbottom *et al.* appear to be correct but assignment of *R,S*-priorities is difficult. Isol. from plasmodia of the slime mold *Physarum polycephalum*. Orange-red powder. λ_{max} 253 (log ϵ 4.15); 390 (log ϵ 4.74) (MeOH).

1-N-*De-Me:* ***Polycephalin B***
[220422-47-9]
$C_{31}H_{34}N_2O_8$ 562.618
Isol. from *Physarum polycephalum*. Orange-red powder. λ_{max} 247 (log ϵ 4.14); 386 (log ϵ 4.74); 406 (sh) (log ϵ 4.69) (MeOH).

Nowak, A. *et al., Angew. Chem., Int. Ed.*, 1998, **37**, 3139-3141 (*isol, ir, cd, pmr, cmr*)
Blumenthal, F. *et al., Tetrahedron*, 2002, **58**, 8433-8437 (*cd, abs config*)
Longbottom, D.A. *et al., Tetrahedron*, 2003, **59**, 6955-6966 (*synth, abs config*)

Polycitone A P-556

[153212-84-1]

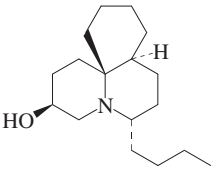


$C_{38}H_{21}Br_8NO_7$ 1242.818
Alkaloid from the marine ascidian *Polycitor* sp. Inhibits retroviral reverse transcriptase and DNA polymerase. Fibroblast inhibitor. Yellowish needles + $1Me_2CO$ (Me_2CO). Mp 285°. λ_{max} 285 (ϵ 13500) (MeOH) (Berdy).

N-*Dealkyl:* ***Polycitone B***
[272118-06-6]
$C_{30}H_{13}Br_8NO_6$ 1122.668
Alkaloid from *Polycitor africanus*. Yellow oil.

Rudi, A. *et al., J.O.C.*, 1994, **59**, 999-1003 (*isol, uv, ir, pmr, cmr, cryst struct*)
Loya, S. *et al., Biochem. J.*, 1999, **344**, 85-92 (*activity*)
Rudi, A. *et al., J. Nat. Prod.*, 2000, **63**, 832-833 (*Polycitone B*)
Kreipl, A.T. *et al., Org. Lett.*, 2002, **4**, 3287-3288 (*synth*)
Gupton, J.T. *et al., Tetrahedron*, 2008, **64**, 5246-5253 (*synth*)

Polycitorol A P-557

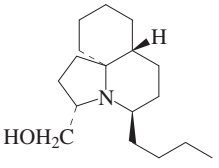


Relative Configuration

$C_{17}H_{31}NO$ 265.438
Alkaloid from an ascidian of the family Polycitoridae. Oil. $[\alpha]_D^{25}$ +15.3 (c, 0.2 in $CHCl_3$).

Issa, H.H. *et al., Mar. Drugs*, 2005, **3**, 78-85 (*isol, pmr, cmr*)

Polycitorol B P-558



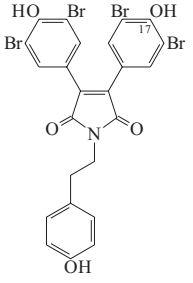
Relative Configuration

$C_{17}H_{31}NO$ 265.438
Alkaloid from an ascidian of the family Polycitoridae. Oil. $[\alpha]_D^{25}$ -10.3 (c, 0.6 in $CHCl_3$).

Issa, H.H. *et al., Mar. Drugs*, 2005, **3**, 78-85 (*isol, pmr, cmr*)

Polycitrin A P-559

[153212-85-2]



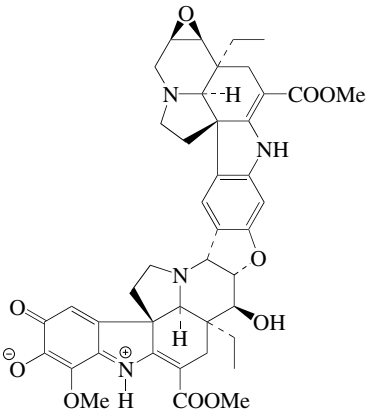
$C_{24}H_{15}Br_4NO_5$ 717.002
Alkaloid from the marine ascidian *Polycitor* sp. Yellowish oil or red cryst. Mp 180-181°.

17-Me ether: ***Polycitrin B***
[153212-86-3]
$C_{25}H_{17}Br_4NO_5$ 731.029
From *Polycitor* sp. Cryst. (CH_2Cl_2/pentane) (synthetic). Mp 140-142° (synthetic).

Rudi, A. *et al., J.O.C.*, 1994, **59**, 999 (*isol, uv, ir, pmr, cmr, struct*)
Terpin, A. *et al., Tetrahedron*, 1995, **51**, 9941-9946 (*synth*)
Beccalli, E.M. *et al., Tetrahedron*, 2000, **56**, 2699-2702 (*synth, Polycitrin B*)
Winklhofer, C. *et al., Synthesis*, 2006, 3043-3047 (*synth*)

Polyervinine P-560

[169971-14-6]

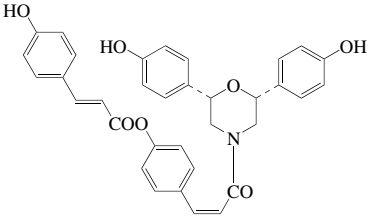


$C_{43}H_{46}N_4O_{10}$ 778.857
Zwitterionic. Alkaloid from leaves of *Ervatamia polyneura*. Air-sensitive amorph. purple powder. λ_{max} 203 (log ϵ 4.49); 244 (sh) (log ϵ 4.11); 316 (log ϵ 4.18); 393 (sh) (log ϵ 3.35); 583 (log ϵ 3.33) (MeOH).

Clivio, P. *et al., Phytochemistry*, 1995, **40**, 953 (*isol, uv, ir, pmr, cmr, struct*)

Polygonapholine P-561

[188302-30-9]

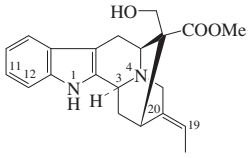


$C_{34}H_{29}NO_7$ 563.606
Alkaloid from rhizomes of *Polygonatum alte-lobatum*. Pale yellow powder. Mp 238-240°. $[\alpha]_D^{25}$ -76 (c, 0.5 in MeOH). λ_{max} 225 ; 306 ; 330 (sh) ; 429 (sh) (MeOH).

Lin, C.-N. *et al., Tetrahedron*, 1997, **53**, 2025 (*isol, uv, ir, pmr, cmr, ms, struct*)

Polyneuridine P-562

Methyl 17-hydroxysarpagan-16-carboxylate, 9CI†. *Normacusine A*
[6872-44-2]



Absolute Configuration

$C_{21}H_{24}N_2O_3$ 352.432
Epimeric with Akuammidine, A-229. Alkaloid from *Aspidosperma polyneuron*, *Rauwolfia suaveolens*, *Rauwolfia volkensii*, *Strychnos potatorum* and *Hazunta* spp. Cryst. (EtOH or C_6H_6). Mp 245-247.5° (solvate). $[\alpha]_D$ -73 (c, 0.82 in Py). $[\alpha]_D$ +1 (c, 1.03 in $CHCl_3$).

N^4-*Oxide:* ***Polyneuridine* N-*oxide***
$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from the roots of *Ochrosia acuminata*. Light yellow powder. $[\alpha]_D^{25}$ -19.5 (c, 0.1 in MeOH).

O-*Ac:*
Cryst. (MeOH). Mp 270-272°. $[\alpha]_D$ -92 (c, 0.71 in Py).

N^1-*Me:* ***Voachalotine***
[664-25-5]
$C_{22}H_{26}N_2O_3$ 366.459
Alkaloid from *Voacanga chalotiana, Tabernaemontana fuchsiaefolia* and *Alstonia legouixiae* (Apocynaceae). Shows cardiotonic props. Prisms (C_6H_6). Mp 223-224°. $[\alpha]_D^{22}$ -2.8 (c, 6 in $CHCl_3$).

N^4-*Me:* ***Macusine A***
[6801-39-4]
$C_{22}H_{27}N_2O_3^{\oplus}$ 367.467
Quaternary alkaloid from the bark of *Strychnos toxifera* (Loganiceae). Cryst. (EtOH/Et_2O) (as chloride). Mp 252° (darkens at 240°, sinters at 248°) (chloride). $[\alpha]_D^{25}$ -57.5 (c, 1.46 in H_2O).

N^1,N^4-*Di-Me:* ***N^4-Methylvoachalotine***
[109269-77-4]
$C_{23}H_{29}N_2O_3^{\oplus}$ 381.494
Quaternary alkaloid from the roots of *Tabernaemontana laeta*. Cryst. (MeOH). Mp 259-260°. $[\alpha]_D^{25}$ -21.3 (c, 6.3 in DMSO). λ_{max} 223 (ϵ 42570); 282 (ϵ 6290) (MeOH).

N^1-*Me,* O-*Ac:*
Needles (MeOH aq.). Mp 180-181.5°. $[\alpha]_D^{20}$ -34.8 (c, 1 in $CHCl_3$).

17-Aldehyde: ***Voachalotinal***. *Polyneuridine aldehyde*
[92138-23-3]
$C_{21}H_{22}N_2O_3$ 350.416
Alkaloid from the leaves of *Alstonia undulata* and bark of *Aspidosperma dasycarpon*. Cryst. (Et_2O). Mp 231°. The *A. dasycarpon* isolate was obt. only in v. small amt. and C-17 config. was not assigned. It could therefore have been Akuammidine aldehyde. Identity with Voachalotinal is assigned here based solely on the identical reported Mps. The uv spectrum is that of this isolate. λ_{max} 226 (log ϵ 4.5); 282 (log ϵ 3.67); 290 (log ϵ 3.65) (EtOH).

19,20ξ-Dihydro: ***19,20-Dihydropolyneuridine***
[85799-35-5]
$C_{21}H_{26}N_2O_3$ 354.448
Minor alkaloid from the leaves of *Alstonia venenata* (Apocynaceae). Amorph.

19S,20-Dihydro, N^1*-Me,* O-*Ac:* ***17-O-Acetyl-19,20-dihydrovoachalotine***
[62404-92-6]
$C_{24}H_{30}N_2O_4$ 410.512
Alkaloid from the root bark of *Voacanga chalotiana* (Apocynaceae). Cryst. (EtOH). Mp 201°. $[\alpha]_D^{20}$ -54 ($CHCl_3$).

11-Hydroxy, N^1,N^4*-di-Me:* ***N^1-Methyl-11-hydroxymacusine A***
[163131-24-6]
[163131-24-6 (chloride)]
$C_{23}H_{29}N_2O_4^{\oplus}$ 397.493
Quaternary alkaloid from stem bark of *Stemmadenia obovata* (Apocynaceae). Needles (MeOH/$CHCl_3$) (as chloride). Mp 300° (chloride). $[\alpha]_D^{25}$ -76 (c, 0.167 in MeOH) (chloride).

11-Methoxy, N^4*-Me:* ***11-Methoxymacusine A***
[87340-28-1]
$C_{23}H_{29}N_2O_4^{\oplus}$ 397.493
Alkaloid from the root and stem bark of *Strychnos angolensis* (Loganiceae). Muscular relaxant. Mp 224-226° (chloride). λ_{max} 262 ; 266 (sh) ; 293 ; 300 (sh) (MeOH).

▶ VQ5800000

12-Methoxy, N^1,N^4*-di-Me:* ***12-Methoxy-4-methylvoachalotine***
[109304-75-8]
$C_{24}H_{31}N_2O_4^{\oplus}$ 411.52
Quaternary alkaloid from stem bark of *Peschiera fuchsiaefolia* (Apocynaceae). Amorph. solid. Mp 221-223°. $[\alpha]_D^{25}$ -106.19 (c, 1 in MeOH). No counterion mentioned.

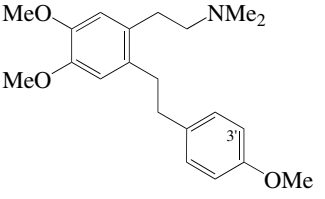
12-Methoxy, N^1,N^4*-di-Me, Et ester:* ***12-Methoxy-4-methylvoachalotine ethyl ester***
[109269-78-5]
$C_{25}H_{33}N_2O_4^{\oplus}$ 425.547
Quaternary alkaloid from the stem bark of *Peschiera fuchsiaefolia* (Apocynaceae). Amorph. solid. Mp 211-214°. $[\alpha]_D^{25}$ -55.94 (c, 1 in MeOH). No counterion mentioned.

16-Epimer: see Akuammidine, A-229

Pecher, J. *et al., Chem. Ind. (London)*, 1960, 1481 (*Voachalotine, isol, struct*)
Battersby, A.R. *et al., J.C.S.*, 1960, 1848-1854 (*Macusine A*)
Pecher, J. *et al., Tet. Lett.*, 1961, 270-273 (*Voachalotine, struct*)
Janot, M.-M. *et al., Bull. Soc. Chim. Fr.*, 1962, 1079-1081 (*abs config*)
Antonaccio, L.D. *et al., J.A.C.S.*, 1962, **84**, 2161-2169 (*isol, uv, ir, ms, struct*)
Iball, J. *et al., Acta Cryst.*, 1963, **16**, 434 (*cryst struct, Voachalotine*)
McPhail, A.T. *et al., J.C.S.*, 1963, 1832-1840 (*cryst struct, Macusine A*)
Ohashi, M. *et al., Tetrahedron*, 1963, **19**, 2241-2246 (*ms*)
Battersby, A.R. *et al., J.C.S.*, 1964, 4419-4427 (*Macusine A, struct, abs config*)
Joule, J.A. *et al., Tetrahedron*, 1965, **21**, 1717-1734 (*Polyneuridine aldehyde*)
Achenbach, H. *et al., Tet. Lett.*, 1966, 4405-4407 (*Voachalotine*)
Bláha, K. *et al., Coll. Czech. Chem. Comm.*, 1974, **39**, 3168-3176 (*uv, cd, abs config, Voachalotine, synth*)
Bombardelli, E. *et al., Phytochemistry*, 1976, **15**, 2021-2022 (*Acetyldihydrovoachalotine*)
Majumder, P. *et al., Phytochemistry*, 1982, **21**, 2389-2392 (*19,20-Dihydropolyneuridine*)
Verpoorte, R. *et al., J. Nat. Prod.*, 1983, **46**, 572-575 (*11-Methoxymacusine A*)
Braga, R.M. *et al., Phytochemistry*, 1987, **26**, 833-836 (*12-Methoxy-4-methylvoachalotine*)
Pinchon, T.-M. *et al., Phytochemistry*, 1990, **29**, 3341-3344 (*Voachalotinal*)
Madinaveitia, A. *et al., J. Nat. Prod.*, 1995, **58**, 250 (*N^1-Methyl-11-hydroxymacusine A*)
Medeiros, W.L.B. *et al., J. Braz. Chem. Soc.*, 2001, **12**, 368-372 (*N-Methylvoachalotine*)
Salim, A.A. *et al., J. Nat. Prod.*, 2004, **67**, 1719-1721 (*N-oxide*)
Yin, W. *et al., Org. Lett.*, 2007, **9**, 295-298 (*synth*)

Polysignine P-563

[102759-47-7]



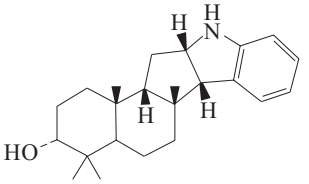
$C_{21}H_{29}NO_3$ 343.465
A secobenzylisoquinoline alkaloid. Alkaloid from bark of *Polyalthia insignis.*

3′-Methoxy: ***Methoxypolysignine***
[66920-24-9]
$C_{22}H_{31}NO_4$ 373.491
Alkaloid from bark of *Polyalthia insignis.*

Lee, K.-H. *et al., Tet. Lett.*, 1997, **38**, 1253 (*isol, pmr, cmr, ms, struct*)
Nimgirawath, S. *et al., Aust. J. Chem.*, 2000, **53**, 523-525 (*synth*)

Polyveoline P-564

[67701-60-4]

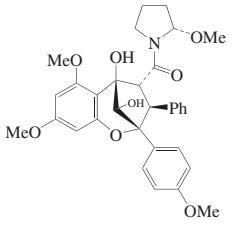


$C_{23}H_{33}NO$ 339.52
Alkaloid from the stem bark of *Greenwayodendron suaveolens* (*Polyalthia suaveolens*) (Annonaceae). Mp 172°. $[\alpha]_D$ -23 (c, 1.1 in $CHCl_3$). λ_{max} 249 (ϵ 5750); 301 (ϵ 2340) (EtOH) (Derep).

Hocquemiller, R. *et al., Tet. Lett.*, 1981, **22**, 5057 (*uv, pmr, ms, cryst struct, abs config*)

Ponapensin P-565

[922169-95-7]



Relative Configuration

$C_{32}H_{35}NO_8$ 561.63

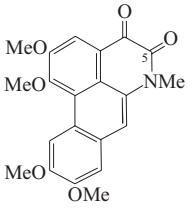
Alkaloid from *Aglaia ponapensis*. NF-κB inhibitor. Yellow oil. $[\alpha]_D^{22}$ -167 (c, 0.4 in $CHCl_3$). λ_{max} 224 (log ϵ 3.84) (MeOH).

Salim, A.A. *et al., Bioorg. Med. Chem. Lett.*, 2007, **17**, 109-112 (*isol, pmr, cmr*)

Pontevedrine P-566

*1,2,9,10-Tetramethoxy-6-methyl-4*H*-dibenzo[*de,g*]quinoline-4,5(6*H*)-dione, 9CI*

[34647-65-9]



$C_{21}H_{19}NO_6$ 381.384

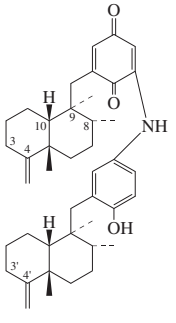
Alkaloid from *Glaucium flavum* var. *vestitum*. Also obt. by treatment of Cataline, C-190 with I_2 or DDQ (Papaveraceae). Red needles (EtOH/$CHCl_3$). Mp 269-271°.

5-Alcohol: ***Dihydropontevedrine***
[72498-24-9]
$C_{21}H_{21}NO_6$ 383.4
Minor alkaloid from *Glaucium flavum* (Papaveraceae). Red needles (EtOH). Mp 251-253°.

Ribas, I. *et al., Tet. Lett.*, 1971, 3093 (*uv, ir, pmr*)
Castedo, L. *et al., Tet. Lett.*, 1976, 501; 1978, 2179 (*struct, synth*)
Daskalova, E. *et al., Phytochemistry*, 1988, **27**, 953 (*Dihydropontevedrine*)
Atanes, N. *et al., J.O.C.*, 1991, **56**, 2984 (*synth*)
Estévez, J.C. *et al., Heterocycles*, 1994, **38**, 1 (*synth*)
Estévez, J.C. *et al., Tetrahedron*, 1994, **50**, 2107 (*synth*)

Popolohuanone A P-567

[133056-07-2]



Absolute Configuration

$C_{42}H_{57}NO_3$ 623.917

Terpenoid (clerodane) numbering shown; different numbering given in the lit. Isol. from the sponge *Dysidea* sp. Intense purple-blue powder. λ_{max} 222 (log ϵ 4.28); 266 (log ϵ 4.21); 512 (log ϵ 3.58) (hexane).

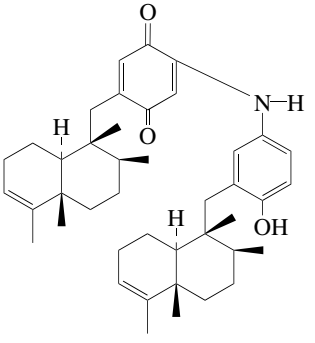
$\Delta^{3,4}$-Isomer: ***Popolohuanone B***
[133056-09-4]
$C_{42}H_{57}NO_3$ 623.917
Isol. from *Dysidea* sp. Purple-blue powder. λ_{max} 222 (log ϵ 4.08); 266 (log ϵ 3.98); 512 (log ϵ 3.36) (hexane).

8,8′,9,9′,10,10′-Hexaepimer, $\Delta^{3,4:3',4'}$-isomer: ***Popolohuanone C***
[144587-57-5]
$C_{42}H_{57}NO_3$ 623.917
Isol. from *Dysidea avara*. Dark violet amorph. solid. Mp 125-135°. $[\alpha]_D^{20}$ -9 (c, 0.08 in CH_2Cl_2). λ_{max} 232 ; 275 ; 532 (MeOH).

Rodriguez, A.D. *et al., Tetrahedron*, 1990, **46**, 8025-8030 (*Popolhuanones A-B*)
Alvi, K.A. *et al., J.O.C.*, 1992, **57**, 6604-6607 (*Popolohuanone C*)

Popolohuanone D P-568

[144587-58-6]



$C_{42}H_{57}NO_3$ 623.917

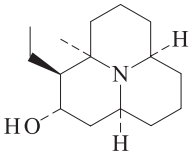
Isol. from the sponge *Dysidea avara*. Dark violet amorph. solid. Mp 113-120°. $[\alpha]_D$ -15 (c, 0.06 in $CHCl_3$). λ_{max} 234 ; 275 ; 533 (MeOH).

Alvi, K.A. *et al., J.O.C.*, 1992, **57**, 6604-6607 (*isol, uv, pmr, cmr, ms*)

Porantherícine P-569

*1-Ethyldodecahydro-9*a*-methylpyrido[2,1,6-*de*]quinolizin-2-ol, 9CI*

[39027-76-4]



Absolute configuration

$C_{15}H_{27}NO$ 237.384

Alkaloid from the shrub *Poranthera corymbosa* (Euphorbiaceae). Gum. $[\alpha]_D$ -20 (c, 1.57 in $CHCl_3$).

Hydrobromide:
Cryst. (EtOH). Mp 308° dec. (subl. >260°). $[\alpha]_D$ -8 (c, 0.51 in MeOH).

Ac: **O-*Acetylporantherícine***
[38976-55-5]
$C_{17}H_{29}NO_2$ 279.422
Alkaloid from *Poranthera corymbosa* (Euphorbiaceae). Gum. $[\alpha]_D$ +2 (c, 0.76 in $CHCl_3$).

1-Epimer:
Needles (Me_2CO). Mp 124-126°. $[\alpha]_D$ +31 (c, 0.73 in $CHCl_3$).

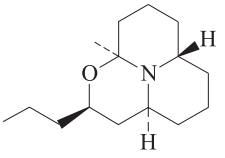
1-Epimer, hydrobromide:
Cryst. (Me_2CO). Mp 278° (with subl. >250°). $[\alpha]_D$ +36 (c, 0.50 in MeOH).

1-Epimer, Ac: ***Porantheriline***
[54352-65-7]
$C_{17}H_{29}NO_2$ 279.422
Alkaloid from the shrub *Poranthera corymbosa* (Euphorbiaceae). Prisms (Me_2CO). Mp 76-77°. $[\alpha]_D$ +87 (c, 0.71 in $CHCl_3$).

Denne, W.A. *et al., Tet. Lett.*, 1972, 1767 (*cryst struct, abs config*)
Denne, W.A. *et al., J. Cryst. Mol. Struct.*, 1973, **3**, 139 (*cryst struct, abs config*)
Johns, S.R. *et al., Aust. J. Chem.*, 1974, **27**, 2025 (*isol, ir, pmr, ms, synth*)

Porantheridine P-570

*Decahydro-9*a*-methyl-2-propyl-2*H*-[1,3]oxazino[2,3,4-*de*]quinolizine, 9CI*



Absolute configuration

$C_{15}H_{27}NO$ 237.384

(-)-*form* [39027-77-5]
Alkaloid from the shrub *Poranthera corymbosa* (Euphorbiaceae). Oil. $[\alpha]_D$ -26 (c, 0.57 in EtOH).

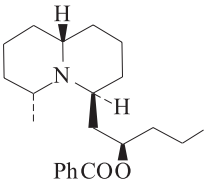
Hydrobromide:
Prisms (Me_2CO). Mp 165-166°. $[\alpha]_D$ -19 (c, 0.89 in MeOH).

(±)-*form*
Synthetic. Oil.

Denne, W.A. *et al., J. Cryst. Mol. Struct.*, 1973, **3**, 87 (*cryst struct, abs config*)
Johns, S.R. *et al., Aust. J. Chem.*, 1974, **27**, 2025 (*isol, ms*)
Gössinger, E. *et al., Monatsh. Chem.*, 1980, **111**, 783 (*synth, ir, pmr, cmr, ms*)
Gössinger, E. *et al., Tet. Lett.*, 1980, **21**, 2229 (*synth, pmr, cmr, ms*)
Comins, D.L. *et al., J.A.C.S.*, 1993, **115**, 8851 (*synth*)
David, M. *et al., J.O.C.*, 1999, **64**, 8402-8405 (*synth*)

Porantherilidine P-571

*Octahydro-6-methyl-α-propyl-2*H*-quinolizine-4-ethanol benzoate, 9CI*



Absolute configuration

$C_{22}H_{33}NO_2$ 343.508

(-)-*form* [51105-10-3]
Alkaloid from the shrub *Poranthera corymbosa* (Euphorbiaceae). Gum. $[\alpha]_D$ -47 (c, 0.75 in $CHCl_3$).

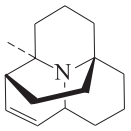
Hydrobromide:
Needles (Me_2CO). Mp 251-252°. $[\alpha]_D$ -27 (c, 0.46 in MeOH).

(±)-*form* [74164-01-5]
Synthetic. Noncryst.

Denne, W.A. *et al., J. Cryst. Mol. Struct.*, 1973, **3**, 367 (*cryst struct, abs config*)
Johns, S.R. *et al., Aust. J. Chem.*, 1974, **27**, 2025 (*isol, ir, pmr, ms*)
Gössinger, E. *et al., Monatsh. Chem.*, 1980, **111**, 143; 783 (*synth, ir, pmr, ms*)

Porantherine P-572

3a,4,5,6,7,8,9,9a-Octahydro-9a-methyl-1H-1,6a-ethanopyrido[2,1,6-de]quinolizine, 9CI



Absolute configuration

$C_{15}H_{23}N$ 217.353

(+)-*form* [33529-61-2]
Major alkaloid from the shrub *Poranthera corymbosa* (Euphorbiaceae). Mp 36-40°. $[\alpha]_D$ +29 (c, 0.35 in $CHCl_3$).

Hydrochloride:
Prisms (EtOH). Mp 307° dec.

Hydrobromide:
Prisms (EtOH). $[\alpha]_D$ -13 (c, 0.35 in EtOH). Dec. >340° without melting.

Picrate:
Yellow needles (EtOH). Mp 295° (dec.).

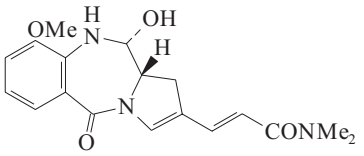
Dihydro: Mp 81-82°. $[\alpha]_D$ +15 (c, 0.55 in $CHCl_3$).

(±)-*form* [54382-19-3]
Synthetic. Oil.

Denne, W.A. *et al., Tet. Lett.*, 1971, 3107 (*cryst struct, abs config*)
Denne, W.A. *et al., J. Cryst. Mol. Struct.*, 1973, **3**, 79 (*cryst struct, abs config*)
Johns, S.R. *et al., Aust. J. Chem.*, 1974, **27**, 2025 (*isol, pmr, ms*)
Corey, E.J. *et al., J.A.C.S.*, 1974, **96**, 6516 (*synth*)

Porothramycin A P-573

BMY 28121. BU 2916T. Antibiotic BMY 28121. Antibiotic BU 2916T
[110652-73-8]



$C_{18}H_{21}N_3O_4$ 343.382
Anthramycin-type antibiotic. Prod. by a *Streptomyces albus* sp. Active against gram-positive bacteria and tumours. Pale yellow powder. Sol. MeOH, $CHCl_3$, Py, EtOH, DMSO; fairly sol. EtOAc, Et_2O; poorly sol. H_2O, hexane. Mp 140-150° dec. $[\alpha]_D^{27}$ +432 (c, 0.46 in $CHCl_3$). Porothramycin A or B obt. depending on isol. process used. λ_{max} 214 (ε 22000); 235 (ε 20300); 336 (ε 45500) (MeOH) (Derep). λ_{max} 214 (ε 12000); 235 (ε 20300); 335 (ε 45500) (MeOH) (Berdy). λ_{max} 214 ; 235 ; 335 (MeOH-HCl) (Berdy).

▶ UC6360000

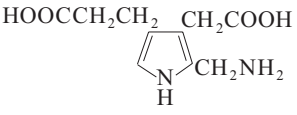
Me ether: ***Porothramycin B***
[110652-72-7]
$C_{19}H_{23}N_3O_4$ 357.408
From *Streptomyces albus*. Similar biol. props. as parent. Yellow needles (EtOAc/MeOH). Sol. MeOH, $CHCl_3$, Py, DMSO, EtOH; fairly sol. EtOAc, Et_2O; poorly sol. H_2O, hexane. Mp 164-166°. $[\alpha]_D^{27}$ +669 (c, 0.62 in $CHCl_3$). λ_{max} 214 (ε 22000); 235 (ε 20300); 336 (ε 45500) (MeOH) (Derep). λ_{max} 213 (ε 27800); 236 (ε 27100); 338 (ε 57500) (MeOH) (Berdy). λ_{max} 213 ; 236 ; 338 (MeOH-HCl) (Berdy).

▶ LD_{50} (mus, ipr) 981 mg/kg. UC6350000

Tsunakawa, M. *et al., J. Antibiot.*, 1988, **41**, 1366 (*isol, pmr, cmr, struct*)

Porphobilinogen P-574

5-(Aminomethyl)-4-(carboxymethyl)-1H-pyrrole-3-propanoic acid, 9CI
[487-90-1]



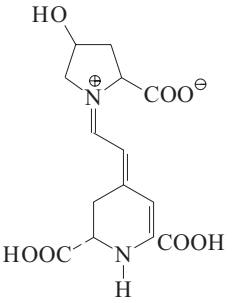
$C_{10}H_{14}N_2O_4$ 226.232
Isol. from urine of patients suffering from certain types of porphyria. Key monopyrrolic intermed. in porphyrin, chlorophyll and vitamin B_{12} biosynth. Cryst. + $1H_2O$ (H_2O). Mp 167° Mp 175-180° dec. Unstable in air and in aq. soln.; turns pink. On heating in acid (in air) forms a mixt. of Uroporphyrins I, II, III and IV.

Lactam: [3468-98-2]
$C_{10}H_{12}N_2O_3$ 208.216
Cryst. (AcOH aq.). Dec. >325°.

Rimington, C. *et al., Nature (London)*, 1955, **175**, 630 (*isol*)
Jackson, A.H. *et al., Can. J. Chem.*, 1957, **35**, 717 (*synth*)
Bezold, G. *et al., Angew. Chem., Int. Ed.*, 1967, **6**, 883 (*rev*)
Battersby, A.R. *et al., Chem. Comm.*, 1973, 1546
Jones, M.I. *et al., Chem. Comm.*, 1976, 472 (*synth*)
Kenner, G.W. *et al., J.C.S. Perkin 1*, 1977, 332 (*synth*)
Gibbs, P.N.B. *et al., Biochem. J.*, 1986, **236**, 447 (*biosynth*)
Blanche, F. *et al., Angew. Chem., Int. Ed.*, 1995, **34**, 383 (*rev*)
Bobal, P. *et al., Trends Org. Chem.*, 1997, **6**, 125-144 (*rev, synth*)
Jacobi, P.A. *et al., J. Appl. Chem.*, 2001, **123**, 9307-9312 (***synth, pmr, cmr***)

Portulacaxanthin I P-575

Portulaxanthine
[11042-69-6]

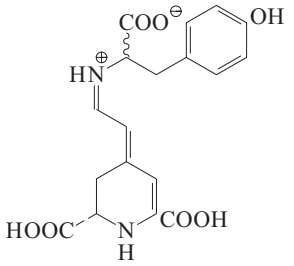


$C_{14}H_{16}N_2O_7$ 324.29
Betalaine pigment. Alkaloid from the flowers *Portulaca grandiflora* (Portulaceae).

Piattelli, M. *et al., CA*, 1967, **66**, 112959p (*isol*)
Trezzini, G.F. *et al., Phytochemistry*, 1991, **30**, 1897

Portulacaxanthin II P-576

4-[[[Carboxy-(4-hydroxyphenyl)ethyl]imino]ethylidene]-1,2,3,4-tetrahydro-2,6-pyridinedicarboxylic acid. Tyrosinebetaxanthin
[135545-98-1]

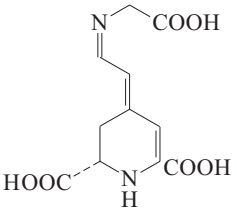


$C_{18}H_{18}N_2O_7$ 374.349
Betalaine pigment. Alkaloid from the flowers of *Portulaca grandiflora* (Portulaceae).

Trezzini, G.F. *et al., Phytochemistry*, 1991, **30**, 1897 (*isol, struct*)

Portulacaxanthin III P-577

4-[[(Carboxymethyl)imino]ethylidene]-1,2,3,4-tetrahydro-2,6-pyridinedicarboxylic acid. Glycinebetaxanthin
[135545-99-2]

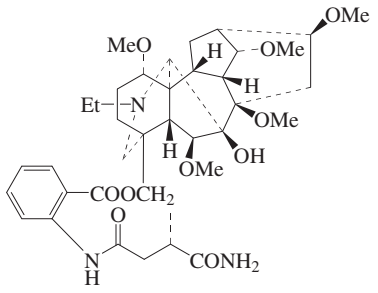


$C_{11}H_{12}N_2O_6$ 268.226
Betalaine pigment. Alkaloid from the flowers of *Portulaca grandiflora* (Portulaceae). λ_{max} 470 nm.

Trezzini, G.F. *et al., Phytochemistry*, 1991, **30**, 1897 (*isol, struct*)

Potanisine G P-578

[664304-12-5]



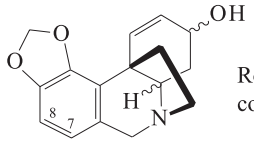
$C_{38}H_{55}N_3O_{10}$ 713.867

Closely related to Delsemine, D-196. Alkaloid from the roots of *Delphinium potaninii*. Amorph. powder. $[\alpha]_D^{10}$ -24.5 (c, 1 in $CHCl_3$). Possible artifact.

Chen, D.-L. *et al., J. Asian Nat. Prod. Res.*, 2003, **5**, 209-213 (*isol, pmr, cmr*)

Powellamine P-579

Cripaline



Relative configuration

$C_{16}H_{17}NO_3$ 271.315

May be the C7-C8 methylenedioxy isomer. Historically Powellamine was the (-)-form and Cripaline the (+)-form.

(+)-*form*

Alkaloid from *Crinum powellii* var. *harlemense* (Amaryllidaceae). Cryst. (Me_2CO). Mp 198-199°. $[\alpha]_D^{24}$ +50 (c, 0.2 in $CHCl_3$).

Perchlorate:
Cryst. (MeOH). Mp 257-258°.

Picrate:
Cryst. (MeOH). Mp 185-186°.

(-)-*form*

Alkaloid from the bulbs of *Crinum powellii* and from the *Crinum* hybrid "Ellen Bosanquet"(Amaryllidaceae). Mp 198-200°. $[\alpha]_D^{25}$ -49 (c, 0.25 in $CHCl_3$).

Perchlorate: Mp 258°.

Picrate: Mp 186°.

(±)-*form*

Obt. from equimolar amts. of the enantiomers. Mp 201°.

Boit, H.-G. *et al., Naturwissenschaften*, 1959, **46**, 475; 1961, **48**, 406 (*isol, struct*)

Döpke, W. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1962, **295**, 868; *CA*, **58**, 11415g (*Cripaline*)

Powellidine P-580

[1360-53-8]

$C_{16}H_{17}NO_3$ 271.315

Amaryllidaceae alkaloid. Struct. unknown. Isol. from the bulbs of *Crinum powellii* (Amaryllidaceae). Mp 207-209°. $[\alpha]_D^{26}$ +100 (c, 0.2 in $CHCl_3$).

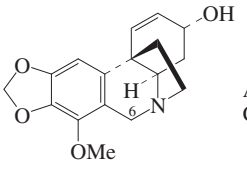
Perchlorate: Mp 177°.

Picrate: Mp 198°.

Boit, H.-G. *et al., Naturwissenschaften*, 1959, **46**, 475 (*isol*)

Powelline P-581

[7363-25-9]



Absolute Configuration

$C_{17}H_{19}NO_4$ 301.341

Alkaloid from *Crinum powellii* and several other spp. in the Amaryllidaceae. Mp 197-198°. $[\alpha]_D$ 0 ($CHCl_3$). λ_{max} 288 (log ϵ 3.23) (EtOH).

Picrate: Mp 228-231° dec.

Me ether: ***Buphanidrine***. *Distichine*
[1162-10-3]
Alkaloid from *Boophone fischeri*, *Boophone disticha* and some other spp. in the Amaryllidaceae. Analgesic. Mp 90-92° Mp 144° (hydrate). $[\alpha]_D^{23}$ -6.9 (c, 1 in $CHCl_3$). $[\alpha]_D^{22}$ +4.2 (c, 0.54 in EtOH).

▶ Toxic, LD_{50} (mus, scn) 8.9 mg/kg.

Me ether, hydrobromide: Mp 195-197°. $[\alpha]_D^{20}$ +5.6 (95% EtOH).

Me ether, picrate: Mp 238-239°.

1β,2β-Epoxide: see Crinamidine, C-743

6α-Hydroxy: ***6α-Hydroxypowelline***
[31128-98-0]
$C_{17}H_{19}NO_5$ 317.341
Isol. from the bulbs of *Nerine bowdenii* and from an unidentified *Crinum* sp. Prisms (Me_2CO). Mp 233-235°. $[\alpha]_D^{24}$ -36 (c, 0.19 in MeOH). λ_{max} 218 (ϵ 17500); 235 (ϵ 6800); 286 (ϵ 2150) (95%EtOH).

6α-Hydroxy, di-Ac:
Cryst. (Me_2CO). Mp 114-117°. $[\alpha]_D^{24}$ -26 (c, 0.20 in MeOH).

6α-Hydroxy, O^3-Me: ***6α-Hydroxybuphanidrine***
[31128-91-3]
$C_{18}H_{21}NO_5$ 331.368
Isol. from the bulbs of *Nerine bowdenii* and *Nerine filifolia*. Cytotoxic agent active against Rauscher leukaemia virus. Prisms ($CHCl_3$). Mp 95-96°. $[\alpha]_D^{24}$ -64 (c, 0.19 in MeOH). $[\alpha]_D^{20}$ +19 (c,0.8 in MeOH). λ_{max} 215 (ϵ 18250); 238 (ϵ 7750); 285 (ϵ 1880) (95%EtOH).

6α-Hydroxy, O^3-Me, hydrochloride:
Amorph. $[\alpha]_D^{24}$ -22 (c, 0.16 in MeOH).

6α-Hydroxy, O^3-Me, Ac:
Cryst. (C_6H_6). Mp 165-168°. $[\alpha]_D^{24}$ -42 (c, 0.23 in MeOH).

6α-Methoxy, O^3-Me: ***6α-Methoxybuphanidrine***
$C_{19}H_{23}NO_5$ 345.394
Alkaloid from the bulbs of *Nerine filifolia*. $[\alpha]_D^{20}$ +34.6 (c, 0.13 in MeOH).

Wildman, W.C. *et al., J.A.C.S.*, 1958, **80**, 2567-2575 (*ir, struct, Powelline, Buphanidrine*)

Goosen, A. *et al., J.C.S.*, 1960, 1094-1096 (*isol, Buphanidrine*)

Haugwitz, R.D. *et al., J.C.S.*, 1965, 2001-2009 (*pmr, Buphanidrine*)

Clardy, J.C. *et al., J.A.C.S.*, 1970, **92**, 6337-6339 (*6-Hydroxybuphanidrine, cryst struct*)

Slabaugh, M.R. *et al., J.O.C.*, 1971, **36**, 3202-3207 (*6-Hydroxypowelline, 6-Hydroxybuphanidrine*)

Zetta, L. *et al., J.C.S. Perkin 2*, 1973, 1180-1184 (*cmr*)

Longévialle, P. *et al., Org. Mass Spectrom.*, 1973, **7**, 401-415; 417-430 (*ms*)

Viladomat, F. *et al., Phytochemistry*, 1995, **40**, 961-965 (*Buphanidrine*)

Nair, J.J. *et al., Phytochemistry*, 2005, **66**, 373-382 (*6α-Hydroxybuphanidrine, 6α-Methoxybuphanidrine*)

Poweramine P-582

[1360-54-9]

$C_{23}H_{30}N_2O_4$ 398.501

Tentative mol. formula. Struct. unknown. Alkaloid from leaves of *Ochrosia poweri* (Apocynaceae). Prisms (MeOH). Mp 241-242° dec. Conts. a 6-methoxyindole chromophore.

Picrate:
Red needles (MeOH), turning brown on drying. Mp 156°.

Doy, F.A. *et al., Aust. J. Chem.*, 1962, **15**, 548-554 (*isol, uv*)

Powerchrine P-583

[1360-55-0]

$C_{22}H_{26}N_2O_3$ 366.459

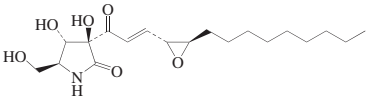
Struct. unknown. Alkaloid from *Ochrosia poweri* (Apocynaceae). Needles (MeOH). Mp 213°. $[\alpha]_D^{25}$ -80.8 (c, 1.1 in Me_2CO).

Douglas, B. *et al., Aust. J. Chem.*, 1964, **17**, 246-255 (*isol, uv*)

Pramanicin P-584

3,4-Dihydroxy-5-(hydroxymethyl)-3-[3-(3-nonyloxiranyl)-1-oxo-2-propenyl]-2-pyrrolidinone, 9CI. Antibiotic L 746628. L 746628

[154445-05-3]



Absolute Configuration

$C_{19}H_{31}NO_6$ 369.457

Tetramic acid deriv. Prod. by *Stagonospora* sp. ATCC 74235. Antimicrobial agent. Cryst. (MeOH aq.). Mp 110-113°. $[\alpha]_D^{25}$ -35 (c, 0.2 in MeOH). λ_{max} 245 (ϵ 14430) (MeOH).

Schwartz, R.E. *et al., Tetrahedron*, 1994, **50**, 1675-1686 (*isol, uv, ir, pmr, cmr, ms*)

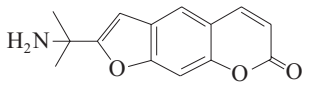
Barrett, A.G.M. *et al., J.O.C.*, 1999, **64**, 6005-6018 (*synth, abs config*)

Harrison, P.M. *et al., J.C.S. Perkin 1*, 2000, 4390-4402 (*biosynth*)

Aoki, S. *et al., Heterocycles*, 2006, **69**, 49-54 (*synth*)

Prangosine P-585

*2-(1-Amino-1-methylethyl)-7*H*-furo[3,2-g][1]benzopyran-7-one, 9CI*
[15399-67-4]

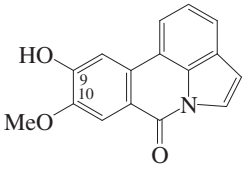


$C_{14}H_{13}NO_3$ 243.262
Alkaloid from *Prangos pabularia* (Apiaceae). Cryst. Mp 131-132°.

Mukhamedova, K.S. *et al., Khim. Prir. Soedin.*, 1967, **3**, 117; 357; *Chem. Nat. Compd. (Engl. Transl.)*, 1967, **3**, 97; 303 (*struct, ms*)
Akramov, S.T. *et al., Khim. Prir. Soedin.*, 1967, **3**, 287; *Chem. Nat. Compd. (Engl. Transl.)*, 1967, **3**, 243 (*pmr*)
Schneiders, G.E. *et al., J. Chem. Res., Synop.*, 1982, 182 (*synth*)
Zubia, E. *et al., Tetrahedron*, 1992, **48**, 4239 (*synth*)

Pratorinine P-586

*9-Hydroxy-10-methoxy-7*H*-pyrrolo[3,2,1-de]phenanthridin-7-one*
[88660-12-2]



$C_{16}H_{11}NO_3$ 265.268
There is considerable confusion regarding the structs. of Pratorimine and Pratorinine due to labelling errors. In the paper by Maddry *et al*, the names are reversed. The alkaloid synthesised by Joshi *et al*, and named Pratorimine now corresponds to Pratorinine. Alkaloid from the bulbs of *Crinum latifolium* and *Crinum bulbispermum*, also from *Crinum asiaticum* and *Crinum augustum* (Amaryllidaceae). Needles (MeOH). Mp 224-225°. The earlier reported Mp 263-265° is erroneous.

Me ether: ***Pratosine***. O-*Methylpratorimine*. O-*Methylpratorinine*. *Criasiaticidine A*
[88720-89-2]
$C_{17}H_{13}NO_3$ 279.295
Alkaloid from the bulbs of *Crinum latifolium* and *Crinum asiaticum*. Fine needles (Et_2O/MeOH). Mp 277-279°.

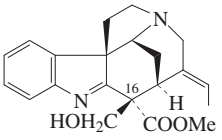
O-*De-Me:* ***Hippacine***†
$C_{15}H_9NO_3$ 251.241
Alkaloid from the bulbs of *Crinum bulbispermum*. Amorph. powder.

O-*De-Me,* O^9-*Me:* ***Pratorimine***
[80787-57-1]
$C_{16}H_{11}NO_3$ 265.268
Alkaloid from the bulbs of *Crinum pratense, Crinum latifolium* and *Crinum bulbispermum*. Also from *Crinum asiaticum* (Amaryllidaceae). Flakes ($CHCl_3$/EtOH). Mp 265-267°.

Ghosal, S. *et al., Phytochemistry*, 1981, **20**, 2003; 1983, **22**, 2305; 1985, **24**, 2141 (*isol, uv, ir, pmr, ms, struct, synth, occur, rev*)
Maddry, J.A. *et al., Tet. Lett.*, 1985, **26**, 4301 (*struct*)
Joshi, B.S. *et al., J. Nat. Prod.*, 1986, **49**, 445 (*Pratorinine, synth*)
Iwao, M. *et al., Heterocycles*, 1994, **38**, 1717 (*synth, Pratosine*)
Hutchings, R.H. *et al., J.O.C.*, 1996, **61**, 1004 (*synth, Pratosine*)
Miki, Y. *et al., Tet. Lett.*, 1999, **40**, 4347-4348 (*Pratosine, synth*)
Ramadan, M.A. *et al., Phytochemistry*, 2000, **54**, 891-896 (*Hippacine*)
Min, B.S. *et al., Chem. Pharm. Bull.*, 2001, **49**, 1217-1219 (*Criasiaticidine A*)
Ganton, M.D. *et al., Org. Lett.*, 2005, **7**, 4777-4779 (*synth*)
Mentzel, U.V. *et al., J.O.C.*, 2006, **71**, 5807-5810 (*Pratosine, synth*)

Preakuammicine P-587

Methyl 1,2,19,20-tetradehydro-17-hydroxycuran-16-carboxylate, 9CI
[23924-90-5]



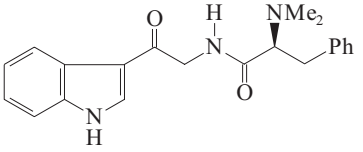
Absolute Configuration

$C_{21}H_{24}N_2O_3$ 352.432
The C-16 config. was not assigned, but its ready conversion to Akuammicine, A-228 and Stemmadenine, S-510 (abs. configs. now fully known) indicates it to be as shown. Alkaloid from *Catharanthus roseus* seedlings (Apocynaceae). Non-cryst. λ_{max} 262 (ϵ 6000) (EtOH).

Scott, A.I. *et al., J.A.C.S.*, 1969, **91**, 4932-4933; 5874-5876 (*isol, uv, pmr, ms, struct, biosynth*)

Prealmazole C P-588

[161068-70-8]

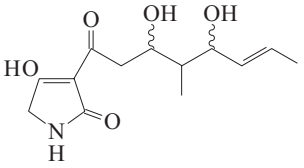


$C_{21}H_{23}N_3O_2$ 349.432
Alkaloid from an unidentified red Senegalese seaweed of the family Delesseriaceae. $[\alpha]_D^{20}$ +38 (c, 0.25 in MeOH).

Guella, G. *et al., Helv. Chim. Acta*, 1994, **77**, 1999-2006 (*isol, pmr, cmr, ms, struct, synth*)

Preapiodionene P-589

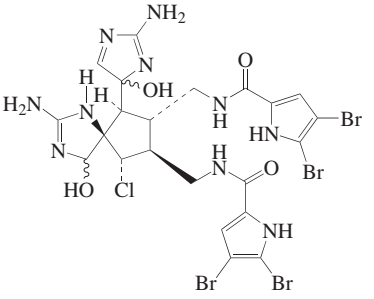
3-(3,5-Dihydroxy-4-methyl-1-oxo-6-octenyl)-2,4-pyrrolidinedione, 9CI
[142808-39-7]
[147920-90-9 , 147782-11-4]



$C_{13}H_{19}NO_5$ 269.297
Tetramic acid deriv. Isol. from *Apiosordaria effusa*. Precursor of Apiodionene, A-1339.

Japan. Pat., 1992, 92 49 289; *CA*, **117**, 88730f (*isol*)
Takahashi, S. *et al., CA*, 1993, **119**, 24279z (*isol, pmr, cmr*)

Preaxinellamine P-590

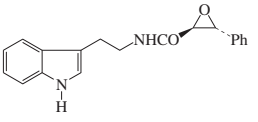


$C_{22}H_{23}Br_4ClN_{10}O_4$ 846.557
There is indirect evidence for the occurrence of this alkaloid. Probably occurs in sponges. Precursor of pyrrole-imidazole dimers.

Grube, A. *et al., Angew. Chem., Int. Ed.*, 2007, **46**, 6721-6724; 8107 (*occur*)

Prebalamide P-591

[190905-97-6]



Relative Configuration

$C_{19}H_{18}N_2O_2$ 306.363
Alkaloid from leaves of *Clausena indica*. Cryst. (Et_2O). Mp 125-127°. $[\alpha]_D$ +30 (c, 0.5 in $CHCl_3$). λ_{max} 224 ; 274 (sh) ; 283 ; 292 (Et_2O).

Riemer, B. *et al., Phytochemistry*, 1997, **45**, 337-341 (*isol, uv, ir, pmr, cmr, ms, struct*)

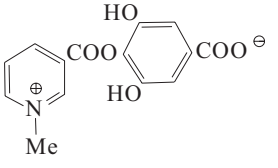
Precasine P-592

Struct. unknown. Alkaloid from the roots of *Abrus precatorius* (Fabaceae). Mp 234-236° (as picrate). Mp given as 234-326° in CAS, presumably due to a misprint.

Khaleque, A. *et al., Sci. Res. (Dacca)*, 1966, **3**, 203; *CA*, **67**, 90987n

Precatorine P-593

[36675-57-7]

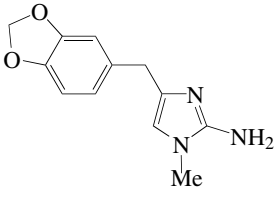


$C_{14}H_{11}NO_6$ 289.244
Alkaloid from the seeds, leaves, stems and roots of *Abrus precatorius* (Fabaceae). Needles (MeOH). Mp 218-220°.

Ghosal, S. *et al., Phytochemistry*, 1971, **10**, 195 (*isol, uv, ir, struct*)

Preclathridine A P-594

*4-(1,3-Benzodioxol-5-ylmethyl)-1-methyl-1*H*-imidazol-2-amine, 9CI. 2-Amino-1-methyl-4-(3,4-methylenedioxybenzyl)-1*H*-imidazole*
[146556-27-6]

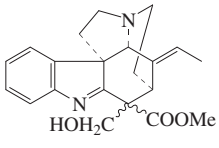


$C_{12}H_{13}N_3O_2$ 231.254
Metab. from the nudibranch *Notodoris gardineri*. Anthelminthic. Yellow oil. λ_{max} 208 ; 285 (MeOH).

Alvi, K.A. *et al., Tetrahedron*, 1993, **49**, 329-336 (*isol, uv, pmr, cmr, ms, struct*)
Kawasaki, I. *et al., Heterocycles*, 1996, **43**, 1375 (*synth*)
Molina, P. *et al., J.O.C.*, 1999, **64**, 2540-2544 (*synth, pmr, cmr*)

Precondylocarpine P-595

Methyl 1,2,14,19-tetradehydro-16-(hydroxymethyl)-condyfolan-16-carboxylate
[2779-17-1]



Absolute Configuration

$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from the leaves of *Vallesia dichotoma* (Apocynaceae). Cryst. (C_6H_6/hexane). Mp 143-146°.

Walser, A. *et al., Helv. Chim. Acta*, 1965, **48**, 391 (*isol, uv, ir, pmr, ms, struct*)

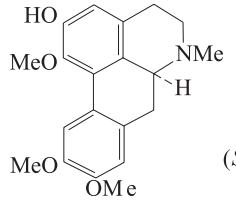
Precurarine P-596

[1360-58-3]
Struct. unknown. Alkaloid from *Strychnos solimoesana* (Loganiceae). Blue col. with Ce(*IV*).

Marini-Bettolo, G.B. *et al., Gazz. Chim. Ital.*, 1956, **86**, 1148

Predicentrine P-597

*5,6,6a,7-Tetrahydro-1,9,10-trimethoxy-6-methyl-4*H*-dibenzo[*de,g*]quinolin-2-ol, 9CI. 2-Hydroxy-1,9,10-trimethoxyaporphine*



(*S*)–*form*

$C_{20}H_{23}NO_4$ 341.406

(*S*)-*form* [517-65-7]
Alkaloid from *Beilschmiedia podagrica, Litsea triflora, Ocotea minarum, Ocotea brachybotra, Liriodendron tulipifera, Glaucium oxylobum, Corydalis cava, Corydalis bulbosa* and *Corydalis slivenensis* (Lauraceae, Magnoliaceae, Papaveraceae).

Hydrochloride:
Cryst. (MeOH/EtOAc). Mp 214-217°.

Hydrobromide:
Needles (MeOH). Mp 200-205° dec. $[\alpha]_D$ +97 (c, 0.2 in EtOH).

N-*De-Me: 2-Hydroxy-1,9,10-trimethoxynoraporphine.* ***Norpredicentrine***
[23768-71-0]
$C_{19}H_{21}NO_4$ 327.379
Alkaloid from the leaves of *Beilschmiedia podagrica* and *Guatteria scandens* (Lauraceae, Annonaceae). Noncryst.

N-*De-Me,* N-*Ac:*
Needles + 1MeOH (MeOH). Mp 133-135°. $[\alpha]_D$ +406 (c, 0.10 in $CHCl_3$).

(±)-*form* [20051-87-0]
Synthetic. Oil.

Hydrochloride:
Cryst. (MeOH/Et_2O). Mp 215-217° dec.

Hydrobromide: Mp 209-210°.

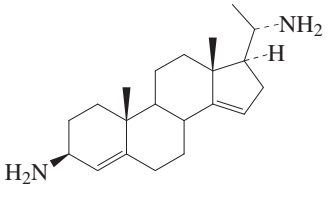
N-*De-Me:* [56533-87-0]
Synthetic. Cryst. (Me_2CO). Mp 204°.

N-*De-Me,* N-*Ac:*
Cryst. ($CHCl_3$/MeOH). Mp 234-236°.

Charubala, R. *et al., Chem. Ber.*, 1968, **101**, 2665 (*synth, uv, pmr*)
Johns, S.R. *et al., Aust. J. Chem.*, 1969, **22**, 1277 (*isol, uv, pmr, ms, struct, deriv*)
Kametani, T. *et al., J.C.S.(C)*, 1971, 1032 (*synth*)
Premila, M.S. *et al., Indian J. Chem.*, 1975, **13**, 13 (*deriv, synth, uv, pmr, ms*)
Preininger, V. *et al., J. Pharm. Sci.*, 1976, **65**, 294 (*isol*)
Chen, C.-L. *et al., Phytochemistry*, 1976, **15**, 1161 (*isol, uv, pmr, ms*)
Vecchietti, V. *et al., Farmaco, Ed. Sci.*, 1977, **32**, 767; 1979, **34**, 829; *CA*, **88**, 133240s; **92**, 18789y (*isol*)
Shafiee, A. *et al., J. Pharm. Sci.*, 1977, **66**, 593 (*isol, uv, pmr, ms*)
Hoshino, O. *et al., Chem. Pharm. Bull.*, 1978, **26**, 3920 (*synth*)
Guinaudeau, H. *et al., J. Nat. Prod.*, 1979, **42**, 325; 329 (*rev, cmr*)
Castedo, L. *et al., An. Quim., Ser. C*, 1980, **76**, 171; *CA*, **94**, 61694s (*isol*)
Kiryakov, H.G. *et al., Planta Med.*, 1981, **43**, 51; 1982, **44**, 168 (*isol*)
Hocquemiller, R. *et al., J. Nat. Prod.*, 1983, **46**, 335 (*deriv*)
Rasoanaivo, P. *et al., Planta Med.*, 1998, **64**, 58-62 (*cmr, Norpredicentrine*)

Pregna-4,14-diene-3,20-diamine P-598

3,20-Diaminopregna-4,14-diene



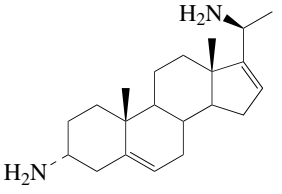
$C_{21}H_{34}N_2$ 314.513

(3β,20*S*)-*form*
N^{20},N^{20}-*Di-Me,* N^3-*tigloyl:* ***Salonine C***
[657411-75-1]
$C_{28}H_{44}N_2O$ 424.668
Alkaloid from *Sarcococca saligna*. Cholinesterase inhibitor. Amorph. solid. $[\alpha]_D^{20}$ -120 (c, 0.05 in MeOH). λ_{max} 206 (log ϵ 2.23) (MeOH).

Atta-ur-Rahman, *et al., Helv. Chim. Acta*, 2004, **87**, 439-448 (*Salonine C*)

Pregna-5,16-diene-3,20-diamine P-599

3,20-Diaminopregna-5,16-diene



$C_{21}H_{34}N_2$ 314.513

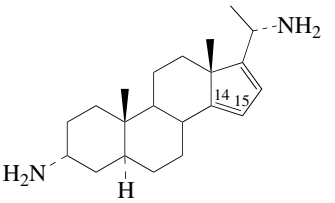
(3α,20*S*)-*form*
N^3,N^3,N^{20}-*Tri-Me,* N^{20}-*Ac:* ***Saracocinaene.*** *Sarcocinaene*
[182815-72-1]
$C_{26}H_{42}N_2O$ 398.631
Alkaloid from aerial parts of *Sarcococca saligna*. Solid. Mp 129-130°. $[\alpha]_D^{25}$ +170 (c, 0.05 in $CHCl_3$).

(3*β*,20*S*)-*form*
N^3,N^{20},N^{20}-*Tri-Me:* ***Sarconidine***
[193629-88-8]
$C_{24}H_{40}N_2$ 356.593
Alkaloid from aerial parts of *Sarcococca saligna*. Yellow amorph. solid. $[\alpha]_D^{20}$ -66 (c, 0.02 in $CHCl_3$).

Naeem, I. *et al., Phytochemistry*, 1996, **43**, 903-906 (*Saracocinaene*)
Atta-ur-Rahman, *et al., Phytochemistry*, 1997, **45**, 861-864 (*Sarconidine*)

Pregna-14,16-diene-3,20-diamine P-600

3,20-Diaminopregna-14,16-diene



$C_{21}H_{34}N_2$ 314.513

(3α,5α,20*S*)-*form*
N^3,N^3,N^{20}-*Tri-Me,* N^{20}-*formyl:* ***Sarcorucinine A.*** N-*[3-(Dimethylamino)pregna-14,16-dien-20-yl]*-N-*methylformamide, 9CI*
[129707-39-7]
$C_{25}H_{40}N_2O$ 384.604
Alkaloid from the aerial parts of

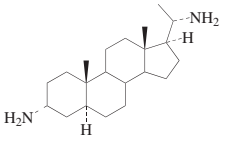
Sarcococca ruscifolia (Buxaceae).

14,15-Dihydro, N^3,N^3,N^{20}*-tri-Me,* N^{20}*-formyl:* ***Sarcorucinine A1***
[143086-41-3]
$C_{25}H_{42}N_2O$ 386.62
From aerial parts of *Sarcococca ruscifolia*.

Qiu, M. *et al., Yunnan Zhiwu Yanjiu*, 1990, **12**, 111; 1991, **13**, 445; *CA*, **113**, 148873j; **117**, 108079f (*isol*)

Pregnane-3,20-diamine P-601

3,20-Diaminopregnane



(3α,5α,20*S*)-*form*

$C_{21}H_{38}N_2$ 318.545

Epipachysamines are not epimers of the Pachysamines.

(3α,5α,20S)-form

N^3,N^{20}*-Di-Me,* N^{20}*-Ac:* **N^3-*Demethylsaracodine***
[4947-49-3]
$C_{25}H_{44}N_2O$ 388.635
Constit. of *Sarcococca saligna*. Amorph. solid. λ_{max} 203 (log ε 2.12) (no solvent reported).

N^{20},N^{20}*-Di-Me,* N^3*-(3-methyl-2-butenoyl):* ***Pachysamine E***. *3-(β,β-Dimethylacryloylamino)-20-dimethylaminopregnane*
[6579-73-3]
$C_{28}H_{48}N_2O$ 428.7
Alkaloid from *Sarcococca pruniformis* and *Pachysandra terminalis*. Cytotoxic. Powder. Mp 148-150° Mp 172-178°. $[\alpha]_D^{25}$ +46 ($CHCl_3$). C-3 epimer of Epipachysamine E.

N^3,N^3,N^{20}*-Tri-Me,* N^{20}*-Ac:* ***Saracodine***. *Sarcodine*
[15437-92-0]
$C_{26}H_{46}N_2O$ 402.662
Alkaloid from *Sarcococca pruniformis* and *Sarcococca saligna*. Shows monoamine oxidase inhibitor-like activity. Cholinesterase inhibitor. Cryst. (MeOH). Mp 247°. $[\alpha]_D^{25}$ -11.9 ($CHCl_3$).

N^3,N^{20},N^{20}*-Tri-Me: 20-Dimethylamino-3-methylaminopregnane.* ***Pachysamine A***
[6801-29-2]
$C_{24}H_{44}N_2$ 360.625
Alkaloid from *Pachysandra terminalis* (Buxaceae). Cryst. (Me_2CO/CH_2Cl_2). Mp 171-173° (167-168°). $[\alpha]_D^{10}$ +20 ($CHCl_3$).

▶ TU4157095

N^3,N^{20},N^{20}*-Tri-Me,* N^3*-Ac:* N^3*-Acetylpachysamine A*. ***Isosaracodine***. *Isosarcodine*
[15027-96-0]
$C_{26}H_{46}N_2O$ 402.662
Alkaloid from *Pachysandra* spp. and *Sarcococca saligna*. Cholinesterase inhibitor. Mp 150-152°.

N^3,N^{20},N^{20}*-Tri-Me,* N^3*-(3-methyl-2-butenoyl):* ***Pachysamine B***
[6792-14-9]
$C_{29}H_{50}N_2O$ 442.727
Alkaloid from *Pachysandra terminalis* (Buxaceae). Mp 171-173°. $[\alpha]_D^{10}$ +67 ($CHCl_3$).

N^3,N^{20},N^{20}*-Tri-Me,* N^3*-benzoyl:* ***Pachysamine H***
[128255-13-0]
$C_{31}H_{48}N_2O$ 464.733
Alkaloid from *Pachysandra axillaris*. Mp 150-153°. $[\alpha]_D^{22}$ +57.4 (c, 0.5 in $CHCl_3$).

N^3,N^3,N^{20},N^{20}*-Tetra-Me: 3,20-Bis(dimethylamino)pregnane.* **N-*Methylpachysamine A***
[6584-68-5]
$C_{25}H_{46}N_2$ 374.652
Alkaloid from *Pachysandra terminalis* (Buxaceae). Cryst. (Me_2CO/CH_2Cl_2). Mp 165-166°. $[\alpha]_D$ +16 ($CHCl_3$).

(3β,5α,20R)-form [95272-07-4]
[96391-90-1 (dihydrochloride)]
Noncryst. Mp 300° (as hydrochloride).

N^3,N^{20}*-Di-Ac:* [95869-16-2]
Mp 284-288°. $[\alpha]_D$ +13 (MeOH).

N-*Tetra-Me:* [1248-06-2]
Cryst. (Me_2CO). Mp 120-121°.

(3β,5α,20S)-form [7050-25-1]

N^3,N^3*-Di-Me:* ***Funtudiamine A***. *Epipachysamine F*
[5141-99-1]
$C_{23}H_{42}N_2$ 346.598
Alkaloid from *Funtumia latifolia*. Minor alkaloid from *Pachysandra terminalis* (Apocynaceae, Buxaceae). Mp 80°. $[\alpha]_D$ +6 ($CHCl_3$).

N^3,N^3*-Di-Me,* N^{20}*-formyl:* **N^{20}-*Formylepipachysamine F***. *Iso*-N-*formylchonemorphine*
[657403-04-8]
$C_{24}H_{42}N_2O$ 374.609
Alkaloid from *Sarcococca brevifolia*. Amorph. solid. Mp 220-222°. $[\alpha]_D^{25}$ -14 (c, 0.2 in $CHCl_3$).

N^3,N^3*-Di-Me,* N^{20}*-Ac:*
Cryst. (Me_2CO). Mp 250-253°. $[\alpha]_D$ +6 ($CHCl_3$).

N^3,N^{20}*-Di-Me:* ***Epipachysamine C***. *Dictyodiamine*
[4215-74-1]
$C_{23}H_{42}N_2$ 346.598
Alkaloid from *Pachysandra terminalis* and *Dictyophleba lucida* roots (Buxaceae, Apocynaceae). Mp 116°. $[\alpha]_D$ +22 ($CHCl_3$).

N^3,N^{20}*-Di-Me,* N^3,N^{20}*-di-Ac:* **N,N-*Diacetylepipachysamine C***
[4947-48-2]
$C_{27}H_{46}N_2O_2$ 430.673
Alkaloid from *Pachysandra terminalis* (Buxaceae). Cryst. (Me_2CO). Mp 242-243°. $[\alpha]_D$ -16 ($CHCl_3$).

N^3,N^{20}*-Di-Me,* N^3*-benzoyl:* ***Hookerianamide I***
[957466-16-9]
$C_{30}H_{46}N_2O$ 450.706
Alkaloid from *Sarcococca hookeriana*. Amorph. solid. $[\alpha]_D^{25}$ +186 (c, 0.3 in MeOH). λ_{max} 220 (log ε 2.1); 266 (log ε 3) (MeOH).

N^{20},N^{20}*-Di-Me: 3-Amino-20-dimethylaminopregnane.* ***Chonemorphine***
[4282-07-9]
$C_{23}H_{42}N_2$ 346.598
Main alkaloid of *Chonemorpha macrophylla* (*Chonemorpha fragrans*), isol. from *Chonemorpha penangensis, Malouetia bequaertiana, Dictyophleba lucida* and *Funtumia latifolia* (Apocynaceae). Mp 144-146°. $[\alpha]_D^{32}$ +25 ($CHCl_3$).

N^{20},N^{20}*-Di-Me, hydrochloride:* Mp 318-320°.

N^{20},N^{20}*-Di-Me,* N^3*-formyl:* **N-*Formylchonemorphine***
[51873-91-7]
$C_{24}H_{42}N_2O$ 374.609
Alkaloid from *Chonemorpha macrophylla* (Apocynaceae) and *Sarcococca saligna* (Buxaceae). Mp 289-291°. $[\alpha]_D^{25}$ +25 (c, 0.05 in MeOH).

N^{20},N^{20}*-Di-Me,* N^3*-Ac:* ***Saracorine***. N-*Acetylchonemorphine. Sarcorine*
[3514-38-3]
$C_{25}H_{44}N_2O$ 388.635
Alkaloid possibly from *Malouetia bequaertiana* and from aerial parts of *Sarcococca saligna*. Cryst. (Me_2CO) (also descr. as an oil). Mp 272°. $[\alpha]_D$ +14 (c, 1 in $CHCl_3$). $[\alpha]_D^{25}$ +49 (c, 0.815 in $CHCl_3$) (Saracorine). Saracorine and the previously tentatively identified *N*-Acetylchonemorphine are prob. identical but have not been compared.

N^{20},N^{20}*-Di-Me,* N^3*-(3-methyl-2-butenoyl):* ***Epipachysamine E***
[3697-79-8]
$C_{28}H_{48}N_2O$ 428.7
Alkaloid from *Pachysandra terminalis* (Buxaceae). Cytotoxic to P388 cells. Mp 210-212°. $[\alpha]_D$ +20 ($CHCl_3$).

N^{20},N^{20}*-Di-Me,* N^3*-tigloyl:* ***Pachysamine G***
[128255-14-1]
$C_{28}H_{48}N_2O$ 428.7
Alkaloid from *Pachysandra axillaris*. Mp 205-206°. $[\alpha]_D^{22}$ +11.4 ($CHCl_3$).

N^{20},N^{20}*-Di-Me,* N^3*-(3,4-dimethyl-2*E*-pentenoyl):* ***Salignenamide A***
[208835-28-3]
$C_{30}H_{52}N_2O$ 456.754
Alkaloid from *Sarcococca saligna*. $[\alpha]_D^{30}$ +52 (c, 0.02 in MeOH). λ_{max} 219 (log ε 3.68); 268 (log ε 3.52) (MeOH).

N^{20},N^{20}*-Di-Me,* N^3*-benzoyl:* ***Epipachysamine D***
[3697-77-6]
$C_{30}H_{46}N_2O$ 450.706
Alkaloid from *Pachysandra terminalis* and *Sarcococca saligna*. Mp 245-248°. $[\alpha]_D$ +13 ($CHCl_3$). λ_{max} 223 (MeOH) (Berdy).

N^{20},N^{20}*-Di-Me,* N^3*-(3-pyridinecarbonyl):* ***Epipachysamine B***
[2552-06-9]
$C_{29}H_{45}N_3O$ 451.694
Alkaloid from *Pachysandra terminalis* (Buxaceae). Cytotoxic to P388 cells. Mp 260-262°. $[\alpha]_D$ +16 ($CHCl_3$).

N^3,N^3,N^{20}*-Tri-Me:* ***Funtudiamine B***.

Deacetylepipachysamine A
[15112-47-7]
$C_{24}H_{44}N_2$ 360.625
Alkaloid from *Funtumia latifolia* and *Pachysandra terminalis* (Apocynaceae, Buxaceae). Mp 96-98° (90-100°). $[\alpha]_D$ +23 (+20) ($CHCl_3$).

N^3,N^3,N^{20}-*Tri-Me,* N^{20}-*Ac:* ***Epipachysamine A***
[2309-42-4]
$C_{26}H_{46}N_2O$ 402.662
Alkaloid from *Pachysandra terminalis* (Buxaceae). Cryst. (Me_2CO). Mp 201-203°. $[\alpha]_D$ -17 (-10) ($CHCl_3$).

▶ AB7910500

N^3,N^{20},N^{20}-*Tri-Me:* ***Dictyophlebine***
[4947-43-7]
$C_{24}H_{44}N_2$ 360.625
Alkaloid from the roots of *Dictyophleba lucida* and from *Funtumia latifolia* (Apocynaceae). Mp 148-151°. $[\alpha]_D^{30}$ +32 (c, 1.0 in $CHCl_3$) (+20).

N^3,N^{20},N^{20}-*Tri-Me,* N^3-*(3,4-dimethyl-2*E*-pentenoyl):* ***Salignenamide F***
[426815-01-2]
$C_{31}H_{54}N_2O$ 470.78
Alkaloid from *Sarcococca saligna*. Powder. λ_{max} 266 (log ϵ 2.7); 279 (log ϵ 3.78) (MeOH).

N^3,N^{20},N^{20}-*Tri-Me,* N^3-*benzoyl:* ***3-Epipachysamine H***. N^3-*Methylepipachysamine D*
[202583-17-3]
$C_{31}H_{48}N_2O$ 464.733
Alkaloid from *Sarcococca saligna* (Buxaceae). $[\alpha]_D^{25}$ +66 (c, 0.04 in $CHCl_3$). λ_{max} 232 (log ϵ 1.62) (MeOH).

N^3,N^{20},N^{20}-*Tri-Me,* N^3-E-*cinnamoyl:* ***Saligcinnamide***
[202597-28-2]
$C_{33}H_{50}N_2O$ 490.771
Alkaloid from *Sarcococca saligna* (Buxaceae). Powder. Mp 156-160°. $[\alpha]_D^{25}$ +96 (c, 0.02 in $CHCl_3$). λ_{max} 279 (log ϵ 3.78) (MeOH). λ_{max} 226 (ϵ 10300); 274 (ϵ 6000) (MeOH) (Berdy).

N^3,N^3,N^{20},N^{20}-*Tetra-Me:* ***Dihydrokurchessine***
[1172-08-3]
$C_{25}H_{46}N_2$ 374.652
Alkaloid from *Malouetia tamaquarina* (Apocynaceae). Mp 106-108°. $[\alpha]_D$ +28 ($CHCl_3$).

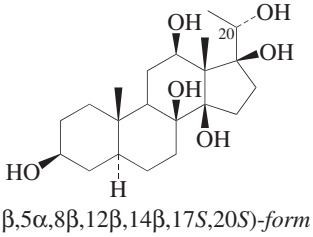
N-*Hexa-Me:* ***Malouetine***
[14486-61-4]
[10308-44-8]
$C_{27}H_{52}N_2^{2\oplus}$ 404.721
Quaternary alkaloid from *Malouetia bequaertiana* (Apocynaceae). Curarising agent. Noncryst. (as dichloride). $[\alpha]_D$ +3 (H_2O) (chloride).

(3β,5β,20*S*)-*form*
$Bp_{0.05}$ 220-230°. $[\alpha]_D^{31}$ +13 (c, 1.3 in EtOH).

[152985-06-3 , 33467-60-6 , 24663-41-0 , 85719-26-2]

Crabbé, P. *et al., Bull. Soc. Chim. Belg.*, 1962, **71**, 203-216 (*3β,5α,20R-form, di-Ac, tetra-Me*)
Janot, M.M. *et al., Bull. Soc. Chim. Fr.*, 1962, 111-118 (*Malouetine*)
Schmitt, J. *et al., Bull. Soc. Chim. Fr.*, 1964, 761-771 (*synth*)
Chien, P.L. *et al., J.O.C.*, 1964, **29**, 315-318 (*Chonemorphine, synth, bibl*)
Tomita, M. *et al., Tet. Lett.*, 1964, **5**, 1641-1644 (*Pachysamines A,B, isol, struct*)
Kikuchi, T. *et al., Tet. Lett.*, 1964, **5**, 1817-1823; 1965, **6**, 1993-1999 (*Pachysandra terminalis constits*)
Khuong-Huu, Q. *et al., Bull. Soc. Chim. Fr.*, 1965, 3035-3040 (*occur, bibl*)
Chatterjee, A. *et al., Chem. Ind. (London)*, 1966, 769-770 (*Sarcococca pruniformis derivs*)
Kikuchi, T. *et al., Chem. Pharm. Bull.*, 1967, **15**, 307-316 (*Epipachysamines*)
Chatterjee, A. *et al., Indian J. Chem.*, 1967, **5**, 146-150 (*Chonemorphine, isol, ir, pmr, synth, struct*)
Sóti, F. *et al., Tet. Lett.*, 1967, 1437-1441 (*Dihydrokurchessine*)
Kohli, J.M. *et al., Tetrahedron*, 1967, **23**, 3829-3835 (*Saracodine*)
Tomita, M. *et al., Yakugaku Zasshi*, 1967, **87**, 215-227 (*Pachysamines A,B, N-Methylpachysamine A, Epipachysamines A,B,D,E, N,N-Diacetylepipachysamine C, N^{20}-Acetylepipachysamine F*)
Goutarel, R. *et al., Tetrahedron*, 1968, **24**, 7013-7026 (*Saracodine, synth*)
Banerji, J. *et al., Indian J. Chem., Sect. B*, 1978, **16**, 346-349 (*Formylchonemorphine, Sarcorine*)
Qiu, M. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 1990, **32**, 626-630; *CA*, **114**, 118538g (*Pachysamines G-H*)
Naeem, I. *et al., Phytochemistry*, 1996, **43**, 903-906 (*Saracodine*)
Atta-ur-Rahman, *et al., Phytochemistry*, 1997, **45**, 861-864; **46**, 771-775 (*Saracorine, N-Formylchonemorphine*)
Atta-ur-Rahman, *et al., J. Nat. Prod.*, 1998, **61**, 202-206 (*Saligcinnamide, N^3-Methylepipachysamine D, Epipachysamine D*)
Atta-ur-Rahman, *et al., Nat. Prod. Lett.*, 1998, **11**, 81-91; 297-304 (*N^3-Demethylsaracodine, Salignenamide A*)
Jayasinghe, U.L.B. *et al., Nat. Prod. Lett.*, 1998, **12**, 103-109; 2000, **14**, 293-298 (*N^{20}-Formylepipachysamine F*)
Funayama, S. *et al., Biol. Pharm. Bull.*, 2000, **23**, 262-264 (*Pachysamine E, Epipachysamines, isol, activity*)
Atta-ur-Rahman, *et al., Helv. Chim. Acta*, 2002, **85**, 678-688 (*Salignenamide F*)
Gilani, A.-U.H. *et al., Planta Med.*, 2005, **71**, 120-125 (*Saracodine, Saracorine*)
Devkota, K.P. *et al., Chem. Pharm. Bull.*, 2007, **55**, 1397-1401 (*Hookerianamide I*)

Pregnane-3,8,12,14,17,20-hexol P-602



(3β,5α,8β,12β,14β,17*S*,20*S*)-*form*

$C_{21}H_{36}O_6$ 384.512

(3β,5α,8β,12β,14β,17*S*,20*S*)-*form*
Dihydrosarcostin. *Deacyldrevogenin*
[3080-22-6]
Cryst. (EtOAc). Mp 240-245°. $[\alpha]_D^{20}$ +41.2 (c, 1.03 in MeOH).

12-O-*(2-Methylaminobenzoyl),* O^{20}-*Ac:* ***Stephanthraniline B***
[69476-88-6]
$C_{31}H_{45}NO_8$ 559.698
Alkaloid from *Stephanotis japonica* aerial parts (Asclepiadaceae). Needles (Me_2CO/diisopropyl ether). Mp 165-168°. $[\alpha]_D$ -24.6 (c, 1.14 in $CHCl_3$). Posn. of ester groups not definitely establ., probable by analogy with Stephanthraniline A (see Pregn-5-ene-3,8,12,14,17,20-hexol, P-610).

20-O-*(2-Methylaminobenzoyl), 12-Ac:* Cryst. Mp 157-159°. $[\alpha]_D^{20}$ -11 (c, 0.1 in MeOH).

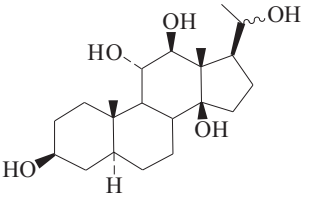
20-O-*(2-Methylaminobenzoyl), 12-Ac, 3-O-[β-D-glucopyranosyl-(1→4)-6-deoxy-3-O-methyl-β-D-allopyranosyl-(1→4)-β-D-cymaropyranosyl-(1→4)-β-D-cymaropyranoside]:* [906366-98-1]
$C_{58}H_{91}NO_{23}$ 1170.35
Constit. of *Stephanotis mucronata*. Amorph. powder. Mp 183-185°. $[\alpha]_D^{20}$ -50.1 (c, 0.1 in MeOH).

20-O-*(3-Pyridinecarbonyl), 12-cinnamoyl:* ***Dihydrogagaminine***
[72537-21-4]
$C_{36}H_{45}NO_8$ 619.753
Alkaloid from *Stephanotis japonica* aerial parts (Asclepiadaceae). Amorph. $[\alpha]_D$ +105 (c, 0.5 in $CHCl_3$). Posn. of ester residues not rigorously detd.; probable by analogy with Gagaminine (see Pregn-5-ene-3,8,12,14,17,20-hexol, P-610).

(3β,5ξ,8β,12β,14β,17*S*,20*S*)-*form*
20-O-*(3-Pyridinecarbonyl), 12-Ac:* ***Dihydrorostratine***
[39012-47-0]
$C_{29}H_{41}NO_8$ 531.645
Constit. of *Marsdenia rostrata* (Asclepiadaceae). Cryst. ($MeOH/Et_2O$). Mp 257-258°. $[\alpha]_D^{22}$ +55 (c, 0.15 in MeOH).

Jaeggi, K.A. *et al., Helv. Chim. Acta*, 1963, **46**, 694-700 (*Dihydrosarcostin*)
Gellert, E. *et al., Aust. J. Chem.*, 1974, **27**, 919 (*Dihydrorostratine*)
Terada, S. *et al., Chem. Pharm. Bull.*, 1979, **27**, 2304 (*Dihydrogagaminine, Stephanthraniline B*)
Ye, Y. *et al., Bioorg. Med. Chem. Lett.*, 2006, **16**, 4586-4591 (*Stephanotis mucronata saponin*)

Pregnane-3,11,12,14,20-pentol P-603



$C_{21}H_{36}O_5$ 368.512

(3β,5α,11α,12β,14β,20ξ)-*form*
Desacylkondurangogenin C
[13872-82-7]
Constit. of *Marsdenia roylei*. Small cryst. (Me_2CO). Mp 225-229°. $[\alpha]_D$ +135.6 (c, 0.14 in $CHCl_3$).

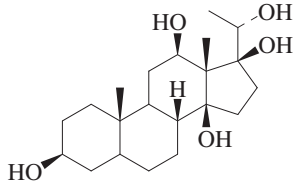
11-O-*(3-Pyridinecarbonyl), 12-Ac:* ***Con-***

durangamine A. *Kondurangamine A*
[55785-23-4]
$C_{29}H_{41}NO_7$ 515.645
Alkaloid from the bark of *Marsdenia condurango* (Asclepiadaceae). Amorph.

20-O-*(3-Pyridinecarbonyl)*: ***Condurangamine B***. *Kondurangamine B*
[55785-27-8]
$C_{27}H_{39}NO_6$ 473.608
Alkaloid from *Marsdenia condurango* (Asclepiadaceae). Mp 119-121° Mp 163-165° (double Mp).

Berger, S. *et al., Phytochemistry*, 1988, **27**, 1451-1458 (*Condurangoglycosides*)
Umehara, K. *et al., Chem. Pharm. Bull.*, 1994, **42**, 611 (*Condurangosides*)

Pregnane-3,12,14,17,20-pentol P-604



$C_{21}H_{36}O_5$ 368.512

(3β,5α,12β,14β,17β*OH*,20*S*)-*form*
Tomentogenin
[3513-00-6]
Constit. of *Marsdenia tomentosa*. Cryst. (Me_2CO). Mp 264-267°. $[\alpha]_D^{16}$ +36 (c, 0.95 in MeOH).

20-O-*(2-Aminobenzoyl), 12-Ac, 3*-O-*[6-deoxy-3*-O-*methyl-β-D-allopyranosyl-(1→4)-β-D-oleandropyranosyl-(1→4)-β-D-cymaropyranoside]:* [871737-01-8]
$C_{51}H_{79}NO_{17}$ 978.182
Constit. of *Caralluma dalzielii*. Amorph. powder. $[\alpha]_D^{25}$ +10 (c, 0.1 in MeOH). λ_{max} 330 (log ϵ 3.8) (MeOH).

20-O-*(2-Aminobenzoyl), 12-Ac, 3*-O-*[β-D-glucopyranosyl-(1→4)-6-deoxy-3*-O-*methyl-β-D-allopyranosyl-(1→4)-β-D-oleandropyranosyl-(1→4)-β-D-cymaropyranoside]:* [871736-97-9]
$C_{57}H_{89}NO_{22}$ 1140.324
Constit. of *Caralluma dalzielii*. Amorph. powder. $[\alpha]_D^{25}$ +22 (c, 0.1 in MeOH). λ_{max} 330 (log ϵ 3) (MeOH).

20-O-*(2-Aminobenzoyl), 12-Ac, 3*-O-*[β-D-glucopyranosyl-(1→6)-β-D-glucopyranosyl-(1→4)-β-D-oleandropyranosyl-(1→4)-β-D-cymaropyranoside]:* [871737-05-2]
$C_{56}H_{87}NO_{23}$ 1142.296
Constit. of *Caralluma dalzielii*. Amorph. powder. $[\alpha]_D^{25}$ +20 (c, 0.1 in MeOH). λ_{max} 323 (log ϵ 2.9) (MeOH).

20-O-*(2-Aminobenzoyl), 12-Ac, 3*-O-*[β-D-glucopyranosyl-(1→4)-6-deoxy-3*-O-*methyl-β-D-allopyranosyl-(1→4)-β-D-cymaropyranosyl-(1→4)-β-D-oleandropyranosyl-(1→4)-β-D-cymaropyranoside]:* [871737-18-7]
$C_{64}H_{101}NO_{25}$ 1284.494
Constit. of *Caralluma dalzielii*. Amorph. powder. $[\alpha]_D^{25}$ +28 (c, 0.1 in MeOH). λ_{max} 327 (log ϵ 2.9) (MeOH).

20-O-*(3-Pyridinecarbonyl), 12-Ac, 3*-O-*[6-deoxy-3*-O-*methyl-β-D-allopyranosyl-(1→4)-β-D-oleandropyranosyl-(1→4)-β-D-cymaropyranoside]:* [871737-02-9]
$C_{50}H_{77}NO_{17}$ 964.155
Constit. of *Caralluma dalzielii*. Amorph. powder. $[\alpha]_D^{25}$ +29 (c, 0.1 in MeOH). λ_{max} 265 (log ϵ 2.7) (MeOH).

20-O-*(3-Pyridinecarbonyl), 12-Ac, 3*-O-*[β-D-thevetopyranosyl-(1→4)-β-D-oleandropyranosyl-(1→4)-β-D-cymaropyranoside]:* [871737-11-0]
$C_{50}H_{77}NO_{17}$ 964.155
Constit. of *Caralluma dalzielii*. Amorph. powder. $[\alpha]_D^{25}$ +20 (c, 0.1 in MeOH). λ_{max} 268 (log ϵ 3.5) (MeOH).

20-O-*(3-Pyridinecarbonyl), 12-Ac, 3*-O-*[β-D-glucopyranosyl-(1→4)-6-deoxy-3*-O-*methyl-β-D-allopyranosyl-(1→4)-β-D-oleandropyranosyl-(1→4)-β-D-cymaropyranoside]:* [871736-98-0]
$C_{56}H_{87}NO_{22}$ 1126.297
Constit. of *Caralluma dalzielii*. Amorph. powder. $[\alpha]_D^{25}$ +11 (c, 0.1 in MeOH). λ_{max} 263 (log ϵ 4.2) (MeOH).

20-O-*(3-Pyridinecarbonyl), 12-Ac, 3*-O-*[β-D-glucopyranosyl-(1→4)-β-D-thevetopyranosyl-(1→4)-β-D-oleandropyranosyl-(1→4)-β-D-cymaropyranoside]:* [871737-10-9]
$C_{56}H_{87}NO_{22}$ 1126.297
Constit. of *Caralluma dalzielii*. Amorph. powder. $[\alpha]_D^{25}$ +15 (c, 0.1 in MeOH). λ_{max} 270 (log ϵ 4) (MeOH).

20-O-*(3-Pyridinecarbonyl), 12-Ac, 3*-O-*[β-D-glucopyranosyl-(1→6)-β-D-glucopyranosyl-(1→4)-β-D-oleandropyranosyl-(1→4)-β-D-cymaropyranoside]:* [871737-06-3]
$C_{55}H_{85}NO_{23}$ 1128.269
Constit. of *Caralluma dalzielii*. Amorph. powder. $[\alpha]_D^{25}$ +49 (c, 0.1 in MeOH). λ_{max} 263 (log ϵ 3) (MeOH).

20-O-*(3-Pyridinecarbonyl), 12-Ac, 3*-O-*[β-D-glucopyranosyl-(1→6)-β-D-glucopyranosyl-(1→4)-β-D-oleandropyranosyl-(1→4)-β-D-oleandropyranoside]:* [871737-16-5]
$C_{55}H_{85}NO_{23}$ 1128.269
Constit. of *Caralluma dalzielii*. Amorph. powder. $[\alpha]_D^{25}$ +48 (c, 0.1 in MeOH). λ_{max} 262 (log ϵ 3) (MeOH).

20-O-*(3-Pyridinecarbonyl), 12-Ac, 3*-O-*[β-D-glucopyranosyl-(1→6)-β-D-glucopyranosyl-(1→4)-β-D-thevetopyranosyl-(1→4)-β-D-oleandropyranoside]:* [871737-13-2]
$C_{55}H_{85}NO_{24}$ 1144.269
Constit. of *Caralluma dalzielii*. Amorph. powder. $[\alpha]_D^{25}$ +20 (c, 0.1 in MeOH). λ_{max} 270 (log ϵ 3) (MeOH).

20-O-*(3-Pyridinecarbonyl), 12-cinnamoyl*: ***Tomentomin***
[63524-08-3]
$C_{36}H_{45}NO_7$ 603.754
Alkaloid from *Marsdenia tomentosa* (Asclepiadaceae). Plates (EtOAc/hexane). Mp 155-157°. $[\alpha]_D^{20}$ +137 (c, 0.4 in $CHCl_3$).

20-O-*(3-Pyridinecarbonyl), 12-cinnamoyl, 3*-O-*[β-D-thevetopyranosyl-(1→4)-β-D-oleandropyranosyl-(1→4)-β-D-cymaropyranoside]:* ***Martsomentoside C***
[238398-64-6]
$C_{57}H_{81}NO_{17}$ 1052.263
Constit. of *Marsdenia tomentosa*. Solid. $[\alpha]_D^{26}$ +159.2 (c, 0.24 in MeOH).

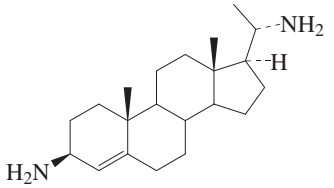
20-O-*(3-Pyridinecarbonyl), 12-cinnamoyl, 3*-O-*[β-D-glucopyranosyl-(1→4)-β-D-thevetopyranosyl-(1→4)-β-D-cymaropyranosyl-(1→4)-β-D-cymaropyranoside]:* ***Marstomentoside T***
[260791-48-8]
$C_{63}H_{91}NO_{22}$ 1214.405
Constit. of *Marsdenia tomentosa*. Solid. $[\alpha]_D^{22}$ +107.5 (c, 0.25 in MeOH).

20-O-*(3-Pyridinecarbonyl), 12-cinnamoyl, 3*-O-*[β-D-glucopyranosyl-(1→4)-β-D-thevetopyranosyl-(1→4)-β-D-oleandropyranosyl-(1→4)-β-D-cymaropyranoside]:* ***Marstomentoside D***
[238398-66-8]
$C_{63}H_{91}NO_{22}$ 1214.405
Constit. of *Marsdenia tomentosa*. Solid. $[\alpha]_D^{30}$ +98.9 (c, 0.96 in MeOH).

Fukuoka, M. *et al., Chem. Pharm. Bull.*, 1968, **16**, 1634 (*struct*)
Seto, H. *et al., Chem. Pharm. Bull.*, 1975, **23**, 1552-1554; 2397-2400; 1976, **24**, 443-449; 1552-1554 (*Tomentosin, Tomentin, Tomentonin, Tomentodin, Deacetyltomentosin, Tomentidin*)
Seto, H. *et al., Chem. Pharm. Bull.*, 1976, **24**, 2457-2460; 1977, **25**, 611-616 (*stereochem, biosynth*)
Seto, H. *et al., Chem. Pharm. Bull.*, 1977, **25**, 876-878 (*Tomentomin*)
Abe, F. *et al., Chem. Pharm. Bull.*, 1999, **47**, 869-875; 2000, **48**, 154-156 (*Isotomentosin, Marstomentosides*)
De Leo, M. *et al., Steroids*, 2005, **70**, 573-585 (*Caralluma dalzielii saponins*)

Pregn-4-ene-3,20-diamine P-605

3,20-Diaminopregn-4-ene



$C_{21}H_{36}N_2$ 316.529

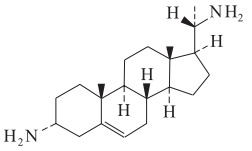
(3β,20*S*)-*form*
N^{20},N^{20}-*Di-Me,* N^3-*tigloyl:* ***Salignarine E***
[299203-57-9]
$C_{28}H_{46}N_2O$ 426.684

Alkaloid from *Sarcococca saligna*. Brown gum. $[\alpha]_D^{25}$ +53 (c, 6.1 in $CHCl_3$). λ_{max} 204 (log ϵ 1.6) (MeOH).

Atta-ur-Rahman, *et al., J. Nat. Prod.*, 2000, **63**, 1364-1368

Pregn-5-ene-3,20-diamine P-606

3,20-Diaminopregn-5-ene



(3α,20*S*)–*form*

$C_{21}H_{36}N_2$ 316.529

(3α,20*S*)-*form*

Mp 151°. $[\alpha]_D$ -70.5 ($CHCl_3$).

N^3,N^{20},N^{20}-*Tri-Me:* ***Croomionidine***
[150036-82-1]
$C_{24}H_{42}N_2$ 358.609
Alkaloid from roots of *Croomia japonica* (Stemonaceae). Cryst. Mp 150-152°. $[\alpha]_D^{25}$ -120 (c, 0.15 in MeOH).

N^3,N^3,N^{20},N^{20}-*Tetra-Me:* ***α-Kurchessine***. *Epiheteroconessine*
$C_{25}H_{44}N_2$ 372.636
Alkaloid from *Holarrhena antidysenterica* (Apocynaceae). Mp 148-150°. $[\alpha]_D$ -28 ($CHCl_3$).

(3β,20*S*)-*form*

Irehdiamine A
[3614-57-1]
Alkaloid from leaves of *Funtumia elastica* (Apocynaceae). Shows antibacterial activity. Mp 148°. $[\alpha]_D$ -47 (c, 1 in 1:1 MeOH/$CHCl_3$).

► TU4812000

Hydrochloride (1:2): Mp 300°. $[\alpha]_D$ -44 (c, 1 in MeOH).

N^3-*Ac,* N^{20}-*formyl:* ***Holarrifine***
[125187-53-3]
$C_{24}H_{38}N_2O_2$ 386.576
Alkaloid from bark of *Holarrhena antidysenterica*. The 20-config. is not illus. in the abstract and it is assumed here to be the usual 20*S*-.

N^3,N^{20}-*Di-Ac:*
$C_{25}H_{40}N_2O_2$ 400.603
Mp 270°. $[\alpha]_D$ -49 (c, 1 in MeOH).

N^3-*Me:* ***Irehdiamine B***. *Kurchamine*
[3734-04-1]
$C_{22}H_{38}N_2$ 330.556
Alkaloid from *Holarrhena antidysenterica* and *Funtumia elastica* (Apocynaceae). Mp 115-117°. $[\alpha]_D$ -56 (c, 1 in $CHCl_3$).

N^3-*Me,* N^3,N^{20}-*di-Ac:*
$C_{26}H_{42}N_2O_2$ 414.63
Mp 231°. $[\alpha]_D$ -48 (c, 1 in $CHCl_3$).

N^{20}-*Me:* ***Kurchimine***
$C_{22}H_{38}N_2$ 330.556
Alkaloid from *Holarrhena antidysenterica* (Apocynaceae). Mp 104-106°. $[\alpha]_D$ -21 (c, 1.29 in $CHCl_3$).

N^3,N^3-*Di-Me:* ***Irehdiamine C***
[52617-38-6]
$C_{23}H_{40}N_2$ 344.582
Alkaloid from *Funtumia latifolia* (Apocynaceae). Mp 105-106°. $[\alpha]_D$ -47 ($CHCl_3$). Incorr. descr. as an *N*-monomethyl compd. in *CA*.

N^3,N^3-*Di-Me,* N^{20}-*formyl:* ***N^{20}-Formylirehdiamine C***
[124162-11-4]
$C_{24}H_{40}N_2O$ 372.593
Alkaloid from *Sarcococca zeylanica*. Mp 220-222°. $[\alpha]_D^{22}$ +2.1 (c, 2.9 in $CHCl_3$).

N^{20},N^{20}-*Di-Me:* ***Irehdiamine F***
[52617-39-7]
$C_{23}H_{40}N_2$ 344.582
Alkaloid from *Vahadenia laurentii* root cortex (Apocynaceae).

N^{20},N^{20}-*Di-Me,* N^3-*Ac:* ***N^3-Acetylirehdiamine F***
[52342-67-3]
$C_{25}H_{42}N_2O$ 386.62
Alkaloid from stem bark of *Didymeles* cf. *madagascariensis* (Didymelaceae).

N^3,N^3,N^{20}-*Tri-Me,* N^{20}-*Ac:* ***Saracocine***. *Alkaloid C*†
[15437-93-1]
$C_{26}H_{44}N_2O$ 400.646
Alkaloid from *Sarcococca pruniformis* and *Sarcococca saligna*. Cryst. (Me_2CO). Mp 231°. $[\alpha]_D^{20}$ -58 ($CHCl_3$). λ_{max} 202 (log ϵ 3.2) (MeOH).

N^3,N^3,N^{20},N^{20}-*Tetra-Me:* ***Kurchessine***. *Irehdiamine I. Saracodinine*
[6869-45-0]
$C_{25}H_{44}N_2$ 372.636
Alkaloid from *Holarrhena antidysenterica*, *Pachysandra terminalis*, *Sarcococca pruniformis* and *Malouetia tamaquarina* (Apocynaceae, Buxaceae). Mp 140-141°. $[\alpha]_D^{20}$ -37 (c, 1.9 in $CHCl_3$).

(3α,20*R*)-*form* [17934-39-3]
Mp 158°. $[\alpha]_D$ -66 ($CHCl_3$).

(3β,20*R*)-*form* [17934-37-1]
Mp 140°. $[\alpha]_D$ -64 ($CHCl_3$).

Truong-Ho, M. *et al., Bull. Soc. Chim. Fr.*, 1963, 594 (*Irehdiamine A, Irehdiamine B*)

Lábler, L. *et al., Coll. Czech. Chem. Comm.*, 1963, **28**, 2345 (*isol, struct*)

Khuong-Huu, Q. *et al., Bull. Soc. Chim. Fr.*, 1965, 3035 (*isol, struct*)

Goutarel, R. *et al., Bull. Soc. Chim. Fr.*, 1967, 4575-4582 (*synth*)

Kohli, J.M. *et al., Tetrahedron*, 1967, **23**, 3829 (*Saracocine*)

Goutarel, R. *et al., Tetrahedron*, 1968, **24**, 7013 (*synth*)

Longeviall, P. *et al., Org. Mass Spectrom.*, 1970, **3**, 803 (*ms*)

Lamotte, J. *et al., Acta Cryst. B*, 1977, **33**, 2392 (*cryst struct*)

Sánchez, V. *et al., Bull. Soc. Chim. Fr.*, Part II, 1984, 71 (N-*Acetylirehdiamine F*)

Siddiqui, S. *et al., Pak. J. Sci. Ind. Res.*, 1989, **32**, 1; *CA*, **112**, 95430h (*Holarrifine*)

Lin, W.H. *et al., Yaoxue Xuebao*, 1993, **28**, 202; *CA*, **119**, 156210e (*Croomionidine*)

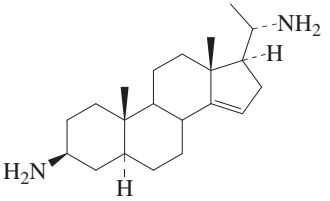
Atta-ur-Rahman, *et al., Phytochemistry*, 1997, **45**, 861-864 (*Saracocine*)

Jayasinghe, U.L.B. *et al., Nat. Prod. Lett.*, 2001, **15**, 151-155 (N^{20}-*Formylirehdiamine C*)

Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, IGH700

Pregn-14-ene-3,20-diamine P-607

3,20-Diaminopregn-14-ene



$C_{21}H_{36}N_2$ 316.529

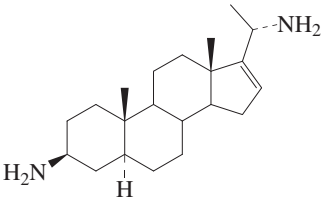
(3β,5α,20*S*)-*form*

N^3,N^{20},N^{20}-*Tri-Me: 20-(Dimethylamino)-3-(methylamino)pregn-14-ene.* ***Hookerianamine A***
[771533-18-7]
$C_{24}H_{42}N_2$ 358.609
Alkaloid from *Sarcococca hookeriana*. Cholinesterase inhibitor. Powder. $[\alpha]_D^{24}$ -60 (c, 0.04 in MeOH). λ_{max} 211 (log ϵ 3.6) (MeOH).

Choudhary, M.I. *et al., Helv. Chim. Acta*, 2004, **87**, 1099-1108 (*Hookerianamine A*)

Pregn-16-ene-3,20-diamine P-608

3,20-Diaminopregn-16-ene



$C_{21}H_{36}N_2$ 316.529

(3β,5α,20*S*)-*form*

N^{20},N^{20}-*Di-Me,* N^3-*(3-methyl-2-butenoyl):* ***Salignarine D***
[299203-56-8]
$C_{28}H_{46}N_2O$ 426.684
Alkaloid from *Sarcococca saligna*. Powder. $[\alpha]_D^{23}$ +66 (c, 0.2 in $CHCl_3$). λ_{max} 210 (log ϵ 1.7) (MeOH).

N^3,N^{20},N^{20}-*Tri-Me:* ***5,6-Dihydrosarconidine***
$C_{24}H_{42}N_2$ 358.609
Alkaloid from *Sarcococca saligna*. Cholinesterase inhibitor. Powder. $[\alpha]_D^{20}$ -60 (c, 0.2 in $CHCl_3$). λ_{max} 212 (log ϵ 2.66) (MeOH).

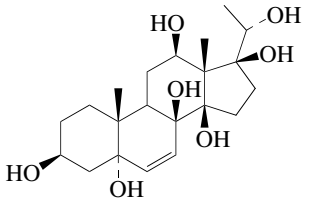
N^3,N^{20},N^{20}-*Tri-Me,* N^3-*(3,4-dimethyl-2*E*-pentenoyl):* ***Salignenamide E***
[426815-00-1]
$C_{31}H_{52}N_2O$ 468.765
Alkaloid from *Sarcococca saligna*. Amorph. solid. λ_{max} 219 (log ϵ 3.7); 270 (log ϵ 3.52) (MeOH).

Atta-ur-Rahman, *et al., J. Nat. Prod.*, 2000, **63**, 1364-1368 (*Salignarine D*)

Atta-ur-Rahman, *et al., Helv. Chim. Acta*, 2002, **85**, 678-688 (*Salignenamide E*)

Atta-ur-Rahman, *et al., Helv. Chim. Acta*, 2004, **87**, 439-448 (*5,6-Dihydrosarconidine*)

Pregn-6-ene-3,5,8,12,14,17,20-heptol P-609



$C_{21}H_{34}O_7$ 398.495

(3β,5α,8β,12β,14β,17β,20*S*)-*form*

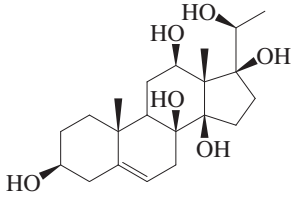
20-O-*(3-Pyridinecarbonyl), 12-cinnamoyl, 3*-O-*[β-D-thevetopyranosyl-(1→4)-β-D-oleandropyranosyl-(1→4)-β-D-cymaropyranoside]:* ***Stephanoside L***
[185507-42-0]
$C_{57}H_{79}NO_{19}$ 1082.246
Constit. of *Stephanotis lutchuensis*. Cryst. Mp 142-144°. $[\alpha]_D^{20}$ +80.2 (c, 3.8 in $CHCl_3$). λ_{max} 206 (log ε 4.29); 218 (log ε 4.34); 263 (log ε 4.2); 280 (log ε 4.2) (EtOH).

20-O-*(3-Pyridinecarbonyl), 12-cinnamoyl, 3*-O-*[β-D-thevetopyranosyl-(1→4)-β-D-cymaropyranosyl-(1→4)-β-D-cymaropyranoside]:* ***Stephanoside N***
[185507-44-2]
$C_{57}H_{79}NO_{19}$ 1082.246
Constit. of *Stephanotis lutchuensis*. Cryst. Mp 148-150°. $[\alpha]_D^{20}$ +64.2 (c, 0.4 in $CHCl_3$). λ_{max} 207 (log ε 4.21); 218 (log ε 4.24); 280 (log ε 4.13) (EtOH).

20-O-*(3-Pyridinecarbonyl), 12-cinnamoyl, 3*-O-*[β-D-thevetopyranosyl-(1→4)-β-D-oleandropyranosyl-(1→4)-β-D-cymaropyranosyl-(1→4)-β-D-cymaropyranoside]:* ***Stephanoside P***
[185507-46-4]
$C_{64}H_{91}NO_{22}$ 1226.416
Constit. of *Stephanotis lutchuensis*. Cryst. Mp 152-154°. $[\alpha]_D^{20}$ +96 (c, 2.3 in $CHCl_3$). λ_{max} 206 (log ε 4.34); 218 (log ε 4.37); 281 (log ε 4.26) (EtOH).

Yoshikawa, K. *et al., Chem. Pharm. Bull.*, 1996, **44**, 2243-2248 (*Stephanosides*)

Pregn-5-ene-3,8,12,14,17,20-hexol P-610



$C_{21}H_{34}O_6$ 382.496

(3β,12β,14β,17β*OH*,20*S*)-*form*
Sarcostin
[18607-76-6]
Found in *Asclepias glaucophylla, Sarcostemma viminale, Pachycarpus lineolatus, Cynanchum caudatum, Cynanchum wilfordii, Cynanchum paniculatum, Marsdenia tomentosa, Metaplexis japonica* and other plants in the Asclepiadaceae. Mp 150° (170°) Mp 250-255° (266-267°) (double Mp). $[\alpha]_D^{23}$ -67 (c, 1 in MeOH).

12-O-*(2-Methylaminobenzoyl), 20-Ac:* ***Stephanthraniline A***
[65429-40-5]
$C_{31}H_{43}NO_8$ 557.683
Alkaloid from stems of *Stephanotis japonica* (Asclepiadaceae). Cryst. (Me_2CO/hexane). Mp 170-173°. $[\alpha]_D$ +17.9 (c, 0.089 in $CHCl_3$).

20-O-*(2-Methylaminobenzoyl), 12-Ac, 3*-O-*[6-deoxy-β-D-allopyranosyl-(1→4)-β-D-oleandropyranosyl-(1→4)-β-D-cymaropyranoside]:* ***Stephanoside B***
[183116-98-5]
$C_{52}H_{79}NO_{18}$ 1006.192
Constit. of *Stephanotis lutchuensis*. Cryst. Mp 140-142°. $[\alpha]_D^{20}$ +2 (c, 3.3 in $CHCl_3$). λ_{max} 221 (log ε 5.32); 255 (log ε 4.96); 280 (log ε 4.17); 350 (log ε 4.65) (EtOH).

20-O-*(2-Methylaminobenzoyl), 12-Ac, 3*-O-*[β-D-oleandropyranosyl-(1→4)-β-D-cymaropyranosyl-(1→4)-β-D-cymaropyranoside]:* ***Stephanoside D***
[183117-00-2]
$C_{52}H_{79}NO_{17}$ 990.193
Constit. of *Stephanotis lutchuensis*. Cryst. Mp 148-150°. $[\alpha]_D^{20}$ -48.8 (c, 1 in $CHCl_3$). λ_{max} 221 (log ε 5.2); 256 (log ε 4.75); 280 (log ε 4.2); 352 (log ε 4.77) (EtOH).

20-O-*(2-Methylaminobenzoyl), 12-Ac, 3*-O-*[β-D-thevetopyranosyl-(1→4)-β-D-cymaropyranosyl-(1→4)-β-D-cymaropyranoside]:* ***Stephanoside E***
[183117-02-4]
$C_{52}H_{79}NO_{18}$ 1006.192
Constit. of *Stephanotis lutchuensis*. Cryst. Mp 153-155°. $[\alpha]_D^{20}$ -4.8 (c, 3.8 in $CHCl_3$). λ_{max} 220 (log ε 5.32); 256 (log ε 4.76); 280 (log ε 4.25); 350 (log ε 4.75) (EtOH).

20-O-*(2-Methylaminobenzoyl), 12-Ac, 3*-O-*[β-D-thevetopyranosyl-(1→4)-β-D-oleandropyranosyl-(1→4)-β-D-cymaropyranoside]:* ***Stephanoside C***
[183116-99-6]
$C_{52}H_{79}NO_{18}$ 1006.192
Constit. of *Stephanotis lutchuensis*. Cryst. Mp 151-153°. $[\alpha]_D^{20}$ +5.9 (c, 1.5 in $CHCl_3$). λ_{max} 220 (log ε 5.33); 255 (log ε 4.8); 281 (log ε 4.2); 351 (log ε 4.68) (EtOH).

20-O-*(2-Methylaminobenzoyl), 12-Ac, 3*-O-*[β-D-thevetopyranosyl-(1→4)-β-D-oleandropyranosyl-(1→4)-β-D-cymaropyranosyl-(1→4)-β-D-cymaropyranoside]:* ***Stephanoside A***
[183116-97-4]
$C_{59}H_{91}NO_{21}$ 1150.362
Constit. of *Stephanotis lutchuensis*. Cryst. Mp 143-145°. $[\alpha]_D^{20}$ +12 (c, 1.9 in $CHCl_3$). λ_{max} 206 (log ε 4.05); 222 (log ε 4.17); 257 (log ε 3.74); 279 (log ε 3.61); 354 (log ε 3.38) (EtOH).

12-O-*(3-Pyridinecarbonyl):* ***Gagamine***
[289634-18-0]
$C_{27}H_{37}NO_7$ 487.592
Constit. of *Cynanchum caudatum*. Amorph. solid. Mp 257-258° dec. $[\alpha]_D^{25}$ -12.7 (c, 1 in $CHCl_3$). λ_{max} 221 (log ε 3.61); 263 (log ε 4.13) (MeOH).

12-O-*(3-Pyridinecarbonyl), 3*-O-*[α-L-cymaropyranosyl-(1→4)-β-D-oleandropyranosyl-(1→4)-β-D-cymaropyranosyl-(1→4)-β-D-cymaropyranoside]:*
$C_{55}H_{85}NO_{19}$ 1064.272
Constit. of *Cynanchum caudatum*. Amorph. powder. $[\alpha]_D^{20}$ -13.9 (c, 0.61 in MeOH).

12-O-*(3-Pyridinecarbonyl), 3*-O-*[β-D-glucopyranosyl-(1→4)-6-deoxy-3*-O-*methyl-β-D-allopyranosyl-(1→4)-β-D-oleandropyranosyl-(1→4)-β-D-cymaropyranosyl-(1→4)-β-D-cymaropyranoside]:* ***Hainaneoside A***
[156891-23-5]
$C_{61}H_{95}NO_{25}$ 1242.413
Constit. of *Marsdenia hainanensis*. Amorph. powder (MeOH). Mp 166-167°. $[\alpha]_D^{23}$ +17.6 (c, 0.6 in Me_2CO).

12-O-*(3-Pyridinecarbonyl), 20-Ac:*
[165746-37-2]
$C_{29}H_{39}NO_8$ 529.629
Constit. of *Leptadenia hastata*. Cryst. Mp 155-160°. $[\alpha]_D^{25}$ +145.5 (c, 1 in MeOH).

12-O-*(3-Pyridinecarbonyl), 20-Ac, 3*-O-*[β-D-glucopyranosyl-(1→4)-6-deoxy-3*-O-*methyl-β-D-allopyranosyl-(1→4)-β-D-oleandropyranosyl-(1→4)-β-D-cymaropyranosyl-(1→4)-β-D-cymaropyranoside]:* [175667-74-0]
$C_{63}H_{97}NO_{26}$ 1284.45
Constit. of *Leptadenia hastata*. Amorph. powder. $[\alpha]_D^{25}$ +100.5 (c, 1 in MeOH).

12-O-*(3-Pyridinecarbonyl), 20-Ac, 3*-O-*[β-D-glucopyranosyl-(1→4)-6-deoxy-3*-O-*methyl-β-D-allopyranosyl-(1→4)-β-D-oleandropyranosyl-(1→4)-β-D-oleandropyranosyl-(1→4)-β-D-cymaropyranoside]:* [175667-89-7]
$C_{63}H_{97}NO_{26}$ 1284.45
Constit. of *Leptadenia hastata*. Amorph. powder. $[\alpha]_D^{25}$ +160 (c, 1 in MeOH).

12-O-*(3-Pyridinecarbonyl), 20*-E-*cinnamoyl:* ***Isogagaminine***
[175702-35-9]
$C_{36}H_{43}NO_8$ 617.738
Constit. of *Leptadenia hastata*. Cryst. Mp 155-160°. $[\alpha]_D^{25}$ +135.5 (c, 1 in MeOH).

12-O-*(3-Pyridinecarbonyl), 20*-E-*cinnamoyl, 3*-O-*[β-D-glucopyranosyl-(1→4)-6-deoxy-3*-O-*methyl-β-D-allopyranosyl-(1→4)-β-D-cymaropyranosyl-(1→4)-β-D-cymaropyranoside]:*
[906366-99-2]
$C_{63}H_{89}NO_{23}$ 1228.389
Constit. of *Stephanotis mucronata*. Amorph. powder. Mp 178-180°. $[\alpha]_D^{20}$ -23.1 (c, 0.1 in MeOH).

12-O-*(3-Pyridinecarbonyl), 20-cinnamoyl, 3*-O-*[β-D-glucopyranosyl-(1→4)-6-deoxy-3*-O-*methyl-β-D-allopyranosyl-(1→4)-β-D-oleandropyranosyl-*

(1→4)-β-D-cymaropyranoside]: ***Hainaneoside B***
[185217-99-6]
$C_{63}H_{89}NO_{23}$ 1228.389
Constit. of *Marsdenia hainanensis.*
Amorph. powder (MeOH). Mp 174-175°. $[\alpha]_D^{23}$ +86.2 (c, 2.7 in Me_2CO).

12-O-*(3-Pyridinecarbonyl), 20-cinnamoyl, 17-Ac, 3*-O-*[β-D-glucopyranosyl-(1→4)-6-deoxy-3*-O-*methyl-β-D-allopyranosyl-(1→4)-β-D-oleandropyranosyl-(1→4)-β-D-oleandropyranosyl-(1→4)-β-D-cymaropyranoside]:*
[175667-94-4]
$C_{72}H_{103}NO_{27}$ 1414.596
Constit. of *Leptadenia hastata.*
Amorph. powder. $[\alpha]_D^{25}$ +135.5 (c, 1 in MeOH).

20-O-*(3-Pyridinecarbonyl), 12-Ac:* ***Rostratine***
[39007-91-5]
$C_{29}H_{39}NO_8$ 529.629
Alkaloid from *Marsdenia rostrata* (Asclepiadaceae). Cryst. (MeOH/Et_2O). Mp 259-260°. $[\alpha]_D^{22}$ +49 (c, 1.0 in MeOH).

20-O-*(3-Pyridinecarbonyl), 12*-E-*cinnamoyl:* ***Gagaminine***
[41060-37-1]
$C_{36}H_{43}NO_8$ 617.738
Alkaloid from *Metaplexis japonica, Marsdenia condurango, Marsdenia tomentosa*, *Stephanotis japonica* and *Cynanchum caudatum* (Asclepiadaceae). Mp 160-170°. $[\alpha]_D^{20}$ +143.8 (c, 0.7 in $CHCl_3$).

20-O-*(3-Pyridinecarbonyl), 12*-E-*cinnamoyl, 3*-O-*[β-D-glucopyranosyl-(1→4)-β-D-thevetopyranosyl-(1→4)-β-D-oleandropyranosyl-(1→4)-β-D-cymaropyranoside]:* ***Marstomentoside O***
[260789-62-6]
$C_{63}H_{89}NO_{23}$ 1228.389
Constit. of *Marsdenia tomentosa.* Solid. $[\alpha]_D^{26}$ +43.6 (c, 0.7 in MeOH).

20-O-*(3-Pyridinecarbonyl), 12*-Z-*cinnamoyl, 3*-O-*[β-D-glucopyranosyl-(1→4)-β-D-thevetopyranosyl-(1→4)-β-D-oleandropyranosyl-(1→4)-β-D-cymaropyranoside]:* ***Marstomentoside P***
[260789-63-7]
$C_{63}H_{89}NO_{23}$ 1228.389
Constit. of *Marsdenia tomentosa.* Solid. $[\alpha]_D^{26}$ +44.7 (c, 0.6 in MeOH).

20-O-*(3-Pyridinecarbonyl), 12-cinnamoyl, 3*-O-*[α-L-cymaropyranosyl-(1→4)-β-D-cymaropyranosyl-(1→4)-β-D-cymaropyranoside]:*
$C_{57}H_{79}NO_{17}$ 1050.248
Constit. of *Cynanchum caudatum.*
Amorph. powder. $[\alpha]_D^{20}$ +111 (c, 0.41 in MeOH).

20-O-*(3-Pyridinecarbonyl), 12-cinnamoyl, 3*-O-*[α-L-cymaropyranosyl-(1→4)-β-D-oleandropyranosyl-(1→4)-β-D-cymaropyranoside]:*
$C_{57}H_{79}NO_{17}$ 1050.248
Constit. of *Cynanchum caudatum.*
Amorph. powder. $[\alpha]_D^{20}$ +86.8 (c, 0.82 in MeOH).

20-O-*(3-Pyridinecarbonyl), 12-cinnamoyl, 3*-O-*[β-D-oleandropyranosyl-(1→4)-β-D-cymaropyranosyl-(1→4)-β-D-cymaropyranoside]:* [174097-88-2]
$C_{57}H_{79}NO_{17}$ 1050.248
Constit. of *Cynanchum caudatum.*
Amorph. powder. $[\alpha]_D^{20}$ +127 (c, 2 in MeOH).

20-O-*(3-Pyridinecarbonyl), 12-cinnamoyl, 3*-O-*[β-D-oleandropyranosyl-(1→4)-β-D-oleandropyranosyl-(1→4)-β-D-cymaropyranoside]:*
$C_{57}H_{79}NO_{17}$ 1050.248
Constit. of *Cynanchum caudatum.*
Amorph. powder. $[\alpha]_D^{20}$ +96 (c, 0.75 in MeOH).

20-O-*(3-Pyridinecarbonyl), 12-cinnamoyl, 3*-O-*[β-D-thevetopyranosyl-(1→4)-β-D-cymaropyranosyl-(1→4)-β-D-cymaropyranoside]:* ***Stephanoside H***
[183117-05-7]
$C_{57}H_{79}NO_{18}$ 1066.247
Constit. of *Stephanotis lutchuensis.*
Cryst. Mp 160-162°. $[\alpha]_D^{20}$ +92 (c, 1.1 in $CHCl_3$). λ_{max} 206 (log ϵ 4.18); 217 (log ϵ 4.3); 280 (log ϵ 4.23) (EtOH).

20-O-*(3-Pyridinecarbonyl), 12-cinnamoyl, 3*-O-*[β-D-thevetopyranosyl-(1→4)-β-D-oleandropyranosyl-(1→4)-β-D-cymaropyranoside]:* ***Stephanoside G***
[183117-04-6]
$C_{57}H_{79}NO_{18}$ 1066.247
Constit. of *Stephanotis lutchuensis.*
Cryst. Mp 150-152°. $[\alpha]_D^{20}$ +60.6 (c, 1.1 in $CHCl_3$). λ_{max} 206 (log ϵ 4.18); 218 (log ϵ 4.23); 280 (log ϵ 4.11) (EtOH).

20-O-*(3-Pyridinecarbonyl), 12-cinnamoyl, 3*-O-*[β-D-cymaropyranosyl-(1→4)-β-D-oleandropyranosyl-(1→4)-β-D-cymaropyranosyl-(1→4)-β-D-cymaropyranoside]:*
$C_{64}H_{91}NO_{20}$ 1194.418
Constit. of *Cynanchum caudatum.*
Amorph. powder. $[\alpha]_D^{20}$ +130 (c, 0.34 in MeOH).

20-O-*(3-Pyridinecarbonyl), 12-cinnamoyl, 3*-O-*[6-deoxy-3*-O-*methyl-β-D-allopyranosyl-(1→4)-β-D-oleandropyranosyl-(1→4)-β-D-oleandropyranosyl-(1→4)-β-D-cymaropyranoside]:*
[175667-83-1]
$C_{64}H_{91}NO_{21}$ 1210.417
Constit. of *Leptadenia hastata.*
Amorph. powder. $[\alpha]_D^{25}$ +121 (c, 1 in MeOH).

20-O-*(3-Pyridinecarbonyl), 12-cinnamoyl, 3*-O-*[β-D-oleandropyranosyl-(1→4)-β-D-oleandropyranosyl-(1→4)-β-D-cymaropyranosyl-(1→4)-β-D-cymaropyranoside]:*
$C_{64}H_{91}NO_{20}$ 1194.418
Constit. of *Cynanchum caudatum.*
Amorph. powder. $[\alpha]_D^{20}$ +101 (c, 0.7 in MeOH).

20-O-*(3-Pyridinecarbonyl), 12-cinnamoyl, 3*-O-*[β-D-thevetopyranosyl-(1→4)-β-D-oleandropyranosyl-(1→4)-β-D-cymaropyranosyl-(1→4)-β-D-cymaropyranoside]:* ***Stephanoside F***
[183117-03-5]
$C_{64}H_{91}NO_{21}$ 1210.417
Constit. of *Stephanotis lutchuensis.*
Cryst. Mp 152-154°. $[\alpha]_D^{20}$ +90.8 (c, 2.5 in $CHCl_3$). λ_{max} 217 (log ϵ 4.3); 281 (log ϵ 4.22) (EtOH).

20-O-*(3-Pyridinecarbonyl), 12-cinnamoyl, 3*-O-*[α-L-cymaropyranosyl-(1→4)-β-D-oleandropyranosyl-(1→4)-β-D-oleandropyranosyl-(1→4)-β-D-cymaropyranosyl-(1→4)-β-D-cymaropyranoside]:*
$C_{71}H_{103}NO_{23}$ 1338.588
Constit. of *Cynanchum caudatum.*
Amorph. powder. $[\alpha]_D^{22}$ +74.1 (c, 0.74 in MeOH).

20-O-*(3-Pyridinecarbonyl), 12-cinnamoyl, 3*-O-*[β-D-glucopyranosyl-(1→4)-α-L-cymaropyranosyl-(1→4)-β-D-cymaropyranosyl-(1→4)-α-L-diginopyranosyl-(1→4)-β-D-cymaropyranoside]:* ***Wilfoside G1G***
[100776-59-8]
$C_{70}H_{101}NO_{25}$ 1356.56
Constit. of *Cynanchum wilfordi.*
Amorph. powder. Mp 164-167°. $[\alpha]_D^{17}$ +28.2 (c, 0.98 in $CHCl_3$).

20-O-*(3-Pyridinecarbonyl), 12-cinnamoyl, 3*-O-*[β-D-glucopyranosyl-(1→4)-β-D-oleandropyranosyl-(1→4)-β-D-oleandropyranosyl-(1→4)-β-D-cymaropyranosyl-(1→4)-β-D-cymaropyranoside]:* [188826-02-0]
$C_{70}H_{101}NO_{25}$ 1356.56
Constit. of *Cynanchum caudatum.*
Amorph. powder. $[\alpha]_D^{24}$ +91.8 (c, 0.73 in MeOH).

20-O-*(3-Pyridinecarbonyl), 12-cinnamoyl, 3*-O-*[β-D-oleandropyranosyl-(1→4)-β-D-oleandropyranosyl-(1→4)-β-D-oleandropyranosyl-(1→4)-β-D-cymaropyranosyl-(1→4)-β-D-cymaropyranoside]:*
$C_{71}H_{103}NO_{23}$ 1338.588
Constit. of *Cynanchum caudatum.*
Amorph. powder. $[\alpha]_D^{22}$ +87.7 (c, 0.59 in MeOH).

20-O-*(3-Pyridinecarbonyl), 12-cinnamoyl, 3*-O-*[β-D-thevetopyranosyl-(1→4)-β-D-oleandropyranosyl-(1→4)-β-D-oleandropyranosyl-(1→4)-β-D-cymaropyranosyl-(1→4)-β-D-cymaropyranoside]:* ***Marstomentoside A***
[238398-33-9]
$C_{71}H_{103}NO_{24}$ 1354.587
Constit. of *Marsdenia tomentosa.* Solid. $[\alpha]_D^{30}$ +74.1 (c, 0.32 in MeOH).

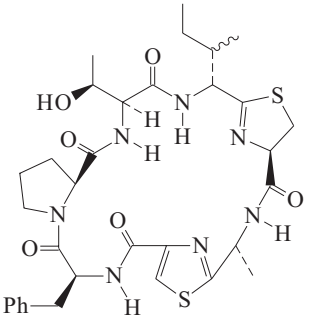
[1832-88-8 , 3513-04-0]

Yamagishi, T. *et al., Chem. Pharm. Bull.*, 1972, **20**, 2289-2292 (*Gagaminin*)
Farnsworth, N.R. *et al., J. Pharm. Sci.*, 1973, **62**, 1028 (*nomencl, Wilforine*)
Gellert, E. *et al., Aust. J. Chem.*, 1974, **27**, 919-921 (*Rostratine*)
Terada, S. *et al., Chem. Pharm. Bull.*, 1977, **25**, 2802-2805 (*Stephanotis japonica constits*)
Tsukamoto, S. *et al., Chem. Pharm. Bull.*, 1985, **33**, 2294-2304 (*Wilfosides, cmr*)
Kaur, K.J. *et al., Indian J. Chem., Sect. B*, 1985, **24**, 1053-1056 (*Orine*)
Ma, B.X. *et al., Chin. Chem. Lett.*, 1994, **5**, 209-210 (*Hainaneoside A*)
Warashina, T. *et al., Chem. Pharm. Bull.*, 1995, **43**, 977-982; 1996, **44**, 358-363 (*Cynanchum caudatum saponins*)
Aquino, R. *et al., J. Nat. Prod.*, 1995, **58**, 672-679; 1996, **59**, 555-564 (*Leptadenia hastata constits*)

Yoshikawa, K. *et al., Chem. Pharm. Bull.*, 1996, **44**, 1790-1796; 1998, **46**, 1239-1243 (*Stephanosides, Gymnepregoside F*)
Ma, B. *et al., J. Nat. Prod.*, 1997, **60**, 134-138 (*Hainaneosides*)
Abe, F. *et al., Chem. Pharm. Bull.*, 1999, **47**, 869-875; 2000, **48**, 154-156 (*Isokidjoladinin, Marstomentosides*)
Lee, D.-U. *et al., Planta Med.*, 2000, **66**, 480-482 (*Gagamine, Gagaminine*)
Ye, Y. *et al., Bioorg. Med. Chem. Lett.*, 2006, **16**, 4586-4591 (*Stephanotis mucronata saponin*)

Prelissoclinamide 2 P-611

[104928-31-6]

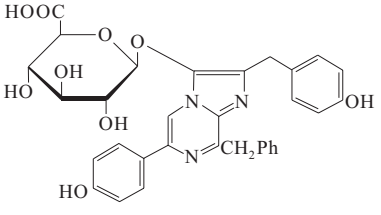


$C_{33}H_{43}N_7O_6S_2$ 697.878
Isol. from the tunicate *Lissoclinum patella*. $[\alpha]_D$ +18.1 (c, 2.24 in $CHCl_3$).

Sesin, D.F. *et al., Bull. Soc. Chim. Belg.*, 1986, **95**, 853

Diaphus Preluciferin P-612

[107503-09-3]



$C_{32}H_{29}N_3O_9$ 599.596
Bioluminescent subst. from the liver of the myctophina fish *Diaphus elucens*. Also found in *Diaphus coeruleus, Diaphus suborbitalis, Benthosema fibulata* and *Myctophum asperum*.

Inoue, S. *et al., Chem. Lett.*, 1987, 417 (*isol, uv, pmr, struct*)
Teranishi, K. *et al., Bioorg. Chem.*, 2007, **35**, 82-111 (*rev*)

Premavacurine P-613

[1360-59-4]

Struct. unknown. Alkaloid from *Strychnos solimoesana* (Loganiceae). Rose-violet col. with Ce(*IV*).

Marini-Bettolo, G.B. *et al., Gazz. Chim. Ital.*, 1956, **86**, 1148

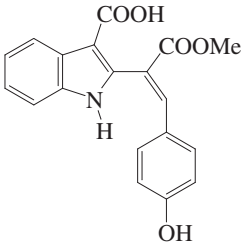
Premnine P-614

$C_{14}H_{15}NO$ 213.279

Struct. unknown. Alkaloid from the stem bark of *Premna integrifolia*. Amorph. Mp 82° Mp 211-213° (as hydrochloride).

Basu, N.K. *et al., J. Am. Pharm. Assoc.*, 1947, **36**, 389-391; *CA*, **42**, 3535i (*isol*)

Prenostodione P-615

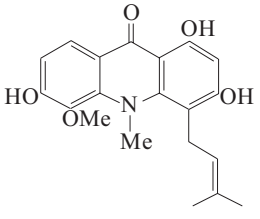


$C_{19}H_{15}NO_5$ 337.331
Precursor of Nostodione A, N-323. Isol. from a *Nostoc* sp. (TAU strain IL-235). Uv absorbant. Yellow oil. λ_{max} 217 (ϵ 29200); 230 (ϵ 24150); 287 (ϵ 17000); 318 (ϵ 15640) (MeOH).

Ploutno, A. *et al., J. Nat. Prod.*, 2001, **64**, 544-545

Prenylcitpressine P-616

*1,3,6-Trihydroxy-5-methoxy-10-methyl-4-(3-methyl-2-butenyl)-9(10*H*)-acridinone, 9CI. 1,3,6-Trihydroxy-5-methoxy-10-methyl-4-*C*-prenylacridone*
[81525-60-2]



$C_{20}H_{21}NO_5$ 355.39
Alkaloid from the root bark of *Citrus depressa* and *Citrus grandis* f. *hakunikuyu* (Rutaceae). Yellow plates + ½ H_2O (Et_2O). Mp 160-162°.

3-Me ether: ***Grandisinine****. 1,6-Dihydroxy-3,5-dimethoxy-10-methyl-4-(3-methyl-2-butenyl)-9(10*H*)-acridinone*
[87959-95-3]
$C_{21}H_{23}NO_5$ 369.416
Alkaloid from the root bark of *Citrus grandis* f. *hakunikuyu* (Rutaceae). Yellow plates (Me_2CO). Mp 194-196°.

3,6-Di-Me ether: ***Baiyumine B****. 1-Hydroxy-3,5,6-trimethoxy-10-methyl-4-(3-methyl-2-butenyl)-9(10*H*)-acridinone, 9CI. 1-Hydroxy-3,5,6-trimethoxy-10-methyl-4-prenylacridone*
[109030-95-7]
$C_{22}H_{25}NO_5$ 383.443
Alkaloid from the root of *Citrus grandis* f. *hakunikuyu* (Rutaceae). Yellow plates (Et_2O). Mp 145-147°.

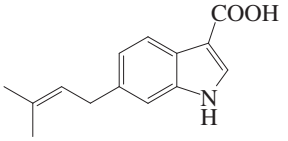
Tri-Me ether:
Yellow syrup.

$\Delta^{3'}$-Isomer, 2′-hydroxy, 3-Me ether: 1,6-Dihydroxy-3,5-dimethoxy-4-(2-hydroxy-3-methyl-3-butenyl)-10-methylacridone. ***Buntanmine A***
[126622-49-9]
$C_{21}H_{23}NO_6$ 385.416
Alkaloid from the stem bark of *Citrus grandis* f. *buntan* (Rutaceae). Yellowish granules (Me_2CO). Mp 201-202°. $[\alpha]_D$ -116.7 (c, 0.12 in MeOH).

Wu, T.-S. *et al., Chem. Pharm. Bull.*, 1983, **31**, 895 (*isol, uv, ir, pmr, ms, struct*)
Wu, T.-S. *et al., Phytochemistry*, 1983, **22**, 1493; 1987, **26**, 871 (*isol, uv, ir, pmr, cmr, ms, struct, derivs*)
Huang, S.C. *et al., Phytochemistry*, 1989, **28**, 3574 (*Buntanmine A*)

6-Prenyl-1*H*-indole-3-carboxylic acid P-617

*6-(3-Methyl-2-butenyl)-1*H*-indole-3-carboxylic acid*

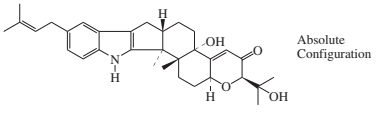


$C_{14}H_{15}NO_2$ 229.278
Alkaloid prod. by *Colletotrichum* sp. isol. from *Artemisia annua*. Needles. Mp 54-55°.

Lu, H. *et al., Plant Sci. (Limerick, Irel.)*, 2000, **151**, 67-73 (*isol, pmr, cmr*)

9-Prenylpaxilline P-618

9-Isopentenylpaxilline
[163019-15-6]

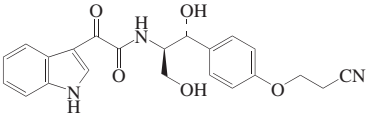


$C_{32}H_{41}NO_4$ 503.68
Numbering systems vary; also called 21-isopentenyl. Metab. of the ascostromata of *Eupenicillium shearii* NRRL3324. Insecticide. Mycotoxin. Oil. $[\alpha]_D$ -12 (c, 0.30 in $CHCl_3$). λ_{max} 236 (ϵ 9800); 283 (ϵ 2500) (MeOH) (Berdy).

Belofsky, G.N. *et al., Tetrahedron*, 1995, **51**, 3959 (*isol, uv, pmr, cmr, ms*)
Smith, A.B. *et al., Helv. Chim. Acta*, 2003, **86**, 3908-3938 (*synth, abs config*)

Preoxazinin 7 P-619

[1001439-33-3]

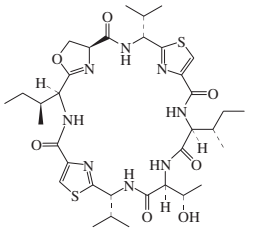


$C_{22}H_{21}N_3O_5$ 407.425
Isol. from toxic mussels, *Mytilus galloprovincialis*.

Ciminiello, P. *et al., Eur. J. Org. Chem.*, 2007, 5434-5439 (*isol, synth, pmr, cmr, ms*)

Prepatellamide A P-620

[350593-23-6]



Absolute Configuration

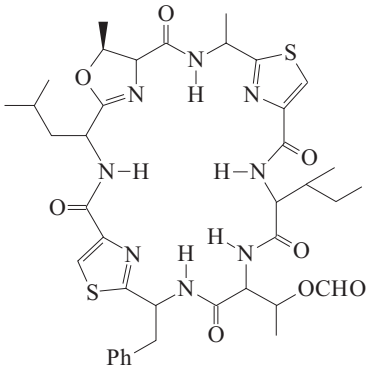
$C_{35}H_{52}N_8O_7S_2$ 760.977

Isol. from the tunicate *Lissoclinum patella*. Amorph. solid. $[\alpha]_D$ +80.1 (c, 0.1 in MeOH).

Fu, X. *et al., Sci. China, Ser. B*, 2000, **43**, 643-648; *CA*, **135**, 105198e (*isol, pmr, cmr*)

Prepatellamide B formate P-621

[104928-32-7]



$C_{39}H_{50}N_8O_8S_2$ 823.005

Cyclic peptide antibiotic. Isol. from the tunicate *Lissoclinum patella*. $[\alpha]_D$ +36.5 (c, 0.3 in $CHCl_3$).

Sesin, D.F. *et al., Bull. Soc. Chim. Belg.*, 1986, **95**, 853 (*isol, pmr, cmr*)

Prepsammaplin A P-622

Methyl 3-oxo-2-oxa-7,8-dithia-4,11-diazadodecan-12-oate, 9CI. Dimethyl (dithiodiethylene)dicarbamate, 8CI

[28138-84-3]

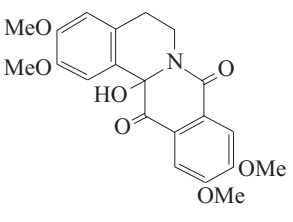
MeOOCNHCH$_2$CH$_2$-S-S-CH$_2$CH$_2$NHCOOMe

$C_8H_{16}N_2O_4S_2$ 268.357

Isol. from the marine sponge *Psammaplysilla purpurea*. Oil.

Jimenez, C. *et al., Tetrahedron*, 1991, **47**, 2097 (*isol, pmr, cmr, ms*)

Prepseudopalmanine P-623



$C_{21}H_{21}NO_7$ 399.399

(±)-*form* [75091-35-9]

Alkaloid from the stems of *Berberis darwinii* (Berberidaceae). Cryst. (Et_2O) or amorph. Mp 160-161°.

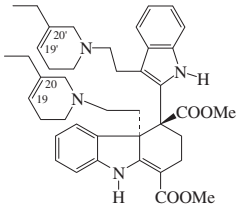
[95530-37-3]

Manikumar, G. *et al., Heterocycles*, 1980, **14**, 827 (*synth, ir, pmr*)

Valencia, E. *et al., Tetrahedron*, 1984, **40**, 3957 (*isol, uv, ir, pmr, ms*)

Presecamine P-624

[29089-93-8]



Probable Relative Configuration

$C_{42}H_{52}N_4O_4$ 676.897

Minor alkaloid from the leaves of *Rhazya stricta* (Apocynaceae). Noncryst. λ_{max} 227 (log ϵ 4.3); 288 (sh) (log ϵ 4.07); 295 (log ϵ 4.14); 329 (log ϵ 4.17) (EtOH).

19,20- And/or 19′,20′-dihydro: ***Dihydropresecamine***

$C_{42}H_{54}N_4O_4$ 678.913

Minor alkaloid from leaves of *Rhazya stricta* (Apocynaceae). Noncryst. Possibly a mixt. of 2 components.

19,19′,20,20′-Tetrahydro: ***Tetrahydropresecamine***

[56875-50-4]

$C_{42}H_{56}N_4O_4$ 680.929

Alkaloid from *Pandaca minutiflora*, the leaves of *Hunteria elliotii* and *Rhazya stricta*, and from the roots of *Rhazya orientalis* and *Amsonia tabernaemontana* (Apocynaceae). Noncryst. $[\alpha]_D^{20}$ -1.9 (95% EtOH). $[\alpha]_D^{20}$ -10 (95% EtOH). $[\alpha]_D$ +57 (EtOH). Stereochem. undefined, isolates have various opt. rotns., the (-)-form being probably largely racemic. Rearranges quantitatively to Secamine, S-174 in dil. HCl at r.t. λ_{max} 227 (log ϵ 4.3); 288 (sh) (log ϵ 4.07); 295 ; 329 (log ϵ 4.17) (EtOH).

Cordell, G.A. *et al., Chem. Comm.*, 1970, 191-192 (*uv, ir, pmr, ms, struct*)

Zsadon, B. *et al., Phytochemistry*, 1975, **14**, 1438-1439 (*tetrahydro, uv, ir, ms*)

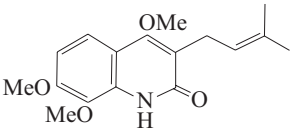
Petitfrère, N. *et al., Phytochemistry*, 1975, **14**, 1648-1649 (*tetrahydro, isol, uv, ir, pmr, ms*)

Cordell, G.A. *et al., J. Indian Chem. Soc.*, 1978, **55**, 1083-1091 (*config*)

Preskimmianine P-625

*3-(3,3-Dimethylallyl)-4,7,8-trimethoxy-2(1*H*)-quinolinone. 4,7,8-Trimethoxy-3-prenyl-2(1*H*)-quinolinone. Dasycarpamine*

[38695-41-9]



$C_{17}H_{21}NO_4$ 303.357

Alkaloid from root of *Dictamnus albus* and *Dictamnus dasycarpus* (Rutaceae). Cryst. (C_6H_6). Mp 151-152°.

N-*Me:* **N-*Methylpreskimmianine***

[76525-28-5]

$C_{18}H_{23}NO_4$ 317.384

Alkaloid from the stem bark of *Vepris louisii* (Rutaceae). Plates (hexane). Mp 88-89°.

*$\Delta^{3',4'}$-Isomer,2′ξ-hydroxy: 3-(2-Hydroxy-3-methyl-3-butenyl)-4,7,8-trimethoxy-2(1*H*)-quinolinone.* ***Isoptelefoline***

[27745-39-7]

$C_{18}H_{23}NO_5$ 333.383

Alkaloid from *Ptelea trifoliata* (Rutaceae). Cryst. (Me_2CO/hexane). Mp 145-146°.

3′,4′-Dihydro, 2′-oxo, 3′-hydroxy: ***Veprisilone***

[82848-01-9]

$C_{18}H_{23}NO_6$ 349.383

Alkaloid from the trunk bark of *Vepris louisii* (Rutaceae). Prisms (EtOAc). Mp 135-136°.

Reisch, J. *et al., Tet. Lett.*, 1970, 1945 (*Isoptelefoline*)

Storer, R. *et al., Tetrahedron*, 1973, **29**, 1217 (*Preskimmianine*)

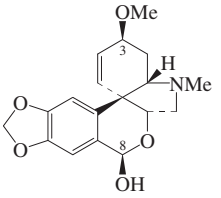
Ayafor, J.F. *et al., Phytochemistry*, 1982, **21**, 955; 2733 (*Veprisilone, N-Methylpreskimmianine*)

Ramesh, M. *et al., Tetrahedron*, 1984, **40**, 4041-4049 (*synth, pmr*)

Pretazettine P-626

Isotazettine. PTZ

[17322-84-8]



Absolute Configuration

$C_{18}H_{21}NO_5$ 331.368

Alkaloid from *Sprekelia formosissima*, *Sprekelia formosissima*, *Ruta graveolens*, *Narcissus bicolor*, *Hymenocallis littoralis* and *Ismene calithina* (preferred genus name *Hymenocallis*). Prob. very widely distributed in the Amaryllidaceae. Antineoplastic agent active against Rauscher leukaemia virus and others. Noncryst. $[\alpha]_D^{24}$ +180 (c, 0.2 in $CHCl_3$). Log P -0.65 (uncertain value) (calc). Easily rearr. to Tazettine, T-53. λ_{max} 238 (ϵ 5060); 291 (ϵ 4300) (EtOH) (Berdy).

Hydrochloride: Mp 224-225°. $[\alpha]_D^{24}$ +30.3 (c, 0.15 in H_2O).

O^8-*Me:* ***8-O-Methylpretazettine***

$C_{19}H_{23}NO_5$ 345.394

Alkaloid from *Eucharis amazonica*. Amorph. solid.

O^8-*Et,* N-*de-Me:* ***8β-Ethoxy-N-demethylpretazettine***

[250253-94-2]

$C_{19}H_{23}NO_5$ 345.394

Alkaloid from *Crinum bulbispermum*.

Amorph. $[\alpha]_D^{28}$ +34 (c, 0.14 in $CHCl_3$).

8-Ketone (lactone): ***3-Epimacronine***
[17322-73-5]
$C_{18}H_{19}NO_5$ 329.352
Isol. from *Sprekelia formosissima* and bulbs of *Narcissus bicolor* (Amaryllidaceae). Prisms (Me_2CO). Mp 129-131°. $[\alpha]_D^{24}$ +276 (c, 0.95 in $CHCl_3$).

8-Ketone (lactone), N-*de-Me:* ***Ungspiroline***. N-*Demethyl-3-epimacronine*
[17245-18-0]
$C_{17}H_{17}NO_5$ 315.325
Alkaloid from *Ungernia spiralis* (Amaryllidaceae). Cryst. (Et_2O/Me_2CO)(synthetic). Mp 148-149° (nat.) Mp 154-155° (synthetic). $[\alpha]_D^{20}$ +105 (c, 0.6 in $CHCl_3$) (nat.). $[\alpha]_D^{24}$ +207 (c, 0.36 in $CHCl_3$) (synthetic). Abs. config. incorrectly shown in the 1977 paper. λ_{max} 228 (ϵ 31400); 268 (ϵ 6000); 308 (ϵ 6800) (95% EtOH).

8-Ketone (lactone), O-*de-Me:* **O-*Demethyl-3-epimacronine***
[233767-23-2]
$C_{17}H_{17}NO_5$ 315.325
Alkaloid from *Galanthus plicatus* ssp. *byzantinus*. Amorph. powder. $[\alpha]_D$ +120 (c, 0.2 in MeOH). λ_{max} 228 (log ϵ 4.34); 262 (sh) (log ϵ 3.66); 309 (log ϵ 3.42) (MeOH).

1,2-Dihydro, 8-ketone (lactone): ***1,2-Dihydro-3-epimacronine***
[64507-57-9]
$C_{18}H_{21}NO_5$ 331.368
Alkaloid from *Ungernia spiralis* (Amaryllidaceae). Cryst. Mp 98-99°. $[\alpha]_D$ +11 ($CHCl_3$). λ_{max} 227 (log ϵ 4.36); 272 (log ϵ 3.85); 314 (log ϵ 3.73) (EtOH).

1,2-Dihydro, 8-ketone (lactone), N-*de-Me:* ***Ungspirolidine***
[66408-49-9]
$C_{17}H_{19}NO_5$ 317.341
Alkaloid from *Ungernia spiralis* (Amaryllidaceae). Mp 142-143°. $[\alpha]_D^{20}$ +11 (c, 0.45 in $CHCl_3$). λ_{max} 230 (log ϵ 4.3); 270 (log ϵ 3.7); 309 (log ϵ 3.63) (EtOH).

3-Epimer: ***Precriwelline***
[17245-16-8]
$C_{18}H_{21}NO_5$ 331.368
Alkaloid from bulbs of *Crinum powellii* var. *album, Narcissus tazetta*, *Sprekelia formosissima* (Amaryllidaceae). Active against Rauscher leukaemia virus. Amorph. $[\alpha]_D^{24}$ +228 (c, 0.18 in $CHCl_3$). λ_{max} 242 (ϵ 3010); 291 (ϵ 3200) (EtOH) (Berdy).

3-Epimer, hydrochloride:
Needles + ½ H_2O (H_2O). Mp 199-201°. $[\alpha]_D^{24}$ +82 (c, 0.2 in H_2O).

3-Epimer, 8-ketone (lactone): ***Macronine***
[2124-70-1]
$C_{18}H_{19}NO_5$ 329.352
Alkaloid from the leaf sheaths of *Crinum macrantherum* and the bulbs of *Crinum erubescens* (Amaryllidaceae). Prisms (Me_2CO). Mp 203-205°. $[\alpha]_D^{22}$ +413 (c, 0.228 in $CHCl_3$). $[\alpha]_D^{22}$ +380 (c, 0.225 in EtOH). λ_{max} 229 (log ϵ 4.49); 268 (log ϵ 3.74); 308 (log ϵ 3.78) (EtOH).

3-Epimer, 8-ketone (lactone), N-*de-Me:* **N-*Demethylmacronine***
$C_{17}H_{17}NO_5$ 315.325
Isol. from the bulbs of *Crinum erubescens* (Amaryllidaceae). Cryst. (Me_2CO). Mp 176-177°. Not indexed by CAS to 14CI.

3-Epimer, 8-ketone (lactone), N-*de-Me,* N-*ethoxycarbonyl:* **N-*Demethyl*-N-*ethoxycarbonylmacronine***. N-*Demethylcarboethoxymacronine*
[17245-22-6]
$C_{20}H_{21}NO_7$ 387.388
Isol. from the bulbs of *Crinum erubescens* (Amaryllidaceae). Amorph. $[\alpha]_D^{24}$ +313 (c, 0.17 in $CHCl_3$).

3-Epimer, 8-ketone (lactone), O-*de-Me:* **O-*Demethylmacronine***
[233767-22-1]
$C_{17}H_{17}NO_5$ 315.325
Alkaloid from *Galanthus gracilis*. Amorph. powder. $[\alpha]_D$ +227 (c, 0.16 in MeOH). λ_{max} 228 (log ϵ 4.53); 264 (log ϵ 3.82); 309 (log ϵ 3.66) (MeOH).

8-Epimer, O^8*-Et,* N-*de-Me:* ***8α-Ethoxy*-N-*demethylpretazettine***
[250253-93-1]
$C_{19}H_{23}NO_5$ 345.394
Alkaloid from *Crinum bulbispermum*. Amorph. $[\alpha]_D^{28}$ +160.6 (c, 0.09 in $CHCl_3$).

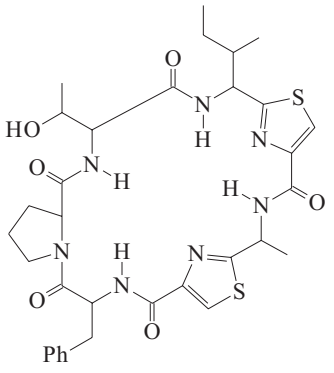
3,8-Diepimer, O^8*-Et:* ***8α-Ethoxyprecriwelline***
[250282-46-3]
$C_{20}H_{25}NO_5$ 359.421
Alkaloid from *Crinum bulbispermum*. Amorph. $[\alpha]_D^{28}$ +116.6 (c, 0.06 in $CHCl_3$).

[61045-12-3]

Hauth, H. *et al., Helv. Chim. Acta*, 1964, **47**, 185-194 (*Macronine, isol, uv, ir, pmr*)
Murphy, C.F. *et al., Tet. Lett.*, 1964, 3857-3861 (*Macronine, uv, ir, pmr, synth*)
Wildman, W.C. *et al., J.A.C.S.*, 1967, **89**, 5514-5515; 1969, **91**, 150-157 (*isol, struct, synth*)
Wildman, W.C. *et al., J.O.C.*, 1968, **33**, 3749-3753 (*Precriwelline, 3-Epimacronine, N-Demethylmacronine, N-Demethyl-3-epimacronine, N-Demethylcarboethoxymacronine, Ungspiroline, Ungspirolidine*)
Döpke, W. *et al., Tet. Lett.*, 1968, 1307-1310 (*pmr, cd, struct*)
Isobe, K. *et al., Tet. Lett.*, 1976, 2331-2334 (*Macronine, synth*)
Kadyrov, K.A. *et al., Khim. Prir. Soedin.*, 1977, **13**, 426-427; 719; *Chem. Nat. Compd. (Engl. Transl.)*, 1977, **13**, 364; 606 (*Dihydroepimacronine, Ungspiroline, Ungspirolidine*)
Martin, S.F. *et al., J.A.C.S.*, 1984, **106**, 6431-6433 (*synth*)
Viladomat, F. *et al., Phytochemistry*, 1990, **29**, 1307-1310 (*3-Epimacronine*)
Ishibashi, H. *et al., J.O.C.*, 1993, **58**, 2360-2368 (*synth*)
Weniger, B. *et al., Planta Med.*, 1995, **61**, 77-79 (*activity*)
Wagner, J. *et al., Tetrahedron*, 1996, **52**, 6591-6600 (*cd*)
Linden, A. *et al., Acta Cryst. C*, 1998, **54**, 1653-1659 (*3-Epimacronine, cryst struct*)
Seaforth, C.E. *et al., Fitoterapia*, 1998, **69**, 79 (*cmr*)
Nishimata, T. *et al., J.O.C.*, 1998, **63**, 7586-7587 (*synth*)
Jones, K. *et al., Tetrahedron*, 1998, **54**, 2275-2280 (*synth*)
Elgorashi, E.E. *et al., Phytochemistry*, 1999, **52**, 533-536 (*Crinum bulbispermum derivs*)
Unver, N. *et al., Planta Med.*, 1999, **65**, 347-350 (*O-Demethylmacronine, O-Demethylepimacronine*)
Baldwin, S.W. *et al., Org. Lett.*, 2000, **2**, 99-102 (*synth*)
Cabezas, F. *et al., Chem. Pharm. Bull.*, 2003, **51**, 315-317 (*8*-O-*Methylpretazettine*)
Zhang, F.-M. *et al., Tetrahedron*, 2006, **62**, 9445-9455 (*synth*)

Preulicyclamide P-627

[104928-30-5]

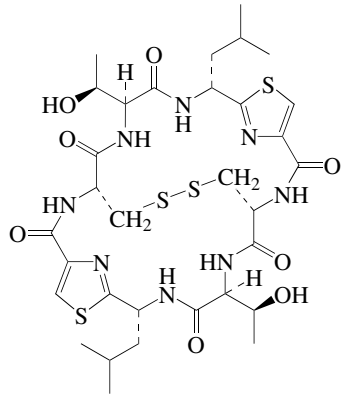


$C_{33}H_{41}N_7O_6S_2$ 695.862
Isol. from the tunicate *Lissoclinum patella*. $[\alpha]_D$ +5.4 (c, 0.24 in $CHCl_3$).

Sesin, D.F. *et al., Bull. Soc. Chim. Belg.*, 1986, **95**, 853 (*isol, pmr, cmr*)
Sugiura, T. *et al., Tet. Lett.*, 1987, **28**, 2251 (*synth*)

Preulithiacyclamide P-628

[105637-44-3]

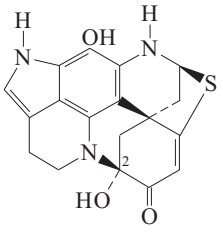


$C_{32}H_{46}N_8O_8S_4$ 799.028
Isol. from the ascidian *Lissoclinum patella*. Amorph. powder. Mp 178-181° Mp 260-263° (synthetic). $[\alpha]_D^{22}$ +65 (c, 0.5 in DMF) (synthetic). λ_{max} 211 ; 241 (no solvent reported).

Kato, S. *et al., Tet. Lett.*, 1986, **27**, 2653-2656 (*synth*)
Schmidt, U. *et al., Tet. Lett.*, 1986, **27**, 3495-3496 (*synth*)
Patil, A.D. *et al., Nat. Prod. Lett.*, 1997, **9**, 181-187 (*isol, ir, pmr, cmr*)

Prianosin C P-629

[116302-36-4]



$C_{18}H_{15}N_3O_3S$ 353.401

Alkaloid from the Okinawan marine sponge *Prianos melanos*. Exhibits potent antineoplastic activity. Green solid. Fairly sol. DMF; poorly sol. MeOH, hexane. Mp 300°. $[\alpha]_D^{22}$ +358 (c, 0.01 in MeOH). Unstable in soln. λ_{max} 231 (ϵ 12300); 263 (ϵ 3900); 292 (ϵ 2100); 370 (ϵ 1280) (MeOH) (Derep).

O^2,N,N-*Tri-Ac:*
Yellow cryst. Mp 200-201° dec. $[\alpha]_D^{23}$ +384 (c, 0.1 in $CHCl_3$).

Cheng, J.F. *et al., J.O.C.*, 1988, **53**, 4621 (*isol, uv, ir, pmr, cmr, ms, cd*)
Kobayashi, J. *et al., Tet. Lett.*, 1991, **32**, 1227 (*struct*)

Primocarcin P-630

5-(Acetylamino)-4-oxo-5-hexenamide, 9CI. 5-Acetamido-4-oxo-5-hexenamide, 8CI

[3750-26-3]

$H_2C{=}C(NHAc)COCH_2CH_2CONH_2$

$C_8H_{12}N_2O_3$ 184.194

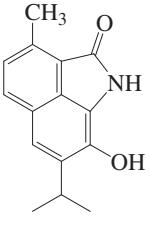
Isol. from *Nocardia fukaya*. Antitumour and antimicrobial antibiotic. Needles (MeOH). Sol. H_2O, MeOH, butanol, Me_2CO, Py, EtOH; fairly sol. EtOAc; poorly sol. C_6H_6, Et_2O, hexane. Mp 130-131°. λ_{max} 215 (ϵ 3230); 347 (ϵ 304) (0.1*M* NaOH) (Derep). λ_{max} 254 (ϵ 3500) (H_2O) (Derep). λ_{max} 215 ; 347 (NaOH) (Berdy).

▶ LD_{50} (mus, ipr) 55.5 mg/kg; LD_{50} (mus, ivn) 300 mg/kg. MP6475000

Nagatsu, J. *et al., J. Antibiot., Ser. A*, 1962, **15**, 75; 77; 80 (*isol, struct*)
Bowman, R.E. *et al., J.C.S.*, 1965, 470 (*synth, ir, uv*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, PMC750

Prioline P-631

8-Hydroxy-3-methyl-7-(1-methylethyl)-benz[cd]indol-2(1H)-one, 9CI. 8-Hydroxy-7-isopropyl-3-methylbenz[cd]indol-2(1H)-one



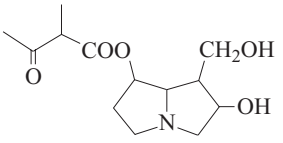
$C_{15}H_{15}NO_2$ 241.289

Alkaloid from the roots of *Salvia prionitis*. Yellow needles (EtOAc). Mp 210-212°. λ_{max} 215 (log ϵ 4.43); 256 (log ϵ 4.39); 354 (log ϵ 3.71) (MeOH).

Li, M. *et al., J. Nat. Prod.*, 2000, **63**, 139-141

Procerine† P-632

[68622-81-1]



$C_{13}H_{21}NO_5$ 271.313

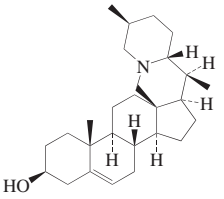
Alkaloid from *Senecio procerus* var. *procerus* (Asteraceae). Mp 238-290° dec. Tentative struct.

Jovčeva, R.J. *et al., Coll. Czech. Chem. Comm.*, 1978, **43**, 2312 (*isol, ms*)

Procevine P-633

18,28-Cyclo-16,28-secosolanid-5-en-3-ol, 9CI. 5-Cevaniden-3-ol. Pseudosolanidine

[468-24-6]



Absolute Configuration

$C_{27}H_{43}NO$ 397.643

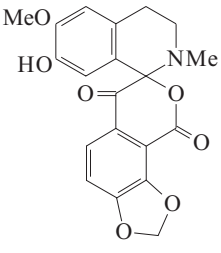
Alkaloid from *Veratrum grandiflorum* (Liliaceae) seedlings grown under controlled conditions. Mp 235-237°. $[\alpha]_D$ -12.2 (c, 0.33 in $CHCl_3$). This alkaloid probably represents a biosynthetic intermed. between solanidanes and cevanines.

O-*Ac:* Mp 166-168°.

Pelletier, S.W. *et al., J.A.C.S.*, 1952, **74**, 4218-4219; 1953, **75**, 4442-4446 (*synth*)
Weisenborn, F.L. *et al., J.A.C.S.*, 1953, **75**, 259-262 (*synth*)
Sheehan, J.C. *et al., J.A.C.S.*, 1960, **82**, 6147-6153 (*synth, struct*)
Kaneko, K. *et al., Tet. Lett.*, 1978, 4801-4804 (*isol, ir, ms, pmr, struct*)

Procumbine P-634

[109389-82-4]



$C_{20}H_{17}NO_7$ 383.357

Alkaloid from *Hypecoum procumbens* and *Hypecoum leptocarpum* (Hypecoaceae). Orange-red needles. Mp 191-192°.

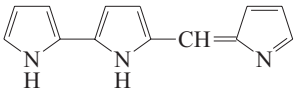
Táborská, E. *et al., Coll. Czech. Chem. Comm.*, 1987, **52**, 508 (*isol, uv, ir*)
Táborská, E. *et al., Heterocycles*, 1988, **27**, 39 (*uv, ir, pmr, cmr, ms, struct*)

Prodigiosene P-635

5-(2H-Pyrrol-2-ylidenemethyl)-2,2′-bi-1H-pyrrole, 9CI

[22187-69-5]

[22187-70-8 (hydrobromide)]



$C_{13}H_{11}N_3$ 209.25

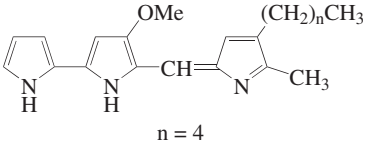
Pigment isol. from *Serratia marcescens*. Long metallic blue needles (as hydrobromide). Mp 360° (hydrobromide). λ_{max} 546 (EtOH/HCl) (Berdy).

Hearn, W.R. *et al., J.O.C.*, 1970, **35**, 142
Boger, D.L. *et al., J.O.C.*, 1988, **53**, 1405 (*synth, bibl*)

Prodigiosin P-636

4-Methoxy-5-[(5-methyl-4-pentyl-2H-pyrrol-2-ylidene)methyl]-2,2′-bi-1H-pyrrole, 9CI. 2-Methyl-3-pentylprodiginine

[82-89-3]



n = 4

$C_{20}H_{25}N_3O$ 323.437

Pyrrole antibiotic. Pigment from *Serratia marcescens*, *Serratia polymuthica*, *Actinomadura pelletieri*, *Hahella chejuensis*, *Streptomyces variegatus*, *Nocardia* sp., *Pseudomonas magnesiorubra*, *Vibrio psychroerythreus*, *Vibrio gazogenes*, *Alteromonas rubra*, *Cladophora* sp., *Beneckea gazogenes* and *Cladophora* spp. Shows antileukaemic and antifungal props. Active against plant-pathogenic fungi; insecticide enhancer. Shows antimalarial activity but too toxic for clinical use. Shows strong immunosuppressive activity. Lustrous dark red square pyramids. Sol. MeOH, acids, Et_2O; poorly sol. H_2O. Mp 151-152°. Sinters at 70-80°. λ_{max} 216 (ϵ 8660); 275 (sh) (ϵ 6440); 296 (ϵ 12200); 371 (ϵ 7750); 382 (sh) (ϵ 7240); 510 (sh) (ϵ 54400); 541 (ϵ 132000) (EtOH at pH 2.9) (Derep). λ_{max} 257 (ϵ 7950); 281 (ϵ 9520); 336 (ϵ 7860); 469 (ϵ 42400) (EtOH at pH 11) (Derep). λ_{max} 226 (ϵ 10800); 289 (ϵ 9820); 337 (ϵ 7590); 471 (ϵ 41600); 539 (ϵ 17200) (EtOH at pH 7.4) (Derep).

▶ LD_{50} (mus, ipr) 18 mg/kg; LD_{50} (mus, ivn) 10 mg/kg. DW2977000

Hydrochloride:
Magenta cryst. (C_6H_6/petrol). Mp 148.5-150° dec.

Perchlorate:
Deep red cryst. (EtOH). Mp 228°.

O-*De-Me: De*-O-*methylprodigiosin*. ***Norprodigiosin***
[27005-43-2]
$C_{20}H_{25}N_3O$ 323.437
Pigment prod. by *Hahella chejuensis* and a mutant of *Serratia marcescens*. Orange-brown cryst. (CH_2Cl_2/petrol). Sol. Me_2CO; poorly sol. H_2O. Mp 184-185°. λ_{max} 490 (EtOH) (Berdy).

Demethoxy: ***Demethoxyprodigiosin***
[112373-41-8]
$C_{19}H_{23}N_3$ 293.411
From *Serratia marcescens*. Purple solid (as hydrobromide). λ_{max} 568 (EtOH/HCl) (Berdy).

Lower homologue (n = 2): ***2-Methyl-3-propylprodiginine***
[955127-08-9]
$C_{18}H_{21}N_3O$ 295.383
Prod. by the marine bacterium *Hahella chejuensis* KCTC 2396.

Lower homologue (n = 3): ***3-Butyl-2-methylprodiginine***
[955127-09-0]
$C_{19}H_{23}N_3O$ 309.41
Prod. by *Hahella chejuensis* KCTC 2396.

Homologue (n = 5): ***3-Hexyl-2-methylprodiginine***
[955127-10-3]
$C_{21}H_{27}N_3O$ 337.464
Prod. by *Hahella chejuensis* KCTC 2396.

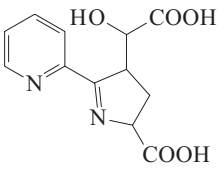
Homologue (n = 6): ***3-Heptyl-2-methylprodiginine***. *Methylosin B*
[89014-12-0]
$C_{22}H_{29}N_3O$ 351.491
Prod. by *Hahella chejuensis* KCTC 2396 and earlier isol. from *Methylosinus trichosporium*. The struct. of the accompanying Methylosin A has not been established.

[89072-96-8 (Methylosin A)]

Wrede, F. *et al., Ber.*, 1929, **62**, 2678
Rapoport, H. *et al., J.A.C.S.*, 1962, **84**, 635 (*synth*)
Hearn, W.R. *et al., Biochem. Biophys. Res. Commun.*, 1964, **17**, 517 (*Norprodigiosin*)
Williams, R.P. *et al., Antibiotics (N.Y.)*, 1967, **2**, 410; 449 (*rev*)
Jackson, A.H. *et al., Tetrahedron*, 1967, **23**, 603 (*ms*)
Hearn, W.R. *et al., J.O.C.*, 1970, **35**, 142 (*synth*)
Deol, B.S. *et al., Aust. J. Chem.*, 1974, **27**, 2657 (*Norprodigiosin*)
Lim, D.V. *et al., J. Bacteriol.*, 1977, **129**, 124 (*biosynth*)
Sveshnikova, M.A. *et al., Antibiotiki (Moscow)*, 1983, **28**, 723 (*isol*)
Strauss, D.G. *et al., Z. Allg. Mikrobiol.*, 1983, **23**, 661-668 (*Methylosins A-B*)
Boger, D.L. *et al., J.O.C.*, 1988, **53**, 1405-1415 (*synth, biosynth*)
Wasserman, H.H. *et al., Tet. Lett.*, 1989, **30**, 1725; 1999, **40**, 7587-7589 (*synth*)
Okamoto, H. *et al., CA*, 1999, **130**, 207057x; 2000, **132**, 47317 (*activity*)
Fürstner, A. *et al., Angew. Chem., Int. Ed.*, 2003, **42**, 3582-3603 (*rev*)
Kim, D. *et al., J. Appl. Microbiol.*, 2007, **102**, 937-944 (*Hahella homologues*)

Proferrorosamine B P-637

*2-Carboxy-3,4-dihydro-α-hydroxy-5-(2-pyridinyl)-2*H*-pyrrole-4-acetic acid, 9CI. 5-Carboxy-2-(2-pyridyl)-1-pyrroline-3-glycolic acid, 8CI*
[21045-59-0]



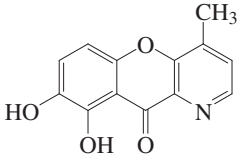
$C_{12}H_{12}N_2O_5$ 264.237
Prod. by *Bacillus roseus fluorescens*. Siderophore.

Fe complex (2:1): [21711-47-7]
$C_{24}H_{22}FeN_4O_{10}$ 582.306
Isol. from *Bacillus roseus fluorescens*. Red pigment.

Pouteau-Thouvenot, M. *et al., Bull. Soc. Chim. Biol.*, 1968, **50**, 222 (*isol*)

Prolifine P-638

*8,9-Dihydroxy-4-methyl-10*H*-[1]benzopyrano[3,2-*b*]pyridin-10-one, 9CI*
[263871-95-0]

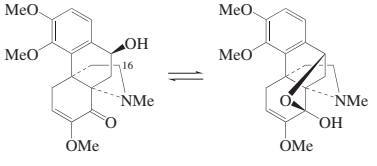


$C_{13}H_9NO_4$ 243.218
Alkaloid from the roots of *Saccopetalum prolificum* (preferred genus name *Miliusa*). Yellow needles. Mp 243-245°. λ_{max} 205 (log ϵ 4.43); 222 (log ϵ 4.27); 253 (log ϵ 4.02); 269 (log ϵ 4.06); 286 (log ϵ 4.04); 352 (log ϵ 3.97) (MeOH).

Wang, M.L. *et al., Chin. Chem. Lett.*, 2000, **11**, 129-130

Prometaphanine P-639

6,7-Didehydro-8,10-epoxy-3,4,7-trimethoxy-17-methylhasubanan-8-ol, 9CI
[6858-85-1]



Absolute Configuration

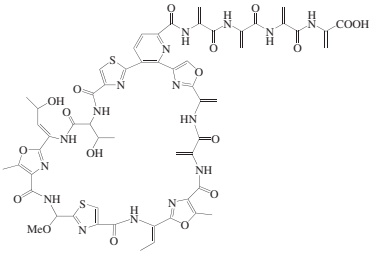
$C_{20}H_{25}NO_5$ 359.421
Alkaloid from *Stephania japonica* (Menispermaceae). Amorph. Mp 207° (as methiodide). $[\alpha]_D^{10}$ -32 (MeOH) ((methiodide)).

16-Oxo: ***16-Oxoprometaphanine***
[58738-31-1]
$C_{20}H_{23}NO_6$ 373.405
Alkaloid from the leaves, stems and rhizomes of *Stephania japonica* (Menispermaceae). Prisms (MeOH). Mp 195°. $[\alpha]_D^{20}$ -52.3 (c, 0.5 in $CHCl_3$).

Tomita, M. *et al., Tet. Lett.*, 1964, 3617 (*ir, pmr, struct*)
Matsui, M. *et al., Chem. Pharm. Bull.*, 1975, **23**, 1323; 1982, **45**, 497 (*Prometaphanine, 16-Oxoprometaphanine, isol, uv, ir, pmr, ms, struct*)
Watanabe, Y. *et al., Phytochemistry*, 1975, **14**, 2695 (*uv, ir, pmr, ms, struct, deriv*)

Promoinducin P-640

58-(1-Carboxyethenyl)sulfomycin I
[164802-54-4]

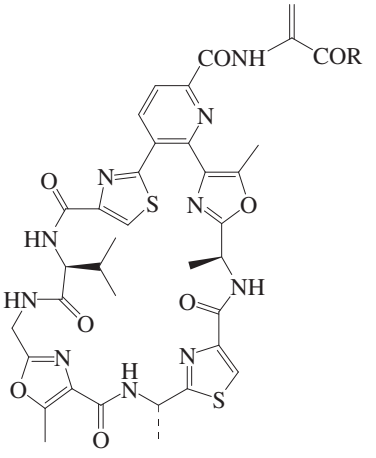


$C_{57}H_{54}N_{16}O_{18}S_2$ 1315.282
Prod. by *Streptomyces* sp. SF2741. tipA promotor. Powder. Mp 290-300° (dec.). $[\alpha]_D^{20}$ -15.6 (c, 0.1 in $CHCl_3$/MeOH). λ_{max} 204 (ϵ 87600); 251 (ϵ 86800); 315 (sh) (ϵ 15500) (EtOH).

Yun, B.-S. *et al., Biosci., Biotechnol., Biochem.*, 1995, **59**, 876-880 (*isol, struct*)

Promothiocin A P-641

SF 2741A. Antibiotic SF 2741A. 10381W. Antibiotic 10381W. pre-W
[156737-05-2]
[164455-23-6]



R = NH_2

$C_{36}H_{37}N_{11}O_8S_2$ 815.889
Thiopeptide antibiotic. Prod. by *Streptomyces* sp. SF2741. Powder. Sol. Py, DMF, DMSO; poorly sol. H_2O, MeOH. Mp 268-272° dec. $[\alpha]_D^{21}$ +79.2 (c, 0.69 in $CHCl_3$/MeOH). λ_{max} 224 (ϵ 34000); 313 (sh) (ϵ 9000) (MeOH) (Derep).

Yun, B.-S. *et al., J. Antibiot.*, 1994, **47**, 510-514 (*isol, uv, ir, pmr, cmr*)

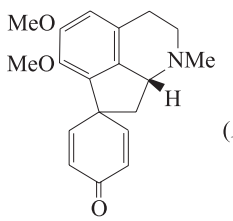
Pat. Coop. Treaty (WIPO), 1995, 95 07 292; *CA*, **123**, 54272s (*10381W*)
Bagley, M.C. *et al., J.A.C.S.*, 2000, **122**, 3301-3313 (*synth*)
Yun, B.-S. *et al., Tetrahedron*, 2001, **57**, 9683-9687 (*abs config, conformn*)

Promothiocin B P-642

SF 2741B. Antibiotic SF 2741B. 10381X. Antibiotic 10381X. pre-X
[156737-06-3]
[164455-24-7]
As Promothiocin A, P-641 with
R = –NHC(=CH_2)CONHC(=CH_2)$CONH_2$
$C_{42}H_{43}N_{13}O_{10}S_2$ 954.015
Thiopeptide antibiotic. Prod. by *Streptomyces* sp. SF2741. Powder. Sol. Py, DMF, DMSO; poorly sol. H_2O, MeOH. Mp 250-255° dec. $[\alpha]_D^{21}$ -62.5 (c, 0.3 in $CHCl_3$/MeOH). λ_{max} 225 (ϵ 42000); 313 (sh) (ϵ 10000) (MeOH) (Derep). λ_{max} 225 (ϵ 41000); 313 (ϵ 10000) (MeOH) (Berdy).
Yun, B.-S. *et al., J. Antibiot.*, 1994, **47**, 510 (*isol, uv, ir, pmr, cmr*)
Pat. Coop. Treaty (WIPO), 1995, 95 07 292; *CA*, **123**, 54272s (*10381X*)
Yun, B.-S. *et al., Tetrahedron*, 2001, **57**, 9683-9687 (*abs config, conformn*)

Pronuciferine P-643

Miltanthin. N,O-*Dimethylcrotsparine*



(*R*)–*form*

$C_{19}H_{21}NO_3$ 311.38

(*R*)-*form* [2128-60-1]
Alkaloid from *Nelumbo nucifera* (East India lotus), *Stephania glabra, Papaver caucasicum, Meconopsis cambrica* and *Isolona pilosa* (Nelumbonaceae, Menispermaceae, Papaveraceae, Annonaceae). Shows strong local anaesthetic activity. Mp 127-129°. $[\alpha]_D$ +99 (c, 0.2 in $CHCl_3$). $[\alpha]_D$ +106 (c, 0.41 in EtOH).
▶ WH0167500
Picrate: Mp 119-123°.
N-*De-Me:* ***Stepharine***. *Stephaglabrine*
[2810-21-1]
$C_{18}H_{19}NO_3$ 297.353
Alkaloid from *Stephania glabra* (Menispermaceae). Mp 179-181°. $[\alpha]_D^{26}$ +143 (c, 1.88 in $CHCl_3$).
N-*De-Me,* N-*formyl:* **N-*Formylstepharine***
[104012-91-1]
$C_{19}H_{19}NO_4$ 325.363
Alkaloid from *Caryomene olivascens.* Negative opt. rotn.
N-*De-Me,* N-*Ac:* **N-*Acetylstepharine***
[4880-87-9]
[75023-53-9]
$C_{20}H_{21}NO_4$ 339.39
Alkaloid from *Stephania sasakii*. Mp 234-235°. $[\alpha]_D^{24}$ -80 (c, 1.6 in $CHCl_3$).
N-*De-Me,* N-*carbamoyl:* **N-*Carboxamidostepharine***. N-*Carbamoylstepharine*
[113145-62-3]
$C_{19}H_{20}N_2O_4$ 340.378
Alkaloid from the rhizomes of *Stephania venosa* (Menispermaceae). Amorph. $[\alpha]_D$ +22 (c, 0.2 in $CHCl_3$).
N-*De-Me,* N-*methoxycarbonyl:* ***Promucosine***
[275355-87-8]
$C_{20}H_{21}NO_5$ 355.39
Alkaloid from *Annona purpurea* (soncoya). Brown powder. Mp 125-127°. $[\alpha]_D^{25}$ +147 (c, 0.07 in $CHCl_3$). λ_{max} 217 (log ϵ 3.78); 267 (log ϵ 4.45); 303 (log ϵ 3.87) (MeOH).
O^1-*De-Me: 6-Methylcrotsparine. Suavedol. Glazen. PM 297*
[6808-72-6]
$C_{18}H_{19}NO_3$ 297.353
Alkaloid from *Ocotea glaziovii*, *Annona purpurea*, *Meconopsis cambrica* and *Litsea laurifolia* (Lauraceae, Papaveraceae). Claimed antidepressant activity. Weak tumour inhibitor. Active against gram-positive bacteria. Mp 235-237° dec. $[\alpha]_D$ +7 (c, 1 in $CHCl_3$). The natural alkaloid is largely racemic. In some plants there is an excess of the (-)-form.
O^2-*De-Me:* Mp 216-218°. $[\alpha]_D$ +122 (c, 0.45 in MeOH).
O^2-*De-Me,* N-*de-Me:* ***Crotonosine***
[2241-43-2]
Alkaloid from *Croton linearis* (Euphorbiaceae). Shows strong local anaesthetic activity. Depolarising neuromuscular blocker. Mp 300° (begins to dec. at 165°, softens at 197°). $[\alpha]_D^{28}$ +180 (c, 0.83 in MeOH).
O^2-*De-Me,* N-*de-Me,* N,O-*di-Ac:* Mp 203-205°.

(*S*)-*form* [16654-37-8]
Alkaloid from *Ocotea glaziovii* (Lauraceae) and *Croton sparsiflorus* (Euphorbiaceae). Needles (EtOAc). Mp 125-127°.
O^1-*De-Me:* **N-*Methylcrotsparine***
[18058-57-6]
$C_{18}H_{19}NO_3$ 297.353
Alkaloid from *Croton sparsiflorus* (Euphorbiaceae). Cryst. (EtOAc). Mp 223-225°. $[\alpha]_D$ -113 (c, 1.52 in $CHCl_3$).
O^1-*De-Me,* N-*de-Me:* ***Crotsparine***. *Norglaziovine. Crotoflorine*
[18373-79-0]
$C_{17}H_{17}NO_3$ 283.326
Alkaloid from *Croton sparsiflorus* and *Uvaria klaineana*. Cryst. ($CHCl_3$/EtOAc). Mp 193-195°. $[\alpha]_D^{20}$ -64 (c, 0.73 in MeOH). λ_{max} 235 (log ϵ 3.37) (no solvent reported).
O^1-*De-Me,* N-*de-Me, hydrochloride:* Mp 278° dec.
O^1-*De-Me,* N-*de-Me,* N,O-*di-Ac:* Mp 185-186°.
O^2-*De-Me:* ***Homolinearisine***
[10214-68-3]
$C_{18}H_{19}NO_3$ 297.353
Alkaloid from *Caryomene linearis* (Euphorbiaceae). Mp 218-220° dec.
O^2-*De-Me, perchlorate:* Mp 184-186°.
2′,3′,5′,6′-Tetrahydro: ***Tetrahydropronuciferine***
[16562-08-6]
$C_{19}H_{25}NO_3$ 315.411
Alkaloid from the leaves of *Phoebe scortechininii*. Amorph. gum. $[\alpha]_D^{27}$ -50 (c, 1 in $CHCl_3$). λ_{max} 249 (log ϵ 2.3); 285 (log ϵ 1.93); 306 (log ϵ 3.51) (MeOH).

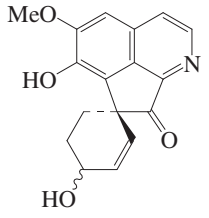
(±)-*form* [17236-29-2]
Synthetic. Mp 148-151°.
O^1-*De-Me:* ***Glaziovine, INN***
[17127-48-9]
From *Ocotea glaziovii*. Neuropharmacological agent. Antiulcerogenic agent. Mp 227-228° dec.
O^2-*De-Me:*
Synthetic. Noncryst.
Tetrahydro, O^1-*de-Me:* ***Tetrahydroglaziovine***
[50300-14-6]
$C_{18}H_{23}NO_3$ 301.385
Alkaloid from *Croton sparsiflorus* (Euphorbiaceae). Mp 163-164°.

[32410-24-5]

Bernauer, K. *et al., Helv. Chim. Acta*, 1963, **46**, 1783-1785 (*R-form, isol, uv, ir, pmr, struct*)
Gilbert, B. *et al., J.A.C.S.*, 1964, **86**, 694-696 (*Glaziovine, isol, uv, ir, pmr, struct*)
Haynes, L.J. *et al., J.C.S.(C)*, 1966, 1676-1679 (*Crotonosine, ir, pmr, struct*)
Baldwin, M. *et al., J.C.S.(C)*, 1967, 154-161 (*ms*)
Barton, D.H.R. *et al., J.C.S.(C)*, 1967, 1295-1298 (*Crotonosine, biosynth*)
Kametani, T. *et al., J.C.S.(C)*, 1967, 2182-2184 (*Glaziovine, synth, pmr*)
Bhakuni, D.S. *et al., Experientia*, 1968, **24**, 10 (*Crotsparine, uv, ir, pmr, ms, struct*)
Ishiwata, S. *et al., Chem. Pharm. Bull.*, 1970, **18**, 1841-1845 (*Homolinearisine, synth*)
Ferrari, G. *et al., Farmaco, Ed. Sci.*, 1970, **25**, 449 (*config*)
Bhakuni, D.S. *et al., Phytochemistry*, 1970, **9**, 2573-2580; 1974, **13**, 2767-2769 (*Crotsparine, isol, pmr, struct, derivs, biosynth*)
Kametani, T. *et al., Tet. Lett.*, 1973, 4219-4220 (*Glaziovine, synth*)
Casagrande, C. *et al., Farmaco, Ed. Sci.*, 1975, **30**, 479-490 (*Glaziovine, Crotsparine, isol*)
Casagrande, C. *et al., J.C.S. Perkin 1*, 1975, 1659-1663 (*Tetrahydroglaziovine*)
Marzo, A. *et al., Arch. Int. Pharmacodyn. Ther.*, 1977, **227**, 254-262 (*Glaziovine, metab*)
De Angelis, L. *et al., Drugs of Today (Barcelona)*, 1977, **13**, 22 (*rev, pharmacol*)
Bindra, J.S. *et al., J.O.C.*, 1977, **42**, 910-911 (*Glaziovine, synth*)
Ricca, G.S. *et al., Org. Magn. Reson.*, 1977, **9**, 8 (*cmr*)
Chaumontet, M. *et al., Arzneim.-Forsch.*, 1978, **28**, 2119-2121 (*Glaziovine, pharmacol*)
Horii, Z. *et al., Chem. Pharm. Bull.*, 1978, **28**, 481-483 (*synth, uv, ir, pmr*)
Marzo, A. *et al., Eur. J. Clin. Pharmacol.*, 1978, **13**, 219-221 (*Glaziovine, pharmacokinet*)
Kunitomo, J. *et al., Yakugaku Zasshi*, 1981, **101**, 431-436 (*N-Acetylstepharine*)
Fajardo, V. *et al., Chem. Comm.*, 1982, **23**, 1350-1352 (*pmr*)
Martindale, The Extra Pharmacopoeia, 28th/29th edn., Pharmaceutical Press, 1982, 12785
Madhusudanan, K.P. *et al., Indian J. Chem., Sect. B*, 1985, **24**, 523-526 (*ms*)
Lavault, M. *et al., Chem. Pharm. Bull.*, 1986, **34**, 1148-1152 (*N-Formylstepharine*)
Charles, B. *et al., J. Nat. Prod.*, 1987, **50**, 1113-1117 (*N-Carboxamidostepharine*)

Simeon, S. *et al., Pharmazie*, 1989, **44**, 593-597 (*Glaziovine, activity*)
Chang, F.-R. *et al., J. Nat. Prod.*, 2000, **63**, 746-748 (*Promucosine*)
Akendengue, B. *et al., Planta Med.*, 2002, **68**, 167-169 (*Crotsparine*)
Honda, T. *et al., Org. Lett.*, 2006, **8**, 657-659 (*synth*)
Awang, K. *et al., Nat. Prod. Res.*, 2007, **21**, 704-709 (*Tetrahydropronuciferine*)

Prooxocryptochine P-644



$C_{17}H_{15}NO_4$ 297.31
Alkaloid from the wood of *Cryptocarya chinensis*. Yellow syrup. $[\alpha]_D$ -17.2 (c, 0.02 in MeOH). λ_{max} 229 ; 254 ; 331 ; 379 (MeOH).

Wu, T.-S. *et al., J. Nat. Prod.*, 2001, **64**, 1404-1407

2-Propanoylpyridine P-645

1-(2-Pyridinyl)-1-propanone, 9CI. Ethyl 2-pyridyl ketone
[3238-55-9]



C_8H_9NO 135.165
Alkaloid from the leaves *Semnostachya menglaensis* (preferred genus name *Strobilanthes*). Oil. Bp 206-207° Bp_9 81-85°.

Phenylhydrazone: Mp 139-140° (128-129°).

Wibaut, J.P. *et al., Rec. Trav. Chim. (J. R. Neth. Chem. Soc.)*, 1951, **70**, 1054-1066 (*synth*)
Teague, P.C. *et al., J.A.C.S.*, 1953, **75**, 3429-3430 (*synth*)
Prasad, K.B. *et al., Chem. Ber.*, 1965, **98**, 2822-2824 (*synth*)
Berg-Nielsen, K. *et al., Acta Chem. Scand., Ser. B*, 1975, **29**, 985-989 (*synth*)
Knebel, N.G. *et al., J. Med. Chem.*, 1991, **34**, 2145-2152 (*synth, pmr*)
Sato, N. *et al., Synthesis*, 2001, 1551-1555 (*synth, ir, pmr, cmr*)
Naef, R. *et al., J. Agric. Food Chem.*, 2005, **53**, 9161-9164 (*isol*)

2-Propenoic acid, 9CI P-646

Acrylic acid
[79-10-7]
$H_2C{=}CHCOOH$
$C_3H_4O_2$ 72.063
Manuf. by oxidn. of 1-Propene or by reaction of $Ni(CO)_4$ with Acetylene and H_2O. Found in green algae. Prod. by *Phaeocystis* sp., *Phaeocystis pouchetii*, *Enteromorpha* sp., *Ulva* sp., *Codium* sp., *Patinopecten yessonensis*, *Protogonyaulax* sp. Undergoes free-radical polym. in aq. soln. to give polyacrylates, acrylic resins etc. USA production in 1999 1.39 million tons. Corrosive liq. with acrid odour and fumes. Misc. H_2O, EtOH, Et_2O; sol. Me_2CO. d_4^{16} 1.06. Mp 13°. Bp 141° (polymerises). n_D^{20} 1.4424. pK_a 4.25 (25°). Vp 4 mmHg (25°). Polym. readily in the presence of O_2. Acrylic acid and its esters usually contain hydroquinone monomethyl ether as polym. inhibitor. Q/e values for copolym., Q 0.83, e +0.88. Copolym. with vinyl chloride: r_{AA} 6.8; r_{VC} 0.107 (typical values, 60°); Q 1.15; e 0.77.

▶ Flammable, fl. p. 52°, autoignition temp. 438°. May polym. exothermically (possibly violently). Irritant to all tissues. LD_{50} (rat, orl) 33.5 mg/kg. LD_{50} (rbt, skn) 280 mg/kg. Exp. teratogen (ipr route). OES: long-term 10 ppm; short-term 20 ppm (Sk). AS4375000

Amide: Acrylamide. 2-Propenamide, 9CI
[79-06-1]
C_3H_5NO 71.079
Constit. of *Pongamia glabra* leaf galls. Manuf. by hydration of the nitrile. Undergoes free radical polym. in aq. soln. to give polyacrylamide. Copolym. easily with many vinyl monomers. Leaflets (C_6H_6). Sol. H_2O, EtOH, MeOH, Et_2O, Me_2CO, DMF, DMSO. Mp 85°. Bp 192.6°. Polym. on heating or under uv light. Aq. solns. are stabilised by O_2 and $Cu^{2\oplus}$ ions. Q/e values for copolym., Q 0.23, e +0.54.

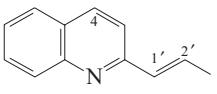
▶ Polym. can be violent at Mp. Symptoms of exposure (dermal, inhalation or ingestion) include cold sweating hands and peripheral neuropathies with numbness, paraesthesias and weakness. Dermal absorption can also cause erythema and peeling of the palms. Probable human carcinogen (IARC 2A). LD_{50} (rat, orl) 124 mg/kg. LD_{50} (rat, skn) 400 mg/kg. Exp. carcinogen and reprod. effects. Adverse exp. CNS effects. MEL: long-term 0.3 mg m^{-3} (Sk). AS3325000

[6292-01-9 , 10344-93-1 , 9003-05-8 , 7446-81-3 , 10192-85-5 , 9003-06-9 , 14643-87-9]

Tareke, E. *et al., J. Agric. Food Chem.*, 2002, **50**, 4998-5006 (*amide, occur, bibl*)
Mottram, D.S. *et al., Nature (London)*, 2002, **419**, 448 (*amide, occur*)
Friedman, M. *et al., J. Agric. Food Chem.*, 2003, **51**, 4504-4526 (*acrylamide, rev, chem, biochem, safety*)

2-(1-Propenyl)quinoline P-647

Chimanine B
[57078-89-4]



$C_{12}H_{11}N$ 169.226
Alkaloid from leaves of *Galipea longiflora* (Rutaceae). Oil. Bp 249-253° $Bp_{0.01}$ 80°. n_D^{25} 1.6359.

1′,2′-Epoxide: 2-(3-Methyloxiranyl)quinoline, 9CI. 1-Methyl-2-(2-quinolinyl)oxirane. 2-(1,2-Epoxypropyl)quinoline. ***Chimanine D***
$C_{12}H_{11}NO$ 185.225
Alkaloid from leaves of *Galipea longiflora* (Rutaceae). Oil.

4-Methoxy: 4-Methoxy-2-(1-propenyl)-quinoline. ***Chimanine C***
[150044-85-2]
$C_{13}H_{13}NO$ 199.252
Alkaloid from leaves of *Galipea longiflora* (Rutaceae). Oil.

Borsche, W. *et al., Chem. Ber.*, 1950, **83**, 78 (*synth*)
Gilman, H. *et al., J.A.C.S.*, 1959, **81**, 4000 (*synth*)
Ishikura, M. *et al., Heterocycles*, 1985, **23**, 2375 (*synth, pmr*)
Fournet, A. *et al., J. Nat. Prod.*, 1993, **56**, 1547 (*isol, uv, pmr, cmr, ms, struct*)
Munos, M.-H. *et al., Chem. Pharm. Bull.*, 1994, **42**, 1914 (*synth, Chimanine D*)

1-Propylamine, 8CI P-648

Propanamine, 9CI. 1-Aminopropane
[107-10-8]
$H_3CCH_2CH_2NH_2$
C_3H_9N 59.111
Isol. from ergot, other fungi and other vegetable sources. Liq. d_4^{20} 0.72. Fp -83. Bp 49°. n_D^{20} 1.3910. pK_a 10.4 (30°).

▶ Highly flammable, fl. p. -37°, autoignition temp. 318°. Respiratory tract irritant. Corrosive and irritating to skin and eyes. LD_{50} (rbt, skn) 560 mg/kg. UH9100000

Hydrochloride: [556-53-6]
Deliquescent cryst. Mp 157-158°.

▶ UI3057000

N-*Ac:* N-*Propylacetamide, 9CI*
[5331-48-6]
$C_5H_{11}NO$ 101.148
Oil. Bp 222-225° Bp_2 60-65°.

N-*Ac; hydrochloride:*
Needles. Mp 47°.

N-*Benzoyl:* N-*Propylbenzamide*
[10546-70-0]
$C_{10}H_{13}NO$ 163.219
Cryst. (EtOH or C_6H_6). Mp 84.5°. Bp 294-295° sl. dec.

▶ CV5800000

N-*Me:* [627-35-0]
$C_4H_{11}N$ 73.138
Liq. with fishy odour. Bp 62-64°.

N,N-*Di-Me:* [926-63-6]
$C_5H_{13}N$ 87.164
Liq. Bp 65-67°.

N-*Hydroxy:* N-*Hydroxypropylamine.* N-*Propylhydroxylamine, 8CI. 1-Hydroxylaminopropane*
[627-38-3]
C_3H_9NO 75.11
Needles (Et_2O). Mp 45.5-46°.

N-*Hydroxy, oxalate:* Mp 154-155°.

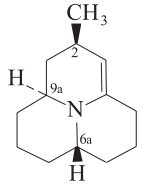
[17033-39-5]

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 280C; 280D (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 450A; 450B; 473C (*nmr*)

Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 364C; 379C (*ir*)
Aldrich Library of NMR Spectra, **2**, 2A
Hofmann, A.W. *et al., Ber.*, 1882, **15**, 762 (*synth*)
Graymore, J. *et al., J.C.S.*, 1931, 1490 (*N-Me*)
Beregi, L. *et al., C. R. Hebd. Seances Acad. Sci.*, 1947, **224**, 1508
Ryer, A.I. *et al., J.A.C.S.*, 1951, **73**, 5675 (*N-hydroxy*)
Iffland, D.C. *et al., J.A.C.S.*, 1952, **74**, 6284 (*synth*)
Sasa, T. *et al., CA*, 1957, **51**, 2780 (*synth*)
Feuer, H. *et al., J.O.C.*, 1965, **30**, 2877; 2880 (*N-hydroxy*)
Iverson, P.E. *et al., Acta Chem. Scand.*, 1966, **19**, 2303 (*N-hydroxy*)
Nagasawa, A. *et al., CA*, 1966, **65**, 15213 (*synth*)
Faure, R. *et al., Org. Magn. Reson.*, 1980, **14**, 20 (*cmr*)
Colosimo, M. *et al., Org. Mass Spectrom.*, 1982, **17**, 286 (*ms*)
Watanabe, Y. *et al., J.O.C.*, 1984, **49**, 4451 (*N-Ac, synth, pmr, cmr, ir*)
Durig, J.R. *et al., J. Raman Spectrosc.*, 1989, **20**, 311 (*ir, Raman*)
Kirk-Othmer Encycl. Chem. Technol., 4th edn., Wiley, 1991, **2**, 369 (*rev*)
Ethel Browning's Toxicity and Metabolism of Industrial Solvents, 2nd edn., (ed. Snyder, R.), Elsevier, Volume 2, 1990, 120
Luxon, S.G. *et al., Hazards in the Chemical Laboratory, 5th edn., Royal Society of Chemistry*, 1992, 1072
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, PND250

Propyleine P-649

1,2,4,5,6,6a,7,8,9,9a-Decahydro-2-methylpyrido[2,1,6-de]quinolizine, 9CI
[38211-32-4]



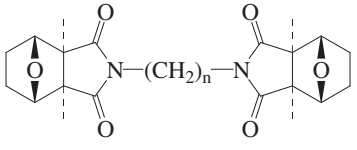
Relative configuration

$C_{13}H_{21}N$ 191.316
Alkaloid from the defence secretion of the beetle *Propylaea quatuordecimpunctata*, the Australian soldier-beetle *Chauliognathus pulchellus* and the seven-spot ladybug *Coccinella septempunctata*. Amorph. Undergoes rapid degradn. when kept as the free base.

Tursch, B. *et al., Chimia*, 1972, **26**, 74 (*uv, ir, pmr, struct*)
Mueller, R.M. *et al., J.O.C.*, 1984, **49**, 2217 (*synth, pmr, cmr*)

N,N′-Propylenebis(cantharimide) P-650

[936025-61-5]



n = 3

$C_{23}H_{30}N_2O_6$ 430.5
Alkaloid from the Chinese blister beetle, *Mylabris phalerata*. Powder. Mp 156-157°.

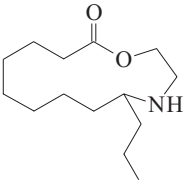
Homologue (n = 4): **N,N′-*Butylenebis(cantharimide)***
[89068-48-4]
$C_{24}H_{32}N_2O_6$ 444.527
Alkaloid from *Mylabris phalerata*. Powder. Mp 246-247°.

Homologue (n = 5): **N,N′-*Pentylenebis(cantharimide)***
[936025-62-6]
$C_{25}H_{34}N_2O_6$ 458.553
Alkaloid from *Mylabris phalerata*. Powder. Mp 148-149°.

Nakatani, T. *et al., Chem. Pharm. Bull.*, 2007, **55**, 92-94 (*isol, pmr, cmr*)

5-Propyl-1-oxa-4-azacyclotridecan-13-one, 9CI P-651

9-Propyl-10-azacyclododecan-12-olide
[147363-85-7]

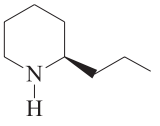


$C_{14}H_{27}NO_2$ 241.373
Related to Epilachnene, E-93. Trace alkaloid from the pupal defensive secretion of the Mexican bean beetle *Epilachna varivestis*.

Attygalle, A.B. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 1993, **90**, 5204 (*isol, ms, struct*)
King, A.G. *et al., Tet. Lett.*, 1996, **37**, 2141 (*synth*)
Gribble, G.W. *et al., Tet. Lett.*, 1996, **37**, 2145 (*synth*)
Rao, B.V. *et al., Tet. Lett.*, 1996, **37**, 8613 (*synth*)

2-Propylpiperidine P-652

***Coniine**. Cicutine. Conicine*



(R)–form

$C_8H_{17}N$ 127.229
The first alkaloid to be synthesised. The alkaloid (and its *N*-Me deriv.) from *Conium maculatum* are largely racemic but opt. active forms can be obt. from residues.

(*R*)-*form* [5985-99-9]
Bp 166.5°. $[\alpha]_D$ -15.6.

Hydrochloride: [88057-03-8]
Mp 220-221° (214-215°). $[\alpha]_D^{20}$ -6.8 (c,3.5 in EtOH).

Hydrobromide: Mp 205°.

N-*Me:* **N-*Methyl-(-)-coniine***
$C_9H_{19}N$ 141.256
Alkaloid from *Conium maculatum* (hemlock) (Apiaceae). Oil. Mp 175-176°. $[\alpha]_D^{20}$ -81.9.

N-*Me; hydrochloride:* Mp 189-190°.

(*S*)-*form* [458-88-8]
Alkaloid of *Conium maculatum*, also prob. in *Arum maculatum, Aethusa cynapium, Arisarum vulgare, Amorphophallus rivieri* (devil's tongue) and *Caladium bulbosum* (stereochem. not detd.) (Apiaceae, Araceae). d_4^{23} 0.84. Mp -2°. Bp 166-167°. $[\alpha]_D$ +15.7 (neat). $[\alpha]_D$ +8 (c, 4 in $CHCl_3$). n_D^{23} 1.4537.
► Exp. teratogen. LD_{50} (mus, orl) 100 mg/kg. TN3730000

Hydrochloride:
Rhomboids. Mp 220°.

Hydrobromide: Mp 207°.

Picrate: Mp 75°.

N-*Me:* **N-*Methyl-(+)-coniine***
[35305-13-6]
$C_9H_{19}N$ 141.256
Alkaloid from *Caladium maculatum* and *Pimpinella acuminata* (Araceae, Apiaceae). Bp_{757} 173-174°. $[\alpha]_D^{23}$ +82.4.

N-*Me; hydrochloride:* Mp 192-193° (188-189°). $[\alpha]_D$ +27.8.

N-*Di-Me:* **N,N-*Dimethyl-(+)-coniine***
$C_{10}H_{22}N^{\oplus}$ 156.291
Quaternary alkaloid from *Aloe sabaea*. $[\alpha]_D^{24}$ +7.5 (c, 0.1 in MeOH).

(±)-*form* [3238-60-6]
Alkaloid from *Caladium maculatum* (Araceae). Bp 166° Bp_{70} 93°. pK_a 16 (25°,NH, aq. KOH).

Hydrochloride: [15991-59-0]
Mp 216-217° (211°).

N-*Me:*Bp 175.5° Bp_{13} 61-63°.

N-*Me; hydrochloride:*
Needles (Me_2CO). Mp 168-168.5°.

N-*Me; picrate:* Mp 112-114°.

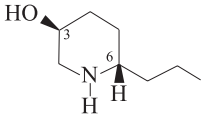
[553-75-3]

Giesecke, *et al., Arch. Pharm. (Weinheim, Ger.)*, 1827, **20**, 97 (*isol*)
Hofmann, A.W. *et al., Ber.*, 1884, **17**, 825 (*struct*)
Ladenburg, A. *et al., Ber.*, 1886, **19**, 2578; 1894, **27**, 3062 (*synth, resoln*)
Wolffenstein, R. *et al., Ber.*, 1894, **27**, 2611 (*isol, deriv*)
Ahrens, F.B. *et al., Ber.*, 1902, **35**, 1330 (*isol, deriv*)
Chemnitius, F. *et al., J. Prakt. Chem.*, 1928, **118**, 25 (*isol*)
Fairbairn, J.W. *et al., Phytochemistry*, 1961, **1**, 38
Weitkamp, H. *et al., Chem. Ber.*, 1962, **95**, 2896 (*pmr*)
Leete, E. *et al., J.A.C.S.*, 1970, **92**, 3835 (*biosynth*)
Craig, J.C. *et al., J.O.C.*, 1971, **36**, 3648 (*resoln*)
Roberts, M.F. *et al., Phytochemistry*, 1974, **13**, 1841 (*biosynth*)
Aketa, K. *et al., Chem. Pharm. Bull.*, 1976, **24**, 621 (*synth*)
Kondrat, R.W. *et al., Science (Washington, D.C.)*, 1978, **199**, 978 (*ms*)
Astier, A. *et al., Tet. Lett.*, 1978, 2051 (*synth*)
Craig, J.C. *et al., Tetrahedron*, 1978, **34**, 501 (*abs config*)
Guerrier, L. *et al., J.A.C.S.*, 1983, **105**, 7754 (*synth*)
Husson, H.P. *et al., Youji Huaxue*, 1987, 314; *CA*, **109**, 73693g (*synth*)
Nagasaka, T. *et al., Heterocycles*, 1988, **27**, 1685 (*synth, ir, pmr*)

Teng, T.-F. *et al., Heterocycles*, 1990, **31**, 1201 (*synth*)
Kiguchi, T. *et al., Heterocycles*, 1990, **31**, 1525 (*synth*)
Higashiyama, K. *et al., Heterocycles*, 1992, **33**, 17 (*synth*)
Ito, M. *et al., Tet. Lett.*, 1992, **33**, 3765 (*synth*)
Enders, D. *et al., Annalen*, 1993, 173 (*synth*)
Al-awar, R.S. *et al., J.O.C.*, 1993, **58**, 7732 (*synth*)
Hattori, K. *et al., Tetrahedron*, 1993, **49**, 1749 (*synth*)
Hirai, Y. *et al., Chem. Lett.*, 1994, 21 (*synth*)
Amat, M. *et al., Tet. Lett.*, 1994, **35**, 2223 (*synth*)
Kim, Y.H. *et al., Tet. Lett.*, 1996, **37**, 5543 (*synth*)
Weymann, M. *et al., Synthesis*, 1997, 1151-1160 (*synth*)
Reding, M.T. *et al., J.O.C.*, 1998, **63**, 6344-6347 (*synth*)
Jo, E. *et al., Tet. Lett.*, 1999, **40**, 5581-5582 (*synth, N-Boc-coniine*)
Wilkinson, T.J. *et al., Org. Lett.*, 2000, **2**, 155-158 (*synth*)
Blitzke, T. *et al., Phytochemistry*, 2000, **55**, 979-982 (*N-Dimethylconiine*)
Bois, F. *et al., Tet. Lett.*, 2000, **41**, 8769-8772 (*synth*)
Pachamuthu, K. *et al., J. Organomet. Chem.*, 2001, **624**, 359-363 (*synth*)
Burke, A.J. *et al., Org. Biomol. Chem.*, 2004, **2**, 1387-1394 (*synth*)
Nagata, K. *et al., Heterocycles*, 2006, **70**, 335-344 (*synth*)
Castro, A. *et al., Heterocycles*, 2007, **71**, 2699-2708 (*synth*)
Lebrun, S. *et al., Org. Lett.*, 2007, **9**, 2473-2476 (*synth*)
Etxebarria, J. *et al., Tetrahedron*, 2007, **63**, 11421-11428 (*synth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, PNT000

6-Propyl-3-piperidinol, 9CI P-653

5-Hydroxy-2-propylpiperidine



(3*S*,6*S*)–*form*

$C_8H_{17}NO$ 143.228

(3*S*,6*S*)-*form*
(+)-trans-*form*. ***Pseudoconhydrine***. *ψ-Conhydrine*
[140-55-6]
Alkaloid from hemlock (*Conium maculatum*) (Apiaceae). Mp 105-106° (93-94°). $[\alpha]_D^{15}$ +11 (EtOH).
► UL5300000
Hydrochloride: [99545-16-1]
Cryst. (MeOH/Et_2O). Mp 220° (212-213°). $[\alpha]_D^{20}$ +7.6 (c, 1 in MeOH).
N-*Benzoyl:* Mp 132-133°. $[\alpha]_D^{17}$ +23.4.
N-*Me:* **N-*Methylpseudoconhydrine***
[78962-69-3]
$C_9H_{19}NO$ 157.255
Alkaloid from *Conium maculatum* (Apiaceae). Hexagonal rods (as hydrochloride). Mp 157° (hydrochloride). $[\alpha]_D^{25}$ +25 (MeOH).

(3*S*,6*R*)-*form*
Epipseudoconhydrine
Hydrochloride: [165883-07-8]
Yellow solid (CH_2Cl_2/Et_2O). Mp 148°. $[\alpha]_D^{20}$ -9.1 (c, 1 in EtOH).

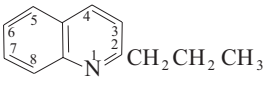
(3*RS*,6*RS*)-*form* [5457-27-2]
Mp 90-92°.
Hydrochloride: [41221-92-5]
Mp 135-140°.
N-*Me; hydrochloride:* Mp 171-173°.

[40336-06-9]

Ladenburg, A. *et al., Ber.*, 1891, **24**, 1671 (*isol*)
Späth, E. *et al., Ber.*, 1933, **66**, 591 (*struct*)
Sorm, F. *et al., Coll. Czech. Chem. Comm.*, 1949, **14**, 331 (*synth*)
Marion, L. *et al., J.A.C.S.*, 1949, **71**, 3402 (*synth*)
Hill, R.K. *et al., J.A.C.S.*, 1958, **80**, 1611 (*abs config*)
Yanai, H.S. *et al., Tetrahedron*, 1959, **6**, 103 (*cryst struct*)
Brown, E. *et al., Tetrahedron*, 1973, **29**, 455 (*synth, pmr*)
Roberts, M.F. *et al., Phytochemistry*, 1981, **20**, 447 (*deriv*)
Shono, T. *et al., Chem. Lett.*, 1984, 1101 (*synth*)
Harding, K.E. *et al., J.O.C.*, 1984, **49**, 40 (*synth*)
Tadano, K. *et al., J. Carbohydr. Chem.*, 1985, **4**, 129-139 (*synth, abs config*)
Shono, T. *et al., J.O.C.*, 1988, **53**, 4118 (*N-Methylpseudoconhydrine*)
Takahata, H. *et al., Heterocycles*, 1994, **38**, 269 (*synth, Pseudoconhydrine, N-Methylpseudoconhydrine*)
Herdeis, C. *et al., Annalen*, 1995, 1295 (*synth, pmr, cmr, ir*)
Sakagami, H. *et al., Chem. Comm.*, 1996, 1433 (*synth*)
Dockner, M. *et al., Liebigs Ann./Recl.*, 1997, 1267 (*synth, pmr, cmr, cryst struct*)
Cossy, J. *et al., Synlett*, 1997, 905-906 (*synth*)
Herdeis, C. *et al., Synthesis*, 1997, 1405-1410 (*Epipseudoconhydrine*)
Agami, C. *et al., Tetrahedron*, 1998, **54**, 8783-8796 (*synth*)
Lofstedt, J. *et al., Tetrahedron*, 2000, **56**, 2225-2230 (*synth*)
Liu, G. *et al., Tetrahedron: Asymmetry*, 2008, **19**, 1297-1303 (*synth*)

2-Propylquinoline, 9CI P-654

[1613-32-7]

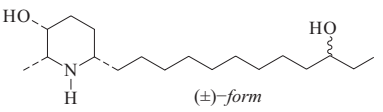


$C_{12}H_{13}N$ 171.241
Alkaloid from the stems of *Galipea bracteata* (Rutaceae). Shows an inhibitory effect on shoot and root growth of lettuce. Pale yellow-green oil. d_4^{17} 1.04. Bp_{13} 142-145° Bp_{10} 130-131°. n_D^{23} 1.5886.
Picrate: [1613-40-7]
Yellow needles or leaflets (EtOH). Mp 163-164°.
Methiodide: [55602-26-1]
Mp 184°.
Decahydro: see *Dendrobates* Alkaloid 181B, A-401

Meisenheimer, J. *et al., Ber.*, 1923, **56**, 1353-1362 (*synth*)
Delaby, R. *et al., C. R. Hebd. Seances Acad. Sci.*, 1930, **191**, 845-847 (*synth*)
Kudo, T. *et al., Yakugaku Zasshi*, 1975, **95**, 521-527; *CA*, **83**, 146716y (*synth*)
Vieira, P.C. *et al., Phytochemistry*, 1990, **29**, 813-815 (*isol, ir, pmr, cmr, ms*)
Wiebe, J.M. *et al., Tetrahedron*, 1996, **52**, 11705-11724 (*synth, pmr*)
Koyama, J. *et al., Chem. Pharm. Bull.*, 1998, **46**, 332-334 (*synth, ir, pmr*)

Prosafrine P-655

α-Ethyl-5-hydroxy-6-methyl-2-piperidinedecanol, 9CI. 3-Hydroxy-6-(10-hydroxydodecyl)-2-methylpiperidine



(±)–*form*

$C_{18}H_{37}NO_2$ 299.496

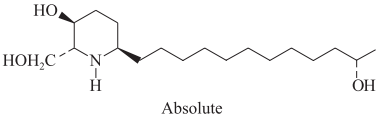
(-)-*form* [38764-78-2]
Alkaloid from the leaves of *Prosopis africana* (Fabaceae). Cryst. (Me_2CO). Mp 68°. $[\alpha]_D$ -8.5 ($CHCl_3$).
N,O,O-*Tri-Ac:*
Oil.
10′-Ketone: ***Prosafrinine***. *12-(5-Hydroxy-6-methyl-2-piperidinyl)-3-dodecanone, 9CI. 3-Hydroxy-2-methyl-6-(10-oxododecyl)piperidine*
[38764-77-1]
$C_{18}H_{35}NO_2$ 297.48
Alkaloid from leaves of *Prosopis africana* (Fabaceae). Cryst. (Me_2CO). Mp 56°. $[\alpha]_D$ -8 ($CHCl_3$). $[\alpha]_D$ -65 (c, 0.9 in EtOH).

(±)-*form*
10′-Ketone: [74843-66-6]
Mp 78.5-79°.

Khuong-Huu, Q. *et al., Bull. Soc. Chim. Belg.*, 1972, **81**, 425; 443 (*isol, ms, ir, pmr, struct, abs config*)
Natsume, M. *et al., Heterocycles*, 1980, **14**, 615 (*synth, deriv*)

Prosopine† P-656

5-Hydroxy-6-(hydroxymethyl)-α-methyl-2-piperidineundecanol, 9CI. 3-Hydroxy-6-(11-hydroxydodecyl)-2-hydroxymethylpiperidine
[14058-38-9]



Absolute configuration

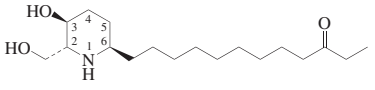
$C_{18}H_{37}NO_3$ 315.495
Alkaloid from leaves of *Prosopis africana* (Fabaceae). Cryst. (Me_2CO). Mp 126°. $[\alpha]_D$ +25 ($CHCl_3$).
N,O,O,O-*Tetra-Ac:*
Oil. $[\alpha]_D$ -20 ($CHCl_3$).
N-*Me:*
Cryst. (EtOAc). Mp 66°. $[\alpha]_D$ +6.6 ($CHCl_3$).
11′-Ketone: ***Prosopinone***. *12-[5-Hydroxy-6-(hydroxymethyl)-2-piperidinyl]-2-dodecanone, 9CI. 3-Hydroxy-2-hydroxymethyl-6-(11-oxododecyl)piperidine*
[14058-55-0]
$C_{18}H_{35}NO_3$ 313.479

Alkaloid from *Cassia carnaval* (Fabaceae). Mp 90° (synthetic). $[\alpha]_D$ +15.

Ratle, G. *et al., Bull. Soc. Chim. Fr.*, 1966, 2945 (*isol, ir, struct*)
Khoung-Huu, Q. *et al., Bull. Soc. Chim. Belg.*, 1972, **81**, 425; 443 (*ir, uv, pmr, ms, abs config*)
Lythgoe, D. *et al., An. Asoc. Quim. Argent.*, 1972, **60**, 317; *CA*, **77**, 164901 (*Prosopinone*)
Khuong-Huu, Q. *et al., J. Chem. Soc. Pak.*, 1982, **4**, 267 (*cmr*)

Prosopinine P-657

12-[5-Hydroxy-6-(hydroxymethyl)-2-piperidinyl]-3-dodecanone, 9CI. 3-Hydroxy-2-hydroxymethyl-6-(10-oxododecyl)piperidine



(+)-*form*

$C_{18}H_{35}NO_3$ 313.479

(+)-*form* [14058-39-0]
Alkaloid from leaves of *Prosopis africana* (Fabaceae). Cryst. (EtOAc). Mp 94.5°. $[\alpha]_D$ +12 ($CHCl_3$).

Hydrochloride: Mp 87°. $[\alpha]_D$ 0 ($CHCl_3$).

N,O,O-*Tri-Ac:*
Oil. $[\alpha]_D$ -13 ($CHCl_3$).

N-*Me:*
Cryst. (EtOAc). Mp 71°. $[\alpha]_D$ +2 ($CHCl_3$).

(±)-*form*

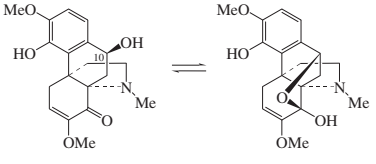
6-Epimer: ***Prosophylline***
[38764-76-0]
$C_{18}H_{35}NO_3$ 313.479
Alkaloid from the leaves of *Prosopis africana* (Fabaceae). Cryst. (Me_2CO). Mp 82-83° (79°). Racemic.

6-Epimer, N,O,O-*tri-Ac:*
Oil.

Ratle, G. *et al., Bull. Soc. Chim. Fr.*, 1966, 2945 (*isol*)
Khuong-Huu, Q. *et al., Bull. Soc. Chim. Belg.*, 1972, **81**, 425; 443 (*ir, uv, pmr, ms, abs config*)
Natsume, M. *et al., Heterocycles*, 1981, **16**, 973 (*synth, deriv*)
Khoung-Huu, Q. *et al., J. Chem. Soc. Pak.*, 1982, **4**, 267 (*cmr*)
Cook, G.R. *et al., Tet. Lett.*, 1994, **35**, 1669 (*synth*)
Hirai, Y. *et al., J.O.C.*, 1997, **62**, 776 (*synth*)
Kadota, I. *et al., Tet. Lett.*, 1997, **38**, 7469-7470 (*synth, deoxo deriv*)
Koulochesi, S.D. *et al., Tet. Lett.*, 1999, **40**, 6869-6870 (*Prosophylline, synth*)
Cossy, J. *et al., J.O.C.*, 2002, **67**, 1982-1992 (*Prosophylline, synth*)
Coulandouros, E.A. *et al., Tet. Lett.*, 2007, **48**, 8227-8229 (*Prosophylline, synth*)

Prostephabyssine P-658

6,7-Didehydro-8,10-epoxy-3,7-dimethoxy-17-methylhasubanan-4,8-diol, 9CI
[36871-88-2]



$C_{19}H_{23}NO_5$ 345.394
Alkaloid from the roots and rhizomes of *Stephania abyssinica* and the roots and stems of *Stephania longa* (Menispermaceae). Pale-yellow glass.

Methiodide:
Prisms (MeOH/C_6H_6). Mp 196-198° dec. $[\alpha]_D^{25}$ -105 (c, 1.98 in MeOH).

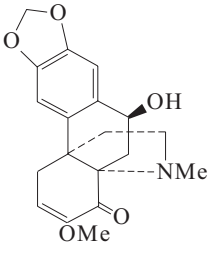
N-*De-Me:* ***Norprostephabyssine***
[863712-30-5]
$C_{18}H_{21}NO_5$ 331.368
Alkaloid from *Stephania longa*. Powder. $[\alpha]_D^{20}$ -80.4 (c, 0.52 in $CHCl_3$). λ_{max} 276 (log ϵ 3.45) (MeOH).

10-Epimer: ***Isoprostephabyssine***
[863712-32-7]
$C_{19}H_{23}NO_5$ 345.394
Alkaloid from *Stephania longa*. Powder. $[\alpha]_D^{20}$ -242.4 (c, 0.32 in $CHCl_3$). λ_{max} 276 (log ϵ 3.68) (MeOH).

Kupchan, S.M. *et al., J.O.C.*, 1973, **38**, 151-153 (*Prostephabyssine*)
Zhang, H. *et al., J. Nat. Prod.*, 2005, **68**, 1201-1207 (*Norprostephabyssine, isoprostephabyssine*)

Prostephanaberrine P-659

[105608-27-3]



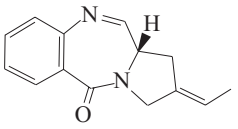
$C_{19}H_{21}NO_5$ 343.379
Alkaloid from the fresh fruits of *Stephania japonica* (Menispermaceae). Light-yellow prisms (MeOH). Mp 225° dec. $[\alpha]_D^{15}$ -219.1 (c, 0.25 in $CHCl_3$).

Ac:
Light-yellow prisms (MeOH). Mp 169.5°.

Matsui, M. *et al., J. Nat. Prod.*, 1986, **49**, 588 (*isol, uv, ir, pmr, cmr, ms, struct*)

Prothracarcin P-660

*2-Ethylidene-1,2,3,11*a*-tetrahydro-5*H*-pyrrolo[2,1-*c*][1,4]benzodiazepin-5-one, 9CI. DC 62. Antibiotic DC 62*
[81542-99-6]



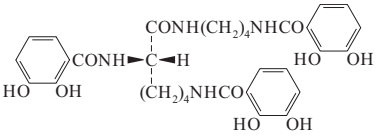
$C_{14}H_{14}N_2O$ 226.277
Anthramycin antibiotic. Prod. by *Streptomyces umbrosus* ssp. *raffinophilus* NRRL12143. Active against gram-positive and -negative bacteria, murine tumours and leukaemia cells. Analgesic. Sedative. Antitumour and antispasmodic agent. Cryst. (EtOAc). Sol. MeOH; fairly sol. Et_2O; poorly sol. H_2O, hexane. Mp 87° dec. $[\alpha]_D^{22}$ +17.1 (c, 0.1 in EtOAc). λ_{max} 218 (ϵ 21000); 239 (sh) (ϵ); 255 (sh) (ϵ); 316 (ϵ 4000) (MeOH) (Derep). λ_{max} 217 (ϵ 21000); 271 ; 316 (MeOH) (Berdy). λ_{max} 218 (ϵ 21000); 316 (ϵ 4000) (H_2O) (Berdy).

▶ LD_{50} (mus, ipr) 42 mg/kg. UY8533500

Japan. Pat., 1981, 56 158 785; *CA*, **96**, 179428 (*isol*)
Shimizu, K. *et al., J. Antibiot.*, 1982, **35**, 972
Mori, M. *et al., Tetrahedron*, 1986, **42**, 3793 (*synth, config*)
Weidner-Wells, M.A. *et al., J.O.C.*, 1989, **54**, 5746 (*synth*)

Protochelin P-661

[131610-88-3]



$C_{31}H_{36}N_4O_{10}$ 624.646
Isol. from a bacterium (DMS No. 5746). Also from *Azotobacter vinelandii*. Siderophore. λ_{max} 248 (ϵ 25120); 312 (ϵ 10000) (MeOH) (Berdy). λ_{max} 550 (ϵ 1995) (pH 1.5 buffer) (Berdy). λ_{max} 480 (ϵ 3980) (pH 13 buffer) (Berdy).

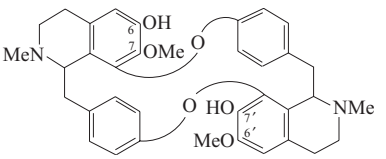
Taraz, K. *et al., Z. Naturforsch., B*, 1990, **45**, 1327 (*isol, pmr, cmr*)
Cornish, A.S. *et al., BioMetals*, 1995, **8**, 332 (*isol, ms*)

Protochondocurarine P-662

Bisbenzylisoquinoline alkaloid. Struct. unknown. Alkaloid from Curare. Mp 265° (as nitrate). $[\alpha]_D^{20}$ +175 (c, 2 in H_2O) (nitrate).

Bodendorf, K. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1954, **287**, 555; *CA*, **52**, 10119h (*isol*)

Protocuridine P-663



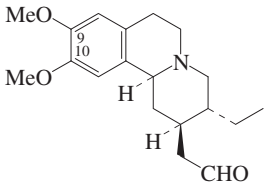
$C_{36}H_{38}N_2O_6$ 594.706
Probable struct. Alkaloid from curare (Menispermaceae). Plates + 0.5 Py (Py aq.). Mp 295°. Stereochem. undetermined but the two (non-identical) chiral centres have the same chirality since methylation to a symmetrical product does not give a meso-form.

Hydrochloride (1:2): [66723-63-5]
Cryst. + $6H_2O$. Mp 295° (efferv.). $[\alpha]_{Hg}^{20}$ +7.6 (c, 0.3 in H_2O).

Isomer: ***Neoprotocuridine***
$C_{36}H_{38}N_2O_6$ 594.706
Alkaloid from curare (Menispermaceae). Leaflets + $8H_2O$ (H_2O). Mp 232°. This is either the 6,7 or 6′,7′ positional isomer of Protocuridine; stereochem. undetermined.

King, H. *et al., J.C.S.*, 1937, 1472-1482 (*isol*)
Bick, I.R.C. *et al., J.C.S.*, 1960, 2402-2407 (*struct*)

Protoemetine P-664



(-)-*form*

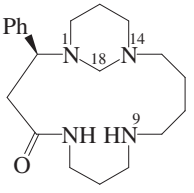
$C_{19}H_{27}NO_3$ 317.427

(-)-*form* [549-91-7]
Alkaloid from *Cephaelis (Psychotria) ipecacuanha* root (Rubiaceae). Noncryst. $[\alpha]_D^{28}$ -14.38 (c, 0.57 in EtOH) (synthetic).
Perchlorate: Mp 140-142° (hydrate) Mp 193-195° (anhyd.).
Semicarbazone: Mp 168-169°.
Alcohol: ***Protoemetinol***. *Dihydroprotoemetine*
[7344-78-7]
$C_{19}H_{29}NO_3$ 319.443
Alkaloid detected by mass spectrometry in *Alangium lamarckii* (Alangiaceae) and identified by tlc comparison with an authentic specimen. Prisms (EtOH aq. or H_2O)(as perchlorate). Mp 199-200° (perchlorate). $[\alpha]_D^{24}$ -15.3 (c, 0.26 in MeOH) (synthetic, perchlorate).
Alcohol, O^9*-de-Me:* ***9-Demethylprotoemetinol***
[84590-09-0]
$C_{18}H_{27}NO_3$ 305.416
Alkaloid from the seeds of *Alangium lamarckii* (Alangiaceae). Mp 157-158.5° (synthetic). $[\alpha]_D^{25}$ -61 (c, 0.50 in EtOH). A direct comparison of the synthetic prod. and natural alkaloid was not possible.
Alcohol, O^9*-de-Me, di*-O-*Ac:* Oil. $[\alpha]_D^{25}$ -34.3 (c, 0.40 in $CHCl_3$).
Alcohol, O^{10}*-de-Me:* ***10-Demethylprotoemetinol***
[84590-10-3]
$C_{18}H_{27}NO_3$ 305.416
Alkaloid from the seeds of *Alangium lamarckii* (Alangiaceae). Glass or amorph. powder. $[\alpha]_D^{17}$ -35.2 (c, 0.50 in EtOH). $[\alpha]_D$ -11.9 ($CHCl_3$).
Alcohol, O^{10}*-de-Me, di*-O-*Ac:* Oil. $[\alpha]_D^{25}$ -29.7 (c, 0.38 in $CHCl_3$). $[\alpha]_D$ -15.8 ($CHCl_3$).

(±)-*form* [17132-38-6]
Synthetic. Noncryst.
Semicarbazone: Mp 185-186°.
Alcohol: [65982-36-7]
Synthetic. Syrup; prisms (EtOH/EtOAc)(as perchlorate). Mp 178-181° (perchlorate).
Alcohol, O^9*-de-Me:*
Synthetic. Prisms (Me_2CO). Mp 171-171.5°.
Alcohol, O^{10}*-de-Me:* [84985-54-6]
Synthetic. Prisms (hexane/$CHCl_3$). Mp 151-152°.
Alcohol, O^{10}*-de-Me, di*-O-*Ac:* Mp 97-98°.
Battersby, A.R. *et al., J.C.S.*, 1959, 1744-1748; 1748-1753 (*isol, struct, synth*)
Albright, J.D. *et al., J. Nat. Prod.*, 1965, **28**, 212-217 (*Protoemetinol, occur*)
Szántay, C. *et al., J.O.C.*, 1966, **31**, 1447-1451 (*synth*)
Kametani, T. *et al., Heterocycles*, 1977, **8**, 119-124 (*synth*)
Takano, S. *et al., Heterocycles*, 1979, **12**, 765-770 (*synth, Protoemetinol*)
Kametani, T. *et al., J.C.S. Perkin 1*, 1979, 1211-1217 (*synth, ir, pmr*)
Ali, E. *et al., Heterocycles*, 1982, **19**, 2301-2304 (*Demethylprotoemetinols*)
Brown, R.T. *et al., Tet. Lett.*, 1984, **25**, 3127-3130 (*synth*)
Fujii, T. *et al., Chem. Pharm. Bull.*, 1987, **35**, 2755-2760 (*Demethylprotoemetinols*)
Hirai, Y. *et al., Chem. Pharm. Bull.*, 1988, **36**, 1343-1350 (*synth*)
Ihara, M. *et al., J.C.S. Perkin 1*, 1990, 1469-1476 (*synth*)
Huang, C.G. *et al., Tet. Lett.*, 2002, **43**, 2721-2723 (*synth*)
Chang, J.-K. *et al., Tetrahedron*, 2008, **64**, 9685-9688 (*Protoemetinol, synth, pmr, cmr*)

Protomethine P-665

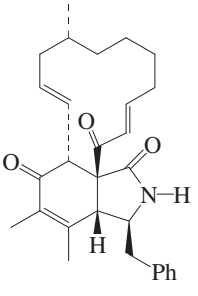
2-Phenyl-1,5,9,14-tetraazobicyclo[12.3.1]octadecan-4-one, 9CI
[216855-67-3]



$C_{20}H_{32}N_4O$ 344.499
Related to Protoverbine, P-673. Alkaloid from *Verbascum pseudonobile*. Solid. $[\alpha]_D$ +4.9 (c, 1.4 in $CHCl_3$).
N^9-E-*Cinnamoyl:* ***Verbamethine***. *Incasine C′*
[162465-73-8]
$C_{29}H_{38}N_4O_2$ 474.645
Alkaloid from *Incarvillea sinensis* and *Verbascum pseudonobile*. Off-white powder. $[\alpha]_D^{24}$ +13.2 (c, 1.3 in $CHCl_3$) (synthetic). λ_{max} 280 (log ϵ 4.33) (EtOH).
N^9-Z-*Cinnamoyl:* ***Isoverbamethine***. *Incasine C*
[162709-45-7]
$C_{29}H_{38}N_4O_2$ 474.645
Alkaloid from *Incarvillea sinensis* and *Verbascum pseudonobile*. Off-white powder. $[\alpha]_D^{24}$ +4.2 (c, 0.4 in $CHCl_3$). Props. refer to Incasine C. Incorr. struct. of Incasine C shown in the ref.
N^9-*(4-Methoxy*-E-*cinnamoyl):* ***Verbamekrine***
[249739-46-6]
$C_{30}H_{40}N_4O_3$ 504.671
Alkaloid from *Verbascum pseudonobile*.
N^9-*(4-Methoxy*-Z-*cinnamoyl):* ***Isoverbamekrine***
[249739-47-7]
$C_{30}H_{40}N_4O_3$ 504.671
Alkaloid from *Verbascum pseudonobile*.
N^9-*(3,4-Dimethoxy*-E-*cinnamoyl):* ***Verbametrine***
[223519-65-1]
$C_{31}H_{42}N_4O_4$ 534.697
Alkaloid from *Verbascum pseudonobile*. Glass. $[\alpha]_D^{28}$ -8 (c, 2 in $CHCl_3$). λ_{max} 232 (sh) (log ϵ 3.44); 296 (sh) (log ϵ 3.44); 320 (log ϵ 3.5) (EtOH).
N^9-*(3,4-Dimethoxy*-Z-*cinnamoyl):* ***Isoverbametrine***
[223519-66-2]
$C_{31}H_{42}N_4O_4$ 534.697
Alkaloid from *Verbascum pseudonobile*.
18-Oxo, N^9-E-*cinnamoyl:* ***Verbascine***. *Verbaskine*
[12651-38-6]
$C_{29}H_{36}N_4O_3$ 488.628
Alkaloid from *Verbascum pseudonobile* (Scrophulariaceae). Cryst. (Me_2CO). Mp 120-123°. $[\alpha]_D^{20}$ -26 ($CHCl_3$). Artifact. λ_{max} 219 (ϵ 14500); 225 (ϵ 11200); 284 (ϵ 15800) (EtOH) (Derep).
Δ^{1,18}(Δ^{14,18})-Dehydro, N^9-E-*cinnamoyl:* ***Incasine B′***
[185139-47-3]
$C_{29}H_{37}N_4O_2^{\oplus}$ 473.637
Alkaloid from *Incarvillea sinensis* (Bignoniaceae). Off-white powder (as chloride). $[\alpha]_D^{31}$ +49.2 (c, 1.3 in $CHCl_3$) (chloride).
Δ^{1,18}(Δ^{14,18})-Dehydro, N^9-Z-*cinnamoyl:* ***Incasine B***
[185139-27-9]
$C_{29}H_{37}N_4O_2^{\oplus}$ 473.637
Alkaloid from *Incarvillea sinensis*. Off-white powder (as chloride). $[\alpha]_D^{32}$ +62.5 (c, 0.5 in $CHCl_3$) (chloride). +ve Charge delocalised over the two ring *N* atoms.
Koblicová, Z. *et al., Tet. Lett.*, 1983, **24**, 4381 (*Verbascine*)
Ishihara, K. *et al., J.A.C.S.*, 1996, **118**, 1569 (*Verbascine, synth*)
Chi, Y.M. *et al., Tetrahedron*, 1997, **38**, 2713-2716 (*Incasines*)
Drandarov, K. *et al., Helv. Chim. Acta*, 1999, **82**, 229-237; 1185-1194 (*Verbascum alkaloids*)
Guggisberg, A. *et al., Helv. Chim. Acta*, 2000, **83**, 3035-3042 (*Protomethine*)
Drandarov, K. *et al., Helv. Chim. Acta*, 2002, **85**, 979-989 (*synth*)
Chi, Y.-M. *et al., J. Asian Nat. Prod. Res.*, 2007, **9**, 115-118 (*Incasine C′*)

Protophomin P-666

[52212-93-8]



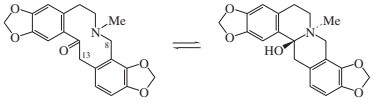
$C_{29}H_{35}NO_3$ 445.6

Constit. of cultures of *Phoma* spp. Cryst. (Me_2CO). Mp 252-256°. $[\alpha]_D^{24}$ -112 (c, 0.042 in $CHCl_3$). λ_{max} 206 (ϵ 23100); 217 (ϵ 12300); 243 (ϵ 10700) (EtOH) (Derep). λ_{max} 248 (ϵ 13200) (EtOH) (Berdy).

Binder, M. *et al., Helv. Chim. Acta*, 1973, **56**, 2387 (*isol*)
Cole, R.J. *et al., Handbook of Toxic Fungal Metabolites*, Academic Press, 1981, 337

Protopine P-667

4,6,7,14-Tetrahydro-5-methylbis[1,3]benzodioxolo[4,5-c:5′,6′-g]azecin-13(5H)-one, 9CI. Fumarine. Corydalis C. Corydinine. Biflorine†. *Macleyine*
[130-86-9]



$C_{20}H_{19}NO_5$ 353.374

The *N*-protonated form adopts a tetracyclic struct. in soln. or in the solid state. Alkaloid from a wide variety of genera in the Papaveraceae (*Argemone, Bocconia, Chelidonium, Eschscholtzia, Glaucium, Hunnemannia, Hylomecon, Macleaya, Meconella, Meconopsis, Papaver, Roemeria, Romneya, Sanguinaria, Stylomecon*, *Corydalis, Dactylicapnos, Dicentra*, *Fumaria*), Berberidaceae (*Berberis*) and Sapindaceae (*Pteridophyllum*). Shows weak spasmolytic, smooth muscle stimulant and weak antineoplastic activity. Exp. coronary vessel dilator. Shows bactericidal activity. Sedative. Antihypertensive and antiamnesic agent. Cryst. ($CHCl_3$/EtOH). Mp 207°. pK_a 5.99. Log P 2.63 (uncertain value) (calc). λ_{max} 288 (ϵ 4000) (MeOH) (Berdy). λ_{max} 293 (ϵ 8500) (EtOH) (Berdy). λ_{max} 240 ; 290 (MeOH/HCl) (Berdy).

▶ LD_{50} (gpg, orl) 237 mg/kg. VS2800000

Hydrochloride: [6164-47-2]
Mp 261-264° dec.

Perchlorate: Mp 321-322°.

Methiodide: Mp 217°.

N-*Oxide:* ***Protopine* N-*oxide***
[87264-51-5]
$C_{20}H_{19}NO_6$ 369.373
Minor alkaloid from *Bocconia cordata* (Papaveraceae). Cryst. + $1H_2O$ ($MeOH/Me_2CO$). Mp 145-146° dec.

14-Alcohol: ***Dihydroprotopine***
$C_{20}H_{21}NO_5$ 355.39
Alkaloid from *Papaver somniferum* (Papaveraceae).

8-Oxo: ***Leptocarpine***†. *Alkaloid HL1. 8-Oxoprotopine*
[164176-15-2]
$C_{20}H_{17}NO_6$ 367.357
Alkaloid from whole plants of *Hypecoum leptocarpum* (Papaveraceae). Yellow needles (as hydroiodide). Mp 246-248° (hydroiodide).

13-Oxo: ***13-Oxoprotopine***. *14-Oxoprotopine. Oxyprotopine*
[15211-02-6]
$C_{20}H_{17}NO_6$ 367.357
Alkaloid from the seeds of *Papaver atlanticum* (Papaveraceae). Also from *Hypecoum procumbens* (Hypecoaceae). Mp 222-225°.

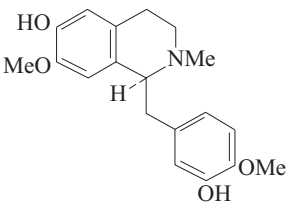
1-Methoxy: ***Coulteropine***
[6014-62-6]
[26012-86-2]
$C_{21}H_{21}NO_6$ 383.4
Alkaloid from the roots of *Romneya coulteri* var. *trichocalyx* (Papaveraceae). Cryst. (C_6H_6). Mp 168-170°.

1-Methoxy, hydrochloride: Mp 149-150°.

Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 616C (*nmr*)
Aldrich Library of Infrared Spectra, 3rd edn., 1981, 1513F (*ir*)
Haworth, R.D. *et al., J.C.S.*, 1926, 1769 (*synth*)
Dolejš, L. *et al., Coll. Czech. Chem. Comm.*, 1964, **29**, 2479 (*ms*)
Ma, J.C.N. *et al., Can. J. Chem.*, 1965, **43**, 1849 (*pmr*)
Stermitz, F.R. *et al., Tetrahedron*, 1966, **22**, 1095 (*Coulteropine*)
Hruban, L. *et al., Coll. Czech. Chem. Comm.*, 1967, **32**, 3414 (*uv*)
Anet, F.A.L. *et al., Tet. Lett.*, 1967, 4881 (*pmr*)
Stermitz, F.R. *et al., Tet. Lett.*, 1968, 3915 (*Coulteropine, cryst struct*)
Preininger, V. *et al., Pharmazie*, 1970, **25**, 356 (*isol, 13-Oxoprotopine*)
Battersby, A.R. *et al., J.C.S. Perkin 1*, 1975, 1147 (*biosynth*)
Takao, N. *et al., Chem. Pharm. Bull.*, 1976, **24**, 2859 (*biosynth*)
Holland, H.L. *et al., Can. J. Chem.*, 1979, **57**, 1588-1597 (*biosynth*)
Šantavý, F. *et al., Alkaloids (Academic Press)*, 1981, **19**, 461 (*Dihydroprotopine*)
Iwasa, K. *et al., Phytochemistry*, 1983, **22**, 627 (*isol, uv, ir, pmr, ms, struct, synth, oxide*)
Castedo, L. *et al., Heterocycles*, 1986, **24**, 5 (*synth, 13-Oxoprotopine*)
Táborská, E. *et al., Coll. Czech. Chem. Comm.*, 1987, **52**, 508 (*Alkaloid HL1*)
Kulkarni, B.K. *et al., J. Het. Chem.*, 1990, **27**, 623 (*synth*)
Táborská, E. *et al., Heterocycles*, 1995, **41**, 799 (*Leptocarpine*)
Marek, R. *et al., Magn. Reson. Chem.*, 1999, **37**, 195-202 (*N-15 nmr*)
Dostál, J. *et al., Acta Cryst. C*, 2001, **57**, 651-652 (*hydrochloride, cryst struct*)
Seger, C. *et al., Magn. Reson. Chem.*, 2004, **42**, 882-886 (*pmr, cmr*)
Toušek, J. *et al., Magn. Reson. Chem.*, 2005, **43**, 578-581 (*HCl salts, pmr, cmr*)
Wada, Y. *et al., J.O.C.*, 2007, **72**, 7301-7306 (*synth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, FOW000

Protosinomenine P-668

[30883-59-1]



$C_{19}H_{23}NO_4$ 329.395
Alkaloid from the pods of *Erythrina lithosperma* (Fabaceae). Gum.

Picrolonate:
Yellow needles (EtOH). Mp 172-174°.

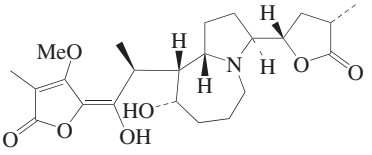
N-*De-Me:* ***Norprotosinomenine***
[26153-70-8]
$C_{18}H_{21}NO_4$ 315.368
Alkaloid from the pods of *Erythrina lithosperma* (Fabaceae). Mp 242-244° (as hydrochloride). $[\alpha]_D^{25}$ +18 (c, 0.88 in H_2O).

Di-Me ether: see Laudanosine, L-69

Ghosal, S. *et al., Aust. J. Chem.*, 1971, **24**, 2733-2735 (*isol, uv, ir, pmr, ms, struct*)
Maier, U.H. *et al., Phytochemistry*, 1999, **52**, 373-382 (*biosynth, pmr, cmr*)

Protostemodiol P-669

[1002109-45-6]

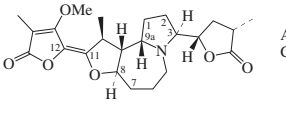


$C_{23}H_{33}NO_7$ 435.516
Alkaloid from *Stemona japonica*. Amorph. yellow powder. $[\alpha]_D^{23}$ +124.7 (c, 0.15 in MeOH). λ_{max} 305 (log ϵ 4.25) (MeOH).

Tang, C.-P. *et al., J. Nat. Prod.*, 2008, **71**, 112-116 (*isol, pmr, cmr, ms*)

Protostemonine P-670

[27495-40-5]



Absolute Configuration

$C_{23}H_{31}NO_6$ 417.501
Alkaloid from the roots of *Stemona cochinchinensis* and *Stemona japonica*. Cryst. + 1MeOH (MeOH). Mp 172-173° (sintering at 90-100°). $[\alpha]_D$ +147.8.

Picrolonate: Mp 237°.

1α,8α-Epoxide: ***Oxyprotostemonine***
$C_{23}H_{29}NO_7$ 431.485
Alkaloid from the roots of *Stemona curtisii* and *Stemona kerrii*. Amorph. $[\alpha]_D^{20}$ +142 (c, 0.2 in MeOH). λ_{max} 298 (MeOH aq.).

7,8-Didehydro: ***Dehydroprotostemonine***
$C_{23}H_{29}NO_6$ 415.485
Alkaloid from the roots of *Stemona curtisii* and *Stemona kerrii*. Amorph. $[\alpha]_D^{20}$ +72 (c, 0.3 in MeOH). λ_{max} 312 (MeOH aq.).

*1,2,3,9*a-*Tetradehydro:* ***Bisdehydroprotostemonine***. *Tetradehydroprotostemonine*
[145701-15-1]
$C_{23}H_{27}NO_6$ 413.469
Alkaloid from roots of *Stemona japonica*. Mp 192-194°. $[\alpha]_D$ +169 (c, 0.81 in EtOH).

*Demethoxy, 11*S,*12*R-*dihydro:* ***12-Epistemocochinine***

$C_{22}H_{31}NO_5$ 389.491
Alkaloid from *Stemona japonica*. Yellow oil. $[\alpha]_D^{23}$ +53.3 (c, 0.04 in MeOH). λ_{max} 294 (log ϵ 3.49) (MeOH).

Demethoxy, 11S,12S-dihydro: ***Stemocochinine***
$C_{22}H_{31}NO_5$ 389.491
Alkaloid from the roots of *Stemona cochinchinensis*, *Stemona curtisii* and *Stemona kerrii*. Amorph. $[\alpha]_D^{20}$ -52 (c, 0.2 in MeOH).

Demethoxy, 1,2,3,9a-tetradehydro, 11S,12R-dihydro: ***Isobisdehydrostemocochinine***
[1003567-57-4]
$C_{22}H_{27}NO_5$ 385.459
Alkaloid from the roots of *Stemona cochinchinensis*. Amorph. yellow powder. $[\alpha]_D^{20}$ -55 (c, 0.17 in $CHCl_3$). λ_{max} 240 (MeOH).

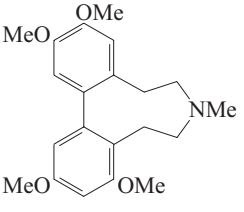
Demethoxy, 1,2,3,9a-tetradehydro, 11S,12S-dihydro: ***Bisdehydrostemocochinine***
[1003567-56-3]
$C_{22}H_{27}NO_5$ 385.459
Alkaloid from the roots of *Stemona cochinchinensis*. Amorph. yellow powder. $[\alpha]_D^{20}$ -9 (c, 0.15 in $CHCl_3$). λ_{max} 239 (MeOH).

(E)-Isomer: ***Isoprotostemonine***
[145841-08-3]
$C_{23}H_{31}NO_6$ 417.501
Alkaloid from roots of *Stemona japonica*. Light yellow cryst. Mp 165-167°. $[\alpha]_D$ -23.6 (c, 0.47 in EtOH).

Irie, H. *et al., Chem. Comm.*, 1970, 268-269 (*uv, ir, pmr, struct*)
Irie, H. *et al., Chem. Pharm. Bull.*, 1973, **21**, 451-452 (*cryst struct, abs config*)
Ye, Y. *et al., Phytochemistry*, 1994, **37**, 1205-1208 (*Isoprotostemonine, Bisdehydroprotostemonine*)
Kaltenegger, E. *et al., Phytochemistry*, 2003, **63**, 803-816 (*isol, pmr, cmr, ms*)
Greger, H. *et al., Planta Med.*, 2006, **72**, 99-113 (*rev, occur, activity*)
Lin, L.-G. *et al., Helv. Chim. Acta*, 2007, **90**, 2167-2175 (*Bisdehydrostemocochinine, Isobisdehydrostemocochinine*)
Wang, C.-P. *et al., J. Nat. Prod.*, 2008, **71**, 112-116 (*12-Epistemocochinine, Stemocochinine*)

Protostephanine P-671

6,7,8,9-Tetrahydro-2,3,10,12-tetramethoxy-7-methyl-5H-dibenz[d,f]azonine, 9CI
[549-28-0]



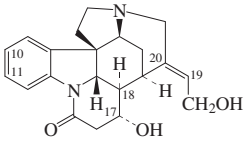
$C_{21}H_{27}NO_4$ 357.449
Alkaloid from *Stephania japonica* (Menispermaceae). Antihypertensive agent. Cryst. (MeOH). Mp 73-74° (MeOH solvate) Mp 90-95° (solvent-free). Log P 3.68 (calc).

Hydrochloride: Mp 150° dec.
Picrate: Mp 207-209°.

Barton, D.H.R. *et al., J.C.S.(C)*, 1966, 2313 (*isol, pmr*)
Pecherer, B. *et al., J.O.C.*, 1967, **32**, 1053 (*synth*)
Battersby, A.R. *et al., Chem. Comm.*, 1968, 1214; 1974, 773
Pecherer, B. *et al., J. Med. Chem.*, 1969, **12**, 149 (*synth*)
Battersby, A.R. *et al., Tet. Lett.*, 1977, 1321 (*synth, biosynth*)
Matsui, M. *et al., Phytochemistry*, 1979, **18**, 1087 (*isol*)
Battersby, A.R. *et al., J.C.S. Perkin 1*, 1981, 2002 (*synth, uv, pmr, ms*)

Protostrychnine P-672

12-Hydroxy-12,24-secostrychnidin-10-one, 9CI. 12,13-Dihydro-12-hydroxyisostrychnine
[71610-48-5]



Absolute Configuration

$C_{21}H_{24}N_2O_3$ 352.432
Minor alkaloid from the root bark of *Strychnos nux-vomica* and root of *Strychnos icaja* (Loganiceae). Mp 201° dec. $[\alpha]_D^{20}$ +5 (c, 0.39 in MeOH).

17-Deoxy, 17,18-didehydro: ***Isostrychnine***. *Isostrychnine I*
[467-16-3]
$C_{21}H_{22}N_2O_2$ 334.417
Alkaloid from root bark seeds and leaves of *Strychnos nux-vomica* (Loganiceae). Needles (EtOAc). Mp 225-228°. $[\alpha]_D$ +25 (EtOH). $[\alpha]_D$ -41.9 (AcOH). λ_{max} 256 (log ϵ 4.05); 285 (log ϵ 3.6); 294 (log ϵ 3.5) (EtOH).

17-Deoxy, 17,18-didehydro, N^4-oxide: ***Isostrychnine N^b-oxide***
[130641-44-0]
$C_{21}H_{22}N_2O_3$ 350.416
Alkaloid from the seeds of *Strychnos nux-vomica*. Component of Ma Qian Zi.

17-Deoxy, 17,18-didehydro, 19,20-dihydro: ***19,20-Dihydroisostrychnine***
[14839-10-2]
$C_{21}H_{24}N_2O_2$ 336.433
Alkaloid from leaves of *Strychnos nux-vomica* (Loganiceae). $[\alpha]_D^{21}$ +55 (c, 0.044 in MeOH). λ_{max} 254 ; 282 ; 292 (MeOH).

11-Methoxy, 10-hydroxy, 17-deoxy, 17,18-didehydro: ***O-Demethylisobrucine***
[130641-45-1]
$C_{22}H_{24}N_2O_4$ 380.443
Alkaloid from the processed seeds of *Strychnos nux-vomica*. Possible artifact.

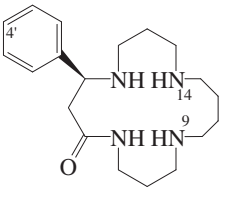
10,11-Dimethoxy, 17-deoxy, 17,18-didehydro: ***Isobrucine***
[129724-78-3]
$C_{23}H_{26}N_2O_4$ 394.469
Alkaloid from the processed seeds of *Strychnos nux-vomica*. Possible artifact.

10,11-Dimethoxy, 17-deoxy, 17,18-didehydro, N^4-oxide: ***Isobrucine* N-*oxide***
[130641-43-9]
$C_{23}H_{26}N_2O_5$ 410.469
Alkaloid from the processed seeds of *Strychnos nux-vomica*. Possible artifact.

Leuchs, H. *et al., Ber.*, 1942, **75**, 573-579 (*Isostrychnine, synth*)
Heimberger, S.I. *et al., Chem. Comm.*, 1973, 217-218 (*Isostrychnine, isol*)
Galeffi, C. *et al., J. Chromatogr.*, 1974, **88**, 416-418 (*Isostrychnine, uv, ms, pmr*)
Leung, J. *et al., Org. Magn. Reson.*, 1977, **9**, 333-337 (*cmr*)
Baser, K.H.C. *et al., Phytochemistry*, 1979, **18**, 512-514; 1982, **21**, 1423-1429 (*Isostrychnine, Dihydroisostrychnine, isol, uv, ir, pmr, cmr, ms, struct*)
Cai, B.C. *et al., CA*, 1990, **113**, 237637c (*isol, struct*)
Cai, B.C. *et al., Chem. Pharm. Bull.*, 1990, **38**, 1295-1298 (*Strychnos nux-vomica alkaloids*)
Cai, B.C. *et al., Yaoxue Xuebao*, 1994, **29**, 44-48 (*Isostrychnine N-oxide*)
Philippe, G. *et al., Phytochemistry*, 2003, **62**, 623-629 (*isol, pmr, cd*)

Protoverbine P-673

8-Phenyl-1,5,9,13-tetraazaheptadecan-6-one, 9CI



$C_{19}H_{32}N_4O$ 332.488
Numbering shown here as given in the lit. by analogy with related alkaloid types, e.g. Protomethine, P-665. CAS numbering differs. $[\alpha]_D$ -28.6 (c, 1.5 in $CHCl_3$).

(S)-form [216855-63-9]
Alkaloid from *Verbascum pseudonobile*. Solid.

N^9-E-Cinnamoyl: ***Verbacine***
[164230-52-8]
[12651-39-7 Verbasine]
$C_{28}H_{38}N_4O_2$ 462.634
Alkaloid from leaves of *Verbascum pseudonobile*. Glass. $[\alpha]_D^{26}$ -14.4 (c, 3.7 in $CHCl_3$). The earlier isolate Verbasine was a mixt. of Verbacine with other alkaloids. λ_{max} 280 (ϵ 20400) (EtOH) (Derep).

N^9-E-Cinnamoyl, N^{14}-formyl: ***Verbamedine***. *Incasine A′*
[459867-41-5]
[185135-06-2]
$C_{29}H_{38}N_4O_3$ 490.644
Alkaloid from *Incarvillea sinensis* and *Verbascum pseudonobile*. Glassy solid. $[\alpha]_D$ -31 (c, 1.6 in $CHCl_3$). Incasine A′ shown to be identical to Verbamedine and prev. published struct. incorrect.

N^9-E-Cinnamoyl, N^{14}-Ac: ***Verbascenine***
[85559-65-5]
$C_{30}H_{40}N_4O_3$ 504.671
Alkaloid from the aerial parts of *Verbascum phoenicum* and *Verbascum*

nigrum. Amorph. $[\alpha]_D^{22}$ -15 (c, 0.43 in MeOH). λ_{max} 217 (sh) (ϵ 21400); 223 (sh) (ϵ 15100); 280 (ϵ 18600); 299 (sh) (ϵ 12300) (no solvent reported).

N^9-Z-*Cinnamoyl:* ***Verballocine***
[164176-10-7]
$C_{28}H_{38}N_4O_2$ 462.634
Alkaloid from leaves of *Verbascum pseudonobile*. Glass. $[\alpha]_D^{26}$ -18 (c, 2.37 in $CHCl_3$). λ_{max} 256 (ϵ 16600) (EtOH) (Derep).

N^9-Z-*Cinnamoyl,* N^{14}-*formyl:* ***Isoverbamedine****. Incasine A*
[459867-42-6]
[185054-72-2]
$C_{29}H_{38}N_4O_3$ 490.644
Alkaloid from *Incarvillea sinensis* and *Verbascum pseudonobile*. Glassy solid. $[\alpha]_D$ -18 (c, 0.9 in $CHCl_3$). Incasine A shown to be identical to Isoverbamedine and prev. published struct. incorrect.

N^9-Z-*Cinnamoyl,* N^{14}-*Ac:* ***Verballoscenine***
[188838-50-8]
$C_{30}H_{40}N_4O_3$ 504.671
Alkaloid from leaves of *Verbascum phoenicum*. Glass. $[\alpha]_D^{25}$ -19 (c, 2.6 in $CHCl_3$). $[\alpha]_D^{25}$ -10.7 (c, 2.38 in MeOH). λ_{max} 256 (log ϵ 4.03) (EtOH).

N^9-*(4-Methoxy-*E*-cinnamoyl):* ***Verbasikrine***
[249739-44-4]
[247079-00-1]
$C_{29}H_{40}N_4O_3$ 492.66
Alkaloid from *Verbascum pseudonobile*.

N^9-*(4-Methoxy-*Z*-cinnamoyl):* ***Isoverbasikrine***
[249739-45-5]
[247079-01-2]
$C_{29}H_{40}N_4O_3$ 492.66
Alkaloid from *Verbascum pseudonobile*.

N^9-*(3,4-Dimethoxy-*E*-cinnamoyl):* ***Verbasitrine***
[223519-63-9]
$C_{30}H_{42}N_4O_4$ 522.686
Minor alkaloid from leaves of *Verbascum pseudonobile* (Scrophulariaceae). $[\alpha]_D^{25}$ -14 (c, 1.85 in $CHCl_3$). λ_{max} 294 (sh) (log ϵ 3.66); 320 (log ϵ 3.71) (EtOH).

N^9-*(3,4-Dimethoxy-*Z*-cinnamoyl):* ***Isoverbasitrine***
[223519-64-0]
$C_{30}H_{42}N_4O_4$ 522.686
Minor alkaloid from leaves of *Verbascum pseudonobile*. $[\alpha]_D^{28}$ -15 (c, 2 in $CHCl_3$). λ_{max} 230 (sh) (log ϵ 4.19); 272 (log ϵ 4.08); 296 (sh) (log ϵ 3.97) (EtOH).

4′-Hydroxy: ***Prelandrine***
[312934-15-9]
$C_{19}H_{32}N_4O_2$ 348.487
Alkaloid from the roots of *Aphelandra squarrosa*. Solid (as trihydrochloride). $[\alpha]_D^{20}$ -9.3 (c, 0.76 in MeOH) (trihydrochloride).

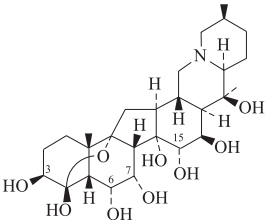
4′-Methoxy: ***Buchnerine***
[151813-62-6]
$C_{20}H_{34}N_4O_2$ 362.514
Trace alkaloid from leaves of *Clerodendrum buchneri*. Oil. $[\alpha]_D^{22}$ -26 (c, 0.5 in MeOH).

4′-Methoxy, N^9-*(4-methoxy-*Z*-cinnamoyl):* ***N^1-(Z)-p-Methoxycinnamoylbuchnerine***
[151194-27-3]
$C_{30}H_{42}N_4O_4$ 522.686
Trace alkaloid from leaves of *Clerodendrum buchneri* (Verbenaceae). Oil. $[\alpha]_D^{22}$ -28 (c, 1.2 in MeOH).

Seifert, K. *et al., Helv. Chim. Acta*, 1982, **65**, 2540-2547 (*Verbascenine*)
Lumbu, S. *et al., J. Nat. Prod.*, 1993, **56**, 1418-1420 (*Buchnerine*)
Drandarov, K. *et al., Tet. Lett.*, 1995, **36**, 617-620 (*Verbasine, Verballlocine, isol, struct*)
Ishihara, K. *et al., J.A.C.S.*, 1996, **118**, 1569-1570 (*Verbascenine, Verbacine, Buchnerine, synth*)
Drandarov, K. *et al., Phytochemistry*, 1997, **44**, 971 (*Verballoscenine*)
Chi, Y.M. *et al., Tet. Lett.*, 1997, **38**, 2713-2716 (*Incasines*)
Drandarov, K. *et al., Helv. Chim. Acta*, 1998, **81**, 1773-1791; 1999, **82**, 229-237; 1185-1194 (*Verbasitrine, Isoverbasitrine, Verbasikrine, Isoverbasikrine*)
Guggisberg, A. *et al., Helv. Chim. Acta*, 2000, **83**, 3035-3042 (*Protoverbine, isol, biosynth*)
Nezbedova, L. *et al., Helv. Chim. Acta*, 2001, **84**, 172-179 (*Prelandrine*)
Drandarov, K. *et al., Helv. Chim. Acta*, 2002, **85**, 979-989 (*synth*)
Drandarov, K. *et al., Tet. Lett.*, 2002, **43**, 5025-5027 (*Verbamedine, Isoverbamedine, Incasines*)

Protoverine P-674

4,9-Epoxy-3,4,6,7,14,15,16,20-cevaneoctol, 9CI. 6-Hydroxygermine
[76-45-9]



Absolute configuration

$C_{27}H_{43}NO_9$ 525.638
Hydrol. prod. of Protoveratrines and other ester alkaloids. Veratrum extracts have been used medicinally to reduce blood pressure. Mp 210-216° dec. $[\alpha]_D^{25}$ -12 (c, 0.96 in Py). Log P -4.7 (uncertain value) (calc).

▶ LD_{50} (mus, scu) 520 mg/kg. FL5700000

*14,15-*O*-Isopropylidene:* Mp 253-256°.

*15-*O*-(2-Methylbutanoyl), 6,7-di-Ac: Desatrine*
[6746-01-6]
Obt. semisynthetically by oxidn. of Protoveratrine B. Patent claims use as insecticide, but doubtless an antihypertensive agent. Needles (Me_2CO/petrol). Mp 232-233°.

*3-Angeloyl, 15-*O*-(2*R*-methylbutanoyl), 6,7-di-Ac:* ***Escholerine***
[663-93-4]
Alkaloid from *Veratrum eschscholtzii*. Antihypertensive agent. Mp 235°. $[\alpha]_D$ -30 (c, 1.0 in Py).

*3-*O*-(2-Hydroxy-2-methylbutanoyl), 15-*O*-(2*R*-methylbutanoyl):* ***Didesacetylprotoveratrine A***
[41535-99-3]
$C_{37}H_{59}NO_{12}$ 709.873
Alkaloid from *Veratrum nigrum* roots. Cryst. (C_6H_6). Mp 202-204°. $[\alpha]_D^{22}$ -18.7 (c, 0.95 in Py). Shown not to be an artifact.

*3-*O*-(2*R*-Hydroxy-2-methylbutanoyl), 15-*O*-(2*R*-methylbutanoyl), 6-Ac:* ***Desacetylprotoveratrine A***
[67375-42-2]
$C_{39}H_{61}NO_{13}$ 751.91
Alkaloid from *Veratrum album* (Liliaceae). Mp 191-192°. $[\alpha]_D$ -15 (Py).

*3-*O*-(2*R*-Hydroxy-2-methylbutanoyl), 15-*O*-(2*R*-methylbutanoyl), 6,7-di-Ac:* ***Protoveratrine A****. Protoveratrine. Pro-Amid. Protalba. Puroverin*
[143-57-7]
$C_{41}H_{63}NO_{14}$ 793.947
Alkaloid from *Veratrum album, Veratrum viride* and *Veratrum nigrum* (Liliaceae). Shows antifungal activity. Strong antihypertensive agent showing high toxicity in use due to powerful emetic action. Mp 270-271°. $[\alpha]_D$ -40 (Py). Log P 0.59 (uncertain value) (calc). Also used as mixt. with Protoveratrine B (Ebrantan, Provell, Tensatrin, Veralba, PVS 295).

▶ LD_{50} (rat, orl) 5 mg/kg. V. toxic if swallowed. FL5750100

*3-*O*-(2*R*,3*R*-Dihydroxy-2-methylbutanoyl), 15-*O*-(2*R*-methylbutanoyl), 6-Ac:* ***Desacetylprotoveratrine B****. Desacetylneoprotoveratrine*
[67370-03-0]
$C_{39}H_{61}NO_{14}$ 767.909
Alkaloid from *Veratrum album* and *Veratrum viride*. Weak antihypertensive agent. Mp 182-183°. $[\alpha]_D$ -9 (Py).

*3-*O*-(2*R*,3*R*-Dihydroxy-2-methylbutanoyl), 15-*O*-(2*R*-methylbutanoyl), 6,7-di-Ac:* ***Protoveratrine B****. Neoprotoveratrine. Veratetrine*
[124-97-0]
$C_{41}H_{63}NO_{15}$ 809.946
Alkaloid from *Veratrum album* and *Veratrum viride* (Liliaceae). Shows antifungal activity. Strong antihypertensive agent showing high toxicity in use due to powerful emetic action. Mp 269-270°. $[\alpha]_D$ -39 (Py).

▶ LD_{50} (mus, scu) 0.21 mg/kg. V. toxic by subcutaneous and other routes. FL5750000

*3-*O*-(2*S*,3*R*-Dihydroxy-2-methylbutanoyl), 15-*O*-(2*R*-methylbutanoyl), 6,7-di-Ac:* ***Protoveratrine C***
[82535-71-5]
$C_{41}H_{63}NO_{15}$ 809.946
Alkaloid from *Veratrum album*. Cryst. solid. Mp 258-260° dec. $[\alpha]_D^{26}$ -6.6 ($CHCl_3$).

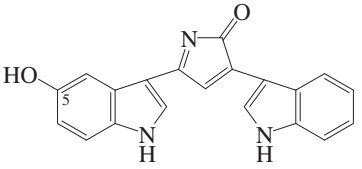
*3-*O*-(3,4-Dimethoxybenzoyl), 15-*O*-(2ξ-methylbutanoyl):* ***15-O-(2-Methylbutanoyl)-3-O-veratroylprotoverine***
$C_{41}H_{59}NO_{13}$ 773.916
Alkaloid from *Veratrum nigrum*. Amorph. powder. $[\alpha]_D^{25}$ +12.5 (c, 0.02

in $CHCl_3$).

Jacobs, W.A. *et al., J. Biol. Chem.*, 1943, **149**, 271-279 (*isol*)
Klohs, M.W. *et al., J.A.C.S.*, 1954, **76**, 1152-1153 (*Escholerine*)
U.S. Pat., 1959, 3 009 917; *CA*, **56**, 4810b (*Desatrine*)
Kupchan, S.M. *et al., J.A.C.S.*, 1960, **82**, 2242-2251; 2252-2258 (*struct, Protoveratrines A,B*)
Tomko, J. *et al., Planta Med.*, 1962, **10**, 138-142 (*isol*)
Wolters, B. *et al., Planta Med.*, 1970, **19**, 189-193 (*activity*)
Bondarenko, N.V. *et al., Khim. Prir. Soedin.*, 1972, 810-811; *Chem. Nat. Compd. (Engl. Transl.)*, 1972, 800-801 (*Didesacetylprotoveratrine A*)
Carey, F.A. *et al., Org. Magn. Reson.*, 1980, **14**, 141-144 (*cmr*)
Saksena, A.K. *et al., Tet. Lett.*, 1982, **23**, 811-814 (*Protoveratrine C*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 391
Wang, B. *et al., Helv. Chim. Acta*, 2008, **91**, 244-248 (*15-Methylbutanoyl-3-veratroylprotoverine*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, NCI600; POF000

Proviolacein P-675

*5-(5-Hydroxy-1*H*-indol-3-yl)-3-(1*H*-indol-3-yl)-2*H*-pyrrol-2-one, 9CI*
[165133-94-8]



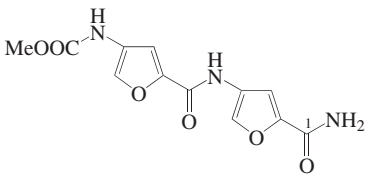
$C_{20}H_{13}N_3O_2$ 327.342
Prod. by *Chromobacterium violaceum*. Red cryst. (MeOH). Mp >240°. λ_{max} 271 (ϵ 12070); 290 (ϵ 13000); 385 (ϵ 8050); 412 (ϵ 8500); 492 (ϵ 16700) (EtOH aq.).

*5-Deoxy: 3,5-Di-1*H*-indol-3-yl-2*H*-pyrrol-2-one, 9CI*. ***Prodeoxyviolacein***
[158099-50-4]
$C_{20}H_{13}N_3O$ 311.342
Prod. by *Chromobacterium violaceum*. Dark red cryst. (MeOH). Mp >275°.

Hoshino, T. *et al., J.C.S. Perkin 1*, 1995, 1565-1571 (*isol, pmr, cmr, ir, 5-deoxy*)

Proximicin A P-676

[1029061-04-8]



$C_{12}H_{11}N_3O_6$ 293.235
Analogue of Netropsin, N-180. Isol. from a marine-derived *Verrucosispora maris* AB-18-032. Cytotoxic.

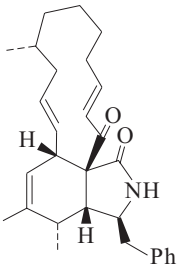
N^1*-[2-(4-Hydroxyphenyl)ethyl]:* ***Proximicin B***
[1029061-05-9]
$C_{20}H_{19}N_3O_7$ 413.386
Isol. from *Verrucosispora maris* AB-18-032.

N^1*-[2-(1*H*-Indol-3-yl)ethyl]:* ***Proximicin C***
[1029061-06-0]
$C_{22}H_{20}N_4O_6$ 436.423
Isol. from *Verrucosispora maris* AB-18-032.

Schneider, K. *et al., Angew. Chem., Int. Ed.*, 2008, **47**, 3258-3261 (*ms, struct*)
Fiedler, H.-P. *et al., J. Antibiot.*, 2008, **61**, 158-163 (*isol, pmr, cmr*)

Proxiphomin P-677

16-Methyl-10-phenylmethyl[13]cytochalasa-6,13,21-triene-1,23-dione, 9CI
[52212-92-7]



$C_{29}H_{37}NO_2$ 431.617
Constit. of cultures of *Phoma* spp. Has antibiotic props. Amorph. solid. $[\alpha]_D^{24}$ -140 (c, 0.156 in $CHCl_3$). λ_{max} 206 (ϵ 23100); 217 (ϵ 12300); 243 (ϵ 10700) (EtOH) (Derep). λ_{max} 217 (ϵ 12300); 243 (ϵ 10700) (EtOH) (Berdy).

Binder, M. *et al., Helv. Chim. Acta*, 1973, **56**, 2387 (*isol, struct, ir, uv, ms, pmr*)
Schmidlin, T. *et al., Helv. Chim. Acta*, 1978, **61**, 2096 (*synth*)
Tapolczay, D.J. *et al., Chem. Comm.*, 1985, 143 (*synth*)
Thomas, E.J. *et al., J.C.S. Perkin 1*, 1989, 499 (*synth*)
Cole, R.J. *et al., Handbook of Toxic Fungal Metabolites*, Academic Press, 1981, 336

Prurienidine P-678

Struct. unknown. Possibly contains a pyridine nucleus. Alkaloid from *Mucuna pruriens* (Fabaceae). Light-buff microcryst. solid. Mp 287-288°.

Hydrochloride: Mp 282-283°.

Sulfate: Mp 175-177°.

Picrate: Mp 269-270°.

Chloroaurate: Mp 300° (blackens at 200°).

Majumdar, D.N. *et al., Indian Pharm.*, 1954, **10**, 79-84; *CA*, **49**, 9881a (*isol*)

Prurienine P-679

$C_6H_{12}N_2O_2$ 144.173
Struct. unknown. Alkaloid from *Mucuna pruriens* (Fabaceae). Vasodilator, hypotensive agent, peristaltic stimulant. Fine needles (Me_2CO). Mp 263-264° dec.

Sulfate: Mp 226°.

Picrate:
Yellowish cryst. Mp 246° dec.

Chloroaurate: Mp 300°.

Majumdar, D.N. *et al., Indian J. Pharm.*, 1953, **15**, 62-65; *CA*, **48**, 8794b (*isol*)

Prurieninine P-680

$C_8H_{16}N_2O_2$ 172.227
Struct. unknown. Alkaloid from *Mucuna pruriens* (Fabaceae). Clusters of needles (EtOH). Mp 213-214° (209-210° dec.).

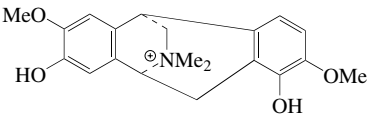
Sulfate: Mp 202° (197-198°).

Picrate: Mp 276-278°.

Chloroaurate: Mp 199-200°.

Majumdar, D.N. *et al., Indian J. Pharm.*, 1953, **15**, 62-65; *CA*, **48**, 8794b (*isol*)
Majumdar, D.N. *et al., Indian Pharm.*, 1954, **10**, 79-84; *CA*, **49**, 9881a (*isol*)

Przewalidine P-681

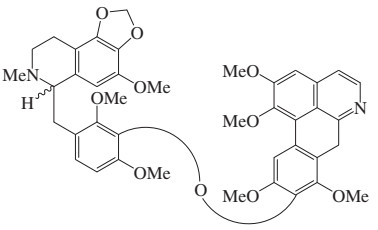


$C_{20}H_{24}NO_4^{\oplus}$ 342.414
Quaternary alkaloid from the roots of *Thalictrum przewalskii*. Powder (MeOH) (as chloride). Mp 170° dec. (chloride). $[\alpha]_D^{25}$ -141.7 (c, 1.8 in MeOH). λ_{max} 260 (log ϵ 3.74); 286 (log ϵ 4.37) (MeOH).

Zhang, G.-L. *et al., Planta Med.*, 1998, **64**, 165-171 (*isol, uv, ir, pmr, cmr, ms*)

Przewaline P-682

[205520-57-6]

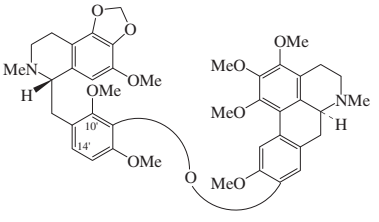


$C_{41}H_{42}N_2O_{10}$ 722.79
Alkaloid from the roots of *Thalictrum przewalskii*. Yellow powder ($CHCl_3$). Mp 180-181°. $[\alpha]_D^{20}$ +70.1 (c,0.5 in $CHCl_3$). λ_{max} 203 (log ϵ 4.5); 220 (sh) (log ϵ 4.41); 258 (sh) (log ϵ 4.34); 280 (sh) (log ϵ 4.09); 300 (sh) (log ϵ 3.96); 315 (sh) (log ϵ 3.88); 340 (sh) (log ϵ 3.35) (MeOH).

Zhang, G.-L. *et al., Planta Med.*, 1998, **64**, 165-171 (*isol, uv, ir, pmr, cmr, ms*)

Przewalskine P-683

[205520-59-8]



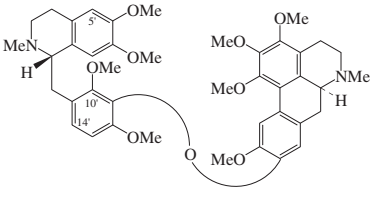
$C_{42}H_{48}N_2O_{10}$ 740.849
Alkaloid from the roots of *Thalictrum przewalskii*. Yellow powder ($CHCl_3$). Mp 71-75°. $[\alpha]_D^{20}$ +98.1 (c, 0.1 in $CHCl_3$). λ_{max} 291 (log ϵ 4.5); 302 (log ϵ 4.42); 322 (sh) (log ϵ 4.37) (MeOH).

10′-Demethoxy, 13′-methoxy: ***Thalmelatidine***
[31199-55-0]
$C_{42}H_{48}N_2O_{10}$ 740.849
Alkaloid from the roots of *Thalictrum minus* ssp. *elatum* (Ranunculaceae). Needles (EtOH). Mp 120-122°. $[\alpha]_D^{19}$ +47 (c, 1.0 in $CHCl_3$). Struct. revised in 1989. Isomeric 5-methoxy-6,7-methylenedioxy struct. originally proposed.

10′-Demethoxy, 14′-methoxy: ***Przewalskinine***
[205520-58-7]
$C_{42}H_{48}N_2O_{10}$ 740.849
Alkaloid from the roots of *Thalictrum przewalskii*. Yellow powder ($CHCl_3$). Mp 88-90°. $[\alpha]_D^{20}$ +60 (c, 0.3 in $CHCl_3$). λ_{max} 282 (log ϵ 4.56); 300 (log ϵ 4.48); 317 (sh) (log ϵ 4.43) (MeOH).

El Sheikh, M.O.A. *et al., Phytochemistry*, 1989, **28**, 1967 (*Thalmelatidine*)
Zhang, G.-L. *et al., Planta Med.*, 1998, **64**, 165-171 (*Przewalskine, Przewalskinine*)

Przewalstine P-684



$C_{42}H_{50}N_2O_9$ 726.865
Alkaloid from the roots of *Thalictrum przewalskii*. Yellow powder ($CHCl_3$). Mp 96-98°. $[\alpha]_D^{20}$ +47.1 (c, 0.3 in $CHCl_3$). λ_{max} 281 (log ϵ 4.56); 302 (log ϵ 4.44); 315 (sh) (log ϵ 4.39) (MeOH).

5′-Hydroxy: ***Przewalstidine***
[205520-62-3]
$C_{42}H_{50}N_2O_{10}$ 742.864
Alkaloid from the roots of *Thalictrum przewalskii*. Yellow powder ($CHCl_3$). Mp 107-111°. $[\alpha]_D^{20}$ +44.4 (c,0.4 in $CHCl_3$). λ_{max} 281 (log ϵ 4.41); 302 (log ϵ 4.31); 315 (sh) (log ϵ 4.26) (MeOH).

10′-Demethoxy, $O^{12'}$*-de-Me:* ***Thalibulamine***
[105437-17-0]
$C_{40}H_{46}N_2O_8$ 682.812
Alkaloid from *Thalictrum cultratum* (Ranunculaceae). $[\alpha]_D$ +63 (c, 0.2 in MeOH).

10′-Demethoxy, $O^{7'}$,$O^{12'}$*-di-de-Me:* ***Istanbulamine***
[82953-24-0]
$C_{39}H_{44}N_2O_8$ 668.785
Alkaloid from the roots and rhizomes of *Thalictrum minus* var. *microphyllum*. $[\alpha]_D^{25}$ +60 (c, 0.09 in MeOH).

10′-Demethoxy, 14′-methoxy: ***Przewalstinine***
[205520-60-1]
$C_{42}H_{50}N_2O_9$ 726.865
Alkaloid from the roots of *Thalictrum przewalskii*. Yellow powder. Mp 91-93°. $[\alpha]_D$ +36.4 (c, 0.3 in $CHCl_3$). $[\alpha]_D$ +65.5 (c, 0.1 in MeOH). λ_{max} 281 (log ϵ 4.56); 300 (log ϵ 4.51); 317 (log ϵ 4.45) (MeOH).

10′-Demethoxy, 14′-methoxy, 5′-hydroxy: ***Przewalstidinine***
[205520-63-4]
$C_{42}H_{50}N_2O_{10}$ 742.864
Alkaloid from the roots of *Thalictrum przewalskii*. Yellow powder ($CHCl_3$). Mp 116-120°. $[\alpha]_D$ +31 (c, 0.2 in $CHCl_3$). $[\alpha]_D$ +61.3 (c, 0.9 in MeOH). λ_{max} 281 (log ϵ 4.5); 300 (log ϵ 4.42); 315 (sh) (log ϵ 4.35) (MeOH).

Guinaudeau, H. *et al., Tet. Lett.*, 1982, **23**, 2523 (*Istanbulamine*)
Hussain, S.F. *et al., J. Nat. Prod.*, 1986, **49**, 494 (*Thalibulamine*)
Zhang, G.-L. *et al., Planta Med.*, 1998, **64**, 165-171 (*Przewalstine, Przewalstinine, Przewalstidine, Przewalstidinine, isol, uv, ir, pmr, cmr, ms*)

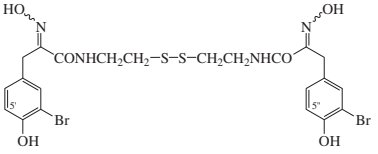
Psammaplin I P-685

[540466-77-1]
As Psammaplin B, P-687 with
R = $-SO_2Me$
$C_{12}H_{15}BrN_2O_5S$ 379.231
Alkaloid from the sponge *Pseudoceratina purpurea*.

Piña, I.C. *et al., J.O.C.*, 2003, **68**, 3866-3873 (*isol, pmr, cmr*)

Psammaplin A P-686

N,N′-*Bis[3-(3-bromo-4-hydroxyphenyl)-2-oximidopropanoyl]cystamine*
[110659-91-1]
[109152-27-4 , 109152-30-9]



$C_{22}H_{24}Br_2N_4O_6S_2$ 664.395
Both the (*E*,*E*)- (Mp 172-174°) and (*E*,*Z*)-isomers have been isol. and characterised. See Park *et al*. (2003). Major metab. from a sponge tentatively identified as *Thorectopsamma xana*. Also from the sponge *Pseudoceratina purpurea* and isol. from another unidentified sponge. Inhibitor of chitinase, histone deacetylase and DNA methyltransferase. Antifungal agent. Exhibits farnesyl protein transferase and leucine aminopeptidase inhibitory activity. Shows cytotoxic and antimicrobial activity. Semicryst. solid. Mp 67-75°. λ_{max} 219 (ϵ 64600); 277 (ϵ 4875); 286 (sh) ; 290 (ϵ 10000) (MeOH) (Derep).

*4′-*O*-Sulfate:* ***Psammaplin A$_1$****. Psammaplin A 11′-sulfate*
[263009-15-0]
[325155-70-2]
$C_{22}H_{24}Br_2N_4O_9S_3$ 744.459
Isol. from the sponge *Aplysinella rhax*. Oil; amorph. pale yellow solid (as *N,N*-dimethylguanidine salt). Mp 76-80° (*N,N*-dimethylguanidine salt). λ_{max} 206 (ϵ 33000); 283 (ϵ 3000); 324 (ϵ 750) (MeOH). λ_{max} 204 (log ϵ 4.73); 280 (log ϵ 3.88) (MeOH) (*N,N*-dimethylguanidine).

*4′,4″-Di-*O*-sulfate:* ***Psammaplin A$_2$***
[325155-74-6]
$C_{22}H_{24}Br_2N_4O_{12}S_4$ 824.523
Isol. from the sponge *Aplysinella rhax*. Amorph. pale yellow solid (as *N,N*-dimethylguanidine salt). Mp 155-160° (*N,N*-dimethylguanidine salt). λ_{max} 204 (log ϵ 4.6); 281 (log ϵ 3.98) (MeOH) (*N,N*-dimethylguanidine).

S-*Oxide:* ***Psammaplin J***
[540466-78-2]
$C_{22}H_{24}Br_2N_4O_7S_2$ 680.394
Alkaloid from the sponge *Pseudoceratina purpurea*.

5′-Hydroxy: ***Psammaplin K***
[439089-58-4]
$C_{22}H_{24}Br_2N_4O_7S_2$ 680.394
Isol. from the sponge *Aplysinella rhax*. Light pinkish oil. λ_{max} 290 (ϵ 3438) (MeOH).

5′,5″-Dihydroxy: ***Psammaplin L***
[439089-59-5]
$C_{22}H_{24}Br_2N_4O_8S_2$ 696.394
Isol. from the sponge *Aplysinella rhax*. Light pinkish oil. λ_{max} 291 (ϵ 3139) (MeOH).

5′,5″-Dimer: ***Bisaprasin***
[112514-43-9]
$C_{44}H_{46}Br_4N_8O_{12}S_4$ 1326.774
Minor metab. of a sponge tentatively identified as *Thorectopsamma xana*. Also isol. from *Pseudoceratina purpurea* and *Aplysinella rhax*. Inhibitor of DNA methyltransferase and histone deacetylase. Exhibits farnesyl protein transferase and leucine aminopeptidase inhibitory activity. Shows cytotoxic and antimicrobial activity. Foam. Sol. EtOH, butanol; poorly sol. H_2O, EtOAc. λ_{max} 204 (ϵ 77000); 284 (ϵ 16000) (MeOH) (Berdy).

*5′,5″-Dimer, 4′-*O*-sulfate:* ***Bisaprasin 11′-sulfate***
[263009-16-1]
$C_{44}H_{46}Br_4N_8O_{15}S_5$ 1406.838
Isol. from *Aplysinella rhax*. Oil. λ_{max} 203 (ϵ 83000); 283 (ϵ 7900); 324 (ϵ 5300) (MeOH).

5′-Bromo: ***5-Bromopsammaplin A***
[612089-85-7]
$C_{22}H_{23}Br_3N_4O_6S_2$ 743.291
Isol. from an association of the sponges *Jaspis wondoensis* and *Poecillastra wondoensis*. Amorph. solid. Possesses (*E*,*E*)-config.

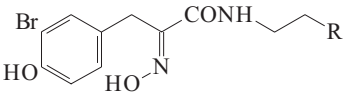
Trisulfide: ***Psammaplin A trisulfide***
$C_{22}H_{24}Br_2N_4O_6S_3$ 696.461
Isol. from an association of the sponges *Jaspis wondoensis* and *Poecillastra wondoensis*. Amorph. solid. Possesses (*E*,*E*)-config.

Arabshahi, L. *et al., J.O.C.*, 1987, **52**, 3584-3586 (*isol, struct*)

Rodriguez, A.D. *et al., Tet. Lett.*, 1987, **28**, 4989-4992 (*isol, uv, ir, pmr, cmr, activity*)
Jimenez, C. *et al., Tetrahedron*, 1991, **47**, 2097-2102 (*activity*)
Hoshino, O. *et al., Bioorg. Med. Chem. Lett.*, 1992, **2**, 1561-1562 (*synth*)
Pham, N.B. *et al., J. Nat. Prod.*, 2000, **63**, 393-395 (*11′-sulfates*)
Shin, J. *et al., Tetrahedron*, 2000, **56**, 9071-9077 (*Psammaplins A_1,A_2, activity*)
Tabudravu, J.N. *et al., Bioorg. Med. Chem.*, 2002, **10**, 1123-1128 (*pmr, cmr, Psammaplins K,L*)
Park, Y. *et al., J. Nat. Prod.*, 2003, **66**, 1495-1498 (*isol, pmr, cmr*)
Piña, I.C. *et al., J.O.C.*, 2003, **68**, 3866-3873 (*isol, pmr, cmr*)
Godert, A.M. *et al., Bioorg. Med. Chem. Lett.*, 2006, **16**, 3330-3333 (*synth*)
Mora, F.D. *et al., J. Nat. Prod.*, 2006, **69**, 547-552 (*Psammaplin A, activity*)

Psammaplin B P-687

2-[[3-(3-Bromo-4-hydroxyphenyl)-2-(hydroxyimino)-1-oxopropyl]amino]ethyl thiocyanate, 9CI
[133991-67-0]



R = SCN

$C_{12}H_{12}BrN_3O_3S$ 358.215
Isol. from the marine sponge *Pseudoceratina purpurea*. Oil. λ_{max} 280 (ϵ 5450) (MeOH) (Berdy).

Jimenez, C. *et al., Tetrahedron*, 1991, **47**, 2097-2102 (*isol, pmr, cmr*)
Piña, I.C. *et al., J.O.C.*, 2003, **68**, 3866-3873 (*isol, activity*)

Psammaplin C P-688

N-*[2-(Aminosulfonyl)ethyl]-3-bromo-4-hydroxy-α-(hydroxyimino)benzenepropanamide, 9CI*
[133991-68-1]
As Psammaplin B, P-687 with
R = $-SO_2NH_2$
$C_{11}H_{14}BrN_3O_5S$ 380.219
Isol. from the marine sponge *Pseudoceratina purpurea*. Oil. λ_{max} 282 (ϵ 2200) (MeOH) (Berdy).

Jimenez, C. *et al., Tetrahedron*, 1991, **47**, 2097-2102 (*isol, pmr, cmr*)
Piña, I.C. *et al., J.O.C.*, 2003, **68**, 3866-3873 (*isol, activity*)

Psammaplin D P-689

[133991-69-2]
As Psammaplin B, P-687 with
R = $-SSCH_2CH_2NHCOOMe$
$C_{15}H_{20}BrN_3O_5S_2$ 466.376
Isol. from the marine sponge *Pseudoceratina purpurea*. Exhibits antimicrobial and mild tyrosine kinase inhibitory activities. Oil. λ_{max} 280 (ϵ 17733) (MeOH) (Berdy).

Jimenez, C. *et al., Tetrahedron*, 1991, **47**, 2097-2102 (*isol, pmr, cmr*)
Park, Y. *et al., J. Nat. Prod.*, 2003, **66**, 1495-1498 (*isol, pmr, cmr*)
Piña, I.C. *et al., J.O.C.*, 2003, **68**, 3866-3873 (*isol, cmr, activity*)

Psammaplin E P-690

[540466-73-7]
As Psammaplin B, P-687 with
R = $-S\text{-}S\text{-}CH_2CH_2NHCOCONH_2$
$C_{15}H_{19}BrN_4O_5S_2$ 479.375
Alkaloid from the sponge *Pseudoceratina purpurea*. λ_{max} 206 (ϵ 18070); 284 (ϵ 1860) (MeOH).

Piña, I.C. *et al., J.O.C.*, 2003, **68**, 3866-3873 (*isol, pmr, cmr*)

Psammaplin F P-691

[540466-74-8]
As Psammaplin B, P-687 with
R = $-S\text{-}S\text{-}CH_2CH_2NHCOCOOH$
$C_{15}H_{18}BrN_3O_6S_2$ 480.36
Alkaloid from the sponge *Pseudoceratina purpurea*. Potent histone deacetylase inhibitor. λ_{max} 206 (ϵ 25935); 280 (ϵ 2060) (MeOH).

Piña, I.C. *et al., J.O.C.*, 2003, **68**, 3866-3873 (*isol, pmr, cmr*)

Psammaplin G P-692

[540466-75-9]
As Psammaplin B, P-687 with
R = $-S\text{-}S\text{-}CH_2CH_2NHC(COOH){=}NNH_2$
$C_{15}H_{20}BrN_5O_5S_2$ 494.39
Alkaloid from the sponge *Pseudoceratina purpurea*. Potent DNA methyltransferase inhibitor.

Piña, I.C. *et al., J.O.C.*, 2003, **68**, 3866-3873 (*isol, pmr, cmr*)

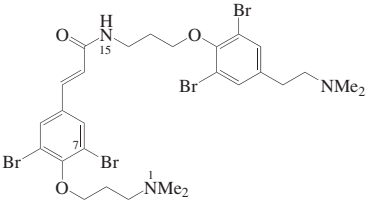
Psammaplin H P-693

[540466-76-0]
As Psammaplin B, P-687 with
R = $-S\text{-}S\text{-}CH_2CH_2NHCOOEt$
$C_{16}H_{22}BrN_3O_5S_2$ 480.403
Alkaloid from the sponge *Pseudoceratina purpurea*.

Piña, I.C. *et al., J.O.C.*, 2003, **68**, 3866-3873 (*isol, pmr, cmr*)

Psammaplysene A P-694

[850013-02-4]



$C_{27}H_{35}Br_4N_3O_3$ 769.208
Isol. from the sponge *Psammaplysilla* sp. Specific inhibitor of FOXO1a nuclear export.

N^{15}-*Me:* ***Psammaplysene D***
[1000582-60-4]
$C_{28}H_{37}Br_4N_3O_3$ 783.235
Isol. from a *Psammoclemma* sp. Amorph. solid. Isol. as a 4:3 mixt. of *E-*/*Z-*isomers. λ_{max} 206 (log ϵ 4.83); 219 (sh) (log ϵ 4.59); 286 (log ϵ 4.37) (MeOH).

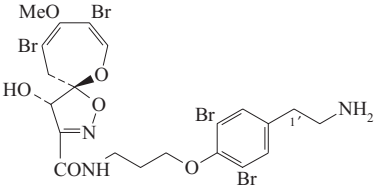
N^{1}-*De-Me:* ***Psammaplysene B***
[865722-85-6]
$C_{26}H_{33}Br_4N_3O_3$ 755.181
Isol. from *Psammaplysilla* sp.

7-Debromo, N^{15}-*Me:* ***Psammaplysene C***
[1000582-18-2]
$C_{28}H_{38}Br_3N_3O_3$ 704.339
Isol. from a *Psammoclemma* sp. Cytotoxic. Amorph. solid. Isol. as a 4:3 mixt. of *E-*/*Z-*isomers. λ_{max} 206 (log ϵ 4.87); 218 (sh) (log ϵ 4.61); 294 (log ϵ 4.36); 312 (sh) (log ϵ 4.3) (MeOH).

Schroeder, F.C. *et al., J. Nat. Prod.*, 2005, **68**, 574-576 (*isol, pmr, cmr, ms*)
Georgiades, S.N. *et al., Org. Lett.*, 2005, **7**, 4091-4094 (*synth*)
Buchanan, M.S. *et al., J. Nat. Prod.*, 2007, **70**, 1827-1829 (*Psammaplysenes C,D*)

Psammaplysin A P-695

[85819-66-5]



$C_{21}H_{23}Br_4N_3O_6$ 733.045
Isol. from Red Sea sponge *Psammaplysilla purpurea*. Shows antibiotic props.; active against gram-positive bacteria. Exhibits moderate *in vitro* cytotoxicity towards the human colon tumour cell-line HCT116. Also shows antifouling activity. Foam. Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. $[\alpha]_D^{22}$ -65.2 (c, 0.52 in MeOH). λ_{max} 229 (ϵ 12700); 262 (sh) (ϵ 7100); 276 (ϵ 2500); 283 (sh) (ϵ 3200) (MeOH) (Derep). λ_{max} 228 (ϵ 9000); 256 (ϵ 4000); 272 (ϵ 2800); 276 (ϵ 2500) (MeOH) (Berdy). λ_{max} 229 (ϵ 12500); 276 (ϵ 7100); 283 (ϵ 3200) (MeOH/HCl) (Berdy). λ_{max} 229 (ϵ 12500) (EtOH) (Berdy).

Di-Ac: [95739-54-1]
Needles (MeOH). Mp 140°.

N-*Formyl:* ***Ceratinamide A***. N-*Formylpsammaplysin A*
[178214-21-6]
$C_{22}H_{23}Br_4N_3O_7$ 761.056
Metab. from the marine sponge *Pseudoceratina purpurea*. Shows potent antifouling activity. Solid. Sol. MeOH. $[\alpha]_D^{24}$ -89.7 (c, 0.146 in MeOH). λ_{max} 207 (ϵ 64200) (MeOH) (Berdy).

N-*(13-Methyltetradecanoyl):* ***Ceratinamide B***. *1′-Deoxypsammaplysin D*
[178214-22-7]

$C_{36}H_{51}Br_4N_3O_7$ 957.431
Metab. from the marine sponge *Pseudoceratina purpurea*. Shows antifouling activity. Solid. Sol. MeOH. $[\alpha]_D^{24}$ -53.5 (c, 0.263 in Me_2CO). λ_{max} 207 (ϵ 51100) (MeOH) (Berdy).

N-*Me:* ***Psammaplysin F***
[190510-86-2]
$C_{22}H_{25}Br_4N_3O_6$ 747.072
Alkaloid from *Aplysinella* sp. $[\alpha]_D$ -62.3 (c, 1.2 in $MeOH/CH_2Cl_2$).

1′-Hydroxy: ***Psammaplysin B***
[85819-67-6]
$C_{21}H_{23}Br_4N_3O_7$ 749.045
Isol. from *Psammaplysilla purpurea*. Active against gram-positive bacteria. Shows moderate *in vivo* cytotoxicity *vs* human colon tumour cells. Foam. Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. $[\alpha]_D^{25}$ -60.2 (c, 0.632 in MeOH). λ_{max} 218 (ϵ 28600); 256 (sh) (ϵ 7000); 262 (sh) (ϵ 6400); 277 (sh) (ϵ 4000); 282 (ϵ 3000) (MeOH) (Derep). λ_{max} 218 (ϵ 28600); 282 (ϵ 3000) (MeOH/HCl) (Berdy).

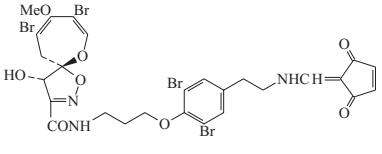
1′-Hydroxy, N-*Me:* ***Psammaplysin C***
[142449-78-3]
$C_{22}H_{25}Br_4N_3O_7$ 763.071
Metab. from the marine sponge *Druinella purpurea* (*Psammaplysilla purpurea*). Exhibits moderate *in vitro* cytotoxicity towards the human colon tumour cell-line HCT116. Glass. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. $[\alpha]_D^{23}$ -57.1 (c, 0.014 in MeOH). λ_{max} 218 (ϵ 17600); 255 (ϵ 6700); 279 (ϵ 3000) (MeOH) (Berdy).

1′-Hydroxy, N-*(13-methyltetradecanoyl):* ***Psammaplysin D***
[149415-75-8]
$C_{36}H_{51}Br_4N_3O_8$ 973.43
Alkaloid from the sponge *Aplysinella* sp. Immunosuppressant. Oil. $[\alpha]_D^{18}$ -71.4 (c, 2.8 in Me_2CO). λ_{max} 210 (ϵ 50900); 224 ; 298 (MeOH) (Berdy).

Rotem, M. *et al., Tetrahedron*, 1983, **39**, 667 (*isol, uv, ir, pmr, cmr, ms, struct*)
Roll, D.M. *et al., J.A.C.S.*, 1985, **107**, 2916 (*uv, ir, pmr, cmr, ms, struct*)
Copp, B.R. *et al., J. Nat. Prod.*, 1992, **55**, 822 (*Psammaplysin C*)
Ichiba, T. *et al., J.O.C.*, 1993, **58**, 4149 (*Psammaplysin D*)
Tsukamoto, S. *et al., Tetrahedron*, 1996, **52**, 8181 (*Ceratinamide A, Ceratinamide B*)
Liu, S. *et al., J. Nat. Prod.*, 1997, **60**, 614 (*Psammaplysin F*)

Psammaplysin E P-696

[149415-76-9]



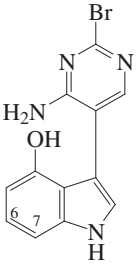
$C_{27}H_{25}Br_4N_3O_8$ 839.126

Alkaloid from the sponge *Aplysinella* sp. and *Pseudoceratina purpurea*. Immunosuppressive, antifouling agent. Bright yellow oil. $[\alpha]_D^{18}$ -80.3 (c, 0.3 in Me_2CO). λ_{max} 208 (ϵ 53400); 224 ; 298 (ϵ 25000) (MeOH) (Berdy).

Ichiba, T. *et al., J.O.C.*, 1993, **58**, 4149 (*isol, uv, ir, pmr, cmr, struct*)

Psammopemmin A P-697

[145940-63-2]



$C_{12}H_9BrN_4O$ 305.133
Free base unstable, isol. as salt (prob. hydrochloride). Alkaloid from an Antarctic sponge *Psammopemma* sp. Yellow solid (as salt). λ_{max} 220 (ϵ 24000); 287 (ϵ 4300); 362 (ϵ 9800) (EtOH) (salt) (Berdy).

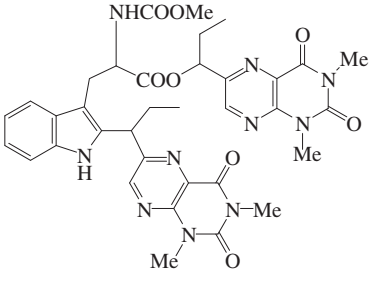
6-Bromo: ***Psammopemmin C***
[145940-65-4]
$C_{12}H_8Br_2N_4O$ 384.029
From *Psammopemma* sp. Yellow solid (as salt). λ_{max} 228 (ϵ 33000); 292 (ϵ 2800); 362 (ϵ 15400) (EtOH) (salt) (Berdy).

7-Bromo: ***Psammopemmin B***
[145940-64-3]
$C_{12}H_8Br_2N_4O$ 384.029
From *Psammopemma* sp. λ_{max} 227 (ϵ 34500); 292 (ϵ 2800); 361 (ϵ 15200) (EtOH) (as salt) (Berdy).

Butler, M.S. *et al., Aust. J. Chem.*, 1992, **45**, 1871 (*isol, uv, pmr, cmr, ms, struct*)

Pseudoanchynazine A P-698

[445430-63-7]

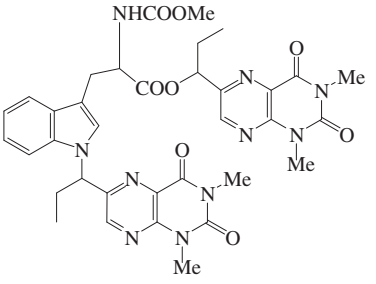


$C_{35}H_{38}N_{10}O_8$ 726.747
Alkaloid from the sponge *Clathria* sp. Yellow powder. $[\alpha]_D^{25}$ -60.7 (c, 0.83 in MeOH). λ_{max} 248 (ϵ 9700) (MeOH).

Zuleta, I.A. *et al., Tetrahedron*, 2002, **58**, 4481-4486 (*isol, pmr, cmr*)

Pseudoanchynazine B P-699

[445430-64-8]

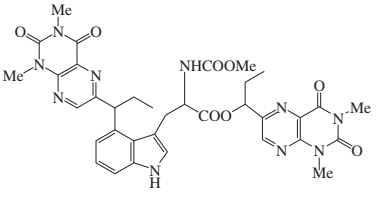


$C_{35}H_{38}N_{10}O_8$ 726.747
Alkaloid from the sponge *Clathria* sp. Yellow powder. $[\alpha]_D^{25}$ +81.2 (c, 0.42 in MeOH). λ_{max} 242 (ϵ 11300) (MeOH).

Zuleta, I.A. *et al., Tetrahedron*, 2002, **58**, 4481-4486 (*isol, pmr, cmr*)

Pseudoanchynazine C P-700

[445430-65-9]

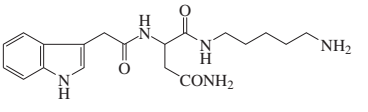


$C_{35}H_{38}N_{10}O_8$ 726.747
Alkaloid from the sponge *Clathria* sp. Yellow powder. $[\alpha]_D^{25}$ +96.6 (c, 2.21 in MeOH). λ_{max} 253 (ϵ 10900) (MeOH).

Zuleta, I.A. *et al., Tetrahedron*, 2002, **58**, 4481-4486 (*isol, pmr, cmr*)

Pseudoargiopinin III P-701

[117233-46-2]

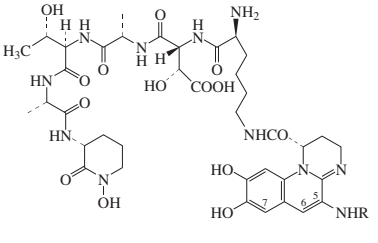


$C_{19}H_{27}N_5O_3$ 373.454
Constit. of *Argiope lobata* venom.

Grishin, E.V. *et al., Bioorg. Khim.*, 1988, **14**, 883 (*isol*)
Grishin, E.V. *et al., Toxicon*, 1989, **27**, 541 (*isol*)

Pseudobactin B P-702

[138145-39-8]



R = -$COCH_2CH_2\overset{5'}{C}OOH$

$C_{42}H_{59}N_{11}O_{17}$ 989.992

Pyoverdin chromopeptin occurring as Fe complex. Des-ferri form shown. Shows delocalisation of charge over the two naphthopyrimidine Ns. Prod. by *Pseudomonas fluorescens*. Siderophore.

5′-Amide: ***Pseudobactin***
[76975-04-7]
$C_{42}H_{60}N_{12}O_{16}$ 989.007
Prod. by *Pseudomonas fluorescens*. Siderophore. Plant growth promotor, showing some control of *Fusarium* sp. Antifungal. Fluorescent yellow-green cryst. (as Fe complex). Poorly sol. hexane. λ_{max} 400 (ϵ 15000) (H_2O) (Berdy). λ_{max} 307 ; 362 ; 376 (pH 4.4 buffer) (Berdy). λ_{max} 401 (pH 7.8 buffer) (Berdy).

5,6-Dihydro, 5′-amide: ***Pseudobactin A***
[79438-64-5]
$C_{42}H_{62}N_{12}O_{16}$ 991.023
Prod. by *Pseudomonas* sp. B_{10}. Siderophore, active against *Erwinia carotovora*. Siderophore, active against *Erwinia carotovora*. λ_{max} 226 ; 405 (pH 7.8 buffer) (Berdy). λ_{max} 220 ; 360 ; 380 (pH 4.4 buffer) (Berdy).

7-Sulfo, 5,6-dihydro, 5′-amide: ***7-Sulfopseudobactin A***
[218433-00-2]
$C_{42}H_{62}N_{12}O_{19}S$ 1071.087
Prod. by *Pseudomonas* sp. 267. Siderophore.

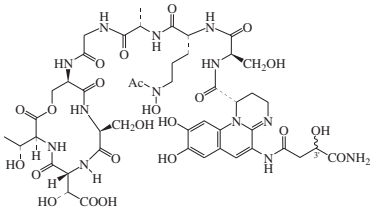
Analogue (R = $COCH_2CH_2CH_2NHCOOH$), 5,6-dihydro: [138145-41-2]
$C_{43}H_{64}N_{12}O_{17}$ 1021.049
Prod. by *Pseudomonas fluorescens*.

Analogue (R = $COCH_2CH_2CH_2NHCOOH$), 7-sulfo, 5,6-dihydro: [218432-99-6]
$C_{43}H_{64}N_{12}O_{20}S$ 1101.113
Prod. by *Pseudomonas fluorescens*. Siderophore.

Teintze, M. *et al., Biochemistry*, 1981, **20**, 6446; 6457 (*isol, cryst struct*)
Kolasa, T. *et al., J.O.C.*, 1990, **55**, 4246 (*synth, bibl*)
Taraz, K. *et al., Z. Naturforsch., C*, 1991, **46**, 522-526 (*Pseudobactin B*)
Andriollo, N. *et al., J. Agric. Food Chem.*, 1992, **40**, 1245-1248 (*Pseudobactin B*)
Okonya, J.F. *et al., J.O.C.*, 1995, **60**, 1932-1935 (*synth, ir, pmr, cmr*)
Buzikiewicz, H. *et al., Nat. Prod. Lett.*, 1998, **12**, 125-130 (*7-sulfo derivs*)

Pseudobactin 7SR1 P-703

Pyoverdin cyclo-Pf P19
[90295-72-0]



$C_{46}H_{63}N_{13}O_{23}$ 1166.077

Struct. revised in 2000. Prod. by *Pseudomonas* sp. 7SR1 and *Pseudomonas fluorescens* P19. Siderophore. Sol. H_2O; poorly sol. Me_2CO, hexane. λ_{max} 460 (pH 5 buffer) (Berdy). λ_{max} 385 ; 401 (ϵ 21000) (H_2O) (Berdy).

3′-Deoxy: [280142-33-8]
$C_{46}H_{63}N_{13}O_{22}$ 1150.078
Prod. by *Pseudomonas fluorescens* P19.

Yang, C.C. *et al., Biochemistry*, 1984, **23**, 3534-3540 (*isol, struct*)
Vossen, W. *et al., Z. Naturforsch., C*, 2000, **55**, 153-164 (*isol, struct*)

Pseudobaleabuxine F P-704

Pseudobaleabuxine, 8CI
[31768-83-9]

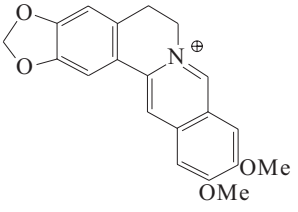
$C_{30}H_{50}N_2O_2$ 470.737

Struct. unknown. Alkaloid from the leaves of *Buxus balearica* (Buxaceae). Mp 236-240°. $[\alpha]_D$ +120.7 ($CHCl_3$). Not identical with N^3-Isobutyrylcycloxobuxine F, in C-920. Suggested to be epimeric with it.

Kurakina, I.O. *et al., Khim. Prir. Soedin.*, 1969, **5**, 406-409; 1970, **6**, 231-235; *Chem. Nat. Compd. (Engl. Transl.)*, 1969, **5**, 337-339; 1970, **6**, 225-227 (*isol, ms, pmr*)

Pseudoberberine P-705

[19716-72-4]



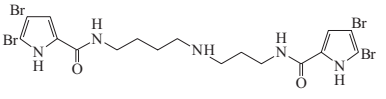
$C_{20}H_{18}NO_4^{\oplus}$ 336.367

Quaternary alkaloid from the leaves of *Isopyrum thalictroides* (Ranunculaceae). Pale yellow needles (as chloride). Mp 300° dec. (chloride).

Moulis, C. *et al., Phytochemistry*, 1977, **16**, 1283 (*isol, uv, ms, struct*)

Pseudoceratidine P-706

[174545-78-9]



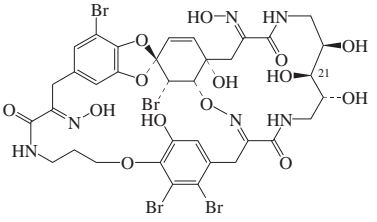
$C_{17}H_{21}Br_4N_5O_2$ 647.001

Metab. from the marine sponge *Pseudoceratina purpurea*. Antifouling agent; larval settlement and development inhibitor. Solid. λ_{max} 275 (ϵ 18400) (MeOH) (Berdy).

Tsukamoto, S. *et al., Tet. Lett.*, 1996, **37**, 1439 (*isol, uv, ir, pmr, cmr, struct*)
Behrens, C. *et al., Bioorg. Med. Chem. Lett.*, 1997, **7**, 321 (*synth*)
Ponasik, J.A. *et al., Tetrahedron*, 1998, **54**, 6977-6986 (*synth*)

Pseudoceratin A P-707

[929624-97-5]



$C_{35}H_{36}Br_4N_6O_{14}$ 1084.317

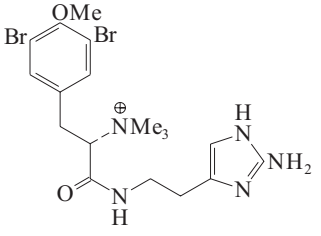
Isol. from *Pseudoceratina purpurea*. Antifungal agent. Amorph. solid. $[\alpha]_D^{28}$ +11.7 (c, 0.1 in MeOH). λ_{max} 207 (log ϵ 5.64) (MeOH).

21-Epimer: ***Pseudoceratin B***
[929624-98-6]
$C_{35}H_{36}Br_4N_6O_{14}$ 1084.317
Isol. from *Pseudoceratina purpurea*. Antifungal agent. Amorph. solid. $[\alpha]_D^{28}$ -11.6 (c, 0.1 in MeOH). λ_{max} 207 (log ϵ 5.64) (MeOH).

Jang, J.-H. *et al., J.O.C.*, 2007, **72**, 1211-1217 (*isol, pmr, cmr*)

Pseudoceratinine B P-708

[172670-15-4]



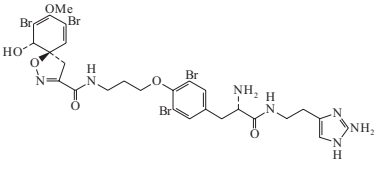
$C_{18}H_{26}Br_2N_5O_2^{\oplus}$ 504.244

Alkaloid from the sponge *Pseudoceratina verrucosa*. Sol. MeOH, CH_2Cl_2; poorly sol. H_2O. $[\alpha]_D$ +17 (c, 1 in MeOH) (as hydrochloride). λ_{max} 285 (ϵ 1480); 330 (ϵ 490) (MeOH) (Berdy).

Benharref, A. *et al., J. Nat. Prod.*, 1996, **59**, 177 (*isol, uv, ir, pmr, cmr, cd, struct*)

Pseudoceratinine C P-709

[172617-97-9]



$C_{27}H_{31}Br_4N_7O_6$ 869.201

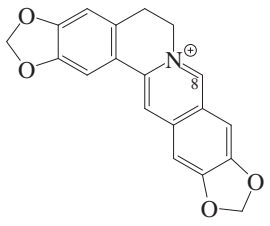
Alkaloid from the sponge *Pseudoceratina verrucosa*. Sol. MeOH, CH_2Cl_2; poorly sol. H_2O. $[\alpha]_D$ -10 (c, 1 in

MeOH) (as hydrochloride). Closely related to Purealine, P-816. λ_{max} 220 (ϵ 34670); 228 (ϵ 12880) (MeOH) (Berdy).

Benharref, A. *et al., J. Nat. Prod.*, 1996, **59**, 177 (*isol, uv, ir, cd, pmr, cmr, struct*)

Pseudocoptisine P-710

[19716-67-7]



$C_{19}H_{14}NO_4^{\oplus}$ 320.324

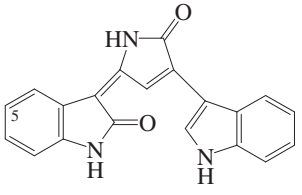
Quaternary alkaloid from the leaves of *Isopyrum thalictroides* (Ranunculaceae). Yellow cryst. (as chloride). Mp 300° (dec.)(chloride).

8-Hydroxy: ***8-Hydroxypseudocoptisine***
$C_{19}H_{14}NO_5^{\oplus}$ 336.323
Quaternary alkaloid from the roots of *Thalictrum przewalskii*. Powder (MeOH) (as chloride). Mp 270° (chloride). λ_{max} 237 (log ϵ 3.97); 265 (log ϵ 4.08); 287 (log ϵ 4.24); 312 (log ϵ 4.06); 341 (log ϵ 3.9); 380 (sh) (log ϵ 3.53) (MeOH).

Moulis, C. *et al., Phytochemistry*, 1977, **16**, 1283 (*isol, uv, pmr, ms, struct*)
Zhang, G.-L. *et al., Planta Med.*, 1998, **64**, 165-171 (*8-Hydroxypseudocoptisine*)

Pseudodeoxyviolacein P-711

*3-[1,5-Dihydro-4-(1*H*-indol-3-yl)-5-oxo-2*H*-pyrrol-2-ylidene]-1,3-dihydro-2*H*-indol-2-one, 9CI*
[155210-54-1]



$C_{20}H_{13}N_3O_2$ 327.342

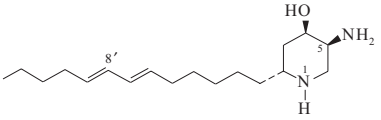
Prod. by *Chromobacterium violaceum*. Orange-red powder. Mp >280° dec. λ_{max} 270 (ϵ 9200); 285 (ϵ 9100); 383 (sh) (ϵ 6500); 483 (ϵ 15100) (MeOH).

5-Hydroxy: ***Pseudoviolacein***
$C_{20}H_{13}N_3O_3$ 343.341
Prod. by *Chromobacterium violaceum*. Red cryst. (MeOH). Mp >240°. λ_{max} 275 (ϵ 9100); 290 (ϵ 9500); 394 (ϵ 8500); 413 (ϵ 8900); 472 (ϵ 11100) (MeOH).

Hoshino, T. *et al., Biosci., Biotechnol., Biochem.*, 1994, **58**, 279-282 (*Pseudodeoxyviolacein*)
Hoshino, T. *et al., J.C.S. Perkin 1*, 1995, 1565-1571 (*Pseudoviolacein*)

Pseudodistomin B P-712

5-Amino-2-(6,8-tridecadienyl)-4-piperidinol, 9CI
[106293-83-8]



$C_{18}H_{34}N_2O$ 294.479

Struct. revised in 1992. Originally assigned as the 3′,5′-diene. Metab. from the Okinawan tunicate *Pseudodistoma kanoko* and *Pseudodistoma megalarva*. Exhibits antineoplastic activity; phosphodiesterase inhibitor; calmodulin antagonist. Oil (as *N*,*N*′-di-Ac). Sol. $CHCl_3$, MeOH; poorly sol. H_2O, toluene. $[\alpha]_D^{24}$ +35 (c, 1 in MeOH) (di-Ac). λ_{max} 233 (ϵ 17500) (MeOH) (Derep).

8′Z-Isomer: ***Pseudodistomin A***
[106231-30-5]
Metab. from *Pseudodistoma kanoko*. Exhibits antineoplastic activity; phosphodiesterase inhibitor; calmodulin antagonist. Oil (as *N*,*N*′-di-Ac). Sol. $CHCl_3$, MeOH; poorly sol. H_2O, toluene. $[\alpha]_D^{24}$ +36 (c, 1 in MeOH) (di-Ac). λ_{max} 233 (ϵ 17500) (MeOH) (Derep).

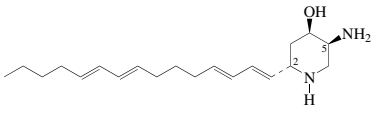
4-Epimer: ***Pseudodistomin D***
[196099-42-0]
$C_{18}H_{34}N_2O$ 294.479
Isol. from *Pseudodistoma megalarva*. Gum. $[\alpha]_D^{25}$ +5 (c, 0.3 in MeOH). λ_{max} 240 (MeOH).

4,5-Diepimer: ***Pseudodistomin E***
[196099-44-2]
$C_{18}H_{34}N_2O$ 294.479
Isol. from *Pseudodistoma megalarva*. Gum. $[\alpha]_D^{25}$ -20.8 (c, 0.4 in MeOH). λ_{max} 239 (MeOH).

Ishibashi, M. *et al., J.O.C.*, 1987, **52**, 450-453 (*Pseudodistomins A,B, isol, uv, ir, pmr, cmr, ms*)
Kiguchi, T. *et al., Tet. Lett.*, 1992, **33**, 7389-7390 (*synth, struct*)
Ishibashi, M. *et al., J. Nat. Prod.*, 1995, **58**, 804-806 (*struct*)
Naito, T. *et al., J.C.S. Perkin 1*, 1996, 281-288 (*synth, struct, bibl*)
Kiguchi, T. *et al., Chem. Pharm. Bull.*, 1997, **45**, 1212-1215 (*synth*)
Freyer, A.J. *et al., J. Nat. Prod.*, 1997, **60**, 986-990 (*Pseudodistomins D,E, isol, uv, ir, pmr, cmr*)
Ninomiya, I. *et al., Alkaloids (Academic Press)*, 1998, **50**, 317-342 (*rev*)
Trost, B.M. *et al., Org. Lett.*, 2005, **7**, 823-826 (*synth*)

Pseudodistomin F P-713

5-Amino-2-(1,3,8,10-pentadecatetraenyl)-4-piperidinol
[196099-46-4]



$C_{20}H_{34}N_2O$ 318.501

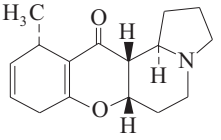
Isol. from the ascidian *Pseudodistoma megalarva*. Gum. $[\alpha]_D^{25}$ -13.9 (c, 0.4 in MeOH). λ_{max} 233 (MeOH).

4,5-Diepimer: ***Pseudodistomin C***
[169626-36-2]
$C_{20}H_{34}N_2O$ 318.501
Isol. from *Pseudodistoma kanoko* and *Pseudodistoma megalarva*. Cytotoxic agent. Oil (as N^1,N^5,*O*-tri-Ac). $[\alpha]_D^{22}$ +85 (c, 1 in $CHCl_3$) (tri-Ac). λ_{max} 235 (ϵ 37000) (MeOH) (tri-Ac).

Kobayashi, J. *et al., J.O.C.*, 1995, **60**, 6941-6945 (*Pseudodistomin C*)
Doi, Y. *et al., Tetrahedron*, 1996, **52**, 4573-4580 (*Pseudodistomin C, synth*)
Freyer, A.J. *et al., J. Nat. Prod.*, 1997, **60**, 986-990 (*Pseudodistomin F*)
Langlois, N. *et al., Org. Lett.*, 2002, **4**, 185-187 (*Pseudodistomin C, synth*)
Tanaka, K. *et al., Heterocycles*, 2006, **68**, 183-192 (*Pseudodistomin C, synth*)

Pseudoepiisoelaeocarpiline P-714

13,16-Dihydroelaeocarpine, 9CI
[28230-67-3]



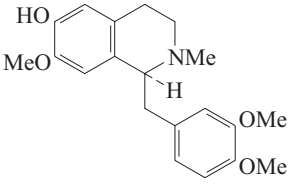
$C_{16}H_{21}NO_2$ 259.347

Alkaloid from the leaves of *Elaeocarpus sphaericus* (Elaeocarpaceae). Gum. Mp 230-235° (as picrate). $[\alpha]_D$ +222 (c, 0.04 in $CHCl_3$).

Johns, S.R. *et al., Aust. J. Chem.*, 1971, **24**, 1679 (*isol, uv, ir, pmr, ms, struct, abs config*)

Pseudolaudanine P-715

1-[(3,4-Dimethoxyphenyl)methyl]-1,2,3,4-tetrahydro-7-methoxy-2-methyl-6-isoquinolinol, 9CI. 1-(3,4-Dimethoxybenzyl)-1,2,3,4-tetrahydro-6-hydroxy-7-methoxy-2-methylisoquinoline
[85-65-4]



(S)–form

$C_{20}H_{25}NO_4$ 343.422

(S)-form [13452-22-7]
Alkaloid from *Roemeria refracta* (Papaveraceae). Cryst. ($MeOH/Et_2O$). Mp 117-119°. $[\alpha]_D$ +73 (c, 0.4 in MeOH).

N-*Me:* ***Pseudorine***. N-*Methylpseudolaudanine*
[87332-68-1]
$C_{21}H_{28}NO_4^{\oplus}$ 358.456
Alkaloid from the bark of *Fagara mayu* (Rutaceae) and from roots of *Papaver pseudo-orientale* (Papaveraceae). Prisms (EtOH) (as iodide). Mp 204-

206° (iodide). $[\alpha]_D^{20}$ +107 (c, 0.5 in MeOH). Abs. config. not detd. It is possible that Pseudorine and *N*-Methylpseudolaudanine could have opposite abs. configs. Phys. props. refer to Pseudorine iodide.

Me ether: see Laudanosine, L-69

(±)-*form* [5876-49-3]
Cryst. ($CHCl_3$/petrol). Mp 110°.

Picrate:
Yellow cryst. (EtOH). Mp 162°.

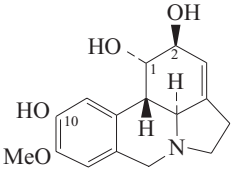
Me ether: see Laudanosine, L-69

[105660-68-2 , 13240-65-8]

Chatterjee, A. *et al., Chem. Ber.*, 1966, **99**, 1764-1766 (*synth*)
Cassels, B.K. *et al., Chem. Ind. (London)*, 1966, 1635-1636 (*resoln*)
Miller, L.L. *et al., J.A.C.S.*, 1973, **95**, 2651-2656 (*synth*)
Assem, E.M. *et al., Planta Med.*, 1983, **48**, 77 (*N-Methylpseudolaudanine*)
Věžnik, F. *et al., Coll. Czech. Chem. Comm.*, 1986, **57**, 1752-1763 (*Pseudorine*)
Gözler, B. *et al., J. Nat. Prod.*, 1990, **53**, 666-668 (*isol, pmr, struct*)

Pseudolycorine P-716

[29429-03-6]



$C_{16}H_{19}NO_4$ 289.33
Alkaloid from *Lycoris radiata* and several other spp. in the Amaryllidaceae. Anti-neoplastic agent active against Rauscher viral leukaemia. Mp 247-248° (hydrate) Mp 240-242° (anhyd.). $[\alpha]_D$ -62 (c, 1.2 in EtOH). Log P -1.07 (uncertain value) (calc).

▶ VS3200000

Hydrochloride: Mp 266°.

1-O-β-D-Glucopyranoside: ***Pseudolycorine-1-glucoside***
[93710-69-1]
$C_{22}H_{29}NO_9$ 451.472
Alkaloid from the roots of *Pancratium biflorum*. Also detected in a number of *Crinum* spp. (Amaryllidaceae). Amorph. solid + $1H_2O$. $[\alpha]_D^{20}$ -105.5 (c, 0.3 in MeOH).

O^1,O^2-Di-O-β-D-glucopyranoside: ***Pseudolycorine 1,2-diglucoside***
[132472-47-0]
$C_{28}H_{39}NO_{14}$ 613.614
Alkaloid from *Hymenocallis caymanensis* (Amaryllidaceae). Mp 265°. $[\alpha]_{Hg}^{22}$ +68 (c, 0.2 in $CHCl_3$).

1-Ac: ***1-O-Acetylpseudolycorine***
[104386-94-9]
$C_{18}H_{21}NO_5$ 331.368
Alkaloid from the aerial parts of *Narcissus requienii* (Amaryllidaceae). Mp 248-250°.

2-Ac: ***2-O-Acetylpseudolycorine***
[104386-93-8]
$C_{18}H_{21}NO_5$ 331.368
Alkaloid from the aerial parts of *Narcissus requienii* (Amaryllidaceae). Cryst. + ½ H_2O. Mp 168-170°.

O,O,O-Tri-Ac: Mp 205°.

O^1-Hexadecanoyl, O^2-(1-O-hexadecanoyl-2-O-octadecanoylglycerophosphoryl): ***1-O-Palmitoyl-2-O-(1-O-palmitoyl-2-O-stearoyl)glycerophosphorylpseudolycorine***
[128701-14-4]
$C_{69}H_{120}NO_{12}P$ 1186.68
From fruits of *Crinum asiaticum*. Light brown amorph. solid. Obt. as a mixt. containing some octadecenoyl (oleoyl) residues in place of stearoyl.

O^2-Phosphatidyl: ***Phosphatidylpseudolycorine***
[109269-86-5]
[109269-88-7]
Alkaloid from the flowers of *Zephyranthes flava* (Amaryllidaceae). Light brown amorph. solid. Mixt. contg. stearoyl and oleoyl alkyl residues.

O^2-Me: ***Carinatine***
[64937-89-9]
$C_{17}H_{21}NO_4$ 303.357
Alkaloid from the bulbs of *Zephyranthes carinata* (Amaryllidaceae). Amorph. $[\alpha]_D^{27}$ -68.97 (c, 0.696 in $CHCl_3$).

O^2-Me, picrate: Mp 195-197° dec.

O^9-De-Me, O^{10}-Me: ***Golceptine***
$C_{16}H_{19}NO_4$ 289.33
Alkaloid from *Narcissus jonquilla* (Amaryllidaceae). Cryst. (Me_2CO). Mp 146-148°. $[\alpha]_D^{24}$ -156 (c, 0.2 in $CHCl_3$). Probable struct. Formulated as *O^2,O^9*- or *O^2,O^{10}*-didemethylgalanthine. The 2,10-isomer would correspond to Pseudolycorine, P-716 to which the props. clearly do not correspond.

O^9-De-Me, O^{10}-Me, 1-Ac: ***Sternbergine***
[96253-76-8]
$C_{18}H_{21}NO_5$ 331.368
Alkaloid from the bulbs of *Sternbergia lutea* and *Brunsvigia radulosa*. Cytotoxic on P388 and BL6 melanoma. Antimalarial agent. Needles ($CHCl_3$). Mp 105-112° Mp 197-202°. Not correlated with Golceptine.

O^{10}-Me: ***Methylpseudolycorine***
[11042-05-0]
$C_{17}H_{21}NO_4$ 303.357
Alkaloid from *Narcissus pseudonarcissus* and several other spp. in the Amaryllidaceae. Mp 228-233°. $[\alpha]_D$ -40 (DMF).

O^1,O^{10}-Di-Me, stereoisomer: ***Zaidine***
[63125-82-6]
$C_{18}H_{23}NO_4$ 317.384
Alkaloid from *Hymenocallis arenicola* (Amaryllidaceae). Prisms (Me_2CO). Mp 192-193°. $[\alpha]_D^{24}$ -4 (c, 0.2 in $CHCl_3$). 1- And 2-configs. unknown.

O^2,O^{10}-Di-Me: ***Galanthine***
[517-78-2]
$C_{18}H_{23}NO_4$ 317.384
Alkaloid from *Galanthus voronovii* and a large number of other spp. in the Amaryllidaceae. Hypotensive agent. Mp 132-134° (hydrate) Mp 162-164° (anhyd.). $[\alpha]_D^{22}$ -85 (c, 0.23 in $CHCl_3$).

O^2,O^{10}-Di-Me, hydrochloride: Mp 198-199°.

O^2,O^{10}-Di-Me, perchlorate: Mp 218° dec. (199-201°).

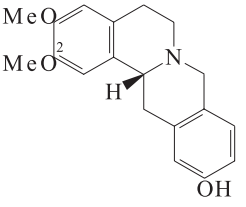
O^2,O^{10}-Di-Me, 3,3aα-epoxide: ***Incartine***
[145237-00-9]
$C_{18}H_{23}NO_5$ 333.383
Alkaloid from *Galanthus elwesii* and *Lycoris incarnata*. A biosynthetic intermediate from Galanthine to Narcissidine, N-43. Mp 183-185°.

O^2,O^{10}-Di-Me, O^9-de-Me: ***Goleptine***
$C_{17}H_{21}NO_4$ 303.357
Alkaloid from the *Narcissus jonquilla* hybrid "Golden Sceptre" (Amaryllidaceae). Fine needles (Me_2CO). Mp 141°. $[\alpha]_D^{24}$ -99 (c, 0.2 in $CHCl_3$). Probable struct. Shown to be *O^9*- or *O^{10}* demethylgalanthine; clearly not the same as Carinatine.

O^2,O^{10}-Di-Me, O^9-de-Me; perchlorate: Cryst. (MeOH). Mp 211° dec.

Boit, H.G. *et al., Chem. Ber.*, 1956, **89**, 163 (*Galanthine, isol*)
Fales, H.M. *et al., J.A.C.S.*, 1956, **78**, 4145; 1958, **80**, 4395 (*derivs, struct*)
Uyeo, S. *et al., J.C.S.*, 1959, 172 (*struct*)
Döpke, W. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1964, **297**, 39 (*Goleptine, Golceptine*)
Kinstle, T.H. *et al., Tet. Lett.*, 1966, 4659 (*Pseudolycorine, Galanthine, ms*)
Harken, R.D. *et al., J.O.C.*, 1976, **41**, 2450 (*biosynth*)
Kobayashi, S. *et al., Chem. Pharm. Bull.*, 1977, **25**, 2244 (*Carinatine*)
Döpke, W. *et al., Z. Chem.*, 1977, **17**, 101 (*Zaidine*)
Evidente, A. *et al., J. Nat. Prod.*, 1984, **47**, 1003 (*Sternbergine*)
Ghosal, S. *et al., Phytochemistry*, 1984, **23**, 1167 (*glucoside*)
Llabrés, J.M. *et al., Phytochemistry*, 1986, **25**, 1453 (*acetates*)
Ghosal, S. *et al., Phytochemistry*, 1987, **26**, 823 (*Phosphatidylpseudolycorine*)
Ghosal, S. *et al., Phytochemistry*, 1990, **29**, 805 (*glycerophosphorylpseudolycorine*)
Doepke, W. *et al., Z. Chem.*, 1990, **30**, 375 (*1,2-diglucoside*)
Kihara, M. *et al., Heterocycles*, 1992, **34**, 1299 (*Incartine*)
Seaforth, C.E. *et al., Fitoterapia*, 1998, **69**, 79 (*Pseudolycorine, pmr, cmr*)
Campbell, W.E. *et al., Phytochemistry*, 2000, **53**, 587 (*Sternbergine, isol, activity*)
Berkov, S. *et al., Molecules*, 2007, **12**, 1430-1435 (*Incartine, pmr, cmr*)

Pseudomanibacanine P-717



(*R*)–*form*

$C_{19}H_{21}NO_3$ 311.38

(*R*)-*form* [151851-39-7]
Alkaloid from stem bark of *Aniba*

canelilla (Lauraceae). $[\alpha]_D$ +182 (c, 0.22 in MeOH).

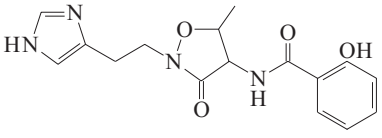
(*S*)-*form*

O^2-*De-Me:* ***Pseudoanibacanine***
[151851-38-6]
$C_{18}H_{19}NO_3$ 297.353
Alkaloid from stem bark of *Aniba canelilla* (Lauraceae). $[\alpha]_D$ -31 (c, 2 in MeOH).

Oger, J.-M. *et al., Can. J. Chem.*, 1993, **71**, 1128 (*isol, uv, pmr, cmr, ms, struct*)

Pseudomonine P-718

[172923-94-3]

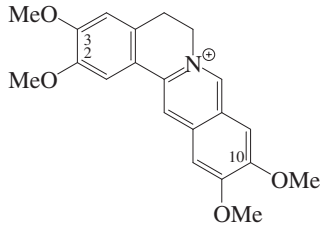


$C_{16}H_{18}N_4O_4$ 330.343
Alkaloid from cultures of *Pseudomonas fluorescens* AH2 isol. from spoiled Nile perch from Lake Victoria. Siderophore. Amorph. brownish solid. Sol. H_2O. $[\alpha]_D$ -80 (c, 0.041 in H_2O). λ_{max} 203 (ϵ 25118); 237 (ϵ 8912); 298 (ϵ 2291) (H_2O) (Berdy).

Anthoni, U. *et al., J. Nat. Prod.*, 1995, **58**, 1786 (*isol, uv, pmr, cmr, struct*)

Pseudopalmatine P-719

5,6-Dihydro-2,3,10,11-tetramethoxydibenzo[a,g]quinolizinium(1+), 9CI
[19716-66-6]
[30045-17-1]



$C_{21}H_{22}NO_4^{\oplus}$ 352.409
Alkaloid from *Stephania suberosa*, *Enantia chlorantha* and *Xylopia vieillardi*. Yellow needles ($CHCl_3$) (as chloride). Mp 212-213° (207-208°) (chloride). λ_{max} 265 (log ϵ 4.16); 288 (log ϵ 4.48); 310 (sh) (log ϵ 4.34); 339 (log ϵ 4.1); 379 (log ϵ 3.66) ($CHCl_3$) (as chloride).

O^2-*De-Me:* ***Pseudocolumbamine***
[64191-04-4]
$C_{20}H_{20}NO_4^{\oplus}$ 338.382
Quaternary alkaloid from the leaves of *Isopyrum thalictroides* (Ranunculaceae). Yellow needles + $2H_2O$ (as chloride). Mp 300° dec. (chloride). λ_{max} 241 (log ϵ 4.42); 266 (log ϵ 4.46); 289 (log ϵ 4.79); 315 (log ϵ 4.52); 342 (log ϵ 4.35) (EtOH) (as chloride).

O^3-*De-Me:* ***Dehydrodiscretine***. *Pseudojatrorrhizine*
[68947-61-5]
[75491-93-9]
$C_{20}H_{20}NO_4^{\oplus}$ 338.382
Quaternary alkaloid from *Thalictrum fauriei, Fibraurea chloroleuca* and *Heptacyclum zenkeri* (preferred genus name *Penianthus*) (Ranunculaceae, Menispermaceae). Shows strong antiplasmodial activity. Fine reddish-brown needles (MeOH) (as chloride); orange needles (MeOH) (as iodide). Mp 230-234° (chloride) Mp 243-245° dec. (iodide). Identity of Pseudojatrorrhizine with Dehydrodiscretine is based on CA information only. λ_{max} 242 (log ϵ 4.24); 265 (log ϵ 4.13); 289 (log ϵ 4.32); 315 (sh) (log ϵ 4.15); 342 (log ϵ 3.97); 381 (log ϵ 3.97) (MeOH) (iodide). λ_{max} 254 (log ϵ 4.46); 309 (log ϵ 4.24); 379 (log ϵ 4.31) (MeOH/OH^-) (iodide).

O^{11}-*De-Me:* ***Dehydrocorytenchine***
$C_{20}H_{19}NO_4$ 337.374
Alkaloid from *Xylopia vieillardi* (Annonaceae). Cryst. (MeOH). Mp 256-258°. Exists as zwitterion with negative charge on *O*-10. λ_{max} 208 (log ϵ 3.91); 233 (log ϵ 3.91); 290 (log ϵ 4.27); 318 (log ϵ 4.22); 344 (sh) (log ϵ 3.81); 383 (log ϵ 3.76) (MeOH). λ_{max} 240 (log ϵ 3.94); 266 (sh) (log ϵ 3.93); 288 (log ϵ 4.29); 313 (log ϵ 4.13); 340 (sh) (log ϵ 3.85); 376 (log ϵ 3.48) (MeOH/HCl).

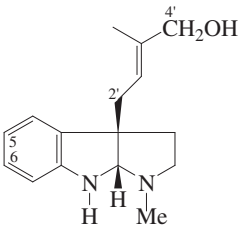
O^2,O^{11}-*Di-de-Me:* ***Dehydrocoreximine***
$C_{19}H_{18}NO_4^{\oplus}$ 324.356
Quaternary alkaloid from the roots of *Xylopia parviflora*. Pale yellow cryst. (as perchlorate). Mp 243-247° (perchlorate). λ_{max} 222 (log ϵ 4.23); 292 (log ϵ 4.54); 320 (log ϵ 4.48); 380 (log ϵ 4.11) (MeOH).

O^3,O^{11}-*Di-de-Me: 3,11-Dihydroxy-2,10-dimethoxy-5,6-dihydroprotoberberine*
$C_{19}H_{17}NO_4$ 323.348
Alkaloid from the stems and leaves of *Miliusa cuneata*. Yellow powder (MeOH). Mp 217-219°. Zwitterionic. λ_{max} 208 ; 239 (sh) ; 293 ; 323 ; 384 (MeOH).

Kametani, T. *et al., Tetrahedron*, 1973, **29**, 73-76 (*synth, pmr*)
Kametani, T. *et al., J.C.S. Perkin 1*, 1974, 1712-1714 (*synth*)
Moulis, C. *et al., Phytochemistry*, 1977, **16**, 1283-1287 (*Pseudocolumbamine*)
Siwon, J. *et al., Pharm. Weekbl.*, 1978, **113**, 1153-1156 (*Pseudocolumbamine*)
Chen, C.H. *et al., CA*, 1983, **99**, 212774z (*Dehydrodiscretine, synth*)
Duah, F.K. *et al., Phytochemistry*, 1983, **22**, 321-322 (*Dehydrodiscretine*)
Patra, A. *et al., Phytochemistry*, 1987, **26**, 547-549 (*isol, uv*)
Jossang, A. *et al., J. Nat. Prod.*, 1991, **54**, 466-472 (*Dehydrocorytenchine*)
Wright, C.W. *et al., J. Nat. Prod.*, 2000, **63**, 1638-1640 (*activity*)
Chen, B. *et al., Nat. Prod. Res.*, 2003, **17**, 397-402 (*3,11-Dihydroxy-2,10-dimethoxydihydroprotoberberine*)
Nishiyama, Y. *et al., Phytochemistry*, 2004, **65**, 939-944 (*Dehydrocoreximine*)
Grycová, L. *et al., Phytochemistry*, 2007, **68**, 150-175 (*rev*)

Pseudophrynamine 258A P-720

Pseudophrynaminol. Pseudophryne *Alkaloid 258A*. *PS 258A*



(-)-*form*

$C_{16}H_{22}N_2O$ 258.363

(+)-*form*
Synthetic. Cryst. (MeOH). Mp 146°. $[\alpha]_D$ +87.8 (c, 0.72 in $CHCl_3$) (+82.1).

(-)-*form* [113056-55-6]
Alkaloid from skin extracts of the Australian frog *Pseudophryne coriacea* (Myobatrachidae). Also present in *Pseudophryne guentheri*, *Pseudophryne occidentalis*, *Pseudophryne australis*, *Pseudophryne semimarmorata*, *Pseudophryne bibronii* and *Pseudophryne corroboree*. $[\alpha]_D^{29}$ -82.8 (c, 0.98 in $CHCl_3$). λ_{max} 242 ; 295 (MeOH) (Berdy). λ_{max} 210 (ϵ 11000); 243 (ϵ 4800); 297 (ϵ 1800) (EtOH) (Berdy).

N^8-*Me:* ***Pseudophrynamine 272A***. N^8-*Methylpseudophrynaminol*. Pseudophryne *Alkaloid 272A*. *PS 272A*
[128855-20-9]
$C_{17}H_{24}N_2O$ 272.389
Trace constit. in one population of *Pseudophryne coriacea*. Tentative struct.

4′-Aldehyde: ***Pseudophrynamine 256***. Pseudophryne *Alkaloid 256*. *PS 256*
[128855-19-6]
$C_{16}H_{20}N_2O$ 256.347
Trace alkaloid from skin extracts of the Australian frog *Pseudophryne coriacea*.

4′-Aldehyde, N^8-*Me:* ***Pseudophrynamine 270***. Pseudophryne *Alkaloid 270*. *PS 270*
[433711-65-0]
$C_{17}H_{22}N_2O$ 270.374
Alkaloid from skin extracts of *Pseudophryne semimarmorata*. Tentative struct.

4′-Carboxylic acid, Me ester: ***Pseudophrynamine 286A***. Pseudophryne *Alkaloid 286A*. *PS 286A*
[113056-57-8]
$C_{17}H_{22}N_2O_2$ 286.373
Trace alkaloid from skin extracts of the Australian frog *Pseudophryne coriacea* (Myobatrachidae), also present in *Pseudophryne corroboree*, *Pseudophryne semimarmorata* and *Pseudophryne bibronii*. Probably an artifact.

Deoxy: ***Pseudophrynamine 242***. Pseudophryne *Alkaloid 242*. *PS 242*
[433711-61-6]
$C_{16}H_{22}N_2$ 242.363
Alkaloid from skin extracts of *Pseu-*

dophryne semimarmorata.

5-Hydroxy, 4′-carboxylic acid, Me ester: ***Pseudophrynamine 302***. Pseudophryne *Alkaloid 302. PS 302*
[128646-02-6]
$C_{17}H_{22}N_2O_3$ 302.372
Alkaloid from skin extracts of *Pseudophryne australis*, *Pseudophryne coriacea*, *Pseudophryne semimarmorata* and *Pseudophryne corroboree.*

5-Methoxy, 4′-carboxylic acid, Me ester: ***Pseudophrynamine 316***. Pseudophryne *Alkaloid 316. PS 316*
[128646-01-5]
$C_{18}H_{24}N_2O_3$ 316.399
Minor or trace alkaloid in skin extracts of *Pseudophryne coriacea*, *Pseudophryne australis* and *Pseudophryne occidentalis.*

6-Methoxy, 5-hydroxy, 4′-carboxylic acid, Me ester: ***Pseudophrynamine 332***. Pseudophryne *Alkaloid 332. PS 332*
[128646-03-7]
$C_{18}H_{24}N_2O_4$ 332.399
Minor or trace alkaloid from *Pseudophryne coriacea*, *Pseudophryne australis*, *Pseudophryne occidentalis* and one population of *Pseudophryne corroboree.*

5,6-Dimethoxy, 4′-carboxylic acid, Me ester: ***Pseudophrynamine 346A***. Pseudophryne *Alkaloid 346A. PS 346A*
[128895-97-6]
$C_{19}H_{26}N_2O_4$ 346.425
Minor/trace alkaloid in skin of *Pseudophryne australis* and *Pseudophryne coriacea.*

$\Delta^{2'}$-Isomer: ***Pseudophrynamine 258B***. Pseudophryne *Alkaloid 258B. PS 258B*
[433711-63-8]
$C_{16}H_{22}N_2O$ 258.363
Alkaloid from skin extracts of *Pseudophryne semimarmorata.* Tentative struct.

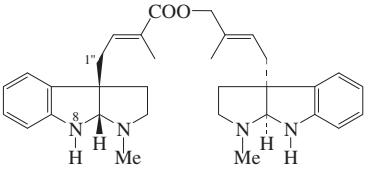
$\Delta^{2'}$-Isomer, 4′-carboxylic acid, Me ester: ***Pseudophrynamine 286B***. Pseudophryne *Alkaloid 286B. PS 286B*
[128946-40-7]
$C_{17}H_{22}N_2O_2$ 286.373
Trace alkaloid in *Pseudophryne coriacea* and *Pseudophryne semimarmorata.*

Deoxy, 6-bromo: see Flustramine E, F-108

Spande, T.F. *et al., J.O.C.*, 1988, **53**, 1222-1226 (*isol, uv, ir, pmr, cmr, ms, cd, struct, PS 286A*)
Daly, J.W. *et al., J. Nat. Prod.*, 1990, **53**, 407-421 (*occur, derivs, Alkaloid 256*)
Mitchell, M.O. *et al., Tet. Lett.*, 1990, **31**, 2681-2684 (*synth*)
Sun, W.Y. *et al., Synlett*, 1993, 337-338 (*synth*)
Fuji, K. *et al., Synlett*, 1995, 367-368 (*synth*)
Crich, D. *et al., Tetrahedron*, 1995, **51**, 6379-6384 (*synth, cd, abs config*)
Smith, B.P. *et al., J. Nat. Prod.*, 2002, **65**, 439-447 (*biosynth, occur*)
Kawasaki, T. *et al., Tet. Lett.*, 2003, **44**, 1591-1593 (*synth*)
Daly, J.W. *et al., J. Nat. Prod.*, 2005, **68**, 1556-1575 (*rev*)

Pseudophrynamine 512A P-721

Pseudophryne *Alkaloid 512. Pseudophrynamine A. PS 512*
[113056-56-7]



$C_{32}H_{40}N_4O_2$ 512.694
Alkaloid from skin extracts of the Australian frog *Pseudophryne coriacea* (Myobatrachidae).

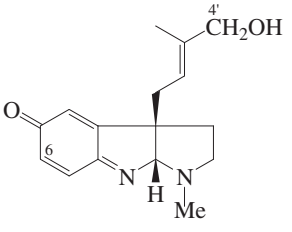
Didehydro, N^8*-Me:* ***Pseudophrynamine 524***. Pseudophryne *Alkaloid 524. PS 524*
[129726-96-1]
$C_{33}H_{40}N_4O_2$ 524.705
Trace alkaloid in skin extracts of *Pseudophryne coriacea*. Tentative struct.

1′′ξ-Hydroxy: ***Pseudophrynamine 528***. Pseudophryne *Alkaloid 528. PS 528*
[128855-18-5]
$C_{32}H_{40}N_4O_3$ 528.693
Minor or trace alkaloid in skin extracts of *Pseudophryne coriacea* and *Pseudophryne corroboree.* Minor constit. in *Pseudophryne semimarmorata.*

Spande, T.F. *et al., J.O.C.*, 1988, **53**, 1222-1226 (*isol, ir, pmr, cmr, ms, struct*)
Daly, J.W. *et al., J. Nat. Prod.*, 1990, **53**, 407-421 (*derivs*)
Smith, B.P. *et al., J. Nat. Prod.*, 2002, **65**, 439-447 (*occur, biosynth*)

Pseudophrynamine 272B P-722

Pseudophryne *Alkaloid 272B.* ***PS 272B***
[128646-04-8]



$C_{16}H_{20}N_2O_2$ 272.346
Tentative struct. Trace constit. in two populations of *Pseudophryne coriacea* and one population each of *Pseudophryne corroboree*, *Pseudophryne occidentalis* and *Pseudophryne semimarmorata.*

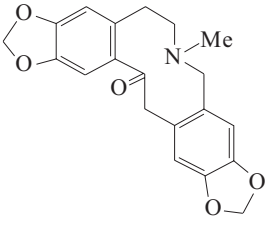
4′-Carboxylic acid, Me ester: ***Pseudophrynamine 300***. Pseudophryne *Alkaloid 300. PS 300*
[128855-15-2]
$C_{17}H_{20}N_2O_3$ 300.357
Minor alkaloid from skin extracts of *Pseudophryne australis* and *Pseudophryne semimarmorata.*

6-Methoxy, 4′-carboxylic acid, Me ester: ***Pseudophrynamine 330***. Pseudophryne *Alkaloid 330. PS 330*
[128855-16-3]
$C_{18}H_{22}N_2O_4$ 330.383
Minor alkaloid in skin extracts of the Australian frogs *Pseudophryne coriacea* and *Pseudophryne semimarmorata.* Trace constit. in *Pseudophryne australis, Pseudophryne corroboree* and *Pseudophryne occidentalis.* Tentative struct. More than one isomer (*E,Z*-?) detected.

Daly, J.W. *et al., J. Nat. Prod.*, 1990, **53**, 407-421 (*isol, ms*)
Smith, B.P. *et al., J. Nat. Prod.*, 2002, **65**, 439-447 (*occur, biosynth*)

Pseudoprotopine P-723

5,7,8,15-Tetrahydro-6-methylbis[1,3]benzodioxolo[5,6-c,5′,6′-g]azecin-14(6H)-one, 9CI
[24240-05-9]

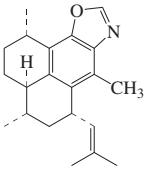


$C_{20}H_{19}NO_5$ 353.374
Alkaloid from the bark of *Zanthoxylum conspersipunctatum* and the root and stem bark of *Fagara vitiensis* (Rutaceae). Cryst. (MeOH). Mp 205° (200-202°).

Johns, S.R. *et al., Aust. J. Chem.*, 1969, **22**, 2233 (*isol, uv, pmr, ms, struct*)
Fish, F. *et al., Phytochemistry*, 1972, **11**, 1528 (*isol, uv*)
Sotelo, R.M. *et al., Aust. J. Chem.*, 1972, **25**, 385 (*synth, uv*)
Orito, K. *et al., Heterocycles*, 1980, **14**, 11 (*synth*)

Pseudopteroxazole P-724

[242150-01-2]



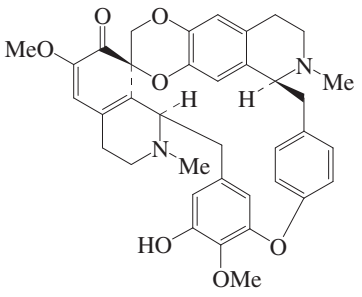
Absolute Configuration

$C_{21}H_{27}NO$ 309.45
Struct. revised in 2001. Isol. from *Pseudopterogorgia elisabethae.* Active against *Mycobacterium tuberculosis.* Yellowish oil. $[\alpha]_D^{25}$ +101 (c, 1 in $CHCl_3$). λ_{max} 220 (ϵ 15400); 250 (ϵ 5000); 284 (ϵ 2000) (MeOH).

Rodriguez, A.D. *et al., Org. Lett.*, 1999, **1**, 527-530 (*isol*)
Johnson, T.W. *et al., J.A.C.S.*, 2001, **123**, 4475-4479 (*struct*)
Davidson, J.P. *et al., J.A.C.S.*, 2003, **125**, 13486-13489 (*synth, abs config*)
Harmata, M. *et al., Org. Lett.*, 2005, **7**, 3581-3583 (*synth*)

Pseudorepanduline P-725

[57821-67-7]

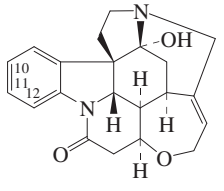


$C_{37}H_{38}N_2O_7$ 622.716
Alkaloid from *Daphnandra dielsii* and from an unnamed *Daphnandra* sp. (Monimiaceae). Mp 168-173° dec. $[\alpha]_D^{18}$ +229 ($CHCl_3$).

Bick, I.R.C. *et al., Tet. Lett.*, 1975, 2219-2220 (*ir, pmr, ms, struct*)
Koike, L. *et al., J. Nat. Prod.*, 1992, **55**, 455-460 (*pmr, cmr, abs config*)

Pseudostrychnine P-726

16-Hydroxystrychnidin-10-one, 9CI. 3-Hydroxystrychnine. ψ-Strychnine
[465-62-3]



Absolute Configuration

$C_{21}H_{22}N_2O_3$ 350.416
Alkaloid from *Strychnos nux-vomica*, *Strychnos wallichiana*, *Strychnos ligustrina* and bark of *Strychnos gaultheriana* (Loganiceae). Cryst. (EtOAc), powder ($CHCl_3$). Mp 266-268° (248-251°) dec. (dimorph.). $[\alpha]_D$ -85.9 ($CHCl_3$). $[\alpha]_D$ -43.8 (EtOH). Is formed as an artifact when $CHCl_3$ or CH_2Cl_2 solns. of Strychnine are left to stand. Pseudostrychnine is prob. a genuine alkaloid, however. λ_{max} 255 (log ϵ 4.13); 279 (sh) (log ϵ 3.7); 280 (log ϵ 3.58) (EtOH).

► UL7450000

Hydrochloride:
Cryst. + $2H_2O$ (H_2O). $[\alpha]_D^{19}$ +3.9 (H_2O).

Perchlorate:
Needles (H_2O). Mp 300°.

Me ether: ***3-Methoxystrychnine****. 16-Methoxystrychnine*
[5096-72-0]
$C_{22}H_{24}N_2O_3$ 364.443
Alkaloid from *Strychnos icaja* leaves, prob. as methylation artifact (Loganiceae). Feathery needles (MeOH). Mp 195-200°. $[\alpha]_D$ -66 (c, 0.67 in $CHCl_3$).

► WL2420000

Et ether: 16-Ethoxystrychnine
Alkaloid from *Strychnos ignatii* as ethylation artifact.

12-Hydroxy: ***3,12-Dihydroxystrychnine****. 12,16-Dihydroxystrychnine*
[75326-94-2]
$C_{21}H_{22}N_2O_4$ 366.416
Alkaloid from leaves of *Strychnos nux-vomica* (Sri Lankan, poss. hybrid) (Loganiceae). $[\alpha]_D^{21}$ +55 (c, 0.21 in MeOH). λ_{max} 260 ; 280 (sh) ($CHCl_3$).

10-Methoxy: ***Pseudo-β-colubrine****. 3-Hydroxy-β-colubrine*
[29079-34-3]
$C_{22}H_{24}N_2O_4$ 380.443
Minor alkaloid from *Strychnos nux-vomica* seeds and *Strychnos ligustrina* bark (Loganiceae). Cryst. (EtOAc/hexane). Mp 140-143°. $[\alpha]_D^{20}$ -56 (c, 1 in $CHCl_3$). λ_{max} 263 (log ϵ 4.06); 296 (log ϵ 3.56); 310 (sh) (90% EtOH).

11-Methoxy: ***Pseudo-α-colubrine****. 3-Hydroxy-α-colubrine*
[34479-58-8]
$C_{22}H_{24}N_2O_4$ 380.443
Minor alkaloid from seeds of *Strychnos nux-vomica* (Loganiceae). Cryst. (EtOAc/hexane). Mp 225-227°. $[\alpha]_D^{20}$ -54 (c, 1 in $CHCl_3$). λ_{max} 257 (sh) (log ϵ 3.94); 293 (log ϵ 3.68); 300 (log ϵ 3.68) (90% EtOH).

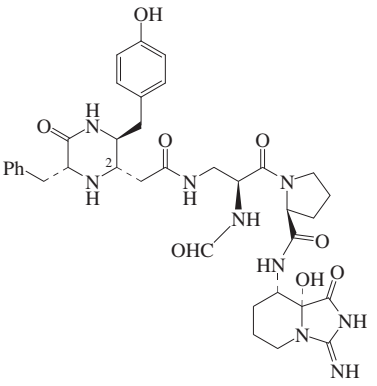
11-Methoxy, 12-hydroxy: ***3,12-Dihydroxy-11-methoxystrychnine***
[83905-58-2]
$C_{22}H_{24}N_2O_5$ 396.442
Alkaloid from leaves of *Strychnos nux-vomica* (Sri Lankan, poss. hybrid) (Loganiceae). Prisms (EtOAc). $[\alpha]_D^{21}$ +38 (c, 0.25 in MeOH). λ_{max} 240 ; 270 (MeOH).

10,11-Dimethoxy: ***Pseudobrucine***
[560-30-5]
$C_{23}H_{26}N_2O_5$ 410.469
Alkaloid from *Strychnos wallichiana* leaves, from *Strychnos nux-vomica*, *Strychnos gaultheriana* and *Strychnos ligustrina* (Loganiceae). Cryst. (EtOAc). Mp 259-260°. $[\alpha]_D$ -70 (-55) ($CHCl_3$). λ_{max} 265 (log ϵ 4.21); 299 (sh) (log ϵ 6.03) (no solvent reported) (unlikely extinction value).

Warnat, K. *et al., Helv. Chim. Acta*, 1931, **14**, 997-1007 (*isol*)
Bailey, A.S. *et al., J.C.S.*, 1948, 703-705 (*synth*)
Hendrickson, J.B. *et al., Alkaloids (Academic Press)*, 1960, **6**, 179-217 (*rev, bibl*)
Boit, H.G. *et al., Naturwissenschaften*, 1960, **47**, 136 (*Pseudobrucine, isol*)
Marini-Bettolo, G.B. *et al., J. Assoc. Off. Anal. Chem.*, 1968, **51**, 185-191 (*isol, props, Pseudostrychnine, Pseudobrucine*)
delle Monache, F. *et al., J. Chromatogr.*, 1968, **32**, 178-179 (*isol*)
Galeffi, C. *et al., Ann. Chim. (Rome)*, 1970, **60**, 444-453 (*Pseudocolubrines*)
Bisset, N.G. *et al., Tetrahedron*, 1973, **29**, 4137-4148 (*Strychnos icaja alkaloids*)
Bisset, N.G. *et al., Phytochemistry*, 1974, **13**, 259-263 (*isol*)
Verpoorte, R. *et al., Org. Magn. Reson.*, 1977, **9**, 567-571 (*cmr*)
Baser, K.H.C. *et al., Phytochemistry*, 1982, **21**, 1423-1429 (*3,12-Dihydroxystrychnine, 3,12-Dihydroxy-11-methoxystrychnine*)
Asai, F. *et al., Yakugaku Zasshi*, 1982, **102**, 690-694 (*Strychnos ligustrina alkaloids*)
Philippe, G. *et al., Phytochemistry*, 2003, **62**, 623-629 (*isol, pmr*)

Pseudotheonamide A_1 P-727

[224577-31-5]



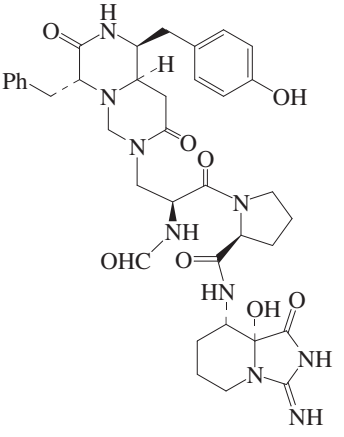
$C_{36}H_{45}N_9O_8$ 731.807
The pseudotheonamides were initially named as Pseudocyclotheonamides. Isol. from the sponge *Theonella swinhoei*. Serine protease inhibitor. Amorph. solid. $[\alpha]_D^{29}$ -28 (c, 0.08 in MeOH). λ_{max} 227 (sh) (ϵ 14000); 243 (sh) (ϵ 4500); 278 (sh) (ϵ 2000) (MeOH).

2-Epimer: ***Pseudotheonamide A_2***
[224577-33-7]
$C_{36}H_{45}N_9O_8$ 731.807
Isol. from *Theonella swinhoei*. Serine protease inhibitor. Amorph. solid. $[\alpha]_D^{29}$ -34 (c, 0.06 in MeOH). λ_{max} 227 (sh) (ϵ 17000); 243 (sh) (ϵ 7100); 278 (sh) (ϵ 2300) (MeOH).

Nakao, Y. *et al., J.A.C.S.*, 1999, **121**, 2425-2431

Pseudotheonamide B_2 P-728

[224577-34-8]



$C_{37}H_{45}N_9O_8$ 743.818
Isol. from the sponge *Theonella swinhoei*. Serine protease inhibitor. Amorph. solid. $[\alpha]_D^{29}$ -17 (c, 0.05 in MeOH). Pseudotheonamide B not isolated. λ_{max} 226 (sh) (ϵ 15000); 243 (sh) (ϵ 4500); 278 (sh) (ϵ 1800) (MeOH).

Nakao, Y. *et al., J.A.C.S.*, 1999, **121**, 2425-2431

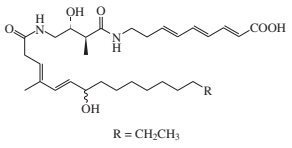
Pseudothiobinupharidine P-729

$C_{30}H_{40}N_2O_2S$ 492.724

Nuphar alkaloid. Struct. unknown. Alkaloid from the rhizomes of *Nuphar luteum* (Nymphaeaceae). Prisms + $2H_2O$ (as diperchlorate). Mp 173-175° (diperchlorate). $[\alpha]_D$ +186.2 (EtOH) (diperchlorate).

Achmatowicz, O. *et al., Pol. J. Chem. (Rocz. Chem.)*, 1962, **36**, 1815-1825 (*isol, ir*)

Pseudotrienoic acid A P-730



Absolute Configuration

$C_{31}H_{50}N_2O_6$ 546.746

Prod. by *Pseudomonas* sp. MF381-IODS. Antibacterial agent. Oil.

Pohanka, A. *et al., J. Nat. Prod.*, 2005, **68**, 1380-1385 (*isol, pmr, cmr*)

Pseudotrienoic acid B P-731

As Pseudotrienoic acid A, P-730 with R = H

$C_{29}H_{46}N_2O_6$ 518.692

Prod. by *Pseudomonas* sp. MF381-IODS. Antibacterial agent. Oil. $[\alpha]_D^{20}$ +1.9 (c, 0.4 in MeOH).

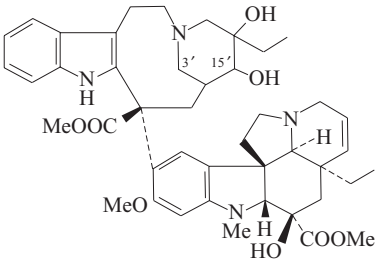
Pohanka, A. *et al., J. Nat. Prod.*, 2005, **68**, 1380-1385 (*isol, pmr, cmr*)

Amans, D. *et al., Angew. Chem., Int. Ed.*, 2006, **45**, 5870-5874 (*synth*)

Pseudovinblastinediol P-732

Pseudovincaleukoblastine diol

[58511-80-1]



$C_{44}H_{56}N_4O_8$ 768.948

Proposed struct. The alternative, carbinolamine struct. with the hydroxyl group located at C-3′ instead of at C-15′ cannot be conclusively excluded. Alkaloid from *Catharanthus roseus* (Apocynaceae).

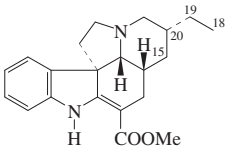
Tafur, S. *et al., J. Pharm. Sci.*, 1975, **64**, 1953-1957 (*isol, pmr, ms, struct*)

Pseudovincadifformine P-733

Methyl 2,3-didehydro-7-ethyl-20,21-dinoraspidospermidine-3-carboxylate, 9CI. ψ-Vincadifformine

[26251-92-3]

[56815-95-3 (+)-form, 73837-57-7 (±)-form]



Absolute Configuration

$C_{21}H_{26}N_2O_2$ 338.449

Alkaloid from *Pandaca caducifolia* and *Melodinus polyadenus* (Apocynaceae). Noncryst. $[\alpha]_D$ +430 (MeOH).

15,20-Didehydro: ***Pseudotabersonine.*** *$\Delta^{6,7}$-ψ-Vincadifformine. ψ-Catharanthine. ψ-Tabersonine. Pseudocatharanthine*

[54244-12-1]

$C_{21}H_{24}N_2O_2$ 336.433

Alkaloid from *Pandaca caducifolia* (Apocynaceae). Noncryst. $[\alpha]_D$ +320 (MeOH).

20-Hydroxy: ***20-Epipandoline***

[56698-80-7]

$C_{21}H_{26}N_2O_3$ 354.448

Alkaloid from *Pandaca caducifolia*, *Ervatamia lifuana* and *Ervatamia obtusiuscula* (Apocynaceae). Noncryst. $[\alpha]_D$ +462 (MeOH).

18,19ξ-Dihydroxy: ***18,19-Dihydroxy-ψ-vincadifformine***

$C_{21}H_{26}N_2O_4$ 370.447

Alkaloid from the stem bark of *Tabernaemontana albiflora* (Apocynaceae). Cryst. (MeOH). Mp 190°. $[\alpha]_D^{20}$ +264 (c, 0.8 in $CHCl_3$).

19ξ,20-Dihydroxy: ***19,20-Dihydroxy-ψ-vincadifformine****. 19-Hydroxy-20-epipandoline*

$C_{21}H_{26}N_2O_4$ 370.447

Alkaloid from stem bark of *Tabernaemontana albiflora* (Apocynaceae). Cryst. (MeOH). Mp 204°. $[\alpha]_D^{20}$ +511 (c, 1 in $CHCl_3$).

20-Epimer, 20-hydroxy: ***Pandoline***

[53507-78-1]

$C_{21}H_{26}N_2O_3$ 354.448

Alkaloid from *Pandaca caducifolia* and other *Pandaca* spp., *Ervatamia orientalis, Ervatamia lifuana* and *Melodinus polyadenus* (Apocynaceae). Noncryst. $[\alpha]_D$ +417 (MeOH).

Kutney, J.P. *et al., J.A.C.S.*, 1970, **92**, 1708 (*Pseudovincadifformine, Pseudotabersonine, synth, uv, ir, pmr*)

Hoizey, M.-J. *et al., Phytochemistry*, 1974, **13**, 1995 (*Pandoline, isol, ms, uv, ir, pmr*)

Hoizey, M.-J. *et al., Tet. Lett.*, 1974, 1601 (*Pandoline, struct*)

Zeches, M. *et al., Phytochemistry*, 1975, **14**, 1122 (*Pseudotabersonine, Pandoline, Epipandoline, isol, uv, ir, pmr, ms, struct*)

LeMen, J. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1976, **283**, 759 (*Pandoline, struct, abs config*)

Bruneton, J. *et al., Tet. Lett.*, 1976, 3567 (*Pandoline, pmr, cmr*)

Kuehne, M.E. *et al., J.O.C.*, 1980, **45**, 3259; 1982, **47**, 1335 (*Pandoline, Pseudovincadifformine, synth, uv, ir, pmr, ms*)

Kan, C. *et al., Planta Med.*, 1981, **41**, 195 (*19,20-Dihydroxy-ψ-vincadifformine*)

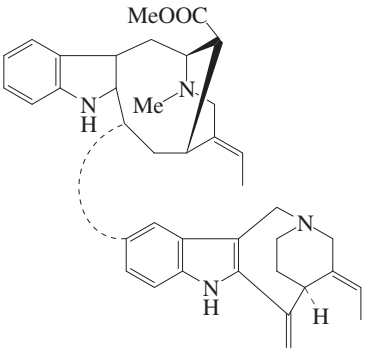
Bornmann, W.G. *et al., J.O.C.*, 1992, **57**, 1752 (*synth*)

Carroll, W.A. *et al., J.A.C.S.*, 1993, **115**, 1164 (*Pseudotabersonine, synth*)

Kalaus, G. *et al., J.O.C.*, 1993, **58**, 6076 (*synth*)

Pseudovobpariciné P-734

[99023-48-0]



$C_{39}H_{44}N_4O_2$ 600.802

Alkaloid from the root bark of *Tabernaemontana divaricata* (Apocynaceae).

Van Beek, T.A. *et al., Planta Med.*, 1985, 277-279 (*uv, pmr, ms, cd, struct*)

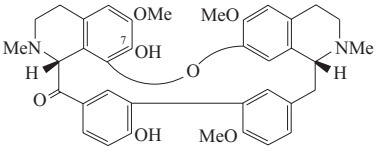
Pseudowithanine P-735

Struct. unknown. Alkaloid from *Withania somnifera* (Solanaceae). Mp 155-156° dec.

Majumdar, D.N. *et al., Indian J. Pharm.*, 1955, **17**, 158-161; *CA*, **50**, 3713f

Pseudoxandrine P-736

[104818-08-8]



$C_{37}H_{38}N_2O_7$ 622.716

Alkaloid from the bark of *Pseudoxandra* aff. *lucida* (Annonaceae). Amorph. $[\alpha]_D$ +23 (c, 1.13 in $CHCl_3$). $[\alpha]_D$ +60 (c, 0.1 in MeOH).

7-Me ether: ***Pseudoxandrinine***

[104778-23-6]

$C_{38}H_{40}N_2O_7$ 636.743

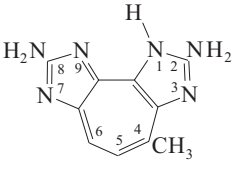
Alkaloid from *Pseudoxandra* aff. *lucida* (Annonaceae). Amorph. $[\alpha]_D$ +7 (c, 0.7 in $CHCl_3$).

Cortes, D. *et al., Can. J. Chem.*, 1986, **64**, 1390 (*isol, uv, ir, pmr, cmr, ms, cd, struct, deriv*)

Pseudozoanthoxanthin A P-737

*4-Methyl-1*H*-cyclohepta[1,2-*d*:3,4-*d′*]diimidazole-2,8-diamine, 9CI. 2,8-Diamino-4-methyl-1*H*-cyclohepta[1,2-*d*:3,4-*d′*]diimidazole*

[60049-47-0]



$C_{10}H_{10}N_6$ 214.229

Tautomeric with 9*H*-form. Note that when the 1, 8 or 9-posn. is substd., CA numbering is reversed and derivs. become 6-methyl instead of 4-methyl. Isol. from *Parazoanthus axinellae* and other Zoanthidae. Cryst. (EtOH). Mp 280° dec.

1-Me: ***3-Norpseudozoanthoxanthin***
[94080-60-1]
$C_{11}H_{12}N_6$ 228.256
From *Parazoanthus gracilis* and *Epizoanthus arenaceus*. Yellow needles (MeOH). Mp 300°.

9-Me: ***Norpseudozoanthoxanthin***
[55827-12-8]
$C_{11}H_{12}N_6$ 228.256
Pigment from *Epizoanthus arenaceus*. Yellow prisms (MeOH). Darkens >230°.

N^8*-Di-Me:* ***N*^{8}*,N*^{8}*-Dimethylpseudozoanthoxanthin A***
[94080-62-3]
$C_{12}H_{14}N_6$ 242.283
From *Parazoanthus gracilis*. Yellow needles (MeOH). Mp 300°.

1,N^8*-Di-Me:* ***1,N*^{8}*-Dimethylpseudozoanthoxanthin A***
[71337-50-3]
$C_{12}H_{14}N_6$ 242.283
Isol. from the coral *Gerardia* sp. Amorph. yellow powder. Dec. at *ca.* 180°.

N^2*,*N^8*-Di-Me:* ***N*^{2}*,N*^{8}*-Dimethylpseudozoanthoxanthin A***. *Norparagracine*
[94080-61-2]
[71827-21-9 (tautomer)]
$C_{12}H_{14}N_6$ 242.283
From *Parazoanthus gracilis* and *Epizoanthus arenaceus*. Yellow needles ($MeOH/CH_2Cl_2$). Mp 190-192° dec.

7,9-Di-Me: ***Pseudozoanthoxanthin***
[55827-11-7]
$C_{12}H_{14}N_6$ 242.283
Pigment from *Parazoanthus axinellae*, *Parazoanthus gracilis*, *Epizoanthus arenaceus*, *Zoanthus sociatus* and *Palythoa mammilosa*. Yellow prisms (MeOH). Mp 310°. Imino-tautomer on C-2. λ_{max} 290 (ϵ 75900); 335 (ϵ 5890); 348 (ϵ 6030); 399 (ϵ 21400) (MeOH/HCl) (Derep). λ_{max} 281 (ϵ 30200); 307 (ϵ 46800); 367 (ϵ 11700); 421 (ϵ 8510) (MeOH) (Derep).

1,N^8*,*N^8*-Tri-Me:* ***1,N*^{8}*,N*^{8}*-Trimethylpseudozoanthoxanthin A***
[68395-65-3]
$C_{13}H_{16}N_6$ 256.31
From *Gerardia* sp., *Palythoa* sp. and *Parazoanthus* sp. Cryst. (EtOH aq.) or amorph. yellow powder. Dec. at *ca.* 200°. Imino-tautomer on C-2.

N^2*,*N^8*,*N^8*-Tri-Me:* ***Paragracine***
[57695-32-6]
$C_{13}H_{16}N_6$ 256.31
Isol. from *Parazoanthus gracilis* together with *Dentitheca habereri* (the former is parasitic on the latter). Also from *Epizoanthus* sp. Shows papaverine-like activity and antihistamine activity. Selective Na channel blocker in squid axon membranes. Yellow needles (MeOH). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 258-262° dec. Strong yellow-green fluor. in soln. λ_{max} 230 (sh) (ϵ 15000); 252 (ϵ 13000); 305 (sh) (ϵ 47900); 316 (ϵ 62200); 373 (ϵ 15000); 409 (ϵ 14400); 428 (sh) (ϵ 3800) (EtOH) (Derep). λ_{max} 252 (ϵ 11900); 314 (ϵ 52000); 372 (ϵ 12600); 409 (ϵ 13100) (MeOH) (Berdy). λ_{max} 245 (ϵ 13500); 301 (ϵ 54800); 363 (ϵ 6900); 410 (ϵ 21300) (MeOH/HCl) (Berdy).

N^2*,*N^8*,*N^8*-Tri-Me, dihydrobromide:*
Yellow needles + $3H_2O$. Mp 280-282° dec.

7,9,N^2*-Tri-Me:* ***Homopseudozoanthoxanthin***
[71827-22-0]
$C_{13}H_{16}N_6$ 256.31
Trace pigment from *Palythoa* sp. and *Zoanthus sociatus*. Yellow prisms (MeOH). Mp 256-259°. Imino-tautomer on C-2. λ_{max} 226 (ϵ 10500); 261 (ϵ 10500); 306 (ϵ 38900); 317 (sh) (ϵ 30900); 377 (ϵ 10000); 416 (ϵ 15100) (MeOH) (Derep).

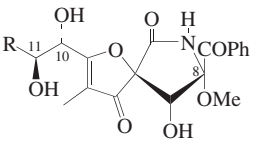
1,N^2*,*N^8*,*N^8*-Tetra-Me:* ***9-Methylparagracine***
[81904-42-9]
$C_{14}H_{18}N_6$ 270.336
Isol. from *Parazoanthus gracilis*. Yellow prisms. Mp 269-271° dec. λ_{max} 251 (ϵ 1875); 309 (ϵ 8250); 369 (ϵ 1625); 409 (ϵ 2125) (MeOH).

7,9,N^2*,*N^2*-Tetra-Me:* ***Dimethylpseudozoanthoxanthin***
[55827-18-4]
$C_{14}H_{18}N_6$ 270.336
Pigment from *Palythoa* sp. Yellow needles (MeOH). Mp 310°. Imino-tautomer on C-2.

1,N^2*,*N^2*,*N^8*,*N^8*-Penta-Me:* ***N*^{2}*,N*^{2}*,N*^{8}*,N*^{8}*,1,4-Hexamethyl-1*H*-cyclohepta[1,2-*d*:3,4-*d*′]diimidazole-2,8-diamine, 9CI***
[71337-51-4]
$C_{15}H_{20}N_6$ 284.363
Minor constit. of *Gerardia* sp. Oily yellow solid. Mp 115° dec. approx.

Cariello, L. *et al., Tetrahedron*, 1974, **30**, 4191-4196 (*Epizoanthus arenaceus constits*)
Komoda, Y. *et al., Chem. Pharm. Bull.*, 1975, **23**, 2464 (*uv, pmr, cryst struct*)
Braun, M. *et al., J.A.C.S.*, 1978, **100**, 4208-4213 (*synth*)
Schwartz, R.E. *et al., Tet. Lett.*, 1978, 2235-2238 (*1,*N^8*,*N^8*-tri-Me, isol, cryst struct*)
Schwartz, R.E. *et al., Can. J. Chem.*, 1979, **57**, 1707-1711 (*Gerardia constits, isol, cryst struct*)
Cariello, L. *et al., Comp. Biochem. Physiol., B: Comp. Biochem.*, 1979, **63**, 77-82 (*Zoanthus constits, Palythoa constits*)
Komoda, Y. *et al., Chem. Pharm. Bull.*, 1982, **30**, 502; 1984, **32**, 3873-3879 (*Parazoanthus gracilis constits, uv, pmr, cmr, ms*)
Jiménez, C. *et al., J. Nat. Prod.*, 1993, **56**, 9-14 (*9-Methylparagracine, isol*)

Pseurotins P-738



Pseurotin A, R = $-CH\overset{Z}{=}CHCH_2CH_3$
Pseurotin B, R = $-CH\overset{Z}{=}CHCH(OH)CH_3$
Pseurotin C, R = $-CH\overset{E}{=}CHCH(OH)CH_3$
Pseurotin E, R = $-CH\overset{E}{=}CHCOCH_3$

Pseurotin A [58523-30-1]

$C_{22}H_{25}NO_8$ 431.441
Prod. by *Pseudeurotium ovalis*. Also from terrestrial and marine-derived *Aspergillus fumigatus*. Monoamine oxidase and chitin sythase inhibitor, apomorphine antagonist, nerve growth gactor. Rhombic cryst. (CH_2Cl_2/hexane). Sol. MeOH, EtOAc; poorly sol. H_2O, hexane. Mp 162-163.5°. $[\alpha]_D^{25}$ -5 (MeOH). λ_{max} 202 (ϵ 23400); 251 (ϵ 14700); 284 (ϵ 10300) (EtOH) (Derep). λ_{max} 253 (ϵ 16600); 279 (ϵ 11220) (EtOH) (Berdy).

Tri-O-*Ac:* Mp 126-128°. $[\alpha]_D^{20}$ -23 (c, 0.23 in MeOH).

11-Me ether: ***11*-O-*Methylpseurotin A***
[956904-34-0]
$C_{23}H_{27}NO_8$ 445.468
Prod. by a marine-derived *Aspergillus fumigatus*. Pale yellow solid. $[\alpha]_D^{28}$ -1.8 (c, 0.2 in MeOH).

O-*De-Me:* ***Pseurotin F*$_2$**. *De*-O-*methylpseurotin A*
[149883-42-1]
$C_{21}H_{23}NO_8$ 417.415
Prod. by *Aspergillus fumigatus*. Oil.

8-Epimer, O-*de-Me:* ***Pseurotin F*$_1$**
[149792-62-1]
$C_{21}H_{23}NO_8$ 417.415
Prod. by *Aspergillus fumigatus*.

Pseurotin B [77409-67-7]

$C_{22}H_{25}NO_9$ 447.441
Prod. by *Pseudeurotium ovalis*. Cryst. (THF/Et_2O). Mp 204-206°.

Pseurotin C [77449-67-3]

$C_{22}H_{25}NO_9$ 447.441
Prod. by *Pseudeurotium ovalis*. Monoamine oxidase inhibitor. Foam. Rather unstable.

Pseurotin D [77409-68-8]

$C_{22}H_{25}NO_8$ 431.441
Prod. by *Pseudeurotium ovalis* and *Aspergillus fumigatus*. Neuroleptic agent, apomorphine antagonist. Unstable yellowish oil. Sol. CH_2Cl_2, EtOH, $CHCl_3$, 2-propanol, EtOAc. Allylically rearranged isomer of Pseurotin A with $-CH(OH)CH{=}CHCH(OH)CH_2CH_3$ side-chain.

Pseurotin E [77409-69-9]

$C_{22}H_{23}NO_9$ 445.425

Prod. by *Pseudeurotium ovalis*. Oil. Rather unstable.

Bloch, P. *et al., Helv. Chim. Acta*, 1981, **64**, 304-315 (*isol, pmr, cmr*)
Breitenstein, W. *et al., Helv. Chim. Acta*, 1981, **64**, 379-388 (*isol, struct*)
Mohr, P. *et al., Tetrahedron, Suppl.*, No. 9, 1981, **37**, 201-212 (*cmr, biosynth*)
Wenke, J. *et al., Biosci., Biotechnol., Biochem.*, 1993, **57**, 961-964 (O-*Demethylpseurotin A, Pseurotin A*)
Eur. Pat., 1993, 546 474; *CA*, **119**, 137528y (*Pseurotins F_1,F_2*)
Hayashi, Y. *et al., Org. Lett.*, 2003, **5**, 2287-2280 (*synth*)
Aoki, S. *et al., Bull. Chem. Soc. Jpn.*, 2004, **77**, 1703-1716 (*synth*)
Boot, C.M. *et al., J. Nat. Prod.*, 2007, **70**, 1672-1675 (*marine, isol*)

Psilocauline **P-739**

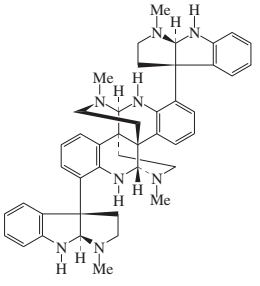
$C_{15}H_{31}N_3O$ 269.429

Struct. unknown. MF not certain. Alkaloid from *Psilocaulon absimile*. Mp 162°.

Rimington, C. *et al., S. Afr. J. Sci.*, 1933, **30**, 503

Psycholeine **P-740**

[144424-79-3]



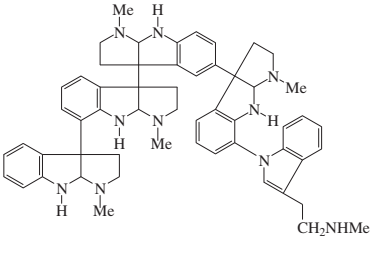
Absolute Configuration

$C_{44}H_{50}N_8$ 690.933

Alkaloid from *Psychotria oleoides* (Rubiaceae). $[\alpha]_D^{20}$ -150 (c, 0.4 in EtOH). λ_{max} 240 (ϵ 18600); 310 (ϵ 5300) (EtOH).

Guéritte-Voegelein, F. *et al., J. Nat. Prod.*, 1992, **55**, 923-930 (*isol, uv, ir, pmr, cmr, ms, cd, struct*)
Lebsack, A.D. *et al., J.A.C.S.*, 2002, **124**, 9008-9009 (*synth*)

Psychopentamine **P-741**



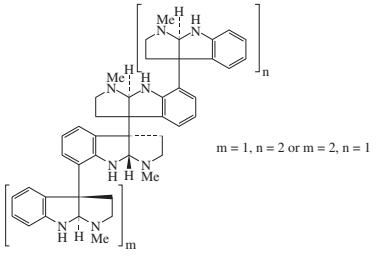
$C_{55}H_{62}N_{10}$ 863.162

Alkaloid from the leaves of *Psychotria rostrata*. Amorph. powder. $[\alpha]_D^{18}$ +42 (c, 0.2 in $CHCl_3$). λ_{max} 210 (log ϵ 4.81); 250 (log ϵ 4.37); 304 (log ϵ 4.1) (MeOH).

Takayama, H. *et al., Org. Lett.*, 2004, **6**, 2945-2948 (*isol, cd, pmr, cmr, ms*)

Psychotridine **P-742**

[52617-25-1]



m = 1, n = 2 or m = 2, n = 1

$C_{55}H_{62}N_{10}$ 863.162

Struct. revised in 1999. Alkaloid from *Psychotria beccaroides* and *Calycodendron milneri* (Rubiaceae). Platelet aggregation inhibitor, analgesic, sedative. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 180-181°. $[\alpha]_D$ -38 (c, 0.9 in $CHCl_3$).

Stereoisomer: Alkaloid E†

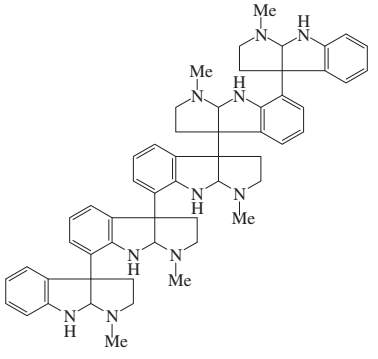
$C_{55}H_{62}N_{10}$ 863.162

Alkaloid from leaves of *Psychotria forsteriana*. Exhibits potent cytotoxicity. $[\alpha]_D^{20}$ +153 (c, 0.35 in EtOH). $[\alpha]_D^{20}$ +49 (c, 0.2 in $CHCl_3$).

Hart, N.K. *et al., Aust. J. Chem.*, 1974, **27**, 639-646 (*isol, uv, ir, pmr, ms*)
Roth, A. *et al., Planta Med.*, 1986, 450 (*Alkaloid E*)
Jannic, V. *et al., J. Nat. Prod.*, 1999, **62**, 838-843 (*cd, struct*)

Psychotridine C **P-743**

[129651-30-5]

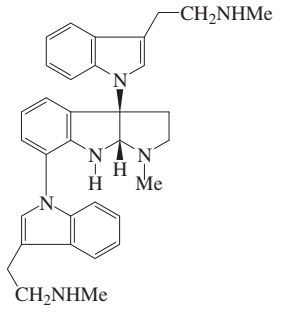


$C_{55}H_{62}N_{10}$ 863.162

Alkaloid from *Calycodendron milnei*.

Adjibade, Y. *et al., Planta Med.*, 1990, **56**, 212-215
Saad, H.-E.A. *et al., Planta Med.*, 1995, **61**, 313-316

Psychotrimine **P-744**

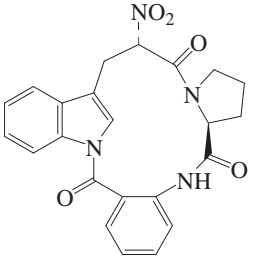


$C_{33}H_{38}N_6$ 518.703

Alkaloid from the leaves of *Psychotria rostrata*. Amorph. powder. $[\alpha]_D^{18}$ +179 (c, 0.2 in $CHCl_3$). λ_{max} 206 (log ϵ 4.55); 222 (log ϵ 4.57); 296 (log ϵ 3.99) (MeOH).

Takayama, H. *et al., Org. Lett.*, 2004, **6**, 2945-2948 (*isol, cd, pmr, cmr, ms*)
Newhouse, T. *et al., J.A.C.S.*, 2008, **130**, 10886-10887 (*synth*)
Matsuda, Y. *et al., Org. Lett.*, 2008, **10**, 125-128 (*synth*)

Psychrophilin A **P-745**

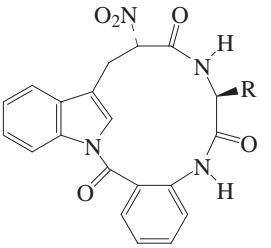


$C_{23}H_{20}N_4O_5$ 432.435

Prod. by *Penicillium ribeum* IBT 16537. Solid. Mp 164-167°. $[\alpha]_D^{25}$ +43.7 (MeCN). λ_{max} 217 (log ϵ 4.37); 244 (log ϵ 4.15); 304 (log ϵ 3.74) (MeCN).

Dalsgaard, P.W. *et al., J. Nat. Prod.*, 2004, **67**, 878-881 (*isol, pmr, cmr*)

Psychrophilin B **P-746**



R = -$CH(CH_3)_2$

$C_{23}H_{22}N_4O_5$ 434.451

Prod. by *Penicillium rivulum* IBT 24420. Amorph. powder (MeCN aq.). Mp 186-190°. $[\alpha]_D^{25}$ +15.2 (c, 0.03 in MeCN). λ_{max} 214 (log ϵ 4.27); 244 (log ϵ 4.09); 302 (log ϵ 3.65) (MeCN).

Dalsgaard, P.W. *et al., J. Nat. Prod.*, 2004, **67**, 1950-1952 (*isol, cd, pmr, cmr*)

Psychrophilin C **P-747**

As Psychrophilin B, P-746 with R = CH_3

$C_{21}H_{18}N_4O_5$ 406.397

Prod. by *Penicillium rivulum* IBT 24420. Amorph. powder (MeCN aq.). Mp 167-171°. $[\alpha]_D^{25}$ +16.7 (c, 0.02 in MeCN).

Dalsgaard, P.W. *et al., J. Nat. Prod.*, 2004, **67**, 1950-1952 (*isol, cd, pmr, cmr*)

Psychrophilin D **P-748**

As Psychrophilin B, P-746 with R = $-CH_2CH(CH_3)_2$

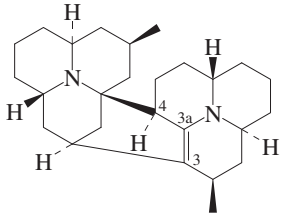
$C_{24}H_{24}N_4O_5$ 448.477

Prod. by *Penicillium algidum* IBT 22067. Powder (MeCN aq.). Mp 93-95°. $[\alpha]_D^{25}$ +24.4 (c, 0.18 in MeCN). λ_{max} 194 (log ϵ 4.52); 244 (log ϵ 4.13); 303 (log ϵ 3.76) (MeCN).

Dalsgaard, P.W. *et al., J. Antibiot.*, 2005, **58**, 141-144 (*isol, cd, pmr, cmr*)

Psylloborine A **P-749**

[215596-11-5]



$C_{26}H_{40}N_2$ 380.615

Alkaloid from the ladybird beetle *Psyllobora vigintiduopunctata* (*Psyllobora 22-punctata*). Oil.

$\Delta^{3a,4}$-Isomer: ***Isopsylloborine A***

$C_{26}H_{40}N_2$ 380.615

Alkaloid from the ladybird beetles *Halyzia 16-guttata* and *Vibidia 12-guttata*. Oil. $[\alpha]_{579}$ +17 (c, 0.53 in $CHCl_3$). Possesses 3β*H* config.

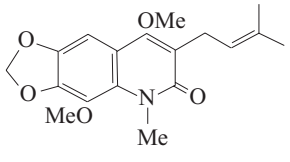
Schroeder, F.C. *et al., Tetrahedron*, 1998, **54**, 12243-12248 (*isol, pmr, cmr*)

Lebrun, B. *et al., Tet. Lett.*, 1999, **40**, 8115-8116 (*Isopsylloborine A*)

Ptelecortine **P-750**

*4,8-Dimethoxy-1-methyl-6,7-methylenedioxy-3-prenyl-2(1*H*)-quinolinone*

[36017-59-1]



$C_{18}H_{21}NO_5$ 331.368

Alkaloid from *Ptelea trifoliata* (Rutaceae). Cryst. (hexane). Mp 126-128°.

$\Delta^{3',4'}$-Isomer, 2′ξ-hydroxy: ***Ptelefructine***

[27741-35-1]

$C_{18}H_{21}NO_6$ 347.367

Alkaloid from *Ptelea trifoliata* (Rutaceae). Cryst. (EtOAc/hexane). Mp 146-149°.

Reisch, J. *et al., Tet. Lett.*, 1970, 1945; 1972, 449 (*uv, ir, pmr, ms, struct*)

Pteledimericine **P-751**

[72751-06-5]

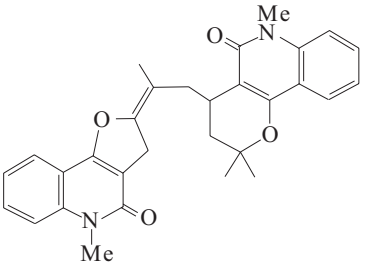
$C_{30}H_{30}N_2O_5$ 498.577

Struct. unknown. Dimeric quinolinone alkaloid. Alkaloid from the root bark of *Ptelea trifoliata* (Rutaceae). Needles (EtOH/Me_2CO). Mp 275-277°.

Mester, I. *et al., Annalen*, 1979, 1785-1788 (*isol, uv*)

Pteledimeridine **P-752**

[72681-97-1]



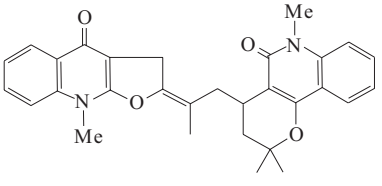
$C_{30}H_{30}N_2O_4$ 482.578

Alkaloid from the root bark of *Ptelea trifoliata* (Rutaceae). Needles (Me_2CO). Mp 340-342°.

Mester, I. *et al., Annalen*, 1979, 1785 (*isol, uv, ir, pmr, ms, struct*)

Pteledimerine **P-753**

[70509-83-0]



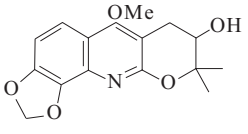
$C_{30}H_{30}N_2O_4$ 482.578

Alkaloid from the root bark of *Ptelea trifoliata* (Rutaceae). Cryst. (Me_2CO). Mp 319-321°.

Reisch, J. *et al., Tet. Lett.*, 1978, 3681 (*ir, uv, pmr, ms, struct*)

Pteleflorine **P-754**

[58880-20-9]



$C_{16}H_{17}NO_5$ 303.314

Alkaloid from *Ptelea trifoliata* (Rutaceae). Cryst. (C_6H_6/hexane). Mp 93-96°.

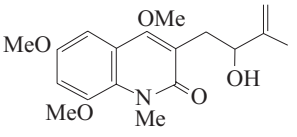
Reisch, J. *et al., Phytochemistry*, 1975, **14**, 2722 (*isol, uv, ir, ms, struct*)

Neville, C.F. *et al., J.C.S. Perkin 1*, 1991, 259 (*synth, pmr*)

Ptelefoline **P-755**

*3-(2-Hydroxy-3-methyl-3-butenyl)-4,6,8-trimethoxy-1-methyl-2(1*H*)-quinolinone*

[25488-61-3]



$C_{18}H_{23}NO_5$ 333.383

Alkaloid from leaves of *Ptelea trifoliata* (Rutaceae). Mp 91-93°. Opt. inactive.

Me ether: **O-*Methylptelefoline***

$C_{19}H_{25}NO_5$ 347.41

Alkaloid from *Ptelea trifoliata* (Rutaceae). Oil.

*3′,4′-Dihydro, 3′-hydroxy: 3-(2,3-Dihydroxy-3-methylbutyl)-4,6,8-trimethoxy-1-methyl-2(1*H*)-quinolinone, 9CI.* ***Ptelefolinol, 9CI***

[59719-25-4]

$C_{18}H_{25}NO_6$ 351.399

Alkaloid from *Ptelea trifoliata* (Rutaceae).

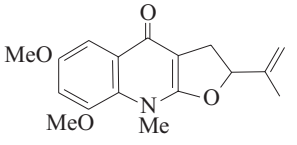
Reisch, J. *et al., Tet. Lett.*, 1969, 3803; 1970, 1945 (*Ptelefoline, O-Methylptelefoline*)

Korosi, J. *et al., Herba Hung.*, 1976, **15**, 9; *CA*, **85**, 30608b (*Ptelefolinol*)

Ptelefolone **P-756**

*3,9-Dihydro-6,8-dimethoxy-9-methyl-2-(1-methylethenyl)furo[2,3-*b*]quinolin-4(2*H*)-one, 9CI. 3,9-Dihydro-6,8-dimethoxy-2-isopropenyl-9-methylfuro[2,3-*b*]quinolin-4(*H*)-one*

[28385-67-3]



$C_{17}H_{19}NO_4$ 301.341

Alkaloid from the leaves and flowers of *Ptelea trifoliata* (Rutaceae). Cryst. (hexane/Me_2CO). Mp 70-71°. $[\alpha]_D^{28}$ +1.9 (c, 1.5 in $CHCl_3$).

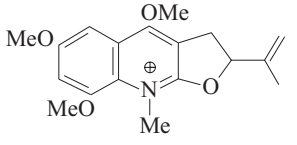
Reisch, J. *et al., Tet. Lett.*, 1970, 3365 (*uv, ir, pmr, ms, struct*)

Gaston, J.L. *et al., Tet. Lett.*, 1978, 2629 (*synth*)

Ptelefolonium **P-757**

*2,3-Dihydro-4,6,8-trimethoxy-9-methyl-2-(1-methylethenyl)furo[2,3-*b*]quinolinium(1+), 9CI. O^4-Methylptelefolonium*

[52768-97-5]



$C_{18}H_{22}NO_4^{\oplus}$ 316.376
Alkaloid from the leaves and callus strains of *Ptelea trifoliata* (Rutaceae).

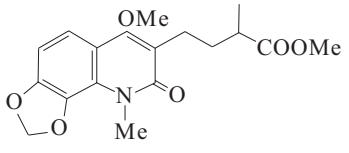
Chloride: Mp 135° (94-96°). $[\alpha]_D^{20}$ +15.28 (c, 0.006 in MeOH).

Perchlorate: Mp 254-256° (236-238°).

Reisch, J. *et al., Phytochemistry*, 1973, **12**, 2552 (*isol, uv, pmr, struct*)
Mitscher, L.A. *et al., J. Nat. Prod.*, 1975, **38**, 109 (*isol, ir, pmr*)
Gaston, J.L. *et al., Tet. Lett.*, 1978, 2629 (*synth*)
Rideau, M. *et al., Phytochemistry*, 1979, **18**, 155 (*isol, pmr, ms*)
Petit-Paly, G. *et al., Plant Cell Rep.*, 1987, **6**, 309 (*isol, uv, pmr, ms*)

Pteleoline P-758

[36017-61-5]

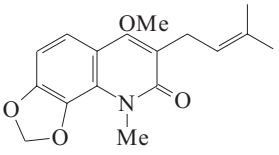


$C_{18}H_{21}NO_6$ 347.367
Alkaloid from *Ptelea trifoliata* (Rutaceae). Oil. $[\alpha]_D^{25}$ -1.8 (c, 1.12 in $CHCl_3$).

Reisch, J. *et al., Tet. Lett.*, 1972, 449 (*uv, ir, pmr, ms, struct*)

Pteleprenine P-759

6-Methoxy-9-methyl-7-(3-methyl-2-butenyl)-1,3-dioxolo[4,5-h]quinolin-8(9H)-one, 9CI. 4-Methoxy-1-methyl-7,8-methylenedioxy-3-prenyl-2-quinolone
[17232-50-7]



$C_{17}H_{19}NO_4$ 301.341
Alkaloid from leafless shoots of *Ptelea trifoliata* (Rutaceae). Needles (petrol). Mp 76-77° (synthetic).

3′,4′-Dihydro, 2′ξ,3′-dihydroxy: ***Hydroxylunidine***
[518-59-2]
$C_{17}H_{21}NO_6$ 335.356
Minor alkaloid from *Lunasia amara* (Rutaceae). Rosettes (EtOAc/cyclohexane). Mp 124-125°. $[\alpha]_D^{23}$ +27.6 (c, 0.820 in EtOH).

$\Delta^{3',4'}$-Isomer, 2′ξ-hydroxy: ***Ptelefolidine***
[27745-40-0]
$C_{17}H_{19}NO_5$ 317.341
Alkaloid from *Ptelea trifoliata* (Rutaceae). Cryst. (EtOAc/hexane). Mp 118-119°.

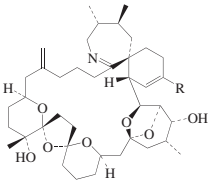
$\Delta^{3',4'}$-Isomer, 2′ξ-methoxy: **O-*Methylptelefolidine***
[27745-41-1]
$C_{18}H_{21}NO_5$ 331.368
Alkaloid from *Ptelea trifoliata* (Rutaceae). Cryst. (hexane). Mp 133-135°.

3′,4′-Dihydro, 2′-oxo: see Lunidonine, L-295

Goodwin, S. *et al., J.A.C.S.*, 1959, **81**, 6209 (*Hydroxylunidine*)
Bowman, R.M. *et al., J.C.S.(C)*, 1967, 2368 (*Pteleprenine*)
Novak, I. *et al., Herba Hung.*, 1970, **9**, 23; *CA*, **75**, 77090k (*Hydroxylunidine, isol*)
Reisch, J. *et al., Tet. Lett.*, 1970, 1945 (*Ptelefolidine, O-Methylptelefolidine*)
Korosi, J. *et al., Herba Hung.*, 1974, **13**, 23; *CA*, **83**, 93836d (*Pteleprenine, isol*)

Pteriatoxin A P-760

[352275-99-1]



Absolute Configuration

R = -^{34}CH(OH)CH$_2$SCH$_2^{2'}$CH(NH$_2$)COOH (34*S*,2′*R*-)

$C_{45}H_{70}N_2O_{10}S$ 831.121
Exists as a zwitterion. Neutral form shown. Related to Pinnatoxin A, P-437. Toxin from the bivalve *Pteria penguin*.
▶ Acutely toxic to mice.

Takada, N. *et al., Tet. Lett.*, 2001, **42**, 3495-3497 (*isol*)
Kuramoto, M. *et al., Mar. Drugs*, 2004, **2**, 39-54 (*rev, tox*)
Matsuura, F. *et al., J.A.C.S.*, 2006, **128**, 7463-7465; 7742-7743 (*synth, abs config*)

Pteriatoxin B P-761

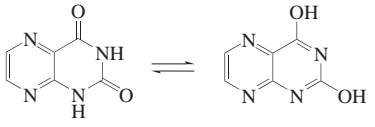
[352276-00-7]
As Pteriatoxin A, P-760 with
R = ^{34}CH(CH$_2$OH)SCH$_2^{2'}$CH(NH$_2$)-)COOH (34*R*,2′*R*-)
$C_{45}H_{70}N_2O_{10}S$ 831.121
Exists as a zwitterion. Neutral form shown. Toxin from the bivalve *Pteria penguin*.
▶ Acutely toxic.

34-Epimer: ***Pteriatoxin C***
[352276-01-8]
$C_{45}H_{70}N_2O_{10}S$ 831.121
Toxin from *Pteria penguin*.
▶ Acutely toxic.

Takada, N. *et al., Tet. Lett.*, 2001, **42**, 3495-3497 (*isol*)
Matsuura, F. *et al., J.A.C.S.*, 2006, **128**, 7463-7465; 7742-7743 (*synth, abs config*)

2,4(1*H*,3*H*)-Pteridinedione, 9CI P-762

Lumazine, 8CI. 2,4-Pteridinediol. 2,4-Dihydroxypteridine



$C_6H_4N_4O_2$ 164.123
Di-*NH*-form occurs in aq. soln. Intermediate tautomers also possible. Yellow cryst. (H_2O). Mp 350°. Subl.0.05 145. pK_{a1} 7.95 (20°). Bluish-green fluor. in aq. soln., green in alkali, blue in acid.

1-Me: ***1-Methyl-2,4-pteridinedione***
[50256-18-3]
$C_7H_6N_4O_2$ 178.15
Isol. from the New Caledonian sponge *Corallistes fulvodesmus*. Needles (H_2O). Mp 290-291° (271°).

3-Me: [50256-19-4]
$C_7H_6N_4O_2$ 178.15
Cryst. (H_2O). Mp 332°.

1-Ph: [32433-26-4]
$C_{12}H_8N_4O_2$ 240.221
Cryst. Mp 307-308°.

3-Ph:
$C_{12}H_8N_4O_2$ 240.221
Cryst. (MeOH). Mp 359-360°.

Di-*NH-form* [487-21-8]
▶ UO3416000

1,3-Di-Me: [13401-18-8]
$C_8H_8N_4O_2$ 192.177
Cryst. (H_2O). Mp 200°.

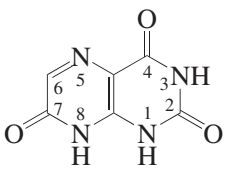
1,3-Di-Et: [94591-34-1]
$C_{10}H_{12}N_4O_2$ 220.23
Cryst. (Et_2O/petrol). Mp 87-88°.

1,3-Dibenzyl: [94591-35-2]
$C_{20}H_{16}N_4O_2$ 344.372
Needles (EtOH aq.). Mp 140°.

Aldrich Library of NMR Spectra, 2nd edn., 1983, **2**, 768A (*nmr*)
Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 894B (*ir*)
Pfleiderer, W. *et al., Chem. Ber.*, 1957, **90**, 2582 (*1-Me, 3-Me, 1,3-di-Me, uv*)
Brown, D.J. *et al., J.C.S.*, 1961, 4413 (*synth*)
Pfleiderer, W. *et al., Chem. Ber.*, 1973, **106**, 3149 (*synth*)
Ewers, J. *et al., Chem. Ber.*, 1974, **107**, 3275 (*cmr*)
Pfleiderer, W. *et al., Annalen*, 1984, 1798 (*derivs, synth*)
Tsuzuki, K. *et al., J. Het. Chem.*, 1986, **23**, 1299 (*1-Me*)
Klein, R. *et al., Photochem. Photobiol.*, 1987, **45**, 55 (*tautom, uv*)
Debitus, C. *et al., Tet. Lett.*, 1989, **30**, 1534-1538 (*1-Me, isol*)
Goswami, S. *et al., Eur. J. Org. Chem.*, 2007, 4056-4064 (*synth, ir, pmr*)

2,4,7(1*H*,3*H*,8*H*)-Pteridinetrione, 9CI, 8CI P-763

Isoxantholumazine. Violapterin. 7-Oxolumazine. 2,4,7-Trihydroxypteridine
[2577-38-0]



$C_6H_4N_4O_3$ 180.123

Prod. by *Physarum polycephalum* and the ant *Formica polyctena*. Metab. of 2-Amino-4,7-dihydroxypteridine, A-751. Cryst. (H_2O). Mp 350°.

1-Me: [2614-44-0]
$C_7H_6N_4O_3$ 194.149
Mp >° 340.

3-Me: [2622-65-3]
$C_7H_6N_4O_3$ 194.149
Cryst. (H_2O). Mp > 340°.

6-Me: [31053-46-0]
$C_7H_6N_4O_3$ 194.149
Cryst. + $1H_2O$ (H_2O). Mp 340°.

*8-Me: 8-Methyl-2,4,7(1*H*,3*H*,8*H*)-pteridinetrione, 9CI, 8CI. 1,2,3,4,7,8-Hexahydro-8-methyl-2,4,7-trioxopteridine.*
Luciopterin
[19845-00-2]
$C_7H_6N_4O_3$ 194.149
Constit. of the Japanese firefly *Luciola cruciata*. Strongly fluorescent, pale yellow microcryst. Mp > 340°. pK_{a1} 3.69; pK_{a2} 0 (H_2O).

1,3-Di-Me: [2614-43-9]
$C_8H_8N_4O_3$ 208.176
Mp 264°.

1,6-Di-Me:
$C_8H_8N_4O_3$ 208.176
Cryst. (H_2O). Mp 330° dec.

1,8-Di-Me: [70916-42-6]
$C_8H_8N_4O_3$ 208.176
Cryst. (EtOH). Mp 310° dec.

3,6-Di-Me:
$C_8H_8N_4O_3$ 208.176
Cryst. (H_2O). Mp 340°.

3,8-Di-Me: [70916-39-1]
$C_8H_8N_4O_3$ 208.176
Cryst. Mp 350°. Darkens at 300°.

6,8-Di-Me: [6743-25-5]
$C_8H_8N_4O_3$ 208.176
Cryst. Mp 350°.

1,3,6-Tri-Me: [2625-21-0]
$C_9H_{10}N_4O_3$ 222.203
Needles (H_2O). Mp 308°.

1,3,8-Tri-Me: [70674-02-1]
$C_9H_{10}N_4O_3$ 222.203
Pale yellow cryst. (EtOH). Mp 220°.

1,6,8-Tri-Me: [70916-41-5]
$C_9H_{10}N_4O_3$ 222.203
Cryst. (EtOH). Dec. at 317°.

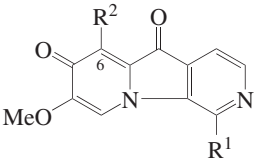
3,6,8-Tri-Me: [6743-26-6]
$C_9H_{10}N_4O_3$ 222.203
Cryst. (EtOH). Mp 331-334°.

1,3,6,8-Tetra-Me:
$C_{10}H_{12}N_4O_3$ 236.23
Pale yellow needles (EtOH aq.). Mp 253°.

Pfleiderer, W. *et al., Chem. Ber.*, 1957, **90**, 2588-2603; 1958, **91**, 1671-1680 (*synth, N-Me derivs*)
McNutt, W.S. *et al., J. Biol. Chem.*, 1963, **238**, 1116-1121 (*7-Oxolumazine, metab*)
Kishi, Y. *et al., Tet. Lett.*, 1968, **9**, 2847-2850 (*Luciopterin, isol*)
Schmidt, G.H. *et al., Z. Naturforsch., B*, 1969, **24**, 1153-1169 (*isol*)
Bergmann, F. *et al., J.C.S. Perkin 2*, 1979, 35-39 (*1,8-di-Me, synth*)
Loidl, P. *et al., CA*, 1984, **100**, 20127 (*isol*)

Pterocellin A P-764

[593235-02-0]



$R^1 = CH_2CH(CH_3)_2$, $R^2 = H$

$C_{16}H_{16}N_2O_3$ 284.314
Isol. from the marine bryozoan *Pterocella vesiculosa*. Cytotoxic. Dark red needles (toluene). Mp 172-173°. λ_{max} 202 (log ε 3.83); 256 (log ε 3.7); 280 (log ε 3.87); 483 (log ε 2.93) (MeOH).

6,6′-Dimer: ***Pterocellin E***
$C_{32}H_{30}N_4O_6$ 566.612
Isol. from *Pterocella vesiculosa*. Rose-pink solid. λ_{max} 201 (log ε 4.65); 230 (sh) (log ε 4.48); 258 (sh) (log ε 4.48); 286 (log ε 4.57); 480 (log ε 3.61) (MeOH).

Yao, B. *et al., J. Nat. Prod.*, 2003, **66**, 1074-1077 (*isol, pmr, cmr, N-15 nmr, cryst struct*)
O'Malley, M.M. *et al., Org. Lett.*, 2006, **8**, 2651-2652 (*synth*)
Prinsep, M.R. *et al., J. Nat. Prod.*, 2008, **71**, 134-136 (*Pterocellin E*)

Pterocellin B P-765

[593235-03-1]
As Pterocellin A, P-764 with
R^1 = -CH_2Ph, R^2 = H

$C_{19}H_{14}N_2O_3$ 318.331
Isol. from the marine bryozoan *Pterocella vesiculosa*. Cytotoxic. Amorph. red solid. λ_{max} 202 (log ε 4.08); 287 (log ε 3.63); 485 (log ε 2.63) (MeOH).

Yao, B. *et al., J. Nat. Prod.*, 2003, **66**, 1074-1077 (*isol, pmr, cmr, N-15 nmr*)

Pterocellin C P-766

[1000598-23-1]
As Pterocellin A, P-764 with
$R^1 = CH_2CH(CH_3)_2$, R^2 = -$(CH_2)_4COCH_3$

$C_{22}H_{26}N_2O_4$ 382.458
Isol. from *Pterocella vesiculosa*. Orange-red solid. λ_{max} 203 (log ε 4.87); 224 (sh) (log ε 4.76); 257 (log ε 4.74); 290 (log ε 5.02); 489 (log ε 4.06) (MeOH).

Prinsep, M.R. *et al., J. Nat. Prod.*, 2008, **71**, 134-136 (*isol, pmr, cmr, ms*)

Pterocellin D P-767

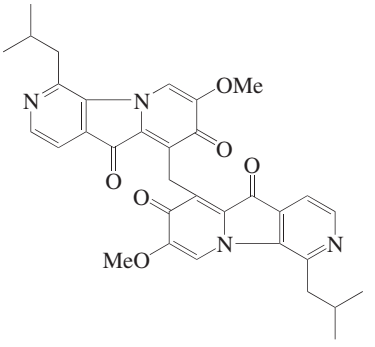
[1000598-24-2]
As Pterocellin A, P-764 with
R^1 = -$CH_2CH(CH_3)_2$, R^2 = -$CH(CH_3)_2$

$C_{19}H_{22}N_2O_3$ 326.394
Isol. from *Pterocella vesiculosa*. Red-orange solid. λ_{max} 203 (log ε 4.29); 255 (log ε 4.01); 290 (log ε 4.11); 490 (log ε 3.08) (MeOH).

Prinsep, M.R. *et al., J. Nat. Prod.*, 2008, **71**, 134-136 (*isol, pmr, cmr, ms*)

Pterocellin F P-768

[1000598-26-4]



$C_{33}H_{32}N_4O_6$ 580.639
Isol. from *Pterocella vesiculosa*. Dark red solid. λ_{max} 202 (log ε 3.8); 286 (log ε 3.36); 494 (log ε 2.2) (MeOH).

Prinsep, M.R. *et al., J. Nat. Prod.*, 2008, **71**, 134-136 (*isol, pmr, cmr, ms*)

Pterogynidine P-769

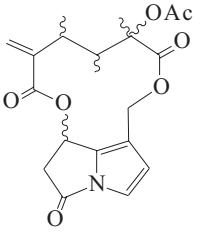
N,N′-*Bis(3-methyl-2-butenyl)guanidine, 9CI.* N,N′-*Diisopentenylguanidine.* N,N′-*Diprenylguanidine*
[25713-89-7]
HN═C[NHCH$_2$CH═C(CH$_3$)$_2$]$_2$

$C_{11}H_{21}N_3$ 195.307
Alkaloid from *Alchornea cordifolia* and *Pterogyne nitens*. Mp 105-106° (as picrate). λ_{max} 203 ; 273 (MeOH).

Corral, R.A. *et al., Chem. Comm.*, 1970, 556 (*isol, synth, pmr*)
Mavar-Manga, H. *et al., Nat. Prod. Commun.*, 2006, **1**, 1097-1100 (*isol, pmr, cmr*)

Pterophorine P-770

12-(Acetyloxy)-3,8-didehydro-14-methyl-21-norsenecionan-5,11,16-trione, 9CI
[62786-99-6]



$C_{20}H_{23}NO_7$ 389.404
Alkaloid from seeds of *Senecio pterophorus* and *Senecio inaequidens* (Asteraceae). Oil. $[\alpha]_D$ +27 (c, 4.6 in $CHCl_3$).

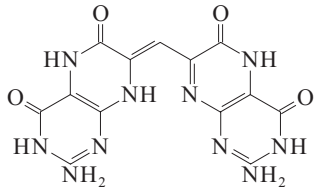
Stereoisomer: ***Isopterophorine***
[71075-40-6]
$C_{20}H_{23}NO_7$ 389.404
Alkaloid from roots of *Senecio pulviniformis*. Oil. $[\alpha]_D$ -25 ($CHCl_3$). Partial stereochemistries are shown for Pterophorine and Isopterophorine but these do not appear to be well established.

Bohlmann, F. *et al., Chem. Ber.*, 1977, **110**, 474 (*isol, ord*)

Bohlmann, F. *et al., Phytochemistry*, 1977, **16**, 965; 1979, **18**, 125 (*isol, ir, pmr, struct*)

Pterorhodine, 8CI P-771

2-Amino-7-[(2-amino-1,4,5,6-tetrahydro-4,6-dioxo-7-pteridinyl)methylene]-1,5,7,8-tetrahydro-4,6-pteridinedione, 9CI. Rhodomelanochrome. Lepidoporphyrin. Rhosoptein. Platynerepterin
[6538-79-0]

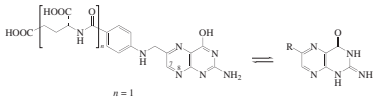


$C_{13}H_{10}N_{10}O_4$ 370.287
Isol. from wings of butterflies, e.g. *Appias nero*, and from the skin of the leaf frog *Agalychnis dacnicolor*. Red-violet cryst.

Purrmann, R. *et al., Annalen*, 1944, **556**, 189 (*isol*)
Russell, P.B. *et al., J.A.C.S.*, 1949, **71**, 3412
Pfleiderer, W. *et al., Z. Naturforsch., B*, 1963, **18**, 420 (*isol*)
Viscontini, M. *et al., Helv. Chim. Acta*, 1970, **53**, 1207-1209 (*isol, struct*)
Misuraca, G. *et al., Comp. Biochem. Physiol., B: Comp. Biochem.*, 1977, **57**, 41 (*isol*)
Pfleiderer, W. *et al., J. Het. Chem.*, 1992, **29**, 583 (*rev*)

Pteroylglutamic acid P-772

N-*[4-[[(2-Amino-1,4-dihydro-4-oxo-6-pteridinyl)methyl]amino]benzoyl]glutamic acid, 9CI.* ***Folic acid, BAN, INN.*** *Vitamin B_c. Vitamin M. Coenzyme F. Leucal. CoF. Citrovorin. Folacin. Folvite. Foliamin. NSC 3073*
[59-30-3]



$C_{19}H_{19}N_7O_6$ 441.402
Other tautomers also possible. Natural isolates normally contain homologues having n > 1. Present in liver and kidney tissue, fungi, green plants, etc. Essential cofactor. Used in the treatment of megaloblastic anaemias to stimulate erythrocyte, lymphocyte and platelet production. Recommended as dietary supplement during pregnancy as preventative against spina bifida. Pale lemon-yellow to light-orange needles (H_2O at pH 3). Almost insol. H_2O; sl. sol. MeOH; mod. sol. AcOH; insol. Et_2O. $[\alpha]_D^{25}$ +23 (c, 0.5 in 1*M* NaOH). pK_{a1} 4.65; pK_{a2} 6.75; pK_{a3} 9 (30°, 0.01*M* KNO_3). Log P -1.02 (calc). Chars above 250°. Component of numerous preparations. Also used as calcium salt (Calcium folate, BAN, INN).
► LD_{50} (mus, orl) 10,000 mg/kg. Exp. teratogen. LP5425000

7,8-Dihydro: ***7,8-Dihydrofolic acid****. 7,8-Dihydropteroylglutamic acid*
[4033-27-6]
$C_{19}H_{21}N_7O_6$ 443.418
Metabolic product of reduction of folic acid by dihydrofolate reductase. Yellow cryst. (H_2O). pK_{a1} 0.34; pK_{a2} 4.2; pK_{a3} 10.3.

5,6,7,8-Tetrahydro: see 5,6,7,8-Tetrahydrofolic acid, T-172

*Homologue (*n = *2):* ***Pteroyldiglutamic acid****. Pteroylglutamylglutamic acid. Diopterin*
[6807-82-5]
$C_{24}H_{26}N_8O_9$ 570.518
Prod. by microorganisms.

*Homologue (*n = *2), 7,8-dihydro,* N^8*-Me:* ***7-Hydro-8-methylpteroylglutamylglutamic acid***
[108402-49-9]
$C_{25}H_{30}N_8O_9$ 586.56
Isol. from actinomycete strain SK 2049, identified as *Promicromonospora sukumoe*. Antifolate agent, thymidilate synthase inhibitor. Shows antimalarial props. Yellowish powder + $5H_2O$. Sol. bases; fairly sol. H_2O; poorly sol. EtOH, hexane, $CHCl_3$. Mp 196° dec. $[\alpha]_D^{20}$ +24 (c, 0.25 in H_2O). λ_{max} 200 (ϵ 13000); 219 (ϵ 11000); 292 (ϵ 17500) (0.01*M* HCl) (Derep). λ_{max} 203 (ϵ 22000); 215 (sh) (ϵ 13500); 282 (ϵ 17000) (0.01*N* NH_4OH) (Derep). λ_{max} 216 (sh) (ϵ 13500); 290 (ϵ 17500) (H_2O) (Derep). λ_{max} 217 (ϵ 13800); 299 (ϵ 18200) (H_2O) (Berdy). λ_{max} 220 (ϵ 12000); 302 (ϵ 19000) (HCl) (Berdy).

*Homologue (*n = *3):* ***Pteroyltriglutamic acid****. Pteroylglutamylglutamylglutamic acid. Dripterin. Pteropterin. Terapterin.* Lactobacillus casei *Factor. Teropterin*
[89-38-3]
$C_{29}H_{33}N_9O_{12}$ 699.633
Prod. by *Lactobacillus casei, Corynebacterium* spp. and others. Antineoplastic agent. Amorph. Log P -3.65 (calc).

*Homologue (*n = *5):* ***Pteroylpentaglutamic acid***
[33611-85-7]
$C_{39}H_{47}N_{11}O_{18}$ 957.863
Found in yeast etc.

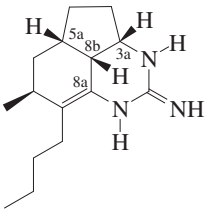
*Homologue (*n = *7):* ***Pteroylheptaglutamic acid****. Pteroylhexaglutamylglutamic acid. Folic acid conjugate. Vitamin B_c conjugate*
[6484-74-8]
$C_{49}H_{61}N_{13}O_{24}$ 1216.094
Found in yeast, pollen etc. Microcryst. (H_2O).

[1492-18-8 , 6484-89-5 , 75708-92-8 , 6713-32-2]

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 898A (*ir*)
Pfiffner, J.J. *et al., J.A.C.S.*, 1946, **68**, 1392 (*Pteroylheptaglutamic acid*)
Boothe, J.H. *et al., J.A.C.S.*, 1948, **70**, 1099; 1949, **71**, 2304
Weisblat, D.I. *et al., J.A.C.S.*, 1953, **75**, 3625 (*synth*)
Blakley, R.L. *et al., Nature (London)*, 1960, **188**, 231 (*uv*)
Jaenicke, L. *et al., Prog. Chem. Org. Nat. Prod.*, 1963, **21**, 183 (*rev*)
Pastore, E.J. *et al., Ann. N.Y. Acad. Sci.*, 1971, **186**, 43 (*pmr*)
Shiota, T. *et al., Compr. Biochem.*, Elsevier, Amsterdam, 1971, **21**, 111 (*rev, biosynth*)
Godwin, H.A. *et al., J. Biol. Chem.*, 1972, **247**, 2266 (*Pteroyltriglutamic acid*)
Bieri, J. *et al., Helv. Chim. Acta*, 1973, **56**, 2905 (*synth*)
Frick, W. *et al., Helv. Chim. Acta*, 1974, **57**, 2658 (*cmr*)
Drey, C.N.C. *et al., Chem. Comm.*, 1977, 144 (*Pteroyltriglutamic acid*)
Pont, L.O. *et al., Anal. Profiles Drug Subst.*, 1979, **8**, 315 (*rev*)
Murphy, M. *et al., Biochim. Biophys. Acta*, 1979, **583**, 535 (*metab*)
Nixon, P.F. *et al., Clin. Exp. Pharmacol. Physiol.*, Suppl. 1, 1979, **5**, 35 (*rev, pharmacol*)
Poe, M. *et al., Methods Enzymol.*, 1980, **66**, 483 (*pmr*)
Mastropaolo, D. *et al., Science (Washington, D.C.)*, 1980, **210**, 334 (*cryst struct*)
Straw, J.E. *et al., Cancer Res.*, 1984, **44**, 3114 (*metab*)
Cooper, B.A. *et al., Clin. Biochem.*, 1984, **17**, 95 (*metab*)
Blakeley, R.L. *et al., Folates Pterins*, (Eds.), J. Wiley & Sons, NY, 1984, **1**, (*chem, biochem*)
Brody, T. *et al., Food Sci. Technol.*, 1984, **13**, 459 (*biol studies*)
Charlton, P.A. *et al., J.C.S. Perkin 1*, 1985, 1349 (*7,8-dihydro, synth*)
D'Ari, L. *et al., Methods Enzymol.*, 1985, **113**, 169 (*Pteroyltriglutamic acid*)
Shane, B. *et al., Methods Enzymol.*, 1986, **122**, 269; 323 (*detn, synth*)
Moran, R.G. *et al., Methods Enzymol.*, 1986, **122**, 309 (*synth*)
Young, D.W. *et al., Nat. Prod. Rep.*, 1986, **3**, 395 (*biosynth*)
Rees, L. *et al., Tetrahedron*, 1986, **42**, 117 (*7,8-dihydro, synth*)
Rees, L. *et al., Chem. Comm.*, 1987, 470 (*synth*)
Murata, M. *et al., J. Antibiot.*, 1987, **40**, 251 (*7-Hydro-8-methylpteroylglutamylglutamic acid*)
Negwer, M. *et al., Organic-Chemical Drugs and their Synonyms, 6th edn., Akademie-Verlag*, 1987, 5190
Al-Shammary, F.J. *et al., Anal. Profiles Drug Subst.*, 1990, **19**, 221 (*rev*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 1039
Rossi, C. *et al., Spectrosc. Lett.*, 1993, **26**, 1603 (*pmr, conform*)
Encyclopedia of Food and Color Additives, (ed. Burdock, G.A.), CRC Press, 1997, 1122-1123
Roje, S. *et al., Phytochemistry*, 2007, **68**, 1904-1921 (*biosynth, rev*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, FMT000

Ptilocaulin P-773

[78777-02-3]



(+)-*form*

$C_{15}H_{25}N_3$ 247.383
Isol. from the Caribbean sponge *Ptilocaulis* aff. *Ptilocaulis spiculifer*, may be a symbiont metab. Also from *Batzella* sp., *Monanchora arbuscula* and *Hemimycale* sp. Active against gram-positive bacteria and leukaemia cells. Cryst. (as nitrate). Sol. MeOH, $CHCl_3$; poorly sol. hexane. Mp 183-185° (nitrate). $[\alpha]_D$ +74.4 (MeOH). λ_{max} 225 (ϵ 10000) (MeOH).

*8*b-*Hydroxy:* ***8b-Hydroxyptilocaulin***
[167499-84-5]
$C_{15}H_{25}N_3O$ 263.382
Alkaloid from the marine sponge *Monanchora arbuscula*. Oil (as hydrochloride). $[\alpha]_D$ +77.5 (c, 0.12 in MeOH) (hydrochloride).

*7-Epimer, $\Delta^{8a,8b}$-isomer(8*α*H): **7-Epineoptilocaulin***. *8*a,*8*b-*Dehydroptilocaulin*
$C_{15}H_{25}N_3$ 247.383
Renamed in 2008. Isol. from the sponge *Batzella* sp. Oil. $[\alpha]_D$ +13.3 (c, 1.2 in MeOH). λ_{max} 228 ; 242 ; 306 (MeOH).

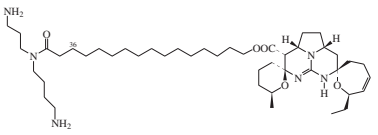
*7-Epimer, $\Delta^{8a,8b}$-isomer, 8*α*-hydroxy: **8α-Hydroxy-7-epineoptilocaulin***. *8*a,*8*b-*Dehydro-8-hydroxyptilocaulin*
$C_{15}H_{25}N_3O$ 263.382
Renamed in 2008. Isol. from the sponge *Batzella* sp. Gum. $[\alpha]_D$ +24.2 (c, 0.33 in MeOH). λ_{max} 237 ; 299 (MeOH).

[86594-30-1 , 88154-76-1]

Harbour, G.C. *et al., J.A.C.S.*, 1981, **103**, 5604 (*isol, uv, pmr, cmr, ms, struct*)
Roush, M.R. *et al., J.A.C.S.*, 1984, **106**, 721 (*synth*)
Snider, B.B. *et al., J.A.C.S.*, 1984, **106**, 1443 (*synth, ir, pmr, cmr, ms, cd*)
Watts, A.E. *et al., Tetrahedron*, 1985, **41**, 3463 (*synth*)
Uyehara, T. *et al., Chem. Comm.*, 1986, 539 (*synth*)
Murthy, K.S.K. *et al., Isr. J. Chem.*, 1991, **31**, 239 (*synth*)
Snider, B.B. *et al., J.O.C.*, 1993, **58**, 3828-3839 (*biosynth*)
Tavares, R. *et al., J. Nat. Prod.*, 1995, **58**, 1139 (*8b-Hydroxyptilocaulin*)
Patil, A.D. *et al., J. Nat. Prod.*, 1997, **60**, 704-707 (*isol, uv, pmr, cmr, derivs*)
Yu, M. *et al., J.O.C.*, 2008, **73**, 9065-9074 (*synth, pmr, cmr*)

Ptilomycalin A P-774

[124512-47-6]



$C_{45}H_{80}N_6O_5$ 785.164
Alkaloid from the Caribbean sponge *Ptilocaulis spiculifer*, the Red Sea sponge *Hemimycale* sp., the New Caledonian starfish *Celerina heffernani* and the Caribbean sponge *Batzella* sp. Exhibits remarkable antifungal, antiviral and antitumour activities. $[\alpha]_D^{25}$ -2.5 (c, 0.70 in $CHCl_3$).

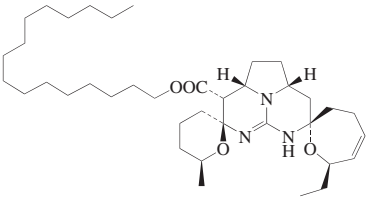
*36*R-*Hydroxy:* ***Celeromycalin***
[163597-72-6]
$C_{45}H_{80}N_6O_6$ 801.164
Alkaloid from the starfish *Celerina heffernani*. Highly cytotoxic. $[\alpha]_D$ -4.5.

38-Parent acid: ***Crambescidic acid***
$C_{38}H_{63}N_3O_6$ 657.932
Constit. of *Monanchora dianchora* and *Monanchora unguifera*. $[\alpha]_D^{25}$ +4.4 (c, 0.2 in MeOH).

Kashman, Y. *et al., J.A.C.S.*, 1989, **111**, 8925-8926 (*isol, ir, pmr, cmr, struct*)
Ohtani, I. *et al., J.A.C.S.*, 1992, **114**, 8472-8479 (*isol, ir, pmr, cmr, struct*)
Overman, L.E. *et al., J.A.C.S.*, 1995, **117**, 2657-2658 (*synth*)
Patil, A.D. *et al., J.O.C.*, 1995, **60**, 1182-1188 (*isol*)
Palagiano, E. *et al., Tetrahedron*, 1995, **51**, 3675-3682 (*Celeromycalin*)
Coffey, D.S. *et al., J.A.C.S.*, 2000, **122**, 4893-4903 (*synth*)
Gallimore, W.A. *et al., J. Nat. Prod.*, 2005, **68**, 1420-1423 (*Crambescidic acid*)
Bensemhoun, J. *et al., J. Nat. Prod.*, 2007, **70**, 2033-2035 (*Crambescidic acid*)

Ptilomycalin D P-775

[1002730-82-6]

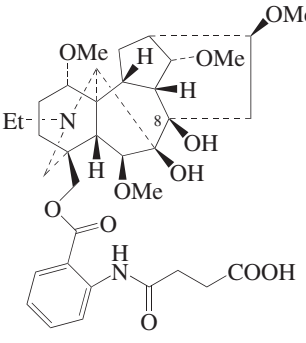


$C_{38}H_{65}N_3O_4$ 627.949
Alkaloid from *Monanchora dianchora*. $[\alpha]_D^{25}$ -7.2 (c, 0.26 in $CHCl_3$).

Bensemhoun, J. *et al., J. Nat. Prod.*, 2007, **70**, 2033-2035 (*isol, pmr, cmr*)

Puberaconitine P-776

[69787-06-0]



$C_{36}H_{50}N_2O_{11}$ 686.798
Alkaloid from the roots of *Aconitum barbatum* var. *puberulum* (Ranunculaceae). Amorph. $[\alpha]_D^{20}$ +34 (c, 0.5 in $CHCl_3$).

Me ester: ***Septentriodine***. *Cashmiradelphine*
[69787-05-9]
$C_{37}H_{52}N_2O_{11}$ 700.825
Alkaloid from the roots of *Delphinium cashmirianum, Aconitum septentrionale* and *Aconitum barbatum* var. *puberulum*, and from *Aconitum gigas* (Ranunculaceae). Cryst. (MeOH/Et_2O). Mp 130-135°. $[\alpha]_D^{27}$ +56 (c, 0.39 in EtOH). λ_{max} 222 (log ϵ 3.06); 227 (sh) (log ϵ 2.97); 252 (log ϵ 271); 260 (sh) (log ϵ 2.61); 310 (log ϵ 2.28) (MeOH).

Amide: ***Avadharidine***
[509-16-0]
$C_{36}H_{51}N_3O_{10}$ 685.813
Alkaloid from the roots of *Aconitum orientale, Aconitum finetianum* and *Delphinium cashmirianum* (Ranunculaceae). Amorph. $[\alpha]_D^{27}$ +40 (c, 0.37 in EtOH).

O^8*-Me:* ***Puberaconitidine***
[83685-21-6]
$C_{37}H_{52}N_2O_{11}$ 700.825
Alkaloid from the roots of *Aconitum barbatum* var. *puberulum* (Ranunculaceae). $[\alpha]_D^{20}$ +22.4 (c, 0.9 in $CHCl_3$).

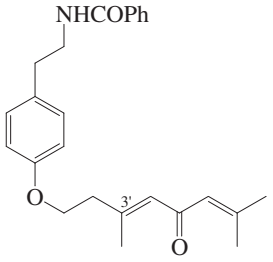
O^8*-Me, Me ester:* ***Septentrionine***
[70553-63-8]
$C_{38}H_{54}N_2O_{11}$ 714.851
Alkaloid from the roots of *Aconitum septentrionale* and *Aconitum barbatum* var. *puberulum* (Ranunculaceae). Mp 123-125°. $[\alpha]_D^{26}$ +21.2 (c, 1.0 in $CHCl_3$).

O^{14}*-De-Me, Me ester:* ***Vulparine***
[935754-38-4]
$C_{36}H_{50}N_2O_{11}$ 686.798
Alkaloid from *Aconitum vulparia*. Amorph. solid. $[\alpha]_D^{27}$ +47 (c, 0.1 in $CHCl_3$). λ_{max} 223 (log ϵ 3.04); 227 (sh) (log ϵ 3.01); 252 (log ϵ 2.75); 260 (sh) (log ϵ 2.65); 311 (log ϵ 2.32) (MeOH).

O^{14}*-De-Me, 14-Ac, Me ester:* ***Finetiadine***
[178494-88-7]
$C_{38}H_{52}N_2O_{12}$ 728.835
Minor alkaloid from roots of *Aconitum finetianum*. Amorph. powder (Me_2CO). Mp 116-117°. $[\alpha]_D^{18}$ +31.63 (c, 0.1 in $CHCl_3$).

Kuzovkov, A.D. *et al., J. Gen. Chem. USSR (Engl. Transl.)*, 1955, **25**, 161-163; 1959, **29**, 2746-2749 (*Avadharidine*)
Sakai, S. *et al., Yakugaku Zasshi*, 1978, **98**, 1376-1384 (*Septentriodine*)
Pelletier, S.W. *et al., Heterocycles*, 1979, **12**, 377-381 (*Septentrionine*)
Shamma, M. *et al., J. Nat. Prod.*, 1979, **42**, 615-623 (*Avadharidine, uv, ir, pmr, ms, struct*)
Pelletier, S.W. *et al., J.A.C.S.*, 1981, **103**, 6536-6538 (*config*)
Edwards, O.E. *et al., Can. J. Chem.*, 1982, **60**, 2661-2667 (*config*)
Jiang, S. *et al., Zhongcaoyao*, 1982, **13**, 5; *CA*, **97**, 107027u (*Avadharidine, isol*)
Yu, D. *et al., Planta Med.*, 1983, **49**, 85-89 (*Puberaconitidine, Septentrionine*)
Joshi, B.S. *et al., J. Nat. Prod.*, 1990, **53**, 1028-1030 (*Puberaconitine, Puberaconitidine, config*)
Wu, G. *et al., Phytochemistry*, 1996, **42**, 1253-1255 (*Finetiadine*)
Csupor, D. *et al., Z. Naturforsch., B*, 2007, **62**, 135-141 (*Vulparine, Septentriodine*)

Pubesamide B P-777



$C_{25}H_{29}NO_3$ 391.509
Constit. of the seeds of *Casimiroa pubescens*. Yellow solid. Mp 89-92°. Isol. as a mixt. with Pubesamide A to which data refers.

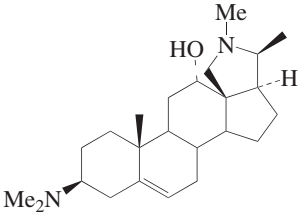
(3′Z)-Isomer: ***Pubesamide A***
$C_{25}H_{29}NO_3$ 391.509
Constit. of the seeds of *Casimiroa pubescens*. Yellow solid. Mp 88-91°. λ_{max} 269 (log ϵ 4.38) ($CHCl_3$).

*5′-Deoxo, Δ4′-isomer(*E-*), 3′ξ-hydroxy:* ***Pubesamide C***
$C_{25}H_{31}NO_3$ 393.525
Constit. of the seeds of *Casimiroa pubescens*. Yellowish solid. Mp 83-84°. λ_{max} 202 (log ϵ 4.37); 230 (log ϵ 4.52) (MeOH).

García-Argáez, A.N. *et al., Z. Naturforsch., B*, 2004, **59**, 245-248 (*isol, pmr, cmr, ms*)

Pubescimine P-778

[159249-81-7]

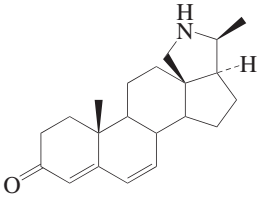


$C_{24}H_{40}N_2O$ 372.593
Alkaloid from bark of *Holarrhena pubescens* (Apocynaceae). Irregular plates (Me_2CO). Mp 220-222°.

Begum, S. *et al., Phytochemistry*, 1994, **36**, 1537-1541 (*isol, uv, ir, pmr, cmr, ms, struct*)

Pubescine† P-779

[159194-89-5]

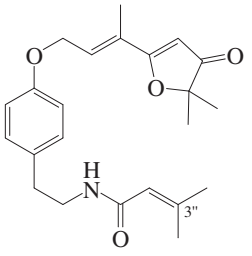


$C_{21}H_{29}NO$ 311.466
Alkaloid from bark of *Holarrhena pubescens* (Apocynaceae). Irregular plates (Me_2CO). Mp 224-226°.

Begum, S. *et al., Phytochemistry*, 1994, **36**, 1537-1541 (*isol, uv, ir, pmr, cmr, ms, struct*)

Puhinamide P-780

[204641-53-2]



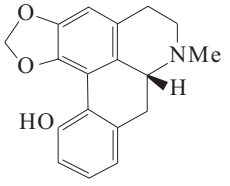
$C_{23}H_{29}NO_4$ 383.486
Alkaloid from *Glycosmis* cf. *parva*. Cryst. (Et_2O). Mp 88-90°. λ_{max} 227 ; 296 (MeOH).

2″,3″-Dihydro: ***Khaochamide***
[204641-52-1]
$C_{23}H_{31}NO_4$ 385.502
Alkaloid from *Glycosmis parva*. Cryst. (Et_2O). Mp 114-115°. λ_{max} 227 ; 241 (sh) ; 291 (MeOH).

Hofer, O. *et al., Monatsh. Chem.*, 1998, **129**, 213-219

Pukateine P-781

11-Hydroxy-1,2-methylenedioxyaporphine. N-*Methylobovanine*



$C_{18}H_{17}NO_3$ 295.337

(*R*)-*form* [81-67-4]
Alkaloid from the bark of *Laurelia novae-zelandiae* (Monimiaceae). Cryst. (EtOH). Mp 210-211°. $[\alpha]_D^{15}$ -257 (c, 1.0 in EtOH).

α-N-*Oxide:*
Synthetic. Plates. Mp 160-162° (MeOH solvate) Mp 176-178°.

β-N-*Oxide:* ***Laurepukine***
[34029-94-2]
$C_{18}H_{17}NO_4$ 311.337
Alkaloid from the bark of *Laurelia novae-zelandiae* (Monimiaceae). Pale beige needles (MeOH). Mp 220-222°. $[\alpha]_D^{25}$ -257 (c, 0.11 in $CHCl_3$/MeOH 1:1).

N-*De-Me: 11-Hydroxy-1,2-methylenedioxynoraporphine.* ***Obovanine***
[53254-79-8]
$C_{17}H_{15}NO_3$ 281.31
Alkaloid from *Magnolia obovata*, the stem bark of *Duguetia calycina*, and the bark of *Laurelia novae-zelandiae* (Magnoliaceae, Annonaceae, Monimiaceae). Mp 260-262° (250°) dec. (as hydrochloride). $[\alpha]_D^{12}$ -263 (c, 0.11 in MeOH) (-164) (hydrochloride).

Me ether: 11-Methoxy-1,2-methylenedioxyaporphine. **O-*Methylpukateine***
[16625-66-4]
$C_{19}H_{19}NO_3$ 309.364
Alkaloid from *Laurelia novae-zelandiae* and the stem bark of *Duguetia calycina* (Monimiaceae, Annonaceae). Mp 136-138°. $[\alpha]_D^{25}$ -293.4 (c, 0.199 in $CHCl_3$). $[\alpha]_D^{25}$ -271 (c, 0.105 in EtOH).

Me ether, N-*de-Me: 11-Methoxy-1,2-methylenedioxynoraporphine.* ***Puterine***
[65012-38-6]
$C_{18}H_{17}NO_3$ 295.337
Alkaloid from stem bark of *Guatteria elata* and *Duguetia calycina* (Annonaceae). Shows antimicrobial activity.

*Me ether, β-*N-*oxide:*
Cryst. ($MeOH/Et_2O$). Mp 146-149° Mp 169-175° (double Mp).

Me ether, N-*de-Me,* N-*formyl:* **N-*Formylputerine***
[89368-30-9]
$C_{19}H_{17}NO_4$ 323.348
Alkaloid from *Duguetia calycina* (Annonaceae). Noncryst. $[\alpha]_D$ -467 (c, 0.42 in $CHCl_3$).

Me ether, N-*de-Me, Ac:*
Amorph. powder (Me_2CO). Mp 178-182°. $[\alpha]_D^{25}$ -352 (c, 0.25 in MeOH).

*7*S-*Hydroxy:* ***Duguexine***
[112494-62-9]
$C_{18}H_{17}NO_4$ 311.337
Alkaloid from *Duguetia spixiana* (Annonaceae). Obt. only in admixture with Spixianine, S-469.

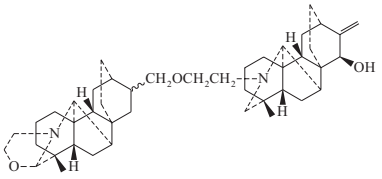
*7*S-*Hydroxy,* N-*oxide:* ***Duguexine* N-*oxide***
[112494-65-2]
$C_{18}H_{17}NO_5$ 327.336
Alkaloid from *Duguetia spixiana* (Annonaceae).

(±)-*form*
Synthetic. Cryst. (EtOH). Mp 232-233° (213-215°).

Barger, G. *et al., Helv. Chim. Acta*, 1931, **14**, 481 (*Pukateine, isol, struct*)
Girardet, A. *et al., Helv. Chim. Acta*, 1931, **14**, 504 (*Laurepukine, isol*)
Bernhauer, K. *et al., Helv. Chim. Acta*, 1967, **50**, 1583 (O-*Methylpukateine*)
Zymalkowsky, F. *et al., Chem. Ber.*, 1969, **102**, 2959 (*synth, pmr*)
Weiss, E. *et al., Helv. Chim. Acta*, 1971, **54**, 1342 (*Laurepukine, synth, ms, cd, ord, struct*)
Oberhänsli, W.E. *et al., Helv. Chim. Acta*, 1971, **54**, 1389 (*Laurepukine, cryst struct*)
Kametani, T. *et al., J.C.S. Perkin 1*, 1972, 1435 (*synth, pmr*)
Ito, K. *et al., Yakugaku Zasshi*, 1974, **94**, 729 (*Obovanine, isol, uv, ir, pmr, ms, struct*)
Hsu, C.C. *et al., J. Nat. Prod.*, 1977, **40**, 505 (*Puterine*)
Roblot, F. *et al., Plant. Med. Phytother.*, 1978, **12**, 259; *CA*, **91**, 2517b (*Obovanine,* O-*Methylpukateine*)
Roblot, F. *et al., C. R. Hebd. Seances Acad. Sci., Ser. 2*, 1981, **293**, 373 (O-*Methylpukateine, cmr*)
Urzúa, A. *et al., Phytochemistry*, 1982, **21**, 773 (*pmr, ms*)
Roblot, F. *et al., J. Nat. Prod.*, 1983, **46**, 862 (*N-Formylputerine*)
Villar, A. *et al., Farm. Tijdschr. Belg.*, 1984, **61**, 300 (*Puterine, activity*)
Debourges, D. *et al., J. Nat. Prod.*, 1987, **50**, 664 (*Duguexine, Duguexine N-oxide*)

Pukeensine P-782

[144442-84-2]



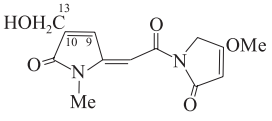
$C_{44}H_{64}N_2O_3$ 669.001

Alkaloid from the whole plant of *Aconitum pukeense* (Ranunculaceae).

Ding, L.S. *et al., Yaoxue Xuebao*, 1992, **27**, 394; *CA*, **117**, 230089z (*isol, struct*)

Pukeleimide P-783

*1-[[1,5-Dihydro-4-(hydroxymethyl)-1-methyl-5-oxo-2*H*-pyrrol-2-ylidene]acetyl]-1,5-dihydro-4-methoxy-2*H*-pyrrol-2-one, 9CI*



(*E*)*–form*

$C_{13}H_{14}N_2O_5$ 278.264

(*E*)-*form*

Pukeleimide A

[72362-15-3]

Metab. from the marine cyanophyte *Lyngbya majuscula*. Solid. λ_{max} 224 (ϵ 11200); 287 (ϵ 25200) (MeOH) (Derep).

Me ether: ***Pukeleimide G***

[72362-23-3]

$C_{14}H_{16}N_2O_5$ 292.291

Metab. from *Lyngbya majuscula*. Solid.

9,10-Dihydro, 10-hydroxy: ***Pukeleimide D***

[72362-20-0]

$C_{13}H_{16}N_2O_6$ 296.279

Metab. from *Lyngbya majuscula*. Solid.

9,10-Dihydro, 10-methoxy: ***Pukeleimide C***

[72362-19-7]

$C_{14}H_{18}N_2O_6$ 310.306

Metab. from *Lyngbya majuscula*. Cryst. ($CHCl_3$/hexane or Me_2CO/hexane). Mp 186° (part. subl.). Racemic. λ_{max} 224 (ϵ 11200); 287 (ϵ 25200) (MeOH) (Derep).

$\Delta^{10,13}$-Isomer, 13-deoxy: ***Pukeleimide E***

[72362-21-1]

$C_{13}H_{14}N_2O_4$ 262.265

Metab. from *Lyngbya majuscula*. Solid.

(*Z*)-*form*

Pukeleimide B

[72362-17-5]

Metab. from *Lyngbya majuscula*. Solid.

Me ether: ***Pukeleimide F***

[72362-22-2]

$C_{14}H_{16}N_2O_5$ 292.291

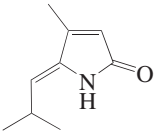
Metab. from *Lyngbya majuscula*. Solid.

Cardellina, J.H. *et al., Tet. Lett.*, 1979, 2003; 2007 (*isol, uv, ir, pmr, cmr, ms, cryst struct*)

James, G.D. *et al., Tet. Lett.*, 1985, **26**, 3617 (*synth, Pukeleimide A*)

Pulchellalactam P-784

*1,5-Dihydro-4-methyl-5-(2-methylpropylidene)-2*H*-pyrrol-2-one*



$C_9H_{13}NO$ 151.208

Isol. from the marine-derived fungus *Corollospora pulchella*. Inhibitor of CD45 protein tyrosine phosphatase. Oil. λ_{max} 276 (no solvent reported). λ_{max} 275 (MeOH) (Berdy).

Alvi, K.A. *et al., J. Antibiot.*, 1998, **51**, 515-517 (*isol, pmr, cmr*)

Li, W.-R. *et al., J.O.C.*, 2002, **67**, 4702-4706 (*synth*)

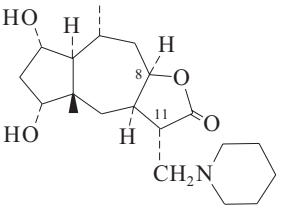
Bessho, J. *et al., Heterocycles*, 2004, **63**, 1013-1016 (*synth*)

Chavan, S.P. *et al., Synth. Commun.*, 2007, **37**, 1503-1510 (*synth, ir, pmr, cmr*)

Felluga, F. *et al., Synthesis*, 2007, 1882-1886 (*synth*)

Pulchellidine† P-785

[23367-86-4]



$C_{20}H_{33}NO_4$ 351.485

Sesquiterpene alkaloid from *Gaillardia pulchella* (Asteraceae). Cryst. (Me_2CO/Et_2O). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 185-186°. $[\alpha]_D^{17.5}$ -22.5 (c, 1.33 in EtOH).

Hydrobromide: Mp 208-210°.

Di-Ac: Mp 135-136°. $[\alpha]_D^{27}$ -24 (c, 1 in $CHCl_3$).

8,11-Diepimer: ***Neopulchellidine***

[28513-27-1]

$C_{20}H_{33}NO_4$ 351.485

Alkaloid from *Gaillardia pulchella* (Asteraceae). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 131-134°. $[\alpha]_D^{21}$ -13 (c, 1 in $CHCl_3$). The 11-config. is not clearly shown.

Yanagita, M. *et al., Tet. Lett.*, 1969, 2073; 1970, 131 (*ir, pmr, isol, stereochem*)

Sekita, T. *et al., Tet. Lett.*, 1970, 135 (*cryst struct*)

Yanagita, M. *et al., Tet. Lett.*, 1970, 3007 (*Neopulchellidine*)

Inayama, S. *et al., Heterocycles*, 1985, **23**, 377 (*synth*)

Pulchelline† P-786

[1360-68-5]

$C_{18}H_{23}NO_3$ 301.385

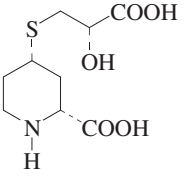
Struct. unknown. Alkaloid from leaves of *Neolitsea pulchella* (Lauraceae). Cryst. (Me_2O). Mp 189°. $[\alpha]_D$ +80.1 (c, 0.81 in $CHCl_3$).

Hui, W.H. *et al., J.C.S.*, 1965, 2285-2286

Pulcherrimine P-787

4-[(2-Carboxy-2-hydroxyethyl)thio]-2-piperidinecarboxylic acid

[309946-45-0]



Absolute Configuration

$C_9H_{15}NO_5S$ 249.287

Abs. config. revised in 2002. Isol. from the ovaries of the sea urchin, *Hemicentrotus pulcherrimus.* Amorph. powder. $[\alpha]_D^{24}$ -16.5 (c, 0.2 in H_2O). All 8 stereoisomers have been synthesised.

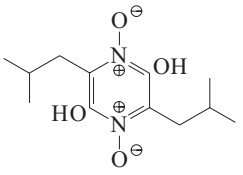
Murata, Y. *et al., J. Agric. Food Chem.*, 2000, **48**, 5557-5560 (*isol, pmr, cmr, ms*)

Sata, N.U. *et al., Tet. Lett.*, 2002, **43**, 115-118 (*synth, abs config*)

Pulcherriminic acid, 8CI P-788

3,6-Bis(2-methylpropyl)-2,5-pyrazinediol 1,4-dioxide, 9CI. 2,5-Dihydroxy-3,6-diisobutylpyrazine N,N*-dioxide*

[957-86-8]



$C_{12}H_{20}N_2O_4$ 256.301

Microbial metab. of *Bacillus, Micrococcus, Candida*, etc. spp. Found in soil, manure etc., usually as Pulcherrimin. Active against gram-positive bacteria. Pale-yellow cryst. or solid. Poorly sol. H_2O. Mp *ca.* 156-157° dec. (Mp varies with recryst. solv.). λ_{max} 243 ; 282 ; 410 (NaOH) (Berdy).

Fe complex: Pulcherrimin†

$C_{36}H_{60}FeN_6O_{12}$ 824.75

Formed by soil bacteria. Active against mycobacteria and fungi. Red solid. Dec. >200°.

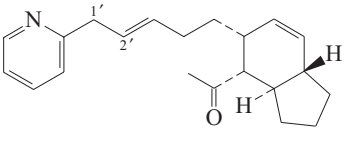
MacDonald, J.C. *et al., Can. J. Chem.*, 1963, **41**, 165 (*isol, struct, bibl, ir, pmr*)

Ohta, A. *et al., Chem. Pharm. Bull.*, 1964, **12**, 125 (*synth, struct*)

Uffen, R.L. *et al., J. Bacteriol.*, 1972, **111**, 86 (*biosynth*)

Puloupone P-789

[97190-30-2]



$C_{21}H_{27}NO$ 309.45

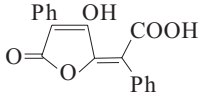
Probable abs. config. shown based on the tentative assignment to Isopuloupone. A minor metab. of the cephalaspidean mollusc *Philinopsis speciosa*. Oil. Sol. MeOH, hexane; poorly sol. H_2O. $[\alpha]_D$ -10 (c, 0.20 in hexane). λ_{max} 206 (ϵ 10700); 257 (ϵ 3870); 263 (ϵ 4200); 269 (ϵ 3130) (EtOH) (Derep).

$\Delta^{1',2'}$-Isomer: ***Isopuloupone***
[149155-21-5]
$C_{21}H_{27}NO$ 309.45
Isol. from the mollusc *Navanax inermis* and its prey *Bulla gouldiana*. Ichthyotoxin. $[\alpha]_D^{20}$ -119 (c, 0.4 in hexane). λ_{max} 242 (ϵ 11400); 281 (ϵ 5400) (MeOH) (Berdy).

Coval, S.J. *et al., J.O.C.*, 1985, **50**, 3024-3025 (*isol, uv, ir, pmr, ms, struct*)
Sugahara, T. *et al., Tet. Lett.*, 1989, **30**, 1821 (*synth, abs config*)
Spinella, A. *et al., Tetrahedron*, 1993, **49**, 3203 (*Isopulo'upone*)

Pulvinic acid P-790

α-(3-Hydroxy-5-oxo-4-phenyl-2(5H)-furanylidene)benzeneacetic acid, 9CI. Pulvic acid
[26548-70-9]



$C_{18}H_{12}O_5$ 308.29

Numbering systems vary. Pigment from various lichen spp. Orange powder (Et_2O or $CHCl_3$), orange prisms (C_6H_6). V. sol. EtOH; sol. H_2O; spar. sol. Et_2O, $CHCl_3$. Mp 216-217°. Forms solvates with MeOH, EtOH.

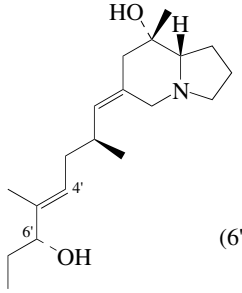
▶ HF3325000

Amide: ***Pulvinamide***
[31673-63-9]
$C_{18}H_{13}NO_4$ 307.305
Isol. from *Pseudocyphellaria crocata*. Cryst. ($CHCl_3$). Mp 220-221° dec.

Maass, W.S.G. *et al., Phytochemistry*, 1970, **9**, 2477 (*Pulvinamide*)

Pumiliotoxin A P-791

Octahydro-6-(6-hydroxy-2,5-dimethyl-4-octenylidene)-8-methyl-8-indolizinol, 9CI. 8-Hydroxy-6-(6-hydroxy-2,5-dimethyl-4-octenylidene)-8-methylindolizidine. Dendrobates *Alkaloid 307A. PTX-A*
[67054-00-6]



(6'*R*)-*form*

$C_{19}H_{33}NO_2$ 307.475

Consists of two isomers which appear to be C-6′ epimers. A major alkaloid from skin extracts of the Panamanian poison-frog *Dendrobates pumilio*; minor or trace constit. in *Dendrobates auratus, Dendrobates granuliferus, Dendrobates lehmanni, Dendrobates minutus, Dendrobates occultator, Dendrobates viridis* and *Dendrobates* sp. (Colombia, Dendrobatidae). Potentiator of striated muscle contraction, affects Ca transport across plasma membranes. $[\alpha]_D^{25}$ +22.7 (c, 1.0 in MeOH). $[\alpha]_D^{25}$ +14.2 (c, 0.51 in $CHCl_3$) (2:1 mixt. of epimers).

▶ Highly toxic, LD_{50} =1 mg/kg (mice). NM2411000

(6′R)-form
Pumiliotoxin 307A′
$[\alpha]_D^{25}$ +14.3 (c, 0.74 in $CHCl_3$). Major natural isomer.

6′-Me ether: ***Pumiliotoxin 321***
$C_{20}H_{35}NO_2$ 321.502
Alkaloid from skin extracts of *Dendrobates pumilio* (Dendrobatidae). $[\alpha]_D$ +21.3 (c, 1.0 in MeOH). A mixt. of (15*R*)- and (15*S*)-isomers. Prob. artifact.

4′,5′-Dihydro, 6′-ketone: ***Pumiliotoxin 307F***
$C_{19}H_{33}NO_2$ 307.475
Alkaloid from skin extracts of *Dendrobates pumilio* (Dendrobatidae). $[\alpha]_D$ -8.5 (c, 1.0 in MeOH). Possibly an artifact.

7β-Hydroxy: ***Allopumiliotoxin 323B′***
[109279-26-7]
$C_{19}H_{33}NO_3$ 323.475
Minor or trace alkaloid in *Dendrobates abditus*, *Dendrobates leucomelas*, *Dendrobates pumilio*Melanophyrniscus *moreirae*, the Madagascan frogs *Mantella aurantiaca* and *Mantella madagascariensis* (Ranidae, subfamily Mantellinae) and the Australian frog *Pseudophryne semimarmorata* (Myobatrachidae). $[\alpha]_D^{25}$ +22.3 (c, 1.0 in MeOH). Config. at C-15 unknown, but presumed to be (*R*-). An epimeric mixt. of Allopumiliotoxin 323B′ and Allopumiliotoxin 323B″ was formerly called Allopumiliotoxin B.

7′S-Hydroxy: ***Pumiliotoxin B***. Dendrobates *Alkaloid 323A. PTX-B*
[67016-65-3]
$C_{19}H_{33}NO_3$ 323.475
A major alkaloid in skin extracts of the neotropical poison-frogs *Dendrobates auratus*, *Dendrobates granuliferus*, *Dendrobates lehmanni*, *Dendrobates leucomelas*, *Dendrobates occultator*, *Dendrobates pumilio*, *Dendrobates viridis*; minor or trace constit. in *Dendrobates abditus*, *Dendrobates fulguritus*, *Dendrobates histrionicus*, and *Dendrobates minutus*, also from the Madagascan frog *Mantella aurantiaca* (Ranidae, subfamily Mantellinae). $[\alpha]_D^{25}$ +19.8 (c, 2.28 in MeOH).

▶ RH2241000

7α, 7′S-Dihydroxy: ***Allopumiliotoxin 339A***
$C_{19}H_{33}NO_4$ 339.474
Minor alkaloid from *Dendrobates auratus* (Dendrobatidae), also from skin extracts of *Mantella aurantiaca* (Ranidae, subfamily Mantellinae). $[\alpha]_D^{25}$ +29.4 (c, 1.0 in MeOH).

7β, 7′S-Dihydroxy: ***Allopumiliotoxin 339B***
$C_{19}H_{33}NO_4$ 339.474
Minor alkaloid from *Dendrobates auratus* (Dendrobatidae). $[\alpha]_D^{25}$ +4.5 (c, 0.5 in MeOH).

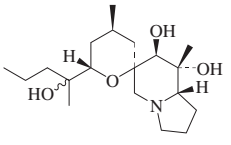
(6′S)-form
Pumiliotoxin 307A″
Alkaloid from *Dendrobates* spp. (Dendrobatidae): see under Pumiliotoxin 307A′ above.

7β-Hydroxy: ***Allopumiliotoxin 323B″***
$C_{19}H_{33}NO_3$ 323.475
Source as cited for Allopumiliotoxin 323B′. $[\alpha]_D$ +55 (c, 0.1 in MeOH).

Daly, J.W. *et al., Science (Washington, D.C.)*, 1967, **156**, 970
Daly, J.W. *et al., J.A.C.S.*, 1980, **102**, 830 (*pmr, cmr, struct*)
Tokuyama, T. *et al., Tet. Lett.*, 1982, **23**, 2121 (*config*)
Overman, L.E. *et al., Tet. Lett.*, 1982, **23**, 2355 (*config*)
Uemura, M. *et al., Tet. Lett.*, 1982, **23**, 4369 (*abs config, Pumiliotoxin B*)
Overman, L.E. *et al., J.A.C.S.*, 1984, **106**, 4192 (*synth, ir, pmr, cmr, ms*)
Tokuyama, T. *et al., Tetrahedron*, 1984, **40**, 1183 (*Allopumiliotoxin 323B*)
Daly, J.W. *et al., Toxicon*, 1984, **22**, 905 (*Allopumiliotoxin 323B*)
Overman, L.E. *et al., J.O.C.*, 1985, **50**, 3669 (*synth, pmr*)
Daly, J.W. *et al., Alkaloids: Chem. Biol. Perspect.*, 1986, **4**, 142 (*rev, pharmacol*)
Tokuyama, T. *et al., Tetrahedron*, 1987, **43**, 643 (*Pumiliotoxins 307F and 321*)
Overman, L.E. *et al., Tet. Lett.*, 1988, **29**, 901 (*synth*)
Trost, B.M. *et al., J.A.C.S.*, 1989, **111**, 4988 (*synth, Allopumiliotoxin 339B*)
Overman, L.E. *et al., J.A.C.S.*, 1992, **114**, 368 (*synth, Allopumiliotoxin 339A*)
Goldstein, S.W. *et al., J.O.C.*, 1992, **57**, 1179 (*synth, Allopumiliotoxin 339B*)
Franklin, A.S. *et al., Chem. Rev.*, 1996, **96**, 505-522 (*rev, synth*)
Hirashima, S. *et al., J.A.C.S.*, 1999, **121**, 9873-9874 (*synth*)
Tang, X.-Q. *et al., J.A.C.S.*, 2000, **122**, 6950-6954 (*synth, Allopumiliotoxin 339A, Allopumiliotoxin 339B*)
Kibayashi, C. *et al., J. Organomet. Chem.*, 2002, **653**, 229-233 (*synth*)
Aoyagi, S. *et al., J.O.C.*, 2002, **67**, 5517-5526 (*synth*)
Daly, J.W. *et al., J. Nat. Prod.*, 2005, **68**, 1556-1575 (*rev*)

Pumiliotoxin 341A P-792

Allopumiliotoxin 341A. Dendrobates *Alkaloid 341A*
[227606-38-4]



Probable Absolute Configuration

$C_{19}H_{35}NO_4$ 341.49
Alkaloid from skin extracts of the Ecuadorian poison frog *Epipedobates tricolor*, also from *Dendrobates auratus*, *Dendrobates granuliferus* and *Dendrobates viridis*. Oil.

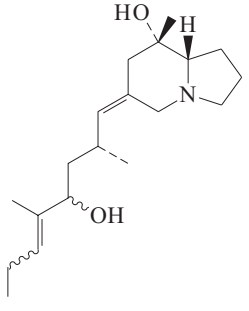
Hydroxy (?): **Dendrobates *Alkaloid 357***
[164324-99-6]
$C_{19}H_{35}NO_5$ 357.489
Minor alkaloid from skin extracts of *Dendrobates auratus* (Dendrobatidae). m/e 357 (3), 340 (8), 324 (8), 272 (4), 182 (20), 138 (10), 110 (20), 84 (20), 70 (100).

Stereoisomer (?): **Dendrobates *Alkaloid 341B***
$C_{19}H_{35}NO_4$ 341.49
Trace alkaloid from skin extracts of *Dendrobates lehmanni* (Dendrobatidae). m/e 341 (1), 324 (4), 182 (60), 114 (20), 112 (20), 70 (100). CAS No. not found to 2008.

Daly, J.W. *et al., Toxicon*, 1978, **16**, 163-188 (*isol*)
Daly, J.W. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 205-340 (*ms, rev*)
Jain, P. *et al., Heterocycles*, 1999, **50**, 903-912 (*isol, ir, pmr, ms, struct*)
Michael, J.P. *et al., Nat. Prod. Rep.*, 2000, **17**, 579-602 (*rev*)

Pumiliotoxin 307B P-793

Octahydro-6-(4-hydroxy-2,5-dimethyl-5-octenylidene)-8-methyl-8-indolizinol, 9CI
[151805-33-3]

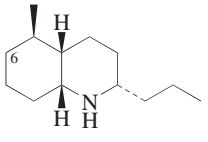


$C_{19}H_{33}NO_2$ 307.475
Consists of two diastereomers, poss. allylic rearr. prods. of Pumiliotoxin A, P-791. Trace alkaloid from skin extracts of the Madagascan frogs *Mantella aurantiaca* and *Mantella crocea*. Minor constit. of *Mantella viridis*.

Garraffo, H.M. *et al., J. Nat. Prod.*, 1993, **56**, 1016 (*isol, ir, ms, struct*)

Pumiliotoxin C P-794

Decahydro-5-methyl-2-propylquinoline, 9CI. Dendrobates *Alkaloid 195A*. *PTX-C*
[27766-71-8]
[55785-29-0 ((±)-form)]



Absolute Configuration

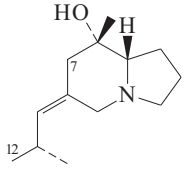
$C_{13}H_{25}N$ 195.347
A major alkaloid in skin extracts of the poison-frogs *Dendrobates pumilio* and *Dendrobates auratus*; trace constit. in *Dendrobates lehmanni* and *Dendrobates minutus* (Dendrobatidae). Liq. Mp 230-240° (as hydrochloride) (natural) Mp 277-278° (hydrochloride) (synthetic). Opt. rotn. not reported. The hydrochloride of the unnatural enantiomer had $[\alpha]_D$ +16.4 (MeOH). Rel. nontoxic, causes convulsions in v. large doses. Many syntheses reported. For a review of synthetic work to 1996, see Kibayashi *et al*, 1997.

6β-Hydroxy: **Dendrobates *Alkaloid 211A***
[109175-45-3]
$C_{13}H_{25}NO$ 211.347
Trace alkaloid from *Dendrobates pumilio* (Dendrobatidae). $[\alpha]_D$ -11.7 (c, 1.0 in $CHCl_3$).

Daly, J.W. *et al., Annalen*, 1969, **729**, 198-204 (*isol, cryst struct, ms, pmr*)
Oppolzer, W. *et al., Helv. Chim. Acta*, 1975, **58**, 593; 1977, **60**, 48; 204-207 (*synth, ir, pmr, ms, abs config*)
Habermehl, G. *et al., Annalen*, 1976, 1577-1583; 1977, 800-805 (*synth, ir, pmr, ms, abs config*)
Overman, L.E. *et al., J.A.C.S.*, 1978, **100**, 5179-5185 (*synth, ir, pmr, cmr, ms*)
Tokuyama, T. *et al., Tetrahedron*, 1987, **43**, 643-652 (*6-hydroxy*)
Kibayashi, C. *et al., Stud. Nat. Prod. Chem.*, 1997, **19**, 3-88 (***rev, synth***)
Riechers, T. *et al., Eur. J. Org. Chem.*, 1998, 2641-2646 (*synth*)
Back, T.G. *et al., J.O.C.*, 1998, **63**, 6566-6571 (*synth, bibl*)
Weymann, M. *et al., Tet. Lett.*, 1998, **39**, 7835-7838 (*synth*)
Spande, T.F. *et al., J. Nat. Prod.*, 1999, **62**, 5-21 (*pmr, cmr, occur*)
Shieh, Y.-S. *et al., J. Chin. Chem. Soc. (Taipei)*, 2000, **47**, 283-284 (*synth*)
Oppolzer, W. *et al., Helv. Chim. Acta*, 2001, **84**, 141-145 (*synth*)
Akashi, M. *et al., J.O.C.*, 2001, **66**, 7873-7874 (*synth*)
Toyooka, N. *et al., J.O.C.*, 2002, **67**, 6078-6081 (*synth*)
Dijk, E.W. *et al., Tetrahedron*, 2004, **60**, 9687-9693 (*synth*)
Girard, N. *et al., Eur. J. Org. Chem.*, 2005, 2269-2280 (*synth*)
Holub, N. *et al., Org. Lett.*, 2005, **7**, 1227-1229 (*trans-form, synth*)

Pumiliotoxin 209F P-795

Octahydro-8-methyl-6-(2-methylpropylidene)-8-indolizinol, 9CI
[103190-29-0]



$C_{13}H_{23}NO$ 209.331
Alkaloid from skin extracts of the Panamanian poison frog *Dendrobates pumilio*. $[\alpha]_D$ -11.6 (c, 0.10 in $CHCl_3$).

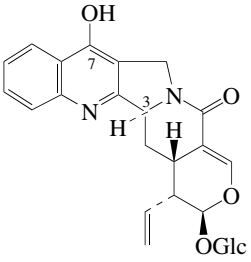
7β-Hydroxy: Octahydro-8-methyl-6-(2-methylpropylidene)-7,8-indolizinediol, 9CI. ***Allopumiliotoxin 225E***
[141643-32-5]
$C_{13}H_{23}NO_2$ 225.33
From skin extracts of *Dendrobates pumilio*.

12-Hydroxy: Octahydro-6-(3-hydroxy-2-methylpropylidene)-8-methyl-8-indolizinol, 9CI. ***Pumiliotoxin 225F***
[141671-16-1]
$C_{13}H_{23}NO_2$ 225.33
From skin extracts of *Dendrobates pumilio*. $[\alpha]_D$ -87.4 (c, 0.23 in $CHCl_3$).

Tokuyama, T. *et al., Tetrahedron*, 1991, **47**, 5415 (*isol, ir, cmr, ms, struct*)
Hirashima, S. *et al., J.A.C.S.*, 1999, **121**, 9873-9874 (*Pumiliotoxin 225F, synth*)
Aoyagi, S. *et al., J.O.C.*, 2002, **67**, 5517-5526 (*Pumiliotoxin 225F, synth*)
Woodin, K.S. *et al., J.O.C.*, 2007, **72**, 7451-7454 (*synth*)

Pumiloside P-796

[126722-26-7]
[126624-21-3]



$C_{26}H_{28}N_2O_9$ 512.515
Tautomeric with 4-quinolone form. Alkaloid from the whole plant of *Ophiorrhiza pumila* and the bark of *Nauclea orientalis*. Intermed. in biosynth. of Camptothecin, C-70. Prisms(MeOH). Mp 307-308°. $[\alpha]_D^{22}$ -39.8 (c, 0.15 in MeOH). λ_{max} 211; 241 (sh); 244; 303 (sh); 314; 317 (MeOH) (Derep).

7-Deoxy: ***(3S)-Deoxypumiloside***
[126624-20-2]
$C_{26}H_{28}N_2O_8$ 496.516
Alkaloid from whole plant of *Ophiorrhiza pumila* (Rubiaceae). Plausible intermed. for biosynth. of Camptothecin, C-70. Amorph. powder. λ_{max} 206; 235; 293; 300; 306; 312; 320 (MeOH) (Derep).

7-Deoxy, 3-epimer: ***(3R)-Deoxypumiloside***
[185020-37-5]
$C_{26}H_{28}N_2O_8$ 496.516
Alkaloid from *Ophiorrhiza pumila*.

Aimi, N. *et al., Tet. Lett.*, 1989, **30**, 4991-4994 (*isol, uv, pmr, synth, struct*)
Kitajima, M. *et al., Tet. Lett.*, 1997, **38**, 4255 (*isol, struct, cd, deriv*)
Zhang, Z. *et al., J. Nat. Prod.*, 2001, **64**, 1001-1005 (*isol, pmr, cmr*)
Kitajima, M. *et al., Tetrahedron*, 2002, **58**, 9169-9178 (*Deoxypumilosides*)

Punarnavine P-797

$C_{17}H_{22}N_2O$ 270.374
Struct. unknown. Alkaloid from *Boer-*

haavia diffusa (Nyctaginaceae). Cryst. (C_6H_6). Mp 236-237° dec.

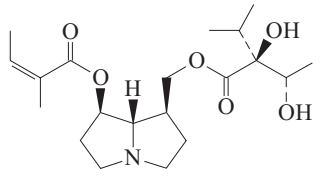
Sulfate: Mp 204-205°.

Picrate: Mp 114-115° dec.

Basu, N.K. *et al., Q. J. Pharm. Pharmacol.*, 1947, **20**, 38-42 (*isol, bibl*)

Punctanecine P-798

[145204-91-7]



$C_{20}H_{33}NO_6$ 383.484

Abs. stereochem. is tentative. Alkaloid from *Liatris punctata* (Asteraceae). Yellow oil. $[\alpha]_D^{23}$ -2.5 (c, 0.4 in $CHCl_3$).

[145307-23-9]

Mead, E.W. *et al., Phytochemistry*, 1992, **31**, 3255 (*isol, pmr, cmr, ms, struct*)

Punikathine P-799

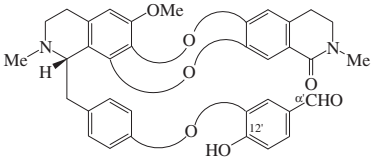
$C_{19}H_{23}NO_5$ 345.394

Struct. unknown. Amaryllidaceae alkaloid. Isol. from the *Haemanthus* hybrid "King Albert" (Amaryllidaceae). Cryst. (Me_2CO or EtOAc/Et_2O). Mp 177-178°. $[\alpha]_D^{22}$ -46 (c, 0.25 in $CHCl_3$).

Boit, H.-G. *et al., Chem. Ber.*, 1956, **89**, 1129-1134 (*isol*)

Punjabine P-800

[84435-36-9]



$C_{35}H_{32}N_2O_7$ 592.647

Minor alkaloid from the roots of *Berberis lycium* (Berberidaceae). Needles. $[\alpha]_D^{25}$ -40 (c, 0.48 in MeOH).

Me ether: **O-*Methylpunjabine***
[58194-22-2]
$C_{36}H_{34}N_2O_7$ 606.674
Trace alkaloid from *Stephania sasakii* (Menispermaceae). Also isol. from leaves of *Anisocycla jollyana*. Needles (Me_2CO/MeOH). Mp 144-146°. $[\alpha]_D$ -4.12 (c, 0.19 in $CHCl_3$).

α′-Carboxylic acid, Me ester: ***Gilgitine***
[84435-37-0]
$C_{36}H_{34}N_2O_8$ 622.673
Minor alkaloid from the roots of *Berberis lycium* (Berberidaceae). Specific rotn. could not be detd. CD curve resembles that of Punjabine.

α′-Alcohol, $O^{12'}$-Me: ***Secojollyanine***
[175097-23-1]
$C_{36}H_{36}N_2O_7$ 608.69
Alkaloid from leaves of *Anisocycla jollyana*. $[\alpha]_D^{20}$ -8.4 (c, 2.0 in $CHCl_3$). The name Secojollyanine is misleading (Jollyanine is an iboga alkaloid).

α′-Deoxo, Me ether: **O-*Methyldeoxopunjabine***
[89503-80-0]
$C_{36}H_{36}N_2O_6$ 592.69
Alkaloid from *Stephania sasakii* (Menispermaceae). Prisms + 1.5MeOH (MeOH or Me_2CO). Mp 183-185°.

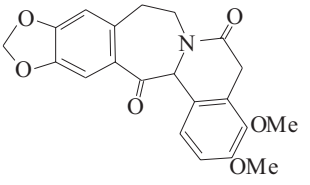
Leet, J.E. *et al., Heterocycles*, 1982, **19**, 2355 (*isol, uv, cd, ir, pmr, ms, struct*)

Kunimoto, J. *et al., Chem. Pharm. Bull.*, 1985, **33**, 135 (*O-Methylpunjabine, O-Methyldeoxopunjabine*)

Kanyinda, B. *et al., J. Nat. Prod.*, 1996, **59**, 498 (*Secojollyanine, O-Methylpunjabine*)

Puntarenine P-801

*5,8,9,15a-Tetrahydro-3,4-dimethoxy[1,3]-dioxolo[4,5-*h*]isoquino[1,2-*b*][3]benzazepine-6,15-dione, 9CI. 3,4-Dimethoxy-11,12-methylenedioxy-8,14-dioxohexahydroisohomoprotoberberine*



$C_{21}H_{19}NO_6$ 381.384

(±)-*form* [85769-44-4]
Alkaloid from the stems and aboveground wood of *Berberis empetrifolia* and from *Berberis actinacantha* (Berberidaceae). Cryst. (MeOH). Mp 214-216° Mp 250-255°. Prob. an artifact.

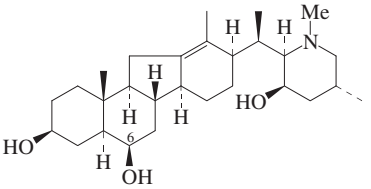
Sepulveda-Boza, S. *et al., Planta Med.*, 1983, **49**, 32 (*isol, ir, pmr, cmr, ms, cryst struct*)

Fajardo, V. *et al., Tet. Lett.*, 1983, **24**, 155 (*uv, ir, pmr, cmr, ms, struct*)

Shamma, M. *et al., J. Nat. Prod.*, 1986, **49**, 398

Puqienine A P-802

[848644-14-4]



$C_{28}H_{47}NO_3$ 445.684

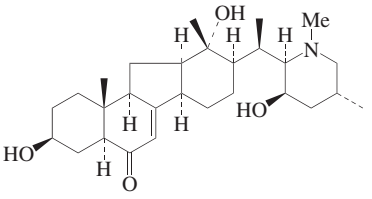
Alkaloid from the bulbs of *Fritillaria puqiensis*. Needles (Me_2CO). Mp 260-261°. $[\alpha]_D^{20}$ -31.1 (c, 0.2 in MeOH).

6-Ketone: ***Puqienine B***
[848644-15-5]
$C_{28}H_{45}NO_3$ 443.668
Alkaloid from the bulbs of *Fritillaria puqiensis*. Needles (Me_2CO). Mp 226-227°. $[\alpha]_D^{20}$ -31.2 (c, 0.1 in MeOH).

Jiang, Y. *et al., J. Nat. Prod.*, 2005, **68**, 264-267 (*isol, pmr, cmr, cryst struct*)

Puqienine C P-803

[924889-52-1]



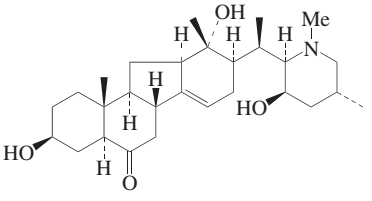
$C_{28}H_{45}NO_4$ 459.668

Alkaloid from the bulbs of *Fritillaria puqiensis*. Needles (MeOH). Mp 291-293°. $[\alpha]_D^{20}$ +10.9 (c, 0.1 in MeOH). λ_{max} 250 (MeOH).

Jiang, Y. *et al., Steroids*, 2006, **71**, 843-848 (*isol, pmr, cmr*)

Puqienine D P-804

[924889-53-2]



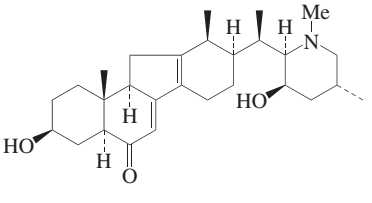
$C_{28}H_{45}NO_4$ 459.668

Alkaloid from the bulbs of *Fritillaria puqiensis*. Needles. Mp 275-277°. $[\alpha]_D^{20}$ -73.1 (c, 0.1 in MeOH).

Jiang, Y. *et al., Steroids*, 2006, **71**, 843-848 (*isol, pmr, cmr*)

Puqienine E P-805

[924889-54-3]



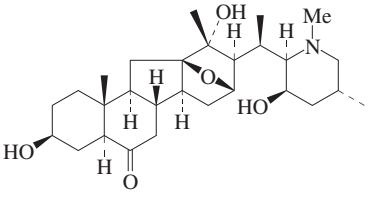
$C_{28}H_{43}NO_3$ 441.653

Alkaloid from the bulbs of *Fritillaria puqiensis*. Cubes (MeOH). Mp 235-237°. $[\alpha]_D^{20}$ -141.1 (c, 0.1 in MeOH). λ_{max} 305 (MeOH).

Jiang, Y. *et al., Steroids*, 2006, **71**, 843-848 (*isol, pmr, cmr*)

Puqienine F P-806

[906089-20-1]

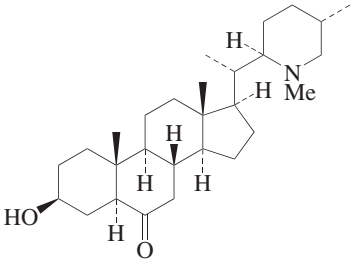


$C_{28}H_{45}NO_5$ 475.667
Alkaloid from the bulbs of *Fritillaria puqiensis*. Cryst. (MeOH). Mp 216-218°. $[\alpha]_D^{20}$ -65.5 (c, 0.1 in MeOH).

Li, H.-J. *et al., Chem. Pharm. Bull.*, 2006, **54**, 722-724 (*isol, pmr, cmr, cryst struct*)

Puqietinone P-807

3-Hydroxy-28-methyl-16,28-secosolanidan-6-one, 9CI
[133362-87-5]



$C_{28}H_{47}NO_2$ 429.685
Stereochem. revised in 1995. Struct. incorrect in abstract. Alkaloid from the bulbs of *Fritillaria puqiensis* (Liliaceae). Exhibits antitussive and antitumour activity. Mp 240-245°. $[\alpha]_D^{20}$ +29.4 (c, 0.64 in $CHCl_3$).

3-O-*β*-D-*Glucopyranoside:* ***Puqietinonoside***
[848644-16-6]
$C_{34}H_{57}NO_7$ 591.827
Alkaloid from the bulbs of *Fritillaria puqiensis*. Needles (Me_2CO). Mp 327-328°. $[\alpha]_D^{20}$ -22.7 (c, 0.1 in MeOH).

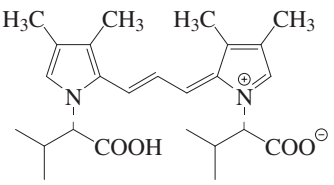
N-*De-Me:* **N-*Demethylpuqietinone***
[848616-39-7]
$C_{27}H_{45}NO_2$ 415.658
Alkaloid from the bulbs of *Fritillaria puqiensis*. Needles (Me_2CO). Mp 285-286°. $[\alpha]_D^{20}$ -10.4 (c, 0.1 in MeOH).

N-*De-Me, 3*-O-*[β-D-glucopyranosyl-(1→4)-β-D-galactopyranoside]:* ***Yibeinoside C***
[157536-48-6]
$C_{39}H_{65}NO_{12}$ 739.942
Alkaloid from *Fritillaria pallidiflora*. Cryst. Mp 209-211°.

3-Ketone: ***Puqietinedione***
[924889-56-5]
$C_{28}H_{45}NO_2$ 427.669
Alkaloid from the bulbs of *Fritillaria puqiensis* (Liliaceae). Needles (MeOH). Mp 281-283°. $[\alpha]_D^{20}$ +30.1 (c, 0.1 in MeOH).

Li, P. *et al., Zhongguo Yaoke Daxue Xuebao*, 1990, **21**, 198-200; *CA*, **114**, 182054y (*isol*)
Xu, Y. *et al., Yaoxue Xuebao*, 1994, **29**, 200-203 (*Yibeinoside C*)
Lin, G. *et al., J. Nat. Prod.*, 1995, **58**, 1662-1667 (*config, cryst struct*)
Jiang, Y. *et al., J. Nat. Prod.*, 2005, **68**, 264-267 (*N-de-Me, Puqietinonoside*)
Jiang, Y. *et al., Steroids*, 2006, **71**, 843-848 (*Puqietinedione*)

PUR 1 P-808

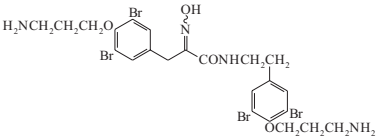


$C_{25}H_{34}N_2O_4$ 426.555
Constit. of mixed purees of onion and garlic (*Allium cepa* and *Allium sativum*). Purple powder. Mp 161-164°. λ_{max} 570 (ε 94000) (MeOH). λ_{max} 570 (ε 148000) (MeOH/HCl). λ_{max} 300 (ε 20000) (MeOH/NaOH).

Imai, S. *et al., J. Agric. Food Chem.*, 2006, **54**, 843-847 (*isol, uv, pmr, cmr*)

Purealidin C P-809

[138590-56-4]

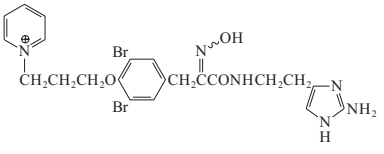


$C_{23}H_{28}Br_4N_4O_4$ 744.115
Alkaloid from the marine sponge *Psammaplysilla purea*. Antifungal agent. Cytotoxic. Amorph. λ_{max} 210 (ε 23000); 285 (ε 1600) (MeOH) (Berdy).

Kobayashi, J. *et al., Tetrahedron*, 1991, **47**, 6617 (*isol, uv, ir, pmr, cmr, ms, struct*)

Purealidin D P-810

[143052-17-9]

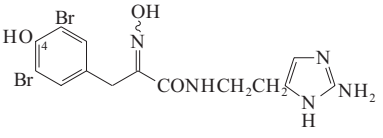


$C_{22}H_{25}Br_2N_6O_3^{\oplus}$ 581.286
Alkaloid from the sponge *Psammaplysilla purea*. $Na^{\oplus}$ and $K^{\oplus}$-ATPase inhibitor. Isol. as the bis(trifluoroacetate) salt. λ_{max} 217 (ε 15300); 260 (ε 2900); 269 (sh); 286 (ε 800) (MeOH) (Derep).

Tsuda, M. *et al., Tet. Lett.*, 1992, **33**, 2597 (*isol, pmr, cmr*)

Purealidin H P-811

[164301-30-8]



$C_{14}H_{15}Br_2N_5O_3$ 461.112
Alkaloid from the Okinawan sponge *Psammaplysilla purea*. Oil. λ_{max} 277 (ε 1700); 284 (ε 1400) (MeOH).

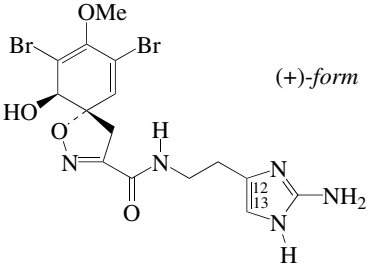
O^4-*(3-Aminopropyl):* ***Purealidin A***
[134850-51-4]
$C_{17}H_{22}Br_2N_6O_3$ 518.207
Alkaloid from *Psammaplysilla purea* and *Pseudoceratina verrucosa*. Cytotoxic, inhibitor of $Na^{\oplus}/K^{\oplus}$ ATPase. Ichthyotoxic agent. Amorph. solid.

O^4-*(3-Trimethylaminopropyl):* ***Purealidin E***
[145205-26-1]
[145205-28-3]
$C_{20}H_{29}Br_2N_6O_3^{\oplus}$ 561.296
Alkaloid from *Psammaplysilla purea*. $Na^{\oplus}/K^{\oplus}$ ATPase inhibitor. Amorph. solid (as bis(trifluoroacetate)). Sol. MeOH. λ_{max} 218 (ε 13600); 287 (ε 1000) (MeOH).

Ishibashi, M. *et al., Experientia*, 1991, **47**, 299 (*Purealidin A*)
Tsuda, M. *et al., J. Nat. Prod.*, 1992, **55**, 1325-1327 (*Purealidin E*)
Kobayashi, J. *et al., J. Nat. Prod.*, 1995, **58**, 467 (*Purealidin H*)

Purealidin J P-812

Pseudoceratinine A



(+)-*form*

$C_{15}H_{17}Br_2N_5O_4$ 491.138
Pseudoceratinine A was the (-)-form.

(+)-*form*
Alkaloid from the Okinawan marine sponge *Psammaplysilla purea*. Shows moderate inhibitory activity against epidermal growth factor receptor kinase. Oil (as trifluoroacetate). Sol. MeOH, EtOAc; poorly sol. H_2O. $[\alpha]_D^{21}$ +24 (c, 0.98 in MeOH) (trifluoroacetate). λ_{max} 277 (ε 1700); 284 (ε 1400) (MeOH) (Berdy).

*12,13-Dihydro, 13-oxo (12*RS-*):* ***Purealidin K***
[167394-76-5]
$C_{15}H_{17}Br_2N_5O_5$ 507.138
Alkaloid from *Psammaplysilla purea*. Shows mod. inhibition of epidermal growth factor receptor kinase. Oil (as trifluoroacetate). Sol. MeOH, EtOAc; poorly sol. H_2O. $[\alpha]_D^{24}$ +26 (c, 0.38 in MeOH) (trifluoroacetate). λ_{max} 231 (ε 6300); 284 (ε 2400) (MeOH) (Berdy).

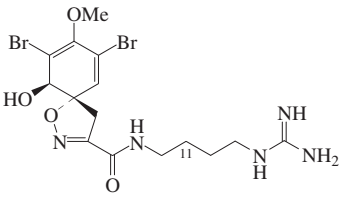
Deamino: see Aerophobin 1, A-154

(-)-*form* [172723-35-2]
Alkaloid from the sponge *Pseudoceratina verrucosa*. $[\alpha]_D$ -158 (c, 1 in MeOH) (as hydrochloride). Incorrect struct. assigned in CA. λ_{max} 220 (log ε 4.47); 284 (log ε 4.08) (MeOH).

Kobayashi, J. *et al., Chem. Pharm. Bull.*, 1995, **43**, 403 (*isol, uv, ir, pmr, cmr, cd, struct*)
Benharref, A. *et al., J. Nat. Prod.*, 1996, **59**, 177-180 (*Pseudoceratinine A*)

Purealidin L P-813

[167394-77-6]



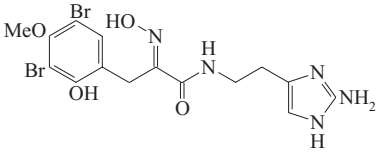
$C_{15}H_{21}Br_2N_5O_4$ 495.17
Alkaloid from the Okinawan marine sponge *Psammaplysilla purea* and from *Aiolochroia crassa*. Oil (as trifluoroacetate). $[\alpha]_D^{24}$ +27 (c, 0.18 in MeOH) (trifluoroacetate). Genus name sometimes misspelt Ailochroia.

11ξ-Hydroxy: ***Caissarine A***
[439132-04-4]
$C_{15}H_{21}Br_2N_5O_5$ 511.169
Isol. from the Brazilian sponge *Aplysina caissara*. Glassy solid. λ_{max} 232 (ϵ 9100); 283 (ϵ 4250) (MeOH).

Kobayashi, J. *et al., Chem. Pharm. Bull.*, 1995, **43**, 403-407 (*isol, uv, ir, pmr, cmr, cd, struct*)
Saeki, B.M. *et al., J. Nat. Prod.*, 2002, **65**, 796-799; 2003, **66**, 1039 (*Caissarine A*)

Purealidin M P-814

N-*[2-(2-Amino-1*H*-imidazol-4-yl)ethyl]-3,5-dibromo-2-hydroxy-α-(hydroxyimino)-4-methoxybenzenepropanamide, 9CI*
[167394-78-7]



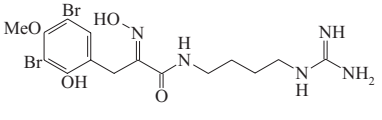
$C_{15}H_{17}Br_2N_5O_4$ 491.138
Alkaloid from the Okinawan marine sponge *Psammaplysilla purea*. Oil (as trifluoroacetate).

Deamino: ***Purealidin N***
[167394-79-8]
$C_{15}H_{16}Br_2N_4O_4$ 476.124
From *Psammaplysilla purea*. Exhibits cytotoxicity against murine lymphoma L1210 cells and human epidermoid carcinoma KB cells *in vitro*. Oil. Sol. MeOH, EtOAc; poorly sol. H_2O. λ_{max} 235 (ϵ 2600); 290 (ϵ 2800) (MeOH) (Berdy).

Kobayashi, J. *et al., Chem. Pharm. Bull.*, 1995, **43**, 403 (*isol, uv, ir, pmr, cmr, struct*)
Boehlow, T.R. *et al., J.O.C.*, 2001, **66**, 3111-3118 (*Purealidin N, synth*)

Purealidin O P-815

N-*[4-[(Aminoiminomethyl)amino]butyl]-3,5-dibromo-2-hydroxy-α-(hydroxyimino)-4-methoxybenzenepropanamide*
[167394-80-1]

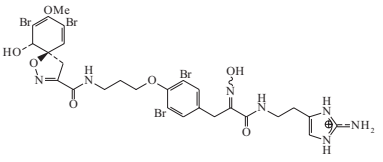


$C_{15}H_{21}Br_2N_5O_4$ 495.17
Alkaloid from the Okinawan marine sponge *Psammaplysilla purea*. Oil (as trifluoroacetate).

Kobayashi, J. *et al., Chem. Pharm. Bull.*, 1995, **43**, 403 (*isol, uv, ir, pmr, cmr, struct*)

Purealine P-816

[100101-28-8]



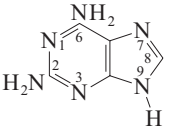
$C_{27}H_{30}Br_4N_7O_7^{\oplus}$ 884.193
Isol. from the Okinawan marine sponge *Psammaplysilla purea*. Na/K-ATPase inhibitor. Sol. MeOH, EtOAc; poorly sol. H_2O. λ_{max} 276 (sh); 284; 292 (sh) (MeOH) (Derep). λ_{max} 276 (ϵ 8); 284 ; 292 (MeOH) (Berdy).

Chloride:
$C_{27}H_{30}Br_4ClN_7O_7$ 919.645
Amorph. solid. Mp 142-145°. $[\alpha]_D$ -85 (c, 2.1 in MeOH).

Nakamura, H. *et al., Tet. Lett.*, 1985, **26**, 4517 (*isol, uv, ir, pmr, cmr, ms, cd, struct*)

2,6-Purinediamine, 9CI P-817

2,6-Diaminopurine, 8CI. 2-Aminoadenine
[1904-98-9]



$C_5H_6N_6$ 150.143
Prod. by *Bacillus subtilis*. Biochemistry much studied. Mp 302° Mp 270°. λ_{max} 220 (ϵ 24500); 246 (ϵ 7400); 280 (ϵ 9100) (H_2O).

▶ LD_{50} (mus, ipr) 202 mg/kg. UO7524000

N^1*-Oxide:*
$C_5H_6N_6O$ 166.142
Cryst.

N^2*-Me:* [7390-65-0]
$C_6H_8N_6$ 164.169
Mp 300°.

N^6*-Me:* [4421-04-9]
$C_6H_8N_6$ 164.169
Mp 300°.

N^2,N^2*-Di-Me:*
$C_7H_{10}N_6$ 178.196
Mp 300°.

N^2,N^6*-Di-Me:* [6333-66-0]
$C_7H_{10}N_6$ 178.196
Mp 300°.

N^6,N^6*-Di-Me:* [5437-49-0]
$C_7H_{10}N_6$ 178.196
Mp 300°.

N^2,N^2,N^6*-Tri-Me:* [5426-14-2]
$C_8H_{12}N_6$ 192.223
Mp 234° (block).

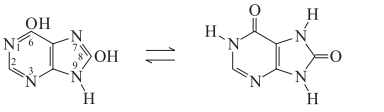
N^2,N^6,N^6*-Tri-Me:*
$C_8H_{12}N_6$ 192.223
Mp 300°.

[7280-83-3]

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 714B (*ir*)
Cavalieri, L.F. *et al., J.A.C.S.*, 1948, **70**, 3875 (*uv*)
Robins, R.K. *et al., J.A.C.S.*, 1953, **75**, 263 (*synth*)
Montgomery, J.A. *et al., J.A.C.S.*, 1958, **80**, 404 (*derivs*)
Stevens, M.A. *et al., J.A.C.S.*, 1958, **80**, 2755; 2759 (*synth, uv, cryst struct, oxide*)
Taylor, E.C. *et al., J.A.C.S.*, 1959, **81**, 2442 (*synth, uv*)
Coburn, W.C. *et al., J.O.C.*, 1965, **30**, 1110 (*pmr*)
Thorpe, M.C. *et al., J. Magn. Reson.*, 1974, **15**, 98 (*cmr*)
Marumoto, R. *et al., Chem. Pharm. Bull.*, 1975, **23**, 759-774 (*CV 1808*)
Ger. Pat., 1975, (*(Abbott Lab)*)2 460 553; *CA*, **831**, 47702 (*synth*)
Chollet, A. *et al., Chem. Scr.*, 1986, **26**, 37
Gereneer, R.Z. *et al., Br. J. Pharmacol.*, 1992, **107**, 1048-1056 (*CV 1808, pharmacol*)
Florian, J. *et al., J. Phys. Chem.*, 1992, **96**, 9278-9282 (*Raman, ir*)
Wang, Z. *et al., Org. Lett.*, 2003, **5**, 2067-2070 (*uv*)
Virta, P. *et al., Org. Biomol. Chem.*, 2005, **3**, 2924-2929 (*fluorescence*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, POJ500

6,8-Purinediol P-818

*6,8-Dihydroxypurine. 7,9-Dihydro-1*H*-purine-6,8-dione*



9H–form *7,9–Dihydro–1H–form*

$C_5H_4N_4O_2$ 152.112
Complex tautom. 7,9-Dihydro-1*H*-form appears to predominate for parent compd. Formed by electrochemical oxidn. of 6-Purinol, P-820. Component of hen egg yolk. Non-species specific mammalian cell growth promoting agent. Needles (H_2O). Mp 350°. pK_{a1} 7.65; pK_{a2} 9.87 (20°, H_2O).

1*H*-7,9-Dihydro-*form* [13231-00-0]

1-Me: [54638-26-5]
$C_6H_6N_4O_2$ 166.139
Rectangular plates (H_2O). Mp 300° dec. pK_{a1} 1.8; pK_{a2} 8.2; pK_{a3} 13 (7-anion). Violet fluor. Other tautomers possible.

7-Me: [54638-28-7]
Rectangular plates (H_2O). Mp 300° dec. pK_{a1} 2; pK_{a2} 7.8; pK_{a3} 10.5 (1-anion). Violet fluor. Other tautomers possible.

9-Me: [54638-29-8]
$C_6H_6N_4O_2$ 166.139
Solid. Mp 390° dec. (sealed tube). pK_{a1} 2; pK_{a2} 8.4; pK_{a3} 13. Violet fluor. Other tautomers possible.

1,7-Di-Me: [54638-36-7]
$C_7H_8N_4O_2$ 180.166
Rods (H_2O). Mp 300° dec. pK_{a1} 2; pK_{a2} 8.5 (9-anion). Violet fluor.

1,9-Di-Me: [54638-30-1]
Needles (H_2O). Mp 300° dec. pK_{a1} 1.5; pK_{a2} 8.5 (7-anion). Violet fluor.

7,9-Di-Me: [54638-31-2]
Needles (H_2O). Mp 300° dec. pK_{a1} 1.5; pK_{a2} 9.2 (1-anion). Violet fluor.

1,7,9-Tri-Me: [54638-34-5]
$C_8H_{10}N_4O_2$ 194.193
Solid. Mp 229-230° (sealed tube). pK_a 0 (cation). Violet fluor.

*1-(3-Oxobutyl): 7,9-Dihydro-1-(3-oxobutyl)-1*H*-purine-6,8-dione.* ***1-(3-Oxobutyl)-6,8-purinediol***
$C_9H_{10}N_4O_3$ 222.203
Alkaloid from *Subergorgia suberosa*.
Powder. λ_{max} 212 ; 264 (MeOH).

*9-(3-Oxobutyl): 7,9-Dihydro-9-(3-oxobutyl)-1*H*-purine-6,8-dione.* ***9-(3-Oxobutyl)-6,8-purinediol***
$C_9H_{10}N_4O_3$ 222.203
Alkaloid from *Subergorgia suberosa*.
Powder. λ_{max} 212 ; 264 (MeOH).

3*H*-*form* [51953-35-6]

3-Me: [54638-27-6]
$C_6H_6N_4O_2$ 166.139
Plates (H_2O). Mp 300° dec. pK_{a1} 1.3; pK_{a2} 9 (9-anion). Violet fluor.

3,7-Di-Me: [54638-37-8]
$C_7H_8N_4O_2$ 180.166
Prisms (H_2O). Mp 300° dec. pK_{a1} 1.5; pK_{a2} 6 (9-anion). Violet fluor.

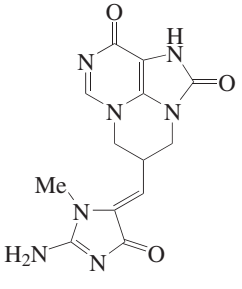
3,9-Di-Me: [54638-38-9]
Prisms (H_2O). Mp 300° dec. pK_{a1} 1.3; pK_{a2} 9 (9-anion). Violet fluor.

3,7,9-Tri-Me: [54638-41-4]
$C_8H_{10}N_4O_2$ 194.193
Prisms (DMF). Mp 300° dec. pK_a 1 (cation).

Fischer, E. *et al., Ber.*, 1899, **32**, 250; 1897, **30**, 1846 (*synth, derivs*)
Albert, A. *et al., J.C.S.*, 1954, 2060 (*synth*)
Mason, S.F. *et al., J.C.S.*, 1954, 2071 (*uv*)
Robins, R.K. *et al., J.A.C.S.*, 1958, **80**, 6671 (*synth, uv*)
Rahat, M. *et al., J.C.S. Perkin 1*, 1974, 2229 (*synth, pmr, uv*)
Ogawa, K. *et al., Chem. Pharm. Bull.*, 1992, **40**, 612 (*synth, uv, pmr*)
Qi, S. *et al., J. Nat. Prod.*, 2008, **71**, 716-718 (*3-oxobutylpurinediols*)

Subergorgia suberosa Purine-imidazole alkaloid P-819

[1016169-23-5]

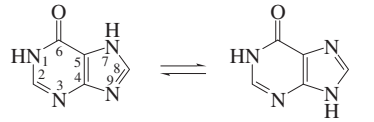


$C_{13}H_{13}N_7O_3$ 315.291
Alkaloid from *Subergorgia suberosa*.
Powder. λ_{max} 213 ; 264 ; 310 (MeOH).

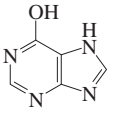
Qi, S.-H. *et al., J. Nat. Prod.*, 2008, **71**, 716-718 (*isol, pmr, cmr*)

6-Purinol P-820

*1,7-Dihydro-6*H*-purin-6-one, 9CI.* ***Hypoxanthine****. Sarcine. Sarkine. 6-Hydroxypurine. 6(1*H*)-Purinone*
[68-94-0]



1,7-Dihydro-*form* 1,9-Dihydro-*form*



OH-form

$C_5H_4N_4O$ 136.113
Many alternative tautomeric forms possible. Occurs widely in plant and animal tissue. Used as a 0.8% soln. in DMF for pptn. detn. of Ag, Bi, Pd. Needles. Mp 360°. pK_{a1} 1.91; pK_{a2} 8.96; pK_{a3} 12.18 (20°).

▶ Exp. teratogen (large does). LD_{50} (mus, ipr) 750 mg/kg. UP0791000

*1-Amino: 1-Aminohypoxanthine. 6-Amino-6,7-dihydroimidazo[4,5-*d*]pyrimidin-7-one*
$C_5H_5N_5O$ 151.127
Cryst. (DMF). Mp 314°.

1-(4-Nitrobenzylideneamino):
Pale yellow solid. Mp 311-312° dec.

1,7-Dihydro-*form*

1-Oxide:
$C_5H_4N_4O_2$ 152.112

▶ Exp. carcinogen.

*1-Me: 1,7-Dihydro-1-methyl-6*H*-purin-6-one, 9CI. 1-Methylhypoxanthine, 8CI*
[1125-39-9]
$C_6H_6N_4O$ 150.14
Cryst. (MeOH aq.). Mp 311-312°. pK_{a1} 8.8.

*7-Me: 1,7-Dihydro-7-methyl-6*H*-purin-6-one, 9CI. 7-Methylhypoxanthine*
[1006-08-2]
$C_6H_6N_4O$ 150.14
Needles (EtOH). Mp 355° dec Mp 356-357° dec. pK_{a1} 9.4.

*1,7-Di-Me: 1,7-Dihydro-1,7-dimethyl-6*H*-purin-6-one, 9CI. 1,7-Dimethylhypoxanthine*
[33155-83-8]
$C_7H_8N_4O$ 164.166
Cryst. Mp 245-246° (243°).

1,9-Dihydro-*form* [51953-23-2]

7-Oxide: [118974-81-5]
$C_5H_4N_4O_2$ 152.112
Needles. Mp 300°.

*9-β-D-Ribopyranosyl: 1,9-Dihydro-9-β-D-ribopyranosyl-6*H*-purin-6-one, 9CI. 9-β-D-Ribopyranosylhypoxanthine*
[52678-79-2]
$C_{10}H_{12}N_4O_5$ 268.229
Prod. by *Streptomyces antibioticus*.
Cryst. (MeOH aq.). Mp 245-246° dec. $[\alpha]_D^{23}$ -37 (c, 1 in 0.1M NaOH). λ_{max} 252 (ϵ 13150) (NaOH aq.).

*9-Me: 1,9-Dihydro-9-methyl-6*H*-purin-6-one. 9-Methylhypoxanthine*
[875-31-0]
$C_6H_6N_4O$ 150.14
Plates (H_2O). Mp 390° dec. pK_{a1} 10.3.

*1,9-Di-Me: 1,9-Dihydro-1,9-dimethyl-6*H*-purin-6-one, 9CI. 1,9-Dimethylhypoxanthine*
[20535-82-4]
$C_7H_8N_4O$ 164.166
Isol. from the sponge *Spongosorites* sp.
Cryst. (EtOH). Mp 255-256°. λ_{max} 209 (log ϵ 3.7); 260 (log ϵ 3.4) (H_2O).

3,7-Dihydro-*form* Minor tautomer.

*3-Me: 3,7-Dihydro-3-methyl-6*H*-purin-6-one, 9CI. 3-Methylhypoxanthine*
[1006-11-7]
$C_6H_6N_4O$ 150.14
Cryst. (H_2O). Mp 307-309° dec. pK_{a1} 8.4.

*3,7-Di-Me: 3,7-Dihydro-3,7-dimethyl-6*H*-purin-6-one, 9CI. 3,7-Dimethylhypoxanthine*
[19143-59-0]
$C_7H_8N_4O$ 164.166
Cryst. Mp 242-245°.

3,9-Dihydro-*form* Minor tautomer.

*3,9-Di-Me: 3,9-Dihydro-3,9-dimethyl-6*H*-purin-6-one, 9CI. 3,9-Dimethylhypoxanthine*
$C_7H_8N_4O$ 164.166
Cryst. (AcOH/C_6H_6). Mp 276-278°.

7,9-Dihydro-*form*
Imidazolium betaine form

*7,9-Di-Me: 6-Hydroxy-7,9-dimethyl-7*H*-purinium hydroxide inner salt, 9CI*
[5752-16-9]
$C_7H_8N_4O$ 164.166
Cryst. (MeOH). Mp 330-332°.

OH*,3*H*-*form

3-Me: [3324-66-1]
$C_6H_6N_4O$ 150.14
Needles (H_2O). Mp 162-163°. pK_a 5.7.

OH*,7*H*-*form

Me ether: 6-Methoxypurine
[1074-89-1]
$C_6H_6N_4O$ 150.14
Needles (H_2O). Mp 262-263°. pK_{a1} 2.17; pK_{a2} 9.18 (20°).

*Me ether, 7-Me: 6-Methoxy-7-methyl-7*H*-purine*
[38917-24-7]
$C_7H_8N_4O$ 164.166
Needles (C_6H_6/heptane). Mp 200°.

Benzyl ether: 6-Benzyloxypurine
[57500-07-9]
$C_{12}H_{10}N_4O$ 226.237
Cryst. Mp 171-172°.

OH*,9*H*-*form

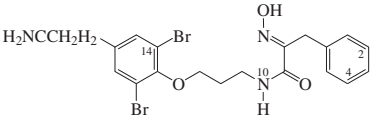
Me ether, 9-Me: 6-Methoxy-7-methyl-9H-purine
[38917-25-8]
$C_7H_8N_4O$ 164.166
Needles (C_6H_6/heptane). Mp 152-153°.

Ph ether: 6-Phenoxypurine
[66085-17-4]
$C_{11}H_8N_4O$ 212.21
Cryst. (2-propanol). Mp 217-218°.

Aldrich Library of NMR Spectra, 2nd edn., 1983, **2**, 584A (*nmr*)
Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 709A (*ir*)
Fischer, E. *et al., Ber.*, 1897, **30**, 2400-2415; 1898, **31**, 104-122; 431-446 (*7-Me, 9-Me, synth*)
Traube, W. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1906, **244**, 11 (*3-Me*)
Krebs, E.G. *et al., Arch. Biochem. Biophys.*, 1949, **24**, 49 (*1,9-di-Me*)
Robins, R.K. *et al., J.A.C.S.*, 1957, **79**, 490 (*synth, 9-Me*)
Prasad, R.N. *et al., J.A.C.S.*, 1957, **79**, 6401 (*synth, 7-Me*)
Jones, J.W. *et al., J.A.C.S.*, 1962, **84**, 1914-1919 (*7,9-dihydro 7,9-di-Me, 3,7-dihydro 3-Me, synth*)
Elion, G.B. *et al., J.O.C.*, 1962, **27**, 2478-2491 (*3,7-dihydro 3-Me, 1,7-dihydro 1-Me, 1,9-dihydro 9-Me, 1,9-dihydro 1,9-di-Me, synth*)
Bullock, F.J. *et al., J.O.C.*, 1964, **29**, 1988 (*pmr*)
Montgomery, J.A. *et al., J.O.C.*, 1965, **30**, 3235 (*1-Me*)
Neiman, Z. *et al., Isr. J. Chem.*, 1966, **3**, 161 (*3,9-di-Me*)
Bergmann, F. *et al., J.C.S.(C)*, 1966, 10 (*synth*)
Ovcharova, I.M. *et al., CA*, 1968, **69**, 52099 (*3,7-di-Me*)
Deutsch, J. *et al., Org. Mass Spectrom.*, 1970, **3**, 1219 (*7-Me*)
Lister, J.H. *et al., Chem. Heterocycl. Compd.*, (Weissberger, A. etal, Ed.), Part II, 1971, (*rev*)
Sekiya, M. *et al., Chem. Pharm. Bull.*, 1972, **20**, 209; 1975, **23**, 2401 (*synth, 1-Me, uv, pmr*)
Lichtenberg, D. *et al., Isr. J. Chem.*, 1972, **10**, 805 (*nmr, uv, tautom*)
Karrer, W. *et al., Konstitution und Vorkommen der Organischen Pflanzenstoffe*, 2nd edn., Birkhäuser Verlag, 1972, no. 2553 (*occur*)
Marzilli, L.G. *et al., J.A.C.S.*, 1975, **97**, 3351 (*7-Me*)
Chenon, M.T. *et al., J.A.C.S.*, 1975, **97**, 4627; 4636 (*cmr, tautom*)
Raurez, G. *et al., Quim. Anal. (Madrid)*, 1975, **29**, 216 (*use*)
Keck, J.H. *et al., J.O.C.*, 1978, **43**, 2587-2590 (*Ph ether*)
Brown, T. *et al., J.C.S. Perkin 1*, 1979, 3107 (*3-Me*)
Kern, D.L. *et al., J. Het. Chem.*, 1980, **17**, 461-463 (*9-ribopyranosyl*)
Scheiner, P. *et al., J. Het. Chem.*, 1985, **22**, 1435 (*synth, pmr, uv*)
Schmalle, H.W. *et al., Acta Cryst. C*, 1988, **44**, 732 (*cryst struct*)
Ogawa, K. *et al., Chem. Pharm. Bull.*, 1992, **40**, 612 (*9-Me, 7-oxide*)
Capon, R.J. *et al., J. Nat. Prod.*, 2000, **63**, 261-262 (*isol, 1,9-Dimethylhypoxanthine*)
Fridman, N. *et al., Acta Cryst. C*, 2004, **60**, o44-o46 (*Me ether, cryst struct*)
Lagoja, I.M. *et al., Chem. Biodiversity*, 2004, **1**, 106-111 (*synth*)
Wanner, M.J. *et al., J. Med. Chem.*, 2004, **47**, 6875-6883 (*benzyl ether*)
Laufer, S.A. *et al., J. Med. Chem.*, 2005, **48**, 710-722 (*Ph ether*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, DMC000

Purpuramine A P-821

N-*[3-[4-(2-Aminoethyl)-2,6-dibromophenoxy]propyl]-α-(hydroxyimino)benzenepropanamide, 9CI*
[149636-92-0]



$C_{20}H_{23}Br_2N_3O_3$ 513.228
Isol. from the sponge *Psammaplysilla purpurea*. λ_{max} 280 (ϵ 834) (MeOH).

2-Bromo, 4-methoxy, N^{10}*-Me:* ***Purpuramine L***
$C_{22}H_{26}Br_3N_3O_4$ 636.177
Isol. from *Psammaplysilla purpurea*. Amorph. solid. Mp 175-178°. λ_{max} 214 (log ϵ 5.12); 280 (log ϵ 4.02) (MeOH).

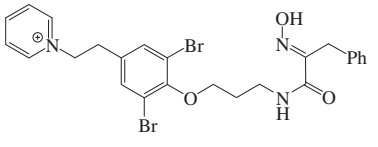
14-Debromo: ***Purpuramine B***
[149636-93-1]
$C_{20}H_{24}BrN_3O_3$ 434.332
Isol. from *Psammaplysilla purpurea*. λ_{max} 280 (ϵ 641) (MeOH).

14-Debromo, 2,4-dibromo, 3-methoxy: ***14-Debromoprearaplysillin I***
[136685-30-8]
$C_{21}H_{24}Br_3N_3O_4$ 622.15
Alkaloid from the sponge *Psammaplysilla purpurea*. Glass.

James, D.M. *et al., J. Nat. Prod.*, 1991, **54**, 1137 (*14-Debromoprearaplysillin I*)
Yagi, H. *et al., Tetrahedron*, 1993, **49**, 3749-3754 (*Purpuramines A,B*)
Goud, T.V. *et al., Chem. Pharm. Bull.*, 1993, **51**, 990-993 (*Purpuramine L*)

Purpuramine C P-822

[149636-94-2]

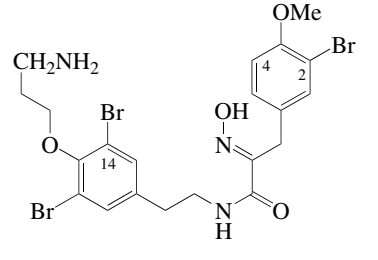


$C_{25}H_{26}Br_2N_3O_3^{\oplus}$ 576.307
Isol. from the sponge *Psammaplysilla purpurea*. λ_{max} 250 (ϵ 5600) (MeOH).

Yagi, H. *et al., Tetrahedron*, 1993, **49**, 3749-3754 (*isol*)

Purpuramine H P-823

Aplysamine 3
[149636-99-7]



$C_{21}H_{24}Br_3N_3O_4$ 622.15
Metab. from the sponge *Psammaplysilla purpurea*. Cytotoxic agent. Amorph. or semicryst. solid. Isol. as a salt, counterion not specified. λ_{max} 214 (ϵ 17000); 222 (ϵ 16700); 280 (ϵ 3100) (MeOH).

N^{20}*-(13-Methyltetradecanoyl):* ***Aplysamine 5***
[152606-62-7]
$C_{36}H_{52}Br_3N_3O_5$ 846.536
Isol. from sponge *Psammaplysilla purpurea*. Cytotoxic agent. Gum. λ_{max} 214 (ϵ 18500); 222 (ϵ 17200); 282 (ϵ 2700) (MeOH).

N^{20}*-Me:* ***Purpuramine I***
[149637-00-3]
$C_{22}H_{26}Br_3N_3O_4$ 636.177
Isol. from *Psammaplysilla purpurea* and *Suberea* sp. λ_{max} 280 (ϵ 1800) (MeOH).

N^{20}*-Me,* N^{20}*-(methoxycarbonyl):* ***Purpuramine K***
[627544-34-7]
$C_{24}H_{28}Br_3N_3O_6$ 694.214
Isol. from *Psammaplysilla purpurea*. Amorph. solid. Mp 190-195°. λ_{max} 218 (log ϵ 3.65); 280 (log ϵ 4.78) (MeOH).

N^{20},N^{20}*-Di-Me:* ***Aplysamine 2***
[172486-24-7]
[125547-39-9]
$C_{23}H_{28}Br_3N_3O_4$ 650.204
Isol. from *Aplysina* sp., *Psammaplysilla purpurea* and *Pseudoceratina purpurea*. Pale tan semicryst. solid (as hydrochloride). Mp 87-88.5° (hydrochloride). λ_{max} 214 (ϵ 17000); 222 (ϵ 16700); 280 (ϵ 3100) (MeOH).

N^{20},N^{20}*-Di-Me,* N^{20}*-oxide:* ***Purpuramine J***
[478487-88-6]
$C_{23}H_{28}Br_3N_3O_5$ 666.203
Isol. from the Fijian sponge *Druinella* sp. Cytotoxic. Oil. λ_{max} 280 (log ϵ 3.26) (MeOH).

O*-De-Me:* ***Purpuramine F***
[149636-97-5]
$C_{20}H_{22}Br_3N_3O_4$ 608.124
Isol. from *Psammaplysilla purpurea*. λ_{max} 282 (ϵ 2600) (MeOH).

O*-De-Me,* N^{20}*-Me:* ***Purpuramine G***
[149636-98-6]
$C_{21}H_{24}Br_3N_3O_4$ 622.15
Isol. from *Psammaplysilla purpurea*. λ_{max} 282 (ϵ 2800) (MeOH).

4-Bromo: ***Aplysamine 4***
[152606-61-6]
$C_{21}H_{23}Br_4N_3O_4$ 701.046
From *Psammaplysilla purpurea*. Cytotoxic agent. Semicryst. solid. Isol. as a salt, counterion not specified. λ_{max} 218 (ϵ 17600); 222 (ϵ 17400); 274 (ϵ 2100) (MeOH).

2-Debromo, 3-demethoxy: ***Purpuramine D***
[149636-95-3]
$C_{20}H_{23}Br_2N_3O_3$ 513.228
Isol. from *Psammaplysilla purpurea*. λ_{max} 282 (ϵ 512) (MeOH).

2-Debromo, 3-demethoxy, N^{20}*-Me:* ***Purpuramine E***
[149636-96-4]
$C_{21}H_{25}Br_2N_3O_3$ 527.255
Isol. from *Psammaplysilla purpurea*.

λ_{max} 282 (ϵ 600) (MeOH).

14-Debromo: [159157-29-6]
$C_{21}H_{25}Br_2N_3O_4$ 543.254
Isol. from *Psammaplysilla purpurea*.

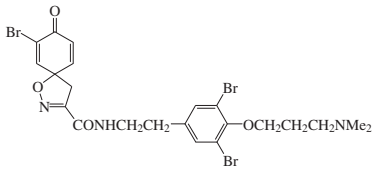
14-Debromo, 4-bromo: ***14-Debromoaplysamine 4***
[159157-30-9]
$C_{21}H_{24}Br_3N_3O_4$ 622.15
Isol. from *Psammaplysilla purpurea*.

14-Debromo, 4-bromo, N^{20}*-Me:* ***Purpurealidin H***
[799246-92-7]
$C_{22}H_{26}Br_3N_3O_4$ 636.177
Isol. from *Psammaplysilla purpurea*. Amorph. solid (MeOH). λ_{max} 218 (ϵ 12675); 280 (ϵ 2675) (MeOH).

Xynas, R. *et al., Aust. J. Chem.*, 1989, **42**, 1427-1433 (*Aplysamine 2*)
Yagi, H. *et al., Tetrahedron*, 1989, **49**, 3749-3754 (*Purpuramines*)
Pakrashi, S.C. *et al., Tetrahedron*, 1990, **50**, 12009-12014; 12783 (*isol*)
Jurek, J. *et al., J. Nat. Prod.*, 1993, **56**, 1609-1612 (*Aplysamines 3-5*)
Rao, M.R. *et al., Indian J. Chem., Sect. B*, 1999, **38**, 1301-1303 (*Aplysamine 2*)
Tabudravu, J.N. *et al., J. Nat. Prod.*, 2002, **65**, 1798-1801 (*Purpuramine J*)
Goud, T.V. *et al., Chem. Pharm. Bull.*, 2003, **51**, 990-993 (*Purpuramine K*)
Tilvi, S. *et al., Tetrahedron*, 2004, **60**, 10207-10215 (*Purpurealidin H, 14-Debromoaplysamine 4*)
Kijjoa, A. *et al., Z. Naturforsch., B*, 2005, **60**, 904-908 (*Aplysamine 2*)

Purpurealidin B P-824

[799246-87-0]

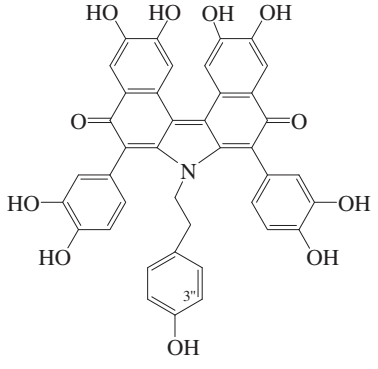


$C_{22}H_{24}Br_3N_3O_4$ 634.161
Isol. from the sponge *Psammaplysilla purpurea*. Amorph. solid. Mp 175.8°. λ_{max} 283 (ϵ 1320) (MeOH).

Tilvi, S. *et al., Tetrahedron*, 2004, **60**, 10207-10215 (*isol, pmr, cmr, ms*)

Purpurone P-825

[147362-37-6]



$C_{40}H_{27}NO_{11}$ 697.653
Alkaloid from the marine sponge *Iotrochota* sp. Exhibits ATP-citrate lyase inhibitory activity. Lipogenesis inhibitor. Purple glass. λ_{max} 215 (ϵ 30400); 315 (ϵ 16400); 511 (ϵ 8500) (MeOH/KOH) (Derep). λ_{max} 216 (ϵ 28100); 296 (ϵ 15100); 500 (ϵ 11400) (MeOH) (Derep).

3''-Hydroxy: ***Ningalin D***
[188111-70-8]
$C_{40}H_{27}NO_{12}$ 713.653
Alkaloid from the ascidian *Didemnum* sp. Dark red solid. λ_{max} 206 (ϵ 41000); 276 (ϵ 18000); 294 (ϵ 17000); 404 (sh) ; 508 (ϵ 9900) (MeOH).

Chan, G.W. *et al., J.O.C.*, 1993, **58**, 2544-2546 (*isol, uv, ir, pmr, cmr*)
Kang, H. *et al., J.O.C.*, 1997, **62**, 3254-3262 (*Ningalin D*)
Peschko, C. *et al., Tet. Lett.*, 2000, **41**, 9477-9481 (*synth*)
Hamasaki, A. *et al., J.A.C.S.*, 2005, **127**, 10767-10770 (*Ningalin D, synth*)

Putreanine P-826

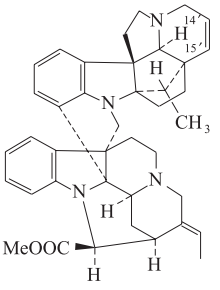
N-*(4-Aminobutyl)-β-alanine, 9CI.* N-*(4-Aminobutylamino)propanoic acid*
[25887-39-2]
$H_2NCH_2CH_2CH_2CH_2NHCH_2CH_2CO$-OH

$C_7H_{16}N_2O_2$ 160.216
Amino acid present in mammalian brain. Cryst. + ½ H_2O (as sulfate salt). Mp 250-251° (sulfate).

Shiba, T. *et al., Tetrahedron*, 1970, **26**, 4307 (*struct, synth*)
Anselini, C. *et al., CA*, 1979, **90**, 39227n (*synth*)

Pycnanthine† P-827

[19553-44-7]



Absolute configuration

$C_{40}H_{44}N_4O_2$ 612.813
Alkaloid from *Pleiocarpa pycnantha* var. *pycnantha* (Apocynaceae). Mp 250°. $[\alpha]_D^{25}$ +321 (c, 1 in $CHCl_3$).

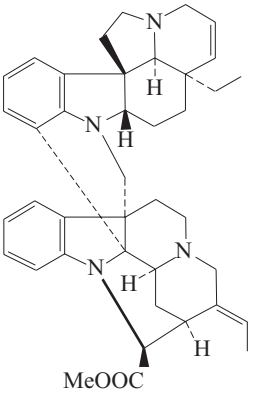
14',15'-Dihydro: ***Pleiomutinine***
[21400-49-7]
$C_{40}H_{46}N_4O_2$ 614.829
Alkaloid from *Pleiocarpa mutica, Hunteria congolana* and *Gonioma malagasy* (Apocynaceae). Mp 250°. $[\alpha]_D^{25}$ +274 (c, 0.44 in $CHCl_3$).

19'-Epimer, 14',15'-dihydro: ***19'-Epipleiomutinine***
$C_{40}H_{46}N_4O_2$ 614.829
Isol. from trunkwood of *Hunteria congolana* (Apocynaceae). Amorph. $[\alpha]_D$ +188 (c, 1 in $CHCl_3$).

Gorman, A.A. *et al., Helv. Chim. Acta*, 1969, **52**, 33 (*isol, uv, ir, pmr, ms, struct*)
Rasoanaivo, P. *et al., J.O.C.*, 1976, **41**, 376 (*cmr, struct*)
Vercauteren, J. *et al., Bull. Soc. Chim. Fr., Part 2*, 1982, 291 (*Epipleiomutinine*)

Pycnanthinine, 9CI P-828

[25480-38-0]



$C_{40}H_{46}N_4O_2$ 614.829
Minor alkaloid from the root bark of *Pleiocarpa pycnantha* (Apocynaceae). Noncryst. $[\alpha]_D^{23}$ +183 (c, 0.567 in $CHCl_3$).

Gorman, A.A. *et al., Monatsh. Chem.*, 1967, **98**, 1554 (*isol, uv, ir, pmr, ms, struct*)

Pycnarrhenamine P-829

$C_{35}H_{40}N_2O_9$ 632.709
Bisbenzylisoquinoline alkaloid. Struct. unknown. Phenolic. Alkaloid from the roots of *Pycnarrhena manillensis* (Menispermaceae). Mp 203°. Phenolic.

v. Bruchhausen, F. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1960, **293**, 454-461 (*isol*)

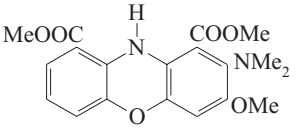
Pycnarrhenine P-830

$C_{36}H_{42}N_2O_9$ 646.736
Bisbenzylisoquinoline alkaloid. Struct. unknown. Alkaloid from the roots of *Pycnarrhena manillensis* (Menispermaceae). Mp 193°.

v. Bruchhausen, F. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1960, **293**, 454-461 (*isol*)

Pycnosanguin P-831

[133056-31-2]



$C_{19}H_{20}N_2O_6$ 372.377
Isol. from *Pycnoporus sanguineus*. Yellow needles. Mp 246-249°.

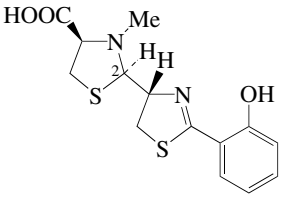
Achenbach, H. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1991, **324**, 3 (*isol, uv, ir, pmr, cmr, synth, ms, struct*)

Pyochelin I P-832

2-[4,5-Dihydro-2-(2-hydroxyphenyl)-4-thiazolyl]-3-methyl-4-thiazolidinecarboxylic acid

[164104-31-8]

[79236-62-7 , 164104-33-0 , 164104-34-1]



$C_{14}H_{16}N_2O_3S_2$ 324.424

Prod. by *Pseudomonas aeruginosa* and *Burkholderia cepacia* (*Pseudomonas cepacia*). Siderophore. $[\alpha]_D^{25}$ +54.8 (c, 0.4 in $CHCl_3$) (as Me ester).

2-Epimer: ***Pyochelin II***

[164104-32-9]

$C_{14}H_{16}N_2O_3S_2$ 324.424

Prod. by *Pseudomonas aeruginosa*. $[\alpha]_D^{25}$ -51.2 (c, 1.2 in $CHCl_3$) (as Me ester).

[163581-05-3 , 163581-04-2 , 163581-03-1 , 163581-02-0]

Rinehart, K.L. *et al., J.O.C.*, 1995, **60**, 2786-2791 (*isol, synth, pmr, cmr, cryst struct, abs config*)

Zamri, A. *et al., Tetrahedron*, 2000, **56**, 249-256 (*synth, bibl*)

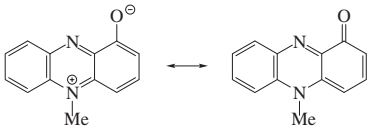
Rivault, F. *et al., Tetrahedron*, 2006, **62**, 2247-2254 (*synth*)

Schlegel, K. *et al., Z. Naturforsch., C*, 2006, **61**, 263-266 (*Fe complex, cryst struct*)

Pyocyanine P-833

1-Hydroxy-5-methylphenazinium hydroxide inner salt, 9CI. 1,5-Dihydro-5-methyl-1-phenazinone. Cyanomycin. Sanasin. Sanazin. Antibiotic 4738 B

[85-66-5]



$C_{13}H_{10}N_2O$ 210.235

Phenazine antibiotic. Prod. by *Bacillus pyocyaneus*, *Streptomyces cyanoflavus* and *Pseudomonas aeruginosa*. Increases respiration of living cells. Active against gram-positive and -negative bacteria. Blue needles (H_2O or $CHCl_3$/petrol). Sol. $CHCl_3$, Me_2CO, hot H_2O, insol. Et_2O, C_6H_6, petrol, CCl_4, CS_2. Mp 133°. pK_a 4.85 (30°). Can be kept. for several weeks *in vacuo* in the dark, but on longer standing dec. to 1-Phenazinol, P-327. λ_{max} 240 (ε 11600); 278 (ε 44900); 384 (ε 16400); 520 (ε 2460) (0.1*N* HCl) (Derep). λ_{max} 239 (ε 23500); 293 (ε 27300); 370 (ε 5570); 690 (0.1*N* NaOH) (Derep). λ_{max} 239 (ε 16000); 278 (ε 24800); 310 (ε 15300); 384 (ε 10500); 690 (ε 4300) (H_2O at pH 5) (Derep).

Perchlorate: [55171-01-2]

Dark-red needles (H_2O contg. $HClO_4$). Mp 221-223° dec.

Picrate:

Very dark-red leaflets with violet sheen + 2MeOH (MeOH), violet leaflets + 1EtOH (EtOH). Mp 194-195° dec.

McIlwain, H. *et al., J.C.S.*, 1937, 1704 (*synth*)

Org. Synth., Coll. Vol., 3, 1955, 753 (*synth*)

Swan, G.A. *et al., Phenazines*, Interscience, N.Y., London, 1957, 174

Funaki, M. *et al., J. Antibiot., Ser. A*, 1958, **11**, 143 (*isol*)

MacDonald, J.C. *et al., Can. J. Microbiol.*, 1963, **9**, 809; 1966, **12**, 771 (*biosynth*)

Von Saltza, M. *et al., J. Antibiot.*, 1969, **22**, 49 (*isol*)

Flood, M.E. *et al., J.C.S. Perkin 1*, 1972, 622 (*biosynth*)

Knight, M. *et al., Anal. Biochem.*, 1979, **95**, 19 (*synth*)

Baron, S.S. *et al., Antimicrob. Agents Chemother.*, 1981, **20**, 814 (*props*)

Muller, M. *et al., Free Radical Biol. Med.*, 2002, **33**, 1527-1533; 2006, **41**, 1670-1677 (*pharmacol*)

Allen, L. *et al., J. Immunol.*, 2005, **174**, 3643-3649 (*pharmacol*)

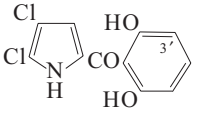
Angell, S. *et al., Chem. Biol.*, 2006, **13**, 1349-1359 (*marine, isol, pmr, cmr*)

Sax, N.I. *et al., Dangerous Properties of Industrial Materials, 7th edn., Van Nostrand Reinhold*, 1989, 2322

Pyoluteorin P-834

(4,5-Dichloro-1H-pyrrol-2-yl)(2,6-dihydroxyphenyl)methanone, 9CI. 2,3-Dichloro-5-(2,6-dihydroxybenzoyl)pyrrole

[25683-07-2]



$C_{11}H_7Cl_2NO_3$ 272.087

Pyrrole antibiotic. Isol. from *Pseudomonas aeruginosa*, *Pseudomonas fluorescens* and a bacterial symbiont of *Sogatella furcifera*. Shows antibacterial, antifungal and herbicidal props. Yellow needles. Sol. MeOH, Et_2O; fairly sol. acids; poorly sol. H_2O, hexane. Mp 174-175° dec. λ_{max} 257 (ε 12600); 309 (ε 39100) (MeOH/HCl) (Derep). λ_{max} 288 (ε 12000); 368 (ε 35500) (MeOH/NaOH) (Derep). λ_{max} 256 (ε 12600); 308 (ε 37400) (MeOH) (Derep). λ_{max} 255 (ε 4200); 310 (ε 13000) (EtOH) (Berdy). λ_{max} 282 ; 369 (MeOH-NaOH) (Berdy). λ_{max} 338 (ε 18400) (NaOH) (Berdy).

▶ LD_{50} (mus, ipr) 45 mg/kg, LD_{50} (mus, orl) 125 mg/kg. OB1804400

Di-O-Ac: Mp 204-206°.

N,O,O-Tri-Me:

Prisms (Et_2O). Mp 136-137°.

3′-Nitro: ***3′-Nitropyoluteorin***

[69093-95-4]

$C_{11}H_6Cl_2N_2O_5$ 317.084

Prod. by *Pseudomonas aeruginosa*. Shows antibacterial, antifungal and herbicidal props. Yellow needles. Mp 228-230°. λ_{max} 313 (ε 33700) (MeOH/HCl) (Derep). λ_{max} 310 (ε 30100) (MeOH) (Derep). λ_{max} 330 (ε 28700); 400 (ε 34500) (MeOH/NaOH) (Derep).

Takeda, R. *et al., J.A.C.S.*, 1958, **80**, 4749 (*isol, uv*)

Birch, A.J. *et al., J.C.S.*, 1964, 2641 (*struct*)

Utsumi, Y. *et al., Bull. Chem. Soc. Jpn.*, 1970, **43**, 2640 (*cryst struct*)

Birchall, G.R. *et al., Tet. Lett.*, 1970, 4879 (*synth, bibl*)

Bailey, D.M. *et al., J. Med. Chem.*, 1973, **16**, 1298 (*synth, analogues*)

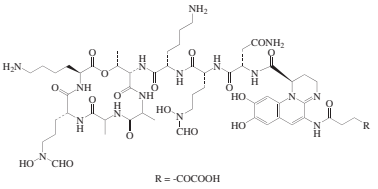
Ohmori, T. *et al., Agric. Biol. Chem.*, 1978, **43**, 2031 (*isol, derivs*)

Cuppels, D.A. *et al., Z. Naturforsch., C*, 1986, **41**, 532 (*biosynth*)

Kenny, P.T.M. *et al., Pestic. Sci.*, 1989, **27**, 117 (*isol*)

Pyoverdin I, 9CI P-835

[114616-35-2]



$C_{56}H_{82}N_{16}O_{21}$ 1315.358

Cyclic depsipeptide antibiotic complex. Isol. from *Pseudomonas fluorescens*. Siderophore.

Poppe, K. *et al., Tetrahedron*, 1987, **43**, 2261-2272 (*struct, bibl*)

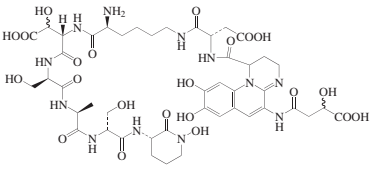
Pyoverdin 2112 P-836

Contains glycine/threonine/serine/glutamic acid/alanine/lysine in ratio 3:2:1:1:1:1, DL-*threo*-β-hydroxyaspartic acid and N^{δ}-hydroxyornithine. Prod. by *Pseudomonas fluorescens* 2112. Siderophore. Inhibits *Phytophthara capsici*, a red pepper blight-causing fungus.

Lee, E.-T. *et al., J. Microb. Biotechnol.*, 2003, **13**, 415-421 (*isol, uv, activity*)

Pyoverdin 11370 P-837

[264189-47-1]



$C_{45}H_{62}N_{12}O_{22}$ 1123.052

Isol. from *Pseudomonas putida*.

Budzikiewicz, H. *et al., Z. Naturforsch., C*, 1999, **54**, 1021-1026

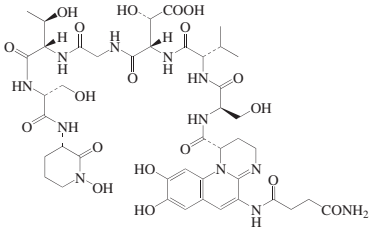
Pyoverdin A1 P-838

Reported aminoacid analysis cannot be correct. Prod. by *Pseudomonas putida* A1 isol. from a chickpea rhizophore. Siderophore. Shows antifungal activity against phytopathogens. CAS no. not found to 2008.

Boopathi, E. *et al., Biochim. Biophys. Acta*, 1999, **1435**, 30-40 (*isol, cd, activity*)

Pyoverdin BTP 2 P-839

[367252-76-4]

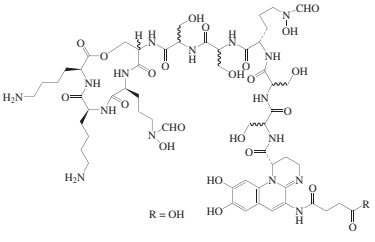


$C_{43}H_{60}N_{12}O_{19}$ 1049.016
Isol. from *Pseudomonas fluorescens* BTP2. Siderophore.

Ongena, M. *et al., Tet. Lett.*, 2001, **42**, 5849-5851

Pyoverdin BTP7 P-840

[205181-21-1]



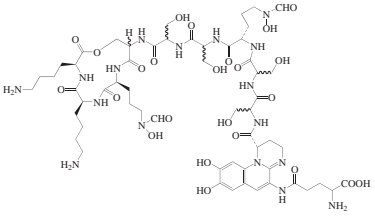
$C_{56}H_{84}N_{16}O_{24}$ 1365.372
Prod. by *Pseudomonas fluorescens* BTP7. Siderophore.

Amide:
$C_{56}H_{85}N_{17}O_{23}$ 1364.388
Prod. by *Pseudomonas fluorescens* BTP7. Siderophore.

Homologue (R = COOH):
$C_{57}H_{84}N_{16}O_{25}$ 1393.383
Prod. by *Pseudomonas fluorescens* BTP7.

Ongena, M. *et al., J. Mass Spectrom. Soc. Jpn.*, 1998, **46**, 53-56 (*isol, ms, struct*)

Pyoverdin BTP7G P-841

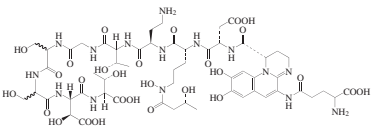


$C_{57}H_{87}N_{17}O_{24}$ 1394.414
Stereochem. of Ser residues not determined. Prod. by *Pseudomonas fluorescens* BTP7. Siderophore.

Ongena, M. *et al., J. Mass Spectrom. Soc. Jpn.*, 1998, **46**, 53-56 (*isol, ms, struct*)

Pyoverdin BTP16G P-842

[431982-43-3]

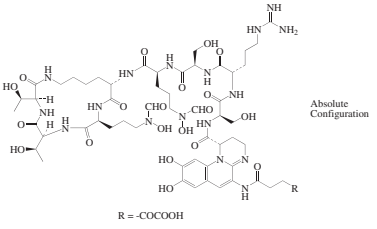


$C_{55}H_{81}N_{15}O_{28}$ 1400.329
Prod. by *Pseudomonas putida* BTP16. Siderophore.

Ongena, M. *et al., J. Mass Spectrom. Soc. Jpn.*, 1998, **46**, 53-56 (*isol, ms*)
Ongena, M. *et al., Lett. Pept. Sci.*, 2002, **8**, 21-27 (*isol*)

Pyoverdin C P-843

Pyoverdin PaB
[104022-78-8]

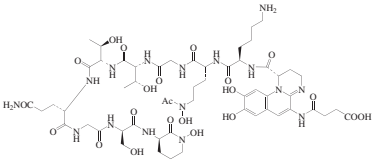


$C_{56}H_{83}N_{17}O_{23}$ 1362.372
Prod. by *Pseudomonas aeruginosa* and *Pseudomonas fluorescens*. Siderophore. No phys. props. reported. Sol. H_2O; poorly sol. Me_2CO, hexane. λ_{max} 230 (ϵ 36300); 400 (ϵ 16980); 470 (ϵ 5495); 555 (ϵ 2512) (MeOH) (Berdy).

Wendenbaum, S. *et al., Tet. Lett.*, 1983, **24**, 4877-4880 (*isol*)
Hider, R.C. *et al., Struct. Bonding (Berlin)*, 1984, **58**, 25-87 (*rev*)
Briskot, G. *et al., Annalen*, 1989, 375-384 (*isol, struct*)
Budzikiewicz, A. *et al., Z. Naturforsch., C*, 1997, **52**, 713-720 (*rev*)

Pyoverdin CFBP 2392 P-844

[273378-29-3]

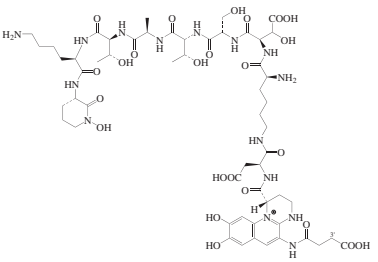


$C_{55}H_{82}N_{16}O_{22}$ 1319.347
Prod. by *Pseudomonas fluorescens* CFBP 2392. Siderophore.

Beiderbeck, H. *et al., BioMetals*, 1999, **12**, 331-338 (*isol, struct*)

Pyoverdin CFBP 2461 P-845

Pyoverdin WCS358
[701285-46-3]
[273378-27-1]



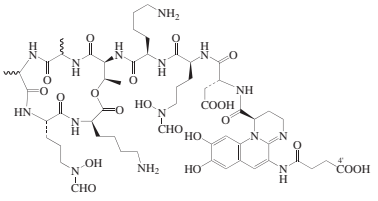
$C_{56}H_{84}N_{15}O_{24}^{\oplus}$ 1351.366
Struct. revised in 2003. Metab. of *Pseudomonas putida* CFBP 2461. Siderophore.

3′-Hydroxy: [273378-28-2]
$C_{56}H_{84}N_{15}O_{25}^{\oplus}$ 1367.365
Metab. of *Pseudomonas putida* CFBP 2461. Siderophore.

Beiderbeck, H. *et al., BioMetals*, 1999, **12**, 331-338 (*isol, pmr, cmr, ms*)
Fernandez, D.U. *et al., Monatsh. Chem.*, 2003, **134**, 1421-1431 (*struct*)

Pyoverdin CHAO P-846

[178497-43-3]



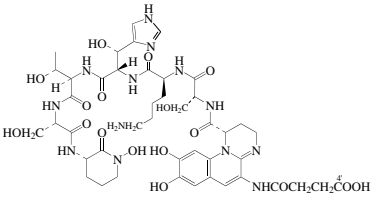
$C_{55}H_{81}N_{15}O_{21}$ 1288.333
Cyclic depsipeptide. Prod. by *Pseudomonas fluorescens*. Siderophore.

4′-Amide: ***Pyoverdin CHAO-A***
[178497-44-4]
$C_{55}H_{82}N_{16}O_{20}$ 1287.348
Prod. by *Pseudomonas fluorescens*. Siderophore.

Wong-Lung-Sang, S. *et al., Tet. Lett.*, 1996, **37**, 3329-3332 (*isol, pmr, cmr*)

Pyoverdin $C_{44}H_{61}N_{13}O_{17}$ P-847

[203261-53-4]



$C_{44}H_{61}N_{13}O_{17}$ 1044.043
Prod. by *Pseudomonas fluorescens and Pseudomonas putida*. Siderophore. λ_{max} 227 (ϵ 30771); 399 (ϵ 15551) (H_2O) (Berdy). λ_{max} 218 (ϵ 19904); 245 (ϵ 8526); 362 (ϵ 6516); 374 (ϵ 6244) (HCl) (Berdy).

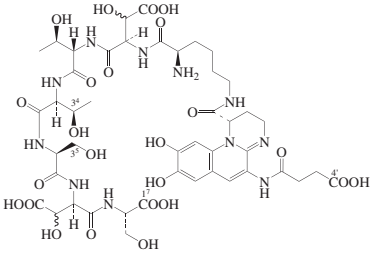
4′-Amide: ***Pyoverdin $C_{44}H_{62}N_{14}O_{16}$***
[203261-55-6]
$C_{44}H_{62}N_{14}O_{16}$ 1043.058
Prod. by *Pseudomonas fluorescens* and *Pseudomonas putida*. Siderophore.
λ_{max} 227 (ϵ 30771); 399 (ϵ 15551)

(H_2O) (Berdy). λ_{max} 218 (ϵ 19904); 245 (ϵ 8526); 362 (ϵ 6516); 374 (ϵ 6244) (HCl) (Berdy).

Budzikiewicz, H. *et al., Z. Naturforsch., C*, 1997, **52**, 721-728 (*isol, pmr, cmr, ms*)

Pyoverdin $C_{45}H_{63}N_{11}O_{24}$ P-848

[393802-69-2]



$C_{45}H_{63}N_{11}O_{24}$ 1142.052
Prod. by *Pseudomonas syringae* and *Pseudomonas viridiflava*.

4′-Amide: ***Pyoverdin $C_{45}H_{64}N_{12}O_{23}$***
[393802-71-6]
$C_{45}H_{64}N_{12}O_{23}$ 1141.067
Prod. by *Pseudomonas syringae*, *Pseudomonas cichorii* and *Pseudomonas viridiflava*.

($1^7 \rightarrow 3^4$)-Lactone, 4′-amide: [848934-20-3]
$C_{45}H_{62}N_{12}O_{22}$ 1123.052
Metab. of *Pseudomonas syringae*. Siderophore.

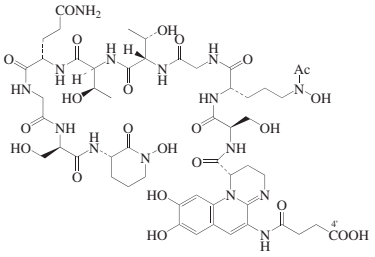
5-Gly analogue, ($1^7 \rightarrow 3^4$)-lactone, 4′-amide: ***Pyoverdin***
[848934-21-4]
$C_{44}H_{60}N_{12}O_{21}$ 1093.026
Metab. of *Pseudomonas syringae*. Stereochem. not fully shown. Has serine at residue 5 replaced by glycine.

Jülioh, M. *et al., Z. Naturforsch., C*, 2001, **56**, 687-694 (*isol, pmr, cmr, amide*)

Bultreys, A. *et al., Z. Naturforsch., C*, 2004, **59**, 613-618 (*Pseudomonas syringae constits*)

Pyoverdin $C_{52}H_{75}N_{15}O_{23}$ P-849

[222841-35-2]



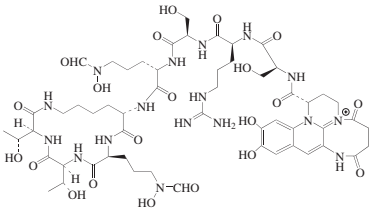
$C_{52}H_{75}N_{15}O_{23}$ 1278.251
Prod. by *Pseudomonas aureofaciens*. Siderophore. Prob. artifact. λ_{max} 399 (pH 7.1). λ_{max} 363 (pH 3.2 buffer).

4′-Amide: ***Pyoverdin $C_{52}H_{76}N_{16}O_{22}$***
[222841-34-1]
$C_{52}H_{76}N_{16}O_{22}$ 1277.266
Prod. by *Pseudomonas aureofaciens*. Siderophore.

Beiderbeck, H. *et al., Z. Naturforsch., C*, 1999, **54**, 1-5

Pyoverdin $C_{55}H_{83}N_{17}O_{21}$ P-850

[278618-18-1]

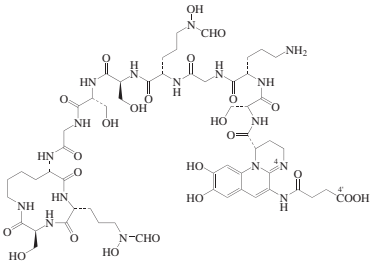


$C_{55}H_{82}N_{17}O_{21}^{\oplus}$ 1317.354
Succinopyoverdin isol. from *Pseudomonas aeruginosa* ATCC 15692. Siderophore. λ_{max} 414 (log ϵ 4.29) (pH 7.0). λ_{max} 376 (log ϵ 4.18) (pH 3.0).

Lenz, C. *et al., Z. Naturforsch., C*, 2000, **55**, 146-152 (*isol, uv, pmr, cmr*)

Pyoverdin $C_{57}H_{85}N_{17}O_{24}$ P-851

[278618-20-5]



$C_{56}H_{83}N_{17}O_{24}$ 1378.371
Isol. from *Pseudomonas fluorescens*. Siderophore.

(4′ →4)-Lactam: ***Pyoverdin $C_{57}H_{85}N_{17}O_{23}$***
[278618-19-2]
$C_{56}H_{82}N_{17}O_{23}^{\oplus}$ 1361.364
Isol. from *Pseudomonas fluorescens*. Siderophore. λ_{max} 400 (pH 7). λ_{max} 374 (pH 3).

Lenz, C. *et al., Z. Naturforsch., C*, 2000, **55**, 146-152 (*Pseudomonas fluorescens constits*)

Pyoverdin D P-852

Pyoverdin PaA. Pyoverdin PaO1
[104022-79-9]
As Pyoverdin C, P-843 with R = -COOH
$C_{55}H_{83}N_{17}O_{22}$ 1334.361
Prod. by *Pseudomonas aeruginosa* and *Pseudomonas fluorescens*. Siderophore. Sol. H_2O; poorly sol. Me_2CO, hexane. λ_{max} 385 ; 400 (pH 7 buffer) (Berdy). λ_{max} 365 (ϵ 14000); 380 (ϵ 14000) (pH 4 buffer) (Berdy).

Amide: ***Pyoverdin E****. Pyoverdin Pa*
[88966-86-3]
$C_{55}H_{84}N_{18}O_{21}$ 1333.377
From *Pseudomonas aeruginosa* and *Pseudomonas fluorescens*. Siderophore. Sol. H_2O; poorly sol. Me_2CO, hexane. λ_{max} 385 ; 400 (pH 7 buffer) (Berdy). λ_{max} 403 (ϵ 19000); 460 ; 540 (pH 4 buffer) (Berdy).

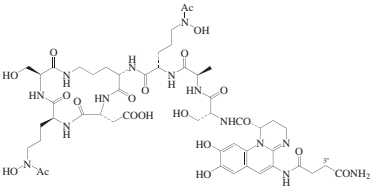
Wendenbaum, S. *et al., Tet. Lett.*, 1983, **24**, 4877-4880 (*Pyoverdin Pa*)

Hider, R.C. *et al., Struct. Bonding (Berlin)*, 1984, **58**, 25-87 (*rev*)

Briskot, G. *et al., Annalen*, 1989, 375-384 (*isol, struct*)

Pyoverdin G 173 P-853

Pyoverdin Pf G 173
[535994-93-5]



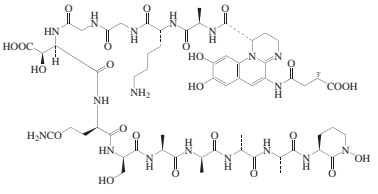
$C_{49}H_{70}N_{14}O_{20}$ 1175.174
Isol. from *Pseudomonas fluorescens* G173. Siderophore.

3″-Hydroxy:
$C_{49}H_{70}N_{14}O_{21}$ 1191.173
Isol. from *Pseudomonas fluorescens* G173. Siderophore. CAS no. not found to 2004.

Fernández, D.U. *et al., Z. Naturforsch., C*, 2003, **58**, 1-10 (*isol, pmr, cmr, ms*)

Pyoverdin GM II P-854

[131647-40-0]



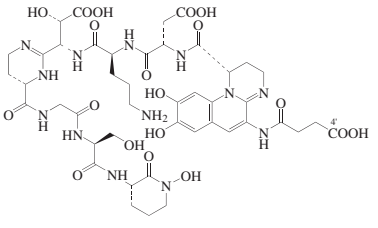
$C_{59}H_{86}N_{18}O_{24}$ 1431.435
Isol. from *Pseudomonas fluorescens*. Siderophore. Anthelmintic agent. Acaricide. Sol. H_2O. λ_{max} 400 (ϵ 11750) (pH 7 buffer) (Berdy).

3′-Amide: ***Pyoverdin GM I***
[131647-39-7]
$C_{59}H_{87}N_{19}O_{23}$ 1430.45
Isol. from *Pseudomonas fluorescens*. Siderophore. Anthelmintic agent. Acaricide. Sol. H_2O. λ_{max} 400 (ϵ 11220) (pH 7 buffer) (Berdy).

Mohn, G. *et al., Z. Naturforsch., B*, 1990, **45**, 1437-1450 (*isol, pmr, cmr, ms*)

Pyoverdin G4RA P-855

[197846-88-1]



$C_{44}H_{59}N_{13}O_{19}$ 1074.026
Prod. by *Pseudomonas putida*. Siderophore. λ_{max} 365 ; 380 (pH 5 buffer).

4′-Amide: ***Pyoverdin G4R***
[197846-90-5]
$C_{44}H_{60}N_{14}O_{18}$ 1073.041
Prod. by *Pseudomonas putida*. Siderophore.

Salah el Din, A.L.M. *et al., Tetrahedron*, 1997, **53**, 12539-12552 (*isol, uv, pmr, cmr, N-15 nmr, ms*)

Pyoverdin II P-856

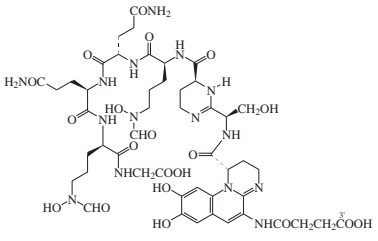
[114587-58-5]
As Pyoverdin I, P-835 with
R = –COOH
$C_{55}H_{82}N_{16}O_{20}$ 1287.348
Isol. from *Pseudomonas fluorescens*. Siderophore.

Amide: ***Pyoverdin III***
[114587-59-6]
$C_{55}H_{83}N_{17}O_{19}$ 1286.363
From *Pseudomonas fluorescens*. Siderophore.

Poppe, K. *et al., Tetrahedron*, 1987, **43**, 2261-2272 (*struct, bibl*)

Pyoverdin Pa II P-857

[137341-42-5]



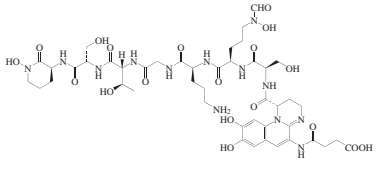
$C_{48}H_{67}N_{15}O_{20}$ 1174.146
Prod. by *Pseudomonas aeruginosa* strain R. Siderophore.

3′-Amide: ***Pyoverdin Pa I***
[137341-41-4]
$C_{48}H_{68}N_{16}O_{19}$ 1173.161
Prod. by *Pseudomonas aeruginosa* strain R. Siderophore.

Gipp, S. *et al., Z. Naturforsch., C*, 1991, **46**, 534-541

Pyoverdin Pa TII P-858

[148337-19-3]



$C_{45}H_{65}N_{13}O_{19}$ 1092.084
Prod. by *Pseudomonas aeruginosa*. Siderophore.

Tappe, R. *et al., J. Prakt. Chem.*, 1993, **335**, 83-87 (*struct*)
Kinzel, O. *et al., J. Antibiot.*, 1998, **51**, 499-507 (*synth*)

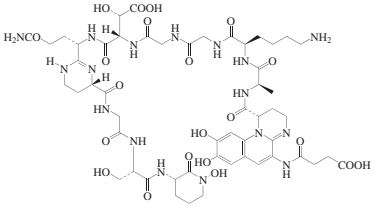
Pyoverdin PaC P-859

Contains alanine, 2 β-hydroxyaspartic acids, 2 glycines, 2 threonines and an unknown amino acid. Prod. by *Pseudomonas asplenii* LMG2137. Siderophore.

Bultreys, A. *et al., Appl. Environ. Microbiol.*, 2003, **69**, 1143-1153 (*isol, props*)

Pyoverdin Pf 1.3 P-860

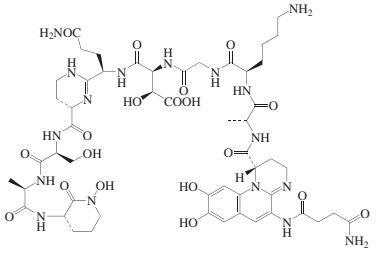
[244021-59-8]



$C_{53}H_{75}N_{17}O_{21}$ 1286.277
Isol. from *Pseudomonas fluorescens* 1.3. Siderophore. λ_{max} 410 (pH 6.8). λ_{max} 368 ; 379 (pH 3.0).

Georgias, H. *et al., Z. Naturforsch., C*, 1999, **54**, 301-308

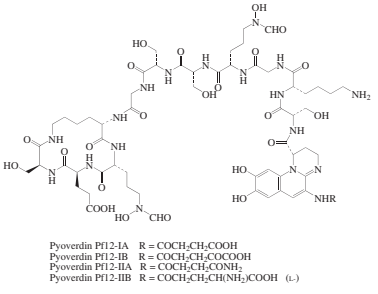
Pyoverdin Pf/3 17400 P-861



$C_{52}H_{75}N_{17}O_{19}$ 1242.267
Metab. of *Pseudomonas fluorescens* ATCC 17400. Siderophore. CAS no. not found to 2008.

Demange, P. *et al., Tet. Lett.*, 1990, **31**, 7611-7614 (*isol, pmr, cmr, ms*)

Pyoverdin Pf12 P-862



Pyoverdin Pf12-IA R = $COCH_2CH_2COOH$
Pyoverdin Pf12-IB R = $COCH_2CH_2COCOOH$
Pyoverdin Pf12-IIA R = $COCH_2CH_2CONH_2$
Pyoverdin Pf12-IIB R = $COCH_2CH_2CH(NH_2)COOH$ (L-)

Illus. in ref. as the cations. Isol. from cultures of *Pseudomonas fluorescens*. Siderophore.

Pyoverdin Pf12-IA [141073-88-3]
$C_{62}H_{92}N_{18}O_{27}$ 1521.513
Sol. H_2O. λ_{max} 400 (H_2O) (Berdy). λ_{max} 470 ; 550 ($H_2O/FeCl_3$) (Berdy).

Pyoverdin Pf12-IB [141073-89-4]
$C_{63}H_{92}N_{18}O_{28}$ 1549.524
Sol. H_2O. λ_{max} 400 (H_2O) (Berdy). λ_{max} 470 ; 550 ($H_2O/FeCl_3$) (Berdy).

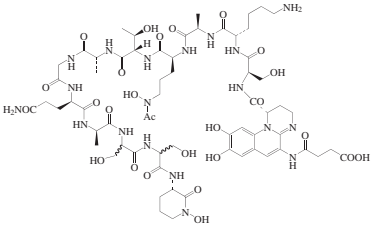
Pyoverdin Pf12-IIA [141095-99-0]
$C_{62}H_{93}N_{19}O_{26}$ 1520.528
Sol. H_2O. λ_{max} 400 (H_2O) (Berdy). λ_{max} 470 ; 550 ($H_2O/FeCl_3$) (Berdy).

Pyoverdin Pf12-IIB [141073-90-7]
$C_{63}H_{95}N_{19}O_{27}$ 1550.555
Sol. H_2O. λ_{max} 400 (H_2O) (Berdy). λ_{max} 470 ; 550 ($H_2O/FeCl_3$) (Berdy).

Geisen, K. *et al., Monatsh. Chem.*, 1992, **123**, 151-178 (*isol, pmr, cmr, ms, struct*)

Pyoverdin Pf 1547 P-863

[292840-54-1]

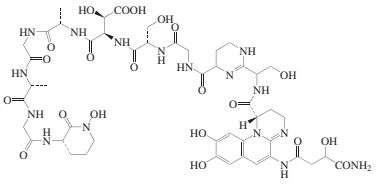


$C_{64}H_{97}N_{19}O_{26}$ 1548.582
Prod. by *Pseudomonas* spp. Siderophore. λ_{max} 399 (pH 7). λ_{max} 363 ; 375 (pH 3 buffer).

Ruangviryachai, C. *et al., Z. Naturforsch., C*, 2000, **55**, 323-327

Pyoverdin Pf CCM 2798 P-864

[133174-10-4]

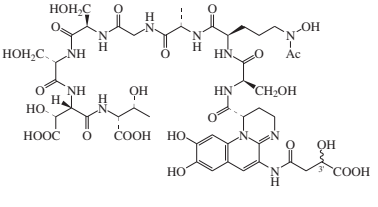


$C_{48}H_{66}N_{16}O_{21}$ 1203.144
Metab. of *Pseudomonas fluorescens* CCM 2798. Siderophore.

Demange, P. *et al., Tet. Lett.*, 1990, **31**, 7611-7614 (*isol, pmr, cmr, ms*)

Pyoverdin Pf P19 P-865

[280577-27-7]



$C_{46}H_{64}N_{12}O_{25}$ 1185.077

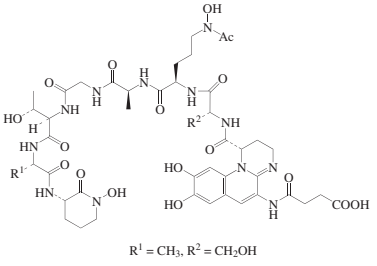
Prod. by *Pseudomonas fluorescens* P19. Siderophore.

3′-Deoxy: [280142-32-7]
$C_{46}H_{64}N_{12}O_{24}$ 1169.078
Prod. by *Pseudomonas fluorescens* P19. Siderophore.

Vossen, W. *et al., Z. Naturforsch., C*, 2000, **55**, 153-164

Pyoverdin PL7 P-866

[422563-91-5]



$C_{44}H_{62}N_{12}O_{18}$ 1047.043
Prod. by *Pseudomonas fluorescens* PL7. Siderophore.

Barelmann, I. *et al., Z. Naturforsch., C*, 2002, **57**, 9-16 (*isol, pmr, cmr*)

Pyoverdin PL8 P-867

Pyoverdin $C_{47}H_{69}N_{13}O_{18}$
[422563-93-7]
As Pyoverdin PL7, P-866 with
$R^1 = CH_2OH$, $R^2 = -(CH_2)_3CH_2NH_2$
$C_{47}H_{69}N_{13}O_{18}$ 1104.138
Prod. by *Pseudomonas fluorescens* PL8. Siderophore.

Barelmann, I. *et al., Z. Naturforsch., C*, 2002, **57**, 9-16 (*isol, pmr, cmr*)

Pyoverdin Pm P-868

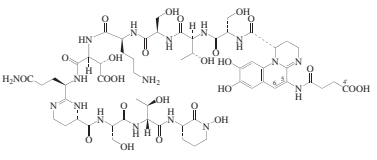
[149316-40-5]

Contains β-hydroxyaspartic acid, lysine, N^{δ}-hydroxyornithine, 2 serines and 3 threonines. Prod. by *Pseudomonas putida* M (VKPMB-4308). Siderophore.

Maksimova, N.P. *et al., Mikrobiologiya*, 1994, **63**, 1038-1044; *Microbiology (Engl. Transl.)*, 1994, **63**, 587-590 (*isol, uv*)

Pyoverdin Pp 1 P-869

[144447-59-6]



$C_{57}H_{83}N_{17}O_{25}$ 1406.382
Isol. from *Pseudomonas putida*. Siderophore. Sol. H_2O. λ_{max} 225 ; 297 ; 398 (ϵ 16600) (H_2O) (Berdy).

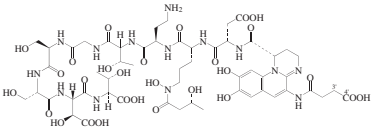
4′-Amide: ***Pyoverdin Pp 2***
[144447-60-9]
$C_{57}H_{84}N_{18}O_{24}$ 1405.397
Isol. from *Pseudomonas putida*. Siderophore. Sol. H_2O. λ_{max} 225 ; 297 ; 398 (ϵ 16600) (H_2O) (Berdy).

5,6-Dihydro, 4′-amide: ***Dihydropyoverdin Pp 2***
[144447-61-0]
$C_{57}H_{86}N_{18}O_{24}$ 1407.413
Isol. from *Pseudomonas putida*. Siderophore. Sol. H_2O. λ_{max} 225 ; 297 ; 398 (ϵ 16600) (H_2O) (Berdy).

Gwose, I. *et al., Z. Naturforsch., C*, 1992, **47**, 487-502 (*isol, pmr, cmr, ms*)

Pyoverdin PpC 3B P-870

Pyoverdin C 3B
[148714-91-4]



$C_{54}H_{78}N_{14}O_{28}$ 1371.287
Prod. by *Pseudomonas putida* C and *Pseudomonas putida* BTB16. Siderophore. Sol. H_2O, MeOH. λ_{max} 401 (pH 7 buffer) (Berdy). λ_{max} 363 ; 370 (pH 3 buffer) (Berdy).

4′-Amide: ***Pyoverdin PpC 2B****. Pyoverdin C 2B. Pyoverdin BTB 16*
[148714-89-0]
$C_{54}H_{79}N_{15}O_{27}$ 1370.302
Prod. by *Pseudomonas putida* C and *Pseudomonas putida* BTB16. Siderophore. Sol. H_2O, MeOH. λ_{max} 401 (pH 7 buffer) (Berdy). λ_{max} 363 ; 370 (pH 3 buffer) (Berdy).

3′-Hydroxy: ***Pyoverdin PpC 3A****. Pyoverdin C 3A*
[148714-90-3]
$C_{54}H_{78}N_{14}O_{29}$ 1387.287
Prod. by *Pseudomonas putida* C. Siderophore. Sol. H_2O, MeOH. λ_{max} 401 (pH 7 buffer) (Berdy). λ_{max} 363 ; 370 (pH 3 buffer) (Berdy).

3′-Hydroxy, 4′-amide: ***Pyoverdin PpC 2A****. Pyoverdin C 2A*
[148714-83-4]
$C_{54}H_{79}N_{15}O_{28}$ 1386.302
Prod. by *Pseudomonas putida* C. Siderophore. Sol. H_2O, MeOH. λ_{max} 401 (pH 7 buffer) (Berdy). λ_{max} 363 ; 370 (pH 3 buffer) (Berdy).

Seinsche, D. *et al., J. Prakt. Chem.*, 1993, **335**, 157-168 (*Pseudomonas putida C constits, isol, struct*)
Ongena, M. *et al., J. Mass Spectrom. Soc. Jpn.*, 1998, **46**, 53-56 (*isol, amide, ms*)
Ongena, M. *et al., Lett. Pept. Sci.*, 2002, **8**, 21-27 (*Pseudomonas putida BTB16 constits*)

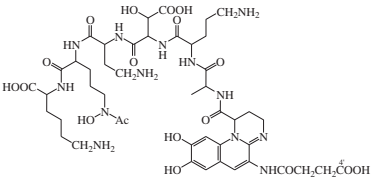
Pyoverdin PS P-871

Contains 3 threonines, 3 serines, 1 lysine and δ-*N*-hydroxyornithine. Prod. by *Pseudomonas syringae*. CAS no. not found to 2008.

Torres, L. *et al., Appl. Environ. Microbiol.*, 1986, **52**, 157-160 (*isol*)

Pyoverdin PS 6.10 P-872

[948556-39-6]



$C_{46}H_{69}N_{13}O_{18}$ 1092.127
Prod. by *Pseudomonas* sp. PS 6.10.

4′-Amide: [948556-38-5]
$C_{46}H_{70}N_{14}O_{17}$ 1091.143
Prod. by *Pseudomonas* PS 6.10.

Budzikiewicz, H. *et al., Z. Naturforsch., C*, 2006, **61**, 815-820 (*isol, pmr, cmr, ms*)

Pyoverdin PSS P-873

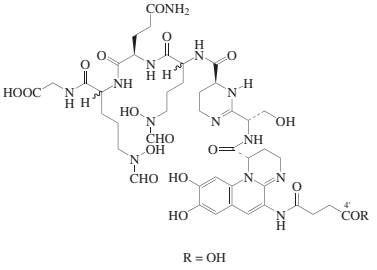
[110737-08-1]

Contains 2 β-hydroxyaspartic acids, 1 lysine, 2 serines and 2 threonines. Prod. by *Pseudomonas syringae* pv *syringae*. Siderophore.

Cody, Y.S. *et al., Appl. Environ. Microbiol.*, 1987, **53**, 928-934 (*isol, props*)

Pyoverdin R′ P-874

[403806-52-0]



$C_{43}H_{59}N_{13}O_{18}$ 1046.015
Prod. by *Pseudomonas aeruginosa* strain R′.

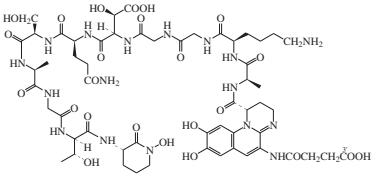
4′-Amide: ***Pyoverdin $C_{43}H_{60}N_{14}O_{17}$***
$C_{43}H_{60}N_{14}O_{17}$ 1045.031
Prod. by *Pseudomonas aeruginosa* strain R′. CAS no. not found to 2008.

Homologue (R = COOH): ***Pyoverdin $C_{44}H_{59}N_{13}O_{19}$***
$C_{44}H_{59}N_{13}O_{19}$ 1074.026
Prod. by *Pseudomonas aeruginosa* strain R′. CAS no. not found to 2008.

Ruangviriyachai, C. *et al., Z. Naturforsch., C*, 2001, **56**, 933-938

Pyoverdin 51WA P-875

Pyoverdin 51W-Suc
[235101-94-7]



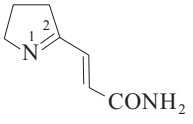
$C_{56}H_{81}N_{17}O_{24}$ 1376.355
Isol. from *Pseudomonas fluorescens* strain 51W. Siderophore.

3′-Amide: ***Pyoverdin 51W****. Pyoverdin 51W-Suca*
[235101-93-6]
$C_{56}H_{82}N_{18}O_{23}$ 1375.371
Isol. from *Pseudomonas fluorescens* strain 51W. Siderophore.

Dallakian, P. *et al., Chirality*, 1999, **11**, 381-386 (*abs config*)
Voss, J. *et al., Z. Naturforsch., C*, 1999, **54**, 156-162 (*isol, struct*)

Pyracrimycin A P-876

*3-(3,4-Dihydro-2*H*-pyrrol-5-yl)-2-propenamide, 9CI. 3-(1-Pyrrolin-2-yl)acrylamide. Cyclamidomycin. Desdanine. U 22662. Antibiotic U 22662*



$C_7H_{10}N_2O$ 138.169
λ_{max} 237 (ϵ 16900) (0.1*N* HCl) (Derep).
λ_{max} 235 (ϵ 20100) (0.1*N* NaOH) (Derep).
λ_{max} 235 (ϵ 24000) (MeOH) (Derep).

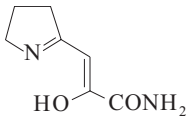
(E)-form [35663-85-5]
Isol. from *Streptomyces* spp. Shows antibiotic props. Cryst. (MeOH). Mp 215-217° dec.
▶ LD_{50} (mus, orl) 240 mg/kg. UC6320000

1,2-Dihydro: 3-(2-Pyrrolinyl)-2-propenamide, 9CI. ***Dihydropyracrimycin A****. 2-Pyrrolidine-2-acrylamide*
[43043-23-8]
$C_7H_{12}N_2O$ 140.185
From *Streptomyces eridani*. Sol. H_2O, DMSO, DMF; fairly sol. MeOH, acids; poorly sol. butanol, hexane.

Coronelli, C. *et al., J. Antibiot.*, 1971, **24**, 491; 497 (*isol, struct*)
Takahashi, S. *et al., J. Antibiot.*, 1971, **24**, 902 (*isol*)
Argoudelis, A.D. *et al., J. Antibiot.*, 1972, **25**, 432 (*uv, pmr, ms, struct, bibl*)
Martin, W. *et al., Tet. Lett.*, 1973, 1459 (*synth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, COV125

Pyracrimycin B P-877

*3-(3,4-Dihydro-2*H*-pyrrol-5-yl)-2-hydroxy-2-propenamide, 9CI*

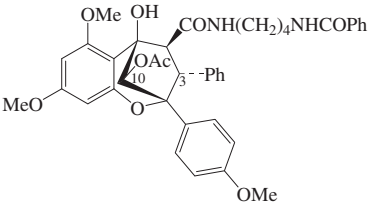


$C_7H_{10}N_2O_2$ 154.168
Exists as zwitterion protonated on the pyrrole N.

(Z)-form [12688-72-1]
Isol. from *Streptomyces eridani*. Shows antibiotic props. Pale-yellow cryst. ($CHCl_3$). Mp 222-224°. λ_{max} 322 (ϵ 16000) (MeOH) (Berdy). λ_{max} 292 (ϵ 7000) (MeOH-HCl) (Berdy).

Coronelli, C. *et al., J. Antibiot.*, 1971, **24**, 491 (*isol*)
Gallo, G.G. *et al., Gazz. Chim. Ital.*, 1975, **105**, 51 (*struct*)

Pyramidaglaine A P-878



$C_{40}H_{42}N_2O_9$ 694.78
Flavagline compd. Alkaloid from *Aglaia andamanica*. Needles (MeOH). Mp 135-137°. $[\alpha]_D^{20}$ -117 (c, 0.1 in MeOH). λ_{max} 215 (ϵ 12850); 270 (ϵ 420) (MeOH).

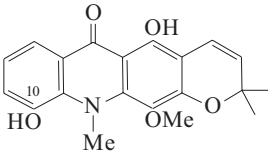
O-*De-Ac:* ***Isofoveoglin***
[948312-50-3]
$C_{38}H_{40}N_2O_8$ 652.743
Alkaloid from the leaves of *Aglaia foveolata*. Amorph. powder. $[\alpha]_D^{20}$ +10 (c, 0.3 in $CHCl_3$). λ_{max} 203 (log ϵ 4.72); 214 (sh) (log ϵ 4.63) (MeOH).

3,10-Diepimer: ***Pyramidaglaine B***
$C_{40}H_{42}N_2O_9$ 694.78
Alkaloid from *Aglaia andamanica*. Needles (MeOH). Mp 146-148°. $[\alpha]_D^{20}$ +22.8 (c, 0.1 in MeOH). λ_{max} 215 (ϵ 11110); 270 (ϵ 1740) (MeOH).

Puripattanavong, J. *et al., Planta Med.*, 2000, **66**, 740-745 (*isol, pmr, cmr*)
Salim, A.A. *et al., Tetrahedron*, 2007, **63**, 7926-7934 (*Isofoveoglin*)

Pyranofoline P-879

*2,11-Dihydro-5,10-dihydroxy-12-methoxy-2,2,11-trimethyl-6*H*-pyrano[3,2-b]acridin-6-one*
[82644-79-9]

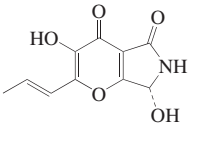


$C_{20}H_{19}NO_5$ 353.374
Alkaloid from the root and stem bark of *Glycosmis citrifolia* (Rutaceae). Orange needles (Me_2CO). Mp 212-214°.

10-Methoxymethyl ether:
Orange needles (Et_2O). Mp 112-114°.

Wu, T.-S. *et al., Heterocycles*, 1982, **19**, 1227; *J.C.S. Perkin 1*, 1983, 1681 (*isol, uv, ir, ms, pmr, cmr, struct*)

Pyranonigrin A P-880



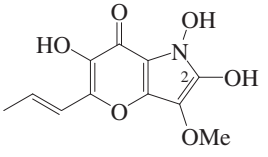
Absolute Configuration

$C_{10}H_9NO_5$ 223.185
Struct. revised in 2007. Prod. by the marine-derived *Aspergillus nigerLL*-LV3020 and the terrestrial *Aspergillus nigerLL*-RB17. Amorph. solid. $[\alpha]_D^{25}$ +84.4 (c, 1 in DMSO). $[\alpha]_D^{25}$ +38.2 (c, 1 in MeOH). λ_{max} 210 (ϵ 19400); 250 (ϵ 9900); 314 (ϵ 13200) (MeOH). λ_{max} 208 ; 250 ; 312 (MeCN aq.).

1-Deoxy: ***Pyranonigrin S***
$C_{10}H_9NO_4$ 207.185
Prod. by *Aspergillus nigerLL*-LV3020. λ_{max} 210 (ϵ 18000); 250 (ϵ 8100); 312 (ϵ 13300) (MeCN aq.).

Hiort, J. *et al., J. Nat. Prod.*, 2004, **67**, 1532-1543 (*isol, pmr, cmr*)
Schlingmann, G. *et al., J. Nat. Prod.*, 2007, **70**, 1180-1187 (*isol, cd, uv, pmr, cmr, ms*)

Pyranonigrin B P-881

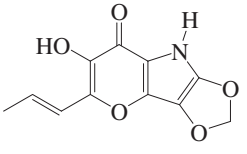


$C_{11}H_{11}NO_6$ 253.211
Prod. by *Aspergillus niger* isol. from the sponge *Axinella damicornis*. Amorph. solid.

O-*De-Me, 2-Me ether:* ***Pyranonigrin C***
$C_{11}H_{11}NO_6$ 253.211
Prod. by *Aspergillus niger* from *Axinella damicornis*. Amorph. solid.

Hiort, J. *et al., J. Nat. Prod.*, 2004, **67**, 1532-1543 (*isol, pmr, cmr*)

Pyranonigrin D P-882

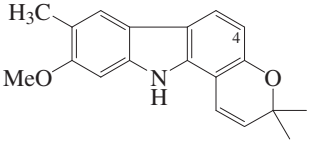


$C_{11}H_9NO_5$ 235.196
Prod. by *Aspergillus niger* isol. from the sponge *Axinella damicornis*. Amorph. solid.

Hiort, J. *et al., J. Nat. Prod.*, 2004, **67**, 1532-1543 (*isol, pmr, cmr*)

Pyrayafoline A P-883

3,11-Dihydro-9-methoxy-3,3,8-trimethylpyrano[3,2-a]carbazole, 9CI
[104778-00-9]



$C_{19}H_{19}NO_2$ 293.365
Alkaloid from the stem bark of *Murraya euchrestifolia* (Rutaceae). Plates (Et_2O). Mp 228-231°. λ_{max} 222 ; 239 ; 286 (sh) ;

295 ; 334 (MeOH).

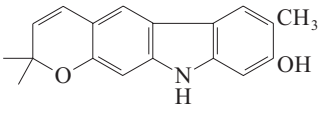
O-*De-Me:* ***Pyrayafoline C***
[138822-92-1]
$C_{18}H_{17}NO_2$ 279.338
Alkaloid from the stem bark of *Murraya euchrestifolia* (Rutaceae). Pale yellow oil. λ_{max} 227 ; 238 ; 286 (sh) ; 296 ; 323 ; 351 (MeOH).

Demethoxy, 4-methoxy: 3,11-Dihydro-5-methoxy-3,3,8-trimethylpyrano[3,2-a]carbazole, 9CI. ***Heptazolidine***
[53424-58-1]
$C_{19}H_{19}NO_2$ 293.365
Alkaloid from *Clausena heptaphylla* (Rutaceae). Cryst. (MeOH). Mp 145°. λ_{max} 230 (log ϵ 4.68); 238 (log ϵ 4.86); 278 (log ϵ 4.29); 282 (log ϵ 4.49); 335 (log ϵ 3.7) (EtOH).

Chakraborty, D.P. *et al., Chem. Ind. (London)*, 1974, 303 (*Heptazolidine*)
Furukawa, H. *et al., Chem. Pharm. Bull.*, 1986, **34**, 2672-2675 (*synth, uv, ir, pmr, ms, struct*)
Ito, C. *et al., Chem. Pharm. Bull.*, 1991, **39**, 1668-1671 (*Pyrayafoline C*)

Pyrayafoline B P-884

[138822-91-0]

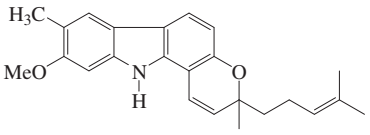


$C_{18}H_{17}NO_2$ 279.338
Alkaloid from the stem bark of *Murraya euchrestifolia* (Rutaceae). Shows cytotoxic activity. Brown powder.

Ito, C. *et al., Chem. Pharm. Bull.*, 1991, **39**, 1668 (*isol, uv, ir, pmr, ms, synth, struct*)
Itoigawa, M. *et al., J. Nat. Prod.*, 2000, **63**, 893-897 (*activity*)

Pyrayafoline D P-885

[138822-93-2]

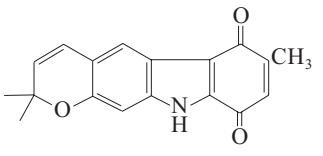


$C_{24}H_{27}NO_2$ 361.483
Alkaloid from the stem bark of *Murraya euchrestifolia*. Pale brown powder. λ_{max} 222 ; 238 ; 288 (sh) ; 296 ; 331 ; 342 (MeOH).

Ito, C. *et al., Chem. Pharm. Bull.*, 1991, **39**, 1668-1671

Pyrayaquinone A P-886

[96861-90-4]

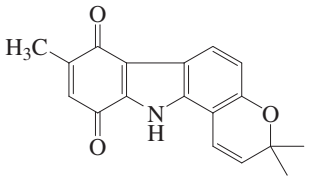


$C_{18}H_{15}NO_3$ 293.321
Alkaloid from the root bark of *Murraya euchrestifolia* (Rutaceae). Mp 222° dec.

Furukawa, H. *et al., Chem. Pharm. Bull.*, 1985, **33**, 1320 (*isol, uv, ir, pmr, ms, struct, synth*)
Yogo, M. *et al., Chem. Pharm. Bull.*, 1991, **39**, 328 (*synth*)

Pyrayaquinone B P-887

[96861-91-5]

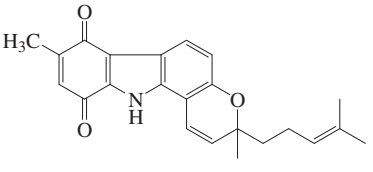


$C_{18}H_{15}NO_3$ 293.321
Alkaloid from the root bark of *Murraya euchrestifolia* (Rutaceae). Mp 244° dec.

Furukawa, H. *et al., Chem. Pharm. Bull.*, 1985, **33**, 1320 (*isol, uv, ir, pmr, ms, struct, synth*)
Ramesh, K. *et al., Chem. Ind. (London)*, 1986, 614 (*synth*)
Yogo, M. *et al., Chem. Pharm. Bull.*, 1991, **39**, 328 (*synth*)

Pyrayaquinone C P-888

3,11-Dihydro-3,8-dimethyl-3-(4-methyl-3-pentenyl)pyrano[3,2-a]carbazole-7,10-dione, 9CI
[117591-99-8]

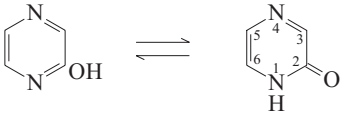


$C_{23}H_{23}NO_3$ 361.44
Alkaloid from the root bark of *Murraya euchrestifolia* (Rutaceae). Dark-violet prisms (Me_2CO). Mp 223° dec.

Ito, C. *et al., Chem. Pharm. Bull.*, 1988, **36**, 2377 (*isol, uv, ir, pmr, ms, struct*)

Pyrazinol, 8CI P-889

2-Hydroxypyrazine. 2(1H)-Pyrazinone



$C_4H_4N_2O$ 96.088
NH-form predominates. Cryst. (C_6H_6). Mp 185-186°. pK_{a1} -0.1; pK_{a2} 8.25 (20°, H_2SO_4 aq.).

OH-form

Me ether: Methoxypyrazine. FEMA 3302
[3149-28-8]
$C_5H_6N_2O$ 110.115
Flavouring agent. Bp_{29} 60-61° (Bp_{28} 68°). pK_a 0.75. Odour threshold 700 ppb in H_2O.
▶ Skin and eye irritant.

Me ether, 1-oxide: [32046-05-2]
$C_5H_6N_2O_2$ 126.115
Mp 159-160.5°.

Me ether, 4-oxide: [23902-69-4]
$C_5H_6N_2O_2$ 126.115
Mp 80-81.5°.

Et ether: Ethoxypyrazine
[38028-67-0]
$C_6H_8N_2O$ 124.142
Bp_{90} 90-92°.

Ph ether: 2-Phenoxypyrazine
[107697-82-5]
$C_{10}H_8N_2O$ 172.186
Mp 50-51°.

NH-form [6270-63-9]

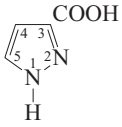
1-N-Me:
$C_5H_6N_2O$ 110.115
Cryst. (petrol). Mp 83-84°.

4-Oxide: ***Emimycin***
[3735-46-4]
$C_4H_4N_2O_2$ 112.088
Prod. by *Streptomyces griseochromogenes*, *Streptomyces antibioticus* 2020i, *Bacillus* sp. Nk84-0218 and *Bacillus megatherium*. Weakly active against gram-positive and -negative bacteria and fungi. Anticoccidial agent and acaricide. Nucleic acid antimetabolite. Cryst. ($EtOH/Et_2O$). Sol. H_2O, AcOH, MeOH; fairly sol. EtOH, Me_2CO; poorly sol. EtOAc, hexane. Mp 245-250° dec. λ_{max} 222 (E1%/1cm 1545); 276 (E1%/1cm 610); 331 (E1%/1cm 393) (MeOH) (Berdy). λ_{max} 220 (E1%/1cm 1955); 272 (E1%/1cm 800); 328 (E1%/1cm 460) (HCl) (Berdy). λ_{max} 229 (E1%/1cm 2410); 256 (E1%/1cm 831); 330 (E1%/1cm 569) (NaOH) (Berdy).
▶ LD_{50} (mus, ipr) 1000-2000 mg/kg.
UQ4385000

Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 403B (*nmr*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 1559D (*ir*)
Erickson, A.E. *et al., J.A.C.S.*, 1946, **68**, 400 (*synth*)
Karmas, G. *et al., J.A.C.S.*, 1952, **74**, 1580 (*synth*)
Albert, A. *et al., J.C.S.*, 1956, 1294
Mason, S.F. *et al., J.C.S.*, 1957, 4874; 5010; 1959, 1253 (*uv, tautom*)
Cheeseman, G.W.H. *et al., J.C.S.*, 1960, 242 (*struct*)
Tamura, C. *et al., Bull. Chem. Soc. Jpn.*, 1963, **36**, 1187 (*Emimycin*)
Terao, M. *et al., J. Antibiot., Ser. A*, 1963, **16**, 182 (*deriv*)
Okada, S. *et al., Chem. Pharm. Bull.*, 1971, **19**, 1344
Uchimani, F. *et al., J. Het. Chem.*, 1971, **8**, 99 (*ms*)
Bloch, A. *et al., J. Med. Chem.*, 1972, **15**, 164; 1973, **16**, 183 (*Emimycin*)
Marx, G.S. *et al., J.O.C.*, 1972, **37**, 111 (*pmr*)
MacDonald, J.C. *et al., Tetrahedron*, 1976, **32**, 655 (*nmr*)
Tsujimoto, T. *et al., Chem. Pharm. Bull.*, 1979, **27**, 1169 (*pmr*)
Mano, M. *et al., Chem. Pharm. Bull.*, 1980, **28**, 2720 (*Emimycin*)
Isono, K. *et al., J. Antibiot.*, 1988, **41**, 1711 (*rev*)
Lewis, R.J. *et al., Food Additives Handbook*, Van Nostrand Reinhold International, New York, 1989, MFN285

Peters, D.A. *et al., Acta Cryst. C*, 1992, **48**, 307 (*cryst struct, Me ether oxide*)
Plé, N. *et al., Synthesis*, 1996, 838 (*Me ether*)
Cherng, Y.-J. *et al., Tetrahedron*, 2002, **58**, 887-890 (*Et ether, Ph ether*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, MFN285

3(5)-Pyrazolecarboxylic acid, 9CI P-890



1*H–form*

$C_4H_4N_2O_2$ 112.088
Prisms (H_2O). Sol. EtOH; mod. sol. Et_2O, AcOH; insol. $CHCl_3$, C_6H_6. Mp 293° dec. A claimed isolation in 1997 from a marine sponge was shown to be incorr. (2003).

Me ester: [15366-34-4]
$C_5H_6N_2O_2$ 126.115
Cryst. (C_6H_6). Sol. MeOH; spar. sol. petrol. Mp 139-140°.

Et ester: [5932-27-4]
$C_6H_8N_2O_2$ 140.141
Cryst. (hexane/EtOAc). Mp 158-159°.

Amide: [33064-36-7]
$C_4H_5N_3O$ 111.103
Mp 203-204°.

Nitrile: 3-Cyanopyrazole
[33064-34-5]
$C_4H_3N_3$ 93.088
Cryst. (C_6H_6). Mp 76-77°.

1*H-form* [1621-91-6]

N-*Me: 1-Methyl-1*H-*pyrazole-3-carboxylic acid, 9CI*
[25016-20-0]
$C_5H_6N_2O_2$ 126.115
Cryst. Mod. sol. hot H_2O. Mp 155-155.5° (146°) Mp 222°.

N-*Me, Me ester:* [17827-61-1]
$C_6H_8N_2O_2$ 140.141
Liq. Bp_9 120°.

N-*Me, Et ester:*
$C_7H_{10}N_2O_2$ 154.168
Liq. Mp 9-11°. Bp_{13} 140-143°.

N-*Ph: 1-Phenyl-1*H-*pyrazole-3-carboxylic acid, 9CI*
[4747-46-0]
$C_{10}H_8N_2O_2$ 188.185
Needles (H_2O). Mp 146°. pK_{a1} 3.6 (20°).

N-*Ph, Me ester:*
$C_{11}H_{10}N_2O_2$ 202.212
Needles. Mp 77°.

N-*Ph, nitrile: 3-Cyano-1-phenyl-1*H-*pyrazole*
[18093-85-1]
$C_{10}H_7N_3$ 169.185
Cryst. (Et_2O/petrol).

2*H-form*

N-*Me: 1-Methyl-1*H-*pyrazole-5-carboxylic acid, 9CI*
[16034-46-1]
[25832-41-1 , 17827-60-0]
$C_5H_6N_2O_2$ 126.115
Isol. from the gorgonian *Echinomuraceae splendens*. Cryst. (H_2O). Mp 223-224° (219-220°).

N-*Me, Et ester:*
Liq. Bp_{18} 95°.

N-*Ph: 1-Phenyl-1*H-*pyrazole-5-carboxylic acid, 9CI*
[1133-77-3]
$C_{10}H_8N_2O_2$ 188.185
Needles (H_2O). Mp 183°. pK_{a1} 2.7 (20°).

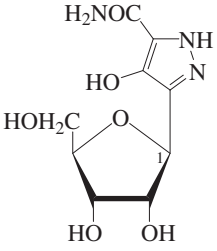
N-*Ph, Me ester:* [55115-07-6]
Needles. Mp 67°.

N-*Ph, nitrile: 5-Cyano-1-phenyl-1*H-*pyrazole*
$C_{10}H_7N_3$ 169.185
Liq. $Bp_{0.625}$ 95-100° (lit. gives a pressure range).

Claisen, L. *et al., Annalen*, 1894, **278**, 292 (*N-Ph*)
v. Pechmann, H. *et al., Ber.*, 1900, **33**, 3594 (*synth*)
Buchner, E. *et al., Ber.*, 1902, **35**, 37 (*synth*)
Rojahn, C.A. *et al., Annalen*, 1924, **437**, 303 (*N-Ph*)
v. Auwers, K. *et al., J. Prakt. Chem.*, 1935, **143**, 259 (*ester*)
Cusmano, S. *et al., Gazz. Chim. Ital.*, 1940, **70**, 227 (*N-Ph*)
Panizzi, L. *et al., Gazz. Chim. Ital.*, 1947, **77**, 556 (*N-Ph*)
Roedig, A. *et al., Annalen*, 1955, **597**, 214 (*N-Ph*)
Hüttel, R. *et al., Annalen*, 1959, **625**, 55 (*synth*)
Gundermann, K. *et al., Chem. Ber.*, 1960, **93**, 883 (*synth*)
Wijnberger, C. *et al., J. Het. Chem.*, 1969, **6**, 545 (*N-Me*)
Manecke, G. *et al., Tet. Lett.*, 1969, 617 (*synth*)
Sasaki, T. *et al., J.C.S.(C)*, 1971, 2147 (*derivs*)
Akhrem, A.A. *et al., Tet. Lett.*, 1973, 2655 (*pmr, ir, uv*)
Scherowsky, G. *et al., Annalen*, 1977, 1235 (*N-Ph*)
Beck, J.R. *et al., J. Het. Chem.*, 1988, **25**, 555 (*N-Ph*)
Pavlik, J.W. *et al., J. Het. Chem.*, 1992, **29**, 1357 (*N-Me*)
Martins, M.A.P. *et al., Synthesis*, 1995, 1491 (*Et ester*)
Parameswaran, P.S. *et al., Indian J. Chem., Sect. B*, 2002, **41**, 1093-1096 (*isol, N-Me*)
Rao, K.V. *et al., J. Nat. Prod.*, 2003, **66**, 823-828 (*claimed isol*)

Pyrazomycin P-891

*4-Hydroxy-3-ribofuranosyl-1*H-*pyrazole-5-carboxamide, 9CI. A 23813. Antibiotic A 23813*



β-*form*

$C_9H_{13}N_3O_6$ 259.218
Nucleoside antibiotic. Sol. H_2O, EtOH, butanol, MeOH; fairly sol. EtOAc; poorly sol. $CHCl_3$, hexane. Log P -2.91 (calc). λ_{max} 232 (ϵ 7400); 263 (ϵ 6200) (EtOH/HCl) (Derep). λ_{max} 235 (ϵ 5100); 307 (ϵ 5100) (EtOH/NaOH) (Derep). λ_{max} 232 (ϵ 6200); 263 (ϵ 6210) (pH 7 H_2O) (Derep). λ_{max} 226 (ϵ 7600); 267 (ϵ 6000) (MeOH) (Berdy). λ_{max} 232 (ϵ 7400); 263 (ϵ 6200) (EtOH) (Berdy). λ_{max} 235 (ϵ 5100); 307 (ϵ 5100) (EtOH-NaOH) (Berdy). λ_{max} 232 (ϵ 7000); 263 (ϵ 6000) (EtOH-HCl) (Berdy). λ_{max} 263 (ϵ 6200) (pH 7 buffer) (Berdy). λ_{max} 307 (ϵ 8100) (pH 12 buffer) (Berdy).

α-D-*form*

Pyrazofurin B. *Pyrazomycin B*
[41855-21-4]
Isol. from *Streptomyces candidus*. Dihydrate. Sol. H_2O, MeOH; poorly sol. Et_2O, hexane. Mp 69-70°. λ_{max} 232 (ϵ 7400); 263 (ϵ 6200) (EtOH/HCl) (Derep). λ_{max} 235 (ϵ 5100); 307 (ϵ 5100) (EtOH/NaOH) (Derep). λ_{max} 232 (ϵ 6200); 263 (ϵ 6210) (pH 7 H_2O) (Derep). λ_{max} 225 (ϵ 8000); 276 (ϵ 6700) (EtOH) (Berdy).

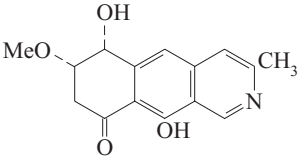
β-D-*form*

Pyrazofurin, USAN. *Pirazofurin, INN. Antibiotic A 23812. NSC 143095. A 23812*
[30868-30-5]
From *Streptomyces candidus*. Shows antibiotic and antineoplastic props. Cryst. (H_2O). Mp 112-115°. $[\alpha]_D^{25}$ -49.6 (c, 0.80 in H_2O).
▶ Gastrointestinal disturbances and adverse skin effects reported when used therapeutically. UQ6360000

Ger. Pat., 1971, 2 019 838; *CA*, **74**, 41133s (*isol*)
Farkas, J. *et al., Tet. Lett.*, 1972, 2279 (*synth*)
Wenkert, E. *et al., Biochem. Biophys. Res. Commun.*, 1973, **51**, 318 (*cmr*)
Sweeney, M.J. *et al., Cancer Res.*, 1973, **33**, 2619
Crain, P.F. *et al., J. Het. Chem.*, 1973, **10**, 843 (*ms*)
de Bernardo, S. *et al., J.O.C.*, 1976, **41**, 287 (*synth*)
U.S. Pat., 1976, 3 998 999; *CA*, **86**, 155899z (*synth*)
Neumann, J.M. *et al., Biochim. Biophys. Acta*, 1977, **479**, 427 (*conformn, nmr*)
Miles, D.W. *et al., J. Phys. Chem.*, 1983, **87**, 2444 (*conformn*)
Karagiri, N. *et al., J.C.S. Perkin 1*, 1984, 553 (*synth*)
Lopez Herrera, F.J. *et al., Carbohydr. Res.*, 1985, **139**, 95 (*analogues*)
Petrie, C.R. *et al., J. Med. Chem.*, 1986, **29**, 268 (*derivs*)
Negwer, M. *et al., Organic-Chemical Drugs and their Synonyms, 6th edn., Akademie-Verlag*, 1987, 1300
Isono, K. *et al., J. Antibiot.*, 1988, **41**, 1711 (*rev*)

Pyrenoline A† P-892

*7,8-Dihydro-6,10-dihydroxy-7-methoxy-3-methylbenz[g]isoquinolin-9(6*H*)-one, 9CI. Chrysanthone†*
[129134-97-0]



$C_{15}H_{15}NO_4$ 273.288

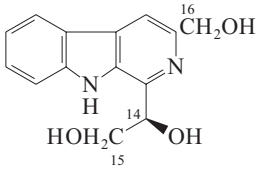
Related to Bostrycoidin, B-255. Isol. from *Ascochyta chrysanthemi*. Prod. by the fungus *Pyrenophora teres*. Phytotoxin, shows weak antifungal and antibacterial activity. Orange cryst. Mp 193° (80° dec.). $[\alpha]_D$ -37.2 (c, 0.1 in Py).

Demethoxy: ***Pyrenoline B***
[129134-98-1]
$C_{14}H_{13}NO_3$ 243.262
From *Pyrenophora teres*. Phytotoxin. Phytotoxin. Light orange oil. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. $[\alpha]_D$ -22 (c, 0.0014 in MeOH). λ_{max} 244 (ϵ 8300); 270 (ϵ 7300); 350 (ϵ 7400) (MeOH) (Berdy).

Albinati, A. *et al., Phytochemistry*, 1989, **28**, 923 (*isol, uv, ir, pmr, cmr, ms, cryst struct*)
Coval, S.J. *et al., Tet. Lett.*, 1990, **31**, 2117 (*isol, struct*)

Pyridindolol P-893

*α′-(Hydroxymethyl)-9*H*-pyrido[3,4-*b*]indole-1,3-dimethanol, 9CI. 1-(1,2-Dihydroxyethyl)-3-hydroxymethyl-β-carbazole. Tu 2480F₁. Antibiotic Tu 2480F₁*



$C_{14}H_{14}N_2O_3$ 258.276
λ_{max} 256 (ϵ 38000); 306 (ϵ 20000); 380 (ϵ 5620) (MeOH/HCl) (Derep). λ_{max} 216 (ϵ 22900); 238 (ϵ 41690); 245 (sh) (ϵ 33880); 255 (sh) (ϵ 28840); 285 (sh); 345 (ϵ 5130); 350 (ϵ 5130) (MeOH) (Derep). λ_{max} 216 ; 237 ; 291 ; 343 ; 355 (EtOH) (Berdy).

(R)-form [55812-46-9]
Alkaloid from *Streptomyces alboverticillatus* and *Streptomyces parvulus*. Shows antibiotic props. β-Galactosidase inhibitor. Needles. Sol. MeOH, butanol; poorly sol. $CHCl_3$, hexane. Mp 167-168°. $[\alpha]_D^{25}$ -49 (c, 1 in MeOH).

► UU9810000

*14-*O*-β-D-Glucopyranoside:* ***Antibiotic Tu 2480F₂****. Tu 2480F₂*
[115178-47-7]
$C_{20}H_{24}N_2O_8$ 420.418
From *Streptomyces parvulus*. Glycosidase inhibitor. Needles + $^1/_3H_2O$ (MeOH/EtOAc). Mp 228-231° dec. $[\alpha]_D^{20}$ -100 (c, 0.5 in MeOH). λ_{max} 256 (ϵ 30000); 306 (ϵ 20000); 380 (ϵ 5620) (EtOH/HCl) (Derep). λ_{max} 215 (ϵ 11200); 237 (ϵ 32400); 290 (ϵ 14100); 343 (ϵ 4570); 354 (ϵ 4570) (EtOH) (Derep).

*15-*O*-β-D-Glucopyranoside:* ***Antibiotic Tu 2480F₃****. Tu 2480F₃*
[115178-45-5]
$C_{20}H_{24}N_2O_8$ 420.418
From *Streptomyces parvulus*. Glycosidase inhibitor. Powder. $[\alpha]_D^{20}$ -90 (c, 0.5 in MeOH). λ_{max} 256 (ϵ 30000); 306 (ϵ 20000); 380 (ϵ 5620) (EtOH/HCl) (Derep). λ_{max} 215 (ϵ 11200); 237 (ϵ 32400); 290 (ϵ 14100); 343 (ϵ 4570); 354 (ϵ 4570) (EtOH) (Derep).

*16-*O*-β-D-Glucopyranoside:* ***Antibiotic Tu 2480F₄****. Tu 2480F₄*
[115178-46-6]
$C_{20}H_{24}N_2O_8$ 420.418
From *Streptomyces parvulus*. Glycosidase inhibitor. Powder. $[\alpha]_D^{22}$ -80 (c, 0.5 in MeOH). λ_{max} 256 (ϵ 30000); 306 (ϵ 20000); 380 (ϵ 5620) (EtOH/HCl) (Derep). λ_{max} 215 (ϵ 11200); 237 (ϵ 32400); 290 (ϵ 14100); 343 (ϵ 4570); 354 (ϵ 4570) (EtOH) (Berdy). λ_{max} 214 (ϵ 11750); 237 (ϵ 35480); 239 (ϵ 214800); 340 (ϵ 1445); 351 (ϵ 4570) (EtOH) (Berdy).

16-Ac: ***Pyridindolol K2***
[189756-51-2]
$C_{16}H_{16}N_2O_4$ 300.313
Alkaloid from *Streptomyces* sp. K93-0711. Needles. Sol. MeOH, EtOAc; poorly sol. H_2O. Mp 123-124°. $[\alpha]_D^{20}$ -35 (c, 0.4 in MeOH). λ_{max} 215 (log ϵ 4.23); 238 (log ϵ 4.42); 245 (sh) (log ϵ 4.39); 254 (sh) (log ϵ 4.32); 262 (sh) (log ϵ 4.12); 282 (sh) (log ϵ 3.84); 291 (log ϵ 4.02); 343 (log ϵ 3.53); 356 (sh) (log ϵ 3.48) (MeOH).

15,16-Di-Ac: ***Pyridindolol K1***
[189756-49-8]
$C_{18}H_{18}N_2O_5$ 342.351
Alkaloid from *Streptomyces* sp. K93-0711. Oil. Sol. MeOH, EtOAc; poorly sol. H_2O. $[\alpha]_D^{20}$ -16 (c, 0.2 in MeOH). λ_{max} 205 (sh) (log ϵ 4.02); 215 (log ϵ 4.04); 238 (log ϵ 4.14); 247 (sh) (log ϵ 4.08); 254 (sh) (log ϵ 4.03); 262 (log ϵ 3.87); 282 (sh) (log ϵ 3.62); 290 (log ϵ 3.75); 346 (log ϵ 3.35); 356 (sh) (log ϵ 3.28) (MeOH).

1′-Carboxylic acid: see 1-(1,2-Dihydroxyethyl)-β-carboline-3-carboxylic acid, D-579

(±)-form [66183-62-8]
Cryst. (EtOAc/MeOH). Mp 169-170°.
Aoyagi, T. *et al., J. Antibiot.*, 1975, **28**, 555-557 (*isol, ir, uv, struct*)
Naganawa, H. *et al., J. Antibiot.*, 1975, **28**, 876-880 (*struct, nmr, cryst struct*)
Soerens, D. *et al., J.O.C.*, 1979, **44**, 535-545 (*synth*)
Bieraugel, H. *et al., Tetrahedron*, 1983, **39**, 3987-3990 (*synth*)
Hagmann, L. *et al., J. Antibiot.*, 1988, **41**, 289-295 (*derivs*)
Kim, Y.-P. *et al., J. Antibiot.*, 1997, **50**, 189-193 (*Pyridindolol K1/K2*)
Kanekiyo, N. *et al., Heterocycles*, 2000, **53**, 1877-1880 (*Pyridindolol K2, synth*)
Kanekiyo, N. *et al., J.O.C.*, 2002, **66**, 8793-8798 (*synth*)

Pyridine, 9CI, 8CI P-894

Azabenzene. Azine. FEMA 2966
[110-86-1]



C_5H_5N 79.101
Extracted in quantity from coal tar. Found in traces in some plants, e.g. *Nicotiana paniculata*, *Atropa belladonna* (Solanaceae). Powerful solvent; dissolves inorg. salts. Org. intermed. Solvent in Karl Fischer reagent for detn. of H_2O, denaturant for industrial ethanol. Important analytical solvent; often used in separation and detn. of elements. Liq. with characteristic unpleasant odour and sharp taste. Misc. H_2O, petrol, Et_2O, etc. d_4^{25} 0.98. Fp -42. Bp 115.5°. n_D^{21} 1.5092. pK_a 5.58 (25°). pK_a 5.23 (25°). Forms azeotropic mixt. with 3 mols. H_2O, Bp 92-3°. Hygroscopic. Steam-volatile.

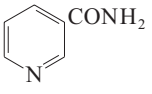
► Flammable, fl. p. 17°, autoignition temp. 482°. Eye and skin irritant. May cause dermatitis. CNS depressant by inhalation; symptoms include headache, vertigo, insomnia, nausea. Prolonged or repeated exposure injures kidney and liver. LD_{50} (rat, orl) 891 mg/kg. LD_{50} (rbt, skn) 1121 mg/kg. OES: long-term 5 ppm; short-term 10 ppm. UR8400000

[16969-45-2 , 7291-22-7]

Luckner, M. *et al., Pharmazie*, 1964, **19**, 1 (*biosynth*)
Boodman, N.S. *et al., Chem. Heterocycl. Compd.*, Suppl. 1, 1974, **14**, 183 (*synth*)
Kirk-Othmer Encycl. Chem. Technol., 3rd edn., Wiley, 1978, **19**, 454 (*rev*)

3-Pyridinecarboxamide, 9CI P-895

Nicotinamide, 8CI, INN*. Niacinamide. Nicotinic acid amide. Antipellagra factor. Nicosan 2. PP-Factor. Vitamin B₃. Many other names*
[98-92-0]
[119047-33-5 (perchlorate)]



$C_6H_6N_2O$ 122.126
Widespread in plants, e.g. rice, yeast and fungi. Prod. by the marine bacterium strain He159b. Enzyme cofactor, used in treatment of pellagra, low mammalian toxicity. Needles (C_6H_6). Mp 129-130°. $Bp_{0.0005}$ 150-160°. pK_a 3.33 (20°). Log P -0.21 (calc).

► QS3675000

N′-Me: N-*Methyl-3-pyridinecarboxamide, 9CI*. N-*Methylnicotinamide, 8CI. 3-(Methylcarbamoyl)pyridine*
[114-33-0]
$C_7H_8N_2O$ 136.153
Metabolised from Tryptophan, T-640 and 3-Pyridinecarboxylic acid, P-897; principal urinary excretion product of 3-Pyridinecarboxylic acid, P-897 in man, dogs, pigs, rats, etc. Mp 105°.

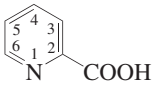
[6485-44-5]

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 796B; 917A (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 338B; 342B (*nmr*)
La Forge, F.B. *et al., J.A.C.S.*, 1928, **50**, 2477 (*synth*)
Georg, A. *et al., Helv. Chim. Acta*, 1943, **26**, 358 (*synth*)
Long, K.R. *et al., J. Magn. Reson.*, 1972, **8**, 207-216 (N′-*Me, cmr*)

Bernardi, L. *et al., Chem. Comm.*, 1975, 320-321 (N′-*Me*)
Auerbach, J. *et al., J.O.C.*, 1976, **41**, 725 (*synth*)
Kirk-Othmer Encycl. Chem. Technol., 3rd edn., Wiley, 1978, **24**, 59 (*rev*)
Oppenheimer, N.J. *et al., Org. Magn. Reson.*, 1980, **13**, 14 (*N-15 nmr*)
Shabaan, M. *et al., Dissertation*, Univ. of Göttingen, 2004, (*marine, isol*)
Roje, S. *et al., Phytochemistry*, 2007, **68**, 1904-1921 (*biosynth, rev*)

2-Pyridinecarboxylic acid, 9CI P-896

Picolinic acid, 8CI
[98-98-6]



$C_6H_5NO_2$ 123.111
Isol. from culture medium of *Piricularia oryzae*. Catalyst for CrO_3 oxidns. Used as 8% aq. soln. for extraction separation of V(*III*). Needles (H_2O, EtOH or C_6H_6). Sol. MeOH, EtOAc; fairly sol. H_2O, C_6H_6, Et_2O; poorly sol. hexane. Mp 136-138° (melts with sublimation). pK_{a1} 0.99; pK_{a2} 5.39 (25°). λ_{max} 265 (MeOH) (Berdy).

► LD_{50} (mus, ipr) 360 mg/kg. TJ7344000

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 784C; 792C; 800A; 916B (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 316C; 328C; 347A (*nmr*)
Singer, A.W. *et al., Org. Synth., Coll. Vol., 3*, 1955, 740-741 (*synth, bibl*)
Tamari, K. *et al., CA*, 1965, **63**, 6049 (*isol*)
Pollak, P.I. *et al., Chem. Heterocycl. Compd.*, Suppl. 3, 1974, **14**, (*bibl*)
Cook, I.B. *et al., Aust. J. Chem.*, 1989, **42**, 1493 (*cmr*)
Csanády, G. *et al., Org. Prep. Proced. Int.*, 1990, **22**, 507 (*synth*)
de Oliveira, S.M. *et al., Org. Mass Spectrom.*, 1991, **26**, 855 (*ms*)

3-Pyridinecarboxylic acid P-897

Nicotinic acid, INN. *Niacin, USAN. Nicamin. Nicobid. Nyclin. Pelonin. Wampocap. Many other names*
[59-67-6]

$C_6H_5NO_2$ 123.111
Present in fruits and other plant materials. Used as 2.5% aq. soln. for extraction-photometric detn. of U(*VI*) (λ_{max} 556 nm, ε 120000). Vitamin, enzyme cofactor, vasodilator. Antihyperglycaemic agent. Used to treat lipid disorders. . Needles (H_2O or EtOH). Sol. hot H_2O; spar. sol. Et_2O. Mp 236° (225-227°). pK_{a1} 2; pK_{a2} 4.82 (25°). Log P 0.8 (calc). Sublimes.

► Can cause dermal and gastrointestinal reactions and hepatic effects at high therapeutic doses. Low acute mammalian toxicity. QT0525000

β-D-Glucopyranosyl ester: 1-O-*Nicotinoyl-β-D-glucopyranose*
[35214-85-8]
$C_{12}H_{15}NO_7$ 285.253
Present in tobacco (*Nicotiana tabacum*) cells grown in a high conc. of niacin. Prob. a detoxification form of niacin in the plant. λ_{max} 263 (log ε 3.22) (H_2O).

N-*(2-Hydroxyethyl), betaine: 3-Carboxy-1-(2-hydroxyethyl)pyridinium betaine.* ***Pyridinebetaine A***
[52578-48-0]
$C_8H_9NO_3$ 167.164
Isol. from the sponge *Agelas dispar*. Amorph. solid. λ_{max} 220 (ε 3000); 266 (ε 2500) (MeOH).

[1976-28-9]

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 785B; 793D; 794A; 797C; 800C; 916C (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 317B; 330B; 331A; 331B; 332B; 336C; 340B; 347C (*nmr*)
Org. Synth., Coll. Vol., 1, 1932, 385 (*synth*)
Pollak, P.I. *et al., Chem. Heterocycl. Compd.*, Suppl. 3, 1974, **14**, (*bibl*)
Kirk-Othmer Encycl. Chem. Technol., 3rd edn., Wiley, 1978, **24**, 59 (*rev*)
Dommisse, R. *et al., Heterocycles*, 1981, **16**, 1893-1897 (*cmr*)
Staedeli, W. *et al., Org. Magn. Reson.*, 1981, **15**, 106-109 (*N-15 nmr*)
Ohshima, N. *et al., Phytochemistry*, 1997, **44**, 1483-1484 (*glucosyl ester*)
Cafieri, F. *et al., J. Nat. Prod.*, 1998, **61**, 1171-1173 (*Pyridinebetaine A*)
McCormack, P.L. *et al., Drugs*, 2005, **65**, 2719-2740 (*rev*)

4-Pyridinecarboxylic acid, 9CI P-898

Isonicotinic acid, 8CI
[55-22-1]

$C_6H_5NO_2$ 123.111
Needles (H_2O). Subl. 315. pK_{a1} 1.77; pK_{a2} 4.84 (25°).

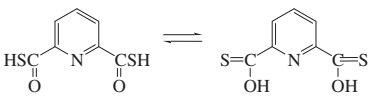
► LD_{50} (rat, orl) 5000 mg/kg. NS1103000

2R-Methylheptyl ester: ***2-Methylheptyl isonicotinate***
$C_{14}H_{21}NO_2$ 235.325
Prod. by *Streptomyces* sp. 201. Antibacterial and antifungal agent. Brown solid. $[\alpha]_D^{20}$ +8.3 (c, 0.6 in $CHCl_3$). λ_{max} 220 ($CHCl_3$).

Bordoloi, G.N. *et al., Biosci., Biotechnol., Biochem.*, 2001, **65**, 1856-1858 (*2-methylheptyl ester, isol*)

2,6-Pyridinedicarbothioic acid, 9CI P-899

Pyridine-2,6-di(monothiocarboxylic acid)
[69945-42-2]



$C_7H_5NO_2S_2$ 199.254
Prod. by *Pseudomonas putida* and *Pseudomonas stutzeri*. Siderophore. λ_{max} 267 ; 340 (MeOH) (Berdy).

Fe complex: [97253-20-8]
[95787-42-1]
$C_{14}H_6FeN_2O_4S_4^{2\ominus}$ 450.323
Prod. by *Pseudomonas putida*. Blue powder.

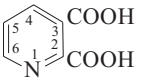
Di-*OH-form*

Di-Me ester: [84877-69-0]
$C_9H_9NO_2S_2$ 227.308
Orange cryst. (MeOH). Mp 100-100.5°.

Ockels, W. *et al., Tet. Lett.*, 1978, 3341-3342 (*isol*)
Jones, B.A. *et al., J.O.C.*, 1983, **48**, 2635-2639 (*synth, ester*)
Hildebrand, U. *et al., Phosphorus Sulfur Relat. Elem.*, 1983, **16**, 361-364 (*cryst struct*)
Hildebrand, U. *et al., Z. Naturforsch., C*, 1985, **40**, 201-207 (*isol*)
Lee, C.-H. *et al., Biochem. Biophys. Res. Commun.*, 1999, **261**, 562-566 (*isol*)
Zawadzka, A.M> *et al., Appl. Environ. Microbiol.*, 2006, **72**, 3119-3129 (*isol, activity*)

2,3-Pyridinedicarboxylic acid, 9CI, 8CI P-900

Quinolinic acid
[89-00-9]



$C_7H_5NO_4$ 167.121
Intermed. in the biosynth. of nicotinic acid dinucleotide in microorganisms. Convulsive agent. Prisms (H_2O). Spar. sol. H_2O; prac. insol. EtOH, Et_2O. Mp 188° Mp 190-195° dec. pK_{a1} 2.43; pK_{a2} 4.78 (25°, 0.1*M* $NaClO_4$).

Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 326A; 336A (*nmr*)
Aldrich Library of NMR Spectra, **9**, 44D (*pmr*)
Oliveto, E.P. *et al., Chem. Heterocycl. Compd.*, (Part 3), 1962, **14**, 179 (*bibl*)
Caswell, L.R. *et al., J. Het. Chem.*, 1972, **9**, 551 (*rev*)
Sutter, P. *et al., J. Het. Chem.*, 1986, **23**, 29 (*synth, bibl*)

2,6-Pyridinedicarboxylic acid, 9CI, 8CI P-901

Dipicolinic acid
[499-83-2]

$C_7H_5NO_4$ 167.121
Occurs in bacteria and fungi, e.g. *Verticillium*, *Pseudomonas*, *Penicillium*, *Bacillus* spp. Used as 0.1*M* aq. soln. for photometric detn. of Ag, Cr, V and Mn; gravimetric detn. of U. Polyamide fibres have been synth. by reaction of the di-Ph ester or dichloride with diamines. Coml. antibacterial agent. Also shows mycotoxic and insecticidal props. Cryst. + $1\frac{1}{2}H_2O$ (H_2O). Mp 252° dec. (anhyd.). pK_{a1} 2.24; pK_{a2} 4.67 (25°). λ_{max} 270 ; 278 (MeOH) (Berdy).

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 791D; 795D
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 327B; 334A; 337B (*nmr*)
Biemann, K. *et al., J.A.C.S.*, 1957, **79**, 5558-5564 (*synth, ir*)
Oliveto, E.P. *et al., Chem. Heterocycl. Compd.*, (Part 3), 1962, **14**, 179-346 (*bibl*)
Hodson, P.H. *et al., J. Bacteriol.*, 1966, **91**, 562-569 (*occur*)
Brown, E.V. *et al., J. Het. Chem.*, 1971, **8**, 189-192 (*ms*)

3,5-Pyridinedicarboxylic acid, 9CI, 8CI P-902

Dinicotinic acid

[499-81-0]

$C_7H_5NO_4$ 167.121

Cryst. Prac. insol. H_2O. Mp 323° dec. pK_{a1} 1.1; pK_{a2} 2.72; pK_{a3} 4.62 (25°). Several polyamides have been synth.

Diamide: 3,5-Pyridinedicarboxamide. Dinicotinic amide

[4663-99-4]

$C_7H_7N_3O_2$ 165.151

Alkaloid from *Aristolochia zollingeriana* and *Peristrophe japonica*. Cryst. + ½H_2O (DMF). Mp 318-319° dec. (310-311°).

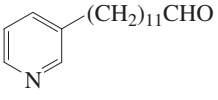
Kuthan, J. *et al., Coll. Czech. Chem. Comm.*, 1966, **31**, 2618 (*esters, diamide*)

Chiang, C.-Y. *et al., J. Chin. Chem. Soc. (Taipei)*, 1998, **45**, 93-97 (*isol, diamide*)

Carelli, V. *et al., J.C.S. Perkin 1*, 2002, 542-547 (*diamide, bismethylamide, synth, pmr*)

3-Pyridinedodecanal P-903

12-(3-Pyridinyl)dodecanal



$C_{17}H_{27}NO$ 261.406

Oxime: [291775-86-5]

$C_{17}H_{28}N_2O$ 276.421

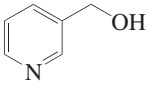
Isol. from *Amphimedon* sp. Config. not determined. λ_{max} 264 (ϵ 3200) (MeOH).

Hirano, K. *et al., Chem. Pharm. Bull.*, 2000, **48**, 974-977 (*isol, pmr, cmr, uv*)

3-Pyridinemethanol, 9CI, 8CI P-904

3-Hydroxymethylpyridine. Nicotinyl alcohol, BAN. NSC 526046

[100-55-0]



C_6H_7NO 109.127

Vasodilator. Bp_{15} 142-143° $Bp_{0.1}$ 110°. pK_a 4.93 (25°). Log P -0.39 (calc).

▶ UT4690000

O-*β*-*D*-*Glucopyranoside:* ***Nicoloside***

[151870-75-6]

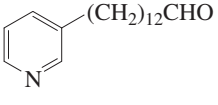
$C_{12}H_{17}NO_6$ 271.269

Alkaloid from whole plants of *Anoectochilus koshumensis* (Orchidaceae). Oil. $[\alpha]_D^{24}$ -37.7 (c, 2.60 in MeOH).

Ito, A. *et al., Phytochemistry*, 1993, **33**, 1133 (*Nicoloside*)

3-Pyridinetridecanal P-905

13-(3-Pyridinyl)tridecanal



$C_{18}H_{29}NO$ 275.433

Oxime: [291775-85-4]

$C_{18}H_{30}N_2O$ 290.448

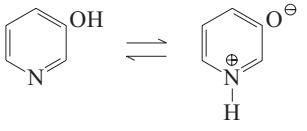
Isol. from *Amphimedon* sp. Config. not determined. λ_{max} 264 (ϵ 3100) (MeOH).

Hirano, K. *et al., Chem. Pharm. Bull.*, 2000, **48**, 974-977 (*isol, pmr, cmr, uv*)

3-Pyridinol P-906

3-Hydroxypyridine. 3-Pyridol

[109-00-2]



C_5H_5NO 95.101

Tautomerises *ca.* 50% to zwitterion in H_2O at r.t. Reagent used in peptide synth. Needles. Mp 129°. pK_{a1} 4.79; pK_{a2} 8.75 (20°).

▶ LD_{50} (mus, ipr) 1822 mg/kg. UU7701400

OH-form

Me ether: 3-Methoxypyridine

[7295-76-3]

C_6H_7NO 109.127

Isol. from *Thermopsis rhombifolia* and *Equisetum arvense*. Bp 178-179°. n_D^{21} 1.5165. n_D^{21} 1.5202.

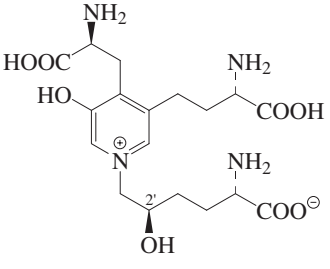
Manske, F. *et al., Can. J. Res., Sect. B*, 1942, **20**, 265 (*Me ether, isol*)

Pyridinoline P-907

4-(2-Amino-2-carboxyethyl)-1-(5-amino-5-carboxy-2-hydroxypentyl)-3-(3-amino-3-carboxypropyl)-5-hydroxypyridinium(1+), 9CI. Hydroxylysylpyridinoline

[77464-35-8]

[79646-35-8 , 128112-67-4 , 220243-86-7 , 63800-01-1 , 125659-26-9]



$C_{18}H_{28}N_4O_8^{\oplus}$ 428.441

Several diastereomers possible. -ve charge also shown on the phenolic O. Derived from collagen cross-links formed between adjacent hydroxylysine residues in type I and type II collagen of bone and cartilage respectively. Released into serum and urine during bone resorption. Clinical marker. Used to assess bone resorption levels in metabolic bone diseases. Solid. $[\alpha]_D^{20}$ +39.17 (c, 0.24 in MeOH) (as trifluoroacetate salt). CAS no. refers to hydroxide inner salt.

2′-Deoxy: ***Deoxypyridinoline****. Lysylpyridinoline*

[82637-02-3]

[119241-22-4 , 200405-37-4 , 220243-98-1 , 83462-55-9 , 90032-33-0]

$C_{18}H_{28}N_4O_7^{\oplus}$ 412.442

Derived from collagen cross-links formed between adjacent lysine residues in type I collagen of bone and dentine. Released into serum and urine during bone resorption. Marker for bone metabolism. Clinical marker of bone turnover in osteoporosis. Pale yellow solid (as trifluoroacetate salt). $[\alpha]_D^{20}$ +31.6 (c, 0.25 in MeOH) (as trifluoroacetate).

2′-Epimer: [220348-30-1]

$C_{18}H_{28}N_4O_8^{\oplus}$ 428.441

Synthetic. $[\alpha]_D^{20}$ +43.23 (c, 0.26 in MeOH) (as trifluoroacetate salt). CAS no. refers to trifluoroacetate.

Fujimoto, D. *et al., Biochem. Biophys. Res. Commun.*, 1977, **76**, 1124-1129; 1978, **84**, 52-57 (*isol, uv, pmr, cmr, nmr, ms, fluorescence*)

Ogawa, T. *et al., Biochem. Biophys. Res. Commun.*, 1982, **107**, 1252-1257 (*Deoxypyridinoline, isol, pmr*)

Barber, M. *et al., Biochem. Biophys. Res. Commun.*, 1982, **109**, 1041-1046 (*struct, ms, uv*)

Black, D. *et al., Anal. Biochem.*, 1988, **169**, 197-203 (*deoxypyridinoline, isol, chromatog*)

Acil, Y. *et al., J. Chromatogr., A*, 1994, **664**, 183-188 (*isol*)

Arbault, P. *et al., J. Liq. Chromatogr.*, 1994, **17**, 1981-1993 (*isol, chromatog*)

McGuinness, B.J. *et al., Biochem. Soc. Trans.*, 1995, **23**, 3865 (*deoxypyridinoline, pmr*)

Waelchli, R. *et al., Bioorg. Med. Chem. Lett.*, 1997, **7**, 2831-2836 (*synth*)

Lamprecht, G. *et al., J. Chromatogr., B*, 1997, **691**, 297-304 (*deoxypyridinoline, isol, chromotog*)

Knott, L. *et al., Bone*, 1998, **22**, 181-187 (*rev*)

St Clair, E.W. *et al., J. Rheumatol.*, 1998, **25**, 1472-1479 (*detn, clinical*)

U.S. Pat., 1998, 5 723 619; *CA*, **128**, 205137s (*synth*)

Yilmaz, N. *et al., Clin. Chem. Lab. Med.*, 1999, **37**, 137-143 (*detn, Deoxypyridinoline*)

Adamczyk, M. *et al., Tetrahedron*, 1999, **55**, 63-88; 2000, **56**, 2379-2390 (*synth, pyridinoline, deoxypyridinoline, pmr, cmr, bibl*)

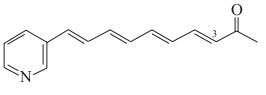
Adamczyk, M. *et al., Tetrahedron: Asymmetry*, 2000, **11**, 2289-2298; 5017 (***synth, pyridinoline, 2′-deoxy, pmr, erratum***)

Allevi, P. *et al., Tetrahedron: Asymmetry*, 2002, **13**, 1901-1910; 2004, **14**, 2005-2012 (*synth, pyridinoline, 2′-deoxy*)

Allevi, P. *et al., J.O.C.*, 2007, **72**, 3478-3483 (*synth*)

10-(3-Pyridinyl)-3,5,7,9-decatetraen-2-one, 9CI P-908

3-(9-Oxo-1,3,5,7-decatetraenyl)pyridine



(all–*E*)–*form*

$C_{15}H_{15}NO$ 225.29

(all-*E*)-*form*

Navenone A

[62695-67-4]

Major constit. of the alarm pheromone of the marine opisthobranch mollusc *Navanax inermis (Chelidonura inermis)*. Yellow cryst. (C_6H_6). Mp 144-145°. λ_{max}

399 (ϵ 14400) (MeOH) (Berdy).

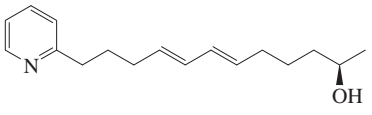
3-Methyl: ***3-Methylnavenone A***
[73414-53-6]
$C_{16}H_{17}NO$ 239.316
Minor constit. of the alarm pheromone of *Navanax inermis*.

(3*Z*,5*E*,7*E*,9*E*)-*form* [73465-89-1]
Minor constit. of the alarm pheromone of *Navanax inermis*.

(3*Z*,5*Z*,7*E*,9*E*)-*form* [73952-89-3]
Minor constit. of the alarm pheromone of *Navanax inermis*.

Sleeper, H.L. *et al., J.A.C.S.*, 1977, **99**, 2367-2368 (*isol, uv, ir, pmr, cmr, ms, struct*)
Sakakibara, M. *et al., Agric. Biol. Chem.*, 1979, **43**, 117 (*synth*)
Fenical, W. *et al., Pure Appl. Chem.*, 1979, **51**, 1865 (*derivs*)
Sleeper, H.L. *et al., J. Chem. Ecol.*, 1980, **6**, 57 (*isol*)
Soullez, D. *et al., Nat. Prod. Lett.*, 1994, **4**, 203 (*synth*)

12-(2-Pyridinyl)-6,8-dodecadien-2-ol P-909



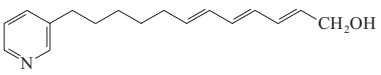
$C_{17}H_{25}NO$ 259.391

(2*R*,6*E*,8*E*)-*form*
Phormidinine A
Alkaloid from the cyanobacterium *Phormidium* sp. Oil. $[\alpha]_D^{20}$ -4 (c, 0.09 in $CHCl_3$). λ_{max} 232 (ϵ 17100); 262 (ϵ 3900); 268 (ϵ 1700) (MeOH).

Ac: ***Phormidinine B***
$C_{19}H_{27}NO_2$ 301.428
Isol. from *Phormidium* sp. Oil.

Teruya, T. *et al., Tet. Lett.*, 2005, **46**, 4001-4003 (*isol, pmr, cmr*)

12-(3-Pyridinyl)-2,4,6-dodecatrien-1-ol, 9CI P-910

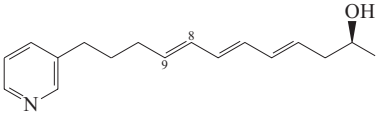


$C_{17}H_{23}NO$ 257.375

(2*E*,4*E*,6*E*)-*form*
Ac: ***Haminol C***
[147362-36-5]
$C_{19}H_{25}NO_2$ 299.412
Alkaloid from the mollusc *Haminoea orteai*. Alarm pheromone.

Spinella, A. *et al., Tetrahedron*, 1993, **49**, 1307-1314 (*isol, struct*)

12-(3-Pyridinyl)-4,6,8-dodecatrien-2-ol, 9CI P-911



$C_{17}H_{23}NO$ 257.375

(2*S*,4*E*,6*E*,8*E*)-*form*
Haminol 1
[147391-85-3]
Alkaloid from the molluscs *Haminoea orbignyana* and *Haminoea fusari*. Alarm pheromone.

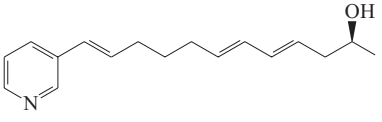
Ac: ***Haminol 2***
[147391-84-2]
$C_{19}H_{25}NO_2$ 299.412
From *Haminoea orbignyana* and *Haminoea fusari*. Alarm pheromone. $[\alpha]_D^{20}$ -19 (c, 1.3 in MeOH).

8,9-Dihydro: 12-(3-Pyridinyl)-4,6-dodecadien-2-ol, 9CI. ***Haminol 3***
[147362-30-9]
$C_{17}H_{25}NO$ 259.391
From *Haminoea fusari*. Alarm pheromone.

8,9-Dihydro, Ac: ***Haminol 4***
[147362-25-2]
$C_{19}H_{27}NO_2$ 301.428
From *Haminoea fusari*. Alarm pheromone. $[\alpha]_D^{20}$ -12.5 (c, 0.7 in MeOH).

Spinella, A. *et al., Tetrahedron*, 1993, **49**, 1307 (*isol, uv, ir, pmr, cmr, ms, struct*)
Solladie, G. *et al., Tetrahedron: Asymmetry*, 1997, **8**, 801-810 (*synth, Haminol 1*)

12-(3-Pyridinyl)-4,6,11-dodecatrien-2-ol P-912



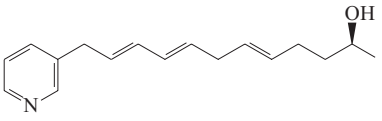
$C_{17}H_{23}NO$ 257.375

(2*S*,4*E*,6*E*,11*E*)-*form*
Haminol A
[133412-13-2]
Alkaloid from the molluscs *Haminoea navicula* and *Haminoea orteai*. Alarm pheromone. Oil. $[\alpha]_D$ +5 (c, 0.3 in MeOH). λ_{max} 232 (ϵ 30200); 282 (ϵ 4340) (MeOH) (Derep).

Ac: ***Haminol B***
[133412-14-3]
$C_{19}H_{25}NO_2$ 299.412
From *Haminoea navicula*. Alarm pheromone. Oil. $[\alpha]_D$ -24 (c, 0.4 in MeOH). λ_{max} 230 (ϵ 23400); 282 (ϵ 3440) (MeOH) (Derep).

Cimino, G. *et al., Experientia*, 1991, **47**, 61-63 (*isol, uv, ir, pmr, cmr, ms, struct*)
Spinella, A. *et al., Tetrahedron*, 1993, **49**, 1307
Matikainen, J. *et al., J. Nat. Prod.*, 1995, **58**, 1622 (*synth*)
Alvarez, R. *et al., Tetrahedron: Asymmetry*, 1998, **9**, 3065-3072 (*Haminol B*)

12-(3-Pyridinyl)-5,8,10-dodecatrien-2-ol, 9CI P-913



$C_{17}H_{23}NO$ 257.375

(2*S*,5*E*,8*E*,10*E*)-*form*
Haminol 5
[147391-86-4]
Alkaloid from the mollusc *Haminoea fusari*. Alarm pheromone.

Ac: ***Haminol 6***
[147362-35-4]
$C_{19}H_{25}NO_2$ 299.412
From *Haminoea fusari*. Alarm pheromone. $[\alpha]_D^{20}$ -4.2 (c, 0.2 in MeOH).

Spinella, A. *et al., Tetrahedron*, 1993, **49**, 1307-1314 (*isol, uv, ir, pmr, cmr, ms, struct*)

9*H*-Pyrido[3,4-*b*]indol-1-ol P-914

*2,9-Dihydro-1*H*-pyrido[3,4-*b*]indol-1-one. 1-Hydroxy-β-carboline*
[19839-52-2]



$C_{11}H_8N_2O$ 184.197
Solid. Mp 255-257° (245-247°).

*Me ether: 1-Methoxy-9*H*-pyrido[3,4-b]indole. 1-Methoxy-β-carboline.* ***Taraxacine A***
$C_{12}H_{10}N_2O$ 198.224
Alkaloid from the aerial parts of *Taraxacum formosanum*. Pale yellow syrup. λ_{max} 212 (log ϵ 3.9); 246 (log ϵ 3.6); 257 (log ϵ 3.6); 273 (log ϵ 3.5); 300 (log ϵ 3.4); 367 (log ϵ 3.2) (MeOH).

Bracher, F. *et al., Annalen*, 1992, 1315 (*synth, ir, pmr, cmr*)
Leu, Y.-L. *et al., Chem. Pharm. Bull.*, 2003, **51**, 599-601 (*Taraxacine A*)

9*H*-Pyrido[3,4-*b*]indol-6-ol P-915

6-Hydroxy-β-carboline
[58982-28-8]
$C_{11}H_8N_2O$ 184.197
Cryst. (toluene or Me_2CO). Mp 189-190°.

*Me ether: 6-Methoxy-9*H*-pyrido[3,4-b]indole, 9CI*
[30684-42-5]
$C_{12}H_{10}N_2O$ 198.224
Leaflets (C_6H_6). Mp 202°.

Me ether, N^2*-Me:* ***6-Methoxy-2-methyl-β-carbolinium(1+)***
[22022-18-0]
$C_{13}H_{13}N_2O^{\oplus}$ 213.258
Quaternary alkaloid from *Desmodium gangeticum* and *Desmodium pulchellum* (Fabaceae). Mp 155-157° dec. (as reineckate). λ_{max} 240 ; 250 ; 273 (sh) ; 290 ; 342 (EtOH).

Bannerjee, P.K. *et al., Aust. J. Chem.*, 1969, **22**, 275-277 (N^2*-Me Me ether, isol, uv, struct*)
Ghosal, S. *et al., Phytochemistry*, 1970, **9**, 429-433 (N^2*-Me Me ether, occur*)
Périn-Roussel, O. *et al., J.C.S. Perkin 1*, 1972, 531-532 (*Me ether, synth*)
Rocca, P. *et al., J. Het. Chem.*, 1995, **32**, 1171-1175 (*synth, pmr, ir*)

9*H*-Pyrido[3,4-*b*]indol-7-ol, 9CI P-916

7-Hydroxy-β-carboline
[99896-91-0]
$C_{11}H_8N_2O$ 184.197
Cryst. (toluene or Me_2CO). Mp >260°.

*Me ether: 7-Methoxy-9*H*-pyrido[3,4-*

b*]indole. 7-Methoxy-β-carboline.* ***Norharmine***
[6253-19-6]
$C_{12}H_{10}N_2O$ 198.224
Alkaloid from the seeds of *Passiflora harmala* (Zygophyllaceae). Needles (C_6H_6). Mp 213-215°. Sublimes. λ_{max} 225 ; 256 ; 285 ; 325 ; 370 (MeOH).

1,2,3,4-Tetrahydro, Me ether, N^9*-formyl: 1,2,3,4-Tetrahydro-7-methoxy-9*H*-pyrido[3,4-*b*]indole-9-carboxaldehyde. 9-Formyl-1,2,3,4-tetrahydro-7-methoxy-β-carboline.* ***Harmalicine***
[110064-66-9]
$C_{13}H_{14}N_2O_2$ 230.266
Alkaloid from the seeds of *Peganum harmala* (Zygophyllaceae). Fine needles (MeOH). Mp 251-252°. λ_{max} 205 ; 235 (sh) ; 300 ; 330 (MeOH).

1,2,3,4-Tetrahydro, Me ether, N^9*-formyl, Ac:* [110064-67-0]
Fine needles. Mp 235-236°.

Siddiqui, S. *et al., Heterocycles*, 1987, **26**, 1563-1567; 1989, **29**, 521 (*Harmalicine, Norharmine, isol, uv, ir, pmr, cmr, ms, struct*)
Rocco, P. *et al., J. Het. Chem.*, 1995, **32**, 1171-1175 (*synth, pmr, ir*)

9*H*-Pyrido[3,4-*b*]indol-8-ol P-917

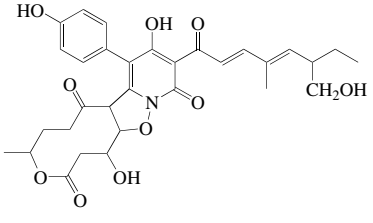
8-Hydroxy-β-carboline
[334709-41-0]
$C_{11}H_8N_2O$ 184.197
Cryst. (toluene or Me_2CO). Mp 250°.

N^2*-Me: 8-Hydroxy-2-methyl-β-carbolinium*
[356073-89-7]
$C_{12}H_{11}N_2O^{\oplus}$ 199.232
Quaternary alkaloid from a *Pseudodistoma* sp. Gum. Counterion not specified. λ_{max} 228 (log ε 3.68); 268 (log ε 3.56); 317 (log ε 3.23); 389 (log ε 2.7) (MeOH).

*Me ether: 8-Methoxy-9*H*-pyrido[3,4-*b*]indole, 9CI. 8-Methoxy-β-carboline*
[30684-48-1]
$C_{12}H_{10}N_2O$ 198.224
Cryst. (xylene). Mp 204-205°. λ_{max} 216 ; 243 ; 268 ; 278 ; 287 ; 343 ; 354 (sh) (EtOH).

Ho, B.T. *et al., J. Pharm. Sci.*, 1970, **59**, 1445-1448 (*Me ether, synth*)
Rocco, P. *et al., J. Het. Chem.*, 1995, **32**, 1171-1175 (*synth, ir, pmr*)
Rashid, M.A. *et al., Tetrahedron*, 2001, **57**, 5751-5755 (*N^2-Me, isol*)

Pyridomacrolidin P-918

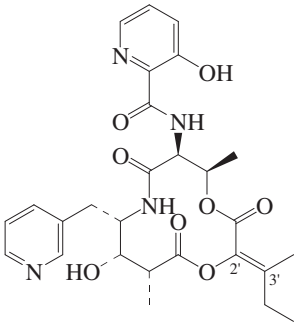


$C_{31}H_{35}NO_{10}$ 581.618
Related to Tenellin, T-72. Prod. by *Beauveria bassiana*. Sol. MeOH, EtOAc, DMSO, Me_2CO; poorly sol. H_2O, hexane. Mp 192-194° dec. $[\alpha]_D^{15}$ +19.4 (c, 0.1 in MeOH). λ_{max} 238 (ε 14500); 342 (ε 14600) (MeOH).

Takahashi, S. *et al., J. Antibiot.*, 1998, **51**, 596-598; 1051-1054 (*isol, uv, pmr, cmr*)

Pyridomycin P-919

*3-Hydroxy-*N*-[10-hydroxy-5,11-dimethyl-2-(1-methylpropylidene)-3,7,12-trioxo-9-(3-pyridylmethyl)-1,4-dioxa-8-azacyclododec-6-yl]-2-pyridinecarboxamide, 9CI. U 24544. Antibiotic U 24544. Erizomycin*
[18791-21-4]
[11052-02-1]



$C_{27}H_{32}N_4O_8$ 540.572
Macrolide antibiotic. Prod. by *Streptomyces pyridomyceticus*, *Streptomyces griseus* var. *erizensis* and *Streptomyces albidofuscus.* Cytotoxic and antibacterial agent. Needles (EtOH). Sol. MeOH, $CHCl_3$; fairly sol. Et_2O; poorly sol. H_2O, hexane. Mp 221-222°. $[\alpha]_D^{25}$ -82 (c, 1.35 in EtOH). λ_{max} 227 (ε 35000); 303 (ε 13500) (EtOH/HCl) (Derep). λ_{max} 226 (ε 36000); 303 (ε 17900); 331 (ε 8960) (EtOH/NaOH) (Derep). λ_{max} 303 (ε 11300) (EtOH) (Derep).
▶ LD_{50} (mus, ivn) 300 mg/kg, LD_{50} (mus, orl) 1000 mg/kg. UV1130000

Hydrochloride:
Cryst. Mp 194-196°. $[\alpha]_D^{16}$ -53.2 (H_2O).

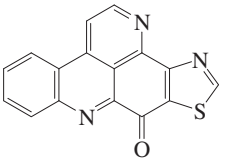
Hydrobromide (1:2):
Cryst. + H_2O (EtOAc). Mp 203-205° dec.

2′,3′-Dihydro, 3′ξ-hydroxy: ***Pyridomycinol***
$C_{27}H_{34}N_4O_9$ 558.587
Prod. by *Streptomyces* sp. Stamm Ku2. Mp 108°. $[\alpha]_D^{20}$ -52 (c, 1 in MeOH). λ_{max} 256 (log ε 0.14); 262 (log ε 0.15); 303 (log ε 0.25) (MeOH). λ_{max} 261 (log ε 0.18); 268 (log ε 0.12); 335 (log ε 0.27) (MeOH/NaOH).

Maeda, K. *et al., J. Antibiot., Ser. A*, 1957, **10**, 94 (*isol*)
Herr, R.R. *et al., Appl. Microbiol.*, 1967, **15**, 1142 (*isol*)
Reusser, F. *et al., J. Bacteriol.*, 1967, **94**, 1040 (*props*)
Koyama, G. *et al., Tet. Lett.*, 1967, 3587 (*struct, cryst struct, abs config*)
Ogawara, H. *et al., Biochemistry*, 1968, **7**, 3296-3302 (*biosynth*)
U.S. Pat., 1968, 3 367 833; *CA*, **71**, 122302 (*Erizomycin*)
Kinoshita, M. *et al., Bull. Chem. Soc. Jpn.*, 1975, **48**, 2081 (*synth*)
Kinoshita, M. *et al., Tet. Lett.*, 1989, **30**, 7419 (*synth*)
Schulze, A. *et al., Dissertation*, Univ. of Göttingen, 2003, (*Pyridomycinol*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, PPI775

9*H*-Pyrido[4,3,2-*mn*]thiazolo[4,5-*b*]acridin-9-one, 9CI P-920

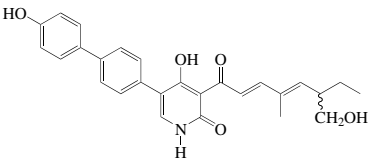
Kuanoniamine A
[133401-10-2]



$C_{16}H_7N_3OS$ 289.317
Alkaloid from a tunicate and its predator mollusc *Chelynotus semperi*. Also from *Oceanapia sagittaria*. Cytotoxic. Yellow needles ($CHCl_3$). Mp 255-258° dec. λ_{max} 214 (ε 18200); 224 (ε 19100); 250 (ε 15800); 258 (ε 15500); 295 (ε 6310); 354 (ε 5750); 394 (ε 4070) (MeOH) (Derep). λ_{max} 208 (ε 17200); 226 (ε 17780); 292 (ε 15000); 382 (ε 5150); 430 (MeOH/NaOH) (Berdy). λ_{max} 480 (MeOH/HCl) (Berdy).

Carroll, A.R. *et al., J.O.C.*, 1990, **55**, 4426-4431 (*isol, uv, ir, pmr, cmr, ms, struct*)
Kitahara, Y. *et al., Tetrahedron*, 1997, **53**, 17029-17038 (*synth*)
Kijjoa, A. *et al., Mar. Drugs*, 2007, **5**, 6-22 (*isol, activity*)

Pyridovericin P-921

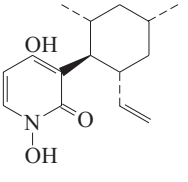


$C_{21}H_{23}NO_5$ 369.416
Related to Tenellin, T-72. Prod. by the fungus *Beauveria bassiana*. Pale yellow powder. Sol. MeOH, DMSO, EtOAc, Me_2CO; poorly sol. H_2O, hexane. Mp 203-206° dec. $[\alpha]_D^{15}$ -20.3 (c, 0.1 in MeOH). λ_{max} 248 (ε 16400); 336 (ε 15900) (MeOH). λ_{max} 248 (ε 16400); 336 (ε 15900) (MeOH) (Berdy).

Takahashi, S. *et al., J. Antibiot.*, 1998, **51**, 596-598; 1051-1054 (*isol, pmr, cmr, uv*)
Zhang, Q. *et al., J.A.C.S.*, 2002, **124**, 5774-5781 (*synth*)
Irlapati, N.R. *et al., Tetrahedron*, 2004, **60**, 9307-9317 (*synth*)

Pyridoxatin P-922

*3-(2-Ethenyl-4,6-dimethylcyclohexyl)-1,4-dihydroxy-2(1*H*)-pyridinone, 9CI. Tolypocin*
[135529-30-5]
[149196-98-5]



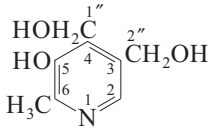
$C_{15}H_{21}NO_3$ 263.336
Prod. by the fungus *Acremonium* sp. BX86 and *Tolypocladium geodes*. Free radical scavenger. Inhibitor of gelatinase A. Cytotoxic agent. Needles (Me_2CO/EtOAc). Sol. MeOH, EtOAc, Me_2CO; poorly sol. H_2O. Mp 195-197° dec. $[\alpha]_D^{23}$ -23 (c, 0.09 in MeOH). λ_{max} 216 (ϵ 10200); 246 (ϵ 3900); 267 (ϵ 3600) (MeOH/HClaq) (Derep). λ_{max} 230 (ϵ 15900); 262 (ϵ 4700); 295 (ϵ 3600) (MeOH/NaOH) (Derep). λ_{max} 218 (ϵ 11600); 288 (ϵ 4700) (MeOH) (Derep).

Fe complex: ***Terricolin***
[149153-43-5]
[149250-21-5]
$C_{45}H_{60}FeN_3O_9$ 842.831
Prod. by *Tolypocladium terricola*. Red plates + 2MeOH (MeOH). Dec. at 220°. λ_{max} 221 (ϵ 94500); 250 (sh) (ϵ 20000); 288 (ϵ 11100); 390 (ϵ 5100) (MeOH/HCl aq.).

Teshima, Y. *et al., J. Antibiot.*, 1991, **44**, 685 (*isol, pmr, cmr*)
Jegorov, A. *et al., J.C.S. Dalton*, 1993, 1287-1293 (*Tolypocin, Terricolin, cryst struct*)
Lee, H.-J. *et al., J. Membr. Biol.*, 1996, **6**, 445-450 (*isol, props*)

Pyridoxine, BAN, INN P-923

5-Hydroxy-6-methyl-3,4-pyridinedimethanol, 9CI. Vitamin B_6, 8CI. 3-Hydroxy-4,5-bis(hydroxymethyl)-2-methylpyridine. Adermin. Pyridoxol. Many other names
[65-23-6]



$C_8H_{11}NO_3$ 169.18
Found in rice husks, cane molasses, yeast, wheat germ and cod liver oils. Vitamin, dietary supplement, nutrient. Needles (Me_2CO). Mp 160°. pK_{a1} 5; pK_{a2} 8.96 (25°, 0.15*M* NaCl). Log P -0.7 (calc). Readily sublimes.

▶ LD_{50} (rat, orl) 4000 mg/kg. UV1300000

Hydrochloride: ***Pyridoxine hydrochloride, USAN***. *Aderoxin. Becilan. Gravidox*
[58-56-0]
Rhombic cryst. (EtOH/Me_2CO). Mp 206-208°. Component of Bendectin and Debendox.

▶ Long-term treatment with large doses associated with development of peripheral neuropathies. Human and exp. reprod. effects. LD_{50} (rat, orl) 4000 mg/kg. UV1350000

Picrate: Mp 156°.

O-*(7-Theophyllinylethyl)sulfate (1:1):* ***Pyridofylline, INN***. *Atherophylline. Theodoxine*
[53403-97-7]
Respiratory stimulant, coronary vasodilator. Cryst. (EtOH). Mp 144-146°.

▶ LD_{50} (mus, orl) 1600 mg/kg. UO8430000

$O^{1'}$-*Phosphate:* ***Pyridoxine 5′-phosphate***. *Pyridoxol dihydrogen phosphate*
[447-05-2]
$C_8H_{12}NO_6P$ 249.16
Prod. by fungi and bacteria from pyridoxine. Cryst. (EtOH aq.). Mp 208-210°.

Tri-Ac: [10030-93-0]
$C_{14}H_{17}NO_6$ 295.291
Viscous oil. $Bp_{0.2}$ 145-150°.

Tribenzoyl:
$C_{29}H_{23}NO_6$ 481.504
Mp 121-122°.

5-Me ether: [633-72-7]
$C_9H_{13}NO_3$ 183.207
Needles ($CHCl_3$/petrol). Mp 89.5-90°.

5-Me ether, hydrochloride: [62511-98-2]
Mp 150°.

$O^{1''}$-*Me: 5-Hydroxy-4-(methoxymethyl)-6-methyl-3-pyridinemethanol, 9CI. 3-Hydroxy-5-hydroxymethyl-4-methoxymethyl-2-methylpyridine. 4′-Methoxypyridoxine.* ***Ginkgotoxin***
[1464-33-1]
$C_9H_{13}NO_3$ 183.207
Isol. from seeds of maidenhair tree *Ginkgo biloba*. Sitotoxic (convulsive) agent with antivitamin B_6 activity. Mp 181° (as hydrochloride).

▶ LD_{50} (mus, orl) 32 mg/kg. UT5009000

$O^{1''}$-*Me, 5-O-β-D-glucopyranoside:*
[121531-33-7]
$C_{15}H_{23}NO_8$ 345.349
Isol. from the seeds of *Albizzia lucida*. Neurotoxin.

$O^{1''}$-*Me,* $O^{2''}$-*[β-D-glucuronopyranosyl-(1→2)-β-D-glucopyranoside]:* ***Julibrine I***
$C_{21}H_{31}NO_{14}$ 521.474
Isol. from the stem bark of *Albizzia julibrissin*. Powder. $[\alpha]_D$ -20 (MeOH).

$O^{1''}$-*Me,* $O^{2''}$-*[β-D-apiofuranosyl-(1→2)-β-D-glucopyranoside]:* ***Julibrine II***
$C_{20}H_{31}NO_{12}$ 477.464
From the stem bark of *Albizzia julibrissin*. Shows arrhythmic-inducing activity. Powder. $[\alpha]_D$ -65.2 (MeOH).

$O^{1''}$-*Me,* $O^{2''}$-*Ac:* [82470-47-1]
$C_{11}H_{15}NO_4$ 225.244
Constit. of *Albizzia tanganyicensis*.

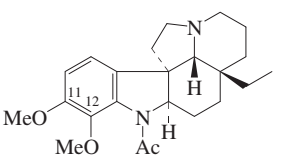
Dihydroxyacetic acid monoether: ***Piridoxilate, BAN, INN***. *Pyridoxylate. Nargin. Venartan*
[24340-35-0] Antianginal agent. Mp 167°. Log P -1.16 (calc). A 1:1 complex of the 3 and 1″ positional isomers. Exists as zwitterions.

[79636-52-5 , 63797-00-2 , 8064-77-5 , 70829-29-7 , 62154-08-9 , 74536-44-0 , 62602-94-2 , 3131-27-9]

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 759D (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 282B; 283A (*nmr*)
Harris, S.A. *et al., J.A.C.S.*, 1939, **61**, 1245; 3307 (*synth*)
Mowatt, J.H. *et al., J.A.C.S.*, 1943, **65**, 954 (*synth*)
Fr. Pat., 1961, M828; *CA*, **58**, 9098g (*Pyridofylline*)
Ogata, K. *et al., Agric. Biol. Chem.*, 1966, **30**, 829 (*1″-phosphate*)
De Jongh, D.C. *et al., J.A.C.S.*, 1966, **88**, 1233 (*ms*)
Firestone, R.A. *et al., Tetrahedron*, 1967, **23**, 943 (*synth, ir, uv*)
Efimovsky, O. *et al., Eur. J. Med. Chem. (Chim. Ther.)*, 1969, **4**, 89 (*Piridoxilate, synth, struct*)
Fourneau, J.P. *et al., Boll. Chim. Farm.*, 1970, **109**, 702 (*rev*)
Witherup, T.H. *et al., J.O.C.*, 1975, **40**, 2229 (*cmr*)
Hill, R.E. *et al., J.A.C.S.*, 1977, **99**, 4179 (*biosynth, cmr*)
Coffen, D.L. *et al., Kirk-Othmer Encycl. Chem. Technol., 3rd edn., Wiley*, 1978, **24**, 94 (*rev*)
Longo, J. *et al., Acta Cryst. B*, 1982, **38**, 2721 (*cryst struct*)
Aboul-Enein, H.Y. *et al., Anal. Profiles Drug Subst.*, 1984, **13**, 447 (*rev, synth, anal, pharmacol*)
Shimada, S. *et al., Chem. Pharm. Bull.*, 1984, **32**, 38 (*synth*)
Wada, K. *et al., Chem. Pharm. Bull.*, 1985, **33**, 3555; 1988, **36**, 1779 (*Ginkgotoxin*)
Parnell, C.A. *et al., Tetrahedron*, 1985, **41**, 5791 (*synth*)
Likos, J.J. *et al., Vitamin B6 Pyridoxal Phosphate: Chemical, Biochemical and Medical Aspects, Part A*, (ed. Dolphin, D. *et al*), Wiley-Interscience, 1986, 13 (*rev*)
Korpela, T. *et al., Biochemistry of Vitamin B6*, Birkhäuser Verlag, 1987, (*book*)
Negwer, M. *et al., Organic-Chemical Drugs and their Synonyms, 6th edn., Akademie-Verlag*, 1987, 951
Steyn, P.S. *et al., S. Afr. J. Chem.*, 1987, **40**, 191 (*deriv*)
Lewis, R.J. *et al., Food Additives Handbook*, Van Nostrand Reinhold International, New York, 1989, PPK500
Orsini, F. *et al., Gazz. Chim. Ital.*, 1989, **119**, 63 (*5-glucoside*)
Dakshinamurti, K. *et al., Ann. N.Y. Acad. Sci.*, 1990, **585**, 1 (*revs*)
Lycka, A. *et al., Pharmazie*, 1990, **45**, 371 (*N-15 nmr*)
Higuchi, H. *et al., Chem. Pharm. Bull.*, 1992, **40**, 829 (*Julibrine*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 1054; 1318; 1403
Spenser, I.D. *et al., Nat. Prod. Rep.*, 1995, **12**, 555 (*rev, biosynth*)
Encyclopedia of Food and Color Additives, (ed. Burdock, G.A.), CRC Press, 1997, 2389; 2391 (*rev*)
Fiehe, K. *et al., J. Nat. Prod.*, 2000, **63**, 185-189 (*Ginkgotoxin, biosynth*)
Kall, M.A. *et al., Food Chem.*, 2003, **82**, 315-327 (*detn, occur*)
Zeidler, J. *et al., J.O.C.*, 2003, **68**, 3486-3493 (*biosynth*)
Dumond, Y.R. *et al., Molecules*, 2003, **8**, 873-881 (*synth*)
Roje, S. *et al., Phytochemistry*, 2007, **68**, 1904-1921 (*biosynth, rev*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, MEY000; PPK250; PPK500; MFN600

Pyrifolidine P-924

1-Acetyl-16,17-dimethoxyaspidospermidine, 9CI
[639-26-9]



(-)-*form*

$C_{23}H_{32}N_2O_3$ 384.517

(+)-*form*

Alkaloid from *Aspidosperma pyrifolium* (Apocynaceae). Cryst. (MeOH aq.). Mp 147.5-150°. $[\alpha]_D^{26}$ +90 (c, 1.04 in $CHCl_3$). λ_{max} 223 (log ϵ 4.5); 252 (log ϵ 3.94); 286 (log ϵ 3.32) (EtOH).

Perchlorate:

Cryst. (MeOH aq.). Mp 255-260.5°.

N-*De-Ac:* ***Deacetylpyrifolidine***. O-*Methyl*-N-*depropionylaspidolimine*

[25139-33-7]

$C_{21}H_{30}N_2O_2$ 342.48

Minor alkaloid from *Aspidosperma neblinae* (Apocynaceae). Mp 147-149°. $[\alpha]_D^{25}$ +6.7 (c, 0.89 in $CHCl_3$). λ_{max} 215 (log ϵ 4.4); 293 (log ϵ 3.5) (EtOH).

(-)-*form*

Alkaloid from *Aspidosperma quebracho-blanco* (quebracho) (Apocynaceae). Mp 148-150°. $[\alpha]_D^{28}$ -93 (c, 0.9 in $CHCl_3$).

O^{12}-*De-Me:* ***Aspidocarpine***

[466-45-5]

$C_{22}H_{30}N_2O_3$ 370.491

Alkaloid from *Geissospermum argenteum, Aspidosperma meglacarpon, Aspidosperma formasanum, Aspidosperma marcgravianum, Aspidosperma neblinae* and *Aspidosperma album* (Apocynaceae). Prisms (MeOH or heptane). Mp 168.5-169.5°. $[\alpha]_D^{25}$ +140 (c, 2.3 in $CHCl_3$). pK_a 6.55.

O^{12}-*De-Me, hydrochloride:*

Needles (EtOH/EtOAc). Mp 224-230° dec.

O^{12}-*De-Me,* N-*de-Ac,* N-*propanoyl:* ***Aspidolimine***

[5516-66-5]

$C_{23}H_{32}N_2O_3$ 384.517

Alkaloid from *Aspidosperma limae* and *Aspidosperma obscurinervium* (Apocynaceae). Cryst. (MeOH). Mp 150-152°. $[\alpha]_D^{21}$ +133 (c, 1.156 in $CHCl_3$).

O^{12}-*De-Me,* N-*de-Ac,* N-*propanoyl, hydrochloride:*

Cryst. (EtOAc/Et_2O). Mp 200-205° dec.

Di-O-*de-Me:* **O-*Demethylaspidocarpine***

[21401-34-3]

$C_{21}H_{28}N_2O_3$ 356.464

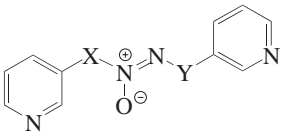
Alkaloid from *Aspidosperma album, Aspidosperma cuspa* and *Aspidosperma melanocalyx* (Apocynaceae). Cryst. (C_6H_6). Mp 130° Mp 156-158°.

Di-O-*de-Me; hydrochloride:*

Needles (EtOH/Et_2O). Mp 283° dec.

McLean, S. *et al., Can. J. Chem.*, 1960, **38**, 1547 (*Aspidocarpine, O-Demethylaspidocarpine*)
Gilbert, B. *et al., Experientia*, 1960, **16**, 61 (*isol, uv, ir*)
Djerassi, C. *et al., Experientia*, 1961, **17**, 162 (*Deacetylpyrifolidine*)
Djerassi, C. *et al., Tetrahedron*, 1961, **16**, 212 (*isol, uv, ord*)
Gilbert, B. *et al., Chem. Ind. (London)*, 1962, 1949 (*isol*)
Pinar, M. *et al., Helv. Chim. Acta*, 1962, **45**, 1283 (*isol, uv, ir, struct*)
Ferrari, C. *et al., Can. J. Chem.*, 1963, **41**, 1531 (*isol, struct, ir, Aspidocarpine, O-Demethylaspidocarpine*)
Biemann, K. *et al., J.A.C.S.*, 1963, **85**, 631 (*isol, uv, ms*)
Brown, K.S. *et al., J.A.C.S.*, 1964, **86**, 2451 (*isol*)
Klyne, W. *et al., Helv. Chim. Acta*, 1966, **49**, 833 (*ord, abs config*)
Burnell, R.H. *et al., Phytochemistry*, 1968, **7**, 2045 (*Pyrifolidine, O-Demethylaspidocarpine, isol, synth, uv, ir, pmr*)
Miranda, E.C. *et al., Experientia*, 1969, **25**, 575 (*O-Demethylaspidocarpine*)
Lyon, R.L. *et al., J. Pharm. Sci.*, 1973, **62**, 218 (*isol, uv, ir, pmr*)
Garcia, M. *et al., Phytochemistry*, 1976, **15**, 1093 (*isol, uv, ir, pmr, ms*)
Paccioni, J.-P. *et al., Phytochemistry*, 1978, **17**, 2146 (*isol*)

Pyrinadine A P-925



X = $-CH_2CH_2CH\overset{Z}{=}CH(CH_2)_{10}-$

Y = $-(CH_2)_{10}CH\overset{Z}{=}CHCH_2CH_2-$

$C_{38}H_{60}N_4O$ 588.918

Alkaloid from *Cribrochalina* sp. (SS-1115). Cytotoxic. Oil. λ_{max} 213 (ϵ 10600); 251 (ϵ 3600); 257 (ϵ 4200); 262 (ϵ 4700); 269 (ϵ 3700) (MeOH).

Kariya, Y. *et al., Tet. Lett.*, 2006, **47**, 997-998 (*isol, pmr, cmr*)

Pyrinadine B P-926

[918302-92-8]

As Pyrinadine A, P-925 with

X = Y = -$(CH_2)_{13}$-

$C_{36}H_{60}N_4O$ 564.896

Alkaloid from *Cribrochalina* sp. (SS-1115). Cytotoxic. Oil. λ_{max} 214 (ϵ 11700); 250 (ϵ 4500); 257 (ϵ 4700); 262 (ϵ 4900); 269 (ϵ 3500) (MeOH).

Kariya, Y. *et al., Bioorg. Med. Chem.*, 2006, **14**, 8415-8419 (*isol, pmr, cmr, ms*)

Pyrinadine C P-927

[918302-80-4]

As Pyrinadine A, P-925 with

X = -$(CH_2)_{13}$-, Y = -$(CH_2)_{12}$-

$C_{35}H_{58}N_4O$ 550.869

N-Oxide functionality may be on the other azine *N*. Alkaloid from *Cribrochalina* sp. (SS-1115). Cytotoxic. Oil. λ_{max} 214 (ϵ 9200); 250 (ϵ 4900); 256 (ϵ 4700); 262 (ϵ 4700); 269 (ϵ 3400) (MeOH).

Kariya, Y. *et al., Bioorg. Med. Chem.*, 2006, **14**, 8415-8419 (*isol, pmr, cmr, ms*)

Pyrinadine D P-928

[918302-85-9]

As Pyrinadine A, P-925 with

X = -$CH_2CH_2CH{=}CH(CH_2)_{10}$-, Y = -$(CH_2)_{13}$-

$C_{37}H_{60}N_4O$ 576.907

N-Oxide functionality may be on the other azine *N*. Alkaloid from *Cribrochalina* sp. (SS-1115). Cytotoxic. Oil. X-linker chain has *Z*-configuration. λ_{max} 213 (ϵ 9900); 251 (ϵ 3600); 257 (ϵ 4200); 262 (ϵ 4600); 269 (ϵ 3400) (MeOH).

Kariya, Y. *et al., Bioorg. Med. Chem.*, 2006, **14**, 8415-8419 (*isol, pmr, cmr, ms*)

Pyrinadine E P-929

[918302-88-2]

As Pyrinadine A, P-925 with

X = -$CH_2CH_2CH{=}CH(CH_2)_{10}$-, Y = -$(CH_2)_{12}$-

$C_{36}H_{58}N_4O$ 562.88

N-Oxide functionality may be on the other azine N. Alkaloid from *Cribrochalina* sp. (SS-1115). Cytotoxic. Oil. X-linker chain has *Z*-configuration. λ_{max} 213 (ϵ 10100); 250 (ϵ 4100); 257 (ϵ 4400); 262 (ϵ 4600); 269 (ϵ 3300) (MeOH).

Kariya, Y. *et al., Bioorg. Med. Chem.*, 2006, **14**, 8415-8419 (*isol, pmr, cmr, ms*)

Pyrinadine F P-930

[918302-90-6]

As Pyrinadine A, P-925 with

X = -$CH_2CH_2CH{=}CH(CH_2)_{10}$-, Y = -$(CH_2)_3CH{=}CH(CH_2)_9$-

$C_{38}H_{60}N_4O$ 588.918

N-Oxide functionality may be on the other azine *N*. Alkaloid from *Cribrochalina* sp. (SS-1115). Cytotoxic. Oil. X- and Y-linker chains have *Z*-configuration. λ_{max} 215 (ϵ 9300); 251 (ϵ 3700); 257 (ϵ 4400); 263 (ϵ 4800); 269 (ϵ 3500) (MeOH).

Kariya, Y. *et al., Bioorg. Med. Chem.*, 2006, **14**, 8415-8419 (*isol, pmr, cmr, ms*)

Pyrinadine G P-931

[918302-91-7]

As Pyrinadine A, P-925 with

X = -$CH_2CH_2CH{=}CH(CH_2)_{10}$-, Y = -$(CH_2)_8CH{=}CH(CH_2)_4$-

$C_{38}H_{60}N_4O$ 588.918

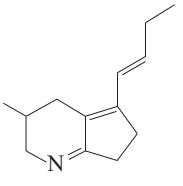
N-Oxide functionality may be on the other azine *N*. Alkaloid from *Cribrochalina* sp. (SS-1115). Cytotoxic. Oil. X- and Y-linker chains have *Z*-configuration. λ_{max} 213 (ϵ 10300); 251 (ϵ 4600); 257 (ϵ 4600); 262 (ϵ 4800); 269 (ϵ 3700) (MeOH).

Kariya, Y. *et al., Bioorg. Med. Chem.*, 2006, **14**, 8415-8419 (*isol, pmr, cmr, ms*)

Pyrindicine P-932

*5-(1-Butenyl)-3,4,6,7-tetrahydro-3-methyl-2*H*-cyclopenta[*b*]pyridine, 9CI*

[50719-83-0]



$C_{13}H_{19}N$ 189.3
Metab. of *Streptomyces griseofulvus* var. *pyrindicus*. Weak antibiotic, active against gram-positive and -negative bacteria. Pale yellow solid. $[\alpha]_D^{21}$ -38.8 (c, 0.05 in H_2O). λ_{max} 311 (ϵ 41500) (MeOH) (Derep).

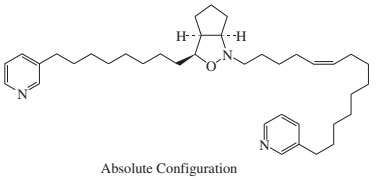
Hydrochloride: Mp 145°. $[\alpha]_D^{20}$ +22.9 (c, 0.7 in H_2O).

Picrate: Mp 174-176° dec.

Methiodide: Mp 187-188°.

Onda, M. *et al., Chem. Pharm. Bull.*, 1973, **21**, 2048 (*uv, pmr, ms, struct*)
Iwai, Y. *et al., Chem. Pharm. Bull.*, 1978, **26**, 736 (*cmr, biosynth*)
Hegde, V.R. *et al., J. Antibiot.*, 1994, **47**, 110 (*isol, pmr, cmr*)

Pyrinodemin A P-933



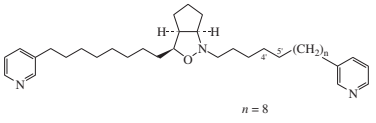
Absolute Configuration

$C_{38}H_{59}N_3O$ 573.904
Isol. from the sponge *Amphimedon* sp. Cytotoxic agent. Oil. $[\alpha]_D^{25}$ -9 (c, 1 in $CHCl_3$). λ_{max} 264 (ϵ 6300) (MeOH).

Tsuda, M. *et al., Tet. Lett.*, 1999, **40**, 4819-4820 (*isol, uv, ir, pmr, cmr, ms*)
Snider, B.B. *et al., Tet. Lett.*, 2001, **42**, 1639-1642 (*synth*)
Romeril, S.P. *et al., Tet. Lett.*, 2002, **43**, 327-329; 2003, **44**, 7757-7761 (*synth, abs config*)
Mormoto, Y. *et al., Org. Lett.*, 2003, **5**, 2611-2614 (*synth, abs config*)
Ishiyama, H. *et al., Molecules*, 2005, **10**, 312-316 (*synth, struct*)
Pouilhès, A. *et al., Org. Biomol. Chem.*, 2008, **6**, 1502-1510 (*synth*)

Pyrinodemin B P-934

[292041-81-7]



$C_{37}H_{59}N_3O$ 561.893
Isol. from *Amphimedon* sp. Cytotoxic agent. λ_{max} 264 (ϵ 6000) (MeOH).

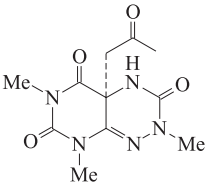
4′,5′-Didehydro(Z-): ***Pyrinodemin C***
[292041-82-8]
$C_{37}H_{57}N_3O$ 559.877
Isol. from *Amphimedon* sp. Cytotoxic agent. λ_{max} 263 (ϵ 5800) (MeOH).

Lower homologue (n = 7): ***Pyrinodemin D***
[292041-83-9]
$C_{36}H_{57}N_3O$ 547.866
Isol. from *Amphimedon* sp. Cytotoxic agent. λ_{max} 264 (ϵ 3300) (MeOH).

Hirano, K. *et al., Chem. Pharm. Bull.*, 2000, **48**, 974-977 (*Pyrinodemins B-D, isol, pmr, cmr, uv*)
Snider, B.B. *et al., Tet. Lett.*, 2001, **42**, 1639-1642 (*synth*)
Romeril, S.P. *et al., Tet. Lett.*, 2003, **44**, 7757-7761 (*config*)

Pyrizinostatin P-935

2,4,4a,8-Tetrahydro-2,6,8-trimethyl-4a-(2-oxo propyl)pyrimido[5,4-e]-1,2,4-triazine-3,5,7(6H)-trione, 9CI
[146406-84-0]



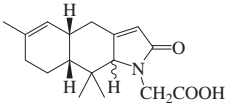
Relative configuration

$C_{11}H_{15}N_5O_4$ 281.271
Prod. by *Streptomyces* sp. Pyroglutamyl peptidase inhibitor. Cryst (MeOH). Sol. H_2O, $CHCl_3$, DMSO, MeOH; poorly sol. EtOAc, hexane, Et_2O. Mp 188-190°. $[\alpha]_D^{24}$ -15.6 (c, 1 on MeOH). λ_{max} 280 (ϵ 4600) (MeOH) (Derep).

Aoyagi, T. *et al., J. Antibiot.*, 1992, **45**, 1795; 1961 (*isol, struct, props*)
Kitagawa, M. *et al., Heterocycles*, 1994, **38**, 1747 (*synth*)
Tatsuka, K. *et al., J. Antibiot.*, 1994, **47**, 389 (*synth*)

Pyrodysinoic acid P-936

[385801-57-0]



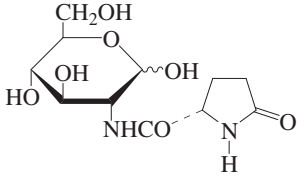
Relative Configuration

$C_{17}H_{23}NO_3$ 289.374
Isol. from a *Dysidea* sp. Pale yellow oil. $[\alpha]_D^{23}$ +9.1 (c, 0.07 in MeOH). λ_{max} 204 (log ϵ 1.46) (MeOH).

Goetz, G.H. *et al., J. Nat. Prod.*, 2001, **64**, 1486-1488 (*isol, pmr, cmr*)

Pyroglutamylglucosamine P-937

2-Deoxy-2-(5-oxo-2-pyrrolidinecarboxamido)glucopyranose, 9CI
[29227-87-0]

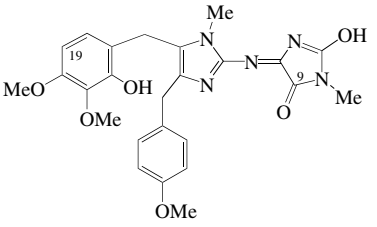


$C_{11}H_{18}N_2O_7$ 290.272
Isol. from the field mushroom *Agaricus campestris*. Tentative identification.

Altamura, M.R. *et al., J. Food Sci.*, 1970, **35**, 134-139 (*isol*)

Pyronaamidine P-938

[124535-77-9]



$C_{25}H_{27}N_5O_6$ 493.518
Alkaloid from a Micronesian sponge, *Leucetta* sp. Cytotoxic against KB cells (MIC 5 μg/mL). Yellow feathery cryst. Mp 185-187°. λ_{max} 208 (ϵ 49000); 224 (ϵ 34700); 276 (ϵ 6030); 388 (ϵ 16600) (MeOH) (Derep).

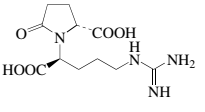
19-Hydroxy: ***Naamidine E***
[152273-84-2]
$C_{25}H_{27}N_5O_7$ 509.518
Alkaloid from *Leucetta* sp. and *Notodoris gardineri*. Yellow amorph. solid. Mp 115-118°.

9-(N-Methylimide): ***Pyronaamidine 9-N-methylimide***
[191362-11-5]
$C_{26}H_{30}N_6O_5$ 506.56
Alkaloid from *Leucetta* sp. cf. *chagosensis*. Yellow cryst. (CH_2Cl_2/MeOH). Mp 222-225°. λ_{max} 211 (5.14); 274 (4.78); 388 (4.96) (MeOH).

Akee, R.K. *et al., J.O.C.*, 1990, **55**, 1944 (*isol, uv, ir, pmr, cmr, ms, struct*)
Carroll, A.R. *et al., Aust. J. Chem.*, 1993, **46**, 1229 (*Naamidine E*)
Plubrukarn, A. *et al., J. Nat. Prod.*, 1997, **60**, 712 (*9-methylimide*)
Nakamura, S. *et al., J.C.S. Perkin 1*, 2002, 1061-1066 (*synth, pmr*)

Pyronopaline P-939

[86630-17-3]
[141032-89-5]



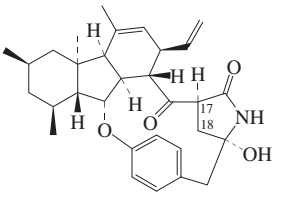
Absolute Configuration

$C_{11}H_{18}N_4O_5$ 286.287
Opine. Isol. from crown gall tumour. Cryst. (EtOH aq.). Mp 245° (dec.). $[\alpha]_D^{22}$ -40 (c, 0.5 in H_2O). Possible artifact.

Hall, L.M. *et al., J. Biol. Chem.*, 1983, **258**, 7276-7279 (*isol, pmr, struct*)
U.S. Pat., 1992, 5 081 289; *CA*, **116**, 210751k (*synth*)

Pyrrocidine B P-940

[428439-25-2]



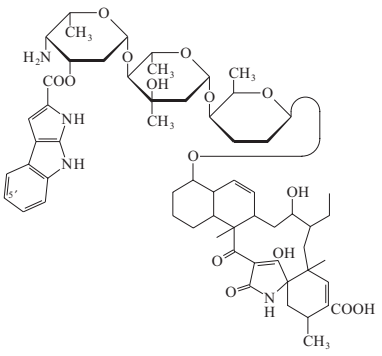
$C_{31}H_{39}NO_4$ 489.653
Prod. by a fungus, LL-Cyan 426. Active against gram-positive bacteria. Yellowish amorph. powder. $[\alpha]_D$ +88.2 (c, 0.22 in MeOH).

17,18-Didehydro: ***Pyrrocidine A***
[428439-24-1]
$C_{31}H_{37}NO_4$ 487.638
Prod. by a fungus, LL-Cyan426. Active against gram-positive bacteria. Yellowish amorph. powder. $[\alpha]_D$ +91.2 (c, 0.58 in MeOH).

He, H. *et al., Tet. Lett.*, 2002, **43**, 1633-1636 (*isol, pmr, cmr*)

Pyrroindomycin A P-941

[160472-94-6]



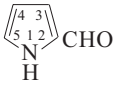
$C_{60}H_{80}N_4O_{15}$ 1097.31
Prod. by a strain of *Streptomyces rugosporus*. Active against gram-positive bacteria. λ_{max} 226 (ϵ 26100); 273 (ϵ 18500); 335 (ϵ 26200) (MeOH) (Derep).

5′-Chloro: ***Pyrroindomycin B***
[160472-95-7]
$C_{60}H_{79}ClN_4O_{15}$ 1131.755
Prod. by a strain of *Streptomyces rugosporus*. Active against gram-positive bacteria. λ_{max} 229 (ϵ 26100); 281 (ϵ 23200); 335 (ϵ 25600) (MeOH) (Derep).

Ding, W. *et al., J. Antibiot.*, 1994, **47**, 1249-1257; 1258-1265 (*isol, pmr, cmr, ir, props*)
Abbanat, D. *et al., J. Antibiot.*, 1999, **52**, 117-126 (*biosynth*)

1*H*-Pyrrole-2-carboxaldehyde, 9CI P-942

Pyrrole-2-aldehyde. 2-Formylpyrrole
[1003-29-8]



C_5H_5NO 95.101
Constit. of numerous plant spp. incl. tea, coffee and various legumes. Prisms (petrol). Mp 50-51°. Bp 217-219° Bp_2 78°.

Oxime: [32597-34-5]
$C_5H_6N_2O$ 110.115
Needles ($CHCl_3$ or C_6H_6). Mp 165-166°.

Phenylhydrazone: [81280-72-0]
Needles (petrol). Mp 139-139.5°.

4-Nitrophenylhydrazone:
Red needles (xylene). Mp 182.5-183°.

*Ethylene dithioketal: 2-(2-Pyrrolyl)-1,3-dithiolane. 2-(1,3-Dithiolan-2-yl)-1*H*-pyrrole, 9CI*
[70582-57-9]
$C_7H_9NS_2$ 171.287
Light yellow oil. Mp 27-30°.

N-*Ac:* [30186-49-3]
$C_7H_7NO_2$ 137.138
Plates (hexane) cryst. (Et_2O/petrol). Mp 78-78.5°.

N-*Benzoyl:*
$C_{12}H_9NO_2$ 199.209
Cryst. (petrol). Mp 90°.

N-*Me: 1-Methyl-2-pyrrolecarboxaldehyde*
[1192-58-1]
C_6H_7NO 109.127
Oil with odour resembling benzaldehyde. Bp_{32} 94-96° Bp_{11} 75-76°. On boiling rapidly turns yellow, then purple, finally deep red. Stable in alkali resinifies with acids.

▶ UX9350000

N-*Me, oxime:*
$C_6H_8N_2O$ 124.142
Mp 152°.

N-*Me, semicarbazone:*
Cryst. (EtOH). Mp 207-208°.

N-*Me, phenylhydrazone:* Mp 127-128°.

N-*Et: 1-Ethyl-1*H*-pyrrole-2-carboxaldehyde*
[2167-14-8]
C_7H_9NO 123.154
Light yellow oil. Bp_7 73-75°.

N-*Et, phenylhydrazone:* Mp 75°.

N-*Butyl:* [17164-95-3]
$C_9H_{13}NO$ 151.208
Oil. Bp_{11} 148-150°.

N-*Benzyl:* [18159-24-5]
$C_{12}H_{11}NO$ 185.225
Oil. $Bp_{0.1}$ 96-98°.

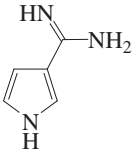
N-*Ph: 1-Phenyl-1*H*-pyrrole-2-carboxaldehyde*
$C_{11}H_9NO$ 171.198
Yellow cryst. Mp 98°.

N-*Hydroxymethyl: 1-Hydroxymethyl-2-pyrrolecarboxaldehyde*
[116967-16-9]
$C_6H_7NO_2$ 125.127

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 568B; 568C (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 6C; 7A (*nmr*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 1448A; 1448B (*ir*)
Smith, G.F. *et al., J.C.S.*, 1954, 3842 (*synth*)
Silverstein, R.M. *et al., J.O.C.*, 1955, **20**, 668 (*synth*)
Fournari, P. *et al., Bull. Soc. Chim. Fr.*, 1963, 488 (*1-Me*)
Org. Synth., Coll. Vol., 4, 1963, 831 (*synth*)
Khan, M.K.A. *et al., J.C.S.*, 1964, 2579 (*ir*)
Jones, R.F. *et al., J.C.S.(C)*, 1970, 2563 (*synth*)
Matsuo, T. *et al., Bull. Chem. Soc. Jpn.*, 1972, **45**, 1349 (*uv*)
Chadwick, D.J. *et al., Tet. Lett.*, 1974, 3183 (*nmr*)
Cushley, R.J. *et al., Can. J. Chem.*, 1975, **53**, 148 (*cmr*)
Severin, T. *et al., Chem. Ber.*, 1975, **108**, 1768 (*1-Me*)
Limage, M.H. *et al., J. Chim. Phys. Phys.-Chim. Biol.*, 1975, **72**, 914 (*ir, Raman*)
Nikisch, K. *et al., Chem. Ber.*, 1980, **113**, 2036 (*synth, ir, pmr*)
Comins, D.L. *et al., J.O.C.*, 1987, **52**, 104 (*Et*)
Boykin, D.W. *et al., J. Het. Chem.*, 1988, **25**, 643 (*O-17 nmr*)
Katritzky, A.R. *et al., Magn. Reson. Chem.*, 1988, **26**, 129-133 (*N-hydroxymethyl, synth, pmr, cmr*)
Katritzky, A.R. *et al., Org. Prep. Proced. Int.*, 1988, **20**, 585 (*synth*)
Pindur, U. *et al., J. Het. Chem.*, 1989, **26**, 1563 (*synth, ir, ms, pmr*)
Wallace, D.M. *et al., J.O.C.*, 1993, **58**, 7245 (*synth, deriv, pmr*)
Dumoulin, H. *et al., J. Het. Chem.*, 1995, **32**, 1703 (*N-Ph*)

1*H*-Pyrrole-3-carboximidamide, 9CI P-943

Pyrrole-3-carbamidine. 3-Amidinopyrrole. ***Brunfelsamidine****. Hopamidine*
[97744-98-4]



$C_5H_7N_3$ 109.13
Alkaloid from the root bark of *Brunfelsia grandiflora* ssp. *schultesii* and from *Leptonychia pubescens* and *Nierembergia hippomanica*. Shows convulsant props., toxic to livestock. Hygroscopic solid. Sol. MeOH, H_2O; fairly sol. butanol; poorly sol. $CHCl_3$, hexane. λ_{max} 232 ; 262 (MeOH) (Berdy).

▶ Toxic.

Hydrochloride: Mp 127-128°.

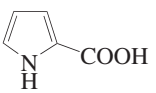
Picrate:
Cryst. (EtOH). Mp 247-249°.

1-β-D-Ribofuranosyl: ***1-β-D-Ribofuranosylbrunfelsamidine***
[117654-70-3 (HCl salt)]
$C_{10}H_{15}N_3O_4$ 241.246
Alkaloid from *Leptonychia pubescens*. Amorph. solid. $[\alpha]_D^{30}$ -1 (c, 0.5 in H_2O). λ_{max} 199 (log ϵ 4.05); 236 (log ϵ 3.18) (H_2O).

Lloyd, H.A. *et al., Tet. Lett.*, 1985, **26**, 2623-2624 (*uv, pmr, cmr, ms*)
Buschi, C.A. *et al., Phytochemistry*, 1987, **26**, 863-865 (*isol, synth, ir, pmr, cmr, ms*)
Yang, L.K. *et al., Planta Med.*, 2005, **71**, 1071-1072 (*ribofuranosyl*)

1*H*-Pyrrole-2-carboxylic acid, 9CI P-944

Minaline
[634-97-9]



$C_5H_5NO_2$ 111.1
Occurs in various microorganisms, e.g. *Streptomyces griseoflavus*. Imino-acid occurring in diastase, prob. resulting

from dehydration of hydroxyprolines. Esters possess local anaesthetic props. Protein racemase inhibitor. Platelet aggregation inhibitor. Leaflets (H_2O). Sol. H_2O, EtOH, Et_2O. Mp 208.5° dec. pK_{a1} 1.48; pK_{a2} 4.5 (25°). Decarboxylates at Mp. Isoelectric point 2.9. λ_{max} 263 (MeOH) (Berdy).

*α-L-Rhamnopyranosyl ester: 1*H*-Pyrrol-2-ylcarbonyl α-L-rhamnopyranoside*
$C_{11}H_{15}NO_6$ 257.243
Prod. by *Streptomyces* sp. Mp 89° dec. $[\alpha]_D^{20}$ -39 (c, 0.56 in MeOH). λ_{max} 210 (log ε 3.37); 267 (log ε 4.23) (MeOH).

(6-Deoxy-α-L-talopyranosyl) ester:
$C_{11}H_{15}NO_6$ 257.243
Prod. by *Streptomyces* sp. strain GöM1. Amorph. solid. $[\alpha]_D^{20}$ -60 (c, 1 in MeOH). λ_{max} 231 (log ε 3.49); 267 (log ε 3.96) (MeOH).

Me ester: [1193-62-0]
$C_6H_7NO_2$ 125.127
Isol. from an *Agelas* sp. Needles (petrol). Sol. EtOH, Et_2O. Mp 73°. Bp_{740} 220-223° Bp_{14} 115-120° (lit. gives a pressure range).

Benzyl ester: [35889-87-3]
$C_{12}H_{11}NO_2$ 201.224
Pale yellow solid. Mp 55°.

Et ester: [2199-43-1]
$C_7H_9NO_2$ 139.154
Cryst. V. sol. Et_2O, EtOH, C_6H_6, petrol. Mp 41-42°. Bp 230-232°.

2-Phenylethyl ester: Phenethyl 2-pyrrolecarboxylate
[168324-00-3]
$C_{13}H_{13}NO_2$ 215.251
Alkaloid from the rhizome of *Sparganium stoloniferum*.

Chloride: [5427-82-7]
C_5H_4ClNO 129.545
Cryst. (Et_2O/petrol). V. sol. Et_2O, $CHCl_3$. Sinters at 110°, dec. at higher temps. Dec. rapidly in moist air.

*Amide: 1*H*-Pyrrole-2-carboxamide*
[4551-72-8]
$C_5H_6N_2O$ 110.115
Alkaloid from the sponge *Agelas oroides*. Plates (H_2O or EtOH). Mp 176°. Sweet taste. λ_{max} 262 (ε 3700) (MeOH) (Berdy).

N-*Formylamide:* N-*Formyl-1*H*-pyrrole-2-carboxamide, 9CI*
[160156-23-0]
$C_6H_6N_2O_2$ 138.126
Alkaloid from the sponge *Agelas oroides*. Powder. λ_{max} 284 (ε 8140) (MeOH).

Hydrazide:
$C_5H_7N_3O$ 125.13
Cryst. (EtOH aq.). Mp 231-232° dec.

Azide: [67307-19-1]
$C_5H_4N_4O$ 136.113
Cryst. Mp 105° dec.

*Nitrile: 1*H*-Pyrrole-2-carbonitrile, 9CI. 2-Cyanopyrrole*
[4513-94-4]
$C_5H_4N_2$ 92.1
Oil. Bp_{14} 118-120° $Bp_{0.05}$ 50°.

N-*Methoxycarbonyl, Me ester:*
$C_8H_9NO_4$ 183.163
Cryst. (hexane). Mp 48-49.5° (37-40°). Bp_{28} 145°.

N-*Ethoxycarbonyl, Et ester:* [66202-48-0]
$C_{10}H_{13}NO_4$ 211.217
Bp_8 132-134° Bp_1 86-87°.

N-*tosyl, nitrile:* [220105-73-7]
$C_{12}H_{10}N_2O_2S$ 246.289
Cryst. Mp 114-115°.

N-*Me: 1-Methyl-1*H*-pyrrole-2-carboxylic acid*
[6973-60-0]
$C_6H_7NO_2$ 125.127
Needles (H_2O). Mp 135°.

N-*Me, Me ester:* [37619-24-2]
$C_7H_9NO_2$ 139.154
Bp_{13} 86.5-87°.

N-*Me, Et ester:* [23466-27-5]
$C_8H_{11}NO_2$ 153.18
$Bp_{0.5}$ 68°. n_D^{20} 1.5043.

N-*Me, nitrile: 2-Cyano-1-methyl-1*H*-pyrrole*
[34884-10-1]
$C_6H_6N_2$ 106.127
Yellow oil. Bp_{20} 60-62°.

N-*Et:* [4778-76-1]
$C_7H_9NO_2$ 139.154
Needles (H_2O). Mp 78°.

N-*Ph: 1-Phenyl-1*H*-pyrrole-2-carboxylic acid, 9CI*
[78540-03-1]
$C_{11}H_9NO_2$ 187.198
Cryst. (EtOH or C_6H_6). Mp 166° dec. Decarboxylates in boiling H_2O.

N-*Ph, Me ester:* [35524-54-0]
$C_{12}H_{11}NO_2$ 201.224
Cryst. (EtOH aq.). Mp 88°. Bp 282°.

N-*Ph, Et ester:* [24601-00-1]
$C_{13}H_{13}NO_2$ 215.251
Cryst. (EtOH aq.). Mp 88-89°. Bp 289°.

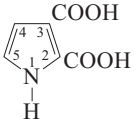
N-*Ph, amide:* [4778-75-0]
$C_{11}H_{10}N_2O$ 186.213
Cryst. (C_6H_6). Mp 152-155°.

N-*Ph, nitrile: 2-Cyano-1-phenyl-1*H*-pyrrole*
$C_{11}H_8N_2$ 168.198
Solid (heptane). Mp 58-59°.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 568D; 569A (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 7C; 8A (*nmr*)
Sadtler Standard C-13 NMR Spectra, 14815 (*cmr*)
Schwanert, H. *et al., Annalen*, 1860, **116**, 257 (*synth*)
Pictet, A. *et al., Ber.*, 1902, **35**, 2529 (*N-Ph*)
Blicke, F.F. *et al., J.A.C.S.*, 1930, **52**, 238 (*esters*)
Treibs, A. *et al., Annalen*, 1958, **619**, 80 (*Et ester*)
Doyle, F.P. *et al., J.C.S.*, 1958, 4458 (*synth*)
Fournari, P. *et al., Bull. Soc. Chim. Fr.*, 1963, 488 (*N-Me*)
Hodge, P. *et al., J.C.S.*, 1963, 2543 (*synth*)
Org. Synth., 1971, **51**, 100 (*Et ester*)
Streith, J. *et al., Helv. Chim. Acta*, 1976, **59**, 2786 (*nitrile*)
Wang, N.-C. *et al., Can. J. Chem.*, 1977, **55**, 4103 (*N-carboxy*)
Lautié, A. *et al., Spectrochim. Acta A*, 1977, **33**, 121 (*ir*)
Barnett, G.H. *et al., Can. J. Chem.*, 1980, **58**, 409 (*amide, nitrile*)
Höfle, G. *et al., Annalen*, 1983, 835 (*isol, pmr*)
Katritzky, A.R. *et al., Org. Prep. Proced. Int.*, 1988, **20**, 585 (*synth, pmr*)
Costa, C. *et al., Org. Mass Spectrom.*, 1991, **26**, 972 (*ms*)
Wallace, D.M. *et al., J.O.C.*, 1993, **58**, 7245 (*Et ester*)
Koenig, G.M. *et al., Nat. Prod. Lett.*, 1994, **5**, 141-146 (*isol, amides*)
Niclas, H.-J. *et al., Synth. Commun.*, 1994, **24**, 3241 (*nitrile*)
Miyaichi, Y. *et al., Nat. Med. (Tokyo)*, 1995, **49**, 24-28 (*phenethyl ester*)
Hughes, T.V. *et al., J.O.C.*, 1999, **64**, 313-315 (*tosyl nitrile*)
Grond, S. *et al., Eur. J. Org. Chem.*, 2000, 929-937; 1875-1881 (*rhamnosyl ester*)
Assman, M. *et al., Marine Ecol.: Progr. Ser.*, 2000, **207**, 255-262 (*Agelas constit*)
Smaliy, R.V. *et al., Synthesis*, 2002, 2416-2420 (*N-Me nitrile, N-Ph nitrile*)
Dieter, A. *et al., J. Antibiot.*, 2003, **56**, 639-646 (*isol, pmr, cmr*)
Bitzer, J. *et al., Eur. J. Org. Chem.*, 2006, 3661-3666 (*6-deoxytalopyranosyl ester*)
La Regina, G. *et al., J. Med. Chem.*, 2007, **50**, 922-931 (*N-Ph amide*)
Dohi, T. *et al., J.O.C.*, 2007, **72**, 109-116 (*tosyl nitrile*)
Schmuck, C. *et al., Eur. J. Org. Chem.*, 2008, 324-329 (*Me ester, benzyl ester*)

1*H*-Pyrrole-2,3-dicarboxylic acid, 9CI P-945

[1125-32-2]



$C_6H_5NO_4$ 155.11
Alkaloid from the leaves and flowers of *Parietaria officinalis* (Urticaceae). Needles. Mp 224° dec Mp 242-243° dec.

3-Me ester:
$C_7H_7NO_4$ 169.137
Needles (EtOH). Mp 200°.

3-Et ester:
$C_8H_9NO_4$ 183.163
Mp 145°.

Di-Me ester: [2818-08-8]
$C_8H_9NO_4$ 183.163
Mp 70°.

Di-Et ester: [25472-60-0]
$C_{10}H_{13}NO_4$ 211.217
$Bp_{0.08}$ 110°.

N-*Me:*
$C_7H_7NO_4$ 169.137
Solid.

N-*Me, di-Me ester:* [25472-58-6]
$C_9H_{11}NO_4$ 197.19
Cryst. (Et_2O).

Nicolaus, R.A. *et al., Gazz. Chim. Ital.*, 1956, **86**, 757 (*synth*)
Swan, G.A. *et al., J.C.S.(C)*, 1970, 285 (*synth, derivs*)
Budzianowski, J. *et al., Phytochemistry*, 1990, **29**, 3299 (*isol*)
Woo, J. *et al., J.A.C.S.*, 1993, **115**, 3407 (*deriv, synth, pmr, ms*)

1*H*-Pyrrole-2,5-dicarboxylic acid, 9CI P-946

[937-27-9]

$C_6H_5NO_4$ 155.11
Alkaloid from leaves of *Berberis koreana* (Berberidaceae). Needles (EtOH aq.). Sol. Et_2O, Me_2CO; insol. $CHCl_3$, EtOAc, C_6H_6, petrol. Mp 260° dec. (245°).

Mono-Me ester: [1199-64-0]
$C_7H_7NO_4$ 169.137
Alkaloid from leaves of *Berberis koreana* (Berberidaceae). Mp 241-242° (204-206°).

Di-Me ester: [1757-29-5]
$C_8H_9NO_4$ 183.163
Needles (H_2O). Sol. EtOH, Et_2O, C_6H_6. Mp 132° (126-127°).

Di-Et ester:
$C_{10}H_{13}NO_4$ 211.217
Needles. Mp 82°.

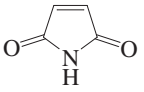
Dinitrile: 2,5-Dicyanopyrrole
[59215-66-6]
$C_6H_3N_3$ 117.11
Yellow solid.

1-Ph:
$C_{12}H_9NO_4$ 231.207
Light yellow cryst. Mp 140-144°. Various subst. 1-Ph derivs have also been prepd. and cryst. structs. determined.

Nicolaus, R.A. *et al., Gazz. Chim. Ital.*, 1956, **86**, 358 (*synth*)
U.S. Pat., 1959, 2 900 386; *CA*, **54**, 1557h (*synth*)
Barker, P. *et al., J.O.C.*, 1978, **43**, 4849 (*derivs*)
Košťálová, D. *et al., Phytochemistry*, 1992, **31**, 3669 (*isol, uv, ir, pmr, cmr, ms, struct*)
Lin, Q. *et al., J.C.S. Perkin 2*, 1998, 2109-2116 (*1-Ph, synth, cryst struct, pmr, cmr*)
Gade, L.H. *et al., Chem. Eur. J.*, 2002, **8**, 4308-4318 (*dinitrile, synth, ir, pmr, cmr, ms*)

1*H*-Pyrrole-2,5-dione, 9CI P-947

Maleimide, 8CI
[541-59-3]



$C_4H_3NO_2$ 97.073
Maleimide and its *N*-substituted derivs. are used in polym. compositions. Plates. Mp 93°. Subl. readily.

▶ LD_{50} (mus, orl) 80 mg/kg. Exp. reprod. and teratogenic effects. ON4800000

Monooxime: Maleimide monooxime
[74230-05-0]
$C_4H_4N_2O_2$ 112.088
Isol. from *Haliclona baeri*, *Haliclona cymaeformis* and *Cliona patera*. Yellow gum.

Wattanadilok, R. *et al., Mar. Drugs*, 2007, **5**, 40-51 (*monooxime, isol*)

1*H*-Pyrrole-3-propanoic acid P-948

3-(3-Pyrrolyl)propionic acid
[134448-22-9]
$C_7H_9NO_2$ 139.154

*Amide: 1*H*-Pyrrole-3-propanamide.* ***Cystamidin A***
[152509-75-6]
$C_7H_{10}N_2O$ 138.169
Prod. by *Streptomyces* sp. KP-1241. Calpain inhibitor. Powder. Sol. H_2O, C_6H_6, MeOH, Me_2CO, $CHCl_3$. Mp 146-148°. λ_{max} 203 (ε 4400); 213 ; 260 (MeOH) (Berdy).

[150985-69-6 , 107748-37-8]

Eur. Pat., 1993, 569 122; *CA*, **120**, 105131 (*Cystamidin A, isol, pmr, cmr, uv, ir*)
Hodges, L.M. *et al., J.O.C.*, 1993, **58**, 4788 (*Me ester*)

Pyrrolidine, 9CI, 8CI P-949

Tetrahydropyrrole. Tetramethyleneimine. Azacyclopentane. FEMA 3523
[123-75-1]



C_4H_9N 71.122
More complex acyl derivatives not given here may be listed as pyrrolidides under the parent carboxylic acids. Manuf. by catalytic reaction of NH_3 with tetrahydrofuran or butanediol. Present in tobacco and carrot leaves (*Daucus carota*) (Apiaceae). Widely distributed in trace amts., presumably as bacterial decarboxylation prod. of proline. Widely used org. base, used in the prep. of enamines. Reagent used in the ms detn. of the position of double bonds and of methyl branching in fatty acids. Flavouring ingredient. Liq. with odour resembling Piperidine, P-454. Misc. H_2O. d_4^{20} 0.86. Fp -63. Bp 88.5-89°. pK_a 11.31 (25°). Fumes in air. Strongly alkaline.

▶ Highly flammable, fl. p. 3°. Skin, eye and respiratory tract irritant. LD_{50} (rat, orl) 300 mg/kg. UX9650000

Hemipicrate:
Dark red cryst. Mp 163-164°.

Monopicrate: [1689-56-1]
Yellow needles (EtOH). Mp 112°.

N-*Ac:* [4030-18-6]
$C_6H_{11}NO$ 113.159
Liq. Bp 224-225°.

N-*Hexadecanoyl:* **N-*Hexadecanoylpyrrolidine*.** *Hexadecanoic acid pyrrolidide.* N-*Palmitoylpyrrolidine. Alkaloid MQ-B_2*
[70974-48-0]
$C_{20}H_{39}NO$ 309.534
Alkaloid from *Piper amalago*, *Ipomoeaaquatica* (water spinach) and *Merremia quinquefolia*.

N-*(2-Hexadecenoyl)(*E-*):* **N-*(2-Hexadecenoyl)pyrrolidine*.** *2-Hexadecenoic acid pyrrolidide*
[102934-30-5]
$C_{20}H_{37}NO$ 307.518
Alkaloid from *Piper amalago*.

N-*(3,6-Hexadecadienoyl):* **N-*(3,6-Hexadecadienoyl)pyrrolidine*.** *3,6-Hexadecadienoic acid pyrrolidide*
[102819-18-1]
$C_{20}H_{35}NO$ 305.503
Alkaloid from *Piper amalago*. Struct. not certain, may be the 3,7-dienoyl isomer.

N-*Octadecanoyl:* **N-*Octadecanoylpyrrolidine*.** N-*Stearoylpyrrolidine. Octadecanoic acid pyrrolidide. Alkaloid MQ-B_4*
[33707-76-5]
$C_{22}H_{43}NO$ 337.588
Alkaloid from *Piper amalago* and *Merremia quinquefolia*.

N-*(2-Octadecenoyl)(*E-*):* **N-*(2-Octadecenoyl)pyrrolidine*.** *2-Octadecenoic acid pyrrolidide*
[102934-31-6]
$C_{22}H_{41}NO$ 335.572
Alkaloid from *Piper amalago*.

N-*(9-Octadecenoyl):* **N-*(9-Octadecenoyl)pyrrolidine*.** *9-Octadecenoic acid pyrrolidide*
[52380-36-6]
[4637-54-1]
$C_{22}H_{41}NO$ 335.572
Alkaloid from *Piper amalago*.

N-*(3,6-Octadecadienoyl):* **N-*(3,6-Octadecadienoyl)pyrrolidine*.** *3,6-Octadecadienoic acid pyrrolidide*
[102819-20-5]
$C_{22}H_{39}NO$ 333.556
Alkaloid from *Piper amalago*. Struct. uncertain, may be the 3,7-dienoyl isomer.

N-*(2,4-Eicosadienoyl):* see Trichonine, T-491

N-*(2,11-Eicosadienoyl)(*E,E-*):* **N-*(2,11-Eicosadienoyl)pyrrolidine*.** *2,11-Eicosadienoic acid pyrrolidide*
[102934-34-9]
$C_{24}H_{43}NO$ 361.61
Alkaloid from *Piper amalago*.

N-*(3,6-Eicosadienoyl):* **N-*(3,6-Eicosadienoyl)pyrrolidine*.** *3,6-Eicosadienoic acid pyrrolidide*
[102819-22-7]
$C_{24}H_{43}NO$ 361.61
Alkaloid from *Piper amalago*. Struct. not certain, may be the 3,7-dienoyl isomer.

N-*(14*S*-Methylhexadecanoyl):* **N-*(14-Methylhexadecanoyl)pyrrolidine*.** *14-Methylhexadecanoic acid pyrrolidide. Alkaloid MQ-A_3*
[260058-83-1]
$C_{21}H_{41}NO$ 323.561
Alkaloid from *Ipomoea aquatica* (water spinach) and *Merremia quinquefolia*. $[\alpha]_D^{20}$ +5 (c, 0.4 in $CHCl_3$).

N-*Benzoyl:* [3389-54-6]
$C_{11}H_{13}NO$ 175.23
Liq. Bp_{20} 187°.

N-*Nitroso:* [930-55-2]
$C_4H_8N_2O$ 100.12
Found in fried bacon, tobacco smoke. Oil. Bp 214°. n_D^{20} 1.4900.

▶ Exp. hepatocarcinogen. Possible human carcinogen (IARC 2B). UY1575000

N-*Me:* see 1-Methylpyrrolidine, M-543

N-*Et:* [7335-06-0]
$C_6H_{13}N$ 99.175
Liq. Bp_{100} 50°.

N-*Propyl:* [7335-07-1]
$C_7H_{15}N$ 113.202
Bp 130-135°.

N-*Butyl:* [767-10-2]

$C_8H_{17}N$ 127.229
Liq. Bp 155-157° Bp_{22} 55-56°. n_D^{20} 1.4400.

► UX9800000

N-*(2-Chloroethyl):* [5050-41-9] [7250-67-1]
$C_6H_{12}ClN$ 133.62
Mp 169.5-173° (as hydrochloride). CAS no. refers to hydrochloride.

► UY0703150

N-*Benzyl:* [29897-82-3]
$C_{11}H_{15}N$ 161.246
Liq. Sol. EtOH, Et_2O. Bp 237°. Absorbs CO_2 and H_2O from the air.

N-*Triphenylmethyl: 1-Tritylpyrrolidine, 8CI*
[18265-12-8]
$C_{23}H_{23}N$ 313.441
Mp 124-125°.

N-*(2,4-Dinitrophenyl):* [14552-00-2]
Cryst. (cyclohexane/EtOAc). Mp 101.5-102.5°.

N-*Amino: 1-Aminopyrrolidine. 1-Pyrrolidinamine, 9CI*
[16596-41-1]
$C_4H_{10}N_2$ 86.136
Bp_{13} 28-30°.

N-*Amino; hydrochloride:* [63234-71-9]
Cryst. (2-propanol). Mp 117-119°.

N-*Amino, picrate:* Mp 165° dec.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 353C; 355A; 398B (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 557C; 623B (*nmr*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 442A; 443B; 481B (*ir*)
Aldrich Library of NMR Spectra, **2**, 58D (*pmr*)
De Jong, M. *et al., Rec. Trav. Chim. (J. R. Neth. Chem. Soc.)*, 1930, **49**, 237 (*synth*)
Ochiai, E. *et al., Ber.*, 1934, **67**, 1017 (*derivs*)
Rink, M. *et al., Naturwissenschaften*, 1961, **48**, 51 (*N-amino*)
Wright, J.B. *et al., J. Med. Pharm. Chem.*, 1962, **5**, 815 (*N-amino, synth*)
Duffield, A.M. *et al., J.A.C.S.*, 1965, **87**, 2920 (*ms*)
Wilshire, J.F.K. *et al., Aust. J. Chem.*, 1966, **19**, 1935 (*deriv*)
Andersson, B.A. *et al., Lipids*, 1974, **9**, 185; 443; 1975, **10**, 215; 716 (*use*)
Hawthorne, D.G. *et al., Aust. J. Chem.*, 1976, **29**, 315 (*cmr*)
Ahmed, M.G. *et al., J.C.S. Perkin 2*, 1978, 372 (*cmr, derivs*)
Fieser and Fieser's Reagents for Organic Synthesis, Wiley, 1980, **8**, 428 (*use*)
Ullmann's Encycl. Ind. Chem., 5th Ed., VCH, Weinheim, 1985, **A2**, 13 (*rev*)
Achenbach, H. *et al., Planta Med.*, 1986, **52**, 12-18 (*isol, pyrrolidides*)
Barbry, D. *et al., Magn. Reson. Chem.*, 1990, **28**, 560 (*cmr, N-15 nmr*)
Hunt, E.J. *et al., Carcinogenesis (London)*, 1991, **12**, 571 (*N-nitroso, bibl*)
Encyclopaedia of Reagents for Organic Synthesis, (ed. Paquette, L.A.), Wiley, 1995, **6**, 4381-4384 (*use*)
Encyclopedia of Food and Color Additives, (ed. Burdock, G.A.), CRC Press, 1997, 2398-2399 (*occur*)
Akula, M.R. *et al., Org. Prep. Proced. Int.*, 1999, **31**, 214-215 (*N-trityl*)
Tofern, B. *et al., Phytochemistry*, 1999, **52**, 1437-1441 (*MQ alkaloids*)
Yajima, A. *et al., Biosci., Biotechnol., Biochem.*, 2001, **65**, 463-465 (*MQ-A_3, synth, abs config*)
IARC Monog. (Web), (*N-nitroso*)
Luxon, S.G. *et al., Hazards in the Chemical Laboratory, 5th edn., Royal Society of Chemistry*, 1992, 1090
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, BSK250; NLP500; PPS500

2-Pyrrolidineacetic acid, 9CI P-950

β-Homoproline†



$C_6H_{11}NO_2$ 129.158
Present in flowerheads of *Arnica montana*, *Arnica chamissonis* ssp. *foliosa*, *Arnica amplexicaulis* and *Arnica sachalinensis*. Also occurs in *Tussilago farfara* (coltsfoot).

(*R*)-*form* [61350-65-0]
Mp 188-190°. $[\alpha]_D$ -44.8 (c, 1 in 3.41*M* HCl).

(*S*)-*form* [56633-75-1]
Present in cured tobacco leaves. Needles (propanol). Mp 189-191° (185°) (dec.). $[\alpha]_D^{25}$ +4 (c, 1 in H_2O). $[\alpha]_D$ +45 (c, 1 in 3.41*M* HCl).

Me ester: [53912-83-7]
$C_7H_{13}NO_2$ 143.185
Oil. Bp_1 135-145°. $[\alpha]_D^{20}$ +7 (c, 2.6 in $CHCl_3$).

N-tert-*Butyloxycarbonyl:* [56502-01-3]
$C_{11}H_{19}NO_4$ 229.275
Cryst. (hexane). Mp 99-101°. $[\alpha]_D$ -39.5 (c, 1.9 in DMF) (-41.6).

N-*Benzyloxycarbonyl:* [56633-73-9]
$C_{14}H_{17}NO_4$ 263.293
Cryst. (diisopropyl ether). Mp 74.5-75.5°. $[\alpha]_D$ -35.3 (c, 1 in AcOH).

N-*Benzyloxycarbonyl, Me ester:* [56633-72-8]
$C_{15}H_{19}NO_4$ 277.319
Oil. $[\alpha]_D$ -35.1 (c, 1 in $CHCl_3$).

N-*[(9H-Fluoren-9-ylmethoxy)carbonyl]:* [193693-60-6]
$C_{21}H_{21}NO_4$ 351.401
Cryst. (MeOH). Mp 191-192°. $[\alpha]_D^{20}$ -33.6 (c, 0.9 in DMF).

N-*Me: 1-Methyl-2-pyrrolidineacetic acid. Homohygrinic acid*
[137693-28-8]
$C_7H_{13}NO_2$ 143.185
Plates (C_6H_6). Mp 120-122°. $[\alpha]_D$ -31.3 (c, 1.0 in EtOH).

N-*Me, Me ester:* [51856-76-9]
$C_8H_{15}NO_2$ 157.212
Constit. of *Solanum sturtianum*. Oil. Bp_7 80-85°.

N-*Me, nitrile: 2-Cyanomethyl-1-methylpyrrolidine*
[67824-39-9]
$C_7H_{12}N_2$ 124.185
Oil. $Bp_{0.5}$ 45-46°. $[\alpha]_D$ -36.6 (c, 3 in MeOH).

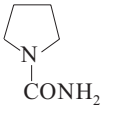
N-*Amidino:* N-*(Aminoiminomethyl)-2-pyrrolidineacetic acid.* ***Cimipronidine***
$C_7H_{13}N_3O_2$ 171.199
Alkaloid from the roots of *Cimicifuga racemosa*. Off-white powder. $[\alpha]_D^{20}$ +36.2 (c, 0.1 in H_2O). Stereochem. not confirmed. Zwitterionic. λ_{max} 285 (log ϵ 1.04); 333 (log ϵ 1.62) (H_2O).

[52484-80-7]

Bremner, J.B. *et al., Aust. J. Chem.*, 1973, **26**, 2559-2561 (*N-Me Me ester, isol, synth*)
Cassal, J.-M. *et al., Helv. Chim. Acta*, 1976, **59**, 1917-1924 (*synth*)
Wakabayashi, T. *et al., Synth. Commun.*, 1977, **7**, 239-244 (*synth*)
Leete, E. *et al., J.A.C.S.*, 1991, **113**, 9286-9292 (*1-Me, nitrile*)
Passreiter, C.M. *et al., Phytochemistry*, 1992, **31**, 4135-4137 (*isol*)
Ellmerer-Müller, E.P. *et al., Helv. Chim. Acta*, 1998, **81**, 59-65 (*Fmoc deriv, synth, ir, pmr, cmr, ms*)
Harrison, J.R. *et al., J.C.S. Perkin 1*, 1999, 3623-3631 (*Me ester, synth, ir, pmr, cmr*)
Chippindale, A.M. *et al., Tetrahedron*, 2003, **59**, 3253-3265 (*S-form, synth*)
Calvet, S. *et al., Tetrahedron*, 2003, **59**, 6333-6339 (*S-form, Me ester*)
Fabricant, D.S. *et al., J. Nat. Prod.*, 2005, **68**, 1266-1270 (*Cimipronidine*)

1-Pyrrolidinecarboxamide, 9CI P-951

N-*Carbamoylpyrrolidine. 1-(Aminocarbonyl)pyrrolidine*
[4736-71-4]

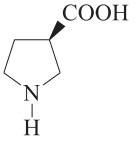


$C_5H_{10}N_2O$ 114.147
Metab. of the Mediterranean sponge *Aplysina (Verongia) cavernicola*. Cryst. (H_2O). Mp 148-152° (nat.) Mp 218° (synth.).

Reppe, W. *et al., Annalen*, 1955, **596**, 80 (*synth*)
D'Ambrosio, M. *et al., Comp. Biochem. Physiol., B: Comp. Biochem.*, 1986, **83**, 309 (*isol, ir, pmr, cmr, ms*)

3-Pyrrolidinecarboxylic acid P-952

β-Proline
[59378-87-9]



$C_5H_9NO_2$ 115.132

N-*Me:* ***Achyranthine***
$C_6H_{11}NO_2$ 129.158
Alkaloid from *Achyranthes aspera*. Vasodilator, diuretic, purgative, antihypertensive agent. Monohydrate. Mp 292-293° dec. $[\alpha]_D^{25}$ -6.5. Log P -2.23 (calc). Struct. proof not convincing. Abs. config. not detd.

N-*Me; hydroiodide:* Mp 204-205°.

Dimethylbetaine: 3-Carboxy-1,1-di-

methylpyrrolidinium hydroxide inner salt, 9CI. ***β-Stachydrine***
[86849-51-6]
$C_7H_{13}NO_2$ 143.185
Alkaloid from the marine red alga *Griffithsia flosculosa*. Mp 238°. Natural β-Stachydrine was characterised as the hydrochloride. The Mp given here is for semisynthetic material obt. by methylation of Achyranthine. Abs. config. not detd.

Dimethylbetaine; hydrochloride: Mp 236-238° dec. $[\alpha]_D^{23}$ -5.5 (c,0.27 in MeOH). Deriv. of β-Stachydrine.

Dimethylbetaine; hydroiodide: Mp 267°. Derived from Achyranthine.

(*R*)-*form* [72580-54-2]
Synthetic. Cryst. (EtOH). Mp 188-190°. $[\alpha]_D^{25}$ -18.9 (c, 2.0 in H_2O).

(*S*)-*form* [72580-53-1]
Mp 186-188.5°. $[\alpha]_D^{25}$ +19.1 (c, 2 in H_2O). Struct. incorr. drawn by Flešet *al* (1964).

Me ester:
$C_6H_{11}NO_2$ 129.158
Volatile oil. $[\alpha]_D^{23}$ +7.2 (c, 1.0 in $CHCl_3$).

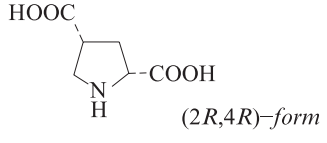
(±)-*form* [68464-02-8]
Plates. Mp 186°.

Et ester: [72925-15-6]
$C_7H_{13}NO_2$ 143.185
Bp_4 70-74°.

Basu, N.K. *et al., J. Proc. Inst. Chem. (India)*, 1957, **29**, 55; 73 (*Achyranthine*)
Miyamoto, M. *et al., Yakugaku Zasshi*, 1957, **77**, 568; *CA*, **51**, 16422h (*synth*)
Fleš, D. *et al., Croat. Chem. Acta*, 1964, **36**, 27-32; *CA*, **61**, 10644b (*S-form, synth, abs config.*)
Yuki, H. *et al., J. Polym. Sci., Polym. Chem. Ed.*, 1979, **17**, 3867-3878 (*R-form, synth, resoln, pmr*)
Blunden, G. *et al., Phytochemistry*, 1983, **22**, 293 (*β-Stachydrine*)
Mazzini, C. *et al., J.O.C.*, 1997, **62**, 5215-5218 (*R-form, S-form, synth, pmr, cmr*)
Thomas, C. *et al., Synthesis*, 1998, 1491-1496 (*R-form, S-form, synth, ir, pmr*)
Blanchet, J. *et al., Tet. Lett.*, 2007, **48**, 5727-5730 (*synth*)

2,4-Pyrrolidinedicarboxylic acid P-953

4-Carboxyproline



$C_6H_9NO_4$ 159.141

(2*R*,4*R*)-*form*
D-cis-*form*
[130830-78-3]
Prisms. Mp 224-225°. $[\alpha]_D^{21}$ +41.5 (c, 1.01 in H_2O) (+37).

N-*Benzoyl:* [188345-79-1]
$C_{13}H_{13}NO_5$ 263.249
Mp 164-165°. $[\alpha]_D^{20}$ +82 (c, 1.04 in EtOH).

(2*R*,4*S*)-*form*
D-trans-*form*
[130830-77-2]
Prisms. Mp 219-220°. $[\alpha]_D^{25}$ +51 (c, 1.04 in H_2O).

(2*S*,4*R*)-*form*
L-trans-*form*
[64769-66-0]
Constit. of the Mediterranean red algae *Chondria coerulescens, Chondria dasiphylla* and *Ceramium rubrum*; found in the seeds of *Afzelia bella* (Fabaceae). Cryst. (MeOH aq.). Mp 223-225°. $[\alpha]_D$ -54 (c, 1.04 in H_2O).

4-Me ester:
$C_7H_{11}NO_4$ 173.168
No phys. props. reported. $[\alpha]_D$ -11 (c, 1.5 in $CHCl_3$).

N-*Benzyl:* [627100-87-2]
$C_{13}H_{15}NO_4$ 249.266
Mp 60-62° (as hydrochloride). $[\alpha]_D^{20}$ +29.4 (c, 0.78 in MeOH) (hydrochloride). CAS no. refers to the hydrochloride.

2-Et ester, 4-nitrile, N-*benzyl:* [627100-83-8]
$C_{15}H_{18}N_2O_2$ 258.319
Oil. $[\alpha]_D^{20}$ +64.8 (c, 1 in $CHCl_3$).

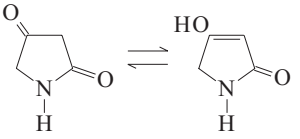
(2*S*,4*S*)-*form*
L-cis-*form*
[64927-38-4]
Prisms (EtOH aq./Me_2CO). Mp 225-256°. $[\alpha]_D^{25}$ -40 (c, 1.02 in H_2O).

(2*RS*,4*RS*)-*form*
(±)-cis-*form*
[136033-11-9]
Prisms (EtOH). Mp 226-230°.

Impellizzeri, G. *et al., Phytochemistry*, 1977, **16**, 1601-1602 (*isol, pmr, ms, struct*)
Dupont, L. *et al., Acta Cryst. B*, 1978, **34**, 850-854 (*cryst struct*)
Welter, A. *et al., Phytochemistry*, 1978, **17**, 131-134 (*isol, ir, pmr, cmr, ms, cd, struct*)
Bridges, R.J. *et al., J. Med. Chem.*, 1991, **34**, 717-725 (*synth, pmr, cmr, ir*)
Arakawa, Y. *et al., Chem. Pharm. Bull.*, 1997, **45**, 255-259 (*2R,3R-form, 2S,3S-form, 2RS,3RS-form, synth, pmr, cmr*)
Wang, Q. *et al., Tetrahedron*, 1998, **54**, 15759-15780 (*2S,4R-form, synth, ir, nmr, 4-Me ester*)
Heindl, C. *et al., Tetrahedron: Asymmetry*, 2003, **14**, 3141-3152 (*2S,4R-form, benzyl derivs*)

2,4-Pyrrolidinedione, 9CI P-954

*1,5-Dihydro-4-hydroxy-2*H*-pyrrol-2-one. Tetramic acid*
[37772-90-0]



$C_4H_5NO_2$ 99.089
Pale yellow solid. Mp 360°.

N-*Ac:* [182352-40-5]
$C_6H_7NO_3$ 141.126
Cryst. solid (MeOH). Mp 165-168°.

N-*Benzoyl:* [68661-20-1]
$C_{11}H_9NO_3$ 203.197
Solid. Mp 180° dec.

N-*Ethoxycarbonyl:*
$C_7H_9NO_4$ 171.152
Solid. Mp 105-108° (96-102°).

N-tert-*Butyloxycarbonyl:*
$C_9H_{13}NO_4$ 199.206
Cryst. solid (EtOAc). Mp 130-132° dec.

N-*Benzyloxycarbonyl:*
$C_{12}H_{11}NO_4$ 233.223
Cryst. solid. Mp 151-153° dec.

Enol-form

*Me ether: 1,5-Dihydro-4-methoxy-2*H*-pyrrol-2-one, 9CI*
[69778-83-2]
$C_5H_7NO_2$ 113.116
Constit. of the marine cyanophyte *Lyngbya majuscula*. Hydrol. prod. of Malyngamide A. Needles (C_6H_6). Mp 128-129°.

Me ether, N-*Ac: 1-Acetyl-1,5-dihydro-4-methoxy-2*H*-pyrrol-2-one*
$C_7H_9NO_3$ 155.153
Minor constit. of *Lyngbya majuscula*. Mp 89-90°.

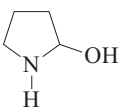
*Benzyl ether: 4-Benzyloxy-1,5-dihydro-2*H*-pyrrol-2-one*
[113896-95-0]
$C_{11}H_{11}NO_2$ 189.213
Mp 150-153°.

N*[1]*,*4-Di-Me: 1,5-Dihydro-4-methoxy-1-methyl-2*H*-pyrrol-2-one, 9CI*
[90968-33-5]
$C_6H_9NO_2$ 127.143
Prisms (C_6H_6/hexane). Mp 86-87°.

Cram, D.J. *et al., J.A.C.S.*, 1963, **85**, 1430 (*deriv, synth*)
Mulholland, T.P.C. *et al., J.C.S. Perkin 1*, 1972, 2121 (*synth*)
Lowe, G. *et al., J.C.S. Perkin 1*, 1973, 2907 (*synth, nmr*)
Cardellina, J.H. *et al., J.A.C.S.*, 1979, **101**, 240 (*occur, derivs*)
Kochhar, K.S. *et al., Tet. Lett.*, 1984, **25**, 1871 (*synth*)
Gill, G.B. *et al., J.C.S. Perkin 1*, 1993, 2567 (*deriv, synth, ir, pmr, cmr*)
James, G.D. *et al., J.C.S. Perkin 1*, 1993, 2581 (*deriv, synth, ir, pmr, cmr*)
Hamilakis, S. *et al., J. Het. Chem.*, 1996, **33**, 825 (*acyl derivs*)
Parsons, A.F. *et al., Tet. Lett.*, 1996, **37**, 1667 (*benzyl ether, synth*)
Lu, Z. *et al., Bioorg. Med. Chem. Lett.*, 2003, **13**, 2505-2507 (*synth*)

2-Pyrrolidinol P-955

2-Hydroxypyrrolidine



C_4H_9NO 87.121

(±)-*form*

N-*Formyl: 2-Hydroxy-1-pyrrolidinecarboxaldehyde, 9CI*
[69352-24-5]
$C_5H_9NO_2$ 115.132
Liq. $Bp_{1.5}$ 122-125°.

Me ether, N-*formyl:* [61020-06-2]
$C_6H_{11}NO_2$ 129.158
Liq. Bp_{48} 135-137° $Bp_{1.5}$ 77-80°. n_D^{25} 1.4700.

Me ether, N-E-*cinnamoyl:* ***Aglamide D***
[922149-10-8]
$C_{14}H_{17}NO_2$ 231.294
Alkaloid from the bark of *Aglaia edulis*. Amorph. powder. λ_{max} 206 (log ϵ 4.2); 218 (log ϵ 4.22); 280 (log ϵ 4.35) (MeOH) (206).

(ξ)-*form*

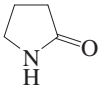
Me ether, N-*carbamoyl:* N-*Carbamoyl-2-methoxypyrrolidine. 2-Methoxy-1-pyrrolidinecarboxamide, 9CI*
[83459-48-7]
$C_6H_{12}N_2O_2$ 144.173
Alkaloid from the stem bark of *Hexalobus crispiflorus*, twigs of *Oxymitra velutina* (preferred genus name *Friesodielsia*) and roots and stem bark of *Piptostigma fugax* (Annonaceae). Needles (petrol/Me_2CO). Mp 96-98°. $[\alpha]_D$ 0 (c, 0.66 in MeOH).

Me ether, N-*cinnamoyl:* N-*Cinnamoyl-2-methoxypyrrolidine.* ***Piperlotine I***
$C_{14}H_{17}NO_2$ 231.294
Alkaloid from the leaves of *Piper lolot*. Syrup. $[\alpha]_D$ +23.2 (c, 0.08 in MeOH). λ_{max} 210 ; 216 ; 222 ; 274 (MeOH).

Nyberg, K. *et al., Acta Chem. Scand., Ser. B*, 1976, **30**, 640-642 (*synth*)
Mitzlaff, M. *et al., Annalen*, 1978, 1713-1733 (*Me ether N-formyl*)
Iwasaki, T. *et al., J.O.C.*, 1979, **44**, 1552-1554 (*synth*)
Achenbach, H. *et al., Annalen*, 1982, 1623-1633 (*Me ether N-carbamoyl*)
Achenbach, H. *et al., Phytochemistry*, 1991, **30**, 1265-1267; 1995, **38**, 1037-1048 (*Me ether N-carbamoyl*)
Kim, S. *et al., J. Nat. Prod.*, 2006, **69**, 1769-1775 (*Aglamide D*)
Li, C.-Y. *et al., J. Agric. Food Chem.*, 2007, **55**, 9436-9442 (*Piperlotine I*)

2-Pyrrolidinone, 9CI, 8CI P-956

2-Oxopyrrolidine. Butyrolactam. 2-Pyrrolidone. Piperidinic lactam. 4-Aminobutanoic acid lactam
[616-45-5]



C_4H_7NO 85.105
Manuf. from γ-butyrolactone and NH_3. Constit. of *Artemisia asiatica nakai*, *Solanum vestissimum* and red ginseng. Isol. from the rump glands of the antelope *Antilocapra americana* as a possible alerting pheromone. Reagent used in the ms detn. of the branching points in long-chain primary alcohols, low acute tox. Plasticiser/emulsifier. Solvent. Anionic polym. gives nylon-4. Cryst. (petrol). V. sol. H_2O, most org. solvs.; spar. sol. petrol. Mp 24.6°. Bp 245° Bp_{12} 133°. pK_a -0.94 (25°). Spar. steam-volatile. Forms a monohydrate in moist air, Mp 35° (30°). Ceiling temp. for polym., T_c 76°.

▶ Eye, skin and mucous membrane irritant.
UY5715000

N-E-*Cinnamoyl: 1-(1-Oxo-3-phenyl-2-propenyl)-2-pyrrolidinone.* N-*Cinnamoyl-2-pyrrolidinone.* ***Piperlotine F***
[141236-49-9]
$C_{13}H_{13}NO_2$ 215.251
Alkaloid from the leaves of *Piper lolot*. Needles. Mp 101-102°. λ_{max} 211 ; 273 (MeOH).

N-*(4-Methoxy-*E*-cinnamoyl):* N-*(4-Methoxycinnamoyl)-2-pyrrolidinone.* ***Piperlotine G***
[141236-52-4]
$C_{14}H_{15}NO_3$ 245.277
Alkaloid from the leaves of *Piper lolot*. Needles. Mp 140-142°. λ_{max} 222 ; 284 (MeOH).

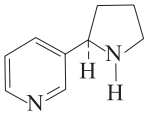
N-*(4-Methoxy-*Z*-cinnamoyl):* ***Piperlotine H***
[958296-15-6]
$C_{14}H_{15}NO_3$ 245.277
Alkaloid from the leaves of *Piper lolot*. Syrup. λ_{max} 224 ; 274 (MeOH).

N-*(2,3,6-Tribromo-4,5-dihydroxybenzyl):* N-*(2,3,6-Tribromo-4,5-dihydroxybenzyl)-2-pyrrolidinone*
[946585-49-5]
$C_{11}H_{10}Br_3NO_3$ 443.917
Isol. from red alga *Symphyocladia latiuscula*. Amorph. yellow solid. Mp 166-168°. λ_{max} 216 (log ϵ 3.86); 259 (log ϵ 2.9); 295 (log ϵ 2.7) (MeOH).

Suarez, M. *et al., Flavour Fragrance J.*, 1993, **8**, 215-220 (*isol*)
Wood, W.F. *et al., Biochem. Syst. Ecol.*, 2002, **30**, 361-363 (*isol*)
Li, C.-Y. *et al., J. Agric. Food Chem.*, 2007, **55**, 9436-9442 (*Piperlotines F,G,H*)
Duan, X.-J. *et al., J. Nat. Prod.*, 2007, **70**, 1210-1213 (*Tribromodihydroxybenzylpyrrolidinone*)

3-(2-Pyrrolidinyl)pyridine, 9CI P-957

2-(3-Pyridyl)pyrrolidine. ***Nornicotine***
[13450-58-3]



(*R*)-*form*

$C_9H_{12}N_2$ 148.207

(*R*)-*form* [7076-23-5]
Alkaloid from *Duboisia hopwoodii* (Solanaceae). d_4^{10} 1.08. $Bp_{3.6}$ 117°. $[\alpha]_D^{20}$ +86.3 (60% o.p.). n_D^{18} 1.5490.

▶ RC8050000

Dipicrate: Mp 191-192°.

N-*Me:* see Nicotine, N-190

(*S*)-*form* [494-97-3]
Constit. of tobacco, *Nicotiana tabacum* (Solanaceae). Principal alkaloid of some tobacco strains. Insecticide. Now superseded. $d^{19.5}$ 1.07. Bp_{11} 130-131° Bp_1 120°. $n_D^{18.5}$ 1.5378.

▶ QS6405000

N-*Formyl:* **N-*Formylnornicotine***. *2-(3-Pyridinyl)-1-pyrrolidinecarboxaldehyde, 9CI*
[38840-03-8]
$C_{10}H_{12}N_2O$ 176.218
Alkaloid from *Nicotiana tabacum* and *Duboisia hopwoodii* (Solanaceae). No opt. rotn. reported for the *D. hopwoodii* isolate, could be the enantiomer (cf. Nornicotine).

N-*Ac:* **N-*Acetylnornicotine***. *1-Acetyl-2-(3-pyridinyl)pyrrolidine, 9CI*
[5979-94-2]
$C_{11}H_{14}N_2O$ 190.244
Alkaloid from *Nicotiana tabacum* and *Duboisia hopwoodii* (Solanaceae). Bp_{12} 212-214°. $[\alpha]_D^{20}$ -3.24 (C_6H_6). No opt. rotn. recorded for the *D. hopwoodii* isolate (Solanaceae).

▶ UX9682000

N-*Hexanoyl:* **N-*Hexanoylnornicotine***. *1-(1-Oxohexyl)-2-(3-pyridinyl)pyrrolidine, 9CI*
[38854-09-0]
$C_{15}H_{22}N_2O$ 246.352
Minor alkaloid from cured tobacco (*Nicotiana tabacum*) (Solanaceae).

N-*Octanoyl:* **N-*Octanoylnornicotine***. *1-(1-Oxooctyl)-2-(3-pyridinyl)pyrrolidine, 9CI*
[38854-10-3]
$C_{17}H_{26}N_2O$ 274.405
Minor alkaloid from cured tobacco (*Nicotiana tabacum*) (Solanaceae).

N-*Me:* see Nicotine, N-190

N-*Et: 3-(1-Ethyl-2-pyrrolidinyl)pyridine, 9CI.* **N-*Ethylnornicotine***
[5979-92-0]
$C_{11}H_{16}N_2$ 176.261
Alkaloid from leaves of *Nicotiana tabacum* (Solanaceae). Oil.

▶ UT3770000

N-*Isopropyl: 3-[1-(1-Methylethyl)-2-pyrrolidinyl]pyridine, 9CI.* **N-*Isopropylnornicotine***
[72461-69-9]
$C_{12}H_{18}N_2$ 190.288
Alkaloid from *Nicotiana tabacum* (Solanaceae).

N-*(3-Hydroxy-12-methyltridecanoyl): 1-(3-Hydroxy-12-methyl-1-oxotridecyl)-2-(3-pyridinyl)pyrrolidine, 9CI.* **N-*(3-Hydroxy-12-methyltridecanoyl)nornicotine***
[115849-84-8]
$C_{23}H_{38}N_2O_2$ 374.565
Alkaloid from trichomes of *Nicotiana stocktonii*.

N-*(β-D-Fructopyranos-1-yl): 1-Deoxy-1-[2-(3-pyridinyl)-1-pyrrolidinyl]-β-D-fructopyranose*
$C_{15}H_{22}N_2O_5$ 310.349
Amadori compd. isol. from flue-cured Delhi tobacco. Needles. Mp 67-70°. $[\alpha]_D^{25}$ -94 (c, 1 in H_2O).

N′-*Nitroso:* [16543-55-8]
[84237-38-7 , 80508-23-2 , 61601-78-3]
$C_9H_{12}N_3O_2^{\oplus}$ 194.213
Carcinogen in tobacco and tobacco smoke. $Bp_{0.2}$ 150-160°.
►Possible human carcinogen (IARC 2B).

(±)-*form* [5746-86-1]
$Bp_{0.5}$ 94°.
►RC8400000

N-*Et:* [86500-39-2]
Bp_{13} 128-130°.

(ξ)-*form*

N-*(3-Hydroxy-10-methylundecanoyl): 1-(3-Hydroxy-10-methyl-1-oxoundecyl)-2-(3-pyridinyl)pyrrolidine, 9CI.* **N-*(3-Hydroxy-10-methylundecanoyl)nornicotine***
[115849-79-1]
$C_{21}H_{34}N_2O_2$ 346.512
Alkaloid from *Nicotiana repanda* and other *Nicotiana* spp. Plant growth inhibitor.

N-*(3-Hydroxydodecanoyl): 1-(3-Hydroxy-1-oxododecyl)-2-(3-pyridinyl)pyrrolidine, 9CI.* **N-*(3-Hydroxydodecanoyl)nornicotine***
[115849-80-4]
$C_{21}H_{34}N_2O_2$ 346.512
Alkaloid from *Nicotiana repanda* and other *Nicotiana* spp. Plant growth inhibitor.

N-*(3-Hydroxy-10-methyldodecanoyl): 1-(3-Hydroxy-10-methyl-1-oxododecyl)-2-(3-pyridinyl)pyrrolidine, 9CI.* **N-*(3-Hydroxy-10-methyldodecanoyl)nornicotine***
[115849-82-6]
$C_{22}H_{36}N_2O_2$ 360.539
Alkaloid from *Nicotiana repanda* and other *Nicotiana* spp.

N-*(3-Hydroxy-11-methyldodecanoyl): 1-(3-Hydroxy-11-methyl-1-oxododecyl)-2-(3-pyridinyl)pyrrolidine, 9CI.* **N-*(3-Hydroxy-11-methyldodecanoyl)nornicotine***
[115849-81-5]
$C_{22}H_{36}N_2O_2$ 360.539
Alkaloid from *Nicotiana repanda* and other *Nicotiana* spp.

N-*(3-Hydroxy-12-methyltetradecanoyl): 1-(3-Hydroxy-12-methyl-1-oxotetradecyl)-2-(3-pyridinyl)pyrrolidine, 9CI.* **N-*(3-Hydroxy-12-methyltetradecanoyl)-nornicotine***
$C_{24}H_{40}N_2O_2$ 388.592
Alkaloid from *Nicotiana repanda* and other *Nicotiana* spp.

N-*(3-Hydroxy-13-methyltetradecanoyl): 1-(3-Hydroxy-13-methyl-1-oxotetradecyl)-2-(3-pyridinyl)pyrrolidine, 9CI.* N-*(3-Hydroxy-13-methyltetradecanoyl)-nornicotine*
[116353-94-7]
$C_{24}H_{40}N_2O_2$ 388.592
Alkaloid from *Nicotiana repanda* and other *Nicotiana* spp.

N-*(3-Hydroxy-14-methylpentadecanoyl): 1-(3-Hydroxy-14-methyl-1-oxopentadecyl)-2-(3-pyridinyl)pyrrolidine, 9CI.* **N-*(3-Hydroxy-14-methylpentadecanoyl)-nornicotine***
[120042-33-3]
$C_{25}H_{42}N_2O_2$ 402.619
Alkaloid from *Nicotiana repanda.*

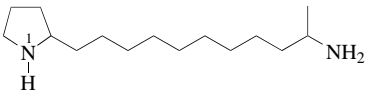
N-*(3-Hydroxyhexadecanoyl): 1-(3-Hydroxy-1-oxohexadecyl)-2-(3-pyridinyl)pyrrolidine, 9CI.* **N-*(3-Hydroxyhexadecanoyl)nornicotine***
[120042-32-2]
$C_{25}H_{42}N_2O_2$ 402.619
Alkaloid from *Nicotiana repanda.*

[86900-40-5 , 91429-66-2 , 123348-72-1 , 123348-68-5]

Späth, E. *et al., Ber.*, 1935, **68**, 1388; 1667 (*isol*)
Swain, M.L. *et al., J.A.C.S.*, 1949, **71**, 1342 (*uv*)
Erdtman, H. *et al., Acta Chem. Scand.*, 1963, **17**, 1717 (*synth*)
Duffield, A.M. *et al., J.A.C.S.*, 1965, **87**, 2926 (*ms*)
Leete, E. *et al., J.O.C.*, 1972, **37**, 4465 (*synth*)
Bolt, A.J.N. *et al., Phytochemistry*, 1972, **11**, 2341 (*N-Hexanoylnornicotine, N-Octanoylnornicotine*)
Warfield, A.H. *et al., Phytochemistry*, 1972, **11**, 3371 (*N-Acetylnornicotine, N-Formylnornicotine, synth*)
Seeman, J.I. *et al., Synthesis*, 1977, 498 (*synth, nmr, ms*)
Hecht, S.S. *et al., J.O.C.*, 1978, **43**, 72-76 (*N′-nitroso, synth, bibl*)
Nakane, M. *et al., J.O.C.*, 1978, **43**, 3922 (*synth*)
Heck, R.F. *et al., Acc. Chem. Res.*, 1979, **12**, 146 (*synth*)
Miyano, M. *et al., Agric. Biol. Chem.*, 1979, **43**, 2205 (*N-Isopropylnornicotine*)
Siddiqui, I.R. *et al., Carbohydr. Res.*, 1981, **98**, 57 (*fructosyl*)
Leete, E. *et al., Phytochemistry*, 1981, **20**, 1037 (*N-Isopropylnornicotine*)
Jacob, P. *et al., J.O.C.*, 1982, **47**, 4165 (*synth, resoln*)
Castonguay, A. *et al., Methods Enzymol.*, 1982, **84**, 641-650 (*N′-nitroso, rev*)
Luanratana, O. *et al., Phytochemistry*, 1982, **21**, 449 (*N-Acetylnornicotine, N-Formylnornicotine*)
Langhals, E. *et al., Annalen*, 1983, 330 (*synth*)
Seeman, J.J. *et al., J.O.C.*, 1985, **50**, 5419 (*synth*)
Zador, E. *et al., Plant Physiol.*, 1986, **82**, 479 (*N-(3-Hydroxy-12-methyltridecanoyl), isol, biosynth*)
Severson, R.F. *et al., ACS Symp. Ser.*, 1988, **380**, 335-362 (*isol, N-acyl derivs*)
Mahboobi, S. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1988, **321**, 175 (*synth*)
Kuno, H. *et al., Agric. Biol. Chem.*, 1989, **53**, 535 (*N-(3-Hydroxy-12-methyltridecanoyl), synth*)
Braumann, T. *et al., Phytochemistry*, 1990, **29**, 3693 (*N-Ethylnornicotine*)
Pesticide Manual, 9th edn., 1991, No. 9050
Aislaitner, G. *et al., Med. Sci. Res.*, 1992, **20**, 897 (*metab*)
Deo, N.M. *et al., Tet. Lett.*, 1996, **37**, 1137 (*synth*)
Isomura, S. *et al., J.O.C.*, 2001, **66**, 4115-4121 (*R-form, S-form, synth, pmr, cmr*)
Felpin, F.-X. *et al., J.O.C.*, 2001, **66**, 6305-6312 (*synth*)
Baxendale, I.R. *et al., J.C.S. Perkin 1*, 2002, 143-154 (*synth*)
IARC Monog. (Web),
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, NNR500; NNS500

11-(2-Pyrrolidinyl)-2-undecylamine P-958

α-Methyl-2-pyrrolidinedecanamine. 2-(10-Aminoundecyl)pyrrolidine



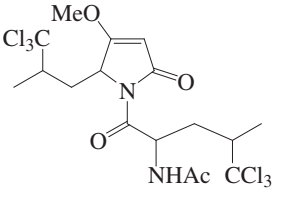
$C_{15}H_{32}N_2$ 240.431

N^1*-(2-Hydroxyethyl): 2-(10-Aminoundecyl)-1-pyrrolidineethanol, 9CI*
[192213-03-9]
$C_{17}H_{36}N_2O$ 284.484
Alkaloid from the ladybird *Epilachna boraelis.*

Radford, P. *et al., J. Nat. Prod.*, 1997, **60**, 755-759 (*isol, ms*)

Asteronotus cespitosus Pyrrolidone P-959

[489469-96-7]

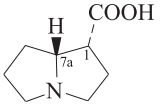


$C_{17}H_{22}Cl_6N_2O_4$ 531.088
Related to Dysideapyrrolidone, D-969. Alkaloid from the dorid nudibranch *Asteronotus cespitosus.* $[\alpha]_D$ +4.8 (c, 0.0004 in $CHCl_3$).

Fahey, S.J. *et al., J. Chem. Ecol.*, 2002, **28**, 1773-1785 (*isol, pmr, cmr*)

1-Pyrrolizidinecarboxylic acid P-960

*Hexahydro-1*H*-pyrrolizine-1-carboxylic acid, 9CI*



(1*R*,7a*R*)–*form*

$C_8H_{13}NO_2$ 155.196
All 4 stereoisomers occur as necine base components of pyrrolizidine alkaloids.

(1*R*,7*aR*)-*form* [22269-14-3]
Cryst. by subl. Mp 244-245°. $[\alpha]_D^{25}$ +82 (c, 0.7 in H_2O).

Picrate:
Yellow prisms (EtOH). Mp 218-219°.

Methiodide:
Cryst. (Me_2CO). Mp 141-142°.

Me ester: ***Chysin A****. Chysine. 1-Methoxycarbonylpyrrolizidine*
[22269-11-0]
$C_9H_{15}NO_2$ 169.223
Alkaloid from *Chysis bractescens* (Orchidaceae). Oil. $[\alpha]_D^{25}$ +64 (c, 1.1 in $CHCl_3$).

Et ester: ***Chysin B***
$C_{10}H_{17}NO_2$ 183.25
Alkaloid from *Chysis bractescens* (Orchidaceae). No phys. props. reported.

(1*R*,7*aS*)-*form*
Trachelanthamidinic acid
[526-66-9]
Mp 215-216°. $[\alpha]_D$ -43.4 (H_2O). $[\alpha]_D$ -32.5 (EtOH).
Picrate: Mp 178-179°.

(1*S*,7*aR*)-*form*
Laburnoic acid
[488-07-3]
Cryst. + $1H_2O$. Mp 215-216°. $[\alpha]_D$ +44.2 (H_2O).
Picrate: Mp 175-176°.

(1*S*,7*aS*)-*form*
Isoretronecanolic acid
[526-65-8]
Mp 228-229° dec. $[\alpha]_D$ -71.4 (EtOH).
Picrate: Mp 219-220°.
Me ester: [63527-06-0]
$C_9H_{15}NO_2$ 169.223
Oil. $[\alpha]_D^{20}$ -65.1 (c, 2.16 in $CHCl_3$).

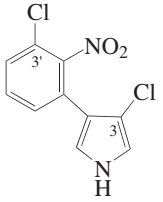
(1*RS*,7*aSR*)-*form*
(±)-cis-*form*
Et ester, picrate:
Cryst. (EtOH). Mp 149-151°.

(1*RS*,7*aRS*)-*form*
(±)-trans-*form*
Et ester: [34951-60-5]
$Bp_{0.1}$ 113-115°.
Et ester, picrate:
Cryst. (EtOH). Mp 120-121°.

Adams, R. *et al., J.A.C.S.*, 1942, **64**, 2597 (*synth*)
Galinovsky, F. *et al., Monatsh. Chem.*, 1954, **85**, 913 (*synth*)
Lüning, B. *et al., Tet. Lett.*, 1965, 921 (*Chysins*)
Lüning, B. *et al., Acta Chem. Scand.*, 1968, **22**, 2324 (*isol, synth*)
Schnekenburger, J. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1977, **310**, 177 (*synth*)
Borch, R.F. *et al., J.O.C.*, 1977, **42**, 1225 (*synth*)
Pinnick, H.W. *et al., J.O.C.*, 1978, **43**, 4662 (*synth*)
Terao, Y. *et al., Chem. Pharm. Bull.*, 1982, **30**, 3167 (*synth*)
David, O. *et al., J.O.C.*, 1999, **64**, 3122-3131 (*Me ester, synth, pmr, cmr, ir*)

Pyrrolnitrin, INN, USAN P-961

*3-Chloro-4-(3-chloro-2-nitrophenyl)-1*H*-pyrrole, 9CI. Icar. Micutrin. Pyro-Ace. Rugosin H. A 10338. FR 005759. Lilly 52230. NSC 107654. Antibiotic A 10338*
[1018-71-9]



$C_{10}H_6Cl_2N_2O_2$ 257.075
Pyrrole antibiotic. Produced by *Pseudomonas pyrrocinia*, *Pseudomonas aureofaciens*, *Pseudomonas fluorescens*, other *Pseudomonas* spp. and *Myxococcus fulvus*. Antifungal agent. Pale-yellow cryst. (C_6H_6). Mp 125°. Log P 3.86 (calc). Dec. on exp. to air and light. λ_{max} 252 (ε 7500) (EtOH) (Derep).
▶ LD_{50} (mus, orl) 1000 mg/kg. UX9450000

2-Chloro: ***2,3-Dichloro-4-(3-chloro-2-nitrophenyl)-1*H*-pyrrole, 8CI. Chloropyrrolnitrin***
[21390-86-3]
$C_{10}H_5Cl_3N_2O_2$ 291.52
Isol. from *Pseudomonas aureofaciens* and *Pseudomonas cepacia*. Active against *Neurospora* sp. Yellow cryst. (C_6H_6/hexane). Sol. MeOH, Et_2O; poorly sol. H_2O. Mp 140-141°. λ_{max} 212 (ε 29000); 240 ; 280 (MeOH) (Berdy). λ_{max} 252 (EtOH) (Berdy).

*4′-Fluoro: 3-Chloro-4-(3-chloro-4-fluoro-2-nitrophenyl)-1*H*-pyrrole. 4-Fluoropyrrolnitrin*
[17307-19-6]
$C_{10}H_5Cl_2FN_2O_2$ 275.065
Prod. by *Pseudomonas aureofaciens* in the presence of 6-Fluorotryptophan. Active against *Neurospora* sp. and fungi. Yellow plates ($CHCl_3$). Sol. MeOH, C_6H_6; poorly sol. H_2O. λ_{max} 248 (ε 6550) (EtOH) (Berdy).

*6′-Hydroxy: 4-Chloro-2-(4-chloro-1*H*-pyrrol-3-yl)-3-nitrophenol, 9CI. 3-Chloro-4-(3-chloro-6-hydroxy-2-nitrophenyl)-1*H*-pyrrole.* ***Oxypyrrolnitrin***
[15345-51-4]
$C_{10}H_6Cl_2N_2O_3$ 273.074
Produced by *Pseudomonas pyrrolnitrica*. Pale-yellow cryst. (Et_2O/hexane). Sol. MeOH, EtOAc; fairly sol. $CHCl_3$, Et_2O, C_6H_6; poorly sol. H_2O, hexane. Mp 215-216° dec. λ_{max} 290 (ε 3470) (EtOH) (Derep).

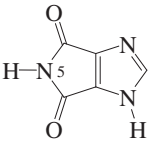
3-Dechloro, bromo analogue: ***3-(3-Bromo-2-nitrophenyl)-1*H*-pyrrole, 9CI***
[88899-31-4]
$C_{10}H_7BrN_2O_2$ 267.082
Prod. by *Pseudomonas aureofaciens*. Active against *Neurospora crassa*.

3′-Dechloro: ***3-Chloro-4-(2-nitrophenyl)-pyrrole***
[7123-69-5]
$C_{10}H_7ClN_2O_2$ 222.63
Metab. of *Pseudomonas pyrrolnitrica*. Light-yellow needles (C_6H_6/petrol). Mp 111°.

3′-Dechloro, 2-chloro: ***2,3-Dichloro-4-(2-nitrophenyl)-1*H*-pyrrole, 9CI****. Isopyrrolnitrin*
[6991-29-3]
$C_{10}H_6Cl_2N_2O_2$ 257.075
Prod. by *Pseudomonas* sp. Yellowish cryst. Mp 105-108°.

Arima, K. *et al., Agric. Biol. Chem.*, 1964, **28**, 575-576 (*isol, ir, nmr*)
Imanaka, H. *et al., J. Antibiot., Ser. A*, 1965, **18**, 207-210 (*struct, ir, uv, nmr*)
Hashimoto, M. *et al., Bull. Chem. Soc. Jpn.*, 1966, **39**, 410; *Chem. Pharm. Bull.*, 1966, **14**, 1314-1316; 1968, **16**, 1144 (*Pyrrolnitrin, Isopyrrolnitrin, Oxypyrrolnitrin, 3′-dechloro deriv*)
Hamill, R.L. *et al., Antimicrob. Agents Chemother.*, 1967, 388-396 (*Chloropyrrolnitrin, isol, props*)
Gorman, M. *et al., Biochem. Biophys. Res. Commun.*, 1968, **31**, 294 (*4-Fluoropyrrolnitrin*)
Jones, N. *et al., J. Antibiot.*, 1968, **21**, 451 (*4-Fluoropyrrolnitrin, cryst struct*)
Japan. Pat., 1968, 68 16 135; *CA*, **70**, 57621 (*Chloropyrrolnitrin, synth*)
Morimoto, Y. *et al., Tet. Lett.*, 1968, 209-211 (*cryst struct*)
Kumada, S. *et al., CA*, 1969, **70**, 36371 (*pharmacol*)
Umio, S. *et al., Chem. Pharm. Bull.*, 1969, **17**, 559-566; 588-595 (*Pyrrolnitrin, 3′-chloro deriv, synth, ir, uv, nmr*)
Hamill, R.L. *et al., Appl. Microbiol.*, 1970, **19**, 721 (*4-Fluoropyrrolnitrin*)
Japan. Pat., 1971, 70 29 432; *CA*, **74**, 52144 (*Oxypyrrolnitrin, isol*)
Gosteli, J. *et al., Helv. Chim. Acta*, 1972, **55**, 451-460 (*synth, ir, uv, nmr*)
Martin, L.L. *et al., J.A.C.S.*, 1972, **94**, 8942-8944 (*cmr*)
Salcher, O. *et al., Tet. Lett.*, 1978, 3097-3100 (*isol*)
Howell, C.R. *et al., Phytopathology*, 1979, **69**, 480-482 (*isol*)
Chang, C.J. *et al., J. Antibiot.*, 1981, **34**, 555-566 (*biosynth*)
Gerth, K. *et al., J. Antibiot.*, 1982, **35**, 1101-1103 (*isol, bibl*)
Van Pèe, K.-H. *et al., J. Antibiot.*, 1983, **36**, 1735 (*3-(3-Bromo-2-nitrophenyl)pyrrole*)
Martindale, The Extra Pharmacopoeia, 32nd edn., Pharmaceutical Press, 1999, 387
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, CFC000

Pyrrolo[3,4-*d*]imidazole-4,6(1*H*,5*H*)-dione P-962



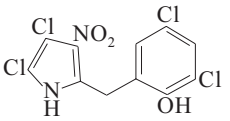
$C_5H_3N_3O_2$ 137.098

N^5*-(3-Methyl-2-butenyl):* ***Bredilonine***
$C_{10}H_{11}N_3O_2$ 205.216
Constit. of the leaves of *Bridelia balansae*. Powder. Mp > 300°. λ_{max} 209 (log ε 4.13); 274 (log ε 4.04) (MeOH).

Tsai, Y.-H. *et al., Helv. Chim. Acta*, 2003, **86**, 2452-2457 (*isol, pmr, cmr, ms*)

Pyrrolomycin B P-963

*2,4-Dichloro-6-[(4,5-dichloro-3-nitro-1*H*-pyrrol-2-yl)methyl]phenol, 9CI. 2,3-Dichloro-5-(3,5-dichloro-2-hydroxybenzyl)-4-nitropyrrole. SF 2080B. Antibiotic SF 2080B*
[79763-00-1]



$C_{11}H_6Cl_4N_2O_3$ 355.991
prod. by *Streptomyces* strain SF 2080 (*Actinosporangium vitaminophilum*). Active against gram-positive and -negative bacteria and some fungi. Immunopotentiator by acting on the membrane of lymphocytes. Yellow cryst. Sol. MeOH, Me_2CO, dioxan; fairly sol. $CHCl_3$; poorly sol. H_2O, hexane. Mp 222-225°. $[\alpha]_D^{25}$ 0 (c, 1 in MeOH). λ_{max} 277 (ϵ 7080); 332 (ϵ 3720) (MeOH/HCl) (Derep). λ_{max} 245 (ϵ 12000); 312 (ϵ 12100) (MeOH/NaOH) (Derep). λ_{max} 277 (ϵ 6440); 330 (ϵ 3720) (MeOH) (Derep).

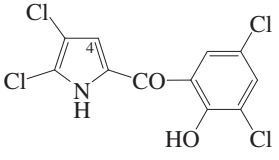
▶ LD_{50} (mus, ipr) 100 mg/kg. SK9200000

O-Ac:
Needles (C_6H_6). Mp 180-181°.

Ezaki, N. *et al., J. Antibiot.*, 1981, **34**, 1363-1365; 1366-1368; 1483-1489 (*isol, uv, ir, pmr, cmr, cryst struct*)
Umezawa, K. *et al., J. Antibiot.*, 1984, **37**, 1253-1256 (*props*)
Ratnayake, A.S. *et al., J. Nat. Prod.*, 2008, **71**, 1923-1926 (*biosynth*)

Pyrrolomycin C P-964

(3,5-Dichloro-2-hydroxyphenyl)(4,5-dichloro-1H-pyrrol-2-yl)methanone, 9CI. 2,3-Dichloro-5-(3,5-dichloro-2-hydroxybenzoyl)pyrrole. SF 2080C. Antibiotic SF 2080C
[81910-06-7]



$C_{11}H_5Cl_4NO_2$ 324.977
Pyrrole antibiotic. Prod. by *Actinosporangium vitaminophilum* SF-2080 and *Streptomyces fumanus* LL-F42248. Active against gram-positive bacteria. Yellow needles (C_6H_6). Sol. bases, EtOAc, Me_2CO; fairly sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. Mp 220-221°. λ_{max} 220 (sh) (ϵ 21300); 260 (ϵ 8180); 327 (ϵ 14900); 340 (sh) (ϵ 14700) (MeOH) (Derep).

▶ LD_{50} (mus, ipr) 50 mg/kg. PC4948000

Me ether: ***Pyrrolomycin I***
$C_{12}H_7Cl_4NO_2$ 339.004
Prod. by *Streptomyces fumanus* LL-F42248.

4-Chloro: 2,3,4-Trichloro-5-(3,5-dichloro-2-hydroxybenzoyl)pyrrole. ***Pyrrolomycin D****. SF 2080D. Antibiotic SF 2080D*
[81910-07-8]
[82987-07-3]
$C_{11}H_4Cl_5NO_2$ 359.422
Prod. by *Actinosporangium vitaminophilum* SF-2080. Active against gram-positive and -negative bacteria and fungi. Yellow needles (C_6H_6). Sol. Me_2CO, bases, EtOAc; fairly sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. Mp 195-198°. Pyrrole antibiotic. λ_{max} 220 (sh) (ϵ 26900); 336 (ϵ 13800); 370 (ϵ 14500) (MeOH) (Derep). λ_{max} 310 (MeOH/HCl) (Berdy). λ_{max} 331 (MeOH/NaOH) (Berdy).

▶ LD_{50} (mus, ipr) 20 mg/kg. PC4949000

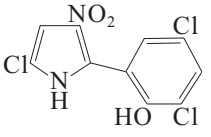
4-Chloro, Me ether: ***Pyrrolomycin J***
$C_{12}H_6Cl_5NO_2$ 373.448
Prod. by *Streptomyces fumanus* LL-F42248. Yellow solid.

[82987-08-4]

Ezaki, N. *et al., J. Antibiot.*, 1983, **36**, 1263-1267; 1483-1489 (*isol, uv, ir, pmr, cmr*)
Charan, R.D. *et al., J. Nat. Prod.*, 2005, **68**, 277-279 (*Pyrrolomycins I-J*)

Pyrrolomycin E P-965

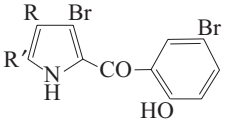
2,4-Dichloro-6-(5-chloro-3-nitro-1H-pyrrol-2-yl)phenol, 9CI. 5-Chloro-2-(3,5-dichloro-2-hydroxyphenyl)-3-nitropyrrole. SF 2080E. Antibiotic SF 2080E
[87376-16-7]



$C_{10}H_5Cl_3N_2O_3$ 307.519
Pyrrole antibiotic. Isol. from *Actinosporangium vitaminophilum*. Active against gram-positive bacteria. Yellow needles (C_6H_6). Sol. MeOH, bases; fairly sol. EtOAc, $CHCl_3$; poorly sol. H_2O, hexane. Mp 250°. λ_{max} 221 (ϵ 39400); 245 (sh) (ϵ 15600); 330 (ϵ 5590); 340 (ϵ 6170) (MeOH) (Derep). λ_{max} 312 (MeOH/NaOH) (Berdy).

Ezaki, N. *et al., J. Antibiot.*, 1983, **36**, 1263; 1483 (*isol, struct*)

Pyrrolomycin F P-966



		R	R′
Pyrrolomycin	F_1	Br	Br
Pyrrolomycin	F_{2a}	Cl	Br
Pyrrolomycin	F_{2b}	Br	Cl
Pyrrolomycin	F_3	Cl	Cl

Pyrrole antibiotic complex. Constits of 4 components.

Pyrrolomycin F_1

2,3,4-Tribromo-5-(5-bromo-2-hydroxybenzoyl)pyrrole. SF 2080F$_1$. Antibiotic SF 2080F$_1$
[88217-19-0]
$C_{11}H_5Br_4NO_2$ 502.782
From *Actinosporangium vitaminophilum*. Active against gram-positive bacteria and fungi. Yellow needles (C_6H_6/hexane). Mp 188-190°.

▶ PC4937680

Pyrrolomycin F_{2a}

2,4-Dibromo-5-(5-bromo-2-hydroxybenzoyl)-3-chloropyrrole. SF 2080F$_{2a}$. Antibiotic SF 2080F$_{2a}$
[88477-78-5]
$C_{11}H_5Br_3ClNO_2$ 458.331
From *Actinosporangium vitaminophilum* ATCC31673. Active against gram-positive bacteria and fungi. Yellow needles (C_6H_6/hexane). Sol. MeOH, bases, EtOAc; fairly sol. $CHCl_3$; poorly sol. H_2O, hexane. Mp 182°. λ_{max} 267 ; 315 (MeOH) (Berdy).

Pyrrolomycin F_{2b}

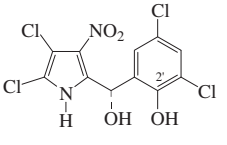
3,4-Dibromo-2-(5-bromo-2-hydroxybenzoyl)-5-chloropyrrole. SF 2080F$_{2b}$. Antibiotic SF 2080F$_{2b}$
[88477-79-6]
$C_{11}H_5Br_3ClNO_2$ 458.331
From *Actinosporangium vitaminophilum* ATCC31673. Active against gram-positive bacteria and fungi. Yellow needles (C_6H_6/hexane). Sol. MeOH, bases, EtOAc; fairly sol. $CHCl_3$; poorly sol. H_2O, hexane. Mp 206-208°. λ_{max} 267 ; 315 (MeOH) (Berdy).

Pyrrolomycin F_3

3-Bromo-2-(5-bromo-2-hydroxyphenyl)-4,5-dichloropyrrole. SF 2080F$_3$. Antibiotic SF 2080F$_3$
[88228-92-6]
$C_{11}H_5Br_2Cl_2NO_2$ 413.879
From *Actinosporangium vitaminophilum* ATCC31673. Active against gram-positive bacteria and fungi. Yellow needles (C_6H_6/hexane). Sol. MeOH, EtOAc, bases; fairly sol. $CHCl_3$; poorly sol. H_2O, hexane. Mp 192-193°. λ_{max} 268 ; 314 (MeOH) (Berdy).

Shomura, T. *et al., Int. J. Syst. Bacteriol.*, 1983, **33**, 557 (*isol*)
Ezaki, N. *et al., J. Antibiot.*, 1983, **36**, 1431 (*isol, uv, ir, pmr, ms*)
Japan. Pat., 1983, 83 126 863; *CA*, **100**, 21555 (*isol*)

Pyrrolomycin G P-967



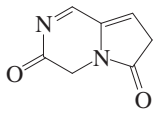
Absolute Configuration

$C_{11}H_6Cl_4N_2O_4$ 371.99
Prod. by *Streptomyces fumanus* (culture LL-F42248). Yellow solid. $[\alpha]_D$ -15.6 (c, 0.28 in MeOH).

2′-Me ether: ***Pyrrolomycin H***
$C_{12}H_8Cl_4N_2O_4$ 386.017
Prod. by *Streptomyces fumanus* (strain LL-F42248). Yellow solid. $[\alpha]_D$ -91 (c, 0.3 in MeOH).

Charan, R.D. *et al., J. Nat. Prod.*, 2005, **68**, 277-279 (*isol, cd, pmr, cmr*)

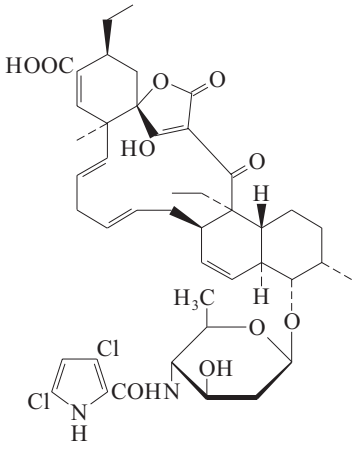
Pyrrolo[1,2-*a*]pyrazine-3,6(4*H*,7*H*)-dione, 9CI **P-968**
[870136-68-8]



$C_7H_6N_2O_2$ 150.137
Prod. by a marine-derived *Bacillus* sp.

Zhang, H.-L. *et al., Zhongguo Yaowu Huaxue Zazhi*, 2003, **13**, 294-296; *CA*, **144**, 2926x (*isol*)

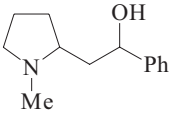
Pyrrolosporin A **P-969**
BMY 42448. Antibiotic BMY 42448
[140395-71-7]



$C_{44}H_{54}Cl_2N_2O_{10}$ 841.823
Prod. by *Micromonospora narashinoensis*. Antitumour agent. Cryst. Mp 235°. $[\alpha]_D^{26}$ +2.8 (c, 0.2 in MeOH). λ_{max} 268 ; 341 (MeOH).

U.S. Pat., 1992, 5 082 933; *CA*, **116**, 190938w (*ir, uv, pmr, cmr*)
Lam, K.S. *et al., J. Antibiot.*, 1996, **49**, 860 (*props*)
Schroeder, D.R. *et al., J. Antibiot.*, 1996, **49**, 865 (*isol, uv, ir, pmr, cmr, ms, cryst struct*)

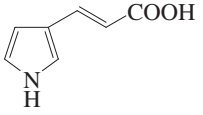
Pyrrolsedamine **P-970**
2-(2-Hydroxy-2-phenylethyl)-1-methylpyrrolidine. 2-(1-Methyl-2-pyrrolidinyl)-1-phenylethanol. 1-Methyl-α-phenyl-2-pyrrolidineethanol, 9CI
[175447-14-0]



$C_{13}H_{19}NO$ 205.299
Alkaloid from leafy parts of *Sedum oryzifolium*.

Stereoisomer: ***Pyrrolallosedamine***
[175447-15-1]
$C_{13}H_{19}NO$ 205.299
From leafy parts of *Sedum oryzifolium*.
Kim, J.H. *et al., Phytochemistry*, 1996, **41**, 1319 (*Pyrrolsedamine, Pyrrolallosedamine*)

3-(1*H*-Pyrrol-3-yl)-2-propenoic acid, 9CI **P-971**
3-Pyrroleacrylic acid
[856597-79-0]



(*E*)-*form*

$C_7H_7NO_2$ 137.138

(*E*)-*form* [85310-57-2]
Isol. from *Streptomyces parvulus*. No antimicrobial activity. Cryst. (EtOAc). Mp 182-184°. λ_{max} 300 (MeOH) (Berdy).

Me ester: [97055-89-5]
$C_8H_9NO_2$ 151.165
Cryst. (Et_2O/petrol). Mp 82-83°.

Amide: [97055-88-4]
$C_7H_8N_2O$ 136.153
From *Streptomyces parvulus*. Cryst. (EtOAc). Mp 142-143°. λ_{max} 300 (MeOH) (Berdy).

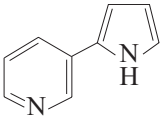
Dimethylamide: [897921-42-5]
$C_9H_{12}N_2O$ 164.207
Pale yellow cryst. (EtOAc/hexane). Mp 171-173°.

Nitrile: [897921-49-2]
$C_7H_6N_2$ 118.138
Light brown solid. Mp 106-108°.

N-*4-Methylbenzenesulfonyl:* [864815-12-3]
$C_{14}H_{13}NO_4S$ 291.327
Yellow cryst. (EtOAc/hexane). Mp 184-185°.

Labouta, I.M. *et al., Acta Chem. Scand., Ser. B*, 1982, **36**, 669-674 (*synth, ir, uv, pmr*)
Keller-Schierlein, W. *et al., Helv. Chim. Acta*, 1985, **68**, 559-562 (*isol, ir, uv, pmr, ms, Me ester, amide*)
Nishikawa, Y. *et al., Chem. Pharm. Bull.*, 1989, **37**, 684-687 (*synth, pmr*)
Karousis, N. *et al., Synthesis*, 2006, 1494-1498 (*synth, amide, dimethylamide, nitrile*)

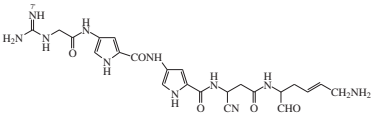
3-(2-Pyrrolyl)pyridine **P-972**
2-(3-Pyridinyl)pyrrole. β-Nornicotyrine. Nornicotyrine
[494-98-4]



$C_9H_8N_2$ 144.176
Needles (petrol/C_6H_6). V. sol. EtOH, Et_2O, $CHCl_3$, C_6H_6; spar. sol. petrol, H_2O, EtOH. Mp 102°. pK_a 4.35 (24°). Et_2O solns. show blue fluor. Gives cryst. K salt.
▶ Exp. tumourigenic data. UT7875000
Methiodide:
Pale yellow needles (EtOH). Mp 170-171°.
Picrate:
Yellow prisms (H_2O or EtOH). Mp 203-205°.
N-*Me: 3-(1-Methyl-1*H*-pyrrol-2-yl)pyridine, 9CI. **Nicotyrine**. β-Nicotyrine*
[487-19-4]
$C_{10}H_{10}N_2$ 158.202
Alkaloid from cured tobacco (*Nicotiana tabacum*) (Solanaceae). Shows insecticidal props. Liq. Bp 281°. pK_a 4.76 (24°).
▶ LD_{50} (mus, orl) 575 mg/kg. UT6130000
N-*Me, picrate:* Mp 170-171°.

Späth, E. *et al., Ber.*, 1937, **70**, 2450 (*Nicotyrine*)
Swain, M.L. *et al., J.A.C.S.*, 1949, **71**, 1341 (*Nicotyrine*)
Ryang, H. *et al., Chem. Comm.*, 1972, 594-595 (*synth*)
Shibagaki, M. *et al., Agric. Biol. Chem.*, 1988, **52**, 2651 (*synth*)
Mullen, G.B. *et al., J.O.C.*, 1989, **54**, 2476 (*synth, ir, pmr, bibl*)
Savoia, D. *et al., J.O.C.*, 1991, **56**, 1822 (*synth, ir, pmr, ms*)
Noland, W.E. *et al., Acta Cryst. C*, 2003, **59**, o263-o267 (*cryst struct*)
Wei, X. *et al., Synth. Commun.*, 2003, **33**, 3305-3315 (*Nicotyrine, synth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, NDX300; PQB500

Pyrronamycin A **P-973**

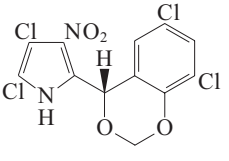


$C_{23}H_{29}N_{11}O_5$ 539.553
Pyrrole antibiotic. Prod. by *Streptomyces* sp. KY11768. Active against gram-positive and -negative bacteria and tumours.

7′-N-*Hydroxy:* ***Pyrronamycin B***
$C_{23}H_{29}N_{11}O_6$ 555.552
Prod. by *Streptomyces* sp. KY11768. Active against gram-positive and -negative bacteria and tumours.

Asai, A. *et al., J. Antibiot.*, 2000, **53**, 66-69 (*isol, activity*)

Pyrroxamycin **P-974**
Dioxapyrrolomycin. Al-R 2081. LL-F42248α. SS 46506A. Antibiotic Al-R 2081. Antibiotic LL-F42248α. Antibiotic SS 46506A. Antibiotic HS 3. HS 3
[105888-54-8]



$C_{12}H_6Cl_4N_2O_4$ 384.001
Pyrrole antibiotic. Prod. by *Streptomyces*

spp. Active against gram-positive bacteria and dermophytes. Pale-yellow cryst. (EtOH) or (C_6H_6). Mp 216-220° dec. (200-207°). $[\alpha]_D^{25}$ -110 (c, 0.5 in EtOH). $[\alpha]_D^{25}$ -37.2 (c, 1 in Me_2CO). λ_{max} 211 (ϵ 27500); 273 (ϵ 7080); 321 (ϵ 3470) (MeOH/HCl) (Derep). λ_{max} 212 (ϵ 30200); 296 (ϵ 6920); 319 (ϵ 8910) (MeOH/NaOH) (Derep). λ_{max} 211 (ϵ 27500); 278 (ϵ 6030); 320 (ϵ 4470) (MeOH) (Derep). λ_{max} 220 (sh) (ϵ); 276 (ϵ 6800); 285 (ϵ 6950); 294 (ϵ 6500); 322 (ϵ 5300) (MeOH) (Derep).

▶ UX9458500

[118187-02-3]

Rengaraju, S. *et al., CA*, 1987, **106**, 152653 (*isol*)

Carter, G.T. *et al., J. Antibiot.*, 1987, **40**, 233-236 (*isol, struct, props*)

Nakamura, H. *et al., J. Antibiot.*, 1987, **40**, 899-903 (*isol, struct, props*)

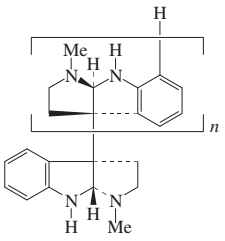
Yano, K. *et al., J. Antibiot.*, 1987, **40**, 961-969 (*isol, struct, props*)

Masuda, K. *et al., J. Antibiot.*, 1991, **44**, 533-540 (*isol*)

Charan, R.D. *et al., J. Nat. Prod.*, 2006, **69**, 29-33 (*biosynth*)

Quadrigemine I Q-1

[235099-49-7]



Absolute Configuration

$n = 3$

$C_{44}H_{50}N_8$ 690.933

Alkaloid from *Psychotria oleoides*. Amorph. powder. $[\alpha]_D^{25}$ +16 (c, 0.34 in $CHCl_3$). $[\alpha]_D$ +199 (c, 0.34 in EtOH). λ_{max} 244 (log ϵ 4.45); 302 (log ϵ 4.13) (EtOH).

Homologue (n = 4): ***Oleioidine***

$C_{55}H_{62}N_{10}$ 863.162

Alkaloid from *Psychotria oleoides*. Amorph. yellow powder. $[\alpha]_D^{25}$ +89 (c, 0.4 in $CHCl_3$). $[\alpha]_D$ +371 (c, 0.2 in EtOH). λ_{max} 244 (log ϵ 4.55); 302 (log ϵ 4.26) (EtOH).

Homologue (n = 5): ***Caledonine***

[235099-23-7]

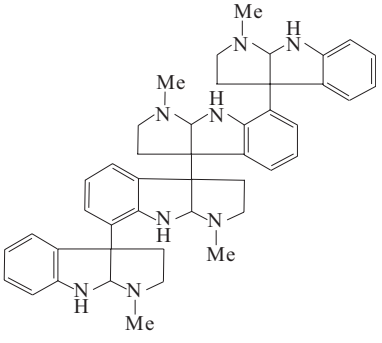
$C_{66}H_{74}N_{12}$ 1035.391

Alkaloid from *Psychotria oleoides*. Amorph. yellow powder. $[\alpha]_D^{25}$ +125 (c, 0.4 in $CHCl_3$). $[\alpha]_D$ +462 (c, 0.2 in EtOH). λ_{max} 243 (log ϵ 4.62); 303 (log ϵ 4.35) (EtOH).

Jannic, V. *et al., J. Nat. Prod.*, 1999, **62**, 838-843 (*isol, uv, ir, cd, pmr, cmr, ms*)

Quadrigemine A Q-2

[69937-02-6]



$C_{44}H_{50}N_8$ 690.933

Minor alkaloid from *Hodgkinsonia frutescens* and *Psychotria forsteriana* (Rubiaceae). Cytotoxic. Amorph. solid. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. $[\alpha]_D^{23}$ +32 (EtOH). Probably a mixt. of diastereoisomers. λ_{max} 243 (ϵ 17380); 302 (ϵ 9120) (EtOH) (Berdy).

Stereoisomer: ***Quadrigemine C***

[112295-93-9]

$C_{44}H_{50}N_8$ 690.933

Alkaloid from *Psychotria oleoides* and *Calycodendron milnei* (Rubiaceae). Cytotoxic. Shows analgesic props. Amorph. $[\alpha]_D$ -69 (c, 1 in $CHCl_3$). Probable stereochem. has been suggested.

Stereoisomer (2): ***Alkaloid C***†

$C_{44}H_{50}N_8$ 690.933

Alkaloid from leaves of *Psychotria forsteriana*. Exhibits potent cytoxicity. $[\alpha]_D^{20}$ +32.5 (c, 0.2 in EtOH). $[\alpha]_D^{20}$ +115.7 (c, 0.2 in $CHCl_3$).

Parry, K.P. *et al., J.C.S. Perkin 1*, 1978, 1671 (*isol, uv, ir, ms, pmr, struct*)

Roth, A. *et al., Planta Med.*, 1986, **52**, 450 (*Alkaloid C*)

Libot, F. *et al., J. Nat. Prod.*, 1987, **50**, 468 (*Quadrigemine C*)

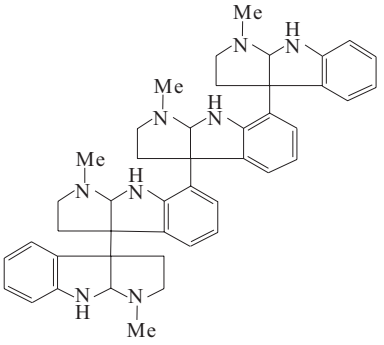
Adjibade, Y. *et al., Planta Med.*, 1989, **55**, 567 (*isol, props*)

Jannic, V. *et al., J. Nat. Prod.*, 1999, **62**, 838-843 (*Quadrigemine C, stereochem*)

Lebsack, A.D. *et al., J.A.C.S.*, 2002, **124**, 9008-9009 (*Quadrigemine C, synth*)

Quadrigemine B Q-3

[69937-10-6]



$C_{44}H_{50}N_8$ 690.933

Minor alkaloid from *Hodgkinsonia frutescens* (Rubiaceae), *Psychotria forsteriana* and *Psychotria rostrata*. Cytotoxic. Active against gram-positive bacteria. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 229-243°. $[\alpha]_D^{23}$ +263 (EtOH). Probably a mixt. of diastereoisomers. λ_{max} 244 (ϵ 17780); 302 (ϵ 6040) (EtOH) (Berdy).

Stereoisomer: Psychotria *Alkaloid B*

$C_{44}H_{50}N_8$ 690.933

Alkaloid from leaves of *Psychotria forsteriana*. Exhibits potent cytotoxicity. $[\alpha]_D^{20}$ +215 (EtOH). $[\alpha]_D^{20}$ -10 ($CHCl_3$).

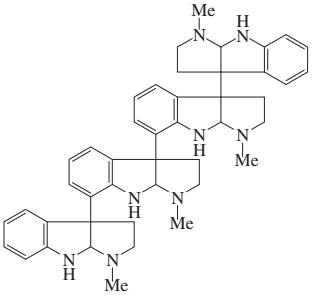
Parry, K.P. *et al., J.C.S. Perkin 1*, 1978, 1671 (*isol, uv, ir, pmr, ms, struct*)

Roth, A. *et al., Planta Med.*, 1986, 450 (*Alkaloid B*)

Mahmud, Z. *et al., Int. J. Pharmacogn.*, 1993, **31**, 142-146 (*isol, activity*)

Quadrigemine H Q-4

[168611-79-8]



$C_{44}H_{50}N_8$ 690.933

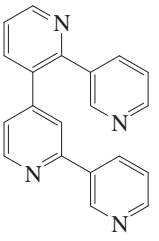
Alkaloid from *Calycodendron milnei*.

Saad, H.-E.A. *et al., Planta Med.*, 1995, **61**, 313-316

3,2′:3′,4″:2″,3‴-Quaterpyridine, 9CI Q-5

Nemertelline

[59697-14-2]



$C_{20}H_{14}N_4$ 310.357

Struct. revised in 1995. Alkaloid from the marine hoplonomertine *Amphiporus angulatus*. Neurotoxin. Cryst. (Et_2O). Mp 154-156°.

Kem, W.R. *et al., Experientia*, 1976, **32**, 684-686 (*isol*)

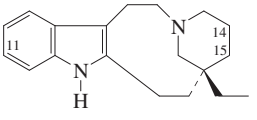
Cruskie, M.P. *et al., J.O.C.*, 1995, **60**, 7491-7495 (*synth, pmr, cmr, cryst struct*)

Zoltewicz, J.A. *et al., Tetrahedron*, 1995, **51**, 11401-11410 (*synth*)

Bouillon, A. *et al., J.O.C.*, 1993, **68**, 10178-10180 (*synth, pmr, cmr*)

Quebrachamine Q-6

7-Ethyl-1,4,5,6,7,8,9,10-octahydro-2H-3,7-methanoazacycloundecino[5,4-b]indole, 9CI. Kamassine



(*R*)-*form*

$C_{19}H_{26}N_2$ 282.428

(R)-form [4850-21-9]

Alkaloid from *Aspidosperma quebracho-blanco* (quebracho), *Aspidosperma chakensis* and several other *Aspidosperma* spp., *Gonioma kamassi, Hunteria elliotii* and *Rhazya stricta* (Apocynaceae). Shows DNA-binding properties, α2 receptor antagonist. Cryst. (C_6H_6, hexane or EtOH). Mp 147-149°. $[\alpha]_D$ -100 ($CHCl_3$). $[\alpha]_D$ -110 (c, 0.496 in Me_2CO).

Picrate:

Scarlet needles (EtOH). Mp 195-196°.

N-*Me:* **N-*Methylquebrachamine***

[2671-48-9]

$C_{20}H_{28}N_2$ 296.455

Alkaloid from *Vallesia dichotoma* (Apocynaceae). Cryst. (EtOH). Mp 82-84° (nat. prod.) Mp 89° (synthetic). $[\alpha]_D$ -109 (c, 0.5 in EtOH) (synthetic).

11-Methoxy: ***11-Methoxyquebrachamine***

$C_{20}H_{28}N_2O$ 312.454

Alkaloid from the stem bark of *Melodinus australis* (Apocynaceae). Prisms (Et_2O/pentane). Mp 157-160°. $[\alpha]_D$ +68 (c, 1.3 in $CHCl_3$). Dec. in $CHCl_3$ soln. Struct. uncertain, may be the 12-methoxy isomer.

(*S*)-*form* [14430-17-2]
Alkaloid from *Vinca erecta*, the leaves of *Pleiocarpa tubicina*, the root bark of *Pleiocarpa pycnantha* var. *pycnantha*, and the bark of *Stemmadenia donnell-smithii* (Apocynaceae). Cryst. (MeOH or Et_2O/petrol). Mp 147-149°. $[\alpha]_D$ +98 ($CHCl_3$). $[\alpha]_D$ +108.9 (Me_2CO).

Picrate:
Bright red cryst. Mp 190-193°.

N-*Me:* Synthetic. Cryst. (MeOH). Mp 86-87°. $[\alpha]_D$ +110 ($CHCl_3$).

14β-Hydroxy: ***14β-Hydroxyquebrachamine***
$C_{19}H_{26}N_2O$ 298.427
Alkaloid from the leaves of *Stemmadenia grandiflora* (Apocynaceae). Mp 123-126°. $[\alpha]_D^{21}$ +86 (c, 0.14 in $CHCl_3$).

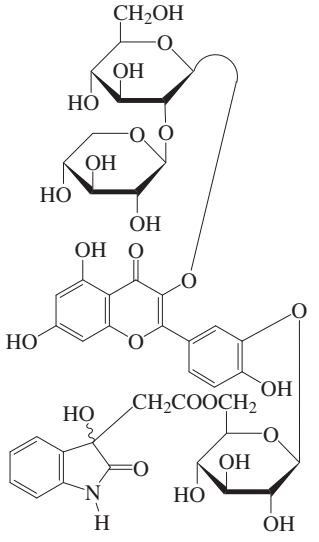
(±)-*form* [7689-01-2]
Synthetic. Needles (MeOH). Mp 113-116°.

Picrate:
Cryst. (MeOH). Mp 176-179°.

N-*Me:* Alkaloid from *Vinca minor* (Apocynaceae). Cryst. (EtOH). Mp 70-72°.

Hesse, O. *et al., Annalen*, 1882, **211**, 249 (*isol*)
Field, E. *et al., J.C.S.*, 1924, **125**, 1444 (*derivs*)
Schlittler, E. *et al., Helv. Chim. Acta*, 1951, **34**, 920 (*isol, uv*)
Gellért, E. *et al., Helv. Chim. Acta*, 1952, **35**, 114 (*struct*)
Orazi, O.O. *et al., J.O.C.*, 1956, **21**, 978 (*isol, ord*)
Witkop, B. *et al., J.A.C.S.*, 1957, **79**, 3193 (*ir, degradn*)
Walls, F. *et al., Tetrahedron*, 1958, **2**, 173 (*isol, uv*)
Cohen, L.A. *et al., J.A.C.S.*, 1960, **82**, 2184 (*pmr*)
Biemann, K. *et al., J.A.C.S.*, 1962, **84**, 4578 (*ms*)
Mokrý, J. *et al., Tet. Lett.*, 1962, 1185 (*N-Me*)
Stork, G. *et al., J.A.C.S.*, 1963, **85**, 2872 (*synth*)
Trojánek, J. *et al., Coll. Czech. Chem. Comm.*, 1964, **29**, 1904 (*synth, ms, N-Me*)
Bycroft, B.W. *et al., Helv. Chim. Acta*, 1964, **47**, 1147 (*isol*)
Walser, A. *et al., Helv. Chim. Acta*, 1965, **48**, 391 (*N-Me, isol, uv, ir, pmr, ms, synth*)
Linde, H.H.A. *et al., Helv. Chim. Acta*, 1965, **48**, 1822 (*11-Methoxyquebrachamine*)
Kutney, J.P. *et al., J.A.C.S.*, 1966, **88**, 3656; 1968, **90**, 3891 (*synth*)
Dugan, J.J. *et al., Helv. Chim. Acta*, 1967, **50**, 60 (*synth*)
Gorman, A.A. *et al., Helv. Chim. Acta*, 1969, **52**, 33 (*isol, uv*)
Barth, G. *et al., Helv. Chim. Acta*, 1972, **55**, 2168 (*N-Me, cd, mcd*)
Zsadon, B. *et al., Acta Chim. Acad. Sci. Hung.*, 1973, **78**, 207 (*synth, N-Me*)
Bruneton, J. *et al., Phytochemistry*, 1974, **13**, 1963 (*11-Methoxyquebrachamine*)
Puglisi, C. *et al., Acta Cryst. B*, 1976, **32**, 1900 (*cryst struct*)
Wenkert, E. *et al., Helv. Chim. Acta*, 1976, **59**, 2711 (*cmr*)
Takano, S. *et al., J.A.C.S.*, 1979, **101**, 6414 (*synth*)
Takano, S. *et al., Chem. Comm.*, 1980, 616; 1981, 1153 (*synth*)
Giri, V.S. *et al., J. Het. Chem.*, 1980, **17**, 1133 (*synth, uv, ir, pmr, ms*)
Wenkert, E. *et al., Tetrahedron*, 1981, **37**, 4017 (*synth*)
Ban, Y. *et al., Tetrahedron*, 1983, **39**, 3657 (*synth*)
Mandal, S.B. *et al., J.O.C.*, 1988, **53**, 4236 (*synth*)
Torrenegra, R. *et al., Phytochemistry*, 1988, **27**, 1843 (*14β-Hydroxyquebrachamine*)
Asaoka, M. *et al., Heterocycles*, 1989, **29**, 243 (*synth*)
Node, M. *et al., J.O.C.*, 1990, **55**, 517 (*synth*)
Deutsch, H.F. *et al., J. Pharm. Biomed. Anal.*, 1994, **12**, 1253-1287 (*isol, activity*)
Temme, O. *et al., J.O.C.*, 1998, **63**, 6007-6015 (*synth*)
Wee, A.G.H. *et al., Tetrahedron*, 1998, **54**, 13435-13448 (*synth*)
Meier, A. *et al., J. Antibiot.*, 1999, **52**, 957-959 (*activity*)
Eles, J. *et al., J. Het. Chem.*, 2002, **39**, 767-771 (*synth*)
Kozmin, S.A. *et al., J.A.C.S.*, 2002, **124**, 4628-4641 (*synth*)
Fujimura, T. *et al., Tet. Lett.*, 2002, **43**, 97-99 (*synth*)

Aesculus hippocastanum Quercetin indoxylacetylglycoside **Q-7**

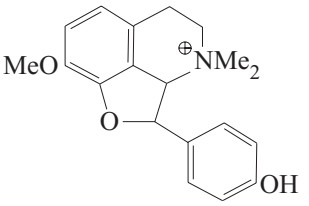


$C_{42}H_{45}NO_{24}$ 947.81
Not named in the lit. Constit. of *Aesculus hippocastanum*. $[\alpha]_D^{20}$ +52.8 (c, 0.2 in MeOH).

Huebner, G. *et al., Planta Med.*, 1999, **65**, 636-642

Quettamine **Q-8**

[77844-42-9]
[82373-00-0]

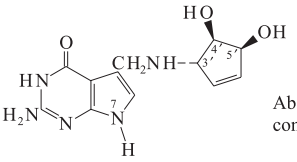


$C_{19}H_{22}NO_3^{\oplus}$ 312.388
Alkaloid from *Berberis baluchistanica* (Berberidaceae). Noncryst. (as chloride). Opt. inactive.

Zarga, M.H.A. *et al., Tet. Lett.*, 1981, **22**, 541 (*uv, pmr, ms, struct*)
Chattopadhyay, S. *et al., Heterocycles*, 1982, **19**, 697 (*synth*)

Queuine **Q-9**

*2-Amino-5-[[(4,5-dihydroxy-2-cyclopenten-1-yl)amino]methyl]-1,7-dihydro-4*H*-pyrrolo[2,3-*d*]pyrimidin-4-one, 9CI. 2-Amino-5-(4,5-dihydroxycyclopent-1-en-3-ylaminomethyl)pyrrolo[2,3-*d*]pyrimidine. 7-(4,5-Dihydroxy-2-cyclopent-1-en-3-ylaminomethyl)-7-deazaguanine. Q base*
[72496-59-4]
[86496-18-6]



Absolute configuration

$C_{12}H_{15}N_5O_3$ 277.282
Prisms (as dihydrochloride). Mp 230-235° dec. (hydrochloride). $[\alpha]_D^{26}$ +113 (c, 0.3 in H_2O).

7-β-D-Ribofuranosyl: ***Queuosine****. Nucleoside Q*
[57072-36-3]
[71050-05-0]
$C_{17}H_{23}N_5O_7$ 409.398
Hypermodified nucleoside occurring in the first anticodon posn. in tRNA's of plants and animals. Pale yellow cryst. (H_2O); glassy solid (as hydrochloride). Mp 225-230° dec. $[\alpha]_D$ +43.4 (c, 0.1 in H_2O).

7-O-β-D-Ribofuranosyl, 4′-O-β-D-galactopyranoside: ***Galactosylqueuosine***
[60426-58-6]
$C_{23}H_{33}N_5O_{12}$ 571.54
Modified nucleoside found in tRNA's.

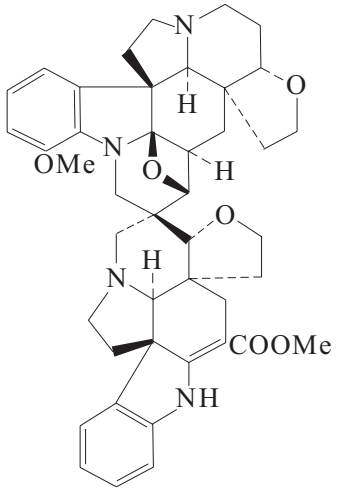
7-O-β-D-Ribofuranosyl, 4′-O-β-D-mannopyranoside: ***Mannosylqueuosine***
[60398-20-1]
$C_{23}H_{33}N_5O_{12}$ 571.54
Modified nucleoside found in tRNA's.

Kasai, H. *et al., J.A.C.S.*, 1976, **98**, 5044-5046 (*Galactosylqueuosine, Mannosylqueuosine*)
Ohgi, T. *et al., J.A.C.S.*, 1979, **101**, 3629 (*deriv, synth, abs config, bibl*)
Akimoto, H. *et al., J. Med. Chem.*, 1986, **29**, 1749 (*biochem, ir, pmr, bibl*)

Kondo, T. *et al., Tetrahedron*, 1986, **42**, 207 (*synth, uv, pmr, ir*)
Akimoto, H. *et al., J.C.S. Perkin 1*, 1988, 1637 (*synth, ir, pmr*)
Barnett, C.J. *et al., Tetrahedron*, 2000, **56**, 9221-9225 (*synth, cmr*)

Quimbeline Q-10

[55786-21-5]



$C_{43}H_{48}N_4O_6$ 716.875

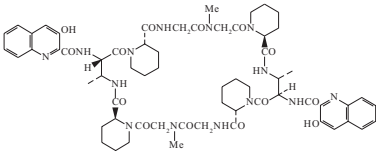
Alkaloid from the root bark of *Voacanga chalotiana* (Apocynaceae). Mp 270°. $[\alpha]_D$ -195 (c, 1 in $CHCl_3$).

Bombardelli, E. *et al., Experientia*, 1975, **31**, 139 (*uv, ir, pmr, cmr, ms, struct*)

Quinaldopeptin Q-11

BMY 28662. BU 3845T. Antibiotic BMY 28662. Antibiotic BU 3845T

[130743-07-6]



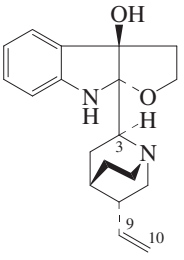
$C_{62}H_{78}N_{14}O_{14}$ 1243.384

Cyclic peptide antibiotic. Related to Luzopeptin and Sandramycin, S-50. Prod. by *Streptoverticillium album* and an *Amycolata* spp. Active against gram-positive bacteria and anaerobes. Exhibits cytotoxic and anthelmintic activity. Rods ($CHCl_3$/Et_2O). Sol. Py; fairly sol. DMSO; poorly sol. H_2O, Me_2CO, hexane. Mp 300°. $[\alpha]_D^{24}$ +51 (c, 0.5 in Py). λ_{max} 211 (sh); 222; 251; 307 (sh); 396 (MeOH/NaOH) (Derep). λ_{max} 214 (ϵ 78000); 230 (ϵ 73000); 299 (ϵ 9700); 359 (ϵ 9300) (MeOH) (Derep). λ_{max} 214 ; 230 ; 299 ; 359 (MeOH/HCl) (Berdy).

Toda, S. *et al., J. Antibiot.*, 1990, **43**, 796 (*isol, struct*)
Rickards, R.W. *et al., J. Antibiot.*, 1998, **51**, 1093-1095 (*isol, activity*)

Quinamine Q-12

[464-85-7]



Absolute Configuration

$C_{19}H_{24}N_2O_2$ 312.411

Stereochem. not clear. CAS assigns the abs. config. as shown, but proof for this is not clear. Minor alkaloid from *Cinchona ledgeriana* and many other *Cinchona* spp. (Rubiaceae). No detectable antimalarial props. Mp 185-186° (172°). $[\alpha]_D$ +104.5 (c, 2 in EtOH).

Hydrochloride: Cryst. + $1H_2O$. Mp 166-167°. $[\alpha]_D$ +103 (H_2O).

Picrate: Mp 175-176°. $[\alpha]_D$ +90 (Me_2CO).

9,10-Dihydro: ***Dihydroquinamine***
[22660-97-5]
$C_{19}H_{26}N_2O_2$ 314.427
Main alkaloid of *Isertia hypoleuca* (Rubiaceae). Silky needles (Me_2CO aq.). Mp 154-156°. $[\alpha]_D$ +36 (c, 0.113 in $CHCl_3$).

3-Epimer: ***Conquinamine***. *Epiquinamine*
[464-86-8]
$C_{19}H_{24}N_2O_2$ 312.411
Alkaloid from *Cinchona succirubra, Cinchona rosulenta* and *Cinchona ledgeriana* (Rubiaceae). No detectable antimalarial props. Large prisms. Mp 123° Mp 115-118°. $[\alpha]_D$ +144 (c, 0.4 in $CHCl_3$). $[\alpha]_D$ +164 (c, 0.4 in EtOH). Conquinamine (1877), semi-synthetic epiquinamine (1950) and natural 3-epiquinamine (1980) have not been compared, but they are prob. identical. λ_{max} 242 ; 300 (MeOH).

3-Epimer, 9,10-dihydro: ***3-Epidihydroquinamine***
[89708-22-5]
$C_{19}H_{26}N_2O_2$ 314.427
Alkaloid from *Isertia hypoleuca* (Rubiaceae). Mp 181-185°. $[\alpha]_D^{20}$ -57 (c, 0.71 in $CHCl_3$).

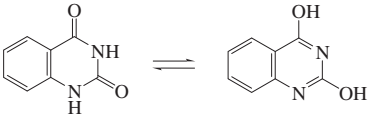
Stereoisomer: Cinchona ledgeriana *Alkaloid C*
[77549-88-3]
$C_{19}H_{24}N_2O_2$ 312.411
Alkaloid from *Cinchona ledgeriana* leaves (Rubiaceae). Noncryst. $[\alpha]_D$ +35 ($CHCl_3$). Stereochem. unknown.

Hesse, O. *et al., Ber.*, 1877, **10**, 2152-2162 (*Quinamine, Conquinamine, isol*)
Goutarel, R. *et al., Helv. Chim. Acta*, 1950, **33**, 150-164 (*uv, ir, struct*)
Witkop, B. *et al., J.A.C.S.*, 1950, **72**, 2311-2312 (*struct*)
Culvenor, C.C.J. *et al., J.C.S.*, 1950, 1485-1493 (*uv, struct*)
Bohlmann, H. *et al., Phytochemistry*, 1969, **8**, 645-652 (*Dihydroquinamine*)
Zeches, M. *et al., Phytochemistry*, 1980, **19**, 2451-2454 (*Epiquinamine, Alkaloid C*)
Mulder-Krieger, T. *et al., Pharm. Weekbl., Sci. Ed.*, 1982, 91-92 (*cmr*)
Esterl, A. *et al., Planta Med.*, 1983, **49**, 244-245 (*Dihydroquinamine, Epidihydroquinamine*)

2,4(1*H*,3*H*)-Quinazolinedione, 9CI Q-13

2,4-Quinazolinediol. 2,4-Dihydroxyquinazoline. Benzoyleneurea

[86-96-4]



$C_8H_6N_2O_2$ 162.148

Di-*NH*-form predominates for parent compd. Constit. of *Strobilanthes cusia*. Prisms (DMF/$CHCl_3$). Mp 358°.

▶ LD_{50} (rat, ipr) 1200 mg/kg. Exp. reprod. effects. VA1390000

Diol-*form*

Di-Me ether: 2,4-Dimethoxyquinazoline
$C_{10}H_{10}N_2O_2$ 190.201
Mp 66-67°.

Di-*NH-form*

*1-Me: 1-Methyl-2,4(1*H,*3*H*)-quinazolinedione, 9CI*. ***Glycosmicine***
[604-50-2]
$C_9H_8N_2O_2$ 176.174
Minor alkaloid from the leaves of *Glycosmis arborea* (Rutaceae). Mp 270-271°.

▶ VA1411500

*3-Me: 3-Methyl-2,4(1*H,*3*H*)-quinazolinedione*
[607-19-2]
$C_9H_8N_2O_2$ 176.174
Solid. Mp 242-243.5°.

*1,3-Di-Me: 1,3-Dimethyl-2,4(1*H,*3*H*)-quinazolinedione*
[1013-01-0]
$C_{10}H_{10}N_2O_2$ 190.201
Sex pheromone of the pale brown chafer *Phyllopertha diversa*. Shows antiinflammatory, analgesic and anticonvulsant activity. Cryst. (H_2O). Mp 165-166° (170°). λ_{max} 220 (log ϵ 4.7); 312 (log ϵ 3.63) (no solvent reported).

*3-Ph: 3-Phenyl-2,4(1*H,*3*H*)-quinazolinedione, 9CI*
[603-23-6]
$C_{14}H_{10}N_2O_2$ 238.245
Cryst. (MeOH). Mp 282°.

3-Ph, 1-Ac: [35118-04-8]
$C_{16}H_{12}N_2O_3$ 280.282
Cryst. (EtOH). Mp 202°.

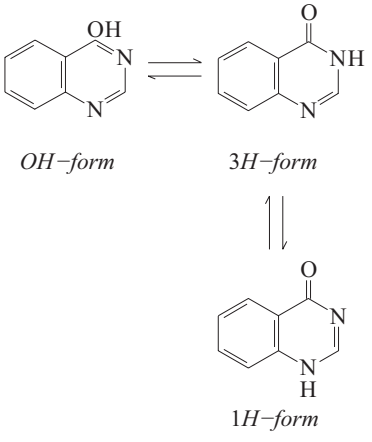
*3-Amino: 3-Amino-2-hydroxy-4(3*H*)-quinazolinone. 3-Amino-2,4(1*H,*3*H*)-quinazolinedione*
[30386-01-7]
$C_8H_7N_3O_2$ 177.162
Cryst. (H_2O). Mp 291-293°.

*3-Benzyl: 3-Benzyl-2,4(1*H,*3*H*)-quinazo-*

linedione
[1932-42-9]
$C_{15}H_{12}N_2O_2$ 252.272
Solid (Et_2O). Mp 226-226.5°.
Aldrich Library of NMR Spectra, 2nd edn., 1983, **2**, 359C (*nmr*)
Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 882B (*ir*)
Kunckell, F. *et al., Ber.*, 1910, **43**, 1021 (*3-amino*)
Org. Synth., Coll. Vol., 2, 1943, 79 (*synth*)
Pakrashi, S.C. *et al., Tetrahedron*, 1963, **19**, 1011 (*uv, ir, pmr, ms, struct, Glycosmicine*)
Spence, T.W.M. *et al., J.C.S. Perkin 1*, 1972, 97 (*3-Ph*)
Fahmy, A.F.M. *et al., Bull. Chem. Soc. Jpn.*, 1978, **51**, 2148 (*synth*)
Yamamoto, M. *et al., Chem. Pharm. Bull.*, 1978, **26**, 1633 (*synth*)
Michman, M. *et al., Org. Prep. Proced. Int.*, 1978, **10**, 13 (*synth, ms*)
Petridou-Fischer, J. *et al., J. Het. Chem.*, 1982, **19**, 123 (*cmr*)
Papadopoulos, E.P. *et al., J. Het. Chem.*, 1982, **19**, 123; 269 (*synth, pmr, cmr*)
Lalezari, I. *et al., J. Het. Chem.*, 1984, **21**, 5
Yoshida, T. *et al., Bull. Chem. Soc. Jpn.*, 1987, **60**, 1793 (*synth*)
Beckwith, A.L.J. *et al., Aust. J. Chem.*, 1990, **43**, 451 (*synth*)
Gineinah, M.M. *et al., J. Het. Chem.*, 1990, **27**, 723 (*synth*)
Miyata, T. *et al., Heteroat. Chem.*, 1991, **2**, 473 (*synth*)
Li, L. *et al., Yaoxue Xuebao*, 1993, **28**, 238 (*isol*)
Leal, W.S. *et al., Nature (London)*, 1997, **385**, 213 (*occur, 1,3-di-Me*)
Pfeiffer, W.-D. *et al., J. Het. Chem.*, 1999, **36**, 1327-1336 (*3-amino*)
Choo, H.Y.P. *et al., Bioorg. Med. Chem.*, 2002, **10**, 517-523 (*3-Ph, synth, ir, pmr*)
Mizuno, T. *et al., Tetrahedron*, 2002, **58**, 3155-3158 (*synth*)
Wu, Y.-Q. *et al., J. Het. Chem.*, 2003, **40**, 191-193 (*synth, pmr*)
Petrov, J.S. *et al., Org. Prep. Proced. Int.*, 2005, **37**, 560-565 (*synth, ir, pmr, ms, 3-Ph*)
Huang, Y. *et al., J. Het. Chem.*, 2007, **44**, 1421-1424 (*3-Me, 3-benzyl*)
Mizuno, T. *et al., Synthesis*, 2007, 2524-2528 (*synth, ir, pmr, cmr, ms*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, QEJ800

4-Quinazolinol, 8CI Q-14

*4-Hydroxyquinazoline. 4(1*H*)-Quinazolinone, 9CI. Quinazolone*
[491-36-1]



OH−form 3*H−form* 1*H−form*

$C_8H_6N_2O$ 146.148
3*H*-form predominates. Isol. from the Chinese drug Ch'ang Shan (roots of *Dichroa febrifuga*) (Hydrangeaceae). Needles (EtOH). Mp 215-216°. pK_{a1} 2.06; pK_{a2} 9.87 (20°). Prob. an artifact.
▶ LD_{50} (mus, orl) 609 mg/kg. VA2300000
Hydrochloride: [33238-79-8]
Mp 212-215° Mp 247°.

1*H-form*

N-*Me:* see 1-Methyl-4(1*H*)-quinazolinone, M-556

N-*Et: 1-Ethyl-4(1*H*)-quinazolinone*
[16347-92-5]
$C_{10}H_{10}N_2O$ 174.202
Mp 127-129°.

N-*Ph: 1-Phenyl-4(1*H*)-quinazolinone*
[35242-42-3]
$C_{14}H_{10}N_2O$ 222.246
Cryst. (EtOH or EtOAc). Mp 184° (180-181°).

3H-form [132305-20-5]

N-*Me: 3-Methyl-4(3*H*)-quinazolinone*
[2436-66-0]
$C_9H_8N_2O$ 160.175
Mp 104-106°.

N-*Et: 3-Ethyl-4(3*H*)-quinazolinone*
[3476-65-1]
$C_{10}H_{10}N_2O$ 174.202
Mp 101-102°.

N-*Ph: 3-Phenyl-4(3*H*)-quinazolinone, 9CI*
[16347-60-7]
$C_{14}H_{10}N_2O$ 222.246
Cryst. Mp 138-140°.

N-*Ph; hydrochloride:* Mp 222-223°.

N-*(2-Hydroxyethyl): 3-(2-Hydroxyethyl)-4(3*H*)-quinazolinone*
[2981-86-4]
$C_{10}H_{10}N_2O_2$ 190.201
Needles. Mp 152-153°. This struct. was erroneously assigned to Echinozolinone, an alkaloid, in 1987.

N-*(2-Phenylethenyl)(*E-*):* ***(*E*)-Bogorin***
[220457-08-9]
$C_{16}H_{12}N_2O$ 248.284
Trace constit. of *Glycosmis* cf. *chlorosperma*. Cryst. (petrol). Mp 154-157°.

N-*(2-Phenylethenyl)(*Z-*): 3-(2-Phenylethenyl)-4(3*H*)-quinazolinone.* N-*Styryl-4(3*H*)-quinazolinone.* ***(Z)-Bogorin***
[220457-05-6]
$C_{16}H_{12}N_2O$ 248.284
Alkaloid from *Glycosmis* cf. *chlorosperma*. Cryst. Mp 73-76°. λ_{max} 227 (log ϵ 3.81); 269 (log ϵ 3.45); 310 (log ϵ 3.12) (EtOH). λ_{max} 227 (ϵ 6456); 269 (ϵ 2818); 310 (ϵ 1318) (MeOH) (Berdy).

N-*(2-Carboxyphenyl): 3-(2-Carboxyphenyl)-4(3*H*)-quinazolinone*
[25380-15-8]
$C_{15}H_{10}N_2O_3$ 266.256
Alkaloid from the roots of *Isatis indigotica* (Brassicaceae). Mp 279-281°.

N-*(2-Hydroxyphenyl): 3-(2-Hydroxyphenyl)-4(3*H*)-quinazolinone*
[3977-51-3]
$C_{14}H_{10}N_2O_2$ 238.245
Alkaloid from *Isatis indigotica* (Brassicaceae). Mp 183-184° (synthetic).

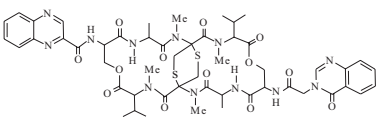
OH-form [134434-33-6]
[17227-47-3]

Me ether: 4-Methoxyquinazoline
[16347-95-8]
$C_9H_8N_2O$ 160.175
Cryst. Mp 37.5°.
▶ VA1465000

Et ether: 4-Ethoxyquinazoline
[16347-96-9]
$C_{10}H_{10}N_2O$ 174.202
Cryst. Mp 46-48°.
Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 881D (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 466C (*nmr*)
Chou, T.Q. *et al., J.A.C.S.*, 1948, **70**, 1765-1767 (*isol, synth*)
Breukink, K.W. *et al., Rec. Trav. Chim. (J. R. Neth. Chem. Soc.)*, 1957, **76**, 401-414 (*Me ether, synth, deriv*)
Armarego, W.F.L. *et al., J. Appl. Chem.*, 1961, **11**, 70-72 (*synth*)
Batterham, T.J. *et al., J.C.S.(B)*, 1967, 892-897 (*ms*)
Irwin, W.J. *et al., J.C.S. Perkin 1*, 1972, 353-355 (*1-Ph, synth, uv, ms*)
Peet, N.P. *et al., J.O.C.*, 1974, **39**, 1931-1935 (*synth, N-carboxyphenyl*)
Kametani, T. *et al., Heterocycles*, 1978, **9**, 1585-1591; 1980, **14**, 1469-1473 (*synth, cmr*)
Bhattacharya, J. *et al., Heterocycles*, 1980, **14**, 1469-1473 (*cmr*)
Baig, G.U. *et al., J.C.S. Perkin 1*, 1984, 2765-2766 (*aryl derivs*)
Reisch, J. *et al., J. Nat. Prod.*, 1989, **52**, 404-407 (*2-hydroxyethyl, synth, ir, pmr, ms*)
Chakrabarty, M. *et al., Monatsh. Chem.*, 1995, **126**, 789-794 (*pmr, cmr*)
Deng, K.M. *et al., Chin. Chem. Lett.*, 1997, **8**, 237-238 (*2-hydroxyphenyl*)
Wu, X. *et al., Planta Med.*, 1997, **63**, 55-57 (*isol, N-carboxyphenyl*)
Seger, C. *et al., Chem. Pharm. Bull.*, 1998, **46**, 1926-1928 (*synth, Bogorin*)
Wang, L. *et al., Synthesis*, 2003, 1241-1247 (*3-Ph*)
Wiklund, P. *et al., J.O.C.*, 2004, **69**, 6371-6376 (*3-N-Et*)
Shemchuk, L.A. *et al., Russ. J. Org. Chem. (Engl. Transl.)*, 2007, **43**, 719-722 (*synth, pmr*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, QFA000

Quinazomycin Q-15

[28171-80-4]

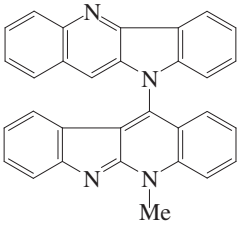


$C_{51}H_{62}N_{12}O_{13}S_2$ 1115.255
Depsipeptide antibiotic. Molecular formula and structure in original paper disagree. Prod. by *Streptomyces* sp. in the presence of 4-Oxo-3-quinazolineacetic acid. Active against *Staphylococcus aureus*. Cryst. Sol. MeOH, C_6H_6; poorly sol. H_2O. λ_{max} 225 ; 244 ; 290 ; 328 (MeOH) (Berdy).
Khan, A.W. *et al., Indian J. Biochem.*, 1969, **6**, 220

Dhar, M.M. *et al., Pure Appl. Chem.*, 1971, **28**, 469

Quindolinocryptotackieine Q-16

[625830-78-6]



$C_{31}H_{20}N_4$ 448.526

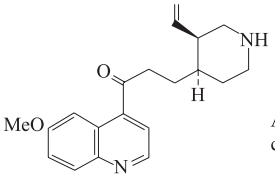
Alkaloid from *Cryptolepis sanguinolenta*.

Blinov, K. *et al., Magn. Reson. Chem.*, 2003, **41**, 577-584 (*isol, pmr, cmr*)

Quinicine Q-17

3-(3-Ethenyl-4-piperidinyl)-1-(6-methoxy-4-quinolinyl)-1-propanone, 9CI. Mequiverine. Quinotoxine. ***Viquidil, INN***

[84-55-9]



Absolute configuration

$C_{20}H_{24}N_2O_2$ 324.422

Alkaloid from many *Cinchona* spp. (Rubiaceae), poss. an artifact from rearr. of Quinine, Q-20. Readily obt. by thermal rearr. of quinine or quinidine. Spasmolytic agent, cerebral vasodilator. Antiarrhythmic agent. Noncryst. Sol. Et_2O, C_6H_6, Et_2O, $CHCl_3$; poorly sol. H_2O, hexane. Mp 60°. $[\alpha]_D$ +39 ($CHCl_3$). Log P 3.03 (calc).

Hydrochloride: Desclidium. Permiran. Vasexeten
[36342-92-4]
Mp 180-182°. $[\alpha]_D^{14}$ +16.3 (H_2O).

Oxime: Mp 112-116°.

*9*S*-Alcohol,* N*-Me:* **N-*Methylquinicinol***
[83255-68-9]
$C_{21}H_{28}N_2O_2$ 340.464
Alkaloid from the bark of *Guettarda noumeana* (Rubiaceae). Gum. $[\alpha]_D$ -70 (c, 0.5 in $CHCl_3$). λ_{max} 224 (log ϵ 4.55); 277 (log ϵ 3.97); 308 (sh) (log ϵ 3.51) (MeOH).

10,11-Dihydro, N*-Me:* **N-*Methyldihydroquinicine***
[99964-74-6]
$C_{21}H_{28}N_2O_2$ 340.464
Alkaloid from the trunk bark of *Guettarda trimera* (Rubiaceae). Amorph. $[\alpha]_D^{20}$ -3 (c, 1 in $CHCl_3$). λ_{max} 222 ; 245 ; 262 ; 300 ; 356 (EtOH).

*10,11-Dihydro, 9*R*-alcohol,* N*-Me:* ***9-Epi*-N-*methyldihydroquinicinol***
[99964-75-7]
$C_{21}H_{30}N_2O_2$ 342.48
Alkaloid from the trunk bark of *Guettarda trimera* (Rubiaceae). Cryst. (Me_2CO). Mp 164°. $[\alpha]_D^{20}$ +58 (c, 0.3 in $CHCl_3$).

*10,11-Dihydro, 9*S*-alcohol,* N*-Me:* **N-*Methyldihydroquinicinol***
[99964-76-8]
$C_{21}H_{30}N_2O_2$ 342.48
Alkaloid from the trunk bark of *Guettarda trimera* (Rubiaceae). Cryst. (Me_2CO). Mp 156°. $[\alpha]_D^{20}$ -84 (c, 1.2 in $CHCl_3$). λ_{max} 233 ; 271 ; 281 ; 291 ; 323 ; 333 (EtOH).

Demethoxy: ***Cinchonicine****. Cinchotoxine*
[69-24-9]
$C_{19}H_{22}N_2O$ 294.396
Poss. minor congener of Cinchonine, C-447, occurrence not well documented. Readily obt. by thermal rearr. of cinchonine or cinchonicine. Long thin prisms (Et_2O). Mp 58-59°. $[\alpha]_D$ +46.5 (c, 2 in $CHCl_3$). $[\alpha]_D$ +57.7 (EtOH).

Demethoxy; nitrate: Mp 160°.

*Demethoxy, 9*R*-alcohol:* ***Epicinchonicinol***
[120949-74-8]
$C_{19}H_{24}N_2O$ 296.411
Alkaloid from the bark of *Ladenbergia oblongifolia* and cortex of *Cinchona succirubra*. Brownish-yellow amorph. powder. $[\alpha]_D^{25}$ -29 (c, 0.1 in EtOH).

*Demethoxy, 9*R*-alcohol,* N*-Ac:* **N-*Acetylcinchonicinol***
$C_{21}H_{26}N_2O_2$ 338.449
Alkaloid from the leaves of *Remijia peruviana*. Amorph. $[\alpha]_D^{25}$ +111.5 (c, 0.1 in EtOH). λ_{max} 206 (log ϵ 4.68); 225 (log ϵ 4.5); 284 (log ϵ 3.8); 300 (log ϵ 3.78); 314 (log ϵ 3.7) (EtOH).

*Demethoxy, 9*S*-alcohol:* ***Cinchonicinol****. Cinchonidicinol. 1,8-Secocinchonine*
[27875-43-0]
$C_{19}H_{24}N_2O$ 296.411
Alkaloid from *Cinchona succirubra* and the bark of *Ladenbergia oblongifolia*. Monoamine oxidase inhibitor. Pale yellow amorph. powder. $[\alpha]_D^{25}$ -15 (c, 0.1 in EtOH). $[\alpha]_D^{21}$ +5.6 (c, 0.09 in EtOH). λ_{max} 224 (log ϵ 4.1); 281 (log ϵ 2.92); 300 (log ϵ 2.79); 314 (log ϵ 2.72) (EtOH).

Demethoxy, 10,11-dihydro, 9-alcohol: ***Dihydrocinchonicinol***
[27875-44-1]
$C_{19}H_{26}N_2O$ 298.427
Alkaloid from the bark of *Ladenbergia oblongifolia*. Mixt. of C-9 epimers.

Demethoxy, deoxo, N*-Ac:* **N-*Acetyldeoxycinchonicinol***
$C_{21}H_{26}N_2O$ 322.449
Alkaloid from the leaves of *Remijia peruviana*. Amorph. $[\alpha]_D^{25}$ +84 (c, 0.79 in EtOH). λ_{max} 206 (log ϵ 4.8); 224 (log ϵ 4.8); 282 (log ϵ 3.96); 300 (log ϵ 3.82); 316 (log ϵ 3.7) (EtOH).

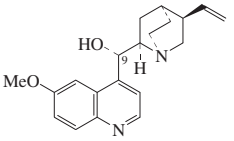
[52211-63-9]

Howard, D. *et al., J.C.S.*, 1871, **24**, 61-64; 1872, **25**, 101-106 (*isol, synth*)
Prošenik, M. *et al., Helv. Chim. Acta*, 1943, **26**, 1965-1971 (*synth*)
Quevauviller, A. *et al., Ann. Pharm. Fr.*, 1966, **24**, 39-50 (*rev, pharmacol, synth*)
Gueremy, C. *et al., Arzneim.-Forsch.*, 1972, **22**, 1336-1340; 1341-1346 (*metab*)
Grethe, G. *et al., Helv. Chim. Acta*, 1973, **56**, 1485-1494 (*synth*)
Smith, G. *et al., J. Chromatogr.*, 1984, **299**, 233-244 (*hplc*)
Kan-Fan, C. *et al., Phytochemistry*, 1985, **24**, 2773-2775 (*N-Methyldihydroquinicine, N-Methyldihydroquinicinol, 9-Epidihydroquinicinol*)
Mitsui, N. *et al., Chem. Pharm. Bull.*, 1989, **37**, 363-366 (*Cinchonicinol, Cinchonicine*)
Montagnac, A. *et al., Phytochemistry*, 1997, **46**, 973-975 (*N-Methylquinicinol*)
Martindale, The Extra Pharmacopoeia, 32nd edn., Pharmaceutical Press, 1999, 16442
Okunade, A.L. *et al., Fitoterapia*, 2001, **72**, 717-719 (*Cinchonicinol, Epicinchonicinol, Dihydrocinchonicinols*)
Díaz, J.G. *et al., J. Nat. Prod.*, 2004, **67**, 1667-1671 (*N-Acetyldeoxycinchonicinol, N-Acetylcinchonicinol*)

Quinidine, BAN Q-18

6′-Methoxycinchonan-9-ol, 9CI†*. Conquinine. Conchinine. β-Quinine. Pitayine. Many other names*

[56-54-2]



Absolute Configuration

$C_{20}H_{24}N_2O_2$ 324.422

Alkaloid from *Cinchona officinalis* and very many other *Cinchona* spp., and from *Remijia pedunculata* (Rubiaceae). Potassium channel blocker. Antiarrhythmic agent, antimalarial. Cardiac depressant, has been used as clinical antifibrillatory agent. Mp 174-175° (anhyd.). $[\alpha]_D^{15}$ +262 (EtOH). pK_{a1} 8.54; pK_{a2} 4. Log P 2.93 (calc). λ_{max} 279 (ϵ 3990); 332 (ϵ 5280) (MeOH).

▶ Adverse human effects incl. gastrointestinal and cardiac. Eye irritant. LD_{50} (rat, orl) 263 mg/kg. VA4725000

Hydrochloride: Mp 258-259° dec. (anhyd.). $[\alpha]_D^{20}$ +200 (H_2O).

Sulfate (2:1): ***Quinidine sulfate, USAN****. CinQuin. Quinidex*
[50-54-4]

▶ Adverse human systemic effects. LD_{50} (rat, orl) 456 mg/kg. VA5951000

Picrate: Mp 243°.

D-Gluconate salt: ***Quinidine gluconate, USAN****. Duraquin. Quinaglute*
[7054-25-3]

▶ Harmful in contact with skin (allergic dermatitis). LZ5250000

Ketone: 6′-Methoxycinchonan-9-one, 9CI. ***Quinidinone***
[14528-53-1]
$C_{20}H_{22}N_2O_2$ 322.406
Alkaloid from *Cinchona* sp. Cryst. (Et_2O). Sol. $CHCl_3$, C_6H_6, Et_2O; poorly sol. H_2O, hexane. Mp 99-100.5°. $[\alpha]_D$ +73.8 (c, 1 in EtOH).

10,11-Dihydro: ***Hydroquinidine****. Hydroconquinine. Hydroconchinene. Hydroquine. Lentoquine. Quinotidine. Serecor*
[1435-55-8]
$C_{20}H_{26}N_2O_2$ 326.438

Minor congener of quinidine from *Cinchona* bark, also obt. from *Remijia pedunculata* and *Aspidosperma marcgravianum* bark and leaves (Rubiaceae, Apocynaceae). Antimalarial. Antiarrhythmic. Needles (EtOH). Mp 168-169°. $[\alpha]_D^{18}$ +237 (EtOH). Log P 3.42 (calc).

▶ LD_{50} (rat, orl) 369 mg/kg. MX3016000

10,11-Dihydro; hydrochloride: [1476-98-8]
Cryst. (H_2O). Mp 273-274°. $[\alpha]_D^{26}$ +183.9.

▶ MX3018000

10,11-Dihydro, O-*(4-chlorobenzoyl): DHQD-CLB*
[113162-02-0]
$C_{27}H_{29}ClN_2O_3$ 464.99
Chiral ligand for asymmetric dihydroxylation of alkenes. Pale yellow solid. Mp 102-105°. $[\alpha]_D$ -73 (c, 1 in EtOH).

9-Epimer: ***Epiquinidine***
[572-59-8]
Occurs in *Cinchona* spp., poss. as artifact. Cryst. (EtOAc). Mp 113°. $[\alpha]_D^{20}$ +103.7 (EtOH).

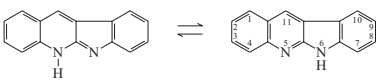
9-Epimer; hydrochloride (1:2):
Cryst. (EtOH). Mp 195.7° dec. $[\alpha]_D^{20}$ +45.5 (EtOH).

[6591-63-5]

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 865D; 866B (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 441A; 441B; 442A (*nmr*)
Van Hejningen, *et al., Annalen*, 1849, **72**, 301-305 (*isol*)
Dirscherl, W. *et al., Annalen*, 1935, **521**, 48-72 (*Epiquinidine, isol*)
Lyle, G.G. *et al., Tetrahedron*, 1967, **23**, 51-63; 3253-3263 (*uv, ord, config*)
Battersby, A.R. *et al., Chem. Comm.*, 1971, 30-31; 31-32 (*biosynth*)
Gutzwiller, J. *et al., Helv. Chim. Acta*, 1973, **56**, 1494-1503 (*Quinidinone, synth*)
Moreland, C.G. *et al., J.O.C.*, 1974, **39**, 2413-2416 (*cmr*)
Grethe, G. *et al., J.A.C.S.*, 1978, **100**, 589-593 (*synth*)
Soeterboek, A.M. *et al., Int. Congr. Ser. Excerpta Med.*, 1980, **501**, 180-192 (*rev*)
Kashino, S. *et al., Acta Cryst. C*, 1983, **39**, 310-312 (*cryst struct*)
Loutfy, M.A. *et al., Anal. Profiles Drug Subst.*, 1983, **12**, 483-546 (*rev, uv, ir, pmr, cmr, ms, anal*)
Roden, D.M. *et al., Pharmacol. Ther.*, 1983, **23**, 179-191 (*rev*)
Smith, E. *et al., J. Chromatogr.*, 1984, **299**, 233-244 (*hplc*)
Negwer, M. *et al., Organic-Chemical Drugs and their Synonyms, 6th edn., Akademie-Verlag*, 1987, 5748
Robins, R.J. *et al., Phytochemistry*, 1987, **26**, 551-556 (*pmr, cmr*)
Prakash, O. *et al., Indian J. Chem., Sect. B*, 1988, **27**, 950-952 (*pmr*)
Encyclopaedia of Reagents for Organic Synthesis, (ed. Paquette, L.A.), Wiley, 1995, **3**, 1887-1888 (*dihydro chlorobenzoyl, use*)
Silva, T.H.A. *et al., Bioorg. Med. Chem.*, 1997, **5**, 353-361 (*conformn*)
Reichardt, C. *et al., Liebigs Ann./Recl.*, 1997, 707-720 (*dihydro chlorobenzoyl, synth*)
Martindale, The Extra Pharmacopoeia, 32nd edn., Pharmaceutical Press, 1999, 938
Raheem, I.T. *et al., J.A.C.S.*, 2004, **126**, 706-707 (*synth*)
Igarashi, J. *et al., Tet. Lett.*, 2004, **45**, 3783-3786 (*synth*)
Guo, M.-J. *et al., Acta Cryst. E*, 2007, **63**, o1483-o1484 (*cryst struct*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, HIG500; 1992, QFS000; QHA000; QDS225

Quinindoline, 9CI Q-19

*Indolo[2,3-*b*]quinoline. 6-Azabenzo[*b*]carbazole*
[243-38-9]



6H–form

$C_{15}H_{10}N_2$ 218.257

Free compd. is in the 6*H*-form. Constit. of anthracite pitch. Degradn. prod. of β-Isoindigo. Yellow needles or leaflets ($PhNO_2$). Sol. hot $PhNO_2$, hot $PhNH_2$; insol. most solvs. Mp 346°.

Hydrochloride:
Yellow needles. Mp 280° dec.

5H-form

N-*Me: 5-Methyl-5*H-*indolo[2,3-*b*]quinoline. Cryptotackieine.* ***Neocryptolepine***
[114414-78-7]
$C_{16}H_{12}N_2$ 232.284
Alkaloid from root bark of *Cryptolepis sanguinolenta*. Shows antibacterial and antifungal activities. Yellowish amorph. powder or cryst. (hexane). Mp 107-109°.

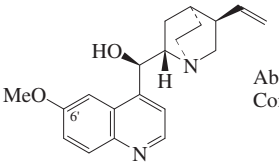
6H-form

Ac:
$C_{17}H_{12}N_2O$ 260.295
Needles. Mp 189° (185°).

Gabriel, S. *et al., Ber.*, 1897, **30**, 3017-3022
Lawson, G. *et al., J.C.S.*, 1924, **125**, 626-657
Pailer, M. *et al., Monatsh. Chem.*, 1965, **96**, 1695 (*synth*)
Sagitullin, R.S. *et al., CA*, 1974, **81**, 13408m (*synth*)
Kaczmarek, L. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1988, **321**, 463-467
Marais, F. *et al., J. Het. Chem.*, 1989, **26**, 1589 (*synth, ir, pmr*)
Reczynska-Czoch, W. *et al., J. Med. Chem.*, 1994, **37**, 3503 (*synth*)
Sharaf, E.H.M. *et al., J. Het. Chem.*, 1996, **33**, 239 (*Cryptotackieine*)
Cimanga, K. *et al., Tet. Lett.*, 1996, **37**, 1703 (*Neocryptolepine, isol, uv, pmr, cmr, ms, struct*)
Alajarin, M. *et al., J. Nat. Prod.*, 1997, **60**, 747 (*synth, cmr*)
Timari, G. *et al., Synlett*, 1997, 1067-1068 (*Neocryptolepine, synth*)
Cimanga, K. *et al., Phytomedicine*, 1998, **5**, 209-214 (*Neocryptolepine, activity*)
Molina, P. *et al., Synthesis*, 1999, 326-329 (*Neocryptolepine, synth, pmr, cmr, ms*)
Fresneda, P.M. *et al., Tetrahedron*, 2001, **57**, 6197-6202 (*Neocryptolepine, synth*)
Ho, T.L. *et al., Helv. Chim. Acta*, 2002, **85**, 3823-3827 (*Neocryptolepine, synth, ir, pmr, cmr*)
Sundaram, G.S.M. *et al., J.O.C.*, 2004, **69**, 5760-5762 (*Neocryptolepine, synth*)
Engqvist, R. *et al., Synth. Commun.*, 2004, **34**, 386-390 (*synth, pmr, Neocryptolepine*)
Dhanabal, T. *et al., Tetrahedron*, 2006, **62**, 6258-6263 (*Neocryptolepine, synth*)
Parvatkar, P.T. *et al., Tet. Lett.*, 2007, **48**, 7870-7872 (*Neocryptolepine, synth*)

Quinine, BAN Q-20

6′-Methoxycinchonan-9-ol, 9CI†
[130-95-0]



Absolute Configuration

$C_{20}H_{24}N_2O_2$ 324.422
Alkaloid from *Cinchona officinalis* and most other *Cinchona* spp., also in *Remijia pedunculata*. Occurs mainly in the bark (cinchona bark) but has also been isol. from trunkwood (Rubiaceae). Used as 1% aq. soln. (as sulfate) for photometric detn. of Bi, W, As(*V*), P(*V*). Resolving agent for organic acids, used in asymmetric syntheses. Used in tonics and bitter drinks. Potassium channel blocker. Traditional antimalarial drug esp. important in treating *Plasmodium falciparum* which is resistant to other antimalarial drugs. Activity is stereochemistry-independent, i.e. racemates and stereoisomers show similar activity. Illicit abortifacient in large doses. Stimulant for horses, has been used in horse doping. Weak cardiac depressant, antipyretic and antifibrillatory agent. Cryst. with v. bitter taste. Sol. H_2O, EtOH, C_6H_6, $CHCl_3$. Mp 177° (anhyd.). $[\alpha]_D^{15}$ -158.7 (Et_2O). $[\alpha]_D$ -158 (-145) (EtOH). pK_{a1} 8.34; pK_{a2} 4.21 (20°). Log P 2.93 (calc). Forms a dihydrate and a trihydrate, Mp 57°(efflorescent). Triboluminescent. Blue fluor. in soln. λ_{max} 279 (ϵ 3870); 332 (ϵ 514) (MeOH).

▶ Adverse effects from therapeutic or larger doses of quinine or its salts (cinchonism). Irritant to mucous membranes. Human and exp. teratogenic effects. LD_{50} (mus, ipr) 115 mg/kg. VA6020000

Hydrochloride (1:1): ***Quinine hydrochloride, JAN.*** *FEMA 2976*
[130-89-2]
[7549-43-1]
Needles + $2H_2O$, dehydrating at 100°. Mp 158-160° (anhyd.). $[\alpha]_D^{15}$ -145.5 (EtOH).

▶ VA7700000

Hydrochloride (1:2): [60-93-5]
[7549-43-1]
Needles. Mp 180-185°. $[\alpha]_D^{18}$ -233 (H_2O).

▶ LD_{50} (rat, orl) 1393 mg/kg. VA6478000

Hydrobromide: [549-49-5]
Hygroscopic needles + H_2O. Mp 200° (softens from 152°).

▶ VA7650000

Hydrobromide (1:2):
Yellow prisms + $3H_2O$. Mp 81-82°.

Sulfate salt (1:1): Quinine bisulfate.

FEMA 2975
[549-56-4] Flavouring agent with bitter taste.

Sulfate salt (2:1): ***Quinine sulfate, JAN, USAN***. *Quinanium*. *Quine*. *Quinite*. *FEMA 2977*
[804-63-7]
[549-56-4 , 6119-70-6] Flavouring agent with bitter taste. Mp 205°. $[\alpha]_D^{15}$ -235 (H_2SO_4 aq.). Forms a dihydrate and an octahydrate. Component of Quinamin.

▶ VA8440000

Gluconate salt (1:1): [4325-25-1]
Mp 159-161° (anhyd.).

Compd. with ascorbic acid (1:2): ***Quinine ascorbate, USAN***. *Quinine biascorbate*
[146-40-7] Smoking deterrent.

Ethylcarbonate: ***Quinine ethylcarbonate, JAN***. *Euquinine*. *Tasteless Quinine*
[83-75-0]
$C_{23}H_{28}N_2O_4$ 396.485
Antimalarial. Fine needles. Mp 90-92°. $[\alpha]_D^{20}$ -43.7. Log P 4.22 (uncertain value) (calc).

Methiodide (1:2):
Yellow plates + $3H_2O$. Mp 167-168° dec. $[\alpha]_D^{18}$ -151 (2*M* H_2SO_4).

N-*Benzyl:* [67174-25-8]
$C_{27}H_{31}N_2O_2^{\oplus}$ 415.554
Chiral phase-transfer catalyst. Mp 200-205° dec. (as chloride). $[\alpha]_D^{20}$ -235 (c, 1.5 in H_2O). CAS no. refers to chloride.

Ac: [18797-86-9]
Cryst. (petrol). Mp 116-117°. $[\alpha]_D^{15}$ -54.3 (EtOH).

Benzoyl: [69758-70-9]
Prisms (Et_2O). Mp 139°. $[\alpha]_D^{17}$ +121.6 (EtOH). Log P 5.48 (uncertain value) (calc).

O-*(2-Hydroxybenzoyl):* ***Saloquinine***. *Salochimin*
$C_{27}H_{28}N_2O_4$ 444.529
Analgesic, antipyretic. Cryst. (EtOH). Mp 140°. Log P 5.81 (uncertain value) (calc).

N^1-*Et:* **N^1-Ethylquinine**
$C_{22}H_{29}N_2O_2^{\oplus}$ 353.483
Alkaloid from the bark of *Remijia peruviana*. Amorph. $[\alpha]_D^{25}$ +128 (c, 0.12 in EtOH). Counterion not specified. λ_{max} 230 (log ϵ 3.02); 279 (sh) (log ϵ 2.14); 333 (sh) (log ϵ 2.17) (EtOH).

O-*De-Me:* ***Cupreine***. *Ultraquinine*
[524-63-0]
$C_{19}H_{22}N_2O_2$ 310.395
Alkaloid from *Remijia pedunculata*, poss. also present in *Picrolemma pseudocoffea* (Rubiaceae, Simaroubaceae). Mp 198°. $[\alpha]_D$ -175 (EtOH).

O-*De-Me, sulfate salt:* Mp 257°.

O-*De-Me, 6′-Ac:* ***6′-O-Acetylcupreine***
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from the bark of *Remijia peruviana*. $[\alpha]_D^{25}$ -116.6 (c, 0.32 in EtOH). λ_{max} 232 (log ϵ 3.25); 286 (sh) (log ϵ 2.41); 336 (sh) (log ϵ 2.48) (EtOH).

O-*De-Me, di-Ac:* Mp 88°.

O-*De-Me,* O$^{6'}$*-Et:* *Quinethyline*
[83348-45-2]
$C_{21}H_{26}N_2O_2$ 338.449
Febrifuge. Mp 160°. $[\alpha]_D$ -169.4 (EtOH).

10,11-Dihydro: ***Hydroquinine***
[522-66-7]
$C_{20}H_{26}N_2O_2$ 326.438
Minor congener of Quinine found in *Cinchona* spp., also from *Remijia pedunculata* (Rubiaceae). Antimalarial. Needles (Et_2O or $CHCl_3$). Mp 172° (169°). $[\alpha]_D$ -142.2 (EtOH).

10,11-Dihydro; hydrochloride: Mp 235-240° (anhyd.).

10,11-Dihydro, Me ether: Mp 93°.

10,11-Dihydro, O-*de-Me:* ***Dihydrocupreine***. *Hydrocupreine*
[5962-19-6]
$C_{19}H_{24}N_2O_2$ 312.411
Alkaloid from the bark of *Timonius kaniensis* (Rubiaceae). Glass or foam. $[\alpha]_D$ -143 (c, 0.7 in EtOH).

10,11-Dihydro, O-*de-Me, picrate:* Mp 250-252°.

10,11-Dihydro, O-*(4-chlorobenzoyl):*
[113216-88-9]
$C_{27}H_{29}ClN_2O_3$ 464.99
Chiral ligand used in asymmetric dihydroxylation of alkenes. Pale yellow solid. Mp 130-133°. $[\alpha]_D$ +150 (c, 1 in EtOH).

10,11-Dihydro, O-*de-Me,* O$^{6'}$*-Et:* *Ethyldihydrocuprein*. *Neumolisina*. *Neumolysin*. *Numoquin*. *Optochin*. *Optoquine*
[522-60-1]
$C_{21}H_{28}N_2O_2$ 340.464
Antibacterial (ophthalmologic) agent. Bitter cryst. Mp 123-128°. $[\alpha]_D^{25}$ -136.2 (EtOH). Log P 3.94 (calc).

▶ Eye irritant (rbt). LD_{Lo} (mus, orl) 400 mg/kg. MW5950000

10,11-Dihydro, O-*de-Me,* O$^{6'}$*-Et, hydrochloride:* [3413-58-9]
Rhombic cryst. (Me_2CO/Et_2O). Mp 252-254°. $[\alpha]_D^{21}$ -123.6 (H_2O).

▶ MW6300000

3S-Hydroxy: 3-Hydroxyquinine
$C_{20}H_{24}N_2O_3$ 340.421
Major metab. of quinine in humans. Mp 148-150°. $[\alpha]_D^{25}$ -196.8 (c, 0.5 in MeOH).

9-Epimer: ***Epiquinine***
[572-60-1]
$C_{20}H_{24}N_2O_2$ 324.422
Minor constit. of *Cinchona* spp. (Rubiaceae). Oil. $[\alpha]_D^{20}$ +43.3 (EtOH).

9-Epimer, hydrochloride (1:2):
Cryst. (Me_2CO). Mp 196° dec. $[\alpha]_D^{21}$ +33.3 (EtOH).

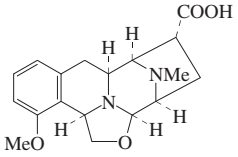
[6119-47-7]

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 864D (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 440B; 441C (*nmr*)
Paul, *et al., Pharm. J.*, 1881, **12**, 497 (*Cupreine, isol*)
U.S. Pat., 1913, 1 062 203 (*Ethyldihydrocupreine*)
Giemsa, G. *et al., Ber.*, 1918, **51**, 1325-1333 (*Cupreine Me ether, Ethyldihydrocupreine*)
Woodward, R.B. *et al., J.A.C.S.*, 1945, **67**, 860-874 (*synth*)
Muira, K. *et al., CA*, 1947, **41**, 4582 (*Ethyldihydrocuprein, synth, pharmacol*)
Welcher, F.J. *et al., Organic Analytical Reagents*, Van Nostrand, NY, 1948, **4**, 251 (*use*)
Altman, R.F.A. *et al., CA*, 1958, **52**, 506a (*Cupreine, occur*)
Willemot, J. *et al., Ann. Pharm. Fr.*, 1965, **23**, 203-209 (*gluconate*)
Lyle, G.G. *et al., Tetrahedron*, 1967, **23**, 51-63; 3253-3263 (*config, uv, ord, pmr*)
Johns, S.R. *et al., Aust. J. Chem.*, 1970, **23**, 211-212 (*Dihydrocupreine*)
Fales, H.M. *et al., J.A.C.S.*, 1970, **92**, 1590-1597 (*ms*)
Battersby, A.R. *et al., Chem. Comm.*, 1971, 30-31; 31-32 (*biosynth*)
Chao, J.M. *et al., Anal. Chem.*, 1974, **46**, 296-298 (*ms*)
Moreland, C.G. *et al., J.O.C.*, 1974, **39**, 2413-2416 (*cmr*)
Grethe, G. *et al., J.A.C.S.*, 1978, **100**, 589-593 (*synth*)
Hahn, F.E. *et al., Antibiotics (N.Y.)*, 1979, **5**, 353-362 (*rev, pharmacol, tox*)
Fieser and Fieser's Reagents for Organic Synthesis, Wiley, 1980, **8**, 430 (*use*)
Muhtadi, F.J. *et al., Anal. Profiles Drug Subst.*, 1983, **12**, 547-621 (*rev, uv, ir, pmr, cmr, ms, anal*)
Imanishi, T. *et al., Chem. Pharm. Bull.*, 1983, **31**, 1551-1560 (*synth*)
Hofheinz, W. *et al., Handb. Exp. Pharmacol.*, 1984, **68**, 61-81 (*rev*)
Smith, E. *et al., J. Chromatogr.*, 1984, **299**, 233-244 (*hplc*)
Negwer, M. *et al., Organic-Chemical Drugs and their Synonyms, 6th edn., Akademie-Verlag*, 1987, 5747 (*synonyms*)
Prakash, O. *et al., Indian J. Chem., Sect. B*, 1988, **27**, 950-952 (*pmr*)
Christie, D.J. *et al., J. Lab. Clin. Med.*, 1988, **112**, 92-98 (*Cupreine, activity*)
Diaz-Arauzo, H. *et al., J. Nat. Prod.*, 1990, **53**, 112-124 (*synth*)
Lander, V. *et al., Z. Lebensm.-Unters. -Forsch.*, 1990, **190**, 410-413 (*hplc*)
Karle, J.M. *et al., Acta Cryst. C*, 1992, **48**, 1975-1980 (*Epiquinine, cryst struct*)
Encyclopaedia of Reagents for Organic Synthesis, (ed. Paquette, L.A.), Wiley, 1995, **3**, 1887-1888 (*dihydro chlorobenzoyl, use*)
Encyclopedia of Food and Color Additives, (ed. Burdock, G.A.), CRC Press, 1997, 2407 (*rev*)
Reichardt, C. *et al., Liebigs Ann./Recl.*, 1997, 707-720 (*dihydro chlorobenzoyl, synth*)
Montagnac, A. *et al., Phytochemistry*, 1997, **46**, 973-975 (*Cupreine, isol, pmr, cmr*)
Martindale, The Extra Pharmacopoeia, 32nd edn., Pharmaceutical Press, 1999, 439
Fenaroli's Handbook of Flavor Ingredients, 4th edn., (ed. Burdock, G.A.), CRC Press, 2001, 1574-1577 (*use, salts*)
Stork, G. *et al., J.A.C.S.*, 2001, **123**, 3239-3242 (*synth, bibl*)
Raheem, I.T. *et al., J.A.C.S.*, 2004, **126**, 706-707 (*synth*)
Igarashi, J. *et al., Tet. Lett.*, 2004, **45**, 3783-3786 (*synth*)
Kaufman, T.S. *et al., Angew. Chem., Int. Ed.*, 2005, **44**, 854-885 (*rev*)
Ruiz-Mesia, L. *et al., J. Agric. Food Chem.*, 2005, **53**, 1921-1926 (N^1*-Ethylquinine, O-Acetylcupreine*)
Sarma, P.V.V.S. *et al., J. Nat. Prod.*, 2005, **68**, 942-944 (*3-Hydroxyquinine*)
Seeman, J.I. *et al., Angew. Chem., Int. Ed.*, 2007, **46**, 1378-1413 (***rev, synth***)
Webber, P. *et al., J.O.C.*, 2008, **73**, 9379-9387 (*synth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*,

2000, QHJ000; 1992, QIJ000; QJS000; QMA000; QJJ100; ELC500; HHR700

Quinocarcin Q-21

DC 52. Antibiotic DC 52
[84573-33-1]



Absolute Configuration

$C_{18}H_{22}N_2O_4$ 330.383
Isol. from *Streptomyces melanovinaceus*. Active against gram-positive bacteria and tumours. Powder. Sol. H_2O, butanol, EtOH, MeOH; fairly sol. EtOAc, Me_2CO; poorly sol. $CHCl_3$, Et_2O, hexane. $[\alpha]_D^{22}$ -32 (c, 0.5 in H_2O). Browns at 170°, indefinite Mp. Fairly unstable, forms a more stable HCN adduct. λ_{max} 271 ; 277 (MeOH) (Derep).

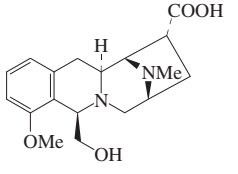
▶ LD_{50} (mus, ipr) 27 mg/kg. Mutagenic.
NJ8620820

[159571-56-9 , 101311-75-5]

Tomita, F. *et al., J. Antibiot.*, 1983, **36**, 463; 468; 1984, **37**, 1268 (*isol, uv, pmr, cmr, struct*)
Eur. Pat., 1985, (*(Kyowa Hakko Kogyo)*)157 126; *CA*, **104**, 155970f (*synth, pharmacol*)
Danishefsky, S.J. *et al., J.A.C.S.*, 1985, **107**, 1421
Fujimoto, K. *et al., Cancer Res.*, 1987, **47**, 1516
Saito, H. *et al., Tet. Lett.*, 1987, **28**, 4065 (*synth*)
Fukuyama, T. *et al., J.A.C.S.*, 1988, **110**, 5196 (*synth, bibl*)
Garner, P. *et al., J.A.C.S.*, 1993, **115**, 10742-10753 (*synth, abs config*)
Katoh, T. *et al., Tetrahedron*, 1994, **50**, 6193; 6209; 6221; 6239 (*synth, bibl, ir, pmr*)
Plowman, J. *et al., Cancer Res.*, 1995, **55**, 862
Katoh, T. *et al., Stud. Nat. Prod. Chem.*, 1997, **19**, 289-350 (*rev, synth*)
Kwon, S. *et al., J.A.C.S.*, 2005, **127**, 16796-16797 (*synth*)
Wu, Y.-C. *et al., J.A.C.S.*, 2008, **130**, 7148-7152 (*synth*)
Allan, K.M. *et al., J.A.C.S.*, 2008, **130**, 17270-17271 (*synth*)

Quinocarcinol Q-22

DC 52d. Antibiotic DC 52d
[84573-32-0]



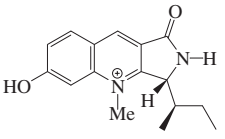
Absolute Configuration

$C_{18}H_{24}N_2O_4$ 332.399
See also Quinocarcin, Q-21. Isol. from *Streptomyces melanovinaceus* NRRL12388. Active against gram-positive bacteria and shows marginal antitumour activity. Powder. Sol. H_2O, butanol, MeOH; fairly sol. Me_2CO, EtOAc; poorly sol. $CHCl_3$, hexane. $[\alpha]_D^{22}$ -8 (c, 0.5 in H_2O). Browns at 188°, dec. at 230°. λ_{max} 271 ; 277 (MeOH) (Derep).

Tomita, F. *et al., J. Antibiot.*, 1983, **36**, 463; 468 (*isol, uv, pmr, cmr, struct*)
Hirayama, N. *et al., J.C.S. Perkin 2*, 1983, 1705 (*cryst struct*)
Danishefsky, S.J. *et al., J.A.C.S.*, 1985, **107**, 1421 (*synth*)

Quinocitrinine A Q-23

[630119-02-7]



Relative Configuration

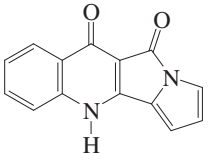
$C_{16}H_{19}N_2O_2^{\oplus}$ 271.338
Prod. by *Penicillium citrinum* VKM FW-800. Sl. brownish solid. Mp 142-143°. $[\alpha]_D^{22}$ +25.3 (c, 0.32 in MeOH). Counterion not specified. λ_{max} 216 (ϵ 8108); 248 (ϵ 5285); 256 (ϵ 5430); 300 (ϵ 2388); 314 (ϵ 2785); 328 (ϵ 2499) (MeOH).

Diastereoisomer: ***Quinocitrinine B***
[630119-04-9]
$C_{16}H_{19}N_2O_2^{\oplus}$ 271.338
Prod. by *Penicillium citrinum* VKM FW-800. Sl. brownish solid. Mp 152-153°. $[\alpha]_D^{22}$ -13.2 (c, 0.62 in MeOH). Counterion not specified. λ_{max} 216 (ϵ 8108); 248 (ϵ 5772); 256 (ϵ 5831); 300 (ϵ 2542); 314 (ϵ 3074); 328 (ϵ 1973) (MeOH).

Kozlovsky, A.G. *et al., J. Antibiot.*, 2003, **56**, 488-491 (*isol, pmr, cmr*)

Quinolactacide Q-24

10H-Pyrrolizino[1,2-b]quinoline-9,10(4H)-dione, 9CI
[856216-29-0]

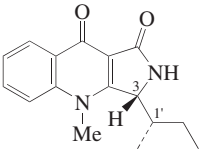


$C_{14}H_8N_2O_2$ 236.229
Isol. from *Penicillium citrinum* F 1539. Insecticide. Yellow cryst. ($CHCl_3$/MeOH). Mp 373-374° dec. λ_{max} 241 (ϵ 12300); 288 (ϵ 32200) ($CHCl_3$/MeOH).

Abe, M. *et al., Biosci., Biotechnol., Biochem.*, 2005, **69**, 1202-1205; 2006, **70**, 303-306 (*isol, synth, pmr, cmr, ms*)

Quinolactacin A_1 Q-25

[386211-68-3]



Absolute Configuration

$C_{16}H_{18}N_2O_2$ 270.33
Stereochem. revised in 2006. It has been demonstrated that only Quinolactacins A_2 and B_2 are genuine nat. prods.; the remainder are dec. artifacts. Prod. by *Penicillium citrinum* sp. 90648. Acetylcholinesterase inhibitor. Powder. $[\alpha]_D$ +30.3 (c, 0.16 in DMSO). λ_{max} 215 (ϵ 31300); 248 (ϵ 20150); 256 (ϵ 20250); 315 (ϵ 11150); 327 (ϵ 10150) (MeOH).

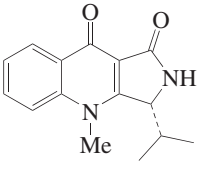
3-Hydroxy: ***Quinolactacin C_1***
[888728-74-3]
$C_{16}H_{18}N_2O_3$ 286.33
Prod. by *Penicillium citrinum* (MST-F10130).

3-Epimer: ***Quinolactacin A_2***. *Quinolactacin A (obsol.)*
[386211-69-4]
$C_{16}H_{18}N_2O_2$ 270.33
Prod. by *Penicillium citrinum* sp. 90648 and a *Penicillium* sp. EPF-6. Acetylcholinesterase inhibitor; shows antitumour props. Powder. Mp 262-265°. $[\alpha]_D^{25}$ +17.9 (c, 0.13 in DMSO).

3-Epimer, 3-hydroxy: ***Quinolactacin C_2***
[888728-73-2]
$C_{16}H_{18}N_2O_3$ 286.33
Prod. by *Penicillium citrinum* and *Penicillium* sp. EPF-6. Powder. Mp 180-185° dec. $[\alpha]_D^{25}$ +5.9 (c, 0.19 in DMSO). λ_{max} 215 (ϵ 31050); 250 (ϵ 18900); 258 (ϵ 17850); 315 (ϵ 12200); 328 (ϵ 11750) (MeOH).

Kakinuma, N. *et al., J. Antibiot.*, 2000, **53**, 1247-1251; 1252-1256 (*isol, uv, pmr, cmr*)
Kim, W.G. *et al., J. Antibiot.*, 2001, **54**, 831-835 (*isol, uv, cd, ir, pmr, cmr*)
Zhang, X. *et al., J.O.C.*, 2003, **68**, 4523-4526 (*synth*)
Park, S.-J. *et al., Tet. Lett.*, 2004, **45**, 8793-8795 (*Quinolactacin A_2, synth*)
Sasaki, T. *et al., J. Antibiot.*, 2006, **59**, 418-427 (*biosynth*)
Clark, B. *et al., Org. Biomol. Chem.*, 2006, **4**, 1512-1519 (*isol, uv, abs config*)

Quinolactacin B Q-26



(*R*)-*form*

$C_{15}H_{16}N_2O_2$ 256.304
Abs. configs. not clear. Quinolactacin B has only one chiral centre. It appears that the *R*- config. refers to the laevorotatory enantiomer (known as Quinolactacin B1) but Shankaraiah *et al* give the opposite assignment. Opt. rotns. are small however.

(R)-form
Quinolactacin B_1
[549500-83-6]
Prod. by *Penicillium citrinum* (MST-F10130) and *Penicillium* sp. EPF-6. Powder. Mp 260-263° dec. $[\alpha]_D^{25}$ -3.3 (c, 0.15 in DMSO). λ_{max} 214 (ϵ 24800); 248 (ϵ 15650); 255 (ϵ 15600); 314 (ϵ 8500); 327 (ϵ 7850) (MeOH).

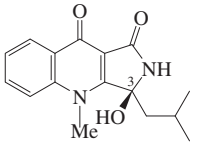
(*S*)-*form*

Quinolactacin B_2
[319917-26-5]
Prod. by *Penicillium citrinum* (MST-F10130).

Kakinuma, N. *et al., J. Antibiot.*, 2000, **53**, 1247-1251; 1252-1256 (*isol, struct*)
Tatsuta, K. *et al., J. Antibiot.*, 2001, **54**, 109-112 (*synth*)
Zhang, X. *et al., J.O.C.*, 2003, **68**, 4523-4526 (*synth*)
Clark, B. *et al., Org. Biomol. Chem.*, 2006, **4**, 1512-1519 (*isol, uv, abs config*)
Shankaraiah, N. *et al., Tet. Lett.*, 2008, **49**, 4289-4291 (*synth*)

Quinolactacin D_1 Q-27

[888728-69-6]



Absolute Configuration

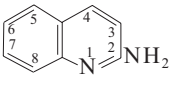
$C_{16}H_{18}N_2O_3$ 286.33
Prod. by *Penicillium citrinum* (MST-F10130). Isol. as a mixt. with D_2. λ_{max} 216 (ϵ 23100); 250 (ϵ 12600); 259 (ϵ 12100); 315 (ϵ 8200) (MeOH) (mixt. of D_1/D_2).

3-Epimer: ***Quinolactacin D_2***
[888728-68-5]
$C_{16}H_{18}N_2O_3$ 286.33
Prod. by *Penicillium citrinum* (MST-F10130). Isol. as a mixt. with D_1.

Clark, B. *et al., Org. Biomol. Chem.*, 2006, **4**, 1512-1519 (*isol, pmr, cmr, ms*)

2-Quinolinamine, 9CI Q-28

2-Aminoquinoline, 8CI. α-Aminoquinoline
[580-22-3]



$C_9H_8N_2$ 144.176
Alkaloid from the mushroom *Leucopaxillus aebissimus* var. *paradoxus* form *albiformis* (Agaricaceae). Possesses antibacterial, protease inhibitory, mutagenic, antitumour and anthelminthic activity. Cryst. (H_2O). Sol. MeOH, $CHCl_3$; poorly sol. hexane. Mp 131.5-132.5° (129°). pK_a 7.3 (20°).

▶ VA9621800

Picrate: Mp 266-267°.

Methochloride:
Cryst. + $1H_2O$. Mp 268°.

Methiodide:
Cryst. (H_2O). Mp 247°.

N-*Ac:*
$C_{11}H_{10}N_2O$ 186.213
Mp 88-90°.

N-*Ph: 2-Anilinoquinoline*
[5468-85-9]
$C_{15}H_{12}N_2$ 220.273
Cryst. (EtOH). Mp 98°.

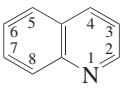
N-*Ph, 1-oxide:*
$C_{15}H_{12}N_2O$ 236.273
Mp 211-212°.

N-*Nitro: 2-Nitraminoquinoline. 2-Quinolylnitramine*
$C_9H_7N_3O_2$ 189.173
Yellow needles (AcOH). Mp 223-225°. Turns red in air.

Tschitschibabin, A.E. *et al., Ber.*, 1925, **58**, 803-807 (*synth*)
Steck, E.A. *et al., J.A.C.S.*, 1948, **70**, 3397 (*synth*)
Dymek, W. *et al., Pol. J. Chem. (Rocz. Chem.)*, 1964, **38**, 925 (*2-Anilinoquinoline*)
Kametani, T. *et al., J. Het. Chem.*, 1965, **2**, 330 (*synth*)
Cook, M.J. *et al., J.C.S. Perkin 2*, 1973, 1080 (*tautom*)
Tondys, H. *et al., J. Het. Chem.*, 1985, **22**, 353 (*synth*)
Pfister, J.R. *et al., J. Nat. Prod.*, 1988, **51**, 969 (*isol, cmr, pmr*)
Yamada, M. *et al., Bull. Chem. Soc. Jpn.*, 1991, **64**, 1821 (*uv*)
Strekowski, L. *et al., Synth. Commun.*, 1994, **24**, 2387 (*N-Ac*)
Campagnone, R.S. *et al., Synth. Commun.*, 1997, **27**, 1631-1641 (*synth, ir, pmr, cmr*)

Quinoline Q-29

1-Benzazine. 1-Azanaphthalene. FEMA 3470
[91-22-5]



C_9H_7N 129.161
Occurs in cocoa, black tea, Scotch whisky, coal tar and in 'stupp' fat. A fairly major constit. of cigarette smoke. Alkaloid from various plant spp. incl. *Mentha* spp., *Peganum harmala* and *Rubus laciniata*. Solv. for decarboxylations. Dehydrohalogenation reagent. Used for photometric detn. of Mo (λ_{max} 470 nm, ϵ 18000), gravimetric detn. of P(*V*); as a synergistic agent in extraction of Co. Flavouring ingredient. Antimalarial agent. Liq. Mod. sol. H_2O. d_4^{20} 1.09. Fp -15.6. Bp 238.05° Bp_{17} 114°. n_D^{20} 1.6268. pK_a 4.9 (20°). Hygroscopic, steam-volatile.

▶ Fl. p. 99°, autoignition temp. 480°. Often violent synth. (Skraup reaction). Skin and severe eye irritant. Contact with liquid can damage eyes. LD_{50} (rat, orl) 331 mg/kg. LD_{50} (rbt, skn) 540 mg/kg. Reported to be mutagenic and carcinogenic. VA9275000

Hydrochloride: [530-64-3]
Deliquescent prisms + ½ H_2O. Mp 94° Mp 134.5° (anhyd.).

Sulfate (2:1): [54957-90-3]
Cryst. (EtOH or AcOH). Mp 163.5-164.5°.

Picrate: [14876-03-0]
Yellow needles (C_6H_6). Mp 207-208°.

N-*Oxide:* [1613-37-2]
C_9H_7NO 145.16
Needles + $2H_2O$. Mp 62°.

▶ VC2335000

N-*Oxide, picrate:*
Cryst. Mp 143°.

Methochloride:
$C_{10}H_{10}ClN$ 179.648
Cryst. + $1H_2O$ (EtOH). Mp 126°.

Methobromide: [2516-72-5]
$C_{10}H_{10}BrN$ 224.1
Needles. Mp 70°.

Methiodide: [3947-76-0]
$C_{10}H_{10}IN$ 271.1
Orange-red cryst. (EtOH). Mp 133°.

▶ VC3955000

Ethobromide: [26670-42-8]
$C_{11}H_{12}BrN$ 238.127
Plates + $1H_2O$ (H_2O or EtOH). Mp 80°.

Ethiodide: [634-35-5]
$C_{11}H_{12}IN$ 285.127
Yellow prisms (EtOH). Mp 158°.

▶ VC3677000

N-*Benzyl:* [19801-99-1]
$C_{16}H_{14}N^{\oplus}$ 220.293
Used as a 0.8% soln. in HNO_3 for gravimetric detn. of Ce, Th. Cryst. (HNO_3) (as nitrate). Mp 73-74° (nitrate).

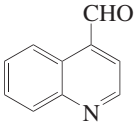
[5436-28-2 , 1701-63-9 , 27926-80-3 , 26323-01-3]

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 853A (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 421A (*nmr*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 1565A (*ir*)
Cole, W.G. *et al., J.C.S.(B)*, 1968, 1284 (*ms*)
Fieser and Fieser's Reagents for Organic Synthesis, Wiley, 1969, **2**, 356 (*use*)
Lienhard, G.E. *et al., Biochemistry*, 1970, **9**, 3011 (*uv*)
Markov, G.S. *et al., Zh. Anal. Khim.*, 1970, **25**, 278; 1971, **26**, 1215 (*N-benzyl, synth, detn, Th, Ce*)
Hideo, A. *et al., Nippon Kagaku Zasshi*, 1971, **92**, 1156; *CA*, **76**, 104508g (*detn, Co*)
Zharekeev, B.K. *et al., Khim. Prir. Soedin.*, 1974, **10**, 264-265; *Chem. Nat. Compd. (Engl. Transl.)*, 1974, **10**, 282-283 (*isol*)
Rao, V.P. *et al., Mikrochim. Acta*, 1975, 265 (*detn, Mo*)
Johns, S.R. *et al., Aust. J. Chem.*, 1976, **29**, 1617 (*cmr*)
Hirano, K. *et al., Cancer Res.*, 1976, **36**, 329-335 (*tox*)
Jones, G. *et al., Chem. Heterocycl. Compd.*, 1977, **32**, 1 (*rev*)
Kirk-Othmer Encycl. Chem. Technol., 3rd edn., Wiley, 1978, **19**, 532 (*rev*)
Attimonelli, M. *et al., Org. Magn. Reson.*, 1979, **12**, 17 (*pmr*)
Horino, H. *et al., Tet. Lett.*, 1979, 2403 (*synth*)
Boyd, D.R. *et al., Tet. Lett.*, 1991, **32**, 2963-2966 (*bibl, tox, metab*)
Encyclopaedia of Reagents for Organic Synthesis, (ed. Paquette, L.A.), Wiley, 1995, **6**, 4397-4399 (*use*)
Fenaroli's Handbook of Flavor Ingredients, 3rd edn., (ed. Burdock, G.A.), CRC Press, 1995, **II**, 714 (*occur, use*)
Asseline, U. *et al., Org. Biomol. Chem.*, 2006, **4**, 1949-1957 (*methiodide*)
Kalinin, A.I. *et al., CA*, **80**, 127816c (*detn, P*)
Bretherick, L. *et al., Handbook of Reactive Chemical Hazards, 4th edn., Butterworths*, 1990, 2923
Luxon, S.G. *et al., Hazards in the Chemical Laboratory, 5th edn., Royal Society of Chemistry*, 1992, 1091

Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, QMJ000

4-Quinolinecarboxaldehyde, 9CI Q-30

4-Formylquinoline. Cinchoninaldehyde
[4363-93-3]



$C_{10}H_7NO$ 157.171
Alkaloid prod. by *Archangium gephyra*. Orange needles, plates + $1H_2O$. Sol. H_2O, EtOH, Et_2O, toluene. Mp 51-53° (monohydrate 84-84.5°). Bp_4 122-123°.

Picrate:
Cryst. (EtOH). Mp 179° (sinters at 170°).

Oxime: [39977-74-7]
$C_{10}H_8N_2O$ 172.186
Alkaloid prod. by *Archangium gephyra*. Needles (MeOH). Mp 181-182°.

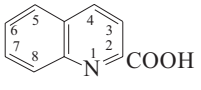
Phenylhydrazone:
Yellow cryst. Mp 175-176°.

Semicarbazone: Mp 244-245° dec.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 869A (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 446C (*nmr*)
Clemo, G.R. *et al., J.C.S.*, 1939, 1241-1244 (*synth*)
Schultz, O.E. *et al., Annalen*, 1970, **740**, 192-195 (*synth*)
Forbis, R.M. *et al., J.A.C.S.*, 1973, **95**, 5003-5013 (*synth*)
Rodriguez, J.G. *et al., J. Het. Chem.*, 1988, **25**, 819-821 (*synth*)
Böhlendorf, B. *et al., Annalen*, 1996, 49-53 (*pmr, ms*)

2-Quinolinecarboxylic acid, 9CI Q-31

Quinaldic acid. Quinaldinic acid
[93-10-7]



$C_{10}H_7NO_2$ 173.171
Used for gravimetric detn. of Cd, Cu, Zn, Te. Needles + $2H_2O$ (H_2O). Sol. hot H_2O, C_6H_6; mod. sol. cold H_2O. Mp 157° (anhyd.). pK_{a1} 1.45; pK_{a2} 4.91 (25°, 0.1*M* $NaClO_4$). Heat → quinoline.

▶ UZ9100000

N-*Me, zwitterion: 2-Carboxy-1-methylisoquinolinium hydroxide inner salt, 9CI. 2-Carboxy-1-methylquinolinium betaine.* **N-*Methylquinaldic acid***
[27104-82-1]
$C_{11}H_9NO_2$ 187.198
Alkaloid from the firefly *Photuris versicolor*. Defensive agent. Mp 110° dec. (natural) Mp 166-171° dec. (synthetic). λ_{max} 235 (log ϵ 4.35); 320 (sh) (log ϵ 3.97); 326 (log ϵ 3.99) (MeOH).

Quast, H. *et al., Annalen*, 1970, **732**, 64-69 (*synth, N-Me*)
Gonzalez, A. *et al., J. Nat. Prod.*, 1999, **62**, 378-380 (*N-Me, isol, spectra*)

4-Quinolinecarboxylic acid, 9CI, 8CI Q-32

Cinchoninic acid
[486-74-8]
$C_{10}H_7NO_2$ 173.171
Metab. of *Archangium gephyra*. Needles + 1 or $2H_2O$. Insol. Et_2O; spar. sol. H_2O, EtOH. Mp 253-254°. Possible artifact.

▶ GD3850000

Methochloride:
Prisms (H_2O). Mp 243° dec.

Methobromide: [17323-98-7]
Needles (H_2O). Mp 262°.

Methiodide:
Orange-red needles (EtOH). Mp 224° dec.

Me ester: [21233-61-4]
$C_{11}H_9NO_2$ 187.198
Mp 24°.

Et ester: [10447-29-7]
$C_{12}H_{11}NO_2$ 201.224
Mp 13°. Bp_{15} 173°.

Chloride: [50821-72-2]
$C_{10}H_6ClNO$ 191.616
Yellow needles. Mp 68°. Bp_{12} 148°.

Amide: [4363-95-5]
$C_{10}H_8N_2O$ 172.186
Needles. Sol. hot H_2O, hot EtOH. Mp 181°.

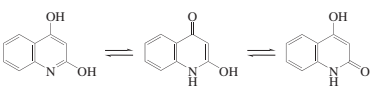
Nitrile: 4-Cyanoquinoline. Cinchoninonitrile
[2973-27-5]
$C_{10}H_6N_2$ 154.171
Mp 102°. Steam-volatile.

N-*Oxide:* [40614-43-5]
$C_{10}H_7NO_3$ 189.17
Prisms (AcOH). Mp 256° dec.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 869D (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 447C (*nmr*)
Elderfield, R.C. *et al., J.A.C.S.*, 1951, **73**, 5622 (*synth*)
Schultz, O.-E. *et al., Annalen*, 1970, **740**, 192 (*synth*)
Zalis, B. *et al., Talanta*, 1973, **20**, 33 (*uv*)
Böhlendorf, B. *et al., Annalen*, 1996, 49-53 (*isol, pmr, cmr, ms*)
Dobson, A.J. *et al., Acta Cryst. C*, 1998, **54**, 1883-1885; 1999, **55**, 935-937 (*cryst struct*)

2,4-Quinolinediol Q-33

*4-Hydroxy-2(1*H*)-quinolinone, 9CI. 4-Hydroxycarbostyril, 8CI. 2,4-Dihydroxyquinoline. 2-Hydroxy-4(1*H*)-quinolinone*
[70254-43-2]
[52851-41-9]



$C_9H_7NO_2$ 161.16
4-One-form predominates. Mp 300°. pK_{a1} 0.76; pK_{a2} 5.9 (20°).

2-One-*form* [86-95-3]

▶ VB7877500

*4-Ac: 4-Acetoxy-2(1*H*)-quinolinone*
$C_{11}H_9NO_3$ 203.197
Needles. Mp 214-216°.

4-Benzoyl:
$C_{16}H_{11}NO_3$ 265.268
Needles (C_6H_6). Mp 220°.

N-*Me:* [1677-46-9]
$C_{10}H_9NO_2$ 175.187
Mp 274-275°.

N-*Me,* O*4-benzoyl:*
$C_{17}H_{13}NO_3$ 279.295
Cryst. (EtOH). Mp 173-174°.

N-*Benzyl,* O*4-benzoyl:*
$C_{23}H_{17}NO_3$ 355.392
Cryst. (EtOH). Mp 150-152°.

N-*Ph:* [14994-75-3]
$C_{15}H_{11}NO_2$ 237.257
Light yellow cryst. (EtOH aq.). Mp 291°.

N-*Ph,* O*4-benzoyl:* [685895-32-3]
$C_{22}H_{15}NO_3$ 341.365
Yellow prisms (EtOH). Mp 150-151°.

*4-Me ether: 2-Hydroxy-4-methoxyquinoline. 4-Methoxy-2(1*H*)-quinolinone*
[27667-34-1]
$C_{10}H_9NO_2$ 175.187
Alkaloid from *Haplophyllum bungei*. Cryst. (hexane). Mp 254-255°.

Me ether, N-*Me:* ***4-Methoxy-1-methyl-2(1*H*)-quinolinone, 9CI***
[32262-18-3]
$C_{11}H_{11}NO_2$ 189.213
Alkaloid from *Evodia lunu-ankenda*, *Xanthoxylum inerme*, *Hesperethusa crenulata* (preferred genus name *Naringi*), *Fagara boninensis*, *Hortia longifolia*, *Myrtopsis sellingii*, *Zanthoxylum decaryi*, *Adiscanthus fusciflorus*, and others (Rutaceae). Cryst. (C_6H_6/petrol). Sol. MeOH, C_6H_6; poorly sol. H_2O. Mp 100-100.5° Mp 68-69° (hydrate). λ_{max} 229 (ϵ 48000); 269 (ϵ 5120); 278 (ϵ 5130); 318 (ϵ 4470) (EtOH) (Berdy).

4-Me ether, N-*methoxy: 1,4-Dimethoxy-2(1*H*)-quinolinone, 9CI.* ***Haplotusine***
[27667-33-0]
$C_{11}H_{11}NO_3$ 205.213
Alkaloid from the aerial parts of *Haplophyllum obtusifolium*. Mp 118-119°.

4-One-*form* [70254-44-3]

2-Me ether, N-*Me: 2-Methoxy-1-methyl-4(1*H*)-quinolinone*
$C_{11}H_{11}NO_2$ 189.213
Mp 195°.

*2-Et ether: 2-Ethoxy-4-hydroxyquinoline. 2-Ethoxy-4(1*H*)-quinolinone*
$C_{11}H_{11}NO_2$ 189.213
Mp 228°.

Diol-*form*

Di-Me ether: 2,4-Dimethoxyquinoline. ***Montrutanine****. Montanine*†
[40335-00-0]
$C_{11}H_{11}NO_2$ 189.213
Alkaloid from the fruit of *Evodia hupehensis* and the aerial parts of *Ruta montana* (Rutaceae). Cryst. (MeOH). Mp 82°. Doubts have been expressed

by Osborne *et al* as to the veracity of this struct.

Di-Et ether: 2,4-Diethoxyquinoline
[57839-56-2]
$C_{13}H_{15}NO_2$ 217.267
Cryst. (EtOH) (as picrate). Mp 55-56° (EtOH aq.) Mp 192-193° (picrate).

[4510-76-3]

Aldrich Library of NMR Spectra, 2nd edn., 1983, **2**, 736D (*nmr*)
Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 859A (*ir*)
Arndt, F. *et al., Chem. Ind. (London)*, 1950, 465 (*Me ethers*)
Ziegler, E. *et al., Monatsh. Chem.*, 1965, **96**, 418 (*synth*)
Paul, B.D. *et al., J. Indian Chem. Soc.*, 1968, **45**, 552-553 (*N-Me*)
Omori, A. *et al., Bull. Chem. Soc. Jpn.*, 1970, **43**, 1135-1138 (*synth*)
Nayar, M.N.S. *et al., Phytochemistry*, 1971, **10**, 2843 (*4-Methoxy-1-methylquinolinone*)
Razakova, D.M. *et al., Khim. Prir. Soedin.*, 1984, **20**, 635; *Chem. Nat. Compd. (Engl. Transl.)*, 1984, **20**, 599 (*Haplotusine*)
Reisch, J. *et al., Pharmazie*, 1985, **40**, 812-814 (*di-Me ether, isol*)
Ulubelen, A. *et al., J. Nat. Prod.*, 1990, **53**, 207 (*Montrutanine*)
Osborne, A.G. *et al., J. Nat. Prod.*, 1992, **55**, 589-595 (*di-Me ether, di-Et ether, pmr, cmr*)
Kappe, T. *et al., J. Het. Chem.*, 1996, **33**, 663-670 (O^4*-benzoyl derivs*)
Jung, J.-C. *et al., Synth. Commun.*, 2001, **31**, 1195-1200 (*synth, ir, pmr, cmr*)
Jones, K. *et al., Org. Biomol. Chem.*, 2003, **1**, 4380-4383 (*4-Me ether, 2,4-di-Me ether, synth, ir, pmr, cmr*)
Stadlbauer, W. *et al., J. Het. Chem.*, 2004, **41**, 681-690 (*N-Ph* O^4*-benzoyl*)
Nadaraj, V. *et al., ARKIVOC*, 2006, **x**, 82-89 (*synth, 4-Me ether N-Me*)
Sheibani, H. *et al., Synthesis*, 2006, 435-438 (*N-Ph*)
Ambrozin, A.R.P. *et al., Quim. Nova*, 2008, **31**, 740-743 (*Haplotusine*)
Selig, P. *et al., Synthesis*, 2008, 2177-2182 (*4-Ac*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, QNA000

3,8-Quinolinediol Q-34

3,8-Dihydroxyquinoline. ***Jineol***
[178762-28-2]
$C_9H_7NO_2$ 161.16
Alkaloid from the centipede *Scolopendra subspinipes*. Exhibits modest cytotoxicity *in vitro* against the growth of several human tumour cell lines. Orange amorph. solid. Mp 139-141°. λ_{max} 254 ; 267 (MeOH).

Di-Ac:
$C_{13}H_{11}NO_4$ 245.234
Mp 101-102°.

Moon, S.-S. *et al., J. Nat. Prod.*, 1996, **59**, 777-779 (*isol, uv, ir, pmr, cmr, ms, struct*)

4,8-Quinolinediol Q-35

*8-Hydroxy-4(1*H*)-quinolinone, 9CI. 4,8-Dihydroxyquinoline*
[53846-46-1]
$C_9H_7NO_2$ 161.16
Alkaloid from octopus ink (*Octopus dofleini martini*) and the urine of silkworm pupae. Cryst. (CH_2Cl_2). Mp 305-308° dec.

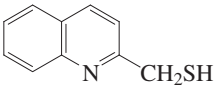
Hydrochloride:
Needles + $^1/_2H_2O$ (Me_2CO/EtOH). Mp 295-298° dec.

8-(4-Methylbenzenesulfonyl): [18996-01-5]
$C_{16}H_{13}NO_4S$ 315.349
Cryst. (EtOH). Mp 237°.

Inagami, K. *et al., CA*, 1956, **50**, 8077a (*isol*)
Matsuura, Y. *et al., CA*, 1959, **53**, 8373b (*synth*)
Siuda, J.F. *et al., J. Nat. Prod.*, 1974, **37**, 501-503 (*isol, synth, pmr*)
Grandjean, D. *et al., Bull. Soc. Chim. Fr.*, 1989, 657-660 (*synth, pmr*)
Heiskanen, J.P. *et al., J.O.C.*, 2007, **72**, 920-922 (*synth, tosyl*)

2-Quinolinemethanethiol, 9CI Q-36

2-(Thiomethyl)quinoline. 2-(Mercaptomethyl)quinoline
[83492-32-4]



$C_{10}H_9NS$ 175.254
Constit. of the defensive secretions of the skunks *Conepatus mesoleucus*, *Mephitis mephitis* and *Spilogale putorius*. Prisms (EtOH/petrol) (as hydrobromide). Mp 150-151° dec. (hydrobromide).

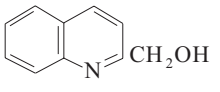
S-*Ac:* S-*(2-Quinolinylmethyl) thioacetate. 2-(Acetylthiomethyl)quinoline*
[129120-37-2]
$C_{12}H_{11}NOS$ 217.291
Isol. from the anal sac of *Mephitis mephitis*.

[99409-21-9 , 83492-33-5 , 83492-25-5]

Yousif, M.M. *et al., Chem. Pharm. Bull.*, 1982, **30**, 1974-1979 (*synth*)
Sturis, A. *et al., CA*, 1986, **104**, 33980p (*synth*)
Wood, W.F. *et al., J. Chem. Ecol.*, 1990, **16**, 2057-2065; 1991, **17**, 1415-1420; 1993, **19**, 837-841 (*occur*)

2-Quinolinemethanol, 9CI Q-37

2-(Hydroxymethyl)quinoline. α-Hydroxyquinaldine. α-Quinolylcarbinol. α-Quinaldinol. Antibiotic PO 1227B. PO 1227B
[1780-17-2]



$C_{10}H_9NO$ 159.187
Prod. by *Kitasatoa griseophaeus*. Exhibits hypoglycaemic activity. Needles (EtOH or petrol). Mp 66-67° (64°). Bp 145-160°. Steam-volatile. λ_{max} 230 (ε 47700); 233 (ε 44500); 277 (ε 4000); 284 (ε 3800); 290 (ε 3700); 296 (ε 3300); 303 (ε 4000) (MeOH) (Berdy).

Ac: 2-(Acetoxymethyl)quinoline. α-Acetoxyquinaldine. Quinaldyl acetate. Antibiotic PO 1227A. PO 1227A
[60483-07-0]
$C_{12}H_{11}NO_2$ 201.224
Prod. by *Kitasatoa griseophaeus* PO-1227. Cryst. (hexane).

Benzoyl:
$C_{17}H_{13}NO_2$ 263.295
Mp 52-53°.

Hammick, D.L. *et al., J.C.S.*, 1926, 1302-1304 (*synth*)
Kaslow, C.E. *et al., J.O.C.*, 1953, **18**, 55-58 (*synth*)
Kato, T. *et al., Yakugaku Zasshi*, 1962, **82**, 1649-1652; *CA*, **59**, 2765 (*synth*)
Omura, S. *et al., J. Antibiot.*, 1976, **29**, 797-803 (*isol*)

4-Quinolinemethanol, 9CI Q-38

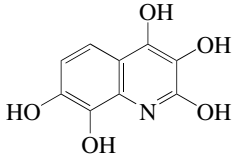
4-(Hydroxymethyl)quinoline
[6281-32-9]
$C_{10}H_9NO$ 159.187
Alkaloid from the fungi *Polyporus sanguineus* and *Polyporus versicolor*. Cryst. (MeOH). Mp 96-97° (92° dec.).

Ac: [35982-82-2]
$C_{12}H_{11}NO_2$ 201.224
Mp 55-57°.

Palmer, M.H. *et al., Tet. Lett.*, 1968, 2147 (*synth*)
Forbis, R.M. *et al., J.A.C.S.*, 1973, **95**, 5003 (*synth*)
Takadate, A. *et al., Synthesis*, 1983, 806 (*synth, ir, pmr*)
Abraham, W.-R. *et al., Phytochemistry*, 1991, **30**, 371 (*isol*)
Wender, P.A. *et al., Synthesis*, 1994, 1278 (*synth, ir, pmr, cmr*)
Böhlendorf, B. *et al., Annalen*, 1996, 49 (*isol, ir, pmr, cmr, ms*)
Mikolajczyk, M. *et al., J.O.C.*, 2006, **71**, 8818-8823 (*synth*)

2,3,4,7,8-Quinolinepentol Q-39

*2,3,4,7,8-Pentahydroxyquinoline. 3,4,7,8-Tetrahydroxy-2(1*H*)-quinolinone*



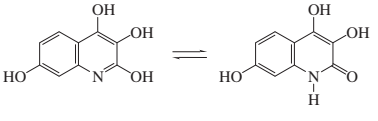
$C_9H_7NO_5$ 209.158

2,3-Methylene, 4,7,8-tri-Me ether: 4,7,8-Trimethoxy-2,3-methylenedioxyquinoline
[200337-59-3]
$C_{13}H_{13}NO_5$ 263.249
Alkaloid from the leaves of *Acanthosyris paulo-alvinii* (Santalaceae). Needles. Mp 112-114°. λ_{max} 243 (log ε 4.01); 272 (log ε 3.33) (no solvent reported).

Chavez, J.P. *et al., Phytochemistry*, 1997, **46**, 967-968 (*isol, uv, ir, pmr, cmr, ms*)

2,3,4,7-Quinolinetetrol Q-40

*3,4,7-Trihydroxy-2(1*H*)-quinolinone. 2,3,4,7-Tetrahydroxyquinoline*



$C_9H_7NO_4$ 193.159

2,3-Methylene, 4,7-di-Me ether: ***4,7-Di-***

methoxy-2,3-methylenedioxyquinoline
$C_{12}H_{11}NO_4$ 233.223
Alkaloid from the roots of *Acronychia laurifolia*. Plates (MeOH). Mp 176-178°. λ_{max} 242 (log ϵ 1.5); 255 (log ϵ 2.8); 308 (log ϵ 3.5); 335 (log ϵ 3.8) (MeOH).

Cui, B. *et al., Phytochemistry*, 1999, **52**, 95-98 (*isol, uv, ir, pmr, cmr, ms*)

2,3,4,8-Quinolinetetrol Q-41

*3,4,8-Trihydroxy-2(1*H*)-quinolinone. 2,3,4,8-Tetrahydroxyquinoline*

$C_9H_7NO_4$ 193.159

NH-form

3,4,8-Tri-Me ether: ***3,4,8-Trimethoxy-2(1*H*)-quinolinone***
[164163-88-6]
$C_{12}H_{13}NO_4$ 235.239
Alkaloid from aerial parts of *Erioste-mon gardneri* (Rutaceae). Amorph. solid.

N,O^3,O^8*-Tri-Me: 4-Hydroxy-3,8-di-methoxy-1-methyl-2(1*H*)-quinolinone.* ***Swietenidin A***
[64595-74-0]
$C_{12}H_{13}NO_4$ 235.239
Alkaloid from the bark of *Chloroxylon swietenia* (Flindersiaceae). Cryst. (EtOAc). Mp 164-166° (158-159°).

Bhide, K.S. *et al., Indian J. Chem., Sect. B*, 1977, **15**, 440 (*isol, uv, ir, pmr, struct, Swietenidin A*)
Coppola, G.M. *et al., J. Het. Chem.*, 1985, **22**, 1087 (*synth, ir, pmr, cmr, Swietenidin A*)
Sarkar, S.D. *et al., J. Nat. Prod.*, 1995, **58**, 574 (*isol, uv, ir, pmr, cmr, ms, struct, deriv*)
Fischer, M. *et al., Sci. Pharm.*, 1996, **64**, 353 (*synth, tri-Me ether*)

2,4,6,8-Quinolinetetrol Q-42

*4,6,8-Trihydroxy-2(1*H*)-quinolinone, 9CI. 2,4,6,8-Tetrahydroxyquinoline*

$C_9H_7NO_4$ 193.159

*6,8-Di-Me ether: 6,8-Dimethoxy-2,4-di-hydroxyquinoline. 4-Hydroxy-6,8-di-methoxy-2(1*H*)-quinolinone. 6,8-Dimethoxy-2,4-quinolinediol*
[39022-15-6]
$C_{11}H_{11}NO_4$ 221.212
Mp 290°.

*4,6,8-Tri-Me ether: 4,6,8-Trimethoxy-2(1*H*)-quinolinone. 2-Hydroxy-4,6,8-trimethoxyquinoline.* ***Halfordamine***
[21144-33-2]
$C_{12}H_{13}NO_4$ 235.239
Alkaloid from *Halfordia scleroxyla* (Rutaceae). Cryst. (C_6H_6/petrol). Mp 240-241°.

*4,6,8-Tri-Me ether, N-Me: 4,6,8-Tri-methoxy-1-methyl-2(1*H*)-quinolinone*
[38989-33-2]
$C_{13}H_{15}NO_4$ 249.266
Mp 163°.

Crow, W.D. *et al., Aust. J. Chem.*, 1968, **21**, 3075 (*isol, uv, ir, pmr, ms*)
Storer, R. *et al., Tetrahedron*, 1973, **29**, 1215 (*synth, uv, ir, pmr, struct*)
Venturella, P. *et al., Gazz. Chim. Ital.*, 1974, **104**, 297 (*synth, uv, ir, pmr, struct*)
Mali, R.S. *et al., Indian J. Chem., Sect. B*, 1977, **15**, 865 (*synth*)
Nadaraj, V. *et al., ARKIVOC*, 2006, **x**, 82-89 (*6,8-di-Me ether, 4,6,8-tri-Me ether N-Me*)

2,4,7,8-Quinolinetetrol, 9CI Q-43

*4,7,8-Trihydroxy-2(1*H*)-quinolinone. 2,4,7,8-Tetrahydroxyquinoline*

$C_9H_7NO_4$ 193.159

*7,8-Di-Me ether: 2,4-Dihydroxy-7,8-di-methoxyquinoline. 7,8-Dimethoxy-2,4-quinolinediol. 7,8-Dimethoxy-4-hydro-xy-2(1*H*)-quinolinone*
[43215-49-2]
$C_{11}H_{11}NO_4$ 221.212
Mp 246°.

*4,7,8-Tri-Me ether: 4,7,8-Trimethoxy-2(1*H*)-quinolinone. 2-Hydroxy-4,7,8-trimethoxyquinoline.* ***Haplobungine***
[121949-99-3]
$C_{12}H_{13}NO_4$ 235.239
Alkaloid from aerial parts of flowering *Haplophyllum bungei* (Rutaceae). Mp 174-175°.

NH-form

4,7,8-Tri-Me, N*-Me:* ***4,7,8-Trimethoxy-1-methyl-2(1*H*)-quinolinone***
[43215-43-6]
$C_{13}H_{15}NO_4$ 249.266
Minor alkaloid from the roots and stems of *Spathelia sorbifolia* (Rutaceae). Cryst. (petrol). Mp 143-148°.

Storer, R. *et al., Tetrahedron*, 1973, **29**, 1721 (*Trimethoxymethylquinolinone*)
Bessonova, I.A. *et al., Khim. Prir. Soedin.*, 1989, **25**, 23; *Chem. Nat. Compd. (Engl. Transl.)*, 1989, **25**, 18 (*Haplobungine*)
Nadaraj, V. *et al., ARKIVOC*, 2006, **x**, 82-89 (*7,8-di-Me ether, tri-Me ether N-Me*)

3,4,5,8-Quinolinetetrol Q-44

*3,5,8-Trihydroxy-4(1*H*)-quinolinone, 9CI. 3,4,5,8-Tetrahydroxyquinoline.* ***Uranidine***
[92264-09-0]
$C_9H_7NO_4$ 193.159
Yellow zoochrome of the sponge *Verongia aerophoba*. Also from *Tylodina perversa*. HIV reverse transcriptase (HIV-rt) inhibitor. Very unstable; rapidly turns blue, then purple, and finally black on exposure to air. λ_{max} 240 (ϵ 15000); 321 (ϵ 2600); 368 (ϵ 2900) (pH 1 H_2O) (Derep). λ_{max} 236 (ϵ 14700); 315 (ϵ 2900); 604 (ϵ 3000); 641 (ϵ 3100) (pH 13 H_2O) (Derep). λ_{max} 239 (ϵ 15000); 319 (ϵ 2600); 365 (ϵ 2900) (H_2O pH 7) (Derep).

Cimino, G. *et al., Tet. Lett.*, 1984, **25**, 2925-2928 (*isol, uv, pmr, cmr*)
Loya, S. *et al., Arch. Biochem. Biophys.*, 1994, **309**, 315-322 (*activity*)

2,3,4-Quinolinetriol, 9CI Q-45

*3,4-Dihydroxy-2(1*H*)-quinolinone. 2,3,4-Trihydroxyquinoline*



$C_9H_7NO_3$ 177.159

*3,4-Di-Me ether: 3,4-Dimethoxy-2(1*H*)-quinolinone. 2-Hydroxy-3,4-dimethoxy-quinoline.* ***Swietenidin B***
[2721-56-4]
$C_{11}H_{11}NO_3$ 205.213
Alkaloid from the bark of *Chloroxylon swietenia* (Flindersiaceae). Needles (C_6H_6/Me_2CO or EtOAc). Mp 182°.

NH-form

3,4-Di-Me ether, N*-Me: 3,4-Dimethoxy-1-methyl-2(1*H*)-quinolinone, 9CI.* ***N-Methylswietenidin B***
[123497-83-6]
$C_{12}H_{13}NO_3$ 219.24
Alkaloid from combined stem bark and root extracts of *Clausena anisata* (Rutaceae). Plates (CH_2Cl_2). Mp 74-75°.

Ziegler, E. *et al., Monatsh. Chem.*, 1965, **96**, 889 (*synth*)
Bhide, K.S. *et al., Indian J. Chem., Sect. B*, 1977, **15**, 440 (*Swietenidin B*)
Ngadjui, B.T. *et al., Phytochemistry*, 1989, **28**, 1517 (*N-Methylswietenidin B*)

2,4,6-Quinolinetriol Q-46

*4,6-Dihydroxy-2(1*H*)-quinolinone. 2,4,6-Trihydroxyquinoline*

$C_9H_7NO_3$ 177.159

*6-Me ether: 2,4-Dihydroxy-6-methoxyqui-noline. 6-Methoxy-2,4-quinolinediol. 4-Hydroxy-6-methoxy-2(1*H*)-quinoli-none*
[14300-45-9]
$C_{10}H_9NO_3$ 191.186
Mp 300°.

NH-form

4-Me ether, N*-Me: 6-Hydroxy-4-meth-oxy-1-methyl-2(1*H*)-quinolinone, 9CI.* ***Integriquinolone***
[81943-13-7]
$C_{11}H_{11}NO_3$ 205.213
Alkaloid from roots of *Zanthoxylum integrifoliolum* (Rutaceae). Needles (MeOH). Mp 257-260°.

4,6-Di-Me ether, N*-Me:* ***4,6-Dimethoxy-1-methyl-2(1*H*)-quinolinone, 9CI***
[52345-94-5]
$C_{12}H_{13}NO_3$ 219.24
Alkaloid from aerial parts of an *Agathosma* sp. (Rutaceae). Needles (C_6H_6/petrol). Mp 143-144°.

Ishii, H. *et al., Chem. Pharm. Bull.*, 1982, **30**, 1992 (*uv, ir, pmr, struct, Integriquinolone*)
Campbell, W.E. *et al., Phytochemistry*, 1990, **29**, 1303 (*isol, uv, ir, pmr, cmr, ms*)
Nadaraj, V. *et al., ARKIVOC*, 2006, **x**, 82-89 (*6-Me ether, 4,6-di-Me ether N-Me*)

2,4,8-Quinolinetriol Q-47

*2,4,8-Trihydroxyquinoline. 4,8-Dihydroxy-2(1*H*)-quinolinone*

$C_9H_7NO_3$ 177.159

Other tautomers possible.

*8-Me ether: 2,4-Dihydroxy-8-methoxyqui-noline. 8-Methoxy-2,4-quinolinediol. 4-Hydroxy-8-methoxy-2(1*H*)-quinoli-none*
[7224-68-2]

$C_{10}H_9NO_3$ 191.186
Mp 248°.

*4,8-Di-Me ether: 4,8-Dimethoxy-2(1*H*)-quinolinone.* ***Edulitine****. Robustinine*
[15272-24-9]
$C_{11}H_{11}NO_3$ 205.213
Alkaloid from bark of *Casimiroa edulis* (Mexican apple) (Rutaceae). Needles (EtOAc). Mp 235-236°.

4,8-Di-Me ether, picrate:
Yellow cryst. (MeOH). Mp 189-191°.

NH-form

O^4*-Me, 8*-O-*β-D-glucopyranoside:*
$C_{16}H_{19}NO_8$ 353.328
Alkaloid from the aerial parts of *Echinops gmelinii*. Needles (MeOH). Mp 242° dec. $[\alpha]_D^{20}$ -4.3 (c, 0.23 in Py).

O^4,N-*Di-Me: 8-Hydroxy-4-methoxy-1-methyl-2(1*H*)-quinolinone.* ***Folifidine***
[3148-23-0]
$C_{11}H_{11}NO_3$ 205.213
Alkaloid from *Haplophyllum foliosum* (Rutaceae). Cryst. (EtOH). Mp 226-227°.

O^4,N-*Di-Me; hydrochloride:*
Cryst. (EtOH). Mp 232° dec.

O^4,N-*Di-Me, picrate:*
Cryst. (EtOH). Mp 218°.

O^4,N-*Di-Me, 8*-O-*β-D-glucopyranoside:*
$C_{17}H_{21}NO_8$ 367.355
Alkaloid from the aerial parts of *Echinops gmelinii*. Needles (MeOH). Mp > 300°. $[\alpha]_D^{20}$ -20.4 (c, 0.54 in Py).

O^4,O^8,N-*Tri-Me: 4,8-Dimethoxy-1-methyl-2(1*H*)-quinolinone.* ***Folimine***
[3148-24-1]
$C_{12}H_{13}NO_3$ 219.24
Alkaloid from *Haplophyllum foliosum* and *Haplophyllum perforatum* (Rutaceae). Mp 139-140°.

O^4,O^8,N-*Tri-Me; hydrochloride:* Mp 171-172°.

O^4,O^8,N-*Tri-Me, picrate:* Mp 193-194°.

*8-*O*-(3-Methyl-2-butenyl),* O^4,N-*di-Me: 4-Methoxy-1-methyl-8-[(3-methyl-2-butenyl)oxy]-2(1*H*)-quinolinone. 4-Methoxy-1-methyl-8-prenyloxyquinolone.* ***Daurine***
[54357-79-8]
$C_{16}H_{19}NO_3$ 273.331
Alkaloid from roots of *Haplophyllum dauricum* (Rutaceae). Needles (CH_2Cl_2/petrol). Mp 118-119°.

Iriarte, J. *et al., J.C.S.*, 1956, 4170 (*Edulitine, isol, uv, ir*)
Faizutdinova, Z.Sh. *et al., Khim. Prir. Soedin.*, 1967, **3**, 257; *Chem. Nat. Compd. (Engl. Transl.)*, 1967, **3**, 215 (*Folifidine*)
Toube, T.P. *et al., Tetrahedron*, 1967, **23**, 2061 (*Edulitine, pmr, ms*)
Narasimhan, N.S. *et al., Tetrahedron*, 1971, **27**, 1351 (*synth*)
Razzakova, I.A. *et al., Khim. Prir. Soedin.*, 1972, **8**, 133; *Chem. Nat. Compd. (Engl. Transl.)*, 1972, **8**, 139 (*Folimine*)
Bessonova, I.A. *et al., Khim. Prir. Soedin.*, 1983, **19**, 116; 1984, **20**, 73; *Chem. Nat. Compd. (Engl. Transl.)*, 1983, **19**, 117; 1984, **20**, 68 (*Daurine*)
Reisch, J. *et al., Monatsh. Chem.*, 1988, **119**, 1169 (*Daurine, synth, pmr, ms*)
Su, Y.-F. *et al., J. Asian Nat. Prod. Res.*, 2004, **6**, 223-227 (*Echinops gmelinii glucosides*)
Nadaraj, V. *et al., ARKIVOC*, 2006, **x**, 82-89 (*8-Me ether, folimine*)

4,7,8-Quinolinetriol Q-48

*4,7,8-Trihydroxyquinoline. 7,8-Dihydroxy-4(1*H*)-quinolinone*

$C_9H_7NO_3$ 177.159

*8-Me ether: 4,7-Dihydroxy-8-methoxyquinoline. 8-Methoxy-4,7-quinolinediol. 7-Hydroxy-8-methoxy-4(1*H*)-quinolinone*
[98267-21-1]
$C_{10}H_9NO_3$ 191.186
Isol. from the soft corals *Sinularia polydactyla* and *Sinularia microclavate*. Cardiovascular agent.

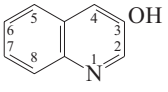
*7,8-Di-Me ether: 4-Hydroxy-7,8-dimethoxyquinoline. 7,8-Dimethoxy-4(1*H*)-quinolinone. 7,8-Dimethoxy-4-quinolinol*
[99878-76-9]
$C_{11}H_{11}NO_3$ 205.213
Cryst. (EtOAc/MeOH). Mp 187-190°.

[108915-16-8]

Long, K. *et al., CA*, 1985, **103**, 128867; 1990, **112**, 118619; 1991, **115**, 71358 (*synth, isol, pharmacol*)
Kelly, T.R. *et al., Tetrahedron*, 1985, **41**, 3033 (*deriv*)
Huang, S. *et al., Jiegou Huaxue*, 1986, **5**, 1; *CA*, **107**, 39495 (*cryst struct*)

3-Quinolinol, 9CI Q-49

3-Hydroxyquinoline
[580-18-7]



C_9H_7NO 145.16
Alkaloid from aerial parts of *Ruta montana*. Cryst. (MeOH). Mp 201-202°. pK_{a1} 4.28; pK_{a2} 8.08 (20°).

▶ VC4050000

N-*Oxide:*
$C_9H_7NO_2$ 161.16
Solid (EtOH/$CHCl_3$). Mp 218°.

O-*Ac:*
$C_{11}H_9NO_2$ 187.198
Needles (petrol). Mp 37.5°.

Me ether: 3-Methoxyquinoline
[6931-17-5]
$C_{10}H_9NO$ 159.187
Pale brown oil. Mp 222° (as picrate).

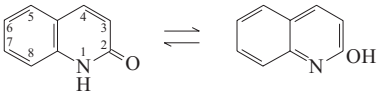
Et ether: 3-Ethoxyquinoline
$C_{11}H_{11}NO$ 173.214
Mp 224-228° (as picrate).

[1321-40-0]

Org. Synth., 1960, **40**, 54 (*synth*)
Kaneko, C. *et al., Chem. Pharm. Bull.*, 1967, **15**, 663 (*synth, uv*)
Naumann, C. *et al., Synthesis*, 1990, 279 (*synth, ir, pmr*)
Ulubelen, A. *et al., Fitoterapia*, 1991, **62**, 279 (*isol, pmr, ms*)
Bergeron, R.J. *et al., J. Med. Chem.*, 1999, **42**, 95-108 (*synth, oxide, pmr*)

2(1*H*)-Quinolinone, 9CI Q-50

Carbostyril, 8CI. 2-Hydroxyquinoline. 2-Quinolinol
[59-31-4]



C_9H_7NO 145.16
NH-Tautomer predominates. Cryst. + $1H_2O$. Mp 199-200° (anhyd.). pK_{a1} -0.31; pK_{a2} 11.74.
▶ LD_{50} (mus, ipr) 150 mg/kg. FG7175000

NH-form

N-*Me:* ***1-Methyl-2(1*H*)-quinolinone***
[606-43-9]
$C_{10}H_9NO$ 159.187
Alkaloid from the bark of *Galipea officinalis*. Needles (petrol). Mp 74°.

N-*Et:* [53761-50-5]
$C_{11}H_{11}NO$ 173.214
Mp 54°. Bp 316-318°.

N-*Ph:* [67176-94-7]
$C_{15}H_{11}NO$ 221.258
Needles (EtOH aq.). Mp 138°.

1-Amino: [26539-38-8]
$C_9H_8N_2O$ 160.175
Plates (EtOH). Mp 107-108°.

OH-form [70254-42-1]

Me ether: 2-Methoxyquinoline
$C_{10}H_9NO$ 159.187
Bp 246-247°.

Me ether, N-*oxide:*
$C_{10}H_9NO_2$ 175.187
Mp 70-72°.

Et ether: 2-Ethoxyquinoline
$C_{11}H_{11}NO$ 173.214
Bp 266°.

Et ether, N-*oxide:*
$C_{11}H_{11}NO_2$ 189.213
Mp 75-77°.

[1321-40-0]

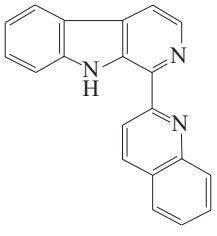
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 431C (*nmr*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 1570A (*ir*)
Bamberger, E. *et al., Ber.*, 1894, **27**, 203
Dieckmann, W. *et al., Ber.*, 1908, **41**, 3268
Chichibabin, A.E. *et al., CA*, 1925, **19**, 1572 (*synth*)
Effenberger, F. *et al., Angew. Chem.*, 1964, **76**, 188 (*synth, ethers*)
Brasiunas, V. *et al., CA*, 1964, **61**, 5608 (*synth*)
Mack, W. *et al., Angew. Chem., Int. Ed.*, 1966, **5**, 896 (*synth, ir, uv, pmr, ms*)
Hampson, P. *et al., Chem. Comm.*, 1967, 371 (*N-14 nmr, ethers*)
Katritzky, A.R. *et al., An. Quim.*, 1974, **70**, 994 (*1-amino*)
Claret, P.A. *et al., Spectrosc. Lett.*, 1976, **9**, 157; 167 (*pmr, cmr*)
Ribar, B. *et al., Cryst. Struct. Commun.*, 1977, **6**, 677 (*cryst struct*)
Kido, M. *et al., Chem. Pharm. Bull.*, 1982, **30**, 1488 (*cryst struct*)
Bird, C.W. *et al., Tetrahedron*, 1985, **41**, 1409 (*props*)

Gronowitz, S. *et al., Heteroat. Chem.*, 1986, **5**, 73 (*rev*)
Wawzonek, S. *et al., J. Het. Chem.*, 1988, **25**, 381 (*pmr, deriv*)
Grignon-Dubois, M. *et al., Synth. Commun.*, 1995, **25**, 2999 (*N-Me*)
Houghton, P.J. *et al., Planta Med.*, 1999, **65**, 250-254 (*isol, N-Me*)
Horaguchi, T. *et al., J. Het. Chem.*, 2002, **39**, 61-67 (*synth, ir, pmr, cmr*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, CCC250

1-(2-Quinolinyl)-β-carboline Q-51

*1-(2-Quinolinyl)-9*H*-pyrido[3,4-*b*]indole, 9CI.* ***Nitramarine***

[95360-17-1]



$C_{20}H_{13}N_3$ 295.343

Alkaloid from the aerial parts of *Nitraria komarovii* (Zygophyllaceae). Promotes sleep in expl. animals. Needles. Mp 180.5-182° (172-173°).

1,2,3,4-Tetrahydro: 1,2,3,4-Tetrahydro-1-(2-quinolinyl)-β-carboline. ***Tetrahydronitramarine***

[95360-18-2]

$C_{20}H_{17}N_3$ 299.374

Alkaloid from aerial parts of *Nitraria komarovii*. Mp 193-194°. Opt. inactive.

Tulyaganov, T.S. *et al., Khim.-Farm. Zh.*, 1984, **18**, 1474; *CA*, **102**, 128811g
Hibino, S. *et al., Chem. Pharm. Bull.*, 1987, **35**, 2261 (*synth, uv, pmr, pharmacol*)
Tulyaganov, T.S. *et al., Khim. Prir. Soedin.*, 1990, **25**, 61; *Chem. Nat. Compd. (Engl. Transl.)*, 1990, **25**, 49 (*Tetrahydronitramarine*)
Rocca, P. *et al., Tetrahedron*, 1993, **49**, 3325 (*synth, ir, pmr, cmr*)
Molina, P. *et al., Tet. Lett.*, 1994, **35**, 8851 (*synth*)
Bracher, F. *et al., Tetrahedron*, 1994, **50**, 12329 (*synth*)

1-(4-Quinolinyl)-β-carboline Q-52

*1-(4-Quinolinyl)-9*H*-pyrido[3,4-*b*]indole.* ***Nitraridine***

[915708-51-9]

$C_{20}H_{13}N_3$ 295.343

Alkaloid from the aerial parts of *Nitraria komarovii*. Cryst. (CH_2Cl_2). Mp 272-273°. λ_{max} 211 (log ε 4.65); 233 (log ε 4.65); 252 (sh) (log ε 4.32); 294 (log ε 4.18); 317 (sh) (log ε 3.93); 360 (log ε 3.77) (EtOH).

3,4-Dihydro: ***Dihydronitraridine***

[915708-52-0]

$C_{20}H_{15}N_3$ 297.359

Alkaloid from *Nitraria komarovii*. Mp 262-263°. λ_{max} 218 (log ε 4.51); 244 (sh) (log ε 4.07); 307 (log ε 3.93); 312 (log ε 3.98) (EtOH).

1,2,3,4-Tetrahydro: ***Tetrahydronitraridine***

[6649-85-0]

$C_{20}H_{17}N_3$ 299.374

Alkaloid from *Nitraria komarovii*. Mp 176-177°. Racemate. λ_{max} 227 (log ε 4.52); 280 (log ε 4.01); 304 (log ε 3.84); 316 (log ε 3.72) (EtOH).

Tulyaganov, T.S. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2006, **42**, 459-461 (*isol, synth, pmr*)

1-(5-Quinolinyl)-β-carboline Q-53

*1-(5-Quinolinyl)-9*H*-pyrido[3,4-*b*]indole, 9CI.* ***Isokomarovine***

[85403-68-5]

$C_{20}H_{13}N_3$ 295.343

Alkaloid from *Nitraria komarovii* (Zygophyllaceae). Mp 321-322°. λ_{max} 220 (log ε 4.65); 292 (log ε 4.18); 358 (log ε 3.69) (no solvent reported).

3,4-Dihydro: ***Dihydroisokomarovine***

[85403-69-6]

$C_{20}H_{15}N_3$ 297.359

Alkaloid from *Nitraria komarovii* (Zygophyllaceae). Cryst. ($CHCl_3$/MeOH). Mp 252-253°. λ_{max} 220 (log ε 4.6); 246 (sh) (log ε 4.66); 293 (log ε 4.1); 320 (log ε 3.87) (no solvent reported).

*1,2,3,4-Tetrahydro: 2,3,4,9-Tetrahydro-1-(5-quinolinyl)-1*H*-pyrido[3,4-*b*]indole.* ***Tetrahydroisokomarovine***

[127498-35-5]

$C_{20}H_{17}N_3$ 299.374

Alkaloid from *Nitraria komarovii*. Cryst. (CH_2Cl_2). Mp 274-275°.

Tulyaganov, T.S. *et al., Khim. Prir. Soedin.*, 1982, **18**, 635-638; *Chem. Nat. Compd. (Engl. Transl.)*, 1982, **18**, 601-603 (*isol, struct*)
Tulyaganov, T.S. *et al., Khim. Prir. Soedin.*, 1990, **26**, 61-67; *Chem. Nat. Compd. (Engl. Transl.)*, 1990, **26**, 49-53 (*Dihydroisokomarovine, Tetrahydroisokomarovine*)

1-(6-Quinolinyl)-β-carboline Q-54

*1-(6-Quinolinyl)-9*H*-pyrido[3,4-*b*]indole.* ***Komarovinine***

[85412-79-9]

$C_{20}H_{13}N_3$ 295.343

Alkaloid from *Nitraria komarovii* (Zygophyllaceae). Cryst. ($MeOH/CHCl_3$). Mp 239-240°.

1,2,3,4-Tetrahydro: ***Tetrahydrokomarovinine***

[85403-70-9]
[112583-69-4]

$C_{20}H_{17}N_3$ 299.374

Alkaloid from *Nitraria komarovii*. Cryst. (C_6H_6/CH_2Cl_2). Mp 252-253°.

Tulyaganov, T.S. *et al., Khim. Prir. Soedin.*, 1982, **18**, 638-640; 1990, **26**, 61-67; *Chem. Nat. Compd. (Engl. Transl.)*, 1982, **18**, 604-605; 1990, **26**, 49-53 (*isol, ir, pmr, ms*)

1-(8-Quinolinyl)-β-carboline Q-55

*1-(8-Quinolinyl)-9*H*-pyrido[3,4-*b*]indole, 9CI.* ***Komarovine***

[62209-25-0]

$C_{20}H_{13}N_3$ 295.343

Alkaloid from the above-ground parts of *Nitraria komarovii* (Zygophyllaceae). Cryst. ($MeOH/CHCl_3$). Mp 229-230°.

3,4-Dihydro: ***Komarovidine***

[76971-22-7]

$C_{20}H_{15}N_3$ 297.359

Alkaloid from *Nitraria komarovii* (Zygophyllaceae). Cryst. ($MeOH/CHCl_3$). Mp 219-220°.

1,2,3,4-Tetrahydro: ***Komarovicine***

[85403-71-0]

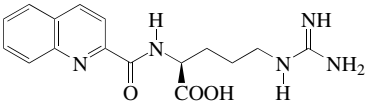
$C_{20}H_{17}N_3$ 299.374

Alkaloid from *Nitraria komarovii* (Zygophyllaceae). Cryst. ($MeOH/CHCl_3$). Mp 209-210°. Racemate.

Tulyaganov, T.S. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1980, **15**, 654 (*Komarovine*)
Tulyaganov, T.S. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1982, **18**, 598-600 (*Komarovicine, Komarovidine*)

N^2-[(2-Quinolinyl)carbonyl]arginine, 9CI Q-56

N^2-*Quinaldylarginine*



$C_{16}H_{19}N_5O_3$ 329.358

(S)-form

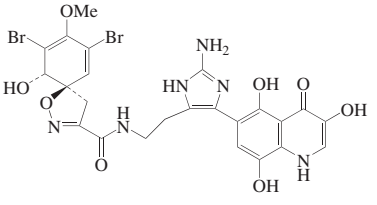
L-form

[180082-49-9]

Isol. from the ladybird *Subcoccinella 24-punctata*. Insect defence substance, feeding deterrent. Amorph. solid. (as hydrochloride). Sol. MeOH. $[\alpha]_D$ +26.8 (c, 0.47 in MeOH) (monohydrochloride). CAS no. refers to hydrochloride. λ_{max} 238 (ε 22535); 315 (ε 2066); 352 (ε 1485) (MeOH) (monohydrochloride). λ_{max} 238 (ε 22535); 315 (ε 2066); 352 (ε 1485) (MeOH) (Berdy).

Wang, S.F. *et al., Experientia*, 1996, **52**, 628-630 (*isol, synth, pmr, cmr*)

Oceanapia Quinolone alkaloid Q-57



Absolute Configuration

$C_{24}H_{22}Br_2N_6O_8$ 682.281

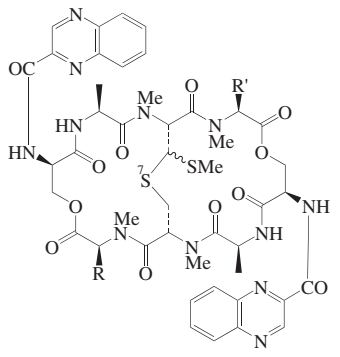
Isol. from the sponge *Oceanapia* sp. Inhibitor of mycothiol S-conjugate amidase. $[\alpha]_D^{20}$ -150 (c, 0.19 in MeOH).

Nicholas, G.M. *et al., Org. Lett.*, 2001, **3**, 1543-1545 (*isol, cd, pmr, cmr*)

Quinomycin A, 9CI Q-58

Echinomycin. Actinoleukin. X 948. X 53III. Antibiotic 1491. Antibiotic 59266. Antibiotic X 948. Antibiotic X 53III

[512-64-1]



R = R' = -$CH(CH_3)_2$
Absolute Configuration

$C_{51}H_{64}N_{12}O_{12}S_2$ 1101.272

Depsipeptide antibiotic. Produced by *Streptomyces echinatus* and *Streptomyces lasaliensis*. Active against gram-positive and negative bacteria and some viruses. Under investigation as an antineoplastic agent. Cryst. Mp 221-223° (217-218°). $[\alpha]_D^{20}$ -310 (c, 0.86 in $CHCl_3$). Intercalates with DNA. λ_{max} 242 (ϵ 63300); 322 (ϵ 11560) (MeOH) (Derep).

▶ Adverse effects reported when used therapeutically. LD_{50} (mus, ipr) 0.4 mg/kg. LD_{50} (mus, scu) 3.8 mg/kg. JW5250000

7-S-Oxide: ***Antibiotic FD 991***. *FD 991*

[160918-29-6]

$C_{51}H_{64}N_{12}O_{13}S_2$ 1117.271

Prod. by *Streptomyces echinatus*. Cytotoxic agent. λ_{max} 243 (ϵ 66000); 320 (ϵ 12000) (MeOH) (Berdy).

Corbaz, R. *et al., Helv. Chim. Acta*, 1957, **40**, 199 (*isol*)

Japan. Pat., 1970, 70 17 592; *CA*, **73**, 75659 (*deriv*)

Martin, G.D. *et al., J. Antibiot.*, 1975, **28**, 332 (*struct*)

Dell, A. *et al., J.A.C.S.*, 1975, **97**, 2497 (*struct*)

Cheung, H.T. *et al., J.A.C.S.*, 1978, **100**, 46 (*conformn*)

Waring, M.J. *et al., Antibiotics (N.Y.)*, 1979, **5**, 173 (*rev*)

Steinerova, N. *et al., Folia Microbiol. (Prague)*, 1987, **32**, 1 (*isol*)

Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 477

Japan. Pat., 1994, 94 316 595; *CA*, **122**, 131143j (*FD 991*)

Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, EAD500

Quinomycin B_0, 8CI Q-59

[13602-50-1]

As Quinomycin A, Q-58 with

R = -$CH(CH_3)_2$, R′ = -$CH(CH_3)CH(CH_3)_2$

$C_{53}H_{68}N_{12}O_{12}S_2$ 1129.325

Depsipeptide antibiotic. Isol. from *Streptomyces aureus* with added leucine. Active against gram-positive bacteria, shows some antitumour activity. Powder. Sol. MeOH, C_6H_6; poorly sol. H_2O, hexane. Mp 215-219° dec. λ_{max} 243 (ϵ 66070); 320 (ϵ 12600) (MeOH) (Berdy).

Yoshida, T. *et al., J. Antibiot., Ser. A*, 1961, **14**, 330 (*isol, ir, uv*)

Ōtsuka, M. *et al., Tetrahedron*, 1967, **23**, 1535 (*isol, ir, uv*)

Dell, A. *et al., J.A.C.S.*, 1975, **97**, 2497 (*struct, ir, ms, pmr, cmr*)

Quinomycin B Q-60

A528. Antibiotic A528

[13602-52-3]

As Quinomycin A, Q-58 with

R = R′ = -$CH(CH_3)CH_2CH_3$ (*R*-)

$C_{53}H_{68}N_{12}O_{12}S_2$ 1129.325

Depsipeptide antibiotic. Prod. by *Streptomyces aureus* in a medium supplemented with DL-isoleucine. Active against gram-positive bacteria, shows some antitumour activity. Needles. Sol. Me_2CO, EtOAc, dioxan, acids, HCl; fairly sol. MeOH, C_6H_6, EtOH; poorly sol. H_2O, hexane. Mp 221° dec. $[\alpha]_D^{26}$ -300 (c, 1.308 in $CHCl_3$). λ_{max} 242 (E1%/1cm 678); 322 (E1%/1cm 118) (MeOH) (Berdy).

▶ LD_{50} (mus, ivn) .054 mg/kg, LD_{50} (mus, ipr) .04 mg/kg. VC8935000

[11001-72-2]

Yoshida, T. *et al., J. Antibiot., Ser. A*, 1962, **15**, 272 (*isol, ir, uv*)

Ōtsuka, H. *et al., Tetrahedron*, 1967, **23**, 1535 (*isol, ir, uv*)

Martin, G.D. *et al., J. Antibiot.*, 1975, **28**, 332-336 (*struct*)

Dell, A. *et al., J.A.C.S.*, 1975, **97**, 2497 (*struct, ir, ms, pmr, cmr*)

Quinomycin C Q-61

Antibiotic 6270†. U 48160. Antibiotic U 48160

[11001-74-4]

As Quinomycin A, Q-58 with

R = R′ = -$CH(CH_3)CH(CH_3)_2$

$C_{55}H_{72}N_{12}O_{12}S_2$ 1157.379

Depsipeptide antibiotic. Prod. by *Streptomyces aureus* and *Streptomyces flavochromogenes*. Cytotoxic. Needles ($CHCl_3$). Mp 218-220° dec. $[\alpha]_D^{25}$ -250 (c, 1 in $CHCl_3$). λ_{max} 243 ; 322 (MeOH).

Brazhnikova, M.G. *et al., CA*, 1960, **54**, 25028eg; 1961, **55**, 7664b (*isol*)

Yoshida, T. *et al., J. Antibiot.*, 1961, **14**, 324-329; 330-334 (*isol*)

Otsuka, H. *et al., J. Antibiot.*, 1966, **19**, 128-131 (*isol*)

Martin, G.D. *et al., J. Antibiot.*, 1975, **28**, 332-336 (*struct*)

Quinomycin D, 8CI Q-62

[11016-62-9]

As Quinomycin A, Q-58 with

R = -$CH(CH_3)_2$, R′ = $CH(CH_3)CH_2CH_3$ (*R*-)

$C_{52}H_{66}N_{12}O_{12}S_2$ 1115.299

Depsipeptide antibiotic. Isol. from *Streptomyces aureus* as trace component. Shows antibacterial activity. Sol. MeOH, C_6H_6; poorly sol. hexane, H_2O. λ_{max} 243 (ϵ 63100); 320 (ϵ 12300) (MeOH) (Berdy).

Otsuka, M. *et al., Tetrahedron*, 1967, **23**, 1535 (*isol, ir, uv*)

Dell, A. *et al., J.A.C.S.*, 1975, **97**, 2497 (*struct, ir, ms, pmr, cmr*)

Quinomycin E, 8CI Q-63

[14222-15-2]

As Quinomycin A, Q-58 with

R = -$CH(CH_3)CH_2CH_3$, R′ = $CH(CH_3)CH(CH_3)_2$

$C_{54}H_{70}N_{12}O_{12}S_2$ 1143.352

Depsipeptide antibiotic. Mixt. of two components in 4:1 ratio. Struct. of major component shown; minor component has R and R′ interchanged. Isol. from *Streptomyces aureus*. Powder. Sol. Me_2CO, $CHCl_3$; poorly sol. MeOH, H_2O, hexane. Mp 215-219° dec. λ_{max} 243 (ϵ 66000); 320 (ϵ 12500) (MeOH) (Berdy).

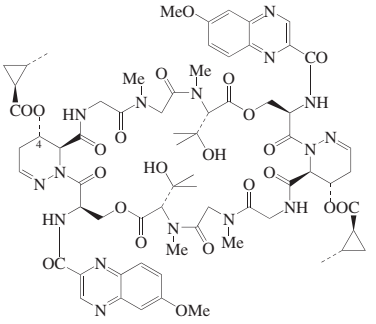
Otsuka, M. *et al., Tetrahedron*, 1967, **23**, 1535 (*isol, ir, uv*)

Dell, A. *et al., J.A.C.S.*, 1975, **97**, 2497 (*struct, ir, ms, pmr, cmr*)

Shoji, J. *et al., J. Antibiot.*, 1976, **29**, 1246 (*struct, cmr*)

Quinoxapeptin A Q-64

[175484-07-8]



Absolute Configuration

$C_{68}H_{84}N_{16}O_{22}$ 1477.506

Depsipeptide antibiotic. Prod. by actinomycete sp. MA7095 (ATCC 55599). Inhibitor of HIV-1 and -2 reverse transcriptase. Cytotoxic agent. Amorph. solid. $[\alpha]_D^{20}$ +11 (c, 0.09 in CH_2Cl_2). Similar to Luzopeptin C, L-312.

4-Deacyl, 4-Ac: ***Quinoxapeptin B***

[175484-08-9]

$C_{65}H_{80}N_{16}O_{22}$ 1437.441

Prod. by actinomycete sp. MA7095 (ATCC 55599). Inhibitor of HIV-1 and -2 reverse transcriptase. Cytotoxic agent. Amorph. solid. $[\alpha]_D^{20}$ +36 (c, 0.01 in CH_2Cl_2).

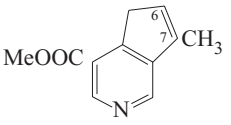
Lingham, R.S. *et al., J. Antibiot.*, 1996, **49**, 253-259 (*isol, props*)

Boger, D.L. *et al., Angew. Chem., Int. Ed.*, 1999, **38**, 2424-2426 (*synth, abs config*)

Boger, D.L. *et al., J.A.C.S.*, 1999, **121**, 11375-11383 (*synth*)

Racemigerine R-1

*Methyl 7-methyl-5*H*-2-pyrindine-4-carboxylate, 9CI*
[76655-39-5]

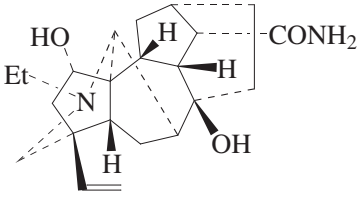


$C_{11}H_{11}NO_2$ 189.213
Alkaloid from the aerial parts of *Scaevola racemigera* (Goodeniaceae). Prisms (CH_2Cl_2). Mp 108°.

6,7-Epoxide: ***6,7-Epoxyracemigerine***
[99339-51-2]
$C_{11}H_{11}NO_3$ 205.213
Alkaloid from *Scaevola racemigera* (Goodeniaceae). Noncryst. Opt. inactive (racemic).

Skaltsounis, A.-L. *et al., Helv. Chim. Acta*, 1985, **68**, 1679 (*isol, uv, ir, pmr, ms, struct, epoxide*)

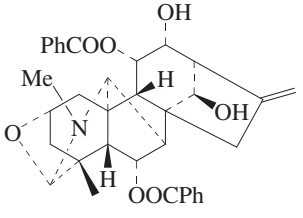
Racemulosine R-2



$C_{22}H_{32}N_2O_3$ 372.506
Alkaloid from *Aconitum racemulosum* Franch var. *pengzhouense*. Cryst. ($CHCl_3$/MeOH). Mp 228-230°. $[\alpha]_D^{17}$ -19.2 (c, 0.5 in $CHCl_3$/MeOH).

Wang, F.-P. *et al., Tetrahedron*, 2000, **56**, 7443-7446

Racemulotine R-3

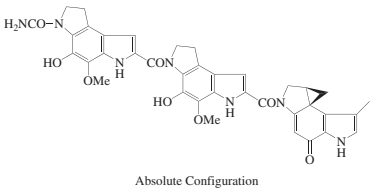


$C_{35}H_{37}NO_7$ 583.68
Alkaloid from the whole plant of *Aconitum racemulosum* var. *pengzhouense*. Amorph. powder. $[\alpha]_D^{17}$ -34.4 (c, 0.2 in $CHCl_3$). Not in CA.

Peng, C.-S. *et al., J. Asian Nat. Prod. Res.*, 2001, **3**, 49-54 (*isol, pmr, cmr*)

Rachelmycin R-4

CC 1065. ML 1065. NSC 298223. Antibiotic CC 1065
[69866-21-3]
[110352-07-3 (enantiomer)]



Absolute Configuration

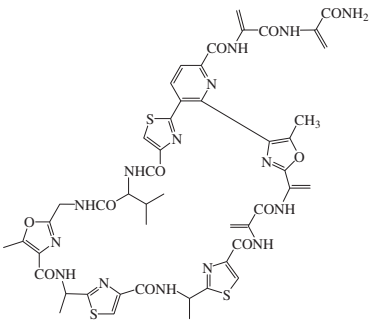
$C_{37}H_{33}N_7O_8$ 703.71
Obt. from terrestrial *Streptomyces zelensis* and *Streptomyces canulus*. Antineoplastic antibiotic. One of the most potent antineoplastic agents known. Alkylates B-DNA minor groove sites. Clustered needles or amorph. amber-coloured foam. $[\alpha]_D^{25}$ +98 (c, 0.2 in DMF). λ_{max} 233 (ϵ 23100); 257 (ϵ 19500); 300 ; 362 (MeOH/HCl) (Derep). λ_{max} 230 (sh) ; 278 ; 375 (H_2O/pH 8) (Derep). λ_{max} 232 (sh) (ϵ 21400); 258 (sh) (ϵ 18700); 371 (ϵ 27800) (MeOH) (Derep).

▶ LD_{50} (mus, ivn) 0.009 mg/kg. LD_{50} (mus, ipr) 0.007 mg/kg. Very toxic by intravenous and intraperitoneal route. Mutagenic props. DF4936780

N-*De(aminocarbonyl),* N-*Ac:* ***Gilvusmycin***
[195052-09-6]
$C_{38}H_{34}N_6O_8$ 702.722
Prod. by *Streptomyces* sp. QM16. Antitumour agent. Yellow powder. Mp 160-162° dec. $[\alpha]_D^{20}$ +85 (c, 0.1 in DMF). Stereochem. not confirmed. λ_{max} 276 (ϵ 27500); 370 (ϵ 33300) (MeOH).

Hanka, L.J. *et al., J. Antibiot.*, 1978, **31**, 1211-1217 (*isol*)
Martin, D.G. *et al., J. Antibiot.*, 1980, **33**, 902-903; 1981, **34**, 1119-1125 (*isol, struct*)
Chidester, C.G. *et al., J.A.C.S.*, 1981, **103**, 7629-7635 (*cryst struct*)
Frolova, V.I. *et al., Antibiotiki (Moscow)*, 1982, **27**, 483-487; *CA*, **97**, 123511 (*CC 1065, isol, uv, pmr, cmr*)
Sundberg, R.I. *et al., J.O.C.*, 1985, **50**, 425-432 (*bibl*)
Wierenga, W. *et al., Adv. Enzyme Regul.*, 1986, **25**, 141-155 (*rev, pharmacol*)
Reynolds, V.L. *et al., J. Antibiot.*, 1986, **39**, 319-334 (*rev, pharmacol*)
Rawal, V.H. *et al., Heterocycles*, 1987, **25**, 701-728 (*rev, synth*)
Kelly, R.C. *et al., J.A.C.S.*, 1987, **109**, 6837-6838 (*synth*)
Watt, W. *et al., Acta Cryst. C*, 1988, **44**, 1675-1677 (*cryst struct*)
Bolton, R.E. *et al., J.C.S. Perkin 1*, 1988, 2491-2499 (*synth, bibl*)
Lee, C.-S. *et al., Chem. Res. Toxicol.*, 1991, **4**, 203-213 (*pharmacol*)
Hurley, L.H. *et al., J. Mol. Recognit.*, 1994, **7**, 123-132 (*rev*)
Tietze, L. *et al., J.O.C.*, 1994, **59**, 192-196 (*synth, bibl*)
Linseman, D.A. *et al., Nat. Toxins*, 1995, **3**, 32-40 (*pharmacol, enantiomers*)
Boger, D.L. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 1995, **92**, 3642-3649 (*pharmacol, rev*)
Boger, D.L. *et al., Chem. Rev.*, 1997, **97**, 787-828 (*rev, synth*)
Tokoro, Y. *et al., J. Antibiot.*, 1999, **52**, 263-268 (*Gilvusmycin*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, APT375

Radamycin R-5

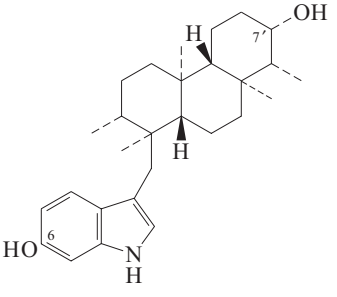


$C_{48}H_{47}N_{15}O_{11}S_3$ 1106.191
Related to Sulfomycin, S-638. Prod. by *Streptomyces* sp. RSP9. Pale yellow powder. $[\alpha]_D^{25}$ -274.2 (c, 0.58 in $CHCl_3$). λ_{max} 250 (MeOH).

Holgado, G.G. *et al., J. Antibiot.*, 2002, **55**, 383-390; 391-395 (*isol, pmr, cmr*)

Radarin B R-6

[138629-07-9]



$C_{28}H_{41}NO_2$ 423.637
Indole diterpenoid antibiotic. Prod. by *Aspergillus sulphureus*. Possesses antiinsectan and cytotoxic props. Yellow solid. Mp 115-118° dec. $[\alpha]_D$ +39.4 (c, 0.003 in $CHCl_3$). λ_{max} 210 (ϵ 6220); 226 (ϵ 6990); 290 (ϵ 1510) (MeOH) (Derep).

6-Deoxy: ***Radarin D***
[138606-37-8]
$C_{28}H_{41}NO$ 407.638
Prod. by *Aspergillus sulphureus*. Yellow oil. $[\alpha]_D$ +31.8 (c, 0.003 in $CHCl_3$). λ_{max} 210 (ϵ 6220); 226 (ϵ 6990); 290 (ϵ 1510) (MeOH) (Derep).

7′-Ketone: ***Radarin A***
[138606-35-6]
$C_{28}H_{39}NO_2$ 421.622
Prod. by *Aspergillus sulphureus*. Pink oil. $[\alpha]_D$ +11.1 (c, 0.005 in $CHCl_3$). λ_{max} 210 (ϵ 6220); 226 (ϵ 6990); 290 (ϵ 1510) (MeOH) (Derep).

6-Deoxy, 7′-ketone: ***Radarin C***
[138606-36-7]
$C_{28}H_{39}NO$ 405.622
Prod. by *Aspergillus sulphureus*. Yellow oil. $[\alpha]_D$ +6.7 (c, 0.002 in $CHCl_3$). λ_{max} 210 (ϵ 6220); 226 (ϵ 6990); 290 (ϵ 1510) (MeOH) (Derep).

Laakso, J.A. *et al., J.O.C.*, 1992, **57**, 138 (*isol, pmr, cmr, struct*)

Raddeamine R-7

$C_{23}H_{37}NO_2$ 359.551

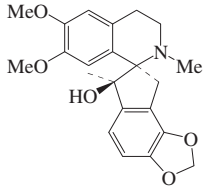
Prob. a steroidal alkaloid. Struct. unknown. Alkaloid from *Fritillaria raddeana* (Liliaceae). Cryst. Mp 271-272°. Occurs with Alvanidine, A-665 and Alvanine, A-666.

Hydrochloride: Mp 235-236°.

Aslanov, Kh.A. *et al., Zh. Obshch. Khim.*, 1956, **26**, 579-583; *J. Gen. Chem. USSR (Engl. Transl.)*, 1956, **26**, 623-627 (*isol*)

Raddeanamine R-8

*3′,4′,6,8-Tetrahydro-6′,7′-dimethoxy-2′,6-dimethylspiro[7*H*-indeno[4,5-*d*]-1,3-dioxole-7,1′(2′*H*)-isoquinolin]-6-ol, 9CI*
[59614-35-6]



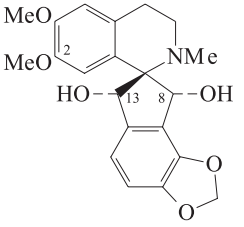
Absolute Configuration

$C_{22}H_{25}NO_5$ 383.443
Alkaloid from *Corydalis ochotensis* var. *raddeana* (Papaveraceae). Gum. $[\alpha]_D^{20}$ +166 (c, 0.68 in MeOH).

Kametani, T. *et al., J.C.S. Perkin 1*, 1977, 390 (*isol, ir, pmr, ms, struct*)

Raddeanine† R-9

*3′,4′,6,8-Tetrahydro-6′,7′-dimethoxy-2′-methylspiro[7*H*-indeno[4,5-*d*]-1,3-dioxole-7,1′(2′*H*)-isoquinoline]-6,8-diol, 9CI. 13-Epiyenhusomine*
[59654-07-8]



(+)-*form*

$C_{21}H_{23}NO_6$ 385.416

(+)-*form*
Alkaloid from *Corydalis ochotensis* var. *raddeana* and *Corydalis govaniana* (Papaveraceae). Prisms (Me_2CO). Mp 208-209° (200-202°). $[\alpha]_D$ +79.4 (c, 0.11 in MeOH).

8-Ac: ***Raddeanidine***
[59614-36-7]
$C_{23}H_{25}NO_7$ 427.453
Alkaloid from *Corydalis ochotensis* var. *raddeana* (Papaveraceae). Gum. $[\alpha]_D^{20}$ +82.7 (c, 0.52 in MeOH).

*2-*O*-De-Me:* ***Ledeboridine****. Ledebouridine*
[64191-01-1]
$C_{20}H_{21}NO_6$ 371.389
Alkaloid from *Corydalis ledebouriana* (Papaveraceae). Mp 140-141°. $[\alpha]_D$ +114 (c, 0.28 in MeOH).

13-Ketone: ***Raddeanone***
[59654-08-9]
$C_{21}H_{21}NO_6$ 383.4
Alkaloid from *Corydalis ochotensis* var. *raddeana* (Papaveraceae). Prisms (Me_2CO). Mp 132-133° Mp 168-170° Mp 181-182°.

*13-Ketone, 2-*O*-de-Me:* ***Ledeborine****. Lederbourine. Ledebourine*
[56816-35-4]
$C_{20}H_{19}NO_6$ 369.373
Alkaloid from *Corydalis ledebouriana* (Papaveraceae). Cryst. ($CHCl_3$). Mp 184-186°. Opt. rotn. not reported. Struct. may be erroneous: see *Alkaloids (N.Y.)*, 1979, **17**, 502.

8-Epimer, 13-ketone: ***Yenhusomidine****.* O*-Methylcorpaine*
[60102-30-9]
$C_{21}H_{21}NO_6$ 383.4
Alkaloid from *Corydalis vaginans* (Papaveraceae). Cryst. (MeOH). Mp 220-221°. $[\alpha]_D^{22}$ -36.7 (c, 0.44 in $CHCl_3$).

*8-Epimer, 13-ketone, 2-*O*-de-Me:* ***Corpaine***
[31002-20-7]
$C_{20}H_{19}NO_6$ 369.373
Alkaloid from *Corydalis paczoskii* (Papaveraceae). Cryst. (EtOH). Mp 204°. No opt. rotn. reported. A mixt. containing Corpaine was known as Coryline.

13-Epimer: ***Yenhusomine***
[56435-41-7]
$C_{21}H_{23}NO_6$ 385.416
Alkaloid from *Corydalis ochotensis* (Papaveraceae). Prisms + $1H_2O$ (Me_2CO). Mp 127-128° dec. $[\alpha]_D^{19}$ +48 (c, 1.0 in MeOH).

(±)-*form* [64234-40-8]
Alkaloid from *Corydalis ledebouriana* (Papaveraceae). Cryst. ($MeOH/CHCl_3$). Mp 219-220° Mp 201-202° (synthetic).

O^8*-Ac:*Synthetic. Mp 169-171°.

*13-Ketone, 2-*O*-de-Me:* ***Corysolidine***
[105926-86-1]
$C_{20}H_{19}NO_6$ 369.373
Alkaloid from the whole plants of *Corydalis ochotensis* and *Corydalis solida*. Amorph. Racemate.

*13-Ketone, 2-*O*-de-Me, 8-Ac:* ***8-O-Acetylcorysolidine***
[314729-31-2]
$C_{22}H_{21}NO_7$ 411.41
Alkaloid from the aerial parts of *Corydalis ochotensis.*

8-Epimer, 13-ketone: ***(±)-Yenhusomidine***
$C_{21}H_{21}NO_6$ 383.4
Alkaloid from *Corydalis ochotensis* (Papaveraceae). Prisms (Me_2CO). Mp 242-243° Mp 228-229° (synthetic).

8-Epimer, 13-ketone, picrate:
Yellow prisms (Me_2CO). Mp 214-215° dec.

8-Epimer, 13-ketone, Ac:
Yellow-brown prisms (MeOH). Mp 173-174°.

13-Epimer: [60761-13-9]
Synthetic. Cryst. (MeOH). Mp 223-225°.

Baisheva, Kh.S. *et al., Khim. Prir. Soedin.*, 1970, **6**, 574; *Chem. Nat. Compd. (Engl. Transl.)*, 1970, **6**, 590 (*Corpaine*)

Israilov, I.A. *et al., Khim. Prir. Soedin.*, 1975, **11**, 268; 1977, **13**, 428; *Chem. Nat. Compd. (Engl. Transl.)*, 1975, **11**, 284; 1977, **13**, 366 (*Raddeanine, Ledeborine, Ledeboridine*)

Irie, H. *et al., Heterocycles*, 1976, **4**, 1083 (*synth*)

Lu, S.T. *et al., J.C.S. Perkin 1*, 1976, 63 (*isol, cd, uv, ir, pmr, ms, struct*)

Margelashvili, N.N. *et al., Khim. Prir. Soedin.*, 1976, **12**, 123 (*O-Methylcorpaine*)

Nalliah, B.C. *et al., Can. J. Chem.*, 1977, **55**, 922; 1979, **57**, 1545 (*synth*)

McLean, S. *et al., Can. J. Chem.*, 1977, **55**, 924 (*synth*)

Hughes, D.W. *et al., Can. J. Chem.*, 1977, **55**, 3304 (*cmr*)

Kametani, T. *et al., J.C.S. Perkin 1*, 1977, 390 (*Raddeanine, Raddeanone, isol, ir, pmr, ms, struct*)

Dime, D. *et al., Can. J. Chem.*, 1979, **57**, 1569 (*Corpaine, synth*)

Rahimizadeh, M. *et al., Phytochemistry*, 1986, **25**, 2245-2246 (*Corysolidine*)

Mukhopadhyay, S. *et al., J. Nat. Prod.*, 1987, **50**, 270 (*isol, uv, ir, pmr, cmr, ms*)

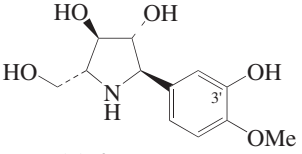
Hanaoka, M. *et al., Chem. Pharm. Bull.*, 1988, **36**, 4248 (*Raddeanine, Raddeanidine, Yenhusomine, Yenhusomidine, synth, ir, pmr*)

Kessar, S.V. *et al., Chem. Comm.*, 1994, 1327 (*synth*)

Kim, D.K. *et al., Arch. Pharmacal Res.*, 2000, **23**, 459-460 (*8-O-Acetylcorysolidine*)

Radicamine A R-10

3,4-Dihydroxy-2-(3-hydroxy-4-methoxyphenyl)-5-hydroxymethylpyrrolidine



(+)-*form*

$C_{12}H_{17}NO_5$ 255.27

(+)-*form* [431981-74-7]
Alkaloid from *Lobelia sinensis.* Pale yellow oil. $[\alpha]_D^{25}$ +43.7 (c, 0.13 in H_2O). Related to Codonopsine, C-557. λ_{max} 228 (log ϵ 3.64); 281 (log ϵ 3.94) (no solvent reported).

3′-Deoxy, O*-de-Me:* ***Radicamine B***
[431981-75-8]
$C_{11}H_{15}NO_4$ 225.244
Alkaloid from *Lobelia sinensis.* Pale yellow oil. $[\alpha]_D^{25}$ +72 (c, 0.1 in H_2O). λ_{max} 227 (log ϵ 4.19); 277 (log ϵ 3.6) (no solvent reported).

(-)-*form*

$O^{3'}$,N*-Di-Me:* ***Codonopsinol***
$C_{14}H_{21}NO_5$ 283.324
Alkaloid from *Codonopsis clematidea*. Amorph. powder. $[\alpha]_D$ -3.5 (c, 0.2 in MeOH).

Shibano, M. *et al., Chem. Pharm. Bull.*, 2001, **49**, 1362-1365 (*isol*)

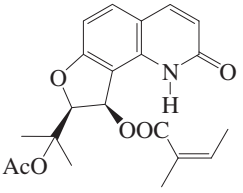
Shibano, M. *et al., Heterocycles*, 2002, **57**, 1539-1553 (*biosynth*)

Yu, C.-Y. *et al., Org. Lett.*, 2006, **8**, 3021-3024 (*synth, abs config*)

Gurjar, M.K. *et al., Tet. Lett.*, 2006, **47**, 6979-6981 (*Radicamine B, synth, abs config*)

Liu, C. *et al., Lett. Org. Chem.*, 2007, **4**, 556-558 (*Radicamine B, synth*)
Merino, P. *et al., Eur. J. Org. Chem.*, 2008, 2929-2947 (*Radicamine B, synth*)
Ishida, S. *et al., J. Nat. Med. (Tokyo)*, 2008, **62**, 236-238 (*Codonopsinol*)
Ribes, C. *et al., J.O.C.*, 2008, **73**, 7779-7782 (*Radicamine B, synth*)

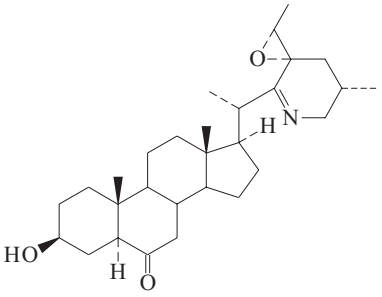
Radixisatidis A **R-11**
Banlangenjiasu
[221181-27-7]



$C_{21}H_{23}NO_6$ 385.416
Constit. of Radix Strobilanthes (*Strobilanthes* sp.) Component of Ban Lan Gen.

Wang, S. *et al., CA*, 1999, **130**, 220357q

Radpetine **R-12**
[139751-06-7]

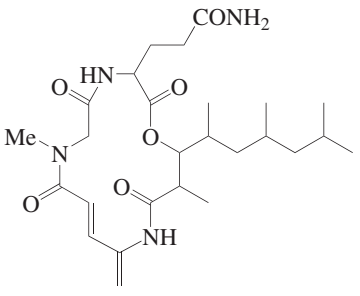


$C_{29}H_{45}NO_3$ 455.679
Alkaloid from epigeal parts of *Petilium raddeana* (Liliaceae). Cryst. (Me_2CO/petrol). Mp 229-231°.

Ac:
Cryst. Mp 100-103°.

Tashkhodzhaev, B. *et al., Khim. Prir. Soedin.*, 1991, 384; *Chem. Nat. Compd. (Engl. Transl.)*, 332 (*isol, ir, pmr, ms, cryst struct*)

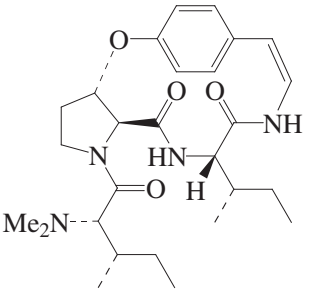
Rakicidin C **R-13**
[310440-15-4]



$C_{26}H_{42}N_4O_6$ 506.641
Depsipeptide antibiotic. Prod. by *Streptomyces* sp. GT61042. Powder. $[\alpha]_D^{25}$ +90.9 (c, 0.24 in DMSO). λ_{max} 201 (log ϵ 3.73); 243 (log ϵ 1.71) (MeOH).

Hu, J.-F. *et al., Eur. J. Org. Chem.*, 2000, 3353-3356 (*isol, pmr, cmr*)

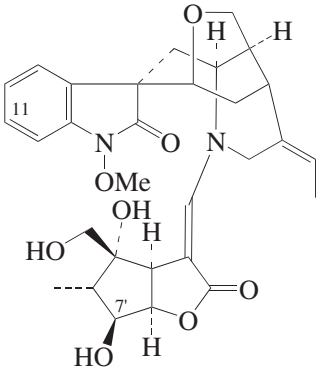
Ramosine A **R-14**
[530092-39-8]



$C_{27}H_{40}N_4O_4$ 484.637
Alkaloid from the roots of *Paliurus ramosissimus*. Amorph. solid. Mp 55-56°. $[\alpha]_D^{26}$ -125 (c, 0.76 in MeOH). λ_{max} 221 (log ϵ 4.52) (MeOH).

Lin, H.-Y. *et al., Helv. Chim. Acta*, 2003, **86**, 127-138 (*isol, cd, pmr, cmr*)

Rankiniridine **R-15**
[1036975-00-4]

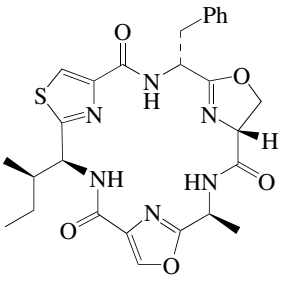


$C_{30}H_{36}N_2O_8$ 552.623
Related to Humantenirine, H-367. Alkaloid from *Gelsemium rankinii*. Amorph. powder. $[\alpha]_D^{21}$ -270.5 (c, 0.14 in MeOH). λ_{max} 208 (log ϵ 4.18); 296 (log ϵ 4.25) (MeOH).

11-Methoxy, 7′-deoxy: ***Humanteniridine***
[1036975-02-6]
$C_{31}H_{38}N_2O_8$ 566.65
Alkaloid from the leaves of *Gelsemium elegans*. Amorph. yellow powder. $[\alpha]_D^{16}$ -409.4 (c, 0.26 in MeOH). λ_{max} 215 (log ϵ 4.51); 293 (log ϵ 4.35) (MeOH).

Kogure, N. *et al., Tet. Lett.*, 2008, **49**, 3638-3642 (*isol, cd, pmr, cmr*)

Raocyclamide A **R-16**
[174846-65-2]

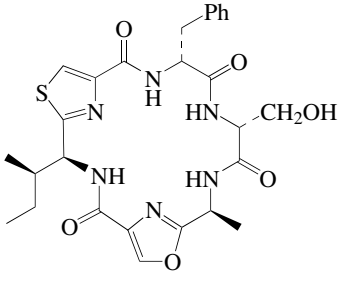


Absolute Configuration

$C_{27}H_{30}N_6O_5S$ 550.637
Stereochem. revised in 1998. Cyclic hexapeptide from the terrestrial cyanobacterium *Oscillatoria raoi*. Exhibits moderate cytotoxicity against sea urchin embryos. Glassy solid. $[\alpha]_D^{25}$ +25.5 (c, 4.4 in MeOH). λ_{max} 242 (ϵ 17750) (MeOH).

Admi, V. *et al., J. Nat. Prod.*, 1996, **59**, 396 (*isol, uv, ir, pmr, cmr, ms, struct*)
Freeman, D.J. *et al., Tet. Lett.*, 1998, **39**, 3251-3254 (*synth, abs config*)

Raocyclamide B **R-17**
[174846-66-3]

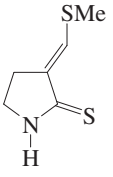


Absolute Configuration

$C_{27}H_{32}N_6O_6S$ 568.652
Stereochem. revised in 1998. Cyclic hexapeptide from the terrestrial cyanobacterium *Oscillatoria raoi*. Glassy solid. $[\alpha]_D^{25}$ +5.1 (c, 4.1 in MeOH). λ_{max} 241 (ϵ 17166) (MeOH).

Admi, V. *et al., J. Nat. Prod.*, 1996, **59**, 396 (*isol, uv, ir, pmr, cmr, ms, struct*)
Freeman, D.J. *et al., Tet. Lett.*, 1998, **39**, 3251-3254 (*synth, abs config*)

Raphanusanin **R-18**
3-[(Methylthio)methylene]-2-pyrrolidinethione, 9CI. Raphantin



(*E*) - form

$C_6H_9NS_2$ 159.276

There have been various struct. revisions,. The most recent incorrect struct. proposed was a MeOH covalent solvate of the struct. shown. The names Raphanusanin A and Raphanusanin B were erroneously applied to stereoisomers of this solvate.

(E)-form [128463-44-5]
[104760-73-8]
Isol. from *Raphanus sativus* var. *hortensis* f. *gigantissimus* (Brassicaceae). Growth inhibitor involved in phototropism of hypocotyls. Needles (MeOH).

(Z)-form [148225-27-8]
[104760-72-7]
Isol. from *Raphanus sativus* var. *hortensis* f. *gigantissimus* (Brassicaceae). Growth inhibitor involved in phototropism of hypocotyls. Amorph. pale yellow powder.

Sakoda, M. *et al., Phytochemistry*, 1990, **29**, 1031 (*isol*)
Harada, N. *et al., Tet. Lett.*, 1991, **32**, 6757 (*uv, ir, pmr, cmr, ms, bibl*)
Kosemura, S. *et al., Tet. Lett.*, 1993, **34**, 481-484 (*struct*)
Matsuoka, H. *et al., Phytochemistry*, 1998, **47**, 975-977 (*isol*)
Hasegawa, T. *et al., Phytochemistry*, 2000, **54**, 275-279 (*biosynth*)

Raucaffridine R-19

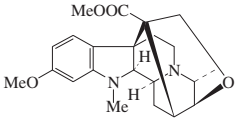
[107527-78-6]

$C_{21}H_{24}N_2O_3$ 352.432

Struct. unknown. Alkaloid from *Rauwolfia caffra* (Apocynaceae). Mp 221° dec.

Khan, N.H. *et al., Pak. J. Sci. Ind. Res.*, 1965, **8**, 23-27

Raucanine R-20



Absolute Configuration

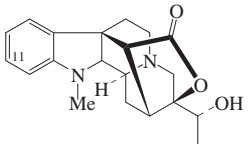
$C_{22}H_{28}N_2O_4$ 384.474

The struct. is badly drawn in the paper but this appears to be the relative stereochemistry. Alkaloid from *Rauwolfia canescens*. Mp 183-185°. $[\alpha]_D$ -27 ($CHCl_3$). CAS no. not found 8-14CI. λ_{max} 251 ; 295 (no solvent reported).

Shakirov, R. *et al., Khim. Prir. Soedin.*, 1996, **32**, 761-863; *Chem. Nat. Compd. (Engl. Transl.)*, 1996, **32**, 737-858 (*rev*)

Raucubaine R-21

1,2,19,20-Tetrahydro-19,20-dihydroxy-1-methylakuammilan-17-oic acid γ-lactone, 9CI. Quaternoline
[75418-95-0]



Absolute Configuration

$C_{20}H_{24}N_2O_3$ 340.421

Identity of Raucubaine and Quaternoline not certain, may be stereoisomers. Alkaloid from the leaves of *Rauwolfia salicifolia* (Apocynaceae). Cryst. (MeOH). Mp 224°. $[\alpha]_D^{20}$ -18 ($CHCl_3$). Poss. artifact, also obt. by acid treatment of Cathafoline, C-191.

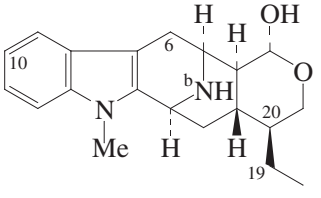
11-Methoxy: ***Caberoline***
[56283-51-3]
$C_{21}H_{26}N_2O_4$ 370.447
Alkaloid from *Cabucala* spp. and *Alstonia plumosa* (Apocynaceae). Poss. artifact; also obt. by acid treatment of Caberine.

[57498-99-4]

Mamatas-Kalamaras, S. *et al., Phytochemistry*, 1975, **14**, 1849 (*Quaternoline*)
Kutney, J.P. *et al., Heterocycles*, 1980, **14**, 1309 (*uv, ir, pmr, cd, ms, cryst struct*)
Pauptit, R.A. *et al., Can. J. Chem.*, 1981, **59**, 1007 (*cryst struct*)
Jacquier, M.J. *et al., Phytochemistry*, 1982, **21**, 2973 (*isol*)
Sierra, P. *et al., Coll. Czech. Chem. Comm.*, 1982, **47**, 2912 (*isol, spectra, abs config*)

Raumacline R-22

4-Demethyl-20,21-dihydroalstophyllan-17-ol, 9CI
[132923-02-5]



$C_{20}H_{26}N_2O_2$ 326.438
Alkaloid from cell cultures of *Rauwolfia serpentina* (Apocynaceae). Mp 197-200°. $[\alpha]_D^{26}$ -26.43 (c, 0.28 in $CHCl_3$) (synthetic).

N^b*-Me:* ***N^b-Methylraumacline***
[132943-65-8]
$C_{21}H_{28}N_2O_2$ 340.464
Alkaloid from cell cultures of *Rauwolfia serpentina* (Apocynaceae). Amorph. solid. $[\alpha]_D^{25}$ -67.5 (c, 0.16 in $CHCl_3$) (synthetic).

6α-Hydroxy: ***6α-Hydroxyraumacline***
[145051-93-0]
$C_{20}H_{26}N_2O_3$ 342.437
Alkaloid from cell cultures of *Rauwolfia serpentina* (Apocynaceae). Needles (Me_2CO/Et_2O). Mp 199-200°.

10-Hydroxy, 19,20-didehydro, N*-de-Me:* ***10-Hydroxy-N-demethyl-19,20-dehydroraumacline***
$C_{19}H_{22}N_2O_3$ 326.394
Alkaloid from hairy root cultures of *Rauwolfia serpentina*. Powder. $[\alpha]_D^{25}$ +29.6 (c, 0.5 in MeOH). Mp >300°. Isol. as a mixt. of *E*- and *Z*-isomers. λ_{max} 226 (log ϵ 4.12); 279 (log ϵ 3.65) (MeOH).

*19*S*-Hydroxy,* N^b*-Me:* ***19(S)-Hydroxy-N^b-methylraumacline***
[141810-20-0]
$C_{21}H_{28}N_2O_3$ 356.464
Alkaloid from cell suspension cultures of *Rauwolfia serpentina* following addition of Ajmaline, A-216. Amorph. powder. $[\alpha]_D^{25}$ -86.7 (c, 0.18 in $CHCl_3$).

20-Epimer: ***Isoraumacline***
[149507-97-1]
$C_{20}H_{26}N_2O_2$ 326.438
Alkaloid from cell cultures of *Rauwolfia serpentina*. $[\alpha]_D^{20}$ +15.6 (c, 0.39 in $CHCl_3$). λ_{max} 228 ; 284 ; 293 (MeOH).

Polz, L. *et al., Tet. Lett.*, 1990, **31**, 6693 (*isol, uv, cd, pmr, cmr, struct*)
Endress, S. *et al., Planta Med.*, 1992, **58**, 410 (*6α-Hydroxyraumacline*)
Takayama, H. *et al., Tetrahedron*, 1992, **48**, 2627 (*19(S)-Hydroxy-N^b-methylraumacline*)
Endress, S. *et al., Helv. Chim. Acta*, 1993, **76**, 2544 (*synth*)
Fu, X. *et al., J.O.C.*, 1993, **58**, 661 (*synth*)
Endress, S. *et al., Phytochemistry*, 1993, **32**, 725-730 (*Isoraumacline*)
Bailey, P.D. *et al., J.C.S. Perkin 1*, 1997, 1209 (*synth*)
Sheludko, Y. *et al., Planta Med.*, 2002, **68**, 435-438 (*19,20-Didehydro-N-demethyl-10-hydroxyraumacline*)
Bailey, P.D. *et al., Tet. Lett.*, 2008, **49**, 2150-2153 (*synth*)

Raunamine R-23

[1360-77-6]

$C_{23}H_{30}N_2O_4$ 398.501

Struct. unknown. Alkaloid from the root bark of *Rauwolfia micrantha* (Apocynaceae). Needles (EtOH). Mp 206-207°. $[\alpha]_D^{17}$ +60.1 (c, 0.189 in EtOH).

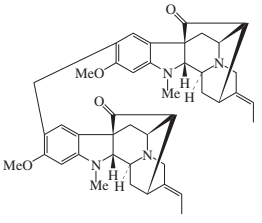
Hydrochloride:
Needles (EtOH). Mp 236-238°.

Picrate:
Yellow microcryst. needles (EtOH aq.). Mp 190-192° dec.

Pillay, P.P. *et al., J. Sci. Ind. Res., Sect. B*, 1960, **19**, 135-137 (*isol, uv, ir*)

Raureflexine R-24

[226994-19-0]



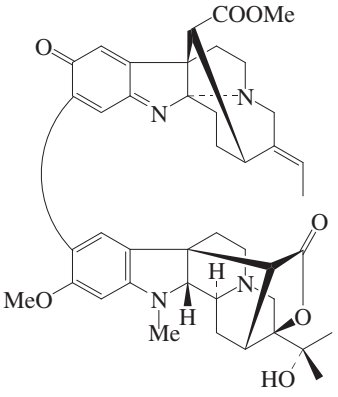
Absolute Configuration

$C_{43}H_{48}N_4O_4$ 684.877
Alkaloid from *Rauwolfia reflexa*. Amorph. solid. $[\alpha]_D^{25}$ +328.2 (c, 1 in $CHCl_3$). Dec. at 217-218°. λ_{max} 213 (log ϵ 4.76); 256 (log ϵ 4.19); 300 (log ϵ 4) (EtOH).

Chatterjee, A. *et al., J. Indian Chem. Soc.*, 1998, **75**, 695-697

Rausutranine R-25

[161068-56-0]

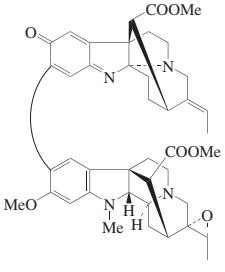


$C_{41}H_{46}N_4O_7$ 706.837
Alkaloid from leaves of *Rauwolfia sumatrana* (Apocynaceae). Dark red amorph. powder.

Subhadhirasakul, S. *et al., Chem. Pharm. Bull.*, 1994, **42**, 1427-1431 (*isol, uv, cd, pmr, cmr, ms, struct*)

Rausutrine R-26

[161068-57-1]



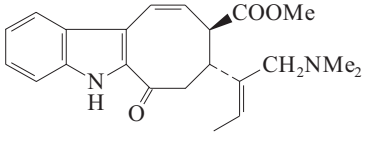
Absolute Configuration

$C_{42}H_{48}N_4O_7$ 720.864
Alkaloid from leaves of *Rauwolfia sumatrana* (Apocynaceae). Dark red amorph. powder.

Subhadhirasakul, S. *et al., Chem. Pharm. Bull.*, 1994, **42**, 1427-1431 (*isol, uv, cd, pmr, cmr, ms, struct*)

Rauviridine R-27

Vobasine methine
[57567-12-1]



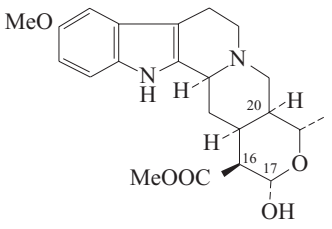
$C_{22}H_{26}N_2O_3$ 366.459
Alkaloid from the stem bark of *Rauwolfia viridis* (Apocynaceae). Needles (Et_2O/petrol). Mp 145-146°. $[\alpha]_D$ -103.7 (c, 0.9 in $CHCl_3$). Data given relates to synthetic prod.

Epimer: ***Epirauviridine***
[128112-82-3]
$C_{22}H_{26}N_2O_3$ 366.459
Alkaloid from the stem bark of *Rauwolfia viridis* (Apocynaceae). Config. not determined.

Renner, U. *et al., Helv. Chim. Acta*, 1963, **46**, 2186-2208 (*synth*)
Knox, J.R. *et al., Aust. J. Chem.*, 1975, **28**, 1843 (*synth*)
Martinez, P.J.A. *et al., Rev. Cubana Farm.*, 1989, **23**, 117; 129; *CA*, **113**, 37702; 41096 (*isol*)

Rauvolcinine R-28

[78853-47-1]



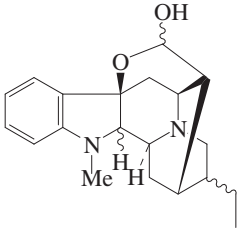
$C_{22}H_{28}N_2O_5$ 400.474
Alkaloid from the roots of *Rauwolfia volkensii* (Apocynaceae).

Stereoisomer: ***Cabucinine***
[38839-94-0]
$C_{22}H_{28}N_2O_5$ 400.474
Alkaloid from *Cabucala madagascariensis, Cabucala erythrocarpa, Cabucala fasciculata* and *Cabucala striolata* (Apocynaceae). Mp 170°. $[\alpha]_D$ 0 ($CHCl_3$). Epimeric with Rauvolcinine at C-20; C-16 and C-17 configs. undetd.

Douzoua, L.L. *et al., Ann. Pharm. Fr.*, 1972, **30**, 199-204; *CA*, **77**, 72560v (*Cabucinine*)
Akinloye, B.A. *et al., J. Ethnopharmacol.*, 1981, **4**, 99-109; *CA*, **95**, 111700j (*Rauvolcinine*)

Rauwolfinine R-29

Perakenine



Probable Structure

$C_{20}H_{26}N_2O_2$ 326.438
Alkaloid from the root bark of *Rauwolfia serpentina* (Apocynaceae). Plates (EtOAc). Mp 235-236° dec. $[\alpha]_D^{32}$ -34.7 (EtOH).

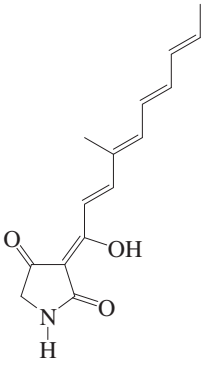
Hydrochloride: Mp 195° (dec.).

Hydrobromide:
Cryst. (EtOH). Mp 280-281° (dec.).

Bose, S. *et al., J. Indian Chem. Soc.*, 1954, **31**, 47; 311; 691; 1958, **35**, 72 (*isol, uv, ir, derivs, struct*)
Venkateswaran, N. *et al., J. Indian Chem. Soc.*, 1958, **35**, 363 (*conformn*)
Chatterjee, A. *et al., J. Indian Chem. Soc.*, 1961, **38**, 403 (*pmr, struct*)

Ravenic acid R-30

3-(1-Hydroxy-4-methyl-2,4,6,8-decatetraenylidene)-2,4-pyrrolidinedione, 9CI

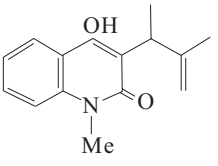


$C_{15}H_{17}NO_3$ 259.304
Tetramic acid. Prod. by *Penicillium* sp. MINAP9902. Orange-yellow solid. λ_{max} 240 (ϵ 9900); 366 (ϵ 11000) (EtOH).

Michael, A.P. *et al., J. Nat. Prod.*, 2002, **65**, 1360-1362 (*isol, uv, pmr, cmr, ms*)

Ravenoline R-31

[20105-23-1]



$C_{15}H_{17}NO_2$ 243.305

(+)-*form*
Alkaloid from *Ravenia spectabilis* (Rutaceae). Mp 144°. $[\alpha]_D^{35}$ +6 ($CHCl_3$).

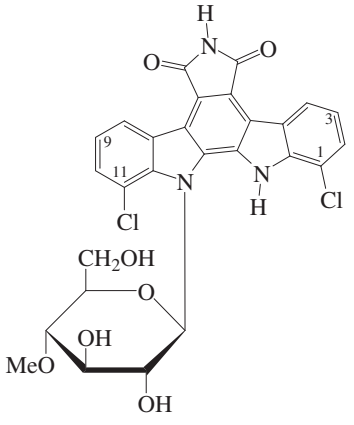
(-)-*form*
From *Ravenia spectabilis.* $[\alpha]_D$ -5 ($CHCl_3$). The question of the isol. of 2 enants. from the same sp. has not been resolved.

(ξ)-*form*
2′,3′-Dihydro, 2′-hydroxy: 4-Hydroxy-3-(2-hydroxy-1,2-dimethylpropyl)-1-methyl-2(1H)quinolinone. ***Paraensine***†
[33172-19-9]
$C_{15}H_{19}NO_3$ 261.32
Alkaloid from the heartwood of *Euxylophora paraënsis* (Rutaceae). Needles ($CHCl_3$ or Me_2CO/MeOH). Mp 217-218°. $[\alpha]_D^{25}$ -0.54 (c, 1.0 in $CHCl_3$).

Paul, B.D. *et al., Indian J. Chem.*, 1969, **7**, 678 (*ir, uv, pmr, struct, synth*)
Talapatra, S.K. *et al., Tet. Lett.*, 1971, 2683-6 (*isol*)
Jurd, L. *et al., Aust. J. Chem.*, 1983, **36**, 759 (*Paraensine*)

Rebeccamycin R-32

*1,11-Dichloro-12,13-dihydro-12-(4-O-methyl-β-D-glucopyranosyl)-5*H*-indolo[2,3-a]pyrrolo[3,4-c]carbazole-5,7(6*H*)-dione, 9CI*
[93908-02-2]



$C_{27}H_{21}Cl_2N_3O_7$ 570.384
Isol. from *Saccharothrix aerocolonigenes* ATCC 39243. Antineoplastic agent. Yellow solid. Sol. THF, DMSO; fairly sol. Me_2CO, $CHCl_3$/MeOH; poorly sol. H_2O, hexane, MeOH. Mp 326-330° dec. $[\alpha]_D^{21}$ +131 (THF). $[\alpha]_D^{20}$ +143 (c, 1 in THF) (synthetic). Log P 3.69 (calc). λ_{max} 238 (ε 43130); 256 (sh) (ε); 293 (ε 31466); 314 (ε 51594); 362 (ε 4780); 390 (ε 4495) (MeOH) (Derep). λ_{max} 237 ; 285 ; 314 (MeOH/NaOH) (Berdy).

▶ NM3455000

6-N-[2-(Diethylamino)ethyl]: ***Becatecarin, INN, USAN****. BMY 27557. BMS 181176. NSC 655649. XL 119*
[119673-08-4]
[127099-93-8 , 119673-09-5]
$C_{33}H_{34}Cl_2N_4O_7$ 669.56
Antineoplastic agent. Water-soluble Rebeccamycin deriv. active against P388 leukaemia and B16 melanoma. Sol. H_2O.

Aglycone: [118458-56-3]
Golden-yellow needles (DMF). Mp 360°.

Dibromo analogue: Bromorebeccamycin
[137605-02-8]
$C_{27}H_{21}Br_2N_3O_7$ 659.287
Prod. by *Saccharothrix aerocolonigenes* in a medium containing 0.5% KBr. Antineoplastic agent. Bright yellow amorph. solid. Sol. DMSO, DMF, THF; fairly sol. Me_2CO; poorly sol. H_2O. λ_{max} 206 (ε 22500); 238 (ε 27400); 294 (ε 20500); 316 (ε 34500); 390 (ε 3240) (MeOH) (Derep).

11-Dechloro: ***11-Deschlororebeccamycin***
[97938-09-5]
$C_{27}H_{22}ClN_3O_7$ 535.939
From *Saccharothrix aerocolonigenes* ATCC 39243. Active against gram-positive and -negative bacteria and tumours. Yellow solid. $[\alpha]_D^{20}$ +128.1 (c, 1 in THF) (synthetic). λ_{max} 235 ; 257 (sh) ; 290 ; 315 ; 400 (MeOH).

Bis(dechloro), 2,10-difluoro: Fluoroindolocarbazole A
[138829-50-2]
$C_{27}H_{21}F_2N_3O_7$ 537.476
Prod. by *Saccharothrix aerocolonigenes* ATCC 39243 in a medium containing 6-fluorotryptophan. Antitumour agent. Bright yellow amorph. solid. λ_{max} 228 (ε 780); 256 (ε 454); 280 (ε 387); 316 (ε 1050); 398 (ε 103) (MeOH).

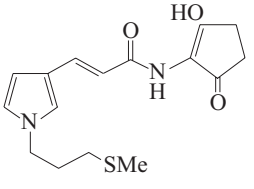
Bis(dechloro), 2,10-difluoro, O*-de-Me: Fluoroindolocarbazole B*
[138829-47-7]
$C_{26}H_{19}F_2N_3O_7$ 523.449
Prod. by *Saccharothrix aerocolonigenes* ATCC 39243 in a medium containing 6-fluorotryptophan. Antitumour agent. Bright yellow amorph. solid. λ_{max} 226 (ε 526); 256 (ε 313); 280 (ε 259); 316 (ε 640); 398 (ε 60) (MeOH).

Bis(dechloro), 3,9-difluoro, O*-de-Me: Fluoroindolocarbazole C*
[138829-46-6]
$C_{26}H_{19}F_2N_3O_7$ 523.449
Prod. by *Saccharothrix aerocolonigenes* in a medium containing 5-fluorotryptophan. Antitumour agent. Bright yellow amorph. solid. λ_{max} 230 (ε 348); 259 ; 277 ; 288 ; 322 (ε 457); 405 (MeOH).

Nettleton, D.E. *et al., Tet. Lett.*, 1985, **26**, 4011-4014 (*isol, struct, props*)
Kaneko, T. *et al., Tet. Lett.*, 1985, **26**, 4015-4018 (*synth*)
U.S. Pat., 1985, (*(Bristol-Myers)*)4 524 145; *CA*, **103**, 159104d (*11-dechloro*)
Bush, J.A. *et al., J. Antibiot.*, 1987, **40**, 668-678 (*manuf, props, bibl*)
Eur. Pat., 1988, (*(Bristol-Myers)*)269 025; *CA*, **110**, 135647b (*becatecarin, synth, pharmacol*)
Golik, J. *et al., J. Antibiot.*, 1989, **42**, 1784-1789 (*cmr*)
Bergman, J. *et al., J.O.C.*, 1989, **54**, 824-828 (*aglycone, synth, pmr*)
Kaneko, T. *et al., J. Antibiot.*, 1990, **43**, 125-127 (*becatecarin, synth, pharmacol*)
Lam, K.S. *et al., J. Antibiot.*, 1991, **44**, 934-939 (*Bromorebeccamycin*)
Fabre, S. *et al., Bioorg. Med. Chem.*, 1994, **2**, 73-77 (*sar*)
Saulnier, M.G. *et al., Tet. Lett.*, 1995, **36**, 7841-7844 (*synth*)
Faul, M.M. *et al., J.O.C.*, 1999, **64**, 2465-2470 (*synth, pmr, cmr*)
Lam, K.S. *et al., J. Antibiot.*, 2001, **54**, 1-9 (*Fluoroindolocarbazoles*)
Wang, J. *et al., Tet. Lett.*, 2001, **42**, 8935-8937 (*aglycone, synth*)
Rewcastle, G.W. *et al., IDrugs*, 2005, **8**, 838-847 (*becatecarin, rev*)

Reductiline R-33

AIS 2M3. Antibiotic AIS 2M3
[85145-25-1]

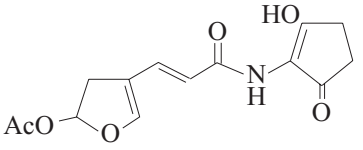


$C_{16}H_{20}N_2O_3S$ 320.412
Prod. by *Streptomyces orientalis* in the presence of methionine. Shows anticancer, antibacterial and antiviral props. Yellow cryst. (MeOH). Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. Mp 203-204°. λ_{max} 273 (ε 16000); 327 (ε 28700) (MeOH) (Derep). λ_{max} 260 (ε 13300); 305 (ε 12800) (MeOH/NaOH) (Berdy). λ_{max} 330 (ε 13700) (MeOH/HCl) (Berdy).

Japan. Pat., 1982, 82 57 206 676; *CA*, **99**, 4062
Ojika, M. *et al., Tet. Lett.*, 1982, **23**, 4977 (*struct, synth*)

Reductiomycin R-34

*3-[5-(Acetyloxy)-4,5-dihydro-3-furanyl]-*N*-(2-hydroxy-5-oxo-1-cyclopenten-1-yl)-2-propenamide. AM 6201. Antibiotic AM 6201. S 551II. Antibiotic S 551II*
[68748-55-0]



$C_{14}H_{15}NO_6$ 293.276
Identity of Reductiomycin and AM6201 not yet conclusively proven. Isol. from *Streptomyces orientalis, Streptomyces xanthochromogenus* and *Streptomyces griseorubiginosus.* Active against gram-positive bacteria, fungi and Newcastle disease virus. Yellow needles (MeOH). Mp 215° dec Mp 232-233°. λ_{max} 290 (ε 26000) (MeOH/HCl) (Derep). λ_{max} 265 (sh) (ε 25900); 282 (ε 28700); 326 (sh) (ε 15500) (MeOH) (Derep).

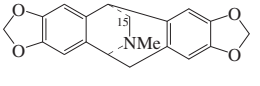
▶ UC6220000

[79303-68-7 , 83377-76-8 , 85439-32-3]

Kondo, Y. *et al., J. Antibiot.*, 1981, **34**, 1222 (*isol*)
Shimizu, K. *et al., J. Antibiot.*, 1981, **34**, 649; 654 (*isol*)
Shizuri, Y. *et al., Tet. Lett.*, 1981, **22**, 4291 (*uv, ir, pmr, cmr, ms, struct*)
Ojika, M. *et al., Chem. Comm.*, 1982, 628 (*synth*)
Onda, M. *et al., Chem. Pharm. Bull.*, 1982, **30**, 1210 (*isol, uv, cd, ir, pmr, cmr, struct*)
Donohue, J. *et al., J. Crystallogr. Spectrosc. Res.*, 1984, **14**, 35 (*cryst struct*)
Floss, H.G. *et al., Pure Appl. Chem.*, 1989, **61**, 485 (*rev, biosynth*)
Cho, H. *et al., J.A.C.S.*, 1993, **115**, 12296 (*biosynth*)

Reframidine R-35

*11,12-Dihydro-14-methyl-11,5-(iminomethano)-5*H*-cyclohepta[1,2-f:4,5-f′]bis[1,3]benzodioxole, 9CI*



(-)-*form*

$C_{19}H_{17}NO_4$ 323.348

(-)-*form* [21051-82-1]
Alkaloid from *Papaver anomalum* and *Roemeria refracta* (*Roemeria rhoeadiflora*)(Papaveraceae). Amorph. $[\alpha]_D^{23}$ -123 (c, 0.4 in MeOH).

N-*Oxide* (R-): ***(R)-Reframidine* N-*oxide***
[143051-75-6]
$C_{19}H_{17}NO_5$ 339.347
Alkaloid from *Roemeria refracta* (Papaveraceae). $[\alpha]_D$ -146.1 (c, 0.167 in MeOH).

N-*Oxide* (S-): ***(S)-Reframidine* N-*oxide***
[143120-44-9]
$C_{19}H_{17}NO_5$ 339.347
Alkaloid from *Roemeria refracta* (Papaveraceae). $[\alpha]_D$ -128.2 (c, 0.117 in MeOH).

N-*Me:* Mp 223-225° (as iodide).

N-*De-Me:* ***Norreframidine***
[119181-90-7]
$C_{18}H_{15}NO_4$ 309.321
Alkaloid from *Roemeria refracta* (Papaveraceae). Amorph. $[\alpha]_D$ -98 (c, 0.11 in MeOH). First known naturally occurring *N*-norisopavine.

15-Oxo: ***Roelactamine***. *15-Oxoreframidine*
[143070-35-3]
$C_{19}H_{15}NO_5$ 337.331
Alkaloid from *Roemeria refracta* (Papaveraceae). $[\alpha]_D$ -22 (c, 0.123 in MeOH). First example of a natural isopavine lactam.

15-(2-Oxopropyl): ***15-(2-Oxopropyl)reframidine***
[143120-82-5]
$C_{22}H_{21}NO_5$ 379.412
Alkaloid from *Roemeria refracta* (Papaveraceae). $[\alpha]_D$ -100.5 (c, 0.19 in MeOH). Isol. as an inseparable mixt. of 2 epimers which are possibly artifacts.

15-(Carboethoxy)methyl: ***Ethyl (raframidin-15-yl)acetate***
[143120-45-0]
$C_{23}H_{23}NO_6$ 409.438
Alkaloid from *Roemeria refracta* (Papaveraceae). $[\alpha]_D$ -104.2 (c, 0.19 in MeOH). Isol. as an inseparable mixt. of 2 epimers which are possibly artifacts.

(±)-*form* [33535-61-4]
Synthetic. Golden oil.

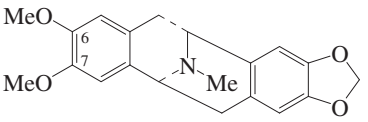
N-*Me:*
Cryst. (EtOH). Mp 267-269° (as iodide).

[143051-76-7 , 143070-36-4]

Dolejš, L. *et al., Coll. Czech. Chem. Comm.*, 1968, **33**, 3917 (*ms*)
Slavík, J. *et al., Coll. Czech. Chem. Comm.*, 1968, **33**, 4066 (*isol, uv, ir, struct*)
Dyke, S.F. *et al., Tetrahedron*, 1971, **27**, 3803 (*synth, pmr, ms*)
Pfeifer, S. *et al., Pharmazie*, 1972, **27**, 48 (*isol, ms*)
Kametani, T. *et al., Chem. Pharm. Bull.*, 1984, **32**, 1614 (*synth*)
Gözler, B. *et al., J. Nat. Prod.*, 1988, **51**, 760 (*Norreframidine*)
Gözler, B. *et al., Helv. Chim. Acta*, 1992, **75**, 260 (*oxides, Roelactamine*)

Reframine R-36

*10,11-Dihydro-7,8-dimethoxy-13-methyl-10,5-(iminomethano)-5*H*-benzo[4,5]cyclohepta[1,2-f]-1,3-benzodioxole, 9CI*
[21305-35-1]



$C_{20}H_{21}NO_4$ 339.39
Biogenetic (benzylisoquinoline-type) numbering shown. Alkaloid from *Roemeria refracta* (Papaveraceae). Amorph. $[\alpha]_D^{24}$ -146 (c, 0.5 in MeOH).

N-*Me:* ***Remrefine***. *Roemrefine*. *Reframine* N-*methosalt*
[26012-99-7]
[21059-77-8 , 21059-78-9]
$C_{21}H_{24}NO_4^{\oplus}$ 354.425
Quaternary alkaloid from *Roemeria refracta* (Papaveraceae). Cryst. (EtOH/Me_2CO or MeOH)(as chloride). Mp 258-259° (241-242°)(chloride). $[\alpha]_D$ -188 (c, 0.33 in H_2O) (-147).

O^6-*De-Me:* ***Reframoline***
[21238-92-6]
Alkaloid from *Roemeria refracta* (*Roemeria rhoeadiflora*) (Papaveraceae). Cryst. (Et_2O). Mp 160°. $[\alpha]_D^{20}$ -144 (c, 0.37 in EtOH).

O^7-*De-Me:* ***Refractamine***
$C_{19}H_{19}NO_4$ 325.363
Alkaloid from *Roemeria refracta* (Papaveraceae). Amorph. $[\alpha]_D$ -114 (c, 0.11 in MeOH).

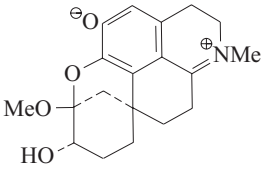
(±)-*form* [33535-62-5]
Synthetic. Red-brown gum.

N-*Me:*
Cryst. (EtOH). Mp 272-274°.

Yunusov, M.S. *et al., Khim. Prir. Soedin.*, 1967, **3**, 68; 1968, **4**, 225; *Chem. Nat. Compd. (Engl. Transl.)*, 1967, **3**, 58; 1968, **4**, 193 (*isol, uv, pmr, struct*)
Dolejš, L. *et al., Coll. Czech. Chem. Comm.*, 1968, **33**, 3917 (*ms*)
Slavík, J. *et al., Coll. Czech. Chem. Comm.*, 1968, **33**, 4066 (*isol, uv, ir, struct*)
Hoshino, O. *et al., Heterocycles*, 1973, **1**, 223 (*synth*)
Dyke, S.F. *et al., Tetrahedron*, 1978, **34**, 241; 3803 (*synth, uv, cd, pmr, ms*)
Gözler, B. *et al., J. Nat. Prod.*, 1988, **51**, 760 (*Refractamine*)

Regecoline R-37

[97682-67-2]



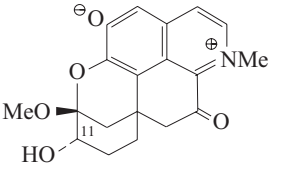
$C_{19}H_{23}NO_4$ 329.395
Alkaloid from the aerial parts of *Colchicum kesselringii* (Liliaceae). Mp 312-314° dec.

11-Epimer: ***Isoregecoline***
[104972-88-5]
$C_{19}H_{23}NO_4$ 329.395
Alkaloid from *Colchicum kesselringii* (Liliaceae). Mp 284-286°.

Usmanov, A.M. *et al., Khim. Prir. Soedin.*, 1985, **21**, 248; *Chem. Nat. Compd. (Engl. Transl.)*, 233 (*isol, pmr, cmr, ms, struct, synth*)
Chommadov, B. *et al., Khim. Prir. Soedin.*, 1985, **21**, 808; *Chem. Nat. Compd. (Engl. Transl.)*, 767 (*Isoregecoline*)
Alikulov, R.V. *et al., Khim. Prir. Soedin.*, 1986, **22**, 464; *Chem. Nat. Compd. (Engl. Transl.)*, 433 (*synth*)

Regelinone R-38

[66855-44-5]



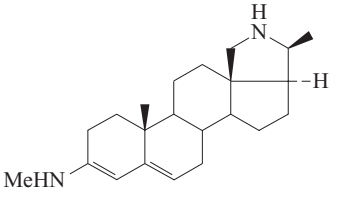
$C_{19}H_{19}NO_5$ 341.363
Struct. revised in 1985. Alkaloid from *Colchicum kesselringii* (Liliaceae). Mp 316-317°. λ_{max} 248 ; 300 ; 395 (no solvent reported).

11-Epimer: ***Isoregelinone***
[79027-71-7]
$C_{19}H_{19}NO_5$ 341.363
Alkaloid from *Colchicum kesselringii* (Liliaceae). Cryst. (Me_2CO/MeOH). Mp 321-323°. Struct. revised in 1985.

Yusupov, M.K. *et al., Khim. Prir. Soedin.*, 1977, **13**, 867-868; *Chem. Nat. Compd. (Engl. Transl.)*, 1977, **13**, 736-737 (*isol, uv, pmr, ms*)
Usmanov, A.M. *et al., Khim. Prir. Soedin.*, 1981, **17**, 195-199; *Chem. Nat. Compd. (Engl. Transl.)*, 1981, **17**, 152-156 (*Isoregelinone*)
Usmanov, A.M. *et al., Khim. Prir. Soedin.*, 1985, **21**, 81-84; *Chem. Nat. Compd. (Engl. Transl.)*, 1985, **21**, 76-79 (*pmr, struct*)

Regholarrhenine C R-39

N-*Methyl-23-norcona-3,5-dienin-3-amine, 9CI*. *3-Methylamino*-N-*norcona-3,5-diene*
[114687-92-2]

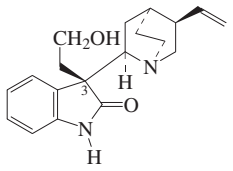


$C_{22}H_{34}N_2$ 326.524
Alkaloid from the stem bark of *Holarrhena antidysenterica* collected at flowering (Apocynaceae). Cryst. (MeOH/Me_2CO). Mp 302-304°. $[\alpha]_D^{33}$ -80 (c, 0.2 in MeOH).

N,N′-*Di-Ac:* Mp 191-192°.

Bhutani, K.K. *et al., Phytochemistry*, 1988, **27**, 925 (*isol, uv, ir, pmr, ms, cd, ord, struct*)

Remijinine R-40



Relative Configuration

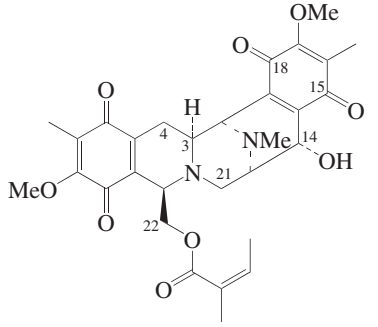
$C_{19}H_{24}N_2O_2$ 312.411
Alkaloid from the leaves of *Remijia peruviana*. Prisms (MeOH/EtOAc). Mp 214-216°. $[\alpha]_D^{25}$ -21.9 (c, 0.57 in MeOH). λ_{max} 207 (log ϵ 4.6); 251 (log ϵ 3.97); 282 (log ϵ 3.57) (EtOH).

3-Epimer: ***Epiremijinine***
$C_{19}H_{24}N_2O_2$ 312.411
Alkaloid from the leaves of *Remijia peruviana*. Amorph. $[\alpha]_D^{25}$ +41.6 (c, 0.13 in MeOH). λ_{max} 206 (log ϵ 4.05); 251 (log ϵ 3.14); 287 (log ϵ 2.85) (EtOH).

Díaz, J.G. *et al., J. Nat. Prod.*, 2004, **67**, 1667-1671 (*isol, pmr, cmr, cryst struct*)

Renieramycin A R-41

[79664-60-1]



$C_{30}H_{34}N_2O_9$ 566.607
Metab. from the marine sponge *Reniera* sp. Shows antimicrobial and antitumour props.; active against *Staphylococcus aureus* and *Bacillus subtilis*. Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. $[\alpha]_D^{20}$ -36.3 (c, 0.16 in MeOH). λ_{max} 267 (ϵ 15800); 363 (ϵ 1400) (MeOH) (Derep). λ_{max} 268 (ϵ 15800); 365 (ϵ 1370) (MeOH) (Berdy).

O-*Detigloyl, 22-Ac:* ***Xestomycin***
$C_{27}H_{30}N_2O_9$ 526.542
Isol. from *Xestospongia* sp. Antibacterial agent. Yellow powder. $[\alpha]_D$ -56 (MeOH). Poorly documented. λ_{max} 212 ; 267 ; 347 (MeOH).

Et ether: ***Renieramycin B***
[79664-61-2]
$C_{32}H_{38}N_2O_9$ 594.66
Prod. by *Reniera* sp. Shows antimicrobial and antitumour props. Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. $[\alpha]_D^{20}$ -32.2 (c, 0.15 in MeOH). Prob. an artifact. λ_{max} 265 (ϵ 16100); 370 (ϵ 1450) (MeOH) (Derep). λ_{max} 268 (ϵ 17400); 365 (ϵ 1460) (MeOH) (Berdy).

21α-Hydroxy, Me ether: ***Renieramycin F***
[123641-96-3]
$C_{31}H_{36}N_2O_{10}$ 596.633
From *Reniera* sp. Yellow powder. λ_{max} 265 (ϵ 16100); 370 (ϵ 1450) (MeOH) (Derep). λ_{max} 265 (ϵ 12000) (MeOH) (Berdy).

21α-Hydroxy, 14-deoxy: ***Renieramycin E***
[123641-95-2]
$C_{30}H_{34}N_2O_9$ 566.607
From *Reniera* sp. Yellow powder. λ_{max} 267 (ϵ 15800); 363 (ϵ 1400) (MeOH) (Derep). λ_{max} 266 (ϵ 17000) (MeOH) (Berdy).

21-Oxo: ***Renieramycin C***
[79664-62-3]
$C_{30}H_{32}N_2O_{10}$ 580.59
Prod. by *Reniera* sp. Shows antimicrobial and antitumour props. Poorly sol. hexane. $[\alpha]_D^{20}$ -89.2 (c, 0.065 in MeOH). λ_{max} 267 (ϵ 15800); 363 (ϵ 1400) (MeOH) (Derep). λ_{max} 266 (ϵ 14900); 360 (ϵ 21600) (MeOH) (Berdy).

21-Oxo, Et ether: ***Renieramycin D***
[79664-63-4]
$C_{32}H_{36}N_2O_{10}$ 608.644
Prod. by *Reniera* sp. Shows antimicrobial and antitumour props. Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. $[\alpha]_D^{20}$ -100.7 (c, 0.092 in MeOH). λ_{max} 265 (ϵ 16100); 370 (ϵ 1450) (MeOH) (Derep).

21-Oxo, 8a,9-didehydro, Me ether: ***Renieramycin I***
[224566-79-4]
$C_{31}H_{32}N_2O_{10}$ 592.601
Isol. from the sponge *Haliclona cribricutis*. λ_{max} 220 (log ϵ 4.4); 260 (log ϵ 4.1); 340 (log ϵ 3.5); 520 (log ϵ 3.1) (MeOH).

21-Oxo, 14-deoxy: ***Renieramycin G***
[143458-75-7]
$C_{30}H_{32}N_2O_9$ 564.591
Major metab. from the Fijian sponge *Xestospongia caycedoi*. Exhibits moderate cytotoxicity. Unstable. λ_{max} 267 (ϵ 15800); 363 (ϵ 1400) (MeOH) (Derep). λ_{max} 269 (ϵ 20000) (MeOH) (Berdy).

21α-Cyano: ***Renieramycin O***
[631913-68-3]
$C_{31}H_{33}N_3O_9$ 591.616
Isol. from a *Xestospongia* sp. pretreated with KCN. Oxidn. prod. of Renieramycin N. Pale yellow powder. $[\alpha]_D^{20}$ -134.4 (c, 0.7 in $CHCl_3$). λ_{max} 269 (log ϵ 4.62); 370 (log ϵ 3.1) (no solvent reported).

21α-Cyano, Me ether: ***Renieramycin R***
[724707-54-4]
$C_{32}H_{35}N_3O_9$ 605.643
Isol. from a *Xestospongia* sp. pretreated with KCN. Pale yellow solid. $[\alpha]_D^{18}$ -17.6 (c, 0.1 in $CHCl_3$). λ_{max} 269 (log ϵ 4.62); 370 (log ϵ 3.12) (no solvent reported).

21α-Cyano, 14-deoxy: ***Renieramycin M***
[631913-64-9]
$C_{31}H_{33}N_3O_8$ 575.617
Isol. from a *Xestospongia* sp. pretreated with KCN. Cytotoxic. Dark yellow prisms (EtOAc). Mp 194.5-197°. $[\alpha]_D^{20}$ -49.5 (c, 1 in $CHCl_3$). λ_{max} 269 (log ϵ 4.63); 370 (log ϵ 3.11) (no solvent reported).

21α-Cyano, 14-deoxy, O-*deacyl:* ***Jorunnamycin A***
$C_{26}H_{27}N_3O_7$ 493.515
Isol. from *Jorunna funebris* pre-treated with KCN. Pale yellow solid. $[\alpha]_D^{25}$ -270.6 (c, 1 in $CHCl_3$). λ_{max} 269 (log ϵ 4.61); 370 (log ϵ 3.11) (no solvent reported).

21α-Cyano, 14-deoxy, O-*deacyl,* O-*propanoyl:* ***Jorunnamycin C***
$C_{29}H_{31}N_3O_8$ 549.579
Isol. from *Jorunna funebris* pre-treated with KCN. Yellow solid. $[\alpha]_D^{20}$ -91.6 (c, 0.1 in $CHCl_3$). λ_{max} 268 (log ϵ 4.25); 370 (log ϵ 3.14) (no solvent reported).

*21α-Cyano, 14-deoxy, 7-*O-*de-Me: Renieramycin S*
$C_{30}H_{31}N_3O_8$ 561.59
Isol. from a *Xestospongia* sp. pretreated with KCN. Pale yellow needles (EtOAc/petrol). Mp 179-180°. $[\alpha]_D^{20}$ -38.8 (c, 0.1 in $CHCl_3$). λ_{max} 269 (log ϵ 4.62); 370 (log ϵ 3.12) (no solvent reported).

21α-Cyano, 15,18-hydroquinone: Renieramycin N
[631913-65-0]
$C_{31}H_{35}N_3O_9$ 593.632
Isol. from a *Xestospongia* sp. pretreated with KCN. Cytotoxic. Pale yellow prisms (EtOH). Mp 162.5-164°. $[\alpha]_D^{20}$ -24.7 (c, 0.01 in MeOH). λ_{max} 273 (log ϵ 3.99); 370 (log ϵ 2.7) (no solvent reported).

21α-Cyano, 15,18-hydroquinone, 14-ketone: ***Renieramycin Q***
[724707-53-3]
$C_{31}H_{33}N_3O_9$ 591.616
Isol. from a *Xestospongia* sp. pre-treated with KCN. Pale yellow solid. $[\alpha]_D^{18}$ -69.8 (c, 0.1 in $CHCl_3$). λ_{max} 224 (log ϵ 4.02); 276 (log ϵ 4.07); 374 (log ϵ 3.61) (no solvent reported).

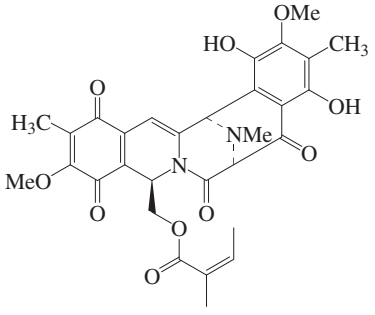
21α-Cyano, 15,18-hydroquinone, 14-ketone, O-*deacyl:* ***Jorunnamycin B***
$C_{26}H_{27}N_3O_8$ 509.515
Isol. from *Jorunna funebris* pre-treated with KCN. Orange-yellow solid. $[\alpha]_D^{20}$ +117.6 (c, 0.11 in $CHCl_3$). λ_{max} 254 (log ϵ 3.96); 275 (log ϵ 4.15); 371 (log ϵ 3.64) (no solvent reported).

Frincke, J.M. *et al., J.A.C.S.*, 1982, **104**, 265-269 (*Renieramycins A-D, isol, uv, ir, pmr, cmr, ms, struct*)
He, H. *et al., J.O.C.*, 1989, **54**, 5822-5824 (*Renieramycins E,F*)
Fukuyama, T. *et al., Tet. Lett.*, 1990, **31**, 5989-5992 (*synth, struct*)
Gulavita, N.K. *et al., CA*, 1992, **117**, 230454q (*Xestomycin*)
Davidson, B.S. *et al., Tet. Lett.*, 1992, **33**, 3721-3724 (*Renieramycin G*)
Parameswaran, P.S. *et al., Indian J. Chem., Sect. B*, 1998, **37**, 1258-1263 (*Renieramycin I*)
U.S. Pat., 2001, 7 241 892; *CA*, **134**, 17616 (*Xestomycin*)
Suwanborirux, K. *et al., J. Nat. Prod.*, 2003, **66**, 1441-1446; 2004, **67**, 1023-1028 (*Renieramycins M,N,O,Q,R,S*)
Magnus, P. *et al., J.A.C.S.*, 2005, **127**, 12476-12477 (*Renieramycin G, synth*)

Lane, J.W. *et al., J.A.C.S.*, 2005, **127**, 12684-12690 (*Renieramycin G, synth*)
Charupant, K. *et al., Chem. Pharm. Bull.*, 2007, **55**, 81-86 (*Jorunnamycins A-C*)

Renieramycin H R-42

Cribrostatin 4
[276682-85-0]
[224566-78-3]



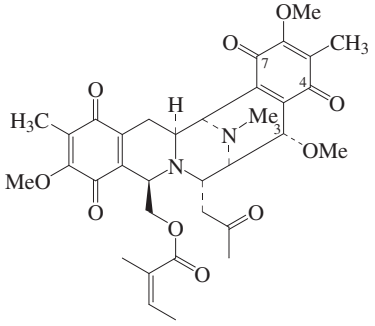
$C_{30}H_{30}N_2O_{10}$ 578.574

Struct. revised in 2001. Isol. from sponges *Cribrochalina* sp. and *Haliclona cribicutis*. Cytotoxic agent. Red prisms (MeOH). Mp 190-192° dec. λ_{max} 209 (ϵ 40770); 274 (ϵ 13680); 359 (ϵ 8070); 507 (ϵ 3420) (MeOH).

Pasameswaran, P.S. *et al., Indian J. Chem., Sect. B*, 1998, **37**, 1258-1263 (*isol*)
Pettit, G.R. *et al., J. Nat. Prod.*, 2000, **63**, 793-798 (*isol, uv, ir, pmr, cmr, ms, cryst struct*)
Saito, N. *et al., Heterocycles*, 2001, **55**, 21-28 (*pmr, cmr, struct*)
Chan, C. *et al., J.A.C.S.*, 2005, **127**, 4596-4598; 7262 (*synth*)
Vincent, G. *et al., Angew. Chem., Int. Ed.*, 2007, **46**, 1517-1520 (*synth*)
Chen, X. *et al., Angew. Chem., Int. Ed.*, 2007, **46**, 3962-3965 (*synth*)

Renieramycin K R-43

[631913-66-1]



$C_{34}H_{40}N_2O_{10}$ 636.697

Isol. from a Thai sponge *Xestospongia* sp. Amorph. yellow powder. λ_{max} 271 (log ϵ 4.4); 372 (log ϵ 3.11) (no solvent reported).

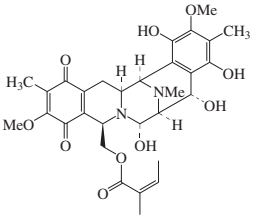
3-Demethoxy: ***Renieramycin J***
[500111-59-1]
$C_{33}H_{38}N_2O_9$ 606.671
Isol. from *Xestospongia* sp. Amorph. yellow powder. λ_{max} 273 (log ϵ 4.32); 370 (log ϵ 3) (no solvent reported).

4,7-Hydroquinone, O^3*-de-Me, 3-ketone:* ***Renieramycin L***
[631913-67-2]
$C_{33}H_{38}N_2O_{10}$ 622.671
Isol. from a *Xestospongia* sp. Pale yellow powder. λ_{max} 244 (log ϵ 4.02); 276 (log ϵ 4.07); 375 (log ϵ 3.75) (no solvent reported).

Suwanborirux, K. *et al., J. Nat. Prod.*, 2003, **66**, 1441-1446 (*isol, pmr, cmr*)

Renieramycin P R-44

Renieramycin J (obsol.)†
[593280-18-3]



Absolute Configuration

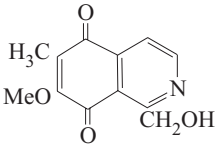
$C_{30}H_{36}N_2O_{10}$ 584.622

Originally called Renieramycin J; renamed to avoid duplication. Isol. from the sponge *Neopetrosia* sp. Brownish solid. $[\alpha]_D^{21}$ +1.2 (c, 0.02 in MeOH). λ_{max} 203 (ϵ 39000); 273 (ϵ 12000) (MeOH).

Oku, N. *et al., J. Nat. Prod.*, 2003, **66**, 1136-1139 (*isol, pmr, cmr*)
Suwanborirux, K. *et al., J. Nat. Prod.*, 2003, **66**, 1441-1446 (*nomencl*)

Renierol† R-45

1-(Hydroxymethyl)-7-methoxy-6-methyl-5,8-isoquinolinedione, 9CI
[77640-19-8]



$C_{12}H_{11}NO_4$ 233.223

Alkaloid from the Fijian sponge *Xestospongia caycedoi*; also from *Oceanapia* sp. Shows antibiotic activity. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. λ_{max} 205 (ϵ 15000); 241 (ϵ 13000); 314 (ϵ 4100) (MeOH) (Berdy).

O-*Ac:* ***Renierol acetate***
[97603-18-4]
$C_{14}H_{13}NO_5$ 275.26
Metab. from the marine sponge *Xestospongia* sp. and its associated nudibranch *Jorunna funebris*. Cryst. (MeOH). Mp 118-119°. λ_{max} 246 (ϵ 17780); 318 (ϵ 5011) (MeOH) (Berdy). λ_{max} 206 ; 237 ; 296 ; 315 (EtOH) (Berdy).

O-*Propanoyl:* ***Renierol propionate***
[124909-65-5]
$C_{15}H_{15}NO_5$ 289.287
Isol. from the sponge *Xestospongia* sp. and its associated nudibranch *Jorunna funebris*. Yellow needles (MeOH). Mp 89-90°.

O-*Angeloyl:* ***Renierone***
[73777-65-8]
$C_{17}H_{17}NO_5$ 315.325
Major metab. from an intense blue sponge *Reniera* sp., possibly prod. by symbiotic microorganism. Active against gram-positive bacteria, fungi and tumours. Mp 91.5-92.5°. Related to Mimocin, M-622. λ_{max} 214 (ϵ 20000); 312 (ϵ 4000) (MeOH) (Derep).

O^7*-De-Me,* $O^{1'}$*-Ac:* **O-*Demethylrenierol acetate***
[149022-06-0]
$C_{13}H_{11}NO_5$ 261.234
Isol. from a bright blue sponge *Petrosia* sp. Shows antibacterial activity. Yellow oil. λ_{max} 226 (ϵ 19400); 300 (ϵ 4094) (MeOH).

O^7*-De-Me,* O-*angeloyl:* **O-*Demethylrenierone***
[77515-81-2]
$C_{16}H_{15}NO_5$ 301.298
Isol. from an unidentified *Reniera* sp. and a *Cribrochalina* sp. Shows antibacterial props. Orange solid. Mp 135-136°. λ_{max} 208 (ϵ 12500); 248 (ϵ 7640); 290 (ϵ 3260); 316 (ϵ 1610) (MeOH) (Derep). λ_{max} 228 (log ϵ 3.92); 298 (log ϵ 3.31) (MeOH).

1,2-Dihydro, O-*Ac,* N-*formyl:* **N-*Formyl-1,2-dihydrorenierol acetate***
[124909-71-3]
$C_{15}H_{15}NO_6$ 305.287
Isol. from the sponge *Xestospongia* sp. and its associated nudibranch *Jorunna funebris*. Dark red oil. Sol. MeOH. λ_{max} 269 (ϵ 9772); 340 (ϵ 3467); 500 (ϵ 1550) (MeOH) (Berdy). λ_{max} 204 ; 217 ; 269 ; 344 (EtOH) (Berdy).

1,2-Dihydro, O-*propanoyl,* N-*formyl:* **N-*Formyl-1,2-dihydrorenierol propionate***
[124909-72-4]
$C_{16}H_{17}NO_6$ 319.313
Isol. from the sponge *Xestospongia* sp. and its associated nudibranch *Jorunna funebris*. Dark red oil. λ_{max} 268 (ϵ 10000); 340 (ϵ 3715); 500 (ϵ 1737) (MeOH) (Berdy).

*1,2*R-*Dihydro,* O-*angeloyl,* N-*formyl:* ***(-)-*N-*Formyl-1,2-dihydrorenierone***
[79664-57-6]
$C_{18}H_{19}NO_6$ 345.351
Isol. from a *Reniera* sp. Active against tumours. Red non-cryst. solid. Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. $[\alpha]_D^{20}$ -227 (c, 0.023 in MeOH). Shown to be a 2:1 mixt. of two rotamers by pmr and cmr. λ_{max} 216 (ϵ 31000); 265 (ϵ 16500); 340 (ϵ 6000); 515 (ϵ 3500) (MeOH) (Derep).

*1,2*S-*Dihydro,* O-*angeloyl,* N-*formyl:* ***(+)-*N-*Formyl-1,2-dihydrorenierone***
[80108-30-1]
$C_{18}H_{19}NO_6$ 345.351
Isol. from a *Cribrochalina* sp. and a *Reniera* sp. Dark red solid. $[\alpha]_D$ +230 (c, 0.04 in MeOH). λ_{max} 218 (log ϵ 4.35); 268 (log ϵ 3.96); 344 (log ϵ 3.53) (MeOH).

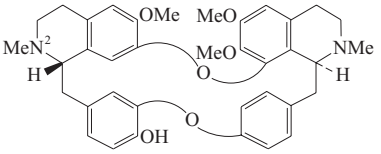
1,2-Dihydro, O-*angeloyl,* N-*(3-oxo-1-butenyl):* **N-*(3-Oxo-1-butenyl)-1,2-dihydrorenierone***

[182293-46-5]
$C_{21}H_{23}NO_6$ 385.416
Isol. from the Philippine marine sponge *Xestospongia* sp. Active against gram-positive bacteria. Shows weak insecticidal activity. Blue gum. λ_{max} 223 (ϵ 27000); 312 (ϵ 23000); 330 (ϵ 21000) (MeOH).

McIntyre, D.E. *et al., Tet. Lett.*, 1979, 4163-4166 (*Renierone, isol, uv, ir, cmr, pmr, cryst struct*)
Danishefsky, S. *et al., Tet. Lett.*, 1980, 4819-4822 (*Renierone, synth*)
Kubo, A. *et al., Chem. Pharm. Bull.*, 1981, **29**, 595-596; 1983, **31**, 341-343; 1986, **34**, 4056-4068; 1989, **37**, 1384-1386 (*synth, ir, derivs*)
Frincke, J.M. *et al., J.A.C.S.*, 1982, **104**, 265-269 (*Renierone, N-formyl-1,2-dihydrorenierone, O-Demethylrenierone*)
Berman, E. *et al., Diss. Abstr. Int., B*, 1984, **45**, 556 (*synth*)
Kitahara, Y. *et al., Chem. Pharm. Bull.*, 1985, **33**, 823-830 (*cmr*)
McKee, T.C. *et al., J. Nat. Prod.*, 1987, **50**, 754-756 (*isol, uv, ir, pmr, cmr, ms, struct*)
Saito, N. *et al., Chem. Pharm. Bull.*, 1989, **37**, 1493-1499 (*Renierone, synth*)
Venkateswarlu, Y. *et al., Indian J. Chem., Sect. B*, 1993, **32**, 704 (*O-Demethylrenierol acetate*)
Edrada, R.A. *et al., J. Nat. Prod.*, 1996, **59**, 973-976 (*N-(3-Oxo-1-butenyl)-1,2-dihydrorenierone*)
Ramesh, P. *et al., J. Nat. Prod.*, 1999, **62**, 780-781 (*activity, isol*)
Fontana, A. *et al., Tetrahedron*, 2000, **56**, 7305-7308 (*isol*)
Plubrukarn, A. *et al., Pharm. Biol.*, 2003, **41**, 439-442 (*(+)-N-Formyl-1,2-dihydrorenierone*)
Kuwabara, N. *et al., Tetrahedron*, 2004, **60**, 2943-2952 (*synth*)

Repandine† R-46

6,6′,7-Trimethoxy-2,2′-dimethyloxyacanthan-12′-ol, 9CI
[518-92-3]



$C_{37}H_{40}N_2O_6$ 608.733
Alkaloids covered by this entry (*S,S*-config.) are enantiomeric with respect to those in Limacusine, L-175 and diastereomeric with those in Oxyacanthine, O-1 (1*R*,1′*S*-). Alkaloid from the bark of *Daphnandra repandula*, and the leaves, stem and bark of *Daphnandra johnsonii* (Monimiaceae). Shows selective antiplasmodial activity. Needles (EtOH). Mp 255°. $[\alpha]_D^{15}$ -106 (c, 1.2 in $CHCl_3$). Epimer of Oxyacanthine in O-1.

N^2-*De-Me:* ***Demerarine***
[15353-21-6]
$C_{36}H_{38}N_2O_6$ 594.706
Alkaloid from the bark of *Ocotea rodiaei* (Lauraceae). Needles (MeOH). Mp 222-223°. $[\alpha]_D^{25}$ -162 (c, 0.35 in $CHCl_3$/MeOH 5:95). Epimer of Sepeerine in O-1.

N^2-*De-Me; hydrochloride (1:2):*
Cryst. + $1H_2O$. Mp 278°. $[\alpha]_D$ -181 (c, 1.0 in H_2O).

Me ether: **O-*Methylrepandine***
[4021-17-4]
$C_{38}H_{42}N_2O_6$ 622.76
Alkaloid from the bark of *Daphnandra dielsii* and *Daphnandra repandula*, the leaves, stem and bark of *Daphnandra johnsonii*, and from *Isopyrum thalictroides* (Monimiaceae, Ranunculaceae). Needles (MeOH). Mp 211°. $[\alpha]_D^{13}$ -73 (c, 0.3 in $CHCl_3$). $[\alpha]_D^{20}$ -108 (c, 1.7 in 0.1*M* HCl).

Me ether, N^2,$N^{2'}$-*di-Me:*
Needles + $2.5H_2O$ (H_2O)(as diiodide). Mp 255-260° dec. (diiodide). $[\alpha]_D^{20}$ -93 (c, 1.6 in 50% EtOH aq.).

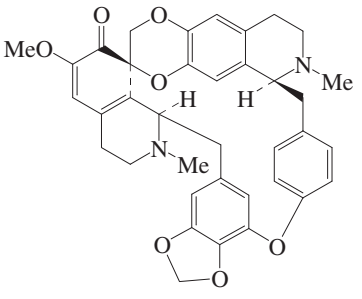
$O^{6'}$-*De-Me,* O^{12}-*Me:* ***Johnsonine***
[69064-34-2]
$C_{37}H_{40}N_2O_6$ 608.733
Alkaloid from the leaves, stems and bark of *Daphnandra johnsonii* (Monimiaceae). Pale-yellow cryst. + 0.5 MeOH. Mp 225° dec. (sinters at 150-152°). $[\alpha]_D^{19}$ -86 ($CHCl_3$).

$O^{7'}$-*De-Me,* O^{12}-*Me:* ***Cycleapeltine***. *Faralaotrine*
[38849-80-8]
Alkaloid from the roots of *Cyclea peltata* and the leaves, stem bark and root bark of *Colubrina faralaotra* ssp. *faralaotra* (Menispermaceae, Rhamnaceae). Cryst. (EtOH/$CHCl_3$). Mp 232-234°. $[\alpha]_D^{25}$ -106 (c, 1.0 in $CHCl_3$). Enantiomer of Limacusine, L-175. λ_{max} 282 (ϵ 5200) (MeOH) (Berdy).

Bick, I.R.C. *et al., J.C.S.*, 1948, 2170; 1949, 2767; 1953, 695 (*Repandine, O-Methylrepandine, isol, struct, uv*)
Fujita, E. *et al., Yakugaku Zasshi*, 1952, **72**, 1232; *CA*, **47**, 12409a (*struct, synth*)
Hearst, P.J. *et al., J.O.C.*, 1964, **29**, 466; 1968, **33**, 1229 (*Demerarine*)
Battersby, A.R. *et al., J.C.S.*, 1965, 2239 (*uv, ord*)
Falco, M.R. *et al., Tet. Lett.*, 1968, 1953 (*pmr*)
Baldas, J. *et al., J.C.S. Perkin 1*, 1972, 592 (*ms*)
Bick, I.R.C. *et al., Aust. J. Chem.*, 1978, **31**, 2539 (*Johnsonine*)
Moulis, C. *et al., J. Nat. Prod.*, 1981, **44**, 101 (*O-Methylrepandine, isol, uv, ir, pmr, ms*)
Koike, L. *et al., J.O.C.*, 1982, **47**, 4351 (*cmr*)
Schiff, P.L. *et al., J. Nat. Prod.*, 1997, **60**, 934-953 (*Cycleapeltine*)
Angerhoffer, C.K. *et al., J. Nat. Prod.*, 1999, **62**, 59-66 (*activity*)

Repanduline R-47

[20398-02-1]



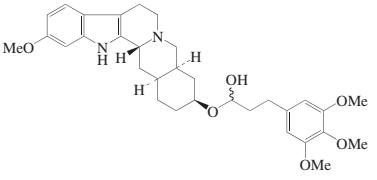
$C_{37}H_{36}N_2O_7$ 620.701
Alkaloid from the bark of *Daphnandra repandula, Daphnandra dielsii* and *Daphnandra tenuipes* (Monimiaceae). Yellow needles. Mp 215-232° dec. (shrinks at 180-185°). $[\alpha]_D^{17}$ +473 (c, 0.98 in $CHCl_3$) (c, 0.2 in MeOH).

Hydrochloride (1:2): Dec. slowly >100°.

Bick, I.R.C. *et al., J.C.S.*, 1953, 692-695; 695-700 (*isol, uv*)
Harley-Mason, J. *et al., J.C.S.(C)*, 1967, 1948-1951 (*ir, struct*)
Bick, I.R.C. *et al., J.C.S.(C)*, 1967, 1951-1957 (*pmr, ms, struct*)
Shamma, M. *et al., Heterocycles*, 1975, **3**, 297-300 (*biosynth*)
Neuhaus, D. *et al., J.A.C.S.*, 1983, **105**, 5996-6002 (*pmr, abs config*)
Koike, L. *et al., J. Nat. Prod.*, 1992, **55**, 455-460 (*cmr*)

Rescinnaminol R-48

[109028-40-2]

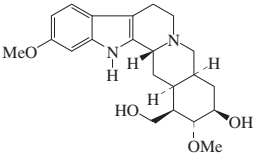


$C_{32}H_{42}N_2O_6$ 550.694
The proposed hemiacetal struct. would not be expected to be stable or isolable. Alkaloid from roots of *Rauwolfia serpentina*. Mp 241-243°.

Siddiqui, S. *et al., Pak. J. Sci. Ind. Res.*, 1986, **29**, 401-403; *CA*, **107**, 36566f

Reserpenediol R-49

18-Hydroxy-11,17-dimethoxyyohimban-16-methanol, 9CI. Reserpic alcohol
[482-98-4]



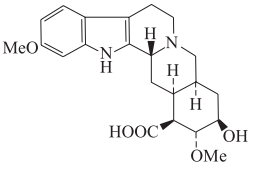
$C_{22}H_{30}N_2O_4$ 386.49
Alkaloid from *Rauwolfia serpentina* root cultures (Apocynaceae), well known prev. as semisynthetic prod. Mp 217-218°. λ_{max} 228 ; 273 ; 298 (MeOH).

[75331-13-4 , 75331-14-5]

Uddin, A. *et al., Bangladesh Pharm. J.*, 1978, **7(3)**, 15-16; *CA*, **91**, 35721s (*isol, uv*)

Reserpic acid R-50

18-Hydroxy-11,17-dimethoxyohimban-16-carboxylic acid, 9CI. Reserpinolic acid
[83-60-3]



$C_{22}H_{28}N_2O_5$ 400.474
Alkaloid from *Rauwolfia vomitoria*, hydrol. prod. of several ester alkaloids. Only recently isol. in unesterified form (Apocynaceae). Mp 241-243°.

Hydrochloride: [1910-70-9]
Mp 257-263°. $[\alpha]_D$ -80 ($CHCl_3$).

Me ester: ***Methyl reserpate***
[2901-66-8]
$C_{23}H_{30}N_2O_5$ 414.5
Alkaloid from *Rauwolfia serpentina, Rauwolfia amsoniaefolia, Rauwolfia macrophylla* and *Rauwolfia vomitoria* (Apocynaceae). Mp 244-245°. $[\alpha]_D$ -101 (c, 0.5 in $CHCl_3$). λ_{max} 228 (log ϵ 4.49); 271 (log ϵ 3.67); 298 (log ϵ 3.78) (EtOH).

▶ LD_{50} (rat, orl) 479 mg/kg. ZF9890000

O-*(3,4-Dimethoxybenzoyl), Me ester:* ***3,4-Dimethoxybenzoylreserpic acid methyl ester***
[2901-64-6]
$C_{32}H_{38}N_2O_8$ 578.661
Alkaloid from root bark of *Rauwolfia vomitoria* (Apocynaceae). Mp 225-230° dec Mp 230° (synthetic). $[\alpha]_D^{20}$ -125.5 (c,1 in $CHCl_3$). λ_{max} 223 (log ϵ 4.74); 263 (log ϵ 4.27); 296 (log ϵ 4.13) (MeOH).

O-*(3,4,5-Trimethoxybenzoyl), Me ester:* see Reserpine, R-52

O-*(3-Methoxy-4,5-methylenedioxybenzoyl), Me ester:* ***Veneserpine***
[23924-95-0]
$C_{32}H_{36}N_2O_9$ 592.644
Alkaloid from *Alstonia venenata* stem bark (Apocynaceae). Mp 249-250° dec. $[\alpha]_D$ -100 ($CHCl_3$). pK_a 6.1. λ_{max} 225 (log ϵ 4.65); 274 (log ϵ 4.18); 292 (log ϵ 4.08) (EtOH).

O-*(2-Acetamidobenzoyl), Me ester:* ***Anthraserpine***
[123690-03-9]
$C_{32}H_{37}N_3O_7$ 575.66
Alkaloid from *in vitro* hairy-root cultures of *Catharanthus trichophyllus.* Highly unstable. Opt. rotn. not recorded. λ_{max} 220 (log ϵ 4.74); 251 (log ϵ 4.48); 310 (log ϵ 4.02) (EtOH).

O-*(2-Acetamido-4,5-dimethoxybenzoyl), Me ester:* ***Dimethoxyanthraserpine***
[123690-04-0]
$C_{34}H_{41}N_3O_9$ 635.713
Major alkaloid from *in vitro* hairy-root cultures of *Catharanthus trichophyllus.* Amorph. solid. $[\alpha]_D^{20}$ -73 (c, 0.6 in $CHCl_3$). λ_{max} 229 (log ϵ 4.58); 272 (log ϵ 4.18); 307 (log ϵ 3.96) (EtOH).

O-*(3,4,5-Trimethoxycinnamoyl), Me ester:* ***Rescinnamine, BAN, INN, JAN****. Reserpinine†. Anaprel. Apoterin. Cinnaloid. Rescaloid. Moderil. Scinnamina. Many other names*
[84-34-4]
[24815-24-5]
$C_{35}H_{42}N_2O_9$ 634.725
Alkaloid from *Rauwolfia vomitoria, Rauwolfia caffra, Rauwolfia cumminsii, Rauwolfia macrophylla, Rauwolfia oreogiton, Rauwolfia volkensii, Rauwolfia mombasiana* and many other *Rauwolfia* spp. (Apocynaceae). Antihypertensive agent and tranquilliser agent. Sedative. Cryst. (Me_2CO aq.). Mp 238-239° (in vacuo). $[\alpha]_D^{17}$ -99 (c, 1.3 in $CHCl_3$). Log P 3.6 (calc). Not the same as Reserpinine, R-53. Shows similar pharmacol. to Reserpine but is less potent.

▶ LD_{50} (rat, orl) 1000 mg/kg.

O-*(3,4,5-Trimethoxycinnamoyl), O*^{17}*-de-Me, Me ester:* ***Rescidine***
[3314-86-1]
$C_{34}H_{40}N_2O_9$ 620.698
Alkaloid from *Rauwolfia vomitoria* (Apocynaceae). Needles (MeOH). Mp 183-186° dec. $[\alpha]_D$ -63.4 (c, 1 in $CHCl_3$). λ_{max} 229 (log ϵ 4.76); 302 (log ϵ 4.42) (no solvent reported).

O-*[3-(3,4,5-Trimethoxyphenyl)propanoyl], Me ester:* ***Rescinnamidine***
[110222-52-1]
$C_{35}H_{44}N_2O_9$ 636.741
Alkaloid from roots of *Rauwolfia serpentina*. Yellow needles ($CHCl_3$/Et_2O). Mp 260-261°. $[\alpha]_D^{20}$ +207 ($CHCl_3$). λ_{max} 210 ; 225 ; 270 ; 295 (MeOH).

O^{17}*-De-Me, 17*-O-*(3,4,5-trimethoxybenzoyl), Me ester:* ***Raugustine***
[522-79-2]
$C_{32}H_{38}N_2O_9$ 594.66
Alkaloid from *Rauwolfia ligustrina* (Apocynaceae). Cryst. + $1H_2O$. Mp 160-170° dec. (*in vacuo*). $[\alpha]_D^{24}$ -50 (c, 0.609 in $CHCl_3$). λ_{max} 217 (ϵ 54600); 268 (ϵ 15400); 291 (sh) (ϵ 9300) (EtOH).

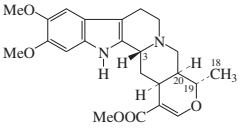
O^{17}*-De-Me, 18*-O-*(2-acetamidobenzoyl), Me ester:* ***Pseudoanthraserpine***
[123690-05-1]
$C_{31}H_{35}N_3O_7$ 561.633
Alkaloid from *in vitro* hairy-root cultures of *Catharanthus trichophyllus.* Amorph. Tentative struct. No stereochem. implied.

3-Epimer, O-*(3,4,5-trimethoxycinnamoyl), Me ester:* ***3-Epirescinnamine***
[187082-77-5]
$C_{35}H_{42}N_2O_9$ 634.725
Alkaloid from root bark of *Rauwolfia vomitoria* (Apocynaceae). Mp 238°. $[\alpha]_D^{20}$ -137.2 (c, 1 in $CHCl_3$). λ_{max} 230 (log ϵ 4.57); 300 (log ϵ 4.2) (MeOH).

Furlenmeyer, A. *et al., Experientia*, 1953, **9**, 331-333 (*Me ester, uv, ir*)
Klohs, M.W. *et al., J.A.C.S.*, 1955, **77**, 2241-2243 (*Rescinnamine, isol*)
Kroneberg, G. *et al., Arzneim.-Forsch.*, 1956, **6**, 579-583 (*Rescinnamine, pharmacol*)
Müller, J.M. *et al., Experientia*, 1957, **13**, 479-481 (*Raugustine, isol*)
Zoha, M.S. *et al., J. Pharm. Pharmacol.*, Suppl., 1958, **10**, 231T-240T (*Rescinnamine, pharmacol*)
Woodward, R.B. *et al., Tetrahedron*, 1958, **2**, 1-57 (*synth, Me ester*)
Rosen, W.E. *et al., J.A.C.S.*, 1961, **83**, 4816-4819 (*pmr, Me ester*)
Popelak, A. *et al., Naturwissenschaften*, 1961, **48**, 73-74 (*Rescidine, isol*)
Popelak, A. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1963, **296**, 261-265 (*Rescidine, struct*)
Chatterjee, A. *et al., Chem. Ind. (London)*, 1969, 1388-1389 (*Veneserpine, isol, struct*)
Pantarotto, C. *et al., Adv. Mass Spectrom. Biochem. Med.*, 1977, **2**, 351-364 (*Rescinnamine, detn, glc, ms*)
Suzuki, Y. *et al., CA*, 1982, **96**, 115441 (*pharmacol*)
Malik, A. *et al., J. Nat. Prod.*, 1983, **46**, 939 (*isol*)
Lounasmaa, M. *et al., Heterocycles*, 1985, **23**, 371-375 (*pmr*)
Siddiqui, S. *et al., J. Nat. Prod.*, 1987, **50**, 238-240 (*Rescinnamidine*)
Davioud, E, *et al., Phytochemistry*, 1989, **28**, 1383-1387 (*Anthraserpine, Dimethoxyanthraserpine, Pseudoanthraserpine*)
Awang, D.V.C. *et al., J. Pharm. Biomed. Anal.*, 1990, **8**, 91; *CA*, **113**, 115663n (*cmr, Rescinnamine*)
Negwer, M. *et al., Organic-Chemical Drugs and their Synonyms, 7th edn., Akademie-Verlag*, 1994, 11465 (*synonyms*)
Petati, M. *et al., Fitoterapia*, 1996, **67**, 422-426 (*3-Epirescinnamine, 3,4-Dimethoxybenzoylreserpic acid methyl ester*)
Martindale, The Extra Pharmacopoeia, 32nd edn., Pharmaceutical Press, 1999, 941
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, MPH300; TLN500

Reserpiline R-51

Elliptamine
[131-02-2]



Absolute Configuration

$C_{23}H_{28}N_2O_5$ 412.485
Alkaloid from *Rauwolfia canescens* and very many other *Rauwolfia* spp., *Aspidosperma discolor* and some *Ochrosia* spp. (Apocynaceae). Noncryst. $[\alpha]_D$ -12 ($CHCl_3$). λ_{max} 229 (log ϵ 4.57); 250 (log ϵ 4.07); 300 (log ϵ 4.03); 304 (log ϵ 4.03); 307 (sh) (log ϵ 4) (EtOH).

▶ RP5776550

Hydrochloride: Mp 205-207°. $[\alpha]_D^{24}$ -40 (c, 0.44 in EtOH).

*(4*R*)*-N-*Oxide:* ***Reserpiline (4*R*)-*N*-oxide***
[77795-01-8]
$C_{23}H_{28}N_2O_6$ 428.484
Alkaloid from the trunk bark of *Ochrosia moorei* (Apocynaceae). λ_{max} 224 ; 274 ; 291 ; 296 ; 302 ; 308 (EtOH).

*(4*S*)*-N-*Oxide:* ***Reserpiline (4*S*)-*N*-oxide***
[77795-02-9]
$C_{23}H_{28}N_2O_6$ 428.484
Alkaloid from the trunk bark of *Ochrosia moorei* (Apocynaceae). λ_{max} 225 ; 276 ; 290 ; 297 ; 302 ; 307 (EtOH).

N^4*-Me:* ***4-Methylreserpiline***
[49685-85-0 (bromide)]
$C_{24}H_{31}N_2O_5^{\oplus}$ 427.519

Quaternary alkaloid from the root bark of *Rauwolfia confertiflora* (Apocynaceae).

19,20-Didehydro: ***19,20-Dehydroreserpiline***
[70509-80-7]
$C_{23}H_{26}N_2O_5$ 410.469
Alkaloid from the stem bark of *Rauwolfia vomitoria* (Apocynaceae).

3-Epimer: ***Isoreserpiline***
[572-67-8]
$C_{23}H_{28}N_2O_5$ 412.485
From *Rauwolfia* spp., *Aspidosperma discolor, Vinca* and *Ochrosia* spp. (Apocynaceae). Mp 211-212° dec. $[\alpha]_D^{20}$ -82 (Py). λ_{max} 220 (log ϵ 4.58); 250 (log ϵ 4.16); 300 (log ϵ 4.01); 304 (log ϵ 4.02); 311 (sh) (log ϵ 3.98) (EtOH or MeOH).

3-Epimer, N^4*-Me:* ***Holeinine****.* N^b*-Methylisoreserpilinium*
[6879-77-2]
$C_{24}H_{31}N_2O_5^{\oplus}$ 427.519
Quaternary alkaloid from the bark of *Ochrosia sandwicensis* (Apocynaceae). Needles (MeOH/EtOAc) (as chloride). Mp 283-285° dec. (chloride). $[\alpha]_D^{23}$ -134.5 (c, 2.97 in MeOH) (chloride).

3-Epimer, 18,19-didehydro: 18,19-Dehydro-3-isoreserpiline. ***Darcyribeirine***
[432031-09-9]
Alkaloid from the root bark of *Rauwolfia grandiflora*. Amorph. solid. $[\alpha]_D^{20}$ -36 (c, 0.05 in $CHCl_3$). λ_{max} 226 (log ϵ 4.53); 299 (log ϵ 4.01) (no solvent reported).

3,20-Diepimer: ***10,11-Dimethoxyajmalicine***
[55529-56-1]
$C_{23}H_{28}N_2O_5$ 412.485
Alkaloid from *Cabucala striolata, Rauwolfia cumminsii* and *Neisosperma glomerata* (Apocynaceae).

19,20-Diepimer: ***3-Epirauvanine***
[6835-93-4]
$C_{23}H_{28}N_2O_5$ 412.485
Alkaloid from the bark of *Neisosperma oppositifolia* (Apocynaceae). Amorph. $[\alpha]_D$ +111 ($CHCl_3$).

3,19,20-Triepimer: ***Rauvanine***
[3148-42-3]
$C_{23}H_{28}N_2O_5$ 412.485
Alkaloid from *Rauwolfia vomitoria* (Apocynaceae). Leaflets + $0.5H_2O$ (MeOH). Mp 129-135° dec. $[\alpha]_D$ +32.5 (c, 1 in $CHCl_3$). λ_{max} 228 (log ϵ 4.54); 298 (log ϵ 3.98); 315 (log ϵ 3.99) (no solvent reported).

▶ RP5776500

3,19,20-Triepimer, hydrochloride: Mp 280-282° dec.

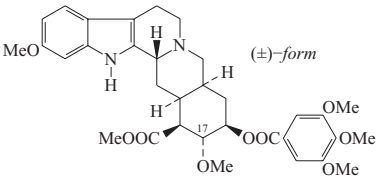
Stereoisomer: ***Neoreserpiline***
$C_{23}H_{28}N_2O_5$ 412.485
Alkaloid from leaves and stems of *Rauwolfia perakensis* (Apocynaceae). Mp 129-131°. $[\alpha]_D^{23}$ -78 (Py). Config. undetd. No CAS no. reported.

Stereoisomer, nitrate: Mp 252-254° dec.

Stoll, A. *et al., Helv. Chim. Acta*, 1955, **38**, 270-283 (*isol, uv, ir, struct*)
Goutarel, R. *et al., C. R. Hebd. Seances Acad. Sci.*, 1961, **253**, 2589-2591 (*Rauvanine, uv, ir, pmr, struct*)
Scheuer, P.J. *et al., J.O.C.*, 1961, **26**, 3069-3071 (*Holeinine*)
Shamma, M. *et al., J.A.C.S.*, 1962, **84**, 1739-1740; 1963, **85**, 2507-2512 (*pmr, config*)
Spiteller, G. *et al., Monatsh. Chem.*, 1963, **94**, 779-785 (*ms*)
Poisson, J. *et al., Bull. Soc. Chim. Fr.*, 1964, 2853-2856 (*3-Epirauvanine*)
Kiang, A.K. *et al., J. Nat. Prod.*, 1964, **27**, 220-225 (*Neoreserpiline*)
Finch, N. *et al., Tetrahedron*, 1966, **22**, 1327-1333 (*uv, ord, config*)
Bombardelli, E. *et al., Fitoterapia*, 1973, **43**, 67-70; 1974, **45**, 183-187; *CA*, **79**, 137335p; **83**, 25051u (*4-Methylreserpiline, 10,11-Dimethoxyajmalicine*)
Sabri, N.N. *et al., Phytochemistry*, 1978, **17**, 2023-2026 (*19,20-Dehydroreserpiline*)
Rüffer, M. *et al., Tet. Lett.*, 1978, 1593-1596 (*biosynth*)
Ahond, A. *et al., J. Nat. Prod.*, 1981, **44**, 193-199 (*oxides*)
Seguin, E. *et al., J. Nat. Prod.*, 1982, **45**, 738-744; 1984, **47**, 687-691 (*10,11-Dimethoxyajmalicine*)
Seguin, E. *et al., Helv. Chim. Acta*, 1983, **66**, 2059-2067 (*cd*)
Amarasekara, A.S. *et al., Fitoterapia*, 1986, **57**, 55-57 (*3-Epirauvanine, isol*)
De Bruyn, A. *et al., Magn. Reson. Chem.*, 1989, **27**, 935-940 (*pmr, cmr*)
Cancelieri, N.M. *et al., Tet. Lett.*, 2002, **43**, 1783-1787 (*Darcyribeirine, Isoreserpiline*)

Reserpine, BAN, INN, JAN, USAN R-52

Serpasil. Sermix. Reserpoid. Sandril. Apoplon. Carpacil. Many other names



$C_{33}H_{40}N_2O_9$ 608.687
Antiadrenergic, anticonvulsant agent. Antineoplastic agent. Possesses sedative tranquilliser props. Antihypertensive agent acting by depleting stores of noradrenaline in sympathetic neurones. Many semisynthetic analogues have been investigated. Log P 3.37 (calc).

(-)-*form* [50-55-5]
Alkaloid from *Rauwolfia serpentina, Rauwolfia vomitoria, Rauwolfia macrophylla*, very many other *Rauwolfia* spp., *Vinca minor, Alstonia constricta* and many other spp. in the Apocynaceae, e.g. *Vallesia dichotoma* and *Excavatia coccinea* (preferred genus name *Ochrosia*). Active against fungi. Long prisms (Me_2CO aq.). Sol. $CHCl_3$, AcOH; fairly sol. H_2O. Mp 262-266° Mp 284-285°. λ_{max} 216 (ϵ 61700); 267 (ϵ 1700); 295 (ϵ 12200) (MeOH) (Berdy).

▶ Adverse effects reported when used therapeutically incl. mental depression and gastrointestinal disturbances. Human and exp. reprod. effects. Exp. teratogen. Exp. neoplastic agent. LD_{50} (rat, orl) 420 mg/kg. ZG0350000

Hydrochloride: Mp 224°.

Perchlorate: Mp 238-239°.

Picrate: Mp 183-186°.

N^b*-Oxide:* ***Renoxydine****. Reserpoxidine. Renoxidine*
[474-48-6]
$C_{33}H_{40}N_2O_{10}$ 624.686
Alkaloid from *Rauwolfia vomitoria, Rauwolfia serpentina, Rauwolfia canescens*, several other *Rauwolfia* spp. and *Melodinus balansae* (Apocynaceae). Shows similar pharmacol. props. to Reserpine but with about half the activity. Cryst. + ½ H_2O (Me_2CO/hexane). Mp 238-241° dec. $[\alpha]_D$ -100 ($CHCl_3$). λ_{max} 218 (ϵ 64300); 267 (ϵ 16600); 296 (ϵ 11000) (EtOH).

1-N-*(Diethylaminoethyl):* ***Bietaserpine, INN***
[53-18-9]
$C_{39}H_{53}N_3O_9$ 707.862
Antihypertensive agent. $[\alpha]_D^{17}$ -121 (c, 2 in $CHCl_3$). Log P 4.88 (calc).

▶ Exp. teratogen. ZF9380000

1-N-*(Diethylaminoethyl), bitartrate: Pleiaserpin. Pleiatensin simplex. Tensibar. DL 152. S 1210*
[1111-44-0]
Mp 145-150° dec.

▶ Exp. reprod. and teratogenic effects (large dose). LD_{50} (rat,orl) 4885 mg/kg. ZF9385000

O^{17}*-De-Me:* ***Pseudoreserpine****. Norreserpine. ψ-Reserpine*
[522-80-5]
$C_{32}H_{38}N_2O_9$ 594.66
Alkaloid from *Rauwolfia canescens, Rauwolfia nitida* and *Rauwolfia ligustrina* (Apocynaceae). Shows antihypertensive and sedative activity, weaker than that of Reserpine. Cryst. (Me_2CO aq.). Mp 257-258°. $[\alpha]_D^{24}$ -65 (c, 1 in $CHCl_3$). Log P 2.7 (calc). λ_{max} 218 (log ϵ 4.76); 268 (log ϵ 4.22); 296 (log ϵ 4.02) (EtOH).

O^{17}*-De-Me; nitrate:*
Fine needles. Mp 253-255°.

3-Epimer: ***3-Isoreserpine***
[482-85-9]
[72173-53-6]
$C_{33}H_{40}N_2O_9$ 608.687
Alkaloid from *Rauwolfia vomitoria*. Cryst. (MeOH). Mp 152-156° (150-151°). $[\alpha]_D^{23}$ -165.1 (c, 1 in $CHCl_3$).

16,17-Diepimer, O^{17}*-de-Me:* ***16,17-Diepipseudoreserpine***
[82262-76-8]
$C_{32}H_{38}N_2O_9$ 594.66
Alkaloid from *Rauwolfia yunnanensis* (Apocynaceae). Alkaloid not named in the abstract.

Stereoisomer, O^{17}*-de-Me:* ***Neonorreserpine***
[74958-26-2]
Alkaloid from *Rauwolfia vomitoria* (Apocynaceae). Silky prismatic rods (MeOH/C_6H_6). Mp 291-292°. Config. unknown.

Stereoisomer, O^{17}*-de-Me, hydrochloride:*

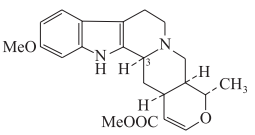
Mp 230-231°.

(±)-*form* [75331-15-6]
Mp 260-262° dec.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 1069C (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 615A (*nmr*)
Furlenmeyer, A. *et al., Experientia*, 1953, **9**, 331-333 (*uv, ir*)
Ulshafer, P.R. *et al., C. R. Hebd. Seances Acad. Sci.*, 1957, **244**, 2989-2991 (*oxide*)
Klohs, M.W. *et al., J.A.C.S.*, 1957, **79**, 3763-3766 (*Pseudoreserpine*)
Velluz, L. *et al., Bull. Soc. Chim. Fr.*, 1958, 145-146; 673-677 (*synth*)
Woodward, R.B. *et al., Tetrahedron*, 1958, **2**, 1-57 (*synth*)
Rosen, W.E. *et al., J.A.C.S.*, 1961, **83**, 4816-4819 (*pmr*)
U.K. Pat., 1961, 894 866; *CA*, **57**, 9910e (*Bietaserpine*)
Berthaux, P. *et al., Arzneim.-Forsch.*, 1964, **14**, 1040-1045 (*Bietaserpine, pharmacol, clin trials*)
Ban, Y. *et al., Tetrahedron*, 1964, **20**, 2877-2884 (*abs config*)
Schlittler, E. *et al., Alkaloids (Academic Press)*, 1965, **8**, 287-334 (*rev*)
Levin, R.H. *et al., J.O.C.*, 1973, **38**, 1983-1986 (*cmr*)
Taylor, W.I. *et al., The Vinca Alkaloids*, Marcel Dekker, 1973, (*rev, props*)
Becker, O. *et al., Org. Mass Spectrom.*, 1977, **12**, 461-464 (*ms*)
Mehri, M.H. *et al., Phytochemistry*, 1978, **17**, 1451-1452 (*oxide*)
Fanso-Free, S.N.Y. *et al., J.A.C.S.*, 1979, **101**, 1549-1553 (*N-15 nmr*)
Pearlman, B.A. *et al., J.A.C.S.*, 1979, **101**, 6404-6408 (*synth*)
Bein, H.J. *et al., Handb. Exp. Pharmacol.*, (Part 1), 1980, **55**, 43-58 (*rev, pharmacol*)
IARC Monog., 1980, **24**, 211; *Suppl.*, **6**, 485; *Suppl.*, **7**, 330 (*rev, tox*)
Wender, P.A. *et al., J.A.C.S.*, 1980, **102**, 6157-6159 (*synth*)
Voelter, W. *et al., Z. Naturforsch., B*, 1980, **35**, 920-923 (*Neonorreserpine, isol, cmr*)
Feng, X. *et al., Yaoxue Xuebao*, 1981, **16**, 510-518; *CA*, **97**, 3593j (*Diepipseudoreserpine, isol*)
Muhtadi, F.J. *et al., Anal. Profiles Drug Subst.*, 1984, **13**, 737-765 (*rev, ir, pmr, cmr, ms, anal*)
Lounasmaa, M. *et al., Heterocycles*, 1985, **23**, 371-375 (*pmr*)
Szántay, C. *et al., Alkaloids (Academic Press)*, 1986, **27**, 253-268 (*pharmacol, bibl*)
Martin, S.F. *et al., J.A.C.S.*, 1987, **109**, 6124-6134 (*synth*)
Negwer, M. *et al., Organic-Chemical Drugs and their Synonyms, 6th edn., Akademie-Verlag*, 1987, 7993 (*synonyms*)
Zhang, L.-H. *et al., J.O.C.*, 1989, **54**, 4708-4712 (*3-Isoreserpine*)
Chu, C.-S. *et al., Chem. Comm.*, 1996, 1537-1538 (*synth*)
Nicolaou, K.C. *et al., Classics in Total Synthesis, Targets, Strategies, Methods*, VCH, 1996, 55 (*bibl, synth*)
Hanessian, S. *et al., J.O.C.*, 1997, **62**, 465-473 (*synth*)
Martindale, The Extra Pharmacopoeia, 32nd edn., Pharmaceutical Press, 1999, 942
Mehta, G. *et al., J.C.S. Perkin 1*, 2000, 1399-1404 (*synth*)
Sparks, S.M. *et al., J.O.C.*, 2003, **68**, 5274-5285 (*synth*)
Stork, G. *et al., J.A.C.S.*, 2005, **127**, 16255-16262 (*synth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, DIG800; RDK000; DIH000

Reserpinine† R-53

Methyl 16,17-didehydro-11-methoxy-19-methyloxayohimban-17-carboxylate, 9CI. Raubasinine. Pubescine†
[482-96-2]



Absolute configuration

$C_{22}H_{26}N_2O_4$ 382.458
Alkaloid from *Rauwolfia serpentina*, many other *Rauwolfia* spp., *Vinca major* and several other *Vinca* spp., also in *Ochrosia oppositifolia* (Apocynaceae). Cryst. (Me_2CO). Mp 243-244° dec. (229°). $[\alpha]_D^{20}$ -131 (c, 1.18 in $CHCl_3$) (-120). λ_{max} 228 (log ϵ 4.65); 250 (sh) (log ϵ 4.12); 296 (log ϵ 3.81) (no solvent reported).

Hydrochloride: Mp 244-246° dec.

3-Epimer: ***3-Isoreserpinine***
[482-95-1]
$C_{22}H_{26}N_2O_4$ 382.458
From *Rauwolfia canescens, Ochrosia oppositifolia*, *Vinca major* and *Vinca herbacea* (Apocynaceae). Cryst. (Et_2O/EtOH). Mp 225-226° dec. $[\alpha]_D^{20}$ -5 (c, 0.7 in Py).

19-Epimer: ***Raunitidine***
[14883-83-1]
$C_{22}H_{26}N_2O_4$ 382.458
Alkaloid from leaves of *Rauwolfia nitida* (Apocynaceae). Cryst. (EtOH). Mp 276-278°. $[\alpha]_D$ -30.6 (Py). $[\alpha]_D$ -69.5 ($CHCl_3$). λ_{max} 229 (log ϵ 4.63); 250 (log ϵ 4.06); 298 (log ϵ 3.8) (no solvent reported).

▶ LD_{50} (mus, ivn) 56 mg/kg. NM3400000

19-Epimer, hydrochloride:
Cryst. + 1EtOH (EtOH). Mp 230° dec. $[\alpha]_D$ -108 (MeOH).

20-Epimer: ***Tetraphylline***
[482-94-0]
$C_{22}H_{26}N_2O_4$ 382.458
Alkaloid from *Rauwolfia* spp. and leaves of *Ochrosia glomerata* (Apocynaceae). Mp 220-223° dec. $[\alpha]_D^{28}$ -73 ($CHCl_3$). $[\alpha]_D$ -35 (Py). λ_{max} 229 (log ϵ 4.65); 298 (log ϵ 3.81) (EtOH).

20-Epimer, nitrate: Mp 264-266°.

3,19-Diepimer: Isoraunitidine
[13555-43-6]
Synthetic. Cryst. (MeOH). Mp 259-261°. $[\alpha]_D$ +131 (Py). λ_{max} 229 (log ϵ 4.66); 249 (log ϵ 4.11); 298 (log ϵ 3.86) (EtOH).

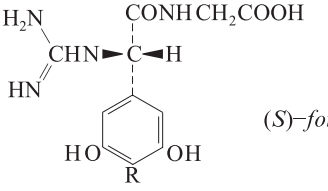
3,20-Diepimer: ***Raufloridine***
[36063-55-5]
$C_{22}H_{26}N_2O_4$ 382.458
Alkaloid from root bark of *Rauwolfia confertiflora* and bark of *Neisosperma glomerata* (Apocynaceae). Amorph. powder. $[\alpha]_D^{20}$ +5.95 (c, 0.25 in Me_2CO).

3,20-Diepimer, hydrochloride: Mp 183°.

Weisenborn, F.L. *et al., Chem. Ind. (London)*, 1954, 375-376 (*isol, uv, ir, struct*)
Djerassi, C. *et al., J.A.C.S.*, 1957, **79**, 1217-1222 (*Tetraphylline*)
Salkin, R. *et al., J. Pharm. Sci.*, 1961, **50**, 1038-1041 (*Raunitidine*)
Shamma, M. *et al., J.A.C.S.*, 1963, **85**, 2507-2512 (*pmr, config*)
Göggel, H. *et al., Chem. Comm.*, 1965, 538-539 (*biosynth*)
Finch, N. *et al., Tetrahedron*, 1966, **22**, 1327-1333 (*uv, ord, config*)
Danieli, B. *et al., Chim. Ind. (Milan)*, 1971, **53**, 1042-1043 (*Raufloridine*)
Levin, R.H. *et al., J.O.C.*, 1973, **38**, 1983-1986 (*cmr*)
Taylor, W.I. *et al., The Vinca Alkaloids*, Marcel Dekker, 1973, (*rev, props*)
Sakai, S. *et al., Yakugaku Zasshi*, 1978, **98**, 850; *CA*, **79**, 18923w (*synth*)
Seguin, E. *et al., J. Nat. Prod.*, 1982, **45**, 738-744; 1984, **47**, 687-691 (*Tetraphylline, Raufloridine, isol*)
Seguin, E. *et al., Helv. Chim. Acta*, 1983, **66**, 2059-2067 (*cd*)
De Bruyn, A. *et al., Magn. Reson. Chem.*, 1989, **27**, 935-940 (*Tetraphylline, pmr*)
Mukhopadhyay, G. *et al., Phytochemistry*, 1991, **30**, 2447-2449 (*3-epimer, cryst struct*)

Resorcinomycin A R-54

N-*[*N-*(Aminoiminomethyl)-2-[3,5-dihydroxy-4-(1-methylethyl)phenyl]glycyl]-glycine, 9CI. DO 248A. Antibiotic DO 248A*
[100234-70-6]



(*S*)–*form*

R = $-CH(CH_3)_2$

$C_{14}H_{20}N_4O_5$ 324.336
Peptide antibiotic. Isol. from *Streptoverticillium roseoverticillatum*. Active against acid-fast bacteria. Powder + $2H_2O$. Sol. H_2O, DMF, EtOH, MeOH; fairly sol. Me_2CO, EtOAc, $CHCl_3$; poorly sol. C_6H_6, hexane, Et_2O. Mp 194-200°. λ_{max} 276 (ϵ 1170); 283 (ϵ 1170) (MeOH/HCl) (Derep). λ_{max} 297 (ϵ 2400) (MeOH/NaOH) (Derep). λ_{max} 276 (ϵ 1170); 283 (ϵ 1170) (MeOH) (Derep).

Eur. Pat., 1985, 159 004; *CA*, **104**, 67502 (*isol*)
Kondo, E. *et al., J. Antibiot.*, 1989, **42**, 1; 463 (*isol, struct, props*)

Resorcinomycin B R-55

N-*[*N-*(Aminoiminomethyl)-2-(4-ethyl-3,5-dihydroxyphenyl)glycyl]glycine, 9CI. DO 248B. Antibiotic DO 248B*
[100234-69-3]
As Resorcinomycin A, R-54 with
R = $-CH_2CH_3$

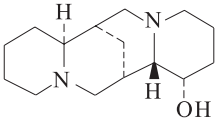
$C_{13}H_{18}N_4O_5$ 310.309
Peptide antibiotic. Isol. from *Streptoverticillium roseoverticillatum*. Active against acid-fast bacteria. Powder +$2H_2O$. Sol. H_2O, MeOH, DMF, EtOH; fairly sol. Me_2CO, EtOAc, $CHCl_3$; poorly sol.

C_6H_6, Et_2O, hexane. Mp 189-192°. λ_{max} 276 (ϵ 1170); 283 (ϵ 1170) (MeOH/HCl) (Derep). λ_{max} 297 (ϵ 2400) (MeOH/NaOH) (Derep). λ_{max} 276 (ϵ 1170); 283 (ϵ 1170) (MeOH) (Derep).

Ger. Pat., 1985, 159 004; *CA*, **104**, 67502 (*isol*)
Kondo, E. *et al., J. Antibiot.*, 1989, **42**, 1 (*isol, struct, props*)

Retamine R-56

12α-Hydroxysparteine
[2122-29-4]

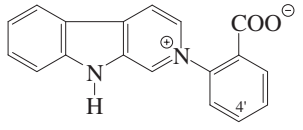


Absolute configuration

$C_{15}H_{26}N_2O$ 250.383
The 12-config. does not appear to be unequivocally established. Originally thought to be 7-, 8-, or 9-hydroxysparteine. Alkaloid from *Genista sphaerocarpa, Genista junceum* and most *Genista* spp. (Fabaceae). Powerful hypotensive agent. Mp 166°. $[\alpha]_D^{20}$ +46.2 (c, 1.02 in EtOH).
► VH5373000
Battandier, J. *et al., C. R. Hebd. Seances Acad. Sci.*, 1897, **125**, 360; 450 (*isol*)
Fraga, F. *et al., Tetrahedron*, 1960, **11**, 78 (*isol, ir*)
Bohlmann, F. *et al., Chem. Ber.*, 1965, **98**, 659 (*struct*)
Shin, K.H. *et al., Can. J. Chem.*, 1965, **43**, 2012 (*struct, synth, abs config*)
Neuner-Jehle, N. *et al., Monatsh. Chem.*, 1967, **98**, 836 (*ms*)
Bohlmann, F. *et al., Chem. Ber.*, 1975, **108**, 1043 (*cmr*)

Reticulatate R-57

[552846-52-3]



$C_{18}H_{12}N_2O_2$ 288.305
Alkaloid from the sponges *Fascaplysinopsis reticulata* and *Thorectandra* sp. Light yellow solid. λ_{max} 215 (log ϵ 3.72); 260 (log ϵ 3.71); 312 (log ϵ 3.6); 388 (log ϵ 2.94) (MeOH).

Me ester: ***Reticulatine****. 1-Deoxysecofascaplysin A. Methyl reticulatate*
[552846-51-2]
$C_{19}H_{15}N_2O_2^{\oplus}$ 303.34
Alkaloid from the sponges *Fascaplysinopsis reticulata* and a *Thorectandra* sp. Light yellow solid. Counterion not specified. λ_{max} 218 (log ϵ 3.89); 261 (log ϵ 3.85); 313 (log ϵ 3.71); 348 (log ϵ 3.18); 394 (log ϵ 3.14) (MeOH).

Me ester, salt with Dehydroluffariellolide diacid: ***Reticulatine B***
[135091-12-2]
$C_{44}H_{52}N_2O_6$ 704.905
Isol. from *Fascaplysinopsis reticulata*. Red amorph. solid. Consists of alkaloid cation with sesterterpenoid anion. λ_{max} 250 ; 308 ; 340 (sh) ; 382 (MeOH) (Derep).

Me ester, salt with 16-Oxodehydroluffariellolide diacid: ***Reticulatine A***
[135091-11-1]
$C_{44}H_{50}N_2O_7$ 718.888
Alkaloid from the sponge *Fascaplysinopsis reticulata*. Red amorph. solid. Consists of alkaloid cation with sesterterpenoid anion. λ_{max} 250 ; 308 ; 340 (sh) ; 382 (MeOH) (Derep).

4′-Bromo: ***14-Bromoreticulatate***
[548773-66-6]
$C_{18}H_{11}BrN_2O_2$ 367.201
Alkaloid from the sponge *Fascaplysinopsis reticulata*. Yellow solid.

4′-Bromo, Me ester: ***14-Bromoreticulatine***
[693790-76-0]
$C_{19}H_{14}BrN_2O_2^{\oplus}$ 382.236
Alkaloid from the Indo-Pacific sponge *Fascaplysinopsis reticulata*. Yellow solid (as chloride).

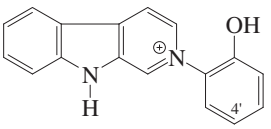
7-Bromo, Me ester: Methyl 7-bromoreticulatate
[1001202-15-8]
$C_{19}H_{14}BrN_2O_2^{\oplus}$ 382.236
Alkaloid from an undescribed thorectid sponge.

4′,7-Dibromo, Me ester: ***Methyl 7,14-dibromoreticulatate***
[693790-77-1]
$C_{18}H_{10}Br_2N_2O_2$ 446.097
Alkaloid from *Fascaplysinopsis reticulata*. Yellow solid. Different numbering systems used.

Jiménez, C. *et al., Tet. Lett.*, 1991, **32**, 1843-1846 (*Reticulatines A,B*)
Segraves, N.L. *et al., Tet. Lett.*, 2003, **44**, 3471-3475 (*isol, pmr, cmr*)
Segraves, N.L. *et al., J. Nat. Prod.*, 2004, **67**, 783-792 (*isol, activity*)
Charan, R.D. *et al., Nat. Prod. Res.*, 2004, **18**, 225-229 (*Thorectandra alkaloids*)
Ankietty, S. *et al., Nat. Prod. Commun.*, 2007, **2**, 1145-1148 (*Methyl 7-bromoreticulatate*)

Reticulatol R-58

[694436-62-9]



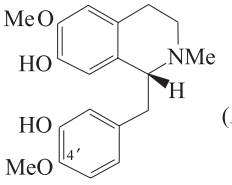
$C_{17}H_{13}N_2O^{\oplus}$ 261.303
Alkaloid from the sponge *Fascaplysinopsis reticulata*. Yellow solid (as chloride).

4′-Bromo: ***14-Bromoreticulatol***
[693790-79-3]
$C_{17}H_{12}BrN_2O^{\oplus}$ 340.199
Alkaloid from *Fascaplysinopsis reticulata*. Yellow solid (as chloride).

Segraves, N.L. *et al., J. Nat. Prod.*, 2004, **67**, 783-792 (*isol, pmr, cmr, 4′-bromo*)

Reticuline R-59

Laudanosoline 4′,6-dimethyl ether. Coclanoline



(*R*)–*form*

$C_{19}H_{23}NO_4$ 329.395

(R)-form
Alkaloid from *Romneya coulteri* var. *trichocalayx* (Papaveraceae). Intermediate in the biosynth. of Morphine, M-704. Noncryst. $[\alpha]_D^{28}$ -55 (c, 0.44 in EtOH).

(S)-form [485-19-8]
Alkaloid from *Annona reticulata* (custard apple), *Cananga odorata* (ylang ylang), *Phylica rogersii* and *Papaver somniferum* and many spp. over many different plant families (Annonaceae, Rhamnaceae, Papaveraceae). Shows antiplatelet aggregation activity. Needles. Mp 200-202°. $[\alpha]_D$ +132 (MeOH). λ_{max} 258 (log ϵ 4.5); 285 (log ϵ 4.39); 334 (log ϵ 2.17) (MeOH).
► LD_{50} (mus, ipr) 56 mg/kg. NX5993000
Perchlorate: Mp 203-204° (211°). $[\alpha]_D^{31}$ +88 (EtOH).

N-*Oxide* (R-)*:* ***Reticuline*** **N^{β}*-oxide***
[71657-63-1]
$C_{19}H_{23}NO_5$ 345.394
Alkaloid from the leaves of *Neolitsea sericea* var. *aurata* and *Pachygone ovata*.

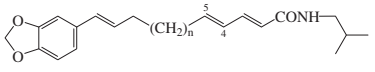
N-*Oxide* (S-)*:* ***Reticuline*** **N^{α}*-oxide***
[937018-75-2]
$C_{19}H_{23}NO_5$ 345.394
Alkaloid from the leaves of *Neolitsea sericea* var. *aurata*.

N-*Me:* ***Tembetarine***
[18446-73-6]
$C_{20}H_{26}NO_4^{\oplus}$ 344.43
Alkaloid from the bark of *Fagara naranjillo* and several other *Fagara* spp. and from *Zanthoxylum* spp. (Rutaceae). Convulsive agent producing transient hypertension and brachycardia in exp. animals. Mp 236-237° (as chloride). $[\alpha]_D^{29}$ +123 (c, 0.9 in EtOH).
► Toxic, LD_{50} 63mg/kg (rat).
Di-Me ether: see Laudanosine, L-69

(±)-form [1699-46-3]
Alkaloid from *Pachygone somniferum* (Papaveraceae). Noncryst. Mp 190-192° (as picrate).
Billek, G. *et al., Monatsh. Chem.*, 1956, **87**, 106-112 (*synth, deriv*)
Gopinath, K.W. *et al., Chem. Ber.*, 1959, **92**, 1657-1661 (*synth*)
Arndt, R.R. *et al., J.C.S.*, 1964, 2244-2248 (*isol, uv*)
Albonico, S.M. *et al., Annalen*, 1965, **685**, 200-206 (*Tembetarine*)
Battersby, A.R. *et al., J.C.S.*, 1965, 3323-3332 (*synth*)
Albonico, S.M. *et al., J.C.S.(C)*, 1966, 1340-1342 (*Tembetarine, uv, ord, abs config*)

Konda, M. *et al., Chem. Pharm. Bull.*, 1975, **23**, 1063-1076 (*pmr, synth, ms*)
Bhakuni, D.S. *et al., J.C.S. Perkin 1*, 1977, 1662-1666 (*biosynth*)
Dasgupta, S. *et al., J. Nat. Prod.*, 1979, **42**, 399-406 (*oxide*)
Hirsenkorn, R. *et al., Tet. Lett.*, 1990, **31**, 7591-7594 (*synth*)
Chen, J. *et al., Planta Med.*, 2000, **66**, 251-256 (*activity*)
Chang, Y.-C. *et al., Z. Naturforsch., C*, 2003, **58**, 521-526 (*isol, pmr, ms*)
Lee, S.-S. *et al., J. Nat. Prod.*, 2007, **70**, 637-642 (*N-oxides*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, SLX500

Retrofractamides R-60



Retrofractamide A; n = 1
B; n = 3
D; n = 2

Historically, Pipercide was the first alkaloid characterised but they are described here as retrofractamides for ease of presentation.

Retrofractamide A [94079-67-1]
$C_{20}H_{25}NO_3$ 327.422
Alkaloid from the above-ground parts of *Piper retrofractum* (Javanese long pepper) and the fruits of *Piper nigrum* (pepper). Cryst. (MeOH). Mp 129° (125°).

4,5-Dihydro: ***Retrofractamide C***
[96386-33-3]
$C_{20}H_{27}NO_3$ 329.438
Alkaloid from *Piper retrofractum* (Javanese long pepper) (Piperaceae). Mp 120°.

2,3,4,5-Tetrahydro: ***Dihydroretrofractamide C****. Dehydroretrofractamide C (incorr.)*
$C_{20}H_{29}NO_3$ 331.454
Alkaloid from the fruit of *Piper nigrum* (pepper). Powder. λ_{max} 216 ; 261 ; 306 (MeOH).

Hexahydro:
Cryst. (MeOH). Mp 65°. Obt. from either Retrofractamide A or C.

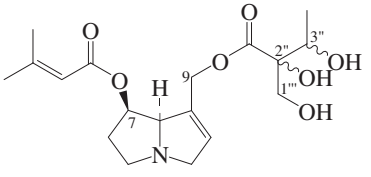
Retrofractamide B
Pipercide
[54794-74-0]
$C_{22}H_{29}NO_3$ 355.476
Alkaloid from the aerial parts of *Piper retrofractum* (Javanese long pepper) and the fruits of *Piper nigrum* (pepper) (Piperaceae). Insecticidal agent. Cryst. (EtOAc). Mp 114-115°.

10,11-Dihydro: ***10,11-Dihydropipercide****. Dihydroretrofractamide B*
[75022-26-3]
[85383-60-4]
$C_{22}H_{31}NO_3$ 357.492
Alkaloid from the fruit of *Piper nigrum* (pepper). Insecticide. Needles (petrol/EtOAc/hexane). Mp 94-95° (89.5-91.5°).

Retrofractamide D [96386-34-4]
$C_{21}H_{27}NO_3$ 341.449
Alkaloid from *Piper brachystachyum* and *Piper retrofractum* (Javanese long pepper). Amorph. solid. Mp 118-120°. λ_{max} 211 (log ϵ 4.42); 262 (log ϵ 4.5) (EtOH).

Miyakado, M. *et al., Agric. Biol. Chem.*, 1979, **43**, 1609; 1980, **44**, 1701 (*Pipercide, Dihydropipercide*)
Crombie, L. *et al., Tet. Lett.*, 1984, **25**, 4267-4270 (*Pipercide, synth*)
Banerji, A. *et al., Phytochemistry*, 1985, **24**, 279; 1987, **26**, 3345 (*isol, uv, ir, pmr, cmr, ms, struct, synth*)
Sabharwal, A. *et al., J. Indian Chem. Soc.*, 1990, **67**, 318-320 (*Pipercide, synth*)
Strunz, G.M. *et al., Can. J. Chem.*, 1996, **74**, 419 (*synth, Retrofractamide A*)
Rotherham, L.W. *et al., J.O.C.*, 1998, **63**, 6667-6672 (*Pipercide, Dihydropipercide, synth*)
Park, I.-K. *et al., J. Agric. Food Chem.*, 2002, **50**, 1866-1870 (*isol, pmr, cmr*)
Banerji, A. *et al., Phytochemistry*, 2002, **59**, 897-901 (*Retrofractamide D*)
Rho, M.-C. *et al., Phytochemistry*, 2007, **68**, 899-903 (*Dihydroretrofractamide C*)

Retronecine 9-(2,3-dihydroxy-2-hydroxymethylbutanoate) 7-senecioate R-61



$C_{18}H_{27}NO_7$ 369.414
Not named in the lit. Alkaloid from *Senecio caudatus* (Asteraceae).

1‴-Deoxy: ***Retronecine 9-(2,3-dihydroxy-2-methylbutanoate) 7-senecioate***
$C_{18}H_{27}NO_6$ 353.414
Alkaloid from *Senecio caudatus* (Asteraceae). Not named in the lit.

1‴-Deoxy, N*-oxide:* ***Retronecine 9-(2,3-dihydroxy-2-methylbutanoate) 7-senecioate* N*-oxide***
$C_{18}H_{27}NO_7$ 369.414
Alkaloid from *Senecio caudatus* (Asteraceae).

1‴-Deoxy, $O^{3''}$*-Ac:* ***Retronecine 9-(3-acetoxy-2-hydroxy-2-methylbutanoate) 7-senecioate***
$C_{20}H_{29}NO_7$ 395.452
Alkaloid from *Senecio caudatus* (Asteraceae). Not named in the lit.

1‴-Deoxy, $O^{3''}$*-Ac,* N*-oxide:* ***Retronecine 9-(3-acetoxy-2-hydroxy-2-methylbutanoate) 7-senecioate* N*-oxide***
$C_{20}H_{29}NO_8$ 411.451
Alkaloid from *Senecio caudatus* (Asteraceae).

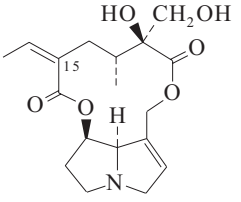
*2″,3″-Dideoxy, 2″,3″-didehydro (*Z*-):* ***Retronecine 9-sarracinate 7-senecioate***
$C_{18}H_{25}NO_5$ 335.399
Alkaloid from *Senecio variabilis, Senecio caudatus* and *Senecio triangularis* (Asteraceae). Gum. $[\alpha]_D^{25}$ +11 (c, 1.0 in MeOH). Not named in the lit.

2″,3″-Dideoxy, 2″,3″-didehydro, N*-oxide:* ***Retronecine 9-sarracinate 7-senecioate* N*-oxide***
$C_{18}H_{25}NO_6$ 351.399
Alkaloid from *Senecio caudatus* and *Senecio umgeniensis* (Asteraceae).

Rüeger, H. *et al., Can. J. Chem.*, 1983, **61**, 2526 (*isol, ir, pmr, cmr, cd, struct*)
Bohlmann, F. *et al., Phytochemistry*, 1986, **25**, 1151 (*isol, ir, ms, struct*)

Retrorsine R-62

12,18-Dihydroxysenecionan-11,15-dione, 9CI. β-Longilobine
[480-54-6]



$C_{18}H_{25}NO_6$ 351.399
Alkaloid from *Senecio* spp, *Crotalaria* spp. and *Erechtites quadridentata* (Asteraceae, Fabaceae). Cryst. (EtOH). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 217° (207-208°). $[\alpha]_D^{20}$ -62.4 (c. 1.0 in $CHCl_3$). $[\alpha]_D$ -17.6 (c, 1.99 in EtOH). λ_{max} 217 (ϵ 7100) (MeOH) (Berdy).
▶ Hepatotoxin, causes liver and kidney neoplasms. Highly toxic. VH7525000

Nitrate:
Prisms (EtOH/Et_2O). Mp 145°.

Methiodide:
Prisms (MeOH). Mp 266° (260°).

N*-Oxide:* ***Isatidine****. Retrorsine* N*-oxide*
[15503-86-3]
$C_{18}H_{25}NO_7$ 367.398
Alkaloid from *Senecio* spp., *Erechtites quadridentata* and *Werneria decora*. Mp 145°. $[\alpha]_D$ -8.2 (H_2O).
▶ VH7700000

*15*E*-Isomer:* ***Usaramine****. Usuramine. Mucronatine*†
[15503-87-4]
$C_{18}H_{25}NO_6$ 351.399
Alkaloid from *Crotalaria brevifolia, Crotalaria incana, Crotalaria mucronata* and *Crotalaria usaramoensis* (Fabaceae). Poorly sol. hexane. Mp 182.5-183.5°. $[\alpha]_D^{20}$ +7.1 (c, 1.83 in EtOH). Uv light → Retrorsine.
▶ Hepato- and pneumotoxin. VT5707200

Stereoisomer: ***Mucronatinine***
[20824-37-7]
$C_{18}H_{25}NO_6$ 351.399
Alkaloid from *Crotalaria mucronata* (Fabaceae). Cryst. Mp 161-163°. Of undetd. config.

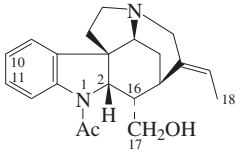
Stereoisomer, picrate: [20824-38-8]
Mp 228-229°.

Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 1164B (*nmr*)
Manske, R.H.F. *et al., Can. J. Res.*, 1931, **5**, 651 (*isol*)
Barger, G. *et al., J.C.S.*, 1935, 11 (*isol*)
Leisegang, E.C. *et al., J.C.S.*, 1950, 702 (*struct*)
Culvenor, C.C.J. *et al., Aust. J. Chem.*, 1966, **19**, 2127 (*Usaramine*)
Bhacca, N.S. *et al., Tetrahedron*, 1968, **24**, 6319 (*Mucronatine*)

Culvenor, C.C.J. *et al., J.C.S.(C)*, 1971, 3653 (*cd*)
Stoeckli-Evans, H. *et al., Acta Cryst. B*, 1979, **35**, 2798 (*cryst struct*)
Jones, A.J. *et al., Aust. J. Chem.*, 1982, **35**, 1173 (*cmr*)
Molyneux, R.J. *et al., Phytochemistry*, 1982, **21**, 439 (*cmr*)
Roitman, J.N. *et al., Aust. J. Chem.*, 1983, **36**, 1203 (*isol*)
Segall, H.J. *et al., Phytochemistry*, 1983, **22**, 1271-1273 (*pmr*)
White, J.D. *et al., J.O.C.*, 1989, **54**, 4268 (*synth, Usaramine*)
Lock de Ugaz, O. *et al., Phytochemistry*, 1990, **29**, 2373-2375 (*N-Oxide, cmr*)
White, J.D. *et al., J.O.C.*, 1992, **57**, 2270 (*synth, Usaramine*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, RFP000; RFU000

Retuline R-63

1-Acetyl-19,20-didehydrocuran-17-ol, 9CI
[2616-16-2]



Absolute Configuration

$C_{21}H_{26}N_2O_2$ 338.449
Alkaloid from *Strychnos holstii* var. *reticulata f. condensata, Strychnos henningsii, Strychnos kasengaensis* and some other *Strychnos* spp. (Loganiceae). Mp 167-173° (170°). $[\alpha]_D$ +7 (+23) (MeOH). $[\alpha]_D^{25}$ -13.5 (c, 0.73 in $CHCl_3$).

▶ GS3310000

N^b-*Oxide:* ***Retuline* N^b*-oxide***. *Oxyretuline*
[38769-04-9]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from *Strychnos camptoneura* and *Strychnos henningsii* (Loganiceae). Prisms (Et_2O/MeOH). Mp 178-180°.

N-*De-Ac:* ***Desacetylretuline***. *2β,16β-Dihydroakuammicinol*. N-*Deacetylretuline*
[18397-04-1]
$C_{19}H_{24}N_2O$ 296.411
Alkaloid from *Strychnos variabilis, Strychnos kasengaensis* and other *Strychnos* spp. (Loganiceae). Cryst. (MeOH/Et_2O). Mp 177° (165°). $[\alpha]_D$ -7 (MeOH). $[\alpha]_D$ -42 ($CHCl_3$).

O-*Ac:* **O-*Acetylretuline***
[18397-05-2]
$C_{23}H_{28}N_2O_3$ 380.486
Alkaloid from bark and leaves of *Strychnos henningsii, Strychnos pungens* and *Strychnos kasengaensis* (Loganiceae). Amorph. powder. Mp 120°.

1,2-Didehydro, N-*de-Ac: 1,2-Dehydrodesacetylretuline*
[88721-04-4]
$C_{19}H_{22}N_2O$ 294.396
Structure erroneously assigned to an alkaloid from *Strychnos longicaudata*. For revised struct. see Normavacurine in M-130.

17-Aldehyde: ***Retulinal***
[77096-54-9]
$C_{21}H_{24}N_2O_2$ 336.433
In tautomeric equilib. with Isoretulinal. Major alkaloid from dried root of *Strychnos variabilis* (Loganiceae). λ_{max} 212 (log ϵ 4.4); 251 (log ϵ 4.07); 282 (log ϵ 3.46) (MeOH).

17-Carboxylic acid, N-*de-Ac,* N^1,N^4*-di-Me, Me ester:* **N^a*-Methyl-2,16-dihydroakuammicine* N^b*-methosalt***
[69754-34-3]
$C_{22}H_{29}N_2O_2^{\oplus}$ 353.483
Quaternary alkaloid from leaves of *Vinca minor* (Apocynaceae). Cryst. (Me_2CO)(as iodide). Mp 310° (iodide).

12-Hydroxy, 17-aldehyde: ***12-Hydroxyretulinal***
[77053-11-3]
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from dried root of *Strychnos variabilis* (Loganiceae). In tautomeric equilib. with 12-Hydroxyisoretulinal. λ_{max} 217 (log ϵ 4.05); 252 (log ϵ 3.45); 288 (log ϵ 3.08) (MeOH).

11-Methoxy: ***11-Methoxyretuline***
[94943-26-7]
$C_{22}H_{28}N_2O_3$ 368.475
Alkaloid from *Strychnos kasengaensis.*

16-Epimer: ***Isoretuline***
[10388-62-2]
$C_{21}H_{26}N_2O_2$ 338.449
Trace alkaloid from *Strychnos variabilis* and *Strychnos kasengaensis* (Loganiceae).

▶ GS3320000

16-Epimer, N-*de-Ac:* **N^a*-Desacetylisoretuline***. *Isodeacetylretuline. Desacetylisoretuline*
[13941-27-0]
$C_{19}H_{24}N_2O$ 296.411
Alkaloid from *Strychnos variabilis, Strychnos henningsii, Strychnos floribunda, Strychnos kasengaensis, Strychnos scheffleri* and other *Strychnos* spp. (Loganiceae). Prisms (Me_2CO). Mp 177-178°.

16-Epimer, O-*Ac:* **O-*Acetylisoretuline***
[62860-81-5]
$C_{23}H_{28}N_2O_3$ 380.486
Alkaloid from *Strychnos variabilis* and *Strychnos kasengaenis.*

16-Epimer, 17-aldehyde: ***Isoretulinal***. N-*Acetyl-2,16-dihydroakuammicinal. 18-Deoxydiaboline*
[62835-85-2]
$C_{21}H_{24}N_2O_2$ 336.433
Alkaloid from dried root of *Strychnos variabilis* and from *Strychnos kasengaensis* (Loganiceae). Mp 192-197° (188-191°). $[\alpha]_D$ +157 (MeOH). In tautomeric equilib. with Retulinal.

16-Epimer, 17-aldehyde, N-*de-Ac:* ***Desacetylisoretulinal***. *Dihydrocheminortoxiferine. 16-Deoxy-Wieland-Gumlich aldehyde*
[6879-70-5]
$C_{19}H_{22}N_2O$ 294.396
Alkaloid from *Strychnos variabilis, Strychnos dolichothyrsa, Strychnos kasangaensis, Strychnos matopensis* and *Strychnos minfiensis* (Loganiceae).

16-Epimer, 12-hydroxy, 17-aldehyde: ***12-Hydroxyisoretulinal***
[77096-55-0]
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from dried root of *Strychnos variabilis* (Loganiceae). In tautomeric equilib. with 12-hydroxyretulinal.

16-Epimer, 16-hydroxy, 17-aldehyde: ***16-Hydroxyisoretulinal***
[76177-21-4]
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from the root bark of *Strychnos variabilis* (Loganiceae). Powder.

16-Epimer, 18-hydroxy: ***18-Hydroxyisoretuline***
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from leaves and stems of *Strychnos henningsii* (Loganiceae). Small prisms (Me_2CO). Mp 245-248°.

16-Epimer, 18-hydroxy, N-*de-Ac:* **N^a*-Desacetyl-18-hydroxyisoretuline***. *Wieland-Gumlich diol*
[900-98-1]
$C_{19}H_{24}N_2O_2$ 312.411
Alkaloid from *Strychnos henningsii, Strychnos longicaudata* and *Strychnos kasengaensis* root bark (Loganiceae). Needles (Me_2CO). Mp 247-250°.

16-Epimer, 18-hydroxy, N-*de-Ac,* O^{17}*-Ac:* ***17*-O-*Acetyl*-N^a*-desacetyl-18-hydroxyisoretuline***
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from *Strychnos henningsii* (Loganiceae). Noncryst.

16-Epimer, 18-acetoxy, N-*de-Ac:* ***18-Acetoxy*-N^a*-desacetylisoretuline***
[88721-02-2]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from the stem bark of *Strychnos longicaudata* and from *Strychnos kasengaensis* (Loganiceae). $[\alpha]_D$ -31 (c, 0.55 in $CHCl_3$). λ_{max} 218 ; 246 ; 300 (EtOH).

16-Epimer, 10-methoxy, N-*de-Ac:* ***Tsilanimbine***
[59630-35-2]
$C_{20}H_{26}N_2O_2$ 326.438
Alkaloid from *Strychnos henningsii* leaves and stems (Loganiceae). Noncryst.

16-Epimer, 11-methoxy: ***11-Methoxyisoretuline***
[94898-70-1]
$C_{22}H_{28}N_2O_3$ 368.475
Alkaloid from the stem bark of *Strychnos kasengaensis* and from *Strychnos variabilis* (Loganiceae). $[\alpha]_D$ +145 (c, 0.2 in MeOH). λ_{max} 223 (log ϵ 4.32); 250 (log ϵ 4.05); 292 (log ϵ 3.69) (MeOH).

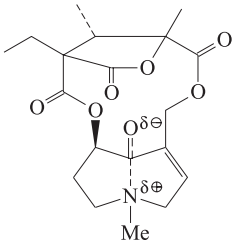
16-Epimer, 11-methoxy, O-*Ac:* **O-*Acetyl-11-methoxyisoretuline***. *11-Methoxy*-O-*acetylisoretuline*

[127160-69-4]
$C_{24}H_{30}N_2O_4$ 410.512
Alkaloid from seeds of *Strychnos variabilis* (Loganiceae). $[\alpha]_D$ +62 (c, 0.6 in $CHCl_3$).

Bisset, N.G. *et al., Chem. Ind. (London)*, 1965, 1036-1037 (*uv, ir, pmr, ms, struct*)
Hymon, J.R. *et al., Helv. Chim. Acta*, 1966, **49**, 2067-2071 (*synth, pmr, ir*)
Wenkert, E. *et al., J.O.C.*, 1966, **31**, 2689-2691; 1978, **43**, 1099-1105 (*synth, cmr, pmr*)
Koch, M. *et al., Ann. Pharm. Fr.*, 1972, **30**, 299-306 (*oxide*)
Angenot, L. *et al., Phytochemistry*, 1975, **14**, 2519-2520 (*Desacetylretuline*)
Koch, M. *et al., Phytochemistry*, 1976, **15**, 321-324 (*18-Hydroxyisoretuline: 17-Acetyl-N-desacetyl-18-hydroxyisoretuline*)
Richard, C. *et al., Phytochemistry*, 1976, **15**, 1805-1806 (*Isoretuline, Isoretulinal*)
Tavernier, D. *et al., Bull. Soc. Chim. Belg.*, 1978, **87**, 595-607 (*pmr*)
Tits, M. *et al., Plant. Med. Phytother.*, 1978, **12**, 92-95 (*18-Deoxydiaboline*)
Votický, Z. *et al., Coll. Czech. Chem. Comm.*, 1979, **44**, 123-127 (*N-Methyldihydroakuammicine N-methosalt*)
Tits, M. *et al., Phytochemistry*, 1980, **19**, 1531-1534 (*16-Hydroxyisoretulinal*)
Tits, M. *et al., Tet. Lett.*, 1980, **21**, 2439-2442 (*Retulinal,12-Hydroxyretulinal, isol,ms, uv, ir, pmr, tautom, struct*)
Angenot, L. *et al., Planta Med.*, 1981, **41**, 240-243 (O-*Acetylretuline*)
Massiot, G. *et al., Tetrahedron*, 1983, **39**, 3645-3656 (*Wieland-Gumlich diol, 18-Acetoxy-N^a-desacetylisoretuline*)
Thépenier, P. *et al., Phytochemistry*, 1984, **23**, 2659-2663; 1990, **29**, 686-687 (*11-Methoxyretuline, 11-Methoxyisoretuline,* O-*Acetylretuline,* O-*Acetyl-11-methoxyisoretuline, Desacetylisoretulinal, Isoretulinal*)
Massiot, G. *et al., Phytochemistry*, 1988, **27**, 3293-3304 (*cmr*)
Delaude, C. *et al., Bull. Soc. R. Sci. Liege*, 1997, **66**, 183-286 (*occur, derivs, rev*)

Retusamine, 9CI R-64

[6883-16-5]



Absolute configuration

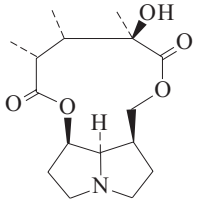
$C_{19}H_{25}NO_7$ 379.409
Cyclic diester of Otonecine, O-136 with retusaminic acid. Alkaloid from *Crotalaria retusa, Crotalaria crassipes, Crotalaria mitchellii* and *Crotalaria novae-hollandiae* (Fabaceae). Needles (C_6H_6/petrol), prisms (EtOH). Mp 174.5° (164-164.5°). $[\alpha]_D^{20}$ +12 (c, 2.25 in EtOH).

► VH7980000

Culvenor, C.C.J. *et al., Aust. J. Chem.*, 1957, **10**, 464; 1965, **18**, 1625; 1967, **20**, 801 (*isol, struct, ir, nmr*)
Wunderlich, J.A. *et al., Acta Cryst. B*, 1967, **23**, 846 (*cryst struct, abs config*)
Kiyooka, S. *et al., Chem. Lett.*, 1973, 963 (*synth*)

Retusine† R-65

1,2,14,19-Tetrahydro-12-hydroxy-20-nor-crotalanan-11,15-dione, 9CI
[480-86-4]

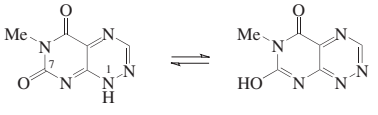


$C_{16}H_{25}NO_5$ 311.377
Alkaloid from *Crotalaria retusa* and *Crotalaria spectabilis* (Fabaceae). Needles (EtOH or Me_2CO). Mp 174-175°. $[\alpha]_D$ +16 (c, 1 in $CHCl_3$). Hydrol. gives Hexahydro-7-hydroxy-1*H*-pyrrolizine-1-methanol, H-233 and a mixt. of epimeric α- and β-retusanecic acids (lactone acids derived by cyclisation of the necic acid portion).

Culvenor, C.C.J. *et al., Aust. J. Chem.*, 1957, **10**, 464 (*isol*)
Aasen, A.J. *et al., J.O.C.*, 1969, **34**, 4137 (*pmr, stereochem*)
Kiyooka, S. *et al., Bull. Chem. Soc. Jpn.*, 1973, **46**, 3609 (*config*)
Smith, L.W. *et al., Aust. J. Chem.*, 1988, **41**, 429

Reumycin R-66

6-Methylpyrimido[5,4-e]-1,2,4-triazine-5,7(1H,6H)-dione, 9CI. 1-Demethyltoxoflavin. Reumitsin
[5016-18-2]



1*H-form* 7*H-form*

$C_6H_5N_5O_2$ 179.138
Isol. from *Actinomyces rectus bruneus.* Antineoplastic agent. Yellow powder or cryst. Sol. MeOH, H_2O, EtOAc, DMF; fairly sol. Me_2CO, C_6H_6; poorly sol. hexane, Et_2O. Mp 210° dec Mp 244-245°. λ_{max} 235 (ε 17800); 265 (sh) (ε 3090); 340 (ε 5248); 400 (ε 741) (EtOH) (Derep). λ_{max} 258 (ε 15130); 400 (ε 2630) (EtOH/NaOH) (Berdy).

► UW7930000

1*H-form*

1-N-Me: 1,6-Dimethylpyrimido[5,4-e]-1,2,4-triazine-5,7(1H,6H)-dione. 1,5,6,7-Tetrahydro-1,6-dimethyl-5,7-dioxopyrimido[5,4-e]-as-triazine. ***Toxoflavin****. Xanthothricin. 1-Methylreumycin*
[84-82-2]
$C_7H_7N_5O_2$ 193.165
Prod. by *Pseudomonas cocovenenans* and *Burkholderia gladioli*. Shows broad-spectrum antibiotic activity but is highly toxic. Shows phytotoxic activity. Yellow needles (EtOH or MeOH). Sol. H_2O, EtOH. Mp 172°. λ_{max} 258 (ε 18400); 397 (ε 4500) (pH 1 H_2O) (Derep). λ_{max} 322 (ε 6400) (pH 11) (Derep). λ_{max} 259 (ε 22500); 330 (sh) (ε 1950); 395 (ε 5500) (EtOH) (Derep).

► UW7875000

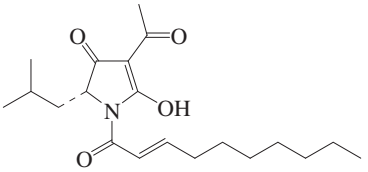
1-N-Me, 4-oxide: [32496-16-5]
Yellow needles (EtOH or dioxan). Mp 189° (215°).

7*OH-form*

7-Me ether: 7-Methoxy-6-methylpyrimido[5,4-e]-1,2,4-triazin-5(6H)-one, 9CI. ***7-Methoxyreumycin***
[51590-95-5]
$C_7H_7N_5O_2$ 193.165
From *Actinomyces rectus bruneus.* Antineoplastic agent. Sol. MeOH, EtOAc, DMF, H_2O; fairly sol. Me_2CO, C_6H_6; poorly sol. hexane, Et_2O.

Van Damme, P.A. *et al., Rec. Trav. Chim. (J. R. Neth. Chem. Soc.)*, 1960, **79**, 255 (*Toxoflavin, struct, uv, ir*)
Latuasan, H.E. *et al., Biochim. Biophys. Acta*, 1961, **52**, 502 (*Toxoflavin, tox*)
Hellendoorn, A.J. *et al., Rec. Trav. Chim. (J. R. Neth. Chem. Soc.)*, 1961, **80**, 307 (*Toxoflavin, cryst struct*)
Daves, G.D. *et al., J.A.C.S.*, 1962, **84**, 1724 (*synth*)
Levenberg, P. *et al., J. Biol. Chem.*, 1966, **241**, 846 (*biosynth*)
Esipov, S.E. *et al., J. Antibiot.*, 1973, **26**, 537 (*struct*)
Yoneda, F. *et al., Chem. Pharm. Bull.*, 1975, **23**, 2001-2009 (*synth, ir, uv, nmr*)
Yoneda, F. *et al., J.C.S. Perkin 1*, 1976, 713
Adanin, V.M. *et al., Khim. Geterotsikl. Soedin.*, 1979, 1270 (*ms*)
Voragen, A.G.J. *et al., Food Chem.*, 1982, **9**, 167 (*Toxoflavin, hplc*)
Esipov, S.E. *et al., Antibiot. Med. Biotekhnol.*, 1987, **32**, 111; 116 (*ir, pmr, struct*)
Furuya, N. *et al., J. Fac. Agric., Kyushu Univ.*, 1997, **22**, 33-37; *CA*, **128**, 214320q (*Toxoflavin, isol, activity*)
Koshino, H. *et al., Heterocycles*, 2000, **52**, 811-817 (*Toxoflavin, N-15 nmr*)

Reutericyclin R-67



$C_{20}H_{31}NO_4$ 349.469
Tetramic acid. Tautomeric β-triketonic system; one tautomer shown.

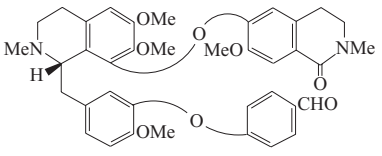
(R)-form [303957-69-9]
Prod. by *Lactobacillus reuteri* LTH2584. Active against gram-positive bacteria. Mp 161-164° (synthetic). $[\alpha]_D^{20}$ +13 (c, 0.29 in EtOH) (synthetic).

λ_{max} 238 ; 286 (MeCN). λ_{max} 228 (ϵ 17870); 266 (ϵ 23875); 278 (ϵ 25165) (EtOH).

Höltzel, A. *et al., Angew. Chem., Int. Ed.*, 2000, **39**, 2766-2768 (*pmr, cmr, struct*)
Gänzle, M.G. *et al., Appl. Environ. Microbiol.*, 2000, **66**, 4325-4333 (*isol*)
Marquardt, U. *et al., Synlett*, 2000, 1131-1132 (*synth*)
Böhme, R. *et al., Helv. Chim. Acta*, 2005, **88**, 2837-2841 (*synth*)
Schobert, R. *et al., Synthesis*, 2006, 3902-3914 (*synth, ir, pmr, cmr, ms*)

Revolutinone R-68

[74046-19-8]



$C_{38}H_{40}N_2O_8$ 652.743

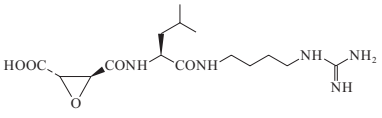
Trace alkaloid from the fruit of *Thalictrum revolutum* (Ranunculaceae), also obt. by oxidn. of *O*-Methylthalicberine in T-313. Amorph. $[\alpha]_D^{28}$ -10 (c, 0.5 in MeOH).

Wu, J. *et al., J. Nat. Prod.*, 1980, **43**, 270 (*isol, uv, cd, ir, pmr, ms, struct, synth*)

Rexostatine R-69

3-[[[1-[[[4-[(Aminoiminomethyl)amino]butyl]amino]carbonyl]-3-methylbutyl]amino]carbonyl]oxiranecarboxylic acid, 9CI. Proteinase inhibitor E 64. E 64

[66701-25-5]



$C_{15}H_{27}N_5O_5$ 357.409

Isol. from *Aspergillus japonicus*. Thiol proteinase inhibitor. Sensitizes human lung and colon carcinomas to antineoplastic chemotherapy. Needles (Me_2CO aq.). Sol. MeOH aq., AcOH, DMSO, Py; fairly sol. EtOH; poorly sol. Me_2CO, hexane. $[\alpha]_D^{25}$ +24.4 (c, 1 in 0.1*M* HCl). Log P -1.71 (calc). Dec. at 231-234°.

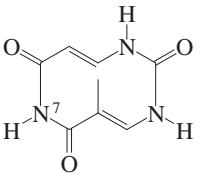
▶ Exp. teratogen. RR0390000

[66701-24-4]

Hanada, K. *et al., Agric. Biol. Chem.*, 1978, **42**, 523; 529; 537 (*isol, synth, struct, props*)
Hanada, K. *et al., Pept. Chem.*, 1979, **17**, 31 (*synth, props*)
Barrett, A.J. *et al., Acta Biol. Med. Ger.*, 1981, **40**, 1513 (*rev, pharmacol*)
Barrett, A.J. *et al., Biochem. J.*, 1982, **201**, 189 (*props*)
Yamamoto, D. *et al., Chem. Pharm. Bull.*, 1989, **37**, 2577; 1990, **38**, 2339 (*cryst struct, conformn*)
Tachikura, T. *et al., Acta Paediatr. Jpn.*, 1990, **32**, 495 (*tox*)
Jani, J.P. *et al., Cancer Res.*, 1992, **52**, 2931
Sarabia, F. *et al., Bioorg. Med. Chem.*, 2005, **13**, 1691-1705 (*synth*)

Rhapallin A R-70

5-Methyl-1,3,7-triazecine-2,6,8(1H,3H,7H)-trione, 9CI. 5-Methyl-1,3,7-triazacyclodeca-4,9-diene-2,6,8-trione



(*E,E*)-*form*

$C_8H_9N_3O_3$ 195.177

(*E,E*)-*form*

Isol. from the sponge *Rhaphisia pallida*.

(*Z,Z*)-*form* [193224-03-2]

Alkaloid from the sponge *Rhaphisia pallida*.

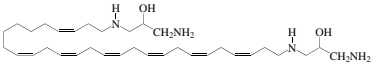
N^7-*Bromo: 7-Bromo-5-methyl-1,3,7-triazecine-2,6,8(1H,3H,7H)-trione*
[193224-05-4]
$C_8H_8BrN_3O_3$ 274.074
Alkaloid from the sponge *Rhaphisia pallida*.

Cen, Y.Z. *et al., CA*, 1997, **127**, 147229f (*isol, uv, pmr, cmr, ms*)
Zeng, L. *et al., Pure Appl. Chem.*, 1999, **71**, 1147-1151

Rhapsamine R-71

1,28-Bis[(3-amino-2-hydroxypropyl)amino]-3,6,9,12,15,18,25-octacosaheptaene

[198826-15-2]



$C_{34}H_{60}N_4O_2$ 556.874

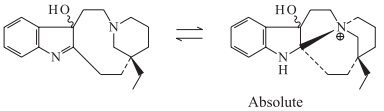
Alkaloid from the sponge *Leucetta leptorhapsis*. Amorph. solid. Racemic. λ_{max} 232 (ϵ 6340) (MeOH).

Jayatilake, G.S. *et al., Tet. Lett.*, 1997, **38**, 7507-7510 (*isol, uv, pmr, cmr*)

Rhazidigenine R-72

*7-Ethyl-1,2,4,5,6,7,8,9-octahydro-14*bH*-3,7-methanoazacycloundecino[5,4-*b*]indol-14*b*-ol, 9CI. Rhazidine base. Strictanol*

[3384-38-1]
[109063-87-8]



Absolute configuration

$C_{19}H_{26}N_2O$ 298.427

Strictanol appears to be identical with the prev. descr. Rhazidine. The opt. rotn. reported is similar to that of the hydrochloride. Alkaloid from *Rhazya stricta*, *Aspidosperma quebracho-blanco*, *Amsonia angustifolia* and *Gonioma kamassi*. Mp 187°. $[\alpha]_D$ -612 (EtOH/NaOH). λ_{max} 210 (log ϵ 4.33); 281 (log ϵ 3.66); 292 (log ϵ 3.62); 307 (log ϵ 3.58) (heptane).

Hydrochloride: Rhazidine. Rhazidine salt
[15381-61-0]
Mp 285° dec. $[\alpha]_D$ -40 (neutral or acidic EtOH) ((-37)). Quaternary pentacyclic structure. λ_{max} 236 (log ϵ 3.91); 293 (log ϵ 3.38) (EtOH).

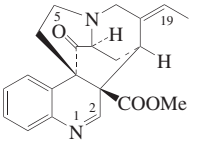
N^b-*Oxide:* ***Rhazidigenine*** $\mathbf{N^b}$***-oxide***
[26066-43-3]
$C_{19}H_{26}N_2O_2$ 314.427
Alkaloid from the seeds of *Rhazya stricta* and the bark of *Aspidosperma quebracho-blanco* (quebracho) (Apocynaceae). Noncryst. Mp 240-245°. λ_{max} 228 ; 285 ; 293 ; 308 (no solvent reported).

N^b-*Oxide; hydrochloride:* Mp 325-327°. λ_{max} 237 (log ϵ 3.89); 293 (log ϵ 3.29) (no solvent reported).

Spiteller-Friedmann, M. *et al., Monatsh. Chem.*, 1964, **95**, 1228 (*uv, ir, ms, struct*)
Markey, S. *et al., Tet. Lett.*, 1967, 157 (*uv, struct*)
Tunmann, P. *et al., Z. Naturforsch., B*, 1969, **24**, 1665 (*isol, uv, ir, ms, struct, oxide*)
Miana, G.A. *et al., J. Chem. Soc. Pak.*, 1982, **4**, 119; *CA*, **97**, 159507v (*isol*)
Atta-ur-Rahman, *et al., Phytochemistry*, 1987, **26**, 589-591 (*Strictanol*)

Rhazimine R-73

[93772-08-8]



Absolute Configuration

$C_{21}H_{22}N_2O_3$ 350.416

Struct. revised in 1987. Rearranged indole alkaloids which are remotely related to the Akuammiline type. Alkaloid from the leaves of *Rhazya stricta* and *Melodinus acutiflorus* and from *Amsonia sinensis*. Inhibitor of arachidonic acid metabolism and of platelet activating factor. Mp 170.5° (168°) dec. $[\alpha]_D$ +131 ($CHCl_3$). $[\alpha]_D^{22}$ +252 (c, 0.23 in $CHCl_3$).

1,2-Dihydro, 2ξ-methoxy: ***1,2-Dihydro-2-methoxyrhazimine****. 2-Methoxy-1,2-dihydrorhazimine*
[98264-40-5]
$C_{22}H_{26}N_2O_4$ 382.458
Alkaloid from leaves of *Rhazya stricta* (Apocynaceae). Hygroscopic cryst. $[\alpha]_D$ +85 ($CHCl_3$). Extremely labile, transformed to Rhazimine after 2-3 hr. at 30° in $CHCl_3$ soln. The struct. of this compd. is presumed to be as shown following the struct. revision of Rhazimine.

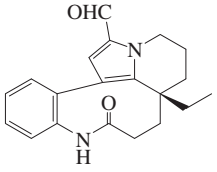
19Z-Isomer, 5α-methoxy: ***(Z)-5α-Methoxyrhazimine***
[214263-41-9]
$C_{22}H_{24}N_2O_4$ 380.443
Alkaloid from *Alstonia villosa*. Prisms. Mp 260-263°. $[\alpha]_D^{29}$ +366.6 (c, 0.06 in $CHCl_3$). λ_{max} 224 (log ϵ 4.24); 270 (log ϵ 3.79); 290 (sh) (log ϵ 3.72) (MeOH).

Atta-ur-Rahman, *et al., Tet. Lett.*, 1984, **25**, 3913-3916 (*isol, uv, ir, pmr, cmr, ms*)

Atta-ur-Rahman, *et al., Phytochemistry*, 1985, **24**, 1625-1626 (*1,2-dihydro 2-methoxy*)
Hu, W.-L. *et al., Phytochemistry*, 1987, **26**, 2625-2630 (*isol, uv, ir, pmr, cmr, ms, struct*)
Saeed, S.A. *et al., Planta Med.*, 1993, **59**, 566-568 (*activity*)
Abe, F. *et al., Chem. Pharm. Bull.*, 1998, **46**, 1235-1238 (*5-Methoxyrhazimine*)

Rhazinal R-74

[197141-77-8]



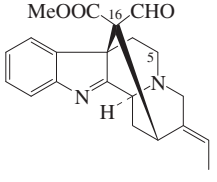
Absolute Configuration

$C_{20}H_{22}N_2O_2$ 322.406
Alkaloid from *Kopsia singapurensis*. Light yellow oil. $[\alpha]_D$ -187 (c, 0.19 in $CHCl_3$). λ_{max} 203 ; 234 ; 302 (no solvent reported).

Kam, T.-S. *et al., Nat. Prod. Lett.*, 1998, **12**, 307-310 (*isol, pmr, cmr*)
Banwell, M.G. *et al., Org. Biomol. Chem.*, 2003, **1**, 296-305 (*synth*)
Banwell, M.G. *et al., ARKIVOC*, 2006, **iii**, 163-174 (*synth*)
Subramaniam, G. *et al., J. Nat. Prod.*, 2007, **70**, 1783-1789 (*isol*)

Rhazinaline R-75

[60706-90-3]



Absolute Configuration

$C_{21}H_{22}N_2O_3$ 350.416
Alkaloid from the leaves of *Rhazya stricta* (Apocynaceae). Stout needles (C_6H_6/petrol). Mp 137°. $[\alpha]_D^{25}$ +61 (EtOH).

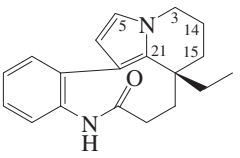
N^b-*Oxide:* ***Rhazinaline* N^4-*oxide***
[154879-27-3]
$C_{21}H_{22}N_2O_4$ 366.416
Alkaloid from leaves of *Leuconotis eugenifolius* (Apocynaceae). Solid. $[\alpha]_D^{27}$ -87.3 (c, 0.70 in MeOH).

16-Epimer. 16-Formylstrictamine. ***Rhazimal***. *16-Epirhazinaline*
[73466-11-2]
$C_{21}H_{22}N_2O_3$ 350.416
Alkaloid from *Rhazya stricta* (Apocynaceae). Minor alkaloid from leaves of *Melodinus acutiflorus*. Mp 101-102°. $[\alpha]_D$ +57 (MeOH). $[\alpha]_D^{20}$ +16.19 ($CHCl_3$). λ_{max} 222 (ϵ 14100); 265 (ϵ 3660) (MeOH).

16-Epimer, (Z)-isomer, 5α-methoxy: ***(Z)-16-Formyl-5α-methoxystrictamine***
$C_{22}H_{24}N_2O_4$ 380.443
Alkaloid from *Alstonia villosa*. Solid. $[\alpha]_D^{25}$ -18.4 (c, 0.06 in MeOH). λ_{max} 217 (log ϵ 4.18); 230 (sh) (log ϵ 4.09); 297 (log ϵ 3.65) (MeOH).

Chatterjee, A. *et al., Bull. Chem. Soc. Jpn.*, 1976, **49**, 2000 (*isol, uv, ir, pmr, ms, struct*)
Ahmad, Y. *et al., Phytochemistry*, 1983, **22**, 1017-1019 (*Rhazimal*)
Atta-ur-Rahman, *et al., Planta Med.*, 1986, 230-231 (*pmr, cmr, Rhazimal*)
Hu, W.-L. *et al., Planta Med.*, 1988, **54**, 235-236 (*epimer*)
Abe, F. *et al., Phytochemistry*, 1994, **35**, 169 (*oxide*)
Abe, F. *et al., Chem. Pharm. Bull.*, 1998, **46**, 1235-1238 (*16-Formyl-5-methoxystrictamine*)

Rhazinilam R-76



(*R*)-*form*

$C_{19}H_{22}N_2O$ 294.396

(*R*)-*form* [36193-36-9]
Isol. from *Rhazya stricta*, *Aspidosperma quebracho-blanco* (quebracho), *Leuconotis eugenifolia* and *Melodinus australis* (Apocynaceae). Antimitotic, spindle poison, antitubulin. Mp 176° Mp 214-216°. Artifact.

5,21-Dihydro: ***5,21-Dihydrorhazinilam***
[109305-80-8]
$C_{19}H_{24}N_2O$ 296.411
Alkaloid from *Leuconotis eugenifolia*. Converted to Rhazinilam on prolonged exp. to air.

3-Oxo: ***Rhazinicine***. *3-Oxorhazinilam*
[197141-93-8]
$C_{19}H_{20}N_2O_2$ 308.379
Alkaloid from *Kopsia dasyrachis* and a *Rauwolfia serpentina* x *Rhazya stricta* hybrid. Powder. Mp 201-204°. $[\alpha]_D^{25}$ -247.2 (c, 0.3 in $CHCl_3$). λ_{max} 207 (log ϵ 4.37); 229 (sh) (log ϵ 4.19); 275 (sh) (log ϵ 3.61) (EtOH).

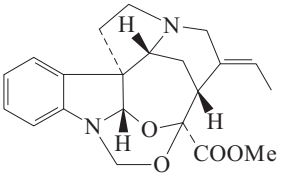
3-Oxo, 14,15-didehydro: ***14,15-Didehydro-3-oxorhazinilam***. *3-Oxo-14,15-dehydrorhazinilam*. *AQC-3*
[139955-87-6]
$C_{19}H_{18}N_2O_2$ 306.363
Alkaloid from *Aspidosperma quebracho-blanco* (quebracho) (Apocynaceae). Amorph.

(±)-*form* [52745-52-5]
Synthetic. Mp 222-223°.

Banerji, A. *et al., Phytochemistry*, 1970, **9**, 1491-1493 (*isol, uv, ir, pmr, ms*)
Abraham, D.J. *et al., Tet. Lett.*, 1972, 909-912 (*cryst struct*)
De Silva, K.T. *et al., Tet. Lett.*, 1972, 913-916 (*pmr, struct*)
Ratcliffe, A.H. *et al., Tet. Lett.*, 1973, 5179-5184 (*synth*)
Goh, S.H. *et al., Tet. Lett.*, 1986, **27**, 2501-2504 (*5,21-Dihydrorhazinilam*)
Aimi, N. *et al., Tet. Lett.*, 1991, **32**, 4949-4952 (*3-Oxo-14,15-dehydrorhazinilam*)
Kam, T.-S. *et al., Phytochemistry*, 1999, **51**, 159-169 (*Rhazinicine*)
Gerasimenko, I. *et al., J. Nat. Prod.*, 2001, **64**, 114-116 (*Rhazinicine*)
Magnus, P. *et al., Tetrahedron*, 2001, **57**, 8647-8651 (*synth*)
Johnson, J.A. *et al., J.A.C.S.*, 2002, **124**, 6900-6903 (*synth*)
Bowie, A.L. *et al., Org. Lett.*, 2005, **7**, 5207-5209 (*synth*)
Banwell, M.G. *et al., ARKIVOC*, 2006, **iii**, 163-174 (*synth*)

Rhazizine R-77

[123871-29-4]

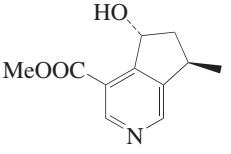


$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from the leaves of *Rhazya stricta* (Apocynaceae). $[\alpha]_D$ +84 (MeOH).

Atta-ur-Rahman, *et al., Tetrahedron*, 1989, **45**, 3507 (*isol, uv, ir, pmr, cmr, ms, struct*)

Rhexifoline R-78

[93915-32-3]

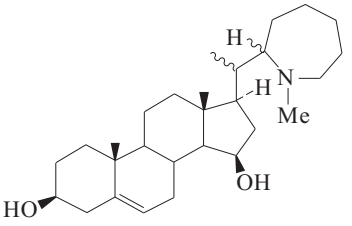


$C_{11}H_{13}NO_3$ 207.229
Alkaloid from *Castilleja rhexifolia* and *Castilleja rhexifolia* aff. *miniata* (Scrophulariaceae). $[\alpha]_D^{23}$ +18 (c, 0.82 in $CHCl_3$). λ_{max} 225 ; 273 (EtOH).

Roby, M.R. *et al., J. Nat. Prod.*, 1984, **47**, 846-853 (*isol, uv, ir, pmr, cmr, ms, struct*)

Rhinolidine R-79

*20-(Hexahydro-1-methyl-1*H*-azepin-2-yl)pregn-5-ene-3,15-diol, 9CI*
[70474-40-7]



$C_{28}H_{47}NO_2$ 429.685
Struct. dubious. More likely to be a piperidine related to Sevcoridinine, S-275 or a solanidane. No furher reports to 2006. Alkaloid from *Fritillaria valujevii* (Liliaceae). Mp 199-201°. $[\alpha]_D$ -52.9 (EtOH).

*3-*O*-β-D-Glucopyranoside:* ***Rhinoline***
[70474-39-4]
$C_{34}H_{57}NO_7$ 591.827
Alkaloid from *Rhinopetalum bucharicum*, *Rhinopetalum karelini* and *Fritillaria valujevii* (Liliaceae). Mp 255-257°.

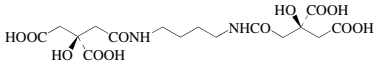
$[\alpha]_D$ -53.2 (EtOH).

3-O-[β-D-Glucopyranosyl-(1→4)-β-D-glucopyranoside]: ***Rhinolinine***
[72060-81-2]
$C_{40}H_{67}NO_{12}$ 753.969
Alkaloid from *Rhinopetalum bucharicum* and *Fritillaria valujevii* (Liliaceae). Mp 301-302°. $[\alpha]_D$ -36.5.

Samikov, K. *et al., Khim. Prir. Soedin.*, 1978, **14**, 815-817; 1979, **15**, 350-353; 1981, **17**, 530; *Chem. Nat. Compd. (Engl. Transl.)*, 1978, **14**, 701-702; 1979, **15**, 303-305 (*Rhinoline, Rhinolinine*)

Rhizoferrin R-80

2,2′-[1,4-Butanediylbis[imino(2-oxo-2,1-ethanediyl)]]bis[2-hydroxybutanedioic acid]. N^1,N^4-Bis(4,4-dicarboxy-3-hydroxy-1-oxobutyl)-1,4-butanediamine
[138846-62-5]



$C_{16}H_{24}N_2O_{12}$ 436.372
λ_{max} 200 ; 280 (H_2O) (Berdy).

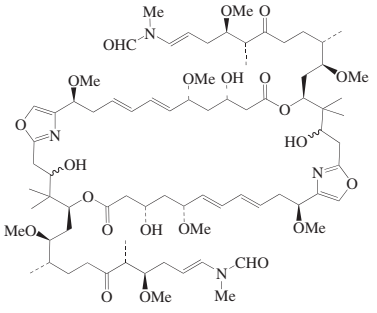
(R,R)-form
Prod. by *Rhizopus microsporus* var. *rhizopodiformis*, *Rhizopus arrhizus* and *Cunninghamella elegans*. Siderophore, growth promotor. Sol. H_2O. $[\alpha]_D^{26}$ -16.7 (c, 0.16 in MeOH).

(S,S)-form
Enantiorhizoferrin
[251366-27-5]
Prod. by *Ralstonia pickettii* DSM 6297. Siderophore. Glass.

Drechsel, H. *et al., Biol. Met.*, 1991, **4**, 238; 1992, **5**, 141 (*isol, uv, ir, pmr, cmr, ms*)
Thieken, A. *et al., FEMS Microbiol. Lett.*, 1992, **94**, 37 (*occur*)
Shenker, M. *et al., Soil Sci. Soc. Am. Proc.*, 1995, **59**, 837 (*isol, pmr, cmr, cd*)
Bergeron, R.J. *et al., Tetrahedron*, 1997, **53**, 427-434 (*synth, pmr, cd, abs config*)
Munzinger, M. *et al., BioMetals*, 1999, **12**, 189-193 (*Enantiorhizoferrin*)

Rhizopodin R-81

[150346-23-9]



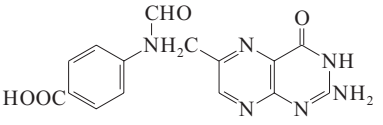
$C_{78}H_{124}N_4O_{22}$ 1469.851
Major struct. revision in 2008. Prod. by *Myxococcus stipitatus* strain Mxf 164. Antitumour agent. Protein phosphorylation inhibitor. Amorph. solid. Sol. MeOH, EtOH, Me_2CO; fairly sol. $CHCl_3$, Et_2O; poorly sol. H_2O, hexane.

$[\alpha]_D^{20}$ -53.4 (c, 1 in MeOH). λ_{max} 231 (log ϵ 4.65); 241 (sh) (log ϵ 4.49) (MeOH).

Sasse, F. *et al., J. Antibiot.*, 1993, **46**, 741-748 (*isol, uv, cmr, props*)
Jansen, R. *et al., Tet. Lett.*, 2008, **49**, 5796-5799 (*isol, pmr, cmr*)

Rhizopterin R-82

4-[(2-Amino-1,4-dihydro-4-oxo-6-pteridinyl)methyl]formylaminobenzoic acid, 9CI. 12-Formylpteroic acid
[119-20-0]



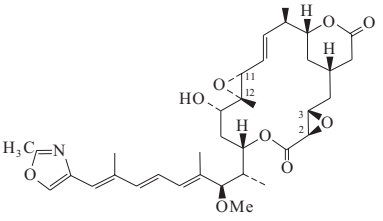
$C_{15}H_{12}N_6O_4$ 340.298
Occurs in *Rhizopus nigricans*. Folic acid growth factor. Pale yellow needles (AcOH aq.). Insol. H_2O, org. solvs.; sol. acids and alkalis. Mp 300°.

Benzoyl:
Cryst. (AcOH aq.). Mp 250° dec.

Rickes, E.L. *et al., J.A.C.S.*, 1947, **69**, 2749; 2751 (*isol, uv*)
Wolf, D.E. *et al., J.A.C.S.*, 1947, **69**, 2753

Rhizoxin R-83

WF 1360. Antibiotic WF 1360. NSC 332598
[90996-54-6]



$C_{35}H_{47}NO_9$ 625.758
Macrolide antibiotic. Originally thought to be prod. by *Rhizopus microsporus* but it has been shown to be prod. by its bacterial endosymbiont *Burkholderia rhizoxina*. Also prod. by *Pseudomonas fluorescens* Pf-5. Antifungal agent. Phytotoxic to rice seedlings. Inhibits microtubule assembly. Pale-yellow powder. Mp 131-135°. $[\alpha]_D^{24}$ +155 (c, 0.8 in MeOH). λ_{max} 230 (ϵ 9000); 240 (sh) (ϵ 8000); 295 (ϵ 42300); 308 (ϵ 54000); 325 (ϵ 39000) (MeOH) (Derep).

▶ VI1800000

O-*De-Me:* ***17-De-O-methylrhizoxin***
[103528-74-1]
$C_{34}H_{45}NO_9$ 611.731
Prod. by *Burkholderia rhizoxina* and *Rhizopus chinensis*. Active against fungi and tumours. Plant growth inhibitor. Powder. Sol. MeOH, EtOH, Me_2CO; poorly sol. H_2O. $[\alpha]_D^{24}$ +116.3 (c, 0.11 in MeOH). λ_{max} 297 (ϵ 32300); 309 (ϵ 41000); 323 (ϵ 30180) (MeOH) (Berdy).

2,3-Deepoxy, 2,3-didehydro: ***Antibiotic WF 1360F****. WF 1360F. FR 900216F. Antibiotic FR 900216F*
[103528-75-2]
$C_{35}H_{47}NO_8$ 609.758
Prod. by *Burkholderia rhizoxina* and *Pseudomonas fluorescens* Pf-5. Active against fungi and tumours. Powder. $[\alpha]_D^{24}$ +136.8 (c, 0.71 in MeOH). $[\alpha]_D^{23}$ +97 (c, 1.9 in $CHCl_3$).

2,3-Deepoxy, 2,3-didehydro, O*-de-Me:* ***Antibiotic WF 1360B****. WF 1360B. FR 900216B. Antibiotic FR 900216B*
[103528-76-3]
$C_{34}H_{45}NO_8$ 595.731
Prod. by *Burkholderia rhizoxina* and *Pseudomonas fluorescens* Pf-5. Active against fungi and tumours. Powder. Sol. MeOH, EtOAc; poorly sol. H_2O. $[\alpha]_D^{24}$ +99.3 (c, 0.61 in MeOH). $[\alpha]_D^{23}$ +110 (c, 1.9 in $CHCl_3$). λ_{max} 297 (ϵ 39100); 308 (ϵ 50300); 323 (ϵ 36600) (MeOH) (Berdy).

2,3:11,12-Bis(deepoxy), 2,3,11,12-tetradehydro: ***Rhizoxin D***
[103528-77-4]
$C_{35}H_{47}NO_7$ 593.759
Prod. by *Burkholderia rhizoxina* and *Pseudomonas fluorescens* Pf-5. Active against fungi and tumours. Powder. Sol. MeOH, EtOAc; poorly sol. H_2O. $[\alpha]_D^{24}$ +287.1 (c, 0.48 in MeOH). λ_{max} 216 (ϵ 25900); 235 (ϵ 24700); 238 (ϵ 24500); 297 (ϵ 38700); 309 (ϵ 49900); 323 (ϵ 36500) (MeOH) (Berdy).

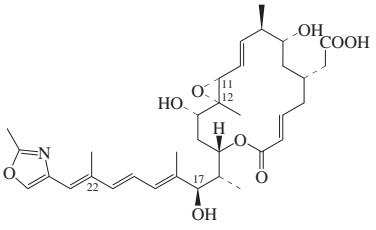
2,3:11,12-Bis(deepoxy), 2,3,11,12-tetradehydro, O*-de-Me:* ***Rhizoxin D_1****. Antibiotic WF 1360C. WF 1360C. FR 900216C. Antibiotic FR 900216C*
[103528-78-5]
$C_{34}H_{45}NO_7$ 579.732
Prod. by *Burkholderia rhizoxina* and *Pseudomonas fluorescens* Pf-5. Active against fungi and tumours. Powder. Sol. MeOH, EtOAc; poorly sol. H_2O. $[\alpha]_D^{24}$ +246 (c, 0.66 in MeOH). $[\alpha]_D^{23}$ +197 (c, 0.2 in $CHCl_3$). λ_{max} 215 (ϵ 28400); 232 (ϵ 26200); 238 (ϵ 25700); 297 (ϵ 42500); 308 (ϵ 55100); 323 (ϵ 40300) (MeOH) (Berdy).

Iwasaki, S. *et al., J. Antibiot.*, 1984, **37**, 354-362; 1986, **39**, 424-429; 1987, **40**, 66-72 (*isol, uv, ir, pmr, cmr, bibl*)
Tsuruo, T. *et al., Cancer Res.*, 1986, **46**, 381-385 (*props*)
Iwasaki, S. *et al., Chem. Comm.*, 1986, 1702-1703 (*biosynth*)
Iwasaki, S. *et al., Chem. Pharm. Bull.*, 1986, **34**, 1387-1390 (*derivs*)
Kiyoto, S. *et al., J. Antibiot.*, 1986, **39**, 762-772 (*WF 1360*)
Li, Y. *et al., Biochem. Biophys. Res. Commun.*, 1992, **187**, 722-729 (*Rhizoxin, activity*)
Boger, D.L. *et al., J.O.C.*, 1992, **57**, 2235-2244 (*synth, bibl*)
Nakada, M. *et al., Tet. Lett.*, 1993, **34**, 1035-1038; 1039-1042 (*synth*)
Keck, G.E. *et al., Angew. Chem., Int. Ed.*, 2001, **40**, 231-234 (*Rhizoxin D, synth*)
White, J.D. *et al., J.O.C.*, 2002, **67**, 7750-7760 (*Rhizoxin D, synth*)
Lafontaine, J.A. *et al., J.O.C.*, 2003, **68**, 4215-4234 (*Rhizoxin D, synth*)
Jiang, Y. *et al., Org. Lett.*, 2004, **6**, 1445-1448 (*Rhizoxin D: synth*)
Hong, J. *et al., Tetrahedron*, 2004, **60**, 5653-5681 (*rev*)
Mitchell, I.S. *et al., Org. Biomol. Chem.*, 2005, **3**, 4412-4431 (*Rhizoxin D, synth*)

Scherlach, K. *et al., J.A.C.S.*, 2006, **128**, 11529-11536 (*Burkholderia, isol, pmr, cmr*)
Partida-Martinez, L.P. *et al., ChemBioChem*, 2007, **8**, 41-45 (*biosynth*)
Loper, J.E. *et al., Appl. Environ. Microbiol.*, 2008, **74**, 3085-3093 (*Pseudomonas, isol*)

Rhizoxin S_1 R-84

[911676-00-1]



$C_{34}H_{47}NO_9$ 613.747

Closely related to Rhizoxin, R-83. Prod. by *Burkholderia rhizoxina*, the bacterial endosymbiont of *Rhizopus microsporus*. Antitumour agent. Amorph. powder. $[\alpha]_D^{25}$ +31 (c, 0.08 in MeOH). λ_{max} 299 (log ϵ 4.29); 310 (log ϵ 4.4); 324 (log ϵ 4.3) (MeOH).

Me ester: Rhizoxin M_1
[911676-02-3]
$C_{35}H_{49}NO_9$ 627.773
Potent antitumour agent. Amorph. powder. $[\alpha]_D^{25}$ +32 (c, 0.1 in MeOH).

17-Me ether: ***Rhizoxin S_2***
[308285-11-2]
$C_{35}H_{49}NO_9$ 627.773
Prod. by *Burkholderia rhizoxina*, the bacterial endosymbiont of *Rhizopus microsporus*. Amorph. powder. $[\alpha]_D^{25}$ +41 (c, 0.13 in MeOH). λ_{max} 298 (log ϵ 4.42); 310 (log ϵ 4.52); 324 (log ϵ 4.39) (MeOH).

17-Me ether, Me ester: Rhizoxin M_2
[911676-03-4]
$C_{36}H_{51}NO_9$ 641.8
Potent antitumour agent. Amorph. powder. $[\alpha]_D^{25}$ +36 (c, 0.3 in MeOH).

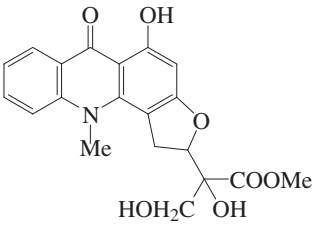
*Deepoxy, 11,12-didehydro(*E-*):* ***Rhizoxin D_3***
[911676-06-7]
$C_{34}H_{47}NO_8$ 597.747
Prod. by *Burkholderia rhizoxina*, the bacterial endosymbiont of *Rhizopus microsporus*. Amorph. powder.

22Z-Isomer, 17-Me ether: ***Rhizoxin Z_1***
[911676-04-5]
$C_{35}H_{49}NO_9$ 627.773
Prod. by *Burkholderia rhizoxina*, the bacterial endosymbiont of *Rhizopus microsporus*. Amorph. powder. $[\alpha]_D^{25}$ +116 (c, 0.07 in MeOH). λ_{max} 298 (sh) ; 310 (log ϵ 4.55); 324 (log ϵ 4.43) (MeOH).

22Z-Isomer, 17-Me ether, Me ester: Rhizoxin Z_2
[911676-05-6]
$C_{36}H_{51}NO_9$ 641.8
Potent antitumour agent. Amorph. powder. $[\alpha]_D^{25}$ +138 (c, 0.15 in MeOH).

Scherlach, K. *et al., J.A.C.S.*, 2006, **128**, 11529-11536 (*isol, pmr, cmr*)

Rhodesiacridone R-85



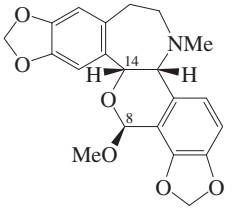
$C_{20}H_{19}NO_7$ 385.373

(-)-form
Alkaloid from the roots of *Thamnosma rhodesica*. Amorph. yellow powder. $[\alpha]_D$ -47.7 (c, 0.1 in MeOH). λ_{max} 249 (log ϵ 3.96); 265 (sh) (log ϵ 4.01); 272 (log ϵ 4.09); 299 (log ϵ 3.73); 330 (log ϵ 3.44); 397 (log ϵ 3.18) (MeOH).

Ahua, K.M. *et al., Phytochemistry*, 2004, **65**, 963-968 (*isol, pmr, cmr*)

Rhoeadine R-86

8-Methoxy-16-methyl-2,3:10,11-bis[methylenebis(oxy)]rheadan, 9CI. Rheadine. O-*Methylrhoeagenine.* N-*Methylpapaverrubine E*



(+)-*form*

$C_{21}H_{21}NO_6$ 383.4

Various numbering schemes in use.

(+)-form [2718-25-4]
Alkaloid from *Bocconia frutescens*, *Meconopsis betonicifolia* and other *Meconopsis* spp., *Papaver albiflorum* and other *Papaver* spp. (Papaveraceae). Increases intraocular pressure in expt. animals, causes mydriasis. *P. rhoeas* extracts have been used in medicine as sedatives and expectorants but this does not appear to be caused by Rhoeadine. Needles (MeOH or $CHCl_3$/MeOH). Mp 253-254°. $[\alpha]_D^{22}$ +228.5 (c, 1.008 in $CHCl_3$).
▶ Toxic, LD_{50} (rat, ipr) 530 mg/kg.
VI0650000

N-*De-Me:* ***Papaverrubine E***. N-*Demethylrhoeadine*
[6807-95-0]
$C_{20}H_{19}NO_6$ 369.373
Alkaloid from *Bocconia frutescens, Meconopsis* spp. and many *Papaver* spp. (Papaveraceae). Mp 230-231°. $[\alpha]_D$ +331 ($CHCl_3$).

O-*De-Me:* ***Rhoeagenine***. *Rheagenine*
[5574-77-6]
$C_{20}H_{19}NO_6$ 369.373
In some solvents the alkaloid exists as a mixt. of C-14 epimers (hemiacetal equilibrium). Alkaloid from *Papaver arenarium*, *Papaver argemone*, *Papaver armeniacum*, *Papaver atlanticum*, *Papaver californicum*, *Papaver commutatum*, *Papaver dubium*, *Papaver hispidum*, *Papaver latericium*, *Papaver nudicaule*, *Papaver oreophilum*, *Papaver pilosum*, *Papaver rhoeas* (corn poppy), *Papaver rupifragum, Papaver strigosum, Papaver syriacum* and *Papaver tauricola*. Mp 236-238°. $[\alpha]_D^{22}$ +134 (c, 0.96 in Py).

O-*De-Me,* N-*Me:*
Needles (MeOH) (as iodide). Mp 255-258° dec. (iodide). $[\alpha]_D^{22}$ +154 (c, 0.95 in $CHCl_3$) (iodide).

O-*De-Me, Et ether:* ***Dubirheine***. O-*Ethylrhoeagenine*
[2650-36-4]
$C_{22}H_{23}NO_6$ 397.427
Isol. from *Papaver armeniacum*, *Papaver dubium* and *Papaver tauricola* (Papaveraceae). Needles ($CHCl_3$/EtOH). Mp 236-237°. $[\alpha]_D^{24}$ +236 (c, 0.06 in $CHCl_3$). Prob. an artifact.

14-Epimer: ***Isorhoeadine***. N-*Methylpapaverrubine A*. *Alkaloid RA*
[4046-21-3]
$C_{21}H_{21}NO_6$ 383.4
Alkaloid from *Meconopsis betonicifolia*, *Papaver arenarium*, *Papaver argemone*, *Papaver commutatum* and other *Papaver* spp. (Papaveraceae). Mp 159-161°. $[\alpha]_D$ +314 (c, 0.576 in $CHCl_3$).

14-Epimer, N-*de-Me:* ***Papaverrubine A***. N-*Demethylisorhoeadine. Alkaloid RS*
[6807-93-8]
$C_{20}H_{19}NO_6$ 369.373
Alkaloid from *Meconopsis betonicifolia* and many *Papaver* spp. (Papaveraceae). Mp 223-225°. $[\alpha]_D^{22}$ +406 (c, 0.978 in $CHCl_3$).

8,14-Diepimer, O-*de-Me:* ***Isorhoeagenine***. *Isorheagenine*
[17948-35-5]
$C_{20}H_{19}NO_6$ 369.373
Alkaloid from *Papaver commutatum* and *Papaver rhoeas* (corn poppy) (Papaveraceae). Needles (MeOH/Me_2CO). Mp 210-215°. $[\alpha]_D^{22}$ +153 (c, 0.65 in 1:1 $CHCl_3$/MeOH).

8,14-Diepimer, O-*de-Me,* O-*α-D-glucopyranoside:* ***Alkaloid RC***
[17948-36-6]
$C_{26}H_{29}NO_{11}$ 531.515
Alkaloid from *Papaver commutatum* and *Papaver rhoeas* (corn poppy) (Papaveraceae). Mp 240-242°. $[\alpha]_D^{22}$ +250 (c, 0.40 in $CHCl_3$/MeOH 1:1).

(-)-form [35321-09-6]
Synthetic. Mp 253-254°. $[\alpha]_D^{22}$ -228.2 (c, 1 in $CHCl_3$).

(±)-form [30634-53-8]
Synthetic. Mp 222-224°.

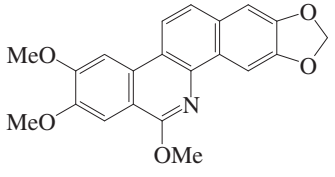
N-*De-Me:* [70681-69-5]
Cryst. (CH_2Cl_2/petrol). Mp 216-218°.

Pfeifer, S. *et al., Pharmazie*, 1964, **19**, 286; 1972, **27**, 48 (*Papaverrubines*)
Slavík, J. *et al., Coll. Czech. Chem. Comm.*, 1965, **30**, 2864; 1980, **45**, 2706; 1981, **46**, 2587 (*Rhoeadine, Dubirheine*)
Šantavý, F. *et al., Coll. Czech. Chem. Comm.*, 1965, **30**, 3479; 1967, **32**, 461 (*Rhoeadine, Isorhoeagenine, uv, pmr, struct, synth*)

Němečková, A. *et al., Naturwissenschaften*, 1967, **54**, 45 (*Alkaloid RC*)
Dolejš, L. *et al., Tetrahedron*, 1967, **23**, 2997 (*ms*)
Shamma, M. *et al., Chem. Comm.*, 1968, 212 (*stereochem*)
Huber, C.S. *et al., Acta Cryst. B*, 1970, **26**, 373 (*Rhoeagenine, cryst struct, abs config*)
Klötzer, W. *et al., Helv. Chim. Acta*, 1972, **55**, 2228 (*synth*)
Hohlbrugger, R. *et al., Chem. Ber.*, 1979, **112**, 849 (*synth*)
Slavková, L. *et al., Coll. Czech. Chem. Comm.*, 1980, **45**, 761 (*isol*)
Sariyar, G. *et al., Phytochemistry*, 1980, **19**, 2189 (*Dubirheine, Rhoeadine, isol, pmr, ms*)
Věžník, F. *et al., Coll. Czech. Chem. Comm.*, 1981, **46**, 926 (*isol*)
Phillipson, J.D. *et al., Planta Med.*, 1981, **41**, 105 (*Dubirheine, Rhoeadine*)
Sariyar, G. *et al., Planta Med.*, 1982, **46**, 175; 1983, **49**, 43 (*isol*)
Rönsch, H. *et al., Alkaloids (Academic Press)*, 1986, **28**, 78 (*pharmacol*)
Marek, R. *et al., Magn. Reson. Chem.*, 2002, **40**, 687-692 (*N-15 nmr*)

Rhoifoline B R-87

2,3,13-Trimethoxy[1,3]benzodioxolo[5,6-c]phenanthridine

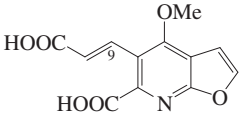


$C_{21}H_{17}NO_5$ 363.369
Alkaloid from the stem bark of *Zanthoxylum rhoifolium*. Powder. Mp 258-259°.

Gonzaga, W. de A. *et al., Planta Med.*, 2003, **69**, 371-374 (*isol, pmr, cmr*)

Rhoifolinic acid R-88

5-(2-Carboxy-1-ethenyl)-4-methoxyfuro[2,3-b]pyridine-6-carboxylic acid



(*E*)-*form*

$C_{12}H_9NO_6$ 263.206
Secofuroquinoline.

(*E*)-*form*

Di-Me ester: ***Dimethyl (E)-rhoifolinate***
[142543-00-8]
$C_{14}H_{13}NO_6$ 291.26
Alkaloid from *Glycosmis citrifolia*, *Metrodorea nigra* and *Zanthoxylum rhoifolium*.

9-Methoxy(E-), di-Me ester: ***Furomegistine I***
[352320-25-3]
$C_{15}H_{15}NO_7$ 321.286
Alkaloid from the bark of *Sarcomelicope megistophylla*. Amorph. yellow solid. λ_{max} 298 (sh) ; 345 (sh) (log ε 2.64) (MeOH).

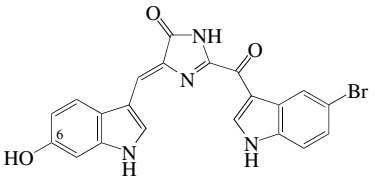
(*Z*)-*form*

Di-Me ester: ***Dimethyl (Z)-rhoifolinate***
[142542-99-2]
$C_{14}H_{13}NO_6$ 291.26
Alkaloid from *Glycosmis citrifolia*, *Metrodorea nigra* and *Zanthoxylum rhoifolium*.

Arruda, M.S.P. *et al., Biochem. Syst. Ecol.*, 1992, **20**, 173-178 (*isol*)
Mueller, A.H. *et al., Phytochemistry*, 1995, **40**, 1797-1800 (*isol*)
Fokialakis, N. *et al., Phytochemistry*, 2001, **57**, 593-596 (*Furomegistine I*)

Rhopaladin A R-89

[212069-48-2]



$C_{21}H_{13}BrN_4O_3$ 449.263
Alkaloid from the marine tunicate *Rhopalaea* sp. Amorph. red solid. λ_{max} 218 (ε 29000); 268 (ε 10000); 280 (ε 9700); 291 (ε 9600); 344 (ε 6700); 488 (ε 13000) (MeOH).

6-Deoxy: ***Rhopaladin C***
[212069-50-6]
$C_{21}H_{13}BrN_4O_2$ 433.263
Alkaloid from *Rhopalaea* sp. Amorph. red solid. λ_{max} 212 (ε 56000); 258 (sh) ; 282 (ε 4900); 291 (sh) ; 471 (ε 5600) (MeOH).

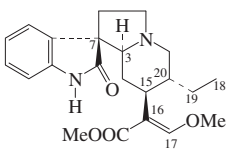
Debromo: ***Rhopaladin B***
[212069-49-3]
$C_{21}H_{14}N_4O_3$ 370.367
Alkaloid from *Rhopalaea* sp. Amorph. red solid. λ_{max} 213 (ε 19000); 267 (ε 6900); 281 (ε 5800); 293 (ε 5100); 350 (ε 4400); 485 (ε 8900) (MeOH).

Debromo, 6-deoxy: ***Rhopaladin D***
[212069-51-7]
$C_{21}H_{14}N_4O_2$ 354.367
Alkaloid from *Rhopalaea* sp. Amorph. red solid. λ_{max} 211 (ε 22000); 259 (sh) ; 276 (ε 5400); 281 (sh) ; 468 (ε 4800) (MeOH).

Sato, H. *et al., Tetrahedron*, 1998, **54**, 8687-8690 (*Rhopaladings A-D, isol, uv, ir, pmr, cmr, ms*)
Janosik, T. *et al., Tetrahedron*, 2002, **58**, 2813-2819 (*synth*)

Rhyncophylline R-90

Mitrinermine. Rhynchophylline
[76-66-4]



Absolute Configuration

$C_{22}H_{28}N_2O_4$ 384.474
Alkaloid from *Uncaria rhyncophylla*, some other *Uncaria* spp., several *Mitragyna* spp. and *Cephalanthus occidentalis* (Rubiaceae). Antipyretic, hypotensive agent. Mp 214° (208-209°). $[\alpha]_D$ -24 ($CHCl_3$) (-15). λ_{max} 245 (log ε 4.24); 280 (log ε 3.15) (no solvent reported).

N-*Oxide:* ***Rhyncophylline* N-*oxide***.
Rhynchophylline N-*oxide*
[35128-90-6]
$C_{22}H_{28}N_2O_5$ 400.474
Alkaloid from *Mitragyna inermis* and *Cephalanthus occidentalis* (Rubiaceae). Noncryst.

18,19-Didehydro: ***Corynoxeine***
[630-94-4]
$C_{22}H_{26}N_2O_4$ 382.458
Alkaloid from *Pseudocinchona africana* (preferred genus name *Corynanthe*), *Mitragyna rotundifolia*, *Mitragyna speciosa* and *Uncaria attenuata* (Rubiaceae). Cryst. (Me_2CO). Mp 212-214°. $[\alpha]_D$ -21 ($CHCl_3$). $[\alpha]_D$ +23 (c, 1 in Py). λ_{max} 244 (log ε 4.27) (EtOH).

Parent acid: ***Rhynchophyllic acid***. *Rhyncophyllic acid*
[151124-30-0]
$C_{21}H_{26}N_2O_4$ 370.447
Alkaloid from stems of *Uncaria sinensis* (Rubiaceae). Amorph. powder. λ_{max} 237 (log ε 4.2); 280 (log ε 3.36) (EtOH).

7-Epimer: ***Isorhyncophylline***. *Isorhynchophylline*
[6859-01-4]
$C_{22}H_{28}N_2O_4$ 384.474
Alkaloid from *Uncaria* and *Mitragyna* spp. (Rubiaceae). Mp 144°. $[\alpha]_D$ +13 (+8.3) ($CHCl_3$). λ_{max} 243 (log ε 4.27) (EtOH).

▶ GN1605000

*7-Epimer, β-*N*-oxide:* ***Isorhyncophylline* N-*oxide***. *Isorhynchophylline* N-*oxide*
[35129-00-1]
$C_{22}H_{28}N_2O_5$ 400.474
Alkaloid from *Mitragyna inermis, Mitragyna rotundifolia* and *Cephalanthus occidentalis* (Rubiaceae). Mp 242-243°. *N*-oxide config. *anti-*.

7-Epimer, 18,19-didehydro: ***Isocorynoxeine***
[51014-29-0]
$C_{22}H_{26}N_2O_4$ 382.458
Alkaloid from *Uncaria attenuata attenuata* and *Mitragyna rotundifolia* (Rubiaceae). Noncryst.

7-Epimer, parent acid: ***Isorhynchophyllic acid***. *Isorhyncophyllic acid*
[144525-05-3]
$C_{21}H_{26}N_2O_4$ 370.447
Alkaloid from stems of *Uncaria sinensis* (Rubiaceae). Mp 175-176.5°. $[\alpha]_D$ +5.2 (c, 0.08 in MeOH). λ_{max} 242 (log ε 4.27); 280 (log ε 3.5) (EtOH).

7-Epimer, demethoxy: ***17-Demethoxyisorhyncophylline***
[94482-54-9]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from the whole plant of *Amsonia brevifolia* (Apocynaceae). Cytotoxic agent. Amorph. gum. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. $[\alpha]_D$ 0 (c, 0.2 in MeOH). λ_{max} 210 ; 252 ; 282 (MeOH) (Berdy).

7-Epimer, demethoxy, 16,17-dihydro: ***16,17-Dihydro-17-demethoxyisorhyncophylline***
[259540-05-1]
$C_{21}H_{28}N_2O_3$ 356.464
Alkaloid from *Ervatamia yunnanensis*. Gum.

7-Epimer, demethoxy, 16,17-dihydro, N-*oxide:* ***16,17-Dihydro-17-demethoxyisorhyncophylline* N-*oxide***
[259540-06-2]
$C_{21}H_{28}N_2O_4$ 372.463
Alkaloid from *Ervatamia yunnanensis*. Gum.

20-Epimer: ***Corynoxine B***. *Isocorynoxine*
[17391-18-3]
$C_{22}H_{28}N_2O_4$ 384.474
Alkaloid from *Uncaria macrophylla* (Rubiaceae). Noncryst.

20-Epimer, demethoxy: ***17-Demethoxycorynoxine B***
[119365-65-0]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from the whole plant of *Amsonia brevifolia* (Apocynaceae). Cytotoxic agent. Fine needles. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 178-180°. $[\alpha]_D$ +61 (c, 0.2 in MeOH). λ_{max} 214 ; 253 ; 286 (MeOH) (Berdy).

3,15-Diepimer, demethoxy: ***Catharinensine***
[94444-28-7]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from the bark of *Peschiera catharinensis* (Apocynaceae). $[\alpha]_D^{25}$ -194 (c, 0.5 in $CHCl_3$). Unusual 15-epi config. CD of opposite sign to that of Corynoxine.

7,20-Diepimer: ***Corynoxine***. *Corynoxine A*
[6877-32-3]
$C_{22}H_{28}N_2O_4$ 384.474
Alkaloid from *Pseudocinchona africana, Uncaria macrophylla* and *Mitragyna speciosa* (Rubiaceae). Mp 166-168°. $[\alpha]_D$ -3 ($CHCl_3$). $[\alpha]_D$ -14 (c, 1 in Py).

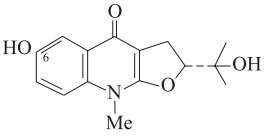
(±)-*form* [39032-62-7]
Synthetic. Mp 197-199°.

7-Epimer: Mp 225-227°.

Cu, N.A. *et al., Bull. Soc. Chim. Fr.*, 1957, 1292-1294 (*Corynoxine, Corynoxeine*)
Seaton, J.C. *et al., Can. J. Chem.*, 1957, **35**, 1102-1108; 1960, **38**, 1035-1042 (*Rhyncophylline, Isorhyncophylline*)
Finch, N. *et al., J.A.C.S.*, 1962, **84**, 3871-3877 (*Corynoxeine, config*)
Gilbert, B. *et al., J.A.C.S.*, 1963, **85**, 1523-1528 (*ms*)
Pousset, J.L. *et al., Tet. Lett.*, 1966, **7**, 6283-6289; 1967, **8**, 952; 1919-1927 (*Corynoxine, cd, config, synth*)
Pousset, J.-L. *et al., Bull. Soc. Chim. Fr.*, 1967, 2766-2779 (*pmr, config*)
Becket, A.H. *et al., Tetrahedron*, 1969, **25**, 5961-5969 (*ms*)
Shellard, E.J. *et al., Phytochemistry*, 1971, **10**, 2505-2511 (*oxides*)
Phillipson, J.D. *et al., Phytochemistry*, 1973, **12**, 2795-2798; 1974, **13**, 2621-2622 (*Corynoxine B, N-oxides*)
Hough, P.J. *et al., Planta Med.*, 1974, **26**, 104 (*Isocorynoxeine*)
Ban, Y. *et al., Chem. Pharm. Bull.*, 1975, **23**, 2605-2613 (*Isorhyncophylline, synth, ir, ms*)
Phillipson, J.D. *et al., J. Chromatogr.*, 1975, **105**, 163-178 (*tlc, gc, ms*)
Brown, R.T. *et al., Tet. Lett.*, 1976, 1401-1402 (*Isorhyncophylline, synth*)
Araujo, A.R. *et al., Phytochemistry*, 1984, **23**, 2359 (*Catharinensine*)
Sharma, P. *et al., Phytochemistry*, 1988, **27**, 3649-3652 (*17-Demethoxycorynoxine B, 17-Demethoxyisorhyncophylline*)
Liu, H.-M. *et al., Phytochemistry*, 1993, **33**, 707-710 (*Rhynchophyllic acid, Isorhynchophyllic acid*)
Yu, Y. *et al., Chin. Chem. Lett.*, 1999, **10**, 575-578 (*Dihydrodemethoxyisorhyncophylline*)
Laus, G. *et al., Helv. Chim. Acta*, 2003, **86**, 181-187 (*cryst struct*)
Deiters, A. *et al., J.O.C.*, 2006, **71**, 6547-6561 (*synth*)

Ribaline R-91

*3,9-Dihydro-6-hydroxy-2-(1-hydroxy-1-methylethyl)-9-methylfuro[2,3-*b*]quinolin-4(2*H*)-one, 9CI. Rutalinidine*
[50894-68-3]



(*R*)–*form*

$C_{15}H_{17}NO_4$ 275.304

(*R*)-*form* [6872-52-2]
Alkaloid from the trunk bark and heartwood of *Balfourodendron riedelianum* (Rutaceae). Cryst. (MeOH). Mp 210-211° (indefinite). $[\alpha]_D^{25}$ +86 (c, 0.44 in MeOH) (+72.1).

O^6*-Ac:*
Glistening plates (Me_2CO). Mp 222-223°. $[\alpha]_D^{25}$ +82.1 (c, 0.6 in MeOH).

(±)-*form* [41234-32-6]
Minor alkaloid from *Balfourodendron riedelianum* and *Ruta graveolens* (rue) (Rutaceae). Needles (MeOH). Mp 268-269° (259-260° dec.).

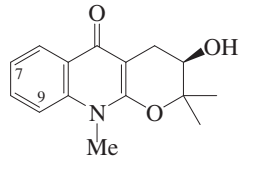
Picrate: Mp 223-224° dec.

O^6*-Ac:*
Needles (MeOH). Mp 240°.

Szendrei, K. *et al., Herba Hung.*, 1971, **10**, 131-139 (*isol*)
Corral, R.A. *et al., Tetrahedron*, 1973, **29**, 205 (*isol, uv, ir, struct, synth*)
Hammerum, S. *et al., Acta Chem. Scand., Ser. B*, 1977, **31**, 31 (*ms*)
Jurd, L. *et al., Aust. J. Chem.*, 1983, **36**, 1615 (*isol, ir, pmr, cmr, ms*)
Corral, R.A. *et al., Tet. Lett.*, 1983, **24**, 2359 (*synth*)

Ribalinine R-92

*2,3,4,10-Tetrahydro-3-hydroxy-2,2,10-trimethyl-5*H*-pyrano[2,3-*b*]quinolin-5-one, 9CI. Folifine*
[16117-68-3]



(*R*)-*form*

$C_{15}H_{17}NO_3$ 259.304

(*R*)-*form* [62928-56-7]
Alkaloid from *Haplophyllum bucharicum*, *Haplophyllum foliosum* and *Araliopsis tabouensis* (Rutaceae). Mp 222°. $[\alpha]_D$ +14.1 (c, 0.6 in MeOH).

7-Hydroxy: ***Ribalinidine***
[87936-14-9]
$C_{15}H_{17}NO_4$ 275.304
Minor alkaloid from the heartwood of *Balfourodendron riedelianum* (Rutaceae). Needles (MeOH). Mp 260-261°. $[\alpha]_D^{25}$ +15.3 (c, 0.5 in MeOH).

9-Methoxy: ***Isobalfourodine***
[478-38-6]
$C_{16}H_{19}NO_4$ 289.33
Alkaloid from *Balfourodendron riedelianum* (Rutaceae). Mp 204-205°. $[\alpha]_D$ +15 (c, 1 in EtOH).

9-(3-Methyl-2-butenyloxy): ***Ribalireprenylene***
$C_{20}H_{25}NO_4$ 343.422
Alkaloid from *Skimmia laureola*. Pale yellow gum. $[\alpha]_D^{29}$ +10 (c, 1 in $CHCl_3$). λ_{max} 265 (log ε 2.67); 304 (log ε 3.84); 318 (log ε 3.86); 325 (log ε 3.74); 330 (log ε 3.76) (MeOH).

(*S*)-*form* [7688-58-6]
Alkaloid from *Araliopsis soyauxii*. Mp 222°. $[\alpha]_D$ -14 (c, 0.5 in MeOH).

7-Hydroxy: [19783-80-3]
Alkaloid from *Balfourodendron riedelianum*. Cryst. (EtOH). Mp 257-258° dec. $[\alpha]_D^{20}$ -15 (c, 1.0 in MeOH).

9-Methoxy: ***Lunasia II***. *Lunacrinol*
$C_{16}H_{19}NO_4$ 289.33
Alkaloid from *Lunasia amara* (Rutaceae). Mp 201-203°. $[\alpha]_D$ -14 (EtOH).

(±)-*form*
Alkaloid from the bark of *Balfourodendron riedelianum* (Rutaceae). Mp 233-234°.

7-Hydroxy: [86851-77-6]
Synthetic. Cryst. (EtOH). Mp 256-257°.

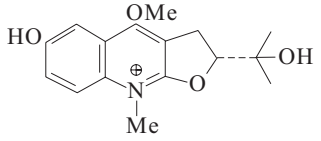
9-Methoxy: Mp 184-186°.

Rapoport, H. *et al., J.A.C.S.*, 1960, **82**, 4395 (*Isobalfourodine*)
Bowman, R.M. *et al., J.C.S.(C)*, 1966, 1504 (*synth, pmr*)
Faizutdinova, Z.Ch. *et al., Khim. Prir. Soedin.*, 1967, **3**, 257; *Chem. Nat. Compd. (Engl. Transl.)*, 1967, **3**, 215 (*Ribalinine*)
Collins, J.F. *et al., Chem. Comm.*, 1969, 1078 (*config*)
Corral, R.A. *et al., Tetrahedron*, 1973, **29**, 205 (*Ribalinine, Ribalinidine, isol, ir, uv, pmr, struct, synth*)
Vaquette, J. *et al., Phytochemistry*, 1976, **15**, 743 (*Ribalinine, isol, ir, uv, ms, pmr, struct*)
Hammerum, S. *et al., Acta Chem. Scand., Ser. B*, 1977, **31**, 31 (*ms*)
Grundon, M.F. *et al., Chem. Comm.*, 1978, 624 (*config*)
Jurd, L. *et al., Aust. J. Chem.*, 1983, **36**, 1615 (*Ribalinidine, isol, ir, pmr, cmr, ms, struct*)
Corral, R.A. *et al., Tet. Lett.*, 1983, **24**, 2359 (*synth*)
Ramesh, M. *et al., Heterocycles*, 1984, **22**, 125 (*synth, ir, pmr*)
Ramesh, M. *et al., Indian J. Chem., Sect. B*, 1985, **24**, 602 (*Isobalfourodine, synth*)

Subramanian, M. *et al., Z. Naturforsch., B*, 1992, **47**, 1016 (*synth*)
Barr, S.A. *et al., Chem. Comm.*, 1994, 153 (*synth*)
Boyd, D.R. *et al., J.C.S. Perkin 1*, 2000, 3397-3405 (*synth, abs config*)
Sultana, N. *et al., Z. Naturforsch., B*, 2006, **60**, 1186-1191 (*Ribaliprenylene*)

Ribalinium R-93

2,3-Dihydro-6-hydroxy-2-(1-hydroxy-1-methylethyl)-4-methoxy-9-methylfuro[2,3-b]quinolinium(1+), 9CI
[6883-22-3]



$C_{16}H_{20}NO_4^{\oplus}$ 290.338
Alkaloid from the trunk bark of *Balfourodendron riedelianum* and the leaves of *Ruta graveolens* (rue) (Rutaceae).

Chloride:
Cryst. (MeOH/EtOAc or MeOH). Mp 188-190° (gas evoln). $[\alpha]_D^{24}$ +40 (c, 1.25 in MeOH).

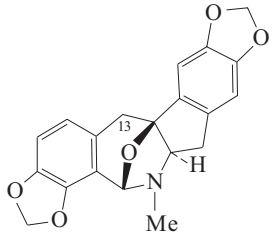
Perchlorate: Mp 205° (218-220° dec.). $[\alpha]_D^{20}$ +23.6 (c, 0.006 in MeOH).

Picrate:
Cryst. (Me_2CO/EtOH). Mp 192-193° (darkening, gas evoln.).

Corral, R.A. *et al., Tetrahedron*, 1965, **21**, 909 (*isol, uv, ir, pmr, struct*)
Rideau, M. *et al., Phytochemistry*, 1979, **18**, 155 (*isol, pmr, ms, struct*)

Ribasine R-94

Limogine. Grandiflorine†
[87099-54-5]



$C_{20}H_{17}NO_5$ 351.358
Alkaloid from *Sarcocapnos crassifolia, Corydalis claviculata* and *Argemone grandiflora* subsp. *grandiflora* (Fumariaceae, Papaveraceae). Cryst. (EtOH). Mp 202.5-203.5° (194-195°). $[\alpha]_D$ +125 (c, 1 in $CHCl_3$).

N-*De-Me:* ***Norribasine***
[133084-01-2]
$C_{19}H_{15}NO_5$ 337.331
Alkaloid from *Corydalis claviculata* (Papaveraceae). Amorph. $[\alpha]_D^{25}$ +72 (c, 0.36 in MeOH).

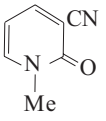
13β-Hydroxy: ***Ribasidine***. *13β-Hydroxyribasine*
[88151-44-4]
$C_{20}H_{17}NO_6$ 367.357
Alkaloid from *Sarcocapnos enneaphylla* and *Corydalis claviculata* (Papaveraceae). Needles ($CHCl_3$). Mp 230°. $[\alpha]_D^{25}$ +120 (c, 0.04 in EtOH).

13β-Hydroxy, O-*Ac:*
Cryst. (MeOH). Mp 198°.

Boente, J.M. *et al., Tet. Lett.*, 1983, **24**, 2029 (*uv, pmr, ms, cryst struct*)
Allais, D.P. *et al., Tet. Lett.*, 1983, **24**, 2445 (*uv, ir, pmr, cmr, ms, cd, struct*)
Boente, J.M. *et al., Tet. Lett.*, 1983, **24**, 4481 (*uv, ir, pmr, cmr, ms, struct, Ribasidine*)
Mitchell, R.E. *et al., Can. J. Chem.*, 1984, **62**, 258 (*isol, uv, ir, pmr, ms, struct*)
Allais, D.P. *et al., J. Nat. Prod.*, 1990, **53**, 1280 (*Norribasine*)
Ollero, L. *et al., Tet. Lett.*, 1998, **39**, 1413-1416 (*synth*)
Padwa, A. *et al., J.O.C.*, 1999, **64**, 4079-4088 (*synth*)
Ollero, L. *et al., Tetrahedron*, 1999, **55**, 4445-4456 (*synth, pmr, cmr*)

Ricinidine R-95

1,2-Dihydro-1-methyl-2-oxo-3-pyridinecarbonitrile, 9CI. 3-Cyano-1-methyl-2-pyridone
[767-88-4]

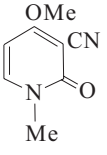


$C_7H_6N_2O$ 134.137
Alkaloid from *Trewia nudiflora* (Euphorbiaceae), long known previously as synthetic compd. Needles ($CHCl_3$/Et_2O). Mp 146°. Bp_{28} 243°.

Späth, E. *et al., Ber.*, 1923, **56**, 880 (*bibl*)
Robinson, W.G. *et al., J. Biol. Chem.*, 1964, **239**, 4257 (*synth*)
Ganguly, S.N. *et al., Phytochemistry*, 1970, **9**, 1667 (*isol, uv*)

Ricinine R-96

1,2-Dihydro-4-methoxy-1-methyl-2-oxo-3-pyridinecarbonitrile, 9CI. 4-Methoxy-2-oxo-1-methyl-1,2-dihydronicotinonitrile. 3-Cyano-4-methoxy-1-methyl-2-pyridone. Recinine
[524-40-3]



$C_8H_8N_2O_2$ 164.163
Alkaloid from *Ricinus communis* (castor-oil) seed (Euphorbiaceae). Leaflets or prisms (H_2O). Sol. hot H_2O. Mp 201°.

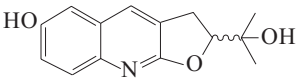
▶ Human systemic effects by ingestion, hepatotoxic, can cause death. QT3100000

$HgCl_2$ compd.: Mp 204°.

Tuson, R.V. *et al., J.C.S.*, 1864, **17**, 195 (*isol*)
Späth, E. *et al., Ber.*, 1925, **58**, 2124 (*synth, bibl*)
Robinson, W.E. *et al., J. Biol. Chem.*, 1964, **239**, 4257 (*ir, uv, synth*)
Walker, G.R. *et al., Anal. Biochem.*, 1966, **16**, 277 (*ms*)
Sugasawa, T. *et al., Chem. Pharm. Bull.*, 1974, **22**, 763 (*synth, ir, pmr*)
Robinson, T. *et al., Phytochemistry*, 1978, **17**, 1903 (*biosynth*)
Soriano-Garcia, M. *et al., Acta Cryst. C*, 1989, **45**, 957 (*cryst struct*)
Sax, N.I. *et al., Dangerous Properties of Industrial Materials, 5th edn., Van Nostrand Reinhold*, 1979,

Riedelianine R-97

2-(1-Hydroxy-1-methylethyl)-2,3-dihydrofuro[2,3-b]quinolin-6-ol. 2,3-Dihydro-6-hydroxy-α,α-dimethylfuro[2,3-b]quinoline-2-methanol
[87893-11-6]

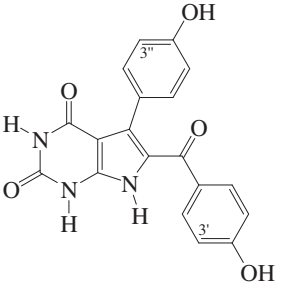


$C_{14}H_{15}NO_3$ 245.277
Alkaloid from *Balfourodendron riedelianum* heartwood (Rutaceae). Thick needles (MeOH). Mp 257°. $[\alpha]_D^{25}$ +25.3 (c, 0.6 in MeOH).

Jurd, L. *et al., Aust. J. Chem.*, 1983, **36**, 1615 (*isol, cryst struct, ms, ir, cmr, pmr*)

Rigidin A R-98

6-(4-Hydroxybenzoyl)-5-(4-hydroxyphenyl)-1H-pyrrolo[2,3-d]pyrimidine-2,4(3H,7H)-dione, 9CI. Rigidin
[132160-44-2]



$C_{19}H_{13}N_3O_5$ 363.329
Alkaloid from the marine tunicate *Eudistoma* cf. *rigida* and *Cystodytes* sp. Calmodulin antagonist. Purple solid. Mp 300°. λ_{max} 232 (sh) ; 276 (ε 4500); 356 (ε 2500); 552 (ε 200) (MeOH/HCl) (Derep). λ_{max} 240 (sh) ; 285 (ε 4300); 346 (ε 4500); 401 (ε 2500) (MeOH/KOH) (Derep). λ_{max} 240 (sh) ; 285 (ε 4300); 346 (ε 2500); 401 (ε 2500) (MeOH) (Derep). λ_{max} 206 (ε 39780); 278 (ε 21070); 285 (ε 4300); 308 (ε 14860); 346 (ε 2500); 356 (ε 14110); 401 (ε 2500) (MeOH) (Berdy).

3-N-*Me:* ***Rigidin E***
$C_{20}H_{15}N_3O_5$ 377.356
Alkaloid from a *Eudistoma* sp. Dark green film. λ_{max} 276 (ε 7000); 362 (ε 4000) (MeOH).

3′-Methoxy: ***Rigidin B***
$C_{20}H_{15}N_3O_6$ 393.355
Alkaloid from the marine tunicate *Cystodytes* sp. Amorph. yellow

solid. λ_{max} 236 (sh) ; 278 (ϵ 13200); 304 (sh) ; 319 (ϵ 9600); 364 (ϵ 9400) (MeOH).

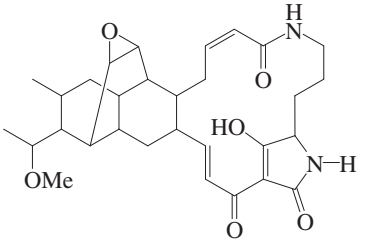
3′′-Methoxy: ***Rigidin C***
$C_{20}H_{15}N_3O_6$ 393.355
Alkaloid from *Cystodytes* sp. Amorph. yellow solid. λ_{max} 236 (sh) ; 272 (ϵ 14400); 304 (sh) ; 317 (ϵ 11600); 352 (ϵ 9400) (MeOH).

3′,3′′-Dimethoxy: ***Rigidin D***
$C_{21}H_{17}N_3O_7$ 423.381
Alkaloid from *Cystodytes* sp. Amorph. yellow solid. λ_{max} 238 (sh) ; 270 (ϵ 12000); 304 (sh) ; 322 (ϵ 11000); 352 (ϵ 9300) (MeOH).

Kobayashi, J. *et al., Tet. Lett.*, 1990, **31**, 4617-4620 (*isol, uv, ir, pmr, cmr, struct*)
Edstrom, E.D. *et al., J.O.C.*, 1993, **58**, 403-407 (*synth*)
Sakamoto, T. *et al., J.C.S. Perkin 1*, 1996, 459-464 (*synth*)
Tsuda, M. *et al., J. Nat. Prod.*, 2003, **66**, 292-294 (*Rigidins B,C,D*)
Davis, R.A. *et al., Mar. Drugs*, 2003, **1**, 27-33 (*Rigidin E*)
Gupton, J.T. *et al., Tetrahedron*, 2006, **62**, 8243-8255 (*synth*)

Ripromycin R-99

[617711-42-9 ((+)-form)]

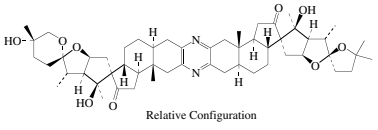


$C_{30}H_{40}N_2O_6$ 524.656
Prod. by *Streptomyces* sp. Tü 6239. Exhibits antibacterial and cytostatic activities. Yellow-beige powder. Mp 190°. $[\alpha]_D^{20}$ +114 (c, 0.77 in MeOH). λ_{max} 204 (log ϵ 4.4); 238 (sh) ; 290 (sh) ; 314 (log ϵ 4.05) (MeOH).

Bertasso, M. *et al., J. Antibiot.*, 2003, **56**, 364-371 (*isol, activity*)

Ritterazine V R-100

[184770-01-2]

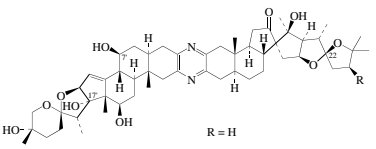


$C_{54}H_{76}N_2O_9$ 897.202
Alkaloid from the tunicate *Ritterella tokioka*. $[\alpha]_D$ +109.2 (c, 0.05 in $CHCl_3$). λ_{max} 290 (ϵ 9209); 308 (sh) ($CHCl_3$).

Fukuzawa, S. *et al., J.O.C.*, 1997, **62**, 4484-4491 (*isol, uv, pmr, cmr*)

Ritterazine A R-101

[160391-62-8]



$C_{54}H_{76}N_2O_{10}$ 913.202
Alkaloid from the tunicate *Ritterella tokioka*. Shows potent cytotoxicity against P388 murine leukaemia cells. Glassy solid. $[\alpha]_D$ +112 (c, 0.1 in MeOH). λ_{max} 287 (ϵ 8580); 308 (sh) (ϵ) (MeOH) (Derep).

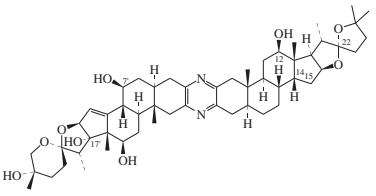
22-Epimer: ***Ritterazine D***
[165172-44-1]
$C_{54}H_{76}N_2O_{10}$ 913.202
From *Ritterella tokioka*. Shows potent cytotoxicity against P388 murine leukaemia cells. Glassy solid. $[\alpha]_D$ +81.4 (c, 0.1 in MeOH). λ_{max} 286 (ϵ 9200) (MeOH) (Berdy).

7′,17′-Dideoxy: ***Ritterazine T***
[184768-89-6]
$C_{54}H_{76}N_2O_8$ 881.203
Alkaloid from *Ritterella tokioka*. $[\alpha]_D$ +106.6 (c, 0.1 in $CHCl_3$). λ_{max} 290 (ϵ 9870); 308 (sh) ($CHCl_3$).

Fukuzawa, S. *et al., J.O.C.*, 1994, **59**, 6164-6166; 1997, **62**, 4484-4491 (*isol, uv, ir, pmr, cmr, struct*)
Fukuzawa, S. *et al., Tetrahedron*, 1995, **51**, 6707-6716 (*Ritterazine D*)

Ritterazine B R-102

[160568-10-5]



$C_{54}H_{78}N_2O_9$ 899.218
22-Config. revised in 2007. C-27 is subject to epimerisation, and the stereochem. of some of the Ritterazines is subject to revision. Alkaloid from the tunicate *Ritterella tokioka*. Shows potent cytotoxicity against P388 murine leukaemia cells. . Glassy solid. $[\alpha]_D$ +43 (c, 0.1 in MeOH). λ_{max} 287 (ϵ 6880); 308 (sh) (ϵ) (MeOH) (Derep).

7′,17′-Dideoxy: ***Ritterazine Y***
[184770-06-7]
$C_{54}H_{78}N_2O_7$ 867.219
Alkaloid from *Ritterella tokioka*. Cytotoxic agent. $[\alpha]_D$ +57.4 (c, 0.1 in $CHCl_3$). λ_{max} 289 (ϵ 9156); 308 (sh) ($CHCl_3$).

22-Epimer: ***Ritterazine F***
[165172-45-2]
$C_{54}H_{78}N_2O_9$ 899.218
From *Ritterella tokioka*. Shows potent cytotoxicity against P388 murine leukaemia cells. Glassy solid. $[\alpha]_D$ +59 (c, 0.1 in MeOH). λ_{max} 288 (ϵ 7900) (MeOH) (Berdy).

22-Epimer, 14,15-didehydro: ***Ritterazine G***
[164991-70-2]
$C_{54}H_{76}N_2O_9$ 897.202
From *Ritterella tokioka*. Shows potent cytotoxicity against P388 murine leukaemia cells. Glassy solid. $[\alpha]_D$ +91.4 (c, 0.1 in MeOH). λ_{max} 288 (ϵ 11200) (MeOH) (Berdy).

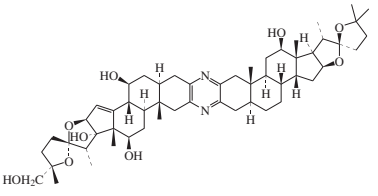
22-Epimer, 12-ketone: ***Ritterazine H***
[165074-71-5]
$C_{54}H_{76}N_2O_9$ 897.202
From *Ritterella tokioka*. Shows potent cytotoxicity against P388 murine leukaemia cells. Glassy solid. $[\alpha]_D$ +96 (c, 0.1 in MeOH). λ_{max} 287 (ϵ 8920) (MeOH) (Berdy).

22-Epimer, 14-hydroxy, 12-ketone: ***Ritterazine I***
[164991-71-3]
$C_{54}H_{76}N_2O_{10}$ 913.202
From *Ritterella tokioka*. Shows potent cytotoxicity against P388 murine leukaemia cells. Glassy solid. $[\alpha]_D$ +74.5 (c, 0.1 in MeOH). λ_{max} 286 (ϵ 9120) (MeOH) (Berdy).

Fukuzawa, S. *et al., J.O.C.*, 1995, **60**, 608-614; 1997, **62**, 4484-4491 (*isol, uv, ir, pmr, cmr, struct*)
Fukuzawa, S. *et al., Tetrahedron*, 1995, **51**, 6707-6716 (*Ritterazines F-I*)
Phillips, S.T. *et al., J.A.C.S.*, 2007, **129**, 6589-6598 (*stereochem, bibl*)

Ritterazine C R-103

[160604-68-2]



$C_{54}H_{78}N_2O_9$ 899.218
Alkaloid from the tunicate *Ritterella tokioka*. Shows potent cytotoxicity against P388 murine leukaemia cells. Glassy solid. $[\alpha]_D$ +72 (c, 0.1 in MeOH). λ_{max} 287 (ϵ 6880); 308 (sh) (MeOH) (Derep). λ_{max} 285 (ϵ 8720); 303 (MeOH) (Berdy).

Fukuzawa, S. *et al., J.O.C.*, 1995, **60**, 608-614 (*isol, uv, ir, pmr, cmr, struct*)

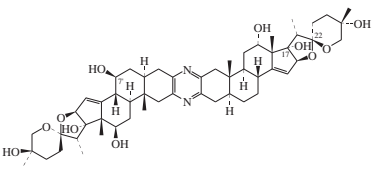
Ritterazine E R-104

24-Methylritterazine D
[164991-69-9]
As Ritterazine A, R-101 with R = CH_3, 22-epimer
$C_{55}H_{78}N_2O_{10}$ 927.229
Alkaloid from the tunicate *Ritterella tokioka*. Shows potent cytotoxicity against P388 murine leukaemia cells. Glassy solid. $[\alpha]_D$ +70.8 (c, 0.1 in MeOH). λ_{max} 288 (ϵ 10100) (MeOH) (Berdy).

Fukuzawa, S. *et al., Tetrahedron*, 1995, **51**, 6707-6716 (*isol, uv, ir, pmr, cmr, struct*)

Ritterazine J R-105

[164991-72-4]



$C_{54}H_{76}N_2O_{11}$ 929.201

Stereochem. revised in 2001. Alkaloid from the tunicate *Ritterella tokioka*. Shows potent cytotoxicity against P388 murine leukaemia cells. Glassy solid. $[\alpha]_D$ +66.1 (c, 0.1 in MeOH). λ_{max} 289 (ϵ 8420) (MeOH) (Berdy).

7′-Deoxy: ***Ritterazine K***
[164991-73-5]
$C_{54}H_{76}N_2O_{10}$ 913.202
From *Ritterella tokioka*. Shows potent cytotoxicity against P388 murine leukaemia cells. Glassy solid. $[\alpha]_D$ +74 (c, 0.1 in MeOH). λ_{max} 288 (ϵ 7100) (MeOH) (Berdy).

7′,17-Dideoxy: ***Ritterazine L***
[164991-74-6]
$C_{54}H_{76}N_2O_9$ 897.202
From *Ritterella tokioka*. Shows potent cytotoxicity against P388 murine leukaemia cells. Glassy solid. $[\alpha]_D$ +85.5 (c, 0.1 in MeOH). λ_{max} 288 (ϵ 11000) (MeOH) (Berdy).

7′,17-Dideoxy, 25-epimer: ***Ritterazine M***
[165172-46-3]
$C_{54}H_{76}N_2O_9$ 897.202
From *Ritterella tokioka*. Shows potent cytotoxicity against P388 murine leukaemia cells. Glassy solid. $[\alpha]_D$ +95.1 (c, 0.1 in MeOH). Struct. revised in 2002. λ_{max} 289 (ϵ 11900) (MeOH) (Berdy).

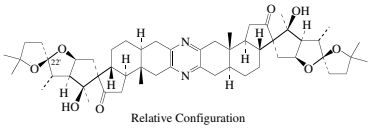
Fukuzawa, S. *et al., Tetrahedron*, 1995, **51**, 6707-6716 (*isol, uv, ir, pmr, cmr, struct*)

Jeong, J.U. *et al., J.A.C.S.*, 1999, **121**, 2071-2084 (*synth, Ritterazine K*)

Lee, S. *et al., Org. Lett.*, 2002, **4**, 313-316; 317-318 (*Ritterazine M, synth, struct*)

Ritterazine N R-106

[184764-19-0]



$C_{54}H_{76}N_2O_8$ 881.203

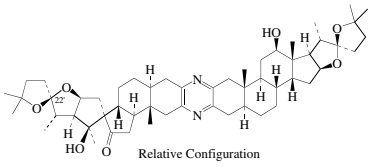
Alkaloid from the tunicate *Ritterella tokioka*. Cytotoxic agent. $[\alpha]_D$ +121.7 (c, 0.05 in $CHCl_3$). λ_{max} 289 (ϵ 9388); 309 (sh) ($CHCl_3$).

22′-Epimer: ***Ritterazine O***
[184971-68-4]
$C_{54}H_{76}N_2O_8$ 881.203
From *Ritterella tokioka*. $[\alpha]_D$ +108.6 (c, 0.1 in $CHCl_3$). λ_{max} 289 (ϵ 9379); 308 (sh) ($CHCl_3$).

Fukuzawa, S. *et al., J.O.C.*, 1997, **62**, 4484-4491 (*isol, uv, pmr, cmr*)

Ritterazine P R-107

[184765-85-3]



$C_{54}H_{78}N_2O_7$ 867.219

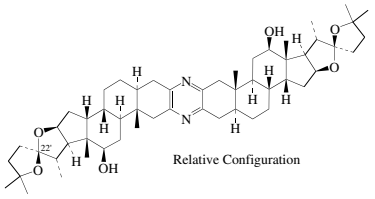
Alkaloid from the tunicate *Ritterella tokioka*. Cytotoxic agent. $[\alpha]_D$ +42.5 (c, 0.05 in $CHCl_3$). λ_{max} 289 (ϵ 10618); 309 (sh) ($CHCl_3$).

22′-Epimer: ***Ritterazine Q***
[184971-69-5]
$C_{54}H_{78}N_2O_7$ 867.219
From *Ritterella tokioka*. Cytotoxic agent. $[\alpha]_D$ +57.8 (c, 0.05 in $CHCl_3$). λ_{max} 289 (11225); 309 (sh) ($CHCl_3$).

Fukuzawa, S. *et al., J.O.C.*, 1997, **62**, 4484-4491 (*isol, uv, pmr, cmr*)

Ritterazine R R-108

[184766-99-2]



$C_{54}H_{80}N_2O_6$ 853.236

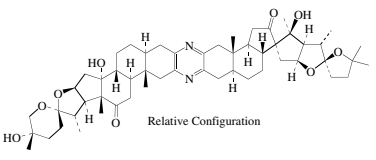
Alkaloid from the tunicate *Ritterella tokioka*. $[\alpha]_D$ +26.3 (c, 0.05 in $CHCl_3$). λ_{max} 288 (9557); 309 (sh) ($CHCl_3$).

22′-Epimer: ***Ritterazine S***
[184971-73-1]
From *Ritterella tokioka*. Cytotoxic agent. $[\alpha]_D$ +43.3 (c, 0.05 in $CHCl_3$). λ_{max} 290 (ϵ 10480); 308 (sh) ($CHCl_3$).

Fukuzawa, S. *et al., J.O.C.*, 1997, **62**, 4484-4491 (*isol, uv, pmr, cmr*)

Ritterazine U R-109

[184769-28-6]



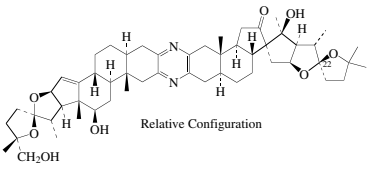
$C_{54}H_{76}N_2O_9$ 897.202

Alkaloid from the tunicate *Ritterella tokioka*. $[\alpha]_D$ +89 (c, 0.1 in $CHCl_3$). λ_{max} 290 (9424); 308 (sh) ($CHCl_3$).

Fukuzawa, S. *et al., J.O.C.*, 1997, **62**, 4484-4491 (*isol, uv, pmr, cmr*)

Ritterazine W R-110

[184770-05-6]



$C_{54}H_{76}N_2O_8$ 881.203

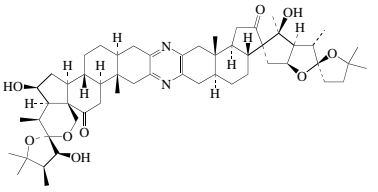
Alkaloid from the tunicate *Ritterella tokioka*. $[\alpha]_D$ +120.4 (c, 0.05 in $CHCl_3$). λ_{max} 290 (ϵ 8155); 308 (sh) ($CHCl_3$).

22-Epimer: ***Ritterazine X***
[184971-98-0]
$C_{54}H_{76}N_2O_8$ 881.203
From *Ritterella tokioka*. $[\alpha]_D$ +108 (c, 0.05 in $CHCl_3$). λ_{max} 290 (ϵ 8816); 308 (sh) ($CHCl_3$).

Fukuzawa, S. *et al., J.O.C.*, 1997, **62**, 4484-4491 (*isol, uv, pmr, cmr*)

Ritterazine Z R-111

[184770-08-9]



$C_{55}H_{78}N_2O_9$ 911.229

Alkaloid from the tunicate *Ritterella tokioka*. $[\alpha]_D$ +105.8 (c, 0.1 in $CHCl_3$). λ_{max} 289 (8958); 308 (sh) ($CHCl_3$).

Fukuzawa, S. *et al., J.O.C.*, 1997, **62**, 4484-4491 (*isol, uv, pmr, cmr*)

Robecine R-112

[1360-89-0]

$C_{17}H_{21}NO_3$ 287.358

Amaryllidaceae alkaloid. Struct. unknown. Isol. from *Narcissus* sp. (Amaryllidaceae).

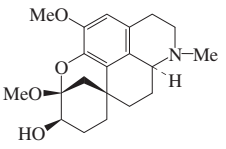
Hydroiodide: Mp 240-241° dec. $[\alpha]_D^{25}$ -95 (c, 0.2 in DMF).

Methiodide: Mp 248-249° dec.

Boit, H.-G. *et al., Chem. Ber.*, 1957, **90**, 2197-2202 (*isol*)

Robustamine R-113

[174847-42-8]



Absolute Configuration

$C_{20}H_{27}NO_4$ 345.438

Alkaloid from aerial parts of *Merendera robusta*. Cryst. (Me_2CO). Mp 251-252°. $[\alpha]_D$ -40 (c, 0.50 in $CHCl_3$).

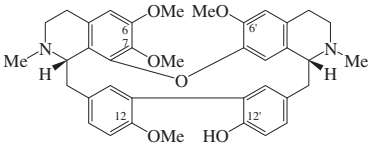
α-N-*Oxide:* ***Robustamine* cis-N-*oxide***
[191356-25-9]
$C_{20}H_{27}NO_5$ 361.437
Alkaloid from *Merendera robusta*. Cryst. (Me_2CO). Mp 140-142°. $[\alpha]_D^{22}$ -24 (c, 0.4 in $CHCl_3$).

Yunusov, M.K. *et al., Khim. Prir. Soedin.*, 1995, **31**, 109; 1996, **32**, 734-738; *Chem. Nat. Compd. (Engl. Transl.)*, 1995, **31**, 87; 1996, **32**, 716-719

Shakirov, R. *et al., Khim. Prir. Soedin.*, 1996, **32**, 761-863; *Chem. Nat. Compd. (Engl. Transl.)*, 1996, **32**, 737-858 (*N-oxide*)

Rodiasine, 9CI R-114

6′-O-*Methylphlebicine*
[6391-64-6]



$C_{38}H_{42}N_2O_6$ 622.76
Alkaloids covered by this entry (1*S*,1′*R*-) are enantiomeric with those in Cordobine, C-643 and diastereomeric with those in Guattaguianine, G-212 (*S,S*-). Alkaloid from the bark and seeds of *Ocotea rodiaei* (Lauraceae). Needles (MeOH). Mp 203-204°. $[\alpha]_D^{24}$ +157 (c, 1.0 in $CHCl_3$). $[\alpha]_D$ +168 (c, 0.3 in $CHCl_3$).

Hydrochloride (1:2): Mp 247-249°.

$N^{2'}$-*De-Me:* ***Ocotine***. *2′-Demethylrodiasine*
[18529-55-0]
$C_{37}H_{40}N_2O_6$ 608.733
Alkaloid from the bark and seeds of *Ocotea rodiaei* (Lauraceae). Needles (MeOH). Mp 165°. $[\alpha]_D^{24}$ +40 (c, 1.0 in $CHCl_3$).

$N^{2'}$-*De-Me, hydrochloride (1:2):*
Needles + $2H_2O$ (dil. HCl). Mp 250-260° dec. $[\alpha]_D^{29}$ +84 (c, 2.6 in MeOH).

N-*De-Me:* ***Norrodiasine***
$C_{37}H_{40}N_2O_6$ 608.733
Alkaloid from the bark of *Ocotea rodiaei* (Lauraceae). Cryst. + $2H_2O$ (as dihydrochloride). Mp 282° (dihydrochloride). $[\alpha]_D$ +74 (c, 1.0 in H_2O). May be identical with Ocotine or may be the N^2-de-Me isomer.

Me ether: Obt. by methylation of Rodiasine, Tiliageine or Antioquine. Cryst. (Et_2O/hexane or EtOH) or amorph. solid. Mp 170-172° (163-165°, 168-169°). $[\alpha]_D^{24}$ +86.9 (c, 0.45 in MeOH). $[\alpha]_D$ +78 (c, 0.9 in $CHCl_3$).

Me ether, N^2,$N^{2'}$-*di-Me:*
Prisms (H_2O). Mp 270-280° dec.

$O^{6'}$-*De-Me:* ***Phlebicine***
[52674-06-3]
$C_{37}H_{40}N_2O_6$ 608.733
Alkaloid from the bark of *Cremastosperma polyphlebum* (Annonaceae). Cryst. + $1.5H_2O$ ($CHCl_3$/MeOH). Mp 195° (sinters at 180°). $[\alpha]_D$ +182.5 (c, 1.0 in $CHCl_3$).

$O^{6'}$-*De-Me, di-Ac:*
Yellow powder. Mp 200-203° (sinters at 190°).

O^7-*De-Me:* ***(+)-Antioquine***
[93767-27-2]
Alkaloid from *Pseudoxandra* aff. *lucida* (Annonaceae). Needles (MeOH). Mp 197°. $[\alpha]_D$ +214 (c, 0.9 in $CHCl_3$).

O^7-*De-Me, di-Ac:*
Needles (MeOH). Mp 164-166°. $[\alpha]_D$ +150 (c, 0.2 in $CHCl_3$).

O^7-*De-Me,* N^2-*de-Me:* ***Tilitriandrine***
[120139-68-6]
$C_{36}H_{38}N_2O_6$ 594.706
Alkaloid from aerial parts of *Tiliacora triandra* (Menispermaceae). Cryst. + $1CH_2Cl_2$ ($MeOH/CH_2Cl_2$). Mp 192°. $[\alpha]_D$ +197.9 (c, 1.1 in $CHCl_3$).

O^{12}-*De-Me,* $O^{12'}$-*Me:* ***Funiferine***. O^{12}-*Demethyl-*$O^{12'}$-*methylrodiasine*
[1394-44-1]
$C_{38}H_{42}N_2O_6$ 622.76
Alkaloid from roots of *Tiliacora funifera* and *Tiliacora dinklagei* (Menispermaceae). Exhibits antiparasitic and cytotoxic activities. Active against gram-positive bacteria. Cryst. (EtOH). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 232-234° (218-220°). $[\alpha]_D^{32}$ +184.3 (c, 2.0 in $CHCl_3$).

O^{12}-*De-Me,* $O^{12'}$-*Me,* N^2-*oxide:* ***Funiferine* N-*oxide***
[61912-73-0]
$C_{38}H_{42}N_2O_7$ 638.759
Alkaloid from the roots of *Tiliacora funifera* (Menispermaceae). Powder. Mp 207-209° dec. $[\alpha]_D^{25}$ +44 (c, 0.1 in MeOH).

O^{12}-*De-Me,* $O^{12'}$-*Me,* N,N-*di-Me:* ***Funiferine* N,N′-*dimethosalt***
[1394-46-3]
$C_{40}H_{48}N_2O_6^{2\oplus}$ 652.829
Alkaloid from the roots of *Tiliacora funifera* (Menispermaceae). Cryst. (Me_2CO)(as diiodide). Mp 268° (diiodide). $[\alpha]_D^{29}$ +13.8 (c, 0.65 in MeOH). CAS no. refers to diiodide.

O^{12}-*De-Me,* $O^{12'}$-*Me,* $N^{2'}$-*de-Me:* ***2′-Norfuniferine***
[116064-70-1]
$C_{37}H_{40}N_2O_6$ 608.733
Alkaloid from the stem bark of *Guatteria guianensis* (Annonaceae). $[\alpha]_D$ +196 (c, 0.17 in $CHCl_3$).

O^7,O^{12}-*Di-de-Me,* $O^{12'}$-*Me:* ***Tiliageine***
[53755-51-4]
$C_{37}H_{40}N_2O_6$ 608.733
Alkaloid from the roots of *Tiliacora dinklagei* (Menispermaceae). Exhibits antiparasitic and cytotoxic activities. Needles (Et_2O/EtOAc). Mp 270°. $[\alpha]_D^{25}$ +132.6 (c, 1.43 in Py). Abs. config. determined by tritium labelling studies.

O^7,O^{12}-*Di-de-Me,* $O^{12'}$-*Me,* $N^{2'}$-*de-Me:* ***2′-Nortiliageine***
[116084-92-5]
$C_{36}H_{38}N_2O_6$ 594.706
Alkaloid from the stem bark of *Guatteria guianensis* (Annonaceae). $[\alpha]_D$ +203 (c, 0.18 in $CHCl_3$).

Grundon, M.F. *et al., J.C.S.*, 1960, 2739-2745 (*Rodiasine, Ocotine, isol, uv, ir*)

Hearst, P.J. *et al., J.O.C.*, 1964, **29**, 466-470 (*Norrodiasine*)

Grundon, M.F. *et al., J.C.S.(C)*, 1966, 1082-1084 (*Rodiasine, pmr, struct*)

Chan, K.C. *et al., J.C.S.(C)*, 1967, 2479-2488 (*Ocotine, isol, uv, ord, pmr, ms*)

Mitscher, L.A. *et al., J. Nat. Prod.*, 1972, **35**, 157-176 (*Funiferine, Tiliageine, activity*)

Tackie, A.N. *et al., J. Nat. Prod.*, 1973, **36**, 66-71 (*Tiliageine, Funiferine, isol, uv, ir, pmr, ms, struct*)

Tackie, A.N. *et al., Experientia*, 1974, **30**, 847-848 (*Tiliageine*)

Cava, M.P. *et al., J.O.C.*, 1974, **39**, 3588-3591 (*Phlebicine*)

Dwuma-Badu, D. *et al., J. Pharm. Sci.*, 1977, **66**, 1242-1244 (*Funiferine N-oxide*)

Bhakuni, D.S. *et al., Tetrahedron*, 1978, **34**, 1409-1410 (*Tiliageine, biosynth, abs config*)

Cortes, D. *et al., J. Nat. Prod.*, 1985, **48**, 76-85 (*Antioquine, isol, uv, ir, pmr, ms, cd, struct*)

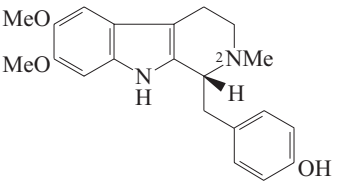
Pachaly, P. *et al., Planta Med.*, 1988, **54**, 516-519 (*Tiltriandrine*)

Chiaroni, P.A. *et al., Acta Cryst. C*, 1990, **46**, 825-828 (*Antioquine, cryst struct*)

Roumy, V. *et al., Planta Med.*, 2006, **72**, 894-898 (*isol, pmr, cmr*)

Roecarboline R-115

[131984-68-4]



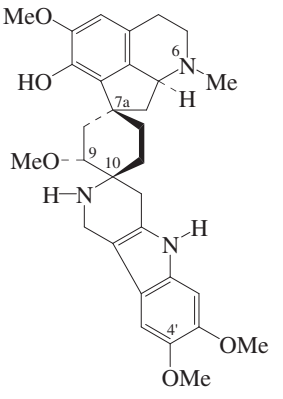
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from *Roemeria hybrida* (Papaveraceae). $[\alpha]_D$ -27 (c, 0.14 in $CHCl_3$). $[\alpha]_D$ -5 (c, 0.13 in MeOH).

N^2-*De-Me:* ***Norroecarboline***
[131984-69-5]
$C_{20}H_{22}N_2O_3$ 338.405
Alkaloid from *Roemeria hybrida* (Papaveraceae). $[\alpha]_D$ +35 (c, 0.07 in $CHCl_3$). $[\alpha]_D$ +4 (c, 0.21 in MeOH).

Gözler, B. *et al., J. Nat. Prod.*, 1990, **53**, 740 (*isol, uv, cd, ms, pmr, struct*)

Roehybridine R-116

[123000-13-5]



$C_{31}H_{39}N_3O_5$ 533.666
Alkaloid from *Roemeria hybrida* (Papaveraceae). Cryst. (MeOH). Mp 210-211°. $[\alpha]_D$ -16 (c, 0.056 in MeOH).

N^6-*Oxide(α-):* ***Roehybridine α-N-oxide***
[409120-36-1]
$C_{31}H_{39}N_3O_6$ 549.666
Alkaloid from *Roemeria hybrida*. Amorph. solid. $[\alpha]_D$ -15 (c, 0.13 in MeOH). λ_{max} 208 (log ε 4.89); 224 (sh) (log ε 4.67); 289 (log ε 3.91) (MeOH).

N-*Oxide(β-):* ***Roehybridine β-N-oxide***
[131669-93-7]
$C_{31}H_{39}N_3O_6$ 549.666
Alkaloid from *Roemeria hybrida* (Papaveraceae). Amorph. solid. $[\alpha]_D$ -36 (c, 0.056 in MeOH).

1-Me ether: **O-*Methylroehybridine***
[131669-94-8]
$C_{32}H_{41}N_3O_5$ 547.693
Alkaloid from *Roemeria hybrida* (Papaveraceae). Amorph. solid. $[\alpha]_D$ -17 (c, 0.187 in MeOH).

N-*De-Me:* ***Norroehybridine***
[131690-43-2]
$C_{30}H_{37}N_3O_5$ 519.639
Alkaloid from *Roemeria hybrida* (Papaveraceae). Amorph. solid. $[\alpha]_D$ -29 (c, 0.149 in MeOH).

4′-Demethoxy: ***Roehybramine***
[131669-92-6]
$C_{30}H_{37}N_3O_4$ 503.64
Alkaloid from *Roemeria hybrida* (Papaveraceae). Amorph. solid. $[\alpha]_D$ -13 (c, 0.185 in MeOH).

4′-Demethoxy, N^6*-oxide(β-):* ***Roehybramine β-N-oxide***
[409105-30-2]
$C_{30}H_{37}N_3O_5$ 519.639
Alkaloid from *Roemeria hybrida*. Amorph. solid. $[\alpha]_D$ -26.6 (c, 0.15 in MeOH). λ_{max} 208 (log ε 4.83); 226 (log ε 4.65); 289 (log ε 3.81) (MeOH).

3′,9-Bis(demethoxy): ***Phoebegrandine A***
[194737-72-9]
$C_{29}H_{35}N_3O_3$ 473.614
Alkaloid from *Phoebe grandis* (Lauraceae). Gum. Racemic. λ_{max} 224 (log ε 4.55); 277 (log ε 3.97); 308 (sh) (log ε 3.51) (MeOH).

3′,9-Bis(demethoxy), 1-Me ether: ***Phoebescortechiniine***
[1007220-51-0]
$C_{30}H_{37}N_3O_3$ 487.641
Alkaloid from the leaves of *Phoebe scortechinii*. Amorph. gum. $[\alpha]_D^{27}$ -3.3 (c, 1 in MeOH). λ_{max} 215 (log ε 4.55); 272 (log ε 3.97) (MeOH).

*3′,9-Bis(demethoxy), 2-*O*-de-Me, 1-Me ether:* ***Phoebegrandine B***
[194737-77-4]
$C_{29}H_{35}N_3O_3$ 473.614
Alkaloid from *Phoebe grandis* (Lauraceae). Gum. Racemic. λ_{max} 225 (log ε 4.55); 278 (log ε 3.97); 308 (sh) (log ε 3.51) (MeOH).

3′,4′,9-Tris(demethoxy), 8α-hydroxy: ***Phoebegrandine D***
[909118-75-8]
$C_{28}H_{33}N_3O_3$ 459.587
Alkaloid from the leaves of *Phoebe grandis*. Amorph. brown solid. $[\alpha]_D^{23}$ -22.2 (c, 0.16 in MeOH). λ_{max} 233 ; 300 (MeOH).

3′,4′,9-Tris(demethoxy), 8β-hydroxy: ***Phoebegrandine C***
[690957-78-9]
$C_{28}H_{33}N_3O_3$ 459.587
Alkaloid from the leaves of *Phoebe grandis*. Amorph. brown solid. $[\alpha]_D^{23}$ +3.8 (c, 0.27 in MeOH). λ_{max} 238 ; 301 ; 376 (MeOH).

9-Epimer: ***Roehymine***. *Misrhybridine*
[131724-52-2]
$C_{31}H_{39}N_3O_5$ 533.666
Alkaloid from *Roemeria hybrida* (Papaveraceae). Amorph. solid. $[\alpha]_D$ +29 (c, 0.065 in MeOH). Identity of Misrhybridine with Roehymine not certain.

9-Epimer, 4′-demethoxy: ***Roebramine***
[132075-36-6]
$C_{30}H_{37}N_3O_4$ 503.64
Alkaloid from *Roemeria hybrida* (Papaveraceae). Amorph. solid. $[\alpha]_D$ +7 (c, 0.092 in MeOH).

*7*a,*10-Diepimer:* ***Roemeridine***. *Remeridine*
[122890-33-9]
$C_{31}H_{39}N_3O_5$ 533.666
Alkaloid from *Roemeria hybrida* and *Papaver pavoninum* (Papaveraceae). Cryst. (MeOH) or amorph. solid. Mp 236-237°. $[\alpha]_D$ -21 (c, 0.075 in MeOH).

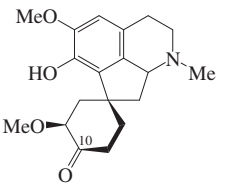
*7*a,*10-Diepimer, 1-Me ether:* **O-*Methylroemeridine***
$C_{32}H_{41}N_3O_5$ 547.693
Alkaloid from *Roemeria hybrida* (Papaveraceae). Amorph. solid. $[\alpha]_D$ -18 (c, 0.317 in MeOH).

*7*a,*10-Diepimer, 4′-demethoxy:* ***Roemebramine***
$C_{30}H_{37}N_3O_4$ 503.64
Alkaloid from *Roemeria hybrida* (Papaveraceae). Amorph. solid. $[\alpha]_D$ -21 (c, 0.193 in MeOH).

Platonova, T.F. *et al., Zh. Obshch. Khim.*, 1956, **26**, 173-180; *CA*, **50**, 13960 (*Roemeridine*)
Slavík, J. *et al., Coll. Czech. Chem. Comm.*, 1974, **39**, 888-894 (*Roehybridine, isol*)
Podlaha, J. *et al., Phytochemistry*, 1989, **28**, 1779-1781 (*Roemeridine, pmr, cmr, ms, cryst struct*)
Gözler, B. *et al., Tet. Lett.*, 1989, **30**, 1165-1168 (*Roemeridine, Roehybridine, pmr, cmr, ms, struct*)
El-Masry, S. *et al., Alexandria J. Pharm. Sci.*, 1990, **4**, 90-93; *CA*, **114**, 160639 (*Misrhybridine*)
Gözler, B. *et al., J. Nat. Prod.*, 1990, **53**, 675-685 (*isol, uv, cd, pmr, ms, Roemeridine, β-oxide*)
Mukhtar, M.R. *et al., Phytochemistry*, 1997, **45**, 1543-1546 (*Phoebegrandine A,B*)
Marek, R. *et al., Magn. Reson. Chem.*, 1999, **37**, 195-202 (*N-15 nmr*)
Gunes, H.S. *et al., Fitoterapia*, 2001, **72**, 875-887 (*Roehybridine α-N-oxide, Roehybramine β-N-oxide*)
Mukhtar, M.R. *et al., Nat. Prod. Res.*, 2004, **18**, 163-167; 2006, **20**, 567-572 (*Phoebegrandine C,D*)
Awang, K. *et al., Nat. Prod. Res.*, 2007, **21**, 704-709 (*Phoebescortechiniine*)

Roehybrine R-117

Rehybrine
[52705-95-0]



Absolute Configuration

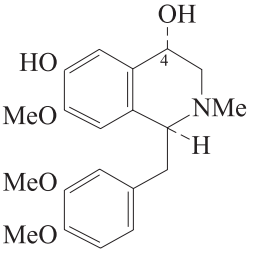
$C_{19}H_{25}NO_4$ 331.411
Alkaloid from *Roemeria hybrida* (Papaveraceae). Needles (Et_2O/hexane). Mp 191-192°. $[\alpha]_D^{24}$ -67 (c, 0.29 in MeOH).

Perchlorate:
Long needles (H_2O or MeOH). Mp 290-291°.

*10*S-*Alcohol:* ***α-Roemehybrine***
[112515-39-6]
$C_{19}H_{27}NO_4$ 333.427
Alkaloid from *Roemeria hybrida* (Papaveraceae). Amorph. $[\alpha]_D$ -49 (c, 0.15 in MeOH).

Slavík, J. *et al., Coll. Czech. Chem. Comm.*, 1974, **39**, 888 (*isol, uv, ir, ms, struct*)
Gözler, B. *et al., Tetrahedron*, 1987, **43**, 1765 (*isol, uv, ir, pmr, ms, cd, struct, abs config*)

Roemecarine R-118



(+)–*form*

$C_{20}H_{25}NO_5$ 359.421
The first naturally occurring C-4 hydroxylated tetrahydrobenzylisoquinoline alkaloid. Config. revised in 1987.

(+)-*form*
Alkaloid from *Roemeria carica* (Papaveraceae). Amorph. $[\alpha]_D$ +9 (c, 0.07 in MeOH).

2α-N-*Oxide:* ***Roemecarine 2α-N-oxide***
$C_{20}H_{25}NO_6$ 375.421
Alkaloid from *Roemeria carica*. $[\alpha]_D$ +18 (c, 0.09 in MeOH).

(-)-*form*
Synthetic. $[\alpha]_D^{27}$ -9.18 (c, 2.1 in MeOH).

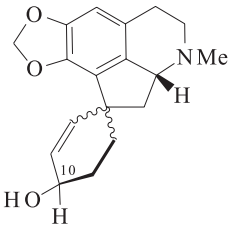
(±)-*form*
Synthetic. Cryst. (C_6H_6/hexane). Mp 115.5-117°.

*4-Epimer:*Synthetic. Cryst. (C_6H_6/hexane). Mp 140-141.5°.

Gözler, T. *et al., Heterocycles*, 1986, **24**, 1227 (*isol, uv, pmr, ms, cd, struct, oxide*)
Hoshino, O. *et al., Chem. Pharm. Bull.*, 1990, **38**, 3277 (*synth, abs config*)

Roemeramine R-119

[21059-81-4]



Absolute configuration

$C_{18}H_{21}NO_3$ 299.369

Alkaloid from *Roemeria refracta* (Papaveraceae). Cryst., fine needles + $1Et_2O$ (Et_2O). Mp 66-67° (59-62° solvate). $[\alpha]_D^{22}$ -93 (c, 0.30 in MeOH). Browns rapidly in air, satisfactory anal. could not be obt. Chemically correlated with (+)-Mecambrine, the enantiomer of natural (-)-Mecambrine.

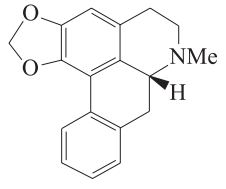
Hydrochloride:
Cryst. (HCl aq.). Mp 284-285°. Rel. stable in air.

10-Ketone: ***Roemeronine***
[21059-83-6]
$C_{18}H_{19}NO_3$ 297.353
Alkaloid from *Roemeria refracta* (Papaveraceae). Prisms (Et_2O). Mp 130-135°. $[\alpha]_D^{23}$ -167 (c, 0.10 in MeOH). Extremely unstable in air.

Slávik, J. *et al., Coll. Czech. Chem. Comm.*, 1968, **33**, 4066

Roemerine R-120

*6,7,7*a*,8-Tetrahydro-7-methyl-5*H*-benzo[*g*]-1,3-benzodioxolo[6,5,4-*de*]quinoline. 1,2-Methylenedioxyaporphine.* N-*Methylanonaine. Remerine*†. *Aporheine. Isoroemerine. Isoremerine*



(*R*)–*form*

$C_{18}H_{17}NO_2$ 279.338

Aporheine and Isoroemerine were names applied historically to the *S*-enantiomer.

(*R*)-*form* [548-08-3]
Alkaloid from *Roemeria refracta*, *Annona senegalensis* and *Nelumbo nucifera* (Nelumbonaceae). Present in the Annonaceae, Magnoliaceae, Menispermaceae and Rhamnaceae. Mp 102-103° (85-86°). $[\alpha]_D^{25}$ -97 (c, 0.20 in EtOH). λ_{max} 234 (log ϵ 4.17); 272 (log ϵ 4.21); 312 (log ϵ 4.21); 372 (log ϵ 3.52) (EtOH).
► Mutagenic. CE0908000

N-*Oxide:* ***Roemerine* N-*oxide***
[75088-35-6]
$C_{18}H_{17}NO_3$ 295.337
Alkaloid from *Papaver* sp. (Papaveraceae) and *Liriodendron tulipifera*.

N-*Me:* ***(-)-Roemrefidine***. *Remrefidine.* N-*Methylroemerinium*
$C_{19}H_{20}NO_2^{\oplus}$ 294.372
Quaternary alkaloid from *Roemeria refracta* (Papaveraceae). Cryst. (MeOH aq.) (as hydroxide). Mp 223-224° (hydroxide).

N-*De-Me: 1,2-Methylenedioxynoraporphine.* ***Anonaine***
[1862-41-5]
$C_{17}H_{15}NO_2$ 265.311
Alkaloid from *Annona reticulata*, *Annona muricata* (soursop) (Annonaceae) and *Nelumbo nucifera* (East India lotus) (Nelumbonaceae), also from the Lauraceae, Magnoliaceae, Monimiaceae, Papaveraceae, Rhamnaceae and Menispermaceae. Serotonin receptor antagonist. Shows cytotoxic, antimicrobial and insecticidal activity. Mp 122-123°. $[\alpha]_D^{31}$ -68 (c, 0.77 in EtOH). λ_{max} 233 (log ϵ 4.12); 273 (log ϵ 4.2); 314 (log ϵ 3.53) (EtOH).

N-*De-Me,* N-*formyl:* **N-*Formylanonaine***
[83459-45-4]
$C_{18}H_{15}NO_3$ 293.321
Alkaloid from the stem bark and root bark of *Hexalobus crispiflorus* (Annonaceae). Needles (MeOH). Mp 249-250°. $[\alpha]_D^{20}$ -319 (c, 0.1 in $CHCl_3$). λ_{max} 233 (sh) ; 274 (log ϵ 4.32); 292 (sh) ; 315 (log ϵ 3.73) (EtOH).

N-*De-Me,* N-*Ac:* **N-*Acetylanonaine***
[5894-74-6]
$C_{19}H_{17}NO_3$ 307.348
Alkaloid from the heartwood of *Magnolia obovata* and *Liriodendron tulipifera*, the roots of *Zanthoxylum bungeanum* and the root bark of *Zanthoxylum simulans* (Szechuan pepper) (Magnoliaceae, Rutaceae). Cryst. (EtOH). Mp 229-230°. $[\alpha]_D^{25}$ -356 (c, 0.49 in $CHCl_3$).

N-*De-Me,* N-*methoxycarbonyl:* ***Romucosine***. N-*Methoxycarbonylanonaine*
[181718-71-8]
$C_{19}H_{17}NO_4$ 323.348
Alkaloid from fresh unripe fruits of *Rollinia mucosa* (biriba). Needles ($CHCl_3$). Mp 152-153°. $[\alpha]_D^{25}$ -106.5 (c, 0.04 in $CHCl_3$).

N-*De-Me,* N-*carbamoyl:* **N-*Carbamoylanonaine***
[83459-46-5]
$C_{18}H_{16}N_2O_3$ 308.336
Alkaloid from the stem bark and root bark of *Hexalobus crispiflorus* (Annonaceae). Amorph. (diisopropyl ether). Mp 172° dec. $[\alpha]_D^{20}$ -336 (c, 0.49 in MeOH). λ_{max} 232 (log ϵ 4.22); 275 (log ϵ 4.15); 313 (log ϵ 3.53) (MeOH).

N-*De-Me,* N-*nitroso:* **N-*Nitrosoanonaine***
$C_{17}H_{14}N_2O_3$ 294.309
Alkaloid from *Duguetia furfuracea*. Cryst. (MeOH/$CHCl_3$). Mp 174-175°. $[\alpha]_D^{25}$ -298 (c, 0.5 in $CHCl_3$).

*6*a*,7-Didehydro:* see Dehydroroemerine, D-166

(*S*)-*form* [2030-53-7]
Alkaloid from *Liriodendron tulipifera* (Magnoliaceae) and from the Papaveraceae. Low doses are hypotensive, high doses hypertensive. Strychnine-like convulsive agent in high doses. $[\alpha]_D^{25}$ +68 (c, 0.27 in EtOH).

N-*Oxide:* Mp 176-177° dec.

N-*Me:* ***Aporheine* N-*methosalt***. *(+)-Roemrefidine*
[21153-67-3]
$C_{19}H_{20}NO_2^{\oplus}$ 294.372
Quaternary alkaloid from *Papaver caucasicum, Papaver dubium, Papaver litwinowii, Papaver albiflorum* ssp. *austromoravicum, Papaver fugax* and *Roemeria refracta* (Papaveraceae). Curare-like neuromuscular blocking agent. Small needles (H_2O or MeOH) (as iodide). Mp 236-237° (223-224°) (iodide). $[\alpha]_D^{25}$ +49 (c, 0.23 in MeOH). λ_{max} 270 (log ϵ 4.26); 315 (log ϵ 3.73) (no solvent reported).

N-*De-Me:* [58846-21-2]
$C_{17}H_{15}NO_2$ 265.311
Alkaloid from *Neolitsea aurata* (Annonaceae).

(±)-*form*
Mp 85-87°.

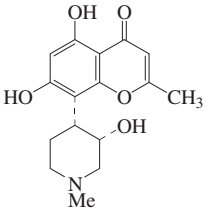
N-*De-Me:* [7241-00-1]
$C_{17}H_{15}NO_2$ 265.311
Alkaloid from *Xylopia pancheri* (Annonaceae). Mp 116.5°.

N-*Me:* Mp 221°.

Yunoussoff, S. *et al., Bull. Soc. Chim. Fr.*, 1939, **6**, 811-817 (*Roemerine*)
Marion, L. *et al., J.A.C.S.*, 1944, **66**, 1290-1292 (*Roemerine*)
Marion, L. *et al., Can. J. Res., Sect. B*, 1950, **28**, 21 (*Anonaine*)
Gopinath, K.W. *et al., Chem. Ber.*, 1959, **92**, 776-779 (*Anonaine, isol*)
Barton, D.H.R. *et al., Chem. Comm.*, 1966, 259-260 (*Roemerine*)
Cava, M.P. *et al., J.O.C.*, 1966, **31**, 1281-1283 (*Anonaine*)
Johns, S.R. *et al., Aust. J. Chem.*, 1968, **21**, 1383-1386 (*Anonaine, pmr, isol*)
Akramov, S.T. *et al., Khim. Prir. Soedin.*, 1968, **4**, 199; *Chem. Nat. Compd. (Engl. Transl.)*, 1968, **4**, 173 (*Roemrefidine*)
Bhakuni, D.S. *et al., Phytochemistry*, 1972, **11**, 1819-1822 (*Roemerine, Anonaine, ms, pmr, uv, isol*)
Hufford, C.D. *et al., Phytochemistry*, 1976, **15**, 1169-1171 (*N-Acetylanonaine*)
Nieto, M. *et al., Planta Med.*, 1976, **30**, 48-58 (*±-form, N-de-Me*)
Sashida, Y. *et al., Yakugaku Zasshi*, 1976, **96**, 659; *CA*, **88**, 3043u (*N-Acetylanonaine*)
Manushakyan, M.A. *et al., Khim. Prir. Soedin.*, 1977, **13**, 713; *Chem. Nat. Compd. (Engl. Transl.)*, 1977, **13**, 599 (*N-metho salt*)
Slavík, J. *et al., Coll. Czech. Chem. Comm.*, 1980, **45**, 914-920; 1981, **46**, 1534-1538; 2587-2593 (*Roemrefidine, Aporheine*)
Gray, A.I. *et al., Planta Med.*, 1980, **39**, 209 (*N-Acetylanonaine*)
Phillipson, J.D. *et al., J. Nat. Prod.*, 1981, **44**, 296-307 (*Roemerine oxide*)
Ren, L. *et al., Yaoxue Xuebao*, 1981, **16**, 672-677; *CA*, **96**, 48974e (*N-Acetylanonaine*)
Achenbach, H. *et al., Annalen*, 1982, 1623-1633 (*N-Formylanonaine, N-Carbamoylanonaine*)
Chen, Y.-Y. *et al., J. Nat. Prod.*, 1996, **59**, 904-906 (*Romucosine*)
Hasrat, J.A. *et al., Phytomedicine*, 1997, **4**, 133-140 (*Anonaine, activity*)
Chen, C.-Y. *et al., J. Nat. Prod.*, 2000, **63**, 1475-1478 (*Anonaine, activity*)
Carollo, C.A. *et al., J. Nat. Prod.*, 2006, **69**, 1222-1224 (*N-Nitrosoanonaine*)

Rohitukine† R-121

[71294-60-5]
[97907-01-2]



Absolute Configuration

$C_{16}H_{19}NO_5$ 305.33
Alkaloid from the leaves and stems of *Amoora rohituka*, the stem bark of *Dysoxylum binectariferum* and from *Schumanniophyton magnifium*. Shows antiinflammatory and immunomodulatory activity. Yellow cryst. Mp 218-219° Mp 227-232°. $[\alpha]_D^{20}$ +44.3 (MeOH). Log P -0.49 (calc). λ_{max} 208 (ϵ 23442); 262 (ϵ 12600); 330 (ϵ 4786) (MeOH) (Berdy).

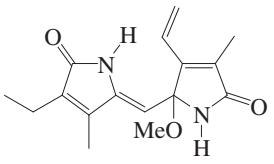
Hydrochloride: Mp 242-243°. $[\alpha]_D$ -27.2 (MeOH).

N-*Oxide:* ***Rohitukine* N-*oxide***
$C_{16}H_{19}NO_6$ 321.329
Alkaloid from the stem bark of *Dysoxylum binectariferum*. Amorph. powder (MeOH). λ_{max} 227 ; 252 ; 257 ; 297 ; 320 (sh) (no solvent reported).

N-*De-Me,* O$^{3'}$-*Ac:* **N-*Demethylrohitukine 3′-acetate***
$C_{17}H_{19}NO_6$ 333.34
Alkaloid from the stem bark of *Schumanniophyton magnificum*. Cream amorph. solid. Isol. as a mixt. of the 3′α- and 3′β- isomers in an approximately 2:1 ratio.

Harmon, A.D. *et al., Tet. Lett.*, 1979, 721-724 (*isol, ir, ms, pmr, cmr, cryst struct*)
Houghton, P.J. *et al., Planta Med.*, 1988, **54**, 239 (*N-Demethylrohitukine 3′-acetate*)
Naik, R.G. *et al., Tetrahedron*, 1988, **44**, 2081-2086 (*isol, ir, pmr, synth*)
De Souza, N.J. *et al., ACS Symp. Ser.*, 1993, **534**, 331 (*rev*)
Yang, D.H. *et al., Chin. Chem. Lett.*, 2003, **14**, 720-723 (*cryst struct, abs config*)
Yang, D.-H. *et al., J. Asian Nat. Prod. Res.*, 2004, **6**, 233-236 (*N-oxide*)

Rollipyrrole R-122



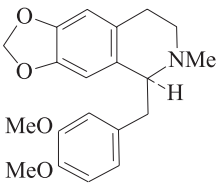
$C_{16}H_{20}N_2O_3$ 288.346

(±)-*form*
Constit. of the leaves of *Rollinia mucosa* (biriba). Amorph. yellow powder. Possible artifact. λ_{max} 266 (no solvent reported).

Kuo, R.-Y. *et al., Tet. Lett.*, 2001, **42**, 7907-7909

Romneine R-123

5-[(3,4-Dimethoxyphenyl)methyl]-5,6,7,8-tetrahydro-6-methyl-1,3-dioxolo[4,5-g]isoquinoline, 9CI. 1-(3,4-Dimethoxybenzyl)-1,2,3,4-tetrahydro-6,7-methylenedioxy-2-methylisoquinoline



(*S*)–*form*

$C_{20}H_{23}NO_4$ 341.406

(*R*)-*form*
Alkaloid from the bark of *Laurelia novae-zelandiae* (Monimiaceae).
Amorph. Has the same registry number as the (*S*)-form.

Hydrobromide: Mp 223-225°. $[\alpha]_D^{15}$ -75 (c, 0.2 in EtOH).

(*S*)-*form* [5544-49-0]
Alkaloid from the roots of *Romneya coulteri* var. *trichocalyx* (Papaveraceae). Oil. $[\alpha]_D^{27}$ +37 (c, 0.11 in EtOH).

Hydrobromide: Mp 226-227°. $[\alpha]_D^{28}$ +40 (c, 0.26 in EtOH). The stereochemical purity of this sample has been questioned.

N-*Me:* ***Escholinine***
[51550-01-7]
$C_{21}H_{26}NO_4^{\oplus}$ 356.441
Quaternary alkaloid from *Eschscholtzia californica* (Papaveraceae).

N-*Me, iodide:*
$C_{21}H_{26}INO_4$ 483.345
Cryst. (MeOH). Mp 197-198°.

N-*Me, perchlorate:*
$C_{21}H_{26}ClNO_8$ 455.891
Prisms (MeOH). Mp 209-210°. $[\alpha]_D^{25}$ +74 (c, 0.31 in MeOH).

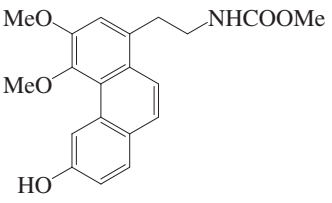
O$^{4'}$-*De-Me,* N-*Me:* ***Phyllocryptine***
[126298-57-5]
[126262-25-7]
$C_{20}H_{24}NO_4^{\oplus}$ 342.414
Quaternary alkaloid from various parts of *Cryptocarya phyllostemon* (Lauraceae). Yellow amorph. powder (as chloride). Positive opt. rotn. which could not be measured owing to the dark-coloured soln.

(±)-*form* [5544-50-3]
Alkaloid from leaves of *Cryptocarya chinensis* (Lauraceae). Pale yellow oil or amorph. solid.

Hydrobromide: Mp 194-196°.

Stermitz, F.R. *et al., Tetrahedron*, 1966, **22**, 1095 (*isol, uv, ir, pmr, ms, struct, synth*)
Stermitz, F.R. *et al., Tet. Lett.*, 1967, 1601 (*abs config*)
Slavík, J. *et al., Coll. Czech. Chem. Comm.*, 1970, **35**, 2597; 1973, **38**, 3514 (*Escholinine*)
Kametani, T. *et al., Chem. Pharm. Bull.*, 1974, **22**, 966 (*synth, pmr*)
Urzúa, A. *et al., Phytochemistry*, 1982, **21**, 773 (*isol, pmr*)
Cavé, A. *et al., Aust. J. Chem.*, 1989, **42**, 2243 (*Phyllocryptine*)
Lee, S.-S. *et al., J. Nat. Prod.*, 1993, **56**, 227 (*isol, uv, ir, pmr, cmr, ms*)

Romucosine I R-124

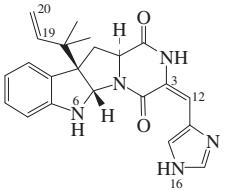


$C_{20}H_{21}NO_5$ 355.39
Alkaloid from the stems of *Rollinia mucosa* (biriba). Brown amorph. powder. λ_{max} 251 ; 259 ; 304 ; 316 (MeOH).

Kuo, R.-Y. *et al., Z. Naturforsch., B*, 2004, **59**, 334-336 (*isol, pmr*)

Roquefortine C R-125

[58735-64-1]



Absolute Configuration

$C_{22}H_{23}N_5O_2$ 389.456
CAS numbering shown. The abs. config. ref. is inaccessible but the results are given in the 1998 Synthesis ref. Metab. of *Penicillium roquefortii* ATCC 10110, *Penicillium commune*, *Penicillium cyclopium* NRRL 6093, *Penicillium farinosum* and many other *Penicillium* spp. incl. a marine -derived sp. Common constit. of blue cheese. Neurotoxin. Needles + 1MeOH (MeOH aq.). Mp 195-200° dec Mp 225-228° dec. $[\alpha]_D^{22}$ -703 (c, 1 in $CHCl_3$). $[\alpha]_D^{15}$ -764 (c, 0.5 in Py). λ_{max} 210 (ϵ 31620); 243 (ϵ 18200); 325 (ϵ 28800) (EtOH).
▶ LD_{50} (mus, ipr) 15 mg/kg. UQ4730500

N^6-*Formyl:* **N^6-*Formylroquefortine C***
[158200-10-3]
$C_{23}H_{23}N_5O_3$ 417.466
Metab. of *Penicillium verrucosum* var. *cyclopium* AV 67718. Mycotoxin. Solid (MeOH aq.). Mp 216-219° dec. λ_{max} 207 ; 242 ; 326 (MeOH) (Berdy).

N^{16}-*Et:* **N^{16}-*Ethylroquefortine C***
[174792-02-0]
$C_{24}H_{27}N_5O_2$ 417.51
Prod. by *Penicillium janczewskii.*

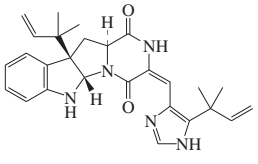
3α,12-Dihydro: 3,12-Dihydroroquefortine. ***Roquefortine D****. Alkaloid Z*
[58735-66-3]
$C_{22}H_{25}N_5O_2$ 391.472
Prod. by *Penicillium* sp. incl. *Penicillium roquefortii* ATCC 10110. Neurotoxin. Prisms (MeCN). Mp 153-154°. $[\alpha]_D^{15}$ -370 (c, 0.23 in Py). λ_{max} 208 (ϵ 195000); 244 (ϵ 35480); 298 (ϵ 15140) (EtOH).
▶ Toxic.

3α,12-Dihydro, N^{16}*-ethoxycarbonyl:* N^{16}*-Ethoxycarbonylroquefortine D.* **N^{16}-**

Carboxyethyldihydroroquefortine C
$C_{25}H_{29}N_5O_4$ 463.535
Prod. by *Penicillium aureovirens* VKM FW-766. Wax. $[\alpha]_D^{22}$ -66.8 (c, 10.1 in MeOH). λ_{max} 210 ; 239 ; 300 (MeOH).

Ohmomo, S. *et al., Agric. Biol. Chem.*, 1975, **39**, 1333-1334; 1977, **41**, 2097-2098; 1978, **42**, 2387-2389; 1979, **43**, 2035-2038; 1980, **44**, 1929-1930 (*isol, uv, ir, pmr, ms, biosynth, Roquefortine D*)
Scott, P.M. *et al., Experientia*, 1976, **32**, 140-142 (*isol, uv, ir, pmr, cmr, struct*)
Barrow, K.D. *et al., Chem. Comm.*, 1979, 225-226 (*biosynth*)
Scott, P.M. *et al., J. Agric. Food Chem.*, 1979, **27**, 201-202 (*config*)
Engel, G. *et al., J. Chromatogr.*, 1979, **170**, 288-291 (*tlc, uv*)
Wagener, R.E. *et al., Appl. Environ. Microbiol.*, 1980, **39**, 882-887 (*isol, uv, ir, ms*)
Vesonder, R.F. *et al., Experientia*, 1980, **36**, 1308 (*isol, uv, ir*)
Kozlovsky, A.G. *et al., Experientia*, 1981, **37**, 472-473 (*Roquefortine D, isol, biosynth*)
Gorst-Allman, C.P. *et al., Chem. Comm.*, 1982, 652-653 (*biosynth, cmr*)
Mantle, P.G. *et al., Appl. Environ. Microbiol.*, 1983, **45**, 1486-1490 (*biosynth*)
Scott, P.M. *et al., Dev. Food Sci.*, 1984, **8**, 463-468 (*rev*)
Yamaguchi, T. *et al., Proc. Jpn. Assoc. Mycotoxicol.*, 1991, **34**, 29-32 (*abs config*)
Bhat, B. *et al., Tetrahedron*, 1993, **49**, 10663-10669 (*biosynth*)
Musuku, A. *et al., J. Nat. Prod.*, 1994, **57**, 983-987 (*N^6-Formylroquefortine C*)
Kozlovsky, A.G. *et al., Prikl. Biokhim. Mikrobiol.*, 1997, **33**, 70-74 (*N-Ethylroquefortine*)
Chen, W.-C. *et al., Tet. Lett.*, 1998, **39**, 8401-8404 (*Roquefortine D, synth*)
Kozlovsky, A.G. *et al., Heterocycles*, 2003, **60**, 1639-1644 (*Ethoxycarbonylroquefortine D*)
Bringmann, G. *et al., Tetrahedron*, 2005, **61**, 7252-7265 (*marine isol*)
Shangguan, N. *et al., J.A.C.S.*, 2008, **130**, 6281-6287 (*synth, props*)

Roquefortine E R-126



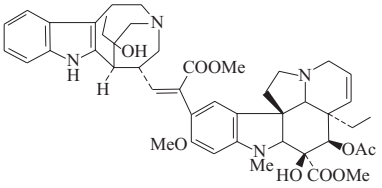
Absolute Configuration

$C_{27}H_{31}N_5O_2$ 457.574
Prod. by *Gymnoascus reessii* (MST-F9977). Amorph. solid. $[\alpha]_D$ -223 (c, 0.06 in $CHCl_3$). λ_{max} 228 (ϵ 13600); 342 (ϵ 11100) (MeOH).

Clark, B. *et al., J. Nat. Prod.*, 2005, **68**, 1661-1664 (*isol, pmr, cmr*)

Roseadine R-127

[58005-25-7]

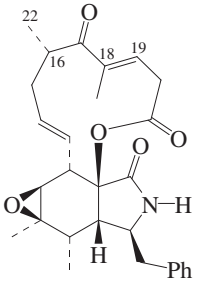


$C_{46}H_{56}N_4O_9$ 808.97
Alkaloid from *Catharanthus roseus* (Apocynaceae). Amorph. Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. λ_{max} 214 (ϵ 49000); 225 (ϵ 147000); 286 (ϵ 12000); 294 (ϵ 12400); 326 (ϵ 8500) (EtOH) (Berdy).

El-Sayed, A. *et al., J. Nat. Prod.*, 1983, **46**, 517 (*isol, uv, ir, pmr, cmr, ms, struct*)

Rosellichalasin R-128

[123452-64-2]



$C_{28}H_{33}NO_5$ 463.572
Stereochem. of the compds. in this entry not all determined. Metab. of *Rosellinia necatrix*. Plant growth inhibitor. Needles (Me_2CO/hexane). Mp 121-123°. $[\alpha]_D^{20}$ -2.7 (c, 1 in MeOH). λ_{max} 245 (ϵ 12500) (EtOH) (Derep).

16-Hydroxy, 18,19-dihydro:
$C_{28}H_{35}NO_6$ 481.588
Prod. by *Rhinocladiella* sp. Powder.

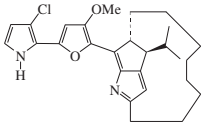
22-Hydroxy, 18,19-dihydro:
$C_{28}H_{35}NO_6$ 481.588
Prod. by *Rhinocladiella* sp. Powder.

Δ^{19}-Isomer, 17-alcohol:
$C_{28}H_{35}NO_5$ 465.588
Prod. by *Rhinocladiella* sp. Powder.

Kimura, Y. *et al., Agric. Biol. Chem.*, 1989, **53**, 1699-1701 (*isol, pmr, cmr*)
Wagenaar, M.M. *et al., J. Nat. Prod.*, 2000, **63**, 1692-1695 (*Rhinocladiella constits*)

Roseophilin R-129

[142386-38-7]



Absolute Configuration

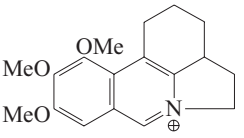
$C_{27}H_{33}ClN_2O_2$ 453.023
Prod. by *Streptomyces griseoviridus*. Cytotoxic agent. Mp 137-178° dec. λ_{max} 296 (ϵ 24800); 477 (ϵ 29800); 572 (ϵ 14400) (MeOH/NaOH) (Derep). λ_{max} 306 (ϵ 15000); 364 (ϵ 8800); 378 (ϵ 8600); 533 (ϵ 112400) (MeOH) (Derep).

Hydrochloride: [142435-87-8]
Reddish-purple powder.

Hayakawa, Y. *et al., Tet. Lett.*, 1992, **33**, 2701-2704 (*isol*)
Fürstner, A. *et al., J.A.C.S.*, 1998, **120**, 2817-2825 (*synth, pmr, cmr*)
Trost, B.M. *et al., J.A.C.S.*, 2000, **122**, 3801-3810 (*synth*)
Bamford, S.J. *et al., Org. Lett.*, 2000, **2**, 1157-1160 (*synth*)
Harrington, P.E. *et al., J.A.C.S.*, 2001, **123**, 8509-8514 (*synth, abs config*)
Boger, D.L. *et al., J.A.C.S.*, 2001, **123**, 8515-8519 (*synth, cd, abs config*)
Fürstner, A. *et al., Angew. Chem., Int. Ed.*, 2003, **42**, 3582-3603 (*rev, synth, chem, biol, history*)

Roserine R-130

*1,2,3,3*a*,4,5-Hexahydro-9,10,11-trimethoxypyrrolo[3,2,1-*de*]phenanthridinium(1+), 9CI*
[139955-89-8]

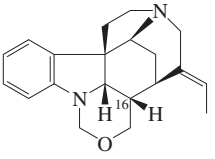


$C_{18}H_{22}NO_3^{\oplus}$ 300.377
Alkaloid from aerial parts and bulbs of *Narcissus pallidulus* (Amaryllidaceae). Counterion not specified.

Bastida, J. *et al., J. Nat. Prod.*, 1992, **55**, 134 (*isol, pmr, cmr, ms, struct*)
Bunnell, A.E. *et al., J.O.C.*, 1997, **62**, 9305-9313 (*synth*)

Rosibiline R-131

[76247-84-2]



Absolute Configuration

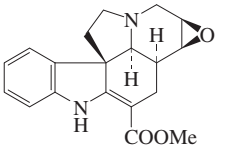
$C_{20}H_{24}N_2O$ 308.422
Alkaloid from the root bark of *Strychnos variabilis* (Loganiceae). Powder.

16-Epimer: ***Isorosibiline***
[55969-04-5]
$C_{20}H_{24}N_2O$ 308.422
Alkaloid from *Strychnos floribunda* stem bark and from *Strychnos matopensis* (Loganiceae).

Tits, M. *et al., Phytochemistry*, 1980, **19**, 1531-1534 (*Rosibiline, isol, uv, cd, ms, pmr, struct*)
Verpoorte, R. *et al., Planta Med.*, 1981, **42**, 32-36 (*Isorosibiline, isol, ms, pmr, synth*)
Massiot, G. *et al., Phytochemistry*, 1988, **27**, 3293-3304 (*Isorosibiline, isol*)

Rosicine R-132

[95690-65-6]



Absolute Configuration

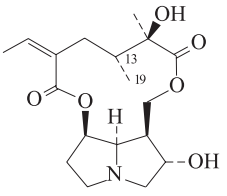
$C_{19}H_{20}N_2O_3$ 324.379
A dinoraspidosperma alkaloid. Alkaloid from the leaves of *Catharanthus roseus* (Apocynaceae). Pale-yellow gum. $[\alpha]_D$

+188.67 ($CHCl_3$).

Atta-ur-Rahman, *et al., Tet. Lett.*, 1984, **25**, 6051 (*isol, uv, ir, pmr, cmr, ms, struct*)

Rosmarinine R-133

1,2-Dihydro-2,12-dihydroxysenecionan-11,16-dione, 9CI
[520-65-0]



Absolute configuration

$C_{18}H_{27}NO_6$ 353.414

Cyclic diester of Rosmarinecine in D-597 with Senecic acid. Alkaloid from *Senecio rosmarinifolius, Senecio taiwanensis, Senecio braychypodus, Senecio triangularis, Senecio pauciligulatus, Senecio hygrophyllus, Senecio angulatus* and *Senecio halimifolius* (Asteraceae). Laminae (Me_2CO or EtOH). Mp 209° (205-208°). $[\alpha]_D$ -120 ($CHCl_3$). $[\alpha]_D$ -94 (EtOH). Not hepatotoxic. Dehydration gives Senecionine, S-238.

12-Ac: ***12-O-Acetylrosmarinine***
[137760-53-3]
$C_{20}H_{29}NO_7$ 395.452
Alkaloid from *Senecio hadiensis* (Asteraceae). Pale amber oil. $[\alpha]_D$ -36 (c, 1.8 in EtOH).

13,19-Didehydro: ***Angularine***†
$C_{18}H_{25}NO_6$ 351.399
Alkaloid from *Senecio angulatus* (Asteraceae). Cryst. (EtOAc). Mp 200-201°. $[\alpha]_D^{25}$ -98 (c, 0.022 in EtOH). Cyclic diester of Rosmarinecine in D-597 with Seneciphyllic acid.

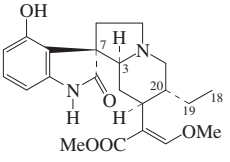
(15E)-Isomer: ***Neorosmarinine***
[137821-11-5]
$C_{18}H_{27}NO_6$ 353.414
Alkaloid from *Senecio hadiensis* (Asteraceae). Gum; cryst. (EtOH)(as perchlorate). Mp 205-207° (perchlorate). $[\alpha]_D$ -12 (c, 0.6 in EtOH).

Stereoisomer: ***Isorosmarinine***
[155322-44-4]
$C_{18}H_{27}NO_6$ 353.414
Trace alkaloid from *Senecio pterophorus* (Asteraceae). Mp 137-142°.

Richardson, M.F. *et al., J.C.S.*, 1943, 452 (*isol, bibl, struct*)
Porter, L.A. *et al., J.O.C.*, 1962, **27**, 4132 (*Angularine*)
Hrbek, J. *et al., Coll. Czech. Chem. Comm.*, 1972, **37**, 3918 (*cd*)
Lu, S.T. *et al., J. Chin. Chem. Soc. (Taipei)*, 1972, **19**, 127 (*isol*)
Roitman, J.N. *et al., Aust. J. Chem.*, 1983, **36**, 1203 (*isol, cmr*)
Freer, A.A. *et al., Acta Cryst. C*, 1986, **42**, 1348 (*cryst struct*)
Kunec, E.K. *et al., Chem. Comm.*, 1986, 250 (*biosynth*)
Were, O. *et al., J. Nat. Prod.*, 1991, **54**, 491 (*12-O-Acetylrosmarinine, Neorosmarinine*)
Liddell, J.R. *et al., Phytochemistry*, 1993, **34**, 1629 (*Isorosmarinine*)

Rotundifoline R-134

Stipulatine
[6883-25-6]



Absolute Configuration

$C_{22}H_{28}N_2O_5$ 400.474
Alkaloid from *Mitragyna rotundifolia* and several other *Mitragyna* spp. (Rubiaceae). Mp 238-240° (248-249°). $[\alpha]_D^{15}$ +124 ($CHCl_3$). λ_{max} 223 (log ϵ 4.36); 242 (sh) (log ϵ 4.15); 292 (log ϵ 3.42) (EtOH).

Hydrochloride: Mp 222°.

β-N^b-Oxide: ***Rotundifoline* N-*oxide***
[64470-93-5]
$C_{22}H_{28}N_2O_6$ 416.473
Alkaloid from *Mitragyna rubrostipulata* (Rubiaceae). Noncryst. λ_{max} 222 ; 242 (sh) ; 292 (EtOH).

Me ether: ***Rhynchociline***. *Rhyncociline*
[18002-97-6]
$C_{23}H_{30}N_2O_5$ 414.5
Alkaloid from *Mitragyna ciliata, Mitragyna inermis, Mitragyna tubulosa, Mitragyna parvifolia, Mitragyna rotundifolia* and *Uncaria* spp. (Rubiaceae). Mp 178-180°. $[\alpha]_D^{20}$ +6.2 (c, 2 in $CHCl_3$).

Me ether, perchlorate: Mp 221-222°.

18,19-Didehydro: ***Rotundifoleine***
[55872-09-8]
$C_{22}H_{26}N_2O_5$ 398.458
Alkaloid from *Mitragyna parvifolia* (Rubiaceae). λ_{max} 223 ; 243 (sh) ; 286 ; 295 (EtOH).

18,19-Didehydro, Me ether: ***Isospecionoxeine***
[18003-00-4]
$C_{23}H_{28}N_2O_5$ 412.485
Alkaloid from *Mitragyna speciosa* (Rubiaceae). Cryst. (Et_2O/hexane). Mp 179°. λ_{max} 223 (log ϵ 4.46); 244 (log ϵ 4.26); 288 (log ϵ 3.52) (EtOH).

18,19-Didehydro, Me ether, perchlorate: Cryst. (EtOH/Et_2O). Mp 230-231°.

7-Epimer: ***Isorotundifoline***. *Mitragynol*
[6884-20-4]
$C_{22}H_{28}N_2O_5$ 400.474
Alkaloid from *Mitragyna ciliata* and some other *Mitragyna* spp. (Rubiaceae). Mp 131-132° Mp 200° (dimorph.). λ_{max} 222 (log ϵ 4.43); 242 (sh) (log ϵ 4.13); 290 (log ϵ 3.49) (EtOH).

7-Epimer, Me ether: ***Ciliaphylline***
[18002-98-7]
$C_{23}H_{30}N_2O_5$ 414.5
Alkaloid from *Mitragyna ciliata*, *Mitragyna inermis*, *Mitragyna tubulosa*, *Mitragyna parvifolia*, *Mitragyna rotundifolia* and *Uncaria* spp. (Rubiaceae). Mp 222-223°. $[\alpha]_D^{25.5}$ -89.5 (c, 0.65 in $CHCl_3$). λ_{max} 222 (log ϵ 4.44); 244 (log ϵ 4.24); 287 (log ϵ 3.46) (EtOH).

7-Epimer, Me ether, picrate: Mp 130-131°.

7-Epimer, Me ether, N-*oxide:* ***Ciliaphylline* N-*oxide***
[50506-22-4]
$C_{23}H_{30}N_2O_6$ 430.5
Alkaloid from *Mitragyna tubulosa* (Rubiaceae). λ_{max} 221 ; 243 ; 297 (no solvent reported).

7-Epimer, 18,19-didehydro: ***Isorotundifoleine***
[55923-84-7]
$C_{22}H_{26}N_2O_5$ 398.458
Alkaloid from *Mitragyna parvifolia* (Rubiaceae). λ_{max} 222 ; 224 (sh) ; 278 ; 294 (EtOH).

7-Epimer, 18,19-didehydro, Me ether: ***Specionoxeine***
[18002-99-8]
$C_{23}H_{28}N_2O_5$ 412.485
Alkaloid from *Mitragyna speciosa* (Rubiaceae). Cryst. (Me_2CO). Mp 225°. λ_{max} 223 (log ϵ 4.49); 245 (log ϵ 4.18); 288 (log ϵ 3.29) (EtOH).

20-Epimer: ***Mitrafoline***
[55903-79-2]
$C_{22}H_{28}N_2O_5$ 400.474
Alkaloid from the leaves of *Mitragyna speciosa* (Rubiaceae). λ_{max} 224 ; 243 (sh) ; 292 (EtOH).

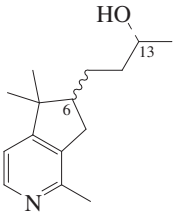
3,20-Diepimer: ***Isospeciofoline***
[56687-49-1]
$C_{22}H_{28}N_2O_5$ 400.474
Alkaloid from the leaves of *Mitragyna speciosa* (Rubiaceae).

7,20-Diepimer: ***Isomitrafoline***
[55903-80-5]
$C_{22}H_{28}N_2O_5$ 400.474
Alkaloid from the leaves of *Mitragyna speciosa* (Rubiaceae). λ_{max} 225 ; 237 (sh) ; 290 (EtOH).

3,7,20-Triepimer: ***Speciofoline***
[5171-42-6]
$C_{22}H_{28}N_2O_5$ 400.474
Alkaloid from leaves of *Mitragyna speciosa* (Rubiaceae). Needles. Mp 202-204°. $[\alpha]_D^{22}$ -103 (c, 2 in $CHCl_3$). pK_a 6.3 (H_2O). λ_{max} 223 (log ϵ 4.47); 242 (sh) (log ϵ 4.27); 290 (log ϵ 3.49) (EtOH).

Beckett, A.H. *et al., Tet. Lett.*, 1963, 1709-1714 (*Rotundifoline, Speciofoline*)
Trager, W.F. *et al., Tetrahedron*, 1968, **24**, 523-543 (*Ciliaphylline, Specionoxeine, Isospecionoxeine*)
Beckett, A.H. *et al., Tetrahedron*, 1969, **25**, 5961-5969 (*ms*)
Phillipson, J.D. *et al., Phytochemistry*, 1973, **12**, 2043-2048 (*Ciliaphylline oxide*)
Hemingway, S.R. *et al., Phytochemistry*, 1975, **14**, 557-563 (*Mitrafoline, Isomitrafoline, Rotundifoleine, Isospeciofoline*)
Shellard, E.J. *et al., Phytochemistry*, 1977, **16**, 1427-1429 (*Rotundifoline oxide*)

Rotundine B R-135



$C_{15}H_{23}NO$ 233.353
Alkaloid from the rhizomes of *Cyperus rotundus* (nutgrass). Oil. $[\alpha]_D^{25}$ -14.7 (c, 0.15 in $CHCl_3$). λ_{max} 264 (log ϵ 3.4) (MeOH).

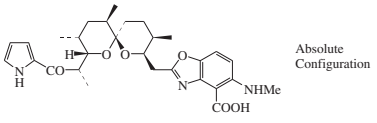
13-Ketone: ***Rotundine A***
$C_{15}H_{21}NO$ 231.337
Alkaloid from the rhizomes of *Cyperus rotundus* (nutgrass). Oil. $[\alpha]_D^{27}$ -12.3 (c, 0.31 in $CHCl_3$). λ_{max} 260 (log ϵ 3.15) (MeOH).

6-Epimer: ***Rotundine C***
$C_{15}H_{23}NO$ 233.353
Alkaloid from the rhizomes of *Cyperus rotundus* (nutgrass). Oil. $[\alpha]_D^{25}$ -10.2 (c, 0.11 in $CHCl_3$). λ_{max} 262 (log ϵ 3.48) (MeOH).

Jeong, S.-J. *et al., J. Nat. Prod.*, 2000, **63**, 673-675

Routiennocin R-136

Antibiotic CP 61405. CP 61405
[99623-84-4]



$C_{26}H_{30}N_2O_7$ 482.532
Polyether antibiotic related to Calcimycin, C-26. Prod. by *Streptomyces routienii*. Active against gram-positive bacteria. Controls swine dysentery. Sol. MeOH, C_6H_6; poorly sol. H_2O. λ_{max} 258 (E1%/1cm 287); 308 (E1%/1cm 400) (MeOH) (Berdy). λ_{max} 258 (E1%/1cm 277); 269 (E1%/1cm 247); 290 (E1%/1cm 331) (MeOH/HCl) (Berdy). λ_{max} 254 (E1%/1cm 247); 310 (E1%/1cm 356) (MeOH/NaOH) (Berdy).

U.S. Pat., 1985, 4 547 523; *CA*, **104**, 49844
Kotecha, N.R. *et al., Synlett*, 1992, 395; 399 (*synth*)
Diez-Martin, D. *et al., Tetrahedron*, 1992, **48**, 7899 (*synth*)

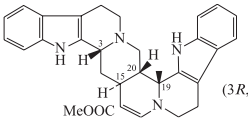
Rovidine R-137

[1360-83-4]
Bisindole alkaloid. Struct. unknown. Alkaloid from *Catharanthus roseus* (Apocynaceae). Thin blades (EtOH)(as sulfate). Mp 320° dec. (sulfate). Mol. formula not reported. λ_{max} 214 (E1%/1cm 513); 265 (E1%/1cm 153); 296 (E1%/1cm 112) (EtOH) (Berdy).

Sulfate:
Thin blades (EtOH). Mp 320° dec.

Svoboda, G.H. *et al., J. Pharm. Sci.*, 1964, **53**, 1227-1231 (*isol, uv, ir*)

Roxburghines R-138



$C_{31}H_{32}N_4O_2$ 492.619

(3R,15S,19R,20R)-form
Roxburghine B
[27932-46-3]
Isol. from the leaves of *Uncaria gambir* (Rubiaceae). Mp 255°. $[\alpha]_D^{20}$ -350 (MeOH).

(3R,15S,19R,20S)-form
Roxburghine E
[27773-33-7]
Isol. from the leaves and stems of *Uncaria gambir* (Rubiaceae). Mp 234-236°. $[\alpha]_D^{20}$ -105 (MeOH).

(3R,15S,19S,20S)-form
Roxburghine D. *Roxburghine*
[27802-03-5]
Isol. from the leaves and stems of *Uncaria gambir* and from the bark of *Uncaria elliptica* (Rubiaceae). Faint-yellow cryst. (EtOH). Mp 197-200°. $[\alpha]_D^{20}$ +160 (MeOH).

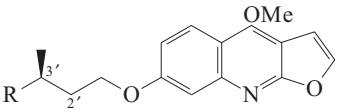
(3S,15S,19S,20S)-form
Roxburghine C
[27773-32-6]
Isol. from the leaves of *Uncaria gambir* (Rubiaceae). Mp 245-250°. $[\alpha]_D^{20}$ -221 (MeOH).

(3ξ,15S,19ξ,20ξ)-form
Roxburghine X
[73651-11-3]
Isol. from the bark of *Uncaria elliptica* (Rubiaceae). Faint-pink cryst. (EtOH). Mp 215°. $[\alpha]_D^{27}$ -29 (MeOH).

(3ξ,15ξ,19ξ,20ξ)-form
Roxburghine A
[30908-03-3]
Alkaloid from the leaves of *Uncaria gambir* (Rubiaceae). Mp 290-295°. $[\alpha]_D^{20}$ -264 (MeOH).

Merlini, L. *et al., Tetrahedron*, 1970, **26**, 2259 (*isol, uv, ir, pmr, ms, ord, struct*)
Riesner, H. *et al., Chem. Comm.*, 1972, 786 (*synth*)
Cistaro, C. *et al., Gazz. Chim. Ital.*, 1973, **103**, 153 (*pmr*)
Benz, G. *et al., Chem. Ber.*, 1975, **108**, 248 (*synth*)
Cistaro, C. *et al., Helv. Chim. Acta*, 1976, **59**, 2249 (*pmr, config*)
Merlini, L. *et al., Helv. Chim. Acta*, 1976, **59**, 2254 (*cmr*)
Herath, W.H.M.W. *et al., Phytochemistry*, 1979, **18**, 1385 (*Roxburghine X*)

Roxiamine A R-139



R = COOMe

$C_{18}H_{19}NO_5$ 329.352

(S)-form [175097-25-3]
Alkaloid from *Evodia roxburghiana*. Yellow oil. $[\alpha]_D$ +2 (c, 1.0 in $CHCl_3$).

*2′,3′-Didehydro (*E-*):* ***Roxiamine B***
[175097-26-4]
$C_{18}H_{17}NO_5$ 327.336
From *Evodia roxburghiana*. Solid.

McCormick, J.L. *et al., J. Nat. Prod.*, 1996, **59**, 469 (*isol, uv, ir, pmr, cmr, ms, struct*)

Roxiamine C R-140

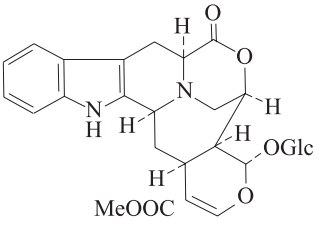
As Roxiamine A, R-139 with R = OH
$C_{16}H_{17}NO_4$ 287.315

(S)-form [175097-27-5]
Alkaloid from *Evodia roxburghiana*. Solid. $[\alpha]_D$ +4 (c, 1.0 in $CHCl_3$).

McCormick, J.L. *et al., J. Nat. Prod.*, 1996, **59**, 469 (*isol, uv, ir, pmr, cmr, ms, struct*)

Rubenine R-141

[52467-52-4]



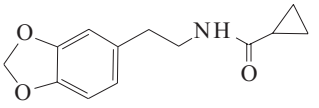
$C_{28}H_{32}N_2O_{11}$ 572.568
Alkaloid from the heartwood of *Adina rubescens* (Nucleaceae). $[\alpha]_D^{25}$ -42 (MeOH).

Tetra-O-*Ac:* Mp 154-156° (as picrolonate). $[\alpha]_D$ -46 ($CHCl_3$).

Brown, R.T. *et al., Chem. Comm.*, 1973, 765 (*pmr, ms, cd, struct*)

Rubesamide R-142

N-*[2-(1,3-Benzodioxol-5-yl)ethyl]cyclopropanecarboxamide, 9CI*. N-*(3,4-Methylenedioxyphenethyl)cyclopropanecarboxamide*
[58738-58-2]

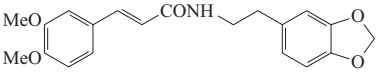


$C_{13}H_{15}NO_3$ 233.266
Alkaloid from *Fagara rubescens* root bark (Rutaceae). Needles (C_6H_6/petrol). Mp 131.5-132.5°.

Dadson, B.A. *et al., J.C.S. Perkin 1*, 1976, 146 (*isol, uv, ir, pmr, ms, synth*)

Rubescenamine R-143

[125187-30-6]



$C_{20}H_{21}NO_5$ 355.39
Alkaloid from the stem bark of *Zanthoxylum rubescens* (Rutaceae). Mp

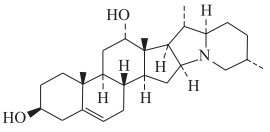
145-147°.

N-*Me:* ***Rubescenamide***
[125187-29-3]
$C_{21}H_{23}NO_5$ 369.416
Alkaloid from the stem bark of *Zanthoxylum rubescens* (Rutaceae). Amorph. solid.

Adesina, S.K. *et al., Planta Med.*, 1989, **55**, 324 (*isol, uv, ir, pmr, cmr, ms, synth, struct*)

Rubijervine R-144

*22α*H,*25β*H-*Solanid-5-ene-3β,12α-diol*
[79-58-3]



Absolute configuration

$C_{27}H_{43}NO_2$ 413.642
Alkaloid from *Veratrum album, Veratrum californicum, Veratrum eschscholtzii, Veratrum nigrum, Veratrum viride, Veratrum lobelianum* and *Veratrum oxysepalum* (Liliaceae). Shows antifungal activity. Mp 240-242°. $[\alpha]_D$ +19 (EtOH).

▶ WF0300000

Hydrobromide: Mp 265-270°.

Hydroiodide: Mp 293-296°.

Di-Ac: Mp 160-163°.

Dibenzoyl: Mp 186-187.5°.

12-Epimer: ***Epirubijervine***
[472-00-4]
$C_{27}H_{43}NO_2$ 413.642
Alkaloid from illuminated *Veratrum grandiflorum* (Liliaceae). Mp 231-234°. $[\alpha]_D$ -32.3 (c, 0.22 in $CHCl_3$).

12-Epimer, dibenzoyl: Mp 264-267°.

Jacobs, W.A. *et al., J. Biol. Chem.*, 1943, **148**, 41 (*isol, synth, Epirubijervine*)
Sato, Y. *et al., J. Biol. Chem.*, 1949, **179**, 623 (*struct*)
Höhne, E. *et al., Tetrahedron*, 1966, **22**, 673 (*config*)
Wolters, B. *et al., Planta Med.*, 1970, **19**, 189-193 (*activity*)
Kaneko, K. *et al., Phytochemistry*, 1975, **14**, 1295 (*biosynth*)
Kaneko, K. *et al., Chem. Pharm. Bull.*, 1979, **27**, 2534 (*Epirubijervine*)
Machaidze, N.L. *et al., Khim. Prir. Soedin.*, 1982, **18**, 659; *Chem. Nat. Compd. (Engl. Transl.)*, 1982, **18**, 628 (*isol*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, SKR000

Rubiverine R-145

[1360-91-4]

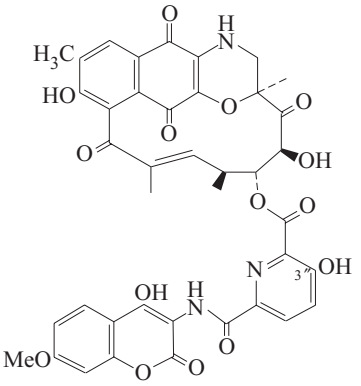
$C_{25}H_{39}NO_2$ 385.589

Steroidal alkaloid. Struct. unknown. Alkamine from *Veratrum album* (Liliaceae). Mp 245-247°. $[\alpha]_D^{20}$ 0 (c, 0.5 in $CHCl_3$).

Cionga, E. *et al., Acta Pol. Pharm.*, 1957, **14**, 73-76; *CA*, **52**, 12882c

Rubradirin B R-146

[68833-11-4]



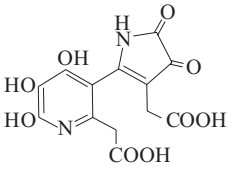
$C_{40}H_{33}N_3O_{15}$ 795.712
Isol. from *Streptomyces achromogenes rubradiris.* Active against gram-positive bacteria. Red cryst. ($CHCl_3$). Mp 300° dec. λ_{max} 235 (sh) (ε 34000); 280 (ε 25000); 312 (ε 33000); 515 (ε 1580) (85% MeOH/pH 2) (Derep). λ_{max} 300 (ε 42500); 345 (sh) (ε 18000); 412 (ε 11000) (85% MeOH/pH 11) (Derep). λ_{max} 235 (sh) (ε 34000); 280 (ε 25000); 312 (ε 33000); 515 (ε 1580) (acidic solvent) (Derep). λ_{max} 222 (ε 47900); 270 (ε 19960); 312 (ε 24950); 510 (ε 1711) (EtOH-HCl) (Berdy). λ_{max} 285 (ε 25000); 315 (ε 32500); 512 (MeOH-HCl) (Berdy).

3''-Deoxy: ***Rubradirin C***
[69279-50-1]
$C_{40}H_{33}N_3O_{14}$ 779.712
From *Streptomyces achromogenes rubradiris.* Less biol. active than other rubradirins. Cryst. (DMSO). Sol. bases, DMSO, DMF; fairly sol. MeOH, THF, EtOH, $CHCl_3$; poorly sol. H_2O, hexane, C_6H_6, toluene. Mp 300° dec. λ_{max} 235 (sh) (ε 34000); 280 (ε 25000); 312 (ε 33000); 515 (ε 1580) (85% MeOH/pH 2) (Derep). λ_{max} 300 (ε 42500); 345 (sh) (ε 18000); 412 (ε 11000) (85% MeOH/pH 11) (Derep). λ_{max} 235 (sh) (ε 34000); 280 (ε 25000); 312 (ε 33000); 515 (ε 1580) (acidic solvent) (Derep). λ_{max} 203 (ε 86205); 220 (ε 41644); 271 (ε 26239); 320 (ε 30400); 530 (MeOH-HCl) (Berdy). λ_{max} 302 (ε 35818); 410 (ε 14100) (MeOH-NAOH) (Berdy).

Bhuyan, B.K. *et al., Antimicrob. Agents Chemother.*, 1964, 91; 97 (*isol*)
Hoeksema, H. *et al., J. Antibiot.*, 1978, **31**, 945 (*isol, uv, ir, pmr, cmr*)
Hoeksema, H. *et al., J.A.C.S.*, 1982, **104**, 5173 (*isol, struct, pmr, cmr*)

Rubrifacine R-147

[91403-60-0]

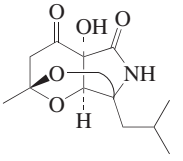


$C_{13}H_{10}N_2O_9$ 338.23
Red pigment from *Erwinia rubrifaciens.* λ_{max} 295 ; 350 ; 490 (pH 2 buffer) (Berdy). λ_{max} 350 ; 522 (pH 9 buffer) (Berdy).

Feistner, G. *et al., Can. J. Chem.*, 1985, **63**, 495 (*cmr, ms, struct*)

Rubrobramide R-148

[205386-57-8]



Relative Configuration

$C_{12}H_{17}NO_5$ 255.27
Prod. by *Cladobotryum rubrobrunnescens.* Phytotoxic and cytotoxic agent. Cryst. (EtOH). Sol. MeOH, EtOAc; poorly sol. H_2O. Mp 131-133°. $[\alpha]_D$ +177 (c, 1 in $CHCl_3$).

Wagner, C. *et al., J. Nat. Prod.*, 1998, **61**, 501-502 (*isol, ir, pmr, cmr, ms*)

Rubrocurarines R-149

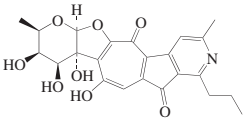
[1360-95-8 (Rubrocurarine IV), 1360-92-5 (Rubrocurarine I), 1360-94-7 (Rubrocurarine III), 1360-93-6 (Rubrocurarine II)]

Struct. unknown. Alkaloids from *Strychnos solimoesana* (Loganiceae). Rubrocurarines I, II, III and IV identified chromatographically, all giving red spots.

Marini-Bettolo, G.B. *et al., Gazz. Chim. Ital.*, 1956, **86**, 1148

Rubrolone R-150

[65445-21-8]



Absolute Configuration

$C_{23}H_{23}NO_8$ 441.437
The opposite abs. config. is given in CAS. Prod. by *Streptomyces echinoruber* NRRL8144. Red pigment. Sol. H_2O, MeOH; fairly sol. EtOH; poorly sol. butanol, hexane. $[\alpha]_D^{25}$ -937.5 (c, 0.2 in H_2O). A second pigment, prob. isomeric, was also isol. λ_{max} 216 (ε 18800); 275 (ε 31500); 421 (ε 9500); 523 (ε 8600) (H_2O) (Berdy).

▶ UQ0350000

Palleroni, N.J. *et al., J. Antibiot.*, 1978, **31**, 1218-1225 (*isol*)
Schuep, W. *et al., J. Antibiot.*, 1978, **31**, 1226-1232 (*cryst struct*)
Sweeny, J.G. *et al., J. Agric. Food Chem.*, 1981, **29**, 1292-1293 (*props*)
Kelly, T.R. *et al., Tet. Lett.*, 1986, **27**, 6049-6050 (*synth*)
Boger, D.L. *et al., J.A.C.S.*, 2000, **122**, 12169-12173 (*synth*)

Rubrolone B R-151

Antibiotic Ro 21-4958. Ro 21-4958

$C_{23}H_{23}NO_8$ 441.437

Struct. closely related to Rubrolone, R-150. Prod. by *Streptomyces echinoruber*. Red powder. Sol. H_2O, MeOH; fairly sol. EtOH; poorly sol. butanol, hexane. λ_{max} 218 (ϵ 18000); 273 (ϵ 4300); 333 (ϵ 8600); 412 (ϵ 6700); 520 (ϵ 5200) (H_2O).

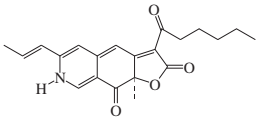
Palleroni, N.J. *et al., J. Antibiot.*, 1978, **31**, 1218-1225

Schuep, W. *et al., J. Antibiot.*, 1978, **31**, 1226-1232

Rubropunctamine R-152

*9*a-*Methyl-3-(1-oxohexyl)-6-(1-propenyl)furo[3,2-*g*]isoquinoline-2,9(7*H*,9*a*H)-dione*

[514-66-9]



Absolute Configuration

$C_{21}H_{23}NO_4$ 353.417

Homologue of Monascorubramine, M-686. Prod. by *Monascus anka* and *Monascus purpureus*. Mycotoxin. Purple needles (EtOH). Mp 217-218° dec. λ_{max} 252 (log ϵ 4.16); 305 (log ϵ 4.43); 382 (log ϵ 3.93); 426 (log ϵ 4.17); 542 (log ϵ 4.24) (no solvent reported).

N-*(1*R*-Carboxyethyl):* [186649-33-2]
$C_{24}H_{27}NO_6$ 425.48
Prod. by a *Monascus* sp. Amorph. red solid. $[\alpha]_D$ -2800 (c, 0.003 in MeOH). λ_{max} 202 ; 248 ; 292 ; 420 ; 500 (MeOH).

N-*(1*S*-Carboxyethyl):* [186649-32-1]
$C_{24}H_{27}NO_6$ 425.48
Prod. by a *Monascus* sp. Amorph. red solid. $[\alpha]_D^{20}$ -2500 (c, 0.002 in MeOH). λ_{max} 202 ; 248 ; 292 ; 420 ; 498 (MeOH).

N-*(1*R*,2-Dicarboxyethyl):* [186649-37-6]
$C_{25}H_{27}NO_8$ 469.49
Prod. by *Monascus* sp. Amorph. red solid. $[\alpha]_D^{20}$ -1400 (c, 0.002 in MeOH).

N-*(1*S*,2-Dicarboxyethyl):* [186649-36-5]
$C_{25}H_{27}NO_8$ 469.49
Prod. by a *Monascus* sp. Amorph. red solid. $[\alpha]_D^{20}$ -2200 (c, 0.003 in MeOH). λ_{max} 204 ; 248 ; 294 ; 418 ; 500 (MeOH).

Haws, E.J. *et al., J.C.S.*, 1959, 3598-3610 (*synth, struct*)

Hadfield, J.R. *et al., J.C.S.(C)*, 1967, 751-755 (*isol*)

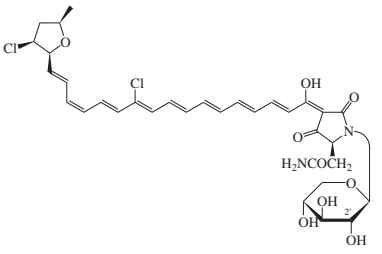
Sweeny, J. *et al., J. Agric. Food Chem.*, 1981, **29**, 1189-1193 (*isol, pmr*)

Sato, K. *et al., Chem. Pharm. Bull.*, 1997, **45**, 227-229 (*N-carboxyethyl derivs*)

Akihisa, T. *et al., J. Agric. Food Chem.*, 2005, **53**, 562-565 (*isol, pmr*)

Rubroside G R-153

[227597-42-4]



$C_{33}H_{38}Cl_2N_2O_9$ 677.577

Similar to Aurantoside A, A-1550. Isol. from the marine sponge *Siliquariaspongia japonica*. Antifungal agent. Amorph. red solid. $[\alpha]_D^{24}$ -1212 (c, 0.001 in MeOH). λ_{max} 248 (ϵ 32400); 435 (ϵ 154400); 460 (ϵ 175500) (MeOH).

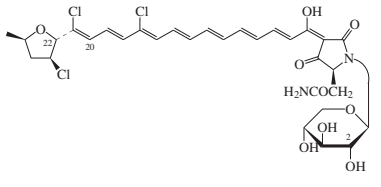
2′-O-*[5-Deoxy-β-*D*-arabinofuranosyl-(1→4)-β-*D*-xylopyranosyl]:* ***Rubroside B***
[227597-37-7]
$C_{43}H_{54}Cl_2N_2O_{16}$ 925.809
Isol. from *Siliquariaspongia japonica*. Amorph. red solid. $[\alpha]_D^{24}$ -1460 (c, 0.001 in MeOH). λ_{max} 250 (ϵ 18900); 432 (ϵ 71300); 457 (ϵ 69700) (MeOH).

2′-O-*[5-Deoxy-2-*O*-methyl-β-*D*-arabinofuranosyl-(1→4)-β-*D*-xylopyranosyl]:* ***Rubroside D***
[227597-39-9]
$C_{44}H_{56}Cl_2N_2O_{16}$ 939.836
Isol. from *Siliquariaspongia japonica*. Amorph. red solid. $[\alpha]_D^{24}$ -1024 (c, 0.001 in MeOH). λ_{max} 251 (ϵ 16400); 432 (ϵ 109100) (MeOH).

Sata, N.U. *et al., J.O.C.*, 1999, **64**, 2331-2339 (*Rubrosides B,D,G*)

Rubroside H R-154

[227597-43-5]



$C_{31}H_{35}Cl_3N_2O_9$ 685.984

Similar to Aurantoside A, A-1550. Isol. from the marine sponge *Siliquariaspongia japonica*. Antifungal agent. Amorph. red solid. $[\alpha]_D^{24}$ -1308 (c, 0.001 in MeOH). λ_{max} 245 (ϵ 13700); 440 (ϵ 44700) (MeOH).

2′-O-*[5-Deoxy-β-*D*-arabinofuranosyl-(1→4)-β-*D*-xylopyranosyl]:* ***Rubroside E***
[227597-40-2]
$C_{41}H_{51}Cl_3N_2O_{16}$ 934.216
Isol. from *Siliquariaspongia japonica*. Amorph. red solid. $[\alpha]_D^{24}$ -1424 (c, 0.001 in MeOH). λ_{max} 243 (ϵ 17000); 450 (ϵ 61700) (MeOH).

2′-O-*[5-Deoxy-2-*O*-methyl-β-*D*-arabinofuranosyl-(1→4)-β-*D*-xylopyranosyl]:* ***Rubroside F***
[227597-41-3]
$C_{42}H_{53}Cl_3N_2O_{16}$ 948.243
Isol. from *Siliquariaspongia japonica*. Amorph. red solid. $[\alpha]_D^{24}$ -490 (c, 0.001 in MeOH). λ_{max} 250 (ϵ 9100); 425 (ϵ 80000) (MeOH).

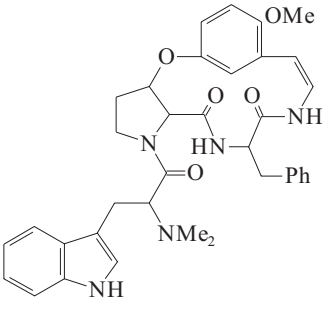
21-Dechloro, 2′-O-*[5-deoxy-2-*O*-methyl-β-*D*-arabinofuranosyl-(1→4)-β-*D*-xylopyranosyl]:* ***Rubroside C***
[227597-38-8]
$C_{42}H_{54}Cl_2N_2O_{16}$ 913.798
Isol. from *Siliquariaspongia japonica*. Amorph. red solid. $[\alpha]_D^{24}$ -1088 (c, 0.001 in MeOH). λ_{max} 240 (ϵ 18600); 450 (ϵ 60600) (MeOH).

*21-Dechloro, 20*Z*-isomer, 22-epimer, 2′*-O-*[5-deoxy-2-*O*-methyl-β-*D*-arabinofuranosyl-(1→4)-β-*D*-xylopyranosyl]:* ***Rubroside A***
[227597-36-6]
$C_{42}H_{54}Cl_2N_2O_{16}$ 913.798
Isol. from *Siliquariaspongia japonica*. Amorph. red solid. $[\alpha]_D^{24}$ -1824 (c, 0.001 in MeOH). λ_{max} 246 (ϵ 29100); 418 (ϵ 110400); 430 (ϵ 110200) (MeOH).

Sata, N.U. *et al., J.O.C.*, 1999, **64**, 2331-2339 (*Rubrosides A,C,E,F,H*)

Rugosanine B R-155

[123519-68-6]



$C_{36}H_{39}N_5O_5$ 621.735

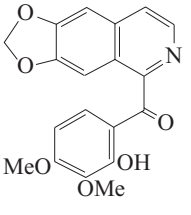
Alkaloid from the stem bark of *Zizyphus rugosa* (Rhamnaceae). Shows antibacterial and antifungal props. Granules (MeOH). Mp 216-218° dec.

Tripathi, Y.C. *et al., Phytochemistry*, 1989, **28**, 1563 (*isol, uv, ir, ms, struct*)

Rugosinone R-156

Linaresine

[73609-04-8]



$C_{19}H_{15}NO_6$ 353.331

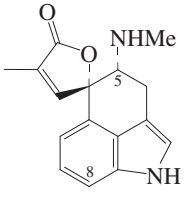
Linaresine and Dihydrolinaresine originally assigned α-hydroxycularine structs. Identity with Rugosinone and Dihydrorugosinone established in 1996. Minor alkaloid from the roots of *Thalictrum rugosum* (Ranunculaceae). Also isol. (as Linaresine) from *Berberis valdiviana* (Berberidaceae). Yellow needles (EtOAc). Mp 223-224° (220-221°).

3,4-Dihydro: ***Dihydrorugosinone***. *Dihydrolinaresine*
[74909-04-9]
$C_{19}H_{17}NO_6$ 355.346
Alkaloid from stems of *Berberis darwinii* and twigs of *Berberis actinacantha* (Berberidaceae). Also isol. (as Dihydrolinaresine) from *Berberis valdiviana*. Yellow amorph. solid (MeOH). Mp 172-174° Mp 220-223°.

[92219-94-8 , 92240-99-8]

Murugesan, N. *et al., Heterocycles*, 1980, **14**, 585 (*synth*)
Wu, W.-N. *et al., J. Nat. Prod.*, 1980, **43**, 143 (*isol, uv, ir, pmr, ms, struct*)
Cheng, H.-Y. *et al., J. Nat. Prod.*, 1980, **43**, 151 (*synth*)
Valencia, E. *et al., J. Nat. Prod.*, 1984, **47**, 1050 (*Dihydrorugosinone*)
Firdous, S. *et al., J.A.C.S.*, 1984, **106**, 6099 (*isol, Linaresine, Dihydrolinaresine*)
García, A. *et al., Tetrahedron*, 1996, **52**, 5929 (*struct*)

Rugulovasine A R-157



(+)-*form*

$C_{16}H_{16}N_2O_2$ 268.315

(+)-*form* [91465-62-2]
Synthetic. Mp 120°. $[\alpha]_D^{25}$ +43 (c, 0.5 in MeOH).

Hydrochloride: Mp 224°. $[\alpha]_D^{20}$ -142 (c, 1 in MeOH). $[\alpha]_D$ +30 (c, 0.5 in DMSO).

(±)-*form* [26909-33-1]
Alkaloid from *Penicillium concavo-rugulosum* and *Penicillium islandicum*. Shows hypotensive and bradycardiac props. Mycotoxic. Prisms or needles (C_6H_6, $CHCl_3$ or MeCN). Sol. MeOH, EtOAc; fairly sol. $CHCl_3$, C_6H_6; poorly sol. H_2O, hexane. Mp 138° dec. λ_{max} 224 (ϵ 30200); 288 (ϵ 6600); 295 (ϵ 6300) (EtOH) (Berdy).
▶ LD_{50} (mus, ivn) 80 mg/kg.

Hydrochloride:
Prisms (H_2O). Mp 225° dec.

Picrate:
Yellow prisms (MeOH). Mp 229° dec.

N-*De-Me:* **N-*Demethylrugulovasine A***. *RUG 13A*. *Antibiotic RUG 13A*
[176901-08-9]
[177019-39-5]
$C_{15}H_{14}N_2O_2$ 254.288
Prod. by *Saccharothrix* sp. Rug-13. Substance P antagonist. Analgesic. Powder (as hydrochloride). Sol. MeOH; poorly sol. $CHCl_3$. λ_{max} 220 (ϵ 40600); 284 (ϵ 7600); 293 (ϵ 7600) (MeOH) (hydrochloride). λ_{max} 220 (ϵ 40600); 284 (ϵ 7600); 293 (ϵ 7600) (MeOH) (Berdy).

8-Chloro: ***8-Chlororugulovasine A***. *Toxin B*
[59787-45-0]
$C_{16}H_{15}ClN_2O_2$ 302.759
Alkaloid from cultures of *Penicillium islandicum*. Noncryst. Isol. as the racemate, poss. because of racemisation during isol. Interconverts with 8-chlororugulovasine B below in hot MeOH.
▶ WG9667000

5-Epimer: ***Rugulovasine B***
[26909-34-2]
Alkaloid from cultures of *Penicillium concavo-rugulosum* and *Penicillium islandicum*. Also prod. by *Lenzites trabea* , *Pellicularia filamentosa*, *Corticium caeruleum*, *Penicillium* Coryophyloides,. Hypotensive agent, mycotoxin. Amorph. solid; prisms (as hydrochloride). Sol. MeOH, EtOAc, bases, Py; fairly sol. H_2O, $CHCl_3$, Et_2O, C_6H_6; poorly sol. hexane. Mp 187° dec. (as hydrochloride). Rugulovasines A and B are readily interconverted. λ_{max} 227 (ϵ 14450); 228 (ϵ 4790); 288 (ϵ 5370); 295 (ϵ 5250) (EtOH) (Berdy).

5-Epimer, N-*de-Me:* **N-*Demethylrugulovasine B***. *RUG 13B*. *Antibiotic RUG 13B*
[177019-41-9]
[177185-32-9]
$C_{15}H_{14}N_2O_2$ 254.288
Prod. by *Saccharothrix* sp. Rug-13. Substance P antagonist. Analgesic. Powder (as hydrochloride). Sol. MeOH; poorly sol. $CHCl_3$. λ_{max} 220 (ϵ 39500); 284 (ϵ 6800); 293 (ϵ 6600) (MeOH) (hydrochloride). λ_{max} 220 (ϵ 39500); 284 (ϵ 6800); 293 (ϵ 6600) (MeOH) (Berdy).

5-Epimer, 8-chloro: ***8-Chlororugulovasine B***. *Toxin A*
[59787-46-1]
$C_{16}H_{15}ClN_2O_2$ 302.759
Alkaloid from cultures of *Penicillium islandicum*. Noncryst.

Abe, M. *et al., Agric. Biol. Chem.*, 1969, **33**, 469 (*isol, uv, ir*)
Yamatodani, S. *et al., Agric. Biol. Chem.*, 1970, **34**, 485 (*uv, pmr, struct*)
Nagaoka, A. *et al., Arzneim.-Forsch.*, 1972, **22**, 137; 143 (*props*)
Cole, R.J. *et al., Can. J. Microbiol.*, 1976, **22**, 741 (*8-Chlororugulovasines*)
Cole, R.J. *et al., Tet. Lett.*, 1976, 3849 (*cryst struct*)
Ohmomo, S. *et al., Agric. Biol. Chem.*, 1977, **41**, 1707 (*biosynth*)
Dorner, J.W. *et al., Appl. Environ. Microbiol.*, 1980, **40**, 685 (*isol*)
Rebek, J. *et al., J.O.C.*, 1984, **49**, 3540 (*synth, conformn*)
Martin, S.F. *et al., J.A.C.S.*, 1993, **115**, 10450 (*synth*)
Japan. Pat., 1996, 96 81470; *CA*, **125**, 8685x (*N-demethylrugulovasines*)
Liras, S. *et al., J.A.C.S.*, 2001, **123**, 5918-5924 (*synth*)
Cole, R.J. *et al., Handbook of Toxic Fungal Metabolites*, Academic Press, 1981, 537

Rulodine R-158

$C_{17}H_{21}NO_4$ 303.357

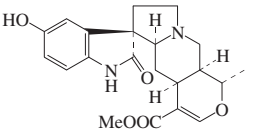
Amaryllidaceae alkaloid. Struct. unknown. Isol. from the bulbs of *Narcissus odorus* var. *rugulosus* (Amaryllidaceae). Cryst. (Me_2CO). Mp 193°. $[\alpha]_D^{25}$ -15 (c, 0.2 in $CHCl_3$).

Hydroiodide:
Cryst. (Me_2CO). Mp 135-136° dec.

Boit, H.-G. *et al., Naturwissenschaften*, 1961, **48**, 603 (*isol*)

Rumberine R-159

[73354-04-8]



Absolute Configuration

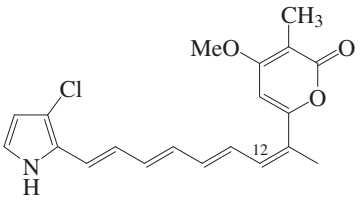
$C_{21}H_{24}N_2O_5$ 384.431
Alkaloid from the aerial parts of *Hamelia patens* (Rubiaceae). Cryst. (cyclohexane). Mp 188-189°. $[\alpha]_D^{20}$ -48. λ_{max} 227 (ϵ 12600); 255 (ϵ 18100); 312 (ϵ 2900) (EtOH).

Me ether: ***Palmirine***
[73367-02-9]
$C_{22}H_{26}N_2O_5$ 398.458
Alkaloid from the aerial parts of *Hamelia patens* (Rubiaceae). Cryst. (MeOH aq.). Mp 101-102°. $[\alpha]_D^{20}$ -56.5. λ_{max} 255 (ϵ 24900); 312 (ϵ 2990) (EtOH).

Borges, J. *et al., Tet. Lett.*, 1979, **20**, 3197-3200 (*Rumberine, Palmirine, uv, ir, pmr, ms, struct*)

Rumbrin R-160

N 13. *Antibiotic N 13*
[150206-14-7]



$C_{20}H_{20}ClNO_3$ 357.836
Related to Auxarconjugatin A, A-1559. Isol. from the fungi *Auxarthron umbrinum* and *Gymnoascus reessii*. Cytoprotective agent. Calcium accumulation inhibitor and active oxygen remover. Lipid peroxidation inhibitor. Red needles (MeOH). Sol. MeOH, EtOAc, $CHCl_3$, DMSO; poorly sol. H_2O, hexane. Mp 170-171° dec. λ_{max} 269 (ϵ 12800); 341 (ϵ 17400); 442 (ϵ 33800) (MeOH).

*12*E-*Isomer:* ***12*E-*Rumbrin***. *12*E-*Isorumbrin*
$C_{20}H_{20}ClNO_3$ 357.836

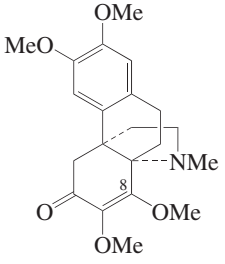
Isol. from *Gymnoascus reessii* strain MST-F9977. Cytotoxic. Red solid. λ_{max} 225 (ϵ 7700); 269 (ϵ 9900); 330 (ϵ 10600); 340 (ϵ 12000); 439 (ϵ 35000) (MeOH).

[148528-19-2]

Matsuoka, M. *et al., J. Antibiot.*, 1993, **46**, 884-887; 888-891 (*isol, pmr, cmr, struct, props*)
Clark, B.R. *et al., Org. Lett.*, 2006, **8**, 701-704 (*12E-Rumbrin*)

Runanine R-161

[100485-12-9]



$C_{21}H_{27}NO_5$ 373.448
Alkaloid from the roots of *Stephania sinica*. Mp 100-102°. $[\alpha]_D^{18}$ -400 (c, 0.8 in $CHCl_3$).

N-*De-Me: 7,8-Didehydro-2,3,7,8-tetramethoxyhasubanan-6-one.* ***Stephanubine***
[111509-16-1]
$C_{20}H_{25}NO_5$ 359.421
Alkaloid from the tuberous roots of *Stephania suberosa*. Amorph. $[\alpha]_D^{25}$ -170 (c, 0.22 in $CHCl_3$).

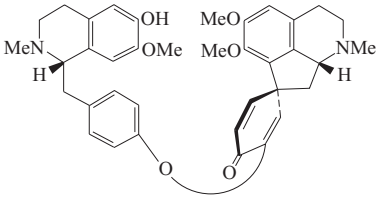
O^2-*De-Me:* ***Cephatonine***
[175862-78-9]
$C_{20}H_{25}NO_5$ 359.421
Alkaloid from tubers of *Stephania cepharantha*. Amorph. powder. $[\alpha]_D^{28}$ -264 (c, 0.13 in $CHCl_3$).

8-Demethoxy: ***8-Demethoxyrunanine***
[1017277-31-4]
$C_{20}H_{25}NO_4$ 343.422
Alkaloid from the rhizomes of *Sinomenium acutum*. Mp 169.5-170.5°. $[\alpha]_D^{20}$ -244.1 (c, 0.48 in $CHCl_3$).

Zhi-Da, M. *et al., Phytochemistry*, 1985, **24**, 3084-3085 (*Runanine*)
Patra, A. *et al., Phytochemistry*, 1987, **26**, 2391-2395 (*Stephanubine*)
Kashiwaba, N. *et al., J. Nat. Prod.*, 1996, **59**, 476-480 (*Cephatonine*)
Wang, X. *et al., Fitoterapia*, 2007, **78**, 593-595 (*8-Demethoxyrunanine*)

Rupancamine R-162

[96203-73-5]

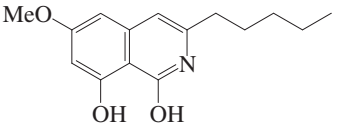


$C_{37}H_{40}N_2O_6$ 608.733
Alkaloid from *Berberis actinacantha* (Berberidaceae). Amorph. $[\alpha]_D^{25}$ +116.9 (c, 0.12 in $CHCl_3$).

Weiss, I. *et al., Heterocycles*, 1984, **22**, 2231 (*uv, ir, pmr, ms, struct*)

Ruprechstyril R-163

*6-Methoxy-3-pentyl-1,8-isoquinolinediol. 2,8-Dihydroxy-6-methoxy-2-pentylisoquinoline. 8-Hydroxy-6-methoxy-3-pentyl-1(2*H*)-isoquinolinone. 8-Hydroxy-6-methoxy-3-pentylisocarbostyril*

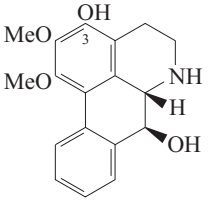


$C_{15}H_{19}NO_3$ 261.32
Tautomeric with pyridone form. Alkaloid from the stem bark and twigs of *Ruprechtia tangarana*. Needles (Me_2CO). Mp 139-141°. λ_{max} 244 (log ϵ 4.7) (MeOH).

Pettit, G.R. *et al., J. Nat. Prod.*, 2003, **66**, 1065-1069 (*isol, pmr, cmr, cryst struct*)

Rurrebanidine R-164

[112494-67-4]



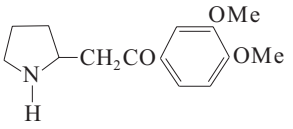
$C_{18}H_{19}NO_4$ 313.352
Alkaloid from the bark of Bolivian *Duguetia spixiana* (Annonaceae). Negative opt. rotn. in EtOH.

3-Me ether: ***Rurrebanine***
[112494-68-5]
$C_{19}H_{21}NO_4$ 327.379
Alkaloid from *Duguetia spixiana* (Annonaceae). $[\alpha]_D$ -43 (c, 0.72 in EtOH).

Rasamizafy, S. *et al., J. Nat. Prod.*, 1987, **50**, 674 (*isol, uv, pmr, ms, cd, struct*)

Ruspolinone R-165

1-(3,4-Dimethoxyphenyl)-2-(2-pyrrolidinyl)ethanone, 9CI. 2-(3,4-Dimethoxyphenacyl)pyrrolidine. 2-(2-Pyrrolidinyl)-3′,4′-dimethoxyacetophenone. 3′,4′-Dimethoxy-2-pyrrolidin-2-yl-acetophenone



$C_{14}H_{19}NO_3$ 249.309

(±)-*form* [60890-27-9]
Alkaloid from seeds of *Ruspolia hypercrateriformis* (Acanthaceae). Intermed. in Tylophorinine biosynth. in *Tylophora asthmatica* (Asclepiadaceae). Oil. Unstable, intractable.

$O^{4'}$-*De-Me:* ***Norruspolinone****. 1-(4-Hydroxy-3-methoxyphenyl)-2-(2-pyrrolidinyl)ethanone, 9CI. 2-(2-Pyrrolidinyl)-4′-hydroxy-3′-methoxyacetophenone*
[67257-66-3]
$C_{13}H_{17}NO_3$ 235.282
Alkaloid from seeds of *Ruspolia hypercrateriformis* (Acanthaceae). Mp 175° dec.

$O^{4'}$-*De-Me,* N-*Me:* ***Phyllosterone***
[126262-24-6]
$C_{14}H_{19}NO_3$ 249.309
Alkaloid from *Cryptocarya phyllostemon* (Lauraceae). Gum. $[\alpha]_D$ -5 (c, 0.69 in EtOH). Apparently not completely racemic. No information on opt. purity or abs. config.

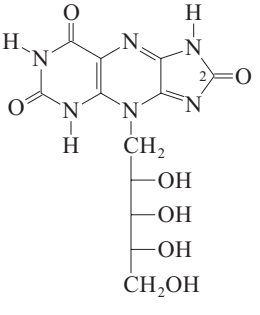
(S)-form
Synthetic. Pale yellow powder (CH_2Cl_2/petrol). Mp 114-115°. $[\alpha]_D$ -29.73 (c, 0.74 in CH_2Cl_2).

[62024-33-3]

Roessler, F. *et al., Helv. Chim. Acta*, 1978, **61**, 1200 (*isol, uv, ir, pmr, ms, struct, deriv*)
Mangla, V.K. *et al., Indian J. Chem., Sect. B*, 1980, **19**, 748 (*synth*)
Cragg, J.E. *et al., J.C.S. Perkin 1*, 1982, 2477 (*synth*)
Herbert, R.B. *et al., J.C.S. Perkin 1*, 1984, 825
Cavé, A. *et al., Aust. J. Chem.*, 1989, **42**, 2243 (*Phyllosterone*)
Brown, D.S. *et al., Tetrahedron*, 1991, **47**, 1311 (*synth*)
Jones, K. *et al., Tetrahedron*, 1991, **47**, 7179 (*synth*)
Courture, A. *et al., Tet. Lett.*, 1996, **37**, 7749 (*synth*)

Russupteridine yellow IV R-166

*1-Deoxy-1-(1,2,3,6,7,8-hexahydro-2,6,8-trioxo-4*H*-imidazo[4,5-*g*]pteridin-4-yl)-*D*-ribitol, 9CI*
[70858-25-2]



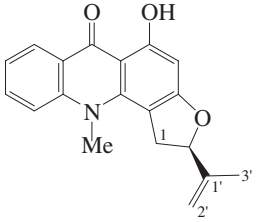
$C_{12}H_{14}N_6O_7$ 354.279
Isol. from *Russula sardonia* (Basidiomycetes). Pale yellow powder. Mp 300° dec. pK_a 2.97.

2-Alcohol: ***Russupteridine yellow I***
[70858-26-3]
$C_{12}H_{16}N_6O_7$ 356.294
Isol. from *Russula* spp. Yellowish-brown needles (AcOH aq.). Mp 300°. pK_{a1} 0.25; pK_{a2} 4.8; pK_{a3} 12.1. pH>5 is in equilibrium with an open formylimino form.

Iten, P.X. *et al., Helv. Chim. Acta*, 1984, **67**, 550 (*isol, pmr, cmr, uv, ir, ms*)

Rutacridone R-167

1,11-Dihydro-5-hydroxy-11-methyl-2-(1-methylethenyl)furo[2,3-c]acridin-6(2H)-one
[17948-33-3]



(*R*)-*form*

$C_{19}H_{17}NO_3$ 307.348

Natural Rutacridone has recently (2005) been shown to have the *R*-config. illus. Related alkaloids included in this entry may not necessarily be configurationally related. Alkaloid from *Ruta graveolens* (rue) and *Ruta chalepensis* (Rutaceae). Mp 161-162°. $[\alpha]_D$ -44.9 (c, 0.1 in MeOH). λ_{max} 212 (log ϵ 4.35); 227 (log ϵ 4.3); 249 (log ϵ 4.56); 273 (log ϵ 4.72); 300 (log ϵ 4.35); 332 (log ϵ 4); 398 (log ϵ 3.83) (MeOH).

▶ VM2050000

1′R,2′-Epoxide: ***Rutacridone epoxide***
[77996-03-3]
$C_{19}H_{17}NO_4$ 323.348
Alkaloid from roots and callus tissue cultures of *Ruta graveolens* (rue). Shows antimicrobial activity. Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. Abs. config. determined in 2005. λ_{max} 226 (ϵ 3710); 263 (ϵ 6760); 300 (ϵ 3710); 390 (ϵ 1200) (MeOH) (Berdy).

▶ LV0850000

3′-Chloro: ***Alkaloid A6***
[142741-38-6]
$C_{19}H_{16}ClNO_3$ 341.793
Alkaloid from callus cultures of several *Ruta* spp.

1ξ-Hydroxy, 1′ξ,2′-epoxide: ***1-Hydroxyrutacridone epoxide***
[101330-59-0]
$C_{19}H_{17}NO_5$ 339.347
Alkaloid from the callus tissue of *Ruta graveolens* (rue). Shows antimicrobial activity.

3′-Hydroxy: ***Gravacridonol***
[81545-69-9]
$C_{19}H_{17}NO_4$ 323.348
Alkaloid from *Ruta graveolens* (rue). Mp 155-156° (153°). λ_{max} 230 (log ϵ 4.28); 248 (log ϵ 4.33); 280 (log ϵ 4.37); 338 (log ϵ 3.9); 424 (log ϵ 3.67) (MeOH).

3′-Hydroxy, O-*β*-D-*glucopyranoside:* ***Gravacridonol monoglucoside***
[155861-84-0]
$C_{25}H_{27}NO_9$ 485.49
Alkaloid from cell suspension cultures of *Thamnosma montana*.

3′-Hydroxy, 1′,2′-epoxide: ***20-Hydroxyrutacridone epoxide***
[80565-10-2]
$C_{19}H_{17}NO_5$ 339.347
Alkaloid from the roots and callus tissue cultures of *Ruta graveolens* (rue). Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. 20-Posn. in the authors' numbering scheme called here 3′. λ_{max} 227 (ϵ 8910); 250 (ϵ 9770); 264 (ϵ 10470); 274 (ϵ 13800); 301 (ϵ 5370); 330 (ϵ 2450); 392 (ϵ 1740) (MeOH) (Berdy).

1′,2′-Dihydro, 1′-chloro, 2′-hydroxy: ***Gravacridonechlorine***
[38494-84-7]
$C_{19}H_{18}ClNO_4$ 359.808
Alkaloid from *Ruta graveolens* (rue). Mp 254-257°.

1′,2′-Dihydro, 2′-chloro, 1′-hydroxy: ***Isogravacridonechlorine***
[62512-94-1]
$C_{19}H_{18}ClNO_4$ 359.808
Alkaloid from *Ruta graveolens* (rue). Shows weak antibacterial activity. Yellow powder (Me_2CO). Mp 224-226° dec Mp 247-250°. $[\alpha]_D^{21}$ -9.2 (c, 0.08 in $CHCl_3$).

▶ Mutagen.

1′,2′-Dihydro, 1′,2′-dihydroxy: ***Gravacridonediol***
[37551-75-0]
$C_{19}H_{19}NO_5$ 341.363
Alkaloid from the root tissue cultures of *Ruta graveolens* (rue). Cryst. (Me_2CO or Me_2CO/C_6H_6). Mp 224-227° dec Mp 227-233° Mp 246-250°. $[\alpha]_D$ -111 (c, 0.1 in MeOH). λ_{max} 214 (ϵ 14517); 227 (ϵ 14517); 249 (ϵ 26127); 273 (ϵ 3731); 300 (ϵ 15690); 331 (ϵ 7310); 400 (ϵ 4845) (MeOH).

*1′,2′-Dihydro, 1′,2′-dihydroxy, 2′-*O-*β*-D-*glucopyranoside:* ***Gravacridonediol glucoside***
[59086-97-4]
$C_{25}H_{29}NO_{10}$ 503.505
Alkaloid from *Ruta graveolens* (rue). Isol. as a mixt. with Gravacridonetriol glucoside.

1′,2′-Dihydro, 1′,2′-dihydroxy, 2′-Ac: ***Gravacridonediol acetate***
[136591-55-4]
$C_{21}H_{21}NO_6$ 383.4
Alkaloid from *Ruta graveolens* (rue). Yellow needles ($CHCl_3$). Mp 221-223°. $[\alpha]_D^{21}$ +59.8 (c, 0.4 in $CHCl_3$).

1′,2′-Dihydro, 1′-hydroxy, 2′-methoxy: ***Gravacridonediol methyl ether***
[37551-76-1]
$C_{20}H_{21}NO_5$ 355.39
Alkaloid from the root of *Ruta graveolens* (rue). Cryst. (EtOAc). Mp 219-221°.

1′,2′-Dihydro, 1′,3′-dihydroxy, 2′-chloro: 2-[1-Chloro-2-hydroxy-1-(hydroxymethyl)ethyl]-1,11-dihydro-5-hydroxy-11-methylfuro[2,3-c]acridin-6(2H)-one. ***Gravacridonolchlorine***
[38494-85-8]
$C_{19}H_{18}ClNO_5$ 375.808
Alkaloid from *Ruta graveolens* (rue). Mp 223-227°.

1′,2′-Dihydro, 1′,2′,3′-trihydroxy: ***Gravacridonetriol***
[59086-94-1]
$C_{19}H_{19}NO_6$ 357.362
Alkaloid from *Ruta graveolens* (rue). Cryst. (MeOH). Mp 230-232°.

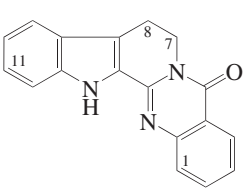
*1′,2′-Dihydro, 1′,2′,3′-trihydroxy, 2′-*O-*β*-D-*glucopyranoside:* ***Gravacridonetriol glucoside***
[59086-96-3]
$C_{25}H_{29}NO_{11}$ 519.504
Alkaloid from *Ruta graveolens* (rue). Isol. as a mixt. with Gravacridonediol glucoside.

10-Hydroxy, N-*de-Me:* ***Oriciacridone C***
$C_{18}H_{15}NO_4$ 309.321
Alkaloid from the stem bark of *Oriciopsis glaberrima*. α-Glucosidase inhibitor. Yellow needles (MeOH). Mp 253-254°. $[\alpha]_D^{25}$ +21.8 (c, 0.39 in MeOH). Possesses *R*-config. λ_{max} 253 (log ϵ 6.09); 277 (log ϵ 5.76); 279 (log ϵ 5.77); 303 (log ϵ 5.66); 346 (log ϵ 4.76) (MeOH).

Reisch, J. *et al., Phytochemistry*, 1972, **11**, 2121-2122; 2359; 1976, **15**, 240-241; 1977, **16**, 151 (*Gravacridonediol derivs, Gravacridonechlorine, Gravcridonolchlorine, Gravacridonetriol, Isogravacridonechlorine*)
Rózsa, Zs. *et al., Fitoterapia*, 1976, **47**, 147-149 (*Gravacridonol, isol*)
Reisch, J. *et al., Z. Naturforsch., B*, 1978, **33**, 957 (*rev, pmr, struct*)
Bergenthal, D. *et al., Phytochemistry*, 1979, **18**, 161-163 (*Gravacridonediol, cmr*)
Wolters, B. *et al., Planta Med.*, 1981, **43**, 166-174 (*epoxides, isol, activity*)
Nahrstedt, A. *et al., Z. Naturforsch., C*, 1981, **36**, 200-203 (*Rutacridone epoxide*)
Zschunke, A. *et al., Chem. Comm.*, 1982, 1263-1265 (*biosynth*)
Eilert, U. *et al., Z. Naturforsch., C*, 1982, **37**, 132-133 (*20-Hydroxyrutacridone epoxide*)
Nahrstedt, A. *et al., Planta Med.*, 1985, 517-518 (*1-Hydroxyrutacridone epoxide*)
Reisch, J. *et al., Monatsh. Chem.*, 1990, **121**, 829-835 (*synth*)
Reisch, J. *et al., Annalen*, 1991, 299 (*Gravacridonol, synth, ir, uv, pmr, cmr*)
Paulini, H. *et al., Planta Med.*, 1991, **57**, 59; 82-83 (*Isogravacridonechlorine, Gravacridonediolacetate*)
Baumert, A. *et al., Plant Cell, Tissue Organ Cult.*, 1992, **28**, 159-162; *CA*, **117**, 66678t (*Alkaloid A6*)
Reisch, J. *et al., J. Chem. Res., Synop.*, 1994, 157; *J. Chem. Res., Miniprint*, 1994, 911-927 (*Gravacridonediol, synth, ir, pmr, cmr*)
Baumert, A. *et al., Planta Med.*, 1994, **60**, 143-145 (*Gravacridonol monoglucoside*)
El Sayed, K. *et al., J. Nat. Prod.*, 2000, **63**, 995-997 (*Isogravacridonechlorine, activity*)
Meepagala, K.M. *et al., Phytochemistry*, 2005, **66**, 2689-2695 (*cd, abs config*)
Wansi, J.D. *et al., Chem. Pharm. Bull.*, 2006, **54**, 292-296 (*Oriciacridone C*)

Rutaecarpine R-168

8,13-Dihydroindolo[2′,3′:3,4]pyrido[2,1-b]quinazolin-5(7H)-one, 9CI. Rhetine. Rutecarpine
[84-26-4]



$C_{18}H_{13}N_3O$ 287.32
A major component of the Chinese drug Wou-chou-yu (the dried fruit of *Evodia rutaecarpa*). Also isol. from *Hortia arborea*, *Hortia badinii*, *Zanthoxylum rhetsa*, *Zanthoxylum ovalifolium* and *Zanthoxylum integrifoliolum*. Antihypertensive agent., vasodilator. *Evodia rutaecarpa* is used in Chinese medicine against headache, abdominal pain, dysentery and cholera. Vasodilator. Cryst. (EtOAc, C_6H_6, EtOH or AcOH). Mp 259.5-260°. Log P 2.57 (calc). λ_{max} 278 ; 290 ; 332 ; 345 ; 364 (MeOH) (Berdy).

7,8-Didehydro: ***7,8-Dehydrorutaecarpine***
[55786-24-8]
$C_{18}H_{11}N_3O$ 285.304
Alkaloid from *Phellodendron amurense*. Pale yellow powder. λ_{max} 217 (log ϵ 4.52); 250 (log ϵ 4.49); 281 (log ϵ 4.31); 330 (log ϵ 4.42); 348 (log ϵ 4.38); 368 (log ϵ 4.43); 390 (log ϵ 4.42) (MeOH).

1-Hydroxy: ***1-Hydroxyrutaecarpine***
[53600-24-1]
$C_{18}H_{13}N_3O_2$ 303.32
Minor alkaloid from the bark of *Euxylophora paraënsis* and the stem bark of *Vepris louisii* (Rutaceae). Pale yellow needles ($CHCl_3$/MeOH). Mp 318-320°.

1-Hydroxy, hydrochloride:
Yellow needles (MeOH/$CHCl_3$). Mp 326-328°.

1-Hydroxy, 7,8-didehydro: ***7,8-Dehydro-1-hydroxyrutaecarpine***
[85769-53-5]
$C_{18}H_{11}N_3O_2$ 301.304
Minor alkaloid from the stem bark of *Vepris louisii* (Rutaceae). Yellow powder. Mp 340°.

3-Hydroxy: ***3-Hydroxyrutaecarpine***
[381723-48-4]
$C_{18}H_{13}N_3O_2$ 303.32
Alkaloid from *Leptothrysa sprucei*. Needles (MeOH). Mp 280-282°. λ_{max} 220 (log ϵ 4.62); 230 (log ϵ 4.61); 340 (log ϵ 4.66) (MeOH).

7β-Hydroxy: ***7-Hydroxyrutaecarpine***
[163815-35-8]
$C_{18}H_{13}N_3O_2$ 303.32
Alkaloid from heartwood of *Tetradium glabrifolium* (*Evodia meliaefolia*) and fruit of *Tetradium ruticarpum* (Rutaceae). Needles. Mp 228-230°. $[\alpha]_D$ +187.8 (c, 0.0017 in MeOH).

11-Hydroxy: ***11-Hydroxyrutaecarpine***

11-Hydroxy, O-*β-D-glucopyranoside:* ***Ternatoside C***
$C_{24}H_{23}N_3O_7$ 465.462
Alkaloid from the roots of *Ranunculus ternatus*. Brown powder (MeOH). Mp 185-187°. λ_{max} 222 (log ϵ 4.61); 353 (log ϵ 4.86) (MeOH).

11-Hydroxy, O-*[α-L-rhamnopyranosyl-(1→6)-β-D-glucopyranoside]:* ***Ternatoside D***
$C_{30}H_{33}N_3O_{11}$ 611.604
Alkaloid from the roots of *Ranunculus ternatus*. Brown powder (MeOH). Mp 172-175°. λ_{max} 220 (log ϵ 4.51); 351 (log ϵ 4.88) (MeOH).

7β,8α-Dihydroxy: ***7,8-Dihydroxyrutaecarpine***
[212138-47-1]
$C_{18}H_{13}N_3O_3$ 319.319
Alkaloid from *Phellodendron amurense*. Needles (EtOAc/EtOH). Mp 247-250°. $[\alpha]_D^{25}$ -38 (c, 0.0016 in MeOH). Incorrect name assigned in CA. λ_{max} 215 (log ϵ 4.77); 240 (sh) (log ϵ 4.63); 275 (log ϵ 4.19); 288 (log ϵ 4.16); 332 (log ϵ 4.64); 345 (log ϵ 4.7); 362 (log ϵ 4.6) (EtOH).

1,2-Dihydroxy: ***1,2-Dihydroxyrutaecarpine***
[622842-36-8]
$C_{18}H_{13}N_3O_3$ 319.319
Alkaloid from the aerial parts of *Bouchardatia neurococca*. Amorph. yellow solid. λ_{max} 256 (log ϵ 3.6); 343 (log ϵ 3.5); 360 (log ϵ 3.5); 377 (sh) (no solvent reported).

1-Methoxy: ***1-Methoxyrutaecarpine***
[53600-26-3]
$C_{19}H_{15}N_3O_2$ 317.346
Alkaloid from fruits of *Zanthoxylum integrifoliolum*. Shows antiplatelet aggregation activity. Yellowish prisms (MeOH). Mp 253-255°.

1-Methoxy, 7,8-didehydro: ***7,8-Dehydro-1-methoxyrutaecarpine***
[864179-28-2]
$C_{19}H_{13}N_3O_2$ 315.331
Alkaloid from the root bark of *Zanthoxylum integrifoliolum*. Yellowish needles ($CHCl_3$/MeOH). Mp 287-289°. λ_{max} 210 (log ϵ 4.64); 248 (sh) (log ϵ 4.48); 285 (log ϵ 4.27); 326 (log ϵ 4.42); 345 (log ϵ 4.39); 364 (log ϵ 4.46); 385 (log ϵ 4.42) (EtOH).

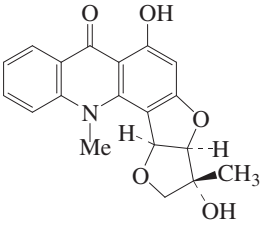
2-Methoxy: ***2-Methoxyrutaecarpine***
[53600-27-4]
$C_{19}H_{15}N_3O_2$ 317.346
Alkaloid from the stem bark of *Araliopsis tabouensis*. Amorph. yellow powder. λ_{max} 214 (log ϵ 1.95); 242 (log ϵ 1.11); 324 (log ϵ 0.7) (MeOH).

2-Methoxy, N^{13}*-Me:* ***2-Methoxy-*** $\mathbf{N^{13}}$***-methylrutaecarpine***
[53600-30-9]
$C_{20}H_{17}N_3O_2$ 331.373
Alkaloid from the stem bark of *Araliopsis tabouensis*. Amorph. yellow powder (EtOAc). Mp 164° (synthetic). λ_{max} 212 (log ϵ 1.8); 326 (log ϵ 0.9); 372 (log ϵ 1.52) (MeOH).

Asahina, Y. *et al., J.C.S.*, 1927, 1708-1710 (*synth*)
Pachter, I.J. *et al., J.A.C.S.*, 1960, **82**, 5187-5193 (*isol*)
Yamazaki, M. *et al., Tet. Lett.*, 1966, **7**, 3221-3224; 1967, **8**, 3317-3320 (*biosynth*)
Danieli, B. *et al., Phytochemistry*, 1974, **13**, 1603-1606 (*isol, uv, ir, pmr, ms, struct, synth, 1-Hydroxyrutaecarpine*)
Danieli, B. *et al., Gazz. Chim. Ital.*, 1975, **105**, 45-49 (*2-Methoxy-N13-methylrutaecarpine, synth*)
De Barros Corrêa, D. *et al., Phytochemistry*, 1975, **14**, 2059-2060 (*isol*)
Tamás, J. *et al., Acta Chim. Acad. Sci. Hung.*, 1976, **89**, 85-89 (*ms*)
Kametani, T. *et al., J.A.C.S.*, 1976, **98**, 6186-6188; 1977, **99**, 2306-2309 (*synth, uv, ir, pmr, ms*)
Toth, G. *et al., Annalen*, 1977, 529-536 (*cmr*)
Kametani, T. *et al., Chem. Pharm. Bull.*, 1978, **26**, 1922-1926 (*synth*)
Danieli, B. *et al., Heterocycles*, 1978, **9**, 803-806 (*synth*)
Kökösi, J. *et al., Tet. Lett.*, 1981, **22**, 4861-4862; 1992, **33**, 2995-2998 (*synth*)
Ayafor, J.F. *et al., Phytochemistry*, 1982, **21**, 2733-2736 (*7,8-Dehydro-1-hydroxyrutaecarpine*)
Kaneko, C. *et al., Heterocycles*, 1985, **23**, 1385-1390 (*synth*)
Bergman, J. *et al., J.O.C.*, 1985, **50**, 1246-1255 (*synth*)
Eguchi, S. *et al., Heterocycles*, 1992, **33**, 153-156 (*synth*)
Chiou, W.-F. *et al., Eur. J. Pharmacol.*, 1994, **257**, 59-66 (*pharmacol*)
Ko, H.-C. *et al., J. Chromatogr., B*, 1994, **655**, 27-31 (*hplc*)
Wu, T.-S. *et al., Heterocycles*, 1995, **41**, 1071-1076 (*7-Hydroxyrutaecarpine*)
Sheen, W.-S. *et al., Planta Med.*, 1996, **62**, 175-176 (*1-Methoxyrutaecarpine*)
Ikuta, A. *et al., J. Nat. Prod.*, 1998, **61**, 1012-1014 (*7,8-Dihydroxyrutaecarpine, 7-Hydroxyrutaecarpine*)
Ikuta, A. *et al., Phytochemistry*, 1998, **48**, 285-291 (*pmr, cmr, 7,8-Dehydrorutaecarpine*)
Sheu, J.-R. *et al., Cardiovasc. Drug Rev.*, 1999, **17**, 237-245 (*rev*)
Lee, S.L. *et al., Heterocycles*, 2001, **55**, 1555-1559 (*synth*)
Li, X.-C. *et al., Phytochemistry*, 2001, **58**, 627-629 (*3-Hydroxyrutaecarpine*)
Christopher, E. *et al., Helv. Chim. Acta*, 2003, **86**, 2914-2918 (*2-Methoxyrutaecarpines*)
Wattanapiromsakul, C. *et al., Phytochemistry*, 2003, **64**, 609-615 (*1,2-Dihydroxyrutaecarpine*)
Chavan, S.P. *et al., Tet. Lett.*, 2004, **45**, 997-999 (*synth*)
Harayama, T. *et al., Tetrahedron*, 2004, **60**, 10645-10649 (*synth*)
Chen, J.-J. *et al., Planta Med.*, 2005, **71**, 470-475 (*7,8-Dehydro-1-methoxyrutaecarpine*)
Hamid, A. *et al., Tet. Lett.*, 2006, **47**, 1777-1781 (*synth*)
Mhaske, S.B. *et al., Tetrahedron*, 2006, **62**, 9787-9826 (*rev, synth*)
Zhang, L. *et al., Chem. Pharm. Bull.*, 2007, **55**, 1267-1269 (*11-Hydroxyrutaecarpine derivs*)
Bowman, W.R. *et al., Org. Biomol. Chem.*, 2007, **5**, 103-113 (*synth*)
Lee, S.H. *et al., Molecules*, 2008, **13**, 272-300 (***rev***)

Rutagravine R-169

[101330-60-3]



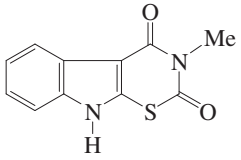
$C_{19}H_{17}NO_5$ 339.347
Alkaloid from the callus tissue of *Ruta graveolens* (rue) (Rutaceae). Cryst. (MeOH). Mp 209-212°. $[\alpha]_D^{25}$ -152 ($CHCl_3$). λ_{max} 212 (ϵ 14414); 226 (ϵ 17057); 251 (ϵ 28602); 272 (ϵ 48289); 325 (ϵ 7207); 393 (ϵ 5700) (MeOH).

Nahrstedt, A. *et al., Planta Med.*, 1985, 517-519 (*isol, pmr, cmr, struct*)

Reisch, J. *et al., J. Chem. Res., Synop.*, 1994, 157; *J. Chem. Res., Miniprint*, 1994, 911-927 (*synth, ir, pmr, cmr, struct, abs config*)

Rutalexin **R-170**

3-Methyl-1,3-thiazino[6,5-b]indole-2,4(3H,9H)-dione



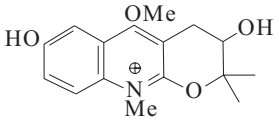
$C_{11}H_8N_2O_2S$ 232.262

Alkaloid from the tubers of *Brassica napus* ssp. *rapifera* (swede, rutabaga). Phytoalexin. Solid. Mp 313-315°. λ_{max} 213 (log ϵ 4); 242 (log ϵ 3.7); 275 (log ϵ 3.6) (no solvent reported).

Pedras, M.S.C. *et al., J.O.C.*, 2004, **69**, 4471-4476 (*isol, synth, pmr, cmr, ms*)

Rutalinium **R-171**

[27539-40-8]



$C_{16}H_{20}NO_4^{\oplus}$ 290.338

Alkaloid from *Ruta graveolens* (rue), *Ruta graveolens* ssp. *hortensis* and *Balfourodendron riedelianum* (Rutaceae).

Szendrei, K. *et al., Herba Hung.*, 1971, **10**, 131; *CA*, **79**, 15853k (*isol, pmr, struct*)

Varga, E. *et al., Acta Pharm. Hung.*, 1978, **48**, 193; *CA*, **89**, 176400g (*isol*)

Ruticin **R-172**

[1393-17-5]

Phenazine antibiotic. Struct. unknown. Prod. by *Streptomyces rutgersensis.* Antibacterial agent. Orange cryst. Sol. MeOH, EtOAc; fairly sol. H_2O. λ_{max} 262 ; 364 (MeOH).

▶ LD_{50} (mus, ivn) 20 mg/kg.

Fisher, W.P. *et al., Antibiot. Annu.*, 1953, 174-176

Ruzorine **R-173**

$C_{18}H_{27}NO_8$ 385.413

Pyrrolizidine alkaloid. Struct. unknown. Possibly identical with Bisline, B-194. Alkaloid from *Senecio ruwenzoriensis* (= *Senecio othonniformis*) (Asteraceae). Prisms or needles. V. sol. H_2O. Mp 161-163° (dec. from 134°).

Hydrochloride:
V. unstable cryst. Mp 148° dec. approx.

Picrate: Mp 133-137° (dec. from 125°).

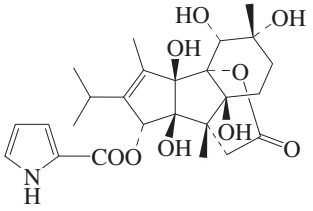
Sapiro, M.L. *et al., J.C.S.*, 1953, 1942-1943 (*isol*)

Benn, M. *et al., Phytochemistry*, 1992, **31**, 3295-3296

Susag, L. *et al., Phytochemistry*, 2000, **54**, 933-935

Ryania diterpene ester C_2 **R-174**

[99964-43-9]



$C_{25}H_{33}NO_9$ 491.537

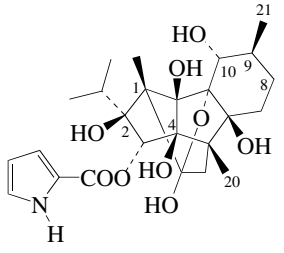
Alkaloid from *Ryania speciosa* (Flacourtiaceae). Cryst. ($CHCl_3$). Mp 274-275°.

Ruest, L. *et al., Can. J. Chem.*, 1985, **63**, 2840-2843 (*isol, ir, pmr, struct*)

Ryanodine **R-175**

Ryanex. Ryanicide. Ryno-tox

[15662-33-6]



$C_{25}H_{35}NO_9$ 493.553

Alkaloid from *Ryania speciosa* (Flacourtiaceae). Calcium transport blocker. Insecticide, now superseded. Tan solid. Mp 219-220°. $[\alpha]_D^{25}$ +26 (c, 1.02 in MeOH). Log P -1.22 (uncertain value) (calc). Hydrol. yields 2-Pyrrolecarboxylic acid and Ryanodol. For diterpene ester C_2 see Ryania diterpene ester C_2, R-174.

▶ Human systemic effects by ingestion (gastrointestinal and CNS). Harmful in contact with skin. LD_{50} (rat, orl) 750 mg/kg. LD_{50} (rat, skn) 750 mg/kg.
VM4025000

3-O-(3-Pyridinecarbonyl) analogue: ***Ryanodyl 3-nicotinate***
[137441-82-8]
$C_{26}H_{35}NO_9$ 505.564
Alkaloid from *Ryania speciosa* (Flacourtiaceae). Prisms (Me_2CO/hexane). Mp 200-205°.

8,9-Didehydro: ***8,9-Didehydoryanodine***
[99964-45-1]
$C_{25}H_{33}NO_9$ 491.537
Constit. of *Ryania speciosa*.

9,21-Didehydro: ***Dehydroryanodine****. 9,21-Didehydroryanodine*
[94513-55-0]
$C_{25}H_{33}NO_9$ 491.537
Second most abundant ryanodine-type alkaloid from *Ryania speciosa* (Flacourtiaceae). Mp 175-179°.

▶ VM4155000

4-Deoxy, 20-hydroxy: ***Spiganthine****. 4-Deoxy-20-hydroxyryanodine*
[168034-68-2]
$C_{25}H_{35}NO_9$ 493.553
Alkaloid from *Spigelia anthelmia.* Cardiotonic agent. Cryst. ($CHCl_3$/Me_2CO). Mp 158°. $[\alpha]_D^{23}$ +30 (c, 0.1 in MeOH). λ_{max} 227 (log ϵ 3.86); 267 (log ϵ 4.1) (MeOH).

8-Oxo, 10-deoxy, 9,10-didehydro: ***Ryania diterpene ester B***
[99964-44-0]
$C_{25}H_{31}NO_9$ 489.521
Alkaloid from *Ryania speciosa* (Flacourtiaceae).

3-Epimer: 3-Epiryanodine
[150736-85-9]
Cryst. (CH_2Cl_2/MeOH). Mp 228-230°.

10-Epimer, 8β-hydroxy, O^4-Me: ***Ryania diterpene ester A***
[100082-08-4]
$C_{26}H_{37}NO_{10}$ 523.579
Alkaloid from *Ryania speciosa* (Flacourtiaceae).

10-Epimer, 8β-hydroxy, 19,21-didehydro, O^4-Me: ***Ryania diterpene ester D***
[100082-09-5]
$C_{26}H_{35}NO_{10}$ 521.563
Alkaloid from *Ryania speciosa* (Flacourtiaceae).

10-Epimer, 8β-hydroxy, 4-deoxy, O^{10}-Me: ***4-Deoxyester A***
[226923-09-7]
$C_{26}H_{37}NO_9$ 507.58
Constit. of *Ryania speciosa*. Amorph. solid.

10-Epimer, 9α-hydroxy: ***Ryania diterpene ester C_1***
[137844-84-9]
$C_{25}H_{35}NO_{10}$ 509.552
Alkaloid from *Ryania speciosa* (Flacourtiaceae). Cryst. ($CHCl_3$). Mp 188-190°.

[100427-92-7]

Wiesner, K. *et al., Tet. Lett.*, 1967, 221-225 (*struct*)

Wiesner, K. *et al., Adv. Org. Chem.*, 1972, **8**, 295-316 (*pmr, rev, struct*)

Bélanger, A. *et al., Can. J. Chem.*, 1979, **57**, 3348-3354 (*synth*)

Jones, L.R. *et al., J. Biol. Chem.*, 1981, **256**, 11809-11818 (*pharmacol*)

Waterhouse, A.L. *et al., Chem. Comm.*, 1984, 1265-1268 (*Dehydroryanodine*)

Ruest, L. *et al., Can. J. Chem.*, 1985, **63**, 2840-2843 (*Ryania diterpene esters*)

Waterhouse, A.L. *et al., J.C.S. Perkin 2*, 1985, 1011-1016 (*cmr, pmr*)

Deslongchamps, P. *et al., Can. J. Chem.*, 1990, **68**, 115-126; 127-152; 153-185; 186-192 (*synth*)

Jefferies, P.R. *et al., J. Nat. Prod.*, 1991, **54**, 1147-1149 (*Ryanodyl 3-nicotinate*)

Pesticide Manual, 9th edn., 1991, No. 10620

Ruest, L. *et al., Can. J. Chem.*, 1993, **71**, 634-638 (*3-Epiryanodine*)

Achenbach, H. *et al., J. Nat. Prod.*, 1995, **58**, 1092-1096 (*Spiganthine*)

Ruest, L. *et al., Can. J. Chem.*, 1999, **77**, 12-15 (*8,9-Didehydroryanodine, 4-Deoxyester A*)

Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, RSZ000

Sabadillines S-1

Veragenine†

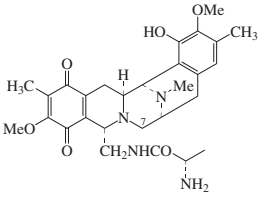
Alkaloids of unknown struct. Sabadillines I, II and III, which may not be pure, were separated. Isol. from *Schoenocaulon sabadilla* (Sabadilla). Amorph. solids. Elemental analyses were inconclusive.

Svoboda, G.R. *et al., J. Pharm. Sci.*, 1963, **52**, 772-776 (*isol, ir, uv*)

Safracin A S-2

Quinonamine B. Y 16601. Y 16482β. Antibiotic Y 16601. Antibiotic Y 16482β

[87578-98-1]



Absolute Configuration

$C_{28}H_{36}N_4O_6$ 524.616

Quinone antibiotic. CAS numbering shown. Isol. from *Pseudomonas fluorescens*. Active against gram-positive and -negative bacteria *in vitro*. Shows antitumour activity. Inhibits primary RNA synthesis. Pale yellow needles + $1H_2O$ (as dihydrochloride). Mp 300° dec. (dihydrochloride). $[\alpha]_D^{20}$ -144 (c, 0.5 in MeOH). λ_{max} 292 (MeOH/NaOH) (Derep). λ_{max} 271 (ϵ 8510) (MeOH) (Derep).

▶ TX1404580

7α-Hydroxy: ***Safracin B****. Quinonamine A. EM 5519. Y 16760. Y 16482α. Antibiotic EM 5519. Antibiotic Y 16760. Antibiotic Y 16482α*

[87578-99-2]

$C_{28}H_{36}N_4O_7$ 540.615

From *Pseudomonas fluorescens*. Active against gram-positive and -negative bacteria *in vitro*. Shows antitumour activity. Pale yellow needles + $1H_2O$ (as dihydrochloride). Mp 260° dec. (dihydrochloride). $[\alpha]_D^{20}$ -106 (c, 0.5 in MeOH). λ_{max} 292 (MeOH/NaOH) (Derep). λ_{max} 271 (ϵ 8510) (MeOH) (Derep).

▶ TX1404550

7-Cyano: Cyanoquinonamine

[96996-50-8]

$C_{29}H_{35}N_5O_6$ 549.625

Semisynthetic. Active against gram-positive bacteria and tumours.

[97059-07-9 , 82029-27-4 , 82029-28-5]

Pat. Coop. Treaty (WIPO), 1982, 00 146; *CA*, **97**, 4669 (*isol*)

Ikeda, Y. *et al., J. Antibiot.*, 1983, **36**, 1279; 1284; 1290 (*isol, uv, ir, pmr, cmr, ms*)

Meyers, E. *et al., J. Antibiot.*, 1983, **36**, 190

Cooper, R. *et al., J. Antibiot.*, 1985, **38**, 24 (*uv, ir, pmr, cmr, ms, struct*)

Saframycin A_{D-1} S-3

[107140-33-0]

As Saframycin A, S-4 with

R = –$COCOCH_2CH_3$, R′ = CN

$C_{30}H_{32}N_4O_8$ 576.605

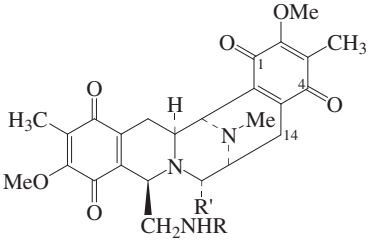
Prod. by *Streptomyces lavendulae* NRRL11002 by directed biosynth. Antitumour agent. Yellow powder. Sol. MeOH, EtOAc; poorly sol. H_2O. Mp 124-128°. λ_{max} 268 (ϵ 18600); 340 (sh) (MeOH) (Derep). λ_{max} 268 (ϵ 19950) (MeOH) (Berdy).

Yazawa, K. *et al., J. Antibiot.*, 1986, **39**, 1639-1650 (*isol, uv, ir, pmr, cmr, ms, struct*)

Kaneda, S. *et al., J. Antibiot.*, 1987, **40**, 1640-1642 (*activity*)

Saframycin A S-4

[66082-27-7]



R = -$CO^{25}COCH_3$, R' = CN

$C_{29}H_{30}N_4O_8$ 562.578

CAS numbering shown. Isol. from *Streptomyces lavendulae*. Shows antibiotic and antineoplastic props. Yellow powder. Sol. MeOH, $CHCl_3$; fairly sol. Et_2O; poorly sol. hexane, H_2O. Mp 122-126°. $[\alpha]_D^{20}$ +18.2 (c, 0.9 in MeOH). λ_{max} 268 (ϵ 21880); 368 (ϵ 1450) (MeOH) (Derep).

▶ LD_{50} (mus, ipr) 4.9 mg/kg ; LD_{50} (mus, ivn) 3.3 mg/kg. VN2265000

25-Alcohol (1): Saframycin AR_1. 25-Dihydrosaframycin A. Saframycin AH_2

[81382-09-4]

$C_{29}H_{32}N_4O_8$ 564.594

Prod. by microbial conversion of Saframycin A. Active against gram-positive bacteria, weakly active against gram-negative bacteria. Weak antineoplastic agent. Yellow powder + $^1/_3H_2O$. Sol. EtOAc. Mp 142-145°. $[\alpha]_D^{25}$ +21.4 (MeOH). Log P -0.42 (calc). λ_{max} 268 (ϵ 10500) (MeOH) (Berdy).

25-Alcohol (2): Saframycin AH_1

[92621-76-6]

$C_{29}H_{32}N_4O_8$ 564.594

Semisynthetic, prod. by redn. of Saframycin A. Potent antineoplastic agent. Log P -0.42 (calc). C-25 Epimer of Saframycin AR_1.

5α-Hydroxy: ***Saframycin G***

[92569-02-3]

$C_{29}H_{30}N_4O_9$ 578.577

From *Streptomyces lavendulae*. Yellow powder. Sol. MeOH; poorly sol. H_2O. Mp 134-136°. $[\alpha]_D^{22}$ -28 (c, 1 in MeOH). λ_{max} 268 (ϵ 21880); 368 (ϵ 1450) (MeOH) (Derep). λ_{max} 264 (ϵ 17500); 370 (ϵ 891) (MeOH) (Berdy).

14-Oxo, 1,4-hydroquinone: ***Saframycin F***

[92569-03-4]

$C_{29}H_{30}N_4O_9$ 578.577

Prod. by *Streptomyces lavendulae*. Antineoplastic agent. Light yellow powder. Sol. MeOH; poorly sol. H_2O. Mp 134-136° dec. $[\alpha]_D^{22}$ +28.4 (c, 0.1 in MeOH). Planar struct. only currently known. λ_{max} 243 (ϵ 13800); 274 (ϵ 17400); 369 (ϵ 5620) (MeOH) (Derep). λ_{max} 231 (ϵ 9550); 277 (ϵ 12880); 375 (ϵ 4466) (MeOH) (Berdy).

Decyano: ***Saframycin B***

[66082-28-8]

$C_{28}H_{31}N_3O_8$ 537.568

From *Streptomyces lavendulae*. Orange-yellow prisms (Et_2O). Sol. MeOH, Py, $CHCl_3$, C_6H_6; fairly sol. Et_2O; poorly sol. hexane, H_2O. Mp 108-109°. $[\alpha]_D^{20}$ -54.4 (c, 1 in MeOH). λ_{max} 268 (ϵ 21880); 368 (ϵ 1450) (MeOH) (Derep).

▶ LD_{50} (mus, ipr) 250 mg/kg. TX1418200

Decyano, 25-alcohol: Saframycin AR_3. 25-Dihydrosaframycin B. 21-Decyano-25-dihydrosaframycin A

[81853-83-0]

$C_{28}H_{33}N_3O_8$ 539.584

Prod. by microbial conversion of Saframycin B. Active against gram-positive and -negative bacteria. Yellow powder + $^1/_2H_2O$. Sol. EtOAc. Mp 123-126°. $[\alpha]_D^{25}$ -76.7 (MeOH). Log P 0.12 (calc). λ_{max} 269 (ϵ 13100) (MeOH) (Berdy).

Decyano, 5α-methoxy: ***Saframycin C***

[66082-29-9]

$C_{29}H_{33}N_3O_9$ 567.594

From *Streptomyces lavendulae*. Orange needles (Et_2O). Sol. MeOH, Py, C_6H_6, $CHCl_3$; fairly sol. Et_2O; poorly sol. H_2O, hexane. Mp 143-146°. $[\alpha]_D^{20}$ -20.8 (c, 1 in MeOH). λ_{max} 268 (ϵ 21880); 368 (ϵ 1450) (MeOH) (Derep).

▶ LD_{50} (mus, ipr) 250 mg/kg. TX1418300

Decyano, 14-oxo, 1,4-hydroquinone: ***Saframycin D***

[66082-30-2]

$C_{28}H_{31}N_3O_9$ 553.568

Prod. by *Streptomyces lavendulae*. Shows antibiotic and antineoplastic props. Yellow needles. Sol. MeOH, $CHCl_3$, Py, C_6H_6; fairly sol. Et_2O, EtOAc, Me_2CO; poorly sol. hexane, H_2O. Mp 150-154°. $[\alpha]_D^{20}$ +141 (c, 1 in MeOH). λ_{max} 243 (ϵ 13800); 274 (ϵ 17400); 369 (ϵ 5620) (MeOH) (Derep).

▶ LD_{50} (mus, ipr) 250 mg/kg. TX1486750

Decyano, 5α-hydroxy, 1,4-hydroquinone: ***Saframycin E***

[66082-31-3]

$C_{28}H_{33}N_3O_9$ 555.583

Isol. from *Streptomyces lavendulae*. Yellow powder. Sol. MeOH, $CHCl_3$, Py, C_6H_6; fairly sol. Et_2O, Me_2CO, EtOAc, $CHCl_3$; poorly sol. hexane, H_2O. Mp 146-148°. $[\alpha]_D^{20}$ -37.3 (c, 0.53 in MeOH). λ_{max} 243 (ϵ 13800); 274 (ϵ 17400); 369 (ϵ 5620) (MeOH) (Derep). λ_{max} 272 (ϵ 10700); 368 (ϵ 8500) (MeOH) (Berdy).

▶ LD_{50} (mus, ipr) 250 mg/kg. VN2265100

(±)-*form*

Decyano: [82660-65-9]
$C_{28}H_{31}N_3O_8$ 537.568
Synthetic. Mp 175-180° dec.

Arai, T. *et al., J. Antibiot.*, 1977, **30**, 1015-1018 (*Saframycins A,B,C,D,E, isol, ir, uv, ms, pmr*)
Ger. Pat., 1979, 2 839 668; *CA*, **90**, 166572 (*isol*)
Arai, T. *et al., Tet. Lett.*, 1979, 2355-2358 (*Saframycin C, cryst struct, Saframycin B*)
Arai, T. *et al., Experientia*, 1980, **36**, 1025-1027 (*uv, ir, pmr, cmr, ms, cd, struct*)
Lown, J.W. *et al., Can. J. Chem.*, 1981, **59**, 2945-2952 (*pmr, bibl*)
Takahashi, K. *et al., J. Antibiot.*, 1982, **35**, 196-202 (*25-alcohol, decyano 25-alcohol*)
Yazawa, K. *et al., J. Antibiot.*, 1982, **35**, 915-917 (*biosynth*)
Fukuyama, T. *et al., J.A.C.S.*, 1982, **104**, 4957-4958; 1990, **112**, 3712-3713 (*Saframycin B, synth*)
Arai, T. *et al., Alkaloids (Academic Press)*, 1983, **21**, 89-95 (*biol props*)
Kishi, K. *et al., J. Antibiot.*, 1984, **37**, 847-852 (*struct, props, Saframycins D,F,G*)
Haruyama, H. *et al., Chem. Pharm. Bull.*, 1985, **33**, 905-915 (*pmr, abs config*)
Cooper, R. *et al., J. Antibiot.*, 1985, **38**, 24-30 (*ms*)
Mikami, V. *et al., J. Biol. Chem.*, 1985, **260**, 344-348 (*biosynth*)
Sachleben, R.A. *et al., Diss. Abstr. Int., B*, 1986, **46**, 1429 (*synth*)
Kubo, A. *et al., Chem. Pharm. Bull.*, 1987, **35**, 440-442 (*Saframycin D, uv, ir, pmr, cmr, ms, struct*)
Mikami, Y. *et al., J. Antibiot.*, 1988, **41**, 734-740 (*Saframycins F,G*)
Kubo, A. *et al., J.O.C.*, 1988, **53**, 4295-4310 (*Saframycin B, synth*)
Saito, N. *et al., Tetrahedron*, 1990, **46**, 7711-7728 (*Saframycins C,D, synth*)
Shawe, T.T. *et al., Tetrahedron*, 1991, **47**, 5643-5666 (*Saframycin B, synth*)
Saito, N. *et al., Chem. Pharm. Bull.*, 1995, **43**, 777-782 (*Saframycin E, synth*)
Myers, A.G. *et al., J.A.C.S.*, 1999, **121**, 10828-10829 (*synth*)
Martinez, E.J. *et al., Org. Lett.*, 1999, **1**, 75-77 (*Saframycin A, synth*)
Saito, N. *et al., Heterocycles*, 2001, **55**, 21-28 (*Saframycin D, pmr, cmr*)
U.S. Pat., 2001, (*Pharma Mar S.A.*)7 241 892; *CA*, **134**, 17616 (*bibl*)

Saframycin H S-5

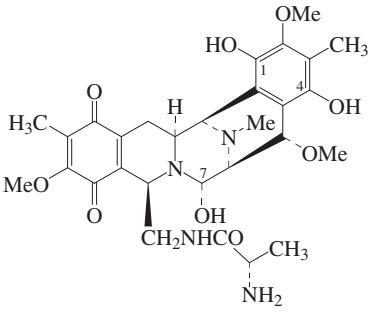
[92569-01-2]
As Saframycin A, S-4 with
R = –COC(OH)$(CH_3)CH_2COCH_3$, R′ = CN

$C_{32}H_{36}N_4O_9$ 620.658
Prod. by *Streptomyces lavendulae* NRRL11002. Antitumour agent. Light yellow needles. Sol. MeOH; poorly sol. H_2O. Mp 184-186° dec. $[\alpha]_D^{22}$ -7 (c, 0.1 in MeOH). λ_{max} 268 (ϵ 15500) (MeOH) (Derep).

Takahashi, K. *et al., J. Antibiot.*, 1982, **35**, 196-202 (*isol*)
Yazawa, K. *et al., J. Antibiot.*, 1982, **35**, 915-917 (*isol*)
Kishi, K. *et al., J. Antibiot.*, 1984, **37**, 847-852 (*struct*)
Mikami, Y. *et al., J. Antibiot.*, 1988, **41**, 734-740 (*struct*)

Saframycin Mx 1 S-6

[113036-78-5]



$C_{29}H_{38}N_4O_9$ 586.641
Quinone antibiotic. CAS numbering shown. Isol. from *Myxococcus xanthus*. Sol. MeOH, EtOAc; poorly sol. H_2O, C_6H_6, hexane. $[\alpha]_D^{20}$ -70.7 (c, 0.5 in MeOH). λ_{max} 273 (ϵ 8910) (MeOH) (Derep). λ_{max} 290 (pH 3.5 buffer) (Berdy).

▶ TX1404590

1,4-Quinone: ***Saframycin Mx 1BC***
[116925-60-1]
$C_{29}H_{36}N_4O_9$ 584.625
Prod. by *Myxococcus xanthus*. Orange-yellow solid.

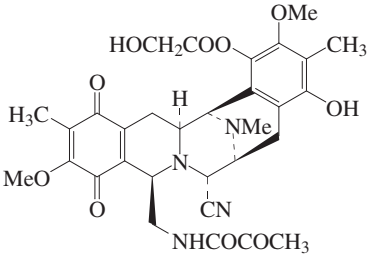
7-Deoxy: ***Saframycin Mx 2***
[113036-79-6]
$C_{29}H_{38}N_4O_8$ 570.641
Isol. from *Myxococcus xanthus*. Sol. MeOH, EtOAc; poorly sol. H_2O. $[\alpha]_D^{20}$ -119.8 (c, 0.5 in MeOH). λ_{max} 273 (ϵ 8910) (MeOH) (Derep). λ_{max} 290 (pH 3.5 buffer) (Berdy).

7-Deoxy, 1,4-quinone: ***Saframycin Mx 2BC***. *Mx 2BC*
[116925-61-2]
$C_{29}H_{36}N_4O_8$ 568.625
Prod. by *Myxococcus xanthus*. Orange-yellow solid.

Trowitzsch-Kienast, W. *et al., Annalen*, 1988, 475-481 (*isol, pmr, cmr, struct*)
Irschik, H. *et al., J. Antibiot.*, 1988, **41**, 993-998 (*isol, ir, pmr, cmr, struct*)
Japan. Pat., 1988, 88 49 092; *CA*, **110**, 55972p (*Mx 1BC, Mx 2BC*)
Saito, N. *et al., Tetrahedron*, 1995, **51**, 8213-8230; 8231-8246 (*synth, abs config*)

Saframycin R S-7

[85411-35-4]



$C_{31}H_{34}N_4O_{10}$ 622.63
Quinone antibiotic. Struct. revised in 2000. Prod. by *Streptomyces lavendulae*. Shows antitumour props. and activity against gram-positive and -negative bacteria. Pale yellow needles. Sol. DMSO, MeOH, EtOAc; fairly sol. $CHCl_3$, C_6H_6; poorly sol. H_2O, hexane. Mp 184-186° dec. $[\alpha]_D$ -79.2 (c, 0.6 in $CHCl_3$). λ_{max} 270 (ϵ 8910) (MeOH) (Derep).

▶ LD_{50} (mus, ivn) 29.5 mg/kg, LD_{50} (mus, ipr) 26 mg/kg.

Asaoka, T. *et al., J. Antibiot.*, 1982, **35**, 1708-1710 (*isol, pmr, cmr*)
Lown, J.W. *et al., J. Antibiot.*, 1983, **36**, 1184-1195 (*struct, nmr*)
Saito, N. *et al., Tetrahedron*, 2000, **56**, 9937-9944 (*pmr, cmr, struct*)

Saframycin S S-8

21-Hydroxysaframycin B
[75425-66-0]
As Saframycin A, S-4 with
R = –$COCOCH_3$, R′ = OH

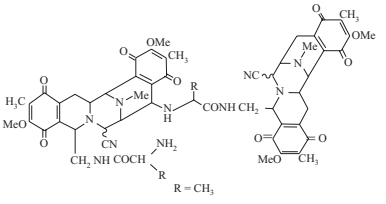
$C_{28}H_{31}N_3O_9$ 553.568
Isol. from *Streptomyces lavendulae*. Shows antineoplastic and antibiotic props. Dark yellow powder. Sol. MeOH, $CHCl_3$; fairly sol. Et_2O; poorly sol. hexane, H_2O. Mp 107-115° dec. $[\alpha]_D^{25}$ +32.5 (c, 0.5 in MeOH). λ_{max} 268 (ϵ 21880); 368 (ϵ 1450) (MeOH) (Derep). λ_{max} 268 (ϵ 15200) (MeOH) (Berdy).

▶ VN2265300

Arai, T. *et al., J. Antibiot.*, 1980, **33**, 951-960 (*isol, uv, ir, pmr, cmr, struct*)
Yazawa, K. *et al., J. Antibiot.*, 1982, **35**, 915-917 (*biosynth*)
Cooper, R. *et al., J. Antibiot.*, 1985, **38**, 24-30 (*cmr*)

Saframycin Y_{2b} S-9

[107140-34-1]



$C_{58}H_{64}N_{10}O_{14}$ 1125.202
Prod. by *Streptomyces lavendulae* NRRL11002 by directed biosynth. Antitumour agent. Orange-yellow powder + $1H_2O$. Sol. MeOH, EtOAc; poorly sol. H_2O. Mp 200° dec. $[\alpha]_D^{22}$ -42.2 (c, 0.1 in MeOH). λ_{max} 268 (ϵ 45700) (MeOH) (Derep).

Yazawa, K. *et al., J. Antibiot.*, 1986, **39**, 1639-1650 (*isol, uv, ir, pmr, cmr, ms, struct*)
Kaneda, S. *et al., J. Antibiot.*, 1987, **40**, 1640-1642 (*activity*)

Saframycin Y_{2b-D} S-10

[107163-30-4]
As Saframycin Y_{2b}, S-9 with
R = CH_2CH_3

$C_{60}H_{68}N_{10}O_{14}$ 1153.256

Prod. by *Streptomyces lavendulae* NRRL11002 by directed biosynth. Antitumour agent. Orange-yellow powder + $1H_2O$. Sol. MeOH, EtOAc; poorly sol. H_2O. $[\alpha]_D^{22}$ -41.9 (c, 0.1 in MeOH). Dec. >200°. λ_{max} 268 (ϵ 45700) (MeOH) (Derep). λ_{max} 269 (ϵ 43650) (MeOH) (Berdy).

Yazawa, K. *et al., J. Antibiot.*, 1986, **39**, 1639-1650 (*isol, uv, ir, pmr, cmr, ms, struct*)
Kaneda, S. *et al., J. Antibiot.*, 1987, **40**, 1640-1642 (*activity*)

Saframycin Y_3 S-11

25-Deoxy-25-aminosaframycin A
[98205-62-0]
As Saframycin A, S-4 with
R = –COCH(NH2)CH3, R′ = CN
$C_{29}H_{33}N_5O_7$ 563.609

Quinone antibiotic. Prod. by *Streptomyces lavendulae* by directed biosynth. Shows antibacterial and antitumour props. Yellow amorph. powder. Sol. MeOH, C_6H_6, $CHCl_3$, EtOAc; fairly sol. Et_2O; poorly sol. H_2O, hexane. Mp 143-146° dec. $[\alpha]_D^{22}$ -46.1 (c, 0.7 in MeOH). λ_{max} 268 (ϵ 18600); 340 (sh) (MeOH) (Derep).

Yazawa, K. *et al., J. Antibiot.*, 1986, **39**, 1639-1650 (*isol, uv, ir, pmr, cmr, struct*)
Kaneda, S. *et al., J. Antibiot.*, 1987, **40**, 1640-1642 (*activity*)

Saframycin Y_{D-1} S-12

26-Homosaframycin Y_3
[98205-63-1]
As Saframycin A, S-4 with
R = –COCH(NH2)CH2CH3, R′ = CN
$C_{30}H_{35}N_5O_7$ 577.636

Isol. from *Streptomyces lavendulae* by directed biosynth. Antitumour agent. Yellow amorph. powder + $1H_2O$. Sol. MeOH, $CHCl_3$, C_6H_6, EtOAc; fairly sol. Et_2O; poorly sol. H_2O, hexane. Mp 124-127° dec. $[\alpha]_D^{22}$ -43.5 (c, 1 in MeOH). λ_{max} 268 (ϵ 18600); 340 (sh) (MeOH) (Derep).

Yazawa, K. *et al., J. Antibiot.*, 1986, **39**, 1639-1650 (*isol, uv, ir, pmr, cmr, struct*)
Kaneda, S. *et al., J. Antibiot.*, 1987, **40**, 1640-1642 (*activity*)

Saframycin Y_{D-2} S-13

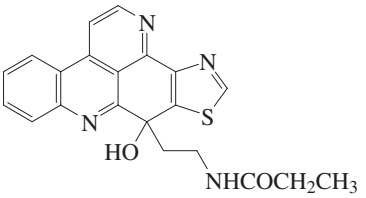
26-Demethylsaframycin Y_3
[98205-61-9]
As Saframycin A, S-4 with
R = –COCH2NH2, R′ = CN
$C_{28}H_{31}N_5O_7$ 549.582

Prod. by *Streptomyces lavendulae* NRRL11002 by directed biosynth. Antitumour agent. Dark yellow powder + ½ H_2O. Sol. $CHCl_3$, C_6H_6; fairly sol. Et_2O; poorly sol. hexane. Mp 144-148° dec. λ_{max} 268 (ϵ 18600); 340 (sh) (MeOH) (Derep). λ_{max} 268 (ϵ 17100) (MeOH) (Berdy).

Yazawa, K. *et al., J. Antibiot.*, 1986, **39**, 1639-1650 (*isol, uv, ir, pmr, struct*)
Kaneda, S. *et al., J. Antibiot.*, 1987, **40**, 1640-1642 (*activity*)

Sagitol S-14

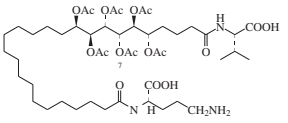
[185543-92-4]



$C_{21}H_{18}N_4O_2S$ 390.465
Minor alkaloid from the sponge *Oceanapia sagittaria*. Yellow glass. Closely related to Kuanoniamine C in D-93. λ_{max} 260 (ϵ 22810); 318 (ϵ 3430); 335 (ϵ 3920); 351 (ϵ 3430); 396 (ϵ 1470) (MeOH).

Salomon, C.E. *et al., Tet. Lett.*, 1996, **37**, 9147 (*isol, uv, ir, pmr, cmr, struct*)

Sagittamide A S-15



Absolute Configuration

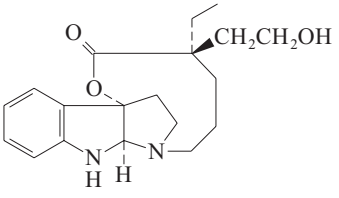
$C_{48}H_{81}N_3O_{18}$ 988.177
Absolute configuration confirmed in 2007. Isol. from an unidentified didemnid ascidian from Micronesia. Glass. $[\alpha]_D^{25}$ -22 (c, 0.6 in MeOH). λ_{max} 214 ; 228 ; 276 (MeOH).

7-O-*De-Ac:* ***Sagittamide B***
$C_{46}H_{79}N_3O_{17}$ 946.14
Isol. from an unidentified didemnid ascidian from Micronesia. Glass. $[\alpha]_D^{25}$ -19.7 (c, 0.17 in MeOH). λ_{max} 214 (ϵ 1534); 256 (ϵ 702) (MeOH).

Lievens, S.C. *et al., Org. Lett.*, 2005, **7**, 2281-2284 (*isol, pmr, cmr*)
Lievens, S.C. *et al., J.A.C.S.*, 2006, **128**, 11764-11765 (*abs config*)
Seike, H. *et al., Org. Lett.*, 2006, **8**, 3865-3868 (*synth, abs config*)
Schuetz, A. *et al., J.A.C.S.*, 2007, **129**, 15114-15115 (*nmr, abs config*)

Saifine S-16

[161099-48-5]



$C_{19}H_{26}N_2O_3$ 330.426
Indole akaloid possibly derived from an Eburna type with loss of *C*-22, but the details are not yet known. Alkaloid from roots of *Rhazya stricta* (Apocynaceae).

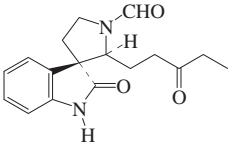
Atta-ur-Rahman, *et al., Nat. Prod. Lett.*, 1995, **5**, 245 (*isol*)

Saipeimine S-17

$C_{27}H_{43}NO_4$ 445.641
Steroidal alkaloid. Struct. unknown. Alkaloid from the Chinese drug Bei-son-pei-mu. Mp 256-258°. λ_{max} 288 nm.
Chu, T.T. *et al., CA*, 1951, **51**, 445

Salacin† S-18

[128638-14-2]



Relative Configuration

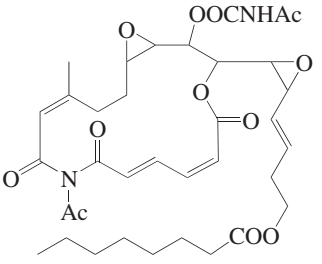
$C_{17}H_{20}N_2O_3$ 300.357
Related to the Corynanthe alkaloids. CAS indexes under the abs. config. as shown, but there does not appear to be any firm evidence for this. Alkaloid from the leaves of *Uncaria salaccensis* (*Uncaria attenuata*) (Rubiaceae). Amorph. λ_{max} 208 ; 250 ; 282 (MeOH).

[128706-55-8]

Ponglux, D. *et al., Chem. Pharm. Bull.*, 1990, **38**, 573-575 (*isol, synth, struct*)

Salarin A S-19

[1005147-97-6]

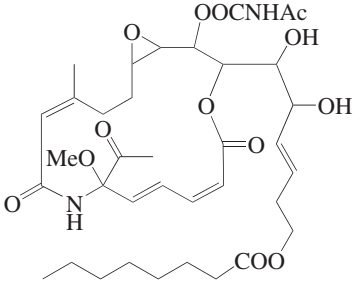


$C_{35}H_{46}N_2O_{12}$ 686.755
Isol. from a *Fascaplysinopsis* sp. Cytotoxic. Pale yellow oil. $[\alpha]_D^{23}$ -57 (c, 0.37 in $CHCl_3$).

Bishara, A. *et al., Org. Lett.*, 2008, **10**, 153-156 (*isol, pmr, cmr*)

Salarin B S-20

[1005147-98-7]



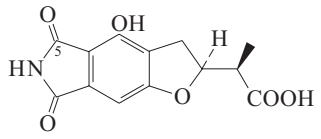
$C_{36}H_{52}N_2O_{13}$ 720.812
Isol. from a *Fascaplysinopsis* sp. Oil. $[\alpha]_D^{23}$

-130 (c, 0.12 in $CHCl_3$).

Bishara, A. *et al., Org. Lett.*, 2008, **10**, 153-156 (*isol, pmr, cmr*)

Salfredin C_1 S-21

[139542-56-6]



$C_{13}H_{11}NO_6$ 277.233
Prod. by *Crucibulum* sp. RF-3817. Aldose reductase inhibitor. Pale yellow powder. Sol. EtOAc, Me_2CO, MeOH, EtOH. λ_{max} 234 (ϵ 21600); 247 (sh) (ϵ 16100); 393 (ϵ 4160) (MeOH/NaOH) (Derep). λ_{max} 223 (ϵ 18600); 248 (ϵ 23300); 335 (ϵ 3050) (MeOH) (Derep). λ_{max} 223 (E1%/1cm 380); 248 (E1%/1cm 770); 335 (E1%/1cm 110) (MeOH/HCl) (Berdy).

N-*(Carboxymethyl):* ***Salfredin C_2***
[139542-57-7]
$C_{15}H_{13}NO_8$ 335.27
Prod. by *Crucibulum* sp. RF-3817. Aldose reductase inhibitor. Prisms. Sol. EtOAc, EtOH, Me_2CO, MeOH. Mp 246-247°. λ_{max} 223 (E1%/1cm 600); 247 (E1%/1cm 900); 335 (E1%/1cm 110) (MeOH) (Berdy). λ_{max} 223 (E1%/1cm 520); 247 (E1%/1cm 840); 335 (E1%/1cm 110) (MeOH/HCl) (Berdy). λ_{max} 241 (E1%/1cm 900); 395 (E1%/1cm 150) (MeOH/NaOH) (Berdy).

N-*(1-Carboxyethyl):* ***Salfredin C_3***
[139542-58-8]
$C_{16}H_{15}NO_8$ 349.296
Prod. by *Crucibulum* sp. RF-3817. Aldose reductase inhibitor. Pale yellow oil. Sol. EtOAc, EtOH, MeOH, Me_2CO. λ_{max} 223 ; 247 ; 335 (MeOH) (Berdy). λ_{max} 223 ; 247 ; 335 (MeOH/HCl) (Berdy). λ_{max} 241 ; 395 (MeOH/NaOH) (Berdy).

5-Deoxo, N-*(carboxymethyl):* ***Salfredin A_4***
[139542-54-4]
$C_{15}H_{15}NO_7$ 321.286
Prod. by *Crucibulum* sp. RF-3817. Aldose reductase inhibitor. Prisms. Sol. EtOAc, MeOH, Me_2CO, EtOH. Mp >300°. λ_{max} 220 (sh) (ϵ 20200); 275 (ϵ 4820); 316 (ϵ 1930) (MeOH/NaOH) (Derep). λ_{max} 215 (ϵ 26000); 258 (ϵ 6100); 303 (ϵ 1930) (MeOH) (Derep). λ_{max} 215 (E1%/1cm 710); 258 (E1%/1cm 190); 303 (E1%/1cm 60) (MeOH/HCl) (Berdy).

5-Deoxo, N-*(1-carboxyethyl):* ***Salfredin A_7***
[139542-55-5]
$C_{16}H_{17}NO_7$ 335.313
Prod. by *Crucibulum* sp. RF-3817. Aldose reductase inhibitor. Prisms. Sol. EtOAc, EtOH, MeOH, Me_2CO. Mp 293-296° dec. λ_{max} 220 (sh) (ϵ 20200); 275 (ϵ 4820); 316 (ϵ 1930) (MeOH/NaOH) (Derep). λ_{max} 215 (ϵ 26000); 258 (ϵ 6100); 303 (ϵ 1930) (MeOH) (Derep).

5-Deoxo, N-*(1,3-dicarboxypropyl):* ***Salfredin A_3***
[139542-53-3]
$C_{18}H_{19}NO_9$ 393.349
Prod. by *Crucibulum* sp. RF-3817. Aldose reductase inhibitor. Powder. Sol. EtOAc, Me_2CO, EtOH, MeOH. λ_{max} 220 (sh) (ϵ 24800); 275 (ϵ 5900); 316 (ϵ 2360) (MeOH/NaOH) (Derep). λ_{max} 215 (ϵ 31800); 258 (ϵ 7470); 303 (ϵ 2360) (MeOH) (Derep). λ_{max} 217 (E1%/1cm 770); 260 (E1%/1cm 230); 303 (E1%/1cm 70) (MeOH/HCl) (Berdy).

Matsumoto, K. *et al., J. Antibiot.*, 1995, **48**, 439 (*isol, pmr, cmr*)

Salicilobine S-22

Struct. unknown. Alkaloid from *Lobelia salicifolia*. Mp 280-285°.

Steinegger, I.E. *et al., Pharm. Acta Helv.*, 1956, **31**, 89-96 (*isol*)

Salicornine S-23

[1361-03-1]

$C_5H_{11}NO_2$ 117.147

Struct. unknown. Alkaloid from *Salicornia herbacea* (Chenopodiaceae).

Hydrochloride: Mp 253-256°.

Picrate: Mp 210-211°.

Borkowski, B. *et al., Pharmazie*, 1965, **20**, 390-393; *CA*, **63**, 15223c

Saliherbine S-24

[1361-04-2]

$C_9H_{21}N_5O_4$ 263.296

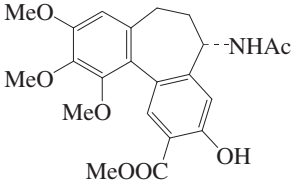
Struct. unknown. Alkaloid from *Salicornia herbacea* (Chenopodiaceae).

Hydrochloride: Mp 318-321°.

Picrate: Mp 261-262°.

Borkowski, B. *et al., Pharmazie*, 1965, **20**, 390-393; *CA*, **63**, 15223c

Salimine S-25



$C_{22}H_{25}NO_7$ 415.442
Struct. revised in 1994.

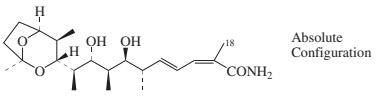
(S)-form [138704-12-8]
Alkaloid from *Colchicum decaisnei* (Liliaceae). Amorph. solid. $[\alpha]_D$ -17 (c, 0.11 in MeOH).

Abu Zarga, M.H. *et al., J. Nat. Prod.*, 1991, **54**, 936 (*isol, uv, ir, pmr, cmr, ms*)

Banwell, M.G. *et al., Chem. Comm.*, 1994, 2647 (*struct*)

Saliniketal A S-26

[923952-66-3]



$C_{22}H_{37}NO_5$ 395.538
Prod. by the marine-derived *Streptomyces arenicola* CNR-005. Inhibitor of ornithine decarboxylase induction. Amorph. powder. $[\alpha]_D$ -13.7 (c, 0.13 in MeOH). λ_{max} 240 (log ϵ 3.1) (MeOH).

18-Hydroxy: ***Saliniketal B***
[923952-68-5]
$C_{22}H_{37}NO_6$ 411.537
Prod. by a marine-derived *Streptomyces arenicola* CNR-059. Amorph. powder. $[\alpha]_D$ -22.4 (c, 0.11 in MeOH). λ_{max} 242 (log ϵ 4) (MeOH).

Williams, P.G. *et al., J. Nat. Prod.*, 2007, **70**, 83-88 (*isol, pmr, cmr*)

Paterson, I. *et al., Org. Lett.*, 2008, **10**, 3295-3298 (*synth*)

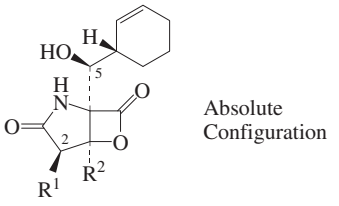
Salinosporamide I S-27

[872360-12-8]
As Salinosporamide A, S-28 with
R^1 = -CH_2CH_2Cl, R^2 = -CH_2CH_3
$C_{16}H_{22}ClNO_4$ 327.807
Prod. by *Salinospora tropica* NPS000465. Amorph. solid. $[\alpha]_D^{22}$ -20 (c, 0.9 in MeCN). Full stereochem. not confirmed. λ_{max} 205 (log ϵ 3.19); 220 (sh) (log ϵ 2.99) (MeCN).

Reed, K.A. *et al., J. Nat. Prod.*, 2007, **70**, 269-276 (*isol, pmr, cmr, ms*)

Salinosporamide A S-28

NPI 0052. Antibiotic NPI 0052
[437742-34-2]



R^1 = -CH_2CH_2Cl, R^2 = CH_3

$C_{15}H_{20}ClNO_4$ 313.78
Prod. by the marine bacterium *Salinospora tropica* (strain CNB-392). Proteasome inhibitor. Cytotoxic. Needles (EtOAc/2,3,3-trimethylpentane). Mp 169-171°. $[\alpha]_D^{25}$ -72.9 (c, 0.55 in MeOH). λ_{max} 205 (log ϵ 4.03); 225 (log ϵ 3.3) (MeOH).

5-Deoxy: ***Salinosporamide J***
[932739-03-2]
$C_{15}H_{20}ClNO_3$ 297.781
Prod. by *Salinospora tropica* NPS000465. Amorph. solid. $[\alpha]_D^{22}$ -120 (c, 0.3 in MeCN). λ_{max} 217 (log ϵ 3.21); 230 (sh) (log ϵ 3.19) (MeCN).

Dechloro: ***Salinosporamide B****. NPI 0047.*

Antibiotic NPI 0047
[863126-95-8]
$C_{15}H_{21}NO_4$ 279.335
Prod. by *Salinospora tropica* (strain CNB-392). Cryst. (EtOAc). Mp 143-145°. $[\alpha]_D^{25}$ -54.5 (c, 0.29 in MeOH). λ_{max} 256 (log ϵ 3.7) (MeOH).

Bromo analogue: Bromosalinosporamide
[872360-15-1]
$C_{15}H_{20}BrNO_4$ 358.231
Semisynthetic. Prod. by *Salinospora tropica* in NaBr. Amorph. solid. $[\alpha]_D^{22}$ -51.6 (c, 0.95 in MeCN).

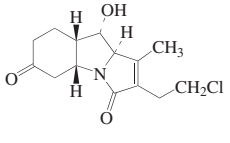
2-Epimer: ***Salinosporamide F***
[872360-11-7]
$C_{15}H_{20}ClNO_4$ 313.78
Prod. by *Salinospora tropica* NPS000465. Amorph. solid. $[\alpha]_D^{22}$ -108.9 (c, 8.78 in MeCN). λ_{max} 206 (log ϵ 3.16); 223 (sh) (log ϵ 3.05) (MeCN).

2-Epimer, dechloro: Salinosporamide H
[872360-16-2]
$C_{15}H_{21}NO_4$ 279.335
Prod. by *Salinospora tropica* in NaBr. Amorph. solid. λ_{max} 221 (sh) (MeCN aq.).

Feling, R.H. *et al., Angew. Chem., Int. Ed.*, 2003, **42**, 355-357 (*isol, pmr, cmr, cryst struct*)
Macherla, V.R. *et al., J. Med. Chem.*, 2005, **48**, 3684-3687 (*sar*)
Endo, A. *et al., J.A.C.S.*, 2005, **127**, 8298-8299 (*synth*)
Williams, P.G. *et al., J.O.C.*, 2005, **70**, 6196-6203 (*Salinosporamide B, isol, pmr, cmr*)
Reddy, L.R. *et al., Org. Lett.*, 2005, **7**, 2699-2701 (*synth*)
Groll, M. *et al., J.A.C.S.*, 2006, **128**, 5136-5141 (*proteasome complex, struct, cryst struct*)
Ruiz, S. *et al., Mol. Cancer Ther.*, 2006, **5**, 1836-1843 (*pharmacol*)
Shibasaki, M. *et al., Chem. Asian J.*, 2007, **2**, 20-38 (*rev, synth*)
Lam, K.S. *et al., J. Antibiot.*, 2007, **60**, 13-19 (*isol, props*)
Reed, K.A. *et al., J. Nat. Prod.*, 2007, **70**, 269-276 (*isol, pmr, cmr, cryst struct*)
Beer, L.L. *et al., Org. Lett.*, 2007, **9**, 845-848 (*biosynth*)
Ma, G. *et al., Org. Lett.*, 2007, **9**, 2143-2146 (*synth*)
Ling, T. *et al., Org. Lett.*, 2007, **9**, 2289-2292 (*synth*)
Caubert, V. *et al., Tet. Lett.*, 2007, **48**, 381-384 (*synth*)
Mulholland, N.P. *et al., Org. Biomol. Chem.*, 2008, **6**, 2782-2789 (*synth*)
Fukuda, T. *et al., Org. Lett.*, 2008, **10**, 4239-4242 (*synth*)
Margalef, I.V. *et al., Tetrahedron*, 2008, **64**, 7896-7901 (*synth*)

Salinosporamide C S-29

[863126-96-9]



Relative Configuration

$C_{14}H_{18}ClNO_3$ 283.754
Prod. by the marine bacterium *Salinospora tropica* (strain CNB-392). Cytotoxic. Oil. $[\alpha]_D$ -33.6 (c, 0.27 in MeOH). Possible artifact. λ_{max} 222 (log ϵ 3.9) (MeOH).

Williams, P.G. *et al., J.O.C.*, 2005, **70**, 6196-6203 (*isol, pmr, cmr*)

Salinosporamide D S-30

[823229-26-1]
As Salinosporamide A, S-28 with
$R^1 = R^2 = CH_3$
$C_{14}H_{19}NO_4$ 265.308
Prod. by *Salinospora tropica* NPS000465. Amorph. solid. $[\alpha]_D^{22}$ -63.8 (c, 4.71 in MeCN). λ_{max} 208 (log ϵ 3.06); 223 (sh) (log ϵ 3.06) (MeCN).

2-Epimer: ***Salinosporamide G***
[872360-13-9]
$C_{14}H_{19}NO_4$ 265.308
Prod. by *Salinospora tropica* NPS000465. Amorph. solid. $[\alpha]_D^{22}$ -54.5 (c, 1.1 in MeCN). λ_{max} 209 (log ϵ 3.09); 218 (sh) (log ϵ 3.08) (MeCN).

Reed, K.A. *et al., J. Nat. Prod.*, 2007, **70**, 269-276 (*isol, pmr, cmr*)

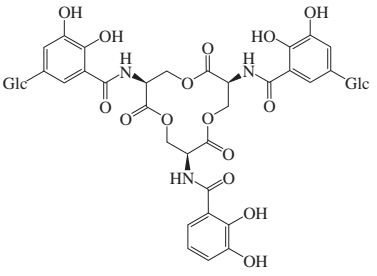
Salinosporamide E S-31

[872360-24-2]
As Salinosporamide A, S-28 with
$R^1 = CH_2CH_2CH_3$, $R^2 = CH_3$
$C_{16}H_{23}NO_4$ 293.362
Prod. by *Salinospora tropica* NPS000465. Amorph. solid. $[\alpha]_D^{22}$ -60 (c, 0.1 in MeCN).

Reed, K.A. *et al., J. Nat. Prod.*, 2007, **70**, 269-276 (*isol, pmr, cmr*)

Salmochelin 4 S-32

[768386-89-6]

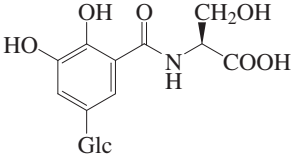


$C_{42}H_{47}N_3O_{25}$ 993.838
Related to Enterobactin, E-86. Isol. from *Salmonella enterica*. Catecholate siderophore.

Bister, B. *et al., BioMetals*, 2004, **17**, 471-481 (*isol, pmr, cmr, ms*)

Salmochelin X S-33

N-*(5-β-D-Glucopyranosyl-2,3-dihydroxybenzoyl)serine. Pacifarinic acid*
[768386-88-5]

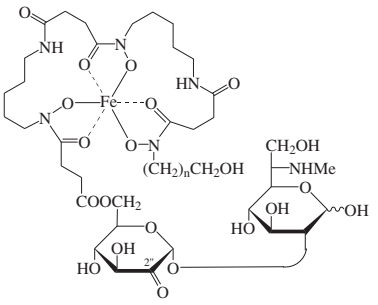


$C_{16}H_{21}NO_{11}$ 403.342
Isol. from *Salmonella enterica*. Catecholate siderophore.

Bister, B. *et al., BioMetals*, 2004, **17**, 471-481

Salmycin B S-34

[163596-95-0]



n = 4

$C_{41}H_{69}FeN_6O_{21}$ 1037.871
Prod. by *Streptomyces violaceus* DSM 8286. Siderophore. Antibacterial agent. Sol. H_2O, MeOH; poorly sol. EtOH, hexane. Possesses same aglycone as Danomycin, D-16. λ_{max} 427 (ϵ 1995) (MeOH) (Berdy).

2′-Oxime: ***Salmycin A***
[163596-94-9]
$C_{41}H_{70}FeN_7O_{21}$ 1052.885
Prod. by *Streptomyces violaceus* DSM 8286. Siderophore. Sol. H_2O, MeOH; poorly sol. EtOH, hexane. λ_{max} 430 (ϵ 1995) (MeOH) (Berdy).

Vertesy, L. *et al., Helv. Chim. Acta*, 1995, **78**, 46-60 (*isol, ir, pmr, cmr, struct*)
Dong, L. *et al., J.A.C.S.*, 2002, **124**, 15001-15005 (*synth*)

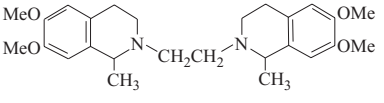
Salmycin C S-35

[163596-96-1]
As Salmycin B, S-34 with
$n = 3$
$C_{40}H_{67}FeN_6O_{21}$ 1023.844
Prod. by *Streptomyces violaceus* DSM 8286. Siderophore. Antibacterial agent. Sol. H_2O, MeOH; poorly sol. EtOH, hexane. λ_{max} 430 (ϵ 2000) (MeOH) (Berdy).

2′-Oxime: ***Salmycin D***
[163596-97-2]
$C_{40}H_{68}FeN_7O_{21}$ 1038.858
Prod. by *Streptomyces violaceus* DSM 8286. Siderophore. Sol. H_2O, MeOH; poorly sol. EtOH, hexane. λ_{max} 427 (ϵ 200) (MeOH) (Berdy).

Vertesy, L. *et al., Helv. Chim. Acta*, 1995, **78**, 46-60 (*isol, ir, pmr, cmr, struct*)

Salsamine S-36

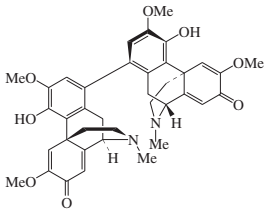


$C_{26}H_{36}N_2O_4$ 440.581
Defective diag. in *CA*. Alkaloid from

Salsola richteri (Chenopodiaceae). Mp 165-167°.

Proskurnina, N. *et al., Bull. Soc. Chim. Fr.*, 1937, **4**, 1265 (*isol*)
Proskurnina, N.F. *et al., Zh. Obshch. Khim.*, 1958, **28**, 256; *CA*, **52**, 12879f (*struct*)

Saludimerine A S-37



Absolute Configuration

$C_{38}H_{40}N_2O_8$ 652.743

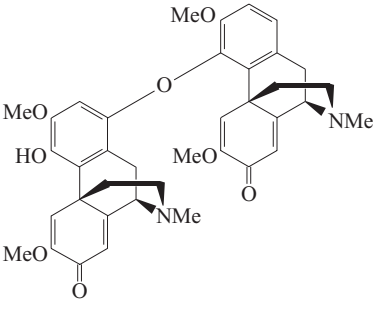
Dimer of Salutaridine, S-39. Alkaloid from the leaves of *Croton flavens*. Mp 220° dec. $[\alpha]_D^{20}$ -219 (c, 1.7 in MeOH). λ_{max} 241 (log ϵ 4.56); 283 (log ϵ 4.08) (MeOH).

Atropisomer: ***Saludimerine B***
$C_{38}H_{40}N_2O_8$ 652.743
Alkaloid from the leaves of *Croton flavens*. Mp 225° dec. $[\alpha]_D^{20}$ -154 (c, 1.4 in MeOH). λ_{max} 244 (log ϵ 4.54); 283 (log ϵ 4.07) (MeOH).

Bracher, F. *et al., J.O.C.*, 2004, **69**, 8602-8608 (*isol, cd, pmr, cmr*)

Salutadimerine S-38

[131690-44-3]



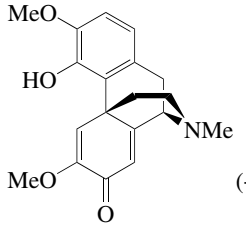
$C_{38}H_{40}N_2O_8$ 652.743

The first reported dimeric morphinandienone alkaloid. Alkaloid from *Papaver lasiothrix* and *Papaver pseudo-orientale* (Papaveraceae). Amorph. $[\alpha]_D$ +36 (c, 0.1 in MeOH).

Sariyar, G. *et al., J. Nat. Prod.*, 1990, **53**, 1383 (*isol, uv, ir, pmr, cmr, ms, struct*)

Salutaridine S-39

Floripavine. Sinoacutine. Salutarine
[1936-18-1]



(+)-*form*

$C_{19}H_{21}NO_4$ 327.379

Salutaridine was historically the (+)-form, Sinoacutine the (-)-form and Salutarine the (±)-form. However Salutaridine occurs in at least some sources as a partial racemate.

(+)-form
Alkaloid from *Croton salutaris*, *Croton balsamifera*, *Croton stenophylus*, *Papaver* spp. and *Glaucium* spp. (Euphorbiaceae, Papaveraceae). Intermediate in biosynth. of morphine alkaloids. Shows antitumour activity *vs.* Walker 256 carcinosarcoma. Rods (EtOAc). Mp 197-198°. $[\alpha]_D$ +111 (c, 1.69 in EtOH). λ_{max} 236 ; 279 (MeOH) (Berdy).

N-*Oxide:* ***Salutaridine* N-*oxide***
[144860-15-1]
$C_{19}H_{21}NO_5$ 343.379
Alkaloid from capsules of *Papaver bracteatum* (Papaveraceae). Amorph. $[\alpha]_D$ +52 (c, 0.146 in MeOH).

N-*De-Me:* ***Norsalutaridine***
[55781-26-5]
$C_{18}H_{19}NO_4$ 313.352
Alkaloid from *Croton salutaris* (Euphorbiaceae). $[\alpha]_D^{24}$ +38.6 (c, 3.4 in EtOH).

Ac: Mp 171°. $[\alpha]_D$ +120 (c, 1.26 in EtOH).

5,6ξ-Dihydro: ***Alkaloid Or$_1$***
[57157-67-2]
$C_{19}H_{23}NO_4$ 329.395
Alkaloid from *Papaver orientale* and *Papaver pseudo-orientale* (Papaveraceae). Cryst. (petrol). Mp 109°. $[\alpha]_D^{20}$ +93 (c, 0.45 in $CHCl_3$). Proposed struct. Cryst. with difficulty, not obt. completely pure.

5,6-Dihydro, 2,4-dinitrophenylhydrazone: Mp 110-115°.

5,6ξ-Dihydro; methiodide: Mp 186-188°.

5,6-Dihydro, N-*de-Me:* **N-*Noralkaloid Or$_1$***
[199527-84-9]
$C_{18}H_{21}NO_4$ 315.368
Alkaloid from *Papaver pseudo-orientale.*

(-)-form [4090-18-0]
Alkaloid from *Sinomenium acutum*, *Corydalis* spp., *Nandina* spp. and others in the Menispermaceae, Papaveraceae and Lauraceae. Mp 198°. $[\alpha]_D^{16}$ -112 (EtOH).

Perchlorate: Mp 117°.

Methiodide: Mp 216°.

N-*De-Me:* ***Norsinoacutine***
[13186-21-5]
$C_{18}H_{19}NO_4$ 313.352
Alkaloid from *Croton* spp. (Euphorbiaceae). Cryst. + EtOAc (MeOH/EtOAc). Mp 113-115°. $[\alpha]_D^{16}$ -107 (c, 1.14 in MeOH).

Me ether, methiodide:
Cryst. + Me_2CO. Mp 163-165°.

O^3-*De-Me,* O^4-*Me:* ***Isosinoacutine***
[76202-24-9]
$C_{19}H_{21}NO_4$ 327.379
Alkaloid from the roots of *Stephania elegans* (Menispermaceae). Mp 120°. $[\alpha]_D$ -41 ($CHCl_3$). $[\alpha]_D$ -82 (90% EtOH).

O^6-*De-Me:* ***Mocrispatine***
[84622-66-2]
[27669-33-6]
$C_{18}H_{19}NO_4$ 313.352
Alkaloid from *Monodora crispata* (Annonaceae).

O^6-*De-Me,* N-*de-Me:* ***3-Methoxy-4,6-dihydroxymorphinandien-7-one***
[80248-95-9]
$C_{17}H_{17}NO_4$ 299.326
Alkaloid from *Croton bonplandianum* (Euphorbiaceae). Cryst. + 1EtOAc (MeOH/EtOAc). Mp 143°.

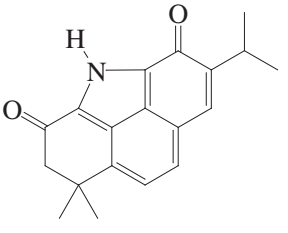
(±)-form [23979-21-7]
Alkaloid from *Croton salutaris* (Euphorbiaceae). Mp 222-224°. Co-occurs with the (+)-form.

Picrate: Mp 219-222°.

Barton, D.H.R. *et al., Chem. Comm.*, 1965, 52 (*struct*)
Barton, D.H.R. *et al., J.C.S.*, 1965, 2423 (*pmr, uv*)
Chambers, C. *et al., Chem. Comm.*, 1966, 449
Wheeler, D.M.S. *et al., J.A.C.S.*, 1967, **89**, 4494 (*ms*)
Stuart, K.L. *et al., J.C.S.(C)*, 1969, 1681 (*isol, uv*)
Kametani, T. *et al., J.C.S.(C)*, 1969, 2030 (*synth*)
Stuart, K.L. *et al., Phytochemistry*, 1973, **12**, 1967 (*biosynth*)
Shafiee, A. *et al., J. Pharm. Sci.*, 1975, **64**, 1570 (*Alkaloid Or$_1$*)
Khosa, R.L. *et al., Chem. Ind. (London)*, 1980, 662 (*Isosinoacutine*)
Barnes, R.A. *et al., Phytochemistry*, 1981, **20**, 543 (*N-Norsalutaridine*)
Djakoure, A.L. *et al., CA*, 1983, **98**, 107592v (*Mocrispatine*)
Ludwig, W. *et al., Angew. Chem., Int. Ed.*, 1986, **25**, 1025 (*synth*)
Sariyar, G. *et al., Planta Med.*, 1992, **58**, 368 (*Salutaridine N-oxide*)
Ribár, B. *et al., Acta Cryst. C*, 1993, **49**, 978 (*cryst struct*)
Shafiee, A. *et al., J. Sci., Islamic Repub. Iran*, 1997, **8**, 105-107 (*N-Noralkaloid Or^1*)
Bracher, F. *et al., J.O.C.*, 2004, **69**, 8602-8608 (*isol, pmr, cmr*)

Salviadione S-40

[862832-47-1]



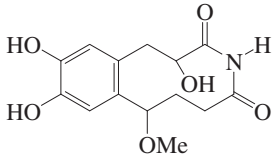
$C_{19}H_{19}NO_2$ 293.365

Alkaloid from the roots of *Salvia miltiorrhiza*. Orange solid (EtOAc/hexane). Mp 212-214°.

Don, M.-J. *et al., J. Nat. Prod.*, 2005, **68**, 1066-1070 (*isol, pmr, cmr*)

Salviamiltamide S-41

1,6,7,8-Tetrahydro-2,10,11-trihydroxy-8-methoxy-2H-benzo[e]azecine-3,5-dione



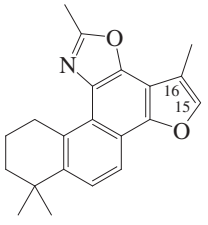
$C_{14}H_{17}NO_6$ 295.291

Alkaloid from the rhizomes of *Salvia miltiorrhiza*. Grey powder. $[\alpha]_D^{20}$ +7.3 (c, 0.1 in MeOH). λ_{max} 230 (log ϵ 3.62); 283 (log ϵ 3.45) (MeOH).

Choi, J.S. *et al., Fitoterapia*, 2001, **72**, 30-34

Salvianene S-42

[862832-45-9]



$C_{21}H_{21}NO_2$ 319.402

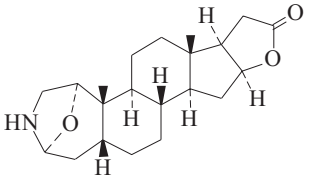
Alkaloid from the roots of *Salvia miltiorrhiza*. Cytotoxic. Brown needles (EtOAc/hexane). Mp 90-92°.

15,16-Dihydro: ***Salvianane***
[862832-46-0]
$C_{21}H_{23}NO_2$ 321.418
Alkaloid from the roots of *Salvia miltiorrhiza*. Pale green plates (EtOAc/hexane).

Don, M.-J. *et al., J. Nat. Prod.*, 2005, **68**, 1066-1070 (*isol, pmr, cmr, ms*)

Samandaridine S-43

[6384-73-2]



$C_{21}H_{31}NO_3$ 345.481

Present in salamanders (*Salamandra* spp.). Also occurs as glycosides in *Torulopsis magnoliae* and prod. by various *Acetobacter* spp. Cryst. (EtOH). Mp 287-288°. $[\alpha]_D^{21}$ +29.5 (2N AcOH).

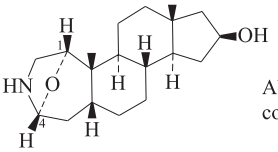
▶ CL8019000

Hydrochloride:
Cryst. (H_2O). Mp 343°. $[\alpha]_D^{24}$ +14.1 (H_2O).

Walker, T.K. *et al., Arch. Biochem. Biophys.*, 1959, **83**, 161 (*isol*)
Gorin, P.A.J. *et al., Can. J. Chem.*, 1961, **39**, 846 (*isol*)
Habermehl, G. *et al., Chem. Ber.*, 1963, **96**, 840
Habermehl, G. *et al., Annalen*, 1967, **706**, 213 (*ms*)
Habermehl, G. *et al., Chem. Ber.*, 1968, **101**, 198 (*biosynth*)
Shimizu, Y. *et al., J.O.C.*, 1976, **41**, 1930 (*synth*)
Oka, K. *et al., J.A.C.S.*, 1977, **99**, 3859 (*struct*)

Samandarine S-44

*1,4-Epoxy-3-aza-*A*-homoandrostan-16-ol*
[467-51-6]



Absolute configuration

$C_{19}H_{31}NO_2$ 305.459

Secretion of *Salamandra maculosa* and *Salamandra atra*. Toxin causing respiratory paralysis, hypertension and cardiac arrhythmia. Potent local anaesthetic not used because of its toxicity. Cryst. (EtOH aq. or Me_2CO). Mp 187-188°. $[\alpha]_D^{17}$ +43.7.

▶ LD_{50} (mus, ipr) 0.3 mg/kg; Highly toxic, LD_{50} (mus, scu) 1.5 mg/kg; LD_{50} (rbt, ivn) 1 mg/kg. VP2405000

Hydrochloride: Mp 321-322°.

O-*Ac:* **O-*Acetylsamandarine***
[1857-07-4]
$C_{21}H_{33}NO_3$ 347.497
Alkaloid from *Salamandra maculosa*. Mp 159°.

Di-Ac:
Needles (EtOH aq.). Mp 167-168°.

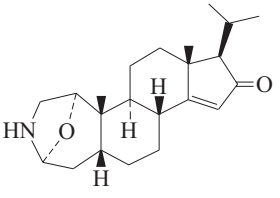
16-Ketone: ***Samandarone***
[467-52-7]
$C_{19}H_{29}NO_2$ 303.444
Main alkaloid of *Salamandra maculosa*, minor alkaloid in other *Salamandra* spp. Also from *Leptodactylus pentadactylus*. Paralytic toxin. Mp 190°.

▶ Toxic, LD_{50} (mus, scu) 1.2 mg/kg. CL8017800

Wolfel, E. *et al., Chem. Ber.*, 1961, **94**, 2361-2373 (*struct, ir, ord, abs config*)
Habermehl, G. *et al., Alkaloids (Academic Press)*, 1967, **9**, 427-439 (*rev, tox*)
Habermehl, G. *et al., Annalen*, 1967, **706**, 213-222 (*ms*)
Habermehl, G. *et al., Chem. Ber.*, 1968, **101**, 198-200 (*biosynth*)
Altona, C. *et al., Tetrahedron*, 1968, **24**, 13-32 (*abs config*)
Shizimu, Y. *et al., J.O.C.*, 1976, **41**, 1930-1934 (*synth*)

Samandenone S-45

*1,4-Epoxy-20-methyl-3-aza-*A*-homopregn-14-en-16-one*
[6400-81-3]



$C_{22}H_{33}NO_2$ 343.508

Alkaloid from the skin of *Salamandra maculosa*. Platelets (EtOH aq.). Mp 189-191°.

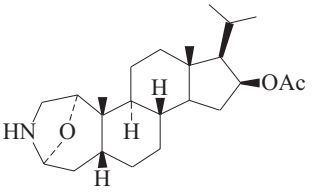
▶ VP2405500

Hydroiodide: Mp 310-311°.

Habermehl, G. *et al., Chem. Ber.*, 1966, **99**, 1439 (*isol, struct, ir, ms, pmr*)
Habermehl, G. *et al., Chem. Ber.*, 1968, **101**, 198 (*biosynth*)

Samandinine S-46

[24206-15-3]



$C_{24}H_{39}NO_3$ 389.577

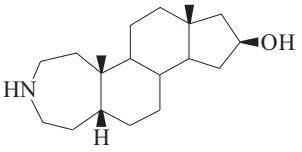
Prob. struct. Minor alkaloid from the skin of *Salamandra maculosa*. Mp 170°.

▶ CL8019200

Habermehl, G. *et al., Toxicon*, 1969, **7**, 163; *CA*, **71**, 113121z (*isol, ms, ir*)

Samanine S-47

*3-Aza-*A*-homoandrostan-16-ol*
[22614-24-0]



$C_{19}H_{33}NO$ 291.476

Alkaloid from the toxic secretion of *Salamandra maculosa taeniata*. Cryst. (EtOH). Mp 197°.

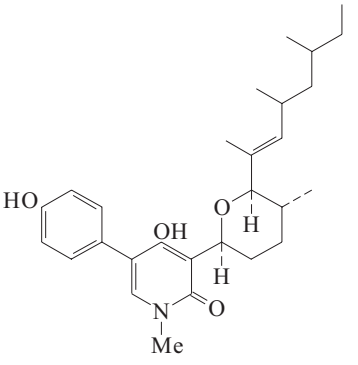
Hydrochloride: Mp 304-306°.

O,N-*Di-Ac:*
Cryst. (MeOH aq.). Mp 70-74°.

Habermehl, G. *et al., Prog. Org. Chem.*, 1968, **7**, 35 (*isol*)
Habermehl, G. *et al., Annalen*, 1969, **722**, 155 (*synth, ms*)
Oka, K. *et al., Tet. Lett.*, 1969, 1193 (*synth*)
Rao, R.B. *et al., Tet. Lett.*, 1973, 4971

Sambutoxin S-48

[160047-56-3]



$C_{28}H_{39}NO_4$ 453.62

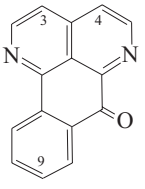
Related to Funiculosin, F-197 and Oxysporidinone, O-226. Prod. by *Fusarium sambucinum* PZF4 and *Fusarium oxysporum*. Mycotoxin. Shows respiratory chain inhibiting activity. Prisms (MeOH). Sol. MeOH, toluene, C_6H_6, EtOH, butanol, EtOAc; poorly sol. H_2O, hexane. Mp 196.5-197.5°. $[\alpha]_D^{25}$ -200 (c, 0.1 in MeOH). λ_{max} 213 (ϵ 38000); 233 (ϵ 17000); 254 (ϵ 29000) (MeOH) (Berdy).

N-*De-Me:* **N-*Demethylsambutoxin***
$C_{27}H_{37}NO_4$ 439.594
Prod. by *Fusarium oxysporum* strain N17B. Amorph. solid. $[\alpha]_D^{26}$ -98.6 (c, 0.1 in $CHCl_3$). λ_{max} 212 (log ϵ 4.32); 252 (log ϵ 4.03) ($CHCl_3$).

Kim, J.-C. *et al., Tet. Lett.*, 1995, **36**, 1047-1050 (*isol, uv, ir, pmr, cmr*)
Kawaik, S. *et al., Cereal Res. Commun.*, 1997, **25**, 325-326 (*activity*)
Jayasinghe, L. *et al., J. Nat. Prod.*, 2006, **69**, 439-442 (*N-Demethylsambutoxin*)

Sampangine S-49

*7*H-*Naphtho[1,2,3-*ij*][2,7]naphthyridin-7-one, 9CI*
[116664-93-8]



$C_{15}H_8N_2O$ 232.241

A drawing error in the original CAS abstract incorrectly depicted Sampangine as Indeno[1,2,3-*ij*][2,7]naphthyridine, I-65 which caused errors in registration. Alkaloid from the stem bark of *Cananga odorata* (ylang ylang) (Annonaceae). Shows antifungal activity. Bright yellow needles (C_6H_6). Mp 210° dec. λ_{max} 220 ; 252 ; 312 ; 326 ; 392 (MeOH) (Berdy).

3-Methoxy: ***3-Methoxysampangine***
[128129-42-0]
$C_{16}H_{10}N_2O_2$ 262.267
Alkaloid from the root bark of *Cleistopholis patens* (Annonaceae). Exhibits antifungal activity. Yellow needles (EtOAc/hexane). Mp 225-227° (213-215°).

4-Methoxy: ***Eupomatidine 2***. *4-Methoxysampangine*
[139253-60-4]
$C_{16}H_{10}N_2O_2$ 262.267
Alkaloid from bark of *Eupomatia laurina* (Eupomatiaceae). Fine lemon needles ($MeOH/CH_2Cl_2$). Mp 262-265° dec.

8-Hydroxy: ***8-Hydroxysampangine***
[225938-87-4]
$C_{15}H_8N_2O_2$ 248.24
Alkaloid from *Cleistopholis patens.* Orange powder. Mp 223-226°. λ_{max} 233 ; 315 ; 337 ; 447 (MeOH).

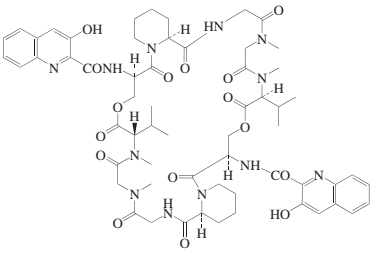
9-Methoxy: ***Eupomatidine 1***. *9-Methoxysampangine*
[139220-15-8]
$C_{16}H_{10}N_2O_2$ 262.267
Alkaloid from aerial parts of *Eupomatia bennettii* (Eupomatiaceae). Yellow prisms (MeOH). Mp 195-197° (natural) Mp 228-231° (synthetic).

4,9-Dimethoxy: ***Eupomatidine 3***. *4,9-Dimethoxysampangine*
[139220-16-9]
$C_{17}H_{12}N_2O_3$ 292.293
Alkaloid from bark of *Eupomatia laurina* (Eupomatiaceae). Yellow needles ($MeOH/CH_2Cl_2$). Mp 245-248° dec. (natural) Mp 278-281° dec. (synthetic).

Rao, J.U.M. *et al., J. Nat. Prod.*, 1986, **49**, 346 (*isol, uv, ir, pmr, ms, struct, activity*)
Bracher, F. *et al., Annalen*, 1989, 87 (*synth, uv, ir, pmr, cmr, ms*)
Liu, S. *et al., Antimicrob. Agents Chemother.*, 1990, **34**, 529 (*3-Methoxysampangine*)
Carroll, A.R. *et al., Aust. J. Chem.*, 1991, **44**, 1615 (*Eupomatidines, isol*)
Zjawiony, J.K. *et al., J. Het. Chem.*, 1997, **34**, 1233-1237 (*3-Methoxysampangine, synth, ir, pmr, cmr*)
Kitahara, Y. *et al., Tetrahedron*, 1997, **53**, 6001 (*Eupomatidines, synth*)
Akendengue, B. *et al., Nat. Prod. Lett.*, 1999, **13**, 147-150 (*8-Hydroxysampangine*)

Sandramycin, 9CI S-50

[100940-65-6]



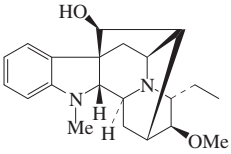
$C_{60}H_{76}N_{12}O_{16}$ 1221.331

Depsipeptide antibiotic. Prod. by *Nocardioides* sp. ATCC 39419. Cytotoxic agent; moderately active against leukaemia, gram-positive bacteria and tumours; inhibits HIV-1 reverse transcriptase. Cryst. or powder + $8H_2O$ ($MeOH/CHCl_3$). Sol. EtOAc, C_6H_6; fairly sol. toluene, MeOH; poorly sol. H_2O, hexane. Mp 208-212°. λ_{max} 210 (ϵ 76000); 228 (ϵ 71200); 306 (ϵ 9880); 356 (ϵ 10100) (MeOH/HCl) (Derep). λ_{max} 246 (ϵ 73000); 301 (ϵ 8780); 395 (ϵ 11200) (MeOH/NaOH) (Derep). λ_{max} 217 (ϵ 77700); 229 (ϵ 76600); 356 (ϵ 9880) (MeOH) (Derep).

Ger. Pat., 1985, 3 521 436; *CA*, **104**, 128220 (*isol, struct*)
Matson, J.A. *et al., J. Antibiot.*, 1989, **42**, 1763-1767; 1993, **46**, 162-166 (*pmr, struct*)
Boger, D.L. *et al., J.A.C.S.*, 1993, **115**, 11624; 1996, **118**, 1629; 2001, **123**, 561-568 (*synth, activity*)

Sandwicolidine S-51

[99612-65-4]



Relative Configuration

$C_{21}H_{28}N_2O_2$ 340.464

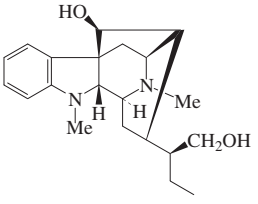
Struct. is peculiarly shown and described. It appears to be an abeoajmaline. Alkaloid from the undried roots of *Rauwolfia serpentina* (Apocynaceae). Plates (EtOH/EtOAc). Mp 213-214°. $[\alpha]_D^{20}$ +227 ($CHCl_3$).

Ac: Mp 241-242°.

Siddiqui, S. *et al., Tetrahedron*, 1985, **41**, 4577 (*isol, uv, ir, pmr, cmr, ms, struct*)

Sandwicoline S-52

4-Methyl-4,21-secosandwicine
[95753-42-7]



Absolute Configuration

$C_{21}H_{30}N_2O_2$ 342.48

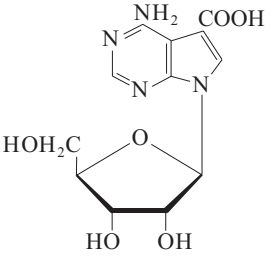
Alkaloid from the undried winter roots of *Rauwolfia serpentina* (Apocynaceae). Elongated rods (MeOH). Mp 177-178°. $[\alpha]_D^{20}$ +202 ($CHCl_3$).

Di-Ac:
Powder. Mp 203-204°.

Siddiqui, S. *et al., Heterocycles*, 1985, **23**, 617 (*isol, uv, ir, pmr, cmr, ms, struct, synth*)
Haider, S.I. *et al., Indian J. Chem., Sect. B*, 1987, **26**, 1065 (*synth*)
Ahmad, S.S. *et al., Synthesis*, 1988, 478 (*synth, uv, ir, pmr, ms*)

Sangivamycic acid S-53

*4-Amino-7-β-D-ribofuranosyl-7*H*-pyrrolo[2,3-*d*]pyrimidine-5-carboxylic acid, 8CI*
[18418-00-3]



$C_{12}H_{14}N_4O_6$ 310.266
Cryst. (H_2O). Mp 238° dec.

Hydrochloride: [21090-38-0]
Plates (MeOH). Mp 236-238°.

Me ester: ***5-(Methoxycarbonyl)tubercidin***
[18440-68-1]
$C_{13}H_{16}N_4O_6$ 324.293
Isol. from the sponge *Jaspis johnstoni*. Cytotoxic agent. Cryst. (MeOH/$CHCl_3$). Sol. MeOH, $CHCl_3$; poorly sol. hexane. Mp 216-218°. λ_{max} 211 ; 232 (sh) ; 281 (MeOH).

Me ester, hydrochloride:
Prisms (MeOH). Mp 216-218°.

Amide: ***Sangivamycin***. *B 14437. BA 90912. NSC 65346. OS 1998. Antibiotic B 14437. Antibiotic BA 90912*
[18417-89-5]
$C_{12}H_{15}N_5O_5$ 309.281
Produced by a strain of *Streptomyces rimosus*. Possesses cytotoxicity against HeLa cells and exhibits significant activity against leukaemia 1210 in mice. Mp 260°. $[\alpha]_D^{26}$ -45.7 (c, 1 in 0.1*M* HCl). λ_{max} 229 (ϵ 8200); 278 (ϵ 15100) (EtOH).

► LD_{50} (mus, orl) 11 mg/kg. UY9355000

*Nitrile: 4-Amino-7-β-D-ribofuranosyl-7H-pyrrolo[2,3-*d*]pyrimidine-5-carbonitrile, 9CI.* ***Toyocamycin***. *Cyanotubercidin. Unamycin B. Vengicide. E 212. Antibiotic 1037. Antibiotic E 212. Anhygroscopin B. Naritheracin*
[606-58-6]
$C_{12}H_{13}N_5O_4$ 291.266
Prod. by *Streptomyces toyocaensis* and *Streptomyces fungicidicus*. Isol. from the sponge *Jaspis johnstoni*. Active against gram-positive organisms; shows some exp. antineoplastic activity. Needles or prisms + $1H_2O$. Mp 243°. $[\alpha]_D^{26}$ -55.6 (c, 1 in 0.1*M* HCl). λ_{max} 235 (ϵ 22100); 273 (ϵ 16300) (0.1*N* HCl) (Derep). λ_{max} 235 (ϵ 11600); 280 (ϵ 16600) (0.1*N* NaOH) (Derep). λ_{max} 207 ; 232 (ϵ 11060); 274 (sh) ; 278 (ϵ 15700); 289 (sh) (MeOH) (Derep).

► LD_{50} (mus, orl) 8 mg/kg. UY9100000

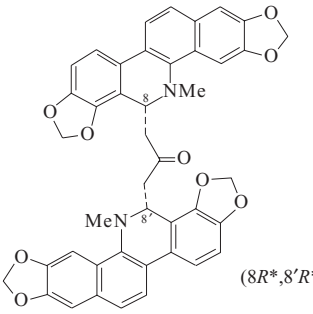
Nitrile, 5′-O-α-D-glucopyranoside: ***Toyocamycin 5′-α-D-glucopyranose***
[117456-79-8]
$C_{18}H_{23}N_5O_9$ 453.408
Isol. from *Tolypothrix tenuis* and *Plectonema radiosum*. Cytotoxic and antifungal agent. Amorph. Sol. H_2O. $[\alpha]_D^{25}$ +2.1 (c, 0.03 in H_2O). λ_{max} 230 (ϵ 7400); 278 (ϵ 10000) (H_2O) (Derep).

5′-Deoxy, nitrile: ***5′-Deoxytoyocamycin***
[65562-55-2]
$C_{12}H_{13}N_5O_3$ 275.266
Prod. by *Streptomyces* sp. A14345. Cryst. + $\frac{1}{2}H_2O$ (H_2O). Mp 187-188°. λ_{max} 235 (ϵ 22100); 273 (ϵ 16300) (0.1*N* HCl) (Derep). λ_{max} 235 (ϵ 11600); 280 (ϵ 16600) (0.1*N* NaOH) (Derep). λ_{max} 207 ; 232 (ϵ 11060); 274 (sh) ; 278 (ϵ 15700); 289 (sh) (MeOH) (Derep).

Suzuki, S. *et al., J. Antibiot., Ser. A*, 1961, **14**, 343
Aszalos, A. *et al., J. Antibiot.*, 1966, **19**, 285
Rao, K.V. *et al., J. Med. Chem.*, 1968, **11**, 939 (*Sangivamycin, isol, struct*)
Tolman, R.L. *et al., J.A.C.S.*, 1968, **90**, 524; 1969, **91**, 2102 (*Sangivamycic acid, Sangivamycin, Toyocamycin, struct, synth*)
U.S. Pat., 1969, 3 423 398; *CA*, **70**, 86268y (*Sangivamycin*)
Uematsu, T. *et al., J. Biol. Chem.*, 1970, **245**, 4365 (*biosynth*)
Japan. Pat., 1970, 70 19 638; *CA*, **73**, 108253f (*isol*)
Nichol, C.A. *et al., Handb. Exp. Pharmacol.*, 1975, **38**, 434 (*rev, pharmacol*)
Chenon, M.-T. *et al., J.A.C.S.*, 1975, **97**, 4627 (*nmr*)
Wang, Y. *et al., Carbohydr. Res.*, 1977, **59**, 449 (*5′-Deoxytoyocamycin*)
Prusiner, P. *et al., Acta Cryst. B*, 1978, **34**, 517 (*cryst struct, deriv*)
Bergstrom, D.E. *et al., J.O.C.*, 1981, **46**, 1423-1431 (*Methoxycarbonyltubercidin, synth*)
Stewart, J.B. *et al., J. Antibiot.*, 1988, **41**, 1048 (*deriv*)
Isono, K. *et al., J. Antibiot.*, 1988, **41**, 1711 (*rev*)
Osada, H. *et al., J. Antibiot.*, 1989, **42**, 102 (*props*)
Zabriskie, T.M. *et al., J. Nat. Prod.*, 1989, **52**, 1353-1356 (*Jaspis johnstoni constits*)
Isaac, B.G. *et al., J. Antibiot.*, 1991, **44**, 729 (*5′-Deoxytoyocamycin*)
Iimori, T. *et al., Tet. Lett.*, 1991, **32**, 7273 (*pmr, conformn*)
Sharma, M. *et al., Nucleosides Nucleotides*, 1993, **12**, 643 (*Toyocamycin, synth*)
Porcari, A.R. *et al., Nucleosides Nucleotides*, 1999, **18**, 153-159 (*Toyocamycin, synth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, SAU000; VGZ000

Sanguidimerine S-54

*1,3-Bis(13,14-dihydro-13-methyl[1,3]benzodioxolo[5,6-*c*]-1,3-dioxolo[4,5-*i*]phenanthridin-14-yl)-2-propanone, 9CI. 1,3-Bis(8-hydrosanguinarinyl)acetone. 1,3-Bis(11-hydrosanguinarinyl)acetone*



(8*R**,8′*R**)*-form*

$C_{43}H_{32}N_2O_9$ 720.734
Antineoplastic agent.

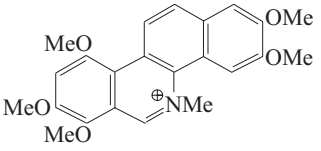
(8R*,8′R*)-form
(+)-form. Alkaloid SC2
[41758-45-6]
Alkaloid from the rhizomes of *Sanguinaria canadensis*. Also obt. by base-catalysed condensation of Sanguinarine, S-56 with acetonedicarboxylic acid (Papaveraceae). Cryst. ($CHCl_3$/MeOH). Mp 174°. $[\alpha]_D^{26}$ +21.2 (c, 0.5 in Py).

(8RS,8′SR)-form
meso*-form.* ***Chelidimerine***. *Alkaloid CM1*
[39110-99-1]
Alkaloid from the rhizomes and roots of *Chelidonium majus*. Also obt. by base-cat. condensation of Sanguinarine, S-56 with acetonedicarboxylic acid (Papaveraceae). Cryst. ($CHCl_3$/MeOH). Mp 258-260°. Pharmacol. active isomer. Opt. inactive. The *N*-oxide shows higher cytotoxic activity.

Kim, H.K. *et al., J. Pharm. Sci.*, 1969, **58**, 372 (*isol, uv, ir*)
Tin-Wa, M. *et al., J. Nat. Prod.*, 1970, **33**, 267; 1972, **35**, 87 (*isol, uv, ir, pmr, ms, cryst struct*)
Tin-Wa, M. *et al., J. Pharm. Sci.*, 1972, **61**, 1846 (*synth, uv, ms, struct*)

Sanguilutine S-55

*2,3,7,8,10-Pentamethoxy-5-methylbenzo[*c*]phenanthridinium(1+), 9CI*
[55950-34-0]



$C_{23}H_{24}NO_5^{\oplus}$ 394.446
Struct. revised in 1978. Alkaloid from *Sanguinaria canadensis* (Papaveraceae). Sol. MeOH, $CHCl_3$; poorly sol. H_2O.

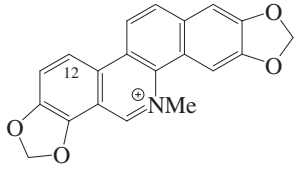
Chloride:
Golden-yellow needles ($CHCl_3$/EtOH). Mp 163-164° (137-138°, 140-145° dec.).

Pseudocyanide:
Prisms ($CHCl_3$/EtOH). Mp 232-233° dec.

Slavḱ, J. *et al., Coll. Czech. Chem. Comm.*, 1960, **25**, 1667; 1968, **33**, 1619 (*isol, pmr*)
Hruban, L. *et al., Coll. Czech. Chem. Comm.*, 1970, **35**, 3420 (*uv*)
Kessar, S.Y. *et al., Tet. Lett.*, 1977, 1459 (*synth*)
Ishii, H. *et al., Chem. Pharm. Bull.*, 1978, **26**, 864; 3252 (*struct, synth*)
Ishii, H. *et al., J.C.S. Perkin 1*, 1984, 2283 (*synth, pmr*)
Hanaoka, M. *et al., J.C.S. Perkin 1*, 1987, 677 (*synth, uv, pmr*)
Hanaoka, M. *et al., Chem. Pharm. Bull.*, 1989, **37**, 857 (*synth*)
Dostal, J. *et al., Phytochemistry*, 1998, **47**, 879-885 (*isol, struct*)
Marek, R. *et al., Magn. Reson. Chem.*, 1999, **37**, 195-202 (*N-15 nmr*)
Seckárová, P. *et al., Magn. Reson. Chem.*, 2002, **40**, 147-152 (*pmr, cmr*)

Sanguinarine S-56

*13-Methyl[1,3]benzodioxolo[5,6-*c*]-1,3-dioxolo[4,5-*i*]phenanthridinium(1+), 9CI. 5-Methyl-2,3:7,8-bis(methylenedioxy)benzo[*c*]phenanthridinium(1+). Pseudochelerythrine. ψ-Chelerythrine*
[2447-54-3]



$C_{20}H_{14}NO_4^{\oplus}$ 332.335
Several numbering systems have been used. Alkaloid from a wide variety of genera in the Papaveraceae (*Argemone*, *Bocconia*, *Chelidonium*, *Dicranostigma*, *Eschscholtzia*, *Glaucium*, *Hunnemannia*, *Hylomecon*, *Hypecoum*, *Macleaya*, *Me-*

conopsis, *Papaver*, *Platystemon*, *Romneya*, *Sanguinaria*, *Stylomecon*, *Stylophorum*), Papaveraceae (*Corydalis*, *Dicentra*, *Fumaria*), Rutaceae (*Zanthoxylum*), and Sapindaceae (*Pteridophyllum*). Potent cytotoxic agent functioning by DNA intercalation and uncoupling of oxidative phosphorylation. Inhibitor of alanine aminotransferase, acetylcholine transferase and of human plasma diamine oxidase. Adrenergic receptor antagonist. Antimicrobial and antiinflammatory agent showing antiplaque activity. Anaesthetic, antifungal and hepatotoxic agent. Has been used in toothpastes and oral rinses. Causes temporary change in intraocular pressure. Consumption of Sanguinarine, present in poppy seeds and in the oil of *Argemone mexicana* which has been used as an adulterant for mustard oil in India, has been linked to development of glaucoma. Banned by FDA. Sol. MeOH, $CHCl_3$. Log P 0.01 (uncertain value) (calc). λ_{max} 234 ; 284 ; 324 (MeOH) (Berdy). λ_{max} 234 (ϵ 31500); 283 (ϵ 33100); 325 (ϵ 14100) (EtOH) (Berdy).

▶ LD_{50} (mus, ivn) 22 mg/kg; LD_{50} (mus, ipr) 18 mg/kg; LD_{50} (mus, scu) 112 mg/kg. VP5200000

Chloride: ***Sanguinarium chloride, INN, USAN***
[5578-73-4]
$C_{20}H_{14}ClNO_4$ 367.788
Orange needles (dil. HCl). Mp 277-280° dec. (273-274°, 284-289° dec.).

▶ VP5220000

Pseudocyanide:
$C_{21}H_{14}N_2O_4$ 358.353
Mp 244-245° (236-237°).

N-*De-Me: [1,3]Benzodioxolo[5,6-*c*]-1,3-dioxolo[4,5-*i*]phenanthridine. 2,3:7,8-Bis(methylenedioxy)benzo[*c*]phenanthridine.* ***Norsanguinarine***
[522-30-5]
$C_{19}H_{11}NO_4$ 317.3
Alkaloid from *Corydalis incisa*, *Corydalis pallida*, *Dicentra peregrina*, *Argemone mexicana*, *Argemone albiflora*, *Chelidonium japonicum*, *Eschscholtzia californica*, *Glaucium flavum* var. *vestitum*, *Macleaya cordata*, *Papaver somniferum*, *Papaver setigerum*, *Papaver bracteatum*, *Papaver orientale*, *Papaver rhoeas* (corn poppy), *Pteridophyllum racemosum* and *Fumaria vaillantii* (Papaveraceae, Sapindaceae). Pale yellow needles (Me_2CO, $CHCl_3$/MeOH or $CHCl_3$/EtOH). Mp 285-287° (278-280° dec.).

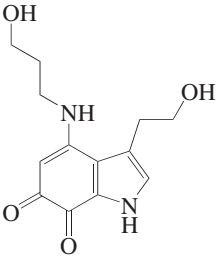
12-Methoxy: see Chelirubine, C-360

8-Methoxy (?): see Pancorine, P-55

Späth, E. *et al., Ber.*, 1931, **64**, 370 (*struct*)
Slavík, J. *et al., Coll. Czech. Chem. Comm.*, 1968, **33**, 1619 (*ms, pmr*)
Hruban, L. *et al., Coll. Czech. Chem. Comm.*, 1970, **35**, 3420 (*uv*)
Sainsbury, M. *et al., J.C.S.(C)*, 1970, 1797 (*synth, uv, ir*)
Onda, M. *et al., Chem. Pharm. Bull.*, 1971, **19**, 31 (*synth*)
Furuya, T. *et al., Phytochemistry*, 1972, **11**, 3401 (*Norsanguinarine*)
Haisová, K. *et al., Coll. Czech. Chem. Comm.*, 1973, **38**, 3312; 1975, **40**, 1576 (*Norsanguinarine*)
Ikuta, A. *et al., Phytochemistry*, 1974, **13**, 2175; 1976, **15**, 577 (*Norsanguinarine*)
Battersby, A.R. *et al., J.C.S. Perkin 1*, 1975, 1140; 1147 (*isol, biosynth*)
Ishii, H. *et al., Chem. Pharm. Bull.*, 1978, **26**, 864 (*pmr*)
Lenfeld, J. *et al., Planta Med.*, 1981, **43**, 161; 1983, **48**, 111 (*pharmacol*)
Maiti, M. *et al., FEBS Lett.*, 1982, **142**, 280 (*pharmacol*)
Takao, N. *et al., Helv. Chim. Acta*, 1983, **66**, 473 (*biosynth*)
Šmidrkal, J. *et al., Coll. Czech. Chem. Comm.*, 1984, **49**, 1412 (*synth*)
Šimánek, V. *et al., Alkaloids (Academic Press)*, 1985, **26**, 185 (*rev*)
Nagao, Y. *et al., Nucleic Acids Symp. Ser.*, 1985, **16**, 37 (*pharmacol*)
Hanaoka, M. *et al., Chem. Lett.*, 1986, 739 (*synth*)
Blaskó, G. *et al., Heterocycles*, 1988, **27**, 911 (*cmr*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 1410
Marek, R. *et al., Magn. Reson. Chem.*, 1999, **37**, 195-202 (*N-15 nmr*)
Seckárová, P. *et al., Magn. Reson. Chem.*, 2002, **40**, 147-152 (*pmr, cmr*)
Dvorák, Z. *et al., Heterocycles*, 2006, **68**, 2403-2422 (*rev*)
Mackraj, I. *et al., Cardiovasc. Ther.*, 2008, **26**, 75-83 (*rev*)
Sax, N.I. *et al., Dangerous Properties of Industrial Materials, 5th edn., Van Nostrand Reinhold*, 1979, 964

Sanguinolentaquinone S-57

[950842-11-2]

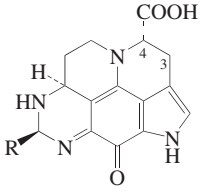


$C_{13}H_{16}N_2O_4$ 264.28
Isol. from the mushrooms *Mycena haematopus* and *Mycena sanguinolenta*. Red solid. λ_{max} 241 (log ϵ 3.95); 341 (log ϵ 3.81); 531 (log ϵ 2.79) (H_2O).

Peters, S. *et al., J. Nat. Prod.*, 2007, **70**, 1274-1277 (*isol, pmr, cmr, ms*)
Peters, S. *et al., Eur. J. Org. Chem.*, 2008, 319-323 (*isol*)

Sanguinone A† S-58

[950842-09-8]



R = H

Absolute Configuration

$C_{15}H_{14}N_4O_3$ 298.301
Isol. from mushroom *Mycena sanguinolenta*. Blue solid. $[\alpha]_D^{25}$ -45 (c, 0.01 in H_2O). λ_{max} 251 (log ϵ 3.9); 376 (log ϵ 3.73); 578 (log ϵ 2.64) (H_2O).

4-Decarboxy, 3,4-didehydro: Decarboxydidehydrosanguinone A. Decarboxydehydrosanguinone A
[949005-10-1]
$C_{14}H_{12}N_4O$ 252.275
Yellow solid. Artifact. Oxidative decarboxylation product. λ_{max} 231 (log ϵ 3.32); 252 (log ϵ 3.19); 428 (log ϵ 3.05); 452 (log ϵ 3.25) (H_2O).

Peters, S. *et al., J. Nat. Prod.*, 2007, **70**, 1274-1277 (*isol, cd, pmr, cmr, ms*)

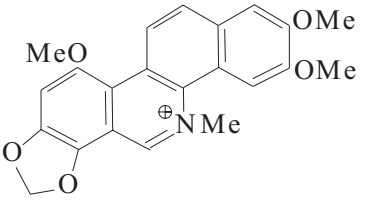
Sanguinone B S-59

[950842-10-1]
As Sanguinone A, S-58 with
R = CH_3
$C_{16}H_{16}N_4O_3$ 312.327
Isol. from mushroom *Mycena sanguinolenta*. Blue solid. λ_{max} 247 (log ϵ 3.86); 374 (log ϵ 3.75); 571 (log ϵ 2.59) (H_2O).

Peters, S. *et al., J. Nat. Prod.*, 2007, **70**, 1274-1277 (*isol, cd, pmr, cmr, ms*)

Sanguirubine S-60

*5,9,10-Trimethoxy-12-methylbenzo[*c*]-1,3-dioxolo[4,5-*i*]phenanthridinium(1+), 9CI. 2,3,10-Trimethoxy-5-methyl-7,8-methylenedioxybenzo[*c*]phenanthridinium(1+)*
[55950-33-9]



$C_{22}H_{20}NO_5^{\oplus}$ 378.404
Alkaloid from *Sanguinaria canadensis* (Papaveraceae). Sol. MeOH, $CHCl_3$; poorly sol. H_2O.

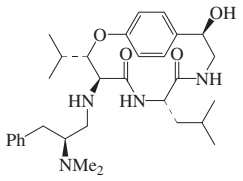
Chloride:
$C_{22}H_{20}ClNO_5$ 413.856
Red needles ($CHCl_3$/EtOH or H_2O). Mp 281-284° Mp 275-276°.

Pseudocyanide:
$C_{23}H_{20}N_2O_5$ 404.421
Prisms ($CHCl_3$/EtOH). Mp 237-238°.

Slavík, J. *et al., Coll. Czech. Chem. Comm.*, 1960, **25**, 1667; 1968, **33**, 1619 (*isol, pmr*)
Hruban, L. *et al., Coll. Czech. Chem. Comm.*, 1970, **35**, 3420 (*uv*)
Ishii, H. *et al., Chem. Pharm. Bull.*, 1978, **26**, 864; 3252 (*struct, synth*)
Ishii, H. *et al., J.C.S. Perkin 1*, 1984, 2283 (*synth, pmr*)
Seckárová, P. *et al., Magn. Reson. Chem.*, 2002, **40**, 147-152 (*pmr, cmr*)

Sanjoinine G_1 S-61

[107462-36-2]



Absolute Configuration

$C_{31}H_{44}N_4O_5$ 552.712

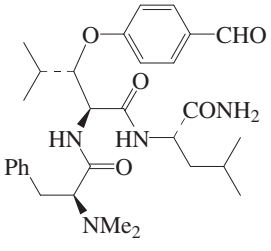
Isol. from the seeds of *Zizyphus vulgaris* var. *spinosus*. Mp 236-238°. $[\alpha]_D^{20}$ -68.6 (c, 0.175 in $CHCl_3$). λ_{max} 232 (log ϵ 3.97); 278 (log ϵ 3.3) (No solvent reported).

Me ether: ***Sanjoinine D***
[107462-34-0]
$C_{32}H_{46}N_4O_5$ 566.739
Isol. from the seeds of *Zizyphus vulgaris* var. *spinosus*. Needles ($CHCl_3$/MeOH). Mp 256-258°. $[\alpha]_D^{26}$ -53.6 (c, 0.25 in $CHCl_3$). λ_{max} 231 (log ϵ 3.82); 279 (log ϵ 2.82) (MeOH).

Han, B.H. *et al., Phytochemistry*, 1990, **29**, 3315-3319 (*isol, pmr, cmr, ms*)
Han, B.H. *et al., Heterocycles*, 1995, **41**, 1909 (*synth*)
Park, M.H. *et al., Phytochemistry*, 1996, **43**, 701-704 (*isol, uv, cd, pmr, abs config*)
East, S.P. *et al., Tetrahedron*, 1998, **54**, 13371-13390 (*synth*)
Temal-Laib, T. *et al., J.A.C.S.*, 2002, **124**, 583-590 (*synth*)

Sanjoinine G_2 S-62

[107494-21-3]



$C_{30}H_{42}N_4O_5$ 538.686

A seco-ansapeptide alkaloid. Alkaloid from Sanjoin (the seeds of *Zizyphus vulgaris* var. *spinosus* (Rhamnaceae)). Needles (Me_2CO aq.). Mp 182°. $[\alpha]_D$ -79.2. λ_{max} 284 (log ϵ 3.81) (no solvent reported).

Han, B.H. *et al., Pure Appl. Chem.*, 1989, **61**, 443-448 (*isol, struct*)
Han, B.H. *et al., Phytochemistry*, 1990, **29**, 3315-3319 (*isol, ir, uv, pmr, cmr*)

Sankhpuspine S-63

$C_{17}H_{23}NO_3$ 289.374

Struct. unknown. Alkaloid from *Convolvulus pluricaulis* (Convolvulaceae). Cryst. (EtOH). Mp 162-164°.

Picrate: Mp 76° dec.

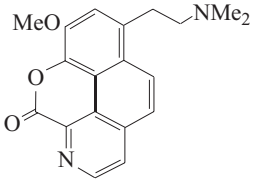
Aurichloride: Mp 208° dec.

Chloroplatinate: Mp 180° dec.

Basu, N.K. *et al., J. Am. Pharm. Assoc.*, 1948, **37**, 27-28 (*isol*)

Santiagonamine S-64

[92664-91-0]



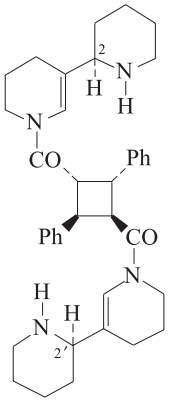
$C_{19}H_{18}N_2O_3$ 322.363

Alkaloid from the stems and branches of *Berberis darwinii* (Berberidaceae). The first known phenanthridine alkaloid.

Valencia, E. *et al., Tet. Lett.*, 1984, **25**, 3163 (*uv, ir, pmr, ms, struct*)
Markey, M.D. *et al., Org. Lett.*, 2007, **9**, 3255-3257 (*synth*)

Santiaguine S-65

[528-31-4]



(2*R*,2′*R*)–*form*

$C_{38}H_{48}N_4O_2$ 592.823

α-Truxillate dimer of Adenocarpine, A-138. The truxillate residue is *meso*-, so there are four possible isomers; 2 enantiomers, one (±)-form and one *meso*-. All have been found in nature.

(2R,2′R)-form [11016-82-3]
Alkaloid from *Adenocarpus commutatus* and *Adenocarpus grandiflorus* (Fabaceae). Mp 240-245°. $[\alpha]_D^{20}$ -18.42 (c, 9.6 in 85% HCOOH aq.).

Hydrochloride (1:2): [11016-90-3]
$[\alpha]_D^{18}$ -16.66 (c, 3.96 in 85% HCOOH).

(2S,2′S)-form [11016-83-4]
Alkaloid from *Adenocarpus complicatus, Adenocarpus intermedius, Adenocarpus foliosus* and *Adenocarpus viscosus* (Fabaceae). Cryst. (EtOH). Mp 235-236°. $[\alpha]_D^{17}$ +3.3 (c, 3.68 in EtOH).

Hydrochloride (1:2): [11016-92-5]
Cryst. + $1H_2O$ (H_2O); cryst. (EtOH). Mp 238° (anhyd. 241°).

Perchlorate (1:2): [11017-00-8]
Mp 244-245° dec.

Picrate: Mp 285° (explodes, prior blackening).

(2RS,2′RS)-form
(±)-form
[11016-84-5]
Alkaloid from *Adenocarpus commutatus, Adenocarpus grandiflorus, Adenocarpus foliosus* and *Adenocarpus viscosus* (Fabaceae). Cryst. + $1H_2O$. Mp 237-239° dec.

Hydrochloride (1:2): [11016-93-6]
Cryst. + $2H_2O$. Mp 245-250° dec.

Perchlorate (1:2):
Cryst. + $1^1/_2$ H_2O. Mp 252-254° dec.

(2RS,2′SR)-form
meso-*form*
[11016-85-6]
Alkaloid from *Adenocarpus commutatus* (Fabaceae). Cryst. + $3H_2O$ (MeOH aq.). Mp 238-240° dec.

Hydrochloride (1:2): [11016-91-4]
Cryst. + $3^1/_2$ H_2O (EtOH aq.). Mp 245-247° dec.

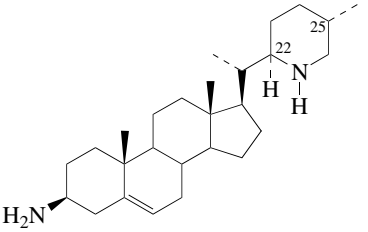
Perchlorate (1:2): [11017-01-9]
Cryst. + $1^1/_2$ H_2O. Mp 245-248° dec.

[11016-88-9 , 11016-89-0 , 11016-86-7 , 11016-96-9 , 11016-95-8 , 11016-87-8 , 11016-97-0 , 11016-94-7]

Ribas, I. *et al., An. R. Soc. Esp. Fis. Quim., Ser. B*, 1950, **46**, 489; 1951, **47**, 730; 1953, **49**, 783; 1956, **52**, 133; 1958, **54**, 157; 215; 1966, **62**, 845 (*isol, struct, bibl, abs config*)
Ribas, I. *et al., Ann. Pharm. Fr.*, 1952, **10**, 54 (*isol*)
Bernasconi, R. *et al., Pharm. Acta Helv.*, 1970, **45**, 421 (*isol*)
O'Donovan, D.G. *et al., J.C.S. Perkin 1*, 1974, 2524 (*biosynth*)
Nehme, M. *et al., An. Quim.*, 1977, **73**, 307 (*isol*)

Sarachine S-66

22,26-Iminocholest-5-en-3-amine
[214706-01-1]



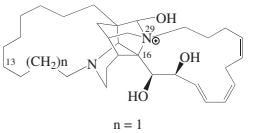
$C_{27}H_{46}N_2$ 398.674

Alkaloid from *Saracha punctata*. Antiprotozoal agent. Greenish powder. $[\alpha]_D^{25}$ -7 (c, 0.3 in $CHCl_3$). $[\alpha]_D^{25}$ -13 (c, 0.3 in MeOH). Only relative config. of C-22:C-25 is known.

Moretti, C. *et al., J. Nat. Prod.*, 1998, **61**, 1390-1393 (*isol, pmr, cmr, ms*)

Sarain A S-67

[123117-93-1]



Absolute Configuration

$C_{32}H_{51}N_2O_3^{\oplus}$ 511.767
Alkaloid from the sponge *Reniera sarai*. Vasodilator, insecticide. Amorph. powder. $[\alpha]_D$ +66 (c, 1.3 in $CHCl_3$). The title of the 2007 paper was 'Synthesis of (-)-Sarain A'. This was an error and should be (+)-Sarain A. A correction is in press March 2008. λ_{max} 238 (ϵ 14939) (MeOH).

13,14-Didehydro(Z-), n = 2: ***Sarain B***
[123391-00-4]
$C_{33}H_{51}N_2O_3^{\oplus}$ 523.778
Alkaloid from *Reniera sarai*. Insecticide, acaricide. Toxic to sea urchins. Powder. $[\alpha]_D$ +76.3 (c, 1.2 in $CHCl_3$). λ_{max} 238 (ϵ 13415) (MeOH).

[123117-96-4 , 123391-01-5 , 123117-94-2]

Cimino, G. *et al., Tetrahedron*, 1989, **45**, 3863-3872 (*isol, uv, ir, pmr, cmr, cryst struct*)
Cimino, G. *et al., J. Nat. Prod.*, 1990, **53**, 1519-1525 (*uv, ir, pmr, cmr, ms*)
Guo, Y. *et al., Tetrahedron*, 1996, **52**, 8341-8348 (*pmr, cmr, abs config*)
Matzanke, N. *et al., Org. Prep. Proced. Int.*, 1998, **30**, 3-51 (*rev*)
Becker, M.H. *et al., J.A.C.S.*, 2007, **129**, 11987-12002 (*synth, bibl*)

Sarain C S-68

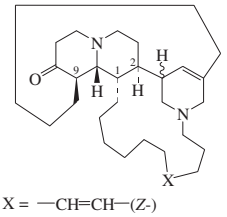
[123089-18-9]
As Sarain A, S-67 with
n = 2
$C_{33}H_{53}N_2O_3^{\oplus}$ 525.793
Alkaloid from the sponge *Reniera sarai*. Insecticide, acaricide, toxic to sea urchins. Amorph. powder. $[\alpha]_D$ +67.4 (c,1 in $CHCl_3$). λ_{max} 238 (ϵ 13582) (MeOH).

[123089-19-0]

Cimino, G. *et al., Tetrahedron*, 1989, **45**, 3863 (*isol, uv, ir, pmr, cmr*)
Caprioli, V. *et al., Comp. Biochem. Physiol., B: Comp. Biochem.*, 1992, **103**, 293 (*activity*)
Guo, Y. *et al., Tetrahedron*, 1996, **52**, 8341 (*abs config*)

Saraine 1 S-69

[105418-77-7]



Absolute Configuration

X = —CH=CH—(Z-)

$C_{31}H_{50}N_2O$ 466.749
Alkaloid from the marine sponge *Reniera sarai*. Antiarrythmic, ion chelator, insecticide. Amorph. powder. $[\alpha]_D$ -47.8 (c, 1.2 in $CHCl_3$).
▶ LD_{50} (mus, ipr) 200 mg/kg.

1,2,9-Triepimer: ***Isosaraine 1***
[119766-95-9]
$C_{31}H_{50}N_2O$ 466.749
Minor alkaloid from the Mediterranean sponge *Reniera sarai*. Shows insecticidal props. Amorph. solid. $[\alpha]_D$ -23.1 (c, 1.2 in $CHCl_3$).

Cimino, G. *et al., Bull. Soc. Chim. Belg.*, 1986, **95**, 783-800 (*isol, pmr, cmr, biosynth*)
Cimino, G. *et al., Tet. Lett.*, 1989, **30**, 133-136 (*isol, pmr, cmr, ms, struct*)
Caprioli, V. *et al., Comp. Biochem. Physiol., B: Comp. Biochem.*, 1992, **103**, 293-296 (*biochem*)
Guo, Y. *et al., Tetrahedron*, 1996, **52**, 14961-14974 (*cmr*)
Guo, Y. *et al., Tet. Lett.*, 1998, **39**, 463-466 (*abs config*)

Saraine 2 S-70

[105418-80-2]
As Saraine 1, S-69 with
X = –CH_2–
$C_{30}H_{50}N_2O$ 454.738
Alkaloid from the marine sponge *Reniera sarai*. Antiarrythmic, ion-chelator, insecticide. Amorph. powder. $[\alpha]_D$ -117 (c, 1.1 in $CHCl_3$).

1,2,9-Triepimer: ***Isosaraine 2***
[135091-28-0]
$C_{30}H_{50}N_2O$ 454.738
Alkaloid from the marine sponge *Reniera sarai*. Oil. $[\alpha]_D$ -34.6 (c, 2 in $CHCl_3$).

Cimino, G. *et al., Bull. Soc. Chim. Belg.*, 1986, 783-800 (*isol, pmr, cmr, biosynth*)
Cimino, G. *et al., Tet. Lett.*, 1989, **30**, 133-136 (*struct*)
Cimino, G. *et al., Magn. Reson. Chem.*, 1991, **29**, 327-332 (*isol, pmr, cmr, struct*)
Caprioli, V. *et al., Comp. Biochem. Physiol., B: Comp. Biochem.*, 1992, **103**, 293-296 (*biochem*)
Guo, Y. *et al., Tetrahedron*, 1996, **52**, 14961-14974 (*abs config, cmr*)
Guo, Y. *et al., Tet. Lett.*, 1998, **39**, 463-466 (*config*)

Saraine 3 S-71

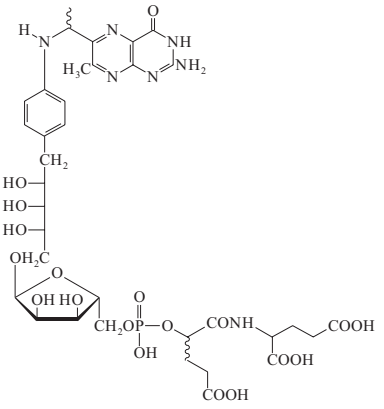
[105305-54-2]
As Saraine 1, S-69 with
X = –CH=CH–CH_2–
$C_{32}H_{52}N_2O$ 480.776
Alkaloid from the marine sponge *Reniera sarai*. Antiarrythmic, ion-chelator, insecticide. Amorph. powder. $[\alpha]_D$ -27.4 (c, 0.8 in $CHCl_3$).

1,2,9-Triepimer: ***Isosaraine 3***
[184429-62-7]
$C_{32}H_{52}N_2O$ 480.776
Alkaloid from the sponge *Reniera sarai*. Amorph. powder. $[\alpha]_D$ -16.3 (c, 1.34 in $CHCl_3$).

Cimino, G. *et al., Bull. Soc. Chim. Belg.*, 1986, **95**, 783-800 (*isol, pmr, cmr, biosynth*)
Cimino, G. *et al., Tet. Lett.*, 1989, **30**, 133-136 (*struct*)
Caprioli, V. *et al., Comp. Biochem. Physiol., B: Comp. Biochem.*, 1992, **103**, 293-296 (*biochem*)
Guo, Y. *et al., Tetrahedron*, 1996, **52**, 14961-14974 (*pmr, cmr, struct*)
Guo, Y. *et al., Tet. Lett.*, 1998, **39**, 463-466 (*abs config*)

Sarcinapterin S-72

[89157-12-0]

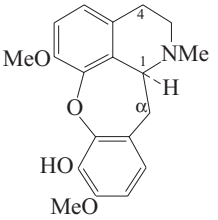


$C_{35}H_{48}N_7O_{19}P$ 901.773
Isol. from *Methanosarcina barkeri*. Co-factor in methanogenic bacteria. Solid.

Ván Beelen, P. *et al., Eur. J. Biochem.*, 1984, **139**, 359 (*isol, uv, pmr*)
Gorris, L.G. *et al., Prog. Biotechnol.*, 1986, **2**, 144; *CA*, **106**, 210634t (*props*)

Sarcocapnidine S-73

*2,3,12,12a-Tetrahydro-6,9-dimethoxy-1-methyl-1*H*-[1]-benzoxepino[2,3,4-*ij*]isoquinolin-8-ol, 9CI*
[87069-33-8]



$C_{19}H_{21}NO_4$ 327.379
Biogenetic (benzylisoquinoline-type) numbering shown. Alkaloid from *Sarcocapnos crassifolia* and *Corydalis claviculata* (Papaveraceae). Cryst. (EtOH). Mp 126-127°. $[\alpha]_D$ +385.4 (c, 0.07 in MeOH).

N-α-*Oxide:* **cis-*Sarcocapnidine* N-*oxide***
[122621-72-1]
$C_{19}H_{21}NO_5$ 343.379
Alkaloid from aerial parts of *Sarcocapnos baetica* subsp. *integrifolia* (Papaveraceae). Amorph. powder. $[\alpha]_D$ +430 (c, 0.20 in MeOH).

N-*De-Me:* ***Norsarcocapnidine***
$C_{18}H_{19}NO_4$ 313.352
Alkaloid from *Sarcocapnos crassifolia*. Amorph. solid. $[\alpha]_D^{25}$ +347.5 (c, 0.8 in EtOH).

Me ether: ***Sarcocapnine***
[81874-23-9]
$C_{20}H_{23}NO_4$ 341.406
Alkaloid from *Sarcocapnos enneaphylla* (Papaveraceae). Cryst. (EtOH/Et_2O)(as hydrochloride). Mp 213-215° (hydrochloride). $[\alpha]_D^{25}$ +218 (c, 0.3 in EtOH).

Me ether, N-α-*oxide:* **cis-*Sarcocapnine* N-**

oxide
[122555-13-9]
$C_{20}H_{23}NO_5$ 357.405
Alkaloid from *Ceratocapnos heterocarpa*. Amorph. powder. Mp 110-114°. $[\alpha]_D$ +174 (c, 0.065 in MeOH). λ_{max} 230 (sh) (log ϵ 4.08); 284 (log ϵ 3.4) (MeOH).

Me ether, N-*de-Me:* ***Norsarcocapnine***
[81855-38-1]
$C_{19}H_{21}NO_4$ 327.379
Alkaloid from *Ceratocapnos heterocarpa*. Pale yellowish cryst. Mp 110°. $[\alpha]_D$ +165 (c, 0.06 in MeOH). λ_{max} 206 (log ϵ 4.68); 228 (sh) (log ϵ 4.26); 280 (log ϵ 3.61) (MeOH).

*4*R-*Hydroxy:* ***4-Hydroxysarcocapnidine***
[120186-23-4]
$C_{19}H_{21}NO_5$ 343.379
Alkaloid from aerial parts of *Sarcocapnos baetica* subsp. *integrifolia* (Papaveraceae). Amorph. solid. $[\alpha]_D$ +157 (c, 0.13 in $CHCl_3$).

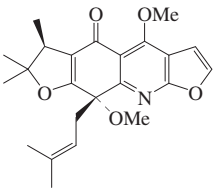
*4*R-*Hydroxy, Me ether:* ***4-Hydroxysarcocapnine***
[95377-94-9]
$C_{20}H_{23}NO_5$ 357.405
Alkaloid from *Sarcocapnos enneaphylla* (Papaveraceae). Cryst. (EtOH). Mp 145-146°. $[\alpha]_D$ +311 (c, 0.11 in $CHCl_3$). λ_{max} 218 (log ϵ 4.26); 230 (sh) (log ϵ 4.09); 282 (log ϵ 3.46) (EtOH).

α-Oxo, 1,2,3,4-tetradehydro, N-*de-Me: 8-Hydroxy-6,9-dimethoxy-12*H-*[1]-benzoxepino[2,3,4-*ij*]isoquinolin-12-one, 9CI.* ***Oxosarcocapnidine***
[87035-68-5]
$C_{18}H_{13}NO_5$ 323.304
Alkaloid from *Sarcocapnos crassifolia* (Papaveraceae). Yellow cryst. (MeOH). Mp 231-232°.

α-Oxo, 1,2,3,4-tetradehydro, Me ether, N-*de-Me: 6,8,9-Trimethoxy-12*H-*[1]benzoxepino[2,3,4-*ij*]isoquinolin-12-one, 9CI.* ***Oxosarcocapnine***
[81855-39-2]
$C_{19}H_{15}NO_5$ 337.331
Alkaloid from *Sarcocapnos enneaphylla* (Papaveraceae). Yellow cryst. (EtOH). Mp 202-203°.

Campello, M.J. *et al., Tet. Lett.*, 1982, **23**, 239 (*isol, uv, pmr, ms, struct, abs config, Sarcocapnine, Oxosarcocapnine*)
Boente, J.M. *et al., Tet. Lett.*, 1983, **24**, 2303 (*uv, ir, pmr, cmr, ms, struct, Sarcocapnidine, Oxosarcocapnidine*)
Blaschke, G. *et al., Z. Naturforsch., C*, 1983, **38**, 670
Castedo, L. *et al., Tet. Lett.*, 1984, 4573-4576 (*4-Hydroxysarcocapnine*)
Castedo, L. *et al., Heterocycles*, 1987, **26**, 29; 1988, **27**, 2783 (*Norsarcocapnidine, 4-Hydroxysarcocapnidine, Sarcocapnidine N-oxide*)
Suau, R. *et al., Phytochemistry*, 1989, **28**, 3511 (*Norsarcocapnine*)
de Sousa, J.D.F. *et al., J.A.C.S.*, 1994, **116**, 9745 (*synth, Sarcocapnidine, Sarcocapnine*)
Suau, R. *et al., Phytochemistry*, 1996, **43**, 1389 (*Sarcocapnidine N-oxide, Sarcocapnine N-oxide*)
Rodrigues, J.A.R. *et al., J.O.C.*, 2004, **69**, 2920-2928 (*synth*)

Sarcodifurine A S-74

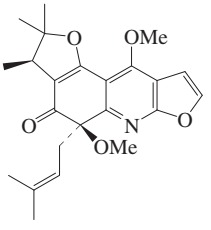


Relative Configuration

$C_{23}H_{27}NO_5$ 397.47
Alkaloid from the leaves of *Sarcomelicope follicularis*. Yellow needles (MeOH). Mp 155-157°. $[\alpha]_D^{25}$ -27 (c, 0.6 in MeOH). λ_{max} 244 ; 255 (sh) ; 272 ; 320 (MeOH).

Chosson, E. *et al., Heterocycles*, 2004, **63**, 2043-2050 (*isol, pmr, cmr, cryst struct*)

Sarcodifurine B S-75



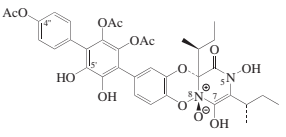
Relative Configuration

$C_{23}H_{27}NO_5$ 397.47
Alkaloid from the leaves of *Sarcomelicope follicularis*. Yellow needles (MeOH). Mp 166-167°. $[\alpha]_D^{25}$ +99 (c, 0.6 in MeOH). λ_{max} 258 ; 267 ; 276 ; 354 (MeOH).

Chosson, E. *et al., Heterocycles*, 2004, **63**, 2043-2050 (*isol, pmr, cmr, cryst struct*)

Sarcodonin S-76

[263846-30-6]



Absolute Configuration

$C_{36}H_{38}N_2O_{14}$ 722.701
Isol. from the fruiting bodies of the basidiomycete *Sarcodon leucopus*. Moderate cytotoxic agent. Amorph. powder. $[\alpha]_D^{25}$ -20.4 (c, 1.6 in $CHCl_3$) (as tetra-Ac). λ_{max} 202 (ϵ 40450); 256 (ϵ 15230) (EtOH).

7-Ac: ***Sarcodonin γ***
[679001-56-0]
$C_{38}H_{40}N_2O_{15}$ 764.738
Isol. from *Sarcodon leucopus*. Amorph. solid. $[\alpha]_D^{25}$ -11.7 (c, 0.24 in $CHCl_3$).

*4″-*O*-De-Ac:* ***Sarcodonin α***
[679001-53-7]
$C_{34}H_{36}N_2O_{13}$ 680.664
Isol. from *Sarcodon leucopus*. Amorph. powder. $[\alpha]_D^{25}$ -9.9 (c, 1.2 in $CHCl_3$). λ_{max} 210 (log ϵ 4.66); 270 (log ϵ 4.24) (EtOH).

*4″-*O*-De-Ac, 5′,6′-di-Ac:* ***Sarcodonin β***
[679001-55-9]
$C_{38}H_{40}N_2O_{15}$ 764.738
Isol. from *Sarcodon leucopus*. Amorph. powder. $[\alpha]_D^{25}$ -41.7 (c, 0.12 in $CHCl_3$).

N-*Deoxy,* N-*methoxy, 4″-*O*-de-Ac:* ***Sarcodonin δ***
[870773-03-8]
$C_{35}H_{38}N_2O_{13}$ 694.691
Isol. from *Hydnellum geogerirum*, *Hydnellum suaveolens* and *Sarcodon scabrosus*. Amorph. red powder. $[\alpha]_D^{20}$ -2.7 (c, 0.1 in MeOH). λ_{max} 205 (log ϵ 4.26); 260 (log ϵ 4.79) (MeOH).

5′,6′-Quinone, tri-de-Ac: ***Sarcoviolin α***
[679001-64-0]
$C_{30}H_{30}N_2O_{11}$ 594.574
Isol. from the fruiting bodies of the basidiomycete *Sarcodon leucopus*. Cytotoxic. Amorph. violet solid. Obt. as a 2:1 mixt. with Episarcoviolin α to which the data refers. λ_{max} 290 (log ϵ 4.08); 350 (log ϵ 3.52); 540 (log ϵ 2.71) (MeOH).

8-Epimer: ***Episarcodonin***
[679001-58-2]
$C_{36}H_{38}N_2O_{14}$ 722.701
Isol. from *Sarcodon leucopus*. Amorph. solid. $[\alpha]_D^{25}$ -5.4 (c, 0.4 in MeOH).

*8-Epimer, 4″-*O*-de-Ac:* ***Episarcodonin α***
[679001-59-3]
$C_{34}H_{36}N_2O_{13}$ 680.664
Isol. from *Sarcodon leucopus*. Amorph. solid. $[\alpha]_D^{25}$ -1.8 (c, 0.55 in $CHCl_3$). λ_{max} 210 (log ϵ 4.71); 270 (log ϵ 4.27) (EtOH).

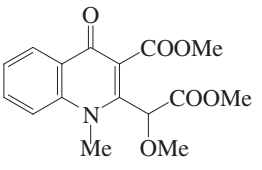
*8-Epimer, 4″-*O*-de-Ac, 5′,6′-di-Ac:* ***Episarcodonin β***
[679001-61-7]
$C_{38}H_{40}N_2O_{15}$ 764.738
Isol. from *Sarcodon leucopus*. Amorph. powder. $[\alpha]_D^{25}$ -28 (c, 0.23 in $CHCl_3$).

8-Epimer, N-*methoxy, 4″-*O*-de-Ac:* ***Hydnellin A***
[910099-73-9]
$C_{35}H_{38}N_2O_{13}$ 694.691
Isol. from *Hydnellum suaveolens*. $[\alpha]_D^{20}$ -125.1 (c, 1 in $CHCl_3$). λ_{max} 257 (log ϵ 4.2) (EtOH).

8-Epimer, 5′,6′-quinone, tri-de-Ac: ***Episarcoviolin α***
[679001-65-1]
$C_{30}H_{30}N_2O_{11}$ 594.574
Isol. from *Sarcodon leucopus*.

Geraci, C. *et al., J. Nat. Prod.*, 2000, **63**, 347-351 (*Sarcodonin, isol, pmr, cmr*)
Calì, V. *et al., Eur. J. Org. Chem.*, 2004, 592-599 (*Sarcodonins α,β,γ, Episarcodonins, Sarcoviolin α, Episarcoviolin α*)
Ma, B.-J. *et al., Z. Naturforsch., B*, 2005, **60**, 565-568 (*Sarcodonin δ*)
Hashimoto, T. *et al., Chem. Pharm. Bull.*, 2006, **54**, 912-914 (*Hydnellin A*)

Sarcomejine S-77



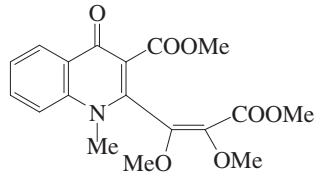
$C_{16}H_{17}NO_6$ 319.313

Alkaloid from the bark of *Sarcomelicope megistophylla*. Amorph. yellow powder. $[\alpha]_D^{25}$ +3 (c, 0.1 in CH_2Cl_2). λ_{max} 290 (sh) ; 327 (log ϵ 3.67); 341 (log ϵ 3.73) (MeOH).

Fokialakis, N. *et al., J. Nat. Prod.*, 2000, **63**, 1004-1005

Sarcomejine B S-78

[939403-86-8]

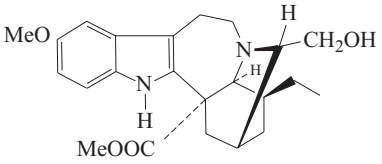


$C_{18}H_{19}NO_7$ 361.351
Alkaloid from the bark of *Sarcomelicope megistophylla*. λ_{max} 297 (sh) ; 314 (sh) ; 326 (sh) ; 337 (log ϵ 3.32) (MeOH).

Mitaku, S. *et al., Fitoterapia*, 2007, **78**, 169-170 (*isol, pmr, cmr, ms*)

Sarcopharyngine S-79

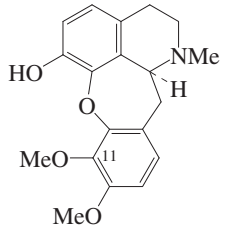
Methyl 19-(hydroxymethyl)-12-methoxyibogamine-18-carboxylate, 9CI
[110011-72-8]



$C_{23}H_{30}N_2O_4$ 398.501
Alkaloid from the seeds of *Sarcopharyngia crassa* (preferred genus name *Tabernaemontana*) (Apocynaceae). $[\alpha]_D^{22}$ -38.

Batchily, F. *et al., Ann. Pharm. Fr.*, 1986, **44**, 449

Sarcophylline S-80



$C_{19}H_{21}NO_4$ 327.379
Biogenetic (benzylisoquinoline-type) numbering shown.

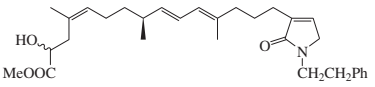
(*S*)-*form*
Alkaloid from *Sarcocapnos crassifolia* and *Sarcocapnos enneaphylla* (Papaveraceae). Amorph. $[\alpha]_D^{25}$ +200 (c, 1.65 in $CHCl_3$).

O^{11}-De-Me: ***Claviculine***
[87035-67-4]
Alkaloid from *Sarcocapnos crassifolia* (Papaveraceae). Cryst. (EtOH). Mp 126° (112-113°). $[\alpha]_D$ +443 (c, 0.41 in MeOH).

Boente, J.M. *et al., Tet. Lett.*, 1983, **24**, 2303 (*Claviculine*)
Blaschke, G. *et al., Phytochemistry*, 1985, **24**, 585-588 (*Claviculine*)
Castedo, L. *et al., Heterocycles*, 1987, **26**, 29-33 (*uv, ir, pmr, ms, struct*)

Sarcotragin A S-81

[346583-99-1]



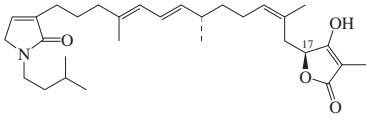
$C_{31}H_{43}NO_4$ 493.685
Alkaloid from the sponge *Sarcotragus* sp. Gum. $[\alpha]_D^{25}$ +16 (c, 0.11 in MeOH). λ_{max} 204 (log ϵ 4.1); 236 (log ϵ 4.07) (MeOH).

N-*De-(2-phenylethyl),* N-*(carboxymethyl):* ***Sarcotragin B***
[346584-00-7]
$C_{25}H_{37}NO_6$ 447.57
Alkaloid from *Sarcotragus* sp. Gum (as Na salt). $[\alpha]_D^{25}$ +17.5 (c, 0.12 in MeOH) (Na salt). λ_{max} 209 (log ϵ 4.12); 232 (log ϵ 4.15) (MeOH) (Na salt).

Shin, J. *et al., Tet. Lett.*, 2001, **42**, 3005-3007 (*isol, pmr, cmr*)

Sarcotrine A S-82

[472974-46-2]



$C_{30}H_{45}NO_4$ 483.69
Constit. of a *Sarcotragus* sponge. Oil. $[\alpha]_D^{21}$ +36.1 (c, 0.18 in MeOH). λ_{max} 240 (log ϵ 4.81) (MeOH).

N-*Dealkyl,* N-*(2-methylbutyl):* ***Sarcotrine C***
[472974-48-4]
$C_{30}H_{45}NO_4$ 483.69
Constit. of a *Sarcotragus* sponge. Oil. $[\alpha]_D^{21}$ +19.1 (c, 0.18 in MeOH). λ_{max} 245 (log ϵ 4.28) (MeOH).

N-*Dealkyl,* N-*(2-phenylethyl):* ***Sarcotrine B***
[472974-47-3]
$C_{33}H_{43}NO_4$ 517.707
Constit. of a *Sarcotragus* sponge. Oil. $[\alpha]_D^{21}$ +36.9 (c, 0.07 in MeOH).

N-*Dealkyl,* N-*(carboxymethyl):* ***Sarcotrine E***
[627895-36-7]
$C_{27}H_{37}NO_6$ 471.592
Constit. of *Sarcotragus* sp. Oil. $[\alpha]_D^{21}$ +38.8 (c, 0.18 in MeOH).

17-Epimer: ***Episarcotrine A***
[471278-72-5]
$C_{30}H_{45}NO_4$ 483.69
Constit. of a *Sarcotragus* sponge. Oil. $[\alpha]_D^{21}$ +42.8 (c, 0.05 in MeOH). λ_{max} 242 (log ϵ 4.56) (MeOH).

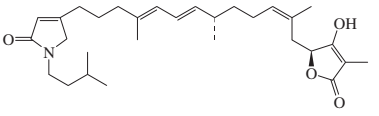
17-Epimer, N-*dealkyl,* N-*(2-methylbutyl):* ***Episarcotrine C***
[472974-54-2]
$C_{30}H_{45}NO_4$ 483.69
Constit. of a *Sarcotragus* sponge. Oil. $[\alpha]_D$ +24 (c, 0.06 in MeOH).

17-Epimer, N-*dealkyl,* N-*(2-phenylethyl):* ***Episarcotrine B***
[471278-73-6]
$C_{33}H_{43}NO_4$ 517.707
Constit. of a *Sarcotragus* sponge. Oil. $[\alpha]_D^{21}$ +42.1 (c, 0.04 in MeOH).

Liu, Y. *et al., J. Nat. Prod.*, 2002, **65**, 1307-1314 (*isol, pmr cmr*)
Liu, Y. *et al., J. Nat. Prod.*, 2003, **66**, 1451-1456 (*Sarcotrine E*)

Sarcotrine D S-83

[472974-56-4]



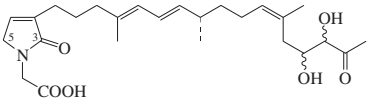
$C_{30}H_{45}NO_4$ 483.69
Constit. of a *Sarcotragus* sponge. Oil. $[\alpha]_D^{21}$ +65.2 (c, 0.01 in MeOH). λ_{max} 239 (log ϵ 4.34) (MeOH).

N-*Dealkyl,* N-*(carboxymethyl):* ***Isosarcotrine E***
[627895-37-8]
$C_{27}H_{37}NO_6$ 471.592
Constit. of a *Sarcotragus* sp. Oil. $[\alpha]_D^{21}$ +33.3 (c, 0.09 in MeOH).

Liu, Y. *et al., J. Nat. Prod.*, 2002, **65**, 1307-1314 (*Sarcotrine D*)
Liu, Y. *et al., J. Nat. Prod.*, 2003, **66**, 1451-1456 (*Isosarcotrine E*)

Sarcotrine F S-84

[627895-38-9]



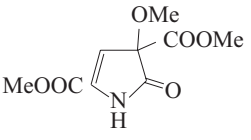
$C_{26}H_{39}NO_6$ 461.597
Constit. of a *Sarcotragus* sp. Oil. Isol. as a mixt. with Isosarcotrine F.

3-Deoxo, 5-oxo: ***Isosarcotrine F***
[627895-39-0]
$C_{26}H_{39}NO_6$ 461.597
Constit. of a *Sarcotragus* sp. Oil. Stereochem. need not necessarily correspond.

Liu, Y. *et al., J. Nat. Prod.*, 2003, **66**, 1451-1456 (*isol, pmr, cmr*)

Sargassumlactam S-85

[75956-49-9]



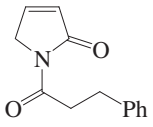
$C_9H_{11}NO_6$ 229.189
Isol. from the marine brown alga *Sar-*

gassum kjellmanianum. Mp 140-141.5°. $[\alpha]_D$ 0. λ_{max} 208 (ϵ 6100); 293 (ϵ 3400) (EtOH) (Derep).

Nozaki, H. *et al., Chem. Lett.*, 1980, 1453 (*uv, ir, pmr, cmr, cryst struct*)

Sarmentamide A **S-86**

1,5-Dihydro-1-(1-oxo-3-phenylpropyl)-2H-pyrrol-2-one. N-*(3-Phenylpropanoyl)-Δ³-pyrrolidone*

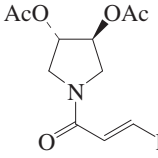


$C_{13}H_{13}NO_2$ 215.251
Constit. of the roots of *Piper sarmentosum*. Oil. λ_{max} 209 (log ϵ 4.23); 230 (sh) (log ϵ 3.89) (MeOH).

Tuntiwachwuttikul, P. *et al., Chem. Pharm. Bull.*, 2006, **54**, 149-151 (*isol, pmr, cmr*)

Sarmentamide B **S-87**

3,4-Diacetoxy-N-*cinnamoylpyrrolidine*



Relative Configuration

$C_{17}H_{19}NO_5$ 317.341
Constit. of the roots of *Piper sarmentosum*. Wax. $[\alpha]_D^{25}$ +68.3 (c, 0.12 in MeOH). λ_{max} 206 (log ϵ 4.27); 217 (log ϵ 4.21); 233 (sh) (log ϵ 4.08); 258 (log ϵ 3.78); 283 (log ϵ 4.25) (MeOH).

Tuntiwachwuttikul, P. *et al., Chem. Pharm. Bull.*, 2006, **54**, 149-151 (*isol, pmr, cmr*)

Sarothamnine **S-88**

[1361-10-0]

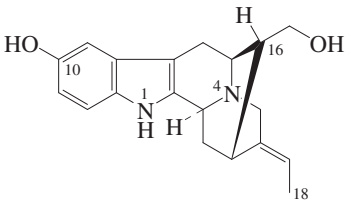
$C_{30}H_{50}N_4$ 466.752

Struct. unknown. Prob. a Sparteine-type dimer. Alkaloid from *Cytisus scoparius* (Fabaceae). Mp 173-174°. $[\alpha]_D$ -48.4 ($CHCl_3$). Ir spectrum resembles that of sparteine; indicates no CH_3 groups or sites of unsatn.

Valeur, A. *et al., C. R. Hebd. Seances Acad. Sci.*, 1918, **167**, 26 (*isol*)
Delaby, R. *et al., Bull. Soc. Chim. Fr.*, 1949, **16**, 152-154
Paris, R.R. *et al., Bull. Soc. Chim. Fr.*, 1963, 1597-1599 (*chromatog*)

Sarpagine **S-89**

Sarpagan-10,17-diol, 9CI. Raupine
[482-68-8]



$C_{19}H_{22}N_2O_2$ 310.395
Alkaloid from many *Rauwolfia* spp., *Alstonia yunnanensis, Vinca major* and *Vinca difformis* (Apocynaceae). Needles (EtOH or MeOH). $[\alpha]_D^{20}$ +54 (Py). Dec. at 320° without melting.

Hydrochloride:
Needles (EtOH). Dec. at 220° without melting.

Hydrobromide:
Prisms (EtOH). Dec. at 220° without melting.

O^{17}-*Ac:* ***17-Acetylsarpagine***
[102358-21-4]
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from roots of *Alstonia yunnanensis.*

Di-O-*Ac:*
Cryst. (C_6H_6). Mp 244-245°. $[\alpha]_D^{20}$ -23 (c, 0.46 in Py). $[\alpha]_D$ +24 (c, 0.45 in EtOH).

N^1-*Me:* **N-*Methylsarpagine***
[17801-05-7]
$C_{20}H_{24}N_2O_2$ 324.422
Alkaloid from the bark of *Alstonia spectabilis* (Apocynaceae). Prisms (MeOH). Mp 300° dec.

N^1,N^4-*Di-Me:* **N^a-*Methylsarpagine methosalt***
[4849-01-8 (chloride)]
$C_{21}H_{27}N_2O_2^{\oplus}$ 339.456
Alkaloid from the roots of *Pleiocarpa mutica* and *Pleiocarpa tubicina* (Apocynaceae). Cryst. (MeOH) (as chloride). Mp 275-280° (dec.)(as chloride). $[\alpha]_D$ +56 (c, 0.174 in MeOH aq.).

10-Me ether: ***Lochnerine****. Lochvinerine. 10-Methoxysarpagan-17-ol, 9CI. Alkaloid C*†*. C-Alkaloid T*
[522-47-4]
$C_{20}H_{24}N_2O_2$ 324.422
Alkaloid present in curare, *Lochnera rosea* (preferred genus name *Catharanthus), Vinca major*, *Rauwolfia suaveolens*, *Rauwolfia macrophylla* and *Rauwolfia nitida* (Apocynaceae). Strong hypoglycaemic agent. Cryst. (MeOH aq.). Mp 202.5-203.5° (195-197° dec.). $[\alpha]_D^{25}$ +72 (c, 0.624 in EtOH). $[\alpha]_D^{24}$ +52 (c, 0.385 in Py).

10-Me ether, 17-Ac:
Needles (CH_2Cl_2/Et_2O). Mp 243°. $[\alpha]_D^{24}$ -5.6 (c, 0.358 in Py).

10-Me ether, N^1-*Me:* ***10-Methoxyaffinisine***
[7689-00-1]
$C_{21}H_{26}N_2O_2$ 338.449
Alkaloid from the stem bark of *Alstonia macrophylla*. Needles (MeOH). Mp 205-206°. $[\alpha]_D$ +75 (c, 0.62 in $CHCl_3$). λ_{max} 223 (log ϵ 4.25); 283 (log ϵ 4.02); 300 (log ϵ 3.91) (EtOH).

10-Me ether, N^4-*Me:* ***Lochneram****. 17-Hydroxy-10-methoxy-4-methylsarpaginium*
[6901-26-4]
$C_{21}H_{27}N_2O_2^{\oplus}$ 339.456
Alkaloid from curare (Loganiceae).

Cryst. (Me_2CO)(as iodide). Mp 235-238° (iodide). $[\alpha]_D^{23}$ +41 (c, 0.48 in 96% EtOH) (iodide).

17-Aldehyde, Me ether: ***10-Methoxyvellosimine***
[2149-40-8]
$C_{20}H_{22}N_2O_2$ 322.406
Alkaloid from *Vinca major* (Apocynaceae). Needles (C_6H_6/EtOAc or MeOH). Mp 224-226°.

17-Aldehyde, Me ether, N^1-*Me:* ***Majvinine***
[63959-49-9]
$C_{21}H_{24}N_2O_2$ 336.433
Alkaloid from the aerial parts of *Vinca major* (Apocynaceae). Needles (C_6H_6). Mp 195-197° dec.

18-Hydroxy, 10-Me ether: ***18-Hydroxylochnerine***
[107603-56-5]
$C_{20}H_{24}N_2O_3$ 340.421
Alkaloid from the leaves, stem and root bark of *Rauwolfia biauriculata* (Apocynaceae). Amorph. solid.

16-Epimer: ***16-Episarpagine***
[102490-01-7]
$C_{19}H_{22}N_2O_2$ 310.395
Alkaloid from roots of *Alstonia yunnanensis.* Cryst. Mp 300° dec. $[\alpha]_D^{30}$ +34.7 (c,0.08 in EtOH).

16-Epimer, 17-carboxylic acid, Me ester: ***10-Hydroxypericyclivine***
[132242-29-6]
$C_{20}H_{22}N_2O_3$ 338.405
Alkaloid from the leaves of *Alstonia undulata* (Apocynaceae).

16-Epimer, 17-carboxylic acid, N^1-*Me, Me ester:* ***10-Hydroxy*-N-*methylpericyclivine***
[132242-28-5]
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from the leaves of *Alstonia undulata* (Apocynaceae).

16-Epimer, 17-carboxylic acid, Me ether, Me ester: ***10-Methoxypericyclivine***
[132242-30-9]
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from the leaves of *Alstonia undulata* (Apocynaceae). Cryst. (Me_2CO). Mp 235-238°. $[\alpha]_D$ +1.7 (c, 1 in $CHCl_3$).

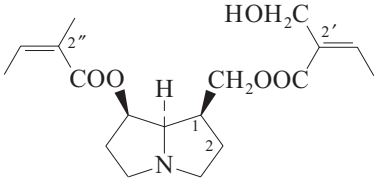
16-Epimer, 17-carboxylic acid, Me ether, N^1-*Me, Me ester:* ***10-Methoxy*-N-*methylpericyclivine***
[132242-31-0]
$C_{22}H_{26}N_2O_3$ 366.459
Alkaloid from the leaves of *Alstonia undulata* (Apocynaceae). Also isol. from *Haplophyton crooksii* (Apocynaceae). Cryst. (Me_2CO). Mp 230-231° (213-215°). $[\alpha]_D$ +23 (c, 0.5 in $CHCl_3$). Erroneously claimed to be novel by Mroue *et al* (1996).

Stoll, A. *et al., Helv. Chim. Acta*, 1953, **36**, 1143-1147 (*isol, uv*)
Janot, M.M. *et al., C. R. Hebd. Seances Acad. Sci.*, 1956, **243**, 1789 (*uv, ir*)
Mors, W.B. *et al., Chem. Ind. (London)*, 1956, 173-174 (*Lochnerine, isol, uv, ir*)
Stauffacher, D. *et al., Helv. Chim. Acta*, 1957, **40**, 508-513 (*synth, Lochnerine*)
Arnold, W. *et al., Helv. Chim. Acta*, 1957, **40**, 705-716 (*Lochnerine, Lochneram*)

Biemann, K. *et al., J.A.C.S.*, 1961, **83**, 4801-4805 (*ms, synth, Lochnerine*)
Plat, M. *et al., Bull. Soc. Chim. Fr.*, 1965, 2497-2501 (*10-Methoxyvellosimine*)
Khan, Z.M. *et al., Helv. Chim. Acta*, 1965, **48**, 1957-1965; 1967, **50**, 625-627 (*N^a-Methylsarpagine methochloride*)
Hart, N.K. *et al., Aust. J. Chem.*, 1972, **25**, 2739-2741 (N-*Methylsarpagine*)
Blaha, K. *et al., Coll. Czech. Chem. Comm.*, 1974, **39**, 3168-3176 (*uv, cd, ord*)
Banerji, A. *et al., Phytochemistry*, 1974, **13**, 2309-2312; 1977, **16**, 1124-1125 (*Sarpagine, Lochnerine, 10-Methoxyvellosimine, Majvinine, isol, uv, ir, pmr, ms, struct*)
Chen, W. *et al., Yaoxue Xuebao*, 1985, **20**, 906; *CA*, **105**, 3520s (*epimer, 17-Acetylsarpagine*)
Abaul, J. *et al., J. Nat. Prod.*, 1986, **49**, 829-832 (*18-Hydroxylochnerine*)
Pinchon, T.-M. *et al., Phytochemistry*, 1990, **29**, 3341-3344 (*Alstonia undulata constits*)
Mroue, M.A. *et al., J. Nat. Prod.*, 1996, **59**, 890-893 (*10-Methoxy-N-methylpericyclivine*)
Kam, T.-S. *et al., Phytochemistry*, 1999, **51**, 839-844 (*10-Methoxyaffinisine*)
Zhao, S. *et al., J.O.C.*, 2003, **68**, 6279-6295 (*N-Methylsarpagine, Majvinine, 10-Methoxyaffinisine, synth*)
Sarma, P.V.V.S. *et al., Org. Lett.*, 2006, **8**, 1017-1020 (*10-Hydroxy-N-methylpericyclivine, synth*)
Lewis, S.E. *et al., Tetrahedron*, 2006, **62**, 8655-8681 (*rev, chem*)

Sarracine S-90

Mikanoidine
[2492-09-3]



$C_{18}H_{27}NO_5$ 337.415
Double ester of Platynecine, H-233 with Sarracinic acid, H-574 and Angelic acid. Alkaloid from *Senecio sarracenius*, *Senecio mikanoides*, *Senecio sylvaticus*, *Senecio rhombifolius*, *Senecio franchetii* and *Adenostyles alliariae* (preferred genus name *Cacalia*) (Asteraceae). Was used in the USSR for treatment of gastrointestinal hypermotility and peptic ulceration. Spasmolytic agent. Cryst. (EtOH). Mp 51-52° (45-46°). $[\alpha]_D$ -129.7 (EtOH). Log P 1.81 (calc).
▶ LD_{50} (rat, ipr) 218 mg/kg. EM9251400

Picrate:
Cryst. (EtOH). Mp 140-141°.

N-*Oxide:* ***Sarracine* N-*oxide***
[19038-27-8]
$C_{18}H_{27}NO_6$ 353.414
Alkaloid from *Senecio sarracenius, Senecio franchetii* and *Senecio mikanoides* (Asteraceae). Cryst. + $1H_2O$ (Me_2CO). Mp 123-124°. $[\alpha]_D$ -81.65 (H_2O). $[\alpha]_D$ -94 (EtOH). Becomes anhyd. at 100°, rehydrates on standing in air.

N-*Oxide, picrate:*
Cryst. (EtOH). Mp 107.5-108.5°.

O-*(3-Hydroxy-3-methylbutanoyl):* ***Racemodine***
[147554-28-7]
$C_{23}H_{35}NO_7$ 437.532
Alkaloid from *Senecio racemosus* (Asteraceae). Oil. $[\alpha]_D$ -135 (c, 0.35 in EtOH).

(2′E,2″E)-isomer: ***Neosarranicine***
[136173-27-8]
$C_{18}H_{27}NO_5$ 337.415
Alkaloid from *Senecio serra, Senecio hydrophyllus* and *Senecio mikanoides* (Asteraceae).

(2′E,2″Z)-isomer: ***Sarranicine***
[136173-25-6]
$C_{18}H_{27}NO_5$ 337.415
Alkaloid from *Senecio serra, Senecio hydrophyllus* and *Senecio mikanoides* (Asteraceae).

(2′Z,2″E)-isomer: ***Neosarracine***
[136173-26-7]
$C_{18}H_{27}NO_5$ 337.415
Alkaloid from *Senecio chrysocoma* and *Senecio kaschkarovii*. Tentatively identified also in a GC-MS study in *Senecio hydrophyllus* and *Senecio mikanioides* (Asteraceae). Oil. $[\alpha]_D^{20}$ +60.5 (c, 0.5 in EtOH).

7a-*Epimer:* ***8-Episarracine***
$C_{18}H_{27}NO_5$ 337.415
Alkaloid from the roots of *Senecio macedonicus.*

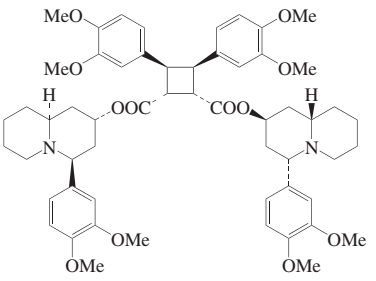
7a-*Epimer,* N-*oxide:* ***8-Episarracine* N-*oxide***
$C_{18}H_{27}NO_6$ 353.414
Alkaloid from the roots of *Senecio macedonicus.* Oil.

7a-*Epimer, (2′Z,2″E)-isomer:* ***8-Epineosarracine***
$C_{18}H_{27}NO_5$ 337.415
Alkaloid present in the roots of *Senecio macedonicum*. Identified by gc-ms.

Danilova, A.V. *et al., Zh. Obshch. Khim.*, 1953, **23**, 1417; 1597; *CA*, **47**, 12759 (*isol, Sarracine, oxide*)
Culvenor, C.C.J. *et al., J.O.C.*, 1961, **26**, 3045 (*isol, pmr, struct*)
Akramov, S.T. *et al., Khim. Prir. Soedin.*, 1967, **3**, 351; *Chem. Nat. Compd. (Engl. Transl.)*, 1967, **3**, 296 (*isol*)
White, E.P. *et al., An. Quim.*, 1972, **68**, 723 (*isol*)
Dauksha, V.E. *et al., Khim. Prir. Soedin.*, 1976, **12**, 831; *Chem. Nat. Compd. (Engl. Transl.)*, 1976, **12**, 753 (*isol*)
Stelljes, M.E. *et al., J. Nat. Prod.*, 1991, **54**, 759 (*Neosarracine, Neosarranicine, Sarranicine*)
Cheng, D.L. *et al., Phytochemistry*, 1992, **31**, 3671 (*Neosarracine*)
Ahmed, W. *et al., Phytochemistry*, 1993, **32**, 224 (*Racemodine*)
Grue, M.R. *et al., Phytochemistry*, 1993, **33**, 1517 (*Neosarracine*)
Christov, V. *et al., Z. Naturforsch., C*, 2002, **57**, 780-784 (*8-Episarracine, 8-Episarracine N-oxide, 8-Epineosarracine*)

Sarusubine A S-91

[956298-05-8]



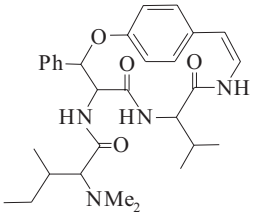
Relative Configuration

$C_{56}H_{70}N_2O_{12}$ 963.175
Alkaloid from the leaves of *Lagerstroemia subcostata*. Pale yellow solid. $[\alpha]_D^{23}$ +40.1 (c, 1 in MeOH).

Watanabe, K. *et al., Tet. Lett.*, 2007, **48**, 7502-7504 (*isol, pmr, cmr, ms*)

Sativanine A S-92

2-(Dimethylamino)-3-methyl-N-*[7-(1-methylethyl)-5,8-dioxo-3-phenyl-2-oxa-6,9-diazabicyclo[10.2.2]hexadeca-10,12,14,15-tetraen-4-yl]pentanamide, 9CI*
[72361-59-2]

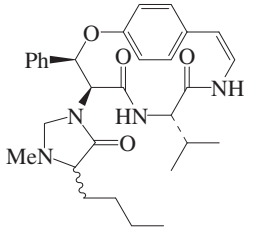


$C_{30}H_{40}N_4O_4$ 520.67
Alkaloid from the bark of *Zizyphus sativa* and from *Zizyphus spina-christi* (Rhamnaceae). Mp 80°. Opt. rotn. not recorded.

Tschesche, R. *et al., Phytochemistry*, 1979, **18**, 702 (*isol, uv, ms, struct*)

Sativanine B S-93

4-(4-Butyl-3-methyl-5-oxo-1-imidazolidinyl)-7-(1-methylethyl)-3-phenyl-2-oxa-6,9-diazabicyclo[10.2.2]hexadeca-10,12,14,15-tetraene-5,8-dione, 9CI
[72361-60-5]

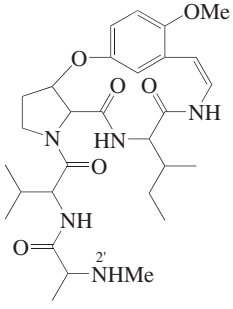


$C_{30}H_{38}N_4O_4$ 518.655
Alkaloid from the bark of *Zizyphus sativa* (Rhamnaceae). Amorph. Opt. rotn. not recorded. Related to Nummularine G, N-333.

Tschesche, R. *et al., Phytochemistry*, 1979, **18**, 702 (*isol, uv, ms, struct*)

Sativanine C S-94

[92664-86-3]



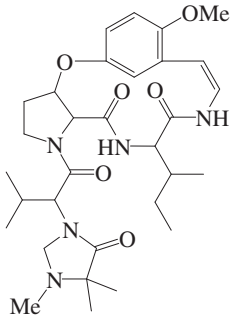
$C_{29}H_{43}N_5O_6$ 557.689
Alkaloid from the bark of *Zizyphus sativa*. Mp 113-114°.

N$^{2'}$-*Formyl:* ***Sativanine M***
$C_{30}H_{43}N_5O_7$ 585.699
Alkaloid from the bark of *Zizyphus sativa*. Cryst. (MeOH). Mp 210-212°. $[\alpha]_D^{20}$ -215 (MeOH). λ_{max} 260 (log ϵ 3.7); 320 (log ϵ 3.6) (MeOH).

Shah, A.H. *et al., Phytochemistry*, 1984, **23**, 931-933 (*Sativanine C*)
Pandey, M.B. *et al., Nat. Prod. Res.*, 2008, **22**, 219-221 (*Sativanine M*)

Sativanine D S-95

[99694-93-6]

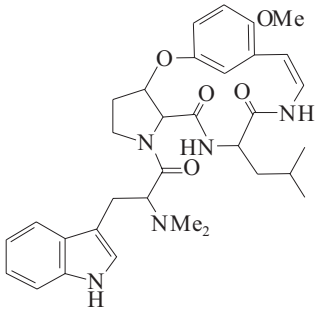


$C_{30}H_{43}N_5O_6$ 569.7
Alkaloid from the bark of *Zizyphus sativa* (Rhamnaceae). Mp 119-121°.

Shah, A.H. *et al., Phytochemistry*, 1985, **24**, 2765 (*isol, uv, ir, ms, struct*)

Sativanine E S-96

[98618-05-4]

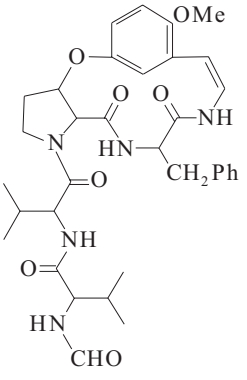


$C_{33}H_{41}N_5O_5$ 587.717
Alkaloid from the bark of *Zizyphus sativa* (Rhamnaceae). Mp 127-128°. $[\alpha]_D^{20}$ -99 (c, 0.2 in $CHCl_3$).

Shah, A.H. *et al., J. Nat. Prod.*, 1985, **48**, 555 (*isol, uv, ir, pmr, ms, struct*)

Sativanine F S-97

[99694-92-5]

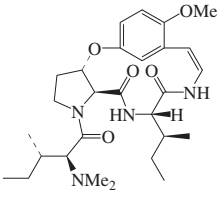


$C_{34}H_{43}N_5O_7$ 633.743
Alkaloid from the bark of *Zizyphus sativa* (Rhamnaceae). Mp 139-141°.

Shah, A.H. *et al., Phytochemistry*, 1985, **24**, 2768 (*isol, uv, ir, ms, struct*)

Sativanine G S-98

[93754-84-8]



Absolute Configuration

$C_{28}H_{42}N_4O_5$ 514.664
Alkaloid from *Paliurus ramossisimus* and *Zizyphus sativa* (Rhamnaceae). Amorph. solid. Mp 93-94°. $[\alpha]_D^{26}$ -327 (c, 0.85 in MeOH). λ_{max} 217 (log ϵ 4.66); 230 (log ϵ 4.51); 269 (log ϵ 4.65) (MeOH).

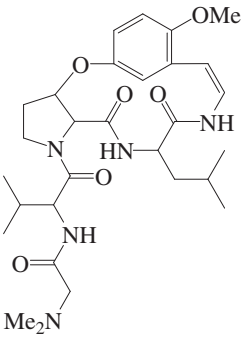
N,N-*Di-de-Me:* ***Sativanine N***
$C_{26}H_{38}N_4O_5$ 486.61
Alkaloid from the bark of *Zizyphus sativa*. Cryst. (MeOH). Mp 176-178°. $[\alpha]_D^{20}$ -158 (c, 0.18 in $CHCl_3$). λ_{max} 270 (log ϵ 2.78); 322 (log ϵ 2.58) (MeOH).

N,N-*Di-de-Me, 2′*-N-*formyl:* ***Sativanine K***
[108906-92-9]
$C_{27}H_{38}N_4O_6$ 514.62
Alkaloid from the bark of *Zizyphus sativa*. Mp 160-162°. λ_{max} 260 ; 320 (MeOH).

Shah, A.H. *et al., Phytochemistry*, 1984, **23**, 2120-2121; 1987, **26**, 1230 (*isol, uv, ir, ms, struct*)
Lin, H.-Y. *et al., J. Nat. Prod.*, 2000, **63**, 1338-1343 (*isol, uv, cd, pmr, cmr*)
Singh, S. *et al., J. Asian Nat. Prod. Res.*, 2006, **8**, 733-737 (*Sativanine N*)

Sativanine H S-99

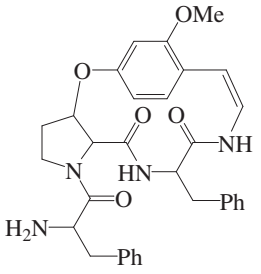
[107603-59-8]



$C_{29}H_{43}N_5O_6$ 557.689
Alkaloid from the stem bark of *Zizyphus sativa* and *Zizyphus rugosa*. Mp 191-192°.

Shah, A.H. *et al., Planta Med.*, 1986, 500-501 (*isol*)
Tripathi, Y.C. *et al., Phytochemistry*, 1989, **28**, 1563-1565 (*occur*)

Sativanine O S-100

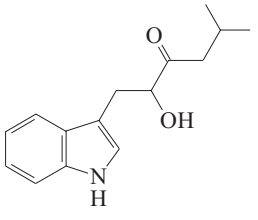


$C_{32}H_{34}N_4O_5$ 554.644
Alkaloid from the bark of *Zizyphus sativa*. Cryst. (MeOH). Mp 224-226°. $[\alpha]_D^{20}$ -195 (c, 0.15 in $CHCl_3$). λ_{max} 270 (log ϵ 2.8); 320 (log ϵ 2.4) (MeOH).

Singh, S. *et al., J. Asian Nat. Prod. Res.*, 2006, **8**, 733-737 (*isol, ms*)

Sattazolin S-101

*2-Hydroxy-1-(1*H*-indol-3-yl)-5-methyl-3-hexanone*



$C_{15}H_{19}NO_2$ 245.321

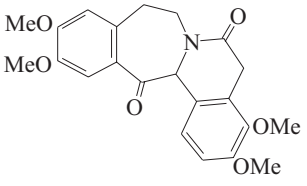
(+)-*form* [169272-85-9]
Prod. by *Bacillus* sp. B-60. Antiviral agent. Sol. MeOH, $CHCl_3$. $[\alpha]_D$ +58 (c, 1.5 in $CHCl_3$).

*Me ether: 1-(1*H*-Indol-3-yl)-2-methoxy-5-methyl-3-hexanone.* **O-*Methylsattazolin***
[168916-24-3]

$C_{16}H_{21}NO_2$ 259.347
Prod. by *Bacillus* sp. B-60. Antiviral agent. Sol. MeOH, $CHCl_3$. $[\alpha]_D$ -22 (c, 0.5 in $CHCl_3$).

Lampis, G. *et al., J. Antibiot.*, 1995, **48**, 967 (*isol, pmr, activity*)

Saulatine S-102



$C_{22}H_{23}NO_6$ 397.427

(±)-*form* [91897-61-9]
Alkaloid from the roots of *Abuta bullata* (Menispermaceae). Cryst. (MeOH). Mp 226-228°. Prob. an artifact.

Hocquemiller, R. *et al., J. Nat. Prod.*, 1984, **47**, 539 (*uv, ir, pmr, cmr, ms, struct*)
Shamma, M. *et al., J. Nat. Prod.*, 1986, **49**, 398
Kim, D.C. *et al., J. Het. Chem.*, 1993, **30**, 1431 (*synth*)

Saururidine S-103

$C_{17}H_{25}NO_3$ 291.389
Struct. unknown. Alkaloid from *Lycopodium saururus* (Lycopodiaceae).

MacLean, D.B. *et al., Alkaloids (Academic Press)*, 1985, **26**, 241

Saururine S-104

$C_{10}H_{19}N$ 153.267
Struct. unknown. Alkaloid from the leaves of *Lycopodium saururus* (Lycopodiaceae). Syrup.

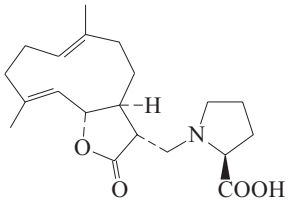
Picrate:
Yellow prisms (Me_2CO aq.). Mp 202°.

Methiodide:
Fine needles (H_2O). Mp 242-244°.

Deulofeu, V. *et al., J.A.C.S.*, 1942, **64**, 968-969 (*isol*)

Saussureamine A S-105

[148245-82-3]

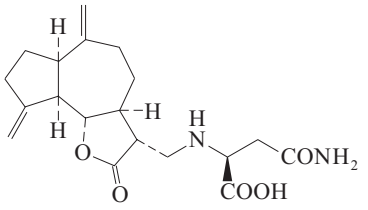


$C_{20}H_{29}NO_4$ 347.453
Constit. of *Saussurea lappa* root. Prisms (MeOH aq.). Mp 115-117°. $[\alpha]_D$ +36.7 (c, 0.4 in MeOH).

Yoshikawa, M. *et al., Chem. Pharm. Bull.*, 1993, **41**, 214-216 (*isol, pmr, cmr*)
Matsuda, H. *et al., Tetrahedron*, 2000, **56**, 7763-7777 (*synth, abs config*)

Saussureamine C S-106

[148245-83-4]

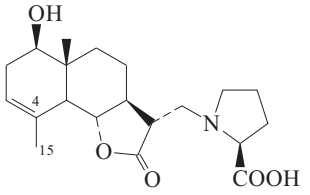


$C_{19}H_{26}N_2O_5$ 362.425
Constit. of *Saussurea lappa* root. Powder. $[\alpha]_D$ -17.2 (c, 0.5 in MeOH).

Yoshikawa, M. *et al., Chem. Pharm. Bull.*, 1993, **41**, 214-216 (*isol, pmr, cmr*)
Matsuda, H. *et al., Tetrahedron*, 2000, **56**, 7763-7777 (*synth, abs config*)

Saussureamine D S-107

[148225-51-8]



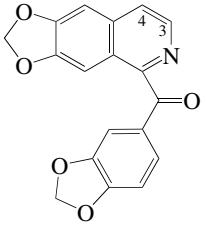
$C_{20}H_{29}NO_5$ 363.453
Constit. of *Saussurea lappa* root. Needles (MeOH aq.). Mp 235-237°. $[\alpha]_D$ +13.3 (c, 0.3 in MeOH).

$\Delta^{4(15)}$-Isomer: ***Saussureamine E***
[148225-52-9]
$C_{20}H_{29}NO_5$ 363.453
Constit. of *Saussurea lappa* root. Needles (MeOH aq.). Mp 150-153°. $[\alpha]_D$ +33.7 (c, 0.9 in MeOH).

Yoshikawa, M. *et al., Chem. Pharm. Bull.*, 1993, **41**, 214-216 (*isol, pmr, cmr*)
Matsuda, H. *et al., Tetrahedron*, 2000, **56**, 7763-7777 (*synth, abs config*)

Sauvagnine S-108

[133084-03-4]



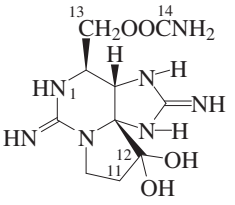
$C_{18}H_{11}NO_6$ 337.288
Struct. revised in 1996. Alkaloid from *Corydalis claviculata* (Papaveraceae). Amorph. Mp 215-217°.

3,4-Dihydro: ***Dihydrosauvagnine***
[133083-99-5]
$C_{18}H_{13}NO_6$ 339.304
Alkaloid from *Corydalis claviculata* (Papaveraceae). Amorph.

Allais, D.P. *et al., J. Nat. Prod.*, 1990, **53**, 1280-1286 (*isol, pmr*)
Garcia, A. *et al., J. Nat. Prod.*, 1996, **59**, 806-807 (*synth, ir, struct*)

Saxitoxin S-109

STX
[35523-89-8]



$C_{10}H_{17}N_7O_4$ 299.289
Isol. from Alaska butter clams (*Saxidomus giganteus*), toxic mussels (*Mytilus californianus*), the plankton *Gonyaulax catenella*, *Protogonyaulax tamarensis* and other marine organisms. Sodium channel (I, II, III, h1) blocker. Causal agent of paralytic shellfish poisoning. Noncryst. Sol. H_2O, MeOH; fairly sol. EtOH, AcOH; poorly sol. butanol, hexane. $[\alpha]_D$ +130. See also 11-Hydroxysaxitoxin, H-731.

▶ Extremely toxic, among the most toxic substances known. LD_{50} (rat, orl) 0.192 mg/kg. LD_{50} (mus, ipr) 0.005 mg/kg. LD_{50} (mus, ivn) 0.008 mg/kg. UY8708500

N^{14}-*Sulfonic acid:* ***Gonyautoxin V. GTX5. Toxin B_1***
[64296-25-9]
$C_{10}H_{17}N_7O_7S$ 379.353
Present in *Gonyaulax* and *Protogonyaulax* spp. and other marine organisms. Neurotoxin.

▶ Toxic.

N^{14}-*Me:* ***N′-Methylsaxitoxin***
[209856-64-4]
$C_{11}H_{19}N_7O_4$ 313.316
Isol. from the freshwater puffer *Tetraodon cutcutia*.

Decarbamoyl: ***Decarbamoylsaxitoxin***
[58911-04-9]
$C_9H_{16}N_6O_3$ 256.264
Isol. from various shellfish.

Decarbamoyl, 13-Ac: LWTX5
[133144-32-8]
$C_{11}H_{18}N_6O_4$ 298.301
Isol. from *Lyngbya wollei.*

*Decarbamoyl, 13-*O*-(4-hydroxybenzoyl):* ***GC 3***
[603125-82-2]
$C_{16}H_{20}N_6O_5$ 376.371
Isol. from *Gymnodinium catenatum.*

De(carbamoyloxy): ***Decarbamoyloxysaxitoxin***
[143084-69-9]
[164905-60-6]
$C_9H_{16}N_6O_2$ 240.264
Isol. from *Gymnodinium catenatum.*

N^1-*Hydroxy:* ***Neosaxitoxin***
[64296-20-4]
$C_{10}H_{17}N_7O_5$ 315.288

Prod. by *Protogonyaulax* and found in shellfish, marine algae and other organisms incl. *Gonyaulax tamarensis*, *Aphanizomenon flos-aquae*, *Saxidomus giganteus*,*Vibrio* sp., *Pyrodinium* sp. Neurotoxic neuromuscular blocker.

▶ Potent neurotoxin; LD_{50} (mus, ipr) 5 mg/kg.

N^{1}-*Hydroxy,* N^{14}-*sulfonic acid:* ***Gonyautoxin VI***. *GTX6*. *Toxin* B_2
[82810-44-4]
$C_{10}H_{17}N_7O_8S$ 395.352
Prod. by *Gonyaulax* and *Protogonyaulax* spp., isol. from shellfish. Neurotoxin; causal agent of shellfish poisoning.

▶ Toxic.

N^{1}-*Hydroxy, decarbamoyl:* ***Decarbamoylneosaxitoxin***
[68683-58-9]
$C_9H_{16}N_6O_4$ 272.263
Isol. from the crab *Zosimus aeneus.*

N^{14}-*Hydroxy:* ***N′-Hydroxysaxitoxin***
[153856-77-0]
$C_{10}H_{17}N_7O_5$ 315.288
Isol. from the crab *Zosimus aeneus.* Contains an *N*-hydroxycarbamoyl group.

N^{14},*1-Dihydroxy:* ***N′-Hydroxyneosaxitoxin***
[153856-78-1]
$C_{10}H_{17}N_7O_6$ 331.288
Isol. from the crab *Zosimus aeneus.* Toxic paralytic agent.

*12-Deoxy(12*S*-), decarbamoyl:* ***Decarbamoyl-12-deoxysaxitoxin***. *LWTX4*
[75352-31-7]
[80844-68-4]
$C_9H_{16}N_6O_2$ 240.264
Isol. from *Lyngbya wollei*. Neurotoxin.

*12-Deoxy(12*S*-), decarbamoyl, 13-*O*-Ac: LWTX6*
[200816-98-4]
$C_{11}H_{18}N_6O_3$ 282.302
Isol. from *Lyngbya wollei*.

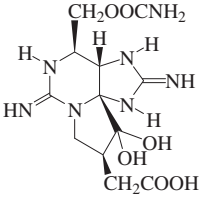
11-Hydroxy: see 11-Hydroxysaxitoxin, H-731

[35554-08-6]

Schantz, E.J. *et al., Biochemistry*, 1966, **5**, 1191-1195 (*isol, bibl*)
Bordner, J. *et al., J.A.C.S.*, 1975, **97**, 6008-6012 (*cryst struct, pmr, cmr*)
Tanino, H. *et al., J.A.C.S.*, 1977, **99**, 2818-2819 (*synth*)
Koehn, F.E. *et al., Bioorg. Chem.*, 1981, **10**, 412-428 (*decarbamoyl, synth*)
Fix Wichman, C. *et al., Tet. Lett.*, 1981, **22**, 1941-1944 (*isol*)
Harada, T. *et al., Agric. Biol. Chem.*, 1982, **46**, 1861-1864 (*Gonyautoxins V,VI*)
Onoue, Y. *et al., J. Agric. Food Chem.*, 1983, **31**, 420-423 (*props*)
Oshima, Y. *et al., Agric. Biol. Chem.*, 1984, **48**, 1707-1711 (*chromatog, struct, bibl*)
Maruyama, J. *et al., Agric. Biol. Chem.*, 1984, **48**, 2783-2788 (*ms*)
Shimizu, Y. *et al., Tetrahedron*, 1984, **40**, 539-544 (*props*)
Kodama, M. *et al., Agric. Biol. Chem.*, 1988, **52**, 1075-1077 (*isol*)
Hall, S. *et al., ACS Symp. Ser.*, 1990, **418**, (*book*)
Arakawa, O. *et al., Toxicon*, 1994, **32**, 175-183 (*Zosimus aeneus constits*)
Onodera, H. *et al., Nat. Toxins*, 1997, **5**, 175-186 (*LWTX toxins*)
Zaman, L. *et al., Toxicon*, 1998, **36**, 627-630 (*N′-Methylsaxitoxin*)
Martindale, The Extra Pharmacopoeia, 32nd edn., Pharmaceutical Press, 1999, 16273
Food Sci. Technol., Seafood and Freshwater Toxins, (ed. Botana, L.M.), Marcel Dekker, 2000, **103**, (*revs*)
Negri, A. *et al., Chem. Res. Toxicol.*, 2003, **16**, 1029-1033 (*GC3*)
Ciminiello, P. *et al., Eur. J. Org. Chem.*, 2004, 2533-2551 (*rev*)
Llewellyn, L.E. *et al., Nat. Prod. Rep.*, 2006, **23**, 200-222 (*rev*)
Jang, J. *et al., Toxicon*, 2006, **48**, 980-987 (*occur*)
Iwamoto, O. *et al., Angew. Chem., Int. Ed.*, 2007, **46**, 8625-8628 (*Decarbamoylsaxitoxin, synth*)
Fleming, J.J. *et al., J.A.C.S.*, 2007, **129**, 9964-9975 (*synth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, SBA500

11-Saxitoxinacetic acid S-110

11-Saxitoxinethanoic acid
[172888-62-9]



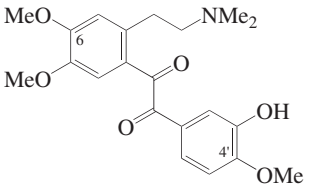
Absolute Configuration

$C_{12}H_{19}N_7O_6$ 357.325
Assumed to exist as a mixt. of 3 tautomers. Isol. from the xanthid crab *Atergatis floridus.*

Arakawa, O. *et al., Toxicon*, 1995, **33**, 1577-1584

Saxoguattine S-111

[91174-13-9]



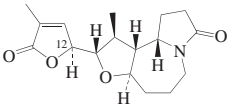
$C_{21}H_{25}NO_6$ 387.432
Alkaloid from the stem bark of *Guatteria discolor* (Annonaceae). Noncryst.

$O^{4'}$,O^{6}-*Di-de-Me,* $O^{3'}$-*Me:* ***Pseudoronine***
$C_{20}H_{23}NO_6$ 373.405
Alkaloid from the roots of *Papaver pseudo-orientale* (Papaveraceae). Yellow needles (MeOH). Mp 249-252°.

Hocquemiller, R. *et al., J. Nat. Prod.*, 1984, **47**, 353 (*isol, uv, ir, pmr, cmr, ms, struct*)
Věžník, F. *et al., Coll. Czech. Chem. Comm.*, 1986, **51**, 1752 (*Pseudoronine*)
Rozwadowska, M.D. *et al., Pol. J. Chem. (Rocz. Chem.)*, 1991, **65**, 1287 (*synth*)
Bentley, K.W. *et al., The Isoquinoline Alkaloids*, 1998, 41 (*Pseudoronine, struct*)

Saxorumamide S-112

[949092-28-8]



Relative Configuration

$C_{17}H_{23}NO_4$ 305.373
Alkaloid from the roots of *Stemona saxorum*. Light yellow powder. $[\alpha]_D^{20}$ -15.4 (c, 0.35 in MeOH). λ_{max} 204 (log ϵ 4.04); 300 (log ϵ 2.22) (MeOH).

12-Epimer: ***Isosaxorumamide***
[949092-29-9]
$C_{17}H_{23}NO_4$ 305.373
Alkaloid from the roots of *Stemona saxorum*. Light yellow powder. $[\alpha]_D^{20}$ -152 (c, 0.13 in MeOH). λ_{max} 205 (log ϵ 4.2); 299 (log ϵ 2.36) (MeOH).

Wang, Y.-Z. *et al., J. Nat. Prod.*, 2007, **70**, 1356-1359 (*isol, pmr, cmr*)

Scabrine S-113

[111-04-6]

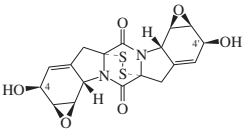
$C_{22}H_{35}NO$ 329.525

Struct. unknown. An isobutylamide of an acid $C_{18}H_{26}O_2$ which may be an octadecapentaenoic acid or may be acetylenic. Isol. from seeds of *Heliopsis scabra* (Asteraceae). Yellow oil.

Jacobson, M. *et al., J.A.C.S.*, 1951, **73**, 100-103
Bohlmann, F. *et al., Annalen*, 1983, 1202-1206

Scabrosin S-114

[67866-98-2]



Absolute Configuration

$C_{18}H_{16}N_2O_6S_2$ 420.466
Epithiodioxopiperazine antibiotics. Struct. revised in 1999.

Di-Ac: ***Scabrosin 4,4′-diacetate***
[67705-18-4]
$C_{22}H_{20}N_2O_8S_2$ 504.541
Isol. from lichen *Xanthoparmelia scabrosa*. Mp 262°.

4′-Butanoyl, 4-Ac: ***Scabrosin 4-acetate-4′-butyrate***
[67705-19-5]
$C_{24}H_{24}N_2O_8S_2$ 532.594
Isol. from *Xanthoparmelia scabrosa*. Mp 216.5-217.5°. $[\alpha]_{246}^{25}$ -9600.

Dibutanoyl: ***Scabrosin 4,4′-dibutyrate***
[67705-20-8]
$C_{26}H_{28}N_2O_8S_2$ 560.648
Isol. from *Xanthoparmelia scabrosa*. Mp 197-199° (196-197°).

4′-Hexanoyl, 4-Ac: ***Scabrosin 4-acetate-4′-hexanoate***
[67705-21-9]

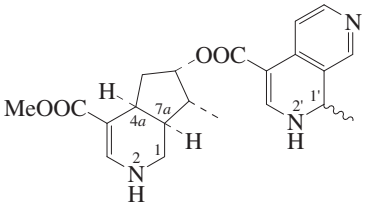
$C_{26}H_{28}N_2O_8S_2$ 560.648
Isol. from *Xanthoparmelia scabrosa*. Mp 213° (209°).

4′-Hexanoyl, 4-butanoyl: ***Scabrosin 4-butanoate-4′-hexanoate***
$C_{28}H_{32}N_2O_8S_2$ 588.701
Isol. from *Xanthoparmelia scabrosa*. Cytotoxic agent. Amorph. solid. Mp 139-141°.

Begg, W.R. *et al., Tet. Lett.*, 1978, 1047 (*ir, ms, cmr, struct*)
Ernst-Russell, M.A. *et al., Aust. J. Chem.*, 1999, **52**, 279-283 (*isol, pmr, cmr, ms, cryst struct*)

Scaevodimerine A S-115

[112579-70-1]



$C_{21}H_{25}N_3O_4$ 383.446

Scaevodimerines are the first bis-monoterpene alkaloids. Alkaloid from the aerial parts of *Scaevola racemigera* (Goodeniaceae) and from *Strychnos spinosa*. Amorph. solid. $[\alpha]_D^{20}$ +31 (c, 1 in MeOH).

1′,2′-Didehydro: ***Scaevodimerine B***
[112561-59-8]
$C_{21}H_{23}N_3O_4$ 381.43
Alkaloid from the aerial parts of *Scaevola racemigera* (Goodeniaceae) and from *Strychnos minfiensis*. Amorph. solid. $[\alpha]_D^{20}$ +39 (c, 1 in MeOH).

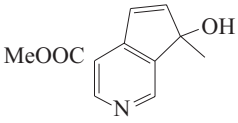
1,2,4a,7a-Tetradehydro: ***Scaevodimerine C***
[112561-60-1]
$C_{21}H_{21}N_3O_4$ 379.415
Alkaloid from the aerial parts of *Scaevola racemigera* (Goodeniaceae). $[\alpha]_D^{20}$ -18 (c, 1 in MeOH).

1′,2′-Didehydro, 1-oxo: ***Scaevodimerine D***
[112579-71-2]
$C_{21}H_{21}N_3O_5$ 395.414
Alkaloid from the aerial parts of *Scaevola racemigera* (Goodeniaceae) and from *Strychnos pungens*. $[\alpha]_D^{20}$ +48 (c, 0.2 in MeOH).

Skaltsounis, A.-L. *et al., Heterocycles*, 1987, **26**, 599 (*uv, ir, pmr, struct, derivs*)
Delaude, C. *et al., Bull. Soc. R. Sci. Liege*, 1992, **61**, 429-440 (*isol, Strychnos*)
Thépenier, P. *et al., Bull. Soc. R. Sci. Liege*, 1996, **65**, 379-382 (*isol, Strychnos*)

Scaevoline S-116

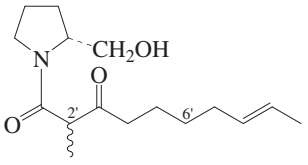
[99339-50-1]



$C_{11}H_{11}NO_3$ 205.213
Alkaloid from the aerial parts of *Scaevola racemigera* (Goodeniaceae). Prisms ($CHCl_3$). Mp 119-121°. $[\alpha]_D^{20}$ 0 (c, 1 in MeOH). λ_{max} 235 (log ϵ 3.88); 268 (log ϵ 3.62); 298 (log ϵ 3.24); 310 (log ϵ 3.12) (EtOH).

Skaltsounis, A.-L. *et al., Helv. Chim. Acta*, 1985, **68**, 1679-1685 (*isol, uv, ir, pmr, ms, struct*)

Scalusamide A S-117



$C_{16}H_{27}NO_3$ 281.394
Prod. by marine-derived *Penicillium citrinum* strain N 055. Antifungal agent. Amorph. solid. $[\alpha]_D^{22}$ -28 (c, 1 in $CHCl_3$).

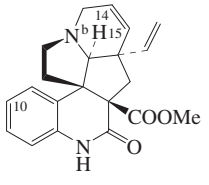
8′,9′-Dihydro: ***Scalusamide C***
$C_{16}H_{29}NO_3$ 283.41
Prod. by *Penicillium citrinum* strain N 055. Amorph. solid. $[\alpha]_D^{26}$ -13 (c, 0.2 in $CHCl_3$).

*6′,7′-Didehydro(*E-*), 8′,9′-dihydro:* ***Scalusamide B***
$C_{16}H_{27}NO_3$ 281.394
Prod. by *Penicillium citrinum* strain N 055. Amorph. solid. $[\alpha]_D^{26}$ -13 (c, 0.2 in $CHCl_3$).

Tsuda, M. *et al., J. Nat. Prod.*, 2005, **68**, 273-276 (*isol, pmr, cmr*)

Scandine S-118

3-(Methoxycarbonyl)meloscine, 9CI
[24314-59-8]



Absolute Configuration

$C_{21}H_{22}N_2O_3$ 350.416
Alkaloid from *Melodinus scandens* (Apocynaceae). Prisms (MeOH/EtOH). Mp 188-192°. $[\alpha]_D^{25}$ +254 (c, 0.2 in EtOH).

N^b-Oxide: ***Scandine N^b-oxide***
[140701-69-5]
$C_{21}H_{22}N_2O_4$ 366.416
Alkaloid from *Melodinus fusiformis* (Apocynaceae).

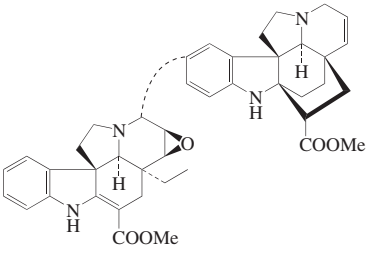
14ξ,15ξ-Epoxide: ***14,15-Epoxyscandine***
$C_{21}H_{22}N_2O_4$ 366.416
Alkaloid from aerial parts of *Melodinus hemsleyanus* (Apocynaceae). Prisms (Me_2CO). Mp 116-118°.

10-Hydroxy: ***10-Hydroxyscandine***
[119188-47-5]
$C_{21}H_{22}N_2O_4$ 366.416
Alkaloid from the stem bark of *Melodinus tenuicaudatus* (Apocynaceae). Mp 180°. $[\alpha]_D$ +228 ($CHCl_3$).

Bernauer, B.K. *et al., Helv. Chim. Acta*, 1969, **52**, 1886 (*uv, ms, pmr*)
Daudon, M. *et al., J.O.C.*, 1975, **40**, 2838 (*cmr*)
Cannon, J.R. *et al., Aust. J. Chem.*, 1982, **35**, 1655 (*cryst struct, abs config*)
Zhou, Y.L. *et al., Planta Med.*, 1988, **54**, 315 (*10-Hydroxyscandine*)
He, X. *et al., Huaxue Xuebao*, 1992, **50**, 96; *CA*, **116**, 191092c (*oxide*)
Guo, L.-W. *et al., Phytochemistry*, 1993, **34**, 563 (*14,15-Epoxyscandine*)
Gu, J.-M. *et al., Acta Cryst. E*, 2006, **62**, o4775-o4777 (*cryst struct*)

Scandomelidine S-119

[139682-13-6]

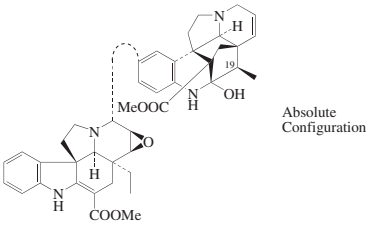


$C_{42}H_{46}N_4O_5$ 686.849
Alkaloid from stems and leaves of *Melodinus scandens* (Apocynaceae). Amorph. powder. $[\alpha]_D^{20}$ -160 (c, 1 in $CHCl_3$).

Mehri, H. *et al., J. Nat. Prod.*, 1992, **55**, 241 (*isol, uv, ir, pmr, cmr, ms, struct*)

Scandomeline S-120

[59813-32-0]



Absolute Configuration

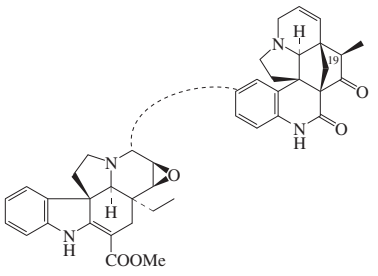
$C_{42}H_{46}N_4O_6$ 702.849
Alkaloid from the leaves and stems of *Melodinus scandens* (Apocynaceae). Cryst. (Me_2CO). Mp 300° dec. $[\alpha]_D^{22}$ -170 (c, 1 in $CHCl_3$). λ_{max} 232 (sh) (log ϵ 3.93); 259 (log ϵ 3.94); 302 (log ϵ 3.92); 328 (log ϵ 4.01) (EtOH).

19-Epimer: ***Episcandomeline***
[59830-07-8]
$C_{42}H_{46}N_4O_6$ 702.849
Isol. from *Melodinus scandens* (Apocynaceae). Cryst. (Me_2CO). Mp 300° dec. $[\alpha]_D^{22}$ -112 (c, 0.5 in $CHCl_3$). λ_{max} 232 (sh) (log ϵ 3.93); 259 (log ϵ 3.94); 302 (log ϵ 3.92); 328 (log ϵ 4.01) (EtOH).

Daudon, M. *et al., J.O.C.*, 1976, **41**, 3275 (*isol, uv, ir, pmr, cmr, ms, struct, epimer*)

Scandomelonine S-121

[59813-31-9]



$C_{41}H_{42}N_4O_5$ 670.807

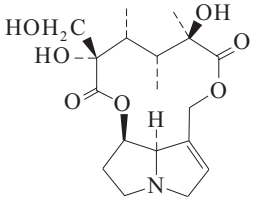
Alkaloid from the stems and leaves of *Melodinus scandens* (Apocynaceae). Cryst. (Me_2CO). Mp 300° dec. $[\alpha]_D^{22}$ -25 (c, 1.0 in $CHCl_3$).

19-Epimer: ***Episcandomelonine***
[59830-06-7]
$C_{41}H_{42}N_4O_5$ 670.807
Alkaloid from *Melodinus scandens* (Apocynaceae). Amorph. $[\alpha]_D^{22}$ +25 (c, 1.0 in $CHCl_3$).

Daudon, M. *et al., J.O.C.*, 1976, **41**, 3275 (*isol, uv, ir, pmr, cmr, ms, struct, epimer*)

Sceleratine S-122

15,20-Dihydro-12,15,18-trihydroxy-14-methyl-21-norsenecionan-11,16-dione
[6190-25-6]



$C_{18}H_{27}NO_7$ 369.414

Cyclic diester of Retronecine with Sclerianecic acid. Struct. revised in 1985. Constit. of *Senecio sceleratus* and *Senecio latifolius* (Asteraceae). Cryst. (EtOH). Mp 176.5-177°. $[\alpha]_D^{20}$ +55 (c, 1.09 in EtOH).

▶ VR1225000

N-*Oxide:* ***Sceleratine* N-*oxide***
[103184-92-5]
$C_{18}H_{27}NO_8$ 385.413
Alkaloid from *Senecio latifolius*. Cryst. (EtOH). Mp 152° dec. $[\alpha]_D^{20}$ +48.4 (c, 1.27 in MeOH).

18-Deoxy, 18-chloro, N-*oxide:* ***Merenskine* N-*oxide***
[96657-95-3]
$C_{18}H_{26}ClNO_7$ 403.859
Alkaloid from *Senecio latifolius* (Asteraceae). Solid + 1EtOH (EtOH). Mp 146° dec. $[\alpha]_D^{20}$ +26.1 (c, 0.33 in EtOH).

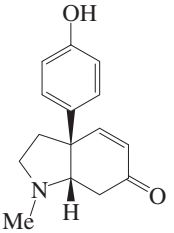
18-Deoxy, 18-chloro, picrate: Mp 213-215°.

18-Deoxy, 18-chloro: ***Merenskine****. Sceleratinyl chloride. Chlorodeoxysceleratine*
[96657-94-2]
[15215-30-2]
$C_{18}H_{26}ClNO_6$ 387.859
Alkaloid from *Senecio sceleratus* (now regouped under *Senecio latifolius*) (Asteraceae). Mp 196° (194.5-195°). $[\alpha]_D^{20.4}$ +32.6 (c, 0.24 in EtOH). Revised struct.

de Waal, H.L. *et al., CA*, 1944, **38**, 833 (*isol*)
de Waal, H.L. *et al., J.C.S.*, 1963, 953
Culvenor, C.C.J. *et al., Aust. J. Chem.*, 1965, **18**, 1625 (*pmr*)
Gordon-Gray, C.G. *et al., J.C.S.(C)*, 1967, 781 (*Merenskine, isol*)
Culvenor, C.C.J. *et al., J.C.S.(C)*, 1971, 3653 (*cd*)
Bredenkamp, M.W. *et al., Tet. Lett.*, 1985, **26**, 929; 5721 (*Scleratine, Merenskine, ir, cmr, ms, cryst struct, oxides*)

Sceletenone S-123

*1,2,3,3*a*,7,7*a*-Hexahydro-3*a*-(4-hydroxyphenyl)-1-methyl-6*H*-indol-6-one, 9CI*
[51934-31-7]



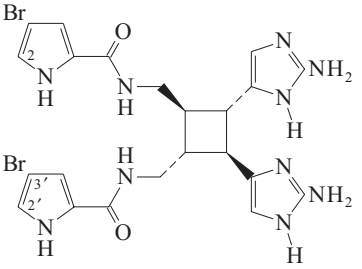
$C_{15}H_{17}NO_2$ 243.305

Minor alkaloid from *Sceletium namaquense* (Aïzoaceae). Cardiotonic antiphogistic. Oil, purified by hplc. Opt. inactive.

Jeffs, P.W. *et al., J.O.C.*, 1974, **39**, 2703 (*isol, uv, ir, pmr, cmr, ms, struct*)
Martin, N.H. *et al., Org. Mass Spectrom.*, 1976, **11**, 1 (*ms*)
Sáchez, I.H. *et al., Synth. Commun.*, 1983, **13**, 35 (*synth, deriv*)

Sceptrine S-124

[79703-25-6]



$C_{22}H_{24}Br_2N_{10}O_2$ 620.305

Conts. 2 tautomeric aminoimidazole fragments. Isol. from the sponge *Agelas sceptrum, Agelas conifera, Agelas schmidtii, Agelas dispar, Agelas nakamurai, Agelas novaecaledoniae, Agelas longissima, Agelas clathrodes, Axinella* sp., *Hymeniacidon* sp. and from an unidentified Micronesian sponge. Exhibits antimicrobial, antiserotonergic, prophage induction, ichthyotoxic, adrenergic antagonist, serotonin antagonist and anti-muscarinic activities; somatostatin inhibitor, vasoactive intestinal peptide inhibitor and antihistamine. Cryst. + H_2O (H_2O) (as hydrochloride). Sol. MeOH; poorly sol. Me_2CO, hexane, H_2O, EtOAc. Mp 215-225° dec. (hydrochloride). $[\alpha]_D$ -7.4 (c, 1.2 in MeOH). The elemental anal. of a dried sample of the hydrochloride required $1H_2O$ but the X-ray study indicated $3H_2O$. λ_{max} 265 (ϵ 20900) (MeOH) (Derep). λ_{max} 203 (ϵ 27300); 214 (ϵ 28300); 267 (ϵ 25200) (MeOH) (Berdy).

2-Bromo: ***Bromosceptrine***
[335214-63-6]
$C_{22}H_{23}Br_3N_{10}O_2$ 699.202
Isol. from *Agelas conifera*.

2,2′-Dibromo: ***Dibromosceptrine***
[117417-71-7]
$C_{22}H_{22}Br_4N_{10}O_2$ 778.098
Isol. from *Agelas conifera* and *Agelas clathrodes*. Antifouling agent, neurotoxin. Sol. MeOH, $CHCl_3$, EtOAc; poorly sol. H_2O. $[\alpha]_D^{25}$ -44 (c, 0.108 in MeOH) (as di-Ac). λ_{max} 202 (ϵ 27300); 215 (ϵ 24800); 273 (ϵ 26300) (MeOH) (Derep).

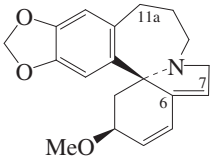
3′-Debromo: ***Debromosceptrine***
[117442-38-3]
$C_{22}H_{25}BrN_{10}O_2$ 541.409
Isol. from *Agelas conifera*. $[\alpha]_D^{25}$ -30 (c, 1.03 in MeOH) (as di-Ac). λ_{max} 203 (ϵ 25700); 212 (ϵ 26700); 265 (ϵ 25600) (MeOH) (Derep).

Bis(debromo): ***Didebromosceptrine***
[217807-68-6]
[217633-87-9 (dihydrochloride)]
$C_{22}H_{26}N_{10}O_2$ 462.513
Isol. from *Agelas conifera*. Amorph. pale yellow powder (as dihydrochloride). $[\alpha]_D$ +53.8 (c, 0.36 in EtOH) (dihydrochloride). λ_{max} 267 (log ϵ 3.5) (EtOH) (dihydrochloride).

Walker, R.P. *et al., J.A.C.S.*, 1981, **103**, 6772-6773 (*isol, uv, ir, pmr, cmr, ms, cryst struct*)
Albizati, K.F. *et al., J.O.C.*, 1985, **50**, 4163-4164 (*isol*)
Keifer, P.A. *et al., J.O.C.*, 1991, **56**, 2965-2975; 6728 (*isol, pmr, cmr, struct, Dibromoseptrine*)
Shen, X. *et al., J. Nat. Prod.*, 1998, **61**, 1302-1303 (*Debromosceptrine, Didebromosceptrine*)
Assmann, M. *et al., Z. Naturforsch., C*, 2002, **57**, 157-160 (*Bromosceptrine*)
Birman, V.B. *et al., Org. Lett.*, 2004, **6**, 2369-2371 (*synth*)
O'Malley, D.P. *et al., J.A.C.S.*, 2007, **129**, 4762-4775; 7702 (*synth*)

Schelhammeridine S-125

Alkaloid C†
[22373-00-8]



$C_{19}H_{21}NO_3$ 311.38

A major alkaloid from *Schelhammera pedunculata* (Liliaceae). Needles (Me_2CO). Mp 118°. $[\alpha]_D$ -108 (c, 0.53 in $CHCl_3$).

Picrate:
Yellow needles (EtOH). Mp 202-207° dec.

Methiodide: Mp 215-216°.

6ξ,7ξ-Epoxide: ***Cycloxyisoschelhammericine***
[66322-14-3]
$C_{19}H_{21}NO_4$ 327.379
Alkaloid from *Cephalotaxus hainanensis* and *Cephalotaxus sinensis* (Cephalotaxaceae).

8-Oxo: ***8-Oxoschelhammeridine****. Alkaloid K*
[24204-40-8]
$C_{19}H_{19}NO_4$ 325.363
Minor alkaloid from *Schelhammera pedunculata* (Liliaceae). Needles (Me_2CO). Mp 170-171°. $[\alpha]_D$ +35 (c, 0.23 in $CHCl_3$).

*11*a-*Oxo:* ***11a-Oxoschelhammeridine****. 12-Oxoschellhammeridine, 8CI. Alkaloid J*†
[24204-39-5]
$C_{19}H_{19}NO_4$ 325.363
Minor alkaloid from *Schelhammera pedunculata* (Liliaceae). Cryst. (Me_2CO). Mp 151-153°. $[\alpha]_D$ -47 (c, 0.15 in $CHCl_3$).

3-Epimer: ***3-Epischelhammeridine****. Alkaloid G*†
[24204-35-1]
$C_{19}H_{21}NO_3$ 311.38
Minor alkaloid from *Schelhammera pedunculata* (Liliaceae). Needles (Me_2CO). Mp 131-133°. $[\alpha]_D$ +24 (c, 0.04 in $CHCl_3$).

*3-Epimer, 6S,7*R*-epoxide:* ***Fortunine***
[196796-76-6]
Alkaloid from *Cephalotaxus fortunei*. May be identical with Comosimine above.

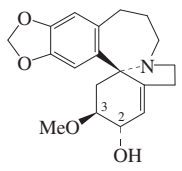
3-Epimer, 6ξ,7ξ-epoxide: ***Comosimine***
[31690-01-4]
$C_{19}H_{21}NO_4$ 327.379
Alkaloid from leaves of *Phelline comosa* (Phellinaceae). Mp 126°. $[\alpha]_D$ +63 (c, 1.8 in $CHCl_3$).

3-Epimer, 6ξ,7ξ-epoxide; hydrochloride: Cryst. ($MeOH/Et_2O$). Mp 218-219°. $[\alpha]_D$ +71 (c, 1.6 in EtOH).

Fitzgerald, J.S. *et al., Aust. J. Chem.*, 1969, **22**, 2187 (*isol, uv, pmr, ms, struct*)
Johns, S.R. *et al., Aust. J. Chem.*, 1969, **22**, 2219 (*oxo derivs*)
Langlois, N. *et al., Bull. Soc. Chim. Fr.*, 1970, 3535 (*epoxide*)
Battersby, A.R. *et al., Tet. Lett.*, 1975, 3419 (*biosynth*)
Ren, L. *et al., Zhongcaoyao*, 1981, **12**, 1; *CA*, **96**, 3672p (*epoxide*)
Tsuda, Y. *et al., Chem. Pharm. Bull.*, 1996, **44**, 515 (*synth, Schelhammeridine, 3-Epischelhammeridine*)
Qiu, M. *et al., CA*, 1997, **127**, 275355f (*Fortunine*)

Schelhammerine S-126

Alkaloid D†
[21030-71-7]



Absolute Configuration

$C_{19}H_{23}NO_4$ 329.395
Major alkaloid from *Schelhammera pedunculata* (Liliaceae). Prisms (Me_2CO). Mp 173-174°. $[\alpha]_D$ +186 (c, 0.5 in $CHCl_3$).

Hydrobromide: Mp 276°.

Methiodide:
Prisms (MeOH). Mp 210-212°.

Ac:
Needles (MeOH). Mp 143-144°. $[\alpha]_D$ +242 (c, 0.15 in $CHCl_3$).

2-Deoxy: ***Schellhammericine****. Alkaloid F*†
[21030-78-4]
$C_{19}H_{23}NO_3$ 313.396
Minor alkaloid from *Schelhammera pedunculata* (Liliaceae). Needles (petrol). Mp 76-77°. $[\alpha]_D$ +122 (c, 0.08 in $CHCl_3$).

2-Deoxy, picrate:
Yellow cryst. (MeOH). Mp 169-172°.

3-Epimer: ***3-Epischelhammerine****. Alkaloid H*†*. Alkaloid 3. 2-Epihomoerythratine*
[24204-38-4]
$C_{19}H_{23}NO_4$ 329.395
Minor alkaloid from *Schelhammera pedunculata*. Also isol. from leaves of *Phelline comosa* and from the twigs and foliage of *Athrotaxis cupressoides* (Liliaceae, Phellinaceae, Taxodiaceae). Cryst. (Me_2CO). Mp 184-185°. $[\alpha]_D^{19}$ +170 (c, 1.4 in $CHCl_3$).

3-Epimer, O*-de-Me:* ***Robustidine***
[128508-52-1]
$C_{18}H_{21}NO_4$ 315.368
Minor alkaloid from the leaves of *Phelline comosa* var. *robusta* (Phellinaceae). Mp 200-202°. $[\alpha]_D$ +141 (c, 0.83 in $CHCl_3$).

3-Epimer, 2-deoxy: ***3-Epischelhammericine****. Alkaloid E*†
[24204-36-2]
$C_{19}H_{23}NO_3$ 313.396
Major alkaloid of *Schelhammera multifora*; a constit. of *Schelhammera pedunculata, Schelhammera undulata, Phelline comosa, Phelline* sp. aff. *Phelline lucida, Cephalotaxus harringtonia* var. *harringtonia, Cephalotaxus hainanensis, Cephalotaxus wilsoniana, Cephalotaxus drupacea* and *Dysoxylum lenticellare* (Liliaceae, Phellinaceae, Cephalotaxaceae, Meliaceae). Noncryst. $[\alpha]_D$ +123 (c, 0.3 in $CHCl_3$).

3-Epimer, 2-deoxy, 1α,6α-epoxide: **O-*Methylrobustimine***
[128508-53-2]
$C_{19}H_{23}NO_4$ 329.395
Minor alkaloid from leaves of *Phelline comosa* var. *robusta* and *Phelline brachyphylla* (Phellinaceae). Mp 146-148°. $[\alpha]_D$ +113 (c, 0.66 in $CHCl_3$).

3-Epimer, 2-deoxy, 1α,6α-epoxide, O*-de-Me:* ***Robustimine***
[128533-18-6]
$C_{18}H_{21}NO_4$ 315.368
Minor alkaloid from leaves of *Phelline comosa* var. *robusta* and *Phelline brachyphylla* (Phellinaceae). Mp 134-136°. $[\alpha]_D$ +94 (c, 0.76 in $CHCl_3$).

3-Epimer, 2-deoxy, 12ξ-hydroxy: ***3-Epi-12-hydroxyschelhammericine***
[91897-63-1]
$C_{19}H_{23}NO_4$ 329.395
Alkaloid from the leaves of *Dysoxylum lenticellare* (Meliaceae) and *Lagarostrobos colensoi (Dacrydium colensoi)*. Cryst. (EtOAc). Mp 235-236°.

2,3-Diepimer: ***Homoerythratine***
[84471-41-0]
$C_{19}H_{23}NO_4$ 329.395
Alkaloid from *Phelline brachyphylla*, *Athrotaxis cupressoides*, *Athrotaxis selaginoides* and *Athrotaxis laxifolia* (Phellinaceae). Cryst. (Et_2O). Mp 176°. $[\alpha]_D$ +75 (c, 0.65 in $CHCl_3$).

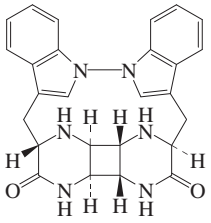
2,3-Diepimer, 1α,6α-epoxide, Me ether: **O-*Methylphellinine***
[82482-18-6]
$C_{20}H_{25}NO_5$ 359.421
Alkaloid from leaves of *Phelline brachyphylla* (Phellinaceae). Mp 202°. $[\alpha]_D$ +45.4 (c, 0.86 in $CHCl_3$).

2,3-Diepimer, 1α,6α-epoxide, O^3*-de-Me,* O^2*-Me:* ***Phellinine***
[82463-44-3]
$C_{19}H_{23}NO_5$ 345.394
Alkaloid from the leaves of *Phelline brachyphylla* (Phellinaceae). Cryst. (MeOH). Mp 230°. $[\alpha]_D$ +40.2 (c, 1.25 in $CHCl_3$).

Johns, S.R. *et al., Chem. Comm.*, 1968, 1102-1104 (*cryst struct, pmr*)
Fitzgerald, J.S. *et al., Aust. J. Chem.*, 1969, **22**, 2187-2201 (*Schelhammerine, Schelhammericine, isol, uv, ir, pmr, ms, struct*)
Johns, S.R. *et al., Aust. J. Chem.*, 1969, **22**, 2219-2231 (*Schelhammerine, 3-Epischelhammerine, Schelhammericine, uv, pmr, ms, struct, synth*)
Langlois, N. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1969, **269**, 639-641 (*Schelhammerine, 3-Epischelhammerine, Schelhammericine, occur, uv, pmr, ms, struct*)
Kowala, C. *et al., Z. Kristallogr., Kristallgeom., Kristallphys., Kristallchem.*, 1969, **130**, 121-138; *CA*, **72**, 94254 (*cryst struct, abs config*)
Powell, R.G. *et al., Phytochemistry*, 1972, **11**, 1467-1472 (*Schelhammericine, isol, uv, pmr, ms*)
Debourges, D. *et al., J. Nat. Prod.*, 1982, **45**, 163-167 (*Homoerythratine, Phellinine, O-Methylphellinine*)
Aledesamni, A.J. *et al., J. Chem. Res., Synop.*, 1984, 108 (*3-Epi-12-hydroxyschelhammericine*)
Panichanun, S. *et al., Tetrahedron*, 1984, **40**, 2677-2684; 2685-2689 (*isol, uv, ir, pmr, ms, epimers*)
Tsuda, Y. *et al., Chem. Pharm. Bull.*, 1985, **33**, 3574; 1996, **44**, 500 (*Schelhammericine, 3-Epischelhammericine, synth*)
Langlois, N. *et al., Heterocycles*, 1990, **30**, 659-664 (*Robustidine, Robustimine, O-Methylrobustimine*)
Bloor, S.J. *et al., Phytochemistry*, 1996, **41**, 801-802 (*3-Epi-12-hydroxyschelhammericine, isol*)

Schischkiniin S-127

[865866-93-9]



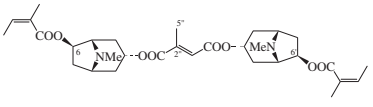
Relative Configuration

$C_{26}H_{24}N_6O_2$ 452.515
Alkaloid from the seeds of *Centaurea schischkinii*. Cytotoxic and antioxidant. Gum. λ_{max} 220 ; 280 (MeOH).

Shoeb, M. *et al., Tetrahedron*, 2005, **61**, 9001-9006 (*isol, pmr, cmr*)

Schizanthine X S-128

[136945-84-1]



$C_{31}H_{44}N_2O_8$ 572.697
Alkaloid from *Schizanthus grahamii* (Solanaceae). Oil. $[\alpha]_D^{25}$ -20 (c, 0.92 in EtOH).

6-O-*Deangeloyl:* ***Schizanthine Y***
[222716-55-4]
$C_{26}H_{38}N_2O_7$ 490.595
Alkaloid from *Schizanthus porrigens.* Oil. $[\alpha]_D^{25}$ +8.1 (c, 0.43 in EtOH).

6-O-*Deangeloyl, 6*-O-*(3-methyl-2-butenoyl):* ***Schizanthine B***
[70474-25-8]
$C_{31}H_{44}N_2O_8$ 572.697
Alkaloid from the leaves and stems of *Schizanthus pinnatus* (Solanaceae). Amorph. powder. $[\alpha]_D^{22}$ -64.7 (c, 0.71 in $CHCl_3$).

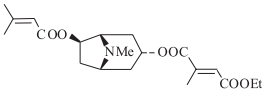
6-De(angeloyloxy): ***Schizanthine C***
[109031-02-9]
$C_{26}H_{38}N_2O_6$ 474.596
Alkaloid from *Schizanthus grahamii* (Solanaceae). Oil. $[\alpha]_D^{25}$ -17.2 (c, 0.32 in EtOH).

$\Delta^{2'',5''}$-Isomer, 6-O-*deangeloyl:* ***Schizanthine Z***
[222716-56-5]
$C_{26}H_{38}N_2O_7$ 490.595
Alkaloid from *Schizanthus porrigens.* Oil. $[\alpha]_D^{25}$ +11.1 (c, 0.24 in EtOH).

Ripperger, H. *et al., Phytochemistry*, 1979, **18**, 171 (*Schizanthine B*)
San-Martin, A. *et al., Phytochemistry*, 1987, **26**, 819 (*Schizanthine C*)
Muñoz, O. *et al., J. Nat. Prod.*, 1991, **54**, 1094 (*Schizanthine X*)
Muñoz, O. *et al., Pharm. Biol.*, 1998, **36**, 162-166 (*Schizanthine Y, Schizanthine Z*)

Schizanthine A S-129

[70474-24-7]



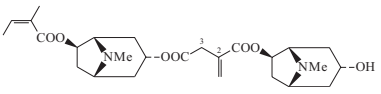
Absolute configuration

$C_{20}H_{29}NO_6$ 379.452
Alkaloid from the leaves and stems of *Schizanthus pinnatus* (Solanaceae). Oil. $[\alpha]_D^{22}$ -24.6 (c, 0.92 in $CHCl_3$).

Ripperger, H. *et al., Phytochemistry*, 1979, **18**, 171 (*isol, uv, ir, pmr, ms, struct*)

Schizanthine E S-130

[109031-04-1]



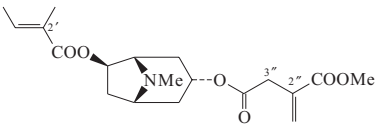
$C_{26}H_{38}N_2O_7$ 490.595
Alkaloid from *Schizanthus grahamii* (Solanaceae). Oil. $[\alpha]_D^{25}$ -2.3 (c, 0.086 in EtOH).

$\Delta^{2,3}$-Isomer: ***Schizanthine D***
[109031-03-0]
$C_{26}H_{38}N_2O_7$ 490.595
Alkaloid from *Schizanthus grahamii* (Solanaceae). $[\alpha]_D^{25}$ -9.7 (c, 0.584 in EtOH).

San-Martń, A. *et al., Phytochemistry*, 1987, **26**, 819 (*isol, ir, pmr, cmr, ms, struct*)

Schizanthine G S-131

[119736-74-2]



$C_{19}H_{27}NO_6$ 365.425
Alkaloid from *Schizanthus pinnatus* (Solanaceae). Oil. $[\alpha]_D$ -11.4 (c, 0.23 in EtOH).

Et ester analogue: ***Schizanthine M***
[119736-78-6]
$C_{20}H_{29}NO_6$ 379.452
Alkaloid from *Schizanthus pinnatus* (Solanaceae). Oil. $[\alpha]_D$ -8.5 (c, 0.06 in EtOH). Poss. artifact.

2′Z-Isomer: ***Schizanthine H***
[119736-75-3]
$C_{19}H_{27}NO_6$ 365.425
Alkaloid from *Schizanthus pinnatus* (Solanaceae). Oil. $[\alpha]_D$ -12.5 (c, 0.1 in EtOH).

2′Z-Isomer, Et ester analogue: ***Schizanthine L***
[119736-77-5]
$C_{20}H_{29}NO_6$ 379.452
Alkaloid from *Schizanthus pinnatus* (Solanaceae). Oil. $[\alpha]_D$ -7.7 (c, 0.1 in EtOH).

$\Delta^{2'',3''}$-Isomer: ***Schizanthine F***
[119736-73-1]
$C_{19}H_{27}NO_6$ 365.425
Alkaloid from *Schizanthus pinnatus* (Solanaceae). Oil. $[\alpha]_D$ -13.3 (c, 0.16 in EtOH).

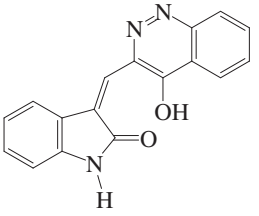
$\Delta^{2'',3''}$-Isomer, 2′Z-isomer: ***Schizanthine I***
[119763-87-0]
$C_{19}H_{27}NO_6$ 365.425
Alkaloid from *Schizanthus pinnatus* (Solanaceae). Oil. $[\alpha]_D$ -13.2 (c, 0.18 in EtOH).

$\Delta^{2'',3''}$-Isomer, Et ester analogue: ***Schizanthine K***
[119736-76-4]
$C_{20}H_{29}NO_6$ 379.452
Alkaloid from *Schizanthus pinnatus* (Solanaceae). Oil. $[\alpha]_D$ -12.1 (c, 0.24 in EtOH). Poss. artifact.

de la Fuente, G. *et al., Heterocycles*, 1988, **27**, 1887 (*isol, ir, pmr, cmr, ms, struct*)

Schizocommunine S-132

*1,3-Dihydro-3-[(4-hydroxy-3-cinnolinyl)-methylene]-2*H*-indol-2-one, 9CI*
[272119-70-7]

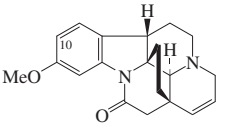


$C_{17}H_{11}N_3O_2$ 289.293
Prod. by *Schizophyllum commune* isol. from a human with allergic bronchopulmonary mycosis. Cytotoxic.

Hosoe, T. *et al., Mycopathologia*, 1999, **146**, 9-12

Schizogaline S-133

[2671-28-5]



Absolute Configuration

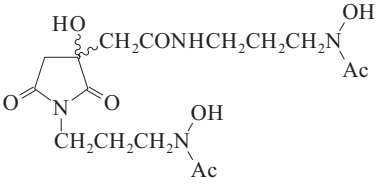
$C_{20}H_{22}N_2O_2$ 322.406
Alkaloid from *Schizozygia caffaeoides* (Apocynaceae). Cryst. (Et_2O). Mp 156-157°. $[\alpha]_D^{25}$ +28.2 (c, 1 in $CHCl_3$).

10-Methoxy: ***Schizogamine***
[2671-27-4]
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from *Schizozygia caffaeoides* (Apocynaceae). Cryst. (petrol). Mp 123-125°. $[\alpha]_D^{25}$ -7.9 (c, 1 in $CHCl_3$).

Renner, U. *et al., Experientia*, 1963, **19**, 244-246 (*cd, ir, uv, pmr*)
Renner, U. *et al., J. Nat. Prod.*, 1964, **27**, 406-415 (*struct*)
Stephens, P.J. *et al., J.O.C.*, 2007, **72**, 2508-2524 (*cd, abs config*)

Schizokinen A† S-134

N,*1-Bis[3-(acetylhydroxyamino)propyl]-3-hydroxy-2,5-dioxo-3-pyrrolidineacetamide, 9CI*
[83948-77-0]



$C_{16}H_{26}N_4O_8$ 402.403
Isol. from *Bacillus megaterium* ATCC 19213. Siderophore. Powder. Not the same as Schizokinen.

Mullis, K.B. *et al., Biochemistry*, 1971, **10**, 4894-4898 (*isol, struct*)
Lee, B.H. *et al., J.O.C.*, 1983, **48**, 24-31 (*synth, struct*)
Budzikiewicz, H. *et al., Z. Naturforsch., C*, 1997, **52**, 496-503 (*isol, synth, pmr, cmr*)

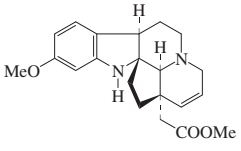
Schizoluteine S-135

Struct. unknown. Mol. formula not recorded. Alkaloid from *Schizozygia caffaeoides* (Apocynaceae). Mp 210-212°.

Renner, U. *et al., Experientia*, 1963, **19**, 244-246 (*isol, uv, ir*)

Schizophylline S-136

[2447-60-1]



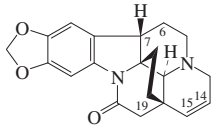
Relative Configuration

$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from *Schizozygia caffaeoides* (Apocynaceae). Cryst. (MeOH). Mp 129-130°. $[\alpha]_D^{24}$ -64 (c, 1 in $CHCl_3$).

Renner, U. *et al., Experientia*, 1963, **19**, 244 (*cd, ir, uv*)
Renner, U. *et al., J. Nat. Prod.*, 1964, **27**, 406 (*synth, struct*)

Schizozygine S-137

[2047-63-4]



Absolute Configuration

$C_{20}H_{20}N_2O_3$ 336.39
Alkaloid from the leaves and roots of *Schizozygia coffaeoides* (Apocynaceae). Cryst. (Et_2O). Mp 192-194°. $[\alpha]_D^{23}$ +15.5 (c, 1 in $CHCl_3$).

19β-Hydroxy, 6,7-didehydro: ***6,7-Didehydro-19-hydroxyschizozygine***. *6,7-Dehydro-19-hydroxyschizozygine*
$C_{20}H_{18}N_2O_4$ 350.373
Alkaloid from the leaves of *Schizozygia coffaeoides*. Amorph. powder. Mp 212-214°. λ_{max} 250 (log ϵ 3.78); 254 (log ϵ 4.03); 260 (log ϵ 4.12); 263 (log ϵ 4.12); 272 (log ϵ 3.81); 320 (log ϵ 3.03) ($CHCl_3$).

14,15-Dihydro, 15ξ-hydroxy: ***α-Schizozygol***
[2772-65-8]
$C_{20}H_{22}N_2O_4$ 354.405
Alkaloid from *Schizozygia caffaeoides* (Apocynaceae). Cryst. (MeOH). Mp 210-211°. $[\alpha]_D^{24}$ +51.3 (c, 1 in $CHCl_3$). pK_a 4.8.

Renner, U. *et al., Experientia*, 1963, **19**, 244-246 (*cd, uv, ir*)
Renner, U. *et al., J. Nat. Prod.*, 1964, **27**, 406-415 (*α-Schizozygol*)
Renner, U. *et al., Helv. Chim. Acta*, 1965, **48**, 308-317 (*struct, pmr*)
Hesse, M. *et al., Helv. Chim. Acta*, 1966, **49**, 1875-1899 (*ms*)
Kariba, R.M. *et al., J. Nat. Prod.*, 2002, **65**, 566-569 (*Dehydrohydroxyschizozygine*)
Stephens, P.J. *et al., J.O.C.*, 2007, **72**, 2508-2524 (*cd, abs config*)

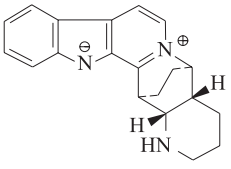
β-Schizozygol S-138

$C_{20}H_{22}N_2O_4$ 354.405
Struct. unknown. Alkaloid from *Schizozygia caffaeoides* (Apocynaceae). Mp 247-250°.

Renner, U. *et al., Experientia*, 1963, **19**, 244-246 (*isol, uv, ir*)

Schoberidine, 9CI S-139

[56775-83-8]



Probable Relative configuration

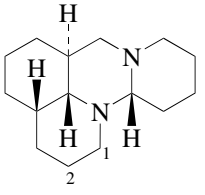
$C_{20}H_{21}N_3$ 303.406
Alkaloid from *Nitraria schoberi* (Zygophyllaceae). Yellow cryst. Mp 204-205°.

Hydrochloride: Mp 267°.

Ibragimov, A.A. *et al., Khim. Prir. Soedin.*, 1975, **11**, 275; *Chem. Nat. Compd. (Engl. Transl.)*, 1975, **11**, 297 (*isol, uv, ms, struct*)

Schoberine S-140

*Dodecahydro-1*H*,4*H*,9*H*-dipyrido[2,1-*b*:3′,2′,1′-*ij*]quinazoline, 9CI*
[63653-27-0]



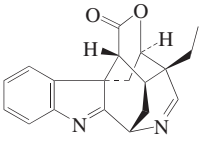
$C_{15}H_{26}N_2$ 234.384
Alkaloid from *Myrioneuron nutans*, *Nitraria schoberi* and *Nitraria komarovii*. Cryst.(MeOH). Mp 62-63°. $[\alpha]_D^{20}$ -12.2 (c, 1 in MeOH). Racemates isol. from *Nitraria* spp.

1,2-Didehydro: ***Dehydroschoberine***
[169564-18-5]
$C_{15}H_{24}N_2$ 232.368
Alkaloid from *Nitraria komarovii*. Oil.

Ibragimov, A.A. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1977, **13**, 71-74 (*isol*)
Tashkhodzhaev, B. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1989, **25**, 24-28 (*cryst struct*)
Tulyaganov, T.S. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1993, **29**, 31-34 (*Dehydroschoberine*)
Pham, V.C. *et al., J.O.C.*, 2008, **73**, 7565-7573 (*isol, synth, pmr, cmr, ms, abs config*)

Scholarisine A S-141

[1002321-69-8]

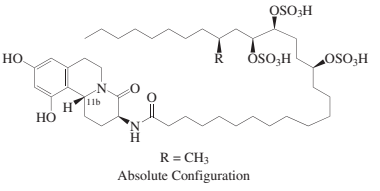


Absolute Configuration

$C_{19}H_{18}N_2O_2$ 306.363
Alkaloid from the leaves of *Alstonia scholaris*. Powder. $[\alpha]_D^{20}$ +188 (c, 0.55 in MeOH). λ_{max} 220 (ϵ 2370); 268 (ϵ 604) (MeOH).

Cai, X.-H. *et al., Org. Lett.*, 2008, **10**, 577-580 (*isol, pmr, cmr*)

Schulzeine A S-142



Absolute Configuration

$C_{42}H_{72}N_2O_{16}S_3$ 957.233
Alkaloid from the marine sponge *Penares schulzei*. α-Glucosidase inhibitor. Powder (as tri-Na salt). $[\alpha]_D^{22}$ +40 (c, 0.1 in MeOH) (tri-Na salt). λ_{max} 209 (ϵ 27500); 284 (ϵ 1390) (MeOH) (tri-Na salt).

Takada, K. *et al., J.A.C.S.*, 2004, **126**, 187-193 (*isol, cd, pmr, cmr, ms*)

Schulzeine C S-143

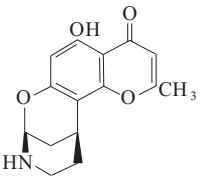
As Schulzeine A, S-142 with
R = H
$C_{41}H_{70}N_2O_{16}S_3$ 943.206
Alkaloid from the marine sponge *Penares schulzei*. α-Glucosidase inhibitor. Powder (as tri-Na salt). $[\alpha]_D^{22}$ +33 (c, 0.1 in MeOH) (tri-Na salt). λ_{max} 209 (ϵ 27800); 284 (ϵ 1500) (MeOH) (tri-Na salt).

*11*b*-Epimer:* ***Schulzeine B***
$C_{41}H_{70}N_2O_{16}S_3$ 943.206
Alkaloid from *Penares schulzei*. α-Glucosidase inhibitor. Powder (as tri-Na salt). $[\alpha]_D^{22}$ -23 (c, 0.1 in MeOH) (tri-Na salt). λ_{max} 209 (ϵ 20800); 281 (ϵ 1500) (MeOH) (tri-Na salt).

Takada, K. *et al., J.A.C.S.*, 2004, **126**, 187-193 (*isol, pmr, cmr, ms*)
Gurjar, M.K. *et al., J.O.C.*, 2007, **72**, 6591-6594 (*synth*)

Schumagnine S-144

[112448-53-0]



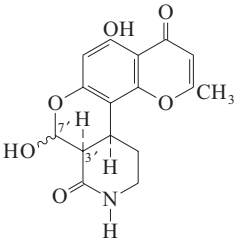
$C_{15}H_{15}NO_4$ 273.288
Alkaloid from *Schumanniophyton magnificum* (Rubiaceae). Cream amorph. solid.

N-*Me:* **N-*Methylschumagnine***
$C_{16}H_{17}NO_4$ 287.315
Alkaloid from *Schumanniophyton magnificum* (Rubiaceae). Cream amorph. solid.

Houghton, P.J. *et al., Planta Med.*, 1987, **53**, 262 (*isol, uv, ir, pmr, ms, struct, deriv*)

Schumannificine S-145

Schumanniofícine
[88720-91-6]



$C_{16}H_{15}NO_6$ 317.298
Struct. revised in 1987 and again in 1995. Alkaloid from the root bark of *Schumanniophyton magnificum* (Rubiaceae). Anti-HIV activity. Mp 234°. λ_{max} 220 ; 255 ; 260 ; 280 ; 290 ; 296 ; 310 ; 320 ; 333 (MeOH) (Berdy).

N-*Me:* **N-*Methylschumannificine***
[88720-92-7]
$C_{17}H_{17}NO_6$ 331.324
Alkaloid from the root bark of *Schumanniophyton magnificum* (Rubiaceae). Cryst. + 1MeOH. Mp 208-209°. λ_{max} 220 (ϵ 13182); 225 (ϵ 13182); 253 (ϵ 7762); 260 (ϵ 7940); 277 (ϵ 7800); 290 (ϵ 7940); 310 (ϵ 8912); 320 (ϵ 9200) (MeOH) (Berdy).

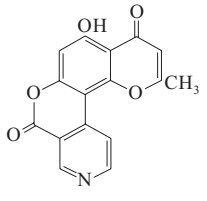
7′-Deoxy, 3′,7′-didehydro: ***Anhydroschumannificine***
$C_{16}H_{13}NO_5$ 299.282
Alkaloid from the root bark of *Schumanniophyton magnificum* (Rubiaceae). Yellowish amorph. solid. Struct. revised in 1987 and again in 1995. λ_{max} 224 (ϵ 12020); 253 (ϵ 20900); 310 (ϵ 250) (MeOH) (Berdy).

7′-Deoxy, 3′,7′-didehydro, N-*Me:* **N-*Methylanhydroschumannificine***
$C_{17}H_{15}NO_5$ 313.309
Alkaloid from the root bark of *Schumanniophyton magnificum* (Rubiaceae). Yellow cryst. ($CHCl_3$). λ_{max} 224 (ϵ 15848); 246 (ϵ 12600); 256 (ϵ 12600); 310 (ϵ 200) (MeOH) (Berdy).

Okogun, J.I. *et al., Planta Med.*, 1983, **49**, 95 (*isol, uv, ir, pmr, ms*)
Houghton, P.J. *et al., Planta Med.*, 1995, **61**, 154 (*struct*)

Schumanniophytine S-146

[69735-24-6]



$C_{16}H_9NO_5$ 295.251
Alkaloid from the root bark of *Schumanniophyton problematicum* and *Schumanniophyton magnificum* (Rubiaceae). Anti-HIV agent. Cryst. (AcOH). Mp 284-286°. λ_{max} 225 (ϵ 25118); 237 (ϵ 25700); 251 (ϵ 28840); 256 (ϵ 28180); 292 (ϵ 11748); 318 (ϵ 12880) (MeOH) (Berdy).

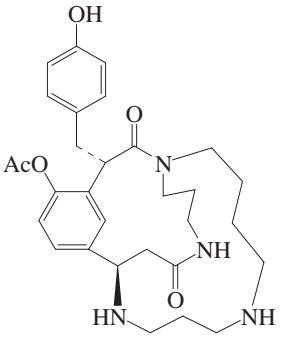
Ac: Mp 243-245°.

N-*Me:* **N-*Methylschumanniophytine***
$C_{17}H_{12}NO_5^{\oplus}$ 310.285
Quaternary alkaloid from *Schumanniophyton magnificum* (Rubiaceae). Anti-HIV agent. Yellow prismatic cryst. (as chloride); cryst. + $1H_2O$ (as iodide). Mp 286° (iodide). Confusingly, the struct. of *N*-Methylschumanniophytine is shown by Houghton *et al.* as the *N*-methyl deriv. of the now discarded structure for Schumanniophytine which is now allocated to Isoschumanniophytine, I-314.

Schlittler, E. *et al., Tet. Lett.*, 1978, 2911 (*uv, ir, pmr, ms, struct*)
Houghton, P.J. *et al., Planta Med.*, 1985, **51**, 23; 1987, **53**, 262 (*isol, uv, ir, pmr, ms, struct, deriv*)
Kelly, T.R. *et al., J.O.C.*, 1992, **57**, 1593 (*synth, pmr, ms, struct*)
Macklin, T.K. *et al., Eur. J. Org. Chem.*, 2008, 1507-1509 (*synth*)

Schweinine S-147

[133084-04-5]

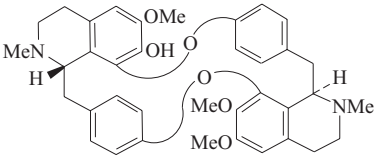


$C_{30}H_{40}N_4O_5$ 536.67
Alkaloid from the whole plant of *Schweinfurthia papilionacea* (Scrophulariaceae). Amorph. Mp 263° dec. $[\alpha]_D$ +61.7 (c, 0.65 in MeOH). Related to Aphelandrine, A-1334.

Ahmad, V.U. *et al., J. Nat. Prod.*, 1990, **53**, 1162-1167 (*isol, pmr, cmr, struct*)

Sciadenine S-148

[59043-23-1]



$C_{37}H_{40}N_2O_6$ 608.733
Alkaloid from *Sciadotenia toxifera* (Menispermaceae). Needles ($CHCl_3$/Me_2CO). Mp 254-256° dec. $[\alpha]_D^{30}$ -43 (c, 1.22 in Py). $[\alpha]_D^{25}$ +15 (c, 1.185 in $CHCl_3$).

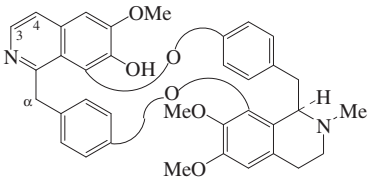
Me ether: ***Isocycleanine***. O-*Methylsciadenine*
[18210-67-8]
$C_{38}H_{42}N_2O_6$ 622.76
Alkaloid from the roots of *Cyclea sutchuenenesis*. Powder. Mp 262-263° dec. (semisynthetic). Opt. inactive (meso-compd.).

Et ether: Mp 233-234° dec.

Takahashi, K. *et al., Heterocycles*, 1976, **4**, 471 (*Sciadenine, O-Methylsciadenine*)
Lai, S. *et al., Yaoxue Xuebao*, 1993, **28**, 599-603 (*Isocycleanine*)

Sciadoline S-149

[62404-95-9]



$C_{36}H_{34}N_2O_6$ 590.674
Alkaloid from *Sciadotenia toxifera* (Menispermaceae). Needles ($CHCl_3$/Me_2CO). Mp 225-228° dec. $[\alpha]_D^{22}$ +46 (c, 0.46 in $CHCl_3$).

Ac: Mp 236-237°.

Et ether: Mp 192-194° dec.

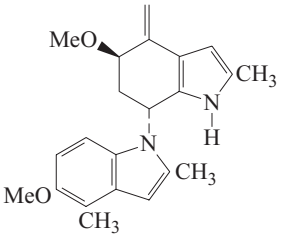
3,4-Dihydro: ***Sciadoferine***
[68676-59-5]
$C_{36}H_{36}N_2O_6$ 592.69
Alkaloid from the stem wood of *Sciadotenia toxifera* (Menispermaceae). Cryst. (EtOAc). Mp 188-189°. $[\alpha]_D^{20}$ +84.7 (c, 1.2 in $CHCl_3$).

α-Hydroxy: ***Cavanine***
$C_{36}H_{34}N_2O_7$ 606.674
Alkaloid from *Sciadotenia toxifera*. Needles ($MeOH/CH_2Cl_2$). λ_{max} 242 (log ϵ 4.1); 259 (sh) (log ϵ 4.03); 276 (log ϵ 3.77); 290 (sh) (log ϵ 3.09); 328 (sh) (log ϵ 3.5); 336 (log ϵ 3.58) (EtOH aq.).

Takahashi, K. *et al., Heterocycles*, 1976, **5**, 367 (*uv, ms, pmr, struct*)
Galeffi, C. *et al., Gazz. Chim. Ital.*, 1978, **108**, 97 (*Sciadoferine*)
Menachery, M.D. *et al., Tet. Lett.*, 2000, **41**, 2843-2846 (*Cavanine*)

Sciodole S-150

[157536-57-7]



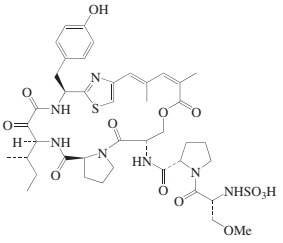
$C_{22}H_{26}N_2O_2$ 350.46

Alkaloid from fruit bodies of *Tricholoma sciodes*. Solid. Mp 70-75°. $[\alpha]_D$ +44 (c, 1.5 in $CDCl_3$). λ_{max} 222 (ϵ 36000); 275 (ϵ 16500) (EtOH) (Derep).

Sterner, O. *et al., Nat. Prod. Lett.*, 1994, **4**, 9-14 (*isol, uv, ir, pmr, cmr, ms*)

Scleritodermin A S-151

[663597-92-0]



Absolute Configuration

$C_{42}H_{55}N_7O_{13}S_2$ 930.068

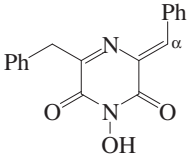
Stereochem. revised in 2008. Isol. from the sponge *Scleritoderma nodosum*. Cytotoxic. Off-yellow powder (as Na salt). $[\alpha]_D$ -41 (c, 0.1 in MeOH) (Na salt). λ_{max} 200 (ϵ 26500); 305 (ϵ 11300) (MeOH) (Na salt).

Schmidt, E.W. *et al., J. Nat. Prod.*, 2004, **67**, 475-478 (*isol, pmr, cmr*)

Liu, S. *et al., Org. Lett.*, 2008, **10**, 3765-3768 (*synth, abs config*)

Scleromimol S-152

5-Benzyl-3-benzylidene-1-hydroxy-2,6(1H,3H)-pyrazinedione



$C_{18}H_{14}N_2O_3$ 306.32

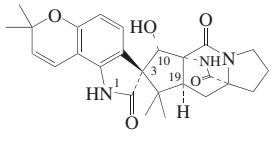
Isol. from hypovirulent isolates of *Sclerotinia minor*. Also obt. from debilitated isolates of *Sclerotinia sclerotiorum*. Cryst. (MeOH). λ_{max} 246 (sh) ; 251 ; 260 (sh) ; 372 ($CHCl_3$).

α-Hydroxy(E-): 5-Benzyl-1-hydroxy-3-(hydroxybenzylidene)-2,6(1H,3H)-pyrazinedione
[915972-36-0]
$C_{18}H_{14}N_2O_4$ 322.32
Prod. by *Menisporopsis theobromae* BCC 3975. Antimalarial agent; cytotoxic. Yellow needles (MeOH). Mp 168-171°. λ_{max} 204 (log ϵ 4.6); 251 (log ϵ 4.2); 365 (log ϵ 4.3) (MeOH).

Savard, M.E. *et al., J. Nat. Prod.*, 2003, **66**, 306-309 (*isol, pmr, cmr, ms, cryst struct*)

Chinworrungsee, M. *et al., J. Nat. Prod.*, 2006, **69**, 1404-1410 (*α-hydroxy*)

Sclerotiamide S-153



(-)-*form*

$C_{26}H_{29}N_3O_5$ 463.532

(-)-*form* [184025-39-6]

Isol. from the sclerotia of *Aspergillus sclerotiorum* NRRL 5167. Exhibits potent antiinsectan activity. Larvicide. Feeding deterrent. Mp 239-242° dec. $[\alpha]_D$ -55.1 (c, 0.1 in MeOH). λ_{max} 215 (ϵ 5100); 250 (ϵ 8700); 280 (ϵ 3700) (MeOH).

10-Deoxy: ***Notoamide B***
[937791-52-1]
$C_{26}H_{29}N_3O_4$ 447.533
Isol. from a marine-derived *Aspergillus* sp. $[\alpha]_D^{27}$ -118 (c, 0.06 in MeOH). λ_{max} 246 (log ϵ 4.3); 283 (sh) (log ϵ 3.8); 294 (sh) (log ϵ 3.6); 330 (sh) (log ϵ 3.1) (MeOH).

10-Deoxy, N^1-hydroxy: ***Notoamide A***
[937810-92-9]
$C_{26}H_{29}N_3O_5$ 463.532
Prod. by a marine-derived *Aspergillus* sp. $[\alpha]_D^{27}$ -112 (c, 0.08 in MeOH). λ_{max} 247 (log ϵ 4.3); 283 (sh) (log ϵ 3.9); 294 (sh) (log ϵ 3.7); 330 (sh) (log ϵ 3.2) (MeOH).

3,19-Diepimer, 10-deoxy: ***Versicolamide B***
$C_{26}H_{29}N_3O_4$ 447.533
Prod. by *Aspergillus versicolor* NRRL 35600. $[\alpha]_D$ +26 (c, 0.1 in Me_2CO).

(+)-*form*

10-Deoxy: ***(+)-Notoamide B***
$C_{26}H_{29}N_3O_4$ 447.533
Prod. by *Aspergillus versicolor* NRRL 35600. $[\alpha]_D$ +102 (c, 0.05 in MeOH).

Whyte, A.C. *et al., J. Nat. Prod.*, 1996, **59**, 1093-1095 (*isol, uv, ir, pmr, cmr, ms, struct*)

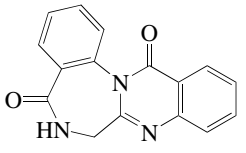
Kato, H. *et al., Angew. Chem., Int. Ed.*, 2007, **46**, 2254-2256 (*Notoamides A,B*)

Grubbs, A.W. *et al., Angew. Chem., Int. Ed.*, 2007, **46**, 2257-2261; 2262-2265 (*Notoamide B, synth*)

Greshock, T.J. *et al., Angew. Chem., Int. Ed.*, 2008, **47**, 3573-3577 (*Versicolamide B, (+)-Notoamide B*)

Sclerotigenin S-154

6,7-Dihydroquinolino[3,2-a][1,4]benzodiazepine-5,13-dione, 9CI
[65641-84-1]



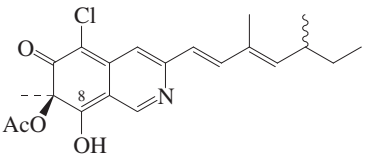
$C_{16}H_{11}N_3O_2$ 277.282

Isol. from the sclerotia of *Penicillium sclerotigenum*. Antiinsectan. Solid. Mp 235-238° (natural) Mp 277-280° (synthetic). λ_{max} 235 (ϵ 7800); 271 (ϵ 3700); 311 (ϵ 1600) (MeOH).

Joshi, B.K. *et al., J. Nat. Prod.*, 1999, **62**, 650-652 (*isol, uv, ir, pmr, cmr, ms*)

Snider, B.B. *et al., Tetrahedron*, 2001, **57**, 3301-3307 (*synth, pmr, cmr*)

Sclerotiorinamine S-155



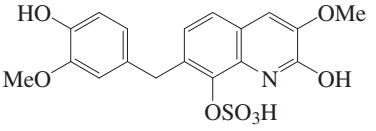
$C_{21}H_{24}ClNO_4$ 389.878

The parent (not isol.) was represented as the 8-oxo-*NH*-tautomer.

Me ether: ***8-O-Methylsclerotiorinamine***
$C_{22}H_{26}ClNO_4$ 403.904
Prod. by *Penicillium multicolor*. Antagonist of the Grb2-SH2 domain. Orange gum. $[\alpha]_D^{25}$ +102 (c, 0.15 in MeOH). Related to Isochromophilone VI, I-205. λ_{max} 204 (ϵ 5600); 271 (ϵ 16500); 286 (ϵ 17800); 364 (ϵ 22500) (MeOH).

Nam, J.-Y. *et al., J. Nat. Prod.*, 2000, **63**, 1303-1305

Scolopendrine S-156



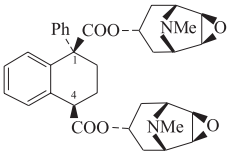
$C_{18}H_{17}NO_8S$ 407.4

Isol. from the centipede *Scolopendra subspinipes*. Yellow powder. Mp 192-194°.

Noda, N. *et al., Chem. Pharm. Bull.*, 2001, **49**, 930-931

Scopadonnine S-157

1,2,3,4-Tetrahydro-1-phenyl-1,4-naphthalenedicarboxylic acid bis(9-methyl-3-oxa-9-azatricyclo[3.3.1.0^{2,4}]non-7-yl) ester, 9CI. 1-Phenyl-1,4-tetralindicarboxylic acid discopine ester



(1*RS*,4*RS*)-*form*

$C_{34}H_{38}N_2O_6$ 570.684

Dimerisation prod. of Apohyoscine, A-1364. Prob. artifact. May be a minor congener of Apohyoscine, A-1364 in various plants.

(1*RS*,4*RS*)-*form*
cis-*form*. ***β-Scopadonnine***
[6882-53-7]
Minor alkaloid from leaves of *Duboisia leichhardtii* (Solanaceae). Also isol. from seeds of *Datura inoxia*. Needles (EtOH), cryst. + ½ H_2O. Mp 128° (hemihydrate) Mp 130-133°.

Perchlorate (1:2):
Cryst. + ½ H_2O. Mp 210-220° dec.

Dipicrate: Mp 210-220° dec.

(1*RS*,4*SR*)-*form*
trans-*form*. **α-*Scopadonnine***
[545-85-7]
Minor alkaloid from leaves of *Duboisia leichhardtii* (Solanaceae). Also isol from seeds of *Datura inoxia*. Prisms (EtOH). Mp 195-196° (191°). $[\alpha]_D^{20}$ 0 (c, 0.38 in EtOH).

Perchlorate (1:2):
Cryst. + 1½ H_2O. Mp 229-230° dec.

Dipicrate: Mp 325°.

Voigtländer, H.W. *et al., Annalen*, 1959, **625**, 196 (*struct*)
Voigtländer, H.W. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1959, **262**, 632
Kagei, K. *et al., Yakugaku Zasshi*, 1980, **100**, 216 (*isol, uv, pmr, ms, cmr*)
Aripova, S.F. *et al., Khim. Prir. Soedin.*, 1991, 532-537; *Chem. Nat. Compd. (Engl. Transl.)*, 1991, 464-468 (*isol, cryst struct*)

Scopine S-158

9-Methyl-3-oxa-9-azatricyclo[3.3.1.0^{2,4}]-nonan-7-ol, 9CI. 6,7-Epoxytropan-3-ol, 8CI
[498-45-3]



$C_8H_{13}NO_2$ 155.196
Tropane numbering shown. Base obt. by mild hydrol. of Scopolamine, S-159, prob. present in scopolamine-yielding plants in traces. Needles (petrol). Mp 76°. Opt. inactive (*meso*-).

Hydrochloride: [85700-55-6]
Platelets (EtOH).

Picrate:
Leaflets. Mp 231°.

N-*De-Me,* O-*(3-acetoxy-2-methylpropanoyl):* [855784-82-6]
$C_{13}H_{19}NO_5$ 269.297
Alkaloid from *Datura stramonium*.

O-*(2-Hydroxy-3-phenylpropanoyl):* ***6,7-Epoxylittorine***
$C_{17}H_{21}NO_4$ 303.357
Alkaloid from leaves of a *Datura candida* cultivar (Solanaceae). Waxy semicryst. Tentative struct.

O-*Phenylacetyl:* ***Phenylacetylscopine***
[130288-54-9]
$C_{16}H_{19}NO_3$ 273.331
Alkaloid from the seeds of *Datura ferox*.

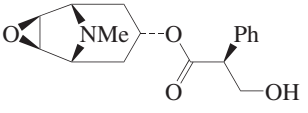
3-Ketone: Scopinone
[498-47-5]
$C_8H_{11}NO_2$ 153.18
Needles and plates (Et_2O/petrol). Mp 65-67°.

3-Epimer. Pseudoscopine. ψ-Scopine
[498-46-4]
$C_8H_{13}NO_2$ 155.196
Long needles. Mp 122-123°.

Willstätter, R. *et al., Ber.*, 1923, **56**, 1079 (*synth*)
Fodor, G. *et al., Chem. Ind. (London)*, 1956, 764 (*synth*)
Heusner, A. *et al., Chem. Ber.*, 1958, **91**, 2399-2405 (*synth, Scopine, Pseudoscopine, Scopinone*)
Werner, G. *et al., Tet. Lett.*, 1967, 1283 (*synth*)
Mandava, N. *et al., Can. J. Chem.*, 1968, **46**, 2761 (*pmr*)
Schink, H.E. *et al., J.O.C.*, 1991, **56**, 2769 (*synth*)
Griffin, W.J. *et al., Phytochemistry*, 1992, **31**, 367 (*6,7-Epoxylittorine*)
Vitale, A.A. *et al., J. Ethnopharmacol.*, 1995, **49**, 81-89 (*Phenylacetylscopine*)
Justice, D.E. *et al., Tetrahedron*, 1996, **52**, 11977 (*synth, Scopine, Pseudoscopine*)
Doncheva, T. *et al., CA*, 2005, **143**, 74802f (*Datura stramonium constit*)

Scopolamine S-159

*9-Methyl-3-oxa-9-azatricyclo[3.3.1.0^{2,4}]-non-7-yl α-(hydroxymethyl)benzeneacetate, 9CI. **Hyoscine, BAN**. Scopoline tropate. Oscine tropate. Escopolamina. Joscina. Transcop. Scopoderm*



$C_{17}H_{21}NO_4$ 303.357
Antimuscarinic agent. Analgesic. Anti-inflammatory, antispasmodic agent. Smooth muscle relaxant. Used as a cycloplegic and mydriatic, antinauseant, e.g. in travel sickness, sedative, e.g. in preoperative medication. Banned for use in cosmetics in UK. Log P 0.26 (calc).

(-)-*form* [51-34-3]
Alkaloid from *Atropa, Datura, Hyoscyamus* and *Scopolia* spp. and several other genera in the Solanaceae. Coml. sources are *Datura metel, Datura meteloides* and *Datura fastuosa* var *alba*. Noncryst. $[\alpha]_D^{20}$ -18 (EtOH). $[\alpha]_D$ -20 (H_2O). Forms a hydrate, Mp 59°; racemises in alkaline soln. Pharmacol. active isomer.
▶ Adverse ocular effects. Absorbed through skin. Human CNS effects when used therapeutically (esp. drowsiness). Psychotic effects when administered transdermally. LD_{50} (mus, orl) 1275 mg/kg. Exp. reprod. and teratogenic effects. VR3675000

Hydrochloride: [55-16-3]
Mp 200°.
▶ VR4290000

Hydrobromide: ***Scopolamine hydrobromide, USAN***. *Hyosol. Scopamin. Scopos. Tranaxine*
[114-49-8]
Cycloplegic and mydriatic. Mp 193-194° (anhyd.). $[\alpha]_D$ -25.9 (H_2O). $[\alpha]_D$ -15.72 (EtOH). Component of Benacine, Donnagel, Donnatal, Donnazyme and Kinesed.
▶ LD_{50} (rat, orl) 1270 mg/kg. Exp. reprod. and teratogenic effects. YM4550000

Picrate:
Yellow needles. Mp 187-188°.

*Methobromide: Hyoscine methobromide, BAN. **Methscopolamine bromide, USAN**. Pamine*
[155-41-9]
[13265-10-6]
Parasympatholytic and spasmolytic agent.
▶ LD_{50} (rat, orl) 3400 mg/kg. YM3675000

N-*Oxide:* ***Hyoscine* N-*oxide 1***
$C_{17}H_{21}NO_5$ 319.357
Alkaloid from *Atropa, Datura, Hyoscyamus* and *Scopolia* spp. (Solanaceae). Mp 125-130° dec. (as hydrochloride). Equatorial *O*. The axial-*O*-isomer (obt. synthetically) was not detected.

N-*De-Me:* ***Norhyoscine***. *Norscopolamine*
[4684-28-0]
$C_{16}H_{19}NO_4$ 289.33
Principal alkaloid of the corollas of *Datura suaveolens* (Solanaceae). Mp 205° (as hydrochloride).

N-*De-Me; picrate:*
Serrated needles (EtOH). Mp 232-233°.

N-*Butyl, bromide: Butylscopolammonium bromide. Hyoscine butyl bromide. Scopolamine butyl bromide. Buscopan. Scobutil. Scopolan. Many other names*
[149-64-4]
Anticholinergic, spasmolytic agent. Mp 142-144°.
▶ LD_{50} (mus, orl) 1170 mg/kg. Exp. porphyrinogen. Exp. reprod. effects. YM3500000

(±)-*form*
Atroscine
[138-12-5]
Alkaloid from *Scopolia atropoides* and *Duboisia leichhardtii* (Solanaceae). Noncryst. Forms a monohydrate, Mp 56-7°, and a dihydrate, Mp 37-9°.

Picrate: Mp 173.5-174.5°.

Hydrobromide: pK_a 7.55 (23°).

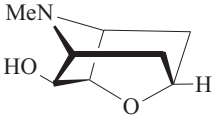
[92714-23-3 , 6533-68-2]

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 286C (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **2**, 1231A (*nmr*)
Ladenburg, A. *et al., Annalen*, 1880, **206**, 299 (*isol*)
Dobó, P. *et al., J.C.S.*, 1959, 3461 (*synth*)
Johns, S.R. *et al., Chem. Comm.*, 1965, 458 (*pmr*)
Ivanov, V. *et al., Farmatsiya (Sofia)*, 1967, **17**, 18; *CA*, **68**, 29912p (*synth, N-butyl*)
Joyce, C.R. *et al., Life Sci.*, 1968, **7**, 533 (*pharmacol*)
Pauling, P. *et al., Chem. Comm.*, 1969, 1001 (*cryst struct*)
Fales, H.M. *et al., Arch. Mass Spectral Data*, 1971, **2**, 654 (*ms*)
Evans, W.C. *et al., Phytochemistry*, 1972, **11**, 3293 (*isol, Norhyoscine*)
Greenblat, D.J. *et al., N. Engl. J. Med.*, 1973, **288**, 1215 (*rev, pharmacol*)
Simeral, L. *et al., Org. Magn. Reson.*, 1974, **6**, 226 (*cmr*)
Innes, I.R. *et al., Pharmacol. Basis Ther., 5th edn.*, 1975, 514 (*rev, pharmacol*)
Phillipson, J.D. *et al., Phytochemistry*, 1975, **14**, 999 (*oxide*)
Shutt, L.E. *et al., Anaesthesia*, 1979, **34**, 476 (*rev, pharmacol*)
Clissold, S.P. *et al., Drugs*, 1985, **29**, 189 (*rev, activity*)
Seeger, R. *et al., Dtsch. Apoth. -Ztg.*, 1986, **126**, 1930 (*rev, chem, props, occur, tox, pharmacol*)
Negwer, M. *et al., Organic-Chemical Drugs and their Synonyms, 6th edn., Akademie-Verlag*, 1987, 4459; 4970; 6354 (*synonyms*)
Muhtadi, F.J. *et al., Anal. Profiles Drug Subst.*, 1990, **19**, 477 (*rev*)

Sarazin, C. *et al., Magn. Reson. Chem.*, 1991, **29**, 291 (*pmr, cmr*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 425
Glaser, R. *et al., J.O.C.*, 1999, **64**, 9217-9224 (*conformn*)
Glaser, R. *et al., Can. J. Chem.*, 2000, **78**, 212-223 (*cryst struct*)
Tytgat, G.N. *et al., Drugs*, 2007, **67**, 1343-1357 (*hyoscine butyl bromide, rev*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, HOT500; SBG000; SBG500; SBH500

Scopoline† S-160

*Hexahydro-4-methyl-2,5-methano-2*H*-furo[3,2-*b*]pyrrol-6-ol, 9CI. Oscine*
[487-27-4]



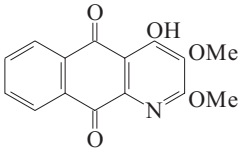
$C_8H_{13}NO_2$ 155.196
Alkaloid from several *Datura* spp. and *Scopolia tanguticus* (Solanaceae). Prod. in the hydrol. of Scopolamine, S-159 by rearr. Hygroscopic prisms (Et_2O). Mp 108-109°. Bp 248°. pK_a 8.2 (as nitrate). Racemic; has been resolved.

Hydrochloride: [21030-89-7]
Plates (hydrate), prisms (anhyd.). Mp 273-274° (244-250° dec.).

Hesse, O. *et al., Annalen*, 1892, **271**, 100
King, H. *et al., J.C.S.*, 1919, **115**, 476 (*resoln*)
Heusner, A. *et al., Chem. Ber.*, 1954, **87**, 1063 (*struct*)
Zeile, K. *et al., Chem. Ber.*, 1957, **90**, 2809 (*synth*)
Mandava, N. *et al., Can. J. Chem.*, 1968, **46**, 2761 (*pmr*)
Evans, W.C. *et al., J.C.S.(C)*, 1968, 2775 (*ms, ir*)
Bristol, M.L. *et al., J. Nat. Prod.*, 1969, **32**, 123 (*isol*)
Scheiber, P. *et al., Magn. Reson. Chem.*, 1989, **27**, 1097 (*pmr, cmr*)
Mann, J. *et al., J.C.S. Perkin 1*, 1992, 787 (*synth*)

Scorazanone S-161

4-Hydroxy-2,3-dimethoxybenzo[g]quinoline-5,10-dione, 9CI
[126657-23-6]

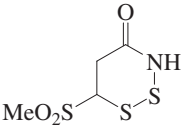


$C_{15}H_{11}NO_5$ 285.256
Alkaloid from the roots of *Goniothalamus scortechinii* (Annonaceae). Yellow needles (Et_2O). Mp 205.5-206.5°.

Din, L.B. *et al., Phytochemistry*, 1990, **29**, 346 (*isol, ir, pmr, cmr, ms, struct*)

Scorodophlone A S-162

*Dihydro-6-(methylsulfonyl)-1,2,3-dithiazin-4(3*H*)-one*
[933770-81-1]

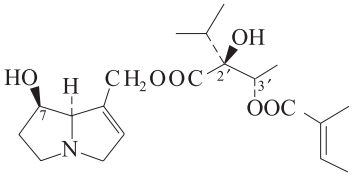


$C_4H_7NO_3S_3$ 213.302
Constit. of the seeds of *Scorodophloeus zenkeri*.

Songue, J.L. *et al., Bull. Chem. Soc. Ethiop.*, 2006, **20**, 173-176 (*isol, struct*)

Scorpioidine† S-163

[80405-18-1]



$C_{20}H_{31}NO_6$ 381.468
Alkaloid from *Myosotis scorpioides* (Boraginaceae). Oil. $[\alpha]_D^{24}$ -5.06 (c, 1.72 in MeOH). λ_{max} 218 (ε 15200) (MeOH) (Berdy).

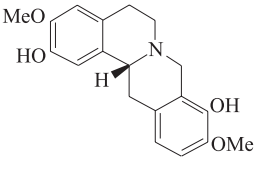
O^7*-Ac: 7-Acetylscorpioidine*
[80405-17-0]
$C_{22}H_{33}NO_7$ 423.505
Alkaloid from *Myosotis scorpioides* (Boraginaceae). Oil. $[\alpha]_D^{24.5}$ -8.17 (c, 1.18 in MeOH).

Diastereoisomer, N*-oxide:* ***Anadoline* N-*oxide***. *Anadoline*
[28513-29-3]
$C_{20}H_{31}NO_7$ 397.467
Alkaloid from *Symphytum orientale* (Boraginaceae). Mp 186° dec. $[\alpha]_D^{22}$ +9.2 (c, 0.7 in $CHCl_3$). Epimeric with Scorpioidine at C2′ or C3′, i.e. a tiglate ester of a retronecine trachelanthate *N*-oxide (abs. config. of necic ester portion not known). Thus a deriv. of either Indicine or Intermedine.

Ulubelen, A. *et al., Tet. Lett.*, 1970, 2583 (*isol, Anadoline*)
Culvenor, C.C.J. *et al., Aust. J. Chem.*, 1975, **28**, 173 (*struct, Anadoline*)
Resch, J.F. *et al., J. Nat. Prod.*, 1982, **45**, 358 (*isol, uv, ir, pmr, cmr, ms*)

Scoulerine S-164

Alkaloid HF1. Aurotensine



(*R*)*-form*

$C_{19}H_{21}NO_4$ 327.379
Aurotensine was a partial racemate with lower Mp. Active against gram-positive and gram-negative bacteria.

(R)-form [6507-34-2]
Alkaloid from *Corydalis tuberosa* and *Corydalis cava* (Papaveraceae). Mp 195° (vac.). $[\alpha]_D^{22}$ +284 (c, 0.82 in MeOH).

(S)-form [6451-73-6]
Alkaloid from many *Corydalis* spp., *Erythrina orientalis, Bocconia frutescens, Glaucium* spp., *Eschscholtzia lobbii* and *Fumaria officinalis* (Fabaceae, Papaveraceae). Shows antiemetic and antitussive activities. Active against gram-positive and gram-negative bacteria. Fine grey needles (MeOH). Mp 204°. $[\alpha]_D^{28}$ -289 (c, 0.62 in MeOH). $[\alpha]_D^{26}$ -318 (c, 0.41 in MeOH).
▶ DR9808600

Hydrochloride: Mp 268-269°.

N-*Me:* see Cyclanoline, C-833

Di-Me ether: see Tetrahydropalmatine, T-212

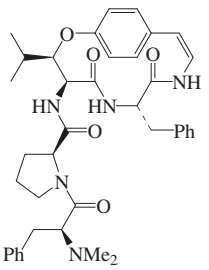
(±)-form [6451-72-5]
Alkaloid from *Corydalis* and *Fumaria* spp. Plates (MeOH), cryst. (EtOH). Mp 198-200° (183-185°).

Picrate:
Cryst. powder (EtOH). Mp 206° (200°) dec.

Gadamar, J. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1927, **265**, 675
Manske, R.H.F. *et al., Can. J. Res., Sect. B*, 1936, **16**, 153; 1939, **17**, 57; 1940, **18**, 414; 1942, **20**, 49
Battersby, A.R. *et al., J.C.S.(C)*, 1966, 1052 (*synth*)
Brochmann-Hanssen, G. *et al., Tet. Lett.*, 1966, 2261 (*cd, ms, pmr*)
Kametani, T. *et al., J.C.S.(C)*, 1967, 530 (*ir, synth*)
Abbasoglu, U. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1991, **324**, 379-380 (*activity*)
Cheng, X. *et al., Chem. Biodiversity*, 2008, **5**, 1335-1344 (*isol, pmr, cmr*)

Scutianine A S-165

Scutianine
[14051-13-9]



Absolute Configuration

$C_{39}H_{47}N_5O_5$ 665.831
Alkaloid from the bark of *Scutia buxifolia* (Rhamnaceae). Needles (EtOH aq. or $CHCl_3$/petrol). Mp 186-187°. $[\alpha]_D^{20}$ -399 (c, 0.15 in $CHCl_3$).

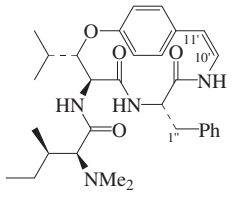
N-*De-Me:* ***Scutianine F***. N-*Demethylscutianine A*
[64309-19-9]
$C_{38}H_{45}N_5O_5$ 651.804
Alkaloid from the bark of *Scutia buxifolia* (Rhamnaceae). Needles (EtOH aq.). Mp 208°. $[\alpha]_D^{20}$ -132 (c, 0.02 in MeOH).

N^{pro}-*Deacyl,* N^{pro}-*Me:* ***Ceanothine B***
[19471-43-3]
$C_{29}H_{36}N_4O_4$ 504.628
Alkaloid from the root bark of *Ceanothus americanus* (New Jersey tea) and *Ceanothus sanguineus* (Rhamnaceae). Needles ($CHCl_3/Et_2O$). Mp 238.5-240.5°. $[\alpha]_D^{25}$ -293 (c, 0.68 in $CHCl_3$).

Warnhoff, E.W. *et al., Can. J. Chem.*, 1965, **43**, 2594 (*Ceanothine B, isol, ms, pmr*)
Tschesche, R. *et al., Chem. Ber.*, 1967, **100**, 323-334 (*Scutianine A*)
Klein, F.K. *et al., J.A.C.S.*, 1968, **90**, 3576 (*Ceanothine B, ms, struct*)
Servis, R.E. *et al., J.A.C.S.*, 1968, **90**, 4179 (*Ceanothine B, struct*)
Tschesche, R. *et al., Phytochemistry*, 1977, **16**, 1025-1028 (*Scutianine F*)
Lagarias, J.C. *et al., J. Nat. Prod.*, 1979, **42**, 663 (*Ceanothine B, isol, ms*)

Scutianine C S-166

[53766-26-0]



Absolute Configuration

$C_{31}H_{42}N_4O_4$ 534.697
Various nomenclature and numbering schemes used. Alkaloid from the bark of *Scutia buxifolia* (Rhamnaceae). Needles (MeOH/cyclohexane). Mp 267°. $[\alpha]_D^{20}$ -231 (c, 0.1 in $CHCl_3$).

10,11-Dihydro:
Needles ($CHCl_3$/hexane). Mp 297-299°. $[\alpha]_D^{20}$ -102 (c, 0.1 in $CHCl_3$).

10,11-Dihydro, 11ξ-hydroxy: ***Pandamine***
[10233-81-5]
$C_{31}H_{44}N_4O_5$ 552.712
Alkaloid from *Panda oleosa* (Pandaceae). Cryst. (EtOAc). Mp 256°. $[\alpha]_D$ -103 (c, 0.5 in $CHCl_3$). Gross struct. only, no stereochem. Not interrelated with Scutianine C.

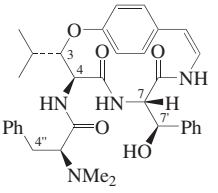
10,11-Dihydro, 11-hydroxy, hydrochloride:
Cryst. + $1H_2O$. Mp 235° dec. $[\alpha]_D$ -77 (c, 1 in MeOH).

1″ξ-Hydroxy: ***Scutianine H***
[72047-69-9]
$C_{31}H_{42}N_4O_5$ 550.697
Alkaloid from the bark of *Scutia buxifolia* (Rhamnaceae). Cryst. ($CHCl_3/Et_2O$). Mp 242-243°. $[\alpha]_D$ -233 (c, 0.1 in $CHCl_3$). Gross struct. only, no stereochem. Not interrelated with Scutianine C.

Pais, M. *et al., Ann. Chim. (Paris)*, 1966, **11**, 83 (*Pandamine*)
Tschesche, R. *et al., Chem. Ber.*, 1974, **107**, 2274-2283 (*Scutianine C*)
Morel, A.F. *et al., Phytochemistry*, 1979, **18**, 473-477 (*Scutianines C,H*)
Pais, M. *et al., Phytochemistry*, 1979, **18**, 1869-1872 (*Pandamine, cmr*)
Da Silva, U.F. *et al., Phytochem. Anal.*, 1996, **7**, 20-23 (*abs config*)

Scutianine D S-167

[53766-27-1]



Absolute Configuration

$C_{34}H_{40}N_4O_5$ 584.714
Various changes in CAS nomenclature and numbering. That shown here is in accordance with one CAS scheme. Alkaloid from the bark of *Scutia buxifolia* (Rhamnaceae) and from *Condalia buxifolia*, *Zizyphus jujuba* and *Zizyphus nummularia*. Needles (EtOH aq.). Mp 219-220°. $[\alpha]_D^{20}$ -196 (c, 0.1 in $CHCl_3$).

O-*Ac:*
Cryst. (EtOH aq.). Mp 236°. $[\alpha]_D$ -163 (c, 0.1 in $CHCl_3$).

10,11-Dihydro:
Needles (EtOH aq.). Mp 256-258°. $[\alpha]_D^{20}$ -74.5 (c, 0.1 in $CHCl_3$).

4″ξ-Hydroxy: ***Scutianine J***
[163136-11-6]
$C_{34}H_{40}N_4O_6$ 600.713
Alkaloid from bark of *Scutia buxifolia* (Rhamnaceae). Amorph. solid. Stereochem. not determined.

7′-Deoxy: ***Scutianine B***
[35467-41-5]
$C_{34}H_{40}N_4O_4$ 568.714
Alkaloid from the bark and roots of *Scutia buxifolia* and from *Condalia buxifolia*, *Discaria febrifuga*, *Melochia tomentosa* and *Waltheria douradahina*. Antibacterial. Needles (CH_2Cl_2/cyclohexane). Mp 248-250°. $[\alpha]_D^{20}$ -296 (c, 0.1 in $CHCl_3$).

7-Epimer: ***Scutianine G***
[65494-36-2]
$C_{34}H_{40}N_4O_5$ 584.714
Alkaloid from the bark of *Scutia buxifolia* (Rhamnaceae). Needles (EtOH aq.). Mp 162°. $[\alpha]_D^{20}$ -112 (c, 0.02 in MeOH).

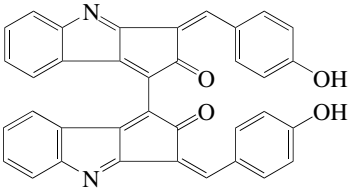
7,7′-Diepimer: ***Scutianine K***
[202394-59-0]
$C_{34}H_{40}N_4O_5$ 584.714
Alkaloid from *Scutia buxifolia*. Cryst. (MeOH/Et_2O). Mp 215-217°. $[\alpha]_D^{25}$ -20.9 (c, 0.1 in $CHCl_3$).

3,4,7,7′-Tetraepimer: ***Scutianine E***
[53797-27-6]
$C_{34}H_{40}N_4O_5$ 584.714
Alkaloid from the bark of *Scutia buxifolia* (Rhamnaceae). Needles (EtOH aq.). Mp 121°. $[\alpha]_D^{20}$ -22.2 (c, 0.1 in $CHCl_3$). Contains two D-amino acid residues.

Tschesche, R. *et al., Tet. Lett.*, 1971, 4405-4408 (*Scutianine B*)
Tschesche, R. *et al., Chem. Ber.*, 1974, **107**, 2274-2283 (*Scutianine D*)
Merkuza, V.M. *et al., Phytochemistry*, 1974, **13**, 1279-1282 (*Scutianine B*)
Tschesche, R. *et al., Phytochemistry*, 1977, **16**, 1817-1818 (*Scutianine G*)
Morel, A.F. *et al., Phytochemistry*, 1979, **18**, 473-477; 1998, **47**, 125-129 (*Scutianines D,K*)
Menezes, A.S. *et al., Phytochemistry*, 1995, **38**, 783-786 (*Scutianine J*)
Da Silva, U.F. *et al., Phytochem. Anal.*, 1996, **7**, 20-23 (*abs config*)
Tan, N.H. *et al., Chem. Rev.*, 2006, **106**, 840-895 (*bibl*)

Scytonemin† S-168

3,3′-Bis[(4-hydroxyphenyl)methylene]-[1,1′-bicyclopent[b]indole]-2,2′(3H,3′H)-dione, 9CI
[152075-98-4]

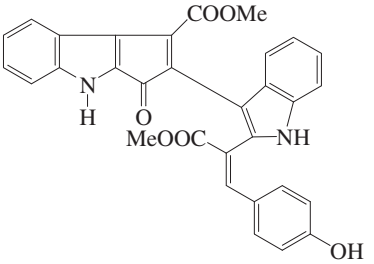


$C_{36}H_{20}N_2O_4$ 544.565
Pigment from the sheaths of cyanobacteria *Calothrix* spp. and *Stigonema* sp. UV sunscreen. Antiproliferative agent. Yellow-green cryst. Mp > 325°.

Proteau, P.J. *et al., Experientia*, 1993, **49**, 825-829 (*isol, pmr, cmr*)
Edwards, H.G. *et al., Spectrochim. Acta A*, 2000, **56**, 193-200 (*Raman*)
Stevenson, C.S. *et al., J. Pharmacol. Exp. Ther.*, 2002, **303**, 858-866 (*activity*)

Scytonine S-169

[683771-38-2]

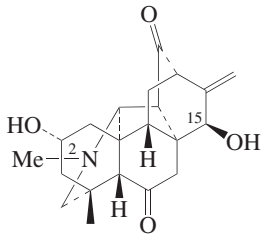


$C_{31}H_{22}N_2O_6$ 518.525
Isol. from a terrestrial cyanobacterium *Scytonema* sp. Amorph. brown solid. λ_{max} 207 (ε 38950); 225 (ε 37050); 270 (ε 22480) (MeOH).

Bultel-Poncé, V. *et al., J. Nat. Prod.*, 2004, **67**, 678-681 (*isol, pmr, cmr*)

Sczukidine S-170

2,15-Dihydroxy-6,21-secohetisan-6,13-dione, 9CI
[135626-91-4]



$C_{21}H_{27}NO_4$ 357.449
Alkaloid from *Aconitum sczukini* (Ranunculaceae).

2-Ac: ***Sczukinine***
[135626-90-3]
$C_{23}H_{29}NO_5$ 399.486
Alkaloid from *Aconitum sczukini* (Ranunculaceae).

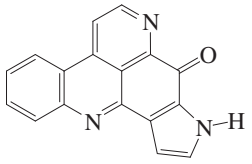
2-O-(2-Methylbutanoyl), 15-Ac: ***Sczukitine***
[135626-92-5]
$C_{28}H_{37}NO_6$ 483.603
Alkaloid from *Aconitum sczukini* (Ranunculaceae).

6-Deoxo, 2-ketone: ***Delcarduchol***
[240121-83-9]
$C_{21}H_{27}NO_3$ 341.449
Alkaloid from *Delphinium carduchorum*.

Chen, D. *et al., CA*, 1991, **115**, 110581r (*Sczukinine, Sczukitine*)
Mericli, A.H. *et al., Phytochemistry*, 1999, **51**, 337-340 (*Delcarduchol*)

Sebastianine A S-171

[448264-64-0]

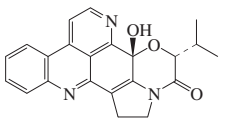


$C_{17}H_9N_3O$ 271.278
Isol. from the Brazilian ascidian *Cystodytes dellechiajei*. Cytotoxic. Amorph. yellow solid. λ_{max} 223 (log ϵ 4.56); 238 (log ϵ 4.49); 265 (log ϵ 4.36); 301 (log ϵ 4.11); 390 (log ϵ 3.85) (MeOH).

Torres, Y.R. *et al., J.O.C.*, 2002, **67**, 5429-5432 (*isol, pmr, cmr*)
Legentil, L. *et al., Tet. Lett.*, 2003, **44**, 2473-2475 (*synth*)

Sebastianine B S-172

[448264-65-1]



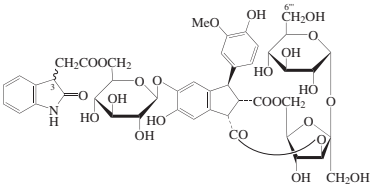
Relative Configuration

$C_{22}H_{19}N_3O_3$ 373.41
Isol. from the Brazilian ascidian *Cystodytes dellechiajei*. Cytotoxic. Pale yellow solid. λ_{max} 206 (log ϵ 4.57); 252 (log ϵ 4.58); 292 (log ϵ 4.23); 366 (log ϵ 4.19) (MeOH).

Torres, Y.R. *et al., J.O.C.*, 2002, **67**, 5429-5432 (*isol, cd, pmr, cmr*)

Secaloside A S-173

[188834-49-3]



Relative Configuration

$C_{46}H_{51}NO_{24}$ 1001.901
Constit. of the pollen of rye (*Secale cereale*). Antitumour agent. Amorph. powder. Mp 178-186° dec. $[\alpha]_D$ +4.6 (c, 0.6 in MeOH). λ_{max} 280 ; 320 (sh) (H_2O).

6‴-O-β-D-Glucopyranoside: ***Secaloside C***
[188834-50-6]
$C_{52}H_{61}NO_{29}$ 1164.043
Constit. of rye pollen. Antitumour agent. Tentative struct. assigned.

3-Epimer: ***Secaloside B***
[188855-24-5]
$C_{46}H_{51}NO_{24}$ 1001.901
Constit. of the pollen of rye. Antitumour agent. Amorph. powder. Mp 192-201° dec. $[\alpha]_D$ +6.8 (c, 0.4 in MeOH). λ_{max} 280 ; 320 (sh) (H_2O).

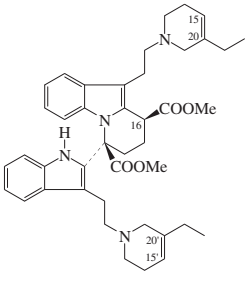
3-Epimer, 6‴-O-β-D-glucopyranoside: ***Secaloside D***
[188899-19-6]
$C_{52}H_{61}NO_{29}$ 1164.043
Constit. of rye pollen. Antitumour agent. Tentative struct. assigned.

[187988-51-8 , 187988-50-7]

Jaton, J.-C. *et al., J. Nat. Prod.*, 1997, **60**, 356-360; 361-365

Secamine S-174

[34304-16-0]



Probable Relative Configuration

$C_{42}H_{52}N_4O_4$ 676.897
The *R,R*- absolute config. is given in CAS but the evidence supporting this cannot be located. The evidence summarised here supports the *RS,SR*- config., i.e. racemic with *R,S* relative config. Alkaloid from the roots of *Rhazya stricta* (Apocynaceae). Noncryst. Opt. inactive.

15,20/15′,20′-Dihydro: ***Dihydrosecamine***
$C_{42}H_{54}N_4O_4$ 678.913
Alkaloid from *Rhazya stricta* (Apocynaceae), obt. only as a mixt. Noncryst.

15,15′,20,20′-Tetrahydro: ***Tetrahydrosecamine***
[33633-19-1]
$C_{42}H_{56}N_4O_4$ 680.929
Alkaloid from *Rhazya stricta*, *Amsonia elliptica*, *Amsonia tabernaemontana*, *Aspidosperma excelsum*,*Aspidosperma marcgravianum* and *Rhazya orientalis* (Apocynaceae). Shows cytotoxic and antimicrobial activity. Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. λ_{max} 220 ; 283 ; 292 (MeOH) (Berdy). λ_{max} 225 ; 272 ; 285 ; 294 (EtOH) (Berdy).

16-Hydroxy, 15,15′,20,20′-tetrahydro: ***16-Hydroxytetrahydrosecamine***
[88607-52-7]
$C_{42}H_{56}N_4O_5$ 696.928
Alkaloid from root bark of *Aspidosperma excelsum*. Shows antimicrobial activity. Sol. MeOH, Me_2CO; poorly sol. H_2O. λ_{max} 220 ; 276 (sh) ; 282 ; 291 (MeOH). λ_{max} 220 ; 282 ; 291 (MeOH) (Berdy).

16-De(methoxycarbonyl), 16-hydroxy, 15,15′,20,20′-tetrahydro: ***16-Hydroxy-16-decarbomethoxytetrahydrosecamine***
[88607-51-6]
$C_{40}H_{54}N_4O_3$ 638.892
From root bark of *Aspidosperma excelsum*. Shows antimicrobial activity. Sol. MeOH, Me_2CO; poorly sol. H_2O. λ_{max} 220 ; 276 (sh) ; 285 ; 292 (MeOH).

16′-De(methoxycarbonyl), 15,15′,20,20′-tetrahydro: ***Decarbomethoxytetrahydrosecamine***
[56842-20-7]
$C_{40}H_{54}N_4O_2$ 622.892
Alkaloid from *Amsonia tabernaemontana*, *Rhazya stricta*, *Aspidosperma marcgravianum* and *Aspidosperma excelsum*. Antiseptic. Noncryst. Sol. Me_2CO; poorly sol. H_2O. $[\alpha]_D^{20}$ 0 (EtOH). Log P 8.76 (uncertain value) (calc). λ_{max} 220 ; 283 ; 292 (MeOH) (Berdy).

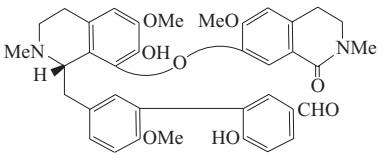
Bis(demethoxycarbonyl), 15,15′,20,20′-tetrahydro: ***Didemethoxycarbonyltetrahydrosecamine***
[57905-97-2]
$C_{38}H_{52}N_4$ 564.856
Alkaloid from roots of *Rhazya stricta*. Amorph. $[\alpha]_D^{20}$ +30 ($CHCl_3$). λ_{max} 224 ; 284 ; 290 (sh) (MeOH).

[88728-16-9]

Evans, D.A. *et al., Chem. Comm.*, 1968, 859-861 (*isol, ms, struct*)
Zsadon, B. *et al., Phytochemistry*, 1975, **14**, 1438-1439 (*Tetrahydrosecamine, Decarbomethoxytetrahydrosecamine*)
Cordell, G.A. *et al., J. Indian Chem. Soc.*, 1978, **55**, 1083-1091 (*config*)
Mukhopadhyay, S. *et al., J. Nat. Prod.*, 1981, **44**, 696-700 (*Tetrahydrosecamine, isol, uv, ir, pmr, ms*)
Verpoorte, R. *et al., Planta Med.*, 1983, **48**, 283-289 (*16-hydroxy derivs*)
Atta-ur-Rahman, *et al., J. Nat. Prod.*, 1986, **49**, 1138-1139 (*Didemethoxycarbonyltetrahydrosecamine*)

Secantioquine S-175

[93767-29-4]

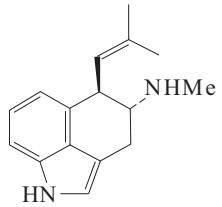


$C_{37}H_{38}N_2O_8$ 638.716

Alkaloid from the bark of a *Pseudoxandra* sp. (Annonaceae). Amorph. $[\alpha]_D$ -15 (c, 1 in $CHCl_3$). First example of a secobisbenzylisoquinoline alkaloid to contain a biphenyl linkage.

Cortes, D. *et al., C. R. Hebd. Seances Acad. Sci., Ser.* 2, 1984, **298**, 591 (*uv, ir, pmr, ms, cd, struct*)

6,7-Secoagroclavine S-176



$C_{16}H_{20}N_2$ 240.347

Natural-form [68156-97-8]

Minor alkaloid from *Claviceps purpurea*. Mp 132° (126-129°). Opt. rotn. not recorded.

N-*Me:* Mp 136° (132-134°).

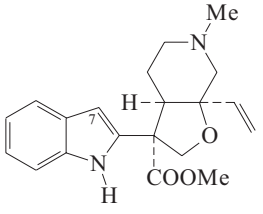
(±)-*form*

Synthetic. Mp 202-205°.

Horwell, D.C. *et al., Phytochemistry*, 1979, **18**, 519 (*isol, uv, ir, pmr, ms, struct*)
Natsume, M. *et al., Heterocycles*, 1980, **14**, 1101 (*synth, uv, ir, pmr, ms*)
Porter, J.K. *et al., J. Agric. Food Chem.*, 1981, **29**, 653 (*isol, synth*)
Oppolzer, W. *et al., Tetrahedron*, 1983, **39**, 3695 (*synth, uv, ir, pmr, ms*)
Somei, M. *et al., Chem. Pharm. Bull.*, 1984, **32**, 5064; 1986, **34**, 677 (*synth*)
Hatanaka, N. *et al., Tet. Lett.*, 1986, **27**, 3169 (*synth*)
Somei, M. *et al., Heterocycles*, 1987, **26**, 2823 (*synth*)
Nakagawa, K. *et al., Heterocycles*, 1991, **32**, 873 (*synth*)
Yamada, F. *et al., Heterocycles*, 2007, **72**, 599-620 (*synth*)

6,7-Secoangustilobine A S-177

[123064-77-7]



$C_{20}H_{24}N_2O_3$ 340.421

Alkaloid from leaves of *Alstonia congensis* (Apocynaceae). $[\alpha]_D$ +78 (c, 0.3 in $CHCl_3$).

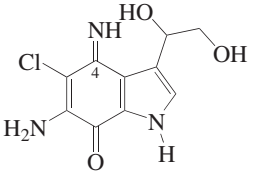
N-*De-Me:* ***Nor-6,7-secoangustilobine A***
[112448-49-4]
$C_{19}H_{22}N_2O_3$ 326.394
Alkaloid from *Alstonia angustiloba* and *Alstonia pneumatophora* (Apocynaceae). $[\alpha]_D$ +83 (c, 0.3 in MeOH).

7-Formyl, N-*de-Me:* ***4,6-Secoangustilobinal***
[112464-22-9]
$C_{20}H_{22}N_2O_4$ 354.405
Alkaloid from *Alstonia angustiloba* and *Alstonia pneumatophora* (Apocynaceae). $[\alpha]_D$ +28 (c, 0.23 in MeOH). Rel. config. only detd.

Zeches, M. *et al., J. Nat. Prod.*, 1987, **50**, 714 (*4,6-Secoangustilobinal, Nor-6,7-secoangustilobine A*)
Caron, C. *et al., Phytochemistry*, 1989, **28**, 1241 (*isol, uv, ir, pmr, cmr, ms, struct*)

Secobatzelline A S-178

[247590-59-6]



$C_{10}H_{10}ClN_3O_3$ 255.66

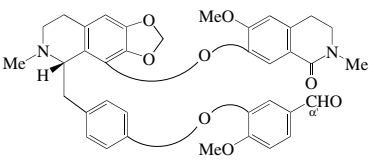
Alkaloid from the sponge *Batzella* sp. Mp 169-170° (as di-Ac) Mp > 300° (blackens at 165-170°). $[\alpha]_D^{24}$ -135 (c, 0.01 in MeOH). λ_{max} 203 (log ϵ 4.19); 233 (log ϵ 4.13); 322 (log ϵ 4) (MeOH).

4-Deimino, 4-oxo: ***Secobatzelline B***
[247590-60-9]
$C_{10}H_9ClN_2O_4$ 256.645
Alkaloid from *Batzella* sp. Mp 170-171° (as di-Ac) Mp > 300° (blackens at 180-182°). $[\alpha]_D^{24}$ -18 (c, 0.01 in MeOH). Prob. artifact. λ_{max} 203 (log ϵ 4.32); 245 (log ϵ 4); 335 (log ϵ 4.32) (MeOH).

Gunasekera, S.P. *et al., J. Nat. Prod.*, 1999, **62**, 1208-1211 (*Secobatzellines A,B*)
Shinkre, B.A. *et al., Synth. Commun.*, 2007, **37**, 2399-2409 (*Secobatzelline B, synth*)

Secocepharanthine S-179

[89503-78-6]



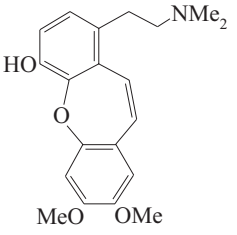
$C_{37}H_{36}N_2O_8$ 636.7

Trace alkaloid from *Stephania sasakii* (Menispermaceae). Amorph. $[\alpha]_D$ -7.2 (c, 2.08 in $CHCl_3$).

α′-*Alcohol:* ***Dihydrosecocepharanthine***
[89503-79-7]
$C_{37}H_{38}N_2O_8$ 638.716
Alkaloid from *Stephania sasakii*. Plates (MeOH). Mp 192-194°. $[\alpha]_D$ -1.67 (c, 0.12 in $CHCl_3$).

Kunitomo, J. *et al., Chem. Pharm. Bull.*, 1985, **33**, 135 (*uv, ir, pmr, ms, cd, ord, struct, synth*)

Secocularidine S-180



$C_{20}H_{23}NO_4$ 341.406

Alkaloid from *Corydalis claviculata* (Papaveraceae). Prisms (MeOH). Mp 189-190°.

N-*De-Me:* ***Norsecocularidine***
[110883-32-4]
$C_{19}H_{21}NO_4$ 327.379
Trace alkaloid from *Sarcocapnos crassifolia* and *Sarcocapnos enneaphylla* (Papaveraceae). Noncryst.

Me ether: ***Secocularine***
$C_{21}H_{25}NO_4$ 355.433
Alkaloid from *Sarcocapnos crassifolia* (Papaveraceae). Amorph.

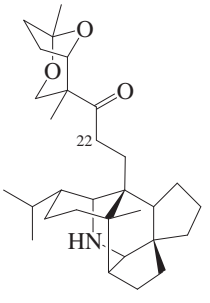
Me ether, perchlorate:
Cryst. (EtOH). Mp 194-196°.

Me ether, N-*de-Me:* ***Norsecocularine***
$C_{20}H_{23}NO_4$ 341.406
Alkaloid from *Corydalis claviculata* (Papaveraceae).

Boente, J.M. *et al., Chem. Biol. Isoquinoline Alkaloids, Int. Symp., Phytochem. Soc. Eur., Abstr. Pap.*, 1984, 7 (*Norsecocularine*)
Boente, J.M. *et al., Tet. Lett.*, 1984, **25**, 889 (*uv, ir, pmr, ms, struct, synth*)
Castedo, L. *et al., Heterocycles*, 1987, **26**, 591 (*Norsecocularidine*)
Tojo, E. *et al., Heterocycles*, 1988, **27**, 2367 (*synth, Norsecocularidine, Norsecocularine*)

Secodaphniphylline S-181

[28606-61-3]



Absolute Configuration

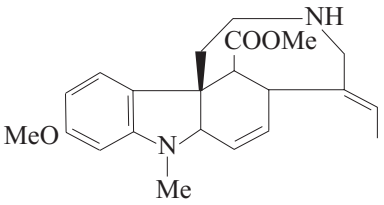
$C_{30}H_{47}NO_3$ 469.706
Alkaloid from the leaves and bark of *Daphniphyllum macropodum* (Daphniphyllaceae). Cryst. (hexane). Mp 129-130° Mp 124-125° (synthetic). $[\alpha]_D$ -50 (c, 0.35 in $CHCl_3$) (synthetic).

*22*S-*Acetoxy:* ***Daphniteijsmine****. Acetoxysecodaphniphylline*
[55855-00-0]
$C_{32}H_{49}NO_5$ 527.743
Minor alkaloid from the fruits of *Daphniphyllum teijsmanni* (Daphniphyllaceae). Cryst. (hexane/EtOAc). Mp 228-232° (187-188°).

Sasaki, K. *et al., J.C.S.(B)*, 1971, 1565 (*abs config*)
Toda, M. *et al., Tetrahedron*, 1972, **28**, 1477 (*isol, ir, pmr, ms, struct*)
Yamamura, S. *et al., Tet. Lett.*, 1974, **15**, 2849-2852; 3673-3676 (*isol, ir, ms, struct, Daphniteijsmine*)
Heathcock, C.H. *et al., J.O.C.*, 1992, **57**, 2566 (*synth, ir, pmr, cmr, ms*)
Morita, H. *et al., Tetrahedron*, 1999, **55**, 12549-12556 (*isol, cmr*)

3,4-Seco-3,14-dehydrocabucraline S-182

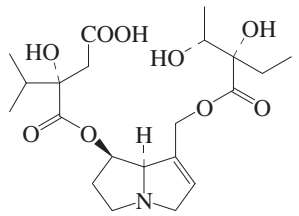
[87596-50-7]



$C_{22}H_{28}N_2O_3$ 368.475
Alkaloid from the root bark of *Alstonia plumosa* (Apocynaceae). $[\alpha]_D$ -21 (c, 1.0 in $CHCl_3$).

Jacquier, M.J. *et al., Phytochemistry*, 1982, **21**, 2973 (*isol, uv, ir, pmr, ms, struct*)

12-Seco-14-deoxyparsonsianine S-183



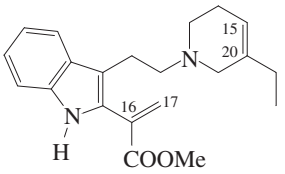
$C_{21}H_{33}NO_9$ 443.493

Me ester: [136997-63-2]
$C_{22}H_{35}NO_9$ 457.52
Alkaloid from leaves of *Parsonsia laevigata* (Apocynaceae). Solid. $[\alpha]_D^{31}$ +31.6 (c, 0.70 in MeOH). Possibly an artifact.

Abe, F. *et al., Chem. Pharm. Bull.*, 1991, **39**, 1576 (*isol, pmr, cmr, struct*)

Secodine S-184

*Methyl 3-[2-(3-ethyl-5,6-dihydro-1(2*H*)-pyridinyl)ethyl]-α-methylene-1*H*-indole-2-acetate, 9CI*
[27825-42-9]



$C_{21}H_{26}N_2O_2$ 338.449
Presumed precursor of Presecamine, P-624. Noncryst. Reactive, readily dimerises.

15,20-Dihydro: 15,20-Dihydrosecodine
[27570-39-4]
Formed by the pyrolysis of Tetrahydropresecamine in P-624. Noncryst. $[\alpha]_D^{20}$ -2.5 (MeOH). Dimerises back to Tetrahydropresecamine on standing.

16,17-Dihydro: ***16,17-Dihydrosecodine***
[27825-43-0]
$C_{21}H_{28}N_2O_2$ 340.464
Alkaloid from the leaves of *Rhazya stricta* (Apocynaceae). Gum.

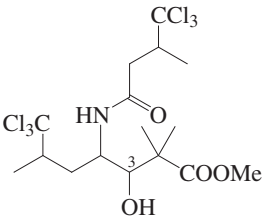
16,17-Dihydro, 17-hydroxy: ***16,17-Dihydrosecodin-17-ol***
[27825-45-2]
$C_{21}H_{28}N_2O_3$ 356.464
Alkaloid from *Rhazya orientalis* (Apocynaceae). Cryst. (CH_2Cl_2). Mp 131.5-132° Mp 150-151°. λ_{max} 222 (log ϵ 4.49); 274 (log ϵ 3.87); 284 (log ϵ 3.93); 292 (log ϵ 3.86) (EtOH).

15,16,17,20-Tetrahydro: ***Tetrahydrosecodine***
[27498-98-2]
$C_{21}H_{30}N_2O_2$ 342.48
Alkaloid from *Rhazya orientalis* and the leaves of *Rhazya stricta* (Apocynaceae). Gum. Mp 223-225° (216-218°) dec. (as picrolonate). $[\alpha]_D^{25}$ -6.5 ($CHCl_3$). $[\alpha]_D^{25}$ 0 (EtOH). Probably a mixt. of diastereoisomers.

15,16,17,20-Tetrahydro, 17-hydroxy: ***Tetrahydrosecodinol***
[28423-88-3]
$C_{21}H_{30}N_2O_3$ 358.48
Alkaloid from the roots of *Rhazya orientalis* (Apocynaceae). Noncryst.

Cordell, G.A. *et al., Chem. Comm.*, 1970, 189-190; 191-192 (*isol, uv, ir, pmr, ms, struct, 16,17-dihydro, tetrahydro*)
Brown, R.T. *et al., Chem. Comm.*, 1970, 190-191 (*Tetrahydrosecodine, synth, biosynth*)
Battersby, A.R. *et al., Chem. Comm.*, 1970, 193-194 (*synth, struct*)
Marazano, C. *et al., Chem. Comm.*, 1977, 742-743 (*synth*)
Kutney, J.P. *et al., Can. J. Chem.*, 1979, **57**, 289-299 (*synth, uv, ir, pmr, ms*)
Raucher, S. *et al., J.A.C.S.*, 1981, **103**, 2419-2421 (*synth, pmr*)
Kalaus, G. *et al., Heterocycles*, 1985, **23**, 2783 (*synth, pmr, cmr, ms, Tetrahydrosecodine*)

1,2-Secodysidamide S-185



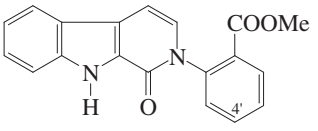
$C_{16}H_{25}Cl_6NO_4$ 508.094
Constit. of the Red Sea sponge *Lamellodysidea herbacea*. Needles. Mp 173-174°. $[\alpha]_D$ -41.8 (c, 1.1 in CH_2Cl_2).

3-Ketone: ***1,2-Secodysidamide H***
$C_{16}H_{23}Cl_6NO_4$ 506.078
Constit. of *Lamellodysidea herbacea*. Needles. Mp 95-96°. $[\alpha]_D$ -29.6 (c, 0.44 in CH_2Cl_2).

Sauleau, P. *et al., Tetrahedron*, 2005, **61**, 955-963 (*isol, pmr, cmr*)

Secofascaplysin A S-186

[132911-53-6]



$C_{19}H_{14}N_2O_3$ 318.331
Alkaloid from the sponge *Fascaplysinopsis reticulata*. Pale yellow cryst.; originally isol. as a red oil. Mp 105-107°. λ_{max} 238 (ϵ 22500); 286; 296 (ϵ 4780); 334 (ϵ 3600); 350 (sh) (ϵ 3000) (MeOH) (Derep).

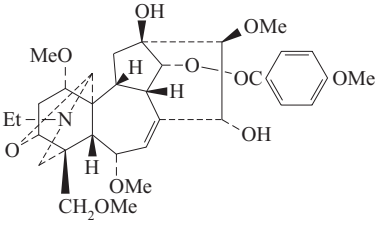
4′-Bromo: ***3-Bromosecofascaplysin A***
[693790-80-6]
$C_{19}H_{13}BrN_2O_3$ 397.227
Alkaloid from *Fascaplysinopsis reticulata*. Yellow solid.

4′-Bromo, parent acid: ***3-Bromosecofascaplysin B***
[693790-81-7]
$C_{18}H_{11}BrN_2O_3$ 383.201
Alkaloid from *Fascaplysinopsis reticulata*. Yellow solid.

Jimenez, C. *et al., J.O.C.*, 1991, **56**, 3403-3410 (*isol, uv, ir, pmr, cmr, struct*)
Fürster, A. *et al., Tetrahedron*, 1996, **52**, 7329-7344 (*synth, ir, pmr, cmr*)
Segraves, N.L. *et al., J. Nat. Prod.*, 2004, **67**, 783-792 (*3-Bromosecofascaplysins*)

Secojesaconitine S-187

[119212-27-0]



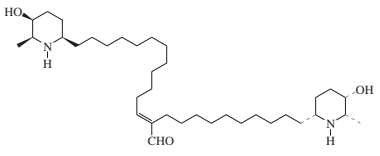
$C_{33}H_{45}NO_{10}$ 615.719

Alkaloid from the roots of *Aconitum japonicum* (Ranunculaceae). Prisms + 1$CHCl_3$ ($CHCl_3$/Me_2CO). Mp 175-180°. $[\alpha]_D^{20}$ +12.5 (c, 1.0 in MeOH).

15-Deoxy: ***Secoyunaconitine***
$C_{33}H_{45}NO_9$ 599.72
Alkaloid from the roots of *Aconitum episcopale*. Needles ($CHCl_3$/Me_2CO). Mp 180-182°. $[\alpha]_D^{14}$ +56.1 (c, 0.77 in $CHCl_3$).

Bando, H. *et al., Chem. Pharm. Bull.*, 1988, **36**, 1604 (*Secojesaconitine, cryst struct*)
Li, Z.Y. *et al., Helv. Chim. Acta*, 2004, **87**, 2085-2087 (*Secoyunaconitine*)

Secojuliprosopinal S-188

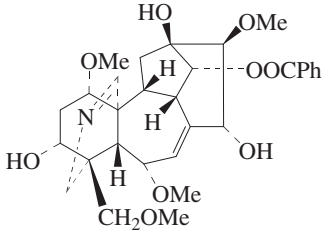


$C_{36}H_{68}N_2O_3$ 576.945
Alkaloid from *Prosopis juliflora*. Gum. $[\alpha]_D^{28}$ +5 (c, 1 in MeOH). λ_{max} 224 (ϵ 4700) (MeOH).

Nakano, H. *et al., Phytochemistry*, 2004, **65**, 587-591 (*isol, pmr, cmr*)

Secokaraconitine S-189

[475978-90-6]

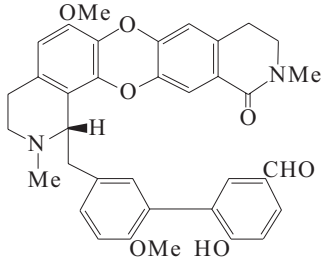


$C_{30}H_{39}NO_9$ 557.639
Alkaloid from the tubers of *Aconitum karacolicum*. Cryst. + ½H_2O (Me_2CO). Mp 230-232°.

Sultankhodzhaev, M.N. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2002, **38**, 78-81; 2003, **39**, 512 (*isol, pmr, cmr, cryst struct*)

Secolucidine S-190

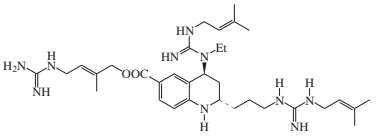
[107739-86-6]



$C_{36}H_{34}N_2O_7$ 606.674
Minor alkaloid from the bark of *Pseudoxandra sclerocarpa* (Annonaceae). $[\alpha]_D$ +82 (c, 0.5 in $CHCl_3$).

Cortes, D. *et al., J. Nat. Prod.*, 1986, **49**, 854 (*isol, uv, ir, pmr, ms, cd, struct*)

Secomartinelline S-191

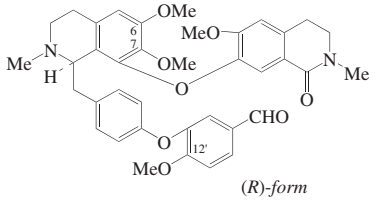


$C_{33}H_{54}N_{10}O_2$ 622.855
Alkaloid from the root of *Martinella iquitosensis*. Bradykinin receptor antagonist. Muscarinic antagonist. Adrenergic and antihistaminic agents. $[\alpha]_D^{25}$ +9.4. λ_{max} 314 (ϵ 12460) (H_2O).

U.S. Pat., 1994, 5 288 725; *CA*, **121**, 91779s (*isol, pmr, cmr*)

Secoobaberine S-192

Auroramine



(*R*)-*form*

$C_{38}H_{40}N_2O_8$ 652.743
Secoobaberine as isolated was the *S*-form and Auroramine the *R*-form.

(*R*)-*form* [115653-32-2]
Alkaloid from the leaves of *Gyrocarpus americanus* (Hernandiaceae).

O^6-*De-Me:* ***Maroumine***
[115610-42-9]
$C_{37}H_{38}N_2O_8$ 638.716
Alkaloid from the leaves of *Gyrocarpus americanus* (Hernandiaceae).

(*S*)-*form* [55085-45-5]
Minor alkaloid from *Pseudoxandra* aff. *lucida*. Amorph. $[\alpha]_D$ -5 (c, 0.2 in $CHCl_3$).

O^7-*De-Me:* ***Secohomoaromaline***
[175097-24-2]
$C_{37}H_{38}N_2O_8$ 638.716
Obt. by the oxidn. of Homoaromoline in O-1. Alkaloid from leaves of *Aniscocyla jollyana*. Needles. $[\alpha]_D^{20}$ -5.4 (c, 5.3 in $CHCl_3$).

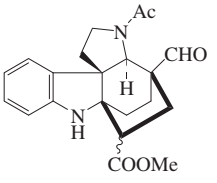
$O^{12'}$-*De-Me:* ***Baluchistanamine***
[55085-44-4]
$C_{37}H_{38}N_2O_8$ 638.716
Obt. in low yield by the oxidn. of Oxyacanthine in O-1. Alkaloid from *Berberis baluchistanica* and *Berberis lycium*. Cryst. (cyclohexane/C_6H_6).

1″-Carboxylic acid, $O^{12'}$-de-Me, Me ester: ***Tejedine***
[221001-23-6]
$C_{38}H_{40}N_2O_9$ 668.742
Alkaloid from *Berberis vulgaris* ssp. *australis* (barberry). Amorph. powder. Mp 132-134°. $[\alpha]_D$ -40.6 (c, 0.06 in MeOH). λ_{max} 206 (log ϵ 4.83); 224 (log ϵ 4.79); 260 (log ϵ 4.36); 292 (log ϵ 3.99) (MeOH).

Shamma, M. *et al., J.A.C.S.*, 1974, **96**, 7809 (*isol, ir, uv, ms, pmr, cd, struct, Baluchistanamine*)
Leete, J.E. *et al., Heterocycles*, 1982, **19**, 2355 (*isol, Baluchistanamine*)
Cortes, D. *et al., J. Nat. Prod.*, 1985, **48**, 76 (*Secoobaberine*)
Duté, P. *et al., Phytochemistry*, 1988, **27**, 655 (*Auroramine, Maroumine*)
Kanyinda, B. *et al., J. Nat. Prod.*, 1996, **59**, 498 (*Secohomoaromaline*)
Suau, R. *et al., Phytochemistry*, 1998, **49**, 2545-2549 (*Tejedine*)
Wang, Y.-C. *et al., Org. Lett.*, 2002, **4**, 2675-2678 (*Tejedine, synth*)

14,15-Seco-3-oxokopsinal S-193

[90373-27-6]



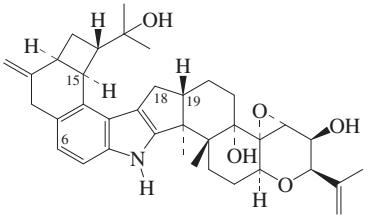
Absolute Configuration

$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from the stem bark of *Melodinus guillauminii* (Apocynaceae). $[\alpha]_D$ -41 (c, 0.4 in $CHCl_3$).

Zeches, M. *et al., Phytochemistry*, 1984, **23**, 171 (*isol, uv, ir, pmr, ms, struct*)

Secopenitrem B S-194

[139975-54-5]



$C_{37}H_{47}NO_5$ 585.782
Metab. of *Aspergillus sulphureus*. Shows antiinsect props. Orange-brown solid. Mp 185-189° dec. $[\alpha]_D$ -5.2 ($CHCl_3$). λ_{max} 220 (ϵ 31900); 286 (ϵ 11900) (MeOH) (Derep).

15-Hydroxy, 18,19-didehydro: ***Thomitrem E***
[502759-47-9]
$C_{37}H_{45}NO_6$ 599.766
Prod. by *Penicillium crustosum* grown on rice. Named as Thomitrem E because it is structurally related to Penitrem E. Thomitrems B-D have not been isol. λ_{max} 228 ; 249 ; 284 (no solvent reported).

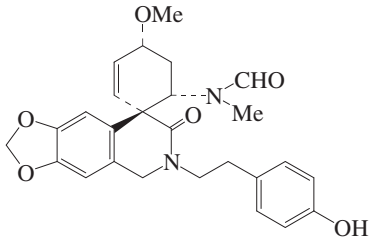
15-Hydroxy, 6-chloro, 18,19-didehydro: ***Thomitrem A***
[502759-46-8]
$C_{37}H_{44}ClNO_6$ 634.21
Prod. by *Penicillium crustosum* grown on rice. λ_{max} 236 ; 254 ; 282 (no solvent reported).

Laakso, J.A. *et al., J.O.C.*, 1992, **57**, 2066-2071 (*isol, pmr, cmr*)

Rundberget, T. *et al., Phytochemistry*, 2002, **61**, 979-985 (*Thomitrems*)

Secoplicamine S-195

[232597-77-2]



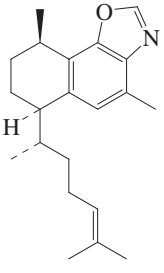
$C_{26}H_{28}N_2O_6$ 464.517

Alkaloid from *Galanthus plicatus* ssp. *byzantinus*. Amorph. solid. $[\alpha]_D$ -16.9 (c, 0.14 in MeOH). λ_{max} 221 (sh) (log ϵ 4.41); 243 (sh) (log ϵ 4.02); 287 (log ϵ 3.67) (MeOH).

Unver, N. *et al., Phytochemistry*, 1999, **50**, 1255-1261 (*isol, uv, ir, cd, pmr, cmr*)

Secopseudopteroxazole S-196

[242150-02-3]



$C_{21}H_{29}NO$ 311.466

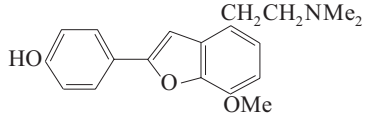
Isol. from *Pseudopterogorgia elisabethae*. Active against *Mycobacterium tuberculosis*. Yellowish oil. $[\alpha]_D^{25}$ +28.2 (c, 0.85 in $CHCl_3$). Isolate was contaminated with traces of Elisabethin A.

Rodriguez, A.D. *et al., Org. Lett.*, 1999, **1**, 527-530

Secoquettamine S-197

4-[4-[2-(Dimethylamino)ethyl]-7-methoxy-2-benzofuranyl]phenol, 9CI. 4-(2-Dimethylaminoethyl)-2-(4-hydroxyphenyl)-7-methoxybenzofuran

[77765-52-7]



$C_{19}H_{21}NO_3$ 311.38

Alkaloid from *Berberis baluchistanica* (Berberidaceae). Needles (MeOH). Mp 171-172°.

Dihydro: ***Dihydrosecoquettamine***

[77765-54-9]

$C_{19}H_{23}NO_3$ 313.396

Alkaloid from *Berberis baluchistanica* (Berberidaceae). Noncryst. Opt. inactive.

Zarga, M.H.A. *et al., Tet. Lett.*, 1981, **22**, 541 (*uv, pmr, ms, struct*)

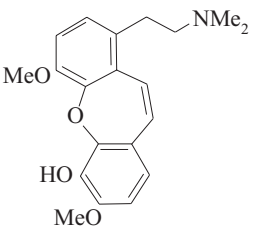
Chattopadhyay, S. *et al., Heterocycles*, 1982, **19**, 697 (*synth*)

Biftu, T. *et al., J. Chem. Res., Synop.*, 1982, 270 (*synth*)

Secosarcocapnidine S-198

9-[2-(Dimethylamino)ethyl]-3,6-dimethoxydibenz[b,f]oxepin-4-ol, 9CI

[110883-33-5]



$C_{20}H_{23}NO_4$ 341.406

Trace alkaloid from *Sarcocapnos crassifolia* and *Sarcocapnos enneaphylla* (Papaveraceae). Noncryst.

Hydrochloride:

Cryst. (EtOH/Et_2O). Mp 240-241°.

N-*De-Me:* ***Norsecosarcocapnidine***. *3,6-Dimethoxy-9-[2-(methylamino)ethyl]-dibenz[b,f]oxepin-4-ol, 9CI*

[110883-30-2]

$C_{19}H_{21}NO_4$ 327.379

Trace alkaloid from *Sarcocapnos crassifolia* and *Sarcocapnos enneaphylla* (Papaveraceae). Noncryst.

Me ether: ***Secosarcocapnine***. *4,6,7-Trimethoxy*-N,N-*dimethyldibenz[b,f]oxepin-1-ethanamine, 9CI*

[110883-34-6]

$C_{21}H_{25}NO_4$ 355.433

Trace alkaloid from *Sarcocapnos crassifolia* and *Sarcocapnos enneaphylla* (Papaveraceae). Noncryst.

Me ether, hydrochloride:

Cryst. (EtOH/Et_2O). Mp 168-188°.

Me ether, N-*De-Me:* ***Norsecosarcocapnine***. *4,6,7-Trimethoxy*-N-*methyldibenz[b,f]oxepin-1-ethanamine, 9CI*

[110883-31-3]

$C_{20}H_{23}NO_4$ 341.406

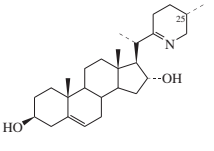
Trace alkaloid from *Sarcocapnos crassifolia* and *Sarcocapnos enneaphylla* (Papaveraceae). Noncryst.

Castedo, L. *et al., Heterocycles*, 1987, **26**, 591 (*isol, uv, ir, pmr, ms, struct*)

Tojo, E. *et al., Heterocycles*, 1988, **27**, 2367 (*synth, Norsecosarcocapnidine, Norsecosarcocapnine*)

16,28-Secosolanida-5,22(28)-diene-3,16-diol, 9CI S-199

*20-(3,4,5,6-Tetrahydro-5-methyl-2-pyridinyl)-pregn-5-ene-3,16-diol, 13CI. 22,26-Epiminocholesta-5,22(*N*)-diene-3,16-diol, 9CI*



(3β,16α,20*S*,25α)-*form*

$C_{27}H_{43}NO_2$ 413.642

(3β,16α,20*S*,25α)-*form*

Etioline. *Veralosidine. Veralozidine. 16-Hydroxyverazine*

[29271-49-6]

Alkaloid from *Veratrum album* ssp. *lobelianum, Veratrum grandiflorum* and *Solanum havanense* (Liliaceae, Solanaceae). Hepatoprotective agent. Mp 153-155°. $[\alpha]_D^{26}$ -92.2 (c, 0.47 in EtOH). Identity of Etioline and Veralosidine apparently not conclusively establ.

3-O-*β*-*D*-*Glucopyranoside:* ***Deacetylveralosine***. *Etioline 3-glucoside*

[54557-67-4]

$C_{33}H_{53}NO_7$ 575.784

Alkaloid from epigeal parts of *Veratrum lobelianum* and from roots of *Solanum spirale*. Cryst. (MeOH). Mp 238-240° (225-227° dec.). $[\alpha]_D$ -30.3 (c, 0.5 in $CHCl_3$). $[\alpha]_D^{26}$ -78.8 (c, 0.72 in Py).

3-O-*[β*-*D*-*Glucopyranosyl*-*(1→4)*-*β*-*D*-*glucopyranoside]:* ***Etiolinine***

[107783-36-8]

$C_{39}H_{63}NO_{12}$ 737.926

Alkaloid from *Solanum havanense* (Solanaceae).

16-Ac: ***Veralosinine***. *16*-O-*Acetyletioline. Veralozinine*

[36506-65-7]

$C_{29}H_{45}NO_3$ 455.679

Alkaloid from *Veratrum lobelianum* (Liliaceae). Mp 161-163°. $[\alpha]_D^{25}$ -186.2 (c, 0.92 in $CHCl_3$).

16-Ac, 3-O-*β*-*D*-*glucopyranoside:* ***Veralosine***. *Veralozine. Havanine*†

[30511-97-8]

$C_{35}H_{55}NO_8$ 617.821

Alkaloid from *Veratrum album* ssp. *lobelianum* and from leaves of *Solanum havanense* (Liliaceae, Solanaceae). Mp 213-215° (186-187°). $[\alpha]_D$ -147.7 (MeOH). $[\alpha]_D^{25}$ -110.8 (c, 1 in MeOH). Struct. of Veralosine not certain and identity of Veralosine with Havanine not establ.

(3β,16α,20*S*,25β)-*form*

25-Isoetioline. *25-Epietioline*

[129938-55-2]

Alkaloid from the leaves and stems of *Solanum canense* and *Solanum fraxinifolium* (Solanaceae). Mp 141-143°. $[\alpha]_D^{20}$ +73.6 (c, 0.4 in $CHCl_3$).

(3β,16α,20*R*,25β)-*form*

20,25-Bisisoetioline

[175777-78-3]

Alkaloid from leaves and stems of *Solanum canense* and *Solanum fraxinifolium*. Cryst. (MeOH). Mp 158-161°. $[\alpha]_D^{20}$ -11.8 (c, 0.69 in $CHCl_3$).

Khashimov, A.M. *et al., Khim. Prir. Soedin.*, 1970, **6**, 339; 1971, **7**, 779; *Chem. Nat. Compd. (Engl. Transl.)*, 1970, **6**, 338; 1971, **7**, 751 (*isol, pmr*)

Kaneko, K. *et al., Tet. Lett.*, 1971, 4251 (*isol, spectra*)

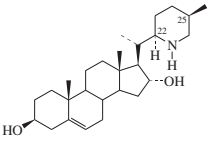
Abaidullaev, K.A. *et al., Khim. Prir. Soedin.*, 1974, **10**, 678; *Chem. Nat. Compd. (Engl. Transl.)*, 1974, **10**, 703 (*Deacetylveralosine*)

Moiseeva, G.P. *et al., Khim. Prir. Soedin.*, 1976, **12**, 623; *Chem. Nat. Compd. (Engl. Transl.)*, 1976, **12**, 557 (*cd*)

Ripperger, H. *et al., Pharmazie*, 1977, **32**, 537 (*isol*)
Basterrechea, M. *et al., Phytochemistry*, 1984, **23**, 2057-2058 (*Havanine*)
Basterrechea, M.J. *et al., Rev. Cubana Quim.*, 1986, **2**, 71; *CA*, **106**, 153103t (*Etiolinine*)
Ripperger, H. *et al., Phytochemistry*, 1990, **29**, 3375-3376; 1996, **41**, 1629-1631 (*25-Isoetioline, 20,25-Bisisoetioline*)
Le Thi Quyen, *et al., Annalen*, 1991, 143 (*synth*)
Ripperger, H. *et al., Phytochemistry*, 1996, **43**, 705-707 (*Etioline 3-O-glucoside*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, MRV750

16,28-Secosolanid-5-ene-3,16-diol S-200

20-(5-Methyl-2-piperidinyl)-pregn-5-ene-3,16-diol, 13CI. 22,26-Epiminocholest-5-ene-3,16-diol



(3β,16α,22*R*,25*R*)-*form*

$C_{27}H_{45}NO_2$ 415.658

(3β,16α,22*R*,25*R*)-*form*

Capsimine
[123123-41-1]
Constit. of *Solanum capsicastrum*. Antihepatotoxic agent. Prisms (MeOH) + $2H_2O$. Mp 264-267°. $[\alpha]_D^{25}$ -104 (c, 0.5 in MeOH).

3-O-β-D-Glucopyranoside: Capsimine 3-glucoside
[145681-73-8]
$C_{33}H_{55}NO_7$ 577.8
Alkaloid from root bark of *Solanum capsicastrum* (Solanaceae). Antihepatotoxic agent. Powder (MeOH). Mp 214-216°. $[\alpha]_D^{20}$ -68.8 (c, 0.05 in cyclohexane/EtOAc/MeOH).

(3β,16α,22*R*,25*S*)-*form*

Teinemine
[65027-01-2]
Isol. from *Veratrum grandiflorum* terrestrial parts (Liliaceae). Plates (Me_2CO). Mp 204-209°. $[\alpha]_D^{20}$ -35.8 (c, 1.19 in $CHCl_3$).
▶QG1360000

*3-O-β-D-Glucopyranoside: **Isocapsicastrine**. Tienemine 3-glucoside*
[123164-25-0]
$C_{33}H_{55}NO_7$ 577.8
Isol. from *Solanum capsicastrum*. Pale yellow powder (MeOH/$CHCl_3$). $[\alpha]_D^{25}$ +202 (c, 0.25 in Py).

(3β,16α,22*S*,25*R*)-*form*

***Schlechtendamine**. 22-Epicapsimine*
[36456-16-3]
Alkaloid from *Solanum schlechtendalianum*. Cryst. Mp 252-253° (synthetic). $[\alpha]_D^{23}$ -33 (c, 0.4 in $CHCl_3$) (synthetic).

(3β,16α,22*S*,25*S*)-*form*

Isoteinemine
[65027-00-1]
Isol. from *Veratrum grandiflorum* terrestrial parts (Liliaceae). Flakes (Me_2CO). Mp 217-220°.

*3-O-β-D-Galactopyranoside: **Capsicastrine**. Isoteinemine galactoside*
[107585-56-8]
$C_{33}H_{55}NO_7$ 577.8
Alkaloid from root bark of *Solanum capsicastrum* (Solanaceae). Needles (Me_2CO). Mp 220-221°. $[\alpha]_D^{21}$ -25.5 (c, 0.1 in $CHCl_3$).

*3-O-[α-L-Rhamnopyranosyl-(1→4)-[α-L-rhamnopyranosyl-(1→4)-β-D-glucopyranosyl-(1→2)]-β-D-glucopyranoside]: **Solateinemine***
[211683-81-7]
$C_{51}H_{85}NO_{20}$ 1032.227
Alkaloid from the root bark of *Solanum pseudocapsicastrum*.

*16-Ac: **Muldamine**. Alkaloid Q*
[36069-45-1]
$C_{29}H_{47}NO_3$ 457.695
Alkaloid from *Veratrum californicum* (Liliaceae). Mp 210-211°. $[\alpha]_D^{25}$ -95 (c, 1 in EtOH/$CHCl_3$ 3:1). C-Nor-D-homosteroid struct. originally assigned.
▶Exp. reprod. and teratogenic effects.
QG1320000

(3β,16β,22*S*,25*R*)-*form*

***Solaverbascine**. Dihydrosolasodine A*
[6785-55-3]
Alkaloid from leaves of *Solanum verbascifolium* (Solanaceae). Abortifacient responsible for the folk medicine use of *S. verbascifolium*. Cryst. (MeOH aq.). Mp 263-265°. $[\alpha]_D$ -67.9 (c, 0.3 in $CHCl_3$).
▶Poss. teratogen.
Tri-Ac: Mp 171°. $[\alpha]_D$ -16.8 ($CHCl_3$).

(3β,16β,22*S*,25*S*)-*form*

N-*Me: 28-Methyl-16,28-secosolanid-5-ene-3,16-diol*. ***Hapepunine***
[68422-01-5]
$C_{28}H_{47}NO_2$ 429.685
Alkaloid from the aerial parts of *Fritillaria camtschatcensis* (Liliaceae). Needles (EtOH). Mp 201-202° (196.5-198.5°). $[\alpha]_D$ -72.6.

N-*Me, 3-O-[β-D-glucopyranosyl-(1→4)-β-D-glucopyranoside]: Hapepunine 3-β-cellobioside*
[169786-66-7]
$C_{40}H_{67}NO_{12}$ 753.969
Alkaloid from bulbs of *Fritillaria maximowiczii* (Liliaceae). Amorph. $[\alpha]_D^{27}$ -29.1 (c, 0.43 in MeOH).

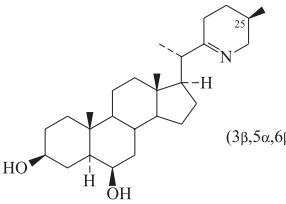
N-*Me, 3-O-[α-L-rhamnopyranosyl-(1→2)-β-D-glucopyranoside]: **Hapepunine 3-neohesperidoside***
$C_{40}H_{67}NO_{11}$ 737.969
Alkaloid from aerial parts of *Fritillaria thunbergii* (Liliaceae). Needles + $1H_2O$ (MeOH aq.). Mp 269-274° dec. $[\alpha]_D$ -67.2 (Py).

N-*Me, di-Ac:* Mp 207-212°.

Kaneko, K. *et al., Phytochemistry*, 1977, **16**, 1620-1622; 1981, **20**, 157-160 (*Teinemine, Isoteinemine, Hapepunine*)
Adam, G. *et al., Phytochemistry*, 1980, **19**, 1002-1003 (*Solaverbascine*)
Katajima, J. *et al., Phytochemistry*, 1982, **21**, 187-192 (*Hapepunine rhamnosylglucoside*)
Gaffield, W. *et al., Phytochemistry*, 1982, **21**, 2397-2400 (*Muldamine*)
Lin, C.N. *et al., Phytochemistry*, 1987, **26**, 305-307 (*Capsicastrine*)
Lin, C.N. *et al., Planta Med.*, 1989, **55**, 48-50 (*Capsimine*)
Gan, K.H. *et al., J. Nat. Prod.*, 1993, **56**, 15-21 (*Capsimine 3-glucoside*)
Qian, Z.Z. *et al., Phytochemistry*, 1995, **40**, 979-981 (*Hapepunine cellobioside*)
Gan, K.-H. *et al., Chin. Pharm. J. (Taipei)*, 1997, **49**, 315-320 (*Solateinemine*)
Ferrer, A. *et al., Rev. Cubana Quim.*, 1998, **10**, 3 (*Sclechtendamine*)
Weissenberg, M. *et al., Phytochemistry*, 2001, **58**, 501-508 (*Solaverbascine glycosides*)

16,28-Secosolanid-22(28)-ene-3,6-diol S-201

22,26-Iminocholest-22(N)-ene-3,6-diol



(3β,5α,6β,25*R*)–*form*

$C_{27}H_{45}NO_2$ 415.658

(3β,5α,6β,25*R*)-*form*

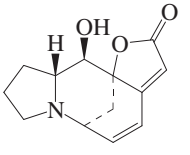
O^3-*β-D-Glucopyranoside: **Cordatine A***
[107585-57-9]
$C_{33}H_{55}NO_7$ 577.8
Alkaloid from the petals of *Lilium cordatum* (Liliaceae). Pale-red powder. $[\alpha]_D^{29}$ -3.5 (c, 0.85 in MeOH).

(3β,5α,6β,25*S*)-*form*

O^3-*β-D-Glucopyranoside: **Cordatine B***
[107656-79-1]
$C_{33}H_{55}NO_7$ 577.8
Alkaloid from the petals of *Lilium cordatum* (Liliaceae). Pale-red needles. Mp 187-190°. $[\alpha]_D^{29}$ -11.2 (c, 1.07 in MeOH).

Nakano, K. *et al., Phytochemistry*, 1987, **26**, 301 (*isol, ir, pmr, cmr, ms, struct*)

Secuamamine A S-202



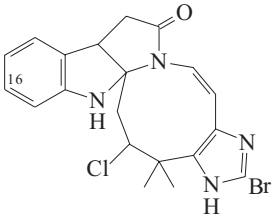
Absolute Configuration

$C_{13}H_{15}NO_3$ 233.266
Alkaloid from the leaves and twigs of *Securinega suffruticosa* var. *amamiensis*. Oil. $[\alpha]_D^{23}$ -479 (c, 0.15 in $CHCl_3$). λ_{max} 254 (log ε 4.06) (MeOH).

Ohsaki, A. *et al., Tet. Lett.*, 2003, **44**, 3097-3099 (*isol, pmr, cmr*)
Magnus, P. *et al., Org. Lett.*, 2006, **8**, 3569-3571 (*biosynth*)
Liu, P. *et al., J.A.C.S.*, 2008, **130**, 7562-7563 (*synth*)

Securamine A S-203

[173220-55-8]



$C_{20}H_{20}BrClN_4O$ 447.761

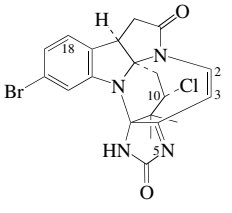
Exists in equilib. with Securine A. Alkaloid from the marine bryozoan *Securiflustra securifrons*. Cryst. Mp 200° dec. $[\alpha]_D^{20}$ -87.5 (c, 0.064 in $CHCl_3$).

16-Bromo: ***Securamine B***
[173220-56-9]
$C_{20}H_{19}Br_2ClN_4O$ 526.657
From *Securiflustra securifrons*. Cryst. $[\alpha]_D^{20}$ -316.7 (c, 0.030 in $CHCl_3$). Exists in equilib. with Securine B.

Rahbaek, L. *et al., J.O.C.*, 1996, **61**, 887-889 (*isol, uv, ir, cd, pmr, cmr, struct*)

Securamine C S-204

[173220-57-0]



Relative Configuration

$C_{20}H_{18}BrClN_4O_2$ 461.744
Alkaloid from the marine bryozoan *Securiflustra securifrons*. Amorph. yellow solid. $[\alpha]_D^{20}$ -433.5 (c, 0.033 in $CHCl_3$).

Debromo: ***Securamine D***
[173220-58-1]
$C_{20}H_{19}ClN_4O_2$ 382.848
Isol. from *Securiflustra securifrons*. Amorph. green solid. $[\alpha]_D^{20}$ -320 (c, 0.069 in $CHCl_3$).

18-Bromo: ***Securamine E***
[185616-44-8]
$C_{20}H_{17}Br_2ClN_4O_2$ 540.641
Isol. from *Securiflustra securifrons*. Amorph. yellow solid. $[\alpha]_D^{20}$ -115 (c, 0.0078 in $CHCl_3$). λ_{max} 303 (log ϵ 3.82); 327 (log ϵ 3.83) ($CHCl_3$).

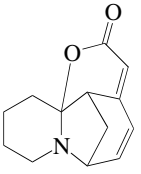
10-Epimer: ***Securamine F***
[185616-45-9]
$C_{20}H_{18}BrClN_4O_2$ 461.745
Isol. from *Securiflustra securifrons*. Amorph. orange solid. $[\alpha]_D^{20}$ -200 (c, 0.0045 in $CHCl_3$). λ_{max} 299 (log ϵ 3.86); 328 (log ϵ 3.88) ($CHCl_3$).

2,3,4,5-Tetrahydro, 3,4-didehydro: ***Securamine G***
[185616-47-1]
$C_{20}H_{20}BrClN_4O_2$ 463.76
Isol. from *Securiflustra securifrons*. Amorph. brown solid. $[\alpha]_D^{20}$ -15.6 (c, 0.032 in $CHCl_3$). λ_{max} 298 (log ϵ 2.81) ($CHCl_3$).

Rahbaek, L. *et al., J.O.C.*, 1996, **61**, 887-889 (*isol, uv, ir, cd, pmr, cmr, struct*)
Rahbaek, L. *et al., J. Nat. Prod.*, 1997, **60**, 175-177 (*Securamines E-G*)

Securinegine† S-205

[72741-90-3]

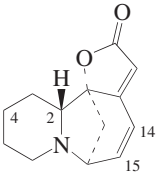


$C_{13}H_{15}NO_2$ 217.267
Alkaloid from the leaves of *Securinega suffruticosa*. Yellow cryst. (EtOH).

Shabana, M.M. *et al., CA*, 1980, **92**, 72692z (*isol, struct*)

Securinine, INN S-206

*9,10,11,11*a-*Tetrahydro-8*H-*6,11*b-*methanofuro[2,3-*c*]pyrido[1,2-*a*]pyridoazepin-2(6*H*)-one, 9CI. Virosecurinine*



(-)-*form*

$C_{13}H_{15}NO_2$ 217.267
Virosecurinine was originally the (+)-enantiomer. Log P 0.21 (uncertain value) (calc).

(-)-*form* [5610-40-2]
Alkaloid from the leaves, roots and stems of *Securinega suffruticosa* and *Phyllanthus discoides*, also isol. from *Securinega durissima, Securinega fluggeoides* and the bark of *Securidaca longepedunculata* (Euphorbiaceae, Fabaceae). Stereospecific $GABA_A$ receptor antagonist. CNS stimulant with strychnine-like activity but lower toxicity, causes respiratory stimulation, increased muscle tone and hypotension. Yellow cryst. (EtOH). Mp 142-143°. $[\alpha]_D^{20}$ -1042 (c, 1.0 in EtOH). pK_a 7.17.

▶ LD_{50} (mus, orl) 270 mg/kg. VS4115000

Hydrobromide:
Pale yellow needles + $2H_2O$ (Et_2O). Mp 250° dec. (dehydrating range 110-120°).

Picrolonate: Mp 194° (208°).

14,15-Dihydro: ***Dihydrosecurinine***
[1878-04-2]
Alkaloid from the leaves of *Securinega suffruticosa* (Euphorbiaceae). Flakes (petrol). Mp 58-60°. $[\alpha]_D^{20}$ 0 (c, 1 in EtOH). pK_a 8.35.

14,15-Dihydro, hydrochloride:
Needles (MeOH/Et_2O). Mp 256-258°. $[\alpha]_D^{22}$ -71.5 (c, 1 in EtOH).

14,15-Dihydro, picrate: Mp 244-246°.

14,15-Dihydro, 15α-methoxy: ***Secuamamine C***
[1004529-77-4]
$C_{14}H_{19}NO_3$ 249.309
Alkaloid from the wood of *Securinega suffruticosa* var. *amamiensis*. Amorph. solid. $[\alpha]_D^{25}$ +82.1 (c, 0.15 in $CHCl_3$). Only relative config. determined. λ_{max} 232 (log ϵ 3.41); 283 (log ϵ 2.53) (MeOH).

2-Epimer: see Allosecurinine, A-630

(+)-*form* [6704-68-3]
Alkaloid from the leaves of *Securidaca virosa* (Euphorbiaceae). Yellow cryst. (EtOH). Mp 141-142°. $[\alpha]_D^{20}$ +1035 (c, 0.43 in EtOH). $[\alpha]_D^{20}$ +1148 (c, 0.4 in $CHCl_3$). It is remarkable that while Securinine and Allosecurinine (2-*epi*-Securinine) co-occur in *Securinega suffruticosa*, their optical antipodes, Virosecurinine and Viroallosecurinine, co-occur in *S. virosa*.

▶ ZA5500000

Hydrochloride:
Cryst. (Me_2CO). Mp 252-253° (sealed tube). $[\alpha]_D^{21}$ +344 (c, 0.52 in EtOH).

Picrate:
Cryst. (Me_2CO). Mp 218°.

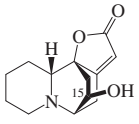
(±)-*form* [5588-52-3]
Synthetic. Yellow needles (hexane). Mp 109-111°.

Parello, J. *et al., Bull. Soc. Chim. Fr.*, 1963, 898 (*uv, ir, pmr*)
Nakano, T. *et al., J.O.C.*, 1963, **28**, 2619; 1964, **29**, 3441 (*uv, ord, cd, config, Virosecurinine*)
Mukherjee, R. *et al., Naturwissenschaften*, 1963, **50**, 155 (*isol, uv, ir, ms*)
Nakano, T. *et al., Tetrahedron*, 1963, **19**, 609 (*isol, uv, ir, struct, Virosecurinine*)
Saito, S. *et al., Tetrahedron*, 1963, **19**, 2085 (*uv, ir, struct, synth*)
Horii, Z. *et al., Tetrahedron*, 1963, **19**, 2085; 2101; 1967, **23**, 1165 (*uv, ir, pmr, struct, abs config, synth*)
Saito, S. *et al., Yakugaku Zasshi*, 1963, **83**, 800; *CA*, **59**, 15535h (*Dihydrosecurinine, isol*)
Bevan, C.W.L. *et al., Chem. Ind. (London)*, 1964, 838 (*occur*)
Imado, S. *et al., Chem. Ind. (London)*, 1964, 1691 (*cryst struct*)
Chatterjee, A. *et al., J. Indian Chem. Soc.*, 1964, **41**, 163 (*ir*)
Clauder, O. *et al., Acta Pharm. Hung.*, 1968, **38**, 126; *CA*, **69**, 54266j (*isol*)
Audier, H.E. *et al., Bull. Soc. Chim. Fr.*, 1968, 1552 (*pmr, ms*)
Horii, Z. *et al., Chem. Pharm. Bull.*, 1970, **18**, 1967 (*synth, ir*)
Snieckus, V. *et al., Alkaloids (London)*, 1971, **1**, 455 (*rev*)
Snieckus, V. *et al., Alkaloids (Academic Press)*, 1973, **14**, 425 (*rev*)
Parry, R.J. *et al., Tet. Lett.*, 1974, 307; *Chem. Comm.*, 1975, 144 (*biosynth*)
Sankawa, U. *et al., Tet. Lett.*, 1974, 1867 (*biosynth*)
Golebiewski, W.M. *et al., Chem. Comm.*, 1976, 217 (*biosynth*)
Sankawa, U. *et al., Phytochemistry*, 1977, **16**, 561 (*biosynth*)
Parry, R.J. *et al., Bioorg. Chem.*, 1978, **7**, 277 (*biosynth*)
Beutler, J.A. *et al., J. Nat. Prod.*, 1984, **47**, 677 (*cmr*)
Niu, C.S. *et al., Yaoxue Xuebao*, 1988, **23**, 347; *CA*, **110**, 154639s (*synth*)

Luger, P. *et al., Acta Cryst. C*, 1995, **51**, 127 (*cryst struct*)
Liras, S. *et al., Org. Lett.*, 2001, **3**, 703-706 (*synth*)
Honda, T. *et al., Heterocycles*, 2002, **59**, 169-187 (*synth*)
Honda, T. *et al., Org. Lett.*, 2004, **6**, 87-89 (*synth*)
Alibés, R. *et al., Org. Lett.*, 2004, **6**, 1813-1816 (*synth*)
Ohsaki, A. *et al., J. Nat. Prod.*, 2007, **70**, 2003-2005 (*Secuamamine C*)
Yuan, W. *et al., Nat. Prod. Res.*, 2007, **21**, 234-242 (*isol, pmr, cmr*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, SBN350

Securinol A S-207

[5008-48-0]



Absolute Configuration

$C_{13}H_{17}NO_3$ 235.282

Struct. revised in 1991. Alkaloid from *Securinega suffruticosa* and *Margaritaria indica*. Cryst. (C_6H_6). Mp 135-136°. $[\alpha]_D^{17}$ +58.2 (c, 0.14 in $CHCl_3$).

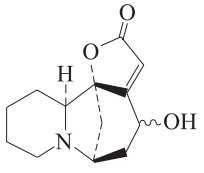
Picrate:
Cryst. + $1H_2O$ (EtOH). Mp 186-187° dec.

15-Epimer: Securinol B. ***Virosine A***
[30155-10-3 (Securinol B)]
$C_{13}H_{17}NO_3$ 235.282
Alkaloid from *Flueggea virosa* and *Securinega suffruticosa*. Needles (petrol). Mp 159-160°. $[\alpha]_D$ +120 (c, 0.15 in EtOH) (Securinol B). $[\alpha]_D$ +92 (c, 0.1 in MeOH) (Virosine B). Probable struct. of Securinol B based on revised struct. for Securinol A.

Horii, Z. *et al., Chem. Pharm. Bull.*, 1965, **13**, 1307-1311; 1970, **18**, 2009-2012 (*isol, uv, ord, ir, pmr, ms, Securinol B*)
Arbain, D. *et al., J.C.S. Perkin 1*, 1991, 1863-1869 (*isol, pmr, cmr, cryst struct, abs config*)
Wang, G.-C. *et al., Helv. Chim. Acta*, 2008, **91**, 1124-1129 (*Virosine A, B*)

Securinol C S-208

14,15-Dihydro-14-hydroxysecurinan-11-one, 9CI
[30155-11-4]



Tentative structure

$C_{13}H_{17}NO_3$ 235.282

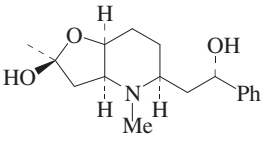
Struct. doubtful. Alkaloid from the leaves of *Securinega suffruticosa* (Euphorbiaceae). Needles (C_6H_6/petrol). Mp 114-115°. $[\alpha]_D$ -81.9 (c, 0.58 in EtOH).

Picrate: Mp 194° dec.

Horii, Z. *et al., Chem. Pharm. Bull.*, 1965, **13**, 1307; 1970, **18**, 2009 (*isol, ir, uv, pmr, ms, struct*)
Arbain, D. *et al., J.C.S. Perkin 1*, 1991, 1863

Sedacryptine S-209

Octahydro-2-hydroxy-2,4-dimethyl-α-phenylfuro[3,2-b]pyridine-5-ethanol, 9CI



(-)-*form*

$C_{17}H_{25}NO_3$ 291.389

(-)-*form* [77784-07-7]
Minor alkaloid from *Sedum acre* (Crassulaceae). Cryst. (cyclohexane). Mp 125-127°.

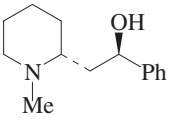
Hydrochloride: [77844-22-5]
Mp 141-143°. $[\alpha]_D^{22}$ -49 (c, 1.6 in MeOH).

(±)-*form*
Mp 99-101°.

Kooy, J.H. *et al., Planta Med.*, 1976, **30**, 295 (*isol*)
Hootelé, C. *et al., Tet. Lett.*, 1980, **21**, 5061 (*isol, cryst struct, ms*)
Colau, B. *et al., Can. J. Chem.*, 1983, **61**, 470 (*abs config*)
Natsume, M. *et al., Heterocycles*, 1983, **20**, 601 (*synth*)
Akiyama, E. *et al., Synlett*, 1996, 100 (*synth, abs config*)
Wee, A.G.H. *et al., Org. Lett.*, 2008, **10**, 3869-3872 (*synth*)

Sedamine S-210

1-Methyl-α-phenyl-2-piperidineethanol, 9CI. 2-(2-Hydroxy-2-phenylethyl)-1-methylpiperidine. 2-(1-Methyl-2-piperidinyl)-1-phenylethanol. 8-Phenyllobelol



(2*R*,2'*R*)-*form*

$C_{14}H_{21}NO$ 219.326

(2*R*,2'*R*)-*form* [67008-23-5]
Synthetic. Cryst. (pentane). Mp 61-62°. $[\alpha]_D^{18}$ +91.5 (c, 3.29 in EtOH). $[\alpha]_D^{22}$ +65 (c, 0.1 in EtOH).

*4*R-*Hydroxy: 4-Hydroxy-1-methyl-α-phenylpiperidineethanol. 4-Hydroxy-2-(2-hydroxy-2-phenylethyl)piperidine.* ***4-Hydroxysedamine***
[61535-08-8]
[103823-30-9]
$C_{14}H_{21}NO_2$ 235.325
Alkaloid from *Sedum acre* (Crassulaceae). Amorph. Mp 130-131° (as picrate). $[\alpha]_D^{22}$ +58 (c, 1.6 in MeOH). A hydroxy deriv. of the enantiomer of natural Sedamine present in *S. acre*.

(2*R*,2'*S*)-*form*
(+)-Allosedamine
Synthetic. Cryst. (pentane). Mp 79-80°. $[\alpha]_D^{20}$ +18.6 (c, 2.42 in EtOH).

Picrate: Mp 129-130°.

*4*R-*Hydroxy:* ***4-Hydroxyallosedamine***
[103805-62-5]
$C_{14}H_{21}NO_2$ 235.325
Alkaloid from *Sedum acre* (Crassulaceae). Mp 91-92°. $[\alpha]_D^{22}$ +20.6 (c, 1.3 in MeOH). A hydroxy deriv. of the enantiomer of natural allosedamine present in *S. acre*.

(2*S*,2'*R*)-*form*
Allosedamine*. 8-Phenyllobelol I*
[497-89-2]
Alkaloid from *Lobelia inflata* and *Sedum acre* (Campanulaceae). Mp 81-82°. $[\alpha]_D^{19.5}$ -18.6 (EtOH). $[\alpha]_D^{22}$ -32.2 (MeOH).

Hydrochloride: Mp 118-119°.

N-*De-Me:* ***Norallosedamine****. 8-Phenylnorlobelol I*
$C_{13}H_{19}NO$ 205.299
Alkaloid from *Lobelia inflata* (Campanulaceae). Mp 102-103°. $[\alpha]_D^{23}$ +49.3 (EtOH). $[\alpha]_D$ +37.2 (MeOH).

N-*De-Me, hydrochloride:* Mp 133-134°.

*3*R-*Hydroxy:* ***3-Hydroxyallosedamine***
$C_{14}H_{21}NO_2$ 235.325
Minor alkaloid from *Sedum acre* (Crassulaceae). Amorph. $[\alpha]_D^{22}$ -17 (c, 1.3 in MeOH). Racemate synthesised.

*3*R-*Hydroxy, perchlorate:* Mp 162-163°. $[\alpha]_D^{22}$ -40 (c, 2.4 in MeOH).

*3*R-*Hydroxy,* N-*de-Me:* ***3-Hydroxynorallosedamine***
$C_{13}H_{19}NO_2$ 221.299
Minor alkaloid from *Sedum acre* (Crassulaceae). Mp 155-156°. $[\alpha]_D^{22}$ -66 (c, 1.6 in MeOH). Racemate synthesised and resolved.

(2*S*,2'*S*)-*form* [497-88-1]
Alkaloid from *Sedum acre*, *Sedum lydium* and other *Sedum* spp. (Crassulaceae). Mp 75-76° (89°). $[\alpha]_D$ -88.4 (c, 4.65 in EtOH).

Hydrochloride: Mp 210-211°.

Picrolonate: Mp 159-160°.

N-*De-Me: Norsedamine*
Semisynthetic. Mp 108-109°. $[\alpha]_D^{20}$ -32.5 (MeOH).

2'-Ketone: 2-(1-Methyl-2-piperidinyl)-1-phenylethanone, 9CI. ***Sedaminone***
[103771-49-9]
$C_{14}H_{19}NO$ 217.31
Alkaloid from spp. in the Crassulaceae.

N-*De-Me; hydrochloride:* Mp 169-171°.

*5*S-*Hydroxy:* ***5-Hydroxysedamine***
$C_{14}H_{21}NO_2$ 235.325
Minor alkaloid from *Sedum acre* (Crassulaceae). Noncryst. $[\alpha]_D^{20}$ -50 (c, 0.3 in MeOH).

*5*S-*Hydroxy, di-Ac:* $[\alpha]_D^{20}$ -66 (c, 0.6 in MeOH).

(2*RS*,2'*RS*)-*form*
(±)-Sedamine
[1630-44-0]
Alkaloid from *Sedum acre*, *Sedum aizoon*, *Sedum purpureum*, *Sedum hybridum* and *Sedum ewersii* (Crassulaceae). Mp 88°.
► TM9314000

Hydrochloride: Mp 185°.

2′-Ketone: [121961-27-1]
Oil. $Bp_{0.15}$ 92-93°.

N-*De-Me:* Mp 98-99°.

(2RS,2′SR)-form
(±)-Allosedamine
Mp 67-68°.

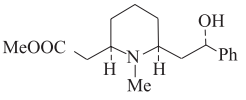
N-*De-Me:* Mp 112-113°.

[67008-24-6 , 67008-23-5]

Wieland, C.H. *et al., Annalen*, 1939, **540**, 103 (*isol, deriv*)
Marion, L. *et al., Can. J. Res., Sect. B*, 1945, **23**, 165 (*isol*)
Beyerman, H.C. *et al., Rec. Trav. Chim. (J. R. Neth. Chem. Soc.)*, 1956, **75**, 82; 1957, **76**, 415; 1959, **78**, 43 (*synth*)
Schöpf, C. *et al., Annalen*, 1959, **626**, 134; **628**, 101 (*synth, abs config, derivs, bibl*)
Spiteller-Friedmann, M. *et al., Monatsh. Chem.*, 1965, **96**, 104 (*ms*)
Gupta, R.N. *et al., Phytochemistry*, 1970, **9**, 2329 (*biosynth*)
Leistner, E. *et al., J.A.C.S.*, 1973, **95**, 4715 (*biosynth*)
Wakabayashi, T. *et al., Chem. Lett.*, 1977, 223 (*synth*)
Krasnov, E.A. *et al., Khim. Prir. Soedin.*, 1977, **13**, 585; *Chem. Nat. Compd. (Engl. Transl.)*, 1977, **13**, 492 (*isol*)
Tufariello, J. *et al., Tet. Lett.*, 1978, 4647 (*synth, pmr*)
Gerdes, H.J. *et al., Phytochemistry*, 1979, **18**, 771 (*biosynth*)
Irie, K. *et al., Chem. Comm.*, 1985, 633 (*synth*)
Halin, F. *et al., Tetrahedron*, 1985, **41**, 2891 (*4-Hydroxysedamine, 4-Hydroxyallosedamine*)
Hootele, C. *et al., Tetrahedron*, 1985, **41**, 5563 (*pmr, cmr, conformn, occur*)
Ibebeke-Bomangwa, W. *et al., Tetrahedron*, 1987, **43**, 935 (*5-Hydroxysedamine, 3-Hydroxynorallosedamine*)
Liguori, A. *et al., Chem. Ber.*, 1989, **122**, 2019 (*synth, ir, pmr, ms*)
Takahata, H. *et al., J.C.S. Perkin 1*, 1989, 1211 (*synth, ir, pmr, bibl*)
Pyne, S.G. *et al., J.O.C.*, 1990, **55**, 1086 (*synth*)
Ozawa, N. *et al., Heterocycles*, 1991, **32**, 889 (*Sedamine, Allosedamine, synth*)
Pilli, R.A. *et al., Synth. Commun.*, 1991, **21**, 2213 (*Sedamine, Allosedamine, synth*)
Stevens, J.F. *et al., Phytochemistry*, 1992, **31**, 3917 (*isol, Sedamone*)
Comins, D.L. *et al., J.O.C.*, 1993, **58**, 5035 (*synth*)
Oppolzer, W. *et al., Helv. Chim. Acta*, 1994, **77**, 554 (*Allosedamine, synth*)
Herdeis, C. *et al., Annalen*, 1995, 1295 (*5-Hydroxysedamine*)
Ghiaci, M. *et al., Org. Prep. Proced. Int.*, 1996, **28**, 474 (*synth*)
Cossy, J. *et al., J.O.C.*, 2002, **67**, 1982-1992 (*synth*)
Felpin, F.-X. *et al., J.O.C.*, 2002, **67**, 9192-9199 (*synth*)
Bates, R.W. *et al., Tetrahedron*, 2002, **58**, 5957-5978 (*synth*)
Angoli, M. *et al., J.O.C.*, 2003, **68**, 9525-9527 (*synth*)
Raghavan, S. *et al., Tetrahedron*, 2004, **60**, 5059-5067 (*Allosedamine, synth*)
Kang, B. *et al., Tetrahedron*, 2004, **60**, 7353-7359 (*Allosedamine, synth*)
Yadav, J.S. *et al., Synthesis*, 2006, 4005-4012 (*synth*)
Bates, R.W. *et al., Synthesis*, 2008, 1033-1038 (*synth, pmr, cmr*)
Liu, G. *et al., Tetrahedron: Asymmetry*, 2008, **19**, 1297-1303 (*5-Hydroxysedamine, synth*)

Sederine S-211

Methyl 6-(2-hydroxy-2-phenylethyl)-1-methyl-2-piperidinecarboxylate, 9CI
[70786-43-5]



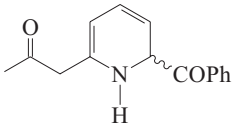
Absolute configuration

$C_{17}H_{25}NO_3$ 291.389
Minor alkaloid from *Sedum acre* (Crassulaceae). Mp 199-201° (as hydrochloride). $[\alpha]_D^{20}$ -82 (c, 1.4 in MeOH).

Hootelé, C. *et al., Bull. Soc. Chim. Belg.*, 1979, **88**, 111; 1983, **92**, 21 (*isol, pmr, ms, cryst struct, abs config*)

Sediendione S-212

1-(6-Benzoyl-1,6-dihydro-2-pyridinyl)-2-propanone, 9CI. 2-Benzoyl-1,2-dihydro-6-acetonylpyridine
[133056-36-7]



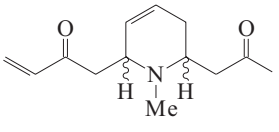
$C_{15}H_{15}NO_2$ 241.289

(ξ)-form
Alkaloid from *Sedum acre* (Crassulaceae).

Maksimovic, M. *et al., Rapid Commun. Mass Spectrom.*, 1990, **4**, 503; *CA*, **114**, 160721m (*Sediendione, ms*)
Maksimovic, M. *et al., CA*, 2005, **143**, 474940y (*Sediendione*)

Sediene S-213

1-[1,2,5,6-Tetrahydro-1-methyl-6-(2-oxopropyl)-2-pyridinyl]-3-buten-2-one, 9CI
[133056-35-6]

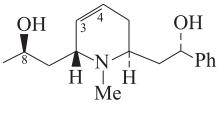


$C_{13}H_{19}NO_2$ 221.299
Alkaloid from *Sedum acre* (Crassulaceae). Shows antimicrobial activity. Pale yellow powder. Mp 94°. λ_{max} 210 ; 325 (Me_2CO) (Berdy).

Nikolin, B. *et al., Acta Pharm. Jugosl.*, 1990, **40**, 555 (*isol*)
Maksimovic, M. *et al., Rapid Commun. Mass Spectrom.*, 1990, **4**, 503; *CA*, **114**, 160721m (*isol, ms*)

Sedinine S-214

1,2,3,6-Tetrahydro-α⁶,1-dimethyl-α²-phenyl-2,6-pyridinediethanol, 9CI. 8-Methyl-10-phenyl-3,4-dehydrolobelidiol
[492-49-9]



Absolute configuration

$C_{17}H_{25}NO_2$ 275.39
The double bond was originally considered to be in the alternative 4,5-position. Alkaloid from *Sedum acre* (Crassulaceae). Prisms (cyclohexane). Mp 121°. $[\alpha]_D^{20}$ -105 (c, 0.46 in MeOH).

Hydrochloride: [86161-46-8]
Mp 172°. $[\alpha]_D^{20}$ -145 (c, 1.04 in MeOH).

8-Ketone: ***Sedacrine****. 1-[1,2,5,6-Tetrahydro-6-(2-hydroxy-2-phenylethyl)-1-methyl-2-pyridinyl]-2-propanone, 9CI*
[61550-92-3]
$C_{17}H_{23}NO_2$ 273.374
Major alkaloid from *Sedum acre* (Crassulaceae). Oil. $[\alpha]_D^{22}$ -156 (c, 1.7 in $CHCl_3$). Thermolabile, dec. on extraction with hot MeOH.

8-Ketone; perchlorate:
Cryst. (butanone). Mp 169°. $[\alpha]_D^{20}$ -115 (c, 2 in MeOH).

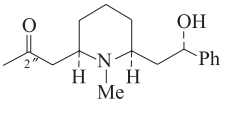
3,4-Dihydro: ***Dihydrosedinine***
[86108-22-7]
$C_{17}H_{27}NO_2$ 277.406
Alkaloid from *Sedum acre* (Crassulaceae). Cryst. (butanone) (as hydrochloride). Mp 165° (hydrochloride). $[\alpha]_D^{20}$ -64 (c, 0.4 in MeOH).

3,4-Dihydro, diastereoisomer: ***8-Methyl-10-phenyllobelidiol***
$C_{17}H_{27}NO_2$ 277.406
Alkaloid from *Lobelia inflata* (Campanulaceae). Mp 91-92° (as hydrochloride). $[\alpha]_D^{20}$ +3 (EtOH). Of unknown stereochem.

Schöpf, C. *et al., Annalen*, 1957, **608**, 88 (*8-Methyl-10-phenyllobelidiol*)
Franck, B. *et al., Chem. Ber.*, 1958, **91**, 2803; 1959, **92**, 1001; 1960, **93**, 2360 (*isol, ir, uv, biosynth*)
Hootelé, C. *et al., Tet. Lett.*, 1980, **21**, 5063 (*cryst struct, abs config*)
Colau, B. *et al., Can. J. Chem.*, 1983, **61**, 470 (*isol, pmr, ms, struct, abs config, Sedacrine, Dihydrosedinine*)
Driessens, F. *et al., Can. J. Chem.*, 1991, **69**, 211 (*synth*)

Sedinone S-215

1-[6-(2-Hydroxy-2-phenylethyl)-1-methyl-2-piperidinyl]-2-propanone, 9CI. 8-Methyl-10-phenyllobelionol
[67010-71-3]



Absolute configuration

$C_{17}H_{25}NO_2$ 275.39
Alkaloid from *Sedum acre* (Crassulaceae). Cryst. (petrol). Mp 93°.

Hydrochloride:
Needles (butanone). Mp 176-178° dec. (175°). $[\alpha]_D^{22}$ -79.4 (c, 1.02 in MeOH).

Hydroxy: ***Hydroxysedinone***
[61565-33-1]
$C_{17}H_{25}NO_3$ 291.389
Alkaloid from *Sedum acre* (Crassulaceae). Posn. of hydroxylation unknown.

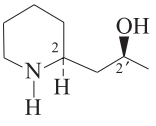
Hydroxy, 2″-alcohol: ***Hydroxysedinol***

[66921-64-0]
$C_{17}H_{27}NO_3$ 293.405
Alkaloid from *Sedum acre* (Crassulaceae). Posn. of OH-group and stereochem. undetd.

Franck, B. *et al., Chem. Ber.*, 1958, **91**, 2803-2818; 1959, **92**, 1001 (*isol, uv, struct*)
Kooy, J.H. *et al., Planta Med.*, 1976, **30**, 295-296 (*Hydroxysedinone*)
Francis, L.P.S. *et al., Planta Med.*, 1977, **32**, 268-274 (*isol, Sedinone, Hydroxysedinol*)
Colau, B. *et al., Can. J. Chem.*, 1983, **61**, 470-472 (*struct, abs config, pmr, ms*)
Driessens, F. *et al., Can. J. Chem.*, 1991, **69**, 211-217 (*synth*)

Sedridine S-216

α-Methyl-2-piperidineethanol, 9CI. 2-(2-Hydroxypropyl)piperidine. 1-(2-Piperidino)-2-propanol. 8-Methylnorlobelol. Dihydroisopelletierine



(2*S*,2′*S*)–*form*

$C_8H_{17}NO$ 143.228
Note potential confusion in stereochem. of allosedridines depending on whether the side-chain chiral centre is numbered 2 or 2′. Both have been used. Here it is numbered 2′.

(2*R*,2′*R*)-*form*
Synthetic. Mp 83-84°. $[\alpha]_D^{21}$ -28.1 (c, 2.31 in EtOH).

(2*S*,2′*S*)-*form* [501-83-7]
Alkaloid from *Sedum acre* and *Sedum maximum* (Crassulaceae). Mp 83-84°. $[\alpha]_D^{23}$ +29.3 (c, 2.28 in EtOH).
O,N-*Dibenzoyl:* Mp 101-103°. $[\alpha]_D$ -13.6 (c, 1.5 in $CHCl_3$).

(2*R*,2′*S*)-*form*
(+)-Allosedridine
[26171-47-1]
Synthetic. Mp 62-63°. $[\alpha]_D^{29}$ +16.2 (c, 4 in MeOH).
O,N-*Dibenzoyl:* Mp 97-100°. $[\alpha]_D^{20}$ +75.6 (c, 1.8 in EtOH).
N-*Me:* **N-*Methylallosedridine***
$C_9H_{19}NO$ 157.255
Alkaloid from *Sedum sarmentosum* (Crassulaceae). Mp 125° (as picrate). $[\alpha]_D^{25}$ +67 (c, 0.9 in EtOH) (synthetic). $[\alpha]_D$ +25 (c, 2.48 in EtOH) (natural).

(2*S*,2′*R*)-*form*
(-)-Allosedridine
Synthetic. Mp 62°. $[\alpha]_D^{29}$ -16.4 (c, 4 in MeOH).

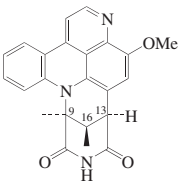
(2*RS*,2′*RS*)-*form*
(±)-Sedridine
Alkaloid from *Sedum acre* (Crassulaceae). Mp 75°.
Picrate: Mp 135-137°.
N-*Me:*
$C_9H_{19}NO$ 157.255
Mp 113-114° (as picrate). Bp_{24} 103-105°.

(2*RS*,2′*SR*)-*form*
(±)-Allosedridine
Mp 71-72°.
N-*Me:* Mp 126-127° (as picrate). Bp_{24} 118-120°.

Marion, L. *et al., Can. J. Res., Sect. B*, 1949, **27**, 215 (*isol, deriv*)
Beyerman, H.C. *et al., Rec. Trav. Chim. (J. R. Neth. Chem. Soc.)*, 1955, **74**, 1568; 1965, **84**, 1367; 1969, **88**, 1012 (*isol, synth, abs config, ir, ord*)
Fodor, G. *et al., Tetrahedron, Suppl.*, No. 8, 1966, 113 (*synth*)
Schöpf, C. *et al., Annalen*, 1970, **732**, 181 (*synth*)
Butruille, D. *et al., Tetrahedron*, 1971, **27**, 2055 (*abs config, ir, pmr, ms*)
Beyerman, H.C. *et al., Rec. Trav. Chim. (J. R. Neth. Chem. Soc.)*, 1972, **91**, 1441 (*N-Methylallosedridine*)
Tufariello, J.J. *et al., Tet. Lett.*, 1978, 4647 (*synth*)
Uyehara, T. *et al., Tet. Lett.*, 1991, **32**, 4371 (*synth*)
Littler, B.J. *et al., Synlett*, 1997, 22 (*synth*)
Nagata, K. *et al., Heterocycles*, 2006, **70**, 335-344 (*synth*)
Chen, L.-J. *et al., Tetrahedron: Asymmetry*, 2008, **19**, 715-720 (*Allosedridine, synth*)

Segoline A S-217

[117694-96-9]



Absolute Configuration

$C_{23}H_{19}N_3O_3$ 385.421
Alkaloid from the Red Sea tunicate *Eudistoma* sp. Cell proliferation inhibitor. Amorph. powder. Sol. MeOH. Mp 276°. $[\alpha]_D^{24}$ -322 (c, 1 in $CHCl_3$). λ_{max} 245 (ϵ 7400); 278 (sh) (ϵ 15600); 298 (ϵ 21300); 366 (ϵ 1400); 382 (ϵ 2500); 545 (ϵ 2500) (MeOH/HCl) (Derep). λ_{max} 236 (sh) (ϵ 9000); 270 (ϵ 16200); 308 (ϵ 5100); 320 (ϵ 5600); 368 (ϵ 1600); 383 (ϵ 2600); 460 (ϵ 3100) (MeOH) (Derep).

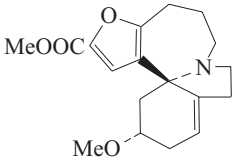
16-Epimer: ***Segoline C***
[340162-11-0]
$C_{23}H_{19}N_3O_3$ 385.421
Alkaloid from *Eudistoma bituminis.* $[\alpha]_D$ -374 ($CHCl_3$).

9,13-Diepimer: ***Segoline B***
[122795-54-4]
$C_{23}H_{19}N_3O_3$ 385.421
Alkaloid from the Red Sea tunicate *Eudistoma* sp. Amorph. powder. $[\alpha]_D^{24}$ +355 (c, 1 in $CHCl_3$). λ_{max} 245 (ϵ 7400); 278 (sh) (ϵ 15600); 298 (ϵ 21300); 366 (ϵ 1400); 382 (ϵ 2500); 545 (ϵ 2500) (MeOH/HCl) (Derep). λ_{max} 236 (sh) (ϵ 9000); 270 (ϵ 16200); 308 (ϵ 5100); 320 (ϵ 5600); 368 (ϵ 1600); 383 (ϵ 2600); 460 (ϵ 3100) (MeOH) (Derep).

Rudi, A. *et al., J.O.C.*, 1989, **54**, 5331-5337 (*isol, uv, ir, pmr, cmr, cd, struct*)
Viracaoundin, I. *et al., Tet. Lett.*, 2001, **42**, 2669-2671 (*isol, cd, pmr, cmr, abs config*)

Selaginoidine S-218

[93888-55-2]

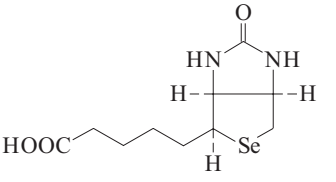


$C_{18}H_{23}NO_4$ 317.384
Alkaloid from the twigs and foliage of *Athrotaxis selaginoides* and *Athrotaxis laxifolia* (Taxodiaceae). Mp 62-63°. $[\alpha]_D^{19}$ +166.7 (c, 0.25 in $CHCl_3$).

Panichanun, S. *et al., Tetrahedron*, 1984, **40**, 2685 (*isol, uv, ir, pmr, cmr, ms, struct*)
Cassidy, M.P. *et al., Org. Lett.*, 2005, **7**, 1339-1342 (*synth*)

Selenobiotin S-219

*Hexahydro-2-oxo-1*H*-selenolo[3,4-*d*]imidazole-4-pentanoic acid, 9CI*
[57956-29-3]

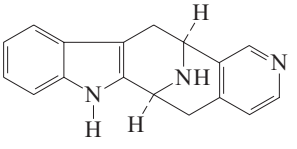


$C_{10}H_{16}N_2O_3Se$ 291.208
Identified as an excretion prod. of *Phycomyces blakesleeanus.* Supports the growth of biotin-requiring microorganisms. Mp 234°. $[\alpha]_D^{25}$ +80.5 (c, 1 in 0.1*M* NaOH).

Bury, S. *et al., Tet. Lett.*, 1976, 2033 (*synth*)
Lindblow-Kull, C. *et al., Biochem. Biophys. Res. Commun.*, 1980, **93**, 572 (*isol*)
De Titta, G.T. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 1980, **77**, 333 (*cryst struct*)

Sellowiine S-220

N-*Demethyl-20-deethylsuaveoline*
[173693-51-1]



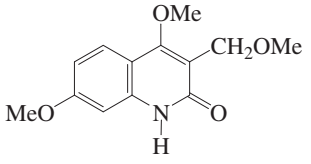
$C_{17}H_{15}N_3$ 261.326
Struct. reported has been shown by synth. to be incorrect in 2004. Alkaloid from leaves of *Rauwolfia sellowii.* Cryst. (MeOH). Mp 202-206°. $[\alpha]_D$ -135 (c, 0.54 in $CHCl_3$). λ_{max} 222 ; 268 ; 282 ; 290 (MeOH).

Batista, C.V.F. *et al., Phytochemistry*, 1996, **41**, 969-973 (*isol, pmr, cmr, ms*)

Ohba, M. *et al., Heterocycles*, 2004, **63**, 2845-2850 (*synth*)

Semecarpifoline S-221

*4,7-Dimethoxy-3-(methoxymethyl)-2(1*H*)-quinolinone*

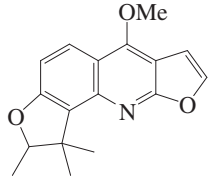


$C_{13}H_{15}NO_4$ 249.266
Alkaloid from the root bark of *Melicope semecarpifolia*. Yellow needles (MeOH). Mp 123-127°. λ_{max} 218 (log ϵ 4.57); 284 (log ϵ 3.83); 325 (log ϵ 4.06); 337 (log ϵ 3.97) (MeOH).

Chen, I.S. *et al., J. Nat. Prod.*, 2001, **64**, 1143-1147

Semecarpine S-222

[632335-16-1]

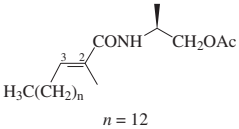


$C_{17}H_{17}NO_3$ 283.326
Alkaloid from the leaves of *Melicope semecarpifolia*. Pale yellow needles ($CHCl_3$/Me_2CO). Mp 145-147°. λ_{max} 227 (log ϵ 4.61); 262 (log ϵ 4.51); 279 (log ϵ 4.44); 325 (log ϵ 4.05); 411 (log ϵ 3.78) (EtOH).

Chen, J.-J. *et al., Planta Med.*, 2003, **69**, 542-546 (*isol, pmr, cmr, ms*)

Semiplenamide C S-223

[630100-43-5]



Absolute Configuration

n = 12

$C_{22}H_{41}NO_3$ 367.571
Alkaloid from *Lyngbya semiplena*. Amorph. solid. $[\alpha]_D^{26}$ -5 (c, 0.3 in $CHCl_3$). λ_{max} 213 (ϵ 6500) (MeOH).

Han, B. *et al., J. Nat. Prod.*, 2003, **66**, 1364-1368 (*isol, pmr, cmr*)
Davies, I.R. *et al., Tet. Lett.*, 2005, **46**, 5547-5549 (*synth*)

Semiplenamide D S-224

[630100-44-6]
As Semiplenamide C, S-223 with n = 16
$C_{26}H_{49}NO_3$ 423.678
Alkaloid from *Lyngbya semiplena*. Amorph. solid. $[\alpha]_D^{26}$ -10.6 (c, 0.15 in $CHCl_3$). λ_{max} 207 (ϵ 5200) (MeOH).

Han, B. *et al., J. Nat. Prod.*, 2003, **66**, 1364-1368 (*isol, pmr, cmr*)

Semiplenamide E S-225

[630100-45-7]
As Semiplenamide C, S-223 with n = 14
$C_{24}H_{45}NO_3$ 395.624
Alkaloid from *Lyngbya semiplena*. Amorph. solid. $[\alpha]_D^{26}$ -7.1 (c, 0.28 in $CHCl_3$). λ_{max} 207 (ϵ 4300) (MeOH).

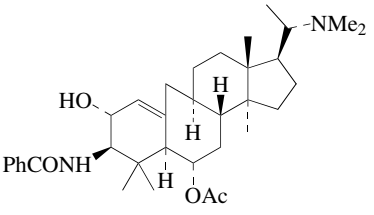
*2*R*,3*S*-Epoxide:* ***Semiplenamide G***
[630100-47-9]
$C_{24}H_{45}NO_4$ 411.624
Alkaloid from *Lyngbya semiplena*. Amorph. solid. $[\alpha]_D^{26}$ -3 (c, 0.6 in $CHCl_3$). 1′-Config. not determined. λ_{max} 207 (ϵ 6100) (MeOH).

*2*R*,3*S*-Epoxide, O-de-Ac:* ***Semiplenamide F***
[630100-46-8]
$C_{22}H_{43}NO_3$ 369.587
Alkaloid from *Lyngbya semiplena*. Amorph. solid. $[\alpha]_D^{26}$ -5 (c, 0.3 in $CHCl_3$). 1′-Config. not determined. λ_{max} 205 (ϵ 5500) (MeOH).

Han, B. *et al., J. Nat. Prod.*, 2003, **66**, 1364-1368 (*Semiplenamides E-G*)

Semperviraminol S-226

[231628-55-0]



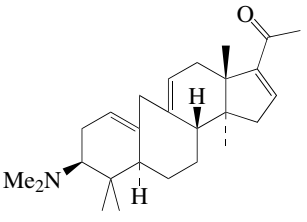
$C_{35}H_{52}N_2O_4$ 564.807
Alkaloid from the roots of *Buxus sempervirens*. Amorph. solid. $[\alpha]_D^{20}$ +97 (c, 0.6 in $CHCl_3$). λ_{max} 226 (log ϵ 2.3) (MeOH).

9,11-Didehydro: ***Hyrcanol***
$C_{35}H_{50}N_2O_4$ 562.791
Alkaloid from the leaves of *Buxus hyrcana*. Amorph. solid. $[\alpha]_D^{24}$ -4.8 (c, 0.08 in $CHCl_3$). λ_{max} 226 (log ϵ 2.3) (MeOH).

Atta-ur-Rahman, *et al., J. Nat. Prod.*, 1999, **62**, 665-669 (*Semperviraminol*)
Choudhary, M.I. *et al., Chem. Biodiversity*, 2006, **3**, 1039-1042 (*Hyrcanol*)

Semperviraminone S-227

[191288-30-9]



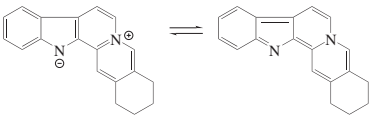
$C_{26}H_{39}NO$ 381.6
Alkaloid from the roots of *Buxus sempervirens* (Buxaceae). Gum. $[\alpha]_D^{20}$ +0.5 (c, 1.2 in $CHCl_3$). λ_{max} 240 (MeOH).

N-*De-Me:* **N-*Demethylsemperviraminone***
[191101-05-0]
$C_{25}H_{37}NO$ 367.573
Alkaloid from the roots of *Buxus sempervirens* (Buxaceae). Gum. $[\alpha]_D^{20}$ +0.5 (c, 0.8 in $CHCl_3$). λ_{max} 240 (MeOH).

Atta-ur-Rahman, *et al., J. Nat. Prod.*, 1997, **60**, 770-774 (*isol, uv, ir, pmr, cmr, ms*)

Sempervirine† S-228

*2,3,4,13-Tetrahydro-1*H*-benz[*g*]indolo[2,3-*a*]quinolizin-6-ium, 9CI. Sempervine*
[6882-99-1 (cation)]



$C_{19}H_{16}N_2$ 272.349
Alkaloid from *Gelsemium sempervirens* and *Rauwolfia* sp. Shows antitumour props. Intercalating agent. Red-orange powder. Sol. EtOH, $CHCl_3$, Py; poorly sol. C_6H_6, Et_2O. Mp 258-260° (223°, 254°). λ_{max} 242 ; 249 ; 294 ; 342 ; 385 (95% EtOH).

Hydrochloride: pK_a 10.6 (18°).

Hydrobromide: Mp 323-325° dec.

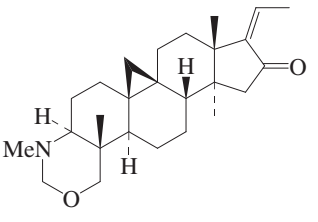
Nitrate: Mp 267° dec.

N^1*-Me:* [6484-78-2]
[47197-61-5 (cation)]
$C_{20}H_{19}N_2^{\oplus}$ 287.384
Mp 330-332° (as chloride).

Stevenson, A.E. *et al., J. Am. Pharm. Assoc.*, 1916, **4**, 1458-1463; *CA*, **10**, 804 (*isol*)
Prelog, V. *et al., Helv. Chim. Acta*, 1948, **31**, 588-593 (*uv*)
Woodward, R.B. *et al., J.A.C.S.*, 1949, **71**, 379-380 (*struct, synth, methochloride*)
Potts, K.T. *et al., J.O.C.*, 1968, **33**, 3985-3987 (*synth, ir, uv*)
Beljanski, M. *et al., Oncology*, 1986, **43**, 198-203; *CA*, **105**, 54186v (*pharmacol*)
Gribble, G.W. *et al., Tetrahedron*, 1988, **44**, 3195-3202 (*synth, uv, ir, pmr, cmr*)
Chatterjee, A. *et al., Monatsh. Chem.*, 1996, **127**, 1259-1262 (*synth, uv*)

Sempervirone S-229

[116537-79-2]



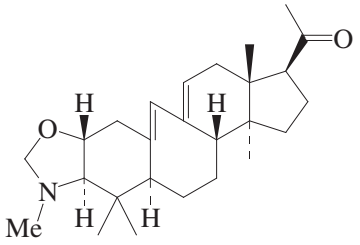
$C_{26}H_{39}NO_2$ 397.6

Stereochem. revised in 1998.
Alkaloid from the leaves of *Buxus sempervirens* (Buxaceae). Amorph. solid. $[\alpha]_D^{20}$ -65 (c, 0.5 in $CHCl_3$). λ_{max} 243 (MeOH).

Atta-ur-Rahman, *et al., J. Nat. Prod.*, 1988, **51**, 783-786 (*isol, uv, ir, pmr, ms, struct*)
Atta-ur-Rahman, *et al., Heterocycles*, 1998, **48**, 519-528 (*isol, pmr, ms, config*)

Semperviroxazolidine S-230

[220705-50-0]

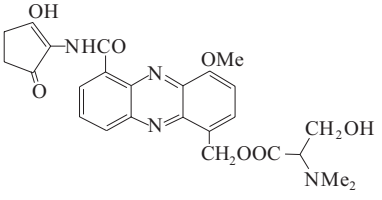


$C_{26}H_{39}NO_2$ 397.6
Alkaloid from the roots of *Buxus sempervirens*. Gum. $[\alpha]_D^{20}$ -45 (c, 0.38 in $CHCl_3$). λ_{max} 231 (sh) ; 238 ; 245 ; 254 (sh) (MeOH).

Atta-ur-Rahman, *et al., Nat. Prod. Lett.*, 1998, **12**, 299-306 (*isol, pmr, cmr*)

Senacarcin A S-231

DC 59A. Antibiotic DC 59A
[82800-43-9]



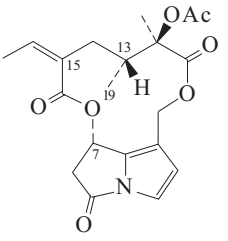
$C_{25}H_{26}N_4O_7$ 494.503
Phenazine antibiotic. Deriv. of Griseoluteic acid in H-514. Prod. by *Streptomyces endus* subsp. *aureus*. Active against gram-positive bacteria and tumours and weakly active against gram-negative organisms. Yellow needles. Sol. MeOH, H_2O, $CHCl_3$, DMSO; poorly sol. hexane, H_2O. Mp 190°. λ_{max} 210 (ϵ 3950); 263 (ϵ 4200); 350 (sh) (ϵ 500); 366 (ϵ 700) (95% EtOH) (Derep).

O-*Deacyl:* ***Senacarcin H***. *DC 59H. Antibiotic DC 59H*
[81782-37-8]
$C_{20}H_{17}N_3O_5$ 379.371
Prod. by *Streptomyces endus aureus*. Orange cryst. Sol. MeOH, H_2O, $CHCl_3$, DMSO; poorly sol. hexane, H_2O. λ_{max} 215 ; 263 ; 365 ; 445 (EtOH).

Nakano, H. *et al., J. Antibiot.*, 1982, **35**, 760 (*isol, uv, ir, pmr*)
Japan. Pat., 1982, 82 4 975; *CA*, **96**, 197887f (*isol, pharmacol*)

Senaetnine S-232

12-(Acetyloxy)-3,8-didehydrosenecionan-5,11,16-trione, 9CI
[64191-69-1]



$C_{20}H_{23}NO_7$ 389.404
Alkaloid from *Senecio* spp. (Asteraceae). Cryst. (Et_2O/petrol). Mp 183.5°. $[\alpha]_D^{24}$ +10.6 (c, 2.5 in $CHCl_3$).

*15*E-*Isomer:* ***14,15*-trans-*Senaetnine***
[71075-41-7]
$C_{20}H_{23}NO_7$ 389.404
Alkaloid from *Senecio aucheri* (Asteraceae). Oil. Not obt. free of Senaetnine. The 14,15-numbering arises from use of a nonstandard numbering system. No stereochem. detd.

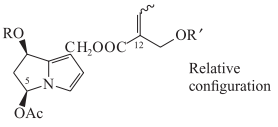
13,19-Didehydro: ***Dehydrosenaetnine***. *(+)-Dehydroisosenaetnine*
[68353-30-0]
$C_{20}H_{21}NO_7$ 387.388
Alkaloid from *Senecio barbertonicus* (Asteraceae). Oil. Referred to by the authors as (+)-Dehydroisosenaetnine, which seems misleading as it is apparently shown to be dehydrosenaetnine.

7-Epimer: ***Isosenaetnine***
[67920-39-2]
$C_{20}H_{23}NO_7$ 389.404
Alkaloid from above-ground parts of *Kleinia kleinioides* (Asteraceae). Cryst. (Et_2O/petrol). Mp 198.5°. $[\alpha]_D^{24}$ -34.8 (c, 1.0 in $CHCl_3$). Stereochem. undefined.

7-Epimer, 13,19-didehydro: ***Dehydroisosenaetnine***
[67951-60-4]
$C_{20}H_{21}NO_7$ 387.388
Alkaloid from *Kleinia kleinioides* (Asteraceae). Viscous oil. $[\alpha]_D^{24}$ -45.6 (c, 0.5 in $CHCl_3$).

Bohlmann, F. *et al., Phytochemistry*, 1977, **16**, 965; 1978, **17**, 599; 1979, **18**, 79 (*isol, ir, pmr, ms, struct*)
Bohlmann, F. *et al., Chem. Ber.*, 1978, **111**, 3009 (*cd, stereochem*)
Klose, W. *et al., Chem. Ber.*, 1980, **113**, 2694

Senampelines S-233



Senampeline	R	R′	12–configuration
A	Tigloyl	$(H_3C)_2C{=}CHCO$	(*E*–)
B	Tigloyl	Tigloyl	(*E*–)
C	Tigloyl	$(H_3C)_2C{=}CHCO$	(*Z*–)
D	Tigloyl	Tigloyl	(*Z*–)
E	Tigloyl	Angeloyl	(*E*–)
F	$(H_3C)_2C{=}CHCO$	Angeloyl	(*E*–)
G	Angeloyl	Angeloyl	(*E*–)

A family of isomeric alkaloids from *Senecio cissampelinus, Senecio mikanoides* and other *Senecio* spp. (Asteraceae).

Senampeline A [62787-00-2]
$C_{25}H_{31}NO_8$ 473.522
Oil. Not separated from Senampeline B.

Senampeline B [62860-52-0]
$C_{25}H_{31}NO_8$ 473.522
Oil. Not sepd. from Senampeline A.

Senampeline C [62841-11-6]
$C_{25}H_{31}NO_8$ 473.522
Oil. Not sepd. from Senampeline D.

Senampeline D [62787-01-3]
$C_{25}H_{31}NO_8$ 473.522
Oil. Not sepd. from Senampeline C.

Senampeline E [71075-42-8]
$C_{25}H_{31}NO_8$ 473.522
Not sepd. from Senampelines F and G.

Senampeline F [71075-43-9]
$C_{25}H_{31}NO_8$ 473.522
Not sepd. from Senampelines E and G.

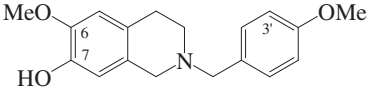
Senampeline G [71075-44-0]
$C_{25}H_{31}NO_8$ 473.522
Not sepd. from Senampelines E and F.

5-Deacetoxy, 5-oxo: ***5-Deacetoxy-5-oxosenampeline G***
$C_{23}H_{27}NO_7$ 429.469
Alkaloid from *Senecio stapeliaeformis* (Asteraceae). Alkaloid not named in the lit.

Bohlmann, F. *et al., Chem. Ber.*, 1977, **110**, 474 (*isol, uv, ir, pmr, ms, struct*)
Bohlmann, F. *et al., Phytochemistry*, 1979, **18**, 79; 1986, **25**, 1151 (*isol, struct, deriv*)

Sendaverine S-234

1,2,3,4-Tetrahydro-6-methoxy-2-[(4-methoxyphenyl)methyl]-7-isoquinolinol, 9CI. 1,2,3,4-Tetrahydro-7-hydroxy-6-methoxy-2-(4-methoxybenzyl)isoquinoline. Alkaloid F28
[5056-80-4]



$C_{18}H_{21}NO_3$ 299.369
Alkaloid from *Corydalis aurea*, *Corydalis gortschakovii* and *Corydalis tashiroi* (Papaveraceae). Fine needles (Et_2O), cubes (hexane). Mp 140-141.5°.

Hydrochloride:
Needles (MeOH/Et_2O). Mp 225-230° dec.

N-*Oxide:* ***Sendaverine* N-*oxide***
[65907-09-7]
$C_{18}H_{21}NO_4$ 315.368
Alkaloid from the aerial parts of *Corydalis gortschakovii* (Papaveraceae).

O$^{4'}$-*De-Me: 1,2,3,4-Tetrahydro-2-[(4-hydroxyphenyl)methyl]-6-methoxy-7-isoquinolinol. 1,2,3,4-Tetrahydro-7-hydroxy-2-(4-hydroxybenzyl)-6-methoxyisoquinoline.* ***Corgoine***
[15778-86-6]
$C_{17}H_{19}NO_3$ 285.342
Alkaloid from *Corydalis gortschakovii* (Papaveraceae). Needles (MeOH/Et_2O), cryst. ($CHCl_3$/MeOH). Mp 198° (190-191°).

O$^{4'}$-*De-Me, hydrochloride:*
Cryst. (MeOH/Et_2O). Mp 239-240°.

O^{6}-*De-Me,* O^{7}-*Me:* ***Isosendaverine***
[156401-02-4]
$C_{18}H_{21}NO_3$ 299.369
Alkaloid from *Ceratocapnos heterocarpa* (Papaveraceae). Pale yellow cryst. (MeOH). Mp 181-182°.

3′-Hydroxy: ***Capnosine***
[148234-97-3]
$C_{18}H_{21}NO_4$ 315.368
Alkaloid from *Ceratocapnos heterocarpa* (Papaveraceae). Yellowish powder. Mp 105-106°.

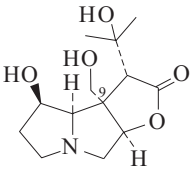
3′-Hydroxy, O^{7}-*Me:* ***Capnosinine***
[156401-03-5]
$C_{19}H_{23}NO_4$ 329.395
Alkaloid from *Ceratocapnos heterocarpa* (Papaveraceae). Cryst. (EtOH). Mp 172-173°.

3′-Methoxy, O^{7}-*Me:* ***Intebrimine***
$C_{20}H_{25}NO_4$ 343.422
Alkaloid from leaves of *Berberis integerrima*. Cryst. (as hydrochloride). Mp 169-170° (hydrochloride).

Manske, R.H.F. *et al., Can. J. Res., Sect. B*, 1936, **16**, 81 (*isol*)
Kametani, T. *et al., Chem. Pharm. Bull.*, 1967, **15**, 608 (*uv, ir, pmr, ms, struct, synth*)
Ibragimova, M.U. *et al., Khim. Prir. Soedin.*, 1970, **6**, 438; 638; 1971, **7**, 211; *Chem. Nat. Compd. (Engl. Transl.)*, 1970, **6**, 447; 660; 1971, **7**, 209 (*Sendaverine, Corgoine, isol, synth, pmr*)
Suguna, H. *et al., Indian J. Chem.*, 1974, **12**, 1141 (*Corgoine, synth, uv, ir, pmr*)
Kametani, T. *et al., Tetrahedron*, 1975, **31**, 235 (*Corgoine, synth, ir, pmr*)
Mori, M. *et al., Heterocycles*, 1977, **6**, 1841 (*synth, ir, pmr, ms*)
Israilov, I.A. *et al., Khim. Prir. Soedin.*, 1977, **13**, 834; *Chem. Nat. Compd. (Engl. Transl.)*, 1977, **13**, 702 (*isol, oxide*)
Kametani, T. *et al., J.C.S. Perkin 1*, 1979, 2836 (*synth*)
Pandey, G.D. *et al., Indian J. Chem., Sect. B*, 1980, **19**, 160 (*synth*)
Pandey, G.D. *et al., Pol. J. Chem. (Rocz. Chem.)*, 1980, **54**, 763 (*Corgoine, synth*)
Masood, M. *et al., Synth. Commun.*, 1980, **10**, 541 (*synth, ir, pmr, ms*)
Tani, C. *et al., Planta Med.*, 1981, **41**, 403 (*isol*)
Otomasu, H. *et al., J.C.S. Perkin 1*, 1982, 2399 (*Sendaverine, Corgoine, synth, pmr*)
Takano, S. *et al., Heterocycles*, 1993, **35**, 47 (*synth*)
Karimov, A. *et al., Khim. Prir. Soedin.*, 1993, **29**, 70; *Chem. Nat. Compd. (Engl. Transl.)*, 1993, **29**, 57 (*Intebrimine*)
Suau, R. *et al., Phytochemistry*, 1994, **36**, 241 (*Isosendaverine, Capnosine, Capnosinine*)

Senecicaudatin S-235

[106283-48-1]



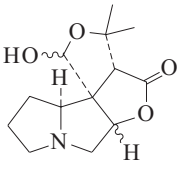
$C_{13}H_{21}NO_5$ 271.313

O-*(3-Methylbutanoyl):* ***Senecicaudatin* O-*isopentanoate***
[106283-50-5]
$C_{18}H_{29}NO_6$ 355.43
Alkaloid from *Senecio caudatus* (Asteraceae). Alkaloid not named in the paper.

O-*(3-Methyl-2-butenoyl):* ***Senecicaudatin* O-*senecioate***
[106283-49-2]
$C_{18}H_{27}NO_6$ 353.414
Alkaloid from *Senecio caudatus* (Asteraceae). Not named in the paper.

Bohlmann, F. *et al., Phytochemistry*, 1986, **25**, 1151-1159 (*isol, ir, ms, struct*)

Senecicaudatinal hemiacetal S-236

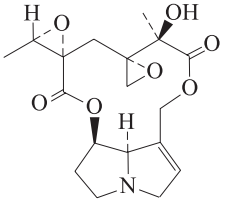


$C_{13}H_{19}NO_4$ 253.297
Alkaloid from *Senecio caudatus* (Asteraceae).

Bohlmann, F. *et al., Phytochemistry*, 1986, **25**, 1151 (*isol, ir, ms, struct*)

Seneciocannabine S-237

[81855-31-4]



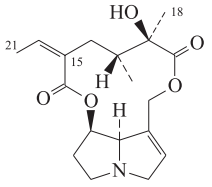
Absolute configuration

$C_{18}H_{23}NO_7$ 365.382
Diepoxide of Seneciphylline, S-240. Alkaloid from roots and aerial parts of *Senecio cannabifolius* (Asteraceae). Prisms. Mp 198°. $[\alpha]_D^{25}$ -8.9 ($CHCl_3$).
▶ Poss. carcinogen. VT5704550

Asada, Y. *et al., Tet. Lett.*, 1982, 189 (*isol, cmr, cryst struct*)
Asada, Y. *et al., Chem. Pharm. Bull.*, 1984, **32**, 4616 (*synth*)
Mori, H. *et al., Cancer Res.*, 1985, **45**, 3125 (*tox*)

Senecionine S-238

12-Hydroxysenecionan-11,16-dione, 9CI. Aureine†
[130-01-8]



Absolute configuration

$C_{18}H_{25}NO_5$ 335.399
Cyclic ester of 2,3,5,7*a*-Tetrahydro-1-hydroxy-1*H*-pyrrolizine-7-methanol, T-188 with 5-Ethylidene-2-hydroxy-2,3-dimethylhexanedioic acid. Alkaloid from many *Senecio* spp., *Brachyglottis repanda*, *Emilia sonchifolia*, *Erechtites hieracifolia*, *Petasites hybridus* and other Asteraceae. Large amts. obtainable from *Senecio triangularis*; also obt. from *Castilleja rhexifolia* (Scrophulariaceae). Shows antineoplastic activity *vs.* Walker 256 carcinosarcoma. Mp 232-233°. $[\alpha]_D$ -56 ($CHCl_3$). Log P -0.04 (uncertain value) (calc). Hieracifoline and Pterophine were mixts. of Senecionine and Seneciphylline, S-240.
▶ LD_{50} (rat, ivn) 41 mg/kg. LD_{50} (mus, ivn) 64 mg/kg. Exp. reprod. and teratogenic effects. Hepatotoxic, also causes lung lesions. VT5710000

N-*Oxide:* ***Senecionine* N-*oxide***
[13268-67-2]
$C_{18}H_{25}NO_6$ 351.399
Alkaloid from seeds of *Crotalaria anagyroides* (Fabaceae). Antineoplastic agent. Hygroscopic solid. Mp 140-141° dec. (synthetic). Log P -2.01 (uncertain value) (calc).
▶ LD_{50} (mus, ipr) 75 mg/kg.

*15*E-*Isomer:* ***Integerrimine****. Squalidine. Alkaloid SD*
[480-79-5]
$C_{18}H_{25}NO_5$ 335.399
Alkaloid from *Senecio* spp., *Crotalaria incana* and other *Crotalaria* spp., *Cacalia hastata* and others (Fabaceae, Asteraceae). Strong insect antifeedant agent. Mp 172°. $[\alpha]_D$ -29 (-18.3) ($CHCl_3$). $[\alpha]_D$ +4 (MeOH). λ_{max} 210 (ϵ 10620) (MeOH) (Berdy).
▶ NM9080000

*15*E-*Isomer,* N-*oxide:* ***Integerrimine* N-*oxide***
[85955-28-8]
$C_{18}H_{25}NO_6$ 351.399
Alkaloid from *Senecio erucifolius*, *Senecio nebrodensis* and *Senecio vulgaris.* Strong insect antifeedant agent. Oil. $[\alpha]_D^{25}$ +8.5 (c,0.02 in EtOH).

*15*E-*Isomer,* O-*Ac:* ***Acetylintegerrimine***
[119328-82-4]
$C_{20}H_{27}NO_6$ 377.436
Alkaloid from the seeds of *Crotalaria naragutensis* (Fabaceae).

*15*E-*Isomer, 12-epimer:* ***Usaramoensine****.*

Usaramensine, 8CI
[480-80-8]
$C_{18}H_{25}NO_5$ 335.399
Alkaloid from *Senecio usaramoensis*. Prisms (Me_2CO). Mp 221° dec. (sealed tube). $[\alpha]_D$ -25.2 ($CHCl_3$). Struct. not certain. Considered by Adams *et al*. to be the 12-epimer of Senecionine, reassigned by Gonzalez *et al* as the 12-epimer, 15*E*-isomer but the evidence is not conclusive.

*15*E-*Isomer, 12-epimer, picrate:*
Cryst. (MeOH). Mp 235° dec.

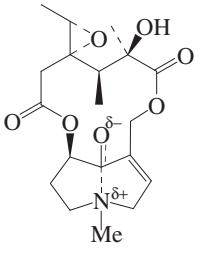
*15*E-*Isomer, 21-hydroxy:* ***21-Hydroxyintegerrimine***. *Eruciflorine*
[135626-66-3]
$C_{18}H_{25}NO_6$ 351.399
Alkaloid from *Senecio argunensis*, *Senecio erucifolius* and *Senecio jacobaea* (Asteraceae). Gum. $[\alpha]_D$ -2 (c, 1.5 in EtOH).

18-Hydroxy: see Retrorsine, R-62

Barger, G. *et al., J.C.S.*, 1936, 743 (*isol*)
Kropman, M. *et al., J.C.S.*, 1950, 700 (*Integerrimine*)
Adams, R. *et al., J.A.C.S.*, 1953, **75**, 4631 (*Integerrimine, Usaramoensine*)
Warren, F.L. *et al., Prog. Chem. Org. Nat. Prod.*, 1955, **12**, 198; 1966, **24**, 329 (*occur, bibl*)
Gonzalez Gonzalez, A. *et al., An. R. Soc. Esp. Fis. Quim., Ser. B*, 1958, **54**, 223 (*Usaramoensine*)
Šantavý, F. *et al., Coll. Czech. Chem. Comm.*, 1962, **27**, 1666 (*props, Integerrimine*)
Simanek, V. *et al., Coll. Czech. Chem. Comm.*, 1969, **34**, 1832 (*uv*)
Culvenor, C.C.J. *et al., J.C.S.(C)*, 1971, 3653 (*cd*)
Crout, D.H.G. *et al., J.C.S. Perkin 1*, 1972, 671 (*biosynth*)
Abdullaev, U.A. *et al., Khim. Prir. Soedin.*, 1974, **10**, 538; *Chem. Nat. Compd. (Engl. Transl.)*, 1974, **10**, 556 (*ms*)
Bale, N.M. *et al., J.C.S. Perkin 1*, 1978, 101 (*biosynth*)
Mackay, M.F. *et al., Acta Cryst. B*, 1982, **38**, 2754 (*cryst struct*)
Jones, A.J. *et al., Aust. J. Chem.*, 1982, **35**, 1173 (*cmr*)
Rastogi, R. *et al., Pharmazie*, 1982, **37**, 75 (*N-oxide*)
Molyneux, R.J. *et al., Phytochemistry*, 1982, **21**, 439 (*cmr*)
Robins, D.J. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 115 (*occur, bibl*)
Roitman, J.N. *et al., Aust. J. Chem.*, 1983, **36**, 1203 (*isol*)
Narasaka, K. *et al., J.A.C.S.*, 1984, **106**, 2954 (*synth, Integerrimine*)
Mattocks, A.R. *et al., Chemistry and Toxicology of Pyrrolizidine Alkaloids*, Academic Press, 1986, (*tox, rev*)
Hanson, B.A. *et al., J.A.C.S.*, 1988, **110**, 6314 (*conformn*)
Mattocks, A.R. *et al., Phytochemistry*, 1988, **27**, 3289 (*Acetylintegerrimine*)
Barrero, A.F. *et al., An. Quim.*, 1991, **87**, 386-390 (*Integerrimine N-oxide*)
Liu, K. *et al., Phytochemistry*, 1991, **30**, 1303 (*21-Hydroxyintegerrimine*)
White, J.D. *et al., J.O.C.*, 1992, **57**, 2270 (*synth, Integerrimine*)
Witte, L. *et al., Phytochemistry*, 1992, **31**, 559 (*Eruciflorine*)
Niwa, H. *et al., Tetrahedron*, 1992, **48**, 393 (*synth, Integerrimine*)
Niwa, H. *et al., Bull. Chem. Soc. Jpn.*, 1994, **67**, 1990 (*synth*)
Reina, M. *et al., J. Nat. Prod.*, 2001, **64**, 6-11 (*Integerrimine N-oxide, activity*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, ARS500; IDG000

Senecioracenine S-239

[146573-88-8]

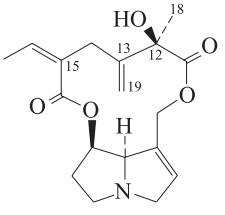


$C_{19}H_{27}NO_7$ 381.425
Alkaloid from *Senecio racemosus* (Asteraceae). Oil. $[\alpha]_D$ +50 (c, 0.2 in $CHCl_3$).

Ahmed, W. *et al., J. Nat. Prod.*, 1992, **55**, 1764-1767 (*isol, ir, pmr, cmr, ms, struct*)

Seneciphylline S-240

13,19-Didehydro-12-hydroxysenecionan-11,16-dione, 9CI. α-Longilobine. Jacodine
[480-81-9]



Absolute configuration

$C_{18}H_{23}NO_5$ 333.383
Alkaloid from numerous *Senecio* and *Crotalaria* spp., also *Erechtites hieracifolia* and *Erechtites quadridentata* (Asteraceae, Fabaceae). Cause of grazing toxicity in animals. Plates (EtOAc). Mp 217-218° dec. $[\alpha]_D^{17}$ -139 ($CHCl_3$).

▶ LD_{50} (rat, ipr) 77 mg/kg, hepatotoxic, other exp. toxic effects. VT5977000

N-*Oxide:* ***Seneciphylline* N-*oxide***
[38710-26-8]
$C_{18}H_{23}NO_6$ 349.383
Alkaloid from whole plants of *Senecio persoonii* (Asteraceae). $[\alpha]_D^{20}$ -56 (c, 1 in EtOH).

O-*Ac:* ***Seneciphyllinine***. *12-Acetylseneciphylline*
[90341-45-0]
$C_{20}H_{25}NO_6$ 375.421
Alkaloid from *Gynura segetum* and *Senecio pterophorus* (Asteraceae). Cryst. Mp 82-83°.

13ξ,19-Epoxide: ***Seneciphylline epoxide***
[106356-85-8]
$C_{18}H_{23}NO_6$ 349.383
Alkaloid from *Senecio megaphyllus* and *Senecio usgorensis* (Asteraceae). Alkaloid not named in the lit.

18-Hydroxy: ***Riddelline***. *Riddelliine*
[23246-96-0]
$C_{18}H_{23}NO_6$ 349.383
Alkaloid from *Senecio riddellii, Senecio longiflorus, Senecio eremophilus, Crotalaria juncea* etc. (Asteraceae, Fabaceae). Mp 197-198° dec. $[\alpha]_D^{25}$ -109.5 ($CHCl_3$).

▶ LD_{50} (mus, ivn) 105 mg/kg, hepatotoxic. Possible human carcinogen (IARC 2B). VJ3850000

*15*E-*Isomer:* ***(E)-Seneciphylline***
[129029-37-4]
$C_{18}H_{23}NO_5$ 333.383
Alkaloid from *Gynura segetum* (Asteraceae).

*15*E-*Isomer, 13ξ,19-epoxide:* ***(E)-Seneciphylline epoxide***
[106356-86-9]
$C_{18}H_{23}NO_6$ 349.383
Alkaloid from *Senecio megaphyllus* (Asteraceae). Not named in the lit.

*12-Epimer, 15*E-*isomer:* ***Spartioidine***
[520-59-2]
$C_{18}H_{23}NO_5$ 333.383
Alkaloid from *Senecio spartioides* (Asteraceae). Mp 178°. $[\alpha]_D$ -83.7 (c, 1.73 in 95% EtOH).

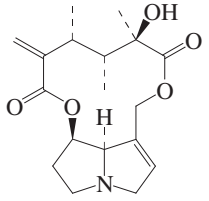
▶ WG6475000

*12-Epimer, 15*E-*isomer,* N-*oxide:* ***Spartioidine* N-*oxide***
[121123-61-3]
$C_{18}H_{23}NO_6$ 349.383
Alkaloid from *Senecio vulgaris*.

Adams, R. *et al., J.A.C.S.*, 1942, **64**, 2760-2763; 1957, **79**, 174-177 (*Ridelline, Spartioidine*)
Warren, F.L. *et al., Prog. Chem. Org. Nat. Prod.*, 1955, **12**, 201 (*occur*)
Masamune, S. *et al., Chem. Ind. (London)*, 1959, 21 (*struct*)
Culvenor, C.C.J. *et al., Aust. J. Chem.*, 1965, **18**, 1625 (*pmr*)
Cervinka, O. *et al., Chem. Comm.*, 1968, 261 (*abs config*)
Šimánek, V. *et al., Coll. Czech. Chem. Comm.*, 1969, **34**, 1832 (*uv*)
Hrbek, J. *et al., Coll. Czech. Chem. Comm.*, 1972, **37**, 3918 (*cd*)
Abdullaev, U.A. *et al., Khim. Prir. Soedin.*, 1974, **10**, 538; *Chem. Nat. Compd. (Engl. Transl.)*, 1974, **10**, 556 (*ms*)
Edgar, J.A. *et al., Experientia*, 1976, **32**, 1535 (*Acetylseneciphylline*)
Molyneux, R.J. *et al., Phytochemistry*, 1982, **21**, 439 (*cmr*)
Robins, D.J. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 115-203 (*occur*)
Wiedenfeld, H. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1984, **317**, 97 (*cryst struct*)
Rana, J. *et al., Chem. Comm.*, 1985, 1742 (*biosynth*)
Mattocks, A.R. *et al., Chemistry and Toxicology of Pyrrolizidine Alkaloids*, Academic Press, 1986, (*tox, rev*)
Bohlmann, F. *et al., Phytochemistry*, 1986, **25**, 1151 (*epoxides*)
Yuan, S.Q. *et al., Yaoxue Xuebao*, 1990, **25**, 191-197 (*Seneciphyllinine, (E)-Seneciphylline*)
Roeder, E. *et al., Phytochemistry*, 1993, **32**, 1051 (*Seneciphylline N-oxide*)
Liddell, J.R. *et al., Phytochemistry*, 1993, **34**, 1629 (*Acetylseneciphylline*)
IARC Monog. (Web), (*tox*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, RJZ000; SBX500

Senecivernine S-241

12-Hydroxy-14-methyl-21-norsenecionan-11,16-dione, 9CI
[72755-25-0]



Absolute Configuration

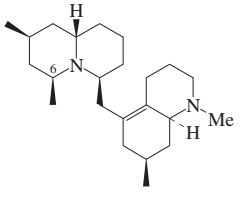
$C_{18}H_{25}NO_5$ 335.399

Cyclic diester of retronecine with senecivernic acid (unique to this alkaloid). Alkaloid from *Senecio vernalis* aboveground parts (Asteraceae). Mp 105-107° dec. $[\alpha]_D^{20}$ -34.9 (EtOH).

N-*Oxide:* ***Senecivernine* N-*oxide***
[101687-28-9]
$C_{18}H_{25}NO_6$ 351.399
Alkaloid from *Senecio vernalis* and *Senecio procumbens*. Brown oil.

Röder, E. *et al., Planta Med.*, 1979, **37**, 131 (*isol, ms, pmr, cmr, ir, struct*)
Parvez, M. *et al., Acta Cryst. C*, 1995, **51**, 1202-1204 (*cryst struct, abs config*)
Liu, Z.-Y. *et al., Tet. Lett.*, 1999, **40**, 5593-5596 (*synth*)
Kostova, N. *et al., J. Serb. Chem. Soc.*, 2006, **71**, 1275-1280 (*N-oxide*)

Senepodine A S-242



Absolute Configuration

$C_{23}H_{40}N_2$ 344.582
Alkaloid from *Lycopodium chinense*. Cytotoxic agent. Solid. $[\alpha]_D$ -33 (c, 0.6 in MeOH).

N-*De-Me:* ***Senepodine C***
$C_{22}H_{38}N_2$ 330.556
Alkaloid from *Lycopodium chinense*. Solid. $[\alpha]_D^{25}$ -15 (c, 1 in MeOH).

N-*De-Me,* N-*formyl:* ***Senepodine D***
$C_{23}H_{38}N_2O$ 358.566
Alkaloid from *Lycopodium chinense*. Solid. $[\alpha]_D^{23}$ -33 (c, 0.5 in MeOH).

N-*De-Me,* N-*Ac:* ***Senepodine E***
$C_{24}H_{40}N_2O$ 372.593
Alkaloid from *Lycopodium chinense*. Solid. $[\alpha]_D^{22}$ -106 (c, 1 in MeOH).

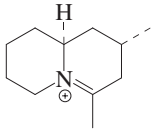
4′aβ,5′α-Dihydro, N-*de-Me,* N-*Ac:* ***Senepodine F***
$C_{24}H_{42}N_2O$ 374.609
Alkaloid from *Lycopodium chinense*. Amorph. solid. $[\alpha]_D^{23}$ -35 (c, 0.5 in MeOH).

*6(*N*)-Dehydro:* ***Senepodine B***
$C_{23}H_{39}N_2^{\oplus}$ 343.575
Quaternary alkaloid from *Lycopodium chinense*. Solid. $[\alpha]_D^{27}$ -38 (c, 0.2 in MeOH). Counterion not specified.

Morita, H. *et al., Tet. Lett.*, 2001, **42**, 4199-4201 (*isol, pmr, cmr*)
Hirasawa, Y. *et al., Tetrahedron*, 2003, **59**, 3567-3573 (*isol, pmr, cmr, abs config*)
Hirasawa, Y. *et al., Heterocycles*, 2004, **64**, 515-521 (*Senepodine F*)

Senepodine G S-243

1,2,3,6,7,8,9,9a-Octahydro-2,4-dimethylquinolizinium(1+)
[760947-76-0]



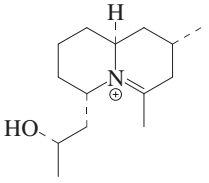
Relative Configuration

$C_{11}H_{20}N^{\oplus}$ 166.286
Quaternary alkaloid from *Lycopodium chinense*. Amorph. solid (as trifluoroacetate). $[\alpha]_D^{26}$ -35 (c, 0.3 in MeOH) (trifluoroacetate).

Morita, H. *et al., Tetrahedron*, 2004, **60**, 7015-7023 (*isol, pmr, cmr*)
Snider, B.B. *et al., J.O.C.*, 2007, **72**, 1039-1042 (*synth*)

Senepodine H S-244

[760947-77-1]



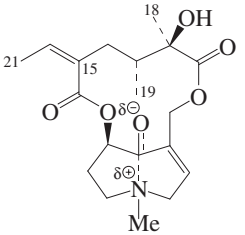
Absolute Configuration

$C_{14}H_{26}NO^{\oplus}$ 224.366
Quaternary alkaloid from *Lycopodium chinense*. Amorph. solid (as trifluoroacetate salt). $[\alpha]_D^{27}$ -35 (c, 0.2 in MeOH) (trifluoroacetate salt).

Morita, H. *et al., Tetrahedron*, 2004, **60**, 7015-7023 (*isol, pmr, cmr*)

Senkirkine S-245

12-Hydroxy-4-methyl-4,8-secosenecionan-8,11,16-trione, 9CI. Renardine
[2318-18-5]



$C_{19}H_{27}NO_6$ 365.425

Cyclic otonecine diester. Alkaloid from *Nardosmia laevigata*, (preferred genus name *Petasites*), *Farfugium japonicum*, *Crotalaria laburnifolia*, *Senecio anonymus*, *Senecio kirkii* and others (Asteraceae, Fabaceae). Bevelled plates (EtOAc or Me_2CO). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 196.5-197.5°. $[\alpha]_D^{25}$ -16 (c, 1.89 in MeOH). pK_a 6.4. λ_{max} 219 (ε 10500) (MeOH) (Berdy).

▶ LD_{50} (rat, ipr) 220 mg/kg. Exp. neoplastic agent, hepatotoxic. VT5960000

Picrate:
Yellow rods (EtOH aq.). Mp 225-225.5° (219-220°).

Ac: **O-*Acetylsenkirkine***
[53092-44-7]
$C_{21}H_{29}NO_7$ 407.463
Alkaloid from *Senecio kirkii* (Asteraceae). Needles (EtOAc/Me_2CO). Mp 195-196°. $[\alpha]_D^{25}$ -34 (c, 0.44 in MeOH).

*1*R*,2-Dihydro:* ***Dihydrosenkirkine***
[135574-55-9]
$C_{19}H_{29}NO_6$ 367.441
Alkaloid from *Senecio integrifolius* var. *fauriri* (Asteraceae). Exists in equilib. as two ring structs.

18-Hydroxy: ***Hydroxysenkirkine***
[37819-28-6]
$C_{19}H_{27}NO_7$ 381.425
Alkaloid from *Crotalaria laburnifolia* (Fabaceae). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 124-125°. $[\alpha]_D^{26}$ +5.3 (c, 0.682 in EtOH).

▶ Hepatotoxic.

19-Hydroxy: ***18-Hydroxysenkirkine***
[106312-35-0]
$C_{19}H_{27}NO_7$ 381.425
Alkaloid from *Senecio laricifolius* (Asteraceae). The trivial name 18-Hydroxysenkirkine results from use of a nonstandard numbering system.

19-Acetoxy: ***18-Acetoxysenkirkine***
[106283-54-9]
$C_{21}H_{29}NO_8$ 423.462
Alkaloid from *Senecio laricifolius* (Asteraceae). Trivial name results from a nonstandard numbering system.

12-Epimer, 12-Ac: ***Neoligularidine***
[90364-91-3]
$C_{21}H_{29}NO_7$ 407.463
Alkaloid from the aerial parts of *Ligularia dentata* (Asteraceae). Needles (hexane). Mp 117-119°. $[\alpha]_D^{27}$ -58 (c, 0.13 in $CHCl_3$).

▶ VS3592000

*(15*E*)-Isomer:* ***Neosenkirkine***
[57194-70-4]
$C_{19}H_{27}NO_6$ 365.425
Alkaloid from *Senecio auricola* (Asteraceae). Cryst. (Me_2CO). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 175°. $[\alpha]_D^{23}$ -21 (c, 1.08 in $CHCl_3$).

*15*E*-Isomer, 18-hydroxy:* ***Hydroxyneosenkirkine***
$C_{19}H_{27}NO_7$ 381.425
Alkaloid from *Senecio anonymus*. Sol. MeOH, $CHCl_3$; poorly sol. H_2O.

*15*E*-Isomer, 21-hydroxy:* ***Anonamine***
[111566-66-6]
$C_{19}H_{27}NO_7$ 381.425
Alkaloid from *Senecio anonymus* (Asteraceae). Mp 202°. $[\alpha]_D$ +33.5 (c, 1 in $CHCl_3$).

*15*E*-Isomer, 21-acetoxy:* ***Acetylanonamine***
[138079-62-6]
$C_{21}H_{29}NO_8$ 423.462
Alkaloid from *Senecio anonymus*

(Asteraceae). Mp 124-125°. $[\alpha]_D$ +17.99 (c, 0.91 in $CHCl_3$).

*15*E-*Isomer, 12-epimer, 12-Ac:* ***Ligularidine***
[60872-63-1]
$C_{21}H_{29}NO_7$ 407.463
Alkaloid from the aerial parts and roots of *Ligularia dentata* (Asteraceae). Needles (Et_2O). Mp 196° Mp 210°. $[\alpha]_D^{28}$ -49.8 (c, 1.02 in EtOH).

▶ VS3591000

Stereoisomer: ***Isosenkirkine***
$C_{19}H_{27}NO_6$ 365.425
Alkaloid from *Crotalaria walkeri* (Fabaceae). Mp 195-196°. $[\alpha]_D$ +32 (MeOH). No details in accessible lit. Of undetd. stereochem. For a further stereoisomer see Crotaverrine in S-245.

*15*E-*Isomer, stereoisomer:* ***Crotaverrine***
[60827-69-2]
$C_{19}H_{27}NO_6$ 365.425
Alkaloid from *Crotalaria verrucosa* and *Crotalaria walkeri* (Fabaceae). Hygroscopic cryst. (EtOAc). Mp 142-144°. $[\alpha]_D^{25}$ +32.7 (c, 1.04 in MeOH). Stereochem. incorrectly given in CAS (indexed as *O*-deacetylligularidine). The stereochem. is poorly shown in the original paper which appears to show that the acid obt. from Crotaverrine is Usaramensic acid. This would make it identical with Neosenkirkine, but the props. are completely different.

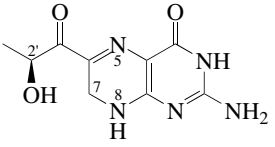
*15*E-*Isomer, 12-Ac, stereoisomer:* **O-*Acetylcrotaverrine***
$C_{21}H_{29}NO_7$ 407.463
Alkaloid from *Crotalaria verrucosa* (Fabaceae). Noncryst. $[\alpha]_D^{25}$ +45.54 (c, 1.01 in MeOH).

[6882-01-5]

Chalmers, A.H. *et al., J. Chromatogr.*, 1965, **20**, 270-277 (*tlc*)
Briggs, L.H. *et al., J.C.S.*, 1965, 2492-2498 (*isol, bibl, pmr, Senkirkine, Acetylsenkirkine*)
Šimánek, V. *et al., Coll. Czech. Chem. Comm.*, 1969, **34**, 1832-1837 (*uv*)
Hrbek, J. *et al., Coll. Czech. Chem. Comm.*, 1972, **37**, 3918-3935 (*cd*)
Crout, D.H.G. *et al., J.C.S. Perkin 1*, 1972, 1602-1607 (*isol, pmr, Hydroxysenkirkine*)
Atal, C.K. *et al., Indian J. Pharm.*, 1973, **35**, 1-12 (*Isosenkirkine*)
Panizo, F.M. *et al., An. Quim.*, 1974, **70**, 1043-1048 (*Neosenkirkine*)
Birnbaum, G.I. *et al., J.A.C.S.*, 1974, **96**, 6165-6168 (*cryst struct*)
Abdullaev, U.A. *et al., Khim. Prir. Soedin.*, 1976, **12**, 66-71; *Chem. Nat. Compd. (Engl. Transl.)*, 1976, **12**, 55-59 (*ms*)
Suri, O.P. *et al., Phytochemistry*, 1976, **15**, 1061-1063 (*Crotaverrine, O-Acetylcrotaverrine*)
Jones, A.J. *et al., Aust. J. Chem.*, 1982, **35**, 1173-1184 (*cmr*)
Molyneux, R.J. *et al., Phytochemistry*, 1982, **21**, 439-443 (*cmr*)
IARC Monog., 1983, **31**, 231; *Suppl.* 7, 71 (*rev, tox*)
Asada, Y. *et al., Chem. Pharm. Bull.*, 1984, **32**, 475-482 (*Ligularidine, Neoligularidine*)
Mattocks, A.R. *et al., Chemistry and Toxicology of Pyrrolizidine Alkaloids*, Academic Press, 1986, (*tox, rev*)
Bohlmann, F. *et al., Phytochemistry*, 1986, **25**, 1151-1159 (*isol, 19-hydroxy, 19-acetoxy*)
Glinski, J.A. *et al., Acta Cryst. C*, 1988, **44**, 1593-1598 (*cryst struct, Anonamine, Neosenkirkine, Hydroxysenkirkine*)
Zalkow, L.H. *et al., J. Nat. Prod.*, 1988, **51**, 690-702 (*Anonamine, Hydroxyneosenkirkine*)
Asibal, C.F. *et al., J. Nat. Prod.*, 1991, **54**, 1425-1426 (*Acetylanonamine*)
Roeder, E. *et al., Phytochemistry*, 1991, **30**, 1734-1737 (*Dihydrosenkirkine*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, DMX200

Sepiapterin, 8CI S-246

2-Amino-7,8-dihydro-6-(2-hydroxy-1-oxopropyl)-4(1H)-pteridinone, 9CI. 6-Lactoyl-7,8-dihydropterin



$C_9H_{11}N_5O_3$ 237.218

(*S*)-*form*
L-form
[17094-01-8]
Eye pigment from *Drosophila melanogaster* mutant *sepia*. Yellow powder or cryst.

Deoxy: ***Deoxysepiapterin***. *Isosepiapterin*
[1797-87-1]
$C_9H_{11}N_5O_2$ 221.218
Eye pigment from *Drosophila melanogaster*, more readily obt. from the blue-green alga *Anacystis nidulans*. Yellow cryst. (EtOH aq.). pK_{a1} 1.35; pK_{a2} 10.05 (cation).

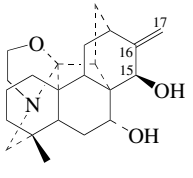
7,8-Didehydro, 2′-ketone: ***Ramiopterin***
[88848-62-8]
$C_9H_7N_5O_3$ 233.186
Present in *Drosophila* sp. Precursor of Sepiapterin, S-246 and Drosopterin, D-941.

[35101-75-8]

Forrest, H.S. *et al., J.A.C.S.*, 1954, **76**, 5656; 5658 (*isol, uv*)
Forrest, H.S. *et al., Arch. Biochem. Biophys.*, 1959, **83**, 508 (*isol*)
Nawa, S. *et al., Bull. Chem. Soc. Jpn.*, 1960, **33**, 1555 (*struct, uv*)
Schircks, B. *et al., Helv. Chim. Acta*, 1978, **61**, 2731 (*synth, uv, cd, bibl*)
Pfleiderer, W. *et al., Chem. Ber.*, 1979, **112**, 2750 (*synth, abs config*)
Hearl, W.G. *et al., CA*, 1984, **100**, 134386x (*Ramiopterin*)
Baur, R. *et al., Helv. Chim. Acta*, 1988, **71**, 531 (*synth, uv, pmr, deriv*)
Primus, J.P. *et al., Insect Biochem.*, 1994, **24**, 907 (*biosynth*)

Septatisine S-247

Septedinine
[156400-93-0]



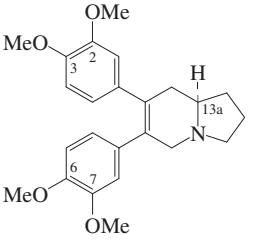
$C_{22}H_{31}NO_3$ 357.492
Alkaloid from roots of *Aconitum septentrionale* (Ranunculaceae). Mp 129-130°. $[\alpha]_D^{19}$ +30.55 (c, 0.37 in $CHCl_3$).

16β,17-Dihydro, 15-ketone: ***Septedine***
[176181-91-2]
$C_{22}H_{31}NO_3$ 357.492
Alkaloid from roots of *Aconitum septentrionale* (Ranunculaceae). Cryst. (Me_2CO). Mp 160-161°.

Joshi, B.S. *et al., Can. J. Chem.*, 1994, **72**, 100 (*isol, pmr, cmr, ms, struct*)
Usmanova, S.K. *et al., Khim. Prir. Soedin.*, 1995, **31**, 104; 1996, **32**, 77-81; *Chem. Nat. Compd. (Engl. Transl.)*, 1995, **31**, 83; 1996, **32**, 62-65 (*Septedine, Septedinine*)

Septicine S-248

6,7-Bis(3,4-dimethoxyphenyl)-1,2,3,5,8,8a-hexahydroindolizine, 9CI



(*R*)-*form*

$C_{24}H_{29}NO_4$ 395.497
Phenanthroindolizidine numbering shown.

(*R*)-*form* [42922-10-1]
Minor alkaloid from *Tylophora asthmatica* (Asclepiadaceae). Needles (Et_2O). Mp 136°. $[\alpha]_D$ +38.8 (c, 1 in MeOH). λ_{max} 238 (sh) ; 287 (log ϵ 4.2) (EtOH).

7-Demethoxy: ***Secoantofine***
[126262-27-9]
$C_{23}H_{27}NO_3$ 365.471
Alkaloid from *Cynanchum vincetoxicum*. Gum. $[\alpha]_D$ -81.9 (c, 0.4 in $CHCl_3$).

7-Demethoxy, N-*oxide(β-): Di-*O-*methylphyllostemine β-*N-*oxide.* ***Secoantofine β-*N-*oxide***
[314744-21-3]
$C_{23}H_{27}NO_4$ 381.471
Alkaloid from *Cynanchum vincetoxicum*. Gum. $[\alpha]_D^{21}$ -83.4 (c, 0.15 in $CHCl_3$). λ_{max} 260 (ϵ 7100); 280 (ϵ 300) (MeOH).

7-Demethoxy, O^3,O^6*-di-de-Me:* ***Phyllostemine***
[126262-22-4]
$C_{21}H_{23}NO_3$ 337.418
Alkaloid from the leaves, twigs, roots and fruit of *Cryptocarya phyllostemon* (Lauraceae). Pale yellow cryst. ($MeOH/CHCl_3$ or Py). Mp 205-207° (200-202°) dec. $[\alpha]_D$ -8 (c, 0.28 in EtOH).

7-Demethoxy, O^6*-de-Me:* ***6-O-Demethylsecoantofine***
$C_{22}H_{25}NO_3$ 351.444
Alkaloid from *Cynanchum vincetoxicum*. Gum. $[\alpha]_D^{25}$ -92.6 (c, 0.2 in $CHCl_3$).

(*S*)-*form* [24316-18-5]
Alkaloid from *Tylophora crebriflora* and *Ficus septica* (Asclepiadaceae, Moraceae). Cryst. (MeOH). Mp 135-136°. $[\alpha]_D^{22}$ -16.2 (c, 1 in MeOH). λ_{max} 240 (sh) (log ϵ 4.2); 288 (log ϵ 4.03) (no solvent reported).

2-Demethoxy: ***Hispidine***†
[82958-04-1]
$C_{23}H_{27}NO_3$ 365.471
Alkaloid from the leaves of *Ficus hispida* (Moraceae). Mp 124-125°.

(±)-*form* [26503-67-3]
Synthetic. Cryst. (MeOH or MeOH, aq.). Mp 135-136°.

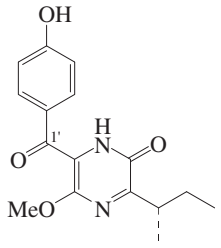
(ξ)-*form*

*13*a-*Hydroxy:* ***13*a-Hydroxysepticine***
[95066-47-0]
$C_{24}H_{29}NO_5$ 411.497
Alkaloid from the aerial parts of *Tylophora hirsuta* (Asclepiadaceae). Cryst. (C_6H_6). Mp 290-292° dec. $[\alpha]_D^{25}$ +100 (c, 0.4 in MeOH).

Russel, J.H. *et al., Naturwissenschaften*, 1963, **50**, 443-444 (*occur, struct*)
Russel, J.H. *et al., Tet. Lett.*, 1969, 4035-4036 (*synth*)
Rao, K.V. *et al., J. Pharm. Sci.*, 1970, **59**, 1608-1611 (*uv, ms, pmr, struct*)
Govindachari, T.R. *et al., Tetrahedron*, 1970, **26**, 715-719; 1973, **29**, 891-897 (*isol, synth, uv, ir, pmr, ms*)
Herbert, R.B. *et al., Chem. Comm.*, 1976, 450-451 (*synth*)
Stevens, R.V. *et al., Tet. Lett.*, 1977, 979-982 (*synth*)
Iwashita, T. *et al., Chem. Lett.*, 1980, 383-386 (*synth*)
Mangla, V.K. *et al., Indian J. Chem., Sect. B*, 1980, **19**, 748-749 (*synth, uv, ir, pmr, ms*)
Cragg, J.E. *et al., J.C.S. Perkin 1*, 1982, 2477-2485 (*synth*)
Venkatachalam, S.R. *et al., Naturwissenschaften*, 1982, **69**, 287-288 (*Hispidine*)
Iida, H. *et al., J.O.C.*, 1984, **49**, 2412-2418 (*synth, pmr, ms*)
Bhutani, K.K. *et al., Phytochemistry*, 1984, **23**, 1765-1769 (*13a-Hydroxysepticine*)
Cavé, A. *et al., Aust. J. Chem.*, 1989, **42**, 2243-2263 (*Phyllostemine*)
Yerxa, B.R. *et al., Tetrahedron*, 1994, **50**, 6173-6180 (*synth*)
Ciufolini, M.A. *et al., J.A.C.S.*, 1996, **118**, 12082-12089 (*synth*)
Comins, D.L. *et al., J.O.C.*, 1997, **62**, 7435-7438 (*synth*)
Staerk, D. *et al., J. Nat. Prod.*, 2000, **63**, 1584-1586; 2002, **65**, 1299-1302 (*Secoantofine, Secoantofine β-N-oxide*)

Septorine S-249

[67332-36-9]



Absolute Configuration

$C_{16}H_{18}N_2O_4$ 302.329
Alkaloid from the fungus *Septoria nodorum*. Respiration inhibitor. Amorph. $[\alpha]_D^{20}$ +19 (MeOH). λ_{max} 230 (ϵ 6500); 300 (ϵ 9000); 370 (ϵ 4000) (MeOH) (Derep).

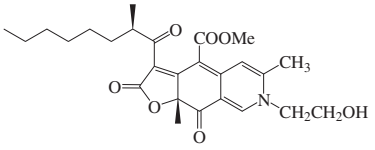
N-*Methoxy:* **N-*Methoxyseptorine***
[85657-19-8]
$C_{17}H_{20}N_2O_5$ 332.355
Alkaloid from *Septoria nodorum*. Cryst. (hexane). Mp 167°. $[\alpha]_D$ +30 ($CHCl_3$). λ_{max} 230 (ϵ 6500); 300 (ϵ 9000); 370 (ϵ 4000) (MeOH) (Derep).

N-*Methoxy, 1′-alcohol:* **N-*Methoxyseptorinol***
[146428-58-2]
$C_{17}H_{22}N_2O_5$ 334.371
Metab. of *Septoria nodorum*. Phytotoxin. Yellow amorph. powder. $[\alpha]_D$ +0.5 ($CHCl_3$). λ_{max} 223 (ϵ 7980); 282 (ϵ 2300); 360 (ϵ 4700) (MeOH) (Berdy).

Devys, M. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1978, **286**, 457-458 (*ms, uv, pmr, struct*)
Devys, M. *et al., Tet. Lett.*, 1982, **23**, 5409-5412 (*uv, pmr, cmr, ms, struct*)
Ohta, A. *et al., Heterocycles*, 1991, **32**, 923-936 (*synth*)
Devys, M. *et al., Phytochemistry*, 1992, **31**, 4393-4394 (*N-Methoxyseptorinol*)
Devys, M. *et al., Org. Prep. Proced. Int.*, 1993, **25**, 696-698 (*synth*)
Barbier, M. *et al., Phytochemistry*, 1994, **35**, 955-957 (*abs config, N-Methoxyseptorinol*)

Sequoiamonascin D S-250

[561305-73-5]

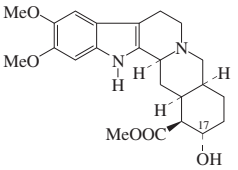


$C_{26}H_{33}NO_7$ 471.549
Azaphilone. Similar to Monascorubramine, M-686. Prod. by *Aspergillus parasiticus* isol. from *Sequoia sempervirens*. Red oil. $[\alpha]_D^{25}$ +1.7 (c, 0.09 in MeOH). λ_{max} 202 (log ϵ 3.94); 260 (log ϵ 3.74); 402 (log ϵ 3.5); 481 (log ϵ 3.54) (MeOH).

Stierle, D.B. *et al., J.O.C.*, 2003, **68**, 4966-4969 (*isol, pmr, cmr, ms*)

Seredine S-251

Methyl 17-hydroxy-10,11-dimethoxyyohimban-16-carboxylate, 9CI. 10,11-Dimethoxy-α-yohimbine
[522-77-0]



Absolute Configuration

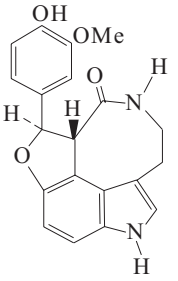
$C_{23}H_{30}N_2O_5$ 414.5
Alkaloid from roots of a variety of *Rauwolfia vomitoria*. Also detected in *Rauwolfia serpentina* (Apocynaceae). Small prisms (Me_2CO). Mp 291° Mp 308° (sealed tube). $[\alpha]_D$ -1 (c, 0.43 in $CHCl_3$).

17-Epimer: ***10,11-Dimethoxy-17-epi-α-yohimbine***
[84667-06-1]
$C_{23}H_{30}N_2O_5$ 414.5
Alkaloid from leaves of *Neisosperma glomerata* (Apocynaceae). Cryst. (MeOH). Mp 259°. $[\alpha]_D^{20}$ -50 (c, 0.1 in EtOH).

Poisson, J. *et al., Bull. Soc. Chim. Fr.*, 1958, 1195-1200 (*isol, uv, ir, ord, struct*)
Kaiser, F. *et al., Chem. Ber.*, 1959, **92**, 278-287 (*occur*)
Seguin, E. *et al., J. Nat. Prod.*, 1982, **45**, 738-744 (*epimer*)

Serotobenine S-252

Moschamindole
[99615-94-8]



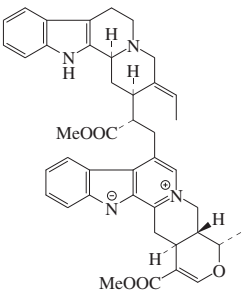
$C_{20}H_{18}N_2O_4$ 350.373
Isol. from safflower meal (*Carthamus tinctorius*), *Centaurea moschata* and *Rhaphidophora decursiva*. Cryst. (MeOH). Mp 282-284.5° dec.

Ac:
Needles. Mp 211-214°. $[\alpha]_D^{25}$ 0 (c, 0.15 in Me_2CO).

Sato, H. *et al., Agric. Biol. Chem.*, 1985, **49**, 2969 (*isol, ir, pmr, cmr, ms, cryst struct*)
Sarker, S.D. *et al., Nat. Prod. Lett.*, 1997, **9**, 189-199 (*Moschamindole*)
Zhang, H. *et al., Pharm. Biol.*, 2002, **40**, 221-224 (*isol, pmr, cmr*)
Koizumi, Y. *et al., J.A.C.S.*, 2008, **130**, 16854-16855 (*synth*)

Serpentinine S-253

[36519-42-3]



Absolute Configuration

$C_{42}H_{44}N_4O_5$ 684.833

Alkaloid from several *Rauwolfia* spp. (Apocynaceae). Mp 265-270° dec. pK_{a1} 6; pK_{a2} 10.6 (66% DMF aq.).

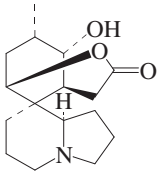
Hydrochloride (1:2): Mp 250°. $[\alpha]_D^{25}$ +189 (c, 0.45 in H_2O).

Dipicrate: Mp 271-273°.

Schlitter, E. *et al., Helv. Chim. Acta*, 1954, **37**, 1912 (*uv, ir*)
Kaneko, H. *et al., Yakugaku Zasshi*, 1960, **80**, 1357; *CA*, **55**, 6511
Gorman, A.A. *et al., Alkaloids (London)*, 1971, **1**, 287 (*uv, ms, pmr*)
Irie, H. *et al., Chem. Comm.*, 1972, 871 (*cryst struct*)

Serratezomine A S-254

[301679-55-0]



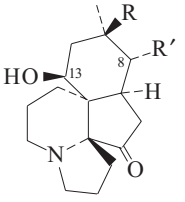
Absolute Configuration

$C_{16}H_{25}NO_3$ 279.378
Alkaloid from *Lycopodium serratum* var. *serratum*. Amorph. solid. $[\alpha]_D$ +13 (c, 0.5 in MeOH).

Morita, H. *et al., J.O.C.*, 2000, **65**, 6241-6245; 2002, **67**, 5378-5381 (*isol, synth, abs config*)

Serratine S-255

[15252-93-4]



R = OH, R′= H

$C_{16}H_{25}NO_3$ 279.378
Alkaloid from *Lycopodium serratum* var. *serratum* form. *serratum* (*Lycopodium serratum* var. *thunbergii*). Pillars (Me_2CO or EtOAc). Mp 253°. $[\alpha]_D^{22}$ -15 (c, 1.02 in EtOH).

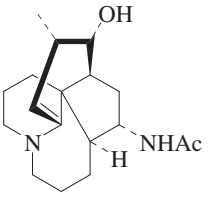
Di-Ac:
Cryst. (hexane). Mp 212-214°.

8α-Hydroxy: ***Serratanidine***
[19637-58-2]
$C_{16}H_{25}NO_4$ 295.378
Alkaloid from *Lycopodium serratum* var. *serratum* form. *serratum*. Mp 210-211°. $[\alpha]_D^{12.5}$ -52 (c, 1.01 in EtOH).

Inubushi, Y. *et al., Chem. Pharm. Bull.*, 1967, **15**, 250-252; 1968, **16**, 2463-2470 (*ir, pmr, struct*)
Inubushi, Y. *et al., Chem. Pharm. Bull.*, 1968, **16**, 561-563 (*Serratanidine*)
Nishio, K. *et al., Tet. Lett.*, 1969, **10**, 861-864 (*config*)
Katakawa, K. *et al., J. Nat. Prod.*, 2007, **70**, 1024-1028 (*isol, pmr, cmr, ms, cryst struct*)

Serratinidine S-256

[7689-04-5]



$C_{18}H_{28}N_2O_2$ 304.431
Alkaloid from *Lycopodium serratum* (Lycopodiaceae). Mp 232-234°. $[\alpha]_D^{10}$ +224.2 (c, 1.08 in EtOH).

O-*Ac:*
Cryst. + $2H_2O$. Mp 105-108°. $[\alpha]_D^{16}$ +172 (c, 1.19 in EtOH).

Deoxy: ***8-Deoxyserratinidine***
[82841-99-4]
$C_{18}H_{28}N_2O$ 288.432
Alkaloid from *Lycopodium phlegmaria* (Lycopodiaceae). Mp 198-199°.

Yasui, B. *et al., Tet. Lett.*, 1966, 3967 (*ir, pmr, struct*)
Ishii, H. *et al., Chem. Pharm. Bull.*, 1970, **18**, 1880 (*struct*)
Inubushi, Y. *et al., Yakugaku Zasshi*, 1982, **102**, 434; *CA*, **97**, 107030q (*8-Deoxyserratinidine*)
Harayama, T. *et al., Heterocycles*, 1984, **22**, 1327 (*config*)

Serratinine S-257

[5545-99-3]
As Serratine, S-255 with
R = H, R′ = OH
$C_{16}H_{25}NO_3$ 279.378
Alkaloid from *Lycopodium serratum* (Lycopodiaceae). Prisms (Me_2CO). Mp 244-245°. $[\alpha]_D^8$ -27.8 (c, 1.44 in EtOH).

N-*Oxide:* ***Serratezomine B***. *Serratinine* N-*oxide*
[301679-57-2]
$C_{16}H_{25}NO_4$ 295.378
Alkaloid from *Lycopodium serratum* var. *serratum*. Amorph. solid. $[\alpha]_D$ +7 (c, 1.3 in MeOH).

Di-Ac: Mp 157-158°.

O^8*-(4-Methoxyphenylacetyl):* ***Huperserratinine***
[158182-11-7]
$C_{25}H_{33}NO_5$ 427.539
Alkaloid from the whole plant of *Huperzia serrata* (Lycopodiaceae). Mp 217-218°. $[\alpha]_D$ -3.5 (c, 0.2 in EtOH).

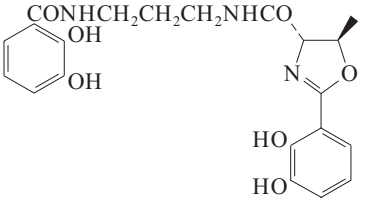
8-Deoxy: ***8-Deoxyserratinine***
[18331-31-2]
$C_{16}H_{25}NO_2$ 263.379
Alkaloid from *Lycopodium serratum* (Lycopodiaceae). Fine columns (EtOAc or Me_2CO). Mp 223-224°. $[\alpha]_D^{17}$ -15.6 (c, 1.00 in EtOH).

8-Deoxy, 13-ketone: ***8-Deoxy-13-dehydroserratinine***
[14478-54-7]
$C_{16}H_{23}NO_2$ 261.363
Alkaloid from *Lycopodium phlegmaria* (Lycopodiaceae). Fine needles (hexane). Mp 110-112°.

Inubushi, Y. *et al., Tet. Lett.*, 1966, **6**, 1537-1549 (*ir, struct*)
Inubushi, Y. *et al., Yakugaku Zasshi*, 1967, **87**, 1394-1404; *CA*, **68**, 47027h (*Serratinine, 8-Deoxyserratinine, isol*)
Inubushi, Y. *et al., Tetrahedron*, 1968, **24**, 3541-3556 (*ms*)
Ishii, H. *et al., Chem. Pharm. Bull.*, 1970, **18**, 1880-1885 (*synth, 8-Deoxyserratinine, 8-Deoxy-13-dehydroserratinine*)
Harayama, T. *et al., Chem. Pharm. Bull.*, 1975, **23**, 1511-1515; 1980, **28**, 2394-2402 (*Serratinine, 8-Deoxyserratinine, synth*)
Inubushi, Y. *et al., Yakugaku Zasshi*, 1982, **102**, 434-439; *CA*, **97**, 107030q (*8-Deoxy-13-dehydroserratinine*)
Zhou, B.-N. *et al., Phytochemistry*, 1993, **34**, 1425-1428 (*pmr, cmr*)
Zhu, D.-Y. *et al., Phytochemistry*, 1994, **36**, 1069-1072 (*Huperserratinine*)
Morita, H. *et al., J.O.C.*, 2000, **65**, 6241-6245 (*Serratezomine B*)

Serratiochelin S-258

[155070-21-6]

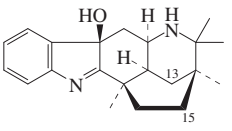


$C_{21}H_{23}N_3O_7$ 429.429
Isol. from *Serratia marcescens*. Siderophore. λ_{max} 254 (ϵ 2400); 316 (ϵ 20000) (MeOH) (Berdy).

Ehlert, G. *et al., Z. Naturforsch., C*, 1994, **49**, 11 (*isol, synth, pmr, cmr*)

Serratoline S-259

[74260-86-9]



Absolute Configuration

$C_{20}H_{26}N_2O$ 310.438
Minor alkaloid from *Aristotelia serrata* (Elaeocarpaceae). Rhombs (MeOH). Mp 157-160° Mp 178° dec. (synthetic). $[\alpha]_D^{19}$ -68.25 ($CHCl_3$).

13-Oxo: ***Triabunnine***
[90930-66-8]
$C_{20}H_{24}N_2O_2$ 324.422
Alkaloid from *Aristotelia peduncularis* (Elaeocarpaceae). Amorph. λ_{max} 219 (sh) (log ϵ 4.31); 223 (log ϵ 4.35); 266 (log ϵ 3.74) (EtOH).

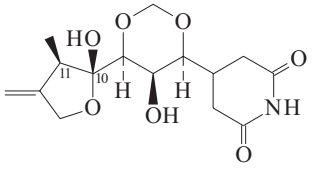
15α-Hydroxy: ***Aristotelinine***
[66833-16-7]
$C_{20}H_{26}N_2O_2$ 326.438
Trace alkaloid from *Aristotelia chilensis* (Elaeocarpaceae). Mp 246-250°. λ_{max} 220 (ϵ 18000); 263 (ϵ 6000)

(MeOH).

Gopalakrishna, E.M. *et al., Acta Cryst. B*, 1978, **34**, 3778-3780 (*cryst struct, Aristotelinine*)
Bittner, M. *et al., Chem. Comm.*, 1978, 79-80 (*Aristotelinine, uv, struct*)
Bick, I.R.C. *et al., Tet. Lett.*, 1980, **21**, 545-546 (*uv, pmr*)
Bick, I.R.C. *et al., Heterocycles*, 1983, **20**, 667-669 (*pmr, cmr, struct*)
Kyburz, R. *et al., Helv. Chim. Acta*, 1984, **67**, 804-814 (*Triabunnine*)
Stoermer, D. *et al., J.O.C.*, 1993, **58**, 564-568 (*synth*)

Sesbanimide A S-260

Sesbanimide



$C_{15}H_{21}NO_7$ 327.333

(+)-*form* [85719-78-4]
Alkaloid from the seeds of *Sesbania drummondii* and *Sesbania punicea* (Fabaceae). Prod. by a marine *Agrobacterium* strain PH-103. Shows notable cytotoxicity against KB cells *in vitro* and potent inhibitory activity against P338 murine leukaemia *in vivo*. Cryst. (Et_2O/CH_2Cl_2 or MeOH/CH_2Cl_2). Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. Mp 158-159° (155-156°). $[\alpha]_D^{20}$ +54.7 (c, 0.17 in $CHCl_3$). $[\alpha]_D^{20}$ -3.8 (c, 0.28 in MeOH) (-5.6).

(-)-*form*
Synthetic. Solid (CH_2Cl_2/Et_2O). Mp 154.5-155.5°. $[\alpha]_D$ +6 (c, 0.27 in MeOH). $[\alpha]_D$ -56.9 (c, 0.21 in $CHCl_3$).

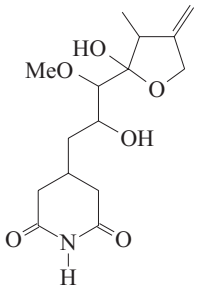
11-Epimer: ***Sesbanimide B***
$C_{15}H_{21}NO_7$ 327.333
Alkaloid from seeds of *Sesbania drummondii* (Fabaceae). Glass. Sol. MeOH, $CHCl_3$. $[\alpha]_D^{20}$ -22.4 (c, 0.17 in $CHCl_3$) (synthetic). Isol. as a mixt. of 2 components, B1 and B2, which are C-10 epimers (assignments of configs. not yet made).

[92282-10-5 , 95839-03-5]

Powell, R.G. *et al., J.A.C.S.*, 1983, **105**, 3739-3741 (*isol, uv, ir, pmr, ms, cryst struct*)
Gorst-Allman, C.P. *et al., J.C.S. Perkin 1*, 1984, 1311-1314 (*isol, ir, pmr, cmr*)
Powell, R.G. *et al., Phytochemistry*, 1984, **23**, 2789-2796 (*Sesbanimide B, isol, uv, ir, pmr, cmr, ms, struct*)
U.S. Pat., 1985, 4 532 327; *CA*, **103**, 166147 (*activity*)
Schlessinger, R.H. *et al., J.O.C.*, 1986, **51**, 2621-2623 (*synth*)
Wanner, M.J. *et al., Tetrahedron*, 1987, **43**, 2549-2556 (*synth, ir, pmr*)
Matsuda, F. *et al., Bull. Chem. Soc. Jpn.*, 1988, **61**, 2123 (*synth, props*)
Tomioka, K. *et al., Tet. Lett.*, 1988, **29**, 3095-3096 (*synth*)
Matsuda, F. *et al., Tetrahedron*, 1988, **44**, 4721-4736 (*synth, ir, pmr, abs config*)
Vloon, W.J. *et al., Rec. Trav. Chim. (J. R. Neth. Chem. Soc.)*, 1991, **110**, 414-419 (*synth*)
Grieco, P.A. *et al., Chem. Comm.*, 1992, 368-370 (*synth*)
Cirillo, P.F. *et al., J.O.C.*, 1994, **59**, 3055-3063 (*synth*)
Honda, T. *et al., Tetrahedron: Asymmetry*, 1994, **5**, 247-254 (*synth*)
Acebal, C. *et al., J. Antibiot.*, 1998, **51**, 64-67 (*marine isol, pmr, cmr*)

Sesbanimide C S-261

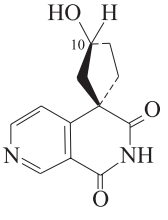
[95599-43-2]



$C_{15}H_{23}NO_6$ 313.35
Alkaloid from seeds of *Sesbania drummondii* (Fabaceae). Prod. by a marine *Agrobacterium* strain PH-A034C. Powder. Sol. MeOH. $[\alpha]_D^{25}$ +9.52 (c, 0.21 in $CHCl_3$).

Powell, R.G. *et al., Phytochemistry*, 1984, **23**, 2789-2796 (*isol, pmr, ms, struct*)
Acebal, C. *et al., J. Antibiot.*, 1998, **51**, 64-67 (*isol, pmr, cmr*)

Sesbanine S-262



Absolute configuration

$C_{12}H_{12}N_2O_3$ 232.238
Shows weak antineoplastic, cytotoxic activity. Log P -1.77 (uncertain value) (calc).

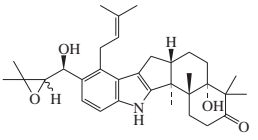
(+)-*form* [70521-94-7]
Alkaloid from the seeds of *Sesbania drummondii* (Fabaceae). Cryst. (MeOH). Mp 240-243°. $[\alpha]_D^{23}$ +14.6 (c, 0.56 in MeOH) (natural). $[\alpha]_D$ +43.1 (c, 0.52 in MeOH) (synthetic). Originally reported to exhibit potent antineoplastic activity. However, subsequent studies revealed that Sesbanine is only marginally cytotoxic and that the major antineoplastic agent isolated from the plant is Sesbanimide A, S-260.

(±)-*form*
Synthetic. Cryst. (MeOH/EtOAc). Mp 241-243° (238-240°).

10-Epimer: Synthetic. Mp 240-242°.

Powell, R.G. *et al., J.A.C.S.*, 1979, **101**, 2784 (*pmr, cmr, ir, uv, cryst struct*)
Bottaro, J.C. *et al., J.O.C.*, 1980, **45**, 1176 (*synth*)
Kende, A.S. *et al., Tet. Lett.*, 1980, **21**, 715 (*synth, ir, pmr, cmr, ms*)
Wanner, M.J. *et al., Tetrahedron*, 1982, **38**, 2741 (*synth, ir, pmr*)
Iwao, M. *et al., Tet. Lett.*, 1983, **24**, 2649 (*synth, ir, pmr*)
Wada, M. *et al., Tet. Lett.*, 1985, **26**, 3267 (*synth, ir, pmr*)
Tomioka, K. *et al., Tetrahedron*, 1988, **44**, 4351 (*synth, ir, pmr, cmr, abs config*)

Sespendole S-263



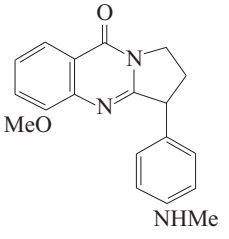
Absolute Configuration

$C_{33}H_{45}NO_4$ 519.723
Prod. by *Pseudobotrytis terrestris* FKA-25. Inhibitor of lipid droplet synthesis in macrophages. Amorph. solid. $[\alpha]_D^{23}$ -18 (c, 0.1 in MeOH). λ_{max} 239 (ϵ 37900); 288 (ϵ 8800) (MeOH).

Uchida, R. *et al., J. Antibiot.*, 2006, **59**, 93-97; 298-302; 338-344 (*isol, pmr, cmr, biosynth, activity*)

Sessiflorine S-264

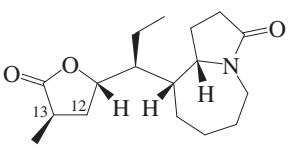
2,3-Dihydro-5-methoxy-3-[4-(methylamino)phenyl]pyrrolo[2,1-b]quinazolin-9(1H)-one, 9CI
[35226-54-1]



$C_{19}H_{19}N_3O_2$ 321.378
Minor alkaloid from the leaves and branches of *Anisotes sessiliflorus* (Acanthaceae). Cryst. (MeOH). Mp 195-197°. Opt. inactive.

Arndt, R.R. *et al., Tetrahedron*, 1967, **23**, 3521 (*isol, uv, ir, pmr, ms*)
Onaka, T. *et al., Tet. Lett.*, 1971, 4387 (*struct, synth, ir, pmr, ms*)

Sessilifoliamide B S-265



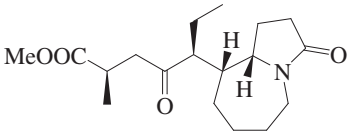
$C_{17}H_{27}NO_3$ 293.405
Alkaloid from the roots of *Stemona*

sessilifolia. Oil. $[\alpha]_D^{24}$ -43 (c, 0.1 in $CHCl_3$).

12,13-Didehydro: ***Sessilifoliamide C***
$C_{17}H_{25}NO_3$ 291.389
Alkaloid from the roots of *Stemona sessilifolia*. Oil. $[\alpha]_D^{26}$ -140 (c, 0.17 in $CHCl_3$).

Kakuta, D. *et al., Tetrahedron*, 2003, **59**, 7779-7786 (*isol, pmr, cmr*)

Sessilifoliamide D S-266

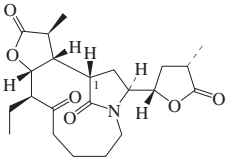


$C_{18}H_{29}NO_4$ 323.431
Alkaloid from the roots of *Stemona sessilifolia*. Oil. $[\alpha]_D^{26}$ -94 (c, 0.16 in $CHCl_3$).

Kakuta, D. *et al., Tetrahedron*, 2003, **59**, 7779-7786 (*isol, pmr, cmr*)

Sessilifoliamide E S-267

[922500-42-3]



Relative Configuration

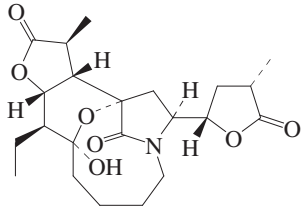
$C_{22}H_{31}NO_6$ 405.49
Alkaloid from the roots of *Stemona sessilifolia*. Prisms. Mp 197-200°. $[\alpha]_D$ -18 (c, 0.1 in $CHCl_3$).

1-Hydroxy: ***Sessilifoliamide F***
[922500-43-4]
$C_{22}H_{31}NO_7$ 421.489
Alkaloid from the roots of *Stemona sessilifolia*. Prisms. Mp 200-202°. $[\alpha]_D$ -42 (c, 0.8 in $CHCl_3$).

Hitotsuyanagi, Y. *et al., Tetrahedron*, 2007, **63**, 1008-1013 (*isol, pmr, cmr, cryst struct*)

Sessilifoliamide G S-268

[922500-44-5]

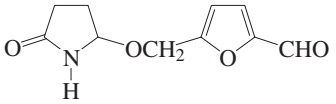


$C_{22}H_{31}NO_7$ 421.489
Alkaloid from the roots of *Stemona sessilifolia*. Prisms. Mp 213-215°. $[\alpha]_D$ -85 (c, 0.06 in MeOH).

Hitotsuyanagi, Y. *et al., Tetrahedron*, 2007, **63**, 1008-1013 (*isol, pmr, cmr, cryst struct*)

Sessiline S-269

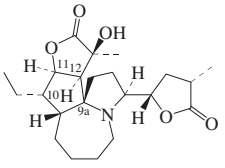
5-[(5-Oxo-2-pyrrolidinyloxy)methyl]-2-furancarboxaldehyde



$C_{10}H_{11}NO_4$ 209.201
Alkaloid from the fruit of *Acanthopanax sessiliflorus*. Mp 171-172°. Racemate. λ_{max} 223 (log ϵ 3.58); 278 (log ϵ 4.17) (MeOH).

Lee, S. *et al., Planta Med.*, 2002, **68**, 936-939 (*isol, pmr, cmr, ms*)

Sessilistemonamine A S-270



Relative Configuration

$C_{22}H_{33}NO_5$ 391.506
Alkaloid from the roots of *Stemona sessilifolia*. Prisms (EtOAc/petrol). Mp 193-194°. $[\alpha]_D^{20}$ +117 (c, 0.07 in MeOH).

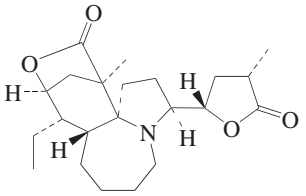
10-Epimer: ***Sessilistemonamine C***
$C_{22}H_{33}NO_5$ 391.506
Alkaloid from the roots of *Stemona sessilifolia*. Prisms (EtOAc/petrol). Mp 221-222°. $[\alpha]_D^{20}$ -157 (c, 0.05 in MeOH).

9a,10,11,12-Tetraepimer: ***Sessilistemonamine B***
$C_{22}H_{33}NO_5$ 391.506
Alkaloid from the roots of *Stemona sessilifolia*. Plates (EtOAc/petrol). Mp 252-254°. $[\alpha]_D^{20}$ -29 (c, 0.05 in MeOH).

Wang, P. *et al., Chem. Biodiversity*, 2007, **4**, 523-530 (*isol, pmr, cmr, ms*)

Sessilistemonamine D S-271

[941271-34-7]



$C_{22}H_{33}NO_4$ 375.507
Alkaloid from the roots of *Stemona sessilifolia*. Prisms. Dec. at 208°.

Wang, P. *et al., Chin. Chem. Lett.*, 2007, **18**, 152-154 (*isol, pmr, cmr*)

Sessilistemonine S-272

$C_{25}H_{35}NO_7$ 461.554

Struct. unknown. Alkaloid from *Stemona sessilifolia* (Stemonaceae). Mp 172°. $[\alpha]_D$ +112.5 (c, 1 in MeOH).

Perchlorate:
Needles. Mp 201-205°.

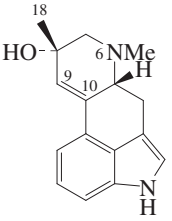
Picrate:
Yellow needles. Mp 163-165°.

Picrolonate:
Yellow needles. Mp 236°.

Methiodide:
Needles. Mp 231-232°.

Chu, J.-H. *et al., Chem. Zentralbl.*, 1960, **131**, 1858 (*isol*)

Setoclavine S-273



(+)-*form*

$C_{16}H_{18}N_2O$ 254.331

(+)-*form* [519-12-0]
Alkaloid from ergot found on *Pennisetum typhoideum* (pearl millet) and *Elymus mollis*. Also occurs in *Argyreia cuneata, Argyreia nervosa* and *Rivea corymbosa* (Convolvulaceae). Prisms (MeOH or Me_2CO). Mp 229-234° dec. $[\alpha]_D^{20}$ +174 (c, 1.1 in Py). $[\alpha]_D^{20}$ +165 (c, 0.3 in EtOH). λ_{max} 242 (ϵ 26300); 317 (ϵ 12600) (EtOH).

Hydrochloride:
Needles (H_2O or EtOH). Mp 300° (darkens above 200°).

Nitrate:
Needles (H_2O). Mp 300° (darkens above 125°). $[\alpha]_D^{20}$ +190 (c, 0.5 in 50% EtOH aq.).

N-*De-Me:* ***6-Norsetoclavine***
[19641-11-3]
$C_{15}H_{16}N_2O$ 240.304
Isol. from the culture filtrates of *Pennisetum* ergot strains 47A and 231. Mp 163-165°. Prob. a secondary prod. arising in the fungus by demethylation of Setoclavine. λ_{max} 225 (log ϵ 4.28); 241 (log ϵ 4.23); 314 (log ϵ 3.9) (EtOH).

18-Hydroxy: ***Penniclavine***
[519-13-1]
$C_{16}H_{18}N_2O_2$ 270.33
Alkaloid from ergot (and several other *Claviceps* spp.), *Ipomoea muelleri, Argyreia* spp. and several other spp. (Convolvulaceae). Mp 222-225° dec. $[\alpha]_D^{20}$ +151 (c, 0.5 in Py). λ_{max} 242 (ϵ 26300); 317 (ϵ 12600) (EtOH) (Derep).

8-Epimer: ***Isosetoclavine***
[519-11-9]
$C_{16}H_{18}N_2O$ 254.331
Alkaloid from *Claviceps purpurea, Argyreia nervosa, Argyreia cuneata, Rivea corymbosa* and *Ipomoea muelleri* (Convolvulaceae). Cryst. (MeOH). Mp 234-237° dec. $[\alpha]_D^{20}$ +107 (c, 0.5 in Py). $[\alpha]_D^{20}$ +129 (c, 0.4 in EtOH).

8-Epimer, picrate:
Orange-yellow needles (MeOH). Mp 150-155°.

8-Epimer, 9,10α-dihydro: ***Dihydroisosetoclavine***

[52146-68-6]
$C_{16}H_{20}N_2O$ 256.347
Stereochem. revised in 2006 by Moldvai *et al*. Formerly known as Dihydrosetoclavine. Prod. by *Claviceps paspali*. Cryst. (MeOH or Me_2CO). Mp 276-278° dec. $[\alpha]_D^{20}$ -51 (c, 0.2 in Py). λ_{max} 223 (log ϵ 4.52); 281 (log ϵ 3.83); 292 (log ϵ 3.74) (MeOH).

8-Epimer, 18-hydroxy: ***Isopenniclavine***
[478-92-2]
$C_{16}H_{18}N_2O_2$ 270.33
Alkaloid from ergot *Claviceps purpurea* and from the seeds of *Ipomoea muelleri* and *Stictocardia campanulata* (Convolvulaceae). Cryst. (H_2O). Mp 163-165° dec. $[\alpha]_D^{20}$ +146 (c, 0.7 in Py). $[\alpha]_D^{20}$ +140 (c, 0.9 in EtOH). λ_{max} 242 (ϵ 26300); 317 (ϵ 12600) (EtOH) (Derep).

(±)-*form* [86194-81-2]
Synthetic. Mp 206°.

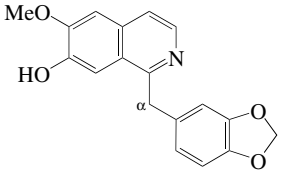
9,10α-Dihydro:
Synthetic. Mp 252-256°.

8-Epimer: [34964-90-4]
Synthetic. Mp 203-205°.

Stoll, A. *et al., Helv. Chim. Acta*, 1954, **37**, 1815 (*Penniclavine, isol, uv*)
Hofmann, A. *et al., Helv. Chim. Acta*, 1957, **40**, 1358-1373 (*Isosetoclavine, Penniclavine, Isopenniclavine, isol, uv, ir, struct*)
Ramstad, E. *et al., J. Nat. Prod.*, 1967, **30**, 441-444 (*6-Norsetoclavine*)
Mrtek, R.G. *et al., Phytochemistry*, 1968, **7**, 1535-1541 (*pmr*)
Kornfeld, E.C. *et al., Chem. Ind. (London)*, 1971, 1233-1234 (*Isosetoclavine, synth*)
Chao, J.M. *et al., J. Pharm. Sci.*, 1973, **62**, 588-591 (*Isosetoclavine, Penniclavine, occur*)
Chao, J.-M. *et al., Phytochemistry*, 1973, **12**, 2435-2440 (*Isosetoclavine, occur*)
Tscherter, H. *et al., Helv. Chim. Acta*, 1974, **57**, 113-121 (*Dihydrosetoclavine*)
Der Marderosian, A *et al., Planta Med.*, 1974, **25**, 6-16 (*Penniclavine, Isopenniclavine, occur*)
Bach, N.J. *et al., Tet. Lett.*, 1974, 3225-3228 (*Penniclavine, synth*)
Bernardi, L. *et al., Tetrahedron*, 1974, **30**, 3447-3450 (*Isosetoclavine, synth*)
Wurst, M. *et al., J. Chromatogr.*, 1978, **150**, 477-483 (*Isosetoclavine, hplc*)
Lee, T.M. *et al., Planta Med.*, 1979, **35**, 247-252 (*Penniclavine, occur*)
Natsume, M. *et al., Heterocycles*, 1981, **16**, 375-379 (*Dihydrosetoclavine*)
Rebek, J. *et al., J.A.C.S.*, 1984, **106**, 1813-1819 (*synth, ir, pmr, ms*)
Liras, S. *et al., J.A.C.S.*, 2001, **123**, 5918-5924 (*synth*)
Moldvai, I. *et al., Heterocycles*, 2006, **67**, 291-298 (*synth, pmr, cmr*)

Sevanine S-274

1-(1,3-Benzodioxol-5-ylmethyl)-6-methoxy-7-isoquinolinol, 9CI. 7-Hydroxy-6-methoxy-1-(3,4-methylenedioxybenzyl)isoquinoline
[54293-58-2]



$C_{18}H_{15}NO_4$ 309.321
Alkaloid from *Papaver macrostomum* (Papaveraceae). Mp 218°.

O-*β*-D-*Glucopyranoside:* ***Glycomarine***. *Glicomarine*
[77396-64-6]
$C_{24}H_{25}NO_9$ 471.463
Alkaloid from *Papaver arenarium* (Papaveraceae). Mp 205-206°. $[\alpha]_D$ -51 ($CHCl_3$/MeOH).

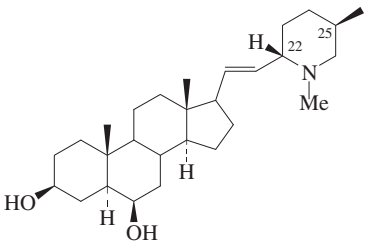
Me ether: Mp 106-108°.

α-Methoxy, Me ether: ***Setigeridine***
[180386-77-0]
$C_{20}H_{19}NO_5$ 353.374
Minor alkaloid from *Papaver setigerum*.

Mnatsakanyan, V.A. *et al., Tet. Lett.*, 1974, 851 (*ms, uv, pmr, struct*)
Simanek, V. *et al., Heterocycles*, 1976, **4**, 1263 (*synth*)
Israilov, I.A. *et al., Khim. Prir. Soedin.*, 1980, **16**, 852 (*Glycomarine*)
Slavík, J. *et al., Coll. Czech. Chem. Comm.*, 1996, **61**, 1047-1052 (*Setigeridine*)

Sevcoridinine S-275

21-(1,5-Dimethyl-2-piperidinyl)pregn-20-ene-3,6-diol, 9CI
[60269-68-3]



$C_{28}H_{47}NO_2$ 429.685
Revised structs. Originally assigned with azepine side-chains. Alkaloid from the aerial parts of *Korolkowia sewerzowii*. Cryst. (Me_2CO). Mp 241-243°. $[\alpha]_D$ -43.2 (c, 0.11 in EtOH).

3-O-β-D-Glucopyranoside: ***Sevcorine***
[19625-06-0]
$C_{34}H_{57}NO_7$ 591.827
Alkaloid from *Korolkowia sewertzowii*. Mp 236-238°. $[\alpha]_D$ -41.1 (c, 1.01 in MeOH).

6-Deoxy, 5,6-didehydro: Sevcoridine
$C_{28}H_{45}NO$ 411.67
Aglycone obt. by hydrol. of Sevcorine. Cryst. (Me_2CO). Mp 179-180°. $[\alpha]_D$ -78 (c, 0.846 in MeOH).

22,25-Diepimer: ***Edpetilidinine***
[27509-73-5]
$C_{28}H_{47}NO_2$ 429.685
Alkaloid from the epigeal parts of *Petilium eduardii*. Cryst. (MeOH). Mp 269-271°. $[\alpha]_D$ +42.48 (c, 0.306 in EtOH).

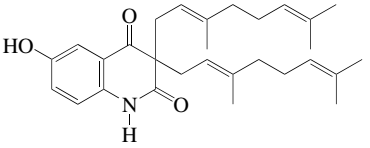
22,25-Diepimer, hydrochloride: Mp 283° dec.

22,25-Diepimer, 3-O-β-D-xylopyranoside: ***Edpetilinine***
[28440-32-6]
$C_{33}H_{55}NO_6$ 561.801
Alkaloid from aerial parts of *Petilium eduardii* (Liliaceae). Mp 262-264°. $[\alpha]_D^{26}$ -10.86 (Py).

Shakirov, R. *et al., Khim. Prir. Soedin.*, 1965, **1**, 384-392; *Chem. Nat. Compd. (Engl. Transl.)*, 1965, **1**, 302-307 (*Edpetilidinine, isol*)
Nuriddinov, R.N. *et al., Khim. Prir. Soedin.*, 1969, **5**, 605-606; *Chem. Nat. Compd. (Engl. Transl.)*, 1969, **5**, 527 (*Edpetilinine*)
Samikov, S.M. *et al., Khim. Prir. Soedin.*, 1976, **13**, 269-270; *Chem. Nat. Compd. (Engl. Transl.)*, 1976, **13**, 244-245 (*Sevcorine*)
Abdullaeva, D.U. *et al., Khim. Prir. Soedin.*, 1978, **14**, 817; *Chem. Nat. Compd. (Engl. Transl.)*, 1978, **14**, 702-703 (*Sevcoridinine, Sevcorine*)
Nasirov, S.M. *et al., Khim. Prir. Soedin.*, 1987, **23**, 864-869; *Chem. Nat. Compd. (Engl. Transl.)*, 1988, **23**, 721-723 (*Edpetilidinine, Sevcoridinine, cryst struct*)

Severibuxine S-276

6-Hydroxy-3,3-bis(3,7-dimethyl-2,6-octadienyl)-2,4(1H,3H)-quinolinedione
[219998-24-0]

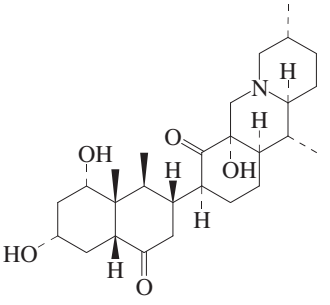


$C_{29}H_{39}NO_3$ 449.632
Alkaloid from the root bark of *Severinia buxifolia*. Yellowish needles (hexane). Mp 113-115°. λ_{max} 209 ; 242 ; 265 ; 382 (MeOH).

Wu, T.-S. *et al., Phytochemistry*, 1998, **49**, 1467-1470 (*isol, uv, ir, pmr, cmr*)

Severidine S-277

1,3,13-Trihydroxy-11,12-secocevane-6,12-dione, 9CI. Seweridine
[80248-74-4]



$C_{27}H_{43}NO_5$ 461.64
A *C-seco*-cevane alkaloid. Alkaloid from *Korolkowia sewerzowii (Fritillaria severzovii)* (Liliaceae). Cryst. (Me_2CO). Mp 200-202°. $[\alpha]_D$ +97.7 (c, 1.504 in EtOH).

3-Ac: ***Severidinine***. *Seweridinine*
[88755-00-4]
[88823-94-3]
$C_{29}H_{45}NO_6$ 503.678

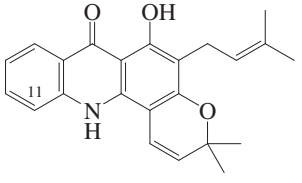
Alkaloid from *Korolkowia sewerzowi*. Cryst. (Me_2CO/petrol). Mp 145-147°. $[\alpha]_D$ -50.2 (c, 0.78 in $CHCl_3$).

Nasirov, S.M. *et al., Khim. Prir. Soedin.*, 1981, **17**, 342-349; *Chem. Nat. Compd. (Engl. Transl.)*, 1981, 265-272 (*isol, cryst struct, abs config*)

Abdullaeva, D.U. *et al., Khim. Prir. Soedin.*, 1983, **19**, 488-490; *Chem. Nat. Compd. (Engl. Transl.)*, 1983, **19**, 459-461 (*Severidinine*)

Severifoline S-278

3,12-Dihydro-6-hydroxy-3,3-dimethyl-5-(3-methyl-2-butenyl)-7H-pyrano[2,3-c]acridin-7-one, 9CI
[84306-81-0]



$C_{23}H_{23}NO_3$ 361.44
Alkaloid of *Severinia buxifolia* (Rutaceae). Yellow needles (Me_2CO). Mp 253-254°. λ_{max} 224 ; 240 ; 253 ; 278 ; 296 ; 338 ; 410 (MeOH).

N-*Me:* **N-*Methylseverifoline***
[84306-82-1]
$C_{24}H_{25}NO_3$ 375.466
Alkaloid from *Severinia buxifolia* (Rutaceae). Orange-yellow cryst. (Me_2CO). Mp 152-154°. λ_{max} 228 ; 254 ; 288 ; 295 ; 343 ; 417 (MeOH).

11-Hydroxy: ***Atalaphyllinine***
[56296-87-8]
$C_{23}H_{23}NO_4$ 377.439
Alkaloid from *Severinia buxifolia* and *Atalantia monophylla* (Rutaceae). Yellow needles (C_6H_6/EtOAc). Mp 205-207°. λ_{max} 264 (log ϵ 3.85); 293 (log ϵ 4.05); 305 (log ϵ 4.12); 347 (log ϵ 4.34) (EtOH).

11-Hydroxy, N-*Me:* **N-*Methylatalaphyllinine***
[49620-08-8]
$C_{24}H_{25}NO_4$ 391.466
Alkaloid from *Severinia buxifolia*, *Atalantia monophylla* and *Atalantia ceylanica* (Rutaceae). Red needles (Et_2O/petrol). Mp 192-193°.

11-Methoxy, N-*Me:*
Yellow needles (Et_2O/petrol). Mp 126.5°.

Fraser, A.W. *et al., J.C.S. Perkin 1*, 1973, 1173-1175 (*isol, uv, ir, nmr, ms,* N-*Methylataphyllinine*)

Basa, S.C. *et al., Phytochemistry*, 1975, **14**, 835-836 (*Atalaphyllinine*)

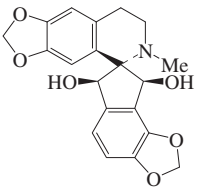
Banerji, J. *et al., Indian J. Chem., Sect. B*, 1981, **20**, 835-838 (*cmr,* N-*Methylatalaphyllinine*)

Wu, T.-S. *et al., Phytochemistry*, 1982, **21**, 1771-1773 (*Severinia buxifolia constits*)

Chukaew, A. *et al., Acta Cryst. E*, 2008, **63**, o3723-o3724 (*N-Methylatalaphyllinine, cryst struct*)

Severzinine S-279

Sewercinine. Sewerzinine
[68736-95-8]



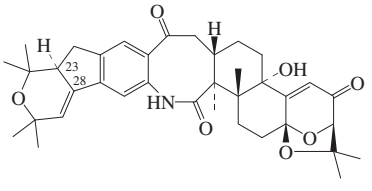
Absolute Configuration

$C_{20}H_{19}NO_6$ 369.373
Diastereoisomer of Ochrobirine, O-20. CAS name is defective (spiro posn. numbered 7′ instead of 5). Alkaloid from *Corydalis severtzovii* (Papaveraceae). Cryst. (EtOH). Mp 90-91° dec. $[\alpha]_D$ +109 (c, 1.2 in $CHCl_3$).

Irgashev, T. *et al., Khim. Prir. Soedin.*, 1978, **14**, 536; *Chem. Nat. Compd. (Engl. Transl.)*, 1978, **14**, 464 (*isol, uv, ir, pmr, ms, struct*)

Shearinine I S-280

[925427-39-0]



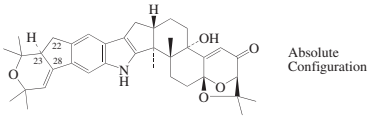
$C_{37}H_{45}NO_7$ 615.765
Prod. by a mangrove-derived *Penicillium* sp. HKI0459. Amorph. powder. $[\alpha]_D$ +6.5 (c, 0.3 in $CHCl_3$). λ_{max} 245 (MeOH).

$\Delta^{23,28}$-Isomer: ***Shearinine H***
[925427-38-9]
$C_{37}H_{45}NO_7$ 615.765
Prod. by *Penicillium* sp. HKI0459. Amorph. powder. $[\alpha]_D$ +20.2 (c, 0.3 in $CHCl_3$). λ_{max} 246 ; 308 (MeOH).

Xu, M. *et al., Tetrahedron*, 2007, **63**, 435-444 (*isol, cd, pmr, cmr, ms*)

Shearinine A S-281

[163136-24-1]



Absolute Configuration

$C_{37}H_{45}NO_5$ 583.766
Shearinines have been isol. by two groups of workers simultaneously, and various Shearinine code letters have been given to different but closely similar compds. Prod. by *Eupenicillium shearii*, a marine-derived *Penicillium janthinellum* and *Penicillium* sp. HKI0459. Apoptosis inducer. Exhibits antiinsectan activity. Mp 250° dec. $[\alpha]_D$ +16 (c, 0.20 in $CHCl_3$).

22α-Hydroxy (1): ***Shearinine D***†
[925427-34-5]
$C_{37}H_{45}NO_6$ 599.766
Prod. by *Penicillium* sp. HKI0459 and marine-derived *Penicillium janthinellum*. Amorph. powder. $[\alpha]_D$ +67.7 (c, 0.3 in $CHCl_3$). λ_{max} 210 ; 236 ; 260 ; 330 (MeOH).

22α-Hydroxy (2): ***Shearinine E***†
$C_{37}H_{45}NO_6$ 599.766
Prod. by a marine-derived *Penicillium janthinellum*. Cryst. (hexane/EtOAc). Mp > 300° dec. $[\alpha]_D^{20}$ +3.5 (c, 0.17 in $CHCl_3$). C-22:C-23 relative config. only. May be identical with Shearinine D above. λ_{max} 231 (log ϵ 4.2); 256 (sh) (log ϵ 4.36); 264 (log ϵ 4.38); 286 (log ϵ 4.03); 330 (log ϵ 4.04) ($CHCl_3$).

22β-Hydroxy: ***Shearinine D***†
$C_{37}H_{45}NO_6$ 599.766
Prod. by a marine-derived *Penicillium janthinellum*. Cryst. (hexane/EtOAc). Mp 180-185° dec. $[\alpha]_D^{20}$ +21.8 (c, 0.13 in $CHCl_3$). C-22/C-23 relative config. only determined. λ_{max} 233 (log ϵ 4.13); 256 (sh) (log ϵ 4.36); 263 (log ϵ 4.34); 330 (log ϵ 4.08) ($CHCl_3$).

22α-Methoxy: ***Shearinine E***†
[925427-35-6]
$C_{38}H_{47}NO_6$ 613.792
Prod. by *Penicillium* sp. HKI0459. Amorph. powder. $[\alpha]_D$ +8.9 (c, 0.2 in $CHCl_3$). λ_{max} 204 ; 234 ; 264 ; 332 (MeOH).

$\Delta^{23,28}$-Isomer: ***Shearinine F***†
[925427-36-7]
$C_{37}H_{45}NO_5$ 583.766
Prod. by *Penicillium* sp. HKI0459 isol. from a mangrove. Amorph. powder. $[\alpha]_D$ +26.4 (c, 0.3 in $CHCl_3$). λ_{max} 204 ; 240 ; 306 (MeOH).

$\Delta^{23,28}$-Isomer, 22-oxo: ***Shearinine G***
[925427-37-8]
$C_{37}H_{43}NO_6$ 597.75
Prod. by *Penicillium* sp. HKI0459. Amorph. powder. $[\alpha]_D$ +35.7 (c, 0.1 in $CHCl_3$). λ_{max} 280 (MeOH).

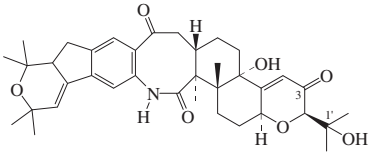
Belofsky, G.N. *et al., Tetrahedron*, 1995, **51**, 3959-3968 (*Shearinine A*)

Smetanina, O.F. *et al., J. Nat. Prod.*, 2007, **70**, 906-909; 2054 (*Shearinines D,E, isol, pmr, cmr*)

Xu, M. *et al., Tetrahedron*, 2007, **63**, 435-444 (*Shearinines D-G*)

Shearinine C S-282

[163136-26-3]



$C_{37}H_{47}NO_7$ 617.781
Metab. from the ascostromata of *Eupenicillium shearii*. Exhibits antiinsectan activity. Pale yellow solid. Mp 180-190° dec. $[\alpha]_D$ -146 (c, 0.20 in $CHCl_3$).

1′-Deoxy, 1′,2′-didehydro, 3β-alcohol: ***Antibiotic PF 1101B***. *PF 1101B*
[157408-11-2]
$C_{37}H_{47}NO_6$ 601.781
Prod. by *Penicillium* sp. Anthelminitic,

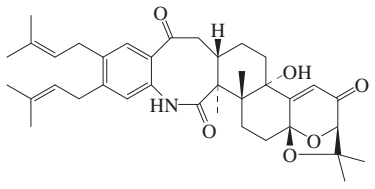
shows insecticidal props. Cryst.

Japan. Pat., 1994, 94 65 246; *CA*, **121**, 155915t (*PF 1101B*)

Belofsky, G.N. *et al., Tetrahedron*, 1995, **51**, 3959 (*Shearinine C*)

Shearinine J S-283

[925427-40-3]



$C_{37}H_{47}NO_6$ 601.781

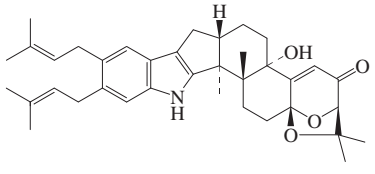
Prod. by a mangrove-derived *Penicillium* sp. HKI0459. Amorph. powder. $[\alpha]_D$ +48.5 (c, 0.3 in $CHCl_3$). λ_{max} 206 ; 232 (MeOH).

Xu, M. *et al., Tetrahedron*, 2007, **63**, 435-444 (*isol, pmr, cmr, ms*)

Shearinine K S-284

Shearinine F†

[925427-41-4]



$C_{37}H_{47}NO_4$ 569.783

See note under Shearinine A, S-281. Prod. by a mangrove-derived *Penicillium* sp. HKI0459 and *Penicillium janthinellum*. Amorph. powder. $[\alpha]_D$ +26.7 (c, 0.2 in $CHCl_3$). $[\alpha]_D$ +76 (c, 0.25 in $CHCl_3$). λ_{max} 238 ; 280 (MeOH). λ_{max} 234 (log ϵ 3.9); 300 (log ϵ 3.28) ($CHCl_3$).

Smetanina, O.F. *et al., J. Nat. Prod.*, 2007, **70**, 906-909; 2054 (*isol, pmr, cmr*)

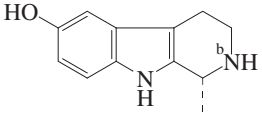
Xu, M. *et al., Tetrahedron*, 2007, **63**, 435-444 (*isol, pmr, cmr, ms*)

Shepherdine S-285

*2,3,4,9-Tetrahydro-1-methyl-1*H*-pyrido[3,4-*b*]indol-6-ol, 9CI. 1,2,3,4-Tetrahydro-6-hydroxy-1-methyl-β-carboline*

[3000-36-0]

[28090-87-1]



(*R*)-*form*

$C_{12}H_{14}N_2O$ 202.255

(*R*)-*form* [104485-07-6]

Occurs in urine of man and other mammals. No phys. props. reported.

(*S*)-*form* [104885-06-5]

Occurs in urine of man and other mammals. No phys. props. reported.

(±)-*form*

Cryst. (MeOH). Mp 225-230° Mp 257-258°. λ_{max} 276 ; 298 (sh) ; 308 (sh) (EtOH) (HCl salt, pH7). λ_{max} 222 (log ϵ 4.3); 274 (log ϵ 3.9); 297 (sh) (log ϵ 3.72) (no solvent reported) (phosphate buffer, pH7).

Me ether: Mp 224-226° (156°, 196-196.5°).

Me ether, picrate: Mp 223-226° dec.

Me ether, N^b-Me: ***1,2,3,4-Tetrahydro-6-methoxy-1,2-dimethyl-β-carboline***
$C_{14}H_{18}N_2O$ 230.309
Constit. of *Piptadenia peregrina*. Cryst. ($CHCl_3$/hexane). Mp 155-157°.

(ξ)-*form*

Alkaloid from the roots of *Shepherdia canadensis* and from the sponge *Hyrtios* sp. Under certain conditions, a metab. of Serotonin in animals. Mp 266° dec. (as hydrochloride). $[\alpha]_D$ 0.

N,O-*Di-Ac:*
Cryst. (MeOH). Mp 192-194°.

N^b-*Me:* ***1,2,3,4-Tetrahydro-6-hydroxy-1,2-dimethyl-β-carboline***. *1,2,3,4-Tetrahydro-6-hydroxy-2-methylharman*
$C_{13}H_{16}N_2O$ 216.282
Alkaloid from *Croton moritibensis.*

Me ether: 1,2,3,4-Tetrahydro-6-methoxy-1-methyl-β-carboline. ***Adrenoglomerulotropin***. *6-Methoxytetrahydroharman*
[1210-56-6]
[58911-03-8]
$C_{13}H_{16}N_2O$ 216.282
Alkaloid from *Desmodium pulchellum* and *Virola cuspidata* (Fabaceae, Myristicaceae). Also isol. from bovine pineal gland and human urine. Shows some psychotomimetic activity.

▶ UV0740000

Me ether, N^b-*Me:* [21890-60-8]
Alkaloid from *Anadenanthera peregrina* (Fabaceae). No opt. rotn. reported.

Akabori, S. *et al., Ber.*, 1930, **63**, 2245-2248 (*Me ether, synth*)

Farrell, G.L. *et al., Arch. Biochem. Biophys.*, 1961, **94**, 543-544 (*Me ether, isol, struct*)

Taboisky, R.G. *et al., J. Med. Chem.*, 1964, **7**, 135-141 (*synth, uv*)

Agurell, S. *et al., Acta Chem. Scand.*, 1969, **23**, 903-916 (*Me ether N^b-Me, occur, synth*)

Ayer, W.A. *et al., Can. J. Chem.*, 1970, **48**, 1980-1984 (*isol, uv, ir, pmr, synth*)

Cassady, J.M. *et al., CA*, 1972, **77**, 98688 (*Me ether, isol*)

Gynther, J. *et al., Acta Chem. Scand., Ser. B*, 1985, **39**, 849-859 (*Me ether, synth, ms*)

Matsubara, K. *et al., Alcohol Alcohol.*, 1986, **21**, 339-345 (*Me ether, hplc, ms, occur*)

Beck, O. *et al., Biochem. Pharmacol.*, 1986, **35**, 2636-2639 (*R-form, S-form, hplc, occur, bibl*)

Zhang, F. *et al., J. Med. Chem.*, 1992, **35**, 82-93 (*synth, hplc, pmr, cmr*)

Callaway, J.C. *et al., J. Het. Chem.*, 1994, **31**, 431-435 (*synth, bibl*)

Herraiz, T. *et al., J. Agric. Food Chem.*, 2000, **48**, 4900-4904 (*hplc, occur*)

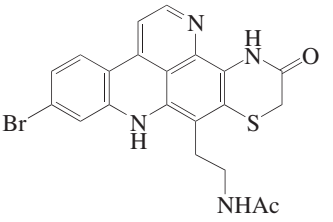
Somei, M. *et al., Chem. Pharm. Bull.*, 2001, **49**, 1159-1165 (*(±)-form, synth, Me ether, Me ether N^b-Me*)

Salmoun, M. *et al., J. Nat. Prod.*, 2002, **65**, 1173-1176 (*isol, pmr, cmr*)

De Araújo-Júnior, V.T. *et al., Pharm. Biol.*, 2004, **42**, 62-67 (*N^b-Me*)

Shermilamine A S-286

[116302-28-4]



$C_{21}H_{17}BrN_4O_2S$ 469.361

Alkaloid from a tunicate *Tridemnum* sp. collected from Guam and from *Chelynotus semperi*. Cytotoxic agent. Orange prisms ($CHCl_3$/MeOH). Mp 300°. Erroneous spectroscopic data quoted in the original paper. λ_{max} 242 (ϵ 25100); 286 (ϵ 22900); 312 (ϵ 35500); 320 (ϵ 34700); 364 (ϵ 5500); 382 (ϵ 5620); 536 (ϵ 5890) (MeOH/HCl) (Derep). λ_{max} 238 (ϵ 33100); 282 (ϵ 28200); 298 (ϵ 24500); 350 (ϵ 7940); 392 (ϵ 5130); 470 (ϵ 5750) (MeOH) (Derep).

Debromo: ***Shermilamine B***. *Debromoshermilamine A*
[122271-41-4]
$C_{21}H_{18}N_4O_2S$ 390.465
Alkaloid from a tunicate *Trididemnum* sp., from the Red Sea tunicate *Eudistoma* sp. and from *Chelynotus semperi*. Fine orange prisms (MeOH). Mp 254° dec. λ_{max} 232 (ϵ 27500); 282 (ϵ 25100); 302 (ϵ 33900); 318 (ϵ 49000); 364 (ϵ 6030); 382 (ϵ 6170); 536 (ϵ 6760) (MeOH/HCl) (Derep). λ_{max} 234 (ϵ 34700); 282 (ϵ 28200); 298 (ϵ 24500); 348 (ϵ 9330); 390 (ϵ 5750); 468 (ϵ 6460) (MeOH) (Derep).

Debromo, N-*de-Ac,* N^{ω},N^{ω}-*di-Me:* ***Shermilamine D***
[211311-08-9]
$C_{21}H_{20}N_4OS$ 376.481
Alkaloid from the tunicate *Cystodytes violatinctus.* Amorph. orange powder. λ_{max} 232 (log ϵ 4.35); 281 (log ϵ 4.25); 297 (log ϵ 4.18); 348 (log ϵ 3.74); 392 (log ϵ 3.51); 468 (log ϵ 3.58) (MeOH). λ_{max} 230 ; 281 ; 302 ; 316 ; 363 ; 382 ; 530 (MeOH/HCl) (Berdy).

Debromo, N-*de-Ac,* N^{ω},N^{ω}-*di-Me,* N-*oxide:* ***Shermilamine E***
[211311-09-0]
$C_{21}H_{20}N_4O_2S$ 392.481
Alkaloid from the tunicate *Cystodytes violatinctus.* Amorph. brown powder. λ_{max} 232 (log ϵ 4.29); 296 (log ϵ 4.1); 349 (log ϵ 3.7); 391 (log ϵ 3.51); 464 (log ϵ 3.49) (MeOH). λ_{max} 230 ; 281 ; 300 ; 315 ; 361 ; 382 ; 526 (MeOH/HCl) (Berdy).

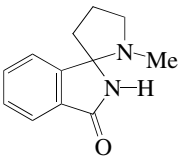
Debromo, N-*de-Ac,* N^{ω}-*(3-methyl-2-butenoyl):* ***Shermilamine C***

[158758-41-9]
$C_{24}H_{22}N_4O_2S$ 430.529
Isol. from *Cystodytes* sp. Antitumour agent. Topoisomerase II inhibitor. DNA intercalator. Orange solid. λ_{max} 231 (ϵ 9185); 279 (ϵ 6670); 296 (ϵ 5690); 350 (ϵ 2680); 390 (ϵ 1896); 463 (ϵ 1664) (MeOH).

Cooray, N.M. *et al., J.O.C.*, 1988, **53**, 4619-4620 (*isol, cryst struct*)
Carroll, A.R. *et al., J.O.C.*, 1989, **54**, 4231-4232 (*isol, uv, ir, pmr, cmr, ms, struct, Shermilamine B*)
Rudi, A. *et al., J.O.C.*, 1989, **54**, 5331 (*isol, uv, ir, pmr, cmr, Shermilamine B*)
Steffan, B. *et al., Tetrahedron*, 1993, **49**, 6223 (*biosynth, Shermilamine B*)
Eldredge, G.S. *et al., J. Med. Chem.*, 1994, **37**, 3819-3827 (*Shermilamine C*)
Ciufolini, M.A. *et al., J.A.C.S.*, 1995, **117**, 12460-12469 (*synth*)
Koren-Goldshlager, G. *et al., J.O.C.*, 1998, **63**, 4601-4603 (*Shermilamines D,E, isol, uv, ir, pmr, cmr*)

Shihunidine S-287

*1′-Methylspiro[1*H*-isoindole-1,2′-pyrrolidin]-3(2*H*)-one, 9CI*
[135626-84-5]

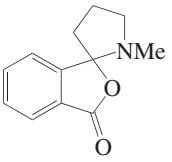


$C_{12}H_{14}N_2O$ 202.255
Artifact from *Dendrobium loddigesii*. Inhibitor of Na and K ATPase of rat kidney. Cryst.(C_6H_6). Mp 173-174°.

Li, M.F. *et al., Yaoxue Xuebao*, 1991, **26**, 307-310 (*isol, struct*)

Shihunine S-288

*1′-Methylspiro[isobenzofuran-1(3*H*),2′-pyrrolidin]-3-one, 9CI*
[4031-12-3]



$C_{12}H_{13}NO_2$ 203.24
pK_a 3.6 (50% EtOH). Log P 2.46 (uncertain value) (calc).

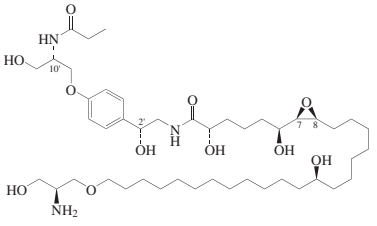
(±)-form
Alkaloid from the orchid *Dendrobium lohohense* (component of the Chinese drug Shi-hu) and from *Dendrobium pierardii* (Orchidaceae). Na/K-ATP-ase inhibitor. Needles (Et_2O/hexane). Mp 78-79°. Log P 2.46 (uncertain value) (calc).

Picrate:
Yellow prisms (MeOH). Mp 154-155.5° Mp 163-164°.

Inubushi, Y. *et al., Chem. Pharm. Bull.*, 1964, **12**, 749; 1968, **16**, 1014 (*isol, uv, ir, pmr, struct*)
Elander, M. *et al., Acta Chem. Scand.*, 1971, **25**, 721 (*isol, uv, ir, pmr*)
Breuer, E. *et al., Tetrahedron*, 1975, **31**, 499 (*synth, ir, pmr*)
Leete, E. *et al., J.A.C.S.*, 1976, **98**, 6321 (*biosynth, cmr*)
Bodem, G.B. *et al., J.O.C.*, 1979, **44**, 4696 (*synth*)
Gore, V.G. *et al., Tetrahedron*, 1990, **46**, 2483 (*synth*)
Li, M.F. *et al., Yaoxue Xuebao*, 1991, **26**, 307-310 (*isol, pharmacol*)

Shishididemniol A S-289

[929641-64-5]



Absolute Configuration

$C_{45}H_{81}N_3O_{11}$ 840.148
Isol. from a tunicate of the family Didemnidae. Antibacterial agent. Oil. $[\alpha]_D^{20}$ -33.7 (c, 1 in MeOH). λ_{max} 275 (ϵ 1195); 281 (ϵ 1020) (MeOH).

$O^{2'}$-Ac: ***Shishididemniol E***
[945421-79-4]
$C_{47}H_{83}N_3O_{12}$ 882.186
Isol. from a tunicate of the family Didemnidae. Oil. $[\alpha]_D^{19}$ -30.7 (c, 0.5 in MeOH). λ_{max} 275 (ϵ 760); 281 (ϵ 650) (MeOH).

$N^{10'}$-Depropanoyl, $N^{10'}$-Ac: ***Shishididemniol C***
[945421-77-2]
$C_{44}H_{79}N_3O_{11}$ 826.122
Isol. from a tunicate of the family Didemnidae. Oil. $[\alpha]_D^{18}$ -19 (c, 1 in MeOH). λ_{max} 275 (ϵ 870); 281 (ϵ 770) (MeOH).

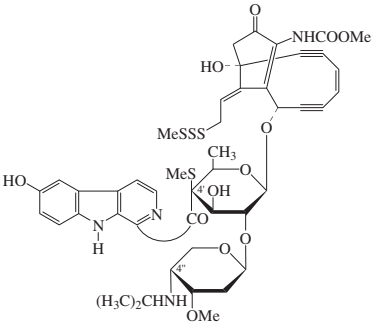
*Deepoxy, 7*R*-hydroxy, 8*R*-chloro:* ***Shishididemniol B***
[929641-65-6]
$C_{45}H_{82}ClN_3O_{11}$ 876.609
Isol. from a tunicate of the family Didemnidae. Antibacterial agent. Oil. $[\alpha]_D^{20}$ -19.4 (c, 1 in MeOH). λ_{max} 275 (ϵ 1220); 281 (ϵ 1040) (MeOH).

*Deepoxy, 7*R*-hydroxy, 8*R*-chloro, $N^{10'}$-depropanoyl, $N^{10'}$-Ac:* ***Shishididemniol D***
[945421-78-3]
$C_{44}H_{80}ClN_3O_{11}$ 862.582
Isol. from a tunicate of the family Didemnidae. Oil. $[\alpha]_D^{19}$ -16.6 (c, 1 in MeOH). λ_{max} 275 (ϵ 1100); 281 (ϵ 900) (MeOH).

Kobayashi, H. *et al., J.O.C.*, 2007, **72**, 1218-1225 (*Shishididemniols A,B*)
Kobayashi, H. *et al., Tetrahedron*, 2007, **63**, 6748-6754 (*Shishididemniols C,D,E*)

Shishijimicin A S-290

[503860-50-2]



$C_{46}H_{52}N_4O_{12}S_4$ 981.2
Isol. from the ascidian *Didemnum proliferum*. Cytotoxic.

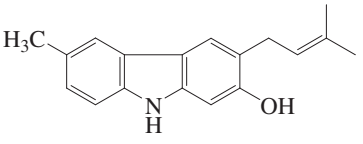
*4″-*N*-Deisopropyl, 4″-*N*-Et:* ***Shishijimicin C***
[503860-52-4]
$C_{45}H_{50}N_4O_{12}S_4$ 967.174
Isol. from *Didemnum proliferum*. Cytotoxic.

4′-De(methylthio): ***Shishijimicin B***
[503860-51-3]
$C_{45}H_{50}N_4O_{12}S_3$ 935.108
Isol. from *Didemnum proliferum*. Cytotoxic.

Oku, N. *et al., J.A.C.S.*, 2003, **125**, 2044-2045 (*isol*)

Siamenol S-291

*6-Methyl-3-(3-methyl-2-butenyl)-9*H*-carbazol-2-ol. 2-Hydroxy-6-methyl-3-prenylcarbazole*
[264622-44-8]

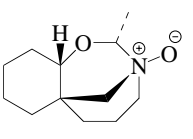


$C_{18}H_{19}NO$ 265.354
Alkaloid from *Murraya siamensis*. HIV inhibitor. Pale yellow solid. λ_{max} 216 (log ϵ 4.03); 238 (log ϵ 4.11); 261 (log ϵ 3.73); 308 (log ϵ 3.71); 328 (sh) (log ϵ 3.4) (MeOH).

Meragelman, K.M. *et al., J. Nat. Prod.*, 2000, **63**, 427-428

Sibirinine S-292

*Hexahydro-2-methyl-4*H*,7*H*-methano-2*H*-1,3-benzoxazocine 3-oxide, 9CI*
[113866-79-8]



Absolute Configuration

$C_{12}H_{21}NO_2$ 211.303
Alkaloid from *Nitraria sibirica* (Zygophyllaceae). Cryst. Mp 40°. $[\alpha]_D^{20}$ -9.4 (c,

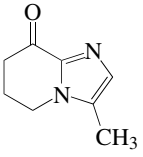
0.53 in $CHCl_3$).

[120095-27-4]

Ibragimov, A.A. *et al., Khim. Prir. Soedin.*, 1987, **23**, 685-689; *Chem. Nat. Compd. (Engl. Transl.)*, 1987, **23**, 569-573 (*isol, pmr, abs config, synth*)
Ibragimov, A.A. *et al., Khim. Prir. Soedin.*, 1988, **24**, 82-91; *Chem. Nat. Compd. (Engl. Transl.)*, 1988, **24**, 71-78 (*pmr, cmr*)

Sibyllimycin S-293

*6,7-Dihydro-3-methylimidazo[1,2-*a*]pyridin-8(5*H*)-one, 9CI*
[176520-65-3]



$C_8H_{10}N_2O$ 150.18
Metab. of *Thermoactinomyces* sp. Cryst. (toluene). Mp 122-123°. λ_{max} 240 (ϵ 9379); 297 (ϵ 24481) ($CHCl_3$).

Hafenbradl, D. *et al., Angew. Chem., Int. Ed.*, 1996, **35**, 545 (*isol, pmr, cmr, synth, struct*)

Sickenbergine S-294

[1361-17-7]

$C_{16}H_{19}NO_5$ 305.33

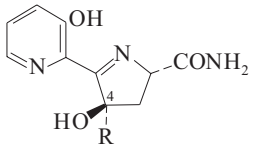
Amaryllidaceae alkaloid. Struct. unknown. Isol. from *Pancratium sickenbergeri, Pancratium arabicum, Pancratium maritimum* and *Pancratium tortuosum* (Amaryllidaceae). Mp 110° dec.

Hydrochloride: Mp 175° dec.

Fahmy, I.R. *et al., J. Pharm. Sci. U.A.R.*, 1960, **1**, 133-137; *CA*, **56**, 10280i (*isol*)
Ahmed, Z.F. *et al., J. Nat. Prod.*, 1964, **27**, 115-134; *CA*, **61**, 13630d (*occur*)

Siderochelin A S-295

*3,4-Dihydro-4-hydroxy-5-(3-hydroxy-2-pyridinyl)-4-methyl-2*H*-pyrrole-2-carboxamide, 9CI. EM 4940A. Antibiotic EM 4940A*
[77550-87-9]



R = CH_3

$C_{11}H_{13}N_3O_3$ 235.242
Isol. from the fermentation broths of *Nocardia* sp. SC 11,340 and from an unusual *Actinomycetes* sp. Weakly active against gram-positive, gram-negative and anaerobic bacteria. Sol. MeOH, $CHCl_3$; fairly sol. MeCN; poorly sol. H_2O, hexane. Mp 165-168° (161-163°). $[\alpha]_D^{22}$ +1.7 (c, 0.30 in MeOH). λ_{max} 315 (ϵ 8350) (MeOH) (Derep). λ_{max} 206 (E1%/1cm 480); 315 (E1%/1cm 220) (MeOH) (Berdy). λ_{max} 316 (ϵ 8350) (EtOH) (Berdy).

4-Epimer: ***Siderochelin B***
[77518-26-4]
$C_{11}H_{13}N_3O_3$ 235.242
Isol. from *Nocardia* sp. SC 11,340 and from an unusual *Actinomycetes* sp. Weakly active against gram-positive, gram-negative and anaerobic bacteria. Sol. MeOH, $CHCl_3$, MeCN; poorly sol. H_2O, hexane. Mp 200-201° (186-186.5°). $[\alpha]_D^{22}$ -1.9 (c, 0.21 in MeOH). λ_{max} 315 (ϵ 8350) (MeOH) (Derep).

Liu, W.-C. *et al., J. Antibiot.*, 1981, **34**, 791 (*isol, uv, ir, pmr, cryst struct*)
Okuyama, D. *et al., J. Antibiot.*, 1982, **35**, 1240 (*abs config*)
Mitscher, L.A. *et al., J. Antibiot.*, 1984, **37**, 1260 (*isol, uv, ir, pmr, cd*)

Siderochelin C S-296

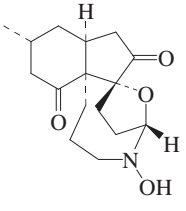
[93973-61-6]
As Siderochelin A, S-295 with
R = $-CH_2CH_3$

$C_{12}H_{15}N_3O_3$ 249.269
Fermentation product of *Streptoalloteichus* sp. 69-209B. Weakly active against *E. coli*. Cryst. Sol. MeOH, EtOAc; poorly sol. H_2O, hexane. Mp 168-171°. λ_{max} 315 (ϵ 8350) (MeOH) (Derep). λ_{max} 316 (ϵ 7340) (MeOH) (Berdy).

Mitscher, L.A. *et al., J. Antibiot.*, 1984, **37**, 1260 (*isol, uv, ir, pmr, cd, struct*)

Sieboldine A S-297

[619326-44-2]



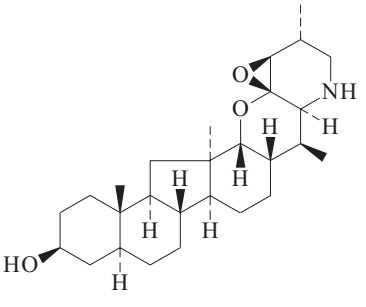
Relative Configuration

$C_{16}H_{23}NO_4$ 293.362
Alkaloid from *Lycopodium sieboldii*. ACE inhibitor. Needles (MeOH). $[\alpha]_D$ +139 (c, 0.3 in MeOH). Dec. at 160°.

Hirasawa, Y. *et al., Org. Lett.*, 2003, **5**, 3991-3993 (*isol, pmr, cmr*)

Siechuantine S-298

[162616-59-3]



$C_{27}H_{43}NO_3$ 429.642
Alkaloid from bulbs of *Fritillaria siechuanica* (Liliaceae).

Wang, F. *et al., CA*, 1995, **122**, 261018h (*isol, struct*)

Signatipennine S-299

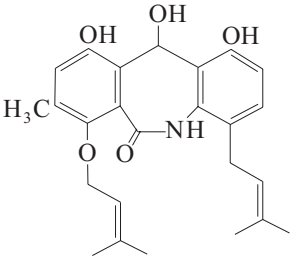
[183163-68-0]
$HOCH_2CH_2NH(CH_2)_{15}CH(CH_3)NHCH_2CH_2OH$

$C_{21}H_{46}N_2O_2$ 358.607
Alkaloid from the beetle *Epilachna signatipennis* (Coccinellidae). Isol. and characterised as the tetra-Ac.

Wang, S.F. *et al., Bull. Soc. Chim. Belg.*, 1996, **105**, 483 (*isol*)

Silvaticamide S-300

[73606-98-1]

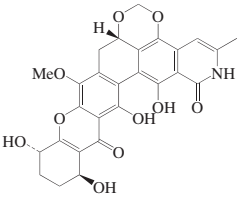


$C_{25}H_{29}NO_5$ 423.508
Secoanthraquinone. Prod. by *Aspergillus silvaticus*. Mycotoxin. Sol. MeOH, C_6H_6; poorly sol. H_2O. Mp 191-192° dec. Unstable to light. λ_{max} 290 (ϵ 4400); 310 (ϵ 5300) (MeOH) (Berdy).

Yamazaki, M. *et al., Heterocycles*, 1981, **15**, 889 (*isol, struct*)
Maebayashi, Y. *et al., Chem. Pharm. Bull.*, 1985, **33**, 4296 (*biosynth*)

Simaomicin β S-301

*7*a*,8,11,12,13,14-Hexahydro-11,14,16,17-tetrahydroxy-9-methoxy-3-methyl-2*H*-xanthe-no[2′,3′:6,7][1,3]benzodioxino[4,5-*fg*]isoquinoline-1,15-dione, 9CI. LL-D 42067β*
[100111-39-5]



Relative Configuration

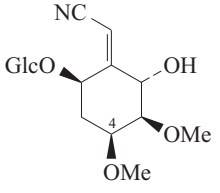
$C_{27}H_{23}NO_{10}$ 521.479
Prod. by *Actinomadura madura* ssp. *simaoensis*. Anticoccidial agent. Yellow cryst. Similar to Actinoplanone A in A-128. λ_{max} 253 (ϵ 35500); 320 (ϵ 12900); 379 (sh) (ϵ 22900); 395 (ϵ 25100) (MeOH) (Derep).

N-*Me:* ***Simaomicin α***. *LL-D 42067α*
[100157-22-0]
$C_{28}H_{25}NO_{10}$ 535.506
From *Actinomadura madura* ssp. *simaoensis* NRRL15734 and *Micromonospora purpurochromogenes* wuxiensis NRRL18075. Anticoccidial agent. Yellow cryst. Sol. MeOH, CH_2Cl_2, EtOAc; poorly sol. H_2O. $[\alpha]_D^{26}$ +836 (c, 0.3 in DMF). λ_{max} 253 (ϵ 35500); 320 (ϵ 12900); 379 (sh) (ϵ 22900); 395 (ϵ 25100) (MeOH) (Derep). λ_{max} 213 (ϵ 27000); 253 (ϵ 34500); 321 (ϵ 12200); 374 (ϵ 21100); 389 (ϵ 8290) (MeOH/HCl) (Berdy). λ_{max} 217 (ϵ 42100); 253 (ϵ 13900); 312 (ϵ 5700); 395 (ϵ 10700) (MeOH/NaOH) (Berdy).

U.S. Pat., 1985, 4551533; *CA*, **104**, 62068 (*LL-D 42067α*)
Lee, T.M. *et al., Chem. Comm.*, 1989, 1771-1772 (*isol, struct*)
Carter, G.T. *et al., J.O.C.*, 1989, **54**, 4321-4323 (*biosynth*)
Maiese, W.M. *et al., J. Antibiot.*, 1990, 1059-1063 (*isol*)

Simmondsin S-302

[6-(β-D-Glucopyranosyloxy)-2-hydroxy-3,4-dimethoxycyclohexylidene]acetonitrile, 9CI. 2-Cyanomethylene-1-glucosyloxy-3-hydroxy-4,5-dimethoxycyclohexane
[51771-52-9]



$C_{16}H_{25}NO_9$ 375.375
Constit. of *Simmondsia californica* and *Simmondsia chinensis* (jojoba). Appetite suppressant. Waxy solid. Mp 95-100°. $[\alpha]_D^{25}$ -78 (c, 1 in MeOH).

▶ AM0250000

Penta-Ac: Mp 165-166°.

2′-O-*(4-Hydroxy-3-methoxy*-E-*cinnamoyl):* ***2′-O-Feruloylsimmondsin***
[179466-18-3]
[67411-22-7 , 179466-19-4]
$C_{26}H_{33}NO_{12}$ 551.546
Constit. of the seeds of jojoba (*Simmondsia chinensis*).

3-O-*De-Me, 2′-(4-hydroxy-3-methoxy*-Z-*cinnamoyl):* [162290-39-3]
[179466-20-7]
$C_{25}H_{31}NO_{12}$ 537.519
Constit. of jojoba meal (*Simmondsia chinensis*).

4-O-*De-Me:* ***4-O-Demethylsimmondsin***
[135105-75-8]
$C_{15}H_{23}NO_9$ 361.348
Constit. of jojoba meal (*Simmondsia chinensis*).

4-O-*De-Me, 2′-(4-hydroxy-3-methoxy*-E-*cinnamoyl):* [162290-38-2]
[179601-21-9]
$C_{25}H_{31}NO_{12}$ 537.519
Constit. of jojoba meal (*Simmondsia chinensis*).

Di-O-*de-Me:* ***Dide*-O-*methylsimmondsin***
[135074-86-1]
$C_{14}H_{21}NO_9$ 347.321
Constit. of jojoba meal (*Simmondsia chinensis*). Amorph. $[\alpha]_D^{20}$ -50 (c, 0.52 in H_2O). λ_{max} 215 (log ϵ 3.97) (H_2O).

Di-O-*de-Me, 4*-O-*α-D-glucopyranoside:* ***Dide*-O-*methyl-4*-O-*α-D-glucopyranosylsimmondsin***
[370068-00-1]
$C_{20}H_{31}NO_{14}$ 509.463
Constit. of jojoba meal (*Simmondsia chinensis*).

Di-O-*de-Me, 2*-O-*(3-methyl-2-butenoyl):* ***Ehretioside A₃***
[156368-87-5]
$C_{19}H_{27}NO_{10}$ 429.423
Constit. of *Ehretia philippinensis*. Waxy solid. $[\alpha]_D^{25}$ -53 (c, 1 in MeOH). Has (*E*)-config. (change of Cahn-Ingold-Prelog priorities).

Di-O-*de-Me, 3*-O-*(3-methyl-2-butenoyl):* ***Ehretioside A₁***
[156368-85-3]
$C_{19}H_{27}NO_{10}$ 429.423
Constit. of *Ehretia philippinensis*. Amorph. $[\alpha]_D^{25}$ +39 (c, 1 in Py).

Di-O-*de-Me, 4*-O-*(3-methyl-2-butenoyl):* ***Ehretioside A₂***
[156368-86-4]
$C_{19}H_{27}NO_{10}$ 429.423
Constit. of *Ehretia philippinensis*. Waxy solid. $[\alpha]_D^{25}$ -53 (c, 1 in MeOH).

Di-O-*de-Me, 2*-O-*benzoyl:* ***Lanceolin A***
[158022-45-8]
$C_{21}H_{25}NO_{10}$ 451.429
Constit. of *Lophira lanceolata*. Amorph. solid. Has (*E*)-config. (change of Cahn-Ingold priorities).

Di-O-*de-Me, 3*-O-*benzoyl:* ***Lanceolin C***
[221149-42-4]
$C_{21}H_{25}NO_{10}$ 451.429
Constit. of *Lophira alata*. Amorph. solid.

Di-O-*de-Me, 4*-O-*benzoyl:* ***Lanceolin B***
[151197-19-2]
$C_{21}H_{25}NO_{10}$ 451.429
Constit. of *Lophira lanceolata*. Amorph. solid.

Di-O-*de-Me, 2,4-di*-O-*benzoyl:* ***Lophiroside A₂***
[151171-81-2]
$C_{28}H_{29}NO_{11}$ 555.537
Constit. of the bark of *Lophira alata*. Amorph. $[\alpha]_D^{20}$ -22.6 (c, 0.93 in MeOH). λ_{max} 229 (log ϵ 4.54); 274 (log ϵ 3.26) (MeOH).

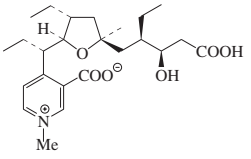
Di-O-*de-Me, 3,4-di*-O-*benzoyl:* ***Lophiroside A₁***
[151171-80-1]
$C_{28}H_{29}NO_{11}$ 555.537
Constit. of the bark of *Lophira alata*. Amorph. $[\alpha]_D^{20}$ +11.5 (c, 0.87 in MeOH). λ_{max} 229 (log ϵ 4.54); 274 (log ϵ 3.26) (MeOH).

Di-O-*de-Me, 2*-O-E-*cinnamoyl, 4*-O-*benzoyl:* ***Lophiroside B₂***
[151171-83-4]
$C_{30}H_{31}NO_{11}$ 581.575
Constit. of the bark of *Lophira alata*. Amorph. $[\alpha]_D^{20}$ -22.9 (c, 0.83 in MeOH). Has (*E*)-config. (change of Cahn-Ingold-Prelog priorities). λ_{max} 222 (log ϵ 4.25); 279 (log ϵ 4.14) (MeOH).

Di-O-*de-Me, 3*-O-E-*cinnamoyl, 4*-O-*benzoyl:* ***Lophiroside B₁***
[151171-82-3]
$C_{30}H_{31}NO_{11}$ 581.575
Constit. of the bark of *Lophira alata*. Amorph. $[\alpha]_D^{20}$ +63 (c, 0.54 in MeOH). λ_{max} 222 (log ϵ 4.25); 279 (log ϵ 4.14) (MeOH).

Elliger, C.A. *et al., J.O.C.*, 1974, **39**, 2930 (*struct*)
Elliger, C.A. *et al., Phytochemistry*, 1974, **13**, 2319 (*isol*)
Verbiscar, A.J. *et al., J. Agric. Food Chem.*, 1978, **26**, 1456-1459 (*2′-ferulate*)
Chida, N. *et al., J.C.S. Perkin 1*, 1992, 1131 (*synth, abs config*)
Van Boven, M. *et al., J. Agric. Food Chem.*, 1993, **41**, 1605; 1994, **42**, 2684; 1996, **44**, 2239-2243 (*isol, cryst struct, derivs*)
Murakami, A. *et al., Phytochemistry*, 1993, **32**, 1461-1466 (*Lophirosides*)
Tih, A.E. *et al., J. Nat. Prod.*, 1994, **57**, 971-974 (*Lanceolin A, Lanceolin B*)
Simpol, L.R. *et al., Phytochemistry*, 1994, **36**, 91-95 (*Ehretiosides*)
Messanga, B.B. *et al., Fitoterapia*, 1998, **79**, 439-442 (*Lanceolin C*)
Van Boven, M. *et al., J. Agric. Food Chem.*, 2001, **49**, 4278-4283 (*Didemethyl-4-glucosylsimmondsin*)

Simplakidine A S-303



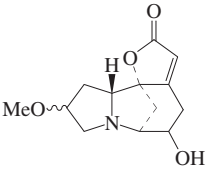
Absolute Configuration

$C_{24}H_{37}NO_6$ 435.559
Alkaloid from the sponge *Plakortis simplex*. Weakly cytotoxic. Amorph. solid. $[\alpha]_D^{25}$ -21.7 (c, 1.2 in MeOH). λ_{max} 272 (log ϵ 3.55) (MeOH).

Campagnuolo, C. *et al., Org. Lett.*, 2003, **5**, 673-676 (*isol, pmr, cmr, ms*)

Simplexine† S-304

[118636-89-8]



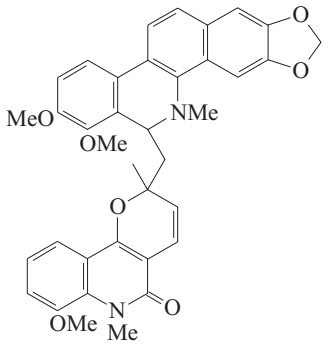
Absolute Configuration

$C_{13}H_{17}NO_4$ 251.282
Alkaloid from the whole plant of *Phyllanthus simplex* (Euphorbiaceae). $[\alpha]_D^{20}$ -20.4 (c, 0.2 in EtOH).

Negi, R.S. *et al., Phytochemistry*, 1988, **27**, 3027-3028 (*isol, uv, ir, pmr, ms, struct*)

Simulanoquinoline S-305

[155416-22-1]



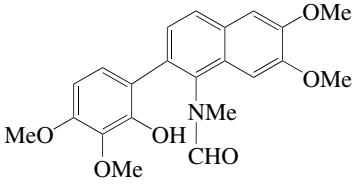
$C_{37}H_{34}N_2O_7$ 618.685

Alkaloid from root bark of *Zanthoxylum simulans* (Szechuan pepper) (Rutaceae). Prisms ($CHCl_3$/MeOH). Mp 240-243°.

Wu, S.-J. *et al., Phytochemistry*, 1993, **34**, 1659 (*isol, uv, ir, pmr, ms, struct*)

Simulansamide S-306

[176713-29-4]



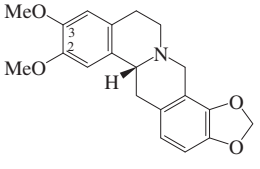
$C_{22}H_{23}NO_6$ 397.427

A secobenzo[*c*]phenanthridine alkaloid. Alkaloid from root bark of *Zanthoxylum simulans* (Szechuan pepper). Platelet aggregation inhibitor. Cryst. (MeOH/$CHCl_3$). Mp 257-259°.

Wu, S.-J. *et al., J. Chin. Chem. Soc. (Taipei)*, 1996, **43**, 195-198; *CA*, **124**, 337827k (*synth, uv, ir, pmr, ms*)

Sinactine S-307

Tetrahydroepiberberine



(*R*)-*form*

$C_{20}H_{21}NO_4$ 339.39

(*R*)-*form* [82051-55-6]

Alkaloid from *Corydalis meifolia* (Papaveraceae). Cryst. (MeOH). Mp 177-178°. $[\alpha]_D$ +298 (c, 1.04 in $CHCl_3$).

(*S*)-*form* [22554-51-4]

Alkaloid from *Fumaria officinalis* and *Sinomenium acutum* (Papaveraceae, Menispermaceae). Mp 175°. $[\alpha]_D$ -312 ($CHCl_3$). λ_{max} 232 (ε 13600); 287 (ε 7200) (EtOH).

N-*Me:* **N-*Methylsinactine***

[82667-90-1]

$C_{21}H_{24}NO_4^{\oplus}$ 354.425

Quaternary alkaloid from *Fumaria officinalis* (Papaveraceae). Needles (EtOH/$CHCl_3$) (as hydroxide). Mp 318-320° (hydroxide). $[\alpha]_D^{20}$ -260 (c, 0.11 in H_2O) (hydroxide).

O^2-*De-Me:* ***Cheilanthifoline***

[483-44-3]

$C_{19}H_{19}NO_4$ 325.363

Alkaloid from *Corydalis cheilanthifolia, Corydalis scouleri, Corydalis sibirica* and some *Argemone* spp. (Papaveraceae). Mp 184°. $[\alpha]_D^{20}$ -311 (MeOH).

(±)-*form* [38853-67-7]

Alkaloid from *Fumaria officinalis* (Papaveraceae). Mp 169-170°.

O^2-*De-Me:* [41431-80-5]

$C_{19}H_{19}NO_4$ 325.363

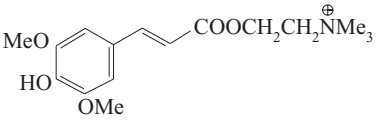
Alkaloid from whole plants of *Eschscholtzia californica*. Mp 176-178° (synthetic) Mp 190° (natural).

Goto, K. *et al., J.C.S.*, 1930, 1234-1237 (*S-form, isol, struct*)
Manske, R.H.F. *et al., Can. J. Res.*, 1940, **18**, 100-102 (*isol*)
Cooper, S.F. *et al., Planta Med.*, 1972, **21**, 313 (*synth, pmr, ir*)
Ninomiya, I. *et al., J.C.S. Perkin 1*, 1975, 1720-1724 (*synth*)
Pavelka, S. *et al., Coll. Czech. Chem. Comm.*, 1976, **41**, 3157-3169 (*uv*)
Furuya, T. *et al., Phytochemistry*, 1978, **17**, 891-893 (*biosynth*)
Pai, B.R. *et al., Indian J. Chem., Sect. B*, 1982, **21**, 607-611 (*synth*)
Mardirossian, Z.H. *et al., Phytochemistry*, 1983, **22**, 759-761 (N-*Methylsinactine*)
Bhakuni, D.S. *et al., Tetrahedron*, 1983, **39**, 455-459 (*biosynth, abs config*)
Narasimhan, N.S. *et al., Tetrahedron*, 1983, **39**, 1975-1982 (*synth*)
Jain, L. *et al., Planta Med.*, 1996, **62**, 188 (*(±)-form O^2-de-Me, isol*)
Seger, C. *et al., Magn. Reson. Chem.*, 2004, **42**, 882-886 (*pmr, cmr*)
Wang, X.-L. *et al., Acta Cryst. E*, 2006, **62**, 81-82; 1271-1272 (*Sinactine, Cheilanthifoline, cryst structs*)

Sinapine S-308

2-[[3-(4-Hydroxy-3,5-dimethoxyphenyl)-1-oxo-2-propenyl]oxy]-N,N,N- *trimethylethanaminium(1+), 9CI. Choline 4-hydroxy-3,5-dimethoxycinnamate, 8CI*

[18696-26-9]



$C_{16}H_{24}NO_5^{\oplus}$ 310.369

Alkaloid from seeds of *Brassica nigra*, *Brassica alba* (*Sinapis alba*) and many other spp. in the Brassicaceae. Also from the Chinese drug Ting Li (*Draba nemorosa*) (Brassicaceae). Astringent antinutrient of practical importance, esp. in cattle feed, e.g. rape meal. Reported to have radioprotective effects in some cruciferous plants and in *Drosophila*.

Iodide: [5655-06-1]

$C_{16}H_{24}INO_5$ 437.274

Mp 185-186° (178-179°).

Sulfate: [6509-38-2]

$C_{16}H_{25}NO_8S$ 391.441

Mp 186-188° (anhyd.) Mp 126.5-127.5° dec. (dihydrate).

O-*β*-D-*Glucopyranoside:* [21848-40-8]

[87206-57-3 , 87206-59-5]

$C_{22}H_{34}NO_{10}^{\oplus}$ 472.511

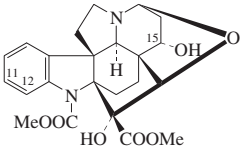
Alkaloid from the seeds of *Alliaria officinalis*. Semicryst. (as acetate salt). Obt. as a mix. of *E*- and *Z*-isomers. λ_{max} 315 (H_2O).

[84123-22-8 , 84123-21-7]

Gadamer, J. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1897, **235**, 44 (*isol*)
Späth, E. *et al., Monatsh. Chem.*, 1920, **41**, 271 (*synth*)
Kung, H.P. *et al., J.A.C.S.*, 1949, **71**, 1836 (*isol, uv*)
Schwartze, P. *et al., Naturwissenschaften*, 1949, **36**, 88 (*isol*)
Tzagoloff, A. *et al., Plant Physiol.*, 1963, **38**, 202 (*metab*)
Durkee, A.B. *et al., J. Food Sci.*, 1975, **40**, 820 (*occur*)
Sosulski, F.W. *et al., Dev. Food Proteins*, 1983, **2**, 109 (*rev*)
Larsen, L.M. *et al., Phytochemistry*, 1983, **22**, 219-222 (*glucoside*)
Regenbrecht, J. *et al., Phytochemistry*, 1985, **24**, 407

Singapurensine A S-309

[158182-15-1]



Absolute Configuration

$C_{23}H_{26}N_2O_7$ 442.468

Alkaloid from *Kopsia singapurensis* (Apocynaceae).

Me ether: ***Singapurensine B***

[158182-16-2]

$C_{24}H_{28}N_2O_7$ 456.494

From *Kopsia singapurensis* (Apocynaceae).

12-Methoxy: ***Kopsidine C***

[164081-05-4]

$C_{24}H_{28}N_2O_8$ 472.494

Alkaloid from leaves of *Kopsia teoi* (Apocynaceae). $[\alpha]_D$ +12 (c, 0.208 in $CHCl_3$). λ_{max} 217 (log ε 4.5); 254 (log ε 3.99); 282 (log ε 3.28); 289 (log ε 3.25) (EtOH).

12-Methoxy, O^{15}*-Me:* ***Kopsidine A***

[149355-64-6]

$C_{25}H_{30}N_2O_8$ 486.521

Novel heptacyclic skeleton. Alkaloid from leaves of *Kopsia teoi* (Apocynaceae). $[\alpha]_D$ +16 (c, 0.21 in $CHCl_3$).

12-Methoxy, O^{15}*-Et:* ***Kopsidine B***

[149355-65-7]

$C_{26}H_{32}N_2O_8$ 500.547

Alkaloid from leaves of *Kopsia teoi* (Apocynaceae). $[\alpha]_D$ +11 (c, 0.073 in $CHCl_3$).

11,12-Methylenedioxy: ***Singapurensine C***

[158182-33-3]
$C_{24}H_{26}N_2O_9$ 486.477
From *Kopsia singapurensis* (Apocynaceae).

11,12-Methylenedioxy, Me ether: ***Singapurensine D***
[158182-17-3]
$C_{25}H_{28}N_2O_9$ 500.504
From *Kopsia singapurensis* (Apocynaceae).

15-Epimer, 12-methoxy: ***Kopsidine D***
[192995-27-0]
$C_{24}H_{28}N_2O_8$ 472.494
Alkaloid from leaves of *Kopsia teoi*. $[\alpha]_D$ -16 (c, 0.058 in $CHCl_3$). λ_{max} 217 (log ϵ 4.36); 254 (log ϵ 3.9); 282 (log ϵ 3.33); 289 (log ϵ 3.3) (EtOH).

Awang, K. *et al., Nat. Prod. Lett.*, 1993, **3**, 283-289 (*Singapurensines*)
Kan-Fan, C. *et al., Nat. Prod. Lett.*, 1993, **3**, 291-298 (*Kopsidines, synth*)
Kam, T.-S. *et al., Tet. Lett.*, 1993, **34**, 1819-1822 (*Kopsidines, isol, uv, pmr, cmr, ms, struct*)
Tan, G.-H. *et al., Tet. Lett.*, 1995, **36**, 1327-1330 (*Kopsidines, synth*)
Kam, T.-S. *et al., Phytochemistry*, 1997, **45**, 623-625 (*Kopsidine D*)

Sinharine S-310

$PhCH_2CH_2NHCOCH{=}CHSMe$

$C_{12}H_{15}NOS$ 221.323

Struct. revised in 1994. λ_{max} 263 (Et_2O) (Berdy).

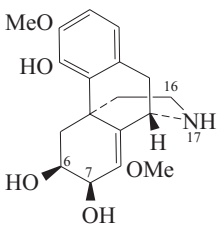
(*E*)-*form* [142717-65-5]
Isol. from *Glycosmis cyanocarpa* (Rutaceae). Antifungal agent. Cryst. Mp 74-75°.

N-*Me:* ***Methylsinharine***
[142717-66-6]
$C_{13}H_{17}NOS$ 235.349
From *Glycosmis cyanocarpa*. Antifungal agent. Oil. λ_{max} 269 (Et_2O) (Berdy).

Greger, H. *et al., Tetrahedron*, 1992, **48**, 1209 (*isol, pmr, cmr*)
Johnson, W.M. *et al., Aust. J. Chem.*, 1994, **47**, 751-756 (*synth*)
Hinterberger, S. *et al., Tetrahedron*, 1994, **50**, 6279 (*synth, struct*)

Sinococuline S-311

8,14-Didehydro-3,8-dimethoxymorphinan-4,6,7-triol, 9CI. Alkaloid FK 1000. FK 1000
[109351-36-2]



$C_{18}H_{23}NO_5$ 333.383
Alkaloid from the stems and rhizomes of *Cocculus trilobus* (Menispermaceae). Possesses antitumour activity. Amorph. powder. $[\alpha]_D^{25}$ -137.4 (c, 0.12 in MeOH). The previously reported specific rotn. (-77) is erroneous. λ_{max} 234 (ϵ 8000); 283 (ϵ 2700) (EtOH).

6,7-Di-Ac: ***Alkaloid FK 3000***. *FK 3000. 6,7-Di-*O*-acetylsinococuline*
[115439-63-9]
$C_{22}H_{27}NO_7$ 417.458
Alkaloid from roots of *Stephania cepharantha* (Menispermaceae). Needles (EtOAc). Mp 185-186°. $[\alpha]_D^{22}$ -163 (c, 0.73 in MeOH). The CA name is erroneous: 4,5,6-triol instead of 4,6,7-triol. λ_{max} 258 (ϵ 3720); 284 (ϵ 1660) (MeOH) (Berdy). λ_{max} 217 (log ϵ 4.28); 286 (log ϵ 3.4) (no solvent reported).

N-*Me:* N-*Methylsinococuline.* ***Cephasugine***
[189390-47-4]
$C_{19}H_{25}NO_5$ 347.41
Alkaloid from *Stephania cepharantha*. Amorph. powder. $[\alpha]_D^{25}$ -98 (c, 0.3 in $CHCl_3$). λ_{max} 283 (log ϵ 3.22) (MeOH).

6,7-Di-Ac, N-*Me:* ***Cephakicine***
[175617-22-8]
$C_{23}H_{29}NO_7$ 431.485
Alkaloid from tubers of *Stephania cepharantha*. Amorph. powder. $[\alpha]_D^{28}$ -161 (c, 0.22 in $CHCl_3$). CAS name for Caphakicine is defective (the methyl group at N-17 is omitted).

16,17-Didehydro: ***Cephamorphinanine***
[142905-23-5]
$C_{18}H_{21}NO_5$ 331.368
Alkaloid from roots of *Stephania cepharantha* (Menispermaceae). Needles (Me_2CO/MeOH). Mp 284-285°. $[\alpha]_D^{22}$ -118 (c, 0.07 in MeOH). λ_{max} 215 (log ϵ 4.23); 235 (sh) (log ϵ 4); 270 (log ϵ 3.25) (no solvent reported).

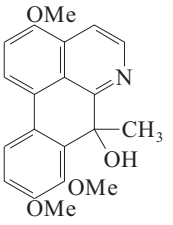
6-Epimer, 10β-hydroxy, O^6,O^7*-di-Ac:* ***Fenfangjine G***
[205533-81-9]
$C_{22}H_{27}NO_8$ 433.457
Alkaloid from the roots of *Stephania tetrandra*. Needles (EtOAc). Mp 203-205°. $[\alpha]_D^{24}$ -63.7 (c, 0.8 in $CHCl_3$).

2-Methoxy, 4-deoxy, O^3*-de-Me:* ***Isosinococuline***
[164176-42-5]
$C_{18}H_{23}NO_5$ 333.383
Alkaloid from rhizomes of *Cocculus trilobus*. Antitumour agent. Cryst. powder. Mp 149-151° dec. $[\alpha]_D^{26}$ -66 (c, 0.31 in MeOH). λ_{max} 208 (log ϵ 4.5); 287 (log ϵ 3.68); 297 (sh) (log ϵ 3.62) (MeOH).

Itokawa, H. *et al., Chem. Pharm. Bull.*, 1987, **35**, 1660-1662 (*isol, uv, pmr, cmr, cd, struct*)
Deng, J.-Z. *et al., Phytochemistry*, 1992, **31**, 1448-1450 (*FK-3000, Cephamorphinanine*)
Itokawa, H. *et al., Bioorg. Med. Chem. Lett.*, 1995, **5**, 821 (*Isosinococuline*)
Hitotsuyanagi, Y. *et al., J.O.C.*, 1995, **60**, 4549-4558 (*synth, Sinococuline, epimers*)
Kashiwaba, N. *et al., J. Nat. Prod.*, 1996, **59**, 476-480 (*Cephakicine*)
Kashiwaba, N. *et al., Chem. Pharm. Bull.*, 1997, **45**, 545-548 (*Cephasugine*)
Ogino, T. *et al., Heterocycles*, 1998, **48**, 311-317 (*Fenfangjine G*)

Sinomendine S-312

[143601-13-2]

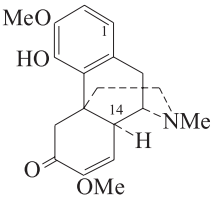


$C_{20}H_{19}NO_4$ 337.374
Minor alkaloid from rhizomes of *Sinomenium acutum* (Menispermaceae).

Chen, Y. *et al., Beijing Yike Daxue Xuebao*, 1991, **23**, 235; *CA*, **117**, 167656q

Sinomenine S-313

7,8-Didehydro-4-hydroxy-3,7-dimethoxy-17-methylmorphinan-6-one, 9CI. Cucoline. Kukoline
[115-53-7]



Absolute configuration

$C_{19}H_{23}NO_4$ 329.395
Alkaloid from *Sinomenium acutum* and *Stephania cepharantha* (Menispermaceae). Starting material for synth. of enantiomeric morphine derivs. Abortifacient in large doses. Immunosuppressant. Analgesic, antiinflammatory, antirheumatic props. Mp 161° Mp 182° (double Mp). $[\alpha]_D^{25}$ -71 (c, 2.1 in EtOH). Log P 0.46 (uncertain value) (calc).

▶ LD_{50} (mus, orl) 580 mg/kg. LD_{50} (mus, ipr) 285 mg/kg. QD2170000

Hydrochloride:
Cryst. + $2H_2O$. Mp 231° dec. $[\alpha]_D^{17}$ -82 (c, 4.4 in H_2O).

N-*Oxide:* ***Sinomenine* N-*oxide***
$C_{19}H_{23}NO_5$ 345.394
Alkaloid from the stems of *Sinomenium acutum*. Powder (MeOH). Mp 155-156°. $[\alpha]_D^{20}$ -79 (c, 0.5 in MeOH).

N-*De-Me:* ***N-Demethylsinomenine***
$C_{18}H_{21}NO_4$ 315.368
Alkaloid from the stems of *Sinomenium acutum*. Cryst. ($CHCl_3$). Mp 222-223°. $[\alpha]_D^{20}$ -108 (c, 0.5 in MeOH).

8-Methoxy: ***Cephamonine***
[162857-99-0]
$C_{20}H_{25}NO_5$ 359.421
Alkaloid from tubers of *Stephania cepharantha* (Menispermaceae). Amorph. powder; prisms (MeOH/Et_2O) as hydrochloride. Mp 183-186° (hydrochloride). $[\alpha]_D^{22}$ -36 (c, 0.11 in $CHCl_3$).

14-Epimer: ***14-Episinomenine***
[60761-53-7]
$C_{19}H_{23}NO_4$ 329.395
Alkaloid from *Ocotea brachybotra* (Lauraceae). Cryst. + ½ C_6H_6 (C_6H_6).

Mp 118-120°. $[\alpha]_D^{20}$ -40 (c, 1 in $CHCl_3$).

14-Epimer, hydrochloride:
Cryst. + $2H_2O$ (MeOH). Mp 200-210°.

14-Epimer, 8-methoxy: ***Cephamuline***
[162990-77-4]
$C_{20}H_{25}NO_5$ 359.421
Alkaloid from tubers of *Stephania cepharantha* (Menispermaceae). Amorph. powder. $[\alpha]_D^{22}$ -63 (c, 0.18 in $CHCl_3$).

1,1′-Dimer: ***1,1′-Bisinomenine****. Dehydrosinomenine. 1,1′-Disinomenine*
[596-58-7]
$C_{38}H_{44}N_2O_8$ 656.774
Alkaloid from seeds and stems of *Sinomenium acutum*. Also obt. by oxidn. of Sinomenine. Tablets (MeOH), needles (C_6H_6). Mp 222°. $[\alpha]_D^{25}$ +97.4 (c, 0.4 in MeOH). Possible artifact of oxidn.

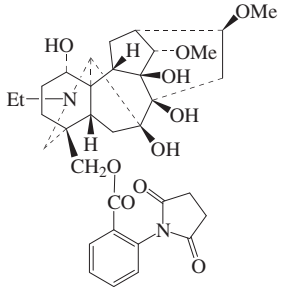
1,1′-Dimer, 7S,8-dihydro: ***7,8-Dihydro-1,1′-bisinomenine****. 7,8-Dihydro-1,1′-disinomenine*
$C_{38}H_{46}N_2O_8$ 658.79
Alkaloid from the stems of *Sinomenium acutum*. Amorph. powder. Mp 220-221°. $[\alpha]_D^{25}$ +79 (c, 0.06 in MeOH). Possible artifact of oxidn. λ_{max} 211 ; 290 (MeOH).

2,2′-Dimer: ***2,2′-Bisinomenine****. 2,2′-Disinomenine*
$C_{38}H_{44}N_2O_8$ 656.774
Alkaloid from the stems of *Sinomenium acutum*. Needles ($CHCl_3$/MeOH). Mp 214-215°. $[\alpha]_D^{25}$ +48 (c, 0.16 in $CHCl_3$). Possible artifact of oxidn. λ_{max} 208 ; 294 (MeOH).

Goto, K. *et al., Annalen*, 1931, **485**, 247 (*struct*)
Bentley, K.W. *et al., J.C.S.*, 1955, 3252
Goto, K. *et al., Sinomenine*, Kitasoto Institute, Tokyo, 1964, (*book*)
Vecchietti, V. *et al., Tet. Lett.*, 1976, 1631 (*epimer*)
Bjorevåg, S.V. *et al., Acta Cryst. C*, 1983, **39**, 1066 (*cryst struct, bibl*)
Hojo, H. *et al., J. Immunopharmacol.*, 1985, **7**, 33 (*pharmacol*)
Liu, L. *et al., Arzneim.-Forsch.*, 1994, **44**, 1223 (*pharmacol*)
Kashiwaba, N. *et al., Chem. Pharm. Bull.*, 1994, **47**, 2452 (*Cephamonine, Cephamuline*)
Tai, Z. *et al., Drugs of the Future*, 1998, **23**, 45-49 (*rev*)
Bao, G.-H. *et al., J. Nat. Prod.*, 2005, **68**, 1128-1130 (*pmr, cmr, N-oxide, N-demethyl*)
Jin, H.-Z. *et al., J. Nat. Prod.*, 2008, **71**, 127-129 (*1,1′-Bisinomenine, 2,2′-Bisinomenine*)

Sinomontanine I S-314

[872977-67-8]

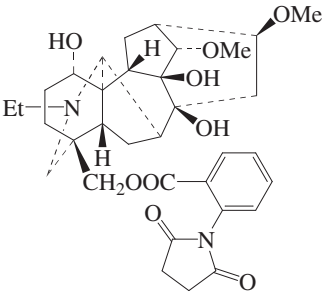


$C_{34}H_{44}N_2O_{10}$ 640.729
Alkaloid from the roots of *Aconitum sinomontanum*.

Peng, C.-S. *et al., Youji Huaxue*, 2005, **25**, 1235-1239; *CA*, **144**, 103949n

Sinomontanine C S-315

[433717-27-2]



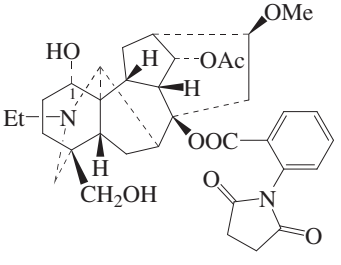
$C_{34}H_{44}N_2O_9$ 624.73
Alkaloid from the roots of *Aconitum sinomontanum*. Amorph. powder. $[\alpha]_D$ +21.8 (c, 0.5 in $CHCl_3$).

7-Hydroxy: ***Sinomontanine I***
$C_{34}H_{44}N_2O_{10}$ 640.729
Alkaloid from *Aconitum sinomontanum*. $[\alpha]_D^{17}$ -9.8 (c, 0.5 in $CHCl_3$).

Wang, F.-P. *et al., J. Asian Nat. Prod. Res.*, 2001, **3**, 15-22 (*Sinomontanine C*)
Peng, C.-S. *et al., Youji Huaxue*, 2005, **25**, 1235-1239 (*Sinomontanine I*)

Sinomontanitine A S-316

[433717-24-9]



$C_{35}H_{44}N_2O_9$ 636.741
Alkaloid from the roots of *Aconitum sinomontanum*. Foam. $[\alpha]_D$ +24.2 (c, 1 in $CHCl_3$).

1-Me ether: ***Sinomontanitine B***
[433717-25-0]
$C_{36}H_{46}N_2O_9$ 650.767
Alkaloid from the roots of *Aconitum sinomontanum*. Amorph. powder. $[\alpha]_D$ +1 (c, 0.5 in $CHCl_3$).

Wang, F.-P. *et al., J. Asian Nat. Prod. Res.*, 2001, **3**, 15-22 (*isol, pmr, cmr*)

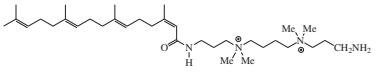
Sinostemonine S-317

$C_{21}H_{36}NO_5$ 382.519
Struct. unknown. Constit. of the Chinese drug pai pu, stated to be derived from an unidentified *Stemona* sp. (Stemonaceae). Needles (H_2O). Mp 138-138.5°. $[\alpha]_D^{25}$ -37 (H_2O).

Lee, H.M. *et al., J. Am. Pharm. Assoc.*, 1940, **29**, 391-394 (*isol, pharmacol*)

Sinulamide S-318

[122027-56-9]
[221278-53-1 , 122027-57-0]

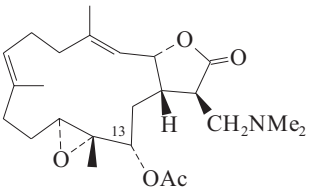


$C_{34}H_{67}N_4O^{2\oplus}$ 547.93
Alkaloid from a soft coral *Sinularia* sp. ATP-ase inhibitor. Cytotoxic agent. Powder (as dichloride, hydrochloride).

Japan. Pat., 1988, 88 307 849; *CA*, **111**, 102689j
Sata, N.U. *et al., Tet. Lett.*, 1999, **40**, 719-722 (*isol, synth, pmr, cmr*)

Sinulamine II S-319

[139579-28-5]



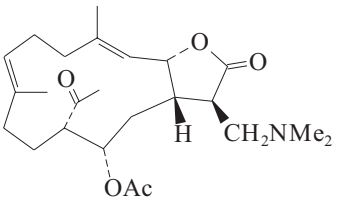
$C_{24}H_{37}NO_5$ 419.56
Constit. of a *Sinularia* coral. Needles. Mp 147-148°. $[\alpha]_D$ +40 (c, 0.1 in $CHCl_3$).

O^{13}-De-Ac, 13-ketone: ***Sinulamine I***
[139579-27-4]
$C_{22}H_{33}NO_4$ 375.507
Constit. of a *Sinularia* coral. Needles. Mp 139-140°. $[\alpha]_D$ +34 (c, 0.4 in $CHCl_3$).

Iguchi, K. *et al., Chem. Lett.*, 1992, 127 (*isol, pmr, cmr*)
Kobayashi, M. *et al., J. Chem. Res., Synop.*, 1992, 340 (*struct*)

Sinulamine III S-320

[139579-29-6]

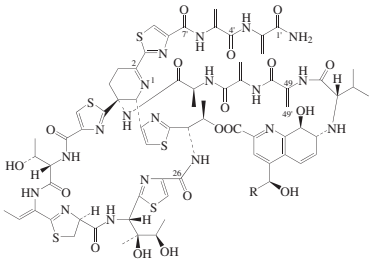


$C_{24}H_{37}NO_5$ 419.56
Constit. of a *Sinularia* coral. Pale yellow viscous oil. $[\alpha]_D$ -57.7 (c, 1.02 in $CHCl_3$).

Iguchi, K. *et al., Chem. Lett.*, 1992, 127 (*isol, pmr, cmr*)
Kobayashi, M. *et al., J. Chem. Res., Synop.*, 1992, 340 (*struct*)

Siomycin A, 8CI S-321

1-Valine-2-(2,3-didehydroalanine)thiostrepton, 9CI. Mutabilycin. Sporangiomycin. Antibiotic 6741-21. Mutabillicin
[12656-09-6]



R = CH_3
Absolute Configuration

$C_{71}H_{81}N_{19}O_{18}S_5$ 1648.867

Depsipeptide antibiotic. Close homologue of Thiostrepton, T-392. Metab. of *Streptomyces sioyaensis* and *Streptomyces mutabilis-thiostreptoni*. Active against gram-positive bacteria. Cryst. (MeOH/dioxan). Mp 255-260° dec. $[\alpha]_D^{33}$ -90.9 (c, 1 in dioxan). λ_{max} 240 (sh) ; 245 (ϵ 50000); 280 (sh) ; 294 (ϵ 18000); 305 (sh) ; 306 (ϵ 14900) (MeOH) (Derep).

7′-Parent amide: ***Siomycin B***
[61419-19-0]
$C_{65}H_{75}N_{17}O_{16}S_5$ 1510.742
Cyclic depsipeptide antibiotic. Metab. of *Streptomyces sioyaensis*. Active against gram-positive bacteria. Cryst. (MeOH/$CHCl_3$). Mp 255-260° dec. $[\alpha]_D^{23}$ -102.9 (c, 0.5 in dioxan). Probably derived from Siomycin A, S-321. λ_{max} 245 (sh) (ϵ 60000); 290 (ϵ 20000) (MeOH) (Derep).

1′-Parent acid, Me ester: ***Siomycin C***
[75524-62-8]
$C_{72}H_{82}N_{18}O_{19}S_5$ 1663.879
Metab. of *Streptomyces sioyaensis*. Active against gram-positive organisms and mycobacteria. Cryst. (MeOH/$CHCl_3$). Sol. $CHCl_3$, dioxan, DMF; fairly sol. Me_2CO, MeOH; poorly sol. H_2O, EtOAc, hexane, bases, acids. Mp 255-260° dec. $[\alpha]_D^{23}$ -84.5 (c, 0.5 in dioxan). λ_{max} 241 ; 255 (MeOH) (Berdy).

49S,49′-Dihydro, 26-thione, 4′-parent amide: ***Thiopeptin A_{4b}***
[70591-35-4]
$C_{68}H_{80}N_{18}O_{16}S_6$ 1597.887
From *Streptomyces tateyamensis*. Active against gram-positive bacteria. Sol. $CHCl_3$; poorly sol. H_2O.

49S,49′-Dihydro, 26-thione, 7′-parent amide: ***Thiopeptin A_{3b}***
[70788-67-9]
$C_{65}H_{77}N_{17}O_{15}S_6$ 1528.824
From *Streptomyces tateyamensis*. Active against gram-positive bacteria. Sol. $CHCl_3$; poorly sol. H_2O.

49S,49′-Dihydro, 26-thione, 1′-parent acid: ***Thiopeptin B_b***
[70591-33-2]
$C_{71}H_{82}N_{18}O_{18}S_6$ 1667.935
Prod. by *Streptomyces tateyamensis* ATCC21389. Active against gram-positive bacteria.

49S,49′-Dihydro, 26-thione, 1′-parent acid, Me ester: ***Thiopeptin A_{1b}***
[70591-34-3]
$C_{72}H_{84}N_{18}O_{18}S_6$ 1681.961
Prod. by *Streptomyces tateyamensis* ATCC21389. Active against gram-positive bacteria. Sol. $CHCl_3$; poorly sol. H_2O. λ_{max} 250 (E1%/1cm 335) (MeOH) (Berdy).

1,2R,49S,49′-Tetrahydro, 26-thione, 4′-parent amide: ***Thiopeptin A_{4a}***
[70591-37-6]
[11075-34-6]
$C_{68}H_{82}N_{18}O_{16}S_6$ 1599.903
Depsipeptide antibiotic. Isol. from *Streptomyces tateyamensis*. Active against gram-positive organisms. Cryst. Sol. $CHCl_3$, DMSO, DMF, dioxan; fairly sol. MeOH, EtOAc, Me_2CO; poorly sol. C_6H_6, H_2O, hexane. Mp *ca.* 200° (dec. browns). $[\alpha]_D^{23}$ -81.5 (c, 1 in $CHCl_3$). Data refers to mixt. of A_{4a} and A_{4b}. λ_{max} 242 ; 290 ; 305 (MeOH) (Berdy).

▶ LD_{50} (mus, ipr) 1000 mg/kg.

1,2R,49S,49′-Tetrahydro, 26-thione, 7′-parent amide: ***Thiopeptin A_{3a}***
[70591-38-7]
$C_{65}H_{79}N_{17}O_{15}S_6$ 1530.84
Isol. from *Streptomyces tateyamensis* ATCC21389. Active against gram-positive organisms. Fine needles. Sol. DMSO, $CHCl_3$, dioxan, THF; fairly sol. EtOAc, Me_2CO; poorly sol. C_6H_6, H_2O, hexane. Mp 200° dec. approx. $[\alpha]_D^{23}$ -10.8 (c, 1 in $CHCl_3$). Data refers to a mixt. of A_{3a} and A_{3b}. λ_{max} 245 (E1%/1cm 410); 292 (E1%/1cm 160); 306 (E1%/1cm 155) (MeOH) (Berdy).

▶ LD_{50} (mus, ipr) 250 mg/kg.

1,2R,49S,49′-Tetrahydro, 26-thione, 1′-parent acid: ***Thiopeptin B_a***. *Thiofeed*
[70606-90-5]
[12789-58-1]
$C_{71}H_{84}N_{18}O_{18}S_6$ 1669.95
Cyclic depsipeptide antibiotic. Isol. from *Streptomyces tateyamensis* ATCC21389. Used as a feed additive. Active against gram-positive bacteria. Faintly yellow cryst. Sol. DMF, dioxan, Py, THF, $CHCl_3$, DMSO; fairly sol. MeOH, Me_2CO, EtOAc; poorly sol. C_6H_6, H_2O, hexane. Mp 219-222°. $[\alpha]_D^{23}$ -80 (c, 1 in $CHCl_3$). λ_{max} 248 (E1%/1cm 430); 250 (E1%/1cm 327) (MeOH) (Berdy).

▶ LD_{50} (mus, ipr) 40-80 mg/kg, LD_{50} (mus, scu) 3600 mg/kg.

1,2R,49S,49′-Tetrahydro, 26-thione, 1′-parent acid, Me ester: ***Thiopeptin A_{1a}***
[70591-36-5]
$C_{72}H_{86}N_{18}O_{18}S_6$ 1683.977
Prod. by *Streptomyces tateyamensis* ATCC21389. Active against gram-positive bacteria. Yellow plates (EtOAc). Sol. DMSO, DMF, $CHCl_3$, dioxan, Py; fairly sol. MeOH, Me_2CO, EtOAc; poorly sol. C_6H_6, hexane, H_2O. Mp *ca.* 200° (browns). $[\alpha]_D$ -71 ($CHCl_3$). Data refers to inseparable mixt. of Thiopeptins A_{1a} and A_1. λ_{max} 295 ; 305 (MeOH) (Berdy).

▶ LD_{50} (mus, ipr) 500 mg/kg.

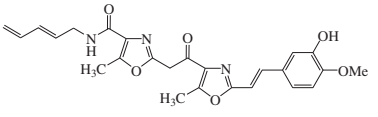
Ebata, M. *et al., J. Antibiot., Ser. A*, 1969, **22**, 364-368; 423-433; 434-441 (*isol, uv*)
Japan. Pat., 1969, 70 05 034; *CA*, **72**, 109825k (*isol, manuf*)
Miyairi, N. *et al., J. Antibiot.*, 1970, **23**, 113-119 (*Thiopeptins, isol*)
Miyairi, N. *et al., Antimicrob. Agents Chemother.*, 1972, **1**, 192-196 (*Thiopeptins*)
Oleskar, A. *et al., Chem. Comm.*, 1978, 577-578 (*struct, nmr*)
Motoki, Y. *et al., Pept. Chem.*, 1979, **17**, 13; 19
Tokura, K. *et al., J. Antibiot.*, 1980, **33**, 1563-1567 (*pmr, cmr, struct*)
Tori, K. *et al., J. Antibiot.*, 1981, **34**, 124-129 (*pmr, cmr, struct*)
Hensens, O.D. *et al., J. Antibiot.*, 1983, **36**, 799-813; 814-831; 832-845 (*Thiopeptins*)
Mori, T. *et al., Chem. Asian J.*, 2008, **3**, 984-1012; 1013-1025 (*synth*)

Siomycin D_1 S-322

[61419-61-2]
As Siomycin A, S-321 with
R = H
$C_{70}H_{79}N_{19}O_{18}S_5$ 1634.841
Cyclic depsipeptide antibiotic. Isol. from *Streptomyces sioyaensis*. Active against gram-positive bacteria. Cryst. Sol. $CHCl_3$, DMF. Mp *ca.* 260° (dec.). $[\alpha]_D$ -69.9 (dioxan). λ_{max} 205 ; 250 ; 285 (EtOH).

Tokura, K. *et al., J. Antibiot.*, 1980, **33**, 1563-1567 (*struct*)

Siphonazole S-323

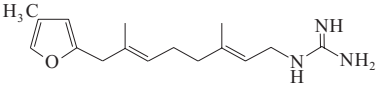


$C_{25}H_{25}N_3O_6$ 463.489
Isol. from *Herpetosiphon* sp. Amorph. solid. λ_{max} 225 (log ϵ 4.54); 334 (log ϵ 4.11) (MeOH).

Nett, M. *et al., Angew. Chem., Int. Ed.*, 2006, **45**, 3863-3867 (*isol, pmr, cmr, ms*)
Linder, J. *et al., Org. Biomol. Chem.*, 2008, **6**, 3908-3916 (*synth*)

Siphonodictidine S-324

[88316-91-0]

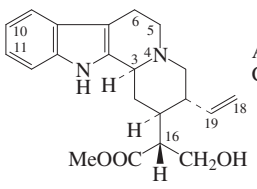


$C_{16}H_{25}N_3O$ 275.393
Constit. of the sponge *Siphonodictyon* sp. Sol. MeOH, EtOAc.

Sullivan, B. *et al., Science (Washington, D.C.)*, 1983, **221**, 1175-1176 (*isol, pmr, cmr, ms*)
Jefford, C.W. *et al., Synlett*, 1990, 745-746 (*synth*)
Jefford, C.W. *et al., Gazz. Chim. Ital.*, 1993, **123**, 317-320 (*synth*)
Jefford, C.W. *et al., J. Nat. Prod.*, 2004, **67**, 1383-1386 (*synth*)

Sitsirikine S-325

[1245-00-7]



Absolute Configuration

$C_{21}H_{26}N_2O_3$ 354.448

Alkaloid from *Catharanthus roseus*, the seeds of *Aspidosperma oblongum*, leaves of *Rauwolfia caffra* and from *Strychnos pungens*. Mp 206-209° (218-220°). $[\alpha]_D^{25}$ -58 (MeOH) (synthetic). $[\alpha]_D$ +23 (MeOH) (natural). λ_{max} 226 (log ϵ 4.56); 282 (log ϵ 3.9); 290 (log ϵ 3.84) (MeOH).

Picrate: Mp 226-228° dec.

Ac: Mp 198°. $[\alpha]_D^{26}$ -26 (MeOH).

18,19-Dihydro: ***(16R)-Dihydrositsirikine***
[6519-26-2]
$C_{21}H_{28}N_2O_3$ 356.464
Alkaloid from *Catharanthus roseus*, *Pausinystalia yohimbe* and *Aspidosperma marcgravianum* (Rubiaceae, Apocynaceae). Cryst. (MeOH aq.). Mp 215°. $[\alpha]_D^{26}$ -55 (MeOH). Forms solvated cryst. from Me_2CO, Mp 180°. λ_{max} 226 (log ϵ 4.61); 282 (log ϵ 3.95); 290 (log ϵ 3.87) (MeOH).

18,19-Dihydro, picrate:
Amber prisms (MeOH). Mp 228-230° dec.

18,19-Dihydro, Ac:
Needles (Me_2CO/petrol). Mp 187°. $[\alpha]_D^{26}$ -31 (MeOH).

3,4,5,6-Tetradehydro: ***3,4,5,6-Tetradehydrositsirikine***
[88607-63-0]
$C_{21}H_{22}N_2O_3$ 350.416
Alkaloid from the seeds of *Aspidosperma oblongum* (Apocynaceae). $[\alpha]_D$ -167 (c, 0.56 in MeOH). Anhydronium base.

$\Delta^{19,20}$-Isomer: see Isositsirikine, I-319

10-Methoxy: ***10-Methoxysitsirikine***
[88607-59-4]
$C_{22}H_{28}N_2O_4$ 384.474
Alkaloid from the seeds of *Aspidosperma oblongum* (Apocynaceae). Amorph. $[\alpha]_D$ -9 (c, 0.54 in MeOH).

16-Epimer: ***16-Episitsirikine****. (16S)-Sitsirikine*
[68346-08-7]
Alkaloid from the seeds of *Aspidosperma album* (Apocynaceae). Mp 205-207°. $[\alpha]_D^{25}$ -22 (MeOH). $[\alpha]_D$ +218 (MeOH).

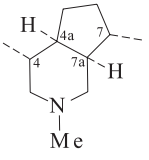
16-Epimer, 18,19-dihydro: ***(16S)-Dihydrositsirikine***
[72401-66-2]
$C_{21}H_{28}N_2O_3$ 356.464
Alkaloid from the root bark of *Aspidosperma marcgravianum* (Apocynaceae). Amorph. $[\alpha]_D$ -14 (c, 0.35 in MeOH). λ_{max} 226 (log ϵ 4.82); 274 (log ϵ 3.89); 284 (log ϵ 3.91); 291 (log ϵ 3.65) (EtOH).

16-Epimer, 10,11-dimethoxy, 18,19-dihydro: ***10,11-Dimethoxy-18,19-dihydro-16S-sitsirikine***
[77795-00-7]
$C_{23}H_{32}N_2O_5$ 416.516
Alkaloid from the trunk bark of *Ochrosia moorei* and *Ochrosia glomerata* (Apocynaceae). λ_{max} 227 ; 297 (EtOH).

Van der Meulen, Th.H. *et al., Rec. Trav. Chim. (J. R. Neth. Chem. Soc.)*, 1964, **83**, 148-153; 154-166 (*Dihydrositsirikine*)
Kutney, J.P. *et al., Tetrahedron*, 1966, **22**, 321-336 (*Dihydrositsirikine, isol, uv, ir, pmr, ms, struct*)
Fujii, T. *et al., Heterocycles*, 1977, **7**, 149-154 (*Dihydrositsirikine, synth*)
Stöckigt, J. *et al., Planta Med.*, 1978, **33**, 188-192 (*config, uv, ir, pmr, ms*)
Brown, R.T. *et al., Tet. Lett.*, 1979, 1805-1808 (*config*)
Ahond, A. *et al., J. Nat. Prod.*, 1981, **44**, 193-199 (*10,11-Dimethoxy-16S-dihydrositsirikine*)
Kohl, W. *et al., Z. Naturforsch., B*, 1982, **37**, 1346-1351 (*Dihydrositsirikine*)
Robert, G.M.T. *et al., J. Nat. Prod.*, 1983, **46**, 694-707; 708-722 (*16R- and 16S-Dihydrositsirikine, 10-Methoxysitsirikine, Tetradehydrositsirikine*)
Seguin, E. *et al., J. Nat. Prod.*, 1984, **47**, 687-691 (*10,11-Dimethoxy-16S-dihydrositsirikine*)
Thépenier, P. *et al., Phytochemistry*, 1990, **29**, 2384-2386 (*isol*)

Skytanthine S-326

*Octahydro-2,4,7-trimethyl-1*H*-cyclopenta[*c*]pyridine*



(4*R*,4a*R*,7*S*,7a*R*)–*form*

$C_{11}H_{21}N$ 167.294

▶ Tremorigenic agent of low toxicity.

(4R,4aR,7S,7aR)-form
α-Skytanthine
[2065-32-9]
Minor alkaloid of *Skytanthus acutus* (Apocynaceae). Liq. Mp 120° (as picrate). $[\alpha]_D$ +79.

*4,4*a*-Didehydro:* ***Δ⁴-Dehydroskytanthine****. 4,4*a*-Didehydroskytanthine*
$C_{11}H_{19}N$ 165.278
Alkaloid from *Skytanthus acutus* (Apocynaceae). Also obt. by treating 4-Hydroxyskytanthine, H-735 with $SOCl_2$. Mp 127° (as picrate).

(4S,4aR,7S,7aS)-form
β-Skytanthine
[24282-31-3]
Major component of the skytanthine mixt. from *Skytanthus acutus* (Apocynaceae). Liq. Mp 135° (as picrate). Bp_{10} 88°. $[\alpha]_D$ +16.4.

N-*Oxide:* ***β-Skytanthine* N-*oxide***
[25499-86-9]
$C_{11}H_{21}NO$ 183.293
Alkaloid from *Skytanthus acutus* (Apocynaceae). Cryst. + $2H_2O$ (C_6H_6/petrol). Mp 218-222° dec. $[\alpha]_D$ 0 (c, 1 in MeOH).

(4R,4aR,7S,7aS)-form
γ-Skytanthine
[6545-32-0]
Synthetic. Liq. Mp 162° (as picrate). $[\alpha]_D$ +59.

(4S,4aR,7S,7aR)-form
δ-Skytanthine
[2883-89-8]
Minor alkaloid of *Skytanthus acutus* (Apocynaceae). Also isol. from *Tecoma stans* (Bignoniaceae). Mp 144-146° (139°)(as picrate). $[\alpha]_D$ +9.

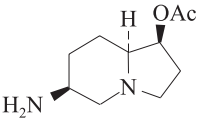
*4*a*,5-Didehydro:* ***Δ⁴ᵃ-Dehydroskytanthine****. 4*a*,5-Didehydroskytanthine*
$C_{11}H_{19}N$ 165.278
Alkaloid from *Tecoma stans* (Bignoniaceae). Mp 167° (as picrate). $[\alpha]_D^{26}$ -89 (c, 0.72 in $CHCl_3$). Catalytic hydrogenation yields δ-skytanthine.

(4ξ,4aξ,7ξ,7aξ)-form
N-*De-Me:* **N-*Normethylskytanthine***
[22324-93-2]
$C_{10}H_{19}N$ 153.267
Alkaloid from *Tecoma stans* (Bignoniaceae). Mp 179-180° (as picrate). Bp_{13} 125-130°. $[\alpha]_D^{22}$ +35.

Eisenbraun, E.J. *et al., Chem. Ind. (London)*, 1962, 1242 (*isol, struct*)
Casinovi, C.G. *et al., Gazz. Chim. Ital.*, 1962, **92**, 479 (*synth*)
Marini-Bettolo, G.B. *et al., Gazz. Chim. Ital.*, 1963, **93**, 1367 (*Δ⁴-Dehydroskytanthine*)
Adolphen, G. *et al., Tetrahedron*, 1967, **23**, 3147 (*Δ⁴-Dehydroskytanthine*)
Dickinson, E.M. *et al., Tetrahedron*, 1969, **25**, 1523 (*N-Normethylskytanthine*)
Eisenbraun, E.J. *et al., J.O.C.*, 1970, **35**, 1364 (*ms*)
Gross, D. *et al., Phytochemistry*, 1973, **12**, 201 (*Skytanthine, Δ⁴ᵃ-Dehydroskytanthine*)
Oppolzer, W. *et al., Tet. Lett.*, 1986, **27**, 1141 (*synth*)
Tsunoda, T. *et al., Tet. Lett.*, 1996, **37**, 2463 (*synth*)
Ernst, M. *et al., Synthesis*, 2002, 1953-1955 (*α-Skytanthine, synth*)
Schöllhorn, B. *et al., Eur. J. Org. Chem.*, 2006, 901-908 (*synth*)
Kaneda, K. *et al., Tetrahedron*, 2008, **64**, 11589-11593 (*α-Skytanthine, synth*)

Slaframine S-327

6-Aminooctahydro-1-indolizinol acetate, 9CI. Alkaloid RL-A



(–)–*form*

$C_{10}H_{18}N_2O_2$ 198.264

Sol. MeOH, EtOAc.

▶ Toxic.

(-)-form [20084-93-9]
Alkaloid toxin from the fungus *Rhizoctonia leguminicola*. Strong parasympathomimetic agent. Cause of 'slobbers' disease (excessive salivation) in cattle feeding on *Rhizoctonia leguminicola*. Toxicity requires metabolic activation.

Has been suggested as therapeutic agent for cystic fibrosis and similar diseases. Mp 183-184° (as dipicrate). $[\alpha]_D$ -38 (c, 0.16 in $CHCl_3$) (synthetic).

N-*Ac:*
Mp 140-142°. $[\alpha]_D^{25}$ -15.9 (c, 5 in EtOH).

6-Epimer:
Synthetic. $[\alpha]_D^{22}$ -11.6 (c, 0.37 in EtOH).

*1,8*a-*Diepimer:*
Synthetic. $[\alpha]_D^{25}$ +20 (c, 0.5 in EtOH).

(±)-*form* [30591-15-2]
Synthetic. Oil; extremely hygroscopic solid as dihydrochloride.

Dipicrate:
Yellow needles (20% EtOH aq.). Mp 215-221° dec.

N-*Ac:*
Cryst. (EtOH/hexane). Mp 143-146°.

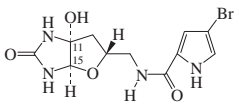
6-Epimer: [114817-63-9]
Synthetic. Oil.

6-Epimer, N-*Ac:* [114817-64-0]
Cryst. by subl. Mp 203°.

Rainey, D.P. *et al., Nature (London)*, 1965, **205**, 203 (*isol*)
Aust, S.D. *et al., Nature (London)*, 1965, **205**, 204 (*isol*)
Whitlock, B.J. *et al., Tet. Lett.*, 1966, 3819 (*isol, ms*)
Gardiner, R.A. *et al., J.A.C.S.*, 1968, **90**, 5639 (*ms, struct, abs config*)
Cartwright, D. *et al., J.A.C.S.*, 1970, **92**, 7615 (*synth*)
Gensler, W.J. *et al., J.O.C.*, 1973, **38**, 3848 (*synth*)
Clevenstine, E.C. *et al., Biochemistry*, 1979, **18**, 3658; 3663 (*biosynth*)
Gobao, R.A. *et al., J.A.C.S.*, 1982, **104**, 7065 (*synth, ir, pmr, ms*)
Schneider, M.J. *et al., J.O.C.*, 1984, **49**, 3681 (*synth, ir, pmr, cmr, ms*)
Howard, A.S. *et al., Alkaloids (Academic Press)*, 1986, **28**, 269 (*pharmacol*)
Elbein, A.D. *et al., Alkaloids: Chem. Biol. Perspect.*, 1987, **5**, 1 (*rev*)
Dartmann, M. *et al., Annalen*, 1988, 695 (*synth, ir, pmr, cmr, ms*)
Pearson, W.H. *et al., J.O.C.*, 1991, **56**, 1976; 1992, **57**, 3977 (*synth, abs config*)
Choi, J.-R. *et al., Tet. Lett.*, 1991, **32**, 6469 (*synth*)
Sibi, M.P. *et al., J.O.C.*, 1992, **57**, 4329 (*synth*)
Knapp, S. *et al., J.O.C.*, 1992, **57**, 4802 (*synth*)
Hua, D.H. *et al., J.O.C.*, 1993, **58**, 2144 (*synth*)
Knight, D.W. *et al., J.C.S. Perkin 1*, 1997, 2179-2187 (*synth*)
Kang, S.H. *et al., Tet. Lett.*, 1998, **39**, 9047-9050 (*synth*)
Sibi, M.P. *et al., J.O.C.*, 1999, **64**, 6434-6443 (*synth*)
Comins, D.L. *et al., Org. Lett.*, 1999, **1**, 1941-1943 (*synth*)
Pourashraf, M. *et al., J.O.C.*, 2000, **65**, 6966-6972 (*synth*)
Cossy, J. *et al., Synthesis*, 2002, 951-957 (*synth, ir, pmr, cmr, ms*)
Cole, R.J. *et al., Handbook of Toxic Fungal Metabolites*, Academic Press, 1981, 912

Slagenine A S-328

[246136-98-1]



Absolute Configuration

$C_{11}H_{13}BrN_4O_4$ 345.152
Alkaloid from the sponge *Agelas nakamurai*. Cytotoxic. Amorph. solid. $[\alpha]_D^{27}$ +11 (c, 1.2 in MeOH). λ_{max} 270 (ϵ 10500) (MeOH).

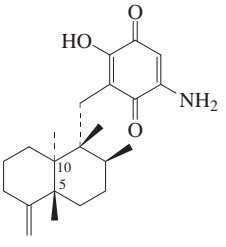
11-Me ether: ***Slagenine B***
[246137-00-8]
$C_{12}H_{15}BrN_4O_4$ 359.179
Alkaloid from *Agelas nakamurai*. Cytotoxic agent. Amorph. solid. $[\alpha]_D^{26}$ +33 (c, 0.2 in MeOH). λ_{max} 269 (ϵ 9000) (MeOH).

11,15-Diepimer, 11-Me ether: ***Slagenine C***
[246137-03-1]
$C_{12}H_{15}BrN_4O_4$ 359.179
Alkaloid from *Agelas nakamurai*. Cytotoxic agent. Amorph. solid. $[\alpha]_D^{25}$ -35 (c, 0.2 in MeOH). λ_{max} 269 (ϵ 9000) (MeOH).

Tsuda, M. *et al., Tet. Lett.*, 1999, **40**, 5709-5712 (*isol, ir, uv, pmr, cmr*)
Gurjar, M.K. *et al., Org. Lett.*, 2002, **4**, 3569-3570 (*synth*)
Jiang, B. *et al., J.O.C.*, 2003, **68**, 2376-2384 (*synth, abs config*)

Smenospongine S-329

[113021-53-7]



Absolute Configuration

$C_{21}H_{29}NO_3$ 343.465
Quinoterpenoid antibiotic. Prod. by the sponges *Smenospongia* sp., *Dactylospongia elegans* and *Petrosaspongia metachromia*. Cytotoxic and antimicrobial agent. Red cryst. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 153-155°. λ_{max} 209 (ϵ 16200); 317 (ϵ 15600) (EtOH) (Derep).

N-*(2-Methylpropyl):* ***Smenospongorine***
[121994-53-4]
$C_{25}H_{37}NO_3$ 399.572
Constit. of *Smenospongia* sp. and *Dactylospongia elegans*. Antimicrobial and cytotoxic agent. Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. λ_{max} 210 (ϵ 14000); 329 (ϵ 20200) (EtOH) (Derep).

N-*Pentyl:* ***Pentylsmenospongine***. *Sesquiterpenylamylaminohydroxyquinone*
[127524-59-8]
$C_{26}H_{39}NO_3$ 413.599
Isol. from a *Smenospongia* sp. Red needles (EtOH aq.). Mp 131-134°. No stereochem. indicated.
Presumed here to be a Smenospongine deriv. Named by the authors as Sesquiterpenylamylaminohydroxyquinone.

N-*(3-Methylbutyl):* ***Smenospongiarine***
[121994-52-3]
$C_{26}H_{39}NO_3$ 413.599
Constit. of *Smenospongia* sp. and *Dactylospongia elegans*. Antimicrobial and cytotoxic agent. Cryst. Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. Mp 170-172°. λ_{max} 210 (ϵ 14000); 329 (ϵ 20200) (EtOH) (Derep). λ_{max} 210 ; 325 (MeOH) (Berdy). λ_{max} 204 (ϵ 27230); 324 (ϵ 14700) (EtOH) (Berdy).

N-*(2-Phenylethyl):* ***Smenospongidine***
[121994-51-2]
$C_{29}H_{37}NO_3$ 447.616
Constit. of *Smenospongia* sp. and *Dactylospongia elegans*. Antimicrobial and cytotoxic agent. Cryst. (MeOH). Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. Mp 168-170°. λ_{max} 207 (ϵ 25000); 327 (ϵ 17000) (EtOH) (Derep). λ_{max} 210 ; 330 (MeOH) (Berdy).

N-*(Carboxymethyl):* ***Glycinylilimaquinone***
[159240-55-8]
$C_{23}H_{31}NO_5$ 401.502
Constit. of a *Fasciospongia* sp. Amorph. red powder. λ_{max} 203 (ϵ 23000); 320 (ϵ 11000); 454 (ϵ 1900); 492 (ϵ 2000) (MeOH) (Berdy).

5-Epimer: ***5-Epismenospongine***
[287967-28-6]
$C_{21}H_{29}NO_3$ 343.465
Constit. of *Petrosaspongia metachromia*. Purple powder. $[\alpha]_D^{23}$ +73.1 (c, 0.03 in $CHCl_3$).

5-Epimer, N-*(3-methylbutyl):* ***5-Epismenospongiarine***
$C_{26}H_{39}NO_3$ 413.599
Constit. of *Dactylospongia elegans*. Oil. $[\alpha]_D$ +96.7 (c, 0.12 in $CHCl_3$). CAS no. not found 9-14CI.

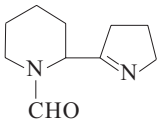
5-Epimer, N-*(2-phenylethyl):* ***5-Epismenospongidine***
[144335-13-7]
$C_{29}H_{37}NO_3$ 447.616
Constit. of *Dactylospongia elegans*. Oil. $[\alpha]_D$ +37.5 (c, 0.16 in $CHCl_3$).

5-Epimer, N-*(2-methylpropyl):* ***5-Epismenospongorine***
[764648-37-5]
$C_{25}H_{37}NO_3$ 399.572
Constit. of *Dactylospongia elegans*. $[\alpha]_D$ +23 (c, 0.06 in $CHCl_3$). λ_{max} 205 (ϵ 20500); 320 (ϵ 9800) (no solvent reported).

Kondracki, M.-L. *et al., Tetrahedron*, 1989, **45**, 1995-2004 (*isol, ir, uv, pmr, cmr*)
Utkina, N.K. *et al., Khim. Prir. Soedin.*, 1990, **26**, 47-51; *Chem. Nat. Compd. (Engl. Transl.)*, 1990, **26**, 37-40 (*Pentylsmenospongine*)
Rodriquez, J. *et al., Tetrahedron*, 1992, **48**, 6667-6680 (*isol, pmr, cmr, abs config, bibl*)
Evans, T.P. *et al., Nat. Prod. Lett.*, 1994, **4**, 287-291 (*Glycinylilimaquinone, isol, pmr, cmr, uv, ir, activity*)
Kwak, J.H. *et al., J. Nat. Prod.*, 2000, **63**, 1153-1156 (*5-Epismenospongine*)
Ling, T. *et al., J.A.C.S.*, 2002, **124**, 12261-12267 (*synth*)
Aoki, S. *et al., Chem. Pharm. Bull.*, 2004, **52**, 935-937 (*Dactylospongia elegans constits, bibl*)

Smipine S-330

*2-(3,4-Dihydro-2*H*-pyrrol-5-yl)-1-piperidinecarboxaldehyde, 9CI. 2-(1-Formyl-2-piperidyl)-1-pyrroline*
[52196-11-9]

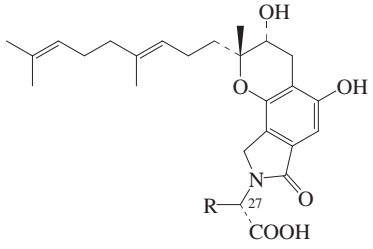


$C_{10}H_{16}N_2O$ 180.249
Alkaloid from *Lupinus formosus* (Fabaceae). Lack of opt. activity prob. due to tautomerism with $\Delta^{2,2'}$-form.

Fitch, W.L. *et al., J.O.C.*, 1974, **39**, 2974-2979 (*isol, uv, ir, pmr, ms, synth*)

SMTP 3 S-331

[221161-84-8]



R = CH_2OH

$C_{26}H_{35}NO_7$ 473.565
Analogue of Staplabin in S-490. Abs. config. of C-27 as shown; rel. config. only of other centres known. Prod. by *Stachybotrys microspora*. Promotes plasminogen activation and plasminogen binding to fibrin. Light brown oil. $[\alpha]_D^{20}$ +19 (c, 0.32 in Me_2CO). λ_{max} 214 (ϵ 43000); 256 (ϵ 9500); 298 (ϵ 3400) (MeOH).

Hasumi, K. *et al., J. Antibiot.*, 1998, **51**, 1059-1068 (*isol, uv, ir, pmr, cmr*)

SMTP 4 S-332

[221161-86-0]
As SMTP 3, S-331 with
R = CH_2Ph
$C_{32}H_{39}NO_6$ 533.663
Analogue of Staplabin in S-490. Prod. by *Stachybotrys microspora*. Promotes plasminogen activation and plasminogen binding to fibrin. Light brown oil. $[\alpha]_D^{20}$ -79 (c, 0.9 in MeOH). λ_{max} 214 (ϵ 40700); 259 (ϵ 8400); 302 (ϵ 2500) (MeOH).

27-Epimer: SMTP 4D. Antibiotic SMTP 4D
Prod. by *Stachybotrys microspora* fed with D-Phe. Light brown oil. $[\alpha]_D^{20}$ +51.4 (c, 0.9 in MeOH).

Hasumi, K. *et al., J. Antibiot.*, 1998, **51**, 1059-1068 (*isol, uv, ir, pmr, cmr*)
Hu, W. *et al., J. Antibiot.*, 2003, **56**, 832-837 (*SMTP 4D*)

SMTP 5 S-333

[221161-89-3]
As SMTP 3, S-331 with
R = $CH_2CH(CH_3)_2$
$C_{29}H_{41}NO_6$ 499.646
Analogue of Staplabin in S-490. Prod. by *Stachybotrys microspora*. Promotes plasminogen activation and plasminogen binding to fibrin. Light brown oil. $[\alpha]_D^{20}$ -12.3 (c, 0.5 in MeOH). λ_{max} 215 (ϵ 36700); 259 (ϵ 7600); 300 (ϵ 2300) (MeOH).

27-Epimer: SMTP 5D. Antibiotic SMTP 5D
Prod. by *Stachybotrys microspora* fed with D-Leu. Light brown oil. $[\alpha]_D^{20}$ -9.8 (c, 0.5 in MeOH).

Hasumi, K. *et al., J. Antibiot.*, 1998, **51**, 1059-1068 (*isol, uv, ir, pmr, cmr*)
Hu, W. *et al., J. Antibiot.*, 2003, **56**, 832-837 (*SMTP 5D*)

SMTP 6 S-334

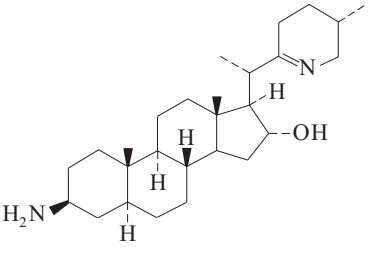
[221161-92-8]
As SMTP 3, S-331 with
R = 3-indolylmethyl
$C_{34}H_{40}N_2O_6$ 572.7
Analogue of Staplabin in S-490. Prod. by *Stachybotrys microspora*. Promotes plasminogen activation and plasminogen binding to fibrin. Light brown oil. $[\alpha]_D^{20}$ -44.6 (c, 0.5 in MeOH). λ_{max} 216 (ϵ 50300); 260 (ϵ 10100); 282 (sh) (ϵ 6200); 290 (sh) (ϵ 5400); 308 (sh) (ϵ 2500) (MeOH).

27-Epimer: SMTP 6D. Antibiotic SMTP 6D
Prod. by *Stachybotrys microspora* fed with D-Trp. Light brown oil. $[\alpha]_D^{20}$ +19.2 (c, 0.5 in MeOH).

Hasumi, K. *et al., J. Antibiot.*, 1998, **51**, 1059-1068 (*isol, uv, ir, pmr, cmr*)
Hu, W. *et al., J. Antibiot.*, 2003, **56**, 832-837 (*SMTP 6D*)

Solacallinidine S-335

*3-Amino-16,28-secosolanid-22(28)-en-16-ol, 9CI. 3-Amino-22,26-epimino-5α-cholest-22(*N*)-en-16-ol*
[61899-01-2]



$C_{27}H_{46}N_2O$ 414.673
Isol. from dried leaf and stem of *Solanum callium* (Solanaceae). Noncryst. Mp 175-178°. $[\alpha]_D^{35}$ +51.3 (c, 0.9 in $CHCl_3$).

Hydrochloride (1:2): [71609-90-0]
Cryst. + H_2O. Mp 310° dec. Strongly retains H_2O.

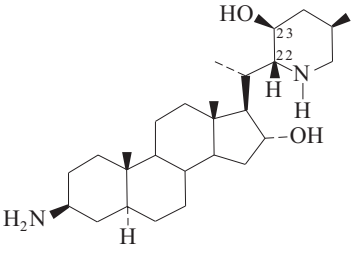
Picrate: [71609-94-4]
Minute yellow cryst. (EtOH aq.). Mp 210° dec.

O-*Ac:*
Pale-yellow solid. Mp 150-152°. $[\alpha]_D^{35}$ -115.6 (c, 1.23 in $CHCl_3$).

Bird, G.J. *et al., Aust. J. Chem.*, 1979, **32**, 597; 797 (*isol, struct, ir, uv, pmr, cmr*)

Solacapine S-336

3-Amino-22,26-iminocholestane-16,23-diol
[63785-22-8]



$C_{27}H_{48}N_2O_2$ 432.688
Alkaloid from *Solanum pseudocapsicum* (Solanaceae). Fine needles (MeOH/$CHCl_3$). Mp 286-288°. $[\alpha]_D$ +47.1 (c, 0.68 in $CHCl_3$/MeOH 1:1).

N-*Tri-Me:* Mp 228-230°.

22-Epimer: ***Isosolacapine***
[90762-21-3]
$C_{27}H_{48}N_2O_2$ 432.688
Alkaloid from *Solanum pseudocapsicum* (Solanaceae). Fine needles (MeOH/MeCN). Mp 238-240°. $[\alpha]_D$ -12.3 (c, 0.73 in $CHCl_3$/MeOH 1:1).

22-Epimer, N-*tri-Me:* Mp 200-201°.

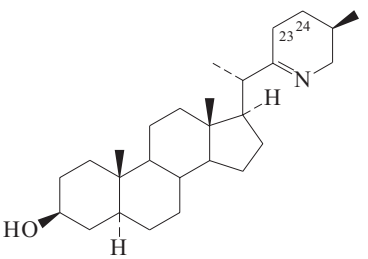
23-Epimer: ***Episolacapine***
[90762-20-2]
$C_{27}H_{48}N_2O_2$ 432.688
Alkaloid from *Solanum pseudocapsicum* (Solanaceae). Prisms (MeOH/$CHCl_3$). Mp 256-258°. $[\alpha]_D$ -41.5 (c, 0.41 in $CHCl_3$/MeOH 1:1).

23-Epimer, N^3,N^3-*di-Me:* Mp 242-244°.

Chakravarty, A.K. *et al., J.C.S. Perkin 1*, 1984, 467 (*isol, ir, pmr, struct*)

Solacongestidine S-337

16,28-Secosolanid-22(28)-en-3-ol, 9CI. 22,26-Epiminocholest-22(28)-en-3-ol
[984-82-7]



$C_{27}H_{45}NO$ 399.659
Alkaloid from *Solanum congestiflorum*, occurring as glycosides (Solanaceae). Shows antifungal activity. Rod-shaped cryst. (MeOH aq., Me_2CO or Et_2O). Mp

169-174°. $[\alpha]_D^{20}$ +35.6 (c, 1.6 in $CHCl_3$).

Glycoside (1): ***Solacongestine***
[57495-66-6]
$C_{39}H_{65}NO_{11}$ 723.943
Alkaloid from *Solanum congestiflorum* (Solanaceae). Conts. 1 D-glucose and 1 D-galactose.

Glycoside (2): ***α-Solacongestinine***
[57572-75-5]
$C_{44}H_{73}NO_{14}$ 840.059
Alkaloid from *Solanum congestiflorum* (Solanaceae). Conts. 1 D-glucose, 1 D-xylose and 1 D-rhamnose.

Glycoside (3): ***β-Solacongestinine***
[57512-69-3]
$C_{38}H_{63}NO_{10}$ 693.916
Alkaloid from *Solanum congestiflorum* (Solanaceae). Conts. 1 D-glucose and 1 D-xylose.

Ac:
Cryst. (MeOH). Mp 156-158°.

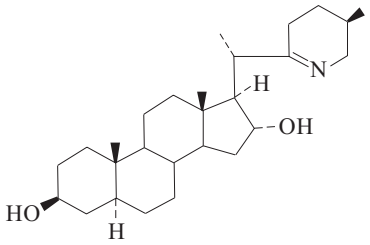
23-Oxo: ***23-Oxosolacongestidine***
[19374-60-8]
$C_{27}H_{43}NO_2$ 413.642
Alkaloid from *Solanum congestiflorum* (Solanaceae). Pale yellow needles. Mp 213-223° (unsharp) and >300° (part dec.).

24-Oxo: ***24-Oxosolacongestidine***
[19374-61-9]
$C_{27}H_{43}NO_2$ 413.642
Alkaloid from *Solanum congestiflorum* (Solanaceae). Pale yellow plates + 1MeOH (MeOH). Mp 158-162° (anhyd.). $[\alpha]_D^{23}$ +40.9 (c, 0.8 in $CHCl_3$).

Sato, Y. *et al., J.O.C.*, 1969, **34**, 1577-1582 (*isol, ms, ir, uv, pmr, oxo-derivs*)
Kusano, G. *et al., J.O.C.*, 1970, **35**, 2624-2626 (*synth*)
Katz, R. *et al., CA*, 1975, **83**, 193635f (*glycosides*)
Bird, G.J. *et al., Aust. J. Chem.*, 1979, **32**, 797-816 (*cmr*)
Kusano, G. *et al., Chem. Pharm. Bull.*, 1987, **35**, 4862-4867 (*activity*)

Solafloridine S-338

*16,28-Secosolanid-22(28)-ene-3,16-diol, 9CI. 22,26-Epiminocholest-22(*N*)-ene-3,16-diol*
[2385-18-4]



$C_{27}H_{45}NO_2$ 415.658
Alkaloid from *Solanum congestiflorum*, *Solanum umbellatum* and *Solanum verbascifolium*, occurring as glycosides (Solanaceae). Shows antifungal activity. Needles (Me_2CO, rapidly), prisms (Me_2CO, slowly). Mp 162-165° Mp 172-175°. $[\alpha]_D^{20}$ +123 (c, 1.15 in $CHCl_3$).

Hydrochloride:
Cryst. + $1H_2O$. Mp 280-288°.

20-Epimer: ***20-Isosolafloridine***
[175777-77-2]
$C_{27}H_{45}NO_2$ 415.658
Alkaloid from roots of *Solanum abutiloides*. Needles (Me_2CO). Mp 136-137°. $[\alpha]_D^{25}$ +45.1 (c, 0.89 in $CHCl_3$).

25-Epimer: ***25-Isosolafloridine***
[36297-66-2]
$C_{27}H_{45}NO_2$ 415.658
Alkaloid from *Solanum callium* and *Solanum aculeatum* (Solanaceae). Mp 164.5-166.5°. $[\alpha]_D^{25}$ +44.8 (c, 0.85 in $CHCl_3$).

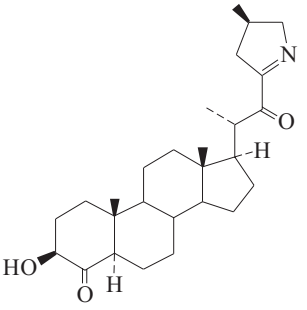
▶ VS3600000

25-Epimer, hydrochloride: Mp 325-330° dec.

Sato, Y. *et al., J.O.C.*, 1969, **34**, 1577 (*ir, uv, pmr, ms*)
Kusano, G. *et al., J.O.C.*, 1970, **35**, 2624 (*synth*)
Bird, G.J. *et al., Tet. Lett.*, 1976, 3653 (*epimer*)
Kusano, G. *et al., Chem. Pharm. Bull.*, 1987, **35**, 4862-4867 (*activity*)
Ripperger, H. *et al., Phytochemistry*, 1996, **41**, 1629 (*20-Isosolafloridine*)

Solamaladine S-339

*21-(3,4-Dihydro-3-methyl-2*H*-pyrrol-5-yl)-3-hydroxy-20-methylpregnane-4,21-dione, 9CI. 23,26-Epimino-3-hydroxycholest-23(*N*)-ene-4,22-dione*
[51059-59-7]



$C_{27}H_{41}NO_3$ 427.626
Alkaloid isol. from green fruits of *Solanum hypomalacophyllum* (Solanaceae). Mp 178-180°. $[\alpha]_D$ +39.5 (EtOH).

Ac: Mp 202-208°. $[\alpha]_D$ -69 (EtOH).

Usubillaga, A. *et al., Rev. Latinoam. Quim.*, 1973, **4**, 32; *CA*, **79**, 123632w (*isol, ms, pmr, ir*)
Usubillaga, A. *et al., Acta Cryst. B*, 1982, **38**, 966 (*cryst struct*)
Usubillaga, A. *et al., J. Nat. Prod.*, 1984, **47**, 52 (*isol*)

Solamine S-340

*N′-[4-(Dimethylamino)butyl]-*N,N*-dimethyl-1,4-butanediamine, 9CI. 4,4′-Bis(dimethylamino)dibutylamine, 8CI.* N^{ω}*-Tetramethylhomospermine*
[17232-87-0]
$Me_2N(CH_2)_4NH(CH_2)_4NMe_2$
$C_{12}H_{29}N_3$ 215.381
Constit. of the roots of *Solanum carolinense* and *Cyphomandra betacea* (Solanaceae). Bp_{10} 80-90° (bath).

Trihydrochloride:
Small prisms (EtOH/Et_2O). Mp 262° dec.

Tripicrate:
Shining plates (EtOH aq.). Mp 113-114°.

N-*Ac:*
Oil; needles (as methiodide). Mp 241-243° (methiodide).

N-*Ethoxycarbonyl:* ***Solaurethine***
[65427-96-5]
$C_{15}H_{33}N_3O_2$ 287.445
Alkaloid from the roots of *Solanum carolinense* (Solanaceae). Rosettes (EtOH aq.) (as picrate). Mp 122° (picrate).

N-*Hexanoyl:* ***Solacaproine***. N,N-*Bis[4-(dimethylamino)butyl]hexanamide*. N-*Hexanoylsolamine*
[35771-90-5]
$C_{18}H_{39}N_3O$ 313.526
Alkaloid from the roots of *Cyphomandra betacea* (tree tomato) (Solanaceae). Gum; fine needles (EtOH) (as picrate). Mp 149-150° (picrate).

N-*Heptanoyl:* **N-*Heptanoylsolamine***
$C_{19}H_{41}N_3O$ 327.552
Tentatively identified as a constit. of *Cyphomandra betacea* (tree tomato) (Solanaceae).

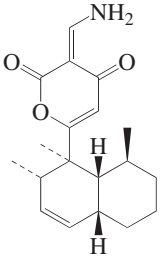
N-*Hexadecanoyl:* ***Solapalmitine***. *Hexadecanoylsolamine. NSC 123124*
[17232-85-8]
$C_{28}H_{59}N_3O$ 453.794
Alkaloid from *Solanum tripartitum* (Solanaceae). Shows significant antineoplastic activity. Liq. $Bp_{0.05}$ 150° (bath). Log P 7.11 (uncertain value) (calc). A mixt. of Solapalmitine and Solapalmitenine was called Solapartine.

N-(2E-*Hexadecenoyl):* ***Solapalmitenine***. N-*(2-Hexadecenoyl)solamine. Solpalmitene. NSC 123125*
[17232-86-9]
$C_{28}H_{57}N_3O$ 451.778
Alkaloid from *Solanum tripartitum* (Solanaceae). Shows significant antineoplastic activity. Liq. $Bp_{0.08}$ 153° (bath). Log P 6.81 (uncertain value) (calc).

Kupchan, S.M. *et al., J.O.C.*, 1969, **34**, 3888 (*Solamine, Solapalmitine, Solapalmitenine, synth, ir, pmr, ms*)
Evans, W.C. *et al., J.C.S. Perkin 1*, 1972, 2017 (*Solamine, Solacaproine, N-Heptanoylsolamine*)
Evans, W.C. *et al., Phytochemistry*, 1977, **16**, 1859 (*Solaurethine*)

Solanapyrone L S-341

[950731-13-2]



Relative Configuration

$C_{19}H_{25}NO_3$ 315.411
Prod. by an unidentified fungus. Oil. $[\alpha]_D^{25}$ -53 (c, 0.04 in MeOH). Isol. as a mixt. of *E*/*Z*-isomers.

N-*(2-Hydroxyethyl):* ***Solanapyrone K***
[950731-12-1]
$C_{21}H_{29}NO_4$ 359.464
Prod. by an unidentified fungus. Oil. $[\alpha]_D^{25}$ -45 (c, 0.12 in MeOH).

Schmidt, L.E. *et al., J. Nat. Prod.*, 2007, **70**, 1317-1320 (*isol, pmr, cmr*)

Solangustidine S-342

[138464-51-4]

$C_{27}H_{43}NO_2$ 413.642

Not well characterised. Struct. unknown, poss. a steroidal alkaloid such as a stereoisomer of Spirosol-5-en-3-ol, S-456. Plates (as hydrochloride). Mp 325° (hydrochloride).

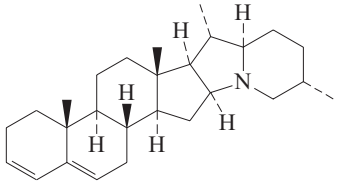
Glucoside: ***Solangustine***
[1401-35-0]
$C_{33}H_{53}NO_7$ 575.784
Isol. from *Solanum angustifolium* (Solanaceae). Cryst. + $1H_2O$. Mp 235° dec.

Ac:
Needles. Mp 256°.

Tutin, F. *et al., J.C.S.*, 1914, **105**, 559-576

3,5-Solanidadiene, 9CI S-343

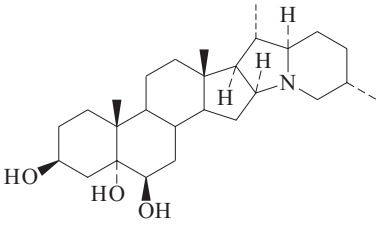
Solanthrene
[26516-51-8]



$C_{27}H_{41}N$ 379.628
Alkaloid from *Fritillaria camtschatcensis*, *Notholirion bulbuliferum* (Liliaceae) and *Solanum* sp. (Solanaceae). Mp 162-165°. Possible artifact.

Soltys, A. *et al., Ber.*, 1933, **66**, 762
Mitsuhashi, H. *et al., Chem. Pharm. Bull.*, 1969, **17**, 2370 (*isol*)

3,5,6-Solanidanetriol S-344



$C_{27}H_{45}NO_3$ 431.657

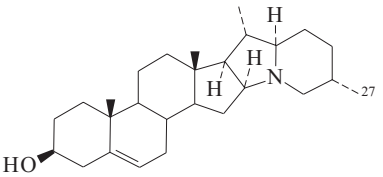
(3β,5α,6β)-*form* [119766-93-7]
Alkaloid from the Chinese herbal drug "Bei-mu" (dried bulbs of *Fritillaria delavayi*) (Liliaceae).

Di-Ac: Mp 100-104°.

Kaneko, K. *et al., Chem. Pharm. Bull.*, 1988, **36**, 4700 (*isol, ir, pmr, cmr, ms, struct*)

Solanidine S-345

Solanid-5-en-3-ol, 9CI. Solatubine. Solanidine T
[80-78-4]



$C_{27}H_{43}NO$ 397.643
Alkaloid from *Solanum tuberosum*, *Cestrum purpureum*, *Fritillaria camtschatcensis*, *Rhinopetalum bucharicum* and *Rhinopetalum stenantherum* (Solanaceae, Liliaceae). Glycosides (esp. Solanines and Chaconine) are trace toxic constits. of potato tubers, and interbreeding of potatoes with wild strains may increase their concn. or introduce other more toxic solanidine glycosides. Mp 219°. $[\alpha]_D$ -27 ($CHCl_3$) (Py).

▶ WF0500000

Hydrochloride: Mp 335° dec.

O-*β-D-Galactopyranoside:* ***γ-Solanine***
[511-37-5]
$C_{33}H_{53}NO_6$ 559.785
Alkaloid from potato spp. (*Solanum tuberosum* and *Solanum chacoense*) and *Veratrum album* ssp. *lobelianum* (Solanaceae, Liliaceae). Antiasthmatic, antibronchitic, antiepileptic agent. Mp *ca.* 250°. $[\alpha]_D$ -26 (MeOH). Log P 4.15 (uncertain value) (calc).

O-*β-D-Glucopyranoside:* ***γ-Chaconine***
[511-36-4]
$C_{33}H_{53}NO_6$ 559.785
Alkaloid from potato spp. *Solanum tuberosum* and *Solanum chacoense* (Solanaceae). Mp 243-244°. $[\alpha]_D$ -40 (Py).

O-*[α-L-Rhamnopyranosyl-(1→4)-β-D-glucopyranoside]:* ***β$_2$-Chaconine***
[469-14-7]
$C_{39}H_{63}NO_{10}$ 705.927
Alkaloid from *Solanum tuberosum* (potato) and other *Solanum* spp. Amorph. powder.

O-*[β-D-Glucopyranosyl-(1→3)-β-D-glucopyranoside]:* ***β-Solanine***
[61877-94-9]
$C_{39}H_{63}NO_{11}$ 721.927
Alkaloid from potato spp. *Solanum wrightii*, *Solanum tuberosum* and *Solanum chacoense* (Solanaceae). Mp 290°. $[\alpha]_D$ -31 (MeOH).

O-*[β-D-Glucopyranosyl-(1→6)-β-D-glucopyranoside]:* ***Stenantidine***
[80248-81-3]
$C_{39}H_{63}NO_{11}$ 721.927
Alkaloid from aerial parts of *Rhinopetalum stenantherum* (Liliaceae). Mp 269-271°. $[\alpha]_D$ -47.5.

O-*[α-L-Rhamnopyranosyl-(1→2)-β-D-glucopyranoside]:* ***β$_1$-Chaconine***
[472-51-5]
$C_{39}H_{63}NO_{10}$ 705.927
Alkaloid from potato spp. (*Solanum chacoense*, *Solanum commersonii*, *Solanum crispum*, *Solanum tuberosum*, *Solanum ajanhuiri* and *Solanum stenotomum*, Solanaceae). Mp 287-292° dec. $[\alpha]_D$ -52.5 (c, 0.9 in Py).

O-*[α-L-Rhamnopyranosyl-(1→4)-β-D-glucopyranosyl-(1→6)-β-D-glucopyranoside]:* ***Stenantine***
[80248-79-9]
$C_{45}H_{73}NO_{15}$ 868.069
Alkaloid from aerial parts of *Rhinopetalum stenantherum* (Liliaceae). Mp 262-264°. $[\alpha]_D$ +46.5. Partial hydrol → β_2 and γ-Chaconines.

O-*[α-L-Rhamnopyranosyl-(1→2)-[β-D-glucopyranosyl-(1→4)]-β-D-glucopyranoside]:* [81942-09-8]
$C_{45}H_{73}NO_{15}$ 868.069
Alkaloid from aerial parts of *Fritillaria thunbergii*. Needles + $2H_2O$ (MeOH). Mp 278-283° dec. $[\alpha]_D$ -58.4 (c, 1 in Py).

O-*[α-L-Rhamnopyranosyl-(1→2)*-O-*[β-D-glucopyranosyl-(1→3)]-β-D-galactopyranoside]:* ***α-Solanine***
[20562-02-1]
$C_{45}H_{73}NO_{15}$ 868.069
Alkaloid from potato (*Solanum tuberosum*) and very many other *Solanum* spp. (Solanaceae). Shows cytotoxic activity against mouse ascites tumour cells. Cholinesterase inhibitor. Responsible for the teratogenicity of sprouting potatoes. Poorly sol. H_2O, Et_2O, $CHCl_3$. Mp 286°. $[\alpha]_D$ -59 (Py). Log P 0.96 (uncertain value) (calc).

▶ Adverse human CNS and gastrointestinal effects by ingestion (associated with consumption of damaged or rotten potatoes). LD_{50} (rat, orl) 590 mg/kg. LD_{50} (mus, ipr) 42 mg/kg. Exp. reprod. and teratogenic effects. WF0250000

O-*[α-L-Rhamnopyranosyl-(1→2)*-O-*[α-L-rhamnopyranosyl-(1→4)]-β-D-glucopyanoside]:* ***α-Chaconine***
[20562-03-2]
$C_{45}H_{73}NO_{14}$ 852.07
Alkaloid from *Solanum chacoense* and very many other *Solanum* spp. (Solanaceae). Mp 243°. $[\alpha]_D$ -85 (Py).

▶ Adverse human CNS and gastrointestinal effects by ingestion (associated with consumption of damaged or rotten potatoes). LD_{50} (rat, ipr) 84 mg/kg. Exp. reprod. and teratogenic effects. FL6700000

O-*[β-D-Glucopyranosyl-(1→4)-β-D-xylopyranosyl-(1→4)-β-D-xylopyranoside]:* ***Solacauline***
$C_{43}H_{69}NO_{14}$ 824.016
Alkaloid from potato spp. *Solanum acaule*, *Solanum punae* and *Solanum schreiteri* (Solanaceae). Mp 260-265°. $[\alpha]_D$ -30 (Py).

O-*[β-D-Glucopyranosyl-(1→3)-β-D-glucopyranosyl-(1→4)-α-L-rhamnopyra-*

nosyl-(1→2)-β-D-glucopyranoside]: ***Hyacinthoside***
[102728-60-9]
$C_{51}H_{83}NO_{20}$ 1030.211
Alkaloid from the bulbs of *Notholirion hyacinthinum* (Liliaceae).

O-*[β-D-Glucopyranosyl-(1→2)-[β-D-xylopyranosyl-(1→3)]-β-D-glucopyranosyl-(1→4)-β-D-galactopyranoside]:* ***Δ⁵-Demissine***. *5,6-Dehydrodemissine*
[195433-57-9]
$C_{50}H_{81}NO_{20}$ 1016.185
Alkaloid from potato (*Solanum commersonii*).

O-*[β-D-Glucopyranosyl-(1→6)-[α-L-rhamnopyranosyl-(1→2)]-β-D-glucopyranosyl-(1→3)-β-D-glucopyranosyl-(1→4)-β-D-glucopyranoside]:* ***Neohyacinthoside***
[115491-59-3]
$C_{57}H_{93}NO_{25}$ 1192.353
Isol. from the bulbs of *Notholirion hyacinthinum*. Powder. Mp 262-265°. $[\alpha]_D^{20}$ -25.9 (c, 0.29 in Py).

O-*Ac:* Mp 208°.

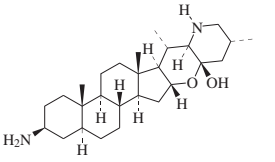
5,6-Dihydro: see Demissidine, D-205

27-Hydroxy: ***Camtschatcanidine***
[78719-99-0]
$C_{27}H_{43}NO_2$ 413.642
Isol. from *Fritillaria camtschatcensis* (Liliaceae). Needles (Me_2CO). Mp 261-265°. $[\alpha]_D$ -19.4 (c, 0.1 in MeOH).

Clemo, G.R. *et al., J.C.S.*, 1936, 1299 (*isol*)
Prelog, V. *et al., Helv. Chim. Acta*, 1942, **25**, 1306; 1944, **27**, 390 (*struct*)
Schreiber, K. *et al., Chem. Ber.*, 1954, **87**, 1007 (*Solacauline*)
Correia Alves, L. *et al., Garcia de Orta*, 1961, **9**, 713; *CA*, **61**, 12326d (*trioside*)
Budzikiewicz, H. *et al., Tetrahedron*, 1964, **20**, 2267 (*ms*)
Höhne, E. *et al., Tetrahedron*, 1966, **22**, 673 (*cryst struct*)
Schreiber, K. *et al., Alkaloids (Academic Press)*, 1968, **10**, 1 (*rev*)
Kessar, S.V. *et al., Tetrahedron*, 1971, **27**, 2153 (*synth*)
Radeglia, R. *et al., Tet. Lett.*, 1977, 903 (*cmr*)
Ripperger, H. *et al., Alkaloids (Academic Press)*, 1981, **19**, 81 (*rev*)
Samikov, K. *et al., Khim. Prir. Soedin.*, 1981, **17**, 349; *Chem. Nat. Compd. (Engl. Transl.)*, 273 (*Stenantine, Stenantidine*)
Kaneko, K. *et al., Phytochemistry*, 1981, **20**, 327 (*Camtschatcanidine*)
Katajima, J. *et al., Phytochemistry*, 1982, **21**, 187 (*glycosides*)
Qiu, F. *et al., CA*, 1983, **98**, 104286n (*glycoside*)
Keeler, R.F. *et al., Alkaloids: Chem. Biol. Perspect.*, 1984, **4**, 389 (*rev, tox*)
Xu, W.H. *et al., Yaoxue Xuebao*, 1986, **21**, 177; *CA*, **105**, 21663 (*Hyacinthoside*)
Xu, W.H. *et al., Yaoxue Xuebao*, 1988, **23**, 61-63 (*Neohyacinthoside*)
Vazquez, A. *et al., Euphytica*, 1997, **95**, 195-201 (*Δ⁵-Demissine*)
Lawson, D.R. *et al., J. Agric. Food Chem.*, 1997, **45**, 4122-4126 (*pmr, cmr, ms*)
Abouzid, S. *et al., Nat. Prod. Res.*, 2008, **22**, 147-153 (*α-Chaconine, β₂-Chaconine*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, CDG500; SKS000

Solanocapsine S-346

3-Amino-16,23-epoxy-16,28-secosolanidan-23-ol, 9CI. 3-Amino-22,26-epimino-16,23-epoxycholestan-23-ol
[639-86-1]



$C_{27}H_{46}N_2O_2$ 430.673
Alkaloid from *Solanum pseudocapsicum*, *Solanum capsicastrum*, *Solanum hendersonii*, *Solanum seaforthianum* and *Solanum tucumanense* (Solanaceae). Shows antifungal and antiyeast activity. Antibacterial agent. On injection produces local irritation and cardiac disorganisation. Mp 222° dec. (213-215° dec.) (variable). $[\alpha]_D$ +25 (MeOH). Log P 4.7 (uncertain value) (calc). λ_{max} 286 ; 293 (EtOH) (Berdy).

▶ LD_{50} (mus, ipr) 100 mg/kg, LD_{50} (mus, scu) 300 mg/kg. WF0539000

Sulfate: Mp 324°.

Picrate: Mp 194° (200-201°).

Me ether: **O-*Methylsolanocapsine***
[90819-92-4]
$C_{28}H_{48}N_2O_2$ 444.699
Alkaloid from *Solanum pseudocapsicum* (Solanaceae). Fine needles (MeOH/MeCN). $[\alpha]_D$ +44.4 (c, 0.63 in $CHCl_3$).

5,6-Didehydro: ***Solanoforthine***
[64919-50-2]
$C_{27}H_{44}N_2O_2$ 428.657
Isol. from *Solanum seaforthianum* (Solanaceae). Cryst. (C_6H_6). Mp 208-210°. $[\alpha]_D$ -26.6 (c, 0.6 in $CHCl_3$).

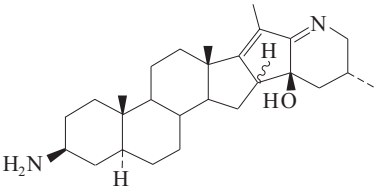
*22,*N-*Didehydro, Me ether:* ***Solacassine***
[59957-97-0]
$C_{28}H_{46}N_2O_2$ 442.684
Isol. from *Solanum pseudocapsicum* flower tops (Solanaceae). Antibacterial agent. Shows antifungal and antiyeast activity. Mp 215-220° dec. $[\alpha]_D$ +29 (MeOH). Probable struct. OMe group may be an artifact of extraction. Drawing error in the paper.

7β-Hydroxy, Me ether: ***7-Hydroxy-O-methylsolanocapsine***
[114847-23-3]
$C_{28}H_{48}N_2O_3$ 460.699
Minor alkaloid from leaves of *Solanum capsicastrum* (Solanaceae). Amorph. powder. $[\alpha]_D^{24}$ +65.2 (c, 0.46 in $CHCl_3$).

Barger, G. *et al., J.C.S.*, 1936, 1537 (*isol*)
Boll, P.M. *et al., Antibiot. Annu.*, 1955, 255-259 (*activity*)
Budzikiewicz, H. *et al., Tetrahedron*, 1964, **20**, 2267 (*ms*)
Ripperger, H. *et al., Annalen*, 1969, **723**, 159 (*pmr, ir, struct*)
Höhne, E. *et al., Tetrahedron*, 1970, **26**, 3569 (*cryst struct*)
Ripperger, H. *et al., Tetrahedron*, 1972, **28**, 1629 (*synth*)
Mitscher, L. *et al., Experientia*, 1976, **32**, 415 (*Solacassine, activity*)
Ali, E. *et al., Tetrahedron*, 1977, **33**, 1371 (*isol, ms, Solanoforthine*)
Bird, G.J. *et al., Aust. J. Chem.*, 1979, **32**, 797 (*cmr*)
Ripperger, H. *et al., Pharmazie*, 1982, **37**, 870 (*isol*)
Chakravarty, A.K. *et al., J.C.S. Perkin 1*, 1984, 467 (*O-Methylsolanocapsine*)
Chakravarty, A.K. *et al., Phytochemistry*, 1988, **27**, 956 (*7β-Hydroxy-O-methylsolanocapsine*)

Solanocastrine S-347

[112156-49-7]

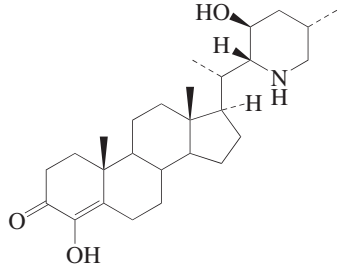


$C_{27}H_{42}N_2O$ 410.642
Very minor alkaloid from the leaves of *Solanum capsicastrum* (Solanaceae). Mp 258-260° dec. $[\alpha]_D$ 0 ($CHCl_3$).

Chakravarty, A.K. *et al., Tet. Lett.*, 1987, **28**, 4753 (*uv, ir, pmr, cmr, ms, struct*)

Solanudine S-348

[118655-44-0]



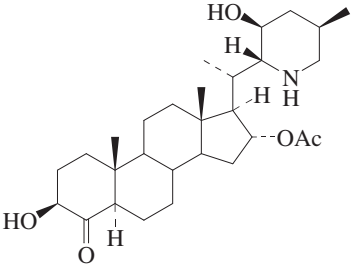
$C_{27}H_{43}NO_3$ 429.642
Alkaloid from the green berries of *Solanum nudum* (Solanaceae). Needles. Mp 225°. $[\alpha]_D^{23}$ +352 (c, 1.02 in dioxan).

Tri-Ac: Mp 162-165°.

Usubillaga, A. *et al., Phytochemistry*, 1988, **27**, 3031-3032 (*isol, uv, ir, pmr, cmr, ms, struct*)

Solaphyllidine S-349

16-Acetoxy-3,23-dihydroxy-16,28-secosolanidan-4-one, 9CI. Solafilidine
[26520-58-1]



$C_{29}H_{47}NO_5$ 489.694
Alkaloid from leaves and berries of *Solanum hypomalacophyllum* and from *Solanum ecuadorense* (Solanaceae). Cryst. (MeOH). Mp 165-170°. $[\alpha]_D^{20}$ -25.4 (c, 0.887 in MeOH).

▶TU4382400

O-*De-Ac:* ***Deacetylsolaphyllidine***.
3,16,23-Trihydroxy-16,28-secosolanidan-4-one, 9CI
[26520-60-5]
$C_{27}H_{45}NO_4$ 447.657
Alkaloid from *Solanum ecuadorense* and *Solanum hypomalacophyllum* (Solanaceae). Mp 272-276°. $[\alpha]_D^{20}$ +48.3 (c, 0.258 in MeOH).

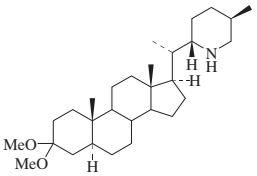
▶TU4381800

O,O,N-*Tri-Ac:*
Cryst. (propan-2-ol). Mp 204-206°. $[\alpha]_D^{20}$ -25.4 (c, 0.75 in MeOH).

Usubillaga, A. *et al., J.A.C.S.*, 1970, **92**, 700-701 (*isol, ms, cryst struct*)
Usubillaga, A. *et al., CA*, 1973, **79**, 113186 (*isol*)
Usubillaga, A. *et al., Planta Med.*, 1973, **23**, 286-289 (*isol*)

Solaquidine S-350

3,3-Dimethoxy-16,28-secosolanidane, 9CI. 3,3-Dimethoxy-22,26-epiminocholestane
[65180-55-4]



Absolute Configuration

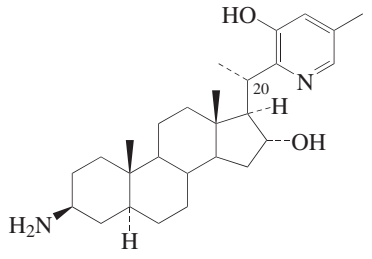
$C_{29}H_{51}NO_2$ 445.727
Alkaloid from *Solanum pseudoquina* (Solanaceae). Needles (MeOH). Mp 278-281°.

Ac:
Cryst. (Me_2CO/hexane). Mp 129-134°.

Usubillaga, A. *et al., Phytochemistry*, 1977, **16**, 1861-1862 (*ir, ms, pmr, struct*)
Meccia, G. *et al., J. Nat. Prod.*, 1987, **50**, 642-645 (*abs config*)

Solaseaforthine S-351

3-Amino-16,28-secosolanida-22,24,26(28)-triene-16,23-diol
[70191-12-7]



$C_{27}H_{42}N_2O_2$ 426.641
Alkaloid from *Solanum seaforthianum* and *Solanum giganteum* (Solanaceae). Mp 172-178°. $[\alpha]_D$ +22 (MeOH). Prob. artifact.

N,N-*Di-Me,* O,O-*di-Ac:*
Glass.

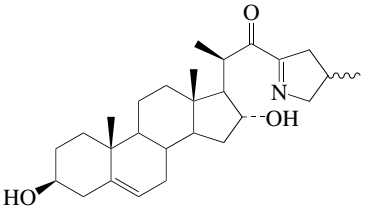
20-Epimer: ***Isosolaseaforthine***
[70139-40-1]
From *Solanum seaforthianum* (Solanaceae). Amorph. Mp 172-180°. $[\alpha]_D$ +26 (MeOH).

20-Epimer, N,N-*di-Me,* O,O-*di-Ac:* Mp 202-204°.

Ali, E. *et al., Tet. Lett.*, 1978, **19**, 3871-3874 (*isol, uv, cd, pmr, struct*)

Solaspiralidine S-352

[181884-05-9]

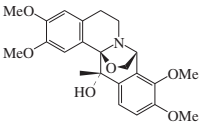


$C_{27}H_{41}NO_3$ 427.626
Alkaloid from roots of *Solanum spirale*. Needles (Me_2CO). Mp 212-214°. $[\alpha]_D^{26}$ -63.1 (c, 0.86 in $CHCl_3$).

Ripperger, H. *et al., Phytochemistry*, 1996, **43**, 705-707 (*isol, pmr, cmr, ms, cd, struct*)

Solidaline S-353

[67257-83-4]



Relative Configuration

$C_{23}H_{27}NO_6$ 413.469
Alkaloid from *Corydalis solida*. Cryst. ($CHCl_3$/MeOH). Mp 198°. λ_{max} 233 (log ε 4.03); 281 (log ε 3.51); 316 (log ε 3.42); 364 (log ε 3.33) (MeOH). λ_{max} 248 (log ε 4.02); 318 (log ε 3.92); 367 (log ε 3.9) (MeOH/HCl aq.).

Manske, R.H.F. *et al., Can. J. Chem.*, 1978, **56**, 383-386 (*isol, uv, pmr, cmr, ms*)
Suau, R. *et al., Tetrahedron*, 1999, **55**, 4019-4028 (*synth*)

Solimocurarine S-354

[1361-30-4]

Struct. unknown. Alkaloid from *Strychnos solimoesana* (Loganiceae). Blue col. with Ce(*IV*).

Marini-Bettolo, G.B. *et al., Gazz. Chim. Ital.*, 1956, **86**, 1148

Solimoesines S-355

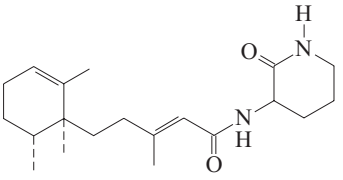
[1361-29-1 (Solimoesine III), 1361-28-0 (Solimoesine II), 1361-27-9 (Solimoesine I)]

Struct. unknown. Alkaloids from *Strychnos solimoesana* (Loganiceae). Solimoesines I, II and III identified, giving different colour reacns.

Marini-Bettolo, G.B. *et al., Gazz. Chim. Ital.*, 1956, **86**, 1148

Sollasin B S-356

[149297-98-3]

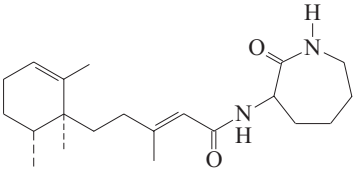


$C_{20}H_{32}N_2O_2$ 332.485
Constit. of *Poecillastra sollasi*. Solid. Sol. MeOH, C_6H_6; poorly sol. H_2O. $[\alpha]_D^{24}$ +29.8 (c, 2.14 in $CHCl_3$). λ_{max} 215 (ε 18900) (heptane).

Killday, K.B. *et al., J. Nat. Prod.*, 1993, **56**, 500-507 (*isol, pmr, cmr*)

Sollasin C S-357

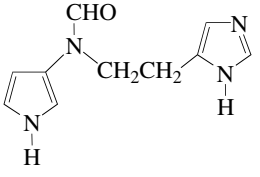
[149297-99-4]



$C_{21}H_{34}N_2O_2$ 346.512
Constit. of *Poecillastra sollasi*. Oil. Sol. MeOH, C_6H_6; poorly sol. H_2O. $[\alpha]_D^{24}$ +10 (c, 1.26 in $CHCl_3$). λ_{max} 222 (ε 21772) (heptane) (Berdy).

Killday, K.B. *et al., J. Nat. Prod.*, 1993, **56**, 500 (*isol, pmr, cmr*)

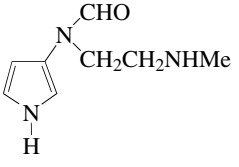
Solsodomine A S-358



$C_{10}H_{12}N_4O$ 204.231
Alkaloid from the fruit of *Solanum sodomaeum*. Yellow needles (EtOH). Mp 118-119°. λ_{max} 280 (log ε 3.08); 320 (log ε 3.06); 348 (log ε 2.93) (MeOH). λ_{max} 280 (ε 1200); 320 (ε 1150); 348 (ε 850) (MeOH) (Berdy).

El Sayed, K.A. *et al., J. Nat. Prod.*, 1998, **61**, 848-850 (*isol, uv, ir, pmr, cmr, ms*)

Solsodomine B S-359

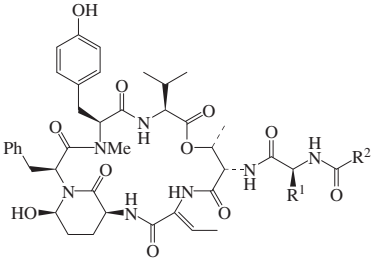


$C_8H_{13}N_3O$ 167.21
Constit. of the fruit of *Solanum sodomaeum*. Needles (EtOH). Mp 112-113°. λ_{max} 271 (log ϵ 3.1); 317 (log ϵ 3.01); 342 (log ϵ 2.03) (MeOH). λ_{max} 271 (ϵ 1280); 317 (ϵ 1030); 342 (ϵ 550) (MeOH) (Berdy).

El Sayed, K.A. *et al., J. Nat. Prod.*, 1998, **61**, 848-850 (*isol, uv, ir, pmr, cmr, ms*)

Somamide A S-360

[350811-51-7]



R^1 = -CH_2CH_2SOMe, R^2 = -$(CH_2)_4CH_3$

Absolute Configuration

$C_{48}H_{67}N_7O_{12}S$ 966.163
Depsipeptide antibiotic. Related to Dolastatin 13. Isol. from an assemblage of *Lyngbya majuscula* and *Schizothrix* sp. Oil. $[\alpha]_D^{22}$ -2.5 (c, 0.08 in MeOH).

Nogle, L.M. *et al., J. Nat. Prod.*, 2001, **64**, 716-719 (*isol*)
Yokokawa, F. *et al., Tet. Lett.*, 2002, **43**, 8673-8677 (*synth*)

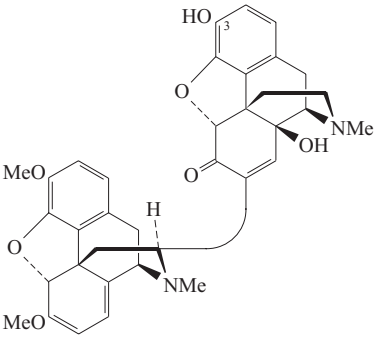
Somniferine† S-361

Struct. unknown. Alkaloid from *Withania somnifera* (Solanaceae). Mp 185-187° dec.

Majumdar, D.N. *et al., Curr. Sci.*, 1952, **21**, 46; *CA*, **47**, 2184b
Majumdar, D.N. *et al., Indian J. Pharm.*, 1955, **17**, 158-161; *CA*, **50**, 3713f

Somniferine† S-362

[117611-63-9]



$C_{36}H_{36}N_2O_7$ 608.69
Alkaloid from *Papaver somniferum* (opium poppy) (Papaveraceae). Hypnotic agent. Amorph. $[\alpha]_D^{20}$ -297 (c, 1 in $CHCl_3$). Log P 0.28 (uncertain value) (calc).

3-Me ether: **O-*Methylsomniferine***
[117611-62-8]
$C_{37}H_{38}N_2O_7$ 622.716
Alkaloid from *Papaver somniferum* (opium poppy) (Papaveraceae). No phys. props. reported.

Dragar, C. *et al., Tet. Lett.*, 1988, **29**, 3115 (*struct*)

Somniferinine S-363

Struct. unknown. Alkaloid from *Withania somnifera* (Solanaceae). Mp 120° dec.

Majumdar, D.N. *et al., Curr. Sci.*, 1952, **21**, 46; *CA*, **47**, 2184b
Majumdar, D.N. *et al., Indian J. Pharm.*, 1955, **17**, 158-161; *CA*, **50**, 3713f

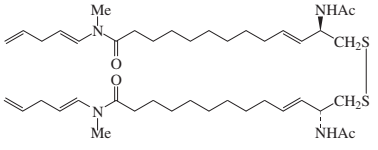
Somnine S-364

Struct. unknown. Alkaloid from *Withania somnifera* (Solanaceae). Mp 300°.

Majumdar, D.N. *et al., Indian J. Pharm.*, 1955, **17**, 158-161; *CA*, **50**, 3713f

Somocystinamide A S-365

[422312-35-4]



Absolute Configuration

$C_{42}H_{70}N_4O_4S_2$ 759.171
Isol. from a cyanobacterial assemblage of *Lyngbya majuscula* and *Schizothrix* sp. Cytotoxic. Amorph. solid. $[\alpha]_D^{22}$ +13.5 (c, 0.75 in $CHCl_3$). λ_{max} 210 (ϵ 17700); 241 (ϵ 9900) (MeOH).

Nogle, L.M. *et al., Org. Lett.*, 2002, **4**, 1095-1098 (*isol, pmr, cmr*)
Suyama, T.L. *et al., Org. Lett.*, 2008, **10**, 4449-4452 (*synth*)

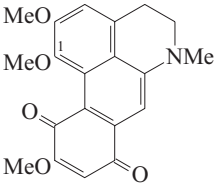
Songorinine S-366

$C_{27}H_{33}NO_9$ 515.559
Struct. unknown. Alkaloid from the upper parts of *Aconitum soongoricum* (Ranunculaceae). Cryst. (MeOH). Mp 203-204° dec.

Samatov, A.S. *et al., Dokl. Akad. Nauk UzSSR*, 1965, **22**, 21-22; *CA*, **63**, 12000f

Sonodione S-367

Isocorydione
[75652-90-3]



$C_{20}H_{19}NO_5$ 353.374
Alkaloid from stem bark of *Hernandia sonora* and *Dehaasia triandra*. Violet prisms (MeOH). Mp 207-209°. λ_{max} 224 (log ϵ 4.43); 277 (log ϵ 4.16); 323 (log ϵ 4.22); 565 (log ϵ 3.49) (EtOH).

N-*De-Me:* ***Norsonodione***. N-*Demethylsonodione. Norisocorydione.* N-*Demethylisocorydione*
[173220-46-7]
$C_{19}H_{17}NO_5$ 339.347
From stem bark of *Hernandia sonora* and *Dehaasia triandra*. Violet prisms ($CHCl_3$/MeOH). Mp 216-219°. λ_{max} 223 (log ϵ 4.44); 276 (log ϵ 4.13); 327 (log ϵ 4.23); 564 (log ϵ 3.58) (EtOH).

O^1-*De-Me:* ***1-Demethylsonodione***
[174581-72-7]
$C_{19}H_{17}NO_5$ 339.347
From stem bark of *Hernandia sonora*. Greenish prisms (MeOH). Mp 230-233°. λ_{max} 219 (log ϵ 4.44); 283 (log ϵ 4.09); 336 (log ϵ 4.28); 492 (sh) (log ϵ 3.36); 642 (log ϵ 3.67) (EtOH).

4,5-Didehydro: ***Dehydroisocorydione***
[176901-23-8]
$C_{20}H_{17}NO_5$ 351.358
Alkaloid from leaves of *Dehaasia triandra*. Needle-like cryst. (Me_2CO). Mp 252.5°.

Chen, I.-S. *et al., Planta Med.*, 1995, **61**, 537 (*isol, uv, ir, pmr, ms, struct*)
Lee, S.-S *et al., J. Nat. Prod.*, 1996, **59**, 55 (*isol, uv, ir, pmr, cmr, ms, struct*)
Lee, S.S. *et al., Tetrahedron*, 1996, **52**, 6561 (*Dehydroisocorydione*)

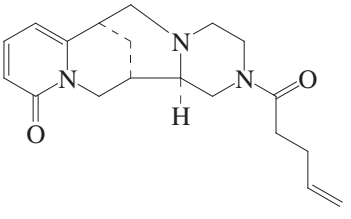
Sonpeimine S-368

$C_{27}H_{43}NO_4$ 445.641
Struct. unknown. Steroidal alkaloid from "Bei-son-pei-mu" (*Fritillaria* spp.) (Liliaceae). Mp 256-258°.

Chu, T.-T. *et al., CA*, 1957, **51**, 446a

Sophazrine S-369

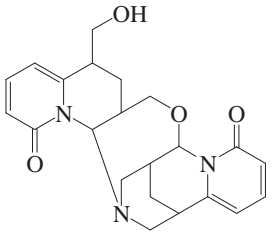
[137760-66-8]



$C_{19}H_{25}N_3O_2$ 327.425
Alkaloid from *Sophora griffithii* (Fabaceae). Amorph. solid. $[\alpha]_D^{23}$ +213 (c, 0.02 in MeOH). New type of tetracyclic quinolizidine alkaloid. λ_{max} 233 (log ϵ 3.81); 309 (log ϵ 3.87) (MeOH).

Atta-ur-Rahman, *et al., J. Nat. Prod.*, 1991, **54**, 929-935 (*isol, uv, ir, pmr, cmr, ms, struct*)

Sophoattarine S-370

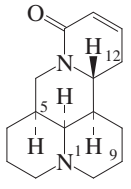


$C_{22}H_{25}N_3O_4$ 395.457
Alkaloid from *Sophora griffithii*. Gum. Opt. inactive. λ_{max} 234 (log ϵ 3.71); 310 (log ϵ 3.77) (MeOH).

Ajaz, M.S. *et al., Thesis*, Univ. of Karachi, 1993, (*isol, pmr, cmr, ms, struct*)

Sophocarpine S-371

13,14-Didehydromatridin-15-one, 9CI
[6483-15-4]



Absolute Configuration

$C_{15}H_{22}N_2O$ 246.352
Alkaloid from *Sophora alopecuroides*, *Sophora pachycarpa*, *Sophora griffithii*, *Sophora flavescens*, *Sophora prodani* and other *Sophora* spp., *Ammothamnus lehmannii* (preferred genus name *Sophora*), *Goebelia pachycarpa* (preferred genus name *Sophora*), and *Leontice smirnovii* (Fabaceae, Leonticaceae). Antineoplastic agent, inhibitor of Walker 256 carcinosarcoma and other tumours. Antiarrhythmic agent, nematocide. Cryst. + $1H_2O$. Poorly sol. hexane. Mp 53-54° (81-82°). $[\alpha]_D$ -29.4 (EtOH). Log P 0.28 (uncertain value) (calc). λ_{max} 260 (log ϵ 3.6) (EtOH). λ_{max} 260 (ϵ 2500) (EtOH).

▶ LD_{50} (rat, orl) 196 mg/kg. LD_{50} (rat, ipr) 124 mg/kg. WG1136000

Hydrochloride: Mp 300°.

Picrate:
Yellow cryst. (H_2O). Mp 155-157°.

1-Oxide: ***Sophocarpidine***. *Sophocarpine* N-*oxide*. *Oxysophocarpine*
[26904-64-3]
$C_{15}H_{22}N_2O_2$ 262.351
Alkaloid from *Sophora pachycarpa, Sophora alopecuroides* and *Sophora flavescens* (Fabaceae). Mp 202-204° (200° dec.). $[\alpha]_D$ +32.4 (c, 2.0 in EtOH). $[\alpha]_D^{18}$ +21 (c, 2.0 in EtOH).

1-Oxide, picrate: [26904-65-4]
Mp 200-202°.

5α-Hydroxy: ***5-Hydroxysophocarpine***
[131871-12-0]
$C_{15}H_{22}N_2O_2$ 262.351
Alkaloid from *Sophora flavescens* var. *angustifolia* (Fabaceae). Amorph. solid. $[\alpha]_D$ -36 (c, 0.06 in MeOH).

9-Hydroxy: ***9α-Hydroxysophocarpine***
[220961-52-4]
$C_{15}H_{22}N_2O_2$ 262.351
Alkaloid from *Sophora viciifolia* (Fabaceae). Cryst. (C_6H_6). Mp 120°. $[\alpha]_D^{25}$ -44.2 (c, 0.36 in EtOH).

9α-Hydroxy, N-*oxide:* ***9-Hydroxysophocarpine* N-*oxide***
$C_{15}H_{22}N_2O_3$ 278.35
Alkaloid reported from *Sophora flavescens*. Details not accessible. Cited by Murakoshi *et al*. Phytochemistry, 1982, **21**, 2379-2384. CAS no. not found 8-14CI.

12α-Hydroxy: ***12α-Hydroxysophocarpine***
$C_{15}H_{22}N_2O_2$ 262.351
Alkaloid from the roots of *Sophora flavescens*. Plates (petrol/Me_2CO). Mp 90-92°. $[\alpha]_D^{24}$ +137.3 (c, 0.1 in MeOH). λ_{max} 206 (log ϵ 3.86); 258 (log ϵ 3.37) (MeOH).

12β-Hydroxy: ***12β-Hydroxysophocarpine***
[259860-47-4]
$C_{15}H_{22}N_2O_2$ 262.351
Alkaloid from the seeds of *Sophora viciifolia*. Cryst. (C_6H_6). Mp 146°. $[\alpha]_D^{25}$ -215.1 (c, 0.22 in EtOH).

5-Epimer: ***5-Episophocarpine***. *13,14-Dehydrosophoridine. 13,14-Didehydrosophoridine*
[68398-59-4]
$C_{15}H_{22}N_2O$ 246.352
Alkaloid from epigeal parts of *Sophora flavescens* and from *Sophora alopecuroides*. Prisms + $1H_2O$ (hexane). Mp 83-84°. $[\alpha]_D^{22}$ +76.8 (c, 0.266 in EtOH) (synthetic).

5-Epimer, 1-oxide: ***13,14-Dehydrosophoridine* N-*oxide***
[64838-17-1]
$C_{15}H_{22}N_2O_2$ 262.351
Alkaloid from *Sophora alopecuroides* (Fabaceae). Cryst. (Et_2O). Mp 68-70°. $[\alpha]_D^{25}$ +27.5 (c, 0.75 in H_2O). C-7 config. wrongly shown, apparently a drawing error.

[78003-71-1 , 68365-91-3]

Orekhov, A.P. *et al., Ber.*, 1934, **67**, 77-83 (*isol*)
Okuda, S. *et al., Chem. Ind. (London)*, 1962, 1326-1327 (*synth, struct*)
Iskandarov, S. *et al., Khim. Prir. Soedin.*, 1968, **4**, 106-109; *Chem. Nat. Compd. (Engl. Transl.)*, 1969, **4**, 90-92 (*ms*)
Zainutdinov, U.N. *et al., CA*, 1970, **72**, 121754u (*oxide*)
Yunusov, T.K. *et al., Khim. Prir. Soedin.*, 1972, **8**, 200-207; *Chem. Nat. Compd. (Engl. Transl.)*, 1972, **8**, 201-206 (*ir*)
Kushmuradov, J.K. *et al., Phytochemistry*, 1972, **11**, 3441-3445 (*isol, oxide*)
Karakozova, S.A. *et al., Khim. Prir. Soedin.*, 1975, **11**, 664-665; *Chem. Nat. Compd. (Engl. Transl.)*, 1975, **11**, 703 (*isol*)
Kuchkarov, S. *et al., Khim. Prir. Soedin.*, 1977, **13**, 541-544; *Chem. Nat. Compd. (Engl. Transl.)*, 1977, **13**, 451-454 (*epimer oxide*)
Abdusalamov, B.A. *et al., Khim. Prir. Soedin.*, 1977, **13**, 549-552; *Chem. Nat. Compd. (Engl. Transl.)*, 1977, **13**, 458-460 (*biosynth*)
Ueno, A. *et al., Chem. Pharm. Bull.*, 1978, **26**, 1832-1836 (*isol, struct, oxide*)
Morinaga, K. *et al., Chem. Pharm. Bull.*, 1978, **26**, 2483-2488 (*isol, synth, cryst struct, epimer*)
Kushmuradov, Yu.K. *et al., Khim. Prir. Soedin.*, 1978, **14**, 231-233; *Chem. Nat. Compd. (Engl. Transl.)*, 1978, **14**, 190-191 (*epimer*)
Wang, Y.L. *et al., J. Tradit. Chin. Med.*, 1987, **7**, 35 (*pharmacol*)
Saito, K. *et al., J. Chromatogr.*, 1989, **462**, 333-340 (*hplc*)
Saito, K. *et al., Planta Med.*, 1990, **56**, 487 (*5-Hydroxysophocarpine*)
Matsuda, K. *et al., J. Agric. Food Chem.*, 1991, **39**, 189-191 (*isol, activity*)
Xiao, P. *et al., Phytochemistry*, 1999, **50**, 189-193 (*12β-Hydroxysophocarpine, 9α-Hydroxysophocarpine, cmr*)
Atta-ur-Rahman, *et al., J. Nat. Prod.*, 2000, **63**, 190-192 (*12-β-Hydroxysophocarpine, cryst struct*)
Ding, P.-L. *et al., Bioorg. Med. Chem. Lett.*, 2006, **16**, 1231-1235 (*12α-Hydroxysophocarpine*)

Sophochrysine S-372

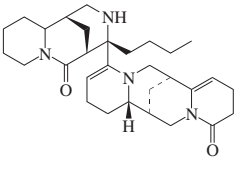
[1361-32-6]

$C_{15}H_{19}N_3O_2$ 273.334
Tentative mol. formula. Struct. unknown. Alkaloid from *Sophora chrysophylla, Sophora microphylla, Sophora tetraptera* and bark of *Genista monosperma* (Fabaceae). Amorph. Mp 284-287°. $[\alpha]_D$ -113.2 (EtOH).

Picrate:
Short yellow needles. Mp 360° (darkens at 250°).

Briggs, L.H. *et al., J.C.S.*, 1937, 1795; 1938, 1206; 1942, 507-509; 555-556; 1960, 1955-1956
González, A. *et al., An. R. Soc. Esp. Fis. Quim., Ser. B*, 1959, **55**, 607-616; *CA*, **54**, 8874c (*isol*)
Ahmed, Z.F. *et al., J. Chem. U.A.R.*, 1963, **6**, 227-242; *CA*, **63**, 3312a (*isol*)
Morales Mendez, A. *et al., CA*, 1975, **82**, 121629p (*isol*)

Sophohejrine S-373

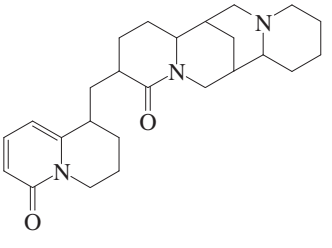


Relative Configuration

$C_{30}H_{44}N_4O_2$ 492.703
Alkaloid from *Sophora griffithii*. Yellow gum. $[\alpha]_D^{25}$ -250 (c, 0.204 in MeOH).

Ajaz, M.S. *et al., Thesis*, Univ. of Karachi, 1993, (*isol, pmr, cmr, ms, struct.*)

Sopholupanizidone S-374

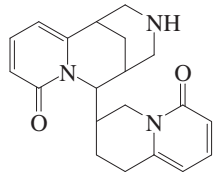


$C_{25}H_{35}N_3O_2$ 409.57

Alkaloid from *Sophora griffithii*. $[\alpha]_D^{25}$ -55 (c, 0.124 in MeOH). λ_{max} 235 (log ϵ 3.93); 310 (log ϵ 3.97) (MeOH).

Ajaz, M.S. *et al., Thesis*, Univ. of Karachi, 1993, (*isol, pmr, cmr, ms, struct*)

Sopholupisine S-375



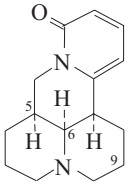
$C_{20}H_{23}N_3O_2$ 337.421

N-*Me:* **N-*Methylsopholupisine***
$C_{21}H_{25}N_3O_2$ 351.447
Alkaloid from leafy shoots of *Sophora griffithii*. $[\alpha]_D^{25}$ -76 (c, 0.244 in MeOH). λ_{max} 232 (log ϵ 3.89); 308 (log ϵ 3.93) (MeOH).

Ajaz, M.S. *et al., Thesis*, Univ. of Karachi, 1993, (*isol, pmr, cmr, ms, struct*)

Sophoramine S-376

11,12,13,14-Tetradehydromatridin-15-one, 9CI
[6882-66-2]



$C_{15}H_{20}N_2O$ 244.336
Probable abs. config. shown by analogy with Matrine; does not appear to have been unambiguously detd. Alkaloid from *Sophora pachycarpa*, *Sophora alopecuroides* and *Sophora flavescens* (Fabaceae). Mp 164-165°. $[\alpha]_D$ -90.8 (c, 0.5 in EtOH).

Hydroiodide: Mp 294-296°.

Picrate: Mp 229-231° dec.

*7,8-Didehydro: 7,8,11,12,13,14-Hexadehydromatridin-15-one. **Δ⁷-Dehydrosophoramine**. 7,8-Didehydrosophoramine*
[67767-18-4]
$C_{15}H_{18}N_2O$ 242.32
Alkaloid from epigeal parts of *Sophora flavescens* (not present in root) (Fabaceae). Prisms (Et_2O/CH_2Cl_2). Mp 146-148°. $[\alpha]_D^{17}$ -110 (c, 1.0 in H_2O).

*7α-Hydroxy: **7α-Hydroxysophoramine***
$C_{15}H_{20}N_2O_2$ 260.335
Alkaloid from *Sophora alopecuroides*. Cryst. (Me_2CO/MeOH). Mp 204°. $[\alpha]_D^{25}$ -87 (c, 0.04 in MeOH). λ_{max} 203 (log ϵ 4.04); 233 (log ϵ 3.72); 309 (log ϵ 3.84) (MeOH).

*9α-Hydroxy: **9α-Hydroxysophoramine***
$C_{15}H_{20}N_2O_2$ 260.335
Alkaloid from *Sophora flavescens* (Fabaceae).

9α-Hydroxy, N-*oxide: **9α-Hydroxysophoramine N-oxide***
$C_{15}H_{20}N_2O_3$ 276.335
Alkaloid from *Sophora flavescens* (Fabaceae).

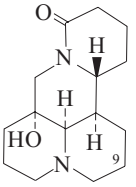
*5-Epimer: **Neosophoramine***
[52932-74-8]
$C_{15}H_{20}N_2O$ 244.336
Alkaloid from epigeal parts of *Sophora alopecuroides* (Fabaceae). Cryst. (EtOH). Mp 124-125°. $[\alpha]_D$ -30 (EtOH). Abs. config. unknown, therefore could be the 6,7-diepimer of Sophoramine.

*6-Epimer: **Isosophoramine**. Allosophoramine*
[6838-34-2]
$C_{15}H_{20}N_2O$ 244.336
Isol. from *Sophora pachycarpa* (Fabaceae). Mp 149°. $[\alpha]_D$ +53.3 (c, 1.005 in EtOH). Energetic redn. gives (+)-Allomatrine.

Proskurnina, N. *et al., Dokl. Akad. Nauk SSSR*, 1953, **91**, 1145; *CA*, **48**, 11438 (*isol, struct*)
Okuda, S. *et al., Chem. Ind. (London)*, 1962, 1326 (*struct*)
Sadykov, A.S. *et al., Dokl. Akad. Nauk SSSR, Ser. Khim.*, 1962, **145**, 829 (*isol, Isosophoramine*)
Okuda, S. *et al., Chem. Pharm. Bull.*, 1963, **11**, 1349 (*synth, uv, Isosophoramine*)
Wenkert, E. *et al., J.A.C.S.*, 1973, **95**, 8427 (*synth, Isosophoramine*)
Monakhova, T.E. *et al., Khim. Prir. Soedin.*, 1974, **10**, 472; *Chem. Nat. Compd. (Engl. Transl.)*, 1974, **10**, 477 (*isol, ir, ms, Neosophoramine*)
Ueno, A. *et al., Chem. Pharm. Bull.*, 1978, **26**, 1832 (*Dehydrosophoramine*)
Kusmuradov, Yu.K. *et al., Khim. Prir. Soedin.*, 1979, **15**, 353; *Chem. Nat. Compd. (Engl. Transl.)*, 1979, **15**, 306 (*ms*)
Kuchkarov, S. *et al., Khim. Prir. Soedin.*, 1979, **15**, 413; *Chem. Nat. Compd. (Engl. Transl.)*, 1979, **15**, 364 (*isol, Neosophoramine*)
Murakoshi, I. *et al., Phytochemistry*, 1982, **21**, 2379 (*9α-Hydroxysophoramine, 9α-Hydroxysophoramine N-oxide*)
Abdusalamov, B.A. *et al., Khim. Prir. Soedin.*, 1984, **20**, 3; *Chem. Nat. Compd. (Engl. Transl.)*, 1984, **20**, 1 (*biosynth*)
Atta-ur-Rahman, *et al., J. Nat. Prod.*, 2000, **63**, 190-192 (*cryst struct, 7α-Hydroxysophoramine*)

Sophoranol S-377

5-Hydroxymatridin-15-one, 9CI. 5-Hydroxymatrine
[3411-37-8]



$C_{15}H_{24}N_2O_2$ 264.367
Alkaloid from *Euchresta japonica, Euchresta horsfeldii* and *Sophora flavescens* (Fabaceae). Mp 171°. $[\alpha]_D^{20}$ +66 (H_2O). Not to be confused with Sophoronol (some refs confused in CA).

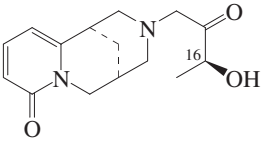
N^1-*Oxide:* ***Sophoranol* N-*oxide***
[72362-01-7]
$C_{15}H_{24}N_2O_3$ 280.366
Alkaloid from *Euchresta japonica, Euchresta horsfeldii* and *Sophora flavescens* (Fabaceae). Needles (Me_2CO/MeOH). Mp 259-261°. $[\alpha]_D^{28}$ +38.1 (c, 0.27 in EtOH).

*9α-Hydroxy: **5α,9α-Dihydroxymatrine**. 5,9-Dihydroxymatridin-15-one, 9CI*
[72362-00-6]
$C_{15}H_{24}N_2O_3$ 280.366
Alkaloid from leaves of *Euchresta horsfeldii* and *Sophora flavescens* (Fabaceae). Cryst. (Me_2CO). Mp 192-193°. $[\alpha]_D^{20}$ +40.6 (c, 0.17 in EtOH).

Bohlmann, F. *et al., Chem. Ber.*, 1958, **91**, 2189 (*isol, ir, struct, synth*)
Okuda, S. *et al., Chem. Pharm. Bull.*, 1965, **13**, 482 (*isol*)
Ohmiya, S. *et al., Phytochemistry*, 1978, **18**, 648 (*isol, struct, Sophoranol, Dihydroxymatrine*)
Ohmiya, S. *et al., Chem. Pharm. Bull.*, 1980, **28**, 546 (*isol, struct, synth, ms, pmr, oxide*)
Murakoshi, I. *et al., Phytochemistry*, 1982, **21**, 2379 (*isol*)

Sophorasine A S-378

*1,2,3,4,5,6-Hexahydro-3-(3-hydroxy-2-oxobutyl)-1,5-methano-8*H*-pyrido[1,2-a][1,5]diazocin-8-one, 9CI.* N-*(3-Hydroxy-2-oxobutyl)cytisine*
[135091-04-2]



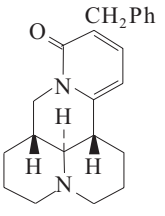
$C_{15}H_{20}N_2O_3$ 276.335
Alkaloid from the leaves of *Sophora griffithii* (Fabaceae). Amorph. solid. $[\alpha]_D^{26}$ -137 (c, 0.02 in MeOH).

*16-Epimer: **Sophorasine B***
[135213-47-7]
$C_{15}H_{20}N_2O_3$ 276.335
Alkaloid from the leaves of *Sophora griffithii* (Fabaceae). Amorph. solid. $[\alpha]_D^{26}$ -136.7 (c, 0.02 in MeOH).

Atta-ur-Rahman, *et al., Phytochemistry*, 1991, **30**, 1001-1003 (*isol*)

Sophorbenzamine S-379

11,12,13,14-Tetradehydro-14-(phenylmethyl)matridin-15-one, 9CI
[60077-56-7]



$C_{22}H_{26}N_2O$ 334.46
Alkaloid from *Goebelia pachycarpa* (preferred genus name *Sophora*) (Fabaceae). Mp 118-119°. $[\alpha]_D^{25}$ +90 (c, 1 in $CHCl_3$).

Picrate: Mp 122-123°.

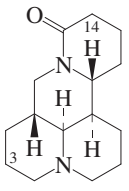
Abdusalamov, B.A. *et al., Khim. Prir. Soedin.*, 1976, **12**, 71

Abdusalamov, B.A. *et al., Khim. Prir. Soedin.*, 1977, **13**, 549; *Chem. Nat. Compd. (Engl. Transl.)*, 1977, **13**, 458 (*isol, uv, ir, ms, cmr, struct, biosynth*)

Sophoridine S-380

(5β)-Matridin-15-one, 9CI

[6882-68-4]



(-)-*form*

$C_{15}H_{24}N_2O$ 248.367

Stereoisomer of Allomatrine, A-628, Matrine, M-121, Isomatrine, I-244 and Darvasamine, D-79.

► WG1250000

(+)-*form*

Alkaloid from epigeal parts of *Leontice albertii* (Leonticaceae). Cryst. (petrol). Mp 108-109°. $[\alpha]_D$ +59.3 (c, 1.30 in EtOH).

(-)-*form*

Alkaloid from *Sophora alopecuroides* and *Sophora prodani* (Fabaceae). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 109-110°. $[\alpha]_D^{18}$ -63.8 (c, 0.53 in H_2O).

► LD_{50} (mus, ipr) 60 mg/kg.

1α-Oxide:

Semisynthetic. Cryst. $[\alpha]_D^{25}$ -42.9 (c, 0.17 in EtOH).

1β-Oxide: ***Sophoridine* N-*oxide***

[54809-74-4]

$C_{15}H_{24}N_2O_2$ 264.367

Alkaloid from *Euchresta japonica* (Fabaceae). Strongly hygroscopic needles. $[\alpha]_D^{28}$ -5.6 (c, 0.14 in EtOH). Sophoridine *N*-oxide of undetd. config. was also isol. from *S. alopecuroides.*

3α-Hydroxy: ***3α-Hydroxysophoridine***

[41645-69-6]

$C_{15}H_{24}N_2O_2$ 264.367

Minor alkaloid from epigeal parts of *Sophora alopecuroides* (Fabaceae). Mp 162-164°. $[\alpha]_D^{20}$ -50.6 (c, 0.555 in EtOH).

14β-Hydroxy: ***14β-Hydroxysophoridine***

$C_{15}H_{24}N_2O_2$ 264.367

Alkaloid from the seeds of *Sophora viciifolia*. Needles (CH_2Cl_2/hexane). Mp 90°. $[\alpha]_D^{25}$ -94.8 (c, 0.47 in EtOH).

Kamalitdinov, D. *et al., Khim. Prir. Soedin.*, 1967, **3**, 352; *Chem. Nat. Compd. (Engl. Transl.)*, 1967, **3**, 297 (*isol*)

Yunusov, T.K. *et al., Khim. Prir. Soedin.*, 1972, **8**, 200; *Chem. Nat. Compd. (Engl. Transl.)*, 1972, **8**, 201 (*ir*)

Monakhova, T.E. *et al., Khim. Prir. Soedin.*, 1973, **9**, 59; *Chem. Nat. Compd. (Engl. Transl.)*, 1973, **9**, 52 (*deriv*)

Vul'fson, N.S. *et al., Khim. Geterotsikl. Soedin.*, 1974, **10**, 251; *Chem. Heterocycl. Compd. (Engl. Transl.)*, 1974, **10**, 221 (*ms*)

Kamaev, F.G. *et al., Khim. Prir. Soedin.*, 1974, **10**, 744; *Chem. Nat. Compd. (Engl. Transl.)*, 1974, **10**, 765 (*pmr, struct*)

Morinaga, K. *et al., Chem. Pharm. Bull.*, 1978, **26**, 2483 (*pmr*)

Ibragimov, B.T. *et al., Khim. Prir. Soedin.*, 1979, **15**, 355; 1981, **17**, 588; *Chem. Nat. Compd. (Engl. Transl.)*, 1979, **15**, 308; 1981, **17**, 424 (*cryst struct, Sophoridine, Sophoridine N-oxide*)

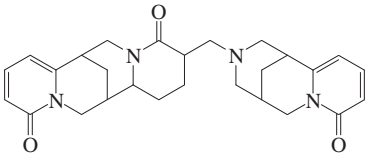
Kuchkarov, S. *et al., Khim. Prir. Soedin.*, 1979, **15**, 364; *Chem. Nat. Compd. (Engl. Transl.)*, 1979, **15**, 364 (*isol*)

Ohmiya, S. *et al., Chem. Pharm. Bull.*, 1980, **28**, 546 (*isol, struct, oxide*)

Ibragimov, B.T. *et al., Khim. Prir. Soedin.*, 1982, **18**, 71; *Chem. Nat. Compd. (Engl. Transl.)*, 1982, **18**, 66 (*rev, stereochem*)

Xiao, P. *et al., Phytochemistry*, 1999, **50**, 189-193 (*14β-Hydroxysophoridine*)

Sophosalimine S-381



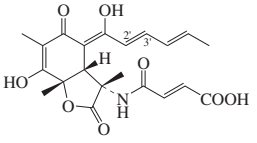
$C_{27}H_{32}N_4O_3$ 460.575

Alkaloid from *Sophora griffithii*. Readily dec. Opt. inactive. λ_{max} 234 (log ε 3.81); 310 (log ε 3.85) (MeOH).

Ajaz, M.S. *et al., Thesis*, Univ. of Karachi, 1993, (*isol, pmr, cmr, ms, struct*)

Sorbicillactone A S-382

[664987-12-6]



Absolute Configuration

$C_{21}H_{23}NO_8$ 417.415

Prod. by *Penicillium chrysogenum* isol. from the sponge *Ircinia fasciculata*. Cytotoxic. Anti-HIV agent. Yellow needles (MeOH aq.). Mp 205° dec. $[\alpha]_D^{20}$ -939 (c, 0.2 in MeOH).

2′,3′-Dihydro: ***Sorbicillactone B***

[861434-14-2]

$C_{21}H_{25}NO_8$ 419.43

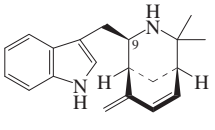
Prod. by *Penicillium chrysogenum* isol. from *Ircinia fasciculata*. Light brown solid (MeOH aq.). Mp 109-115°. $[\alpha]_D^{20}$ -327 (c, 0.2 in MeOH).

Bringmann, G. *et al., Tetrahedron*, 2005, **61**, 7252-7265 (*isol, cd, pmr, cmr*)

Bringmann, G. *et al., Mar. Drugs*, 2007, **5**, 23-30 (*prodn*)

Sorelline S-383

[73004-62-3]



Absolute Configuration

$C_{20}H_{24}N_2$ 292.423

Alkaloid from *Aristotelia peduncularis* (Elaeocarpaceae). Mp 165-168°. $[\alpha]_D^{22}$ +157 (c, 1.067 in $CHCl_3$).

9-Epimer: ***Isosorelline***

$C_{20}H_{24}N_2$ 292.423

Alkaloid from *Aristotelia serrata* and *Aristotelia fruticosa* (Elaeocarpaceae). Cryst. (MeOH). Mp 160-162°. $[\alpha]_D^{21.5}$ +120 ($CHCl_3$). CAS no. not found 8-14CI.

(±)-*form*

Synthetic. Cryst. ($CHCl_3$). Mp 167-168°.

Kyburz, R. *et al., Helv. Chim. Acta*, 1979, **62**, 2539-2546 (*isol, uv, ir, pmr, cmr, ms, struct*)

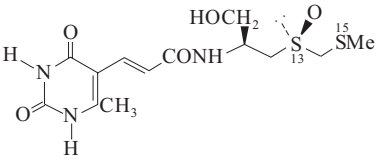
Bick, I.R.C. *et al., Alkaloids (Academic Press)*, 1985, **24**, 113-151 (*rev, Isosorelline*)

Burkard, S. *et al., Helv. Chim. Acta*, 1991, **74**, 275-289 (*synth, abs config*)

Sparsomycin, INN, USAN S-384

Sparsogenin. B 79B. NSC 59729. U 19183. Antibiotic B 79B. Antibiotic U 19183

[1404-64-4]



$C_{13}H_{19}N_3O_5S_2$ 361.442

Prod. by *Streptomyces sparsogenes* and *Streptomyces cuspidosporus.* Antineoplastic antibiotic. Inhibits protein biosynth. Sol. H_2O, MeOH, EtOH; poorly sol. $CHCl_3$, hexane. Mp 208-209° dec. $[\alpha]_D^{25}$ +69 (c, 0.5 in H_2O). Log P -1.92 (calc). λ_{max} 284 (sh) (ε 10500); 328 (ε 25600) (0.01*N* KOH) (Derep). λ_{max} 270 (sh) (ε 15500); 302 (ε 23500) (H_2O) (Derep). λ_{max}. λ_{max} 328 (E1%/1cm 710) (H_2SO_4) (Berdy).

► LD_{50} (mus, orl) 22 mg/kg. LD_{50} (mus, ipr) 2.4 mg/kg. WG5850000

(Z)-Isomer: Isosparsomycin

[58462-97-8]

Cryst. (H_2O). Mp 158-164°.

S^{13}-Epimer: S-*Episparsomycin*

[77880-77-4]

$[\alpha]_D^{25}$ +48 (c, 0.175 in H_2O). Other diastereoisomers also prepd.

*S^{15}-Oxide (*R-*):* ***Sparoxomycin A2***

[174390-02-4]

$C_{13}H_{19}N_3O_6S_2$ 377.442

Prod. by *Streptomyces sparsogenes* SN2325. Cell proliferation modulator. Powder. Sol. MeOH, H_2O. Mp 170-174° dec. $[\alpha]_D^{28}$ +3.6 (c, 0.33 in H_2O). λ_{max} 203 (ε 8800); 303 (ε 13600) (MeOH) (Berdy).

*S^{15}-Oxide (*S-*):* ***Sparoxomycin A1***

[174390-01-3]

$C_{13}H_{19}N_3O_6S_2$ 377.442

Prod. by *Streptomyces sparsogenes* SN2325. Cell proliferation modulator. Powder. Sol. MeOH, H_2O. Mp 169-173° dec. $[\alpha]_D^{28}$ +47.8 (c, 0.13 in H_2O). λ_{max} 203 (ε 9300); 303 (ε 15200)

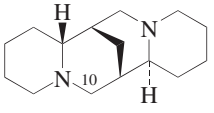
(MeOH) (Berdy).

[77880-75-2 , 77880-76-3 , 63222-12-8]

Wiley, P.F. *et al., J.O.C.*, 1976, **41**, 1858 (*struct, uv, ir, nmr*)
Lin, C.-C.L. *et al., J. Med. Chem.*, 1977, **20**, 337 (*synth*)
Goldberg, I.H. *et al., Antibiotics (N.Y.)*, 1979, **5**, 264 (*rev*)
Ottenheijm, H.C.J. *et al., J.A.C.S.*, 1981, **103**, 1720-1723 (*abs config*)
Ottenheijm, H.C.J. *et al., J.O.C.*, 1981, **46**, 3273 (*synth*)
Ash, R.J. *et al., Biochem. Biophys. Res. Commun.*, 1984, **125**, 784 (*stereochem, props*)
Liskamp, R.M.J. *et al., J. Med. Chem.*, 1984, **27**, 301 (*sar*)
Hwang, D.R. *et al., J.O.C.*, 1985, **50**, 1264 (*synth*)
Ottenheijm, H.C.J. *et al., Prog. Med. Chem.*, 1986, **23**, 219-268 (*rev*)
Parry, R.J. *et al., J.A.C.S.*, 1992, **114**, 5946 (*biosynth*)
Parry, R.J. *et al., Tet. Lett.*, 1994, **35**, 7497 (*biosynth*)
Ubukata, M. *et al., J. Antibiot.*, 1996, **49**, 65-70; 1096-1100 (*Sparoxomycin*)
Nakajima, N. *et al., Biosci., Biotechnol., Biochem.*, 2003, **67**, 2556-2566 (*synth, pmr, cmr, ms*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, SKX000

Sparteine, INN S-385

*Dodecahydro-7,14-methano-2*H*,6*H*-dipyrido[1,2-a:1′,2′-e]diazocine, 9CI. Lupinidine (obsol.). Pachycarpine (obsol.)*



(-)-*form*

$C_{15}H_{26}N_2$ 234.384

Diastereoisomeric with α-Isosparteine, I-321 and β-Isosparteine, I-322. Anti-inflammatory, cathartic, diuretic agent. Shows oxytocic props. Shows antimicrobial activity. Log P 2.15 (calc).

(+)-*form* [492-08-0]

Alkaloid from several genera of the family Fabaceae, subfamily Faboideae, notably *Lupinus pusillus*, *Lupinus niger*, *Cytisus caucasicus*, *Baptisia* spp., *Cytisus scoparius*, *Genista monosperma*, *Pelargonium acutifolia*, *Pelargonium longifolia*, *Sophora pachycarpa* and *Ammodendron* spp. Used as 1% aq. soln. of iodide for extraction-photometric detn. of Ti (λ_{max} 390 nm, ϵ 10300, $CHCl_3$). Antiinflammatory, cathartic, diuretic agent. Shows oxytocic props. Shows antimicrobial activity. Bp_8 173-174°. $[\alpha]_D$ +17.1 (EtOH). n_D^{20} 1.5312. λ_{max} 268 (ϵ 16000) (HCl) (Berdy).

▶ LD_{50} (mus, ivn) 26 mg/kg. RT0620000

Perchlorate:
Plates (EtOH). Mp 171-172°.

Dipicrate:
Cryst. (EtOH/Me_2CO). Mp 205-206°.

N^{16}*-Oxide:* ***Pachycarpine*** N^{16}***-oxide***
[30301-23-6]
$C_{15}H_{26}N_2O$ 250.383
Alkaloid from *Ammodendron karelinii* (Fabaceae). Cryst. (Me_2CO). Mp 153-154°.

(-)-*form* [90-39-1]

Alkaloid from several genera of the family Fabaceae, subfamily Faboideae, notably many *Lupinus* and *Adenocarpus* spp., also *Piptanthus nanus, Sarothamnus* spp. *Chamaecytisus* spp. Used mainly as sulfate used in chiral catalytic systems. Useful complexing agent for metal ions. Antiarrhythmic agent. Has been used in treatment of cardiac insufficiency. Shows curare-like properties. Liq. Bp_{18} 181°. $[\alpha]_D$ -17 (EtOH). n_D^{19} 1.5289. pK_{a1} 11.96; pK_{a2} 4.8 (15°). Log P 2.15 (calc). This is the commonest form, frequently referred to as just Sparteine.

▶ LD_{50} (rat, orl) 960 mg/kg. LD_{50} (rat, ipr) 42 mg/kg. WG5950000

Hydrobromide (1:2): Mp 194-195°.

Hydroiodide (1:2): Mp 257-258°.

Sulfate: ***Sparteine sulfate, USAN****. Many other names*
[299-39-8]
Cryst. + $5H_2O$. Dec. at 136°.

▶ Human reprod. effects. LD_{50} (mus, orl) 350 mg/kg. LD_{50} (mus, ivn) 15 mg/kg. WG6430000

Dipicrate: Mp 208° (205-206°).

Methiodide: Mp 239-240°.

(±)-*form* [4985-24-4]

Alkaloid from *Chamaecytisus proliferus* and *Adenocarpus hispanicus* (Fabaceae). Liq. Bp_1 119-121°. n_D^{20} 1.5223.

Perchlorate: Mp 131-133°.

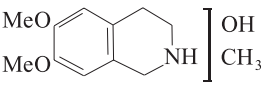
Dipicrate: Mp 208°.

[6160-12-9]

Stenhouse, J. *et al., Annalen*, 1858, **78**, 1 (*isol*)
Clemo, G.R. *et al., J.C.S.*, 1933, 644; 1949, 663 (*struct*)
Jaretzky, R. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1934, **272**, 152 (*occur*)
Leonard, N.J. *et al., J.A.C.S.*, 1950, **72**, 1316 (*ir, synth, rev, resoln*)
Anet, E. *et al., Nature (London)*, 1950, **165**, 35 (*synth*)
Okuda, S. *et al., Chem. Ind. (London)*, 1961, 1116 (*abs config*)
van Tamelen, E.E. *et al., J.A.C.S.*, 1969, **91**, 7372 (*synth*)
Vard, A.G. *et al., CA*, 1970, **76**, 121173m (*use*)
Cannon, J.R. *et al., Aust. J. Chem.*, 1971, **24**, 1537 (*isol*)
Binnig, F. *et al., Arzneim.-Forsch.*, 1974, **24**, 752; 753 (*pharmacol*)
Klyne, W. *et al., J.C.S. Perkin 1*, 1974, 2565 (*cd*)
Nakano, T. *et al., J.O.C.*, 1974, **39**, 3584 (*ms*)
Bohlmann, F. *et al., Chem. Ber.*, 1975, **108**, 1043 (*cmr*)
Kushmuradov, Yu.K. *et al., Khim. Prir. Soedin.*, 1977, **13**, 717; *Chem. Nat. Compd. (Engl. Transl.)*, 1977, **13**, 604 (*oxide*)
Fanso-Free, S.N.Y. *et al., J.A.C.S.*, 1979, **101**, 1549 (*N nmr, conformn*)
Golebiewski, W.M. *et al., Chem. Comm.*, 1983, 1509 (*biosynth*)
Wink, M. *et al., Z. Naturforsch., C*, 1984, **39**, 548-552 (*activity*)
Wippich, C. *et al., Experientia*, 1985, **41**, 1477-1479 (*activity*)
Eichelbaum, M. *et al., Xenobiotica*, 1986, **16**, 465 (*rev, metab*)
Takatsu, N. *et al., Chem. Pharm. Bull.*, 1987, **35**, 4990 (*synth*)
Negwer, M. *et al., Organic-Chemical Drugs and their Synonyms, 6th edn., Akademie-Verlag*, 1987, 3779
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 1416
Bour, P. *et al., J. Phys. Chem. A*, 1997, **101**, 9783-9790 (*vibration cd, uv, ir*)
Lee, Y.-M. *et al., Acta Cryst. C*, 2002, **58**, o733-o734 (*perchlorate, cryst struct*)
Smith, B.T. *et al., Org. Lett.*, 2002, **4**, 2577-2579 (*synth*)
Iyengar, R. *et al., Chemtracts: Org. Chem.*, 2004, **17**, 92-96 (*rev, synth*)
He, H. *et al., Org. Biomol. Chem.*, 2005, **3**, 1557-1567 (*synth*)
Norcross, N.R. *et al., J.O.C.*, 2008, **73**, 7939-7951 (*synth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, PAB250; SKX500; SKX750

Spartocytisine S-386

[1361-33-7]



$C_{12}H_{17}NO_3$ 223.271

Struct. not fully established. Alkaloid from the seeds of *Spartocytisus filipes* (preferred genus name *Cytisus*) (Fabaceae). Cryst. (heptane/C_6H_6). Mp 158-159°. $[\alpha]_D$ +11.4.

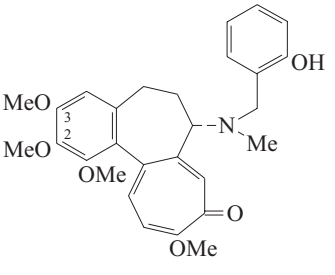
Picrate:
Cryst. (H_2O). Mp 174-175°.

Styphnate:
Cryst. (EtOH). Mp 212°.

N,O-*Di-Ac:*
Cryst. (petrol). Mp 125-126°.

Gonzáles, A.G. *et al., An. R. Soc. Esp. Fis. Quim., Ser. B*, 1962, **58**, 483-490; *CA*, **59**, 2869d (*isol*)

Speciosine S-387



$C_{28}H_{31}NO_6$ 477.556

▶ DF9485000

(*S*)-*form* [16892-03-8]

Alkaloid from the tubers of *Colchicum speciosum* (Liliaceae). Yellow prisms (C_6H_6/Me_2CO). Mp 209-211°. $[\alpha]_D^{20}$ -21.2 (c, 1.75 in $CHCl_3$).

Me ether: **O-*Methylspeciosine***
[172685-48-2]
$C_{29}H_{33}NO_6$ 491.583
Alkaloid from *Colchicum ritchii*. Amorph. $[\alpha]_D^{25}$ -17 (c, 0.20 in MeOH).

O^2-*De-Me:* ***Speciocolchine***
[111509-13-8]
$C_{27}H_{29}NO_6$ 463.529
Alkaloid from *Colchicum ritchii* (Liliaceae). Amorph. $[\alpha]_D$ -37 (c, 0.13 in MeOH).

O^3-*De-Me:* ***Specioritchine***
[111509-12-7]
$C_{27}H_{29}NO_6$ 463.529
Alkaloid from *Colchicum ritchii* (Liliaceae). Amorph. $[\alpha]_D$ -57 (c, 0.11 in MeOH).

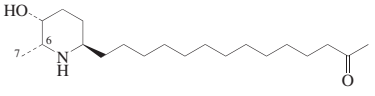
O^{10}-*De-Me:* ***Specioseine***
[142735-47-5]
$C_{27}H_{29}NO_6$ 463.529
Minor alkaloid from *Colchicum speciosum* (Liliaceae). Cryst. (Me_2CO). Mp 169-171°. $[\alpha]_D$ -78 (c, 1.01 in $CHCl_3$).

Deoxy: ***Speciosamine***
[97763-01-4]
$C_{28}H_{31}NO_5$ 461.557
Alkaloid from *Colchicum speciosum* (Liliaceae). Mp 192-194°. $[\alpha]_D$ -42 (c, 0.26 in $CHCl_3$).

Kiselev, V.V. *et al., Zh. Obshch. Khim.*, 1956, **26**, 3218; *CA*, **51**, 8119i (*isol*)
Ramage, R. *et al., Tetrahedron*, 1971, **27**, 1499 (*ir, uv, ms, pmr, struct, synth*)
Hrbek, J. *et al., Coll. Czech. Chem. Comm.*, 1982, **47**, 2258 (*cd*)
Chommadov, B. *et al., Khim. Prir. Soedin.*, 1985, **21**, 417; 1991, **27**, 253; *Chem. Nat. Compd. (Engl. Transl.)*, 1985, **21**, 218; 1991, **27**, 394 (*Speciosamine, Specioseine*)
Freyer, A.J. *et al., J. Nat. Prod.*, 1987, **50**, 684 (*Speciocolchine, Specioritchine*)
Abu Zarga, M.H. *et al., Z. Naturforsch., B*, 1995, **50**, 1424 (*O-Methylspeciosine*)
Izotova, L.Y. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1997, **33**, 469-472 (*cryst struct*)

Spectaline S-388

14-(5-Hydroxy-6-methyl-2-piperidinyl)-2-tetradecanone. 3-Hydroxy-2-methyl-6-(13-oxotetradecyl)piperidine. Cassinicine



(2*R*,5*R*,6*R*)-*form*

$C_{20}H_{39}NO_2$ 325.534

The more recently isol. (-)-spectaline may or may not be identical to the prev. isol. and poorly documented Cassinicine, Mp 170°.

(2*R*,5*R*,6*R*)-*form*
6-Isospectaline
[709046-69-5]
Alkaloid from the flowers of *Cassia spectabilis*. Amorph. yellow solid. Mp 116.7-119.6°. $[\alpha]_D^{20}$ -7 (c, 0.31 in CH_2Cl_2).

(2*R*,5*S*,6*S*)-*form* [64384-95-8]
Alkaloid from *Cassia spectabilis*, *Cassia leptophylla* and *Prosopis africana* (Fabaceae). Oil; cryst. (EtOAc) (as hydrochloride). Mp 155° (hydrochloride). $[\alpha]_D^{25}$ +8 (c, 0.27 in $CHCl_3$).

(2*S*,5*R*,6*R*)-*form* [65560-25-0]
Alkaloid from leaves of *Cassia leptophylla* and *Cassia spectabilis* (Fabaceae). Antinociceptive agent. Shows DNA-damaging props. Amorph. solid. Mp 118° (48.9-52.5°). $[\alpha]_D^{20}$ -12 (c, 0.14 in CH_2Cl_2).

Ac: ***3-O-Acetyl-(-)-spectaline***
[709046-67-3]
$C_{22}H_{41}NO_3$ 367.571
Alkaloid from the flowers of *Cassia spectabilis*.

7-Hydroxy: ***7-Hydroxy-(-)-spectaline***
[709046-68-4]
$C_{20}H_{39}NO_3$ 341.533
Alkaloid from the flowers of *Cassia spectabilis*. Oil. $[\alpha]_D^{20}$ -7 (c, 0.04 in CH_2Cl_2).

(2ξ,5ξ,6ξ)-*form*

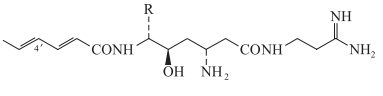
13′ξ-Alcohol: 5-Hydroxy-α,6-dimethyl-2-piperidinetridecanol. 6-(13-Hydroxytetradecyl)-2-methyl-3-piperidinol. ***Spectalinine***
[66408-16-0]
$C_{20}H_{41}NO_2$ 327.549
Alkaloid from leaves and seeds of *Cassia spectabilis* (Fabaceae). Oil; cryst. (as hydrochloride). Mp 120° (hydrochloride). $[\alpha]_D^{25}$ -8.4 (c, 0.12 in $CHCl_3$).

[96614-54-9 ((±)-form)]

Mulchandani, N.B. *et al., Planta Med.*, 1977, **32**, 357-361 (*Cassinicine*)
Christofidis, I. *et al., Tetrahedron*, 1977, **33**, 977; 3005 (*isol, ir, pmr, ms, cmr, struct*)
Khuong-Huu, Q. *et al., J. Chem. Soc. Pak.*, 1982, **4**, 267 (*cmr, struct*)
Paterne, M. *et al., J. Chem. Res., Synop.*, 1985, 278 (*synth, Spectaline*)
Hasseberg, H.-A. *et al., Annalen*, 1989, 255 (*synth, ir, pmr, cmr, Spectaline*)
Momose, T. *et al., Tet. Lett.*, 1993, **34**, 5785 (*synth, Spectaline*)
Bolzani, V. da. S. *et al., Tetrahedron*, 1995, **51**, 5929-5934 (*(-)-Spectaline*)
Bolzani, V. da S. *et al., Ann. Acad. Bras. Cinc.*, 1999, **71**, 181 (*(-)-Spectaline, activity*)
Viegas, C. *et al., J. Nat. Prod.*, 2004, **67**, 908-910 (*(-)-Spectaline, 6-Isospectaline, 7-Hydroxyspectaline, Ac*)

Sperabillin C S-389

TAN 749C. Antibiotic TAN 749C
[111337-84-9]



R = H

$C_{15}H_{27}N_5O_3$ 325.41

Peptide antibiotic. Prod. by *Pseudomonas fluorescens*. Active against gram-positive and -negative bacteria. Powder + $\frac{1}{2}H_2O$ (as hydrochloride). Sol. H_2O, DMSO, MeOH; poorly sol. Me_2CO, hexane. $[\alpha]_D$ -11 (c, 0.68 in H_2O). λ_{max} 264 (ε 28400) (H_2O) (Derep).

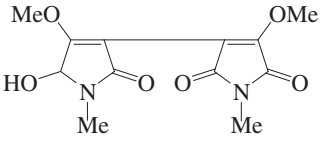
4′Z-Isomer: ***Sperabillin A***. *TAN 749A. Antibiotic TAN 749A*
[111337-86-1]
$C_{15}H_{27}N_5O_3$ 325.41
From *Pseudomonas fluorescens*. Active against gram-positive and -negative bacteria. Powder + $1H_2O$ (as hydrochloride). Sol. H_2O, DMSO, MeOH; poorly sol. Me_2CO, hexane. $[\alpha]_D$ -11 (c, 1.06 in H_2O). λ_{max} 264 (ε 28400) (H_2O) (Derep).

▶ LD_{50} (mus, scu) 500 mg/kg, LD_{50} (mus, orl) 2000-4000 mg/kg, LD_{50} (mus, ipr) 200 mg/kg.

[111337-88-3 , 111337-87-2]

Hashiguchi, S. *et al., J.C.S. Perkin 1*, 1991, 2435 (*synth*)
Katayama, N. *et al., J. Antibiot.*, 1992, **45**, 10 (*isol, pmr, cmr, props*)
Hida, T. *et al., Bull. Chem. Soc. Jpn.*, 1993, **66**, 863 (*isol, struct*)

Speranberculatine A S-390

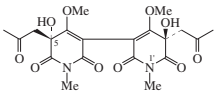


$C_{12}H_{14}N_2O_6$ 282.252
Alkaloid from *Speranskia tuberculata*. Pale yellow gum. $[\alpha]_D^{18}$ -14.8 (c, 0.5 in MeOH). λ_{max} 204 (log ε 3.79); 230 (log ε 2.44); 271 (sh) (log ε 2.04) (MeOH).

Shi, J.G. *et al., Chin. Chem. Lett.*, 2000, **11**, 785-788
Shi, J.G. *et al., J. Nat. Prod.*, 2000, **63**, 782-786

Speranculatine A S-391

[268728-59-2]



Relative Configuration

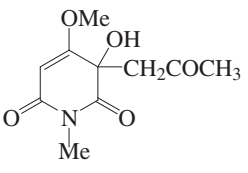
$C_{20}H_{24}N_2O_{10}$ 452.417
Alkaloid from *Speranskia tuberculata*. Prisms (EtOAc). Mp 192-194°. $[\alpha]_D^{18}$ +21.9 (c, 0.54 in MeOH). λ_{max} 225 (log ε 4.87); 267 (log ε 1.62) (MeOH).

5-Epimer: ***Speranculatine B***
[268728-60-5]
$C_{20}H_{24}N_2O_{10}$ 452.417
Alkaloid from *Speranskia tuberculata*. Prisms (EtOAc). Mp 147-149°. $[\alpha]_D^{18}$ +6 (c, 0.3 in MeOH). λ_{max} 224 (log ε 4.96); 267 (log ε 1.66) (MeOH).

5-Epimer, $N^{1'}$*-de-Me:* ***Speranculatine C***
$C_{19}H_{22}N_2O_{10}$ 438.39
Alkaloid from *Speranskia tuberculata*. Cryst. (EtOAc). Mp 183-185°. $[\alpha]_D^{18}$ +9.6 (c, 0.43 in MeOH). λ_{max} 221 (log ε 4.57); 262 (log ε 1.38) (MeOH).

Shi, J.G. *et al., Chin. Chem. Lett.*, 2000, **11**, 225-228
Shi, J.G. *et al., J. Nat. Prod.*, 2000, **63**, 782-786

Speranskatine A S-392



$C_{10}H_{13}NO_5$ 227.216

Abs configs. not yet determined, but Speranskatines A and B belong to opposite enantiomeric series.

(+)-*form* [171090-84-9]

Alkaloid from whole plants of *Speranskia tuberculata* (Euphorbiaceae). Prisms (EtOAc). Mp 158-160°. $[\alpha]_D^{18}$ +14.8 (c, 0.54 in MeOH).

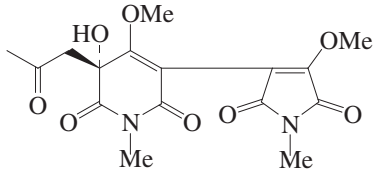
(-)-*form*

N-*De-Me:* ***Speranskatine B***
[171090-85-0]
$C_9H_{11}NO_5$ 213.19
From *Speranskia tuberculata* (Euphorbiaceae). Prisms (EtOAc). Mp 171-172°. $[\alpha]_D^{18}$ -30 (c, 0.30 in MeOH).

Shi, J.-G. *et al., Phytochemistry*, 1995, **40**, 1299-1302 (*isol, uv, ir, pmr, cmr, ms, cryst struct*)

Zhu, Y. *et al., Acta Cryst. C*, 1996, **52**, 2791-2792 (*cryst struct*)

Speranskilatine A S-393



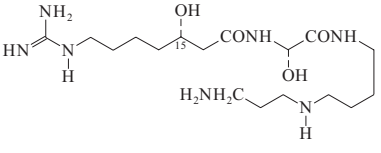
$C_{16}H_{18}N_2O_8$ 366.327

Alkaloid from *Speranskia tuberculata*. Prisms ($CHCl_3$). Mp 166-167°. $[\alpha]_D^{18}$ +3.8 (c, 1.3 in MeOH). λ_{max} 229 (log ϵ 4.34); 268 (log ϵ 1.89) (MeOH).

Shi, J.-G. *et al., J. Nat. Prod.*, 2000, **63**, 782-786

Spergualin S-394

1-Amino-19-guanidino-11,15-dihydroxy-4,9,12-triazanonadecane-10,13-dione. BMG 162 aF2. Antibiotic BMG 162 aF2
[80902-43-8]
[80952-47-2 (trihydrochloride)]



$C_{17}H_{37}N_7O_4$ 403.524

Prod. by *Bacillus laterosporus*. Active against gram-negative and -positive bacteria and tumours. Immunosuppressant, angiogenesis inhibitor. Sol. H_2O, MeOH; fairly sol. EtOH; poorly sol. Me_2CO, hexane. Mp 62-78° (as tripicrate). $[\alpha]_D^{24}$ -11 (c, 1 in H_2O) (as trihydrochloride). Log P -4.07 (calc).

► LD_{50} (mus, ipr) 150 mg/kg; LD_{50} (mus, ivn) 80-120 mg/kg. MI7601060

*15-Deoxy: 7-[(Aminoiminomethyl)amino]-*N*-[2-[[4-[(3-aminopropyl)amino]butyl]amino]-1-hydroxy-2-oxoethyl]heptanamide.* N-*[[[4-[(3-Aminopropyl)amino]butyl]carbamoyl]hydroxymethyl]-7-guanidinoheptanamide. 1-Amino-19-guanidino-11-hydroxy-4,9,12-triazanonadecane-10,13-dione. 15-Deoxyspergualin.* ***Gusperimus, INN****. Spanidin*
[89149-10-0]
[104317-84-2 (racemate)]
$C_{17}H_{37}N_7O_3$ 387.524
Isol. from *Bacillus laterosporus*. Immunosuppressant used clinically in kidney transplantation, antineoplastic agent. Angiogenesis inhibitor. $[\alpha]_D$ -14.3 (c, 1 in H_2O) (synthetic). Log P -3 (calc). Commercial product is racemic.

15-Deoxy, trihydrochloride: ***Gusperimus trihydrochloride****. BMS 181173. NKT 01. BMY 42215-1. NSC 356894*
[84937-45-1]
[85468-01-5 (racemate)]
Syrup. $[\alpha]_D^{25}$ -7.3 (c, 1 in H_2O). The pharmaceutical prod. appears to be the racemate.

[114760-38-2]

Takeuchi, T. *et al., J. Antibiot.*, 1981, **34**, 1619-1621 (*isol*)

Umezawa, H. *et al., J. Antibiot.*, 1981, **34**, 1622-1624 (*struct*)

Kondo, S. *et al., J. Antibiot.*, 1981, **34**, 1625-1627 (*synth*)

Belg. Pat., 1982, (*(Microbiochemical Research Foundation)*)890 229; *CA*, **97**, 90399s (*isol*)

Iwasawa, H. *et al., J. Antibiot.*, 1982, **35**, 1665-1669; 1985, **38**, 886-898; 1987, **40**, 561-562; 1316-1324 (*Gusperimus, synth, ir, pharmacol, pmr*)

Eur. Pat., 1983, (*(Microbiochemical Research Foundation)*)94 632; *CA*, **100**, 120781k (*Gusperimus, synth, pharmacol*)

Umezawa, K. *et al., Biomed. Pharmacother.*, 1987, **41**, 227 (*rev, pharmacol, props*)

Bergeron, R.J. *et al., J.O.C.*, 1987, **52**, 1700-1703 (*Gusperimus, synth, bibl, pmr*)

Nishimura, K. *et al., Cell Sci.*, 1990, **6**, 639 (*Gusperimus, rev, pharmacol*)

Nishikawa, K. *et al., J. Antibiot.*, 1991, **44**, 1101-1109 (*Gusperimus, activity*)

Oikawa, T. *et al., Anti-Cancer Drugs*, 1992, **3**, 293-300 (*Guperimus, pharmacol*)

Maeda, K. *et al., Ann. N.Y. Acad. Sci.*, 1993, **685**, 123-135 (*Gusperimus, rev, pharmacol*)

Schorlemmer, H.U. *et al., Ann. N.Y. Acad. Sci.*, 1993, **685**, 155-174 (*Gusperimus, rev, pharmacol*)

Tepper, M.A. *et al., Ann. N.Y. Acad. Sci.*, 1993, **685**, 175-192; **696**, 123-132; 270-280 (*Spergualin, Gusperimus, rev, pharmacol*)

Suzuki, S. *et al., Ann. N.Y. Acad. Sci.*, 1993, **696**, 263-269 (*Gusperimus, rev*)

Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 1360 (*Gusperimus*)

Yuh, D.D. *et al., Transplantation*, 1993, **55**, 578-591 (*Gusperimus, pharmacol*)

Tanabe, K. *et al., J. Urol. (Baltimore)*, 1994, **152**, 562 (*Gusperimus, pharmacol*)

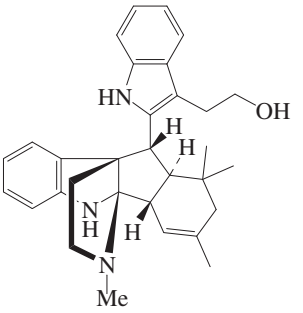
Mayo, D.J. *et al., J. Pharm. Biomed. Anal.*, 1996, **14**, 457-463 (*chiral hplc*)

Durand, P. *et al., J.O.C.*, 1998, **63**, 9723-9727 (*synth, abs config*)

Durand, P. *et al., Tetrahedron*, 2001, **57**, 2757-2760 (*synth*)

Spermacoceine S-395

*2-[2,4*a*,10,10*a*-Tetrahydro-1,1,3,13-tetramethyl-1*H*,5*H*-4*b*,9*b*-(iminoethano)indeno[1,2-*b*]indol-10-yl]-1*H*-indole-3-ethanol, 9CI*
[135091-05-3]



$C_{31}H_{37}N_3O$ 467.653

Related to Borreverine, B-253. Alkaloid from *Borreria verticillata* (Rubiaceae). λ_{max} 226 ; 285 ; 295 (EtOH) (Berdy).

Baldé, A.M. *et al., Phytochemistry*, 1991, **30**, 997 (*isol, pmr, cmr, struct*)

Spermatherine S-396

Struct. unknown. Mol. formula not reported. Trace alkaloid from *Atherosperma moschatum* (Monimiaceae). Needles (Me_2CO/petrol). Mp 124-125°. Dec. to a brown mass on exposure to light.

Bick, I.R.C. *et al., Aust. J. Chem.*, 1956, **9**, 111-119 (*isol*)

Spermic acid S-397

N,N′-*1,4-Butanediylbis-β-alanine, 9CI. 4,9-Diazadodecanedioic acid.* N^1,N^4-*Bis(2-carboxyethyl)-1,4-butanediamine.* N,N′-*Tetramethylenedi-β-alanine. 1,4-Diaminobutane-*N,N′*-dipropanoic acid*
[14209-33-7]
$HOOCCH_2CH_2NH(CH_2)_4NHCH_2CH_2$-COOH

$C_{10}H_{20}N_2O_4$ 232.279

Isol. from bovine brain.

Di-Et ester: [87952-71-4]
Powder (as hydrochloride). Mp 237-238° dec. (hydrochloride). CAS no. refers to hydrochloride.

[61345-82-2]

Imaoka, N. *et al., J. Neurochem.*, 1974, **22**, 859 (*isol*)

Tabor, H. *et al., Methods Enzymol.*, 1983, **94**, 418 (*rev, synth*)

Wasserman, H.H. *et al., Tetrahedron*, 1983, **39**, 2459 (*synth, ester*)

Ioannou, P.V. *et al., Chim. Chron.*, 1991, **20**, 85 (*synth*)

Spermidine S-398

N-*(3-Aminopropyl)-1,4-butanediamine, 9CI. 1,5,10-Triazadecane. 1,8-Diamino-4-azaoctane*
[124-20-9]
$H_2NCH_2CH_2CH_2N'HCH_2CH_2CH_2C$-$CH_2N''H_2$

$C_7H_{19}N_3$ 145.247

Prod. by many microorganisms including

the thermophilic eubacteria, *Thermoleophilum album*, *Thermoleophilum minutum*, *Hydrogenobacter thermophilus* and *Bacillus schlegelii*. Isol. from the edible shaggy ink cap mushroom (*Coprinus comatus*) and from *Stichopus japonicus*, *Halocynthia roretzi* and *Crassostrea gigas*. Bp_{14} 128-130°.

▶ LD_{50} (mus, ivn) 78 mg/kg. EJ7000000

Hydrochloride (1:3): [334-50-9]
Mp 256-258°.

▶ EJ7023000

Tripicrate:
Yellow needles (H_2O). Mp 211°.

N-*Ac:* N-*[3-[(4-Aminobutyl)amino]propyl]acetamide, 9CI.* N^1-*Acetylspermidine*
[14278-49-0]
[34450-16-3]
$C_9H_{21}N_3O$ 187.284
Oil. Mp 191-193° (as dihydrochloride).

N′-*Ac:* N-*(4-Aminobutyl)*-N-*(3-aminopropyl)acetamide.* N^5-*Acetylspermidine*
[66039-56-3]
$C_9H_{21}N_3O$ 187.284
Mp 187.5-188.5° (as oxalate).

N″-*Ac:* N-*[4-[(3-Aminopropyl)amino]butyl]acetamide, 9CI.* N^1-*(3-Aminopropyl)*-N^4-*acetyl-1,4-butanediamine.* N^8-*Acetylspermidine*
[13431-24-8]
[34450-15-2]
$C_9H_{21}N_3O$ 187.284
Inhibits spermidine-stimulated polyphenylalanine synth. in an *E. coli* cell-free system. Oil or cryst. (as dihydrochloride). Mp 202-203° (EtOH) (dihydrochloride).

N′-*Hexanoyl:* **N^5-*Hexanoylspermidine***
[97141-37-2]
$C_{13}H_{29}N_3O$ 243.392
Alkaloid from senescing ovaries of pea (*Pisum sativum*).

N′-*Benzoyl:* N-*(4-Aminobutyl)*-N-*(3-aminopropyl)benzamide.* **N^5-*Benzoylspermidine***
[83392-14-7]
$C_{14}H_{23}N_3O$ 249.355
Isol. from leaves of *Oncinotis tenuiloba* (Apocynaceae). Viscous oil.

N,N″-*Dibenzoyl:* **N^1,N^{10}-*Dibenzoylspermidine***
[73038-07-0]
$C_{21}H_{27}N_3O_2$ 353.463
Alkaloid from leaves of *Cassia floribunda* (Fabaceae). Needles (EtOH/EtOAc). Mp 133-134°.

N,N″-*Bis(2,3-dihydroxybenzoyl):* **N,N″-*Bis(2,3-dihydroxybenzoyl)spermidine***
[54135-84-1]
[73038-10-5]
$C_{21}H_{27}N_3O_6$ 417.461
Alkaloid from *Paracoccus denitrificans* (*Micrococcus denitrificans*). Siderophore (microbial iron-transport agent). Fragment present in Agrobactin, A-203. Cryst. (H_2O)(as hydrochloride). Mp 205-207° (hydrochloride).

N,N″-*Bis(3,4-dihydroxybenzoyl):* N^1,N^{10}-*Bis(3,4-dihydroxybenzoyl)spermidine.* ***Pistillarine***
[89647-69-8]
$C_{21}H_{27}N_3O_6$ 417.461
Alkaloid from *Clavariadelphus pistillaris* and several *Ramaria* spp. Also prod. by the marine-derived *Penicillium bilaii*.

N,N″-*Bis(3,4-dihydroxyphenylpropanoyl):* **N^1,N^{10}-*Bis(dihydrocaffeoyl)spermidine***
[132194-39-9]
$C_{25}H_{35}N_3O_6$ 473.568
Alkaloid from *Iochroma cyaneum* (Solanaceae).

Tris-(3-nitrobenzoyl): Mp 148-150° (anhyd.).

$N^?$-*(4-Hydroxycinnamoyl):* **p-*Coumaroylspermidine***
[70185-59-0]
$C_{16}H_{25}N_3O_2$ 291.392
Alkaloid from *Salix* sp. (Salicaceae). Position of coumaroyl group not determined.

$N^?$-*(3,4-Dihydroxycinnamoyl):* ***Caffeoylspermidine***
[58994-15-3]
$C_{16}H_{25}N_3O_3$ 307.392
Alkaloid from *Nicotiana tabacum* and *Pennisetum americanum* (Solanaceae, Poaceae). Position of caffeoyl group not determined.

$N^?$-*(4-Hydroxy-3-methoxycinnamoyl):* ***Feruloylspermidine***
[70185-60-3]
$C_{17}H_{27}N_3O_3$ 321.419
Alkaloid from *Ananas comosus* (pineapple) and *Lycopersicon esculentum* (tomato) (Bromeliaceae, Solanaceae). Position of feruloyl group not determined.

$N^?$-*(4-Hydroxy-3,5-dimethoxycinnamoyl):* ***Sinapoylspermidine***
[70185-62-5]
$C_{18}H_{29}N_3O_4$ 351.445
Alkaloid from *Lilium* sp. (Liliaceae). Position of sinapoyl group not determined.

N,N″-*Di*-E-*cinnamoyl:* N^1,N^8-*Dicinnamoylspermidine.* ***Maytenine***
[41590-65-2]
$C_{25}H_{31}N_3O_2$ 405.539
Alkaloid from *Maytenus chuchuhuasha*. Isol. from *Pholiota spumosa*. Cryst. (Me_2CO). Mp 161-162° (158°).

N,N′-*Bis(4-hydroxycinnamoyl):* **N^1,N^5-*Di*-p-*coumaroylspermidine***
[114916-04-0]
$C_{25}H_{31}N_3O_4$ 437.538
Alkaloid from the pollen of *Pterocarya fraxinifolia* (Juglandaceae). A dicoumaroylspermidine of undetd. regiochemistry was isol. from *Alnus glutinosa* (Betulaceae).

N,N″-*Bis(4-hydroxycinnamoyl):* **N^1,N^{10}-*Bis(4-hydroxycinnamoyl)spermidine*.** N^1,N^{10}-*Dicoumaroylspermidine*
[65715-79-9]
[101330-61-4]
$C_{25}H_{31}N_3O_4$ 437.538
Alkaloid from *Dianthus caryophyllus, Helianthus annuus* (sunflower), *Aesculus hippocastanum, Vicia faba, Pyrus communis* (pear) (Caryophyllaceae, Hippocastanaceae, Fabaceae, Rosaceae, Solanaceae).

N,N″-*Bis(3,4-dihydroxycinnamoyl):* ***Dicaffeoylspermidine***
[59001-33-1]
$C_{25}H_{31}N_3O_6$ 469.536
Alkaloid from *Aesculus hippocastanum, Salix* spp. and *Nicotiana tabacum* (Hippocastanaceae, Salicaceae, Solanaceae). Present in fruits of *Solanum melongena* (egg plant).

N-*or* N″-*(4-Hydroxy-3-methoxycinnamoyl),* N″ *or* N-*(3,4-dihydroxycinnamoyl):* ***Caffeoylferuloylspermidine***
[124935-81-5]
$C_{26}H_{33}N_3O_6$ 483.563
Alkaloid from the pollen of *Corylus avellana* (filbert) (Betulaceae).

N,N″-*Bis(4-hydroxy-3-methoxycinnamoyl):* **N^1,N^{10}-*Diferuloylspermidine***
[70185-61-4]
$C_{27}H_{35}N_3O_6$ 497.59
Alkaloid from the pollen of *Corylus avellana* (filbert) (Betulaceae), also from *Ananas comosus* (pineapple), *Dianthus caryophyllus, Vicia faba* and *Lunaria esculentum* (Betulaceae, Bromeliaceae, Caryophyllaceae, Fabaceae, Solanaceae). Only the alkaloid from *C. avellana* has been shown to have the exact struct. shown. The other isolates are diferuloylspermidine with undefined regioisomerism (i.e. could be N^5-substituted).

N′,N″-*Bis(4-hydroxy-3-methoxycinnamoyl):* **N^5,N^{10}-*Diferuloylspermidine***
[115532-15-5]
$C_{27}H_{35}N_3O_6$ 497.59
Alkaloid from the pollen of *Betula verrucosa* (Betulaceae).

N,N′,N″-*Tris(4-hydroxy*-E-*cinnamoyl):* **N,N′,N″-*Tris(4-hydroxycinnamoyl)spermidine*.** N,N′,N″-*Tris(*E-p-*coumaroyl)spermidine.* N,N′,N″-*Tricoumaroylspermidine*
[131086-78-7]
$C_{34}H_{37}N_3O_6$ 583.683
Constit. of *Artemisia caruifolia*, *Carthamus tinctorius* (safflower), *Crataegus* spp. and the flowers of *Arachis hypogaea* (peanut). Cryst. (MeOH).

N′-*(3,4-Dihydroxycinnamoyl),* N,N″-*bis(4-hydroxycinnamoyl):* **N^5-*Caffeoyl*-N^1,N^{10}-*di*-p-*coumaroylspermidine***
[167868-57-7]
$C_{34}H_{37}N_3O_7$ 599.682
Isol. from pollen of *Quercus dentata* (Fagaceae).

N″-*(3,4-Dihydroxycinnamoyl),* N,N′-*bis(4-hydroxycinnamoyl):* **N^{10}-*Caffeoyl*-N^1,N^5-*di*-p-*coumaroylspermidine***
[181264-26-6]
$C_{34}H_{37}N_3O_7$ 599.682
Minor constit. of *Quercus dentata* pollen.

N′,N″-*Bis(3,4-dihydroxycinnamoyl),* N-*(4-hydroxycinnamoyl):* **N^5,N^{10}-*Dicaffeoyl*-N^1-p-*coumaroylspermidine***
[167868-56-6]
$C_{34}H_{37}N_3O_8$ 615.682
Isol. from pollen of *Quercus dentata* (Fagaceae).

N,N′,N″-*Tris(3,4-dihydroxycinnamoyl):* **N^1,N^5,N^{10}-*Tricaffeoylspermidine***
[167868-55-5]
$C_{34}H_{37}N_3O_9$ 631.681
Isol. from pollen of *Quercus dentata* (Fagaceae).

N″-*(4-Hydroxy-3-methoxycinnamoyl),* N-*(3,4-dihydroxycinnamoyl):* **N^1-*Caffeoyl*-N^{10}-*feruloylspermidine***
[101164-74-3]
$C_{26}H_{33}N_3O_6$ 483.563
Alkaloid from *Corylus avellana* (filbert) (Betulaceae) pollen.

N-*(4-Hydroxy-3-methoxycinnamoyl),* N′,N″-*bis(3,4-dihydroxycinnamoyl):* **N^5,N^{10}-*Dicaffeoyl*-N^1-*feruloylspermidine***
$C_{35}H_{39}N_3O_9$ 645.708
Minor constit. of *Quercus dentata* pollen.

N-*(4-Hydroxy-3-methoxy*-E-*cinnamoyl),* N′,N″-*bis(4-hydroxy*-E-*cinnamoyl):* **N^5,N^{10}-*Di*-p-*coumaroyl*-N^1-*feruloylspermidine***. *Keayanidine A*
[927818-88-0]
$C_{35}H_{39}N_3O_7$ 613.709
Constit. of the roots of *Microdesmis keayana*. Yellow powder. λ_{max} 219 (log ϵ 4.66); 232 (log ϵ 4.65); 294 (log ϵ 4.73); 317 (log ϵ 4.82) (MeOH).

N″-*(4-Hydroxy-3-methoxycinnamoyl),* N′-*(3,4-dihydroxycinnamoyl),* N-*(4-hydroxycinnamoyl):* **N^5-*Caffeoyl*-N^1-p-*coumaroyl*-N^{10}-*feruloylspermidine***
[181264-10-8]
$C_{35}H_{39}N_3O_8$ 629.708
Minor constit. of *Quercus dentata* pollen.

N,N″-*Bis(4-hydroxy-3,5-dimethoxycinnamoyl):* ***Disinapoylspermidine***
[70185-63-6]
$C_{29}H_{39}N_3O_8$ 557.642
Alkaloid from *Lilium* sp. (Liliaceae). Regioisomerism not rigorously established.

N,N″-*Bis(4-hydroxy-3-methoxy*-E-*cinnamoyl),* N′-*(4-hydroxy*-E-*cinnamoyl):* **N^5-p-*Coumaroyl*-N^1,N^{10}-*diferuloylspermidine***. *Keayanidine B*
[927818-89-1]
$C_{36}H_{41}N_3O_8$ 643.735
Constit. of the roots of *Microdesmis keayana*. Yellow powder. λ_{max} 220 (log ϵ 4.71); 232 (log ϵ 4.7); 295 (log ϵ 4.75); 319 (log ϵ 4.81) (MeOH).

N,N′,N″-*Tris(4-hydroxy-3-methoxy*-E-*cinnamoyl):* **N^1,N^5,N^{10}-*Triferuloylspermidine***. *Keayanidine C*
[364368-18-3]
$C_{37}H_{43}N_3O_9$ 673.761
Constit. of *Hippeastrum* x *hortorum* and *Microdesmis keayana*. Uv absorbant. Yellow powder. λ_{max} 320 (no solvent reported).

N″-*(3,5-Dibromo-4-methoxy*-E-*cinnamoyl):* N^{10}-*(3,5-Dibromo-4-methoxycinnamoyl)spermidine.* ***Tokaradine C***
[368422-40-6]
$C_{17}H_{25}Br_2N_3O_2$ 463.211
Isol. from the sponge *Pseudoceratina purpurea*. Amorph. yellow solid. λ_{max} 229 (ϵ 12200); 279 (ϵ 9900) (MeOH).

N′-*Me:* N-*(3-Aminopropyl)*-N-*methyl-1,4-butanediamine, 9CI.* **N^5-*Methylspermidine***
[51460-23-2]
$C_8H_{21}N_3$ 159.274
Alkaloid from *Trapa natas.* Oil. Mp 205° dec. (as tripicrate). Bp_{10} 119-121°.

N,N-*Di-Me,* N′-E-*cinnamoyl,* N″-*benzoyl:* ***Dovyalicin F***
$C_{25}H_{33}N_3O_2$ 407.555
Alkaloid from *Dovyalis abyssinica*. Gum.

[49721-50-8]

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 309D; 310A (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 501B (*nmr*)
v. Braun, J. *et al., Ber.*, 1937, **70**, 1230-1240 (*synth*)
Danzig, M. *et al., J.A.C.S.*, 1952, **74**, 1836-1837 (*synth*)
Herbst, E.J. *et al., Arch. Biochem. Biophys.*, 1958, **75**, 171-177 (*isol*)
Raina, A. *et al., Acta Chem. Scand.*, 1970, **24**, 3061-3064 (*biosynth*)
Husson, H.-P. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1973, **276**, 1039 (*Maytenine, synth*)
Englert, G. *et al., Helv. Chim. Acta*, 1973, **56**, 474-478 (*Maytenine*)
Schlittler, E. *et al., Helv. Chim. Acta*, 1973, **56**, 1097-1099 (N^5-*Methylspermidine, Maytenine, synth*)
Delétang, J. *et al., Ann. Tab., Sect. 2*, 1974, **11**, 123-130; *CA*, **84**, 147656m (*Caffeoylspermidine, Dicaffeoylspermidine, Dicoumaroylspermidine*)
Williams-Ashman, H.G. *et al., CA*, 1974, **81**, 23332w (*rev*)
Tait, G.H. *et al., Biochem. J.*, 1975, **146**, 191-204 (*bis(2,3-dihydroxybenzoyl)*)
Tait, G.H. *et al., Biochem. Soc. Trans.*, 1976, **4**, 610-612 (*biosynth*)
Cabanne, F. *et al., Physiol. Veg.*, 1977, **15**, 429-443; *CA*, **88**, 86095m (*Dicoumaroylspermidine*)
Martin-Tanguy, J. *et al., Phytochemistry*, 1978, **17**, 1927-1928 (*Coumaroylspermidine, Feruloylspermidine, Sinapoylspermidine, Dicoumaroylspermidine*)
Bhargava, K.K. *et al., J. Pharm. Sci.*, 1980, **69**, 986-989 (*bis(2,3-dihydroxybenzoyl), synth, pmr*)
Bergeron, R.J. *et al., J.O.C.*, 1980, **45**, 1589-1592; 1981, **46**, 3712-3718; 4524-4529 (*bis(2,3-dihydroxybenzoyl), synth, pmr*)
Nagao, Y. *et al., Tet. Lett.*, 1980, **21**, 841-844 (*Maytenine, synth*)
Tice, C.M. *et al., J.O.C.*, 1983, **48**, 2106-2108 (*N-Ac, synth, ir, pmr*)
Joshua, A.V. *et al., Tet. Lett.*, 1984, **25**, 5725-5728 (*Dibenzoylspermidine, Bis(2,3-dihydroxybenzoyl)spermidine, synth*)
Steglich, W. *et al., Z. Naturforsch., C*, 1984, **39**, 10-12 (*Pistillarine*)
Meurer, B. *et al., Phytochemistry*, 1986, **25**, 433-435; 1988, **27**, 839 (*Dicoumaroylspermidine, Diferuloylspermidine, Caffeoylferuloylspermidine*)
Murahashi, S. *et al., Chem. Lett.*, 1987, 879-882 (*bis(2,3-dihydroxybenzoyl), synth*)
Miyasaka, T. *et al., J.C.S. Perkin 2*, 1987, 1543-1549 (*bis(2,3-dihydroxybenzoyl), synth*)
Alemayehu, G. *et al., Phytochemistry*, 1988, **27**, 3255-3258 (N^5,N^{10}-*Dibenzoylspermidine*)
Almeida, M.L.S. *et al., Acta Chem. Scand.*, 1989, **43**, 990-994 (*N″-Ac, synth, pmr, cmr*)
Meurer-Grimes, B. *et al., Z. Naturforsch., C*, 1989, **44**, 635-640 (*Caffeoylferuloylspermidine*)
Koumoto, Y. *et al., Chem. Pharm. Bull.*, 1990, **38**, 1648-1652 (*N″-Ac, activity*)
Strack, D. *et al., Phytochemistry*, 1990, **29**, 2893-2896 (*tris-4-hydroxycinnamoyl*)
Sattar, E.A. *et al., Phytochemistry*, 1990, **29**, 3931-3933 (N^1,N^{10}-*Bis(dihydrocaffeoyl)spermidine*)
Hamana, K. *et al., Comp. Biochem. Physiol., B: Comp. Biochem.*, 1991, **100**, 59-62 (*occur, hplc*)
Hamana, K. *et al., Biochem. J.*, 1992, **284**, 741-747 (*thermophilic eubacteria constits*)
Polyamines in the Gastrointestinal Tract, (eds. Dowling, R.H. *et al*), Kluwer Academic Publishers, Dordrecht, 1992, (*book*)
Doll, M.K.-H. *et al., Helv. Chim. Acta*, 1994, **77**, 1229-1235 (N^5-*Benzoylspermidine*)
Bokern, M. *et al., Phytochemistry*, 1995, **39**, 1371-1375 (*Quercus dentata constits*)
Nimtz, M. *et al., Phytochemistry*, 1996, **43**, 487-489 (*Quercus dentata constits*)
Perez-Amador, M.A. *et al., Plant Physiol.*, 1996, **110**, 1177-1186 (*Hexanoylspermidine*)
Hernandez-Jover, T. *et al., J. Agric. Food Chem.*, 1997, **45**, 2098-2102 (*occur*)
Hamana, K. *et al., Can. J. Bot.*, 1998, **76**, 130-133 (N^5-*Methylspermidine, isol*)
Kalač, P. *et al., Biologically-active Phytochemicals in Food*, (eds. Pfannhauser, W. *et al*), Royal Society of Chemistry, 2001, 217-220 (*sauerkraut*)
Ma, C.-M. *et al., Chem. Pharm. Bull.*, 2001, **49**, 915-917 (*tri-p-coumaroyl*)
Fusetani, N. *et al., Tetrahedron*, 2001, **57**, 7507-7511 (*Tokaradine C*)
Youhnovski, N. *et al., Z. Naturforsch., C*, 2001, **56**, 526-530 (*Triferuloylspermidine*)
Whitaker, B.D. *et al., J. Agric. Food Chem.*, 2003, **51**, 3448-3454 (*Dicaffeoylspermidine, occur, pmr*)
Zamble, A. *et al., Chem. Biodiversity*, 2006, **3**, 982-989 (*Keayanidines A-C*)
Rasmussen, B. *et al., J. Nat. Prod.*, 2006, **69**, 1300-1304 (*Dovyalicin F*)
Clericuzio, M. *et al., Eur. J. Org. Chem.*, 2007, 5551-5559 (*Maytenine*)
Capon, R.J. *et al., J. Nat. Prod.*, 2007, **70**, 1764-1752 (*Pistillarine*)
Sobolev, V.S. *et al., J. Agric. Food Chem.*, 2008, **56**, 2960-2969 (*peanut coumarates*)
Jiang, J.-S. *et al., J. Asian Nat. Prod. Res.*, 2008, **10**, 447-451 (*safflower coumarates*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, SLA000

Spermine S-399

N,N′-*Bis(3-aminopropyl)-1,4-butanediamine, 9CI. Bis(3-aminopropyl)tetramethylenediamine. 1,12-Diamino-4,9-diazadodecane. 1,5,10,14-Tetraazatetradecane. Gerontine. Neuridine. Musculamine*
[71-44-3]
$H_2NCH_2CH_2CH_2^5NH(CH_2)_4NHCH_2CH_2CH_2NH_2$

$C_{10}H_{26}N_4$ 202.342
Occurs as phosphate in semen, ox pancreas, yeast and meat prods. Isol. from *Anthocidaris crassispina*, *Stichopus japonicus*, *Halocynthia roretzi*, *Tapes philippinarum* and venom of the spider *Agelenopsis aperta*. Deliquescent cryst. $Bp_{0.5}$ 141-142°. Absorbs CO_2 from the air.

► LD_{50} (mus, ivn) 56 mg/kg. EJ7175000

Hydrochloride (1:4): [306-67-2]

Cryst. (EtOH). Mp 312-314.5°.

▶ EJ7230000

Phosphate: [3891-79-0] Sol. hot H_2O, insol. EtOH, Et_2O. Mp 230-234°.

N^1*-Ac:* N-*Acetylspermine. Monoacetylspermine*
[25593-72-0]
$C_{12}H_{28}N_4O$ 244.379
Inhibits oat and maize polyamine oxidase. No phys. props. reported.

Tetrabenzoyl:
Needles (Me_2CO aq.). Mp 155°.

N^1,N^{14}*-Bis(4-hydroxy-3-methoxyphenylacetyl): 1,14-Bis(homovanilloyl)spermine.* ***Orthidine F***
$C_{28}H_{42}N_4O_6$ 530.663
Alkaloid from *Aplidium orthium*. Pale yellow gum. λ_{max} 206 (log ϵ 4.1); 230 (log ϵ 3.46); 285 (log ϵ 3.1) (MeOH).

N^1,N^{10}*-Bis[3-(3,4-dihydroxyphenyl)propanoyl]: 1,10-Bis(dihydrocaffeoyl)spermine.* ***Kukoamine B***
[164991-67-7]
$C_{28}H_{42}N_4O_6$ 530.663
Alkaloid from root bark of *Lycium chinense* (Chinese boxthorn) (Solanaceae). Pale yellow powder.

N^1,N^{14}*-Bis[3-(3,4-dihydroxyphenyl)propanoyl]: 1,14-Bis(dihydrocaffeoyl)spermine.* ***Kukoamine A***
[75288-96-9]
$C_{28}H_{42}N_4O_6$ 530.663
Alkaloid from the root bark of *Lycium chinense* (Chinese boxthorn) and *Solanum tuberosum* (potatoes). Shows hypotensive activity. Noncryst. λ_{max} 284 (possibly MeOH, not reported) (Derep).

N^1,N^5,N^{10}-*Tris(4-hydroxy*-E-*cinnamoyl):* **N^1,N^5,N^{10}-*Tris*-trans-p-*coumaroylspermine***
[402598-51-0]
$C_{37}H_{44}N_4O_6$ 640.778
Constit. of *Matricaria chamomilla* (German chamomile). Yellow powder (as trifluoroacetate). Mp 109-111° dec. (trifluoroacetate).

N^1,N^5,N^{10},N^{14}-*Tetrakis(4-hydroxy*-E-*cinnamoyl):* **N^1,N^5,N^{10},N^{14}-*Tetra*-trans-p-*coumaroylspermine***
[364048-95-3]
$C_{46}H_{50}N_4O_8$ 786.923
Constit. of *Matricaria chamomilla* (German chamomile) and other species of Asteraceae. Tachykinin NK_1 receptor antagonist. Cryst. (MeOH aq.). Mp 139-141° dec. λ_{max} 227 (log ϵ 4.7); 299 (log ϵ 4.93); 311 (log ϵ 4.94) (MeOH).

N^1,N^{14}-*Bis(4-hydroxy-3-methoxy*-E-*cinnamoyl),* N^5-*(4-hydroxy*-E-*cinnamoyl):* N^5-trans-p-*Coumaroyl*-N^1,N^{14}-*di*-trans-*feruloylspermine.* ***Keayanine A***
[942914-01-4]
$C_{39}H_{48}N_4O_8$ 700.83
Alkaloid from the roots of *Microdesmis keayana*. Yellow powder. λ_{max} 218 (log ϵ 4.78); 232 (log ϵ 4.72); 293 (log ϵ 4.64); 315 (log ϵ 4.68) (MeOH).

Bis(4-hydroxy-3-methoxycinnamoyl): ***Diferuloylspermine***
[70208-06-9]
$C_{30}H_{42}N_4O_6$ 554.685
Alkaloid from *Ananas comosus* (pineapple) and *Gomphrena globosa*. Substituted on two of the *N* atoms. Exact struct. unknown.

N-*(4-Hydroxy-3,5-dimethoxycinnamoyl):* ***Sinapoylspermine***
[70185-65-8]
$C_{21}H_{36}N_4O_4$ 408.54
Alkaloid from *Brassica oleracea* var. *botrytis* (cauliflower) (Brassicaceae). Mixt. of N^1 and/or N^5-substitution.

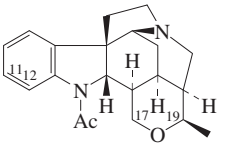
Bis(4-hydroxy-3,5-dimethoxycinnamoyl): ***Disinapoylspermine***
[70185-66-9]
$C_{32}H_{46}N_4O_8$ 614.737
Alkaloid from *Lilium* sp. Substituted on two of the *N* atoms. Exact struct. unknown.

N^5*-Hydroxy:* [864812-09-9]
$C_{10}H_{26}N_4O$ 218.342
Isol. from venom of the spider *Hololena curta*.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 312B (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 503C (*nmr*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 399A (*ir*)
Dudley, H.W. *et al., Biochem. J.*, 1924, **18**, 1263-1272; 1926, **20**, 1082-1094; 1927, **21**, 97-103 (*isol, struct*)
Dubin, D.T. *et al., J. Biol. Chem.*, 1960, **235**, 776-782 (*Monoacetylspermine*)
Israel, M. *et al., J. Med. Chem.*, 1964, **7**, 710-716 (*synth*)
Raina, A. *et al., Acta Chem. Scand.*, 1970, **24**, 3061-3064 (*biosynth*)
Williams-Ashman, M.G. *et al., Adv. Enzyme Regul.*, 1972, **10**, 225-245; *CA*, **81**, 23332w (*rev*)
Martin-Tanguy, J. *et al., Phytochemistry*, 1978, **17**, 1927-1928 (*Sinapoylspermine, Diferuloylspermine, Disinapoylspermine*)
Funayama, S. *et al., Tet. Lett.*, 1980, **21**, 1355 (*Kukoamine A*)
Chantrapromma, K. *et al., Tet. Lett.*, 1981, **22**, 23 (*Kukoamine A, synth*)
Federico, R. *et al., Phytochemistry*, 1989, **28**, 2045-2046; 1990, **29**, 2411-2414 (*Monoacetylspermine, activity*)
Hamana, K. *et al., Comp. Biochem. Physiol., B: Comp. Biochem.*, 1991, **100**, 59-61 (*occur, hplc, gc*)
Polyamines in the Gastrointestinal Tract, (eds. Dowling, R.H. *et al*), Kluwer Academic Publishers, Dordrecht, 1992, (*book*)
Funayama, S. *et al., Phytochemistry*, 1995, **38**, 1529 (*Kukoamine B*)
Hernandez-Jover, T. *et al., J. Agric. Food Chem.*, 1997, **45**, 2098-2102 (*occur*)
Karigiannis, G. *et al., Tet. Lett.*, 1998, **39**, 5117-5120 (*Kukoamine A, synth*)
Yamamoto, A. *et al., Chem. Pharm. Bull.*, 2002, **50**, 47-52 (*Tricoumaroylspermine, Tetracoumaroylspermine*)
Rubio, M. *et al., Synth. Commun.*, 2002, **32**, 2441-2452 (*synth, pmr, cmr*)
Garnelis, T. *et al., Chem. Lett.*, 2005, **34**, 264-265 (*Kukoamine A, synth*)
Parr, A.J. *et al., J. Agric. Food Chem.*, 2005, **53**, 5461-5466 (*Kukoamines, isol*)
Tzouros, M. *et al., Toxicon*, 2005, **46**, 350-354 (*N-hydroxy*)
Zamble, A. *et al., Chem. Pharm. Bull.*, 2007, **55**, 643-645 (*Keayanine*)
Pearce, A.N. *et al., Tetrahedron*, 2008, **64**, 5748-5755 (*Orthidine F*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, DCC400; GEK000

Spermostrychnine S-400

1-Acetyl-17,19-epoxycuran, 9CI
[639-34-9]



Absolute Configuration

$C_{21}H_{26}N_2O_2$ 338.449
Alkaloid from *Strychnos psilosperma*, *Strychnos aculeata* and *Strychnos brasiliensis* (Loganiceae). Needles (Me_2CO). Mp 208-209°. $[\alpha]_D^{22}$ +88 (c, 2.2 in $CHCl_3$).

▶ WG8700000

Picrate:
Small yellow hexagonal plates. Mp 173-175° dec.

Methiodide: Mp 301-303°.

N-*De-Ac:* **N-*Deacetylspermostrychnine***. *Desacetylspermostrychnine*
[22153-12-4]
$C_{19}H_{24}N_2O$ 296.411
Alkaloid from root bark of *Strychnos panganensis*. $[\alpha]_D$ -120 (c, 0.48 in $CHCl_3$). λ_{max} 210 ; 245 ; 301 (MeOH).

N-*De-Ac,* N-*hydroxyacetyl:* ***23-Hydroxyspermostrychnine***
[141544-25-4]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from *Strychnos henningsii* (Loganiceae). $[\alpha]_D$ +70 (c, 0.95 in $CHCl_3$). λ_{max} 212 ; 250 ; 280 ; 290 (MeOH).

N-*De-Ac,* N-*hydroxyacetyl,* N^4*-oxide:* ***23-Hydroxyspermostrychnine N^4-oxide***
[141544-32-3]
$C_{21}H_{26}N_2O_4$ 370.447
Alkaloid from *Strychnos henningsii*.

17-Hydroxy, N-*de-Ac,* N-*hydroxyacetyl:* ***17,23-Dihydroxyspermostrychnine***
[141544-33-4]
$C_{21}H_{26}N_2O_4$ 370.447
Alkaloid from *Strychnos henningsii* (Loganiceae). λ_{max} 211 ; 250 ; 281 ; 290 (sh) (MeOH).

11-Methoxy: ***Strychnospermine***
[509-45-5]
$C_{22}H_{28}N_2O_3$ 368.475
Alkaloid from *Strychnos psilosperma* leaves (Loganiceae). Needles (MeOH aq.). Mp 208-209°. $[\alpha]_D^{16}$ +60.3 (c, 1.37 in $CHCl_3$).

11-Methoxy, hydrochloride:
Plates (H_2O). Mp 330-332° dec. (chars from 300°). $[\alpha]_D^{15}$ +66.6 (c, 1.43 in H_2O).

11-Methoxy, picrate:
Yellow needles (EtOH). Mp 254° dec.

11-Methoxy, 12-hydroxy: ***12-Hydroxy-11-methoxyspermostrychnine***
[34327-10-1]
$C_{22}H_{28}N_2O_4$ 384.474
Alkaloid from trunk bark of *Strychnos brasiliensis* (Loganiceae). Small plates

(EtOH). Mp 272-273°. $[\alpha]_D^{25}$ -217 (c, 0.58 in $CHCl_3$). λ_{max} 225 (log ϵ 4.36); 255 (log ϵ 3.77); 290 (log ϵ 2.88) (EtOH).

11-Methoxy, 12-hydroxy; methiodide: Cryst. (Me_2CO). Mp 289-291°.

19-Epimer: **N^a-*Acetyl-3-deoxyisostrychnosplendine***
[22153-15-7]
$C_{21}H_{26}N_2O_2$ 338.449
Minor alkaloid detected in the bark of *Strychnos splendens* (Loganiceae). Cryst. ($CHCl_3$). Mp 280-283°. $[\alpha]_D^{20}$ +98 (c, 1 in EtOH). λ_{max} 218 (log ϵ 4.41); 250 (log ϵ 4.05); 277 (sh) (log ϵ 3.38) (no solvent reported).

19-Epimer, N-*de-Ac,* N-*hydroxyacetyl:* ***19-Epi-23-hydroxyspermostrychnine***
[141544-26-5]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from *Strychnos henningsii* (Loganiceae). λ_{max} 212 ; 250 ; 280 ; 290 (MeOH).

Anet, F.A.L. *et al., Aust. J. Chem.*, 1953, **6**, 58-65 (*Spermostrychnine, Strychnospermine, isol*)
Anet, F.A.L. *et al., J.C.S.*, 1955, 2253-2262 (*Spermostrychnine, Strychnospermine, uv, ir, struct*)
Biemann, K. *et al., Mass Spectrom. [SPR]*, McGraw-Hill, 1962, 331 (*Strychnospermine, ms*)
Anet, F.A.L. *et al., Can. J. Chem.*, 1963, **41**, 883-888 (*Spermostrychnine, Strychnospermine, pmr*)
Plat, M. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1968, **267**, 1419-1422 (*pmr, config*)
Koch, M. *et al., Ann. Pharm. Fr.*, 1969, **27**, 229-238 (*N^a-Acetyl-3-deoxyisostrychnosplendine*)
Koch, M. *et al., Tetrahedron*, 1969, **25**, 3377-3382 (*config*)
Iwataki, I. *et al., Tetrahedron*, 1971, **27**, 2541-2552 (*12-Hydroxy-11-methoxyspermostrychnine*)
Wenkert, E. *et al., J.O.C.*, 1978, **43**, 1099-1105 (*Strychnospermine, pmr, cmr*)
Massiot, G. *et al., Phytochemistry*, 1991, **30**, 3449-3456 (*23-Hydroxyspermostrychnine, 19-Epi-23-hydroxyspermostrychnine, 1,23-Dihydroxyspermostrychnine, 23-Hydroxyspermostrychnine N-oxide, 17,23-Dihydroxyspermostrychnine*)
Nuzillard, J.-M. *et al., Phytochemistry*, 1996, **43**, 897-902 (*N-Deacetylspermostrychnine*)

Sphaeranthine† S-401

$C_{13}H_{19}NO_5$ 269.297

Struct. unknown. Alkaloid from *Sphaeranthus indicus* (Asteraceae). Mp 166-168° dec.

Hydrochloride: Mp 158-160° dec.

Sulfate: Mp 185° dec.

Oxalate: Mp 110-111° dec.

Picrate: Mp 154-156° dec.

Chloroplatinate: Mp 196-198° dec.

Basu, N.K. *et al., J. Am. Pharm. Assoc.*, 1946, **35**, 274 (*isol*)

Sphaeranthine I† S-402

$C_{14}H_8N_2O_4$ 268.228

Struct. unknown. Alkaloid from the flowers of *Sphaeranthus indicus.* Yellowish needles. Mp 190°.

Naqvi, S.B.S. *et al., Thesis*, Univ. of Karachi, 1997, (*isol, uv, ir, pmr, cmr, ms*)

Sphaeranthine IV S-403

$C_{13}H_{17}NO_6$ 283.28

Struct. unknown. Alkaloid from flowers of *Sphaeranthus indicus.* Mp 125°.

Naqvi, S.B.S. *et al., Thesis*, Univ. of Karachi, 1997, (*isol, uv, ir, pmr, cmr, ms*)

Sphaeranthine VI S-404

$C_{17}H_{18}N_2O$ 266.342

Struct. unknown. Alkaloid from flowers of *Sphaeranthus indicus.* Cryst. Mp 135°.

Naqvi, S.B.S. *et al., Thesis*, Univ. of Karachi, 1997, (*isol, uv, ir, pmr, cmr, ms*)

Sphaeranthine VII S-405

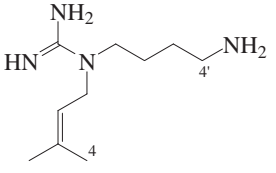
$C_{12}H_8N_2O_5$ 260.206

Struct. unknown. Alkaloid from flowers of *Sphaeranthus indicus.* Mp 170°. λ_{max} 220 ; 280 (no solvent reported).

Naqvi, S.B.S. *et al., Thesis*, Univ. of Karachi, 1997, (*isol, uv, ir, pmr, cmr, ms*)

Spherophysine S-406

N-*(4-Aminobutyl)*-N-*(3-methyl-2-butenyl)guanidine, 9CI.* N-*(4-Aminobutyl)*-N-*prenylguanidine. Sphaerophysine*
[25978-54-5]



$C_{10}H_{22}N_4$ 198.311

Two incorrect structs. were previously proposed. Alkaloid from the leaves of *Sphaerophysa salsula* and from *Galega officinalis*, *Eremosparton flocciodum* and *Swainsona galegifolia* (Fabaceae). Ganglion blocker. V. hygroscopic solid.

Dipicrate: Mp 154-155°.

N$^{4'}$*-Ac:* ***Smirnovine****. Smyrnovine*
[2758-69-2]
$C_{12}H_{24}N_4O$ 240.348
Alkaloid from roots of *Smirnowia turkestana* and from *Astragalus* sp. and *Galega officinale* (Fabaceae). Golden needles (as picrate). Mp 154° (picrate).

N$^{4'}$*-(Carboxyacetyl):* ***Smirnovinine****. Smyrnovinine*
[27586-70-5]
$C_{13}H_{24}N_4O_3$ 284.358
Alkaloid from *Smirnowia turkestana* and *Astragalus* sp. (Fabaceae). Mp 145° dec. (as picrate).

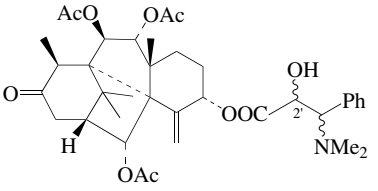
4-Hydroxy (2Z-), N$^{4'}$*-Ac:* ***4-Hydroxysmirnovine***
[180156-26-7]
$C_{12}H_{24}N_4O_2$ 256.347
Alkaloid from *Galega orientalis.* Oil.

[70293-13-9]

Rubinschtein, M.M. *et al., CA*, 1945, **39**, 2291^4 (*isol*)
Rjabinin, A.A. *et al., CA*, 1948, **42**, 4718f; 1951, **45**, 8458 (*derivs*)
Reuter, G. *et al., Planta Med.*, 1965, **13**, 494 (*isol*)
Heesing, A. *et al., Chem. Ber.*, 1970, **103**, 534 (*struct, ms*)
Steiniger, J.R.G. *et al., Pharmazie*, 1973, **28**, 682; 1974, **29**, 422 (*isol, biosynth*)
Benn, M.H. *et al., J. Agric. Food Chem.*, 1996, **44**, 2286-2288 (*4-Hydroxysmirnovine, isol*)
Yadav, V.K. *et al., Can. J. Chem.*, 2000, **78**, 542-545 (*4-Hydroxysmirnovine, synth*)

Spicaledonine S-407

[126617-13-8]



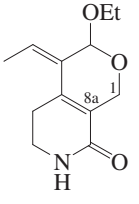
$C_{37}H_{49}NO_{10}$ 667.795
Alkaloid from the bark of *Austrotaxus spicata* (Taxaceae). Amorph. $[\alpha]_D$ +29 (c, 0.3 in $CHCl_3$).

2′-Deoxy: ***Taxuspine H***
[164991-81-5]
$C_{37}H_{49}NO_9$ 651.795
Isol. from *Taxus cuspidata* and *Taxus brevifolia*. Microtubule depolymerisation inhibitor. Amorph. solid. $[\alpha]_D^{23}$ +6.8 (c, 0.29 in $CHCl_3$). λ_{max} 230 (ϵ 14000) (MeOH) (Berdy).

Ettouati, L. *et al., Bull. Soc. Chim. Fr.*, 1989, 687-694 (*isol, pmr, cmr, struct*)
Kobayashi, J. *et al., Tetrahedron*, 1995, **51**, 5971-5978 (*Taxuspine H*)

Spicatine† S-408

*4-Ethenyl-3-ethoxy-1,3,4,5,6,7-hexahydro-8*H*-pyrano[3,4-*c*]pyridin-8-one, 9CI*
[11053-08-0]



$C_{12}H_{17}NO_3$ 223.271

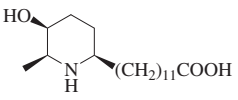
Monoterpene alkaloid. Alkaloid from *Centaurium spicatum* (Gentianaceae). Mp 182-183°.

$\Delta^{1,8a}$-Isomer: [70474-61-2]
$C_{12}H_{17}NO_3$ 223.271
Alkaloid from *Centaurium spicatum* (Gentianaceae). Mp 149-150°.

Khafagy, S.M. *et al., Acta Pharm. Suec.*, 1968, **5**, 135; *CA*, **69**, 80134j
Bishay, D. *et al., J. Pharm. Pharmacol.*, 1978, **30**, Suppl.; 80P (*struct*)
Bishay, D. *et al., Planta Med.*, 1979, **37**, 253 (*deriv*)

Spicigerine S-409

5-Hydroxy-6-methyl-2-piperidinedodecanoic acid, 9CI
[52998-86-4]



Absolute Configuration

$C_{18}H_{35}NO_3$ 313.479
Alkaloid from *Prosopis spicigera* (Fabaceae). Mp 196°.

N,O-*di-Ac, Me ester:*
Oil. $[\alpha]_D^{26}$ -17.2 (c, 1.0 in $CDCl_3$).

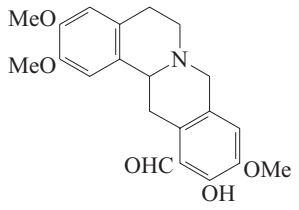
(±)-*form*

Me ester: [87243-58-1]
Mp 69-71.2°. $Bp_{0.001}$ 160°.

Jewers, K. *et al., Phytochemistry*, 1976, **15**, 238-240 (*isol*)
Paterne, M. *et al., J. Chem. Res., Synop.*, 1985, 278 (*synth, ms, ir, pmr*)
Hasseberg, H.-A. *et al., Annalen*, 1989, 255 (*synth, ir, pmr, cmr*)
Momose, T. *et al., Heterocycles*, 1995, **40**, 137 (*abs config*)
Leverett, C.A. *et al., J.O.C.*, 2006, **71**, 8591-8601 (*synth*)

Spiduxine S-410

[112494-59-4]



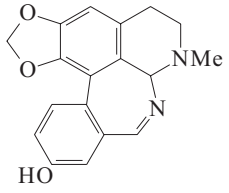
$C_{21}H_{23}NO_5$ 369.416

(ξ)-*form*
Alkaloid from the trunk bark of Colombian *Duguetia spixiana* (Annonaceae). Amorph.

Debourges, D. *et al., J. Nat. Prod.*, 1987, **50**, 664 (*isol, uv, ir, pmr, ms, struct*)

Spiguetidine S-411

5,6,7,7a-Tetrahydro-7-methylbenzo[d]-1,3-dioxolo[4,5-g]pyrido[4,3,2-jk][2]benzazepin-11-ol, 9CI
[112494-57-2]



$C_{18}H_{16}N_2O_3$ 308.336
Rearranged aporphine (azahomoaporphine).

(ξ)-*form*
Alkaloid from the bark of Bolivian *Duguetia spixiana* (Annonaceae).

Me ether: ***Spiguetine***
[112494-56-1]
$C_{19}H_{18}N_2O_3$ 322.363
Alkaloid from *Duguetia spixiana* (Annonaceae). $[\alpha]_D$ -2 (c, 0.15 in EtOH).

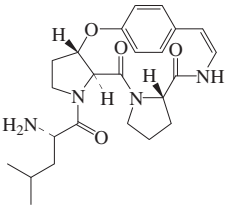
Deoxy: ***Dragabine***
[107030-45-5]
$C_{18}H_{16}N_2O_2$ 292.337
Alkaloid from the bark and leaves of *Guatteria sagotiana* (Annonaceae). Noncryst. Insignificant opt. rotn.

Deoxy, N-*de-Me:* ***Nordragabine***
[107030-44-4]
$C_{17}H_{14}N_2O_2$ 278.31
Trace alkaloid from the trunk bark of *Meiogyne virgata* (Annonaceae). Noncryst. Undergoes considerable dec. on standing.

Cassels, B.K. *et al., Chem. Comm.*, 1986, 1481 (*Dragabine, Nordragabine*)
Rasamizafy, S. *et al., J. Nat. Prod.*, 1987, **50**, 674 (*Spiguetidine, Spiguetine*)

Spinanine A S-412

[135091-07-5]



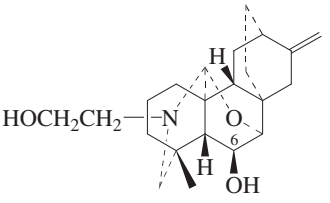
Absolute Configuration

$C_{24}H_{32}N_4O_4$ 440.541
Alkaloid from the stem bark of *Zizyphus spinachristi* (Rhamnaceae). Cryst. Mp 175-176°. $[\alpha]_D$ -121 (c, 0.1 in MeOH).

Abdel-Galil, F.M. *et al., Phytochemistry*, 1991, **30**, 1348 (*isol, uv, ir, ms, struct*)

Spiraeaine A S-413

[473714-84-0]



$C_{22}H_{33}NO_3$ 359.508
Alkaloid from the stems of *Spiraea formosana*. Oil. $[\alpha]_D$ -7.8 (c, 0.7 in $CHCl_3$).

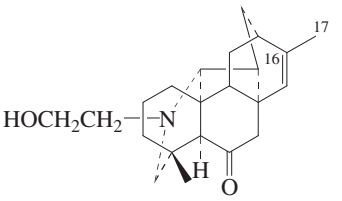
19-Oxo, 6-Ac: ***Spiramine Y***
$C_{24}H_{33}NO_5$ 415.528
Alkaloid from *Spiraea japonica*. Needles (Me_2CO). Mp 144-145°. $[\alpha]_D^{27}$ -152 (c, 0.75 in $CHCl_3$).

19-Oxo, di-Ac: ***Spiramine X***
$C_{26}H_{35}NO_6$ 457.566
Alkaloid from *Spiraea japonica*. Needles (Me_2CO). Mp 125-127°. $[\alpha]_D^{25}$ -139.7 (c, 0.23 in $CHCl_3$).

Wang, B.-G. *et al., Heterocycles*, 2000, **53**, 1343-1350 (*Spiramines X and Y*)
Wu, T.S. *et al., Heterocycles*, 2002, **57**, 1495-1500 (*Spiraeaine A*)

Spirafine II S-414

[20071-95-8]



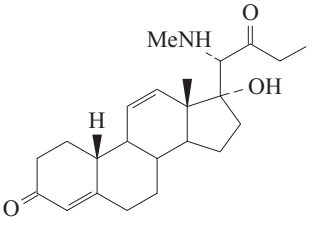
$C_{22}H_{31}NO_2$ 341.492
Alkaloid from *Spiraea fritschiana* var. *parvifolia*. Needles. Mp 155-156°. $[\alpha]_D^{22}$ -33.2 (c, 2 in Py).

5-Epimer, Δ^{17}-isomer: ***Spirafine III***
[20072-00-8]
$C_{22}H_{31}NO_2$ 341.492
Alkaloid from *Spiraea fritschiana* var. *parvifolia*. Needles. Mp 192-193°. $[\alpha]_D^{22}$ -46.1 (c, 2 in Py).

Li, M. *et al., Chin. Chem. Lett.*, 1999, **10**, 827-830

Spirajine S-415

17-Hydroxy-20-(methylamino)-19,21-dinorchola-4,11-diene-3,22-dione, 9CI
[21728-69-8]

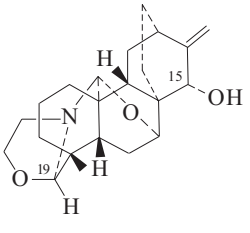


$C_{23}H_{33}NO_3$ 371.519
No details in abstract; struct. is taken from CA details. Unprecedented struct. Alkaloid from leaves of *Spiraea koreana* (Rosaceae). Mp 182-184°. $[\alpha]_D^{19}$ +3.4 ($CHCl_3$).

Kab Duck Jin, *et al., CA*, 1969, **70**, 26359

Spiramine C S-416

[114485-97-1]



$C_{22}H_{31}NO_3$ 357.492
Alkaloid from *Spiraea japonica* var. *acuminata* (Rosaceae). Cryst. (Et_2O). Mp 167-169°. $[\alpha]_D^{25}$ -149.9 (c, 1.0 in C_6H_6).

15-Ac: ***Spiramine A***
[114531-28-1]
$C_{24}H_{33}NO_4$ 399.529

Alkaloid from *Spiraea japonica* var. *acuminata* (Rosaceae). Shows antiplatelet aggregation activity. Cryst. (hexane). Mp 137.5-139°. $[\alpha]_D^{25}$ -103.1 (c, 0.9 in C_6H_6).

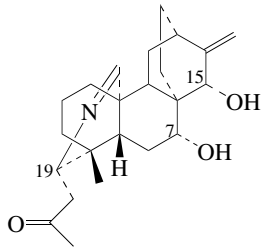
19-Epimer: ***Spiramine D***
[114485-98-2]
$C_{22}H_{31}NO_3$ 357.492
Alkaloid from *Spiraea japonica* var. *acuminata* (Rosaceae). Cryst. (Et_2O). Mp 160-162°. $[\alpha]_D^{25}$ -169 (c, 0.7 in C_6H_6).

19-Epimer, 15-Ac: ***Spiramine B***
[114485-96-0]
$C_{24}H_{33}NO_4$ 399.529
Alkaloid from *Spiraea japonica* var. *acuminata* (Rosaceae). Shows antiplatelet aggregation activity. Cryst. (hexane). Mp 129-131°. $[\alpha]_D^{25}$ -159.5 (c, 0.9 in C_6H_6).

Hao, X. *et al., Chem. Pharm. Bull.*, 1987, **35**, 1670 (*ir, pmr, cmr, cryst struct*)
Node, M. *et al., Heterocycles*, 1990, **30**, 635 (*isol, ir, pmr, cmr, ms, cryst struct*)
Wang, B.-G. *et al., Heterocycles*, 2000, **53**, 1343-1350 (*activity*)

Spiramine J S-417

[147395-98-0]



$C_{23}H_{33}NO_3$ 371.519
C-19 has (*S*)-config. Alkaloid from the roots of *Spiraea japonica* var. *acuminata* (Rosaceae).

7-Ac: ***Spiramine M***
[137760-59-9]
$C_{25}H_{35}NO_4$ 413.556
Alkaloid from the roots of *Spiraea japonica* var. *acuminata* (Rosaceae).

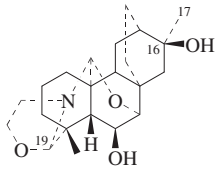
15-Ac: ***Spiramine L***
[137760-58-8]
$C_{25}H_{35}NO_4$ 413.556
Alkaloid from the roots of *Spiraea japonica* var. *acuminata* (Rosaceae).

19-Epimer: ***Spiramine K***
[137760-57-7]
$C_{23}H_{33}NO_3$ 371.519
Alkaloid from the roots of *Spiraea japonica* var. *acuminata* (Rosaceae).

Hao, X. *et al., CA*, 1993, **118**, 209386e

Spiramine P S-418

[162901-90-8]



$C_{22}H_{33}NO_4$ 375.507
Alkaloid from roots of *Spiraea japonica* var. *incisa* (Rosaceae). Needles (MeOH). Mp 237-239°. $[\alpha]_D$ -49 (c, 0.81 in $CHCl_3$). Struct. revised in 2000.

6-Ac: ***Thalicsiline****. Spiramine U*
[119420-10-9]
[205871-37-0]
$C_{24}H_{35}NO_5$ 417.544
Alkaloid from the roots of *Thalictrum sessile* and from roots of *Spiraea japonica* var. *acuta*. Demonstrates antiinflammatory activity in rats. Prisms + $^1/_2H_2O$ (MeOH). Mp 183-186°. $[\alpha]_D^{20}$ -11.4 (c, 0.1 in MeOH). Struct. of Spiramine U revised in 2000. Props. refer to Thalicsiline. Exists in soln. as a mixt. of C-19 epimers.

16-Deoxy, 16,17-didehydro: ***Spiradine G***
[21040-66-4]
$C_{22}H_{31}NO_3$ 357.492
Alkaloid from *Spiraea japonica* (Rosaceae). Mp 168-170°. $[\alpha]_D$ -137 (c, 1.16 in MeOH). pK_a 6.9 (50% MeOH aq.).

16-Deoxy, 16,17-didehydro, 6-Ac: ***Spiradine F***
[21040-64-2]
$C_{24}H_{33}NO_4$ 399.529
Alkaloid from *Spiraea japonica* and *Spiraea japonica* var. *acuta* (Rosaceae). Shows antiplatelet aggregation activity. Mp 114-117° (as hydrochloride).

16-Epimer: ***Spiramine Q***
[162993-29-5]
$C_{22}H_{33}NO_4$ 375.507
Alkaloid from roots of *Spiraea japonica* var. *incisa* (Rosaceae). Platelet aggregation inhibitor, decreases serotonin secretion. Needles. Mp 197-199°. $[\alpha]_D$ -70 (c, 0.84 in $CHCl_3$). Struct. revised in 2000.

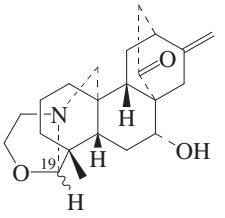
16,19-Diepimer: ***Spiramine W***
[304645-14-5]
$C_{22}H_{33}NO_4$ 375.507
Constit. of *Spiraea japonica* var. *acuta*.

16,19-Diepimer, 6-Ac: ***Spiramine T***
[205871-36-9]
$C_{24}H_{35}NO_5$ 417.544
Alkaloid from roots of *Spiraea japonica* var. *acuta*. Needles. Mp 183-185°. $[\alpha]_D^{25}$ -151.6 (c. 0.67 in $CHCl_3$). Struct. revised in 2000.

Toda, M. *et al., Tet. Lett.*, 1968, **9**, 5565-5568 (*Spiradines F,G*)
Wu, Y.-C. *et al., Phytochemistry*, 1988, **27**, 3949-3953 (*Thalicsiline*)
Hao, X.-J. *et al., Phytochemistry*, 1995, **38**, 545-547 (*Spiramines P,Q, isol, ir, pmr, cmr, ms*)
Nie, J.L. *et al., CA*, 1998, **128**, 280808f (*Spiramines T,U*)
Wang, B.G. *et al., CA*, 2000, **133**, 332129k (*Spiramine W*)
Wang, B.-G. *et al., Heterocycles*, 2000, **53**, 1343-1350 (*Spiradines F,G, activity*)
Wang, B.G. *et al., J. Asian Nat. Prod. Res.*, 2000, **2**, 271-281 (*Spiramines P,Q,T,U, Spiradine F, struct*)
Shen, Z. *et al., Planta Med.*, 2000, **66**, 287-289 (*Spiramine Q, activity*)
Li, L. *et al., Planta Med.*, 2001, **67**, 142-145 (*Spiramine T*)

Spiramine Z_2 S-419

Spiramidine A



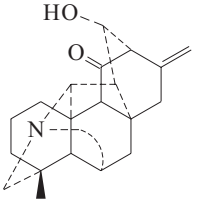
$C_{22}H_{31}NO_3$ 357.492
Two different sets of names have been assigned by the same authors. Alkaloid from *Spiraea japonica* var. *ovalifolia*. Isol. as a mixture with Spiramine Z_3.

19-Epimer: ***Spiramine Z_3****. Spiramidine B*
$C_{22}H_{31}NO_3$ 357.492
Alkaloid from *Spiraea japonica* var. *ovalifolia*. Isol. as a mixture with Spiramine Z_2. The 19-configs. are ambiguously descr. as 19α- and 19β-.

Zuo, G.Y. *et al., Chin. Chem. Lett.*, 2001, **12**, 147-150
Zuo, G.Y. *et al., Heterocycles*, 2001, **55**, 487-493

Spirasine X S-420

13-Hydroxyhetisan-11-one, 9CI
[112543-29-0]

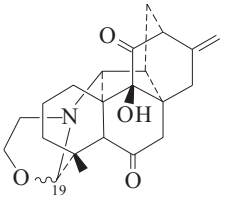


$C_{20}H_{25}NO_2$ 311.423
Alkaloid from *Spiraea japonica* (Rosaceae). Needles (Me_2CO). Mp 224-227°. $[\alpha]_D^{17}$ +51 (c, 1.5 in $CHCl_3$).

Sun, F. *et al., J. Nat. Prod.*, 1987, **50**, 923 (*isol, ir, pmr, cmr, ms, cd, struct*)

Spirasine III S-421

[112496-48-7]



$C_{22}H_{27}NO_4$ 369.46
Exists in soln. as a mixt. of C-19 epimers. Alkaloid from *Spiraea japonica* (Rosaceae). Mp 210-212°. $[\alpha]_D^{21}$ -9 (c, 1.1 in $CHCl_3$).

9-Deoxy: ***Spiredine****. 11-Oxospiradine D, 9CI*
[60062-45-5]
$C_{22}H_{27}NO_3$ 353.46

Alkaloid from *Spiraea japonica* (Rosaceae). Mp 163°.

11-Deoxo: ***Spirasine II***
[106777-12-2]
$C_{22}H_{29}NO_3$ 355.476
Alkaloid from *Spiraea japonica* (Rosaceae). Mp 208-209°.

11-Deoxo, 9-deoxy: ***Spiradine D, 9CI***
[20071-93-6]
$C_{22}H_{29}NO_2$ 339.477
Alkaloid from *Spiraea japonica* (Rosaceae). Mp 134-135°. pK_a 9.35 (50% MeOH).

11-Deoxo, Δ^{15}-isomer: ***Spirasine I***
[106777-13-3]
$C_{22}H_{29}NO_3$ 355.476
Alkaloid from *Spiraea japonica* (Rosaceae). Mp 244-246°. $[\alpha]_D^{21}$ -131 (c, 1.1 in $CHCl_3$).

11-Deoxo, 16,17-dihydro, 16α-hydroxy: ***Spirasine VII***
[106798-64-5]
$C_{22}H_{31}NO_4$ 373.491
Alkaloid from *Spiraea japonica* (Rosaceae). Mp 191-193°. $[\alpha]_D^{28}$ -78 (c, 1.3 in $CHCl_3$).

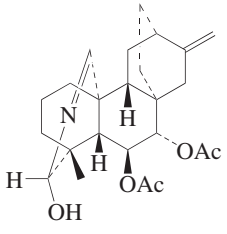
11-Deoxo, 16,17-dihydro, 16β-hydroxy: ***Spirasine VIII***
[106861-54-5]
$C_{22}H_{31}NO_4$ 373.491
Alkaloid from *Spiraea japonica* (Rosaceae). Mp 207-209°. $[\alpha]_D^{28}$ -57 (c, 1.0 in $CHCl_3$).

11-Deoxo, 9-deoxy, 16,17-dihydro, 16α-hydroxy: ***Spirasine V***
[106798-63-4]
$C_{22}H_{31}NO_3$ 357.492
Alkaloid from *Spiraea japonica* (Rosaceae). Mp 177-179°. $[\alpha]_D^{28}$ -47 (c, 0.77 in $CHCl_3$).

11-Deoxo, 9-deoxy, 16,17-dihydro, 16β-hydroxy: ***Spirasine VI***
[106861-53-4]
$C_{22}H_{31}NO_3$ 357.492
Alkaloid from *Spiraea japonica* (Rosaceae). Mp 202-203°. $[\alpha]_D^{21}$ -107 (c, 1.0 in $CHCl_3$).

Goto, G. *et al., Tet. Lett.*, 1968, 2989 (*Spiradine D*)
Gorbunov, V.D. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1976, **12**, 119-120 (*Spiredine*)
Sun, F. *et al., Heterocycles*, 1986, **24**, 2105-2108 (*Spirasines I,II,VII,VIII*)
Sun, F. *et al., Tet. Lett.*, 1986, **27**, 275-278 (*Spirasines V,VI, ir, cmr, cd, cryst struct*)
Sun, F. *et al., Heterocycles*, 1987, **26**, 19-22 (*Spirasine III*)
Fan, L.-M. *et al., J. Integ. Plant Biol.*, 2005, **47**, 120-123 (*Spiredine, Spirasine V,VI*)

Spiratine B S-422

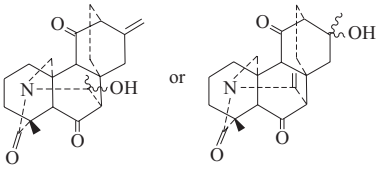


$C_{24}H_{33}NO_5$ 415.528
Alkaloid from the roots of *Spiraea japonica*. Amorph. powder. $[\alpha]_D^{25}$ +129.5 (c, 5 in $CHCl_3$).

O^{19}-Et: ***Spiramine Z***
$C_{26}H_{37}NO_5$ 443.582
Alkaloid from *Spiraea japonica*. Waxy solid. $[\alpha]_D^{27}$ +81.7 (c, 0.35 in $CHCl_3$). Possible artifact.

Wang, B.G. *et al., Heterocycles*, 2000, **53**, 1343-1350 (*Spiramine Z*)
He, H.-P. *et al., J. Nat. Prod.*, 2001, **64**, 379-380 (*Spiratine B*)

Spireine S-423

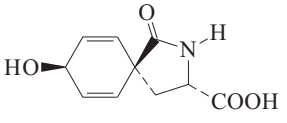


$C_{22}H_{27}NO_4$ 369.46
Alkaloid from *Spiraea japonica* (Rosaceae). Mp 230°.

Gorbunov, V.D. *et al., Khim. Prir. Soedin.*, 1969, **5**, 454; *Chem. Nat. Compd. (Engl. Transl.)*, 1969, **5**, 379-380 (*ir, pmr*)

Spiroarogenic acid S-424

8-Hydroxy-1-oxo-2-azaspiro[4.5]deca-6,9-diene-3-carboxylic acid, 9CI
[86334-99-8]



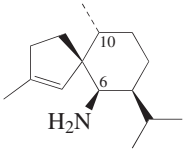
$C_{10}H_{11}NO_4$ 209.201
Prod. by *Neurospora crassa*. No phys. props. reported.

[87726-54-3]

Zamir, L.O. *et al., J. Biol. Chem.*, 1983, **258**, 6486 (*isol, pmr, cmr, strut*)

1-Spiroaxen-6-amine S-425

6-Amino-1-spiroaxene



(6β,10α)-*form*

$C_{15}H_{27}N$ 221.385

(6β,10α)-*form*

N-*Formyl:* ***Axamide 3***
[59633-82-8]
$C_{16}H_{27}NO$ 249.395
Constit. of sponges *Axinella cannabina* and *Axinella cavernosa*. Oil. $[\alpha]_D$ -6.86 (c, 1 in $CHCl_3$).

Isocyanide: ***Axisonitrile 3***
[59633-83-9]
$C_{16}H_{25}N$ 231.38
Isol. from *Axinella cannabina*, *Topsentia*sp., *Ciocalypta* sp., *Acanthella* sp., *Axinyssa aplysinoides* and *Phyllidia pustulosa*. Shows strong antimycobacterial activity. Anthelmintic, antifouling agent, larval settlement inhibitor, spongicide. Cryst. (petrol). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 101-103°. $[\alpha]_D$ +68.44 (c, 1 in $CHCl_3$). Has -NCS replacing -NH_2.

Isothiocyanate: ***Axisothiocyanate 3***
[59633-81-7]
$C_{16}H_{25}NS$ 263.446
Isol. from *Axinella cannabina* and *Axinella cavernosa*. Oil. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. $[\alpha]_D$ +165.2 (c, 1 in $CHCl_3$). Has -NCS replacing -NH_2.

3-Oxo, isocyanide: ***3-Oxoaxisonitrile 3***
[922518-37-4]
$C_{16}H_{23}NO$ 245.364
Constit. of an *Acanthella* sp. Oil. $[\alpha]_D^{20}$ +70 (c, 0.13 in $CHCl_3$).

(6β,10β)-*form* [509078-99-3]

N-*Formyl:* ***Exiguamide***
[481054-36-8]
$C_{16}H_{27}NO$ 249.395
Constit. of *Geodia exigua*. Cryst. (MeOH aq.). Mp 139-140°. $[\alpha]_D^{25}$ +31.7 (c, 0.08 in $CHCl_3$).

N-*Methoxycarbonyl:* ***Exicarbamate***
[509095-16-3]
$C_{17}H_{29}NO_2$ 279.422
Constit. of *Geodia exigua*. Oil. $[\alpha]_D^{25}$ +28 (c, 0.02 in $CHCl_3$).

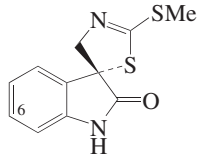
N-*[[(*N-*Methoxycarbonylmethyl)*-N-*methylamino]acetyl]:* ***Exigurin***
[509095-20-9]
$C_{21}H_{36}N_2O_3$ 364.527
Constit. of *Geodia exigua*. Oil. $[\alpha]_D^{25}$ -32 (c, 0.03 in $CHCl_3$).

Isocyanide: ***10-Epiaxisonitrile 3***
[178963-62-7]
$C_{16}H_{25}N$ 231.38
Constit. of *Geodia exigua*, *Phyllidia pustulosa* and *Phyllidia acelata*. Antifouling agent; larval settlement inhibitor. Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. $[\alpha]_D^{23}$ -5.6 (c, 0.025 in $CHCl_3$).

Blasio, B.Di. *et al., Tetrahedron*, 1976, **32**, 473-478 (*Axisonitrile 3, Axisothiocyanate 3, Axamide 3*)
Fusetani, N. *et al., Tet. Lett.*, 1992, **33**, 6823-6826 (*Axisonitrile 3*)
Hirota, H. *et al., Tetrahedron*, 1996, **52**, 2359-2368 (*Axisothiocyanate 3, Axamide 3*)
Okino, T. *et al., Tetrahedron*, 1996, **52**, 9447-9454 (*10-Epiaxisonitrile 3*)
Koenig, G.M. *et al., Planta Med.*, 2000, **66**, 337-342 (*Axisonitrile 3, activity*)
Uy, M.M. *et al., Bioorg. Med. Chem. Lett.*, 2002, **12**, 3037-3038 (*Exiguamide, cryst struct*)
Uy, M.M. *et al., Tetrahedron*, 2003, **59**, 731-736 (*Exiguamide, Exicarbamate, Exigurin, cryst struct*)
Yan, X.-H. *et al., J. Asian Nat. Prod. Res.*, 2006, **8**, 579-584 (*3-Oxoaxisonitrile 3*)

Spirobrassinin S-426

*2′-(Methylthio)spiro[3*H*-indole-3,5′(4′*H*)-thiazol]-2(1*H*)-one, 9CI*
[294857-91-3]



(*R*)-*form*

$C_{11}H_{10}N_2OS_2$ 250.345

(*R*)-*form* [294864-10-1]

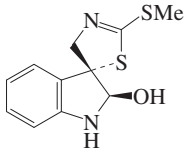
N^1-*Methoxy:* ***1-Methoxyspirobrassinin***
[156499-63-7]
$C_{12}H_{12}N_2O_2S_2$ 280.371
Phytoalexin from *Brassica oleracea* var. *gongylodes* (kohlrabi). $[\alpha]_D$ +61.1 (c, 1 in MeOH). Abs. config. shown to be opposite of parent Spirobrassinin in 2005. λ_{max} 220 (ϵ 23400); 257 (sh) (ϵ 6300); 290 (ϵ 1300) (MeOH).

(*S*)-*form* [113866-40-3]
Alkaloid from *Brassica oleracea* var. *botrytis* (cauliflower), *Raphanus sativus* var. *hortensis* (daikon) and other crucifers as response to fungal infection. Phytoalexin. Cryst. $[\alpha]_D$ -69.5 (c, 1.14 in $CHCl_3$) (natural). $[\alpha]_D$ -143.6 (opt. pure). The nat. prod. is a partial racemate. Undergoes strong enantiomeric enrichment in achiral chromatographic phase. λ_{max} 215 (ϵ 23500); 250 (ϵ 8200); 300 (ϵ 1900) (MeOH).

6-Methoxy: 6-Methoxyspirobrassinin. ***Capparine A***
$C_{12}H_{12}N_2O_2S_2$ 280.371
Alkaloid from *Capparis himalayensis.* Pale yellow plates ($CHCl_3$/MeOH). Mp 170-173°. $[\alpha]_D$ -9.9 (c, 0.16 in MeOH). Partial racemate. λ_{max} 198 (log ϵ 2.86); 224 (log ϵ 3.34) (MeOH).

Takasugi, M. *et al., Chem. Lett.*, 1987, 1631-1632 (*isol, struct*)
Monde, K. *et al., J.A.C.S.*, 1994, **116**, 6650-6657 (*synth*)
Gross, D. *et al., Z. Naturforsch., C*, 1994, **49**, 281-285 (*1-Methoxyspirobrassinin*)
Monde, K. *et al., Chem. Lett.*, 2000, 886-887 (*abs config*)
Monde, K. *et al., J. Nat. Prod.*, 2000, **63**, 1312-1314 (*opt purity*)
Pedras, M.S.C. *et al., Phytochemistry*, 2000, **53**, 161-176 (*rev*)
Suchy, M. *et al., J.O.C.*, 2001, **66**, 3940-3947 (*synth, cd, abs config*)
Monde, K. *et al., Bioorg. Med. Chem.*, 2005, **13**, 5206-5212 (*1-Methoxyspirobrassinin, abs config*)
Pedras, M.S.C. *et al., Chem. Comm.*, 2006, 1848-1850 (*biosynth*)
Pedras, M.S.C. *et al., Org. Biomol. Chem.*, 2006, **4**, 691-701 (*synth*)
Curilova, Z. *et al., Tet. Lett.*, 2007, **48**, 8200-8204 (*1-Methoxyspirobrassinin, synth*)
Li, Y.-Q. *et al., Chem. Pharm. Bull.*, 2008, **56**, 189-191 (*Capparine A*)

Spirobrassinol S-427



Absolute Configuration

$C_{11}H_{12}N_2OS_2$ 252.361

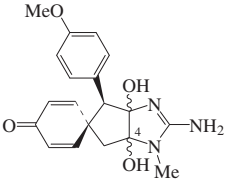
N-*Methoxy:* **N-*Methoxyspirobrassinol***
[166020-09-3 , 165746-57-6]
$C_{12}H_{14}N_2O_2S_2$ 282.387
Stress metab. from the Japanese radish daikon (*Raphanus sativus* var. *hortensis*) inoculated with *Pseudomonas cichorii*. Gum. $[\alpha]_D^{20}$ 0 (c, 0.52 in $CHCl_3$). Unusual hemiaminal struct. Occurs as a mixt. of diastereoisomers, ratio α-*OH*:β-*OH* estimated as 2.5:1. λ_{max} 211 (ϵ 27300); 246 (ϵ 15500); 292 (ϵ 3630) (EtOH).

Me ether, N-*methoxy:* **N-*Methoxyspirobrassinol methyl ether***
[113866-41-4]
$C_{13}H_{16}N_2O_2S_2$ 296.414
Stress metab. from *Raphanus sativus* var. *hortensis* inoculated with *Pseudomonas cichorii*. Gum. $[\alpha]_D^{18}$ -1.9 (c, 1.57 in $CHCl_3$). 2*R*,3*R*-config. determined in 2005. λ_{max} 210 (ϵ 26400); 291 (ϵ 2880) (EtOH).

Monde, K. *et al., Phytochemistry*, 1995, **39**, 581-586 (*isol, pmr, cmr, ms*)
Monde, K. *et al., Bioorg. Med. Chem.*, 2005, **13**, 5206-5212 (*Me ether, abs config*)
Curilova, Z. *et al., Tet. Lett.*, 2007, **48**, 8200-8204 (*synth*)

Spirocalcaridine A S-428

[568561-18-2]



Relative Configuration

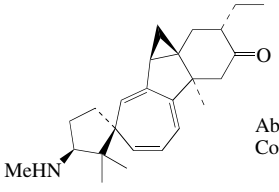
$C_{19}H_{21}N_3O_4$ 355.393
Isol. from the calcareous sponge *Leucetta* sp. Yellow oil. $[\alpha]_D$ -59.3 (c, 0.11 in MeOH).

4-Me ether: ***Spirocalcaridine B***
[568561-22-8]
$C_{20}H_{23}N_3O_4$ 369.419
Isol. from *Leucetta* sp. Yellow oil. $[\alpha]_D$ -50.8 (c. 0.13 in MeOH).

Edrada, R.A. *et al., J. Nat. Prod.*, 2003, **66**, 939-942 (*isol, pmr, cmr*)

Spirofornabuxine S-429

[190720-50-4]



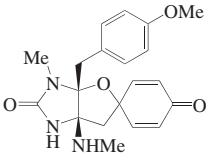
Absolute Configuration

$C_{25}H_{35}NO$ 365.558
Highly modified steroidal alkaloid. Alkaloid from the leaves of *Buxus sempervirens* (Buxaceae).

Fourneau, C. *et al., Tet. Lett.*, 1997, **38**, 2965-2968 (*isol, pmr, cmr, abs config*)

Spiroleucettadine S-430

[813460-81-0]



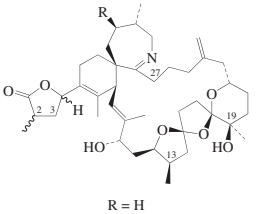
Absolute Configuration

$C_{20}H_{23}N_3O_4$ 369.419
Structure revised in 2008. Alkaloid from a *Leucetta* sp. Yellow powder. $[\alpha]_D$ -27.1 (c, 0.38 in MeOH). λ_{max} 227 (ϵ 2410) (MeOH).

Ralifo, P. *et al., J.O.C.*, 2004, **69**, 9025-9029 (*isol, pmr, cmr*)
White, K.N. *et al., J.O.C.*, 2008, **73**, 8719-8722 (*pmr, cmr, cryst struct*)

Spirolide B S-431

[170713-72-1]



Absolute Configuration

$C_{42}H_{63}NO_7$ 693.962
Isol. from *Alexandrium ostenfeldii* found in various contaminated shellfish such as *Mytilus edulis*, *Placopecten magellanicus.* Calcium channel activating agent, phycotoxin.

2,3-Didehydro: ***Spirolide A***
[318996-47-3]
$C_{42}H_{61}NO_7$ 691.946
Isol. from *Alexandrium ostenfeldii* in contaminated shellfish.

Hu, T. *et al., Chem. Comm.*, 1995, 2159-2161 (*isol, pmr, cmr, ms*)
Hu, T. *et al., J. Nat. Prod.*, 2001, **64**, 308-312 (*Spirolide A*)
Falk, M. *et al., Tetrahedron*, 2001, **57**, 8659-8665 (*config*)
Sleno, L. *et al., Anal. Bioanal. Chem.*, 2004, **378**, 969-976; 977-986 (*isol, ms*)
Meilert, K. *et al., Org. Biomol. Chem.*, 2006, **4**, 2164-2192 (*synth, abs config*)

Spirolide D S-432

[170713-73-2]
As Spirolide B, S-431 with
R = CH_3
$C_{43}H_{65}NO_7$ 707.989
Isol. from *Alexandrium ostenfeldii* found in contaminated shellfish. Ca channel activator; phycotoxin.

2,3-Didehydro: ***Spirolide C***

[318996-49-5]
$C_{43}H_{63}NO_7$ 705.973
Isol. from *Alexandrium ostenfeldii* in contaminated shellfish.

13-Demethyl: ***13-Demethylspirolide D***
$C_{42}H_{63}NO_7$ 693.962
Isol. from *Alexandrium ostenfeldii*.

13-Demethyl, 2,3-didehydro: ***13-Demethylspirolide C***. *13-Desmethylspirolide C*
[334974-07-1]
$C_{42}H_{61}NO_7$ 691.946
Isol. from *Alexandrium ostenfeldii* in contaminated shellfish.

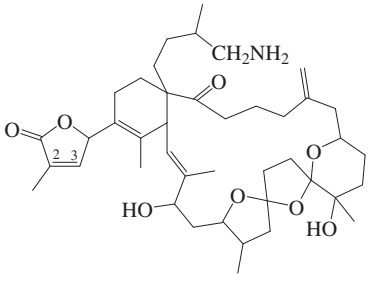
13,19-Didemethyl, 2,3-didehydro: ***13,19-Didemethylspirolide C***
$C_{41}H_{59}NO_7$ 677.92
Isol. from *Alexandrium ostenfeldii*.

13,19-Didemethyl, 27ξ-hydroxy, 2,3-didehydro: ***27-Hydroxy-13,19-didemethylspirolide C***. *13,19-Didemethyl-27-hydroxyspirolide C*
[1000865-10-0]
$C_{41}H_{59}NO_8$ 693.919
Isol. from *Alexandrium ostenfeldii*.

Hu, T. *et al., Chem. Comm.*, 1995, 2159-2161 (*isol, pmr, cmr, ms*)
Hu, T. *et al., J. Nat. Prod.*, 2001, **64**, 308-312 (*Spirolide C, 13-Demethylspirolide C*)
Falk, M. *et al., Tetrahedron*, 2001, **57**, 8659-8665 (*config*)
Sleno, L. *et al., Anal. Bioanal. Chem.*, 2004, **378**, 969-976; 977-986 (*isol, ms*)
MacKinnon, S.L. *et al., J. Nat. Prod.*, 2006, **69**, 983-987 (*13,19-Didemethylspirolide C*)
MacKinnon, S.L. *et al., J.O.C.*, 2006, **71**, 8724-8731 (*13-Demethylspirolide C, biosynth*)
Meilert, K. *et al., Org. Biomol. Chem.*, 2006, **4**, 2184-2192 (*synth, abs config*)
Ciminiello, P. *et al., J. Nat. Prod.*, 2007, **70**, 1878-1883 (*27-Hydroxy-13,19-didemethylspirolide C*)

Spirolide E S-433

[183159-71-9]



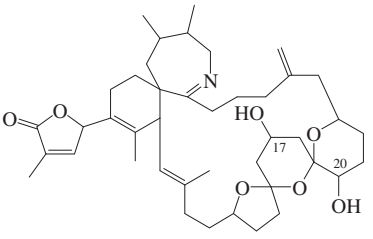
$C_{42}H_{63}NO_8$ 709.962
Isol. from *Alexandrium ostenfeldii* found in contaminated shellfish.

2,3-Dihydro: ***Spirolide F***
[183159-73-1]
$C_{42}H_{65}NO_8$ 711.977
Isol. from *Alexandrium ostenfeldii* in contaminated shellfish.

Hu, T. *et al., Tet. Lett.*, 1996, **37**, 7671-7674 (*isol, pmr, cmr, ms*)
Sleno, L. *et al., Anal. Bioanal. Chem.*, 2004, **378**, 969-976; 977-986 (*isol, ms*)

Spirolide G S-434

[849215-96-9]



$C_{42}H_{61}NO_7$ 691.946
Isol. from *Alexandrium ostenfeldii* in contaminated shellfish.

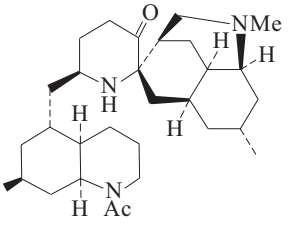
20-Methyl: ***20-Methylspirolide G***
[849215-95-8]
$C_{43}H_{63}NO_7$ 705.973
Isol. from *Alexandrium ostenfeldii* in contaminated shellfish.

*20-Methyl, 17-*O*-hexadecanoyl:* ***20-Methyl-17-O-palmitoylspirolide G***
[901124-53-6]
$C_{59}H_{93}NO_8$ 944.386
Isol. from *Alexandrium ostenfeldii* in contaminated mussels. Most abundant member of a large group of fatty acid esters.

Aasen, J. *et al., Chem. Res. Toxicol.*, 2005, **18**, 509-515 (*isol, pmr, cmr, ms*)
MacKinnon, S.L. *et al., J. Nat. Prod.*, 2006, **69**, 983-987 (*isol, pmr, cmr, ms*)
Aasen, J. *et al., Rapid Commun. Mass Spectrom.*, 2006, **20**, 1531-1537 (*20-Methylspirolide G esters*)

Spirolucidine S-435

[89647-79-0]

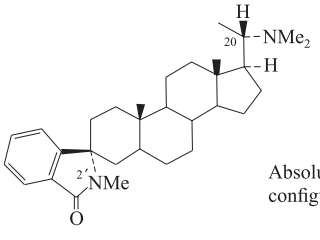


$C_{30}H_{49}N_3O_2$ 483.736
Alkaloid from *Lycopodium lucidulum* (Lycopodiaceae). Viscous oil.

Ayer, W.A. *et al., Can. J. Chem.*, 1984, **62**, 298 (*isol, ir, pmr, ms, struct*)

Spiropachysine S-436

[19587-41-8]



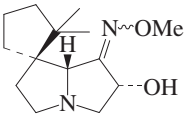
Absolute configuration

$C_{31}H_{46}N_2O$ 462.717
Alkaloid from leaves of *Pachysandra terminalis* (Buxaceae). Needles. Mp 290-292°. $[\alpha]_D$ +35 ($CHCl_3$).

▶ WH1314450
$N^{2'}$*-De-Me:*
Leaves (Me_2CO). Mp 283-285°. $[\alpha]_D^{18}$ +54 (c, 1.0 in $CHCl_3$).
N^{20}*-De-Me:*
Prisms (Me_2CO). Mp 287-290°.
3-Epimer: ***Isospiropachysine***
$C_{31}H_{46}N_2O$ 462.717
Alkaloid from *Pachysandra axillaris* (Buxaceae). Needles. Mp 297-298°. $[\alpha]_D^{22}$ +39.7 ($CHCl_3$).

Kikuchi, T. *et al., Tet. Lett.*, 1968, 2077 (*isol*)
Kikuchi, T. *et al., Chem. Pharm. Bull.*, 1975, **23**, 416 (*struct, ms, uv, ir, pmr, cd, ord*)
Minghua, C. *et al., Phytochemistry*, 1990, **29**, 3927 (*Isospiropachysine*)

Spiropyrrolizidine 252 S-437



$C_{14}H_{24}N_2O_2$ 252.356
Struct. revised in 1992. Alkaloid from skin extracts of the Panamanian poison-frog *Dendrobates pumilio* (Dendrobatidae). $[\alpha]_D$ +18.4 (c, 0.47 in MeOH). $[\alpha]_D$ -4.3 (c, 0.47 in $CHCl_3$).

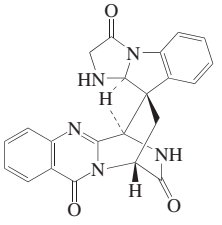
Deoxy: ***Spiropyrrolizidine 236***. Dendrobates *Alkaloid 236*
$C_{14}H_{24}N_2O$ 236.356
Alkaloid from skin extracts of *Dendrobates pumilio* and from the millipede *Rhinotus purpureus*. $[\alpha]_D$ +55.6 (c, 1.0 in MeOH).

Deoxy, O*-de-Me:* ***Spiropyrrolizidine 222***. Dendrobates *Alkaloid 222*
$C_{13}H_{22}N_2O$ 222.33
Struct. revised in 1992. Alkaloid from skin extracts of the Panamanian poison-frog *Dendrobates pumilio* (Dendrobatidae).

Tokuyama, T. *et al., Tetrahedron*, 1987, **43**, 643; 1992, **48**, 4247 (*isol, ir, pmr, cmr, ms, struct*)
Hutchinson, K.D. *et al., Tetrahedron*, 1994, **50**, 6129 (*synth*)
Saporito, R.A. *et al., J. Chem. Ecol.*, 2003, **29**, 2781-2786 (*Spiropyrrolizidine 236, isol*)

Spiroquinazoline S-438

[157075-58-6]



Absolute Configuration

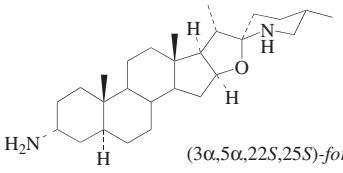
$C_{23}H_{19}N_5O_3$ 413.435

Isol. from *Aspergillus flavipes*. Substance P inhibitor. Yellow solid. Mp 166-168°. $[\alpha]_D$ -2.5 (c, 0.7 in MeOH). λ_{max} 212 (ϵ 22500); 225 (ϵ 20600); 265 (ϵ 7010); 277 (ϵ 6350); 303 (ϵ 2440); 315 (ϵ 1980) (MeOH) (Derep).

Barrow, C.J. *et al., J. Nat. Prod.*, 1994, **57**, 471-476 (*isol, uv, ir, pmr, cmr, cd, struct*)

Spirosolan-3-amine, 9CI S-439

3-Aminospirosolane
[125520-81-2]



(3α,5α,22*S*,25*S*)-*form*

$C_{27}H_{46}N_2O$ 414.673

(3α,5α,22*S*,25*S*)-*form* [182689-75-4]
Alkaloid from *Solanum arboreum*. Amorph. solid.

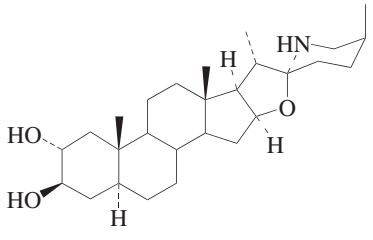
(3β,5α,22*R*,25*R*)-*form* [76932-66-6]
Alkaloid from *Solanum triste*. Cryst. (MeOH aq.). Mp 178-182°. $[\alpha]_D^{26}$ -57.3 (c, 0.26 in $CHCl_3$).

(3β,5α,22*S*,25*S*)-*form*
Soladunalinidine
[66934-59-6]
Alkaloid from *Solanum arboreum* and *Solanum dunalianum*. Amorph. solid. Mp 145-153°. $[\alpha]_D^{22}$ +13.3 (c, 1.5 in MeOH) (natural). $[\alpha]_D$ +3.7 (c, 0.25 in $CHCl_3$) (synthetic).

Picrate: Mp 235-255° dec.

Bird, G.J. *et al., Aust. J. Chem.*, 1979, **32**, 611-617; 797-816 (*isol, ir, pmr, ms, struct, cmr*)
Quyen, L. T. *et al., Annalen*, 1990, 519-524 (*synth*)
Maxwell, A. *et al., Phytochemistry*, 1995, **58**, 625-628 (*isol*)
Maxwell, A. *et al., Phytochemistry*, 1996, **43**, 913 (*isol, pmr, cmr, ms*)

Spirosolane-2,3-diol S-440

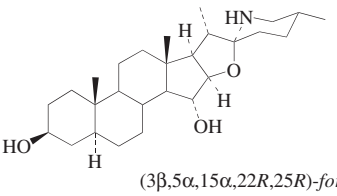


$C_{27}H_{45}NO_3$ 431.657

(2α,3β,5α,22*R*,25*R*)-*form*
2-Hydroxysoladulcidine
Alkaloid from roots of *Lycianthes biflora* (Solanaceae). Needles (MeOH aq.). Mp 252-255° dec. $[\alpha]_D^{22}$ -62.5 (c, 0.45 in $CHCl_3$).

Ripperger, H. *et al., Phytochemistry*, 1992, **31**, 725-726 (*isol*)

Spirosolane-3,15-diol S-441



(3β,5α,15α,22*R*,25*R*)-*form*

$C_{27}H_{45}NO_3$ 431.657

(3β,5α,15α,22*R*,25*R*)-*form*
15α-Hydroxysoladulcidine
[16137-74-9]
Isol. from *Solanum dulcamara* (Solanaceae). Prisms + $1H_2O$ (MeOH aq.). Mp 167-168° Mp 209-212° (double Mp, rapid htg.). On slow htg. the prisms turn to needles at 150-170°. Anhyd. material (by subl.) has Mp 213-215°.

15-Ketone: ***15-Oxosoladulcidine***
$C_{27}H_{43}NO_3$ 429.642
May occur in *Solanum dulcamara* (Solanaceae).

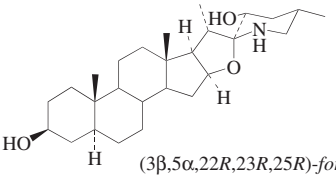
(3β,5α,15α,22*S*,25*S*)-*form*
15α-Hydroxytomatidine
[4828-39-1]
Alkaloid from *Solanum dulcamara* (Solanaceae). Needles (MeOH). Mp 150-155°. $[\alpha]_D^{18}$ +17.8 (c, 0.8 in $CHCl_3$).

Tri-Ac: Mp 203.5-204.5°. $[\alpha]_D^{18}$ -3.1 (c, 0.8 in $CHCl_3$).

(3β,5α,15β,22*R*,25*R*)-*form*
15β-Hydroxysoladulcidine
[16137-76-1]
Isol. from *Solanum dulcamara* (Solanaceae).

Ronsch, H. *et al., Tet. Lett.*, 1965, **6**, 1947-1952 (*15α-Hydroxysoladulcidine, 15α-Hydroxytomatidine*)
Ronsch, H. *et al., Annalen*, 1966, **694**, 169-182 (*15α-Hydroxysoladulcidine, 15α-Hydroxytomatidine*)
Ronsch, H. *et al., J. Chromatogr.*, 1967, **30**, 149-154 (*15β-Hydroxysoladulcidine*)
Willuhn, G. *et al., Planta Med.*, 1970, **18**, 354-360 (*15α-Hydroxytomatidine*)

Spirosolane-3,23-diol S-442



(3β,5α,22*R*,23*R*,25*R*)-*form*

$C_{27}H_{45}NO_3$ 431.657
The 23-*OH* group changes the *R,S*-priorities compared with other spirosolanes.

(3β,5α,22*R*,23*R*,25*R*)-*form*
23*R-*Hydroxysoladulcidine
Alkaloid from roots of *Solanum pandur-aeforme* (Solanaceae). Mp 192-193°. $[\alpha]_D^{22}$ -65.4 (c, 0.44 in MeOH).

(3β,5α,22*R*,23*S*,25*R*)-*form*

23-Ac: ***23-Acetoxysoladulcidine***
[152128-85-3]
$C_{29}H_{47}NO_4$ 473.695
Alkaloid from the roots of a *Lycopersicon esculentum-Lycopersicon hirsutum* hybrid. Amorph. $[\alpha]_D^{20}$ -46 (c, 0.37 in $CHCl_3$).

*23-Ac, 3-*O*-[β-D-glucopyranosyl-(1→2)-[β-D-xylopyranosyl-(1→3)]-β-D-glucopyranosyl-(1→4)-β-D-galactopyranoside]:* ***Lycoperoside B***
[176300-86-0]
$C_{52}H_{85}NO_{23}$ 1092.236
Alkaloid from *Lycopersicon esculentum* (tomato). Amorph. powder. $[\alpha]_D^{27}$ -40.3 (c, 0.56 in MeOH).

(3β,5α,22*R*,23*S*,25*S*)-*form*

23-Ac: ***23-Acetoxy-25-episoladulcidine***
[152128-86-4]
$C_{29}H_{47}NO_4$ 473.695
Alkaloid from roots of a *Lycopersicon esculentum-Lycopersicon hirsutum* hybrid. Amorph. $[\alpha]_D^{20}$ -36.7 (c, 1.2 in $CHCl_3$).

*23-Ac, 3-*O*-[β-D-glucopyranosyl-(1→2)-[β-D-xylopyranosyl-(1→3)]-β-D-glucopyranosyl-(1→4)-β-D-galactopyranoside]:* ***Lycoperoside C***
[176300-87-1]
$C_{52}H_{85}NO_{23}$ 1092.236
Alkaloid from *Lycopersicon esculentum* (tomato). Amorph. powder. $[\alpha]_D^{27}$ -26.3 (c, 0.63 in MeOH).

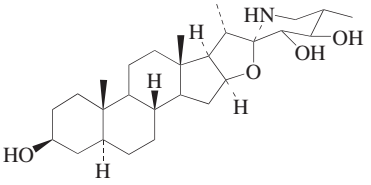
(3β,5α,22*S*,23*R*,25*S*)-*form*

23-Ac: ***23*R-*Acetoxytomatidine***
[152128-84-2]
$C_{29}H_{47}NO_4$ 473.695
Alkaloid from roots of a *Lycopersicon esculentum*/*Lycopersicon hirsutum* hybrid. Amorph. $[\alpha]_D^{20}$ -2.8 (c, 0.42 in $CHCl_3$).

*23-Ac, 3-*O*-[β-D-glucopyranosyl-(1→2)-[β-D-xylopyranosyl-(1→3)]-β-D-glucopyranosyl-(1→4)-β-D-galactopyranoside]: 23*R*-Acetoxytomatine.*
Lycoperoside A
[176181-33-2]
$C_{52}H_{85}NO_{23}$ 1092.236
Alkaloid from *Lycopersicon esculentum* (tomato). Amorph. powder. $[\alpha]_D^{27}$ -31.6 (c, 0.8 in MeOH).

Ripperger, H. *et al., Phytochemistry*, 1993, **32**, 1607-1609 (*23-Hydroxysoladulcidine*)
Nagaoka, T. *et al., Phytochemistry*, 1993, **34**, 1153-1157 (*23-Acetoxysoladulcidine, 23-Acetoxy-25-episoladulcidine, 23-Acetoxytomatidine*)
Yahara, S. *et al., Phytochemistry*, 1996, **42**, 169-172 (*Lycoperosides*)

Spirosolane-3,23,24-triol S-443



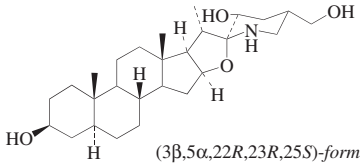
$C_{27}H_{45}NO_4$ 447.657

(3β,5α,22*S*,23*S*,24*R*,25*S*)-*form*

23-Ac, 3-O-*[β-D-glucopyranosyl-(1→2)-[β-D-xylopyranosyl-(1→3)]-β-D-glucopyranosyl-(1→4)-β-D-galactopyranoside], 24*-O-β-D-*glucopyranoside:* ***Lycoperoside G***
[675828-27-0]
$C_{58}H_{95}NO_{29}$ 1270.378
Alkaloid from *Lycopersicon esculentum* (tomato). Amorph. powder. $[\alpha]_D^{20}$ -44.1 (c, 0.68 in MeOH).

Yahara, S. *et al., J. Nat. Prod.*, 2004, **67**, 500-502 (*isol, pmr, cmr*)

Spirosolane-3,23,27-triol S-444



(3β,5α,22*R*,23*R*,25*S*)-*form*

$C_{27}H_{45}NO_4$ 447.657

(3β,5α,22*R*,23*R*,25*S*)-*form*

Isoesculeogenin A
[854381-39-8]
Needles. Mp 206-213°. $[\alpha]_D$ -87.2 (c, 0.64 in Py).

23-Ac, 3-O-*[β-D-glucopyranosyl-(1→2)-[β-D-xylopyranosyl-(1→3)]-β-D-glucopyranosyl-(1→4)-β-D-galactopyranoside], 27*-O-*β-D-glucopyranoside:* ***Lycoperoside F***
[675828-26-9]
$C_{58}H_{95}NO_{29}$ 1270.378
Alkaloid from *Lycopersicon esculentum* (tomato). Amorph. powder. $[\alpha]_D^{29}$ -38.5 (c, 0.8 in MeOH).

(3β,5α,22*S*,23*S*,25*S*)-*form*

Esculeogenin A
[854381-37-6]
Needles. Mp 215-220°. $[\alpha]_D^{26}$ -99.6 (c, 0.7 in Py).

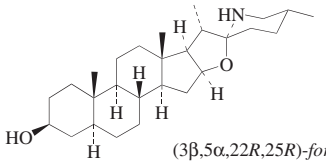
23-Ac, 3-O-*[β-D-glucopyranosyl-(1→2)-[β-D-xylopyranosyl-(1→3)]-β-D-glucopyranosyl-(1→4)-β-D-galactopyranoside], 27*-O-*β-D-glucopyranoside:* ***Esculeoside A***
[532387-86-3]
$C_{58}H_{95}NO_{29}$ 1270.378
Alkaloid from ripe tomatoes (*Lycopersicon esculentum* var. *cerasiforme*). Needles (MeOH). Mp 225° dec. $[\alpha]_D^{26}$ -52.5 (c, 0.6 in MeOH).

Yahara, S. *et al., J. Nat. Prod.*, 2004, **67**, 500-502 (*Lycoperoside F*)

Fujiwara, Y. *et al., Tetrahedron*, 2004, **60**, 4915-4920 (*Esculeoside A*)

Yoshizaki, M. *et al., Chem. Pharm. Bull.*, 2005, **53**, 839-840 (*Isoesculeogenin A*)

Spirosolan-3-ol, 9CI S-445



(3β,5α,22*R*,25*R*)-*form*

$C_{27}H_{45}NO_2$ 415.658
Log P 6.08 (uncertain value) (calc).

(3β,5α,22*R*,25*R*)-*form*

Soladulcidine*. Megacarpidine. Dihydrosolasodine. Solasodanol. 5α-Solasodan-3β-ol (obsol.)*
[511-98-8]
Aglycone of several very widespread glycosides found in *Solanum* spp. Said to occur free in *Lycopersicon pimpinellifolium* (currant tomato). Shows antifungal activity. Mp 209-211°. $[\alpha]_D$ -53 (c, 0.64 in Py). $[\alpha]_D$ -50 (c, 0.4 in $CHCl_3$).

Hydrochloride: Mp 298-299°.

Picrate: Mp 152-154°.

3-O-*[β-D-Xylopyranosyl-(1→4)-β-D-galactopyranoside]:* ***Solalyratine A***
$C_{38}H_{63}NO_{11}$ 709.916
Alkaloid from *Solanum lyratum*. Needles + $3H_2O$. Mp 252-254°. $[\alpha]_D$ -89.2 (c, 0.5 in Py).

3-O-*[β-D-Xylopyranosyl-(1→2)-β-D-glucopyranosyl-(1→4)-β-D-galactopyranoside]:* ***Solalyratine B***
$C_{44}H_{73}NO_{16}$ 872.058
Alkaloid from *Solanum lyratum*. Needles + $2H_2O$. Mp 274-279°. $[\alpha]_D$ -17.9 (c, 0.5 in Py).

3-O-*[α-L-Rhamnopyranosyl-(1→2)-[α-L-rhamnopyranosyl-(1→4)]-β-D-glucopyranoside]:* ***Soladulcine A****. Soladulcidine 3-chacotrioside*
[156555-52-1]
$C_{45}H_{75}NO_{15}$ 870.085
Alkaloid from *Solanum dulcamara*. Needles + $1H_2O$. Mp 256-258°. $[\alpha]_D^{24}$ -91.8 (c, 0.33 in Py).

3-O-*[β-D-Glucopyranosyl-(1→2)-[β-D-xylopyranosyl-(1→3)]-β-D-glucopyranosyl-(1→4)-β-D-galactopyranoside]:* ***Soladulcine B****. Soladulcidine 3-lycotetraoside*
[90366-11-3]
$C_{50}H_{83}NO_{21}$ 1034.2
Alkaloid from *Solanum dulcamara* and *Solanum japonense*. Needles + $2H_2O$. Mp 264-266°. $[\alpha]_D^{24}$ -58.4 (c, 0.5 in Py). Possible identity with α-Soladulcine.

3-O-*[β-D-Glucopyranosyl-(1→2)-β-D-glucopyranosyl-(1→4)-[α-L-rhamnopyranosyl-(1→2)]-β-D-galactopyranoside]:* ***Dihydrosolasuaveoline***
$C_{51}H_{85}NO_{21}$ 1048.227
Alkaloid from *Solanum suaveolens* (Solanaceae). Cryst. (MeOH aq.). Mp 275-277° dec. $[\alpha]_D^{24}$ -43.8 (c, 0.5 in Py).

Glycoside(1): ***Megacarpine***
$C_{44}H_{73}NO_{16}$ 872.058
Alkaloid from *Solanum megacarpum* (Solanaceae). Mp 259-260°. $[\alpha]_D$ -61.6 (Py). Hydrol. gives 1 Glu, 1 Gal and 2 Xyl.

Glycoside(2): ***Soladulcidine tetraoside***
$C_{45}H_{75}NO_{17}$ 902.084
Alkaloid from *Solanum dulcamara* (Solanaceae). Shows antifungal activity. Mp 268-270°. $[\alpha]_D$ -53 (Py). Hydrol. gives 2 Glu, 1 Gal and 1-Xyl.

Glycoside(3): ***α-Soladulcine***
[37337-73-8]
$C_{50}H_{83}NO_{21}$ 1034.2
Alkaloid from *Solanum dulcamara* and *Solanum pseudopersicum* (Solanaceae). Mp 265-269°. $[\alpha]_D$ -56 (MeOH). Hydrol. gives 2 Glu, 1 Gal and 1 D-Xyl.

Glycoside(4): ***β-Soladulcine***
[11093-43-9]
$C_{45}H_{75}NO_{16}$ 886.085
Alkaloid from *Solanum dulcamara* (Solanaceae). Mp 246-248° dec. $[\alpha]_D$ -39 (c, 0.38 in MeOH). Hydrol. gives 1 Glu, 1 Gal and 1 Rha.

Glycoside(5): ***γ-Soladulcine***
Alkaloid from *Solanum dulcamara* (Solanaceae). Not well characterised. Isol. only (Schreiber) as a mixt. with α- and β-Soladulcines.

(3β,5α,22*S*,25*S*)-*form*

Tomatidine*. 5α-Tomatidan-3β-ol (obsol.)*
[77-59-8]
Alkaloid from *Lycopersicon esculentum* (tomato) and *Solanum demissum*, found as glycosides in many other *Lycopersicon* and *Solanum* spp. (Solanaceae). Shows antifungal and cytostatic activity, has been used clinically against dermatitis. Cholinesterase inhibitor, antihistamine. Repellent to the Colorado beetle *Leptinotarsa decemlineata*. Mp 210-211°. $[\alpha]_D^{20}$ +5 (MeOH). Log P 6.08 (uncertain value) (calc).

Hydrochloride: Mp 275-280° dec. $[\alpha]_D^{25}$ -9 (MeOH).

Picrate: Mp 131-133°.

O-*β-D-Glucopyranoside:* [177354-90-4]
$C_{33}H_{55}NO_7$ 577.8
Alkaloid from aerial parts of *Solanum arboreum*. Cryst. Mp 174-177° (as penta-Ac). $[\alpha]_D^{23}$ -13.6 (c, 0.44 in $CHCl_3$).

O-*β-D-Galactopyranoside: δ-Tomatine*
[99304-79-7]
$C_{33}H_{55}NO_7$ 577.8
Metab. of α-Tomatine.

O-*[β-D-Xylopyranosyl-(1→6)-β-D-glucopyranoside]:* [177354-91-5]
$C_{38}H_{63}NO_{11}$ 709.916
Alkaloid from aerial parts of *Solanum arboreum*. Needles. Mp 238-240° (as hepta-Ac). $[\alpha]_D^{23}$ -7.3 (c, 1.64 in $CHCl_3$).

3-O-*[β-D-Glucopyranosyl-(1→4)-β-D-galactopyranoside]:* ***γ-Tomatine****. Lycoperoside D*
[81037-16-3]
$C_{39}H_{65}NO_{12}$ 739.942
Alkaloid from *Lycopersicon esculentum* (tomato). Amorph. powder. $[\alpha]_D^{27}$ -10.8 (c, 0.6 in MeOH).

O-*[β-D-Xylopyranosyl-(1→2)-[β-D-xylopyranosyl-(1→3)]-β-D-glucopyranoside]:* ***Polyanine***
$C_{43}H_{71}NO_{15}$ 842.032
Alkaloid from *Solanum polyadenium* (Solanaceae). Needles (MeOH aq.). Mp 263-270° dec. $[\alpha]_D^{21}$ -36.3 (c, 1.05 in Py).

3-O-*[β-D-Glucopyranosyl-(1→2)-[β-D-glucopyranosyl-(1→3)]-β-D-glucopyanosyl-(1→4)-β-D-galactopyranoside]:* ***Sisunine****. Neotomatine*
[85547-35-9]
$C_{51}H_{85}NO_{22}$ 1064.226
Alkaloid from clones of hybrids of

Solanum acaule and *Solanum ajanhuiri*.

3-O-[β-D-Glucopyranosyl-(1→2)-β-D-glucopyranosyl-(1→4)-β-D-galactopyranoside]: ***β$_1$-Tomatine***
[17406-46-1]
$C_{45}H_{75}NO_{17}$ 902.084
Alkaloid from *Lycopersicon esculentum* and *Lycopersicon pimpinellifolium*, also obt. by partial hydrol. of Tomatine (Solanaceae). Amorph. solid + $1H_2O$. Mp 240-260° dec. $[\alpha]_D^{22}$ -28 (c, 1 in Py). Not obt. completely pure. Other Tomatines (β_2-, γ- and δ-) are other nonalkaloidal partial hydrol. prods. of Tomatine.

O-*[β-D-Glucopyranosyl-(1→2)-[β-D-xylopyranosyl-(1→3)]-β-D-glucopyranosyl-(1→4)-β-D-galactopyranoside]:* ***Tomatine***. *α-Tomatine. Lycopersicin*
[17406-45-0]
$C_{50}H_{83}NO_{21}$ 1034.2
Alkaloid from *Lycopersicon esculentum,* other *Lycopersicon* spp., *Solanum polyadenium*, *Solanum tomatillo*, *Solanum boerhaavii*, *Solanum demissum* and other *Solanum* spp. Antiinflammatory agent. Antibacterial, antifungal agent. Acetylcholine esterase inhibitor, immunostimulant. Shows molluscicidal props. Sol. MeOH, EtOH, dioxan; fairly sol. H_2O, Et_2O, acids, hexane; poorly sol. $CHCl_3$, EtOAc, C_6H_6. Mp 263-267° dec. $[\alpha]_D$ -19 (Py). Log P -3.27 (uncertain value) (calc).

► LD_{50} (rat, orl) 900 mg/kg; LD_{50} (mus, ipr) 25 mg/kg; LD_{50} (mus, scu) 1000 mg/kg; LD_{50} (mus, orl) 500 mg/kg.
XW1050000

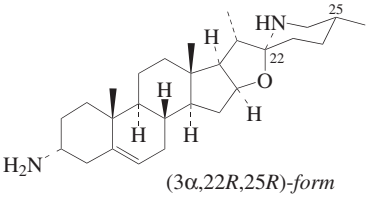
N-*Nitroso:* **N-*Nitrosotomatidine***
[4847-05-6]
$C_{27}H_{44}N_2O_3$ 444.656
Alkaloid from leaves and stems of *Lycopersicon esculentum* (Solanaceae). Hexagonal cryst. changing to flat rods on heating. Mp 234-237°. Mp. quoted is for synthetic material.

3-Ketone: ***5α-Tomatidan-3-one***
[6870-84-4]
$C_{27}H_{43}NO_2$ 413.642
Alkaloid from roots of a *Lycopersicon esculentum*/*Lycopersicon hirsutum* hybrid. Needles (MeOH). Mp 195-198°. $[\alpha]_D^{20}$ +19 (c, 0.38 in $CHCl_3$).

Brink, N.G. *et al., J.A.C.S.*, 1951, **73**, 4018 (*isol, Tomatidine*)
Kuhn, R. *et al., Chem. Ber.*, 1957, **90**, 203 (*Tomatines*)
Sato, Y. *et al., J.A.C.S.*, 1957, **79**, 6089 (*Tomatidine, struct*)
Schreiber, K. *et al., Planta Med.*, 1958, **6**, 94 (*Soladulcines*)
Uhle, F.C. *et al., J.O.C.*, 1962, **27**, 656 (*synth, Soladulcidine*)
Schreiber, K. *et al., Annalen*, 1964, **674**, 168 (*Polyanine*)
Budzikiewicz, H. *et al., Tetrahedron*, 1964, **20**, 2265 (*Tomatidine, ms*)
Boll, P.M. *et al., Acta Chem. Scand.*, 1965, **19**, 1365 (*pmr, stereochem*)
Schreiber, K. *et al., Annalen*, 1965, **682**, 219 (*config*)
Schreiber, K. *et al., Phytochemistry*, 1966, **5**, 707 (*isol*)
Adam, G. *et al., Tetrahedron*, 1966, **22**, 3591 (*synth*)
Kennard, O. *et al., J.C.S.(C)*, 1967, 956 (*cryst struct, Tomatidine*)
Wolters, B. *et al., Planta Med.*, 1970, **19**, 189-193 (*Soladulcidine, activity*)
Tukalo, E.A. *et al., Khim. Prir. Soedin.*, 1971, **7**, 207; *Chem. Nat. Compd. (Engl. Transl.)*, 1971, **7**, 203 (*Soladulcines*)
Roddick, J.G. *et al., Phytochemistry*, 1974, **13**, 1459 (*biosynth*)
Weston, R.J. *et al., Aust. J. Chem.*, 1977, **30**, 917 (*Tomatidine, cmr*)
Garnero, J. *et al., CA*, 1982, **96**, 148962t (*N-Nitrosotomatidine*)
Osman, S.F. *et al., Phytochemistry*, 1986, **25**, 967 (*Sisunine*)
Willker, W. *et al., Magn. Reson. Chem.*, 1992, **30**, 645-650 (*pmr, cmr*)
Nagaoka, T. *et al., Phytochemistry*, 1993, **34**, 1153 (*5α-Tomatidan-3-one*)
Lee, Y.Y. *et al., Chem. Pharm. Bull.*, 1994, **42**, 707-709 (*Soladulcines*)
Yahara, S. *et al., Phytochemistry*, 1996, **42**, 169-172 (*Lycoperosides*)
Maxwell, A. *et al., Phytochemistry*, 1996, **42**, 543 (*derivs*)
Friedman, M. *et al., J. Agric. Food Chem.*, 2002, **50**, 5751-5780 (*Tomatines, rev*)
Zha, X. *et al., Chem. Biodiversity*, 2007, **4**, 25-31 (*Soladulcidine, synth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, THG250

Spirosol-5-en-3-amine, 9CI S-446

3-Aminospirosol-5-ene



(3α,22*R*,25*R*)-*form*

$C_{27}H_{44}N_2O$ 412.657

(3α,22*R*,25*R*)-*form* [173074-72-1]
Alkaloid from *Solanum triste*. Amorph. solid. Mp 166-170°.

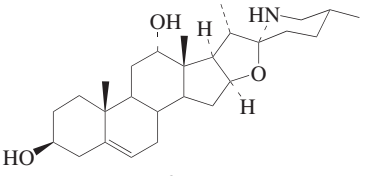
(3α,22*S*,25*S*)-*form* [173074-71-0]
Alkaloid from *Solanum triste*. Amorph. solid. Mp 147-154°.

(3β,22*R*,25*R*)-*form* [164117-53-7]
Alkaloid from *Solanum triste*. Needles. Mp 165-167°. $[\alpha]_D^{27}$ -52 (c, 1 in MeOH).

(3β,22*S*,25*S*)-*form* [182689-76-5]
Alkaloid from *Solanum arboreum*. Amorph. solid.

Maxwell, A. *et al., J. Nat. Prod.*, 1995, **58**, 625-628; 1996, **59**, 200-201 (*Solanum triste constits*)
Maxwell, A. *et al., Phytochemistry*, 1996, **43**, 913-915 (*Solanum arboreum constit*)

Spirosol-5-ene-3,12-diol S-447



(3β,12α,22*R*,25*R*)-*form*

$C_{27}H_{43}NO_3$ 429.642

(3β,12α,22*R*,25*R*)-*form*
3-O-[α-L-Rhamnopyranosyl-(1→2)-[α-L-rhamnopyranosyl-(1→4)]-β-D-glucopyranoside]: ***Robeneoside A***. *12α-Hydroxysolamargine*
$C_{45}H_{73}NO_{16}$ 884.069
Alkaloid from the dried fruit of *Solanum lycocarpum*. Powder ($CHCl_3$/MeOH). Mp 205-208°. $[\alpha]_D^{29}$ -112.2 (c, 1 in Py).

3-O-[α-L-Rhamnopyranosyl-(1→2)-[β-D-glucopyranosyl-(1→3)]-β-D-galactopyranoside]: ***Robeneoside B***. *12α-Hydroxysolasonine*
$C_{45}H_{73}NO_{17}$ 900.068
Alkaloid from the dried fruit of *Solanum lycocarpum*. Powder ($CHCl_3$/MeOH). Mp 206-210°. $[\alpha]_D^{29}$ -22.2 (c, 1 in Py).

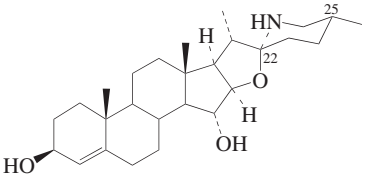
(3β,12β,22*R*,25*R*)-*form*
Solanaviol. *Alkaloid SN-b*
[74131-93-4]
Alkaloid from the leaves of *Solanum aviculare*. Mp 229-232.5°. $[\alpha]_D$ -113 (c, 0.97 in $CHCl_3$).

3-O-[α-L-Rhamnopyranosyl-(1→2)-[α-L-rhamnopyranosyl-(1→4)]-β-D-glucopyranoside]: ***Lobofrutoside***. *12β-Hydroxysolamargine*
$C_{45}H_{73}NO_{16}$ 884.069
Alkaloid from the fruit of *Solanum lycocarpum*. Powder. $[\alpha]_D^{27}$ -92.3 (c, 1 in MeOH).

3-O-[α-L-Rhamnopyranosyl-(1→2)-[β-D-glucopyranosyl-(1→3)]-β-D-galactopyranoside]: Alkaloid SN-e. 12β-Hydroxysolasonine
[107484-57-1]
$C_{45}H_{73}NO_{17}$ 900.068
Alkaloid from the fruits of *Solanum lycocarpum* and *Solanum nigrum*. Amorph. powder. $[\alpha]_D$ -53.3 (Py).

Kaneko, K. *et al., Phytochemistry*, 1980, **19**, 299-302 (*Solanaviol*)
Yoshida, X. *et al., Chem. Pharm. Bull.*, 1987, **35**, 1645-1648 (*Alkaloid SN-e*)
Yoshikawa, M. *et al., J. Nat. Prod.*, 2007, **70**, 210-214 (*Robeneosides A,B*)
Nakamura, S. *et al., Phytochemistry*, 2008, **69**, 1565-1572 (*Lobofrutoside*)

Spirosol-5-ene-3,15-diol S-448



(3β,15α,22*R*,25*R*)-*form*

$C_{27}H_{43}NO_3$ 429.642

(3β,15α,22*R*,25*R*)-*form*
15α-Hydroxysolasodine
Alkaloid from *Solanum dulcamara* (Solanaceae). Prisms (MeOH aq.). Mp 212-216°. $[\alpha]_D^{21}$ -84.5 (c, 0.68 in $CHCl_3$).

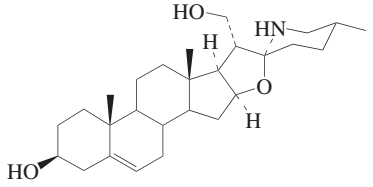
(3β,15α,22*S*,25*S*)-*form*
15α-Hydroxytomatidenol
[7755-31-9]
Isol. from *Solanum dulcamara* (Solanaceae).

(3β,15β,22*R*,25*R*)-*form*
15β-Hydroxysolasodine
Said to occur in *Solanum dulcamara* (Solanaceae). Details unpubl. (K. Schreiber).

Rönsch, H. *et al., Annalen*, 1966, **694**, 169-182 (*15α-Hydroxysolasodine, 15α-Hydroxytomatidenol*)

Willuhn, G. *et al., Planta Med.*, 1970, **18**, 354-360 (*15α-Hydroxysolasodine, 15α-Hydroxytomatidenol*)

Spirosol-5-ene-3,21-diol S-449



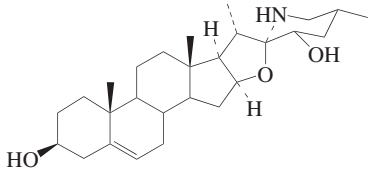
$C_{27}H_{43}NO_3$ 429.642

(3β,22*R*,25*R*)-*form*
Aglycone from *Solanum sycophanta*.

3-O-[β-D-Xylopyranosyl-(1→2)-α-L-rhamnopyranosyl-(1→4)-[α-L-rhamnopyranosyl-(1→2)]-β-D-glucopyranoside]: ***21-Hydroxysycophantine***
[188342-01-0]
$C_{50}H_{81}NO_{20}$ 1016.185
Alkaloid from *Solanum sycophanta*. Powder (MeOH). Mp 256-258° dec. $[\alpha]_D^{21}$ -78 (c, 0.9 in MeOH).

Usubillaga, A. *et al., Phytochemistry*, 1997, **44**, 537-543 (*isol, pmr, cmr, ms*)

Spirosol-5-ene-3,23-diol, 9CI S-450



$C_{27}H_{43}NO_3$ 429.642
The 23-*OH* group changes the *R,S*-priority at C-22 compared with other spirosolanes.

(3β,22*S*,23*S*,25*R*)-*form*
Solaverol A. *23*S*-Hydroxysolasodine*
[129273-42-3]
Alkaloid from the roots of *Solanum canense* and *Solanum fraxinifolium*; hydrol. prod. of Solaverines I and II. Pale yellow powder or cryst. (Me_2CO aq.). $[\alpha]_D$ -67.1 ($CHCl_3$). $[\alpha]_D^{22}$ -93.2 (c, 0.5 in $CHCl_3$).

3-O-[α-L-Rhamnopyranosyl-(1→2)-[β-D-xylopyranosyl-(1→3)]-β-D-galactopyranoside]: ***23-Hydroxyisoanguivine***
[188483-45-6]
$C_{44}H_{71}NO_{16}$ 870.042
Alkaloid from *Solanum uporo*. Needles (MeOH aq.). Mp 225-230° dec. $[\alpha]_D^{26}$ -90.1 (c, 0.56 in Py).

3-O-[α-L-Rhamnopyranosyl-(1→2)-[β-D-xylopyranosyl-(1→3)]-β-D-glucopyranoside]: ***23-Hydroxyanguivine***
[188483-43-4]
$C_{44}H_{71}NO_{16}$ 870.042
Alkaloid from *Solanum uporo*. Mp 215-222° dec. $[\alpha]_D^{22}$ -94 (c, 0.71 in Py).

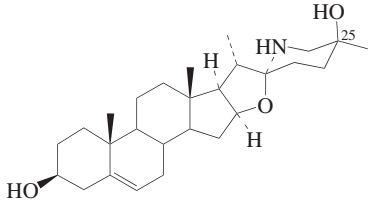
3-O-[α-L-Rhamnopyranosyl-(1→2)-[β-D-glucopyranosyl-(1→3)]-β-D-galactopyranoside]: ***Solaverine II***
[128397-86-4]
$C_{45}H_{73}NO_{17}$ 900.068
Alkaloid from the aerial parts of *Solanum toxicarum* and *Solanum verbascifolium* (Solanaceae). Pale yellow powder. $[\alpha]_D$ -74.6 (Py).

3-O-[α-L-Rhamnopyranosyl-(1→2)-[α-L-rhamnopyranosyl-(1→4)]-β-D-glucopyranoside]: ***Solaverine I***
[128397-85-3]
$C_{45}H_{73}NO_{16}$ 884.069
Alkaloid from the aerial parts of *Solanum toxicarum* and *Solanum verbascifolium* (Solanaceae). Pale yellow powder. $[\alpha]_D$ -75.7 (Py).

Yamashita, T. *et al., Chem. Pharm. Bull.*, 1990, **38**, 827-829 (*Solaverines, Solaverol A*)

Ripperger, H. *et al., Phytochemistry*, 1991, **30**, 1299-1301; 1997, **44**, 731-734 (*23-Hydroxyanguivine, 23-Hydroxyisoanguivine, 23-Hydroxysolasodine*)

Spirosol-5-ene-3,25-diol S-451

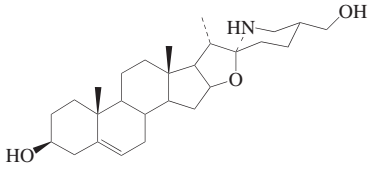


$C_{27}H_{43}NO_3$ 429.642

(3β,25*S*)-*form*
25-Ac, 3-O-[α-L-arabinopyranosyl-(1→3)-[α-L-rhamnopyranosyl-(1→2)][α-L-rhamnopyranosyl-(1→4)]-β-D-glucopyranoside]: ***25-Acetoxyrobustine***
[156122-57-5]
$C_{52}H_{83}NO_{21}$ 1058.222
Alkaloid from the roots of *Solanum robustum*. Amorph. $[\alpha]_D^{20}$ -71.4 (c, 0.85 in Py).

Ripperger, H. *et al., Annalen*, 1994, 517-520 (*isol, pmr, cmr, ms*)

Spirosol-5-ene-3,27-diol S-452

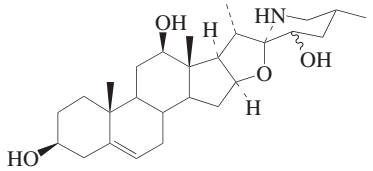


$C_{27}H_{43}NO_3$ 429.642

(3β,22*R*,25*R*)-*form*
Solaparnaine
[103239-11-8]
Alkaloid from green berries of *Solanum asperum* (Solanaceae). $[\alpha]_D^{23}$ -77.8 (MeOH).

Bhattacharyya, J. *et al., Heterocycles*, 1985, **23**, 3111-3112 (*isol, cmr, ms*)

Spirosol-5-ene-3,12,23-triol S-453

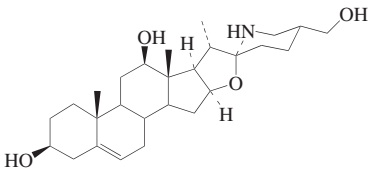


$C_{27}H_{43}NO_4$ 445.641

(3β,12β,22*S*,23ξ,25*R*)-*form*
23-Ac: ***23-Acetoxy-12-hydroxysolasodine****. 23-O-Acetyl-12-hydroxysolasodine (incorr.)*
[117803-97-1]
$C_{29}H_{45}NO_5$ 487.678
Alkaloid from *Solanum nigrum* (Solanaceae). Mp 145°.

Döpke, W. *et al., Z. Chem.*, 1988, **28**, 185

Spirosol-5-ene-3,12,27-triol, 9CI S-454



$C_{27}H_{43}NO_4$ 445.641

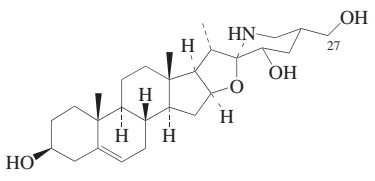
(3β,12β,22*R*,25*R*)-*form*
Alkaloid SN-c*. 12,17-Dihydroxysolasodine*
[107484-55-9]
Alkaloid from the berries of *Solanum nigrum* (Solanaceae). Mp 233-237°. $[\alpha]_D$ -54.7 (MeOH).

3-O-[α-L-Rhamnopyranosyl-(1→2)-[α-L-rhamnopyranosyl-(1→4)]-β-D-glucopyranoside]: ***Alkaloid SN-f***
$C_{45}H_{73}NO_{17}$ 900.068
Alkaloid from *Solanum nigrum* berries (Solanaceae). Amorph. powder. $[\alpha]_D$ -64.1 (Py).

27-Carboxylic acid: 3,12-Dihydroxyspirosol-5-en-27-oic acid, 9CI. ***Alkaloid SN-d***
[107484-56-0]
$C_{27}H_{41}NO_5$ 459.625
Alkaloid from the berries of *Solanum nigrum* (Solanaceae). Mp 276-278°. $[\alpha]_D$ -71.2 (Py).

Yoshida, K. *et al., Chem. Pharm. Bull.*, 1987, **35**, 1645-1648 (*pmr, cmr, ms, struct*)

Spirosol-5-ene-3,23,27-triol, 9CI S-455



$C_{27}H_{43}NO_4$ 445.641

(3β,22*S*,23*S*,25*R*)-*form*

Solaverol B

[129273-43-4]

Hydrol. prod. of Solaverine III.

3-O-*[α-L-Rhamnopyranosyl-(1→2)-[α-L-rhamnopyranoysl-(1→4)]-β-D-glucopyranoside]:* ***Solaverine III***

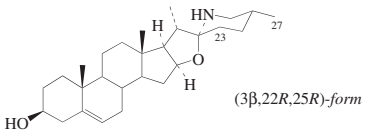
[128397-87-5]

$C_{45}H_{73}NO_{17}$ 900.068

Alkaloid from the aerial parts of *Solanum toxicarum* and *Solanum verbascifolium* (Solanaceae). Pale yellow powder. $[\alpha]_D$ -66 (Py).

Yamashita, T. *et al., Chem. Pharm. Bull.*, 1990, **38**, 827-829 (*isol, struct*)

Spirosol-5-en-3-ol S-456



(3β,22*R*,25*R*)-*form*

$C_{27}H_{43}NO_2$ 413.642

▶ WF1300000

(3β,22*R*,25*R*)-*form*

Solasodine*. Solancarpidine. Purapuridine. Solanidine S. Solancarpine*

[126-17-0]

Isol. from *Solanum aculeatissimum*, *Solanum canense*, *Solanum cyananthum*, *Solanum fraxinifolium*, *Cestrum purpureum* and other plants, v. widely distributed in the Solanaceae as the alkamine constit. of glycoside alkaloids. Antineoplastic agent. Also reputed to have antiandrogenic, antiinflammatory and antispermatogenic props. Much investigated as potential starting material for coml. steroid synth, as alternative to Diosgenin. Shows strong antifungal and antiyeast activity. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 200-201°. $[\alpha]_D$ -98 (MeOH). Log P 5.59 (uncertain value) (calc). Dimorph., both forms with same Mp.

▶ LD_{50} (rat, orl) 4978 mg/kg. Exp. reprod. and teratogenic effects.

Hydrochloride: Mp 313-314°.

Picrate: Mp 144-145°.

3-O-*β-D-Glucopyranoside:* ***Solasodine 3-O-β-D-glucopyranoside***

[14197-65-0]

$C_{33}H_{53}NO_7$ 575.784

Alkaloid from whole plants of *Solanum umbelliferum*. Amorph. powder. Mp 246-248°. $[\alpha]_D^{26}$ -81.1 (c, 0.24 in MeOH).

3-O-*[α-L-Rhamnopyranosyl-(1→2)-β-D-glucopyranoside]:* ***β1-Solamargine***

[73069-20-2]

$C_{39}H_{63}NO_{11}$ 721.927

Alkaloid from *Solanum marginatum* (Solanaceae). Antifungal and molluscicidal agent. Mp 261°. $[\alpha]_D$ -89. Log P 2.31 (uncertain value) (calc). β-Solamargine, which has been isol. from several *S.* spp., was prob. a mixt. of β_1 and β_2-Solamargines. The identity of pure β_1-Solamargine is not conclusively established.

3-O-*[α-L-Rhamnopyranosyl-(1→4)-β-D-glucopyranoside]:* ***Khasianine****. β2-Solamargine*

[32449-98-2]

$C_{39}H_{63}NO_{11}$ 721.927

Alkaloid from *Solanum khasianum* and *Solanum incanum* (Solanaceae). Cytotoxic agent. Microneedles (MeOH). Mp 226-228°. $[\alpha]_D^{25}$ -95 (MeOH). $[\alpha]_D^{24}$ -84 (Py). Also a partial hydrol. prod. of Solamargine.

3-O-*[β-D-Glucopyranosyl-(1→1)-β-L-rhamnopyranos-4-yl]:* ***Solaplumbine***

[54302-48-6]

$C_{39}H_{63}NO_{11}$ 721.927

Alkaloid from *Nicotiana plumbaginifolia* (Solanaceae). Shows antineoplastic activity. Pale yellow needles (EtOH/C_6H_6). Sol. EtOH, butanol; poorly sol. $CHCl_3$, C_6H_6. Mp 180-181°. $[\alpha]_D^{20}$ -90 (c, 1 in MeOH). Log P 2.31 (uncertain value) (calc).

3-O-*[D-Glucopyranosyl-(1→?)-L-mannopyranoside]:* ***Solasurine***

[27028-76-8]

$C_{39}H_{63}NO_{11}$ 721.927

Alkaloid from *Solanum surattense*, *Solanum brusquense*, *Solanum xanthocarpum*, *Solanum elaeagnifolium* and *Solanum viarum* (Solanaceae). Mp 228-230°.

3-O-*[α-L-Rhamnopyranosyl-(1→2)-[β-D-xylopyranosyl-(1→3)]-β-D-galactopyranoside]:* ***Isoanguivine***

[163252-96-8]

$C_{44}H_{71}NO_{15}$ 854.043

From roots of *Solanum anguivi* (Solanaceae). Cryst. (MeOH aq.). Mp 286-291° dec. $[\alpha]_D^{22}$ -88.8 (c, 0.64 in Py).

3-O-*[α-L-Rhamnopyranosyl-(1→2)-[β-D-xylopyranosyl-(1→3)]-β-D-glucopyranoside]:* ***Anguivine***

[163135-92-0]

$C_{44}H_{71}NO_{15}$ 854.043

From roots of *Solanum anguivi* (Solanaceae). Amorph. $[\alpha]_D^{22}$ -83.2 (c, 0.87 in Py).

3-O-*[α-L-Rhamnopyranosyl-(1→2)-[α-L-rhamnopyranosyl-(1→4)]-β-D-xylopyranoside]:* ***Ravifoline***

[157382-29-1]

$C_{44}H_{71}NO_{14}$ 838.043

Alkaloid from *Solanum platanifolium*. Cryst. (MeOH aq.). Mp 280-282°. $[\alpha]_D^{25}$ -104 (Py).

3-O-*[α-L-Rhamnopyranosyl-(1→2)-[α-L-rhamnopyranosyl-(1→4)]-β-D-glucopyranoside]:* ***Solamargine***

[20311-51-7]

$C_{45}H_{73}NO_{15}$ 868.069

Alkaloid from *Solanum marginatum* and a very large number of *Solanum* spp. (Solanaceae). Shows strong antifungal and antiyeast activity. Cytotoxic. Mp 301° dec. $[\alpha]_D$ -105 (MeOH). $[\alpha]_D$ -102 (Py).

3-O-*[α-L-Rhamnopyranosyl-(1→3)-[α-L-rhamnopyranosyl-(1→4)]-β-D-glucopyranoside]:* ***Solanelagnine***

[181023-53-0]

$C_{45}H_{73}NO_{15}$ 868.069

Alkaloid from *Solanum elaeagnifolium*.

3-O-*[α-L-Rhamnopyranosyl-(1→2)-[β-D-glucopyranosyl-(1→3)]-β-D-galactopyranoside]:* ***Solasonine****. Solasodamine*

[19121-58-5]

$C_{45}H_{73}NO_{16}$ 884.069

Alkaloid from *Solanum sodomeum* and a very large number of *Solanum* spp. (Solanaceae). Molluscicidal agent. Sol. MeOH; poorly sol. H_2O, hexane. Mp 300-301°. $[\alpha]_D$ -74 (MeOH). Log P 0.12 (uncertain value) (calc).

▶ LD_{50} (mus, ipr) 30 mg/kg. WF1450000

3-O-*[α-L-Rhamnopyranosyl-(1→2)-[β-D-glucopyranosyl-(1→4)]-β-D-glucopyranoside]:* [132922-48-6]

$C_{45}H_{73}NO_{16}$ 884.069

Alkaloid from the bulbs of *Lilium brownii* var. *colchesteri* (Liliaceae). Amorph. powder. $[\alpha]_D^{28}$ -77.3 (c, 0.11 in MeOH).

3-O-*[α-L-Arabinopyranosyl-(1→3)-[α-L-rhamnopyranosyl-(1→2)]-[α-L-rhamnopyranosyl-(1→4)]-β-D-glucopyranoside]:* ***Robustine***

[156431-09-3]

$C_{50}H_{81}NO_{19}$ 1000.185

Alkaloid from roots of *Solanum robustum* (Solanaceae). Needles (MeOH aq.). Mp 217-223°. $[\alpha]_D^{20}$ -73.7 (c, 0.66 in Py).

3-O-*[β-D-Xylopyranosyl-(1→4)-α-L-rhamnopyranosyl-(1→4)-[β-D-xylopyranosyl-(1→3)]-β-D-glucopyranoside]:* ***Incanumine***

[128585-03-5]

$C_{49}H_{79}NO_{19}$ 986.158

Alkaloid from the fruit of *Solanum incanum*. Powder (MeOH). Mp >° 300. $[\alpha]_D^{20}$ +78 (c, 0.1 in MeOH).

3-O-*[β-D-Xylopyranosyl-(1→2)-α-L-rhamnopyranosyl-(1→4)-[α-L-rhamnopyranosyl-(1→2)]-β-D-glucopyranoside]:* ***Sycophantine***

[175701-97-0]

$C_{50}H_{81}NO_{19}$ 1000.185

Constit. of *Solanum sycophanta* and *Solanum coccineum*. Cryst. (MeOH). Mp 269-271° dec. $[\alpha]_D$ -90 (c, 0.6 in MeOH).

3-O-*[α-L-Rhamnopyranosyl-(1→2)-[α-L-rhamnopyranosyl-(1→4)-][β-D-xylopyranosyl-(1→3)]-β-D-glucopyranoside]:* ***Arudonine***

[737763-55-2]

$C_{50}H_{81}NO_{19}$ 1000.185

Alkaloid from the root bark of *Solanum arundo*. Allelopathic agent.

3-O-*[α-L-Rhamnopyranosyl-(1→2)-[β-*

D-glucopyranosyl-(1→2)-O-*β-D-glucopyranosyl-(1→3)]-β-D-galactopyranoside]:* ***Solaradixine***
[28512-69-8]
$C_{51}H_{83}NO_{21}$ 1046.211
Alkaloid from roots of *Solanum laciniatum* and fruits of *Solanum mammosum* (Solanaceae). Mp 275-278°. $[\alpha]_D$ -69.7 (Py). $[\alpha]_D$ -51.9 (MeOH). Partial enzymic hydrol. gives Solasonine.

3-O-*[β-D-Glucopyranosyl-(1→2)-β-D-glucopyranosyl-(1→4)-[α-L-rhamnopyranosyl-(1→2)]-β-D-galactopyranoside]:* ***Solasuaveoline***
[201805-24-5]
$C_{51}H_{83}NO_{21}$ 1046.211
Alkaloid from *Solanum suaveolens* (Solanaceae). Cryst. (MeOH aq.). Mp 277-278° dec. $[\alpha]_D^{22}$ -64.6 (c, 1 in Py).

3-O-*[β-D-Glucopyranosyl-(1→6)-β-D-glucopyranosyl-(1→3)-[α-L-rhamnopyranosyl-(1→2)]-β-D-galactopyranoside]:* ***Isosolasuaveoline****. Solashabanine*
[37449-88-0]
[201805-28-9]
$C_{51}H_{83}NO_{21}$ 1046.211
Isol. from *Solanum aviculare*, *Solanum laciniatum* and *Solanum suaveolens* (Solanaceae). Needles (MeOH). Mp 277-279° dec. $[\alpha]_D^{23}$ -71.4 (c, 1 in Py). Struct. of Solashabanine not fully substantiated.

3-O-*[β-D-Glucopyranosyl-(1→6)-β-D-glucopyranosyl-(1→2)-β-D-glucopyranosyl-(1→3)-[α-L-rhamnopyranosyl-(1→2)]-β-D-galactopyranoside]:* ***Solaradinine***
[37647-41-9]
$C_{57}H_{93}NO_{26}$ 1208.353
Isol. from *Solanum laciniatum* and *Solanum aviculare* (Solanaceae). Mp 227-230°. $[\alpha]_D$ -45.8 (50% EtOH aq.).

Glycoside (1): ***β-Solanigrine***
Alkaloid from *Solanum americanum*, *Solanum atropurpureum*, *Solanum boerhaaviaefolium*, *Solanum curtipes*, *Solanum gracile*, *Solanum humile*, *Solanum integrifolium*, *Solanum melanocerasum* (garden huckleberry), *Solanum miniatum*, *Solanum nigrum*, *Solanum paraense* and *Solanum villosum* (Solanaceae). Struct. unknown. Hydrol. gives 2 L-rhamnose, 1 D-glucose and 1 D-galactose. No CAS no., isol. pre 1967.

Glycoside (2): ***Isosolasonine***
$C_{45}H_{73}NO_{16}$ 884.069
Alkaloid from *Solanum tomatillo* (Solanaceae). Mp 224-229° dec. $[\alpha]_D^{20}$ -75. Struct. unknown. Hydrol. gives glucose, rhamnose and galactose. No CAS no., isol. pre 1967.

Glycoside (3): ***Solapersine***
[58037-78-8]
$C_{49}H_{79}NO_{20}$ 1002.158
Alkaloid from *Solanum persicum* (Solanaceae). Cryst. (MeOH). Mp 282-284°. $[\alpha]_D^{20}$ -48.1 (c, 0.5 in MeOH). Struct. unknown. Hydrol. gives 1 galactose, 1 glucose and 2 xylose.

Glycoside (4): ***Solavilline***
Alkaloid from *Solanum villosum* (Solanaceae). Struct. unknown. Not v. well-characterised. Gives L-rhamnose, D-xylose, D-glucose and D-galactose on hydrol. No CAS no. in 8CI.

Glycoside (5): ***α-Solanigrine***
Alkaloid from *Solanum americanum*, *Solanum melanocerasum* (garden huckleberry) and *Solanum nigrum* (Solanaceae). Sugar residues not identified. No CAS no., isol. pre 1967.

Glycoside (6): ***Solakhasianine***
Glycoalkaloid from *Solanum khasianum* (Solanaceae). Needles (EtOH). Mp 251-256° dec. Struct. unknown. Hydrol. gives Solasodine, galactose and rhamnose. No CAS no. in 8CI.

Glycoside (7): ***Solatifoline***
[57903-98-7]
Alkaloid from *Solanum platanifolium* (Solanaceae). Mp 292-295°. $[\alpha]_D^{25}$ -119. Struct. unknown. Hydrol. gives Solasodine, glucose, galactose and rhamnose.

O-*Ac:* **O-*Acetylsolasodine***
[6159-99-5]
$C_{29}H_{45}NO_3$ 455.679
Alkaloid from whole plants of *Solanum umbelliferum*. Amorph. powder. Mp 192-194°. $[\alpha]_D^{26}$ -108.4 (c, 0.62 in $CHCl_3$).

N-*Hydroxy:* **N-*Hydroxysolasodine***
[142182-57-8]
$C_{27}H_{43}NO_3$ 429.642
Alkaloid from roots of *Solanum robustum* (Solanaceae). Cryst. (Me_2CO). Mp 206-209° dec. $[\alpha]_D^{20}$ -119.5 (c, 1.00 in $CHCl_3$).

N-*Hydroxy, 3*-O-*[α-L-arabinopyranosyl-(1→3)-[α-L-rhamnopyranosyl-(1→2)]-[α-L-rhamnopyranosyl-(1→4)]-β-D-glucopyranoside]:* **N-*Hydroxyrobustine***
[156122-58-6]
$C_{50}H_{81}NO_{20}$ 1016.185
From roots of *Solanum robustum* (Solanaceae). Amorph. $[\alpha]_D^{20}$ -63.4 (c, 0.68 in Py).

(3β,22*S*,25*R*)-*form*

3-O-*[β-D-Xylopyranosyl-(1→2)-α-L-rhamnopyranosyl-(1→4)-[α-L-rhamnopyranosyl-(1→2)]-β-D-glucopyranoside]:* ***22-Episycophantine***
$C_{50}H_{81}NO_{19}$ 1000.185
Constit. of *Solanum coccineum* and *Solanum sycophanta*. Cryst. (MeOH). Mp 268-272° dec. $[\alpha]_D^{21}$ -52 (c, 0.6 in MeOH).

(3β,22*S*,25*S*)-*form*

Tomatidenol*. Soladulcamaridine. Tomatid-5-en-3-ol. δ^5-Tomatidenol*
[546-40-7]
Aglycone from many *Solanum* spp. and from *Fritillaria camtschatcensis*. Occurs free in *Solanum trilobatum* and *Solanum dulcamara* (Liliaceae, Solanaceae). Shows antifungal activity. Mp 235-238° (206°, 226-228°). $[\alpha]_D$ -45 ($CHCl_3$). Soladulcamaridine was shown to be impure Tomatidenol.

3-O-*[α-L-Rhamnopyranosyl-(1→2)-β-D-glucopyranoside]:* ***γ$_1$-Solamarine***
[11040-30-5]
$C_{39}H_{63}NO_{11}$ 721.927
Alkaloid from *Solanum dulcamara* (Solanaceae). Small needles + $1H_2O$ (MeOH aq.). Mp 268-271° dec. $[\alpha]_D^{22}$ -60.3 (c, 1 in Py).

3-O-*[α-L-Rhamnopyranosyl-(1→4)-β-D-glucopyranoside]:* ***γ$_2$-Solamarine****. γ-Solamarine*
[11034-34-7]
$C_{39}H_{63}NO_{11}$ 721.927
Alkaloid from *Solanum dulcamara*, *Solanum dasyphyllum*, *Solanum juzepczukii* (bitter potato) and *Solanum schimperianum* (Solanaceae). Mp 243-248° dec. $[\alpha]_D^{20}$ -86 (c, 0.36 in Py).

3-O-*[β-D-Glucopyranosyl-(1→3)-β-D-galactopyranoside]:* ***δ-Solamarine***
[15299-07-7]
$C_{39}H_{63}NO_{12}$ 737.926
Alkaloid from *Solanum dulcamara* (Solanaceae). Small needles (MeOH aq.). Mp 265-269° dec. $[\alpha]_D^{21}$ -39.6 (c, 0.92 in Py).

3-O-*[α-L-Rhamnopyranosyl-(1→2)-α-L-rhamnopyranosyl-(1→4)-β-D-glucopyranoside]:* ***β-Solamarine***
[3671-38-3]
$C_{45}H_{73}NO_{15}$ 868.069
Alkaloid from *Solanum dulcamara*, *Solanum dasyphyllum*, *Solanum juzepczukii* (bitter potato), *Solanum macrocarpum* and *Solanum schimperianum* (Solanaceae). Antineoplastic agent. Shows activity against mouse 180 sarcoma. Mp 275-277° dec. $[\alpha]_D^{20}$ -85.6 (c, 0.4 in Py). Log P 1.31 (uncertain value) (calc).

3-O-*[α-L-Rhamnopyranosyl-(1→2)-β-D-glucopyranosyl-(1→3)-β-D-galactopyranoside]:* ***α-Solamarine***
[20318-30-3]
$C_{45}H_{73}NO_{16}$ 884.069
Alkaloid from *Solanum dulcamara*, *Solanum macrocarpum, Solanum dasyphyllum* and *Solanum juzepczukii* (bitter potato) (Solanaceae). Mp 278-281° dec. $[\alpha]_D^{20}$ -45 (c, 0.65 in Py).

3-O-*[β-D-Xylopyranosyl-(1→2)-α-L-rhamnopyranosyl-(1→4)-[α-L-rhamnopyranosyl-(1→2)]-β-D-glucopyranoside]:* ***22,25-Diepisycophantine***
[175779-31-4]
$C_{50}H_{81}NO_{19}$ 1000.185
Alkaloid from *Solanum sycophanta*. Cryst. (MeOH). Mp 268-272° dec. $[\alpha]_D$ -52 (c, 0.6 in MeOH).

O-*[α-L-Rhamnopyranosyl-(1→2)-[β-D-xylopyranosyl-(1→2)-α-L-rhamnopyranosyl-(1→4)]-β-D-galactopyranoside]:* ***Solaculine A***
[408345-39-1]
$C_{50}H_{81}NO_{19}$ 1000.185
Alkaloid from the root bark of *Solanum aculeastrum*. Cryst. Mp 220-224°. $[\alpha]_D^{24}$ -52 (c, 0.2 in MeOH/$CHCl_3$).

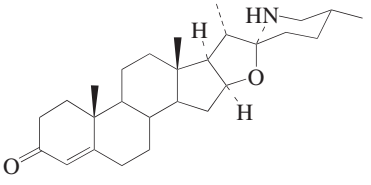
3-O-*[β-D-Glucopyranosyl-(1→2)-[β-D-xylopyranosyl-(1→3)]-β-D-glucopyranosyl-(1→4)-β-D-galactopyranoside]:* ***Dehydrotomatine****. Tomatidenol*

3-lycotetraoside
[157604-98-3]
$C_{50}H_{81}NO_{21}$ 1032.184
Alkaloid from *Lycopersicon esculentum* (tomato) (Solanaceae).

O,N-Di-Ac: Mp 160-162°. $[\alpha]_D$ -39.6 (c, 0.36 in MeOH).

Uhle, F.C. *et al., J.A.C.S.*, 1954, **76**, 4245-4246 (*synth, struct*)
Schreiber, K. *et al., Planta Med.*, 1958, **6**, 435-439 (*Solanigrines*)
Bianchi, E. *et al., CA*, 1961, **55**, 26002g (*Isosolasonine*)
Boll, P.M. *et al., Acta Chem. Scand.*, 1962, **16**, 1819-1830 (*Solanum dulcamara glycosides*)
Wolters, B. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1964, **297**, 748-754 (*Tomatidenol, activity*)
Schreiber, K. *et al., Tetrahedron*, 1964, **20**, 1939-1945; 1966, **22**, 3591-3595 (*struct, synth*)
Budzikiewicz, H. *et al., Tetrahedron*, 1964, **20**, 2267-2278 (*ms*)
Boll, P.M. *et al., Acta Chem. Scand.*, 1965, **19**, 1365-1370 (*pmr, config*)
Bognár, R. *et al., Pharmazie*, 1965, **20**, 40-42 (*Solavilline*)
Rönsch, H. *et al., Phytochemistry*, 1966, **5**, 1227-1233 (*Solamarines*)
Wolters, B. *et al., Planta Med.*, 1966, **14**, 392-401 (*activity*)
Maitli, P.C. *et al., Indian J. Chem.*, 1968, **6**, 547-548 (*Solakhasianine*)
Puroshathaman, K.K. *et al., Aust. J. Chem.*, 1969, **22**, 1569-1570 (*isol*)
Kessar, S.V. *et al., Tetrahedron*, 1971, **27**, 2153-2159 (*synth*)
Bite, P. *et al., Acta Chim. Acad. Sci. Hung.*, 1972, **73**, 361-362 (*Solaradixine, Solashabanine, Solaradinine*)
Singh, S. *et al., Phytochemistry*, 1974, **13**, 2020-2022 (*Solaplumbine*)
Novruzov, E.N. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1975, **11**, 453 (*Solapersine*)
Briggs, L.H. *et al., J.C.S. Perkin 1*, 1975, 2455-2457 (*Solamargine*)
Puri, R.K. *et al., Phytochemistry*, 1975, **14**, 2096 (*Solatifoline*)
Weston, R.J. *et al., Aust. J. Chem.*, 1977, **30**, 917-921 (*cmr*)
Dnyansagar, V.R. *et al., Planta Med.*, 1977, **31**, 21-25 (*Solasurine*)
Bird, G.J. *et al., Aust. J. Chem.*, 1979, **32**, 783-796 (*cmr*)
Mahato, S.B. *et al., Phytochemistry*, 1980, **19**, 2017-2020 (*Solamargines*)
Ripperger, H. *et al., Alkaloids (Academic Press)*, 1981, **19**, 81-192 (*rev*)
Neszmelyi, A. *et al., Phytochemistry*, 1988, **27**, 603-605 (*Solaradinine, Solashabanine*)
Mimaki, Y. *et al., Chem. Pharm. Bull.*, 1990, **38**, 3055-3059 (*rhamnosylglucosylglucoside*)
Lin, C.-N. *et al., J. Nat. Prod.*, 1990, **53**, 513-516 (*Incanumine*)
Ripperger, H. *et al., Phytochemistry*, 1991, **30**, 1299-1301 (*Solasodine, Tomatidenol*)
Ripperger, H. *et al., Phytochemistry*, 1992, **31**, 1837-1839 (*N-Hydroxysolasodine*)
Ripperger, H. *et al., Annalen*, 1994, 517-520 (*Robustine, N-Hydroxyrobustine*)
Puri, R. *et al., J. Nat. Prod.*, 1994, **57**, 587-596 (*Ravifoline*)
Ripperger, H. *et al., Phytochemistry*, 1994, **37**, 1725-1727 (*Anguivine, Isoanguivine*)
Hanna, A.G. *et al., Fitoterapia*, 1996, **67**, 223-226 (*Solanelagnine*)
Kim, Y.C. *et al., J. Nat. Prod.*, 1996, **59**, 283-285 (*Ac, glucoside*)
Lorey, S. *et al., Phytochemistry*, 1996, **41**, 1633-1635 (*Sycophantine, 22-Episycophantine*)
Friedman, M. *et al., J. Agric. Food Chem.*, 1997, **45**, 1541-1547 (*Dehydrotomatine*)
Usubillaga, A. *et al., Phytochemistry*, 1997, **44**, 537-543 (*Sycophantine, 22-Episycophantine, Diepisycophantine*)
Ripperger, H. *et al., Phytochemistry*, 1997, **46**, 1279-1282 (*Solasuaveoline, Isosolasuaveoline*)
Hu, K. *et al., Planta Med.*, 1999, **65**, 35-38 (*isol, activity*)
Weissenberg, M. *et al., Phytochemistry*, 2001, **58**, 501-508 (*β-Solamarine, cmr, ms*)
Wanyonyi, A.W. *et al., Phytochemistry*, 2002, **59**, 79-84 (*Solaculine A, Solamargine, α-Solamarine*)
Fukuhara, K. *et al., Phytochemistry*, 2004, **65**, 1283-1286 (*Arudonine*)
Vega-Baez, J.L. *et al., Acta Cryst. E*, 2006, **62**, 4741-4743 (*Solasodine, cryst struct*)
Zha, X. *et al., Chem. Biodiversity*, 2007, **4**, 25-31 (*Solasodine, synth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, POJ000 (*Solasodine*)

Spirosol-4-en-3-one, 9CI S-457



$C_{27}H_{41}NO_2$ 411.626

(22R,25R)-form
Solasodenone
[17094-86-9]
Alkaloid from *Solanum hainanense* and *Solanum aviculare* spp. Needles (Me_2CO aq.). Poorly sol. H_2O. Mp 183-184°. $[\alpha]_D^{26}$ +28 (c, 0.4 in $CHCl_3$).

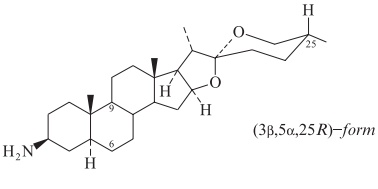
N-Ac:
Cryst. (Et_2O). Mp 124°. $[\alpha]_D^{25}$ +40.1 (c, 0.513 in $CHCl_3$).

4,5β-Dihydro: ***Solasodan-3-one***
$C_{27}H_{43}NO_2$ 413.642
Alkaloid from leaves of *Solanum aviculare* (Solanaceae). Needles (Me_2CO aq.). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 169-170° (164-165°). $[\alpha]_D^{20}$ -49 (c, 2.8 in $CHCl_3$).

Tolstikov, G.A. *et al., Khim. Prir. Soedin.*, 1968, **3**, 286; *Chem. Nat. Compd. (Engl. Transl.)*, 1968, **3**, 242 (*synth*)
Radeglia, R. *et al., Tet. Lett.*, 1977, **18**, 903-906 (*cmr*)
Adam, G. *et al., Phytochemistry*, 1978, **17**, 1070-1071 (*Solasodenone, isol, synth, ms, pmr, uv*)
Adam, G. *et al., Tet. Lett.*, 1980, **21**, 1931-1932 (*synth*)
Rowan, D.D. *et al., Phytochemistry*, 1983, **22**, 2102-2104 (*Solasodenone, Solasodan-3-one*)

Spirostan-3-amine S-458

3-Aminospirostane



(3β,5α,25*R*)*-form*

$C_{27}H_{45}NO_2$ 415.658

(3β,5α,25R)-form
Isojurubidine
[32562-75-7]
Alkaloid from the roots of *Solanum paniculatum* (Solanaceae). Mp 185-187°. $[\alpha]_D$ -63 (c, 0.032 in $CHCl_3$).

N-Ac: Mp 262-265°.

5,6-Didehydro: ***Antillaridine***. *Δ^5-Isojurubidine*
[155416-19-6]
$C_{27}H_{43}NO_2$ 413.642
Alkaloid from *Solanum antillarum* (Solanaceae).

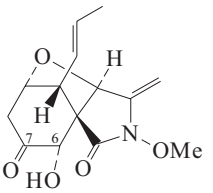
(3β,5α,25S)-form
Jurubidine
[6084-44-2]
Cyclised aglycone from Jurubine, J-60. Mp 182-186°. $[\alpha]_D^{18}$ -78.7 (c, 1.8 in $CHCl_3$).

(3α,25R)-form
5,6-Didehydro: ***Antillidine***. *3α-Δ^5-Isojurubidine*
[155416-18-5]
$C_{27}H_{43}NO_2$ 413.642
From *Solanum antillarum* (Solanaceae).

Ripperger, H. *et al., Chem. Ber.*, 1967, **100**, 1725
Irismetov, M.P. *et al., Izv. Akad. Nauk SSSR, Ser. Khim.*, 1980, 81 (*synth*)
Coll, P.F. *et al., Rev. Cubana Farm.*, 1992, **6**, 66; *CA*, **121**, 5053w (*Antillaridine, Antillidine*)

Spirostaphylotrichin E S-459

[123548-68-5]



$C_{14}H_{17}NO_5$ 279.292
Metab. of *Staphylotrichum coccosporum*. Cryst. (CH_2Cl_2/Et_2O). Mp 107-109°. λ_{max} 225 (ε 12100) (EtOH) (Derep).

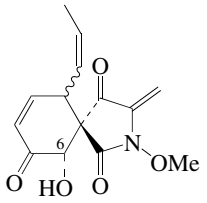
6-Epimer: ***Spirostaphylotrichin F***
[123548-49-2]
$C_{14}H_{17}NO_5$ 279.292
From *Staphylotrichum coccosporum*. Cryst. (CH_2Cl_2/Et_2O). Mp 114-116°. λ_{max} 225 (ε 12100) (EtOH) (Derep). λ_{max} 225 (ε 12200) (MeOH) (Berdy).

7-Alcohol: ***Spirostaphylotrichin L***
[123573-21-7]
$C_{14}H_{19}NO_5$ 281.308
Metab. of *Staphylotrichum coccosporum*. Cryst. (Et_2O). Mp 131-137°. Configs. of the 6- and 7-OH groups not certain.

Sandmeier, P. *et al., Helv. Chim. Acta*, 1989, **72**, 784; 1107 (*isol, pmr, cmr, ms, struct*)

Spirostaphylotrichin G S-460

[123548-69-6]



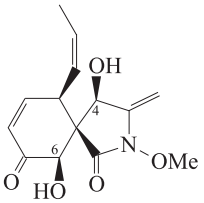
$C_{14}H_{15}NO_5$ 277.276
Metab. of *Staphylotrichum coccosporum*. Cryst. Mp 160-176°. λ_{max} 202 (ϵ 10800); 232 (ϵ 10000); 279 (ϵ 3200) (EtOH) (Derep).

6-Epimer: ***Spirostaphylotrichin H***
[124441-13-0]
$C_{14}H_{15}NO_5$ 277.276
From *Staphylotrichum coccosporum*. λ_{max} 202 (ϵ 10800); 232 (ϵ 10000); 279 (ϵ 3200) (EtOH) (Derep).

Sandmeier, P. *et al., Helv. Chim. Acta*, 1989, **72**, 1107 (*isol, struct*)

Spirostaphylotrichin K S-461

[123548-71-0]



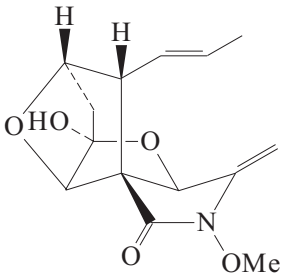
(4*S*,6*R*)–*form*

$C_{14}H_{17}NO_5$ 279.292
Isol. from *Staphylotrichum coccosporum*. Mp 200-205°. λ_{max} 215 (sh) (ϵ 7000); 235 (sh) (ϵ 5000) (EtOH) (Derep).

Sandmeier, P. *et al., Helv. Chim. Acta*, 1989, **72**, 1107 (*isol, pmr, cmr, struct*)

Spirostaphylotrichin M S-462

[123548-72-1]

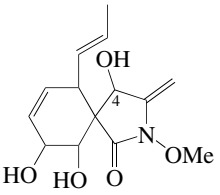


$C_{14}H_{17}NO_5$ 279.292
Metab. of *Staphylotrichum coccosporum*. Cryst. Mp 187-190°. λ_{max} 226 (ϵ 15100) (EtOH) (Derep).

Sandmeier, P. *et al., Helv. Chim. Acta*, 1989, **72**, 1107 (*isol, pmr, cmr, struct*)

Spirostaphylotrichin O S-463

4,9,10-Trihydroxy-2-methoxy-3-methylene-6-(1-propenyl)-2-azaspiro[4.5]dec-7-en-1-one, 9CI
[129666-00-8]



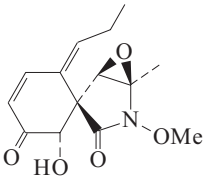
$C_{14}H_{19}NO_5$ 281.308
Isol. from a blocked mutant of *Staphylotrichum coccosporum*. Cryst. (Et_2O). Mp 147-151°.

4-Ketone: ***Spirostaphylotrichin N***
[129665-99-2]
$C_{14}H_{17}NO_5$ 279.292
From *Staphylotrichum coccosporum*. Cryst. (Et_2O). Mp 92-95°.

4-Ketone, N-*demethoxy:* ***Spirostaphylotrichin P***
[129666-01-9]
$C_{13}H_{15}NO_4$ 249.266
From *Staphylotrichum coccosporum*. Cryst. (Et_2O). Mp 141-144°.

Sandmeier, P. *et al., Helv. Chim. Acta*, 1990, **73**, 975 (*isol, pmr, cmr, struct*)

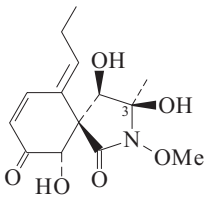
Spirostaphylotrichin Q S-464



$C_{14}H_{17}NO_5$ 279.292
Metab. of *Staphylotrichum coccosporum* and *Curvularia pallescens*. Cryst. (CH_2Cl_2/Et_2O). Mp 163-169°. λ_{max} 205 (ϵ 8900); 291 (ϵ 14200) (EtOH) (Berdy).

Sandmeier, P. *et al., Helv. Chim. Acta*, 1989, **72**, 784 (*isol, pmr, cmr, struct*)
Abraham, W.-R. *et al., Tetrahedron*, 1995, **51**, 4947 (*isol*)

Spirostaphylotrichin R S-465



$C_{14}H_{19}NO_6$ 297.307
Metab. of *Staphylotrichum coccosporum* and *Curvularia pallescens*. Cryst. Mp 157-166°. λ_{max} 204 (ϵ 9100); 291 (ϵ 14100) (EtOH) (Berdy).

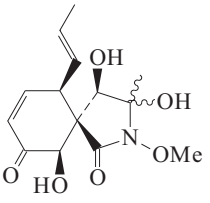
3-Me ether: ***Spirostaphylotrichin V***
$C_{15}H_{21}NO_6$ 311.334
From *Curvularia pallescens*. Glassy, yellowish cryst. $[\alpha]_D^{27}$ -147.6 (c, 0.50 in MeOH).

3-Epimer: ***Spirostaphylotrichin U***
$C_{14}H_{19}NO_6$ 297.307
From *Curvularia pallescens*. Not completely separated from Spirostaphylotrichin R.

Sandmeier, P. *et al., Helv. Chim. Acta*, 1989, **72**, 784 (*isol, pmr, cmr, struct*)
Abraham, W.-R. *et al., Tetrahedron*, 1995, **51**, 4947 (*isol*)

Spirostaphylotrichin S S-466

[123620-40-6]



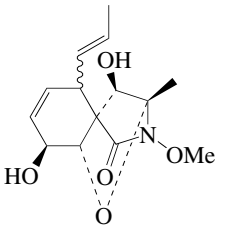
$C_{14}H_{19}NO_6$ 297.307
Metab. of *Staphylotrichum coccosporum*. Cryst. Mp 166-173°. λ_{max} 215 (sh) (ϵ 7000); 235 (sh) (ϵ 5000) (EtOH) (Derep).

Stereoisomer: ***Spirostaphylotrichin I***
[123548-70-9]
$C_{14}H_{19}NO_6$ 297.307
Metab. of *Staphylotrichum coccosporum*. Cryst. (Et_2O). Mp 167-176°.

Sandmeier, P. *et al., Helv. Chim. Acta*, 1989, **72**, 1107 (*isol, pmr, cmr, struct*)

Spirostaphylotrichin T S-467

[129681-31-8]

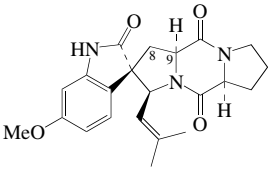


$C_{14}H_{19}NO_5$ 281.308
Tentative config. shown. Isol. from blocked mutant of *Staphylotrichum coccosporum*. Cryst. (Et_2O). Mp 152-159°.

Sandmeier, P. *et al., Helv. Chim. Acta*, 1990, **73**, 975 (*isol, pmr, cmr, struct*)

Spirotryprostatin A S-468

[182234-25-9]



Relative Configuration

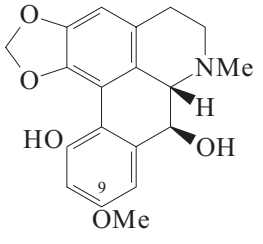
$C_{22}H_{25}N_3O_4$ 395.457
Metab. from *Aspergillus fumigatus* BM939 and the marine-derived *Aspergillus sydowi* PFW1-13. Mammalian cell cycle inhibitor. Pale yellow amorph. powder. $[\alpha]_D^{26}$ -34 (c, 0.10 in $CHCl_3$). λ_{max} 219 (ϵ 15920); 245 (sh) (ϵ 4400); 270 (ϵ 3020); 280 (sh) (ϵ 2960) (MeOH).

Demethoxy, 8,9-didehydro: ***Spirotryprostatin B***
[182234-26-0]
$C_{21}H_{21}N_3O_3$ 363.415
Prod. by *Aspergillus fumigatus* BM939. Mammalian cell cycle inhibitor. Pale yellow cryst. Mp 137-138°. $[\alpha]_D^{22}$ -162.1 (c, 0.92 in $CHCl_3$). λ_{max} 212 (ϵ 36660); 227 (sh) (ϵ 28820); 242 (sh) (ϵ 24830); 272 (sh) (ϵ 17350); 286 (sh) (ϵ 14810) (MeOH).

Cui, C.-B. *et al., Tetrahedron*, 1996, **52**, 12651-12666 (*isol, uv, ir, pmr, cmr, ms*)
Edmondson, S. *et al., J.A.C.S.*, 1999, **121**, 2147-2155 (*synth*)
von Nussbaum, F. *et al., Angew. Chem., Int. Ed.*, 2000, **39**, 2175-2178 (*Spirotryprostatin B, synth*)
Wang, H. *et al., J.O.C.*, 2000, **65**, 4685-4693 (*Spirotryprostatin B, synth*)
Bagul, T.D. *et al., Org. Lett.*, 2002, **4**, 249-251 (*Spirotryprostatin B, synth*)
Sebahar, P.R. *et al., Tetrahedron*, 2002, **58**, 6311-6322 (*Spirotryprostatin B, synth*)
Meyers, C. *et al., Angew. Chem., Int. Ed.*, 2003, **42**, 694-696 (*Spirotryprostatin B, synth*)
Miyake, F.Y. *et al., Org. Lett.*, 2004, **6**, 4249-4251 (*synth*)
Onishi, T. *et al., Tetrahedron*, 2004, **60**, 9503-9515 (*synth*)
Marti, C. *et al., J.A.C.S.*, 2005, **127**, 11505-11515 (*Spirotryprostatin B, synth*)
Trost, B.M. *et al., Org. Lett.*, 2007, **9**, 2763-2766 (*synth*)

Spixianine S-469

[112494-63-0]



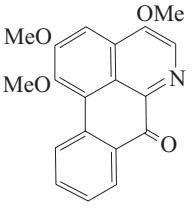
$C_{19}H_{19}NO_5$ 341.363
Alkaloid from the trunk bark of Colombian *Duguetia spixiana* (Annonaceae). Not isol. pure; always mixed with Duguexine in P-781. Pure material obt. by redn. of the *N*-oxide.

N-*Oxide:* ***Spixianine* N-*oxide***
[112494-64-1]
$C_{19}H_{19}NO_6$ 357.362
Alkaloid from *Duguetia spixiana* (Annonaceae). Amorph. $[\alpha]_D$ -84 (c, 0.68 in $CHCl_3$).

Debourges, D. *et al., J. Nat. Prod.*, 1987, **50**, 664 (*isol, uv, pmr, ms, struct*)

Splendidine S-470

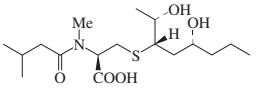
*1,2,4-Trimethoxy-7*H*-dibenzo[*de,g*]quinolin-7-one, 9CI*
[68353-25-3]



$C_{19}H_{15}NO_4$ 321.332
Alkaloid from *Abuta rufescens* (*Abuta splendida*) (Menispermaceae). Bright-yellow needles (MeOH/$CHCl_3$). Mp 235°.

Skiles, J.W. *et al., Can. J. Chem.*, 1979, **57**, 1642 (*isol, ir, uv, ms, pmr, synth, struct*)
Menachery, M.D. *et al., J. Nat. Prod.*, 1997, **60**, 1328-1330 (*isol, cmr*)

Spongiacysteine S-471



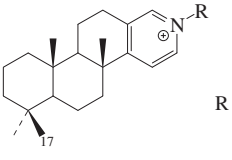
Absolute Configuration

$C_{17}H_{33}NO_5S$ 363.517
Isol. from the Japanese sponge *Spongia* sp. Oil. $[\alpha]_D^{20}$ -238 (c, 0.02 in MeOH) (natural). $[\alpha]_D^{24}$ -115 (c, 0.02 in MeOH) (synthetic).

Kobayashi, K. *et al., Chem. Lett.*, 2004, **33**, 1262-1263 (*isol, synth, pmr, cmr*)

Spongidine A S-472

[263143-53-9]



R = $-CH_2COOH$

$C_{23}H_{34}NO_2^{\oplus}$ 356.527
Alkaloid from a *Spongia* sp. Inhibitor of human phospholipase A_2. $[\alpha]_D$ -16.2 (c, 0.01 in MeOH). Counterion not specified.

17-Acetoxy: ***Spongidine B***
[263143-54-0]
$C_{25}H_{36}NO_4^{\oplus}$ 414.564
Alkaloid from a *Spongia* sp. Inhibitor of human phospholipase A_2. $[\alpha]_D$ +7.8 (c, 0.01 in MeOH). Counterion not specified.

De Marino, S. *et al., J. Nat. Prod.*, 2000, **63**, 323-326

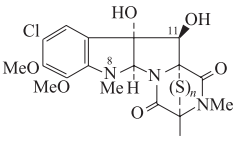
Spongidine D S-473

[263143-56-2]
As Spongidine A, S-472 with
R=$-CH_2CH_2SO_3H$
$C_{23}H_{36}NO_3S^{\oplus}$ 406.608
Alkaloid from a *Spongia* sp. Inhibitor of human phospholipase A_2. $[\alpha]_D$ -6 (c, 0.02 in MeOH). Counterion not specified.

De Marino, S. *et al., J. Nat. Prod.*, 2000, **63**, 323-326

Sporidesmin S-474

Sporidesmin A
[1456-55-9]



Absolute configuration

n = 2

$C_{18}H_{20}ClN_3O_6S_2$ 473.957
Alkaloid from *Pithomyces chartarum*. Causes facial eczema in sheep. Shows antitumour props. Sol. MeOH, Et_2O, bases; poorly sol. H_2O, hexane. λ_{max} 219 (ϵ 31600); 254 (ϵ 12000); 304 (ϵ 2570) (Et_2O) (Derep). λ_{max} 218 (ϵ 39820); 254 (ϵ 13200); 302 (ϵ 2820) (EtOH) (Berdy).
▶ LD_{50} (mus, ivn) 1 mg/kg. KB4740000

CCl_4 complex:
Cryst. Mp 130-134° (sintering from 109°). $[\alpha]_D^{24}$ -23 (c, 0.96 in MeOH).

Di-Ac:
Needles. Mp 170-171°. $[\alpha]_D$ -25 (c, 1.2 in MeOH).

8-N-*De-Me:* ***Sporidesmin J***
[69799-25-3]
$C_{17}H_{18}ClN_3O_6S_2$ 459.93
Metab. of *Pithomyces chartarum*. Cryst. (Et_2O). Mp 168-169°. $[\alpha]_D^{18}$ +43 (c, 0.25 in $CHCl_3$). λ_{max} 219 (ϵ 31600); 254 (ϵ 12000); 304 (ϵ 2570) (Et_2O) (Derep). λ_{max} 216 (ϵ 23400); 252 (ϵ 11300); 290 (ϵ 8000) (MeOH) (Berdy).

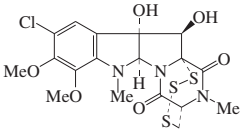
11-Deoxy: ***Sporidesmin B***
[3351-96-0]
$C_{18}H_{20}ClN_3O_5S_2$ 457.958
Constit. of *Pithomyces chartarum*. Needles (Me_2CO aq.). Sol. MeOH, $CHCl_3$; fairly sol. Et_2O, hexane, C_6H_6; poorly sol. H_2O. Mp 183°. $[\alpha]_D^{21}$ -27 (c, 1 in MeOH). λ_{max} 218 (ϵ 31620); 256 (ϵ 12000); 307 (ϵ 2570) (EtOH) (Berdy).
▶ Toxic.

Hodges, R. *et al., Chem. Ind. (London)*, 1963, 42 (*isol, ir, uv, pmr*)
Shannon, J.S. *et al., Tet. Lett.*, 1963, 801 (*ms*)
Herrmann, H. *et al., J.C.S.*, 1964, 4315 (*ord, cd*)
Beecham, A.F. *et al., Tet. Lett.*, 1966, 3131 (*cryst struct*)
Kishi, Y. *et al., J.A.C.S.*, 1973, **95**, 6439 (*synth*)
Nagarajan, R. *et al., J.A.C.S.*, 1973, **95**, 7212 (*cd, ord*)
Nakatsuka, S. *et al., Tet. Lett.*, 1974, 1549 (*synth*)
Ronaldson, J.W. *et al., Aust. J. Chem.*, 1976, **29**, 2307; 1981, **34**, 1215 (*cmr,ir*)
White, E.P. *et al., Mycotoxic Fungi, Mycotoxins, Mycotoxicoses*, 1977, **1**, 427 (*rev*)
Rahlman, R. *et al., J.C.S. Perkin 1*, 1978, 1476 (*Spirodesmin J*)
Wróbel, J.T. *et al., Alkaloids (Academic Press)*, 1985, **26**, 70 (*rev*)
Gallagher, R.T. *et al., J. Agric. Food Chem.*, 1992, **40**, 701 (*synth*)
Miles, C.O. *et al., J. Agric. Food Chem.*, 1992, **40**, 2458 (*pmr*)

Cole, R.J. *et al., Handbook of Toxic Fungal Metabolites*, Academic Press, 1981, 584

Sporidesmin C S-475

[7051-84-5]



Absolute Configuration

$C_{18}H_{20}ClN_3O_6S_3$ 506.023

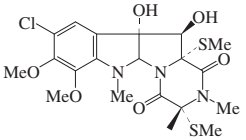
Metab. of *Pithomyces chartarum*. Toxin. Possesses antitumour props. Cryst. λ_{max} 217 (ϵ 33100); 252 (ϵ 16600); 295 (ϵ 3160) (MeOH) (Derep).

Di-Ac:
Needles (2-propanol). Mp 195-200° (resolidifies and remelts at 230-240° dec.). $[\alpha]_D$ -215 (c, 0.46 in $CHCl_3$).

Hodges, R. *et al., Aust. J. Chem.*, 1966, **19**, 1059 (*isol*)
Cole, R.J. *et al., Handbook of Toxic Fungal Metabolites*, Academic Press, 1981, 590

Sporidesmin D S-476

[18180-71-7]



Absolute Configuration

$C_{20}H_{26}ClN_3O_6S_2$ 504.027

Metab. of *Pithomyces chartarum*. Toxin. Shows antibacterial activity. Cryst. + Et_2O. Sol. MeOH, $CHCl_3$; fairly sol. Et_2O; poorly sol. H_2O, hexane. Mp 105-107°. $[\alpha]_D^{20}$ +58 (c, 0.1 in $CHCl_3$). λ_{max} 219 (ϵ 31600); 254 (ϵ 12000); 304 (ϵ 2570) (Et_2O) (Derep). λ_{max} 216 (ϵ 28200); 252 (ϵ 10000); 300 (ϵ 1900) (EtOH) (Berdy).

Di-Ac: Mp 202-204°. $[\alpha]_D^{20}$ +67 (c, 0.1 in $CHCl_3$).

Rahman, R. *et al., Chem. Comm.*, 1967, 1032 (*isol*)
Jamieson, W.D. *et al., J.C.S.(C)*, 1969, 1564 (*isol, struct*)
Ronaldson, J.W. *et al., Aust. J. Chem.*, 1976, **29**, 2307; 1981, **34**, 1215
White, E.P. *et al., CA*, 1978, **88**, 84087m (*rev*)
Cole, R.J. *et al., Handbook of Toxic Fungal Metabolites*, Academic Press, 1981, 591

Sporidesmin E S-477

[22327-77-1]

As Sporidesmin, S-474 with

n = 3

$C_{18}H_{20}ClN_3O_6S_3$ 506.023

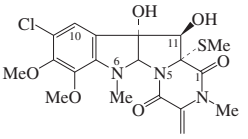
Toxic metab. of *Pithomyces chartarum*. Shows antibacterial and antitumour props. Cryst. + Et_2O. Mp 180-187° (155-165°). $[\alpha]_D^{20}$ -131 (c, 0.065 in $CHCl_3$). λ_{max} 217 (ϵ 33100); 252 (ϵ 16600); 295 (ϵ 3160) (MeOH) (Derep).

Di-Ac: [24569-98-0]
Mp 112-115°.

Rahman, R. *et al., J.C.S.(C)*, 1969, 1665 (*isol*)
White, E.P. *et al., CA*, 1978, **88**, 84087m (*rev*)
Ronaldson, J.W. *et al., Aust. J. Chem.*, 1981, **34**, 1215 (*ir*)
Cole, R.J. *et al., Handbook of Toxic Fungal Metabolites*, Academic Press, 1981, 594

Sporidesmin F S-478

[23044-40-8]



Absolute Configuration

$C_{19}H_{22}ClN_3O_6S$ 455.918

Metab. of *Pithomyces chartarum*. Fungal toxin. Amorph. solid. Mp 65-67°. λ_{max} 217 (ϵ 33100); 252 (ϵ 16600); 295 (ϵ 3160) (MeOH) (Derep). λ_{max} 216 (ϵ 28840); 250 (ϵ 13800); 298 (ϵ 2000) (EtOH) (Berdy).

Jamieson, W.D. *et al., J.C.S.(C)*, 1969, 1564 (*isol*)
White, E.P. *et al., CA*, 1978, **88**, 84087m (*rev*)
Cole, R.J. *et al., Handbook of Toxic Fungal Metabolites*, Academic Press, 1981, 595

Sporidesmin G S-479

[32608-68-7]

As Sporidesmin, S-474 with

n = 4

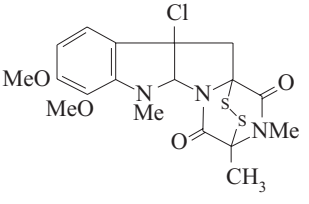
$C_{18}H_{20}ClN_3O_6S_4$ 538.089

Metab. of *Pithomyces chartarum*. Toxin. Shows antitumour props. Cryst. (Et_2O at 4°). Mp 148-153°. $[\alpha]_D^{20}$ -217 (c, 0.023 in $CHCl_3$). λ_{max} 217 (ϵ 33100); 252 (ϵ 16600); 295 (ϵ 3160) (MeOH) (Derep). λ_{max} 216 (ϵ 44700); 250 (ϵ 11500); 298 (ϵ 2950) (EtOH) (Berdy).

Francis, E. *et al., J.C.S. Perkin 1*, 1972, 470 (*isol, struct*)
Przybylska, M. *et al., Acta Cryst. B*, 1974, **30**, 597 (*cryst struct*)
White, E.P. *et al., CA*, 1978, **88**, 84087m (*rev*)
Cole, R.J. *et al., Handbook of Toxic Fungal Metabolites*, Academic Press, 1981, 596

Sporidesmin H S-480

[65492-17-3]

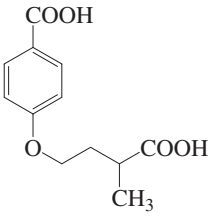


$C_{18}H_{20}ClN_3O_4S_2$ 441.958

Constit. of *Pithomyces chartarum*. Shows antitumour props. Amorph. solid (Et_2O/petrol). Mp 150-152°. λ_{max} 216 (ϵ 23400); 252 (ϵ 11200); 290 (ϵ 6460) (MeOH) (Derep).

Rahman, R. *et al., J.C.S. Perkin 1*, 1978, 1476 (*isol*)
White, E.P. *et al., CA*, 1978, **88**, 84087m (*rev*)
Cole, R.J. *et al., Handbook of Toxic Fungal Metabolites*, Academic Press, 1981, 597

Sporovexin A S-481



$C_{12}H_{14}O_5$ 238.24

Prod. by *Sporormiella vexans*. Pale yellow solid. Mp 177-179°. $[\alpha]_D^{25}$ -22 (c, 0.4 in MeOH). λ_{max} 251 (ϵ 3400) (MeOH).

2-Carboxyethylamide: ***Sporovexin C***
$C_{15}H_{19}NO_6$ 309.318
Prod. by *Sporormiella vexans*. Oil. $[\alpha]_D^{26}$ -11 (c, 0.15 in MeOH). λ_{max} 250 (ϵ 4900) (MeOH).

Soman, A.G. *et al., J. Nat. Prod.*, 1999, **62**, 659-661 (*isol, Sporovexin C*)

Sprintillamine S-482

[1393-32-4]

$C_{28}H_{45}NO_4$ 459.668

Struct. unknown. Alkaloid from *Helleborus viridus*. Respiratory stimulant, convulsant. Small needles (EtOH aq.). Mp 228-229°. Contains one N-Me group.

Hydrochloride: Mp 287-288° (prev. browns and sinters).

Keller, O. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1928, **266**, 545-572 (*isol*)
Franzen, G. *et al., CA*, 1931, **25**, 4052 (*pharmacol*)

Sprintilline S-483

[1401-42-9]

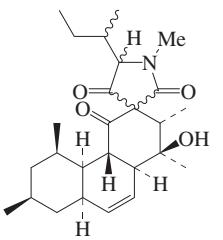
$C_{25}H_{41}NO_3$ 403.604

Struct. unknown. Alkaloid from roots of *Helleborus viridis*. Respiratory stimulant, convulsant. Mp 141-142° (sinters at 132°).

Hydrochloride: Mp 278-279°.

Keller, O. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1928, **266**, 545-572 (*isol*)
Franzen, G. *et al., CA*, 1931, **25**, 4052 (*pharmacol*)

Spylidone S-484



Relative Configuration

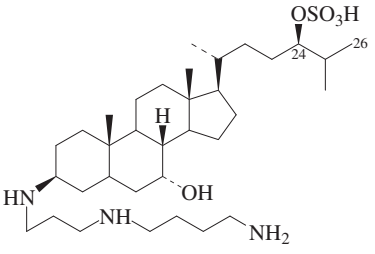
$C_{26}H_{39}NO_4$ 429.598

Tetramic acid deriv. Prod. by *Phoma* sp. FKI-1840. Inhibitor of lipid droplet accumulation in macrophages. Oil. $[\alpha]_D^{26}$ +5.6 (c, 0.1 in MeOH). λ_{max} 203 (ϵ 17300) (MeOH).

Koyama, N. *et al., J. Antibiot.*, 2005, **58**, 338-345 (*isol, pmr, cmr*)

Squalamine S-485

[148717-90-2]



$C_{34}H_{65}N_3O_5S$ 627.971

Constit. of the shark *Squalus acanthias*. Active against gram-positive and -negative bacteria. Broad-spectrum steroidal antibiotic. Inhibits angiogenesis and solid tumour growth. Antineoplastic agent, haemolytic, laxative, gastric secretion inhibitor, diuretic. ATP-ase inhibitor. Sol. H_2O, MeOH.

Lactate: ***Squalamine lactate, USAN****. Evizon. MSI 1256F*
[320725-47-1]
Angiogenesis inhibitor. Antineoplastic used in the treatment of advanced malignancies.

N^{ω}*-(3-Aminopropyl):* ***Trodusquemine, INN, USAN****. 7′-*N*-(3-Aminopropyl)squalamine. MSI 1436*
[186139-09-3]
$C_{37}H_{72}N_4O_5S$ 685.066
Constit. of liver of *Squalus acanthias*. Used for treatment of medically significant obesity. Appetite suppressant. Powder.

*24-*O*-Desulfo, 26-sulfooxy:* [259173-54-1]
$C_{34}H_{65}N_3O_6S$ 643.97
Constit. of liver of *Squalus acanthias*. Powder.

24-Desulfo, 24-ketone, 26-sulfooxy:
[232613-79-5]
$C_{34}H_{63}N_3O_6S$ 641.954
Constit. of liver of *Squalus acanthias*. Powder.

24-Desulfo, 24-ketone, 26-[(2-amino-2-carboxyethyl)thio]: [259173-51-8]
$C_{37}H_{68}N_4O_4S$ 665.035
Constit. of the liver of the dogfish shark *Squalus acanthias*. Powder.

25,26-Didehydro, 24-desulfo, 24-ketone: 3-[[3-[(4-Aminobutyl)amino]propyl]amino]-7-hydroxycholest-25-en-24-one
[186139-08-2]
$C_{34}H_{61}N_3O_2$ 543.875
Constit. of liver of *Squalus acanthias*. Powder.

12α-Hydroxy: ***12-Hydroxysqualamine***
[268733-21-7]
$C_{34}H_{65}N_3O_6S$ 643.97
Constit. of liver of *Squalus acanthias*. Powder.

24-Hydroxymethyl: [268733-22-8]
$C_{35}H_{67}N_3O_6S$ 657.997
Constit. of liver of *Squalus acanthias*. Powder.

Moore, K.S. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 1993, **90**, 1354-1358 (*isol*)
Wehrli, S.L. *et al., Steroids*, 1993, **58**, 370-378 (*pmr, cmr*)
Moriarty, R.M. *et al., Tet. Lett.*, 1994, **35**, 8103; 1995, **36**, 5139-5142 (*synth*)
Sills, A.K. *et al., Cancer Res.*, 1998, **58**, 2784-2792 (*pharmacol*)
Jones, S.R. *et al., J.O.C.*, 1998, **63**, 3786-3789 (*synth*)
Zhang, X. *et al., J.O.C.*, 1998, **63**, 8599-8603 (*synth*)
Selinsky, B.S. *et al., Biochim. Biophys. Acta*, 2000, **1464**, 135-141 (*pharmacol*)
Rao, M.N. *et al., J. Nat. Prod.*, 2000, **63**, 631-635 (*isol, pmr, cmr, config, derivs*)
Zhang, X. *et al., Org. Lett.*, 2000, **2**, 2921-2922 (*synth*)
Bhargava, P. *et al., Clin. Cancer Res.*, 2001, **7**, 3912-3919 (*Squalamine lactate, pharmacol*)
Ahima, R.S. *et al., Diabetes*, 2002, **51**, 2099-2104 (*MSI 1436, pharmacol*)
Okamura, K. *et al., Chem. Pharm. Bull.*, 2003, **51**, 117-1182 (*synth*)
Hao, D. *et al., Clin. Cancer Res.*, 2003, **9**, 2465-2471 (*clin trial*)
Zhang, D.-H. *et al., Org. Lett.*, 2003, **5**, 3257-3259 (*synth*)
Ciulla, T.A. *et al., Retina*, 2003, **23**, 808-814 (*pharmacol*)
Zhang, D.-H. *et al., Chin. J. Chem.*, 2005, **23**, 176-181 (*synth*)
Zhang, D.-H. *et al., Chin. J. Chem.*, 2005, **23**, 176-181 (*synth*)

Squamigerine S-486

[1361-35-9]

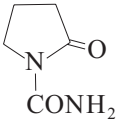
$C_{18}H_{21}NO_5$ 331.368

Amaryllidaceae alkaloid. Struct. unknown. Isol. from the bulbs of *Lycoris squamigera* (Amaryllidaceae). Mp 260°. $[\alpha]_D^{34}$ +165 ($CHCl_3$).

Hung, S.-H. *et al., Yaoxue Xuebao*, 1964, **11**, 1-14; *CA*, **61**, 3154f (*isol*)

Squamolone S-487

2-Oxo-1-pyrrolidinecarboxamide, 9CI. 1-Carbamoyl-2-pyrrolidone
[40451-67-0]



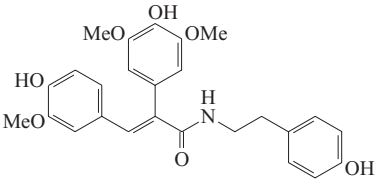
$C_5H_8N_2O_2$ 128.13

An incorrect diazepinedione struct. was originally assigned. Constit. of *Annona squamosa* (sugar apple) and *Hexalobus crispiflorus* (Annonaceae). Also from *Asimina triloba* (pawpaw). Prisms (C_6H_6). Mp 148°.

Yang, T.H. *et al., J. Chin. Chem. Soc. (Taipei)*, 1972, **19**, 149; *CA*, **78**, 16151w (*isol, uv, pmr, ms*)
Marquez, V.E. *et al., J.O.C.*, 1980, **45**, 5308 (*struct, synth, ir, pmr, ms*)
Achenbach, H. *et al., Annalen*, 1982, 1623 (*isol, cmr*)
Zhao, G.-X. *et al., Phytochemistry*, 1993, **33**, 1065 (*isol, synth*)
Sahai, M. *et al., Indian J. Chem., Sect. B*, 1996, **35**, 510 (*isol, synth, ir, pmr, cmr, ms*)

Squamosamide S-488

*4-Hydroxy-α-[(4-hydroxy-3-methoxyphenyl)methylene]-*N*-[2-(4-hydroxyphenyl)ethyl]-3,5-dimethoxybenzeneacetamide, 9CI*



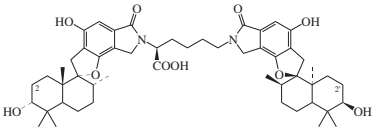
$C_{26}H_{27}NO_7$ 465.502

(E)-form [142750-35-4]
Isol. from branches of *Annona squamosa* (sugar apple) (Annonaceae). Mp 206-207°.

Yang, X.J. *et al., Yaoxue Xuebao*, 1992, **27**, 185-190; *CA*, **117**, 86699d (*isol, struct*)
Ji, X. *et al., Chin. Chem. Lett.*, 1993, **4**, 297-298 (*synth, pmr, cmr*)

Stachybocin A S-489

Spirodihydrobenzofuranlactam VI
[158827-60-2]
[173220-05-8]



$C_{52}H_{70}N_2O_{10}$ 883.132

Probable struct. Struct. of Spirodihydrobenzofuranlactam VI revised in 2003. Presumed synthetic material showed some differences from the nat. product (2003). Prod. by *Stachybotrys* sp. M6222. Endothelin receptor antagonist. Powder. Sol. MeOH, DMSO, bases; poorly sol. H_2O, C_6H_6, hexane. $[\alpha]_D^{23}$ -57 (c, 0.4 in MeOH). λ_{max} 218 (ϵ 70500); 266 (ϵ 15400); 300 (ϵ 5300) (MeOH) (Berdy). λ_{max} 218 (ϵ 70600); 266 (ϵ 15400); 300 (ϵ 5300) (MeOH/HCl) (Berdy). λ_{max} 222 (ϵ 61600); 274 (ϵ 13200); 300 (ϵ 5300) (MeOH/NaOH) (Berdy).

2α-Hydroxy: ***Stachybocin B***
[158827-61-3]
$C_{52}H_{70}N_2O_{11}$ 899.132
Prod. by *Stachybotrys* sp. M6222. Endothelin receptor antagonist. Powder. Sol. MeOH, bases, DMSO; poorly sol. H_2O, C_6H_6, hexane. $[\alpha]_D^{23}$ -64 (c, 0.4 in MeOH). λ_{max} 218 (ϵ 70500); 265 (ϵ 15700); 300 (ϵ 5400) (MeOH) (Berdy). λ_{max} 218 (ϵ 70500); 265 (ϵ 15700); 300 (ϵ 5400) (MeOH/HCl) (Berdy). λ_{max} 222 (ϵ 62000); 274 (ϵ 13500); 310 (ϵ 5400) (MeOH?NaOH) (Berdy).

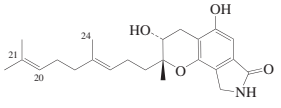
2′β-Hydroxy: ***Stachybocin C***
[158827-62-4]
$C_{52}H_{70}N_2O_{11}$ 899.132
Prod. by *Stachybotrys* sp. M6222. Endothelin receptor antagonist. Powder. Sol. MeOH, DMSO, bases; poorly sol. H_2O, hexane, C_6H_6. $[\alpha]_D^{23}$ -65 (c,

0.4 in MeOH). λ_{max} 218 (ϵ 69100); 265 (ϵ 15300); 300 (ϵ 5400) (MeOH) (Berdy). λ_{max} 222 (ϵ 59100); 275 (ϵ 12800); 310 (ϵ 5200) (MeOH/HCl) (Berdy).

2α,2′α-Dihydroxy: ***Stachybocin D***
[174423-35-9]
$C_{52}H_{70}N_2O_{12}$ 915.131
Prod. by *Stachybotrys* sp. M6222. Endothelin antagonist.

Nakamura, M. *et al., J. Antibiot.*, 1995, **48**, 1389-1395; 1396-1400 (*Stachybocins B-C, isol, pmr, cmr, ir, uv, props*)
Japan. Pat., 1995, 95 330622; *CA*, **124**, 200280g (*Stachybocin D*)
Roggo, B.E. *et al., J. Antibiot.*, 1996, **49**, 13-19; 374-379 (*Spirodihydrobenzofuranlactam VI*)
Deng, W.P. *et al., J.O.C.*, 2003, **68**, 7422-7427 (*synth, struct*)

Stachybotrin B S-490



(+)-*form*

$C_{23}H_{31}NO_4$ 385.502

(+)-*form* [144385-02-4]
From *Stachybotrys* sp. Exhibits antibacterial and antifungal activity. Sol. EtOAc, $CHCl_3$, MeOH; poorly sol. H_2O. Mp 178-180° dec. $[\alpha]_D$ +39.1 (c, 0.11 in MeOH). λ_{max} 220 (ϵ 17000); 254 (ϵ 6400); 302 (ϵ 2900) (MeOH) (Derep). λ_{max} 254 ; 270 ; 302 (MeOH) (Berdy).

N-*[2-(4-Hydroxyphenyl)ethyl]:* ***Stachybotrin C***. *NG 245*. *Antibiotic NG 245*
[150351-23-8]
$C_{31}H_{39}NO_5$ 505.653
Isol. from *Stachybotrys parvispora*. Neuritogenic agent. Yellowish powder. Mp 89-92°. $[\alpha]_D^{28}$ -28.2 (c, 0.1 in MeOH). λ_{max} 216 (ϵ 52800); 258 (ϵ 12600); 301 (ϵ 4000) (MeOH).

24-Hydroxy: ***Stachybotrin A***†
[144373-26-2]
$C_{23}H_{31}NO_5$ 401.502
Alkaloid from an aquatic isolate of the fungus *Stachybotrys* sp. Exhibits antibacterial and antifungal activity. Sol. EtOAc, $CHCl_3$, MeOH; poorly sol. H_2O. $[\alpha]_D$ +8.8 (c, 0.61 in MeOH). λ_{max} 220 (ϵ 17000); 254 (ϵ 6400); 302 (ϵ 2900) (MeOH) (Derep).

(-)-*form*
Antibiotic SMTP O. *SMTP O*
Prod. by *Stachybotrys microspora*. Amorph. solld. $[\alpha]_D^{25}$ -7.4 (c, 0.5 in $CHCl_3$). λ_{max} 215 (ϵ 55770); 251 (ϵ 10620); 300 (ϵ 4000) (MeOH).

N-*(2-Hydroxyethyl):* ***Antibiotic SMTP 1***. *SMTP 1*. *NG 243*. *Antibiotic NG 243*
[189819-17-8]
[161128-86-5]
$C_{25}H_{35}NO_5$ 429.555
Prod. by *Stachybotrys microspora* and *Stachybotrys parvispora*. Light brown oil. $[\alpha]_D^{20}$ -7.1 (c, 2 in Me_2CO). λ_{max} 214 (ϵ 39700); 254 (ϵ 7200); 299 (ϵ 2800) (MeOH).

20,21-Dihydro, 20,21-dihydroxy, N-*(2-hydroxyethyl):* ***Antibiotic SMTP 2***. *SMTP 2*
[189819-19-0]
$C_{25}H_{37}NO_7$ 463.57
Prod. by *Stachybotrys microspora*. Plasminogen activator. Light brown oil. Sol. $CHCl_3$, MeOH, Me_2CO, DMSO; poorly sol. H_2O. $[\alpha]_D^{20}$ -2.7 (c, 0.2 in Me_2CO). λ_{max} 212 (ϵ 34000); 252 (ϵ 8000); 294 (ϵ 3000) (MeOH).

N-*(4-Carboxybutyl):* ***Staplabin***
[183006-79-3]
$C_{28}H_{39}NO_6$ 485.619
Prod. by *Stachybotrys microspora*. Plasminogen activator. Fibrin binding enhancer. Light brown oil. Sol. MeOH, butanol; poorly sol. EtOAc, hexane. $[\alpha]_D^{20}$ -11 (c, 0.1 in $CHCl_3$). λ_{max} 216 (ϵ 33500); 258 (ϵ 7300); 300 (ϵ 2500) (MeOH).

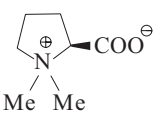
(ξ)-*form*
N-*(2-Oxopropyl):* ***Antibiotic NG 129***. *Antibiotic F 4708*. *NG 129*. *F 4708*
[157758-74-2]
$C_{26}H_{35}NO_5$ 441.566
Prod. by *Stachybotrys parvispora*. Nerve growth factor-like substance. Powder. Stereochem. not determined. λ_{max} 243 (ϵ 12000) (MeOH) (Berdy).

N-*(4-Hydroxy-2-oxobutyl):* ***Antibiotic NG 242***. *NG 242*
[160632-28-0]
$C_{27}H_{37}NO_6$ 471.592
Prod. by *Stachybotrys parvispora*. Nerve growth factor-like substance. Powder. Stereochem. not detd.

Xu, X. *et al., J.O.C.*, 1992, **57**, 6700-6703 (*isol, uv, ir, pmr, cmr, ms, struct*)
Japan. Pat., 1994, 94 128 264; 94 256 350; 94 239 869; *CA*, **121**, 177851w; **122**, 29880k; 142492y (*NG 129,242,243,245*)
Shinohara, C. *et al., J. Antibiot.*, 1996, **49**, 961-966 (*Staplabin*)
Takayasu, R. *et al., FEBS Lett.*, 1997, **418**, 58-62 (*activity*)
Kohyama, T. *et al., J. Antibiot.*, 1997, **50**, 172-174 (*SMTP1, SMTP2*)
Nozawa, Y. *et al., J. Antibiot.*, 1997, **50**, 635-640; 641-645 (*Stachybotrin C*)
Hasumi, K. *et al., J. Antibiot.*, 1998, **51**, 1059-1068 (*activity*)
Hasumi, K. *et al., J. Antibiot.*, 2007, **60**, 463-468 (*SMTP O*)

Stachydrine S-491

2-Carboxy-1,1-dimethylpyrrolidinium hydroxide inner salt, 9CI. Hygric acid methylbetaine, 8CI. N-*Methylproline methylbetaine. Cadabine. Chrysanthemine*
[32039-73-9]
[167936-48-3]



$C_7H_{13}NO_2$ 143.185

Chrysanthemine was a mixt. of stachydrine with Choline, C-419. Cardiotonic agent.

(*S*)-*form*
L-form
[471-87-4]
Alkaloid from *Capparis tomentosa*, *Chrysanthemum* spp., *Citrus* spp., *Galeopsis grandiflora*, *Lagochilus hirtus*, *Medicago sativa* and *Stachys* spp. (Lamiaceae, Capparidaceae, Asteraceae, Rutaceae, Fabaceae). Also from *Aspergillus oryzae*. Systolic depressant. Stachydrine-contg. spp. e.g. *Capparis* spp. are widely used against rheumatism and many other diseases. Mp 116-118° (monohydrate) Mp 235° dec. (anhyd.). $[\alpha]_D$ -40.25 (c, 4 in H_2O). Fairly readily racemised, (±)-form often obt.

Hydrochloride:
Cryst. (EtOH). Mp 222°. $[\alpha]_D^{20}$ -28.1 (c, 4.83 in H_2O).

Et ester: ***Stachydrine ethyl ester***
$C_9H_{18}NO_2^{\oplus}$ 172.247
Present in roots of *Citrus virgata* (Capparidaceae). $[\alpha]_D$ -4 (H_2O). Isol. as periodide.

Et ester, picrate: Mp 101°.

(±)-*form* [50298-93-6]
Mp 235°.

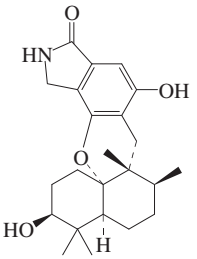
Hydrochloride: Mp 195-196°.

Picrate:
Cryst. (EtOH). Mp 195-196°.

King, H. *et al., J.C.S.*, 1950, 2866, (*isol, struct*)
Cornforth, J.W. *et al., J.C.S.*, 1952, 597; 601 (*isol, props*)
Marian, L. *et al., Phytochemistry*, 1962, **1**, 209 (*biosynth*)
Paudler, W.W. *et al., Chem. Ind. (London)*, 1963, 1693 (*pmr*)
Mandava, N. *et al., Annalen*, 1970, **741**, 167 (*pmr*)
Musich, J.A. *et al., J.O.C.*, 1977, **42**, 139 (*synth*)
Massiot, G. *et al., Alkaloids (Academic Press)*, 1986, **27**, 310 (*bibl, pharmacol*)
Jones, G.P. *et al., Acta Cryst. C*, 1988, **44**, 1669 (*cryst struct*)

Stachyflin S-492

[189185-60-2]



Absolute Configuration

$C_{23}H_{31}NO_4$ 385.502
Prod. by *Stachybotrys* sp. RF-7260. Active against influenza virus A. Needles. $[\alpha]_D$ +138.7 (c, 1 in MeOH). Mp >300°. λ_{max} 216 (ϵ 42700); 257 (ϵ 6600); 302 (ϵ 3000) (MeOH).

3-Ac: ***3-Acetylstachyflin***
[189185-59-9]
$C_{25}H_{33}NO_5$ 427.539
Prod. by *Stachybotrys* sp. RF-7260. Active against influenza virus A.

Needles. $[\alpha]_D^{24}$ +136.4 (c, 1 in MeOH). Mp >300°. λ_{max} 215 (ϵ 45700); 256 (ϵ 7000); 301 (ϵ 3200) (MeOH).

N-*(1-Carboxy-2-methylpropyl), 3-Ac:* ***Antibiotic SQ 02-S-V1***. *SQ 02-S-V1*
$C_{30}H_{41}NO_7$ 527.656
Prod. by *Stachybotrys* sp. RF-7260. Powder. $[\alpha]_D^{24}$ +113.5 (c, 0.34 in MeOH). λ_{max} 218 (ϵ 38500); 262 (ϵ 9200); 300 (ϵ 2900) (MeOH).

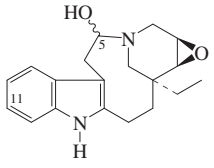
N-*(5-Amino-5-carboxypentyl), 3-Ac:* ***Antibiotic SQ 02-S-L2***. *SQ 02-S-L2*
$C_{31}H_{44}N_2O_7$ 556.698
Prod. by *Stachybotrys* sp. RF-7260. Powder. $[\alpha]_D^{24}$ +96.6 (c, 0.56 in MeOH). λ_{max} 218 (ϵ 36000); 261 (ϵ 7600); 301 (ϵ 2500) (MeOH).

[189185-71-5]

Taishi, T. *et al., Tet. Lett.*, 1998, **39**, 4347-4350 (*synth*)
Minagawa, K. *et al., J. Antibiot.*, 2002, **55**, 155-164; 165-171; 239-248 (*isol, pmr, cmr, activity*)

Stapfinine S-493

[104736-03-0]



Relative Configuration

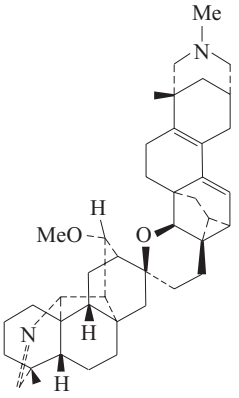
$C_{19}H_{24}N_2O_2$ 312.411
Alkaloid from the leaves of *Ervatamia coronaria* (Apocynaceae). Amorph. $[\alpha]_D$ +25 ($CHCl_3$). λ_{max} 222 (log ϵ 4.58); 275 (log ϵ 3.84); 292 (log ϵ 3.83) (no solvent reported).

11-Hydroxy, 5-ketone: ***Ervatinine***
[99877-65-3]
$C_{19}H_{22}N_2O_3$ 326.394
Alkaloid from the leaves of *Ervatamia coronaria* (Apocynaceae). Amorph. $[\alpha]_D$ +74 ($CHCl_3$). No stereochem. given.

Atta-ur-Rahman, *et al., Phytochemistry*, 1985, **24**, 2473; 1986, **25**, 1781-1782 (*isol, uv, ir, pmr, cmr, ms, struct*)

Staphinine S-494

13-Methoxystaphimine, 9CI
[59588-19-1]



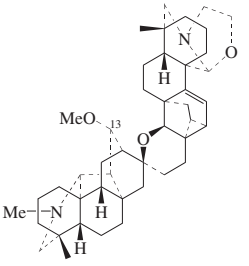
$C_{42}H_{56}N_2O_2$ 620.917
Alkaloid from *Delphinium staphisagria* seeds (Ranunculaceae). Amorph. $[\alpha]_D^{24}$ -57.5 (c, 1.0 in C_6H_6). Extremely sensitive to heat and light in comparison with Staphisine and Staphidine.

Demethoxy: ***Staphimine***
[59588-18-0]
$C_{41}H_{54}N_2O$ 590.89
Alkaloid from *Delphinium staphisagria* seeds(Ranunculaceae). Amorph. $[\alpha]_D$ -58.5 (c, 1.0 in C_6H_6). Extremely sensitive to heat and light.

Pelletier, S.W. *et al., Tet. Lett.*, 1976, 1055 (*uv, ir, pmr, cmr, struct*)

Staphisagnine S-495

13-Methoxystaphisagrine, 9CI
[60723-40-2]



Absolute Configuration

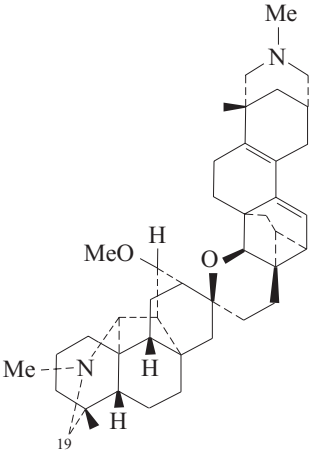
$C_{44}H_{62}N_2O_3$ 666.985
Alkaloid from *Delphinium staphisagria* seeds (Ranunculaceae). Resin. $[\alpha]_D^{25}$ -104.5 (c, 2.0 in C_6H_6).

Demethoxy: ***Staphisagrine***
[1415-71-0]
$C_{43}H_{60}N_2O_2$ 636.959
Alkaloid from *Delphinium staphisagria* seeds (Ranunculaceae). Mp 229-231°. $[\alpha]_D^{25}$ -105.6 (c, 1.4 in C_6H_6).

Pelletier, S.W. *et al., Tet. Lett.*, 1976, 1749 (*isol, ir, pmr, cmr, struct*)

Staphisine S-496

[36576-56-4]



$C_{43}H_{60}N_2O_2$ 636.959
Alkaloid from *Delphinium staphisagria* seeds (Ranunculaceae). Stout needles (Me_2CO). Mp 205° (sinters above 170° and gradually softens to a resin at about 195°). The Staphisine originally isol. (Jacobs, 1941) was shown to be a mixt. of Staphisine and Staphidine.

Methiodide:
Thin plates (EtOH). Mp 285-290° dec.

Demethoxy: ***Staphidine***
[59588-15-7]
$C_{42}H_{58}N_2O$ 606.933
Alkaloid from *Delphinium staphisagria* seeds (Ranunculaceae). Mp 213-216°. $[\alpha]_D^{24}$ -160 (c, 2.0 in C_6H_6).

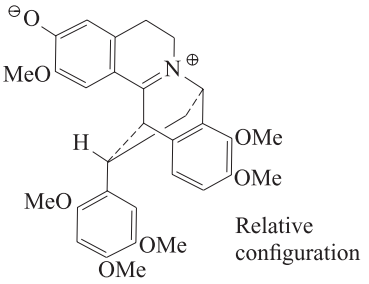
19-Oxo: ***Staphigine***
[59588-13-5]
$C_{43}H_{58}N_2O_3$ 650.943
Alkaloid from *Delphinium staphisagria* seeds (Ranunculaceae). Mp 225-227°. $[\alpha]_D^{25}$ -116 (c, 2.0 in C_6H_6).

19-Oxo, demethoxy: ***Staphirine***
[59588-14-6]
$C_{42}H_{56}N_2O_2$ 620.917
Alkaloid from *Delphinium staphisagria* seeds (Ranunculaceae). Mp 222-225°. $[\alpha]_D^{25}$ -126 (c, 0.5 in C_6H_6).

Jacobs, W.A. *et al., J. Biol. Chem.*, 1941, **141**, 67 (*isol, uv*)
Craig, L.C. *et al., J. Biol. Chem.*, 1944, **152**, 645 (*struct*)
Huebner, C.H. *et al., J. Biol. Chem.*, 1947, **169**, 211 (*struct*)
Pelletier, S.W. *et al., J.A.C.S.*, 1972, **94**, 1754 (*uv, ir, pmr, ms, cryst struct*)
Pelletier, S.W. *et al., J.O.C.*, 1976, **41**, 3042 (*uv, ir, pmr, cmr, struct, derivs*)
Pelletier, S.W. *et al., Tet. Lett.*, 1976, 1055 (*uv, ir, pmr, cmr, ms, struct, Staphidine*)
Pelletier, S.W. *et al., Acta Cryst. B*, 1980, **36**, 3040 (*cryst struct*)

Staudine S-497

[67701-63-7]



Relative configuration

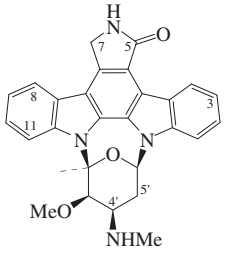
$C_{31}H_{33}NO_7$ 531.604
Alkaloid from *Pachypodanthium staudtii* (Annonaceae). Yellow cryst. Mp 205-206°. Opt. inactive.

Dihydro: Mp 195-196°.

Cavé, A. *et al., J. Nat. Prod.*, 1980, **43**, 103 (*isol, uv, ir, ms, pmr, cmr, cryst struct*)

Staurosporine S-498

AM 2282. CGP 39360. M 193. Antibiotic 230. Antibiotic AM 2282. Antibiotic CGP 39360. Antibiotic M 193
[62996-74-1]



Absolute Configuration

$C_{28}H_{26}N_4O_3$ 466.538
Alkaloid from *Streptomyces staurosporeus*, *Streptomyces* sp. M 193 and the marine actinomycete strain N96C-47. Isol. from *Eudistoma toealensis* and its predator *Pseudoceros* sp. Active against fungi and yeasts. Possesses high hypotensive activity and is a potent platelet aggregation inhibitor. Antiparasitic, nematocide, vasorelaxant, antiamnesic, smooth muscle relaxant, neurotropic, antihyperplastic, endothelin agonist and cell cycle progression inhibitor. Pale yellow plates. Sol. Py; fairly sol. $CHCl_3$, MeOH; poorly sol. butanol, C_6H_6, Me_2CO-EtOAc, hexane. Mp 270° dec. $[\alpha]_D^{25}$ +35 (c, 1 in MeOH). λ_{max} 207 (ϵ 25000); 243 (ϵ 25000); 267 (sh) (ϵ 31800); 292 (ϵ 57200); 322 (sh) (ϵ 14200); 335 (ϵ 14600); 356 (ϵ 10300); 372 (ϵ 11400) (MeOH) (Derep).

▶ LD_{50} (mus, ipr) 6.6 mg/kg (as hydrochloride). KD5084000

4′-N-*Formyl:* **N-*Formylstaurosporine***
[161973-03-1]
$C_{29}H_{26}N_4O_4$ 494.549
From *Streptomyces longisporoflavus* and the marine *Streptomyces* sp. QD518. Cryst. ($EtOAc/CH_2Cl_2$). Mp 221-226°.

4′-N-*Ac:* [120685-33-8]
$C_{30}H_{28}N_4O_4$ 508.576
Prod. by *Saccharothrix aerocolonigenes copiosa* ATCC53856. Protein kinase C inhibitor; antihypertensive; diuretic. Yellow powder. λ_{max} 206 (ϵ 34000); 243 (ϵ 22000); 292 (ϵ 49000); 320 (ϵ 9000); 334 (ϵ 12000); 355 (ϵ 8000); 372 (ϵ 9000) (MeOH).

4′-N-*Benzoyl:* ***Midostaurin, INN, USAN***. N-*Benzoylstaurosporine. CGP 41251. PKC 412*
[120685-11-2]
$C_{35}H_{30}N_4O_4$ 570.646
Selective protein kinase C inhibitor. Antineoplastic agent.

4′-N-*Carbamoyl:* **N-*Carboxamidostaurosporine***. N-*Carbamoylstaurosporine*
$C_{29}H_{27}N_5O_4$ 509.563
Prod. by the marine *Streptomyces* sp. QD518. Pale yellow solid. λ_{max} 243 (log ϵ 3.67); 292 (log ϵ 4.01); 318 (log ϵ 3.43); 333 (log ϵ 3.43); 354 (log ϵ 3.25); 372 (log ϵ 3.3) (MeOH).

4′-N-*Me:* **N-*Methylstaurosporine***
[129623-30-9]
$C_{29}H_{28}N_4O_3$ 480.565
Prod. by *Streptomyces longisporoflavus*. Isol. from *Eudistoma toealensis* and *Pseudoceros* sp. Cryst. (CH_2Cl_2/2-propanol). Mp 133-137°.

4′-N-*De-Me:* ***4′*-N-*Demethylstaurosporine***
[126221-77-0]
$C_{27}H_{24}N_4O_3$ 452.512
Isol. from *Eudistoma toealensis* and *Pseudoceros* sp.

O-*De-Me:* ***De*-O-*methylstaurosporine***. *CGP 58546. Antibiotic CGP 58546*
[161743-35-7]
$C_{27}H_{24}N_4O_3$ 452.512
Prod. by a blocked mutant of *Streptomyces longisporoflavus* and the marine actinomycete strain N96C-47. Isol. from *Eudistoma toealensis* and *Pseudoceros* sp. Inhibitor of protein kinase C. Pale yellow cryst. (EtOAc). Sol. MeOH, $CHCl_3$. Mp 220° dec. $[\alpha]_D^{20}$ +82 (c, 1 in DMSO). λ_{max} 207 (ϵ 25000); 243 (ϵ 25000); 267 (sh) (ϵ 31800); 292 (ϵ 57200); 322 (sh) (ϵ 14200); 335 (ϵ 14600); 356 (ϵ 10300); 372 (ϵ 11400) (MeOH) (Derep).

O-*De-Me, 4′*-N-*de-Me:* ***4′*-N,O-*Didemethylstaurosporine***
[406703-32-0]
$C_{26}H_{22}N_4O_3$ 438.485
Isol. from the flatworm *Pseudoceros* sp. Yellowish amorph. powder. λ_{max} 206 (ϵ 2190); 291 (ϵ 3440); 322 (ϵ 690); 334 (ϵ 760); 355 (ϵ 510); 372 (ϵ 550) (MeOH).

4′-N-*Hydroxy:* [161973-04-2]
[137888-67-6]
$C_{28}H_{26}N_4O_4$ 482.538
Prod. by *Saccharothrix aerocolonigenes copiosa* ATCC53856.

4′-N-*Hydroxy, 4′*-N-*de-Me, 4′*-N-*formyl:*
[161927-20-4]
$C_{28}H_{24}N_4O_5$ 496.521
From *Streptomyces longisporoflavus*. Cryst. (MeCN aq.). Mp 220° dec.

4′-N-*Hydroxy,* O-*de-Me:* [137888-68-7]
$C_{27}H_{24}N_4O_4$ 468.511
Prod. by *Saccharothrix aerocolonigenes copiosa* ATCC53856.

4′-N-*(Acetoxymethoxy):* ***4′*-N-*(Acetoxymethoxy)staurosporine***
[161927-21-5]
$C_{31}H_{30}N_4O_6$ 554.601
From *Streptomyces longisporoflavus*. Cryst. (CH_2Cl_2/propanol). Mp 140-143°.

4′-De(methylamino), 4′α-nitro: ***4′-Demethylamino-4′-nitrostaurosporine***
[161927-19-1]
$C_{27}H_{22}N_4O_5$ 482.495
From *Streptomyces longisporoflavus*. Enzyme inhibitor. Powder (CH_2Cl_2/2-propanol). Mp 237-242°. λ_{max} 233 (ϵ 29400); 244 (sh) (ϵ 28000); 263 (sh) (ϵ 31300); 275 (sh) (ϵ 42000); 289 (ϵ 71000); 319 (sh) (ϵ 13400); 333 (ϵ 17700); 352 (ϵ 12100); 369 (ϵ 13400) (MeOH) (Derep). λ_{max} 209 (ϵ 23000); 230 (ϵ 7800); 263 ; 295 (ϵ 16000); 336 ; 364 (EtOH) (Berdy).

4′-De(methylamino), 4′-hydroxy: 4′-Demethylamino-4-hydroxystaurosporine. ***Antibiotic RK 286C***. *RK 286C*
[126572-73-4]
$C_{27}H_{23}N_3O_4$ 453.496
Prod. by *Streptomyces* sp. RK 286C. Protein kinase C inhibitor; platelet aggregation inhibitor; antiinflammatory; cell cycle progression inhibitor; bleb formn. inhibitor. Pale yellow powder. Sol. EtOAc, DMSO; fairly sol. MeOH; poorly sol. H_2O. Mp 265° dec. $[\alpha]_D^{20}$ +45.3 (c, 0.22 in EtOAc). λ_{max} 207 (ϵ 25000); 243 (ϵ 25000); 267 (sh) (ϵ 31800); 292 (ϵ 57200); 322 (sh) (ϵ 14200); 335 (ϵ 14600); 356 (ϵ 10300); 372 (ϵ 11400) (MeOH) (Derep). λ_{max} 237 (ϵ 30450); 245 (ϵ 30120); 292 (ϵ 69500); 335 (ϵ 16550); 356 (ϵ 13240); 372 (ϵ 14890) (MeOH) (Berdy). λ_{max} 237 ; 245 ; 292 ; 335 ; 356 ; 372 (MeOH/HCl) (Berdy). λ_{max} 237 ; 245 ; 292 ; 335 ; 356 ; 372 (MeOH/NaOH) (Berdy).

4′-De(methylamino), 4′α,5′α-dihydroxy: 4′-Demethylamino-4′,5′-dihydroxystaurosporine. ***Antibiotic MLR 52***. *MLR 52*
[155416-34-5]
$C_{27}H_{23}N_3O_5$ 469.496
Prod. by a *Streptomyces* sp. Inhibitor of protein kinase C. Sol. MeOH. Mp 263-268°. $[\alpha]_D$ +68 (c, 0.09 in MeOH). λ_{max} 206 (ϵ 48500); 234 (ϵ 48500); 286 (ϵ 72100); 317 (ϵ 25000); 332 (ϵ 30000); 351 (ϵ 21500); 368 (ϵ 22600) (MeOH) (Derep).

4′-De(methylamino), 4′,7-dihydroxy:
[137888-70-1]
$C_{27}H_{23}N_3O_5$ 469.496
Prod. by *Saccharothrix aerocolonigenes copiosa* ATCC53856. Enzyme inhibitor. λ_{max} 207 ; 239 ; 292 ; 300 ; 358 ; 375 (MeOH) (Berdy).

4′-De(methylamino), 4′,7-dihydroxy, O-*de-Me:* [137888-71-2]
$C_{26}H_{21}N_3O_5$ 455.469
Prod. by *Saccharothrix aerocolonigenes copiosa* ATCC53856. Enzyme inhibitor. λ_{max} 208 (ϵ 24000); 239 (ϵ 15000); 301 (ϵ 27000); 358 (ϵ 4000); 376 (ϵ 4000) (MeOH) (Berdy).

7-Oxo: ***7-Oxostaurosporine***. *BMY 41950. RK 1409. Antibiotic BMY 41950. Antibiotic RK 1409*
[125035-83-8]
$C_{28}H_{24}N_4O_4$ 480.522
Prod. by *Streptomyces platensis* ssp. *malvinus* and *Streptomyces staurosporeus* ATCC55006. Inhibitor of protein kinase C. Yellow powder. Mp 235° dec. $[\alpha]_D^{20}$ +38.3 (c, 0.06 in $CHCl_3$). λ_{max} 208 (ϵ 19600); 238 (ϵ 26400); 260 (ϵ 13600); 287 (ϵ 16800); 305 (sh) (ϵ 20800); 317 (ϵ 33600); 340 (sh) (ϵ 8800); 410 (ϵ 2400) (MeOH) (Derep).

3-Hydroxy: ***3-Hydroxystaurosporine***
[320384-51-8]
$C_{28}H_{26}N_4O_4$ 482.538
Isol. from *Eudistoma toealensis* and *Pseudoceros* sp.

3-Hydroxy, 4′-N-*Me:* ***3-Hydroxy-4′*-N-*methylstaurosporine***

[399031-46-0]
$C_{29}H_{28}N_4O_4$ 496.565
Isol. from *Eudistoma toealensis* and *Pseudoceros* sp.

3-Hydroxy, 4′-N-*de-Me:* ***3-Hydroxy-4′-N-demethylstaurosporine***
[406703-29-5]
$C_{27}H_{24}N_4O_4$ 468.511
Isol. from *Eudistoma toealensis* and *Pseudoceros* sp. Yellowish amorph. powder. λ_{max} 204 (ϵ 2710); 287 (ϵ 3100); 297 (ϵ 4080); 342 (ϵ 1150); 366 (ϵ 700); 384 (ϵ 700) (MeOH).

3-Hydroxy, O-*de-Me:* ***3-Hydroxy-O-demethylstaurosporine***
[399031-45-9]
$C_{27}H_{24}N_4O_4$ 468.511
Isol. from *Eudistoma toealensis* and *Pseudoceros* sp. Amorph. yellow powder. λ_{max} 237 (ϵ 8350); 251 (ϵ 6600); 270 (ϵ 7120); 297 (ϵ 13380); 342 (ϵ 3790); 366 (ϵ 2400); 384 (ϵ 2420) (MeOH).

5′α-Hydroxy: ***5′-Hydroxystaurosporine***
[308847-74-7]
$C_{28}H_{26}N_4O_4$ 482.538
Prod. by a marine *Micromonospora* sp. Pale yellow powder. Mp > 220° dec. $[\alpha]_D^{25}$ +53 (c, 0.1 in MeOH). λ_{max} 206 ; 242 ; 291 ; 320 ; 334 ; 354 ; 370 (MeOH).

5′α-Hydroxy, N-*Me:* ***5′-Hydroxy-4′-N-methylstaurosporine***
[308847-73-6]
$C_{29}H_{28}N_4O_4$ 496.565
Prod. by a marine *Micromonospora* sp. Pale yellow powder. Mp > 220° dec. $[\alpha]_D^{25}$ +30 (c, 0.11 in $CHCl_3$). λ_{max} 206 ; 242 ; 291 ; 320 ; 334 ; 354 ; 370 (MeOH).

7ξ-Hydroxy: ***7-Hydroxystaurosporine****. UCN 01. Antibiotic UCN 01. NSC 638850*
[112953-11-4]
$C_{28}H_{26}N_4O_4$ 482.538
From *Streptomyces* sp. N-126 and *Streptomyces longisporoflavus* R19. Selective inhibitor of protein kinase C. Cytotoxic. Pale yellow needles. Sol. MeOH, $CHCl_3$, DMSO; poorly sol. H_2O, hexane. Mp 245-250° dec. $[\alpha]_D^{22}$ +132 (c, 0.3 in MeOH). λ_{max} 240 (ϵ 29000); 264 (sh) (ϵ 20000); 274 (sh) (ϵ 21000); 300 (ϵ 55000); 326 (sh) (ϵ 9600); 338 (sh) (ϵ 8300); 358 (ϵ 7500); 374 (ϵ 8500) (MeOH) (Derep). λ_{max} 241 ; 266 ; 280 ; 298 ; 325 ; 356 ; 375 (EtOH) (Berdy).

► LD_{50} (mus, ipr) 30 mg/kg. KC6600010

11-Hydroxy: ***11-Hydroxystaurosporine***
[143682-17-1]
$C_{28}H_{26}N_4O_4$ 482.538
Isol. from the marine tunicate *Eudistoma* sp. Cytotoxic. Inhibitor of protein kinase C. Amorph. $[\alpha]_D$ +10.3 (c, 0.3 in MeOH).

11-Hydroxy, 4′-N-*de-Me:* ***11-Hydroxy-4′-N-demethylstaurosporine***
[272766-45-7]
$C_{27}H_{24}N_4O_4$ 468.511
Isol. from *Eudistoma toealensis*, *Pseudoceros* sp., and from the mollusc *Coriocella nigra*. Amorph. yellow powder. λ_{max} 290 (ϵ 1040); 356 (ϵ 180); 373 (ϵ 180) (MeOH).

3,11-Dihydroxy: ***3,11-Dihydroxystaurosporine***
[143682-18-2]
$C_{28}H_{26}N_4O_5$ 498.537
Isol. from *Eudistoma* sp. and the mollusc *Coriocella nigra*. Cytotoxic. Amorph.

7ξ-Methoxy, 4′-N-*hydroxy:* [137888-69-8]
$C_{29}H_{28}N_4O_5$ 512.564
Prod. by *Saccharothrix aerocolonigenes copiosa* ATCC53856.

10-Methoxy: ***10-Methoxystaurosporine****. Antibiotic TAN 999. TAN 999*
[124843-68-1]
$C_{29}H_{28}N_4O_4$ 496.565
From *Nocardiopsis dassonvillei*. Possesses macrophage-activating props. Pale yellow cryst. + $^1/_2H_2O$. Sol. MeOH; poorly sol. H_2O. Mp 221° dec. $[\alpha]_D^{24}$ +42 (c, 0.5 in DMF). λ_{max} 245 (ϵ 31200); 296 (ϵ 60300); 341 (ϵ 19500); 352 (sh) (ϵ 16200); 368 (ϵ 11000) (MeOH) (Derep).

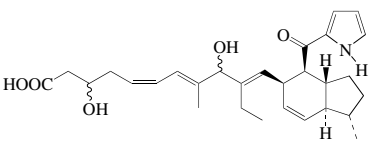
3′-Epimer, 4′-de(methylamino), 4′-hydroxy: ***4′-Demethylamino-4′-hydroxy-3′-epistaurosporine****. Antibiotic RK 1409B. RK 1409B*
[145212-39-1]
$C_{27}H_{23}N_3O_4$ 453.496
Prod. by *Streptomyces platensis* ssp. *malvinus*. Inhibitor of protein kinase C; antiinflammatory; cell cycle progression inhibitor. Pale yellow powder. Sol. DMSO; fairly sol. MeOH, EtOAc, $CHCl_3$, Me_2CO; poorly sol. H_2O, hexane. Mp 260° dec. $[\alpha]_D^{22}$ +147 (c, 0.2 in DMSO). λ_{max} 203 (ϵ 37870); 245 (ϵ 25370); 293 (ϵ 58710); 336 (ϵ 13140); 357 (ϵ 9970); 374 (ϵ 10870) (MeOH) (Berdy).

7-Epimer, 7-hydroxy: ***Antibiotic UCN 02****. UCN 02*
[121569-61-7]
$C_{28}H_{26}N_4O_4$ 482.538
From *Streptomyces* sp. N-126. Cytotoxic, protein kinase C inhibitor. Pale yellow needles. Sol. $CHCl_3$, DMSO, MeOH; poorly sol. H_2O. Mp 245-250° dec. $[\alpha]_D^{22}$ -38.6 (c, 0.35 in MeOH). λ_{max} 240 (ϵ 29000); 264 (sh) (ϵ 20000); 274 (sh) (ϵ 21000); 300 (ϵ 55000); 326 (sh) (ϵ 9600); 338 (sh) (ϵ 8300); 358 (ϵ 7500); 374 (ϵ 8500) (MeOH) (Derep).

Omura, S. *et al., J. Antibiot.*, 1977, **30**, 275-282 (*isol, ms, uv, ir, pmr*)
Cordell, G.A. *et al., Alkaloids (Academic Press)*, 1981, **20**, 4-5 (*rev, tox*)
Furusaki, A. *et al., Bull. Chem. Soc. Jpn.*, 1982, **55**, 3681-3685 (*cryst struct*)
Weinreb, S.M. *et al., Heterocycles*, 1984, **21**, 309-324 (*synth*)
Oka, S. *et al., Agric. Biol. Chem.*, 1986, **50**, 2723-2727 (*isol, props*)
Eur. Pat., 1988, (*(Ciba-Geigy)*)296 110; *CA*, **111**, 96977h (*synth, pharmacol*)
Meyer, T. *et al., Int. J. Cancer*, 1989, **43**, 851-856 (*Midostaurin, pharmacol*)
Takahashi, I. *et al., J. Antibiot.*, 1989, **42**, 564-570; 571-576 (*UCN01, 02*)
Tanida, S. *et al., J. Antibiot.*, 1989, **42**, 1619-1630 (*TAN 999*)
Osada, H. *et al., J. Antibiot.*, 1990, **43**, 168-173 (*RK 286C*)
Pat. Coop. Treaty (WIPO), 1991, 9 034; *CA*, **116**, 39768v (*Saccharothrix aerocolonigenes copsia constits*)
Tsuboi, S. *et al., Tetrahedron*, 1991, **47**, 3565-3574 (*TAN 999, cmr*)
Krause, K.H. *et al., Eur. J. Pharmacol., Mol. Pharmacol.*, 1992, **227**, 221-224 (*Midostaurin, pharmacol*)
Osada, H. *et al., J. Antibiot.*, 1992, **45**, 189-194; 195-198 (*7-Oxostaurosporine*)
Koshino, H. *et al., J. Antibiot.*, 1992, **45**, 1428-1432 (*RK 1409B*)
Kinnel, R.B. *et al., J.O.C.*, 1992, **57**, 6327-6329 (*11-Hydroxystaurosporine, 3,11-Dihydroxystaurosporine*)
Caravatti, G. *et al., Bioorg. Med. Chem. Lett.*, 1994, **4**, 399-404 (*Midostaurin, synth, pharmacol*)
McAlpine, J.B. *et al., J. Antibiot.*, 1994, **47**, 281-288 (*MLR 52*)
Funato, N. *et al., Tet. Lett.*, 1994, **35**, 1251-1254 (*cryst struct, abs config*)
Sedlak, J. *et al., Anti-Cancer Drugs*, 1995, **6**, 70-76 (*Midostaurin, pharmacol*)
Cai, Y. *et al., J. Antibiot.*, 1995, **48**, 143-148 (*Demethylaminonitrostaurosporine, Acetoxymethoxystaurosporine, N-Formylstaurosporine*)
Hoehn, P. *et al., J. Antibiot.*, 1995, **48**, 300-305 (*De-O-methylstaurosporine*)
Omura, S. *et al., J. Antibiot.*, 1995, **48**, 535-548 (*rev*)
Link, J.T. *et al., J.A.C.S.*, 1995, **117**, 552-553 (*synth*)
Begemann, M. *et al., Clin. Cancer Res.*, 1996, **2**, 1017-1030 (*Midostaurin, pharmacol*)
Cai, Y. *et al., J. Antibiot.*, 1996, **49**, 1060-1062 (*N-Methylstaurosporine*)
Yang, S.W. *et al., J. Nat. Prod.*, 1996, **59**, 828-833; 1997, **60**, 236-241 (*biosynth, ms*)
Wood, J.L. *et al., J.A.C.S.*, 1996, **118**, 10656-10657; 1997, **119**, 9652-9661 (*synth*)
Wood, J.L. *et al., Tet. Lett.*, 1996, **37**, 7335-7338 (*synth, RK 286C*)
Beltran, P.J. *et al., Biochem. Pharmacol.*, 1997, **53**, 245-247 (*Midostaurin, pharmacol*)
Weidner, S. *et al., J. Antibiot.*, 1998, **51**, 679-682 (*biosynth*)
Schupp, P. *et al., J. Nat. Prod.*, 1999, **62**, 959-962 (*isol, pmr, cmr*)
Contrell, C.L. *et al., Nat. Prod. Lett.*, 1999, **14**, 39-46 (*Coriocella nigra constits*)
Williams, D.E. *et al., Tet. Lett.*, 1999, **40**, 7171-7174 (*marine strain N96C-47, isol*)
Hernandez, L.M.C. *et al., J. Antibiot.*, 2000, **53**, 895-902 (*5′-Hydroxystaurosporine, 5′-Hydroxy-N-methylstaurosporine*)
Cantrell, C.L. *et al., Nat. Prod. Lett.*, 2000, **14**, 39-46 (*11-Hydroxy-4′-N-demethylstaurosporine*)
Schupp, P. *et al., Cancer Lett. (Shannon, Irel.)*, 2001, **174**, 165-172; 2003, **190**, 119 (*Eudistoma, Pseudoceros, isol*)
Zaugg, K. *et al., Cancer Res.*, 2001, **61**, 732-738 (*Midostaurin, pharmacol*)
Schupp, P. *et al., J. Nat. Prod.*, 2002, **65**, 295-298 (*N,O-Didemethylstaurosporine, 3-Hydroxy-N-demethylstaurosporine, 3-Hydroxy-N-methylstaurosporine*)
Wu, S.J. *et al., J. Antibiot.*, 2006, **59**, 331-337 (*marine strain QD518, isol*)

Stawamycin S-499

[167568-90-3 (Na salt)]

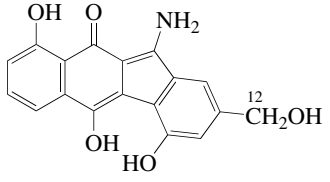


$C_{29}H_{39}NO_5$ 481.631
Prod. by *Streptomyces* sp. Inhibitor of Epstein-Barr virus transcription factor. Amorph. powder (as Na salt). Sol. MeOH; poorly sol. H_2O. $[\alpha]_D$ +179 (c, 0.3 in MeOH) (Na salt). Related to Indanomycin, I-64. λ_{max} 206 (ϵ 13000); 244 (ϵ 12000); 289 (ϵ 25000) (MeOH).

Miao, S. *et al., Tet. Lett.*, 1995, **36**, 5699-5702 (*isol, uv, pmr, cmr*)

Stealthin A S-500

*11-Amino-4,5,9-trihydroxy-2-(hydroxymethyl)-10*H*-benzo[b]fluoren-10-one, 9CI. Antibiotic CA 39A. CA 39A*
[146474-93-3]



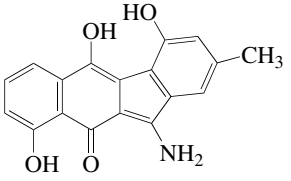
$C_{18}H_{13}NO_5$ 323.304
Prod. by *Streptomyces viridochromogenes*. Free radical scavenger. Haemolysis inhibitor. Antioxidant. Red powder. Unstable in light. λ_{max} 274 (ϵ 37600); 470 (sh) (ϵ 7500); 504 (ϵ 11600); 538 (ϵ 13900) (MeOH). λ_{max} 269 (ϵ 36400); 275 (ϵ 37600); 330 (ϵ 7000); 430 (ϵ 5800); 505 (ϵ 8700); 538 (ϵ 11000) (MeOH/HCl) (Berdy). λ_{max} 268 (ϵ 29500); 275 (ϵ 30100); 357 (ϵ 11600); 583 (ϵ 12100) (MeOH/NaOH) (Berdy).

12-Aldehyde: ***Stealthin B****. Antibiotic CA 39B. CA 39B*
[146474-94-4]
$C_{18}H_{11}NO_5$ 321.289
Prod. by *Streptomyces viridochromogenes*. Free radical scavenger. Haemolysis inhibitor. Antioxidant. Purple powder. Unstable in light. λ_{max} 286 (ϵ 21900); 315 (ϵ 19200); 415 (ϵ 6300); 550 (sh) (ϵ 11600); 585 (ϵ 13900) (MeOH). λ_{max} 268 (ϵ 34000); 275 (ϵ 35300); 330 (ϵ 5500); 345 (ϵ 8100); 415 (ϵ 4900); 437 (ϵ 6700); 503 (ϵ 9800); 535 (ϵ 12500) (MeOH/HCl) (Berdy).

Shin-ya, K. *et al., Tet. Lett.*, 1992, **33**, 7025-7028 (*isol, uv, ir, pmr, cmr*)
Koyama, H. *et al., J.C.S. Perkin 1*, 1998, 203-210 (*synth*)

Stealthin C S-501

*11-Amino-4,5,9-trihydroxy-2-methyl-10*H*-benzo[b]fluoren-10-one, 9CI*
[185253-25-2]

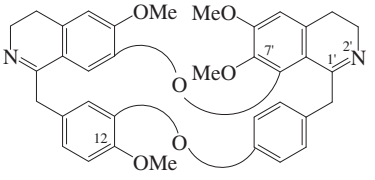


$C_{18}H_{13}NO_4$ 307.305
Prod. by *Streptomyces murayamaensis*. Biosynthetic intermed. of Kinamycin D. λ_{max} 214 ; 276 ; 340 ; 506 ; 540 (MeCN/AcOH aq.).

Gould, S.J. *et al., J.O.C.*, 1997, **62**, 320-324 (*isol, uv, ir, struct*)
Koyama, H. *et al., J.C.S. Perkin 1*, 1998, 203-210 (*synth*)

Stebisimine S-502

N-*Nor-1,2-dehydroepistephanine*
[5692-04-6]



$C_{36}H_{34}N_2O_6$ 590.674
Alkaloid from *Stephania japonica*, *Anisocycla grandidieri* and *Triclisia gilletii* (Menispermaceae). Prisms (MeOH). Mp 233-235° (227-229°). $[\alpha]_D$ 0 (c, 1.26 in $CHCl_3$). λ_{max} 238 (ϵ 51900); 279 (ϵ 24200); 308 (ϵ 12500) (EtOH) (Berdy).

Hydrochloride (1:2): Mp 290° dec.

Dipicrate: Mp 254-256°.

Methiodide (1:2): Mp 290° (gradual dec.).

7′-O-*De-Me:* ***7′-O-Demethylstebisimine***
[916480-88-1]
$C_{35}H_{32}N_2O_6$ 576.648
Alkaloid from the roots of *Cocculus laurifolius*. Amorph. solid.

12-O-*De-Me:* ***Puertogaline B***
$C_{35}H_{32}N_2O_6$ 576.648
Alkaloid from the stem bark of *Guatteria boliviana*. Amorph. λ_{max} 205 (log ϵ 4.64); 235 (log ϵ 4.5); 278 (log ϵ 4.17) (EtOH).

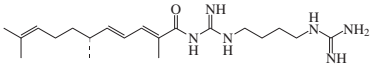
7′,12-Di-O-*de-Me:* ***Puertogaline A***
$C_{34}H_{30}N_2O_6$ 562.621
Alkaloid from the stem bark of *Guatteria boliviana*. Amorph. λ_{max} 204 (log ϵ 4.64); 235 (sh) (log ϵ 4.45); 278 (log ϵ 4.09) (EtOH).

1′,2′-Dihydro: see Coclobine, C-551

α,α′-Dioxo, 7′-O-*de-Me:* ***7′-O-Demethyl-α,α′-dioxostebisimine***
[916480-87-0]
$C_{35}H_{28}N_2O_8$ 604.615
Alkaloid from the roots of *Cocculus laurifolius*. Amorph. solid.

Barton, D.H.R. *et al., J.C.S.(C)*, 1966, 2313 (*isol, ms, ir, uv, pmr, struct*)
Kametani, T. *et al., Chem. Comm.*, 1967, 1212 (*synth, uv, ir, pmr*)
Schlittler, E. *et al., Helv. Chim. Acta*, 1972, **55**, 2061 (*isol*)
Baldas, J. *et al., J.C.S. Perkin 1*, 1972, 592 (*ms*)
Tackie, A.N. *et al., J. Nat. Prod.*, 1974, **37**, 1 (*isol, uv, ir, pmr, ms*)
Owusu, P.D. *et al., J. Nat. Prod.*, 1981, **44**, 61 (*isol*)
Matsui, M. *et al., J. Nat. Prod.*, 1982, **45**, 497 (*isol, uv, ir, pmr, ms*)
Nakova, E. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1985, **21**, 83-87; 88-91 (*synth*)
Mahiou, V. *et al., Phytochemistry*, 2000, **54**, 709-716 (*Puertogalines A,B*)
Zhang, H. *et al., Nat. Prod. Res.*, 2006, **20**, 553-557 (*7′-Demethylstebisimines*)

Stellettadine A S-503



Absolute Configuration

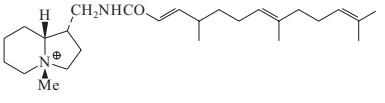
$C_{20}H_{36}N_6O$ 376.544

(R)-form [179732-83-3]
Alkaloid from the marine sponge *Stelletta* sp. Induces larval metamorphosis in ascidians, RNA cleaving agent. $[\alpha]_D^{24}$ -42.7 (c, 0.09 in MeOH). $[\alpha]_D^{24}$ -32.8 (c, 1.00 in MeOH). λ_{max} 285 (ϵ 11100) (MeOH).

Tsukamoto, S. *et al., Tet. Lett.*, 1996, **37**, 5555-5556 (*isol, uv, ir, pmr, cmr, struct*)
Nozawa, D. *et al., Bioorg. Med. Chem. Lett.*, 2001, **11**, 1481-1483 (*synth, abs config*)
Takikawa, H. *et al., J.C.S. Perkin 1*, 2001, 657-661 (*synth, abs config*)

Stellettamide A S-504

Octahydro-4-methyl-1-[[(4,8,12-trimethyl-1-oxo-2,7,11-tridecatrienyl)amino]methyl]indolizinium(1+), 9CI
[129744-24-7]
[129744-25-8]



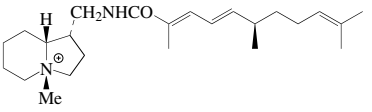
$C_{26}H_{45}N_2O^{\oplus}$ 401.654
Alkaloid from the marine sponge *Stelletta* sp. Antifungal agent. Cytotoxic. Semisolid (as phosphate). $[\alpha]_D$ +23.1 (c, 0.3 in EtOH) (phosphate).

Δ3′-Isomer: ***Stellettamide C***
$C_{26}H_{45}N_2O^{\oplus}$ 401.654
Alkaloid from *Stelletta* sp. Antibacterial agent. Amorph. solid. Counterion not specified.

Hirota, H. *et al., Tet. Lett.*, 1990, **31**, 4163-4164 (*isol, ir, pmr, cmr*)
Whitlock, G.A. *et al., J.O.C.*, 1997, **62**, 7916-7917 (*synth, enantiomer*)
Matsunaga, S. *et al., J. Nat. Prod.*, 1999, **62**, 1202-1204 (*Stellettamide C*)
Whitlock, G.A. *et al., Helv. Chim. Acta*, 2000, **83**, 2007-2022 (*synth*)
Yamazaki, N. *et al., Heterocycles*, 2008, **75**, 285-290 (*synth*)

Stellettamide B S-505

[189580-08-3]



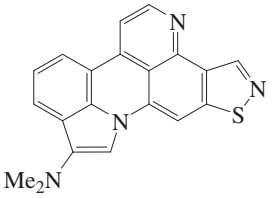
$C_{24}H_{41}N_2O^{\oplus}$ 373.601

Alkaloid from the sponge *Stelletta* sp. Antifungal agent. Yellow gum (as chloride). $[\alpha]_D^{25}$ -24.2 (c, 0.5 in $CHCl_3$) (chloride). CAS no. refers to chloride.

Shin, J. *et al., J. Nat. Prod.*, 1997, **60**, 611-613 (*isol, uv, ir, pmr, cmr*)
Yamazaki, N. *et al., Org. Lett.*, 2001, **3**, 193-196 (*synth*)

Stellettamine S-506

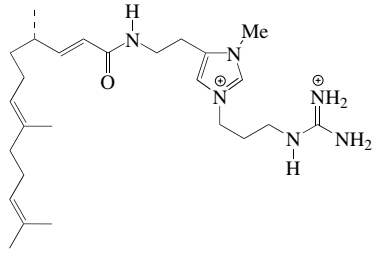
[139427-07-9]



$C_{20}H_{14}N_4S$ 342.423
Alkaloid from the marine sponge *Stelletta* sp. Dark brown cryst. ($CHCl_3$). Mp 280-282°. λ_{max} 205 (ϵ 15700); 260 (ϵ 9400); 309 (ϵ 10800); 364 (ϵ 3760); 391 (ϵ 3420); 460 (ϵ 1370) (MeOH) (Derep).

Gunawardana, G.P. *et al., J.O.C.*, 1992, **57**, 1523 (*isol, ir, uv, pmr, cmr, cryst struct*)

Stellettazole A S-507

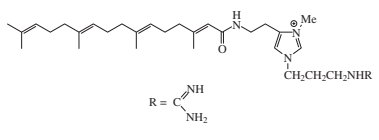


$C_{26}H_{46}N_6O^{2\oplus}$ 458.689
Alkaloid from a marine sponge, *Stelletta* sp. Antibacterial agent. Also inhibits Ca/calmodulin-dependent phosphodiesterase. $[\alpha]_D^{24}$ -35 (c, 0.08 in MeOH). Counterion not specified.

Tsukamoto, S. *et al., Tet. Lett.*, 1999, **40**, 737-738 (*isol, pmr, cmr*)

Stellettazole B S-508

[247086-88-0]



$C_{30}H_{51}N_6O^{\oplus}$ 511.773
The +ve charge is delocalised over the imidazole N's. Alkaloid from the sponge *Stelletta* sp. Antibacterial agent. Amorph. solid. Counterion not specified.

Matsunaga, S. *et al., J. Nat. Prod.*, 1999, **62**, 1202-1204 (*isol, pmr, cmr*)

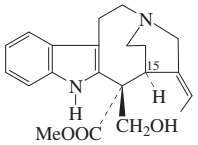
Stellettazole C S-509

[247086-89-1]
As Stellettazole B, S-508 with
R = H
$C_{29}H_{49}N_4O^{\oplus}$ 469.732
Alkaloid from the sponge *Stelletta* sp. Antibacterial agent. Amorph. solid. Counterion not specified.

Matsunaga, S. *et al., J. Nat. Prod.*, 1999, **62**, 1202-1204 (*isol, pmr, cmr*)

Stemmadenine S-510

Methyl 2,7,19,20-tetrahydro-17-hydroxy-3,7-secocuran-16-carboxylate, 9CI
[10012-73-4]



Absolute Configuration

$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from *Stemmadenia donnell-smithii*, *Pandaca minutiflora* leaves, *Diplorhynchus condylocarpon*, *Craspidospermum verticillatum*, *Rhazya stricta* and *Tabernaemontana dichotoma* (Apocynaceae). Shows hypotensive and weak muscle relaxant activity. Active against gram-positive bacteria and fungi. Mp 199-200° (189-191°) dec. $[\alpha]_D^{25}$ +324 (Py).

▶ WI8100000

Hydrochloride: Mp 215-216° dec.

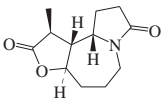
15-Epimer: ***15-Epistemmadenine***. *15β-Stemmadenine*
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from the fruit of *Tabernaemontana heyneana*. Yellow powder. Mp 160°. $[\alpha]_D^{25}$ +247 (c, 0.09 in EtOH). λ_{max} 220 (log ϵ 1.01); 280 (log ϵ 0.24) (MeOH).

De(hydroxymethyl), stereoisomer: ***Desformylstemmadenine***. *Deformylstemmedenine*
[55785-32-5]
$C_{20}H_{24}N_2O_2$ 324.422
Alkaloid from *Craspidospermum verticillatum* var. *petiolare* (Apocynaceae). Cryst. (Me_2CO). Mp 218°. $[\alpha]_D^{20}$ +112 (c, 0.5 in Py). The trivial name is misleading. Stereochem. not detd.

Walls, F. *et al., Tetrahedron*, 1958, **2**, 173 (*isol, uv, ir*)
Stauffacher, D. *et al., Helv. Chim. Acta*, 1961, **44**, 2006 (*isol, ir, uv*)
Sandoval, A. *et al., Tet. Lett.*, 1962, 409, (*pmr*)
Kan-Fan, C. *et al., Bull. Soc. Chim. Fr.*, 1974, **12**, 2839 (*isol, ms, deriv*)
Kutney, J.P. *et al., Heterocycles*, 1975, **3**, 197 (*abs config, pmr*)
Petitfrere, N. *et al., Phytochemistry*, 1975, **14**, 1648 (*isol*)
Ohiri, F.C. *et al., Planta Med.*, 1983, **49**, 17 (*isol*)
Perera, P. *et al., J. Ethnopharmacol.*, 1985, **13**, 165 (*pharmacol*)
Mariee, N.K. *et al., J. Nat. Prod.*, 1988, **51**, 186-187 (*isol, activity*)
Achenbach, H. *et al., Phytochemistry*, 1997, **45**, 325 (*cmr*)
Grover, R.K. *et al., Magn. Reson. Chem.*, 2002, **40**, 474-476 (*15-Epistemmadenine*)

Stemoamide S-511

[142905-25-7]

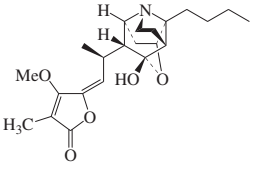


Absolute Configuration

$C_{12}H_{17}NO_3$ 223.271
Alkaloid from roots of *Stemona tuberosa* (Stemonaceae). Insecticidal agent. Amorph. (natural); Cryst. (EtOAc) (synthetic). Mp 190-191° dec Mp 187-188° (synthetic). $[\alpha]_D^{21.6}$ -28.1 (c, 0.125 in MeOH) (natural). $[\alpha]_D^{30}$ -219.3 (c, 0.5 in MeOH) (synthetic) (-181).

Lin, W.-H. *et al., J. Nat. Prod.*, 1992, **55**, 571-576 (*isol, pmr, cmr, ms*)
Williams, D.R. *et al., Tet. Lett.*, 1994, **35**, 6417 (*synth, abs config*)
Kohno, Y. *et al., Bull. Chem. Soc. Jpn.*, 1996, **69**, 2063 (*synth*)
Kinoshita, A. *et al., Heterocycles*, 1997, **46**, 287-300 (*synth*)
Jacobi, P.A. *et al., J.A.C.S.*, 2000, **122**, 4295-4303 (*synth*)
Olivo, H.F. *et al., J.O.C.*, 2006, **71**, 3287-3290 (*synth*)
Torssell, S. *et al., J.O.C.*, 2007, **72**, 4246-4249 (*synth*)

Stemoburkilline S-512



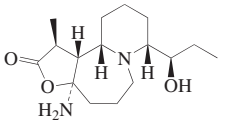
Absolute Configuration

$C_{22}H_{31}NO_5$ 389.491
Alkaloid from the roots of *Stemona burkillii*. Yellow-brown gum. $[\alpha]_D^{26}$ +37.5 (c, 0.28 in $CHCl_3$).

Mungkornasawakul, P. *et al., J. Nat. Prod.*, 2004, **67**, 1740-1743 (*isol, pmr, cmr*)

Stemocochinamine S-513

[1003567-55-2]



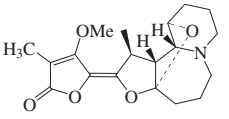
Absolute Configuration

$C_{16}H_{28}N_2O_3$ 296.409
Alkaloid from the roots of *Stemona cochinchinensis*. Needles (hexane/Me_2CO). Racemic.

Lin, L.-G. *et al., Helv. Chim. Acta*, 2007, **90**, 2167-2175 (*isol, pmr, cmr, ms*)

Stemocurtisine S-514

Pyridostemine



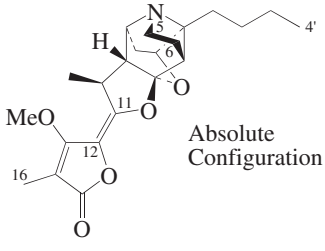
Relative Configuration

$C_{19}H_{25}NO_5$ 347.41
Alkaloid from the roots of *Stemona curtisii* and an unidentified *Stemona* sp. Prisms (EtOAc/Et_2O). Mp 149-151°. $[\alpha]_D^{25}$ +334 (c, 0.66 in $CHCl_3$). $[\alpha]_D^{20}$ +473 (c, 0.4 in MeOH).

Mungkornasawakul, P. *et al., J. Nat. Prod.*, 2003, **66**, 980-982 (*isol, pmr, cmr, cryst struct*)
Kaltenegger, E. *et al., Phytochemistry*, 2003, **63**, 803-816 (*isol, pmr, cmr*)
Pyne, S.G. *et al., Maejo Int. J. Sci. Technol.*, 2007, **1**, 157-165 (*rev, biosynth*)

Stemofoline S-515

[29881-57-0]



Absolute Configuration

$C_{22}H_{29}NO_5$ 387.475
Alkaloid from the stems and leaves of *Stemona japonica* (Stemonaceae). Has insecticidal props. Mp 87-89°. $[\alpha]_D$ +273 (MeOH). λ_{max} 295 (MeOH).

Hydrobromide:
Cryst. + $1H_2O$. Mp 224° dec.

11β,12α-Dihydro: ***11,12-Dihydrostemofoline***
$C_{22}H_{31}NO_5$ 389.491
Alkaloid from the roots of *Stemona burkillii*. Yellow-brown gum. $[\alpha]_D^{26}$ +38.9 (c, 0.35 in $CHCl_3$).

*1′,2′-Didehydro(*E-*):* ***1′,2′-Didehydrostemofoline***. *Asparagamine A*
[156798-15-1]
$C_{22}H_{27}NO_5$ 385.459
Alkaloid from the roots of *Stemona collinsae* and *Asparagus racemosus*. Insecticide and antitumour agent. Cryst. (MeOH). Mp 180° (172-174°). $[\alpha]_D^{18}$ +230 (c, 0.74 in MeOH) (+202.5). Original source of *A. racemosus* now suspected of being *S. collinsae* (2004). λ_{max} 294 (log ϵ 4.41) (MeOH).

*1′,2′-Didehydro(*E-*),* N-*oxide:* ***1′,2′-Didehydrostemofoline* N-*oxide***
$C_{22}H_{27}NO_6$ 401.458
Alkaloid from an unidentified *Stemona* sp. Yellow-brown gum. $[\alpha]_D^{25}$ +99 (c, 0.28 in $CHCl_3$).

*2′*R-*Hydroxy:* ***2′*R-*Hydroxystemofoline***
$C_{22}H_{29}NO_6$ 403.474
Alkaloid from an unidentified *Stemona* sp. Yellow-brown gum. $[\alpha]_D^{22}$ +168 (c, 0.29 in $CHCl_3$).

*2′*S-*Hydroxy:* ***2′*S-*Hydroxystemofoline***
$C_{22}H_{29}NO_6$ 403.474
Alkaloid from *Stemona collinsae*. $[\alpha]_D^{21}$ +249 (c, 0.33 in $CHCl_3$).

*3′*R-*Hydroxy, 1′,2′-didehydro:* ***(3′*R*)-Stemofolenol***
$C_{22}H_{27}NO_6$ 401.458
Alkaloid from an unidentified *Stemona* sp.

*3′*S-*Hydroxy:* ***3′*S-*Hydroxystemofoline***
[947697-38-3]
$C_{22}H_{29}NO_6$ 403.474
Alkaloid from a *Stemona* sp.

*3′*S-*Hydroxy, 1′,2′-didehydro:* ***(3′*S*)-Stemofolenol***
$C_{22}H_{27}NO_6$ 401.458
Alkaloid from an unidentified *Stemona* sp.

4′-Hydroxy: ***4′-Hydroxystemofoline***. *Oxystemofoline*
[139750-70-2]
$C_{22}H_{29}NO_6$ 403.474
Minor alkaloid from roots of *Stemona parviflora*. Drawing error in Chem. Abs.

*6*S-*Hydroxy:* ***6*S-*Hydroxystemofoline***
$C_{22}H_{29}NO_6$ 403.474
Alkaloid from *Stemona japonica*. Amorph. yellow powder. $[\alpha]_D$ +490 (c, 0.05 in MeOH). λ_{max} 295 (log ϵ 4.7) (MeOH).

16-Hydroxy: ***16-Hydroxystemofoline***
$C_{22}H_{29}NO_6$ 403.474
Alkaloid from *Stemona japonica*. Amorph. yellow powder. $[\alpha]_D^{20}$ +286.7 (c, 0.14 in MeOH). λ_{max} 296 (log ϵ 4.39) (MeOH).

4′-Methoxy: ***4′-Methoxystemofoline***
[139768-07-3]
$C_{23}H_{31}NO_6$ 417.501
Minor alkaloid from roots of *Stemona parviflora*.

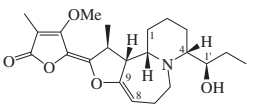
5-O-*β*-D-*Glucopyranosyloxy, 1′,2′-didehydro(*E-*):* ***Stemofolinoside***
$C_{28}H_{37}NO_{11}$ 563.6
Alkaloid from an unidentified *Stemona* sp. Yellow-brown solid. $[\alpha]_D^{22}$ +138 (c, 0.16 in MeOH).

*(*E*)-Isomer:* ***Isostemofoline***
[247089-64-1]
$C_{22}H_{29}NO_5$ 387.475
Alkaloid from *Stemona* spp.

*(*E*)-Isomer, 1′,2′-didehydro(*E-*):* ***1′,2′-Didehydroisostemofoline***
$C_{22}H_{27}NO_5$ 385.459
Alkaloid from *Stemona collinsae*. Insecticide. Glassy resin. $[\alpha]_D^{18}$ +130 (c, 0.01 in MeOH). λ_{max} 295 (log ϵ 4.34) (MeOH).

Irie, H. *et al., Chem. Comm.*, 1970, 1066 (*uv, ir, pmr, cryst struct, abs config*)
Lin, W. *et al., Huaxue Xuebao*, 1991, **49**, 1034; *CA*, **116**, 148189c (*4′-Hydroxystemofoline, 4′-Methoxystemofoline*)
Sekine, T. *et al., J.C.S. Perkin 1*, 1995, 391 (*Asparagamine A, cryst struct*)
Kende, A.S. *et al., J.A.C.S.*, 1999, **121**, 7431-7432 (*Isostemofoline, synth*)
Jiwajinda, S. *et al., Phytochemistry*, 2001, **56**, 693-695 (*Didehydrostemofoline, Didehydroisostemofoline*)
Brem, B. *et al., J. Agric. Food Chem.*, 2002, **50**, 6383-6388 (*cmr, 2′S-Hydroxystemofoline*)
Seger, C. *et al., Chem. Biodiversity*, 2004, **1**, 265-279 (*isol, pmr, cmr, biosynth, cryst struct*)
Mungkornasawakul, P. *et al., J. Nat. Prod.*, 2004, **67**, 1740-1743 (*11,12-Dihydrostemofoline*)
Sastraruji, T. *et al., J. Nat. Prod.*, 2005, **68**, 1763-1767 (*2′-Hydroxystemofolines, Stemofolenols, Stemofolinoside, 1′,2′-Didehydrostemofoline N-oxide*)
Sastraruji, T. *et al., Nat. Prod. Commun.*, 2006, **1**, 813-818 (*3′S-Hydroxystemofoline*)
Greger, H. *et al., Planta Med.*, 2006, **72**, 99-113 (*rev, occur, activity*)
Tang, C.-P. *et al., J. Nat. Prod.*, 2008, **71**, 112-116 (*6-Hydroxystemofoline, 16-Hydroxystemofoline*)

Stemokerrin S-516



Absolute Configuration

$C_{22}H_{31}NO_5$ 389.491
Alkaloid from the roots of *Stemona kerrii*. Plates (CH_2Cl_2/hexane). Mp 138-141°. $[\alpha]_D^{20}$ +136 (c, 0.3 in MeOH). λ_{max} 216 ; 306 (MeOH aq.).

N-*Oxide:* ***Stemokerrin* N-*oxide***
[948994-13-6]
$C_{22}H_{31}NO_6$ 405.49
Alkaloid from the roots of *Stemona saxorum*. Pale yellow powder. $[\alpha]_D^{22}$ +118 (c, 0.24 in MeOH). λ_{max} 212 (log ϵ 3.89); 306 (log ϵ 4.3) (MeOH).

1′-Me ether, N-*oxide:* ***1′-O-Methylstemokerrin* N-*oxide***. *Methoxystemokerrin* N-*oxide*
$C_{23}H_{33}NO_6$ 419.517
Alkaloid from the roots of *Stemona kerrii*. Amorph. $[\alpha]_D^{20}$ +255 (c, 0.2 in MeOH). λ_{max} 216 ; 308 (MeOH aq.).

8,9-Dihydro, 1α,9α-epoxide: ***Oxystemokerrin***
$C_{22}H_{31}NO_6$ 405.49
Alkaloid from the roots of *Stemona curtisii* and *Stemona kerrii*. Amorph. $[\alpha]_D^{20}$ +289 (c, 0.4 in MeOH). λ_{max} 298 (MeOH aq.).

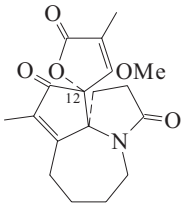
8,9-Dihydro, 1α,9α-epoxide, N-*oxide:* ***Oxystemokerrin* N-*oxide***
$C_{22}H_{31}NO_7$ 421.489
Alkaloid from the roots of *Stemona kerrii*. Amorph. $[\alpha]_D^{20}$ +247 (c, 0.3 in MeOH). λ_{max} 296 (MeOH aq.).

1′,4-Diepimer, 8,9-dihydro, 1α,9α-epoxide: ***Stemocurtisinol***
$C_{22}H_{31}NO_6$ 405.49
Alkaloid from the roots of *Stemona curtisii*. Pale yellow needles (EtOAc). Mp 209-211°. $[\alpha]_D^{25}$ +233 (c, 0.33 in $CHCl_3$).

Kaltenegger, E. *et al., Phytochemistry*, 2003, **63**, 803-816 (*isol, pmr, cmr, ms, cryst struct*)
Mungkornasawakul, P. *et al., J. Nat. Prod.*, 2004, **67**, 675-677 (*Stemocurtisinol*)
Mungkornasawakul, P. *et al., ACGC Chem. Res. Commun.*, 2005, **19**, 30-33 (*Oxystemokerrin, cryst struct*)
Greger, H. *et al., Planta Med.*, 2006, **72**, 99-113 (*rev*)
Wang, Y.-Z. *et al., J. Nat. Prod.*, 2007, **70**, 1356-1359 (*N-oxide*)
Pyne, S.G. *et al., Maejo Int. J. Sci. Technol.*, 2007, **1**, 157-165 (*rev, biosynth*)

Stemonamide S-517

[157009-09-1]



$C_{18}H_{21}NO_5$ 331.368

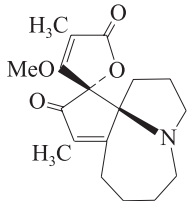
Alkaloid from roots of *Stemona japonica* (Stemonaceae). Mp 182.5-184°. $[\alpha]_D$ -120 (c, 0.79 in EtOH). Amide of Stemonamine, S-518.

12-Epimer: ***Isostemonamide***
[156953-97-8]
$C_{18}H_{21}NO_5$ 331.368
From roots of *Stemona japonica* (Stemonaceae). Mp 234-236°. $[\alpha]_D$ -177 (c, 0.37 in EtOH).

Ye, Y. *et al., J. Nat. Prod.*, 1994, **57**, 665-669 (*isol, ir, pmr, cmr, ms*)
Kende, A.S. *et al., Tetrahedron*, 2002, **58**, 61-74 (*synth*)
Taniguchi, T. *et al., Tetrahedron*, 2008, **64**, 8773-8779 (*synth*)

Stemonamine S-518

*2,3,5,6,7,8-Hexahydro-3′-methoxy-4′,9-dimethylspiro[1*H*-cyclopenta[*b*]pyrrolo[1,2-*a*]azepine-11(10*H*),2′(5′*H*)-furan]-5′,10-dione, 9CI*



Relative configuration

$C_{18}H_{23}NO_4$ 317.384

(±)-*form* [41758-66-1]
Alkaloid from the roots of *Stemona japonica* (Stemonaceae). Mp 172-174°. Stemonamine racemises and epimerises via a tricyclic achiral dipolar intermediate.

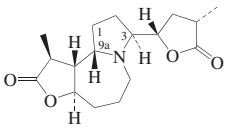
Hydrochloride:
Cryst. + $2H_2O$ (Me_2CO). Mp 148-151°.

Epimer: ***Isostemonamine***
[41758-67-2]
$C_{18}H_{23}NO_4$ 317.384
Alkaloid from the roots of *Stemona japonica* (Stemonaceae). Mp 165-169°. Racemic. Epimeric with Stemonamine at the lactone spiro carbon.

Iizuka, H. *et al., Chem. Comm.*, 1973, 125 (*uv, ir, cryst struct*)
Iizuka, H. *et al., Cryst. Struct. Commun.*, 1973, **2**, 375 (*cryst struct*)
Zhao, Y.-M. *et al., Org. Lett.*, 2008, **10**, 1763-1766 (*synth*)
Taniguchi, T. *et al., Tetrahedron*, 2008, **64**, 8773-8779 (*synth*)

Stemonine† S-519

*Decahydro-1-methyl-8-(tetrahydro-4-methyl-5-oxo-2-furanyl)-2*H*-furo[3,2-c]pyrrolo[1,2-a]azepin-2-one, 9CI*
[27498-90-4]



Absolute Configuration

$C_{17}H_{25}NO_4$ 307.389

See also Stemonine, S-520. Alkaloid from *Stemona japonica* and *Stemona pierrei*. Also a degradn. prod. of Protostemonine, P-670. Mp 151°. $[\alpha]_D^{16}$ -113.8.

Hydrobromide:
Cryst. + ½ H_2O. Mp 275°.

*1,2,3,9*a*-Tetradehydro:* ***Bisdehydrostemonine****. Tetradehydrostemonine. Didehydrostemonine*
[27498-91-5]
$C_{17}H_{21}NO_4$ 303.357
Alkaloid from *Stemona japonica*. Mp 172-175°.

Suzuki, K. *et al., Yakugaku Zasshi*, 1929, **49**, 78; 1931, **51**, 44; 1934, **54**, 101 (*isol*)
Irie, H. *et al., Chem. Comm.*, 1970, 268-269 (*uv, ir, pmr, ms, struct*)
Koyama, H. *et al., J.C.S.(B)*, 1970, 1330 (*cryst struct, abs config*)
Zou, C.-Y. *et al., J. Chin. Pharm. Sci.*, 2000, **9**, 113-115 (*Bisdehydrostemonine*)
Williams, D.R. *et al., Org. Lett.*, 2003, **5**, 3361-3364 (*synth*)

Stemonine† S-520

[20460-41-7]

$C_{22}H_{33}NO_4$ 375.507

Struct. unknown. Not the same as the alkaloid isol. from *Stemona ovata*. Probably a stereoisomer of Tuberostemonine, T-664. Alkaloid from the roots of *Stemona tuberosa* (Stemonaceae). Cryst. (MeOH). Mp 162°. $[\alpha]_D^{20}$ +76 (c, 1.0 in abs. EtOH).

Hydroiodide: Mp 247-248° dec.

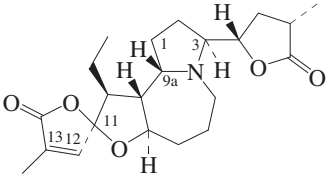
Perchlorate: Mp 274-276° dec.

Methiodide: Mp 258-261° dec.

Pfeifer, S. *et al., Pharmazie*, 1968, **23**, 342; *CA*, **69**, 74480c (*isol, uv, ir*)

Stemoninine S-521

[69772-72-1]



$C_{22}H_{31}NO_5$ 389.491

Alkaloid from the roots of *Stemona sessilifolia*. Mp 113-115°. $[\alpha]_D^{14}$ -110 (c, 1.02 in EtOH).

12,13β-Dihydro: ***Dihydrostemoninine***
$C_{22}H_{33}NO_5$ 391.506
Alkaloid from the roots of *Stemona sessilifolia*. Prisms (EtOAc/petrol).

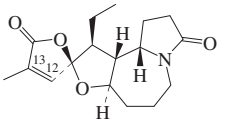
*1,2,3,9*a*-Tetradehydro:* ***Bisdehydrostemoninine***
$C_{22}H_{27}NO_5$ 385.459
Alkaloid from the roots of *Stemona sessilifolia* and *Stemona tuberosa*. Cryst. (EtOAc). Mp 180-181° (*S. sessilifolia*) Mp 138-140° (*S. tuberosa*). $[\alpha]_D^{20}$ -57 (c, 0.13 in $CHCl_3$) (*S. tuberosa*). $[\alpha]_D^{20}$ -125 (c, 0.11 in MeOH) (*S. sessilifolia*).

*11-Epimer, 1,2,3,9*a*-tetradehydro:* ***Isobisdehydrostemoninine***
$C_{22}H_{27}NO_5$ 385.459
Alkaloid from the roots of *Stemona tuberosa*. Needles (EtOAc). Mp 178-182°.

Kuo, C. *et al., Huaxue Xuebao*, 1978, **36**, 291; *CA*, **90**, 164717y (*isol*)
Cheng, D. *et al., J. Nat. Prod.*, 1988, **51**, 202-211 (*pmr, cmr, struct*)
Lin, L.-G. *et al., J. Nat. Prod.*, 2006, **69**, 1051-1054 (*Bisdehydrostemoninine, Isobisdehydrostemoninine*)
Wang, P. *et al., Chem. Biodiversity*, 2007, **4**, 523-530 (*Dihydrostemoninine*)

Stemoninoamide S-522

[158340-34-2]



Absolute Configuration

$C_{17}H_{23}NO_4$ 305.373

Minor alkaloid from roots of *Stemona tuberosa* (Stemonaceae). Mp 155-157°. $[\alpha]_D$ -94 (c, 0.06 in MeOH).

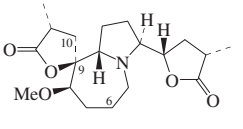
12,13β-Dihydro: ***Sessilifoliamide A***
$C_{17}H_{25}NO_4$ 307.389
Alkaloid from the roots of *Stemona sessilifolia*. Prisms (EtOAc). Mp 166-168°. $[\alpha]_D^{27}$ -128 (c, 0.35 in $CHCl_3$).

[156280-89-6]

Lin, W.H. *et al., Phytochemistry*, 1994, **36**, 1333-1335 (*isol, ir, pmr, cmr, ms, struct*)
Kakuta, D. *et al., Tetrahedron*, 2003, **59**, 7779-7786 (*abs config, Sessilifoliamide A*)

Stemospironine S-523

*Decahydro-8′-methoxy-4-methyl-3′-(tetrahydro-4-methyl-5-oxo-2-furanyl)spiro[-furan-2(5*H*),9′-[9*H*]pyrrolo[1,2-*a*]azepin]-5-one, 9CI. Stemonidine*
[66267-46-7]
[85700-47-6 (Stemonidine)]



Absolute Configuration

$C_{19}H_{29}NO_5$ 351.442

Alkaloid from *Stemona japonica* and *Stemona ovata*. Insecticidal agent. Noncryst. Mp 283-284° dec. (as hydrobromide). $[\alpha]_D^{27}$ -8.2 (c, 0.92 in $CHCl_3$). Identity of the struct. of Stemonidine with Stemospironine demonstrated in 2007.

Demethoxy: ***Croomine***
[71239-66-2]
$C_{18}H_{27}NO_4$ 321.416
Alkaloid from *Croomia heterosepala* and *Stemona tuberosa*. $Bp_{0.002}$ 210-215°. $[\alpha]_D^{18}$ +9.8 (c, 0.11 in $CHCl_3$).

Demethoxy; picrate:
Cryst. (EtOH). Mp 125°.

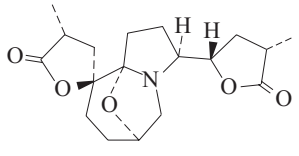
Demethoxy, 6α-hydroxy: ***6α-Hydroxycroomine***
$C_{18}H_{27}NO_5$ 337.415
Alkaloid from the roots of *Stemona tuberosa*. Powder. $[\alpha]_D^{20}$ +24.6 (c, 0.5 in MeOH).

*9-Epimer, demethoxy, 10*R*-hydroxy:* ***Tuberospironine***
$C_{18}H_{27}NO_5$ 337.415
Alkaloid from the roots of *Stemona tuberosa*. Powder. $[\alpha]_D^{20}$ -14.4 (c, 0.5 in MeOH).

Sakata, K. *et al., Agric. Biol. Chem.*, 1978, **42**, 457; *CA*, **88**, 166716e (*isol, ir, pmr, cmr, ms, cryst struct, abs config*)
Noro, T. *et al., Chem. Pharm. Bull.*, 1979, **27**, 1495 (*uv, ir, pmr, cmr, ms, cryst struct, Croomine*)
Xu, R.S. *et al., Tetrahedron*, 1982, **38**, 2667 (*Croomine, pmr*)
Williams, D.R. *et al., J.A.C.S.*, 1989, **111**, 1923 (*synth, Croomine*)
Martin, S.F. *et al., J.A.C.S.*, 1999, **121**, 6990-6997 (*Croomine, synth*)
Williams, D.R. *et al., Org. Lett.*, 2001, **3**, 2721-2724 (*synth*)
Schinnerl, J. *et al., Monatsh. Chem.*, 2005, **136**, 1671-1680 (*6-Hydroxycroomine*)
Jiang, R.-W. *et al., J. Nat. Prod.*, 2006, **69**, 749-754 (*Tuberospironine*)
Jiang, R.-W. *et al., Phytochemistry*, 2006, **67**, 52-57 (*Croomine, 6-Hydroxycroomine*)
Pyne, S.G. *et al., Maejo Int. J. Sci. Technol.*, 2007, **1**, 157-165 (*rev, biosynth*)
Sánchez-Izquierdo, F. *et al., Org. Lett.*, 2007, **9**, 1769-1772 (*Stemonidine*)

Stemotinine S-524

[85644-15-1]



$C_{18}H_{25}NO_5$ 335.399
Alkaloid from the roots of *Stemona tuberosa* (Stemonaceae). Prisms (Me_2CO/Et_2O). Mp 207-208°. $[\alpha]_D^{22}$ +91.7 (c, 1.1 in MeOH).

Epimer: ***Isostemotinine***
[85644-16-2]
$C_{18}H_{25}NO_5$ 335.399
Alkaloid from the roots of *Stemona tuberosa* (Stemonaceae). Prisms (Me_2CO/Et_2O). Mp 245-246°. $[\alpha]_D^{22}$ +47.5 (c, 0.6 in MeOH). Epimeric at the lactone spiro carbon atom.

Xu, R.-S. *et al., Tetrahedron*, 1982, **38**, 2667 (*isol, ir, pmr, cmr, ms, cd, struct*)

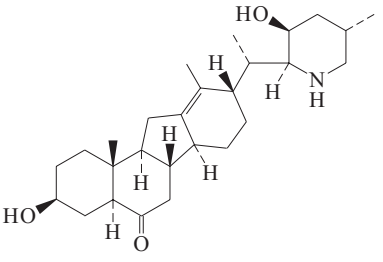
Stemotuberine S-525

Struct. unknown. Alkaloid from the roots of *Stemona tuberosa* (Stemonaceae). Mp 77-82° dec.

Pfeifer, S. *et al., Pharmazie*, 1968, **23**, 342-343 (*isol, uv*)

Stenanzine S-526

*3,23-Dihydroxyveratraman-6(5*H*)-one, 9CI*
[83133-08-8]

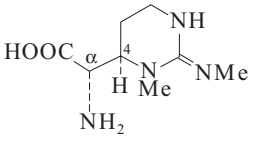


$C_{27}H_{43}NO_3$ 429.642
Alkaloid from *Rhinopetalum stenantherum* (Liliaceae). Mp 203-205°. $[\alpha]_D$ -44 (c, 0.5 in $CHCl_3$).

Samikov, K. *et al., Khim. Prir. Soedin.*, 1982, **18**, 340; *Chem. Nat. Compd. (Engl. Transl.)*, 1982, **18**, 314 (*isol, struct*)

Stendomycidine S-527

α-Amino-3,4,5,6-tetrahydro-3-methyl-2-(methylamino)-4-pyrimidineacetic acid, 9CI
[21948-17-4]

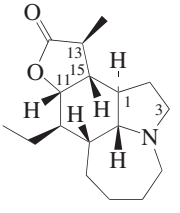


$C_8H_{16}N_4O_2$ 200.24
Component of Stendomycin. No antibiotic activity.

Bodanszky, M. *et al., J. Antibiot.*, 1968, **21**, 77; 1969, **22**, 40 (*isol, struct*)
Marconi, G.G. *et al., J. Antibiot.*, 1970, **23**, 120 (*abs config*)

Stenine S-528

[16625-37-9]
[130760-62-2 (±)-form]



Absolute Configuration

$C_{17}H_{27}NO_2$ 277.406
Numbering systems vary. Alkaloid from the roots of *Stemona tuberosa*. Prisms (hexane). Mp 65-67°. $[\alpha]_D$ -30.2 (MeOH).

3-Oxo: ***3-Oxostenine****. 2-Oxostenine*
[18058-98-5]
$C_{17}H_{25}NO_3$ 291.389
Alkaloid from *Stemona sessilifolia*. Mp 135-138°.

13-Epimer: 15-Epistenine. ***Sessilifoline B***
[929637-36-5]
$C_{17}H_{27}NO_2$ 277.406
Alkaloid from the stems of *Stemona sessilifolia*. Amorph. powder. $[\alpha]_D^{20}$ +34 (c, 0.2 in $CHCl_3$).

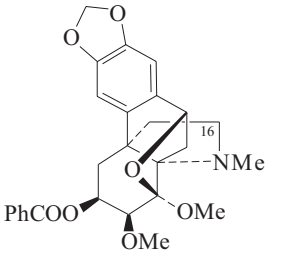
1,11,15-Triepimer: ***Neostenine***
[477953-07-4]
[1023306-02-6 (±)-form]
$C_{17}H_{27}NO_2$ 277.406
Alkaloid from the roots of *Stemona tuberosa*. Antitussive agent. Prisms (hexane/EtOAc). Mp 90-92°. $[\alpha]_D^{20}$ +73.6 (c, 0.1 in MeOH). Both Neostenine and Isostenine below have been assigned the same stereochem., 1,11,15-triepistenine, although they have different props.

Stereoisomer: ***Isostenine***
$C_{17}H_{27}NO_2$ 277.406
Alkaloid from the roots of *Stemona collinsae*. Cryst. Mp 213-215°. $[\alpha]_D$ +92 (c, 0.6 in $CHCl_3$). See note under Neostenine above.

Harada, H. *et al., Chem. Comm.*, 1967, 460 (*abs config*)
Uyeo, S. *et al., Chem. Pharm. Bull.*, 1967, **15**, 768 (*isol, ir, pmr, ms, struct*)
Chen, C.-Y. *et al., J.O.C.*, 1993, **58**, 3840 (*synth*)
Wipf, P. *et al., J.A.C.S.*, 1995, **117**, 11106 (*synth*)
Morimoto, Y. *et al., Chem. Eur. J.*, 2001, **7**, 4107-4116 (*synth*)
Golden, J.E. *et al., Angew. Chem., Int. Ed.*, 2002, **41**, 4316-4318 (*synth*)
Pham, H.-D. *et al., J. Asian Nat. Prod. Res.*, 2002, **4**, 81-85 (*Isostenine*)
Ginn, J.D. *et al., Org. Lett.*, 2002, **4**, 1515-1517 (*synth*)
Chung, H.-S. *et al., Planta Med.*, 2003, **69**, 914-920 (*Neostenine*)
Kakuta, D. *et al., Tetrahedron*, 2003, **59**, 7779-7786 (*2-Oxostenine*)
Zeng, Y. *et al., J.A.C.S.*, 2005, **127**, 15712-15713 (*synth*)
Qian, J. *et al., Helv. Chim. Acta*, 2007, **90**, 326-331 (*Sessilifoline B*)
Frankowski, K.J. *et al., J.A.C.S.*, 2008, **130**, 6018-6024 (*synth*)
Lainchbury, M.D. *et al., J.O.C.*, 2008, **73**, 6497-6505 (*Neostenine, synth*)

Stephabenine S-529

[87853-56-3]



$C_{27}H_{29}NO_7$ 479.529
Alkaloid from the fresh fruits of *Stephania japonica* (Menispermaceae). Prisms (EtOH). Mp 170°. $[\alpha]_D^{16}$ -15.24 (c, 1.65 in $CHCl_3$).

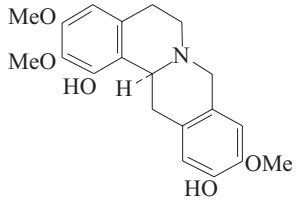
16-Oxo: ***Oxostephabenine***
[99964-46-2]
$C_{27}H_{27}NO_8$ 493.512

Alkaloid from the fruits of *Stephania japonica* (Menispermaceae). Needles (MeOH). Mp 272-273° dec. $[\alpha]_D^{24}$ +65 (c, 1.04 in $CHCl_3$).

Kondo, S. *et al., Chem. Pharm. Bull.*, 1983, **31**, 2574 (*isol, uv, ir, pmr, cmr, ms, struct*)
Yamamura, Y. *et al., J. Nat. Prod.*, 1985, **48**, 746 (*Oxostephabenine*)

Stephabinamine S-530

*5,8,13,13*a*-Tetrahydro-2,3,10-trimethoxy-6*H*-dibenzo[*a,g*]quinolizine-1,11-diol, 9CI*



$C_{20}H_{23}NO_5$ 357.405

(*S*)-*form* [109028-34-4]
Alkaloid from the roots of *Stephania suberosa* (Menispermaceae). $[\alpha]_D^{25}$ -212 (c, 0.13 in $CHCl_3$).

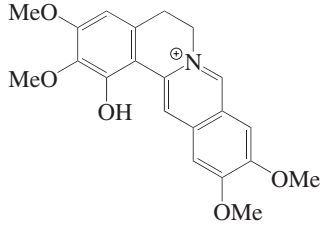
O^{11}-*De-Me:* ***Tetrahydrostephabine***
[109063-88-9]
$C_{21}H_{25}NO_5$ 371.432
Alkaloid from the roots of *Stephania suberosa* (Menispermaceae). $[\alpha]_D^{25}$ -277 (c, 0.59 in $CHCl_3$).

[109028-33-3]

Patra, A. *et al., Phytochemistry*, 1987, **26**, 547 (*isol, pmr, ms, cd, struct*)

Stephabine S-531

5,6-Dihydro-1-hydroxy-2,3,10,11-tetramethoxydibenzo[a,g]quinolizinium(1+), 9CI
[109028-32-2]

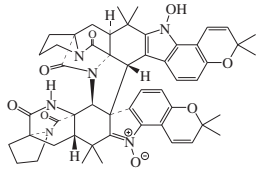


$C_{21}H_{22}NO_5^{\oplus}$ 368.409
Alkaloid from the roots of *Stephania suberosa* (Menispermaceae).

Patra, A. *et al., Phytochemistry*, 1987, **26**, 547 (*isol, uv, pmr, ms, struct*)

Stephacidin B S-532

[360765-75-9]



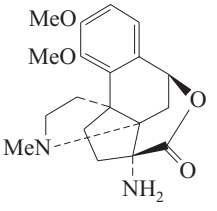
Absolute Configuration

$C_{52}H_{54}N_6O_8$ 891.034
Prod. by *Aspergillus ochraceus* WC76466. Cytotoxic. Off-white amorph. solid. λ_{max} 240 ; 268 (sh) ; 301 ; 346 (sh) (MeOH).

Qian-Cutrone, J. *et al., J.A.C.S.*, 2002, **124**, 14556-14557 (*isol, struct*)
Von Nussbaum, F. *et al., Angew. Chem., Int. Ed.*, 2003, **42**, 3068-3071 (*rev, biosynth*)
Herzon, S.B. *et al., J.A.C.S.*, 2005, **127**, 5342-5344 (*synth, abs config*)
Baran, P.S. *et al., J.A.C.S.*, 2006, **128**, 8678-8693 (*synth, abs config*)
Artman, G.D. *et al., J.A.C.S.*, 2007, **129**, 6336-6342 (*synth*)

Stephadiamine S-533

[94443-36-4]



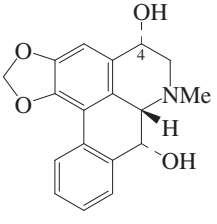
$C_{19}H_{24}N_2O_4$ 344.41
Alkaloid from *Stephania japonica* (Menispermaceae). Prisms (Me_2CO). Mp 180°. $[\alpha]_D^{20}$ +51.8 (c, 0.54 in $CHCl_3$). First example of a *C*-norhasubanan alkaloid.

N-*Ac:* Mp 248°.

Taga, T. *et al., Chem. Pharm. Bull.*, 1984, **32**, 4223 (*ir, pmr, cryst struct*)

Stephadiolamine S-534

4,7-Dihydroxy-1,2-methylenedioxyaporphine
[115044-74-1]



$C_{18}H_{17}NO_4$ 311.337
The abs. configs. of the alkaloids in this entry may not be well established.

N-*Oxide (β-):* ***Stephadiolamine β-N-oxide***
[113145-66-7]
$C_{18}H_{17}NO_5$ 327.336
Alkaloid from the rhizomes of *Stephania venosa* (Menispermaceae). Amorph. $[\alpha]_D$ -37 (c, 0.06 in MeOH).

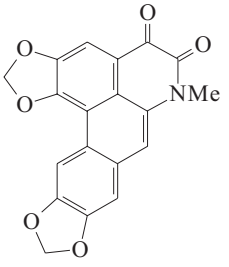
4,7-Diepimer, O^7*-Me:* ***Pachystaudine***
[67627-76-3]
$C_{19}H_{19}NO_4$ 325.363
Alkaloid from the bark of *Pachypodanthium staudtii* (Annonaceae). Mp 157°. $[\alpha]_D$ +34 (c, 0.5 in $CHCl_3$).

4,7-Diepimer, O^7*-Me,* N-*de-Me:* ***Norpachystaudine***
[67627-78-5]
$C_{18}H_{17}NO_4$ 311.337
Alkaloid from the bark of *Pachypodanthium staudtii* (Annonaceae). Mp 214-216°. $[\alpha]_D$ +5 (c, 0.5 in $CHCl_3$).

Bevalot, F. *et al., Plant. Med. Phytother.*, 1977, **11**, 315 (*Pachystaudine, Norpachystaudine*)
Charles, B. *et al., J. Nat. Prod.*, 1987, **50**, 1113 (*Stephadiolamine N-oxide*)

Stephadione S-535

[142905-22-4]

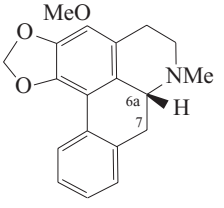


$C_{19}H_{11}NO_6$ 349.299
Alkaloid from aerial parts of *Stephania tetrandra* (Menispermaceae). Amorph. red powder. Mp 300°.

Si, D.Y. *et al., J. Nat. Prod.*, 1992, **55**, 828 (*isol, uv, ir, pmr, ms, struct*)

Stephalagine S-536

3-Methoxy-1,2-methylenedioxyaporphine
[52617-22-8]



$C_{19}H_{19}NO_3$ 309.364
Alkaloid from the stems of *Stephania dinklagei* (Menispermaceae). Needles (Et_2O). Mp 128-130° dec. $[\alpha]_D^{28}$ -30 (c, 1.0 in $CHCl_3$).

Hydrochloride: Mp 263-264° dec.

Hydroiodide:
Cryst. (MeOH). Mp 218° dec.

N-*De-Me:* ***Norstephalagine****. 3-Methoxy-1,2-methylenedioxynoraporphine*
[80151-82-2]
$C_{18}H_{17}NO_3$ 295.337
Alkaloid from *Xylopia buxifolia* and from the stem and root barks of *Hexalobus crispiflorus* (Annonaceae). Cryst. (diisopropyl ether). Mp 94-95°. $[\alpha]_D^{20}$ -35 (c, 0.98 in EtOH).

6a*,7-Didehydro:* ***Dehydrostephalagine***
[107882-28-0]
$C_{19}H_{17}NO_3$ 307.348
Alkaloid from the leaves of *Guatteria sagotiana* (Annonaceae). Amorph.

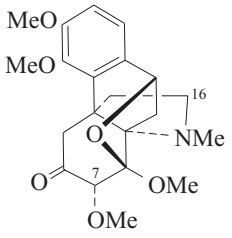
7-Hydroxy: see Guatterine, G-213

Tackie, A.N. *et al., J. Nat. Prod.*, 1974, **37**, 6 (*isol, uv, pmr, ms, struct*)
Hocquemiller, R. *et al., J. Nat. Prod.*, 1981, **44**, 551 (*Norstephalagine*)
Achenbach, H. *et al., Annalen*, 1982, 1132; 1623 (*Norstephalagine*)

Rasamizafy, S. *et al., J. Nat. Prod.*, 1986, **49**, 1078 (*Dehydrostephalagine*)

Stephamiersine S-537

8,10-Epoxy-3,4,7,8-tetramethoxy-17-methylhasubanan-6-one, 9CI
[52309-76-9]



$C_{21}H_{27}NO_6$ 389.447
Alkaloid from the stems and rhizomes of *Stephania japonica* (Menispermaceae). Prisms (MeOH). Mp 165°. $[\alpha]_D^{20}$ +33 (c, 1.28 in $CHCl_3$).

Hydroiodide:
Cryst. + ½ H_2O (MeOH). Mp 253° dec.

16-Oxo: ***Oxostephamiersine****. 8,10-Epoxy-3,4,7,8-tetramethoxy-17-methylhasubanan-6,16-dione, 9CI*
[52466-83-8]
$C_{21}H_{25}NO_7$ 403.431
Alkaloid from leaves, stems and rhizomes of *Stephania japonica*, and from *Stephania japonica* var. *australis* (Menispermaceae). Prisms (MeOH). Mp 256° Mp 290° (dimorph.). $[\alpha]_D^{27}$ +88.25 (c, 1.87 in $CHCl_3$).

7-Epimer: ***Epistephamiersine***
[52389-15-8]
$C_{21}H_{27}NO_6$ 389.447
Alkaloid from stems and rhizomes of *Stephania japonica* (Menispermaceae). Prisms (MeOH). Mp 98°. $[\alpha]_D^{20}$ +64.1 (c, 1.12 in $CHCl_3$).

7-Epimer; hydroiodide:
Cryst. (MeOH). Mp 217° dec.

7-Epimer, 16-oxo: ***Oxoepistephamiersine***
[51804-68-3]
$C_{21}H_{25}NO_7$ 403.431
Alkaloid from roots of *Stephania japonica* (Menispermaceae). Light-yellow prisms (MeOH). Mp 228°. $[\alpha]_D^{13}$ +104.88 (c, 1.0 in $CHCl_3$).

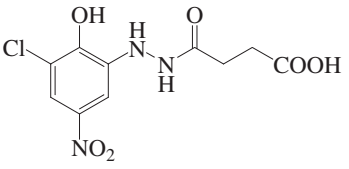
Matsui, M. *et al., Chem. Pharm. Bull.*, 1975, **23**, 1323 (*isol, uv, ir, pmr, ms, struct*)
Matsui, M. *et al., Phytochemistry*, 1979, **18**, 1087 (*Oxostephamiersine*)
Matsui, M. *et al., J. Nat. Prod.*, 1982, **45**, 247 (*cmr*)
Matsui, M. *et al., J. Nat. Prod.*, 1982, **45**, 497; 1984, **47**, 858 (*Oxostephamiersine, Oxoepistephamiersine*)

Stephanoline S-538

$C_{31}H_{42}N_2O_7$ 554.682
Bisbenzylisoquinoline alkaloid. Struct. unknown. Alkaloid from *Stephania japonica* (Menispermaceae). Mp 186°. $[\alpha]_D^{17}$ -255.

Kondo, H. *et al., Yakugaku Zasshi*, 1928, **48**, 1141-1156; *CA*, **23**, 2978

Stephanosporin S-539

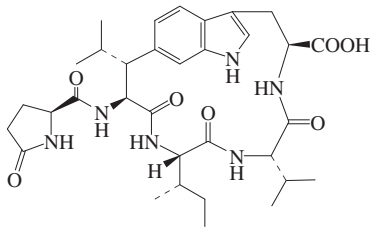


$C_{10}H_{10}ClN_3O_6$ 303.658
Prod. by the carrot truffle, *Stephanospora caroticolor*. Yellow solid. Mp 191-194° dec. λ_{max} 226 (ϵ 11925); 258 (ϵ 12580); 312 (ϵ 4740); 351 (sh) (ϵ 3750) (MeOH).

Lang, M. *et al., Angew. Chem., Int. Ed.*, 2001, **40**, 1704-1705 (*isol, synth, uv, ir, pmr, cmr*)

Stephanotic acid S-540

[268541-40-8]

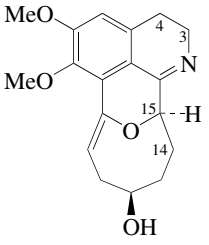


$C_{33}H_{46}N_6O_7$ 638.762
Constit. of *Stephanotis floribunda*. Mp 250-252°. $[\alpha]_D^{25}$ -143 (c, 1.16 in MeOH). λ_{max} 231 (log ϵ 4.31); 275 (log ϵ 3.76); 280 (log ϵ 3.79); 292 (log ϵ 3.72) (MeOH).

Yoshikawa, K. *et al., J. Nat. Prod.*, 2000, **63**, 540-542 (*Stephanotic acid*)
Bentley, D.J. *et al., Org. Lett.*, 2006, **8**, 1975-1978 (*synth*)

Stephaoxocanine S-541

[179458-25-4]



Absolute Configuration

$C_{18}H_{21}NO_4$ 315.368
Alkaloid from tubers of *Stephania cepharantha*. Fine needles (Me_2CO). Mp 160-162°. $[\alpha]_D^{24}$ +60 (c, 0.67 in $CHCl_3$). λ_{max} 255 (log ϵ 4.48); 286 (log ϵ 4.15); 330 (sh) (log ϵ 3.65) (MeOH).

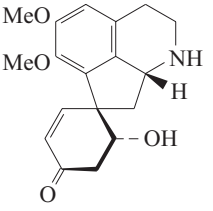
3,4,14,15-Tetradehydro: ***Stephaoxocanidine***
[189393-37-1]
$C_{18}H_{17}NO_4$ 311.337
Alkaloid from the tubers of *Stephania cepharantha* (Menispermaceae). Pale yellow needles (Et_2O). Mp 188-191°. $[\alpha]_D^{25}$ +30 (c, 0.9 in $CHCl_3$). λ_{max} 235 (sh) (log ϵ 4.44); 247 (log ϵ 4.51); 340 (log ϵ 3.89) (MeOH).

3,4,14,15-Tetradehydro, 5-methoxy: ***Eletefine***
[216165-78-5]
$C_{19}H_{19}NO_5$ 341.363
Alkaloid from the roots of *Cissampelos glaberrima*. Red-brown wax.

Kashiwaba, N. *et al., J. Nat. Prod.*, 1996, **59**, 803-805 (*Stephaoxocanine*)
Kashiwaba, N. *et al., Nat. Prod. Lett.*, 1997, **9**, 177-180 (*Stephaoxocanidine*)
Da-Cunha, E.V.L. *et al., J. Nat. Prod.*, 1998, **61**, 1140-1142 (*Eletefine*)

Stepharinosine S-542

[113145-63-4]



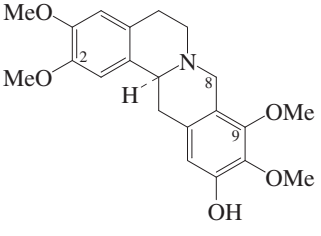
$C_{18}H_{21}NO_4$ 315.368
Alkaloid from the rhizomes of *Stephania venosa* (Menispermaceae). Amorph. Unstable and tends to dec. in soln.

Me ether: **O-*Methylstepharinosine***
[113145-64-5]
$C_{19}H_{23}NO_4$ 329.395
Alkaloid from rhizomes of *Stephania venosa* (Menispermaceae). Amorph. $[\alpha]_D$ -26 (c, 0.11 in $CHCl_3$). Unstable and tends to dec. in soln.

Charles, B. *et al., J. Nat. Prod.*, 1987, **50**, 1113 (*isol, ir, pmr, ms, struct*)

Stepharotine S-543

*5,8,13,13*a*-Tetrahydro-2,3,9,10-tetramethoxy-6*H*-dibenzo[*a,g*]quinolizin-11-ol, 9CI*



$C_{21}H_{25}NO_5$ 371.432
Struct. still doubtful despite the synth. of the racemate.

(S)-form [13588-89-1]
[7668-83-9]
Alkaloid from root tubers of *Stephania rotunda* (Menispermaceae). Mp 227-229° (as hydrobromide). $[\alpha]_D$ -303 (MeOH).

Me ether:
Cryst. (H_2O). Mp 133-135°.

8-Oxo, O^2,O^9*-di-*O*-de-Me:* ***8-Oxopolyalthiane***
$C_{19}H_{19}NO_6$ 357.362
Alkaloid from *Polyalthia longifolia* var.

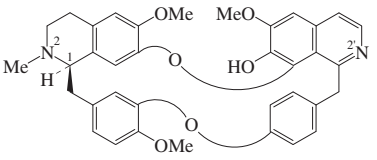
pendula. Amorph. yellow powder. Mp 95-97°. $[\alpha]_D$ -264.8 (c, 0.02 in $CHCl_3$). λ_{max} 238 (log ϵ 4.3); 270 (log ϵ 3.9); 353 (log ϵ 3.5) (MeOH).

(±)-*form* [19598-17-5]
V. pale-yellow prisms (MeOH). Mp 192-193° dec.

Hydrobromide: [19598-18-6]
Needles (MeOH). Mp 258-260° dec.

Tomita, M. *et al., Yakugaku Zasshi*, 1966, **86**, 460 (*isol*)
Augstein, W. *et al., J.O.C.*, 1969, **34**, 1349 (*synth, struct, uv, pmr*)
Ringdahl, B. *et al., J. Nat. Prod.*, 1981, **44**, 75 (*cd, abs config*)
Chen, C.Y. *et al., J. Nat. Prod.*, 2000, **63**, 1475-1478 (*8-Oxopolyalthiane*)

Stephasubine S-544



$C_{36}H_{34}N_2O_6$ 590.674

(*R*)-*form* [104386-89-2]
Alkaloid from the tuberous roots of *Stephania suberosa* (Menispermaceae) and stems of *Stephania hernandifolia*. $[\alpha]_D$ +339 (c, 0.09 in MeOH). λ_{max} 240 (log ϵ 4.56); 287 (log ϵ 3.61); 337 (log ϵ 3.43) (MeOH).

N$^{2'}$-*Me:* ***Colorflammine***
[80550-39-6]
$C_{37}H_{37}N_2O_6^{\oplus}$ 605.709
Alkaloid from the stem and roots of *Pycnarrhena longifolia* (Menispermaceae). $[\alpha]_D^{20}$ +1050 (c, 0.06 in $CHCl_3$). No counterion indicated, prob. chloride. λ_{max} 233 ; 292 ; 333 ; 439 (MeOH).

N-*De-Me:* ***Norstephasubine***
$C_{35}H_{32}N_2O_6$ 576.648
Isol. from *Stephania suberosa*. $[\alpha]_D$ +309 (c, 0.09 in MeOH). λ_{max} 240 (log ϵ 4.53); 286 (log ϵ 3.62); 338 (log ϵ 3.42) (MeOH).

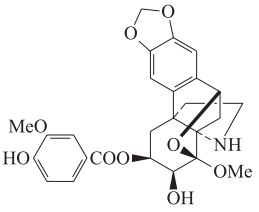
O^{12}-*De-Me,* N-*de-Me:* ***Pycnazanthine***
[111481-94-8]
$C_{34}H_{30}N_2O_6$ 562.621
Alkaloid from the stems of *Pycnarrhena ozantha* (Menispermaceae). $[\alpha]_D$ +186 (c, 0.29 in MeOH). Tentative struct. May be the 6-OH, 12-OMe isomer. λ_{max} 230 (log ϵ 4.8); 284 (sh) (log ϵ 4.12); 318 (sh) (log ϵ 3.8) (MeOH).

1,2-Didehydro, N-*de-Me:* ***Stephasubimine***
[104386-88-1]
$C_{35}H_{30}N_2O_6$ 574.632
Alkaloid from tuberous roots of *Stephania suberosa* (Menispermaceae). λ_{max} 242 (log ϵ 4.64); 281 (log ϵ 3.91); 323 (log ϵ 3.7) (MeOH).

Van Beek, T.A. *et al., J.O.C.*, 1982, **47**, 898-900 (*Colorflammine*)
Patra, A. *et al., J. Nat. Prod.*, 1986, **49**, 424-427 (*Stephasubimine, Stephasubine, Norstephasubine*)
Abouchacra, M.L. *et al., J. Nat. Prod.*, 1987, **50**, 375-380 (*Pycnazanthine*)
Chen, C.-K. *et al., Chin. Pharm. J. (Taipei)*, 2003, **55**, 35-47 (*Colorflammine*)

Stephavanine S-545

[33116-33-5]



Absolute configuration

$C_{26}H_{27}NO_9$ 497.501
Alkaloid from rhizomes of *Stephania abyssinica* (Menispermaceae). Antineoplastic agent. Mp 229-230° dec. $[\alpha]_D^{32}$ +30 (c, 0.90 in Py). Log P 0.61 (uncertain value) (calc).

Hydrochloride: Mp 217-218° dec. $[\alpha]_D^{32}$ +16 (c, 0.73 in MeOH).

Hydrobromide: Mp 191-192° dec.

N,O,O-*Tri-Ac:* Mp 189-190°.

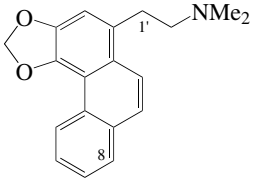
4′-Me ether: ***4′-O-Methylstephavanine***
[152013-83-7]
$C_{27}H_{29}NO_9$ 511.527
Alkaloid from roots of *Stephania abyssinica* (Menispermaceae). Amorph. solid. Mp 187-190° dec. $[\alpha]_D^{20}$ -4 (c, 0.01 in $CHCl_3$).

N,O,O-*Tri-Me:* ***N,O,O-Trimethylstephavanine***
[53111-19-6]
$C_{29}H_{33}NO_9$ 539.581
Alkaloid from *Stephania abyssinica* (Menispermaceae).

Kupchan, S.M. *et al., J.A.C.S.*, 1970, **92**, 5756 (*ms, pmr, struct, cryst struct*)
Van Wyk, A.J. *et al., J. S. Afr. Chem. Inst.*, 1974, **27**, 95 (*deriv*)
Dagne, E. *et al., J. Nat. Prod.*, 1993, **56**, 2022 (*4′-O-Methylstephavanine*)

Stephenanthrine S-546

N,N-*Dimethylphenanthro[3,4-*d*]-1,3-dioxole-5-ethanamine, 9CI. 1-(2-Dimethylaminoethyl)-3,4-methylenedioxyphenanthrene. De-*N*-methyl-1-isoremerine*
[22108-99-2]



$C_{19}H_{19}NO_2$ 293.365
Aporphine-derived numbering shown. Alkaloid from the roots of *Stephania tetrandra* (Menispermaceae). Needles(CH_2Cl_2/hexane). Mp 92-93°. λ_{max} 213 (log ϵ 0.81); 239 (log ϵ 1.07); 249 (log ϵ 1.31); 284 (log ϵ 0.43); 320 (log ϵ 0.25); 351 (log ϵ 0.04); 369 (log ϵ 0.03) (MeOH).

N-*Oxide:* ***Stephenanthrine* N-*oxide***
[138706-50-0]
$C_{19}H_{19}NO_3$ 309.364
Alkaloid from *Monocyclanthus vignei* (Annonaceae). Oil. Possible artifact.

1′ξ-Hydroxy: ***Fenfangjine F***
$C_{19}H_{19}NO_3$ 309.364
Alkaloid from the roots of *Stephania tetrandra*. Oil.

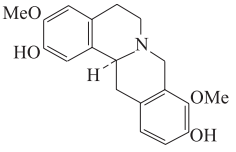
8-Hydroxy: ***8-Hydroxystephenanthrine***
[138690-44-5]
$C_{19}H_{19}NO_3$ 309.364
Alkaloid from *Monocyclanthus vignei* (Annonaceae). Oil.

8-Hydroxy, N-*oxide:* ***8-Hydroxystephenanthrine* N-*oxide***
[138690-46-7]
$C_{19}H_{19}NO_4$ 325.363
Alkaloid from *Monocyclanthus vignei* (Annonaceae). Oil. Possible artifact.

Hu, T. *et al., Yaoxue Xuebao*, 1986, **21**, 29; *CA*, **104**, 221975q (*Stephenanthrine*)
Achenbach, H. *et al., J. Nat. Prod.*, 1991, **54**, 1331 (*Stephenanthrine N-oxide, 8-Hydroxystephenathrene, 8-hydroxystephenanthrine N-oxide*)
Ogino, T. *et al., Heterocycles*, 1998, **48**, 311-317 (*Fenfangjine F*)
Lopez-Martin, J. *et al., Chem. Pharm. Bull.*, 2002, **50**, 1613-1615 (*isol, pmr, cmr*)

Stepholidine S-547

*5,8,13,13*a*-Tetrahydro-3,9-dimethoxy-6*H*-dibenzo[*a,g*]quinolizine-2,10-diol, 9CI*



(*S*)–*form*

$C_{19}H_{21}NO_4$ 327.379

(*S*)-*form* [16562-13-3]
Alkaloid from *Stephania glabra* (Menispermaceae). Needles (Me_2CO). Mp 126-138°. $[\alpha]_D^{18}$ -311 (c, 0.523 in EtOH). λ_{max} 214 (log ϵ 4.4); 287 (log ϵ 3.79) (EtOH).
▶ DR9823500

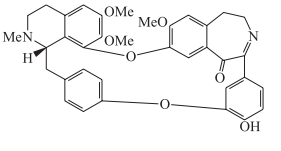
Di-Me ether: see Tetrahydropalmatine, T-212

(±)-*form* [16562-14-4]
Mp 136-140° dec.

Cava, M.P. *et al., J.O.C.*, 1968, **33**, 2785-2789 (*uv, ir, ms*)
Chiang, H.C. *et al., J.O.C.*, 1977, **42**, 3190-3194 (*ms, pmr, synth*)
Wu, S. *et al., Acta Cryst. C*, 1987, **43**, 2126-2128 (*cryst struct*)

Stepinonine S-548

[38835-79-9]



Absolute configuration

$C_{36}H_{34}N_2O_7$ 606.674
Alkaloid from *Stephania japonica* (Menispermaceae). Yellow prisms. Mp 244-245° Mp 280° (dimorph.). $[\alpha]_D^{30}$ -28 (c, 1 in Py).

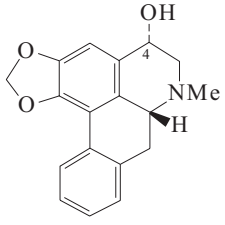
Oxalate: Mp 208-210° dec.

Ac: Mp 157°. $[\alpha]_D^{20}$ -12 (c, 0.5 in $CHCl_3$).

Ibuka, T. *et al., Chem. Pharm. Bull.*, 1975, **23**, 114 (*isol, uv, ir, ms, pmr, struct*)

Steporphine S-549

4-Hydroxy-1,2-methylenedioxyaporphine. 4-Hydroxyroemerine



$C_{18}H_{17}NO_3$ 295.337

(-)-*form* [24191-98-8]
Alkaloid from *Stephania sasakii* and from the stems of *Stephania dinklagei* (Menispermaceae). Pale-yellow needles (Me_2CO/Et_2O). Mp 177-179°. $[\alpha]_D$ -90.6 (MeOH).

▶ CE1055500

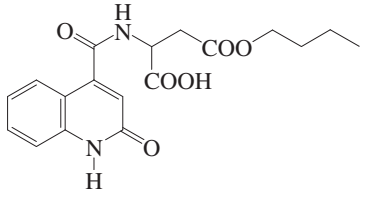
4-Epimer: ***Episteporphine***
[56688-64-3]
$C_{18}H_{17}NO_3$ 295.337
Alkaloid from the leaves of *Colubrina faralaotra* subsp. *faralaotra* (Rhamnaceae). Cryst. (MeOH). Mp 198°. $[\alpha]_D^{20}$ -35 (c, 1.1 in $CHCl_3$).

4-Epimer, N-*de*-*Me:* ***4-Hydroxyanonaine***
[35597-00-3]
$C_{17}H_{15}NO_3$ 281.31
Alkaloid from the bark and leaves of *Laurelia philippiana* (Monimiaceae). Amorph. Isol. in admixture with 4-Hydroxynornantenine in N-29.

(±)-*form*
Synthetic. Needles (Me_2CO/Et_2O). Mp 172-173°.

Kunitomo, J. *et al., Tet. Lett.*, 1969, 3287 (*uv, ir, pmr, ms, struct*)
Tackie, A.N. *et al., J. Nat. Prod.*, 1974, **37**, 6 (*isol, uv, pmr, ms*)
Guinaudeau, H. *et al., Planta Med.*, 1975, **27**, 304 (*epimer*)
Kunitomo, J. *et al., Chem. Pharm. Bull.*, 1982, **30**, 4283 (*synth, uv, ir, pmr, ms*)
Urzúa, A. *et al., Phytochemistry*, 1982, **21**, 773 (*4-Hydroxyanonaine*)

Sterculinine I S-550



$C_{18}H_{20}N_2O_6$ 360.366
Alkaloid from the seeds of *Sterculia lychnophora* (Pangdahai). Powder. Mp 184-186°. $[\alpha]_D^{20}$ +24.2 (c, 0.5 in H_2O). λ_{max} 271 (log ϵ 3.75); 331 (log ϵ 3.12) (H_2O).

Me ester analogue: ***Sterculinine II***
$C_{15}H_{14}N_2O_6$ 318.285
Alkaloid from the seeds of *Sterculia lychnophora*. Powder. Mp 176-178°. $[\alpha]_D^{20}$ +25 (c, 0.5 in H_2O). λ_{max} 275 (log ϵ 3.76); 333 (log ϵ 3.15) (H_2O).

Wang, R.-F. *et al., Phytochemistry*, 2003, **63**, 475-478 (*isol, pmr, cmr, ms*)

Sternine S-551

$C_{18}H_{21}NO_3$ 299.369
Amaryllidaceae alkaloid. Struct. unknown. Isol. from the bulbs of *Sternbergia fischeriana* (Amaryllidaceae). Mp 231-232°. $[\alpha]_D$ +12.5 (EtOH).

Hydrochloride: Mp 181-182°.

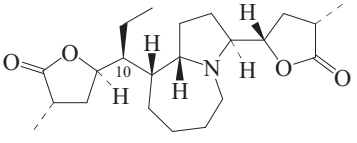
Hydrobromide:
Cryst. + $1H_2O$ (H_2O). Mp 226-226.5°.

Picrate: Mp 227-228°.

Methiodide: Mp 202-203°.

Zh. Obshch. Khim., 1953, **23**, 2056-2059
Proskurnina, N.F. *et al., Chem. Zentralbl.*, 1954, **125**, 8353 (*isol*)

Stichoneurine A S-552



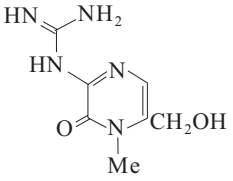
$C_{22}H_{35}NO_4$ 377.523
Alkaloid from the roots and rhizomes of *Stichoneuron caudatum*. Isol. as an inseparable mixt. with Stichoneurine B.

10-Epimer: ***Stichoneurine B***
$C_{22}H_{35}NO_4$ 377.523
Alkaloid from the roots and rhizomes of *Stichoneuron caudatum*.

Schinnerl, J. *et al., Monatsh. Chem.*, 2005, **136**, 1671-1680 (*isol, pmr, cmr*)

Stizolamine S-553

[3,4-Dihydro-5-(hydroxymethyl)-4-methyl-3-oxopyrazinyl]guanidine, 9CI. 3-Guanidino-6-hydroxymethyl-1-methylpyrazin-2-one
[61481-34-3]



$C_7H_{11}N_5O_2$ 197.196
Alkaloid from seeds of *Stizolobium hassjoo* (Fabaceae). Mp 208° dec.

Hydrochloride: Mp 294-296° dec.

Yoshida, T. *et al., Phytochemistry*, 1976, **15**, 1723; 1977, **16**, 1824 (*isol, uv, ir, ms, pmr, struct, biosynth*)

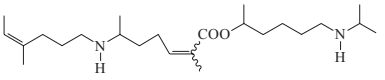
Stizolophine S-554

$C_{15}H_{23}NO_5$ 297.35
Struct. unknown. Alkaloid from the aerial parts of *Stizolophus balsamita*. Cryst. ($CHCl_3$). Mp 122-123°. $[\alpha]_D$ +24.6 (EtOH).

Kuzovkov, A.D. *et al., Zh. Obshch. Khim.*, 1953, **23**, 157-158; *CA*, **48**, 696i

Stockerine S-555

[136771-39-6]

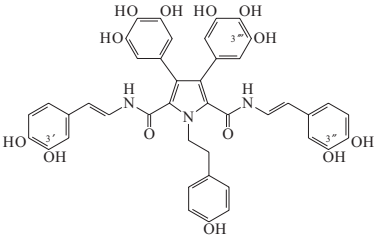


$C_{24}H_{46}N_2O_2$ 394.64
Metab. from the alga *Stockeyia indica*. Amorph.

Atta-ur-Rahman, *et al., Fitoterapia*, 1991, **62**, 77 (*isol, ir, pmr, cmr, ms, struct*)

Storniamide D S-556

[174285-74-6]



$C_{42}H_{35}N_3O_{13}$ 789.751
Alkaloid from a Patagonian sponge *Cliona* sp. Shows antibiotic activity against gram-positive bacteria. Yellow oil. λ_{max} 212 (ϵ 29500); 284 (ϵ 11500); 338 (ϵ 12400) (MeOH) (Berdy).

3′-Deoxy: ***Storniamide B***
[174232-39-4]
$C_{42}H_{35}N_3O_{12}$ 773.751
From *Cliona* sp. Active against gram-positive bacteria. Yellow oil. λ_{max} 210 (ϵ 24500); 282 (ϵ 10200); 334 (ϵ 10800) (MeOH) (Berdy).

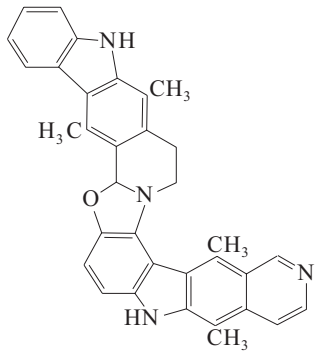
3‴-Deoxy: ***Storniamide C***
[174232-40-7]
$C_{42}H_{35}N_3O_{12}$ 773.751
From *Cliona* sp. Active against gram-positive bacteria. Yellow oil. λ_{max} 214 (ϵ 27000); 284 (ϵ 11100); 342 (ϵ 14300) (MeOH) (Berdy).

3′,3″-Dideoxy: ***Storniamide A***
[174232-38-3]
$C_{42}H_{35}N_3O_{11}$ 757.752
From *Cliona* sp. Active against gram-positive bacteria. Yellow oil. λ_{max} 208 (ϵ 22500); 286 (ϵ 11300); 334 (ϵ 11500) (MeOH) (Berdy).

Palermo, J.A. *et al., Tetrahedron*, 1996, **52**, 2727 (*isol, uv, ir, pmr, cmr, struct*)
Ebel, H. *et al., Tet. Lett.*, 1998, **39**, 9165-9166 (*synth*)
Boger, D.L. *et al., J.A.C.S.*, 1999, **121**, 54-62 (*Storniamide A, synth*)
Iwao, M. *et al., Tet. Lett.*, 2003, **44**, 4443-4446 (*Storniamide A, synth*)
Gupton, J.T. *et al., Tetrahedron*, 2008, **64**, 5246-5253 (*synth*)

Strellidimine S-557

[112547-87-2]

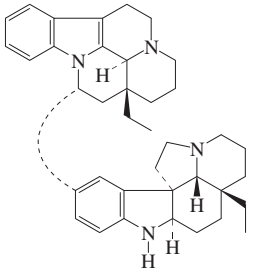


$C_{34}H_{28}N_4O$ 508.621
Alkaloid from the bark of *Strychnos dinklagei* (Loganiceae). Yellow amorph. solid. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. $[\alpha]_D^{20}$ 0 (c, 0.1 in MeOH). λ_{max} 244 (ϵ 24550); 253 (ϵ 26300); 265 (ϵ 21380); 279 (ϵ 19500); 340 (ϵ 4265); 410 (ϵ 3830) (EtOH) (Berdy).

Michel, S. *et al., Chem. Comm.*, 1987, 229-230 (*uv, ir, pmr, ms, struct*)

Strempeliopidine S-558

[96861-87-9]

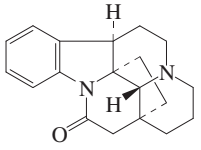


$C_{38}H_{48}N_4$ 560.824
Alkaloid from the roots of *Strempeliopsis strempelioides* (Apocynaceae). Mp 133-135°. $[\alpha]_D^{20}$ +100 ($CHCl_3$).

Laguna, A. *et al., Planta Med.*, 1984, **50**, 285-288 (*isol, uv, ir, pmr, ms, struct*)

Strempeliopine S-559

[79808-95-0]



Absolute Configuration

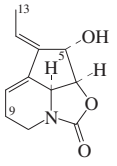
$C_{19}H_{22}N_2O$ 294.396
Alkaloid from *Strempeliopsis strempelioides* (Apocynaceae). Cryst. (MeOH). Mp 152-154°. $[\alpha]_D$ -25.4 (c, 1.8 in MeOH). A prev. reported opt. rotn. of -120° was erroneous.

Laguna, A. *et al., Planta Med.*, 1984, **50**, 285 (*isol, uv, ir, pmr, ms, struct*)

Hájíček, J. *et al., Coll. Czech. Chem. Comm.*, 1986, **51**, 1731 (*synth, uv, ir, pmr, ms, abs config*)

Streptazoline S-560

*4-Ethylidene-2*a*,3,4,6,7,7*b*-hexahydro-3-hydroxy-1*H*-2-oxa-7*a*-azacyclopent[*c*-d*]inden-1-one, 9CI*
[80152-07-4]



Absolute Configuration

$C_{11}H_{13}NO_3$ 207.229
Authors' numbering shown (Puder *et al.*). Isol. from *Streptomyces viridochromogenes* and the marine-derived *Streptomyces* sp. B5525. $[\alpha]_D^{25}$ +22 (c, 2.8 in $CHCl_3$). Readily polymerises. λ_{max} 256 (ϵ 8510) (EtOH) (Derep). λ_{max} 256 (ϵ 9000) (EtOH) (Berdy).

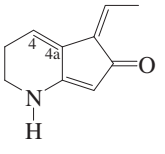
5-O-β-D-Xylopyranoside: ***5-O-β-D-Xylopyranosylstreptazolin***
$C_{16}H_{21}NO_7$ 339.344
Prod. by *Streptomyces* sp. strain A1. Solid. Mp 118°. $[\alpha]_D^{22}$ +1.3 (c, 0.8 in MeOH). λ_{max} 252 (log ϵ 4.23) (MeOH).

*9*R*-Hydroxy:* ***9-Hydroxystreptazolin***
$C_{11}H_{13}NO_4$ 223.228
Prod. by *Streptomyces* sp. strain A1. Oil. $[\alpha]_D^{22}$ +38 (c, 1.1 in MeOH). λ_{max} 256 (log ϵ 3.84) (MeOH).

13-Hydroxy: ***13-Hydroxystreptazolin***
$C_{11}H_{13}NO_4$ 223.228
Prod. by *Streptomyces* sp. strain A1. Oil. $[\alpha]_D^{22}$ +39 (c, 1.1 in MeOH). λ_{max} 256 (log ϵ 4.04); 315 (log ϵ 2.7) (MeOH).

Drautz, H. *et al., Helv. Chim. Acta*, 1981, **64**, 1752-1765 (*isol*)
Karrer, A. *et al., Helv. Chim. Acta*, 1982, **65**, 1432 (*cryst struct*)
Flann, C.J. *et al., J.A.C.S.*, 1987, **109**, 6115 (*synth*)
Kozikowski, A.P. *et al., J.O.C.*, 1990, **55**, 4668 (*synth*)
Mayer, M. *et al., J.O.C.*, 1993, **58**, 3486 (*biosynth, bibl*)
Huang, S. *et al., Chem. Comm.*, 2000, 569-570 (*synth*)
Cossy, J. *et al., Eur. J. Org. Chem.*, 2001, 2841-2850 (*Dihydrostreptazolin, synth*)
Puder, C. *et al., J. Nat. Prod.*, 2001, **64**, 42-45 (*9-hydroxy, 13-hydroxy, 5-xylosyl*)
Maskey, R.P. *et al., Z. Naturforsch., B*, 2002, **57**, 823-829 (*marine, isol*)
Trost, B.M. *et al., Angew. Chem., Int. Ed.*, 2004, **43**, 4327-4329 (*synth*)
Li, F. *et al., J.O.C.*, 2006, **71**, 5221-5227 (*synth*)

Streptazone B_1 S-561



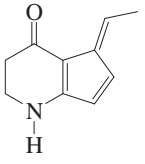
$C_{10}H_{11}NO$ 161.203
Prod. by *Streptomyces* sp. FORM5. Oil. Related to Abikoviromycin, A-14. λ_{max} 262 (log ϵ 4.14); 315 (log ϵ 3.99) (MeOH).

*4ξ,4a*ξ*-Epoxide:* ***Streptazone A***
$C_{10}H_{11}NO_2$ 177.202
Prod. by *Streptomyces* sp. FORM5. Mp 133°. $[\alpha]_D^{22}$ +118 (c, 0.34 in MeOH). Config. not determined. λ_{max} 239 (log ϵ 4.19); 310 (log ϵ 4.37) (MeOH).

*(*E*)-Isomer:* ***Streptazone B_2***
$C_{10}H_{11}NO$ 161.203
Prod. by *Streptomyces* sp. FORM5. Oil. λ_{max} 257 (log ϵ 4.1); 319 (log ϵ 3.91) (MeOH).

Puder, C. *et al., J. Nat. Prod.*, 2000, **63**, 1258-1260

Streptazone C S-562

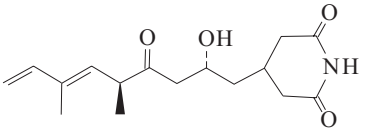


$C_{10}H_{11}NO$ 161.203
Prod. by *Streptomyces* sp. FORM5. Yellow oil. λ_{max} 286 (log ϵ 3.76); 368 (log ϵ 3.39) (MeOH).

Puder, C. *et al., J. Nat. Prod.*, 2000, **63**, 1258-1260

Streptimidone S-563

4-(2-Hydroxy-5,7-dimethyl-4-oxo-6,8-nonadienyl)-2,6-piperidinedione, 9CI. Protomycin. S 632A1. Antibiotic S 632A1
[738-72-7]



$C_{16}H_{23}NO_4$ 293.362
Glutarimide-type antibiotic. Isol. from *Streptomyces* spp. and *Micromonospora coerulea*. Shows antibiotic props. Cryst. (Me_2CO/diisopropyl ether). Mp 72-73°. $[\alpha]_D^{25}$ +238 (c, 0.5 in $CHCl_3$). λ_{max} 232 (ϵ 23100); 291 (ϵ 790) (EtOH) (Derep).
▶ LD_{50} (mus, ipr) 280 mg/kg. TM7525000

Oxime:
Cryst. (Me_2CO/diisopropyl ether). Mp 108-110°. $[\alpha]_D$ +232 (c, 0.5 in MeOH).

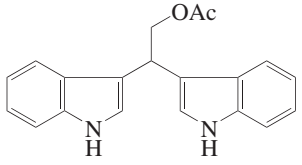
Ac:
Cryst. (Me_2CO/diisopropyl ether). Mp 108-110°. $[\alpha]_D$ +232 (c, 0.5 in MeOH).

Frohardt, R.P. *et al., J.A.C.S.*, 1959, **81**, 5500-5506 (*isol*)
Van Tamelen, E.E. *et al., J.A.C.S.*, 1960, **82**, 2974 (*struct*)
Woo, P.W.K. *et al., J.A.C.S.*, 1961, **83**, 3085 (*struct*)
Sugawara, R. *et al., J. Antibiot., Ser. A*, 1963, **16**, 111; 115 (*isol*)
Allen, M.S. *et al., Aust. J. Chem.*, 1976, **29**, 673-679 (*biosynth*)

Becker, A.M. *et al., Helv. Chim. Acta*, 1976, **59**, 2393-2401 (*abs config*)
Becker, A.M. *et al., Aust. J. Chem.*, 1982, **35**, 1405
Otani, T. *et al., J. Antibiot.*, 1989, **42**, 647; 654 (*S 632*)
Kim, B.S. *et al., J. Agric. Food Chem.*, 1999, **47**, 3372-3380 (*isol*)
Kondo, H. *et al., Eur. J. Org. Chem.*, 2000, 3459-3462 (*synth, pmr, cmr*)

Streptindole S-564

*β-1*H*-Indol-3-yl-1*H*-indole-3-ethyl acetate, 9CI. 2,2-Di(3-indolyl)ethyl acetate*
[88321-08-8]



$C_{20}H_{18}N_2O_2$ 318.374
Metab. from intestinal bacteria (*Streptococcus faecium* IB 37). Sol. MeOH, EtOAc; poorly sol. H_2O. Uncertain low mp. λ_{max} 273 (ϵ 6100); 283 (ϵ 6500); 290 (ϵ 5800) (EtOH) (Derep).

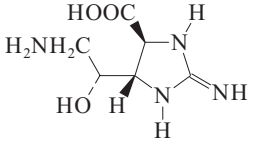
▶ Genotoxic agent.

Deacetoxy: ***Vibrindole A****. 1,1-Di(3-indolyl)ethane*
[5030-91-1]
$C_{18}H_{16}N_2$ 260.338
Metab. from the marine bacterium *Vibrio parahaemolyticus*, isol. from the toxic mucus of the boxfish *Ostracion cubicus*. Exhibits antimicrobial activity. Red powder. Mp 92°. Also descr. as oil, prob. impure. λ_{max} 241 (ϵ 12200); 275 (ϵ 8100); 282 (ϵ 8160) ($CHCl_3$) (Berdy).

Osawa, T. *et al., Tet. Lett.*, 1983, **24**, 4719-4722 (*isol, uv, ir, pmr, ms, struct*)
Hogan, I.T. *et al., Synthesis*, 1984, 872 (*synth, uv, ir, pmr*)
Singh, H. *et al., Tetrahedron*, 1988, **44**, 5897-5904 (*synth, ir, pmr*)
Bell, R. *et al., J. Nat. Prod.*, 1994, **57**, 1587-1590 (*Vibrindole A*)
Chakrabarty, M. *et al., Tet. Lett.*, 2002, **43**, 4075-4078 (*Vibrindole A, synth*)
Bartoli, G. *et al., Synthesis*, 2004, 895-900 (*synth*)
Bandagar, B.P. *et al., ARKIVOC*, 2007, **xvi**, 252-259 (*Vibrindole A, synth, ir, pmr*)

Streptolidine S-565

*2-Amino-5-(2-amino-1-hydroxyethyl)-4,5-dihydro-1*H*-imidazole-4-carboxylic acid, 9CI. Geamine. Roseonine*
[29307-61-7]



$C_6H_{12}N_4O_3$ 188.186
Hydrol. prod. of many *Streptomyces* antibiotics, e.g. Geomycin. pK_{a1} 2.5; pK_{a2} 8.72; pK_{a3} 11.3 (H_2O). pK_{a1} 3.95; pK_{a2} 9.1; pK_{a3} 12.65 (66% DMF).

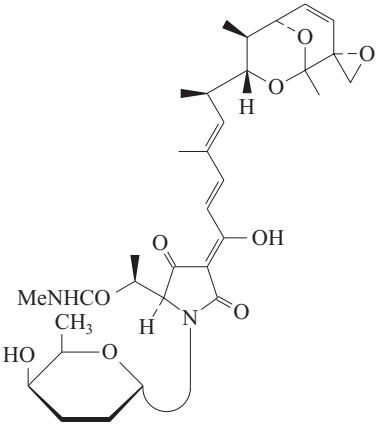
Hydrochloride (1:2): Mp 175-180° dec Mp 208-215° dec Mp 220° Mp 239° dec. $[\alpha]_D$ +56.

Dipicrate:
Deep yellow prisms (H_2O). Mp 237° dec.

Carter, H.E. *et al., J.A.C.S.*, 1961, **83**, 4296 (*isol, struct*)
Borders, D.B. *et al., Tet. Lett.*, 1967, 4187 (*pmr, ir, struct, derivs*)
Bycroft, B.W. *et al., Chem. Comm.*, 1972, 652 (*cryst struct*)
Goto, T. *et al., Tet. Lett.*, 1974, 1413 (*synth, ir, ms, nmr*)
Kusumoto, S. *et al., Bull. Chem. Soc. Jpn.*, 1976, **49**, 3611 (*pmr, synth*)
Kinoshita, M. *et al., Bull. Chem. Soc. Jpn.*, 1977, **50**, 2375 (*synth*)

Streptolydigin, 9CI S-566

Portamycin. Afragilimycin A
[7229-50-7]



$C_{32}H_{44}N_2O_9$ 600.708
Nucleoside antibiotic. Prod. by *Streptomyces lydicus* and *Streptomyces neohygroscopicus afragilimyceticus*. Active against gram-positive bacteria. RNA-polymerase inhibitor. Cryst. + H_2O (Me_2CO). Mp 147-148° Mp 190-195°. $[\alpha]_D^{25}$ -93 (c, 1.6 in $CHCl_3$). $[\alpha]_D^{25}$ -65.7 (c, 2.28 in 0.005*M* NaOH). λ_{max} 240 (ϵ 8000); 357 (ϵ 35500); 370 (ϵ 33700) (EtOH/HCl) (Derep). λ_{max} 262 (ϵ 13600); 291 (ϵ 16400); 335 (ϵ 20000) (EtOH/NaOH) (Derep). λ_{max}.

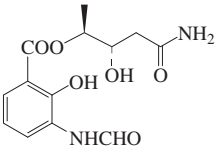
▶ WK4250000

Na salt: Mp 225°. $[\alpha]_D^{25}$ +153 (c, 1.35 in $CHCl_3$). λ_{max} 240 (ϵ 7280); 360 (ϵ 29400); 373 (ϵ 29500) (50% MeOH/HCl) (Derep). λ_{max} 257 (ϵ 10800); 296 (sh) (ϵ 13100); 310 (sh) (ϵ 13600); 336 (ϵ 17900) (50% MeOH) (Derep). λ_{max} 259 (ϵ 11200); 296 (sh) (ϵ 13700); 336 (ϵ 18500) (MeOH aq./NaOH) (Derep).

[76559-69-8]

Rinehart, K.L. *et al., J.A.C.S.*, 1963, **85**, 4035; 4037; 4038 (*struct, uv, ir, ms, pmr*)
Stevens, C.L. *et al., J.A.C.S.*, 1964, **86**, 3592 (*isol*)
Duchamp, D.J. *et al., J.A.C.S.*, 1973, **95**, 4077 (*cryst struct, stereochem*)
Von Meyenburg, K. *et al., Antimicrob. Agents Chemother.*, 1978, **13**, 324
Lee, V.J. *et al., J. Antibiot.*, 1980, **33**, 408 (*cmr*)
McClure, W.R. *et al., J. Biol. Chem.*, 1980, **255**, 1610 (*props*)
Japan. Pat., 1980, 80 127 398; *CA*, **94**, 101308 (*Afragilimycin A*)
Pearce, C.J. *et al., J. Antibiot.*, 1983, **36**, 1536 (*biosynth*)
Perez, J.P. *et al., Diss. Abstr. Int., B*, 1984, **45**, 1781 (*synth*)
Ireland, R.E. *et al., J.A.C.S.*, 1988, **110**, 854 (*synth*)
Bols, M. *et al., J. Antibiot.*, 1991, **44**, 678 (*Afragilimycin A*)
Chen, H. *et al., Org. Lett.*, 2004, **6**, 4033-4036 (*biosynth*)
Chen, H. *et al., Org. Lett.*, 2006, **8**, 5329-5332 (*biosynth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, SLW475

Streptomyceamide A S-567

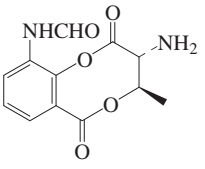


Relative Configuration

$C_{13}H_{16}N_2O_6$ 296.279
Prod. by *Streptomyces* sp. LR4612. Yellowish powder. $[\alpha]_D^{26}$ +77 (c, 1.1 in $CHCl_3$). λ_{max} 242 (log ϵ 4.07); 322 (log ϵ 3.52); 378 (log ϵ 2.4) ($CHCl_3$).

Zhao, P.-J. *et al., Chem. Biodiversity*, 2006, **3**, 337-342 (*isol, pmr, cmr*)

Streptomyceamide B S-568



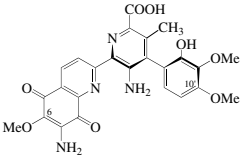
Relative Configuration

$C_{12}H_{12}N_2O_5$ 264.237
Prod. by *Streptomyces* sp. LR4612. Amorph. yellow solid. $[\alpha]_D^{25}$ +45 (c, 0.2 in MeOH). λ_{max} 224 (log ϵ 4.13); 333 (log ϵ 3.38) (MeOH).

Zhao, P.-J. *et al., Chem. Biodiversity*, 2006, **3**, 337-342 (*isol, pmr, cmr*)

Streptonigrin, USAN S-569

Rufocromomycin, BAN, INN*. Bruneomycin. Nigrin. Valacidin. NSC 45383. RP 5278. Antibiotic RP 5278*
[3930-19-6]



Absolute Configuration

$C_{25}H_{22}N_4O_8$ 506.471
Benzoquinone antibiotic. Absolute configuration conclusively assigned in 2008. Isol. from *Streptomyces flocculus* and

other *Streptomyces* spp. Shows immunosuppressant, antineoplastic, anti-HIV and antileukaemic activities. . Coffee-brown to almost black rectangular plates (Me_2CO or dioxan) or brown needles. Mp 262-263° (needles) Mp 275° dec. (plates). pK_a 6.2-6.4 (50% dioxan aq.). Log P 1.12 (uncertain value) (calc). λ_{max} 247 (ϵ 46000); 295 (sh) (ϵ 17000); 386 (ϵ 19700) (MeOH) (Derep).

▶ LD_{50} (dog, orl) 0.5 mg/kg. LD_{50} (mus, orl) 2.3 mg/kg. Exp. reprod. and teratogenic effects. TJ7350000

N^7-*(1-Methyl-2-oxopropyl):* **N^7-(1-Methyl-2-oxopropyl)streptonigrin**
[436142-66-4]
$C_{29}H_{28}N_4O_9$ 576.562
Prod. by *Micromonospora* sp. IM 2670. Red solid. λ_{max} 250 ; 300 (sh) ; 377 (no solvent reported).

6-O-*De-Me:* **6-Demethylstreptonigrin**. *MG 883-12F2. Antibiotic MG 883-12F2*
[104462-58-0]
$C_{24}H_{20}N_4O_8$ 492.444
From a *Streptomyces* sp. Active against mouse leukaemia.

10′-O-*De-Me:* **10′-Demethylstreptonigrin**
[105933-56-0]
$C_{24}H_{20}N_4O_8$ 492.444
From *Streptomyces albus*. Shows antineoplastic and weak antibacterial props. Brown powder. Sol. MeOH, EtOAc; poorly sol. H_2O. Mp 177-181°. λ_{max} 247 (ϵ 46000); 295 (sh) (ϵ 17000); 386 (ϵ 19700) (MeOH) (Derep). λ_{max} 245 (ϵ 32800); 385 (ϵ 12300) (MeOH) (Berdy).

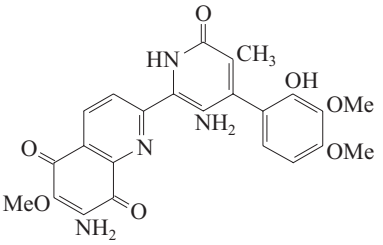
10′-*Demethoxy:* **10′-Demethoxystreptonigrin**
[136803-89-9]
$C_{24}H_{20}N_4O_7$ 476.445
Prod. by *Streptomyces albus* and *Streptomyces otagonensis*. Shows broad spectrum of antibacterial activity. Cytotoxic. Dark red needles (Me_2CO). λ_{max} 247 (ϵ 41600); 379 (ϵ 17400) (MeOH/HCl) (Derep). λ_{max} 246 (ϵ 43600); 380 (ϵ 16100) (MeOH/NaOH) (Derep). λ_{max} 247 (ϵ 34800); 379 (ϵ 14900) (MeOH) (Derep).

▶ US5177500

Rao, K.V. *et al., Antibiot. Annu.*, 1959, 950-953; *CA*, **54**, 17723y (*isol*)
Rao, K.V. *et al., J. Het. Chem.*, 1975, **12**, 725-730; 731-735 (*synth, ir, uv, nmr*)
Chiu, Y.Y. *et al., J.A.C.S.*, 1975, **97**, 2525-2530 (*cryst struct*)
Hibino, S. *et al., Heterocycles*, 1977, **6**, 1485-1507 (*rev, synth*)
Gould, S.J. *et al., J.A.C.S.*, 1977, **99**, 5496-5497 (*biosynth*)
Kim, D. *et al., J.O.C.*, 1978, **43**, 121-125 (*synth*)
Mizuno, N.S. *et al., Antibiotics (N.Y.)*, 1979, **5**, 372-384 (*rev, props*)
Gould, S.J. *et al., J.A.C.S.*, 1982, **104**, 343-346 (*biosynth*)
Weinreb, S.M. *et al., J.A.C.S.*, 1982, **104**, 536-544 (*synth*)
Martindale, The Extra Pharmacopoeia, 28th/29th edn., Pharmaceutical Press, 1982, 1862
Gould, S.J. *et al., Prog. Chem. Org. Nat. Prod.*, 1982, **41**, 77-114 (*rev*)
Herlt, A.J. *et al., J. Antibiot.*, 1985, **38**, 516-518 (*isol, biosynth*)
Boger, D.L. *et al., J.A.C.S.*, 1985, **107**, 5745-5754 (*synth, bibl*)
Eur. Pat., 1986, 185 979; *CA*, **105**, 151549 (*MG 883-12F2*)
Isshiki, K. *et al., J. Antibiot.*, 1986, **39**, 1013-1015 (*10′-Demethylstreptonigrin*)
Si, S. *et al., CA*, 1991, **115**, 202849 (*10′-Demethoxystreptonigrin*)
Japan. Pat., 1991, 91 83 980; *CA*, **115**, 230526 (*10′-Demethoxystreptonigrin*)
Liu, W.C. *et al., J. Antibiot.*, 1992, **45**, 454-457 (*10′-Demethoxystreptonigrin*)
Wang, H. *et al., J. Nat. Prod.*, 2002, **65**, 721-724 (*N-Methyloxopropylstreptonigrin, pmr, cmr*)
Anderberg, P.I. *et al., Magn. Reson. Chem.*, 2002, **40**, 313-315 (*cmr, N-15 nmr*)
Bringmann, G. *et al., Tetrahedron*, 2004, **60**, 3539-3574 (*rev, synth*)
Bringmann, G. *et al., Tetrahedron*, 2008, **64**, 515-521 (*cd, abs config*)
Bringmann, G. *et al., Tetrahedron*, 2008, **64**, 515-521 (*cd, uv, abs config*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, SMA000

Streptonigrone S-570

[96684-38-7]



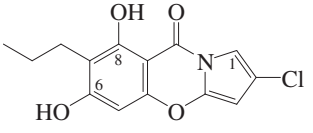
$C_{24}H_{22}N_4O_7$ 478.46

Quinone antibiotic. Opt. inactive, poss. racemic. Prod. by *Streptomyces flocculus* and *Streptomyces albus-bruneomycini*. Antineoplastic agent. Less active than Streptonigrin, S-569. Rods (CH_2Cl_2/petrol). Mp 268-269°. λ_{max} 425 (ϵ 12500) (MeOH) (Berdy). λ_{max} 342 (ϵ 15000) (MeOH/HCl) (Berdy).

Herlt, A.J. *et al., J. Antibiot.*, 1985, **38**, 516 (*isol*)
Kozlova, N.V. *et al., Antibiot. Khimioter.*, 1990, **35**, 13 (*isol*)
Boger, D.L. *et al., J.O.C.*, 1991, **56**, 880 (*synth*)
Tennant, S. *et al., Tetrahedron*, 1997, **53**, 15101-15114 (*config*)
Chan, B.K. *et al., J.O.C.*, 2007, **72**, 8489-8495 (*synth*)

Streptopyrrole S-571

*2-Chloro-6,8-dihydroxy-7-propyl-9*H*-pyrrolo[2,1-*b*][1,3]benzoxazin-9-one, 9CI. Antibiotic XR 587. XR 587*
[192819-12-8]



$C_{14}H_{12}ClNO_4$ 293.706

Prod. by *Streptomyces armeniacus* and *Streptomyces rimosus*. Inhibitor of NR11c protein histidine kinase. Shows strong antimicrobial activity against gram positive bacteria and weak activity against yeasts. Needles (MeCN). Sol. MeOH, DMSO, $CHCl_3$; poorly sol. H_2O. Mp 181-183° dec. λ_{max} 241 (log ϵ 4.51); 294 (log ϵ 4.3); 335 (log ϵ 3.65) (MeOH). λ_{max} 254 ; 293 ; 336 (MeOH) (Berdy).

*6-Me ether: 2-Chloro-8-hydroxy-6-methoxy-7-propyl-9*H*-pyrrolo[2,1-*b*][1,3]benzoxazin-9-one, 9CI*
$C_{15}H_{14}ClNO_4$ 307.733
Prod. by *Streptomyces rimosus*. Powder. λ_{max} 248 ; 291 ; 341 (MeCN aq.).

*1-Chloro: 1,2-Dichloro-6,8-dihydroxy-7-propyl-9*H*-pyrrolo[2,1-*b*][1,3]benzoxazin-9-one, 9CI*
[208707-46-4]
$C_{14}H_{11}Cl_2NO_4$ 328.151
Prod. by *Streptomyces rimosus*. Powder. λ_{max} 247 ; 295 ; 342 (MeCN aq.).

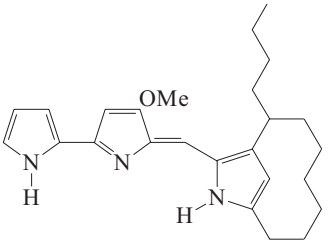
*1-Chloro, 6-Me ether: 1,2-Dichloro-8-hydroxy-6-methoxy-7-propyl-9*H*-pyrrolo[2,1-*b*][1,3]benzoxazin-9-one, 9CI*
$C_{15}H_{13}Cl_2NO_4$ 342.177
Prod. by *Streptomyces rimosus*. Powder. λ_{max} 252 ; 291 ; 348 (MeCN aq.).

*Bromo analogue: 2-Bromo-6,8-dihydroxy-7-propyl-9*H*-pyrrolo[2,1-*b*][1,3]benzoxazin-9-one, 9CI*
[208707-48-6]
$C_{14}H_{12}BrNO_4$ 338.157
Prod. by *Streptomyces rimosus*. Powder. λ_{max} 243 ; 295 ; 333 (MeCN aq.).

Breinholt, J. *et al., Acta Chem. Scand.*, 1998, **52**, 1040-1044 (*isol, uv, pmr, cmr, ms*)
Pat. Coop. Treaty (WIPO), 1998, 98 25 931; *CA*, **129**, 52003e (*isol*)
Raggatt, M.E. *et al., Chem. Comm.*, 1999, 1039-1040 (*biosynth*)
Trew, S.J. *et al., J. Antibiot.*, 2000, **53**, 1-11 (*isol, uv, ir, pmr, cmr, cryst struct, activity*)

Streptorubin B S-572

[56208-07-2]



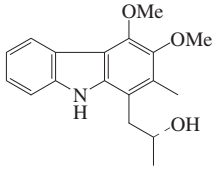
$C_{25}H_{33}N_3O$ 391.555

Pyrrole antibiotic. Structure finally shown to be distinctly different to Butylcycloheptylprodigiosine, B-427 in 2007. Prod. by *Streptomyces coelicolor*. λ_{max} 293 (ϵ 6920); 361 (ϵ 5250); 510 (ϵ 37200); 537 (ϵ 83200) (EtOH/HCl) (Derep).

Tsao, S.-W. *et al., J. Antibiot.*, 1985, **38**, 128-131 (*isol*)
Laatsch, H. *et al., J. Antibiot.*, 1991, **44**, 187-191 (*pmr, cmr*)
Fürstner, A. *et al., Angew. Chem., Int. Ed.*, 2003, **42**, 3582-3603 (*rev*)
Fürstner, A. *et al., Chem. Eur. J.*, 2007, **13**, 1929-1945 (*struct*)

Streptoverticillin S-573

1-(2-Hydroxypropyl)-3,4-dimethoxy-2-methyl-9H-carbazole
[941687-52-1]



Absolute Configuration

$C_{18}H_{21}NO_3$ 299.369
Prod. by *Streptomyces morookaense* strain SC1169. Antifungal agent. Amorph. yellow powder. $[\alpha]_D^{20}$ +18.4 (c, 0.18 in MeOH). λ_{max} 220 (log ϵ 4.41); 242 (log ϵ 4.48); 293 (log ϵ 4.12); 328 (log ϵ 3.61) (MeOH).

Feng, N. *et al., J. Antibiot.*, 2007, **60**, 179-183 (*isol, pmr, cmr, ms*)

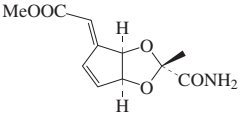
Streptovitacin D, 8CI S-574

[11035-06-6]

$C_{15}H_{23}NO_5$ 297.35
Closely related isomer of Streptovitacin A in D-765, full struct. not known. Produced by *Streptomyces griseus*. Shows antitumour activity, phytotoxin. Cryst. Sol. H_2O, EtOAc, MeOH; fairly sol. $CHCl_3$, Et_2O; poorly sol. hexane. Mp 67-69°. λ_{max} 234 ; 240 (H_2O) (Berdy).

Herr, R.R. *et al., J.A.C.S.*, 1959, **81**, 2595-2596 (*struct*)
U.S. Pat., 1967, 3 305 554; *CA*, **66**, 98487z (*manuf*)

Stresgenin B S-575



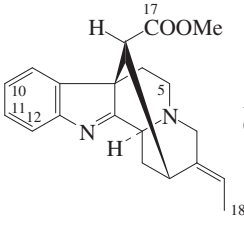
Relative Configuration

$C_{11}H_{13}NO_5$ 239.227
Prod. by *Streptomyces* sp. AS-9. Inhibitor of heat-induced heat shock protein gene expression. Powder. Mp 183-184°. $[\alpha]_D^{25}$ -12.6 (c, 0.16 in MeOH). λ_{max} 275 (ϵ 25800) (MeOH).

Akagawa, H. *et al., J. Antibiot.*, 1999, **52**, 960-970

Strictamine S-576

Methyl akuammilan-17-oate, 9CI. Vincamidine. Desacetyldesformoakuammiline
[6475-05-4]



Absolute Configuration

$C_{20}H_{22}N_2O_2$ 322.406
Alkaloid from *Vinca minor, Vinca libanotica, Alstonia scholaris, Rhazya stricta* and *Rauwolfia vomitoria* (Apocynaceae). Cryst. (Me_2CO or Et_2O). Mp 80-83° (hydrate) Mp 114-115° (anhyd.) Mp 135°. λ_{max} 213 (log ϵ 4.37); 262 (log ϵ 3.8) (EtOH).

▶ LD_{50} (mus, ipr) 162 mg/kg. WK7150000

N^4-Oxide: ***Strictamine* N-oxide**
[90850-95-6]
$C_{20}H_{22}N_2O_3$ 338.405
Alkaloid from the leaves of *Rauwolfia stricta* (Apocynaceae). Amorph. $[\alpha]_D$ -75 ($CHCl_3$). λ_{max} 213 (log ϵ 3.15); 262 (log ϵ 2.66) (MeOH).

N^4-Me: ***N^b-Methylstrictamine***
[123789-23-1]
$C_{21}H_{25}N_2O_2^{\oplus}$ 337.441
Quaternary alkaloid from the leaves of *Rauwolfia stricta* and *Vinca minor* (Apocynaceae). Mp 176-178°. $[\alpha]_D$ -65 ($CHCl_3$). Counterion not specified. CAS no. refers to chloride. λ_{max} 242 (MeOH).

17-Aldehyde: ***Strictalamine***
[1897-36-5]
$C_{19}H_{20}N_2O$ 292.38
Alkaloid from the leaves of *Rhazya stricta* (Apocynaceae). Needles. Mp 152-154°.

10-Hydroxy: ***10-Hydroxystrictamine***
[88754-97-6]
$C_{20}H_{22}N_2O_3$ 338.405
Alkaloid from *Alstonia macrophylla* and *Vinca erecta*. Amorph. $[\alpha]_D$ +81.6 (c, 0.02 in $CHCl_3$). λ_{max} 230 (log ϵ 3.6); 280 (log ϵ 3.4) (MeOH).

11-Hydroxy: ***11-Hydroxystrictamine***
[88754-98-7]
$C_{20}H_{22}N_2O_3$ 338.405
Alkaloid from *Vinca erecta* and *Alstonia angustifolia* (Apocynaceae). Mp 228-229°. λ_{max} 233 (log ϵ 4.25); 285 (log ϵ 3.64) (EtOH).

12-Hydroxy: ***12-Hydroxystrictamine***
[136952-70-0]
$C_{20}H_{22}N_2O_3$ 338.405
Alkaloid from leaves of *Rauwolfia sumatrana* (Apocynaceae). Feathery needles (MeOH). Mp 282-286° dec. λ_{max} 259 (ϵ 5300); 297 (sh) (ϵ 2500) (MeOH).

12-Hydroxy, Ac:
Stout rods (EtOAc/petrol). Mp 177-181°.

18-Hydroxy: ***Gomaline****. 18-Hydroxystrictamine*
[89384-07-6]
$C_{20}H_{22}N_2O_3$ 338.405
Alkaloid from leaves of *Catharanthus roseus* (Apocynaceae). $[\alpha]_D$ +94 ($CHCl_3$). λ_{max} 210 ; 262 (MeOH).

5β-Methoxy: ***5-Methoxystrictamine***
[870995-64-5]
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from the leaves of *Alstonia scholaris*. Powder. Mp 232-235°. $[\alpha]_D^{14}$ -119.3 (c, 0.39 in $CHCl_3$).

11-Methoxy: ***11-Methoxystrictamine***
[160920-59-2]
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from leaves of *Rauwolfia sumatrana* (Apocynaceae). Amorph. powder. λ_{max} 229 (4.08); 279 (3.4) (MeOH).

5α,10-Dimethoxy: ***5,10-Dimethoxystrictamine***
$C_{22}H_{26}N_2O_4$ 382.458
Alkaloid from *Alstonia villosa*. Solid. $[\alpha]_D^{29}$ -71.8 (c, 1.23 in MeOH). Incorrectly indexed in CAS. λ_{max} 207 (log ϵ 4.31); 220 (sh) (log ϵ 4.24); 285 (log ϵ 3.87) (MeOH).

5α,10,11-Trimethoxy: ***5,10,11-Trimethoxystrictamine***
$C_{23}H_{28}N_2O_5$ 412.485
Alkaloid from leaves of *Alstonia macrophylla* (Apocynaceae). Solid. $[\alpha]_D^{22}$ -73.4 (c, 1.30 in MeOH).

16-Epimer, 17-alcohol: ***Rhazinol***
[72778-18-8]
$C_{19}H_{22}N_2O$ 294.396
Alkaloid from *Rhazya stricta* (Apocynaceae). Glass. λ_{max} 225 (ϵ 13610); 266 (ϵ 5440) (MeOH).

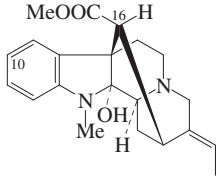
16-Epimer, 17-aldehyde: ***Rhazinoline***
[949932-16-5]
$C_{19}H_{20}N_2O$ 292.38
Alkaloid from the stem bark of *Kopsia arborea*. Oil. $[\alpha]_D$ +136 (c, 0.07 in $CHCl_3$). λ_{max} 211 (log ϵ 4.27); 260 (log ϵ 3.7) (EtOH).

Trojánek, J. *et al., Coll. Czech. Chem. Comm.*, 1960, **25**, 2045-2048 (*isol, uv, ir*)
Schnoes, H.K. *et al., J.O.C.*, 1966, **31**, 1641-1642 (*uv, ir, pmr, ms, struct*)
Taylor, W.I. *et al., The Vinca Alkaloids*, Marcel Dekker, 1973, (*props*)
Ahmad, Y. *et al., J.A.C.S.*, 1977, **99**, 1943-1946 (*uv, ir, pmr, ms, cryst struct, abs config*)
Yagudaev, M.R. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1983, **19**, 454-458 (*10-Hydroxystrictamine, 11-Hydroxystrictamine*)
Ahmad, Y. *et al., Phytochemistry*, 1983, **22**, 1017-1019 (*Rhazinol*)
Atta-ur-Rahman, *et al., Heterocycles*, 1984, **22**, 85-86 (*Gomaline*)
Atta-ur-Rahman, *et al., Phytochemistry*, 1984, **23**, 709-710 (*Strictamine N-oxide*)
Atta-ur-Rahman, *et al., Z. Naturforsch., B*, 1987, **42**, 91-93 (*N^b-Methylstrictamine*)
Ghedira, K. *et al., Phytochemistry*, 1988, **27**, 3955-3962 (*11-Hydroxystrictamine*)
Uhrín, D. *et al., J. Nat. Prod.*, 1989, **52**, 637-639 (*N^b-Methylstrictamine*)
Proksa, B. *et al., Planta Med.*, 1989, **55**, 188-190 (*N^b-Methylstrictamine*)
Arbain, D. *et al., Aust. J. Chem.*, 1991, **44**, 1007-1011 (*12-Hydroxystrictamine*)
Subhadhirasakul, S. *et al., Chem. Pharm. Bull.*, 1994, **42**, 1427-1431 (*11-Methoxystrictamine*)
Atta-ur-Rahman, *et al., Nat. Prod. Lett.*, 1994, **5**, 201-209 (*10-Hydroxystrictamine*)
Abe, F. *et al., Phytochemistry*, 1994, **35**, 253-257 (*5,10,11-Trimethoxystrictamine*)

Abe, F. *et al., Chem. Pharm. Bull.*, 1998, **46**, 1235-1238 (*5,10-Dimethoxystrictamine*)
Zhou, H. *et al., Helv. Chim. Acta*, 2005, **88**, 2508-2512 (*5-Methoxystrictamine*)
Lim, K.-H. *et al., J. Nat. Prod.*, 2007, **70**, 1302-1307 (*Rhazinoline*)

Strictaminolamine S-577

[119328-84-6]



Absolute Configuration

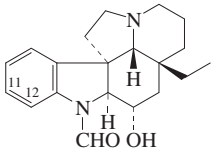
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from the leaves of *Alstonia macrophylla* (Apocynaceae). Amorph. $[\alpha]_D$ -30 ($CHCl_3$).

16-Epimer, 10-methoxy, N^4*-oxide:* ***Alstozine* N-*oxide***
[134328-12-4]
$C_{22}H_{28}N_2O_5$ 400.474
Alkaloid from leaves of *Alstonia macrophylla* (Apocynaceae). Amorph. solid. $[\alpha]_D$ +107 ($CHCl_3$).

Atta-ur-Rahman, *et al., Phytochemistry*, 1988, **27**, 3653 (*isol, uv, ir, pmr, cmr, ms, struct*)
Atta-ur-Rahman, *et al., Fitoterapia*, 1990, **61**, 230 (*Alstozine N-oxide*)

Strictanine S-578

[109028-31-1]



Absolute Configuration

$C_{20}H_{26}N_2O_2$ 326.438
Trace alkaloid from the fruits of *Rhazya stricta* (Apocynaceae). λ_{max} 212 ; 253 ; 260 (sh) ; 280 ; 290 (MeOH).

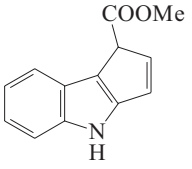
11,12-Dihydroxy, N-*deformyl,* N-*Ac:* ***Spegazzinidine***
[6899-72-5]
$C_{21}H_{28}N_2O_4$ 372.463
Alkaloid from *Aspidosperma chakensis* (Apocynaceae). Cryst. Mp 237-238°. $[\alpha]_D^{24}$ +186 ($CHCl_3$).

12-Hydroxy, N-*deformyl,* N-*Ac:* ***Spegazzinine***
[6882-72-0]
$C_{21}H_{28}N_2O_3$ 356.464
Alkaloid from *Aspidosperma chakensis* (Apocynaceae). Cryst. (MeOH aq.). Mp 104.5-106°. $[\alpha]_D$ +175.6 ($CHCl_3$).

Djerassi, C. *et al., J.A.C.S.*, 1962, **84**, 3480 (*Spegazzinine, Spegazzinidine*)
Atta-ur-Rahman, *et al., Phytochemistry*, 1987, **26**, 589-591 (*Strictanine*)
Belferdi, F. *et al., Molecules*, 2001, **6**, 803-814 (*synth*)

Strictibine S-579

[183803-82-9]

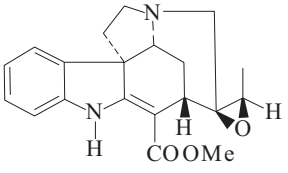


$C_{13}H_{11}NO_2$ 213.235
Alkaloid from leaves of *Rhazya stricta*. λ_{max} 208 (log ϵ 3.9); 237 (log ϵ 4.13); 286 (log ϵ 2.74); 375 (log ϵ 2.25) (MeOH).

Habib-ur-Rehman, *et al., Fitoterapia*, 1996, **67**, 145 (*isol, uv, ir, pmr, ms, struct*)

Stricticine S-580

[72847-49-5]

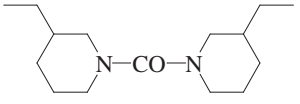


$C_{20}H_{22}N_2O_3$ 338.405
Alkaloid from the leaves of *Rhazya stricta* (Apocynaceae). Amorph. $[\alpha]_D$ +515 ($CHCl_3$). Related to 20-Epilocheneridine; see L-224. λ_{max} 208; 228; 292; 327 (MeOH) (Derep).

Ahmad, Y. *et al., Phytochemistry*, 1983, **22**, 1017-1019 (*isol*)
Atta-ur-Rahman, *et al., Tet. Lett.*, 1987, **28**, 3609 (*uv, ir, pmr, cmr, ms, struct*)

Strictimine S-581

1,1′-Carbonylbis[3-ethylpiperidine], 9CI
[92631-62-4]

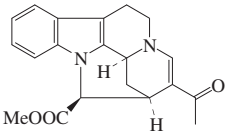


$C_{15}H_{28}N_2O$ 252.399
Alkaloid from the roots of *Rhazya stricta*. Racemic.

Atta-ur-Rahman, *et al., Heterocycles*, 1984, **22**, 2023-2027

Strictine S-582

[72847-50-8]



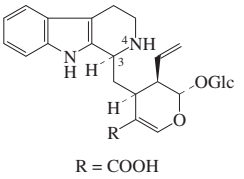
Absolute Configuration

$C_{20}H_{20}N_2O_3$ 336.39
Alkaloid from the leaves of *Rhazya stricta* (Apocynaceae). Amorph.

Atta-ur-Rahman, *et al., Heterocycles*, 1987, **26**, 2125 (*isol, uv, ir, pmr, cmr, ms, struct*)

Strictosidinic acid S-583

[150148-81-5]



Absolute Configuration

$C_{26}H_{32}N_2O_9$ 516.547
Most refs. refer to Strictosidine. Alkaloid from the roots of *Rhazya orientalis* (Apocynaceae) and leaves of *Ophiorrhiza filistipula* (Rubiaceae). Feathery needles (MeOH/EtOAc). Mp 253-255° dec. $[\alpha]_D$ -223 (c, 0.19 in H_2O).

3′-α-D-Glucopyranosyl: ***Hunterioside B***
[168434-16-0]
$C_{32}H_{42}N_2O_{14}$ 678.689
Alkaloid from the stem bark of *Hunteria zeylanica* (Apocynaceae). Amorph. solid. λ_{max} 221 ; 272 ; 289 (EtOH).

6′-α-D-Glucopyranosyl: ***Hunterioside****. Strictosidinic acid 6′-α-D-glucoside*
[156431-08-2]
$C_{32}H_{42}N_2O_{14}$ 678.689
Alkaloid from stem bark of *Hunteria zeylanica* (Apocynaceae). Amorph. powder. The first biose bound monoterpenoid indole alkaloid.

Me ester: ***Strictosidine****. Isovincoside*
[20824-29-7]
$C_{27}H_{34}N_2O_9$ 530.574
Alkaloid from the leaves of *Rhazya stricta* and *Anthocephalus cadamba*, *Catharanthus roseus* (*Vinca rosea*) and *Strychnos mellodora* (Apocynaceae, Rubiaceae). Key intermediate in the biosynth. of terpenoid indole alkaloids. Noncryst. $[\alpha]_D$ -143 (MeOH) (as hydrochloride). Very reactive compound; hydrol. to Vallesiachotamine, V-10.

N^4*-Ac, Me ester:*
Needles (MeOH aq.). Mp 172-173°. $[\alpha]_D$ -107 (MeOH).

N^4*-Me:* ***Palicoside***
[123828-68-2]
$C_{27}H_{34}N_2O_9$ 530.574
Alkaloid from leaves of *Palicourea marcgravii* (Rubiaceae) and from *Strychnos mellodora*. Yellowish needles. Mp 206-208°. $[\alpha]_D$ -61.6 (c, 0.5 in H_2O).

N^4*-Me, Me ester:* ***Dolichantoside***
[68727-52-6]
$C_{28}H_{36}N_2O_9$ 544.6
Alkaloid from roots of *Strychnos gossweileri* and stem bark of *Strychnos tricalysioides* and from *Strychnos mellodora* (Loganiceae). Noncryst. C-3 config. revised to *R*- in 1993 but reversed again in 1997.

3,4-Didehydro: ***3,4-Dehydrostrictosidinic acid***
$C_{26}H_{30}N_2O_9$ 514.531
Alkaloid from *Chimarrhis turbinata*. Amorph. yellow powder. λ_{max} 240 (log

ϵ 3); 356 (log ϵ 3.5) (MeOH).

3,4-Didehydro, Me ester: ***3,4-Dehydrostrictosidine***
$C_{27}H_{32}N_2O_9$ 528.558
Alkaloid from *Chimarrhis turbinata*. Amorph. yellow powder. λ_{max} 239 (log ϵ 3); 358 (log ϵ 3.9) (MeOH).

5-Oxo, Me ester: ***5-Oxostrictosidine***
[56470-42-9]
$C_{27}H_{32}N_2O_{10}$ 544.557
Alkaloid from the heartwood of *Adina rubescens* (Rubiaceae). Amorph. solid (as N^4,*O*,*O*,*O*,*O*-penta-Ac). $[\alpha]_D^{25}$ -20 ($CHCl_3$) (penta-Ac).

3-Epimer: ***3-Epistrictosidinic acid***. *Vinsosidinic acid*
$C_{26}H_{32}N_2O_9$ 516.547
Alkaloid from the leaves of *Palicourea coriacea*. Brown cryst. Mp 190-194°. $[\alpha]_D$ -72 (c, 8.2 in MeOH).

3-Epimer, Me ester: ***Vincoside***
[19456-89-4]
$C_{27}H_{34}N_2O_9$ 530.574
Alkaloid from *Catharanthus roseus* (Apocynaceae). Noncryst. $[\alpha]_D$ -112 (MeOH) (as hydrochloride). Unstable.

3-Epimer, N^4*-Ac, Me ester:* **N-*Acetylvincoside***
$C_{29}H_{36}N_2O_{10}$ 572.611
Alkaloid from *Catharanthus roseus* (Apocynaceae). Needles (EtOH aq.). Mp 180-181°. $[\alpha]_D$ -170 (MeOH).

3-Epimer, N^4*-Me, Me ester:* ***Isodolichantoside***
[75363-97-2]
$C_{28}H_{36}N_2O_9$ 544.6
Minor alkaloid from root bark of *Strychnos gossweileri* (Loganiceae). C-3 config. revised to *S*- in 1993 but reversed again in 1997.

Smith, G.N. *et al., Chem. Comm.*, 1968, 912 (*isol, uv, ir, pmr, ms*)
Battersby, A.R. *et al., J.C.S.(C)*, 1969, 1193 (*isol, uv, ir, pmr*)
De Silva, K.T.D. *et al., Chem. Comm.*, 1971, 905; 908 (*Strictosidinic acid, config*)
Blackstock, W.P. *et al., Chem. Comm.*, 1971, 910 (*abs config*)
Brown, R.T. *et al., Experientia*, 1975, **31**, 505 (*5-Oxostrictosidine*)
Mattes, K.C. *et al., J.A.C.S.*, 1975, **97**, 6270 (*abs config*)
Coune, C. *et al., Planta Med.*, 1978, **34**, 53 (*Dolichantoside*)
Rüffer, M. *et al., Tet. Lett.*, 1978, 1593 (*biosynth*)
Stöckigt, J. *et al., Phytochemistry*, 1979, **18**, 965 (*biosynth*)
Coune, C.A. *et al., Herba Hung.*, 1980, **19**, 189; *CA*, **93**, 217906e (*Isodolichantoside*)
Leclercq, J. *et al., Planta Med.*, 1984, **50**, 457 (*Dolichantoside*)
Morita, H. *et al., Planta Med.*, 1989, **55**, 288 (*Palicoside*)
Subhadhirasakul, S. *et al., Chem. Pharm. Bull.*, 1994, **42**, 991 (*Hunterioside*)
Tits, M. *et al., Planta Med.*, 1996, **62**, 73-74 (*isol, derivs, Strychnos*)
Patthy-Lukáts, A. *et al., J. Nat. Prod.*, 1997, **60**, 69 (*pmr, cmr, stereochem*)
Achenbach, H. *et al., Phytochemistry*, 1997, **44**, 1387-1390 (*Dolichantoside, Isodolichantoside, abs config*)
Takayama, H. *et al., Heterocycles*, 1998, **47**, 87-90 (*Hunteriosides*)
Ohmori, O. *et al., Tet. Lett.*, 1998, **39**, 7737-7740 (*Dolichantoside, Isodolichantoside*)
Patthy-Lukats, A. *et al., J. Nat. Prod.*, 1999, **62**, 1492-1499 (*conformn, config*)
Ohmori, O. *et al., Tet. Lett.*, 1999, **40**, 5039-5042 (*Hunteroside, synth*)
Cardoso, C.L. *et al., J. Nat. Prod.*, 2004, **67**, 1882-1885 (*Dehydrostrictosidine, Dehydrostrictosidinic acid*)
Do Nascimento, C.A. *et al., Z. Naturforsch., B*, 2006, **61**, 1443-1446 (*Epistrictosidinic acid*)
Szabó, L.F. *et al., Molecules*, 2008, **13**, 1875-1896 (***rev***)

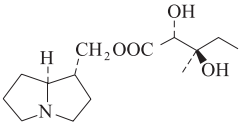
Strictosidinic ketone S-584

[929686-15-7]
As Strictosidinic acid, S-583 with
R = $COCH_3$
$C_{27}H_{34}N_2O_8$ 514.574
Alkaloid from the leaves of *Palicourea coriacea*. Yellowish cryst. $[\alpha]_D$ -60 (c, 10 in MeOH).

Do Nascimento, C.A. *et al., Z. Naturforsch., B*, 2006, **61**, 1443-1446

Strigosine S-585

Trachelanthamidine strigosate
[33981-76-9]



Absolute configuration

$C_{14}H_{25}NO_4$ 271.356
Ester of Trachelanthamidine in H-629 with Strigosic acid. Major alkaloid from *Heliotropium strigosum* (Boraginaceae). Gum. $[\alpha]_D^{20}$ -19.3 (c, 6.56 in EtOH).

Hydrochloride:
Needles (EtOH/Et_2O). Mp 137.5°.

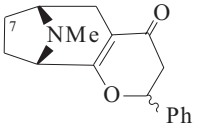
Picrate:
Yellow leaflets (C_6H_6/petrol). Mp 141°.

Methiodide:
Leaflets (EtOH/Et_2O). Mp 135-136°. $[\alpha]_D$ -15.5 (c, 2.84 in EtOH).

Mattocks, A.R. *et al., J.C.S.*, 1964, 1974 (*isol, struct*)
Crout, D.H.G. *et al., J.C.S. Perkin 1*, 1977, 544 (*abs config*)

Strobamine S-586

*2,3,6,7,8,9-Hexahydro-10-methyl-2-phenylcyclohepta[*b*]pyran-5,8-imin-4(5*H*)-one, 9CI*
[75656-91-6]



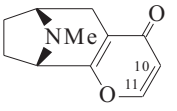
$C_{17}H_{19}NO_2$ 269.343
Rel. config. only detd. Alkaloid from the leaves of *Knightia strobilina* (Proteaceae). Viscous oil. $[\alpha]_D^{20}$ +36 ($CHCl_3$).

7-Hydroxy: ***Strobolamine***
[75638-69-6]
$C_{17}H_{19}NO_3$ 285.342
Alkaloid from the leaves of *Knightia strobilina* (Proteaceae). Cryst. (Me_2CO). Mp 159-161°. $[\alpha]_D^{20}$ +34 ($CHCl_3$).

Lounasmaa, M. *et al., Phytochemistry*, 1980, **19**, 953 (*uv, ir, pmr, ms, struct, deriv*)
Lounasmaa, M. *et al., J. Nat. Prod.*, 1983, **46**, 429 (*synth*)

Strobiline S-587

*6,7,8,9-Tetrahydro-10-methylcyclohepta[*b*]pyran-5,8-imin-4(5*H*)-one, 9CI*
[77053-09-9]



$C_{11}H_{13}NO_2$ 191.229
Rel. config. only established. Alkaloid from the leaves of *Knightia strobilina* (Proteaceae). Cryst. (petrol). Mp 108-109°. $[\alpha]_D^{20}$ +60 ($CHCl_3$).

10,11-Dihydro: ***Dihydrostrobiline***
$C_{11}H_{15}NO_2$ 193.245
Alkaloid from the leaves of *Knightia strobilina* (Proteaceae). Viscous oil. $[\alpha]_D^{20}$ -30 ($CHCl_3$). Incorrectly labelled 9,10-dihydro in the lit.

Lounasmaa, M. *et al., Phytochemistry*, 1980, **19**, 949 (*isol, uv, ir, pmr, cmr, ms, struct, deriv*)

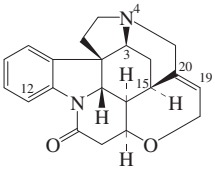
Strychnambarine S-588

[39453-52-6]
Struct. unknown. Minor alkaloid from *Strychnos usambarensis* (Loganiceae). Conts. 3*N*. λ_{max} 227 ; 268 ; 283 ; 290 (no solvent reported).

Koch, M. *et al., Ann. Pharm. Fr.*, 1973, **31**, 45-48 (*isol, ms*)

Strychnine, 8CI, BSI, ISO S-589

Strychnidin-10-one, 9CI
[57-24-9]



Absolute configuration

$C_{21}H_{22}N_2O_2$ 334.417
Alkaloid from the seeds of *Strychnos nux-vomica*, from *Strychnos wallichiana* and from very many other *Strychnos* spp. Bark of *Strychnos icaja* is richest known source (6.6%) (Loganiceae). Violent tetanic poison, employed comly. in vermin killers. Small doses formerly used in tonics. Use as animal poison prohibited in UK except for destruction of moles and other burrowing animals, and is being phased out in most countries. Pharmaceutical use essentially obsolete although still features in homeopathic medicines. Important tool in neurophysiological research. CNS stimulant.

Convulsant. Cholinesterase inhibitor. Used as 80% aq. soln. for photometric detn. of $PO_4^{3\ominus}$, $NO_2^{\ominus}$, $NO_3^{\ominus}$. Potent CNS glycine antagonist. Mp 270-271° (slow heat) Mp 275-285° Mp 286-288°. $[\alpha]_D^{18}$ -139 ($CHCl_3$). pK_{a1} 8; pK_{a2} 2.3 (20°). Log P -0.31 (uncertain value) (calc). Readily forms crystalline chloromethochloride artifacts when $CHCl_3$ or CH_2Cl_2 is used in isoln.

▶ Very toxic by ingestion and other routes of administration. Lethal human dose 30-60 mg. OES: long-term 0.15 mg m^{-3}; short-term 0.45 mg m^{-3}. LD_{50} (rat, orl) 2.35 mg/kg. Exp. reprod. effects. WL2275000

Sulfate (2:1): Strynervene. Strychnine sulfate. Vampirol
[60-41-3]
Cryst. + $5H_2O$. Mp 200° (anhyd.).

▶ LD_{50} (rat, orl) 5 mg/kg. Very toxic by ingestion and other routes of administration. WL2550000

Nitrate: [66-32-0]
Needles.

▶ LD_{50} (rat, orl) 16.2 mg/kg. WL2450000

Picrate: Mp 270° dec.

N^4-*Oxide:* ***Strychnine* N-*oxide***. *Genostrychnine. Movellan. Stricnogen. Z 203*
[7248-28-4]
$C_{21}H_{22}N_2O_3$ 350.416
Alkaloid from *Strychnos wallichiana* and *Strychnos nux-vomica* leaves (Loganiceae). Log P -2.62 (uncertain value) (calc). Is formed as an artifact when $CHCl_3$ or CH_2Cl_2 solns. of strychnine are allowed to stand. Appears to be a genuine alkaloid, however.

▶ LD_{50} (mus, scu) 24.5 mg/kg. WL2460300

N^4-*Me:* **N^4-*Methylstrychninium***
[47466-17-1]
$C_{22}H_{25}N_2O_2^{\oplus}$ 349.452
Quaternary alkaloid from *Strychnos icaja*. λ_{max} 253 (log ϵ 4.31); 280 (log ϵ 3.89); 289 (log ϵ 3.76) (no solvent reported).

Deoxo: Strychnidine
[2054-81-1]
Needles (EtOH). Mp 258° (246-248°). Subl.1 150. $[\alpha]_D$ -8.28 ($CHCl_3$). $[\alpha]_D^{19}$ -63 (c, 1.5 in $CHCl_3$). Not reported as a natural alkaloid.

3-Hydroxy: see Pseudostrychnine, P-726

10-Hydroxy: ***10-Hydroxystrychnine***
[19894-24-7]
$C_{21}H_{22}N_2O_3$ 350.416
Alkaloid in root bark of *Strychnos nux-vomica* (Sri Lankan, poss. hybrid). Metab. of strychnine *in vivo* (Loganiceae). Identified spectroscopically. λ_{max} 260 ; 299 ; 310 (sh) (MeOH).

▶ WL2330000

12-Hydroxy: ***12-Hydroxystrychnine***
[22595-26-2]
$C_{21}H_{22}N_2O_3$ 350.416
Alkaloid from *Strychnos icaja*, seeds of *Strychnos wallichiana* and fruits of *Strychnos nux-vomica* (Loganiceae). Convulsant. Cryst. (EtOH). $[\alpha]_D^{20}$ -8 (c, 0.7 in $CHCl_3$).

▶ WL2340000

12-Hydroxy, N^4-*oxide:* ***12-Hydroxystrychnine* N^b-*oxide***
[83905-59-3]
$C_{21}H_{22}N_2O_4$ 366.416
Alkaloid from leaves of *Strychnos nux-vomica* (Sri Lankan, poss. hybrid) (Loganiceae). λ_{max} 264 ; 295 (MeOH).

15-Hydroxy: ***15-Hydroxystrychnine***
[72994-79-7]
$C_{21}H_{22}N_2O_3$ 350.416
Alkaloid from seeds of *Strychnos nux-vomica* (Loganiceae). Cryst. (EtOAc). Mp 204-206°. $[\alpha]_D^{20}$ -192.7 (c, 0.4 in $CHCl_3$). λ_{max} 255 (log ϵ 4.08); 280 (log ϵ 3.6); 291 (log ϵ 3.49) (EtOH).

10-Methoxy: ***β-Colubrine***. *10-Methoxystrychnine*
[509-36-4]
$C_{22}H_{24}N_2O_3$ 364.443
Alkaloid from *Strychnos nux-vomica* and *Strychnos ligustrina* (Loganiceae). Cryst. (EtOH aq.). Mp 222°. $[\alpha]_D^{21}$ -156 (c, 0.042 in $CHCl_3$). $[\alpha]_D^{19}$ -107.7 (c, 2.47 in EtOH).

▶ GJ9990000

10-Methoxy; hydrochloride:
Plates + $1H_2O$. $[\alpha]_D^{18}$ -32.7 (H_2O).

10-Methoxy, N^4-*oxide:* ***β-Colubrine* N-*oxide***
[19442-97-8]
$C_{22}H_{24}N_2O_4$ 380.443
Alkaloid from *Strychnos ligustrina* (Loganiceae). Mp 205°. $[\alpha]_D^{17}$ +6.6 (c, 0.2 in EtOH).

11-Methoxy: ***α-Colubrine***. *11-Methoxystrychnine*
[509-44-4]
[27137-63-9 , 29135-26-0]
$C_{22}H_{24}N_2O_3$ 364.443
Alkaloid from *Strychnos nux-vomica* (Loganiceae). Cryst. + $4H_2O$ (EtOH aq.). Mp 184°. $[\alpha]_D^{19}$ -76.5 (c, 2.025 in EtOH).

▶ GJ9980000

11-Methoxy; hydrochloride:
Plates + $3H_2O$ (H_2O). $[\alpha]_D^{18}$ -3.1 (c, 1.943 in EtOH).

11-Methoxy, 10-hydroxy: ***10-O-Demethylbrucine***. *10-Hydroxy-11-methoxystrychnine. 10-Hydroxy-α-colubrine*
[1103-85-1]
$C_{22}H_{24}N_2O_4$ 380.443
Alkaloid from the seeds of *Strychnos nux-vomica*. Yellow-brown cryst. (EtOH aq.). Dec. at 245°. λ_{max} 208 ; 264 ; 303 (MeOH).

11-Methoxy, 12-hydroxy: ***12-Hydroxy-11-methoxystrychnine***
[50837-32-6]
$C_{22}H_{24}N_2O_4$ 380.443
Alkaloid from seeds of *Strychnos wallichiana (Strychnos cinnamomifolia)* also detected in root bark and leaves of *Strychnos nux-vomica* (Loganiceae). Mp 263-264° dec. $[\alpha]_D$ -18 (c, 0.22 in $CHCl_3$). λ_{max} 231 ; 270 ; 301 (EtOH).

11-Methoxy, 12-hydroxy, N^4-*oxide:* ***12-Hydroxy-11-methoxystrychnine* N^b-oxide**
[83905-57-1]
$C_{22}H_{24}N_2O_5$ 396.442
Alkaloid from leaves of *Strychnos nux-vomica* (Sri Lankan, poss. hybrid) (Loganiceae). Plates (MeOH). $[\alpha]_D^{21}$ +91 (c, 0.175 in MeOH). λ_{max} 237 ; 268 (MeOH).

10,11-Dimethoxy: ***Brucine***. *10,11-Dimethoxystrychnine*
[357-57-3]
[5892-11-5]
$C_{23}H_{26}N_2O_4$ 394.469
Alkaloid from *Strychnos nux-vomica* and many other *Strychnos* spp. (Loganiceae). Resolving agent. Used in photometric detn. of $ClO_3^{\ominus}$, $NO_3^{\ominus}$, $NO_2^{\ominus}$, NO_2. Antineoplastic agent. A constit. of the herbal and homoeopathic medicine nux vomica. Cryst. powder. Sol. EtOH, $CHCl_3$; sl. sol. C_6H_6, Et_2O. Mp 105° (hydrate) Mp 78° (anhyd.). $[\alpha]_D$ -127 ($CHCl_3$). $[\alpha]_D$ -85 (EtOH). pK_{a1} 8.16; pK_{a2} 2.5 (15°). Log P -0.85 (uncertain value) (calc).

▶ Reported to have one-sixth toxicity of strychnine. LD_{50} (rat, ipr) 91 mg/kg. EH8925000

10,11-Dimethoxy; sulfate: [4845-99-2]
[5787-00-8 , 60583-39-3]
Mp 186° dec. (as monohydrate). $[\alpha]_D^{22}$ -24 (c, 1 in H_2O).

10,11-Dimethoxy; perchlorate: Mp 208-210°.

10,11-Dimethoxy, N^4-*oxide:* ***Brucine* N-*oxide***
[17301-81-4]
$C_{23}H_{26}N_2O_5$ 410.469
Alkaloid from *Strychnos wallichiana* and *Strychnos ligustrina*, also detected in *Strychnos nux-vomica* leaves (Loganiceae).

10,11-Dimethoxy, N^4-*Me:* Mp 295° dec.

Δ^{20}-Isomer. Neostrychnine
[466-69-3]
$C_{21}H_{22}N_2O_2$ 334.417
Semisynthetic. Mp 227-229.5°.

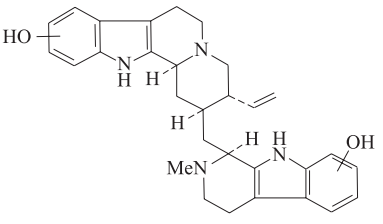
[116708-31-7 , 126590-09-8 , 116728-44-0]

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 1066B (*ir*)
Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 1067C; 1067D (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 613A (*nmr*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 614A; 614B (*nmr*)
Pelletier, J. *et al., Ann. Chim. (Paris)*, 1819, **10**, 142-177; 1820, **12**, 113-133 (*Strychnine, Brucine, isol*)
Warnat, K. *et al., Helv. Chim. Acta*, 1931, **14**, 997-1007 (*α-Colubrine, β-Colubrine*)
Woodward, R.B. *et al., J.A.C.S.*, 1948, **70**, 2107-2115 (*struct, bibl*)
Welcher, F.J. *et al., Organic Analytical Reagents*, Van Nostrand, NY, 1948, **4**, 259 (*use*)
Holmes, H.L. *et al., Alkaloids (Academic Press)*, 1949, **1**, 375-500; 1952, **2**, 513-551 (*rev, bibl*)
Kenner, G.W. *et al., J.C.S.*, 1950, 406 (*Strychnidine, synth*)
Robinson, R. *et al., Prog. Org. Chem.*, 1952, **1**, 1-21 (*rev, struct*)
Eger, C. *et al., Anal. Chem.*, 1955, **27**, 1199-1200 (*detn, $ClO_3^{\ominus}$*)

Peerdeman, A.F. *et al., Acta Cryst.*, 1956, **9**, 824 (*cryst struct*)
Hendrickson, J.B. *et al., Alkaloids (Academic Press)*, 1960, **6**, 179-217 (*rev, bibl*)
Rosenmund, P. *et al., Chem. Ber.*, 1962, **95**, 2639-2644 (*struct, synth, biosynth*)
Woodward, R.B. *et al., Tetrahedron*, 1963, **19**, 247-288 (*synth*)
Jenkins, D. *et al., Anal. Chem.*, 1964, **36**, 610-612 (*detn, $NO_3^{\ominus}$*)
Rosenmund, P. *et al., Chem. Ber.*, 1964, **97**, 1677-1683 (*α-Colubrine, synth*)
Szabo, L. *et al., CA*, 1965, **63**, 7064a (*Strychnidine, synth*)
Hesse, M. *et al., Helv. Chim. Acta*, 1965, **48**, 674-689 (*ms*)
Smith, G.A. *et al., Analyst (London)*, 1967, **92**, 456-462 (*detn, NO_2*)
Sandberg, F. *et al., Tet. Lett.*, 1968, 6217-6218 (*12-Hydroxystrychnine*)
Tedeschi, E. *et al., Tetrahedron*, 1968, **24**, 4573-4580 (*Brucine, β-Colubrine, synth*)
Fadrus, H. *et al., Fresenius' Z. Anal. Chem.*, 1969, **246**, 239-241 (*detn, $NO_2^{\ominus}$*)
Phillipson, J.D. *et al., Phytochemistry*, 1972, **11**, 2547-2553 (*chloromethochlorides*)
Heimberger, S.I. *et al., Chem. Comm.*, 1973, 217-218 (*biosynth*)
Bisset, N.G. *et al., J. Pharm. Pharmacol.*, 1973, **25**, 563-569 (*12-Hydroxy-11-methoxystrychnine*)
Bisset, N.G. *et al., Phytochemistry*, 1974, **13**, 259-263 (*Strychnine N-oxide*)
Bose, A.K. *et al., Anal. Biochem.*, 1978, **89**, 284-291 (*ms*)
Snow, J.W. *et al., Can. J. Chem.*, 1978, **56**, 1222-1230 (*uv, cd*)
Wenkert, E. *et al., J.O.C.*, 1978, **43**, 1099-1105 (*pmr, cmr*)
Kambu, K. *et al., Planta Med.*, 1979, **37**, 161-164 (*N^4-Methylstrychninium*)
Galeffi, C. *et al., Tetrahedron*, 1979, **35**, 2545-2549 (*15-Hydroxystrychnine*)
Baser, K.H.C. *et al., Phytochemistry*, 1982, **21**, 1423-1429 (*10-Hydroxystrychnine, 12-Hydroxystrychnine N-oxide, 12-Hydroxy-11-methoxystrychnine* N-*oxide*)
Asai, F. *et al., Yakugaku Zasshi*, 1982, **102**, 690-694 (*Strychnine N-oxide*)
Chazin, W.J. *et al., Can. J. Chem.*, 1983, **61**, 1749-1755 (*pmr*)
Goldinger, A. *et al., Med. Monatsschr.*, 1983, **6**, 141-146 (*rev, pharmacol*)
Fieser and Fieser's Reagents for Organic Synthesis, Wiley, 1984, **11**, 83-87 (*Brucine, use*)
Verpoorte, R. *et al., Org. Magn. Reson.*, 1984, **22**, 345-348 (*cmr, 10-O-Demethylbrucine*)
Mostad, A. *et al., Acta Chem. Scand., Ser. B*, 1985, **39**, 705-716 (*cryst struct*)
Glover, S.S.C. *et al., Acta Cryst. C*, 1985, **41**, 990-994 (*Brucine, cryst struct*)
Bernstein, M.A. *et al., Can. J. Chem.*, 1985, **63**, 483-490 (*pmr*)
Muhtadi, F.J. *et al., Anal. Profiles Drug Subst.*, 1986, **15**, 563-646 (***rev, bibl***)
Gould, R.O. *et al., Acta Cryst. C*, 1987, **43**, 2405-2410 (*cryst struct*)
Dangerous Prop. Ind. Mater. Rep., 1988, **8**, 78-83 (*tox, rev*)
Ghosh, R. *et al., Acta Cryst. C*, 1989, **45**, 1794-1797 (*cryst struct*)
Glycine Neurotransm. 1990, (Eds. Ottersen, O.P. *et al*), J. Wiley, Chichester, 1990, (*book*)
Smith, B.A. *et al., J. Emergency Med.*, 1990, **8**, 321 (*tox, rev*)
Agrochemicals Handbook, 3rd edn., Royal Society of Chemistry, 1992, A729
Nicholson, J.W. *et al., Educ. Chem.*, 1993, **30**, 46-47 (*rev, bibl*)
Magnus, P. *et al., J.A.C.S.*, 1993, **115**, 8116-8129 (*synth*)
Knight, S.D. *et al., J.A.C.S.*, 1993, **115**, 9293-9294 (*synth*)
Kuehne, M.E. *et al., J.O.C.*, 1993, **58**, 7490-7497 (*synth*)
Beddoes, R.L. *et al., Acta Cryst. C*, 1994, **50**, 447-450 (*Neostrychnine, cryst struct*)
Beifuss, U. *et al., Angew. Chem., Int. Ed.*, 1994, **33**, 1144-1149 (*synth*)
Kuijpers, G.A. *et al., Br. J. Pharmacol.*, 1994, **113**, 471-478 (*pharmacol*)
Rawal, V.H. *et al., J.O.C.*, 1994, **59**, 2685-2686 (*synth*)
Cai, B.C. *et al., Yaoxue Xuebao*, 1994, **29**, 44-48 (*10-O-Demethylbrucine*)
Encyclopaedia of Reagents for Organic Synthesis, (ed. Paquette, L.A.), Wiley, 1995, **1**, 797-799 (*use*)
Aprison, M.H. *et al., J. Neurosci. Res.*, 1995, **40**, 396-400 (*pharmacol, conformn*)
Nicholaou, K.C. *et al., Classics in Total Synthesis, Targets, Strategies, Methods*, VCH, 1996, 21; 641 (*bibl, synth*)
Dijksma, F.J.J. *et al., Acta Cryst. C*, 1998, **54**, 1948-1951 (*cryst struct*)
Kuehne, M.E. *et al., J.O.C.*, 1998, **63**, 9427-9433 (*synth*)
Solé, D. *et al., Angew. Chem., Int. Ed.*, 1999, **38**, 395-397 (*synth*)
Martindale, The Extra Pharmacopoeia, 32nd edn., Pharmaceutical Press, 1999, 1633.1; 1609.3
Martin, G.E. *et al., J. Nat. Prod.*, 2000, **63**, 543-585 (*Strychnine, Brucine, N-15 nmr*)
Pesticide Manual, 12th edn., 2000, 708
Nakanishi, M. *et al., Angew. Chem., Int. Ed.*, 2002, **114**, 2014-2016 (*synth*)
Mori, M. *et al., J.A.C.S.*, 2003, **125**, 9801-9807 (*synth*)
Bialonska, A. *et al., Acta Cryst. C*, 2004, **60**, o853-o855 (*Brucine, cryst struct*)
Ohshima, T. *et al., Chem. Pharm. Bull.*, 2004, **52**, 1031-1052 (*rev, synth*)
Shibasaki, M. *et al., Alkaloids (Academic Press)*, 2007, **64**, 103-138 (*rev, synth*)
Zhang, H. *et al., Org. Lett.*, 2007, **9**, 279-282 (*synth*)
Buckingham, J. *et al., Bitter Nemesis: The Intimate History of Strychnine*, CRC Press, 2008, (*book*)
Chemical Hazards of the Workplace, 3rd edn., (eds. Proctor, N.H. et al), Van Nostrand Reinhold, 1991, 517
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, SMN5000; SMO000; SMP000; BOL750

Strychnobaridine S-590

[67650-02-6]



Proposed structure

$C_{30}H_{34}N_4O_2$ 482.624

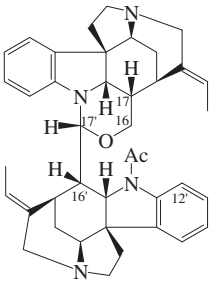
Conceivably a mixt. Alkaloid from the leaves of *Strychnos usambarensis* (Loganiceae).

Angenot, L. *et al., J. Pharm. Belg.*, 1978, **33**, 11-23; *CA*, **89**, 129770t
Cordell, G.A. *et al., Alkaloids (Academic Press)*, 1981, **20**, 1; 49 (*rev*)

Strychnobiline S-591

1-Acetyl-19,20-didehydro-16-(23-deoxy-11-oxa-12,24-secostrychinidin-10-yl)-17-norcuran, 9CI

[68727-53-7]



Absolute Configuration

$C_{40}H_{46}N_4O_2$ 614.829

Alkaloid from *Strychnos variabilis* (Loganiceae).

12′-Hydroxy: ***12′-Hydroxystrychnobiline***
[88668-50-2]
$C_{40}H_{46}N_4O_3$ 630.828
Alkaloid from *Strychnos variabilis* root bark (Loganiceae).

16′,17′-Diepimer: ***Isostrychnobiline***
[68780-12-1]
$C_{40}H_{46}N_4O_2$ 614.829
Alkaloid from *Strychnos variabilis* (Loganiceae). Microcryst. powder. Violet col. with Ce(IV).

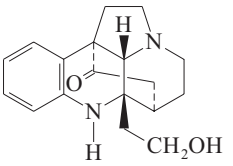
16′,17′-Diepimer, 16,17-didehydro: ***16,17-Dehydroisostrychnobiline***
[90332-58-4]
$C_{40}H_{44}N_4O_2$ 612.813
Alkaloid from root bark of *Strychnos kasengaensis* (Loganiceae). $[\alpha]_D$ +49 (c, 0.64 in MeOH).

16′,17′-Diepimer, 12′-hydroxy: ***12′-Hydroxyisostrychnobiline***
[71610-50-9]
$C_{40}H_{46}N_4O_3$ 630.828
Alkaloid from *Strychnos variabilis* (Loganiceae). Powder. Violet col. with Ce(IV).

Tits, M.J.G. *et al., Planta Med.*, 1978, **34**, 57-61 (*isol*)
Tits, M.J.G. *et al., Phytochemistry*, 1979, **18**, 515-516 (*12′-Hydroxyisostrychnobiline*)
Tits, M.J.G. *et al., J. Nat. Prod.*, 1983, **46**, 638-645 (*isol, struct, pmr, ms*)
Thepenier, P. *et al., Phytochemistry*, 1984, **23**, 2659 (*16,17-Dehydroisostrychnobiline*)

Strychnochromine S-592

[69345-20-6]



$C_{18}H_{22}N_2O_2$ 298.384

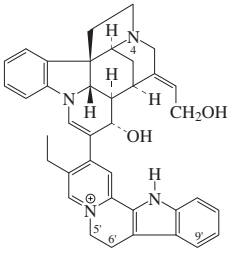
Related to the Condylocarpan alkaloids. Alkaloid from *Strychnos gossweileri* (Loganiceae). Gives intense colour reacns. with numerous reagents, e.g. H_2SO_4

(stable violet), $Ce(SO_4)_2$ (red). Mp 75°.

Coune, C. *et al., Plant. Med. Phytother.*, 1978, **12**, 106 (*isol, uv, ir, ms*)
Quetin-Leclercq, J. *et al., Tet. Lett.*, 1991, **32**, 4295 (*pmr, cmr, cryst struct*)

Strychnochrysine S-593

[201009-99-6]



Absolute Configuration

$C_{38}H_{39}N_4O_2^{\oplus}$ 583.752

Related to Longicaudatine Z, L-250. Quaternary alkaloid from the roots of *Strychnos nux-vomica* (Loganiceae). Orange amorph. powder. Counterion not specified. λ_{max} 210 (log ϵ 4.25); 252 (log ϵ 3.8); 275 (log ϵ 3.76); 311 (log ϵ 3.88); 428 (log ϵ 3.75) (MeOH).

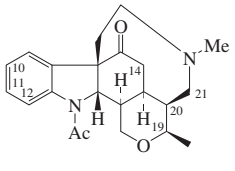
9′-Methoxy, N^4*-Me:* ***Guiachrysine***
[284675-26-9]
$C_{40}H_{44}N_4O_3^{2\oplus}$ 628.813
Quaternary alkaloid from *Strychnos guianensis*. Orange amorph. powder. Counterion not specified. λ_{max} 205 (log ϵ 4.26); 254 (log ϵ 3.96); 320 (log ϵ 3.87); 426 (log ϵ 3.86) (MeOH).

9′-Methoxy, 5′,6′-didehydro, N^4*-Me:* ***5′,6′-Dehydroguiachrysine***
[381724-72-7]
$C_{40}H_{42}N_4O_3^{2\oplus}$ 626.797
Quaternary alkaloid from *Strychnos guianensis*. Orange-brown powder. Counterion not specified. λ_{max} 205 (log ϵ 4.38); 258 (log ϵ 4.29); 279 (log ϵ 4.07); 328 (log ϵ 3.87); 421 (log ϵ 3.98) (MeOH).

Biala, R.G. *et al., J. Nat. Prod.*, 1998, **61**, 139-141 (*Strychnochrysine*)
Penelle, J. *et al., Phytochemistry*, 2000, **53**, 1057-1066; 2001, **58**, 619-626 (*Guiachrysine, Dehydroguiachrysine*)

Strychnofendlerine S-594

1-Acetyl-17,19-epoxy-4-methyl-3,4-seco-curan-3-one, 9CI
[62278-92-6]



Absolute Configuration

$C_{22}H_{28}N_2O_3$ 368.475
Alkaloid from *Strychnos fendleri*, *Strychnos scheffleri*, *Strychnos soubrensis* and *Strychnos aculeata* (Loganiceae). Cryst. (EtOAc). Mp 245-247°. $[\alpha]_D^{20}$ +97 (c, 1.4 in $CHCl_3$). $[\alpha]_D$ +264 (c, 1 in $CHCl_3$). λ_{max} 248 (log ϵ 4.16); 278 (log ϵ 3.53); 286 (sh) (log ϵ 3.45) (EtOH).

20,21-Didehydro: ***Strychnobrasiline***
[34227-00-4]
$C_{22}H_{26}N_2O_3$ 366.459
Alkaloid from *Strychnos brasiliensis*, *Strychnos tabascana*, *Strychnos soubrensis*, *Strychnos alvimiana*, *Strychnos myrtioides* and *Strychnos scheffleri* (Loganiceae). Shows significant chloroquine potentiating action against resistant *Plasmodium* spp. Cryst. (Et_2O or EtOAc). Mp 218-222° (205-208°). $[\alpha]_D^{26}$ +156 (c, 0.91 in $CHCl_3$). λ_{max} 247 (log ϵ 4.15); 277 (sh) (log ϵ 3.5); 285 (sh) (log ϵ 3.43) (EtOH).

20,21-Didehydro, N*-de-Ac:* ***Deacetylstrychnobrasiline***
[139694-99-8]
$C_{20}H_{24}N_2O_2$ 324.422
Alkaloid from root bark of *Strychnos mostueoides*.

14β-Hydroxy, 20,21-didehydro: ***14-Hydroxystrychnobrasiline***
[92202-53-4]
$C_{22}H_{26}N_2O_4$ 382.458
Alkaloid from the stem bark of *Strychnos soubrensis* (Loganiceae).

10-Methoxy, 20,21-didehydro: ***10-Methoxystrychnobrasiline***
[35611-65-5]
$C_{23}H_{28}N_2O_4$ 396.485
Alkaloid from *Strychnos tabascana* (Loganiceae). Cryst. (EtOH). Mp 255-257°.

11-Methoxy: ***11-Methoxystrychnofendlerine***
[72994-78-6]
$C_{23}H_{30}N_2O_4$ 398.501
Alkaloid from *Strychnos fendleri* stem bark (Loganiceae). Cryst. (EtOAc/hexane). Mp 242-244°. λ_{max} 251 (log ϵ 4.03); 290 (log ϵ 3.72); 296 (sh) (log ϵ 3.69) (EtOH).

11-Methoxy, 12-hydroxy: ***12-Hydroxy-11-methoxystrychnofendlerine***
[62258-28-0]
$C_{23}H_{30}N_2O_5$ 414.5
Alkaloid from *Strychnos fendleri* (Loganiceae). Cryst. (EtOAc/hexane). Mp 262-263°. $[\alpha]_D^{20}$ -3.8 (c, 0.85 in $CHCl_3$). λ_{max} 226 (log ϵ 4.41); 254 (log ϵ 3.9); 290 (sh) (log ϵ 3.28) (EtOH).

11-Methoxy, 12-hydroxy, 20,21-didehydro: ***12-Hydroxy-11-methoxystrychnobrasiline***
[34227-01-5]
$C_{23}H_{28}N_2O_5$ 412.485
Alkaloid from *Strychnos brasiliensis* trunk bark (Loganiceae). Needles (MeOH). Mp 229-230°. $[\alpha]_D^{18}$ -31 (c, 0.57 in $CHCl_3$). λ_{max} 227 (log ϵ 4.65); 263 (sh) (log ϵ 3.5); 290 (sh) (log ϵ 3.4) (EtOH).

10,11-Dimethoxy, 20,21-didehydro: ***10,11-Dimethoxystrychnobrasiline***
[34327-12-3]
$C_{24}H_{30}N_2O_5$ 426.511
Alkaloid from *Strychnos brasiliensis* trunk bark (Loganiceae). Small plates (EtOH). Mp 168-175°. $[\alpha]_D^{20}$ +148 (c, 0.61 in $CHCl_3$). λ_{max} 217 (log ϵ 4.47); 258 (log ϵ 4.1); 297 (log ϵ 3.67) (EtOH).

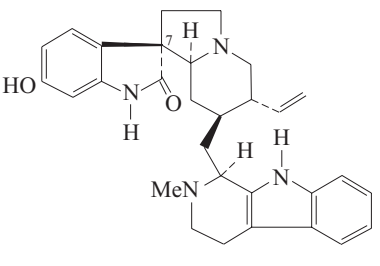
10,11-Dimethoxy, 12-hydroxy, 20,21-didehydro: ***12-Hydroxy-10,11-dimethoxystrychnobrasiline***
$C_{24}H_{30}N_2O_6$ 442.511
Alkaloid from the stem bark of *Strychnos mattogrossensis*. Powder (EtOAc). Mp 260-262°. No CAS no. found CA 136-138. λ_{max} 222 (log ϵ 4.29); 255 (log ϵ 3.94); 294 (log ϵ 3.14) (MeOH).

19-Epimer: ***Isosplendine***
[23943-38-6]
$C_{22}H_{28}N_2O_3$ 368.475
Alkaloid from fruits of *Strychnos splendens* and from *Strychnos aculeata* and *Strychnos soubrensis* (Loganiceae). Prisms (Et_2O/EtOH). Mp 232-233° (block). $[\alpha]_D^{20}$ +206 (c, 1 in EtOH).

Koch, M. *et al., Ann. Pharm. Fr.*, 1969, **27**, 229-238 (*Isosplendine, isol, ms, struct*)
Koch, M. *et al., Tetrahedron*, 1969, **25**, 3377-3382 (*Isosplendine, synth*)
Galeffi, C. *et al., Farmaco, Ed. Sci.*, 1971, **26**, 1100-1114; *CA*, **76**, 59837a (*Strychnobrasiline, 10-Methoxystrychnobrasiline, isol, uv, pmr, ms*)
Iwataki, I. *et al., Tetrahedron*, 1971, **27**, 2541-2552 (*Strychnos brasiliensis constits*)
Galeffi, C. *et al., Gazz. Chim. Ital.*, 1976, **106**, 773-777 (*Strychnos fendleri constits*)
Mirand, C. *et al., Plant. Med. Phytother.*, 1979, **13**, 84-86 (*isol*)
Galeffi, C. *et al., Gazz. Chim. Ital.*, 1980, **110**, 81-85 (*11-Methoxystrychnofendlerine, 12-Hydroxy-11-methoxystrychnofendlerine*)
Caprasse, M. *et al., Planta Med.*, 1981, **42**, 364-370 (*isol*)
Marini-Bettolo, G.B. *et al., An. Asoc. Quim. Argent.*, 1982, **70**, 263-270 (*isol*)
Ohiri, F.C. *et al., J. Nat. Prod.*, 1983, **46**, 369-373 (*Strychnobrasiline, Isoplenidine, 14β-Hydroxystrychnobrasiline*)
Mostad, A. *et al., Acta Chem. Scand., Ser. B*, 1984, **38**, 381-386 (*cryst struct, 14β-Hydroxystrychnobrasiline*)
Angenot, L. *et al., Phytochemistry*, 1990, **29**, 2746-2749 (*Strychnobrasiline, 12-Hydroxy-10,11-dimethoxystrychnobrasiline*)
Rasonaivo, P. *et al., Rev. Latinoam. Quim.*, 1991, **22**, 32-34; *CA*, **116**, 148160m (*Deacetylstrychnobrasiline*)
Rasoanivo, P. *et al., Planta Med.*, 1994, 13-16 (*isol, activity*)
Martin, M.-T. *et al., Magn. Reson. Chem.*, 1996, **34**, 489-491 (*pmr, cmr*)
Trigalo, F. *et al., Tetrahedron*, 1999, **55**, 6139-6146 (*Deacetylstrychnobrasiline, synth*)
Belem-Pinheiro, M.L. *et al., Nat. Prod. Lett.*, 2002, **16**, 229-233 (*12-Hydroxy-10,11-dimethoxystrychnobrasiline*)

Strychnofoline S-595

[63408-17-3]



$C_{30}H_{34}N_4O_2$ 482.624
Principal alkaloid of leaves of *Strychnos usambarensis* (Loganiceae). Antimitotic

agent. Powder. Mp 175°.

Deoxy: ***Barterine***
$C_{30}H_{34}N_4O$ 466.625
Alkaloid from leaves of *Strychnos barteri*. Cryst. (EtOAc/hexane). Mp 166-168°. $[\alpha]_D^{20}$ +58.1 (c, 0.7 in EtOH). λ_{max} 218 (log ϵ 4.7); 269 (log ϵ 4.22); 288 (log ϵ 4.09) (EtOH).

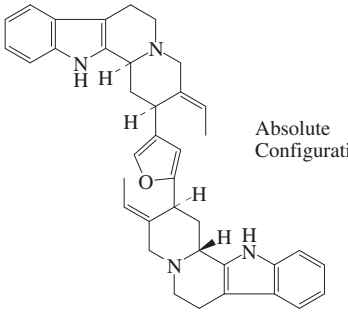
Deoxy, 10-hydroxy: ***10-Hydroxybarterine***
$C_{30}H_{34}N_4O_2$ 482.624
Alkaloid from leaves of *Strychnos barteri*. Cryst. (EtOAc/hexane). Mp 189-192°. $[\alpha]_D^{20}$ -9.5 (c, 1 in EtOH). λ_{max} 218 (log ϵ 4.71); 270 (log ϵ 4.24); 289 (log ϵ 4.09) (EtOH).

7-Epimer: ***Isostrychnofoline***
[69351-04-8]
$C_{30}H_{34}N_4O_2$ 482.624
Alkaloid from leaves of *Strychnos usambarensis* (Loganiceae). Powder. Mp 182°.

Dideberg, O. *et al., Acta Cryst. B*, 1977, **33**, 1796-1801 (*cryst struct*)
Angenot, L. *et al., Plant. Med. Phytother.*, 1978, **12**, 123-129 (*isol, uv, ir, pmr, ms, struct*)
Oguakwa, J.U. *et al., Rend. Accad. Naz. Quaranta*, 1979, **4(2)**, 9-14 (*Barterine, 10-Hydroxybarterine*)
Coune, C. *et al., J. Pharm. Belg.*, 1982, **37**, 189 (*cmr, struct*)
Lerchner, A. *et al., Chem. Eur. J.*, 2006, **12**, 8208-8219 (*synth*)

Strychnofuranine S-596

[119308-20-2]



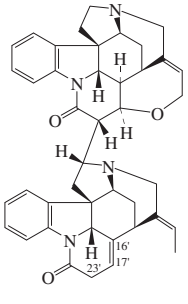
Absolute Configuration

$C_{38}H_{40}N_4O$ 568.76
Alkaloid from the root bark of *Strychnos matopensis* (Loganiceae). $[\alpha]_D$ +14 (c, 0.47 in $CHCl_3$).

Massiot, G. *et al., Phytochemistry*, 1988, **27**, 3293-3304 (*isol, uv, ir, pmr, cmr, ms, struct*)

Strychnogucine A S-597

[324519-12-2]



Absolute Configuration

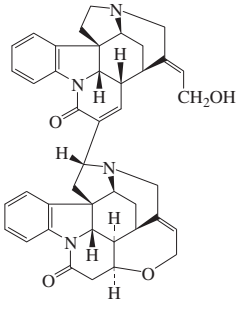
$C_{42}H_{42}N_4O_3$ 650.819
Alkaloid from the roots of *Strychnos icaja*. Antiplasmodial agent. Amorph. powder. λ_{max} 214 (log ϵ 3.22); 255 (log ϵ 2.98); 281 (log ϵ 2.64); 289 (log ϵ 2.58) (MeOH).

$\Delta^{17',23'}$-Isomer: ***Strychnogucine C***
[532971-12-3]
$C_{42}H_{42}N_4O_3$ 650.819
Alkaloid from the roots of *Strychnos icaja*. Yellowish amorph. powder. λ_{max} 208 (log ϵ 4.63); 255 (log ϵ 4.14); 283 (log ϵ 3.93) (MeOH).
▶ Possesses 16′βH-config.

Frederich, M. *et al., J. Nat. Prod.*, 2001, **64**, 12-16 (*Strychnogucine A*)
Philipe, G. *et al., Phytochemistry*, 2003, **62**, 623-629 (*Strychnogucine C*)

Strychnogucine B S-598

[324519-13-3]



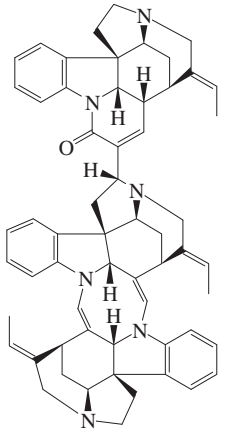
Absolute Configuration

$C_{42}H_{42}N_4O_4$ 666.818
Alkaloid from the roots of *Strychnos icaja*. Antiplasmodial agent. Amorph. powder. λ_{max} 222 (log ϵ 4.45); 252 (log ϵ 4.12); 283 (log ϵ 3.91); 292 (log ϵ 3.86); 304 (log ϵ 3.81) (MeOH).

Frederich, M. *et al., J. Nat. Prod.*, 2001, **64**, 12-16 (*isol, pmr, cmr, uv, cd*)

Strychnohexamine S-599

[442123-70-8]



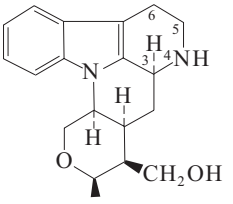
Absolute Configuration

$C_{59}H_{60}N_6O$ 869.163
Alkaloid from the roots of *Strychnos icaja*. Antiplasmodial agent. Yellowish powder. λ_{max} 210 (log ϵ 3.55); 293 (log ϵ 3.25); 320 (log ϵ 2.99) (MeOH).

Philippe, G. *et al., Tet. Lett.*, 2002, **43**, 3387-3390 (*isol, pmr, cmr*)
Philippe, G. *et al., Phytochemistry*, 2003, **62**, 623-629 (*cd, ms*)

Strychnohirsutine S-600

16-De(methoxycarbonyl)-17-deoxy-19,20-dihydro-19-hydroxy-21-methyl-18-nortalbotine, 9CI
[73061-90-2]



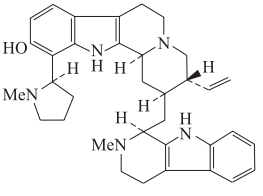
$C_{19}H_{24}N_2O_2$ 312.411
Alkaloid from *Strychnos hirsuta* (Loganiceae). Cryst. (EtOAc/hexane). Mp 141-143°. $[\alpha]_D^{20}$ -6.3 (c, 0.5 in $CHCl_3$).

3,4,5,6-Tetradehydro: ***Tetradehydrostrychnohirsutine***
[73061-91-3]
$C_{19}H_{20}N_2O_2$ 308.379
Alkaloid from *Strychnos hirsuta* (Loganiceae). Cryst. (Et_2O). Mp 221-223°. Fluorescent. Cryst. with difficulty.

Galeffi, C. *et al., Tetrahedron*, 1981, **37**, 3167 (*isol, struct, ir, uv*)

Strychnopentamine S-601

[63209-34-7]



Absolute configuration

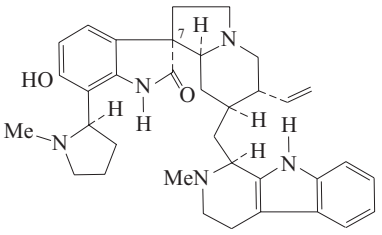
$C_{35}H_{43}N_5O$ 549.758
Alkaloid from the leaves of *Strychnos usambarensis* (Loganiceae). Shows strong antimitotic activity. Shows antitumour activity *in vitro* against Ehrlich ascites, HW165 hepatoma and B16 melanoma test systems. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. λ_{max} 226 (ϵ 23000); 275 (ϵ 6650); 291 (ϵ 5500) (MeOH) (Berdy).

2″-Epimer: ***Isostrychnopentamine A***
$C_{35}H_{43}N_5O$ 549.758
Alkaloid from the leaves of *Strychnos usambarensis* (Loganiceae). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Epimeric at the asymmetric carbon atom of the *N*-methylpyrrolidin-2-yl group.

Dupont, L. *et al., Acta Cryst. B*, 1977, **33**, 1801-1807 (*cryst struct*)
Angenot, L. *et al., J. Pharm. Belg.*, 1978, **33**, 11-23 (*isol, uv, ir, pmr, ms, cd, struct*)
Tavernier, D. *et al., Phytochemistry*, 1987, **26**, 557-560 (*Isostrychnopentamine A*)

Strychnophylline S-602

[69306-88-3]



$C_{35}H_{43}N_5O_2$ 565.757

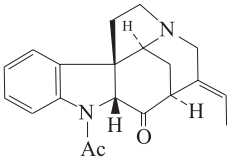
Probable abs. config. shown. Alkaloid from *Strychnos usambarensis* (Loganiceae). Shows cytotoxic activity. Powder. Mp 216°.

7-Epimer: ***Isostrychnophylline***
[69351-03-7]
$C_{35}H_{43}N_5O_2$ 565.757
Trace alkaloid from leaves of *Strychnos usambarensis* (Loganiceae).

Angenot, L. *et al., Plant. Med. Phytother.*, 1978, **12**, 123 (*isol, uv, ir, pmr, ms, struct*)

Strychnopivotine S-603

1-Acetyl-19,20-didehydro-17-norcuran-16-one, 9CI
[76177-20-3]



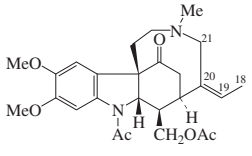
Absolute configuration

$C_{20}H_{22}N_2O_2$ 322.406
Alkaloid from *Strychnos variabilis* (Loganiceae). Powder.

Tits, M. *et al., Phytochemistry*, 1980, **19**, 1531-1534 (*isol, uv, ir, pmr, ms, struct*)

Strychnosilidine S-604

Acetyltabascanine
[34327-13-4]



Absolute Configuration

$C_{26}H_{34}N_2O_6$ 470.564

A 3,4-secocuran. Alkaloid from the bark of *Strychnos brasiliensis, Strychnos tabascana* and *Strychnos alvimiana* (Loganiceae). Needles (EtOH). Mp 236-237°. $[\alpha]_D$ +233 (c, 0.63 in $CHCl_3$). λ_{max} 214 (log ε 4.5); 260 (log ε 4.14); 290 (log ε 3.92) (EtOH).

O-*De-Ac:* ***Tabascanine***
[35611-61-1]
$C_{24}H_{32}N_2O_5$ 428.527
Alkaloid from *Strychnos tabascana* (Loganiceae). Cryst. (EtOAc). Mp 210-213°.

19,20-Dihydro, 18,19,20,21-tetradehydro: ***Strychnosiline***
[34436-25-4]
$C_{26}H_{32}N_2O_6$ 468.549
Alkaloid from the bark of *Strychnos brasiliensis* and from *Strychnos alvimiana* (Loganiceae). Powder. $[\alpha]_D^{20}$ +35 (c, 0.82 in $CHCl_3$). λ_{max} 217 (log ε 4.47); 256 (log ε 3.82); 299 (log ε 3.37) (EtOH).

Bis(demethoxy), O-*de-Ac:* ***Malagashine***
[139682-32-9]
$C_{22}H_{28}N_2O_3$ 368.475
Alkaloid from root bark of *Strychnos mostueoides* (Loganiaceae). Probable stereochem.

Galeffi, C. *et al., Farmaco, Ed. Sci.*, 1971, **26**, 1100-1114; *CA*, **76**, 59837a (*Tabascanine,Strychnosilidine, isol, ir, uv, ir, pmr, ms, ord, struct*)

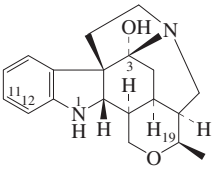
Iwataki, I. *et al., Tetrahedron*, 1971, **27**, 2541 (*Strychnosilidine, Strychnosiline, isol, uv, cd, ms, struct*)

Marini-Bettolo, G.B. *et al., An. Asoc. Quim. Argent.*, 1982, **70**, 263-270; *CA*, **97**, 3556 (*Strychnosilidine, isol*)

Rasonaivo, P. *et al., Rev. Latinoam. Quim.*, 1991, **22**, 32-34; *CA*, **116**, 148160m (*Malagashine*)

Strychnosplendine S-605

17,19-Epoxycuran-3-ol, 9CI
[6516-49-0]



Absolute Configuration

$C_{19}H_{24}N_2O_2$ 312.411
Alkaloid from leaves and fruit of *Strychnos splendens* (Loganiceae). Cryst. Mp 203-204° (block). $[\alpha]_D^{20}$ -82 (c, 1 in EtOH). pK_a 8.35 (DMF). λ_{max} 245 (log ε 3.7); 297 (log ε 3.29) (no solvent reported).

N^1-*Ac:* **N^a-*Acetylstrychnosplendine***
[14013-80-0]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from *Strychnos fendleri* stem bark, *Strychnos aculeata*, *Strychnos scheffleri* and *Strychnos henningsii* root bark (Loganiceae). Cryst. (EtOAc). Mp 155-157°. $[\alpha]_D^{20}$ +121 (c, 0.75 in $CHCl_3$).

N^1-*Hydroxyacetyl:* ***Splendoline***
[22152-58-5]
$C_{21}H_{26}N_2O_4$ 370.447
Alkaloid from leaves of *Strychnos splendens* and from *Strychnos henningsii* (Loganiceae). Cryst. (C_6H_6). Mp 250° dec. $[\alpha]_D^{22}$ +122 (c, 1 in $CHCl_3$). pK_a 7.55 (DMF). λ_{max} 250 (log ε 4.12); 277 (sh) (log ε 3.48) (no solvent reported).

Me ether, N^1-*Ac:* **N^a-*Acetyl*-O-*methylstrychnosplendine***
[35611-63-3]
$C_{22}H_{28}N_2O_3$ 368.475
Alkaloid from *Strychnos tabascana* after MeOH extraction, also from *Strychnos aculeata* and *Strychnos scheffleri* (Loganiceae). Cryst. (EtOAc/hexane). Mp 151-153°. Prob. artifact, also obt. by heating N^a-Acetylstrychnosplendine with MeOH.

11-Methoxy, N^1-*Ac:* **N^a-*Acetyl-11-methoxystrychnosplendine***
[90890-73-6]
$C_{22}H_{28}N_2O_4$ 384.474
Alkaloid from *Strychnos henningsii* root bark (Loganiceae). Cryst. (EtOAc). Mp 200-202°. $[\alpha]_D^{20}$ -101.1 (c, 1 in $CHCl_3$). λ_{max} 224 (log ε 4.32); 251 (log ε 4.03); 290 (log ε 3.73); 296 (sh) (log ε 3.7) (EtOH).

11-Methoxy, 12-hydroxy, N^1-*Ac:* ***12-Hydroxy-11-methoxy-*N^a*-acetylstrychnosplendine***
[62230-08-4]
$C_{22}H_{28}N_2O_5$ 400.474
Alkaloid from *Strychnos fendleri* (Loganiceae). Cryst. (EtOAc). Mp 242-244°. $[\alpha]_D^{20}$ -141 (c, 0.75 in $CHCl_3$). λ_{max} 226 (log ε 4.42); 254 (log ε 3.87); 296 (sh) (log ε 3.3) (EtOH).

19-Epimer: ***Isostrychnosplendine***
[23943-35-3]
$C_{19}H_{24}N_2O_2$ 312.411
Alkaloid from leaves, fruit and trunkwood of *Strychnos splendens* (Loganiceae). Amorph.; cryst. (as hydrochloride). Mp 330° (hydrochloride). $[\alpha]_D^{20}$ -59 (c, 1 in H_2O) (hydrochloride). λ_{max} 244 (log ε 3.7); 297 (log ε 3.34) (no solvent reported).

19-Epimer, N^1-*Ac:* **N^a-*Acetylisostrychnosplendine***
[22152-57-4]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from leaves, trunk and fruit of *Strychnos splendens* (Loganiceae). Mp 190-192°. $[\alpha]_D^{20}$ +125 (c, 1 in EtOH). λ_{max} 250 (log ε 3.89); 277 (sh) (log ε 3.22) (no solvent reported).

19-Epimer, N^1-*hydroxyacetyl:* ***Isosplendoline***
[22153-10-2]
$C_{21}H_{26}N_2O_4$ 370.447
Alkaloid from leaves, trunk and fruit of *Strychnos splendens* (Loganiceae). Mp 250° dec. $[\alpha]_D^{20}$ +110 (c, 1 in $CHCl_3$).

Koch, M. *et al., Bull. Soc. Chim. Fr.*, 1968, 3250-3252 (*isol, struct, config, uv, ir, pmr, ms, Strychnos splendens constits*)

Koch, M. *et al., Tetrahedron*, 1969, **25**, 3377-3382 (*isol, struct, config, uv, ir, pmr, ms*)

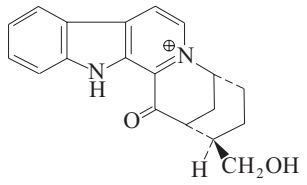
Galeffi, C. *et al., Gazz. Chim. Ital.*, 1976, **106**, 773-777; 1983, **113**, 773-775 (*Strychnos fendleri constits, Strychnos henningsii constits*)

Caprasse, M. *et al., Planta Med.*, 1981, **42**, 364-370 (*Strychnos scheffleri constits*)

Massiot, G. *et al., Phytochemistry*, 1991, **30**, 3449-3456 (*Splendoline, isol*)

Strychnoxanthine S-606

[69345-02-4]



$C_{19}H_{19}N_2O_2^{\oplus}$ 307.371

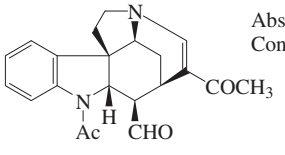
An isoyohimban. Alkaloid from the root bark of *Strychnos gossweileri* (Loganiceae).

Deoxo: ***Melinonine E***
[483-11-4]
$C_{19}H_{21}N_2O^{\oplus}$ 293.388
Quaternary alkaloid from the bark of *Strychnos melinoniana* (Loganiceae). Fine brown cryst. (MeOH) (as chloride). Mp 283.6-283.8° (chloride). $[\alpha]_D^{22}$ -13.9 (c, 1.02 in MeoH) (chloride). Relative config. only appears to be known.

Bächli, E. *et al., Helv. Chim. Acta*, 1957, **40**, 1167 (*Melinonine E, isol, uv, ir*)
Borris, R.P. *et al., Helv. Chim. Acta*, 1984, **67**, 455 (*Melinonine E, uv, ir, pmr, cmr, ms, struct*)
Coune, C. *et al., Planta Med.*, 1984, **50**, 93-95 (*Strychnoxanthine, isol, uv, ir, pmr, cmr, ms, cd, struct*)
Quirante, J. *et al., J.O.C.*, 1998, **63**, 968-976 (*synth*)

Strychnozairine S-607

1-Acetyl-20,21-didehydro-19-oxocuran-17-al, 9CI
[95360-06-8]



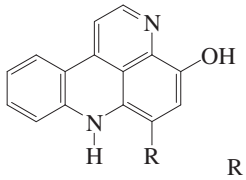
Absolute Configuration

$C_{21}H_{22}N_2O_3$ 350.416
Alkaloid from root bark of *Strychnos variabilis* (Loganiceae).

Tits, M. *et al., Phytochemistry*, 1985, **24**, 205-207 (*isol, uv, ir, ms, pmr, cmr, cd, struct*)

Styelsamine C S-608

[216446-11-6]



R = CHO

$C_{16}H_{10}N_2O_2$ 262.267
Isol. from the ascidian *Eusynstyela latericius.* Cytotoxic. Orange solid (as TFA salt). λ_{max} 248 (log ϵ 4.9); 284 (log ϵ 4.82); 334 (log ϵ 4.22); 350 (log ϵ 4.27); 418 (log ϵ 4.75); 480 (log ϵ 4.41) ($CHCl_3$).

Copp, B.R. *et al., J.O.C.*, 1998, **63**, 8024-8026 (*isol, pmr, cmr*)
Nakahara, S. *et al., Heterocycles*, 2003, **60**, 2017-2022; 2005, **65**, 1925-1929 (*synth*)

Styelsamine D S-609

[216365-44-5]
As Styelsamine C, S-608 with
R = $-^{13}CH_2^{14}CH_2NH_2$
$C_{17}H_{15}N_3O$ 277.325
Closely related to Deacylcystodytin, D-97. Isol. from the ascidian *Eusynstyela latericius.* Purple solid (as bistrifluoroacetate salt). λ_{max} 222 (log ϵ 4.3); 238 (log ϵ 4.17); 276 (log ϵ 4.37); 294 (log ϵ 4.38); 320 (log ϵ 3.8); 372 (log ϵ 3.54); 386 (log ϵ 3.6); 560 (log ϵ 3.43) (MeOH/trifluoroacetate). λ_{max} 270 (log ϵ 4.26); 376 (log ϵ 3.95) (MeOH/KOH).

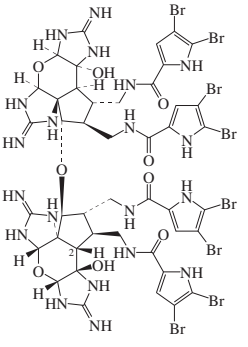
N^{14}*-Ac:* ***Styelsamine B***
[216387-14-3]
$C_{19}H_{17}N_3O_2$ 319.362
Isol. from *Eusynstyela latericius.* Purple solid (as trifluoroacetate salt). λ_{max} 222 (sh) (log ϵ 4.43); 244 (log ϵ 4.28); 278 (log ϵ 4.55); 294 (log ϵ 4.6); 372 (sh) (log ϵ 3.57); 388 (log ϵ 3.7); 572 (log ϵ 3.72) (MeOH/trifluoroacetate). λ_{max} 262 (log ϵ 4.38); 378 (log ϵ 3.97) (KOH).

13-Hydroxy: ***Styelsamine A***
[216446-06-9]
$C_{17}H_{15}N_3O_2$ 293.324
Isol. from *Eusynstyela latericius.* Purple solid (as bistrifluoroacetate salt). λ_{max} 222 (sh) (log ϵ 3.86); 244 (log ϵ 3.71); 276 (log ϵ 3.93); 294 (log ϵ 3.96); 386 (log ϵ 3.17); 554 (log ϵ 3.02) (MeOH/trifluoroacetate). λ_{max} 272 (log ϵ 3.85); 378 (log ϵ 3.39) (MeOH/KOH).

Copp, B.R. *et al., J.O.C.*, 1998, **63**, 8024-8026 (*Styelsamines A,B, isol, ir, pmr, cmr, uv*)
Skyler, D. *et al., Org. Lett.*, 2001, **3**, 4323-4324 (*Styelsamine B, synth*)

Stylissadine A S-610

Flabellazole B
[914769-87-2]



Absolute Configuration

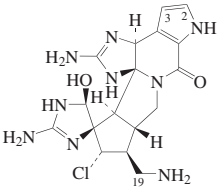
$C_{44}H_{46}Br_8N_{20}O_9$ 1638.208
Dimer of Massadine, M-112. Alkaloid from *Stylissa caribica* and *Stylissa flabellata*. Specific agonist of the $P2X_7$ receptor. $[\alpha]_D^{22}$ -15.2 (c, 1.21 in MeOH). λ_{max} 235 ; 275 (no solvent reported). λ_{max} 277 (log ϵ 4.49) (MeOH).

2-Epimer: ***Stylissadine B***. *Flabellazole A*
[914769-88-3]
$C_{44}H_{46}Br_8N_{20}O_9$ 1638.208
Alkaloid from *Stylissa caribica* and *Stylissa flabellata*. $[\alpha]_D^{22}$ -20 (c, 0.62 in MeOH). λ_{max} 277 (log ϵ 4.56) (MeOH).

Grube, A. *et al., Org. Lett.*, 2006, **8**, 4675-4678 (*isol, pmr, cmr, ms*)
Buchanan, M.S. *et al., J.O.C.*, 2007, **72**, 2309-2317 (*isol, pmr, cmr, ms*)

Styloguanidine S-611

Isopalauamine
[163089-72-3]



Absolute Configuration

$C_{17}H_{22}ClN_9O_2$ 419.873
Stereochem. revised in 2007. Alkaloid from the marine sponge *Stylotella aurantium*. Potent chitinase inhibitor. Antifouling agent. Amorph. solid. $[\alpha]_D$ +20.7 (c, 3.5 in MeOH). λ_{max} 224 (ϵ 7800); 272 (ϵ 7900) (MeOH) (Derep).

3-Bromo: ***3-Bromostyloguanidine***
[162339-62-0]
$C_{17}H_{21}BrClN_9O_2$ 498.769
From *Stylotella aurantium*. Potent chitinase inhibitor; antifouling agent. Tan solid. $[\alpha]_D$ +57.5 (c, 0.7 in MeOH). λ_{max} 277 (ϵ 5000) (MeOH) (Derep).

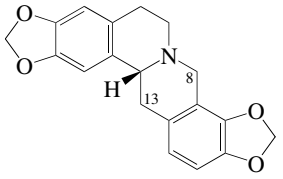
2,3-Dibromo: ***2,3-Dibromostyloguanidine***
[162339-63-1]
$C_{17}H_{20}Br_2ClN_9O_2$ 577.665
From *Stylotella aurantium*. Potent chitinase inhibitor; antifouling agent. Off-white cryst. (2-propanol/MeOH). $[\alpha]_D$ -70.8 (c, 0.6 in MeOH). λ_{max} 283 (ϵ 5800) (MeOH) (Derep).

2,3-Dibromo, N^{19}*-(3,4-dibromopyrrole-2-carbonyl):* ***Carteramine A***. *Tetrabromostyloguanidine*
[934986-32-0]
$C_{22}H_{21}Br_4ClN_{10}O_3$ 828.542
Alkaloid from *Stylissa carteri* and *Stylissa caribica*. Inhibitor of neutrophil chemotaxis. Light yellow powder. $[\alpha]_D^{17}$ -44 (c, 0.5 in MeOH). $[\alpha]_D^{23}$ -42 (c, 1.26 in MeOH). Dimer of Oroidin, O-123. The name tetrabromostyloguanidine is misleading. λ_{max} 217 (ϵ 11700); 277 (ϵ 13700) (MeOH).

Kato, T. *et al., Tet. Lett.*, 1995, **36**, 2133-2136 (*isol, uv, ir, pmr, cmr*)
Kinnel, R.B. *et al., J.O.C.*, 1998, **63**, 3281-3286 (*isol, pmr, cmr*)
Grube, A. *et al., Angew. Chem., Int. Ed.*, 2007, **46**, 2320-2324 (*config, Tetrabromostyloguanidine*)
Buchanan, M.S. *et al., J.O.C.*, 2007, **72**, 2309-2317 (*config*)
Kobayashi, H. *et al., Tet. Lett.*, 2007, **48**, 2127-2129 (*Carteramine A*)

Stylopine S-612

*6,7,12*b,*13-Tetrahydro-4*H-*bis[1,3]benzodioxolo[5,6-a:4′,5′-g]quinolizine, 9CI. Chelidamine. Corydalis E. Fumjudaine. Stilopine. Tetrahydrocoptisine*
[7461-02-1]
[11050-51-4 Fumjudaine]



(*R*)-*form*

$C_{19}H_{17}NO_4$ 323.348
Shows antipsychotic and neuroleptic activity in mice and rats. Active against gram-positive and gram-negative bacteria.

(*R*)-*form* [2884-83-5]
Alkaloid from several *Corydalis* spp. (Papaveraceae). Mp 204°. $[\alpha]_D^{15}$ +310 (c, 0.88 in $CHCl_3$).
Methiodide: Mp 248° dec.

(*S*)-*form* [84-39-9]
Alkaloid from *Corydalis* spp., *Chelidonium majus* (Papaveraceae) and several other spp. in Papaveraceae. Prisms. Mp 204°. $[\alpha]_D^{23}$ -310 (c, 0.3 in $CHCl_3$).
► LD_{50} (mus, ipr) 368 mg/kg. DR9808480
Hydrochloride: Mp 250°.

N-*Me* (trans-): [90457-61-7]
[41431-71-4 , 41431-72-5 , 61989-70-6 , 51795-13-2 , 56711-20-7 , 56245-69-3]
$C_{20}H_{20}NO_4^{\oplus}$ 338.382
Quaternary alkaloid isol. from *Argemone* spp., *Corydalis* spp., *Eschscholtzia* sp., *Stylophorum* spp. and *Glaucium* spp. Small prisms (MeOH)(as iodide). Mp 297-302° (iodide). $[\alpha]_D^{23}$ -125 (c, 0.1 in MeOH) (iodide). CAS no. refers to iodide.

N-*Me* (cis-): **N-*Methylstylopine***. N-*Methylstylopinium*
[90457-62-8]
[64474-10-8 , 56245-68-2 , 113349-14-7]
$C_{20}H_{20}NO_4$ 338.382
Quaternary alkaloid isol. from *Argemone* spp., *Corydalis* spp., *Eschscholtzia* sp. and *Stylophorum* spp. Small prisms (MeOH)(as iodide). Mp 279-281° (iodide). $[\alpha]_D^{20}$ -120 (c, 0.13 in MeOH) (iodide). Normally obt. as a mixt. with its epimer at N. CAS no. refers to iodide. λ_{max} 209 (log ε 4.67); 232 (sh) (log ε 3.96); 289 (log ε 3.92) (MeOH).

13β-Hydroxy: ***13-Hydroxystylopine***
[53777-76-7]
$C_{19}H_{17}NO_5$ 339.347
Alkaloid from *Corydalis ophiocarpa* (Papaveraceae). Prisms (EtOH). Mp 213-215°. $[\alpha]_D$ -259 (c, 0.1 in $CHCl_3$).

13β-Hydroxy, N-*Me:* ***13β-Hydroxy*-N-*methylstylopinium***
[108385-06-4]
$C_{20}H_{20}NO_5^{\oplus}$ 354.382
Quaternary alkaloid from aerial parts and roots of *Papaver atlanticum* (Papaveraceae). Cryst. (MeOH) (as iodide). Mp 254-256° (iodide). $[\alpha]_D^{20}$ -144 (c, 0.1 in MeOH) (iodide). CAS No. refers to iodide.

13β-Acetoxy:
Fine needles (CH_2Cl_2/Et_2O). Mp 237-239° (sealed tube).

(±)-*form* [4312-32-7]
Alkaloid from several *Corydalis* spp. (Papaveraceae). Needles ($CHCl_3$). Mp 222-223°. $Bp_{0.01}$ 260°.
Hydrochloride: Mp 246° (266°).
13β-Hydroxy: [53833-90-2]
Synthetic. Fine needles (EtOH). Mp 219-221° dec.
13β-Acetoxy:
Small plates (CH_2Cl_2/petrol). Mp 242-243° dec.

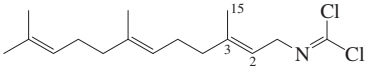
(ξ)-*form*
Alkloid from leaves and stems of *Fumaria judaica* (as Fumjudaine).

*8ξ-Hydroxy, 8-*O-*β-D-glucopyranoside:* ***8-Glucopyranosyloxystylopine***
[188560-51-2]
$C_{25}H_{27}NO_{10}$ 501.489
Alkaloid from *Fumaria indica* (Papaveraceae). Mp 250°. λ_{max} 214 ; 240 ; 291 (MeOH).

Späth, E. *et al., Ber.*, 1931, **64**, 1131-1137 (*isol*)
Slavik, J. *et al., Coll. Czech. Chem. Comm.*, 1973, **38**, 2513-2517; 1975, **40**, 1095-1102; 1991, **56**, 1116-1122 (*N-Methylstylopinium*)
Battersby, A.R. *et al., J.C.S. Perkin 1*, 1975, 1140-1147 (*isol, biosynth*)
Jeffs, P.W. *et al., J.O.C.*, 1975, **40**, 644-647 (*13-Hydroxystylopine*)
Bhattacharya, S.K. *et al., Arzneim.-Forsch.*, 1976, **26**, 2187 (*pharmacol*)
Takao, N. *et al., Chem. Pharm. Bull.*, 1976, **24**, 2859-2868; 3185; 1977, **25**, 1426-1435 (*pmr, cmr, biosynth*)
Abou-Donia, A.H.A. *et al., Planta Med.*, 1980, **40**, 295-298 (*Fumjudaine*)
Narasimhan, N.S. *et al., Tetrahedron*, 1983, **39**, 1975-1982 (*synth*)
Bhakuni, D.S. *et al., Alkaloids (Academic Press)*, 1986, **28**, 95-181 (*rev*)
Táborská, E. *et al., Coll. Czech. Chem. Comm.*, 1986, **51**, 2232-2239 (*13β-Hydroxy*-N-*methylstylopinium*)
Dai-Ho, G. *et al., J.O.C.*, 1988, **53**, 5113-5127 (*synth, uv, ir, pmr, cmr*)
Abbasoglu, U. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1991, **324**, 379-380 (*activity*)
Chrzanowska, M. *et al., J. Nat. Prod.*, 1995, **58**, 401-407 (*synth*)
Khan, S.A. *et al., J. Indian Chem. Soc.*, 1997, **74**, 62-63 (*13-glucosyloxy*)
Marek, R. *et al., Magn. Reson. Chem.*, 1999, **37**, 195-202; 2002, **40**, 687-692 (*N-15 nmr, cryst struct*)
Li, M. *et al., Planta Med.*, 2001, **67**, 189-190 (*Thalictrum delavayi derivs*)

Stylotellane A S-613

[199732-52-0]



$C_{16}H_{25}Cl_2N$ 302.286
Constit. of *Stylotella aurantium*.

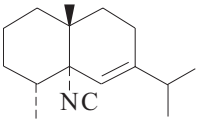
Δ³⁽¹⁵⁾-Isomer, 2ξ-chloro: ***Stylotellane B***
[64789-89-5]
$C_{16}H_{24}Cl_3N$ 336.73
Constit. of the sponge *Pseudaxinyssa pitys* and *Stylotella aurantium*.

*Δ³⁽¹⁵⁾-Isomer, 1,2-didehydro(*E-*):* ***Ulosin A***
[321557-59-9]
$C_{16}H_{23}Cl_2N$ 300.27
Constit. of *Stylotella aurantium* and *Ulosa spongia*. Oil. λ_{max} 284 (log ε 4.5) (MeOH).

Wratten, S.J. *et al., J.A.C.S.*, 1977, **99**, 7367-7368 (*isol, pmr, cmr*)
Simpson, J.S. *et al., Tet. Lett.*, 1997, **38**, 7947-7950 (*isol, pmr, cmr, biosynth*)
Musman, M. *et al., J. Nat. Prod.*, 2001, **64**, 111-113 (*Ulosin A*)
Kehraus, S. *et al., J. Nat. Prod.*, 2001, **64**, 939-941 (*isol, pmr, cmr*)
Brust, A. *et al., Tet. Lett.*, 2003, **44**, 327-330 (*biosynth*)
Simpson, J.S. *et al., Org. Biomol. Chem.*, 2004, **2**, 949-956 (*biosynth*)

Stylotellin S-614

[108648-45-9]



$C_{16}H_{25}N$ 231.38
Constit. of sponge *Stylotella* sp. Oil. $[\alpha]_D$ -47 (c, 1.7 in $CHCl_3$).

Paś, M. *et al., Tet. Lett.*, 1987, **28**, 1409

Suaedin S-615

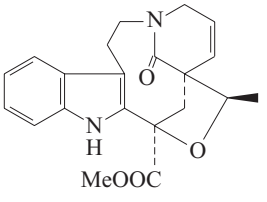
[12712-74-2]

$C_{55}H_{54}N_2O_{31}$ 1239.026
An *O*-citryl betacyanin of unknown struct. Pigment from *Suaeda fruticosa* (Chenopodiaceae). λ_{max} 294 ; 330 ; 546 (H_2O).

Piattelli, M. *et al., Phytochemistry*, 1971, **10**, 3133-3134

Suaveolenine S-616

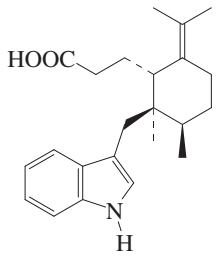
[138642-02-1]



$C_{21}H_{22}N_2O_4$ 366.416
A secoaspidosperma alkaloid. Alkaloid from the trunk of *Melodinus suaveolens* (Apocynaceae). Mp 205°.

Ye, J.H. *et al., Phytochemistry*, 1991, **30**, 3168 (*isol, uv, ir, pmr, cmr, ms, struct*)

Suaveolindole S-617

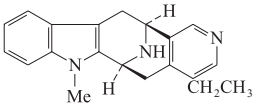


$C_{23}H_{31}NO_2$ 353.503
Alkaloid from the fruit of *Greenwayodendron suaveolens*. Antibacterial agent. $[\alpha]_D^{22}$ +26 (c, 1 in MeOH). λ_{max} 230 ; 283 ; 292 (MeOH).

Yoo, H.-D. *et al., J. Nat. Prod.*, 2005, **68**, 122-124 (*isol, pmr, cmr*)
Velthuisen, E.J. *et al., J.A.C.S.*, 2007, **129**, 10640-10641 (*synth, abs config*)

Suaveoline† S-618

[38993-99-6]



Absolute configuration

$C_{20}H_{21}N_3$ 303.406
Indole alkaloid related to the Macroline group with two cyclisations. Alkaloid from *Rauwolfia suaveolens* (Apocynaceae). Noncryst. $[\alpha]_D$ 0 (c, 1 in $CHCl_3$). $[\alpha]_D^{25}$ -9.33 (c, 0.30 in $CHCl_3$) (synthetic).

N-*Ac:* Mp 207-208°.

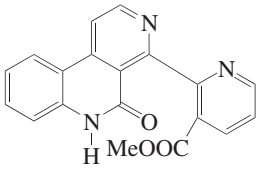
N-*Me:* Mp 194-195°. $[\alpha]_D$ -93 (c, 0.89 in $CHCl_3$).

N-*De-Me:* ***Norsuaveoline***
[93552-58-0]
$C_{19}H_{19}N_3$ 289.379
Alkaloid from *Rauwolfia caffra*.

Majumdar, S.P. *et al., Phytochemistry*, 1973, **12**, 1167 (*isol, synth, uv, pmr, ms*)
Nasser, A.M.A.G. *et al., J. Ethnopharmacol.*, 1984, **11**, 99-117 (*Norsuaveoline*)
Trudell, M.L. *et al., Tetrahedron*, 1992, **48**, 1805 (*synth*)
Bailey, P.D. *et al., J.C.S. Perkin 1*, 1993, 441; 1997, 1209; 2000, 3566-3577 (*synth*)
Fu, X. *et al., J.O.C.*, 1993, **58**, 661 (*synth, cmr*)
Wang, T. *et al., Tet. Lett.*, 1998, **39**, 8009-8012 (*synth*)
Li, J. *et al., J.A.C.S.*, 1999, **121**, 6998-7010 (*Norsuaveoline, synth*)
Ohba, M. *et al., Tetrahedron*, 2007, **63**, 10337-10344 (*synth*)

Subarine S-619

[445471-63-6]

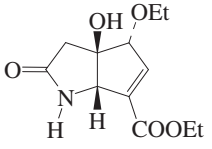


$C_{19}H_{13}N_3O_3$ 331.33
Alkaloid from a Singaporean ascidian. Pale yellow gum. λ_{max} 233 (log ϵ 4.45); 267 (log ϵ 4.14); 335 (log ϵ 3.72) (MeOH).

Nilar, *et al., J. Nat. Prod.*, 2002, **65**, 1198-1200 (*isol, pmr, cmr, ms*)
Bijeire, L. *et al., Eur. J. Org. Chem.*, 2004, 1891-1893 (*synth, pmr, cmr*)

Subereatensin S-620

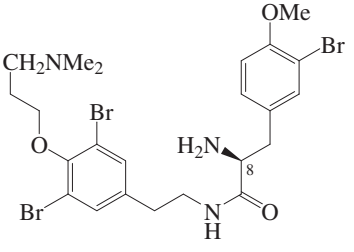
[474670-21-8]



$C_{12}H_{17}NO_5$ 255.27
Isol. from the sponge *Suberea* aff. *praetensa*. Gum.

Kijjoa, A. *et al., Z. Naturforsch., C*, 2002, **57**, 732-738 (*isol, pmr, cmr, ms*)

Suberedamine A S-621



$C_{23}H_{30}Br_3N_3O_3$ 636.22
Related to Purpuramine H, P-823.

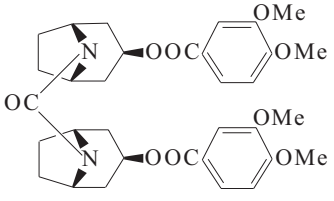
(S)-form
Isol. from a sponge, *Suberea* sp. Cytotoxic. Amorph. solid. Mp 64-67°. $[\alpha]_D^{25}$ +21 (c, 1 in MeOH). λ_{max} 281 (ϵ 2400) (MeOH).

N^8-*Me:* ***Suberedamine B***
$C_{24}H_{32}Br_3N_3O_3$ 650.247
Isol. from a *Suberea* sp. Cytotoxic. Amorph. solid. Mp 79-81°. $[\alpha]_D^{25}$ +16 (c, 1 in MeOH). λ_{max} 281 (ϵ 2900) (MeOH).

Tsuda, M. *et al., J. Nat. Prod.*, 2001, **64**, 980-982

Subhirsine S-622

3,4-Dimethoxybenzoic acid carbonylbis(8-azabicyclo[3.2.1]octane-8,3-diyl) ester, 9CI. N,N′-*Carbonylbis-3-veratroyloxynortropane*
[85412-77-7]

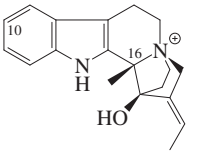


$C_{33}H_{40}N_2O_9$ 608.687
Dimeric tropane alkaloid with unusual 3β configs. Alkaloid from *Convolvulus subhirsutus* (Convolvulaceae). Cryst. (Me_2CO). Mp 190-191°.

Aripova, S.F. *et al., Khim. Prir. Soedin.*, 1982, **18**, 640; *Chem. Nat. Compd. (Engl. Transl.)*, 1982, **18**, 606 (*isol, ms, pmr, struct*)

Subincanadine A S-623

[467420-43-5]



Absolute Configuration

$C_{19}H_{23}N_2O^{\oplus}$ 295.404
Corynanthe-type alkaloid related to Hunteracine, H-368, biosynth. not yet fully worked out. Quaternary alkaloid from the bark of *Aspidosperma subincanum*. Amorph. solid. $[\alpha]_D^{23}$ -11 (c, 1 in MeOH). Counterion not specified. λ_{max} 225 (log ϵ 4.12); 271 (log ϵ 3.67); 279 (log ϵ 3.64); 289 (log ϵ 3.5) (MeOH).

Deoxy: ***Subincanadine C***
[467420-45-7]
$C_{19}H_{23}N_2^{\oplus}$ 279.404
Alkaloid from the bark of *Aspidosperma subincanum*. Amorph. solid. $[\alpha]_D^{23}$ +5 (c, 1 in MeOH). Counterion not specified. λ_{max} 225 (log ϵ 4.09); 271 (log ϵ 3.63); 279 (log ϵ 3.6); 289 (log ϵ 3.45) (MeOH).

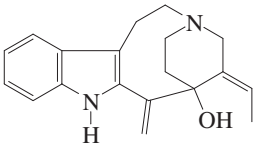
Deoxy, 10-hydroxy: ***Subincanadine G***
$C_{19}H_{23}N_2O^{\oplus}$ 295.404
Alkaloid from the bark of *Aspidosperma subincanum*. Amorph. solid. $[\alpha]_D^{23}$ -32 (c, 0.4 in MeOH). λ_{max} 273 (log ϵ 3.27); 315 (sh) (log ϵ 2.98) (MeOH).

16-Epimer: ***Subincanadine B***
[467420-44-6]
$C_{19}H_{23}N_2O^{\oplus}$ 295.404
Alkaloid from the bark of *Aspidosperma subincanum*. Amorph. solid. $[\alpha]_D^{23}$ +41 (c, 1 in MeOH). Counterion not specified. λ_{max} 223 (log ϵ 4.23); 273 (log ϵ 3.64); 279 (log ϵ 3.64); 289 (log ϵ 3.54) (MeOH).

Kobayashi, J. *et al., J.O.C.*, 2002, **67**, 6449-6455 (*isol, pmr, cmr*)
Ishiyama, H. *et al., Heterocycles*, 2005, **66**, 651-658 (*Subincanadine G*)
Suzuki, K. *et al., Org. Lett.*, 2007, **9**, 4605-4608 (*synth*)

Subincanadine D S-624

[467420-46-8]



$C_{19}H_{22}N_2O$ 294.396

Rearranged indole akaloid related to the Akuammicine type. Alkaloid from the bark of *Aspidosperma subincanum*. Amorph. solid. $[\alpha]_D^{23}$ -3.3 (c, 1 in MeOH). λ_{max} 223 (log ϵ 4); 294 (log ϵ 3.58) (MeOH).

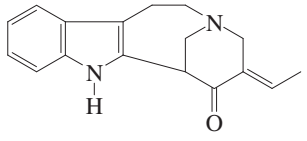
Deoxy: ***Pericine****. Subincanadine E*
[84638-28-8]
[467420-48-0]
$C_{19}H_{22}N_2$ 278.396
Alkaloid from *Aspidosperma subincanum* and *Picralima nitida*. Amorph. solid. $[\alpha]_D^{23}$ +39 (c, 1 in MeOH). λ_{max} 226 (log ϵ 4.01); 301 (log ϵ 3.8) (MeOH).

Deoxy, N-*oxide:* ***Pericine* N-*oxide***
[906096-64-8]
$C_{19}H_{22}N_2O$ 294.396
Alkaloid from the stem bark of *Kopsia arborea*. Cryst. Mp 205-208°. $[\alpha]_D$ +71 (c, 0.21 in $CHCl_3$). λ_{max} 227 (log ϵ 4.41); 301 (log ϵ 4.23) (EtOH).

Arens, H. *et al., Planta Med.*, 1982, **46**, 210-214 (*Pericine*)
Kobayashi, J. *et al., J.O.C.*, 2002, **67**, 6449-6455 (*isol, pmr, cmr*)
Lim, K.-H. *et al., J. Nat. Prod.*, 2007, **70**, 1302-1307 (*Kopsia arborea constit*)

Subincanadine F S-625

[467420-48-0]

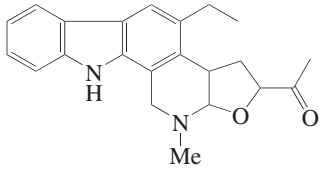


$C_{17}H_{18}N_2O$ 266.342
Truncated indole alkaloid most closely related to the Akuammicine type. Alkaloid from the bark of *Aspidosperma subincanum*. Amorph. yellow solid. $[\alpha]_D^{23}$ +17.8 (c, 1 in MeOH). λ_{max} 223 (log ϵ 4.12); 274 (log ϵ 3.5); 356 (sh) (log ϵ 2.87) (MeOH).

Kobayashi, J. *et al., J.O.C.*, 2002, **67**, 6449-6455 (*isol, pmr, cmr*)
Gao, P. *et al., J.O.C.*, 2006, **71**, 9495-9498 (*synth*)

Subincanine S-626

[26237-70-7]

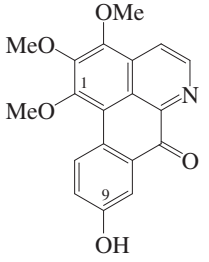


$C_{22}H_{24}N_2O_2$ 348.444
Two stereoisomers of the struct. depicted were synth., neither is the same as the natural alkaloid. It was argued that the other stereoisomers are also very unlikely to correspond to the alkaloid and that the struct. suggested is incorr. Minor alkaloid from *Aspidosperma subincanum* (Apocynaceae). Mp 160-163°. No further reports to 2006.

Gaskell, A.J. *et al., Tet. Lett.*, 1970, 77-82 (*uv, ir, pmr, ms*)
Cohylakis, D. *et al., J.C.S. Perkin 1*, 1980, 1290-1293 (*synth, uv, ir, pmr, ms*)

Subsessiline† S-627

Splendaboline
[49620-02-2]



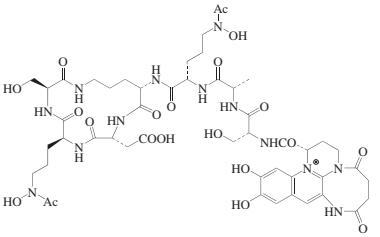
$C_{19}H_{15}NO_5$ 337.331
Alkaloid from the bark of *Guatteria subsessilis*, the stem bark of *Guatteria ouregou*, and from *Telitoxicum peruvianum* (Annonaceae, Menispermaceae). Shows antimicrobial activity. Deep red needles (Me_2CO). Mp 247-249° (241-243°).

O^1*-De-Me,* O^9 *-Me ether:* ***Sinofranine***
$C_{19}H_{15}NO_5$ 337.331
Alkaloid from the dried stems of *Sinofranchetia chinensis*. Yellowish cryst. Mp 193-195°.

Hasegawa, M. *et al., Acta Cient. Venez.*, 1972, **23**, 165; *CA*, **79**, 42716z (*isol*)
Skiles, J.W. *et al., J.O.C.*, 1979, **44**, 409 (*synth, ir, pmr, ms, struct*)
Menachery, M.D. *et al., J. Nat. Prod.*, 1981, **44**, 320 (*isol*)
Leboeuf, M. *et al., Planta Med.*, 1983, **48**, 234 (*isol, pmr*)
Villar, A. *et al., Planta Med.*, 1986, **52**, 556-557 (*activity*)
Xu, C. *et al., Fitoterapia*, 2004, **75**, 239-241 (*Sinofranine*)

Succinopyoverdin G173 S-628

[535994-95-7]



$C_{49}H_{68}N_{13}O_{20}^{\oplus}$ 1159.151
Prod. by *Pseudomonas fluorescens* G173. Siderophore.

Fernandez, D.U. *et al., Z. Naturforsch., C*, 2003, **58**, 1-10 (*isol, pmr, cmr, ms*)

Succirubine S-629

[1361-38-2]

$C_{19}H_{24}N_2O_2$ 312.411
Struct. unknown. Alkaloid from the bark of *Cinchona succirubra* (Rubiaceae). Mp 80-81°. $[\alpha]_D^{30}$ +1.63 (EtOH).

Qudrat-i-Khuda, M. *et al., Sci. Res. (Dacca)*, 1965, **2**, 1-7; *CA*, **63**, 12004g

Suffruticodine S-630

[1361-40-6]

$C_{13}H_{15}NO_3$ 233.266
Struct. unknown. Alkaloid from *Securinega suffruticosa* (Euphorbiaceae). Mp 120-122°. Opt. inactive. Ir 3048, 1756 and 1636 cm^{-1} (OH or NH, C═O and C═C).

Murav'eva, V.I. *et al., Zh. Obshch. Khim.*, 1963, **33**, 693-694; *CA*, **59**, 2884h (*isol*)

Suffruticonine S-631

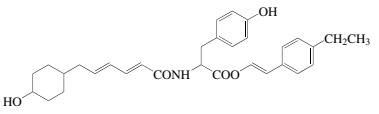
[1361-41-7]

$C_{13}H_{17}NO_2$ 219.283
Struct. unknown. Alkaloid from *Securinega suffruticosa* (Euphorbiaceae). Mp 237-238°. Opt. inactive. Ir 3050 (OH or NH), 1773 (C═O), 1655 (C═C) cm^{-1}.

Murav'eva, V.I. *et al., Zh. Obshch. Khim.*, 1963, **33**, 693-694; *CA*, **59**, 2884h (*isol*)

Suinin S-632

[175993-00-7]

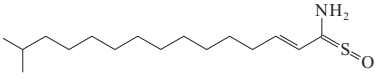


$C_{31}H_{37}NO_5$ 503.637
Prod. by a mutant of *Streptomyces nasri*. Antibiotic. Reddish needles.

Gohar, Y.M. *et al., CA*, 1996, **124**, 311910g (*isol, uv, ir, pmr, cmr, ms*)

Sulfinemycin S-633

14-Methyl-2-pentadecenethioamide S-*oxide, 9CI*
[162857-73-0]

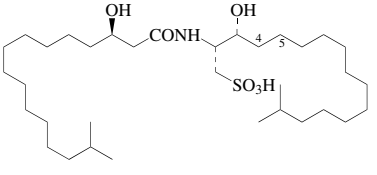


$C_{16}H_{31}NOS$ 285.493
Prod. by *Streptomyces albus*. Anthelmintic agent. Yellow powder. Sol. MeOH, $CHCl_3$, CH_2Cl_2; poorly sol. Et_2O, hexane. Mp 84°. Dec. at 105°. λ_{max} 210; 247; 343 (MeOH) (Derep).

Lee, T.M. *et al., J. Antibiot.*, 1995, **48**, 282 (*isol, uv, ir, pmr, cmr, ms*)

Sulfobacin A S-634

Flavocristamide B
[169217-35-0]



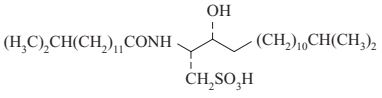
$C_{34}H_{69}NO_6S$ 619.988
Prod. by *Chryseobacterium* sp. NR 2993 and from a *Flavobacterium* sp. in the marine bivalve *Cristaria plicata*. Von Willebrand factor receptor antagonist. Powder. $[\alpha]_D^{24}$ -35 (c, 0.1 in MeOH).

*4,5-Didehydro(*E-*):* ***Flavocristamide A***
[169217-34-9]
$C_{34}H_{67}NO_6S$ 617.972
Prod. by a *Flavobacterium* sp. in the marine bivalve *Cristaria plicata*. DNA polymerase inhibitor. Amorph. solid. $[\alpha]_D^{20}$ -17 (c, 0.3 in MeOH).

Kamiyama, T. *et al., J. Antibiot.*, 1995, **48**, 924-928; 929-936 (*isol, ir, pmr, cmr*)
Kobayashi, J. *et al., Tetrahedron*, 1995, **51**, 10487-10490 (*isol, ir, pmr, cmr, ms*)
Irako, N. *et al., Tet. Lett.*, 1998, **39**, 5793-5796 (*synth*)
Takikawa, H. *et al., J.C.S. Perkin 1*, 1999, 2467-2477 (*synth*)
Shioiri, T. *et al., Tetrahedron*, 2000, **56**, 9129-9142 (*synth*)
Labeeuw, O. *et al., Tet. Lett.*, 2003, **44**, 6383-6386 (*synth*)
Gupta, P. *et al., Tet. Lett.*, 2004, **45**, 9641-9643 (*synth*)
Sharma, A. *et al., Tet. Lett.*, 2007, **48**, 3705-3707 (*synth*)

Sulfobacin B S-635

[170242-21-4]

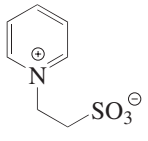


$C_{32}H_{65}NO_5S$ 575.935
Prod. by *Chryseobacterium* sp. NR 2993. von Willebrand factor receptor antagonist. Powder. Sol. MeOH, EtOAc; poorly sol. H_2O. $[\alpha]_D^{24}$ -19 (c, 0.1 in MeOH). λ_{max} (MeOH) (Berdy).

Kamiyama, T. *et al., J. Antibiot.*, 1995, **48**, 924; 929 (*isol, ir, pmr, cmr, ms, props*)
Takikawa, H. *et al., J.C.S. Perkin 1*, 1999, 2467-2477 (*synth*)
Shioiri, T. *et al., Tetrahedron*, 2000, **56**, 9129-9142 (*synth*)

N-(2-Sulfoethyl)pyridinium betaine S-636

2-Pyridinioethanesulfonic acid. ***Pyridinebetaine B***
[24020-66-4]

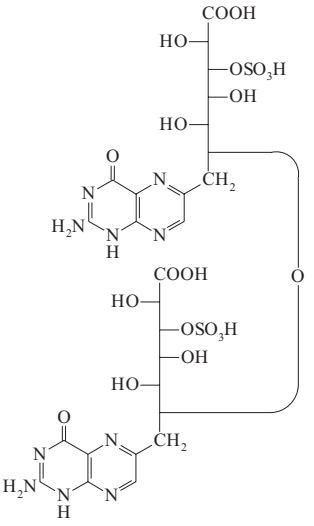


$C_7H_9NO_3S$ 187.219
Isol. from the sponge *Agelas dispar*. Cryst. (EtOH). Mp 260°. λ_{max} 222 (ϵ 6500); 260 (ϵ 4500) (MeOH).

Le Berre, A. *et al., Bull. Soc. Chim. Fr.*, 1970, 954 (*synth, pmr*)
King, J.F. *et al., Can. J. Chem.*, 1984, **62**, 1977-1995 (*synth*)
Cafieri, F. *et al., J. Nat. Prod.*, 1998, **61**, 1171-1173 (*isol, uv, ir, pmr, cmr*)

Sulfohalopterin 2 S-637

6,6′-Oxybis[7-(2-amino-1,4-dihydro-4-oxo-6-pteridinyl)-6,7-dideoxy-D-glycero-L-galacto-heptonic acid] 3,3′-bis(hydrogen sulfate), 9CI. SHP 2
[109686-75-1]

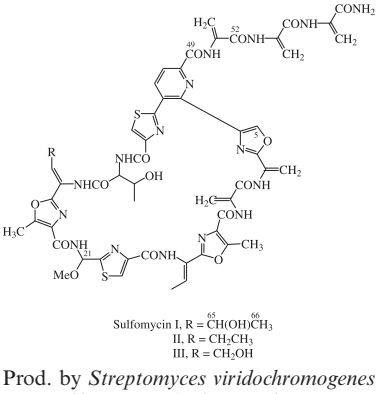


$C_{26}H_{32}N_{10}O_{21}S_2$ 884.725
Isol. from *Halobacterium marismortui*. No phys. props. reported.

Lin, X. *et al., Biochemistry*, 1987, **26**, 6211 (*isol, pmr, cmr, cd, struct*)

Sulfomycin S-638

[65454-59-3]



Prod. by *Streptomyces viridochromogenes* ssp. *sulfomycini*. Active against gram-positive bacteria. Closely related to Berninamycin A, B-104. λ_{max} 255 (ϵ 82400); 330 (sh) (ϵ 14400) (MeOH/NaOH) (Derep). λ_{max} 252 (ϵ 93300); 325 (sh) (ϵ 14400) (MeOH) (Derep).
▶WR0176000

Sulfomycin I [62339-99-5]
$C_{54}H_{52}N_{16}O_{16}S_2$ 1245.234
Prisms. Mp 280°. $[\alpha]_D^{20}$ -16 (c, 2 in MeOH).

N^{49}*-Parent amide:* ***Antibiotic 10381V***
[164366-78-3]
$C_{45}H_{43}N_{13}O_{13}S_2$ 1038.046
Prod. by *Streptomyces arginensis*. Yellow powder. Sol. MeOH, EtOAc.

N^{52}*-Parent amide:* ***Antibiotic 10381Y***
[164300-77-0]
$C_{48}H_{46}N_{14}O_{14}S_2$ 1107.109
Prod. by *Streptomyces arginensis*. Yellow powder. Sol. MeOH, EtOAc.

21-Demethoxy: ***21-Demethoxysulfomycin I****. Pre-B*
[164366-77-2]
$C_{53}H_{50}N_{16}O_{15}S_2$ 1215.208
Prod. by *Streptomyces arginensis*. Yellow powder. Sol. MeOH, EtOAc.

5-Methyl: ***Methylsulfomycin I***
[202606-10-8]
$C_{55}H_{54}N_{16}O_{16}S_2$ 1259.261
Prod. by *Streptomyces* sp. HIL Y-9420704. Powder. $[\alpha]_D^{25}$ -57.1 (c, 0.07 in MeOH). Mp >250° dec. λ_{max} 250 ; 320 (MeOH).

Sulfomycin II [102489-42-9]
$C_{54}H_{52}N_{16}O_{15}S_2$ 1229.235
$[\alpha]_D^{27}$ -11.8 (MeOH). Dec. at 190°.

Sulfomycin III [102489-41-8]
$C_{53}H_{50}N_{16}O_{16}S_2$ 1231.208
$[\alpha]_D^{27}$ +3.2 (MeOH). Dec. at 183°.

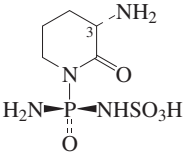
*65-Deoxy, 21-*O*-de-Me:* ***Antibiotic 10381Z$_1$***
[164366-75-0]
$C_{52}H_{48}N_{16}O_{15}S_2$ 1201.181
Prod. by *Streptomyces arginensis*. Yellow powder. Sol. MeOH, EtOAc.

65-Deoxy, 21-demethoxy: ***Antibiotic 10381Z$_2$***
[164366-76-1]
$C_{52}H_{48}N_{16}O_{14}S_2$ 1185.182
Prod. by *Streptomyces arginensis*. Yellow powder. Sol. MeOH, EtOAc.

Egawa, Y. *et al., J. Antibiot.*, 1969, **22**, 12-17 (*isol, props*)
Abe, H. *et al., Tet. Lett.*, 1977, 735-736; 1978, 2791-2794; 1988, **29**, 1401-1404 (*struct*)
Pat. Coop. Treaty (WIPO), 1995, 95 07 292; *CA*, **123**, 54272s (*Antibiotics 10381*)
Kohno, J. *et al., J. Antibiot.*, 1996, **49**, 1063-1065 (*Sulfomycins II,III, pmr, cmr, struct*)
Martin, G.E. *et al., Magn. Reson. Chem.*, 1998, **36**, 635-644 (*N-15 nmr*)
Kumar, E.K.S.V. *et al., J. Nat. Prod.*, 1999, **62**, 1562-1564 (*Methylsulfomycin I*)

Sulphostin S-639

Sulfostin
[307345-51-3]
[307345-53-5]



Absolute Configuration

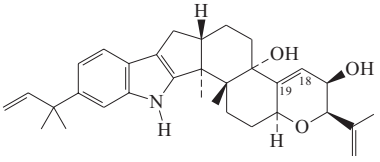
$C_5H_{13}N_4O_5PS$ 272.221
Prod. by *Streptomyces* sp. MK251-43F3. Inhibitor of dipeptidyl peptidase IV. Cryst. (EtOH aq.) (synthetic). Mp 203-208° dec. (synthetic). $[\alpha]_D^{23}$ -21.5 (c, 1 in H_2O) (synthetic). Readily epimerises at C-3. Isol. as a mixt. with the C-3 epimer.

Akiyama, T. *et al., J. Antibiot.*, 2001, **54**, 744-746 (*isol*)
Abe, M. *et al., J. Nat. Prod.*, 2004, **67**, 999-1004 (*synth, pmr, cmr, P-31 nmr, cryst struct*)

Abe, M. *et al., J. Antibiot.*, 2005, **58**, 111-117 (*activity*)

Sulpinine B S-640

[139975-52-3]



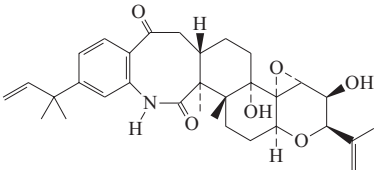
$C_{32}H_{41}NO_3$ 487.681
Metab. of *Aspergillus sulphureus*. Shows antiinsect props. Orange oil. $[\alpha]_D$ -43.2 ($CHCl_3$). λ_{max} 235 (ϵ 22600); 283 (ϵ 5600) (MeOH) (Derep).

18α,19α-Epoxide: ***Sulpinine A***
[139975-51-2]
$C_{32}H_{41}NO_4$ 503.68
Metab. of *Aspergillus sulphureus*. Yellow-orange solid. Mp 149-152° dec. $[\alpha]_D$ -29.6 ($CHCl_3$). λ_{max} 235 (ϵ 22600); 283 (ϵ 5600) (MeOH) (Derep).

Laakso, J.A. *et al., J.O.C.*, 1992, **57**, 2066 (*isol, pmr, cmr*)

Sulpinine C S-641

[139975-53-4]

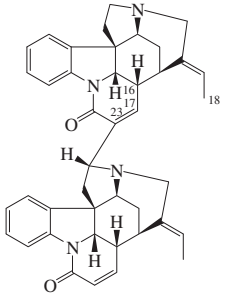


$C_{32}H_{41}NO_6$ 535.679
Metab. of *Aspergillus sulphureus*. Shows antiinsect props. Yellow oil. $[\alpha]_D$ +17.1 ($CHCl_3$). λ_{max} 229 (ϵ 25600); 262 (ϵ 18200) (MeOH) (Derep).

Laakso, J.A. *et al., J.O.C.*, 1992, **57**, 2066 (*isol, pmr, cmr*)

Sungucine S-642

[73020-53-8]



Absolute Configuration

$C_{42}H_{42}N_4O_2$ 634.819
Alkaloid from the root bark of *Strychnos icaja* (Loganiceae). Shows antiplasmodial, antimalarial and cytotoxic activities. Prisms ($Me_2CO/CHCl_3$). Mp 350°. λ_{max} 220 (log ϵ 4.38); 265 (log ϵ 3.88); 292 (log ϵ 4.03); 302 (log ϵ 4.06) (MeOH).

16,17-Didehydro, 17,23-dihydro: ***Isosungucine***
[279684-12-7]
$C_{42}H_{42}N_4O_2$ 634.819
Alkaloid from *Strychnos icaja*. Amorph. powder. C-23 config. not determined. λ_{max} 220 (log ϵ 4.38); 230 (log ϵ 4.24); 252 (log ϵ 4.04); 292 (log ϵ 3.86); 302 (3.74) (MeOH).

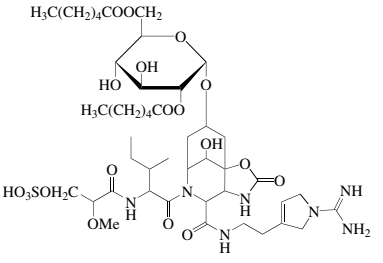
18-Hydroxy: ***18-Hydroxysungucine***
[279258-77-4]
$C_{42}H_{42}N_4O_3$ 650.819
Alkaloid from *Strychnos icaja*. Amorph. powder. λ_{max} 220 (log ϵ 4.38); 265 (log ϵ 3.88); 292 (log ϵ 4.03); 302 (log ϵ 4.06) (MeOH).

18-Hydroxy, 16,17-didehydro, 17,23-dihydro: ***18-Hydroxyisosungucine***
[279258-78-5]
$C_{42}H_{42}N_4O_3$ 650.819
Alkaloid from *Strychnos icaja*. Amorph. powder. λ_{max} 220 (log ϵ 4.38); 230 (log ϵ 4.24); 252 (log ϵ 4.04); 292 (log ϵ 3.86); 302 (3.74) (MeOH).

Lamotte, J. *et al., Tet. Lett.*, 1979, 4227-4228 (*isol, uv, ir, pmr, ms, cryst struct, abs config*)
Frederich, M. *et al., Planta Med.*, 2000, **66**, 262-269 (*isol, activity, uv, ir, cd, pmr, cmr, ms*)
Frédèrich, M. *et al., J. Nat. Prod.*, 2001, **64**, 12-16 (*activity*)

Suomilide S-643

[195256-59-8]

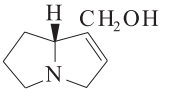


$C_{45}H_{73}N_7O_{19}S$ 1048.173
Isol. from the marine cyanobacterium *Nodularia spumigena* HKUV. Enzyme inhibitor. Amorph. powder. $[\alpha]_D^{26}$ +74.2 (c, 0.1 in MeOH).

Sivonen, K. *et al., Hydrobiologia*, 1989, **185**, 3-8 (*isol*)
Fujii, K. *et al., Tet. Lett.*, 1997, **38**, 5529-5532 (*isol, pmr, cmr, ms*)

Supinidine S-644

2,3,5,7a-Tetrahydro-1H-pyrrolizine-7-methanol, 9CI. 1-Hydroxymethyl-1,2-didehydropyrrolizidine



(R)–form

$C_8H_{13}NO$ 139.197
▶ Exp. carcinogen.

(R)-form
Necine component of Cynaustine in A-669. Rare in nature. Oil. $Bp_{0.14}$ 85° (bulb). $[\alpha]_D^{20}$ +9.2 (c, 2.07 in EtOH).

Picrate:
Yellow needles (EtOH). Mp 144-144.5°.

(S)-form [551-59-7]
Obt. by hydrol. of Supinine in A-669. $[\alpha]_D$ -10.3.

O-[2S-Hydroxy-2-(1S-hydroxyethyl)-4-methylpentanoyl], N-oxide:
$C_{16}H_{27}NO_5$ 313.393
Alkaloid from the roots of *Anchusa strigosa*. Orange oil. $[\alpha]_D^{25}$ -4.3 (c, 0.1 in MeOH). λ_{max} 230 (sh) ; 270 (MeOH).

Me ether: ***1-Methoxymethyl-1,2-dehydropyrrolizidine***
[6029-76-1]
$C_9H_{15}NO$ 153.224
Alkaloid from *Crotalaria trifoliastrum* and *Crotalaria medicaginea* (Fabaceae). Oil. Bp_{10} 100°. $[\alpha]_D^{20}$ -24 (c, 4.88 in EtOH).

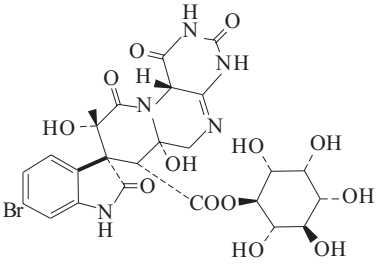
Me ether, picrate: Mp 153-154°.

(±)-form [23185-51-5]
Cryst. (MeOH) (as picrate). Mp 124-126° (picrate).

Culvenor, C.C.J. *et al., Aust. J. Chem.*, 1962, **15**, 121 (*isol, deriv*)
Sawhney, R.S. *et al., J. Indian Chem. Soc.*, 1970, **47**, 741 (*isol, deriv*)
Culvenor, C.C.J. *et al., J.C.S.(C)*, 1971, 3653 (*cd*)
Tufariello, J.J. *et al., J.O.C.*, 1975, **40**, 3866 (*synth, bibl*)
Mody, N.V. *et al., J. Nat. Prod.*, 1979, **42**, 417 (*cmr*)
Chamberlin, A.R. *et al., Tet. Lett.*, 1982, **23**, 2619 (*synth*)
Hart, D.J. *et al., Tet. Lett.*, 1982, **23**, 2761 (*synth*)
Macdonald, T.L. *et al., J.O.C.*, 1983, **48**, 1129 (*synth*)
Burnett, D.A. *et al., J.A.C.S.*, 1984, **106**, 8201 (*synth*)
Boynton, C.M. *et al., J.C.S. Perkin 1*, 2000, 3599-3602 (*synth*)
Braca, A. *et al., Planta Med.*, 2003, **69**, 835-841 (*Anchusa strigosa ester*)
Sarkar, T.K. *et al., Tetrahedron*, 2005, **61**, 1155-1165 (*synth*)
Sax, N.I. *et al., Dangerous Properties of Industrial Materials, 5th edn., Van Nostrand Reinhold*, 1979, 1005

Surugatoxin S-645

[40957-92-4]



$C_{25}H_{26}BrN_5O_{13}$ 684.41
Unique skeleton containing both indole and pteridine subunits. Toxin from the mid-gut gland of the Japanese Ivory shell *Babylonia japonica* (harvested from

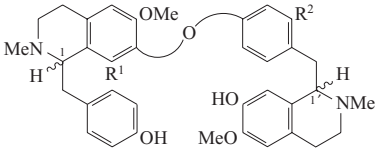
a particular area only). Prod. from cyanobacteria. Marine toxin, causing shellfish poisoning. Prisms + $7H_2O$. Mp 300°. Artifact formed during isol. λ_{max} 276 (ϵ 15000) (0.1*N* HCl) (Derep). λ_{max} 279 (ϵ 19000) (0.1*N* NaOH) (Derep). λ_{max} 276 (ϵ 15000) (H_2O) (Derep).

▶ Toxic.

Kosuge, T. *et al., Tet. Lett.*, 1972, 2545-2548 (*isol, uv, ir, cryst struct*)
Inoue, S. *et al., Tet. Lett.*, 1984, **25**, 4407 (*synth*)
Okado, K. *et al., Yakugaku Zasshi*, 1985, **105**, 375; 381 (*synth*)
Inoue, S. *et al., Tetrahedron*, 1994, **50**, 2729 (*synth*)

Sutchueneneonine S-646

[151271-92-0]



R^1 = H, R^2 = OH

$C_{36}H_{40}N_2O_6$ 596.722

Alkaloid from roots of *Cyclea sutchuenensis* (Menispermaceae). Powder. $[\alpha]_D^{26}$ +6.7 (c, 0.422 in EtOH).

Wang, X.-K. *et al., Phytochemistry*, 1993, **33**, 1253 (*isol, uv, ir, pmr, cmr, ms, struct*)

Sutchuenenine S-647

[151271-90-8]

As Sutchueneneonine, S-646 with R^1 = OH, R^2 = H

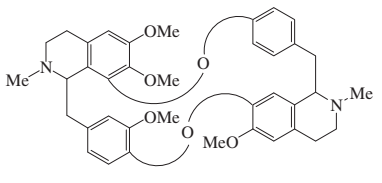
$C_{36}H_{40}N_2O_6$ 596.722

Alkaloid from roots of *Cyclea sutchuenensis* (Menispermaceae). Yellowish powder. $[\alpha]_D^{26}$ -47.4 (c, 0.703 in $CHCl_3$). Suggested to have 1*R*,1′*R* config.

Wang, X.-K. *et al., Phytochemistry*, 1993, **33**, 1253 (*isol, uv, ir, pmr, cmr, ms, struct*)

Sutchuenensine S-648

[152406-26-3]



$C_{38}H_{42}N_2O_6$ 622.76

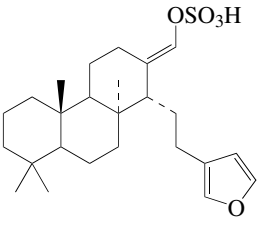
Alkaloid from the roots of *Cyclea sutchuenensis*. Powder. $[\alpha]_D^{27}$ -110 (c, 0.13 in EtOH).

Lai, S. *et al., Yaoxue Xuebao*, 1993, **28**, 599-603

Suvanine S-649

[94203-53-9]

[202072-67-1]



$C_{25}H_{38}O_5S$ 450.638

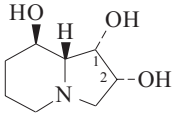
Constit. of sponges of the genera *Coscinoderma* and *Hippospongia*. Powder (as *N,N*-dimethylguanidine salt). Mp 224° (dimethylguanidine salt). $[\alpha]_D$ +9.5 (MeOH). Also isol. as the trimethylguanidinium salt. λ_{max} 210 (ϵ 6300) (MeOH) (Derep).

Manes, L.V. *et al., J.O.C.*, 1985, **50**, 284; 1988, **53**, 570 (*struct*)
Kimura, J. *et al., J. Nat. Prod.*, 1998, **61**, 248-250; 862 (*isol*)

Swainsonine S-650

Octahydro-1,2,8-indolizinetriol, 9CI. 1,2,8-Trihydroxyoctahydroindolizine. ***Tridolgosir, INN***

[72741-87-8]



$C_8H_{15}NO_3$ 173.211

Alkaloid from *Swainsona canescens* and *Astragalus lentiginosus*. Also isol. from seeds of *Astragalus oxyphysus* (Fabaceae) and prod. by the fungus *Rhizoctonia leguminicola*. Neurological α-mannosidase inhibitor. Potent toxin producing symptoms similar to the genetic disorder mannosidosis. Antineoplastic agent. Needles ($CHCl_3$). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 144-145° dec. $[\alpha]_D^{20}$ -85.1 (c, 0.6 in MeOH) (synthetic). pK_a 7.4. The *Rhizoctonia leguminicola* isol. was originally assigned an isomeric struct. (Guengerich *et al*, 1973, revised by Schneider *et al*, 1983).

Hydrochloride: ***Tridolgosir hydrochloride, USAN. GD 0039***
[214462-68-7]
Cryst. (MeOH/Et_2O). Sol. H_2O (3g/ml). Mp 190-191°.

N-*Oxide:* ***Swainsonine* N-*oxide***
[81759-44-6]
$C_8H_{15}NO_4$ 189.211
Alkaloid from above-ground parts of *Astragalus lentiginosus* (Fabaceae). Hygroscopic, pale yellow prisms (Me_2CO). Mp 161-163°.

Tri-Ac:
Pale yellow oil. Dec. rapidly on standing in air.

8-Deoxy: see Octahydro-1,2-indolizinediol, O-46

1-Epimer: Synthetic. Cryst. (MeCN/MeOH). Mp 111-113°. $[\alpha]_D^{20}$ -32.14 (c, 1.5 in MeOH).

8-Epimer: Synthetic. Mp 92-93°. $[\alpha]_D^{20}$ -22.1 (c, 0.25 in MeOH).

*8*a-*Epimer:* Synthetic. α-D-Mannosidase inhibitor. Cryst. ($CHCl_3$). Mp 122-124° dec. $[\alpha]_D^{19}$ -64.5 (c, 0.95 in MeOH).

*2,8*a-*Diepimer:* Synthetic. Mp 138-142° dec. $[\alpha]_D^{26}$ -24 (c, 1.14 in MeOH).

*8,8*a-*Diepimer:* Synthetic. Potent inhibitor of human lysosomal α-D-mannosidase. Cryst. ($CHCl_3$/hexane). Mp 130-131° dec. $[\alpha]_D^{22}$ -21.2 (c, 0.78 in MeOH).

*2,8,8*a-*Triepimer:* Synthetic. Glass. $[\alpha]_D^{20}$ +31.62 (c, 1.07 in MeOH).

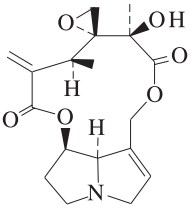
[41431-34-9]

Colegate, S.M. *et al., Aust. J. Chem.*, 1979, **32**, 2257 (*isol, ir, pmr, cmr, ms, struct*)
Skelton, B.W. *et al., Aust. J. Chem.*, 1980, **33**, 435 (*cryst struct*)
Schneider, M.J. *et al., J.A.C.S.*, 1982, **104**, 6863 (*biosynth*)
Molyneux, R.J. *et al., Science (Washington, D.C.)*, 1982, **216**, 190 (*oxide*)
Schneider, M.J. *et al., Tetrahedron*, 1983, **39**, 29 (*struct*)
Yasuda, N. *et al., Chem. Lett.*, 1984, 1201 (*synth*)
Fleet, G.W.J. *et al., Tet. Lett.*, 1984, **25**, 1853 (*synth*)
Suami, T. *et al., Carbohydr. Res.*, 1985, **136**, 67 (*synth*)
Ali, M.H. *et al., Carbohydr. Res.*, 1985, **136**, 225 (*synth*)
Adams, C.E. *et al., J.O.C.*, 1985, **50**, 420 (*synth*)
Setoi, H. *et al., J.O.C.*, 1985, **50**, 3948 (*synth*)
Howard, A.S. *et al., Alkaloids (Academic Press)*, 1986, **28**, 287 (*rev, pharmacol, tox*)
Elbein, A.D. *et al., Alkaloids: Chem. Biol. Perspect.*, 1987, **5**, 1 (*rev*)
Ikota, N. *et al., Chem. Pharm. Bull.*, 1987, **35**, 2140; 1988, **36**, 1143 (*synth*)
Bashyal, B.P. *et al., Tetrahedron*, 1987, **43**, 3083 (*synth, ir, pmr, ms*)
Tadano, K. *et al., J.O.C.*, 1988, **53**, 5209 (*synth, ir, pmr, cmr*)
Dener, J.M. *et al., J.O.C.*, 1988, **53**, 6022 (*synth, ir, ms*)
Bennett, R.B. *et al., J.A.C.S.*, 1989, **111**, 2580 (*synth, pmr, cmr*)
Kim, Y.G. *et al., Tet. Lett.*, 1989, **30**, 5721 (*synth, epimers*)
Carpenter, N.M. *et al., Tet. Lett.*, 1989, **30**, 7261 (*synth*)
Ikota, N. *et al., Chem. Pharm. Bull.*, 1990, **38**, 2712 (*synth*)
Miller, S.A. *et al., J.A.C.S.*, 1990, **112**, 8100 (*synth*)
Pearson, W.H. *et al., Tet. Lett.*, 1990, **31**, 7571 (*synth*)
Kardono, L.B.S. *et al., Phytochem. Anal.*, 1991, **2**, 120 (*isol, pmr, cmr*)
Gonzalez, F.B. *et al., Bull. Chem. Soc. Jpn.*, 1992, **65**, 567 (*synth*)
Casiraghi, G. *et al., J.O.C.*, 1993, **58**, 3397 (*synth, epimers*)
Honda, T. *et al., J.C.S. Perkin 1*, 1994, 2091 (*synth*)
Naruse, M. *et al., J.O.C.*, 1994, **59**, 1358 (*synth*)
Zhou, W.-S. *et al., Tet. Lett.*, 1995, **36**, 1291 (*synth*)
Mukai, C. *et al., J.O.C.*, 1998, **63**, 6281-6287 (*synth*)
Pat. Coop. Treaty (WIPO), 1998, (*(Glycodesign)*)98 46 602; *CA*, **129**, 306525d (*tridolgosir hydrochloride*)
Klein, J.L. *et al., Br. J. Cancer*, 1999, **80**, 87-95 (*pharmacol*)

Trost, B.M. *et al., Chem. Eur. J.*, 1999, **5**, 3279-3284 (*synth*)
Misago, M. *et al., Biochem. Biophys. Res. Commun.*, 2000, **269**, 219-225 (*pharmacol*)
Bohle, D.S. *et al., J.O.C.*, 2000, **65**, 5685-5692 (*synth*)
El Nemr, A. *et al., Tetrahedron*, 2000, **56**, 8579-8629 (*rev, synth*)
Zhao, H. *et al., J.O.C.*, 2001, **66**, 1761-1767 (*synth, pmr, cmr*)
Buschmann, N. *et al., J.O.C.*, 2002, **67**, 4325-4329 (*synth*)
Lindsay, K.B. *et al., J.O.C.*, 2002, **67**, 4325-4329 (*synth*)
Kumar, N.S. *et al., J.O.C.*, 2006, **71**, 1262-1264 (*synth*)
Au, C.W.G. *et al., J.O.C.*, 2006, **71**, 7097-7099 (*synth*)
Nath, M. *et al., Org. Lett.*, 2006, **8**, 317-320 (*synth*)
Déschamps, I. *et al., Tetrahedron*, 2007, **63**, 9082-9091 (*synth*)
Abrams, J.N. *et al., J.O.C.*, 2008, **73**, 1935-1940 (*epimer, synth*)
Håkansson, A.E. *et al., Tet. Lett.*, 2008, **49**, 179-184 (*synth*)
Guo, H. *et al., Tetrahedron*, 2008, **64**, 304-313 (*synth*)
Shi, G.-F. *et al., Tetrahedron*, 2008, **64**, 5005-5012 (*synth*)

Swazine S-651

[38763-74-5]



Absolute configuration

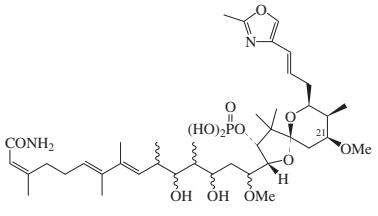
$C_{18}H_{23}NO_6$ 349.383

Cyclic retronecine diester. Alkaloid from *Senecio swaziensis* (Asteraceae). Needles (Me_2CO). Mp 165°. $[\alpha]_D^{20}$ -104 (c, 1.16 in EtOH).

Laing, M. *et al., Tet. Lett.*, 1972, 5183 (*cryst struct*)
Gordon-Gray, C.G. *et al., J.C.S. Perkin 1*, 1974, 1556 (*isol, struct*)
Drewes, S.E. *et al., J.C.S. Perkin 1*, 1981, 287 (*cmr*)
White, J.D. *et al., Chem. Comm.*, 1998, 603-604; 1237 (*abs config, cryst struct*)

Swinhoeiamide A S-652

[209408-31-1]



$C_{40}H_{65}N_2O_{12}P$ 796.934

Related to Calyculin A, C-55 and Clavosine A, C-516. Isol. from the sponge *Theonella swinhoei*. Insecticide and antifungal agent. Cell proliferation inhibitor. Powder. $[\alpha]_D^{20}$ -21.6 (c, 0.35 in EtOH).

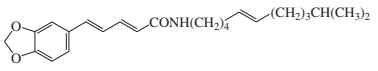
λ_{max} 223 (MeOH).

O^{21}-*De-Me:* ***Geometricin A***
[443769-46-8]
$C_{39}H_{63}N_2O_{12}P$ 782.907
Isol. from the sponge *Luffariella geometrica*. Cytotoxic. Amorph. solid. $[\alpha]_D^{23}$ -36.3 (c, 0.29 in MeOH). λ_{max} 206 (ϵ 16280); 221 (ϵ 16370) (MeOH).

Kehraus, S. *et al., J. Nat. Prod.*, 2002, **65**, 1056-1058 (*Geometricin A*)
Edrada, R.A. *et al., J. Nat. Prod.*, 2002, **65**, 1168-1172 (*Swinhoeiamide A*)

Sylvatine S-653

*5-(1,3-Benzodioxol-5-yl)-*N*-(10-methyl-5-undecenyl)-2,4-pentadienamide, 9CI*



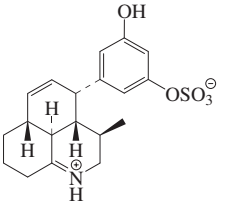
$C_{24}H_{33}NO_3$ 383.53

(E,E,E)-form [42438-80-2]
Alkaloid from *Piper aurantiacum*, *Piper brachystachyum*, *Piper sylvaticum*, *Piper chaba* (Javanese long pepper) and several other *Piper* spp. (Piperaceae). Needles (C_6H_6/hexane). Mp 116-117° (111-112°).

Banerji, A. *et al., Tetrahedron*, 1973, **29**, 977 (*isol, uv, ir, pmr, ms, struct*)
Patra, A. *et al., Phytochemistry*, 1974, **13**, 2889 (*isol*)
Rao, J.M. *et al., Curr. Sci.*, 1974, **43**, 76 (*isol, uv, ir, pmr*)
Dutta, C.P. *et al., Phytochemistry*, 1975, **14**, 2090 (*isol*)
Vig, O.P. *et al., Indian J. Chem.*, 1975, **13**, 225 (*synth, ir, pmr*)

Symbioimine S-654

[862479-86-5]



Absolute Configuration

$C_{19}H_{23}NO_5S$ 377.46

Alkaloid from the marine dinoflagellate *Symbiodinium* sp.; also from *Amphiscolops* sp. Inhibitor of cyclooxygenase-2 and osteoclast differentiation. Cryst. + $1H_2O$ (H_2O). Mp 214-215° dec. $[\alpha]_D^{27}$ +245 (c, 0.1 in DMSO).

Kita, M. *et al., J.A.C.S.*, 2004, **126**, 4794-4795 (*isol*)
Kita, M. *et al., Bioorg. Med. Chem.*, 2005, **13**, 5253-5258 (*isol, pmr, cmr, activity*)
Varseev, G.N. *et al., Angew. Chem., Int. Ed.*, 2006, **45**, 4767-4771 (*synth*)
Zou, Y. *et al., Org. Lett.*, 2006, **8**, 5605-5608 (*synth*)
Kim, J. *et al., Angew. Chem., Int. Ed.*, 2007, **46**, 3104-3106 (*synth*)

Synaine S-655

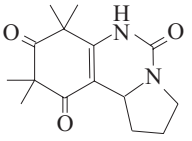
$C_{24}H_{39}NO$ 357.578

Struct. unknown. Alkaloid from the roots and rhizomes of *Veratrum album* (Liliaceae). Mp 217-218° dec. $[\alpha]_D^{20}$ -31.68 (c, 1 in $CHCl_3$). Proposed mol. formula seems improbable as it is prob. a steroidal alkaloid.

Cionga, E. *et al., Acta Pol. Pharm.*, 1957, **14**, 73-76; *CA*, **52**, 12882c
Cionga, E. *et al., Ann. Pharm. Fr.*, 1958, **16**, 511; *CA*, **53**, 5590h

Syncarpurea S-656

*2,3,7*b*,10-Tetrahydro-7,7,9,9-tetramethylpyrrolo[1,2-c]quinazoline-5,8,10(1*H*,6*H*,9*H*)-trione, 9CI*
[89759-17-1]

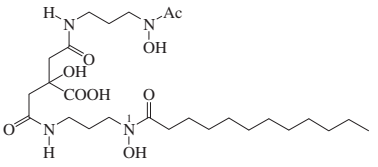


$C_{15}H_{20}N_2O_3$ 276.335

Metab. from *Uvaria afzelii* (Annonaceae). Cryst. ($CHCl_3$). Mp 239-240°. λ_{max} 236 (ϵ 4310); 306 (ϵ 5520); 362 (MeOH/NaOH) (Derep). λ_{max} 236 (ϵ 4310); 306 (ϵ 5520) (MeOH) (Derep).

Hufford, C.D. *et al., Tet. Lett.*, 1984, **25**, 371 (*isol, uv, ir, pmr, ms, cryst struct*)

Synechobactin A S-657



$C_{26}H_{48}N_4O_9$ 560.687

Isol. from the marine cyanobacterium *Synechococcus* sp. PCC 7002. Siderophore. Related to Schizokinen.

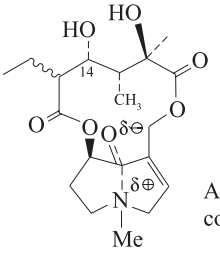
N^1-*Deacyl,* N^1-*octanoyl:* ***Synechobactin C***
$C_{22}H_{40}N_4O_9$ 504.579
Isol. from *Synechococcus* sp. PCC 7002.

N^1-*Deacyl,* N^1-*decanoyl:* ***Synechobactin B***
$C_{24}H_{44}N_4O_9$ 532.633
Isol. from *Synechococcus* sp. PCC 7002.

Ito, Y. *et al., Limnol. Oceanogr.*, 2005, **50**, 1918-1923 (*isol, struct*)

Syneilesine S-658

15,20-Dihydro-12,14-dihydroxy-4-methyl-4,8-secosenecionan-8,11,16-trione, 9CI
[55652-65-8]



Absolute configuration

$C_{19}H_{29}NO_7$ 383.441

Cyclic otonecine diester. Alkaloid from *Syneilesis palmata* (Asteraceae). Needles (petrol). Mp 194.5-195°.

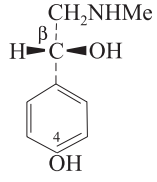
▶ Poss. hepatocarcinogen. VS3595500

O[14]-Ac: ***Acetylsyneilesine***
[62387-18-2]
$C_{21}H_{31}NO_8$ 425.478
From *Syneilesis palmata* (Asteraceae). Oil.

Hikichi, M. *et al., Chem. Pharm. Bull.*, 1976, **24**, 3178 (*isol, cd, cmr, pmr, struct*)
Jones, A.J. *et al., Aust. J. Chem.*, 1982, **35**, 1173 (*cmr*)
Mori, H. *et al., Cancer Res.*, 1985, **45**, 3125 (*tox*)

Synephrine S-659

4-Hydroxy-α-[(methylamino)methyl]-benzenemethanol, 9CI. 1-(p-Hydroxyphenyl)-2-methylaminoethanol. p-*(α-Hydroxy-β-methylaminoethyl)phenol. Analeptin. Ethaphene. Oxedrine, BAN. Simpalon. Sympathol. Many other names*
[94-07-5]



(*R*)–*form*

$C_9H_{13}NO_2$ 167.207

Sympathomimetic agent showing vasoconstrictor, hypertensive and bronchial muscle relaxant props. Possesses decongestant props. Log P -0.09 (calc). Was investigated as a synthetic drug before it was found naturally.

▶ LD_{50} (mus, ipr) 1000 mg/kg. DO7350000

(R)-form [614-35-7]

A widely distributed alkaloid, occurs in *Citrus* (Rutaceae) and *Coryphantha* (Cactaceae) spp., in *Ficus bengalensis* and a no. of Amaryllidaceae spp., also in *Haloxylon salicornicum* (Chenopodiaceae) (opt. rotn. of isolates not reported in many cases). Plates (Me_2CO aq. or H_2O). Mp 162-164° dec. $[\alpha]_D^{25}$ -55.6 (c, 0.5 in M HCl).

▶ DO7175003

4-Me ether: ***Longimammine****. 4-O-Methylsynephrine*
[57286-93-8]
$C_{10}H_{15}NO_2$ 181.234
Alkaloid from *Dolichothele longimamma* (Cactaceae). Mp 144-146° (hydrochloride). $[\alpha]_D^{25}$ -36.

N,O-Isopropylidene: ***Synephrine acetonide***
[225928-85-8]
$C_{12}H_{17}NO_2$ 207.272
Alkaloid from the seeds of *Casimiroa edulis* (Mexican apple). Hypertensive.

(±)-form [582-84-3]

Alkaloid from a number of *Coryphantha* spp. and from *Dolichothele longimamma* (Cactaceae). Spar. sol. org. solvs. Mp 184-185° dec. Used mainly as tartrate.

Hydrochloride: [5985-28-4]
Cryst. powder. Mp 149.5-157°.

▶ DO7700000

Tartrate (2:1): [16589-24-5]
Cryst. Mp 188-190°.

Di-Ac: Mp 157°.

Dibenzoyl: Mp 176°.

β-Me ether: ***β-O-Methylsynephrine***
[60094-92-0]
[25006-35-3]
$C_{10}H_{15}NO_2$ 181.234
Alkaloid from *Coryphantha greenwoodii, Coryphantha ramilosa* and *Coryphantha cornifera* (Cactaceae); also obt. from tangerine leaves, poss. as artifact. Mp 182-184° (175-176°) (as hydrochloride). One isolate was definitely racemic; opt. rotn. of others not recorded, poss. enantiomeric.

4-Me ether:
$C_{10}H_{15}NO_2$ 181.234
Synthetic. Mp 117-118° (as hydrochloride).

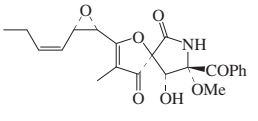
β-Et ether: ***β-O-Ethylsynephrine***
$C_{11}H_{17}NO_2$ 195.261
Alkaloid from *Dolichothele sphaerica* (Cactaceae). Mp 169-171° (as hydrochloride). Artifact.

[67-04-9]

Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **2**, 613C (*nmr*)
Priestley, H.M. *et al., J.O.C.*, 1940, **5**, 355 (*synth*)
Corrigan, J.R. *et al., J.A.C.S.*, 1945, **67**, 1894 (*synth*)
Stewart, I.S. *et al., J. Biol. Chem.*, 1964, **239**, 930 (*isol*)
Kappe, T. *et al., J. Med. Chem.*, 1965, **8**, 368 (*uv*)
Wheaton, T.A. *et al., Phytochemistry*, 1969, **8**, 85 (*biosynth*)
McLaughlin, J.L. *et al., J. Pharm. Sci.*, 1972, **61**, 41; 1973, **62**, 408; 411; 1663 (*isol, derivs*)
Ranieri, R.L. *et al., J.O.C.*, 1976, **41**, 319 (*isol, derivs*)
Smith, T.A. *et al., Phytochemistry*, 1977, **16**, 9 (*occur*)
Hengstmann, J.H. *et al., Arzneim.-Forsch.*, 1978, **28**, 2326 (*metab*)
Dattagupta, J.K. *et al., Acta Cryst. B*, 1982, **38**, 2830 (*cryst struct*)
Negwer, M. *et al., Organic-Chemical Drugs and their Synonyms, 6th edn., Akademie-Verlag*, 1987, 1283
Midgley, J.M. *et al., J.C.S. Perkin 2*, 1989, 963 (*cryst struct, abs config*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 1250
Kusu, F. *et al., Chem. Pharm. Bull.*, 1995, **43**, 1158 (*resoln*)
Magos, G.A. *et al., J. Ethnopharmacol.*, 1998, **64**, 35-44; *CA*, **131**, 410 (*acetonide*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, HLV500; SPD000

Synerazol S-660

8-Benzoyl-2-[3-(1-butenyl)oxiranyl]-9-hydroxy-8-methoxy-3-methyl-1-oxa-7-azaspiro[4.4]non-2-ene-4,6-dione, 9CI
[127941-81-5]



Absolute Configuration

$C_{22}H_{23}NO_7$ 413.426

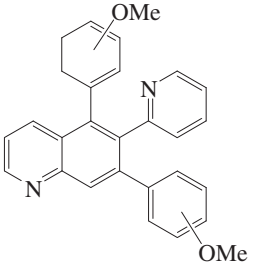
Prod. by *Aspergillus fumigatus* SANK 10588. Antifungal agent. Powder. Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. $[\alpha]_D^{22}$ +22.9 (c, 0.55 in $CHCl_3$). Related to Pseurotins, P-738. λ_{max} 202 (ε 23400); 251 (ε 14700); 284 (ε 10300) (EtOH) (Derep). λ_{max} 251 (E1%/1cm 340); 285 (E1%/1cm 280) (MeOH) (Berdy).

▶ RN7067000

Japan. Pat., 1989, 89 277 492; *CA*, **113**, 38904 (*isol*)
Ando, O. *et al., J. Antibiot.*, 1991, **44**, 382-389 (*isol, pmr, cmr, ms*)
Igarashi, Y. *et al., J. Antibiot.*, 2004, **57**, 537-540 (*abs config*)
Hayashi, Y. *et al., J.O.C.*, 2005, **70**, 5643-5654 (*synth, abs config*)

Syphilobin A S-661

[11031-99-5]



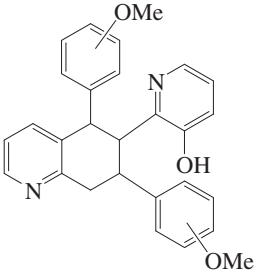
$C_{28}H_{22}N_2O_2$ 418.494

Alkaloid from *Lobelia syphilitica* (Campanulaceae). Needles (Et_2O). Mp 192-194°. λ_{max} 221 (log ε 4.67); 254 (log ε 4.64); 275 (log ε 4.46); 321 (sh) (log ε 3.33); 337 (log ε 3.47); 353 (log ε 3.51) (no solvent reported).

Tschesche, R. *et al., Tetrahedron*, 1964, **20**, 2885-2893 (*isol, ms, uv, ir*)

Syphilobin F S-662

[11032-00-1]



$C_{28}H_{26}N_2O_3$ 438.525

Alkaloid from *Lobelia syphilitica* (Campanulaceae). Needles (C_6H_6). Mp 222-223°. $[\alpha]_D^{20}$ -1.64 (c, 1.217 in Py). λ_{max} 274 (log ε 4.14); 280 (log ε 4.14) (no solvent reported).

Ac:
Plates (Me_2CO). Mp 124-125°.

Me ether:
Plates (Me_2CO). Mp 179-180°.

Methiodide:
Needles. Mp 244-246°.

Tschesche, R. *et al., Tetrahedron*, 1964, **20**, 2885-2893 (*isol, uv, ir, pmr, ms*)

Syriamycin S-663

[71751-72-9]

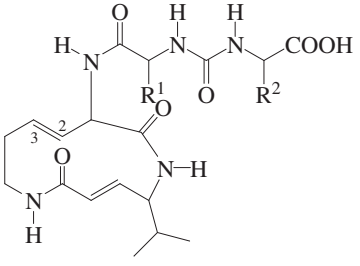
Thiazole-peptide antibiotic. Struct. unknown. Prod. by *Streptomyces violaceoniger*. Antibacterial and antitumour agent. Yellow.

Abdallah, N.M. *et al., CA*, 1979, **91**, 191294k (*isol*)

Zaki, Z. *et al., Indian J. Exp. Biol.*, 1979, **17**, 721-723 (*isol*)

Syringolin A S-664

[212115-96-3]



$R^1 = R^2 = -CH(CH_3)_2$

$C_{24}H_{39}N_5O_6$ 493.602

Prod. by *Pseudomonas syringae* pv. *syringae*. Antifungal agent. Peptide elicitor that induces resistance to *Pyricularia oryzae* in rice.

2,3-Dihydro: ***Syringolin B***

[235096-66-9]

$C_{24}H_{41}N_5O_6$ 495.618

Prod. by *Pseudomonas syringae* pv. *syringae*. Antifungal agent.

Wäspi, U. *et al., Mol. Plant-Microbe Interact.*, 1998, **11**, 727-733 (*isol, pmr*)

Wäspi, U. *et al., Microbiol. Res.*, 1999, **154**, 89-93 (*isol, pmr, ms*)

Syringolin C S-665

[235096-67-0]

As Syringolin A, S-664 with

$R^1 = -CH(CH_3)CH_2CH_3$, $R^2 = -CH(CH_3)_2$

$C_{25}H_{41}N_5O_6$ 507.629

Prod. by *Pseudomonas syringae* pv. *syringae*. Antifungal agent.

Wäspi, U. *et al., Microbiol. Res.*, 1999, **154**, 89-93 (*isol, pmr, ms*)

Syringolin D S-666

[235096-68-1]

As Syringolin A, S-664 with

$R^1 = -CH(CH_3)_2$, $R^2 = -CH(CH_3)CH_2CH_3$

$C_{25}H_{41}N_5O_6$ 507.629

Prod. by *Pseudomonas syringae* pv. *syringae*. Antifungal agent.

2,3-Dihydro: ***Syringolin E***

[235096-69-2]

$C_{25}H_{43}N_5O_6$ 509.645

Prod. by *Pseudomonas syringae* pv. *syringae*. Antifungal agent.

Wäspi, U. *et al., Microbiol. Res.*, 1999, **154**, 89-93 (*isol, pmr, ms*)

Syringolin F S-667

[235096-70-5]

As Syringolin A, S-664 with

$R^1 = R^2 = -CH(CH_3)CH_2CH_3$

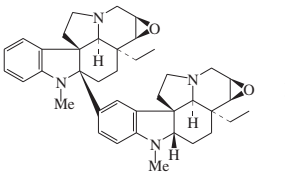
$C_{26}H_{43}N_5O_6$ 521.656

Prod. by *Pseudomonas syringae* pv. *syringae*. Antifungal agent.

Wäspi, U. *et al., Microbiol. Res.*, 1999, **154**, 89-93 (*isol, pmr, ms*)

Tabernaebovine T-1

[220327-17-3]



$C_{40}H_{50}N_4O_2$ 618.861

Alkaloid from *Tabernaemontana bovina*. Cryst. (Me_2CO). Mp 163-165°. $[\alpha]_D^{24}$ +133 (c, 1 in $CHCl_3$).

Lien, T.P. *et al., Phytochemistry*, 1998, **49**, 1797-1799 (*isol, pmr, cmr*)

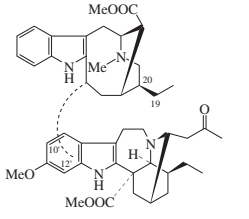
Tabernaelegantidine T-2

Bisindole alkaloid (Iboga-vobasine type). Struct. unknown. Alkaloid from *Tabernaemontana elegans* (Apocynaceae). Mol. formula not reported.

Cordell, G.A. *et al., Alkaloids (Academic Press)*, 1981, **20**, 1; 266 (*rev*)

Tabernaelegantinine A T-3

[58917-03-6]



$C_{46}H_{58}N_4O_6$ 762.987

Alkaloid from the root bark of *Tabernaemontana elegans* (Apocynaceae). Cryst. (hexane). Mp 160°. $[\alpha]_D^{20}$ -53.7 ($CHCl_3$). Possibly an artifact.

19,20Z-Didehydro: ***3-(2-Oxopropyl)conodurine***

[64192-91-2]

$C_{46}H_{56}N_4O_6$ 760.972

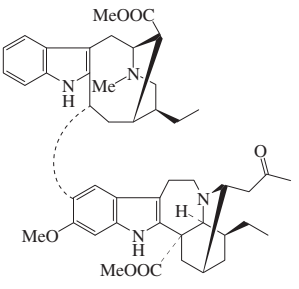
Alkaloid from the roots of *Tabernaemontana holstii* (Apocynaceae). Shows high cytotoxicity *vs.* mouse P-388 cells. Mp 203-204°.

Bombardelli, E. *et al., J.C.S. Perkin 1*, 1976, 1432 (*Tabernaelegantinine A*)

Kingston, D.G.I. *et al., J. Pharm. Sci.*, 1977, **66**, 1135; 1978, **67**, 249 (*3-(2-Oxopropyl)conodurine*)

Tabernaelegantinine B T-4

[58917-02-5]



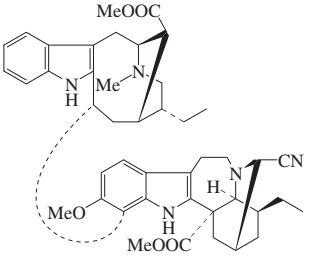
$C_{46}H_{58}N_4O_6$ 762.987

Alkaloid from the root bark of *Tabernaemontana elegans* (Apocynaceae). Cryst. (MeOH). Mp 215°. $[\alpha]_D^{20}$ +39.1 ($CHCl_3$). Possibly an artifact.

Bombardelli, E. *et al., J.C.S. Perkin 1*, 1976, 1432 (*uv, pmr, cmr, ms, struct*)

Tabernaelegantinine C T-5

[72542-42-8]



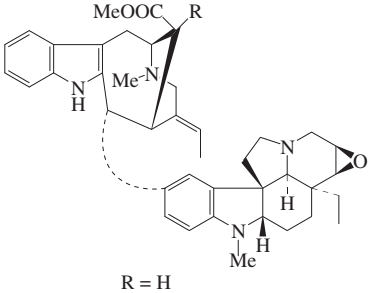
$C_{44}H_{53}N_5O_5$ 731.933

Alkaloid from the root bark of *Tabernaemontana elegans* (Apocynaceae). Cryst. (MeOH). Mp 177°.

Danieli, B. *et al., J.C.S. Perkin 1*, 1980, 601 (*uv, ir, pmr, cmr, ms, cd, struct*)

Tabernaemontabovine T-6

[243974-08-5]



R = H

$C_{41}H_{50}N_4O_3$ 646.871

Struct. revised in 2000. Alkaloid from leaves and stems of *Tabernaemontana bovina*. Oil. $[\alpha]_D^{25}$ -74.2 (c, 0.50 in MeOH).

Ripperger, H. *et al., J. Prakt. Chem.*, 1999, **341**, 506-508; 2000, **342**, 725-727 (*isol, pmr, cmr, ms*)

Tabernaemontavine T-7

[243974-09-6]

As Tabernaemontabovine, T-6 with

R = CH_2OH

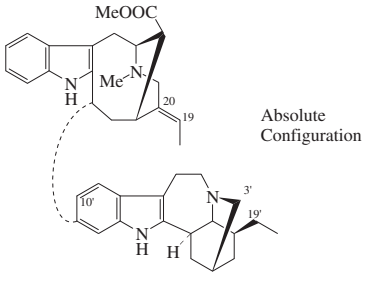
$C_{42}H_{52}N_4O_4$ 676.897

Struct. revised in 2000. Alkaloid from leaves and stems of *Tabernaemontana bovina*. Oil. $[\alpha]_D^{25}$ -56.8 (c, 0.50 in MeOH).

Ripperger, H. *et al., J. Prakt. Chem.*, 1999, **341**, 506-508; 2000, **342**, 725-727 (*isol, pmr, cmr, ms*)

Tabernamine T-8

[59626-92-5]



$C_{40}H_{48}N_4O_2$ 616.845

Alkaloid from the stem bark of *Tabernaemontana johnstonii* and *Tabernaemontana dichotoma* (Apocynaceae). Shows strong cytotoxic activity vs. mouse P-388 carcinoma. Amorph. powder. $[\alpha]_D^{22}$ -51 (c, 0.18 in MeOH). λ_{max} 236 (ϵ 33000); 287 (ϵ 10900); 295 (ϵ 10000) (MeOH) (Berdy). λ_{max} 235 (ϵ 34000); 287 (ϵ 10400); 295 (ϵ 10000) (EtOH) (Berdy).

N-*De-Me:* ***N⁴-Demethyltabernamine***. *13′-Peribogamine*

[66302-66-7]

$C_{39}H_{46}N_4O_2$ 602.818

Alkaloid from the stem bark of *Tabernaemontana dichotoma* (Apocynaceae). Shows strong activity vs. P-388 lymphocytic leukaemia.

19,20ξ-Dihydro: ***19,20-Dihydrotabernamine***

[79543-26-3]

$C_{40}H_{50}N_4O_2$ 618.861

Alkaloid from the root bark of *Hazunta modesta* (Apocynaceae). Cryst. (MeOH). Mp 230°. $[\alpha]_D$ -27 (c, 0.6 in $CHCl_3$).

3′-Hydroxy: ***3′-Hydroxytabernamine***

[99257-60-0]

$C_{40}H_{48}N_4O_3$ 632.844

Alkaloid from the stem bark of *Tabernaemontana dichotoma* (Apocynaceae). Active against gram-positive bacteria. Sol. MeOH, butanol, $CHCl_3$; poorly sol. H_2O, hexane. Epimeric mixt. at C-3′. λ_{max} 237 (ϵ 69200); 287 (ϵ 21900); 295 (ϵ 20400) (EtOH) (Berdy).

3′-Hydroxy, N-*de-Me:* ***3′-Hydroxy-N⁴-demethyltabernamine***

[99257-59-7]

$C_{39}H_{46}N_4O_3$ 618.817

Alkaloid from the stem bark of *Tabernaemontana dichotoma* (Apocynaceae). Active against gram-positive bacteria. Sol. MeOH, $CHCl_3$, butanol; poorly sol. H_2O, hexane. Epimeric mixt. at C-3′. λ_{max} 236 (ϵ 74000); 256 (ϵ 20000); 296 (ϵ 18600) (EtOH) (Berdy).

19′R-Hydroxy: ***19′R-Hydroxytabernamine***

[482662-87-3]

$C_{40}H_{48}N_4O_3$ 632.844

Alkaloid from the stem bark of *Tabernaemontana corymbosa*. Light

yellow oil. $[\alpha]_D$ -139 (c, 0.13 in $CHCl_3$). λ_{max} 231 (log ϵ 4.59); 286 (log ϵ 4.07); 295 (log ϵ 4.02) (EtOH).

19′S-Hydroxy: ***19′S-Hydroxytabernamine***
[482662-86-2]
$C_{40}H_{48}N_4O_3$ 632.844
Alkaloid from the stem bark of *Tabernaemontana corymbosa*. Light yellow oil. $[\alpha]_D$ -144 (c, 0.07 in $CHCl_3$). λ_{max} 230 (log ϵ 4.64); 286 (log ϵ 4.09); 295 (log ϵ 4.04) (EtOH).

19′-Oxo: ***19′-Oxotabernamine***
[482662-88-4]
$C_{40}H_{46}N_4O_3$ 630.828
Alkaloid from the stem bark of *Tabernaemontana corymbosa*. Oil. $[\alpha]_D$ -158 (c, 0.08 in $CHCl_3$). λ_{max} 231 (log ϵ 4.57); 284 (log ϵ 4.03); 296 (log ϵ 3.98) (EtOH).

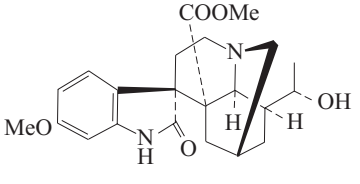
10′-Methoxy, 19,20α-dihydro: ***16′-Decarbomethoxy-20-epidihydrovoacamine***
[56725-98-5]
$C_{41}H_{52}N_4O_3$ 648.887
Alkaloid from the bark of *Ervatamia orientalis* (Apocynaceae). Powdery solid (petrol/C_6H_6). $[\alpha]_D$ +18 (c, 0.75 in $CHCl_3$). Dec. at 180° without melting.

10′-Methoxy, 19,20β-dihydro: ***16′-Decarbomethoxy-19,20-dihydrovoacamine***
[56691-97-5]
$C_{41}H_{52}N_4O_3$ 648.887
Alkaloid from the bark of *Ervatamia orientalis* (Apocynaceae). Powder (C_6H_6/petrol). $[\alpha]_D$ +22 (c, 1.7 in $CHCl_3$). Dec. at 215° without melting.

Knox, J.R. *et al., Aust. J. Chem.*, 1975, **28**, 1813 (*Decarbomethoxydihydrovincamines*)
Kingston, D.G.I. *et al., Tet. Lett.*, 1976, 649 (*uv, ir, pmr, ms, struct*)
Kingston, D.G.I. *et al., J. Pharm. Sci.*, 1978, **67**, 249 (*isol*)
Urrea, M. *et al., Bull. Soc. Chim. Fr., Part II*, 1981, 147 (*isol, uv, ir, pmr, cmr, ms, struct, 19,20-Dihydrotabernamine*)
Perera, P. *et al., Phytochemistry*, 1985, **24**, 2097 (*isol, uv, ir, pmr, ms, derivs, activity*)
Kam, T.-S. *et al., Heterocycles*, 2002, **57**, 2137-2143 (*19′-Hydroxytabernamines, 19′-Oxotabernamine*)

Tabernoxidine T-9

[91423-26-6]

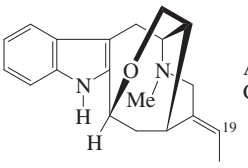


$C_{22}H_{28}N_2O_5$ 400.474
Minor alkaloid from the leaves of *Tabernaemontana heyneana* (Apocynaceae). Mp 291-292°.

Joshi, B.S. *et al., Indian J. Chem., Sect. B*, 1984, **23**, 101 (*uv, ir, pmr, ord, cryst struct*)

Taberpsychine T-10

3,17-Epoxyvobasan, 9CI. Anhydrovobasinediol
[19452-84-7]



Absolute Configuration

$C_{20}H_{24}N_2O$ 308.422
Alkaloid from *Tabernaemontana psychotrifolia*, *Tabernaemontana brachyantha* and *Conopharyngia durissima* (Apocynaceae). Cryst. (MeOH). Mp 208° dec. $[\alpha]_D^{23}$ -284 (c, 0.87 in $CHCl_3$).

Methiodide:
Cryst. (Me_2CO). Mp 272-274° dec.

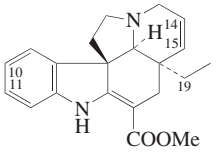
19Z-Isomer: ***(19Z)-Taberpsychine***
[113973-32-3]
$C_{20}H_{24}N_2O$ 308.422
Minor alkaloid from roots of *Gelsemium elegans* (Loganiaceae). Oil. $[\alpha]_D^{23}$ -180 (c, 0.4 in $CHCl_3$) (natural). $[\alpha]_D^{23}$ -151 (c, 0.3 in $CHCl_3$) (synth.).

19Z-Isomer, N-*methoxy:* **N-*Methoxyanhydrovobasinediol***
[125180-42-9]
$C_{21}H_{26}N_2O_2$ 338.449
Alkaloid from *Gelsemium elegans* (Loganiaceae). Needles. Mp 75°. $[\alpha]_D$ -272.5 (c, 0.24 in MeOH).

Dugan, J.J. *et al., Helv. Chim. Acta*, 1969, **52**, 701 (*uv, ir, pmr, ms, struct, synth*)
Burnell, R.H. *et al., Can. J. Chem.*, 1971, **49**, 307 (*isol, uv, ir, pmr, ms, struct*)
Patel, M.B. *et al., Phytochemistry*, 1973, **12**, 451 (*isol, uv, ir, pmr, ms*)
Van Beek, T.A. *et al., J. Nat. Prod.*, 1985, **48**, 400 (*isol, pmr, ms*)
Ponglux, D. *et al., Tetrahedron*, 1988, **44**, 5075 (*19Z-Taberpsychine*)
Takayama, H. *et al., J.C.S. Perkin 1*, 1989, 1075 (*Taberpsychine, 19Z-Taberpsychine, synth, abs config*)
Lin, L.-Z. *et al., Phytochemistry*, 1989, **28**, 2827 (*N-Methoxyanhydrovobasinediol*)
Magnus, P. *et al., J.A.C.S.*, 1990, **112**, 5220 (*synth*)
Kitajima, M. *et al., J.C.S. Perkin 1*, 1991, 1773 (*synth*)
Bailey, P.D. *et al., J.C.S. Perkin 1*, 1993, 441 (*synth*)

Tabersonine T-11

Methyl 2,3,6,7-tetradehydroaspidospermidine-3-carboxylate, 9CI
[4429-63-4]



Absolute Configuration

$C_{21}H_{24}N_2O_2$ 336.433
Numbering systems vary. Alkaloid from *Amsonia tabernaemontana*, *Amsonia angustifolia*, *Voacanga africana* and v. many other spp. in the Apocynaceae. Shows hypotensive activity (*ca.* 25% of Reserpine, R-52). Amorph.; cryst. (as hydrochloride). Mp 193-197° (hydrochloride). $[\alpha]_D$ -310 (c, 0.13 in MeOH) (hydrochloride). λ_{max} 230 (log ϵ 3.85); 299 (log ϵ 3.99); 328 (log ϵ 3.17) (EtOH).

N^4-Oxide: ***Tabersonine N^b-oxide***
[67249-34-7]
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from the seeds of *Amsonia elliptica* (Apocynaceae). Amorph. λ_{max} 231 ; 298 ; 335 (EtOH).

14α,15α-Epoxide: ***Lochnericine****. 14α,15α-Epoxytabersonine. Tabersonine α-epoxide*
[72058-36-7]
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from *Catharanthus roseus*, *Amsonia tabernaemontana*, *Amsonia angustifolia*, *Alstonia lanceolata*, *Catharanthus trichophyllus*, *Tabernaemontana* spp., *Voacanga* spp. and several other genera in Apocynaceae. Shows strong cytotoxicity vs. human carcinoma KB cells. Mp 188-191° dec. $[\alpha]_D^{25}$ +473 (c, 0.37 in EtOH). λ_{max} 299 (ϵ 18000); 328 (ϵ 3000) (MeOH) (Berdy). λ_{max} 225 ; 295 ; 325 (EtOH) (Berdy).

14β,15β-Epoxide: ***Pachysiphine****. Tabersonine β-epoxide. 14β,15β-Epoxytabersonine*
[2447-58-7]
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from *Tabernaemontana pachysiphon* (Apocynaceae). Amorph.; cryst. (EtOH/Me_2CO)(as hydrochloride). Mp 163° (hydrochloride). $[\alpha]_D$ -455 (c, 1.05 in MeOH) (hydrochloride).

11-Hydroxy: ***11-Hydroxytabersonine****. 16-Hydroxytabersonine*
[22149-28-6]
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from the leaves of *Tabernanthe pubescens, Melodinus balansae* and *Craspidospermum verticillatum* (Apocynaceae). Mp 176°. $[\alpha]_D$ -332 ($CHCl_3$).

14,15-Dihydro: see Vincadifformine, V-111

11-Hydroxy, 14α,15α-epoxide: ***14,15-Epoxy-11-hydroxytabersonine***
[140680-64-4]
$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from *Melodinus fusiformis* (Apocynaceae). Shows significant antitumour activity. Spermatocide.

11-Methoxy: ***Ervamycine****. 11-Methoxytabersonine. Ervamicine*
[27773-39-3]
[22149-29-7]
$C_{22}H_{26}N_2O_3$ 366.459
Alkaloid from *Vinca herbacea*, *Vinca erecta*, *Melodinus polyadenus* and *Melodinus aeneus* (Apocynaceae). Amorph. Mp 186° dec. (as hydrochloride). $[\alpha]_D^{23}$ -310 (c, 0.32 in $CHCl_3$). $[\alpha]_D^{20}$ -264.4 (c, 1.4 in $CHCl_3$).

11-Methoxy, 14α,15α-epoxide: ***Lochnerinine****. Hazuntine*

[22255-04-5]
$C_{22}H_{26}N_2O_4$ 382.458
Alkaloid from *Catharanthus roseus*, *Melodinus aeneus*, *Vinca herbacea*, *Cabucala erythrocarpa* and *Cabucala fasciculata* (Apocynaceae). Shows antitumour activity. Cryst. (Me_2CO/MeOH). Mp 168-169°. $[\alpha]_D^{16}$ -424 ($CHCl_3$). λ_{max} 247 (ϵ 15500); 326 (ϵ 21350) (EtOH) (Berdy).

11-Methoxy, 14,15-epoxide, stereoisomer: ***Ervincinine***
[22223-16-1]
$C_{22}H_{26}N_2O_4$ 382.458
Alkaloid from *Vinca erecta* (Apocynaceae). Cryst. (MeOH/Me_2CO). Mp 247-248°. $[\alpha]_D^{22}$ -80.5 (c, 0.39 in $CHCl_3$). No config. information.

10-Hydroxy, 11-methoxy: ***10-Hydroxy-11-methoxytabersonine****. 15-Hydroxy-16-methoxytabersonine*
[72713-28-1]
$C_{22}H_{26}N_2O_4$ 382.458
Alkaloid from *Hazunta* spp. (Apocynaceae).

10,11-Dimethoxy, 14β,15β-epoxide: ***Hazuntinine***
[22255-06-7]
$C_{23}H_{28}N_2O_5$ 412.485
Alkaloid from *Hazunta velutina* (Apocynaceae). Cryst. (MeOH). Mp 132°. $[\alpha]_D$ -482 (c, 0.56 in $CHCl_3$).

11,12-Dimethoxy, 10-hydroxy, 14β,15β-epoxide: ***Taberhanine***
$C_{23}H_{28}N_2O_6$ 428.484
Alkaloid from the leaves of *Tabernaemontana divaricata*. Light yellowish oil. $[\alpha]_D$ -185 (c, 0.08 in $CHCl_3$). λ_{max} 202 (log ϵ 4.13); 238 (log ϵ 3.94); 307 (log ϵ 3.96); 340 (log ϵ 3.93) (EtOH).

19-Hydroxy: see 19-Hydroxytabersonine, H-743

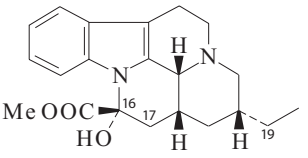
Dimer: ***Bistabersonine****. Ditabersonine*
[50645-77-7]
$C_{42}H_{46}N_4O_4$ 670.85
Alkaloid from the root bark of *Crioceras dipladeniiflorus* (Apocynaceae). Noncryst. Oxidative dimer, point of dimerisation unknown. Possibly identical with Voafrine A, V-176.

[22260-37-3]

Janot, M.-M. *et al., Bull. Soc. Chim. Fr.*, 1954, 707-708 (*isol, ir, uv*)
Nair, C.P.N. *et al., Tetrahedron*, 1959, **6**, 89 (*Lochnericine, isol, uv, ir*)
Moza, B.K. *et al., Chem. Ind. (London)*, 1962, 1425 (*isol, uv, ir*)
Plat, M. *et al., Tet. Lett.*, 1962, 271-276 (*ms, struct*)
Moza, B.K. *et al., Tet. Lett.*, 1964, 2561 (*Tabersonine, Lochnericine, pmr, ms, struct*)
Patel, M.B. *et al., Bull. Soc. Chim. Fr.*, 1966, 427 (*Pachysiphine, isol, uv, ir, pmr, ms*)
Pyuskyulev, B. *et al., Coll. Czech. Chem. Comm.*, 1967, **32**, 1289-1294 (*Ervamycine*)
Kan-Fan, C. *et al., Ann. Pharm. Fr.*, 1968, **26**, 577-582 (*11-Hydroxytabersonine*)
Potier, P. *et al., Ann. Pharm. Fr.*, 1968, **26**, 621 (*Hazuntinine, isol, ir, pmr, ms, struct*)
Mehri, M. *et al., Ann. Pharm. Fr.*, 1972, **30**, 643-650 (*11-Hydroxytabersonine*)
Wenkert, E. *et al., J.A.C.S.*, 1973, **95**, 4990-4995 (*cmr*)
Ziegler, F.E. *et al., J.A.C.S.*, 1973, **95**, 7458-7464 (*synth*)
Bruneton, J. *et al., Phytochemistry*, 1973, **12**, 1475-1480 (*Ditabersonine*)
Cavé, A. *et al., Tet. Lett.*, 1973, 5081 (*Hazuntinine, cmr, stereochem*)
Titeux, F. *et al., Phytochemistry*, 1974, **13**, 1620 (*isol*)
Douzoua, L. *et al., Phytochemistry*, 1974, **13**, 1994 (*isol*)
Takano, S. *et al., J.A.C.S.*, 1976, **98**, 3022-3023 (*synth*)
Baassou, S. *et al., Phytochemistry*, 1978, **17**, 1449-1450 (*Ervamycine*)
Bui, A.M. *et al., Phytochemistry*, 1979, **18**, 1329-1331 (*10-Hydroxy-11-methoxytabersonine*)
Kunesch, N. *et al., Tet. Lett.*, 1980, **21**, 1727 (*Lochnericine, cmr*)
Rabaron, A. *et al., Ann. Pharm. Fr.*, 1981, **39**, 369-373 (*16-Methoxytabersonine*)
Mulamba, T. *et al., J. Nat. Prod.*, 1981, **44**, 184-189 (*16-Hydroxytabersonine*)
Vercauteren, J. *et al., Phytochemistry*, 1981, **20**, 1411 (*Lochnericine, isol*)
Kunesch, N. *et al., Bull. Soc. Chim. Fr., Part II*, 1982, 285 (*Pachysiphine, struct, synth*)
He, X. *et al., Huaxue Xuebao*, 1992, **50**, 96-101; *CA*, **116**, 191092c (*14,15-Epoxy-11-hydroxytabersonine*)
Kobayashi, S. *et al., Tet. Lett.*, 1999, **40**, 1519-1522 (*synth*)
Kozmin, S.A. *et al., J.A.C.S.*, 2002, **124**, 4621-4641 (*synth*)
Éles, J. *et al., J.O.C.*, 2002, **67**, 7255-7260 (*Lochnericine, synth*)
Kam, T.-S. *et al., Org. Biomol. Chem.*, 2003, **1**, 1292-1297 (*Taberhanine*)

Tacamine T-12

Pseudovincamine
[56942-57-5]



$C_{21}H_{26}N_2O_3$ 354.448
A major alkaloid from the leaves and twigs of *Tabernaemontana eglandulosa*, also from *Tabernaemontana pandacaqui* (Apocynaceae). λ_{max} 227 ; 277 ; 282 ; 290 (sh) (MeOH).

16-Deoxy, 16,17-didehydro: ***16,17-Anhydrotacamine****. Apotacamine*
[56942-59-7]
$C_{21}H_{24}N_2O_2$ 336.433
Minor alkaloid from *Tabernaemontana eglandulosa* (Apocynaceae). λ_{max} 228 ; 273 ; 312 (MeOH).

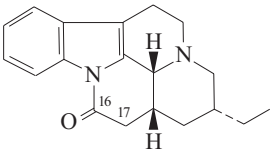
*19*S*-Hydroxy:* ***19-Hydroxytacamine***
[90702-15-1]
$C_{21}H_{26}N_2O_4$ 370.447
Minor alkaloid from *Tabernaemontana eglandulosa* (Apocynaceae). λ_{max} 227 ; 277 ; 280 ; 291 (MeOH).

16-Epimer: ***16-Epitacamine***
[56942-58-6]
$C_{21}H_{26}N_2O_3$ 354.448
A major alkaloid from *Tabernaemontana eglandulosa* (Apocynaceae). λ_{max} 225 ; 274 ; 280 ; 289 (sh) (MeOH).

van Beek, T.A. *et al., Tetrahedron*, 1984, **40**, 737-748 (*Tacamine, 19-Hydroxytacamine, 16,17-Anhydrotacamine, uv, pmr, cmr, ms, cd, abs config*)
Taesotikul, T. *et al., Planta Med.*, 1990, **56**, 688 (*isol*)
Din Belle, D. *et al., Tetrahedron*, 1996, **52**, 11361-11378 (*synth, cmr*)
Lounasmaa, M. *et al., Tetrahedron*, 1998, **54**, 14845-14858 (*synth, 19-Hydroxytacamine*)

Tacamonine T-13

Pseudovincamone I
[90761-95-8]
[83607-40-3 ((±)-form)]



$C_{19}H_{22}N_2O$ 294.396
A major alkaloid from the leaves and twigs of *Tabernaemontana eglandulosa* (Apocynaceae). Mp 180-181°. λ_{max} 242 ; 265 ; 273 (sh) ; 294 ; 303 (MeOH).

16α-Alcohol: ***16*S*-Descarbomethoxytacamine***
[90702-14-0]
$C_{19}H_{24}N_2O$ 296.411
Minor alkaloid from *Tabernaemontana eglandulosa* (Apocynaceae). λ_{max} 228 ; 277 ; 282 ; 290 (MeOH).

16β-Alcohol: ***16*R*-Descarbomethoxytacamine***
[90702-13-9]
$C_{19}H_{24}N_2O$ 296.411
Minor alkaloid from *Tabernaemontana eglandulosa* (Apocynaceae). λ_{max} 228 ; 277 ; 282 ; 290 (MeOH).

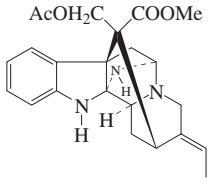
17β-Hydroxy: ***17β-Hydroxytacamonine***
[90702-12-8]
$C_{19}H_{22}N_2O_2$ 310.395
Trace alkaloid from *Tabernaemontana eglandulosa* (Apocynaceae). Config. revised in 1995. Originally formulated as 17α-Hydroxytacamonine. λ_{max} 221 ; 225 ; 242 ; 267 ; 290 ; 302 (sh) (MeOH).

Massiot, G. *et al., Bull. Soc. Chim. Fr.*, 1982, 185-190 (*synth*)
van Beek, T.A. *et al., Tetrahedron*, 1984, **40**, 737-748 (*isol, uv, pmr, ms, cd, struct, derivs*)
Wasserman, H.H. *et al., Tet. Lett.*, 1989, **30**, 873-876 (*synth*)
Ihara, M. *et al., J.O.C.*, 1994, **59**, 5317-5323 (*synth*)
Din Belle, D. *et al., Tetrahedron*, 1996, **52**, 11361-11378 (*17-Hydroxytacamonine, synth, config*)
Lounasmaa, M. *et al., Tetrahedron*, 1998, **54**, 157-164 (*synth*)
Suzuki, M. *et al., Heterocycles*, 2000, **52**, 1083-1085 (*synth*)
Lavilla, R. *et al., Eur. J. Org. Chem.*, 2001, 3719-3729 (*synth*)

Danieli, B. *et al., Tet. Lett.*, 2001, **42**, 7237-7240 (*synth*)
Deiters, A. *et al., J.O.C.*, 2006, **71**, 6547-6561 (*synth*)
Ho, T.-L. *et al., Tetrahedron*, 2008, **64**, 10401-10405 (*synth*)

Tacraline T-15

[98776-13-7]



Absolute Configuration

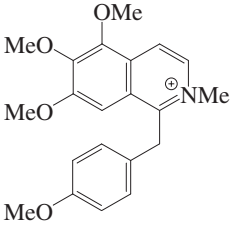
$C_{23}H_{27}N_3O_4$ 409.484
Trace alkaloid from the root bark of *Tabernaemontana chippii* (Apocynaceae). λ_{max} 205 ; 235 ; 293 (MeOH).

O-De-Ac: ***Desacetyltacraline***
[98798-64-2]
$C_{21}H_{25}N_3O_3$ 367.447
Trace alkaloid from *Tabernaemontana chippii* (Apocynaceae). λ_{max} 207 ; 236 ; 295 (MeOH).

Van Beek, T.A. *et al., J. Nat. Prod.*, 1985, **48**, 400-423 (*isol, uv, pmr, ms, struct, de-Ac*)

Takatonine T-16

[6882-14-0]
[4668-06-8]



$C_{21}H_{24}NO_4^{\oplus}$ 354.425
Quaternary alkaloid from the Japanese commercial crude drug "Takato-gusa", the dried leaves and stems of *Thalictrum minus* (Ranunculaceae). Weak spasmolytic agent showing atropine-like activity. Yellow plates (MeOH) (as iodide). Mp 181-182° (iodide).

► LD_{50} (mus, ipr) 167mg/kg.

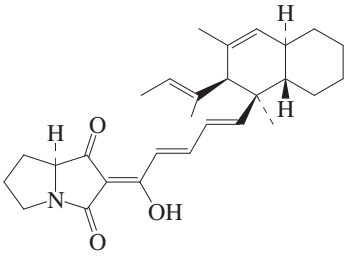
O^6*-De-Me:* ***6-De-O-methyltakatonine***
$C_{20}H_{22}NO_4^{\oplus}$ 340.398
Quaternary alkaloid from the leaves of *Thalictrum delavayi*. Yellow oil. Counterion not specified.

[5083-11-4]

Fujita, E. *et al., Yakugaku Zasshi*, 1959, **79**, 1082; *CA*, **54**, 4643a (*isol*)
Kubota, S. *et al., J.O.C.*, 1966, **31**, 516 (*uv, pmr, synth, struct*)
Birch, A.J. *et al., J.C.S. Perkin 1*, 1974, 2190 (*synth, pmr*)
Baser, K.H.C. *et al., J. Nat. Prod.*, 1982, **45**, 704 (*isol, uv, ir, pmr, ms*)
Wang, Y. *et al., Acta Bot. Sin.*, 2003, **45**, 500-502 (*6-O-Demethyltakatonine*)

Talarotoxin T-17

TB Toxin
[155679-73-5]

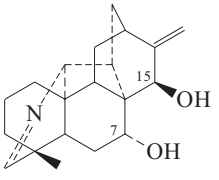


$C_{28}H_{37}NO_3$ 435.605
Prod. by *Talaromyces bacillisporus* IFO 8397 cultured on rice. Cytotoxic. Yellow needles (EtOH). Mp 137-138°.

Ishii, K. *et al., Appl. Environ. Microbiol.*, 1995, **61**, 941-943 (*isol, pmr*)

Talassamine T-18

[142861-01-6]



$C_{20}H_{27}NO_2$ 313.439
Minor alkaloid from epigeal parts of *Aconitum talassicum* (Ranunculaceae). Cryst. (Me_2CO). Mp 208-210°.

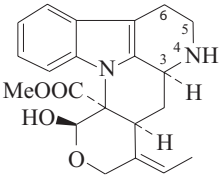
7-Ac: ***Talassimine***
[142861-10-7]
$C_{22}H_{29}NO_3$ 355.476
Minor alkaloid from epigeal parts of *Aconitum talassicum* (Ranunculaceae). Cryst. (Et_2O). Mp 242-245°.

15-Ac: ***Talassimidine***
[142861-11-8]
$C_{22}H_{29}NO_3$ 355.476
Minor alkaloid from epigeal parts of *Aconitum talassicum* (Ranunculaceae). Cryst. (Me_2CO). Mp 263-265°.

Nishanov, A.A. *et al., Khim. Prir. Soedin.*, 1991, 93; *Chem. Nat. Compd. (Engl. Transl.)*, 82 (*isol, ir, pmr, ms, cryst struct*)

Talbotine, 9CI T-19

[30809-15-5]



$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from the leaves and stem bark of *Pleiocarpa talbotii* (Apocynaceae). Cryst. (MeOH). Mp 212°. $[\alpha]_D^{23}$ -200 (c, 0.528 in $CHCl_3$). $[\alpha]_D^{23}$ -289 (c, 0.995 in Py).

N,O-*Di-Ac:*
Cryst. (Et_2O/pentane). Mp 190-193°. $[\alpha]_D^{25}$ -35 (c, 0.975 in $CHCl_3$).

Me ether:
Cryst. (Me_2CO/hexane). Mp 155-156°. $[\alpha]_D^{20}$ -240 (c, 0.915 in MeOH).

3,4-Didehydro: ***3,4-Didehydrotalbotine***
[51856-92-9]
$C_{21}H_{22}N_2O_4$ 366.416
Alkaloid from the leaves of *Pleiocarpa talbotii* (Apocynaceae). Needles (MeOH). Mp 196°. $[\alpha]_D^{22}$ -182 (c, 0.612 in MeOH).

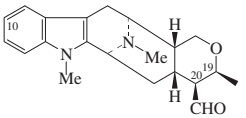
3,4,5,6-Tetradehydro: ***3,4,5,6-Tetradehydrotalbotine***
[30809-25-7]
$C_{21}H_{20}N_2O_4$ 364.4
Alkaloid from leaves of *Pleiocarpa talbotii* (Apocynaceae). Needles (Me_2CO). Mp 189°. $[\alpha]_D^{22}$ -211 (c, 0.294 in MeOH).

3,4,5,6-Tetradehydro, Me ether:
Cryst. (Me_2CO/hexane). Mp 212-214°. $[\alpha]_D^{25}$ -230 (c, 0.482 in MeOH).

Pinar, M. *et al., Helv. Chim. Acta*, 1971, **54**, 15 (*isol, uv, ord, ir, pmr, ms, struct*)
Narango, J. *et al., Helv. Chim. Acta*, 1972, **55**, 752 (*isol*)
Pinar, M. *et al., Helv. Chim. Acta*, 1973, **56**, 2719 (*isol, uv, ord, ir, struct, Didehydrotalbotine,Tetradehydrotalbotine*)

Talcarpine T-20

20,21-Dihydro-21-methyl-18-noralstophyllan-19-al, 9CI
[38990-08-8]



Absolute Configuration

$C_{21}H_{26}N_2O_2$ 338.449
Alkaloid from *Alstonia macrophylla* and *Pleiocarpa talbotii*. Plates (Et_2O/Me_2CO/hexane). Mp 167-169° dec. $[\alpha]_D$ -26 (c, 0.12 in $CHCl_3$). λ_{max} 209 (log ϵ 3.86); 226 (log ϵ 4.01); 277 (log ϵ 2.65); 285 (log ϵ 2.91); 294 (log ϵ 2.65) (EtOH).

21-Alcohol: ***Macrocarpine A***
[685508-24-1]
$C_{21}H_{28}N_2O_2$ 340.464
Alkaloid from the bark of *Alstonia macrophylla*. Light yellow oil. $[\alpha]_D$ +117 (c, 0.11 in $CHCl_3$). λ_{max} 230 (log ϵ 4.15); 286 (log ϵ 3.46) (EtOH).

19,20-Didehydro: 19,20-Didehydrotalcarpine. ***Alstonerinal***
[158725-12-3]
$C_{21}H_{24}N_2O_2$ 336.433
Alkaloid from *Alstonia macrophylla*. $[\alpha]_D$ -32 (c, 0.03 in $CHCl_3$). λ_{max} 228 (log ϵ 4.3); 267 (log ϵ 4); 291 (log ϵ 3.8) (EtOH).

19,20-Didehydro, N^1*-de-Me:* ***N^1-Demethylalstonerinal***
Alkaloid from the bark of *Alstonia macrophylla*.

19,20-Didehydro, N^4*-de-Me:* ***N^4-Demethylalstonerinal***

[701304-80-5]
$C_{20}H_{22}N_2O_2$ 322.406
Alkaloid from the leaves of *Alstonia angustifolia* var. *latifolia*.

20α-Hydroxy, 21-alcohol: ***Alstohentine***
[685508-22-9]
$C_{21}H_{28}N_2O_3$ 356.464
Alkaloid from the leaves of *Alstonia macrophylla*. Light yellowish oil. $[\alpha]_D$ -58 (c, 0.22 in $CHCl_3$). λ_{max} 228 (log ϵ 3.91); 289 (log ϵ 3.26) (EtOH).

10-Methoxy, 19,20-didehydro: ***19,20-Dehydro-10-methoxytalcarpine***
[120374-20-1]
$C_{22}H_{26}N_2O_3$ 366.459
Alkaloid from the leaves of *Alstonia angustifolia*. Mp 300°. $[\alpha]_D$ -140 (c, 0.5 in EtOH).

20-Epimer: ***20-Epitalcarpine***. N^b-*Methyl*-N^b,*21-secotalpinine*
[38990-35-1]
Alkaloid from *Alstonia macrophylla*. $[\alpha]_D$ +19 (c, 0.45 in $CHCl_3$). λ_{max} 205 (log ϵ 3.95); 228 (log ϵ 4.21); 280 (log ϵ 3); 285 (log ϵ 3.42); 300 (log ϵ 3.12) (EtOH).

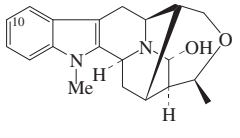
20-Epimer, 21-alcohol: ***Macrocarpine B***
[685508-25-2]
$C_{21}H_{28}N_2O_2$ 340.464
Alkaloid from the bark of *Alstonia macrophylla*. Light yellow oil. $[\alpha]_D$ -51 (c, 0.34 in $CHCl_3$). λ_{max} 230 (log ϵ 4.34); 288 (log ϵ 3.64) (EtOH).

20-Epimer, 21-alcohol, 21-Ac: ***Macrocarpine C***
$C_{23}H_{30}N_2O_3$ 382.502
Alkaloid from the bark of *Alstonia macrophylla*. $[\alpha]_D$ -35 (c, 1.5 in $CHCl_3$). λ_{max} 230 (log ϵ 4.3); 287 (log ϵ 3.62) (EtOH).

Naranjo, J. *et al., Helv. Chim. Acta*, 1972, **55**, 752-771 (*isol, uv, ir, pmr, ms, struct*)
Garnick, R.L. *et al., J.A.C.S.*, 1978, **100**, 4213-4219 (*synth, ir, pmr, ms, epimer*)
Ghedira, K. *et al., Phytochemistry*, 1988, **27**, 3955-3962 (*19,20-Dehydro-10-methoxytalcarpine*)
Takayama, H. *et al., Tetrahedron*, 1991, **47**, 1383-1392 (*synth, uv, ir, pmr, cmr, ms, cd*)
Wong, W.-H. *et al., Phytochemistry*, 1996, **41**, 313-315 (*isol, pmr, cmr*)
Yu, P. *et al., J.O.C.*, 1998, **63**, 9160-9161; 2000, **65**, 3173-3191 (*synth*)
Kam, T.-S. *et al., Phytochemistry*, 1999, **51**, 839-844 (*Alstonerinal*)
Kam, T.-S. *et al., J. Nat. Prod.*, 2004, **67**, 547-552 (*Alstohentine*)
Kam, T.-S. *et al., Phytochemistry*, 2004, **65**, 603-608 (N^4-*Demethylalstonerinal*)
Kam, T.-S. *et al., Tetrahedron*, 2004, **60**, 3957-3966 (*isol, pmr, cmr, 20-Epitalcarpine, Macrocarpines*)
Liao, X. *et al., J.O.C.*, 2006, **71**, 8884-8890 (*synth*)

Talpinine T-21

17,19-Epoxy-19,20-dihydro-1-methylsarpagan-21-ol, 9CI
[38990-06-6]



Absolute Configuration

$C_{20}H_{24}N_2O_2$ 324.422
Alkaloid from the root bark and stem bark of *Pleiocarpa talbotii* (Apocynaceae). Plates (Et_2O/pentane). Mp 153-154°. $[\alpha]_D^{23}$ -30 (c, 0.302 in $CHCl_3$). pK_a 6.51 (MCS).

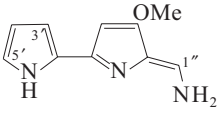
Picrate:
Cryst. (MeOH). Mp 245° dec.

10-Methoxy, N-*de-Me:* ***21-Hydroxycyclolochnerine***
[96688-58-3]
$C_{20}H_{24}N_2O_3$ 340.421
Alkaloid from *Catharanthus roseus* cell suspension cultures, and from the leaves, stem, and root bark of *Rauwolfia biauriculata* (Apocynaceae). Mp 172°.

Naranjo, J. *et al., Helv. Chim. Acta*, 1972, **55**, 752-771 (*isol, uv, ir, pmr, ms, cd, struct*)
Garnick, R.L. *et al., J.A.C.S.*, 1978, **100**, 4213-4219 (*synth, ir, ms*)
Kohl, W. *et al., Planta Med.*, 1984, **50**, 242-244 (*21-Hydroxycyclolochnerine, isol, uv, pmr, cmr, ms, cd, cryst struct*)
Abaul, J. *et al., J. Nat. Prod.*, 1986, **49**, 829-832 (*21-Hydroxycyclolochnerine*)
Yu, P. *et al., J.O.C.*, 1998, **63**, 9160-9161; 2000, **65**, 3173-3191 (*synth*)

Tambjamine A T-22

[85850-00-6]



$C_{10}H_{11}N_3O$ 189.216
Isol. from the nembrothid nudibranchs *Tambja abdere*, *Tambja eliora*, *Atapozoa* sp., *Nembrotha crista*, *Nembrotha kubaryana* and *Roboastra tigris*, also isol. from the dietary source *Sessibugula translucens*. DNA binding agent. Oil. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. λ_{max} 255 (ϵ 4600); 397 (ϵ 20000) (MeOH) (Derep).

1″-N-*Et:* ***Tambjamine E***
[126584-10-9]
$C_{12}H_{15}N_3O$ 217.27
Alkaloid from the marine ascidian *Atapozoa* sp. and from *Nembrotha crista* and *Nembrotha kubaryana*. DNA binding agent, feeding deterrent. Yellow cryst. ($CDCl_3$). Mp 68-70°. λ_{max} 204 (ϵ 26600); 252 (ϵ 6900); 366 (ϵ 17700) (MeOH/NaOH) (Derep). λ_{max} 205 (ϵ 5000); 255 (ϵ 5700); 280 (sh) ; 405 (ϵ 30500) (MeOH) (Derep).

1″-N-*(2-Methylpropyl):* ***Tambjamine C***
[85850-02-8]
$C_{14}H_{19}N_3O$ 245.324
Isol. from *Tambja abdere*, *Tambja eliora*, *Roboastra tigris*, *Sessibugula* and *Atapozoa* spp. DNA binding agent. Oil. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. λ_{max} 204 (ϵ 26600); 252 (ϵ 6900); 366 (ϵ 17700) (MeOH/NaOH) (Derep). λ_{max} 205 (ϵ 5000); 255 (ϵ 5700); 280 (sh) ; 405 (ϵ 30500) (MeOH) (Derep). λ_{max} 204 (ϵ 5300); 251 (ϵ 6600); 258 (ϵ 5700); 405 (ϵ 23000) (MeOH) (Berdy).

1″-N-*(2-Phenylethyl):* ***Tambjamine F***
[126584-09-6]
$C_{18}H_{19}N_3O$ 293.368
Alkaloid from *Atapozoa* sp. and from *Nembrotha crista* and *Nembrotha kubaryana*. DNA binding agent, feeding deterrent. Brown oil. λ_{max} 205 (ϵ 10200); 259 (ϵ 7000); 407 (ϵ 32100) (MeOH) (Berdy). λ_{max} 203 (ϵ 32600); 251 (ϵ 7000); 365 (ϵ 19200) (MeOH/NaOH) (Berdy).

1″-N-*Dodecyl:* ***Antibiotic BE 18591***. *BE 18591*
[147138-01-0]
$C_{22}H_{35}N_3O$ 357.538
Prod. by *Streptomyces* sp. BA18591. Antitumour agent. Yellowish-green amorph. solid. Mp 50-53°. λ_{max} 257 (28400); 325 (100000); 406 (8500) (MeOH).

1″-N-*(3Z-Dodecenyl):* [882419-92-3]
$C_{22}H_{33}N_3O$ 355.522
Prod. by the marine bacterium *Pseudoalteromonas tunicata*. Yellow solid.

3′-Bromo, 1″-N-*(2-methylpropyl):* ***Tambjamine D***
[85850-03-9]
$C_{14}H_{18}BrN_3O$ 324.22
Isol. from *Tambja abdere*, *Tambja eliora*, *Sessibugula* sp. and *Roboastra tigris* spp. DNA binding agent. Oil. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. λ_{max} 257 (ϵ 6200); 401 (ϵ 23000) (MeOH) (Derep).

5′-Bromo: ***Tambjamine B***
[85850-01-7]
$C_{10}H_{10}BrN_3O$ 268.112
Isol. from *Tambja abdere*, *Tambja eliora*, *Roboastra tigris*, *Sessibugula* and *Roboastra* spp. DNA binding agent. Oil. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. λ_{max} 255 (ϵ 4600); 397 (ϵ 20000) (MeOH) (Derep).

5′-Bromo, 1″-N-*Et:* ***Tambjamine G***
[157536-53-3]
$C_{12}H_{14}BrN_3O$ 296.166
Alkaloid from the bryozoan *Bugula dentata*.

5′-Bromo, 1″-N-*propyl:* ***Tambjamine H***
[157536-54-4]
$C_{13}H_{16}BrN_3O$ 310.193
Alkaloid from *Bugula dentata*.

5′-Bromo, 1″-N-*(2-methylpropyl):* ***Tambjamine I***
[157536-55-5]
$C_{14}H_{18}BrN_3O$ 324.22
Alkaloid from *Bugula dentata*.

5′-Bromo, 1″-N-*(2-methylbutyl):* ***Tambjamine J***
[157536-56-6]
$C_{15}H_{20}BrN_3O$ 338.246
Alkaloid from *Bugula dentata*.

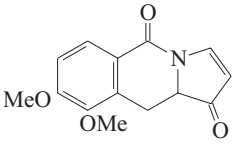
[153231-89-1]

Carté, B. *et al., J.O.C.*, 1983, **48**, 2314-2318 (*Tambjamines A-D, struct*)
Carté, B. *et al., J. Chem. Ecol.*, 1986, **12**, 795-804 (*Tambjamines A-D, defence pheromones*)
Paul, V.J. *et al., Marine Ecol.: Progr. Ser.*, 1990, **59**, 109 (*occur*)
Lindquist, N. *et al., Experientia*, 1991, **47**, 504-506 (*Tambjamines C,E,F*)
Kojiri, K. *et al., J. Antibiot.*, 1993, **46**, 1799-1803; 1894-1896 (*BE 18591*)

Blackman, A.J. *et al., Aust. J. Chem.*, 1994, **47**, 1625-1629 (*Tambjamines G-J*)
Franks, A. *et al., Molecules*, 2005, **10**, 1286-1291 (*Pseudoalteromonas alkaloid*)
Pinkerton, D.M. *et al., Org. Lett.*, 2007, **9**, 5127-5130 (*synth*)

Tamynine T-23

[159509-33-8]

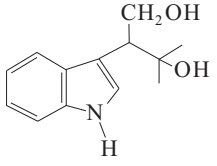


$C_{14}H_{13}NO_4$ 259.261
Alkaloid from leaves of *Murraya paniculata* (Rutaceae). Mp 113-114°. $[\alpha]_D^{26}$ +103 (c, 0.23 in $CHCl_3$).

Khan, M.A. *et al., Heterocycles*, 1994, **38**, 2005 (*isol, uv, ir, pmr, cmr, ms, struct*)

Tanakamine T-24

*2-(1*H*-Indol-3-yl)-3-methyl-1,3-butanediol, 9CI. 3-(2-Hydroxy-1-hydroxymethyl-2-methylpropyl)-1*H*-indole*
[106449-17-6]



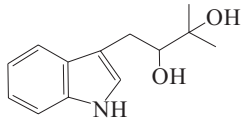
$C_{13}H_{17}NO_2$ 219.283

(ξ)-*form*
Alkaloid from the stems of *Limonia acidissima* (wood apple) (Rutaceae). Amorph. $[\alpha]_D^{25}$ +7.6 (c, 0.69 in MeOH).

Zarga, M.H.A. *et al., J. Nat. Prod.*, 1986, **49**, 901 (*isol, uv, pmr, cmr, ms, struct*)

Tanakine T-25

*1-(1*H*-Indol-3-yl)-3-methyl-2,3-butanediol, 9CI*
[106449-15-4]



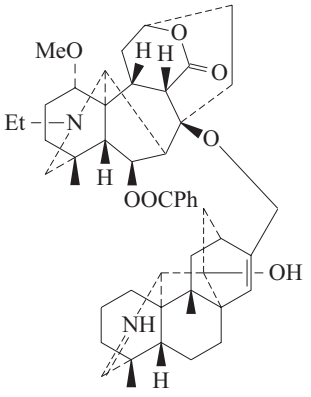
$C_{13}H_{17}NO_2$ 219.283
Alkaloid from the stems of *Limonia acidissima* (wood apple) (Rutaceae). Amorph. $[\alpha]_D^{25}$ +38 (c, 0.51 in MeOH).

N-*β*-D-*Glucopyranosyl:* ***Bruceolline F***
[159903-55-6]
$C_{19}H_{27}NO_7$ 381.425
Alkaloid from root wood of *Brucea mollis* var. *tonkinensis* (Simaroubaceae). Pale yellow powder (Me_2CO/MeOH). Mp 209-211°. $[\alpha]_D^{20}$ -55.8 (c, 0.9 in Py). Stereochem. not detd. Not correlated with Tanakine.

Zarga, M.H.A. *et al., J. Nat. Prod.*, 1986, **49**, 901 (*isol, uv, pmr, ms, struct*)
Ouyang, Y. *et al., Phytochemistry*, 1994, **37**, 575 (*Bruceolline F*)

Tangirine T-26

[152606-86-5]

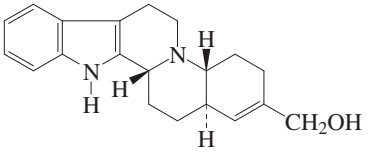


$C_{49}H_{62}N_2O_7$ 791.038
Alkaloid from *Aconitum tanguticum* (Ranunculaceae). Mp 266-268° dec. $[\alpha]_D^{19}$ +84.2 (c, 0.36 in $CHCl_3$).

Joshi, B.S. *et al., Tet. Lett.*, 1993, **34**, 7525 (*isol, ir, pmr, cmr, ms, struct*)

Tangutorine T-27

[224426-78-2]

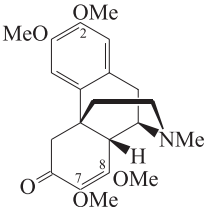


$C_{20}H_{24}N_2O$ 308.422
Alkaloid from *Nitraria tangutorum*. Cryst. (CH_2Cl_2/MeOH). Mp 276-278°. Racemic. λ_{max} 225 ; 281 ; 292 (sh) (no solvent reported).

Duan, J.-A. *et al., Tet. Lett.*, 1999, **40**, 2593-2596 (*isol, uv, ir, pmr, cmr, cryst struct*)
Putkonen, T. *et al., Tet. Lett.*, 2001, **42**, 6593-6594 (*synth*)
Luo, S. *et al., Org. Lett.*, 2003, **5**, 4709-4712 (*synth*)
Ho, T.-L. *et al., Helv. Chim. Acta*, 2006, **89**, 122-126 (*synth, pmr, cmr*)

Tannagine T-28

[123750-34-5]



Relative configuration

$C_{21}H_{27}NO_5$ 373.448
This struct. was originally assigned to Isostephodeline, I-325. Alkaloid from aerial parts of *Stephania zippeliana* (Menispermaceae). $[\alpha]_D$ +40 (c, 0.80 in $CHCl_3$).

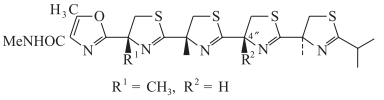
14-Epimer: ***Stephodeline***
[56596-12-4]
$C_{21}H_{27}NO_5$ 373.448
Alkaloid from *Stephania delavayi.* and *Stephania zippeliana* (Menispermaceae). Amorph. Mp 198-200° (as hydrochloride). $[\alpha]_D$ +20 (c, 0.6 in $CHCl_3$).

14-Epimer, O^2*-de-Me:* ***Zippelianine****. 2-O-Demethylstephodeline*
[123688-34-6]
$C_{20}H_{25}NO_5$ 359.421
Alkaloid from aerial parts of *Stephania zippeliana* (Menispermaceae). $[\alpha]_D$ +25 (c, 0.70 in $CHCl_3$).

Perel'son, M.E. *et al., Khim. Prir. Soedin.*, 1975, **11**, 188; *Chem. Nat. Compd. (Engl. Transl.)*, 197 (*Stephodeline*)
Charles, B. *et al., Can. J. Chem.*, 1989, **67**, 1257 (*Zippelianine*)

Tantazole A T-29

[129941-13-5]



$C_{24}H_{32}N_6O_2S_4$ 564.82
Stereochem. revised in 1993. Isol. from the blue-green alga *Scytonema mirabile.* Cytotoxic. $[\alpha]_D$ -31.9 ($CHCl_3$). λ_{max} 222 (ϵ 25000); 255 (ϵ 12800) (EtOH) (Derep).

4″-Epimer: ***Tantazole I***
[129895-75-6]
$C_{24}H_{32}N_6O_2S_4$ 564.82
From *Scytonema mirabile.* Cytotoxic. No phys. props. reported. λ_{max} 222 (ϵ 25000); 255 (ϵ 12800) (EtOH) (Derep).

Carmeli, S. *et al., J.A.C.S.*, 1990, **112**, 8195 (*isol, struct*)
Carmeli, S. *et al., Tet. Lett.*, 1993, **34**, 6681 (*config*)

Tantazole B T-30

[129895-76-7]
As Tantazole A, T-29 with
$R^1 = R^2 = CH_3$
$C_{25}H_{34}N_6O_2S_4$ 578.847
Stereochem. revised in 1993. Isol. from *Scytonema mirabile.* Cytotoxic. $[\alpha]_D$ -94 ($CHCl_3$). λ_{max} 222 (ϵ 25000); 255 (ϵ 12800) (EtOH) (Derep).

Carmeli, S. *et al., J.A.C.S.*, 1990, **112**, 8195 (*isol, struct*)
Fukuyama, T. *et al., J.A.C.S.*, 1993, **115**, 8449 (*synth*)
Carmeli, S. *et al., Tet. Lett.*, 1993, **34**, 6681 (*config*)
Parsons, R.L. *et al., Synlett*, 1996, 1168 (*synth*)

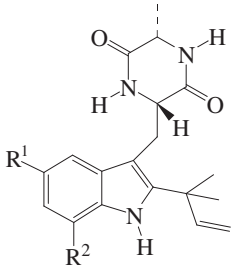
Tantazole F T-31

[129895-77-8]
As Tantazole A, T-29 with
$R^1 = H$, $R^2 = CH_3$
$C_{24}H_{32}N_6O_2S_4$ 564.82
Isol. from *Scytonema mirabile.* Cytotoxic.

$[\alpha]_D$ -63.7 ($CHCl_3$). λ_{max} 222 (ϵ 25000); 255 (ϵ 12800) (EtOH) (Derep).

Carmeli, S. *et al., J.A.C.S.*, 1990, **112**, 8195 (*isol, struct*)

Tardioxopiperazine A T-32



R^1 = -CH_2CH=$C(CH_3)_2$, R^2 = H

$C_{24}H_{31}N_3O_2$ 393.528
Prod. by *Microascus tardifaciens*. Moderate immunosuppressant. Amorph. pale yellow solid. $[\alpha]_D^{22}$ -30 (c, 0.2 in $CHCl_3$). λ_{max} 229 (log ϵ 4.46); 281 (sh) (log ϵ 3.85); 287 (log ϵ 3.86); 296 (sh) (log ϵ 3.79) (MeOH).

Fujimoto, H. *et al., Chem. Pharm. Bull.*, 1999, **47**, 1426-1432

Tardioxopiperazine B T-33

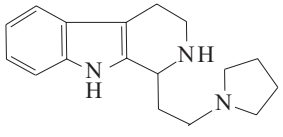
As Tardioxopiperazine A, T-32 with R^1 = H, R^2 = -CH_2CH=$C(CH_3)_2$

$C_{24}H_{31}N_3O_2$ 393.528
Prod. by *Microascus tardifaciens*. Amorph. pale yellow solid. $[\alpha]_D^{22}$ -16 (c, 0.2 in $CHCl_3$). λ_{max} 219 (sh) (log ϵ 3.7); 226 (log ϵ 4.4); 273 (sh) (log ϵ 3.79); 280 (log ϵ 3.79) (MeOH).

Fujimoto, H. *et al., Chem. Pharm. Bull.*, 1999, **47**, 1426-1432

Tarennine† T-34

*2,3,4,9-Tetrahydro-1-[2-(1-pyrrolidinyl)ethyl]-1*H*-pyrido[3,4-*b*]indole, 9CI. 1,2,3,4-Tetrahydro-1-(2-pyrrolidylethyl)-β-carboline. Dihydroelaeocarpidine*
[20069-08-3]



$C_{17}H_{23}N_3$ 269.389

(±)-*form* [24298-76-8]
Alkaloid from *Tarenna bipindensis* (Rubiaceae). Mp 124-126°. Boissier *et al*, propose that the name Dihydroelaeocarpidine be used in preference to Tarennine. However, since hydrogenation of Elaeocarpidine involves ring-opening the trivial name Tarennine is preferred here.

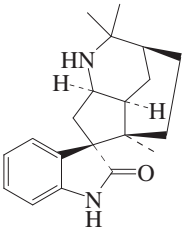
Hydrochloride (1:2): Mp 294-295°.

Picrate: Mp 200-202°.

Harley-Mason, J. *et al., Chem. Comm.*, 1969, 281 (*synth*)
Gribble, G.W. *et al., J.O.C.*, 1970, **35**, 1944 (*synth*)
Boissier, J.R. *et al., Experientia*, 1971, **27**, 677 (*struct, ir, ms*)
Gribble, G.W. *et al., J.O.C.*, 1988, **53**, 3164 (*synth*)

Tasmanine T-35

[80640-70-6]



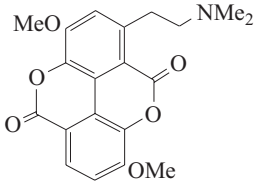
Absolute Configuration

$C_{20}H_{26}N_2O$ 310.438
Alkaloid from *Aristotelia peduncularis* (Elaeocarpaceae). Cryst. (MeOH). Mp 250° (subl. from 220°). $[\alpha]_D^{20}$ -132 (c, 0.453 in $CHCl_3$). λ_{max} 213 (log ϵ 4.42); 250 (sh) (log ϵ 3.77); 255 (log ϵ 3.8); 262 (sh) (log ϵ 3.74); 286 (log ϵ 3.22); 291 (sh) (log ϵ 3.17) (EtOH).

Kyburz, R. *et al., Helv. Chim. Acta*, 1981, **64**, 2555-2561 (*isol, uv, ir, pmr, cmr, ms, cd, struct*)
Hai, M.A. *et al., Tetrahedron*, 1984, **40**, 4359-4361 (*abs config*)
Güller, R. *et al., Helv. Chim. Acta*, 1993, **76**, 1847-1862 (*synth*)

Taspine T-36

*1-[2-(Dimethylamino)ethyl]-3,8-dimethoxy[1]benzopyrano[5,4,3-*cde*][1]benzopyran-5,10-dione, 9CI. Thaspine*
[602-07-3]



$C_{20}H_{19}NO_6$ 369.373
Alkaloid from *Leontice eversmannii, Caulophyllum robustum, Magnolia liliflora* and from the bark of *Croton lechleri* (Leonticaceae, Euphorbiaceae). Antiinflammatory agent. Cryst. (MeOH). Mp 225° dec Mp 370° dec. $[\alpha]_D^{24}$ +7.6 (c, 0.64 in Py). Log P 1.64 (calc).

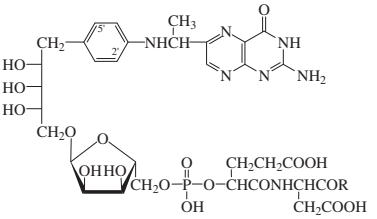
Hydrochloride:
Needles. Mp 252-253° dec.

Platonova, T.F. *et al., Zh. Obshch. Khim.*, 1956, **26**, 2651-2656; *CA*, **51**, 5102b (*Leonice eversmannii constit*)
Safronich, L.N. *et al., CA*, 1961, **55**, 18892 (*Caulophyllum robustum constit*)
Shamma, M. *et al., Chem. Comm.*, 1971, 1065-1066 (*synth, uv, pmr*)
Perdue, G.P. *et al., J. Pharm. Sci.*, 1979, **68**, 124-126 (*Croton lechleri constit*)

Talapatra, B. *et al., Phytochemistry*, 1982, **21**, 747-750 (*Magnolia liliflora constit*)
Kelly, T.R. *et al., J.O.C.*, 1998, **63**, 8045-8048 (*synth*)

Tatiopterin T-37

[126026-65-1]



Tatiopterin O R = OH
1 R = -Glu-OH

Tatiopterin O

$C_{33}H_{44}N_7O_{19}P$ 873.72
Isol. from *Methanogenium tationis*. Isol. as Na salt.

2′,5′-Dihydroxy: ***Thermopterin***
[135745-46-9]
$C_{33}H_{44}N_7O_{21}P$ 905.719
Isol. from *Methanoculleus thermophilicum*.

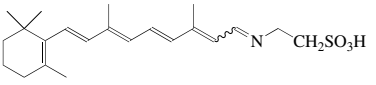
Tatiopterin 1

$C_{38}H_{51}N_8O_{22}P$ 1002.835
Isol. from *Methanogenium tationis*. Isol. as Na salt.

Raemakers-Franken, P.C. *et al., BioFactors*, 1991, **3**, 127 (*isol*)
Raemakers-Franken, P.C. *et al., Eur. J. Biochem.*, 1991, **200**, 783-787 (*isol, uv, pmr, ms*)

Tauret T-38

Retinylidenetaurine
[133867-05-7]

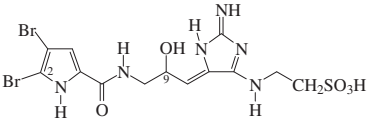


$C_{22}H_{33}NO_3S$ 391.574
Endogenous constit. of the retina and pigmented epithelium of the frog *Rana ridibunda*.

Petrosian, A.M. *et al., Adv. Exp. Med. Biol.*, 1996, **403**, 333-342

Tauroacidin A T-39

[200566-34-3]



$C_{13}H_{16}Br_2N_6O_5S$ 528.181
Tautomerism possible in the iminoimidazole ring. Closely related to Dispacamide A, D-863. Alkaloid from the sponge *Hymeniacidon* sp. Inhibits tyro-

sine kinase. Amorph. solid. $[\alpha]_D^{28}$ -4.3 (c, 0.1 in MeOH). Isol. as a partial racemate. λ_{max} 273 (ϵ 9700); 312 (ϵ 3800) (MeOH).

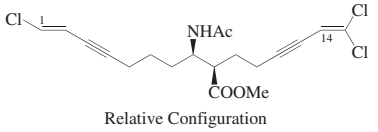
9-Deoxy: ***Taurodispacamide A***
[323177-96-4]
$C_{13}H_{16}Br_2N_6O_4S$ 512.181
Alkaloid from the sponge *Agelas oroides*. Antihistaminic agent. Pale yellow solid. λ_{max} 230 ; 270 (no solvent reported).

2-Debromo: ***Tauroacidin B***
[200566-35-4]
$C_{13}H_{17}BrN_6O_5S$ 449.285
Alkaloid from *Hymeniacidon* sp. Inhibits tyrosine kinase. Amorph. solid. Isol. as a racemate.

2-Debromo, 9-deoxy: ***9-Deoxytauroacidin B***. *2-Debromotaurodispacamide A*
$C_{13}H_{17}BrN_6O_4S$ 433.285
Alkaloid from *Axinella verrucosa*.

Kobayashi, J. *et al., Tetrahedron*, 1997, **53**, 16679-16682 (*isol, uv, ir, pmr, cmr, ms*)
Fattorusso, E. *et al., Tet. Lett.*, 2000, **41**, 9917-9922 (*Taurodispacamide A*)
Aiello, A. *et al., Bioorg. Med. Chem.*, 2006, **14**, 17-24 (*Deoxytauroacidin B*)

Taveuniamide E T-40



Relative Configuration

$C_{19}H_{22}Cl_3NO_3$ 418.746
Isol. from a mixed assemblage of *Lyngbya majuscula* and *Schizothrix* sp. $[\alpha]_D^{25}$ +2.1 (c, 0.3 in $CHCl_3$). λ_{max} 242 (ϵ 7200) (EtOH).

12,12,13,13,14,15-Hexahydro: ***Taveuniamide A***
$C_{19}H_{28}Cl_3NO_3$ 424.793
Isol. from a mixt. of *Lyngbya majuscula* and *Schizothrix* sp. $[\alpha]_D^{25}$ +11.7 (c, 0.4 in $CHCl_3$). Stereochem. not determined. λ_{max} 236 (ϵ 6700) (EtOH).

1-Chloro, 1,2-dihydro: ***Taveuniamide D***
$C_{19}H_{23}Cl_4NO_3$ 455.206
Isol. from a mixt. of *Lyngbya majuscula* and *Schizothrix* sp. $[\alpha]_D^{25}$ +5.3 (c, 0.09 in $CHCl_3$). Stereochem. not determined. λ_{max} 244 (ϵ 16500) (EtOH).

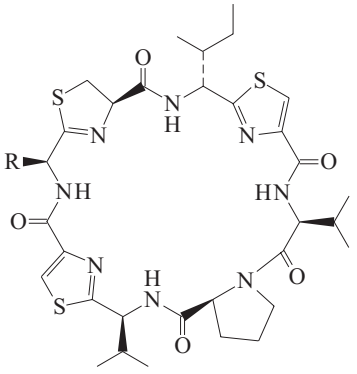
*1-Chloro, 1,2,3*E*,4-tetrahydro:* ***Taveuniamide C***
$C_{19}H_{25}Cl_4NO_3$ 457.222
Isol. from a mixt. of *Lyngbya majuscula* and *Schizothrix* sp. $[\alpha]_D$ +24 (c, 0.03 in $CHCl_3$). Stereochem. not determined. λ_{max} 244 (ϵ 15400) (EtOH).

1-Chloro, 12,12,13,13,14,15-hexahydro: ***Taveuniamide B***
$C_{19}H_{27}Cl_4NO_3$ 459.238
Isol. from a mixt. of *Lyngbya majuscula* and *Schizothrix* sp. $[\alpha]_D^{25}$ +10.4 (c, 0.1 in $CHCl_3$). Stereochem. not determined. λ_{max} 244 (ϵ 18300) (EtOH).

Williamson, R.T. *et al., Tetrahedron*, 2004, **60**, 7025-7033 (*isol, pmr, cmr*)

Tawicyclamide A T-41

[143007-28-7]



R = CH_2Ph

$C_{39}H_{50}N_8O_5S_3$ 807.073
Cyclic peptide antibiotic. Isol. from the ascidian *Lissoclinum patella*. Weakly cytotoxic. Clear solid. $[\alpha]_D^{25}$ -15 (c, 0.43 in $CHCl_3$). λ_{max} 249 (ϵ 16530) (MeOH) (Berdy).

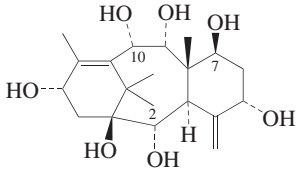
McDonald, L.A. *et al., J.O.C.*, 1992, **57**, 4616-4624 (*isol, pmr, cmr, cryst struct*)

Tawicyclamide B T-42

[143007-29-8]
As Tawicyclamide A, T-41 with
R = $-CH_2CH(CH_3)_2$
$C_{36}H_{52}N_8O_5S_3$ 773.055
Cyclic peptide antibiotic. Isol. from the ascidian *Lissoclinum patella*. Weakly cytotoxic. Clear solid. $[\alpha]_D^{25}$ +2.1 (c, 0.35 in $CHCl_3$). λ_{max} 249 (ϵ 15029) (MeOH) (Berdy).

McDonald, L.A. *et al., J.O.C.*, 1992, **57**, 4616-4624 (*isol, pmr, cmr, cryst struct*)

4(20),11-Taxadiene-1,2,5,7,9,10,13-heptol T-43



(1β,2α,5α,7β,9α,10α,13α)-*form*

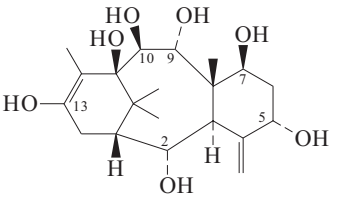
$C_{20}H_{32}O_7$ 384.469

(1β,2α,5α,7β,9α,10α,13α)-*form*

5-O-*(3-Dimethylamino-2-hydroxy-3-phenylpropanoyl), 2,7,9,10,13-penta-Ac:* ***2-Acetoxy-2-deacetyl-1-hydroxyaustrospicatine***
$C_{41}H_{55}NO_{14}$ 785.884
Alkaloid from *Taxus baccata* (Taxaceae). Cryst. Mp 120°. $[\alpha]_D^{25}$ +42 (c, 1.1 in $CHCl_3$).

Barboni, L. *et al., Annalen*, 1995, 345 (*2-Acetoxy-2′-deacetyl-1-hydroxyaustrospicatine*)

4(20),12-Taxadiene-2,5,7,9,10,11,13-heptol T-44



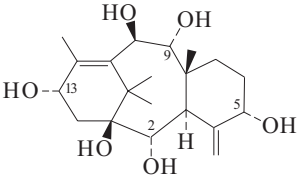
$C_{20}H_{32}O_7$ 384.469

(2α,5α,7β,9α,10β,11β)-*form*

*5-(3-Dimethylamino-3-phenylpropanoyl)(*R-*), 2,7,9,10,13-penta-Ac:* ***Taxuspine P***
[175739-43-2]
$C_{41}H_{55}NO_{13}$ 769.884
Constit. of *Taxus cuspidata*. Microtubule depolymerisation inhibitor. Amorph. solid. $[\alpha]_D^{19}$ +32.7 (c, 1.3 in MeOH). λ_{max} 207 (ϵ 14500); 261 (ϵ 960) (MeOH) (Berdy).

Kobayashi, J. *et al., Tetrahedron*, 1996, **52**, 5391 (*Taxuspine P*)
Kobayashi, J. *et al., Bioorg. Med. Chem. Lett.*, 1997, **7**, 393-398 (*Taxuspines, activity*)

4(20),11-Taxadiene-1,2,5,9,10,13-hexol T-45



$C_{20}H_{32}O_6$ 368.469

(1β,2α,5α,9α,10β,13α)-*form* [138613-22-6]
Constit. of *Taxus chinensis*. Cryst. Mp 120-121°. $[\alpha]_D$ -5.6 ($CHCl_3$/Py).

5-O-*(3-Dimethylamino-3-phenylpropanoyl)(*S-*), 10,13-di-Ac:* ***13-Deoxo-13-acetyloxytaxine B***
[151124-22-0]
$C_{35}H_{49}NO_9$ 627.773
Alkaloid from *Taxus baccata* (Taxaceae). Powder. Mp 119°. $[\alpha]_D^{25}$ +42 (c, 0.26 in CH_2Cl_2).

5-O-*(3-Dimethylamino-3-phenylpropanoyl)(*S-*), 2,9,10,13-tetra-Ac:* ***13-Dihydro-2,9,13-triacetyltaxine B***
[155512-17-7]
$C_{39}H_{53}NO_{11}$ 711.848
Constit. of *Taxus baccata*. $[\alpha]_D^{22}$ +60 (c, 0.52 in $CHCl_3$).

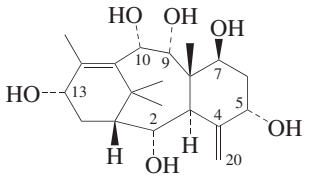
13-Ketone, 5-O-*(3-dimethylamino-3-phenylpropanoyl)(*S-*), 10-Ac:* ***Taxine B***. *Taxine I*
[1361-51-9]
$C_{33}H_{45}NO_8$ 583.72
Alkaloid from yew *Taxus baccata* (Taxaceae). Amorph. solid. Mp 109°. $[\alpha]_D$ +116.9 (c, 0.33 in $CHCl_3$). The older lit. on substances known as Taxine B and Taxine I is confused. Struct. revised in 1991.

►WX1275000

*13-Ketone, 5-*O*-(3-dimethylamino-3-phenylpropanoyl)(*S*-), 2,9,10-tri-Ac:* ***Diacetyltaxine B***
[101981-13-9]
$C_{37}H_{49}NO_{10}$ 667.795
Constit. of *Taxus baccata*. Mp 115° Mp 156-158°. $[\alpha]_D^{25}$ +107 (c, 0.88 in MeOH).

Ettouati, L. *et al., J. Nat. Prod.*, 1991, **54**, 1455-1458 (*Taxine B, ir, uv, pmr, struct*)
Appendino, G. *et al., J. Nat. Prod.*, 1993, **56**, 514-520 (*Diacetyltaxine B*)
Appendino, G. *et al., Phytochemistry*, 1993, **33**, 1521-1523 (*13-Deoxo-13-acetyloxytaxine B*)
Hassanzadeh, M.K. *et al., Iran. J. Sci. Technol.*, 1999, **23**, 313-319; *CA*, **132**, 262625x (*13-Dihydro-2,9,13-triacetyltaxine B*)

4(20),11-Taxadiene-2,5,7,9,10,13-hexol T-46



(2α,5α,7β,9α,10α,13α)-*form*

$C_{20}H_{32}O_6$ 368.469

(2α,5α,7β,9α,10α,13α)-*form*

5-(3-Dimethylamino-3-phenylpropanoyl), 7,9,10,13-tetra-Ac: ***2-Hydroxy-2′-deacetoxyaustrospicatine***
[119777-83-2]
$C_{39}H_{53}NO_{11}$ 711.848
Alkaloid from leaves of *Austrotaxus spicata* (Taxaceae). Amorph. $[\alpha]_D$ +50 (c, 2.75 in $CHCl_3$).

5-(3-Dimethylamino-2-hydroxy-3-phenylpropanoyl), 2,7,9,10,13-penta-Ac: ***2-Acetoxy-2′-deacetylaustrospicatine***
[119777-82-1]
$C_{41}H_{55}NO_{13}$ 769.884
Alkaloid from leaves of *Austrotaxus spicata* (Taxaceae). Cryst. ($CHCl_3$/MeOH). Mp 113-115°. $[\alpha]_D$ +19 (c, 2 in $CHCl_3$).

5-(2-Acetoxy-3-dimethylamino-3-phenylpropanoyl), 2,7,9,10,13-penta-Ac: ***2α-Acetoxyaustrospicatine***
[119777-81-0]
$C_{43}H_{57}NO_{14}$ 811.922
Alkaloid from leaves of *Austrotaxus spicata* (Taxaceae). Amorph. $[\alpha]_D$ -41 (c, 0.3 in $CHCl_3$).

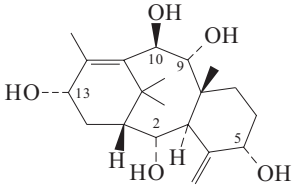
(2α,5α,7β,9α,10β,13α)-*form*

*5-(3*S*-Dimethylamino-2*R*-hydroxy-3-phenylpropanoyl), 7,9,10,13-tetra-Ac:*
[824951-59-9]
$C_{39}H_{53}NO_{12}$ 727.847
Constit. of *Taxus canadensis*. Gum. $[\alpha]_D^{22}$ +76 (c, 0.21 in $CHCl_3$).

*4β,20-Epoxide, 5-*O*-(3ξ-dimethylamino-3-phenylpropanoyl), 2,7,9,10,13-penta-Ac:* ***7-Acetoxy-9-acetylspicataxine***
[156576-68-0]
$C_{41}H_{55}NO_{13}$ 769.884
Alkaloid from roots of *Taxus* x *media* cv. Hicksii (Taxaceae). Powder. Mp 212-213°. $[\alpha]_D^{25}$ +56 (c, 1.1 in $CHCl_3$).

Ettouati, L. *et al., Bull. Soc. Chim. Fr.*, 1988, 749-755; 1989, 687-694 (*Autotaxus spicata constits*)
Appendino, G. *et al., J. Nat. Prod.*, 1994, **57**, 607 (*7-Acetoxy-9-acetylspicataxine*)
Shi, Q.-W. *et al., Phytochemistry*, 2004, **65**, 3097-3106 (*Taxus canadensis constit*)

4(20),11-Taxadiene-2,5,9,10,13-pentol T-47



$C_{20}H_{32}O_5$ 352.47

(2α,5α,9α,10β,13α)-*form*

*5-O-(3-Methylamino-3-phenylpropanoyl)(*R*-), 10,13-di-Ac:* ***13-Deoxy-13-acetyloxy-1-deoxynortaxine B***
[151124-24-2]
$C_{34}H_{47}NO_8$ 597.747
Alkaloid from *Taxus baccata* and *Taxus canadensis* (Taxaceae). Powder or gum. Mp 165°. $[\alpha]_D^{25}$ +76 (c, 0.62 in CH_2Cl_2). $[\alpha]_D^{22}$ +47 (c, 0.21 in $CHCl_3$).

5-(3-Methylamino-3-phenylpropanoyl), 2,10,13-tri-Ac: [525601-68-7]
$C_{36}H_{49}NO_9$ 639.784
Constit. of *Taxus canadensis*. Gum. $[\alpha]_D^{22}$ +37 (c, 0.1 in $CHCl_3$).

5-(3-Methylamino-3-phenylpropanoyl), 2,9,10,13-tetra-Ac: [256942-45-7]
$C_{38}H_{51}NO_{10}$ 681.822
Constit. of *Taxus chinensis* var. *mairei*. Gum. $[\alpha]_D^{24}$ +47 (c, 0.002 in $CHCl_3$).

*5-(3-Dimethylamino-3-phenylpropanoyl)(*R*-), 2,9,13-tri-Ac:* [640278-65-5]
$C_{37}H_{51}NO_9$ 653.811
Constit. of *Taxus canadensis*. Gum. $[\alpha]_D^{22}$ +37 (c, 0.1 in $CHCl_3$).

*5-(3-Dimethylamino-3-phenylpropanoyl)(*R*-), 2,10,13-tri-Ac:* [640278-66-6]
$C_{37}H_{51}NO_9$ 653.811
Constit. of *Taxus canadensis*. Amorph. powder or gum. $[\alpha]_D^{22}$ +49 (c, 0.1 in $CHCl_3$). $[\alpha]_D^{22}$ +53 (c, 0.21 in $CHCl_3$).

*5-(3-Dimethylamino-3-phenylpropanoyl)(*R*-), 9,10,13-tri-Ac:* ***Taxuspine Z***
[194782-04-2]
$C_{37}H_{51}NO_9$ 653.811
Constit. of *Taxus cuspidata*. Amorph. solid. $[\alpha]_D^{28}$ +31.2 (c, 0.08 in $CHCl_3$). λ_{max} 210 (ϵ 15400); 265 (ϵ 2330) (MeOH).

*5-(3-Dimethylamino-3-phenylpropanoyl)(*R*-), 2,9,10,13-tetra-Ac:* ***2-Acetyltaxuspine Z***
[214151-14-1]
[256942-48-0]
$C_{39}H_{53}NO_{10}$ 695.848
Constit. of *Taxus chinensis* var. *mairei*. Amorph. powder. λ_{max} 216 ; 276 (MeOH).

*5-O-(3*R*-Dimethylamino-3-phenylpropanoyl), 10,13-di-Ac:* ***13-Deoxo-13-acetyloxy-1-deoxytaxine B***
[151124-23-1]
$C_{35}H_{49}NO_8$ 611.774
Alkaloid from *Taxus baccata* (Taxaceae). Powder. Mp 192°. $[\alpha]_D^{25}$ +25 (c, 0.79 in CH_2Cl_2).

*4β,20-Epoxide, 5-*O*-(3ξ-dimethylamino-3-phenylpropanoyl), 2,9,13-tri-Ac:* ***9-Acetyl-10-deacetylspicataxine***
[126585-91-9]
$C_{37}H_{51}NO_{10}$ 669.811
From the bark of *Austrotaxus spicata* (Taxaceae). Amorph. $[\alpha]_D$ +43 (c, 1.1 in $CHCl_3$).

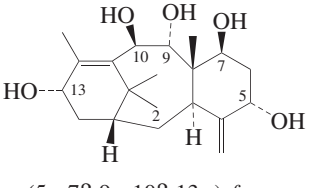
*4β,20-Epoxide, 5-*O*-(3ξ-dimethylamino-3-phenylpropanoyl), 2,10,13-tri-Ac:* ***Spicataxine***
[126585-86-2]
$C_{37}H_{51}NO_{10}$ 669.811
Alkaloid from the bark of *Austrotaxus spicata* (Taxaceae).

*4β,20-Epoxide, 9-*O*-(3-pyridinecarbonyl), 5-*O*-(3ξ-methylamino-3-phenylpropanoyl), 2,10,13-tri-Ac:* **N-*Demethylnicaustrine***
[126617-16-1]
$C_{42}H_{52}N_2O_{11}$ 760.88
From the bark of *Austrotaxus spicata* (Taxaceae). Amorph. $[\alpha]_D$ +93 (c, 0.52 in $CHCl_3$).

*4β,20-Epoxide, 9-*O*-(3-pyridinecarbonyl), 5-*O*-(3ξ-dimethylamino-3-phenylpropanoyl), 2,10,13-tri-Ac:* ***Nicaustrine***
[127211-02-3]
$C_{43}H_{54}N_2O_{11}$ 774.906
Alkaloid from the bark of *Austrotaxus spicata* (Taxaceae). Amorph. $[\alpha]_D$ +67 (c, 1.8 in $CHCl_3$).

Ettouati, L. *et al., Bull. Soc. Chim. Fr.*, 1989, 687-755 (*Austrotaxus spicata constits*)
Appendino, G. *et al., Phytochemistry*, 1993, **33**, 1521-1523 (*5-dimethylaminophenylpropanoyl 10,13-di-Ac, 5-methylaminophenylpropanoyl 10,13-di-Ac*)
Shigemori, H. *et al., Chem. Pharm. Bull.*, 1997, **45**, 1205-1208 (*Taxuspine Z*)
Chen, Y.-J. *et al., J. Nat. Prod.*, 1999, **62**, 149-151 (*Decinnamoyltaxinine E, 2-Acetyltaxuspine Z*)
Shi, Q.-W. *et al., Phytochemistry*, 1999, **52**, 1571-1575 (*Taxus chinensis var mairei constit*)
Shi, Q.-W. *et al., Tohoku J. Agric. Res.*, 1999, **50**, 33-46; *CA*, **132**, 134755c (*Taxus chinensis var mairei constit*)
Shi, Q.-W. *et al., J. Nat. Prod.*, 2003, **66**, 470-476; 1480-1485 (*Taxus canadensis constits*)
Shi, Q.-W. *et al., Phytochemistry*, 2004, **65**, 3097-3106 (*Taxus canadensis constits*)

4(20),11-Taxadiene-5,7,9,10,13-pentol T-48



(5α,7β,9α,10β,13α)-*form*

$C_{20}H_{32}O_5$ 352.47

(5α,7β,9α,10β,13α)-*form* [27854-03-1]
Cryst. Mp 194-195°. $[\alpha]_D$ +65.

5-(3-Methylamino-3-phenylpropanoyl), 7,9,10,13-tetra-Ac: [256942-46-8]
$C_{38}H_{51}NO_{10}$ 681.822
Constit. of *Taxus chinensis* var. *mairei*. Gum. $[\alpha]_D^{25}$ +10.3 (c, 0.005 in $CHCl_3$).

5-(3-Dimethylamino-3-phenylpropanoyl), 7,9,10,13-tetra-Ac: ***2′-Deacetoxyaustrospicatine***
[119777-80-9]
$C_{39}H_{53}NO_{10}$ 695.848
From the leaves of *Austrotaxus spicata*, *Taxus cuspidata* and *Taxus wallichiana*. Amorph. $[\alpha]_D$ +71 (c, 0.85 in CH_2Cl_2). $[\alpha]_D$ +117 (c, 1 in CH_2Cl_2).

5-(3-Dimethylamino-2-hydroxy-3-phenylpropanoyl), 7,9,10,13-tetra-Ac: ***2′-Deacetylaustrospicatine***
[119777-78-5]
$C_{39}H_{53}NO_{11}$ 711.848
From the leaves of *Austrotaxus spicata* (Taxaceae). Cryst. ($CHCl_3$/MeOH). Mp 298-300°. $[\alpha]_D$ +56 (c, 0.7 in CH_2Cl_2).

5-(2-Acetoxy-3-dimethylamino-3-phenylpropanoyl), 10-Ac: ***2′,3,9-Trideacetylaustrospicatine***
[119789-85-4]
$C_{35}H_{49}NO_9$ 627.773
From the leaves of *Austrotaxus spicata* (Taxaceae). Amorph. $[\alpha]_D$ +41 (c, 1.05 in $CHCl_3$).

5-(2-Acetoxy-3-dimethylamino-3-phenylpropanoyl), 10,13-di-Ac: ***7,9-Dideacetylaustrospicatine***
[119789-84-3]
$C_{37}H_{51}NO_{10}$ 669.811
From the leaves of *Austrotaxus spicata* (Taxaceae). Amorph.

5-(2-Acetoxy-3-dimethylamino-3-phenylpropanoyl), 9,10,13-tri-Ac: ***7-Deacetylaustrospicatine***
[119777-79-6]
$C_{39}H_{53}NO_{11}$ 711.848
From the leaves of *Austrotaxus spicata* (Taxaceae). Amorph. $[\alpha]_D$ +41 (c, 0.5 in $CHCl_3$).

5-(2-Acetoxy-3-dimethylamino-3-phenylpropenoyl), 7,9,10,13-tetra-Ac: ***Austrospicatine***
[119777-76-3]
$C_{41}H_{55}NO_{12}$ 753.885
Alkaloid from the leaves of *Austrotaxus spicata* (Taxaceae). Amorph. $[\alpha]_D$ +52 (c, 0.7 in CH_2Cl_2).

13-Ketone: 5,7,9,10-Tetrahydroxy-4(20),11-taxadien-13-one
$C_{20}H_{30}O_5$ 350.454
Aglycone of 2-Deacetoxytaxinine B.

13-Ketone, 5-(3-dimethylamino-2-hydroxy-3-phenylpropanoyl), 7,9,10-tri-Ac: ***Comptonine***†
[126585-69-1]
$C_{37}H_{49}NO_{10}$ 667.795
Taxane alkaloid from the bark of *Austrotaxus spicata* (Taxaceae). Amorph. $[\alpha]_D$ +85 (c, 0.82 in $CHCl_3$).

Ettouati, L. *et al., Bull. Soc. Chim. Fr.*, 1988, 749-755; 1989, 687-694 (*Austrotaxus spicata constits*)

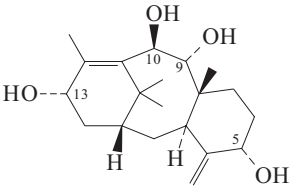
Konda, Y. *et al., Chem. Pharm. Bull.*, 1994, **42**, 2621-2624 (*2′-Deacetoxyaustrospicatine, cryst struct*)

Chattopadhyay, S.K. *et al., Indian J. Chem., Sect. B*, 1996, **35**, 508-509 (*2′-Deacetoxyaustrospicatine*)

Shi, Q.-W. *et al., Phytochemistry*, 1999, **52**, 1571-1575 (*Taxus chinensis var mairei constit*)

Shi, Q.-W. *et al., Tohoku J. Agric. Res.*, 1999, **50**, 33-46; *CA*, **132**, 134755c (*Taxus chinensis var mairei constit*)

4(20),11-Taxadiene-5,9,10,13-tetrol T-49



$C_{20}H_{32}O_4$ 336.47

(5α,9α,10β,13α)-*form* [15877-46-0]
Constit. of the heartwood of *Taxus baccata*. Cryst. Mp 195-198°. $[\alpha]_D$ +134.

5-(3-Methylamino-3-phenylpropanoyl), 9,10,13-tri-Ac: [256942-47-9]
$C_{36}H_{49}NO_8$ 623.785
Constit. of *Taxus chinensis* var. *mairei*.

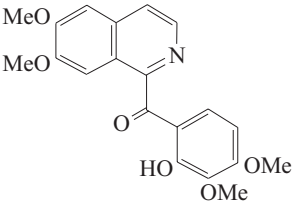
5-(3-Dimethylamino-3-phenylpropanoyl), 9,10,13-tri-Ac: ***2′,7-Bisdeacetoxyaustrospicatine***. *2′,7-Dideacetoxyaustrospicatine*
[159384-73-3]
$C_{37}H_{51}NO_8$ 637.812
Constit. of *Taxus wallichiana* and *Taxus mairei*. Needles (Me_2CO). Mp 199-200°. $[\alpha]_D^{15}$ +112.9 (c, 0.95 in $CHCl_3$) (+14.5).

Shi, Q.W. *et al., Nat. Prod. Lett.*, 1999, **13**, 179-186 (*2′,7-Bisdeacetoxyaustrospicatine*)

Shi, Q.-W. *et al., Tohoku J. Agric. Res.*, 1999, **50**, 33-46; *CA*, **132**, 134755c (*Taxus chinensis var mairei constit*)

Taxilamine T-50

(6,7-Dimethoxy-1-isoquinolinyl)(2-hydroxy-3,4-dimethoxyphenyl)methanone, 9CI. 1-(2-Hydroxy-3,4-dimethoxybenzoyl)-6,7-dimethoxyisoquinoline
[81525-57-7]



$C_{20}H_{19}NO_6$ 369.373
Alkaloid from the root bark of *Berberis aristata* (Berberidaceae). Amorph.

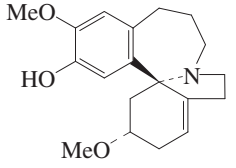
3,4-Dihydro: ***Dihydrotaxilamine***
[105798-92-3]
$C_{20}H_{21}NO_6$ 371.389
Alkaloid from roots of *Berberis actinacantha* (Berberidaceae). Amorph.

Blaskó, G. *et al., Heterocycles*, 1982, **19**, 257 (*isol, uv, pmr, ms, struct*)

Rahimizadeh, M. *et al., Planta Med.*, 1986, 339 (*Dihydrotaxilamine*)

Taxodine T-51

1,6-Didehydro-3,16-dimethoxy-C-homoerythrinan-15-ol, 9CI. Alkaloid B†. *3-Epischellhammericine B. Alkaloid V*†. *2,7-Dihydrohomoerysovine*
[24204-37-3]



$C_{19}H_{25}NO_3$ 315.411
A major alkaloid from *Schelhammera undulata*. Also isol. from *Schelhammera pedunculata, Cephalotaxus harringtonia* var. *harringtonia, Cephalotaxus drupacea, Cephalotaxus oliveri, Athrotaxis cupressoides, Athrotaxis selaginoides* and *Athrotaxis laxifolia* (Liliaceae, Cephalotaxaceae, Taxodiaceae). Needles (Me_2CO). Mp 152-153°. $[\alpha]_D$ +111 (c, 0.09 in $CHCl_3$). λ_{max} 235 (sh) (ε 8000); 283 (ε 3700); 289 (sh) (ε 3300) (no solvent reported).

Me ether: ***2,7-Dihydrohomoerysotrine***. O-*Methyltaxodine*. O-*Methyl-3-epischellhammericine B*
[51095-85-3]
$C_{20}H_{27}NO_3$ 329.438
Minor alkaloid from leaves, stems and roots of *Cephalotaxus harringtonia* var. *harringtonia* and the leaves of *Phelline* sp. aff. *Phelline lucida, Dysoxylum lenticellare* and *Cephalotaxus wilsoniana* (Cephalotaxaceae, Phellinaceae, Meliaceae). Noncryst. $[\alpha]_D$ +122 (c, 0.50 in $CHCl_3$).

17-O-*De-Me:* ***Cephalezomine M***. *17*-O-*Demethyltaxodine*
[462075-60-1]
$C_{18}H_{23}NO_3$ 301.385
Alkaloid from the leaves of *Cephalotaxus harringtonia* var. *nana*. Amorph. solid. $[\alpha]_D$ +64 (c, 0.8 in MeOH). λ_{max} 217 (ε 4500); 233 (ε 3600); 286 (ε 1800) (MeOH).

3-Epimer: ***Schellhammericine B***
[30633-33-1]
$C_{19}H_{25}NO_3$ 315.411
Minor alkaloid from *Cephalotaxus harringtonia* var. *harringtonia* (Cephalotaxaceae). $[\alpha]_D$ +76 (c, 0.40 in $CHCl_3$). Not obt. pure. The struct. of this alkaloid has not been proven and it could be the 16-hydroxy-15-methoxy isomer. It has, however, been registered by CAS with the 16-methoxy struct.

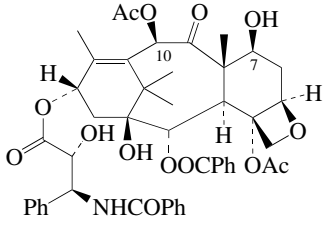
3-Epimer, Me ether: ***3-Epi-2,7-dihydrohomoerysotrine***. O-*Methylschellhammericine B*
[38750-53-7]

$C_{20}H_{27}NO_3$ 329.438
Minor alkaloid from leaves, stems and roots of *Cephalotaxus harringtonia* var. *harringtonia* (Cephalotaxaceae). $[\alpha]_D$ +118 (c, 0.58 in $CHCl_3$).

Johns, S.R. *et al., Aust. J. Chem.*, 1969, **22**, 2219-2231 (*uv, ir, pmr, ms, struct*)
Sioumis, A.A. *et al., Aust. J. Chem.*, 1971, **24**, 2737 (*isol*)
Powell, R.G. *et al., Phytochemistry*, 1972, **11**, 1467-1472 (*isol, uv, ir, pmr, ms, struct, Cephalotaxus harringtonia constits*)
Aladesanmi, A.J. *et al., J. Nat. Prod.*, 1983, **46**, 127-131 (*2,7-Dihydrohomoerysotrine*)
Langlois, N. *et al., Heterocycles*, 1984, **22**, 2453-2457 (*2,7-Dihydrohomoerysotrine*)
Panichanun, S. *et al., Tetrahedron*, 1984, **40**, 2677-2684; 2685-2689 (*isol, uv, ir, pmr, ms, synth*)
Morita, H. *et al., Tetrahedron*, 2002, **58**, 5489-5495 (*Cephalezomine M*)

Taxol T-52

Paclitaxel, BAN, INN, USAN. *Taxol A. Anzatax. Yewtaxan. BMS 181339-01. NSC 125973*
[33069-62-4]



$C_{47}H_{51}NO_{14}$ 853.918
A coml. semisynthesis introduced in 1993 uses 10-Deacetylbaccatin III in E-141. Isol. from the stem bark of *Taxus brevifolia*, *Taxus cuspidata* and *Taxus yunnanensis* (Taxaceae). Also reported in traces from the fungus *Taxomyces andreanae* and from *Taxus baccata*, *Cephalotaxus mannii*, *Taxus wallichiana*, *Taxomyces andreanae*, *Taxus sumatrana*, *Pestalotiopsis wallachiana*, *Pestalotiopsis microspora*, *Periconia* sp., *Pestalotia heterocornis* and *Trichothecium roseum*. Antileukaemic and antineoplastic agent, esp. against melanoma and ovarian tumours. Use limited by low solubility. Biochemical tool extensively used to study cellular shape and function. Also shown to be active against oomycete fungi. Needles (MeOH aq.). Mp 213-216°. $[\alpha]_D^{20}$ -49 (MeOH). Log P 2.47 (uncertain value) (calc). λ_{max} 227 (ϵ 29800); 273 (ϵ 1700) (MeOH) (Derep).

▶ LD_{50} (mus, ipr) 128 mg/kg. LD_{50} (mus, ivn) 12 mg/kg. WX1272100

Poly(L-glutamic acid) conjugate: ***Paclitaxel poliglumex, INN, USAN.*** *CT 2103. PG-TXL. XYOTAX*
[263351-82-2] Biodegradable polymer. Delivers higher levels of active chemotherapeutic to the tumour. Phase III trials (2002) for the treatment of non-small cell lung cancer.

Polyethylene glycol conjugate: Peg-paclitaxel
Prodrug of taxol.

7-O-β-D-Xylopyranoside: ***7-Xylosyltaxol***
[90332-66-4]
$C_{52}H_{59}NO_{18}$ 986.034
Constit. of *Taxus baccata*. Cryst. (2-propanol). Mp 236-238°. $[\alpha]_D$ -23 (Py). λ_{max} 227 (ϵ 29800); 273 (ϵ 1700) (MeOH) (Derep).

N-*Debenzoyl,* N-*Ac:* **N-*Acetyl*-N-*debenzoyltaxol***
[173101-48-9]
$C_{42}H_{49}NO_{14}$ 791.847
Constit. of *Taxus canadensis*. Gum.

N-*Debenzoyl,* N-*butanoyl:* ***Taxol D.*** *Taxcultine*
[153415-46-4]
$C_{44}H_{53}NO_{14}$ 819.901
Isol. from roots of *Taxus* x *media* cv Hicksii and cell cultures of *Taxus baccata* and *Taxus canadensis* (Taxaceae). Powder. Mp 155° Mp 206-208°. $[\alpha]_D$ -7.54 (c, 0.106 in MeOH). $[\alpha]_D^{25}$ -16 (c, 0.45 in $CHCl_3$). Identity of Taxol D with Taxcultine not confirmed. λ_{max} 227 (ϵ 29800); 273 (ϵ 1700) (MeOH) (Derep).

N-*Debenzoyl,* N-*butanoyl, 7*-O-*β-D-xylopyranoside:* ***7-Xylosyltaxol D***
[334981-00-9]
$C_{49}H_{61}NO_{18}$ 952.017
Constit. of bark of *Taxus yunnanensis*. Powder. $[\alpha]_D^{28}$ -25 (c, 0.25 in MeOH). λ_{max} 202 (log ϵ 4.3); 229 (log ϵ 4.2) (MeOH).

N-*Debenzoyl,* N-*(2-methylbutanoyl):* N-*Debenzoyl*-N-*(α-methylbutyryl)paclitaxel*
[159001-25-9]
$C_{45}H_{55}NO_{14}$ 833.928
Constit. of *Taxus* x *media* cv. Hicksii. Powder. $[\alpha]_D^{25}$ -48 (c, 0.1 in MeOH).

N-*Debenzoyl,* N-*tigloyl:* ***Cephalomannine.*** *Taxol B*
[71610-00-9]
$C_{45}H_{53}NO_{14}$ 831.912
Alkaloid from *Taxus wallichiana*, the bark of *Taxus yunnanensis* and *Cephalotaxus mannii*. Antileukaemic agent. $[\alpha]_D^{23}$ -41 (c, 0.39 in MeOH). Abs. config. of side-chain not certain. λ_{max} 225 (ϵ 25000); 273 (ϵ 1700) (MeOH) (Derep).

N-*Debenzoyl,* N-*tigloyl, 7*-O-*β-D-xylopyranoside:* ***7-Xylosylcephalomannine.*** *7-Xylosyltaxol B*
[90352-19-5]
$C_{50}H_{61}NO_{18}$ 964.028
Constit. of *Taxus baccata*. $[\alpha]_D$ -26 (Py). λ_{max} 227 (ϵ 29800); 273 (ϵ 1700) (MeOH) (Derep).

N-*Debenzoyl,* N-*hexanoyl:* ***Taxol C.*** *Taxuyunnanine A*
[153415-45-3]
$C_{46}H_{57}NO_{14}$ 847.955
From roots of *Taxus* x *media* cv Hicksii, *Taxus yunnanensis* and cell cultures of *Taxus baccata*. Also from *Taxus brevifolia* and *Taxus media*. Shows potent selective cytotoxicity vs. NCI human cell line. Tubulin assembly promotor. Cryst. (MeOAc/hexane) or yellowish amorph. solid (MeOH). Mp 204-205° (150°). $[\alpha]_D^{20}$ -64.7 (c, 1.2 in $CHCl_3$). $[\alpha]_D$ -107 (c, 0.054 in MeOH). λ_{max} 227 (ϵ 29800); 273 (ϵ 1700) (MeOH) (Derep). λ_{max} 227 (ϵ 15490) (MeOH) (Berdy).

N-*Debenzoyl,* N-*hexanoyl, 7*-O-*β-D-xylopyranoside:* ***7-Xylosyltaxol C***
[90332-67-5]
$C_{51}H_{65}NO_{18}$ 980.07
Constit. of *Taxus baccata*. Tubulin assembly promotor. Cryst. (EtOH aq.). Mp 229-231°. $[\alpha]_D$ -4 (Py). λ_{max} 227 (ϵ 29800); 273 (ϵ 1700) (MeOH) (Derep).

N-*Debenzoyl,* N-*cinnamoyl:* **N-*Debenzoyl*-N-*cinnamoylpaclitaxel***
[219783-77-4]
$C_{49}H_{53}NO_{14}$ 879.956
Constit. of *Taxus* x *media* cv. Hicksii. Powder. Mp 180° dec. $[\alpha]_D^{25}$ -16.6 (c, 0.9 in MeOH).

N-*Me:* ***Taxuspinanane I***
[212071-25-5]
$C_{48}H_{53}NO_{14}$ 867.945
Constit. of *Taxus cuspidata* var. *nana*. Amorph. powder. $[\alpha]_D$ -71 (c, 0.04 in $CHCl_3$). λ_{max} 204 (log ϵ 4.41); 218 (log ϵ 4.32); 272 (log ϵ 3.27); 282 (log ϵ 3.22) (MeOH).

N-*Me,* N-*debenzoyl,* N-*hexanoyl:* **N-*Methyltaxol C***
[153083-53-5]
$C_{47}H_{59}NO_{14}$ 861.981
From roots of *Taxus* x *media* cv Hicksii and *Taxus baccata*. Tubulin assembly promotor. Cryst. (MeOAc/hexane). Mp 225-228° dec. $[\alpha]_D^{20}$ -52.7 (c, 1.0 in $CHCl_3$). λ_{max} 227 (ϵ 29800); 273 (ϵ 1700) (MeOH) (Derep). λ_{max} 223 (ϵ 16980) (MeOH) (Berdy).

N-*Me,* N-*debenzoyl,* N-*hexanoyl, 7*-O-*β-D-xylopyranoside:* ***7-Xylosyl*-N-*methyltaxol C***
[550373-59-6]
$C_{52}H_{67}NO_{18}$ 994.097
Constit. of *Taxus yunnanensis*. Cryst. Mp 220°. λ_{max} 202 (log ϵ 4.41); 214 (log ϵ 4.33) (MeOH).

2′,7-Di-Ac: ***2′,7-Diacetyltaxol***
[81924-74-5]
$C_{51}H_{55}NO_{16}$ 937.993
Constit. of *Taxus brevifolia*. Tubulin assembly promotor. Needles. Poorly sol. hexane. Mp 227-228°.

7-[(2,3-Dihydroxypropoxy)carbonyl]: ***Paclitaxel ceribate, INN.*** *Protaxel. BP 179*
[186040-50-6]
$C_{51}H_{57}NO_{18}$ 972.007
H_2O sol. prodrug.

4-De-Ac, 4-methoxycarbonyl: BMS 188797
[172481-83-3]
$C_{47}H_{51}NO_{15}$ 869.918
Antineoplastic agent. Amorph. solid.

10-De-Ac: ***10-Deacetyltaxol***
[78432-77-6]
$C_{45}H_{49}NO_{13}$ 811.881
Constit. of *Taxus wallichiana*, *Taxus mairei* and *Cephalotaxus mannii*. Tubulin assembly promotor. Amorph. powder. λ_{max} 227 (ϵ 29800); 273 (ϵ 1700) (MeOH) (Derep). λ_{max} 211 (ϵ 15500); 231 (ϵ 15500); 277 (ϵ 3160)

(MeOH) (Berdy).

*10-De-Ac, 7-*O*-β-D-xylopyranoside:* ***10-Deacetyl-7-xylosyltaxol***
[90332-63-1]
$C_{50}H_{57}NO_{17}$ 943.997
Constit. of *Taxus baccata*, *Taxus yunnanensis* and *Taxus canadensis*. Tubulin assembly promotor. Cryst. (EtOH aq.). Mp 246-248°. $[\alpha]_D$ -2 (Py). λ_{max} 227 (ϵ 29800); 273 (ϵ 1700) (MeOH) (Derep). λ_{max} 229 (ϵ 20700); 274 (ϵ 1400); 281 (ϵ 1100) (MeOH) (Berdy).

10-De-Ac, N-*debenzoyl,* N-*propanoyl:* **N-*Debenzoyl*-N-*propanoyl-10-deacetylpaclitaxel***
[173101-59-2]
$C_{41}H_{49}NO_{13}$ 763.837
Constit. of *Taxus baccata*. Cryst. Mp 245° dec.

10-De-Ac, N-*debenzoyl,* N-*butanoyl:* **N-*Debenzoyl*-N-*butanoyl-10-deacetylpaclitaxel***
[173101-47-8]
$C_{42}H_{51}NO_{13}$ 777.864
Constit. of *Taxus baccata*. Cryst. Mp 244° dec.

10-De-Ac, N-*debenzoyl,* N-*butanoyl, 7-*O*-β-D-xylopyranoside:* ***7-Xylosyl-10-deacetyltaxol D***
[172486-23-6]
$C_{47}H_{59}NO_{17}$ 909.98
Constit. of *Taxus baccata*. Amorph. powder. $[\alpha]_D^{20}$ -14.3 (c, 0.27 in MeOH). λ_{max} 227 (ϵ 29800); 273 (ϵ 1700) (MeOH) (Derep). λ_{max} 227 (ϵ 6166); 263 (ϵ 933); 267 (ϵ 933); 273 (ϵ 955); 280 (ϵ 813) (MeOH) (Berdy).

10-De-Ac, N-*debenzoyl,* N-*tigloyl:* ***10-Deacetylcephalomannine***
[76429-85-1]
$C_{43}H_{51}NO_{13}$ 789.875
Isol. from *Taxus wallichiana* and *Cephalotaxus mannii*. Amorph. Sol. H_2O. λ_{max} 227 (ϵ 29800); 273 (ϵ 1700) (MeOH) (Derep).

10-De-Ac, N-*debenzoyl,* N-*tigloyl, 7-*O*-β-D-xylopyranoside:* ***10-Deacetyl-7-xylosylcephalomannine****. 10-Deacetyl-7-xylosyltaxol B*
[90332-64-2]
$C_{48}H_{59}NO_{17}$ 921.991
Constit. of *Taxus baccata*. Cryst. (EtOH aq.). Mp 250-252°. $[\alpha]_D$ +4 (Py). λ_{max} 227 (ϵ 29800); 273 (ϵ 1700) (MeOH) (Derep).

10-De-Ac, N-*debenzoyl,* N-*hexanoyl:* ***10-Deacetyltaxol C****. 10-Deacetyltaxuyunnanine A*
[154677-95-9]
$C_{44}H_{55}NO_{13}$ 805.917
From cell cultures of *Taxus baccata* and from *Taxus mairei* and *Taxus yunnanensis* (Taxaceae). Tubulin assembly promotor. Amorph. solid (MeOH). Mp 157° dec. $[\alpha]_D$ -14.78 (c, 0.115 in MeOH). λ_{max} 227 (ϵ 29800); 273 (ϵ 1700) (MeOH) (Derep). λ_{max} 236 ; 272 (MeOH) (Berdy).

10-De-Ac, N-*debenzoyl,* N-*hexanoyl, 7-*O*-β-D-xylopyranoside:* ***10-Deacetyl-7-xylosyltaxol C***
[90332-65-3]
$C_{49}H_{63}NO_{17}$ 938.033
Constit. of *Taxus baccata*. Cryst. (EtOH aq.). Mp 215-217°. $[\alpha]_D$ +3 (Py). λ_{max} 227 (ϵ 29800); 273 (ϵ 1700) (MeOH) (Derep).

10-De-Ac, 7-Ac: ***7-Acetyl-10-deacetyltaxol***
[115842-86-9]
$C_{47}H_{51}NO_{14}$ 853.918
Constit. of *Taxus canadensis*. Gum. $[\alpha]_D^{22}$ -44 (c, 0.05 in $CHCl_3$).

10-De-Ac, 10-(3-hydroxybutanoyl): ***10-Deacetyl-10-(3-hydroxybutyryl)taxol***
[90332-68-6]
$C_{49}H_{55}NO_{15}$ 897.971
Constit. of *Taxus baccata*. λ_{max} 227 (ϵ 29800); 273 (ϵ 1700) (MeOH) (Derep).

10-De-Ac, 10-(3-hydroxybutanoyl), N-*debenzoyl,* N-*tigloyl:* ***10-Deacetyl-10-(β-hydroxybutyryl)cephalomannine****. 10-Deacetyl-10-(β-hydroxybutyryl)-taxol B*
[90332-69-7]
$C_{47}H_{57}NO_{15}$ 875.965
Constit. of *Taxus baccata*. λ_{max} 227 (ϵ 29800); 273 (ϵ 1700) (MeOH) (Derep).

*2-*O*-Debenzoyl, 2-tigloyl:* ***2-Debenzoyl-2-tigloylpaclitaxel***
[173101-54-7]
$C_{45}H_{53}NO_{14}$ 831.912
Constit. of *Taxus* x *media* cv. Hicksii. Powder. Mp 232° dec. $[\alpha]_D^{25}$ -44 (c, 0.7 in MeOH).

*13-Deacyl, 13-cinnamoyl(*E*-):* ***Taxuspinanane J***
[212071-26-6]
$C_{40}H_{44}O_{12}$ 716.78
Constit. of *Taxus cuspidata* var. *nana*. Amorph. powder. $[\alpha]_D$ -43.8 (c, 0.14 in $CHCl_3$). λ_{max} 205 (log ϵ 4.05); 232 (log ϵ 4.1); 274 (log ϵ 3.02); 282 (log ϵ 2.94) (MeOH).

10-Ketone, 10-de-Ac, 7-Ac: ***10-Deacetyl-10-dehydro-7-acetyltaxol A***
[171864-27-0]
$C_{47}H_{49}NO_{14}$ 851.902
Constit. of *Taxus* x *media*. Cryst. Mp 226-230°. $[\alpha]_D^{25}$ -57 (c, 2.8 in MeOH). λ_{max} 227 (ϵ 29800); 273 (ϵ 1700) (MeOH) (Derep).

9α-Alcohol: ***Yunnanxamine****. 9-Deoxo-9α-hydroxytaxol. Dihydrotaxol*
[148584-53-6]
$C_{47}H_{53}NO_{14}$ 855.934
From *Taxus yunnanensis* (Taxaceae). Powder. Mp 174-176°. $[\alpha]_D^{22}$ -13.1 (c, 0.08 in $CHCl_3$). λ_{max} 227 (ϵ 29800); 273 (ϵ 1700) (MeOH) (Derep).

7-(Methylthio)methyl: ***BMS 184476***
[160237-25-2]
$C_{49}H_{55}NO_{14}S$ 914.038
Antineoplastic agent. Characterised by pmr.

7-Epimer: ***7-Epitaxol***
[105454-04-4]
$C_{47}H_{51}NO_{14}$ 853.918
From *Taxus brevifolia* (Taxaceae). Tubullin assembly promotor. Cryst. Mp 168-171°. $[\alpha]_D^{23}$ -32.3 (c, 0.012 in MeOH). λ_{max} 227 (ϵ 29800); 273 (ϵ 1700) (MeOH) (Derep).

7-Epimer, 2′-Ac: ***2′-Acetyl-7-epitaxol***
[172586-62-8]
$C_{49}H_{53}NO_{15}$ 895.955
Constit. of *Taxus canadensis*. $[\alpha]_D^{22}$ -30 (c, 0.05 in $CHCl_3$).

7-Epimer, 10-de-Ac: ***10-Deacetyl-7-epitaxol****. Ormosin VI*
[78454-17-8]
$C_{45}H_{49}NO_{13}$ 811.881
Isol. from callus cultures of *Taxus baccata*, the bark of *Taxus yunnanensis* and from *Taxus cuspidata*. Tubulin assembly promotor.

7-Epimer, N-*debenzoyl,* N-*(2-methylbutanoyl):* ***Taxoline***
[213539-42-5]
$C_{45}H_{55}NO_{14}$ 833.928
Constit. of *Taxus yunnanensis*. Cryst. Mp 184-186°. $[\alpha]_D^{20}$ -79.5 (c, 0.515 in MeOH). λ_{max} 230 (log ϵ 4.21); 274 (log ϵ 3.01) (MeOH).

7-Epimer, N-*debenzoyl,* N-*tigloyl:* ***7-Epicephalomannine****. 7-Epitaxol B*
[150547-36-7]
$C_{45}H_{53}NO_{14}$ 831.912
Constit. of *Taxus* x *media* cv. Hicksii and *Taxus yunnanensis*. Cryst. Mp 187-189° Mp 210° dec. $[\alpha]_D$ -7.3 (c, 0.2 in MeOH). λ_{max} 227 (ϵ 29800); 273 (ϵ 1700) (MeOH) (Derep).

7-Epimer, N-*debenzoyl,* N-*hexanoyl:* ***7-Epitaxuyunnanine A***
[156130-25-5]
$C_{46}H_{57}NO_{14}$ 847.955
Alkaloid from *Taxus yunnanensis*. $[\alpha]_D$ -47.3 ($CHCl_3$).

7-Epimer, 2′-Ac, N-*debenzoyl,* N-*tigloyl: 2′-Acetyl-7-epicephalomannine*
[340739-83-5]
$C_{47}H_{55}NO_{15}$ 873.949
Constit. of *Taxus canadensis*. Gum. $[\alpha]_D^{24}$ +15 (c, 0.01 in $CHCl_3$).

7-Epimer, 10-de-Ac, N-*debenzoyl,* N-*hexanoyl: 7-Epi-10-deacetyltaxuyunnanine A*. ***Taxuspinanane E***
[156130-26-6]
$C_{44}H_{55}NO_{13}$ 805.917
Alkaloid from *Taxus yunnanensis* and *Taxus cuspidata* var. *nana*. $[\alpha]_D$ -34.9 ($CHCl_3$). $[\alpha]_D$ -22.9 (c, 0.1 in MeOH). λ_{max} 204 (log ϵ 4.38); 218 (log ϵ 4.25); 228 (log ϵ 4.2); 272 (log ϵ 3.18); 282 (log ϵ 3.17) (MeOH).

7-Epimer, 10-de-Ac, 10-ketone: ***10-Deacetyl-10-oxo-7-*epi*-taxol***
[105377-71-7]
$C_{45}H_{47}NO_{13}$ 809.865
From *Taxus brevifolia*. Tubulin assembly promotor. Oil. $[\alpha]_D^{23}$ -60.4 (c, 0.002 in MeOH). λ_{max} 227 (ϵ 29800); 273 (ϵ 1700) (MeOH) (Derep).

7-Epimer, 10-de-Ac, 10-ketone, N-*debenzoyl,* N-*tigloyl:* ***10-Deacetyl-10-oxo-7-epicephalomannine***
[213276-08-5]
$C_{43}H_{49}NO_{13}$ 787.859
Constit. of *Taxus canadensis*. Gum. $[\alpha]_D^{24}$ -1.2 (c, 0.05 in $CHCl_3$).

7-Epimer, 10-de-Ac, 10-ketone, N-*debenzoyl,* N-*hexanoyl:* ***7-Epi-10-deacetyl-10-oxotaxuyunnanine A***

[156053-35-9]
$C_{44}H_{53}NO_{13}$ 803.902
Constit. of *Taxus yunnanensis*. $[\alpha]_D$ -70.8 ($CHCl_3$). The name assigned is not strictly correct.

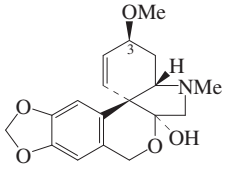
Docosahexaenoic acid conjugate: Docosahexaenoic acid-paclitaxel. DHA-paclitaxel
Inert prodrug composed of the natural fatty acid DHA covalently linked to the 2-position of paclitaxel.

Wani, M.S. *et al., J.A.C.S.*, 1971, **93**, 2325-2327 (*isol, nmr, ms, ir, uv*)
McLauchlin, J.L. *et al., J. Nat. Prod.*, 1981, **44**, 312-319 (*Cephalomannine, 10-Deacetylcephalomannine, 10-Deacetyltaxol*)
Miller, R.W. *et al., J.O.C.*, 1981, **46**, 1469-1474 (*Cephalomannine*)
Kingston, D.G.I. *et al., J. Nat. Prod.*, 1982, **45**, 466-470 (*2′,7-di-Ac*)
Sénith, V. *et al., J. Nat. Prod.*, 1984, **47**, 131-137 (*xylosides*)
Suffness, M. *et al., Alkaloids (Academic Press)*, 1985, **25**, 1-18 (*rev, pharmacol*)
Horwitz, S.B. *et al., Ann. N.Y. Acad. Sci.*, 1986, **466**, 733-744 (*rev, pharmacol*)
Huang, C.H.O. *et al., J. Nat. Prod.*, 1986, **49**, 665-669 (*7-Epitaxol, 10-Deacetyl-10-oxo-7-epitaxol*)
Blechert, S. *et al., Alkaloids (Academic Press)*, 1990, **39**, 195-238 (*rev, pharmacol*)
Kingston, D.G.I. *et al., J. Nat. Prod.*, 1990, **53**, 1-12; 802 (*bibl, rev*)
Slichenmyer, W.J. *et al., Anti-Cancer Drugs*, 1991, **2**, 519-530 (*rev*)
Kingston, D.G.I. *et al., Pharmacol. Ther.*, 1991, **52**, 1-34 (*rev, pharmacol*)
Rose, W.C. *et al., Anti-Cancer Drugs*, 1992, **3**, 311-321 (*rev*)
Potier, P. *et al., Chem. Soc. Rev.*, 1992, **21**, 113-119 (*rev*)
Young, D.H. *et al., Experientia*, 1992, **48**, 882-885 (*antifungal activity*)
Chmurny, G.N. *et al., J. Nat. Prod.*, 1992, **55**, 414-423 (*pmr, cmr*)
Wheeler, N.C. *et al., J. Nat. Prod.*, 1992, **55**, 432-440 (*occur*)
Hilton, B.D. *et al., J. Nat. Prod.*, 1992, **55**, 1157-1161 (*pmr*)
Falzone, C.J. *et al., Tet. Lett.*, 1992, **33**, 1169-1172 (*pmr, cmr*)
Winkler, J.D. *et al., Tetrahedron*, 1992, **48**, 6953-6964 (*rev*)
Ojima, I. *et al., Tetrahedron*, 1992, **48**, 6985-7012 (*synth*)
Horwitz, S.B. *et al., Trends Pharmacol. Sci.*, 1992, **13**, 134-136 (*rev*)
Chen, W.M. *et al., Chin. Chem. Lett.*, 1993, **4**, 699-702 (*Yunnanxamine*)
Wall, M.E. *et al., Chron. Drug Discovery*, 1993, **3**, 327-348 (*rev*)
Fleming, P.E. *et al., J.A.C.S.*, 1993, **115**, 805-807 (*biosynth*)
Stierle, A. *et al., Science (Washington, D.C.)*, 1993, **260**, 214-217 (*isol, ms*)
Williams, H.J. *et al., Tetrahedron*, 1993, **49**, 6545-6560 (*pmr, conformn*)
Zhang, H. *et al., Yunnan Zhiwu Yanjiu*, 1993, **15**, 424-426; *CA*, **121**, 78282e
Nicolaou, K.C. *et al., Angew. Chem., Int. Ed.*, 1994, **33**, 15-44 (*rev*)
Joel, S.P. *et al., Chem. Ind. (London)*, 1994, 172-175 (*rev*)
Sonnichsen, D.S. *et al., Clin. Pharmacokinet.*, 1994, **27**, 256-269 (*rev, pharmacokinet*)
Eur. Pat., 1994, (*(Bristol-Myers Squibb)*)604 910; *CA*, **122**, 81691p (*BMS 184476, synth, pharmacol*)
Hongjie, Z. *et al., Heterocycles*, 1994, **38**, 975-980
Ma, W. *et al., J. Nat. Prod.*, 1994, **57**, 116-122 (*Taxcultine, Taxol C*)
Hoke, S.H. *et al., J. Nat. Prod.*, 1994, **57**, 277-286 (*ms, hplc*)
Appendino, G. *et al., J. Nat. Prod.*, 1994, **57**, 607-613 (*Taxol D*)
Kerns, E.H. *et al., J. Nat. Prod.*, 1994, **57**, 1391-1403 (*ms, hplc*)
Gimon, M.E. *et al., J. Nat. Prod.*, 1994, **57**, 1404-1410 (*ms*)
Holton, R.A. *et al., J.A.C.S.*, 1994, **116**, 1597-1598; 1599-1600 (*synth*)
Fleming, P.E. *et al., J.A.C.S.*, 1994, **116**, 4137-4138 (*biosynth*)
Nicolaou, K.C. *et al., Nature (London)*, 1994, **367**, 630-634 (*synth*)
Barboni, L. *et al., Phytochemistry*, 1994, **36**, 987-990 (*Taxol C, N-Methyltaxol C*)
Fleming, P.E. *et al., Pure Appl. Chem.*, 1994, **66**, 2045-2048 (*biosynth*)
Kingston, D.G.I. *et al., Tet. Lett.*, 1994, **35**, 4483-4484 (*synth*)
Chen, W.M. *et al., Yaoxue Xuebao*, 1994, **29**, 751-757 (*Yunnanxamine*)
Georg, G.I. *et al., ACS Symp. Ser.*, 1995, **583**, (*book*)
Gao, Q. *et al., Acta Cryst. C*, 1995, **51**, 295-298 (*cryst struct*)
Zamir, L.O. *et al., Can. J. Chem.*, 1995, **73**, 655-665 (*pmr, cmr, 7-Epitaxol*)
De Bellis, P. *et al., Fitoterapia*, 1995, **66**, 521-524 (*7-Epicephalomannine*)
Huizing, M.T. *et al., J. Chromatogr., B*, 1995, **664**, 373-382 (*hplc*)
Grothaus, P.G. *et al., J. Nat. Prod.*, 1995, **58**, 1003-1014 (*immunoassay*)
Guo, Y. *et al., J. Nat. Prod.*, 1995, **58**, 1906-1912 (*7-Xylosyl-10-deacetyltaxol D*)
Nicolaou, K.C. *et al., J.A.C.S.*, 1995, **117**, 624-633; 634-644; 645-652; 653-659 (*synth*)
Rowinsky, E.K. *et al., N. Engl. J. Med.*, 1995, **332**, 1004-1014 (*use, tox, rev*)
Nogales, E. *et al., Nature (London)*, 1995, **375**, 424-427 (*taxol-tubulin heterodimer, cryst struct*)
Gabetta, B. *et al., Phytochemistry*, 1995, **40**, 1825-1828 (*10-Deacetyl-10-dehydro-7-acetyltaxol A*)
Vyas, D.M. *et al., Prog. Med. Chem.*, 1995, **32**, 289-337 (***rev***)
Taxol: Science and Applications, Ed., Suffness, M, CRC Press, Boca Raton, USA, 1995, (*book*)
The Chemistry and Pharmacology of Taxol and its Derivatives, (Ed. Farina, V.), Elsevier, 1995, (*book*)
Li, C. *et al., Anti-Cancer Drugs*, 1996, **7**, 642-648 (*peg-paclitaxel*)
Nicolaou, K.C. *et al., Classics in Total Synthesis, Targets, Strategies, Methods*, VCH, 1996, 655 (*bibl, synth*)
Danishefsky, S.J. *et al., J.A.C.S.*, 1996, **118**, 2843-2859 (*synth*)
Heinstein, P. *et al., J.C.S. Perkin 1*, 1996, 845-851 (*ms*)
Strobel, G. *et al., Microbiology (Reading, U.K.)*, 1996, **142**, 435-440 (*Taxol®, isol, biosynth*)
Pat. Coop. Treaty (WIPO), 1996, (*(Biophysica Foundation)*)96 38 138; *CA*, **126**, 113164v (*paclitaxel ceribate, synth*)
Zamir, L.O. *et al., Phytochemistry*, 1996, **41**, 803-805 (*Taxcultine*)
Gao, Q. *et al., Tetrahedron*, 1996, **52**, 2291-2300 (*cryst struct*)
Chen, Z. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 1996, **38**, 323-327; *CA*, **126**, 169062c (*7-Epitaxol B*)
Rao, K.V. *et al., J. Het. Chem.*, 1997, **34**, 675-680 (*synth*)
Wender, P.A. *et al., J.A.C.S.*, 1997, **119**, 2757-2758 (*synth*)
Gennari, C. *et al., J.O.C.*, 1997, **62**, 4746-4755 (*synth*)
Hezari, M. *et al., Planta Med.*, 1997, **63**, 291-295 (*biosynth, rev*)
Li, C. *et al., Cancer Res.*, 1998, **58**, 2404-2409 (*paclitaxel poliglumex*)
Shiina, I. *et al., Chem. Lett.*, 1998, 3-4 (*synth*)
Eisenhauer, E.A. *et al., Drugs*, 1998, **55**, 5-30 (*pharmacol, rev*)
Gabetta, B. *et al., Phytochemistry*, 1998, **47**, 1325-1329 (*N-Debenzoyl-N-butanoyl-10-deacetylpaclitaxel, N-Debenzoyl-N-propanoyl-10-deacetylpaclitaxel, 2-Debenzoyl-2-tigloylpaclitaxel*)
Morita, H. *et al., Phytochemistry*, 1998, **48**, 857-862 (*Taxuspinananes I and J*)
Morita, H. *et al., Planta Med.*, 1998, **64**, 183-186 (*Taxuspinanane E*)
Cao, X. *et al., Prep. Biochem. Biotechnol.*, 1998, **28**, 79-87 (*10-Deacetyl-7-epitaxol, Cephalomannine, isol*)
Xu, X. *et al., Zhongcaoyao*, 1998, **29**, 361-364; *CA*, **129**, 257658u (*Taxoline*)
Mukaiyama, T. *et al., Chem. Eur. J.*, 1999, **5**, 121-161 (*Taxol, synth, rev*)
Li, C. *et al., Clin. Cancer Res.*, 1999, **5**, 891-897; 2000, **6**, 2824-2834 (*paclitaxel poliglumex*)
Ranson, M. *et al., Expert Opin. Invest. Drugs*, 1999, **8**, 837-848
Das, B. *et al., Indian J. Chem., Sect. B*, 1999, **38**, 1018-1024 (*rev*)
Gabetta, B. *et al., J. Nat. Prod.*, 1999, **62**, 219-223 (*N-debenzoyl-N-cinnamoyl, N-debenzoyl-N-2-methylbutanoyl, 2-debenzoyl-2-tigloyl*)
Baloglu, E. *et al., J. Nat. Prod.*, 1999, **62**, 1068-1071 (*synth*)
Gunatilaka, A.A.L. *et al., J.O.C.*, 1999, **64**, 2694-2703 (*BMS 188797, synth, pmr, cmr*)
Martindale, The Extra Pharmacopoeia, 32nd edn., Pharmaceutical Press, 1999, 556
Zhang, J. *et al., J. Nat. Prod.*, 2000, **63**, 929-933 (*2′-Acetyl-7-epitaxol*)
Snyder, J.P. *et al., J.A.C.S.*, 2000, **122**, 724-725 (*pmr, conformn*)
Kusama, H. *et al., J.A.C.S.*, 2000, **122**, 3811-3820 (*synth*)
Zhang, J. *et al., Phytochemistry*, 2000, **54**, 221-230 (*N-Acetyl-N-debenzoyltaxol, 2′-Acetyl-7-epicephalomannine*)
Mandai, T. *et al., Tet. Lett.*, 2000, **41**, 243-244 (*synth*)
Seligson, A.L. *et al., Anti-Cancer Drugs*, 2001, **12**, 305-313 (*paclitaxel ceribate, synth, pharmacol*)
Niethammer, A. *et al., Bioconjug. Chem.*, 2001, **12**, 414-420 (*paclitaxel ceribate*)
Damascelli, B. *et al., Cancer (Philadelphia)*, 2001, **92**, 2592-2602 (*ABI 007*)
Bradley, M.O. *et al., Clin. Cancer Res.*, 2001, **7**, 3229-3238; 2003, **9**, 151-159; 3589-3597 (*DHA paclitaxel, pharmacol*)
Richard, A. *et al., Crit. Rev. Biotechnol.*, 2001, **21**, 219-232 (*paclitaxel poligumex, rev*)
Alstadt, T.J. *et al., J. Med. Chem.*, 2001, **44**, 4577-4583 (*BMS 184476, synth, pmr, ir, pharmacol*)
Zhang, J. *et al., J. Nat. Prod.*, 2001, **64**, 450-455 (*7-Acetyl-10-deacetyltaxol, 2′-Acetyl-7-epicephalomannine, 10-Deacetyl-10-oxo-7-epicephalomannine, 2′-Acetyl-7-epitaxol*)
Walker, K. *et al., Phytochemistry*, 2001, **58**, 1-7 (*biosynth, rev*)
Li, S. *et al., Phytochemistry*, 2001, **58**, 369-374 (*7-Xylosyltaxol D*)
Ibrahim, N.K. *et al., Clin. Cancer Res.*, 2002, **8**, 1038-1044 (*ABI 007, clinical trial*)
Plummer, R. *et al., Clin. Cancer Res.*, 2002, **8**, 2788-2797 (*BMS 184476, pharmacol*)
Singer, J.W. *et al., Adv. Exp. Med. Biol.*, 2003, **519**, 81-99 (*CT 2103, rev*)

Advani, R. *et al., Clin. Cancer Res.*, 2003, **9**, 5187-5194 (*BMS 188797, pharmacol*)
Ojima, I. *et al., Curr. Opin. Invest. Drugs*, 2003, **4**, 732-736 (*BMS 184476, rev*)
Drugs RD, 2003, **4**, 303-305 (*ABI 007, rev*)
Li, S.-H. *et al., Tetrahedron*, 2003, **59**, 37-45 (*7-Xylosyl-N-methyltaxol C*)
Clarke's Analysis of Drugs and Poisons, 3rd edn., (eds. Moffat, A.C. *et al*), Pharmaceutical Press, 2004, 1387 (*props, uv, ir, hplc*)
Simpson, D. *et al., Drugs*, 2004, **64**, 1839-1847 (*rev*)
Oberlies, N.H. *et al., J. Nat. Prod.*, 2004, **67**, 129-135 (*rev*)
Horowitz, S.B. *et al., J. Nat. Prod.*, 2004, **67**, 136-138 (*rev*)
Man, M. *et al., IDrugs*, 2005, **8**, 739-754 (*paclitaxel poliglumex, rev*)
Doi, T. *et al., Chem. Asian J.*, 2006, **1**, 370-383 (*synth*)
Robinson, D.M. *et al., Drugs*, 2006, **66**, 941-948 (*rev*)
Ho, Y. *et al., Magn. Reson. Chem.*, 2006, **44**, 581-585 (*solid-state nmr*)
Boddy, A.V. *et al., Drugs of the Future*, 2007, **32**, 776 (*paclitaxel poliglumex*)
Lin, N.U. *et al., Invest. New Drugs*, 2007, **25**, 369-375 (*paclitaxel poliglumex, pharmacol*)
Kingston, D.G.I. *et al., Phytochemistry*, 2007, **68**, 1844-1854 (*rev*)
Hu, Z. *et al., Chin. Chem. Lett.*, 2008, **19**, 130-132 (*synth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, TAH775

Tazettine T-53

Ungernine. Sekisanine. Sekisanoline
[507-79-9]
[28405-99-4 ((±)-form)]



Absolute Configuration

$C_{18}H_{21}NO_5$ 331.368
Isol. from *Narcissus tazetta*, *Hymenocallis expansa*, *Hippeastrum* spp., *Narcissus confusus* and a very large number of other spp. in the Amaryllidaceae. Weak hypotensive agent. Mp 210-211°. $[\alpha]_D^{16}$ +150 ($CHCl_3$). Has been shown to be an artifact produced by base-catalysed re-arr. of Pretazettine, P-626 in two cases studied, and is probably an artifact in all cases.

▶ LD_{50} (dog, ivn) 71 mg/kg.

Picrate: Mp 205-208°.

Ac: Mp 125-126.5°.

O-*De-Me:* ***Tazettinol***. O-*Demethyltazettine*
[560-31-6]
$C_{17}H_{19}NO_5$ 317.341
Alkaloid from bulbs of *Hippeastrum equestre*. Mp 179-181°. $[\alpha]_D^{22}$ +85 (c, 1 in MeOH).

O-*De-Me,* O^6-*Me:* ***Zeylamine***. *6*-O-*Methyltazettinol*
[110815-91-3]
Alkaloid from the rhizomes of *Crinum zeylanicum*. Cryst. (Me_2CO). Mp 138-140°. The stereochem. may not be certain.

O-*De-Me, 3*-O-*(3-hydroxybutanoyl):* ***3-O-(3-Hydroxybutanoyl)tazettinol***
[343983-03-9]
$C_{21}H_{25}NO_7$ 403.431
Alkaloid from *Galanthus plicatus* ssp. *byzantinus*. Amorph. solid. $[\alpha]_D$ +63.5 (c, 0.22 in MeOH). λ_{max} 215 (log ϵ 4.12); 234 (log ϵ 3.87); 292 (log ϵ 3.6) (MeOH).

1,2-Dihydro, Me ether: ***Ungvedine***. *1,2-Dihydro*-O-*methyltazettine, 9CI*
[73276-40-1]
$C_{19}H_{25}NO_5$ 347.41
Alkaloid from *Ungernia vvedenskyi* (Amaryllidaceae). Mp 148-150°. $[\alpha]_D$ +12.5 (c, 0.528 in $CHCl_3$).

3-Epimer: ***Criwelline***. *3-Epitazettine*
[545-16-4]
[60944-17-4 ((±)-form)]
$C_{18}H_{21}NO_5$ 331.368
Alkaloid from *Crinum powellii*, *Crinum powellii* var. *album*, *Crinum macrantherum*, *Crinum erubescens* and *Galanthus nivalis* (Amaryllidaceae). Cryst. (Me_2CO). Mp 214° (205-206°). $[\alpha]_D^{25}$ +220 (c, 0.15 in $CHCl_3$). $[\alpha]_D^{23}$ +288 (c, 1.0 in $CHCl_3$).

3-Epimer, hydroiodide:
Prisms (H_2O). Mp 228-229° dec.

3-Epimer, picrate: Mp 233°.

3-Epimer, Me ether: Mp 127-128°. $[\alpha]_D^{25}$ +214 (EtOH).

3-Epimer, O-*de-Me:* ***Isotazettinol***. O-*Demethylcriwelline*
[465-63-4]
$C_{17}H_{19}NO_5$ 317.341
Alkaloid from *Galanthus gracilis*. Cryst. (Me_2CO). Mp 204°. $[\alpha]_D$ +194 (c, 0.14 in MeOH) (natural). $[\alpha]_D$ +261.7 (c, 0.5 in EtOH) (synthetic). λ_{max} 236 (sh) (log ϵ 4.07); 290 (log ϵ 3.65) (MeOH).

Boit, H.G. *et al., Chem. Ber.*, 1956, **89**, 2093 (*Criwelline, isol*)
Ikeda, T. *et al., J.C.S.*, 1956, 4749-4761 (*struct*)
Fales, M.M. *et al., Chem. Ind. (London)*, 1959, 1415 (*Criwelline, struct*)
Jeffs, P.W. *et al., J.C.S.*, 1960, 1090-1094 (*Criwelline, struct*)
Duffield, A.M. *et al., J.A.C.S.*, 1965, **87**, 4902-4912 (*ms*)
Haugwitz, R.D. *et al., J.C.S.*, 1965, 2001-2009 (*pmr*)
Highet, R.J. *et al., Tet. Lett.*, 1966, 4099-4101 (*config*)
Sato, T. *et al., J.C.S.(B)*, 1971, 1070-1073 (*cryst struct*)
Hendrickson, J.B. *et al., J.A.C.S.*, 1974, **96**, 7781-7789 (*synth*)
Isobe, K. *et al., Tet. Lett.*, 1976, 2331-2334 (*Criwelline, synth*)
Kadyrov, K.A. *et al., Khim. Prir. Soedin.*, 1979, **15**, 585-586; *Chem. Nat. Compd. (Engl. Transl.)*, 1979, **15**, 513-514 (*Ungvedine*)
Danishefsky, S. *et al., J.A.C.S.*, 1982, **104**, 7591-7599 (*synth, ir, pmr*)
Suffness, M. *et al., Alkaloids (Academic Press)*, 1985, **25**, 203 (*occur*)
Döpke, W. *et al., Z. Chem.*, 1986, **26**, 438 (*Zeylamine*)
Abelman, M.M. *et al., J.A.C.S.*, 1990, **112**, 6959-6964 (*synth*)
Wagner, J. *et al., Tetrahedron*, 1996, **52**, 6591-6600 (*cd*)
Ide, S. *et al., Kristallografiya*, 1997, **42**, 88-92 (*cryst struct*)
Linden, A. *et al., Acta Cryst. C*, 1998, **54**, 1653-1659 (*Tazzettine, Isotazzetinol, cryst struct*)
Rigby, J.H. *et al., J.A.C.S.*, 1998, **120**, 3664-3670 (*synth*)
Pham, L.H. *et al., Phytochemistry*, 1999, **51**, 327-332 (*pmr, cmr, Tazettinol*)
Unver, N. *et al., Planta Med.*, 1999, **65**, 347-350 (*Isotazzetinol*)
Baldwin, S.W. *et al., Org. Lett.*, 2000, **2**, 99-102 (*synth*)
Unver, N. *et al., Heterocycles*, 2001, **55**, 641-652 (*3-Hydroxybutanoyltazettinol*)
Zhang, F.-M. *et al., Tetrahedron*, 2006, **62**, 9446-9455 (*synth*)

Tecleanine† T-54

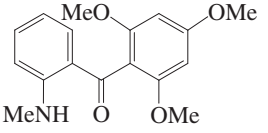
$C_{28}H_{36}N_2O_4$ 464.603
Struct. unknown. Alkaloid from the bark of *Teclea natalensis* (Rutaceae). Needles (C_6H_6). Mp 204-205°. $[\alpha]_D^{24}$ -245 (c, 0.45 in EtOH).

Hydrochloride (1:2):
Prisms (EtOH aq.). Mp 300° dec.

Wright, W.G. *et al., J.C.S.(C)*, 1967, 2262

Tecleanone T-55

2-[(Methylamino)phenyl](2,4,6-trimethoxyphenyl)methanone, 9CI. 2′-Methylamino-2,4,6-trimethoxybenzophenone
[55950-37-3]



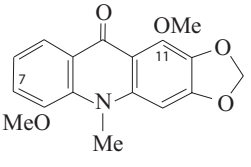
$C_{17}H_{19}NO_4$ 301.341
Alkaloid from *Teclea grandifolia*, *Teclea verdoorniana*, *Diphasia klaineana* and *Oricia suaveolens* (Rutaceae). Yellow solid. Mp 190-191°. Structurally related to an intermed. in the biosynth. of acridone alkaloids.

N-*Me:* Mp 128°.

Casey, A. *et al., Tet. Lett.*, 1975, 401 (*ir, pmr, ms, isol, struct*)
Waterman, P. *et al., Phytochemistry*, 1975, **14**, 2092 (*isol, uv, ir, pmr, ms*)

Tecleanthine T-56

6,11-Dimethoxy-5-methyl-1,3-dioxo[4,5-b]acridin-10(5H)-one, 9CI. 1,5-Dimethoxy-10-methyl-2,3-methylenedioxyacridone
[24966-05-0]



$C_{17}H_{15}NO_5$ 313.309
Alkaloid from the bark of *Teclea natalensis* and other *Teclea* spp. (Rutaceae). Yellow prisms (EtOH). Mp 158°. λ_{max} 235 ; 268 ; 401 (MeOH) (Berdy). λ_{max} 236 (ε 17000); 269 (ε 55000); 401 (ε 11200) (EtOH) (Berdy).

Picrate:
Needles (EtOH). Mp 171°.

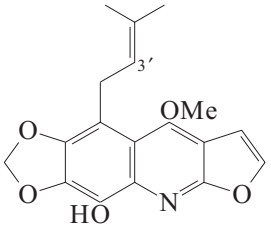
O[11]-De-Me: 1-Hydroxy-5-methoxy-10-methyl-2,3-methylenedioxyacridone. O-*Nortecleanthine*
Orange plates (EtOH). Mp 207°.

7-Methoxy: ***1,5,6-Trimethoxy-10-methyl-2,3-methylenedioxyacridone****. 6,7,11-Trimethoxy-5-methyl-1,3-dioxolo[4,5-b]acridin-10(5H)-one, 9CI*
[52911-51-0]
$C_{18}H_{17}NO_6$ 343.335
Alkaloid from *Teclea boiviniana* (Rutaceae). Yellow cryst. ($CHCl_3$). Mp 168°. λ_{max} 221 (ε 14000); 273 (ε 55000); 323 (ε 5600); 392 (ε 7600) (EtOH) (Berdy).

Pegel, K.H. *et al., J.C.S.(C)*, 1969, 2327-2329 (*isol, uv, ir, pmr, ms, struct*)
Ramachandran, V.N. *et al., Indian J. Chem.*, 1972, **10**, 14-15 (*synth, uv, ir, pmr*)
Laing, M. *et al., J. S. Afr. Chem. Inst.*, 1974, **27**, 162-163; *CA*, **82**, 148605q (*cryst struct*)
Vaquette, J. *et al., Plant. Med. Phytother.*, 1974, **8**, 57-62 (*7-methoxy, isol, struct*)
Rasoanaivo, P *et al., Fitoterapia*, 1999, **70**, 625-627 (*isol, cmr*)

Tecleaverdoornine T-57

9-Methoxy-10-(3-methyl-2-butenyl)-1,3-dioxolo[4,5-g]furo[2,3-b]quinolin-4-ol, 9CI. 8-Hydroxy-6,7-methylenedioxy-5-prenyldictamnine
[65847-03-2]



$C_{18}H_{17}NO_5$ 327.336
Alkaloid from the stem bark of *Teclea verdoorniana* (Rutaceae). Long needles (Me_2CO). Mp 191°.

Ac:
Cryst. (MeOH). Mp 212°.

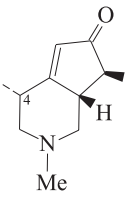
Me ether:
Cryst. (Me_2CO). Mp 139-140°.

3′,4′-Dihydro, 4′-hydroxy: ***Tecleaverdine***
[82202-84-4]
$C_{18}H_{19}NO_6$ 345.351
Alkaloid from stem bark of *Teclea verdoorniana* (Rutaceae). Cryst. (MeOH). Mp 218-219°.

Ayafor, J.F. *et al., J.C.S. Perkin 1*, 1982, 909 (*isol, uv, ir, pmr, ms, struct*)

Tecomanine T-58

Tecomine†
[6878-83-7]



Absolute configuration

$C_{11}H_{17}NO$ 179.261
Major alkaloid from *Tecoma stans* and *Tecoma fulva* (Bignoniaceae). Hypoglycaemic agent. *Tecoma* extracts have been used in Mexico for control of diabetes. $Bp_{0.1}$ 125°. $[\alpha]_D^{24}$ -175 (c, 1.17 in $CHCl_3$). Log P 0.49 (calc).

▶ WX8575000

Picrate: Mp 179.5-180.5°.

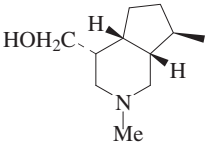
2,4-Dinitrophenylhydrazone: Mp 260°.

4-Hydroxy: ***4-Hydroxytecomanine***
$C_{11}H_{17}NO_2$ 195.261
Alkaloid from fruits of *Tecoma stans* (Bignoniaceae). Oil.

Dickinson, E.M. *et al., Tetrahedron*, 1969, **25**, 1523 (*ir, uv, pmr, isol, struct*)
Jones, G. *et al., Chem. Comm.*, 1971, 994 (*cryst struct*)
Berg, W. *et al., Pharmazie*, 1977, **32**, 41 (*ms*)
Imanishi, T. *et al., Chem. Pharm. Bull.*, 1983, **31**, 1243 (*synth*)
Miyashita, M. *et al., Chem. Pharm. Bull.*, 1992, **40**, 1614 (*synth*)
Lins, A.P. *et al., Phytochemistry*, 1993, **34**, 876-878 (*4-Hydroxytecomanine*)
Kemp, M.I. *et al., Synthesis*, 1998, 552-556 (*synth*)
Ockey, D.A *et al., Tetrahedron*, 2003, **59**, 5377-5381 (*synth*)

Tecostanine T-59

[708-18-9]



Absolute Configuration

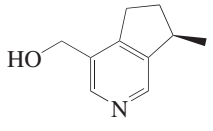
$C_{11}H_{21}NO$ 183.293
Alkaloid from the leaves of *Tecoma stans* (Bignoniaceae). Mp 85°. $[\alpha]_D^{20}$ 0 (MeOH). $[\alpha]_D$ +6 (c, 2 in $CHCl_3$).

▶ WX8690000

Methiodide:
Cryst. (MeOH/Et_2O). Mp 243-246°.

Hammouda, Y. *et al., Bull. Soc. Chim. Fr.*, 1963, 2802 (*uv, ir, pmr, struct*)
Costantino, L. *et al., Pharmazie*, 2003, **58**, 140-142 (*isol, pmr, cmr, cryst struct*)

Tecostidine T-60



(*R*)-*form*

$C_{10}H_{13}NO$ 163.219

(R)-form
Alkaloid from the upper parts of *Pedicularis rhinantoides* (Scrophulariaceae). Viscous oil. Bp_1 150° (bath). $[\alpha]_D^{20}$ +5.9 (c, 0.508 in EtOH). $[\alpha]_D^{21}$ +3 (c, 1.1 in $CHCl_3$) (synthetic).

Picrate:
Yellow needles (EtOH/Et_2O). Mp 151-152°.

(S)-form
Alkaloid from the leaves of *Tecoma stans* (Bignoniaceae). Viscous liq. $[\alpha]_D^{22}$ -4 (c, 1.221 in $CHCl_3$).

Picrate:
Cryst. (EtOH/Et_2O). Mp 152-153°.

Me ether: ***Valerianine***
[30634-66-3]
[30769-38-1]
Alkaloid from roots of *Valeriana officinalis* (valerian) (Valerianaceae). Mp 134° (as hydrochloride). $[\alpha]_D^{20}$ -10.5 (c, 0.37 in MeOH) (hydrochloride).

Hammouda, Y. *et al., Bull. Soc. Chim. Fr.*, 1963, 2901 (*uv, ir, pmr, struct*)
Cavill, G.W.K. *et al., Aust. J. Chem.*, 1967, **20**, 349 (*synth, uv, ir, pmr*)
Abdusamatov, A. *et al., Khim. Prir. Soedin.*, 1969, **5**, 334; *Chem. Nat. Compd. (Engl. Transl.)*, 1969, **5**, 285 (*isol*)
Franck, B. *et al., Angew. Chem., Int. Ed.*, 1970, **9**, 891 (*Valerianine*)
Ranarivelo, Y. *et al., Heterocycles*, 1990, **31**, 1727-1731 (*(S)-form, synth*)
Robert, N. *et al., Tetrahedron*, 2007, **63**, 3702-3706 (*synth*)

Tejeramycin T-61

[111643-99-3]

Nucleoside-peptide antibiotic complex. Struct. unknown. Prod. by *Streptomyces griseus* ATCC39208. Active against gram-positive and -negative bacteria.

Tejeramycin A [111644-00-9]
Powder. Sol. H_2O; poorly sol. butanol, hexane.

Tejeramycin B [111644-01-0]
Powder. Sol. H_2O; poorly sol. butanol, hexane.

Tejeramycin C [111644-02-1]
Powder. Sol. H_2O; poorly sol. butanol, hexane.

Tejeramycin D [111644-03-2]
Powder. Sol. H_2O; poorly sol. butanol, hexane.

Tejeramycin E [111644-05-4]
Powder. Sol. H_2O; poorly sol. butanol, hexane.

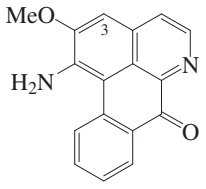
Tejeramycin F [111644-06-5]
[111644-07-6 , 111644-08-7]
Powder. Sol. H_2O; poorly sol. butanol, hexane. λ_{max} 215 ; 258 (H_2O). λ_{max} 215 (E1%/1cm 340); 258 (E1%/1cm 206) (H_2O) (Berdy).

Tejeramycin G [111644-09-8]
Powder. Sol. H_2O; poorly sol. butanol, hexane. λ_{max} 215 (E1%/1cm 354); 258

(E1%/1cm 200) (H_2O) (Berdy).
U.S. Pat., 1987, 4 656 036; *CA*, **107**, 234820x

Telazoline T-62

*1-Amino-2-methoxy-7*H*-dibenzo[*de,g*]-quinolin-7-one, 9CI*
[78432-75-4]



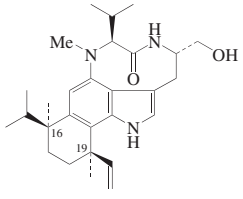
$C_{17}H_{12}N_2O_2$ 276.294
Struct. revised in 2003. Unusual aminoaporphine alkaloids. Alkaloid from the woody stems of *Telitoxicum peruvianum* (Menispermaceae). Reddish-brown prisms ($MeOH/CH_2Cl_2$). Mp 240-243°.

3-Methoxy: ***Teladiazoline****. 1-Amino-2,3-dimethoxy-7*H*-dibenzo[*de,g*]quinolin-7-one*
[119763-88-1]
$C_{18}H_{14}N_2O_3$ 306.32
Alkaloid from the woody stems of *Telitoxicum glaziovii* (Menispermaceae). Reddish-orange needles ($CHCl_3$/MeOH). Mp 197-199° dec. Struct. revised in 2003.

Menachery, M.D. *et al., J. Nat. Prod.*, 1981, **44**, 320; 1988, **51**, 1283 (*Telazoline, Teladiazoline*)
Killmer, L. *et al., J. Nat. Prod.*, 2003, **66**, 115-118 (*pmr, cmr, ms, struct*)

Teleocidin B_1 T-63

*De-*O*-methylolivoretin B*
[95044-71-6]



Absolute Configuration

$C_{28}H_{41}N_3O_2$ 451.651
Prod. by *Streptomyces mediocidicus*. Nematocide and acaricide. Prisms (diisopropyl ether). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 153-155°. $[\alpha]_D$ -132 (MeOH). Closely related to Lyngbyatoxin A, L-367. λ_{max} 233 (ϵ 34700); 287 (ϵ 9770); 298 (sh) (ϵ 8130) (MeOH) (Derep).
▶ Tumour promotor. Skin irritant.

*14-Ac: 14-*O*-Acetylteleocidin B_3*
$C_{30}H_{43}N_3O_3$ 493.688
Prod. by *Actinomyces* sp. Stamm K 17/7. Yellow oil. $[\alpha]_D^{20}$ -76 (c, 0.1 in MeOH).

N-*De-Me:* **N-*Demethylteleocidin B_1***
$C_{27}H_{39}N_3O_2$ 437.624
Prod. by *Streptomyces mediocidicus*. Gum.

Me ether: ***Olivoretin B****. 16-Epiolivoretin A*
[90599-27-2]
$C_{29}H_{43}N_3O_2$ 465.678
Prod. by *Streptoverticillium olivoreticuli*. Needles (MeOH). Sol. MeOH, $CHCl_3$. Mp 277.5-279°. $[\alpha]_D^{32}$ -298.4 (c, 0.35 in $CHCl_3$). λ_{max} 233 (ϵ 34700); 287 (ϵ 9770); 298 (sh) (ϵ 8130) (MeOH) (Derep).
▶ Strong vesicant, poss. tumour promotor.

16-Epimer: ***Teleocidin B_4****. Olivoretin D*
[11032-05-6]
$C_{28}H_{41}N_3O_2$ 451.651
Prod. by *Streptomyces mediocidicus* and *Streptoverticillium olivoreticuli*. Prisms (diisopropyl ether). Sol. MeOH, Et_2O; fairly sol. hexane; poorly sol. H_2O, bases, acids. Mp 230-232.5°. λ_{max} 233 (ϵ 34700); 287 (ϵ 9770); 298 (sh) (ϵ 8130) (MeOH) (Derep).
▶ Very toxic by intraperitoneal and intravenous routes. LD_{50} (mus, ivn) 0.22 mg/kg. WY1982000

16-Epimer, N*-de-Me:* **N-*Demethylteleocidin B_4***
[110200-23-2]
$C_{27}H_{39}N_3O_2$ 437.624
Prod. by *Streptoverticillium mediocidicus, Streptoverticillium blastmyceticum* and *Streptoverticillium olivoreticuli*. Tumour promotor. Gummy solid.

16-Epimer, Me ether: ***Olivoretin A***
[90297-52-2]
$C_{29}H_{43}N_3O_2$ 465.678
Prod. by *Streptoverticillium olivoreticuli* and *Streptoverticillium blastmyceticus*. Plates (MeOH). Sol. MeOH, $CHCl_3$; poorly sol. cyclohexane. Mp 251-253°. $[\alpha]_D$ -314.9 ($CHCl_3$). λ_{max} 233 (ϵ 34700); 287 (ϵ 9770); 298 (sh) (ϵ 8130) (MeOH) (Derep).
▶ Strong vesicant, tumour promotor.

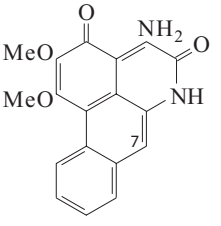
19-Epimer: ***Teleocidin B_3***
[95189-06-3]
$C_{28}H_{41}N_3O_2$ 451.651
Prod. by *Streptoverticillium mediocidicus*. Prisms (diisopropyl ether). Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. Mp 160-162°. $[\alpha]_D^{20}$ -163 (c, 0.1 in MeOH). λ_{max} 233 (ϵ 34700); 287 (ϵ 9770); 298 (sh) (ϵ 8130) (MeOH) (Derep).

16,19-Diepimer: ***Teleocidin B_2***
[95189-05-2]
$C_{28}H_{41}N_3O_2$ 451.651
Prod. by *Streptoverticillium mediocidicus*. Prisms (Me_2CO). Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. Mp 203-204°. λ_{max} 233 (ϵ 34700); 287 (ϵ 9770); 298 (sh) (ϵ 8130) (MeOH) (Derep).

Nakata, H. *et al., Tet. Lett.*, 1966, 2515 (*dihydro, synth*)
Sakabe, N. *et al., Tet. Lett.*, 1966, 2523 (*cryst struct, dihydro*)
Sakai, S. *et al., Chem. Pharm. Bull.*, 1984, **32**, 354 (*Olivoretin A, Teleocidin B_4*)
Hitotsuyanagi, Y. *et al., Chem. Pharm. Bull.*, 1984, **32**, 3774; 4233 (*Olivoretin B, Teleocidins B_1-B_4*)
Irie, K. *et al., Agric. Biol. Chem.*, 1985, **49**, 221; 1988, **52**, 3193 (*isol, deriv*)
Sakai, S. *et al., Chem. Pharm. Bull.*, 1986, **34**, 4883 (*De-*N*-methylteleocidin B_4*)
Nakatsuka, S. *et al., Tet. Lett.*, 1987, **28**, 3671 (*synth*)
Muratake, H. *et al., Tet. Lett.*, 1988, **29**, 6267 (*synth*)
Okabe, K. *et al., Chem. Pharm. Bull.*, 1989, **37**, 563 (*synth*)
Irie, K. *et al., Tetrahedron*, 1990, **46**, 2773 (*biosynth*)
Muratake, H. *et al., Tetrahedron*, 1991, **47**, 8535; 8545; 8559 (*synth*)
Ströch, K. *et al., Dissertation*, Univ. of Göttingen, 2003, (*14-O-Acetylteleocidein B_3*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, TAK750

Telikovinone T-64

*4-Amino-1,2-dimethoxy-3*H*-dibenzo[*de,g*]quinoline-3,5(6*H*)-dione, 9CI*
[166196-18-5]



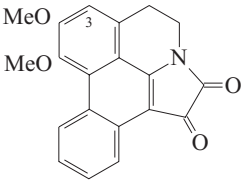
$C_{18}H_{14}N_2O_4$ 322.32
Unusual 4-aminoaporphine alkaloids. Alkaloid from woody stems of *Telitoxicum krukovii* (Menispermaceae). Blood red needles ($MeOH/CHCl_3$). Mp 275-277°. Artifact.

7-Methoxy: ***Telitoxinone***
[174232-33-8]
$C_{19}H_{16}N_2O_5$ 352.346
Alkaloid from *Telitoxicum peruvianum*. Ruby-red needles (CH_2Cl_2/MeOH). Mp 247-248° dec.

Menachery, M.D. *et al., Heterocycles*, 1995, **41**, 1425 (*isol, uv, ir, pmr, cmr, ms, struct*)
Menachery, M.D. *et al., J. Nat. Prod.*, 1995, **58**, 1945 (*Telitoxinone*)

Telisatin A T-65

[64938-92-7]



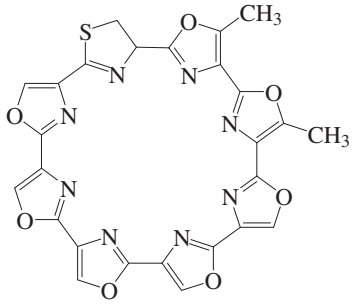
$C_{20}H_{15}NO_4$ 333.343
Modified aporphine. Alkaloid from *Telitoxicum peruvianum*. Also obt. by reaction of Dehydronuciferine, D-164 with oxalyl chloride. Wine-red cryst. (CH_2Cl_2/MeOH). Mp 238-239° dec. (233-234°).

3-Methoxy: ***Telisatin B***
[174232-32-7]
$C_{21}H_{17}NO_5$ 363.369
From *Telitoxicum peruvianum*. Reddish-purple needles (CH_2Cl_2/MeOH). Mp 221-222°.

Saá, J.M. *et al., J.O.C.*, 1978, **43**, 1096 (*synth*)
Menachery, M.D. *et al., J. Nat. Prod.*, 1995, **58**, 1945 (*isol, uv, ir, pmr, cmr, ms*)

Telomestatin T-66

GM 95. Antibiotic GM 95



$C_{26}H_{14}N_8O_7S$ 582.512

Prod. by *Streptomyces anulatus* 3533-SV4. Antitumour agent. Specific telomerase inhibitor. Yellowish powder. Mp 134-143° dec. $[\alpha]_D$ -9.4 (c, 0.13 in MeOH).

Pat. Coop. Treaty (WIPO), 2000, 24 747; *CA*, **132**, 307353a (*GM 95*)

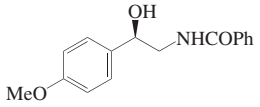
Shin-ya, K. *et al., J.A.C.S.*, 2001, **123**, 1262-1263

Doi, T. *et al., Org. Lett.*, 2006, **8**, 4165-4167 (*synth*)

Tembamide T-67

N-*[2-Hydroxy-2-(4-methoxyphenyl)ethyl]benzamide, 9CI*. N-*Benzoyl-2-hydroxy-2-(4-methoxyphenyl)ethylamine*

[37791-56-3]



(*R*)-*form*

$C_{16}H_{17}NO_3$ 271.315

(*R*)-*form* [15298-30-3]

Alkaloid from the stem bark of *Zanthoxylum hyemale*. Cryst. (EtOH). Mp 156-157° (145-147°). $[\alpha]_D^{25}$ -59.4 (c, 0.57 in $CHCl_3$). $[\alpha]_D^{21}$ +17.9 (c, 0.5 in EtOH).

Me ether:

$C_{17}H_{19}NO_3$ 285.342

Alkaloid from the stem bark of *Zanthoxylum hyemale*. Needles. Mp 88-89°. $[\alpha]_D^{25}$ +17.7 (c, 0.1 in $CHCl_3$).

(*S*)-*form* [15779-24-5]

Synthetic. Cryst. (EtOH). Mp 156-157°. $[\alpha]_D^{21}$ +55.8 (c, 0.5 in $CHCl_3$). $[\alpha]_D^{20}$ -18.5 (c, 0.5 in EtOH).

(±)-*form* [15298-28-9]

Alkaloid from the bark of *Fagara hyemalis, Zanthoxylum tingoassuiba, Zanthoxylum ocumarense, Zanthoxylum conspersipunctatum, Zanthoxylum inerme*, the root of *Aegle marmelos* (bael fruit), and the leaves and branchlets of *Clausena brevistyla* (Rutaceae). Cryst. (EtOH, EtOAc, C_6H_6, $CHCl_3$/petrol or CH_2Cl_2/EtOH). Mp 156-157° (147-149°).

Ac: ***Tembamide acetate***

[15298-31-4]

$C_{18}H_{19}NO_4$ 313.352

Alkaloid from aerial parts of *Piper guayranum* (Piperaceae). Needles (EtOAc or C_6H_6/petrol). Mp 159° (140-141°).

Me ether: **O-*Methyltembamide***

$C_{17}H_{19}NO_3$ 285.342

Alkaloid from the bark of *Zanthoxylum conspersipunctatum* (Rutaceae). Cryst. (C_6H_6/petrol). Mp 98-99°.

[50802-66-9]

Johns, S.R. *et al., Aust. J. Chem.*, 1967, **20**, 2795 (*isol, ir, pmr, ms*)

Albónico, S.M. *et al., J.C.S.(C)*, 1967, 1327 (*isol, uv, ir, pmr, synth*)

Johns, S.R. *et al., Aust. J. Chem.*, 1969, **22**, 2233 (*isol*)

Della Casa de Marcano, D. *et al., Phytochemistry*, 1972, **11**, 1531 (*isol*)

Krajniak, E.R. *et al., Aust. J. Chem.*, 1973, **26**, 687 (*isol, synth, deriv*)

Shoeb, A. *et al., Phytochemistry*, 1973, **12**, 2071 (*isol, uv, ir, pmr, ms*)

Bernhard, H.O. *et al., Helv. Chim. Acta*, 1978, **61**, 2269 (*isol, ir, pmr, ms*)

Patra, A. *et al., Org. Magn. Reson.*, 1981, **16**, 65 (*cmr*)

Maxwell, A. *et al., J. Nat. Prod.*, 1989, **52**, 411 (*isol, uv, ir, pmr, cmr, ms, struct, acetate*)

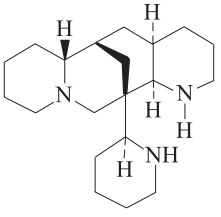
Brown, R.F.C. *et al., Tetrahedron: Asymmetry*, 1993, **4**, 205 (*synth*)

De Moura, N.F. *et al., Planta Med.*, 2002, **68**, 534-538 (*isol, cmr*)

Lee, D.-M. *et al., Tetrahedron: Asymmetry*, 2007, **18**, 2662-2667 (*R-form, synth, pmr, cmr, ms*)

Templetine T-68

[54274-32-7]



Absolute configuration

$C_{20}H_{35}N_3$ 317.517

Stereoisomeric with Ormosanine, O-115, Dasycarpine, D-85 and Piptanthine, P-476. Alkaloid from the leaves of *Templetonia retusa* (Fabaceae). Prisms (Me_2CO). Mp 120.5-122°. $[\alpha]_D$ -52 (c, 1 in EtOH).

Hydrochloride (1:3): [54274-33-8]

Cryst. + $2H_2O$. Mp 295-300°.

Perchlorate (1:3):

Prisms + $1H_2O$ (EtOH). Mp 280-282° dec.

Cannon, J.R. *et al., Aust. J. Chem.*, 1991, **44**, 509 (*isol, ir, ms, cryst struct, abs config*)

Tenacibactin B T-69

[934349-30-1]

$(H_3C)_2CHCH_2CON(OH)(CH_2)_5NHCOCH_2CH_2COOH$

$C_{14}H_{26}N_2O_5$ 302.37

Prod. by the marine-derived *Tenacibaculum* sp. A4K-17. Siderophore. Powder. λ_{max} 205 (log ϵ 2.72) (MeOH).

Me ester: ***Tenacibactin A***

[934490-72-9]

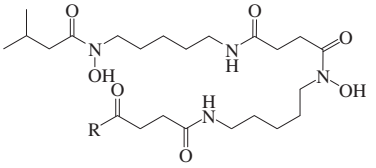
$C_{15}H_{28}N_2O_5$ 316.397

Prod. by *Tenacibaculum* sp. A4K-17. Siderophore. Powder. λ_{max} 205 (log ϵ 2.69) (MeOH).

Jang, J.-H. *et al., J. Nat. Prod.*, 2007, **70**, 563-566 (*isol, pmr, cmr*)

Tenacibactin C T-70

[934490-73-0]



R = OH

$C_{23}H_{42}N_4O_8$ 502.607

Prod. by the marine-derived *Tenacibaculum* sp. A4K-17. Siderophore. Powder. λ_{max} 214 (log ϵ 3.14) (MeOH).

Jang, J.-H. *et al., J. Nat. Prod.*, 2007, **70**, 563-566 (*isol, pmr, cmr*)

Tenacibactin D T-71

[934490-74-1]

As Tenacibactin C, T-70 with

R = $-N(OH)(CH_2)_5NH_2$

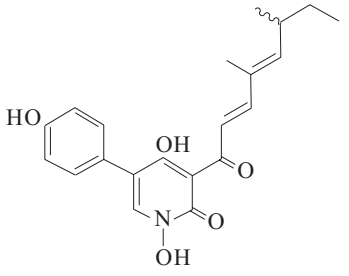
$C_{28}H_{54}N_6O_8$ 602.77

Prod. by the marine-derived *Tenacibaculum* sp. A4K-17. Siderophore. Powder. λ_{max} 212 (log ϵ 3.12) (MeOH).

Jang, J.-H. *et al., J. Nat. Prod.*, 2007, **70**, 563-566 (*isol, pmr, cmr*)

Tenellin T-72

3-(4,6-Dimethyl-1-oxo-2,4-octadienyl)-1,4-dihydroxy-5-(4-hydroxyphenyl)-2(1H)-pyridinone, 9CI



$C_{21}H_{23}NO_5$ 369.416

(-)-*form* [53823-15-7]

Pigment from *Beauveria tenella* and *Beauveria bassiana*. Greenish-yellow. $[\alpha]_D^{24}$ -44 (c, 1 in Me_2CO). Similar to Bassianin, B-28.

(±)-*form* [81844-67-9]

Elongated bright-yellow platelets (CCl_4/$CHCl_3$). Mp 174-176°.

El Basyouni, S.H. *et al., Can. J. Bot.*, 1968, **46**, 441 (*isol*)

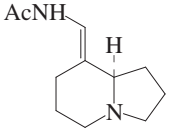
Leete, E. *et al., Tet. Lett.*, 1975, 4103 (*biosynth*)

Wat, C.K. *et al., Can. J. Chem.*, 1977, **55**, 4090 (*struct, ms, cmr*)

Williams, D.R. *et al., J.O.C.*, 1982, **47**, 2846 (*synth*)
Rigby, J.H. *et al., J.O.C.*, 1989, **54**, 5852 (*synth*)
Cox, R.J. *et al., J.C.S. Perkin 1*, 1991, 2537 (*biosynth*)
Buck, J. *et al., J.C.S. Perkin 1*, 1992, 67 (*synth*)
Moore, M.C. *et al., Tetrahedron*, 1998, **54**, 9195-9206 (*biosynth*)
Eley, K.L. *et al., ChemBioChem*, 2007, **8**, 289-297 (*biosynth*)

Tenuamine T-73

N-*[(Hexahydro-8(5*H*)-indolizinylidene)-methyl]*acetamide. *Norlusitanine*



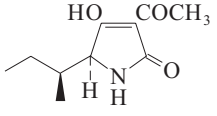
$C_{11}H_{18}N_2O$ 194.276

(*R*)-*form* [256379-00-7]
Alkaloid from *Maackia tenuifolia*. Needles ($CHCl_3$). Mp 136-138°. $[\alpha]_D^{23}$ -4.5 (c, 0.12 in EtOH).

Wang, Y.-H. *et al., Heterocycles*, 1999, **51**, 3001-3004

Tenuazonic acid T-74

*3-Acetyl-1,5-dihydro-4-hydroxy-5-(1-methylpropyl)-2*H*-pyrrol-2-one, 9CI. 3-Acetyl-5-*sec*-butyltetramic acid. Vivotoxin*
[610-88-8]



$C_{10}H_{15}NO_3$ 197.233
CA refers also to two tautomeric forms. Prod. by *Alternaria tenuis*, *Alternaria longipes*, *Alternaria linicola*, *Alternaria alternata*, *Alternaria tenuissima*, *Aspergillus* sp. F1404, *Pyricularia oryzae* T2, *Aspergillus tamarii*, *Penicillium* A374, and an imperfect fungus (order Sphaeropsidales). Causes rice leaf rot and brown spot disease of tobacco. Has insecticidal props. Tremorgenic toxin. Antineoplastic and antiviral agent. Inhibits MT1-matrix metalloproteinase. Viscous oil or pale brown cryst. Sol. MeOH, Et_2O, bases; poorly sol. H_2O, hexane. Mp 74-75.5°. $Bp_{0.035}$ 117°. $[\alpha]_{Hg}^{20}$ -136 (c, 0.2 in $CHCl_3$). λ_{max} 219 (ε 5600); 277 (ε 12700) (EtOH/HCl) (Derep). λ_{max} 240 (ε 11700); 279 (ε 14800) (dil. NaOH) (Derep). λ_{max} 240 (ε 10800); 280 (ε 13500) (H_2O pH 7) (Derep). λ_{max} 240 (ε 11480); 280 (ε 14450) (MeOH) (Berdy). λ_{max} 220 (ε 6500); 277 (ε 10000) (MeOH/HCl) (Berdy).
► LD_{50} (mus, orl) 225 mg/kg; LD_{50} (mus, ivn) 125 mg/kg ; LD_{50} (mus, ipr) 150 mg/kg; LD_{50} (mus, scu) 145 mg/kg. UY7425000

Na salt: Sodium tenuazonate. NSC 525816
[1013-59-8]
$[\alpha]_{Hg}$ -96.7 (c, 2 in MeOH).
► LD_{50} (rat, orl) 168 mg/kg. UY7525000

Compd. with N,N-*Dibenzylethylenediamine (1:1): Benzathine tenuazonate. NSC 82260*
[21327-82-2]
Antineoplastic.

2,4-Dinitrophenylhydrazone:
Needles (MeOH). Mp 199-200°.

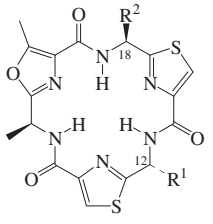
Semicarbazone:
Cryst. Mp 187-189°.

[75652-74-3 , 27778-66-1]

Rosett, T. *et al., Biochem. J.*, 1957, **67**, 390 (*isol*)
Stickings, C.E. *et al., Biochem. J.*, 1959, **72**, 332; 1961, **78**, 412 (*struct, biosynth*)
Harris, S.A. *et al., J. Med. Chem.*, 1965, **8**, 478 (*synth*)
Yuki, H. *et al., Chem. Pharm. Bull.*, 1967, **15**, 1107; 1120 (*synth, props*)
Mikami, Y. *et al., Agric. Biol. Chem.*, 1971, **35**, 611
Meronuck, R.A. *et al., Appl. Microbiol.*, 1972, **23**, 613 (*isol*)
Gatenbeck, S. *et al., Acta Chem. Scand.*, 1973, **27**, 1825 (*biosynth*)
Dippenaar, A. *et al., J. Cryst. Mol. Struct.*, 1977, **7**, 189 (*cryst struct*)
Kono, Y. *et al., Agric. Biol. Chem.*, 1986, **50**, 2401 (*isol, pmr, ms*)
Fujita, M. *et al., Tetrahedron*, 2001, **57**, 1229-1234 (*activity*)
Cole, R.J. *et al., Handbook of Toxic Fungal Metabolites*, Academic Press, 1981, 488
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, ADC250; VTA750

Tenuecyclamide A T-75

[213539-46-9 , 213539-45-8]



Absolute Configuration

$R^1 = R^2 = CH_3$

$C_{19}H_{20}N_6O_4S_2$ 460.537
Alkaloidal peptide from *Nostoc spongiaeforme* var. *tenue*. Amorph. solid. $[\alpha]_D^{25}$ -8.8 (c, 2.5 in MeOH). λ_{max} 243 (ε 24500) (MeOH).

12-Epimer: ***Tenuecyclamide B***
$C_{19}H_{20}N_6O_4S_2$ 460.537
Alkaloidal peptide from *Nostoc spongiaeforme* var. *tenue*. Glassy solid. $[\alpha]_D^{25}$ -36 (c, 0.5 in MeOH). CAS no. incorrectly assigned by CA. λ_{max} 244 (ε 16500) (MeOH).

Banker, R. *et al., J. Nat. Prod.*, 1998, **61**, 1248-1251 (*isol, uv, ir, pmr, cmr, ms*)
You, S.-L. *et al., Org. Lett.*, 2004, **6**, 2627-2630 (*synth, abs config*)

Tenuecyclamide C T-76

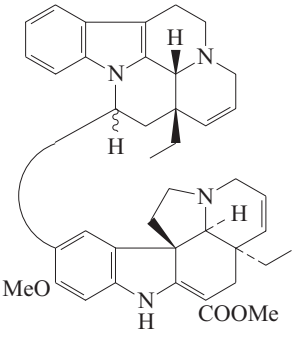
[213539-46-9]
As Tenuecyclamide A, T-75 with
$R^1 = -CH_2^{14}CH_2SMe$, $R^2 = H$
$C_{20}H_{22}N_6O_4S_3$ 506.63
Alkaloidal peptide from *Nostoc spongiaeforme* var. *tenue*. Glassy solid. $[\alpha]_D^{25}$ +12 (c, 0.5 in MeOH). λ_{max} 244 (ε 17300) (MeOH).

14-S-*Oxide:* ***Tenuecyclamide D***
[213539-47-0]
$C_{20}H_{22}N_6O_5S_3$ 522.629
Alkaloidal peptide from *Nostoc spongiaeforme* var. *tenue*. Glassy solid. $[\alpha]_D^{25}$ +44 (c, 0.5 in MeOH). λ_{max} 247 (ε 39170) (MeOH).

Banker, R. *et al., J. Nat. Prod.*, 1998, **61**, 1248-1251 (*isol, uv, ir, pmr, cmr, ms*)
You, S.-L. *et al., Org. Lett.*, 2004, **6**, 2627-2630 (*synth, abs config*)

Tenuicausine T-77

[119212-24-7]



$C_{41}H_{46}N_4O_3$ 642.839
Alkaloid from the stem bark of *Melodinus tenuicaudatus* (Apocynaceae). Mp 160°. $[\alpha]_D$ -27 ($CHCl_3$).

O-*De-Me:* ***De*-O-*methyltenuicausine***
[221640-45-5]
$C_{40}H_{44}N_4O_3$ 628.813
Alkaloid from *Melodinus hemsleyanus*. Component of Chuan Shan Cheng. Amorph. powder. Mp 190° dec. $[\alpha]_D^{13}$ -198.5 (c, 0.05 in $CHCl_3$). λ_{max} 201 (log ε 4.59); 228 (sh) (log ε 4.53); 260 (log ε 4.07); 290 (log ε 4.06); 330 (log ε 4.14) (EtOH).

Zhou, Y.L. *et al., Planta Med.*, 1988, **54**, 315 (*isol, uv, ir, pmr, cmr, ms, struct*)
Yan, K. *et al., Yaoxue Xuebao*, 1998, **33**, 597-599 (*Demethyltenuicausine*)

Tenuidine† T-78

[11017-85-9]

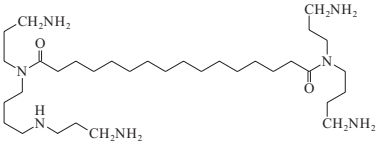
$C_{21}H_{31}N_3O_5$ 405.493

Struct. unknown. Alkaloid from *Polygala tenuifolia* (Polygalaceae). Mp 256°. $[\alpha]_D^{18.5}$ +1200 (EtOH).

Kim, J.H. *et al., Yakhak Hoeji*, 1964, **8**, 59-61; *CA*, **65**, 12248c

Tenuilobine T-79

N^1-*(4-Aminobutyl)*-N^1,N^{16}-*bis(3-aminopropyl)*-N^{16}-*[4-[(3-aminopropyl)amino]butyl]hexadecanediamide*
[173429-85-1]

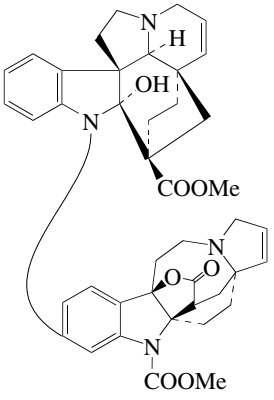


$C_{33}H_{71}N_7O_2$ 597.97
Alkaloid from leaves of *Oncinotis tenuiloba*. Oil (as 5HCl).

Doll, M.K.-H. *et al., Helv. Chim. Acta*, 1996, **79**, 541 (*synth, cmr*)
Doll, M.K.-H. *et al., Heterocycles*, 1996, **42**, 319 (*isol, ir, pmr, ms, struct*)
Vassis, S. *et al., Tet. Lett.*, 2002, **43**, 2597-2600 (*synth*)

Tenuiphylline T-80

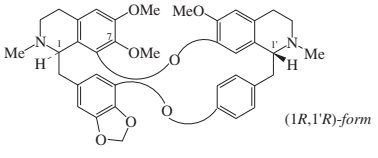
[197234-71-2]



$C_{42}H_{44}N_4O_7$ 716.832
Alkaloid from the leaves of *Kopsia tenuis* (Apocynaceae). Amorph. $[\alpha]_D$ -22 (c, 0.05 in $CHCl_3$). λ_{max} 202 (log ϵ 4.44); 212 (log ϵ 4.33); 249 (log ϵ 3.99); 301 (log ϵ 3.54); 318 (log ϵ 3.5) (EtOH).

Kam, T.-S. *et al., Tetrahedron*, 1997, **53**, 12661-12670 (*isol, uv, ir, pmr, cmr, ms*)

Tenuipine T-81



$C_{38}H_{40}N_2O_7$ 636.743

(1*R*,1′*R*)-*form*
Alkaloid from the bark of *Daphnandra dielsii* and *Daphnandra tenuipes* (Monimiaceae). Prisms (MeOH or Me_2CO/MeOH). Mp 140-145°. $[\alpha]_D^{20}$ -258 (c, 2.8 in $CHCl_3$).

$N^2,N^{2'}$-*Di-Me:*
$C_{40}H_{46}N_2O_7^{2\oplus}$ 666.813
Prisms + $3H_2O$ (50% EtOH aq.)(as diiodide). Mp 267-272° dec. (diiodide). $[\alpha]_D^{15}$ -165 (c, 1.0 in EtOH aq.).

O^7-*De-Me:* ***(-)-Nortenuipine***
$C_{37}H_{38}N_2O_7$ 622.716
Alkaloid from the leaves of *Daphnandra tenuipes* (Monimiaceae). Needles (95% EtOH or $CHCl_3$/MeOH). Mp 211° dec. $[\alpha]_D^{12}$ -218 (c, 0.8 in $CHCl_3$). At first erroneously named *N*-Demethyltenuipine.

O^7-*De-Me,* $N^{2'}$-*β-oxide:* ***Nortenuipine 2′-β-N-oxide***
[126624-25-7]
$C_{37}H_{38}N_2O_8$ 638.716
Alkaloid from the bark of *Daphnandra dielsii* (Monimiaceae). Amorph. $[\alpha]_D^{27}$ -71 (c, 0.24 in $CHCl_3$).

O^7-*De-Me,* $N^2,N^{2'}$-*di-Me:*
$C_{39}H_{44}N_2O_7^{2\oplus}$ 652.786
Mp 261-265° dec. (as diiodide). $[\alpha]_D^{15}$ -154 (c, 0.4 in EtOH aq.).

(1*R*,1′*S*)-*form*
Isotenuipine
[35306-97-9]
Alkaloid from the bark of a *Daphnandra* sp. of unknown origin (Monimiaceae). Mp 239-241°. $[\alpha]_D^{13}$ +129 (c, 1.2 in $CHCl_3$).

$N^2,N^{2'}$-*Di-Me:*
Prisms + $3H_2O$ (30% EtOH aq.)(as diiodide). Mp 278° dec. (diiodide). $[\alpha]_D^{15}$ -50 (c, 0.48 in 50% EtOH aq.).

(1*S*,1′*S*)-*form* [1263-97-4]
Alkaloid from the leaves and terminal twigs of an unnamed *Daphnandra* sp. and from the bark of *Daphnandra tenuipes* (Monimiaceae). $[\alpha]_D^{20}$ +224 ($CHCl_3$).

O^7-*De-Me:* ***(+)-Nortenuipine***
[36067-01-3]
Alkaloid from the bark of *Daphnandra* sp. Dt-7 and *Daphnandra tenuipes*, and from the leaves, stems and bark of *Daphnandra johnsonii* (Monimiaceae). Mp 260°. $[\alpha]_D^{20}$ +236.3 ($CHCl_3$).

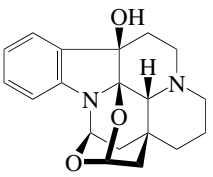
(2*RS*,2′*RS*)-*form*
Repandinine
[6883-11-0]
Alkaloid of the bark of *Daphnandra dielsii, Daphnandra repandula* and *Daphnandra tenuipes*, and from the leaves, stems and bark of *Daphnandra johnsonii* (Monimiaceae). Fine needles (Me_2CO/MeOH). Mp 243°.

$N^2,N^{2'}$-*Di-Me:*
Needles + $2H_2O$ (H_2O)(as diiodide). Mp 275° (diiodide).

Bick, I.R.C. *et al., J.C.S.*, 1953, 695 (*isol, struct*)
Bick, I.R.C. *et al., CA*, 1964, **60**, 1811e (*isol*)
Battersby, A.R. *et al., J.C.S.*, 1965, 2239 (*ord*)
Bick, I.R.C. *et al., J.C.S.(C)*, 1971, 3779 (*Tenuipine, Isotenuipine, config, pmr*)
Baldas, J. *et al., J.C.S. Perkin 1*, 1972, 592 (*ms*)
Bick, I.R.C. *et al., Aust. J. Chem.*, 1978, **31**, 2539 (*isol*)
Koike, L. *et al., Tet. Lett.*, 1979, 3765 (*cmr*)
Galal, A.M. *et al., Heterocycles*, 1989, **29**, 1689 (*Nortenuipine 2′-β-N-oxide*)

Terengganensine A T-82

[188549-37-3]

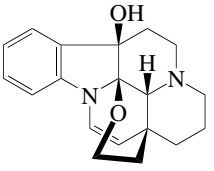


$C_{19}H_{22}N_2O_3$ 326.394
Alkaloid from bark of *Kopsia terengganensis*. $[\alpha]_D$ -25. λ_{max} 208 (log ϵ 4.24); 236 (log ϵ 3.89); 284 (log ϵ 3.34) (No solvent reported).

Uzir, S. *et al., Tet. Lett.*, 1997, **38**, 1571 (*isol, uv, pmr, cmr, struct*)

Terengganensine B T-83

[188549-41-9]

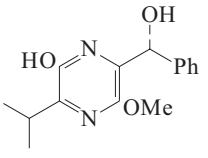


$C_{19}H_{22}N_2O_2$ 310.395
Alkaloid from bark of *Kopsia terengganensis*. $[\alpha]_D$ -19. λ_{max} 228 (log ϵ 3.74); 283 (log ϵ 4.13); 307 (log ϵ 3.6) (No solvent reported).

Uzir, S. *et al., Tet. Lett.*, 1997, **38**, 1571 (*isol, uv, pmr, cmr, struct*)

Terezine A T-84

[165133-88-0]

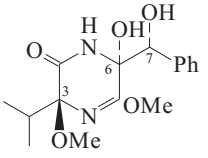


$C_{15}H_{18}N_2O_3$ 274.319
Exists predominantly in the hydroxypyrazine tautomeric form rather than in the more common pyrazinone (amide) form. Metab. of the fungus *Sporormiella teretispora*. Antifungal agent. Yellow oil. $[\alpha]_D$ -20.2 (c, 0.21 in MeOH). λ_{max} 204 (ϵ 15000); 230 (ϵ 8000); 325 (ϵ 7100) (MeOH) (Berdy).

Wang, Y. *et al., J. Nat. Prod.*, 1995, **58**, 93 (*isol, uv, ir, pmr, cmr, ms, struct*)

Terezine B T-85

3,6-Dihydro-6-hydroxy-6-(hydroxyphenylmethyl)-3,5-dimethoxy-3-(1-methylethyl)-2(1H)-pyrazinone, 9CI
[165133-89-1]



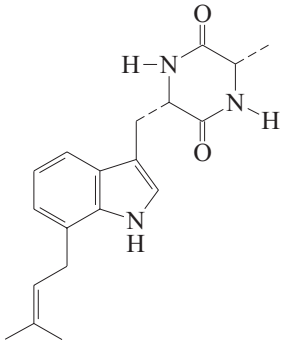
$C_{16}H_{22}N_2O_5$ 322.36
Abs. config. shown is tentative. Metab. of the fungus *Sporormiella teretispora*. Antifungal agent. Yellow oil. $[\alpha]_D$ -14.4 (c, 0.083 in MeOH). λ_{max} 204 (ϵ 11000) (MeOH) (Berdy).

3-Epimer: ***Terezine C***
[165306-63-8]
$C_{16}H_{22}N_2O_5$ 322.36
From *Sporormiella teretispora*. Antifungal agent. Yellow oil. $[\alpha]_D$ -63.1 (c, 0.59 in MeOH). λ_{max} 205 (ϵ 13000) (MeOH) (Berdy).

Wang, Y. *et al., J. Nat. Prod.*, 1995, **58**, 93 (*isol, uv, ir, pmr, cmr, ms, struct*)

Terezine D T-86

3-Methyl-6-[[7-(3-methyl-2-butenyl)-1H-indol-3-yl]methyl]-2,5-piperazinedione, 9CI
[165133-90-4]

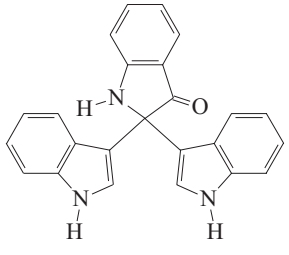


$C_{19}H_{23}N_3O_2$ 325.41
Metab. of the fungus *Sporormiella teretispora*. Antifungal agent. Powder. Mp 192-194°. $[\alpha]_D$ +7 (c, 0.58 in MeOH). λ_{max} 204 (ϵ 24000); 222 (ϵ 24000); 279 (ϵ 3800) (MeOH) (Berdy).

Wang, Y. *et al., J. Nat. Prod.*, 1995, **58**, 93 (*isol, uv, ir, pmr, cmr, ms, struct*)

[3,2′:2′(3′*H*),3″-Ter-1*H*-indol]-3′-one, 9CI T-87

2,2-Di-3-indolyl-3-indolone. 2,2-Bis(3-indolyl)indoxyl
[17646-95-6]

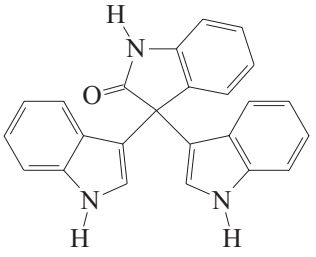


$C_{24}H_{17}N_3O$ 363.418
Metab. from the marine bacterium *Vibrio parahaemolyticus* isol. from the toxic mucus of the boxfish *Ostracion cubicus*. Also isol. as the product of indole oxidation by a strain of *Claviceps purpurea*. Exhibits antibacterial activity. Oil. λ_{max} 242 (ϵ 33600); 268 (ϵ 31800) ($CHCl_3$) (Berdy).

Loo, Y.H. *et al., Chem. Ind. (London)*, 1957, 1123
Bell, R. *et al., J. Nat. Prod.*, 1994, **57**, 1587 (*isol, uv, ir, pmr, cmr*)
Stull, T.L. *et al., J. Biol. Chem.*, 1995, **270**, 5

[3,3′:3′(2′*H*),3″-Ter-1*H*-indol]-2′-one T-88

3,3-Di-3-indolyl-2-indolone. ***Trisindoline***

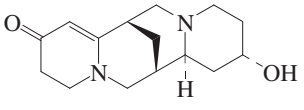


$C_{24}H_{17}N_3O$ 363.418
Prod. by a bacterium of *Vibrio* sp. separated from the Okinawan marine sponge *Hyrtios altum* and *Vibrio parahaemolyticus* Bio249. Amorph. solid. Incorrectly named in CA; no CAS no. reported. λ_{max} 219 (ϵ 62000); 254 (ϵ 12000); 274 (ϵ 12000); 280 (ϵ 12000); 290 (ϵ 10000) (MeOH).

Kobayashi, M. *et al., Chem. Pharm. Bull.*, 1994, **42**, 2449-2451 (*isol, synth, uv, ir, pmr, cmr*)
Veluri, R. *et al., J. Nat. Prod.*, 2003, **66**, 1520-1523 (*isol*)

Termine T-89

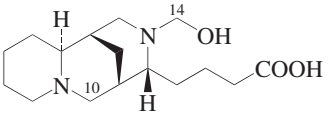
[171090-90-7]



$C_{15}H_{22}N_2O_2$ 262.351
Alkaloid from seeds of *Lupinus termis*.

Mohamed, M.H. *et al., CA*, 1996, **124**, 4886v (*isol*)

Termisine T-90



Relative Configuration

$C_{16}H_{28}N_2O_3$ 296.409

(±)-*form* [152606-58-1]
Alkaloid from seeds of *Lupinus termis* (Fabaceae). Fine yellow cryst. Mp 98-99°. Zwitterionic.

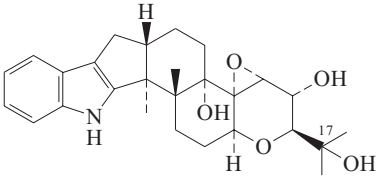
(ξ)-*form*

14-Aldehyde, 10α-hydroxy: ***14-Dehydro-10-hydroxytermisine***
[220672-12-8]
$C_{16}H_{26}N_2O_4$ 310.392
Alkaloid from *Lupinus albus*. Opt. active.

Mohamed, M.H. *et al., J. Nat. Prod.*, 1993, **56**, 1999 (*isol, ir, pmr, cmr, ms, struct*)
Mohamed, M.H. *et al., CA*, 1999, **130**, 179920c (*14-Dehydro-10-hydroxytermisine*)

Terpendole I T-91

[167612-17-1]



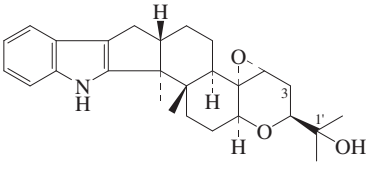
$C_{27}H_{35}NO_5$ 453.577
Prod. by *Albophoma yamanashiensis*. Acyl-CoA:cholesterol acyltransferase (ACAT) inhibitor. Powder. Sol. MeOH, EtOH, C_6H_6, MeCN, EtOAc; poorly sol. H_2O. $[\alpha]_D^{28}$ +7 (c, 1 in MeOH). λ_{max} 228 (ϵ 47400); 280 (ϵ 11200) (MeOH) (Berdy).

17-O-(3-Methyl-2-butenyl): ***Terpendole J***
[167427-26-1]
$C_{32}H_{43}NO_5$ 521.695
Prod. by *Albophoma yamanashiensis*. Acyl-CoA:cholesterol acyltransferase (ACAT) inhibitor. Powder. Sol. MeOH, EtOH, C_6H_6, MeCN, EtOAc; poorly sol. H_2O. Mp 248-250° dec. $[\alpha]_D^{28}$ -30.3 ($CHCl_3$). λ_{max} 238 (ϵ 13100); 282 (ϵ 9400) (MeOH) (Berdy).

Tomoda, H. *et al., J. Antibiot.*, 1995, **48**, 793 (*isol, pmr, cmr, struct*)

Terpendole B T-92

[156967-67-8]



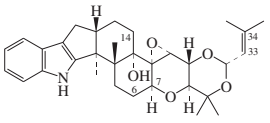
$C_{27}H_{35}NO_3$ 421.578
Full stereochem. not determined. Probable stereochem. shown here by analogy with related compounds. CAS numbering shown. Prod. by *Albophoma yamanashiensis*. Acyl-CoA:cholesterol acyl transferase (ACAT) inhibitor. Powder. Sol. MeOH, EtOAc, EtOH, C_6H_6, MeCN; poorly sol. H_2O. $[\alpha]_D^{28}$ -3.6 (c, 1 in MeOH). λ_{max} 225 ; 275 (MeOH) (Derep).

3α-Hydroxy, 1′-O-(3-methyl-2-butenyl): ***Terpendole D***
[156967-66-7]
$C_{32}H_{43}NO_4$ 505.696
Prod. by *Albophoma yamanashiensis*. Acyl-CoA:cholesterol acyl transferase (ACAT) inhibitor. Powder. Sol. MeOH, MeCN, C_6H_6, EtOH, EtOAc; poorly sol. H_2O. $[\alpha]_D^{28}$ -31.2 (c, 1 in MeOH). λ_{max} 225 ; 275 (MeOH) (Derep).

Huang, X.-H. *et al., J. Antibiot.*, 1995, **48**, 1; 5 (*isol, pmr, cmr, struct*)

Terpendole C T-93

[156967-65-6]



$C_{32}H_{41}NO_5$ 519.68

Prod. by *Albophoma yamanashiensis* FO 2546. Acyl-CoA:cholesterol acyl transferase (ACAT) inhibitor. Powder. Sol. MeOH, C_6H_6, EtOAc, EtOH, MeCN; poorly sol. H_2O. $[\alpha]_D^{28}$ -2.3 (c, 1 in MeOH). λ_{max} 225 ; 275 (MeOH) (Derep).

33,34-Epoxide: ***Terpendole A***
[156967-64-5]
$C_{32}H_{41}NO_6$ 535.679
Prod. by *Albophoma yamanashiensis*. Acyl-CoA:cholesterol acyl transferase (ACAT) inhibitor. Powder. Sol. MeOH, C_6H_6, MeCN, EtOAc, EtOH; poorly sol. H_2O. $[\alpha]_D^{28}$ +11.6 (c, 1 in MeOH). Only gross struct. is known. λ_{max} 225 ; 275 (MeOH) (Derep). λ_{max} 226 ; 282 (MeOH) (Berdy).

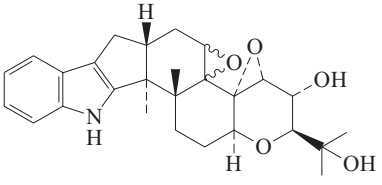
14α-Hydroxy: ***Terpendole M***
[222400-32-0]
$C_{32}H_{41}NO_6$ 535.679
Isol. from *Lolium perenne* infected with *Neotyphodium lolii*. Amorph. solid (MeCN).

6,7-Didehydro: ***Terpendole K***
[167427-27-2]
$C_{32}H_{39}NO_5$ 517.664
Prod. by *Albophoma yamanashiensis*. Acyl-CoA:cholesterol acyltransferase (ACAT) inhibitor. Powder. Sol. MeOH, MeCN, EtOH, EtOAc, C_6H_6; poorly sol. H_2O. $[\alpha]_D^{28}$ -21.8 (c, 1 in MeOH). λ_{max} 228 (ϵ 38600); 280 (ϵ 11200) (MeOH) (Berdy).

Huang, X.-H. *et al., J. Antibiot.*, 1995, **48**, 1-4; 5-11 (*isol, pmr, cmr, struct*)
Tomoda, H. *et al., J. Antibiot.*, 1995, **48**, 793-804 (*Terpendole K*)
Gatenby, W.A. *et al., J. Agric. Food Chem.*, 1999, **47**, 1092-1097 (*Terpendole M*)

Terpendole H T-94

[156967-69-0]



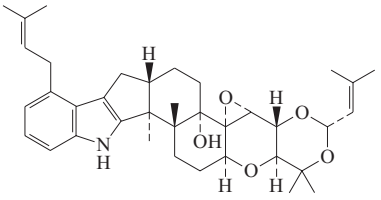
$C_{27}H_{33}NO_5$ 451.561

Prod. by *Albophoma yamanashiensis*. Acyl-CoA:cholesterol acyltransferase (ACAT) inhibitor. Powder. Sol. MeOH, C_6H_6; poorly sol. H_2O. $[\alpha]_D^{28}$ -47 (c, 1 in MeOH). λ_{max} 227 (ϵ 35400); 279 (ϵ 7900) (MeOH) (Berdy).

Tomoda, H. *et al., J. Antibiot.*, 1995, **48**, 793 (*isol, pmr, cmr, struct*)

Terpendole L T-95

[167612-18-2]



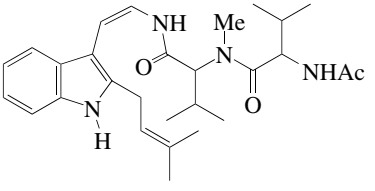
$C_{37}H_{49}NO_5$ 587.798

Prod. by *Albophoma yamanashiensis*. Acyl-CoA:cholesterol acyltransferase (ACAT) inhibitor. Powder. Sol. MeOH, C_6H_6; poorly sol. H_2O. Mp 148-150°. $[\alpha]_D^{28}$ +16.5 (c, 1 in MeOH). λ_{max} 230 (ϵ 32500); 283 (ϵ 9500) (MeOH) (Berdy).

Tomoda, H. *et al., J. Antibiot.*, 1995, **48**, 793 (*isol, pmr, cmr, struct*)

Terpeptin T-96

Antibiotic RK-F 1010. RK-F 1010
[188824-81-9]
[203200-22-0]



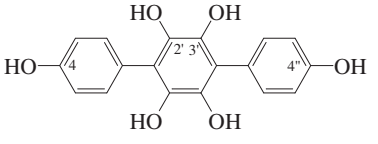
$C_{28}H_{40}N_4O_3$ 480.649

Peptide antibiotic. Prod. by *Aspergillus terreus* 95F-1. Mammalian cell cycle inhibitor. Yellow solid. Mp 92-95°. $[\alpha]_D$ -135.2 (c, 0.1 in $CHCl_3$). λ_{max} 230 (ϵ 87000); 285 (ϵ 6700) (no solvent reported). λ_{max} 230 (ϵ 87000); 280 (ϵ 6700) (MeOH) (Berdy).

Kagamizono, T. *et al., Tet. Lett.*, 1997, **38**, 1223-1226 (*isol, uv, ir, pmr, cmr*)
Japan. Pat., 1998, 98 17 593; *CA*, **128**, 179450h (*isol*)
Su, S. *et al., Tetrahedron*, 2003, **59**, 8931-8946 (*synth, pmr, cmr*)

[*p*-Terphenyl]-2′,3′,4,4″,5′,6′-hexol T-97

*3,6-Bis(4-hydroxyphenyl)-1,2,4,5-benzenetetrol, 8CI. 2′,3′,4,4″,5′,6′-Hexahydroxy-*p*-terphenyl. Leucoatromentin*



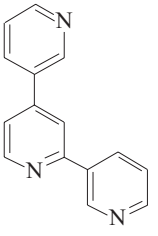
$C_{18}H_{14}O_6$ 326.305

2′-(3-Pyridinecarbonyl), 5′-benzoyl: ***Thelephantin N***
[719279-84-2]
$C_{31}H_{21}NO_8$ 535.509
Isol. from the mushroom *Hydnellum caeruleum*. Greyish solid. λ_{max} 227 (log ϵ 4.2); 264 (log ϵ 4.2) (MeOH).

Quang, D.N. *et al., Phytochemistry*, 2003, **62**, 109-113; **63**, 919-924; 2004, **65**, 1179-1184 (*Thelephantins*)

3,2′:4′,3″-Terpyridine, 9CI, 8CI T-98

Nicotelline
[494-04-2]



$C_{15}H_{11}N_3$ 233.272

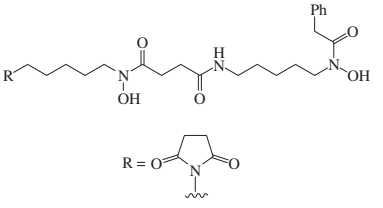
Alkaloid from tobacco (*Nicotiana tabacum*) (Solanaceae). Needles (petrol). Mp 147-148°. Originally considered to be $C_{10}H_8N_2$. Kuffner *et al* (1956) initially proposed an isomeric struct.

Picrate: Mp 216-217°.

1-N-*Oxide:* [172424-37-2]
Mp 200° (min.).

Pictet, A. *et al., Ber.*, 1901, **34**, 696 (*isol*)
Thesing, J. *et al., Chem. Ber.*, 1957, **90**, 711 (*synth*)
Yamamoto, Y. *et al., Synthesis*, 1986, 564 (*synth*)
Zoltewicz, J.A. *et al., Tetrahedron*, 1995, **51**, 11393 (*synth, N-oxide, pmr*)
Yamamoto, Y. *et al., Heterocycles*, 1996, **42**, 189 (*synth, ir, pmr*)

Terragine A T-99



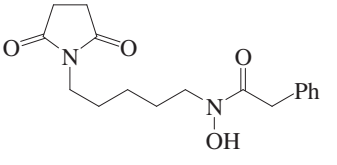
$C_{26}H_{38}N_4O_7$ 518.609

Prod. by *Streptomyceslividans* recombinant 436-s4-5b1. Siderophore.

Wang, G.Y.S. *et al., Org. Lett.*, 2000, **2**, 2401-2404 (*isol, pmr, cmr*)

Terragine B T-100

N-*[5-(2,5-Dioxo-1-pyrrolidinyl)pentyl]*-N-*hydroxybenzeneacetamide, 9CI*
[292862-75-0]



$C_{17}H_{22}N_2O_4$ 318.372

Prod. by *Streptomyces lividans* recombinant 436-s4-5b1. Siderophore.

Wang, G.Y.S. *et al., Org. Lett.*, 2000, **2**, 2401-2404 (*isol, pmr, cmr*)

Terragine C **T-101**

$PhCH_2CON(OH)(CH_2)_5NHAc$

$C_{15}H_{22}N_2O_3$ 278.35

Prod. by *Streptomyces lividans* recombinant 436-s4-5b1. Siderophore.

Wang, G.-Y.-S. *et al., Org. Lett.*, 2000, **2**, 2401-2404 (*isol, pmr, cmr*)

Terragine D **T-102**

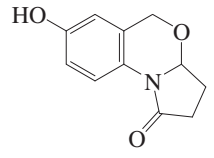
As Terragine A, T-99 with R = NHAc

$C_{24}H_{38}N_4O_6$ 478.587

Prod. by *Streptomyces lividans* recombinant 436-s4-5b1. Siderophore.

Wang, G.Y.S. *et al., Org. Lett.*, 2000, **2**, 2401-2404 (*isol, pmr, cmr*)

Terresoxazine **T-103**



$C_{11}H_{11}NO_3$ 205.213

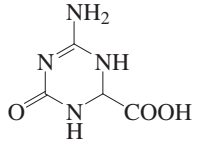
Alkaloid from the fruit of *Tribulus terrestris*. Prisms. Mp 194-196°. $[\alpha]_D^{20}$ +0.7 (c, 0.38 in Me_2CO).

Huang, J.W. *et al., Chin. Chem. Lett.*, 2004, **15**, 305-306 (*isol, pmr, cmr*)

Terrestric acid† **T-104**

6-Amino-1,2,3,4-tetrahydro-4-oxo-1,3,5-triazine-2-carboxylic acid, 9CI

[912850-67-0]



$C_4H_6N_4O_3$ 158.116

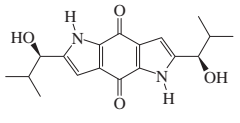
Constit. of *Tribulus terrestris*.

Chen, H. *et al., CA*, 2006, **145**, 434756 (*isol*)

Terreusinone **T-105**

*2,6-Bis(1-hydroxy-2-methylpropyl)-1*H*,5*H*-pyrrolo[2,3-*b*]indole-4,8-dione*

[637334-34-0]



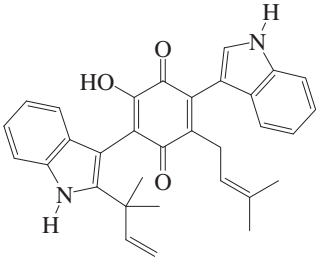
Absolute Configuration

$C_{18}H_{22}N_2O_4$ 330.383

Prod. by the marine fungus *Aspergillus terreus* (MFA-460). Potent Uv-A protectant. Yellowish solid. Mp 230° dec. $[\alpha]_D$ +47 (c, 0.3 in MeOH). λ_{max} 204 (log ϵ 3.73); 247 (log ϵ 4.08); 277 (log ϵ 3.83); 355 (log ϵ 3.57) (MeOH).

Lee, S.M. *et al., Tet. Lett.*, 2003, **44**, 7707-7710 (*isol, cd, pmr, cmr, ms*)

Terriquinone A **T-106**



$C_{32}H_{30}N_2O_3$ 490.601

Prod. by *Aspergillus terreus* found in *Ambrosia ambrosoides*. Cytotoxic. Purple powder. Mp 160-165°. λ_{max} 223 (log ϵ 5.63); 274 (log ϵ 5.18); 360 (log ϵ 4.24) (MeOH).

He, J. *et al., J. Nat. Prod.*, 2004, **67**, 1985-1991 (*isol, pmr, cmr, ms*)

4,8,12,16-Tetraazanonadecane-1,19-diamine, 9CI **T-107**

1,5,9,13,17,21-Hexaazaheneicosane. ***Caldohexamine***

[63833-74-9]

[87265-97-2]

$H_2N(CH_2)_3NH(CH_2)_3NH(CH_2)_3NH(CH_2)_3NH(CH_2)_3NH_2$

$C_{15}H_{38}N_6$ 302.505

Prod. by *Thermus thermophilus* and other thermophilic bacteria. Powder (as hexahydrochloride). Hexahydrochloride melts >250°.

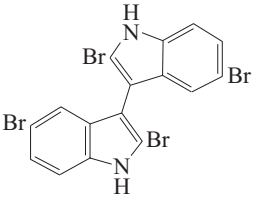
Dietrich, B. *et al., Helv. Chim. Acta*, 1983, **66**, 1262-1278 (*synth, pmr, cmr*)

Hamana, K. *et al., FEMS Microbiol. Lett.*, 1990, **68**, 31-34 (*isol*)

2,2′,5,5′-Tetrabromo-3,3′-bi-1*H*-indole **T-108**

3,3′-Bi(2,5-dibromoindole). ***Rivularin C***

[81387-82-8]



$C_{16}H_8Br_4N_2$ 547.869

Isol. from the marine blue-green alga *Rivularia firma*. Antiinflammatory agent. Rosettes ($CHCl_3$). Mp 239-240°. λ_{max} 209 (ϵ 61400); 228 (ϵ 57400); 289 (ϵ 17600); 297 (ϵ 15500) (MeCN).

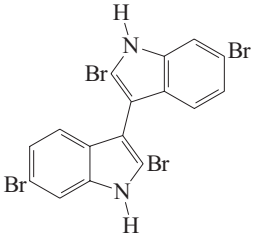
Norton, R.S. *et al., J.A.C.S.*, 1982, **104**, 3628-3635 (*isol, uv, ir, pmr, cmr, struct*)

Maehr, H. *et al., J.O.C.*, 1984, **49**, 1549-1553 (*nomenclature*)

2,2′,6,6′-Tetrabromo-3,3′-bi-1*H*-indole, 9CI **T-109**

3,3′-Bi(2,6-dibromoindole)

[138779-89-2]



$C_{16}H_8Br_4N_2$ 547.869

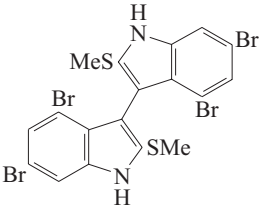
Isol. from the cyanobacterium *Rivularia firma*. Viscous oil.

Hodder, A.R. *et al., J. Nat. Prod.*, 1991, **54**, 1661-1663 (*isol, uv, ir, pmr, cmr, ms, struct*)

4,4′,6,6′-Tetrabromo-2,2′-bis(methylthio)-3,3′-bi-1*H*-indole, 9CI **T-110**

*3,3′-Bi[4,6-dibromo-2-methylthio-1*H*-indole]*

[128351-82-6]



$C_{18}H_{12}Br_4N_2S_2$ 640.054

Alkaloid from the Okinawan red alga *Laurencia brongniartii*. Cryst. (hexane/$CHCl_3$). Mp 186-188°. λ_{max} 236 (ϵ 50000); 306 (ϵ 20000) (EtOH).

*2-*S*-Oxide:* ***4,4′,6,6′-Tetrabromo-2-(methylsulfinyl)-2′-(methylthio)-3,3′-bi-1*H*-indole***

$C_{18}H_{12}Br_4N_2OS_2$ 656.054

Isol. from *Laurencia brongniartii*. Mp 187-189°. $[\alpha]_D^{25}$ +36 (c, 0.2 in $CHCl_3$). λ_{max} 238 (log ϵ 4.7); 312 (log ϵ 4.1) (MeOH).

*2,2′-Di-*S*-oxide:* ***4,4′,6,6′-Tetrabromo-2,2′-bis(methylsulfinyl)-3,3′-bi-1*H*-indole***

$C_{18}H_{12}Br_4N_2O_2S_2$ 672.053

Isol. from *Laurencia brongniartii*. Mp 191-193°. λ_{max} 233 (log ϵ 4.5); 309 (log ϵ 3.08) (MeOH).

2-De(methylthio), 2-bromo: ***2,4,4′,6,6′-Pentabromo-2′-(methylthio)-3,3′-bi-1*H*-indole***

[873202-17-6]

$C_{17}H_9Br_5N_2S$ 672.858

Alkaloid from *Laurencia brongniartii*. λ_{max} 212 (sh) (ϵ 28390); 234 (ϵ 40925); 296 (ϵ 11930) (MeOH).

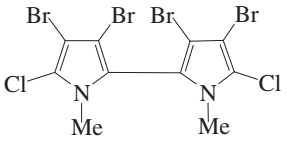
Tanaka, J. *et al., Tetrahedron*, 1989, **45**, 7301-7310 (*isol, uv, ir, pmr, cmr, ms, cryst struct*)

Kubota, N.K. *et al., Heterocycles*, 2005, **65**, 2675-2682 (*demethylthio-2-bromo*)

El-Gamal, A.A. *et al., J. Nat. Prod.*, 2005, **68**, 815-817 (*oxides*)

3,3′,4,4′-Tetrabromo-5,5′-dichloro-1,1′-dimethyl-2,2′-bi-1*H*-pyrrole T-111

[253798-64-0]

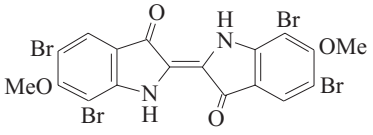


$C_{10}H_6Br_4Cl_2N_2$ 544.692
Isol. from the eggs of various seabirds. Cryst. (Me_2CO). Mp 221° dec.

Gribble, G.W. *et al., Chem. Comm.*, 1999, 2195-2196 (*synth, pmr, ms, cryst struct*)

5,5′,7,7′-Tetrabromo-6,6′-dimethoxyindigotin T-112

[58933-45-2]

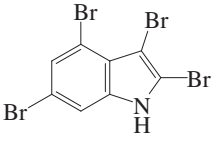


$C_{18}H_{10}Br_4N_2O_4$ 637.904
Pigment from the marine invertebrate *Ptychodera flava laysanica*. Purple-blue powder. Mp 300°.

Higa, T. *et al., Heterocycles*, 1976, **4**, 227-230 (*isol, struct*)

2,3,4,6-Tetrabromo-1*H*-indole, 9CI T-113

[128351-87-1]



$C_8H_3Br_4N$ 432.734
Alkaloid from the Okinawan red alga *Laurencia brongniartii*. Cryst. (hexane/CCl_4). Mp 137-141°.

N-*Ac:* [128351-91-7]
$C_{10}H_5Br_4NO$ 474.772
Cryst. (hexane/CCl_4). Mp 176-178°.

N-*Me: 2,3,4,6-Tetrabromo-1-methyl-1*H-*indole*
[957475-92-2]
$C_9H_5Br_4N$ 446.761
Alkaloid from *Laurencia decumbens*. Cryst.

Tanaka, J. *et al., Tetrahedron*, 1989, **45**, 7301-7310 (*isol, ir, pmr, ms*)
Ji, N.-Y. *et al., Helv. Chim. Acta*, 2007, **90**, 1731-1736 (*N-Me*)

2,3,4,7-Tetrabromo-1*H*-indole, 9CI T-114

[68234-23-1]

$C_8H_3Br_4N$ 432.734
Alkaloid from the marine red alga *Rhodophyllis membranacea*. Mp 144.5°.

Brennan, M.R. *et al., Tet. Lett.*, 1978, **19**, 1637-1640 (*isol, pmr, struct*)
Ohta, T. *et al., Heterocycles*, 1989, **29**, 1663-1667 (*synth*)

2,3,5,6-Tetrabromo-1*H*-indole, 9CI T-115

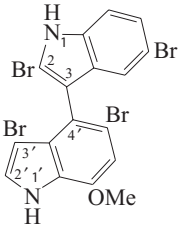
[17826-06-1]

$C_8H_3Br_4N$ 432.734
Alkaloid from the algae *Laurencia brongniartii* and *Laurencia similis*. Mp 152.5-154° (149-151°). λ_{max} 230 (ε 47000); 294 (ε 9600); 301 (ε 9500) (EtOH) (Derep).

N-*Me: 2,3,5,6-Tetrabromo-1-methyl-1*H-*indole*
[25055-55-4]
$C_9H_5Br_4N$ 446.761
Alkaloid from *Laurencia brongniartii*. Cryst. (petrol). Mp 171.5-172° (168-170°). λ_{max} 233 (ε 49000); 296 (ε 10000); 303 (ε 10000) (EtOH) (Derep).

Settimo, A.D. *et al., Gazz. Chim. Ital.*, 1967, **97**, 1304-1316; 1977, **107**, 367-372 (*synth*)
Settimo, A.D. *et al., J.O.C.*, 1970, **35**, 2546-2551 (*N-Me, synth*)
Carter, G.T. *et al., Tet. Lett.*, 1978, 4479-4482 (*N-Me, isol, uv, pmr, ms*)
Liu, Y. *et al., J. Nat. Prod.*, 2002, **65**, 748-749 (*N-Me, synth*)
Suárez-Castillo, O.R. *et al., J. Nat. Prod.*, 2006, **69**, 1596-1600 (*synth*)

2,3′,5,5′-Tetrabromo-7′-methoxy-3,4′-bi-1*H*-indole T-116
Rivularin D₃



$C_{17}H_{10}Br_4N_2O$ 577.895

(+)-*form* [81387-83-9]
Isol. from the marine cyanobacterium *Rivularia firma*. Shows antiinflammatory, antiallergic, CNS depressant and tremorgenic props. Prisms (CH_2Cl_2/hexane). Sol. MeOH, $CHCl_3$. Mp 178-179° dec. $[\alpha]_D^{20}$ +71 (c, 1 in $CHCl_3$). Exhibits opt. activity owing to restricted rotn. λ_{max} 227 (ε 66000); 280 (ε 16000); 290 (ε 17000); 299 (ε 14000) (MeCN) (Berdy).

1-N-*Ac:*
Prisms (CH_2Cl_2/hexane). Mp 109-111°. $[\alpha]_D^{20}$ +99 (c, 1 in $CHCl_3$).

Di-N-*Ac:*
Prisms (CH_2Cl_2/hexane). Mp 96-98°. $[\alpha]_D^{20}$ +71 (c, 0.75 in $CHCl_3$).

*2-Debromo: 3′,5,5′-Tribromo-7′-methoxy-3,4′-bi-1*H-*indole.* ***Rivularin D₁***
[81387-84-0]
$C_{17}H_{11}Br_3N_2O$ 498.999
Isol. from *Rivularia firma*. Antiinflammatory agent. Prisms ($CHCl_3$). Mp 220-223°. $[\alpha]_D^{20}$ +8.5 (c, 1 in $CHCl_3$). Exhibits opt. activity owing to restricted rotn. λ_{max} 283 ; 288 ; 297 (MeOH) (Berdy). λ_{max} 225 (ε 73000); 283 (ε 12700); 288 (ε 13000); 297 (ε 11500) (MeCN).

*3′-Debromo: 2,5,5′-Tribromo-7′-methoxy-3,4′-bi-1*H-*indole.* ***Rivularin D₂***
[81387-85-1]
$C_{17}H_{11}Br_3N_2O$ 498.999
Isol. from the marine blue-green alga *Rivularia firma*. Foam. $[\alpha]_D^{20}$ +11.3 (c, 1 in $CHCl_3$). Exhibits opt. activity owing to restricted rotn. λ_{max} 227 (ε 69000); 279 (ε 17000); 289 (ε 16000); 298 (ε 13000) (MeCN).

(±)-*form* [95739-89-2]
Synthetic. Beige prisms (CH_2Cl_2/hexane). Mp 180°.

2-Debromo: [95739-88-1]
Synthetic. Cryst. ($CHCl_3$). Mp 220-223° dec.

Norton, R.S. *et al., J.A.C.S.*, 1982, **104**, 3628-3635 (*isol, uv, ir, pmr, cmr, struct*)
Maehr, H. *et al., J.A.C.S.*, 1985, **107**, 2943-2945 (*synth, uv, ir, pmr, ms*)

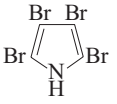
3,3′,5,5′-Tetrabromo-7′-methoxy-1,4′-bi-1*H*-indole T-117
Rivularin B
[81387-86-2]

$C_{17}H_{10}Br_4N_2O$ 577.895
Isol. from the marine blue-green alga *Rivularia firma*. Poorly cryst. solid ($CHCl_3$/hexane). Mp 196-200°. $[\alpha]_D^{20}$ -6 (c, 1 in MeCN). Exhibits opt. activity owing to restricted rotn.

Norton, R.S. *et al., J.A.C.S.*, 1982, **104**, 3628-3635 (*isol, uv, ir, pmr, cmr, struct*)
Maehr, H. *et al., J.O.C.*, 1984, **49**, 1549-1553 (*nomenclature*)

2,3,4,5-Tetrabromo-1*H*-pyrrole, 9CI T-118

[54705-14-5]



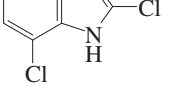
C_4HBr_4N 382.675
Metab. of marine *Chromobacterium* sp. Has antibiotic activity. Spar. sol. H_2O. Mp 250°. Unstable, v. light-sensitive.

N-*Me:* [56454-29-6]
$C_5H_3Br_4N$ 396.701
Mp 154-155°. Blue melt.

De Varda, G. *et al., Ber.*, 1888, **21**, 2871 (*synth*)
Andersen, R.J. *et al., Mar. Biol. (Berlin)*, 1974, **27**, 281 (*isol, ms, struct*)
Gilow, H.M. *et al., J.O.C.*, 1981, **46**, 2221 (*synth, glc*)

2,3,4,7-Tetrachloro-1*H*-indole, 9CI T-119

[68234-17-3]



$C_8H_3Cl_4N$ 254.929

Alkaloid from the marine red alga *Rhodophyllis membranacea*. Mp 119°.

Brennan, M.R. *et al., Tet. Lett.*, 1978, **19**, 1637-1640 (*isol, struct*)
Ohta, T. *et al., Heterocycles*, 1989, **29**, 1663-1667 (*synth*)

15-Tetracosenoic acid T-120

[26444-06-4]

$H_3C(CH_2)_7CH{=}CH(CH_2)_{13}COOH$

$C_{24}H_{46}O_2$ 366.626

(*E*)-*form* [14490-79-0]
Cryst. (EtOH). Mp 66-67° (61°).

Me ester:
$C_{25}H_{48}O_2$ 380.653
Cryst. (Me_2CO). Mp 36.5-37.5°. $Bp_{0.00001}$ 180-190°. CAS no. not found to CA 130.

Amide:
$C_{24}H_{47}NO$ 365.641
Mp 97-98°. CAS no. not found to CA 130.

(*Z*)-*form*
Nervonic acid. Selacholeic acid
[506-37-6]
[31152-46-2]
Present in cerebrosides and in fish oils. Isol. from the sponge *Pseudaxinella* cf. *lunaecharta*. Also in seed oils of *Lunaria biennis*, rape (*Brassica napus*), *Carthamus tinctorius* and *Tropaeolum speciosum*. Cryst. (EtOH). Mp 40.5-41° Mp 44-45°.

Me ester: [2733-88-2]
Mp 14-15°. $Bp_{0.02}$ 165° approx.

Amide: [208650-37-7]
Cryst. (EtOH). Mp 86.5-87.5°.

Benzylamide: N-*Benzyl-15-tetracosenamide*
[847361-94-8]
$C_{31}H_{53}NO$ 455.766
Alkaloid from the tubers of *Lepidium meyenii* (maca). Powder. λ_{max} 212 (log ϵ 3.86) (MeOH).

Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 784B (*nmr*)
Hale, J.B. *et al., J.A.C.S.*, 1930, **52**, 4536 (*synth*)
Bounds, D.G. *et al., J.C.S.*, 1954, 448 (*synth*)
Litchfield, C. *et al., Lipids*, 1970, **5**, 144-146 (*isol*)
Batchelor, J.G. *et al., J.A.C.S.*, 1973, **95**, 6358 (*cmr*)
Lecerf, J. *et al., J. Physiol. (Paris)*, 1975, **70**, 493
Morales, R.W. *et al., Biochim. Biophys. Acta*, 1976, **431**, 206 (*isol, biosynth*)
Bohannon, M.B. *et al., Lipids*, 1976, **11**, 157-159 (*isol*)
Barnathan, G. *et al., Lipids*, 1996, **31**, 193-200 (*isol, Pseudaxinella*)
Zhao, J.-P. *et al., J. Agric. Food Chem.*, 2005, **53**, 690-693 (*benzylamide*)

2,4-Tetradecadiene-8,10-diynoic acid T-121

$H_3CCH_2CH_2C{\equiv}CC{\equiv}CCH_2CH_2CH{=}CHCH{=}CHCOOH$

$C_{14}H_{16}O_2$ 216.279

(2*E*,4*E*)-*form*
Cryst. (petrol/Et_2O). Mp 154-155° (58°).

2-Methylpropylamide: see Anacycline, A-968

3-Methylbutylamide: N-*(3-Methylbutyl)-2,4-tetradecadiene-8,10-diynamide, 9CI. 2,4-Tetradecadiene-8,10-diynoic acid isopentylamide*
[113235-96-4]
$C_{19}H_{27}NO$ 285.428
Isol. from *Achillea wilhelmsii*. Cryst. Mp 95-97°. λ_{max} 250 nm (Et_2O).

Pyrrolidide: 2,4-Tetradecadiene-8,10-diynoic acid pyrrolidide. 1-(1-Oxo-2,4-tetradecadiene-8,10-diynyl)pyrrolidine
[94413-14-6]
$C_{18}H_{23}NO$ 269.386
Isol. from underground parts of *Achillea nana*. Cryst. Mp 88-89°. λ_{max} 255nm (Et_2O).

(2ξ,4ξ)-*form*

Piperidide: ***2,4-Tetradecadien-8,10-diynoic acid piperidide****. 1-(1-Oxo-2,4-tetradecadiene-8,10-diynyl)piperidine, 9CI*
[43110-70-9]
$C_{19}H_{25}NO$ 283.413
Alkamide from *Achillea sudetica* (Asteraceae). Not obt. completely pure.

Crombie, L. *et al., J.C.S.*, 1955, 999; 1957, 2767 (*isol, struct, synth, ir, uv*)
Jente, R. *et al., Chem. Ber.*, 1972, **105**, 1694 (*isol, struct, uv, ms*)
Bohlmann, F. *et al., Chem. Ber.*, 1973, **106**, 1328 (*isol, ms, struct*)
Greger, H. *et al., Phytochemistry*, 1984, **23**, 1503; 1989, **28**, 2363 (*isol, struct, pmr, ir, uv, ms*)
Greger, H. *et al., J. Nat. Prod.*, 1987, **50**, 1100 (*isopentylamide*)
Kuropka, G. *et al., Planta Med.*, 1987, **53**, 440 (*isol*)
Crombie, L. *et al., Tet. Lett.*, 1987, **28**, 4875 (*synth*)

10,12-Tetradecadiene-4,6-diynoic acid, 9CI T-122

$H_3CCH{=}CHCH{=}CHCH_2CH_2C{\equiv}CC{\equiv}CCH_2CH_2COOH$

$C_{14}H_{16}O_2$ 216.279

(10*E*,12*E*)-*form*

2-Methylpropylamide: N-*(2-Methylpropyl)-10,12-tetradecadiene-4,6-diynamide*
[125085-13-4]
$C_{18}H_{25}NO$ 271.402
Isol. from *Achillea magnifica*.

Ulubelen, A. *et al., Planta Med.*, 1989, **55**, 395 (*isol*)

2,4-Tetradecadiene-8,10,12-triynoic acid T-123

$H_3CC{\equiv}CC{\equiv}CC{\equiv}CCH_2CH_2CH{=}CHCH{=}CHCOOH$

$C_{14}H_{12}O_2$ 212.248

(*E*,*E*)-*form*

Piperidide: ***2,4-Tetradeca-8,10,12-triynoic acid piperidide****. 1-(1-Oxo-2,4-tetradecadiene-8,10,12-triynyl)piperidine, 9CI*
[83182-43-8]
$C_{19}H_{21}NO$ 279.381
Alkamide from the roots of *Achillea lycaonica* and *Achillea spinulifolia* (Asteraceae). Mp 115°.

Greger, H. *et al., Phytochemistry*, 1982, **21**, 1071 (*isol, uv, ir, pmr, ms, struct*)

2,4-Tetradecadienoic acid, 9CI T-124

[75011-60-8]

$H_3C(CH_2)_8CH{=}CHCH{=}CHCOOH$

$C_{14}H_{24}O_2$ 224.342

(2*E*,4*E*)-*form* [24738-49-6]
Cryst. (petrol at low temp.). Mp 57-58°.

Me ester: [24738-47-4]
$C_{15}H_{26}O_2$ 238.369
$Bp_{0.3}$ 117-118°.

2-Methylpropylamide: ***2,4-Tetradecadienoic acid isobutylamide***
[13891-73-1]
$C_{18}H_{33}NO$ 279.465
Alkaloid from *Chrysanthemum frutescens, Anacyclus pyrethrum* and *Leucocyclus formosus* (Asteraceae) (in admixture with homologues). Cryst. (petrol). Mp 88°.

2-Hydroxy-2-methylpropylamide: N-*(2-Hydroxyisobutyl)-2,4-tetradecadienamide.* ***Tetrahydrobungeanool***
[200938-43-8]
$C_{18}H_{33}NO_2$ 295.464
Alkaloid from *Zanthoxylum bungeanum* and *Zanthoxylum integrifoliolum*. Unstable powder.

Pyrrolidide: **N-*(2,4-Tetradecadienoyl)-pyrrolidine****. 2,4-Tetradecadienoic acid pyrrolidide*
[88855-41-8]
[88855-38-3]
$C_{18}H_{31}NO$ 277.449
Alkaloid from *Achillea nana*. Mp 36-38° (synthetic).

Piperidide: 1-(1-Oxo-2,4-tetradecadienyl)piperidine, 9CI. ***1-(2,4-Tetradecadienoyl)piperidine****. 2,4-Tetradecadienoic acid piperidide*
[52657-12-2]
$C_{19}H_{33}NO$ 291.476
Alkaloid from the roots of *Otanthus maritimus* (Asteraceae). Oil. $Bp_{0.1}$ 150°.

4,5-Epoxide: 3-(2-Nonyloxiranyl)-2-propenoic acid, 9CI. ***4,5-Epoxy-2-tetradecenoic acid***
[154291-61-9]
$C_{14}H_{24}O_3$ 240.342
Constit. of a sterile fungus found growing in grass. Mp 81-81.5°.

(2*E*,4*Z*)-*form*

Me ester: [54977-81-0]
Oil.

Bohlmann, F. *et al., Chem. Ber.*, 1967, **100**, 104; 1974, **107**, 1038 (*isobutylamide, piperidide*)
Burden, R.S. *et al., J.C.S.(C)*, 1969, 2477 (*synth*)
Greger, H. *et al., Phytochemistry*, 1981, **20**, 2579; 1984, **23**, 1503-1505 (*isobutylamide, pyrrolidide*)
Tsuboi, S. *et al., J.O.C.*, 1982, **47**, 4478-4482 (*2E,4Z-Me ester*)
Tsuboi, S. *et al., J.O.C.*, 1984, **49**, 1204-1208 (*synth, amides*)
Schwartz, R.E. *et al., Tetrahedron*, 1994, **50**, 1675 (*4,5-epoxide*)
Sisiri, W. *et al., J.O.C.*, 1996, **61**, 5911 (*synth, ir, pmr*)
Cow, C. *et al., Can. J. Chem.*, 1997, **75**, 884-889 (*synth, ir, pmr, cmr, ms, 4,5-epoxide*)

Xiong, Q. *et al., Phytochemistry*, 1997, **46**, 1123-1126 (*Tetrahydrobungeanool*)

2,4-Tetradecadien-8-ynoic acid T-125

$H_3C(CH_2)_4C{\equiv}CCH_2CH_2CH{=}CHCH{=}CHCOOH$

$C_{14}H_{20}O_2$ 220.311

(2*E*,4*E*)-*form*

Pyrrolidide: ***2,4-Tetradecadien-8-ynoic acid pyrrolidide****. 1-(1-Oxo-2,4-tetradecadien-8-ynyl)pyrrolidine, 9CI*
[111509-33-2]
$C_{18}H_{27}NO$ 273.417
Isol. from the underground parts of *Achillea ageratifolia* ssp. *serbica* (Asteraceae). Oil.

Greger, H. *et al., Phytochemistry*, 1987, **26**, 2289 (*isol, uv, ir, pmr, ms, struct*)

2,4,6,8,10,12-Tetradecahexaenedioic acid T-126

$HOOCCH{=}CHCH{=}CHCH{=}CHCH{=}CHCH{=}CHCOOH$

$C_{14}H_{14}O_4$ 246.262

(*all-E*)-*form*

Corticrocin
[505-53-3]
Pigment of the fungus *Corticium croceum*. Also from paprika (*Capsicum annuum*) and from *Encephalartos* spp. Orange-red needles. Insol. most solvs. Mp *ca.* 300° subl. dec.

Di-Me ester: [77186-00-6]
$C_{16}H_{18}O_4$ 274.316
Orange cryst. ($CHCl_3$ or AcOH). Mp 230-232°.

Di-Et ester: [1441-61-8]
$C_{18}H_{22}O_4$ 302.369
Mp 204-205°.

1-L-Aspartic acid, 14-L-isoleucine diamide: ***Boletocrocin D***
$C_{24}H_{30}N_2O_8$ 474.51
Isol. from the fruit bodies of *Boletus laetissimus*.

Erdtman, H. *et al., Acta Chem. Scand.*, 1948, **2**, 209 (*isol, struct*)
Shaw, B.L. *et al., J.C.S.*, 1954, 3217 (*synth*)
Kovalev, B.G. *et al., CA*, 1963, **58**, 11209f (*synth*)
Rives-Arnau, V. *et al., Macromolecules*, 1985, **18**, 2088
Kahner, L. *et al., Phytochemistry*, 1998, **49**, 1693-1697 (*Boletocrocin D*)
Schreiner, T. *et al., Z. Naturforsch., C*, 1998, **53**, 4-8 (*isol, synth*)

2,4,8,10,12-Tetradecapentaenoic acid T-127

$H_3C(CH{=}CH)_3CH_2CH_2CH{=}CHCH{=}CHCOOH$

$C_{14}H_{18}O_2$ 218.295

(*all-E*)-*form*

2-Hydroxy-2-methylpropylamide: ***Hydroxy-γ-isosanshool****.* N-*(2-Hydroxyisobutyl)-2,4,8,10,12-tetradecapentaenamide*
[127514-62-9]
$C_{18}H_{27}NO_2$ 289.417
Constit. of *Zanthoxylum* spp. (Rutaceae). Powder. λ_{max} 258 (ϵ 26300); 268 (ϵ 28900); 279 (ϵ 26010) (EtOH).

(2*E*,4*E*,8*Z*,10*E*,12*E*)-*form*

2-Methylpropylamide: N-*Isobutyl-2,4,8,10,12-tetradecapentaenamide.* ***γ-Sanshool***
[78886-65-4]
$C_{18}H_{27}NO$ 273.417
Constit. of *Zanthoxylum ailanthoides, Zanthoxylum piperitum* (Japanese pepper tree) and other *Zanthoxylum* spp. (Rutaceae). Needles (hexane). Mp 88-89°. λ_{max} 260 (ϵ 48000); 272 (ϵ 57000); 280 (ϵ 45000) (EtOH).

2-Hydroxy-2-methylpropylamide: ***Hydroxy-γ-sanshool***
[78886-66-5]
$C_{18}H_{27}NO_2$ 289.417
Constit. of *Zanthoxylum ailanthoides*, *Zanthoxylum bungeanum* and *Zanthoxylum piperitum* (Japanese pepper tree) (Rutaceae). Needles ($CHCl_3$). Mp 122-123°.

2-Methylenepropylamide: ***Dehydro-γ-sanshool***
$C_{18}H_{25}NO$ 271.402
Alkaloid from *Zanthoxylum bungeanum*. Unstable oil.

(2*E*,4*E*,8*Z*,10*Z*,12*E*)-*form*

Me ester: [114567-68-9]
$C_{15}H_{20}O_2$ 232.322
Constit. of *Sanvitalia oxymoides*. Gum. Incorrect name in ref.

2-Methylpropylamide: [114612-73-6]
$C_{18}H_{27}NO$ 273.417
Constit. of *Sanvitalia oxymoides*. Gum.

[98168-69-5 , 98095-54-6 , 117581-14-3]

Yasuda, I. *et al., Chem. Pharm. Bull.*, 1981, **29**, 1791-1793 (*γ-Sanshool, Hydroxy-γ-sanshool*)
Crombie, L. *et al., Tet. Lett.*, 1985, **26**, 2481 (*synth*)
Dominguez, X.A. *et al., Rev. Latinoam. Quim.*, 1987, **18**, 114 (*isol*)
Mizutani, K. *et al., Chem. Pharm. Bull.*, 1988, **36**, 2362 (*isol, ir, pmr, cmr*)
Xiong, Q. *et al., Phytochemistry*, 1997, **46**, 1123-1126 (*isol, pmr, cmr, ms*)

2,4,6,12-Tetradecatetraene-8,10-diynoic acid T-128

$H_3CCH{=}CHC{\equiv}CC{\equiv}C(CH{=}CH)_3COOH$

$C_{14}H_{12}O_2$ 212.248

(*all-E*)-*form*

Isol. from the underground parts of *Achillea wilhelmsii*.

Piperidide: ***2,4,6,12-Tetradecatetraene-8,10-diynoic acid piperidide****. 1-(1-Oxo-2,4,6,12-tetradecatetraene-8,10-diynyl)piperidine, 9CI*
[83182-49-4]
$C_{19}H_{21}NO$ 279.381
Alkamide from the roots of *Achillea grandifolia* (Asteraceae). Unstable yellow foam.

(2*E*,4*E*,6*E*,12*Z*)-*form*

Me ester: [14109-34-3]
$C_{15}H_{14}O_2$ 226.274
Isol. from *Sanvitalia procumbens*. Cryst. (Et_2O/petrol). Mp 102°. λ_{max} 252 ; 275 ; 281 ; 348 ; 368 (no solvent reported).

2-Methylpropylamide: 2,4,6,12-Tetradecatetraene-8,10-diynoic acid isobutylamide
[113235-98-6]
$C_{18}H_{21}NO$ 267.37
Isol. from underground parts of *Achillea wilhelmsii*. Oil. Contains 30% of the 6*Z*-isomer. λ_{max} 264 ; 279 ; 333 (sh) ; 348 ; 368 (Et_2O).

3-Methylbutylamide: 2,4,6,12-Tetradecatetraene-8,10-diynoic acid isopentylamide
[113235-95-3]
$C_{19}H_{23}NO$ 281.397
Isol. from underground parts of *Achillea wilhelmsii*. Cryst. Mp 136-139°. λ_{max} 217 ; 279 ; 333 ; 347 ; 368 (Et_2O).

(2*E*,4*E*,6*Z*,12*Z*)-*form*

2-Methylpropylamide: [113235-97-5]
Isol. from underground parts of *Achillea wilhelmsii*. Oil. Obt. as a mixt. containing 6*E*-isomer. λ_{max} 264 ; 277 ; 335 (sh) ; 348 ; 366 (sh) (Et_2O).

3-Methylbutylamide: [113235-94-2]
Isol. from underground parts of *Achillea wilhelmsii*. Oil. λ_{max} 265 ; 277 ; 332 (sh) ; 347 ; 365 (sh) (Et_2O).

Bohlmann, F. *et al., Chem. Ber.*, 1966, **99**, 3194 (*isol, struct, uv, ir, pmr*)
Greger, H. *et al., Phytochemistry*, 1982, **21**, 1071 (*piperidide*)
Greger, H. *et al., J. Nat. Prod.*, 1987, **50**, 1100 (*amides, isol, uv, ir, ms, pmr*)

2,4,8,11-Tetradecatetraenoic acid T-129

$H_3CCH_2CH{=}CHCH_2CH{=}CHCH_2CH_2CH{=}CHCH{=}CHCOOH$

$C_{14}H_{20}O_2$ 220.311

(2*E*,4*E*,8*Z*,11*E*)-*form*

2-Methylpropylamide: ***Lanyuamide III***
$C_{18}H_{29}NO$ 275.433
Alkaloid from the fruit of *Zanthoxylum integrifoliolum*. Oil. λ_{max} 259 (log ϵ 4.23) (EtOH).

2-Hydroxy-2-methylpropylamide: ***Isobungeanool****. Hydroxylanyuamide III*
[127460-60-0]
[117568-41-9]
$C_{18}H_{29}NO_2$ 291.433
Alkaloid from *Zanthoxylum bungeanum*. Syrup. λ_{max} 268 (ϵ 27350) (EtOH).

(2*E*,4*E*,8*Z*,11*Z*)-*form*

2-Methylpropylamide: ***Hazaleamide***
[81427-15-8]
$C_{18}H_{29}NO$ 275.433
Alkaloid from *Leucocyclus formosus* (Asteraceae). Gum.

2-Hydroxy-2-methylpropylamide: ***Bungeanool***
[117568-40-8]
$C_{18}H_{29}NO_2$ 291.433
Alkaloid from *Zanthoxylum bungeanum*. Syrup. λ_{max} 268 (ϵ 26190) (EtOH).

Pyrrolidide: ***2,4,8,11-Tetradecatetraenoic acid pyrrolidide****. 1-(1-Oxo-2,4,8,11-tetradecatetraenyl)pyrrolidine, 9CI*

[111509-32-1]
$C_{18}H_{27}NO$ 273.417
Isol. from the underground parts of *Achillea ageratifolia* ssp. *serbica* (Asteraceae). Oil.

Piperidide: 1-(1-Oxo-2,4,8,11-tetradecatetraenyl)piperidine. (2,4,8,11-Tetradecatetraenoyl)piperidine. 2,4,8,11-Tetradecatetraenoic piperidide
$C_{19}H_{29}NO$ 287.444
Alkaloid from *Otanthus maritimus*. Oil.

Greger, H. *et al., Phytochemistry*, 1981, **20**, 2579; 1987, **26**, 2289 (*isol, uv, ir, pmr, ms, struct*)
Mizutani, K. *et al., Chem. Pharm. Bull.*, 1988, **36**, 2362-2365 (*isol*)
Shibuya, H. *et al., Chem. Pharm. Bull.*, 1992, **40**, 2325 (*Hazaleamide*)
Chen, I.-S. *et al., Phytochemistry*, 1999, **52**, 357-360 (*isol, cmr*)
Christoduolopoulou, L. *et al., J. Agric. Food Chem.*, 2005, **53**, 1435-1439 (*piperidide*)

2,4,10,12-Tetradecatetraen-8-ynoic acid T-130

$H_3CCH{=}CHCH{=}CHC{\equiv}CCH_2CH_2CH{=}CHCH{=}CHCOOH$
$C_{14}H_{16}O_2$ 216.279

(2*E*,4*E*,10*E*,12*Z*)-*form*

2-Methylpropyl amide: N-*(2-Methylpropyl)-2,4,10,12-tetradecatetraen-8-ynamide*. N-*Isobutyl-2,4,10,12-tetradecatetraen-8-ynamide*
$C_{18}H_{25}NO$ 271.402
Alkaloid from *Chrysanthemum morifolium*. Oil. λ_{max} 270 (MeCN aq.).

Tsao, R. *et al., J. Nat. Prod.*, 2003, **66**, 1229-1231 (*isol, ir, pmr, cmr, ms*)

3,5,13-Tetradecatrien-2-amine T-131

2-Amino-3,5,13-tetradecatriene
$H_2C{=}CH(CH_2)_6CH{=}CHCH{=}CHCH(NH_2)CH_3$
$C_{14}H_{25}N$ 207.358

(2*R*,3*E*,5*E*)-*form*

13,14-Dihydro: ***3,5-Tetradecadien-2-amine, 9CI***. *2-Amino-3,5-tetradecadiene*
[356073-87-5]
$C_{14}H_{27}N$ 209.374
Isol. from a *Pseudodistoma* sp. Oil. $[\alpha]_D$ -1.2 (c, 0.25 in MeOH). λ_{max} 229 (log ϵ 4.24) (MeOH).

(2*S*,3*E*,5*Z*)-*form*

(+)-trans,cis-*form*
[151284-88-7]
Prod. by tunicate *Pseudodistoma novaezelandiae*. Viscous pale yellow oil. $[\alpha]_D^{25}$ +17.8 (c, 1 in $CHCl_3$) (95% e.e.). λ_{max} 230 (ϵ 16600) (MeOH) (Berdy).

(2*RS*,3*E*,5*E*)-*form*

(±)-trans,trans-*form*
[134381-24-1]
Constit. of the ascidian *Pseudodistoma novaezelandiae*. λ_{max} 230 (ϵ 16600) (MeOH) (Berdy).

(2*RS*,3*E*,5*Z*)-*form*

(±)-trans,cis-*form*
[134381-23-0]
Constit. of *Pseudodistoma novaezelandiae*.

13,14-Dihydro: [134381-25-2]
Constit. of *Pseudodistoma novaezelandiae*.

Perry, N.B. *et al., Aust. J. Chem.*, 1991, **44**, 627-633 (*isol, uv, pmr, cmr*)
Enders, D. *et al., Annalen*, 1993, 551-555 (*synth*)
Rashid, M.A. *et al., Tetrahedron*, 2001, **57**, 5751-5755 (*3R,3E,5E-form 13,14-dihydro*)

2,4,12-Tetradecatriene-8,10-diynoic acid T-132

$H_3CCH{=}CHC{\equiv}CC{\equiv}CCH_2CH_2CH{=}CHCH{=}CHCOOH$
$C_{14}H_{14}O_2$ 214.263

(*E*,*E*,*E*)-*form*

2-Methylpropylamide: see Anacycline, A-968

Piperidide: ***2,4,12-Tetradecatriene-8,10-diynoic acid piperidide***. *1-(1-Oxo-2,4,12-tetradecatriene-8,10-diynyl)piperidine, 9CI*
[83182-48-3]
$C_{19}H_{23}NO$ 281.397
Alkamide from *Achillea biebersteinii* and *Achillea sudetica* (Asteraceae). Oil.

Pyrrolidide: 2,4,12-Tetradecatriene-8,10-diynoic acid pyrrolidide. 1-(1-Oxo-2,4,12-tetradecatriene-8,10-diynyl)pyrrolidine
[94413-15-7]
$C_{18}H_{21}NO$ 267.37
Isol. from underground parts of *Achillea nana*. Cryst. Mp 107-110°. λ_{max} 282, 266, 253 nm (Et_2O).

(2*E*,4*E*,12*Z*)-*form*

2-Methylpropylamide: [112711-13-4]
Isol. from *Achillea ptarmica* and *Chrysanthemum morifolium*. Cryst. (petrol). Mp 100-101°. Rapidly becoming dull pink in light. λ_{max} 256 (35000), 267 (43000), 283 (19000) nm.

3-Methylbutylamide: N-*(3-Methylbutyl)-2,4,12-tetradecatriene-8,10-diynamide. 2,4,12-Tetradecatrien-8,10-diynoic acid isopentylamide*
[113235-99-7]
$C_{19}H_{25}NO$ 283.413
Isol. from *Achillea wilhelmsii*. Cryst. Mp 83-85°. λ_{max} 282, 266, 252 nm (Et_2O).

Crombie, L. *et al., J.C.S.*, 1957, 2767 (*synth, uv, ir*)
Bohlmann, F. *et al., Chem. Ber.*, 1973, **106**, 1328 (*isol, ms, pmr, struct*)
Greger, H. *et al., Phytochemistry*, 1981, **20**, 2579; 1984, **23**, 1503; 1989, **28**, 2363 (*isol, struct, pmr, uv, ms*)
Greger, H. *et al., J. Nat. Prod.*, 1987, **50**, 1100 (*isol, struct, uv, ir, ms, pmr*)
Kuropka, G. *et al., Planta Med.*, 1987, **53**, 440 (*isol, pmr*)

2,4,8-Tetradecatrienoic acid T-133

$H_3C(CH_2)_4CH{=}CHCH_2CH_2CH{=}CHCH{=}CHCOOH$
$C_{14}H_{22}O_2$ 222.327

(2*E*,4*E*,8*Z*)-*form*

2-Methylpropylamide: ***2,4,8-Tetradecatrienoic acid isobutylamide***. N-*(2-Methylpropyl)-2,4,8-tetradecatrienamide, 9CI*
[81427-14-7]
$C_{18}H_{31}NO$ 277.449
Alkaloid from *Leucocyclus formosus* (Asteraceae) and from fruits of *Phellodendron chinense* (Rutaceae). Gum.

2-Hydroxy-2-methylpropylamide: N-*(2-Hydroxyisobutyl)-2,4,8-tetradecatrienamide.* ***Dihydrobungeanool***
[200938-41-6]
$C_{18}H_{31}NO_2$ 293.448
Alkaloid from *Zanthoxylum bungeanum*. Unstable oil.

Piperidide: 1-(1-Oxo-2,4,8-tetradecatrienyl)piperidine. N-*(2,4,8-Tetradecatrienoyl)piperidine. 2,4,8-Tetradecatrienoic piperidide*
$C_{19}H_{31}NO$ 289.46
Alkaloid from *Otanthus maritimus*. Oil.

Greger, H. *et al., Phytochemistry*, 1981, **20**, 2579-2581 (*isol, ms, struct*)
Su, R. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 1994, **36**, 817-820; *CA*, **122**, 209774n
Xiong, Q. *et al., Phytochemistry*, 1997, **46**, 1123-1126 (*Dihydrobungeanool*)
Christodoulopoulou, L. *et al., J. Agric. Food Chem.*, 2005, **53**, 1435-1439 (*piperidide*)

2,4,10-Tetradecatrien-8-ynoic acid T-134

$H_3CCH_2CH_2CH{=}CHC{\equiv}CCH_2CH_2CH{=}CHCH{=}CHCOOH$
$C_{14}H_{18}O_2$ 218.295

(2*E*,4*E*,10*Z*)-*form*

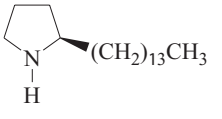
N-*(2-Methylpropyl)amide:* ***2,4,10-Tetradecatrien-8-ynoic acid isobutylamide***. N-*(2-Methylpropyl)-2,4,10-tetradecatrien-8-ynamide*
[83204-63-1]
$C_{18}H_{27}NO$ 273.417
Alkaloid from the roots of *Achillea tomentosa* (Asteraceae). Oil.

Piperidide: ***2,4,10-Tetradecatrien-8-ynoic acid piperidide***. *1-(1-Oxo-2,4,10-tetradecatrien-8-ynyl)piperidine, 9CI*
[83182-42-7]
$C_{19}H_{27}NO$ 285.428
Alkaloid from the roots of *Achillea spinulifolia* (Asteraceae). Gum.

Pyrrolidide: ***2,4,10-Tetradecatrien-8-ynoic acid pyrrolidide***
[94413-13-5]
$C_{18}H_{25}NO$ 271.402
Constit. of *Achillea nana* (Asteraceae).

Greger, H. *et al., Phytochemistry*, 1982, **21**, 1071 (*isol, uv, ir, pmr, ms, struct*)
Bohlmann, F. *et al., Tetrahedron*, 1983, **39**, 123 (*synth*)
Greger, H. *et al., Phytochemistry*, 1984, **23**, 1503-1505 (*pyrrolidide*)
Hofer, O. *et al., Tetrahedron*, 1986, **42**, 2707-2716 (*pmr, cmr, alkamides*)

2-Tetradecylpyrrolidine T-135



$C_{18}H_{37}N$ 267.497

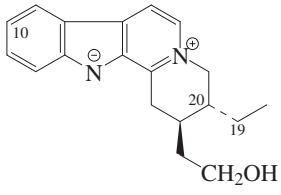
(R)-form

N-*Me: 1-Methyl-2-tetradecylpyrrolidine, 9CI.* ***Bgugaine***
[155416-32-3]
$C_{19}H_{39}N$ 281.524
Alkaloid from tubers of *Arisarum vulgare*. Displays antifungal activity, active against gram-positive bacteria. Oil. $[\alpha]_D$ -48 (MeOH).

Melhaoui, A. *et al., Nat. Prod. Lett.*, 1993, **2**, 237 (*isol, struct*)
Jossang, A. *et al., Heterocycles*, 1996, **43**, 755 (*synth*)
Takahata, H. *et al., Heterocycles*, 1997, **46**, 349-356 (*synth, pmr, cmr*)
Majik, M.S. *et al., J. Chem. Res., Synop.*, 2008, 121-122 (*synth, pmr, cmr*)

3,4,5,6-Tetradehydrodihydrocorynantheol T-136

[88644-42-2]



$C_{19}H_{22}N_2O$ 294.396
Alkaloid from *Aspidosperma marcgravianum* (Apocynaceae). Amorph. $[\alpha]_D$ -56 (c, 0.57 in MeOH).

*19,20*E-*Didehydro: 3,4,5,6-Tetradehydrogeissoschizol*
$C_{19}H_{20}N_2O$ 292.38
Alkaloid from *Rauwolfia serpentina*. Yellow powder. $[\alpha]_D^{20}$ +30.9 (c, 0.3 in MeOH). λ_{max} 253 (log ϵ 4.09); 307 (log ϵ 3.92); 366 (log ϵ 3.28) (MeOH).

*19,20*Z-*Didehydro:*
$C_{19}H_{20}N_2O$ 292.38
Alkaloid from *Rauwolfia serpentina*. Yellow powder. $[\alpha]_D^{20}$ +7 (c, 0.5 in MeOH). λ_{max} 253 (log ϵ 4.13); 308 (log ϵ 3.97); 366 (log ϵ 3.31) (MeOH).

10-Methoxy: ***10-Methoxy-3,4,5,6-tetradehydro-18,19-dihydrocorynantheol***
[92446-40-7]
$C_{20}H_{24}N_2O_2$ 324.422
Alkaloid from the bark of *Neisosperma glomerata* (Apocynaceae). Tentative struct. Isol. as an inseparable mixt. with 10-Methoxy-3,4,5,6-tetradehydrocorynantheol, 3,4,5,6-Tetradehydroochropposinine and 3,4,5,6,18,19-Hexadehydroochropposinine. Anhydronium base.

10-Methoxy, 18,19-didehydro: ***10-Methoxy-3,4,5,6-tetradehydrocorynantheol***
[92446-39-4]
$C_{20}H_{22}N_2O_2$ 322.406
Alkaloid from the bark of *Neisosperma glomerata* (Apocynaceae). Tentative struct. Anhydronium base.

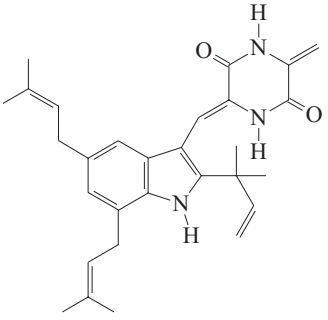
10,11-Dimethoxy: ***3,4,5,6-Tetradehydroochropposinine***
[92446-41-8]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from the bark of *Neisosperma glomerata* (Apocynaceae). Tentative struct. Isol. as an inseparable mixt. with 10-Methoxy-3,4,5,6-tetradehydro-18,19-dihydrocorynantheol, 10-Methoxy-3,4,5,6-tetradehydrocorynantheol and 3,4,5,6,18,19-Hexadehydroochropposinine.

10,11-Dimethoxy, 18,19-didehydro: ***3,4,5,6,18,19-Hexadehydroochropposinine***
[92458-34-9]
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from the bark of *Neisosperma glomerata* (Apocynaceae). Tentative struct. Anhydronium base.

Seguin, E. *et al., J. Nat. Prod.*, 1982, **45**, 738; 1984, **47**, 687-691 (*Tetradehydroochropposinine, Hexadehydroochropposinine, Methoxytetradehydrodihydrocorynantheol, Methoxytetrahydrocorynatheol*)
Fujii, T. *et al., Tetrahedron*, 1993, **49**, 1879-1890 (*Tetradehydrodihydrocorynantheol*)
Wachsmuth, O. *et al., Phytochemistry*, 2002, **61**, 705-709 (*Tetradehydrogeissoschizols*)

Tetradehydroechinulin T-137

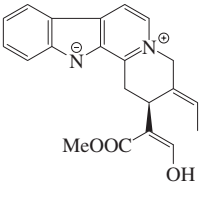
Alkaloid E7
[64361-66-6]



$C_{29}H_{35}N_3O_2$ 457.614
Alkaloid from *Aspergillus amstelodami*.

Inoue, S. *et al., Yakugaku Zasshi*, 1977, **97**, 576 (*isol*)

3,4,5,6-Tetradehydrogeissoschizine T-138



Absolute Configuration

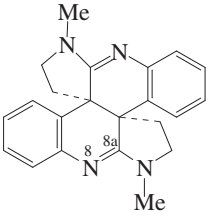
$C_{21}H_{20}N_2O_3$ 348.401

O-*β*-*D*-*Glucopyranoside:*
$C_{27}H_{30}N_2O_8$ 510.543
Alkaloid from *Rauwolfia serpentina*. Yellow powder. $[\alpha]_D^{20}$ +118.3 (c, 0.1 in MeOH). CAS no. not found 8-14CI. λ_{max} 252 (log ϵ 4.23); 307 (log ϵ 4.04); 366 (log ϵ 3.34) (MeOH).

Wachsmuth, O. *et al., Phytochemistry*, 2002, **61**, 705-709 (*isol, pmr, cmr, ms*)

Tetradehydroisocalycanthine T-139

[202932-49-8]
[202932-50-1]



Absolute Configuration

$C_{22}H_{22}N_4$ 342.443

The stereochem. of this group apart from Tetradehydroisocalycanthine itself requires clarification. Alkaloid from the flowers of *Psychotria colorata*. Needles (diisopropyl ether/$CHCl_3$). Mp 253°. $[\alpha]_D^{20}$ -449 (c,1 in EtOH). λ_{max} 274 (log ϵ 4.38); 280 (log ϵ 4.37); 300 (sh) (log ϵ 4.03) (MeOH).

*8,8*a-*Dihydro:* ***Bhesine***
[155322-45-5]
$C_{22}H_{24}N_4$ 344.458
Alkaloid from *Bhesa paniculata* (Celastraceae). No stereochem. determined.

*8,8*a,*8′,8′*a-*Tetrahydro:* ***Isocalycanthine***
[1399-92-4]
$C_{22}H_{26}N_4$ 346.474
Alkaloid from stem bark and fruits of *Psychotria forsteriana* (Rubiaceae). Mp 253°. $[\alpha]_D^{20}$ -150 (c, 2.5 in EtOH). Stereochem. not determined.

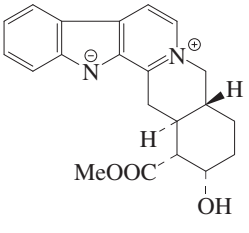
*8,8*a,*8′,8′*a-*Tetrahydro, stereoisomer:* ***Alkaloid CPC 2***
[886752-87-0]
$C_{22}H_{26}N_4$ 346.474
Alkaloid from *Chimonanthus praecox* f. *concolor*. Amorph. solid. $[\alpha]_D^{26}$ +57 (c, 0.04 in EtOH). The enantiomeric 3*aS*,3*′aS*-config. was proposed on little evidence. λ_{max} 208 (log ϵ 4.53); 250 (log ϵ 4.12); 295 (log ϵ 3.59) (MeOH).

Stereoisomer (?): ***Dehydrobhesine***
[155210-51-8]
Alkaloid from *Bhesa paniculata*. No stereochem. determined.

Adjibade, Y. *et al., Phytochemistry*, 1992, **31**, 317-319 (*Isocalycanthine*)
Balayer, A. *et al., Nat. Prod. Lett.*, 1993, **2**, 61-67 (*Bhesine, Dehydrobhesine*)
Verotta, L. *et al., J. Nat. Prod.*, 1998, **61**, 392-396 (*Tetradehydroisocalycanthine, cryst struct*)
Kitajima, M. *et al., Tet. Lett.*, 2006, **47**, 3199-3202 (*CPC 2*)

3,4,5,6-Tetradehydroyohimbine T-140

[181283-45-4]



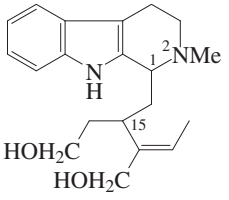
$C_{21}H_{22}N_2O_3$ 350.416
Alkaloid from *Rauwolfia serpentina*. Yellow powder. Mp 260-264°. $[\alpha]_D^{20}$ +175.4 (c, 0.3 in MeOH). λ_{max} 252 (log ϵ 4.14); 306 (log ϵ 3.97); 365 (log ϵ 3.37) (MeOH).

17-Epimer: ***3,4,5,6-Tetradehydro-β-yohimbinium***
[50834-28-1]
[50439-43-5 , 50315-64-5]
$C_{21}H_{23}N_2O_3^{\oplus}$ 351.424
Quaternary alkaloid from *Amsonia elliptica* (Apocynaceae). Cryst. + $2H_2O$ (as hydrochloride). Mp 233-234° (hydrochloride). $[\alpha]_D$ -40.6 (c, 1.09 in H_2O) (hydrochloride).

Sakai, S. *et al., Yakugaku Zasshi*, 1973, **93**, 483-489 (*17-epimer*)
Stahl, R. *et al., Helv. Chim. Acta*, 1996, **79**, 1361-1378 (*synth, pmr, cmr*)
Wachsmuth, O. *et al., Phytochemistry*, 2002, **61**, 705-709 (*isol, pmr, cmr, ms*)

Tetrahydroakagerine T-141

[113122-66-0]



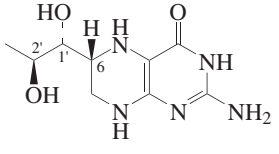
$C_{20}H_{28}N_2O_2$ 328.453
Alkaloid from the root bark and stem bark of *Strychnos johnsonii* (Loganiceae). $[\alpha]_D$ +49 (c, 0.2 in MeOH).

1,2,3,4-Tetradehydro, N*-de-Me:* ***Deppeaninol***
[180785-98-2]
$C_{19}H_{22}N_2O_2$ 310.395
Alkaloid from leaves of *Deppea blumenaviensis* (Rubiaceae). Amorph. $[\alpha]_D^{25}$ +54 (c, 0.41 in MeOH). *R*-Config. at C-15 assigned on biogenetic grounds. λ_{max} 235 (log ϵ 4.36); 250 (sh) (log ϵ 3.93); 280 (sh) (log ϵ 3.61); 288 (log ϵ 4.07); 336 (log ϵ 3.54) (EtOH).

Massiot, G. *et al., Phytochemistry*, 1987, **26**, 2839-2846 (*isol, uv, ir, pmr, cmr, ms, struct*)
Kan-Fan, C. *et al., Nat. Prod. Lett.*, 1995, **7**, 317-321 (*Deppeaninol*)

5,6,7,8-Tetrahydrobiopterin T-142

*2-Amino-6-(1,2-dihydroxypropyl)-5,6,7,8-tetrahydro-4(1*H*)-pteridinone, 9CI*
[17528-72-2]
[90366-07-7]



$C_9H_{15}N_5O_3$ 241.249
► UO3516000

(1′R,2′S,6R)-form
L-erythro-*form*. ***Sapropterin, INN***. *Biopten. Kuvan. Phenoptin. Sun 0588. 6R-BH4. T 1401*
[99630-29-2]
Cofactor for phenylalanine, tyrosine and tryptophan hydroxylases which influences the biosynth. of neurotransmitting catecholamines. Used for treatment of hyperphenylalaninemia. pK_{a1} 1.29; pK_{a2} 5.02; pK_{a3} 10.77. Other stereoisomers known.

Hydrochloride (1:2): ***Sapropterin dihydrochloride, USAN***
[69056-38-8]
Needles (HCl/EtOH). Mp 245-246°. $[\alpha]_D^{20}$ -9.8 (c, 0.56 in 0.1*M* HCl). Also forms a 2:3 hydrochloride.

Tetra-Ac: [81873-18-9]
Cryst. (MeOH). Mp 292° dec. $[\alpha]_D^{20}$ -144 (c, 0.5 in $CHCl_3$).

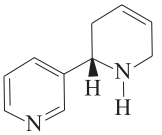
1′,2′-Diketone: ***Dyspropterin***. *6-Pyruvyltetrahydropterin. 6-Pyruvyl-5,6,7,8-tetrahydropterin*
[89687-39-8]
[101383-42-0]
$C_9H_{11}N_5O_3$ 237.218
Intermed. in the biosynthetic pathway of Tetrahydrobiopterin.

[62961-57-3 , 105119-63-9 , 62989-33-7 , 69056-39-9 , 71031-45-3 , 71074-53-8 , 83023-72-7 , 83709-59-5 , 99630-30-5 , 105119-62-8 , 27070-47-9]

Bretthauer, R. *et al., Z. Naturforsch., B*, 1972, **27**, 580-581 (*isol, tlc*)
Ayling, J.E. *et al., Biochemistry*, 1973, **12**, 2045-2051 (*biochem*)
Williams, V.P. *et al., J. Het. Chem.*, 1973, **10**, 827-833 (*ms*)
Schircks, B. *et al., Helv. Chim. Acta*, 1977, **60**, 211-214; 1978, **61**, 2731-2738 (*synth, pmr, cmr*)
Bailey, S.W. *et al., J. Biol. Chem.*, 1978, **253**, 1598-1605 (*resoln, uv, cd*)
Furrer, H.J. *et al., Helv. Chim. Acta*, 1979, **62**, 2577 (*synth, pmr, cmr*)
Armarego, W.L.F. *et al., Aust. J. Chem.*, 1982, **35**, 785-793; 1984, **37**, 355-366 (*synth, pmr, cmr, abs config, bibl, tetra-Ac*)
Whiteley, J.M. *et al., Anal. Biochem.*, 1984, **137**, 394-396 (*synth*)
Masada, M. *et al., Biochim. Biophys. Acta*, 1985, **840**, 235-244 (*Dyspropterin*)
Matsuura, S. *et al., Heterocycles*, 1985, **23**, 3115-3120 (*synth, uv, pmr, cmr, ms*)
Matsuura, S. *et al., J. Biochem. (Tokyo)*, 1985, **98**, 1341-1347; *CA*, **104**, 30828 (*abs config, bibl, cryst struct*)
Smith, G.K. *et al., J. Biol. Chem.*, 1986, **261**, 2725-2737 (*biosynth, uv*)
Levine, R.A. *et al., Ann. N.Y. Acad. Sci.*, 1988, **521**, 129-139 (*rev, metab*)
Hirotsu, I. *et al., Oyo Yakuri*, 1989, **38**, 511-529 (*pharmacol*)
Hirotsu, I. *et al., Eur. J. Pharmacol.*, 1990, **183**, 1461-1462 (*pharmacol*)
Duch, D.S. *et al., J. Nutr. Biochem.*, 1991, **2**, 411-423 (*rev, biosynth*)
Werner, E.R. *et al., Proc. Soc. Exp. Biol. Med.*, 1993, **203**, 1-12 (*rev*)
Steinfeld, R. *et al., J. Inherited Metab. Dis.*, 2004, **27**, 449-453 (*pharmacol*)
Fiege, B. *et al., Mol. Genet. Metab.*, 2004, **81**, 45-51 (*pharmacokinet*)
Burnett, J.R. *et al., IDrugs*, 2007, **10**, 805-813 (*rev*)
Michals-Matalon, K. *et al., Expert Opin. Invest. Drugs*, 2008, **17**, 245-251 (*pharmacol*)
Burton, B.K. *et al., Nat. Rev. Drug Discovery*, 2008, **7**, 199-200 (*rev*)

1,2,3,6-Tetrahydro-2,3′-bipyridine, 9CI T-143

Anatabine



(S)–form

$C_{10}H_{12}N_2$ 160.218

(R)-form [126454-22-6]
Synthetic.
Oil. $[\alpha]_D$ +156 (c, 1.6 in $CHCl_3$).

(S)-form [581-49-7]
Alkaloid from *Nicotiana tabacum, Nicotiana glutinosa* and *Duboisia hopwoodii*. Second most abundant alkaloid after Nicotine in most tobacco varieties (Solanaceae). Bp_{10} 145-156°. $[\alpha]_D^{17}$ -177.8 (neat). n_D^{20} 1.5676.
► BV6495000

Picrate: Mp 191-193°.

N-*Benzoyl:* $Bp_{0.01}$ 160-170°. $[\alpha]_D^{15}$ -15.4 (MeOH).

N-*Me:* **N-*Methylanatabine***
[5953-51-5]
$C_{11}H_{14}N_2$ 174.245
Minor alkaloid from *Nicotiana tabacum* (Solanaceae). Oil. Bp_1 120°. $[\alpha]_D^{18}$ -17.4 (MeOH).

N-*Me, dipicrate:* Mp 207-208°.

(±)-*form* [2743-90-0]
Alkaloid from tobacco (Solanaceae). Oil. Bp_{10} 145-156°. n_D^{20} 1.5655.

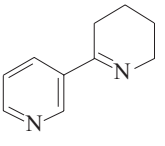
Perchlorate (1:2): Mp 129-230°.

Dipicrate: Mp 201-201.5° (198-200°).

Späth, E. *et al., Ber.*, 1936, **69**, 2448; 1937, **70**, 239; 704 (*isol, struct, resoln*)
Lukeš, R. *et al., Coll. Czech. Chem. Comm.*, 1962, **27**, 751 (*abs config*)
Quan, P.M. *et al., J.O.C.*, 1965, **30**, 2769 (*synth, struct*)
Leete, E. *et al., Chem. Comm.*, 1975, 9 (*biosynth*)
Leete, E. *et al., J.A.C.S.*, 1976, **98**, 6326 (*biosynth*)
Leete, E. *et al., Symp. Pap. - IUPAC Int. Symp. Chem. Nat. Prod., 11th, 1978*, 1978, **1**, 155 (*rev*)
Luanratana, O. *et al., Phytochemistry*, 1982, **21**, 449 (*isol*)
Génisson, Y. *et al., Heterocycles*, 1994, **39**, 811 (*synth*)
Deo, N.M. *et al., Tet. Lett.*, 1996, **37**, 1137 (*synth*)
Yang, C.-M. *et al., Can. J. Chem.*, 1997, **75**, 616-620 (*synth, ir, pmr, cmr, ms*)
Felpin, F.-X. *et al., J.O.C.*, 2001, **66**, 6305-6312 (*synth*)

3,4,5,6-Tetrahydro-2,3′-bipyridine, 9CI T-144

Anabaseine
[3471-05-4]



$C_{10}H_{12}N_2$ 160.218
Toxin from the marine hoplonemertean worms *Paranemertes peregrina* and *Amphiporus angulatus*. Also isol. from the ants *Aphaenogaster* spp. and *Messor* spp. Nicotinic receptor agonist with selectivity for α7 subtype. Oil. Bp_1 110-120°.

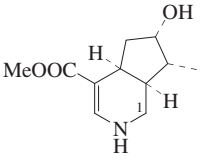
▶ DW1890000

Dipicrate: Mp 174°.

Späth, E. *et al., Ber.*, 1936, **69**, 1082 (*synth*)
Kem, W.R. *et al., Toxicon*, 1971, **9**, 15-22; 23-32 (*isol, occur*)
Kem, W.R. *et al., Experientia*, 1976, **32**, 684
Wheeler, J.W. *et al., Science (Washington, D.C.)*, 1981, **211**, 1051-1052 (*isol, ants*)
Zoltewicz, J.A. *et al., Heterocycles*, 1993, **35**, 171-179 (*pharmacol, derivs*)
Kem, W.R. *et al., J. Pharmacol. Exp. Ther.*, 1997, **283**, 979-992 (*pharmacol*)
Leclerq, S. *et al., J. Chem. Ecol.*, 2001, **27**, 945-952 (*ants, isol*)
Kem, W.R. *et al., Mar. Drugs*, 2006, **4**, 255-273 (*rev*)

Tetrahydrocantleyine T-145

[60022-24-4]



Absolute Configuration

$C_{11}H_{17}NO_3$ 211.26
Alkaloid from the trunk bark of *Lasianthera austrocaledonica* and the aerial parts of *Scaevola racemigera* (Icacinaceae, Goodeniaceae). Also from several *Strychnos* spp. Amorph. $[\alpha]_D^{20}$ +108 (c, 1.01 in $CHCl_3$).

O-*(3-Pyridinecarbonyl):* ***6*-O-*Nicotinoyltetrahydrocantleyine***
[99339-53-4]
$C_{17}H_{20}N_2O_4$ 316.356
Alkaloid from *Scaevola racemigera* (Goodeniaceae) and (?) from *Strychnos cocculoides*, *Strychnos minfiensis*, *Strychnos mitis* and *Strychnos spinosa*. Noncryst. $[\alpha]_D^{20}$ +59 (c, 1 in MeOH). In the 1997 review an isomeric struct. with an extra O atom is drawn. This struct. does not appear elsewhere in the lit. and appears to be an error.

O-*(5-Vinyl-3-pyridinecarbonyl):* ***6*-O-*(5-Vinylnicotinoyl)tetrahydrocantleyine***
[99339-54-5]
$C_{19}H_{22}N_2O_4$ 342.394
Alkaloid from *Scaevola racemigera* (Goodeniaceae). Noncryst. $[\alpha]_D^{20}$ +36 (c, 0.2 in MeOH).

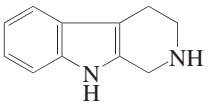
1-Oxo: ***Strychnovoline***
[96861-97-1]
$C_{11}H_{15}NO_4$ 225.244
Alkaloid from the leaves of *Strychnos dinklagei*, from *Strychnos cocculoides*, *Strychnos longicauda*, *Strychnos mitis*, *Strychnos variabilis* and the aerial parts of *Scaevola racemigera* (Loganiceae, Goodeniaceae). Needles ($CHCl_3$). Mp 177-178°. $[\alpha]_D^{20}$ +98 (c, 1 in MeOH).

1-Oxo, O-*(3-pyridinecarbonyl):* ***6*-O-*Nicotinoylstrychnovoline***
[99339-52-3]
$C_{17}H_{18}N_2O_5$ 330.34
Alkaloid from *Scaevola racemigera* (Loganiceae). Noncryst. $[\alpha]_D^{20}$ +24 (c, 0.1 in MeOH).

Sévenet, T. *et al., Phytochemistry*, 1976, **15**, 576 (*isol, uv, ir, pmr, ms, struct, synth*)
Skaltsounis, A.-L. *et al., Helv. Chim. Acta*, 1985, **68**, 1679-1685 (*Scaevola racemigera constits, abs config, synth*)
Michel, S. *et al., J. Nat. Prod.*, 1985, **48**, 86 (*Strychnovoline, isol, uv, ir, pmr, cmr, ms, struct, synth*)
Delaude, C. *et al., Bull. Soc. R. Sci. Liege*, 1997, **66**, 183-286 (*occur, Strychnos*)

1,2,3,4-Tetrahydro-β-carboline T-146

*1,2,3,4-Tetrahydro-9*H*-pyrido[3,4-*b*]indole*
[16502-01-5]



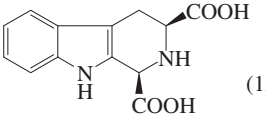
$C_{11}H_{12}N_2$ 172.229
Cryst. (EtOH). Mp 204-205°.

N^2*-(2-Methylaminobenzoyl):* ***Goshuyuamide I***. *Gosuiamide I*
[126223-62-9]
$C_{19}H_{19}N_3O$ 305.379
Alkaloid from the fruits of *Evodia rutaecarpa* (Rutaceae). Prisms (C_6H_6/Me_2CO). Mp 178-180°.

Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 610C (*nmr*)
Späth, E. *et al., Ber.*, 1930, **63**, 2102-2111 (*synth*)
Org. Synth., 1971, **51**, 136-138 (*synth*)
Shoji, N. *et al., J. Nat. Prod.*, 1989, **52**, 1160-1162 (*Goshuyuamide I*)
Yu, H.T. *et al., J.A.C.S.*, 1995, **117**, 348-357 (*cryst struct*)
Herraiz, T. *et al., J. Agric. Food Chem.*, 2004, **52**, 2652-2658 (*occur*)

1,2,3,4-Tetrahydro-β-carboline-1,3-dicarboxylic acid T-147

*2,3,4,9-Tetrahydro-1*H*-pyrido[3,4-*b*]indole-1,3-dicarboxylic acid, 9CI*
[59132-30-8]
[192180-81-7 , 192180-80-6]



(1*R*,3*S*)-*form*

$C_{13}H_{12}N_2O_4$ 260.249

(1*R*,3*S*)-*form*
Mp 269-271°. Probable config. One set of authors gives the Mp but does not assign a config., the other authors show that the main prod. of condensation of Tryptophan, T-640 with Glyoxylic acid is the *cis*-isomer, but do not give a Mp.

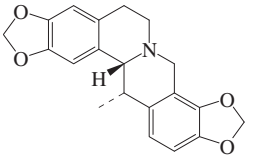
(1ξ,3ξ)-*form*
Present in various foods as Maillard prod. Cryst. Mp 270°.

[123771-30-2, 123771-45-9]

Bobbitt, J.M. *et al., J.O.C.*, 1980, **45**, 1978-1984 (*synth*)
Gutsche, B. *et al., J. Agric. Food Chem.*, 1997, **45**, 2458-2462 (*isol, pmr, ms, synth, config*)

Tetrahydrocorysamine T-148

*6,7,12*b*,13-Tetrahydro-13-methyl-4*H*-bis[1,3]benzodioxolo[5,6-*a*:4′,5′-*g*]quinolizine, 9CI*



(+)-*form*

$C_{20}H_{19}NO_4$ 337.374

(+)-*form* [32043-26-8]
Alkaloid from *Corydalis pallida* var. *tenuis* (Papaveraceae). Mp 180-181°. $[\alpha]_D$ +236.

α-N-*Me:* ***Tetrahydrocorysamine* N-*methosalt***
[72203-88-4]
$C_{21}H_{22}NO_4^{\oplus}$ 352.409
Quaternary alkaloid from *Corydalis cava* (Papaveraceae). Cryst. (MeOH) (as iodide). Mp 285-293° (iodide). CAS no. refers to iodide.

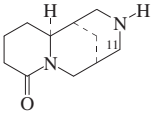
(±)-*form* [19775-54-3]
Mp 207-209°.

[42511-94-4 , 42511-93-3]

Tani, C. *et al., Yakugaku Zasshi*, 1962, **82**, 748 (*synth*)
Kaneko, H. *et al., Yakugaku Zasshi*, 1971, **91**, 101 (*isol*)
Slávik, J. *et al., Coll. Czech. Chem. Comm.*, 1979, **44**, 2261 (*deriv*)
Iwasa, K. *et al., J.O.C.*, 1981, **46**, 4744 (*abs config*)
Hanaoka, M. *et al., Chem. Comm.*, 1985, 1257 (*synth*)

Tetrahydrocytisine T-149

[18161-94-9]



Probable Relative Configuration

$C_{11}H_{18}N_2O$ 194.276
Stereochem., and stereochem. of derivs., not firmly established. Alkaloid from *Thermopsis chinensis* (Fabaceae). $Bp_{0.001}$ 160° (bath). $[\alpha]_D^{30}$ +81 (EtOH).

N-*Me:* **N-*Methyltetrahydrocytisine***
$C_{12}H_{20}N_2O$ 208.303
Alkaloid from *Ormosia indurata* seeds (Fabaceae). Cryst. (Me_2CO). Mp 210°.

N-*Et:* **N-*Ethyltetrahydrocytisine***. *Alkaloid XI*
$C_{13}H_{22}N_2O$ 222.33
Alkaloid from leaves of *Laburnocytisus adamii* (not a generally recognised genus; a hybrid of *Laburnum* and

Chamaecytisus). Tentative identification based on ms.

N-*(3-Butenyl):* ***Tetrahydrorhombifoline***
[3382-84-1]
$C_{15}H_{24}N_2O$ 248.367
Alkaloid from *Lupinus angustifolius, Lupinus truncatus, Lupinus mutabilis* seeds and *Lupinus oscar-haughtii* (Fabaceae). Oil. $Bp_{0.001}$ 160°. $[\alpha]_D^{30}$ +81 (EtOH).

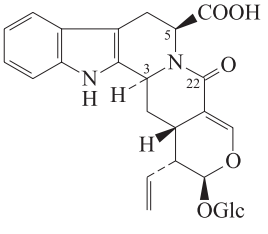
N-*(3-Butenyl), hydrochloride:* Mp 189°.

Hydroxy, N-*(3-butenyl):* ***Hydroxytetrahydrorhombifoline***
[89248-47-5]
$C_{15}H_{24}N_2O_2$ 264.367
Alkaloid from *Castilleja miniata* (Scrophulariaceae). Probable struct. Posn. of OH-group and abs. config. unknown. No phys. props. reported.

11-Oxo, N-*(3-butenyl):* ***11-Oxotetrahydrorhombifoline***
$C_{15}H_{22}N_2O_2$ 262.351
Alkaloid from *Ormosia coutinhoi* bark (Fabaceae). Cryst. (Me_2CO/hexane). $[\alpha]_D^{21}$ +18 (c, 1.1 in MeOH). Shown to belong to the opposite enantiomeric series to Rhombifoline, i.e. opposite of that illus.

Bohlmann, F. *et al., Chem. Ber.*, 1963, **96**, 2254 (*Tetrahydrorhombifoline*)
McLean, S. *et al., Can. J. Chem.*, 1967, **45**, 751; 1971, **49**, 1976 (*11-Oxotetrahydrorhombifoline, N-Methyltetrahydrocytisine*)
Balandrin, M.F. *et al., J. Nat. Prod.*, 1981, **44**, 495 (*Tetrahydrorhombifoline*)
McCoy, J.W. *et al., J. Nat. Prod.*, 1983, **46**, 902-907 (*Hydroxytetrahydrorhombifoline*)
Saito, K. *et al., CA*, 1990, **114**, 203603 (*Tetrahydrocytisine*)
Greinwald, R. *et al., Biochem. Physiol. Pflanz.*, 1991, **187**, 385 (*N-Ethyltetrahydrocytisine*)

Tetrahydrodeoxycordifoline lactam T-150



3α–*form*

$C_{27}H_{30}N_2O_{10}$ 542.541

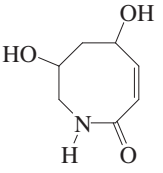
3α-form
5α-Carboxystrictosamide
[38495-77-1]
Alkaloid from *Adina rubescens* and the bark of *Nauclea diderrichii* (Rubiaceae). $[\alpha]_D$ -84 ($CHCl_3$) (as tetra-*O*-Ac, Me ester).

22-Deoxo: ***Sickingine***
[160927-80-0]
$C_{27}H_{32}N_2O_9$ 528.558
Alkaloid from bark of *Sickingia tinctoria* and *Sickingia williansii* (preferred genus name *Simira*) (Rubiaceae). Pale yellow amorph. powder. Mp 136-138°. $[\alpha]_D^{25}$ -250 (c, 1 in MeOH).

3β-form
5α-Carboxyvincosamide
[38495-79-3]
Alkaloid from *Adina rubescens* (Rubiaceae). $[\alpha]_D$ -79 ($CHCl3$) (as tetra-*O*-Ac, Me ester).

Blackstock, W.P. *et al., Chem. Comm.*, 1972, 1006 (*uv, ms, cd, struct*)
Aquino, R. *et al., Phytochemistry*, 1994, **37**, 1471 (*Sickingine*)
Lamidi, M. *et al., Magn. Reson. Chem.*, 2005, **43**, 427-429 (*Nauclea diderrichii constit*)

5,6,7,8-Tetrahydro-5,7-dihydroxy-1*H*-azocin-2-one T-151

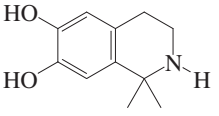


$C_7H_{11}NO_3$ 157.169
Prod. by the marine *Streptomyces* sp. strain QD518.

Fotso, S. *et al., Nat. Prod. Commun.*, 2006, **1**, 9-13 (*isol*)

1,2,3,4-Tetrahydro-6,7-dihydroxy-1,1-dimethylisoquinoline T-152

1,2,3,4-Tetrahydro-1,1-dimethyl-6,7-isoquinolinediol
[55661-23-9]



$C_{11}H_{15}NO_2$ 193.245
Alkaloid from the leaves of *Aristolochia arcuata*. Amorph. brown solid (MeOH). $[\alpha]_D^{25}$ +13 (c, 0.61 in Me_2CO). Dec. at 250°. λ_{max} 289 (log ϵ 3) (MeOH).

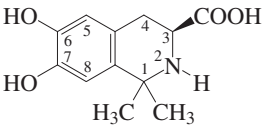
N-*(β-D-Fructopyranos-6-yl):* [556104-22-4]
$C_{17}H_{25}NO_7$ 355.387
Alkaloid from the leaves of *Aristolochia arcuata*. Amorph. brown solid (MeOH). $[\alpha]_D^{25}$ -44 (c, 0.26 in MeOH). Dec. at 105°. λ_{max} 287 (log ϵ 3.4) (MeOH).

N-*Et: 2-Ethyl-1,2,3,4-tetrahydro-6,7-dihydroxy-1,1-dimethylisoquinoline. 2-Ethyl-1,2,3,4-tetrahydro-1,1-dimethyl-6,7-isoquinolinediol*
[556104-21-3]
$C_{13}H_{19}NO_2$ 221.299
Alkaloid from the leaves of *Aristolochia arcuata*. Amorph. brown solid (MeOH). $[\alpha]_D^{25}$ +13 (c, 0.7 in MeOH). Dec. at 184°. λ_{max} 285 (log ϵ 3.5) (MeOH).

N-*(2-Hydroxy-1-hydroxymethylethyl): 1,2,3,4-Tetrahydro-6,7-dihydroxy-2-(2-hydroxy-1-hydroxymethylethyl)-1,1-dimethylisoquinoline*
[556104-20-2]
$C_{14}H_{21}NO_4$ 267.324
Alkaloid from the leaves of *Aristolochia arcuata*. Amorph. brown solid (MeOH). $[\alpha]_D^{25}$ -11 (c, 0.72 in MeOH). Dec. at 174°. λ_{max} 286 (log ϵ 3.1) (MeOH).

Francisco, M.C. *et al., Phytochemistry*, 2003, **62**, 1265-1270 (*isol, pmr, cmr*)

1,2,3,4-Tetrahydro-6,7-dihydroxy-1,1-dimethyl-3-isoquinolinecarboxylic acid, 9CI T-153



$C_{12}H_{15}NO_4$ 237.255

(S)-form
Alkaloid from the seeds of *Mucuna pruriens*. Cryst. $[\alpha]_D^{35}$ -155.3 (c, 0.07 in MeOH).

Misra, L. *et al., Phytochemistry*, 2004, **65**, 2565-2567 (*isol, pmr, cmr, ms*)

1,2,3,4-Tetrahydro-7,8-dihydroxy-1,1-dimethyl-3-isoquinolinecarboxylic acid, 9CI T-154

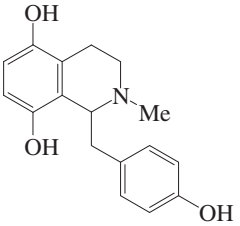
$C_{12}H_{15}NO_4$ 237.255

(S)-form
Alkaloid from the stem bark of *Mucuna pruriens*. Cryst. $[\alpha]_D^{35}$ -144.2 (c, 0.01 in MeOH).

Misra, L. *et al., Phytochemistry*, 2004, **65**, 2565-2567 (*isol, pmr, cmr, ms*)

1,2,3,4-Tetrahydro-5,8-dihydroxy-1-(4-hydroxybenzyl)-2-methylisoquinoline T-155

1,2,3,4-Tetrahydro-1-[(4-hydroxyphenyl)-methyl]-2-methyl-5,8-isoquinolinediol



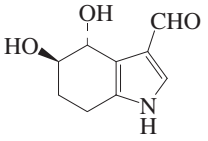
$C_{17}H_{19}NO_3$ 285.342

(ξ)-form
4′,8-Di-Me ether: 1,2,3,4-Tetrahydro-5-hydroxy-8-methoxy-1-(4-methoxybenzyl)-2-methylisoquinoline
$C_{19}H_{23}NO_3$ 313.396
Alkaloid from the aerial parts of *Sabia parviflora*. Needles. Mp 87-89°. λ_{max} 275 (no solvent reported).

Chen, J. *et al., Chin. Chem. Lett.*, 2002, **13**, 426-427 (*isol, pmr*)

4,5,6,7-Tetrahydro-4,5-dihydroxy-1*H*-indole-3-carboxaldehyde T-156

*3-Formyl-4,5,6,7-tetrahydro-4,5-dihydroxy-1*H*-indole*



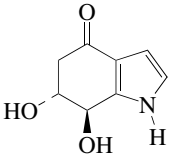
$C_9H_{11}NO_3$ 181.191

(4R*,5R*)-form

5-Ac: [501373-69-9]
$C_{11}H_{13}NO_4$ 223.228
Isol. from a Puerto Rican *Lyngbya majuscula*. Amorph. solid. $[\alpha]_D^{22}$ +104.6 (c, 0.5 in $CHCl_3$). λ_{max} 214 (log ϵ 4.39); 254 (log ϵ 4.04); 287 (log ϵ 3.67) (MeOH).

Nogle, L.M. *et al., J. Nat. Prod.*, 2003, **66**, 217-220 (*isol, pmr, cmr, ms*)

4,5,6,7-Tetrahydro-6,7-dihydroxy-1*H*-indol-4-one T-157



Relative Configuration

$C_8H_9NO_3$ 167.164

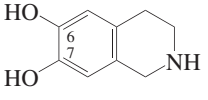
(6R*,7R*)-form

(-)-trans-*form*
Prod. by *Nocardia* sp. FH-A 1527. Oil. $[\alpha]_D^{20}$ -185.6 (c, 0.4 in MeOH). λ_{max} 208 (ϵ 9500); 243 (ϵ 4400); 276 (ϵ 3600) (MeOH).

Henne, P. *et al., Nat. Prod. Lett.*, 1997, **10**, 43-47 (*isol, uv, ir, cd, pmr, cmr*)

1,2,3,4-Tetrahydro-6,7-dihydroxyisoquinoline T-158

1,2,3,4-Tetrahydro-6,7-isoquinolinediol, 9CI
[34827-33-3]



$C_9H_{11}NO_2$ 165.191
Direct and indirect acting sympathomimetic agent.

Hydrochloride: [42887-47-8]
Cryst. (HCl aq. or EtOH). Mp 262° (254-256°).

Hydrobromide: [52768-23-7]
Cryst. (EtOH/Et_2O aq.). Mp 267-268°.

N-*Me: 1,2,3,4-Tetrahydro-2-methyl-6,7-isoquinolinediol, 9CI*
[37491-98-8]
[52553-18-1 (hydrobromide)]
$C_{10}H_{13}NO_2$ 179.218
Occurs in cerebrospinal fluid of humans. May be implicated in Parkinsons disease.

N-*Me, hydrochloride:* [63937-92-8]
Cryst. Mp 228-230°.

N,N-*Di-Me:*
[57553-19-2 (bromide)]
$C_{11}H_{16}NO_2$ 194.253
Cryst. (EtOH) (as bromide). Mp 285° (263-266°) (bromide).

6-Me ether: 1,2,3,4-Tetrahydro-7-hydroxy-6-methoxyisoquinoline. 1,2,3,4-Tetrahydro-6-methoxy-7-isoquinolinol. ***Norcorypalline***
[1011-42-3]
$C_{10}H_{13}NO_2$ 179.218
Poss. alkaloid from the stem bark of *Zizyphus rugosa*. Cryst. (C_6H_6/EtOH)(synthetic); granules (MeOH) (nat.). Mp 197-199° (182-183°)(synth.) Mp 283-285° (nat.). Subl.1.01 140. Tentative identification. The wide discrepancy in Mps. makes the struct. unlikely.

6-Me ether, hydrochloride: [1078-26-8]
Cryst. (EtOH). Mp 256-258° (246-248°).

6-Me ether, picrate:
Cryst. (EtOH aq.). Mp 252-254°.

6-Me ether, N-*Me: 1,2,3,4-Tetrahydro-6-methoxy-2-methyl-7-isoquinolinol. 1,2,3,4-Tetrahydro-7-hydroxy-6-methoxy-2-methylisoquinoline.* ***Corypalline***
[450-14-6]
$C_{11}H_{15}NO_2$ 193.245
Alkaloid from *Corydalis pallida*, *Corydalis aurea*, *Corydalis ophiocarpa*, *Thalictrum dasycarpum*, *Thalictrum rugosum*, *Thalictrum uchiyamai*, *Dory-phora sassafras*, *Islaya minor* (preferred genus name *Neoporteria*) and *Papaver bracteatum*. Cryst. ($CHCl_3$, C_6H_6 or MeOH/Et_2O). Mp 171-173° (164-165°). λ_{max} 227 (log ϵ 3.79); 286 (log ϵ 3.58) (EtOH). λ_{max} 225 (log ϵ 3.79); 286 (log ϵ 3.56) (EtOH/HCl). λ_{max} 247 (log ϵ 3.83); 302 (log ϵ 3.66) (EtOH/NaOH).

6-Me ether, N-*Me, picrate:* Mp 178°.

6-Me ether, N,N-*di-Me:* **N-*Methylcorypalline*.** N-*Methylcorypallinium*
[23594-91-4]
$C_{12}H_{18}NO_2^{\oplus}$ 208.28
Quaternary alkaloid from *Corydalis stricta* (Papaveraceae). Mp 238-239° (as iodide).

7-Me ether: 1,2,3,4-Tetrahydro-6-hydroxy-7-methoxyisoquinoline. 1,2,3,4-Tetrahydro-7-methoxy-6-isoquinolinol
[1011-43-4]
[1078-27-9]
$C_{10}H_{13}NO_2$ 179.218
Cryst. (EtOH/Et_2O) (as hydrochloride). Mp 260-263° (247-249°) (hydrochloride).

7-Me ether, N-*Me: 1,2,3,4-Tetrahydro-7-methoxy-2-methyl-6-isoquinolinol. 1,2,3,4-Tetrahydro-6-hydroxy-7-methoxy-2-methylisoquinoline.* ***Isocorypalline***
[13871-59-5]
$C_{11}H_{15}NO_2$ 193.245
Alkaloid from *Berberis oblonga* and *Corydalis stricta*. Cryst. (C_6H_6). Mp 163-164°. λ_{max} 227 (log ϵ 3.55); 286 (log ϵ 3.44) (EtOH). λ_{max} 227 (log ϵ 3.55); 286 (log ϵ 3.44) (EtOH/HCl). λ_{max} 247 (log ϵ 3.69); 301 (log ϵ 3.55) (EtOH/NaOH).

7-Me ether, N-*Me, hydrochloride:* [30765-63-0]
Cryst. (EtOH). Mp 285-290° (260°-263°).

7-Me ether, N-*Me, picrate:*
Cryst. (H_2O). Mp 168°.

Di-Me ether: 1,2,3,4-Tetrahydro-6,7-dimethoxyisoquinoline, 9CI. ***Heliamine***
[1745-07-9]
$C_{11}H_{15}NO_2$ 193.245
Alkaloid from *Pachycereus weberi*, *Pachycereus pringlei*, *Pachycereus pecten-aboriginum*, *Backebergia militaris* (preferred genus name *Pachycereus*) and *Carnegiea gigantea* (Cactaceae). Antineoplastic agent. Inhibitor of rat sarcoma 45. Mp 84-85°. Log P 0.98 (calc). Readily forms carbonate on exp. to air.

▶ NX5015000

Di-Me ether, hydrochloride: [2328-12-3]
Cryst. (EtOH/Et_2O). Mp 255° (248°, 252°).

Di-Me ether, picrate:
Cryst. (EtOH). Mp 223-225°.

Di-Me ether, N-*Me: 1,2,3,4-Tetrahydro-6,7-dimethoxy-2-methylisoquinoline.* **O-*Methylcorypalline*.** N-*Methylheliamine*
[16620-96-5]
$C_{12}H_{17}NO_2$ 207.272
Alkaloid from *Pachycereus weberi, Thalictrum dioicum, Thalictrum polygamum, Backebergia militaris, Nelumbo nucifera* (East Indian lotus), *Pilosocereus guerreronis* and *Papaver bracteatum* (Cactaceae, Ranunculaceae, Nelumbonaceae, Papaveraceae). Cryst. (MeOH or petrol/cyclohexane), cryst. + ½ H_2O (Et_2O). Mp 69-70° Mp 82° (hemihydrate). λ_{max} 290 (sh) (log ϵ 3.99); 295 (log ϵ 3.47) (no solvent reported).

▶ NX5018510

Di-Me ether, N-*Me, hydrochloride:*
[16135-43-6]
Cryst. (2-propanol). Mp 219-221° (215°, 210°).

Di-Me ether, N-*Me, picrate:* [28332-96-9]
Cryst. (C_6H_6/MeOH). Mp 160°.

Di-Me ether, N,N-*di-Me: 1,2,3,4-Tetrahydro-6,7-dimethoxy-2,2-dimethylisoquinolinium(1+).* **N-*Dimethylheliamine***
[83527-64-4 , 19626-05-2]
$C_{13}H_{20}NO_2^{\oplus}$ 222.307
Quaternary alkaloid from *Berberis amurensis* (Berberidaceae). Mp 242-243° (as iodide).

Di-Et ether: 6,7-Diethoxy-1,2,3,4-tetrahydroisoquinoline
[52759-05-4]
[63905-65-7]
$C_{13}H_{19}NO_2$ 221.299
Flakes (as hydrochloride). Mp 268° (hydrochloride).

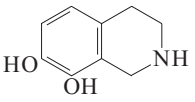
Buck, J.S. *et al., J.A.C.S.*, 1934, **56**, 1769-1771 (*synth, N-Me, 6,7-di-Me, 6,7-di-Me N-Me*)

Manske, R.H.F. *et al., Can. J. Res., Sect. B*, 1937, **15**, 159-167 (*Corypalline, occur, struct, synth*)
Corrodi, H. *et al., Helv. Chim. Acta*, 1964, **47**, 911-918 (*synth*)
Bobbitt, J.M. *et al., J.O.C.*, 1965, **30**, 2247-2250; 1967, **32**, 2225-2227; 1968, **34**, 2001-2002 (*Corypalline, Me ethers, N-Me, synth*)
Kupchan, S.M. *et al., J.O.C.*, 1969, **34**, 1062-1065 (*Corypalline, isol*)
Yang, T.-H. *et al., J. Chin. Chem. Soc. (Taipei)*, 1970, **17**, 54-56; 235-242 (*O-Methylcorypalline, isol, struct*)
Chen, C.R. *et al., J. Nat. Prod.*, 1974, **37**, 493-500 (*Corypalline, isol, uv*)
Simpson, L.L. *et al., J. Pharmacol. Exp. Ther.*, 1975, **192**, 365-371 (*activity*)
Karimov, A. *et al., Khim. Prir. Soedin.*, 1975, **11**, 530-531; *Chem. Nat. Compd. (Engl. Transl.)*, 1975, **11**, 563 (*Isocorypalline*)
Wood, G.W. *et al., Anal. Chem.*, 1976, **48(7)**, 981-984 (*ms*)
Hughes, D.W. *et al., Can. J. Chem.*, 1976, **54**, 2252-2260; 1977, **55**, 3304-3311 (*cmr*)
Von Weigrebe, W. *et al., Helv. Chim. Acta*, 1976, **59**, 949-962 (*O-Methylcorypalline, synth*)
Smissman, E.E. *et al., J. Med. Chem.*, 1976, **19**, 127-131 (*N-Me, 6,7-di-Me ether, 6,7-di-Me ether N-Me, synth*)
Lindgren, J.E. *et al., J. Nat. Prod.*, 1976, **39**, 464-466 (*N-Me, occur, ms*)
Mary, L.J.F. *et al., Indian J. Chem., Sect. B*, 1977, **15**, 182-183 (*Corypalline, synth, uv*)
Strömbom, J. *et al., Acta Pharm. Suec.*, 1978, **15**, 127-132; *CA*, **89**, 126107w (*isol*)
Strömbom, J. *et al., J. Chromatogr.*, 1978, **147**, 513-515 (*O-Methylcorypalline, hplc*)
Shamma, M. *et al., J. Nat. Prod.*, 1978, **41**, 169-178 (*O-Methylcorypalline, isol, uv, ir, pmr, ms*)
Miller, L.L. *et al., J.O.C.*, 1978, **43**, 1580-1586 (*synth, pmr, ms*)
Pandey, G.D. *et al., Indian J. Chem., Sect. B*, 1979, **18**, 544-545 (*Corypalline, synth, pmr, ms*)
Irie, H. *et al., Chem. Lett.*, 1980, 875-878 (*Corypalline, synth*)
Doetsch, P.W. *et al., J. Chromatogr.*, 1980, **189**, 79-85 (*Corypalline, occur*)
Mata, R. *et al., Phytochemistry*, 1980, **19**, 673-678; 1983, **22**, 1263-1270 (*Heliamine, N-Methylheliamine, isol, ir, uv, pmr, cmr, ms*)
Pummangura, S. *et al., J. Nat. Prod.*, 1982, **45**, 277-282 (*Heliamine, isol*)
Irgashev, T. *et al., Khim. Prir. Soedin.*, 1983, **19**, 490-493; *Chem. Nat. Compd. (Engl. Transl.)*, 1983, **19**, 461-463 (*N-Methylcorypalline, Isocorypalline*)
Theuns, H.G. *et al., Phytochemistry*, 1983, **22**, 247-250 (*Corypalline, Isocorypalline, O-Methylcorypalline, occur, synth, pmr, ms*)
Ruchirawat, S. *et al., Synth. Commun.*, 1984, **14**, 1221-1228 (*synth, pmr, ms*)
Bates, H.A. *et al., J.O.C.*, 1986, **51**, 3061-3063 (*N-Me, synth*)
Pandey, V.B. *et al., Phytochemistry*, 1988, **27**, 1915-1916 (*Norcorypalline, isol*)
Niwa, T. *et al., Biochem. Biophys. Res. Commun.*, 1991, **177**, 603-609 (*N-Me, isol*)
Moser, A. *et al., Life Sci.*, 1992, **50**, 1885-1891 (*N-Me, isol*)
Takano, S. *et al., Heterocycles*, 1993, **35**, 47-52 (*synth*)
Walpole, C.S.J. *et al., J. Med. Chem.*, 1994, **37**, 1942-1954 (*synth, pmr*)
Shakirov, R. *et al., Khim. Prir. Soedin.*, 1996, **32**, 410-512; *Chem. Nat. Compd. (Engl. Transl.)*, 1996, **32**, 386-512 (*N-Dimethylheliamine*)
Shirahita, A. *et al., Chem. Pharm. Bull.*, 1997, **45**, 1814-1819 (*synth, detn*)
Cheng, X. *et al., Chem. Biodiversity*, 2008, **5**, 1335-1344 (*Corypalline, pmr, cmr*)

1,2,3,4-Tetrahydro-7,8-dihydroxyisoquinoline T-159

1,2,3,4-Tetrahydro-7,8-isoquinolinediol, 9CI

[102830-09-1]



$C_9H_{11}NO_2$ 165.191

7-Me ether, N-*Me: 1,2,3,4-Tetrahydro-8-hydroxy-7-methoxy-2-methylisoquinoline.* ***Turcamine***
[28026-17-7]
$C_{11}H_{15}NO_2$ 193.245
Alkaloid from *Berberis turcomanica* (Berberidaceae) and *Ceratocapnos palaestinus* (Papaveraceae). Cryst. (Et_2O/petrol). Mp 102°.

7-Me ether, N-*Me; hydrochloride:* [19462-72-7]
Cryst. (EtOH). Mp 220°.

8-Me ether, N-*Me: 1,2,3,4-Tetrahydro-7-hydroxy-8-methoxy-2-methylisoquinoline*
[87339-94-4]
$C_{11}H_{15}NO_2$ 193.245
Cryst. (2-propanol). Mp 160°.

8-Me ether, N-*Me; hydrochloride:*
Cryst. (2-propanol/EtOH). Mp 265°.

Di-Me ether: 1,2,3,4-Tetrahydro-7,8-dimethoxyisoquinoline. ***Lemaireocereine***
[52759-08-7]
[15365-56-7]
$C_{11}H_{15}NO_2$ 193.245
Alkaloid from *Pachycereus weberi* and *Backebergia militaris* (preferred genus name *Pachycereus*). Also identified in trace amount in *Pachycereus pringlei* (Cactaceae). Cryst. (EtOH/Et_2O)(as hydrochloride). Mp 198° (185°)(hydrochloride).

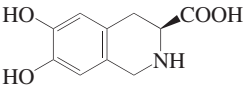
Di-Me ether, N-*Me: 1,2,3,4-Tetrahydro-7,8-dimethoxy-2-methylisoquinoline*
[65644-75-9]
Mp 173-174° (as hydrochloride).

[102830-10-4 , 27943-55-1]

Bobbitt, J.M. *et al., J.O.C.*, 1969, **34**, 2001-2002 (*synth*)
Grethe, G. *et al., Helv. Chim. Acta*, 1970, **53**, 873-881 (*synth*)
Mata, R. *et al., Phytochemistry*, 1980, **19**, 673-678; 1983, **22**, 1263-1270 (*Lemaireocereine, isol, uv, ir, pmr, ms, cmr*)
Mata, R. *et al., Planta Med.*, 1980, **38**, 180-182 (*Lemaireocereine, occur*)
Pummangura, S. *et al., J. Nat. Prod.*, 1981, **44**, 498-499 (*Lemairocereine, isol*)
Dwuma-Badu, D. *et al., J. Nat. Prod.*, 1983, **46**, 342-349 (*di-Me ether N-Me, synth*)
Theuns, H.G. *et al., Phytochemistry*, 1983, **22**, 247-250 (*derivs*)
Herath, W.H.M.W. *et al., J. Nat. Prod.*, 1990, **53**, 1006-1008 (*7-Me ether N-Me*)
Ishii, H. *et al., Chem. Pharm. Bull.*, 1992, **40**, 1993-1996 (*synth*)
Khamidov, I.I. *et al., Khim. Prir. Soedin.*, 1996, **32**, 894-896; *Chem. Nat. Compd. (Engl. Transl.)*, 1996, **32**, 880-881 (*Turcamine*)
Shinohora, T. *et al., Chem. Pharm. Bull.*, 1998, **46**, 918-927 (*synth*)

1,2,3,4-Tetrahydro-6,7-dihydroxy-3-isoquinolinecarboxylic acid, 9CI T-160

[41844-06-8]



(*S*)-*form*

$C_{10}H_{11}NO_4$ 209.201

(S)-form [34312-81-7]
Alkaloid from the seeds of *Mucuna mutisiana* (Fabaceae). Also present in *Mucuna urens, Mucuna deeringiana, Mucuna andreana, Mucuna holtoni, Mucuna pruriens, Mucuna sloanei* and *Stizolobium hassjoo* (Fabaceae). Mp 286-288° (natural) Mp 293-294° dec. (synthetic). $[\alpha]_D^{25}$ -114.9 (c, 1.65 in 20% HCl) (natural). $[\alpha]_D$ -125.91 (c, 1 in 1*M* HCl) (synthetic).

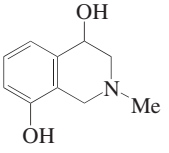
(±)-form
Synthetic. Needles (H_2O). Mp 277°. No CAS No. found 8-14CI.

Shah, R.J. *et al., J.O.C.*, 1961, **26**, 3533-3354 (*synth, ir*)
Bell, E.A. *et al., Phytochemistry*, 1971, **10**, 2191-2194 (*isol, uv, ir, pmr, ms, synth*)
Brossi, A. *et al., Helv. Chim. Acta*, 1972, **55**, 15-21 (*synth, pmr*)
Saito, K. *et al., Phytochemistry*, 1982, **21**, 474-476 (*isol, synth*)
Misra, L. *et al., Phytochemistry*, 2004, **65**, 2565-2567 (*isol, cmr*)

1,2,3,4-Tetrahydro-4,8-dihydroxy-2-methylisoquinoline T-161

1,2,3,4-Tetrahydro-2-methyl-4,8-isoquinolinediol, 9CI. ***Longimammamine***

[57236-57-4]



$C_{10}H_{13}NO_2$ 179.218

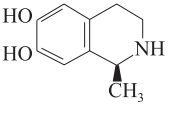
(ξ)-form
Alkaloid from *Dolichothele longimamma* and *Dolichothele uberiformis* (Cactaceae). Cryst. (EtOH/Et_2O)(as hydrochloride). Mp 235-236.5° (224-228°)(as hydrochloride).

Ranieri, R.L. *et al., J.O.C.*, 1976, **41**, 319 (*isol, uv, ir, pmr, ms, struct, synth*)
Ranieri, R.L. *et al., J. Nat. Prod.*, 1977, **40**, 173 (*isol*)

1,2,3,4-Tetrahydro-6,7-dihydroxy-1-methylisoquinoline T-162

1,2,3,4-Tetrahydro-1-methyl-6,7-isoquinolinediol, 9CI. ***Salsolinol***

[525-72-4]



(*S*)–*form*

$C_{10}H_{13}NO_2$ 179.218

(*R*)-*form* [53622-83-6]
Synthetic. Mp 174-174° (as hydrobromide). $[\alpha]_D$ +30 (MeOH) (hydrobromide).

6-Me ether: see 1,2,3,4-Tetrahydro-7-hydroxy-6-methoxy-1-methylisoquinoline, T-181

7-Me ether: see 1,2,3,4-Tetrahydro-6-hydroxy-7-methoxy-1-methylisoquinoline, T-179

Di-Me ether: see 1,2,3,4-Tetrahydro-6,7-dimethoxy-1-methylisoquinoline, T-167

(*S*)-*form* [27740-96-1]
Alkaloid from the leaves of *Aristolochia arcuata*. False neurotransmitter. Potent inhibitor of dopamine uptake into rat brain. Catecholamine*O*-methyltransferase inhibitor. Cryst. (EtOH/Et_2O) (as hydrobromide). Mp 174-175° (hydrobromide). $[\alpha]_D$ -30.9 (MeOH).

N-*(1-Deoxy-β-D-fructopyranos-1-yl):*
[556799-99-6]
$C_{16}H_{23}NO_7$ 341.36
Alkaloid from the leaves of *Aristolochia arcuata*. Amorph. brown solid (MeOH). $[\alpha]_D^{25}$ -45 (c, 1.9 in MeOH). Dec. at 105°. λ_{max} 290 (log ε 2.9) (MeOH).

(±)-*form*

Me ether, N-*Me:* **O-*Demethylcarnegine***. O-*Norcarnegine*
[176329-46-7]
$C_{12}H_{17}NO_2$ 207.272
Alkaloid from *Echium humile*. Oil. Site of methylation not known. Identical with either (±)-*N*-Methylsalsoline or (±)-*N*-Methylisosalsoline.

(ξ)-*form*
Alkaloid from *Annona reticulata* (custard apple), *Musa paradisiaca* (banana), *Theobroma cacao* (cocoa) and *Aconitum carmichaeli* (Annonaceae, Ranunculaceae, Musaceae, Sterculiaceae).

Teitel, S. *et al., J. Med. Chem.*, 1972, **15**, 845 (*synth, uv, cd, ord, pmr, abs config*)
Riggin, R.M. *et al., J. Agric. Food Chem.*, 1976, **24**, 189; 900 (*occur*)
Forgacs, P. *et al., Plant. Med. Phytother.*, 1981, **15**, 10 (*occur*)
Chen, D. *et al., Yaoxue Xuebao*, 1982, **17**, 792; *CA*, **98**, 40465k
El-Shazly, A. *et al., Phytochemistry*, 1996, **42**, 225 (*O-Demethylcarnegine*)
Francisco, M. *et al., Phytochemistry*, 2003, **62**, 1265-1270 (*isol, pmr, cmr*)
Zhao, S.-L. *et al., Chin. J. Chem.*, 2006, **24**, 439-441 (*anal, resoln*)

1,2,3,4-Tetrahydro-7,8-dihydroxy-1-methylisoquinoline T-163

1,2,3,4-Tetrahydro-1-methyl-7,8-isoquinolinediol, 9CI. ***Isosalsolinol***
[53405-13-3]
[102917-28-2]

$C_{10}H_{13}NO_2$ 179.218

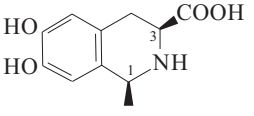
(ξ)-*form*
Alkaloid from the roots of *Mirabilis jalapana*.

7-Me ether: 1,2,3,4-Tetrahydro-7-methoxy-1-methyl-8-isoquinolinol. 1,2,3,4-Tetrahydro-8-hydroxy-7-methoxy-1-methylisoquinoline. ***Arizonine***
[60508-83-0]
$C_{11}H_{15}NO_2$ 193.245
Alkaloid from *Carnegiea gigantea* and *Pachycereus pecten-aboriginum* (Cactaceae). Cryst. (MeOH/Et_2O)(as salicylate). Mp 207-209° (salicylate).

Bruhn, J.G. *et al., J. Nat. Prod.*, 1976, **39**, 197 (*isol, pmr, ms, struct, synth*)
Strömbom, J. *et al., Acta Pharm. Suec.*, 1978, **15**, 127-132 (*Arizonine*)
Kaufman, T.S. *et al., Synth. Commun.*, 1992, **22**, 1913 (*synth*)
Suau, R. *et al., Tet. Lett.*, 1995, **36**, 1315 (*synth*)
Yi-Fen, W. *et al., Helv. Chim. Acta*, 2002, **85**, 2342-2348 (*isol*)

1,2,3,4-Tetrahydro-6,7-dihydroxy-1-methyl-3-isoquinolinecarboxylic acid, 9CI T-164

[52618-26-5]



$C_{11}H_{13}NO_4$ 223.228

(1*S*,3*S*)-*form* [35287-23-1]
Alkaloid from the seeds of *Mucuna deeringiana* and from the seeds and callus of *Stizolobium hassjoo*. Antioxidant. Cryst. (20% AcOH). Mp 240-269° dec. (natural) Mp 288-291° dec. (synthetic). $[\alpha]_D^{20}$ -157 (c, 1 in 1*M* HCl) (synthetic).

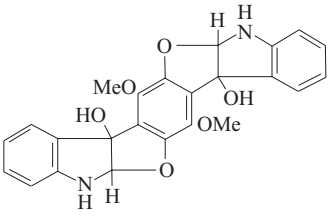
Et ester: Mp 161-162°. $[\alpha]_D$ -133.3 (c, 1 in MeOH).

(1*RS*,3*RS*)-*form*
Cryst. Mp 270-275° dec.

Müller, P. *et al., Biochem. Physiol. Pflanz.*, 1971, **162**, 234 (*biosynth*)
Brossi, A. *et al., Helv. Chim. Acta*, 1972, **55**, 15 (*synth, pmr, ord*)
Daxenbichler, M.E. *et al., Tet. Lett.*, 1972, 1801 (*isol, synth, ms, pmr, struct*)
Teitel, S. *et al., J. Nat. Prod.*, 1974, **37**, 196 (*cd, pmr, cryst struct*)
Bruderer, H. *et al., Helv. Chim. Acta*, 1975, **58**, 795 (*ester, synth, pmr*)
Saito, K. *et al., Phytochemistry*, 1982, **21**, 474 (*isol, pmr, cmr, ms, synth*)
Misra, L. *et al., Phytochemistry*, 2004, **65**, 2565-2567 (*isol, cmr*)
Shiraiwa, T. *et al., Chem. Pharm. Bull.*, 2005, **53**, 1197-1199 (*synth, pmr, cmr, resoln*)

5,5*a*,12,12*a*-Tetrahydro-7,14-dimethoxybenzo[1″,2″:4,5;4″,5″:4′,5′]difuro[2,3-*b*:2′,3′-*b*′]diindole-7*b*,14*b*-diol, 9CI T-165

[78279-84-2]

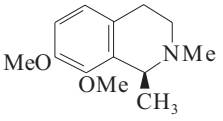


$C_{24}H_{20}N_2O_6$ 432.432
Metab. of *Aspergillus terreus* var. *africanus.* Needles (C_6H_6). Mp 221-223°. $[\alpha]_D^{19}$ +39 (c, 0.11 in dioxan).

Arai, K. *et al., Chem. Pharm. Bull.*, 1981, **29**, 1005 (*uv, pmr, struct*)

1,2,3,4-Tetrahydro-7,8-dimethoxy-1,2-dimethylisoquinoline, 9CI T-166

Tepenine
[34319-92-1]



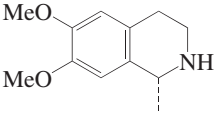
(*S*)–*form*

$C_{13}H_{19}NO_2$ 221.299
Alkaloid from *Pachycereus tehuantepecanus* (Cactaceae). Details of isol. and struct. elucidation have not been published.

Kapadia, G.J. *et al., Chem. Comm.*, 1970, 856 (*occur, synth*)

1,2,3,4-Tetrahydro-6,7-dimethoxy-1-methylisoquinoline T-167

Salsolidine. O-*Methylsalsoline*. N-*Norcarnegine*



(*R*)-*form*

$C_{12}H_{17}NO_2$ 207.272

(*R*)-*form* [54193-08-7]
Alkaloid from branches and fruits of *Genista purgans* (Fabaceae), also obt. by resoln. Mp 47.5-48.5° (71-73° from H_2O). $[\alpha]_D^{16}$ +59.9 (EtOH).

Hydrochloride: Mp 235-236°. $[\alpha]_D^{18}$ +25.3 (H_2O).

Picrate: Mp 193-194° dec.

N-*Me:* [51745-28-9]
Alkaloid from the callus of *Nandina domestica*. Oil. $[\alpha]_D^{19}$ +24.6 (c, 3 in EtOH).

(*S*)-*form* [493-48-1]
Alkaloid from *Salsola richteri* and *Salsola arbuscula* (Chenopodiaceae). Also obt. by resoln. Plates (H_2O). Mp 47.5-48.5° (anhyd.), 71-73° (dihydrate). $[\alpha]_D^{28}$ -59 (c, 0.5 in EtOH).

▶ NX5018500

Hydrochloride:
Plates (H_2O). Mp 239-241° (235-236°). $[\alpha]_D^{18}$ -24.8 (H_2O).

Picrate:
Yellow cryst. (EtOH). Mp 193-194° dec.

N-*Benzoyl:* Mp 124-125°.

N-*Me:* [38221-25-9]
Synthetic. Oil. $[\alpha]_D^{18}$ -24.4 (c, 9 in EtOH).

N-*Me, picrate:* Mp 233-234° (229-232°).

(±)-*form* [38520-68-2]
Alkaloid from *Genista purgans*,

Carnegiea gigantea, *Pachycereus pectenaboriginum*, *Bienertia cycloptera*, *Corispermum leptopyrum*, *Salsola arbuscula*, *Salsola kali*, *Salsola richteri*, *Salsola ruthenica*, *Salsola soda*, *Alhagi pseudalhagi*, *Calicotome spinosa*, *Desmodium tiliaefolium* and *Desmodium cephalotes* (Fabaceae, Cactaceae, Chenopodiaceae). Antihypertensive agent. Mp 53-53.5°. Bp_1 140°.

Hydrochloride: Mp 196-197°.

Picrate: Mp 200-201°.

N-*Benzoyl:* Mp 127-128°.

N-*Me: 1,2,3,4-Tetrahydro-6,7-dimethoxy-1,2-dimethylisoquinoline.* ***Carnegine****. Pectenine*†. N-*Methylsalsolidine*
[490-53-9]
Alkaloid from *Carnegiea gigantea*, *Haloxylon salicornicum*, *Haloxylon articulatum* and *Cereus pectenaboriginum* (*Pachycereus pectenaboriginum*) (Cactaceae, Chenopodiaceae). Convulsive agent. Oil. Bp_1 170°.

▶ Toxic.

N-*Me, hydrochloride:* Mp 209-211°.

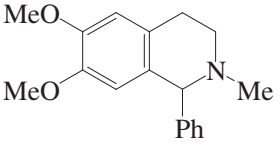
N-*Me, hydrobromide:* Mp 228°.

N-*Me, picrate:* Mp 213-215°.

Proskurnina, N. *et al., Bull. Soc. Chim. Fr.*, 1937, **4**, 1265-1271 (*isol*)
Späth, E. *et al., Ber.*, 1938, **71**, 113-119 (*synth, ir, uv*)
Barca, R. *et al., An. R. Soc. Esp. Fis. Quim.*, 1959, **55B**, 731; *CA*, **54**, 14289g (*isol*)
Battersby, A.R. *et al., J.C.S.*, 1960, 1214-1221 (*config, bibl*)
Carling, C. *et al., Acta Pharm. Suec.*, 1970, **7**, 285; *CA*, **73**, 63154f (*isol*)
Teitel, S. *et al., J. Med. Chem.*, 1972, **15**, 845-846; 1974, **17**, 134-136 (*synth*)
Brown, S.D. *et al., J.O.C.*, 1972, **37**, 1825 (*Carnegine, isol, ir, pmr, ms, synth*)
Ghosal, S. *et al., Phytochemistry*, 1973, **12**, 193-197; 1974, **13**, 1628-1629 (*isol, uv, ms, pmr, occur*)
Kagan, H.B. *et al., J. Organomet. Chem.*, 1975, **90**, 353 (*synth*)
Erhardt, P.W. *et al., J. Pharm. Sci.*, 1975, **64**, 53-62 (*synth, resoln, pharmacol, bibl*)
Middleditch, B.S. *et al., J. Chromatogr.*, 1976, **126**, 581-589 (*ms*)
Bruhn, J.G. *et al., J. Nat. Prod.*, 1976, **39**, 175-177; 197-203 (*Carnegine, isol*)
Drost-Karbowska, K. *et al., Acta Pol. Pharm.*, 1977, **34**, 421; *CA*, **88**, 117814b (*isol*)
Cymerman Craig, J. *et al., J.A.C.S.*, 1977, **99**, 7996-8002 (*uv, cd*)
Kametani, T. *et al., J.C.S. Perkin 1*, 1977, 579-581 (*synth, pmr, ir*)
Singh, S.P. *et al., J. Het. Chem.*, 1978, **15**, 541-544 (*cmr*)
Pummangura, S. *et al., J. Nat. Prod.*, 1982, **45**, 277-282 (*S-form, isol, ir, pmr, struct*)
Mata, R. *et al., Photochemistry*, 1983, **22**, 1263-1270 (*cmr*)
Yamato, M. *et al., Tet. Lett.*, 1988, **29**, 6949-6950 (*R-form, S-form, synth*)
Pyne, S.G. *et al., J.O.C.*, 1990, **55**, 1086-1093 (*R-form, N-Me, synth*)
Comins, D.L. *et al., Heterocycles*, 1991, **32**, 1869-1873 (*synth*)
Coppola, G.M. *et al., J. Het. Chem.*, 1991, **28**, 1769-1772 (*synth, pmr, cmr*)
Org. Synth., Coll. Vol., 8, 1993, 573-577 (*S-form, synth*)
Lee, A.W.M. *et al., J.C.S. Perkin 1*, 1994, 477-481 (*R-form N-Me, synth*)
Chan, W. *et al., Tet. Lett.*, 1995, **36**, 715-718 (*S-form, synth*)
Ponzo, V.L. *et al., Tet. Lett.*, 1995, **36**, 9105-9108 (*S-form, synth*)
Wirth, T. *et al., Synthesis*, 1998, 162-166 (*S-form, synth, pmr, cmr*)
Ukaji, Y. *et al., Bull. Chem. Soc. Jpn.*, 2000, **73**, 447-452 (*S-form, synth, ir, pmr, ms*)
Taniyama, D. *et al., Tet. Lett.*, 2000, **41**, 5533-5536 (*synth*)
Adam, S. *et al., J.O.C.*, 2001, **66**, 8744-8750 (*R-form, synth, pmr, cmr*)
Bracca, A.B.J. *et al., Tetrahedron*, 2004, **60**, 10575-10610 (*rev, Carnegine, synth*)
Werner, F. *et al., Eur. J. Org. Chem.*, 2007, 3911-3915 (*R-form, synth, pmr, cmr*)
Grajewska, A. *et al., Tetrahedron: Asymmetry*, 2007, **18**, 557-561 (*synth*)
Iwasa, K. *et al., J. Nat. Prod.*, 2008, **71**, 1376-1385 (*Carnegine*)

1,2,3,4-Tetrahydro-6,7-dimethoxy-2-methyl-1-phenylisoquinoline, 9CI **T-168**

[4008-69-9]
[136904-97-7]



$C_{18}H_{21}NO_2$ 283.369

(±)-*form* [54329-12-3]
Cryst. (hexane). Mp 82-83°.
N-*Oxide:* [74675-30-2]
Cryst. (EtOAc). Mp 115-118°.

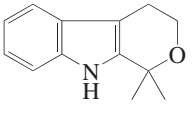
(ξ)-*form*
Alkaloid from *Adhatoda vasica*.

[16135-40-3]

Kametani, T. *et al., J. Het. Chem.*, 1965, **2**, 222 (*synth*)
Bremner, J.B. *et al., Aust. J. Chem.*, 1980, **33**, 833-841 (*synth*)
Barker, J.M. *et al., J.C.S. Perkin 1*, 1985, 275-281 (*synth*)
Minor, D.L. *et al., J. Med. Chem.*, 1994, **37**, 4317-4328 (*synth*)
Hashem, F.A.E.-M. *et al., Pharm. Pharmacol. Lett.*, 1998, **8**, 167-169 (*isol*)

1,3,4,9-Tetrahydro-1,1-dimethylpyrano[3,4-*b*]indole ***Monaspyranoindole*** **T-169**

[42821-17-0]

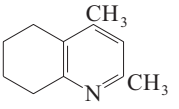


$C_{13}H_{15}NO$ 201.268
Alkaloid from *Monascus pilosus*. Cryst. (Et_2O/C_6H_6)(nat. alkaloid descr. as oil). Mp 142-144°. λ_{max} 288 (log ε 3.6) (MeOH).

Humber, L.G. *et al., Eur. J. Med. Chem. (Chim. Ther.)*, 1975, **10**, 215-220 (*synth*)
Demerson, C.A. *et al., Can. J. Chem.*, 1979, **57**, 3296-3300 (*synth*)
Zhang, X. *et al., Org. Lett.*, 2005, **7**, 2043-2046 (*synth*)
Cheng, M.J. *et al., Chem. Pharm. Bull.*, 2008, **56**, 394-397 (*isol, pmr, cmr, ms*)

5,6,7,8-Tetrahydro-2,4-dimethylquinoline **T-170**

[60169-66-6]



$C_{11}H_{15}N$ 161.246
Alkaloid from the roots of *Glycyrrhiza uralensis* (Chinese licorice). Mp 19-20°. Bp 250-251° Bp_{12} 122-123°.

Hydrochloride: Mp 195°.

Picrate: Mp 144°.

Methiodide: Mp 157°.

v. Braun, J. *et al., Ber.*, 1923, **56**, 1346 (*synth*)
Yamaguchi, K. *et al., Yakugaku Zasshi*, 1926, **533**, 53 (*synth*)
Shaw, J.E. *et al., J. Het. Chem.*, 1987, **24**, 1477 (*synth*)
Han, Y.N. *et al., Arch. Pharmacal Res.*, 1990, **13**, 101; *CA*, **113**, 227984 (*isol*)

5,6,7,8-Tetrahydro-2,5-dimethylquinoline **T-171**

2,5-Dimethyl-5,6,7,8-tetrahydroquinoline
[91245-80-6]

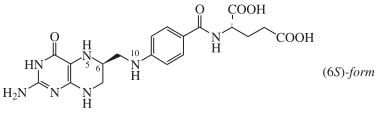
$C_{11}H_{15}N$ 161.246
Alkaloid from *Fabiana imbricata* (Solanaceae). $Bp_{0.04}$ 68-73°.

[94058-68-1]

Edwards, O.E. *et al., Can. J. Chem.*, 1962, **40**, 256 (*isol, pmr, struct*)
Soccolini, F. *et al., J. Het. Chem.*, 1984, **24**, 1001 (*synth*)
Sugita, T. *et al., Heterocycles*, 1985, **23**, 2789 (*synth*)

5,6,7,8-Tetrahydrofolic acid **T-172**

N-*[4-[[(2-Amino-1,4,5,6,7,8-hexahydro-4-oxo-6-pteridinyl)methyl]amino]benzoyl]glutamic acid, 9CI*



(6*S*)-*form*

$C_{19}H_{23}N_7O_6$ 445.434
All stereoisomers reported here have L-Glu config., therefore are diastereoisomers.

(6*R*)-*form* [74708-38-6]
5-Formyl: see Folinic acid, F-121

(6*S*)-*form* [71963-69-4]
Essential coenzyme, product of reduction of folic acid by dihydrofolate reductase. Involved in C_1-transfer during synthesis of nucleoside bases. $[\alpha]_D$ -49.9 (c, 0.149 in 1.5*M* TRIS/HCl; 0.2*M* EtSH). Readily oxid. in air.
N^{10}-*Formyl:* [2800-34-2]
[73650-39-2 , 74644-66-9]
$C_{20}H_{23}N_7O_7$ 473.444
Product of formylation of parent tetrahydrofolic acid. Gives Folinic

acid, F-121 on heating.

5-Formyl: see Folinic acid, F-121

5-N-*Me: 5-Methyltetrahydrofolic acid. Levomefolic acid, USAN. Bodyfolin®. Metafolin®. Nutrifolin®. LMSR*
[31690-09-2]
$C_{20}H_{25}N_7O_6$ 459.461
Widely distributed in milk, fruit and vegetables. Folate cofactor. Source of Me groups in biosynth. of methionine from homocysteine. Used in the treatment and prevention of folate deficiency.

5-N-*Me, Ca salt (1:1):* ***Levomefolate calcium, USAN.*** *LMCA*
[151533-22-1]
Powder (H_2O).

(6*RS*)-*form* [135-16-0]
Powder; cryst. $+1H_2O$ (as hydrochloride). Sol. H_2O. pK_a -1.25; pK_a 1.24; pK_a 3.5; pK_a 4.8; pK_a 4.82; pK_a 10.5 (2225°,$CONH_2$, 22).
▶ Exp. reprod. and teratogenic effects. MA0600800

5-Formyl: see Folinic acid, F-121

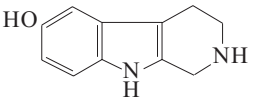
5-N-*Me:* [134-35-0]
[26560-38-3] Has been used as a modulator of 5-fluorouracil toxicity in cancer patients, but effectiveness not supported by phase II clin. trials. Cryst. (H_2O + 2-mercaptoethanol). Mp >300° (as Ca salt). Predominant circulating folate monoglutamate in human plasma/serum. Most significant folate for diagnosing folate deficiency.

[31690-08-1]

May, M. *et al., J.A.C.S.*, 1951, **73**, 3067-3075 (*formyl derivs*)
Kallen, R.G. *et al., J. Biol. Chem.*, 1966, **24**, 5845 (*props*)
Blair, J.A. *et al., Anal. Biochem.*, 1970, **34**, 376-381 (*synth, uv, pmr, N-Me*)
Ruediger, H. *et al., FEBS Lett.*, 1970, **11**, 265-267 (*synth, biochem, N-Me*)
Fontecilla-Camps, J.C. *et al., J.A.C.S.*, 1978, **101**, 6114 (*abs config*)
Feeney, J. *et al., J.C.S. Perkin 2*, 1980, 176 (*derivs, pmr, cmr*)
Kattchee, P.A. *et al., Anal. Biochem.*, 1981, **118**, 85-90 (*synth, deriv*)
Charlton, P.A. *et al., J.C.S. Perkin 1*, 1985, 1349 (*synth, uv*)
Sato, J.K. *et al., Anal. Biochem.*, 1986, **104**, 516 (*synth, derivs*)
Selhub, J. *et al., Anal. Biochem.*, 1989, **182**, 84-93 (*anal, hplc, N-Me*)
Brunner, H. *et al., Chem. Ber.*, 1992, **125**, 2085 (*synth, bibl*)
Eur. Pat., 1993, (*(Applied Pharma Res.)*)537 842; *CA*, **119**, 270915 (*Ca salt, synth, pharmacol*)
Hilhorst, E. *et al., Tet. Lett.*, 1993, **34**, 4257-4260 (*biochem*)
Bolli, E. *et al., Cancer Chemother. Pharmacol.*, 1995, **35**, 339-342 (*5-N-Me, clin trial*)
Bailey, S.W. *et al., Methods Enzymol.*, 1997, **281**, 3-16 (*6S-form, synth*)
Nelson, B.C. *et al., J. Chromatogr., B*, 2001, **765**, 141-150 (*5-N-Me, detn*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, TCR400

1,2,3,4-Tetrahydro-6-hydroxy-β-carboline T-173

*2,3,4,9-Tetrahydro-1*H*-pyrido[3,4-*b*]indol-6-ol, 9CI.* ***Plectocomine***
[23778-34-9]



$C_{11}H_{12}N_2O$ 188.229
Alkaloid from the fruit of *Plectocomiopsis geminiflorus* (Arecaceae). Mp 316° (evac. tube) (294°).
▶ UV1050000

Hydrochloride: Mp 300°.

Picrate: Mp 240°.

N,O-*Di-Ac:* [58100-30-4]
Mp 168-170°.

N^2-*Me: 1,2,3,4-Tetrahydro-6-hydroxy-2-methyl-β-carboline*
[64226-26-2]
[171066-23-2 (monohydrochloride)]
$C_{12}H_{14}N_2O$ 202.255
Alkaloid from *Evodia fargesii*.

N^2-*Me,* N^2-*oxide,* O-*β-D-glucopyranoside:* [890318-61-3]
$C_{18}H_{24}N_2O_7$ 380.397
Alkaloid from *Evodia fargesii*.
Amorph. brown powder. $[\alpha]_D^{23}$ -21 (c, 0.19 in H_2O). λ_{max} 218 ; 274 (H_2O).

*Me ether: 1,2,3,4-Tetrahydro-6-methoxy-β-carboline. 2,3,4,9-Tetrahydro-6-methoxy-1*H*-pyrido[3,4-*b*]indole. 6-Methoxytetrahydro-β-carboline.* ***Pinoline.*** *6-Methoxytryptoline*
[20315-68-8]
$C_{12}H_{14}N_2O$ 202.255
Alkaloid from *Desmodium pulchellum* (Fabaceae). Monoamine oxidase inhibitor. Tan needles (MeOH aq.). Mp 223-224°.

Me ether, hydrochloride: [35764-54-6]
Needles (EtOH aq.). Mp 288-290° (268-269°).

Me ether, picrate:
Cryst. (EtOH). Mp 240-241°.

N^2,O-*Di-Me: 1,2,3,4-Tetrahydro-6-methoxy-2-methyl-β-carboline. 2,3,4,9-Tetrahydro-6-methoxy-2-methyl-1*H*-pyrido[3,4-*b*]indole, 9CI*
[6582-80-5]
$C_{13}H_{16}N_2O$ 216.282
Alkaloid from *Desmodium pulchellum*, *Nectandra megapotamica* and *Virola theiodora*. Fine needles (MeOH aq.). Mp 214° Mp 217-218° (183-184°). λ_{max} 227 (ε 27300); 283 (ε 8350) (EtOH).

N^2,O-*Di-Me, picrate:*
Cryst. (EtOH). Mp 182-191°.

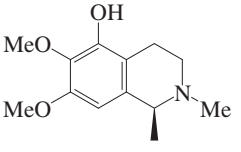
N^2,N^9,O-*Tri-Me: 1,2,3,4-Tetrahydro-6-methoxy-2,9-dimethyl-β-carboline*
[25968-13-2]
$C_{14}H_{18}N_2O$ 230.309
Alkaloid from *Papaver* sp. (Papaveraceae). Pale yellow needles (MeOH). Mp 132-135°.

[17952-64-6 , 58100-31-5]

Abramovitch, R.A. *et al., J.C.S.*, 1956, 4589-4592 (*Me ether, synth*)
Pachter, I.J. *et al., J.A.C.S.*, 1961, **83**, 635 (*Me ether, synth*)
Kiang, A.K. *et al., J. Nat. Prod.*, 1967, **30**, 189 (*isol, uv, pmr, ms, struct, synth, N,O-di-Ac*)
Agurell, S. *et al., Acta Chem. Scand.*, 1969, **23**, 903 (*N,O-di-Me, isol, ms*)
Audette, R.C.S. *et al., Can. J. Chem.*, 1970, **48**, 149 (*isol, uv, ir, pmr, ms*)
Frahn, J.L. *et al., Aust. J. Chem.*, 1971, **24**, 2189; 1974, **27**, 1367 (*N,O-di-Me, isol, uv, synth*)
Shannon, P.V.R. *et al., J.C.S.(C)*, 1971, 2837-2839 (*derivs, synth, pmr, uv, ms, struct*)
Ghosal, S. *et al., Planta Med.*, 1972, **21**, 200 (*deriv*)
Vijayanagar, H.M. *et al., J. Nat. Prod.*, 1975, **38**, 442 (*deriv, isol, synth, ms*)
Filho, D. dos S. *et al., Phytochemistry*, 1975, **14**, 821-822 (*N,O-di-Me*)
Slavík, J. *et al., Coll. Czech. Chem. Comm.*, 1976, **41**, 3343; 1977, **42**, 132; 1978, **43**, 316 (*isol, uv, ir*)
Baudouin, G. *et al., J. Nat. Prod.*, 1981, **44**, 546 (*isol, deriv*)
Jossang, A. *et al., J.O.C.*, 1991, **56**, 6527 (*N,O-di-Me, isol, ir, ms, pmr, cmr*)
Dantale, S.W. *et al., Tetrahedron*, 2003, **59**, 5507-5514 (*N,O-di-Me, synth*)
Qu, S.-J. *et al., Planta Med.*, 2006, **72**, 264-266 (*N-Me N-oxide glucoside*)
Liu, Q.-W. *et al., Zhongguo Tianran Yaowu*, 2006, **4**, 25-29; *CA*, **145**, 425429 (N^2-*Me*)

1,2,3,4-Tetrahydro-5-hydroxy-6,7-dimethoxy-1,2-dimethylisoquinoline T-174

1,2,3,4-Tetrahydro-6,7-dimethoxy-1,2-dimethyl-5-isoquinolinol, 9CI. ***Gigantine***



(*S*)-*form*

$C_{13}H_{19}NO_3$ 237.298

(*S*)-*form* [32829-58-6]
Alkaloid from *Carnegiea gigantea* (Cactaceae). Poss. hallucinogen. Cryst. (Et_2O). Mp 151-152°. $[\alpha]_D^{25}$ +27 (c, 1.99 in $CHCl_3$).

Hydrochloride:
Cryst. (EtOH). Mp 221.5-222.5°.

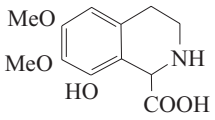
(±)-*form*
Synthetic. Cryst. (Et_2O). Mp 121-123°.

Me ether: 1,2,3,4-Tetrahydro-5,6,7-trimethoxy-1,2-dimethylisoquinoline
Mp 153-154° (as picrate).

1′-Hydroxy: see 1,2,3,4-Tetrahydro-5-hydroxy-1-hydroxymethyl-6,7-dimethoxy-2-methylisoquinoline, T-178

Kapadia, G.J. *et al., Chem. Comm.*, 1970, 856 (*synth*)
Choudhury, A.M. *et al., Chem. Ind. (London)*, 1971, 578 (*synth*)
Brown, S.D. *et al., J.O.C.*, 1972, **37**, 1825 (*isol, ir, pmr, ms, struct, abs config, synth*)
Bruhn, J.G. *et al., J. Nat. Prod.*, 1976, **39**, 197 (*isol*)
Cymerman Craig, J. *et al., J.A.C.S.*, 1977, **99**, 7996 (*uv, cd*)

1,2,3,4-Tetrahydro-8-hydroxy-6,7-dimethoxy-1-isoquinolinecarboxylic acid T-175
Peyoxylic acid
[29193-99-5]

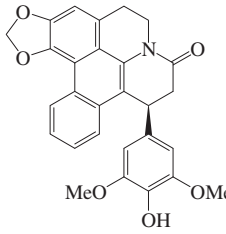


$C_{12}H_{15}NO_5$ 253.254

(±)-*form*
Mp 237-238° dec.
Me ether: [41303-73-5]
Synthetic. Mp 238-240° dec.

(ξ)-*form*
Trace component of *Lophophora williamsii* (Peyote cactus) (Cactaceae). The nat. prod. was identified by glc comparison with synthetic racemic matl.
Me ether: 1,2,3,4-Tetrahydro-6,7,8-trimethoxy-1-isoquinolinecarboxylic acid, 9CI. **O-*Methylpeyoxylic acid***
$C_{13}H_{17}NO_5$ 267.281
Trace component of *Lophophora williamsii* (Cactaceae). Mp 238-240° dec.
Kapadia, G.J. *et al., J.A.C.S.*, 1970, **92**, 6943 (*isol, ir, pmr, ms, synth, struct*)
Kapadia, G.J. *et al., J. Het. Chem.*, 1973, **10**, 135 (*deriv*)

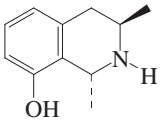
6,7,9,10-Tetrahydro-5-(4-hydroxy-3,5-dimethoxyphenyl)-5*H*-benzo[*g*][1,3]dioxolo[4′,5′:4,5]benzo[*de*]pyrido[3,2,1-*ij*]-quinolin-7-one T-176
[779355-68-9]



Absolute Configuration

$C_{28}H_{23}NO_6$ 469.493
Lignoaporphine. Alkaloid from the wood of *Annona dioica*. Amorph. yellow solid. Mp 211-213°. $[\alpha]_D$ +326 (c, 2.5 in $CHCl_3$).
Dos Santos, P.R.D. *et al., J. Braz. Chem. Soc.*, 2003, **14**, 396-400 (*isol, pmr, cmr*)

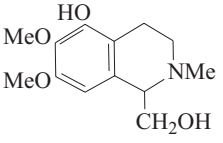
1,2,3,4-Tetrahydro-8-hydroxy-1,3-dimethylisoquinoline T-177
1,2,3,4-Tetrahydro-1,3-dimethyl-8-isoquinolinol. ***Phylline***



$C_{11}H_{15}NO$ 177.246

(1*R*,3*R*)-*form* [240133-91-9]
Alkaloid from *Habropetalum dawei*.
N-*Me:* **N-*Methylphylline***
$C_{12}H_{17}NO$ 191.272
Alkaloid from the root bark of *Ancistrocladus barteri*. Yellow oil. $[\alpha]_D^{20}$ +22 (c, 0.4 in $CHCl_3$). λ_{max} 220 ; 277 (EtOH).
N,O-*Di-Me: 1,2,3,4-Tetrahydro-8-methoxy-1,2,3-trimethylisoquinoline.* N,O-*Dimethylphylline*
$C_{13}H_{19}NO$ 205.299
Alkaloid from the root bark *Ancistrocladus barteri*. Cryst. (Et_2O/CH_2Cl_2/petrol) (as hydrochloride). $[\alpha]_D^{25}$ +39.1 (c, 0.54 in $CHCl_3$) (hydrochloride).
Bringmann, G. *et al., Anal. Chem.*, 1999, **71**, 2678-2686 (*isol, cd, pmr, ms*)
Bringmann, G. *et al., Z. Naturforsch., B*, 2003, **58**, 577-584 (*N-Methylphylline O,N-Dimethylphylline*)

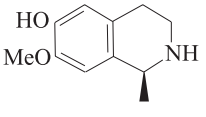
1,2,3,4-Tetrahydro-5-hydroxy-1-hydroxymethyl-6,7-dimethoxy-2-methylisoquinoline T-178
1,2,3,4-Tetrahydro-5-hydroxy-6,7-dimethoxy-2-methyl-1-isoquinolinemethanol, 9CI. Deglucopterocereine
[70475-63-7]



$C_{13}H_{19}NO_4$ 253.297

(ξ)-*form*
Alkaloid from the cactus *Pterocereus gaumeri* (Cactaceae). Mp 247-248° (as hydrochloride). $[\alpha]_D^{26}$ -1.04 (c, 2.2 in H_2O). Probably an artifact of extraction.
N-*Oxide:* ***Deglucopterocereine* N-*oxide***
[85769-27-3]
$C_{13}H_{19}NO_5$ 269.297
Alkaloid from *Pterocereus gaumeri* (Cactaceae). Cryst. (EtOH/Et_2O). Mp 210-213°.
5-O-β-D-Glucopyranoside: ***Pterocereine***
[70475-62-6]
$C_{19}H_{29}NO_9$ 415.439
Alkaloid from *Pterocereus gaumeri* (Cactaceae). Mp 198-199°. $[\alpha]_D^{26}$ -4.5 (c, 1.35 in H_2O).
Mohamed, Y.A.H. *et al., J. Nat. Prod.*, 1979, **42**, 197 (*isol, uv, ir, pmr, cmr, ms, struct, Deglucopterocereine, Pterocereine*)
Pummangura, S. *et al., Phytochemistry*, 1982, **21**, 2375 (*oxide, isol, ir, pmr, cmr, synth*)

1,2,3,4-Tetrahydro-6-hydroxy-7-methoxy-1-methylisoquinoline T-179
1,2,3,4-Tetrahydro-7-methoxy-1-methyl-6-isoquinolinol, 9CI. ***Salsoline***



(*S*)-*form*

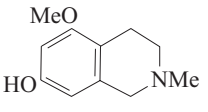
$C_{11}H_{15}NO_2$ 193.245
Antihypertensive, has been used clinically in the USSR. Antihistamine. Plant growth inhibitor. Log P 1.23 (calc).

(*R*)-*form*
Alkaloid from *Salsola richteri* and *Salsola arbuscula* (Chenopodiaceae). Monoamine oxidase inhibitor. Mp 215-216°. Log P 1.23 (calc).
Hydrochloride: [51424-33-0]
Mp 174-175° (171-172°). $[\alpha]_D$ +40.1 (H_2O) (natural). $[\alpha]_D^{25}$ +31 (c, 1 in MeOH) (synthetic).
► LD_{50} (mus, ivn) 140 mg/kg. NX6000000

(*S*)-*form* [89-31-6]
Alkaloid from *Salsola richteri* (Chenopodiaceae). Mp 218-221°.
Hydrochloride: [881-26-5]
Cryst. (H_2O). Mp 174-175°. $[\alpha]_D$ -39.2 (H_2O). $[\alpha]_D^{25}$ -31.5 (c, 1 in MeOH).
Me ether: see 1,2,3,4-Tetrahydro-6,7-dimethoxy-1-methylisoquinoline, T-167

(±)-*form*
Alkaloid from *Alangium lamarckii*, *Echinocereus merkeri*, *Pachycereus pecten-aboriginum*, *Corispermum leptopyrum*, *Salsola arbuscula*, *Salsola kali*, *Salsola richteri*, *Salsola ruthenica*, *Salsola soda*, *Calycotome spinosa*, *Desmodium tiliaefolium* and *Genista purgans* (Cactaceae, Fabaceae, Alangiaceae, Chenopodiaceae). Mp 224-226°.
Hydrochloride:
Cryst. (EtOH/Et_2O). Mp 147-149°.
Picrate:
Yellow needles (H_2O). Mp 189-191°.
Späth, E. *et al., Ber.*, 1934, **67**, 1214 (*isol, struct*)
Proskurnina, N. *et al., Bull. Soc. Chim. Fr.*, 1937, **4**, 1265 (*isol*)
Kovács, O. *et al., Chem. Ber.*, 1951, **84**, 795 (*synth*)
Battersby, A.R. *et al., J.C.S.*, 1960, 1214 (*abs config*)
Ghosal, S. *et al., Phytochemistry*, 1973, **12**, 193 (*isol, uv, ir, pmr, ms*)
Teitel, S. *et al., J. Med. Chem.*, 1974, **17**, 134 (*synth, pmr, uv*)
Drost-Karbowska, K. *et al., Acta Pol. Pharm.*, 1977, **34**, 421; *CA*, **88**, 117814b (*isol*)
Cymerman Craig, J. *et al., J.A.C.S.*, 1977, **99**, 7996 (*uv, cd*)
Strömbom, J. *et al., Acta Pharm. Suec.*, 1978, **15**, 127 (*occur*)
Strömbom, J. *et al., J. Chromatogr.*, 1978, **147**, 513 (*hplc*)
Achari, B. *et al., Planta Med. (Suppl.)*, 1980, 5 (*occur*)
Bembenek, M.E. *et al., J. Med. Chem.*, 1990, **33**, 147 (*pharmacol, enantiomers*)

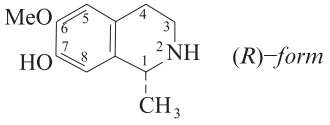
1,2,3,4-Tetrahydro-7-hydroxy-5-methoxy-2-methylisoquinoline T-180
1,2,3,4-Tetrahydro-5-methoxy-2-methyl-7-isoquinolinol, 9CI. ***Uberine***
[63596-58-7]



$C_{11}H_{15}NO_2$ 193.245
Alkaloid from *Dolichothele uberiformis* (Cactaceae). Mp 263-267° dec. (as hydrochloride).

Ranieri, R.L. *et al., J. Nat. Prod.*, 1977, **40**, 173 (*isol, ir, pmr, ms, struct*)

1,2,3,4-Tetrahydro-7-hydroxy-6-methoxy-1-methylisoquinoline T-181
1,2,3,4-Tetrahydro-6-methoxy-1-methyl-7-isoquinolinol, 9CI. ***Isosalsoline***
[4593-97-9]



$C_{11}H_{15}NO_2$ 193.245

(R)-form
Synthetic. Mp 241-242° (as hydrochloride). $[\alpha]_D$ +24.7 (c, 1 in MeOH) (hydrochloride).

N-*Me:* **N-*Methylisosalsoline***. *1,2,3,4-Tetrahydro-6-methoxy-1,2-dimethyl-7-isoquinolinol, 9CI. 1,2,3,4-Tetrahydro-7-hydroxy-6-methoxy-1,2-dimethylisoquinoline. 1-Methylcorypalline*
[35048-35-2]
$C_{12}H_{17}NO_2$ 207.272
Minor alkaloid from tubers of *Corydalis ambigua* (Papaveraceae). Also isol. from *Haloxylon articulatum* (Chenopodiaceae). Mp 156-158°. $[\alpha]_D$ +33.5 (c, 0.23 in $CHCl_3$). $[\alpha]_D$ +1 (c, 0.23 in EtOH).

(S)-form
Synthetic. Mp 241-241° (as hydrochloride). $[\alpha]_D$ -26 (c, 1 in MeOH) (hydrochloride).

N-*Me:* Alkaloid from aerial parts of *Arthrocnemum glaucum* (Chenopodiaceae). Cubes (MeOH). Mp 175-178°. $[\alpha]_D$ -32 (c, 0.79 in MeOH).

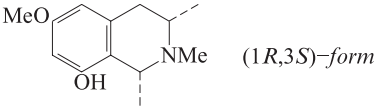
(±)-form
N-*Me:* [19641-12-4]
Synthetic. Mp 148-150°.

N-*Me; hydrochloride:* Mp 190-192°.

(ξ)-form
Alkaloid from *Pachycereus pecten-aboriginum* (Cactaceae). Spec. rotn. and stereochem. unspecified.

Strukov, I.T. *et al., Zh. Obshch. Khim.*, 1959, **29**, 3831; 1961, **31**, 2709; *CA*, **54**, 19676a; **56**, 11567f (*synth, deriv*)
Carling, C. *et al., Acta Pharm. Suec.*, 1970, **7**, 285; *CA*, **73**, 63154f (*isol, deriv*)
Naruto, S. *et al., Phytochemistry*, 1973, **12**, 3008 (*occur, deriv*)
Teitel, S. *et al., J. Med. Chem.*, 1974, **17**, 134 (*synth, uv, ord, cd, pmr*)
Strombom, J. *et al., Acta Pharm. Suec.*, 1978, **15**, 127 (*isol*)
Strombom, J. *et al., J. Chromatogr.*, 1978, **147**, 513 (*hplc*)
Khalil, A.T. *et al., Phytochemistry*, 1992, **31**, 1023 (*Methylcorypalline*)

1,2,3,4-Tetrahydro-8-hydroxy-6-methoxy-1,2,3-trimethylisoquinoline T-182
1,2,3,4-Tetrahydro-6-methoxy-1,2,3-trimethyl-8-isoquinolinol, 9CI



$C_{13}H_{19}NO_2$ 221.299

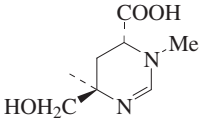
(1R,3S)-form
Gentrymine A
[157740-47-1]
Alkaloid from leaves and twigs of *Ancistrocladus korupensis* (Ancistrocladaceae). Solid. $[\alpha]_D$ +120 (c, 0.17 in MeOH).

(1S,3S)-form
N-*Me:* ***Gentrymine B***
[165689-38-3]
$C_{14}H_{22}NO_2^{\oplus}$ 236.333
Quaternary alkaloid from *Ancistrocladus korupensis* (Ancistrocladaceae). Cubes (Me_2CO)(as iodide). Mp 126° (iodide). $[\alpha]_D^{25}$ -29.8 (c, 0.3 in MeOH).

[165330-33-6]

Hallock, Y.F. *et al., J.O.C.*, 1994, **59**, 6349 (*isol, uv, ir, pmr, cmr, struct*)
Hallock, Y.F. *et al., Tet. Lett.*, 1995, **36**, 4753 (*Gentrymine B*)
Bringmann, G. *et al., Tetrahedron*, 2000, **56**, 581-585 (*synth, abs config*)

3,4,5,6-Tetrahydro-6-hydroxymethyl-3,6-dimethyl-4-pyrimidinecarboxylic acid, 9CI T-183
[246137-84-8]

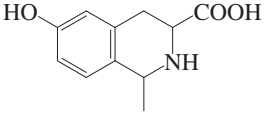


Relative Configuration

$C_8H_{14}N_2O_3$ 186.21
Isol. from the Palauan sponge *Protophlitaspongia aga*. Antifouling agent against barnacles.

Hattori, T. *et al., Fish. Sci.*, 2001, **67**, 690-693 (*isol*)

1,2,3,4-Tetrahydro-6-hydroxy-1-methyl-3-isoquinolinecarboxylic acid T-184

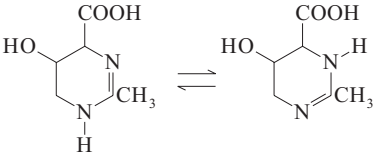


$C_{11}H_{13}NO_3$ 207.229

(1ξ,3ξ)-form [19697-94-0]
Alkaloid from the latex of *Euphorbia myrsinites* and *Euphorbia tirucalli*. Needles (propanol aq.). Mp 269-271° dec. λ_{max} 275 (H_2O).

Müller, P. *et al., Z. Naturforsch., B*, 1968, **23**, 491-493 (*isol, struct*)

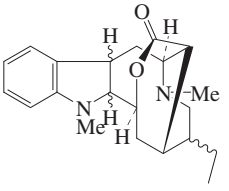
1,4,5,6-Tetrahydro-5-hydroxy-2-methyl-4(6)-pyrimidinecarboxylic acid T-185
Pyrostatin A
[117229-60-4]



$C_6H_{10}N_2O_3$ 158.157
Prod. by *Streptomyces parvulus* and marine-derived *Streptomyces* sp. SA-3501 (Pyrostatin A). Powder. $[\alpha]_D$ +125.4 (H_2O) (Pyrostatin A). Tentatively assigned struct. of Pyrostatin A after revision in 2006.

Inbar, L. *et al., J. Biol. Chem.*, 1988, **263**, 16014-16022 (*isol, cmr, N-15 nmr, biosynth*)
Castellanos, L. *et al., Org. Lett.*, 2006, **8**, 4967-4970 (*Pyrostatin A*)

2,7,19,20-Tetrahydro-3-hydroxy-1-methylvobasan-17-oic acid δ-lactone T-186
[77485-23-5]

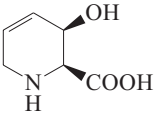


Absolute Configuration

$C_{21}H_{28}N_2O_2$ 340.464
Alkaloid from the leaves of *Rauwolfia oreogiton* (Apocynaceae). Mp 180-181°.

Akinloye, B.A. *et al., Phytochemistry*, 1980, **19**, 2741 (*isol, uv, ir, pmr, ms, struct*)

1,2,3,6-Tetrahydro-3-hydroxy-2-pyridinecarboxylic acid, 9CI T-187
1,2,3,6-Tetrahydro-3-hydroxypicolinic acid. ***3-Hydroxybaikiain***

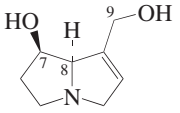


$C_6H_9NO_3$ 143.142

(2S,3R)-form [112269-85-9]
Isol. from fruiting bodies of the toxic mushroom *Russula subnigricans*. Needles (MeOH aq.). Mp 300-302°. $[\alpha]_D^{20}$ -332.7 (c, 0.3 in H_2O). $[\alpha]_D^{20}$ -324 (c, 0.3 in 1*M* HCl).

Kusano, G. *et al., Chem. Pharm. Bull.*, 1987, **35**, 3482 (*isol, ir, pmr, cmr, ms, struct*)

2,3,5,7*a*-Tetrahydro-1-hydroxy-1*H*-pyrrolizine-7-methanol, 9CI T-188
7-Hydroxy-1-hydroxymethyl-1,2-didehydropyrrolizidine



(7*R*,8*R*)-*form*

$C_8H_{13}NO_2$ 155.196
Pyrrolizidine numbering shown. In CAS numbering 8 is 7a. Simple esters of these bases are given here. Many more complex esters have individual entries.

(7*R*,8*R*)-*form*
Retronecine
[480-85-3]
Necine base from numerous pyrrolizidine alkaloids. Trace constit. in seedlings of *Crotalaria scassellatii*. Constit. of the pheromones of the flea beetles *Longitarsus* spp. Cryst. (Me_2CO or by subl.). Sol. H_2O, EtOH; spar. sol. Et_2O; fairly sol. Me_2CO, $CHCl_3$. Mp 121-122°. $[\alpha]_D^{26}$ +50.2 (EtOH). pK_a 8.88 (26°). Does not form a picrate.
► LD_{50} (mus, ivn) 634 mg/kg. VH7175000
Hydrochloride: Mp 162-163°. $[\alpha]_D^{15}$ -16 (EtOH).

N-*Oxide:* ***Retronecine* N-*oxide***
[6870-33-3]
$C_8H_{13}NO_3$ 171.196
Alkaloid from *Senecio caudatus* and *Werneria decora*.

7-O-*(3-Methylbutanoyl):* ***O*^{7}*-(3-Methylbutanoyl)retronecine***
[63503-35-5]
$C_{13}H_{21}NO_3$ 239.314
Constit. of *Crotalaria scassellatii*.

7-O-*(3-Methylbutanoyl),* N-*oxide:* ***O*^{7}*-(3-Methylbutanoyl)retronecine* N-*oxide***
[121181-03-1]
$C_{13}H_{21}NO_4$ 255.313
Constit. of *Crotalaria scassellatii*.

7-O-*Angeloyl:* ***7-Angeloylretronecine***
[6029-82-9]
$C_{13}H_{19}NO_3$ 237.298
Constit. of *Cynoglossum latifolium* and *Senecio triangularis* Constit. of the pheromones of *Longitarsus* spp. Plates (petrol). Mp 76-77° (74°). $[\alpha]_D^{24}$ +49 (c, 1.38 in EtOH).

9-O-*Angeloyl:* ***9-Angeloylretronecine***
[6922-62-9]
$C_{13}H_{19}NO_3$ 237.298
Alkaloid from aerial parts of *Alkanna orientalis* Constit. of the pheromone of *Longitarsus exoletus*. Active against gram-positive bacteria. Oil. $[\alpha]_D^{19.5}$ +2.01 (c, 0.6 in EtOH).

9-O-*Angeloyl,* N-*oxide:* ***9-Angeloylretronecine* N-*oxide***
[27773-86-0]
$C_{13}H_{19}NO_4$ 253.297
Alkaloid from the bark of *Bhesa archboldiana* (Celastraceae) and from *Heliotropium bursiferum*. Cryst. (Me_2CO). Mp 153-154°. $[\alpha]_D$ +30 (c, 0.98 in $CHCl_3$).

7-O-*(3-Methyl-2-butenoyl):* ***O*^{7}*-Senecioylretronecine***
[63503-33-3]
$C_{13}H_{19}NO_3$ 237.298
Alkaloid from *Senecio variabilis* and *Senecio caudatus*. Constit. of the pheromones of *Longitarsus* spp.

7-O-*(3-Methyl-2-butenoyl),* N-*oxide:* ***O*^{7}*-Senecioylretronecine* N-*oxide***
[119590-86-2]
$C_{13}H_{19}NO_4$ 253.297
Constit. of *Crotalaria scassellatii*.

9-O-*(3-Methyl-2-butenoyl):* ***1,2-Dehydrofuchsisenecionine***. O^9*-Senecioylretronecine*
[124262-88-0]
$C_{13}H_{19}NO_3$ 237.298
Alkaloid from *Senecio variabilis* and *Senecio nemorensis* var. *fuchsii*. Constit. of the pheromones of *Longitarsus* spp.

7-O-*(2*S*-Hydroxy-2,3-dimethylbutanoyl):* ***Heliohoustine***
[366452-81-5]
$C_{14}H_{23}NO_4$ 269.34
Alkaloid from *Ageratum houstonianum*.

9-O-*(2*S*-Hydroxy-2,3-dimethylbutanoyl):* ***Retrohoustine***
[366452-83-7]
$C_{14}H_{23}NO_4$ 269.34
Alkaloid from *Ageratum houstonianum*.

7-O-*(4-Hydroxy-3-methyl-2*Z*-butenoyl), 9-angeloyl:* ***Sencalenine***
[95066-37-8]
$C_{18}H_{25}NO_5$ 335.399
Diester of retronecine with angelic and hydroxyangelic acids. Alkaloid from *Senecio cacaliaster* (Asteraceae). Oil. $[\alpha]_D^{20}$ -8 (EtOH).

9-O-*(2-Hydroxymethyl-2-butenoyl), 7-angeloyl:* see Triangularine, T-454

7-O-*(2*S*-Hydroxy-3*S*-methylpentanoyl),* N-*oxide:* ***Isocreatonotine* N-*oxide***
[134306-31-3]
$C_{14}H_{23}NO_5$ 285.339
Alkaloid from the moth *Creatonotos transiens*.

9-O-*(2*S*-Hydroxy-3*S*-methylpentanoyl),* N-*oxide:* ***Creatonotine* N-*oxide***
[134306-30-2]
$C_{14}H_{23}NO_5$ 285.339
Alkaloid from the moth *Creatonotos transiens*.

7-O-*[2-Hydroxy-2-(1-hydroxyethyl)-3-methylpentanoyl]:* ***Heliospathine***. *Retronecine 7-*O*-curassavate*
[135683-57-7]
$C_{16}H_{27}NO_5$ 313.393
Alkaloid from *Heliotropium spathulum* (Boraginaceae). Pale yellow oil. $[\alpha]_D^{20}$ +1.5 (EtOH).

9-O-*[2-Hydroxy-2-(1-hydroxyethyl)-3-methylpentanoyl]:* ***Retronecine 9-O-curassavate***
[135626-74-3]
$C_{16}H_{27}NO_5$ 313.393
Alkaloid from *Heliotropium spathulum*. Yellow oil.

9-O-*[2*S*-Hydroxy-2-(1*R*-hydroxyethyl)-4-methylpentanoyl],* N-*oxide:*
$C_{16}H_{27}NO_6$ 329.392
Alkaloid from the roots of *Anchusa strigosa*. Red oil. $[\alpha]_D^{25}$ +2.3 (c, 0.1 in MeOH). CAS no. not found 8-14CI. λ_{max} 235 (sh) ; 282 (MeOH).

9-O-*[2*S*-Hydroxy-2-(1*S*-hydroxyethyl)-4-methylpentanoyl]:*
$C_{16}H_{27}NO_5$ 313.393
Alkaloid from the roots of *Anchusa strigosa*. Orange-yellow oil. $[\alpha]_D^{25}$ +2.2 (c, 0.05 in MeOH). CAS no. not found 8-14CI. λ_{max} 233 (sh) ; 285 (MeOH).

9-O-*[2*S*-Hydroxy-2-(1*S*-hydroxyethyl)-4-methylpentanoyl],* N-*oxide:*
$C_{16}H_{27}NO_6$ 329.392
Alkaloid from the roots of *Anchusa strigosa*. Orange oil. $[\alpha]_D^{25}$ +4 (c, 0.05 in MeOH). CAS no. not found 8-14CI. λ_{max} 230 (sh) ; 280 (MeOH).

7,9-Dibenzoyl: ***Alkaloid CG 1***. *Retronecine-7,9-dibenzoate*
[25471-42-5]
$C_{22}H_{21}NO_4$ 363.412
Alkaloid from the flowers of *Caccinia glauca* (Boraginaceae). Noncryst. Mp 137-139° (as picrate).

9-*Me ether:* ***O*^{9}*-Methylretronecine***. *7-Hydroxy-1-methoxymethyl-1,2-dehydropyrrolizidine*
[24999-22-2]
$C_9H_{15}NO_2$ 169.223
Constit. of *Crotalaria* spp. (Fabaceae). Mp 35-40°. $Bp_{0.4}$ 77°. $[\alpha]_D$ +38 (EtOH).

9-*Me ether, 7-Ac:* ***7-Acetoxy-1-methoxymethyl-1,2-dehydropyrrolizidine***
[15211-06-0]
$C_{11}H_{17}NO_3$ 211.26
Alkaloid from *Crotalaria trifoliastrum* (Fabaceae). $Bp_{0.03}$ 61°. $[\alpha]_D$ +15.2 (EtOH).

(7*S*,8*R*)-*form*
Heliotridine
[520-63-8]
Found in *Heliotropium ellipticum*, *Heliotropium eichwaldii* and *Heliotropium lasiocarpum*. Hydrol. prod. of many other pyrrolizidine alkaloids. Constit. of the pheromones of the flea beetles *Longitarsus* spp. Cryst. Mp 116-118°. $[\alpha]_D^{20}$ +31.
► LD_{50} (rat, ipr) 1500 mg/kg. UY8405000

7-O-*Angeloyl: 7-Angeloylheliotridine.* ***Rivularine***†
[723-78-4]
$C_{13}H_{19}NO_3$ 237.298
Alkaloid from *Crotalaria officinale*, other *Crotalaria* spp., *Heliotropium eichwaldii, Senecio crispatis, Senecio rivularis* and other spp. Constit. of the pheromones of *Longitarsus* spp. Cryst. (EtOAc). Mp 116-117°. $[\alpha]_D^{24}$ -18 (c, 0.78 in $CHCl_3$). $[\alpha]_D^{24}$ +19 (c, 0.66 in EtOH). λ_{max} 218 (log ϵ 4.07) (EtOH).
► EM9257500

7-O-*Angeloyl,* N-*oxide:* ***Rivularine* N-*oxide***
[64595-72-8]
$C_{13}H_{19}NO_4$ 253.297
Alkaloid from *Senecio integrifolius* var.

fauriri (Asteraceae). Fine needles. Mp 93-95°. $[\alpha]_D$ +8.3 (c, 1 in EtOH).

7,9-Di-O-*angeloyl: 7,9-Diangeloylheliotridine.* ***Asperumine***
[78513-20-9]
$C_{18}H_{25}NO_4$ 319.4
Alkaloid from *Symphytum asperum*. Mp 135-137° (as picrate).

7,9-Di-O-*angeloyl,* N-*oxide:* ***Asperumine* N-*oxide***
$C_{18}H_{25}NO_5$ 335.399
Alkaloid from *Echium vulgare*. Not indexed by CA to 14CI (2001).

9-O-*(2*S*-Hydroxy-2,3-dimethylbutanoyl):* ***Isoretrohoustine***
[366452-82-6]
$C_{14}H_{23}NO_4$ 269.34
Alkaloid from *Ageratum houstonianum*.

9-O-*[2*S*-Hydroxy-2-(1*S*-hydroxyethyl)-4-methylpentanoyl]:*
$C_{16}H_{27}NO_5$ 313.393
Alkaloid from the leaves of *Anchusa strigosa*. Orange-yellow oil. $[\alpha]_D^{25}$ +14.3 (c, 0.1 in MeOH). λ_{max} 233 (sh) ; 285 (MeOH).

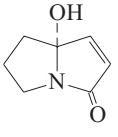
9-Me ether: **O^9-*Methylheliotridine***
[15211-05-9]
$C_9H_{15}NO_2$ 169.223
Alkaloid from *Crotalaria trifoliastrum, Crotalaria aridicola* and *Crotalaria medicaginea* (Fabaceae). Mp 54°. $Bp_{0.3}$ 90-94° (bath). $[\alpha]_D^{20}$ +25.2 (c, 1.78 in EtOH).

[875-22-9 , 6029-83-0 , 133738-53-1 , 133738-52-0 , 17690-54-9]

Warren, F.L. *et al., J.C.S.*, 1958, 4574-4575 (*abs config, bibl*)
Geissman, T.A. *et al., J.O.C.*, 1962, **27**, 139-142 (*Retronecine, synth*)
Culvenor, C.C.J. *et al., Aust. J. Chem.*, 1965, **18**, 1605-1624; 1966, **19**, 1955-1964; 1967, **20**, 757-768; 1970, **23**, 1279-1282 (*isol, pmr, synth, esters*)
Klásek, A. *et al., Coll. Czech. Chem. Comm.*, 1967, **32**, 2512-2522 (*Rivularine*)
Šimácek, V. *et al., Coll. Czech. Chem. Comm.*, 1969, **34**, 1832-1837 (*uv*)
Man'ko, I.V. *et al., J. Gen. Chem. USSR (Engl. Transl.)*, 1970, **40**, 2506 (*Asperumine*)
Sawhney, R.S. *et al., J. Indian Chem. Soc.*, 1970, **47**, 741-742 (*O^9-Methylheliotridine*)
Pedersen, E. *et al., Org. Mass Spectrom.*, 1970, **4**, 249-256 (*ms*)
Culvenor, C.C.J. *et al., J.C.S.(C)*, 1971, 3653-3664 (*cd*)
Karimov, A. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1975, **11**, 452 (*Asperumine N-oxide*)
Bale, N.M. *et al., Phytochemistry*, 1975, **14**, 2617-2622 (*biosynth*)
Siddiqui, M.A. *et al., Phytochemistry*, 1978, **17**, 2049-2050 (*Alkaloid CG 1*)
Jones, A.J. *et al., Aust. J. Chem.*, 1982, **35**, 1173-1184 (*cmr*)
Grue-Sørensen, G. *et al., Can. J. Chem.*, 1982, **60**, 643-662 (*biosynth*)
Niwa, H. *et al., Chem. Lett.*, 1983, 125-126 (*Retronecine, synth*)
Rüeger, H. *et al., Heterocycles*, 1983, **20**, 1331-1334 (*Retronecine, synth*)
Chamberlin, A.R. *et al., J.A.C.S.*, 1983, **105**, 3653-3656 (*Heliotridine, synth*)
Ohsawa, T. *et al., J.O.C.*, 1983, **48**, 3644-3648 (*Retronecine, synth*)
Röder, E. *et al., Phytochemistry*, 1984, **23**, 1761-1763 (*Sencalenine*)
Hart, D.J. *et al., J.O.C.*, 1985, **50**, 235-242 (*Heliotridine, synth*)
Vedejs, E. *et al., J.O.C.*, 1985, **50**, 2170-2174 (*Retronecine, synth*)
Glinski, J.A. *et al., Tet. Lett.*, 1985, **26**, 2857-2860 (*Heliotridine, Angeloylheliotridine, synth*)
Mattocks, A.R. *et al., Chemistry and Toxicology of Pyrrolizidine Alkaloids*, Academic Press, 1986, (*tox, rev*)
Bohlmann, F. *et al., Phytochemistry*, 1986, **25**, 1151-1159 (*O^7-angeloyl, O^7-senecioyl, O^9-senecioyl*)
Kano, S. *et al., Heterocycles*, 1988, **27**, 253-256 (*Heliotridine, synth*)
Toppel, G. *et al., Phytochemistry*, 1988, **27**, 3757-3760 (*Crotalaria scassellatii constits*)
Marquina, G. *et al., Pharmazie*, 1989, **44**, 870-871 (*activity*)
Weidenfeld, H. *et al., Sci. Pharm.*, 1989, **57**, 97; *CA*, **112**, 11824d (*1,2-Dehydrofuchsisenecionine*)
Hartmann, T. *et al., Biochem. Syst. Ecol.*, 1990, **18**, 549-554 (*Creatonotine N-oxide, Isocreatonotine N-oxide*)
Roeder, E. *et al., Phytochemistry*, 1990, **29**, 11-29 (*rev, cmr*)
Roeder, E. *et al., Phytochemistry*, 1991, **30**, 1703-1706; 1734-1737 (*Heliospathine, Rivularine N-oxide*)
Roeder, E. *et al., Fitoterapia*, 1992, **63**, 405-408 (*9-Angeloylretronecine*)
Witte, L.R. *et al., Phytochemistry*, 1992, **32**, 187-196 (*glc-ms*)
Logie, C.G. *et al., Phytochemistry*, 1994, **37**, 43-109 (*rev, pmr*)
Dobler, S. *et al., J. Chem. Ecol.*, 2000, **26**, 1291-1298 (*Longitarsus pheromones*)
Wiedenfeld, H. *et al., Phytochemistry*, 2001, **57**, 1269-1271 (*Heliohoustine, Retrohoustine, Isoretrohoustine*)
Braca, A. *et al., Planta Med.*, 2003, **69**, 835-841 (*Anchusa strigosa esters*)
Huang, J.-M. *et al., Tet. Lett.*, 2004, **45**, 3047-3050 (*synth*)
Roche, C. *et al., J.O.C.*, 2005, **70**, 8352-8363 (*Retronecine, synth*)
Siciliano, T. *et al., Phytochemistry*, 2005, **66**, 1593-1600 (*Anchusa strigosa esters*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, RFK000

5,6,7,7*a*-Tetrahydro-7*a*-hydroxy-3*H*-pyrrolizin-3-one, 9CI T-189

5-Hydroxy-1-azabicyclo[3.3.0]oct-3-en-2-one
[119100-89-9]



$C_7H_9NO_2$ 139.154

(±)-*form*
Oil or pale yellow cryst. Mp 94-95°.

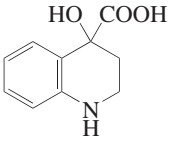
(ξ)-*form*
Prod. by *Streptomyces globisporus* and *Streptomyces griseus.*

[116515-49-2]

Guru, S. *et al., Indian J. Chem., Sect. B*, 1987, **26**, 955 (*synth*)
Ikeda, M. *et al., Heterocycles*, 1988, **27**, 943 (*synth, ir, pmr*)
Jizba, J. *et al., Coll. Czech. Chem. Comm.*, 1993, **58**, 1452-1456 (*isol, synth*)

1,2,3,4-Tetrahydro-4-hydroxy-4-quinolinecarboxylic acid T-190

***Tuberosine B*†**



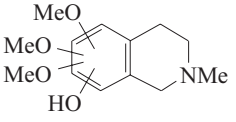
$C_{10}H_{11}NO_3$ 193.202

(ξ)-*form* [306955-19-1]
Alkaloid from the seeds of *Allium tuberosum* (Chinese chives).

Sang, S. *et al., Tianran Chanwu Yanjiu Yu Kaifa*, 2000, **12**, 1; *CA*, **133**, 360801s (*isol*)

1,2,3,4-Tetrahydro-*ar*-hydroxy-*ar*-trimethoxy-2-methylisoquinoline T-191

[93474-24-9]

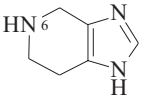


$C_{13}H_{19}NO_4$ 253.297
Alkaloid detected in *Pachycereus weberi* by tandem mass spectrom. (Cactaceae).

Roush, R.A. *et al., Anal. Chem.*, 1985, **57**, 109-114 (*occur*)

4,5,6,7-Tetrahydro-1*H*-imidazo[4,5-*c*]pyridine, 9CI T-192

Spinaceamine
[6882-74-2]



$C_6H_9N_3$ 123.157
Isol. from skin extracts of the amphibians *Verongula* sp., *Leptodactylus pentadactylus labyrinthicus*, *Nyctimystes disrupta* and *Litoria moorei*. Shows antimicrobial activity. Genus name given as Nictimystes in lit.

Hydrochloride (1:2): [62002-31-7]
Mp 277-279° dec.

Dipicrate: Mp 224-225° dec.

N^6-*Me:* ***6-Methylspinaceamine***
[10517-40-5]
$C_7H_{11}N_3$ 137.184
Isol. from the skin of *Leptodactylus pentadactylus labyrinthicus* and *Nyctimystes disrupta*. Shows antimicrobial activity. Mp 272-274° (as dihydrochloride).

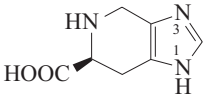
[64403-23-2]

Erspamer, V. *et al., Experientia*, 1963, **19**, 346-347 (*occur*)

Erspamer, V. *et al., Arch. Biochem. Biophys.*, 1964, **105**, 620-629 (*occur*)
Vitali, T. *et al., Gazz. Chim. Ital.*, 1964, **94**, 296-305 (*pmr, struct, synth*)
Nardelli, M. *et al., Ric. Sci., Parte 2: Sez. A*, 1964, **7**, 718-719; *CA*, **63**, 12440g (*cryst struct*)
Habermehl, G.G. *et al., Heterocycles*, 1976, **5**, 127-134 (*synth*)
Roseghini, M. *et al., Z. Naturforsch., C*, 1976, **31**, 118-120 (*occur*)
Ciminiello, P. *et al., J. Nat. Prod.*, 1994, **59**, 1564-1569 (*occur*)

4,5,6,7-Tetrahydro-1*H*-imidazo[4,5-*c*]pyridine-6-carboxylic acid, 9CI T-193

Spinacine



$C_7H_9N_3O_2$ 167.167

(*S*)-*form* [59981-63-4]
Isol. from the crab *Crangon vulgaris*, from the liver of the shark *Acanthias vulgaris* and from spinach *Spinacia oleracea*. Also isol. from the roots of *Panax ginseng*. Mp 265°. $[\alpha]_D^{20}$ -174.6 (H_2O). Forms a sesquihydrate.

Hydrochloride: Mp 286-287° (279-280°).

1-Me: [133807-71-3]
$C_8H_{11}N_3O_2$ 181.194
Cryst. (MeOH/Et_2O) (as dihydrochloride). Mp 287-290° dec. (dihydrochloride). $[\alpha]_D^{23}$ -9597 (c, 1.11 in H_2O).

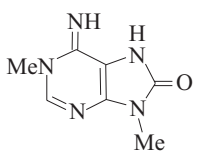
3-Me: [114787-98-3]
$C_8H_{11}N_3O_2$ 181.194
Cryst. (MeOH/Et_2O) (as dihydrochloride). Mp 262-265° dec. (dihydrochloride). $[\alpha]_D^{23}$ -93.5 (c, 1.05 in H_2O).

(±)-*form*
Synthetic. Mp 265°.

Ackermann, D. *et al., Hoppe-Seyler's Z. Physiol. Chem.*, 1941, **268**, 277-282; 1949, **284**, 129-131; 1962, **328**, 275-276 (*isol, struct, synth*)
Vitali, T. *et al., Gazz. Chim. Ital.*, 1964, **94**, 296-305 (*synth*)
Nardelli, M. *et al., Ric. Sci., Parte 2: Sez. A*, 1964, **7**, 718-719; *CA*, **63**, 12440g (*cryst struct*)
Andreetti, G.D. *et al., Gazz. Chim. Ital.*, 1971, **101**, 625-634 (*cryst struct*)
Eilazyan, O.G. *et al., CA*, 1982, **96**, 85467n (*synth*)
Han, Y.N. *et al., Arch. Pharmacal Res.*, 1987, **10**, 258-259; *CA*, **108**, 201742r (*isol*)
Klutchko, S. *et al., J. Het. Chem.*, 1991, **28**, 97-108 (*synth, pmr, derivs*)

1,6,7,9-Tetrahydro-6-imino-1,9-dimethyl-8*H*-purin-8-one, 9CI T-194

1,9-Dimethyl-6-imino-8-oxopurine
[98601-03-7]



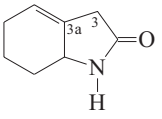
$C_7H_9N_5O$ 179.181
Isol. from the marine sponge *Hymeniacidon sanguinea*. Mp 300° (synthetic). Isol. and struct. elucidated as the Ac deriv.

N-*Ac:* [98601-04-8]
Cryst. ($CHCl_3$). Mp 245-246°.

Cimino, G. *et al., J. Nat. Prod.*, 1985, **48**, 523-528 (*isol, uv, ir, pmr, ms, cryst struct*)
Fujii, T. *et al., Heterocycles*, 1988, **27**, 1145-1148 (*synth, ir, pmr*)

5,6,7,7*a*-Tetrahydro-1*H*-indol-2(3*H*)-one T-195

Thomandersine



$C_8H_{11}NO$ 137.181
Alkaloid from leaves of *Thomandersia laurifolia* (Acanthaceae). Isol. and characterised as the acetate.

N-*Ac:* [167105-95-5]
$C_{10}H_{13}NO_2$ 179.218
Brown oil.

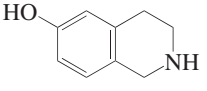
*$\Delta^{3,3a}$-Isomer: 4,5,6,7-Tetrahydro-1*H*-indol-2(3*H*)-one.* ***Isothomandersine***
$C_8H_{11}NO$ 137.181
From leaves of *Thomandersia laurifolia* (Acanthaceae). Isol. and characterised as the acetate.

$\Delta^{3,3a}$-Isomer, N-*Ac:* [167105-96-6]
$C_{10}H_{13}NO_2$ 179.218
Fine brown needles (hexane/EtOAc). Mp 92°.

Ngadjui, B.T. *et al., Phytochemistry*, 1995, **39**, 1249 (*isol, uv, ir, pmr, cmr, ms, struct*)

1,2,3,4-Tetrahydro-6-isoquinolinol, 9CI, 8CI T-196

1,2,3,4-Tetrahydro-6-hydroxyisoquinoline. 6-Hydroxy-1,2,3,4-tetrahydroisoquinoline



$C_9H_{11}NO$ 149.192
Cryst. (EtOH). Mp 192-193°.

Hydrochloride: [66393-01-9]
Mp 222-224° (233°).

Hydrobromide: [59839-23-5]
Cryst. (EtOH/Et_2O). Mp 196.7-197.8°.

N-*Me: 1,2,3,4-Tetrahydro-6-hydroxy-2-methylisoquinoline.* ***Longimammosine***
[14097-39-3]
$C_{10}H_{13}NO$ 163.219
Alkaloid from *Dolichothele longimamma* (Cactaceae). Cryst. (EtOH). Mp 180-182°.

▶ NX6030700

N-*Me; hydrochloride:* [57196-60-8]
Cryst. (EtOH/Et_2O). Mp 236°.

Me ether: 1,2,3,4-Tetrahydro-6-methoxyisoquinoline, 9CI. ***Longimammatine***
[42923-77-3]
[57196-62-0]
$C_{10}H_{13}NO$ 163.219
Alkaloid from *Dolichothele longimamma* (Cactaceae). Plates (EtOH/Et_2O)(as hydrochloride). Mp 244-245.5° (238-239°)(hydrochloride).

▶ NX5082000

Buck, J.S. *et al., J.A.C.S.*, 1934, **56**, 1769-1771 (*synth, Longimammosine*)
Schenker, F. *et al., J. Het. Chem.*, 1971, **8**, 665-668 (*synth, pmr, Longimammatine*)
Ranieri, R.L. *et al., J.O.C.*, 1976, **41**, 319-323 (*isol, uv, ir, pmr, ms, synth, Longimammatine, Longimammosine*)
Mata, R. *et al., Phytochemistry*, 1983, **22**, 1263-1270 (*cmr, Longimammatine*)
Sall, D.J. *et al., J. Med. Chem.*, 1987, **30**, 2208-2216 (*pmr, ir, cmr, ms*)
Shinohara, T. *et al., Chem. Pharm. Bull.*, 1998, **46**, 919-927 (*Me ether*)
Zhong, H.M. *et al., Org. Process Res. Dev.*, 2007, **11**, 463-465 (*Me ether*)

1,2,3,4-Tetrahydro-7-isoquinolinol, 9CI T-197

1,2,3,4-Tetrahydro-7-hydroxyisoquinoline. 7-Hydroxy-1,2,3,4-tetrahydroisoquinoline
[30798-64-2]
$C_9H_{11}NO$ 149.192
Bp_{18} 210-220°.

Hydrobromide: [110192-19-3]
Cryst. (EtOH). Mp 210.3-211.4°.

Me ether: 1,2,3,4-Tetrahydro-7-methoxyisoquinoline, 9CI. ***Weberidine***
[43207-78-9]
$C_{10}H_{13}NO$ 163.219
Alkaloid from *Pachycereus weberi* (Cactaceae). $Bp_{0.1}$ 115° (synth.).

Me ether, hydrochloride: [1745-05-7]
Cryst. (EtOH/Et_2O). Mp 233° (228°).

Pictet, A. *et al., Ber.*, 1911, **44**, 2036-2045 (*synth*)
Schenker, F. *et al., J. Het. Chem.*, 1971, **8**, 665-668 (*synth, pmr*)
Moniot, J.L. *et al., Heterocycles*, 1978, **9**, 145-152 (*pmr*)
Mata, R. *et al., Phytochemistry*, 1980, **19**, 673-678 (*Weberidine, isol, uv, ir, pmr, ms, synth, deriv*)
Mata, R. *et al., Phytochemistry*, 1983, **22**, 1263-1270 (*cmr, Weberidine*)
Sall, D.J. *et al., J. Med. Chem.*, 1987, **30**, 2208-2216 (*synth, pmr, ir, cmr, ms*)
Shinohara, T. *et al., Chem. Pharm. Bull.*, 1998, **46**, 919-927 (*Me ether, synth*)
Kucznierz, R. *et al., J. Med. Chem.*, 1998, **41**, 4983-4994 (*synth, cmr*)
Ueno, H. *et al., J. Med. Chem.*, 2005, **48**, 3586-3604 (*synth*)

1,2,3,4-Tetrahydro-8-isoquinolinol, 9CI, 8CI T-198

1,2,3,4-Tetrahydro-8-hydroxyisoquinoline. 8-Hydroxy-1,2,3,4-tetrahydroisoquinoline
[32999-37-4]
$C_9H_{11}NO$ 149.192
Cryst. by subl. Mp 181-181.5° (*in vacuo*).

Hydrochloride: [32999-38-5]
Cryst. (1*M* HCl). Mp 271-272° dec. (*in vacuo*).

Hydrobromide: [110192-20-6]
Cryst. (EtOH/Et_2O). Mp 257.5-258.7°.

N-*Me: 1,2,3,4-Tetrahydro-8-hydroxy-2-methylisoquinoline, 9CI.* ***Longimammidine***
[14788-32-0]
$C_{10}H_{13}NO$ 163.219
Alkaloid from *Dolichothele longimamma* (Cactaceae). Mp 177° (173-175°).

N-*Me; hydrochloride:* [34222-77-0]
Cryst. (EtOH/Et_2O). Mp 246-247°.

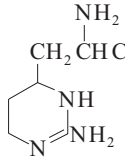
Me ether: 1,2,3,4-Tetrahydro-8-methoxyisoquinoline
[34146-68-4]
$C_{10}H_{13}NO$ 163.219
Mp 38-39°.

Me ether, hydrochloride: [24693-40-1]
Cryst. (EtOH/Et_2O). Mp 260-264°.

Okamoto, M. *et al., Chem. Pharm. Bull.*, 1967, **15**, 168-172 (*N-Me, synth*)
Schenker, F. *et al., J. Het. Chem.*, 1971, **8**, 665-668 (*synth, uv, ir, pmr*)
Ranieri, R.L. *et al., J.O.C.*, 1976, **41**, 319-323 (*N-Me, isol, uv, pmr, ms, struct, synth*)
Gray, R.W. *et al., Helv. Chim. Acta*, 1980, **63**, 315-319 (*N-Me, synth*)
Kashdan, D.S. *et al., J.O.C.*, 1982, **47**, 2638-2643 (*Me ether, synth, pmr*)
Sall, D.J. *et al., J. Med. Chem.*, 1987, **30**, 2208-2216 (*synth, pmr, ir, cmr, ms*)
Shinohara, T. *et al., Chem. Pharm. Bull.*, 1998, **46**, 919-927 (*Me ether, synth*)

Tetrahydrolathyrine T-199

α,2-Diamino-1,4,5,6-tetrahydro-4-pyrimidinepropanoic acid, 9CI
[72748-96-0]

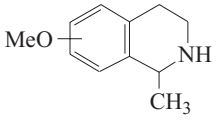


$C_7H_{14}N_4O_2$ 186.213
Amino acid from seeds of *Lonchocarpus costaricensis*. Cryst. (Me_2CO aq.)(as hydrochloride). Mp 258-259° (hydrochloride). $[\alpha]_D^{25}$ -18.9 (c, 0.175 in H_2O) (hydrochloride).

Fellows, L.E. *et al., Phytochemistry*, 1979, **18**, 1333 (*isol*)

1,2,3,4-Tetrahydro-*ar*-methoxy-1-methylisoquinoline T-200

[93474-21-6]

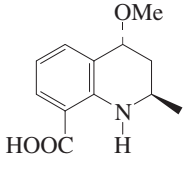


$C_{11}H_{15}NO$ 177.246
Alkaloid detected in *Pachycereus weberi* by tandem mass spectrom. (Cactaceae).

Roush, R.A. *et al., Anal. Chem.*, 1985, **57**, 109-114 (*occur*)

1,2,3,4-Tetrahydro-4-methoxy-2-methyl-8-quinolinecarboxylic acid T-201

Helquinoline



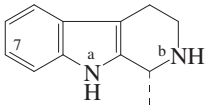
$C_{12}H_{15}NO_3$ 221.255

(2RS,4RS)-form
Prod. by the marine-derived *Janibacter limosus* Hel 1. Antibacterial and antifungal agent. Oil. λ_{max} 221 (log ε 4.05); 261 (log ε 3.67); 349 (log ε 3.49) (MeOH). λ_{max} 201 (log ε 3.96); 223 (log ε 4.03); 261 (log ε 3.59); 358 (log ε 3.47) (MeOH/HCl).

Asolkar, R.N. *et al., J. Antibiot.*, 2004, **57**, 17-23 (*isol, uv, pmr, cmr*)

1,2,3,4-Tetrahydro-1-methyl-β-carboline T-202

*2,3,4,9-Tetrahydro-1-methyl-1*H*-pyrido[3,4-*b*]indole. **Tetrahydroharman**. Calligonine. Eleagnine*



(R)-form

$C_{12}H_{14}N_2$ 186.256

(R)-form [2254-36-6]
Mp 144-148°. $[\alpha]_D^{20}$ +82 (c, 1 in EtOH).

N^b-*Me:* [148151-46-6] Synthetic. Mp 116-118°. $[\alpha]_D^{25}$ -37 (c, 2 in $CHCl_3$).

*5-Methoxy: 2,3,4,9-Tetrahydro-5-methoxy-1-methyl-1*H*-pyrido[3,4-*b*]indole.* ***5-Methoxytetrahydroharman***
[32640-61-2]
$C_{13}H_{16}N_2O$ 216.282
Alkaloid from leaves of *Banisteriopsis argentea* (Malphigiaceae). Pale brown gum. $[\alpha]_D^{25}$ +34 (c, 0.83 in $CHCl_3$). λ_{max} 216 (log ε 4.55); 290 (sh) (log ε 3.66) (EtOH).

7-Methoxy: 1,2,3,4-Tetrahydro-7-methoxy-1-methyl-β-carboline. ***Tetrahydroharmine****. Leptaflorine*
[17019-01-1]
[7671-30-9 , 7759-46-8]
$C_{13}H_{16}N_2O$ 216.282
Alkaloid from *Banisteriopsis caapi*, *Banisteriopsis argentea*, *Banisteriopsis inebrians*, *Leptactina densiflora*, *Peganum harmala* and snuff used by South American Indians (Malphigiaceae, Rubiaceae, Zygophyllaceae). Also obt. by resoln. of the racemate. Mp 198.4-199.8° Mp 210-211° (by resoln.). $[\alpha]_D^{25}$ +32 ($CHCl_3$). $[\alpha]_D$ +70.9 ($CHCl_3$) (by resoln.). Physical constants refer to the alkaloid isol. from *B. caapi*. Spec. rotns. of isolates from other spp. not available.

(S)-form [23844-21-5]
Synthetic. Mp 146-148°. $[\alpha]_D^{20}$ -81.6 (c, 1 in EtOH).

N^b-*Me: 2,3,4,9-Tetrahydro-1,2-dimethyl-1*H*-pyrido[3,4-*b*]indole.* ***1,2,3,4-Tetrahydro-1,2-dimethyl-β-carboline***
[32640-60-1]
$C_{13}H_{16}N_2$ 200.283
Alkaloid from *Banisteriopsis argenta* (Malphigiaceae). Mp 118-120° synthetic. $[\alpha]_D^{25}$ +36 (c, 2 in $CHCl_3$) (synthetic)(+26). $[\alpha]_D^{25}$ +26 (c, 0.72 in $CHCl_3$) (natural). The higher opt. rotn. refers to synthetic material. λ_{max} 226 (log ε 4.5); 278 (log ε 3.83); 293 (log ε 3.81) (EtOH) (natural).

7-Methoxy:
Obt. by resoln. of the racemate. Mp 211-212°. $[\alpha]_D$ -69.6 ($CHCl_3$).

(±)-form [525-40-6]
[2506-10-7]
Alkaloid from *Leptactina densiflora* (Rubiaceae) and several spp. from Fabaceae and Chenopodiaceae. Mp 179-180°.

Hydrochloride: Mp 267° dec.

N-*Benzoyl:* Mp 168-169° Mp 194-195°.

N^b-*Me:* ***Leptocladine***
[27297-47-8]
$C_{13}H_{16}N_2$ 200.283
Alkaloid from *Acacia complanata*, *Arthrophytum leptocladum* and several other spp. in the Fabaceae and Chenopodiaceae. Mp 112°.

N^b-*Me, picrate:* Mp 182-184°.

5-Methoxy: [83788-97-0]
Cryst. (EtOAc/hexane). Mp 200-202°. λ_{max} 226 (log ε 4.25); 271 (log ε 3.59); 280 (log ε 3.52); 292 (log ε 3.53) (EtOH).

5-Methoxy, N^b*-Me:* [83789-00-8]
Cryst. (MeOH aq.). Mp 229-231°. λ_{max} 226 (log ε 4.25); 271 (log ε 3.59); 280 (log ε 3.52); 292 (log ε 3.53) (EtOH).

7-Methoxy: [46501-01-3]
Synthetic. Needles (MeOH). Mp 198-199°.

(ξ)-form
N^b-*Oxide:* ***Tetrahydroharman*** $\mathbf{N^b}$***-oxide****. Calligonidine*
[2288-25-7]
$C_{12}H_{14}N_2O$ 202.255
Alkaloid from *Calligonum minimum* (Polygonaceae). Mp 132-133°.

N^b-*Oxide; hydrochloride:* Mp 215-215.5°.

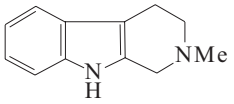
N^b-*Ethoxycarbonyl: 2-Ethoxycarbonyl-1,2,3,4-tetrahydro-1-methyl-β-carboline.* ***2-Ethoxycarbonyltetrahydroharman***
$C_{15}H_{18}N_2O_2$ 258.319
Alkaloid from *Croton moritibensis*.

Perkin, W.H. *et al., J.C.S.*, 1919, **115**, 933-967 (*Tetrahydroharmine, synth*)
Paris, P.R. *et al., Bull. Soc. Chim. Fr.*, 1957, 780-782 (*Tetrahydroharman, Tetrahydroharmine, isol, uv, ir*)
Hochstein, F.A. *et al., J.A.C.S.*, 1957, **79**, 5735-5736 (*Tetrahydroharmine, isol*)
Absusalamov, B.A. *et al., CA*, 1963, **58**, 11412b (*oxide*)
Bernauer, K. *et al., Helv. Chim. Acta*, 1964, **47**, 1075-1077 (*Tetrahydroharmine, isol*)
Johns, S.R. *et al., Aust. J. Chem.*, 1966, **19**, 1539 (*Banisteriopsis argentea constits*)
Koblicova, Z. *et al., Chem. Ind. (London)*, 1966, 1342 (*Tetrahydroharmine, abs config*)
O'Donovan, D.G. *et al., J.C.S.(C)*, 1967, 1109-1110 (*biosynth*)
Ghosal, S. *et al., J. Pharm. Sci.*, 1971, **60**, 1209-1212 (*Banisteriopsis argentea constits*)
Ghosal, S. *et al., Planta Med.*, 1972, **21**, 200-203 (*Tetrahydroharmine, cmr*)
Bláha, K. *et al., Coll. Czech. Chem. Comm.*, 1974, **39**, 3168-3176 (*resoln, config*)
Middleditch, B.S. *et al., J. Chromatogr.*, 1976, **126**, 581-589 (*ms*)

Repke, D.B. *et al., J. Het. Chem.*, 1982, **19**, 845-848 (*5-methoxy, 5-methoxy-N^b-Ne, synth, bibl*)
Han, S.P. *et al., Heterocycles*, 1985, **23**, 1671-1673 (*N^b-oxide, synth*)
Chrisey, L.A. *et al., Heterocycles*, 1990, **30**, 267-270 (*Tetrahydroharmine, resoln*)
Qais, N. *et al., Chem. Pharm. Bull.*, 1991, **39**, 3338-3340 (*synth*)
Peng Shiqi, *et al., Annalen*, 1993, 137-140 (*N^b-Methyltetrahydroharman, synth*)
Herraiz, T. *et al., J. Agric. Food Chem.*, 2000, **48**, 4900-4904; 2004, **52**, 2652-2658 (*hplc, occur, bibl*)
De Araújo-Júnior, V.T. *et al., Pharm. Biol.*, 2004, **42**, 62-67 (*2-Ethoxycarbonyl tetrahydroharman*)

1,2,3,4-Tetrahydro-2-methyl-β-carboline T-203

*2,3,4,9-Tetrahydro-2-methyl-1*H*-pyrido[3,4-*b*]indole, 9CI*
[13100-00-0]



$C_{12}H_{14}N_2$ 186.256
Alkaloid from *Arthrophytum leptocladum*, *Virola theiodora*, *Virola sebifera*, *Hammada leptoclada*, *Elaeagnus angustifolia*, *Phalaris aquatica*, *Phalaris arundinacea*, *Acacia simplicifolia*, *Anadenanthera peregrina*, *Banisteriopsis rusbyana*, *Testulea gabonensis*, *Gymnacranthera paniculata*, *Psychotria carthaginensis*, *Psychotria viridis* and *Flueggea microcarpa* (Chenopodiaceae, Myristicaceae, Eleagnaceae, Poaceae, Fabaceae, Malphigiaceae, Ochidaceae, Rubiaceae, Euphorbiaceae). Cryst. (MeOH). Mp 216-218°. λ_{max} 224 (log ϵ 3.5); 280 (log ϵ 3.9) (MeOH).

Hydrochloride:
Cryst. (EtOH/Et_2O). Mp 245-247°.

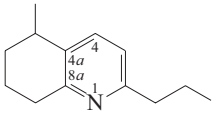
Picrate:
Cryst. (EtOH). Mp 195-197°.

Methiodide:
Cryst. (EtOH). Mp 265-266°.

Bockelheide, V. *et al., J.A.C.S.*, 1950, **72**, 2132 (*synth*)
Johns, S.R. *et al., Aust. J. Chem.*, 1967, **20**, 1737 (*isol, uv, ir, pmr, ms*)
Agurell, S. *et al., Acta Chem. Scand.*, 1969, **23**, 903 (*isol, ms*)
Allen, J.R.F. *et al., Phytochemistry*, 1980, **19**, 1573 (*rev, bibl*)
Kawanishi, K. *et al., Phytochemistry*, 1985, **24**, 1373 (*occur*)
Kumar, S. *et al., Planta Med.*, 1985, 466 (*isol, pmr, cmr, ms*)
Zhalolov, I.Z. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2003, **39**, 289-291 (*cryst struct*)

5,6,7,8-Tetrahydro-5-methyl-2-propylquinoline T-204

Mantella *Alkaloid 189*



$C_{13}H_{19}N$ 189.3
Trace alkaloid from skin extracts of the Madagascan frogs *Mantella* sp. cf. *madagascariensis*, *Mantella betsileo* and *Mantella laevigata*.

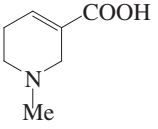
1,4,4a,8a-Tetrahydro: 1,4,4a,5,6,7,8,8a-Octahydro-5-methyl-2-propylquinoline.
Mantella *Alkaloid 193D*
$C_{13}H_{23}N$ 193.331
Alkaloid from skin extracts of *Mantella* sp. cf. *madagascariensis*, *Mantella betsileo* and *Mantella laevigata*. Tentative struct.

Hexahydro: see Pumiliotoxin C, P-794

Garaffo, H.M. *et al., J. Nat. Prod.*, 1993, **56**, 1016 (*isol, ir, ms*)

1,2,5,6-Tetrahydro-1-methyl-3-pyridinecarboxylic acid, 9CI T-205

***Arecaidine**. Arecaine*
[499-04-7]



$C_7H_{11}NO_2$ 141.169
Alkaloid from nuts of *Areca catechu* (betel nuts) (Arecaceae). Cholinergic and anthelmintic agent. Mp 223-224° dec. (anhyd. 232° dec.). pK_a 9.07 (25°). Log P -1.74 (calc). Strong base.

▶ QT2070800

Hydrochloride: Mp 262-263° (rapid heat) (250.5-262°).

Me ester: ***Arecoline***
[63-75-2]
$C_8H_{13}NO_2$ 155.196
Alkaloid from *Areca catechu* (Arecaceae). Cathartic, vermifuge, hypotensive agent etc. Formerly used as a cholinergic agent; purgative and taenifuge in veterinary medicine. Liq. Bp_{17} 94° Bp_7 74°. pK_a 7.64 (25°). Log P 1.05 (calc).

▶ LD_{50} (dog, scu) 5 mg/kg. LD_{50} (rat, orl) 2500 mg/kg. QT2100000

Me ester, hydrochloride: [61-94-9]
Mp 157-158°.

▶ QT2150000

Me ester, hydrobromide: [300-08-3]
Mp 172°.

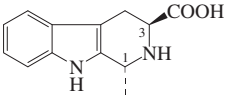
▶ QT2275000

Et ester: ***Homoarecoline***
[28125-84-0]
[6027-10-7 , 17210-50-3]
$C_9H_{15}NO_2$ 169.223
Constit. of *Areca catechu*. Oil.

Jahns, E. *et al., Ber.*, 1888, **21**, 3404 (*isol*)
Wohl, A. *et al., Ber.*, 1907, **40**, 4712 (*struct, synth*)
Chemnitius, F. *et al., J. Prakt. Chem.*, 1927, **117**, 147 (*isol, deriv*)
Mannich, C. *et al., Ber.*, 1942, **75**, 1480 (*synth*)
Lyle, R.E. *et al., J.O.C.*, 1955, **20**, 1761 (*synth, uv*)
Ma, J.C.N. *et al., Can. J. Chem.*, 1965, **43**, 1849 (*pmr*)
Spiteller-Friedmann, M. *et al., Monatsh. Chem.*, 1965, **96**, 104 (*ms*)
Nery, R. *et al., Biochem. J.*, 1971, **122**, 503 (*metab, tox, bibl*)
Burrows, R.B. *et al., Prog. Drug Res.*, 1973, **17**, 108 (*rev*)
Kozello, I.A. *et al., Khim.-Farm. Zh.*, 1979, **13**, 61; *CA*, **92**, 110798y (*synth*)
Strunz, G.M. *et al., Alkaloids (Academic Press)*, 1985, **26**, 89 (*rev*)
Hollander, E. *et al., Br. Med. Bull.*, 1986, **42**, 97 (*pharmacol*)
Kurihara, T. *et al., Heterocycles*, 1990, **30**, 885-896 (*Et ester, synth*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 39
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, AQT625; AQU000; AQU250; AQT750

2,3,4,9-Tetrahydro-1-methyl-1*H*-pyrido[3,4-*b*]indole-3-carboxylic acid, 9CI T-206

1,2,3,4-Tetrahydro-1-methyl-β-carboline-3-carboxylic acid
[5470-37-1]
[143396-05-8 (*cis*-form)]



(1*R*,3*S*)-*form*

$C_{13}H_{14}N_2O_2$ 230.266

(1*R*,3*S*)-*form* [42438-72-2]
Constit. of cocoa and maca tubers (*Lepidium meyenii*). Cryst. (H_2O). Mp 242-244° (225-228° dec.). $[\alpha]_D$ -69.1 (c, 1 in 1*M* HCl/MeOH 1:1).

N^2-*Me:*
$C_{14}H_{16}N_2O_2$ 244.293
Mp 222-223° (as hydrochloride). $[\alpha]_D^{25}$ -29.6 (c, 1 in 1*M* HCl MeOH/H_2O 1:1).

7-Hydroxy: 1,2,3,4-Tetrahydro-7-hydroxy-1-methyl-β-carboline-3-carboxylic acid. ***Brunnein B***
[955377-46-5]
$C_{13}H_{14}N_2O_3$ 246.265
Alkaloid from *Cortinarius brunneus*. Yellow solid. $[\alpha]_D^{25}$ -35 (c, 0.03 in MeOH). λ_{max} 219 (log ϵ 4.4); 299 (log ϵ 3.4) (MeOH).

7-Hydroxy, 1,2-didehydro: 3,4-Dihydro-7-hydroxy-1-methyl-β-carboline-3-carboxylic acid. ***Brunnein A***
[955377-45-4]
$C_{13}H_{12}N_2O_3$ 244.249
Alkaloid from *Cortinarius brunneus*. Yellow-green solid. $[\alpha]_D^{26}$ -22 (c, 0.02 in MeOH). λ_{max} 260 (log ϵ 3.3); 375 (log ϵ 3.6) (MeOH).

(1*S*,3*S*)-*form* [40678-46-4]
Alkaloid from the starfish *Lethasterias nanimensis chelifera*. Constit. of cocoa and garlic (*Allium sativum*). Cryst. (H_2O). Mp 293° (276-280° dec.). $[\alpha]_D^{25}$ -106.6 (c, 1 in 1*M* HCl/MeOH 1:1).

(1*R,3*R**)-*form***

6-Hydroxy: 1,2,3,4-Tetrahydro-6-hydroxy-1-methyl-β-carboline-3-carboxylic acid. ***Hyrtioerectine B***
[42438-95-9 (1*S*,3*S*)-form]
$C_{13}H_{14}N_2O_3$ 246.265

Isol. from the sponge *Hyrtios erectus*. Amorph. solid. $[\alpha]_D^{25}$ -19.2 (c, 0.18 in MeOH). Stereochem. is 1*R*-3*R*-*rel* according to Youssef *et al* (2005) but abstracted as 1*S*,3*S* by *CA*. λ_{max} 231 (log ϵ 3.81); 276 (log ϵ 3.74); 357 (log ϵ 1.82) (MeOH).

(1ξ,3ξ)-*form*

Formed by Pictet-Spengler condensation between Acetaldehyde and Tryptophan, T-640 in nature or during food processing. Present in many foods. Alkaloid from the toxic fly agaric mushroom (*Amanita muscaria*). Shows little pharmacol. activity. Needles (H_2O). Mp 290° dec. $[\alpha]_D$ -142.8 (50 % Py aq.). λ_{max} 219 ; 271 ; 277 ; 280 (sh) ; 287 (MeOH).

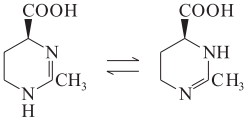
[22677-22-1]

Matsumoto, T. *et al., Helv. Chim. Acta*, 1969, **52**, 716-720 (*isol, uv, ir, struct*)
Brossi, A. *et al., J. Med. Chem.*, 1973, **16**, 418-420 (*1R,3S-form, 1S,3S-form, synth, pharmacol, ord*)
Bobbitt, J.M. *et al., J.O.C.*, 1980, **45**, 1978-1984 (*synth*)
Bosin, T.R. *et al., J. Agric. Food Chem.*, 1986, **34**, 843-847 (*isol*)
Herraiz, T. *et al., J. Agric. Food Chem.*, 1996, **44**, 3057-3065; 1998, **46**, 3484-3490; 1999, **47**, 4883-4887; 2000, **48**, 4900-4904; 2004, **52**, 2652-2658 (*hplc, occur, bibl*)
Herraiz, T. *et al., J. Chromatogr., A*, 1997, **765**, 265-277; 2000, **871**, 23-30 (*occur, gc, hplc*)
Piacenta, S. *et al., J. Agric. Food Chem.*, 2002, **50**, 5621-5625 (*1R,3S-form, isol*)
Kicha, A.A. *et al., Tet. Lett.*, 2003, **44**, 1935-1937 (*Lethasterias alkaloid, isol, pmr, cmr*)
Kuo, F.-M. *et al., Tetrahedron*, 2004, **60**, 12075-12084 (*synth*)
Youssef, D.T.A. *et al., J. Nat. Prod.*, 2005, **68**, 1416-1419 (*Hyrtioerectine B*)
Teichert, A. *et al., J. Nat. Prod.*, 2007, **70**, 1529-1531 (*Brunneins A,B*)

1,4,5,6-Tetrahydro-2-methyl-4(6)-pyrimidinecarboxylic acid, 9CI T-207

Ectoine. *Pyrostatin B*

[117305-84-7]



(*S*)–*form*

$C_6H_{10}N_2O_2$ 142.157

Exists as zwitterion in cryst. Pyrostatin B tentatively assigned this struct. after revision in 2006.

(*S*)-*form* [96702-03-3]

Isol. from halophilic bacteria such as *Ectothiorhodospira halochloris* and *Halomonas elongata*. Also from the marine-derived *Streptomyces* sp. SA-3501 (Pyrostatin B). Osmoprotective agent. Cryst. V. sol. H_2O. Mp 280°. $[\alpha]_D^{20}$ +140 (c, 1.0 in MeOH).

(±)-*form*

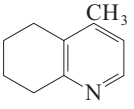
Cryst. (EtOH/Et_2O)(as hydrochloride). Mp 280° (hydrochloride). CAS no. refers to hydrochloride.

Galinski, E.W. *et al., Eur. J. Biochem.*, 1985, **149**, 135-139 (*isol, cmr, ms, ir*)
Schuh, W. *et al., Z. Naturforsch., C*, 1985, **40**, 780 (*cryst struct*)
Inbar, L. *et al., Eur. J. Biochem.*, 1993, **214**, 897-906 (*isol, cryst struct, pmr*)
Filsak, G. *et al., Z. Naturforsch., C*, 1994, **49**, 18 (*synth, pmr, cmr*)
Him-di-Kabbab, S. *et al., Synth. Commun.*, 1995, **25**, 2223 (*synth, pmr, cmr*)
Castellanos, L. *et al., Org. Lett.*, 2006, **8**, 4967-4970 (*Pyrostatin B*)

5,6,7,8-Tetrahydro-4-methylquinoline T-208

5,6,7,8-Tetrahydrolepidine

[28971-03-1]



$C_{10}H_{13}N$ 147.219

Alkaloid from the roots of *Glycyrrhiza uralensis* (Chinese licorice) (Fabaceae). Liq. Spar. sol. H_2O. Bp_{11} 122°.

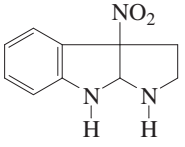
Hydrochloride: Mp 203-204°.

Picrate: [60166-61-2] Mp 178-181° (170°).

Methiodide: Mp 183°.

v. Braun, J. *et al., Ber.*, 1923, **56**, 1343 (*synth*)
Booth, H. *et al., J.C.S. Perkin 2*, 1976, 759 (*pmr*)
Reimann, E. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1983, **316**, 210 (*synth*)
Koyama, J. *et al., Chem. Pharm. Bull.*, 1983, **31**, 2601 (*synth*)
Konno, K. *et al., Tet. Lett.*, 1986, **27**, 3865 (*synth*)
Murahashi, S.-I. *et al., Bull. Chem. Soc. Jpn.*, 1989, **62**, 2968 (*synth*)
Han, Y.N. *et al., Arch. Pharmacal Res.*, 1990, **13**, 101; *CA*, **113**, 227984 (*isol*)

2,3,8,8*a*-Tetrahydro-3*a*-nitro-1*H*-pyrrolo[2,3-*b*]indole T-209



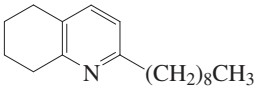
$C_{10}H_{11}N_3O_2$ 205.216

Isol. from the marine-derived *Flavobacterium* sp. T436.

Schuhmann, I. *et al., Dissertation*, Univ. of Göttingen, 2005, (*isol*)

5,6,7,8-Tetrahydro-2-nonylquinoline, 9CI T-210

[59652-32-3]

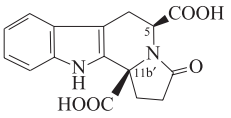


$C_{18}H_{29}N$ 259.434

Isol. from egg tar. λ_{max} 274 (MeOH) (Berdy). λ_{max} 282 (MeOH-HCl) (Berdy).

Tsuji, K. *et al., Yakugaku Zasshi*, 1976, **96**, 479-483 (*isol*)
Kosuge, T. *et al., Chem. Pharm. Bull.*, 1978, **26**, 611-619 (*isol*)

2,3,6,11-Tetrahydro-3-oxo-1*H*-indolizino[8,7-*b*]indole-5,11*b*(5*H*)-dicarboxylic acid, 9CI T-211



(5*S*,11b*R*)–*form*

$C_{16}H_{14}N_2O_5$ 314.297

(5*S*,11*bR*)-*form* [82503-93-3]

Alkaloid from *Clerodendrum trichotomum* (Verbenaceae). Mp 189-190° (as di-Me ester). $[\alpha]_D$ +110 (c, 0.219 in MeOH) (di-Me ester). CAS no. refers to di-Me ester.

(5*S*,11*bS*)-*form* [82535-74-8]

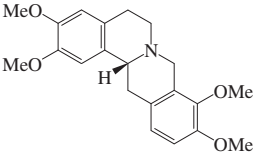
Alkaloid from *Clerodendrum trichotomum* (Verbenaceae). $[\alpha]_D$ -107 (c, 0.205 in MeOH) (as di-Me ester). CAS no. refers to di-Me ester.

Toyoda, Y. *et al., Chem. Lett.*, 1982, 903 (*ir, pmr, ms, struct, synth*)
Irikawa, H. *et al., Bull. Chem. Soc. Jpn.*, 1989, **62**, 880 (*isol, ir, pmr, cmr, ms, cd, struct*)

Tetrahydropalmatine T-212

Corydalis B. Gindarine. Caseanine. Rotundine†. Hindarine

[10097-84-4]



(*R*)-*form*

$C_{21}H_{25}NO_4$ 355.433

Hindarine is a transliteration error for Gindarine, from a Russian paper. Analgesic, sedative and hypnotic agent (hypnotic activity exceeds that of Morphine, M-704). Shows strong papaverine-like activity. Active against gram-positive bacteria. Log P 2.45 (uncertain value) (calc).

(*R*)-*form* [3520-14-7]

Alkaloid from several *Corydalis* spp., *Berberis tinctoria* and *Coptis tecta* (Papaveraceae, Menispermaceae, Berberidaceae, Ranunculaceae). Mp 143°. $[\alpha]_D^{20}$ +291 (EtOH).

Hydrochloride: Mp 266°.

(*S*)-*form* [483-14-7]

Alkaloid from *Corydalis* spp., *Pachypodanthium confine* (Papaveraceae, Annonaceae) and tubers of *Stephania glabra*. Active against gram-positive bacteria. Mp 141-142°. $[\alpha]_D^{21}$ -290.8 (EtOH).

▶HQ1792500

Hydrate: Mp 115-116°.

N-*Oxide*(R-*)*: ***Epicorynoxidine*** [58000-48-9]

$C_{21}H_{25}NO_5$ 371.432

From *Corydalis koidzumiana* (Papaveraceae). Cryst. (Me_2CO). Mp 193-195° dec. $[\alpha]_D$ -2.

N-*Oxide(*S-*):* ***Corynoxidine***
[57906-85-1]
$C_{21}H_{25}NO_5$ 371.432
Alkaloid from *Corydalis koidzumiana* (Papaveraceae). Cryst. (Me_2CO). Mp 183.6-184° dec. $[\alpha]_D$ -57.

O^2*-De-Me:* see Isocorypalmine, I-210

O^3*-De-Me:* see Corypalmine, C-694

O^{10}*-De-Me:* see Corydalmine, C-677

O^2,O^9*-Di-de-Me:* see Scoulerine, S-164

O^2,O^{10}*-Di-de-Me:* see Stepholidine, S-547

O^3,O^9*-Di-de-Me:* see Isoscoulerine, I-315

O^3,O^{10}*-Di-de-Me:* see Discretamine, D-856

O^9,O^{10}*-Di-de-Me:* see 9,10-Dihydroxy-2,3-dimethoxytetrahydroprotoberberine, D-570

(±)-*form* [2934-97-6]
Alkaloid from *Corydalis* spp. (Papaveraceae). Scales (MeOH). Mp 151° (147°).

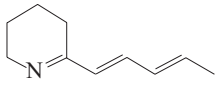
Hydrochloride:
Needles (H_2O). Mp 215°.

Hydroiodide:
Orange-yellow needles. Mp 241° dec.

Späth, E. *et al., Ber.*, 1923, **56**, 875-879 (*isol*)
Kametani, T. *et al., J.C.S.(C)*, 1967, 530-532 (*synth, pmr, ir*)
Cava, M.P. *et al., J.O.C.*, 1968, **33**, 2785-2789 (*S-form, isol*)
Tani, C. *et al., Chem. Lett.*, 1975, 1081-1084 (*Corynoxidine, Epicorynoxidine*)
Hughes, D.W. *et al., Can. J. Chem.*, 1976, **54**, 2252-2260 (*cmr*)
Tourwe, D. *et al., Org. Magn. Reson.*, 1977, **9**, 341-346 (*pmr*)
Narasimhan, N.S. *et al., Tetrahedron*, 1983, **39**, 1975-1982 (*synth*)
Wang, S. *et al., Yiyao Gongye*, 1988, **19**, 444-446; *CA*, **110**, 173517s (*synth*)
Hussain, R.A. *et al., Heterocycles*, 1989, **29**, 2257-2260 (*pmr, cmr*)
Orito, K. *et al., Org. Prep. Proced. Int.*, 1989, **21**, 309-314 (*synth*)
Simeon, S. *et al., Pharmazie*, 1989, **44**, 593-597 (*activity*)
Pyne, S.G. *et al., J.O.C.*, 1990, **55**, 1932-1936 (*synth, pmr, cmr, ms*)
Kessar, S.V. *et al., J.O.C.*, 1992, **57**, 6716-6720 (*synth*)
Ribár, B. *et al., Acta Cryst. C*, 1993, **49**, 1691-1693 (*cryst struct*)
Lugar, P. *et al., Acta Cryst. C*, 1998, **54**, 1977-1980 (*cryst struct*)
Marek, R. *et al., Magn. Reson. Chem.*, 1999, **37**, 195-202 (*N-15 nmr*)
Blanchfield, J.T. *et al., Phytochemistry*, 2003, **63**, 711-720 (*S-form, isol, pmr, cmr*)
Boudou, M. *et al., J.O.C.*, 1995, **70**, 9486-9494 (*synth*)

2,3,4,5-Tetrahydro-6-(1,3-pentadienyl)pyridine, 9CI T-213

1-[2-(3,4,5,6-Tetrahydropyridyl)]-1,3-pentadiene



$C_{10}H_{15}N$ 149.235

(*E,E*)-*form*
Antibiotic NA 337. *NA 337*
[53696-65-4]
Alkaloid from *Streptomyces* sp. NA-337 and actinomyces strain MD736-C6. *N*-Methyltransferase inhibitor. Sol. H_2O, MeOH, butanol; poorly sol. Me_2CO, hexane. Originally considered to be a pyrrolidine. Erroneously reported to have positive opt. rotn. λ_{max} 253 (ϵ 28000); 261 (ϵ 34200) (cyclohexane) (Berdy). λ_{max} 303 (ϵ 33000) (HCl) (Berdy). λ_{max} 267 (NaOH) (Berdy).
▶ LD_{50} (mus, ivn) 5.9 mg/kg. UT8415000

Hydrochloride: [62928-54-5]
Plates. Mp 190-200° dec. Sinters at 155-160°, browns at 170°, dark-brown melt.

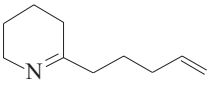
Picrate:
Yellow granules (EtOAc/MeOH).

[54583-43-6]

Onda, M. *et al., Chem. Pharm. Bull.*, 1974, **22**, 2916-2920; 1975, **23**, 2462-2463 (*isol, cmr, pmr, struct*)
Kumada, Y. *et al., J. Antibiot.*, 1974, **27**, 726-728 (*isol, pmr, cmr*)

2,3,4,5-Tetrahydro-6-(4-pentenyl)pyridine, 9CI T-214

2-(4-Penten-1-yl)-Δ^1-piperideine
[83688-89-5]

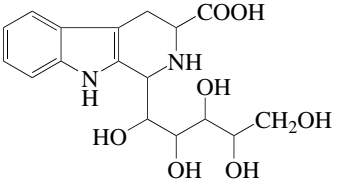


$C_{10}H_{17}N$ 151.251
Component of the venom of a *Solenopsis* sp. ant. Unique among the ant venom alkaloids in having an even no. of C atoms.

Jones, T.H. *et al., Tetrahedron*, 1982, **13**, 1949 (*isol, ms, pmr, struct, synth*)

Tetrahydropentoxyline T-215

1-C-*(3-Carboxy-2,3,4,9-tetrahydro-1*H-*pyrido[3,4-*b*]indol-1-yl)pentitol, 9CI. 1,2,3,4-Tetrahydro-1-(1,2,3,4,5-pentahydroxypentyl)-β-carboline-3-carboxylic acid*
[154204-09-8]

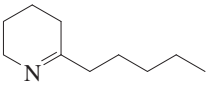


$C_{17}H_{22}N_2O_7$ 366.37
Isol. from human urine and various fruit juices. The fruit juice isolate charactised as two stereoisomers having *cis*- and *trans*- stereochem. at the tetrahydrocarboline ring, but with undetermined pentitol config.

Horiuchi, K. *et al., J. Biochem. (Tokyo)*, 1994, **115**, 362-366 (*isol, pmr, cmr*)
Herraiz, T. *et al., J. Agric. Food Chem.*, 2002, **50**, 4690-4695 (*isol, pmr, cmr, ms*)

2,3,4,5-Tetrahydro-6-pentylpyridine, 9CI T-216

[5832-23-5]

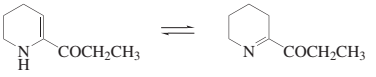


$C_{10}H_{19}N$ 153.267
Alkaloid from *Conium maculatum*. Mp 65-67° (as picrate). Bp_{11} 90°.

Dietzsch, K. *et al., Z. Chem.*, 1966, **6**, 98-102 (*synth*)
McGrane, P.L. *et al., J.A.C.S.*, 1992, **114**, 5459-5460 (*synth*)
Lang, D.G. *et al., CA*, 1999, **130**, 136554u (*isol*)

1,2,3,4-Tetrahydro-6-propanoylpyridine T-217

1-(1,4,5,6-Tetrahydro-2-pyridinyl)-1-propanone, 9CI. 1-(3,4,5,6-Tetrahydro-2-pyridinyl)-1-propanone, 9CI. Ethyl 3,4,5,6-tetrahydro-2-pyridyl ketone, 8CI. 3,4,5,6-Tetrahydro-2-propanoylpyridine. PTP
[80933-75-1 , 80933-74-0]



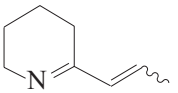
1H-form *3H-form*

$C_8H_{13}NO$ 139.197
Tautomeric; 1*H*-form predominates. Formed by thermal treatment of proline and glucose mixtures. Constit. of the leaves of *Semnostachya menglaensis*. Liq. with intense roast-smelling odour. Bp_7 71-76°.

De Kimpe, N. *et al., J. Agric. Food Chem.*, 1996, **44**, 1515-1519 (*synth, pmr, cmr, ms*)
Hofmann, T. *et al., J. Agric. Food Chem.*, 1998, **46**, 2721-2726 (*occur, ms*)
Naef, R. *et al., J. Agric. Food Chem.*, 2005, **53**, 9161-9164 (*isol, synth*)

2,3,4,5-Tetrahydro-6-(1-propenyl)pyridine T-218

2-(1-Propenyl)-Δ^1-piperideine
[16543-92-3]
[16543-93-4]

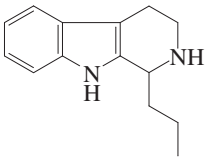


$C_8H_{13}N$ 123.197
Incorr. named as 2-(2-propenyl)-Δ^1-piperideine in the lit. Alkaloid from leaves of *Punica granatum* (pomegranate) (Punicaceae). Cryst. (as hydrochloride). Mp 112-114° (hydrochloride). Unstable, only obt. from fresh extracts. Hydrochloride dec. in moist air.

Roberts, M.F. *et al., Phytochemistry*, 1967, **6**, 711 (*isol, ir, pmr, struct*)

1,2,3,4-Tetrahydro-1-propyl-β-carboline T-219

*2,3,4,9-Tetrahydro-1-propyl-1*H*-pyrido[3,4-*b*]indole, 9CI.* ***Komaroidine***



$C_{14}H_{18}N_2$ 214.31

(ξ)-*form*

Alkaloid from the aerial parts of *Nitraria komarovii* and *Nitraria schoberi*. Cryst. (EtOH/Me_2CO). Mp 207-208°.

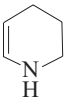
N^2*-Ac: 2-Acetyl-1,2,3,4-tetrahydro-1-propyl-β-carboline.* **N^2-*Acetylkomaroidine***
$C_{16}H_{20}N_2O_2$ 272.346
Alkaloid from the aerial parts of *Nitraria komarovii* and *Nitraria schoberi*. Cryst. (EtOH/Me_2CO). Mp 229-230°.

6-Hydroxy: 1,2,3,4-Tetrahydro-6-hydroxy-1-propyl-β-carboline. ***Schobericine***
$C_{14}H_{18}N_2O$ 230.309
Alkaloid from the aerial parts of *Nitraria schoberi*. Cryst. (EtOH). Mp 193-194°.

Tulyaganov, T.S. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2006, **42**, 198-200 (*isol, synth, pmr*)

1,2,3,4-Tetrahydropyridine T-220

Δ^2-Piperideine
[37497-65-7]



C_5H_9N 83.133
Liq. Dimerises on heating.

Hydrochloride: Mp 230°.

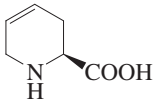
Hydrobromide: Mp 178°.

Ac: ***1-Acetyl-1,2,3,4-tetrahydropyridine***
$C_7H_{11}NO$ 125.17
Alkaloid from leaves and twigs of *Dichilus strictus, Dichilus reflexus, Dichilus lebeckioides, Dichilus pilosus* and *Dichilus gracilis* (Fabaceae). Bp 219.5-220.5°.

Paal, C. *et al., Ber.*, 1901, **34**, 2757 (*synth*)
Van Wyk, B.-E. *et al., Biochem. Syst. Ecol.*, 1988, **16**, 471 (*deriv, isol*)

1,2,3,6-Tetrahydro-2-pyridinecarboxylic acid, 9CI T-221

1,2,3,6-Tetrahydropicolinic acid, 8CI.
Baikiain
[498-98-6]



(*S*)-*form*

$C_6H_9NO_2$ 127.143

(*S*)-*form* [31456-71-0]

Amino acid present in *Baikiaea plurijuga, Caesalpinia tinctoria*, red algae and red seaweeds (Fabaceae, Caesalpiniaceae). Also in *Russula subnigricans*. Neurotransmission inhibitor. Prisms (MeOH). V. sol. H_2O, spar. sol. EtOH, insol. Me_2CO, EtOAc, Et_2O, C_6H_6. $[\alpha]_D$ -182.6 (c, 0.3 in H_2O).

Hydrochloride:
Prisms (MeOH or EtOH). Mp 264°. $[\alpha]_D^{20}$ -90.1 (H_2O).

Picrate:
Needles or plates (H_2O). Mp 172-173°.

Me ester:
$C_7H_{11}NO_2$ 141.169
Bp_{15} 110-112°.

Me ester, hydrochloride:
Prisms (MeOH/Me_2CO). Mp 164°.

N-*Benzoyl:*
$C_{13}H_{13}NO_3$ 231.251
Prisms (EtOAc); needles (Et_2O or H_2O). Mp 178-179°. $[\alpha]_D^{20}$ -91.9.

N-*Di-Me, betaine:* ***Baikiain betaine***
[114622-09-2]
$C_8H_{13}NO_2$ 155.196
Isol. from the red alga *Pterocladia capillacea*. Cryst. (2-propanol). Mp 184-186°. $[\alpha]_D^{25}$ -103 (c, 1.6 in H_2O).

(±)-*form* [7200-16-0]

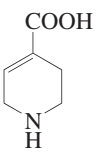
Small prisms (MeOH/Me_2CO). Mp 251-254° dec Mp 273-274° dec.

Hydrochloride: [111257-58-0]
Cryst. (MeOH/EtOAc). Mp 264° dec.

King, T.J. *et al., J.C.S.*, 1950, 3590 (*isol, struct, abs config*)
Burgstahler, A.W. *et al., J.O.C.*, 1960, **25**, 489 (*synth*)
Watson, R. *et al., Phytochemistry*, 1973, **12**, 617 (*isol*)
Impellizzeri, G. *et al., Phytochemistry*, 1975, **14**, 1549-1557 (*algae, isol*)
Maeda, M. *et al., Agric. Biol. Chem.*, 1980, **44**, 2725 (*isol, pmr, cmr, ir, occur, ms*)
Miyazawa, K. *et al., CA*, 1983, **98**, 194969q (*occur*)
Sciuto, S. *et al., J. Nat. Prod.*, 1988, **51**, 322-325 (*Baikiain betaine*)
Kinderman, S.S. *et al., Adv. Synth. Catal.*, 2002, **344**, 736-748 (*S-form, synth, ir, pmr, cmr*)
Ginesta, X. *et al., Tet. Lett.*, 2002, **43**, 779-782 (*synth*)
Chang, M.-Y. *et al., Heterocycles*, 2006, **68**, 2365-2373 (*S-form, synth*)

1,2,3,6-Tetrahydro-4-pyridinecarboxylic acid, 9CI T-222

Isoguvacine
[64603-90-3]



$C_6H_9NO_2$ 127.143
Alkaloid from *Areca catechu* (betel nut). $GABA_A$-receptor agonist. Shows anxiolytic-like activity in animal model. Pharmacol. tool. Mp 220°. pK_{a1} 3.6; pK_{a2} 9.8.

Hydrobromide: [68947-42-2]
Cryst. (2-propanol aq./Et_2O). Mp 284-287° dec.

Me ester: [70684-82-1]
$C_7H_{11}NO_2$ 141.169
Cryst. (MeCN) (as hydrochloride). Mp 159-161° (hydrochloride).

N-tert-*Butyloxycarbonyl, Me ester:*
[184368-74-9]
$C_{12}H_{19}NO_4$ 241.286
No phys. props. reported.

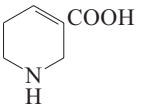
N-tert-*Butyloxycarbonyl, Et ester:*
[906663-30-7]
$C_{13}H_{21}NO_4$ 255.313
Characterised spectroscopically.

[68547-97-7]

Winterstein, E. *et al., Hoppe-Seyler's Z. Physiol. Chem.*, 1918, **104**, 48-53
Krogsgaard-Larsen, P. *et al., J. Neurochem.*, 1978, **30**, 1377 (*synth, sar, ir, pmr*)
Krogsgaard-Larsen, P. *et al., Eur. J. Med. Chem. (Chim. Ther.)*, 1979, **14**, 157; 1980, **15**, 529 (*synth, pharmacol*)
Japan. Pat., 1979, 79 36 275; *CA*, **91**, 56827w (*synth*)
Krogsgaard-Larsen, P. *et al., Acta Chem. Scand., Ser. B*, 1981, **35**, 311 (*bibl, rev*)
Falch, E. *et al., J. Med. Chem.*, 1981, **24**, 285 (*sar*)
Lipkowitz, K.B. *et al., J. Mol. Struct.*, 1989, **195**, 65 (*cryst struct*)
Yamasaki, K. *et al., Jpn. J. Pharmacol.*, 1990, **52**, 255 (*pharmacol*)
Corbett, R. *et al., Psychopharmacology*, 1991, **104**, 312 (*pharmacol*)
Chang, M.-Y. *et al., Heterocycles*, 2002, **57**, 2321-2334 (*synth*)
Hanessian, S. *et al., J. Med. Chem.*, 2006, **49**, 4544-4567 (*N-Boc Me ester, N-Boc Et ester*)

1,2,5,6-Tetrahydro-3-pyridinecarboxylic acid, 9CI T-223

Guvacine. *Δ^3-Tetrahydronicotinic acid*
[498-96-4]



$C_6H_9NO_2$ 127.143
Alkaloid from *Areca catechu* (betel nut) (Arecaceae). Potent inhibitor of 4-Aminobutanoic acid (GABA) uptake. Mp 293-295° dec. (271-272°).

Hydrochloride: Mp 316° dec.

Me ester: ***Guvacoline.*** *Norarecoline*
[495-19-2]
$C_7H_{11}NO_2$ 141.169
Alkaloid from *Areca catechu* (Arecaceae). Mp 27°. $Bp_{13.5}$ 114° (lit. gives a pressure range).

Me ester, hydrochloride: Mp 121-122°.

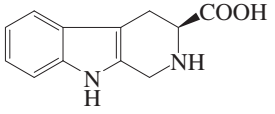
N-*Me:* see 1,2,5,6-Tetrahydro-1-methyl-3-pyridinecarboxylic acid, T-205

Jahns, E. *et al., Ber.*, 1891, **24**, 2615 (*isol*)
Wohl, A. *et al., Ber.*, 1907, **40**, 4698 (*struct*)
Freudenberg, K. *et al., Ber.*, 1918, **51**, 976; 1668 (*struct*)

v. Euler, H. *et al., Helv. Chim. Acta*, 1944, **27**, 382 (*isol*)
McElvain, S.M. *et al., J.A.C.S.*, 1946, **68**, 1049 (*synth*)
Spiteller-Friedmann, M. *et al., Monatsh. Chem.*, 1965, **96**, 104 (*ms*)
Morlacchi, F. *et al., Ann. Chim. (Rome)*, 1967, **57**, 1456 (*synth*)
Krogsgaard-Larsen, P. *et al., Acta Chem. Scand., Ser. B*, 1978, **32**, 327 (*synth, pharmacol*)

2,3,4,9-Tetrahydro-1*H*-pyrido[3,4-*b*]indole-3-carboxylic acid, 9CI T-224

1,2,3,4-Tetrahydro-β-carboline-3-carboxylic acid
[6052-68-2]
[72002-54-1 (*R*-form), 41509-88-0 (±-form)]



$C_{12}H_{12}N_2O_2$ 216.239

(*S*)-*form*
L-form. ***Lycoperodine 1***
[42438-90-4]
Formed by Pictet-Spengler condensation of Formaldehyde and Tryptophan, T-640 in nature or during food processing. Alkaloid from *Aleurites fordii* and *Allium tuberosum*. Isol. from starfish *Asterias rollestoni*. Constit. of cocoa and tomatoes. Cryst. (H_2O). Mp 282-284° Mp 315°. $[\alpha]_D^{20}$ -124.6 (c, 0.2 in 0.1*M* NaOH). $[\alpha]_D^{25}$ -49.6 (c, 1 in 1*M* HCl MeOH/H_2O 1:1). λ_{max} 274 (3.72); 291 (sh) (3.5) (MeOH).

Me ester: [79815-18-2]
$C_{13}H_{14}N_2O_2$ 230.266
Solid. Mp 167°. $[\alpha]_D^{20}$ -73.1 (c, 1 in $CHCl_3$).

Me ester, hydrochloride: Mp 283° dec. $[\alpha]_D^{20}$ -74.7 (c, 1 in EtOH).

Et ester: [129848-93-7]
$C_{14}H_{16}N_2O_2$ 244.293
Fluffy needles (MeCN) (as hydrochloride). Mp 269-270° (hydrochloride). Unstable in air.

N^2-*Me:* [42438-91-5]
Cryst. (MeOH/Me_2CO). Mp 260-262°. $[\alpha]_D^{25}$ -2.99 (c, 1.0 in 1*M* HCl/MeOH).

N^2-*Me, Me ester: Methyl 2-methyl-2,3,4,9-tetrahydro-β-carboline-3-carboxylate*
[83159-20-0]
$C_{14}H_{16}N_2O_2$ 244.293
Alkaloid from the leaves of *Gastrolobium callistachys*. Needles (MeOH or C_6H_6) or prisms. Mp 196-197° (changes cryst. form at 175-180°) (153-154°). $[\alpha]_D$ +18 (c, 0.3 in EtOH). $[\alpha]_D$ -62.6 (c, 1.6 in MeOH).

N^2-*Me, Me ester, hydrochloride:*
Needles. Mp 284-285°. $[\alpha]_D^{20}$ -62.5 (c, 0.4 in EtOH).

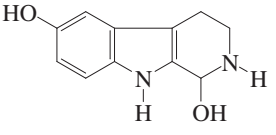
7-Hydroxy: 1,2,3,4-Tetrahydro-7-hydroxy-β-carboline-3-carboxylic acid. ***Brunnein C***
[955377-47-6]
$C_{12}H_{12}N_2O_3$ 232.238
Alkaloid from *Cortinarius brunneus*. Yellowish solid. $[\alpha]_D^{22}$ -57 (c, 0.02 in MeOH). λ_{max} 222 (log ε 4.4); 267 (log ε 3.5); 296 (log ε 3.5) (MeOH).

[129848-94-8]

Harvey, D.G. *et al., J.C.S.*, 1941, **63**, 153-159 (*synth*)
Brossi, A. *et al., J. Med. Chem.*, 1973, **16**, 418-420 (*S-form, synth, pmr, ord, cd, N^2-Me*)
Okuda, T. *et al., Phytochemistry*, 1975, **14**, 2304-2305 (*ir, uv, ms, pmr, config*)
Cannon, J.R. *et al., Aust. J. Chem.*, 1982, **35**, 1497-1500 (N^2-*Me Me ester*)
Maclaren, J.A. *et al., Aust. J. Chem.*, 1989, **42**, 813-821 (*synth, bibl*)
Tilstra, L. *et al., J.A.C.S.*, 1990, **112**, 9176-9182; 9182-9190 (*synth, pmr, ms, cryst struct*)
Herraiz, T. *et al., J. Agric. Food Chem.*, 1996, **44**, 3057-3065; 1998, **46**, 3484-3490; 2000, **48**, 4900-4904; 2004, **52**, 2652-5658 (*hplc, occur, bibl*)
Herraiz, T. *et al., J. Chromatogr., A*, 1997, **765**, 265-277; 2000, **871**, 23-30 (*occur, gc, hplc*)
Li, G.Q. *et al., J. Chin. Pharm. Sci.*, 2004, **13**, 81-86 (*isol, Asterias*)
Yahara, S. *et al., J. Nat. Prod.*, 2004, **67**, 500-502 (*Lycoperodine 1, isol, pmr, cmr*)
Teichert, A. *et al., J. Nat. Prod.*, 2007, **70**, 1529-1531 (*Brunnein C*)

2,3,4,9-Tetrahydro-1*H*-pyrido[3,4-*b*]indole-1,6-diol T-225

1,2,3,4-Tetrahydro-1,6-dihydroxy-β-carboline
[452067-34-4]



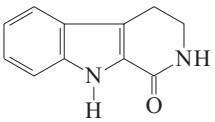
$C_{11}H_{12}N_2O_2$ 204.228
Isol. from the sponge *Hyrtios reticulata*.

1-O-(4-Guanidinobutyl): 1-(4-Guanidinobutyloxy)-6-hydroxy-β-carboline. PwTx II
$C_{16}H_{23}N_5O_2$ 317.39
Isol. from the venom of the spider *Parawixia bistriata*.

Salmoun, M. *et al., J. Nat. Prod.*, 2002, **65**, 1173-1176 (*isol*)
Cesar, L.M.M. *et al., Toxicon*, 2005, **46**, 786-796 (*PwTx II*)

2,3,4,9-Tetrahydro-1*H*-pyrido[3,4-*b*]indol-1-one, 9CI T-226

1,2,3,4-Tetrahydro-1-oxo-β-carboline
[17952-82-8]



$C_{11}H_{10}N_2O$ 186.213
Alkaloid from *Evodia rutaecarpa*. Also isol. from an Indonesian sponge. Needles (EtOH aq.). Mp 183-185°.

Picrate:
Orange-yellow plates (EtOH). Mp 195-197°.

N^2-*(2-Methylaminobenzoyl):* ***Rhetsinine****. Hydroxyevodiamine*
[526-43-2]
$C_{19}H_{17}N_3O_2$ 319.362
Alkaloid from the trunk bark of *Zanthoxylum rhetsa* and the fruits of *Evodia rutaecarpa* (Rutaceae). Also obt. by the mild oxidn. of Evodiamine. Yellow cryst. ($CHCl_3$/EtOH). Mp 206-207° (192° dec.). λ_{max} 314 (log ε 4.15) (EtOH).

N^2-*(2-Methylaminobenzoyl), hydrochloride:*
Yellow needles. Mp 228-229° dec.

N^2-*(2-Methylaminobenzoyl), picrate:*
Slender orange-yellow needles. Mp 270-272° dec.

N^2-*Me: 2,3,4,9-Tetrahydro-2-methyl-1H-pyrido[3,4-b]indol-1-one. 1,2,3,4-Tetrahydro-2-methyl-1-oxo-β-carboline.* ***Strychnocarpine***
[59156-98-8]
$C_{12}H_{12}N_2O$ 200.24
Alkaloid from the stem bark of *Strychnos elaeocarpa* and *Strychnos floribunda* (Loganiceae). Weak muscular relaxant. Cryst. (EtOAc). Mp 226° (198-200°). λ_{max} 227 (log ε 4.25); 242 (log ε 4.07); 305 (log ε 4.14) (MeOH).

6-Hydroxy: 2,3,4,9-Tetrahydro-6-hydroxy-1H-pyrido[3,4-b]indol-1-one. 1,2,3,4-Tetrahydro-6-hydroxy-1-oxo-β-carboline
[51085-95-1]
$C_{11}H_{10}N_2O_2$ 202.212
Isol. from the sponge *Hyrtios* sp.

7-Hydroxy: 2,3,4,9-Tetrahydro-7-hydroxy-1H-pyrido[3,4-b]indol-1-one, 9CI
[56409-32-6]
Mp 138°.

5-Methoxy: 2,3,4,9-Tetrahydro-6-methoxy-1H-pyrido[3,4-b]indol-1-one. ***1,2,3,4-Tetrahydro-5-methoxy-1-oxo-β-carboline***
[26579-73-7]
$C_{12}H_{12}N_2O_2$ 216.239
Alkaloid from the root bark of *Alstonia venenata* (Apocynaceae). Prisms (MeOH). Mp 216-217° (synth.) Mp 182-184° (nat.). The original nat. isolate was impure and the reported spectroscopic data was subsequently revised. λ_{max} 236 (log ε 4.46); 295 (log ε 4.16) (EtOH).

6-Methoxy: 2,3,4,9-Tetrahydro-6-methoxy-1H-pyrido[3,4-b]indol-1-one, 9CI. 1,2,3,4-Tetrahydro-6-methoxy-1-oxo-β-carboline
[17952-87-3]
Synthetic. Prisms (EtOH). Mp 275-277° (265°) Mp 275-277°.

7-Methoxy: 2,3,4,9-Tetrahydro-7-methoxy-1H-pyrido[3,4-b]indol-1-one. 1,2,3,4-Tetrahydro-7-methoxy-1-oxo-β-carboline. ***Ketotetrahydronorharmine****. Harmalacidine*
[26579-69-1]
$C_{12}H_{12}N_2O_2$ 216.239

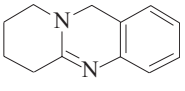
Alkaloid from *Banisteriopsis caapi* (Malphigiaceae) and seeds of *Peganum harmala* (Zygophyllaceae). Needles ($CHCl_3$/MeOH). Mp 200-201° (197-198° dec.). λ_{max} 220 ; 250 ; 325 (MeOH).

*8-Methoxy: 2,3,4,9-Tetrahydro-8-methoxy-1*H*-pyrido[3,4-*b*]indol-1-one, 9CI. 1,2,3,4-Tetrahydro-8-methoxy-1-oxo-β-carboline*
[109021-64-9]
Synthetic. Needles (MeOH). Mp 244-246° (241-242°).

Abramovitch, R.A. *et al., J.C.S.*, 1956, 4589-4592 (*6-methoxy, synth*)
Chatterjee, A. *et al., Tetrahedron*, 1959, **7**, 257-261 (*Rhetsinine, isol, uv, ir*)
Pachter, I.J. *et al., J.O.C.*, 1960, **25**, 1680-1682 (*Rhetsinine, uv, struct, synth*)
Hashimoto, Y. *et al., Phytochemistry*, 1976, **15**, 1559-1560 (*Ketotetrahydronorharmine, isol, uv, ir, pmr, ms, struct, synth*)
Rolfsen, W. *et al., Acta Pharm. Suec.*, 1980, **17**, 333-340 (*Strychnocarpine, isol, uv, ir, pmr, cmr, ms, struct*)
Verpoorte, R. *et al., Planta Med.*, 1981, **42**, 32-36 (*Strychnocarpine, isol, uv, pmr, ms*)
Banerji, J. *et al., Phytochemistry*, 1982, **21**, 2765-2767 (*5-methoxy, isol, struct*)
Herdeis, C. *et al., Heterocycles*, 1984, **22**, 2277 (*Strychnocarpine, synth, uv, ir, pmr, cmr*)
Yamada, F. *et al., Heterocycles*, 1986, **24**, 2619-2627 (*5-methoxy, 8-methoxy, synth, uv, ir, pmr, struct*)
Lehmann, J. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1988, **321**, 411-414 (*Strychnocarpine, synth, ir, pmr*)
Siddiqui, S. *et al., Heterocycles*, 1988, **27**, 1401-1410 (*Harmalacidine, isol, uv, ir, pmr, cmr, ms*)
Narayanan, K. *et al., J.O.C.*, 1991, **56**, 359-365 (*pmr, ir, ms*)
Bracher, F. *et al., Annalen*, 1992, 1315-1319 (*synth*)
Abramovitch, R.A. *et al., Synlett*, 1992, 795-796 (*6-methoxy, synth*)
Bracher, F. *et al., Pharmazie*, 1993, **48**, 695 (*Harmalacidine, Strychnocarpine, synth*)
Soti, F. *et al., Synth. Commun.*, 1993, **23**, 1689-1698 (*8-methoxy, synth*)
Salmoun, M. *et al., J. Nat. Prod.*, 2002, **65**, 1173-1176 (*6-hydroxy*)
Rao, K.V. *et al., J. Nat. Prod.*, 2003, **66**, 823-828 (*isol, pmr, cmr*)
Lehmann, I. *et al., Arch. Pharm. (Weinheim, Ger.)*, **1988**, 321-411 (*synth, ir, pmr*)

6,8,9,11-Tetrahydro-7*H*-pyrido[2,1-*b*]quinazoline, 9CI T-227

*6,7,8,9-Tetrahydro-11*H*-pyrido[2,1-*b*]quinazoline*
[261-08-5]



$C_{12}H_{14}N_2$ 186.256
Alkaloid from the leaves of *Mackinlaya macrosciadia* and *Mackinlaya subulata* (Araliaceae). Plates (Et_2O or Et_2O/petrol). Mp 85-87°.

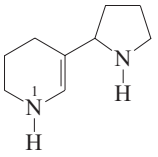
Hydroiodide:
Needles (EtOH). Mp 225-226°.

Sulfate:
Needles (EtOH). Mp 283-285°.

Picrate:
Cryst. (AcOH). Mp 216-217°.

Späth, E. *et al., Ber.*, 1935, **68**, 2221 (*synth*)
Munoz, G.G. *et al., Chem. Ber.*, 1962, **95**, 2182 (*synth*)
Fitzgerald, J.S. *et al., Aust. J. Chem.*, 1966, **19**, 151 (*isol, pmr, ms*)

1,2,3,4-Tetrahydro-5-(2-pyrrolidinyl)pyridine T-228



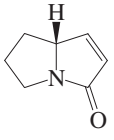
$C_9H_{16}N_2$ 152.239

N^1*-Ac:* ***Maackiamine***
[54966-14-2]
$C_{11}H_{18}N_2O$ 194.276
Alkaloid from the flowers of *Maackia amurensis* var. *buergeri* (Fabaceae). Oil. $[\alpha]_D^{22}$ +110 (c, 0.01 in EtOH).

Saito, K. *et al., Phytochemistry*, 1989, **28**, 2533 (*isol, uv, ir, pmr, cmr, ms, struct*)

5,6,7,7*a*-Tetrahydro-3*H*-pyrrolizin-3-one, 9CI T-229

1-Azabicyclo[3.3.0]oct-3-en-2-one. ***Pyrrolam A***
[113727-94-9]



C_7H_9NO 123.154

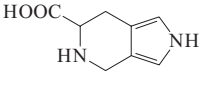
(R)-form [126424-76-8]
Prod. by *Streptomyces olivaceus.* Cryst. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 62°. $[\alpha]_D^{20}$ -29.3 (c, 1 in $CHCl_3$). λ_{max} 209 (ϵ 6000); 240 (ϵ 2600) (MeOH) (Berdy).

(S)-form [161691-23-2]
Solid. $[\alpha]_D^{27}$ +22.37 (c, 0.96 in $CHCl_3$).

Flitsch, W. *et al., Annalen*, 1988, 387 (*synth, pmr*)
Grote, R. *et al., Annalen*, 1990, 525 (*isol, pmr, cmr, struct*)
Aoyagi, Y. *et al., Tetrahedron*, 1996, **52**, 869 (*synth*)
Giovenzana, G.B. *et al., Tetrahedron: Asymmetry*, 1997, **8**, 515-518 (*synth*)
Watson, R.T. *et al., J.O.C.*, 2004, **69**, 6105-6114 (*synth, bibl*)
Majik, M.S. *et al., Synthesis*, 2007, 663-665 (*S-form, synth, pmr, cmr*)
Schobert, R. *et al., Synthesis*, 2007, 1499-1502 (*R-form, synth, ir, pmr, cmr, ms*)

4,5,6,7-Tetrahydro-2*H*-pyrrolo[3,4-*c*]pyridine-6-carboxylic acid, 9CI T-230

*5*H*-Pyrrolo[3,4-*d*]piperidine-2-carboxylic acid*
[134649-28-8]



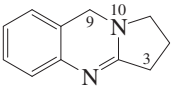
$C_8H_{10}N_2O_2$ 166.179

(ξ)-form
Prod. by *Penicillium oxalicum*. Sol. H_2O; poorly sol. MeOH, EtOAc, DMSO. Mp 284°. λ_{max} 215 (H_2O).

Japan. Pat., 1990, 90 306 976; *CA*, **115**, 27688k (*isol*)

1,2,3,9-Tetrahydropyrrolo[2,1-*b*]quinazoline, 9CI T-231

Deoxypeganine. *Deoxyvasicine*
[495-59-0]



$C_{11}H_{12}N_2$ 172.229
Alkaloid from the above-ground parts of *Peganum harmala* and the foliage of *Peganum nigellastrum* (Zygophyllaceae). Claimed to show cholinergic activity. Cryst. (Et_2O). Mp 99-100°.

Hydrochloride: Mp 260° (246°).

Picrate:
Cryst. (EtOH). Mp 205-206°.

N-*Oxide:* ***Deoxypeganine* N-*oxide***
[168780-02-7]
$C_{11}H_{12}N_2O$ 188.229
Alkaloid from *Nitraria komarovii* (Zygophyllaceae). Cryst. (EtOH/Me_2CO). Mp 243-244°. $[\alpha]_D$ 0. λ_{max} 214 (log ϵ 4.04); 217 (log ϵ 4.1); 223 (log ϵ 3.98); 285 (log ϵ 3.51) (no solvent reported).

*1-Hydroxy: 1,2,3,9-Tetrahydropyrrolo[2,1-*b*]quinazolin-1-ol, 9CI.* ***1-Hydroxydeoxypeganine***
[119459-57-3]
$C_{11}H_{12}N_2O$ 188.229
Alkaloid from aerial parts of *Galium aparine* collected at the flowering period (Rubiaceae).

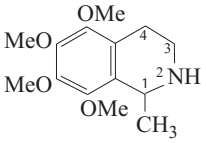
3-Hydroxy: see Peganine, P-165

9-Oxo: see 2,3-Dihydropyrrolo[2,1-*b*]quinazolin-9(1*H*)-one, D-503

Hanford, W.E. *et al., J.A.C.S.*, 1935, **57**, 920 (*synth*)
Späth, E. *et al., Ber.*, 1936, **69**, 255 (*synth*)
Muñoz, G.G. *et al., Chem. Ber.*, 1962, **95**, 2182 (*synth*)
Timothy, J. *et al., J. Med. Chem.*, 1973, **16**, 633 (*synth, pmr*)
Batsuren, D. *et al., Khim. Prir. Soedin.*, 1980, **16**, 736 (*isol*)
Johne, S. *et al., Alkaloids (Academic Press)*, 1986, **29**, 129 (*rev, pharmacol*)
Sener, B. *et al., Gazi Univ. Eczacilik Fak. Derg.*, 1988, **5**, 33; *CA*, **110**, 111673f (*1-Hydroxydeoxypeganine*)
Tulyaganov, T.S. *et al., Khim. Prir. Soedin.*, 1993, **29**, 87; *Chem. Nat. Compd. (Engl. Transl.)*, 1993, **29**, 73 (*Deoxypeganine N-oxide*)
Tashkhodzhaev, B. *et al., Khim. Prir. Soedin.*, 1995, **31**, 421-425; *Chem. Nat. Compd. (Engl. Transl.)*, 1995, **31**, 349-352 (*cryst struct*)
Tozhibaev, A.G. *et al., Khim. Prir. Soedin.*, 2006, **42**, 280-283; *Chem. Nat. Compd. (Engl. Transl.)*, 2006, **42**, 340-344 (*cryst struct*)

1,2,3,4-Tetrahydro-5,6,7,8-tetramethoxy-1-methylisoquinoline, 9CI T-233

Pachycereine
[82261-04-9]



$C_{14}H_{21}NO_4$ 267.324
Alkaloid detected in *Pachycereus weberi* by tandem mass spectrom. (Cactaceae).

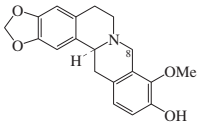
N-*Me: 1,2,3,4-Tetrahydro-5,6,7,8-tetramethoxy-1,2-dimethylisoquinoline, 9CI.* **N-*Methylpachycereine***
[74046-25-6]
$C_{15}H_{23}NO_4$ 281.351
Alkaloid detected in *Pachycereus weberi* by tandem mass spectrom. (Cactaceae).

1,2-Didehydro: 3,4-Dihydro-5,6,7,8-tetramethoxy-1-methylisoquinoline, 9CI. ***Dehydropachycereine***
[82261-02-7]
$C_{14}H_{19}NO_4$ 265.308
Alkaloid detected in *Pachycereus weberi* by tandem mass spectrom. (Cactaceae).

1,2,3,4-Tetradehydro: 5,6,7,8-Tetramethoxy-1-methylisoquinoline, 9CI. ***Isopachycereine***
[93474-27-2]
$C_{14}H_{17}NO_4$ 263.293
Alkaloid detected in *Pachycereus weberi* by tandem mass spectrom. (Cactaceae).

Roush, R.A. *et al., Anal. Chem.*, 1985, **77**, 109 (*occur, derivs*)

Tetrahydrothalifendine T-234

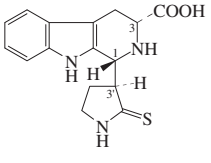


Absolute Configuration

$C_{19}H_{19}NO_4$ 325.363

Shamma, M. *et al., Tetrahedron*, 1971, **27**, 727 (*uv, pmr, ir, ms, struct*)
Pinho, P.M.M. *et al., Phytochemistry*, 1992, **31**, 1403 (*8-Oxotetrahydrothalifendine*)

1,2,3,4-Tetrahydro-1-(2-thio-3-pyrrolidinyl)-β-carboline-3-carboxylic acid T-235



(1*R**,3*R**,3'*S**)-*form*

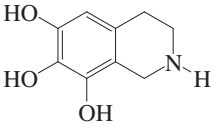
$C_{16}H_{17}N_3O_2S$ 315.395

(1*R*,3*R*,3′*S*)-*form* [221657-55-2]
Alkaloid from fermented radish roots.

(1*R*,3*S*,3′*R*)-*form* [221657-57-4]
Alkaloid from fermented radish roots.
Ozawa, Y. *et al., Biosci., Biotechnol., Biochem.*, 1999, **63**, 216-219

1,2,3,4-Tetrahydro-5,6,7-trihydroxyisoquinoline T-236

1,2,3,4-Tetrahydro-5,6,7-isoquinolinetriol



$C_9H_{11}NO_3$ 181.191

6,7-Di-Me ether: 1,2,3,4-Tetrahydro-6,7-dimethoxy-8-isoquinolinol. 1,2,3,4-Tetrahydro-8-hydroxy-6,7-dimethoxyisoquinoline. ***Anhalamine***
[643-60-7]
$C_{11}H_{15}NO_3$ 209.244
Alkaloid from *Anhalonium lewinii* (*Lophophora williamsii*), *Lophophora diffusa* and *Gymnocalycium gibbosum* (Cactaceae). Cryst. (EtOH). Mp 189-191°. pK_{a1} 8.8; pK_{a2} 11.3 (50% 2-propanol aq.).

▶ NX5948000

6,7-Di-Me ether, hydrochloride: Cryst. (AcOH). Mp 277-278° dec Mp 257-258° (*in vacuo*).

6,7-Di-Me ether, picrate: Mp 273-274° Mp 249-249.5° (*in vacuo*).

6,7-Di-Me ether, N-*formyl:* **N-*Formylanhalamine***
$C_{12}H_{15}NO_4$ 237.255
Constit. of peyote cactus, *Lophophora williamsii* (Cactaceae). Nat. prod. ident. by glc/ms in comparison with an authentic sample.

6,7-Di-Me ether, N-*Ac:* **N-*Acetylanhalamine***
$C_{13}H_{17}NO_4$ 251.282
Constit. of *Lophophora williamsii* (Cactaceae). Nat. prod. ident. by glc/ms.

6,7-Di-Me ether, N-*benzoyl:*
$C_{18}H_{19}NO_4$ 313.352
Prisms (EtOH). Mp 167.5°.

6,7-Di-Me ether, N-*Me: 1,2,3,4-Tetrahydro-6,7-dimethoxy-2-methyl-8-isoquinolinol. 1,2,3,4-Tetrahydro-8-hydroxy-6,7-dimethoxy-2-methylisoquinoline.* ***Anhalidine.*** N-*Methylanhalamine*
[2245-94-5]
$C_{12}H_{17}NO_3$ 223.271
Alkaloid from *Anhalonium lewinii (Lophophora williamsii), Pelecyphora aselliformis* and *Stetsonia coryne* (Cactaceae). Cryst. by subl. Mp 131-133°. pK_{a1} 7.7; pK_{a2} 11.1 (50% 2-propanol aq.).

▶ NX5955350

6,7-Di-Me ether, N-*Me, hydrochloride:* Mp 243°.

6,7-Di-Me ether, N,N-*di-Me: 1,2,3,4-Tetrahydro-8-hydroxy-6,7-dimethoxy-2,2-dimethylisoquinolinium(1+).* ***Anhalotine***
[19267-93-7]
[19445-62-6]
$C_{13}H_{20}NO_3^{\oplus}$ 238.306
Alkaloid from *Anhalonium lewinii* (Cactaceae). Cryst. (EtOH/EtOAc)(as iodide). Mp 219-220° (iodide).

7,8-Di-Me ether: 1,2,3,4-Tetrahydro-6-hydroxy-7,8-dimethoxyisoquinoline. 1,2,3,4-Tetrahydro-7,8-dimethoxy-6-isoquinolinol. ***Isoanhalamine***
[5308-58-7]
$C_{11}H_{15}NO_3$ 209.244
Alkaloid from *Lophophora williamsii* (peyote cactus) (Cactaceae). Cryst. (CH_2Cl_2/Et_2O). Mp 172-174°.

7,8-Di-Me ether, hydrobromide: Mp 214.5-215.5°.

7,8-Di-Me ether, N-*Me: 1,2,3,4-Tetrahydro-7,8-dimethoxy-2-methyl-6-isoquinolinol. 1,2,3,4-Tetrahydro-6-hydroxy-7,8-dimethoxy-2-methylisoquinoline.* ***Isoanhalidine***
[37484-64-3]
$C_{12}H_{17}NO_3$ 223.271
Alkaloid from *Lophophora williamsii* (peyote cactus) (Cactaceae). Mp 215-218° (as hydrochloride).

Tri-Me ether: 1,2,3,4-Tetrahydro-6,7,8-trimethoxyisoquinoline. ***Anhalinine.*** O-*Methylanhalamine*
[642-30-8]
$C_{12}H_{17}NO_3$ 223.271
Alkaloid from *Anhalonium lewinii* (Cactaceae). Cryst. by subl. Mp 61-63°.

Tri-Me ether, hydrochloride: Mp 242-243°.

Tri-Me ether, picrate: Mp 184-185°.

Tri-Me ether, N-*formyl:* **N-*Formylanhalinine***
$C_{13}H_{17}NO_4$ 251.282
Alkaloid from *Anhalonium lewinii* (Cactaceae). Identified by glc/ms comparison with an authentic specimen.

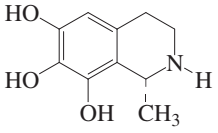
6,7-Methylene, 8-Me ether, N-*Me:* see Hydrocotarnine, H-396

Heffter, A. *et al., Ber.*, 1901, **34**, 3004 (*Anhalamine, isol*)
Späth, E. *et al., Ber.*, 1934, **67**, 2100; 1935, **68**, 501; 944 (*Anhalamine, Anhalinine, isol, synth*)
Brossi, A. *et al., Helv. Chim. Acta*, 1964, **47**, 2089; 1966, **49**, 403 (*synth, derivs*)
Kametani, T. *et al., Yakugaku Zasshi*, 1966, **86**, 913; *CA*, **66**, 28631t (*Anhalamine, Anhalidine, synth*)
Kapadia, G.J. *et al., Chem. Comm.*, 1968, 1688 (*N-Formylanhalinine, N-Formylanhalamine, N-Acetylanhalamine*)
Kapadia, G.J. *et al., J. Pharm. Sci.*, 1968, **57**, 254 (*Anhalotine*)
Lundström, J. *et al., Tet. Lett.*, 1968, 4437 (*biosynth*)
Todd, J.S. *et al., J. Nat. Prod.*, 1969, **32**, 395 (*Anhalamine, occur*)

Khanna, K.L. *et al., Phytochemistry*, 1970, **9**, 1811 (*biosynth*)
Lundström, J. *et al., Acta Chem. Scand.*, 1972, **26**, 1295 (*Isoanhalamine, Isoanhalidine*)
Neal, J.M. *et al., Science (Washington, D.C.)*, 1972, **176**, 1131 (*Anhalidine, isol*)

1,2,3,4-Tetrahydro-6,7,8-trihydroxy-1-methylisoquinoline T-237

1,2,3,4-Tetrahydro-1-methyl-6,7,8-isoquinolinetriol



(*R*)-*form*

$C_{10}H_{13}NO_3$ 195.218

(*R*)-*form*

6,7-Di-Me ether: 1,2,3,4-Tetrahydro-8-hydroxy-6,7-dimethoxy-1-methylisoquinoline. 1,2,3,4-Tetrahydro-6,7-dimethoxy-1-methyl-8-isoquinolinol. ***Anhalonidine***
[529-58-8]
$C_{12}H_{17}NO_3$ 223.271
Alkaloid from *Lophophora williamsii* (Cactaceae). $[\alpha]_D$ -21.2 (95% EtOH). Racemises readily.
► LD_{50} (mus, orl) 700 mg/kg. NX5953000

6,7-Di-Me ether, hydrochloride: $[\alpha]_D$ -0.7 (95% EtOH).

(*S*)-*form*

7,8-Di-Me ether: 1,2,3,4-Tetrahydro-7,8-dimethoxy-1-methyl-6-isoquinolinol. 1,2,3,4-Tetrahydro-6-hydroxy-7,8-dimethoxy-1-methylisoquinoline. ***Isoanhalonidine***
[37484-65-4]
$C_{12}H_{17}NO_3$ 223.271
Alkaloid from *Lophophora williamsii* (peyote cactus) (Cactaceae). Cryst. (Et_2O/pentane). Mp 112-114°.

7,8-Di-Me ether, hydrobromide: Mp 210.5-212°.

7,8-Di-Me ether, N-*Me: 1,2,3,4-Tetrahydro-6-hydroxy-7,8-dimethoxy-1,2-dimethylisoquinoline. 1,2,3,4-Tetrahydro-7,8-dimethoxy-1,2-dimethyl-6-isoquinolinol.* ***Isopellotine***
[37484-66-5]
$C_{13}H_{19}NO_3$ 237.298
Alkaloid from *Lophophora williamsii* (Cactaceae). Mp 212-222° (as hydrochloride).

Tri-Me ether: 1,2,3,4-Tetrahydro-6,7,8-trimethoxy-1-methylisoquinoline. **O-*Methylanhalonidine***
[35646-08-3]
$C_{13}H_{19}NO_3$ 237.298
Alkaloid from *Lophophora williamsii* (peyote cactus) (Cactaceae). Plant growth inhibitor. Viscous oil. $Bp_{0.05}$ 140°. $[\alpha]_D^{25}$ +20.6 (c, 1 in MeOH) ((+11.5)). $[\alpha]_D^{25}$ +19.3 (c, 1 in 1*M* HCl).

Tri-Me ether, hydrobromide: Cryst. (H_2O). Mp 202-204°. $[\alpha]_D^{25}$ +16.4 (c, 1 in MeOH).

(±)-*form*

6,7-Di-Me ether: [3851-33-0]
Alkaloid from *Lophophora williamsii*, *Echinocactus lewinii* and *Lemaireocereus weberi* (Cactaceae). Narcotic and curarising agent to frogs but not to mammals. Cryst. (Me_2CO). Mp 161-161.5°.

6,7-Di-Me ether, hydrochloride:
Cryst. (EtOH/Et_2O). Mp 248.5-250° dec.

6,7-Di-Me ether, picrate:
Needles (EtOH). Mp 200.5-201.5° (201-208°).

6,7-Di-Me ether, N,O-*dibenzoyl:* Mp 125-126°.

6,7-Di-Me ether, N-*Me: 1,2,3,4-Tetrahydro-8-hydroxy-6,7-dimethoxy-1,2-dimethylisoquinoline. 1,2,3,4-Tetrahydro-6,7-dimethoxy-1,2-dimethyl-8-isoquinolinol.* ***Pellotine****. Peyotline*
[83-14-7]
$C_{13}H_{19}NO_3$ 237.298
Alkaloid from *Anhalonium lewinii* (*Lophophora williamsii*), *Anhalonium williamsii*, *Pachycereus weberi* and *Pelecyphora aselliformis*, also detected in *Lophophora diffusa* and *Islaya minor* (preferred genus name *Neoporteria*) (Cactaceae). Cryst. (EtOH or petrol). Mp 111-112°. $[\alpha]_D$ 0. pK_{a1} 8.3; pK_{a2} 11.6 (50% 2-propanol aq.). May be optically active in the plant, but racemises during extraction.
► RY0350000

6,7-Di-Me ether, N-*Me, hydrochloride:*
Cryst. (EtOH). Mp 243-244°.

6,7-Di-Me ether, N-*Me, picrate:* Mp 172-173°.

Tri-Me ether: [4838-93-1]
Synthetic. Cryst. (EtOAc)(as hydrochloride). Mp 148-150° (hydrochloride).

(ξ)-*form*

6,7-Di-Me ether, N-*formyl:* **N-*Formylanhalonidine***
$C_{13}H_{17}NO_4$ 251.282
Constit. of *Lemaireocereus williamsii* (Cactaceae). Abs. config. of the nat. alkaloid unknown; it was identified by glc/ms comparison with an authentic sample.

6,7-Di-Me ether, N,N-*di-Me: 1,2,3,4-Tetrahydro-8-hydroxy-6,7-dimethoxy-1,2,2-trimethylisoquinolinium(1+).* ***Peyotine***
[25526-36-7]
$C_{14}H_{22}NO_3^{\oplus}$ 252.333
Alkaloid from *Lophophora williamsii* (Cactaceae). Cryst. (H_2O)(as iodide). Mp 185-186° (softens and resolidifies at 114°)(iodide).

Tri-Me ether, N-*formyl:* **N-*Formyl*-O-*methylanhalonidine***
[84666-21-7]
$C_{14}H_{19}NO_4$ 265.308
Constit. of *Lophophora williamsii* (Cactaceae). Abs. config. not detd., ident. by glc/ms.

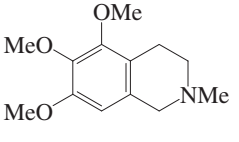
Tri-Me ether, N-*Me: 1,2,3,4-Tetrahydro-6,7,8-trimethoxy-1,2-dimethylisoquinoline.* **O-*Methylpellotine***
[4973-61-9]
$C_{14}H_{21}NO_3$ 251.325
Constit. of *Lophophora diffusa* (Cactaceae). Nat. prod. identified by tlc and glc comparison with reference material.

Heffter, A. *et al., Ber.*, 1894, **27**, 2975-2979 (*Pellotine, isol*)
Späth, E. *et al., Monatsh. Chem.*, 1921, **42**, 97-115; 1922, **43**, 477-484 (*Anhalonidine, Pellotine, synth*)
Späth, E. *et al., Ber.*, 1932, **65**, 1778-1785; 1934, **67**, 266-268; 1936, **69**, 755-757 (*Pellotine, Anhalonidine, struct, synth*)
Späth, E. *et al., Ber.*, 1939, **72**, 334-338 (*O-Methylanhalonidine*)
Djerassi, C. *et al., J.A.C.S.*, 1954, **76**, 3215-3217 (*Anhalonidine, isol*)
Brossi, A. *et al., Helv. Chim. Acta*, 1964, **47**, 2089-2098 (*Pellotine, Anhalonidine, synth, uv, ir, pmr*)
Brossi, A. *et al., Helv. Chim. Acta*, 1966, **49**, 403 (*Isoanhalonidine*)
Leete, E. *et al., J.A.C.S.*, 1966, **88**, 4218-4221 (*biosynth*)
Battersby, A.R. *et al., Tet. Lett.*, 1967, 563-565 (*biosynth*)
Kapadia, G.J. *et al., Chem. Comm.*, 1968, 1688-1689 (*N-Formylanhalonidine*)
Kapadia, G.J. *et al., J. Pharm. Sci.*, 1968, **57**, 254-262 (*Peyotine, isol, uv, ir*)
Todd, J.S. *et al., J. Nat. Prod.*, 1969, **32**, 395-398 (*tlc, occur*)
Fales, H.M. *et al., J.A.C.S.*, 1969, **91**, 3682-3685 (*O-Methylpellotine, ms*)
Khanna, K.L. *et al., Phytochemistry*, 1970, **9**, 1811-1815 (*biosynth*)
Brossi, A. *et al., J.A.C.S.*, 1971, **93**, 6248-6252 (*O-Methylanhalonidine, uv, cd, ord, pmr, config, cryst struct, resoln*)
Lundström, J. *et al., Acta Chem. Scand.*, 1972, **26**, 1295 (*Isopellotine*)
Neal, J.M. *et al., Science (Washington, D.C.)*, 1972, **176**, 1131-1133 (*Pellotine*)
Kapadia, G. *et al., J. Nat. Prod.*, 1973, **36**, 9-35 (*rev, ms*)
Bruhn, J.G. *et al., Phytochemistry*, 1975, **14**, 1442-1443 (*O-Methylpellotine, isol*)
Cymerman Craig, J. *et al., J.A.C.S.*, 1977, **99**, 7996-8002 (*uv, cd, abs config*)
Stronböm, J. *et al., J. Chromatogr.*, 1978, **147**, 513-515; 1980, **189**, 79-89 (*hplc, occur*)
Mata, R. *et al., Phytochemistry*, 1980, **19**, 673 (*isol*)
Sax, N.I. *et al., Dangerous Properties of Industrial Materials, 5th edn., Van Nostrand Reinhold*, 1979, 379

1,2,3,4-Tetrahydro-5,6,7-trimethoxy-2-methylisoquinoline, 9CI T-238

Tehaunine

[30147-93-4]



$C_{13}H_{19}NO_3$ 237.298

Alkaloid from *Pachycereus weberi*, *Pachycereus pringlei* and *Pachycereus tehuantepecanus* (Cactaceae). Mp 229-230° (219-221°)(as hydrochloride).

N-*Oxide:* ***Tehaunine* N-*oxide***
[85769-25-1]
$C_{13}H_{19}NO_4$ 253.297
Alkaloid from *Pachycereus pringlei* (Cactaceae). Cryst. (EtOH/Et_2O)(as hydrochloride). Mp 186-187° (hydrochloride).

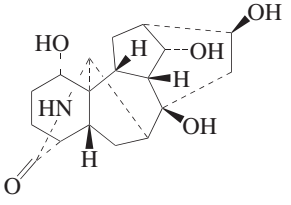
N-*De-Me:* ***Nortehaunine****. 1,2,3,4-Tetrahydro-5,6,7-trimethoxyisoquinoline*
[1745-06-8]
$C_{12}H_{17}NO_3$ 223.271
Alkaloid from *Pachycereus weberi* (Cactaceae). Mp 71-72°.

N-*De-Me; hydrochloride:* Mp 268-269° (260°).

N-*De-Me, picrate:* Mp 175-177°.

Bobbitt, J.M. *et al., J.O.C.*, 1965, **20**, 2247 (*synth*)
Mata, R. *et al., Phytochemistry*, 1980, **19**, 673 (*isol, uv, ir, pmr, ms, struct, deriv*)
Mata, R. *et al., Planta Med.*, 1980, **38**, 180 (*isol*)
Hara, H. *et al., Heterocycles*, 1982, **17**, 293 (*synth*)
Pummangura, S. *et al., Phytochemistry*, 1982, **21**, 2375 (*oxide*)
Mata, R. *et al., Phytochemistry*, 1983, **22**, 1263 (*cmr, Tehaunine, Nortehaunine*)
Takano, S. *et al., Heterocycles*, 1993, **35**, 47 (*synth*)

1,8,14,16-Tetrahydroxyaconitan-19-one T-239

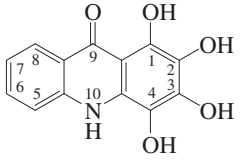


$C_{18}H_{25}NO_5$ 335.399

(1α,5β,14α,16β)-*form*
O^1,O^{16}-*Di-Me:* ***Piepunendine A***
[947321-58-6]
$C_{20}H_{29}NO_5$ 363.453
Alkaloid from the roots of *Aconitum piepunense*. Mp 107-109°. $[\alpha]_D^{20}$ -14.3 (c, 0.5 in $CHCl_3$).

Cai, L. *et al., Nat. Prod. Commun.*, 2006, **1**, 191-194 (*isol, pmr, cmr*)

1,2,3,4-Tetrahydroxyacridone T-240



$C_{13}H_9NO_5$ 259.218

2,3,4-Tri-Me ether: ***1-Hydroxy-2,3,4-trimethoxyacridone***
[114340-03-3]
$C_{16}H_{15}NO_5$ 301.298
Alkaloid from leaves of *Vepris fitoravina* and *Vepris macrophylla* (Rutaceae). Orange-yellow needles (EtOAc/hexane). Mp 208-209° (200°).

2,3,4-Tri-Me ether, N-*Me: 1-Hydroxy-2,3,4-trimethoxy-10-methylacridone.* ***Normelicopicine***
[7008-68-6]
$C_{17}H_{17}NO_5$ 315.325
Alkaloid from *Acronychia baueri* and *Teclea trichocarpa*. Orange needles (EtOH aq.). Mp 125-127°. Prob. artifact.

Tetra-Me ether: ***1,2,3,4-Tetramethoxyacridone***
[75340-58-8]
$C_{17}H_{17}NO_5$ 315.325
Alkaloid from the leaves of *Bauerella simplicifolia* (preferred genus name *Acronychia*) (Rutaceae). Mp 238-240°.

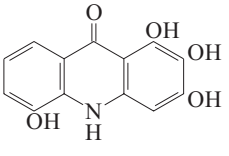
Tetra-Me ether, N-*Me: 1,2,3,4-Tetramethoxy-10-methylacridone.* ***Melicopicine***
[517-73-7]
$C_{18}H_{19}NO_5$ 329.352
Alkaloid from *Acronychia baueri*, *Teclea boiviniana*, *Melicope fareana* and *Melicope leptococca* (Rutaceae). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 133-134°. λ_{max} 218 ; 268 ; 397 (EtOH) (Berdy).

2,3-Methylene, 1,4-di-Me ether: see Xanthevodine, X-2

3,4-Methylene, 1,2-di-Me ether, N-*Me:* see Melicopine, M-169

Price, J.R. *et al., Aust. J. Sci. Res., Ser. A*, 1949, **2**, 249-254; *CA*, **46**, 4010d (*Melicopicine*)
Crow, W.D. *et al., Aust. J. Sci. Res., Ser. A*, 1949, **2**, 282-300; *CA*, **46**, 4014a (*Melicopicine, struct*)
Hughes, G.K. *et al., Aust. J. Sci. Res., Ser. A*, 1950, **3**, 497-503; *CA*, **46**, 4544a (*2,3,4-tri-Me ether, tetra-Me ether, synth*)
Brown, R.D. *et al., Aust. J. Sci. Res., Ser. A*, 1950, **3**, 593-614; *CA*, **45**, 9369a (*uv*)
Bowie, J.H. *et al., Aust. J. Chem.*, 1967, **20**, 1179-1193 (*ms*)
Mester, I. *et al., Z. Naturforsch., B*, 1979, **34**, 516-519 (*cmr*)
Tillequin, F. *et al., J. Nat. Prod.*, 1980, **43**, 498 (*tetra-Me ether*)
Skaltsounis, A.L. *et al., J. Nat. Prod.*, 1983, **46**, 732-735 (*Melicopicine*)
Baudouin, G. *et al., J. Nat. Prod.*, 1985, **48**, 260-265 (*2,3,4,10-tetra-Me*)
Koffi, Y. *et al., Planta Med.*, 1987, **53**, 570-571
Rasoanaivo, P. *et al., Fitoterapia*, 1999, **70**, 625-627 (*Melicopicine, isol, cmr*)
Muriithi, M.W. *et al., J. Nat. Prod.*, 2002, **65**, 956-959 (*Normelicopicine, isol, cryst struct*)

1,2,3,5-Tetrahydroxyacridone T-241



$C_{13}H_9NO_5$ 259.218

2,3-Di-Me ether, N-*Me: 1,5-Dihydroxy-2,3-dimethoxy-10-methylacridone.* ***5-Hydroxyarborinine***
[75821-37-3]
$C_{16}H_{15}NO_5$ 301.298
Alkaloid from the stems and leaves of *Glycosmis bilocularis* (Rutaceae). Orange-yellow cryst. (Et_2O/petrol). Mp 206-207° (185-187°). Phys. props. differ from those of an alkaloid of the same assigned struct. (Mp 185-7°) isol. from *Atalantia monopylla*.

2,3-Di-Me ether, N-*Me, 5-Ac:*
$C_{18}H_{17}NO_6$ 343.335
Yellow prisms (Me_2CO/hexane). Mp 128-129°.

2,3-Di-Me ether, N-*Me, 1,5-di-Ac:*
$C_{20}H_{19}NO_7$ 385.373
Pale-yellow prisms (Me_2CO/hexane). Mp 192-193°.

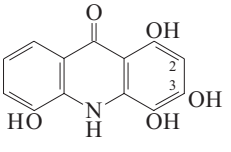
*2,3,5-Tri-Me ether,*N-*Me: 1-Hydroxy-2,3,5-trimethoxy-10-methylacridone.* ***5-Methoxyarborinine***
[75821-42-0]
$C_{17}H_{17}NO_5$ 315.325
Alkaloid from stem bark of *Luvunga angustifolia* (Rutaceae). Yellow needles (EtOH). Mp 168-169° (135-136°).

Tetra-Me ether, N-*Me: 1,2,3,5-Tetramethoxy-10-methylacridone*
$C_{18}H_{19}NO_5$ 329.352
Yellow needles (EtOH). Mp 97-98°.

2,3-Methylene, 1,5-di-Me ether: see Tecleanthine, T-56

Bowen, I.H. *et al., Phytochemistry*, 1978, **17**, 2125; 1980, **19**, 1566 (*isol, uv, ir, pmr, ms, synth*)
Shah, J.S. *et al., Indian J. Chem., Sect. B*, 1982, **21**, 16 (*isol, uv, ir, pmr, ms, struct*)
Wijeratne, E.M.K. *et al., J. Nat. Prod.*, 1992, **55**, 1261 (*5-Methoxyarborinine*)

1,3,4,5-Tetrahydroxyacridone T-242



$C_{13}H_9NO_5$ 259.218

4-Me ether, N-*Me: 1,3,5-Trihydroxy-4-methoxy-10-methylacridone.* ***Citrusinine II***
[86680-33-3]
$C_{15}H_{13}NO_5$ 287.271
Alkaloid from the root bark of *Citrus sinensis* var. *brasiliensis* (navel orange) (Rutaceae). Yellow needles (Me_2CO). Mp 244-246°.

3,4-Di-Me ether, N-*Me: 1,5-Dihydroxy-3,4-dimethoxy-10-methylacridone.* ***Citrusinine I***
[86680-32-2]
$C_{16}H_{15}NO_5$ 301.298
Alkaloid from the root bark of *Citrus sinensis* var. *brasiliensis* (navel orange) and *Citrus grandis* (pummelo) (Rutaceae). Orange needles (Me_2CO). Mp

206-207°. λ_{max} 222 ; 265 ; 319 ; 331 ; 416 (EtOH) (Berdy).

Wu, T.-S. *et al., Chem. Pharm. Bull.*, 1983, **31**, 901 (*isol, uv, ir, pmr, cmr, ms, struct*)
Wu, T.-S. *et al., Phytochemistry*, 1983, **22**, 1493 (*isol*)
Kato, N. *et al., Chem. Pharm. Bull.*, 1993, **41**, 445 (*synth, Citrusinine I*)

1,3,5,6-Tetrahydroxyacridone T-243

$C_{13}H_9NO_5$ 259.218

5-Me ether, N-*Me: 1,3,6-Trihydroxy-5-methoxy-10-methylacridine.* ***Grandisine III***
$C_{15}H_{13}NO_5$ 287.271
Alkaloid from roots of several hybrid seedlings resulting from a cross of Pummelo (*Citrus grandis* cv. May Pummelo x Marsh grapefruit (*Citrus paradisi*)) (Rutaceae). Yellow amorph. powder.

3,5-Di-Me ether: 1,6-Dihydroxy-3,5-dimethoxyacridone. ***Natsucitrine I***. *Des*-N-*methylcitpressine I*
[96910-77-9]
$C_{15}H_{13}NO_5$ 287.271
Alkaloid from the root bark of *Citrus natsudaidai* (Rutaceae). Light yellow prisms (MeOH). Mp 292-293°.

3,5-Di-Me ether, N-*Me: 1,6-Dihydroxy-3,5-dimethoxy-10-methylacridone.* ***Citpressine I***
[81525-58-8]
$C_{16}H_{15}NO_5$ 301.298
Alkaloid from the root of bark of *Citrus depressa* (Shekwasha mandarin) and *Citrus grandis*, f. *hakunikuyu* (Rutaceae). Yellow needles + ½ H_2O (Me_2CO). Mp 183-185°.

3,6-Di-Me ether, N-*Me: 1,5-Dihydroxy-3,6-dimethoxy-10-methylacridone.* ***Grandisine I***
[87959-97-5]
$C_{16}H_{15}NO_5$ 301.298
Alkaloid from the root bark of *Citrus grandis* f. *hakunikuyu* (Rutaceae). Pale yellow needles (Me_2CO). Mp 262-264°.

5,6-Di-Me ether, N-*Me: 1,3-Dihydroxy-5,6-dimethoxy-10-methylacridone.* ***Grandisine II***
[87959-99-7]
$C_{16}H_{15}NO_5$ 301.298
Alkaloid from the root bark of *Citrus grandis* f. *hakunikuyu* (Rutaceae). Yellow needles (Me_2CO). Mp 266-268°.

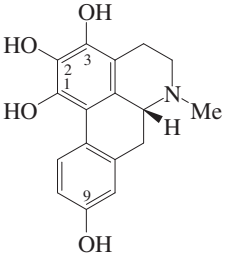
3,5,6-Tri-Me ether: 1-Hydroxy-3,5,6-trimethoxyacridone. ***Natsucitrine II***. *Des*-N-*methylcitpressine II*
[96910-78-0]
$C_{16}H_{15}NO_5$ 301.298
Alkaloid from the root bark of *Citrus natsudaidai* (Rutaceae). Light yellow needles (C_6H_6/Me_2CO). Mp 246-247°.

3,5,6-Tri-Me ether, N-*Me: 1-Hydroxy-3,5,6-trimethoxy-10-methylacridone.* ***Citpressine II***
[81525-59-9]
$C_{17}H_{17}NO_5$ 315.325
Alkaloid from the root of bark of *Citrus depressa* (Shekwasha mandarin) and *Citrus grandis* f. *hakunikuyu* (Rutaceae). Yellow needles (Et_2O). Mp 168-170°.

5,6-Methylene, 3-Me ether, N-*Me: 1-Hydroxy-3-methoxy-10-methyl-5,6-methylenedioxyacridone.* ***Marshdine***
[160927-87-7]
$C_{16}H_{13}NO_5$ 299.282
Alkaloid from roots of marsh grapefruit *Citrus paradisi* (Rutaceae). Yellow cubes. Mp 210-213°.

Wu, T.-S. *et al., Chem. Pharm. Bull.*, 1983, **31**, 895 (*isol, uv, ir, pmr, ms, struct, Citpressines*)
Wu, T.-S. *et al., Phytochemistry*, 1983, **22**, 1493 (*isol, uv, ir, cmr, pmr, ms, struct, Grandisines*)
Ju-ichi, M. *et al., Heterocycles*, 1985, **23**, 1131 (*isol, uv, ir, pmr, cmr, ms, struct, synth, Natsucitrines*)
Takemura, Y. *et al., Heterocycles*, 1992, **34**, 2123; 1994, **39**, 315 (*Grandisine II, Marshdine*)

1,2,3,9-Tetrahydroxyaporphine T-244



(*R*)-*form*

$C_{17}H_{17}NO_4$ 299.326

(*R*)-*form*

2,3-Di-Me ether: 1,9-Dihydroxy-2,3-dimethoxyaporphine
$[\alpha]_D$ -88 (c, 0.07 in $CHCl_3$).

2,3-Di-Me ether, N-*de-Me: 1,9-Dihydroxy-2,3-dimethoxynoraporphine.* ***Oureguattidine***
[88607-28-7]
$C_{18}H_{19}NO_4$ 313.352
Alkaloid from the stem bark of *Guatteria ouregou* (Annonaceae). Cryst. (MeOH). Mp 140°. $[\alpha]_D$ -13 (c, 0.16 in EtOH).

2,3-Di-Me ether, N-*de-Me,* N,O,O-*tri-Ac:* Cryst. (Me_2CO). Mp 168-171°. $[\alpha]_D$ -211 (c, 0.13 in EtOH).

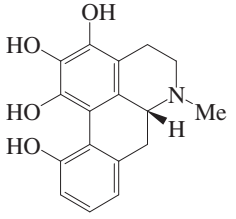
1,2,3-Tri-Me ether, N-*de-Me: 9-Hydroxy-1,2,3-trimethoxynoraporphine.* ***Oureguattine***
[88607-30-1]
$C_{19}H_{21}NO_4$ 327.379
Alkaloid from the leaves of *Guatteria ouregou* (Annonaceae).

(*S*)-*form*

1,2-Di-Me ether, N-*de-Me: 3,9-Dihydroxy-1,2-dimethoxynoraporphine.* ***Norguattevaline***
[158182-27-5]
$C_{18}H_{19}NO_4$ 313.352
Alkaloid from stem bark of *Guatteria foliosa* (Annonaceae). Amorph. $[\alpha]_D$ +35 (EtOH). Guattevaline appears to be unknown.

Leboeuf, M. *et al., Planta Med.*, 1983, **48**, 234 (*Oreguattidine*)
Cortes, D. *et al., J. Nat. Prod.*, 1986, **49**, 878 (*Oureguattine*)
Mahiou, V. *et al., J. Nat. Prod.*, 1994, **57**, 890 (*Norguattevaline*)

1,2,3,11-Tetrahydroxyaporphine T-245



$C_{17}H_{17}NO_4$ 299.326

(*R*)-*form*

1,2,3-Tri-Me ether: 11-Hydroxy-1,2,3-trimethoxyaporphine. **N-*Methylstenantherine***
[119060-81-0]
$C_{20}H_{23}NO_4$ 341.406
Alkaloid from *Neostenanthera gabonensis* (Annonaceae). $[\alpha]_D^{20}$ -145 (c, 0.11 in EtOH).

1,2,3-Tri-Me ether, Ac:
Oil. $[\alpha]_D^{20}$ -60 (c, 0.10 in EtOH).

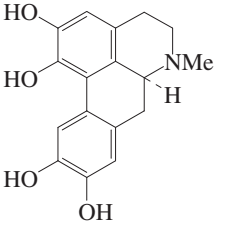
1,2,3-Tri-Me ether, N-*de-Me: 11-Hydroxy-1,2,3-trimethoxynoraporphine.* ***Stenantherine***
[119089-37-1]
$C_{19}H_{21}NO_4$ 327.379
Alkaloid from *Neostenanthera gabonensis* (Annonaceae). Oil.

1,2-Methylene, 3,11-di-Me ether, N-*de-Me: 3,11-Dimethoxy-1,2-methylenedioxynoraporphine.* ***3-Methoxyputerine***
[158018-12-3]
$C_{19}H_{19}NO_4$ 325.363
Alkaloid from stem bark of *Guatteria foliosa* (Annonaceae). Amorph. $[\alpha]_D$ -75 (EtOH).

Renner, C. *et al., J. Nat. Prod.*, 1988, **51**, 973 (*Stenantherine, N-Methylstenantherine*)
Mahiou, V. *et al., J. Nat. Prod.*, 1994, **57**, 890 (*3-Methoxyputerine*)

1,2,9,10-Tetrahydroxyaporphine T-246

*5,6,6a,7-Tetrahydro-6-methyl-4*H*-dibenzo[*de,g*]quinoline-1,2,9,10-tetrol, 9CI*



(*S*)-*form*

$C_{17}H_{17}NO_4$ 299.326
Log P 2.97 (uncertain value) (calc).

(*R*)-*form*

Tetra-Me ether: [38325-02-9]

Mp 124-125°. $[\alpha]_D$ -115.4 (EtOH aq.).

(*S*)-*form*

1,9-Di-Me ether: see Liriotulipiferine, L-195

1,10-Di-Me ether: see Boldine, B-243

2,9-Di-Me ether: see Bracteoline, B-276

2,10-Di-Me ether: see Isoboldine, I-196

9,10-Di-Me ether: see Lastourvilline, L-52

1,2,9-Tri-Me ether: see 10-Hydroxy-1,2,9-trimethoxyaporphine, H-752

1,2,10-Tri-Me ether: see Lauroscholtzine, L-75

1,9,10-Tri-Me ether: see Predicentrine, P-597

2,9,10-Tri-Me ether: see 1-Hydroxy-2,9,10-trimethoxyaporphine, H-751

Tetra-Me ether: 1,2,9,10-Tetramethoxyaporphine. ***Glaucine***
[475-81-0]
$C_{21}H_{25}NO_4$ 355.433
Alkaloid from a wide variety of genera in the Annonaceae (*Alphonsea*, *Annona*, *Polyalthia*, *Schefferomitra*, *Uvaria*), Berberidaceae (*Berberis*, *Mahonia*), Euphorbiaceae (*Croton*), Papaveraceae (*Corydalis*, *Dicentra*), Lauraceae (*Beilschmiedia*, *Ocotea*, *Litsea*), Magnoliaceae (*Liriodendron*, *Magnolia*), Menispermaceae (*Chasmanthera*), Papaveraceae (*Glaucium*, *Papaver*), Ranunculaceae (*Thalictrum*, *Aconitum*), Rhamnaceae (*Colubrina*) and Monimiaceae (*Hedycarya*). Shows antithrombotic, analgesic and antiinflammatory activity. Antifungal agent. Produces narcosis and convulsions in animals, also hypotension and respiratory depression. Antitussive agent with similar potency to Codeine. Mild muscle relaxant. Cryst. (EtOAc or petrol). Mp 120-121°. $[\alpha]_D$ +116 (c, 0.75 in EtOH). Log P 2.97 (uncertain value) (calc). Pharmacol. active isomer.
▶ LD_{50} (rat, orl) 545 mg/kg. LD_{50} (rat, ipr) 143 mg/kg LD_{50} (mus, ivn) 98 mg/kg. CE0925000

Tetra-Me ether, hydrobromide: Bromcholitin. Glauvent. Tussiglaucin
[5996-06-5]
Cryst. Mp 235°.

Tetra-Me ether, N-*Me:* Mp 225-227° dec. (as iodide). $[\alpha]_D^{24}$ +80 (EtOH). Prepd. as *O*-Methylxanthoplanine iodide.

Tetra-Me ether, N-*de-Me: 1,2,9,10-Tetramethoxynoraporphine.* ***Norglaucine***
[21848-62-4]
$C_{20}H_{23}NO_4$ 341.406
Alkaloid from a variety of genera in the Annonaceae (*Alphonsea*, *Duguetia*, *Pseuduvaria*), Magnoliaceae (*Magnolia*, *Liriodendron*), Menispermaceae (*Chasmanthera*), Monimiaceae (*Monimia*) and Rhamnaceae (*Colubrina*). Noncryst.
▶ RB6000200

Tetra-Me ether, N-*de-Me; hydrobromide:* Mp 248-250°. $[\alpha]_D^{30}$ +102 (c, 1 in MeOH).

Tetra-Me ether, N-*de-Me,* N-*Ac:* Mp 102-104°. $[\alpha]_D$ +333 (c, 0.13 in MeOH).

1,2-Methylene, 9,10-di-Me ether: see Dicentrine, D-346

9,10-Methylene, 1,2-di-Me ether: see Nantenine, N-29

3-Chloro, tetra-Me ether, N-*de-Me,* N-*methoxycarbonyl:* ***Romucosine F***
$C_{22}H_{24}ClNO_6$ 433.887
Alkaloid from *Annona purpurea*. Needles. Mp 140-142°. $[\alpha]_D^{25}$ +134 (c, 0.05 in $CHCl_3$). λ_{max} 222 (log ϵ 4.35); 280 (log ϵ 4.21); 305 (log ϵ 3.76) (MeOH).

(±)-*form*

Tetra-Me ether: [5630-11-5]
Mp 137-139°.

Tetra-Me ether, N-*de-Me:* [39945-40-9]
Synthetic. Gum.

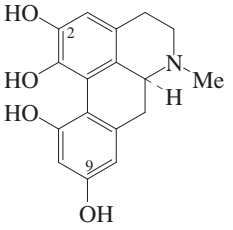
Tetra-Me ether, N-*de-Me, picrate:*
Yellow cryst. (MeOH/EtOH). Mp 149-150°.

6a,7-Didehydro, tetra-Me ether: see Dehydroglaucine, D-159

[73239-87-9]

Go, J. *et al., Yakugaku Zasshi*, 1930, **50**, 933 (*isol*)
Corrodi, H. *et al., Helv. Chim. Acta*, 1956, **39**, 889 (*abs config*)
Baarschers, W.H. *et al., J.C.S.*, 1964, 4478 (*pmr, ms*)
Jackson, A.H. *et al., J.C.S.(C)*, 1966, 2061 (*synth, pmr, uv*)
Shamma, M. *et al., J. Pharm. Sci.*, 1968, **57**, 262 (*isol, ir*)
Kametani, T. *et al., Tetrahedron*, 1969, **25**, 3667 (*synth, ir, uv*)
Johns, S.R. *et al., Aust. J. Chem.*, 1970, **23**, 423 (*isol, pmr, Norglaucine*)
Duchevska, K.H.B. *et al., Dokl. Bulg. Akad. Nauk*, 1973, **26**, 899; *CA*, **80**, 27410x (*6,6a-Dehydronorglaucine*)
Guinaudeau, H. *et al., J. Nat. Prod.*, 1975, **38**, 275; 290; 1979, **42**, 325; 329 (*cmr, uv, rev*)
Premila, M.S. *et al., Indian J. Chem., Sect. B*, 1976, **14**, 134 (*synth*)
Aleshinskaya, E.E. *et al., Khim.-Farm. Zh.*, 1976, **10**, 144 (*pharmacol*)
Hartenstein, J. *et al., Angew. Chem.*, 1977, **89**, 739 (*synth*)
Davis, P.J. *et al., J.C.S. Perkin 1*, 1977, 1 (*synth, ms*)
Ricca, G. *et al., Gazz. Chim. Ital.*, 1979, **109**, 1 (*cmr*)
Kase, Y. *et al., Arzneim.-Forsch.*, 1983, **33**, 936; 947 (*pharmacol*)
Kerr, K.M. *et al., J. Nat. Prod.*, 1986, **49**, 576 (*pmr*)
Czarnocki, Z. *et al., Can. J. Chem.*, 1987, **65**, 2356 (*synth*)
Gupta, S. *et al., Synth. Commun.*, 1989, **19**, 393 (*synth*)
Gottlieb, L. *et al., J.O.C.*, 1990, **55**, 5659 (*synth*)
Ivorra, M.D. *et al., Br. J. Pharmacol.*, 1992, **106**, 387 (*pharmacol*)
Oralla, F. *et al., Br. J. Pharmacol.*, 1993, **110**, 943; 1995, **114**, 1419 (*pharmacol*)
Ozaki, Y. *et al., Chem. Pharm. Bull.*, 1993, **41**, 481 (*synth*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 747
Estévez, J.C. *et al., Tetrahedron*, 1994, **50**, 2107 (*synth*)
Comins, D.L. *et al., Tetrahedron*, 1997, **48**, 16327-16340 (*synth*)
Chang, F.R. *et al., J. Nat. Prod.*, 2000, **63**, 746-748 (*Romucosine F*)
Huang, W.-J. *et al., Synth. Commun.*, 2002, **32**, 3681-3686 (*synth, pmr, ms*)
Huang, W.-J. *et al., Angew. Chem., Int. Ed.*, 2004, **43**, 167-174 (*synth*)
Gao, Y. *et al., Synthesis*, 2004, 1093-1101 (*Glaucine, synth, pmr, cmr, ms*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, TDI475

1,2,9,11-Tetrahydroxyaporphine T-247



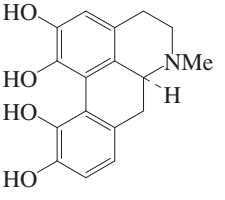
$C_{17}H_{17}NO_4$ 299.326

(*S*)-*form*

2,9-Di-Me ether, N-*Me:* ***Trilobinine***
[126595-92-4]
$C_{20}H_{24}NO_4^{\oplus}$ 342.414
Quaternary alkaloid from *Cissampelos glaberrima* and *Thalictrum acutifolium*. $[\alpha]_D$ +11.6 (c, 0.06 in MeOH). Counterion not specified.

Lin, C.W. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 1989, **31**, 449-452; *CA*, **112**, 175576a

1,2,10,11-Tetrahydroxyaporphine T-248



(*S*)-*form*

$C_{17}H_{17}NO_4$ 299.326

(*S*)-*form*

1-Me ether: 2,10,11-Trihydroxy-1-methoxyaporphine. ***Glaufine***
[70474-42-9]
$C_{18}H_{19}NO_4$ 313.352
Alkaloid from *Glaucium fimbrilligerum* (Papaveraceae). $[\alpha]_D$ +83 (c, 0.2 in MeOH).

1,2-Di-Me ether: 10,11-Dihydroxy-1,2-dimethoxyaporphine. ***Suaveoline***
[99026-98-9]
$C_{19}H_{21}NO_4$ 327.379
Alkaloid from the bark of *Artabotrys suaveolens* (Annonaceae). Bundles of needles or prisms (MeOH). Mp 232°. $[\alpha]_D^{15}$ +164 (c, 1.22 in $CHCl_3$).

1,2-Di-Me ether, N-*Me:* ***Fuzitine***
[142287-96-5]
$C_{20}H_{24}NO_4^{\oplus}$ 342.414
Quaternary alkaloid from tubers of *Aconitum carmichaeli* (Ranunculaceae). Mp 209-211° dec. $[\alpha]_D$ +258 (c,

0.59 in MeOH). Counterion not specified.

1,2-Di-Me ether, N-*de-Me:* ***10,11-Dihydroxy-1,2-dimethoxynoraporphine***
$C_{18}H_{19}NO_4$ 313.352
Alkaloid from *Xylopia parviflora*. Amorph. powder. $[\alpha]_D^{22}$ +57 (c, 0.46 in MeOH). λ_{max} 266 (log ϵ 4.09); 273 (sh) ; 306 (log ϵ 3.85) ($CHCl_3$).

1,10-Di-Me ether: 2,11-Dihydroxy-1,10-dimethoxyaporphine. **N-*Methyllindcarpine***. *Phoebe base*
[14028-97-8]
$C_{19}H_{21}NO_4$ 327.379
Alkaloid from *Lindera pipericarpa* and *Phoebe clemensii*, also from *Magnolia, Beilschmiedia* and *Glaucium* spp. (Lauraceae, Magnoliaceae, Papaveraceae). Mp 198-200°. $[\alpha]_D^{22}$ +222 (c, 0.8 in MeOH). λ_{max} 270 (log ϵ 4.2); 303 (log ϵ 3.8) (no solvent reported).

1,10-Di-Me ether, N-*Me:* **N,N-*Dimethyllindcarpine***
[5890-24-4 (iodide)]
$C_{20}H_{24}NO_4^{\oplus}$ 342.414
Quaternary alkaloid from *Menispermum canadense*, also from *Magnolia, Caltha, Coscinium, Fibraurea* and *Pycnarrhena* spp. (Menispermaceae, Magnoliaceae, Ranunculaceae). Mp 249-251° dec. (as iodide). $[\alpha]_D^{27}$ +213 (c, 0.6 in MeOH) (iodide).

1,10-Di-Me ether, N-*de-Me: 2,11-Dihydroxy-1,10-dimethoxynoraporphine.* ***Lindcarpine***
[11010-63-2]
[14028-95-6]
$C_{18}H_{19}NO_4$ 313.352
Alkaloid from *Lindera pipericarpa* (Lauraceae). Mp 195° dec. $[\alpha]_D^{22}$ +166 (c, 1.35 in EtOH). λ_{max} 218 (log ϵ 4.57); 267 (log ϵ 4.14); 303 (log ϵ 3.82) (EtOH).

1,10-Di-Me ether, N-*de-Me, hydrochloride:* [14028-96-7]
Mp 200° dec.

1,11-Di-Me ether: 2,10-Dihydroxy-1,11-dimethoxyaporphine. **N-*Methylhernovine***
[5550-65-2]
$C_{19}H_{21}NO_4$ 327.379
Alkaloid from *Croton wilsonii* and *Hernandia peltata* (Euphorbiaceae, Hernandiaceae). Amorph. Mp 244-245° dec. (as hydrochloride). $[\alpha]_D^{24}$ +209 (c, 0.55 in MeOH). λ_{max} 218 (4.41); 273 (4.02); 305 (3.63) (EtOH).

1,11-Di-Me ether, N-*de-Me: 2,10-Dihydroxy-1,11-dimethoxynoraporphine.* ***Hernovine***†
[5544-69-4]
$C_{18}H_{19}NO_4$ 313.352
Alkaloid from the bark of *Hernandia ovigera, Hernandia catalpifolia* and *Hernandia jamaicensis.* Also present in *Croton wilsonii* (Hernandiaceae, Euphorbiaceae). Plates (MeOH). Mp 235-237° dec. $[\alpha]_D^{18}$ +142 (c, 0.52 in Py). $[\alpha]_D$ +266 (EtOH). λ_{max} 221 (log ϵ 4.41); 272 (log ϵ 4.01); 306 (log ϵ 3.64) (EtOH).

2,10-Di-Me ether: see Corytuberine, C-702

2,11-Di-Me ether: 1,10-Dihydroxy-2,11-dimethoxyaporphine. ***Isocorytuberine***
[6870-51-5]
$C_{19}H_{21}NO_4$ 327.379
Alkaloid from *Glaucium fimbrilligerum, Glaucium oxylobum* and *Trivalvaria macrophylla* (Papaveraceae, Annonaceae). Mp 223° (as hydrochloride).

2,11-Di-Me ether, N-*de-Me: 1,10-Dihydroxy-2,11-dimethoxynoraporphine.* ***Norisocorytuberine***
[131989-91-8]
$C_{18}H_{19}NO_4$ 313.352
Alkaloid from *Trivalvaria macrophylla* (Annonaceae). $[\alpha]_D$ +170 (c, 0.03 in EtOH).

10,11-Di-Me ether, N-*Me:* ***Zizyphusine***
[107446-79-7]
$C_{20}H_{24}NO_4$ 342.414
Alkaloid from seeds of *Zizyphus vulgaris* var. *spinosus* and *Zizyphus jujuba* var. *inermis* (Rhamnaceae). Shows sedative props. Mp 214-216°. $[\alpha]_D$ +317. Defective diag. in paper. Counterion not specified.

1,2,10-Tri-Me ether: see Isocorydine, I-208

1,2,11-Tri-Me ether: 10-Hydroxy-1,2,11-trimethoxyaporphine. ***Praecoxine***. N-*Methylhernagine*
[4668-25-1]
$C_{20}H_{23}NO_4$ 341.406
Alkaloid from the roots of *Parabenzoin praecox* (Lauraceae). Cryst. (Me_2CO). Mp 230° dec. $[\alpha]_D^{27}$ +270 (c, 0.1 in MeOH). λ_{max} 271 (ϵ 12380); 302 (ϵ 5000) (95% EtOH).

1,2,11-Tri-Me ether, N-*de-Me: 10-Hydroxy-1,2,11-trimethoxynoraporphine.* ***Hernagine***. *Glaufinine*
[74133-19-0]
$C_{19}H_{21}NO_4$ 327.379
Alkaloid from the leaves of *Hernandia nymphaefolia* and *Hernandia peltata*, the stem bark of *Hernandia cordigera* and the aerial parts of *Glaucium fimbrilligerum* (Hernandiaceae). Cryst. (Me_2CO). Mp 222°. $[\alpha]_D$ +252 (c, 1.3 in $CHCl_3$). $[\alpha]_D$ +165 (c, 0.4 in MeOH). Hernagine and Glaufinine not compared, but same struct. assigned. λ_{max} 222 (log ϵ 4.35); 270 (log ϵ 3.82); 309 (log ϵ 3.43) (no solvent reported).

1,10,11-Tri-Me ether: 2-Hydroxy-1,10,11-trimethoxyaporphine. **N,O-*Dimethylhernovine***. *Litseglutine B*
[25368-01-8]
$C_{20}H_{23}NO_4$ 341.406
Alkaloid from *Croton wilsonii*, *Litsea glutinosa* and *Litsea laeta*. Amorph.; cryst. (as hydrochloride). Mp 218-219° dec. (as hydrochloride). $[\alpha]_D^{23}$ +139 (c, 0.51 in MeOH). λ_{max} 220 (log ϵ 4.55); 273 (log ϵ 4.11); 304 (log ϵ 3.69) (EtOH).

1,10,11-Tri-Me ether, N-*de-Me: 2-Hydroxy-1,10,11-trimethoxynoraporphine.* ***10-O-Methylhernovine***
[17807-65-7]
$C_{19}H_{21}NO_4$ 327.379
Alkaloid from *Croton wilsonii* (Euphorbiaceae). Mp 157-158° dec. $[\alpha]_D^{17}$ +188 (c, 1.0 in EtOH). λ_{max} 220 (log ϵ 4.56); 273 (log ϵ 4.11); 305 (log ϵ 3.7) (EtOH).

2,10,11-Tri-Me ether: see Corydine, C-682

Tetra-Me ether: 1,2,10,11-Tetramethoxyaporphine. **O-*Methylcorydine***. O,O-*Dimethylcorytuberine*
[6191-46-4]
$C_{21}H_{25}NO_4$ 355.433
Alkaloid from *Hernandia catalpifolia* and *Hernandia jamaicensis* and from stems of *Chasmanthera dependens* (Hernandiaceae, Menispermaceae). Also a methylation prod. of other aporphine alkaloids, e.g. Isocorydine, I-208. Mp 226-227° dec. (as tartrate). $[\alpha]_D^{28}$ +147 (c, 0.7 in H_2O).

Tetra-Me ether, N-*oxide:* **O-*Methylcorydine* N-*oxide***
[97457-23-3]
$C_{21}H_{25}NO_5$ 371.432
Alkaloid from whole plants of *Berberis chitria* (Berberidaceae). $[\alpha]_D^{35}$ +193 (c, 1 in MeOH).

Tetra-Me ether, N-*Me:* **N,O-*Dimethylisocorydine***. O,O-*Dimethylmagnoflorine*
[51827-27-1]
[58489-51-3 , 5489-15-6]
$C_{22}H_{28}NO_4^{\oplus}$ 370.467
Quaternary alkaloid from leaves of *Cocculus laurifolius* and roots of *Pachygone ovata* (Menispermaceae). Cryst. ($MeOH/Et_2O$) (as chloride). Mp 228-230° dec. (chloride).

Tetra-Me ether, N-*de-Me: 1,2,10,11-Tetramethoxynoraporphine.* ***Catalpifoline***. *Hemiargine A*
[10214-65-0]
$C_{20}H_{23}NO_4$ 341.406
Alkaloid from the bark of *Hernandia catalpifolia* and *Hernandia jamaicensis.* Also from *Croton hemiargyreus* var. *gymnodiscus.* Mp 174-175°. $[\alpha]_D^{25}$ +220.5 (c, 0.10 in EtOH).

1,2-Methylene, 10-Me ether: see Bulbocapnine, B-397

1,2-Methylene, 11-Me ether, N-*de-Me:* see Nandigerine, N-25

10,11-Methylene, 1-Me ether, N-*de-Me:* see Laetine, L-10

4-Oxo, 1,10-di-Me ether, N-*Me:* ***Saxicolaline A***
[1006029-76-0]
$C_{20}H_{22}NO_5^{\oplus}$ 356.398
Quaternary alkaloid from *Corydalis saxicola*. Yellow cryst. (MeOH). Mp 223-225°. $[\alpha]_D^{27}$ +718.8 (c, 0.16 in Py). Counterion not specified. λ_{max} 205 (log ϵ 4.39); 231 (log ϵ 4.23); 289 (log ϵ 4.09); 358 (log ϵ 4.05) (MeOH).

(±)-*form*

2,11-Di-Me ether: [2273-24-7]

Synthetic. Mp 223° (as hydrochloride).

1,10,11-Tri-Me ether: [32563-01-2]
Synthetic. Yellow syrup; needles (MeOH/Et_2O) (as hydrochloride). Mp 245-248° (hydrochloride).

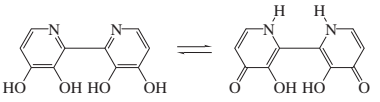
(ξ)-*form*

5ξ-Hydroxy, tetra-Me ether, N-*Me:* ***Magnoporphine***
[188578-70-3]
$C_{22}H_{28}NO_5^{\oplus}$ 386.467
Alkaloid from the leaves of *Magnolia sieboldii* (Magnoliaceae).

Barger, G. *et al., J.C.S.*, 1939, 991-997 (*Suaveoline*)
Jackson, A.H. *et al., J.C.S.(C)*, 1966, 2181-2183; 2222-2229 (*Isocorytuberine, synth, pmr, ms*)
Cava, M.P. *et al., Tet. Lett.*, 1966, 1577-1581 (*Hernovine*)
Johns, S.R. *et al., Aust. J. Chem.*, 1967, **20**, 1277-1281 (*N-Methyllindcarpine, isol, pmr*)
Kiang, A.K. *et al., J.C.S.(C)*, 1967, 282-283 (*Lindcarpine, isol, uv, pmr*)
Stuart, K.L. *et al., Tet. Lett.*, 1967, 4135-4138 (*N-Methylhernovine, 10-O-Methylhernovine, N,O-Dimethylhernovine*)
Kametani, T. *et al., J.C.S.(C)*, 1971, 1923-1927 (*N,O-Dimethylhernovine, synth*)
Cava, M.P. *et al., Tetrahedron*, 1971, **27**, 2639-2643 (*Catalpifoline*)
Guinaudeau, H. *et al., J. Nat. Prod.*, 1975, **38**, 275-338; 1994, **57**, 1033-1035 (*rev*)
Karimova, S.U. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1978, **14**, 699 (*Glaufine*)
Saxena, N.K. *et al., J. Indian Chem. Soc.*, 1979, **56**, 1020-1023 (*N,O-Dimethylisocorydine*)
Bruneton, J. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1980, **291**, 187-189 (*Hernagine, uv, ms, struct*)
Bhat, S.V. *et al., J. Nat. Prod.*, 1980, **43**, 588-591 (*O,O-Dimethylmagnoflorine*)
Yakushijin, K. *et al., Phytochemistry*, 1980, **19**, 161-162 (*Hernagine, pmr, struct*)
Rastogi, R.C. *et al., Phytochemistry*, 1980, **19**, 998-999 (*N,O-Dimethylhernovine, isol, uv, ir, pmr, ms*)
Ringdahl, B. *et al., J. Nat. Prod.*, 1981, **44**, 80-85 (*Hernovine, cd*)
Suess, T.R. *et al., J. Nat. Prod.*, 1981, **44**, 688-692 (*synth*)
Lavault, M. *et al., Planta Med.*, 1981, **42**, 50-54; 1982, **46**, 119-121 (*Hernagine, N-Methylhernovine, isol, uv, pmr, ms*)
Kozuka, M. *et al., Chem. Pharm. Bull.*, 1984, **32**, 5055-5058 (*Praecoxine*)
Hussaini, F.A. *et al., Phytochemistry*, 1985, **24**, 633 (*O-Methylcorydine N-oxide*)
Israilov, I.A. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1986, **22**, 236 (*Glaufinine*)
Han, B.H. *et al., Arch. Pharmacal Res.*, 1989, **12**, 263-268 (*Zizyphusine, isol*)
Han, B.H. *et al., Pure Appl. Chem.*, 1989, **61**, 443-448 (*Zizyphusine, occur*)
Cortes, D. *et al., J. Nat. Prod.*, 1990, **53**, 862-866 (*Norisocorytuberine*)
Chen, H. *et al., Chin. Chem. Lett.*, 1991, **2**, 787; *CA*, **117**, 44535s (*Fuzitine*)
Park, H.J. *et al., CA*, 1997, **126**, 235966d (*Magnoporphine*)
Rasoanaivo, P. *et al., Planta Med.*, 1998, **64**, 58-62 (*cmr*)
Yang, J.-H. *et al., Helv. Chim. Acta*, 2005, **88**, 2523-2526 (*Litseglutine B*)
Nishiyama, Y. *et al., Phytochemistry*, 2006, **67**, 2671-2675 (*10,11-Dihydroxy-1,2-dimethoxynoraporphine*)
Wu, Y.-R. *et al., Planta Med.*, 2007, **73**, 787-791 (*Saxicolaline A*)

3,3′,4,4′-Tetrahydroxy-2,2′-bipyridine T-249

*[2,2′-Bipyridine]-3,3′,4,4′-tetrol, 9CI. 2,2′-Bi[3-hydroxy-4(1*H*)-pyridinone].* ***Orelline****. Orellanine II*
[72016-31-0]



$C_{10}H_8N_2O_4$ 220.184
Alkaloid detected in the toxic mushroom *Cortinarius orellanus*; formed by photochem. or thermal dec. of Orellanine. Yellow solid. Sublimes readily. λ_{max} 243; 260; 285; 385; 407 (MeOH/NaOH) (Derep). λ_{max} 219 (ϵ 22500); 344 (ϵ 7900); 390 (ϵ 2400) (MeOH) (Derep).

Mono-N-*oxide:* ***Orellinine***
[98726-96-6]
$C_{10}H_8N_2O_5$ 236.184
Alkaloid detected in *Cortinarius orellanus*, *Cortinarius seciossimus* and *Cortinarius rubellus.* Formed by photochem. or thermal dec. of Orellanine. Mycotoxin. Convulsive and nephrotoxic agent. Sol. DMSO, acids, bases; fairly sol. MeOH; poorly sol. butanol, H_2O, hexane. λ_{max} 213 ; 267 ; 342 (MeOH) (Berdy). λ_{max} 209 ; 261 (HCl) (Berdy). λ_{max} 223 ; 305 (NaOH) (Berdy).
▶ Toxic.

Di-N-*oxide:* ***Orellanine***
[37338-80-0]
$C_{10}H_8N_2O_6$ 252.183
Alkaloid from *Cortinarius orellanus* and *Cortinarius speciosissimus.* Nephrotoxin, mycotoxin. Sol. bases, NH_4OH, DMSO, Py, THF; fairly sol. MeOH, acids; poorly sol. H_2O, butanol, hexane. Dec. slowly >150°, explosively at 267° to Orelline and O_2. λ_{max} 213; 265; 290 (MeOH/HCl) (Derep). λ_{max} 234; 292; 319 (MeOH/NaOH) (Derep). λ_{max} 219 (ϵ 21800); 248 (ϵ 13200); 282 (ϵ 8400); 352 (ϵ 7300) (MeOH) (Derep).
▶ Highly toxic, induces acute renal failure LD_{50} = 5-8 mg/kg. Long latency period.
RM0525000

Di-N-*oxide, 4,4′-di*-O-*β*-D-*glucopyranoside: Orellanine 4,4′-diglucoside*
$C_{22}H_{28}N_2O_{16}$ 576.467
Alkaloid from *Cortinarius orellanus.* Orellanine occurs mainly as this diglucoside. λ_{max} 237 (log ϵ 3.68); 262 (sh) (log ϵ 3.14); 318 (log ϵ 3.15) (H_2O).

3,3′-Di-Me ether: [405137-22-6]
$C_{12}H_{12}N_2O_4$ 248.238
Mp 151°.

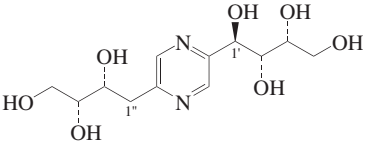
4,4′-Di-Me ether: [104819-53-6]
$C_{12}H_{12}N_2O_4$ 248.238
Mp 252-254°.

3,3′,4,4′-Tetra-Me ether: 3,3′,4,4′-Tetramethoxy-2,2′-bipyridine
[101664-55-5]
$C_{14}H_{16}N_2O_4$ 276.291
Mp 186-187°.

Antkowiak, W.Z. *et al., Bull. Acad. Pol. Sci., Ser. Sci. Chim.*, 1975, **23**, 729 (*isol*)
Antkowiak, W.Z. *et al., Tet. Lett.*, 1979, 1931 (*ir, uv, struct*)
Tiecco, M. *et al., Tetrahedron*, 1986, **42**, 1475-1485 (*synth, pmr, cmr, ms, uv*)
Dehmlow, E.V. *et al., Annalen*, 1987, 857 (*synth*)
Tiecco, M. *et al., Experientia*, 1987, **43**, 462 (*Orellinine, synth, uv, pmr, cmr*)
Hasseberg, H.-A. *et al., Helv. Chim. Acta*, 1988, **71**, 957 (*synth, ir, pmr, cmr*)
Trécourt, F. *et al., Tetrahedron*, 1993, **49**, 8373 (*synth*)
Antkowiak, W.Z. *et al., Heterocycles*, 1994, **39**, 477; 2002, **58**, 137-146 (*Orellanine, ms, pmr, atropisomerism, bibl*)
Oubrahim, H. *et al., J. Chromatogr., A*, 1997, **758**, 145-157 (*tlc*)
Oubrahim, H. *et al., Free Radical Res.*, 1998, **28**, 497-505 (*biochem*)
Mongin, F. *et al., Tetrahedron*, 2002, **58**, 309-314 (*synth, Me ethers*)
Spiteller, P. *et al., Angew. Chem., Int. Ed.*, 2003, **42**, 2864-2867 (*Orellanine diglucoside*)
Michelot, D. *et al., Nat. Prod. Res.*, 2003, **17**, 41-46 (*Orellanine, synth*)

2-(1,2,3,4-Tetrahydroxybutyl)-5-(2,3,4-trihydroxybutyl)pyrazine T-250

1-[5-(2,3,4-Trihydroxybutyl)pyrazinyl]-1,2,3,4-butanetetrol, 9CI
[68510-02-1]



(1′*R*,2′*R*,2″*R*,3′*R*,3″*R*)-*form*

$C_{12}H_{20}N_2O_7$ 304.299

(1′*R*,2′*R*,2″*R*,3′*R*,3″*R*)-*form*
D-lyxo-D-threo-*form*
[220145-37-9]
Cryst. (MeOH). Mp 146°. $[\alpha]_D^{20}$ -14.6 (c, 0.2 in H_2O).

(1′*R*,2′*S*,2″*S*,3′*R*,3″*R*)-*form*
D-arabino-D-erythro-*form. Deoxyfructosazine*
Exhibits DNA strand cleavage activity. Solid (MeOH/EtOH); cryst. (2-propanol aq.). Mp 161-162° (157-158°). $[\alpha]_D^{23.5}$ -79.8 (c, 0.2 in H_2O).

Hepta-Ac: [52057-08-6]
Oil. $[\alpha]_D^{20}$ -18 (c, 1.0 in $CHCl_3$).

(1′*R*,2′*S*,2″*S*,3′*S*,3″*S*)-*form*
L-xylo-L-threo-*form*
[220145-38-0]
Beige cryst. (EtOH aq.). Mp 116°. $[\alpha]_D^{20}$ -62.4 (c, 0.5 in H_2O).

(1′*S*,2′*R*,2″*R*,3′*R*,3″*R*)-*form*
D-xylo-D-threo-*form*
[220145-36-8]
Beige solid (EtOH/MeOH/Et_2O). Mp 90°. $[\alpha]_D^{20}$ +71.3 (c, 0.5 in MeOH).

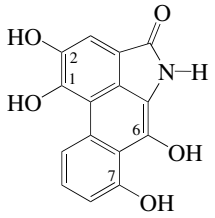
(1′*S*,2′*S*,2″*S*,3′*R*,3″*R*)-*form*
D-ribo-D-erythro-*form*
[220145-41-5]
Ochre cryst. (EtOH aq.). Mp 141°.

(1ξ,2ξ,2′ξ,3ξ,3′ξ)-*form*

Pedatisectine G
[206757-33-7]
Alkaloid from the rhizomes of *Pinellia pedatisecta*.

Kuhn, R. *et al., Annalen*, 1961, **644**, 122-127 (*synth*)
Chilton, W.S. *et al., J.A.C.S.*, 1967, **89**, 4129-4132 (*ord, uv*)
Tsuchida, H. *et al., Agric. Biol. Chem.*, 1973, **37**, 2571-2578; 1975, **39**, 1143-1148 (*deoxyfructosazine, isol, pmr, uv*)
Tsuchida, H. *et al., Carbohydr. Res.*, 1978, **67**, 549-563 (*ms*)
Eitelman, S.J. *et al., Carbohydr. Res.*, 1979, **77**, 205-211 (*deoxyfructosazine, synth*)
Tsuchida, H. *et al., Dev. Food Sci.*, 1986, **13**, 85-94 (*occur*)
Tsuchida, H. *et al., CA*, 1990, **113**, 229877r (*occur, soy sauce*)
Sumoto, K. *et al., Chem. Pharm. Bull.*, 1991, **39**, 792-794 (*deoxyfructosazine, synth*)
Magaletta, R.L. *et al., J. Agric. Food Chem.*, 1996, **44**, 2629-2635 (*anal, hplc*)
Wang, R. *et al., Zhongguo Zhongyao Zazhi*, 1997, **22**, 421-423; *CA*, **128**, 306181y (*Pedatisectine G*)
Pat. Coop. Treaty (WIPO), 1999, 9903842; *CA*, **130**, 139579s (*stereoisomers, synth, pmr*)
Rohovec, J. *et al., Eur. J. Org. Chem.*, 2001, 3899 (*deoxyfructosazine, synth*)

1,2,6,7-Tetrahydroxydibenz[*cd*,*f*]indol-4(5*H*)-one, 9CI T-251



$C_{15}H_9NO_5$ 283.24
CAS numbering shown. Alternative (phenanthrene) numbering frequently used, in which 1,2,6,7- are 4,3,9,8- respectively.

1,6,7-Tri-Me ether: ***Enterocarpam I***
[102719-94-8]
$C_{18}H_{15}NO_5$ 325.32
Alkaloid from the stem bark of *Orophea enterocarpa* (Annonaceae). Shows platelet aggregation inhibitory activity. Cryst. ($CHCl_3$/MeOH). Mp 214°.

1,6,7-Tri-Me ether, N,O-*di-Ac:*
Pale yellow needles (MeOH). Mp 186°.

1,2-Methylene, 7-Me ether: ***9-Hydroxyaristolactam I***. *7-Hydroxyaristolactam I*
[127172-86-5]
$C_{17}H_{11}NO_5$ 309.278
Alkaloid from rhizomes of *Aristolochia brevipes*, also prod. from 8-Methoxy-3,4-methylenedioxy-10-nitro-1-phenanthrenecarboxylic acid, M-262 by treatment with xanthine oxidase. Light yellow fluorescent cryst. (MeOH). Mp 290° dec.

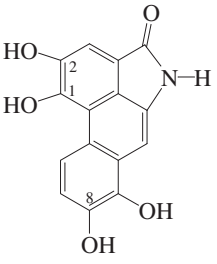
*1,2-Methylene, 7-Me ether, 6-*O*-[β-D-glucopyranosyl-(1→6)-β-D-glucopyranoside]:* ***Triangularine B***
[197006-83-0]
$C_{29}H_{31}NO_{15}$ 633.562
Alkaloid from the roots of *Aristolochia triangularis.*

1,2-Methylene, 6,7-di-Me ether: ***9-Methoxyaristolactam I***
[133462-30-3]
$C_{18}H_{13}NO_5$ 323.304
Alkaloid from *Aristolochia auricularia*. Yellow solid.

1,2-Methylene, 6-Et, 7-Me ether: ***9-Ethoxyaristolactam I***
$C_{19}H_{15}NO_5$ 337.331
Alkaloid from *Aristolochia mollissima*. Component of Mian Mao Ma Dou Ling. Cryst. Mp 237-238°.

Mahmood, K. *et al., Phytochemistry*, 1986, **25**, 965 (*Enterocarpam I*)
Lou, F. *et al., Yaoxue Xuebao*, 1989, **24**, 305-307 (*9-Ethoxyaristolactam I*)
Houghton, P.J. *et al., Phytochemistry*, 1991, **30**, 253 (*9-Methoxyaristolactam I*)
Achenbach, H. *et al., J. Nat. Prod.*, 1992, **55**, 918-922 (*9-Hydroxyaristolactam I*)
Lin, W. *et al., J. Chin. Pharm. Sci.*, 1997, **6**, 8-13 (*Triangularine B*)
Cao, S.-G. *et al., Tetrahedron*, 1998, **54**, 2143-2148 (*Enterocarpam I, activity*)
Chia, Y.C. *et al., J. Nat. Prod.*, 2000, **63**, 1160-1163 (*Enterocarpam I, isol, activity*)

1,2,7,8-Tetrahydroxydibenz[*cd*,*f*]indol-4(5*H*)-one T-252



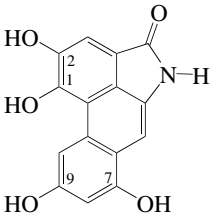
$C_{15}H_9NO_5$ 283.24
Alternative (phenanthrene-type) numbering has also been used for this type of compd., in which posns. 1,2,8- become 4,3,7- respectively.

2,7-Di-Me ether: ***Aristolactam E***
[710319-83-8]
$C_{17}H_{13}NO_5$ 311.293
Alkaloid from *Aristolochia elegans.* Yellow syrup. λ_{max} 236 (log ε 4.22); 253 (log ε 4.12); 282 (log ε 3.65); 332 (log ε 3.52); 390 (log ε 3.44) (MeOH).

1,2-Methylene, 8-Me ether: ***Cepharanone C***
[293314-08-6]
$C_{17}H_{11}NO_5$ 309.278
Alkaloid from *Aristolochia cucurbitifolia*. Yellowish powder. λ_{max} 236 (sh) (log ε 4.45); 241 (log ε 4.49); 276 (sh) (log ε 4.35); 288 (log ε 4.49); 357 (log ε 3.85); 373 (log ε 3.83); 395 (log ε 3.74) (MeOH).

Wu, T.-S. *et al., Chem. Pharm. Bull.*, 2000, **48**, 1006-1009 (*Cepharanone C*)
Shi, L.-S. *et al., Bioorg. Med. Chem.*, 2004, **12**, 439-446 (*Aristolactam E*)

1,2,7,9-Tetrahydroxydibenz[*cd*,*f*]indol-4(5*H*)-one, 9CI T-253

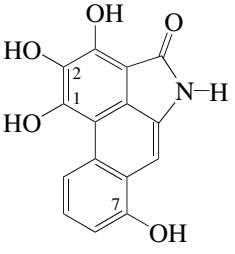


$C_{15}H_9NO_5$ 283.24
CAS numbering shown. Alternative (phenanthrene) numbering frequently used in which 1,2,7,9- become 4,3,8,6- respectively.

1,2-Methylene, 7,9-di-Me ether: ***Aristolactam IV***
[17413-39-7]
$C_{18}H_{13}NO_5$ 323.304
Alkaloid from the roots of *Aristolochia indica* and the rhizomes of *Aristolochia argentina* (Aristolochiaceae). Yellow cryst. by subl. Mp 353° (345°).

Kupchan, S.M. *et al., J.O.C.*, 1968, **33**, 3735 (*isol, uv, ir, pmr, struct, synth*)
Priestap, H.A. *et al., Phytochemistry*, 1985, **24**, 849 (*isol, uv, ir, pmr, ms*)

1,2,3,7-Tetrahydroxydibenz[*cd*,*f*]indol-4(5*H*)-one, 9CI T-254



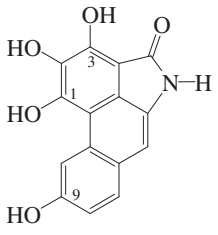
$C_{15}H_9NO_5$ 283.24
Numbering systems vary.

1,2,3-Tri-Me ether: ***Oldhamlactam***. *Oldhamactam*
[921936-15-4]
$C_{18}H_{15}NO_5$ 325.32
Alkaloid from the stems of *Fissistigma oldhamii*. Yellow-brown powder. Mp 224-226°. λ_{max} 252 (log ε 4.24); 296 (log ε 4.82); 397 (log ε 4.92) ($CHCl_3$).

1,2-Methylene, 7-Me ether: ***2-Hydroxy-8-methoxycepharanone A***
[157196-46-8]
$C_{17}H_{11}NO_5$ 309.278
Alkaloid from roots of *Aristolochia cinnabarina* (Aristolochiaceae). Yellow amorph. powder. λ_{max} 230 (log ε 5.52); 250 (sh) (log ε 5.46); 290 (sh) (log ε 4.79); 425 (log ε 4.82) (MeOH).

Hong, L. *et al., Phytochemistry*, 1994, **37**, 237-239 (*Aristolochia cinnabarina constit*)
Zhang, Y.-N. *et al., Bioorg. Med. Chem.*, 2007, **15**, 988-996 (*Oldhamlactam*)

1,2,3,9-Tetrahydroxydibenz[*cd*,*f*]indol-4(5*H*)-one, 9CI T-255



$C_{15}H_9NO_5$ 283.24

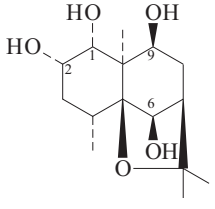
Numbering systems vary.

*1,2,3-Tri-Me ether: 9-Hydroxy-1,2,3-trimethoxydibenz[*cd,f*]indol-4(5*H*)-one.* ***Stigmalactam***
$C_{18}H_{15}NO_5$ 325.32
Alkaloid from *Fissistigma oldhamii*. Brownish-yellow needles. Mp 276-278°. λ_{max} 234 (log ϵ 4.58); 254 (log ϵ 4.56); 304 (log ϵ 4.3); 314 (log ϵ 4.32) (EtOH).

Chia, Y.-C. *et al., J. Nat. Prod.*, 2000, **63**, 1160-1163 (*isol, pmr, cmr*)

Rys, V. *et al., Eur. J. Org. Chem.*, 2003, 1231-1237 (*synth*)

1,2,6,9-Tetrahydroxydihydro-β-agarofuran T-256



$C_{15}H_{26}O_5$ 286.367

(1α,2α,6β,9β)-*form*

6-(3-Pyridinecarbonyl), 9-benzoyl, 1,2-di-Ac: ***Triptogelin C2***
[135118-63-7]
$C_{32}H_{37}NO_9$ 579.646
Alkaloid from *Tripterygium wilfordii*. Needles. Mp 191-194°. $[\alpha]_D^{23}$ +43.2 (c, 0.22 in $CHCl_3$).

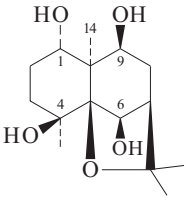
6-(3-Pyridinecarbonyl), 9-benzoyl, 1-Ac: ***Triptogelin C4***
[137740-10-4]
$C_{30}H_{35}NO_8$ 537.608
Alkaloid from *Tripterygium wilfordii*. Amorph. powder. $[\alpha]_D^{23}$ +193 (c, 0.46 in MeOH).

2,6-Bis(3-pyridinecarbonyl), 9-benzoyl, 1-Ac: ***Heterophylline***†
[379693-17-1]
$C_{36}H_{38}N_2O_9$ 642.704
Constit. of *Maytenus heterophylla*. Cryst. Mp 132-135°. $[\alpha]_D$ +63.2 (c, 1 in $CHCl_3$). λ_{max} 234 (log ϵ 4.1); 258 (log ϵ 3.72); 264 (log ϵ 3.74) ($CHCl_3$).

Takaishi, Y. *et al., Phytochemistry*, 1991, **30**, 1561-1566; 1567-1572; 3027-3031 (*Tripterygium wilfordii constits*)

Orabi, K.Y. *et al., Phytochemistry*, 2001, **58**, 475-480 (*Heterophylline*)

1,4,6,9-Tetrahydroxydihydro-β-agarofuran T-257



$C_{15}H_{26}O_5$ 286.367

(1α,4β,6β,9β)-*form*

6-(3-Pyridinecarbonyl), 1,9-dibenzoyl: ***Regelidine***
[114542-54-0]
$C_{35}H_{37}NO_8$ 599.679
Alkaloid from the roots of *Tripterygium regelii* (Celastraceae). Prisms ($CHCl_3$). Mp 292-294°. $[\alpha]_D^{26.4}$ +50 (c, 6 in $CHCl_3$).

1,9-Bis(3-pyridinecarbonyl), 6-benzoyl:
[339151-93-8]
$C_{34}H_{36}N_2O_8$ 600.667
Constit. of *Tripterygium wilfordii*. Amorph. powder. $[\alpha]_D^{25}$ +67.7 (c, 0.3 in MeOH). λ_{max} 222 (log ϵ 4.4); 263 (log ϵ 3.7) (MeOH).

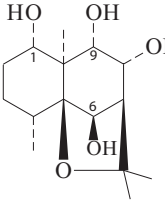
1,6-Bis(3-pyridinecarbonyl), 9-cinnamoyl: ***Wilforcidine***
$C_{36}H_{38}N_2O_8$ 626.705
Constit. of *Tripterygium wilfordii*. Needles (EtOH). Mp 189°. $[\alpha]_D^{25}$ +17.4 (c, 0.5 in $CHCl_3$).

Hori, H. *et al., Chem. Pharm. Bull.*, 1987, **35**, 4683 (*Regelidine*)

He, Z.-S. *et al., J. Nat. Prod.*, 1994, **57**, 305 (*Wilforcidine*)

Duan, H.-Q. *et al., Phytochemistry*, 2001, **56**, 341-346 (*Tripterygium wilfordii constit*)

1,6,8,9-Tetrahydroxydihydro-β-agarofuran T-258



(1α,6β,8α,9α)–*form*

$C_{15}H_{26}O_5$ 286.367

(1α,6β,8α,9α)-*form*

1-(3-Pyridinecarbonyl), 8,9-dibenzoyl, 6-Ac: ***Triptogelin B2***
[135153-78-5]
$C_{37}H_{39}NO_9$ 641.716
Alkaloid from *Tripterygium wilfordii*. Powder. $[\alpha]_D^{23}$ +52.3 (c, 0.52 in MeOH).

(1α,6β,8α,9β)-*form*

9-(3-Pyridinecarbonyl), 6-benzoyl, 1,8-di-Ac: ***Celapanigine***
[52691-07-3]
$C_{32}H_{37}NO_9$ 579.646
Alkaloid from *Celastrus paniculatus* (Celastraceae). Cryst. (EtOH). Mp 184-185°.

(1α,6β,8β,9α)-*form*

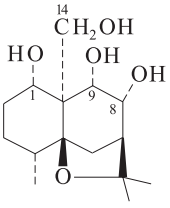
9-(3-Pyridinecarbonyl), 6-benzoyl, 1-Ac: ***Celapagine***
[58074-71-8]
$C_{30}H_{35}NO_8$ 537.608
Alkaloid from *Celastrus paniculatus* (Celastraceae). Cryst. (MeOH). Mp 275-283°.

9-(3-Pyridinecarbonyl), 6-(3-furancarbonyl), 1,8-di-Ac: ***Celapanine***
[52658-32-9]
$C_{30}H_{35}NO_{10}$ 569.607
Alkaloid from *Celastrus paniculatus* (Celastraceae). Cryst. (MeOH). Mp 245-249°. $[\alpha]_D^{26}$ -64.7 (c, 0.46 in $CHCl_3$). 4-Config. not certain.

Wagner, H. *et al., Tetrahedron*, 1975, **31**, 1949-1956 (*Celapanine, Celapagine, Celapanigine*)

Takaishi, Y. *et al., Phytochemistry*, 1991, **30**, 1567-1572 (*Triptogelin B2*)

1,8,9,14-Tetrahydroxydihydro-β-agarofuran T-259



(1α,8α,9α)–*form*

$C_{15}H_{26}O_5$ 286.367

(1α,8α,9α)-*form*

9-Benzoyl, 1,8,14-tri-Ac:
$C_{28}H_{36}O_9$ 516.587
Constit. of *Celastrus angulatus*. Amorph. $[\alpha]_D^{23}$ -77.6 (c, 0.515 in $CHCl_3$). $[\alpha]_D^{23}$ -9.2 (c, 0.53 in $CHCl_3$).

9-(3-Pyridinecarbonyl), 14-benzoyl, 1,8-di-Ac: [209123-98-8]
$C_{32}H_{37}NO_9$ 579.646
Constit. of *Celastrus angulatus*. Cryst. Mp 168-170°. λ_{max} 201 (log ϵ 3.23); 224 (log ϵ 3.28); 263 (log ϵ 2.56) (MeOH).

14-(3-Pyridinecarbonyl), 8,9-dibenzoyl, 1-Ac:
$C_{37}H_{39}NO_9$ 641.716
Constit. of *Celastrus angulatus*. Amorph. powder. $[\alpha]_D^{23}$ -102 (c, 0.53 in $CHCl_3$).

(1α,8β,9α)-*form*

1-Benzoyl, 8,9,14-tri-Ac: ***Kupitengester 4***
[132185-62-7]
$C_{28}H_{36}O_9$ 516.587
Constit. of *Celastrus angulatus*.

9-Benzoyl, 1,8,14-tri-Ac: ***Angulatueoid C***
[144789-24-2]
$C_{28}H_{36}O_9$ 516.587
Constit. of *Celastrus angulatus*. Cryst. Mp 192-195°. $[\alpha]_D^{23}$ -9.24 (c, 0.53 in $CHCl_3$).

8-(3-Pyridinecarbonyl), 1-benzoyl, 9,14-di-Ac: ***Kupitengester 2***
[149183-64-2]
$C_{32}H_{37}NO_9$ 579.646
Constit. of *Celastrus angulatus*.

9-(3-Pyridinecarbonyl), 14-benzoyl, 1,8-di-Ac: [210763-52-3]

$C_{32}H_{37}NO_9$ 579.646
Constit. of *Celastrus angulatus*. Needles (Me_2CO). Mp 168-170°. $[\alpha]_D$ +25.4 (c, 0.52 in MeOH). λ_{max} 201 (log ϵ 3.23); 224 (log ϵ 3.28); 263 (log ϵ 2.56) (MeOH).

14-(2-Pyridinecarbonyl), 9-benzoyl, 1,8-di-Ac: ***Angulatueoid D***
[145042-02-0]
$C_{32}H_{37}NO_9$ 579.646
Constit. of *Celastrus angulatus*. Cryst. Mp 184-185°. Unusual 2-pyridinecarbonyl residue.

14-(3-Pyridinecarbonyl), 9-benzoyl, 1-Ac: [145639-84-5]
$C_{30}H_{35}NO_8$ 537.608
Constit. of *Celastrus angulatus*. Amorph. powder. $[\alpha]_D^{23}$ +47.6 (c, 0.5 in $CHCl_3$).

14-(3-Pyridinecarbonyl), 9-benzoyl, 1,8-di-Ac: [209123-95-5]
$C_{32}H_{37}NO_9$ 579.646
Constit. of *Celastrus angulatus*. Amorph. powder. $[\alpha]_D$ +48.6 (c, 0.35 in MeOH). λ_{max} 201 (log ϵ 3.24); 224 (log ϵ 3.26); 263 (log ϵ 2.58) (MeOH).

14-(3-Pyridinecarbonyl), 9-benzoyl, 1-propanoyl, 8-Ac: ***Angulatueoid F***
[147029-06-9]
$C_{33}H_{39}NO_9$ 593.672
Constit. of *Celastrus angulatus*. Cryst. (Me_2CO). Mp 178.5-180.5°.

14-(3-Pyridinecarbonyl), 9-benzoyl, 1-(2-methylpropanoyl), 8-Ac: ***Angulatueoid E***
[147029-05-8]
$C_{34}H_{41}NO_9$ 607.699
Constit. of *Celastrus angulatus*. Cryst. (Me_2CO). Mp 175.5-177.5°.

14-(3-Pyridinecarbonyl), 9-benzoyl, 8-(2-methylpropanoyl), 1-Ac: [145613-76-9]
$C_{34}H_{41}NO_9$ 607.699
Constit. of *Celastrus angulatus*. Amorph. powder. $[\alpha]_D^{23}$ +49.9 (c, 0.505 in $CHCl_3$).

14-(3-Pyridinecarbonyl), 9-benzoyl, 8-(2-methylbutanoyl), 1-Ac: [145613-75-8]
$C_{35}H_{43}NO_9$ 621.726
Constit. of *Celastrus angulatus*. Amorph. powder. $[\alpha]_D^{23}$ +44.4 (c, 0.495 in $CHCl_3$).

9,14-Bis(3-pyridinecarbonyl), 8-benzoyl, 1-Ac: [145047-92-3]
$C_{36}H_{38}N_2O_9$ 642.704
Constit. of *Celastrus angulatus*. Amorph. $[\alpha]_D^{23}$ +45.4 (c, 0.52 in $CHCl_3$).

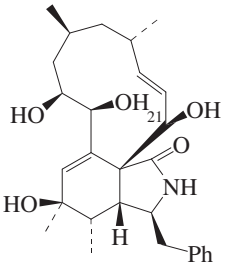
(1α,8β,9β)-*form*
Malkanguniol
[42719-36-8]
Cryst. Mp 171-172°. $[\alpha]_D$ -32.94 (c, 3 in dioxan).

9-Benzoyl, 8-Ac: ***Malkangunin***
[52691-06-2]
$C_{24}H_{32}O_7$ 432.513
Constit. of *Celastrus paniculatus*. Cryst. (Et_2O/petrol). Mp 240-245°. $[\alpha]_D$ -58.8 (c, 1 in $CHCl_3$).

9-(3-Furancarbonyl), 1,8,14-tri-Ac:
[135153-81-0]
$C_{26}H_{34}O_{10}$ 506.549
Constit. of *Celastrus paniculatus*. Amorph. powder. $[\alpha]_D^{25}$ -8.6 (c, 0.32 in MeOH). λ_{max} 212 (log ϵ 3.42); 232 (log ϵ 3.33); 274 (log ϵ 2.76) (MeOH).

Wagner, H. *et al., Tetrahedron*, 1975, **31**, 1949 (*isol*)
Lotter, H. *et al., Tet. Lett.*, 1978, 3243 (*abs config*)
Hong, S. *et al., Phytochemistry*, 1991, **30**, 1547 (*deriv*)
Tu, Y.Q. *et al., Chin. Chem. Lett.*, 1992, **3**, 625 (*isol, pmr, cmr*)
Chunquan, C. *et al., Phytochemistry*, 1992, **31**, 2777 (*Angulatueoids C and D*)
Tu, Y.Q. *et al., Phytochemistry*, 1992, **31**, 3633 (*isol, pmr, cmr*)
Wang, G. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 1992, **34**, 777-780 (*Kupitengesters 2,4*)
Tu, Y.Q. *et al., J. Nat. Prod.*, 1993, **56**, 126 (*isol, pmr, cmr*)
Jikai, L. *et al., Phytochemistry*, 1993, **32**, 379 (*Angulatueoids E and F*)
Yong-Qiang, T. *et al., Phytochemistry*, 1993, **32**, 1339 (*isol, pmr, cmr*)
Li, Y. *et al., Zhongshan Daxue Xuebao Ziran Kexueban*, 1997, **36**, 123-124; *CA*, **129**, 65514x (*Celastrus angulatus esters*)
Wang, Y. *et al., J. Nat. Prod.*, 1998, **61**, 942-944 (*Celastrus angulatus esters*)
Borrelli, F. *et al., Planta Med.*, 2004, **70**, 652-656 (*Celastrus paniculatus constit*)

6,13,14,21-Tetrahydroxy-16,18-dimethyl-10-phenyl[11]cytochalasa-7,19-dien-1-one T-260



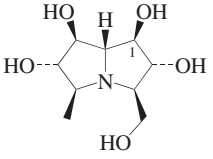
$C_{28}H_{39}NO_5$ 469.62

21-Ac:
$C_{30}H_{41}NO_6$ 511.657
Prod. by *Daldinia concentrica*. Needles. Mp 197-199°. $[\alpha]_D^{24}$ +51.2 (c, 1.3 in MeOH). λ_{max} 204 (MeOH).

Qin, X.-D. *et al., Helv. Chim. Acta*, 2006, **89**, 450-455 (*isol, pmr, cmr*)

1,2,6,7-Tetrahydroxy-3-(hydroxymethyl)-5-methyl-1*H*-pyrrolizidine T-261

*Hexahydro-3-hydroxymethyl-5-methyl-1*H*-pyrrolizine-1,2,6,7-tetrol, 9CI*



(1*R**,2*R**,3*R**,5*S**,6*S**,7*S**,7*aR**)-*form*

$C_9H_{17}NO_5$ 219.237

(1R*,2R*,3R*,5S*,6S*,7S*,7aR*)-form Hyacinthacine C5
[944408-28-0]
Alkaloid from the bulbs of *Scilla socialis*. Powder. $[\alpha]_D$ +1.5 (c, 0.22 in H_2O).

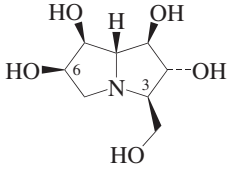
(1R*,2S*,3S*,5S*,6S*,7S*,7aS*)-form Hyacinthacine C1
[240117-30-0]
Alkaloid from *Hyacinthoides non-scripta* and *Muscari armeniacum*. $[\alpha]_D$ +14.7 (c, 0.28 in H_2O).

(1S*,2R*,3R*,5R*,6R*,7R*,7aR*)-form Hyacinthacine C4
[944408-27-9]
Alkaloid from the bulbs of *Scilla socialis*. Powder. $[\alpha]_D$ -37.9 (c, 0.44 in H_2O). Apparently the enantiomer of Hyacinthacine C_1.

Kato, A. *et al., Carbohydr. Res.*, 1999, **316**, 95-103 (*Hyacinthacine C1*)
Kato, A. *et al., J. Nat. Prod.*, 2007, **70**, 993-997 (*Hyacinthacines C4,C5*)

1,2,6,7-Tetrahydroxy-3-(hydroxymethyl)-1*H*-pyrrolizidine T-262

*Hexahydro-3-(hydroxymethyl)-1*H*-pyrrolizine-1,2,6,7-tetrol*



(1*R*,2*R*,3*R*,6*R*,7*S*,7*aR*)-*form*

$C_8H_{15}NO_5$ 205.21

(1R,2R,3R,6R,7S,7aR)-form 6-Epicasuarine. *Uniflorine A*
[194918-09-7]
[260247-75-4 (Uniflorine A)]

Struct. of Uniflorine A finally determined in 2008. Alkaloid from the leaves of *Eugenia uniflora* (Surinam cherry). α-Glucosidase inhibitor. Cryst. Mp 174-178°. $[\alpha]_D$ -4.4 (c, 1.2 in H_2O).

(1R,2R,3R,6S,7S,7aR)-form Casuarine. *Uniflorine B*
[159440-57-0]
[260247-76-5 (Uniflorine B)]

Structure of Uniflorine B was revised in 2008. Alkaloid from *Casuarina equisetifolia*, *Eugenia uniflora* and *Myrtus communis*. Cryst. (EtOH aq.). Mp 181-182°. $[\alpha]_D^{24}$ +16.9 (c, 0.8 in H_2O).

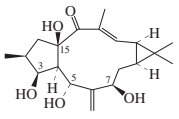
6-O-α-D-Glucopyranoside: ***Casuarine 6-α-D-glucoside***
[186795-20-0]
$C_{14}H_{25}NO_{10}$ 367.352
Alkaloid from *Casuarina equisetifolia* and *Eugenia jambolana* (jambolan).

(1R,2R,3S,6S,7S,7aR)-form 3-Epicasuarine
[729593-71-9]
Alkaloid from *Myrtus communis* (myrtle). Cryst. (EtOH aq.). $[\alpha]_D^{23}$ +5.7 (c, 0.5 in H_2O).

Nash, R.J. *et al., Tet. Lett.*, 1994, **35**, 7849-7852 (*isol, pmr, cmr*)

Wormald, M.R. *et al., Carbohydr. Lett.*, 1996, **2**, 169-174 (*Casuarine 6-glucoside*)
Matsumura, T. *et al., Pharm. Biol.*, 2000, **38**, 302-307 (*Uniflorines, isol*)
Izquierdo, I. *et al., Tetrahedron*, 2005, **61**, 6527-6533 (*synth*)
Van Ameijde, J.V. *et al., Tetrahedron: Asymmetry*, 2006, **17**, 2702-2712 (*Casuarine, 3-Epicasuarine, isol, synth, pmr, cmr*)
Ritthiwigrom, T. *et al., Org. Lett.*, 2008, **10**, 2769-2771 (*Uniflorine A, synth, struct*)
Davies, A.S. *et al., Tetrahedron*, 2008, **64**, 4868-4879 (*Uniflorines, synth, struct*)

3,5,7,15-Tetrahydroxy-6(17),12-lathyradien-14-one T-263



(2β,3β,5α,7β,12*E*,15β)-*form*

$C_{20}H_{30}O_5$ 350.454

(2β,3β,5α,7β,12*E*,15β)-*form*

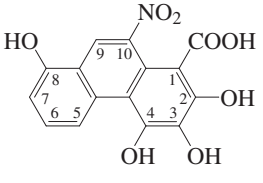
7-(3-Pyridinecarbonyl), 3-benzoyl, 5,15-di-Ac: ***L9***
[129393-28-8]
$C_{37}H_{41}NO_9$ 643.732
Constit. of *Euphorbia lathyris*. Needles. Mp 119-122°. $[\alpha]_D^{20}$ +130.7 (c, 0.76 in $CHCl_3$).

3,7-Dibenzoyl, 5-Ac: ***Euphorbia factor L_{11}***
[850560-45-1]
$C_{36}H_{40}O_8$ 600.707
Constit. of *Euphorbia lathyris*. Amorph. powder. Mp 117-118°. $[\alpha]_D^{20}$ +26 (c, 0.94 in $CHCl_3$). λ_{max} 230 (log ϵ 3.51); 274 (log ϵ 3.13) (MeOH).

(2β,3β,5β,7β,12*E*,15β)-*form*
7-Hydroxylathyrol
[34208-98-5]
Isol. from *Euphorbia lathyris*. Mp 222-224°.

Narayanan, P. *et al., Tet. Lett.*, 1971, 1325-1328 (*7-Hydroxylathyrol*)
Itokawa, H. *et al., Phytochemistry*, 1990, **29**, 2025-2026 (*L9*)
Liao, S.-G. *et al., Org. Lett.*, 2005, **7**, 1379-1382 (*Euphorbia factor L_{11}*)

2,3,4,8-Tetrahydroxy-10-nitro-1-phenanthrenecarboxylic acid T-264



$C_{15}H_9NO_8$ 331.238

*3,4-Methylene, 8-Me ether: 4-Hydroxy-8-methoxy-6-nitrophenanthro[3,4-*d*]-1,3-dioxole-5-carboxylic acid. 2-Hydroxy-8-methoxy-3,4-methylenedioxy-10-nitro-1-phenanthrenecarboxylic acid, 9CI.* ***Aristolochic acid VIa***
[108766-27-4]
$C_{17}H_{11}NO_8$ 357.276
Minor alkaloid from the underground parts of *Aristolochia argentina* (Aristolochiaceae). Mp 280-282°.

Priestap, H.A. *et al., Phytochemistry*, 1987, **26**, 519 (*isol, uv, pmr, ms, struct*)

3,4,6,7-Tetrahydroxy-10-nitro-1-phenanthrenecarboxylic acid T-265

$C_{15}H_9NO_8$ 331.238

*3,4-Methylene, 7-Me ether: 6-Hydroxy-7-methoxy-3,4-methylenedioxy-10-nitro-1-phenanthrenecarboxylic acid. 10-Hydroxy-9-methoxy-6-nitrophenanthro[3,4-*d*]-1,3-dioxole-5-carboxylic acid, 9CI.* ***Aristolochic acid Va***
[108779-46-0]
$C_{17}H_{11}NO_8$ 357.276
Minor alkaloid from the underground parts of *Aristolochia argentina* (Aristolochiaceae). Not obt. completely pure.

3,4-Methylene, 6,7-di-Me ether: 6,7-Dimethoxy-3,4-methylenedioxy-10-nitro-1-phenanthrenecarboxylic acid. ***Aristolochic acid V***
[108766-28-5]
$C_{18}H_{13}NO_8$ 371.303
Minor alkaloid from *Aristolochia argentina* (Aristolochiaceae).

3,4-Methylene, 6,7-di-Me ether, Me ester:
[108766-30-9]
Mp 290-300°.

[108779-47-1 , 108766-32-1]

Priestap, H.A. *et al., Phytochemistry*, 1987, **26**, 519 (*isol, uv, ir, pmr, ms, struct*)

3,4,6,8-Tetrahydroxy-10-nitro-1-phenanthrenecarboxylic acid T-266

$C_{15}H_9NO_8$ 331.238

*3,4-Methylene, 8-Me ether: 10-Hydroxy-8-methoxy-6-nitrophenanthro[3,4-*d*]-1,3-dioxole-5-carboxylic acid. 6-Hydroxy-8-methoxy-3,4-methylenedioxy-10-nitro-1-phenanthrenecarboxylic acid.* ***Aristolochic acid D****. Aristolochic acid IVa*
[17413-38-6]
$C_{17}H_{11}NO_8$ 357.276
Alkaloid from *Aristolochia acuminata, Aristolochia argentina, Aristolochia clematitis, Aristolochia esperanzae, Aristolochia indica, Aristolochia manshuriensis, Aristolochia multiflora* and *Aristolochia mollissima* (Aristolochiaceae). Wine-red cryst. (MeOH). Mp 254-259° Mp 269-271°. λ_{max} 220 (ϵ 29800); 242 (ϵ 37790); 252 (ϵ 37800); 292 (ϵ 13850); 325 (ϵ 11300) (EtOH) (Berdy).

3,4-Methylene, 8-Me ether, Me ester:
Cryst. (EtOAc). Mp 243-250° dec.

3,4-Methylene, 8-Me ether, 6-O-β-D-glucopyranoside: ***Aristoloside****. Aristolochin†*
[84014-70-0]
$C_{23}H_{21}NO_{13}$ 519.418
Alkaloid from the stems of *Aristolochia manshuriensis* (Aristolochiaceae). Orange prisms (MeOH). Sol. MeOH, butanol; poorly sol. $CHCl_3$, hexane. Mp 193-196°. $[\alpha]_D^{15}$ -69.5 (c, 0.23 in MeOH). λ_{max} 222 (ϵ 25700); 243 (ϵ 32300); 252 (ϵ 33200); 318 (ϵ 10700); 392 (ϵ 8500) (MeOH) (Berdy).

3,4-Methylene, 8-Me ether, 6-O-β-D-glucopyranoside, Me ester:
Orange cryst. Mp 176-178°. $[\alpha]_D^{15}$ -59.4 (c, 0.32 in MeOH).

*3,4-Methylene, 6,8-di-Me ether: 8,10-Dimethoxy-6-nitrophenanthro[3,4-*d*]-1,3-dioxole-5-carboxylic acid. 6,8-Dimethoxy-3,4-methylenedioxy-10-nitro-1-phenanthrenecarboxylic acid.* ***Aristolochic acid IV***
[15918-62-4]
$C_{18}H_{13}NO_8$ 371.303
Alkaloid from the roots of *Aristolochia argentina, Aristolochia esperanzae, Aristolochia clematitis, Aristolochia longa* and *Aristolochia pallida* and from the stems of *Aristolochia manshuriensis* (Aristolochiaceae). Deep-red prisms (DMF aq.). Mp 268-270° dec.

3,4-Methylene, 6,8-di-Me ether, Me ester: ***Aristolochic acid IV methyl ester***
[17448-02-1]
$C_{19}H_{15}NO_8$ 385.329
Alkaloid from bulbs and roots of *Aristolochia kwangsiensis* and tubers of *Aristolochia championii* (Aristolochiaceae). Orange-brown cryst. ($CHCl_3$), orange rods(EtOAc). Mp 241-243° (238-240°).

Kupchan, S.M. *et al., J.O.C.*, 1968, **33**, 3735-3738 (*Aristolochic acid D*)
Rúveda, E.A. *et al., Monatsh. Chem.*, 1968, **99**, 2349-2358 (*Aristolochic acid IVa*)
Pakrashi, S.C. *et al., Phytochemistry*, 1977, **16**, 1103-1104 (*Aristolochic acid D*)
Chou, F.H. *et al., Yaoxue Tongbao*, 1981, **16**, 56; *CA*, **95**, 175618w (*Aristolochic acid IV Me ester*)
Nakanishi, T. *et al., Phytochemistry*, 1982, **21**, 1759-1762 (*Aristoloside*)
De Pascual Teresa, J. *et al., Phytochemistry*, 1983, **22**, 2745-2747 (*Aristolochic acid IV*)

3,4,7,8-Tetrahydroxy-10-nitro-1-phenanthrenecarboxylic acid T-267

$C_{15}H_9NO_8$ 331.238

3,4-Methylene, 7-Me ether: 8-Hydroxy-7-methoxy-3,4-methylenedioxy-10-nitro-1-phenanthrenecarboxylic acid. ***Aristolochic acid E***
[107259-48-3]
$C_{17}H_{11}NO_8$ 357.276
Alkaloid from the roots of *Aristolochia contorta* (Aristolochiaceae).

3,4-Methylene, 8-Me ether: 7-Hydroxy-8-methoxy-3,4-methylenedioxy-10-nitro-1-phenanthrenecarboxylic acid. 7-Hydroxyaristolochic acid A. ***Aristolochic acid VIIa***
[79185-75-4]
$C_{17}H_{11}NO_8$ 357.276
Alkaloid from *Aristolochia debilis*. Also an active principle of Tong Cheng Hu Geng (roots of *Aristolochia tagala*) (Aristolochiaceae). Orange powder ($CHCl_3$/MeOH). Mp 267-269°. λ_{max} 226 ; 265 ; 313 ; 371 (MeOH).

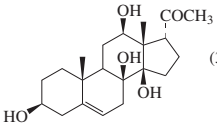
*3,4-Methylene, 7,8-di-Me ether: 7,8-Dimethoxy-3,4-methylenedioxy-10-nitro-1-phenanthrenecarboxylic acid. 8,9-Dimethoxy-6-nitrophenanthro[3,4-*d*]-1,3-dioxole-5-carboxylic acid, 9CI. 7-Methoxyaristolochic acid A.* ***Aristolochic acid VII***
[79185-74-3]

$C_{18}H_{13}NO_8$ 371.303
Alkaloid from *Aristolochia argentina*, *Aristolochia contorta* and *Aristolochia debilis* (Aristolochiaceae). Yellowish needles (as Na salt). Mp >280° (Na salt). λ_{max} 222 ; 264 ; 310 ; 367 ; 372 (MeOH) (Na salt).

3,4-Methylene, 7,8-di-Me ether, Me ester: ***Aristolochic acid VII methyl ester***
[108766-31-0]
$C_{19}H_{15}NO_8$ 385.329
Alkaloid from *Aristolochia cucurbitifolia*. Yellow syrup. λ_{max} 227 ; 273 ; 313 ; 373 (MeOH).

Kunimoto, J.-I. *et al., Phytochemistry*, 1980, **19**, 2735 (*Aristolochic acid VII*)
Lou, F. *et al., Yaoxue Xuebao*, 1986, **21**, 702; *CA*, **106**, 135229j (*Aristolochic acid E*)
Priestap, H.A. *et al., Phytochemistry*, 1987, **26**, 519-529 (*Aristolochic acid VII*)
Leu, Y.-L. *et al., Phytochemistry*, 1998, **48**, 743-745 (*Aristolochic acid VIIa*)
Wu, T.S. *et al., Chem. Pharm. Bull.*, 1999, **47**, 571-573; 2000, **48**, 357-361 (*Aristolochic acid VII, Aristolochic acid VII Me ester*)
Nascimento, I.R. *et al., Phytochemistry*, 2003, **63**, 953-957 (*Aristolochic acid VIIa*)

3,8,12,14-Tetrahydroxypregn-5-en-20-one T-268



(3β,12β,14β,17α)-*form*

$C_{21}H_{32}O_5$ 364.481
C-17 configs. in some of these derivs. may not be reliable owing to ready epimerisation.

(3β,12β,14β,17α)-*form*
Lineolone. *Desacylcynanchogenin*. *Deacylcynanchogenin*
[6869-50-7]
Constit. of *Adonis amurensis* and *Cynanchum caudatum*. Cryst. (Me_2CO). Mp 238° (233-239°). $[\alpha]_D^{24}$ +130 (c, 0.9 in MeOH). Equilibrates with isolineolone below under mild conditions.

*12-(3-Pyridinecarbonyl), 3-*O*-[α-L-cymaropyranosyl-(1→4)-β-D-cymaropyranosyl-(1→4)-β-D-cymaropyranoside]:*
$C_{48}H_{71}NO_{15}$ 902.087
Constit. of *Cynanchum caudatum*. Amorph. powder.

*12-(3-Pyridinecarbonyl), 3-*O*-[β-D-oleandropyranosyl-(1→4)-β-D-cymaropyranosyl-(1→4)-β-D-cymaropyranoside]:*
$C_{48}H_{71}NO_{15}$ 902.087
Constit. of *Cynanchum caudatum*. Amorph. powder. $[\alpha]_D^{20}$ -20.7 (c, 1.6 in MeOH).

*12-(3-Pyridinecarbonyl), 3-*O*-[α-L-cymaropyranosyl-(1→4)-β-D-oleandropyranosyl-(1→4)-β-D-cymaropyranosyl-(1→4)-β-D-cymaropyranoside]:*
$C_{55}H_{83}NO_{18}$ 1046.257
Constit. of *Cynanchum caudatum*. Amorph. powder. $[\alpha]_D^{20}$ -51.8 (c, 0.9 in MeOH).

*12-(3-Pyridinecarbonyl), 3-*O*-[β-D-oleandropyranosyl-(1→4)-β-D-digitoxopyranosyl-(1→4)-β-D-digitoxopyranosyl-(1→4)-β-D-cymaropyranoside]:*
[267422-79-7]
$C_{53}H_{79}NO_{18}$ 1018.203
Constit. of *Asclepias incarnata*. Amorph. powder. $[\alpha]_D^{21}$ -14.4 (c, 0.33 in MeOH). λ_{max} 219 (log ε 4); 263 (log ε 3.49) (MeOH).

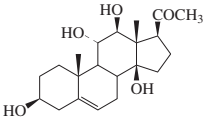
*12-(3-Pyridinecarbonyl), 3-*O*-[β-D-oleandropyranosyl-(1→4)-β-D-digitoxopyranosyl-(1→4)-β-D-digitoxopyranosyl-(1→4)-β-D-digitoxopyranoside]:*
[267422-66-2]
$C_{52}H_{77}NO_{18}$ 1004.176
Constit. of *Asclepias incarnata*. Amorph. powder. $[\alpha]_D^{24}$ -19.1 (c, 0.57 in MeOH). λ_{max} 219 (log ε 4); 258 (log ε 3.46); 263 (log ε 3.49); 269 (sh) (MeOH).

*12-(3-Pyridinecarbonyl), 3-*O*-[β-D-oleandropyranosyl-(1→4)-β-D-oleandropyranosyl-(1→4)-β-D-cymaropyranosyl-(1→4)-β-D-cymaropyranoside]:*
$C_{55}H_{83}NO_{18}$ 1046.257
Constit. of *Cynanchum caudatum*. Amorph. powder. $[\alpha]_D^{20}$ -26.9 (c, 0.96 in MeOH).

*12-(3-Pyridinecarbonyl), 3-*O*-[β-D-glucopyranosyl-(1→4)-β-D-oleandropyranosyl-(1→4)-β-D-digitoxopyranosyl-(1→4)-β-D-digitoxopyranosyl-(1→4)-β-D-cymaropyranoside]:* [267422-86-6]
$C_{59}H_{89}NO_{23}$ 1180.345
Constit. of *Asclepias incarnata*. Amorph. powder. $[\alpha]_D^{27}$ -12.1 (c, 0.45 in MeOH). λ_{max} 219 (log ε 4.07); 259 (log ε 3.45); 263 (log ε 3.49); 270 (sh) (MeOH).

Warashina, T. *et al., Chem. Pharm. Bull.*, 1994, **42**, 322; 1995, **43**, 977; 1734; 1996, **44**, 358; 2000, **48**, 99-107; 2003, **51**, 1036-1045 (*Cynanchum caudatum saponins, Asclepsias saponins, Araujia sericifera saponins*)
Warashina, T. *et al., Phytochemistry*, 1994, **37**, 217; 1997, **44**, 917; 2000, **53**, 485-488 (*Cynanchum caudatum saponins, Asclepias saponins*)

3,11,12,14-Tetrahydroxypregn-5-en-20-one T-269



(3β,11α,12β,14β)-*form*

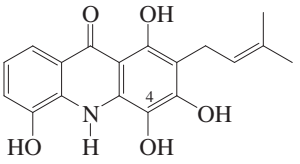
$C_{21}H_{32}O_5$ 364.481

(3β,11ξ,12ξ,14β)-*form*
11-(3-Pyridinecarbonyl), 12-Ac: ***Tinctoramine***
[151756-68-2]
$C_{29}H_{37}NO_7$ 511.614
Alkaloid from *Marsdenia tinctoria*. Needles. Mp 246-255°.

Chowdhury, A.K.A. *et al., Pharmazie*, 1993, **48**, 628-629 (*Tinctoramine*)

1,3,4,5-Tetrahydroxy-2-prenylacridone T-270

*1,3,4,5-Tetrahydroxy-2-(3-methyl-2-butenyl)-9(10*H*)-acridinone, 9CI*



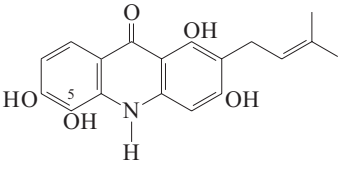
$C_{18}H_{17}NO_5$ 327.336

4-Me ether, N*-Me: 1,3,5-Trihydroxy-4-methoxy-10-methyl-2-prenylacridone.* ***Glycocitrine IV***
$C_{20}H_{21}NO_5$ 355.39
Alkaloid from *Glycosmis citrifolia*. Yellow oil. λ_{max} 202 (log ε 4.44); 227 (sh) (log ε 4.21); 270 (log ε 4.5); 287 (sh) (log ε 4.36); 315 (log ε 4.09); 336 (sh) (log ε 4); 412 (log ε 3.63) (MeOH).

Ito, C. *et al., Chem. Pharm. Bull.*, 2000, **48**, 65-70

1,3,5,6-Tetrahydroxy-2-prenylacridone T-271

*1,3,5,6-Tetrahydroxy-2-(3-methyl-2-butenyl)-9*H*-acridin-9-one*



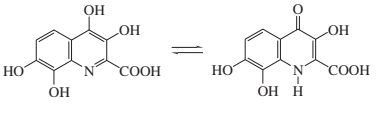
$C_{18}H_{17}NO_5$ 327.336

5-Me ether, N*-Me: 1,3,6-Trihydroxy-5-methoxy-10-methyl-2-prenylacridone.* ***Buntanine***
[119116-85-7]
$C_{20}H_{21}NO_5$ 355.39
Alkaloid from the root bark of *Citrus grandis* (pummelo) (Rutaceae). Yellow plates (Me_2CO). Mp 247-249°.

Wu, T.-S. *et al., Phytochemistry*, 1988, **27**, 3717 (*isol, uv, ir, pmr, cmr, ms, struct*)

3,4,7,8-Tetrahydroxy-2-quinolinecarboxylic acid T-272

1,4-Dihydro-3,7,8-trihydroxy-4-oxo-2-quinolinecarboxylic acid



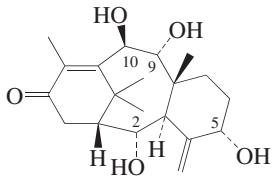
$C_{10}H_7NO_6$ 237.168

NH-form
O^3,O^8,N-*Tri-Me, Me ester:* ***Megistonine II***
$C_{14}H_{15}NO_6$ 293.276
Alkaloid from the bark of *Sarcomelicope megistophylla*. Amorph. yellow powder. λ_{max} 241 (log ε 3.99); 268 (log ε 3.85); 337 (log ε 3.53) (MeOH).

Fokialakis, N. *et al., Chem. Pharm. Bull.*, 2000, **48**, 2009-2010

2,5,9,10-Tetrahydroxy-4(20),11-taxadien-13-one T-273

[5308-90-7]



$C_{20}H_{30}O_5$ 350.454

(2α,5α,9α,10β)-*form*

Taxicin II

5-(3-Dimethylamino-3-phenylpropanoyl), 2,9-di-Ac: [313696-96-7]
$C_{35}H_{47}NO_8$ 609.758
Constit. of *Taxus cuspidata*. Gum. $[\alpha]_D^{24}$ -10 (c, 0.01 in $CHCl_3$).

5-(3-Dimethylamino-3-phenylpropanoyl), 2,10-di-Ac: [313696-95-6]
$C_{35}H_{47}NO_8$ 609.758
Constit. of *Taxus cuspidata*. Gum. $[\alpha]_D^{24}$ -19 (c, 0.01 in $CHCl_3$).

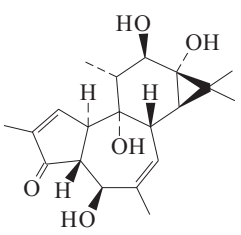
5-(3-Dimethylamino-3-phenylpropanoyl), 9,10-di-Ac: ***2-O-Acetyltaxine II***
[313696-97-8]
$C_{35}H_{47}NO_8$ 609.758
Constit. of *Taxus cuspidata*. Gum. $[\alpha]_D^{24}$ -13 (c, 0.01 in $CHCl_3$).

5-(3-Dimethylamino-3-phenylpropanoyl), 2,9,10-tri-Ac: ***Taxine II***. *1-Deoxydiacetyltaxine B*
[110042-00-7]
$C_{37}H_{49}NO_9$ 651.795
Constit. of *Taxus baccata*. Gum. $[\alpha]_D^{25}$ +27 (c, 2.8 in CH_2Cl_2).

*5-(3*S*-Dimethylamino-2*R*-hydroxy-3-phenylpropanoyl), 2,9,10-tri-Ac:* ***2′-Hydroxytaxine II***
[189956-94-3]
[184291-02-9]
$C_{37}H_{49}NO_{10}$ 667.795
Constit. of *Taxus cuspidata*. Amorph. powder. Mp 84-88°. $[\alpha]_D^{20}$ +43 (c, 1 in $CHCl_3$).

Appendino, G. *et al., J. Nat. Prod.*, 1993, **56**, 514-520 (*Taxine II*)
Ando, M. *et al., J. Nat. Prod.*, 1997, **60**, 499-501 (*2′-Hydroxytaxine II*)
Shi, Q.-W. *et al., Nat. Prod. Lett.*, 2000, **14**, 265-272 (*Taxus cuspidata constits*)

5,9,12,13-Tetrahydroxy-1,6-tigliadien-3-one T-274



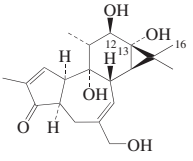
$C_{20}H_{28}O_5$ 348.438

(4β,5β,9α,12β,13α)-*form*

*12-*O*-(2-Methylaminobenzoyl), 13-Ac:* ***Sapintoxin C***
[81345-28-0]
$C_{30}H_{37}NO_7$ 523.625
Constit. of *Sapium indicum*.

Taylor, S.E. *et al., Phytochemistry*, 1981, **20**, 2749-2751; 1982, **21**, 405-407 (*Sapatoxin C, Sapintoxin C*)

9,12,13,20-Tetrahydroxy-1,6-tigliadien-3-one T-275



(4α,9α12β,13α)-*form*

$C_{20}H_{28}O_5$ 348.438

(4α,9α,12β,13α)-*form* [37415-57-9]

*12-*O*-(2-Methylaminobenzoyl): α-Sapintoxin*
[80373-85-9]
$C_{28}H_{35}NO_6$ 481.588
Not a natural product.

*12-*O*-(2-Methylaminobenzoyl), 13-Ac:* ***4α-Sapinine***
[64284-90-8]
$C_{30}H_{37}NO_7$ 523.625
Constit. of *Sapium indicum*. Mp 274-275°. λ_{max} 193 (ε 25000); 223 (ε 37500); 251 (ε 12500); 355 (ε 7600) (MeOH).

(4β,9α,12β,13α)-*form*
4-Deoxyphorbol
[79083-67-3]
Exists as esters in *Euphorbia tirucalli*, *Euphorbia biglandulosa* and *Sapium indicum*.

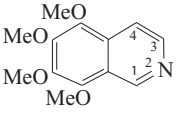
*12-*O*-(2-Methylaminobenzoyl), 13-Ac:* ***Sapintoxin A***
[79083-69-5]
$C_{30}H_{37}NO_7$ 523.625
Isol. from unripe fruits of *Sapium indicum*.
▶ Irritant.

*20-Aldehyde, 12-*O*-(2-methylaminobenzoyl), 13-Ac:* [80321-12-6]
$C_{30}H_{35}NO_7$ 521.609
Constit. of *Sapium indicum*.

Fürstenberger, G. *et al., Tet. Lett.*, 1977, **18**, 925-928 (*isol*)
Miana, G.A. *et al., Z. Naturforsch., B*, 1977, **32**, 727 (*4α-Sapinine*)
Taylor, S.E. *et al., Experientia*, 1981, **37**, 681 (*Sapintoxin A*)
Taylor, S.E. *et al., Phytochemistry*, 1982, **21**, 405-407; 1983, **22**, 1231-1233 (*Sapium esters*)

5,6,7,8-Tetramethoxyisoquinoline T-276

Isonorweberine
[93529-98-7]



$C_{13}H_{15}NO_4$ 249.266

The trivial name Isonorweberine is misleading. Alkaloid detected in *Pachycereus weberi* (Cactaceae) by tandem mass spectrom.

3,4-Dihydro: 3,4-Dihydro-5,6,7,8-tetramethoxyisoquinoline. ***Dehydronorweberine***
$C_{13}H_{17}NO_4$ 251.282
Alkaloid detected in *Pachycereus weberi* by tandem mass spectrom. (Cactaceae). Not indexed in CAS.

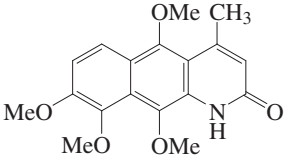
1,2,3,4-Tetrahydro: 1,2,3,4-Tetrahydro-5,6,7,8-tetramethoxyisoquinoline. ***Norweberine***
$C_{13}H_{19}NO_4$ 253.297
Alkaloid detected in *Pachycereus weberi* (Cactaceae) by tandem ms.

1,2,3,4-Tetrahydro, N*-Me: 1,2,3,4-Tetrahydro-5,6,7,8-tetramethoxy-2-methylisoquinoline.* ***Weberine***
[74046-24-5]
$C_{14}H_{21}NO_4$ 267.324
Alkaloid from *Pachycereus weberi*. Also identified in trace amount in *Pachycereus pringlei* (Cactaceae). Cryst. (EtOAc)(as hydrochloride). Mp 165-166° (hydrochloride).

Mata, R. *et al., Phytochemistry*, 1980, **19**, 673 (*Weberine, isol, uv, ir, pmr, ms, struct*)
Mata, R. *et al., Planta Med.*, 1980, **38**, 180 (*Norweberine*)
Takahashi, K. *et al., Heterocycles*, 1982, **19**, 691 (*Weberine, synth, ir, pmr, ms*)
Roush, R.A. *et al., Anal. Chem.*, 1985, **57**, 109-114 (*Norweberine, Isonorweberine, Dehydronorweberine*)

5,8,9,10-Tetramethoxy-4-methylbenzo[*g*]quinolin-2(1*H*)-one, 9CI T-277

1-Aza-1,2-dihydro-7,8,9,10-tetramethoxy-4-methyl-2-oxoanthracene
[925207-32-5]

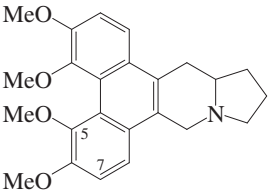


$C_{18}H_{19}NO_5$ 329.352
Alkaloid from the bark of *Pseudoxandra cuspidata*. Amorph. yellow powder. $[\alpha]_D^{25}$ +3 (c, 1.7 in $CHCl_3$). λ_{max} 254 (log ε 5.13); 287 (log ε 5.18); 296 (log ε 5.16); 351 (log ε 4.25); 362 (log ε 4.3) ($CHCl_3$).

Roumy, V. *et al., Planta Med.*, 2006, **72**, 894-898 (*isol, pmr, cmr*)

3,4,5,6-Tetramethoxyphenanthroindolizidine T-278

Tyloindicine A



$C_{24}H_{27}NO_4$ 393.482

(ξ)-*form* [126647-33-4]
Alkaloid from the aerial parts of *Tylophora indica* (Asclepiadaceae). Cryst. (Me_2CO). Mp 199-201°. $[\alpha]_D^{35}$ +7.2 (c, 2.1 in MeOH).

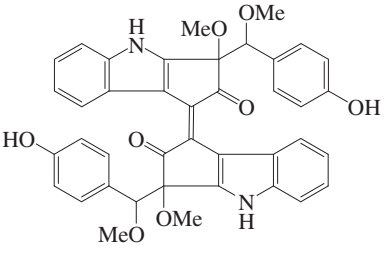
7-Methoxy: 3,4,5,6,7-Pentamethoxyphenanthroindolizidine
Mp 217-219°.

7-Methoxy, O^5*-de-Me:* ***Tyloindicine D***
[126624-16-6]
$C_{24}H_{27}NO_5$ 409.481
Alkaloid from the aerial parts of *Tylophora indica* (Asclepiadaceae). Light yellow powder (Me_2CO). Mp 229-231° dec. $[\alpha]_D^{35}$ +1.6 (c, 0.6 in MeOH).

Ali, M. *et al., Phytochemistry*, 1989, **28**, 3513-3517 (*isol, uv, ir, pmr, ms, struct, Tyloindicine D*)

Tetramethoxyscytonemin T-279

[683771-36-0]



$C_{40}H_{34}N_2O_8$ 670.717
Isol. from the terrestrial cyanobacterium *Scytonema* sp. Amorph. purple solid. λ_{max} 212 (ϵ 35930); 562 (ϵ 5940) (MeOH).

3,9-Didemethoxy, 3,9-didehydro: ***Dimethoxyscytonemin***
[683771-37-1]
$C_{38}H_{28}N_2O_6$ 608.649
Isol. from a terrestrial *Scytonema* sp. Dark red amorph. solid. λ_{max} 215 (ϵ 60350); 316 (ϵ 18140); 422 (ϵ 23015) (MeOH).

Bultel-Poncé, V. *et al., J. Nat. Prod.*, 2004, **67**, 678-681 (*isol, pmr, cmr*)

Tetramethylammonium(1+), 8CI T-280

N,N,N-*Trimethylmethanaminium(1+), 9CI*
[51-92-3]
$Me_4N^{\oplus}$
$C_4H_{12}N^{\oplus}$ 74.145
Occurs naturally in plant and animal tissues.

Chloride: Tetramethylammonium chloride
[75-57-0]
$C_4H_{12}ClN$ 109.598
Cryst. (EtOH). Mp 230° dec.

▶ BS7700000

[15625-56-6 , 80526-82-5 , 79723-02-7]

Llinares, J. *et al., Org. Magn. Reson.*, 1980, **14**, 20 (*cmr*)

Neef, C. *et al., Naunyn-Schmiedeberg's Arch. Pharmacol.*, 1984, **328**, 103; 111 (*pharmacol*)

Tsubaki, H. *et al., J. Pharmacobio-Dyn.*, 1986, **9**, 737 (*pharmacol*)

N,N,N′,N′-Tetramethyl-1,4-butanediamine, 9CI T-281

1,4-Bis(dimethylamino)butane. ***Tetramethylputrescine***
[111-51-3]
$Me_2N(CH_2)_4NMe_2$
$C_8H_{20}N_2$ 144.259
Constit. of *Duboisia leichhardtii, Duboisia myoporoides, Hyoscyamus muticus, Hyoscyamus reticulatus, Hyoscyamus niger, Oldenlandia affinis* and *Ruellia rosea* (Solanaceae, Rubiaceae, Acanthaceae). Oil. Bp 169°.

▶ EJ7530000

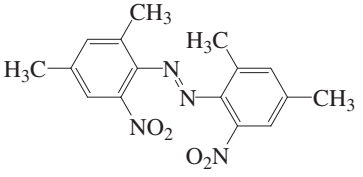
Hydrochloride (1:2): Mp 280° (273°).

Dipicrate: Mp 197-200°.

Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 498A (*nmr*)
Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 307A (*ir*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 394D (*ir*)
Willstätter, R. *et al., Ber.*, 1907, **40**, 3869 (*struct*)
Konowalowa, R.A. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1928, **266**, 449; *CA*, **23**, 472 (*isol*)
Griffin, W.J. *et al., Aust. J. Pharm.*, 1967, **48**, S20; *CA*, **67**, 79622u (*isol*)
Coulson, J.F. *et al., Planta Med.*, 1968, **16**, 174 (*isol*)
Veith, H.J. *et al., Helv. Chim. Acta*, 1971, **54**, 653 (*ms*)
Gran, L. *et al., J. Nat. Prod.*, 1973, **36**, 209 (*isol, ms*)
Johne, S. *et al., Phytochemistry*, 1975, **14**, 2635 (*isol, uv, ir, cmr, ms*)

2,2′,4,4′-Tetramethyl-6,6′-dinitroazobenzene T-282

Bis(2,4-dimethyl-6-nitrophenyl)diazene, 9CI



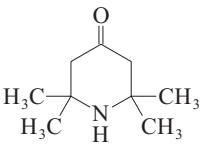
$C_{16}H_{16}N_4O_4$ 328.327

(*E*)-*form* [811848-77-8]
Alkaloid from the leaves of *Aconitum sungpanense.* Red cryst. Subl. 210.

Wang, X. *et al., Fitoterapia*, 2004, **75**, 789-791 (*isol, pmr, cmr, cryst struct*)
Wang, X.-L. *et al., Jiegou Huaxue*, 2004, **23**, 1005-1008 (*cryst struct*)

2,2,6,6-Tetramethyl-4-piperidinone, 9CI T-283

Triacetonamine. Odoratin†*. Vincubine*
[826-36-8]
[956833-72-0 (nitrate salt)]



$C_9H_{17}NO$ 155.239
Isol. from *Acalypha indica* and *Salsola tetrandra* (Euphorbiaceae, Chenopodiaceae), also from *Viola odorata* (sweet violet). Metab. of the soft coral *Lobophytum strictum* and sponge *Agelas oroides.* Plates + $1H_2O$ (Et_2O); anhyd. needles (dry Et_2O). Mp 34.9° (anhyd.). Bp 205°. The hydrochloride of the alkaloid from *Salsola tetrandra* was reported to have $[\alpha]_D$ +14.3° (EtOH) which makes the struct. assignment highly dubious. Artifact.

▶ TO0127900

Monohydrate: [10581-38-1]
Mp 61-63° (58°). Bp_{18} 102-105°.

Hydrochloride: [33973-59-0]
Mp 198° dec.

Oxime: [4168-79-0]
$C_9H_{18}N_2O$ 170.254
Prisms (EtOH). Mp 153°.

▶ LD_{50} (mus, ivn) 180 mg/kg. TO0128000

Semicarbazone:
Cryst. (EtOH). Mp 219-220°.

N,N-*Di-Me: 1,1,2,2,6,6-Hexamethyl-4-oxopiperidinium(1+), 9CI. 1,1,2,2,6,6-Hexamethyl-4-piperidinone*
[195864-37-0 , 113308-50-2]
$C_{11}H_{22}NO^{\oplus}$ 184.301
Quaternary alkaloid from the alga *Laminaria japonica*.

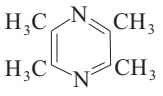
N-*Benzyl:* [52981-86-9]
$C_{16}H_{23}NO$ 245.364
Plates or prisms (EtOH/Et_2O) (as hydrochloride). Mp 137-138° (hydrochloride).

N-*Bromo:*
$C_9H_{16}BrNO$ 234.135
Cryst. (petrol). Mp 44°.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 461C; 461D (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 720C; 721A (*nmr*)
Frenclowa, I. *et al., Acta Pol. Pharm.*, 1961, **18**, 187; 1964, **21**, 145; *CA*, **57**, 7381; **62**, 10817 (*isol*)
Rees, B. *et al., Acta Cryst. B*, 1971, **27**, 932 (*cryst struct*)
Karawya, M.S. *et al., Phytochemistry*, 1971, **10**, 3303 (*isol*)
Sosnovsky, G. *et al., Synthesis*, 1976, 735 (*synth*)
Ermakov, A.I. *et al., Khim. Geterotsikl. Soedin.*, 1979, 507 (*ms*)
Ozinskas, A.J. *et al., Helv. Chim. Acta*, 1980, **63**, 1407 (*pmr*)
Parameswaran, P.S. *et al., Indian J. Chem., Sect. B*, 1991, **30**, 449 (*isol, pmr, cmr*)
Shimoi, N. *et al., Fish. Sci.*, 1997, **63**, 650-651 (*Hexamethylpiperidone*)
Koenig, G.M. *et al., Planta Med.*, 1998, **64**, 88-89 (*isol, pmr, cmr*)
Bond, A.D. *et al., Acta Cryst. C*, 2002, **58**, o115-o116 (*monohydrate, cryst struct*)
Rodrigues, V.H. *et al., Acta Cryst. C*, 2007, **63**, o243-o245 (*nitrate, cryst struct*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, TDU000

Tetramethylpyrazine T-284

Chuanxiongzine. Ligustrazine. Tetrapyrazine. BS Factor. FEMA 3237. NSC 36080. NSC 46451
[1124-11-4]



$C_8H_{12}N_2$ 136.196
Metab. from *Bacillus subtilis* and an arctic marine bacterium; isol. from Galbanum oil. Constit. of *Ligusticum chuanxiong* and *Ligusticum wallichii*. Fragrance and flavouring ingredient. Shows antiinflammatory activity. Bactericidal agent. Trihydrate; cryst. (H_2O). Mp 74-77° (hyd.) Mp 86° (anhyd.). Bp 190°. pK_{a1} 3.61; pK_{a2} -2.73 (25°, H_2O). pK_{a1} 3.55; pK_{a2} -2.7 (27°, H_2SO_4 aq.). Log P 1.58 (calc). Odour threshold 10^4 ppb in H_2O. λ_{max} 294 (ϵ 8500) (MeOH) (Berdy).

▶ LD_{50} (rat, orl) 1910 mg/kg. UQ3905000

Hydrochloride: Mp 91° (dihydrate) Mp 156° (anhyd.).

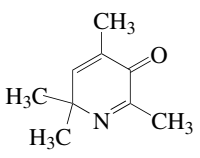
Dipicrate:
Needles. Mp 194-195°.

1,4-Dioxide:
$C_8H_{12}N_2O_2$ 168.195
Mp 224°.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 841C (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 402A (*nmr*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 1559A (*ir*)
Piloty, O. *et al., Ber.*, 1910, **43**, 489
Kipping, F.B. *et al., J.C.S.*, 1929, 2891
Gnitchtel, H. *et al., Chem. Ber.*, 1972, **105**, 1865
Bus, J. *et al., Rec. Trav. Chim. (J. R. Neth. Chem. Soc.)*, 1973, **92**, 123 (*ir*)
Gumbley, S.J. *et al., J. Het. Chem.*, 1985, **22**, 1143 (*props*)
Eiermann, U. *et al., Chem. Ber.*, 1990, **123**, 523 (*uv*)
Ozaki, Y. *et al., Chem. Pharm. Bull.*, 1992, **40**, 954 (*isol, pharmacol*)
Dickschat, J.S. *et al., Chem. Biodiversity*, 2005, **2**, 318-353 (*marine isol*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, TDV725

2,4,6,6-Tetramethyl-3(6*H*)-pyridinone T-285

[203524-64-5]

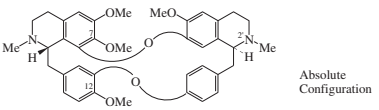


$C_9H_{13}NO$ 151.208
Isol. from the marine sponge *Agelas oroides*. Volatile oil/glass. Possible artifact. λ_{max} 221 (sh) (ϵ 9310); 245 (ϵ 7120) (MeOH).

Koenig, G.M. *et al., Planta Med.*, 1998, **64**, 88-89 (*isol, uv, ir, pmr, cmr, ms*)

Tetrandrine T-286

6,6′,7,12-Tetramethoxy-2,2′-dimethylberbaman, 9CI. Menisine. NSC 77037
[518-34-3]



Absolute Configuration

$C_{38}H_{42}N_2O_6$ 622.76
Alkaloids covered by this entry (*S,S*-series) are enantiomeric with those covered by Phaeanthine, P-301 and diastereomeric with those included in Isotetrandrine, I-328 (1*R*, 1′*S*-) and Peinamine, P-171 (1*S*,1′*R*-). Menisine, Mp 152°, was transformed into Tetrandrine on heating at 150° and was almost certainly a metastable modification of it. Obt. semisynthetically by methylation of Penduline. Alkaloid from the roots of *Cocculus sarmentosus*, *Cyclea barbata*, *Cyclea peltata*, *Cyclea burmanni*, *Stephania hernandifolia*, *Triclisia subcordata* and *Isopyrum thalictroides*, (Menispermaceae). Menisine obt. from the Chinese drug Mu fang chi (tubers of *Stephania tetrandra*). Shows hypotensive and vasodilator props., gives exp. protection against myocardial infarction. Shows antineoplastic activity. Most effective antineoplastic agent of the bisbenzylisoquinoline alkaloids. Also shows antiinflammatory, antidiabetic, anaesthetic, antiarrythmic, antimicrobial and antmitotic props. Needles (Et_2O). Mp 218° (215-217°). $[\alpha]_D^{24}$ +274 (c, 2.16 in $CHCl_3$) (+241.4). Log P 8.3 (calc). λ_{max} 282 (ϵ 8050) (EtOH).

▶ LD_{50} (mus, ipr) 41.3 mg/kg. Chronic administration causes liver necrosis. Lymphotoxin.

N^2-*β-Oxide:* ***Fenfangjine A***. *Tetrandrine 2β-*N*-oxide*
[115556-32-6]
$C_{38}H_{42}N_2O_7$ 638.759
Alkaloid from "Fen-Fang-Ji" (roots of *Stephania tetrandra*) (Menispermaceae). Needles (Me_2CO). Mp 174-176°. $[\alpha]_D^{24}$ +328.2 (c, 1.043 in $CHCl_3$).

N$^{2'}$-*β-Oxide:* ***Tetrandrine 2′β-*N*-oxide***
[62828-25-5]
$C_{38}H_{42}N_2O_7$ 638.759
Alkaloid from the Thai drug "Krung Kha Mao" (*Cyclea barbata*) (Menispermaceae). Mp 185-190°. $[\alpha]_D^{23}$ +198 ($CHCl_3$). $[\alpha]_D$ +157 (c, 0.24 in $CHCl_3$).

N^2-*De-Me:* ***2-Nortetrandrine***
[19196-54-4]
$C_{37}H_{40}N_2O_6$ 608.733
Alkaloid from the seeds of *Ocotea rodiaei* (Lauraceae). Rods (Me_2CO). Mp 222-226°. $[\alpha]_D^{24}$ +335 (c, 1.0 in $CHCl_3$). λ_{max} 227 (log ϵ 4.53); 282 (log ϵ 3.88) ($CHCl_3$).

N^2-*De-Me; perchlorate (1:2):*
Cryst. + 4H_2O. Mp 252-253°.

N^2-*De-Me, dipicrate:* Mp 247-251°.

N$^{2'}$-*De-Me:* ***Cycleanorine***. *2′*-N-*Demethyltetrandrine*
[38769-08-3]
$C_{37}H_{40}N_2O_6$ 608.733
Alkaloid from the roots of *Cyclea peltata* (Menispermaceae). Antineoplastic agent. Needles (EtOH aq.). Mp 170-172°. $[\alpha]_D^{25}$ +308 (c, 0.52 in $CHCl_3$). Log P 7.6 (uncertain value) (calc). λ_{max} 252 (ϵ 10200) (EtOH).

N^2-*Me:* ***2-*N*-Methyltetrandrine***. *Cycleahomine*
[41222-80-4]
[38849-82-0 (chloride salt)]
$C_{39}H_{45}N_2O_6^{\oplus}$ 637.794
Quaternary alkaloid from roots of *Stephania tetrandra* the source of the Chinese drug Fen-Fang-Ji. Also from *Cyclea peltata* roots. Needles (Me_2CO) or prisms (CH_2Cl_2/EtOAc) (as chloride). Mp 192-196° (chloride). $[\alpha]_D$ +245 (c, 0.07 in $CHCl_3$) (chloride)(103). λ_{max} 280 (log ϵ 3.84) (EtOH) (as chloride).

N$^{2'}$-*Me: 2′*-N-*Methyltetrandrine*
[90308-88-6]
$C_{39}H_{45}N_2O_6^{\oplus}$ 637.794
Isol. from roots of *Stephania tetranda*, the source of the Chinese drug Fen-Fang-Ji. Amorph. powder. Mp 208-211° (chloride) (synthetic). $[\alpha]_D^{25}$ +166.5 (c, 0.2 in $CHCl_3$) (synthetic).

N-*Me:* ***Monomethyltetrandrinium***
[53935-72-1 (chloride-hydrochloride)]
$C_{39}H_{45}N_2O_6^{\oplus}$ 637.794
Alkaloid from *Cyclea barbata* (Menispermaceae). Plates ($CHCl_3$/petrol) (as chloride-hydrochloride). Mp 208° (chloride-hydrochloride). $[\alpha]_D^{20}$ +51.5 (MeOH) (as chloride-hydrochloride). Site of monomethylation unknown.

N^2-*Chloromethyl:* N^2-*Chloromethyltetrandrinium*
[38769-09-4 (chloride)]
$C_{39}H_{44}ClN_2O_6^{\oplus}$ 672.239
Artifact isol. from the roots of *Cyclea peltata* (Menispermaceae). Needles + 3½H_2O (Me_2CO) (as chloride). Mp 213-217° dec. (chloride). $[\alpha]_D^{25}$ +156 (c, 0.41 in $CHCl_3$) (chloride).

N^2,N$^{2'}$-*Di-Me:* N,N′-*Dimethyltetrandrinium*. ***Hanjisong***
[26605-37-8]
[22445-73-4 , 116171-98-3]
$C_{40}H_{48}N_2O_6^{2\oplus}$ 652.829
Alkaloid from *Stephania tetrandra*. Needles (EtOH) (as diiodide). Mp 267.5° (236-240° dec.) (diiodide). $[\alpha]_D^{20}$ +234 (MeOH) (diiodide).

N^2,N$^{2'}$-*Bis(chloromethyl):* N^2,N$^{2'}$-*Bis(chloromethyl)tetrandrinium*
[136055-61-3 (dichloride salt)]
$C_{40}H_{46}Cl_2N_2O_6^{2\oplus}$ 721.719
Artifact isol. from *Stephania tetrandra* (Menispermaceae).

O^7-*De-Me:* ***Fangchinoline***. *Menisidine. 12-*O-*Methylatherospermoline*
[436-77-1]
$C_{37}H_{40}N_2O_6$ 608.733
Alkaloid from the roots of *Cyclea peltata*, *Triclisia subcordata* and *Stephania hernandifolia*, the tubers of *Stephania tetrandra*, and from the bark of *Daphnandra* sp. Dt-7 (Menispermaceae, Atherospermacaceae).

Also, as Menisidine, isol. from the Chinese drug "Mu-fang-chi" (*Stephania tetrandra*) (Menispermaceae). Shows good *in vitro* antineoplastic activity against HeLa cells. Also antifibrogenic and antiinflammatory. Cryst. (Et_2O). Mp 240-242° dec. $[\alpha]_D^{24}$ +274 (c, 0.55 in MeOH). Log P 8.12 (uncertain value) (calc). Menisidine, Mp 176°, was transformed into Fangchinoline on heating at 160-170° and was almost certainly a metastable modification of it. Opt. rotns. were similar.

► LD_{50} (mus, ipr) 50 mg/kg. DR9280000

O^7-*De-Me, dipicrate:* Mp 186° Mp 225°.

O^7-*De-Me,* $N^{2'}$-*α-oxide:* ***Fenfangjine B****. Fangchinoline 2′α*-N-*oxide*
[115648-96-9]
$C_{37}H_{40}N_2O_7$ 624.732
Alkaloid from "Fen-Fang-Ji" (roots of *Stephania tetrandra*) (Menispermaceae). Prisms (EtOH). Mp 211-213°. $[\alpha]_D^{25}$ +242.5 (c, 0.640 in $CHCl_3$/MeOH).

O^7-*De-Me,* $N^{2'}$-*β-oxide:* ***Fenfangjine C****. Fangchinoline 2′β*-N-*oxide*
[115648-97-0]
$C_{37}H_{40}N_2O_7$ 624.732
Alkaloid from "Fen-Fang-Ji" (roots of *Stephania tetrandra*) (Menispermaceae). Needles (EtOH). Mp 165-166°. $[\alpha]_D^{25}$ +239.4 (c, 0.630 in MeOH).

O^7-*De-Me,* N^2-*Me:* ***N*^{2}*-Methylfangchinoline***
[133744-51-1]
$C_{38}H_{43}N_2O_6^{\oplus}$ 623.767
Alkaloid from the roots of *Stephania tetrandra* (Menispermaceae). Needles (Me_2CO/MeOH) (as chloride). Mp 205-208° (chloride). $[\alpha]_D$ +256 (c, 0.9 in MeOH). λ_{max} 281 (log ϵ 3.83) (MeOH).

O^{12}-*De-Me:* ***Penduline***†. *(+)-Pycnamine*
[26137-45-1]
Alkaloid from the stems and leaves of *Cocculus pendulus*, and from the roots of *Cocculus leaebe, Berberis coriaria* and *Andrachne cordifolia* (Menispermaceae, Berberidaceae, Euphorbiaceae). Also obt. by epimerisation of Berbamine in I-328 with MeOH (40°/24h, then 2 days at r.t.). Cryst. (EtOAc). Mp 192-194°. $[\alpha]_D$ +265 (c, 1.0 in $CHCl_3$). λ_{max} 284 (log ϵ 3.84) (EtOH).

O^{12}-*De-Me,* N^2-*de-Me:* ***Norpenduline***
$C_{36}H_{38}N_2O_6$ 594.706
Alkaloid from the stems of *Cocculus pendulus*. $[\alpha]_D^{25}$ +260 (c, 0.09 in MeOH).

O^7,O^{12}-*Di-de-Me:* ***Atherospermoline***
[21008-67-3]
$C_{36}H_{38}N_2O_6$ 594.706
Alkaloid from the leaves of *Atherosperma moschatum* (Monimiaceae). Prisms + $1CHCl_3$ ($CHCl_3$). Mp 183-188°. $[\alpha]_D^{18}$ +202 (c, 0.15 in $CHCl_3$). λ_{max} 284 (log ϵ 3.97) (EtOH).

(±)-*form* [23495-89-8]
Alkaloid from the roots of *Cyclea peltata*, *Cyclea barbata*, *Stephania hernandifolia* and *Isopyrum thalictroides* (Menispermaceae, Ranunculaceae). Needles (EtOH or $CHCl_3$/MeOH). Mp 257-258° (252-253°).

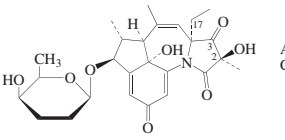
O^7-*De-Me:* ***Cycleadrine***
[38769-07-2]
Alkaloid from the roots of *Cyclea peltata*. Also isol. from the Thai drug Krung Kha Mao (*Cyclea barbata*) (Menispermaceae). Cryst. (Me_2CO/hexane). Mp 160-162°.

O^7-*De-Me, hydroiodide (1:2):*
Cryst. (EtOH aq.). Mp 223-224°.

Kidd, D.A.A. *et al., J.C.S.*, 1954, 669-677 (*struct*)
Tomita, M. *et al., Pharm. Bull.*, 1954, **2**, 372-375 (*struct*)
Kupchan, S.M. *et al., J. Pharm. Sci.*, 1961, **50**, 164-167; 819-822 (*Menisine, isol*)
Bick, I.R.C. *et al., J.C.S.*, 1961, 1896-2407 (*pmr*)
Bick, I.R.C. *et al., Chem. Ind. (London)*, 1965, 694-695 (*Atherospermoline*)
Battersby, A.R. *et al., J.C.S.*, 1965, 2239-2247 (*uv, ord*)
Chan, K.C. *et al., J.C.S.(C)*, 1967, 2479-2488 (*ord, pmr, ms, Nortetrandrine*)
Tomita, M. *et al., Yakugaku Zasshi*, 1967, **87**, 316; *CA*, **67**, 32855g (*Fangchinoline, isol*)
Gupta, N.C. *et al., Experientia*, 1970, **26**, 12-13 (*Penduline*)
Baldas, J. *et al., J.C.S. Perkin 1*, 1972, 592-596 (*ms*)
Kupchan, S.M. *et al., J.O.C.*, 1973, **38**, 1846-1852 (*Cycleanorine, Cycleahomine, Cycleadrine*)
Tackie, A.N. *et al., J. Nat. Prod.*, 1974, **37**, 1-5 (*isol, uv, ir, pmr, ms*)
Hoffstadt, B. *et al., Tetrahedron*, 1974, **30**, 307-310 (*Monomethyltetrandrinium*)
Dwuma-Badu, D. *et al., Phytochemistry*, 1975, **14**, 2524-2525 (*isol, uv, ir, pmr, ms*)
Koike, L. *et al., Tet. Lett.*, 1979, 3765-3768 (*cmr*)
Bhakuni, D.S. *et al., Phytochemistry*, 1980, **19**, 2347-2350 (*biosynth*)
Moulis, C. *et al., J. Nat. Prod.*, 1981, **44**, 101-103 (*isol, uv, ir, pmr, ms*)
Chung, B.H. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1984, **317**, 274-278 (*N-Me derivs, synth*)
Suffness, M. *et al., Alkaloids (Academic Press)*, 1985, **25**, 165-171 (*rev, pharmacol*)
Fang, D. *et al., Chin. Med. J. (Beijing, Engl. edn.)*, 1986, **99**, 638-644; *CA*, **106**, 43950j (*pharmacol*)
Ogino, T. *et al., Heterocycles*, 1988, **27**, 1149-1154 (*Fenfangjines A-C, N-Me-Tetrandrines*)
Deng, J. *et al., J. Nat. Prod.*, 1990, **53**, 993 (*2-N-Methyltetrandrine, 2-N-Methylfangchinoline*)
Deng, J. *et al., Chin. Chem. Lett.*, 1991, **2**, 231-232; *CA*, **115**, 131982n (N^2,$N^{2'}$-*Bis(chloromethyl)tetrandrinium*)
Guinaudeau, H. *et al., J. Nat. Prod.*, 1993, **56**, 1989-1992 (*Tetrandrine 2′-β-N-oxide*)
Wang, G. *et al., Life Sci.*, 1994, **56**, 295-306 (*pharmacol, rev*)
Liu, Q.-Y. *et al., J. Pharmacol. Exp. Ther.*, 1995, **273**, 32 (*pharmacol*)
Schiff, P.L. *et al., J. Nat. Prod.*, 1997, **60**, 934-953 (*pmr, cmr*)
Mousa, S.A. *et al., Cardiovasc. Drug Rev.*, 1998, **16**, 48-61 (*rev*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, TDX830

Tetrapetalone C T-287

[780781-76-2]



Absolute Configuration

$C_{26}H_{33}NO_8$ 487.549

Structs. revised from those reported in isol. ref. Prod. by *Streptomyces* sp. USF-4727. Lipoxygenase inhibitor. Amorph. powder. Mp 154-157°. λ_{max} 206 (ϵ 10350); 250 (sh) (ϵ 5890); 311 (ϵ 3190); 350 (sh) (ϵ 2900) (MeOH).

2-Deoxy: ***Tetrapetalone A***
[561056-66-4]
$C_{26}H_{33}NO_7$ 471.549
Prod. by *Streptomyces* sp. USF-4727. Lipoxygenase inhibitor. Pale yellow powder. Mp 190°. Exists in 1-oxo-3-hydroxy enol form. λ_{max} 240 (ϵ 13800); 385 (ϵ 10200) (MeOH).

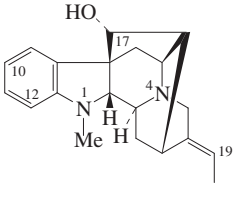
*17*R-*Acetoxy:* ***Tetrapetalone D***
[780781-77-3]
$C_{28}H_{35}NO_{10}$ 545.585
Prod. by *Streptomyces* sp. USF-4727. Lipoxygenase inhibitor. Amorph. powder. Mp 148-151°. λ_{max} 208 (sh) (ϵ 9920); 247 (sh) (ϵ 4470); 312 (ϵ 1720); 335 (sh) (ϵ 1440) (MeOH).

*17*R-*Acetoxy, 2-deoxy:* ***Tetrapetalone B***
[780781-75-1]
$C_{28}H_{35}NO_9$ 529.586
Prod. by *Streptomyces* sp. USF-4727. Lipoxygenase inhibitor. Pale yellow powder. Mp 191-193°. λ_{max} 217 (ϵ 9310); 236 (ϵ 4190) (MeOH).

Komoda, T. *et al., Biosci., Biotechnol., Biochem.*, 2004, **68**, 104-111; 903-908 (*Tetrapetalones A-D, isol, pmr, cmr, struct, abs config*)
Komoda, T. *et al., Org. Biomol. Chem.*, 2007, **5**, 1615-1620 (*biosynth*)

Tetraphyllicine T-288

19,20-Didehydroajmalan-17-ol, 9CI. Serpinine. Semperflorine
[509-38-6]



Absolute Configuration

$C_{20}H_{24}N_2O$ 308.422

Alkaloid from *Rauwolfia tetraphylla* and several other *Rauwolfia* spp. (Apocynaceae). Cryst. (Me_2CO). Mp 320-322°. $[\alpha]_D^{28}$ +21 (Py). pK_a 8.5. λ_{max} 250 (log ϵ 4.07); 294 (log ϵ 3.6) (EtOH).

Perchlorate:
Cryst. (EtOH). Mp 305-307° dec.

O-*Ac:*
Noncryst. Mp 60° (partial melt) Mp 154° (clear melt).

O-*(3,4,5-Trimethoxybenzoyl):* ***Rauvomitine***
[466-57-9]
$C_{30}H_{34}N_2O_5$ 502.609
Alkaloid from the roots and unripe fruits of *Rauwolfia vomitoria*, and the root of *Rauwolfia obscura* (Apocynaceae). Needles (EtOH aq.). Mp 115-117°. $[\alpha]_D^{20}$ -173.4 (c, 1 in $CHCl_3$). λ_{max} 254 (log ϵ 4.18) (no solvent reported).

O-*(3,4,5-Trimethoxybenzoyl); hydrochloride:*
Cryst. (H_2O). Mp 223° dec.

N-*De-Me:* ***Nortetraphyllicine***
[68160-76-9]
$C_{19}H_{22}N_2O$ 294.396
Alkaloid from *Rauwolfia cumminsii*, *Rauwolfia macrophylla*, *Rauwolfia mombasiana*, *Rauwolfia volkensii* and *Rauwolfia vomitoria* (Apocynaceae). Mp 280° dec. λ_{max} 210 ; 240 ; 288 (MeOH).

N-*De-Me,* O-*Ac:* ***17-O-Acetylnortetraphyllicine***
[81525-52-2]
$C_{21}H_{24}N_2O_2$ 336.433
Alkaloid from the root bark of *Rauwolfia nitida* (Apocynaceae). Amorph. $[\alpha]_D^{22}$ +41 (c, 0.01 in MeOH). λ_{max} 215 (log ϵ 4.31); 246 (log ϵ 4.5); 292 (log ϵ 3.63) (MeOH).

N-*De-Me,* O-*(3,4,5-trimethoxybenzoyl):* ***Norrauvomitine***
[64675-21-4]
$C_{29}H_{32}N_2O_5$ 488.582
Alkaloid from *Rauwolfia vomitoria* root and stem bark.

17-Ketone: ***Demethoxypurpeline***
[457613-92-2]
$C_{20}H_{22}N_2O$ 306.407
Alkaloid from the bark of *Rauwolfia bahiensis.* Amorph. yellow solid. $[\alpha]_D^{25}$ +22 (c, 0.57 in $CHCl_3$). λ_{max} 246 (log ϵ 3.61); 280 (log ϵ 3.32); 294 (log ϵ 3.31) (MeOH).

17-Ketone, N-*de-Me:* ***Rauflorine***
[36063-54-4]
$C_{19}H_{20}N_2O$ 292.38
Alkaloid from the root bark of *Rauwolfia confertiflora* (Apocynaceae). Cryst. (MeOH). Mp 221°. $[\alpha]_D^{20}$ +312 (c, 1.54 in $CHCl_3$). λ_{max} 215 (log ϵ 3.84); 240 (log ϵ 3.91); 292 (log ϵ 3.54) (MeOH).

10-Hydroxy, N-*de-Me:* ***10-Hydroxynortetraphyllicine***
[70509-79-4]
$C_{19}H_{22}N_2O_2$ 310.395
Alkaloid from the stem bark of *Rauwolfia vomitoria* (Apocynaceae). Amorph. λ_{max} 215 ; 222 (sh) ; 245 (sh) ; 270 ; 280 ; 290 (MeOH).

12-Hydroxy, 17-ketone: ***Mitoridine***
[3911-19-1]
$C_{20}H_{22}N_2O_2$ 322.406
Alkaloid from *Rauwolfia vomitoria* and the stem bark of *Rauwolfia cumminsii* (Apocynaceae). Cryst. (MeOH). Mp 322°. $[\alpha]_D^{18}$ +175 (c, 1.04 in Py). pK_a 6.16 (methyl cellosolve). λ_{max} 215 (log ϵ 4.55); 249 (log ϵ 3.89); 293 (log ϵ 3.42) (EtOH).

12-Hydroxy, 17-ketone, N-*de-Me:* ***Normitoridine***
[68160-75-8]
$C_{19}H_{20}N_2O_2$ 308.379
Alkaloid from the leaves of *Rauwolfia cumminsii* (Apocynaceae). λ_{max} 249 (log ϵ 4.74); 290 (log ϵ 4.22) (MeOH).

10-Methoxy: ***Vincamajoreine***
[3382-93-2]
$C_{21}H_{26}N_2O_2$ 338.449
Alkaloid from *Vinca major* (Apocynaceae). Needles (MeOH). Mp 266-267° (230°, 246-247°). λ_{max} 246 (log ϵ 4.13); 310 (log ϵ 3.66) (EtOH).

10-Methoxy, O-*Ac:* ***Majoridine****. Majdinine*
[6519-30-8]
$C_{23}H_{28}N_2O_3$ 380.486
Alkaloid from the aerial parts of *Vinca major* (Apocynaceae). Cryst. (EtOH). Mp 222-223° (210-213°). $[\alpha]_D^{22}$ -26 (c, 1.05 in $CHCl_3$). pK_a 6.95 (80% 2-methoxyethanol). λ_{max} 247 (log ϵ 3.94); 310 (log ϵ 3.54) (MeOH).

10-Methoxy, 17-ketone, N-*de-Me:* ***Endolobine***
[67627-71-8]
$C_{20}H_{22}N_2O_2$ 322.406
Alkaloid from the leaves and stem bark of *Rauwolfia cumminsii*, and the leaves of *Rauwolfia mombasiana* (Apocynaceae).

11-Methoxy, 17-ketone: ***Rauflexine***
[70522-05-3]
$C_{21}H_{24}N_2O_2$ 336.433
Alkaloid from the leaves of *Rauwolfia reflexa* (Apocynaceae). Cryst. (petrol/EtOAc). Mp 154-155°. Originally confused with Purpeline.

12-Methoxy: ***Seredamine***
[3911-20-4]
$C_{21}H_{26}N_2O_2$ 338.449
Alkaloid from the root and stem bark of *Rauwolfia cumminsii* and from *Rauwolfia vomitoria* (Apocynaceae). Cryst. ($CHCl_3$/Me_2CO). Mp 297° (280-283°). $[\alpha]_D^{22}$ +44 (c, 1.97 in $CHCl_3$). $[\alpha]_D^{18}$ +60 (c, 0.74 in $CHCl_3$/EtOH, 200:1). pK_a 7.79 (methyl cellosolve). λ_{max} 210 (log ϵ 4.51); 254 (log ϵ 3.93); 290 (log ϵ 3.4) (EtOH).

12-Methoxy, O-*Ac:* Mp 260-262°.

12-Methoxy, O-*(3,4,5-trimethoxybenzoyl):* ***3,4,5-Trimethoxybenzoylseredamine***
[68160-77-0]
$C_{31}H_{36}N_2O_6$ 532.635
Alkaloid from the leaves of *Rauwolfia cumminsii* (Apocynaceae). λ_{max} 218 (log ϵ 4.62); 251 (log ϵ 4.2); 290 (log ϵ 3.85) (MeOH).

12-Methoxy, N-*de-Me:* ***Norseredamine***
[30171-06-3]
$C_{20}H_{24}N_2O_2$ 324.422
Alkaloid from *Rauwolfia vomitoria*, *Rauwolfia sumatrana* and leaves of *Rauwolfia cumminsii*. Needles ($CHCl_3$). Mp 242-245°. $[\alpha]_D^{22}$ +32.6 (c, 3.65 in MeOH). λ_{max} 246 (log ϵ 3.72); 287 (log ϵ 3.24) (EtOH).

12-Methoxy, N-*de-Me,* N,O-*di-Ac:*
Cryst. (Et_2O/hexane). Mp 172-175°.

12-Methoxy, 17-ketone: ***Purpeline***
[2246-33-5]
$C_{21}H_{24}N_2O_2$ 336.433
Alkaloid from the stem bark of *Rauwolfia cumminsii* and *Rauwolfia vomitoria*, and the leaves of *Rauwolfia mombasiana* and *Rauwolfia reflexa* (Apocynaceae). Cryst. (petrol/EtOAc, Et_2O/hexane or Me_2CO/hexane). Mp 155° Mp 164-165°. $[\alpha]_D^{22}$ +286 (c, 1.659 in $CHCl_3$). λ_{max} 252 (log ϵ 3.93); 291 (log ϵ 3.42) (EtOH).

12-Methoxy, 17-ketone, N-*de-Me:* ***Norpurpeline***
[65061-33-8]
$C_{20}H_{22}N_2O_2$ 322.406
Alkaloid from the stem bark of *Rauwolfia cumminsii*, *Rauwolfia mombasiana* and *Rauwolfia vomitoria*, and the leaves of *Rauwolfia mombasiana* (Apocynaceae). Yellow cryst. $[\alpha]_D$ 0. λ_{max} 229 (log ϵ 4.5); 254 (log ϵ 3.92); 290 (log ϵ 3.45) (MeOH).

17-Epimer: ***Mauiensine****. 17-Epitetraphyllicine*
[6883-73-4]
Alkaloid from the root bark of *Rauwolfia mauiensis* (Apocynaceae). Cryst. (Me_2CO). Mp 240-242° (235-240°). $[\alpha]_D$ +184 (MeOH). λ_{max} 249 (log ϵ 3.92); 291 (log ϵ 3.35) (EtOH).

17-Epimer, hydrochloride:
Needles (MeOH). Mp 295° dec.

17-Epimer, 11-methoxy: ***Reflexine***†
[61091-18-7]
$C_{21}H_{26}N_2O_2$ 338.449
Alkaloid from the leaves of *Rauwolfia reflexa* (Apocynaceae). Needles (Me_2CO). Mp 260° dec. $[\alpha]_D$ +126 ($CHCl_3$). OMe group originally considered to be in 12-posn. λ_{max} 250 (log ϵ 3.78); 295 (log ϵ 3.66) (EtOH).

17-Epimer, 12-hydroxy: ***12-Hydroxymauiensine***
[104748-99-4]
$C_{20}H_{24}N_2O_2$ 324.422
Alkaloid from root bark of *Rauwolfia media* (Apocynaceae). Mp 260°. $[\alpha]_D$ +100 (c, 1 in MeOH). λ_{max} 255 (ϵ 7630); 295 (ϵ 2270) (EtOH).

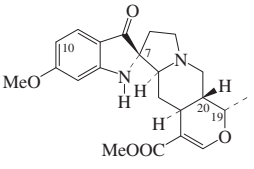
17-Epimer, 12-methoxy, N-*de-Me:* ***17-Epinorseredamine****. Dihydronorpurpeline.* N^a*-Demethyldihydropurpeline*
[65136-98-3]
$C_{20}H_{24}N_2O_2$ 324.422
Alkaloid from the stem bark of *Rauwolfia cumminsii* (Apocynaceae). Yellow amorph. powder. Erroneously indexed in CA.

Poisson, J. *et al., C. R. Hebd. Seances Acad. Sci.*, 1955, **241**, 1840-1842 (*Rauvomitine*)
Haack, E. *et al., Naturwissenschaften*, 1955, **42**, 627 (*Rauvomitine*)
Djerassi, C. *et al., J.A.C.S.*, 1956, **78**, 1259-1260; 1957, **79**, 1217-1222 (*Rauvomitine, Tetraphyllicine, isol, uv, ir, struct*)
Gorman, M. *et al., Tetrahedron*, 1957, **1**, 328-337 (*Mauiensine*)
Scheuer, P.J. *et al., J.O.C.*, 1963, **28**, 2641-2643 (*Mauiensine*)
Poisson, J. *et al., Bull. Soc. Chim. Fr.*, 1964, 2683-2689 (*Purpeline, Mitoridine, Seredamine*)

Biemann, K. *et al., J.A.C.S.*, 1964, **86**, 4624-4628 (*ms*)
Plat, M. *et al., Bull. Soc. Chim. Fr.*, 1965, 2497-2501 (*Vincamajoreine*)
Kaul, J.L. *et al., J. Nat. Prod.*, 1966, **29**, 26-34 (*Majoridine*)
Kaul, J.L. *et al., Coll. Czech. Chem. Comm.*, 1970, **35**, 116-123 (*Majoridine, struct, ms*)
Hanaoka, M. *et al., Helv. Chim. Acta*, 1970, **53**, 1723-1732 (*Purpeline, Seredamine, Noreseredamine, uv, ord, ir, pmr, ms, abs config, synth*)
Danieli, B. *et al., Chim. Ind. (Milan)*, 1971, **53**, 1042-1043 (*Rauflorine*)
Banerji, A. *et al., Phytochemistry*, 1974, **13**, 2309-2312 (*Majoridine, Vincamajoreine*)
Chatterjee, A. *et al., Experientia*, 1976, **32**, 1236 (*Reflexine, Rauflexine, Purpeline*)
Iwu, M.M. *et al., Experientia*, 1977, **33**, 1268 (*Norpurpeline, Demethyldihydropurpeline*)
Iwu, M.M. *et al., Planta Med.*, 1977, **32**, 88-99; 1978, **33**, 232-236; 360-364 (*Norrauvomitine, Endolobine, Purpeline, Normitoridine, Trimethoxybenzoylseredamine, Dihydronorpurpeline*)
Iwu, M.M. *et al., Phytochemistry*, 1978, **17**, 1651-1654 (*Endolobine*)
Sabri, N.N. *et al., Phytochemistry*, 1978, **17**, 2023-2026 (*Nortetraphyllicine, 10-Hydroxynortetraphyllicine*)
Chatterjee, A. *et al., Tet. Lett.*, 1978, 3879-3882 (*Reflexine, Rauflexine, struct, cmr*)
Stöckigt, J. *et al., Tet. Lett.*, 1979, 2615-2618 (*biosynth*)
Amer, M.A. *et al., Phytochemistry*, 1981, **20**, 2569-2573 (*Acetylnortetraphyllicine*)
Kan, C. *et al., Phytochemistry*, 1986, **25**, 1783-1784 (*12-Hydroxymauiensine*)
Jokela, R. *et al., Planta Med.*, 1996, **62**, 577-579 (*Rauflorine, pmr, cmr*)
Kato, L. *et al., Phytochemistry*, 2002, **60**, 315-320 (*Demethoxypurpeline*)

Tetraphylline pseudoindoxyl T-289

[92471-49-3]



Absolute Configuration

$C_{22}H_{26}N_2O_5$ 398.458
Alkaloid from the bark of *Neisosperma glomerata* (*Ochrosia glomerata*) (Apocynaceae).

20-Epimer or 7,20-diepimer, demethoxy, 10-methoxy: ***Aricine pseudoindoxyl***
[1354-50-3]
$C_{22}H_{26}N_2O_5$ 398.458
Alkaloid from the seeds of *Aspidosperma oblongum* (Apocynaceae). Amorph. $[\alpha]_D$ -341 (c, 0.91 in MeOH). C-7 config. not determined.

3,20-Diepimer or 3,7,20-triepimer, demethoxy: ***Akuammigine pseudoindoxyl***
$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from leaves of *Uncaria elliptica* (Rubiaceae). C-7 config. not determined.

7,20-Diepimer, 10-methoxy: ***Isoreserpiline pseudoindoxyl stereoisomer 2***
$C_{23}H_{28}N_2O_6$ 428.484
Alkaloid from *Rauwolfia grandiflora*. $[\alpha]_D$ -90 (c, 0.07 in $CHCl_3$). This stereochem. refers to the most recent isolate (2003) of the alkaloid called Isoreserpiline pseudoindoxyl. The earlier isolates were of a different stereoisomer of incompletely determined abs. config. (see below).

19,20-Diepimer or 7,19,20-triepimer, demethoxy: ***Rauniticine pseudoindoxyl***
[88375-63-7 , 88335-35-7 , 88335-34-6 , 5802-00-6]
$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from the leaves of *Uncaria elliptica* (Rubiaceae). C-7 config. not determined.

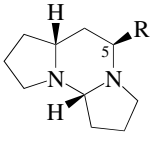
3,19,20-Triepimer or 3,7,19,20-tetraepimer, demethoxy: ***3-Isorauniticine pseudoindoxyl***
$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from leaves of *Uncaria elliptica* (Rubiaceae). C-7 config. not determined.

Stereoisomer, 10-methoxy: ***Isoreserpiline pseudoindoxyl stereoisomer 1***
[5802-11-9]
$C_{23}H_{28}N_2O_6$ 428.484
Alkaloid from *Rauwolfia vomitoria*, *Rauwolfia ligustrina*, *Rauwolfia volkensii*, *Aspidosperma discolor*, *Ochrosia moorei* and *Bleekeria vitiensis* (preferred genus name *Ochrosia*) (Apocynaceae). Cryst. (Me_2CO/pentane). Mp 251-254° (250-253° dec.). $[\alpha]_D^{22}$ -280 (c, 0.108 in $CHCl_3$). This is the more frequently isol. stereoisomer.

Finch, N. *et al., Experientia*, 1963, **19**, 296 (*Isoreserpiline pseudoindoxyl stereoisomer 1*)
Dastour, N.J. *et al., Helv. Chim. Acta*, 1967, **50**, 213 (*Isoreserpiline pseudoindoxyl*)
Robert, G.M.T. *et al., J. Nat. Prod.*, 1983, **46**, 708 (*Aricine pseudoindoxyl*)
Phillipson, J.D. *et al., Phytochemistry*, 1983, **22**, 1809 (*Rauniticine pseudoindoxyl, 3-Isorauniticine pseudoindoxyl, Akuammigine pseudoindoxyl, uv, pmr, ms, struct, synth*)
Seguin, E. *et al., J. Nat. Prod.*, 1984, **47**, 687 (*Tetraphylline pseudoindoxyl*)
Cancelieri, N.M. *et al., Magn. Reson. Chem.*, 2003, **41**, 287-290 (*Isoreserpiline pseudoindoxyl stereoisomer 2*)

Tetraponerine 1 T-290

[171980-65-7]



Absolute Configuration

R = $-CH_2CH_2CH_3$

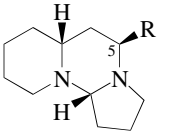
$C_{13}H_{24}N_2$ 208.346
Trace alkaloid from the poison gland of the New Guinean ant *Tetraponera* sp. Oil. $[\alpha]_D^{20}$ +11 (c, 0.14 in $CHCl_3$).

5-Epimer: ***Tetraponerine 2***
[172139-30-9]
$C_{13}H_{24}N_2$ 208.346
Trace alkaloid from *Tetraponera* sp. Oil. $[\alpha]_D^{20}$ +36 (c, 1.79 in $CHCl_3$).

Merlin, P. *et al., J. Chem. Ecol.*, 1988, **14**, 517 (*isol*)
Devijver, C. *et al., Tetrahedron*, 1995, **51**, 10913 (*pmr, ms, struct*)
Yue, C. *et al., J.O.C.*, 1996, **61**, 4949 (*synth, ir, pmr, cmr, ms*)
Bates, R.W. *et al., Tetrahedron*, 2002, **58**, 5957-5978 (*synth*)

Tetraponerine 3 T-291

[114475-95-5]



Absolute Configuration

R = $-CH_2CH_2CH_3$

$C_{14}H_{26}N_2$ 222.373
Alkaloid from the poison gland of the New Guinean ant *Tetraponera* sp. Oil. $[\alpha]_D$ +27 (c, 0.07 in $CHCl_3$).

5-Epimer: ***Tetraponerine 4***
[114530-37-9]
$C_{14}H_{26}N_2$ 222.373
From *Tetraponera* sp. Oil. $[\alpha]_D$ +94 (c, 0.2 in $CHCl_3$).

Merlin, P. *et al., J. Chem. Ecol.*, 1988, **14**, 517 (*isol*)
Braekman, J.C. *et al., Org. Mass Spectrom.*, 1989, **24**, 837 (*ms*)
Jones, T.H. *et al., Tet. Lett.*, 1990, **31**, 1535; 4543 (*synth*)
Macours, P. *et al., Tetrahedron*, 1995, **51**, 1415 (*pmr, cmr, cd, struct, abs config*)
Yue, C. *et al., J.O.C.*, 1996, **61**, 4949 (*synth*)
Stragies, R. *et al., J.A.C.S.*, 2000, **122**, 9584-9591 (*synth*)
Bates, R.W. *et al., Tetrahedron*, 2002, **58**, 5957-5978 (*synth*)
Charette, A.B. *et al., Org. Lett.*, 2005, **7**, 5401-5404 (*synth*)

Tetraponerine 5 T-292

[114475-96-6]
As Tetraponerine 1, T-290 with
R = $CH_2CH_2CH_2CH_2CH_3$
$C_{15}H_{28}N_2$ 236.4
Originally assigned an erroneous struct. Alkaloid from the poison gland of the New Guinean ant *Tetraponera* sp. Oil. $[\alpha]_D^{20}$ +10 (c, 0.2 in $CHCl_3$).

5-Epimer: ***Tetraponerine 6***
[114530-38-0]
$C_{15}H_{28}N_2$ 236.4
From *Tetraponera* sp. Oil. $[\alpha]_D^{20}$ +35 (c, 0.15 in $CHCl_3$). Incorrect struct. originally assigned.

Merlin, P. *et al., J. Chem. Ecol.*, 1988, **14**, 517 (*isol*)
Braekman, J.C. *et al., Org. Mass Spectrom.*, 1989, **24**, 837 (*ms*)
Devijver, C. *et al., Tetrahedron*, 1995, **51**, 10913 (*pmr, cmr, cd, synth, struct, abs config*)
Yue, C. *et al., J.O.C.*, 1996, **61**, 4949 (*synth, ir, pmr, cmr*)
Stragies, R. *et al., J.A.C.S.*, 2000, **122**, 9584-9591 (*synth*)
Kim, J.T. *et al., Org. Lett.*, 2002, **4**, 4697-4699 (*synth*)
Bates, R.W. *et al., Tetrahedron*, 2002, **58**, 5957-5978 (*synth*)

Tetraponerine 7 T-293

*Decahydro-5-pentyl-5*H*-pyrido[1,2-*c*]pyrrolo[1,2-*a*]pyrimidine, 9CI*

[114530-39-1]

As Tetraponerine 3, T-291 with R = $(CH_2)_4CH_3$

$C_{16}H_{30}N_2$ 250.426

Struct. revised in 1995. Alkaloid from the poison gland of the New Guinea ant *Tetraponera* sp. Oil. $[\alpha]_D$ +30 (c, 0.22 in $CHCl_3$).

5-Epimer: ***Tetraponerine 8***

[109269-89-8]

$C_{16}H_{30}N_2$ 250.426

Major alkaloid from *Tetraponera* sp. Mp 40°. $[\alpha]_D$ +102 (c, 0.15 in $CHCl_3$).

▶ Contact poison.

Braekman, J.C. *et al., Z. Naturforsch., C*, 1987, **42**, 627 (*isol, ir, pmr, cmr, cryst struct*)

Merlin, P. *et al., J. Chem. Ecol.*, 1988, **14**, 517 (*isol*)

Braekman, J.C. *et al., Org. Mass Spectrom.*, 1989, **24**, 837 (*ms*)

Yue, C. *et al., J.O.C.*, 1990, **55**, 1140; 1996, **61**, 4949 (*synth*)

Jones, T.H. *et al., Tet. Lett.*, 1990, **31**, 4543 (*synth*)

Merlin, P. *et al., Tetrahedron*, 1991, **47**, 3805 (*synth*)

Renson, B. *et al., Can. J. Chem.*, 1994, **72**, 105 (*biosynth*)

Barluenga, J. *et al., J.O.C.*, 1994, **59**, 3699 (*synth*)

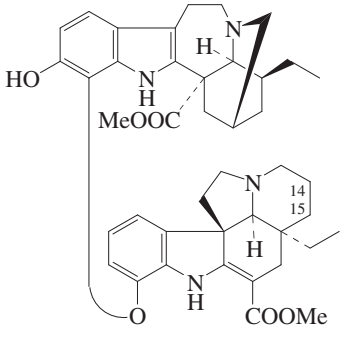
Macours, P. *et al., Tetrahedron*, 1995, **51**, 1415 (*pmr, cmr, cd, struct, synth, abs config*)

Stragies, R. *et al., J.A.C.S.*, 2000, **122**, 9584-9591 (*synth*)

Bates, R.W. *et al., Tetrahedron*, 2002, **58**, 5957-5978 (*synth*)

Tetrastachyne T-294

[79887-93-7]



$C_{42}H_{50}N_4O_6$ 706.88

Aspidosperma-Iboga dimer. Alkaloid from the leaves of *Bonafousia tetrastachya* (preferred genus name *Tabernaemontana*) (Apocynaceae). Amorph. $[\alpha]_D$ -248 (c, 0.5 in $CHCl_3$).

14,15-Didehydro: ***14-Dehydrotetrastachyne***

[91853-53-1]

$C_{42}H_{48}N_4O_6$ 704.864

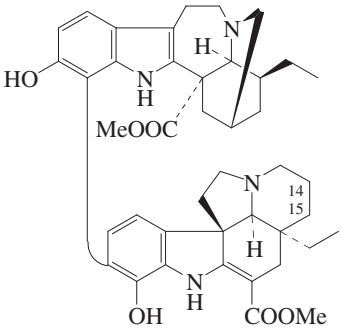
Alkaloid from the leaves of *Tabernaemontana citrifolia* and *Peschiera echinata* (Apocynaceae). Amorph. $[\alpha]_D$ -164 (c, 0.31 in EtOH).

Damak, M. *et al., Bull. Soc. Chim. Fr., Ser. II*, 1981, 213 (*isol, uv, ir, pmr, cmr, ms, struct*)

Abaul, J. *et al., C. R. Hebd. Seances Acad. Sci., Ser. 2*, 1984, **298**, 627 (*14-Dehydrotetrastachyne*)

Tetrastachynine T-295

[79887-94-8]



$C_{42}H_{50}N_4O_6$ 706.88

Alkaloid from the leaves of *Bonafousia tetrastachya* (preferred genus name *Tabernaemontana*) (Apocynaceae). Amorph. $[\alpha]_D$ 0 (c, 1. in $CHCl_3$).

14,15-Didehydro: ***14,15-Dehydrotetrastachynine***

$C_{42}H_{48}N_4O_6$ 704.864

Alkaloid from the leaves of *Stemmadenia grandiflora* and from *Tabernaemontana citrofolia* (Apocynaceae). Oil or amorph. $[\alpha]_D^{21}$ -31 (c, 0.26 in $CHCl_3$). $[\alpha]_D$ -151 (c, 0.25 in EtOH). $[\alpha]_D$ -124 (c, 0.37 in $CHCl_3$). Dec. slowly in the presence of air and light. The low opt. rotn. refers to the *S. grandiflora* isolate.

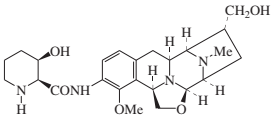
Damak, M. *et al., Bull. Soc. Chim. Fr., Ser. II*, 1981, 213 (*isol, uv, ir, pmr, cmr, ms, struct*)

Torrenegra, R. *et al., Phytochemistry*, 1988, **27**, 1843 (*14,15-Dehydrotetrastachynine*)

Abaul, J. *et al., J. Nat. Prod.*, 1989, **52**, 1279 (*14,15-Dehydrotetrastachynine*)

Tetrazomine T-296

[132073-72-4]



Absolute Configuration

$C_{24}H_{34}N_4O_5$ 458.556

Prod. by *Saccharothrix mutabilis* ssp. *chichijimaensis*. Active against gram-positive and -negative bacteria. Cytotoxic. Sol. H_2O, EtOH, MeOH; poorly sol. EtOAc, hexane. Mp 190° dec. $[\alpha]_D$ -62 (c, 1 in MeOH). λ_{max} 207 ; 224 (MeOH) (Derep). λ_{max} 209 ; 245 (MeOH) (Berdy). λ_{max} 207 ; 224 (EtOH) (Berdy).

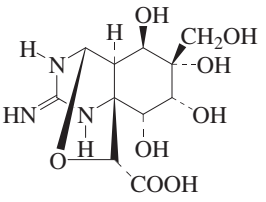
Suzuki, K. *et al., J. Antibiot.*, 1991, **44**, 479 (*isol, props*)

Sato, T. *et al., J. Antibiot.*, 1991, **44**, 1367 (*pmr, cmr, struct*)

Scott, J.D. *et al., J.A.C.S.*, 2002, **124**, 2951-2956 (*synth, abs config*)

Tetrodonic acid T-297

[3270-35-7]



$C_{11}H_{17}N_3O_8$ 319.271

Isol. from the fish *Fugu pardalis*, *Fugu poecilonotus* and *Fugu rubripes*. Amorph.

Tsuda, K. *et al., Chem. Pharm. Bull.*, 1964, **12**, 634-642 (*struct*)

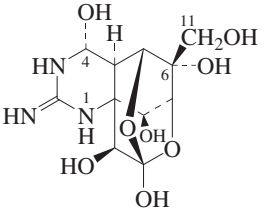
Tamura, C. *et al., Acta Cryst.*, 1966, **21**, 219-225 (*cryst struct*)

Nakamura, M. *et al., Toxicon*, 1985, **23**, 271-276 (*isol*)

Tetrodotoxin T-298

Tarichatoxin. Spheroidine. Tetrodontoxin. Fugu poison. Maculotoxin. Araregai toxin. TTX

[4368-28-9]



$C_{11}H_{17}N_3O_8$ 319.271

Isol. from the ovaries and liver of Japanese puffer fish (*Sphoeroides rubripes*, *Sphoeroides vermicularis*, *Sphoeroides phyreus*), skin of Californian newt (*Taricha torosa*), from the Japanese ivory shell (*Babylonia japonica*), from the dinoflagellate *Alexandrium tarnavense*, xanthid crab *Atergatis floridus* and *Cynops ensicauda*. Believed to be a metab. prod. of a *Pseudomonas* sp. Sodium channel (I, II, III, μ1, h1) blocker. Highly potent toxin. Of practical significance as a cause of accidental poisoning in Japan. Used in neurophysiological research. Anaesthetic synergist. Cryst. Sol. acids; fairly sol. H_2O; poorly sol. EtOAc, hexane. $[\alpha]_D^{25}$ -8.64 (c, 8.55 in AcOH aq.). pK_a 8.76. Darkens at 225° but does not melt.

▶ LD_{50} (mus, orl) 435 μg/kg; LD_{50} (mus, ivn) 9 μg/kg; LD_{50} (mus, ipr) 0.08 mg/kg. Highly toxic to mammals, birds, reptiles, amphibians and fish. IO1450000

Hydrobromide:

Prisms (EtOH aq.). No definite Mp.

Picrate:

Yellow needles + $1H_2O$ (H_2O). Darkens >200° without melting.

Hepta-Ac: Mp 188.5-191.5°. $[\alpha]_D^{30}$ +15.8 (c, 0.39 in $CHCl_3$).

11-Deoxy: ***11-Deoxytetrodotoxin***

[112174-24-0]

$C_{11}H_{17}N_3O_7$ 303.271
Isol. from *Arothron nigropunctatus*, *Cynops ensicauda*, *Fugu* spp. and other marine spp. Paralytic poison, phycotoxin, Na ion blocker. Needles (AcOH aq.). Mp 202° (dec.). $[\alpha]_D^{25}$ +5.4 (c, 0.3 in AcOH aq.).

▶ LD_{50} (mus, ipr) 0.71 mg/kg.

11-Hydroxy: ***11-Hydroxytetrodotoxin***. *11-Oxotetrodotoxin*
[123665-88-3]
$C_{11}H_{17}N_3O_9$ 335.27
Isol. from the puffer fish *Arothron nigropunctatus*, the frog *Brachycephalus ephippium* and the newt *Notophthalmus viridescens*. Also from the xanthid crab *Atergatis floridus*. Amorph. Exists as covalent hydrate.

*4-Deoxy, 4*R*-[(2*S*-amino-2-carboxyethyl)thio]:* ***4-S-Cysteinyltetrodotoxin***
[853013-71-5]
$C_{14}H_{22}N_4O_9S$ 422.415
Isol. from *Fugu pardalis*.

4-Epimer: ***4-Epitetrodotoxin***
[98242-82-1]
$C_{11}H_{17}N_3O_8$ 319.271
Isol. from *Arothron nigropunctatus, Cynops ensicauda*, *Fugu* spp., *Octopus maculosus* and other marine spp. Phycotoxin, sodium channel blocker, paralytic poison. Amorph.

4-Epimer, 11-deoxy: ***11-Deoxy-4-epitetrodotoxin***
[113564-23-1]
$C_{11}H_{17}N_3O_7$ 303.271
Isol. from the newt *Cynops ensicauda*. Amorph.

6-Epimer: ***6-Epitetrodotoxin***
[112318-40-8]
$C_{11}H_{17}N_3O_8$ 319.271
Isol. from *Arothron nigropunctatus*, *Cynops ensicauda*, *Fugu* spp. and other marine spp. Phycotoxin. Amorph. $[\alpha]_D^{21}$ -4.8 (c, 0.3 in AcOH aq.).

▶ LD_{50} (mus, ipr) 0.6 mg/kg.

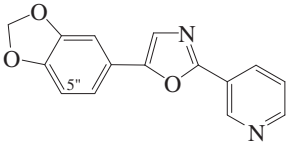
6-De(hydroxymethyl): ***11-Nortetrodotoxin***. *11-Nortetrodotoxin-6*S*-ol*
[156336-07-1]
$C_{10}H_{15}N_3O_7$ 289.244
Isol. from the fish *Arothron nigropunctatus*.

6-De(hydroxymethyl), 6-epimer: ***6-Epi-11-nortetrodotoxin***. *6-De(hydroxymethyl)-6-epitetrodotoxin*. *11-Nortetrodotoxin-6*R*-ol*
[81520-41-4]
$C_{10}H_{15}N_3O_7$ 289.244
Isol. from *Arothron nigropunctatus*, *Atergatis floridus* and *Fugu* spp. incl. from the puffer fish *Fugu niphobles*. Amorph.

Yakoo, A. *et al., Nippon Kagaku Kaishi*, 1950, **71**, 590 (*isol*)
Tomiie, Y. *et al., Tet. Lett.*, 1963, 2101 (*struct*)
Woodward, R.B. *et al., Pure Appl. Chem.*, 1964, **9**, 49 (*struct*)
Goto, T. *et al., Tetrahedron*, 1965, **21**, 2059 (*isol, ir, pmr, struct*)
Furusaki, A. *et al., Bull. Chem. Soc. Jpn.*, 1970, **43**, 3332 (*cryst struct*)
U.S. Pat., 1971, 3 966 934; *CA*, **85**, 87545 (*use*)
Kishi, Y. *et al., J.A.C.S.*, 1972, **94**, 9219 (*synth*)
Yasumoto, T. *et al., Agric. Biol. Chem.*, 1986, **50**, 793-795 (*isol*)
Tetrodotoxin, Saxitoxin and the Molecular Biology of the Sodium Channel, (eds. Kao, C.Y. *et al*), New York Academy of Sciences, 1986, (*book*)
Simidu, U. *et al., Appl. Environ. Microbiol.*, 1987, **53**, 1714-1715 (*occur*)
Yotsu, M. *et al., Toxicon*, 1987, **25**, 225-228 (*isol*)
Yasumoto, T. *et al., J.A.C.S.*, 1988, **110**, 2344-2345 (*derivs, isol, pmr, cmr*)
Endo, A. *et al., Tet. Lett.*, 1988, **29**, 4127-4128 (*6-Epi-11-nortetrodotoxin*)
Khora, S.S. *et al., Tet. Lett.*, 1989, **30**, 4393-4394 (*11-Oxotetrodotoxin*)
Yotsu, M. *et al., Biosci., Biotechnol., Biochem.*, 1992, **56**, 370-371 (*11-Nortetrodotoxin-6S-ol*)
Arakawa, O. *et al., Fish. Sci.*, 1994, **60**, 769-771 (*11-Oxotetrodotoxin, 11-Nortetrodotoxin-6R-ol*)
Yasumoto, T. *et al., J. Toxicol., Toxin Rev.*, 1996, **15**, 81-90 (*rev*)
Kodama, M. *et al., Toxicon*, 1996, **34**, 1101-1105 (*occur*)
Food Sci. Technol., Seafood and Freshwater Toxins, (ed. Botana, L.M.), Marcel Dekker, 2000, **103**, (*rev*)
Miyazawa, K. *et al., J. Toxicol., Toxin Rev.*, 2001, **20**, 11-25 (*rev*)
Yotsu-Yamashita, M. *et al., J. Toxicol., Toxin Rev.*, 2001, **20**, 51-66 (*rev*)
Narahashi, T. *et al., J. Toxicol., Toxin Rev.*, 2001, **20**, 67-85 (*rev, pharmacol*)
Isobe, M. *et al., Tetrahedron*, 2001, **57**, 4543-4558 (*5,11-Dideoxytetrodotoxin, synth*)
Ohyabu, N. *et al., J.A.C.S.*, 2003, **125**, 8798-8805 (*synth*)
Hinman, A. *et al., J.A.C.S.*, 2003, **125**, 11510-11511 (*synth*)
Nishikawa, T. *et al., Pure Appl. Chem.*, 2003, **75**, 251-257 (*11-Deoxytetrodotoxin, synth*)
Yotsu-Yamashita, M. *et al., Toxicon*, 2003, **41**, 893-897 (*11-Oxotetrodotoxin*)
Koert, U. *et al., Angew. Chem., Int. Ed.*, 2004, **43**, 5572-5576 (*synth*)
Daly, J.W. *et al., J. Nat. Prod.*, 2004, **67**, 1211-1215 (*rev, occur*)
Yotsu-Yamashita, M. *et al., Chem. Res. Toxicol.*, 2005, **18**, 865-871 (*4-S-Cysteinyltetrodotoxin*)
Urabe, D. *et al., Chem. Asian J.*, 2006, **1**, 125-135 (*synth*)
Jang, J. *et al., Toxicon*, 2006, **48**, 980-987 (*occur*)
Sato, K. *et al., J.O.C.*, 2008, **73**, 1234-1242 (*synth*)
Noguchi, T. *et al., Mar. Drugs*, 2008, **6**, 220-242 (*rev, occur, activity*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, FOQ000

Texaline T-299

3-[5-(1,3-Benzodioxol-5-yl)-2-oxazolyl]-pyridine, 9CI. 5-(3,4-Methylenedioxyphenyl)-2-(3-pyridinyl)oxazole
[115070-72-9]



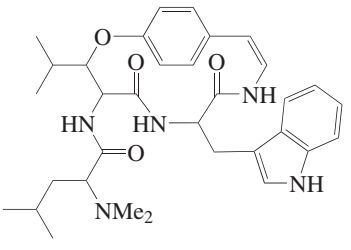
$C_{15}H_{10}N_2O_3$ 266.256
Alkaloid from the roots of *Amyris texana* (Rutaceae). Shows antimycobacterial activity. Cryst. (EtOAc/hexane). Mp 171-174°.

5″-Methoxy: 3-[5-(7-Methoxy-1,3-benzodioxol-5-yl)-2-oxazolyl]pyridine, 9CI. ***2-(3-Methoxy-4,5-methylenedioxyphenyl)-5-(3-pyridinyl)oxazole***
[89764-16-9]
$C_{16}H_{12}N_2O_4$ 296.282
Alkaloid from the aerial portions of *Amyris plumieri* (Rutaceae). Mp 188-189°.

Philip, S. *et al., Heterocycles*, 1984, **22**, 9 (*5″-methoxy*)
Domínguez, X.A. *et al., Heterocycles*, 1988, **27**, 35 (*isol, uv, ir, pmr, cmr, ms, struct*)
Rastogi, N. *et al., FEMS Immunol. Med. Microbiol.*, 1998, **20**, 267-273 (*activity*)

Texensine T-300

2-(Dimethylamino)-N-*[7-(1*H*-indol-3-ylmethyl)-3-(1-methylethyl)-5,8-dioxo-2-oxa-6,9-diazabicyclo[10.2.2]hexadeca-10,12,14,15-tetraen-4-yl]-4-methylpentanamide, 9CI*
[52617-20-6]

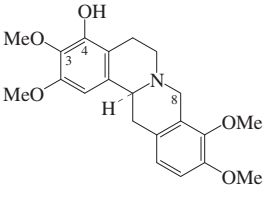


$C_{33}H_{43}N_5O_4$ 573.734
Alkaloid from the aerial part of *Colubrina texensis* (Rhamnaceae). Cryst. (EtOAc). Mp 249-252°. $[\alpha]_D^{25}$ -144 (c, 0.50 in $CHCl_3$).

N-*De-Me (?):* ***Homoamericine***
[27710-05-0]
$C_{32}H_{41}N_5O_4$ 559.707
Alkaloid from *Ceanothus americanus* (Rhamnaceae). Isol. only as a minor contaminant of Americine, A-690. Struct. uncertain; the struct. of the terminal C5 chain was not determined. Could alternatively be identical with Discarine I in D-836.

Klein, F.K. *et al., J.A.C.S.*, 1968, **90**, 2398-2404 (*Homoamericine*)
Wani, M.C. *et al., Tet. Lett.*, 1973, 4675-4678 (*Texensine*)

Thaicanine T-301



(*S*)-*form*

$C_{21}H_{25}NO_5$ 371.432

(S)-form [102828-06-8]
Alkaloid from the leaves of *Parabaena sagittata* (Menispermaceae). Cryst. (MeOH/$CHCl_3$). Mp 144-146°. $[\alpha]_D^{20}$ -243 ($CHCl_3$).

N-*Me:* **N-*Methylthaicanine***
[142934-42-7]
$C_{22}H_{28}NO_5^{\oplus}$ 386.467
Alkaloid from leaves of *Anisocycla cymosa* (Menispermaceae). Amorph. powder. $[\alpha]_D^{20}$ -102.1 (c, 0.014 in MeOH).

Me ether: **O-*Methylthaicanine***
[102828-07-9]
$C_{22}H_{27}NO_5$ 385.459
Isol. from the leaves of *Parabaena sagittata* (Menispermaceae). Cryst. (MeOH/$CHCl_3$). Mp 119-120°. $[\alpha]_D^{20}$ -259 ($CHCl_3$).

Me ether, N-*Me:* **N,O-*Dimethylthaicanine***
[142934-43-8]
$C_{23}H_{30}NO_5^{\oplus}$ 400.494
Alkaloid from leaves of *Anisocycla cymosa* (Menispermaceae). Needles ($CHCl_3$). Mp 218°. $[\alpha]_D^{20}$ -102.8 (c, 0.020 in $CHCl_3$).

O^{10}-*De-Me:* ***Thaipetaline***
[132923-34-3]
$C_{20}H_{23}NO_5$ 357.405
Alkaloid from *Polyalthia stenopetala* (Annonaceae). Amorph. $[\alpha]_D$ -130 (c, 1 in MeOH).

8-Oxo: ***8-Oxothaicanine***
$C_{21}H_{23}NO_6$ 385.416
Alkaloid from stems of *Coscinium fenestratum* (Menispermaceae). Gum. $[\alpha]_D$ -667 (c, 0.003 in $CHCl_3$). Tentative struct.; the 3-OH, 4-OMe struct. cannot be excluded.

8-Oxo, Me ether: ***4-Methoxy-8-oxotetrahydropalmatine****. 13,14-Dihydro-4-methoxyoxypalmatine*
$C_{22}H_{25}NO_6$ 399.443
Alkaloid from the stems of *Cocculus orbiculatus.* Amorph. yellow powder. $[\alpha]_D^{25}$ -214.6 (c, 0.9 in MeOH). λ_{max} 224 ; 279 ; 308 (MeOH).

(±)-*form* [126640-91-3]
Me ether:
Synthetic. Yellow solid. Mp 116-117°.
Ruangrungsi, N. *et al., J. Nat. Prod.*, 1986, **49**, 253 (*isol, uv, ir, pmr, cmr, ms, struct*)
Mali, R.S. *et al., Indian J. Chem., Sect. B*, 1989, **28**, 107 (*synth, uv, ir, pmr, cmr, ms, O-Methylthaicanine*)
Mali, R.S. *et al., Synth. Commun.*, 1989, **19**, 2613 (*synth*)
Janssen, R.H.A.M. *et al., Phytochemistry*, 1990, **29**, 3331 (*cmr*)
Lavault, M. *et al., Phytochemistry*, 1990, **29**, 3845 (*Thaipetaline*)
Kanyinda, B. *et al., J. Nat. Prod.*, 1992, **55**, 607 (*N-Methylthaicanine, N,O-Dimethylthaicanine*)
Pinho, P.M.M. *et al., Phytochemistry*, 1992, **31**, 1403 (*8-Oxothaicanine*)
Chang, F.-R. *et al., J. Nat. Prod.*, 2005, **68**, 1056-1060 (*4-Methoxy-8-oxotetrahydropalmatine*)

Thaldimerine T-302

[11051-30-2]

$C_{40}H_{46}N_2O_9$ 698.811

Struct. not fully known. Aporphine-benzylisoquinoline dimer alkaloid. Alkaloid from *Thalictrum fendleri* (Ranunculaceae). Light-brown oil. Phenolic, contains 6,7-dimethoxyisoquinoline residue. Pmr shows 2 *N*-Me and 6-*O*-Me groups.
Shamma, M. *et al., J. Pharm. Sci.*, 1968, **57**, 262-268 (*isol, uv, pmr, ms*)

Thalebanin B T-303

3-Methylbutanoic acid N-*methyl*-N-*(2-phenylethenyl)amide.* N,*3-Dimethyl*-N-*(2-phenylethenyl)butanamide, 9CI*
$(H_3C)_2^3CH^2CH_2CONMeCH{=}CHPh$
$C_{14}H_{19}NO$ 217.31

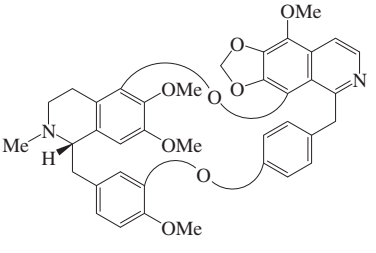
(*E*)-*form*
2,3-Didehydro: ***Dehydrothalebanin A****. 3-Methyl-2-butenoic acid* N-*methyl*-N-*(2-phenylethyl)amide*
[184101-55-1]
$C_{14}H_{17}NO$ 215.294
Isol. from leaves of *Glycosmis crassifolia*. Exhibits antifungal activity. λ_{max} 221 (log ε 4.08); 296 (log ε 4.18); 305 (sh) (log ε 4.15) (Et_2O).

(*Z*)-*form* [184101-54-0]
Isol. from leaves of *Glycosmis crassifolia*. Exhibits antifungal activity. λ_{max} 216 (log ε 4.04); 270 (log ε 4.08) (Et_2O).

2,3-Didehydro: ***Dehydrothalebanin B***
[184101-52-8]
$C_{14}H_{17}NO$ 215.294
From leaves of *Glycosmis crassifolia* and *Glycosmis pentaphylla*. Exhibits antifungal activity. λ_{max} 221 (log ε 4.06); 281 (log ε 3.92) (Et_2O).
Greger, H. *et al., J. Nat. Prod.*, 1996, **59**, 1163-1168 (*isol, uv, ir, pmr, cmr, ms*)
Shapiro, J.P. *et al., J. Agric. Food Chem.*, 2000, **48**, 4404-4409 (*isol*)

Thalfine T-304

Thalphine

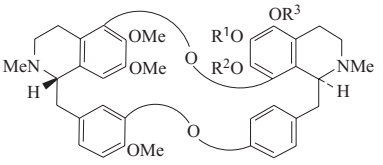


$C_{38}H_{36}N_2O_8$ 648.711

(*S*)-*form* [27764-05-2]
Alkaloid from the roots of *Thalictrum foetidum* and *Thalictrum minus* (Ranunculaceae). Antiseptic agent. Yellow prisms (MeOH). Mp 150-151° (141-142°). $[\alpha]_D^{26}$ +85 (c, 0.35 in MeOH). Log P 8.57 uncertain value (calc).
Abdizhabbarova, S. *et al., Khim. Prir. Soedin.*, 1968, **4**, 330; 1970, **6**, 279; *Chem. Nat. Compd. (Engl. Transl.)*, 1968, **4**, 281; 1970, **6**, 281 (*isol, uv, pmr, struct*)
Shamma, M. *et al., Heterocycles*, 1976, **4**, 1817 (*abs config*)
Liao, W.-T. *et al., J. Nat. Prod.*, 1978, **41**, 257 (*isol, ms, cd, config*)
Moiseeva, G.P. *et al., Khim. Prir. Soedin.*, 1979, **15**, 818; *Chem. Nat. Compd. (Engl. Transl.)*, 1979, **15**, 723 (*cd, abs config*)

Thalfinine T-305

Thalphinine
[27764-06-3]



R^1R^2 = $-CH_2-$, R^3 = Me

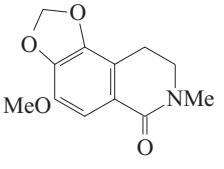
$C_{39}H_{42}N_2O_8$ 666.769
Alkaloid from the roots of *Thalictrum foetidum* and *Thalictrum minus* Race B, and from *Thalictrum faberi* (Ranunculaceae). Antiseptic. Amorph. Mp 117-118°. $[\alpha]_D^{16}$ +115 (c, 0.95 in EtOH) (c, 0.25 in MeOH). Log P 7.7 (uncertain value) (calc).

Hydrochloride (1:2):
Prisms. Mp 223-226° dec.

Perchlorate (1:2):
Needles. Mp 234-235° dec. $[\alpha]_D^{21}$ +135 (c, 1.16 in 2:1 EtOH/H_2O).
Abdizhabbarova, S. *et al., Khim. Prir. Soedin.*, 1968, **4**, 330; 1970, **6**, 279; *Chem. Nat. Compd. (Engl. Transl.)*, 1968, **4**, 281; 1970, **6**, 281 (*isol, uv, ir, pmr, struct*)
Shamma, M. *et al., Heterocycles*, 1976, **4**, 1817 (*abs config*)
Liao, W.-T. *et al., J. Nat. Prod.*, 1978, **41**, 257 (*isol, uv, pmr, ms, cd, config*)

Thalflavine T-306

8,9-Dihydro-4-methoxy-7-methyl-1,3-dioxolo[4,5-f]isoquinolin-6(7H)-one, 9CI. 3,4-Dihydro-7-methoxy-2-methyl-5,6-methylenedioxy-1(2H)-isoquinolinone
[125617-79-0]



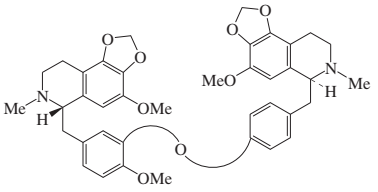
$C_{12}H_{13}NO_4$ 235.239
Struct. revised in 1989. Isomeric 5-methoxy-6,7-methylenedioxy struct. originally proposed. Alkaloid from the roots of *Thalictrum flavum* (Ranunculaceae). Also obt. by the $KMnO_4$ oxidn. of the bisbenzylisoquinolines Thalicracebine, Thalistyline and Thalmelatidine. Needles (MeOH or C_6H_6/petrol). Mp 140°.

[30278-27-4]

Umarov, Kh.S. *et al., Khim. Prir. Soedin.*, 1970, **6**, 444; *Chem. Nat. Compd. (Engl. Transl.)*, 1970, **6**, 452 (*isol, ir, pmr, ms*)
Wu, W.-N. *et al., J. Nat. Prod.*, 1977, **40**, 281; 1980, **43**, 472 (*synth, uv, ir, pmr, ms*)

Liao, W.-T. *et al., J. Nat. Prod.*, 1978, **41**, 257 (*synth*)
Aly, Y. *et al., Phytochemistry*, 1989, **28**, 1967 (*struct*)

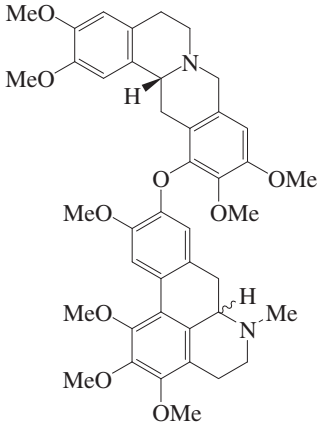
Thaliatrine T-307



$C_{39}H_{42}N_2O_8$ 666.769
Alkaloid from the roots of *Thalictrum atriplex*. Amorph. powder. Mp 89-90°. $[\alpha]_D$ +42.2 (c, 0.9 in $CHCl_3$). λ_{max} 210 ; 274 (MeOH).

Gao, G.-Y. *et al., J. Asian Nat. Prod. Res.*, 2005, **7**, 805-809 (*isol, cd, pmr, cmr, ms*)

Thalibealine T-308

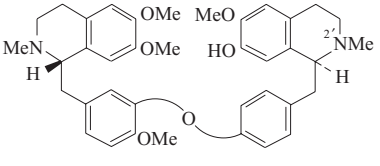


$C_{42}H_{48}N_2O_9$ 724.849
Alkaloid from the roots of *Thalictrum wangii*. Amorph. $[\alpha]_D^{24}$ -162 (c, 0.5 in $CHCl_3$). λ_{max} 210 (log ϵ 4.8); 223 (sh) (log ϵ 4.69); 281 (log ϵ 4.37); 300 (log ϵ 4.21); 303 (sh) (log ϵ 4.19); 312 (log ϵ 4.17) (MeOH).

Al-Howiriny, T.A. *et al., J. Nat. Prod.*, 2001, **64**, 819-822

Thalibrine T-309

2′-N-*Methylnorthalibrine*
[59614-34-5]



$C_{38}H_{44}N_2O_6$ 624.775
Alkaloids covered by this entry are enantiomeric with those in Dauricine, D-88 (*R,R*-config.) and diastereomeric with those covered by Berbamunine, B-98 (1*R*,1′*S*-config.) and Grisabine, G-177 (1*S*,1′*R*-config.). Alkaloid from the roots of *Thalictrum rochebrunianum* and *Thalictrum longistylum* (Ranunculaceae). Antiseptic. Amorph. powder. $[\alpha]_D$ +110 (c, 0.135 in $CHCl_3$). Log P 6.67 (calc). λ_{max} 282 (ϵ 9000) (MeOH) (Berdy).

2′-N-*De-Me:* ***Northalibrine***
[59614-33-4]
$C_{37}H_{42}N_2O_6$ 610.749
Alkaloid from the roots of *Thalictrum rochebrunianum* (Ranunculaceae). Amorph. powder. $[\alpha]_D$ +47 (c, 0.2 in $CHCl_3$).

Me ether: **O-*Methylthalibrine***
[59654-05-6]
$C_{39}H_{46}N_2O_6$ 638.802
Alkaloid from roots of *Thalictrum minus* Race B (Ranunculaceae). Shows antimicrobial activity. Antiseptic. Amorph. $[\alpha]_D$ +82 (c, 0.36 in $CHCl_3$). Log P 6.95 (calc). Enantiomeric with *O*-Methyldauricine. λ_{max} 280 (ϵ 10500); 285 (ϵ 10250) (MeOH) (Berdy).

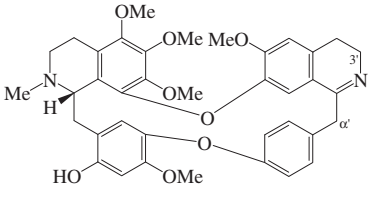
$O^{7'}$-*De-Me,* O^{7}-*Me:* ***Neothalibrine***
[73609-03-7]
$C_{38}H_{44}N_2O_6$ 624.775
Alkaloid from the fruit of *Thalictrum revolutum* (Ranunculaceae). Amorph. $[\alpha]_D^{27}$ +155 (c, 0.5 in MeOH).

$O^{7'}$-*De-Me,* O^{7}-*Me, 2′*-N-*Oxide (α-):* ***Neothalibrine 2′α*-N-*oxide***
[112448-45-0]
$C_{38}H_{44}N_2O_7$ 640.775
Alkaloid from *Thalictrum cultratum* (Ranunculaceae). Amorph. $[\alpha]_D$ +74 (c, 0.2 in MeOH).

O^{7},O^{12}-*Di-de-Me,* $N^{2'}$-*de-Me:* ***Northalibroline***. O^{7},O^{12}-*Didemethylnorthalibrine*
[120091-14-7]
$C_{35}H_{38}N_2O_6$ 582.695
Alkaloid from the roots and rhizomes of *Thalictrum minus* var. *minus* (Ranunculaceae). Enantiomer of Pedroamine in D-88.

Saá, J.M. *et al., Heterocycles*, 1976, **4**, 753 (*Thalibrine, O-Methylthalibrine, Northalibrine, uv, ir, pmr, ms, struct, synth*)
Wu, W.-N. *et al., J. Nat. Prod.*, 1977, **40**, 281; 1980, **43**, 270; 472-481 (*Thalibrine, Methylthalibrine, Neothalibrine, isol, uv, cd, ir, pmr, ms, struct, activity*)
Herath, W.H.M.W. *et al., J. Nat. Prod.*, 1987, **50**, 721 (*Neothalibrine 2′-oxide*)
Başer, K.H.C. *et al., Planta Med.*, 1988, **54**, 513 (*Northalibroline*)

Thalibrunimine T-310



$C_{38}H_{40}N_2O_8$ 652.743
Struct. revised in 1980.

(*S*)-*form* [59553-87-6]
Alkaloid from the roots of *Thalictrum rochebrunianum* (Ranunculaceae). Needles (MeOH). Mp 198-200°. $[\alpha]_D$ +28 (c, 0.19 in $CHCl_3$).

Me ether: **O-*Methylthalibrunimine***
[75956-50-2]
$C_{39}H_{42}N_2O_8$ 666.769
Alkaloid from *Thalictrum rochebrunianum* roots (Ranunculaceae). Cryst. ($CHCl_3$). Mp 183-185°. $[\alpha]_D$ -103.7 (c, 0.5 in $CHCl_3$). Struct. assignment doubtful due to inconsistent publ. pmr and ms (only 5 OMe groups reported in pmr; parent m/e cited as 665).

α′-Oxo: Oxothalibrunimine
[72187-00-9]
$C_{38}H_{38}N_2O_9$ 666.726
Alkaloid from the roots of *Thalictrum rochebrunianum*, also obt. by air oxidn. of Thalibrunimine, T-310 (Ranunculaceae). Mp 198-200° dec. $[\alpha]_D^{22}$ -70 (c, 0.25 in MeOH).

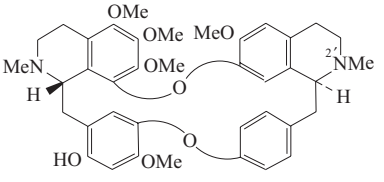
α′-Oxo, 3′,4′-didehydro: ***Thalictrinine***
[72187-01-0]
$C_{38}H_{36}N_2O_9$ 664.71
Trace alkaloid from the roots of *Thalictrum rochebrunianum*, also obt. by Pd/C oxidn. of Thalibrunimine, T-310 (Ranunculaceae). Shows strong antiflammatory activity, weak antitumour agent. Cryst. (Me_2CO). Mp 199-201° dec. $[\alpha]_D^{22}$ -255 (c, 0.24 in MeOH).

α′-S-*Hydroxy, 3′,4′-didehydro:* ***Dihydrothalictrinine***
[72187-02-1]
$C_{38}H_{38}N_2O_9$ 666.726
Minor alkaloid from the roots of *Thalictrum rochebrunianum* (Ranunculaceae). Mp 194-197°. $[\alpha]_D^{22}$ -125 (c, 0.13 in MeOH).

Saá, J.M. *et al., Tet. Lett.*, 1976, 513 (*uv, pmr, ms*)
Ahmad, R. *et al., Islamabad J. Sci.*, 1978, **5**, 38; *CA*, **94**, 30976f (*O-Methylthalibrunimine*)
Wu, J. *et al., J.O.C.*, 1980, **45**, 208; 213 (*Thalictrinine, Dihydrothalictrinine, Thalibrunimine, Oxothalibrunimine, !struct, synth*)

Thalibrunine T-311

5,6,6′,7,12-Pentamethoxy-2,2′-dimethylberbaman-14-ol, 9CI
[11021-81-1]



$C_{39}H_{44}N_2O_8$ 668.785
Struct. revised in 1980. Alkaloid from the roots of *Thalictrum rochebrunianum* (Ranunculaceae). Mp 172-173°. $[\alpha]_D^{28}$ +160 (c, 0.9 in MeOH).

Ac:
Needles (EtOAc). Mp 236-237°. $[\alpha]_D^{22}$ +161 (c, 0.26 in MeCN).

$N^{2'}$-*De-Me:* **N′-*Northalibrunine***. *2′-Demethylthalibrunine*
[59553-88-7]
$C_{38}H_{42}N_2O_8$ 654.758
Alkaloid from roots of *Thalictrum rochebrunianum*, also obt. by redn. of Thalibrunimine, T-310 (Ranuncula-

ceae). Needles (Me_2CO). Mp 158-161°. $[\alpha]_D^{20}$ +79 (c, 0.16 in MeOH).

Fong, H.H.S. *et al., J. Nat. Prod.*, 1966, **29**, 94 (*isol, uv*)

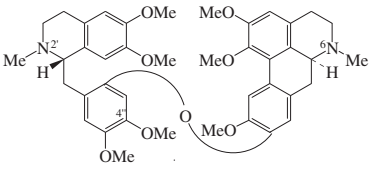
Cava, M.P. *et al., Tet. Lett.*, 1974, 4259 (*cd, pmr, ms*)

Wu, J. *et al., J.O.C.*, 1980, **45**, 208; 213 (*isol, struct, pmr, deriv, synth*)

Thalicarpine T-312

Thaliblastine. NSC 68075

[5373-42-2]



$C_{41}H_{48}N_2O_8$ 696.839

Alkaloid from *Thalictrum dasycarpum, Thalictrum minus*, several other *Thalictrum* spp. and *Hernandia ovigera* (Ranunculaceae, Hernandiaceae). Antihypertensive agent acting *via* nonspecific and myocardial depression. Shows antibacterial activity against *M. smegmatis*, but not against other bacterial species studied. Shows *in vitro* antineoplastic activity against HeLa-S_3 cells and Walker 256 carcinoma. Cryst. (EtOH aq. or Et_2O). Mp 108-110° Mp 160-161° Mp 155-157° (dimorph.). $[\alpha]_D$ +133 (MeOH). Log P 6.09 (uncertain value) (calc).

► LD_{50} (rat, orl) 1500 mg/kg. LD_{50} (rat, ipr) 140 mg/kg. HQ1775000

$N^{2'}$-*Oxide:* ***Thalicarpine 2'-N-oxide***
$C_{41}H_{48}N_2O_9$ 712.838
Alkaloid from the bark of *Hernandia peltata* (Hernandiaceae). $[\alpha]_D$ +15 (c, 0.14 in $CHCl_3$).

N^6-*De-Me:* ***6-Northalicarpine***
$C_{40}H_{46}N_2O_8$ 682.812
Alkaloid from the bark of *Hernandia peltata* (Hernandiaceae).

$N^{2'}$-*De-Me:* ***Northalicarpine***
[56021-86-4]
$C_{40}H_{46}N_2O_8$ 682.812
Alkaloid from the roots of *Thalictrum revolutum* (Ranunculaceae). Amorph. $[\alpha]_D^{21}$ +108 (c, 0.25 in MeOH).

O^1-*De-Me:* ***Thalictropine***
[39032-60-5]
$C_{40}H_{46}N_2O_8$ 682.812
Alkaloid from *Thalictrum polygamum* and *Thalictrum dioicum*. Needles (MeOH). Mp 167°. $[\alpha]_D^{25}$ +120 (c, 0.3 in MeOH). Extremely susceptible to aerial oxidn.

O^1-*De-Me, Ac:*
Cryst. (MeOH). Mp 182-183°.

$O^{6'}$-*De-Me:* ***Thalilutidine***
[66408-23-9]
$C_{40}H_{46}N_2O_8$ 682.812
Minor alkaloid from the roots of *Thalictrum revolutum* (Ranunculaceae). Amorph. $[\alpha]_D^{20}$ +74.2 (c, 0.11 in MeOH). λ_{max} 280 (ϵ 24000); 304 (ϵ 16000) (MeOH) (Berdy).

$O^{7'}$-*De-Me:* ***Thalmelatine***
[5308-77-0]
$C_{40}H_{46}N_2O_8$ 682.812
Alkaloid from *Thalictrum dioicum, Thalictrum minus* ssp. *elatum*, and the roots, fruits and tops of *Thalictrum revolutum* (Ranunculaceae). Shows hypotensive activity. Shows antibacterial activity against *Mycobacterium smegmatis*. Cryst. (Et_2O). Mp 110-112° Mp 120-123°. Log P 5.82 (uncertain value) (calc). λ_{max} 287 ; 302 (MeOH) (Berdy).

$O^{4''}$-*De-Me:* ***Thalidoxine***
[50802-24-9]
$C_{40}H_{46}N_2O_8$ 682.812
Alkaloid from *Thalictrum dioicum* (Ranunculaceae). Amorph. $[\alpha]_D^{25}$ +113 (c, 0.2 in MeOH). Isomer of Pennsylvanine. In a subsequent reinvestigation of *T. dioicum*, no thalidoxine was obtd.

$O^{4''}$-*De-Me, Ac:*
Cryst. ($CHCl_3$). Mp 128-129°.

$O^{5''}$-*De-Me:* ***Pennsylvanine***
[53466-31-2]
$C_{40}H_{46}N_2O_8$ 682.812
Alkaloid from *Thalictrum polygamum, Thalictrum dioicum* and the roots and tops of *Thalictrum revolutum* (Ranunculaceae). Shows antibacterial activity against *Mycobacterium smegmatis*. Cryst. (Et_2O). Mp 112-113°. $[\alpha]_D^{24}$ +131 (c, 0.7 in MeOH). Isomer of Thalidoxine. λ_{max} 281 ; 303 (MeOH) (Berdy). λ_{max} 282 ; 305 ; 320 (MeOH-NaOH) (Berdy).

$O^{5''}$-*De-Me, Ac:*
Cryst. (Et_2O). Mp 137-138°.

$O^1,O^{7'}$-*Di-de-Me:* ***Thalictrogamine***
[41928-76-1]
$C_{39}H_{44}N_2O_8$ 668.785
Alkaloid from *Thalictrum polygamum* and *Thalictrum dioicum*, and from the tops of *Thalictrum revolutum* (Ranunculaceae). Amorph. $[\alpha]_D^{25}$ +135 (c, 0.2 in MeOH). Susceptible to aerial oxidn, turns green on standing.

$O^1,O^{7'}$-*Di-de-Me, di-Ac:*
Cryst. (Et_2O). Mp 147-148°.

$O^1,O^{5''}$-*Di-de-Me:* ***Pennsylvanamine***
[53416-85-6]
$C_{39}H_{44}N_2O_8$ 668.785
Alkaloid from *Thalictrum polygamum* (Ranunculaceae). Fine needles (Me_2CO/Et_2O), prisms (Et_2O). Mp 107-108° Mp 128-129°.

$O^1,O^{5''}$-*Di-de-Me, di-Ac:*
Cryst. (Et_2O). Mp 147-148°.

$O^{7'},O^{5''}$-*Di-de-Me:* ***Thalipine***
[62724-08-7]
$C_{39}H_{44}N_2O_8$ 668.785
Alkaloid from *Thalictrum polygamum, Thalictrum minus* and the fruits and tops of *Thalictrum revolutum* (Ranunculaceae). Amorph. $[\alpha]_D^{25}$ +141 (c, 0.19 in MeOH). λ_{max} 282 (MeOH) (Berdy).

Didehydro: see Dehydrothalicarpine, D-170

Kupchan, S.M. *et al., J. Polym. Sci.*, 1963, **52**, 985 (*Thalicarpine*)

Mollov, N.M. *et al., Tet. Lett.*, 1964, 2219 (*Thalmelatine*)

Tomita, M. *et al., Tet. Lett.*, 1965, 4309 (*Thalicarpine*)

Kupchan, S.M. *et al., J.A.C.S.*, 1973, **95**, 2995 (*synth, Thalicarpine*)

Wu, J. *et al., J. Nat. Prod.*, 1977, **40**, 508 (*Thalictrogamine, Thalmelatine, Thalipine, Pennysylvanine, Pennsylvanamine*)

Wu, J. *et al., J. Nat. Prod.*, 1977, **40**, 508; 593 (*Thalictrogamine, Thalmelatine, Thalipine, Pennsylvanine, Pennsylvanamine*)

Wu, W.N. *et al., Tetrahedron*, 1977, **33**, 2919 (*Thalilutidine*)

Shamma, M. *et al., J. Nat. Prod.*, 1978, **41**, 169 (*Thalictogamine, Thalictropine, Thalmelatine, Thalidoxine, Pennsylvanine, Pennsylvanamine*)

Wu, W.N. *et al., J. Nat. Prod.*, 1980, **43**, 567 (*Northalicarpine*)

Sidjimov, A. *et al., Phytochemistry*, 1982, **21**, 871 (*biosynth*)

Bhakuni, D.S. *et al., Tetrahedron*, 1982, **38**, 729 (*biosynth*)

Suffness, M. *et al., Alkaloids (Academic Press)*, 1985, **25**, 173 (*rev, pharmacol, Thalicarpine*)

Chalandre, M.C. *et al., Can. J. Chem.*, 1986, **64**, 123 (*synth, uv, Dehydrothalimelatine, 6-Northalicarpine, Thalicarpine oxide*)

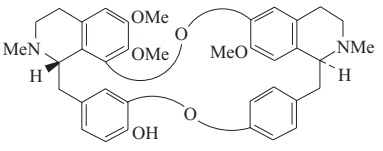
Chen, G. *et al., Cancer Lett. (Shannon, Irel.)*, 1992, **62**, 173 (*pharmacol, Thalicarpine*)

Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, (*TEH250*)

Thalicberine T-313

Dihydrothalmethine

[602-83-5]



$C_{37}H_{40}N_2O_6$ 608.733

Diastereoisomeric with Isothalicberine, I-329. Alkaloid from the stems and leaves of *Thalictrum thunbergii* and the roots of *Thalictrum lucidum* and *Thalictrum minus* (Ranunculaceae). Shows weak *in vivo* antitubercular activity. Needles + $1H_2O$. Mp 161°. $[\alpha]_D$ +231.2 ($CHCl_3$). $[\alpha]_D^{25}$ +210 (c, 0.02 in MeOH). Log P 7.83 (uncertain value) (calc).

► LD_{50} (mus, ipr) 125 mg/kg. XG2001000

Me ether: **O-*Methylthalicberine***. *Thalmidine*
[5096-71-9]
$C_{38}H_{42}N_2O_6$ 622.76
Alkaloid from the stems and leaves of *Thalictrum thunbergii* and other *Thalictrum* spp. (Ranunculaceae). Weak antineoplastic agent. Antiinflammatory, antihypertensive agent. Mp 186-187°. $[\alpha]_D^{19}$ +244.6. Log P 8.4 (uncertain value) (calc).

► LD_{50} (mus, ipr) 125 mg/kg. XG2003000

Me ether, dipicrate: Mp 188-199° dec. $[\alpha]_D^{25}$ +140 (c, 0.3 in $CHCl_3$).

O^7-*De-Me:* ***Thalivarmine***. *7-O-Demethylthalicberine*
[101312-86-1]
$C_{36}H_{38}N_2O_6$ 594.706
Alkaloid from the above-ground parts of *Thalictrum minus* var. *minus* (Ranunculaceae).

O^7-*De-Me,* O^{12}-*Me:* ***Thaliphylline***
[93780-79-1]
$C_{37}H_{40}N_2O_6$ 608.733

Alkaloid from the roots and rhizomes of *Thalictrum minus* var. *microphyllum* (Ranunculaceae). $[\alpha]_D^{25}$ +198 (c, 0.12 in MeOH).

O^7-*De-Me,* O^{12}-*Me, 2′-β*-N-*oxide:* ***Thaliphylline 2′β*-N-*oxide***
[112464-19-4]
$C_{37}H_{40}N_2O_7$ 624.732
Alkaloid from *Thalictrum cultratum* (Ranunculaceae). Amorph. $[\alpha]_D$ +257 (c, 0.7 in MeOH).

O^7-*De-Me,* O^{12}-*Me,* N$^{2'}$-*de-Me:* ***2′-Northaliphylline***
[105418-70-0]
$C_{36}H_{38}N_2O_6$ 594.706
Alkaloid from *Thalictrum cultratum* (Ranunculaceae). Also obt. by $NaBH_4$ redn. of Thalsivasine in T-339. Amorph. $[\alpha]_D$ +197 (c, 0.15 in MeOH).

Yunusov, S. *et al., Zh. Obshch. Khim.*, 1950, **20**, 1151; *CA*, **45**, 1608c (*isol, deriv*)
Fujita, E. *et al., Yakugaku Zasshi*, 1959, **79**, 1256; 1260; 1963, **83**, 159; *CA*, **54**, 4643h; 4644b; **59**, 3971f (*struct*)
Tomimatsu, T. *et al., Yakugaku Zasshi*, 1963, **83**, 153; *CA*, **59**, 3971b (*struct*)
DeJongh, D.C. *et al., J.A.C.S.*, 1966, **88**, 1052 (*ms, deriv*)
Ismailov, Z.F. *et al., Khim. Prir. Soedin.*, 1968, **4**, 256; *Chem. Nat. Compd. (Engl. Transl.)*, 1968, **4**, 220 (*ms, deriv*)
Doskotch, R.W. *et al., J. Nat. Prod.*, 1969, **32**, 29 (*isol, deriv*)
Moiseeva, G.P. *et al., Khim. Prir. Soedin.*, 1970, **6**, 705; *Chem. Nat. Compd. (Engl. Transl.)*, 1970, **6**, 715 (*ord, deriv*)
Duchevska, Kh.B. *et al., Dokl. Bulg. Akad. Nauk*, 1971, **24**, 467; *CA*, **75**, 106101x (*isol*)
Fujita, E. *et al., Chem. Pharm. Bull.*, 1972, **20**, 368 (*synth, pmr, ms, deriv*)
Baldas, J. *et al., J.C.S. Perkin 1*, 1972, 597 (*ms*)
Wu, W.-N. *et al., J. Nat. Prod.*, 1976, **39**, 204; 378; 1977, **40**, 508 (*isol, uv, ir, pmr, cd*)
Moiseeva, G.P. *et al., Khim. Prir. Soedin.*, 1979, **15**, 818; *Chem. Nat. Compd. (Engl. Transl.)*, 1979, **15**, 723 (*cd, abs config*)
Wu, J. *et al., J. Nat. Prod.*, 1980, **43**, 270 (*isol, pmr, deriv*)
Guinaudeau, H. *et al., Tetrahedron*, 1984, **40**, 1975 (*Thaliphylline*)
Baser, K.H.C. *et al., Planta Med.*, 1985, 448 (*Thalivarmine*)
Hussain, S.F. *et al., J. Nat. Prod.*, 1986, **49**, 488 (*2′-Northaliphylline, synth*)
Herath, W.H.M.W. *et al., J. Nat. Prod.*, 1987, **50**, 721 (*2′-Northaliphylline, 2′-Northaliphylline N-oxide*)

Thalicflavine T-314

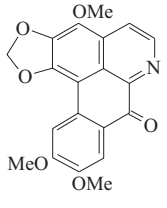
[37274-00-3]

Struct. unknown. Alkaloid from *Thalictrum flavum*.

Vichkanova, S.A. *et al., CA*, 1973, **78**, 66905r

Thalicminine T-315

3,9,10-Trimethoxy-1,2-methylenedioxyoxoaporphine
[16408-77-8]



$C_{20}H_{15}NO_6$ 365.342
Alkaloid from *Thalictrum* spp. and *Ocotea puberula*. Respiratory stimulant, transient hypotensive agent. Golden-orange cryst. (MeOH/$CHCl_3$). Mp 263-265° (274-277°). λ_{max} 254 (log ϵ 4.7); 280 (log ϵ 4.53); 357 (log ϵ 4.43); 452 (log ϵ 3.4) (EtOH).

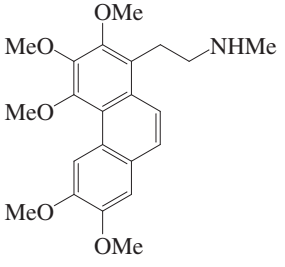
O^9-*De-Me:* ***Isofiliformine***
$C_{19}H_{13}NO_6$ 351.315
Alkaloid from *Cassytha filiformis.* Amorph. red powder ($CHCl_3$/MeOH). Mp > 300°. λ_{max} 250 (log ϵ 3.67); 281 (log ϵ 3.73); 356 (log ϵ 3.16); 461 (log ϵ 2.96) (MeOH). λ_{max} 257 (log ϵ 3.9); 294 (log ϵ 4.03); 389 (log ϵ 3.32); 536 (log ϵ 3.04) (MeOH/NaOH).

O^{10}-*De-Me:* ***Filiformine***†
[208252-25-9]
$C_{19}H_{13}NO_6$ 351.315
Alkaloid from *Cassytha filiformis.* Amorph. red powder ($CHCl_3$). Mp 318-320°. λ_{max} 250 (log ϵ 4.11); 279 (log ϵ 4.2); 320 (log ϵ 4.03); 406 (log ϵ 3.27) (MeOH).

Pulatova, K.G. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1966, **2**, 349-350 (*isol, ir, uv*)
Baralle, F.N. *et al., Phytochemistry*, 1973, **12**, 948-949 (*isol, ir, uv, pmr, ms*)
Chang, F.R. *et al., J. Nat. Prod.*, 1998, **61**, 863-866 (*Filiformine*)
Tsai, T.-H. *et al., J. Nat. Prod.*, 2008, **71**, 289-291 (*Isofiliformine*)

Thalicpureine T-316

2,3,4,6,7-Pentamethoxy-N-*methyl-1-phenanthrenemethanamine, 9CI. 2,3,4,6,7-Pentamethoxy-1-(2-methylaminoethyl)-phenanthrene*
[218900-91-5]

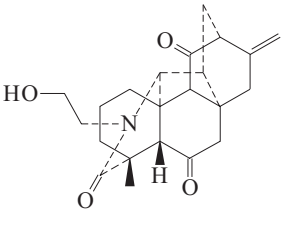


$C_{22}H_{27}NO_5$ 385.459
Alkaloid from the leaves of *Annona purpurea* (soncoya). Antiplatelet aggregation agent. Yellow needles ($CHCl_3$). Mp 196-197°. λ_{max} 220 ; 264 ; 308 ; 326 ; 345 ; 358 (sh) (EtOH).

Chang, F.-R. *et al., J. Nat. Prod.*, 1998, **61**, 1457-1461 (*isol, uv, pmr, cmr, ms*)

Thalicsessine T-317

[113807-86-6]



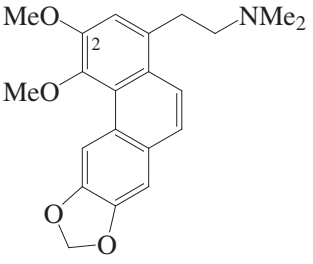
$C_{22}H_{27}NO_4$ 369.46
Alkaloid from the roots of *Thalictrum sessile* (Ranunculaceae). Prisms (MeOH). Mp 213-216°. $[\alpha]_D^{25}$ +113 (c, 0.2 in $CHCl_3$).

N-*De(2-hydroxyethyl),* N-*Me:* ***Carduchorone***
[240121-82-8]
$C_{21}H_{25}NO_3$ 339.433
Alkaloid from *Delphinium carduchorum*.

Wu, Y.-C. *et al., Heterocycles*, 1987, **26**, 943-946 (*Thalicsessine*)
Mericli, A.H. *et al., Phytochemistry*, 1999, **51**, 337-340 (*Carduchorone*)

Thalicthuberine T-318

1,2-Dimethoxy-N,N-*dimethylphenanthro[2,3-*d*][1,3]dioxole-4-ethanamine, 9CI. 1-(2-Dimethylaminoethyl)-3,4-dimethoxy-6,7-methylenedioxyphenanthrene. Thalictuberine*
[477-35-0]



$C_{21}H_{23}NO_4$ 353.417
Aporphine-derived numbering shown. Alkaloid from the roots of *Thalictrum thunbergii* and *Thalictrum rugosum*, and from the roots and rhizomes of *Thalictrum strictum* (Ranunculaceae). Shows a wide range of *in vitro* antimicrobial activity. Needles (Et_2O). Sol. MeOH, H_2O; fairly sol. hexane. Mp 126-127°. λ_{max} 216 (log ϵ 4.22); 261 (log ϵ 4.78); 288 (log ϵ 4.28); 310 (log ϵ 4.01); 322 (log ϵ 3.99); 347 (log ϵ 3.25); 364 (log ϵ 3.21) (MeOH).

Hydrochloride:
Needles + 0.5H_2O. Mp 209-210°.

N-*Oxide:* ***Thalicthuberine* N-*oxide***
[149472-49-1]
$C_{21}H_{23}NO_5$ 369.416
Alkaloid from aerial parts of *Platycapnos spicata* (Papaveraceae). Prisms (EtOH). Mp 112-114°.

N-*De-Me:* ***Northalicthuberine***
[160568-07-0]
$C_{20}H_{21}NO_4$ 339.39
Alkaloid from aerial parts of *Thalictrum simplex* (Ranunculaceae).

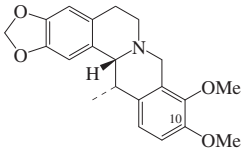
N-*De-Me,* N-*hydroxy:* **N-*Hydroxy-northalicthuberine***
[177413-38-6]
$C_{20}H_{21}NO_5$ 355.39
Alkaloid from aerial parts of *Thalictrum simplex*.

O^2-*De-Me:* ***2*-O-*Demethylthalicthuberine***. *3*-O-*Demethylthalicthuberine*

[154814-42-3]
$C_{20}H_{21}NO_4$ 339.39
Alkaloid from leaves of *Ocotea insularis* (Lauraceae). Mp 182-184°.

Fujita, E. *et al., Yakugaku Zasshi*, 1959, **79**, 1252; *CA*, **54**, 4643f (*isol, uv, ir, struct*)
Maekh, S.Kh. *et al., Khim. Prir. Soedin.*, 1976, **12**, 560; *Chem. Nat. Compd. (Engl. Transl.)*, 1976, **12**, 507 (*isol*)
Wu, W.-N. *et al., J. Nat. Prod.*, 1980, **43**, 143 (*isol, pmr*)
Hasbun, C. *et al., Fitoterapia*, 1993, **64**, 440 (*3-O-Demethylthalicthuberine*)
Blanco, O.M. *et al., Phytochemistry*, 1993, **32**, 1055 (*oxide*)
Velcheva, M.P. *et al., Planta Med.*, 1994, **60**, 485 (*Northalicthuberine*)
Velcheva, M.P. *et al., Phytochemistry*, 1996, **42**, 535 (*N-Hydroxynorthalicthuberine*)
Nimgirawath, S. *et al., J. Chin. Chem. Soc. (Taipei)*, 2006, **53**, 443-447 (*synth, uv, pmr, cmr*)

Thalictricavine T-319



(+)-*form*

$C_{21}H_{23}NO_4$ 353.417

(+)-*form* [29550-24-1]
Alkaloid from *Corydalis tuberosa* and *Corydalis cava* (Papaveraceae). Mp 148-149° (darkens). $[\alpha]_D^{23}$ +291.9 (c, 0.555 in $CHCl_3$).

O^{10}-*De-Me:* ***Epiapocavidine***
$C_{20}H_{21}NO_4$ 339.39
Alkaloid from *Corydalis tuberosa* (Papaveraceae). Noncryst. No opt. rotn. reported. Not the epimer of Apocavidine.

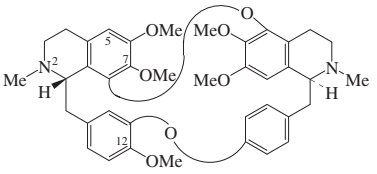
(±)-*form*
Alkaloid from *Corydalis cava*, also obt. by racemisation of the (+)-form (Papaveraceae). Mp 209-210° (204-206°).

O^{10}-*De-Me:*
V. pale yellow cryst. Mp 230° (prior dec.).

Manske, R.H.F. *et al., J.A.C.S.*, 1953, **75**, 4928 (*isol, struct*)
Manske, R.H.F. *et al., An. R. Soc. Esp. Fis. Quim., Ser. B*, 1972, **68**, 689 (*Epiapocavidine*)
Taka, N. *et al., Chem. Pharm. Bull.*, 1976, **24**, 3185; 1977, **25**, 1426 (*ir, cmr, conformn*)
Kametani, T. *et al., J.C.S. Perkin 1*, 1977, 1151 (*synth*)
Slavik, J. *et al., Coll. Czech. Chem. Comm.*, 1979, **44**, 2261 (*isol*)
Cushman, M. *et al., J.O.C.*, 1979, **44**, 407 (*synth*)
Iwasa, K. *et al., J.O.C.*, 1981, **46**, 4744 (*abs config, synth*)
Hanaoka, M. *et al., Chem. Comm.*, 1985, 1257 (*synth*)
Hanaoka, M. *et al., Chem. Pharm. Bull.*, 2000, **48**, 399-404
Marek, R. *et al., Magn. Reson. Chem.*, 2002, **40**, 687-692 (*N-15 nmr*)

Thalidasine T-320

6,6′,7,7′,12-Pentamethoxy-2,2′-dimethylthalidasan, 9CI. 12-O-*Methylthalfoetidine*
[16623-56-6]



$C_{39}H_{44}N_2O_7$ 652.786
Alkaloid from the roots of *Thalictrum dasycarpum*, *Thalictrum lucidum*, *Thalictrum revolutum*, *Thalictrum rugosum*, *Thalictrum alpinum*, *Thalictrum faberi* and *Thalictrum minus* Race B, and from the rhizomes of *Thalictrum foliolosum* (Ranunculaceae). Antineoplastic, antihypertensive and antibacterial agent. Shows *in vivo* activity against *Mycobacterium smegmatis*. Pale yellow amorph. powder. Mp 144-145° (105-107°). $[\alpha]_D^{27}$ -70 (c, 0.89 in MeOH). $[\alpha]_D^{28}$ -68 (c, 1.2 in $CHCl_3$). Log P 7.83 (uncertain value) (calc). λ_{max} 275 (ϵ 4560); 282 (ϵ 4530) (EtOH) (Derep). λ_{max} 275 (ϵ 4560); 285 (ϵ 4530) (MeOH) (Berdy).

▶ LD_{50} (mus, ivn) 120 mg/kg, LD_{50} (mus, ipr) 520 mg/kg. XG2005000

Oxalate:
Cryst. + $2.5H_2O$ (EtOH). Mp 160-162°. $[\alpha]_D^{26}$ -53 (c, 0.55 in MeOH).

Dipicrate:
Cryst. (EtOH). Mp 175-177°.

N^2-*α-Oxide:* ***Thalidasine 2α*-N-*oxide***
$C_{39}H_{44}N_2O_8$ 668.785
Alkaloid from *Thalictrum cultratum* (Ranunculaceae). Amorph. $[\alpha]_D$ +6 (c, 0.15 in MeOH).

N^2-*De-Me:* ***N*^{2}-*Demethylthalidasine***. *2-Northalidasine*
[78432-93-6]
$C_{38}H_{42}N_2O_7$ 638.759
Alkaloid from the roots of *Thalictrum faberi* (Ranunculaceae). Antineoplastic agent. Pale yellow amorph. powder. Mp 137-139°. $[\alpha]_D$ -86.9 (c, 0.414 in MeOH). Log P 7.02 (uncertain value) (calc).

N^2-*De-Me,* N^2-*formyl:* ***Thalrugosinone***
[73609-02-6]
$C_{39}H_{42}N_2O_8$ 666.769
Alkaloid from roots of *Thalictrum rugosum* and from *Thalictrum cultratum* (whole plant) (Ranunculaceae). Noncryst. $[\alpha]_D^{22}$ -42 (c, 0.30 in MeOH). Darkens on exp. to air.

O^7-*De-Me:* ***Thalrugosidine***
[33954-34-6]
$C_{38}H_{42}N_2O_7$ 638.759
Alkaloid from the roots of *Thalictrum rugosum*, *Thalictrum alpinum* and *Thalictrum foliolosum* (Ranunculaceae). Shows antibacterial activity. Needles (MeOH). Mp 175-176° (170-171°). $[\alpha]_D^{30}$ -185 (MeOH). λ_{max} 275 (ϵ 9800); 282 (ϵ 9800) (MeOH) (Berdy).

O^7-*De-Me,* N^2-*de-Me:* **N-*Demethylthalrugosidine***
[74683-04-8]
$C_{37}H_{40}N_2O_7$ 624.732
Alkaloid from roots of *Thalictrum alpinum* (Ranunculaceae). Needles (MeOH). Mp 205-206°. $[\alpha]_D^{21}$ -57 (c, 0.23 in MeOH).

O^7-*De-Me,* N^2-*de-Me,* N^2-*formyl:* ***Thalpindione***. *2-Formyl-2-northalidasine. 7-O-Demethylthalrugosinone*
[74690-97-4]
$C_{38}H_{40}N_2O_8$ 652.743
Alkaloid from the roots of *Thalictrum alpinum* (Ranunculaceae). Pale yellow amorph. solid. $[\alpha]_D^{21}$ -41.5 (c, 0.29 in MeOH). Struct. revised in 1985 (formerly assigned as $C_{37}H_{36}N_2O_9$).

O^{12}-*De-Me:* ***Thalfoetidine***. *Thalfetidine. Thalictrimine*†
[16687-93-7]
$C_{38}H_{42}N_2O_7$ 638.759
Alkaloid from the aerial parts of *Thalictrum foetidum* (Ranunculaceae). Antiinflammatory agent. Prisms + 0.5 Et_2O (Et_2O). Mp 168-170°. $[\alpha]_D^{21}$ -88.6 ($CHCl_3$). Log P 7.25 (uncertain value) (calc). λ_{max} 275 (ϵ 4560); 282 (ϵ 4530) (EtOH) (Derep).

O^7,O^{12}-*Di-de-Me:* ***Thaligosidine***
[64252-82-0]
$C_{37}H_{40}N_2O_7$ 624.732
Alkaloid from the roots of *Thalictrum rugosum* (Ranunculaceae). Antiseptic. Cryst. + $1.5H_2O$ (C_6H_6). Mp 175-177°. $[\alpha]_D^{20}$ -45 (c, 0.26 in MeOH). Log P 7 (uncertain value) (calc). λ_{max} 275 (ϵ 5230); 283 (ϵ 5250) (MeOH) (Berdy). λ_{max} 275 (ϵ 5620); 284 (ϵ 5760); 310 (ϵ 1670) (NaOH) (Berdy).

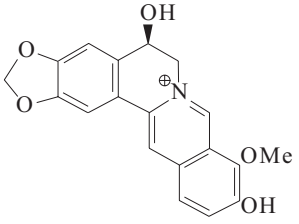
5-Hydroxy: ***5-Hydroxythalidasine***
$C_{39}H_{44}N_2O_8$ 668.785
Alkaloid from *Thalictrum cultratum* (Ranunculaceae). $[\alpha]_D$ -51 (c, 0.1 in MeOH).

5-Hydroxy, N^2-*α-oxide:* ***5-Hydroxythalidasine 2α*-N-*oxide***
$C_{39}H_{44}N_2O_9$ 684.785
Alkaloid from *Thalictrum cultratum* (Ranunculaceae). Amorph. $[\alpha]_D$ -11 (c, 0.4 in MeOH).

Mollov, N.M. *et al., Chem. Ind. (London)*, 1966, 1178 (*Thalfoetidine, isol, uv, ir, pmr*)
Kupchan, S.M. *et al., J.O.C.*, 1968, **33**, 1052; 1969, **34**, 3884 (*Thalidasine, isol, uv, pmr, ms, struct, config, synth*)
Ismailov, Z.F. *et al., Khim. Prir. Soedin.*, 1968, **4**, 256; *Chem. Nat. Compd. (Engl. Transl.)*, 1968, **4**, 220 (*Thalfoetidine, ms*)
Kupchan, S.M. *et al., J.O.C.*, 1969, **34**, 3884 (*Thalfoetidine, struct, config*)
Moisseva, G.P. *et al., Khim. Prir. Soedin.*, 1970, **6**, 705; *Chem. Nat. Compd. (Engl. Transl.)*, 1970, **6**, 715 (*ord*)
Mitscher, L.A. *et al., Dtsch. Apoth. -Ztg.*, 1971, **111**, 1704 (*activity*)
Georgiev, V.S. *et al., Phytochemistry*, 1971, **10**, 2161 (*Thalfoetidine, struct*)
Mitscher, L.A. *et al., J. Nat. Prod.*, 1972, **35**, 167 (*Thalidasine, Thalrugosidine, isol, uv, pmr*)
Baldas, J. *et al., J.C.S. Perkin 1*, 1972, 597 (*ms*)
Wu, W.-N. *et al., J. Nat. Prod.*, 1976, **39**, 204; 1977, **40**, 508; 1980, **43**, 143; 372 (*Thalidasine, N-Demethylthalrugosidine, Thalpindione*)

Liao, W.-T. *et al., J. Nat. Prod.*, 1978, **41**, 257 (*isol*)
Wu, W.-N. *et al., J.O.C.*, 1978, **43**, 580 (*Thalidasine, Thaligosidine, isol, uv, ir, ms, pmr, struct*)
Lin, L.-Z. *et al., CA*, 1981, **95**, 76882w; 86198s (N-*Demethylthalidasine*)
Chattopadhyay, S.K. *et al., J. Nat. Prod.*, 1981, **44**, 45 (*Thalrugosidine, isol, uv, cd, ir, pmr, ms*)
Bhakuni, D.S. *et al., J. Nat. Prod.*, 1982, **45**, 252 (*Thalidasine, Thalrugosidine, isol, uv, pmr*)
Hussain, S.F. *et al., J. Nat. Prod.*, 1985, **48**, 962; 1986, **49**, 488 (*Thalpindione, 5-Hydroxythalidasine, struct, uv, ir, pmr, ms, cd*)
Herath, W.H.M.W. *et al., J. Nat. Prod.*, 1987, **50**, 721 (*oxides*)

Thalidastine T-321



$C_{19}H_{16}NO_5^{\oplus}$ 338.339
Darkens and dec. >230°. Yellow-brown cryst. (as chloride). $[\alpha]_D^{25}$ +138 (MeOH).

(R)-form [4839-14-9]
Quaternary alkaloid from *Thalictrum fendleri* and *Nandina domestica* (Ranunculaceae, Berberidaceae).

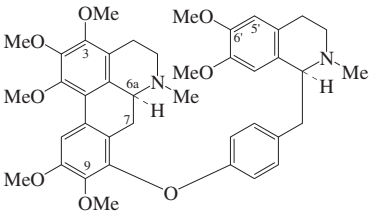
O^{10}*-Me:* ***Berberastine***
[2435-73-6]
$C_{20}H_{18}NO_5^{\oplus}$ 352.366
Alkaloid from *Hydrastis canadensis* and *Coptis* sp. (Ranunculaceae). Yellow solid or cryst. (as iodide). Mp 300° (iodide). $[\alpha]_D$ +107 (c, 0.06 in EtOH). No abs. config. correspondence with Thalidastine implied.

*5-Deoxy, 5,6-didehydro: 10-Hydroxy-9-methoxybenzo[*g*]-1,3-benzodioxolo[5,6-*a*]quinolizinium(1+), 9CI.* ***Deoxythalidastine***
[4839-16-1]
$C_{19}H_{14}NO_4^{\oplus}$ 320.324
Alkaloid from callus tissue of *Thalictrum minus.* Also obt. by dehydration of Thalidastine chloride. Yellow-brown solid (as chloride). Mp 210° dec. CAS No. refers to chloride.

Nijland, M.M. *et al., Pharm. Weekbl.*, 1961, **96**, 640; 1963, **98**, 301; *CA*, **55**, **59**,; 26371h (*isol, uv, ir, struct*)
Monkovič, I. *et al., Can. J. Chem.*, 1965, **43**, 2017 (*biosynth*)
Shamma, M. *et al., Tet. Lett.*, 1965, 3825 (*Thalidastine, Deoxythalidastine, isol, struct*)
Shamma, M. *et al., J. Pharm. Sci.*, 1968, **57**, 262 (*Thalidastine, isol*)
Dyke, S.F. *et al., Tetrahedron*, 1975, **31**, 561 (*synth, uv, ir, pmr*)
Zarga, M.H.A. *et al., Tet. Lett.*, 1980, **21**, 3739 (*abs config*)
Ikuta, A. *et al., Phytochemistry*, 1982, **21**, 1419 (*Deoxythalidastine*)
Ikuta, A. *et al., J. Nat. Prod.*, 1984, **47**, 189 (*isol*)
Napolitano, E. *et al., J.C.S. Perkin 1*, 1987, 2565 (*synth*)

Thalifaberine T-322

O^3*-Methylthalifarapine*
[88313-32-0]



$C_{41}H_{48}N_2O_8$ 696.839
Alkaloid from the roots of *Thalictrum faberi* (Ranunculaceae). Shows cytotoxic activity against several human cancer cell lines, as well as antimalarial activity. Amorph. yellowish solid. Sol. MeOH, $CHCl_3$; poorly sol. hexane. Mp 80-85°. $[\alpha]_D^{25}$ +94.6 (c, 0.38 in MeOH). λ_{max} 282 (ϵ 23000) (MeOH) (Berdy).

O^1*-De-Me:* ***Thalifalandine***
[107019-96-5]
$C_{40}H_{46}N_2O_8$ 682.812
Minor alkaloid from the roots of *Thalictrum faberi* (Ranunculaceae). Cytotoxic agent. Amorph. solid. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. $[\alpha]_D^{14}$ +83.3 (c, 0.375 in MeOH). λ_{max} 205 (ϵ 29500); 285 (ϵ 10715) (MeOH) (Berdy). λ_{max} 204 (ϵ 23500); 290 (ϵ 6760); 313 (ϵ 8910); 325 (ϵ 8900) (MeOH-NAOH) (Berdy).

O^3*-De-Me:* ***Thalifarapine***. *Thalifaroline*
[91926-02-2]
$C_{40}H_{46}N_2O_8$ 682.812
Alkaloid from the roots of *Thalictrum faberi* and *Thalictrum cultratum* (Ranunculaceae). Amorph. $[\alpha]_D^{24}$ +98.6 (c, 0.422 in MeOH) (+73).

$O^{6'}$*-De-Me:* ***Thalifarazine***
[105418-68-6]
$C_{40}H_{46}N_2O_8$ 682.812
Alkaloid from *Thalictrum cultratum* (Ranunculaceae). $[\alpha]_D$ +72 (c, 0.06 in MeOH).

$O^{7'}$*-De-Me:* ***Thalifaretine***
[105418-69-7]
$C_{40}H_{46}N_2O_8$ 682.812
Alkaloid from *Thalictrum cultratum* (Ranunculaceae). $[\alpha]_D$ +61 (c, 0.1 in MeOH).

$O^3,O^{6'}$*-Di-de-Me:* ***3-Hydroxy-6′-demethyl-9-O-methylthalifaboramine***
$C_{39}H_{44}N_2O_8$ 668.785
Alkaloid from *Thalictrum faberi*. Yellow powder. $[\alpha]_D$ +85.6 (c, 0.005 in MeOH). λ_{max} 284 (log ϵ 4); 314 (sh) (log ϵ 3.85) (MeOH).

O^3,O^9*-Di-de-Me:* ***3-Hydroxythalifaboramine***
$C_{39}H_{44}N_2O_8$ 668.785
Alkaloid from *Thalictrum faberi*. Yellow powder. $[\alpha]_D$ +92.3 (c, 0.007 in MeOH). λ_{max} 282 (log ϵ 4.07); 314 (sh) (log ϵ 3.85) (MeOH).

$O^{6'},O^9$*-Di-de-Me:* ***Thalifaberidine***
$C_{39}H_{44}N_2O_8$ 668.785
Alkaloid from roots of *Thalictrum faberi* (Ranunculaceae). Shows cytotoxic activity against several human cancer cell lines as well as antimalarial activity. Yellow powder. $[\alpha]_D$ +87 (c, 0.1 in MeOH). λ_{max} 284 (ϵ 12600); 314 (ϵ 7950) (MeOH) (Berdy).

$O^{7'},O^9$*-Di-de-Me:* ***Thalifaricine***
[106146-68-3]
$C_{39}H_{44}N_2O_8$ 668.785
Alkaloid from *Thalictrum cultratum* (Ranunculaceae). $[\alpha]_D$ +66 (c, 0.1 in MeOH).

$O^3,O^{6'},O^9$*-Tri-de-Me:* ***3-Hydroxy-6′-O-demethylthalifaboramine***
$C_{38}H_{42}N_2O_8$ 654.758
Alkaloid from *Thalictrum faberi*. Yellow powder. $[\alpha]_D$ +76.2 (c, 0.002 in MeOH). λ_{max} 285 (log ϵ 4.01); 314 (sh) (log ϵ 3.78) (MeOH).

3-Demethoxy: ***Thalifaronine***
[105458-70-6]
$C_{40}H_{46}N_2O_7$ 666.813
Alkaloid from *Thalictrum cultratum* (Ranunculaceae). $[\alpha]_D$ +68 (c, 0.1 in MeOH).

3-Demethoxy, $O^{7'}$*-de-Me:* ***Thalifaramine***
[105437-16-9]
$C_{39}H_{44}N_2O_7$ 652.786
Alkaloid from *Thalictrum cultratum* (Ranunculaceae). $[\alpha]_D$ +76 (c, 0.06 in MeOH).

3-Demethoxy, O^9*-de-Me:* ***Thalifaboramine***
[109028-30-0]
$C_{39}H_{44}N_2O_7$ 652.786
Alkaloid from the roots of *Thalictrum faberi*. Yellow amorph. solid. $[\alpha]_D$ +107.4 (c, 0.135 in MeOH).

3-Demethoxy, $O^{6'},O^9$*-di-de-Me:* ***6′-O-Demethylthalifaboramine***
$C_{38}H_{42}N_2O_7$ 638.759
Alkaloid from *Thalictrum faberi*. Yellow powder. $[\alpha]_D$ +65.5 (c, 0.005 in MeOH). λ_{max} 284 (log ϵ 4.05); 314 (sh) (log ϵ 3.8) (MeOH). λ_{max} 284 (ϵ 10700); 314 (MeOH) (Berdy).

5′-Hydroxy: ***Thalifabatine***
[91926-03-3]
$C_{41}H_{48}N_2O_9$ 712.838
Alkaloid from roots of *Thalictrum faberi* (Ranunculaceae). Yellow solid. $[\alpha]_D^{22}$ +60.5 (c, 0.154 in MeOH).

5′-Hydroxy, O^3*-de-Me:* ***Thalifasine***
[91926-04-4]
$C_{40}H_{46}N_2O_9$ 698.811
Alkaloid from the roots of *Thalictrum faberi* (Ranunculaceae). Yellow solid. $[\alpha]_D^{25}$ +67.9 (c, 0.80 in MeOH).

5′-Hydroxy, O^3,O^9*-di-de-Me:* ***3,5′-Dihydroxythalifaboramine***
$C_{39}H_{44}N_2O_9$ 684.785
Alkaloid from *Thalictrum faberi*. Yellow powder. $[\alpha]_D$ +89.8 (c, 0.008 in MeOH). λ_{max} 285 (log ϵ 4.08); 314 (sh) (log ϵ 3.88) (MeOH).

5′-Hydroxy, 3-demethoxy, O^9*-de-Me:* ***5′-Hydroxythalifaboramine***
$C_{39}H_{44}N_2O_8$ 668.785
Alkaloid from *Thalictrum faberi*. Yellow powder. $[\alpha]_D$ +97.3 (c, 0.008 in MeOH). λ_{max} 283 (log ϵ 4.06); 314 (sh) (log ϵ 3.82) (MeOH).

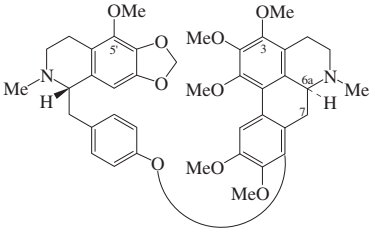
6a,7-Didehydro: ***Dehydrothalifaberine***

[91926-01-1]
$C_{41}H_{46}N_2O_8$ 694.823
Alkaloid from the roots of *Thalictrum faberi* (Ranunculaceae). Amorph. yellow solid. $[\alpha]_D^{24}$ +95.9 (c, 0.143 in MeOH).

Lin, L.-Z. *et al., Planta Med.*, 1983, **49**, 55 (*uv, pmr, ms, cd, struct*)
Wagner, H. *et al., Tetrahedron*, 1984, **40**, 2133 (*isol, uv, pmr, ms, cd, struct, derivs*)
Lin, L.-Z. *et al., Heterocycles*, 1986, **24**, 2731 (*Thalifalandine*)
Hussain, S.F. *et al., J. Nat. Prod.*, 1986, **49**, 494 (*isol, uv, pmr, ms, cd, struct*)
Lin, L.Z. *et al., Phytochemistry*, 1987, **26**, 583; 1999, **50**, 829-834 (*isol, uv, ir, pmr, cmr, ms, derivs*)
Lin, L.-Z. *et al., J. Nat. Prod.*, 1994, **57**, 1430 (*Thalifaberidine*)

Thalifabine T-323

[88313-34-2]



$C_{41}H_{46}N_2O_9$ 710.822
Alkaloid from the roots of *Thalictrum faberi* (Ranunculaceae). Yellow amorph. solid. $[\alpha]_D^{25}$ +78.3 (c, 0.53 in MeOH).

Lin, L.-Z. *et al., Planta Med.*, 1983, **49**, 55 (*uv, pmr, ms, cd, struct*)
Wagner, H. *et al., Tetrahedron*, 1984, **40**, 2133 (*isol, uv, pmr, ms, cd, struct*)

Thalifabomine T-324

[92047-65-9]

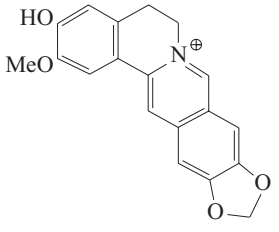
$C_{39}H_{44}N_2O_7$ 652.786

Aporphine-benzylisoquinoline dimer of unknown struct. Alkaloid from the roots of *Thalictrum faberi* (Ranunculaceae). $[\alpha]_D^{26}$ +67.5 (c, 0.16 in MeOH).

Wagner, H. *et al., Tetrahedron*, 1984, **40**, 2133-2139 (*isol, uv, pmr, ms, cd*)

Thalifaurine T-325

[75491-94-0]



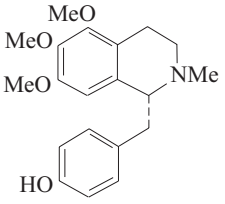
$C_{19}H_{16}NO_4^{\oplus}$ 322.34
Quaternary alkaloid from *Thalictrum fauriei* (whole plant) (Ranunculaceae). Fine yellow needles (MeOH)(as chloride). Mp 258-260° (chloride).

O-*De-Me,* O^3*-Me:* ***Dehydropseudocheilanthifoline***

[64191-03-3]
$C_{19}H_{16}NO_4^{\oplus}$ 322.34
Quaternary alkaloid from the leaves of *Isopyrum thalictroides* (Ranunculaceae). Yellow cryst. + $1H_2O$ (as chloride). Mp >300° dec.

Moulis, C. *et al., Phytochemistry*, 1977, **16**, 1283-1287 (*Dehydropseudocheilanthifoline*)
Chen, C.-H. *et al., J. Pharm. Sci.*, 1980, **69**, 1061 (*Thalifaurine*)

Thalifendlerine T-326



$C_{20}H_{25}NO_4$ 343.422

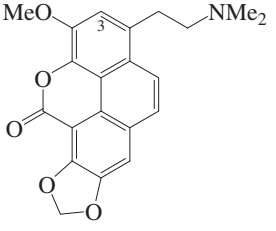
(*R*)-*form* [4668-18-2]
Alkaloid from *Thalictrum fendleri* (Ranunculaceae). Cryst. Mp 177-178°. $[\alpha]_D^{25}$ -108 (MeOH).

4′-O-*β*-*L*-*Mannopyranoside:* ***Veronamine***
[27894-67-3]
$C_{26}H_{35}NO_9$ 505.564
Alkaloid from *Thalictrum fendleri* (Ranunculaceae). Hypotensive agent (site of action unknown) prob. also a smooth muscle relaxant. Produces brachycardia. Noncryst. $[\alpha]_D$ -155 (MeOH).

Shamma, M. *et al., Tet. Lett.*, 1965, 3595; 1969, 4951 (*uv, pmr, cmr, ms, struct, synth, Thalifendlerine, Veronamine*)
Shamma, M. *et al., Tetrahedron*, 1971, **27**, 727 (*Veronamine*)

Thaliglucinone T-327

*3-[2-(Dimethylamino)ethyl]-1-methoxy-10*H-*[1,3]dioxolo[6,7]phenanthro[4,5-*bcd*]pyran-10-one, 9CI*
[35988-96-6]



$C_{21}H_{19}NO_5$ 365.385
Aporphine-derived numbering shown. Alkaloid from *Thalictrum polygamum*, *Thalictrum rugosum* and other *Thalictrum* spp. (Ranunculaceae). Shows antibacterial and hypotensive activity. Yellow cryst. (MeOH or Et_2O). Mp 197° (180-182°, 190-191°). A dimorphic form with Mp 115-116° also reported. λ_{max} 238 ; 256 ; 264 ; 287 ; 322 ; 390 (MeOH) (Berdy).

N-*Me:* ***Thaliglucinone* N-*methosalt***
[53416-40-3]
$C_{22}H_{22}NO_5^{\oplus}$ 380.419
Alkaloid from *Thalictrum polygamum* (Ranunculaceae). Mp 274-274° (as chloride). CAS no. refers to chloride.

Deoxo: ***Thaliglucine****. 1-Methoxy-*N,N*-dimethyl-10*H*-[1,3]dioxolo[6,7]phenanthro[4,5-*bcd*]pyran-3-ethanamine, 9CI. Thalphenine methine*
[36018-39-0]
$C_{21}H_{21}NO_4$ 351.401
Alkaloid from *Thalictrum polygamum* and *Thalictrum rugosum* (Ranunculaceae). Cryst. (EtOH). Mp 122°.

Deoxo, N-*Me:* ***Thaliglucine* N-*methosalt***
[53416-39-0]
$C_{22}H_{24}NO_4^{\oplus}$ 366.436
Alkaloid from *Thalictrum polygamum* (Ranunculaceae). CAS no. refers to chloride.

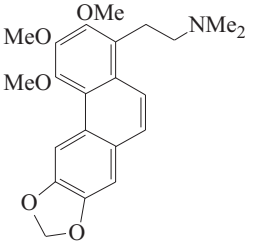
3-Methoxy: ***Thalflavidine***
[66834-83-1]
$C_{22}H_{21}NO_6$ 395.411
Alkaloid from *Thalictrum flavum*, *Thalictrum minus* and *Thalictrum revolutum* (Ranunculaceae). Cryst. (MeOH). Mp 229-230° (219-220°).

2-Demethoxy, 3-methoxy: ***Thalicsine****. Thalixine*
[50657-28-8]
$C_{21}H_{19}NO_5$ 365.385
Alkaloid from the above-ground parts of *Thalictrum longipedunculatum* (Ranunculaceae). Mp 193-194°. Doubtful structural assignment; all natural aporphines are substituted at C-1 and C-2. λ_{max} 237 (log ϵ 4.22); 265 (log ϵ 4.48); 313 (log ϵ 3.96); 390 (log ϵ 3.6) (EtOH).

Doskotch, R.W. *et al., J. Nat. Prod.*, 1969, **32**, 29-35 (*isol, uv, ir*)
Mollov, N.M. *et al., Dokl. Bulg. Akad. Nauk*, 1971, **24**, 1047-1050; *CA*, **76**, 85970h (*Thaliglucine, Thaliglucinone*)
Shamma, M. *et al., Chem. Comm.*, 1972, 408-409 (*Thaliglucine, uv, pmr, ms, cryst struct*)
Mitscher, L.A. *et al., J. Nat. Prod.*, 1972, **35**, 167-176 (*isol*)
Khodzhaev, V.G. *et al., Khim. Prir. Soedin.*, 1973, **9**, 441; *Chem. Nat. Compd. (Engl. Transl.)*, 1975, **9**, 421-422 (*Thalicsine*)
Shamma, M. *et al., Heterocycles*, 1974, **2**, 427-431 (*methosalts*)
Shamma, M. *et al., Tetrahedron*, 1974, **30**, 2279-2282 (*synth*)
Wu, W.-N. *et al., J. Nat. Prod.*, 1976, **39**, 65-75; 204-212; 1977, **40**, 384-394; 508-514; 1980, **43**, 567-570 (*Thaliglucinone, Thalflavidine*)
Umarov, Kh.S. *et al., CA*, 1978, **89**, 39379 (*Thalflavidine*)

Thalihazine T-328

*1,2,3-Trimethoxy-*N,N*-dimethylphenanthro[2,3-*d*][1,3]dioxole-4-ethanamine, 9CI. 1-(2-Dimethylaminoethyl)-2,3,4-trimethoxy-6,7-methylenedioxyphenanthrene*
[111537-36-1]



$C_{22}H_{25}NO_5$ 383.443
Alkaloid from the whole plant of *Thalictrum hazarica* (Ranunculaceae). λ_{max} 261 (log ϵ 4.3); 283 (log ϵ 3.77); 315 (log ϵ 3.37); 344 (log ϵ 2.9) (MeOH).

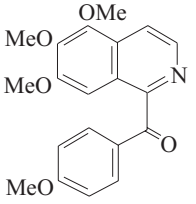
N-*Oxide:* ***Thalihazine* N-*oxide***
[177413-37-5]
$C_{22}H_{25}NO_6$ 399.443
Alkaloid from aerial parts of *Thalictrum simplex*.

N-*De-Me: 1-(2-Methylaminoethyl)-2,3,4-trimethoxy-6,7-methylenedioxyphenanthrene. 1,2,3-Trimethoxy-*N*-methylphenanthro[2,3-*d*][1,3]dioxole-4-ethanamine.* ***Secophoebine***
[109175-38-4]
$C_{21}H_{23}NO_5$ 369.416
Alkaloid from the leaves of *Phoebe valeriana* (Lauraceae). Amorph. solid. λ_{max} 234 (sh) ; 262 ; 284 ; 304 ; 317 ; 344 ; 362 (EtOH).

Castro, O. *et al., J. Nat. Prod.*, 1986, **49**, 1036-1040 (*N-de-Me*)
Herath, W.H.M.W. *et al., J. Nat. Prod.*, 1987, **50**, 757-758 (*isol, uv, pmr, ms, struct*)
Velcheva, M.P. *et al., Phytochemistry*, 1996, **42**, 535-537 (*oxide*)

Thalimicrinone T-329

[84716-73-4]

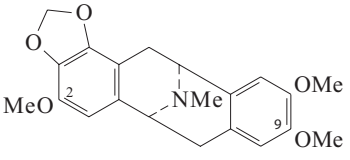


$C_{20}H_{19}NO_5$ 353.374
Alkaloid from the leaves of *Thalictrum minus* var. *microphyllum* (Ranunculaceae). Needles (EtOH). Mp 130-132°.

Başer, K.H.C. *et al., J. Nat. Prod.*, 1982, **45**, 704 (*isol, uv, ir, pmr, ms, struct*)
Al-Khalil, S. *et al., J. Nat. Prod.*, 1985, **48**, 989 (*synth*)

Thalimonine T-330

2,8,9-Trimethoxy-3,4-methylenedioxypavinane
[142735-70-4]



$C_{21}H_{23}NO_5$ 369.416
Alkaloid from aerial parts of *Thalictrum simplex* (Ranunculaceae). $[\alpha]_D^{22}$ -118 (c, 0.20 in MeOH). λ_{max} 287 (ϵ 6920) (MeOH) (Berdy).

N-*Oxide:* ***Thalimonine* N-*oxide A***
[166266-74-6]
$C_{21}H_{23}NO_6$ 385.416
Alkaloid from aerial parts of *Thalictrum simplex* (Ranunculaceae). $[\alpha]_D^{21}$ -53.3 (c, 0.05 in MeOH).

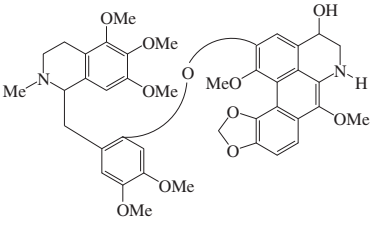
N-*Oxide, epimer:* ***Thalimonine* N-*oxide B***
[166376-54-1]
$C_{21}H_{23}NO_6$ 385.416
Alkaloid from aerial parts of *Thalictrum simplex* (Ranunculaceae). $[\alpha]_D^{21}$ -80 (c, 0.02 in MeOH).

O^2*-De-Me: 2-Hydroxy-8,9-dimethoxy-3,4-methylenedioxypavinane.* ***2-Demethylthalimonine***
[150036-90-1]
$C_{20}H_{21}NO_5$ 355.39
Alkaloid from aerial parts of *Thalictrum simplex* (Ranunculaceae). $[\alpha]_D^{22}$ -43.8 (c, 0.02 in MeOH).

O^9*-De-Me: 9-Hydroxy-2,8-dimethoxy-3,4-methylenedioxypavinane.* ***9-Demethylthalimonine***
[150036-91-2]
$C_{20}H_{21}NO_5$ 355.39
Alkaloid from aerial parts of *Thalictrum simplex* (Ranunculaceae). $[\alpha]_D^{22}$ -51.7 (c, 0.067 in MeOH).

Velcheva, M. *et al., J. Nat. Prod.*, 1992, **55**, 679-680 (*isol, uv, ir, cd, pmr, cmr, ms, struct*)
Velcheva, M.P. *et al., Planta Med.*, 1993, **59**, 262-263 (*2-Demethylthalimonine, 9-Demethylthalimonine*)
Velcheva, M.P. *et al., Phytochemistry*, 1995, **39**, 683-687 (*Thalimonine N-oxides*)
Pabuccuoglu, V. *et al., Heterocycles*, 1997, **45**, 1751-1758 (*synth*)

Thaliphine T-331

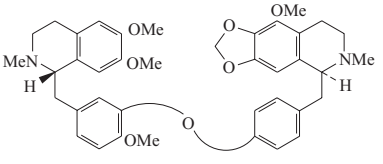


$C_{41}H_{44}N_2O_{11}$ 740.805
Alkaloid from the roots and rhizomes of *Isopyrum thalictroides*. Amorph. solid. $[\alpha]_D$ -46.3 (c, 0.4 in $CHCl_3$). λ_{max} 210 (log ϵ 8); 234 (sh) (log ϵ 7.61); 262 (log ϵ 7.02); 293 (log ϵ 7.32) (EtOH).
Diastereoisomer: ***Isothaliphine***
$C_{41}H_{44}N_2O_{11}$ 740.805
Alkaloid from the roots and rhizomes of *Isopyrum thalictroides*. Amorph. solid. $[\alpha]_D$ -51.8 (c, 0.3 in $CHCl_3$). λ_{max} 210 (log ϵ 7.93); 234 (sh) (log ϵ 7.53); 262 (log ϵ 6.96); 293 (log ϵ 7.18) (EtOH).

Istatkova, R. *et al., Nat. Prod. Res.*, 2004, **18**, 259-263 (*isol, cd, pmr, cmr, ms*)

Thaliracebine T-332

[67591-63-3]



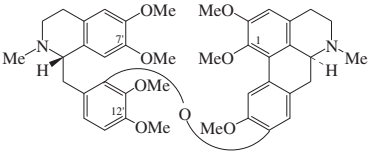
$C_{39}H_{44}N_2O_7$ 652.786
Tentative struct. The 5-methoxy-6,7-methylenedioxy substitution pattern may need revision to 5,6-methylenedioxy-7-methoxy following the structural revision of Thalflavine, T-306. Alkaloid from the roots of *Thalictrum minus* Race B, and from *Thalictrum faberi* (Ranunculaceae). Antiseptic, antihypertensive agent. Amorph. Mp 83-84°. $[\alpha]_D^{26}$ +121 (c, 0.28 in MeOH). Log P 6.83 (uncertain value) (calc). λ_{max} 278 (MeOH) (Berdy).

Methiodide (1:2):
Beige amorph. solid (MeOH/Et_2O). Mp 203-205° dec.

Liao, W.-T. *et al., J. Nat. Prod.*, 1978, **41**, 257 (*isol, uv, cd, ir, pmr, ms, struct*)
Aly, Y. *et al., Phytochemistry*, 1989, **28**, 1967

Thalirevolutine T-333

O-*Methylfetidine*
[62751-64-8]



$C_{41}H_{48}N_2O_8$ 696.839
Alkaloid from the roots of *Thalictrum revolutum* (Ranunculaceae). Hypotensive agent in rabbits. Cryst. + ½H_2O (Et_2O). Mp 105-108°. $[\alpha]_D^{20}$ +134 (c, 0.1 in MeOH).

O^1*-De-Me:* ***Fetidine****. Foetidine*†
[7072-86-8]
$C_{40}H_{46}N_2O_8$ 682.812
Alkaloid from the aerial parts of *Thalictrum foetidum* (Ranunculaceae). Antihypertensive agent, nervous depressant in mice. Shows strong antiinflammatory activity. Cryst. (EtOAc). Mp 132-135° (125-126°). $[\alpha]_D^{15}$ +121.4 (c, 2.57 in MeOH). Log P 5.82 (uncertain value) (calc).

O^1*-De-Me, hydrochloride:* Mp 228-230° dec. $[\alpha]_D^{20}$ -30.9 (c, 2.52 in H_2O).

$O^{12'}$*-De-Me:* ***Thalirevoline***
[65853-12-5]
$C_{40}H_{46}N_2O_8$ 682.812
Alkaloid from the roots, tops and fruits of *Thalictrum revolutum* (Ranunculaceae). Hypotensive agent in rabbits. Shows antibiotic activity against *Mycobacterium smegmatis*. Cryst. + ½ H_2O (Et_2O). Mp 123-125°. $[\alpha]_D^{20}$ +95 (c, 0.1 in MeOH).

$O^{7'}$*-De-Me:* ***Faberidine****. 3-Demethoxyfaberonine*
[91925-99-4]
$C_{40}H_{46}N_2O_8$ 682.812
Alkaloid from the roots of *Thalictrum faberi* (Ranunculaceae). Amorph. solid. $[\alpha]_D^{22}$ +105.5 (c, 0.675 in MeOH).

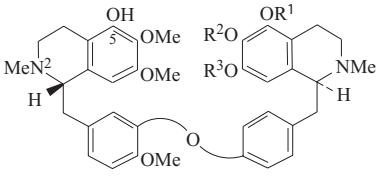
$O^{7'},O^{12'}$*-Di-de-Me:* ***Revolutopine***
[62724-07-6]
$C_{39}H_{44}N_2O_8$ 668.785
Alkaloid from the tops of *Thalictrum revolutum* (Ranunculaceae). Powder (C_6H_6/hexane). $[\alpha]_D^{25}$ +126 (c, 0.1 in MeOH).

Sargazalov, D. *et al., Dokl. Akad. Nauk SSSR,*

Ser. Khim., 1963, **20**, 28; *CA*, **59**, 15336h (*isol, Fetidine*)
Ismailov, Z.F. *et al., Khim. Prir. Soedin.*, 1966, **2**, 43; *Chem. Nat. Compd. (Engl. Transl.)*, 1966, **2**, 35 (*isol, Fetidine*)
Cava, M.P. *et al., Tet. Lett.*, 1972, 2309 (*pmr, struct, Fetidine*)
Wu, J. *et al., J. Nat. Prod.*, 1977, **40**, 593 (*Revolutopine*)
Wu, W.N. *et al., Tetrahedron*, 1977, **33**, 2919 (*Thalirevoline, Thalirevolutine*)
Wagner, H. *et al., Tetrahedron*, 1984, **40**, 2133 (*Faberidine*)

Thalirugidine T-334

[64215-95-8]



R^1 = H, R^2 = R^3 = Me

$C_{39}H_{46}N_2O_8$ 670.801

Alkaloid from the roots of *Thalictrum rugosum* and *Thalictrum foliolosum* (Ranunculaceae). Antiseptic. Amorph. powder. $[\alpha]_D^{20}$ +112 (c, 0.19 in MeOH). Log P 5.34 (calc).

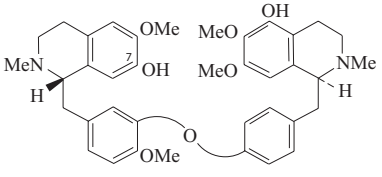
Di-Me ether:
Pale yellow amorph. solid. $[\alpha]_D^{20}$ +53 (c, 0.21 in MeOH).

Di-Et ether:
Amorph. $[\alpha]_D^{20}$ +44 (c, 0.17 in MeOH).

Wu, W.-N. *et al., J.O.C.*, 1978, **43**, 580 (*isol, uv, cd, ir, pmr, ms, struct*)
Chattopadhyay, S.K. *et al., J. Nat. Prod.*, 1981, **44**, 45 (*isol, uv, ir, pmr, ms*)

Thalirugine T-335

[64235-41-2]



$C_{38}H_{44}N_2O_7$ 640.775

Alkaloid from the roots of *Thalictrum rugosum* (Ranunculaceae). Antiseptic. Amorph. solid + ½ H_2O. $[\alpha]_D^{20}$ +92 (c, 0.25 in MeOH). Log P 5.87 (calc).

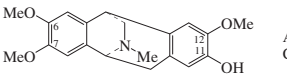
7-Me ether: ***Thaliruginine***
[64215-93-6]
$C_{39}H_{46}N_2O_7$ 654.802
Alkaloid from the roots of *Thalictrum rugosum* (Ranunculaceae). Amorph. solid + $1H_2O$. $[\alpha]_D^{20}$ +104 (c, 0.16 in MeOH).

Di-Me ether:
Pale-yellow amorph. solid. $[\alpha]_D^{21}$ +105 (c, 0.2 in MeOH).

Wu, W.-N. *et al., J.O.C.*, 1978, **43**, 580 (*isol, uv, cd, ir, pmr, ms, struct*)

Thalisopavine T-336

*10,11-Dihydro-3,7,8-trimethoxy-12-methyl-10,5-(iminomethano)-5*H*-dibenzo[a,d]cyclohepten-2-ol, 9CI*
[18927-72-5]
[18927-73-6 ((±)-form)]



Absolute Configuration

$C_{20}H_{23}NO_4$ 341.406

Biogenetic (benzylisoquinoline-type) numbering shown. Alkaloid from the roots of *Thalictrum dasycarpum* (Ranunculaceae). Needles (EtOH). Mp 211-212°. $[\alpha]_D^{25}$ -210 (c, 0.21 in $CHCl_3$).

Me ether: **O-*Methylthalisopavine***
[18944-92-8]
[33579-95-2 ((±)-form)]
$C_{21}H_{25}NO_4$ 355.433
Alkaloid from *Papaver radicatum* (*Papaver nudicaule* var. *radicatum*) (Papaveraceae). Cryst. (diisopropyl ether); needles (EtOH/Et_2O). Mp 92-94°.

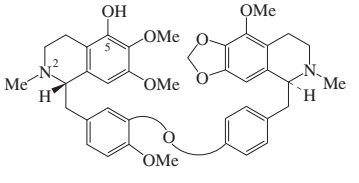
O^7*-De-Me:* ***Thalidine***
[63110-83-8]
[63162-85-6 ((±)-form)]
$C_{19}H_{21}NO_4$ 327.379
Alkaloid from *Thalictrum dioicum* (Ranunculaceae). Cryst. (MeOH). Mp 205-207° (natural) Mp 222-223° (synthetic). $[\alpha]_D^{25}$ -172 (c, 0.7 in MeOH) (natural).

O^7,O^{12}*-Di-de-Me,* O^{11}*-Me:* ***Thalidicine***
[61774-85-4]
$C_{19}H_{21}NO_4$ 327.379
Alkaloid from the roots of *Thalictrum dioicum* (Ranunculaceae). Cryst. (EtOH/Et_2O). Mp 200°. Structural determination incomplete. May be identical with Thalidine.

Kupchan, S.M. *et al., J.O.C.*, 1969, **34**, 1062-1065 (*Thalisopavine, isol, uv, ir, pmr, ms, struct, synth*)
Dyke, S.F. *et al., Tetrahedron*, 1971, **27**, 3803-3809 (*O-Methylthalisopavine, synth, pmr*)
Hoshino, O. *et al., Heterocycles*, 1973, **1**, 223-226 (*(±)-O-Methylthalisopavine, synth*)
Böhm, V.H. *et al., Planta Med.*, 1975, **28**, 210 (*deriv, isol*)
Ong, H. *et al., Ann. Pharm. Fr.*, 1976, **34**, 223 (*Thalidicine*)
Shamma, M. *et al., J. Nat. Prod.*, 1976, **39**, 395 (*Thalidine*)
Elliott, I.W. *et al., J.O.C.*, 1979, **44**, 1162-1163 (*(+)-O-Methylthalisopavine, synth, ms*)
Maffrand, J.-P. *et al., Heterocycles*, 1980, **14**, 325 (*deriv, synth*)
Rice, K.C. *et al., J.O.C.*, 1980, **45**, 601 (*O-Methylthalisopavine, Thalidine, synth, ms*)
Carrillo, L. *et al., J.O.C.*, 1997, **62**, 6716-6721 (*(-)-O-Methylthalisopavine, synth*)

Thalistine T-337

[75352-25-9]



$C_{39}H_{44}N_2O_8$ 668.785

Probable struct. The structs. of all the alkaloids covered by this entry were tentatively revised from 5-methoxy-6,7-methylenedioxy to 7-methoxy-5,6-methylenedioxy in 1989, and this has not subsequently been challenged. Alkaloid from the roots of *Thalictrum minus* Race B (Ranunculaceae). Antiseptic. Amorph. $[\alpha]_D^{20}$ +104 (c, 0.35 in MeOH). Log P 6.03 (uncertain value) (calc). λ_{max} 278 (ε 8000) (MeOH) (Berdy).

N^2*-Me:* ***Thalirabine****. 5-O-Demethylthalistyline*
[67624-63-9]
$C_{40}H_{47}N_2O_8^{\oplus}$ 683.82
Alkaloid from the roots of *Thalictrum minus* Race B (Ranunculaceae). Antiseptic. λ_{max} 207 ; 276 ; 283 (MeOH) (Berdy). λ_{max} 276 ; 283 (HCl) (Berdy). λ_{max} 209 ; 273 ; 280 ($CHCl_3$) (Berdy).

N^2*-Me, hydroxide:*
Beige-coloured amorph. solid. Mp 131-132° dec. $[\alpha]_D^{26}$ +142 (c, 0.548 in MeOH).

N^2*-Me, iodide:*
Tan-coloured rosettes (MeOH aq.). Mp 205-206° dec.

O^5*-Me:* **N-*Demethylthalistyline***
[62251-51-8]
$C_{40}H_{46}N_2O_8$ 682.812
Alkaloid from the roots of *Thalictrum longistylum* and *Thalictrum podocarpum* (Ranunculaceae). Antiseptic, antihypertensive agent. Pale yellow amorph. powder. $[\alpha]_D^{25}$ +151 (c, 0.2 in MeOH). Log P 6.26 (uncertain value) (calc). λ_{max} 282 (ε 8000) (MeOH) (Berdy).

O^5*-Me,* N^2*-Me:* ***Thalistyline****. O-Methylthalirabine*
[62251-53-0]
$C_{41}H_{49}N_2O_8^{\oplus}$ 697.847
Alkaloid from roots of *Thalictrum longistylum* and *Thalictrum podocarpum* (Ranunculaceae). Antiseptic, antihypertensive agent. Shows antibacterial activity. λ_{max} 276 (ε 7300); 283 (ε 7000) (MeOH) (Berdy).

O^5*-Me,* N^2*-Me, chloride:* [62251-48-3] Mp 150-153°. $[\alpha]_D^{25}$ +146 (c, 0.1 in MeOH).

O^5*-Me,* N^2*-Me, iodide:* [62251-49-4] Mp 220-223° dec.

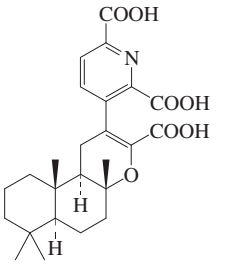
O^5*-Me,* N^2,$N^{2'}$*-di-Me:* ***Methothalistyline****. 2′-N-Methylthalistyline*
[65853-13-6]
$C_{42}H_{52}N_2O_8^{2\oplus}$ 712.881
Alkaloid from roots of *Thalictrum longistylum* and *Thalictrum podocarpum* (Ranunculaceae). Shows antibacterial activity. Antiseptic. Needles + $1H_2O$ (MeOH)(as diiodide). Mp 266-268° dec.(diiodide). $[\alpha]_D^{21}$ +125 (c, 0.1 in MeOH).

Wu, W.-N. *et al., Tet. Lett.*, 1976, 3687-3690 (*Thalistyline*)
Wu, W.-N. *et al., J. Nat. Prod.*, 1977, **40**, 281-289; 384-394 (*Demethylthalistyline, Thalistyline, Methothalistyline, activity*)
Liao, W.-T. *et al., J. Nat. Prod.*, 1978, **41**, 257-270 (*Thalirabine*)

Wu, W.-N. *et al., J. Nat. Prod.*, 1980, **43**, 472-481 (*isol, uv, cd, ir, pmr, ms, struct, synth*)
Aly, Y. *et al., Phytochemistry*, 1989, **28**, 1967-1971 (*struct*)

Thallusin T-338

[851369-86-3]



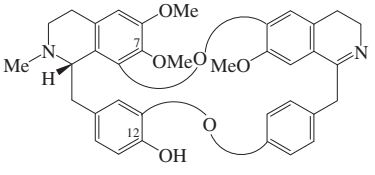
Relative Configuration

$C_{25}H_{31}NO_7$ 457.522
Isol. from a marine bacterium *Cytophaga* sp. YM2-23 obt. from a *Monostroma* sp. Morphogenesis inducer in algae. Amorph. powder.

Matsuo, Y. *et al., Science (Washington, D.C.)*, 2005, **307**, 1598 (*isol, pmr, cmr, cryst struct*)
Gao, X. *et al., Org. Lett.*, 2006, **8**, 2123-2126; 2007, **9**, 379 (*synth*)
Nishizawa, M. *et al., Tet. Lett.*, 2007, **48**, 4229-4233 (*synth*)

Thalmethine T-339

[3729-83-7]



$C_{36}H_{36}N_2O_6$ 592.69
Alkaloid from the above-ground parts of *Thalictrum minus* (Ranunculaceae). Cryst. (MeOH). Mp 275-277°. $[\alpha]_D^{21}$ +200 (c, 1 in $CHCl_3$).

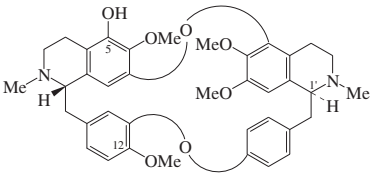
Me ether: **O-*Methylthalmethine***
[5979-99-7]
$C_{37}H_{38}N_2O_6$ 606.717
Alkaloid from the above-ground parts of *Thalictrum minus* and from the roots of *Thalictrum revolutum* (Ranunculaceae). Antiseptic. Needles (C_6H_6). Mp 245-246°. $[\alpha]_D^{21}$ +237 (c, 1 in $CHCl_3$). Log P 7.64 (uncertain value) (calc).

O^7-*De-Me,* O^{12}-*Me:* ***Thalsivasine****. Thalcultrimine*
[101219-59-4]
$C_{36}H_{36}N_2O_6$ 592.69
Alkaloid from the above-ground parts of *Thalictrum minus* var. *minus* (Ranunculaceae).

Mollov, N.M. *et al., Chem. Ind. (London)*, 1965, 1595 (*struct*)
Duchevska, Kh.B. *et al., Dokl. Bulg. Akad. Nauk*, 1971, **24**, 467; *CA*, **75**, 106101x, (*isol*)
Baldas, J. *et al., J.C.S. Perkin 1*, 1972, 597 (*ms*)
Wu, W.-N. *et al., J. Nat. Prod.*, 1977, **40**, 508
Başer, K.H.C. *et al., Planta Med.*, 1985, 448 (*Thalsivasine*)

Thalmiculine T-340

[106146-69-4]



$C_{38}H_{42}N_2O_7$ 638.759
Alkaloid from *Thalictrum cultratum* (Ranunculaceae). $[\alpha]_D$ -35 (c, 2.2 in MeOH).

$N^{2'}$-*De-Me, 1′,2′-didehydro:* ***Thalmiculimine***
[105437-18-1]
$C_{37}H_{38}N_2O_7$ 622.716
Alkaloid from *Thalictrum cultratum* (Ranunculaceae). $[\alpha]_D$ -5 (c, 0.09 in MeOH).

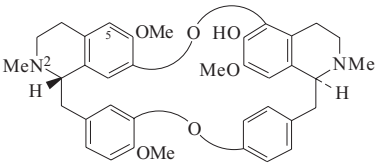
$N^{2'}$-*De-Me, 1′,2′-didehydro,* O^{12}-*de-Me:* ***Cultithalminine***
[112448-46-1]
$C_{36}H_{36}N_2O_7$ 608.69
Alkaloid from *Thalictrum cultratum* (Ranunculaceae). Amorph. $[\alpha]_D$ +7 (c, 0.17 in MeOH).

$N^{2'}$-*De-Me, 1′,2′-didehydro, 5-deoxy,* O^{12}-*de-Me:* ***Thalmiculatimine***
[105418-71-1]
$C_{36}H_{36}N_2O_6$ 592.69
Alkaloid from *Thalictrum cultratum* (Ranunculaceae). $[\alpha]_D$ +7.5 (c, 0.093 in MeOH).

Hussain, S.F. *et al., J. Nat. Prod.*, 1986, **49**, 488-493 (*Thalmiculine, Thalmiculimine, Thalmiculatimine, uv, pmr, ms, cd, struct*)
Herath, W.H.M.W. *et al., J. Nat. Prod.*, 1987, **50**, 721-725 (*Cultithalimine*)

Thalmine T-341

Talmine
[7682-65-7]



$C_{37}H_{40}N_2O_6$ 608.733
These alkaloids (*S,S*-series) are diastereomeric with those covered by the entries Lauberine, L-67 (2*R*,2′*S*-) and Dryadodaphnine, D-944 (2*S*,2′*R*-). Alkaloid from *Thalictrum minus* and *Thalictrum kuhistanicum* (Ranunculaceae). Shows strong antiinflammatory activity. Significant activity against ascites lymphoma in mice and rats. Cryst. (EtOH/$CHCl_3$). Mp 253° dec. $[\alpha]_D$ -64.5. Log P 8.12 (uncertain value) (calc).

Hydrochloride:
Cryst. (EtOH). Mp 147-157°.

N^2-*De-Me:* ***2-Northalmine***
[101488-79-3]
$C_{36}H_{38}N_2O_6$ 594.706
Alkaloid from *Thalictrum cultratum* (Ranunculaceae). $[\alpha]_D^{25}$ -31.8 (c, 0.43 in MeOH).

Me ether: **O-*Methylthalmine***
[7682-67-9]
$C_{38}H_{42}N_2O_6$ 622.76
Alkaloid from *Thalictrum sultanabadense* and *Thalictrum cultratum* (Ranunculaceae). Amorph. $[\alpha]_D$ -43 (MeOH).

O^{12}-*De-Me:* ***Thalbadenzine****. Thalbadensine*
[66834-86-4]
$C_{36}H_{38}N_2O_6$ 594.706
Alkaloid from the aerial parts of *Thalictrum sultanabadense*, and from *Thalictrum minus* (Ranunculaceae). Amorph. No opt. rotn. reported.

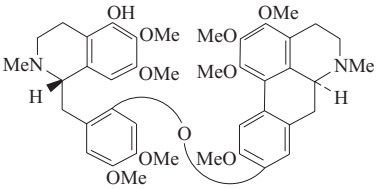
O^{12}-*De-Me,* $O^{6'}$-*Me:* ***Thalictine***
[58092-24-3]
$C_{37}H_{40}N_2O_6$ 608.733
Alkaloid from stems and leaves of *Thalictrum thunbergii* (Ranunculaceae). Needles +1.5 H_2O (as nitrate salt). Mp 226-228° (nitrate). $[\alpha]_D^{28}$ -15.8 (c, 1.203 in $CHCl_3$). $[\alpha]_D^{28}$ -12.2 (c, 1.639 in MeOH). Rapidly oxid. in air.

5-Hydroxy: ***5-Hydroxythalmine***
[105418-73-3]
$C_{37}H_{40}N_2O_7$ 624.732
Alkaloid from *Thalictrum cultratum* (Ranunculaceae). $[\alpha]_D$ -69 (c, 0.08 in MeOH).

Yunusov, S. *et al., Zh. Obshch. Khim.*, 1950, **20**, 1151; *CA*, **45**, 1608c (*isol*)
Telezhenetskaya, M.V. *et al., Khim. Prir. Soedin.*, 1966, **2**, 107; *Chem. Nat. Compd. (Engl. Transl.)*, 1966, **2**, 83 (*struct*)
Baldas, J. *et al., Tet. Lett.*, 1968, 6315 (*pmr, ms, struct*)
Moiseeva, G.P. *et al., Khim. Prir. Soedin.*, 1970, **6**, 705; *Chem. Nat. Compd. (Engl. Transl.)*, 1970, **6**, 715 (*ord*)
Baldas, J. *et al., J.C.S. Perkin 1*, 1972, 597 (*ms*)
Tomimatsu, T. *et al., Chem. Pharm. Bull.*, 1975, **23**, 2279 (*Thalictine*)
Abdizhabbarova, S. *et al., Khim. Prir. Soedin.*, 1978, **14**, 139; *Chem. Nat. Compd. (Engl. Transl.)*, 1978, **14**, 114 (*Thalbadenzine, isol, pmr, ms, struct*)
Moiseeva, G.P. *et al., Khim. Prir. Soedin.*, 1979, **15**, 818; *Chem. Nat. Compd. (Engl. Transl.)*, 1979, **15**, 723 (*cd, abs config*)
Mukhamedova, S. *et al., Khim. Prir. Soedin.*, 1984, **20**, 397; *CA*, **102**, 929037m (*O-Methylthalmine*)
Hussain, S.F. *et al., J. Nat. Prod.*, 1985, **48**, 962; 1986, **49**, 488 (*Northalmine, 5-Hydroxythalmine*)

Thalmineline T-342

[28328-00-9]



$C_{42}H_{50}N_2O_{10}$ 742.864
Alkaloid from the roots of *Thalictrum minus* (Ranunculaceae). Cryst. (EtOH or

Et_2O/heptane). Mp 108-110° (96-98°).

Reisch, J. *et al., Tet. Lett.*, 1970, 2113 (*uv, ir, pmr, struct*)
Borkowski, B. *et al., J. Chromatogr.*, 1971, **59**, 222 (*chromatog*)

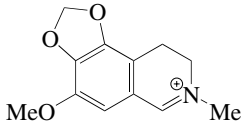
Thalmirabine T-343

[75352-27-1]
As Thalfinine, T-305 with
$R^1 = R^2 = Me$, $R^3 = H$
$C_{39}H_{44}N_2O_8$ 668.785
Alkaloid from the roots of *Thalictrum minus* (Ranunculaceae) Race B. Antiseptic; shows antibacterial activity. Amorph. solid + 1.5 H_2O. $[\alpha]_D$ +116 (c, 0.2 in MeOH). Log P 7.01 (uncertain value) (calc). λ_{max} 280 (ϵ 9000) (MeOH) (Berdy).

Wu, W.-N. *et al., J. Nat. Prod.*, 1980, **43**, 472 (*uv, ir, pmr, ms, cd, struct, activity*)

Thalpetaline T-344

3,4-Dihydro-7-methoxy-2-methyl-5,6-methylenedioxyisoquinolinium(1+)

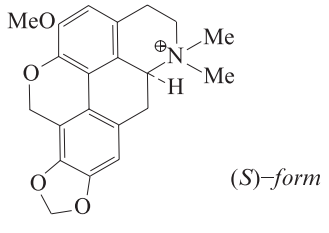


$C_{12}H_{14}NO_3^{\oplus}$ 220.248
Quaternary alkaloid from *Thalictrum petaloideum* var. *supradecompositum*. Amorph. (as iodide).

Al-Rehaily, A.J. *et al., Planta Med.*, 1998, **64**, 681 (*isol, pmr*)

Thalphenine T-345

*4,5,5*a*,11-Tetrahydro-1-methoxy-5,5-dimethyl-3*H*,6*H*-[1,3]benzodioxolo[4′,5′,6′:4,5][2]benzopyrano[1,8,7-hij]isoquinolinium(1+), 9CI*



(*S*)–*form*

$C_{21}H_{22}NO_4^{\oplus}$ 352.409

(*S*)-*form* [39027-72-0]
Quaternary alkaloid from *Thalictrum polygamum*, the roots of *Thalictrum minus* Race B, *Thalictrum rugosum* and *Thalictrum revolutum*, and from the stem bark of *Phellodendron wilsonii*. Shows hypotensive action in rabbits. Weak antibacterial activity vs. *Staphylococcus aureus*, *Mycobacterium smegmatis* and *Candida albicans*.

Chloride: [39027-97-9]
Needles (Me_2CO/MeOH). Mp 186-188°. $[\alpha]_D^{21}$ +71 (c, 0.28 in MeOH).

Iodide: [39005-06-6]
Cryst. + 2H_2O (Me_2CO aq.). Mp 198-199°.

N-*De-Me:* **N-*Demethylthalphenine***
[63640-46-0]
$C_{20}H_{19}NO_4$ 337.374
Alkaloid from the tops and fruits of *Thalictrum revolutum* (Ranunculaceae). Shows *in vitro* antibacterial activity *vs. S. aureus, M. smegmatis* and *C. albicans*. Needles (MeOH or C_6H_6/petrol). Mp 179.5-180.5°. $[\alpha]_D^{25}$ +104 (c, 0.18 in MeOH).

Di-N-*de-Me:* ***Bisnorthalphenine***
[53416-38-9]
$C_{19}H_{17}NO_4$ 323.348
Alkaloid from the tops of *Thalictrum revolutum* and from *Thalictrum polygamum* (Ranunculaceae). Shows weak antibacterial activity *vs. S. aureus, M. smegmatis* and *C. albicans*. Mp 124-125°. $[\alpha]_D^{25}$ +81 (c, 1.12 in MeOH).

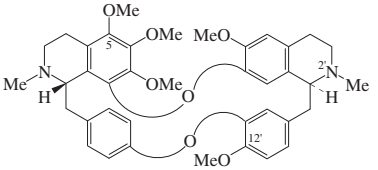
(±)-*form* [51744-23-1]
Synthetic. Cryst. + 1MeOH (MeOH)(as iodide). Mp 193-194° (iodide). CAS no. refers to iodide.

N-*De-Me:* [51665-96-4]
Synthetic. Cryst. (MeOH). Mp 179-180°.

Shamma, M. *et al., Chem. Comm.*, 1972, 408 (*uv, pmr, ms, cryst struct*)
Shamma, M. *et al., Heterocycles*, 1974, **2**, 427 (*uv, pmr, ms, struct, Bisnorthalphenine*)
Shamma, M. *et al., Tetrahedron*, 1974, **30**, 2279 (*synth*)
Wu, W.-N. *et al., J. Nat. Prod.*, 1976, **39**, 65; 249; 1977, **40**, 508; 1980, **43**, 472 (*isol, uv, ir, pmr, ms*)
Wu, J. *et al., J. Nat. Prod.*, 1977, **40**, 294 (*isol, uv, pmr, derivs*)

Thalrugosaminine T-346

5,6,6′,7,12′-Pentamethoxy-2,2′-dimethyloxyacanthan, 9CI. 5-O-*Methylthalisopine. 12′*-O-*Methylthaligosinine.* O,O-*Dimethylthalisopidine*
[22226-73-9]



$C_{39}H_{44}N_2O_7$ 652.786
Alkaloid from the roots of *Thalictrum revolutum*, *Thalictrum rugosum*, *Thalictrum foliolosum*, *Thalictrum alpinum* and *Thalictrum minus* Race B. Also detected in *Thalictrum isopyroides* (Ranunculaceae). Antiseptic, antihypertensive agent. Shows *in vitro* activity against *Mycobacterium smegmatis*. Amorph. solid + 0.5H_2O. Mp 103-105°. $[\alpha]_D^{25}$ -90.4 (c, 0.104 in MeOH). Log P 7.83 (uncertain value) (calc). λ_{max} 262 (ϵ 6310); 282 (ϵ 7600) (MeOH) (Berdy). λ_{max} 205 ; 282 (EtOH) (Berdy).

$N^{2'}$-*β-Oxide:* ***Thalrugosaminine 2′β*-N-*oxide***
[112448-43-8]
$C_{39}H_{44}N_2O_8$ 668.785
Alkaloid from *Thalictrum cultratum* (Ranunculaceae). Amorph. $[\alpha]_D$ -33 (c, 0.2 in MeOH). Struct. in paper not drawn according to Shamma-Moniot convention; called in the paper the 2α-*N*-oxide.

O^5-*De-Me:* ***Thalisopine***. *Thaligosine. 5*-O-*Demethylthalrugosaminine. Talizopine*
[22226-72-8]
$C_{38}H_{42}N_2O_7$ 638.759
Alkaloid from the seeds of *Thalictrum isopyroides*, the roots of *Thalictrum rugosum* and *Thalictrum foliolosum*, and from the subterranean parts of *Thalictrum minus* var. *microphyllum* (Ranunculaceae). Antiseptic, antiarrhythmic agent. Nervous depressant in mice. Cryst. + 1H_2O (Et_2O). Mp 143-145°. $[\alpha]_D$ -109 (c, 0.17 in MeOH). Log P 7.54 (uncertain value) (calc). λ_{max} 282 (ϵ 7250) (MeOH) (Berdy). λ_{max} 282 (ϵ 7600); 305 (ϵ 4360) (NaOH) (Berdy).

O^5-*De-Me,* $N^{2'}$-*β-oxide:* ***Thaligosine 2′β*-N-*oxide***
$C_{38}H_{42}N_2O_8$ 654.758
Alkaloid from *Thalictrum cultratum* (Ranunculaceae). Amorph. $[\alpha]_D$ -59 (c, 0.13 in MeOH). Struct. in paper not drawn in standard orientation; alkaloid incorrectly designated as the 2α-*N*-oxide.

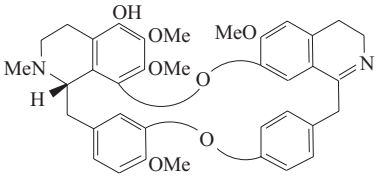
$O^{12'}$-*De-Me:* ***Thaligosinine***
[64235-38-7]
$C_{38}H_{42}N_2O_7$ 638.759
Alkaloid from the roots of *Thalictrum rugosum* (Ranunculaceae). Antiseptic. Cryst. (Et_2O). Mp 233-234.5°. $[\alpha]_D^{21}$ -58.5 (c, 0.316 in MeOH). Log P 7.25 (uncertain value) (calc).

O^5, $O^{12'}$-*Di-de-Me:* ***Thalisopidine***
[26989-49-1]
$C_{37}H_{40}N_2O_7$ 624.732
Alkaloid from the seeds of *Thalictrum isopyroides* (Ranunculaceae). Mp 215-216°. $[\alpha]_D^{19}$ -9 (EtOH).

Ismailov, Z.F. *et al., Dokl. Akad. Nauk SSSR, Ser. Khim.*, 1963, **20**, 21; *CA*, **61**, 4407g (*Thalisopine, struct*)
Pulatova, Kh.G. *et al., Khim. Prir. Soedin.*, 1968, **4**, 394; 1969, **5**, 609; *Chem. Nat. Compd. (Engl. Transl.)*, 1968, **4**, 336; 1969, **5**, 533 (*Thalrugosaminine, Thalisopine, Thalisopidine, isol, struct*)
Moiseeva, G.P. *et al., Khim. Prir. Soedin.*, 1970, **6**, 705; 1979, **15**, 818; *Chem. Nat. Compd. (Engl. Transl.)*, 1970, **6**, 715; 1979, **15**, 723 (*pmr, ms, cd, abs config*)
Shamma, M. *et al., Heterocycles*, 1976, **4**, 1817 (*abs config*)
Wu, W.-N. *et al., J. Nat. Prod.*, 1976, **39**, 65; 1977, **40**, 508 (*isol, uv, cd, pmr, ms, config, struct*)
Wu, W.N. *et al., J.O.C.*, 1978, **43**, 580 (*Thaisopine, Thaligosinine, isol, uv, cd, ir, pmr, ms, struct*)
Chattopadhyay, S.K. *et al., J. Nat. Prod.*, 1981, **44**, 45 (*Thalisopine, Thalrugosaminine, isol, uv, cd, ir, pmr, ms*)
Herath, W.H.M.W. *et al., J. Nat. Prod.*, 1987, **50**, 721 (*Thaligosine N-oxide, Thalrugosaminine N-oxide*)

Thalsimidine T-347

Thalcimidine
[22223-14-9]



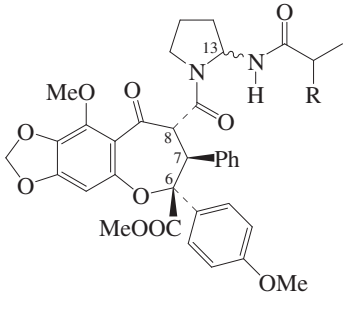
$C_{37}H_{38}N_2O_7$ 622.716
Alkaloid from the aerial parts of *Thalictrum simplex* (Ranunculaceae). Mp 195°. $[\alpha]_D^{14}$ +48 ($CHCl_3$).

Me ether: ***Thalsimine****. Thalcimine.* O-*Methylthalsimidine*
[5525-36-0]
$C_{38}H_{40}N_2O_7$ 636.743
Alkaloid from the aerial parts of *Thalictrum simplex* and *Thalictrum rugosum* and roots of *Thalictrum rochebrunianum* (Ranunculaceae). Anti-inflammatory, antitussive agent. Shows weak antineoplastic activity. Inhibitor of conditioned avoidance reactions in expt. animals. Mp 149-150°. $[\alpha]_D$ +22.6 (c, 0.7 in $CHCl_3$). Log P 7.18 (uncertain value) (calc). Exists in soln. as a 1:1 mixt. of conformers.

Maekh, S.Kh. *et al., Khim. Prir. Soedin.*, 1965, **1**, 188; 1968, **4**, 138; 393; *Chem. Nat. Compd. (Engl. Transl.)*, 1965, **1**, 144; 1968, **4**, 119; 335 (*isol, uv, ms, struct*)
Mollov, N.M. *et al., Dokl. Bulg. Akad. Nauk*, 1966, **19**, 491; 1967, **20**, 329; 1970, **23**, 181; *CA*, **65**, 13780d; **67**, 61598f; **73**, 32285v (*isol, deriv*)
Ismailov, Z.F. *et al., Khim. Prir. Soedin.*, 1968, **4**, 256; *Chem. Nat. Compd. (Engl. Transl.)*, 1968, **4**, 220 (*ms, deriv*)
Moiseeva, G.P. *et al., Khim. Prir. Soedin.*, 1970, **6**, 705; 1979, **15**, 818; *Chem. Nat. Compd. (Engl. Transl.)*, 1970, **6**, 715; 1979, **15**, 723 (*ord, cd, abs config*)
Saá, J.M. *et al., Tet. Lett.*, 1976, 513 (*pmr, deriv*)

Thapoxepine A T-348

[250161-96-7]



R = CH_3

$C_{36}H_{38}N_2O_{10}$ 658.704
Isol. as a C-13 epimeric mixt. Alkaloid from the roots of *Aglaia edulis*. $[\alpha]_D^{20}$ +55 (c, 0.6 in $CHCl_3$). λ_{max} 231 (sh) (log ϵ 4.38); 249 (sh) (log ϵ 4.19); 280 (log ϵ 3.9); 297 (sh) (log ϵ 3.78); 335 (log ϵ 3.38) (MeOH).

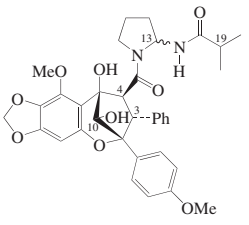
7,8-Diepimer: ***Thapoxepine B***
[250278-72-9]
$C_{36}H_{38}N_2O_{10}$ 658.704
Alkaloid from *Aglaia edulis*. Mp 260-262°. $[\alpha]_D^{20}$ +33 (c, 0.5 in $CHCl_3$). Isol. as a C-13 epimeric mixt. λ_{max} 231 (sh) (log ϵ 4.23); 249 (sh) (log ϵ 4.04); 281 (log ϵ 3.81); 297 (sh) (log ϵ 3.73); 336 (log ϵ 3.43) (MeOH).

Homologue (R = CH_2CH_3): ***Homothapoxepine A***
[250161-98-9]
$C_{37}H_{40}N_2O_{10}$ 672.73
Alkaloid from *Aglaia edulis*. $[\alpha]_D^{20}$ +110 (c, 0.4 in $CHCl_3$). Possesses (13*S*)-config. λ_{max} 231 (sh) (log ϵ 4.42); 249 (sh) (log ϵ 4.19); 280 (log ϵ 3.9); 297 (sh) (log ϵ 3.78); 334 (log ϵ 3.48) (MeOH).

Bacher, M. *et al., Phytochemistry*, 1999, **52**, 253-263 (*isol, uv, ir, pmr, cmr, ms*)

Thapsakin B T-349

[250161-87-6]



Absolute Configuration

$C_{35}H_{38}N_2O_9$ 630.693
Alkaloid from the roots of *Aglaia edulis*. $[\alpha]_D^{20}$ +24 (c, 0.4 in $CHCl_3$). Isol. as a C-13 epimeric mixt. λ_{max} 252 (sh) (log ϵ 3.7); 271 (sh) (log ϵ 3.51); 282 (sh) (log ϵ 3.54); 298 (log ϵ 3.68) (MeOH).

10-Ketone: ***Thapsakone B***
[250161-93-4]
$C_{35}H_{36}N_2O_9$ 628.677
Alkaloid from *Aglaia edulis*. $[\alpha]_D^{20}$ +8 (c, 0.2 in $CHCl_3$). λ_{max} 279 (sh) (log ϵ 3.6); 304 (log ϵ 3.71) (MeOH).

6-Demethoxy, N^{13}*-deacyl,* N^{13}*-(2ξ-methylbutanoyl), 10-Ac:* [251982-77-1]
$C_{37}H_{40}N_2O_9$ 656.731
Alkaloid from the stem bark of *Aglaia roxburghiana*.

6-Demethoxy, 19-hydroxy, N^{13}*-deacyl,* N^{13}*-(2ξ-methylbutanoyl):* [251982-76-0]
$C_{35}H_{38}N_2O_9$ 630.693
Alkaloid from the stem bark of *Aglaia roxburghiana*. C-19 config. not determined.

10-Epimer: ***Isothapsakin B***
[250144-64-0]
$C_{35}H_{38}N_2O_9$ 630.693
Alkaloid from *Aglaia edulis*. $[\alpha]_D^{20}$ -51 (c, 0.2 in $CHCl_3$). λ_{max} 251 (sh) (log ϵ 3.68); 272 (sh) (log ϵ 3.45); 282 (sh) (log ϵ 3.53); 298 (log ϵ 3.64) (MeOH).

3,4-Diepimer, 10-Ac: ***10-O-Acetylthapsakin A***
[250144-66-2]
$C_{37}H_{40}N_2O_{10}$ 672.73
Alkaloid from *Aglaia edulis*. Mp 150-152°. $[\alpha]_D^{20}$ -24 (c, 0.5 in $CHCl_3$). λ_{max} 251 (sh) (log ϵ 3.73); 272 (sh) (log ϵ 3.48); 282 (sh) (log ϵ 3.56); 298 (log ϵ 3.67) (MeOH).

3,4-Diepimer, 10-ketone: ***Thapsakone A***
[250161-91-2]
$C_{35}H_{36}N_2O_9$ 628.677
Alkaloid from *Aglaia edulis*. $[\alpha]_D^{20}$ +23 (c, 0.6 in $CHCl_3$). λ_{max} 280 (sh) (log ϵ 3.54); 304 (log ϵ 3.65) (MeOH).

3,4-Diepimer, N^{13}*-deacyl,* N^{13}*-(2-methylbutanoyl):* ***Homothapsakin A***
[250161-89-8]
$C_{36}H_{40}N_2O_9$ 644.72
Alkaloid from *Aglaia edulis*. $[\alpha]_D^{20}$ -135 (c, 0.3 in $CHCl_3$). λ_{max} 251 (sh) (log ϵ 3.76); 272 (sh) (log ϵ 3.51); 282 (sh) (log ϵ 3.58); 298 (log ϵ 3.69) (MeOH).

3,4-Diepimer, N^{13}*-deacyl,* N^{13}*-(3-methylbutanoyl):* ***Edulirin A***
$C_{36}H_{40}N_2O_9$ 644.72
Alkaloid from the bark of *Aglaia edulis*. Amorph. powder. $[\alpha]_D^{22}$ -148 (c, 0.2 in MeOH). C-13 config. not determined. λ_{max} 213 (log ϵ 4.61); 269 (log ϵ 3.27); 297 (log ϵ 3.52) (MeOH).

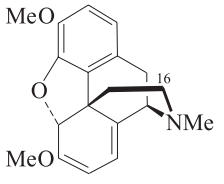
3,4-Diepimer, N^{13}*-deacyl,* N^{13}*-(3-methylbutanoyl), 10-Ac:* ***10-O-Acetyledulirin A***
$C_{38}H_{42}N_2O_{10}$ 686.757
Alkaloid from the bark of *Aglaia edulis*. Amorph. powder. $[\alpha]_D^{22}$ -71 (c, 0.1 in MeOH). C-13 config. not determined. λ_{max} 214 (log ϵ 4.59); 268 (log ϵ 3.31); 297 (log ϵ 3.55) (MeOH).

3,4-Diepimer, N^{13}*-deacyl,* N^{13}*-(3-methyl-2-butenoyl):* ***19,20-Dehydroedulirin A****. 19,20-Didehydroedulirin A*
$C_{36}H_{38}N_2O_9$ 642.704
Alkaloid from the bark of *Aglaia edulis*. Amorph. powder. $[\alpha]_D^{22}$ -46 (c, 0.1 in MeOH). C-13 config. not determined. λ_{max} 216 (log ϵ 4.57); 269 (log ϵ 3.39); 297 (log ϵ 3.53) (MeOH).

Molleyres, L.-P. *et al., Pestic. Sci.*, 1999, **55**, 486-503 (*Aglaia roxburghiana constits*)
Bacher, M. *et al., Phytochemistry*, 1999, **52**, 253-263 (*Thapsakins, Thapsakones, Isothapsakin B, Homothapsakin A*)
Kim, S. *et al., J. Nat. Prod.*, 2006, **69**, 1769-1775; 2007, **70**, 714 (*Edulirin A, 10-Acetyledulirin A, 19,20-Dehydroedulirin A*)

Thebaine T-350

6,7,8,14-Tetradehydro-4,5-epoxy-3,6-dimethoxy-17-methylmorphinan, 9CI. Codeinone methyl enol ether. Paramorphine
[115-37-7]



(–)-*form*

$C_{19}H_{21}NO_3$ 311.38
Log P 1.49 (uncertain value) (calc).
▶ QD2975000

(-)-*form*

Alkaloid from *Papaver* spp., esp. *Papaver bracteatum*; minor constit. of opium (Papaveraceae). Cholinesterase inhibitor. CNS stimulant. Narcotic showing higher narcotic activity and toxicity but weaker analgesic activity than Morphine, M-704. Causes histamine release from tissues. Rectangular plates (EtOH); needles by subl.; also obt. in cubes and prisms. Sol. C_6H_6, $CHCl_3$, v. spar. sol. petrol. Mp 192.5°. $[\alpha]_D^{16}$ -221 (c, 0.35 in MeOH). Log P 1.49 (uncertain value) (calc). Pharmacol. active isomer.

▶ LD_{50} (mus, ipr) 20 mg/kg.

N-*Oxide:* ***Thebaine* N-*oxide***
$C_{19}H_{21}NO_4$ 327.379
Alkaloid from *Papaver bracteatum* (Papaveraceae).

N-*Me:* ***Thebaine* N-*methosalt***. N-*Methylthebaine*
$C_{20}H_{24}NO_3^{\oplus}$ 326.414
Alkaloid from *Papaver bracteatum* (Papaveraceae). Needles (Me_2CO aq.) (as chloride). Mp 188-190° (chloride). $[\alpha]_D^{20}$ -125.8 (c, 0.81 in MeOH).

O^3-*De-Me:* *6,7,8,14-Tetradehydro-4,5-epoxy-6-methoxy-17-methylmorphinan-3-ol*. ***Oripavine***
[467-04-9]
$C_{18}H_{19}NO_3$ 297.353
Alkaloid from *Papaver somniferum* (opium poppy), *Papaver orientale* and *Papaver bracteatum*. Metab. of Thebaine (Papaveraceae). Analgesic. Needles (EtOH). Mp 201-202°. $[\alpha]_D^{20}$ -216.9 (c, 3.44 in $CHCl_3$). Log P 0.91 (uncertain value) (calc).

▶ QD2097500

O^3-*De-Me,* N-*de-Me:* ***Oripavidine***. *Nororipavine*
[7168-66-3]
$C_{17}H_{17}NO_3$ 283.326
Alkaloid from *Papaver orientale* (Papaveraceae). Mp 250° dec. $[\alpha]_D$ -90 (c, 0.27 in MeOH).

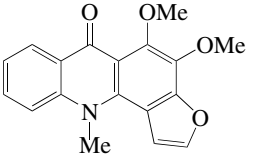
16ξ-Hydroxy: ***16-Hydroxythebaine***
[34388-67-5]
$C_{19}H_{21}NO_4$ 327.379
Constit. of opium. Pale yellow prisms (Me_2CO/petrol). Mp 126-128°.

(±)-*form*
Prisms (MeOH/Et_2O). Mp 184-186°. pK_a 8.15 (15°).

Kiselev, V.V. *et al., J. Gen. Chem. USSR (Engl. Transl.)*, 1948, **18**, 142; 855 (*Oripavine*)
Bentley, K.W. *et al., Chemistry of the Morphine Alkaloids*, Oxford Univ. Press, 1954, 184 (*isol, props*)
Okuda, S. *et al., Chem. Pharm. Bull.*, 1964, **12**, 104 (*pmr*)
Brochmann-Hanssen, E. *et al., J. Pharm. Sci.*, 1964, **53**, 1549 (*glc, tlc*)
Barton, D.H.R. *et al., J.C.S.*, 1965, 2423 (*biosynth*)
Rapoport, H. *et al., J.A.C.S.*, 1967, **89**, 1942 (*synth*)
Wheeler, D.M.S. *et al., J.A.C.S.*, 1967, **89**, 4494 (*ms*)
Kametani, T. *et al., J.C.S.(C)*, 1969, 2030 (*synth, uv, ord, cd*)
Brochmann-Hanssen, E. *et al., J.O.C.*, 1972, **37**, 1881 (*16-Hydroxythebaine*)
Barber, R.B. *et al., J. Med. Chem.*, 1975, **18**, 1074 (*synth*)
Terui, Y. *et al., Tet. Lett.*, 1975, 2853 (*cmr*)
Weller, D.D. *et al., J. Med. Chem.*, 1976, **19**, 1171 (*synth*)
Phillipson, J.D. *et al., Phytochemistry*, 1976, **15**, 1297 (*oxide*)
Shaffie, A. *et al., J. Polym. Sci.*, 1977, **66**, 1050 (*Oripavine, isol, uv, ir*)
Israilov, I.A. *et al., Khim. Prir. Soedin.*, 1977, **13**, 714; *Chem. Nat. Compd. (Engl. Transl.)*, 1977, **13**, 600 (*Oripavidine*)
Rönsch, H. *et al., Phytochemistry*, 1979, **18**, 1089 (N-*Metho salt*)
Neilsen, B. *et al., Planta Med.*, 1983, **48**, 205 (*Oripavine, isol, pmr, ms*)
Theuns, H.G. *et al., J.C.S. Perkin 1*, 1984, 1701 (*oxide*)
Rice, K.C. *et al., Chem. Biol. Isoquinoline Alkaloids, Int. Symp., Phytochem. Soc. Eur., Abstr. Pap.*, 1985, 191 (*rev, synth*)
Mahler, C.H. *et al., Acta Cryst. C*, 1996, **52**, 3193-3195 (*(-)-form, cryst struct*)
Coop, A. *et al., Heterocycles*, 1998, **49**, 43-47 (*synth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, TEN000

Thehaplosin T-351

4,5-Dimethoxy-11-methylfuro[2,3-c]acridin-6(11H)-one, 9CI
[151870-95-0]

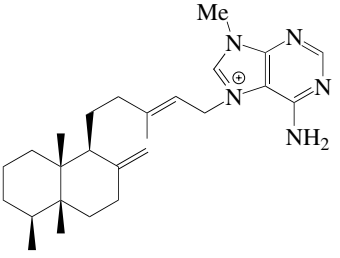


$C_{18}H_{15}NO_4$ 309.321
Alkaloid from aerial parts of *Haplophyllum thesioides*. Amorph. λ_{max} 242 (log ε 4.5); 270 (log ε 4.8); 322 (log ε 4.4); 396 (log ε 3.85) (MeOH).

Ulubelen, A. *et al., Nat. Prod. Lett.*, 1993, **1**, 269-272 (*isol, uv, pmr, cmr, struct*)

Agelas nakamurai Thelepogane-purine alkaloid T-352

[213749-81-6]



$C_{26}H_{40}N_5$ 422.636
Alkaloid from the sponge *Agelas nakamurai*. Amorph. solid. $[\alpha]_D$ +12.9 (c, 0.18 in MeOH). Closely related to the Agelasines. λ_{max} 215 (log ε 4.24); 272 (log ε 3.95) (MeOH).

Iwagawa, T. *et al., J. Nat. Prod.*, 1998, **61**, 1310-1312 (*isol, uv, ir, pmr, cmr*)

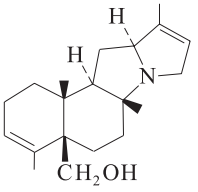
Thelepogidine T-353

$C_{18}H_{27}NO_2$ 289.417
Struct. unknown. Alkaloid from *Thelepogon elegans* whole plant (Poaceae). Needles (EtOH). Mp 254-255°. Conts. no C=O or OH groups.

Crow, W.D. *et al., Aust. J. Chem.*, 1962, **15**, 159-161

Thelepogine T-354

[6899-83-8]



Absolute configuration

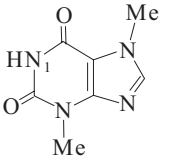
$C_{20}H_{31}NO$ 301.471
Alkaloid from the grass *Thelepogon elegans* (Poaceae). Mp 184-185°.

Methiodide: Mp 254-255°.

Crow, W.D. *et al., Aust. J. Chem.*, 1962, **15**, 159 (*isol*)
Fridrichsons, J. *et al., Acta Cryst.*, 1963, **16**, 206

Theobromine, BAN T-355

3,7-Dihydro-3,7-dimethyl-1H-purine-2,6-dione, 9CI. 3,7-Dimethylxanthine. Diurobromine. Santheose. Thesal. FEMA 3591. Many other names
[83-67-0]



$C_7H_8N_4O_2$ 180.166
Constit. of tea leaves (*Camellia thea*), *Theobroma cacao* (cocoa), *Cola acuminata*, *Paullinia cupana* and some *Ilex* and *Acer* spp. Adenosine receptor antagonist. Diuretic, cardiac stimulant, arterial dilator. Monoclinic needles. Mp 351°. Subl. 290. pK_{a1} 1; pK_{a2} 10 (25°). Log P -0.69 (calc).

▶ Human systemic effects by ingestion (CNS and gastrointestinal). LD_{50} (rat, orl) 1265 mg/kg. Exp. reprod. and teratogenic effects (large dose).
XH2275000

Perchlorate: Mp 271-273° dec.

1-Hexyl: ***Pentifylline, BAN, INN***. *Cosaldon. Hexyltheobromine. SK 7*
[1028-33-7]
$C_{13}H_{20}N_4O_2$ 264.327
Stabiliser for vitamin preparations. Vasodilator, diuretic agent. Mp 82-83°. Log P 2.59 (uncertain value) (calc).

▶ UO8450000

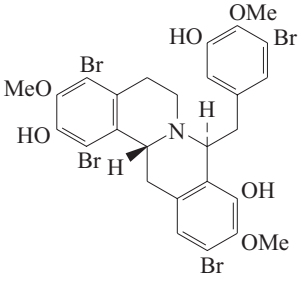
2-Hydroxy-*form*

O^2-*Me: 3,7-Dihydro-2-methoxy-3,7-dimethyl-6H-purin-6-one, 9CI.* ***2-O-Methyltheobromine***
[19143-62-5]
$C_8H_{10}N_4O_2$ 194.193
Constit. of the gorgonian *Echinomur-*

aceae splendens. λ_{max} 265 (ϵ 8555) (MeOH).
Blout, E.R. *et al., J.A.C.S.*, 1950, **72**, 479-484 (*ir*)
Lockhart, E.L. *et al., J.A.C.S.*, 1950, **72**, 5328-5329 (*uv*)
Spiteller, G. *et al., Monatsh. Chem.*, 1962, **93**, 632-638 (*ms*)
Twanmoh, L.-M. *et al., J. Het. Chem.*, 1973, **10**, 187-190 (*pmr*)
Nicolau, C. *et al., Z. Naturforsch., C*, 1974, **29**, 475-478 (*cmr*)
Bergmann, F. *et al., J.O.C.*, 1977, **42**, 2470-2473 (*synth*)
Royer, R.F. *et al., Actual. Pharmacol.*, 1982, **191**, 36-38 (*rev, pharmacol*)
Ueda, T. *et al., Heterocycles*, 1982, **19**, 2291-2294 (*synth*)
Tarka, S.M. *et al., Prog. Clin. Biol. Res.*, 1984, **158**, 9-16 (*props, isol, biosynth*)
Shively, C.A. *et al., Toxicol. Appl. Pharmacol.*, 1986, **84**, 593-598 (*metabol, toxicol, rev*)
Negwer, M. *et al., Organic-Chemical Drugs and their Synonyms, 6th edn., Akademie-Verlag*, 1987, 688 (*synonyms*)
Atta-ur-Rahman, *et al., Alkaloids (Academic Press)*, 1990, **38**, 225-323 (*spectral props*)
Fujii, T. *et al., Chem. Pharm. Bull.*, 1991, **39**, 2833-2862 (*synth, uv, pmr*)
IARC Monog., 1991, **51**, 421 (*rev, tox*)
Fenaroli's Handbook of Flavor Ingredients, 3rd edn., (ed. Burdock, G.A.), CRC Press, 1995, **2**, 751
Encyclopedia of Food and Color Additives, (ed. Burdock, G.A.), CRC Press, 1997, 2771-2772
Ford, K.A. *et al., Acta Cryst. C*, 1998, **54**, 1980-1983 (*cryst struct*)
Martindale, The Extra Pharmacopoeia, 32nd edn., Pharmaceutical Press, 1999, 765
Parameswaran, P.S. *et al., Indian J. Chem., Sect. B*, 2002, **41**, 1093-1096 (*2-O-Methyltheobromine*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, TEO500; TEO750

Theoneberine T-356

[145400-57-3]



$C_{27}H_{25}Br_4NO_6$ 779.114

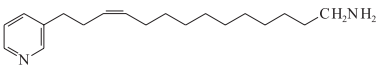
Biogenetically unique isoquinoline alkaloid. Classified as a hybrid between 1-benzylisoquinolines and protoberberines. Alkaloid from the Okinawan marine sponge *Theonella* sp. Exhibits antimicrobial activity against gram-positive bacteria. Also shows cytotoxicity against murine lymphoma L1210 and human epidermoid carcinoma KB cells *in vitro*. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 128°. $[\alpha]_D^{20}$ -53 (c, 0.6 in $CHCl_3$). λ_{max} 286 (ϵ 5300) (MeOH/HCl) (Derep). λ_{max} 300 (ϵ 6800) (MeOH/NaOH) (Derep). λ_{max} 284 (ϵ 5300) (MeOH) (Derep).

Kobayashi, J. *et al., J.O.C.*, 1992, **57**, 6680 (*isol, uv, ir, pmr, cmr, ms, struct*)

Theonelladine A T-357

14-(3-Pyridinyl)-11-tetradecen-1-amine, 9CI. 3-(14-Amino-3-tetradecenyl)pyridine

[125289-09-0]



$C_{19}H_{32}N_2$ 288.475

Mol. formula erroneously reported as $C_{20}H_{32}N_2$ in paper. Alkaloid from the Okinawan marine sponge *Theonella swinhoei*. Exhibits potent antineoplastic activity. Calcium release inducer. λ_{max} 210 (ϵ 12300); 257 (ϵ 3300); 263 (ϵ 3600); 269 (ϵ 2700) (MeOH) (Derep).

1-Aldehyde, oxime (Z-): [291775-83-2]
$C_{19}H_{30}N_2O$ 302.459
Isol. from *Amphimedon* sp. Oxime config. undetermined. λ_{max} 264 (ϵ 3300) (MeOH).

N-*Me:* ***Theonelladine B***
[125289-10-3]
$C_{20}H_{34}N_2$ 302.502
Alkaloid from *Theonella swinhoei*. Exhibits potent antineoplastic activity. Calcium release inducer. Mol. formula erroneously reported as $C_{21}H_{34}N_2$ in paper. λ_{max} 210 (ϵ 12300); 257 (ϵ 3300); 263 (ϵ 3600); 269 (ϵ 2700) (MeOH) (Derep).

3′,4′-Dihydro, 9′,10′-didehydro, 1-aldehyde, oxime (Z,Z-): [291775-84-3]
$C_{19}H_{30}N_2O$ 302.459
Isol. from *Amphimedon* sp. λ_{max} 264 (ϵ 3200) (MeOH).

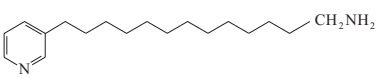
11,12-Didehydro: 14-(3-Pyridinyl)-11-tetradecyn-1-amine. 3-(11-Amino-3-tetradecynyl)pyridine. ***Niphatesine A***
[132923-10-5]
$C_{19}H_{30}N_2$ 286.459
Alkaloid from the marine sponge *Niphates* sp. Antineoplastic. Oil. λ_{max} 207 (ϵ 5900); 258 (ϵ 2800); 263 (ϵ 3200); 268 (ϵ 2500) (MeOH) (Berdy).

Kobayashi, J. *et al., J.C.S. Perkin 1*, 1990, 3301-3303 (*isol, uv, pmr, cmr, ms, struct*)
Rao, A.V.R. *et al., J.O.C.*, 1991, **56**, 4545-4547 (*synth*)
Teubner, A. *et al., Annalen*, 1993, 161-165 (*synth*)
Hirano, K. *et al., Chem. Pharm. Bull.*, 2000, **48**, 974-977 (*oximes, isol*)

Theonelladine C T-358

3-Pyridinetridecanamine. 3-(13-Aminotridecyl)pyridine. 3-(3-Pyridyl)tridecylamine

[125289-11-4]



$C_{18}H_{32}N_2$ 276.464

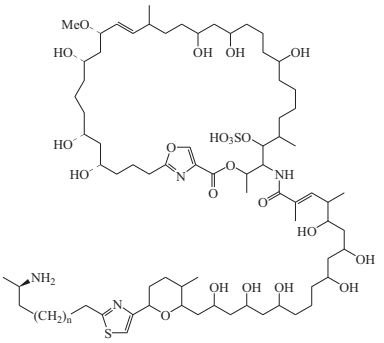
Alkaloid from the Okinawan marine sponge *Theonella swinhoei*. Exhibits potent antineoplastic activity. Calcium release inducer. Obt. mixed with traces of analogues having branched alkyl chains. λ_{max} 210 (ϵ 12300); 257 (ϵ 3300); 263 (ϵ 3600); 269 (ϵ 2700) (MeOH) (Derep).

N-*Me:* ***Theonelladine D***
[125289-12-5]
$C_{19}H_{34}N_2$ 290.491
Alkaloid from *Theonella swinhoei*. Exhibits potent antineoplastic activity. Calcium release inducer. Not obt. completely pure. λ_{max} 210 (ϵ 12300); 257 (ϵ 3300); 263 (ϵ 3600); 269 (ϵ 2700) (MeOH) (Derep).

N-*Methoxy:* N-*Methoxy-3-pyridinetridecanamine.* ***Ikimine C***
[131479-32-8]
$C_{19}H_{34}N_2O$ 306.49
Alkaloid from *Niphates* sp. and other sponges. Cytotoxic. Oil. λ_{max} 260 (ϵ 2000); 265 (ϵ 6610); 270 (ϵ 2880) (MeOH) (Derep). λ_{max} 260 (ϵ 1995); 264 (ϵ 6166); 272 (ϵ 3630) (MeOH) (Berdy).

Kobayashi, J. *et al., Tet. Lett.*, 1989, **30**, 4833 (*isol, uv, pmr, cmr, ms, struct*)
Carroll, A.R. *et al., Tetrahedron*, 1990, **46**, 6637 (*Ikimine C*)
Rao, A.V.R. *et al., J.O.C.*, 1991, **56**, 4545 (*synth*)
Teubner, A. *et al., Annalen*, 1993, 161-165 (*synth*)
Wang, Y. *et al., J.O.C.*, 2003, **68**, 3090-3098 (*synth*)
Shorey, B.J. *et al., Tetrahedron*, 2007, **63**, 5587-5592 (*synth*)

Theonezolides T-359



Macrolide antibiotics. n = 6,4,8 for Theonezolides A,B,C respectively. Partial stereochem. is known. Isol. from the marine sponge *Theonella* sp. Cytotoxic agents.

Theonezolide A [150243-49-5]
$C_{79}H_{140}N_4O_{22}S_2$ 1562.121
Needles + $3H_2O$. Mp 123°. $[\alpha]_D^{28}$ -8.1 (c, 1.5 in MeOH). λ_{max} 210 (ϵ 22000) (MeOH).

Theonezolide B [157536-46-4]
$C_{77}H_{136}N_4O_{22}S_2$ 1534.067
Cryst. Mp 125°. $[\alpha]_D^{28}$ -8 (c, 1.5 in MeOH). λ_{max} 211 (ϵ 22000) (MeOH).

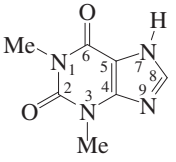
Theonezolide C [157536-47-5]
$C_{81}H_{144}N_4O_{22}S_2$ 1590.174
Cryst. Mp 122°. $[\alpha]_D^{28}$ -7.5 (c, 1.5 in MeOH). λ_{max} 211 (ϵ 25000) (MeOH).

Kobayashi, J. *et al., J.A.C.S.*, 1993, **115**, 6661-6665 (*isol, uv, ir, pmr, cmr, ms*)

Kondo, K. *et al., Tetrahedron*, 1994, **50**, 8355-8362 (*isol, uv, ir, pmr, cmr, ms, struct*)
Kobayashi, J. *et al., Heterocycles*, 1998, **49**, 39-42 (*stereochem*)
Sato, M. *et al., Tetrahedron*, 1998, **54**, 4819-4826 (*stereochem*)

Theophylline, BAN, JAN, USAN T-360

*3,7-Dihydro-1,3-dimethyl-1*H*-purine-2,6-dione, 9CI. 1,3-Dimethylxanthine. Austyn. Elan. Elixophyllin. Euphyllin. Nuelin. Spophyllin retard. Teonova. Theocin. Theodel. Theo-Dur. Theograd. Theolair. Theona P. Theotard. Uniphyllin. Many other names*
[58-55-9]



$C_7H_8N_4O_2$ 180.166
Constit. of tea leaves (*Camellia thea*), *Ilex paraguariensis* and *Paullinia cupana*. Also isol. from the marine sponge *Haliclona* sp. Adenosine receptor antagonist. Smooth muscle relaxant of value in the treatment of bronchial conditions. Anti-asthmatic agent. Synergises the antileukaemic acitity of nitrosoureas. Diuretic and cardiac stimulant. Mp 268° Mp 264°. pK_{a1} 1; pK_{a2} 8.6 (25°). Log P -0.06 (uncertain value) (calc).

▶ Adverse effects reported when used therapeutically incl. gastrointestinal and CNS changes. Overdosage can cause death. LD_{50} (rat, orl) 244 mg/kg. Exp. reprod. and teratogenic effects. XH3850000

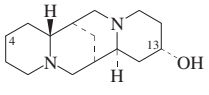
N^7*-(2-Deoxy-β-*D*-*erythro*-pentofuranosyl): **Aplysidine***
[144096-49-1]
$C_{12}H_{16}N_4O_5$ 296.282
Isol. from the sponge *Aplysina* sp. Adenosine A1 receptor antagonist. Amorph. solid. Sol. H_2O, MeOH. Mp 162°. $[\alpha]_D^{20}$ +17 (c, 0.4 in H_2O). λ_{max} 274 (ε 8500) (H_2O) (Berdy). λ_{max} 275 (ε 8400) (HCl) (Berdy). λ_{max} 274 (ε 8400) (NaOH) (Berdy).

[49746-06-7 , 5967-84-0 , 8002-89-9 , 85531-28-8]

Cohen, J.L. *et al., Anal. Profiles Drug Subst.*, 1975, **4**, 466-493 (*rev, ir, pmr, uv, ms, anal*)
Naqvi, A.A. *et al., J. Appl. Crystallogr.*, 1981, **14**, 464 (*cryst struct*)
Kondo, K. *et al., Tetrahedron*, 1992, **48**, 7145-7148 (*Aplysidine*)
Ebisuzaki, Y. *et al., Acta Cryst. C*, 1997, **53**, 777-779 (*cryst struct*)
Markham, A. *et al., Drugs*, 1998, **56**, 1081-1091 (*rev*)

Thermopsamine T-361

13-Hydroxysparteine
[14145-73-4]



Absolute Configuration

$C_{15}H_{26}N_2O$ 250.383
Alkaloid from *Thermopsis lanceolata* epigeal parts (Fabaceae). Also from *Virgilia divaricata* and *Virgilia oroboides* (no stereochem. indicated). Mp 154-155°. $[\alpha]_D$ +26.4 (EtOH).

Dipicrate: Mp 130-131°.

Methiodide: Mp 244-246° dec.

Ketone: ***13-Oxosparteine***
[55869-87-9]
$C_{15}H_{24}N_2O$ 248.367
Alkaloid from *Virgilia divaricata* and *Virgilia oroboides* (Fabaceae) (no stereochem. detd.).

4-Oxo: ***4-Oxothermopsamine****. 13α-Hydroxy-4-oxosparteine*
[162584-08-9]
$C_{15}H_{24}N_2O_2$ 264.367
Minor alkaloid from the seeds of *Lupinus varius*. Amorph. $[\alpha]_D^{25}$ -131 (c, 0.1 in MeOH).

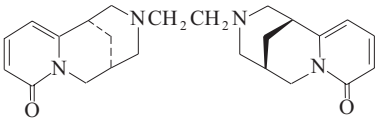
13-Epimer: ***13-Epihydroxysparteine***
$C_{15}H_{26}N_2O$ 250.383
Alkaloid from *Thermopsis mongolica*.

[72401-67-3 , 72401-68-4 , 10349-35-6]

Neuner-Jehle, N. *et al., Monatsh. Chem.*, 1964, **95**, 687-709 (*ms*)
Vinogradova, V.I. *et al., Khim. Prir. Soedin.*, 1971, **7**, 463-466; *Chem. Nat. Compd. (Engl. Transl.)*, 1971, **7**, 440-442 (*isol, struct*)
Christov, V. *et al., J. Nat. Prod.*, 1991, **54**, 1413-1415 (*13-epi-Hydroxysparteine*)
Veen, G. *et al., Phytochemistry*, 1991, **30**, 1891-1895 (*isol*)
Mohamed, M.H. *et al., Pharmazie*, 1999, **54**, 778-780 (*4-Oxothermopsamine*)

Thermopsidine T-362

Alternine. Dimethylenedicytisine



$C_{24}H_{30}N_4O_2$ 406.527
Isol. from *Thermopsis alterniflora* (Fabaceae). Mp 184-186°. $[\alpha]_D$ -216.3. Artifact arising from $ClCH_2CH_2Cl$ used in isoln.

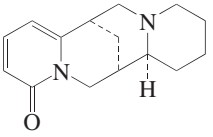
Hydrate: Mp 70°.

Hydrochloride (1:2): Mp 270-271° dec.

Padukina, Z.P. *et al., CA*, 1960, **54**, 6783

Thermopsine T-363

Hexalupine. Isoanagyrine



(-)-*form*

$C_{15}H_{20}N_2O$ 244.336

(+)-*form*
Alkaloid from *Lupinus caudatus* and *Lupinus corymbosus* (Fabaceae). Mp 207°. $[\alpha]_D^{23}$ +155 (EtOH).

Perchlorate: Mp 289°.

(-)-*form* [486-90-8]
Alkaloid from *Thermopsis lanceolata*, *Thermopsis rhombifolia* and *Sophora secundiflora* seeds (Fabaceae). Mp 207°. $[\alpha]_D$ -159.6 (EtOH).

Hydrochloride: Mp 247-248° dec.

(±)-*form*
Prisms (Me_2CO). Mp 171-172°.

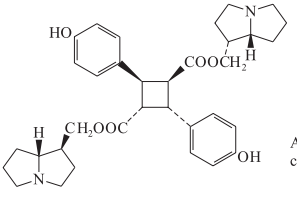
Perchlorate: Mp 260-263°.

11-Epimer: see Anagyrine, A-970

Orechov, A. *et al., Ber.*, 1933, **66**, 625 (*isol*)
Cockburn, W.F. *et al., Can. J. Chem.*, 1951, **29**, 13 (*struct*)
Marion, L. *et al., Can. J. Chem.*, 1951, **29**, 22 (*isol, ir*)
van Tamelen, E.E. *et al., J.A.C.S.*, 1956, **78**, 2913 (*synth*)
Bohlmann, F. *et al., Chem. Ber.*, 1962, **95**, 944 (*synth*)
Vul'fson, N.S. *et al., Khim. Geterotsikl. Soedin.*, 1974, 251; *CA*, **81**, 13678z (*ms*)
Robins, D.J. *et al., Magn. Reson. Chem.*, 1992, **30**, 1125 (*config*)
Gray, D. *et al., Angew. Chem., Int. Ed.*, 2006, **45**, 2419-2423 (*synth*)

Thesine T-364

Diisoretronecanyl p,p′*-dihydroxy-α-truxillate*
[528-37-0]



Absolute configuration

$C_{34}H_{42}N_2O_6$ 574.716
Alkaloid from *Thesium minkwitzianum* whole plant (Santalaceae). Cryst. (EtOH). Mp 254-256°. Hydrol. gives (+)-isoretronecanol and thesinic acid (*p,p′*-dihydroxy-α-truxillic acid).

Sulfate: Mp 244-246°. $[\alpha]_D^{20}$ +33.4 (c, 1.6 in H_2O). Forms a tetrahydrate.

Picrate:
Fine-yellow cryst. (EtOH). Mp 224-226° dec.

Methiodide (1:2): Mp 140-150°. $[\alpha]_D^{20}$ +33.24 (c, 2.2 in EtOH).

Arendaruk, A.P. *et al., Zh. Obshch. Khim.*, 1960, **30**, 484; 489; 670; *J. Gen. Chem. USSR (Engl. Transl.)*, 507; 511; 693 (*isol, struct*)

Thesinicine T-365

$C_{10}H_{11}NO_2$ 177.202
Prob. pyrrolizidine alkaloid. Struct. unknown. Alkaloid from epigeal parts of *Thesium minkwitzianum* (Santalaceae). Mp 124-125°.

Hydrochloride: Mp 197-199°.

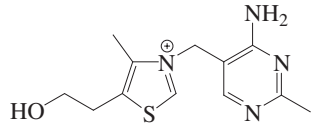
Picrate: Mp 158-159° dec.

Arendaruk, A.P. *et al., Zh. Obshch. Khim.*, 1960, **30**, 670-676; *J. Gen. Chem. USSR (Engl. Transl.)*, 1960, **30**, 693

Thiamine, BAN, INN T-366

3-[(4-Amino-2-methyl-5-pyrimidinyl)-methyl]-5-(2-hydroxyethyl)-4-methylthiazolium(1+), 9CI, 8CI. Vitamin B_1. Torulin. Oryzanin. Aneurine. Vitaneurin. Many other names

[70-16-6]



$C_{12}H_{17}N_4OS^{\oplus}$ 265.358

Ubiquitous constit. of biol. materials. Produced by numerous bacterial spp. Used as aq. soln. for fluorimetric detn. of $PO_4^{2\ominus}$ (λ_{max} 440 nm, 5-100 ppb, via molybdatophosphate). Essential vitamin. Sol. H_2O; sl. sol. EtOH. pK_a 5.17. Log P -3.91 (uncertain value) (calc). Labile in acid or alkaline soln. or on heating. In alkaline soln. the thiazolium ring is reversibly opened to thiols. In therapy thiamine can be replaced by various ring-opened analogues, e.g. Benfotiamine.

Chloride: Thiamine monochloride. Thiacrat

[59-43-8]

$C_{12}H_{17}ClN_4OS$ 300.811

Cryst. + $1H_2O$ (H_2O). Mp 120-122° dec., 163-165° dec. (anhyd.). Infrequently encountered, hydrochloride more stable.

▶XI6550000

Chloride; hydrochloride: ***Thiamine hydrochloride, USAN****. Bewon. Betaxin. Betalin S. Vinothiam. FEMA 3322*

[67-03-8]

$C_{12}H_{18}Cl_2N_4OS$ 337.272

Clinically used vitamin source. Oral or parenterally administered doses. Well tolerated. Plates or cryst. (EtOH). V. sol. H_2O; spar. sol. EtOH; insol. Et_2O, C_6H_6. Mp 248° dec. Mp is not a good criterion of purity.

▶XI7350000

Nitrate: ***Thiamine mononitrate, USAN***

[532-43-4]

$C_{12}H_{17}N_5O_4S$ 327.363

Clinically used vitamin source. Mp 164-165° Mp 196-200°.

▶XI7400000

O-*Phosphate: Monophosphothiamine*

[532-40-1]

$C_{12}H_{18}N_4O_4PS^{\oplus}$ 345.338

Vitamin B_1 deriv. used clinically. Mp 200° (as chloride).

O-*Diphosphate:* ***Thiamine diphosphate****. Cocarboxylase. Diphosphothiamine. Pyruvodehydrase. Thiamine pyrophosphate. Aneurin diphosphate. Coxylase. Cozymase II. Interacton. Nutrase. Many other names*

[154-87-0]

$C_{12}H_{18}N_4O_7P_2S$ 424.31

Coenzyme of the yeast enzyme carboxylase. Catalyses the decarboxylation of α-ketoacids. V. pale yellow needles (as hydrochloride). Mp 240° (hydrochloride).

▶XI7552000

O-*Triphosphate: Thiamine triphosphate. Thiamine triphosphoric acid. TTP*†

[15666-52-1 (chloride)]

$C_{12}H_{20}N_4O_{13}P_3S$ 553.296

Isol. from animal tissues. Cryst. (EtOH aq.).

[7019-71-8]

Aldrich Library of NMR Spectra, 2nd edn., 1983, **2**, 515C (*nmr*)

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 647A (*ir*)

Lohmann, K. *et al., Biochem. Z.*, 1937, **294**, 188

Todd, A.R. *et al., J.C.S.*, 1937, 364; 1938, 26 (*synth*)

Weijlard, J. *et al., J.A.C.S.*, 1938, **60**, 2263; 1941, 63-1160

Karrer, P. *et al., Helv. Chim. Acta*, 1946, **29**, 711

Lenormant, H. *et al., Bull. Soc. Chim. Fr.*, 1954, 375 (*ir, uv*)

Greiling, H. *et al., Nature (London)*, 1958, **13**, 251 (*isol, triphosphate*)

Kotera, K. *et al., Chem. Pharm. Bull.*, 1965, **13**, 440 (*pmr*)

Hesse, M. *et al., Helv. Chim. Acta*, 1967, **50**, 808 (*ms*)

Linnett, P.E. *et al., J.C.S.(C)*, 1967, 796 (*biosynth*)

Ullrich, *et al., Vitam. Horm. (N.Y.)*, 1970, **28**, 365 (*rev, biochem*)

Florkin, M. *et al., Compr. Biochem.*, Elsevier, Amsterdam, Vol. 11, 1971, 3 (*rev, biosynth*)

Pletcher, J. *et al., Acta Cryst. B*, 1972, **28**, 2928; 1997, **33**, 3349 (*cryst struct*)

Karrer, W. *et al., Konstitution und Vorkommen der Organischen Pflanzenstoffe*, 2nd edn., Birkhäuser Verlag, 1972, no. 2609

Holzbecher, J. *et al., Anal. Chim. Acta*, 1973, **64**, 147 (*detn, P*)

Dwidevi, B.K. *et al., J. Agric. Food Chem.*, 1973, **21**, 54 (*props*)

Gallo, A.A. *et al., J. Biol. Chem.*, 1974, **249**, 1382 (*cmr*)

Thiamine, [Proc. Pap. Discuss. U.S.-Jpn. Semin.], 2nd, Wiley, N.Y., 1976, (*book*)

Chauvet-Monges, A. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1978, **286**, 489 (*nmr*)

Oka, Y. *et al., Kirk-Othmer Encycl. Chem. Technol., 3rd edn., Wiley*, 1978, **24**, 124 (*synth*)

Penttinen, H.K. *et al., Methods Enzymol.*, 1979, **62**, 112 (*triphosphate*)

Banan, E.J. *et al., Z. Naturforsch., B*, 1979, **34**, 1615 (*ir*)

Rindi, G. *et al., Acta Vitaminol. Enzymol.*, 1982, **4**, 59 (*metab*)

Brown, G.M. *et al., Adv. Enzymol. Relat. Areas Mol. Biol.*, 1982, **53**, 345 (*biosynth*)

Sable, H.Z. *et al., Ann. N.Y. Acad. Sci.*, 1982, **378**, 78; 378; 454 (*book, nmr, cryst struct, conformn*)

Sanemori, H. *et al., Experientia*, 1982, **38**, 1044 (*metab*)

Martindale, The Extra Pharmacopoeia, 28th/29th edn., Pharmaceutical Press, 1982, 7836

Uray, G. *et al., Monatsh. Chem.*, 1982, **113**, 1475 (*synth*)

Davis, R.E. *et al., Adv. Clin. Chem.*, 1983, **23**, 93 (*chemistry*)

Ishida, T. *et al., Acta Cryst. C*, 1984, **40**, 437 (*cryst struct*)

Gubler, C.J. *et al., Handbook of Vitamins*, (Machlin, L.J. Ed.), M. Dekker, New York, 1984, 245 (*rev*)

Negwer, M. *et al., Organic-Chemical Drugs and their Synonyms, 6th edn., Akademie-Verlag*, 1987, 2515; 2540; 2558; 4574

Thiamin Pyrophosphate Biochemistry, (eds. Schellenberger, A. *et al*), CRC Press, Boca Raton, Florida, 1988, (*book*)

Al-Rashood, K.A.M. *et al., Anal. Profiles Drug Subst.*, 1989, **18**, 413 (*rev*)

Contant, P. *et al., Helv. Chim. Acta*, 1990, **73**, 1300 (*synth*)

Hu, N. *et al., Acta Cryst. C*, 1992, **48**, 1951 (*cryst struct*)

Bender, D.A. *et al., Nutritional Biochemistry of the Vitamins*, Cambridge University Press, Cambridge, 1992, 128 (*rev*)

Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 1053

Casas, J.S. *et al., Acta Cryst. C*, 1994, **50**, 1265 (*cryst struct, acetate*)

Fenaroli's Handbook of Flavor Ingredients, 3rd edn., (ed. Burdock, G.A.), CRC Press, 1995, **2**, 1797

Estramareix, B. *et al., New J. Chem.*, 1996, **20**, 607 (*rev, biosynth*)

Spenser, I.D. *et al., Angew. Chem., Int. Ed.*, 1997, **36**, 1033-1046 (*rev, biosynth*)

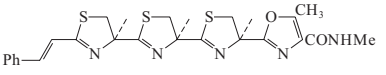
Encyclopedia of Food and Color Additives, (ed. Burdock, G.A.), CRC Press, 1997, 2772-2778 (*rev, use, occur*)

Roje, S. *et al., Phytochemistry*, 2007, **68**, 1904-1921 (*biosynth, rev*)

Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, TES750; TET300; TET500; TET750

Thiangazole T-367

[138667-71-7]



$C_{26}H_{29}N_5O_2S_3$ 539.745

Metab. of *Polyangium* sp. Inhibitor of HIV-1. Anthelmintic. Mp 140°. $[\alpha]_D^{22}$ -287 (c, 0.1 in MeOH). Similar to Tantazole B, T-30. λ_{max} 211 (sh); 218 (sh); 223 (ϵ 37800); 228 (sh); 288 (ϵ 36400); 300 (sh) (MeOH) (Derep). λ_{max} 223 (ϵ 38000); 288 (ϵ 36200) (MeOH) (Berdy). λ_{max} 223 (ϵ 49774); 289 (ϵ 41640) (EtOH) (Berdy).

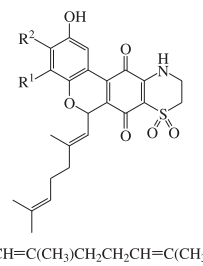
Jansen, R. *et al., Annalen*, 1992, 357 (*isol, uv, ir, pmr, cmr, ms, struct*)

Boyce, R.J. *et al., Tet. Lett.*, 1994, **35**, 5705 (*synth*)

Akaji, K. *et al., Tetrahedron*, 1999, **55**, 10685-10694 (*synth*)

Thiaplidiaquinone A T-368

[852872-92-5]



R^1 = $-CH_2CH{=}C(CH_3)CH_2CH_2CH{=}C(CH_3)_2$ (*E*), R^2 = H

$C_{34}H_{41}NO_6S$ 591.767

Alkaloid from the ascidian *Aplidium*

conicum. Antitumour agent. λ_{max} 354 (ϵ 9300) (MeOH).

Aiello, A. *et al., J. Med. Chem.*, 2005, **48**, 3410-3416 (*isol, pmr, cmr*)

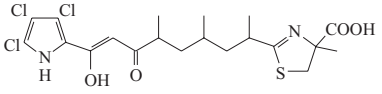
Thiaplidiaquinone B T-369

[852872-93-6]
As Thiaplidiaquinone A, T-368 with R^1 = H, R^2 = -CH_2CH=$C(CH_3)CH_2CH_2CH$=$C(CH_3)_2$(*E*-)
$C_{34}H_{41}NO_6S$ 591.767
Alkaloid from the ascidian *Aplidium conicum*. Antitumour agent. λ_{max} 324 (ϵ 6300) (MeOH).

Aiello, A. *et al., J. Med. Chem.*, 2005, **48**, 3410-3416 (*isol, pmr, cmr*)

Thiazohalostatin T-370

Antibiotic HQ 24A. HQ 24A
[152509-78-9]

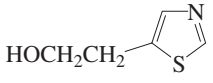


$C_{20}H_{25}Cl_3N_2O_4S$ 495.853
Prod. by *Actinospora* sp. HQ24 and *Actinomadura* sp. Hq24-Bp4037. Cytoprotective agent. Antioxidant, anti-ischaemic agent, antiinflammatory. Powder. Sol. MeOH, EtOAc, EtOH, Me_2CO, $CHCl_3$. Mp 67-69°. $[\alpha]_D^{22}$ -122 (c, 1 in MeOH). λ_{max} 252 (ϵ 7650); 275 (ϵ 5110); 287 (ϵ 4690); 345 (ϵ 33500); 360 (ϵ 28900) (MeOH) (Derep).

Yamagishi, Y. *et al., J. Antibiot.*, 1993, **46**, 1633; 1638 (*isol, pmr, cmr, struct, props*)
Japan. Pat., 1994, 94 157 520; *CA*, **121**, 253888f

5-Thiazoleethanol, 9CI T-371

2-(5-Thiazolyl)ethanol. 5-(2-Hydroxyethyl)thiazole
[5664-55-1]

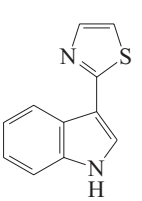


C_5H_7NOS 129.182
Prod. by an unidentified marine bacterium. Bp_{10} 138-141°.

Ulf, H. *et al., Acta Pharm. Suec.*, 1967, **4**, 269-280 (*synth*)
Laasch, H. *et al., Dissertation*, Univ. of Göttingen, 2005, (*marine, isol*)

3-(2-Thiazolyl)-1*H*-indole, 9CI T-372

Camalexin. *2-(3-Indolyl)thiazole*
[135531-86-1]



$C_{11}H_8N_2S$ 200.264
Alkaloid from the leaves of *Camelina sativa* (false flax) infected by the fungus *Alternaria brassicae*. Phytoalexin. Cryst. (MeOH). Mp 134-137°. λ_{max} 214 (ϵ 22200); 274 (ϵ 7900); 318 (ϵ 13800) (MeOH) (Derep).

N^1-Ac: [141690-88-2]
$C_{13}H_{10}N_2OS$ 242.301
Cryst. Mp 117.5°.

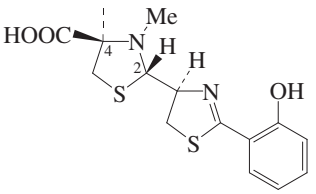
N^1-Me: 1-Methyl-3-(2-thiazolyl)-1H-indole, 9CI. ***1-Methylcamalexin***
[194155-86-7]
$C_{12}H_{10}N_2S$ 214.29
From *Capsella bursa-pastoris* (shepherd's purse) infected with *Alternaria brassicae*. Phytoalexin. Brown solid (hexane). Mp 69-70°.

6-Methoxy: 6-Methoxy-3-(2-thiazolyl)-1H-indole. ***6-Methoxycamalexin***
[135531-87-2]
$C_{12}H_{10}N_2OS$ 230.29
From *Camelina sativa* (false flax) infected with *Alternaria brassicae*. Phytoalexin. Cryst. (MeOH/hexane). Mp 157-159°. λ_{max} 218 (ϵ 21700); 296 (ϵ 11500); 324 (ϵ 11300) (MeOH) (Derep).

Browne, L.M. *et al., Tetrahedron*, 1991, **47**, 3909 (*isol, uv, ir, pmr, cmr, ms, struct*)
Ayer, W.A. *et al., Tetrahedron*, 1992, **48**, 2919 (*synth*)
Fürstner, A. *et al., Tetrahedron*, 1995, **51**, 773 (*synth*)
Sakamoto, T. *et al., J.C.S. Perkin 1*, 1996, 1927 (*synth, pmr*)
Moody, C.J. *et al., Anti-Cancer Drugs*, 1997, **8**, 489-499 (*synth, ir, pmr, cmr, ms, N^1-Ac, N^1-Me*)
Pedras, M.S.C. *et al., Bioorg. Med. Chem. Lett.*, 1997, **7**, 2255-2260 (*metab*)
Jimenez, L.D. *et al., Phytoprotection*, 1997, **78**, 99-103 (*1-Methylcamalexin*)
Pedras, M.S.C. *et al., Phytochemistry*, 2000, **53**, 161-176 (*rev*)
Dzurilla, M. *et al., Molecules*, 2001, **6**, 716-720 (*synth*)
Koradin, C. *et al., Tetrahedron*, 2003, **59**, 1571-1587 (*synth*)
Glawischnig, E. *et al., Phytochemistry*, 2007, **68**, 401-406 (*rev*)

Thiazostatin A T-373

4-Methylpyochelin. AG 55. Antibiotic AG 55
[124508-94-7]



$C_{15}H_{18}N_2O_3S_2$ 338.451
Isol. from *Streptomyces tolurosus*. Antioxidant. Pale yellow needles. Mp 69-72° dec. $[\alpha]_D^{25}$ +29.1 (c, 1 in MeOH). λ_{max} 211 (ϵ 18700); 270 (ϵ 11800); 341 (ϵ 4700) (MeOH/HCl) (Derep). λ_{max} 213 (ϵ 23800); 248 (ϵ 12200); 312 (ϵ 5400) (MeOH/NaOH) (Derep). λ_{max} 211 (ϵ 18700); 270 (ϵ 11800); 341 (ϵ 4700) (MeOH/HCl) (Derep).

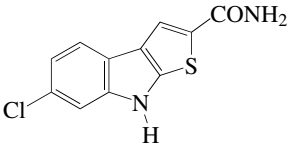
2-Epimer: ***Thiazostatin B***
[124509-83-7]
$C_{15}H_{18}N_2O_3S_2$ 338.451
From *Streptomyces tolurosus*. Antioxidant. Pale yellow needles. Sol. Me_2CO, MeOH, $CHCl_3$, EtOAc, DMSO; poorly sol. H_2O, hexane. Mp 75-78°. $[\alpha]_D^{25}$ -80.7 (c, 1 in MeOH). λ_{max} 211 (ϵ 18700); 270 (ϵ 11800); 341 (ϵ 4700) (MeOH/HCl) (Derep). λ_{max} 213 (ϵ 23800); 248 (ϵ 12200); 312 (ϵ 5400) (MeOH/NaOH) (Derep). λ_{max} 211 (ϵ 18700); 270 (ϵ 11800); 341 (ϵ 4700) (MeOH/HCl) (Derep). λ_{max} 211 (E1%/1cm 567); 270 (E1%/1cm 350); 341 (E1%/1cm 140) (MeOH/HCl) (Berdy). λ_{max} 213 (E1%/1cm 717); 250 (E1%/1cm 363); 312 (E1%/1cm 157) (MeOH/NaOH) (Berdy).

[122054-40-4]

Shindo, K. *et al., J. Antibiot.*, 1989, **42**, 1526-1529 (*isol*)

Thienodolin T-374

6-Chloro-8H-thieno[2,3-b]indole-2-carboxamide, 9CI. MJ 286A
[149127-27-5]

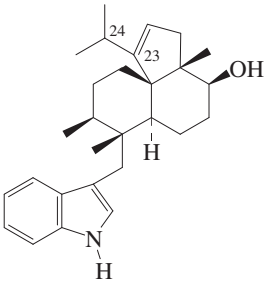


$C_{11}H_7ClN_2OS$ 250.708
Prod. by *Streptomyces albogriseolus*. Plant growth regulator. Dark yellow prisms. Sol. MeOH, DMSO, Me_2CO; poorly sol. H_2O. Mp 249-251°. λ_{max} 239 (ϵ 44700); 271 (sh) (ϵ 12600); 288 (ϵ 18500); 327 (ϵ 18300) (MeOH). λ_{max} 238 ; 288 (ϵ 18500); 327 (MeOH-HCl) (Berdy). λ_{max} 238 ; 288 ; 327 (ϵ 18300) (MeOH-NaOH) (Berdy).

Kanbe, K. *et al., Biosci., Biotechnol., Biochem.*, 1993, **57**, 632-635; 636-637 (*isol, uv, ir, pmr, cmr, cryst struct*)
Engqvist, R. *et al., Eur. J. Org. Chem.*, 2004, 2589-2592 (*synth*)

Thiersindole A T-375

[610317-20-9]



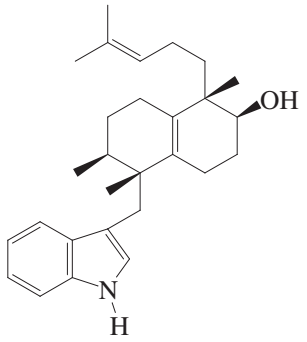
$C_{28}H_{39}NO$ 405.622
Prod. by *Penicillium thiersii* MYC-500. Amorph. solid. Mp 89-92°. $[\alpha]_D$ +26 (c, 0.1 in CH_2Cl_2). λ_{max} 227 (log ϵ 4.26); 254 (log ϵ 3.43); 292 (log ϵ 3.48) (MeOH).

Δ^{23}-Isomer: ***Thiersindole B***
[610317-21-0]
$C_{28}H_{39}NO$ 405.622
Prod. by *Penicillium thiersii* MYC-500. Amorph. solid. Mp 95-98°. $[\alpha]_D$ +21 (c, 0.1 in CH_2Cl_2). λ_{max} 224 (log ϵ 4.28); 284 (log ϵ 3.49); 292 (log ϵ 3.45) (MeOH).

Li, C. *et al., J. Nat. Prod.*, 2003, **66**, 1232-1235 (*isol, pmr, cmr, ms*)

Thiersindole C T-376

[610317-22-1]

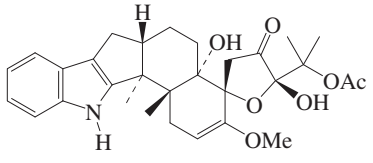


$C_{28}H_{39}NO$ 405.622
Prod. by *Penicillium thiersii* MYC-500. Oil. $[\alpha]_D$ -42 (c, 0.1 in CH_2Cl_2). λ_{max} 220 (log ϵ 4.26); 288 (log ϵ 3.49); 292 (log ϵ 3.48) (MeOH).

Li, C. *et al., J. Nat. Prod.*, 2003, **66**, 1232-1235 (*isol, pmr, cmr, ms*)

Thiersinine A T-377

[468733-26-8]



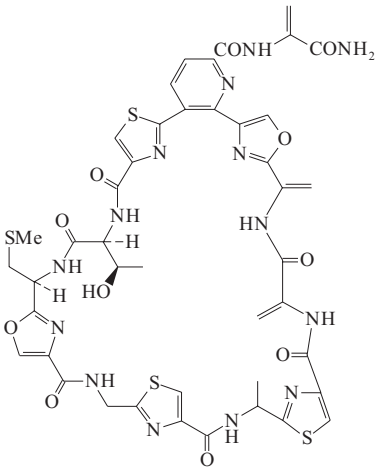
$C_{30}H_{37}NO_7$ 523.625
Prod. by *Penicillium thiersii* NRRL 28147. Antiinsectan. Solid. Mp 255-258°. $[\alpha]_D$ -80 (c, 0.3 in CH_2Cl_2). λ_{max} 230 (ϵ 17000); 272 (ϵ 3000) (MeOH).

O-*De-Me:* ***Thiersinine B***
[468733-27-9]
$C_{29}H_{35}NO_7$ 509.598
Prod. by *Penicillium thiersii* NRRL 28147. Antiinsectan. Oil. $[\alpha]_D$ -93 (c, 0.1 in CH_2Cl_2). A diketone. λ_{max} 230 (ϵ 20300); 284 (ϵ 3800) (MeOH).

Li, C. *et al., Org. Lett.*, 2002, **4**, 3095-3098 (*isol, pmr, cmr, ms*)

Thioactin T-378

[161505-22-2]



$C_{43}H_{40}N_{14}O_{11}S_4$ 1057.14
Cyclic peptide antibiotic related to Thioxamycin. Prod. by *Streptomyces* sp. DP94. Powder. Sol. Me_2CO, $CHCl_3$; poorly sol. H_2O. Mp 250-255° dec. $[\alpha]_D^{19}$ -42.5 (c, 0.1 in $CHCl_3$/MeOH). λ_{max} 215 (sh) (ϵ 40000); 236 (ϵ 42000) (EtOH).

Yun, B.-S. *et al., J. Antibiot.*, 1994, **47**, 1541 (*isol, uv, ir, pmr, cmr*)

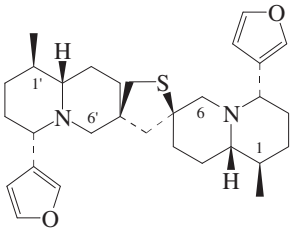
Thiobideoxynupharidine T-379

$C_{30}H_{40}N_2OS$ 476.725
Nuphar alkaloid. Struct. unknown. Alkaloid from the rhizomes of *Nuphar luteum* (Nymphaeaceae). Prismatic needles (as diperchlorate). Mp 225-226° (diperchlorate). $[\alpha]_D$ +26.6 (EtOH) (diperchlorate).

Achmatowicz, O. *et al., Pol. J. Chem. (Rocz. Chem.)*, 1962, **36**, 1815-1825 (*isol, ir*)

Thiobinupharidine T-380

Thionuphlutine A
[30343-72-7]



Absolute Configuration

$C_{30}H_{42}N_2O_2S$ 494.74
Alkaloid from *Nuphar luteum* (Nymphaeaceae). Mp 129-130°. $[\alpha]_D^{25}$ +7.8 (c, 0.18 in MeOH).

Hydrobromide (1:2):
Cryst. + $2H_2O$. Mp 245-247°.

Perchlorate (1:2): Mp 282-284°. $[\alpha]_D$ +49.8 (H_2O).

S-*Oxide(*S-*):* **anti-*Thiobinupharidine sulfoxide***
$C_{30}H_{42}N_2O_3S$ 510.739
Alkaloid from *Nuphar luteum* (Nymphaeaceae). Glass. $[\alpha]_D$ -64 (c, 0.73 in EtOH).

6ξ-Hydroxy: ***Thionupharoline****. 6-Hydroxythiobinupharidine*
[50478-55-2]
$C_{30}H_{42}N_2O_3S$ 510.739
Alkaloid from the rhizomes of *Nuphar luteum* (Nymphaeaceae). Noncryst.; cryst. (as perchlorate). Mp 265-273° dec. (perchlorate). $[\alpha]_D^{25}$ +33 (c, 3.6 in CH_2Cl_2). λ_{max} 204 (ϵ 35000) (EtOH).

6′ξ-Hydroxy: ***6′-Hydroxythiobinupharidine***
[52002-85-4]
$C_{30}H_{42}N_2O_3S$ 510.739
Alkaloid from *Nuphar luteum* (Nymphaeaceae). Mp 216-220° (as perchlorate). $[\alpha]_D^{25}$ +34 (c, 1 in 95% EtOH).

*6*R-*Hydroxy,* S-*oxide(*S-*):* **syn-*6-Hydroxythiobinupharidine sulfoxide***
$C_{30}H_{42}N_2O_4S$ 526.739
Alkaloid from the rhizomes of *Nuphar luteum* (Nymphaeaceae). Amorph. $[\alpha]_D^{20}$ +3.04 (c, 0.85 in $CHCl_3$).

*6′*R-*Hydroxy,* S-*oxide(*R-*):* ***Nupharpumilamine A***
[205530-11-6]
$C_{30}H_{42}N_2O_4S$ 526.739
Alkaloid from the rhizomes of *Nuphar pumilum* (Nymphaeaceae). Oil. $[\alpha]_D^{25}$ -33.4 (c, 0.6 in $CHCl_3$).

*6′*R-*Hydroxy,* S-*oxide(*S-*):* **syn-*6′-Hydroxythiobinupharidine sulfoxide***
[105857-25-8]
$C_{30}H_{42}N_2O_4S$ 526.739
Alkaloid from the rhizomes of *Nuphar luteum* (Nymphaeaceae). Cryst. (C_6H_6). Mp 198-204°. $[\alpha]_D^{20}$ +9.7 (c, 0.79 in $CHCl_3$).

*6*R,*6′*R-*Dihydroxy:* ***Nuphleine****. 6,6′-Dihydroxythiobinupharidine*
[30343-70-5]
$C_{30}H_{42}N_2O_4S$ 526.739
Alkaloid from the rhizomes of *Nuphar luteum* (Nymphaeaceae). Shows antifungal activity. Cryst. (MeOH) (as perchlorate). Mp 225-226° (perchlorate).

*6*S,*6′*S-*Dihydroxy:* ***Thionupharodiolone***
[51153-11-8]
$C_{30}H_{42}N_2O_4S$ 526.739
Alkaloid from the rhizomes of *Nuphar luteum* (Nymphaeaceae). Mp 156-158°.

*6*R,*6′*R-*Dihydroxy,* S-*oxide(*S-*):* **syn-*6,6′-Dihydroxythiobinupharidine sulfoxide***
$C_{30}H_{42}N_2O_5S$ 542.738
Alkaloid from the rhizomes of *Nuphar luteum* (Nymphaeaceae). Cryst. (C_6H_6). Mp 160-165°. $[\alpha]_D^{20}$ +39 (c, 0.79 in $CHCl_3$). Incorrectly indexed in CAS.

6- or 6′-Ethoxy: ***Ethoxythiobinupharidine***
[51141-41-4]
$C_{32}H_{46}N_2O_3S$ 538.793
Alkaloid from *Nuphar luteum* (Nymphaeaceae). Mp 270° (as perchlorate). Indexed in *CA* as 6-Ethoxythiobinupharidine, although the exact location of the ethoxy group appears to be unknown.

6ξ,6′ξ-Diethoxy: ***Diethoxythiobinupharidine***
[50764-65-3]
$C_{34}H_{50}N_2O_4S$ 582.846
Alkaloid from *Nuphar luteum* (Nymphaeaceae). Mp 230° (as perchlorate).

1-Epimer: ***1-Epithiobinupharidine***
[58845-61-7]
$C_{30}H_{42}N_2O_2S$ 494.74
Alkaloid from *Nuphar luteum* (Nymphaeaceae). $[\alpha]_D^{25}$ +23.9 (EtOH) (for mixt. with 1′-epimer). Isol. in admixture with the 1′-epimer.

1′-Epimer: ***1′-Epithiobinupharidine***
[58845-62-8]
$C_{30}H_{42}N_2O_2S$ 494.74
Alkaloid from *Nuphar luteum* (Nymphaeaceae). Isol. in admixture with the 1-epimer.

7-Epimer: Thionuphlutine B
[30343-74-9]
Synthetic. Liq. $[\alpha]_D^{25}$ -131 (c, 0.8 in MeOH).

7-Epimer, S-*oxide(*R-*):* ***Thionuphlutine B α-S-oxide***
[60252-64-4]
$C_{30}H_{42}N_2O_3S$ 510.739
Alkaloid from *Nuphar luteum* (Nymphaeaceae).

7-Epimer, S-*oxide(*S-*):* ***Thionuphlutine B β-S-oxide***
[60252-63-3]
$C_{30}H_{42}N_2O_3S$ 510.739
Alkaloid from *Nuphar luteum* (Nymphaeaceae).

7-Epimer, 6ξ-hydroxy: ***6-Hydroxythionuphlutine B***
[52002-90-1]
$C_{30}H_{42}N_2O_3S$ 510.739
Alkaloid from *Nuphar luteum* (Nymphaeaceae). λ_{max} 205 (ϵ 24400) (acidic 95% EtOH).

*7-Epimer, 6′*S-*hydroxy,* S-*oxide(*R-*):* ***Nupharpumilamine B***
[205530-12-7]
$C_{30}H_{42}N_2O_4S$ 526.739
Alkaloid from *Nuphar pumilum*. Oil. $[\alpha]_D^{25}$ -60.1 (c, 1.6 in $CHCl_3$).

7-Epimer, 6ξ,6′ξ-dihydroxy: ***6,6′-Dihydroxythionuphlutine B***
[30343-71-6]
$C_{30}H_{42}N_2O_4S$ 526.739
Alkaloid from *Nuphar luteum* (Nymphaeaceae). Glassy solid. $[\alpha]_D^{25}$ -69 (c, 0.1 in CH_2Cl_2).

1,1′-Diepimer: ***1-Epi-1′-epithiobinupharidine***
[58845-63-9]
$C_{30}H_{42}N_2O_2S$ 494.74
Alkaloid from *Nuphar luteum* (Nymphaeaceae). $[\alpha]_D^{25}$ +30.9 (c, 0.9 in 95% EtOH).

1,1′-Diepimer, S-*oxide(*R-*):* ***Nupharpumilamine C***
$C_{30}H_{42}N_2O_3S$ 510.739
Alkaloid from the rhizomes of *Nuphar pumilum* (Nymphaeaceae). Oil. $[\alpha]_D^{25}$ -75.1 (c, 0.5 in $CHCl_3$).

1,1′-Diepimer, S-*oxide(*S-*):* ***Nupharpumilamine D***
$C_{30}H_{42}N_2O_3S$ 510.739
Alkaloid from the rhizomes of *Nuphar pumilum* (Nymphaeaceae). Oil. $[\alpha]_D^{25}$ +20.8 (c, 0.9 in $CHCl_3$).

7,7′-Diepimer: ***Neothiobinupharidine***
[4850-09-3]
$C_{30}H_{42}N_2O_2S$ 494.74
Alkaloid from *Nuphar luteum* (Nymphaeaceae). Mp 159-160°.

7,7′-Diepimer, diperchlorate: Mp 320° dec.

7,7′-Diepimer, S-*oxide:* ***Neothiobinupharidine sulfoxide***
$C_{30}H_{42}N_2O_3S$ 510.739
Alkaloid from *Nuphar luteum* (Nymphaeaceae). Cryst. (MeOH/Me_2CO). Mp 240-242°.

7,7′-Diepimer, 6ξ-hydroxy: ***6-Hydroxyneothiobinupharidine***
[55869-57-3]
$C_{30}H_{42}N_2O_3S$ 510.739
Alkaloid from *Nuphar luteum* (Nymphaeaceae).

7,7′-Diepimer, 6′ξ-hydroxy: ***6′-Hydroxyneothiobinupharidine***
[55869-58-4]
$C_{30}H_{42}N_2O_3S$ 510.739
Alkaloid from *Nuphar luteum* (Nymphaeaceae).

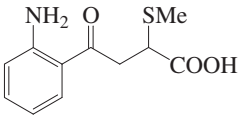
7,7′-Diepimer, 6ξ,6′ξ-dihydroxy: ***6,6′-Dihydroxyneothiobinupharidine***
[58846-67-6]
$C_{30}H_{42}N_2O_4S$ 526.739
Alkaloid from *Nuphar luteum* (Nymphaeaceae).

[205530-14-9 , 205530-13-8]

Achmatowicz, O. *et al., Tet. Lett.*, 1962, 1121-1124; 1964, 927-934 (*Thiobinupharidine, Neothiobinupharidine, isol, ir, pmr, ms*)
Birnbaum, G.I. *et al., Tet. Lett.*, 1965, 4149 (*Neothiobinupharidine, cryst struct*)
Il'inskaya, T.N. *et al., Khim. Prir. Soedin.*, 1967, **3**, 178; *Chem. Nat. Compd. (Engl. Transl.)*, 1967, **3**, 147-149 (*Nuphleine*)
LaLonde, R.T. *et al., J.O.C.*, 1971, **36**, 3703-3706; 1974, **39**, 2892-2897 (*6′-Hydroxythiobinupharidine, Thionuphlutine B, 6-Hydroxythionuphlutine B*)
Wróbel, J.T. *et al., Can. J. Chem.*, 1972, **50**, 1968 (*Neothiobinupharidine sulfoxide*)
Wróbel, J.T. *et al., Bull. Acad. Pol. Sci., Ser. Sci. Chim.*, 1973, **21**, 551-554; 1976, **24**, 99-100; *CA*, **79**, 137334n; **85**, 94579a (*Thionupharodioline, Ethoxythiobinupharidine, Diethoxythiobinupharidine, Thionuphlutine B oxide*)
Wróbel, J.T. *et al., Can. J. Chem.*, 1973, **51**, 2810-2820 (*cryst struct, abs config, ms, pmr*)
Cullen, W.P. *et al., J. Pharm. Sci.*, 1973, **62**, 826-827 (*activity*)
LaLonde, R.T. *et al., J.A.C.S.*, 1973, **95**, 6342-6349 (*ms, pmr, Thionupharoline, Thionuphlutine B derivs*)
Wong, C.F. *et al., J.O.C.*, 1973, **38**, 3225-3226 (*abs config, Thionuphlutine B*)
Martin, T.I. *et al., Can. J. Chem.*, 1974, **52**, 2705-2713 (*Thionupharoline*)
LaLonde, R.T. *et al., Org. Mass Spectrom.*, 1974, **9**, 714-725 (*ms*)
LaLonde, R.T. *et al., Can. J. Chem.*, 1975, **53**, 1714-1715; 3545-3550 (*cmr, 1-Epithiobinupharidine, 1′-Epithiobinupharidine*)
Perel'son, M.E. *et al., Khim. Prir. Soedin.*, 1975, **11**, 768-790; *Chem. Nat. Compd. (Engl. Transl.)*, 1975, **11**, 789 (*Nuphleine*)
Wróbel, J. *et al., Bull. Acad. Pol. Sci., Ser. Sci. Chim.*, 1976, **24**, 99; *CA*, **85**, 94579a (*oxides*)
LaLonde, R.T. *et al., J.O.C.*, 1976, **41**, 291 (*Hydroxyneothiobinupharidines*)
Iwanow, A. *et al., Phytochemistry*, 1986, **25**, 2227-2231 (*sulfoxides*)
Yoshikawa, M. *et al., Heterocycles*, 1997, **46**, 301-308 (*cmr, Nupharpumilamines*)

Thiobutacin T-381

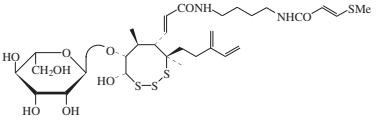
2-Amino-α-(methylthio)-γ-oxobenzenebutanoic acid. 4-(2-Aminophenyl)-2-(methylthio)-4-oxobutanoic acid



$C_{11}H_{13}NO_3S$ 239.295
Prod. by *Lechevalieria aerocolonigenes* strain VK-A9. Antifungal and antioomycetic agent. Brown solid. λ_{max} 227 ; 260 ; 360 (MeOH).

Lee, J.Y. *et al., J. Nat. Prod.*, 2004, **67**, 2076-2078 (*isol, pmr, cmr*)
Chakor, N. *et al., Tet. Lett.*, 2008, **49**, 5056-5058 (*synth*)

Perophora viridis 1,2,3-Thiocane glycoside T-382

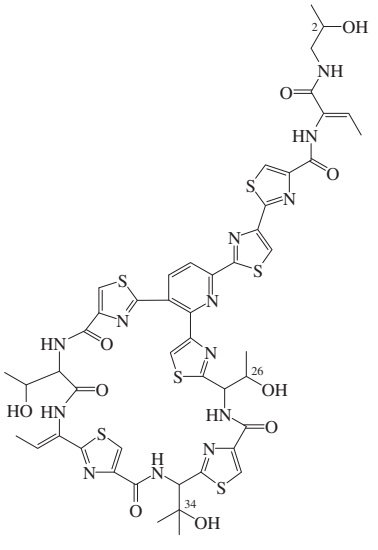


$C_{30}H_{48}N_2O_9S_4$ 708.981
Isol. from the Atlantic tunicate *Perophora viridis*. Pale yellow amorph. solid. $[\alpha]_D^{24}$ +197.3 (c, 0.11 in EtOH). λ_{max} 257 (log ϵ 2.78) (EtOH).

Rezanka, T. *et al., Eur. J. Org. Chem.*, 2002, 2400-2404 (*isol, pmr, cmr, ms*)

Thiocillin I T-383

13′,19′-Didehydro-19′-deoxy-28,44-dihydro-41,44-dihydroxymicrococcin P, 9CI
[59979-01-0]



$C_{48}H_{49}N_{13}O_{10}S_6$ 1160.392

Thiopeptide antibiotic. Similar to Micrococcins. Isol. from *Bacillus badius* and *Bacillus cereus*. Active against gram-positive bacteria. Amorph. powder. Sol. DMF, DMSO, THF, $CHCl_3$-MeOH; fairly sol. MeOH, $CHCl_3$, Me_2CO, EtOH; poorly sol. EtOAc, C_6H_6, Et_2O, H_2O, acids. $[\alpha]_D^{24.5}$ +97.7 (c, 2.028 in 90% EtOH aq.). λ_{max} 217 (E1%/1cm 734); 275 (E1%/1cm 326); 348 (E1%/1cm 199) (MeOH) (Berdy).

▶ LD_{50} (mus, ipr) 500 - 1500 mg/kg. XK6510000

26-Me ether: ***Thiocillin II***

[59979-02-1]

$C_{49}H_{51}N_{13}O_{10}S_6$ 1174.419

From *Bacillus badius* and *Bacillus cereus*. Amorph. powder. Sol. DMSO, $CHCl_3$-MeOH, THF, DMF; fairly sol. MeOH, EtOH, $CHCl_3$, Me_2CO; poorly sol. EtOAc, H_2O, acids, Et_2O, C_6H_6. $[\alpha]_D^{24.5}$ +93.4 (c, 0.59 in 90% EtOH aq.). λ_{max} 217 (E1%/1cm 705); 278 (E1%/1cm 291); 348 (E1%/1cm 202) (MeOH) (Berdy).

▶ LD_{50} (mus, ipr) -400 - 600 mg/kg. XK6520000

34-Me ether: ***Thiocillin III***

[59979-03-2]

$C_{49}H_{51}N_{13}O_{10}S_6$ 1174.419

From *Bacillus badius*. Amorph. powder. Sol. DMF, THF, $CHCl_3$-MeOH, DMSO; fairly sol. MeOH, $CHCl_3$, EtOH, Me_2CO; poorly sol. EtOAc, Et_2O, H_2O, acids, C_6H_6. $[\alpha]_D^{24.5}$ +88 (c, 0.85 in 90% EtOH aq.). λ_{max} 217 (E1%/1cm 729); 275 (E1%/1cm 302); 347 (E1%/1cm 208) (MeOH) (Berdy).

2-Ketone: ***Antibiotic YM 266183***. *YM 266183*

$C_{48}H_{47}N_{13}O_{10}S_6$ 1158.376

Prod. by the marine-derived *Bacillus cereus* QN03323. Active against gram-positive bacteria. Powder. $[\alpha]_D^{25}$ +64.7 (c, 0.37 in MeOH). λ_{max} 213 (ϵ 79830); 290 (sh) ; 344 (ϵ 14460) (MeOH).

2-Ketone, 26-Me ether: ***Antibiotic YM 266184***. *YM 266184*

$C_{49}H_{49}N_{13}O_{10}S_6$ 1172.403

Prod. by the marine-derived *Bacillus cereus* QN03323. Active against gram-positive bacteria. Powder. $[\alpha]_D^{25}$ +60.9 (c, 0.15 in MeOH). λ_{max} 215 (ϵ 100960); 290 (sh) ; 346 (ϵ 29350) (MeOH).

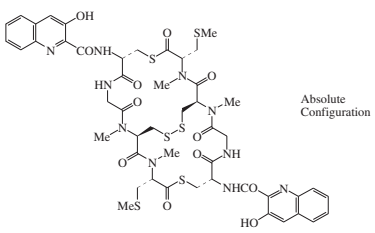
Shoji, J. *et al., J. Antibiot.*, 1976, **29**, 366-374; 1981, **34**, 1126-1136 (*isol, struct*)

Nagai, K. *et al., J. Antibiot.*, 2003, **56**, 123-128; 129-134 (*YM 266183, YM 266184*)

Thiocoraline T-384

PM 93135. Antibiotic PM 93135

[173046-02-1]



$C_{48}H_{56}N_{10}O_{12}S_6$ 1157.426

Depsipeptide antibiotic. Prod. by a marine *Micromonospora* sp. L-13-ACM2-092. Cytotoxic agent. RNA synthesis inhibitor. Weakly inhibits HIV-1 reverse transcriptase. Pale yellow cryst. Mp 266-266.5°. $[\alpha]_D^{25}$ -190.9 (c, 1 in $CHCl_3$). λ_{max} 218 (ϵ 76500); 230 (ϵ 76700); 298 (ϵ 9400); 360 (ϵ 8900) (MeOH).

Romero, F. *et al., J. Antibiot.*, 1997, **50**, 734-737 (*isol, props*)

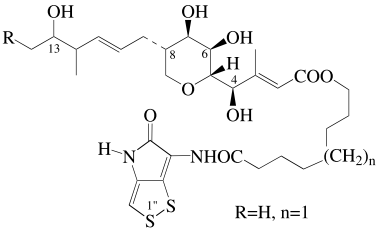
Baz, J.P. *et al., J. Antibiot.*, 1997, **50**, 738-741 (*uv, ir, pmr, cmr*)

Boger, D.L. *et al., J.A.C.S.*, 2001, **123**, 561-568 (*synth, abs config, activity*)

Lombó, F. *et al., ChemBioChem*, 2006, **7**, 366-367 (*biosynth*)

Thiomarinol A T-385

[146697-04-3]



$C_{30}H_{44}N_2O_9S_2$ 640.818

Prod. by the marine bacterium *Alteromonas rava*. Active against gram-positive and -negative bacteria. Inhibitor of isoleucyl transferase and RNA synthetase. Orange cryst. (MeOH). Sol. MeOH, DMSO, DMF, Et_2O; poorly sol. hexane, H_2O. Mp 106-110° dec. $[\alpha]_D^{25}$ +4.3 (c, 1 in MeOH). Related to Pseudomonic acid A. λ_{max} 206 (ϵ 25000); 306 (ϵ 3200); 386 (ϵ 9600) (MeOH/NaOH) (Derep). λ_{max} 214 (ϵ 26000); 300 (ϵ 3500); 387 (ϵ 12000) (MeOH) (Derep). λ_{max} 214 ; 300 ; 387 (MeOH/HCl) (Berdy).

1″,1″-Dioxide: ***Thiomarinol B***

[156098-42-9]

$C_{30}H_{44}N_2O_{11}S_2$ 672.816

Prod. by *Alteromonas rava*. Active against gram-positive and -negative bacteria. Inhibitor of isoleucyl transferase and RNA synthetase. Yellow cryst. (MeOH aq.). Sol. MeOH, DMSO, EtOAc, Et_2O, DMF, butanol, 1-propanol; poorly sol. H_2O, hexane. $[\alpha]_D^{25}$ +7.7 (c, 1 in propanol). λ_{max} 215 (ϵ 21000); 301 (ϵ 13000); 377 (2900) (MeOH). λ_{max} 221 (ϵ 19000); 301 (ϵ 13000); 377 (ϵ 2900) (MeOH/NaOH) (Berdy).

13-Ketone: ***Thiomarinol F***

[182155-01-7]

$C_{30}H_{42}N_2O_9S_2$ 638.802

Prod. by *Alteromonas rava*. Inhibitor of isoleucyl transferase and RNA synthetase. $[\alpha]_D$ -1.66 (c, 0.8 in MeOH). λ_{max} 210 (ϵ 21200); 300 (ϵ 2600); 385 (ϵ 8500) (MeOH).

4-Deoxy: ***Thiomarinol C***

[156343-39-4]

$C_{30}H_{44}N_2O_8S_2$ 624.818

Prod. by *Alteromonas rava*. Active against gram-positive and -negative bacteria. Inhibitor of isoleucyl transferase and RNA synthetase. Yellow cryst. Sol. MeOH, DMF, Et_2O, EtOAc, DMSO, 1-propanol, butanol; poorly sol. H_2O, hexane. $[\alpha]_D^{25}$ -1.4 (c, 1 in MeOH). λ_{max} 215 (ϵ 17000); 300 (ϵ 2700); 388 (9600) (MeOH). λ_{max} 205 (ϵ 49000); 336 (ϵ 8600) (MeOH/NaOH) (Berdy).

4,6-Dideoxy, 8-hydroxy: ***Thiomarinol G***

[194154-33-1]

$C_{30}H_{44}N_2O_8S_2$ 624.818

Prod. by *Alteromonas rava*. λ_{max} 210 ; 300 ; 385 (MeOH).

[156098-43-0]

Shiozawa, H. *et al., J. Antibiot.*, 1993, **46**, 1834; 1995, **48**, 907; 1997, **50**, 449-452 (*isol, uv, ir, pmr, cmr, props*)

Gao, X. *et al., J.A.C.S.*, 2005, **127**, 1628-1629 (*synth*)

Thiomarinol D T-386

[182154-99-0]

As Thiomarinol A, T-385 with

R = CH_3, n = 1

$C_{31}H_{46}N_2O_9S_2$ 654.844

Stereochemical identity with Thiomarinol A, T-385 not confirmed. Prod. by *Alteromonas rava*. Inhibitor of isoleucyl transferase and RNA synthetase. $[\alpha]_D^{25}$ +1.5 (c, 0.8 in MeOH). λ_{max} 210 (ϵ 20900); 300 (ϵ 2600); 385 (ϵ 8900) (MeOH).

Shiozawa, H. *et al., J. Antibiot.*, 1997, **50**, 449-452 (*isol, uv, ir, pmr, cmr*)

Thiomarinol E T-387

[182155-00-6]

As Thiomarinol A, T-385 with

R = H, n = 3

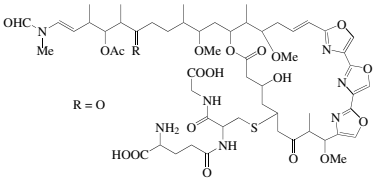
$C_{32}H_{48}N_2O_9S_2$ 668.871

Stereochemical identity with Thiomarinol A, T-385 not confirmed. Prod. by *Alteromonas rava*. λ_{max} 210 ; 300 ; 385 (MeOH).

Shiozawa, H. *et al., J. Antibiot.*, 1997, **50**, 449-452 (*isol, uv, pmr, cmr*)

Thiomycalolide A T-388

[207227-80-3]



$C_{57}H_{81}N_7O_{20}S$ 1216.368

Isol. from a sponge *Mycale* sp. Cytotoxic agent. λ_{max} 238 (MeOH) (Berdy).

Matsunaga, S. *et al., J. Nat. Prod.*, 1998, **61**, 663-666 (*isol, pmr*)

Thiomycalolide B T-389

[207227-81-4]

As Thiomycalolide A, T-388 with

R = H, –OOCCH(OMe)CH_2OMe

$C_{62}H_{91}N_7O_{23}S$ 1334.5

Isol. from a sponge *Mycale* sp. Cytotoxic agent. Brownish powder. $[\alpha]_D$ -3.3 (c, 0.1 in MeOH). λ_{max} 238 (ϵ 33500) (MeOH).

Matsunaga, S. *et al., J. Nat. Prod.*, 1998, **61**, 663-666 (*isol, uv, pmr, cmr, ms*)

Thiomycin T-390

B 870. Antibiotic B 870

[1393-47-1]

Pyrrothine-related antibiotic. Prod. by *Streptomyces phaechromogenes-chloromyceticus*. Antibacterial agent, platelet aggregation inhibitor. Golden-yellow needles (EtOAc). Sol. MeOH, C_6H_6; fairly sol. H_2O; poorly sol. Et_2O, hexane. Mp 176-178° dec.). λ_{max} 223 (E1%/1cm 140); 305 ; 370 (E1%/1cm 375) (MeOH) (Berdy). λ_{max} 370 (E1%/1cm 690) (HCl) (Berdy). λ_{max} 300 (E1%/1cm 555) (NaOH) (Berdy).

▶ LD_{50} (mus, scu) 10 mg/kg.

Hinuma, Y. *et al., J. Antibiot., Ser. A*, 1955, **8**, 118-119; *CA*, **53**, 15201a

Thiosporamicin T-391

Antibiotic 46192. Antibiotic CP 46192. CP 46192

[67383-02-2]

$C_{75}H_{88}N_{18}O_{21}S_6$ 1770.024

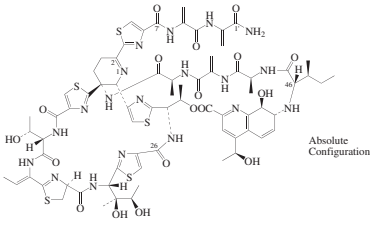
Thiazole-peptide antibiotic. Struct. unknown. Prod. by *Streptosporangium roseum-incarnatum*. Active against gram-positive bacteria. Cryst. (MeOH). Sol. $CHCl_3$, EtOAc; fairly sol. MeOH; poorly sol. H_2O, hexane. Mp 210-216°. $[\alpha]_D$ -129 (c, 1 in $CHCl_3$). λ_{max} 238 (E1%/1cm 350); 303 (E1%/1cm 80) (MeOH) (Berdy).

U.S. Pat., 1978, 4 083 963; *CA*, **89**, 105892h

Thiostrepton, 9CI, 8CI T-392

Thiostrepton A. Bryamycin. Thiactin. Antibiotic 6739-15. Antibiotic 6761-31. Antibiotic A 43791. A 43791

[1393-48-2]



$C_{72}H_{85}N_{19}O_{18}S_5$ 1664.91

Prod. by *Streptomyces azureus* ATCC 14921, *Streptomyces hawaiiensis* ATCC 12236 and *Streptomyces laurentii* ATCC 31255. Exhibits antimalarial and cytotoxic props. and active against gram-positive bacteria. Protein synthesis inhibitor. Cryst. ($CHCl_3$/EtOH). Mp 246-255° dec. $[\alpha]_D^{23}$ -98.5 (AcOH). λ_{max} 240 (sh) ; 245 (ϵ 50000); 280 (sh) ; 294 (ϵ 18000); 305 (sh) ; 306 (ϵ 14900) (MeOH) (Derep).

▶ XN6300100

*26-Thione, 1,2*R*-dihydro: **Antibiotic Sch 18640**. Sch 18640*

[79053-93-3]

$C_{72}H_{87}N_{19}O_{17}S_6$ 1682.992

Isol. from *Micromonospora arborensis* NRRL8041; major component of 68-1147 antibiotic complex. Active against gram-positive and anaerobic bacteria. Fairly sol. butanol; poorly sol. hexane, H_2O. Mp 225-229°. $[\alpha]_D^{26}$ +81.8 (c, 0.3 in $CHCl_3$). λ_{max} 240 (sh) ; 245 (ϵ 50000); 280 (sh) ; 294 (ϵ 18000); 305 (sh) ; 306 (ϵ 14900) (MeOH) (Derep).

7′-Parent amide: Thiostrepton B. Thiostrepton A_2

[75524-61-7]

$C_{66}H_{79}N_{17}O_{16}S_5$ 1526.784

An artifact formed from Thiostrepton A on standing. Sol. $CHCl_3$, Py; fairly sol. MeOH; poorly sol. H_2O. λ_{max} 245 (sh) (ϵ 60000); 290 (ϵ 20000) (MeOH) (Derep).

Tori, K. *et al., Tet. Lett.*, 1976, **17**, 185-188 (*pmr, cmr*)

Florey, K. *et al., Anal. Profiles Drug Subst.*, 1978, **7**, 423 (*rev*)

U.S. Pat., 1978, 4 078 056; *CA*, **89**, 105873c (*Sch 18640*)

Puar, M.S. *et al., J.A.C.S.*, 1981, **103**, 5231-5233 (*Sch 18640, struct*)

Hensens, O.D. *et al., J. Antibiot.*, 1983, **36**, 799-813; 814-831; 831-845 (*struct, bibl*)

Mocek, U. *et al., J. Antibiot.*, 1989, **42**, 1649-1652 (*pmr, cmr*)

Mocek, U. *et al., J.A.C.S.*, 1993, **115**, 7992-8001 (*biosynth*)

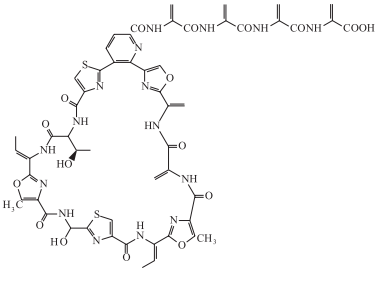
Bond, C.S. *et al., Acta Cryst. D*, 2001, **57**, 755-758 (*cryst struct*)

Nicolaou, K.C. *et al., J.A.C.S.*, 2005, **127**, 11159-11175; 11176-11183 (*synth, pmr*)

Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, TFQ275

Thiotipin T-393

[158792-26-8]



$C_{55}H_{50}N_{16}O_{17}S_2$ 1271.229

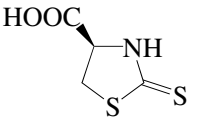
Cyclic peptide antibiotic related to Sulfomycin I in S-638. Prod. by *Streptomyces* sp. DT31. TipA promotor inducer. Powder. Sol. EtOAc, MeOH, $CHCl_3$; poorly sol. Et_2O, hexane, H_2O. Mp 265-270° dec. $[\alpha]_D$ -9.5 (c, 0.1 in $CHCl_3$/MeOH). λ_{max} 215 (sh) (ϵ 53000); 247 (ϵ 67000); 315 (sh) (ϵ 9000) (EtOH).

Yun, B.-S. *et al., Tetrahedron*, 1994, **50**, 11659 (*isol, uv, ir, pmr, cmr*)

2-Thioxo-4-thiazolidinecarboxylic acid T-394

*4,5-Dihydro-2-thioxo-4(3*H*)-thiazolecarboxylic acid. 4-Carboxy-2-thiazolidinethione*

[20933-67-9]



(S)-form

$C_4H_5NO_2S_2$ 163.221

(R)-form

Raphanusamic acid

[98169-56-3]

Isol. from etiolated seedlings of *Raphanus sativus* var. *hortensis* (Japanese radish Daikon). Plant growth inhibitor. $[\alpha]_D^{29}$ -86 (c, 2.5 in 0.5*M* HCl).

Me ester: [80963-80-0]

$C_5H_7NO_2S_2$ 177.248

Light yellow oil. $[\alpha]_D^{20}$ -68.2 ($CHCl_3$).

(S)-form

Et ester: [157832-46-7]

$C_6H_9NO_2S_2$ 191.275

Orange solid. Mp 44-46°.

(±)-form

Me ester: [114180-04-0]

Prisms (CH_2Cl_2). Mp 95-96°.

[101799-35-3 , 64014-03-5]

Hase, T. *et al., Rev. Latinoam. Quim.*, 1985, **16**, 1 (*synth, isol, props*)

Hsiao, C.-N. *et al., J.O.C.*, 1987, **52**, 2201 (*synth, ester, ir, pmr*)

Nagao, Y. *et al., Chem. Pharm. Bull.*, 1988, **36**, 495 (*synth, ester, uv, pmr, cmr*)

Inamori, Y. *et al., Chem. Pharm. Bull.*, 1992, **40**, 2854 (*synth, activity*)

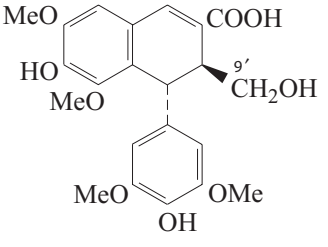
U.S. Pat., 1993, 5 210 094; *CA*, **119**, 22809y (*use*)

Calo, V. *et al., Tetrahedron*, 1994, **50**, 7283 (*synth, ester, pmr*)

Dobson, A.J. *et al., Acta Cryst. C*, 1998, **54**, 1634-1637 (*R-form, cryst struct*)

Thomasic acid T-395

3,4-Dihydro-6-hydroxy-4-(4-hydroxy-3,5-dimethoxyphenyl)-3-hydroxymethyl-5,7-dimethoxy-2-naphthalenecarboxylic acid, 9CI



$C_{22}H_{24}O_9$ 432.426

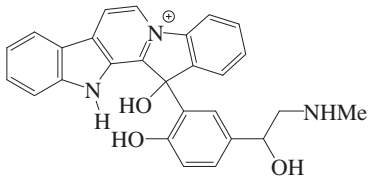
Possible artifact.

(ξ)-form

9′-Carboxylic acid, bis(4-hydroxyphenylethylamide):
$C_{38}H_{40}N_2O_{10}$ 684.741
Alkaloid from *Porcelia macrocarpa*. Amorph. powder. $[\alpha]_D^{25}$ -20 (c, 0.06 in MeOH). λ_{max} 210 (log ϵ 4.87); 240 (log ϵ 4.5); 282 (log ϵ 4.11); 325 (log ϵ 4.23) (MeOH).
Chaves, M.H. *et al., Phytochemistry*, 1997, **46**, 879-881 (*amide deriv*)

Thorectandramine T-396

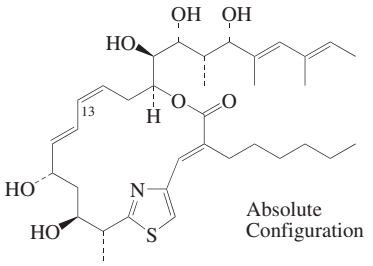
[459165-95-8]



$C_{27}H_{24}N_3O_3^{\oplus}$ 438.505
Quaternary alkaloid isol. from the marine sponge *Thorectandra* sp. Yellow solid (as NH_4 salt). $[\alpha]_D$ +4.9 (c, 0.08 in MeOH) (NH_4 salt). λ_{max} 224 (log ϵ 4.16); 270 (log ϵ 3.97); 338 (log ϵ 3.87); 407 (log ϵ 3.22) (MeOH) (NH_4 salt).
Charan, R.D. *et al., Tet. Lett.*, 2002, **43**, 5201-5204 (*isol, pmr, cmr*)

Thuggacin A T-397

[190895-98-8]

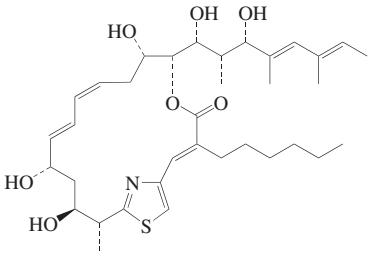


$C_{35}H_{53}NO_7S$ 631.872
Prod. by *Sorangium cellulosum* strain So ce895. Antimycobacterial agent. Cryst. (Et_2O/petrol). Mp 92-94°. $[\alpha]_D^{22}$ -148.4 (c, 0.4 in MeOH). λ_{max} 224 (log ϵ 4.74); 231 (sh) ; 239 (sh) ; 289 (log ϵ 4.11) (MeOH).

13-Methyl: ***13-Methylthuggacin A***
[949574-78-1]
$C_{36}H_{55}NO_7S$ 645.899
Prod. by *Sorangium cellulosum* So ce895. $[\alpha]_D^{22}$ -127.7 (c, 0.94 in MeOH). Stereochem. not determined. λ_{max} 227 (log ϵ 4.62); 286 (log ϵ 4.04) (MeOH).
Pat. Coop. Treaty (WIPO), 1997, 18 217; *CA*, **127**, 32937 (*isol, pmr, cmr, ms*)
Steinmetz, H. *et al., Chem. Eur. J.*, 2007, **13**, 5822-5832 (*isol, pmr, cmr, ms, biosynth*)
Bock, M. *et al., Angew. Chem., Int. Ed.*, 2008, **47**, 2308-2311 (*abs config*)

Thuggacin B T-398

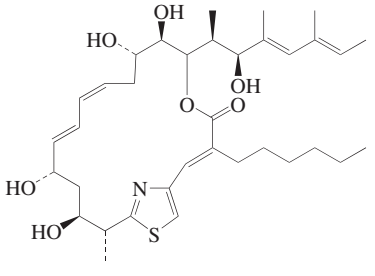
[190895-99-9]



$C_{35}H_{53}NO_7S$ 631.872
Prod. by *Sorangium cellulosum* So ce895. $[\alpha]_D^{22}$ +88.3 (c, 1.1 in MeOH). λ_{max} 226 (log ϵ 4.7); 231 (sh) ; 240 (sh) ; 287 (log ϵ 4.13) (MeOH).
Pat. Coop. Treaty (WIPO), 1997, 18 217; *CA*, **127**, 32937 (*isol, pmr, cmr, ms*)
Steinmetz, H. *et al., Chem. Eur. J.*, 2007, **13**, 5822-5832 (*isol, pmr, cmr, ms*)
Bock, M. *et al., Angew. Chem., Int. Ed.*, 2008, **47**, 2308-2311 (*abs config*)

Thuggacin C T-399

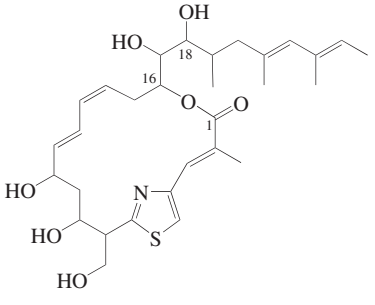
[949574-77-0]



$C_{35}H_{53}NO_7S$ 631.872
Prod. by *Sorangium cellulosum* strain So ce895. $[\alpha]_D^{22}$ -35.7 (c, 0.7 in MeOH). Rearr. prod. of Thuggacin A, T-397. λ_{max} 228 (log ϵ 4.55); 286 (log ϵ 4.05) (MeOH).
Steinmetz, H. *et al., Chem. Eur. J.*, 2007, **13**, 5822-5832 (*isol, pmr, cmr*)
Bock, M. *et al., Angew. Chem., Int. Ed.*, 2008, **47**, 2308-2311 (*abs config*)

Thuggacin cmc-A T-400

[949574-79-2]



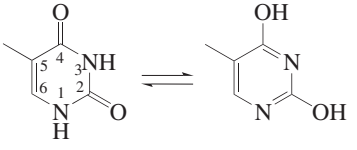
$C_{30}H_{43}NO_7S$ 561.738
Prod. by *Chondromyces crocatus* strain Cm c5. Antimycobacterial agent. $[\alpha]_D^{22}$ -160.6 (c, 1.24 in MeOH). λ_{max} 224 (log ϵ 4.67); 285 (log ϵ 4.08) (MeOH).

(1→18)-Lactone isomer: ***Thuggacin cmc-C***
[949574-80-5]
$C_{30}H_{43}NO_7S$ 561.738
Prod. by *Chondromyces crocatus* strain Cm c5. $[\alpha]_D^{22}$ -47.4 (c, 0.5 in MeOH). λ_{max} 227 (log ϵ 4.64); 285 (log ϵ 4.13) (MeOH).

(1→17)-Lactone isomer: ***Thuggacin cmc-B***
$C_{30}H_{43}NO_7S$ 561.738
Prod. by *Chondromyces crocatus* strain Cm c5. Struct. not confirmed.
Steinmetz, H. *et al., Chem. Eur. J.*, 2007, **13**, 5822-5832 (*isol, pmr, cmr, ms*)

Thymine, 8CI T-401

5-Methyl-2,4(1H,3H)-pyrimidinedione, 9CI. 4-Hydroxy-5-methyl-2(1H)-pyrimidinone, 9CI. 5-Methyluracil. 2,4-Dihydroxy-5-methylpyrimidine. 5-Methyl-2,4-pyrimidinediol
[65-71-4]
[27942-00-3]



$C_5H_6N_2O_2$ 126.115
Dioxo tautomer predominates in solid, soln. and gas phases. Intermediate tautomers also possible. Component of nucleic acids. Also detected in the free state in bacteria. Used as a 0.25% aq. soln for pptn. sepn. of Hg. Plates (H_2O) or parallelepipeds + H_2O (H_2O). Spar. sol. H_2O (0.6-0.8 g per 100 cm^3). Mp 326° Mp 340°. pK_{a1} 9.9 (25°).
▶ LD_{50} (mus, orl) 3500 mg/kg. XP2100000

N^1-(2-Hydroxyethyl): *N^1-(2-Hydroxyethyl)thymine.* ***Thyminol***
[22441-51-6]
$C_7H_{10}N_2O_3$ 170.168
Isol. from a colonial Zoanthid. Mp 179-181°. λ_{max} 263 (log ϵ 2.99) (MeOH).

[41935-71-1]

Rice, J.M. *et al., J.A.C.S.*, 1965, **87**, 4569 (*ms*)
Ozeki, K. *et al., Acta Cryst. B*, 1969, **25**, 1038 (*cryst struct*)
Wong, J.L. *et al., J.O.C.*, 1970, **35**, 3786 (*synth, pmr, uv*)
Ellis, P.D. *et al., J.A.C.S.*, 1973, **95**, 4398 (*cmr*)
Les, A. *et al., Spectrochim. Acta A*, 1992, **48**, 1385 (*ir*)
Atta-ur-Rahman, *et al., Nat. Prod. Lett.*, 1999, **13**, 255-261 (*Thyminol*)

Tienmulilmine T-402

$C_{27}H_{43}NO$ 397.643
Steroidal alkamine alkaloid. Struct. unknown. Isol. from the Chinese drug Li-Lu (*Veratrum* spp.) (Liliaceae). Mp 172-174°. $[\alpha]_D^{16}$ -99.3 (MeOH).
Hydrochloride: Mp 302°.

Hydrobromide: Mp 306°.

Methiodide: Mp 244°.

Chu, J.-H. *et al., CA*, 1958, **52**, 6716

Chu, J.-H. *et al., CA*, personal communication cited by Tomko, J. *et al*, *Alkaloids, N.Y.*, 1973, **14**, 32

Tienmulilminine T-403

$C_{34}H_{51}NO_8$ 601.779

Struct. unknown. Alkaloid from the Chinese drug Li-Lu (*Veratrum*) (Liliaceae). Mp 231°. $[\alpha]_D^{13}$ -24 (c, 1 in MeOH).

Hydrobromide: Mp 226°.

Hydrochloride: Mp 215°.

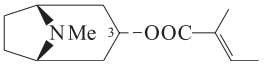
Picrate: Mp 201° dec.

Methiodide: Mp 224° dec.

Chu, J.-H. *et al., Huaxue Xuebao*, 1956, **52**, 229-304; *CA*, **52**, 6716f

3-Tigloyloxytropane T-404

2-Methyl-2-butenoic acid 8-methyl-8-azabicyclo[3.2.1]oct-3-yl ester, 8CI. Tropine tiglate



3α–*form*

$C_{13}H_{21}NO_2$ 223.314

Antiparkinsonian, anticholinergic agent. CNS depressant. Log P 2.03 (calc). Both α- and β-forms reported to possess pharmacol. activity.

3α-*form*

Tigloyltropeine. *Tropigline, BAN, INN*

[495-83-0]

Alkaloid from *Datura ferox* and other *Datura* spp., *Physalis alkekengi* (winter cherry) roots, *Mandragora vernalis, Mandragora autumnalis, Hyoscyamus* spp., etc. (Solanaceae). Mp 181.5-183° Mp 204-207°.

Hydrochloride: Mp 214.5-217.5°.

N-*Oxide:* ***3α-Tigloyloxytropane* N-*oxide***

$C_{13}H_{21}NO_3$ 239.314

Alkaloid from *Physalis alkekengi* (winter cherry) (Solanaceae). Mp 185-186° dec.

3β-*form*

Tigloidine, BAN, INN

[533-08-4]

Alkaloid from *Datura innoxia*, *Datura metel*, *Datura pruinosa*, *Datura meteloides*, *Physalis alkekengi* (winter cherry), *Mandragora* spp. and *Duboisia myoporoides* (Solanaceae). Syrup.

Hydrochloride:

Tabular cryst. (H_2O). Sol. $CHCl_3$, mod. sol. H_2O. Mp 234-235°.

Picrate: Mp 239°.

Barger, G. *et al., J.C.S.*, 1937, 1820 (*isol, synth*)

Sanghvi, I.S. *et al., Eur. J. Pharmacol.*, 1968, **4**, 246 (*pharmacol*)

Evans, W.C. *et al., J.C.S. Perkin 1*, 1972, 2017 (*isol*)

Evans, W.C. *et al., Phytochemistry*, 1973, **12**, 2077; 2505 (*isol*)

Beresford, P.J. *et al., Phytochemistry*, 1974, **13**, 2143; 1975, **14**, 2205 (*isol, biosynth*)

Yamaguchi, H. *et al., Yakugaku Zasshi*, 1974, **94**, 1115 (*oxide*)

Martindale, The Extra Pharmacopoeia, 28th/29th edn., Pharmaceutical Press, 1982, 419

Witte, L. *et al., Planta Med.*, 1987, **53**, 192 (*glc-ms*)

Tiliacoridine T-405

[11076-69-0]

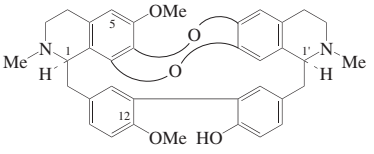
$C_{39}H_{40}N_2O_8$ 664.754

Bisbenzylisoquinoline alkaloid. Struct. unknown. Alkaloid from the leaves of *Tiliacora racemosa* (Menispermaceae). Mp 153-156° dec.

Barua, A.K. *et al., J. Indian Chem. Soc.*, 1970, **47**, 920 (*isol, uv, pmr, ms*)

Tiliacorine T-406

[27073-72-9]



Absolute Configuration

$C_{36}H_{36}N_2O_5$ 576.691

Diastereomeric with Tiliacorinine, T-407. Alkaloid from the roots of *Tiliacora racemosa* and *Tiliacora funifera* (Menispermaceae). Cryst. + $1Me_2CO$ ($CHCl_3$/Me_2CO). Mp 262-264° dec. $[\alpha]_D$ +71.2 (c, 1.5 in Py).

Ac:

Needles (Et_2O). Mp 232-235°. $[\alpha]_D^{21}$ +86.73 (c, 1.13 in $CHCl_3$).

N,N′-*Di-Me:*

$C_{38}H_{42}N_2O_5^{2\oplus}$ 606.76

Needles + $2H_2O$ (Me_2CO/MeOH) (as diiodide). Mp 294-295° dec. (diiodide). $[\alpha]_D$ +136.7 (c, 0.3 in H_2O).

2′-N-*De-Me:* ***Nortiliacorine A***. *Isotiliarine*

[27577-49-7]

$C_{35}H_{34}N_2O_5$ 562.664

Alkaloid from the roots of *Tiliacora funifera* (Menispermaceae). Mp 258-260°. $[\alpha]_D$ +194.5 (c, 0.77 in $CHCl_3$).

Me ether: Obt. by methylation of both Tiliacorine and Dinklacorine. Cryst. (Et_2O). Mp 210-212° dec. $[\alpha]_D^{21}$ +38.5 (c, 0.65 in $CHCl_3$) (+32.6).

Me ether, N,N′-*di-Me:* Obt. by methylation of both Tiliacorine and Dinklacorine. Pale yellow needles (MeOH) (as diiodide). Mp 310° (diiodide). $[\alpha]_D^{30}$ +113.6 (c, 0.22 in MeOH) (+108.3).

O^{12}-*De-Me,* $O^{12'}$-*Me:* ***Dinklacorine***. *Alkaloid TD-2*

[60579-86-4]

$C_{36}H_{36}N_2O_5$ 576.691

Alkaloid from the roots of *Tiliacora dinklagei* (Menispermaceae). Cryst. (Et_2O/EtOAc). Mp 238-240°. $[\alpha]_D^{21}$ +42.55 (c, 0.47 in $CHCl_3$).

O^{12}-*De-Me,* $O^{12'}$-*Me, Ac:* Mp 168-170°. $[\alpha]_D^{21}$ +20.45 (c, 0.88 in $CHCl_3$).

5-*Hydroxy,* $N^{2'}$-*de-Me:* ***Norisoyanangine***

[119067-89-9]

$C_{35}H_{34}N_2O_6$ 578.663

Alkaloid from aerial parts of *Tiliacora triandra* (Menispermaceae). Cryst. + $1CH_2Cl_2$. $[\alpha]_D^{20}$ +139 (c, 1.2 in $CHCl_3$).

Tackie, A.N. *et al., Planta Med.*, 1968, **16**, 158-165 (*Tiliacorine, Nortiliacorine A, isol*)

Anjaneyulu, B. *et al., Tetrahedron*, 1969, **25**, 3091-3105; 1971, **27**, 439-443 (*Tiliacorine, isol, uv, ms, pmr, struct, synth*)

Baldas, J. *et al., J.C.S. Perkin 1*, 1972, 592-596 (*ms*)

Tackie, A.N. *et al., Phytochemistry*, 1973, **12**, 203-205 (*Nortiliacorine A*)

Tackie, A.N. *et al., J. Nat. Prod.*, 1975, **38**, 210-212 (*Dinklacorine, isol*)

Dwuma-Badu, D. *et al., J. Nat. Prod.*, 1976, **39**, 213-217; 1979, **42**, 116-119 (*Tiliacorine, Dinklacorine, uv, ir, pmr, ms, cd, struct*)

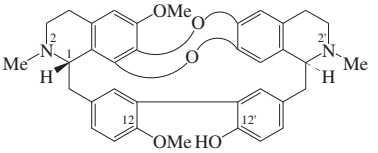
Shamma, M. *et al., J.O.C.*, 1976, **41**, 1293-1294 (*struct*)

Bhakuni, D.S. *et al., J.C.S. Perkin 1*, 1981, 2598-2603 (*abs config, biosynth*)

Pachaly, P. *et al., Planta Med.*, 1988, **54**, 433-437 (*Norisoyanangine*)

Tiliacorinine T-407

[27073-73-0]



$C_{36}H_{36}N_2O_5$ 576.691

Diastereomeric with Tiliacorine, T-406. Alkaloid from the roots of *Tiliacora racemosa, Tiliacora dinklagei* and *Tiliacora triandra* (Menispermaceae). Cryst. + $1Me_2CO$ (Me_2CO). Mp 195° dec. (shrinks above 172°). $[\alpha]_D$ +310 (c, 2.6 in Py).

Ac:

Cryst. (CH_2Cl_2/hexane). Mp 170-172° dec. $[\alpha]_D$ +363.8 (c, 2.5 in Py).

2′-N-*Oxide:* ***Tiliacorinine 2′*-N-*oxide***

[80161-67-7]

$C_{36}H_{36}N_2O_6$ 592.69

Alkaloid from the roots of *Tiliacora triandra* (Menispermaceae). Pale yellow glass. Mp 215-217° dec. $[\alpha]_D^{19}$ +238.3 (c, 1.1 in $CHCl_3$).

N,N′-*Di-Me:*

Needles (MeOH) (as diiodide). Mp 300° (diiodide). $[\alpha]_D$ +194.7 (c, 0.3 in H_2O).

N^2-*De-Me:* ***Nortiliacorinine A***. *Pseudotiliarine*

[26426-60-8]

$C_{35}H_{34}N_2O_5$ 562.664

Alkaloid from the roots of *Tiliacora funifera, Tiliacora racemosa, Tiliacora dinklagei* and *Tiliacora triandra* (Menispermaceae). Mp 220-222° Mp 252-254° dec Mp 264-268° dec.

$N^{2'}$-*De-Me:* ***Nortiliacorinine B***

[26777-94-6]

$C_{35}H_{34}N_2O_5$ 562.664

A minor alkaloid from the roots of *Tiliacora racemosa* (Menispermaceae).

Cryst. + $1H_2O$ (Me_2CO/MeOH). Mp 218-220° dec. $[\alpha]_D$ +356.2 (c, 1.25 in Py).

*Di-*N*-de-Me:* ***Pachyovatamine***
[96910-84-8]
$C_{34}H_{32}N_2O_5$ 548.637
Alkaloid from the leaves and stems of *Pachygone ovata* (Menispermaceae). Amorph. Mp 182-185°. $[\alpha]_D^{25}$ +259 (c, 0.29 in $CHCl_3$).

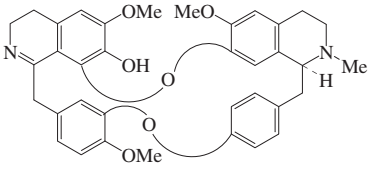
Me ether, N,N′*-di-Me:*
Cryst. + 3MeOH (MeOH) (as diiodide). Mp 270-275° dec. (diiodide).

O^{12}*-De-Me,* O$^{12'}$*-Me:* ***Yanangcorinine***
[102571-99-3]
$C_{36}H_{36}N_2O_5$ 576.691
Alkaloid from *Tiliacora triandra* (Menispermaceae). Amorph. + $1CH_2Cl_2$. Mp 174-180°. $[\alpha]_D^{19}$ +368 (c, 0.6 in $CHCl_3$).

O^{12}*-De-Me,* O$^{12'}$*-Me,* N$^{2'}$*-de-Me:* ***Tiliarine***
[7221-73-0]
$C_{35}H_{34}N_2O_5$ 562.664
Alkaloid from the roots of *Tiliacora racemosa* (Menispermaceae). Mp 203-207°. $[\alpha]_D$ +283.6 (MeOH).

Rao, K.V.J. *et al., J. Sci. Ind. Res., Sect. B*, 1959, **18**, 247 (*Tiliarine, isol*)
Tackie, A.N. *et al., Planta Med.*, 1968, **16**, 158 (*Tiliacorinine, isol*)
Anjaneyulu, B. *et al., Tetrahedron*, 1969, **25**, 3091 (*isol, uv, pmr, Nortiliacorinines*)
Tackie, A.N. *et al., J. Nat. Prod.*, 1975, **38**, 210 (*Nortiliacorinine A*)
Shamma, M. *et al., J.O.C.*, 1976, **41**, 1293 (*struct*)
Wiriyachitra, P. *et al., Aust. J. Chem.*, 1981, **34**, 2001 (*Tiliacorinine N-oxide*)
Bhakuni, D.S. *et al., J.C.S. Perkin 1*, 1981, 2598 (*abs config, biosynth*)
Bhakuni, D.S. *et al., Tetrahedron*, 1981, **37**, 2651 (*Nortiliacorinines*)
Guinaudeau, H. *et al., J. Nat. Prod.*, 1985, **48**, 651 (*Tiliarine, uv, pmr, cd. ms, struct*)
Sultanbawa, M.U.S. *et al., Phytochemistry*, 1985, **24**, 589 (*Pachyovatamine*)
Pachaly, P. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1986, **319**, 126 (*Yanangcorinine*)

Tiliafunimine T-408



$C_{36}H_{36}N_2O_6$ 592.69

(S)-form
Alkaloid from the leaves of *Tiliacora funifera* (Menispermaceae). Needles. Mp 198-200°. $[\alpha]_D^{22}$ +294 (c, 0.52 in $CHCl_3$).

Ayim, J.S.K. *et al., J. Nat. Prod.*, 1977, **40**, 561 (*isol, uv, ir, pmr, ms, struct*)

Tiliandrine T-409

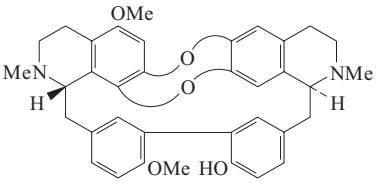
$C_{34}H_{34}N_2O_5$ 550.653

Bisbenzylisoquinoline alkaloid. Struct. unknown. Alkaloid from the roots of *Tiliacora triandra* (Menispermaceae). Mp 175°. $[\alpha]_D$ +408 (EtOH).

Paris, R.R. *et al., Ann. Pharm. Fr.*, 1967, **25**, 627; *CA*, **68**, 33140c (*isol*)

Tiliaresine T-410

[128562-89-0]

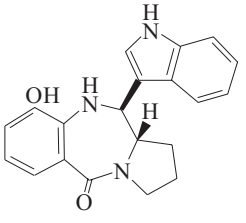


$C_{36}H_{36}N_2O_5$ 576.691
Alkaloid from the leaves of *Tiliacora racemosa* (Menispermaceae). Amorph. $[\alpha]_D^{22}$ +75.17 ($CHCl_3$).

Ray, A.K. *et al., Phytochemistry*, 1990, **29**, 1020; 1023 (*isol, uv, ir, pmr, cmr, struct*)

Tilivalline T-411

*1,2,3,10,11,11*a*-Hexahydro-9-hydroxy-11-(1*H*-indol-3-yl)-5*H*-pyrrolo[2,1-*c*][1,4]benzodiazepin-5-one, 9CI*
[80279-24-9]

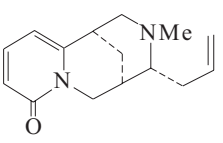


$C_{20}H_{19}N_3O_2$ 333.389
Alkaloid from *Klebsiella pneumoniae* var. *oxytoca*. Mp 168° Mp 180-185° (synthetic). $[\alpha]_D^{25}$ +126.8 (MeOH). $[\alpha]_D^{25}$ +210 (c, 1 in MeOH) (synthetic). λ_{max} 220 (ϵ 28500); 239 (sh); 255 (sh); 278 (sh); 287 (ϵ 3548); 323 (ϵ 2950); 332 (ϵ 2950) (MeOH) (Derep).

Budzikiewicz, H. *et al., Org. Mass Spectrom.*, 1981, **16**, 329 (*ms*)
Mohr, N. *et al., Tetrahedron*, 1982, **38**, 147 (*isol, uv, pmr, cmr, struct, synth*)
Nagasaka, T. *et al., J.O.C.*, 1998, **63**, 6797-6801 (*synth*)

Tinctorine T-412

*1,2,3,4,5,6-Hexahydro-3-methyl-4-(2-propenyl)-1,5-methano-5*H*-pyrido[1,2-a][1,5]diazocin-8-one, 9CI.* N-*Methyl-11-(2-propenyl)cytisine. Alteramine*
[33023-11-9]



$C_{15}H_{20}N_2O$ 244.336
Identity of Tinctorine and Alteramine has not been proven but is v. probable.

Alkaloid from *Genista tinctoria, Baptisia australis* and *Thermopsis alterniflora* (Fabaceae). Mp 112-113°. $Bp_{0.0045}$ 125-128°. $[\alpha]_D$ -43 (EtOH). $[\alpha]_D^{25}$ -49 (c, 1.385 in EtOH).

Hydrochloride:
Cryst. (MeOH/Me_2CO). Mp 185-186°.

Picrate:
Cryst. (EtOH). Mp 215-216° (211-212° dec.).

N-*De-Me:* ***11-Allylcytisine***
[73615-75-5]
[73710-87-9]
$C_{14}H_{18}N_2O$ 230.309
Alkaloid from seeds of *Calotropis brachypetala* seeds and *Sophora secundiflora* fruits (Fabaceae). Brown oil; needles (as perchlorate). Mp 183-184° (perchlorate). $[\alpha]_D^{26}$ -215 (c, 0.006 in MeOH) (perchlorate). Abs. config. not detd.

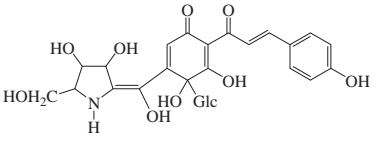
Stereoisomer: ***Isotinctorine***
[77254-90-1]
$C_{15}H_{20}N_2O$ 244.336
Alkaloid from *Baptisia australis* (Fabaceae). Undetd. config. No phys. props. reported.

[33530-05-1]

Knöfel, D. *et al., J. Prakt. Chem.*, 1970, **312**, 887 (*isol, ir, uv, ms, struct*)
Shaimardanov, R.A. *et al., Khim. Prir. Soedin.*, 1970, **6**, 276; 1971, **7**, 160; *Chem. Nat. Compd. (Engl. Transl.)*, 160; 277 (*isol, struct*)
Keller, W.J. *et al., Phytochemistry*, 1979, **18**, 2068 (*N-Allylcytisine*)
Keller, W.J. *et al., J. Nat. Prod.*, 1980, **43**, 164 (*N-Allylcytisine*)
Wink, M. *et al., J. Nat. Prod.*, 1981, **44**, 14 (*isol, ms, Tinctorine, Isotinctorine*)

Tinctormine T-413

[149475-43-4]



$C_{27}H_{31}NO_{14}$ 593.54
Pigment of the flowers of *Carthamus tinctorius* (safflower). Potent calcium antagonist. Yellow amorph. powder. $[\alpha]_D$ -260 (c, 0.1 in MeOH) (-206). Two different opt. rotn. values given in the ref. λ_{max} 275 (log ϵ 4.5); 405 (log ϵ 4.5) (MeOH).

Meselhy, M.R. *et al., Chem. Pharm. Bull.*, 1993, **41**, 1796-1802 (*isol, pmr, cmr, ms*)

Tinosporine† T-414

[80210-02-2]

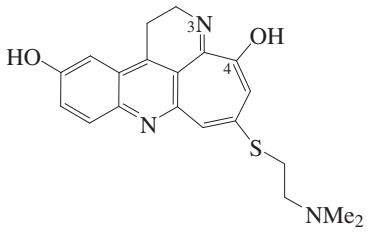
Struct. unknown. Alkaloid from *Tinospora cordifolia* (Menispermaceae).

Picrate: Mp 174-178°.

Qudrat-i-Khuda, M. *et al., Sci. Res. (Dacca)*, 1964, **1**, 177-183; *CA*, **61**, 12331c

Tintamine T-415

[211311-10-3]



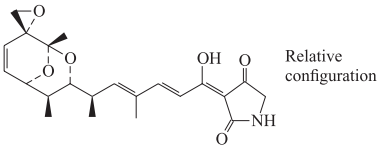
$C_{20}H_{21}N_3O_2S$ 367.471

Numbered by analogy with pyridoacridine alkaloids to which it appears to be related. Tautomeric with the 4-oxo-3*NH*-form. Alkaloid from the tunicate *Cystodytes violatinctus*. λ_{max} 265 (log ϵ 3.68); 308 (log ϵ 3.67) (MeOH) (as di-Ac).

Koren-Goldshlager, G. *et al., J.O.C.*, 1998, **63**, 4601-4603 (*isol, uv, ir, pmr, cmr*)

Tirandalydigin T-416

[114118-91-1]



Relative configuration

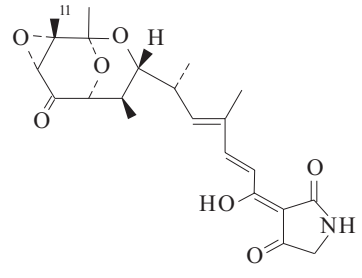
$C_{22}H_{27}NO_6$ 401.458

Prod. by a *Streptomyces tirandis-umidus*. Sol. MeOH, bases, $CHCl_3$, C_6H_6; poorly sol. H_2O, hexane. $[\alpha]_D^{26}$ -4 (c, 0.5 in MeOH). λ_{max} 236 (ϵ 8100); 353 (ϵ 32700); 366 (sh) (ϵ 30000) (EtOH/HCl) (Derep). λ_{max} 253 (ϵ 12500); 287 (ϵ 16200); 331 (ϵ 16700) (EtOH/KOH) (Derep). λ_{max} 254 ; 289 ; 332 (MeOH).

Brill, G.M. *et al., J. Antibiot.*, 1988, **41**, 36 (*pmr, cmr, ir, struct*)
Karwowski, J.P. *et al., J. Antibiot.*, 1992, **45**, 1125 (*isol, props*)
Iwata, Y. *et al., Angew. Chem., Int. Ed.*, 2005, **44**, 1532-1536 (*synth*)

Tirandamycin A T-417

[34429-70-4]



$C_{22}H_{27}NO_7$ 417.458

Tetramic acid antibiotic. Isol. from *Streptomyces tirandis* NRRL3689 and *Streptomyces flaveolus*. Active against gram-positive bacteria. Potent inhibitor of RNA-polymerase. Sol. MeOH, Et_2O; poorly sol. H_2O, hexane. Mp 98-102°. Related to Streptolydigin. λ_{max} 236 (ϵ 8100); 353 (ϵ 32700); 366 (sh) (ϵ 30000) (EtOH/HCl) (Derep). λ_{max} 253 (ϵ 12500); 287 (ϵ 16200); 331 (ϵ 16700) (EtOH/KOH) (Derep). λ_{max} 253 (E1%/1cm 295); 286 (E1%/1cm 366); 332 (E1%/1cm 400) (NaOH) (Berdy). λ_{max} 287 (ϵ 16200); 331 (ϵ 16700); 353 (ϵ 32700) (EtOH/NaOH) (Berdy).

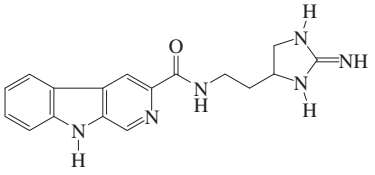
▶ LD_{50} (mus, scu) 370 mg/kg. UY7625500

Na salt:
Cryst. $[\alpha]_D^{25}$ +51 (EtOH).

11-Hydroxy: ***Tirandamycin B***
[60587-14-6]
$C_{22}H_{27}NO_8$ 433.457
Isol. from *Streptomyces flaveolus*. Active against gram-positive bacteria. RNA polymerase inhibitor. Yellow powder. Sol. MeOH, CH_2Cl_2, EtOH; poorly sol. H_2O, hexane, C_6H_6. Mp 92-96°. λ_{max} 236 (ϵ 8100); 353 (ϵ 32700); 366 (sh) (ϵ 30000) (EtOH/HCl) (Derep). λ_{max} 253 (ϵ 12500); 287 (ϵ 16200); 331 (ϵ 16700) (EtOH/KOH) (Derep). λ_{max} 250 (E1%/1cm 460); 288 (E1%/1cm 520); 348 (E1%/1cm 650) (EtOH) (Berdy).

MacKellar, F.A. *et al., J.A.C.S.*, 1971, **93**, 4943 (*uv, ir, pmr, ms*)
Meyer, C.E. *et al., J. Antibiot.*, 1971, **24**, 558 (*isol*)
Duchamp, D.J. *et al., J.A.C.S.*, 1973, **95**, 4077 (*cryst struct*)
Hagenmaier, H. *et al., Arch. Microbiol.*, 1976, **109**, 65 (*deriv*)
Reusser, F. *et al., Antibiotics (N.Y.)*, 1979, **5**, 361 (*rev*)
Lee, V.J. *et al., J. Antibiot.*, 1980, **33**, 408 (*cmr*)
Nolte, M.J. *et al., J.C.S. Perkin 1*, 1980, 1057 (*struct*)
Schlessinger, R.H. *et al., J.A.C.S.*, 1985, **107**, 1777 (*synth*)
DeShong, P. *et al., J.A.C.S.*, 1985, **107**, 5219 (*synth*)
Martin, S.F. *et al., Tetrahedron*, 1988, **44**, 3171 (*synth, bibl*)
Shimshock, S.J. *et al., J.A.C.S.*, 1991, **113**, 8791 (*synth, bibl*)

Tiruchanduramine T-418



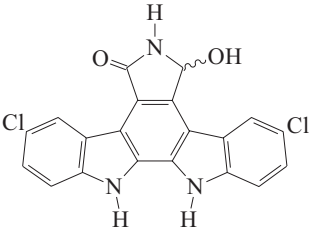
$C_{17}H_{18}N_6O$ 322.369

(ξ)-form
Alkaloid from the ascidian *Synoicum macroglossum*. α-Glucosidase inhibitor. Semisolid. $[\alpha]_D$ +31 (c, 0.5 in MeOH). λ_{max} 215 ; 234 ; 270 ; 334 ; 347 (MeOH).

Ravinder, K. *et al., Tet. Lett.*, 2005, **46**, 5475-5478 (*isol, synth, pmr, cmr*)

Tjipanazole J T-419

[139112-21-3]



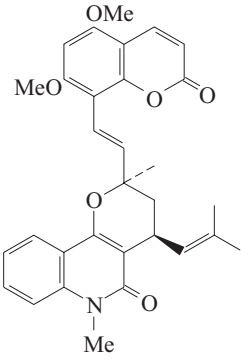
$C_{20}H_{11}Cl_2N_3O_2$ 396.231

Alkaloid from the blue-green alga *Tolypothrix tjipanasensis*. λ_{max} 238 (ϵ 11000); 259 (ϵ 8570); 303 (ϵ 20200); 339 (ϵ 4610); 369 (ϵ 2410) ($MeOH/CHCl_3$) (Derep).

Bonjouklian, R. *et al., Tetrahedron*, 1991, **47**, 7739 (*isol, uv, pmr, cmr, struct*)

Toddacoumalone T-420

[139750-79-1]



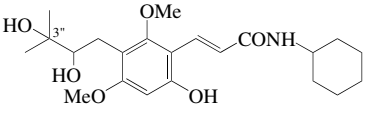
$C_{31}H_{31}NO_6$ 513.589

Alkaloid from *Toddalia asiatica* (*Toddalia aculeata*) (Rutaceae). Prisms (EtOAc). Mp 202-204°. λ_{max} 225 (ϵ 6760); 262 (ϵ 2040); 285 (ϵ 2950); 316 (ϵ 2090) (MeOH) (Derep).

Ishii, H. *et al., Tet. Lett.*, 1991, **32**, 6907-6910 (*isol, pmr, cmr, struct*)

Toddaliamide T-421

[189295-01-0]



$C_{22}H_{33}NO_6$ 407.506

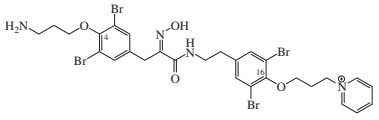
Isol. from root wood of *Toddalia asiatica*. Prisms (MeOH/EtOAc). Mp 227-228°. $[\alpha]_D^{23}$ +19 (c, 0.1 in MeOH). λ_{max} 205 (log ϵ 4.48); 225 (log ϵ 4.27); 245 (sh) (log ϵ 4.22); 300 (log ϵ 4.21); 320 (log ϵ 4.19) (EtOH).

3″-Me ether: ***Methyltoddaliamide***
[189295-02-1]
$C_{23}H_{35}NO_6$ 421.533
From rootwood of *Toddalia asiatica*. Prisms (MeOH/EtOAc). Mp 210-211°.

λ_{max} 220 (log ϵ 4.22); 240 (log ϵ 4.21); 260 (log ϵ 3.73); 300 (log ϵ 4.25); 320 (log ϵ 4.23) (EtOH).

Tsai, I.-L. *et al., Phytochemistry*, 1997, **44**, 1383 (*isol, uv, ir, pmr, cmr, ms, struct*)

Tokaradine A T-422



$C_{28}H_{31}Br_4N_4O_4^{\oplus}$ 807.193

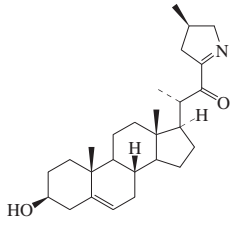
Quaternary alkaloid from *Pseudoceratina purpurea*. Amorph. yellow solid. Counterion not specified. λ_{max} 216 (ϵ 21800); 258 (sh) (ϵ 4000) (MeOH).

Regioisomer: ***Tokaradine B***
$C_{28}H_{31}Br_4N_4O_4^{\oplus}$ 807.193
Quaternary alkaloid from *Pseudoceratina purpurea*. Amorph. yellow solid. Has the groups attached to C-4 and C-16 interchanged. Counterion not specified. λ_{max} 214 (ϵ 20600); 258 (sh) (ϵ 3800) (MeOH).

Fusetani, N. *et al., Tetrahedron*, 2001, **57**, 7507-7511

Tomatillidine T-423

*21-(3,4-Dihydro-3-methyl-2*H*-pyrrol-5-yl)-3-hydroxy-20-methylpregn-5-en-21-one, 9CI*
[986-45-8]



Absolute Configuration

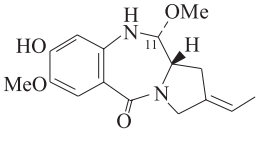
$C_{27}H_{41}NO_2$ 411.626
Alkaloid from *Solanum tomatillo* leaves (Solanaceae). Cryst. (Me_2CO). Mp 219-222°. $[\alpha]_D$ -18.1 ($CHCl_3$).

5α,6-Dihydro: ***Dihydrotomatillidine***
[986-44-7]
$C_{27}H_{43}NO_2$ 413.642
Alkaloid from *Solanum tomatillo* (Solanaceae). Mp 179-181°. $[\alpha]_D^{20}$ +21.4 ($CHCl_3$).

Bianchi, E. *et al., J.O.C.*, 1965, **30**, 754-760 (*isol, pmr, ord*)
Kusano, G. *et al., Chem. Pharm. Bull.*, 1976, **24**, 661-666 (*struct, cd, pmr, ms, synth*)

Tomaymycin T-424

*2-Ethylidene-1,2,3,10,11,11*a*-hexahydro-8-hydroxy-7,11-dimethoxy-5*H*-pyrrolo[2,1-c][1,4]benzodiazepin-5-one, 9CI*
[35050-55-6]



(*E*)–*form*

$C_{16}H_{20}N_2O_4$ 304.345

Anthramycin-type antibiotic. Isol. from *Streptomyces achromogenes* and *Nocardia* C-15003. Antitumour agent. Platelets + MeOH. Mp 145-146°. $[\alpha]_D^{20}$ +423 (c, 0.5 in Py). Strain also produces minor analogs (hydroxy, ethoxy, propoxy). λ_{max} 234 (ϵ 19600); 252 (sh) (ϵ 16700); 289 (ϵ 11400); 325 (ϵ 9270) (MeOH/KOH) (Derep). λ_{max} 224 (ϵ 26500); 237 (ϵ 24500); 260 (sh); 262 (ϵ 7840); 322 (ϵ 4500) (MeOH) (Derep).

▶ LD_{50} (mus, ipr) 1 mg/kg. UY8533000

*11-*O*-De-Me:* ***11-De-O-methyltomaymycin***
[55511-85-8]
$C_{15}H_{18}N_2O_4$ 290.318
From *Streptomyces achromogenes*. Shows antitumour activity.

*11-*O*-De-Me, 11-ketone:* ***Oxotomaymycin***
[35050-54-5]
$C_{15}H_{16}N_2O_4$ 288.302
From *Streptomyces achromogenes*. Biol. inactive. Mp 230° dec. Not obt. completely free of tomaymycin.

11-Demethoxy: ***Antibiotic SEN 215***. *11-Demethoxytomaymycin*. *SEN 215*
[67731-61-7]
$C_{15}H_{18}N_2O_3$ 274.319
Prod. by *Streptomyces cylindrosporus* and *Streptomyces sakaiensis*. Shows antitumour, analgesic, antispasmodic and sedative props. Needles. Mp 216-219°. $[\alpha]_D^{23}$ +177 (c, 0.5 in $CHCl_3$). Lacks the alicyclic methoxy group. λ_{max} 231 ; 238 ; 269 ; 340 (MeOH) (Berdy).

▶ LD_{50} (mus, ipr) 60 mg/kg. UY8534580

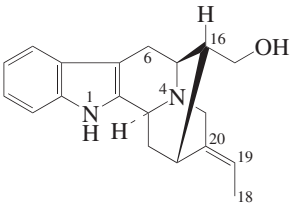
11-Demethoxy, 11-ethoxy: ***Tomaymycin I***
$C_{17}H_{22}N_2O_4$ 318.372
Prod. by *Nocardia* sp. ATCC31281. Active against bacteria, phages, and tumours. Pale-yellow needles. Mp 134-136°.

11-Demethoxy, 10,11-didehydro: ***Pretomaymycin***. *Pretomeimycin*
[28797-41-3]
$C_{15}H_{16}N_2O_3$ 272.303
Anthramycin antibiotic. Prod. by *Streptomyces achromogenes tomaymyceticus* ATCC21353. Biosynthetic intermediate for Tomaymycin. Converts on standing to Tomaymycin, useful for prep. of analogs. Pale-yellow powder (EtOAc). Sol. MeOH, DMSO, $CHCl_3$; fairly sol. Et_2O; poorly sol. hexane, H_2O. $[\alpha]_D^{25}$ +215 (c, 0.08 in Py). λ_{max} 220 (ϵ 26000); 316 (ϵ 3500) (MeOH) (Berdy).

Kariyone, K. *et al., Chem. Pharm. Bull.*, 1971, **19**, 2289 (*isol, struct*)
Arima, K. *et al., J. Antibiot.*, 1972, **25**, 437 (*isol, props*)
Japan. Pat., 1973, 79 73195; 1974, 74 25 956; 74 25 957; 1978, 78 56 693; 1981, 81 121 495; *CA*, **83**, 58899; 77004; **89**, 161536; **91**, 209360 (*isol, props, derivs*)
Hurley, L. *et al., Antimicrob. Agents Chemother.*, 1979, **15**, 42 (*biosynth*)
Hurley, L.H. *et al., Acc. Chem. Res.*, 1980, **13**, 263 (*rev*)
Tozuka, Z. *et al., J. Antibiot.*, 1983, **36**, 142; 276 (*synth, struct, pmr, cmr*)
Kaneko, T. *et al., Tet. Lett.*, 1983, **24**, 5165 (*synth*)
Barkley, M.D. *et al., Biochemistry*, 1986, **25**, 3021 (*pmr, struct*)
Mori, M. *et al., Tetrahedron*, 1986, **42**, 3793 (*synth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, THG500

Tombozine T-425

Sarpagan-17-ol, 9CI. Normacusine B. Vellosiminol. Desformoakuammidinol. Desoxysarpagine. Tombosine
[604-99-9]



$C_{19}H_{22}N_2O$ 294.396
Alkaloid from *Geissospermum vellosii*, several *Rauwolfia* and *Strychnos* spp. (Apocynaceae, Loganiceae). Shows sedative and ganglion blocking activity. Dimorphic cryst. Mp 245° Mp 270-272°.

O-*Ac:*
Prisms (Et_2O). Mp 219-221° (205-212°). $[\alpha]_D$ +12 (c, 0.33 in MeOH).

O-*Benzoyl:* ***O-Benzoyltombozine***
[54357-60-7]
$C_{26}H_{26}N_2O_2$ 398.504
Alkaloid from *Vinca erecta* epigeal parts (Apocynaceae). Cryst. (Et_2O). $[\alpha]_D^{20}$ +93 (c, 0.3 in $CHCl_3$).

N^1-*Me:* ***Affinisine***. *Dehydroxymethylvoachalotinol*. N^a-*Methyldeoxysarpagine*
[2912-11-0]
$C_{20}H_{24}N_2O$ 308.422
Alkaloid from *Peschiera affinis*, *Tabernaemontana fuchsiaefolia* and *Alstonia macrophylla* (Apocynaceae). Shows weak antibacterial activity and mod. analgesic and CNS depressant props. Active against gram-positive bacteria and fungi. Mp 194-196° (185°). $[\alpha]_D^{30}$ +19 (c, 0.78 in $CHCl_3$) (+30).

▶ AW4000000

N^1-*Me,* N^4-*oxide:* ***Affinisine*** N^b***-oxide***
[138989-35-2]
$C_{20}H_{24}N_2O_2$ 324.422
Alkaloid from *Ervatamia hirta* (Apocynaceae). $[\alpha]_D$ +3 (c, 1 in MeOH).

N^1-*Me,* O-*Ac:* Mp 179-180° (172°). $[\alpha]_D^{30}$ +8 (c, 0.82 in $CHCl_3$).

N^1-*Me,* N^4-*chloromethyl:* ***Chloromethyleneaffinisinium***
[167696-85-7 (chloride)]
$C_{21}H_{26}ClN_2O^{\oplus}$ 357.902
Alkaloid from stem bark of *Peschiera buchtieni* (Apocynaceae). $[\alpha]_D$ +4 (c, 0.4 in MeOH) (as chloride). Artifact.

N^4-*Me:* ***Macusine B***
[6792-07-0]
$C_{20}H_{25}N_2O^{\oplus}$ 309.43
Quaternary alkaloid from

Aspidosperma peroba, *Pleiocarpa pycnantha*, *Pleiocarpa tubicina*, *Strychnos toxifera* and several other *Strychnos* spp. (Apocynaceae, Loganiceae). Cryst. (MeOH) (as chloride). Mp 249-250° dec. (chloride). $[\alpha]_D^{25}$ +14 (c, 0.35 in H_2O) (chloride).

Me ether: ***17-Methoxysarpagan***. O-*Methylnormacusine B*
[68160-78-1]
$C_{20}H_{24}N_2O$ 308.422
Alkaloid from the stem bark of *Rauwolfia cumminsii* (Apocynaceae). Off-white amorph. powder.

Me ether, N^4*-oxide:* ***17-Methoxysarpagan* N-*oxide***
[70319-20-9]
$C_{20}H_{24}N_2O_2$ 324.422
Alkaloid from the stem bark of *Rauwolfia cumminsii* (Apocynaceae). Cream amorph. powder.

Me ether, N^4*-Me:* ***O-Methylmacusine B***
[55249-53-1]
$C_{21}H_{27}N_2O^{\oplus}$ 323.457
Alkaloid from *Strychnos usambarensis* roots and the stem bark of *Strychnos decussata* (Loganiceae).

17-Aldehyde: ***Vellosimine***. *Alkaloid RB19*
[6874-98-2]
$C_{19}H_{20}N_2O$ 292.38
Alkaloid from *Geissospermum vellosii*, *Rauwolfia vomitoria*, *Rauwolfia macrophylla*, *Rauwolfia nitida* and *Alstonia yunnanensis* (Apocynaceae). Cryst. (MeOH). Mp 260° Mp 305-306°. λ_{max} 226 (log ϵ 4.52); 283 (log ϵ 3.82) (EtOH).

17-Aldehyde, N^1*-Me:* ***N^a-Methylvellosimine***
[81525-53-3]
$C_{20}H_{22}N_2O$ 306.407
Alkaloid from the root bark of *Rauwolfia nitida* (Apocynaceae). Plates. Mp 255-260°. $[\alpha]_D^{22}$ +23 (c, 0.01 in $CHCl_3$).

17-Carboxylic acid, N^1*-Me, Me ester:* **N-*Methyl-16-epipericyclivine***
[2912-15-4]
$C_{21}H_{24}N_2O_2$ 336.433
Alkaloid from the leaves of *Alstonia undulata* (Apocynaceae). Cryst. (MeOH). Mp 231-232°. $[\alpha]_D$ +22.8 (c, 0.5 in $CHCl_3$) (synthetic). $[\alpha]_D$ 0° (c, 1 in $CHCl_3$).

17-Carboxylic acid, N^4*-Me (zwitterion):* ***Panarine***
[119736-90-2]
$C_{20}H_{22}N_2O_2$ 322.406
Alkaloid from a Venezuelan curare prepd. from the bark of *Strychnos toxifera*. Powder.

17-Carboxylic acid, N^4*-Me, Me ester:* ***Alkaloid Q_3***
[80151-85-5]
$C_{21}H_{25}N_2O_2^{\oplus}$ 337.441
Quaternary alkaloid from *Aspidosperma peroba* (Apocynaceae). Tentative struct.

19,20ξ-Dihydro, Me ether, N^4*-Me:* ***Dihydro-O-methylmacusine B***
[55249-54-2]
$C_{21}H_{29}N_2O^{\oplus}$ 325.473
Alkaloid from the roots of *Strychnos usambarensis* (Loganiceae).

18-Hydroxy, N^1*-Me:* ***18-Hydroxyaffinisine***
[167696-86-8]
$C_{20}H_{24}N_2O_2$ 324.422
Alkaloid from stem bark of *Peschiera buchtieni* (Apocynaceae).

16-Epimer: ***16-Epitombozine***. *16-Epinormacusine B*
[126640-98-0]
$C_{19}H_{22}N_2O$ 294.396
Alkaloid from *Ervatamia hirta* (Apocynaceae). $[\alpha]_D$ +3 (c, 0.25 in MeOH).

16-Epimer, N^1*-Me:* ***16-Epiaffinisine***
[139067-48-4]
$C_{20}H_{24}N_2O$ 308.422
Alkaloid from *Ervatamia hirta* (Apocynaceae). $[\alpha]_D$ -18 (c, 0.5 in MeOH).

16-Epimer, 17-carboxylic acid, Me ester: ***Pericyclivine***. *Methyl sarpagan-17-oate*
[975-77-9]
$C_{20}H_{22}N_2O_2$ 322.406
Alkaloid from *Tabernaemontana holstii*, *Tabernaemontana johnstonii*, *Vinca rosea*, *Catharanthus lanceus*, *Catharanthus ovalis*, *Catharanthus roseus*, *Hazunta modesta*, *Gabunia odoratissima* (preferred genus name *Tabernaemontana*) and *Rauwolfia cumminsii* (Apocynaceae). Shows weak cytotoxic activity vs. P-388 rat leukaemia cells. Needles (Me_2CO). Mp 232-233° (226-228°). $[\alpha]_D^{26}$ +5.2 (c, 1.0 in $CHCl_3$). $[\alpha]_D$ +2.9 ($CHCl_3$) (synthetic). Pmr and cmr revised in 1996. λ_{max} 225 (log ϵ 4.51); 281 (log ϵ 3.88); 289 (log ϵ 3.79) (MeOH).

▶ VQ5835000

16-Epimer, 17-carboxylic acid, N^1*-Me, Me ester:* **N-*Methylpericyclivine***
[160497-66-5]
$C_{21}H_{24}N_2O_2$ 336.433
Alkaloid from stem bark of *Peschiera buchtieni* (Apocynaceae). $[\alpha]_D$ +7.5 (c, 0.29 in $CHCl_3$).

16-Epimer, 17-carboxylic acid, N^4*-Me (zwitterion):* ***16-Epipanarine***
[135355-84-9]
$C_{20}H_{22}N_2O_2$ 322.406
Constit. of *Stemmadenia minima* (Apocynaceae). Needles (MeOH). Mp 226°. $[\alpha]_D^{20}$ -29 (c, 0.7 in MeOH).

16-Epimer, 6ξ-hydroxy: ***Ervincidine***
[32075-02-8]
$C_{19}H_{22}N_2O_2$ 310.395
Alkaloid from epigeal parts of *Vinca erecta* (Apocynaceae). Cryst. (MeOH). Mp 279-280° dec. $[\alpha]_D^{25}$ +29.5 (c, 0.6 in MeOH). Probable struct. MF incorr. given as $C_{19}H_{24}N_2O_2$.

16-Epimer, 19Z-isomer: ***Koumidine***
[1358-75-4]
$C_{19}H_{22}N_2O$ 294.396
Alkaloid from *Gelsemium elegans* and *Gelsemium sempervirens* (Loganiaceae). Cryst. (Me_2CO). Mp 201-203°. $[\alpha]_D$ -11 (c, 0.07 in MeOH). Originally assigned the common 19*E*-config. later shown to be (19*Z*-).

Battersby, A.R. *et al., J.C.S.*, 1960, 1848-1854; 1964, 4419-4427 (*Macusine B, isol*)
Gosset, J. *et al., Bull. Soc. Chim. Fr.*, 1961, 1033-1035 (*Affinisine, synth, O-Ac*)
Anatonaccio, L.D. *et al., J.A.C.S.*, 1962, **84**, 2161-2169 (*Tombozine, isol, ms*)
Rapoport, H. *et al., J.O.C.*, 1962, **27**, 2981-2985 (*Tombozine, Vellosimine, isol, synth, struct*)
Cava, M.P. *et al., Chem. Ind. (London)*, 1964, 1193-1194 (*Affinisine, isol, Ac, ir, uv, pmr*)
Farnsworth, N.R. *et al., J. Pharm. Sci.*, 1964, **53**, 1558 (*Pericylivine, isol, struct*)
Achenbach, H. *et al., Tet. Lett.*, 1966, 4405-4407 (*Affinisine, ms, struct*)
Khan, Z.M. *et al., Helv. Chim. Acta*, 1967, **50**, 625-627 (*Macusine B*)
Gorman, A.A. *et al., Helv. Chim. Acta*, 1969, **52**, 33-55 (*Macusine B, uv*)
Mitscher, L.A. *et al., J. Nat. Prod.*, 1972, **35**, 157-176 (*Affinisine, activity*)
Malikov, V.M. *et al., Khim. Prir. Soedin.*, 1972, **8**, 760-761; *Chem. Nat. Compd. (Engl. Transl.)*, 1974, **8**, 741-742 (*Ervincidine*)
Banerji, A. *et al., Phytochemistry*, 1972, **11**, 2605-2607 (*Affinisine, isol, ms*)
Marini-Bettòlo, G.B. *et al., Gazz. Chim. Ital.*, 1973, **103**, 591 (*Tombozine, cmr*)
Patel, M.B. *et al., Phytochemistry*, 1973, **12**, 451-456 (*Tombozine, isol, uv, ir, pmr, ms*)
Bláha, K. *et al., Coll. Czech. Chem. Comm.*, 1974, **39**, 3168-3176 (*Pericyclivine, uv, cd*)
Sharipov, M.R. *et al., Khim. Prir. Soedin.*, 1974, **10**, 413-414; *Chem. Nat. Compd. (Engl. Transl.)*, 1975, **10**, 422-423 (*O-Benzoyltombozine*)
Angenot, L. *et al., Planta Med.*, 1975, **27**, 24-30 (*O-Methylmacusine B, Dihydro-O-methylmacusine*)
Kingston, D.G.I. *et al., J. Pharm. Sci.*, 1977, **66**, 1135-1138; 1978, **67**, 249-251 (*Pericyclivine, isol, activity*)
Iwu, M.M. *et al., Phytochemistry*, 1978, **17**, 1651-1654 (*17-Methoxysarpagan, 17-Methoxysarpagan N-oxide*)
Chatterjee, A. *et al., Indian J. Chem., Sect. B*, 1979, **18**, 87-88 (*Vellosimine, isol, uv, ir, pmr, ms, struct*)
Marini-Bettòlo, G.B. *et al., Phytochemistry*, 1980, **19**, 992-994 (*O-Ac, cmr*)
Amer, M.A. *et al., Phytochemistry*, 1981, **20**, 2569-2573 (*N^a-Methylvellosimine*)
Schun, Y. *et al., Phytochemistry*, 1987, **26**, 2875-2876 (*Koumidine, struct*)
Dupont, L. *et al., Acta Cryst. C*, 1988, **44**, 2156-2158 (*Panarine, cryst struct*)
Quetin-Leclercq, J. *et al., Phytochemistry*, 1988, **27**, 4002-4004 (*Panarine*)
Ponglux, D. *et al., Tetrahedron*, 1988, **44**, 5075-5094 (*Koumidine, struct*)
Magnus, P. *et al., J.A.C.S.*, 1989, **111**, 786-789; 1990, **112**, 5220-5230 (*Koumidine, synth*)
Takayama, H. *et al., J.C.S. Perkin 1*, 1989, 1075-1076 (*Koumidine, synth, abs config*)
Pinchon, T.M. *et al., Phytochemistry*, 1990, **29**, 3341-3344 (*N-Methyl-16-epipericyclivine*)
Achenbach, H. *et al., J. Nat. Prod.*, 1991, **54**, 473-476 (*16-Epipanarine*)
Kitajima, M. *et al., J.C.S. Perkin 1*, 1991, 1773-1779 (*synth*)
Clivio, P. *et al., Phytochemistry*, 1991, **30**, 3785-3792 (*16-Epitombozine, Affinisine N-oxide*)
Bailey, P.D. *et al., J.C.S. Perkin 1*, 1993, 441-449 (*synth*)
Azoug, M. *et al., Phytochemistry*, 1995, **39**, 1223-1228 (*18-Hydroxyaffinisine, Chlormethleneaffinisinium, N-Methylpericyclivine*)
Jokela, R. *et al., Heterocycles*, 1996, **43**, 1015-1020 (*Pericyclivine, pmr, cmr*)
Liu, X. *et al., Tet. Lett.*, 2000, **41**, 6299-6303 (*Affinisine, synth*)
Deiters, A. *et al., J.A.C.S.*, 2003, **125**, 4541-4550 (*N-Methylvellosimine, synth*)

Yu, J. *et al., J.O.C.*, 2003, **68**, 5852-5859; 7565-7581 (*Tombozine, Vellosimine, Panarine, 16-Epiaffinisine, Alkaloid Q3, N-Methyl-16-epipericyclivine, synth, pmr, cmr*)
Sarma, P.V.V.S. *et al., Org. Lett.*, 2006, **8**, 1017-1020 (*N-Methylpericyclivine, synth*)

Tomentocurine T-426

[1361-62-2]

$C_{36}H_{38}N_2O_6$ 594.706

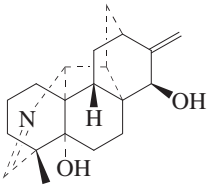
Bisbenzylisoquinoline alkaloid. Struct. unknown. Contains 2 OMe groups and at least one OH. Prob. a close relative of Chondocurine, C-420. Alkaloid from the stems and leaves of *Chondodendron tomentosum* (Menispermaceae). Cryst. + $2^3/_4$ H_2O. Mp 265° (efferv.). $[\alpha]_D^{17}$ +210 (0.1*M* HCl).

King, H. *et al., J.C.S.*, 1948, 1945-1949 (*isol*)
Bick, I.R.C. *et al., J.C.S.*, 1960, 2402-2407 (*isol*)

Tongolinine T-427

19,21-Didehydro-6,21-secohetisan-5,15-diol

[179234-13-0]



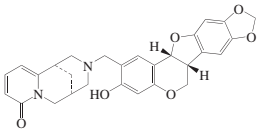
$C_{20}H_{27}NO_2$ 313.439

Alkaloid from *Delphinium tongolense*. Needles. Mp 233-234°.

He, L. *et al., Chin. Chem. Lett.*, 1996, **7**, 557-560 (*isol, pmr, cmr*)

Tonkinensine A T-428

[1044253-68-0]



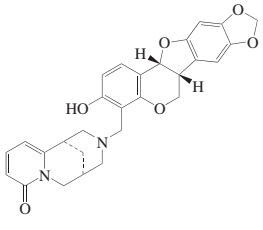
$C_{28}H_{26}N_2O_6$ 486.523

Alkaloid from the roots of *Sophora tonkinensis*. Gum ($CHCl_3$). $[\alpha]_D^{20}$ -334 (c, 0.11 in $CHCl_3$). λ_{max} 205 (log ϵ 3.89); 231 (log ϵ 3.45); 308 (log ϵ 3) (MeOH).

Li, X.-N. *et al., Tet. Lett.*, 2008, **49**, 3797-3801 (*isol, cd, pmr, cmr, ms*)

Tonkinensine B T-429

[1044253-69-1]



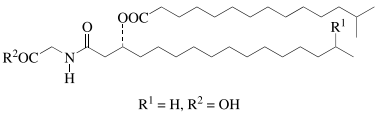
$C_{28}H_{26}N_2O_6$ 486.523

Alkaloid from the roots of *Sophora tonkinensis*. Cryst. (MeOH). Mp 258-260°. $[\alpha]_D^{20}$ -327 (c, 0.11 in $CHCl_3$). λ_{max} 204 (log ϵ 3.85); 233 (log ϵ 3.51); 309 (log ϵ 3.18) (MeOH).

Li, X.-N. *et al., Tet. Lett.*, 2008, **49**, 3797-3801 (*isol, cd, pmr, cmr, ms, cryst struct*)

Topostin B553 T-430

[129204-42-8]



R^1 = H, R^2 = OH

$C_{33}H_{63}NO_5$ 553.864

Struct. established 1998. Earlier tentative structs. shown to be incorrect. Prod. by *Flexibacter topostinus*. Inhibitor of mammalian DNA topoisomerase I. Cytotoxic. Powder. $[\alpha]_D^{22}$ +1.5 (c, 0.5 in $CHCl_3$).

[126603-04-1 , 126603-02-9 , 126603-03-0]

Suzuki, K. *et al., J. Antibiot.*, 1990, **43**, 154; 158 (*isol, activity*)
Noguchi, H. *et al., Tetrahedron*, 1995, **51**, 10531; 10545 (*synth, analogues*)
Nemoto, T. *et al., Tetrahedron*, 1998, **54**, 2683-2690 (*isol, ir, pmr, cmr*)

Topostin D 640 T-431

[205250-26-6]

As Topostin B553, T-430 with R^1 = H, R^2 = -NHCH(CH_2OH)-COOH(*S*-)

$C_{36}H_{68}N_2O_7$ 640.942

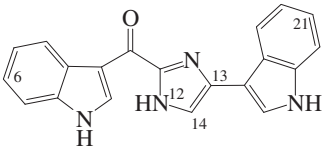
Prod. by *Flexibacter topostinus*. Inhibitor of mammalian DNA topoisomerase I. Powder. $[\alpha]_D^{22}$ +14.2 (c, 2 in $CHCl_3$).

Nemoto, T. *et al., Tetrahedron*, 1998, **54**, 2683-2690 (*isol, ir, pmr, cmr*)

Topsentin A T-432

1H-Indol-3-yl[4-(1H-indol-3-yl)-1H-imidazol-2-yl]methanone, 9CI. 4-(3-Indolyl)-2-(3-indolylcarbonyl)imidazole. Deoxytopsentin

[112515-42-1]



$C_{20}H_{14}N_4O$ 326.357

Shows tautomerism of the imidazole ring in soln., tautomer shown predominates. Naming and numbering systems vary. Alkaloid from the Mediterranean sponge *Topsentia genitrix*. Shows weak piscicidal activity. Mp 290-292°.

13,14-Dihydro: ***Topsentin D***
[122889-35-4]
$C_{20}H_{16}N_4O$ 328.373
Alkaloid from *Topsentia* sp.

6-Hydroxy: ***Topsentin B1***. *Topsentin*
[112515-43-2]
$C_{20}H_{14}N_4O_2$ 342.356
Alkaloid from *Topsentia genitrix* and from the Caribbean deep-sea sponge *Spongosorites* sp. Weak piscicide. Amorph. bright yellow solid. Mp 270°. λ_{max} 208 (ϵ 1800); 246 (ϵ 5100); 300 (ϵ 3400); 375 (ϵ 3100) (EtOH/KOH) (Derep). λ_{max} 202 (ϵ 41000); 220 (sh) (ϵ 31500); 240 (sh) (ϵ 19200); 280 (ϵ 13500); 378 (ϵ 17300) (95% EtOH) (Derep).

▶ PC4957000

6-Bromo: 6-Bromotopsentin A. ***Isobromodeoxytopsentin***
[223596-72-3]
$C_{20}H_{13}BrN_4O$ 405.253
Alkaloid from *Spongosorites genitrix*. Moderate cytotoxic agent. Amorph. yellow solid. Mp 225-230°. λ_{max} 213 (log ϵ 4.41); 252 (log ϵ 4.04); 280 (log ϵ 4.06); 375 (log ϵ 4.02) (MeOH).

6-Bromo, 13,14-dihydro: ***Dihydrodeoxybromotopsentin***. *Spongotine B*
[116747-40-1]
$C_{20}H_{15}BrN_4O$ 407.269
Isol. from *Spongosorites* sp., *Topsentia* sp. and *Rhaphisia lacazei*. Antiviral and antitumour agent. Amorph. yellow powder. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. $[\alpha]_D^{24}$ +198 (c, 2.0 in MeOH). λ_{max} 196 (ϵ 102000); 198 (ϵ 29300); 214 (ϵ 34000); 215 (ϵ 76000); 274 (ϵ 8800); 294 (ϵ 109000); 328 (ϵ 5700); 330 (ϵ 7600) (MeOH) (Berdy).

6-Bromo, 22-hydroxy: ***Isobromotopsentin***
[173220-97-8]
$C_{20}H_{13}BrN_4O_2$ 421.252
Alkaloid from *Spongosorites* sp. Amorph. yellow solid. Mp 225-228° dec. λ_{max} 207 (ϵ 11150); 284 (ϵ 2900); 415 (ϵ 4260) (EtOH).

21-Bromo: 21-Bromotopsentin A. ***Bromodeoxytopsentin***
[180633-55-0]
$C_{20}H_{13}BrN_4O$ 405.253
Alkaloid from *Spongosorites genitrix* and *Rhaphisia lacazei*. Moderate cytotoxic agent. Amorph. yellow solid. Mp 240-243°. λ_{max} 209 (log ϵ 4.61); 235 (log ϵ 4.4); 250 (sh) (log ϵ 4.36); 367 (log ϵ 4.17) (MeOH).

21-Bromo, 13,14-dihydro: ***Spongotine A***
$C_{20}H_{15}BrN_4O$ 407.269
Alkaloid from a *Spongosorites* sp. Amorph. yellow powder. $[\alpha]_D^{25}$ -14 (c, 0.2 in MeOH). λ_{max} 224 (log ϵ 4.27); 268 (log ϵ 3.92); 320 (log ϵ 3.75) (MeOH).

21-Bromo, 6-hydroxy: ***Topsentin B2***. *Bromotopsentin*
[112515-44-3]
$C_{20}H_{13}BrN_4O_2$ 421.252
Alkaloid from *Topsentia genitrix, Spongosorites* sp. and another sponge *Hexadella* sp. Shows antitumour and antiviral activity. Weak piscicide. Bright yellow cryst. ($CHCl_3$/MeOH) or yellow-green oil. Sol. MeOH, CH_2Cl_2. Mp 260° Mp 296-297°. λ_{max} 209 (ϵ 19000); 234 (sh) (ϵ 9700); 300 (ϵ 4200); 375 (ϵ 3500) (EtOH/KOH) (Derep). λ_{max} 208 (ϵ 40000); 237

(ϵ 28800); 254 (sh) (ϵ 22300); 286 (ϵ 15300); 378 (ϵ 17200) (95% EtOH) (Derep). λ_{max} 208 (ϵ 40000); 237 (ϵ 28800); 286 (ϵ 15300); 328 (ϵ 17200); 382 (ϵ 15500) (EtOH) (Berdy).

6,21-Dibromo: 6,21-Dibromotopsentin A. ***Dibromodeoxytopsentin***
$C_{20}H_{12}Br_2N_4O$ 484.149
Alkaloid from the sponge *Spongosorites* sp. Amorph. yellow powder.

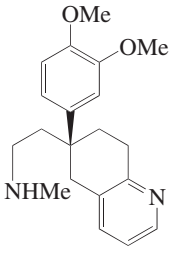
6,21-Dibromo, 13,14-dihydro: ***Spongotine C***
$C_{20}H_{14}Br_2N_4O$ 486.165
Alkaloid from a *Spongosorites* sp. Cryst. $[\alpha]_D^{25}$ -9 (c, 0.8 in MeOH). λ_{max} 221 (log ϵ 4.21); 276 (log ϵ 3.85); 315 (log ϵ 3.57) (MeOH).

6,21-Dibromo, 13,14-dihydro, N^{12}*-Me:* ***Topsentin C***
[128364-30-7]
$C_{21}H_{16}Br_2N_4O$ 500.192
Alkaloid from the Pacific Ocean sponge *Hexadella* sp. Pale yellow powder.

Braekman, J.C. *et al., Bull. Soc. Chim. Belg.*, 1987, **96**, 809-812 (*Topsentin A, synth*)
Bartik, K. *et al., Can. J. Chem.*, 1987, **65**, 2118-2121 (*Topsentins A,B,B2*)
Tsujii, S. *et al., J.O.C.*, 1988, **53**, 5446-5453 (*Topsentin, Bromotopsentin, Dihydrodeoxybromotopsentin*)
Morris, S.A. *et al., Can. J. Chem.*, 1989, **67**, 677-681 (*Topsentin B2*)
Morris, S.A. *et al., Tetrahedron*, 1990, **46**, 715-720 (*Topsentin C*)
Murray, L.M. *et al., Aust. J. Chem.*, 1995, **48**, 2053-2058 (*Isobromotopsentin*)
Achab, S. *et al., Tet. Lett.*, 1996, **37**, 5503-5506 (*Topsentin, Deoxytopsentin, Bromotopsentin, synth*)
Kawasaki, I. *et al., Heterocycles*, 1998, **48**, 1887-1901 (*synth*)
Shin, J. *et al., J. Nat. Prod.*, 1999, **62**, 647-649 (*Bromodeoxytopsentin, Isobromodeoxytopsentin*)
Casapullo, A. *et al., J. Nat. Prod.*, 2000, **63**, 447-451 (*isol*)
Miyake, F.Y. *et al., Org. Lett.*, 2000, **2**, 2121-2123 (*synth*)
Bao, B. *et al., J. Nat. Prod.*, 2005, **68**, 711-715; 2007, **70**, 2-8 (*Dibromodeoxytopsentin, Spongotines A-C*)
Guinchard, X. *et al., J.O.C.*, 2007, **72**, 3972-3975 (*synth*)
Murai, K. *et al., J.O.C.*, 2007, **72**, 8947-8949 (*Spongotine A, synth*)
Mal, S.K. *et al., Tetrahedron*, 2008, **64**, 5904-5914 (*synth*)

Tortuosamine T-433

*6-(3,4-Dimethoxyphenyl)-5,6,7,8-tetrahydro-*N*-methyl-6-quinolineethanamine, 9CI. 7-(3,4-Dimethoxyphenyl)-7-(2-methylaminoethyl)-5,6,7,8-tetrahydroquinoline*



(*R*)-*form*

$C_{20}H_{26}N_2O_2$ 326.438
Modified type of mesembrenoid alkaloid.

(R)-form [35722-04-4]
Alkaloid from *Sceletium tortuosum* and *Sceletium namaquense* (Aïzoaceae). Oil. $[\alpha]_D^{20}$ -29 (c, 1.04 in MeOH).

N-*Formyl:* **N-*Formyltortuosamine***
[51934-14-6]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from *Sceletium namaquense* (Aïzoaceae). Oil.

N-*Ac:* **N-*Acetyltortuosamine***
[82545-10-6]
$C_{22}H_{28}N_2O_3$ 368.475
Alkaloid from *Sceletium namaquense* (Aïzoaceae). Oil.

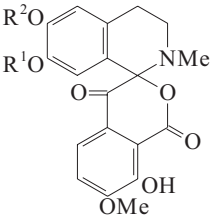
(±)-form [79517-20-7]
Synthetic. Oil.

N-*Formyl:* [79517-21-8]
Synthetic. Oil.

Snyckers, F.O. *et al., Chem. Comm.*, 1971, 1467 (*isol, uv, ir, pmr, ms, struct*)
Jeffs, P.W. *et al., J.O.C.*, 1974, **39**, 2703; 1982, **47**, 3611 (*isol, synth, deriv*)
Martin, N.H. *et al., Org. Mass Spectrom.*, 1976, **11**, 1 (*ms, deriv*)
Capps, T.M. *et al., J.C.S. Perkin 2*, 1977, 1098 (*isol, uv, ir, pmr, ms*)
Koyama, J. *et al., Heterocycles*, 1981, **16**, 969; 1984, **22**, 1973 (*synth*)
Okatani, T. *et al., Heterocycles*, 1989, **29**, 1809 (*synth*)
Goehring, R.R. *et al., Tet. Lett.*, 1994, **35**, 8145 (*synth*)
Kamikubo, T. *et al., Chem. Comm.*, 1998, 783-784 (*synth*)
Yamada, O. *et al., Tet. Lett.*, 1998, **39**, 7747-7750 (*synth*)
Hayashi, M. *et al., Tet. Lett.*, 2002, **43**, 1461-1464 (*synth*)

Torulosine T-434

[156953-74-1]



R^1R^2 = CH_2

$C_{20}H_{17}NO_7$ 383.357

(±)-form
Alkaloid from whole plants of *Dactylicapnos torulosa* and *Hypecoum leptocarpum*. Orange powder. Mp 190-192°. λ_{max} 287 (log ϵ 4.8); 405 (log ϵ 4.29) (MeOH/NaOH). λ_{max} 223 (log ϵ 5); 247 (log ϵ 5.09); 302 (log ϵ 4.88) (MeOH/HCl).

O-*De-Me,* N-*Me:* **O-*Demethyl*-N-*methyltorulosine***. N-*Methylde*-O-*methyltorulosine*
[401892-71-5]
$C_{20}H_{18}NO_7^{\oplus}$ 384.365
Alkaloid from *Hypecoum leptocarpum*. Amorph. yellow powder (MeOH) (as chloride). Mp 100-105° (chloride). λ_{max} 250 (log ϵ 4.02); 310 (log ϵ 3.83); 371 (log ϵ 3.76) (MeOH).

Rücker, G. *et al., Phytochemistry*, 1994, **36**, 519-523 (*isol, uv, ir, pmr, cmr, ms*)
Li, B.-G. *et al., Indian J. Chem., Sect. B*, 2001, **40**, 1215-1218 (*N-Methylde-O-methyltorulosine*)

Torulosinine T-435

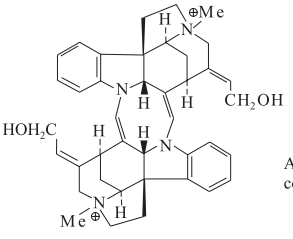
[156953-75-2]
As Torulosine, T-434 with
$R^1 = R^2 = Me$
$C_{21}H_{21}NO_7$ 399.399

(±)-form
Alkaloid from whole plants of *Dactylicapnos torulosa* (Papaveraceae). Yellow amorph. powder. Mp 207-208°.

Rücker, G. *et al., Phytochemistry*, 1994, **36**, 519 (*isol, uv, ir, pmr, ms, struct*)

Toxiferine I T-436

C-*Toxiferine I. Toxiferine V. Toxiferine XI*
[6888-23-9]
[6696-58-8]



Absolute configuration

$C_{40}H_{46}N_4O_2^{2\oplus}$ 614.829
Dimer showing 2-fold rotational symmetry. Alkaloid from calabash curare, *Strychnos toxifera* and *Strychnos froesii* (Loganiceae). Neuromuscular blocking agent. The most potent of the physiologically active calabash-curare alkaloids. $[\alpha]_D$ -511 (MeOH) (as dichloride). Red-viol. col. with $Ce(SO_4)_2$, becoming colourless on standing. Equilibrates in mild acid conds. with Caracurine V dimethosalt.

▶ LD_{50} (mky, ivn) 8900 mg/kg. LD_{50} (mky, ims) 0.018 mg/kg. Very toxic by intravenous and intramuscular routes.
XW5520000

Monodeoxy: **C-*Alkaloid H***
$C_{40}H_{46}N_4O^{2\oplus}$ 598.83
Alkaloid from calabash curare (Loganiceae). Mp 189-192° (as picrate). Red-viol. col. with $Ce(SO_4)_2$, becoming colourless on standing. No CAS no. found to 2007.

*Monodeoxy, di-*N*-de-Me:* ***Caracurine VI***. *Bisnor-*C*-alkaloid H. 18-Hydroxynordihydrotoxiferine. Dinor-*C*-alkaloid H*
[67739-70-2]
$C_{38}H_{40}N_4O$ 568.76
Alkaloid from *Strychnos longicaudata*, *Strychnos dolichothyrsa*, *Strychnos afzelii*, *Strychnos malacoclados*, *Strychnos matopensis* and *Strychnos urceolata* (Loganiceae). Shows antimicrobial props. Purple col. with $Ce(SO_4)_2$, becoming brown on standing. Picrate darkening >260°,

does not melt <300°. Has been confused with Longicaudatine, L-249. λ_{max} 286 ; 292 (MeOH) (Berdy).

18-Deoxy, di-N-*de-Me,* N^4*-oxide:* ***Bisnor-C-alkaloid H* N-*oxide***
$C_{38}H_{40}N_4O_2$ 584.76
Alkaloid from *Strychnos dolichothyrsa*.

Monodeoxy, di-N-*de-Me, di*-N-*oxide:* ***Bisnor*-C-*alkaloid H di*-N-*oxide***
[69320-13-4]
$C_{38}H_{40}N_4O_3$ 600.759
Alkaloid from *Strychnos dolichothyrsa*.

Bis(deoxy): ***18,18′-Dideoxytoxiferine I***. C-*Deoxytoxiferine*. C-*Alkaloid K*. C-*Dihydrotoxiferine I*
[664-27-7]
$C_{40}H_{46}N_4^{2\oplus}$ 582.83
Alkaloid from calabash curare, *Strychnos toxifera* and a few other *Strychnos* spp. (Loganiceae). Curarising agent. $[\alpha]_D$ -611 (H_2O) (as dichloride). Blue-viol. col. with $Ce(SO_4)_2$, becoming colourless on standing.

Bis(deoxy), di-N-*de-Me:* ***Bisnordihydrotoxiferine***. *4,4′-Didemethyl-18,18′-dideoxytoxiferine I*. *Nordihydrotoxiferine. Nordihydrotoxiferine I*
[24163-58-4]
$C_{38}H_{40}N_4$ 552.761
Alkaloid from *Strychnos dolichothyrsa*, *Strychnos afzelii*, *Strychnos toxifera*, *Strychnos variabilis*, *Strychnos longicaudata* and others. Major alkaloid of *Strychnos pseudoquina* (Loganiceae). Shows antimicrobial props. Noncryst. Violet col. with $Ce(SO_4)_2$, becoming brown on standing. λ_{max} 293 ; 310 (MeOH) (Berdy).

▶ XW5525000

Bis(deoxy), di-N-*de-Me,* N^4*-oxide:* ***Bisnordihydrotoxiferine* N-*oxide***
[62569-70-4]
[69345-26-2]
$C_{38}H_{40}N_4O$ 568.76
Alkaloid from *Strychnos dolichothyrsa* and *Strychnos afzelii* (Loganiceae). Noncryst. Poss. artifact.

Bis(deoxy), di-N-*de-Me,* N^4,$N^{4'}$*-dioxide:* ***Bisnordihydrotoxiferine di*-N-*oxide***
[62520-57-4]
$C_{38}H_{40}N_4O_2$ 584.76
Alkaloid from *Strychnos dolichothyrsa* (Loganiceae). Active against gram-positive bacteria and fungi. Noncryst. Poss. artifact.

Wieland, H. *et al., Annalen*, 1941, **547**, 156-179 (*C-Dihydrotoxiferine, isol*)
King, H. *et al., J.C.S.*, 1949, 3263-3271 (*isol*)
Schmid, H. *et al., Helv. Chim. Acta*, 1952, **35**, 1864-1879; 1953, **36**, 102-121 (*isol, C-Alkaloid H*)
Asmis, H. *et al., Helv. Chim. Acta*, 1954, **37**, 1983-1992; 1955, **38**, 1661-1668 (*Bisnordihydrotoxiferine, Caracurine VI*)
Bernauer, K. *et al., Helv. Chim. Acta*, 1958, **41**, 2293-2308; 1959, **42**, 461-463 (*ir, struct, synth, C-Dihydrotoxiferine*)
Battersby, A.R. *et al., J.C.S.*, 1960, 736-741 (*struct, synth*)
Grdinic, M. *et al., J.A.C.S.*, 1964, **86**, ; 3357-3363 (*pmr*)
Verpoorte, R. *et al., J. Nat. Prod.*, 1976, **39**, 357-362 (*Strychnos dolichothyrsa constits*)
Rosato, R.R. *et al., Toxicol. Appl. Pharmacol.*, 1976, **35**, 107-111 (*tox*)
Verpoorte, R. *et al., Org. Magn. Reson.*, 1977, **9**, 567 (*cmr*)
Wenkert, E. *et al., J.O.C.*, 1978, **43**, 1099-1105 (*cmr*)
Verpoorte, R. *et al., Planta Med.*, 1978, **33**, 237-242 (*Bisnordihydrotoxiferine di-N-oxide, activity*)
Tits, M. *et al., Planta Med.*, 1978, **34**, 57-61 (*Nordihydrotoxiferine*)
Verpoorte, R. *et al., Planta Med.*, 1982, **44**, 21-27 (*Bisnor-C-alkaloid H N-oxide, Bisnor-C-alkaloid H di-N-oxide*)
Massiot, G. *et al., J.O.C.*, 1983, **48**, 1869-1872 (*Caracurine VI, bibl*)
Massiot, G. *et al., Tetrahedron*, 1983, **39**, 3645-3656 (*Bisnordihydrotoxiferine*)
Massiot, G. *et al., Phytochemistry*, 1988, **27**, 3293-3304 (*isol, cmr*)
Delaude, C. *et al., Bull. Soc. R. Sci. Liege*, 1997, **66**, 183-286 (*occur, derivs, Strychnos*)
Zlotos, D.P. *et al., Eur. J. Org. Chem.*, 2004, 2375-2380 (*pmr, conformn*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, THI000

Toxiferine II T-437

Strychnotoxine II

$C_{40}H_{48}N_4O_4^{2\oplus}$ 648.844

Struct. unknown. Not the same as *C*-Toxiferine II (see Calebassine, C-31). Alkaloid from calabash curare and *Strychnos toxifera* (Loganiceae). Hexagonal prisms (Me_2CO aq.)(as dipicrate). $[\alpha]_D^{214}$ +216 (dec. (rapid heating) (as dipicrate)).

Wieland, H. *et al., Annalen*, 1941, **547**, 156
Wieland, T. *et al., Chem. Ber.*, 1952, **85**, 731-743

Toxiferine III T-438

$C_{20}H_{27}N_2O^{\oplus}$ 311.446

Struct. unknown. Alkaloid from bark of *Strychnos toxifera* (Loganiceae). Tablets (H_2O)(as chloride). Mp 285° chloride.

King, H. *et al., J.C.S.*, 1949, 3263-3271

Toxiferine VIII T-439

$C_{22}H_{25}N_2O_3^{\oplus}$ 365.451

Minimum formula. Struct. unknown. Alkaloid from bark of *Strychnos toxifera* (Loganiceae). Balls of needles (Me_2CO)(as picrate). Mp 300° (picrate).

King, H. *et al., J.C.S.*, 1949, 3263-3271
Battersby, A.R. *et al., J.C.S.*, 1960, 1848

Toxiferine XII T-440

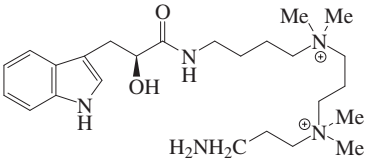
$C_{39}H_{46}N_4O^{2\oplus}$ 586.819

Struct. unknown. Alkaloid from *Strychnos toxifera* bark (Loganiceae). Mp 333° (darkens at *ca.* 230°)(as picrate). A methyleneindoline belonging to the Toxiferine group of alkaloids.

King, H. *et al., J.C.S.*, 1949, 3263-3271
Battersby, A.R. *et al., J.C.S.*, 1960, 1848

Toxin MG 30 T-441

MG 30

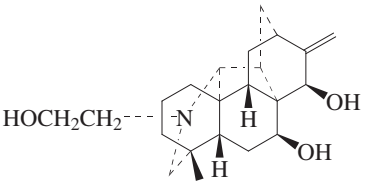


$C_{25}H_{45}N_5O_2^{2\oplus}$ 447.663
Isol. from the venom of the spider, *Macrothele gigas*. $[\alpha]_D$ +3.5 (c, 0.43 in H_2O). Counterion not specified.

Yamaji, N. *et al., Tet. Lett.*, 2004, **45**, 5371-5373 (*isol, synth, cd, pmr, cmr, ms*)

Trabzonine T-442

[303175-76-0]

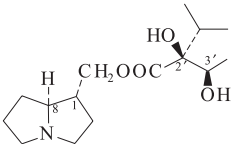


$C_{22}H_{33}NO_3$ 359.508
Alkaloid from the roots of *Aconitum nasutum*. Cryst. Mp 123-126°. $[\alpha]_D^{25}$ -5 (c, 1.2 in MeOH).

Mericli, A.H. *et al., Heterocycles*, 2000, **53**, 1987-1996

Trachelanthamine T-443

[14140-18-2]



Absolute configuration

$C_{15}H_{27}NO_4$ 285.383
Trachelanthamidine and its stereoisomers are esters of 1-Hydroxymethylpyrrolizidine, H-629, various stereoisomers, with 2,3-Dihydroxy-2-isopropylbutanoic acid, various stereoisomers. Posn. 8 is 7a in CAS numbering. Alkaloid from *Trachelanthus korolkovii, Trachelanthus hissaricus* and *Rindera baldschuanica* (Boraginaceae). Cryst. (Me_2CO/petrol). Mp 92-93°. $[\alpha]_D$ -18.14 (c, 1 in EtOH).

▶ EK7787800

Picrate: Mp 155-156°.

N-*Oxide:* ***Trachelanthine***. *Trachelanthamine* N-*oxide*
[510-19-0]
$C_{15}H_{27}NO_5$ 301.382
Alkaloid from *Trachelanthus korolkovii* (Boraginaceae). Needles (Me_2CO). Mp 166-167°. $[\alpha]_D$ -22.5.

▶ EK7788500

3′-Ac: ***3′*-O-*Acetyltrachelanthamine***
[200062-29-9]
$C_{17}H_{29}NO_5$ 327.42
Alkaloid from *Heliotropium floridum*

(Boraginaceae). Oil. $[\alpha]_D$ +7 (c, 0.04 in CH_2Cl_2).

8-Epimer: ***Lindelofine***
[487-99-0]
$C_{15}H_{27}NO_4$ 285.383
Alkaloid from *Lindelofia anchusoides* air-dried plants and *Lindelofia macrostyla* (Boraginaceae). Cryst. (Me_2CO). Mp 106-107°. $[\alpha]_D$ +50 (EtOH).

8-Epimer, picrate:
Cryst. (EtOH). Mp 123-124°.

8-Epimer, N-*oxide:* ***Lindelofine* N-*oxide***
$C_{15}H_{27}NO_5$ 301.382
Alkaloid from *Lindelofia macrostyla* (Boraginaceae). Mp 195-196.5°. $[\alpha]_D$ +20.6.

8-Epimer, O-*tigloyl:* ***Lindelofamine***
$C_{20}H_{33}NO_5$ 367.484
Alkaloid from *Lindelofia anchusoides* air-dried plants (Boraginaceae). Cryst. (petrol). Mp 88°. Posn. of esterification not known.

2′-Epimer: ***Coromandaline***
[68473-86-9]
$C_{15}H_{27}NO_4$ 285.383
Alkaloid from *Heliotropium curassavicum* (Boraginaceae). Pale yellow gum. $[\alpha]_D^{25}$ -6.9 (c, 0.5 in EtOH). Contains the rare enantiomer (+)-Viridifloric acid.

3′-Epimer: ***Viridiflorine***
[551-57-5]
$C_{15}H_{27}NO_4$ 285.383
Alkaloid from *Cynoglossum viridiflorum, Lindelofia olgae, Lindelofia pterocarpa, Lindelofia stylosa, Paracaryum himalayense, Symphytum officinale* and *Trachelanthus hissaricus* (Boraginaceae). Prisms (Me_2CO). Mp 102-103°. $[\alpha]_D$ -11.73 (c, 1 in EtOH).

3′-Epimer, N-*oxide:* ***Viridiflorine* N-*oxide***
[19038-28-9]
$C_{15}H_{27}NO_5$ 301.382
Alkaloid from *Lindelofia macrostyla* and *Lindelofia olgae* (Boraginaceae). Mp 197-198°.

1,2′-Diepimer: ***Heliocoromandaline***
[82354-33-4]
$C_{15}H_{27}NO_4$ 285.383
Isol. from *Heliotropium curassavicum* (Boraginaceae). Gum.

2′,3′-Diepimer: ***Heliovicine***
[68473-85-8]
$C_{15}H_{27}NO_4$ 285.383
Alkaloid from *Heliotropium curassavicum* (Boraginaceae). Pale yellow gum. $[\alpha]_D^{25}$ -2.7 (c, 0.6 in EtOH). Contains the rare enantiomer (-)-trachelanthic acid.

3′,8-Diepimer: ***Cynaustraline***
[17958-37-1]
$C_{15}H_{27}NO_4$ 285.383
Alkaloid from *Cynoglossum australe* (dried plants) (Boraginaceae). Gum. Mp 149-150° (as picrolonate). Apparently the enantiomer of Heliocoromandaline.

1,2′,3′-Triepimer: ***Heliocurassavicine***
[82354-34-5]
$C_{15}H_{27}NO_4$ 285.383
Minor alkaloid from *Heliotropium curassavicum* (Boraginaceae). Gum. $[\alpha]_D^{25}$ +0.3 (c, 0.0035 in $CHCl_3$). Should be the enantiomer of Lindelofine, although opt. rotns. do not agree.

1,2′,3′-Triepimer, N-*oxide:* ***Heliocurassavicine* N-*oxide***
[156714-77-1]
$C_{15}H_{27}NO_5$ 301.382
Alkaloid from aerial parts of *Heliotropium curassavicum* (Boraginaceae).

1,3′,8-Triepimer: ***Neocoromandaline***
[283168-04-7]
$C_{15}H_{27}NO_4$ 285.383
Alkaloid from the roots of *Cynoglossum furcatum*. Gum. $[\alpha]_D^{20}$ -6.8 (EtOH). Synonym misspelt in paper.

Tetraepimer: ***Heliocurassavinine***
[82374-02-5]
$C_{15}H_{27}NO_4$ 285.383
Minor alkaloid from *Heliotropium curassavicum* (Boraginaceae). Gum. $[\alpha]_D^{25}$ +0.3 (c, 0.0035 in $CHCl_3$). Should be the enantiomer of Trachelanthamine, but apparently is of v. low opt. purity.

Men'shikov, G.P. *et al., J. Gen. Chem. USSR (Engl. Transl.)*, 1941, **11**, 209; 1945, **15**, 225; 1947, **17**, 343; 1948, **18**, 1736; *CA*, **35**, 7111; **40**, 2141; **42**, 556; **46**, 2625 (*Trachelanthamine, Viridiflorine*)

Labenskii, A.S. *et al., J. Gen. Chem. USSR (Engl. Transl.)*, 1948, **18**, 1836; *CA*, **43**, 3827 (*Lindelofine, Lindelofamine*)

Tsyrul'nikova, L.G. *et al., Zh. Obshch. Khim.*, 1962, **32**, 2705-2709; *J. Gen. Chem. USSR (Engl. Transl.)*, 1962, **32**, 2663-2666 (*Lindelofine N-oxide*)

Akramov, S.T. *et al., CA*, 1964, **61**, 4700; 11005; 1968, **68**, 47001 (*Viridiflorine, Viridiflorine N-oxide*)

Culvenor, C.C.J. *et al., Aust. J. Chem.*, 1967, **20**, 2499-2503 (*Cynaustraline*)

Akramov, S.T. *et al., Khim. Prir. Soedin.*, 1967, **3**, 351; *Chem. Nat. Compd. (Engl. Transl.)*, 1967, **3**, 296-297 (*Trachelanthine, Viridiflorine oxide*)

Kiyamitdinova, F. *et al., Khim. Prir. Soedin.*, 1967, **3**, 411-412; *Chem. Nat. Compd. (Engl. Transl.)*, 1967, **3**, 343-344 (*Viridiflorine*)

Kochetkov, N.K. *et al., Tetrahedron*, 1969, **25**, 2313-2323 (*abs config, synth*)

Subramanian, P.S. *et al., Aust. J. Chem.*, 1980, **33**, 1357-1363 (*Heliovicine, Coromandaline*)

Mohanraj, S. *et al., Phytochemistry*, 1982, **21**, 1775-1779 (*Heliocurassavicine, Heliocurassavicinine, Heliocoromandaline, Coromandaline, Heliocurassavinine*)

Roeder, E. *et al., Phytochemistry*, 1990, **29**, 11-29 (*rev, cmr*)

Marquina, G. *et al., Rev. Cubana Farm.*, 1992, **26**, 52; *CA*, **121**, 104063f (*Heliocurassavicine N-oxide*)

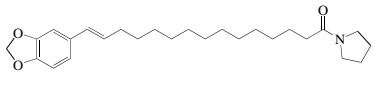
Reina, M. *et al., Phytochemistry*, 1997, **46**, 845-853 (*3′-Acetyltrachelanthamine*)

Weber, S. *et al., Phytochemistry*, 1999, **50**, 1005-1014 (*pmr, cmr, biosynth*)

Ravi, S. *et al., Indian J. Chem., Sect. B*, 2000, **39**, 80-82 (*Neocoromandaline*)

Trachyone T-444

1-[15-(3,4-Methylenedioxyphenyl)-14-pentadecenoyl]pyrrolidine. 15-(3,4-Methylenedioxyphenyl)-14-pentadecenoic acid pyrrolidide



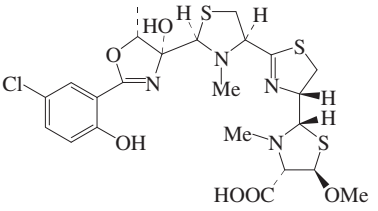
$C_{26}H_{39}NO_3$ 413.599

(E)-form [102965-07-1]
Alkaloid from *Piper amalago* and *Piper nigrum* (white pepper).

Achenbach, H. *et al., Planta Med.*, 1986, **52**, 12-18 (*isol*)

Reddy, S.V. *et al., Phytomedicine*, 2004, **11**, 697-700 (*isol*)

Transvalencin A T-445

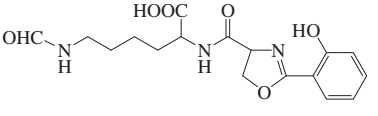


$C_{23}H_{29}ClN_4O_6S_3$ 589.156
Isol. as Zn complex. Isol. from *Nocardia transvalensis* (IFM 10065). Antifungal agent.

Zn complex:
$C_{23}H_{27}ClN_4O_6S_3Zn$ 652.53
Prisms. Mp 280° dec. (shattered at 258°). λ_{max} 225 (log ϵ 4.47); 251 (log ϵ 4.05); 358 (log ϵ 3.65) (MeOH).

Hoshino, Y. *et al., J. Antibiot.*, 2004, **57**, 797-802; 803-807 (*isol, cd, pmr, cmr, ms, cryst struct*)

Transvalencin Z T-446

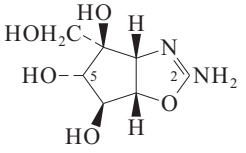


$C_{17}H_{21}N_3O_6$ 363.369
Isol. from *Nocardia transvalensis* (IFM 10065). Active against gram-positive bacteria. Powder. $[\alpha]_D^{25}$ +15.3 (c, 1 in MeOH). λ_{max} 205 (log ϵ 3.77); 241 (log ϵ 3.28); 301 (log ϵ 2.91) (MeOH).

Mukai, A. *et al., J. Antibiot.*, 2006, **59**, 366-369 (*isol, ir, pmr, cmr*)

Trehalamine T-447

2-Amino-3a,5,6,6a-tetrahydro-4-(hydroxymethyl)-4H-cyclopentoxazole-4,5,6-triol, 9CI
[144811-33-6]



$C_7H_{12}N_2O_5$ 204.182
Tautomeric with the 2-imino form. Found in culture broths of *Amycolatopsis* sp. and *Micromonospora* sp. Sol. H_2O; poorly sol. Me_2CO, $CHCl_3$. Mp 163-165°. $[\alpha]_D^{25}$ +13.5 (c, 0.74 in H_2O).

N^2-*β-D-Glucopyranosyl:* ***Trehalostatin***. *Trehazolin. A 70615. Antibiotic A 70615*
[132729-37-4]
$C_{13}H_{22}N_2O_{10}$ 366.324
Aminoglycoside antibiotic. Prod. by *Amycolatopsis trehalostatica* and *Micromonospora* strain SANK 62390. Potent and specific inhibitor of trehalase, active against blowfly (*Aldrichna grahami*). Amorph. powder. $[\alpha]_D^{25}$ +115 (c, 1 in H_2O) (+ 99.5).

[147059-34-5]

Murao, S. *et al., Agric. Biol. Chem.*, 1991, **55**, 895 (*isol, pmr, props*)
Nakayama, T. *et al., Chem. Comm.*, 1991, 919 (*pmr, cmr, struct*)
Ando, O. *et al., J. Antibiot.*, 1991, **44**, 1165; 1993, **46**, 1116 (*isol, struct*)
Kobayashi, Y. *et al., J.A.C.S.*, 1992, **114**, 10065; 1994, **59**, 813 (*synth, abs config*)
Ogawa, S. *et al., J.C.S. Perkin 1*, 1992, **57**, 1939 (*synth, struct*)
Kobayashi, Y. *et al., J. Antibiot.*, 1994, **47**, 932
Uchida, C. *et al., J.C.S. Perkin 1*, 1994, 589 (*synth, pmr, abs config*)
Shiozaki, M. *et al., J.O.C.*, 1994, **59**, 4450
Li, J. *et al., J.O.C.*, 1998, **63**, 3403-3410 (*synth, Trehazolin*)
Boiron, A. *et al., J.O.C.*, 1998, **63**, 5877-5883 (*synth*)
Kobayashi, Y. *et al., Carbohydr. Res.*, 1999, **315**, 3-15 (*rev, synth, props*)
Berecibar, A. *et al., Chem. Rev.*, 1999, **99**, 779-844 (*rev, synth*)
Storch de Gracia, I. *et al., Org. Lett.*, 1999, **1**, 1705-1708 (*synth*)
Crimmins, M.T. *et al., J.O.C.*, 2001, **66**, 4012-4018 (*Trehazolin, synth*)
Sugiyama, Y. *et al., J. Antibiot.*, 2002, **55**, 263-269 (*Trehazolin, biosynth*)

Tremine T-448

Struct. unknown. Alkaloid from fruits of *Trema micrantha* (Urticaceae). Rods (EtOH). Mp 103°. $[\alpha]_D$ +50 (EtOH).

Hydrochloride: Mp 194°.

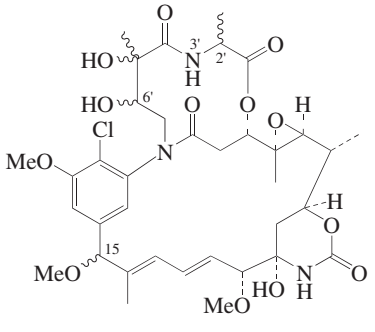
Sulfate:
Powder. Mp 252°.

Glycoside: ***Tremidine***
Alkaloid from *Trema micrantha* (Urticaceae). Plates (EtOH). Mp 53°. $[\alpha]_D^{21}$ +43 (EtOH). Neutral.

Ribeiro, O. *et al., CA*, 1954, **48**, 1490

Trenudine T-449

[79101-56-7]



$C_{36}H_{48}ClN_3O_{13}$ 766.24

Alkaloid from *Trewia nudiflora* (Euphorbiaceae). Cryst. (CH_2Cl_2/hexane). Sol. $CHCl_3$, MeOH; poorly sol. hexane, H_2O. Mp 200-205° dec. $[\alpha]_D^{23}$ -114 (c, 0.24 in $CHCl_3$). λ_{max} 233 (ε 26400); 248 (sh) (ε 21500); 253 (ε 22600); 282 (ε 6130); 288 (ε 6130) (EtOH).

6′-Deoxy: ***Treflorine, 9CI***
[79101-55-6]
$C_{36}H_{48}ClN_3O_{12}$ 750.241
Alkaloid from *Trewia nudiflora* (Euphorbiaceae). Cryst. (CH_2Cl_2/hexane). Sol. $CHCl_3$, MeOH; poorly sol. hexane, H_2O. Mp 205-208° dec. $[\alpha]_D^{23}$ -138 (c, 0.045 in $CHCl_3$). λ_{max} 233 (ε 24000); 243 (sh) (ε 18500); 253 (ε 19850); 282 (ε 5060); 288 (ε 5060) (EtOH) (Derep). λ_{max} 233 (ε 24000); 253 (ε 19850); 282 (ε 5060); 288 (ε 5060) (EtOH) (Berdy).

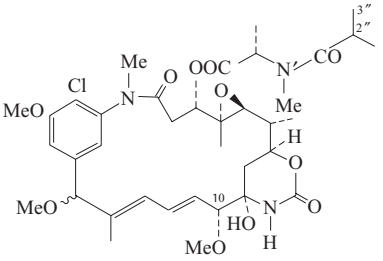
6′-Ketone, $N^{3'}$*-Me:* **N-*Methyltrenudone***
[82400-19-9]
$C_{37}H_{48}ClN_3O_{13}$ 778.251
Alkaloid from *Trewia nudiflora* (Euphorbiaceae). Cryst. (CH_2Cl_2/hexane). Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. Mp 192-197° dec. $[\alpha]_D^{23}$ -110 (c, 0.183 in $CHCl_3$). λ_{max} 233 (ε 27000); 247 (sh) (ε 21300); 252 (ε 21900); 282 (ε 5270); 289 (ε 5470) (EtOH).

15-Demethoxy, 6′-ketone, $N^{3'}$*-Me:* ***Maytanbicyclinol***
[221170-49-6]
$C_{36}H_{46}ClN_3O_{12}$ 748.225
Constit. of *Maytenus buchananii*. Amorph. solid. Mp 185-190°. Stereochem. at C-2′ is *S*-.

Powell, R.G. *et al., J.A.C.S.*, 1982, **104**, 4929-4934 (*Trenudine, Treflorine, N-Methyltrenudone*)
Larson, G.M. *et al., J. Nat. Prod.*, 1999, **62**, 361-363 (*Maytanbicyclinol*)

Trewiasine T-450

[78987-26-5]



$C_{37}H_{52}ClN_3O_{11}$ 750.284

Closely related to Maytansine, M-135. Alkaloid from *Trewia nudiflora* and mosses *Isothecium subdiversiforme* and *Thamnobryum sandei*. Antineoplastic agent. Cryst. (CH_2Cl_2/hexane). Mp 182-185°. $[\alpha]_D^{23}$ -94 (c, 0.15 in $CHCl_3$). Log P 3.03 (calc). λ_{max} 233 (ε 27000); 254 (ε 26200); 282 (ε 6700); 288 (ε 6000) (EtOH) (Berdy).

N^{22}*-De-Me:* ***Nortrewiasine***
[88147-94-8]
$C_{36}H_{50}ClN_3O_{11}$ 736.257
Alkaloid from *Trewia nudiflora*. Cryst. (CH_2Cl_2/hexane). Mp 155-158°. $[\alpha]_D^{23}$ -58 (c, 0.04 in $CHCl_3$).

N′*-De-Me:* ***Demethyltrewiasine***
[78987-28-7]
$C_{36}H_{50}ClN_3O_{11}$ 736.257
Alkaloid from *Trewia nudiflora*. Cryst. (CH_2Cl_2/hexane). Mp 129-142°.

O^{15}*-De-Me:* ***Colubrinol***. *NSC 196520*
[50657-33-5]
$C_{36}H_{50}ClN_3O_{11}$ 736.257
Alkaloid from *Colubrina texensis.* Antineoplastic agent. Mp 194-196°. $[\alpha]_D^{22}$ -94 (c, 0.035 in $CHCl_3$). Log P 2.22 (calc). λ_{max} 233 (ε 17100); 253 (ε 14700); 280 (ε 4040); 289 (ε 3860) (EtOH) (Berdy).

O^{15}*-De-Me, 15-Ac:* ***Colubrinol acetate***
[50499-79-1]
$C_{38}H_{52}ClN_3O_{12}$ 778.294
Alkaloid from *Colubrina texensis.* Antineoplastic agent. Mp 179-182°. $[\alpha]_D^{22}$ -127 (c, 0.073 in $CHCl_3$). Log P 3.07 (calc).

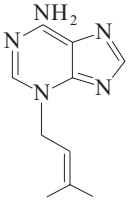
2″,3″-Didehydro: ***Dehydrotrewiasine***
[78987-27-6]
$C_{37}H_{50}ClN_3O_{11}$ 748.268
Alkaloid from *Trewia nudiflora*. Cryst. (CH_2Cl_2/hexane). Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. Mp 165-170°. $[\alpha]_D^{23}$ -90 (c, 0.12 in $CHCl_3$). λ_{max} 233 (ε 23600); 254 (ε 21000); 282 (ε 5240); 289 (ε 4870) (EtOH) (Berdy).

10-Epimer: ***10-Epitrewiasine***
[88198-82-7]
$C_{37}H_{52}ClN_3O_{11}$ 750.284
Alkaloid from *Trewia nudiflora*. Cryst. (CH_2Cl_2/hexane). Mp 159-162°. $[\alpha]_D^{23}$ -48 (c, 0.1 in $CHCl_3$).

Wani, M.C. *et al., Chem. Comm.*, 1973, 390 (*Colubrinol, Colubrinol acetate*)
Powell, R.G. *et al., J.O.C.*, 1981, **46**, 4398-4403 (*Trewiasine, Demethyltrewiasine, Dehydrotrewiasine*)
Powell, R.G. *et al., J. Nat. Prod.*, 1983, **46**, 660-666 (*10-Epitrewiasine, Nortrewiasine*)
Cassady, J.M. *et al., Chem. Pharm. Bull.*, 2004, **52**, 1-26 (*rev*)

Triacanthine T-451

*3-(3-Methyl-2-butenyl)-3*H*-purin-6-amine, 9CI. 6-Amino-3-prenylpurine. Togholamine. Chidlovine*
[10091-84-6]



$C_{10}H_{13}N_5$ 203.246

Alkaloid from leaves of *Holarrhena floribunda, Holarrhena mitis, Holarrhena congolensis* and another *Holarrhena* sp. (poss. *Holarrhena wulfsbergii*), also from *Gleditsia triacanthos* (Caesalpiniaceae,

Apocynaceae), *Chidlowia sanguinea* (Fabaceae). Cryst. by subl. Mp 228-229°. The presence of Triacanthine in the plant is strongly dependent on the season of harvesting.

Hydrochloride:
Needles (EtOH). Mp 232-234° (218-219°).

Picrate: Mp 246° dec. (249-251°).

Belikov, A.S. *et al., Zh. Obshch. Khim.*, 1954, **24**, 919 (*isol*)
Janot, M.-M. *et al., Bull. Soc. Chim. Fr.*, 1959, 896
Leonard, N.J. *et al., J.A.C.S.*, 1962, **84**, 2148 (*isol, ms, struct, synth*)
Leonard, J. *et al., J.O.C.*, 1962, **27**, 1778 (*struct*)
Nellé, S. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1970, **271**, 153 (*isol*)
Leboeuf, M. *et al., Phytochemistry*, 1972, **11**, 843 (*isol, occur*)
Kistenmacher, T.J. *et al., J. Cryst. Mol. Struct.*, 1978, **7**, 219 (*cryst struct*)

1-Triacontylamine T-452

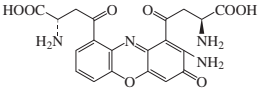
1-Triacontanamine. 1-Aminotriacontane
$H_3C(CH_2)_{28}CH_2NH_2$
$C_{30}H_{63}N$ 437.834

Pentadecanoyl: N-*Triacontylpentadecanamide.* ***Platyamide A***
$C_{45}H_{91}NO$ 662.22
Alkaloid from *Platytaenia multicaule.* Cryst. $[\alpha]_D^{23}$ +80 (c, 0.02 in Py). Optical rotation unaccounted for.

Ahmad, V.U. *et al., Nat. Prod. Res.*, 2006, **20**, 69-74 (*Platyamide A*)

α,α′,2-Triamino-γ,γ′,3-trioxo-3*H*-phenoxazine-1,9-dibutanoic acid, 9CI T-453

[105334-59-6]



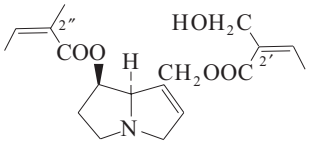
Absolute Configuration

$C_{20}H_{18}N_4O_8$ 442.384
Ommochrome pigment from the eyes and skin of cephalopods *Loligo vulgaris, Sepia officinalis* and *Octopus vulgaris.* Yellow cryst. Insoluble. Closely related to Xanthommatin, X-11. Readily cyclises to Dihydroxanthommatin, D-527. λ_{max} 430 (no solvent reported).

Bolognese, A. *et al., CA*, 1987, **106**, 15949 (*isol*)
Bolognese, A. *et al., J. Het. Chem.*, 1988, **25**, 1243-1246 (*bibl*)

Triangularine T-454

[87340-27-0]



$C_{18}H_{25}NO_5$ 335.399
Diester of Retronecine, in T-188. Alkaloid from *Senecio triangularis* and *Alkanna tinctoria* (Asteraceae, Boraginaceae).

Pale-yellow oil. $[\alpha]_D^{25}$ +2.2 (c, 1 in $CHCl_3$).

*2′*E-*Isomer:* ***Neotriangularine***
[87392-67-4]
$C_{18}H_{25}NO_5$ 335.399
Alkaloid from *Senecio triangularis* (Asteraceae). Yellow oil.

*2″*E-*Isomer:* ***Triangularicine***
[136173-28-9]
$C_{18}H_{25}NO_5$ 335.399
Alkaloid from *Senecio hydrophyllus* and *Senecio mikanoides* (Asteraceae).

(2′E,2″E)-Isomer: ***Neotriangularicine***
[136173-29-0]
$C_{18}H_{25}NO_5$ 335.399
Alkaloid from *Senecio hydrophyllus* (Asteraceae).

[136173-29-0]

Roitman, J.N. *et al., Aust. J. Chem.*, 1983, **36**, 1203 (*isol, pmr, cmr, ms*)
Röder, E. *et al., Phytochemistry*, 1984, **23**, 2125 (*isol, cmr*)
Stelljes, M.A. *et al., J. Nat. Prod.*, 1991, **54**, 759 (*Triangularicine, Neotriangularicine*)

Trianthemine T-455

$C_{32}H_{36}N_2O_6$ 544.646
Struct. unknown. Alkaloid from *Trianthema monogyna*. Mp 127° Mp 112° (as picrate).

Basu, N.K. *et al., Q. J. Pharm. Pharmacol.*, 1947, **20**, 38-42; *CA*, **41**, 7671f

4,8,12-Triazapentadecane-1,15-diamine T-456

N-*(3-Aminopropyl)*-N′-*[3-[(3-aminopropyl)amino]propyl]-1,3-propanediamine, 9CI. 1,15-Diamino-4,8,12-triazapentadecane. 1,5,9,13,17-Pentaazaheptadecane.* ***Caldopentamine***
[13274-42-5]
$H_2N(CH_2)_3NH(CH_2)_3NH(CH_2)_3NH(CH_2)_3NH_2$
$C_{12}H_{31}N_5$ 245.41
Prod. by *Thermoleophilum album*, *Thermoleophilum minutum*, *Hydrogenobacter thermophilus*, *Acidothermus* spp. and *Thermus* spp. Also found in various insects and spiders. $Bp_{0.2}$ 150-154°.

[107886-40-8]

Oshima, T. *et al., J. Biol. Chem.*, 1982, **257**, 9913-9914 (*isol, struct*)
Niitsu, M. *et al., Chem. Pharm. Bull.*, 1986, **34**, 1032-1038 (*synth, cmr*)
Osvath, P. *et al., Aust. J. Chem.*, 1987, **40**, 347-360 (*synth, pmr, cmr, ms*)
Hamana, K. *et al., Comp. Biochem. Physiol., B: Comp. Biochem.*, 1991, **100**, 399-402 (*isol*)
Hamana, K. *et al., Biochem. J.*, 1992, **284**, 741-747 (*Thermoleophilum constits, Hydrogenobacter constits*)

Tribenzylamine T-457

N,N-*Bis(phenylmethyl)benzenemethanamine, 9CI. TBA*
[620-40-6]
$(PhCH_2)_3N$
$C_{21}H_{21}N$ 287.404
Isol. from hops *Humulus lupulus.* Used as 3% soln. in $CHCl_3$ for extraction separation of ion-associates with anionic complexes (e.g. $SbCl_6^{\ominus}$, $Cr_2O_7^{2\ominus}$); extraction-sepn. of V(*III*), Cd; extraction-photometric detn. of Mo (λ_{max} 465 nm, $CHCl_3$). Plates or prisms (Et_2O). Sol. Et_2O, $CHCl_3$. Mp 92°. Bp_{13} 230°.

Hydrochloride: [7673-07-6]
Prisms (EtOH). Mp 227-228°.

Picrate: [67747-71-1]
Mp 191°.

N-*Oxide:* [6852-46-6]
$C_{21}H_{21}NO$ 303.403
Cryst. (hexane/Me_2CO). Mp 138°.

N-*Me: Tribenzylmethylammonium(1+)*
[18265-23-1]
$C_{22}H_{24}N^{\oplus}$ 302.438
Needles (H_2O) (as iodide). Mp 184° (as iodide).

[134636-42-3]

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 1279D (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **2**, 590B (*nmr*)
Sadtler Standard C-13 NMR Spectra, 2247 (*cmr*)
Sekiya, M. *et al., Chem. Pharm. Bull.*, 1967, **15**, 802 (*synth*)
Suga, K. *et al., Chem. Ind. (London)*, 1969, 78 (*synth*)
Iwasaki, F. *et al., Acta Cryst. B*, 1972, **28**, 3370 (*cryst struct*)
Yokoi, M. *et al., Bull. Chem. Soc. Jpn.*, 1972, **45**, 1942 (*pmr*)
Yatirajam, V. *et al., Mikrochim. Acta*, 1974, 671 (*detn, Mo*)
Singh, O.V. *et al., J. Inorg. Nucl. Chem.*, 1975, **37**, 609 (*detn, Cd*)
Yatirajam, V. *et al., Anal. Chim. Acta*, 1976, **86**, 209 (*detn, V*)
Sandell, E.B. *et al., Photometric Determination of Traces of Metals*, General Aspects: Analytical Separations, Wiley, New York, 1978, (*use*)
Donaldson, E.M. *et al., Talanta*, 1980, **27**, 779 (*detn, Cr*)
Cheng, K.L. *et al., Handbook of Organic Analytical Reagents*, CRC Press Inc., Boca Raton, Florida, 1983, (*use*)
Vorbrüggen, H. *et al., Chem. Ber.*, 1984, **117**, 1523 (*synth*)
Qu, Y. *et al., Z. Naturforsch., C*, 2003, **58**, 640-641 (*isol*)

Tribromoacetic acid, 9CI, 8CI T-458

[75-96-7]
Br_3CCOOH
$C_2HBr_3O_2$ 296.741
Monoclinic prisms. Sol. H_2O, EtOH, Et_2O. Mp 131°. Bp 245° dec. pK_a 0.66 (25°, H_2O).

▶ Irritant.

Me ester: [3222-05-7]
$C_3H_3Br_3O_2$ 310.768
d 2.33. Bp_{15} 103°. n_D^{20} 1.5580.

Et ester: [599-99-5]
$C_4H_5Br_3O_2$ 324.794
Constit. of *Asparagopsis armata*. Liq. Bp 178-180° Bp_{73} 148°.

▶ AJ7600000

Chloride: [34718-47-3]
C_2Br_3ClO 315.186
Liq. Bp_{12} 80-82°.

Bromide: [10588-31-5]
C_2Br_4O 359.637
Liq. Bp 210-215° Bp_{12} 88-90°.

Amide: Tribromoacetamide, 9CI
[594-47-8]

$C_2H_2Br_3NO$ 295.756
Isol. from the alga *Wrangelia* sp. Sol. Et_2O, hot EtOH. Mp 122°. Sublimes.

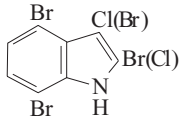
Nitrile: Tribromoacetonitrile, 9CI. Tribromocyanomethane
[75519-19-6]
C_2Br_3N 277.741
Oil. Sol. EtOH, Et_2O, C_6H_6. Bp 170°.

Anhydride: [41936-89-4]
$C_4Br_6O_3$ 575.466
Solid (CCl_4). Mp 63-64°.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 509B (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 793C (*nmr*)
Sadtler Standard C-13 NMR Spectra, 12470 (*cmr*)
Sadtler Standard Proton NMR Spectra, 41588 (*pmr*)
U.S. Pat., 1936, 2 057 964; *CA*, **31**, 112 (*synth*)
Köbrich, G. *et al., Chem. Ber.*, 1968, **101**, 3208 (*synth*)
McConnell, O. *et al., Phytochemistry*, 1977, **16**, 367-374 (*Et ester, isol*)
Parkash, R. *et al., Bull. Chem. Soc. Jpn.*, 1991, **64**, 1443 (*anhydride*)
Márquez, F. *et al., Spectrosc. Lett.*, 1992, **25**, 821 (*ir, Raman*)
Encyclopaedia of Reagents for Organic Synthesis, (ed. Paquette, L.A.), Wiley, 1995, **7**, 4992-4993 (*bromide, use*)
Kigoshi, H. *et al., Chem. Lett.*, 2004, 98-99 (*amide, isol*)
Sax, N.I. *et al., Dangerous Properties of Industrial Materials, 5th edn., Van Nostrand Reinhold*, 1979, 1040

2,4,7(3,4,7)-Tribromo-3(2)-chloro-1*H*-indole, 9CI T-459

[68124-91-4]

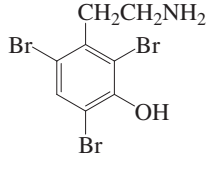


$C_8H_3Br_3ClN$ 388.283
Alkaloid from the marine red alga *Rhodophyllis membranacea*.

Brennan, M.R. *et al., Tet. Lett.*, 1978, 1637-1640 (*isol, pmr, struct*)

2,4,6-Tribromo-3-hydroxyphenethylamine T-460

3-(2-Aminoethyl)-2,4,6-tribromophenol, 9CI. 2-(2,4,6-Tribromo-3-hydroxyphenyl)ethylamine



$C_8H_8Br_3NO$ 373.869

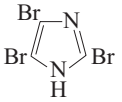
Me ether, N-*formyl: 2,4,6-Tribromo*-N-*formyl-3-methoxyphenethylamine.* ***Lutamide A***
[294210-56-3]
$C_{10}H_{10}Br_3NO_2$ 415.907
Alkaloid from the marine bryozoan *Amathia convoluta*. Needles (EtOH). Mp 105°.

N,O-*Di-Me,* N-*formyl: 2,4,6-Tribromo*-N-*formyl-3-methoxy*-N-*methylphenethylamine.* ***Lutamide C***
[294210-58-5]
$C_{11}H_{12}Br_3NO_2$ 429.933
Alkaloid from the marine bryozoan *Amathia convoluta*. Needles (EtOH). Mp 69-70°.

Hashima, H. *et al., Bioorg. Med. Chem.*, 2000, **8**, 1757-1766 (*Lutamides*)

2,4,5-Tribromo-1*H*-imidazole, 9CI T-461

Tribromoglyoxaline
[2034-22-2]



$C_3HBr_3N_2$ 304.766
Isol. from the egg masses of the molluscs *Ceratosoma erinaceum*, *Trophon geversianus* and *Trunculariopsis trunculus*.
Silky needles (AcOH). Mp 221°.

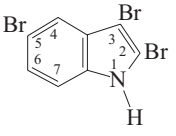
▶ Exp. neurotoxic props. LD_{50} (rat, orl) 34 mg/kg. NI8660000

N-*Me: 2,4,5-Tribromo-1-methyl-1*H-*imidazole*
[1003-91-4]
$C_4H_3Br_3N_2$ 318.793
Cryst. (AcOH aq.). Mp 88-89°.

N-*4-Methylbenzenesulfonyl:* [6595-50-2]
$C_{10}H_7Br_3N_2O_3S$ 474.955
Solid. Mp 157°.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 616D (*ir*)
Balaban, E. *et al., J.C.S.*, 1922, 947 (*synth*)
Stensiö, K.-E. *et al., Acta Chem. Scand.*, 1973, **27**, 2179 (*synth*)
Verschoyle, R.D. *et al., Arch. Toxicol.*, 1984, **56**, 109 (*neurotox*)
Iddon, B. *et al., Chem. Comm.*, 1985, 1428 (*deriv, synth*)
Iddon, B. *et al., Tet. Lett.*, 1986, **27**, 1635 (*haz, use*)
Iddon, B. *et al., J.C.S. Perkin 1*, 1987, 1445 (*tox, props*)
O'Connell, J.F. *et al., Synthesis*, 1988, 767 (*synth, ir, pmr*)
Benkendorff, K. *et al., Nat. Prod. Res.*, 2004, **18**, 427-431 (*isol, synth, ms*)
Schmidt, A. *et al., Heterocycles*, 2006, **68**, 1393-1400 (*N-tosyl*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, THV450

2,3,5-Tribromo-1*H*-indole, 9CI T-462



$C_8H_4Br_3N$ 353.838

N-*Me: 2,3,5-Tribromo-1-methyl-1*H-*indole*
[70063-25-1]
$C_9H_6Br_3N$ 367.865
Alkaloid from the alga *Laurencia brongniartii* and from *Aplysia dactylomela*. Sol. MeOH, C_6H_6; fairly sol. hexane; poorly sol. H_2O. Mp 120-122°. λ_{max} 228 (ϵ 34000); 282 (ϵ 7300); 290 (ϵ 10000); 297 (ϵ 8000); 300 (sh) (EtOH) (Derep).

Carter, G.T. *et al., Tet. Lett.*, 1978, 4479-4482 (*isol, uv, pmr, ms, struct*)
Liu, Y. *et al., J. Nat. Prod.*, 2002, **65**, 748-749 (*synth*)
Suárez-Castillo, O.R. *et al., J. Nat. Prod.*, 2006, **69**, 1596-1600 (*synth*)

2,3,6-Tribromo-1*H*-indole, 9CI T-463

$C_8H_4Br_3N$ 353.838
Alkaloid from *Laurencia similis*. Cryst. Mp 105-107°. λ_{max} 216 (log ϵ 5.15); 240 (log ϵ 4.44) ($CHCl_3$).

N-*Me:* ***2,3,6-Tribromo-1-methyl-1*H-*indole***
[70063-24-0]
$C_9H_6Br_3N$ 367.865
Alkaloid from the alga *Laurencia brongniartii*. Mp 90.5-91°. λ_{max} 230 (ϵ 39000); 288 (ϵ 10000); 294 (ϵ 10000) (EtOH) (Derep).

Carter, G.T. *et al., Tet. Lett.*, 1978, **19**, 4479-4482 (*N-Me, isol, pmr, cmr*)
Ji, N.-Y. *et al., Helv. Chim. Acta*, 2007, **90**, 385-391 (*isol, pmr, cmr, ms*)

2,3,7-Tribromo-1*H*-indole, 9CI T-464

[68234-21-9]

$C_8H_4Br_3N$ 353.838
Alkaloid from the marine red alga *Rhodophyllis membranacea*. Mp 115-116°.

Brennan, M.R. *et al., Tet. Lett.*, 1978, **19**, 1637-1640 (*isol, pmr, struct*)
Erickson, K.L. *et al., Synth. Commun.*, 1981, **11**, 253-259 (*synth, ir, pmr, ms*)

2,4,6-Tribromo-1*H*-indole, 9CI T-465

[128367-88-4]

$C_8H_4Br_3N$ 353.838
Alkaloid from the Okinawan red alga *Laurencia brongniartii*. Cryst. (hexane/CCl_4). Mp 106-113°.

Tanaka, J. *et al., Tetrahedron*, 1989, **45**, 7301-7310 (*isol, ir, pmr, ms, struct*)

3,4,6-Tribromo-1*H*-indole, 9CI T-466

Balanoglossol
[74076-58-7]

$C_8H_4Br_3N$ 353.838
Isol. from *Balanoglossus carnosus*. Mp 95° (89-90° dec.).

Ac:
$C_{10}H_6Br_3NO$ 395.876
Mp 240-242°.

Higa, T. *et al., Comp. Biochem. Physiol., B: Comp. Biochem.*, 1980, **65**, 525-530 (*isol, pmr, ms, struct*)
Ohta, T. *et al., Heterocycles*, 1987, **26**, 2817-2822 (*synth*)
Martin, P. *et al., Tet. Lett.*, 1987, **28**, 1645-1647 (*synth*)
Higa, T. *et al., Tetrahedron*, 1987, **43**, 1063-1070 (*isol, pmr*)

Martin, P. *et al., Helv. Chim. Acta*, 1988, **71**, 344-347 (*synth, pmr*)

3,5,6-Tribromo-1*H*-indole T-467

[929624-69-1]

$C_8H_4Br_3N$ 353.838
Alkaloid from *Laurencia similis*. Cryst. Mp 123-124°. λ_{max} 218 (log ϵ 5.15); 241 (log ϵ 4.64) ($CHCl_3$).

N-*Me: 3,5,6-Tribromo-1-methyl-1*H-*indole*
[929624-70-4]
$C_9H_6Br_3N$ 367.865
Alkaloid from *Laurencia similis*. Cryst. Mp 166-168°. λ_{max} 218 (log ϵ 5.17); 240 (log ϵ 4.51) ($CHCl_3$).

Ji, N.-Y. *et al., Helv. Chim. Acta*, 2007, **90**, 385-391 (*isol, pmr, cmr, ms*)

3,5,7-Tribromo-1*H*-indole, 9CI T-468

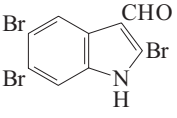
[59025-61-5]

$C_8H_4Br_3N$ 353.838
Isol. from the hemichordates *Ptychodera flava laysanica* and *Ptychodera flava*. Mp 120-122°.

Higa, T. *et al., Heterocycles*, 1976, **4**, 231-233 (*synth, pmr, ms*)
Higa, T. *et al., Comp. Biochem. Physiol., B: Comp. Biochem.*, 1980, **65**, 525-530 (*occur*)

2,5,6-Tribromo-1*H*-indole-3-carboxaldehyde T-469

2,5,6-Tribromo-3-formylindole



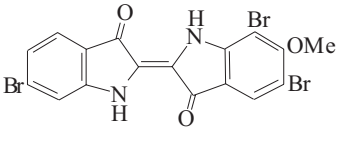
$C_9H_4Br_3NO$ 381.849

N-*Me: 2,5,6-Tribromo-1-methyl-1*H-*indole-3-carboxaldehyde*
[85908-67-4]
$C_{10}H_6Br_3NO$ 395.875
Alkaloid from the marine bryozoan *Zoobotryon verticillatum*. Delays the metamorphosis in fertilised sea urchin eggs at low concentrations. Mp 228.5-229.5°. λ_{max} 223 (ϵ 18100); 256 (ϵ 13700); 309 (ϵ 6900) (MeOH) (Berdy).

Ortega, M.J. *et al., J. Nat. Prod.*, 1993, **56**, 633-636 (*isol, uv, ir, pmr, cmr, ms, struct*)

5,6′,7-Tribromo-6-methoxyindigotin T-470

[58933-46-3]

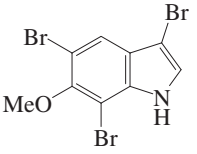


$C_{17}H_9Br_3N_2O_3$ 528.982
Pigment from the marine invertebrate *Ptychodera flava laysanica*. Purple-blue powder. Mp 300°.

Higa, T. *et al., Heterocycles*, 1976, **4**, 227-230 (*isol, uv, struct*)

3,5,7-Tribromo-6-methoxy-1*H*-indole, 9CI T-471

6-Methoxy-3,5,7-tribromoindole
[74076-57-6]

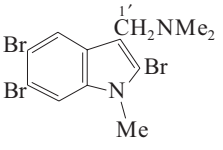


$C_9H_6Br_3NO$ 383.864
Isol. from the hemichordate *Ptychodera flava*. Mp 110-112°.

Higa, T. *et al., Comp. Biochem. Physiol., B: Comp. Biochem.*, 1980, **65**, 525-530 (*isol, pmr, ms, struct*)

2,5,6-Tribromo-*N*-methylgramine T-472

*2,5,6-Tribromo-*N,N*,1-trimethyl-1*H-*indole-3-methanamine, 9CI. 2,5,6-Tribromo-3-(dimethylaminomethyl)-1-methylindole*
[64945-29-5]



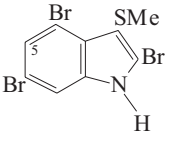
$C_{12}H_{13}Br_3N_2$ 424.96
Alkaloid from the subtropical marine bryozoan *Zoobotryon verticillatum* and *Zoobotryon pellucidum*. Toxic to brine shrimp. Larval settlement inhibitor. Antifouling agent. Cryst. (MeOH). Sol. MeOH, EtOAc; poorly sol. H_2O. Mp 112-113°. λ_{max} 232 (ϵ 46800); 298 (ϵ 9900); 308 (ϵ 9100) (MeOH) (Berdy). λ_{max} 232 (ϵ 46000); 298 (ϵ 9700); 307 (ϵ 9000) (EtOH) (Berdy).

1′-N- *Oxide:* ***2,5,6-Tribromo*-N*-methylgramine* N*-oxide***
[85908-65-2]
$C_{12}H_{13}Br_3N_2O$ 440.959
Alkaloid from *Zoobotryon verticillatum*. Toxic to brine shrimp. Cryst. (MeOH aq.). Sol. MeOH, EtOAc; poorly sol. H_2O. Mp 116-120° dec. λ_{max} 230 (ϵ 38800); 294 (ϵ 11800); 306 (ϵ 10700) (MeOH) (Berdy).

DaSettino, A. *et al., Chim. Ind. (Milan)*, 1977, **59**, 454; *CA*, **87**, 201244c (*synth*)
Sato, A. *et al., Tet. Lett.*, 1983, **24**, 481-484 (*isol, uv, ir, pmr, cmr, ms, struct, synth*)
Kon-Ya, K. *et al., Biosci., Biotechnol., Biochem.*, 1994, **58**, 2178-2181

2,4,6-Tribromo-3-methylthio-1*H*-indole T-473

[128351-83-7]



$C_9H_6Br_3NS$ 399.931
Isol. from a Taiwanese collection of the red alga *Laurencia brongniartii*. Also found in the Okinawan red alga *Laurencia grevilleana* (possibly synonymous with *Laurencia brongniartii*).

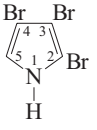
S-*Oxide: 2,4,6-Tribromo-3-(methylsulfinyl)-1*H-*indole*
$C_9H_6Br_3NOS$ 415.931
Isol. from *Laurencia brongniartii*. Mp 102-104°. λ_{max} 236 (log ϵ 4.7); 312 (log ϵ 4.1) (MeOH).

5-Bromo: ***2,4,5,6-Tetrabromo-3-methylthio-1*H*-indole***
[128351-84-8]
$C_9H_5Br_4NS$ 478.827
Isol. from *Laurencia brongniartii* and *Laurencia grevilleana* (? *Laurencia brongniartii*).

Tanaka, J. *et al., Tetrahedron*, 1989, **45**, 7301-7310 (*Laurencia brongniartii constits*)
El-Gamal, A.A. *et al., J. Nat. Prod.*, 2005, **68**, 815-817 (*S-oxide*)

2,3,4-Tribromo-1*H*-pyrrole T-474

[69624-12-0]



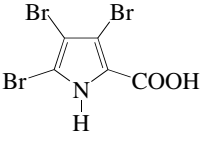
$C_4H_2Br_3N$ 303.778
Isol. from the marine polychaete *Polyphysia crassa* and *Saccoglossus kowalevskii*. Possesses antibacterial and antifeedant activity. Pale yellow oil. Dec. slowly above -18° in soln.

N-*Sulfonic acid:* [162821-17-2]
$C_4H_2Br_3NO_3S$ 383.843
Isol. from *Saccoglossus kowalevskii*. Isol. as Na salt, to which CAS no. refers.

Emrich, R. *et al., J. Nat. Prod.*, 1990, **53**, 703-705 (*isol, pmr, ms, synth*)
Martin, P. *et al., Marine Ecol.: Progr. Ser.*, 1995, **116**, 125-136; *CA*, **122**, 261393 (*1-sulfonic acid*)
John, E.A. *et al., J. Nat. Prod.*, 2004, **67**, 1929-1931 (*synth*)
Kicklighter, C.E. *et al., Limnol. Oceanogr.*, 2004, **49**, 430-441 (*isol, activity*)

3,4,5-Tribromo-1*H*-pyrrole-2-carboxylic acid T-475

[74039-30-8]



$C_5H_2Br_3NO_2$ 347.788
Isol. from an Australian sponge *Axinella* sp. Plates (H_2O). Mp 192-195°. λ_{max} 258 (ϵ 12800) (MeOH).

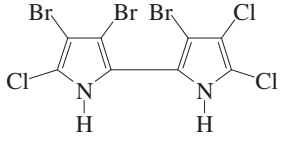
Me ester: [1198-67-0]
$C_6H_4Br_3NO_2$ 361.815

Cryst. (hexane). Mp 212-214°.

N-*Me: 3,4,5-Tribromo-1-methyl-1*H*-pyrrole-2-carboxylic acid*
[150314-26-4]
$C_6H_4Br_3NO_2$ 361.815
Isol. from an *Axinella* sp. Cryst. Mp 175-176° dec. λ_{max} 254 (ϵ 13700); 272 (ϵ 4400) (MeOH).

Hodge, P. *et al., J.C.S.*, 1965, 459-470 (*synth, ester*)
Tashiro, M. *et al., J. Chem. Res., Synop.*, 1988, 136-137 (*synth*)
Barrow, R.A. *et al., Nat. Prod. Lett.*, 1993, **1**, 243-250 (*isol, synth, cmr*)

3,3′,4-Tribromo-4′,5,5′-trichloro-2,2′-bi-1*H*-pyrrole T-476



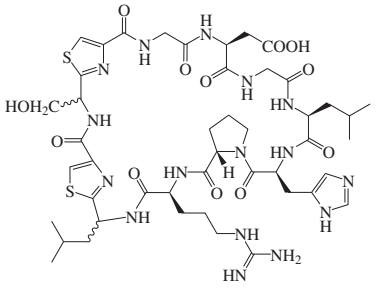
$C_8H_2Br_3Cl_3N_2$ 472.187

N,N′-*Di-Me: 3,3′,4-Tribromo-4′,5,5′-trichloro-1,1′-dimethyl-2,2′-bi-1*H*-pyrrole. DBP-Br_3Cl_3*
[400766-93-0]
$C_{10}H_6Br_3Cl_3N_2$ 500.241
Marine natural product of unknown biogenic origin. Present in marine or freshwater fish, shrimps, seabirds and seal blubber.

Tittlemier, S.A. *et al., Environ. Pollut.*, 2002, **116**, 85-93 (*N,N′-di-Me, occur, detn*)
Tittlemier, S.A. *et al., J. Agric. Food Chem.*, 2004, **52**, 2010-2015 (*N,N′-di-Me, occur, detn*)

Trichamide T-477

[905455-92-7]

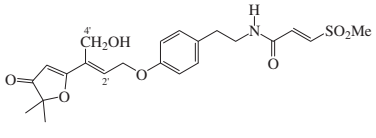


$C_{46}H_{66}N_{16}O_{12}S_2$ 1099.259
Isol. from the cyanobacterium *Trichodesmium erythraeum*.

Sudek, S. *et al., Appl. Environ. Microbiol.*, 2006, **72**, 4382-4387 (*isol, struct, ms*)

Trichanthin A T-478

[211184-05-3]



$C_{22}H_{27}NO_7S$ 449.524
Related to Gerambullin, G-68. Constit. of *Glycosmis trichanthera*. Cryst. (Et_2O). Mp 154-156°. λ_{max} 224 ; 240 (sh) ; 296 (MeOH).

4′-Deoxy: ***Glyparvin A***
[204641-51-0]
$C_{22}H_{27}NO_6S$ 433.524
Constit. of *Glycosmis parva*. Cryst. (Et_2O). Mp 134-137°. λ_{max} 226 ; 239 (sh) ; 288 (MeOH).

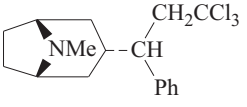
4′-Deoxy, 2′,3′-dihydro: ***Dihydroglyparvin A***
[204591-96-8]
$C_{22}H_{29}NO_6S$ 435.54
Constit. of *Glycosmis parva*. Cryst. (Et_2O). Mp 93-94°. $[\alpha]_D^{20}$ +51 (c, 0.2 in $CHCl_3$). λ_{max} 223 ; 260 (MeOH).

*(2′*E*)-Isomer:* ***Trichanthin B***
[211184-04-2]
$C_{22}H_{27}NO_7S$ 449.524
Constit. of *Glycosmis trichanthera*. Cryst. (Et_2O). Mp 112-114°. λ_{max} 220 ; 240 (sh) ; 286 (sh) ; 292 (MeOH).

Hofer, O. *et al., Monatsh. Chem.*, 1998, **129**, 213-219 (*Glyparvin A, Dihydroglyparvin A*)
Vajrodaya, S. *et al., Phytochemistry*, 1998, **48**, 897-902 (*isol, uv, ir, pmr, cmr, ms*)

3α-(4,4,4-Trichloro-2-butyryloxy)tropane T-479

[78416-85-0]

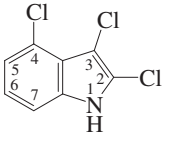


$C_{17}H_{22}Cl_3N$ 346.726
Isol. from roots of *Scopolia tanguticus* (Solanaceae) along with Apoatropine. Almost certainly an artifact derived from Apoatropine, A-1359 by reacn. with $CHCl_3$.

Yang, J.S. *et al., CA*, 1981, **95**, 138446t

2,3,4-Trichloro-1*H*-indole, 9CI T-480

[68234-24-2]



$C_8H_4Cl_3N$ 220.484
Alkaloid from the marine red alga *Rhodophyllis membranacea*.

Brennan, M.R. *et al., Tet. Lett.*, 1978, **19**, 1637-1640 (*isol, pmr, struct*)

2,3,7-Trichloro-1*H*-indole, 9CI T-481

[68234-18-4]

$C_8H_4Cl_3N$ 220.484
Alkaloid from the marine red alga *Rhodophyllis membranacea*. Mp 86°.

Brennan, M.R. *et al., Tet. Lett.*, 1978, **19**, 1637-1640 (*isol, pmr, struct*)
Erickson, K.L. *et al., Synth. Commun.*, 1981, **11**, 253-259 (*synth, ir, pmr, ms*)

1,1,1-Trichloro-5-undecylamine T-482

1,1,1-Trichloro-5-undecanamine. 5-Amino-1,1,1-trichloroundecane
$H_3C(CH_2)_5CH(NH_2)(CH_2)_3CCl_3$
$C_{11}H_{22}Cl_3N$ 274.66

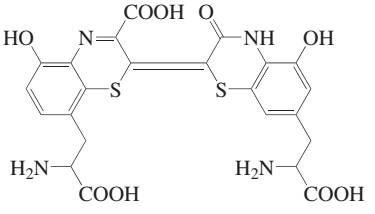
(+)-form

N-*Ac: 5-Acetamido-1,1,1-trichloroundecane*
[345261-12-3]
$C_{13}H_{24}Cl_3NO$ 316.697
Isol. from the cyanobacterium *Microcoleus lyngbyaceus*. Oil. $[\alpha]_D$ +60 (c, 0.02 in $CHCl_3$).

Orsini, M.A. *et al., J. Nat. Prod.*, 2001, **64**, 572-577 (*isol, ir, pmr, cmr*)

Trichochrome B T-483

Trichosiderin B
[35394-49-1]

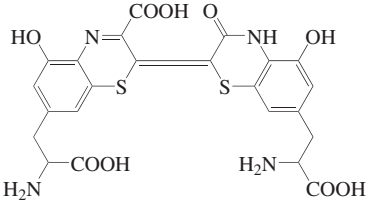


$C_{23}H_{20}N_4O_9S_2$ 560.564
Constit. of human and mammalian red hair and birds' feathers. Found in urine of melanoma patients. Amorph. red-orange solid. Insol. H_2O, org. solvs. λ_{max} 243 (log ϵ 4.6); 329 (log ϵ 4.01); 454 (log ϵ 3.98) (0.2*M* NaOH).

Prota, G. *et al., Experientia*, 1971, **27**, 1145; 1381-1383 (*isol, struct*)
Prota, G. *et al., Experientia*, 1976, **32**, 1122-1124 (*isol*)
Agrup, G. *et al., Acta Derm. Venereol.*, Suppl., 1978, **58**, 269-270 (*isol*)

Trichochrome C T-484

Trichosiderin C
[32214-49-6]



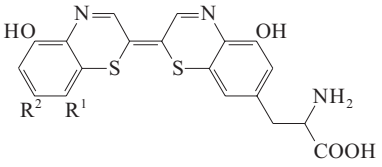
$C_{23}H_{20}N_4O_9S_2$ 560.564
Constit. of red cock feathers. Found in the urine of melanoma patients. λ_{max} 240 (log ϵ 4.56); 327 (log ϵ 4.04); 452 (log ϵ 4.13) (0.2*M* NaOH).

Prota, G. *et al., Experientia*, 1976, **32**, 1122 (*isol, uv*)

Agrup, G. *et al., Acta Derm. Venereol.*, Suppl., 1978, **58**, 269-270; Suppl., 1979, **59**, 453 (*isol, synth, epr*)

Trichochrome E T-485

[25942-18-1]



R^1 = $CH_2CH(NH_2)COOH$, R^2 = H

$C_{22}H_{20}N_4O_6S_2$ 500.555
Isol. from chicken feathers.

Prota, G. *et al., Gazz. Chim. Ital.*, 1969, **99**, 1193

Trichochrome F T-486

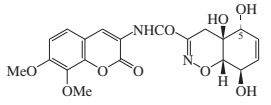
[25942-17-0]
As Trichochrome E, T-485 with
R^1 = H, R^2 = $-CH_2CH(NH_2)COOH$
$C_{22}H_{20}N_4O_6S_2$ 500.555
Isol. from hair and feathers.

[131579-52-7]

Hansson, C. *et al., Acta Derm. Venereol.*, Suppl., 1979, **59**, 453 (*synth, epr*)
Constantini, C. *et al., Tetrahedron*, 1990, **46**, 6831 (*synth, bibl*)

Trichodermamide A T-487

Penicillazine
[508218-11-9]



Absolute Configuration

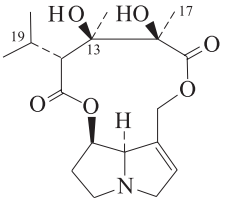
$C_{20}H_{20}N_2O_9$ 432.386
Isol. from the marine-derived fungi *Penicillium* sp. (strain No. 386), *Spicaria elegans* and *Trichoderma virens*. Also prod. by *Aspergillus unilateralis*. Cytotoxic. Needles (Me_2CO). Mp 258-260° (224-226°). $[\alpha]_D^{15}$ +128 (c, 0.15 in MeOH). $[\alpha]_D^{25}$ -11.9 (c, 2.2 in $CHCl_3$). λ_{max} 250 (sh) (log ϵ 3.98); 334 (log ϵ 4.23) (MeOH). λ_{max} 205 (log ϵ 4.6); 266 (log ϵ 4); 343 (log ϵ 4) ($CHCl_3$).

*5-Deoxy, 5*R*-chloro:* ***Trichodermamide B***
[508218-12-0]
$C_{20}H_{19}ClN_2O_8$ 450.831
Isol. from *Trichoderma virens*. Cytotoxic. Oil. $[\alpha]_D^{15}$ +110.7 (c, 0.15 in MeOH). λ_{max} 252 (log ϵ 3.56); 344 (log ϵ 3.86) (MeOH).

Lin, Y. *et al., Tetrahedron*, 2000, **56**, 9607-9609 (*Penicillazine*)
Garo, E. *et al., J. Nat. Prod.*, 2003, **66**, 423-426 (*Trichoderma, pmr, cmr, cryst struct*)
Liu, R. *et al., Arch. Pharmacal Res.*, 2005, **28**, 1042-1046 (*Spicaria, pmr, cmr, ms*)
Capon, R.J. *et al., Org. Biomol. Chem.*, 2005, **3**, 123-129 (*Aspergillus, isol, struct*)
Wan, X. *et al., J.A.C.S.*, 2008, **130**, 17236-17237 (*synth*)

Trichodesmine T-488

14,19-Dihydro-12,13-dihydroxy-19-methylcrotalanan-11,15-dione, 9CI
[548-90-3]



Absolute configuration

$C_{18}H_{27}NO_6$ 353.414
Cyclic diester of 2,3,5,7*a*-Tetrahydro-1-hydroxy-1*H*-pyrrolizine-7-methanol, T-188 and trichodesmic acid. Alkaloid from *Trichodesma incanum, Heliotropium arguzioides, Crotalaria juncea, Crotalaria tetragona* and *Crotalaria rubiginosa* (Boraginaceae, Fabaceae). Prisms (Me_2CO). Mp 160-161° dec. $[\alpha]_D$ +38 (10% EtOH aq.).

Methiodide:
Needles (EtOH). Mp 202° dec.

N-*Oxide:* ***Trichodesmine* N-*oxide***
[55727-46-3]
$C_{18}H_{27}NO_7$ 369.414
Alkaloid from *Heliotropium arguzioides* and *Trichodesma incanum*. Cryst. (EtOH/Me_2CO). Mp 169-170° dec.

13-Deoxy: ***Incanine***†
[480-77-3]
$C_{18}H_{27}NO_5$ 337.415
Alkaloid from *Trichodesma incanum* and *Heliotropium olgae* (Boraginaceae). Mp 96-97°. $[\alpha]_D$ -58.4 (H_2O). Originally reported as $C_{18}H_{29}NO_5$. Hydrol. gives retronecine and a mixt. of incanic and isoincanic acids.

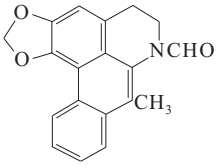
13-Deoxy, N-*Oxide:* ***Incanine* N-*oxide***
[55740-49-3]
$C_{18}H_{27}NO_6$ 353.414
Alkaloid from *Heliotropium olgae* and *Trichodesma incanum*. Cryst. (EtOH). Mp 168-169° dec.

17-Hydroxy: ***Junceine***†
[480-53-5]
$C_{18}H_{27}NO_7$ 369.414
Alkaloid from *Crotalaria juncea* and *Crotalaria rubiginosa* (Fabaceae). Mp 191-192°. $[\alpha]_D$ -3 (Py). Cyclic ester of retronecine with junceic acid.

19-Hydroxy: ***Globiferine***
[90706-03-9]
$C_{18}H_{27}NO_7$ 369.414
Alkaloid from *Crotalaria globifera* seeds (Fabaceae). Cryst. (petrol). Mp 126-129°. $[\alpha]_D^{18}$ -8.6 (c, 0.232 in $CHCl_3$).

Men'shikov, G.P. *et al., Ber.*, 1935, **68**, 2039 (*isol*)
Adams, R. *et al., J.A.C.S.*, 1956, **78**, 1919; 1922; 1926 (*isol, struct, Trichodesmine, Junceine*)
Yunusov, S.Yu *et al., CA*, 1957, **51**, 1539; 1958, **52**, 13017; 1959, **15**, 315 (*Incanine, isol, struct*)
Akramov, S.T. *et al., CA*, 1964, **60**, 16209 (*isol*)
Atal, C.K. *et al., Aust. J. Chem.*, 1966, **19**, 2189 (*isol, pmr, Trichodesmine, Junceine*)
Robins, D.J. *et al., J.C.S.(C)*, 1969, 1386 (*abs config*)
Culvenor, C.C.J. *et al., J.C.S.(C)*, 1971, 3653 (*cd*)
Rashkes, Ya.V. *et al., Khim. Prir. Soedin.*, 1974, **10**, 40; *Chem. Nat. Compd. (Engl. Transl.)*, 1974, **10**, 34 (*ms*)
Tashkhodzhaev, B. *et al., Khim. Prir. Soedin.*, 1979, **15**, 363; 363; 368; *Chem. Nat. Compd. (Engl. Transl.)*, 1979, **15**, 315; 319 (*Trichodesmine, Incanine, cryst struct*)
Stoeckli-Evans, H. *et al., Acta Cryst. B*, 1982, **38**, 1614 (*cryst struct, Junceine*)
Brown, K. *et al., Phytochemistry*, 1984, **23**, 457 (*Globiferine*)

Trichoguattine T-489

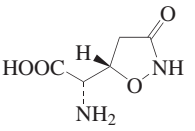


$C_{19}H_{15}NO_3$ 305.332
Alkaloid from the leaves of *Guatteria sagotiana* (Annonaceae). Amorph. Doubtful structural assignment; props. of authentic synthetic material are not in accord with those reported for the nat. prod.

Rasamizafy, S. *et al., J. Nat. Prod.*, 1986, **49**, 1078 (*isol, uv, ir, pmr, ms*)
Atanes, N. *et al., Heterocycles*, 1987, **26**, 1183

Tricholomic acid T-490

α-Amino-3-oxo-5-isoxazolidineacetic acid, 9CI. 2-(3-Oxo-5-isoxazolidinyl)glycine
[2644-49-7]



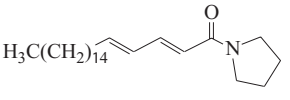
Absolute Configuration

$C_5H_8N_2O_4$ 160.129
Constit. of the mushroom *Tricholoma muscarium*. Said to be useful as a flavouring substance. Insecticide. Pesticide. Mycotoxin. Narcotic intoxicant. Cryst. (H_2O). Sol. H_2O. Mp 207° dec. $[\alpha]_D^{20}$ +80 (c, 0.20 in H_2O). λ_{max} 215 (ϵ 3470) (H_2O) (Berdy).

Takemoto, T. *et al., Yakugaku Zasshi*, 1964, **84**, 1183; 1230; *CA*, **62**, 7859b; 8121c (*isol, struct*)
Iwasaki, H. *et al., Chem. Pharm. Bull.*, 1965, **13**, 753 (*synth*)
Kamiya, K. *et al., Chem. Pharm. Bull.*, 1966, **14**, 1307 (*synth*)
Japan. Pat., 1969, 69 16 354; *CA*, **71**, 111463p (*manuf*)
Japan. Pat., 1979, 79 148 782; *CA*, **92**, 198384u (*synth*)
Conti, P. *et al., Tetrahedron*, 2007, **63**, 2249-2256 (*synth*)

Trichonine T-491

1-(1-Oxo-2,4-eicosadienyl)pyrrolidine, 9CI. N-*Pyrrolidyleicosa-2,4-dienamide. 2,4-Eicosadienoic acid pyrrolidide. 2,4-Icosadienoic acid pyrrolidide.* N-*(2,4-Eicosadienoyl)pyrrolidine*



$C_{24}H_{43}NO$ 361.61

(E,E)-form [33169-28-7]
Alkaloid from the leaves of *Piper trichostachyon* (Piperaceae). Cryst. (petrol). Mp 65-67°.

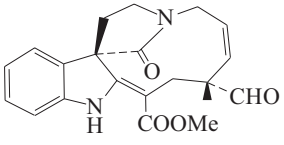
Tetrahydro: **N-*Eicosanoylpyrrolidine***. *Eicosanoic acid pyrrolidide*
[33117-75-8]
$C_{24}H_{47}NO$ 365.641
Alkaloid from *Piper amalago*. Cryst. (petrol). Mp 38-40°.

4,5-Dihydro: **N-*(2-Eicosenoyl)pyrrolidine***. *2-Eicosenoic acid pyrrolidide*
[102934-32-7]
$C_{24}H_{45}NO$ 363.626
Alkaloid from *Piper amalago*.

Singh, J. *et al., Tet. Lett.*, 1971, 2119 (*uv, ir, pmr, ms, struct*)
Vig, B. *et al., Indian J. Chem.*, 1972, **10**, 564 (*synth, uv, ir, pmr*)
Trost, B.M. *et al., Tet. Lett.*, 1983, **24**, 4525 (*synth*)
Achenbach, H. *et al., Planta Med.*, 1986, **52**, 12-18 (*isol, derivs*)
Kaga, H. *et al., Synlett*, 1994, 607 (*synth*)

Trichophylline T-492

[88524-54-3]



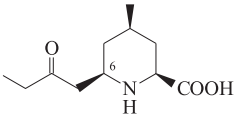
$C_{21}H_{22}N_2O_4$ 366.416

Indole alkaloid prob. most closely related to the Aspidosperma type, poss. by oxidative cleavage and rearrangement of a didehydrotabersonine. Alkaloid from the roots of *Catharanthus trichophyllus* (Apocynaceae). Shows antitumour activity. Cryst. (MeOH). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 230°. $[\alpha]_D^{26}$ -209.5. λ_{max} 238 ; 306 ; 362 (EtOH) (Berdy).

Mukhopadhyay, S. *et al., Tetrahedron*, 1983, **39**, 3639 (*isol, uv, ir, pmr, ms, cryst struct*)

Trichoponamic acid T-493

4-Methyl-6-(2-oxobutyl)-2-piperidinecarboxylic acid, 9CI
[74235-25-9]



Absolute configuration

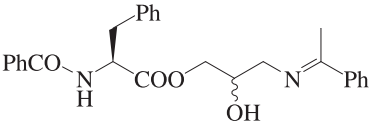
$C_{11}H_{19}NO_3$ 213.276
Isol. from *Trichoderma polysporum* as artifact derived from Trichopolyn. Mp 206-214° dec. $[\alpha]_D^{21}$ 0. $[\alpha]_{286}^{21}$ +193.

6-Epimer: Epitrichoponamic acid
[79026-24-7]
$C_{11}H_{19}NO_3$ 213.276
Isol. from *Trichoderma polysporum*.

Fujita, T. *et al., Chem. Comm.*, 1981, 585

Trichosanatine T-494

[169626-16-8]

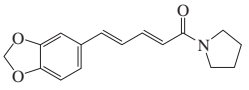


$C_{27}H_{28}N_2O_4$ 444.529
Alkaloid from *Trichosanthes rosthornii*. Cryst. Mp 175.5-176°.

Chao, Z.M. *et al., Yaoxue Xuebao*, 1995, **30**, 517-520 (*isol*)

Trichostachine T-495

1-[5-(1,3-Benzodioxol-5-yl)]-1-oxo-2,4-pentadienylpyrrolidine, 9CI. 5-(3,4-Methylenedioxyphenyl)-2,4-pentadienoic acid pyrrolidide. 1-Piperoylpyrrolidine. Pyrroperine. Piperyline



(*E,E)-form*

$C_{16}H_{17}NO_3$ 271.315

(2E,4E)-form [25924-78-1]
Alkaloid from *Piper nigrum* (pepper) and *Piper guineense* (Piperaceae). Cryst. (EtOAc/hexane or C_6H_6/petrol). Mp 143-145°. λ_{max} 245 (ϵ 10500); 261 (ϵ 10800); 309 (ϵ 19200); 343 (ϵ 33500) (MeOH).

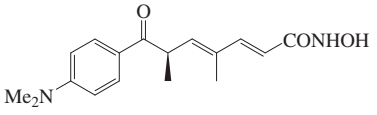
(2E,4Z)-form
Alkaloid from the leaves of *Piper arboreum*. Amorph. solid. λ_{max} 280 (ϵ 2890) (MeOH).

(2Z,4E)-form
Alkaloid from the roots of *Piper nigrum* (pepper). Oil. λ_{max} 263 (log ϵ 3.92); 309 (log ϵ 4.01); 346 (log ϵ 4.12) (MeOH).

Grewe, R. *et al., Chem. Ber.*, 1970, **103**, 3752 (*isol, uv, ir, pmr, ms, struct, synth*)
Okogun, J.I. *et al., J.C.S. Perkin 1*, 1974, 2195 (*isol*)
Olsen, R.A. *et al., J. Agric. Food Chem.*, 1981, **29**, 942 (*synth, uv, ir, pmr*)
Jacobs, H. *et al., J. Indian Chem. Soc.*, 1999, **76**, 713-717 (*isol, pmr, cmr*)
Vasques da Silva, R. *et al., Phytochemistry*, 2002, **59**, 521-527 (*2E,4Z-form*)
Wei, K. *et al., J. Nat. Prod.*, 2004, **67**, 1005-1009 (*2Z,4E-form*)

Trichostatin A T-496

7-[4-(Dimethylamino)phenyl]-N-hydroxy-4,6-dimethyl-7-oxo-2,4-heptadienamide, 9CI. A 300I. Antibiotic A 300I
[58880-19-6]



$C_{17}H_{22}N_2O_3$ 302.372
Isol. from *Streptomyces hygroscopicus* and *Streptomyces sioyaensis*.

Antifungal antibiotic. Potent differentiation inducer of Friend leukaemia. Inhibits histone deacetylase. Cell cycle inhibitor. Powder (EtOAc). Sol. MeOH, Et_2O; poorly sol. hexane, H_2O. Mp 172-174° (150.1°) dec. $[\alpha]_D^{20.5}$ +62.8 (c, 1.007 in EtOH). λ_{max} 252 (sh) (ϵ 16000); 265 (ϵ 17600); 341 (ϵ 19600) (EtOH) (Derep). λ_{max} 253 (E1%/1cm 477); 263 (ϵ 23600); 267 (E1%/1cm 495); 341 (E1%/1cm 776); 342 (ϵ 25100) (MeOH) (Berdy). λ_{max} 249 (E1%/1cm 500); 343 (E1%/1cm 800) (MeOH-NAOH) (Berdy). λ_{max} 264 (ϵ 24100); 265 (E1%/1cm 582); 341 (E1%/1cm 648); 342 (ϵ 27000) (EtOH) (Berdy).

▶ MI5215000

Fe complex: ***Trichostatin B***. *A 300-II. Antibiotic A 300-II*
[58895-00-4]
$C_{51}H_{66}FeN_6O_9$ 962.964
Dark reddish-purple prisms + H_2O (MeOH). Sol. MeOH, Et_2O; poorly sol. H_2O. Mp 192° dec. λ_{max} 252 (sh) (ϵ 16000); 265 (ϵ 17600); 341 (ϵ 19600) (EtOH) (Derep). λ_{max} 262 (E1%/1cm 680); 345 (E1%/1cm 920); 450 (E1%/1cm 50) (MeOH) (Berdy). λ_{max} 277 (E1%/1cm 651); 351 (E1%/1cm 918); 450 (E1%/1cm 50) (EtOH) (Berdy).

O-*α-D-Glucopyranoside:* ***Trichostatin D***
$C_{23}H_{32}N_2O_8$ 464.514
From *Streptomyces violaceusniger*. Antitumour agent. Powder. Mp 131-135°. $[\alpha]_D^{21}$ +183 (c, 0.56 in MeOH). λ_{max} 267 (ϵ 27000); 345 (ϵ 27000) (MeOH).

O-*β-D-Glucopyranoside:* ***Trichostatin C***. *Antibiotic 145-A*
[68676-88-0]
$C_{23}H_{32}N_2O_8$ 464.514
From *Streptomyces hygroscopicus* and *Streptomyces platensis*. Active against trichophytons, fungi and tumours. Prisms (MeOH). Mp 171-173°. $[\alpha]_D^{24}$ +50.5 (c, 0.987 in MeOH). λ_{max} 268 (ϵ 14600); 343 (ϵ 13200) (MeOH) (Derep).

Di-Ac:
Amorph. powder. $[\alpha]_D^{20.5}$ +70.8 (c, 0.891 in $CHCl_3$).

N-*Deoxy:* ***Antibiotic FL 657C***. *FL 657C*
[127349-34-2]
$C_{17}H_{22}N_2O_2$ 286.373
Incorrectly named in CA, although the struct. shown is correct. Isol. from a *Streptomyces* sp. Possesses antitumour props. λ_{max} 250 ; 350 (MeOH) (Berdy).

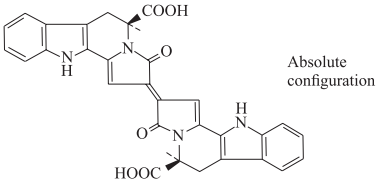
N-*Deoxy,* N-*Me:* ***Trichostatin RK***
$C_{18}H_{24}N_2O_2$ 300.4
Prod. by *Streptomyces* sp. RK98-A74. λ_{max} 265 ; 350 (no solvent reported).

Tsuji, N. *et al., J. Antibiot.*, 1976, **29**, 1; 1978, **31**, 939 (*isol, ir, uv, pmr, cmr, struct*)
Fleming, I. *et al., Tetrahedron*, 1983, **39**, 841 (*synth*)
Yoshida, M. *et al., Agric. Biol. Chem.*, 1985, **49**, 563 (*Trichostatin C*)
Morioka, H. *et al., Agric. Biol. Chem.*, 1988, **52**, 251 (*isol, props*)

Mori, K. *et al., Tetrahedron*, 1988, **42**, 6013 (*synth*)
Japan. Pat., 1989, 89 299 264; *CA*, **112**, 234003 (*FL 657C*)
Yoshida, M. *et al., Ann. N.Y. Acad. Sci.*, 1999, **886**, 23-36 (*Trichostatin A, activity*)
Hayakawa, Y. *et al., J. Antibiot.*, 2000, **53**, 179-183 (*Trichostatin D*)
Ueki, M. *et al., J. Antibiot.*, 2001, **54**, 1093-1095 (*Trichostatin RK*)
Hosokawa, S. *et al., Tet. Lett.*, 2005, **46**, 333-337 (*Trichostatin D, synth*)
Zhang, S. *et al., Adv. Synth. Catal.*, 2006, **348**, 1228-1234 (*Trichostatin A, synth*)

Trichotomine T-497

[53472-14-3]



$C_{30}H_{20}N_4O_6$ 532.511
Blue pigment from the fruits of *Clerodendrum trichotomum* (Verbenaceae). Shows bronchodilator, hypotensive and sedative props. Amorph. Mp 300°. The sp. *Clerodendron* is used in the paper.

N-*β-D-Glucopyranosyl:* ***Trichotomine G$_1$***
[56079-56-2]
$C_{36}H_{30}N_4O_{12}$ 710.653
Alkaloid from fruit of *Clerodendrum trichotomum* (Verbenaceae). Amorph. blue powder. Mp 300°.

N,N′-*Di-D-glucopyranosyl:* ***N,N′-Di(D-glucopyranosyl)trichotomine***
$C_{42}H_{40}N_4O_{17}$ 872.795
Alkaloid from fruit of *Clerodendrum trichotomum* (Verbenaceae). Mixt. of anomers.

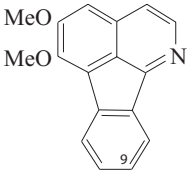
Di-Me ester: Mp 285-287°.

N,N′-*Di-Ac, di-Me ester:* Mp 246-248°.

Iwadare, S. *et al., Tetrahedron*, 1974, **30**, 4105 (*isol, ir, uv, pmr, cd, struct*)
Kapadia, G.J. *et al., Tet. Lett.*, 1977, 975 (*synth*)
Iwadare, S. *et al., Tetrahedron*, 1978, **34**, 1457 (*synth*)

Triclisine T-498

5,6-Dimethoxyindeno[1,2,3-ij]isoquinoline, 9CI. 5,6-Dimethoxy-1-azafluoranthene
[60888-60-0]

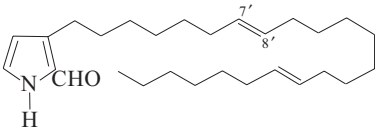


$C_{17}H_{13}NO_2$ 263.295
Alkaloid from *Triclisia gilletii* (Menispermaceae). Yellow cryst. (C_6H_6/petrol). Mp 155°.

9-Hydroxy: 9-Hydroxy-5,6-dimethoxyindeno[1,2,3-ij]isoquinoline. 5,6-Dimethoxyindeno[1,2,3-ij]isoquinolin-9-ol, 9CI. ***Telitoxine***
[78416-88-3]
$C_{17}H_{13}NO_3$ 279.295
Alkaloid from the stems of *Telitoxicum peruvianum* (Menispermaceae). Yellow flakes (MeOH/CH_2Cl_2/$CHCl_3$). Mp 273-275°.

Huls, R. *et al., Bull. Soc. R. Sci. Liege*, 1976, **45**, 40-45; *CA*, **85**, 160372f (*isol, uv, ir, pmr, ms, struct*)
Menachery, M.D. *et al., J. Nat. Prod.*, 1981, **44**, 320-323; 1987, **50**, 726-729 (*Telitoxine, isol, uv, pmr, struct, synth*)
Ramana, M.M.V. *et al., Tet. Lett.*, 2005, **46**, 4385-4386 (*synth*)

3-(7,16-Tricosadienyl)-1*H*-pyrrole-2-carboxaldehyde, 9CI T-499



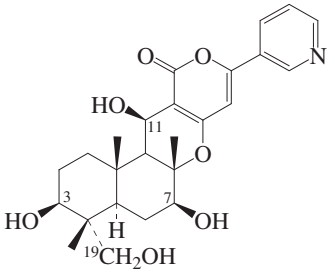
$C_{28}H_{47}NO$ 413.685

(E,E)-form [57992-58-2]
Isol. from the marine sponge *Oscarella lobularis.*

7′,8′-Dihydro: ***3-(16-Tricosenyl)-1H-pyrrole-2-carboxaldehyde, 9CI***
[57992-56-0]
$C_{28}H_{49}NO$ 415.701
Isol. from *Oscarella lobularis.*

Cimino, G. *et al., Experientia*, 1975, **31**, 1387 (*isol, uv, pmr, ms, struct*)

Trideacetylpyripyropene A T-500



$C_{25}H_{31}NO_7$ 457.522
Terpenoid numbering shown. Parent substance of a large group of closely related Pyripyropenes prod. by *Aspergillus fumigatus* and *Eupenicillium reticulosporum*. Pyripyropenes are potent inhibitors of cholesterol acyltransferase and acylcoenzyme A (mostly investigated as mixtures).

3,7,19-Tri-Ac: ***Pyripyropene A***
[147444-03-9]
$C_{31}H_{37}NO_{10}$ 583.634
Shows insecticide and MDR reversing activity. Powder. $[\alpha]_D^{18}$ +65.8 (c, 1 in $CHCl_3$). λ_{max} 231 (ϵ 24300); 320 (ϵ 13400) (MeOH).

3-Propanoyl, 7,19-di-Ac: ***Pyripyropene D***
[151519-46-9]
$C_{32}H_{39}NO_{10}$ 597.661
Powder. $[\alpha]_D^{18}$ +64.5 (c, 1 in $CHCl_3$).

7-Propanoyl, 3,19-di-Ac: ***Pyripyropene C***
[151519-45-8]
$C_{32}H_{39}NO_{10}$ 597.661
Powder. $[\alpha]_D^{18}$ +9.4 (c, 1 in $CHCl_3$).

19-Propanoyl, 3,7-di-Ac: ***Pyripyropene B***
[151519-44-7]
$C_{32}H_{39}NO_{10}$ 597.661
Powder. $[\alpha]_D^{18}$ +62 (c, 1 in $CHCl_3$). λ_{max} 231 ; 320 (MeOH).

3,7-Dipropanoyl, 19-Ac: ***Pyripyropene J***
[165467-60-7]
$C_{33}H_{41}NO_{10}$ 611.688
Powder. Sol. MeOH, EtOAc; poorly sol. H_2O. Mp 248-250° dec. $[\alpha]_D^{28}$ +65 (c, 1 in MeOH). λ_{max} 231 ; 320 (MeOH).

3,19-Dipropanoyl, 7-Ac: ***Pyripyropene K***
[165467-61-8]
$C_{33}H_{41}NO_{10}$ 611.688
Cryst. Sol. MeOH, EtOAc; poorly sol. H_2O. $[\alpha]_D^{28}$ +58 (c, 1 in MeOH). λ_{max} 231 ; 320 (MeOH).

7,19-Dipropanoyl, 3-Ac: ***Pyripyropene L***
[165467-62-9]
$C_{33}H_{41}NO_{10}$ 611.688
Cryst. Sol. MeOH, EtOAc; poorly sol. H_2O. Mp 148-150°. $[\alpha]_D$ +58 (c, 1 in MeOH). λ_{max} 231 ; 320 (MeOH).

3,17,19-Tripropanoyl: ***Pyripyropene I***
[165467-59-4]
$C_{34}H_{43}NO_{10}$ 625.714
Cryst. Sol. MeOH, EtOAc; poorly sol. H_2O. $[\alpha]_D^{28}$ +69 (c, 1 in MeOH). λ_{max} 231 ; 320 (MeOH).

7,19-Dideoxy, 3-Ac: ***Pyripyropene G***
[165467-57-2]
$C_{27}H_{33}NO_6$ 467.561
Powder. Sol. MeOH, EtOAc; poorly sol. H_2O. Mp 248-250° dec. $[\alpha]_D^{28}$ +102 (c, 1 in MeOH). λ_{max} 231 ; 320 (MeOH).

7,19-Dideoxy, 3-propanoyl: ***Pyripyropene H***
[165467-58-3]
$C_{28}H_{35}NO_6$ 481.588
Powder. Sol. MeOH, EtOAc; poorly sol. H_2O. $[\alpha]_D^{28}$ +104 (c, 1 in MeOH). λ_{max} 231 ; 320 (MeOH).

7-Deoxy, 3,19-dipropanoyl: ***Pyripyropene N***
[176385-03-8]
$C_{31}H_{39}NO_8$ 553.651
Powder. Sol. MeOH, EtOAc; poorly sol. H_2O. $[\alpha]_D^{28}$ +97 (c, 0.05 in MeOH). λ_{max} 231 ; 320 (MeOH).

7-Deoxy, 19-propanoyl, 3-Ac: ***Pyripyropene Q***
[176385-06-1]
$C_{30}H_{37}NO_8$ 539.624
Powder. Sol. MeOH, EtOAc; poorly sol. H_2O. λ_{max} 231 ; 320 (MeOH).

11-Deoxy, 7-propanoyl, 3,19-di-Ac: ***Pyripyropene M***
[176385-01-6]
$C_{32}H_{39}NO_9$ 581.661
Powder. Sol. MeOH, EtOAc; poorly sol. H_2O. λ_{max} 231 ; 320 (MeOH).

7,11-Dideoxy, 3,19-di-Ac: ***Pyripyropene O***
[176385-04-9]
$C_{29}H_{35}NO_7$ 509.598
Powder. Sol. MeOH, EtOAc; poorly sol. H_2O. $[\alpha]_D^{28}$ +103 (c, 0.2 in MeOH). λ_{max} 231 ; 320 (MeOH).

7,11-Dideoxy, 3-propanoyl, 19-Ac: ***Pyripyropene R***
$C_{30}H_{37}NO_7$ 523.625
Powder. Sol. MeOH, EtOAc; poorly sol. H_2O. $[\alpha]_D^{28}$ +146 (c, 0.1 in MeOH). λ_{max} 231 ; 320 (MeOH).

7,11-Dideoxy, 19-propanoyl, 3-Ac: ***Pyripyropene P***
[176385-05-0]
$C_{30}H_{37}NO_7$ 523.625
Powder. Sol. MeOH, EtOAc; poorly sol. H_2O. $[\alpha]_D^{28}$ +95 (c, 0.4 in MeOH). λ_{max} 231 ; 320 (MeOH).

7,11,19-Trideoxy, 3-Ac: ***Pyripyropene E****. GERI-BP001 M. Antibiotic GERI-BP001 M*
[156980-53-9]
$C_{27}H_{33}NO_5$ 451.561
Isol. from *Aspergillus fumigatus.* Inhibitor of acyl-CoA : cholesterol acyl transferase (ACAT). Cryst. (MeOH). Mp 174-176°. $[\alpha]_D^{28}$ +113 (c, 1 in MeOH). $[\alpha]_D^{18}$ +146 (c, 0.5 in $CHCl_3$). λ_{max} 232 (ϵ 19200); 322 (ϵ 11100) (MeOH).

7,11,19-Trideoxy, 3-propanoyl: ***Pyripyropene F****. GERI-BP001 B. Antibiotic GERI-BP001 B*
[165467-56-1]
$C_{28}H_{35}NO_5$ 465.588
Isol. from *Aspergillus fumigatus.* Inhibitor of ACAT. Powder. $[\alpha]_D^{28}$ +122 (c, 1 in MeOH) (Pyripyropene F). $[\alpha]_D^{18}$ +59.5 (c, 0.5 in $CHCl_3$). λ_{max} 232 (ϵ 20200); 322 (ϵ 11500) (MeOH).

11-Epimer, 7,19-dideoxy,3-Ac: ***GERI-BP001 A****. Antibiotic GERI-BP001 A*
[168959-29-3]
$C_{27}H_{33}NO_6$ 467.561
Isol. from *Aspergillus fumigatus.* Inhibitor of ACAT. Powder. Sol. MeOH, EtOAc, $CHCl_3$; poorly sol. hexane, H_2O. $[\alpha]_D^{18}$ +39.6 (c, 0.5 in $CHCl_3$). λ_{max} 232 (ϵ 8400); 322 (ϵ 3600) (MeOH).

Tomoda, H. *et al., J. Antibiot.*, 1994, **47**, 148-153; 154-162; 1995, **48**, 495-503; 1996, **49**, 292-298 (*isol, uv, ir, pmr, cmr, ms, cryst struct*)
Tomoda, H. *et al., J.A.C.S.*, 1994, **116**, 12097-12098 (*abs config*)
Wang, H.-J. *et al., Appl. Environ. Microbiol.*, 1995, **61**, 4429-4435 (*activity, Pyripyropene A*)
Obata, R. *et al., J. Antibiot.*, 1995, **48**, 749-750; **49**, 1149-1156 (*activity, Pyripyropene A*)
Jeong, T.-S. *et al., J. Antibiot.*, 1995, **48**, 751-755 (*GERI BP001*)
Nagamitsu, T. *et al., J.O.C.*, 1995, **60**, 8126-8127 (*synth*)
Tomoda, H. *et al., J.O.C.*, 1996, **61**, 882-886 (*biosynth*)
Smith, A.B. *et al., Tet. Lett.*, 1996, **37**, 6461-6464 (*synth*)
Aggarwal, V.K. *et al., J.C.S. Perkin 1*, 1999, 3315-3321 (*synth, bibl*)

2,7-Tridecadiene-10,12-diynoic acid T-501

$HC{\equiv}CC{\equiv}CCH_2CH{=}CH(CH_2)_3CH{=}CHCOOH$

$C_{13}H_{14}O_2$ 202.252

(2E,7Z)-form

2-Methylpropylamide: ***2,7-Tridecadiene-10,12-diynoic acid isobutylamide****.* N-*(2-Methylpropyl)-2,7-tridecadiene-10,12-diynamide, 9CI*
[87797-74-8]
$C_{17}H_{23}NO$ 257.375
Alkamide from the aerial parts of *Echinacea purpurea*, *Echinacea angustifolia* (Asteraceae) and flower heads of *Spilanthes acmella*. Cryst. (petrol) or gum. Mp 40°.

2-Methylbutylamide: 2,7-Tridecadiene-10,12-diynoic acid 2-methylbutylamide
[87797-76-0]
$C_{18}H_{25}NO$ 271.402
Isol. from aerial parts of *Echinacea purpurea*. Gum.

Bohlmann, F. *et al., Phytochemistry*, 1983, **22**, 1173 (*isol, ir, pmr, ms, struct*)
Bauer, R. *et al., Phytochemistry*, 1988, **27**, 2339; 1989, **28**, 505 (*isol, ir, pmr, ms, struct*)
Nakatani, N. *et al., Biosci., Biotechnol., Biochem.*, 1992, **56**, 759 (*isol, uv, ir, pmr, cmr*)

2,4-Tridecadienoic acid T-502

$H_3C(CH_2)_7CH{=}CHCH{=}CHCOOH$

$C_{13}H_{22}O_2$ 210.316

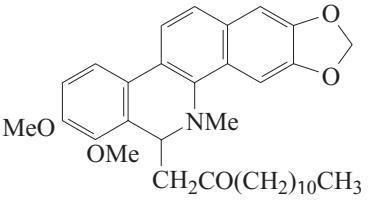
(2E,4E)-form

2-Methylpropylamide: ***2,4-Tridecadienoic acid isobutylamide****.* N-*(2-Methylpropyl)-2,4-tridecadienamide*
$C_{17}H_{31}NO$ 265.438
Alkaloid from *Leucocyclus formosus* (Asteraceae). Obt. only in admixture with homologues.

Greger, H. *et al., Phytochemistry*, 1981, **20**, 2579 (*isol, ms, struct*)

Tridecanochelerythrine T-503

8-(2-Oxotridecyl)dihydrochelerythrine
[152753-15-6]



$C_{34}H_{43}NO_5$ 545.717
Alkaloid from bark of *Zanthoxylum integrifoliolum* (Rutaceae). Mp 68-72°. Numbering systems vary. λ_{max} 229 (ϵ 4073); 283 (ϵ 4785); 320 (sh) (ϵ 1514) (MeOH).

Jen, C.-M. *et al., J. Nat. Prod.*, 1993, **56**, 2019-2021 (*isol, uv, ir, pmr, cmr, ms, struct*)

2,6,8-Tridecatriene-10,12-diynoic acid T-504

$HC{\equiv}CC{\equiv}CCH{=}CHCH{=}CHCH_2CH_2CH{=}CHCOOH$

$C_{13}H_{12}O_2$ 200.237

(2E,6E,8Z)-form

2-Methylpropylamide: ***2,6,8-Tridecatrien-10,12-diynoic acid isobutylamide****.* N-*(2-Methylpropyl)-2,6,8-tridecatriene-10,12-diynamide, 9CI*
[87797-78-2]
$C_{17}H_{21}NO$ 255.359
Alkaloid from the aerial parts of *Echinacea purpurea* (Asteraceae). Gum.

Bohlmann, F. *et al., Phytochemistry*, 1983, **22**, 1173 (*isol, ir, pmr, ms, struct*)

7-Tridecene-10,12-diynoic acid, 9CI T-505

$HC{\equiv}CC{\equiv}CCH_2CH{=}CH(CH_2)_5COOH$

$C_{13}H_{16}O_2$ 204.268

(Z)-form [142505-97-3]

2-Methylpropylamide: N-*Isobutyl-7-tridecene-10,12-diynamide*
$C_{17}H_{25}NO$ 259.391
Isol. from flower heads of *Spilanthes acmella*. Oil.

Nakatani, N. *et al., Biosci., Biotechnol., Biochem.*, 1992, **56**, 759 (*isol, ms, ir, cmr, pmr*)

6-Tridecylamine T-506

6-Tridecanamine. 1-Pentyloctylamine. 6-Aminotridecane
$H_3C(CH_2)_6CH(NH_2)(CH_2)_4CH_3$

$C_{13}H_{29}N$ 199.379

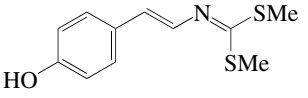
(ξ)-form

N-*Ac: 6-Acetamidotridecane*
[345261-17-8]
$C_{15}H_{31}NO$ 241.416
Isol. from the cyanobacterium *Microcoleus lyngbyaceus.* Cryst.

Orsini, M.A. *et al., J. Nat. Prod.*, 2001, **64**, 572-577 (*isol, ir, pmr, cmr*)

Tridentatol A T-507

[185548-48-5]



$C_{11}H_{13}NOS_2$ 239.362
Metab. from the marine hydroid *Tridentata marginata*. Amorph. solid. λ_{max} 337 (ϵ 18000) (MeOH).

O-*Sulfate:* ***Tridentatol E***
$C_{11}H_{13}NO_4S_3$ 319.426
Isol. from *Tridentata marginata.* Amorph. solid (as Na salt). λ_{max} 326 (log ϵ 4.41) (MeOH) (Na salt).

Z-Isomer: ***Tridentatol B***
[185548-49-6]
$C_{11}H_{13}NOS_2$ 239.362
Isol. from *Tridentata marginata.*

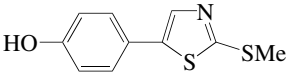
Amorph. solid. λ_{max} 332 (ϵ 11000) (MeOH).

Z-Isomer, O-*sulfate:* ***Tridentatol F***
$C_{11}H_{13}NO_4S_3$ 319.426
Isol. from *Tridentata marginata*. Amorph. solid (as Na salt). λ_{max} 325 (log ϵ 3.78) (MeOH) (Na salt).

Lindquist, N. *et al., Tet. Lett.*, 1996, **37**, 9131-9134 (*Tridentatols A,B*)
Lindquist, N. *et al., J. Nat. Prod.*, 2002, **65**, 681-684 (*Tridentatols E,F*)

Tridentatol C T-508

4-[2-(Methylthio)-5-thiazolyl]phenol, 9CI. 2-(4-Hydroxyphenyl)-5-(methylthio)thiazole
[185548-50-9]

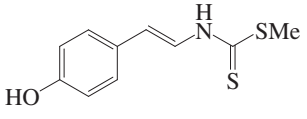


$C_{10}H_9NOS_2$ 223.319
Metab. from the marine hydroid *Tridentata marginata*. Plates. λ_{max} 313 (ϵ 3000) (MeOH).

O-*Sulfate:* ***Tridentatol H***
[439255-40-0]
$C_{10}H_9NO_4S_3$ 303.383
Isol. from *Tridentata marginata*. Amorph. powder (as Na salt).

Lindquist, N. *et al., Tet. Lett.*, 1996, **37**, 9131-9134 (*isol, uv, ir, pmr, cryst struct*)
Jayatilake, G.S. *et al., Org. Lett.*, 1999, **1**, 661-662 (*synth*)
Lindquist, N. *et al., J. Nat. Prod.*, 2002, **65**, 681-684 (*Tridentatol H*)

Tridentatol D T-509



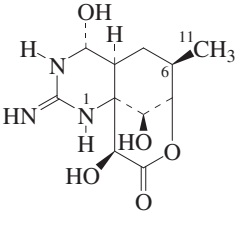
$C_{10}H_{11}NOS_2$ 225.335
Isol. from the marine hydroid *Tridentata marginata*. Amorph. solid. λ_{max} 342 (log ϵ 4.35) (MeOH).

O-*Sulfate:* ***Tridentatol G***
$C_{10}H_{11}NO_4S_3$ 305.399
Isol. from *Tridentata marginata*. Amorph. powder (as Na salt). λ_{max} 289 (sh) ; 339 (log ϵ 4.32) (MeOH) (Na salt).

Lindquist, N. *et al., J. Nat. Prod.*, 2002, **65**, 681-684 (*isol, pmr, cmr*)

5,6,11-Trideoxytetrodotoxin T-510

[172228-91-0]



$C_{11}H_{17}N_3O_5$ 271.272
Slightly misleading name. In Tetrodotoxin, T-298 the 5-OH is present as an internal acetal. Isol. from the fish *Fugu poecilonotus*. $[\alpha]_D^{23}$ -17.4 (c, 0.5 in AcOH aq.).

▶ Toxic.

N^1,*6-Dihydroxy:* ***1-Hydroxy-5,11-dideoxytetrodotoxin***
[146689-16-9]
$C_{11}H_{17}N_3O_7$ 303.271
Isol. from the newt *Taricha granulosa* and *Taricha torosa*. Amorph. powder. $[\alpha]_D$ +14.5 (c, 0.3 in AcOH aq.). Misleading synonym. λ_{max} 225 (H_2O) (Berdy).

▶ Neurotoxin.

6,11-Dihydroxy: ***5-Deoxytetrodotoxin***
$C_{11}H_{17}N_3O_7$ 303.271
Isol. from *Fugu poecilonotus*. Amorph. solid.

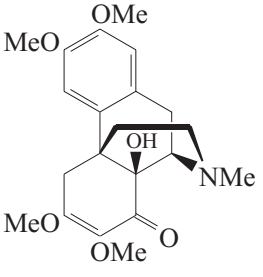
4-Epimer: ***5,6,11-Trideoxy-4-epitetrodotoxin***
[172339-07-0]
$C_{11}H_{17}N_3O_5$ 271.272
Isol. from *Fugu poecilonotus*. $[\alpha]_D^{23}$ -60.2 (c, 0.65 in AcOH aq.).

▶ Toxic.

Kotaki, Y. *et al., J.A.C.S.*, 1993, **115**, 827-830 (*1-Hydroxy-5,11-dideoxytetrodotoxin*)
Yotsu-Yamashita, M. *et al., Tet. Lett.*, 1995, **36**, 9329-9332 (*isol, struct*)
Yotsu-Yamashita, M. *et al., Biosci., Biotechnol., Biochem.*, 1999, **63**, 961-963 (*5-Deoxytetrodotoxin*)

Tridictyophylline T-511

14-Hydroxyisostephodeline. Alkaloid TGL3
[52038-19-4]

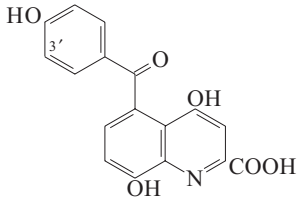


$C_{21}H_{27}NO_6$ 389.447
Alkaloid from *Pachygone dasycarpa*, *Triclisia dictyophylla* and *Triclisia gilletii* (Menispermaceae). Long feathery needles or prisms (MeOH). Mp 204° (softens at 190°). $[\alpha]_D^{28}$ +159 (c, 0.16 in $CHCl_3$). λ_{max} 204 (log ϵ 4.6); 226 (sh) (log ϵ 4.04); 279 (log ϵ 3.96) (MeOH).

Tackie, A.N. *et al., J. Nat. Prod.*, 1974, **37**, 1 (*isol*)
Spiff, A.L. *et al., J. Nat. Prod.*, 1981, **44**, 160 (*isol, uv, ir, pmr, cmr, ms, cryst struct*)
Guinadeau, H. *et al., Phytochemistry*, 1998, **49**, 2561-2563 (*isol, uv, pmr, cmr, ms, cd*)

Trididemnic acid A T-512

4,8-Dihydroxy-5-(4-hydroxybenzoyl)-2-quinolinecarboxylic acid, 9CI
[142808-50-2]



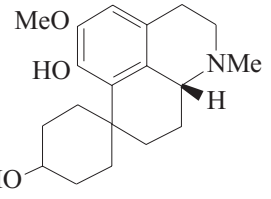
$C_{17}H_{11}NO_6$ 325.277
Alkaloid from the marine ascidian *Trididemnum* sp. Pale yellow solid.

3′-Hydroxy: ***Trididemnic acid B***. *5-(3,4-Dihydroxybenzoyl)-4,8-dihydroxy-2-quinolinecarboxylic acid, 9CI*
[142808-51-3]
$C_{17}H_{11}NO_7$ 341.276
Alkaloid from *Trididemnum* sp.

Dilip de Silva, E. *et al., Tet. Lett.*, 1992, **33**, 2917-2920 (*isol, pmr, cmr, struct*)

Trigamine T-513

[59272-74-1]
[62278-79-9]



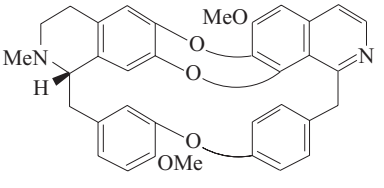
$C_{19}H_{27}NO_3$ 317.427
Alkaloid from *Merendera trigina*. Mp 169-170°. $[\alpha]_D$ -7 (c, 1.0 in $CHCl_3$).

N-*Oxide:* ***Trigamine* N-*oxide***
[97763-03-6]
$C_{19}H_{27}NO_4$ 333.427
Alkaloid from *Merendera jolantae* (Liliaceae). Mp 201-202°. $[\alpha]_D$ +10.

Yusupov, M.K. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1975, **11**, 824-825 (*isol, uv, ir, pmr, ms*)
Timbekov, E.K. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1985, **21**, 1-9 (*ms*)
Chommadov, B. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1985, **21**, 395-397 (*N-oxide*)

Trigilletimine T-514

Alkaloid TGS-1
[52038-21-8]



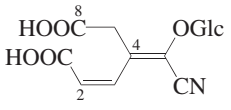
$C_{35}H_{30}N_2O_5$ 558.632

Alkaloid from the stems and roots of *Triclisia gilletii* and *Triclisia patens*, and from *Triclisia dictyophylla* (whole plant) (Menispermaceae). Needles (EtOH). Mp 284° dec. $[\alpha]_D^{25}$ -285.7 (c, 0.7 in CH_2Cl_2).

Tackie, A.N. *et al., J. Nat. Prod.*, 1974, **37**, 1 (*isol*)
Dwuma-Badu, D. *et al., Experientia*, 1975, **31**, 1251 (*uv, pmr, ms, struct*)
Spiff, A.I. *et al., J. Nat. Prod.*, 1981, **44**, 160 (*isol, uv, ir, ms*)

Triglochinin T-515

[28876-11-1]



$C_{14}H_{17}NO_{10}$ 359.289
Constit. of *Triglochin maritimum*, *Alocasia macrorrhiza* and *Arum maculatum*. Hygroscopic amorph. powder. $[\alpha]_D^{16.5}$ +5.5 (c, 0.2 in MeOH).

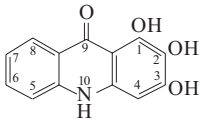
*2*E-*Isomer:* ***Isotriglochinin***
[56816-21-8]
$C_{14}H_{17}NO_{10}$ 359.289
Constit. of *Alocasia macrorrhiza* and *Arum maculatum*. Poss. artifact.

*2*E-*Isomer, 8-Me ester:* [39026-83-0]
$C_{15}H_{19}NO_{10}$ 373.316
Constit. of *Thalictrum aqualegifolium*.

Eyjólfsson, R. *et al., Phytochemistry*, 1970, **9**, 845
Ettlinger, M. *et al., Chem. Comm.*, 1972, 572 (*struct*)
Sharples, D. *et al., Phytochemistry*, 1972, **11**, 2999-3002 (*Me ester*)
Nahrstedt, A. *et al., Phytochemistry*, 1975, **14**, 1339-1340; 1870-1871 (*isol*)
Jaroszewski, J.W. *et al., Phytochemistry*, 1981, **20**, 819 (*biosynth*)
Seigler, D.S. *et al., Phytochemistry*, 2005, **66**, 1567-1580 (*biosynth, occur*)

1,2,3-Trihydroxyacridone T-516

*1,2,3-Trihydroxy-9(10*H*)-acridinone, 9CI*
[263007-73-4]



$C_{13}H_9NO_4$ 243.218
Isol. from root bark of *Severinia buxifolia*.

2,3-Di-Me ether: ***Xanthoxoline****. 1-Hydroxy-2,3-dimethoxyacridone*
[17014-43-6]
$C_{15}H_{13}NO_4$ 271.272
Alkaloid from leaves of *Evodia xanthoxyloides* (Rutaceae). Mp 256-257°.

2,3-Di-Me ether, O-*Ac:*
$C_{17}H_{15}NO_5$ 313.309
Mp 238-241°.

2,3-Di-Me ether, N-*Me:* ***Arborinine***
[5489-57-6]
$C_{16}H_{15}NO_4$ 285.299
Alkaloid from *Glycosmis arborea*, *Fagara leprieurii*, *Evodia xanthoxyloides*, *Ruta graveolens* (rue), and other spp. in the Rutaceae. Antihistamine, antiinflammatory, spasmolytic agent. Cryst. (EtOH). Mp 175-176°. Log P 1.11 (calc).

2,3-Di-Me ether, N-*Me,* O-*Ac:*
$C_{18}H_{17}NO_5$ 327.336
Mp 215-216°.

2,3-Di-Me ether, N-*(acetyloxymethyl):* ***Toddaliopsin C***
[865103-33-9]
$C_{18}H_{17}NO_6$ 343.335
Alkaloid from the leaves of *Toddaliopsis bremekampii*. Yellow glass.

Tri-Me ether: 1,2,3-Trimethoxyacridone. ***Toddaliopsin A***
[33130-09-5]
$C_{16}H_{15}NO_4$ 285.299
Alkaloid from the leaves of *Toddaliopsis bremekampii*. Yellow glass.

Tri-Me ether, N-*Me:* ***1,2,3-Trimethoxy-10-methylacridone***
[13082-16-1]
$C_{17}H_{17}NO_4$ 299.326
Alkaloid from *Evodia alata*, *Vepris bilocularis*, *Melicope leratii* and *Almeidea rubra*. Mp 169-171°.

Tri-Me ether, N-*(methoxymethyl):* ***Toddaliopsin D***
[865103-34-0]
$C_{18}H_{19}NO_5$ 329.352
Alkaloid from the leaves of *Toddaliopsis bremekampii*.

Tri-Me ether, N-*(acetyloxymethyl):* ***Toddaliopsin B***
[865103-32-8]
$C_{19}H_{19}NO_6$ 357.362
Alkaloid from the leaves of *Toddaliopsis bremekampii*. Yellow glass.

3-(3-Methyl-2-butenyl) ether, 2-Me ether, N-*Me: 1-Hydroxy-2-methoxy-10-methyl-3-prenyloxyacridone.* ***Evoprenine***
[16584-45-5]
$C_{20}H_{21}NO_4$ 339.39
Alkaloid from the bark of *Evodia alata*. Yellow needles (EtOH). Mp 143°.

*2,3-Methylene, 1-Me ether: 11-Methoxy-1,3-dioxolo[4,5-*b*]acridin-10-one. 1-Methoxy-2,3-methylenedioxyacridone.* ***Evoxanthidine***
[668-35-9]
$C_{15}H_{11}NO_4$ 269.256
Alkaloid from *Evodia xanthoxyloides* (Rutaceae). Yellow needles (EtOH). Mp 310-312° dec.

2,3-Methylene, 1-Me ether, N-*Me: 1-Methoxy-10-methyl-2,3-methylenedioxyacridone.* ***Evoxanthine***
[477-82-7]
$C_{16}H_{13}NO_4$ 283.283
Alkaloid from *Evodia xanthoxyloides, Balfourodendron riedelianum* and *Oricia suaveolens* (Rutaceae). Yellow needles (EtOH). Mp 217-218°.

Hughes, G.K. *et al., Aust. J. Sci. Res., Ser. A*, 1949, **A2**, 429-436; 1952, **5**, 401-405 (*Evoxanthine, Evoxanthidine, Xanthoxoline, isol, struct*)
Cannon, J.R. *et al., Aust. J. Sci. Res., Ser. A*, 1952, **5**, 406-411 (*Evoxanthine, Evoxanthidine, Xanthoxoline, struct*)
Chakravati, D. *et al., J.C.S.*, 1953, 3337-3340 (*Arborinine, isol*)
Gell, R.J. *et al., Aust. J. Chem.*, 1955, **8**, 114-120 (*Evodia elata constits, struct*)
Pakrashi, S.C. *et al., Chem. Ind. (London)*, 1961, 464-465 (*Arborinine, pmr*)
Banerjee, S.K. *et al., Tetrahedron*, 1961, **16**, 251-254 (*Arborinine*)
Bowie, J. *et al., Aust. J. Chem.*, 1967, **20**, 1179-1193 (*ms*)
Diment, J.A. *et al., Aust. J. Chem.*, 1967, **20**, 1719-1727 (*Evoprenine*)
Govindachari, T.R. *et al., Tetrahedron*, 1967, **23**, 1827-1829 (*Evoxanthidine, synth, ir, uv*)
Bergenthal, D. *et al., Phytochemistry*, 1979, **18**, 161-163 (*cmr*)
Santos, C.S. *et al., J. Braz. Chem. Soc.*, 1988, **9**, 39-42 (*Almeidea rubra constit*)
Coppola, G.M. *et al., J. Het. Chem.*, 1989, **26**, 957-964 (*Evoxanthine, 1,2,3-Trimethoxy-10-methylacridone, synth, ir, pmr*)
Rasoanaivo, P. *et al., Fitoterapia*, 1999, **70**, 625-627 (*Evoxanthine, cmr*)
Wu, T.-S. *et al., J. Nat. Prod.*, 2001, **64**, 1040-1043 (*Severinia buxifolia constit*)
Naidoo, D. *et al., Phytochemistry*, 2005, **66**, 1724-1728 (*Toddaliopsins A-D*)

1,3,4-Trihydroxyacridone T-517

*1,3,4-Trihydroxy-9(10*H*)-acridinone, 9CI*
$C_{13}H_9NO_4$ 243.218

3,4-Di-Me ether, N-*Me:* ***1-Hydroxy-3,4-dimethoxy-10-methylacridone***
[96935-29-4]
$C_{16}H_{15}NO_4$ 285.299
Alkaloid from the wood and bark of *Sarcomelicope leiocarpa* (Rutaceae). Yellow prisms (CH_2Cl_2). Mp 129-131°.

Tri-Me ether, N-*Me:* ***1,3,4-Trimethoxy-10-methylacridone***
[66642-48-6]
$C_{17}H_{17}NO_4$ 299.326
Alkaloid from leaves of *Teclea boiviniana* and bark of *Acronychia baueri*. Pale yellow needles ($CHCl_3$/Et_2O). Mp 137°.

3-(3,7-Dimethyl-2,6-octadienyl) ether, 4-Me ether, N-*Me:* ***1-Hydroxy-3-geranyloxy-4-methoxy-10-methylacridone***
[96935-30-7]
$C_{25}H_{29}NO_4$ 407.508
Alkaloid from the wood and bark of *Sarcomelicope leiocarpa* (Rutaceae). Yellow prisms ($CHCl_3$). Mp 114°.

Vaquette, J. *et al., Planta Med.*, 1978, **33**, 78 (*1,3,4-Trimethoxy-10-methylacridone*)
Funayama, S. *et al., J. Nat. Prod.*, 1984, **47**, 285 (*1,3,4-Trimethoxy-10-methylacridone*)
Baudouin, G. *et al., J. Nat. Prod.*, 1985, **48**, 260 (*isol, uv, ir, pmr, ms, struct*)

1,3,5-Trihydroxyacridone T-518

*1,3,5-Trihydroxy-9(10*H*)-acridinone, 9CI*
[85990-00-7]
$C_{13}H_9NO_4$ 243.218
Bright yellow prisms (Me_2CO aq.). Mp >320°.

N-*Me:* ***1,3,5-Trihydroxy-10-methylacridone***
[679835-33-7]
$C_{14}H_{11}NO_4$ 257.245
Alkaloid from roots of Yalaha [several hybrid seedlings resulting from a cross of Duncan grapefruit (*Citrus paradisi*) x Dancy tangerine (*Citrus tangerina*)]. Yellow oil.

3-Me ether, N-*Me: 1,5-Dihydroxy-3-methoxy-10-methylacridone.* ***Citrusamine***
[108598-30-7]
$C_{15}H_{13}NO_4$ 271.272
Alkaloid from the leaves of *Atalantia ceylanica* and from roots of *Citrus tamurana* and *Citrus natsudaidai* (Rutaceae). Orange-yellow needles ($CHCl_3$/petrol), yellow prisms (Me_2CO). Mp 140-141° Mp 243-246°. Large discrepancy in Mp between the two isolates may indicate an incorrect identity.

5-Me ether: 1,3-Dihydroxy-5-methoxyacridone
[63110-81-6]
$C_{14}H_{11}NO_4$ 257.245
Bright yellow needles (EtOH aq.). Mp 278-280°.

5-Me ether, N-*Me: 1,3-Dihydroxy-5-methoxy-10-methylacridone.* ***Yukodine***
[145940-33-6]
$C_{15}H_{13}NO_4$ 271.272
Alkaloid from the roots of *Citrus yuko* (Rutaceae). Yellow needles. Mp 246-250°.

3,5-Di-Me ether: 1-Hydroxy-3,5-dimethoxyacridone
[85990-01-8]
$C_{15}H_{13}NO_4$ 271.272
Yellow prisms (DMSO aq.). Mp 220-222° (208-210°).

3,5-Di-Me ether, N-*Me: 1-Hydroxy-3,5-dimethoxy-10-methylacridone.* ***Yukodinine***
[145940-34-7]
$C_{16}H_{15}NO_4$ 285.299
Alkaloid from roots of Swingle citrumelo (*Poncirus trifoliata* x *Citrus paradisii*) (Rutaceae). Pale yellow oil.

Tri-Me ether, N-*Me: 1,3,5-Trimethoxy-10-methylacridone*
[52911-52-1]
$C_{17}H_{17}NO_4$ 299.326
Alkaloid from *Teclea boiviniana* (Rutaceae). Beige needles ($CHCl_3$/Et_2O). Mp 141°.

Vaquette, J. *et al., Plant. Med. Phytother.*, 1974, **8**, 57-62 (*1,3,5-Trimethoxy-10-methylacridone, struct*)
Ramesh, K. *et al., Indian J. Chem., Sect. B*, 1986, **25**, 684-687 (*3,5-di-Me ether, synth, pmr*)
Ju-Ichi, M. *et al., Heterocycles*, 1987, **26**, 1873-1876 (*Citrusamine, struct*)
Bowen, I.H. *et al., Planta Med.*, 1987, **53**, 73-75 (*Citrusamine, struct*)
Takemura, Y. *et al., Heterocycles*, 1992, **34**, 2123-2130 (*Yukodine, Yukodinine*)
Takemura, Y. *et al., Chem. Pharm. Bull.*, 1996, **44**, 804 (*1,3,5-Trihydroxy-10-methylacridone*)
Lowden, C.T. *et al., J. Med. Chem.*, 2003, **46**, 5015-5020 (*5-Me ether, 3,5-di-Me ether, synth, pmr*)
Herath, H.M.T.B. *et al., J. Het. Chem.*, 2004, **41**, 23-28 (*synth, pmr, cmr, ms, N-Me, 5-Me ether, 3,5-di-Me ether*)

1,3,6-Trihydroxyacridone T-519

*1,3,6-Trihydroxy-9(10*H*)-acridinone, 9CI*
$C_{13}H_9NO_4$ 243.218

3-Me ether, N-*Me: 1,6-Dihydroxy-3-methoxy-10-methylacridone.* ***Pummeline***
[145940-36-9]
$C_{15}H_{13}NO_4$ 271.272
Alkaloid from roots of several hybrid seedlings resulting from a cross of Pummelo (*Citrus grandis* cv. May Pummelo × Marsh grapefruit (*Citrus paradisi*) (Rutaceae)). Yellow cubes. Mp 235-240°.

Takemura, Y. *et al., Heterocycles*, 1992, **34**, 2123 (*isol, uv, ir, pmr, cmr, ms, struct*)

1,3,8-Trihydroxyacridone T-520

*1,3,8-Trihydroxy-9(10*H*)-acridinone, 9CI*
[197007-31-1]
$C_{13}H_9NO_4$ 243.218
Yellow solid (EtOH aq.). Mp >300° dec.

N-*Me:* ***1,3,8-Trihydroxy-10-methylacridone***
[151077-56-4]
$C_{14}H_{11}NO_4$ 257.245
Alkaloid from aerial parts of *Boronia lanceolata* (Rutaceae). Yellow needles ($CHCl_3$/MeOH). Mp 285-290°.

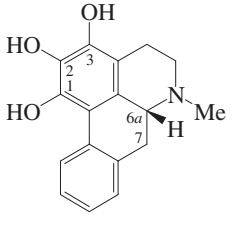
3-Me ether: ***1,8-Dihydroxy-3-methoxyacridone***
[156547-74-9]
$C_{14}H_{11}NO_4$ 257.245
Alkaloid from aerial parts of *Boronia bowmanii* (rutaceae). Yellow needles ($CHCl_3$). Mp 275°.

3-Me ether, N-*Me: 1,8-Dihydroxy-3-methoxy-10-methylacridone.* ***Oligophyllidine***
[94443-43-3]
$C_{15}H_{13}NO_4$ 271.272
Alkaloid from the roots of *Acronychia oligophylebia* (Rutaceae).

Xu, W. *et al., Huaxue Xuebao*, 1984, **42**, 899; *CA*, **102**, 59257s
Ahsan, M. *et al., Phytochemistry*, 1993, **33**, 1507 (*1,3,8-Trihydroxy-10-methylacridone*)
Ahsan, M. *et al., J. Nat. Prod.*, 1994, **57**, 670 (*1,8-Dihydroxy-3-methoxyacridone*)
Chen, J.-J. *et al., Tetrahedron*, 1997, **53**, 12717-12728 (*synth, pmr, cmr, N-Me, 1,3-di-Me ether*)

1,2,3-Trihydroxyaporphine T-521

*5,6,6a,7-Tetrahydro-6-methyl-4*H*-dibenzo[*de,g*]quinoline-1,2,3-triol, 9CI*



(*R*)-*form*

$C_{17}H_{17}NO_3$ 283.326

(*R*)-*form*

1,2-Di-Me ether: 3-Hydroxy-1,2-dimethoxyaporphine. ***3-Hydroxynuciferine****. Lirinine*
[41645-66-3]
$C_{19}H_{21}NO_3$ 311.38
Alkaloid from the leaves of *Liriodendron tulipifera* (Magnoliaceae). Active against gram-positive bacteria. Needles (Et_2O). Mp 150-152°. $[\alpha]_D^{28}$ -83.7 (c, 1.0 in $CHCl_3$). Struct. revised in 1975.

1,2-Di-Me ether, N-*oxide:* ***Lirinine* N-*oxide***
$C_{19}H_{21}NO_4$ 327.379
Alkaloid from the leaves of *Liriodendron tulipifera* (Magnoliaceae). Amorph. Mp 162-164° dec. λ_{max} 218 (log ε 4.4); 284 (log ε 4.03) (EtOH).

1,2-Di-Me ether, N-*de-Me: 3-Hydroxy-1,2-dimethoxynoraporphine.* ***3-Hydroxynornuciferine***
[82644-36-8]
$C_{18}H_{19}NO_3$ 297.353
Alkaloid from the stem bark of *Guatteria melosma*, the bark and leaves of *Polyalthia acuminata*, and the stem and root bark of *Hexalobus crispiflorus* (Annonaceae). Cryst. (Me_2CO). Mp 194-195°. $[\alpha]_D^{20}$ -68 (c, 0.2 in EtOH). Struct. revised in 1975. An alkaloid from *Monanthotaxis cauliflora* considered to be 9-Hydroxy-1,2-dimethoxynoraporphine was shown to give *O*-Methyllirinine on methylation and was therefore prob. identical with 3-Hydroxynornuciferine. λ_{max} 219 (log ε 4.39); 240 (sh) (log ε 3.9); 280 (log ε 4.14); 292 (sh) (log ε 4.04) (no solvent reported).

1,3-Di-Me ether: 2-Hydroxy-1,3-dimethoxyaporphine. ***Liridinine***
[58998-24-6]
$C_{19}H_{21}NO_3$ 311.38
Alkaloid from *Liriodendron tulipifera* (Magnoliaceae). Mp 142-144°. $[\alpha]_D^{20}$ -38 (c, 0.095 in $CHCl_3$). λ_{max} 221 (log ε 4.41); 281 (log ε 4.16) (EtOH).

1,3-Di-Me ether, N-*de-Me: 2-Hydroxy-1,3-dimethoxynoraporphine.* ***Norliridinine***
[83694-77-3]
$C_{18}H_{19}NO_3$ 297.353
Alkaloid from the bark and leaves of *Polyalthia acuminata* (Annonaceae). Amorph. λ_{max} 230 (sh) (log ε 4.05); 274 (log ε 3.95); 282 (sh) (log ε 3.89); 304 (sh) (log ε 3.38) (no solvent reported).

2,3-Di-Me ether: 1-Hydroxy-2,3-dimethoxyaporphine. **N-*Methylisopiline***
[65953-84-6]
$C_{19}H_{21}NO_3$ 311.38
Alkaloid from the leaves of *Guatteria ouregou* (Annonaceae). Prisms (MeOH). Mp 220-222° dec. $[\alpha]_D$ -56 (c, 0.2 in MeOH).

2,3-Di-Me ether, N-*de-Me: 1-Hydroxy-2,3-dimethoxynoraporphine.* ***Isopiline***
[65953-83-5]
$C_{18}H_{19}NO_3$ 297.353
Alkaloid from the trunk bark of *Isolona pilosa*, the stem bark of *Guatteria ouregou* and the bark and leaves of *Polyalthia acuminata* (Annonaceae). Shows antimicrobial activity. Prisms (Et_2O). Mp 153°. $[\alpha]_D$ -55 (c, 1.06 in MeOH).

Tri-Me ether: 1,2,3-Trimethoxyaporphine. ***3-Methoxynuciferine****.* O,N-*Dimethylisopiline.* O-*Methyllirinine*

[5531-86-2]
$C_{20}H_{23}NO_3$ 325.407
Alkaloid from the leaves of *Liriodendron tulipifera* and the bark of *Polyalthia acuminata* (Magnoliaceae, Annonaceae). Pale yellow needles (hexane). Mp 105-106°. $[\alpha]_D^{28}$ -112.15 (c, 0.214 in $CHCl_3$). λ_{max} 212 (ϵ 43000); 228 (sh) (ϵ 25100); 275 (ϵ 21400) (EtOH).

Tri-Me ether, N-*de-Me: 1,2,3-Trimethoxynoraporphine.* **O-*Methylisopiline*.** O-*Methylnorlirinine*
[65953-85-7]
$C_{19}H_{21}NO_3$ 311.38
Alkaloid from bark of *Liriodendron tulipifera*, bark and leaves of *Polyalthia acuminata*, stem bark of *Guatteria ouregou* and leaves of *Guatteria scandens* (Magnoliaceae, Annonaceae). Shows antimicrobial activity. Noncryst. Negative opt. rotn. in MeOH. Struct. revised in 1973. λ_{max} 222 (log ϵ 4.46); 283 (log ϵ 4.22) (EtOH).

Tri-Me ether, N-*de-Me,* N-*formyl:* ***Formouregine***. N-*Formyl*-O-*methylisopiline*
[107633-66-9]
$C_{20}H_{21}NO_4$ 339.39
Alkaloid from the leaves of *Guatteria ouregou* (Annonaceae). $[\alpha]_D$ -146 (c, 0.02 in EtOH). λ_{max} 222 (log ϵ 4.27); 233 (sh) (log ϵ 4.12); 274 (log ϵ 4.05) (EtOH).

Tri-Me ether, N-de-Me, N-*Ac:* ***Tuliferoline***
[60755-82-0]
$C_{21}H_{23}NO_4$ 353.417
Alkaloid from the heartwood of *Liriodendron tulipifera* (Magnoliaceae). Cryst. (EtOH/hexane). Mp 145-146°. $[\alpha]_D^{25}$ -330 (c, 0.83 in $CHCl_3$). λ_{max} 224 (log ϵ 4.06); 273 (log ϵ 4.1) (MeOH).

6a,*7-Didehydro, 1,2-di-Me ether:* ***3-Hydroxy-6a,7-dehydronuciferine***
[82628-33-9]
$C_{19}H_{19}NO_3$ 309.364
Alkaloid from the stem bark and root bark of *Hexalobus crispiflorus* (Annonaceae).

6a,*7-Didehydro, 1,2-di-Me ether, 3-Ac:*
Cryst. (MeOH). Mp 134-135°.

6a,*7-Didehydro, 2,3-di-Me ether,* N-*de-Me,* N-*formyl:* ***1-De-O-methyldehydroformouregine***
[938433-34-2]
$C_{19}H_{17}NO_4$ 323.348
Alkaloid from *Sabia yunnanensis.* Needles (Me_2CO). Mp 203-205°. λ_{max} 256 ; 279 ; 318 ; 347 ; 365 (MeOH).

6a,*7-Didehydro, tri-Me ether,* N-*de-Me:* **O-*Methyldehydroisopiline***
[107633-67-0]
$C_{19}H_{19}NO_3$ 309.364
Alkaloid from the leaves of *Guatteria ouregou* (Annonaceae). Not obt. pure. λ_{max} 214 (log ϵ 4.48); 260 (log ϵ 4.69); 327 (log ϵ 3.96) (EtOH).

6a,*7-Didehydro, tri-Me ether,* N-*de-Me,* N-*formyl:* ***Dehydroformouregine***
[107633-69-2]
$C_{20}H_{19}NO_4$ 337.374
Alkaloid from the leaves of *Guatteria ouregou* (Annonaceae). Cryst. (MeOH). Mp 120-122°. λ_{max} 221 (log ϵ 3.92); 251 (sh) (log ϵ 4.29); 263 (log ϵ 4.32); 310 (log ϵ 3.67) (EtOH).

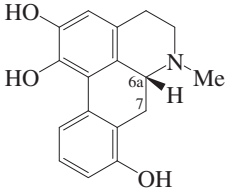
(*S*)-*form*

2,3-Di-Me ether: ***(+)-N-Methylisopiline***
[119060-85-4]
$C_{19}H_{21}NO_3$ 311.38
Trace alkaloid from roots and stems of *Neostenanthera gabonensis* (Annonaceae). Gum. $[\alpha]_D^{20}$ +53 (c, 0.05 in MeOH) (semisynthetic).

2,3-Di-Me ether, N-*de-Me:* ***(+)-Isopiline***
[119060-84-3]
$C_{18}H_{19}NO_3$ 297.353
Alkaloid from the roots and stems of *Neostenanthera gabonensis* (Annonaceae). Oil. $[\alpha]_D^{20}$ +55 (c, 0.15 in MeOH). λ_{max} 273 ; 291 (sh) ; 311 (MeOH). λ_{max} 256 (sh) ; 275 ; 341 (MeOH/NaOH).

Ziyaev, R. *et al., Khim. Prir. Soedin.*, 1973, **9**, 67-70; 505-506; *Chem. Nat. Compd. (Engl. Transl.)*, 59-61; 475-476 (*Lirinine, Lirinine N-oxide,* O-*Methyllirinine*)
Abdusamatov, A. *et al., Khim. Prir. Soedin.*, 1975, **11**, 812-813; *Chem. Nat. Compd. (Engl. Transl.)*, 1975, **11**, 829-830 (*Liridinine*)
Hufford, C.D. *et al., Phytochemistry*, 1976, **15**, 1169-1171 (*Tuliferoline*)
Hocquemiller, R. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1977, **285**, 447-450 (O-*Methyllirinine, Isopiline*)
Wiriyachitra, P. *et al., J.O.C.*, 1977, **42**, 2274-2277 (*Lirinine,* O-*Methyllirinine, synth*)
Chen, C.-L. *et al., Phytochemistry*, 1978, **17**, 779-782 (*O-Methyllirinine, isol, struct*)
Achenbach, H. *et al., Annalen*, 1982, 1132-1141; 1623-1633 (*3-Hydroxynornuciferine, 3-Hydroxy-6a,7-dehydronuciferine*)
Zarga, M.H.A. *et al., J. Nat. Prod.*, 1982, **45**, 471-475 (O-*Methyllirinine, 3-Hydroxynornuciferine, Isopiline, Norliridinine*)
Abd-El Atti, S. *et al., J. Nat. Prod.*, 1982, **45**, 476-480 (*3-Hydroxynornuciferine*)
Hoquemiller, R. *et al., J. Nat. Prod.*, 1983, **46**, 335-341 (*O-Methylisopiline*)
Leboeuf, M. *et al., Planta Med.*, 1983, **48**, 234-245 (*Isopiline, isol, cmr*)
Villar, A. *et al., Farm. Tijdschr. Belg.*, 1984, **61**, 300 (*Isopiline, O-Methylisopiline, activity*)
Cortes, D. *et al., J. Nat. Prod.*, 1986, **49**, 878-884 (*Guatteria ouregou constits*)
Villar, A. *et al., Planta Med.*, 1986, **52**, 556-557 (*3-Hydroxynuciferine, activity*)
Renner, C. *et al., J. Nat. Prod.*, 1988, **51**, 973-976 (*(+)-Isopiline, (+)-N-methylisopiline*)
Deng, Y. *et al., Nat. Prod. Res.*, 2007, **21**, 28-32 (*1-De-O-methyldehydroformouregine*)

1,2,8-Trihydroxyaporphine T-522



(*R*)-*form*

$C_{17}H_{17}NO_3$ 283.326

(*R*)-*form*

1,2-Methylene, 8-Me ether: 8-Methoxy-1,2-methylenedioxyaporphine. ***Stephanine***
[517-63-5]
$C_{19}H_{19}NO_3$ 309.364
Alkaloid from *Stephania capitata* and *Stephania japonica* (Menispermaceae). Mp 155-157°. $[\alpha]_D$ -92.5 ($CHCl_3$).

1,2-Methylene, 8-Me ether, N-*Me:* Mp 211-215° (as iodide).

6a,*7-Didehydro, 1,2-methylene, 8-Me ether:* ***Dehydrostephanine***
[76907-76-1]
$C_{19}H_{17}NO_3$ 307.348
Alkaloid from the root tubers of *Stephania kwangsiensis* and *Stephania micrantha*, and from the seeds of *Stephania cepharantha* (Menispermaceae). Mp 161-163°.

7R-*Hydroxy, 1,2-methylene, 8-Me ether: 7-Hydroxy-8-methoxy-1,2-methylenedioxyaporphine.* ***Ayuthianine***
[82413-18-1]
$C_{19}H_{19}NO_4$ 325.363
Alkaloid from the tuberous roots of *Stephania venosa* (Menispermaceae). Amorph.

(±)-*form*

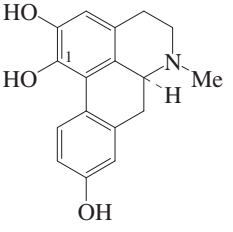
1,2-Methylene, 8-Me ether: Synthetic. Prisms (Me_2CO). Mp 136-137° (131-133°).

1,2-Methylene, 8-Me ether, hydrochloride: Needles (MeOH/Et_2O). Mp 269-270° dec.

1,2-Methylene, 8-Me ether, N-*Me:* Needles (as iodide). Mp 212-214° (iodide).

Shirai, H. *et al., Yakugaku Zasshi*, 1956, **76**, 1287; *CA*, **51**, 9646f (*Stephanine*)
Tomita, M. *et al., Yakugaku Zasshi*, 1957, **77**, 290; 1963, **83**, 996; *CA*, **51**, 11362h; **60**, 4202a (*Stephanine, isol, synth, struct*)
Hey, D.H. *et al., J.C.S.*, 1958, 1876 (*synth*)
Watanabe, Y. *et al., Phytochemistry*, 1975, **14**, 2522 (*synth, uv, ir, pmr, ms*)
Min, Z.-D. *et al., Yaoxue Xuebao*, 1980, **15**, 532; 1981, **16**, 557; *CA*, **94**, 117773m; **97**, 3595m (*Dehydrostephanine*)
Kunitomo, J. *et al., Yakugaku Zasshi*, 1981, **101**, 951; *CA*, **96**, 31640v (*Dehydrostephanine*)
Kunitomo, J. *et al., Heterocycles*, 1982, **19**, 1883 (*Stephanine, cd, ord, cryst struct, abs config*)
Guinaudeau, H. *et al., J. Nat. Prod.*, 1982, **45**, 355 (*Ayuthianine, isol, uv, pmr, ms, cd, struct*)
Bartley, J.P. *et al., Phytochemistry*, 1994, **36**, 1327-1331 (*Stephanine, Ayuthianine, isol, pmr, cmr*)
Blanchfield, J.T. *et al., Phytochemistry*, 2003, **63**, 711-720 (*Stephanine, Ayuthianine, pmr, cmr*)

1,2,9-Trihydroxyaporphine T-523



$C_{17}H_{17}NO_3$ 283.326

(*S*)-*form*

2,9-Di-Me ether: ***1-Hydroxy-2,9-dimethoxyaporphine. Orientinine***
[92008-87-2]
$C_{19}H_{21}NO_3$ 311.38
Alkaloid from *Papaver orientale* (Papaveraceae). Amorph. $[\alpha]_D$ +62 (c, 0.18 in MeOH). λ_{max} 275 ; 315 (sh) (no solvent reported).

2,9-Di-Me ether, N-*de-Me:* ***1-Hydroxy-2,9-dimethoxynoraporphine****. 2,9-Dimethoxy-1-hydroxynoraporphine (incorr.).* N-*Nororientinine*
[126622-47-7]
$C_{18}H_{19}NO_3$ 297.353
Alkaloid from trunk wood of *Ocotea caesia* (Lauraceae). Amorph. $[\alpha]_D^{25}$ +61 (c, 0.11 in MeOH). λ_{max} 245 (log ϵ 4.23); 289 (log ϵ 4.36); 326 (log ϵ 4.38) (MeOH).

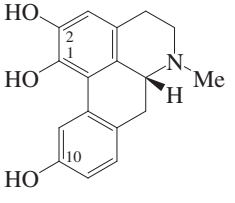
Tri-Me ether: 1,2,9-Trimethoxyaporphine. ***Orientine***†
[90275-85-7]
$C_{20}H_{23}NO_3$ 325.407
Alkaloid from *Papaver orientale* epigeal parts (Papaveraceae). $[\alpha]_D$ +70 (c, 0.16 in MeOH). λ_{max} 278 (log ϵ 4.25); 310 (sh) (log ϵ 3.21) (no solvent reported).

Israilov, I.A. *et al., Khim. Prir. Soedin.*, 1984, **20**, 81; 258; *Chem. Nat. Compd. (Engl. Transl.)*, 1984, **20**, 76-78; 243-244 (*Orientine, Orientinine*)

Yariwake, J.H. *et al., Phytochemistry*, 1989, **28**, 3577-3578 (*1-Hydroxy-2,9-dimethoxynoraporphine*)

1,2,10-Trihydroxyaporphine T-524

*5,6,6*a*,7-Tetrahydro-6-methyl-4*H*-dibenzo[*de*,g*]quinoline-1,2,10-triol, 9CI*



(*R*)-*form*

$C_{17}H_{17}NO_3$ 283.326

(*R*)-*form*

1-Me ether, N-*de-Me: Apocrotonosine*
$C_{17}H_{17}NO_3$ 283.326
Mp 218-220° (hydrochloride hemihydrate). $[\alpha]_D$ -148 (c, 0.42 in H_2O). Rearrangement prod. of Crotonosine, in P-643.

2-Me ether: 1,10-Dihydroxy-2-methoxyaporphine. ***Apoglaziovine****.* N-*Methylsparsiflorine*
[2128-77-0]
$C_{18}H_{19}NO_3$ 297.353
Alkaloid from the leaves of *Ocotea glaziovii* (Lauraceae). Hypotensive agent. Cryst. + $1H_2O$. Mp 149-152° dec. $[\alpha]_D^{26}$ -35 (c, 0.2 in $CHCl_3$). This product must be partly racemic.

2-Me ether, N-*de-Me, tri-Ac:* Mp 196-197°.

1,2-Di-Me ether: 10-Hydroxy-1,2-dimethoxyaporphine. ***Nuciferoline***
[1862-49-3]
$C_{19}H_{21}NO_3$ 311.38
Alkaloid from *Papaver caucasicum* (Papaveraceae). Also obt. by the dienone-phenol rearr. of Pronuciferine, P-643. Cryst. (EtOH). Mp 227-229°. $[\alpha]_D^{20}$ -157 (c, 0.180 in EtOH).

1,2-Di-Me ether, N-*Me:* ***Amurenine***
[169626-39-5]
[169211-34-1]
$C_{20}H_{24}NO_3^{\oplus}$ 326.414
Quaternary alkaloid from young shoots of *Berberis amurensis*. Cryst. (Me_2CO) (as chloride). Mp 194-195° (chloride). $[\alpha]_D$ -164 (c, 0.03 in MeOH) (chloride).

1,2-Di-Me ether, N-*de-Me: 10-Hydroxy-1,2-dimethoxynoraporphine.* ***Tuduranine****. Tsuduranine*
[517-97-5]
$C_{18}H_{19}NO_3$ 297.353
Alkaloid from *Sinomenium acutum*, the root tubers of *Stephania rotunda* and the bark and leaves of *Polyalthia acuminata* (Menispermaceae, Annonaceae). Poorly cryst. Mp 105-125° Mp 204°.

1,2-Di-Me ether, N-*de-Me, hydrochloride:* Prisms (H_2O). Mp 286° dec. $[\alpha]_D^{14.5}$ -148 (MeOH aq.).

1,2-Di-Me ether, N-*de-Me,* N,O-*di-Ac:* Prisms (MeOH or EtOH). Mp 170°. $[\alpha]_D^{14}$ -321.71 (MeOH).

1,10-Di-Me ether: 2-Hydroxy-1,10-dimethoxyaporphine. ***Phoebe base II***
$C_{19}H_{21}NO_3$ 311.38
Alkaloid from *Phoebe* sp. (Lauraceae). Mp 198-200°. $[\alpha]_D$ +160 ($CHCl_3$).

2,10-Di-Me ether: 1-Hydroxy-2,10-dimethoxyaporphine. ***Pulchine****.* N-*Methylzenkerine*
[114579-00-9]
$C_{19}H_{21}NO_3$ 311.38
Constit. of *Ocotea caesia* and *Ocotea pulchella* (Lauraceae). Cryst. (MeOH). Mp 58-60°. $[\alpha]_D^{25}$ -128 (c, 0.19 in MeOH).

2,10-Di-Me ether, N-*Me:* **N,N-*Dimethylzenkerine****.* N-*Methylpulchine*
[866269-27-4]
$C_{20}H_{24}NO_3^{\oplus}$ 326.415
Quaternary alkaloid from *Monodora grandidieri* and *Monodora junodii*.

2,10-Di-Me ether, N-*de-Me: 1-Hydroxy-2,10-dimethoxynoraporphine.* ***Zenkerine***†*. 10-Methoxycaaverine*
[65953-82-4]
$C_{18}H_{19}NO_3$ 297.353
Alkaloid from the trunk bark of *Isolona pilosa* and from *Isolona zenkeri* (Annonaceae). Cryst. (MeOH). Mp 73-76°. $[\alpha]_D^{25}$ -103 (c, 0.17 in MeOH).

Tri-Me ether: 1,2,10-Trimethoxyaporphine. **N,O,O-*Trimethylsparsiflorine***
$C_{20}H_{23}NO_3$ 325.407
Alkaloid from the rhizomes of *Thalictrum foliolosum* (Ranunculaceae).

Tri-Me ether, N-*Me:* Cryst. (MeOH) (as iodide). Mp 210-212° dec. (iodide).

Tri-Me ether, N-*de-Me,* N-*Ac:* Prisms (EtOH). Mp 189°. $[\alpha]_D^{18}$ -400.17 ($CHCl_3$).

(*S*)-*form*

2-Me ether: ***(+)-Apoglaziovine***
[18058-59-8]
$C_{18}H_{19}NO_3$ 297.353
Alkaloid from *Ocotea variabilis* (Lauraceae). Mp 249-252° dec. $[\alpha]_D^{25}$ +165 ($CHCl_3$).

2-Me ether, N-*de-Me: 1,10-Dihydroxy-2-methoxynoraporphine.* ***Sparsiflorine***
[2128-61-2]
$C_{17}H_{17}NO_3$ 283.326
Alkaloid from the leaves of *Croton sparsiflorus* (Euphorbiaceae). Needles (EtOH). Mp 228° dec. $[\alpha]_D^{30}$ +43 (H_2O) (hydrochloride).

1,2-Di-Me ether: ***(+)-Nuciferoline***
[6874-94-8]
$C_{19}H_{21}NO_3$ 311.38
Alkaloid from *Papaver caucasicum* (Papaveraceae). Also obt. by the dienone-phenol rearr. of Pronuciferine (*S*)-form, P-643. Prisms (EtOH). Mp 225-227°. $[\alpha]_D^{21}$ +160 (c, 0.31 in EtOH).

1,2-Di-Me ether, hydrobromide: [20827-79-6]
Needles (MeOH/Et_2O). Mp 222-226° dec.

1,2-Di-Me ether, N-*Me:*
Needles (MeOH/Et_2O). Mp 220-222° dec.

1,2-Di-Me ether, N-*de-Me,* N-*methoxycarbonyl:* ***Romucosine C***
[356048-25-4]
$C_{20}H_{21}NO_5$ 355.39
Alkaloid from *Rollinia mucosa* (biriba). Amorph. powder. $[\alpha]_D^{25}$ +140 (c, 0.05 in $CHCl_3$). λ_{max} 265 (log ϵ 4.25); 280 (log ϵ 4.02); 305 (log ϵ 4.35) (MeOH).

Tri-Me ether: [82444-06-2]
Alkaloid from the rhizomes of *Thalictrum foliolosum* (Ranunculaceae). Mp 124-126°.

Tri-Me ether, N-*de-Me,* N-*methoxycarbonyl:* ***Romucosine D***
[356048-26-5]
$C_{21}H_{23}NO_5$ 369.416
Alkaloid from *Rollinia mucosa* (biriba). Amorph. powder. $[\alpha]_D^{25}$ +145 (c, 0.05 in $CHCl_3$). λ_{max} 263 (log ϵ 4.33); 275 (log ϵ 4.22); 307 (log ϵ 3.75) (MeOH).

(±)-*form*

2-Me ether: ***(±)-Apoglaziovine***
[56261-23-5]
$C_{18}H_{19}NO_3$ 297.353
Alkaloid from the leaves of *Ocotea glaziovii* (Lauraceae).

2-Me ether, N-*de-Me:*
[33074-89-4 (HCl salt)] Synthetic. Pale brown cryst. (MeOH) (as hydrochloride). Mp 300° (hydrochloride). CAS no. refers to hydrochloride.

1,2-Di-Me ether: [28277-74-9]
Synthetic. Plates (C_6H_6). Mp 211-213°.

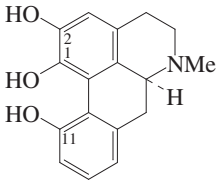
1,2-Di-Me ether, N-*de-Me:*Synthetic. Cryst. (MeOH) (as hydrochloride). Mp 282° (hydrochloride).

Tri-Me ether: [28277-71-6]
$C_{20}H_{23}NO_3$ 325.407
Synthetic. Oil.

Goto, K. *et al., Annalen*, 1936, **521**, 175-184 (*Tuduranine, isol, uv*)
Bernauer, K. *et al., Helv. Chim. Acta*, 1964, **47**, 2122-2129 (*Nuciferoline, synth*)
Gilbert, B. *et al., J.A.C.S.*, 1964, **86**, 694-696 (*Pulchine, isol, uv, ir, pmr, struct, Tuduranine, pmr*)
Chatterjee, A. *et al., Tet. Lett.*, 1965, 1539-1544 (*uv, pmr, struct, Sparsiflorine*)
Haynes, L.J. *et al., J.C.S.(C)*, 1966, 1676-1679 (*Apocrotonosine, synth*)
Tomita, M. *et al., Yakugaku Zasshi*, 1966, **86**, 871-873 (*Tuduranine*)
Narayanaswami, S. *et al., Indian J. Chem.*, 1969, **7**, 945-947; 1971, **9**, 509-511 (*Tuduranine, Sparsiflorine, Apoglaziovine, synth*)
Ishiwata, S. *et al., Chem. Pharm. Bull.*, 1970, **18**, 1219-1223 (*(±)-form, synth*)
Raffauf, R. *et al., Handb. Alkaloids Alkaloid-Containing Plants*, Wiley, N.Y., 1970, (*Phoebe base II*)
Bhakuni, D.S. *et al., Phytochemistry*, 1970, **9**, 2573-2580; 1974, **13**, 2767-2769 (*isol, uv, ir, pmr, biosynth, Sparsiflorine*)
Cava, M.P. *et al., Tet. Lett.*, 1972, 4647-4649 (*isol, (+)-Apoglaziovine*)
Bhakuni, D.S. *et al., Tetrahedron*, 1972, **28**, 4579-4582 (*Sparsiflorine, abs config*)
Casagrande, C. *et al., Farmaco, Ed. Sci.*, 1975, **30**, 479; *CA*, **83**, 93873p (*(±)-Apoglaziovine*)
Cava, M.P. *et al., J.O.C.*, 1975, **40**, 1553-1556 (*Nuciferoline, synth*)
Hocquemiller, R. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1977, **285**, 447 (*Zenkerine*)
Guinaudeau, H. *et al., J. Nat. Prod.*, 1979, **42**, 325-360 (*rev, cmr, Apoglaziovine*)
Hara, H. *et al., Chem. Pharm. Bull.*, 1981, **29**, 1083 (*synth*)
Bhakuni, D.S. *et al., J. Nat. Prod.*, 1982, **45**, 252-255 (*S-form, isol, uv, ir, pmr, ms*)
Zarga, M.H.A. *et al., J. Nat. Prod.*, 1982, **45**, 471-475 (*Tuduranine, isol*)
Cassels, B.K. *et al., J. Nat. Prod.*, 1987, **50**, 297-300 (*cmr, pmr, Apoglaziovine, Zenkerine, Nuciferoline*)
Vilegas, J.H.Y. *et al., Phytochemistry*, 1989, **28**, 3577-3578 (*Zenkerine, Pulchine*)
Yusupov, M.M. *et al., Khim. Prir. Soedin.*, 1993, **29**, 401-404; *Chem. Nat. Compd. (Engl. Transl.)*, 1993, **29**, 338-340 (*Amurenine*)
Kuo, R.Y. *et al., Phytochemistry*, 2001, **57**, 421-425 (*Romucosines*)
Nishiyama, Y. *et al., Nat. Med. (Tokyo)*, 2004, **58**, 303-306; *CA*, **143**, 363319h (*N,N-Dimethylzenkerine*)

1,2,11-Trihydroxyaporphine T-525

*5,6,6a,7-Tetrahydro-6-methyl-4*H*-dibenzo[*de,g*]quinoline-1,2,11-triol, 9CI*



$C_{17}H_{17}NO_3$ 283.326

▶CE1017000

(S)-form

2-Me ether: 1,11-Dihydroxy-2-methoxyaporphine. ***Isothebaidine***
[68156-56-9]
$C_{18}H_{19}NO_3$ 297.353
Alkaloid from the aerial parts of flowering *Papaver orientale* (Papaveraceae). Mp 236-237° dec. $[\alpha]_D$ +321 (c, 0.5 in MeOH).

1,2-Di-Me ether: ***11-Hydroxy-1,2-dimethoxyaporphine***
[95652-98-5]
$C_{19}H_{21}NO_3$ 311.38
Alkaloid from the twigs of *Discaria serratifolia* var. *montana* (Rhamnaceae). Amorph. solid (EtOH). Mp 230-231°. $[\alpha]_D^{20}$ +244 (c, 0.037 in $CHCl_3$).

2,11-Di-Me ether: 1-Hydroxy-2,11-dimethoxyaporphine. ***Isothebaine***
[568-21-8]
$C_{19}H_{21}NO_3$ 311.38
Alkaloid from *Papaver orientale* and *Papaver bracteatum* (Papaveraceae). Convulsive agent in high doses. Small doses increase muscle tonus in intestinal tissue, higher doses produce relaxation. Increases tonus in uterine tissue. Respiratory depressant, shows analgesic and some antiinflammatory action. Mp 164-166° (203-204°). $[\alpha]_D^{21}$ +281 (c, 1.11 in $CHCl_3$). λ_{max} 228 (log ϵ 4.12); 271 (log ϵ 4.07); 294 (sh) (log ϵ 3.81) (MeOH).
▶LD_{50} (mus, scu) 26 mg/kg.

2,11-Di-Me ether, N-*oxide:* ***Isothebaine* N-*oxide***
$C_{19}H_{21}NO_4$ 327.379
Alkaloid from *Papaver pseudo-orientale.* Amorph. $[\alpha]_D$ +260 ($CHCl_3$).

2,11-Di-Me ether, N-*Me:* **N-*Methylisothebainium***
[25651-02-9]
$C_{20}H_{24}NO_3^{\oplus}$ 326.414
Alkaloid from *Papaver orientale*, *Papaver pseudo-orientale* and *Papaver bracteatum*. Needles (MeOH) (as iodide). Mp 254-256° (249-253°) (iodide). $[\alpha]_D^{21}$ +194 (c, 0.51 in MeOH). CAS no. refers to iodide. λ_{max} 210 (log ϵ 4.5); 271 (log ϵ 4.24); 314 (log ϵ 3.66) (MeOH).

Tri-Me ether: 1,2,11-Trimethoxyaporphine. **O-*Methylisothebaine***
[90275-86-8]
$C_{20}H_{23}NO_3$ 325.407
Alkaloid from *Papaver orientale* (Papaveraceae). Mp 98°. $[\alpha]_D$ +26 (c, 0.45 in $CHCl_3$). λ_{max} 273 (log ϵ 4.26); 303 (log ϵ 3.31) (EtOH).

Tri-Me ether, N-*de-Me:* ***1,2,11-Trimethoxynoraporphine***
[111261-80-4]
$C_{19}H_{21}NO_3$ 311.38
Alkaloid from leaves and stems of *Discaria chacaye.*

Tri-Me ether, N-*Me:* ***Zanthoxyphylline.*** *Xanthoxyphylline*
[68711-44-4]
$C_{21}H_{26}NO_3^{\oplus}$ 340.441
Quaternary alkaloid from the roots of *Zanthoxylum oxyphyllum* (Rutaceae). Cryst. (MeOH). Mp 202° dec. (as hydroxide) Mp 300° (as iodide). $[\alpha]_D^{22}$ +51.7 (MeOH). λ_{max} 230 ; 278 (sh) ; 310 (EtOH).

6a,7-Didehydro, 2,11-di-Me ether: ***Dehydroisothebaine***
[25984-81-0]
$C_{19}H_{19}NO_3$ 309.364
Alkaloid from *Papaver orientale* (Papaveraceae). λ_{max} 267 ; 340 ; 391 ; 439 (no solvent reported).

6a,7-Didehydro, tri-Me ether: ***Orientidine***
[90275-84-6]
$C_{20}H_{21}NO_3$ 323.391
Alkaloid from *Papaver orientale* (Papaveraceae). λ_{max} 215 (log ϵ 4.45); 271 (log ϵ 4.39); 340 (log ϵ 3.38) (EtOH).

(R)-form

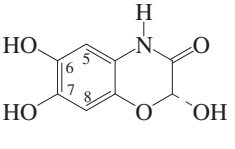
1,2-Methylene ether: see Pukateine, P-781

(±)-form

Tri-Me ether:
Cryst. (petrol). Mp 98°. CAS no. not found 8-14 CI. λ_{max} 230 (log ϵ 4.1); 270 (log ϵ 4.1); 300 (log ϵ 3.9) (no solvent reported).

Govindachari, T.R. *et al., J.O.C.*, 1953, **18**, 1352-1355 (*tri-Me ether, synth*)
Battersby, A.R. *et al., J.C.S.*, 1965, 4550-4556 (*synth, stereochem*)
Battersby, A.R. *et al., Chem. Comm.*, 1969, 464-465 (*biosynth*)
Israelov, I.A. *et al., Khim. Prir. Soedin.*, 1978, **14**, 474-475; *Chem. Nat. Compd. (Engl. Transl.)*, 1978, **14**, 402-403 (*Isothebaidine*)
Tiwari, K.P. *et al., Phytochemistry*, 1978, **17**, 1068-1069 (*Zanthoxyphylline*)
Slavík, J. *et al., Coll. Czech. Chem. Comm.*, 1980, **45**, 914-920; 1985, **50**, 1216-1226; 1991, **56**, 1534-1538 (*N-Methylisothebainium*)
Dolejš, L. *et al., Coll. Czech. Chem. Comm.*, 1984, **49**, 2816-2818 (*N-Methylisothebaine, ms*)
Rivera, A. *et al., J. Nat. Prod.*, 1984, **47**, 1040 (*11-Hydroxy-1,2-dimethoxyaporphine*)
Israilov, I.A. *et al., Khim. Prir. Soedin.*, 1984, **20**, 81-83; 258-259; *Chem. Nat. Compd. (Engl. Transl.)*, 76-78; 243-244 (*Orientidine, O-Methylisothebaine, Dehydroisothebaine*)
Vêžnik, F. *et al., Coll. Czech. Chem. Comm.*, 1986, **51**, 1752-1763 (*N-Methylisothebainium, N-Methylisothebaine*)
Correa, C. *et al., Bol. Soc. Chil. Quim.*, 1987, **32**, 105; *CA*, **107**, 214795q (*1,2,11-Trimethoxynoraporphine*)
Shakirov, R. *et al., Khim. Prir. Soedin.*, 1996, **32**, 761-863; *Chem. Nat. Compd. (Engl. Transl.)*, 1996, **32**, 737-858 (*Isothebaine N-oxide*)
Marek, R. *et al., Magn. Reson. Chem.*, 1999, **37**, 195-202; 2002, **40**, 687-692 (*Isothebaine, N-15 nmr, cryst struct*)

2,6,7-Trihydroxy-2*H*-1,4-benzoxazin-3(4*H*)-one T-526



$C_8H_7NO_5$ 197.147

(R)-form

N-*Hydroxy, 6,7-di-Me ether: 2,4-Dihydroxy-6,7-dimethoxy-2*H*-1,4-benzoxazin-3(4*H*)-one, 9CI*
[67467-45-2]
$C_{10}H_{11}NO_6$ 241.2
Constit. of sweet corn (*Zea mays*).

Hofman, J. *et al., Phytochemistry*, 1973, **12**, 207-208

2,7,8-Trihydroxy-2*H*-1,4-benzoxazin-3(4*H*)-one T-527

$C_8H_7NO_5$ 197.147

(R)-form

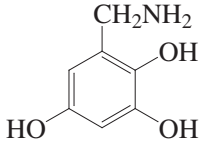
N-*Hydroxy, 7,8-di-Me ether: 2,4-Dihydroxy-7,8-dimethoxy-2*H*-1,4-benzoxazin-3(4*H*)-one, 9CI*
[60032-92-0]
$C_{10}H_{11}NO_6$ 241.2
Constit. of wheat and sweet corn.

N-*Hydroxy, 7,8-di-Me ether, 2-O-β-D-glucopyranoside:* [40246-08-0]
$C_{16}H_{21}NO_{11}$ 403.342
Isol. from sweet corn *(Zea mays)*.

Hofman, J. *et al., Phytochemistry*, 1973, **12**, 207-208

2,3,5-Trihydroxybenzylamine T-528

6-(Aminomethyl)-1,2,4-benzenetriol, 9CI. α-Amino-2,3,5-trihydroxytoluene



$C_7H_9NO_3$ 155.153

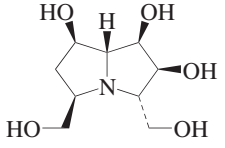
N-*Me, 3-O-β-D-glucopyranoside:* ***Zinolol***
[942626-27-9]
$C_{14}H_{21}NO_8$ 331.322
Constit. of *Anagallis monelli*. Antioxidant and mutagenic agent. Amorph. solid. Mp 164-166°. $[\alpha]_D^{25}$ -375 (c, 0.04 in MeOH). λ_{max} 244 (ϵ 10450) (MeOH).

▶ Mutagen.

Ammar, S. *et al., Chem. Pharm. Bull.*, 2007, **55**, 385-388 (*Zinolol*)

1,2,7-Trihydroxy-3,5-bis(hydroxymethyl)-1*H*-pyrrolizidine T-529

*Hexahydro-1,2,7-trihydroxy-1*H*-pyrrolizidine-3,5-dimethanol*



(1*R**,2*S**,3*S**,5*R**,7*R**,7*aR**)-*form*

$C_9H_{17}NO_5$ 219.237

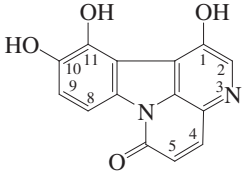
(1R*,2S*,3S*,5R*,7R*,7aR*)-form Hyacinthacine C$_2$
[944408-25-7]
Alkaloid from the bulbs of *Scilla socialis*. Glycosidase inhibitor. Powder. $[\alpha]_D$ +12.9 (c, 0.22 in H_2O).

(1R*,2S*,3S*,5R*,7S*,7aR*)-form Hyacinthacine C$_3$
[944408-26-8]
Alkaloid from the bulbs of *Scilla socialis*. Powder. $[\alpha]_D$ +3.5 (c, 0.23 in H_2O).

Kato, A. *et al., J. Nat. Prod.*, 2007, **70**, 993-997 (*isol, pmr, cmr*)

1,10,11-Trihydroxycanthin-6-one T-530

*1,10,11-Trihydroxy-6*H*-indolo[3,2,1-de][1,5]naphthyridin-6-one, 9CI*



$C_{14}H_8N_2O_4$ 268.228

1,11-Di-Me ether: 10-Hydroxy-1,11-dimethoxycanthin-6-one. ***Bruceolline C***
[165967-62-4]
$C_{16}H_{12}N_2O_4$ 296.282
Alkaloid from root bark of *Brucea mollis* var. *tonkinensis* (Simaroubaceae). Amorph. yellow powder. λ_{max} 276 (sh) (log ϵ 3.37); 286 (log ϵ 3.45); 350 (log ϵ 3.35); 370 (log ϵ 3.35) (MeOH).

Ouyang, Y. *et al., Phytochemistry*, 1995, **39**, 911-913 (*isol, uv, ir, pmr, cmr, ms, struct*)

4,5,10-Trihydroxycanthin-6-one T-531

$C_{14}H_8N_2O_4$ 268.228

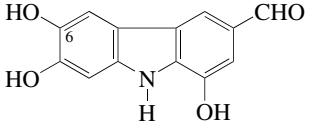
5-Me ether: 4,10-Dihydroxy-5-methoxycanthin-6-one. ***Picrasidine W***
[155416-28-7]
$C_{15}H_{10}N_2O_4$ 282.255
Alkaloid from the wood of *Picrasma quassioides* (Simaroubaceae). Pale yellow needles (MeOH). Mp 225-227°. λ_{max} 230 (log ϵ 4.53); 242 (log ϵ 4.5); 254 (sh) (log ϵ 4.44); 282 (log ϵ 4.4); 304 (sh) (log ϵ 4.13); 355 (log ϵ 4.21); 370 (log ϵ 4.21) (MeOH).

Tri-Me ether:
Pale yellow needles. Mp 258-260°.

Li, H.-Y. *et al., Chem. Pharm. Bull.*, 1993, **41**, 1807-1811 (*isol, uv, ir, pmr, cmr, ms, struct*)

1,6,7-Trihydroxy-9*H*-carbazole-3-carboxaldehyde T-532

3-Formyl-1,6,7-trihydroxycarbazole



$C_{13}H_9NO_4$ 243.218

*6-Me ether: 1,7-Dihydroxy-6-methoxy-9*H*-carbazole-3-carboxaldehyde.* ***Clausine J***
[186002-91-5]
$C_{14}H_{11}NO_4$ 257.245
Alkaloid from stem bark of *Clausena excavata*. Powder (Me_2CO). Mp >290°. λ_{max} 235 ; 255 (sh) ; 289 ; 305 ; 347 (sh) (MeOH).

Wu, T.-S. *et al., Phytochemistry*, 1996, **43**, 1427 (*Clausine J*)

2,6,8-Trihydroxy-9*H*-carbazole-3-carboxaldehyde T-533

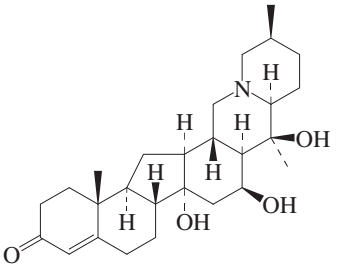
6-Formyl-1,3,7-trihydroxycarbazole

$C_{13}H_9NO_4$ 243.218

*6,8-Di-Me ether: 2-Hydroxy-6,8-dimethoxy-9*H*-carbazole-3-carboxaldehyde. 6-Formyl-7-hydroxy-1,3-dimethoxycarbazole.* ***Clausine B***
[182261-81-0]
$C_{15}H_{13}NO_4$ 271.272
Alkaloid from stem bark of *Clausena excavata*. Yellow needles (Me_2CO). Mp 228-229°. λ_{max} 210 (log ϵ 4.28); 235 (log ϵ 4.3); 269 (sh) (log ϵ 4.24); 278 (log ϵ 4.32); 304 (log ϵ 4.36); 357 (log ϵ 3.83) (MeOH).

Wu, T.-S. *et al., Phytochemistry*, 1996, **43**, 133-140 (*Clausine B*)

14,16,20-Trihydroxycev-4-en-3-one T-534

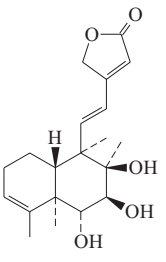


$C_{27}H_{41}NO_4$ 443.625

(16β,20β)-form Veratrenone
[55839-66-2]
Alkaloid from *Veratrum album* var. *grandiflorum* (*Veratrum grandiflorum*) (Liliaceae). Mp 217-218°. $[\alpha]_D$ +60.5 (EtOH). λ_{max} 240 (14000) (EtOH).

Takasugi, M. *et al., Chem. Lett.*, 1974, 1477-1480 (*isol, ir, uv, pmr, cryst struct*)

6,7,8-Trihydroxy-3,11,13-clerodatrien-15,16-olide T-535



$C_{20}H_{28}O_5$ 348.438

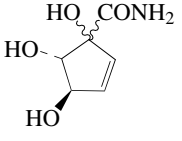
(*ent*-6β,7α,8α,11*E*)-*form*
Barbatin C
[905929-94-4]
Constit. of *Scutellaria barbata*. Cryst. Mp 156-158°. $[\alpha]_D^{29}$ -103.8 (c, 0.14 in MeOH). λ_{max} 220 ; 257 ($CDCl_3$).

6-O-*(3-Pyridinecarbonyl), 7-benzoyl:* ***Scutebarbatine B***
[905929-95-5]
$C_{33}H_{35}NO_7$ 557.642
Constit. of *Scutellaria barbata*. Cryst. Mp 151-153°. $[\alpha]_D^{29}$ -109.6 (c, 0.13 in MeOH). λ_{max} 217 ; 222 ; 257 ($CDCl_3$).

6,7-Bis(3-pyridinecarbonyl): ***Scutebarbatine A***
[176520-13-1]
$C_{32}H_{34}N_2O_7$ 558.63
Constit. of *Scutellaria barbata*. Needles (Me_2CO). Mp 148-150°. $[\alpha]_D^{20}$ -128.7 (c, 0.2 in MeOH).

Wang, Z.-Q. *et al., Chin. Chem. Lett.*, 1996, **7**, 333-334 (*isol, pmr, cmr*)
Dai, S.-J. *et al., Phytochemistry*, 2006, **67**, 1326-1330 (*Barbatin C, Scutebarbatine B*)

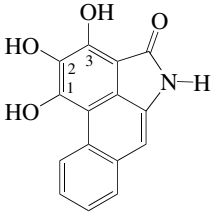
1,4,5-Trihydroxy-2-cyclopentene-1-carboxamide T-536



$C_6H_9NO_4$ 159.141
Alkaloid from *Lindackeria dentata*. Cubes (MeOH). Mp 208-210°. $[\alpha]_D$ -10 (c, 0.1 in MeOH). Shown to be a mixt. of diastereoisomers by synth.

Gibbons, S. *et al., Phytochemistry*, 1998, **49**, 2395-2396 (*isol, ir, pmr, cmr, ms*)
Jaroszewski, J.W. *et al., Planta Med.*, 2004, **70**, 1001-1003 (*synth, pmr, cmr*)

1,2,3-Trihydroxydibenz[*cd,f*]indol-4(5*H*)-one, 9CI T-537



$C_{15}H_9NO_4$ 267.24
CAS numbering shown. Alternative (phenanthrene) numbering frequently encountered, in which 1,2,3 are 4,3,2- respectively.

1,2-Di-Me ether: ***Piperolactam B***
[128718-51-4]
$C_{17}H_{13}NO_4$ 295.294
Alkaloid from *Piper attenuatum* and *Piper boehmerifolium*. Yellow cryst. (C_6H_6/MeOH). Mp 226-227°. This struct. was originally (1990) assigned to 1,2,3-Trihydroxydibenz[*cd,f*]indol-4(5*H*)-one, T-537.

1,3-Di-Me ether: ***Goniopedaline****. Aristolactam F II. Goniopetaline (incorr.)*
[112501-43-6]
$C_{17}H_{13}NO_4$ 295.294
Alkaloid from the leaves and twigs of *Goniothalamus sesquipedalis* and the root of *Pararistolochia flos-avis*. Shows platelet aggregation inhibitory activity. Fine greenish-yellow cryst. ($CHCl_3$/petrol). Mp 225-227° (218°).

*2,3-Di-Me ether: 1-Hydroxy-2,3-dimethoxydibenz[*cd,f*]indol-4(5*H*)-one, 9CI. 10-Amino-2,3-dimethoxy-4-hydroxyphenanthrene-1-carboxylic acid lactam.* ***Piperolactam D***
[116084-93-6]
$C_{17}H_{13}NO_4$ 295.294
Alkaloid from the roots of *Piper longum* (long pepper), stems of *Piper acutisleginum* and whole plants of *Piper boehmerifolium* (Piperaceae). Greenish-yellow cryst. (MeOH). Mp 222-224°. This struct. was originally assigned to Piperolactam B by Desai *et al* (1988).

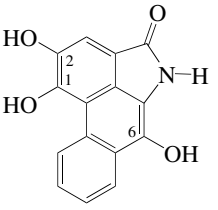
2,3-Di-Me ether, N,O-*di-Ac:*
$C_{21}H_{17}NO_6$ 379.368
Cryst. (C_6H_6). Mp 260-262° (194-195°).

2,3-Di-Me ether, N-*Me:* N-*Methylpiperolactam D.* ***Piperolactam E***
[219687-22-6]
$C_{18}H_{15}NO_4$ 309.321
Alkaloid from *Piper augustum* and *Piper taiwanense*. Greyish needles (C_6H_6/MeOH). Mp 179-181°. λ_{max} 228 (log ϵ 3.9); 269 (sh) (log ϵ 4.11); 296 (log ϵ 3.73); 336 (log ϵ 3.54); 373 (log ϵ 3.31) (MeOH).

*Tri-Me ether: 1,2,3-Trimethoxydibenz[*cd,f*]indol-4(5*H*)-one, 9CI.* ***Piperolactam C***
[116064-76-7]
$C_{18}H_{15}NO_4$ 309.321
Alkaloid from whole plants of *Piper longum* (long pepper) and *Piper boehimerifolium* (Piperaceae). Shows platelet aggregation inhibitory activity. Yellow cryst. (C_6H_6/MeOH). Mp 187-188°.

Priestap, H.A. *et al., Phytochemistry*, 1985, **24**, 849-852 (*Goniopedaline*)
Villar, A. *et al., Planta Med.*, 1986, **52**, 556-557 (*activity*)
Sun, N.J. *et al., J. Nat. Prod.*, 1987, **50**, 843 (*Goniopedaline*)
Talapatra, S.K. *et al., Phytochemistry*, 1988, **27**, 903-906 (*Goniopedaline*)
Desai, S.J. *et al., Indian J. Chem., Sect. B*, 1989, **28**, 775 (*Piperolactam C*)
Olsen, C.E. *et al., Phytochemistry*, 1993, **33**, 518-520 (*Piperolactam B, Piperolactam D*)
Delgado, A.W. *et al., Rev. Colomb. Quim.*, 1998, **27**, 13-21 (*Piperolactam E*)
Chia, Y.-C. *et al., J. Nat. Prod.*, 2000, **63**, 1160-1163 (*isol, activity*)
Rys, V. *et al., Eur. J. Org. Chem.*, 2003, 1231-1237 (*Goniopedaline, Piperolactam C, synth*)
Chen, Y.-C. *et al., Planta Med.*, 2004, **70**, 174-177 (*Piperolactam E*)

1,2,6-Trihydroxydibenz[*cd,f*]indol-4(5*H*)-one, 9CI T-538



$C_{15}H_9NO_4$ 267.24
CAS numbering shown. Alternative (phenanthrene) numbering frequently used, in which 1,2,6- are 4,3,9- respectively.

1,2-Methylene, 6-Me ether: ***9-Methoxyaristolactam II***
[133485-40-2]
$C_{17}H_{11}NO_4$ 293.278
Alkaloid from roots of *Aristolochia auricularia* (Aristolochiaceae). Pale yellow solid.

Houghton, P.J. *et al., Phytochemistry*, 1991, **30**, 253

1,2,7-Trihydroxydibenz[*cd,f*]indol-4(5*H*)-one, 9CI T-539

$C_{15}H_9NO_4$ 267.24
CAS numbering. Alternative (phenanthrene) numbering frequently used in which 1,2,7- become 4,3,8- respectively.

1-Me ether: ***Aristolactam A Ia***
[97399-90-1]
$C_{16}H_{11}NO_4$ 281.267
Alkaloid from the rhizomes of *Aristolochia argentina* (Aristolochiaceae). Cryst. (AcOH). Mp 350°.

1,2-Di-Me ether: ***Velutinam***
[146428-62-8]
Alkaloid from leaves of *Goniothalamus velutinus*. Shows platelet aggregation inhibitory activity. Brownish-yellow needles. Mp 267-270°.

1,7-Di-Me ether: ***Enterocarpam II***
[102719-96-0]
$C_{17}H_{13}NO_4$ 295.294
Alkaloid from stem bark of *Orophea enterocarpa*. Mp 268-272°.

1,7-Di-Me ether, N,O-*di-Ac:*
Cryst. (MeOH). Mp 219-220°.

2,7-Di-Me ether: ***Griffithinam****. Goniofithine. Uvarilactam*
[240122-32-1]
$C_{17}H_{13}NO_4$ 295.294
Alkaloid from the roots of *Goniothalamus griffithii* and the stems of *Uvaria microcarpa*. Pale yellow needles (MeOH). Mp 262-264° Mp 312-314°. λ_{max} 239 (log ϵ 4.43); 257 (log ϵ 4.51); 289 (log ϵ 4.25); 325 (log ϵ 4.05); 340 (log ϵ 3.94); 385 (log ϵ 3.92) (MeOH).

Tri-Me ether: ***Aristolactam B I****. Taliscanine*
[7688-86-0]
$C_{18}H_{15}NO_4$ 309.321
Alkaloid from the roots of *Aristolochia taliscana* (Aristolochiaceae). Mp 272-

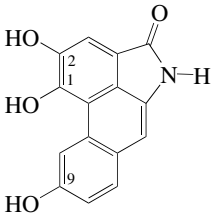
273° (260°).

Tri-Me ether, N-*Ac:* Mp 236-237°.

1,2-Methylene, 7-Me ether: see Aristolactam I, A-1427

Maldonado, L.A. *et al., Ciencia (Mexico City)*, 1966, **24**, 237; *CA*, **65**, 15438e (*Taliscanine*)
Priestap, H.A. *et al., Phytochemistry*, 1985, **24**, 849 (*Aristolactams*)
Mahmood, K. *et al., Phytochemistry*, 1986, **25**, 965-967 (*Enterocarpam II, Velutinam*)
Omar, S. *et al., Phytochemistry*, 1992, **31**, 518 (*Velutinam*)
Zhang, Y.-J. *et al., J. Nat. Prod.*, 1999, **62**, 1050-1052 (*Griffithinam*)
Yu, D.-L. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 1999, **41**, 1104-1107 (*Uvarilactam*)
Chia, Y.-C. *et al., J. Nat. Prod.*, 2000, **63**, 1160-1163 (*isol, activity*)
Hu, Z. *et al., Yaoxue Xuebao*, 2000, **35**, 277-278 (*Gonioffithine*)

1,2,9-Trihydroxydibenz[*cd,f*]indol-4(5*H*)-one, 9CI T-540



$C_{15}H_9NO_4$ 267.24

CAS numbering shown. Alternative (phenanthrene) numbering frequently used, in which 1,2,9- become 4,3,6- respectively.

N-*β*-D-*Glucopyranosyl:* [208774-76-9]
$C_{21}H_{19}NO_9$ 429.382
Alkaloid from *Aristolochia constricta*. Yellow needles. Mp 240-248°. $[\alpha]_D^{25}$ -12 (c, 1 in MeOH).

1-Me ether: ***Aristolactam A IIIa***
[97399-91-2]
$C_{16}H_{11}NO_4$ 281.267
Alkaloid from *Aristolochia argentina* and *Fissistigma* spp. Mp >350°. λ_{max} 212 (log ϵ 4.39); 237 (log ϵ 4.53); 252 (log ϵ 4.38); 260 (sh) (log ϵ 4.37); 279 (log ϵ 4.27); 292 (log ϵ 4.28); 321 (log ϵ 4.08); 402 (log ϵ 3.87) (EtOH).

*1-Me ether, 9-*O-*β*-D-*glucopyranoside:* ***Aristolactam F***
[710319-84-9]
$C_{22}H_{21}NO_9$ 443.409
Alkaloid from *Aristolochia elegans*. Yellow syrup. $[\alpha]_D^{25}$ -7.8 (c, 0.7 in MeOH). λ_{max} 240 (log ϵ 4.55); 246 (log ϵ 4.33); 280 (log ϵ 4.23); 290 (log ϵ 4.15); 324 (log ϵ 4.02) (MeOH).

1,2-Di-Me ether: ***Goniothalactam***
[204975-46-2]
$C_{17}H_{13}NO_4$ 295.294
Alkaloid from *Goniothalamus borneensis* (Annonaciae). Constit. of *Fissistigma* spp. Shows platelet aggregation inhibitory activity. Light yellow needles. Mp 257-259°. λ_{max} 236 (log ϵ 4.58); 256 (log ϵ 4.45); 262 (log ϵ 4.48); 294 (log ϵ 4.35); 320 (log ϵ 4.21) (EtOH).

1,2-Di-Me ether, N-*β*-D-*glucopyranosyl:* [208774-72-5]
$C_{23}H_{23}NO_9$ 457.436
Alkaloid from *Aristolochia constricta*. Yellow needles. Mp 250-259°. $[\alpha]_D^{25}$ -14.5 (c, 1 in MeOH).

1,2-Di-Me ether, N-*[4-hydroxy-*E*-cinnamoyl-(→6)-β-*D*-glucopyranosyl]:* [208774-73-6]
$C_{32}H_{29}NO_{11}$ 603.581
Alkaloid from *Aristolochia constricta*. Yellow needles. Mp 270-275°. $[\alpha]_D^{25}$ -21.5 (c, 1 in MeOH).

1,9-Di-Me ether: ***Aristolactam A III***
[53948-08-6]
$C_{17}H_{13}NO_4$ 295.294
Alkaloid from the roots of *Aristolochia argentina* (Aristolochiaceae) and *Fissistigma* spp. Shows platelet aggregation inhibitory activity. Yellow cryst. (AcOH). Mp 275°.

Tri-Me ether: ***Aristolactam B III***
[53948-10-0]
$C_{18}H_{15}NO_4$ 309.321
Alkaloid from the roots of *Aristolochia argentina* (Aristolochiaceae) and *Fissistigma* spp. Shows platelet aggregation inhibitory activity. Yellow-green cryst. (1-propanol/1-butanol). Mp 264-265°.

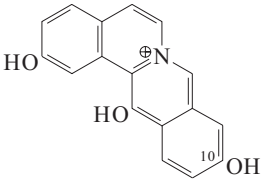
Tri-Me ether, N-*β*-D-*glucopyranosyl: Aristolactam B III* N-*glucoside*
[208774-74-7]
$C_{24}H_{25}NO_9$ 471.463
Alkaloid from *Aristolochia constricta*. Yellow needles. Mp 260-269°. $[\alpha]_D^{25}$ -13.5 (c, 1 in MeOH).

1,2-Methylene ether: see Aristolactam IIIa, A-1429

Crohare, R. *et al., Phytochemistry*, 1974, **13**, 1957-1962 (*Aristolactams*)
Priestap, H.A. *et al., Phytochemistry*, 1985, **24**, 849-852 (*Aristolactams, pmr, cmr*)
Sun, N.J. *et al., J. Nat. Prod.*, 1987, **50**, 843-846 (*Goniothalactam*)
Desai, S.J. *et al., Phytochemistry*, 1988, **27**, 1511-1515 (*Aristolactam BIII*)
Estévez, J.C. *et al., Tet. Lett.*, 1989, **30**, 5785 (*Aristolactam BIII, synth*)
De Tomassi, N. *et al., Nat. Prod. Lett.*, 1998, **11**, 263-270 (*Aristolochia constricta alkaloids*)
Cao, S.-G. *et al., Tetrahedron*, 1998, **54**, 2143-2148 (*Goniothalactam*)
Couture, A. *et al., Nat. Prod. Lett.*, 1999, **13**, 33-40 (*Goniothalactam, synth*)
Chia, Y.-C. *et al., J. Nat. Prod.*, 2000, **63**, 1160-1163 (*isol, activity*)
Shi, L.-S. *et al., Bioorg. Med. Chem.*, 2004, **12**, 439-446 (*Aristolactam AIIIa*)

2,10,13-Trihydroxydibenzo[*a,g*]quinolizinium(1+) T-541

[169700-67-8]

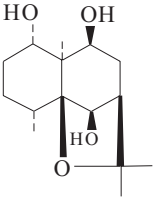


$C_{17}H_{12}NO_3^{\oplus}$ 278.287
Alkaloid from roots of *Aristolochia arcuata*. Red amorph. solid + $2H_2O$ (MeOH)(as hydroxide). Mp 250° dec. (as hydroxide). CAS no. refers to hydroxide.

*10-*O-*Glucopyranoside:* [169700-68-9]
$C_{23}H_{22}NO_8^{\oplus}$ 440.429
From roots of *Aristolochia arcuata*. Amorph. red solid (MeOH) (as hydroxide). Mp 248° dec. (hydroxide). CAS no. refers to hydroxide.

Watanabe, L.Y. *et al., Phytochemistry*, 1995, **40**, 991 (*isol, uv, ir, pmr, cmr, ms, struct*)

1,6,9-Trihydroxydihydro-β-agarofuran T-542



$C_{15}H_{26}O_4$ 270.368

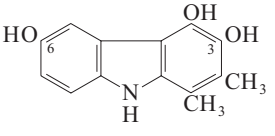
(1α,6β,9β)-*form Celorbicol*
[59812-41-8]
Parent alcohol of esters from the seed oil of *Celastrus orbiculatus*. Cryst. ($CHCl_3$/Me_2CO). Mp 222-223°. $[\alpha]_D^{26}$ -24 (c, 0.5 in $CHCl_3$).

6-(3-Pyridinecarbonyl), 9-benzoyl, 1-Ac: ***Triptogelin F1***
[145940-86-9]
$C_{30}H_{35}NO_7$ 521.609
Constit. of *Tripterygium wilfordii*. Needles. Mp 193-195°. $[\alpha]_D^{23}$ +67.7 (c, 0.4 in MeOH).

Takaishi, Y. *et al., Phytochemistry*, 1992, **31**, 3943-3947 (*Triptogelins*)

3,4,6-Trihydroxy-1,2-dimethylcarbazole T-543

*1,2-Dimethyl-9*H*-carbazole-3,4,6-triol, 9CI*



$C_{14}H_{13}NO_3$ 243.262

3,6-Di-Me ether: 4-Hydroxy-3,6-dimethoxy-1,2-dimethylcarbazole. ***Carbazomycin C***
[108073-62-7]
$C_{16}H_{17}NO_3$ 271.315
Isol. from *Streptoverticillium ehimense*. Pale-yellow prisms (EtOAc/hexane). Mp 198-198.5°. λ_{max} 228 (ϵ 25000); 246 (ϵ 24000); 260 (sh) (ϵ 12500); 288 (sh) (ϵ 7600); 297 (ϵ 12200); 341 (ϵ 3600); 355 (ϵ 4200) (MeOH) (Derep).

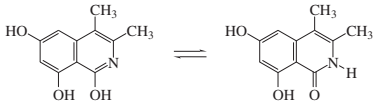
Tri-Me ether: 3,4,6-Trimethoxy-1,2-dimethylcarbazole. ***Carbazomycin D***
[108073-63-8]

$C_{17}H_{19}NO_3$ 285.342
From *Streptoverticillium ehimense*. Needles (CH_2Cl_2/hexane). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 129.5-130°. λ_{max} 228 (ϵ 25000); 246 (ϵ 24000); 260 (sh) (ϵ 12500); 288 (sh) (ϵ 7600); 297 (ϵ 12200); 341 (ϵ 3600); 355 (ϵ 4200) (MeOH) (Derep). λ_{max} 229 (ϵ 30500); 247 (ϵ 27800); 300 (ϵ 1700); 340 (ϵ 4300) (MeOH) (Berdy).

Naid, T. *et al., J. Antibiot.*, 1987, **40**, 157 (*isol, struct, props*)
Kameda, M. *et al., J. Antibiot.*, 1988, **41**, 602 (*cryst struct*)
Knölker, H.J. *et al., J.C.S. Perkin 1*, 1997, 349 (*synth*)

1,6,8-Trihydroxy-3,4-dimethylisoquinoline T-544

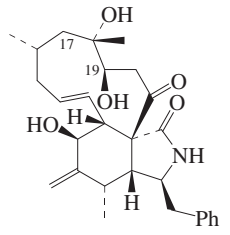
*6,8-Dihydroxy-3,4-dimethyl-1(2*H*)-isoquinolinone, 9CI. 3,4-Dimethyl-1,6,8-isoquinolinetriol.* ***Siaminine A***
[92446-24-7]



$C_{11}H_{11}NO_3$ 205.213
Alkaloid from the leaves of *Cassia siamea* (Fabaceae). Mp 215° (as hydrochloride).

El-Sayyad, S.M. *et al., J. Nat. Prod.*, 1984, **47**, 708 (*isol, uv, ir, pmr, ms, struct*)

7,18,19-Trihydroxy-16,18-dimethyl-10-phenyl[11]cytochalasa-6(12),13-diene-1,21-dione T-545



Relative Configuration

$C_{28}H_{37}NO_5$ 467.604
Isol. from *Microporellus subsessilis* and an unidentified *Daldinia* fungus. Mycotoxin. Amorph. solid. Mp 217-219°. $[\alpha]_D$ +2.6 (c, 2.56 in $CHCl_3$).

19-Ac:
$C_{30}H_{39}NO_6$ 509.641
From *Daldinia* sp. Needles (C_6H_6). Mp 138-140°. $[\alpha]_D$ -23.7 (c, 0.38 in $CHCl_3$).

*19-*O*-(4ξ-Methyl-6*E*,8*E*-hexadecadienoyl):*
$C_{45}H_{65}NO_6$ 716.012
Isol. from *Microporellus subsessilis*. Amorph. solid (MeOH). $[\alpha]_D^{28}$ -22 (c, 0.002 in $CHCl_3$). λ_{max} 232 (ϵ 55410) (MeOH).

19-Me ether: ***7,18-Dihydroxy-19-methoxy-16,18-dimethyl-10-phenyl[11]cytochalasa-6(12),13-diene-1,21-dione***
$C_{29}H_{39}NO_5$ 481.631
From *Daldinia* sp. and *Microporellus subsessilis*. Amorph. solid. Mp 124-126°. $[\alpha]_D$ -24.8 (c, 1.29 in $CHCl_3$).

18-Deoxy: ***7,19-Dihydroxy-16,18-dimethyl-10-phenyl[11]cytochalasa-6(12),13-diene-1,21-dione***
$C_{28}H_{37}NO_4$ 451.605
From *Daldinia* sp. Cryst. (EtOAc). Mp 196-199°. $[\alpha]_D$ +70.3 (c, 0.13 in MeOH). Also descr. as an amorph. solid to which the opt. rotn. refers.

19-Deoxy: ***7,18-Dihydroxy-16,18-dimethyl-10-phenyl[11]cytochalasa-6(12),13-diene-1,21-dione***
$C_{28}H_{37}NO_4$ 451.605
From *Daldinia* sp. and *Microporellus subsessilis*. Amorph. solid. Mp 120-122°. $[\alpha]_D$ -12.6 (c, 1.04 in $CHCl_3$).

*19-Deoxy, 19,20-didehydro(*E*-):* ***7,18-Dihydroxy-16,18-dimethyl-10-phenyl[11]-cytochalasa-6(12),13,19-triene-1,21-dione***
$C_{28}H_{35}NO_4$ 449.589
From *Daldinia* sp. Needles (EtOAc). Mp 179-181°. $[\alpha]_D$ -14.8 (c, 0.88 in $CHCl_3$).

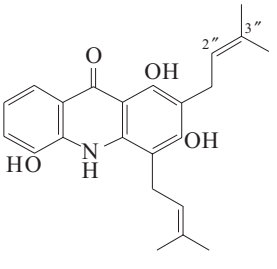
18,19-Dideoxy: ***7-Hydroxy-16,18-dimethyl-10-phenyl[11]cytochalasa-6(12),13-diene-1,21-dione***
$C_{28}H_{37}NO_3$ 435.605
From *Daldinia* sp. Amorph. solid. $[\alpha]_D$ +66.5 (c, 0.18 in MeOH).

*18,19-Dideoxy, 19,20-didehydro(*E*-):* ***7-Hydroxy-16,18-dimethyl-10-phenyl[11]cytochalasa-6(12),13,19-triene-1,21-dione***
$C_{28}H_{35}NO_3$ 433.589
From *Daldinia* sp. Amorph. solid. $[\alpha]_D$ -16.1 (c, 0.31 in $CHCl_3$).

Buchanan, M.S. *et al., Phytochemistry*, 1995, **40**, 135; 1996, **41**, 821; **42**, 173
Kurnia, D. *et al., Phytochemistry*, 2007, **68**, 697-702 (*Microporellus constits*)

1,3,5-Trihydroxy-2,4-diprenylacridone T-546

*1,3,5-Trihydroxy-2,4-bis(3-methyl-2-butenyl)-9(10*H*)-acridinone, 9CI.* ***Atalaphylline***
[28233-35-4]



$C_{23}H_{25}NO_4$ 379.455
Alkaloid from root bark of *Atalantia monophylla* (Rutaceae). Yellow needles (C_6H_6/EtOAc). Mp 246°. λ_{max} 255 (log ϵ 4.53); 265 (log ϵ 4.54); 284 (log ϵ 4.48); 312 (log ϵ 4.2); 402 (log ϵ 3.75) (EtOH).

N-*Me: 1,3,5-Trihydroxy-10-methyl-2,4-diprenylacridone.* **N-*Methylatalaphylline***
[28233-34-3]
$C_{24}H_{27}NO_4$ 393.482
Constit. of *Atalantia monophylla* (Rutaceae). Mp 192-193°. λ_{max} 260 (sh) (log ϵ 4.36); 273 (log ϵ 4.48); 336 (log ϵ 4.06); 415 (log ϵ 3.65) (EtOH).

3-Me ether: 1,5-Dihydroxy-3-methoxy-2,4-diprenylacridone. ***Buxifoliadine B***
[263007-66-5]
$C_{24}H_{27}NO_4$ 393.482
Alkaloid from the root bark of *Severinia buxifolia*. Yellow needles (Me_2CO). Mp 238-240°. λ_{max} 259 (log ϵ 4.71); 309 (log ϵ 4.17); 322 (log ϵ 4.13); 408 (log ϵ 3.82) (MeOH).

3-Me ether, N-*Me: 1,5-Dihydroxy-3-methoxy-10-methyl-2,4-diprenylacridone.* ***Buxifoliadine A***
[263007-65-4]
$C_{25}H_{29}NO_4$ 407.508
Alkaloid from the root bark of *Severinia buxifolia*. Yellow needles (Me_2CO). Mp 155-157°. λ_{max} 278 (log ϵ 4.54); 326 (log ϵ 3.9); 425 (log ϵ 3.65) (MeOH).

3,5-Di-Me ether: 1-Hydroxy-3,5-dimethoxy-2,4-diprenylacridone. ***3,5-Di-O-methylatalaphylline****. Atalaphylline dimethyl ether*
[28233-37-6]
$C_{25}H_{29}NO_4$ 407.508
Alkaloid from *Atalantia monophylla*. Yellow needles (Et_2O/hexane). Mp 145-147°.

Δ$^{3''}$-Isomer, 2''ξ-hydroxy, N-*Me:* ***Bosistine***
$C_{24}H_{27}NO_5$ 409.481
Alkaloid from leaves and stem bark of *Bosistoa transversa*. Amorph. $[\alpha]_D$ -4.1 (c, 0.0013 in $CHCl_3$). Incorrectly indexed by CA.

Govindachari, T. *et al., Tetrahedron*, 1970, **26**, 2905-2910 (*N-Methylatalaphylline, isol, pmr, ms, uv, ir*)
Desai, H. *et al., Indian J. Chem., Sect. B*, 1976, **14**, 473-475 (*isol*)
Banerji, J. *et al., Indian J. Chem., Sect. B*, 1981, **20**, 835-838 (*cmr*)
Kulkarni, G.H. *et al., Phytochemistry*, 1981, **20**, 867 (*di-Me ether*)
Shah, J.S. *et al., Indian J. Chem., Sect. B*, 1982, **21**, 16-19 (*N-Methylatalaphylline*)
Wu, T.-S. *et al., Phytochemistry*, 1982, **21**, 1771-1773 (*N-Methylatalaphylline*)
Bahar, M.H. *et al., Phytochemistry*, 1982, **21**, 2729-2731 (*synth*)
Auzi, A.A. *et al., Phytochemistry*, 1996, **42**, 235-238 (*Bosistine*)
Wu, T.-S. *et al., Chem. Pharm. Bull.*, 2000, **48**, 85-90 (*Buxifoliadines*)

1,3,5-Trihydroxy-2,8-diprenylacridone T-547

*1,3,5-Trihydroxy-2,8-bis(3-methyl-2-butenyl)-9*H*-acridin-10-one*

$C_{23}H_{25}NO_4$ 379.455

N-*Me: 1,3,5-Trihydroxy-9-methyl-2,8-bis(3-methyl-2-butenyl)-9*H*-acridin-10-one.* ***1,3,5-Trihydroxy-9-methyl-2,8-di-***

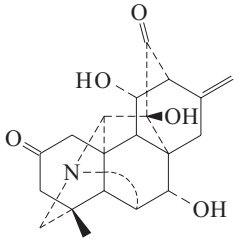
prenylacridone
$C_{24}H_{27}NO_4$ 393.482
Alkaloid from the stem bark of *Swinglea glutinosa*. Amorph. powder. λ_{max} 262 (log ϵ 3.49); 288 (log ϵ 3.12); 320 (log ϵ 3.03); 409 (log ϵ 2.69) (no solvent reported).
Weniger, B. *et al., J. Nat. Prod.*, 2001, **64**, 1221-1223

1,3,8-Trihydroxy-2,7-diprenylacridone T-548

*1,3,8-Trihydroxy-2,7-bis(3-methyl-2-butenyl)-9(10*H*)-acridinone, 9CI.*
Atalaphyllidine†
[60776-36-5]
$C_{23}H_{25}NO_4$ 379.455
Constit. of the roots of *Atalantia monophylla* (Rutaceae). Yellow needles (C_6H_6/EtOAc). Mp 222°.

1,3-Di-Me ether: 8-Hydroxy-1,3-dimethoxy-2,7-diprenylacridone
Yellow needles (Me_2CO). Mp 118°.
Chatterjee, A. *et al., Phytochemistry*, 1976, **15**, 1303 (*isol, uv, ir, pmr, struct*)

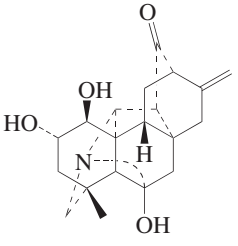
7,11,14-Trihydroxyhetisan-2,13-dione T-549



$C_{20}H_{23}NO_5$ 357.405

(7α,11α)-*form*
Orientinine†
[174293-69-7]
Alkaloid from aerial parts of *Aconitum orientale*. $[\alpha]_D$ +42 (c, 0.1 in $CHCl_3$).
Ulubelen, A. *et al., Phytochemistry*, 1996, **41**, 957 (*isol, ir, pmr, cmr, ms, struct*)

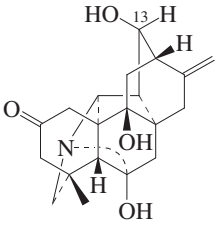
1,2,6-Trihydroxyhetisan-13-one T-550



$C_{20}H_{25}NO_4$ 343.422

(1β,2α)-*form*
1-Ac: [943912-59-2]
$C_{22}H_{27}NO_5$ 385.459
Alkaloid from *Aconitum coreanum*.
Tang, Q. *et al., Yaoxue Xuebao*, 2005, **40**, 640-643 (*isol*)

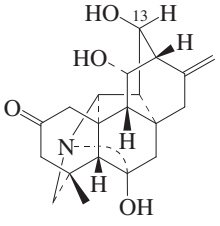
6,9,13-Trihydroxyhetisan-2-one T-551



$C_{20}H_{25}NO_4$ 343.422

(13*S*)-*form*
13-Ac: ***Delnuttaline***
[153331-26-1]
$C_{22}H_{27}NO_5$ 385.459
Minor alkaloid from *Delphinium nuttallianum* (Ranunculaceae). Cryst. Mp 269-271°.
Parvez, M. *et al., Acta Cryst. C*, 1993, **49**, 1871-1873 (*cryst struct*)
Bai, Y. *et al., Phytochemistry*, 1994, **37**, 1717-1724 (*isol, ir, pmr, cmr*)

6,11,13-Trihydroxyhetisan-2-one T-552



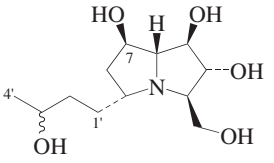
$C_{20}H_{25}NO_4$ 343.422

(11α,13*R*)-*form*
Delbidine
[123497-82-5]
Alkaloid from a *Delphinium occidentale* - *Delphinium barbeyi* hybrid (Ranunculaceae). Cubes (MeOH). Mp 360°. $[\alpha]_D^{25}$ +22.3 (c, 0.268 in MeOH).

13-Ac: ***Geyeridine****. 6-Hydroxy-13-*O*-acetylhetisinone*
[100045-29-2]
$C_{22}H_{27}NO_5$ 385.459
Minor alkaloid from the flowers, small stems and leaves of *Delphinium geyeri* (Ranunculaceae). Gum.

*11-*O*-(2ξ-Methylbutanoyl):* ***Geyerine***
[100045-28-1]
$C_{25}H_{33}NO_5$ 427.539
A major alkaloid from the flowers, small stems and leaves of *Delphinium geyeri* (Ranunculaceae). Glassy amorph. solid which turns translucent on standing. $[\alpha]_D^{23}$ +9.6 (c, 0.36 in EtOH).
Grina, J.A. *et al., J.O.C.*, 1986, **51**, 390 (*Geyerine, Geyeridine*)
Joshi, B.S. *et al., Phytochemistry*, 1989, **28**, 1561 (*Delbidine*)

1,2,7-Trihydroxy-5-(3-hydroxybutyl)-3-(hydroxymethyl)-1*H*-pyrrolizidine T-553



(1*R*,2*R*,3*R*,3'ξ,5*R*,7*R*,7*aR*)-*form*

$C_{12}H_{23}NO_5$ 261.317

(1*R*,2*R*,3*R*,3′ξ,5*R*,7*R*,7*aR*)-*form*
5-(3-Hydroxybutyl)-7-epiaustraline
[710948-64-4]
Alkaloid from the bulbs of *Scilla peruviana*. Glucosidase inhibitor. $[\alpha]_D$ -20.3 (c, 1.35 in H_2O).

*7-Deoxy: 1,2-Dihydroxy-5-(3-hydroxybutyl)-3-(hydroxymethyl)-1*H*-pyrrolizidine.* ***5-(3-Hydroxybutyl)hyacinthacine A_2***
[710948-65-5]
$C_{12}H_{23}NO_4$ 245.318
Alkaloid from the bulbs of *Scilla socialis*. Syrup. $[\alpha]_D$ +1.2 (c, 0.25 in H_2O).

(1*R,2*S**,3*S**,3′ξ,5*S**,7*aS**)-*form***

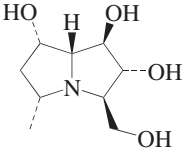
7-Deoxy: ***5-(3-Hydroxybutyl)hyacinthacine A_1***
$C_{12}H_{23}NO_4$ 245.318
Alkaloid from the bulbs of *Scilla peruviana*. Syrup. $[\alpha]_D$ -20.3 (c, 1.35 in H_2O).

*7-Deoxy, 1′ξ-hydroxy: 5-(1,3-Dihydroxybutyl)-1,2-dihydroxy-3-(hydroxymethyl)-1*H*-pyrrolizidine.* ***5-(1,3-Dihydroxybutyl)hyacinthacine A_1***
[710948-66-6]
$C_{12}H_{23}NO_5$ 261.317
Alkaloid from the bulbs of *Scilla peruviana* and *Scilla socialis*. Glucosidase inhibitor. Powder. $[\alpha]_D$ +42 (c, 1 in H_2O).

*7-Deoxy, 1′ξ,4′-dihydroxy: 1,2-Dihydroxy-3-(hydroxymethyl)-5-(1,3,4-trihydroxybutyl)-1*H*-pyrrolizidine. 5-(1,3,4-Trihydroxybutyl)hyacinthacine A_1*
[710948-67-7]
$C_{12}H_{23}NO_6$ 277.317
Alkaloid from the bulbs of *Scilla peruviana*. Powder. $[\alpha]_D$ +33.4 (c, 0.67 in H_2O).
Asano, N. *et al., J. Nat. Prod.*, 2004, **67**, 846-850; 2007, **70**, 993-997 (*isol, pmr, cmr*)

1,2,7-Trihydroxy-3-hydroxymethyl-5-methyl-1*H*-pyrrolizidine T-554

*Hexahydro-3-hydroxymethyl-5-methyl-1*H*-pyrrolizine-1,2,7-triol, 9CI*



(1*R**,2*R**,3*R**,5*R**,7*S**,7*aR**)-*form*

$C_9H_{17}NO_4$ 203.238

(1*R,2*R**,3*R**,5*R**,7*S**,7a*R**)-*form***
Hyacinthacine B$_4$
[479348-19-1]
Alkaloid from the bulbs of *Scilla sibirica* and *Scilla socialis*. Powder. $[\alpha]_D$ -6.7 (c, 1.2 in H_2O).

(1*R,2*R**,3*S**,5*S**,7*R**,7a*S**)-*form***
Hyacinthacine B$_6$
[479348-21-5]
Alkaloid from the bulbs of *Scilla sibirica*. Syrup. $[\alpha]_D$ -61.2 (c, 1 in H_2O).

(1*R,2*S**,3*S**,5*R**,7*S**,7a*S**)-*form***
Hyacinthacine B$_7$
[944408-24-6]
Alkaloid from the bulbs of *Scilla socialis*. Powder. $[\alpha]_D$ -4.4 (c, 0.2 in H_2O).

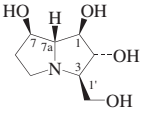
(1*R,2*S**,3*S**,5*S**,7*R**,7a*S**)-*form***
Hyacinthacine B$_5$
[479348-20-4]
Alkaloid from the bulbs of *Scilla sibirica*. Syrup. $[\alpha]_D$ -25.4 (c, 0.26 in H_2O).

(1*R,2*S**,3*S**,5*S**,7*S**,7a*S**)-*form***
Hyacinthacine B$_3$
[268209-91-2]
Alkaloid from the bulbs of *Muscari armeniacum*, *Scilla sibirica* and *Scilla socialis*. Glycosidase inhibitor. $[\alpha]_D$ +3.1 (c, 0.33 in H_2O).

Asano, N. *et al., Tetrahedron: Asymmetry*, 2000, **11**, 1-8 (*isol, pmr, cmr*)
Yamashita, T. *et al., J. Nat. Prod.*, 2002, **65**, 1875-1881 (*isol, pmr, cmr*)
Kato, A. *et al., J. Nat. Prod.*, 2007, **70**, 993-997 (*Hyacinthacine B$_7$*)

1,2,7-Trihydroxy-3-(hydroxymethyl)-1*H*-pyrrolizidine T-555

*Hexahydro-3-(hydroxymethyl)-1*H*-pyrrolizine-1,2,7-triol, 9CI*



(1*R*,2*R*,3*R*,7*R*,7a*R*)-*form*

$C_8H_{15}NO_4$ 189.211

(1*R*,2*R*,3*R*,7*R*,7a*R*)-*form*
*7-Epiaustraline. 7,7*a*-Diepialexine. 7,8-Diepialexine*
[126655-21-8]
[126655-01-4]
Weak inhibitor of glucosidase activity. Cryst. Mp 193-194°. $[\alpha]_D^{23}$ -13 (c, 0.55 in H_2O). Synthetic. This config. originally assigned to a nat. alkaloid but was shown to be the same as Australine (2003).

(1*R*,2*R*,3*R*,7*R*,7a*S*)-*form*
7-Epialexine
[121588-45-2]
Synthetic. Syrup. $[\alpha]_D^{23}$ -11 (c, 1 in H_2O).

(1*R*,2*R*,3*R*,7*S*,7a*R*)-*form*
***Australine**. 8-Epialexine. 7*a*-Epialexine*
[118396-02-4]
Alkaloid from seeds of *Castanospermum australe*. Potent and specific inhibitor of amyloglucosidase. Prisms (Me_2CO). Sol. H_2O, MeOH. Mp 148-149°. $[\alpha]_D^{26}$ +19.3 (c, 2.09 in MeOH).

1′-Carboxylic acid: **7a-*Epialexaflorine***. *8-Epialexaflorine. Australiflorine*
$C_8H_{13}NO_5$ 203.194
Alkaloid from leaves of *Alexa grandiflora* (Fabaceae).

(1*R*,2*R*,3*R*,7*S*,7a*S*)-*form*
***Alexine**. 7*a*-Epiaustraline*
[116174-63-1]
Alkaloid from the pods of *Alexa leiopetala*. Weak inhibitor of glucosidase activity. Cryst. (EtOH aq.). Sol. MeOH, H_2O. Mp 162-163°. $[\alpha]_D^{23}$ +40.4 (c, 0.3 in H_2O).

(1*R*,2*R*,3*S*,7*S*,7a*R*)-*form*
***3-Epiaustraline**. 3,7*a*-Diepialexine. 3,8-Diepialexine*
[119065-82-6]
Alkaloid from the seeds of *Castanospermum australe*. Weak inhibitor of glycosidase activity. Oil; cryst. (EtOH aq.) (as hydrochloride). Mp 148-152° (hydrochloride). $[\alpha]_D^{20}$ -3.5 (c, 1.35 in H_2O) (hydrochloride).

(1*R*,2*R*,3*S*,7*S*,7a*S*)-*form* [121605-56-9]
Synthetic. Mp 190-192°. $[\alpha]_D^{20}$ +63.8 (c, 0.11 in H_2O).

(1*R*,2*S*,3*S*,7*R*,7a*R*)-*form*
2,3,7-Triepiaustraline
[529496-76-2]
Alkaloid from the seeds of *Castanospermum australe*. $[\alpha]_D$ +59.7 (c, 0.58 in H_2O).

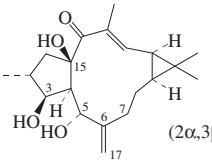
(1*R*,2*S*,3*S*,7*S*,7a*R*)-*form*
2,3-Diepiaustraline
[529496-75-1]
Alkaloid from the seeds of *Castanospermum australe*. $[\alpha]_D$ +38.2 (c, 0.51 in H_2O).

(1*S*,2*R*,3*R*,7*S*,7a*R*)-*form*
***1-Epiaustraline**. 1,7*a*-Diepialexine. 1,8-Diepialexine*
[126594-77-2]
[126654-99-7]
Alkaloid from the seeds of *Castanospermum australe*. Weak inhibitor of glycosidase activity. Oil or hygroscopic solid. Mp 28-30°. $[\alpha]_D^{20}$ +13.3 (c, 0.1 in H_2O). $[\alpha]_D^{20}$ -3 (c, 0.4 in H_2O) (as hydrochloride).

2-O-β-D-Glucopyranoside: 1-Epiaustraline 2-glucoside
[528886-31-9]
$C_{14}H_{25}NO_9$ 351.353
Alkaloid from the seeds of *Castanospermum australe*. $[\alpha]_D$ +35.8 (c, 0.42 in H_2O).

Molyneux, R.J. *et al., J. Nat. Prod.*, 1988, **51**, 1198 (*Australine*)
Nash, R.J. *et al., Tet. Lett.*, 1988, **29**, 2487 (*isol, pmr, cmr, ms, cryst struct, abs config*)
Fleet, G.W.J. *et al., Tet. Lett.*, 1988, **29**, 5441 (*synth, cmr*)
Nash, R.J. *et al., Tetrahedron*, 1988, **44**, 5959 (*3,8-Diepialexine*)
Tropea, J.E. *et al., Biochemistry*, 1989, **28**, 2027 (*pharmacol*)
Nash, R.J. *et al., Phytochemistry*, 1990, **29**, 111 (*1,8-Diepialexine, 7,8-Diepialexine*)
Pearson, W.H. *et al., Tet. Lett.*, 1991, **32**, 5513 (*7,7a-Diepialexine, synth*)
Choi, S. *et al., Tet. Lett.*, 1991, **32**, 5517 (*1,7a-Diepialexine, synth*)
Pereira, A.C. de S. *et al., Tetrahedron*, 1991, **47**, 5637 (*8-Epialexaflorine*)
Taylor, D.L. *et al., Antiviral Chem. Chemother.*, 1992, **3**, 273 (*7,8-Diepialexine, anti-HIV activity*)
Furneaux, R.H. *et al., Tetrahedron*, 1994, **50**, 2131 (*Australine, synth*)
Denmark, S.E. *et al., J.A.C.S.*, 1998, **120**, 7357-7358 (*synth*)
White, J.D. *et al., J.A.C.S.*, 1998, **120**, 7359-7360 (*synth*)
Ikota, N. *et al., Tetrahedron*, 1998, **54**, 8985-8998 (*synth*)
Pearson, W.H. *et al., J.O.C.*, 2000, **65**, 5785-5793 (*synth*)
Romero, A. *et al., J.O.C.*, 2000, **65**, 8264-8268 (*synth*)
White, J.D. *et al., J.O.C.*, 2000, **65**, 9129-9142 (*synth*)
Yoda, H. *et al., Tet. Lett.*, 2000, **41**, 7661-7665 (*synth*)
Denmark, S.E. *et al., J.O.C.*, 2001, **66**, 4276-4284 (*1-Epiaustraline, synth*)
Tang, M. *et al., J.O.C.*, 2003, **68**, 7818-7824 (*7-Epiaustraline, 1,7-Diepiaustraline, synth*)
Kato, A. *et al., Tetrahedron: Asymmetry*, 2003, **14**, 325-331 (*synth, cmr, abs config*)
Donohoe, T.J. *et al., J.O.C.*, 2005, **70**, 7297-7304 (*1-Epiaustraline, synth*)
Lauritsen, A. *et al., Org. Biomol. Chem.*, 2006, **4**, 2898-2905 (*Australine, synth*)
Donohoe, T.J. *et al., Org. Biomol. Chem.*, 2008, **6**, 3896-3898 (*7-Epialexine, synth*)
Takahashi, M. *et al., Tetrahedron*, 2008, **64**, 5254-5261 (*Alexine, synth*)

3,5,15-Trihydroxy-6(17),12-lathyradien-14-one T-556



(2α,3β,5α,12*E*,15β)-*form*

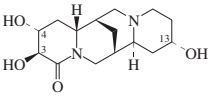
$C_{20}H_{30}O_4$ 334.455

(2β,3β,5β,12*E*,15β)-*form*
Lathyrol
[34420-19-4]
Cryst. Mp 168-169°. $[\alpha]_D^{25}$ +101 (c, 1.3 in MeOH).

(3-Pyridinecarbonyl), di-Ac:
$C_{30}H_{37}NO_7$ 523.625
Constit. of *Euphorbia lathyris*. Position of esters not established.

Adolf, W. *et al., Experientia*, 1971, **27**, 1393-1394 (*Euphorbia lathyris constits*)

3,4,13-Trihydroxylupanine T-557



(3β,4α,13α)-*form*

$C_{15}H_{24}N_2O_4$ 296.366

(3β,4α,13α)-*form*
Alkaloid from the leaves of *Calpurnia aurea* ssp. *aurea* (Fabaceae).

13-O-*(2-Pyrrolecarbonyl):* ***Calpaurine***
[103847-10-5]
$C_{20}H_{27}N_3O_5$ 389.45
Alkaloid from the leaves of *Calpurnia aurea* ssp. *aurea* (Fabaceae).

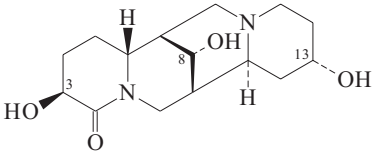
(3β,4α,13β)-*form*

13-Me ether: ***3,4-Dihydroxy-13-methoxylupanine***
[193559-15-8]
$C_{16}H_{26}N_2O_4$ 310.392
Minor alkaloid from bark of *Acosmium panamense.*

13-Me ether, 4-angeloyl: 4-Angeloyloxy-3-hydroxy-13-methoxylupanine
$C_{21}H_{32}N_2O_5$ 392.494
Alkaloid from the seeds of *Acosmium panamense.* Amorph. yellow solid. $[\alpha]_D$ -72 (c, 0.57 in $CHCl_3$).

Asres, K. *et al., Phytochemistry*, 1986, **25**, 1443 (*Trihydroxylupanine, Calpaurine, isol, ir, cmr, ms, struct*)
Mascagni, P. *et al., Tetrahedron*, 1987, **43**, 149 (*Calpaurine, pmr, cmr, struct*)
Veitch, N.C. *et al., Phytochemistry*, 1997, **45**, 847-850 (*3,4-Dihydroxy-13-methoxylupanine*)
Nuzillard, J.-M. *et al., Tetrahedron*, 1999, **55**, 11511-11518 (*Angeloyloxyhydroxymethoxylupanine*)

3,8,13-Trihydroxylupanine T-558



$C_{15}H_{24}N_2O_4$ 296.366

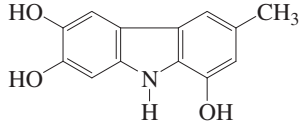
(3β,8α,13α)-*form* [138680-24-7]
Alkaloid from the leaves of *Pearsonia cajanifolia* ssp. *cryptantha* (Fabaceae). $[\alpha]_D^{22}$ +2 (c, 2.2 in $CHCl_3$).

13-Angeloyl: ***Pearsonine***
[126420-99-3]
$C_{20}H_{30}N_2O_5$ 378.467
Alkaloid from *Pearsonia cajanifolia* ssp. *cryptantha* (Fabaceae). Mp 93-96°. $[\alpha]_D^{22}$ +7 (c, 0.6 in $CHCl_3$).

Verdoorn, G.H. *et al., Phytochemistry*, 1990, **29**, 1297 (*Pearsonine*)
Verdoorn, G.H. *et al., Phytochemistry*, 1991, **30**, 3631 (*isol*)

1,6,7-Trihydroxy-3-methylcarbazole T-559

*3-Methyl-9*H*-carbazole-1,6,7-triol*

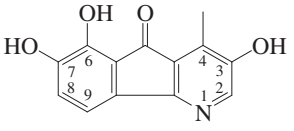


$C_{13}H_{11}NO_3$ 229.235

*6,7-Di-Me ether: 6,7-Dimethoxy-3-methyl-9*H*-carbazol-1-ol. 1-Hydroxy-6,7-dimethoxy-3-methylcarbazole*
[211106-13-7]
$C_{15}H_{15}NO_3$ 257.288
Alkaloid from the leaves of *Murraya koenigii*. Antibacterial agent. Needles (C_6H_6). Mp 216°. λ_{max} 235 (log ε 4.65); 285 (log ε 4.18); 305 (log ε 4.32); 330 (log ε 3.5) (MeOH).

Saha, C. *et al., Phytochemistry*, 1998, **48**, 363-366 (*synth*)
Chowdhury, B.K. *et al., Indian J. Chem., Sect. B*, 2001, **40**, 490-494 (*isol, pmr, cmr*)

3,6,7-Trihydroxy-4-methyl-5*H*-indeno[1,2-*b*]pyridin-5-one, 9CI T-560



$C_{13}H_9NO_4$ 243.218

*3,6-Di-Me ether: 7-Hydroxy-3,6-dimethoxy-4-methyl-5*H*-indeno[1,2-*b*]pyridin-5-one, 9CI. 7-Hydroxy-2,8-dimethoxy-1-methyl-4-aza-9-fluorenone.* ***7-Hydroxy-2,8-dimethoxyonychine***
[161196-98-1]
$C_{15}H_{13}NO_4$ 271.272
Alkaloid from stem bark of *Piptostigma fugax* (Annonaceae). Orange-red needles. Mp 206°.

Achenbach, H. *et al., Phytochemistry*, 1995, **38**, 1037 (*7-Hydroxy-2,8-dimethoxyonychine*)

3,7,8-Trihydroxy-4-methyl-5*H*-indeno[1,2-*b*]pyridin-5-one T-561

$C_{13}H_9NO_4$ 243.218

*3,7-Di-Me ether: 8-Hydroxy-3,7-dimethoxy-4-methyl-5*H*-indeno[1,2-*b*]pyridin-5-one. 6-Hydroxy-2,7-dimethoxy-1-methyl-4-azafluorenone. 6-Hydroxy-2,7-dimethoxyonychine.* ***Oxylopidine***
[101899-52-9]
$C_{15}H_{13}NO_4$ 271.272
Alkaloid from stem bark and twigs of *Oxandra xylopioides* (Annonaceae). Mp 271-273°. Struct. revised in 1994. Orig. descr. as 7-Hydroxy-2,6-dimethoxyonychine.

Zhang, J. *et al., J. Nat. Prod.*, 1987, **50**, 800-806 (*isol*)
Achenbach, H. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1994, **327**, 755 (*synth, struct, Oxylopidine*)

3,8,9-Trihydroxy-4-methyl-5*H*-indeno[1,2-*b*]pyridin-5-one T-562

$C_{13}H_9NO_4$ 243.218

*3,8-Di-Me-ether: 9-Hydroxy-3,8-dimethoxy-4-methyl-5*H*-indeno[1,2-*b*]pyridin-5-one, 9CI. 5-Hydroxy-2,6-dimethoxy-1-methyl-4-aza-9-fluorenone.* ***2,6-Dimethoxy-5-hydroxyonychine***
[126660-44-4]
$C_{15}H_{13}NO_4$ 271.272
Alkaloid from the stem bark of *Alphonsea mollis* (Annonaceae). Mp 211-212°.

Xie, N. *et al., Zhongguo Yaoke Daxue Xuebao*, 1989, **20**, 321; *CA*, **112**, 195252
Guinaudeau, H. *et al., J. Nat. Prod.*, 1994, **57**, 1033 (*rev*)

6,7,8-Trihydroxy-4-methyl-5*H*-indeno[1,2-*b*]pyridin-5-one T-563

6,7,8-Trihydroxy-1-methyl-4-azafluorenone

$C_{13}H_9NO_4$ 243.218

*6-Me ether: 7,8-Dihydroxy-6-methoxy-4-methyl-5*H*-indeno[1,2-*b*]pyridin-5-one.* ***Penduline***†
$C_{14}H_{11}NO_4$ 257.245
Alkaloid from the roots of *Polyalthia longifolia* var. *pendula*. Orange cryst. Mp 188-189°. λ_{max} 205 ; 261 ; 349 (MeOH).

Faizi, S. *et al., Planta Med.*, 2003, **69**, 350-355 (*isol, pmr, cmr, ms*)

6,8,9-Trihydroxy-4-methyl-5*H*-indeno[1,2-*b*]pyridin-5-one T-564

5,6,8-Trihydroxy-1-methyl-4-azafluoren-9-one

$C_{13}H_9NO_4$ 243.218

*6,9-Di-Me ether: 8-Hydroxy-6,9-dimethoxy-4-methyl-5*H*-indeno[1,2-*b*]pyridin-5-one, 9CI. 6-Hydroxy-5,8-dimethoxy-1-methyl-4-azafluoren-9-one. 6-Hydroxy-5,8-dimethoxyonychine.* ***Kinabaline***
[109028-37-7]
$C_{15}H_{13}NO_4$ 271.272
Trace alkaloid from the trunk bark of *Meiogyne virgata* (Annonaceae). Amorph. yellow solid. λ_{max} 208 (log ε 3.96); 222 (log ε 3.91); 231 (log ε 3.93); 246 (sh) (log ε 4.01); 254 (log ε 4.12); 280 (sh) (log ε 3.72); 292 (log ε 3.77); 304 (log ε 3.73); 388 (log ε 3.32) (MeOH).

Tadć, D. *et al., Phytochemistry*, 1987, **26**, 537-541 (*isol, uv, pmr, ms, struct*)

7,8,9-Trihydroxy-4-methyl-5*H*-indeno[1,2-*b*]pyridin-5-one T-565

$C_{13}H_9NO_4$ 243.218

*8-Me ether: 7,9-Dihydroxy-8-methoxy-4-methyl-5*H*-indeno[1,2-*b*]pyridin-5-one. 5,7-Dihydroxy-6-methoxy-1-methyl-4-azafluoren-9-one. 5,7-Dihydroxy-6-methoxyonychine.* ***Cyathocaline***
[164176-16-3]
$C_{14}H_{11}NO_4$ 257.245
Alkaloid from stem bark of *Cyathocalyx zeylanica* (Annonaceae). Orange cryst. Mp 222-224°. λ_{max} 232 (ε 2630); 274 (ε 3980); 354 (ε 2190); 448 (ε 2000) (EtOH/NaOH) (Derep). λ_{max} 224 (ε 2510); 261 (ε 6030); 313 (ε 1910); 348 (ε 1820) (EtOH) (Derep). λ_{max} 224 (ε 2754); 261 (ε 6025); 313 (ε 1905); 348 (ε 1820) (EtOH) (Berdy). λ_{max} 232 (ε 2690); 274 (ε 2187); 354 (ε 3980); 448 (ε 1995) (EtOH-NaOH) (Berdy).

8-Me ether, di-Ac: Mp 107-108°.

*7,8-Di-Me ether: 9-Hydroxy-7,8-dimethoxy-4-methyl-5*H*-indeno[1,2-b]pyridin-5-one, 9CI. 5-Hydroxy-6,7-dimethoxy-1-methyl-4-azafluoren-9-one.* ***5-Hydroxy-6,7-dimethoxyonychine***
[250597-10-5]
$C_{15}H_{13}NO_4$ 271.272
Alkaloid from *Alphonsea monogyna*. Yellow needles. Mp 224-226°. λ_{max} 206 (log ϵ 4.09); 235 (log ϵ 4.03); 266 (log ϵ 4.33); 292 (log ϵ 4.02) (no solvent reported).

7,8-Di-Me ether, N*-oxide:* ***5-Hydroxy-6,7-dimethoxyonychine*** **N-*oxide***
$C_{15}H_{13}NO_5$ 287.271
Alkaloid from *Alphonsea monogyna*. Orange-red needles. Mp 287-288°. λ_{max} 215 (log ϵ 4.09); 240 (log ϵ 4.03); 272 (log ϵ 4.33); 299 (log ϵ 4.02); 310 (sh) (log ϵ 4) (no solvent reported).

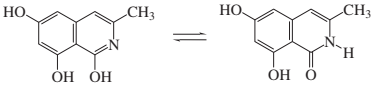
*8,9-Di-Me ether: 7-Hydroxy-8,9-dimethoxy-4-methyl-5*H*-indeno[1,2-b]pyridin-5-one. 7-Hydroxy-5,6-dimethoxy-1-methyl-4-azafluoren-9-one. 7-Hydroxy-5,6-dimethoxyonychine.* ***Darienine***
[111316-27-9]
$C_{15}H_{13}NO_4$ 271.272
Alkaloid from the stem bark of *Oxandra* cf. *major* (Annonaceae). Amorph. yellow solid. λ_{max} 206 (log ϵ 4.09); 235 (log ϵ 4.03); 266 (log ϵ 4.33); 292 (log ϵ 4.02); 302 (sh) (log ϵ 4) (EtOH). λ_{max} 218 (log ϵ 4.05); 226 (sh) (log ϵ 4.04); 285 (log ϵ 4.18); 322 (log ϵ 4.12); 360 (log ϵ 3.78) (EtOH/MeOH). λ_{max} 206 (log ϵ 4.09); 226 (log ϵ 4.03); 265 (log ϵ 4.27); 292 (log ϵ 3.96); 302 (sh) (log ϵ 3.95) (EtOH/HCl).

8,9-Di-Me ether, 7-Ac: Mp 143°.

Arango, G.J. *et al., Phytochemistry*, 1987, **26**, 2093-2098 (*Darienine*)
Wijeratne, E.M.K. *et al., J. Nat. Prod.*, 1995, **58**, 459-462 (*Cyathocaline*)
Yang, N. *et al., CA*, 1999, **131**, 349043j (*5-Hydroxy-6,7-dimethoxyonychine*)
Xie, N. *et al., Chin. Chem. Lett.*, 1999, **10**, 671-672 (*7,8-di-Me ether*)
Yang, N.Y. *et al., Chin. Chem. Lett.*, 2000, **11**, 409-410 (*7,8-di-Me ether N-oxide*)

1,6,8-Trihydroxy-3-methylisoquinoline T-566

*6,8-Dihydroxy-3-methyl-1(2*H*)-isoquinolinone, 9CI. 3-Methyl-1,6,8-isoquinolinetriol. 6,8-Dihydroxy-3-methylisocarbostyril.* ***Siamine***
[60352-12-7]

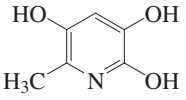


$C_{10}H_9NO_3$ 191.186
Alkaloid from the seeds and leaves of *Cassia siamea* (Fabaceae). Cryst. (MeOH). Mp 264-268°.

Ahn, B.Z. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1978, **311**, 569 (*isol, uv, ir, pmr, cmr, struct*)

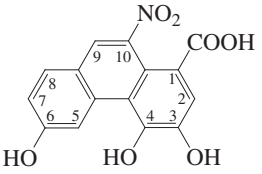
2,3,5-Trihydroxy-6-methylpyridine T-567

*3,5-Dihydroxy-6-methyl-2(1*H*)-pyridinone. 6-Methyl-2,3,5-pyridinetriol*
[95508-57-9]



$C_6H_7NO_3$ 141.126
Tentative struct. assigned. Prod. by *Streptoverticillium hiroshimense*. Dopamine β-hydroxylase inhibitor, antihypertensive agent. Cryst. (H_2O). Sol. H_2O; fairly sol. MeOH; poorly sol. hexane. λ_{max} 272 (HCl) (Berdy). λ_{max} 226 ; 308 (NaOH) (Berdy).
U.S. Pat., 1984, 4 487 761; *CA*, **102**, 130458r

3,4,6-Trihydroxy-10-nitro-1-phenanthrenecarboxylic acid T-568



$C_{15}H_9NO_7$ 315.239

4-Me ether, Me ester: Methyl 3,6-dihydroxy-4-methoxy-10-nitro-1-phenanthrenecarboxylate. ***Ariskanin B***
[157207-61-9]
$C_{17}H_{13}NO_7$ 343.292
From roots and stems of *Aristolochia kankauensis* (Aristolochiaceae). Yellowish needles ($CHCl_3$). Mp 274-276°. λ_{max} 211 (ϵ 27542); 243 (ϵ 38884); 253 (ϵ 38904); 260 (ϵ 38904); 288 (ϵ 15135); 365 (ϵ 7244); 386 (ϵ 8128) (MeOH) (Berdy).

3,4-Di-Me ether, Me ester: Methyl 6-hydroxy-3,4-dimethoxy-10-nitro-1-phenanthrenecarboxylate. ***Ariskanin C***
[157207-62-0]
$C_{18}H_{15}NO_7$ 357.319
From roots and stems of *Aristolochia kankauensis* (Aristolochiaceae). Orange needles ($CHCl_3$/MeOH). Mp 186-190°. λ_{max} 253 (ϵ 33884); 289 (ϵ 12590); 363 (ϵ 7586); 383 (ϵ 9550); 393 (ϵ 7586) (MeOH) (Berdy).

Methylene ether: see 6-Hydroxy-3,4-methylenedioxy-10-nitro-1-phenanthrenecarboxylic acid, H-600

Wu, T.S. *et al., Phytochemistry*, 1994, **36**, 1063-1068 (*isol, pmr*)
Lou, F.C. *et al., Yaoxue Xuebao*, 1995, **30**, 588; *CA*, **123**, 251411n

3,4,8-Trihydroxy-10-nitro-1-phenanthrenecarboxylic acid T-569

$C_{15}H_9NO_7$ 315.239

4,8-Di-Me ether, Me ester: Methyl 3-hydroxy-4,8-dimethoxy-10-nitro-1-phenanthrenecarboxylate. ***Ariskanin D***
[157207-63-1]
$C_{18}H_{15}NO_7$ 357.319
From roots and stems of *Aristolochia kankauensis* (Aristolochiaceae). Yellowish needles ($CHCl_3$/MeOH). Mp 145-148°. λ_{max} 239 (ϵ 39810); 257 (ϵ 38020); 279 (ϵ 21380); 308 (ϵ 13182); 390 (ϵ 9772) (MeOH) (Berdy).

Tri-Me ether, Me ester: Methyl 3,4,8-trimethoxy-10-nitro-1-phenanthrenecarboxylate. ***Ariskanin E***
[157207-64-2]
$C_{19}H_{17}NO_7$ 371.346
From roots and stems of *Aristolochia kankauensis* (Aristolochiaceae). Yellowish needles ($CHCl_3$/MeOH). Mp 158-160°.

3,4-Methylene, 8-Me ether: see 8-Methoxy-3,4-methylenedioxy-10-nitro-1-phenanthrenecarboxylic acid, M-262

Wu, T.S. *et al., Phytochemistry*, 1994, **36**, 1063
Lou, F.C. *et al., Yaoxue Xuebao*, 1995, **30**, 588; *CA*, **123**, 251411n

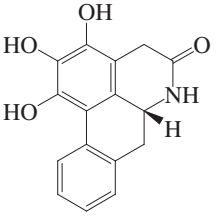
3,4,9-Trihydroxy-10-nitro-1-phenanthrenecarboxylic acid T-570

$C_{15}H_9NO_7$ 315.239

3,4-Methylene, 9-Me ether: 3,4-Methylenedioxy-9-methoxy-10-nitro-1-phenanthrenecarboxylic acid. ***9-Methoxyaristolochic acid II***
[134306-18-6]
$C_{17}H_{11}NO_7$ 341.276
Alkaloid from *Aristolochia ponticum* (Aristolochiaceae).

Houghton, P.J. *et al., Phytochemistry*, 1991, **30**, 717

1,2,3-Trihydroxy-5-oxonoraporphine T-571



$C_{16}H_{13}NO_4$ 283.283

(R)-form

1,2-Di-Me ether: ***3-Hydroxy-1,2-dimethoxy-5-oxonoraporphine***
$C_{18}H_{17}NO_4$ 311.337
Alkaloid from the bark of *Mitrephora* cf. *maingayi*. Light straw-coloured needles ($CHCl_3$). Mp 160-162°. $[\alpha]_D^{25}$ -52 (c, 0.07 in $CHCl_3$). λ_{max} 228 (log ϵ 4.08); 282 (log ϵ 4.08); 320 (log ϵ 2.85) (MeOH).

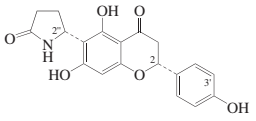
Tri-Me ether: ***1,2,3-Trimethoxy-5-oxonoraporphine***
$C_{19}H_{19}NO_4$ 325.363
Alkaloid from the bark of *Mitrephora* cf. *maingayi*. Yellow needles ($CHCl_3$). Mp 185-187°. $[\alpha]_D^{25}$ -31.6 (c, 0.04 in $CHCl_3$). λ_{max} 228 (log ϵ 4.1); 274 (log ϵ

4.04); 316 (log ϵ 3.26) (MeOH).

Lee, N.H.S. *et al., J. Nat. Prod.*, 1999, **62**, 1158-1159 (*isol, uv, ir, pmr, cmr, ms*)

4′,5,7-Trihydroxy-6-(5-oxo-2-pyrrolidinyl)flavanone T-572

6-(5-Oxo-2-pyrrolidinyl)naringenin



(2R,2"R)-form

$C_{19}H_{17}NO_6$ 355.346

(2*R*,2″*R*)-*form*
Dracocephin A₄
[1023993-43-2]
Constit. of *Dracocephalum rupestre.*

3′-Hydroxy: 3′,4′,5,7-Tetrahydroxy-6-(5-oxo-2-pyrrolidinyl)flavanone. 6-(5-Oxo-2-pyrrolidinyl)eriodictyol. ***Dracocephin C₄***
[1029363-44-7]
$C_{19}H_{17}NO_7$ 371.346
Constit. of *Dracocephalum rupestre.*

(2*R*,2″*S*)-*form*
Dracocephin A₁
[1029363-26-5]
Constit. of *Dracocephalum rupestre.*

3′-Hydroxy: ***Dracocephin C₁***
[1029363-38-9]
$C_{19}H_{17}NO_7$ 371.346
Constit. of *Dracocephalum rupestre.*

(2*S*,2″*R*)-*form*
Dracocephin A₃
[1029363-32-3]
Constit. of *Dracocephalum rupestre.*

3′-Hydroxy: ***Dracocephin C₃***
[1029363-42-5]
$C_{19}N_{17}NO_7$ 592.325
Constit. of *Dracocephalum rupestre.*

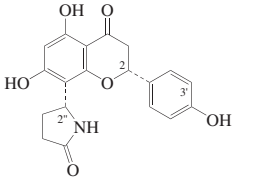
(2*S*,2″*S*)-*form*
Dracocephin A₂
[1029363-29-8]
Constit. of *Dracocephalum rupestre.*

3′-Hydroxy: ***Dracocephin C₂***
[1029363-40-3]
$C_{19}H_{17}NO_7$ 371.346
Constit. of *Dracocephalum rupestre.*

Ren, D.-M. *et al., Phytochemistry*, 2008, **69**, 1425-1433 (*isol, cd, pmr, cmr, cryst struct*)

4′,5,7-Trihydroxy-8-(5-oxo-2-pyrrolidinyl)flavanone T-573

8-(5-Oxo-2-pyrrolidinyl)naringenin



(2R,2"R)_form

$C_{19}H_{17}NO_6$ 355.346

(2*R*,2″*R*)-*form*
Dracocephin B₃
[1029363-36-7]
Constit. of *Dracocephalum rupestre.*

3′-Hydroxy: 3′,4′,5,7-Tetrahydroxy-8-(5-oxo-2-pyrrolidinyl)flavanone. 8-(5-Oxo-2-pyrrolidinyl)eriodictyol. ***Dracocephin D₃***
[1029363-50-5]
$C_{19}H_{17}NO_7$ 371.346
Constit. of *Dracocephalum rupestre.*

(2*R*,2″*S*)-*form*
Dracocephin B₂
[1029363-34-5]
Constit. of *Dracocephalum rupestre.*

3′-Hydroxy: ***Dracocephin D₂***
[1029363-48-1]
$C_{19}H_{17}NO_7$ 371.346
Constit. of *Dracocephalum rupestre.*

(2*S*,2″*R*)-*form*
Dracocephin B₄
[1023993-45-4]
Constit. of *Dracocephalum rupestre.*

3′-Hydroxy: ***Dracocephin D₄***
[1029363-52-7]
$C_{19}H_{17}NO_7$ 371.346
Constit. of *Dracocephalum rupestre.*

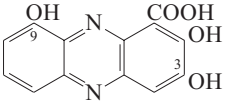
(2*S*,2″*S*)-*form*
Dracocephin B₁
[1023993-44-3]
Constit. of *Dracocephalum rupestre.*

3′-Hydroxy: ***Dracocephin D₁***
[1029363-46-9]
$C_{19}H_{17}NO_7$ 371.346
Constit. of *Dracocephalum rupestre.*

Ren, D.-M. *et al., Phytochemistry*, 2008, **69**, 1425-1433 (*isol, cd, pmr, cmr*)

2,3,9-Trihydroxy-1-phenazinecarboxylic acid T-574

[128723-47-7]

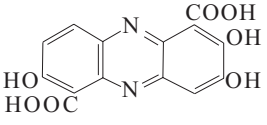


$C_{13}H_8N_2O_5$ 272.217
Isol. from *Pseudomonas fluorescens* grown under beryllium stress. No phys. props. reported.

Taraz, K. *et al., Z. Naturforsch., B*, 1990, **45**, 552 (*isol, pmr, cmr, ms, struct*)

2,3,7-Trihydroxy-1,6-phenazinedicarboxylic acid, 9CI T-575

[71670-86-5]

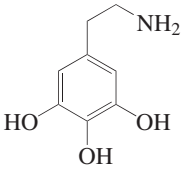


$C_{14}H_8N_2O_7$ 316.226
Isol. from *Pseudomonas aureofaciens.*

Römer, A. *et al., Tet. Lett.*, 1979, 509 (*pmr, struct*)

3,4,5-Trihydroxyphenethylamine T-576

5-(2-Aminoethyl)-1,2,3-benzenetriol, 9CI. 5-(2-Aminoethyl)pyrogallol, 8CI. 2-(3,4,5-Trihydroxyphenyl)ethylamine. 5-Hydroxydopamine
[1927-04-4]



$C_8H_{11}NO_3$ 169.18
Alkaloid from *Acacia rigidula.*

Hydrochloride: [5720-26-3]
Cryst. (MeOH/EtOAc). Mp 215-219°.

Hydrobromide: [20555-57-1]
Mp 192-196°.

Picrate:
Cryst. Mp 193-194°.

N-*Me: 5-[2-(Methylamino)ethyl]-1,2,3-benzenetriol, 9CI.* N-*Methyl-3,4,5-trihydroxyphenethylamine*
[73917-91-6]
$C_9H_{13}NO_3$ 183.207
Alkaloid from *Acacia rigidula.*

3′-Me ether: ***3,4-Dihydroxy-5-methoxyphenethylamine****. 5-(2-Aminoethyl)-3-methoxy-1,2-benzenediol, 9CI*
[16032-86-3]
$C_9H_{13}NO_3$ 183.207
Alkaloid present in *Lophophora williamsii* (Cactaceae). Major intermed. in biosynth. of peyote phenethylamine and tetrahydroisoquinoline alkaloids.

3′,4′-Di-Me ether: see 3-Hydroxy-4,5-dimethoxyphenethylamine, H-465

3′,5′-Di-Me ether: 4-Hydroxy-3,5-dimethoxyphenethylamine. 4-(2-Aminoethyl)-2,6-dimethoxyphenol, 9CI. 3,5-Dimethoxytyramine
[2413-00-5]
$C_{10}H_{15}NO_3$ 197.233
Alkaloid present in *Acacia rigidula*, *Trichocereus werdermannianus*, *Trichocereus pachanoi* and *Lophophora williamsii* (mescal) (Cactaceae). Cryst. Mp 180-181° (152-154°).

3′,5′-Di-Me ether, hydrochloride: [2176-14-9]
Cryst. Mp 258-259°.

3′,5′-Di-Me ether, N-*(4-hydroxy-3-methoxy*-E-*cinnamoyl):* N-trans-*Feruloyl-3,5-dimethoxytyramine.* ***Hibiscusamide***
[925211-84-3]
$C_{20}H_{23}NO_6$ 373.405
Alkaloid from the stem wood of *Hibiscus tiliaceus* and from *Alternanthera philoxeroides.*
Cytotoxic. Needles (EtOH) or yellow solid. Mp 126-128°. $[\alpha]_D^{25}$ -18 (c, 0.68 in MeOH). λ_{max} 220 (log ϵ 3.87); 288 (log ϵ 3.76); 316 (log ϵ 3.79) (MeOH). λ_{max} 232 (log ϵ 4.13); 295 (log ϵ 3.98); 319 (log ϵ 4.09) (MeOH).

Tri-Me ether: see Mescaline, M-219

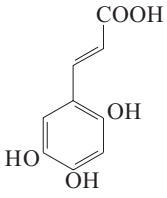
[5090-25-5 , 2176-14-9]

Hahn, G. *et al., Ber., B*, 1938, **71**, 2141 (*synth*)
Agurell, S. *et al., J. Nat. Prod.*, 1969, **32**, 40 (*isol, synth*)
Lunstrom, J. *et al., Acta Chem. Scand.*, 1971, **25**, 3489 (*occur, deriv*)
Andersen, A.M. *et al., Acta Chem. Scand.*, 1972, **26**, 2670-2680 (*cryst struct*)
Short, J.H. *et al., Tetrahedron*, 1973, **29**, 1931-1939 (*synth*)
Pardanani, J.H. *et al., J. Nat. Prod.*, 1977, **40**, 585-590 (*isol, deriv*)
Basmaljian, G.P. *et al., J. Nat. Prod.*, 1978, **41**, 375
Severin, T. *et al., Chem. Ber.*, 1980, **113**, 970-978 (*synth, deriv, pmr, ms*)
Battersby, A.R. *et al., J.C.S. Perkin 1*, 1981, 2016-2029 (*synth, pmr*)
Ma, W.W. *et al., J. Nat. Prod.*, 1986, **49**, 735-737 (*isol, deriv*)
Clement, B.A. *et al., Phytochemistry*, 1998, **49**, 1377-1380 (*isol*)
Chen, J.-J. *et al., Planta Med.*, 2006, **72**, 932-935 (*Hibiscusamide*)
Fang, J.-B. *et al., J. Asian Nat. Prod. Res.*, 2007, **9**, 511-515 (*N-Feruloyldimethoxytyramine*)

3-(2,4,5-Trihydroxyphenyl)-2-propenoic acid T-577

3-(2,4,5-Trihydroxyphenyl)acrylic acid. 2,4,5-Trihydroxycinnamic acid. Aesculetic acid. Esculetic acid

[56437-15-1]



$C_9H_8O_5$ 196.159

(*E*)-*form*

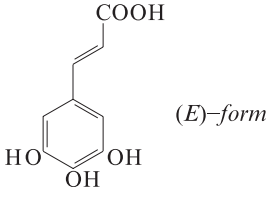
Tri-Me ether, pyrrolidide: N-*(2,4,5-Trimethoxycinnamoyl)pyrrolidine.* ***Sarmentamide C***
$C_{16}H_{21}NO_4$ 291.346
Constit. of the roots of *Piper sarmentosum*. Amorph. solid. Mp 159-162°. λ_{max} 203 (log ϵ 4.25); 230 (log ϵ 4.29); 305 (log ϵ 4.26) (MeOH).

Tuntiwachwuttikul, P. *et al., Chem. Pharm. Bull.*, 2006, **54**, 149-151 (*Sarmentamide C*)

3-(3,4,5-Trihydroxyphenyl)-2-propenoic acid T-578

3-(3,4,5-Trihydroxyphenyl)acrylic acid. 3,4,5-Trihydroxycinnamic acid

[6093-59-0]



(*E*)–*form*

$C_9H_8O_5$ 196.159
Does not appear to have been found in nature in the free state despite extensive searches.

(*E*)-*form*

Needles + $1H_2O$ (H_2O) becoming anhyd. at 120°. Mp 207-208° dec. CAS no. not found 8-14 Cl.

Tri-Me ether: 3-(3,4,5-Trimethoxyphenyl)-2-propenoic acid, 9CI. 3,4,5-Trimethoxycinnamic acid
[20329-98-0]
[90-50-6]
$C_{12}H_{14}O_5$ 238.24
Constit. of *Piper tuberculatum*, *Tecoma radicans, Polygala tenuifolia* and others. Needles (H_2O). Mp 126.5-127°. λ_{max} 222 (log ϵ 4.408); 282 (log ϵ 4.255) (MeOH).

Tri-Me ether, 2-methylpropylamide: 3,4,5-Trimethoxycinnamic acid isobutylamide. N-*Isobutyl-3,4,5-trimethoxycinnamide*
[10511-98-5]
$C_{16}H_{23}NO_4$ 293.362
Alkaloid from *Piper amalago.*

Tri-Me ether, pyrrolidide: N-*(3,4,5-Trimethoxycinnamoyl)pyrrolidine. 3,4,5-Trimethoxycinnamic acid pyrrolidide.* ***Piperlotine C***
[1703-35-1]
$C_{16}H_{21}NO_4$ 291.346
Constit. of *Piper amalago* and *Piper lolot*. Cryst. (H_2O). Mp 158° (148-150°). λ_{max} 231 ; 304 (MeOH).

Tri-Me ether, piperidide: 3,4,5-Trimethoxycinnamoyl piperidide. ***Puberullumine***
[188546-66-9]
$C_{17}H_{23}NO_4$ 305.373
Alkaloid from leaves and stems of *Piper puberuleum*. Needles. Mp 94-96°. λ_{max} 200 ; 224 ; 296 (MeOH).

3,4-Methylene, 5-Me ether, 2-methylpropylamide: **N-*Isobutyl-3-methoxy-4,5-methylenedioxycinnamide.*** N-*(3-Methoxy-4,5-methylenedioxycinnamoyl)isobutylamine*
[102934-27-0]
$C_{15}H_{19}NO_4$ 277.319
Alkaloid from *Esenbeckia almawilla* and *Piper amalago*. Amorph. solid.

3,4-Methylene, 5-Me ether, pyrrolidide: **N-*(3-Methoxy-4,5-methylenedioxycinnamoyl)pyrrolidine***
[102934-26-9]
$C_{15}H_{17}NO_4$ 275.304
Alkaloid from *Piper amalago*. Config. not determined, may have contained some *Z*-isomer.

(*Z*)-*form*

CAS no. not found to 14 Cl.

3,4,5-Tri-Me ether, pyrrolidide: ***Piperlotine D***
[958296-13-4]
$C_{16}H_{21}NO_4$ 291.346
Alkaloid from the leaves of *Piper lolot*. Syrup. λ_{max} 226 ; 289 (MeOH).

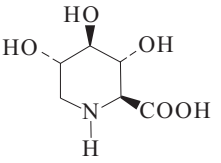
3,4-Methylene, 5-Me ether, piperidide: N-*(3-Methoxy-4,5-methylenedioxycinnamoyl)piperidide*
$C_{16}H_{19}NO_4$ 289.33
Alkaloid from the roots of *Piper nigrum* (pepper). Oil.

[54976-67-9]

Achenbach, H. *et al., Planta Med.*, 1986, **52**, 12-18 (*Piper amalgo amides*)
Wu, Q.-L. *et al., Phytochemistry*, 1997, **44**, 727-730 (*Puberullumine*)
Wei, K. *et al., J. Nat. Prod.*, 2004, **67**, 1005-1009 (*Piper nigrum piperidide*)
Li, C.-Y. *et al., J. Agric. Food Chem.*, 2007, **55**, 9436-9442 (*Piperlotines C-D*)
Barros-Filho, B.A. *et al., Quim. Nova*, 2007, **30**, 1589-1591 (*3,4-methylene 5-Me ether 2-methylpropylamide*)

3,4,5-Trihydroxy-2-piperidinecarboxylic acid T-579

3,4,5-Trihydroxypipecolic acid



$C_6H_{11}NO_5$ 177.157

(2*S*,3*R*,4*R*,5*S*)-*form*

2,6-Dideoxy-2,6-imino-L-gulonic acid, 9CI
[96861-04-0]
Isol. from seeds of *Baphia racemosa* (Fabaceae). Glucuronidase and iduronidase inhibitor. Needles (EtOH aq.). Mp 228-232°. $[\alpha]_D$ +18.5 (c, 1 in H_2O).

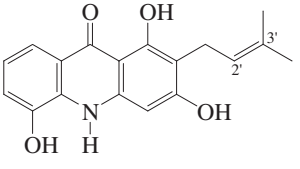
(2*R*,3*R*,4*R*,5*S*)-*form*

2,6-Dideoxy-2,6-imino-L-idonic acid, 9CI
[108428-44-0]
Mp 198-202°. $[\alpha]_D^{20}$ +34 (c, 0.25 in H_2O).

DiBello, I.C. *et al., FEBS Lett.*, 1984, **176**, 61 (*biochem*)
Manning, K.S. *et al., Chem. Comm.*, 1985, 127 (*isol, ms, pmr*)
Bernotas, R.C. *et al., Tet. Lett.*, 1985, **26**, 4981 (*synth, cmr*)
Bashyal, B.P. *et al., Tet. Lett.*, 1986, **27**, 3205 (*synth, cmr*)
Lee, B.W. *et al., Synthesis*, 2000, 1305-1309 (*2R,3R,4R,5S-form, synth, pmr, cmr*)
Tsimilaza, A. *et al., Tetrahedron: Asymmetry*, 2007, **18**, 1585-1588 (*2S,3R,4R,5S-form, synth*)
Booth, K.V. *et al., Acta Cryst. E*, 2008, **63**, o3783-o3784 (*cryst struct*)

1,3,5-Trihydroxy-2-prenylacridone T-580

*1,3,5-Trihydroxy-2-(3-methyl-2-butenyl)-9(10*H*)-acridinone, 9CI*



$C_{18}H_{17}NO_4$ 311.337

N-*Me: 1,3,5-Trihydroxy-10-methyl-2-prenylacridone.* ***Junosine***

[103956-34-9]
$C_{19}H_{19}NO_4$ 325.363
Alkaloid from the bark of *Citrus junos* (yuzu) (Rutaceae). Light yellow prisms. Mp 210-213°.

3-Me ether: 1,5-Dihydroxy-10-methyl-2-prenylacridone. ***Buxifoliadine C***
[263007-67-6]
$C_{19}H_{19}NO_4$ 325.363
Alkaloid from the root bark of *Severinia buxifolia*. Yellow needles (Me_2CO). Mp 275-278° dec. λ_{max} 231 (log ε 3.23); 237 (sh) (log ε 3.19); 262 (log ε 3.66); 273 (log ε 3.55); 275 (sh) (log ε 3.53); 283 (log ε 3.63); 394 (log ε 2.74) (MeOH).

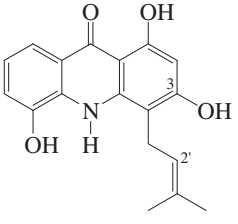
5-Me ether, N-*Me: 1,3-Dihydroxy-5-methoxy-10-methyl-2-prenylacridone.* ***Yukomine***
[139219-97-9]
$C_{20}H_{21}NO_4$ 339.39
Alkaloid from *Citrus wilsonii* and *Citrus yuko* (Rutaceae). Yellow needles (CH_2Cl_2). Mp 214-217°.

Δ$^{3'}$-Isomer, 2′ξ-hydroxy, N-*Me: 1,3,5-Trihydroxy-2-(2-hydroxy-3-methyl-3-butenyl)-10-methylacridone.* ***Bosistidine***
[176391-58-5]
$C_{19}H_{19}NO_5$ 341.363
Alkaloid from stem bark of *Bosistoa transversa* (Rutaceae). Amorph. $[\alpha]_D$ -15.1 (c, 0.0018 in $CHCl_3$).

Ju-ichi, M. *et al., Heterocycles*, 1986, **24**, 1595-1597; 1991, **32**, 1781-1784 (*Junosine, Yukomine*)
Auzi, A.A. *et al., Phytochemistry*, 1996, **42**, 235-238 (*Bosistidine*)
Wu, T.-S. *et al., Chem. Pharm. Bull.*, 2000, **48**, 85-90 (*Buxifoliadine C*)

1,3,5-Trihydroxy-4-prenylacridone T-581

*1,3,5-Trihydroxy-4-(3-methyl-2-butenyl)-9(10*H*)-acridinone, 9CI*
[85990-02-9]



$C_{18}H_{17}NO_4$ 311.337
Alkaloid from the stem bark of *Oriciopsis glaberrima*. α-Glucosidase inhibitor. Yellow powder (MeOH). Mp 250°. $[\alpha]_D^{25}$ +51.6 (c, 0.62 in MeOH). λ_{max} 233 (log ε 1.49); 253 (log ε 1.99); 276 (log ε 1.73); 278 (log ε 1.75); 289 (log ε 1.5); 303 (log ε 1.56); 341 (log ε 0.86); 397 (log ε 1.2) (MeOH).

N-*Me:* ***Oriciacridone E***
[886227-05-0]
$C_{19}H_{19}NO_4$ 325.363
Alkaloid from the stem bark of *Oriciopsis glaberrima*. Amorph. yellow powder (MeOH). $[\alpha]_D^{25}$ +63.6 (c, 0.7 in MeOH). λ_{max} 235 (log ε 1.5); 253 (log ε 2); 275 (log ε 1.8); 280 (log ε 1.75); 290 (log ε 1.5); 303 (log ε 1.6); 342 (log ε 1); 420 (log ε 1.21) (MeOH).

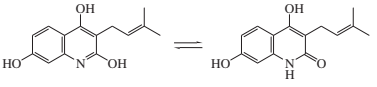
3-Me ether, N-*Me: 1,5-Dihydroxy-3-methoxy-10-methyl-4-prenylacridone.* ***Glycocitrine I***
[82354-36-7]
Alkaloid from the root and stem bark of *Glycosmis citrifolia* and from the root bark of *Citrus grandis* f. *hakunikuyu*. Orange-yellow needles ($CHCl_3$). Mp 210-212°. λ_{max} 228 (log ε 4.17); 268 (log ε 4.57); 322 (sh) (log ε 4.01); 337 (log ε 4.07); 415 (log ε 3.58) (MeOH).

Δ$^{3'}$-Isomer, 2′ξ-hydroxy, 3-Me ether, N-*Me: 1,5-Dihydroxy-4-(2-hydroxy-3-methyl-3-butenyl)-3-methoxy-10-methylacridone.* ***Marshmine***
[160927-88-8]
$C_{20}H_{21}NO_5$ 355.39
Alkaloid from roots of Marsh grapefruit (*Citrus paradisi*). Yellow oil. $[\alpha]_D$ -28 (c, 0.15 in $CHCl_3$).

Wu, T.-S. *et al., J.C.S. Perkin 1*, 1983, 1681-1688 (*Glycocitrine I*)
Takemura, Y. *et al., Heterocycles*, 1994, **39**, 315-318 (*Marshmine*)
Wansi, J.D. *et al., Chem. Pharm. Bull.*, 2006, **54**, 292-296 (*Oriciopsis glaberrima constits, Oriciacridone E*)

2,4,7-Trihydroxy-3-prenylquinoline T-582

*4,7-Dihydroxy-3-(3-methyl-2-butenyl)-2(1*H*)-quinolinone, 9CI*



$C_{14}H_{15}NO_3$ 245.277

NH-form

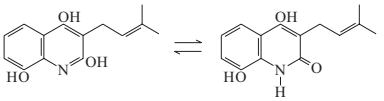
O^7,N-*Di-Me, 2′ξ,3′-epoxide: 3-(2,3-Epoxy-3-methylbutyl)-4-hydroxy-7-methoxy-1-methyl-2(1*H*)-quinolinone*
$C_{16}H_{19}NO_4$ 289.33
Alkaloid from *Toddalia aculeata*. Yellow cryst. Mp 110-112°. λ_{max} 232 ; 238 ; 243 ; 248 ; 250 ; 299 ; 324 (MeOH).

2′,3′-Dihydro, 2′ξ,3′-dihydroxy, O^4,O^7,N-*tri-Me: 3-(2,3-Dihydroxy-3-methylbutyl)-4,7-dimethoxy-1-methyl-2(1*H*)-quinolinone*
$C_{17}H_{23}NO_5$ 321.372
Alkaloid from *Toddalia aculeata*. Yellow cryst. Mp 89-92°. λ_{max} 232 ; 238 ; 257 ; 284 ; 331 (MeOH).

Jain, S.C. *et al., Phytochemistry*, 2006, **67**, 1005-1010 (*isol, pmr, cmr, ms*)

2,4,8-Trihydroxy-3-prenylquinoline T-583

*4,8-Dihydroxy-3-(3-methyl-2-butenyl)-2(1*H*)-quinolinone, 9CI*



$C_{14}H_{15}NO_3$ 245.277

*4,8-Di-Me ether: 4,8-Dimethoxy-3-(3-methyl-2-butenyl)-2(1*H*)-quinolinone. 2-Hydroxy-4,8-dimethoxy-3-prenylquinoline.* ***Glycolone***†
[41303-26-8]
$C_{16}H_{19}NO_3$ 273.331
Alkaloid from the leaves of *Glycosmis pentaphylla*. Cryst. (Me_2CO/petrol). Mp 118°.

NH-form

O^4,N-*Di-Me: 8-Hydroxy-4-methoxy-1-methyl-3-(3-methyl-2-butenyl)-2(1*H*)-quinolinone, 9CI.* ***Glycosolone***
[67879-81-6]
$C_{16}H_{19}NO_3$ 273.331
Alkaloid from the root bark of *Glycosmis pentaphylla* (Rutaceae). Light yellow cryst. (C_6H_6/petrol). Mp 159°.

O^8,N-*Di-Me: 4-Hydroxy-8-methoxy-1-methyl-3-(3-methyl-2-butenyl)-2(1*H*)-quinolinone, 9CI.* ***Glycophylone***
[41303-24-6]
$C_{16}H_{19}NO_3$ 273.331
Alkaloid from the seeds of *Glycosmis pentaphylla* (Rutaceae). Mp 151°.

O^4,O^8,N-*Tri-Me: 4,8-Dimethoxy-1-methyl-3-(3-methyl-2-butenyl)-2(1*H*)-quinolinone.* **O-*Methylglycosolone*.** O-*Methylglycophylone*
[41303-25-7]
$C_{17}H_{21}NO_3$ 287.358
Alkaloid from the roots of *Glycosmis arborea* and *Glycosmis mauritiana*. Oil. $Bp_{0.0001}$ 160°. λ_{max} 240 ; 258 ; 285 ; 295 ; 335 (MeOH).

O^4-*Et,* N-*Me: 4-Ethoxy-8-hydroxy-1-methyl-3-(3-methyl-2-butenyl)-2(1*H*)-quinolinone, 9CI.* ***Homoglycosolone***
[107030-41-1]
$C_{17}H_{21}NO_3$ 287.358
Alkaloid from root bark of *Glycosmis pentaphylla* (Rutaceae). Mp 168°.

2′-Oxo, 2′,3′-dihydro, O^4,O^8,N-*tri-Me: 4,8-Dimethoxy-1-methyl-3-(3-methyl-2-oxobutyl)-2(1*H*)-quinolinone.* ***Orixalone A***
$C_{17}H_{21}NO_4$ 303.357
Alkaloid from the stems of *Orixa japonica*. Oil. λ_{max} 212 ; 238 ; 256 ; 284 ; 292 ; 332 (MeOH).

Δ$^{3'}$-Isomer, 2′-oxo, O^4,O^8*-di-Me: 4,8-Dimethoxy-3-(3-methyl-2-oxo-3-butenyl)-2(1*H*)-quinolinone.* ***Orixalone C***
$C_{16}H_{17}NO_4$ 287.315
Alkaloid from the stems of *Orixa japonica*. Oil. λ_{max} 226 ; 234 (sh) ; 254 ; 280 ; 292 ; 326 (MeOH).

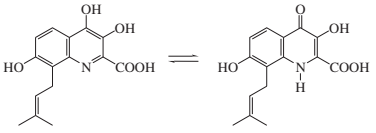
Δ$^{3'}$-Isomer, 2′-oxo, O^4,O^8,N-*tri-Me: 4,8-Dimethoxy-1-methyl-3-(3-methyl-2-oxo-3-butenyl)-2(1*H*)-quinolinone.* ***Orixalone B***
$C_{17}H_{19}NO_4$ 301.341
Alkaloid from the stems of *Orixa japonica*. Oil. λ_{max} 218 ; 230 ; 256 ; 284 ; 294 ; 328 (MeOH).

Clarke, E.A. *et al., J.C.S.*, 1964, 438 (*synth, N,O,O-tri-Me*)
Rastogi, K. *et al., Phytochemistry*, 1980, **19**, 945-948 (*isol, uv, ir, pmr, ms*)
Das, B.P. *et al., Indian J. Chem., Sect. B*, 1982, **21**, 176 (*isol, uv, ir, pmr, cmr, ms, struct, Glycosolone*)
Wu, T.-S. *et al., J.C.S. Perkin 1*, 1983, 1681 (*isol, deriv*)

Bhattacharyya, P. *et al., Chem. Ind. (London)*, 1984, 352 (*Glycopholone*)
Ramesh, M. *et al., Tetrahedron*, 1984, **40**, 4041 (*synth, ir, pmr, deriv*)
Bhattacharyya, P. *et al., Phytochemistry*, 1985, **24**, 634 (*Glycolone*)
Kumar, P. *et al., Chem. Ind. (London)*, 1986, 669 (*Homoglycosolone*)
Chakravarty, A.V. *et al., Phytochemistry*, 1999, **50**, 1263-1266 (*O-Methylglycosolone*)
Ito, C. *et al., J. Nat. Prod.*, 2004, **67**, 1800-1803 (*Orixalones*)

3,4,7-Trihydroxy-8-prenyl-2-quinolinecarboxylic acid T-584

1,4-Dihydro-3,7-dihydroxy-8-(3-methyl-2-butenyl)-4-oxo-2-quinolinecarboxylic acid

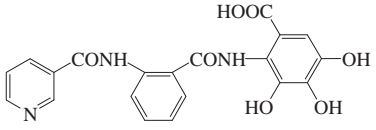


$C_{15}H_{15}NO_5$ 289.287

NH-form

O^3,N-*Di-Me, Me ester:* ***Megistonine I***
$C_{18}H_{21}NO_5$ 331.368
Alkaloid from the bark of *Sarcomelicope megistophylla*. Amorph. yellow powder. λ_{max} 243 (log ε 3.91); 267 (sh) ; 335 (log ε 3.48) (MeOH).
Fokialakis, N. *et al., Chem. Pharm. Bull.*, 2000, **48**, 2009-2010

3,4,5-Trihydroxy-2-[[2-[(3-pyridinylcarbonyl)amino]benzoyl]amino]benzoic acid, 9CI T-585

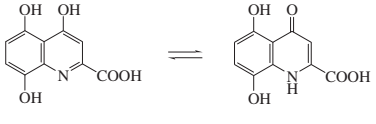


$C_{20}H_{15}N_3O_7$ 409.354

Tri-Me ether, Me ester: Methyl 3,4,5-trimethoxy-2-[[2-[(3-pyridinylcarbonyl)amino]benzoyl]amino]benzoate
[81469-77-4]
$C_{24}H_{23}N_3O_7$ 465.462
Metab. of *Aspergillus terreus* var. *africanus*. Needles (MeOH). Mp 141-143°. Alkaloid not named in the paper.
Arai, K. *et al., Chem. Pharm. Bull.*, 1981, **29**, 1005 (*uv, ir, pmr, ms, struct, synth*)

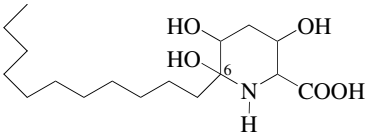
4,5,8-Trihydroxy-2-quinolinecarboxylic acid T-586

1,4-Dihydro-5,8-dihydroxy-4-oxo-2-quinolinecarboxylic acid, 9CI
[115525-96-7]



$C_{10}H_7NO_5$ 221.169
Depicted as the quinolone tautomer which prob. predominates in soln. Pigment from the Antarctic sponge *Dendrilla membranosa*. Exhibits antimicrobial activity. Yellow solid. Sol. H_2O. Mp 295-300° dec. λ_{max} 236 (ε 16300); 258 (ε 13300); 280 (sh) (ε 6550); 353 (ε 4250) (H_2O at pH 10) (Derep). λ_{max} 232 (ε 17100); 250 (ε 14600); 270 (sh) (ε 6550); 331 (ε 3900); 347 (ε 3080) (H_2O) (Derep). λ_{max} 232 (ε 17100); 250 (ε 14600); 331 (ε 3900); 347 (ε 3080) (H_2O) (Berdy).
Molinski, T.F. *et al., Tet. Lett.*, 1988, **29**, 2137 (*isol, uv, ir, pmr, ms, struct*)

3,5,6-Trihydroxy-6-undecyl-2-piperidinecarboxylic acid T-587

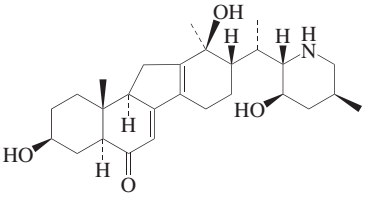


$C_{17}H_{33}NO_5$ 331.451

6-O-β-D-Glucopyranoside: [194099-50-8]
$C_{23}H_{43}NO_{10}$ 493.593
Alkaloid from *Cyclamen coum*.
Yayli, N. *et al., Turk. J. Chem.*, 1997, **21**, 139-143 (*isol, pmr, cmr, ms*)

3,13,23-Trihydroxyveratra-7,12(14)-dien-6-one T-588

7,8,12,14-Tetradehydro-5,6,12,13-tetrahydro-3,13,23-trihydroxyveratraman-6-one

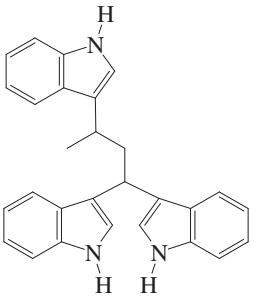


$C_{27}H_{41}NO_4$ 443.625
Nomenclature of these compounds is confusing and not well established.

(3β,5α,13βOH,23R,25S)-form [946412-11-9]
Alkaloid from the bulbs of *Fritillaria hupehensis*. Amorph. powder (MeOH). Mp 132-133.1°. Small negative optical rotation. λ_{max} 242 (log ε 4.28); 348 (log ε 3.56) (no solvent reported).

13-Deoxy: ***3,23-Dihydroxyveratra-7,12(14)-dien-6-one***
[1011725-08-8]
$C_{27}H_{41}NO_3$ 427.626
Alkaloid from the bulbs of *Fritillaria hupehensis*. Powder (MeOH). Mp 132-133°. $[\alpha]_D^{20}$ -0.01 (c, 0.001 in $CHCl_3$). λ_{max} 242 (log ε 4.28); 348 (log ε 3.56) (MeOH).
Zhang, Y.H. *et al., Chin. J. Chem.*, 2007, **25**, 1728-1731 (*isol, pmr, cmr*)
Zhang, Y.H. *et al., Chem. Biodiversity*, 2008, **5**, 259-266 (*isol, pmr, cmr*)

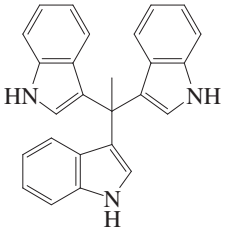
1,1,3-Tri-(1*H*-indol-3-yl)butane T-589



$C_{28}H_{25}N_3$ 403.526

(ξ)-form [639079-45-1]
Isol. from the marine bacterium *Vibrio parahaemolyticus* Bio249. Yellowish solid. λ_{max} 276 (sh) (log ε 4); 282 (log ε 4.03); 290 (log ε 3.99) (MeOH).
Veluri, R. *et al., J. Nat. Prod.*, 2003, **66**, 1520-1523 (*isol, pmr, cmr, ms*)

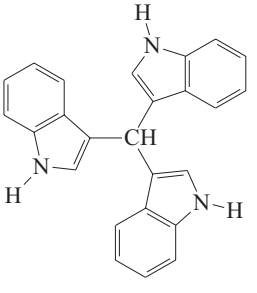
1,1,1-Tri-(1*H*-indol-3-yl)ethane T-590



$C_{26}H_{21}N_3$ 375.472
Isol. from *Escherichia coli* supplemented with indole.
Garbe, T.R. *et al., J. Nat. Prod.*, 2000, **63**, 596-598

Tri-1*H*-indol-3-ylmethane T-591

*3,3′,3′′-Methylidynetris-1*H*-indole, 9CI*
[518-06-9]



$C_{25}H_{19}N_3$ 361.445
Isol. from the marine bacterium *Vibrio parahaemolyticus* Bio249. Cryst. (MeOH). Mp 244-246°. λ_{max} 248 (sh) (log ε 3.56); 283 (log ε 3.32); 388 (log ε 3.65) (MeOH).

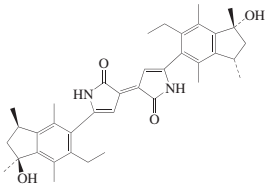
*N,N′,N′′-Tri-Me: Tris(1-methyl-3-indolyl)methane. 3,3′,3′′-Methylidynetris[1-methyl-1*H*-indole]*

[27065-95-8]
$C_{28}H_{25}N_3$ 403.526
Cryst. (Py). Mp 268-270°.

Harley-Mason, J. *et al., Biochem. J.*, 1952, **51**, 430 (*synth*)
Bergman, J. *et al., J. Het. Chem.*, 1971, **8**, 329; 1985, **22**, 341 (*synth, deriv*)
Akgün, E. *et al., J. Het. Chem.*, 1983, **20**, 1303 (*synth, ir, pmr*)
Koshima, H. *et al., J. Het. Chem.*, 2002, **39**, 1089-1091 (*synth, ir, pmr*)
Veluri, R. *et al., J. Nat. Prod.*, 2003, **66**, 1520-1523 (*isol, pmr, cmr*)

Trikendiol T-592

[158734-27-1]



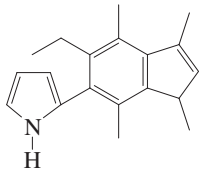
Tentative Relative Configuration

$C_{38}H_{46}N_2O_4$ 594.792
Red pigment from the sponge *Trikentrion loeve*. Sows anti-HIV props. Red cryst. (Me_2CO). Mp 160-162°. $[\alpha]_D$ +102 (c, 0.02 in $CHCl_3$). λ_{max} 210 (ϵ 37400); 265 (ϵ 8050); 337 (sh) ; 510 (ϵ 8360) (MeOH assumed, not reported) (Derep).

Loukaci, A. *et al., Tet. Lett.*, 1994, **35**, 6869-6872 (*isol, uv, pmr, cmr, struct*)

Trikentramine T-593

*2-(5-Ethyl-1,3,4,7-tetramethyl-1*H*-inden-6-yl)-1*H*-pyrrole, 9CI*
[129536-24-9]

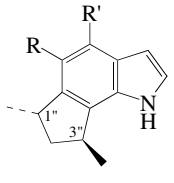


$C_{19}H_{23}N$ 265.397
Alkaloid from the Senegalese sponge *Trikentrion loeve*. Cryst. (hexane). Mp 145°. $[\alpha]_D^{27}$ +175 (c, 0.81 in $CHCl_3$). λ_{max} 209 (ϵ 21300); 222 (ϵ 39700); 271 (ϵ 10700) (no solvent reported).

Aknin, M. *et al., Tet. Lett.*, 1990, **31**, 2979 (*isol, uv, pmr, cmr, cryst struct*)

Trikentrin A T-594

4-Ethyl-1,6,7,8-tetrahydro-6,8-dimethylcyclopent[g]indole, 9CI



(1"*R*,3"*S*)-*form*

R = H, R' = CH_2CH_3

$C_{15}H_{19}N$ 213.322

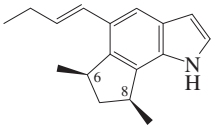
(1"*R*,3"*S*)-*form*
(+)-cis-*form*
[107368-92-3]
Isol. from *Trikentrion flabelliforme*. Possesses antimicrobial activity. Unstable oil which darkens on storage. Sol. MeOH, $CHCl_3$. $[\alpha]_D$ +48 (c, 2.47 in $CHCl_3$). λ_{max} 241 (ϵ 11350); 271 (ϵ 11200) (MeOH) (Berdy).

(1"*S*,3"*S*)-*form*
(+)-trans-*form*
[107438-53-9]
Isol. from the marine sponge *Trikentrion flabelliforme*. Possesses antimicrobial activity. Stable oil which cryst. on standing. Sol. MeOH, $CHCl_3$. $[\alpha]_D$ +23.3 (c, 1.0 in $CHCl_3$). λ_{max} 222 (ϵ 68400); 271 (ϵ 12600) (MeOH) (Berdy).

Capon, R.J. *et al., Tetrahedron*, 1986, **42**, 6545 (*isol, uv, ir, pmr, cmr, ms*)
Macleod, J.K. *et al., Tet. Lett.*, 1988, **29**, 391 (*synth, pmr*)
Muratake, H. *et al., Chem. Pharm. Bull.*, 1994, **42**, 854 (*abs config, bibl*)
Huntley, R.J. *et al., Org. Lett.*, 2006, **8**, 3403-3406 (*synth*)
Jackson, S.K. *et al., J.O.C.*, 2007, **72**, 1405-1411 (*synth*)
Silva, L.F. *et al., Org. Lett.*, 2008, **10**, 5417-5420 (*synth*)

Trikentrin B T-595

5-(1-Butenyl)-1,6,7,8-tetrahydro-6,8-dimethylcyclopent[g]indole, 9CI



(6*R*,8*S*)-*form*

$C_{17}H_{21}N$ 239.36
CAS numbering shown. Isol. as an inseparable mixt. of *cis*- and *trans*-Trikentrin B's. Shows antimicrobial activity. Unstable oil which darkens on storage. $[\alpha]_D$ -13 (c, 1.97 in $CHCl_3$). λ_{max} 249 (ϵ 24200); 275 (ϵ 8800) (MeOH) (Derep).

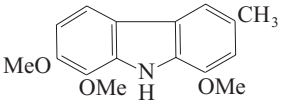
(6*R*,8*S*)-*form*
cis-*form*
[107438-54-0]
Isol. from the marine sponge *Trikentrion flabelliforme*.

(6*S*,8*S*)-*form*
trans-*form*
[107368-93-4]
Isol. from *Trikentrion flabelliforme*.

Capon, R.J. *et al., Tetrahedron*, 1986, **42**, 6545 (*isol, uv, ir, pmr, cmr, ms, struct*)
Muratake, H. *et al., Chem. Pharm. Bull.*, 1994, **42**, 854 (*abs config, bibl*)
MacLeod, J.K. *et al., Aust. J. Chem.*, 1998, **51**, 177-187 (*synth, pmr, cmr*)
Jackson, S.K. *et al., Org. Lett.*, 2005, **7**, 1215-1218 (*synth*)
Huntley, R.J. *et al., Org. Lett.*, 2006, **8**, 3403-3406 (*synth*)

1,2,8-Trimethoxy-6-methyl-9*H*-carbazole, 9CI T-596

Murrayastine
[104778-02-1]

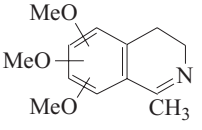


$C_{16}H_{17}NO_3$ 271.315
Alkaloid from the stem bark of *Murraya euchrestifolia* (Rutaceae). Syrup.

Furukawa, H. *et al., Chem. Pharm. Bull.*, 1986, **34**, 2672 (*uv, ir, pmr, ms, struct, synth*)

ar-Trimethoxy-1-methylisoquinoline T-597

[93474-22-7]

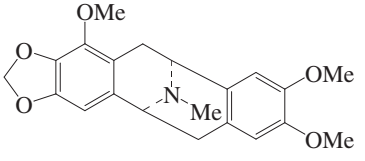


$C_{13}H_{15}NO_3$ 233.266
Alkaloid detected in *Pachycereus weberi* by tandem mass spectrom. (Cactaceae).

Roush, R.A. *et al., Anal. Chem.*, 1985, **57**, 109-114 (*occur*)

4,8,9-Trimethoxy-*N*-methyl-2,3-methylenedioxypavinane T-598

[60941-19-7]

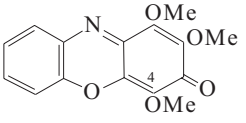


$C_{21}H_{23}NO_5$ 369.416
Probable struct., rel. config. only. Numbered by the authors as 2,3,7-trimethoxy-8,9-methylenedioxy (the pavine nucleus shows twofold rotational symmetry). Alkaloid from *Thalictrum strictum* epigeal parts (Ranunculaceae). Prisms (Et_2O). Mp 144-145°. $[\alpha]_D^{22}$ -174 (c, 0.977 in MeOH).

Maekh, S.Kh. *et al., Khim. Prir. Soedin.*, 1976, 116; *Chem. Nat. Compd. (Engl. Transl.)*, 110 (*isol, uv, pmr, ms*)

1,2,4-Trimethoxy-3*H*-phenoxazin-3-one T-599

AV toxin E
[112899-86-2]



$C_{15}H_{13}NO_5$ 287.271

Prod. by leaf spot fungus *Acrospermum viticola*. Phytotoxin. Red needles (MeOH). Mp 160-162°. Related to 2-Amino-3*H*-phenoxazin-3-one, A-862 and Michigazone, M-590.

*4-Demethoxy: 1,2-Dimethoxy-3*H*-phenoxazin-3-one.* ***AV toxin D***
[112899-85-1]
$C_{14}H_{11}NO_4$ 257.245
From *Acrospermum viticola*. Phytotoxin. Yellow-brown plates (MeOH). Mp 148-150°.

Kinjo, J. *et al., Tet. Lett.*, 1987, **28**, 3697 (*isol, struct*)
Kajimoto, T. *et al., Chem. Lett.*, 1988, 1113 (*synth*)

Trimethylamine, 8CI T-600

N,N-*Dimethylmethanamine, 9CI. FEMA 3241*
[75-50-3]
Me_3N
C_3H_9N 59.111
Manuf. by catalytic reaction of ammonia with MeOH. Widespread in higher plants, fungi and bacteria. Volatile component of anal sac secretions from dog *Canis familiaris* and coyote *Canis latrans*. Used for manuf. of choline salts. Volatile liq. with fishy odour. Misc. H_2O, EtOH; sol. Et_2O, C_6H_6, $CHCl_3$. d_4^0 0.67. Mp -117.2°. $Bp_{746.6}$ 3.2-3.8°. pK_a 9.81. Crit. pt. 160.5°/41 atm.

▶ Extremely flammable. Eye, skin and respiratory tract irritant. High vapour conc. may affect CNS. LD_{50} (mus, ivn) 90 mg/kg. LC_{50} (mus, ihl) 19000 mg m^{-3}. OES: long-term 10 ppm; short-term 15 ppm. PA0350000

Hydrochloride: [593-81-7]
Needles (EtOH). Sol. EtOH; insol. Et_2O. Mp 277-278° dec. Subl. 200.

▶ LD_{50} (mus, ivn) 325 mg/kg. YH2700000

Hydrobromide: [2840-24-6]
Prisms (EtOH). Mp 243-245°.

Hydroiodide: [20230-89-1]
Prisms (EtOH). Sol. H_2O, insol. Et_2O. Mp 263°.

SO_3 complex: [3162-58-1]
$C_3H_9NO_3S$ 139.175
Moisture-sensitive solid. Mp 232° dec Mp 240°.

N-*Oxide:* see Trimethylamine oxide, T-601

N-*Me:* see Tetramethylammonium(1+), T-280

[16962-53-1]

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 298D; 299A (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 479C (*nmr*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 383B (*ir*)
Koeppen, A. *et al., Ber.*, 1905, **38**, 882 (*synth*)
Org. Synth., Coll. Vol., 1, 1932, 531 (*synth, props*)
Moede, J.A. *et al., J.A.C.S.*, 1949, **71**, 852 (*SO_3 complex*)
Ger. Pat., 1969, 2 053 709; *CA*, **75**, 35113q (*synth*)
Hvistendahl, G. *et al., Org. Mass Spectrom.*, 1970, **3**, 821 (*ms*)
Karrer, W. *et al., Konstitution und Vorkommen der Organischen Pflanzenstoffe*, 2nd edn., Birkhäuser Verlag, 1972, no. 2446 (*occur*)
Price, C.C. *et al., J.O.C.*, 1973, **38**, 615 (*pmr*)
Sarneski, J.E. *et al., Anal. Chem.*, 1975, **47**, 2116 (*cmr*)
Preti, G. *et al., J. Chem. Ecol.*, 1976, **2**, 177
Blake, A.J. *et al., Acta Cryst. C*, 1984, **40**, 413 (*cryst struct*)
Halpern, A.M. *et al., J.A.C.S.*, 1986, **108**, 3907 (*uv*)
Ullmann's Encycl. Ind. Chem., 5th Ed., VCH, Weinheim, 1990, **A16**, 535 (*rev*)
Murphy, W.F. *et al., J. Phys. Chem.*, 1993, **97**, 581 (*ir, Raman*)
Encyclopaedia of Reagents for Organic Synthesis, (ed. Paquette, L.A.), Wiley, 1995, **7**, 5195-5197 (*use*)
Fenaroli's Handbook of Flavor Ingredients, 3rd edn., (ed. Burdock, G.A.), CRC Press, 1995, 767
Encyclopedia of Food and Color Additives, (ed. Burdock, G.A.), CRC Press, 1997, 2835; 2836
Luxon, S.G. *et al., Hazards in the Chemical Laboratory, 5th edn., Royal Society of Chemistry*, 1992, 1280
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, TLD500; TLE000; TLD750; TLF750

Trimethylamine oxide, 8CI T-601

N,N-*Dimethylmethanamine* N-*oxide, 9CI. Trimethyloxamine. Triox*
[1184-78-7]
$Me_3N^{\oplus}–O^{\ominus}$
C_3H_9NO 75.11
Widely distrib. in animal tissues, esp. fish. Oxidising agent used in synthesis. Cleaves Si–C bonds. Large cryst. (DMF). Sol. H_2O, MeOH. Mp 224-226° dec. Hygroscopic.

▶ Potentially explosive.

Dihydrate: [62637-93-8]
Cryst. (H_2O). Mp 96°.

▶ YH2850000

Hydrochloride: [7651-88-9]
Needles (EtOH). Sol. H_2O, hot MeOH. Mp 218°.

Hydroiodide: [81752-56-9]
Prisms (EtOH). Sol. H_2O, EtOH. Mp 130° dec.

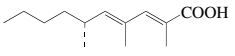
Aldrich Library of FT-IR Spectra, 1st edn., 1985, **1**, 299B (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **1**, 480B (*nmr*)
Dunstan, W.R. *et al., J.C.S.*, 1899, **75**, 792 (*synth*)
Caron, A. *et al., Acta Cryst.*, 1964, **17**, 102 (*cryst struct*)
Craig, J.C. *et al., J.O.C.*, 1970, **35**, 1721 (*synth, props*)
Bravo, R. *et al., Org. Magn. Reson.*, 1973, **5**, 357 (*pmr*)
Olah, G.A. *et al., J.O.C.*, 1978, **43**, 2268 (*cmr*)
Fieser and Fieser's Reagents for Organic Synthesis, Wiley, 1980, **8**, 507; 1981, **9**, 31; 489; 1982, **10**, 423; 1986, **12**, 533; 1988, **13**, 325 (*use*)
Harmon, K.M. *et al., J. Mol. Struct.*, 1982, **78**, 43 (*ir*)
Beugelmans, R. *et al., Can. J. Chem.*, 1985, **63**, 725 (*use*)
Chastanet, J. *et al., J.O.C.*, 1985, **50**, 2910 (*use*)
Sakurai, H. *et al., Tet. Lett.*, 1986, **27**, 75 (*use*)
Soderquist, J.A. *et al., Tet. Lett.*, 1986, **27**, 3961 (*synth*)
Mak, T.C.W. *et al., J. Mol. Struct.*, 1988, **178**, 169 (*dihydrate, cryst struct*)
Encyclopaedia of Reagents for Organic Synthesis, (ed. Paquette, L.A.), Wiley, 1995, **7**, 5197-5201 (*use*)
Knoelker, H.-J. *et al., J. Prakt. Chem.*, 1996, **338**, 190 (*use*)
Bretherick, L. *et al., Handbook of Reactive Chemical Hazards, 4th edn., Butterworths*, 1990, 1236
Luxon, S.G. *et al., Hazards in the Chemical Laboratory, 5th edn., Royal Society of Chemistry*, 1992, 1281
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, TLE100; TLE250

(2-Trimethylammonioethyl)-phosphonic acid betaine T-602

N,N,N-*Trimethyl-2-phosphonoethanaminium hydroxide, inner salt, 9CI. Phosphonyldeoxycholine*
[14596-57-7]
$Me_3N^{\oplus}CH_2CH_2PO_3H^{\ominus}$
$C_5H_{14}NO_3P$ 167.144
Constit. of the sea anemone *Anthopleura xanthogrammica*. Needles (EtOH). Mp 252° dec. Hygroscopic.

Myers, T.C. *et al., J.O.C.*, 1957, **22**, 180 (*synth*)
Rosenthal, A.F. *et al., J.A.C.S.*, 1958, **80**, 5240 (*synth*)
Kittredge, J.S. *et al., Biochemistry*, 1967, **6**, 289 (*isol, synth, ir, pmr*)
Kittredge, J.S. *et al., Comp. Biochem. Physiol.*, 1969, **29**, 859 (*biosynth*)
Richard, H. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1974, **278**, 1275 (*pmr, conformn*)

2,4,6-Trimethyl-2,4-decadienoic acid T-603



(2*E*,4*E*,6*R*)-form

$C_{13}H_{22}O_2$ 210.316

(2*E*,4*E*,6*R*)-*form* [112406-54-9]
Prod. by *Streptomyces parvulus.*

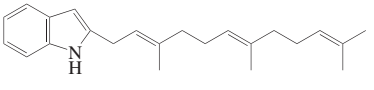
Amide: 2,4,6-Trimethyl-2,4-decadienamide. ***Antibiotic SW-B****. SW-B. Antibiotic 64p-A*
[149837-44-5]
$C_{13}H_{23}NO$ 209.331
Prod. by *Streptomyces flaveus* and *Streptomyces parvulus*. Also obt. by directed biosynthesis. Antifungal agent. λ_{max} 208 ; 260 (MeOH).

[112406-55-0]

Kaiser, D. *et al., Appl. Microbiol. Biotechnol.*, 1994, **41**, 309 (*isol*)
Hwang, B.K. *et al., J. Agric. Food Chem.*, 1996, **44**, 3653 (*isol, bibl, amide*)

2-(3,7,11-Trimethyl-2,6,10-dodecatrienyl)-1*H*-indole T-604

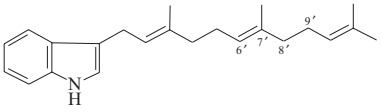
2-Farnesylindole



$C_{23}H_{31}N$ 321.505

(E,E)-form [113801-52-8]
Prod. by *Escherichia coli*.
Brady, S.F. *et al., J.A.C.S.*, 2007, **129**, 12102-12103 (*isol, pmr, ms*)

3-(3,7,11-Trimethyl-2,6,10-dodecatrienyl)-1*H*-indole, 9CI T-605
3-Farnesylindole
[102720-33-2]



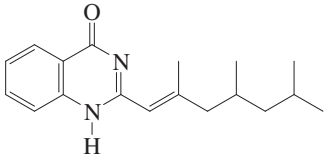
$C_{23}H_{31}N$ 321.505
Alkaloid from the leaves of *Uvaria pandensis* (Annonaceae). Oil.

8′,9′-Dihydroxy: ***3-(8,9-Dihydroxyfarnesyl)indole***
$C_{23}H_{31}NO_2$ 353.503
Alkaloid from the roots of *Uvaria pandensis* (Annonaceae). Viscous light brown oil. $[\alpha]_D^{20}$ +23.5 (c, 0.17 in MeOH).

8′,9′-Dihydroxy, 6′,7′-dihydro: ***3-(6,7-Dihydro-8,9-dihydroxyfarnesyl)indole***
$C_{23}H_{33}NO_2$ 355.519
Alkaloid from the roots of *Uvaria pandensis* (Annonaceae). Viscous light brownish oil. $[\alpha]_D^{20}$ +12.1 (c, 0.34 in MeOH).

Nkunya, M.H.H. *et al., Phytochemistry*, 1987, **26**, 2402-2403; 1989, **28**, 2217-2218 (*isol, uv, ir, pmr, cmr, ms*)

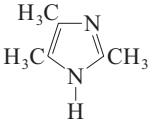
2-(2,4,6-Trimethyl-1-heptenyl)-4(1*H*)-quinazolinone T-606
2-(2,4,6-Trimethyl-1-heptenyl)-4-quinazolinol. 4-Hydroxy-2-(2,4,6-trimethyl-1-heptenyl)quinazoline
[564444-35-5]



$C_{18}H_{24}N_2O$ 284.4
Alkaloid from the leaves of *Zanthoxylum budrunga*. Mp 160-162°. λ_{max} 192 ; 207 ; 283 ; 309 (MeOH).

Ahmad, M.U. *et al., Fitoterapia*, 2003, **74**, 191-193 (*isol, pmr*)

2,4,5-Trimethyl-1*H*-imidazole, 9CI T-607
[822-90-2]



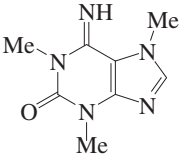
$C_6H_{10}N_2$ 110.158
Spar. sol. H_2O. Mp 132.5-133°. pK_a 8.92 (25°). Strong base.

Hydrochloride: [70807-89-5]
Mp 316°.

1,3-Dibenzyl: 1,3-Dibenzyl-2,4,5-trimethylimidazolium(1+). ***Lepidiline B***
[596093-97-9]
$C_{20}H_{23}N_2^{\oplus}$ 291.415
Alkaloid from the roots of *Lepidium meyenii* (maca). Plates (Me_2CO/MeOH) (as chloride). Mp 220-222° (chloride). λ_{max} 201 (log ϵ 3.32); 258 (log ϵ 2.29); 278 (log ϵ 2.1) (MeOH (chloride)).

Schaubaum, M.L. *et al., Tet. Lett.*, 1971, 2205 (*synth*)
Gnichtel, H. *et al., Chem. Ber.*, 1972, **105**, 1865 (*synth*)
Cui, B. *et al., J. Nat. Prod.*, 2003, **66**, 1101-1103 (*Lepidiline B*)

1,3,7-Trimethylisoguanine T-608
*1,3,6,7-Tetrahydro-6-imino-1,3,7-trimethyl-2*H*-purin-2-one, 9CI*
[290821-46-4]



$C_8H_{11}N_5O$ 193.208
Isol. from a New Zealand ascidian *Pseudodistoma* sp. Constit. of the cuticular wax of *Osmunda regalis*. Light tan oil. λ_{max} 214 (log ϵ 3.6); 288 (log ϵ 3.4) (MeOH).

Copp, B.R. *et al., J. Nat. Prod.*, 2000, **63**, 1168-1169 (*isol, pmr, cmr, uv*)

***N′,N″,N‴*-Trimethyl-*N*-(3-methyl-2,4-dodecadienoyl)spermidine** T-609
N-[3-[[4-(Dimethylamino)butyl]methylamino]propyl]-3-methyl-2,4-dodecadienamide. 2,7,14-Trimethyl-2,7,11-triaza-13,15-tricosadien-12-one
$H_3C(CH_2)_6CH{=}CHC(CH_3){=}^{2'}CHCONH(CH_2)_3NMe(CH_2)_4NMe_2$
$C_{23}H_{45}N_3O$ 379.628

(2′E,4′E)-form [583850-68-4]
Isol. from a *Sinularia* sp. Oil.

4′,5′-Dihydro: N-*[3-[[4-(Dimethylamino)butyl]methylamino]propyl]-3-methyl-2-dodecenamide. 1-(Dimethylamino)-5,12-dimethyl-5,9-diazaheneicos-11-en-10-one.* N′,N″,N‴-*Trimethyl*-N-*(3-methyl-2-dodecenoyl)spermidine. 2,7,14-Trimethyl-2,7,11-triaza-13-tricosen-12-one*
[73710-47-1]
$C_{23}H_{47}N_3O$ 381.644
Isol. from *Sinularia brongersmai*.

(2′Z,4′E)-form [583850-67-3]
Isol. from a soft coral *Sinularia* sp. Pale yellow oil (rapidly darkens on standing).

4′,5′-Dihydro: [81419-45-6]
Isol. from the soft coral *Sinularia brongersmai*. Cytotoxic agent. Pale yellow oil. Rapidly darkens on standing. Obt. as a 9:1 mixt. with its dihydro deriv.

2′,3′,4′,5′-Tetrahydro: ***N′,N″,N‴-Trimethyl-N-(3-methyldodecanoyl)spermidine.*** N-*[3-[[4-(Dimethylamino)butyl]methylamino]propyl]-3-methyldodecanamide. 2,7,14-Trimethyl-2,7,11-triaza-12-tricosanone*
[73710-48-2]
$C_{23}H_{49}N_3O$ 383.66
Minor constit. of *Sinularia brongersmai*. Cytotoxic.

Schmitz, F.J. *et al., Tet. Lett.*, 1979, 3387 (*isol, ir, pmr, ms, struct, Sinularia brongersmai constits*)
Chantrapromma, K. *et al., Tet. Lett.*, 1980, **21**, 2605 (*synth, ir, pmr, ms*)
Kazlauskas, R. *et al., Aust. J. Chem.*, 1982, **35**, 69-75 (*isol, pmr, cmr, ms, struct, synth*)
Ojika, M. *et al., Biosci., Biotechnol., Biochem.*, 2003, **67**, 1410-1412 (*2′E,4′E-form, 2′Z,4′E-form, isol, pmr, cmr*)

***N′,N″,N‴*-Trimethyl-*N*-(5-methyl-2,4-tetradecadienoyl)spermidine** T-610
N-*[3-[[4-(Dimethylamino)butyl]methylamino]propyl]-5-methyl-2,4-tetradecadienamide, 9CI. 2,7,16-Trimethyl-2,7,11-triaza-13,15-pentacosadien-12-one*
$H_3C(CH_2)_8C(CH_3){=}CHCH{=}CHCONH(CH_2)_3NMe(CH_2)_4NMe_2$
$C_{25}H_{49}N_3O$ 407.682

(2E,4E)-form [583850-70-8]
Isol. from the soft coral *Sinularia* sp. Cytotoxic. Oil.

(2Z,4E)-form [583850-69-5]
Isol. from a *Sinularia* sp. Cytotoxic. Oil.
Ojika, M. *et al., Biosci., Biotechnol., Biochem.*, 2003, **67**, 1410-1412 (*isol, pmr, cmr*)

***N′,N″,N‴*-Trimethyl-*N*-(5-methyl-3-tetradecenoyl)spermidine** T-611
N-*[3-[[4-(Dimethylamino)butyl]methylamino]propyl]-5-methyl-3-tetradecenamide. 2,7,16-Trimethyl-2,7,11-triaza-14-pentacosen-12-one*
$H_3C(CH_2)_8CH(CH_3)CH{=}CHCH_2CONH(CH_2)_3NMe(CH_2)_4NMe_2$
$C_{25}H_{51}N_3O$ 409.697

(3′E,5′ξ)-form [129722-93-6]
Isol. from the soft coral *Sinularia* sp. Cytotoxic agent. Oil. $[\alpha]_D$ +7 (c, 0.2 in CH_2Cl_2). λ_{max} 200 (MeOH).
Choi, Y.-H. *et al., J. Nat. Prod.*, 1997, **60**, 495-496

Trimethyl[3-(methylthio)propyl]ammonium(1+), 8CI T-612
N,N,N-*Trimethyl-3-(methylthio)-1-propanaminium(1+), 9CI. TA Toxin A*
[61672-50-2]
$MeSCH_2CH_2CH_2NMe_3^{\oplus}$
$C_7H_{18}NS^{\oplus}$ 148.292
Isol. from the reef shell *Marmarostoma argyrostoma* and the turban shell *Turbo argyrostoma*. Mp 223-225° (as iodide).

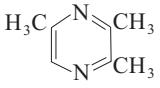
S-*Me: 3-(Dimethylsulfonio)*-N,N,N-*trimethylpropanaminium(2+), 9CI*
[61672-51-3]
$C_8H_{21}NS^{2\oplus}$ 163.327
Isol. from *Marmarostoma argyrostoma*. Mp 246° (as diiodide).

[54289-29-1 , 14617-80-2]

Kirchner, F.D. *et al., J.A.C.S.*, 1955, **77**, 4599 (*synth*)
Tadashi, S. *et al., Yakugaku Zasshi*, 1964, **84**, 1012; *CA*, **62**, 6552g (*synth*)
Yasumoto, T. *et al., Nippon Suisan Gakkaishi*, 1974, **40**, 217; *CA*, **80**, 129589e (*isol*)
Yasumoto, T. *et al., Rinsho Eiyo*, 1976, **49**, 115; *CA*, **86**, 84458s (*isol*)

Trimethylpyrazine, 9CI T-613

FEMA 3244
[14667-55-1]



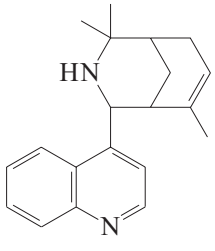
$C_7H_{10}N_2$ 122.169
Urinary signalling pheromone in tree shrews *Tupaia belangeri* and pine vole *Microtus pinetorum*. Isol. from an arctic marine bacterium. Flavouring ingredient. Liq. with roast coffee odour. Bp_{735} 171-172°. pK_{a1} 2.65; pK_{a2} -3.6 (25°, H_2O). Steam-volatile. Odour threshold 9000ppb in H_2O.

▶ LD_{50} (rat, orl) 806 mg/kg. UQ3907000

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 841B (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 401A (*nmr*)
Aldrich Library of FT-IR Spectra: Vapor Phase, 1989, **3**, 1558B (*ir*)
Das, B.K. *et al., J. Indian Chem. Soc.*, 1968, **45**, 1075 (*uv*)
Bus, J. *et al., Rec. Trav. Chim. (J. R. Neth. Chem. Soc.)*, 1973, **92**, 123 (*ir*)
Calabretta, P.J. *et al., Cosmet. Perfum.*, 1975, **90**, 74 (*synth*)
Gumbley, S.J. *et al., J. Het. Chem.*, 1985, **22**, 1143 (*props*)
von Stralendorff, F. *et al., J. Chem. Ecol.*, 1987, **13**, 655
Boyer, M.L. *et al., J. Chem. Ecol.*, 1989, **15**, 649
Dickschat, J.S. *et al., Chem. Biodiversity*, 2005, **2**, 318-353 (*marine isol*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, TME270

2,2,6-Trimethyl-4-(4-quinolinyl)-3-azabicyclo[3.3.1]non-6-ene, 9CI T-614

[151677-05-3]



$C_{20}H_{24}N_2$ 292.423
Alkaloid from aerial parts of *Aristotelia chilensis* (Elaeocarpaceae).

Cespedes, C. *et al., Phytochemistry*, 1993, **34**, 881-882 (*isol*)

Trimethylvinylammonium(1+), 8CI T-615

N,N,N-*Trimethylethenaminium(1+), 9CI. Ethenyltrimethylammonium(1+). Neurine*
[13448-18-5]
$H_2C{=}CHN^{\oplus}Me_3$
$C_5H_{12}N^{\oplus}$ 86.156

Chloride: [6018-82-2]
$C_5H_{12}ClN$ 121.609
Cryst. Mp 193-194°.

Bromide: [10603-92-6]
$C_5H_{12}BrN$ 166.061
Has curare-like activity. Plates (EtOH/Et_2O). Sol. H_2O, EtOH, insol. Et_2O. Mp 194° dec.

▶ LD_{50} (mus, ipr) 52 mg/kg. BT3675000

Picrate:
Golden-yellow needles (H_2O). Sol. H_2O, hot EtOH, spar. sol. $CHCl_3$, cold EtOH. Mp 264°.

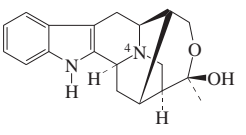
Hydroxide: [463-88-7]
$C_5H_{13}NO$ 103.164
Formed during putrefaction by dehydration of choline. Occurs free and combined in many animal and vegetable products, e.g., bile, brain, egg yolk, cadavers. Found in *Cannabis sativa*. One of the ptomaine poisons. One of the ptomaine poisons. Syrupy liq. with fishy odour. Sol. H_2O, EtOH. Reacts alkaline and readily absorbs CO_2 from air. Forms hygroscopic cryst. hydrate with $3H_2O$. Easily dec. → Me_3N.

▶ Highyl toxic. BT3850000

Meyer, K.H. *et al., Ber.*, 1921, **54**, 2265 (*synth, hydroxide*)
Renshaw, R.R. *et al., J.A.C.S.*, 1925, **47**, 2989 (*synth, bromide*)
Gardner, C. *et al., J.C.S.*, 1949, 789 (*synth, hydroxide, chloride, picrate*)
Grabowska, M. *et al., Diss. Pharm. Pharmacol.*, 1967, **19**, 43 (*synth, pharmacol*)
Ohtsuru, M. *et al., J.A.C.S.*, 1969, **91**, 1187 (*bromide, pmr*)
Kroeller, E. *et al., CA*, 1973, **79**, 16990 (*isol*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, VQR300

Trinervine T-616

*17,19-Epoxysarpagan-19(20*H*)-ol, 9CI*
[132242-49-0]



Absolute Configuration

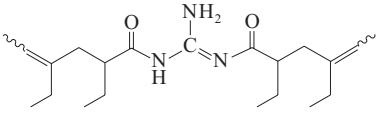
$C_{19}H_{22}N_2O_2$ 310.395
Alkaloid from the roots of *Strychnos trinervis* (Loganiceae). Needles (MeOH/EtOAc). Mp 219-220°. $[\alpha]_D^{22}$ -7 (c, 0.37 in $CHCl_3$).

N^4-*Me: **Venecurine***
[122908-09-2]
$C_{20}H_{25}N_2O_2^{\oplus}$ 325.43
Quaternary alkaloid from Venezuelan curare.

Quetin-Leclercq, J. *et al., Phytochemistry*, 1989, **28**, 2221-2223 (*Venecurine*)
Mukherjee, R. *et al., Heterocycles*, 1990, **31**, 1819-1822 (*Trinervine*)
Liu, X. *et al., Org. Lett.*, 2001, **3**, 4023-4026 (*synth*)

Triophamine T-617

N,N′-*Bis(2,4-diethyl-4-hexenyl)guanidine*
[81256-25-9]

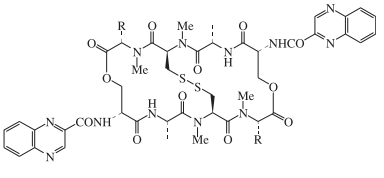


$C_{21}H_{37}N_3O_2$ 363.542
Isol. from skin extracts of the dorid nudibranch *Triopha catalinae*. Light yellow oil. $[\alpha]_D$ -7 (c, 1.7 in MeOH). λ_{max} 214 (ϵ 14500) (MeOH/HCl) (Derep). λ_{max} 232 (ϵ 10000) (KOH) (Derep). λ_{max} 251 (ϵ 12000) (MeOH) (Derep).

Gustafson, K. *et al., J.O.C.*, 1982, **47**, 2167-2169 (*isol, uv, pmr, cmr, ms, struct*)
Piers, E. *et al., Can. J. Chem.*, 1984, **62**, 1 (*synth*)

Triostin T-618

[12795-78-7]



Triostin A R = -CH(CH$_3$)$_2$
B R = -CH$_2$CH(CH$_3$)$_2$ *R-* or *S-*
B$_0$ R = -CH$_2$CH(CH$_3$)$_2$ *R-* or *S-*
C R = -CH(CH$_3$)CH(CH$_3$)$_2$

Cyclic depsipeptide antibiotic complex. Prod. by *Streptomyces* spp. Shows broad activity against gram-positive bacteria and Hela cells.

▶ YJ8950000

Triostin A [13758-27-5]
$C_{50}H_{62}N_{12}O_{12}S_2$ 1087.245
Needles ($CHCl_3$/MeOH). Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. Mp 245-248° dec. $[\alpha]_D^{23.5}$ -157 (c, 0.97 in $CHCl_3$). λ_{max} 243 (ϵ 78800); 323 (ϵ 12700) (MeOH) (Derep). λ_{max} 243 (ϵ 70800); 320 (ϵ 12900) (MeOH) (Berdy).

Triostin B [39421-38-0]
$C_{52}H_{66}N_{12}O_{12}S_2$ 1115.299
Prod. by : *Streptomyces aureus* in small quantities in medium supplemented with isoleucine. Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. Mp 209-213°. $[\alpha]_D$ -

144.

Triostin B_0

$C_{52}H_{66}N_{12}O_{12}S_2$ 1115.299
Sol. MeOH, C_6H_6; poorly sol. H_2O, hexane. λ_{max} 243 (ϵ 71000); 323 (ϵ 13100) (MeOH) (Derep). λ_{max} 243 (ϵ 61600); 320 (ϵ 10200) (MeOH) (Berdy).

Triostin C [10382-35-1]

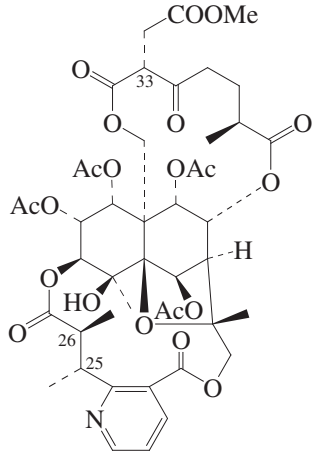
$C_{54}H_{70}N_{12}O_{12}S_2$ 1143.352
Isol. from *Streptomyces* sp. Needles ($CHCl_3$/MeOH). Sol. MeOH, C_6H_6; poorly sol. H_2O, hexane, Et_2O. Mp 260° dec. $[\alpha]_D^{24}$ -143.9 (c, 1.121 in $CHCl_3$). λ_{max} 243 (log ϵ 4.87) and 315-26 nm (4.13). λ_{max} 243 (ϵ 71000); 323 (ϵ 13100) (MeOH) (Derep). λ_{max} 243 (ϵ 74170); 320 (ϵ 13500) (EtOH) (Berdy).

▶ LD_{50} (mus, ipr) 100 mg/kg. YJ8950400

Otsuka, M. *et al., Tetrahedron*, 1965, **21**, 2931; 1967, **23**, 1535 (*struct*)
Otsuka, M. *et al., J. Antibiot., Ser. A*, 1966, **19**, 128 (*isol, struct*)
U.S. Pat., 1972, 3 647 631; *CA*, **77**, 3780e (*manuf*)
Shoji, J. *et al., J. Antibiot.*, 1973, **26**, 302 (*struct*)
Otsuka, M. *et al., J. Antibiot.*, 1976, **29**, 107 (*nmr*)
Blake, T.J. *et al., Tet. Lett.*, 1977, 2621 (*conformn*)
Chakravarty, P.K. *et al., Tet. Lett.*, 1978, 1613 (*synth*)
Shin, M. *et al., Bull. Chem. Soc. Jpn.*, 1984, **57**, 2203; 2211 (*synth*)
Sheldrick, G.M. *et al., Acta Cryst. B*, 1995, **51**, 987-999 (*cryst struct*)

Triptonine A† T-619

[226979-90-4]



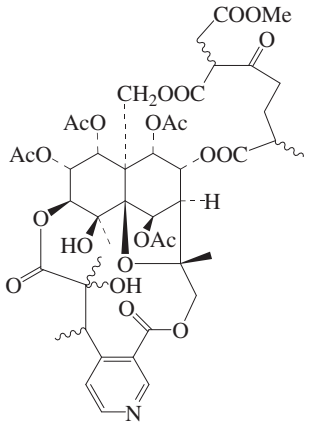
$C_{45}H_{55}NO_{21}$ 945.924

Not to be confused with Triptonine A in P-253. Alkaloid from *Tripterygium hypoglaucum*. Anti-HIV agent. Needles. Mp 284-285.5°. $[\alpha]_D$ -24.1 (c, 1 in MeOH). λ_{max} 224 (log ϵ 3.96); 264 (log ϵ 3.58) (MeOH).

Duan, H. *et al., J. Nat. Prod.*, 2000, **63**, 357-361 (*isol*)

Triptonine B† T-620

[226980-25-2]

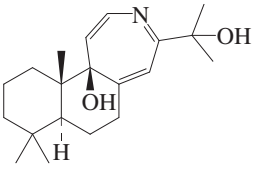


$C_{45}H_{55}NO_{22}$ 961.923
Alkaloid from *Tripterygium hypoglaucum*. Anti-HIV agent. Amorph. powder. $[\alpha]_D^{25}$ +15.5 (c, 0.6 in MeOH). Not to be confused with Triptonine B in P-253. λ_{max} 261 (log ϵ 3.4) (MeOH).

Duan, H. *et al., J. Nat. Prod.*, 2000, **63**, 357-361

Triptotin J T-621

[368423-83-0]



$C_{20}H_{31}NO_2$ 317.47
Alkaloid from the root bark of *Tripterygium wilfordii*. Yellow oil. $[\alpha]_D^{20}$ +21 (c, 0.27 in $CHCl_3$).

Yang, G.-Z. *et al., Helv. Chim. Acta*, 2002, **85**, 168-174 (*isol, pmr, cmr, ms*)

Tris(3-aminopropyl)amine T-622

N,N-*Bis(3-aminopropyl)-1,3-propanediamine, 9CI. 3,3′,3″-Triaminotripropylamine, 8CI.* N^4*-(3-Aminopropyl)norspermidine. Trpn*
[4963-47-7]
$(H_2NCH_2CH_2CH_2)_3N$
$C_9H_{24}N_4$ 188.315
Isol. from the thermophilic bacteria *Hydrogenobacter halophilus* and *Hydrogenobacter thermophilus*. Liq. $Bp_{1.5}$ 134-135°.

Hemihydrate:
Deliquescent cryst. Mp 227-229° (with foaming).

Hydrochloride (1:4): [66322-79-0]
Cryst. (EtOH). Mp 230-231°.

Picrate:
Yellow needles. Mp 222° dec. Softens at 190°.

N-*(3-Aminopropyl): 3-Amino*-N,N,N-*tris(3-aminopropyl)-1-propanaminium(1+), 9CI. Tetrakis(3-aminopropyl)ammonium(1+).* N^4,N^4-***Bis(3-aminopropyl)norspermidine***
[111216-37-6]
$C_{12}H_{32}N_5^{\oplus}$ 246.418
Isol. from *Hydrogenobacter halophilus*, *Hydrogenobacter thermophilus* and *Thermus thermophilus*. Counterion not specified.

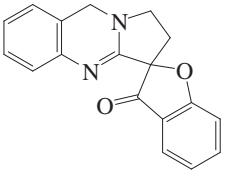
v. Winkle, J.L. *et al., J.O.C.*, 1966, **31**, 3300-3306 (*synth*)
Oshima, T. *et al., J. Biol. Chem.*, 1987, **262**, 11979-11981 (*Thermus thermophilus constit*)
Chin, J. *et al., J.A.C.S.*, 1989, **111**, 186-190 (*synth, pmr*)
Hamana, K. *et al., Biochem. J.*, 1992, **284**, 741-747 (*isol*)
Nitsu, M. *et al., Chem. Pharm. Bull.*, 1992, **40**, 2958-2961 (*synth*)
Hoveyda, H.R. *et al., Can. J. Chem.*, 1998, **76**, 414-425 (*synth*)

N,N′,N″-Tris(3-methylbutyl)guanidine T-623

N,N′,N″-*Triisopentylguanidine*
$(H_3C)_2CHCH_2CH_2N{=}C[NHCH_2CH_2CH(CH_3)_2]_2$
$C_{16}H_{35}N_3$ 269.473
Alkaloid from *Alchornea cordifolia*. Antibacterial agent.

Lamikanra, A. *et al., Phytother. Res.*, 1990, **4**, 198-200

Trisulcusine T-624



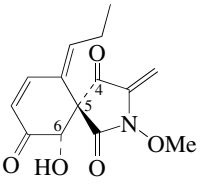
$C_{18}H_{14}N_2O_2$ 290.321

(ξ)-*form*
Alkaloid from the aerial parts of *Anisotes trisulcus*. Needles ($CHCl_3$). Mp 235-236° dec. $[\alpha]_D$ -20 (c, 0.02 in $CHCl_3$). λ_{max} 232 (log ϵ 3.35); 259 (log ϵ 2.75); 301 (log ϵ 2.76); 396 (log ϵ 2.32) ($CHCl_3$).

Al-Rehaily, A.J. *et al., Indian J. Chem., Sect. B*, 2002, **41**, 2385-2389 (*isol, pmr, cmr, ms*)

Triticone A T-625

6-Hydroxy-2-methoxy-3-methylene-10-propenylidene-2-azaspiro[4.5]dec-8-ene-1,4,7-trione, 9CI. Spirostaphylotrichin C
[114582-74-0]



$C_{14}H_{15}NO_5$ 277.276
Isol. from *Drechslera tritici-repentis*, *Curvularia pallescens* and *Staphylotrichum coccosporum*. Phytotoxin. Cryst. Mp 133-138°. λ_{max} 224 (ϵ 19300); 289 (ϵ

15400) (EtOH) (Derep). λ_{max} 208 (ϵ 12900); 288 (ϵ 12000) (MeOH) (Berdy).

4-Alcohol: ***Triticone C***
$C_{14}H_{17}NO_5$ 279.292
Isol. from *Drechslera tritici-repentis*. Pale yellow oil. $[\alpha]_D^{25}$ +2 (c, 1.0 in $CHCl_3$).

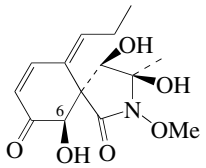
6-Epimer: ***Triticone B***. *Spirostaphylotrichin D*
[114613-32-0]
$C_{14}H_{15}NO_5$ 277.276
From *Drechslera tritici-repentis*, *Curvularia pallescens* and *Staphylotrichum coccosporum*. Phytotoxin. Enhances fibrinolysis. Cryst. The configurational assignments of Spirostaphylotrichins C and D may be reversed. λ_{max} 224 (ϵ 19300); 289 (ϵ 15400) (EtOH) (Derep).

4-Alcohol, 6-epimer: ***Triticone D***
$C_{14}H_{17}NO_5$ 279.292
From *Drechslera tritici-repentis*. Cryst. (EtOAc). $[\alpha]_D^{25}$ +22 (c, 0.64 in MeOH).

Sugawara, F. *et al., J.A.C.S.*, 1988, **110**, 4086 (*isol, struct*)
Sandmeier, P. *et al., Helv. Chim. Acta*, 1989, **72**, 774; 784 (*isol, pmr, cmr, uv, cd, struct, biosynth*)
Hallock, Y.F. *et al., J. Nat. Prod.*, 1993, **56**, 747 (*Triticones*)
Abraham, W.-R. *et al., Tetrahedron*, 1995, **51**, 4947 (*isol*)
Shinohara, C. *et al., J. Antibiot.*, 2000, **53**, 262-268 (*activity*)

Triticone E T-626

[149564-25-0]



$C_{14}H_{19}NO_6$ 297.307
Isol. from culture broth of the plant pathogenic fungus *Drechslera tritici-repentis*. Pale yellow oil. $[\alpha]_D^{25}$ -70 (c, 1.0 in MeOH). Insep. mixt. with Triticone F (ratio 10:9).

6-Epimer: ***Triticone F***
[149654-98-8]
$C_{14}H_{19}NO_6$ 297.307
From *Drechslera tritici-repentis*.

Hallock, Y.F. *et al., J. Nat. Prod.*, 1993, **56**, 747 (*isol, uv, ir, pmr, cmr, ms, struct*)

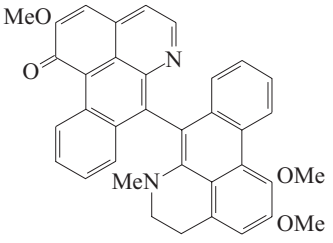
Triuret, 8CI T-627

Diimidotricarbonic diamide, 9CI. Dicarbamoylurea. Carbonyldiurea. Carbonic acid diureide
[556-99-0]
$H_2NCONHCONHCONH_2$
$C_3H_6N_4O_3$ 146.105
Formed by uv irradiation of Urea. Identified in cytoplasm of *Amoeba* spp. Leaflets (NH_3 aq.). Sol. acid, alkali, hot H_2O. Mp 233° dec.

Haworth, R.C. *et al., J.C.S.*, 1943, 603 (*synth*)
Werner, R.A. *et al., CA*, 1947, **41**, 710 (*synth*)
Griffin, J.L. *et al., Biochim. Biophys. Acta*, 1961, **47**, 433 (*occur, ir*)
Furrar, W.V. *et al., Chem. Ind. (London)*, 1972, 682 (*synth*)

Trivalvone T-628

*7-(5,6-Dihydro-1,2-dimethoxy-6-methyl-4*H*-dibenzo[*de,g*]quinolin-7-yl)-2-methoxy-1*H*-dibenzo[*de,g*]quinolin-1-one, 9CI*
[131989-90-7]

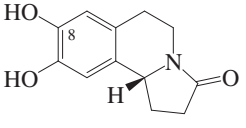


$C_{36}H_{28}N_2O_4$ 552.628
Alkaloid from *Trivalvaria macrophylla* and *Piptostigma fugax* (Annonaceae). Brown cryst. Mp 258°.

Cortes, D. *et al., J. Nat. Prod.*, 1990, **53**, 862 (*isol, uv, ir, pmr, cmr, ms, struct*)
Achenbach, H. *et al., Phytochemistry*, 1995, **38**, 1037 (*isol, pmr, cmr*)

Trolline T-629

*1,5,6,10*b*-Tetrahydro-8,9-dihydroxypyrrolo[2,1-*a*]isoquinolin-3(2*H*)-one, 9CI. Oleracein E. Salsoline A*



(*R*)-*form*

$C_{12}H_{13}NO_3$ 219.24

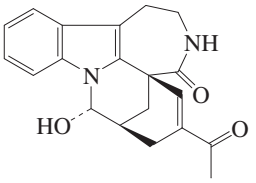
(R)-form
Alkaloid from *Portulaca oleracea* (purslane). Powder (MeOH). Mp 238-240°. $[\alpha]_D^{26}$ +61.1 (c, 0.32 in MeOH). λ_{max} 290 (log ϵ 4.44); 318 (log ϵ 4.43) (MeOH).

(S)-form [724706-17-6]
Alkaloid from the flowers of *Trollius chinensis* and *Salsola collina*. Plates (MeOH). Mp 165-167°. $[\alpha]_D^{20}$ -197 (c, 0.8 in MeOH). λ_{max} 255 ; 289 (MeOH).

(±)-form
8-Me ether: ***Erythrinarbine***
[245348-39-4]
$C_{13}H_{15}NO_3$ 233.266
Alkaloid from the stems of *Erythrina arborescens*. Plates (MeOH). Mp 193-194°. λ_{max} 286 (MeOH).

Yu, D.L. *et al., Chin. Chem. Lett.*, 1999, **10**, 139-142 (*Erythrinarbine*)
Wang, R.F. *et al., Heterocycles*, 2004, **63**, 1443-1448 (*Trolline*)
Zhao, Y. *et al., Yaoxue Xuebao*, 2004, **39**, 598-600 (*Salsoline A*)
Xiang, L. *et al., Phytochemistry*, 2005, **66**, 2595-2601 (*Oleracein E*)
He, Q.Q. *et al., Chin. Chem. Lett.*, 2007, **18**, 651-652 (*synth*)

Tronocarpine T-630

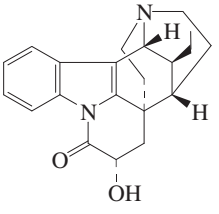


$C_{20}H_{20}N_2O_3$ 336.39
Prob. related to the Tacaman alkaloids. Alkaloid from the stem bark of *Tabernaemontana corymbosa*. Oil. $[\alpha]_D$ +231 (c, 0.08 in CH_2Cl_2). λ_{max} 226 (log ϵ 4.3); 290 (log ϵ 3.71); 296 (log ϵ 3.72) (no solvent reported).

Kam, T.-S. *et al., Tet. Lett.*, 2000, **41**, 2733-2736

Tronoharine T-631

[246136-19-6]

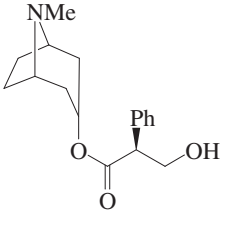


$C_{21}H_{24}N_2O_2$ 336.433
Abs. config prob. as shown, on biogenetic grounds. Alkaloid from the stem bark of *Tabernaemontana corymbosa*. Amorph. $[\alpha]_D$ +35 (c, 0.1 in $CHCl_3$). λ_{max} 202 (log ϵ 4.43); 250 (log ϵ 3.88); 272 (log ϵ 3.83); 296 (log ϵ 3.58) (no solvent reported).

Kam, T.-S. *et al., Tet. Lett.*, 1999, **40**, 5409-5412

Tropine tropate T-632

8-Methyl-8-azabicyclo[3.2.1]oct-3-yl α-(hydroxymethyl)benzeneacetate, 9CI



(*S*)-*form*

$C_{17}H_{23}NO_3$ 289.374
Log P 1.32 (calc).

(S)-form
Hyoscyamine, BAN, USAN. *Daturine. Duboisine*
[101-31-5]
Alkaloid from *Atropa*, *Datura*, *Duboisia*, *Hyoscyamus*, *Anthocercis* and *Scopolia* spp., *Mandragora officinarum* and several other genera in the Solanaceae, esp. some strains of *Duboisia myoporoides*. Anti-muscarinic agent with approx. twice potency of atropine. Spasmolytic agent. Bronchodilator, sedative, analgesic. Mp 108-111°. $[\alpha]_D^{15}$ -22 (50% EtOH aq.). Log P 1.32 (calc). Racemises slowly in EtOH

to Atropine, more rapidly in alkali or on melting; sometimes occurs naturally as partial racemate. Mandragorine from *M. officinarum* was an alkaloid mixture including Scopolamine.

▶ Adverse effects on CNS and peripheral nerves. Adverse ocular effects. Can cause death. LD_{50} (mus, ivn) 95 mg/kg. NH0875000

Hydrobromide: ***Hyoscyamine hydrobromide, USAN***
[306-03-6]
Mp 151°. Deliquescent. Component of Dolonil and Pyridium Plus.

Sulfate (2:1): ***Hyoscyamine sulfate, USAN***. *Anaspaz*. *Peptard*
[6835-16-1] pK_a 9.68 (21°). Component of Donnagel, Donnazyme, Kinesed and Spalix.

Picrate: [5934-49-6]
Mp 165°.

N-*Oxide (equatorial O):* ***Hyoscyamine* N-*oxide 1***
[56362-73-3]
$C_{17}H_{23}NO_4$ 305.373
Alkaloid from *Atropa*, *Datura*, *Hyoscyamus*, *Scopolia* and *Mandragora* spp. (Solanaceae). Mp 165-170° dec. (as hydrochloride).

N-*Oxide (axial O):* ***Hyoscyamine* N-*oxide 2***
[56362-74-4]
$C_{17}H_{23}NO_4$ 305.373
Alkaloid from *Atropa*, *Datura*, *Hyoscyamus*, *Scopolia* and *Mandragora* spp. Mp 175-180° dec. (as hydrochloride).

N-*De-Me:* ***Norhyoscyamine***
[537-29-1]
$C_{16}H_{21}NO_3$ 275.347
Alkaloid from aerial parts of *Datura meteloides*. The major alkaloid of some strains of *Duboisia myoporoides* (Solanaceae).

(±)-*form*
Atropine, BAN, INN, USAN
[51-55-8]
Alkaloid from *Atropa belladonna*, *Datura stramonium*, *Anthocercis* and other Solanaceae. Mydriatic, antispasmodic and cycloplegic agent. Smooth muscle relaxant. Used in preanaesthetic medication to prevent reflex brachycardia and bronchospasm and to decrease gland secretions. Reduces rigidity in parkinsonism. Antidote to poisoning with parasympathomimetic agents, e.g. nerve gases, organophosphorus insecticides. Cause of deliberate and accidental poisoning of humans and livestock. Nontoxic to some spp., e.g. rabbits. Reference material used in elemental microanalysis. Sol. MeOH, $CHCl_3$, acids; fairly sol. Et_2O, C_6H_6; poorly sol. H_2O, hexane. Mp 116-117°. pK_a 10.2 (25°). Log P 1.32 (calc). In many cases, Atropine may be an artifact of the extraction procedure.

▶ Adverse human effects by ingestion, and other routes of administration, incl. dryness of the mouth, difficulty swallowing and thirst. Adverse ocular effects. Can cause death. Variable human lethal dose, but 100 mg can be fatal. LD_{50} (rat, orl) 500 mg/kg. Exp. reprod. and teratogenic effects. CK0700000

Hydrobromide: [6415-90-3]
Mp 163-164°.

Sulfate (2:1): ***Atropine sulfate, JAN, USAN***. *Atropisol*
[55-48-1]
Cryst. Mp 190-194°. Component of Antrocol, Colonaid, Donnagel, Kinesed, Lomotil and Hydrapred.

▶ Human systemic effects. LD_{50} (rat, orl) 600 mg/kg. Exp. reprod. and teratogenic effects. CK2450000

Picrate: Mp 175-176°.

Methobromide: 8-Methylatropinium bromide. *Mydriasine*
[2870-71-5]
$C_{18}H_{26}BrNO_3$ 384.312
Cryst. Mp 222-223°.

Methonitrate: ***Methylatropine nitrate, USAN***. *Atropine methonitrate, BAN, INN, JAN*. *Metropine*. *Harvatrate*. *Metanite*. *Ekomine*. *Eumydrin*
[52-88-0]
$C_{18}H_{26}N_2O_6$ 366.413
Mp 166-168°.

▶ CK2800000

N-*Oxide: Aminoxytropine tropate*. ***Atropine oxide, INN***. *Genatropine*
[4438-22-6]
$C_{17}H_{23}NO_4$ 305.373
Mp 127-128°. Dec. at 135°.

▶ YM6105000

N-*Oxide; hydrochloride:* ***Atropine oxide hydrochloride, USAN***. *Atropigen*. *Tropinox*. *Xtro*
[4574-60-1]
Prisms (EtOH). Mp 192-193°.

N-*De-Me: Noratropine*
[16839-98-8]
$C_{16}H_{21}NO_3$ 275.347
Used in treatment of peptic ulcers.
Cryst. (Me_2CO). Mp 113-114°.

Propanoyl: ***Prampine, BAN, INN***. *Atropine propionate*. *Tropan-3-yl*-O-*propionyl tropate*. *PAMN*
[7009-65-6]
$C_{20}H_{27}NO_4$ 345.438
Used in treatment of peptic ulcers.

(ξ)-*form*

O-*Formyl:* **O-*Formyltropine tropate***
[645419-61-0]
$C_{18}H_{23}NO_4$ 317.384
Alkaloid from *Datura ceratocaula*.
Stereochem. not studied.

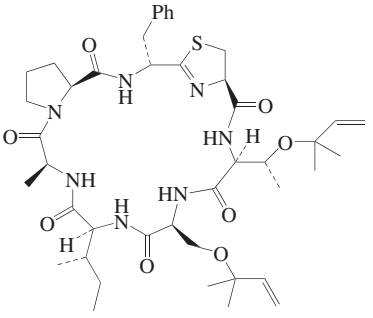
O-*Ac:* **O-*Acetyltropine tropate***
[16655-60-0]
$C_{19}H_{25}NO_4$ 331.411
Alkaloid from *Datura ceratocaula* and *Datura stramonium*.

[620-61-1 , 56362-77-7 , 56362-78-8 , 31610-87-4 , 5908-99-6]

Warren, R.E. *et al., Rep. Lab. Am. Med. Assoc.*, 1921, **14**, 65-67; *CA*, **16**, 2580 (*methobromide*)
Leete, E. *et al., Can. J. Chem.*, 1954, **32**, 1116-1123; 1955, **33**, 1853-1854 (*isol, biosynth*)
Staub, H. *et al., Helv. Chim. Acta*, 1962, **45**, 2297-2305 (*Mandragorine*)
Liebisch, H.W. *et al., Annalen*, 1969, **721**, 163-167 (*biosynth*)
Cannon, J.R. *et al., Aust. J. Chem.*, 1969, **22**, 221-227 (*Anthocercis constits, pmr*)
Baralle, F.E. *et al., Chem. Comm.*, 1969, 721 (*biosynth*)
O'Donovan, D.G. *et al., J.C.S. Perkin 1*, 1969, 223-226 (*biosynth*)
Fales, H.M. *et al., J.A.C.S.*, 1970, **92**, 1590-1597 (*ms*)
Takeuchi, Y. *et al., Chem. Pharm. Bull.*, 1971, **19**, 2603-2608 (*synth*)
Kussäther, E. *et al., Acta Cryst. B*, 1972, **28**, 2896-2899 (*cryst struct*)
Analyst (London), 1972, **97**, 740-756 (*microanal*)
Innes, I.R. *et al., Pharmacol. Basis Ther., 5th edn.*, 1975, 514 (*rev, pharmacol*)
Phillipson, J.D. *et al., Phytochemistry*, 1975, **14**, 999-1003 (*oxides*)
Sternberg, V.I. *et al., J. Het. Chem.*, 1977, **14**, 225-230 (*cmr*)
Pfister, J.R. *et al., J.O.C.*, 1978, **43**, 4373-4374 (*Noratropine synth*)
Shutt, L.E. *et al., Anaesthesia*, 1979, **34**, 476-490 (*rev, pharmacol*)
Kanto, J. *et al., Int. J. Clin. Pharmacol., Ther. Toxicol.*, 1983, **21**, 92-94 (*rev*)
Al-Badr, A.A. *et al., Anal. Profiles Drug Subst.*, 1985, **14**, 325-389 (*rev, uv, ir, pmr, cmr, ms, anal*)
Seeger, R. *et al., Dtsch. Apoth. -Ztg.*, 1986, **126**, 1930-1934 (*rev, pharmacol*)
Muhtadi, F.J. *et al., Anal. Profiles Drug Subst.*, 1994, **23**, 153-228 (*Hyoscyamine, rev*)
Negwer, M. *et al., Organic-Chemical Drugs and their Synonyms, 7th edn., Akademie-Verlag*, 1994, 5975; 5976 (*synonyms*)
Martindale, The Extra Pharmacopoeia, 32nd edn., Pharmaceutical Press, 1999, 455; 457; 464; 468
Philipov, S. *et al., Z. Naturforsch., C*, 2002, **57**, 559-561 (*O-Ac*)
Berkov, S. *et al., Z. Naturforsch., C*, 2003, **58**, 455-458 (*O-formyl*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, ARR000; HOU000; MGR500; ARR500

Trunkamide A T-633

[181758-83-8]



Absolute Configuration

$C_{43}H_{63}N_7O_8S$ 838.079

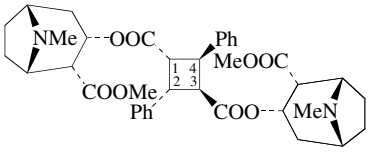
Cyclic heptapeptide. Isol. from an ascidian *Lissoclinum* sp. Shows promising antitumour activity. Oil. $[\alpha]_D$ -231 (c, 0.06 in $CHCl_3$). λ_{max} 248 (ε 14300) (EtOH).

Carroll, A.R. *et al., Aust. J. Chem.*, 1996, **49**, 659-667 (*isol, uv, ir, pmr, cmr, ms*)
Pat. Coop. Treaty (WIPO), 1997, 039 025; *CA*, **127**, 290919m
Wipf, P. *et al., J.O.C.*, 2000, **65**, 1037-1049 (*synth, abs config*)

Caba, J.M. *et al., J.O.C.*, 2001, **66**, 7568-7574 (*synth*)
Salvatella, X. *et al., J.O.C.*, 2003, **68**, 211-215 (*pmr, struct*)
McKeever, B. *et al., Tetrahedron*, 2003, **59**, 2713-2727 (*synth*)

α-Truxilline T-634

γ-Isotropylcocaine. Cocamine
[490-17-5]



$C_{38}H_{46}N_2O_8$ 658.79
Ester of α-truxillic acid with ecgonine methyl ester. Alkaloid from the leaves of *Erythroxylum coca*. Obt. as a mixt. with β-Truxilline. Obt. pure by synth. (Erythroxylaceae). Mp 63° (sinters). The mixt. with β-Truxilline was also known as Cocamine.

Hydrochloride: Mp 274°.

1-Epimer: ***γ-Truxilline***
[113350-56-4]
$C_{38}H_{46}N_2O_8$ 658.79
Constit. of *Erythroxylum coca*.

2-Epimer: **epi-*Truxilline***. *Epitruxilline*
[113351-64-7]
$C_{38}H_{46}N_2O_8$ 658.79
Constit. of *Erythroxylum coca*.

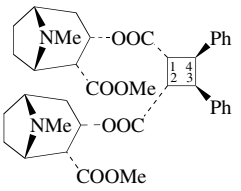
1,2-Diepimer: **peri-*Truxilline***
[113350-53-1]
$C_{38}H_{46}N_2O_8$ 658.79
Constit. of *Erythroxylum coca*.

2,3-Diepimer: ***ϵ-Truxilline***
[113350-55-3]
$C_{38}H_{46}N_2O_8$ 658.79
Constit. of *Erythroxylum coca*.

Liebermann, C. *et al., Ber.*, 1889, **22**, 130; 680 (*synth*)
Hesse, O. *et al., J. Prakt. Chem.*, 1902, **66**, 401 (*bibl*)
Novak, M. *et al., J. Ethnopharmacol.*, 1984, **10**, 261-274 (*rev*)
Moore, J.M. *et al., J. Chromatogr.*, 1987, **410**, 297-318; 1990, **504**, 391-401 (*isol, chromatog*)

β-Truxilline T-635

Isococamine. β-Truxinic acid bis(2-carbomethoxytropyl) ester. δ-Isotropylcocaine
[490-15-3]



$C_{38}H_{46}N_2O_8$ 658.79
Alkaloid from the leaves of *Erythroxylum coca* (Erythroxylaceae). Amorph. solid. Mp 45° (sinters). $[\alpha]_D$ -29.3.

1-Epimer: **neo-*Truxilline***. *Neotruxilline*
[113350-54-2]
$C_{38}H_{46}N_2O_8$ 658.79
Constit. of *Erythroxylum coca*.

3-Epimer: ***ξ-Truxilline***
[113350-58-6]
$C_{38}H_{46}N_2O_8$ 658.79
Constit. of *Erythroxylum coca*.

1,2-Diepimer: ***ω-Truxilline***
$C_{38}H_{46}N_2O_8$ 658.79
Constit. of *Erythroxylum coca*.

1,3-Diepimer: ***μ-Truxilline***
[113350-57-5]
$C_{38}H_{46}N_2O_8$ 658.79
Constit. of *Erythroxylum coca*.

1,4-Diepimer: ***δ-Truxilline***
[113350-52-0]
$C_{38}H_{46}N_2O_8$ 658.79
Constit. of *Erythroxylum coca*.

Liebermann, C. *et al., Ber.*, 1889, **22**, 680 (*synth*)
Hesse, O. *et al., Annalen*, 1892, **271**, 180; 1893, **272**, 238 (*struct*)
Hesse, O. *et al., J. Prakt. Chem.*, 1902, **66**, 401 (*bibl*)
Novak, M. *et al., J. Ethnopharmacol.*, 1984, **10**, 261-274 (*rev*)
Moore, J.M. *et al., J. Chromatogr.*, 1987, **410**, 297-318; 1990, **504**, 391-401 (*isol, chromatog*)

Trypanothione T-636

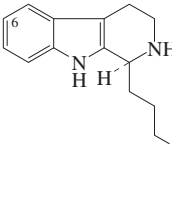
N^1,N^8-*Bis(glutathionyl)spermidine. Trypanothione disulfide*
[96304-42-6]
Glu-Cys-Gly-NH$(CH_2)_n$NH$(CH_2)_3$NH-Gly-Cys-Glu (n = 3)
$C_{27}H_{47}N_9O_{10}S_2$ 721.855
Reduced form shown. Metab. of *Crithidia fasciculata* and *Trypanosoma brucei*. Glutathione reductase cofactor. Trypanocidal agent.

Homologue: ***Homotrypanothione***
[159240-52-5]
$C_{28}H_{49}N_9O_{10}S_2$ 735.881
Metab. of *Trypanosoma cruzi*. Has n = 5.

Fairlamb, A.H. *et al., Science (Washington, D.C.)*, 1985, **227**, 1485-1487 (*isol, synth*)
Shames, S.L. *et al., Biochemistry*, 1986, **25**, 3519 (*biochem*)
Henderson, G.B. *et al., J.C.S. Perkin 1*, 1990, 911-914 (*synth, pmr, cmr, N-15 nmr*)
Fairlamb, A.H. *et al., Annu. Rev. Microbiol.*, 1992, **46**, 695-729 (*rev*)
Fauchet, V. *et al., Bioorg. Med. Chem. Lett.*, 1994, **4**, 2559-2562 (*synth*)
Hunter, K.J. *et al., Eur. J. Biochem.*, 1994, **226**, 1019-1027 (*Homotrypanothione*)
Krauth-Siegel, R.L. *et al., Methods Enzymol.*, 1995, **251**, 287-294 (*rev, isol, detn*)

Trypargine T-637

*3-[(2,3,4,9-Tetrahydro-1*H*-pyrido[3,4-b]indol-1-yl)propyl]guanidine, 9CI. 1-(3-Guanidinopropyl)-1,2,3,4-tetrahydro-β-carboline*



(*S*)-*form*
$C_{15}H_{21}N_5$ 271.364

(*S*)-*form* [82054-21-5]
[82372-68-7]
Obt. from the skin of the African frog *Kassina senegalensis*. Needles (as hydrochloride). Mp 211-212° (hydrochloride). $[\alpha]_D^{15}$ +37.2 (c, 0.54 in MeOH) (hydrochloride).
▶ Highly toxic.

6-Hydroxy: ***6-Hydroxytrypargine***
$C_{15}H_{21}N_5O$ 287.364
Alkaloid from the venom of the spider *Parawixia bistriata*. λ_{max} 224 (log ϵ 4.52); 275 (log ϵ 3.71); 289 (log ϵ 3.42) (MeOH).

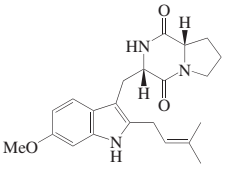
(±)-*form* [82264-57-1]
[82264-59-3 , 82264-58-2]
Alkaloid from a *Eudistoma* sp. Pale yellow prisms (MeOH/Et_2O) (as hydrochloride). Mp 202-206° (hydrochloride).

1,2-Didehydro: ***Trypargimine***
[228113-43-7]
$C_{15}H_{19}N_5$ 269.349
Alkaloid from a *Eudistoma* sp. Light yellow solid. λ_{max} 206 (log ϵ 4.5); 236 (log ϵ 4.3); 254 (log ϵ 4); 316 (log ϵ 4.3); 348 (log ϵ 3.9) (MeOH).

Akizawa, T. *et al., Biomed. Res.*, 1982, **3**, 232-234 (*isol, pmr, cmr, ms*)
Shimizu, M. *et al., Chem. Pharm. Bull.*, 1982, **30**, 909-914; 3453-3456; 4529-4533; 1984, **32**, 1313-1325 (*synth, resoln, cryst struct, abs config*)
Van Wagoner, R.M. *et al., J. Nat. Prod.*, 1999, **62**, 794-797 (*Trypargimine*)
Cesar, L.M.M. *et al., Helv. Chim. Acta*, 2005, **88**, 796-801 (*pmr, cmr, 6-Hydroxytrypargine*)
Czarnocki, S.J. *et al., Tetrahedron*, 2008, **64**, 3176-3182 (*synth*)

Tryprostatin A T-638

[171864-80-5]



Absolute Configuration

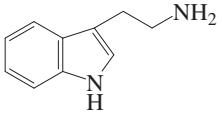
$C_{22}H_{27}N_3O_3$ 381.474
Prod. by the marine-derived *Aspergillus fumigatus*. Mammalian cell cycle inhibitor. Mycotoxin. Microtubule polym. inhibitor. Pale yellow cryst. Sol. MeOH, EtOAc, Me_2CO. Mp 120-123°. $[\alpha]_D^{27}$ -69.7 (c, 0.7 in $CHCl_3$). λ_{max} 227 (ϵ 24540); 270 (ϵ 5450); 297 (ϵ 6590) (MeOH).

Demethoxy: ***Tryprostatin B***
[179936-52-8]
$C_{21}H_{25}N_3O_2$ 351.447
Prod. by the marine-derived *Aspergillus fumigatus*. Cell cycle progression and microtubule polym. inhibitor. Mycotoxin. Pale yellow cryst. Sol. MeOH, Me_2CO, EtOAc. Mp 102-105°. $[\alpha]_D^{27}$ -71.1 (c, 0.6 in $CHCl_3$). λ_{max} 226 (23780); 277 (8690); 298 (sh) (7180) (MeOH).

Cui, C.-B. *et al., J. Antibiot.*, 1995, **48**, 1382-1384; 1996, **49**, 527-533; 534-540 (*isol, uv, ir, props*)
Gan, T. *et al., J.O.C.*, 1997, **62**, 9298-9304 (*synth*)
Kondoh, M. *et al., J. Antibiot.*, 1998, **51**, 801-804 (*activity*)
Zhao, S. *et al., Tet. Lett.*, 1998, **39**, 7009-7012 (*synth*)
Schkeryantz, J.M. *et al., J.A.C.S.*, 1999, **121**, 11964-11975 (*synth*)
Wang, B. *et al., Tet. Lett.*, 2001, **42**, 1463-1466 (*Tryprostatin B, synth*)
Caballero, E. *et al., J.O.C.*, 2003, **68**, 6944-6951 (*Tryprostatin B, synth*)
Cardoso, A.S.P. *et al., Org. Biomol. Chem.*, 2006, **4**, 3966-3972 (*Tryprostatin B, synth*)

Tryptamine T-639

*1*H-*Indole-3-ethanamine, 9CI. 3-(2-Aminoethyl)indole. 2-(3-Indolyl)ethylamine*
[61-54-1]



$C_{10}H_{12}N_2$ 160.218
Occurs widely in plants, esp. *Acacia* spp., *Lens esculenta* (lentil) and *Prosopis juliflora* (Fabaceae) and the fungi *Panaeolus foenisicii* and *Coprinus micaceus* (glistening ink cap). Also obt. from the gorgonian *Paramuricea chamaeleon*. Shows psychotropic effects. Needles (petrol). V. spar. sol. Et_2O, $CHCl_3$, C_6H_6. Mp 118°. $Bp_{0.15}$ 137°. pK_{a1} -6.31; pK_{a2} 10.2 (25°). Log P 1.27 (calc). Metab. precursor of 1*H*-Indole-3-acetic acid, I-81.

▶ LD_{50} (rat, ipr) *ca*. 223 mg/kg. NL4020000

Hydrochloride: [343-94-2]
Needles (EtOH/EtOAc). Mp 248°.

▶ LD_{50} (mus, ipr) 197 mg/kg. NL4375000

Picrate:
Dark red prisms (Et_2O). Mp 247° dec.

N^b-*Ac:* **N^b-*Acetyltryptamine***
[1016-47-3]
$C_{12}H_{14}N_2O$ 202.255
Alkaloid from leaves of *Prosopis nigra*. Prod. by the marine-derived bacteria *Cytophaga marinoflava* sp. AM13.1, *Roseivirga echinicomitans* KMM 6058^T and marine-derived fungus isol. from *Gracilaria verrucosa*. Mp 77°.

N^b-*Di-Ac:* **N^b-*Diacetyltryptamine***
[934391-06-7]
$C_{14}H_{16}N_2O_2$ 244.293
Isol. from the marine bacterium *Roseivirga echinicomitans* KMM 6058^T. Cryst. λ_{max} 274 ; 281 ; 290 (MeOH).

N^b-*(3-Methylbutanoyl):* ***Madugin***
[179027-43-1]
$C_{15}H_{20}N_2O$ 244.336
Alkaloid from the leaves of *Clausena indica*. Prod. by *Cytophaga marinoflava* sp. AM13.1. Oil. λ_{max} 224 ; 274 (sh) ; 283 ; 292 (Et_2O).

N^b-*(3-Methyl-2-oxopentanoyl):* ***Nematophin***. N-*[2-(1*H-*Indol-3-yl)ethyl]-3-methyl-2-oxopentanamide, 9CI*
[183314-23-0]
[183314-24-1]
$C_{16}H_{20}N_2O_2$ 272.346
Prod. by *Xenorhabdus nematophilus*. Exhibits antibacterial and antifungal activities. Shows strong anti-MRSA activity. Powder. $[\alpha]_D^{25}$ +0.1 (c, 0.6 in $CHCl_3$).

N^b-*(3-Methyl-2Z-dodecenoyl):* N^b-*(3-Methyl-2-dodecenoyl)tryptamine.* ***Granulatamide A***
[881417-85-2]
$C_{23}H_{34}N_2O$ 354.534
Constit. of *Eunicella granulata*. Cytotoxic. Pale yellow oil.

N^b-*(3,5-Dimethyl-2Z,4*E-*dodecadienoyl):* N^b-*(3,5-Dimethyl-2,4-dodecadienoyl)-tryptamine.* ***Granulatamide B***
[881417-94-3]
$C_{24}H_{34}N_2O$ 366.545
Constit. of *Eunicella granulata*. Cytotoxic. Pale yellow oil.

N^b-*Hexadecanoyl:* **N^b-*Hexadecanoyltryptamine***. N^b-*Palmitoyltryptamine*
[21469-15-8]
$C_{26}H_{42}N_2O$ 398.631
Alkaloid from seeds of *Annona reticulata* (custard apple) and *Rollinia mucosa* (biriba).

N^b-*Octadecanoyl:* **N^b-*Octadecanoyltryptamine***. N^b-*Stearoyltryptamine*
[21469-14-7]
$C_{28}H_{46}N_2O$ 426.684
Alkaloid from seeds of *Annona reticulata* (custard apple) and *Rollinia mucosa* (biriba) (Annonaceae).

N^b-*Nonadecanoyl:* **N^b-*Nonadecanoyltryptamine***
$C_{29}H_{48}N_2O$ 440.711
Alkaloid from the seeds of *Annona atemoya* (custard apple).

N^b-*Eicosanoyl:* **N^b-*Eicosanoyltryptamine***. N^b-*Arachidoyltryptamine*
[152766-92-2]
$C_{30}H_{50}N_2O$ 454.738
Alkaloid from seeds of *Annona reticulata* (custard apple) and *Rollinia mucosa* (biriba) (Annonaceae).

N^b-*Docosanoyl:* N-*[2-(1*H-*Indol-3-yl)ethyl]docosanamide. 3-[2-(Docosanoylaminoethyl)]indole. Behenic acid tryptamide.* N^b-*Behenoyltryptamine.* N^b-*Docosanoyltryptamine*
[7367-79-5]
$C_{32}H_{54}N_2O$ 482.791
Alkaloid from seeds of *Annona reticulata* (custard apple) and *Rollinia mucosa* (biriba) (Annonaceae). Cryst. (Me_2CO/Me_2CO). Mp 121-123° (116-117°).

N^b-*Tricosanoyl:* **N^b-*Tricosanoyltryptamine***
[152766-93-3]
$C_{33}H_{56}N_2O$ 496.818
Alkaloid from seeds of *Annona reticulata* and *Rollinia mucosa*.

N^b-*Tetracosanoyl:* **N^b-*Tetracosanoyltryptamine***. N^b-*Lignoceroyltryptamine*
[152766-94-4]
$C_{34}H_{58}N_2O$ 510.845
Alkaloid from seeds of *Annona reticulata* and *Rollinia mucosa* cocoa shell. Mp 120-123°.

N^b-*Pentacosanoyl:* **N^b-*Pentacosanoyltryptamine***
[152766-95-5]
$C_{35}H_{60}N_2O$ 524.872
Alkaloid from seeds of *Annona reticulata* and *Rollinia mucosa*.

N^b-*Hexacosanoyl:* **N^b-*Hexacosanoyltryptamine***. N^b-*Cerotoyltryptamine*
[152766-96-6]
$C_{36}H_{62}N_2O$ 538.899
Alkaloid from seeds of *Annona reticulata* and *Rollinia mucosa*.

N^b-*Octacosanoyl:* **N^b-*Octacosanoyltryptamine***
$C_{38}H_{66}N_2O$ 566.952
Constit. of the seeds of *Annona atemoya* (custard apple).

N^b-*(25Z-Triacontenoyl):* N^b-*(25-Triacontenoyl)tryptamine.* ***Cheritamine***
[223696-37-5]
$C_{40}H_{68}N_2O$ 592.99
Alkaloid from *Annona cherimola* (cherimoya). Powder (MeOH). Mp 121-123°. λ_{max} 222 ; 280 (EtOH).

N^b-*(2*S-*Hydroxy-3*S-*methylpentanoyl):* N^b-*(2-Hydroxy-3-methylpentanoyl)-tryptamine.* ***Dihydronematophin***
[184031-87-6]
$C_{16}H_{22}N_2O_2$ 274.362
Metab. from the culture broth of *Xenorhabdus nematophilus*. $[\alpha]_D^{25}$ -0.2 (c, 0.32 in $CHCl_3$). Config. revised in 2003.

N^b-*(7*S-*Methoxy-4*E-*tetradecenoyl):* N-*(7-Methoxy-4-tetradecenoyl)tryptamine.* ***Hermitamide B***
$C_{25}H_{38}N_2O_2$ 398.587
Alkaloid from *Lyngbya majuscula*. Cytotoxic agent. Pale yellow oil. $[\alpha]_D^{26}$ -4.5 (c, 0.1 in $CHCl_3$). λ_{max} 224 (ϵ 13600); 282 (ϵ 3600); 292 (ϵ 3000) (EtOH).

N^b-*Benzoyl:* N-*[2-(1*H-*Indol-3-yl)ethyl]benzamide, 9CI. Benztryptamide*
[4753-09-7]
$C_{17}H_{16}N_2O$ 264.326
Prisms. Mp 137-138°.

N^b-*(2-Methylaminobenzoyl):* N-*[2-(1*H-*Indol-3-yl)ethyl]-2-(methylamino)benzamide, 9CI.* **N^b-*(2-Methylaminobenzoyl)tryptamine***
[72502-82-0]
$C_{18}H_{19}N_3O$ 293.368
Alkaloid from the fruits of *Evodia rutaecarpa*. Needles (C_6H_6), cryst. (toluene). Mp 126-127° (114-117°). λ_{max} 223 (log ϵ 4.4); 259 (log ϵ 3.93); 284 (log ϵ 3.47); 292 (log ϵ 3.45); 346 (log ϵ 3.55) (EtOH).

N^b-*(4-Hydroxycinnamoyl):* **N^b-p-*Coumaroyltryptamine***
[53905-12-7]
$C_{19}H_{18}N_2O_2$ 306.363
Found in kernels of sweet corn (*Zea mays*).

N^b-*(4-Hydroxy-3-methoxycinnamoyl):* **N^b-*Feruloyltryptamine***
[53905-13-8]
$C_{20}H_{20}N_2O_3$ 336.39
Found in kernels of sweet corn (*Zea*

mays).

N^b-*Me:* see *N*-Methyltryptamine, M-582

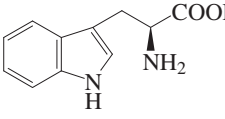
N^b,N^b-*Di-Me:* see *N*,*N*-Dimethyltryptamine, D-785

[54268-28-9]

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 660C; 660D (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 131C (*nmr*)
Ewins, A.J. *et al., J.C.S.*, 1911, **99**, 270-273 (*synth*)
White, E.P. *et al., N.Z. J. Sci. Technol., Sect. B*, 1944, **25**, 137-162; 1951, **33**, 54-60; 1957, **38**, 718-725 (*isol, occur*)
Cohen, L.A. *et al., J.A.C.S.*, 1960, **82**, 2184-2187 (*pmr*)
Jackson, A.H. *et al., J.C.S.*, 1965, 3498-3500 (*synth, struct*)
Sacher, H. *et al., Z. Lebensm.-Unters. -Forsch.*, 1965, **128**, 264-267 (*docosanoyl*)
Kametani, T. *et al., Synthesis*, 1972, 475 (*synth*)
Wakahara, A. *et al., Bull. Chem. Soc. Jpn.*, 1973, **46**, 2481-2486 (*cryst struct*)
Ehmann, A. *et al., Phytochemistry*, 1974, **13**, 1979-1983 (N^b-*p-Coumaroyltryptamine,* N^b-*Feruloyltryptamine*)
Cimino, G. *et al., Comp. Biochem. Physiol., C: Comp. Pharmacol.*, 1978, **61**, 361-362 (*isol*)
Bergman, J. *et al., J.O.C.*, 1985, **50**, 1246-1255 (*N-2-methylaminobenzoyl, synth*)
Morales-Rios, M.S. *et al., Magn. Reson. Chem.*, 1987, **25**, 377-395 (*cmr*)
Shoji, N. *et al., J. Nat. Prod.*, 1988, **51**, 161-162 (*N-2-methylaminobenzoyl, isol, ir, uv, pmr, cmr, ms*)
Szelag, H. *et al., Nahrung*, 1988, **32**, 285-290 (*N-docosanoyl*)
Maeda, U. *et al., Phytochemistry*, 1993, **34**, 1633-1635 (*N-Acyltryptamines*)
Li, J. *et al., J. Nat. Prod.*, 1996, **59**, 1157-1158 (*Dihydronematophin*)
Li, J. *et al., Bioorg. Med. Chem. Lett.*, 1997, **7**, 1349-1355 (*Nematophin, synth*)
Li, J. *et al., Can. J. Microbiol.*, 1997, **43**, 770-773 (*Nematophin*)
Riemer, B. *et al., Phytochemistry*, 1997, **45**, 337-341 (*Madugin*)
Himmler, T. *et al., Bioorg. Med. Chem. Lett.*, 1998, **8**, 2045-2049 (*Nematophin, activity*)
Chen, C.Y. *et al., J. Chin. Chem. Soc. (Taipei)*, 1999, **46**, 77-86 (*Cheritamine*)
Chavez, D. *et al., J. Nat. Prod.*, 1999, **62**, 1119-1122 (*N-Acyltryptamines*)
Li, J. *et al., Bioorg. Med. Chem. Lett.*, 2000, **10**, 1751-1754 (*Nematophin, activity*)
Tan, L.T. *et al., J. Nat. Prod.*, 2000, **63**, 952-955 (*Hermitamide B*)
Li, Y. *et al., Arch. Pharmacal Res.*, 2003, **26**, 21-23 (N^b-*Ac, marine, isol*)
Paik, S. *et al., Bull. Korean Chem. Soc.*, 2003, **24**, 623-626 (*Dihydronematophin, Nematophin*)
Czerwinski, K.M. *et al., Synth. Commun.*, 2003, **33**, 1225-1231 (N^b-*benzoyl*)
Shabaan, M. *et al., Dissertation*, Univ. of Göttingen, 2004, (*Cytophaga marinoflava derivs*)
Wu, Y.-C. *et al., J. Nat. Prod.*, 2005, **68**, 406-408 (*N-Acyltryptamines*)
Schmitt, H.M. *et al., J.A.C.S.*, 2005, **127**, 10356-10364 (*conformn*)
Oleinikova, G.K. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2006, **42**, 713-717 (*N-Acetyltryptamines*)
Hug, B. *et al., J. Agric. Food Chem.*, 2006, **54**, 3199-3203 (*N-docosanoyl, N-tetracosanoyl, detn, occur*)
Reyes, F. *et al., J. Nat. Prod.*, 2006, **69**, 668-670 (*Granulatamides*)
Virolleaud, M.-A. *et al., Tet. Lett.*, 2006, **47**, 5127-5130 (*Hermitamide B, synth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, AJX000; AJX250

Tryptophan, 9CI, 8CI, USAN T-640

*2-Amino-3-(3-indolyl)propanoic acid. α-Amino-1*H*-indole-3-propanoic acid. Indole-3-alanine. 3-Indolylalanine. Trp*



(*S*)-*form*

$C_{11}H_{12}N_2O_2$ 204.228

In CAS the N atoms labelled a and b are referred to as *N*- and 1- respectively.

(*S*)-*form*

L-form

[73-22-3]

Constit. of many plants. Enzymatic hydrol. prod. of most plant and animal proteins. Dietary supplement, nutrient, antidepressant. Plates (EtOH aq.). Sol. boiling H_2O, hot EtOH; spar. sol. cold H_2O, EtOH; insol. $CHCl_3$. Soly. 1.14 g/100 g in H_2O at 25°. Mp *ca.* 282° dec. $[\alpha]_D^{25}$ -68.8 (H_2O). $[\alpha]_D^{20}$ -32.5 (c, 1.1 in H_2O). $[\alpha]_D^{21}$ -5.7 (5*M* HCl). pK_{a1} 2.46; pK_{a2} 9.41; pK_{a3} 16.82 (25°,NH, KOH aq.). pK_a 2.38 (COOH, α-$NH_3^{\oplus}$). Log P -1.57 (uncertain value) (calc). Isoelectric point 5.89. Bitter taste.

▶ LD_{50} (rat, ipr) 1634 mg/kg. Exp. reprod. and teratogenic effects (large dose). Adverse effects when used therapeutically. YN6130000

Hydrochloride: [6159-33-7]
Needles (MeOH). Mp 257° dec.

Picrate:
Red needles and plates. Mp 195-196° slight dec.

N^a-*Hexanoyl,* N^b-*inosityl:* [124772-47-0]
$C_{23}H_{32}N_2O_8$ 464.514
Constit. of green gram flowers (*Phaseolus aureus*). Antihyperglycaemic agent. Exact struct. not indicated.

N^a-*(Carboxyacetyl):* **N-*Malonyltryptophan***
[29399-11-9]
$C_{14}H_{14}N_2O_5$ 290.275
Constit. of various plants incl. *Lycopersicon esculentum* (tomato), *Malus esculentum*, *Medicago sativa* (alfalfa) and *Melilotus albus* (white melilot). Originally assigned to the D-form.

N^a-*(4-Aminobenzoyl):* N^a-*(4-Aminobenzoyl)tryptophan*
[39545-05-6]
$C_{18}H_{17}N_3O_3$ 323.351
Isol. from the myxomycete *Fuligo candida*. Mp 213-214°. $[\alpha]_D^{23}$ -6.8 (c, 0.76 in MeOH). λ_{max} 282 (ε 12000) (MeOH).

N^a-*(4-Hydroxycinnamoyl):* **N^{α}-p-*Hydroxycoumaroyltryptophan***
$C_{20}H_{18}N_2O_4$ 350.373
Constit. of green coffee beans (*Coffea canephora* var. *robusta*) (Rubiaceae). Amorph. powder. Mp 208° dec.

N^a-*(3,4-Dihydroxycinnamoyl):* **N-*Caffeoyltryptophan***
[109163-69-1]
$C_{20}H_{18}N_2O_5$ 366.373
Constit. of green coffee beans (*Coffea canephora*) (Rubiaceae). Amorph. powder.

N^a-*(4-Amino-*E*-cinnamoyl):*
$C_{20}H_{19}N_3O_3$ 349.388
Prod. by *Fuligo aurea*. Amorph. solid. $[\alpha]_D^{23}$ +49 (c, 0.7 in MeOH). λ_{max} 222 (log ε 4.2); 291 (log ε 3.8); 325 (log ε 3.8) (MeOH).

N^a-*(4-Amino-*Z*-cinnamoyl):*
$C_{20}H_{19}N_3O_3$ 349.388
Prod. by *Fuligo aurea*. Amorph. solid. $[\alpha]_D^{23}$ +97 (c, 0.8 in MeOH). λ_{max} 222 (log ε 4.3); 291 (log ε 3.9); 325 (log ε 3.9) (MeOH).

N^a,N^a-*Di-Me:* **N,N-*Dimethyltryptophan***
[2812-40-0]
$C_{13}H_{16}N_2O_2$ 232.282
Isol. from *Abrus precatorius*, *Desmodium triflorum* and *Erythrina lithosperma*. Plant growth inhibitor. Small prisms (EtOH aq.). Mp 243-245°.

N^a,N^a-*Di-Me, Me ester:* [35214-77-8]
$C_{14}H_{18}N_2O_2$ 246.308
Alkaloid present in *Pultenaea altissima*, seeds of *Abrus precatorius*, *Erythrina variegata* and others. Plant growth inhibitor. Needles (hexane). Mp 97-98°. $[\alpha]_D^{20}$ +65 (c, 2 in EtOH). $[\alpha]_D^{20}$ +70 (c, 0.5 in dil. HCl). λ_{max} 203 ; 222 ; 283 ; 290 (EtOH).

N^a,N^a,N^a-*Tri-Me, Me ester:* **N,N-*Dimethyltryptophan methocation methyl ester***
[33440-04-9]
$C_{15}H_{21}N_2O_2^{\oplus}$ 261.343
Isol. from the seeds of *Abrus precatorius*.

N^a-*(4-Carboxy-3-hydroxy-3-methylbutanoyl):* N-*(3-Hydroxy-3-methylglutaroyl)tryptophan*. ***Achillamide***
[223924-17-2]
$C_{17}H_{20}N_2O_6$ 348.355
Constit. of the roots of *Astragalus trojanus*. $[\alpha]_D^{25}$ -29 (c, 0.1 in MeOH). λ_{max} 221 ; 270 ; 281 ; 290 (MeOH).

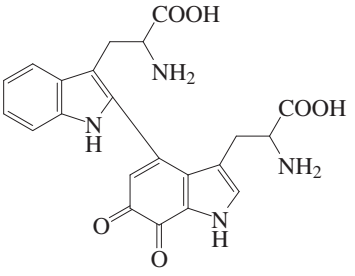
[7401-26-5 , 3184-74-5]

Ghosal, S. *et al., Phytochemistry*, 1971, **10**, 195; 3312 (*Dimethyltryptophan methocation methyl ester*)
Mandava, N. *et al., Phytochemistry*, 1974, **13**, 2853 (*Dimethyltryptophan*)
Gamburg, K.Z. *et al., Plant Sci. (Limerick, Irel.)*, 1991, **77**, 149 (*N-Malonyltryptophan*)
Sakagami, Y. *et al., Biosci., Biotechnol., Biochem.*, 1995, **59**, 1362 (*N-Malonyltryptophan, abs config*)
Murata, M. *et al., Biosci., Biotechnol., Biochem.*, 1995, **59**, 1887 (*cinnamoyltryptophans*)
Bedir, E. *et al., J. Nat. Prod.*, 1999, **62**, 563-568 (*Achillamide*)
Nakatani, S. *et al., Chem. Pharm. Bull.*, 2004, **52**, 368-370 (*N-4-Aminobenzoyltryptophan*)
Hosoya, T. *et al., Heterocycles*, 2006, **69**, 463-468 (*4-aminocinnamates*)

Tryptophan tryptophylquinone T-641

*α,α′-Diamino-6′,7′-dihydro-6′,7′-dioxo-[2,4′-bi-1*H*-indole]-3,3′-dipropanoic acid, 9CI. TTQ*

[134645-25-3]



$C_{22}H_{20}N_4O_6$ 436.423

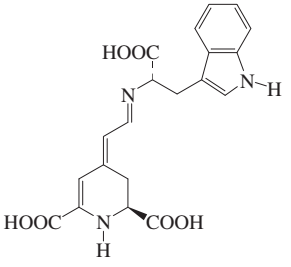
Amino acid derived redox cofactor isol. from bacterial methylamine dehydrogenases. Very difficult to isolate.

McIntire, W.S. *et al., Science (Washington, D.C.)*, 1991, **252**, 817-824 (*isol*)
Hartmann, C. *et al., Methods Enzymol.*, 1995, **258**, 149-164; 1997, **280**, 98-150 (*rev, biosynth*)
Itoh, S. *et al., Nat. Prod. Rep.*, 1995, **12**, 45-53 (*rev*)

Tryptophanbetaxanthin T-642

[419555-21-8]

[1007894-71-4]

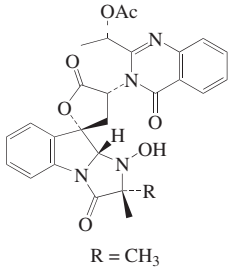


$C_{20}H_{19}N_3O_6$ 397.387

Yellow pigment from *Celosia argentea*. Also found in beet (*Beta vulgaris*).

Schliemann, W. *et al., Phytochemistry*, 2001, **58**, 159-165 (*isol, biosynth*)
Stintzing, F.C. *et al., J. Agric. Food Chem.*, 2002, **50**, 2302-2307 (*occur*)
Kugler, F. *et al., Z. Naturforsch., C*, 2007, **62**, 311-318 (*isol*)

Tryptoquialanine A T-643



Absolute Configuration

R = CH_3

$C_{27}H_{26}N_4O_7$ 518.525

Lower homologue of Tryptoquivaline A, T-645. Metab. of *Penicillium digitatum* on citrus fruits. $[\alpha]_D$ 0 (EtOH). λ_{max} 222 (log ϵ 4.48); 225 (log ϵ 4.49); 273 (sh) (log ϵ 3.9); 289 (sh) (log ϵ 3.69); 298 (sh) (log ϵ 3.54); 310 (sh) (log ϵ 3.39) (EtOH).

Ariza, M.R. *et al., J. Agric. Food Chem.*, 2002, **50**, 6361-6365 (*isol, cd, pmr, cmr*)

Tryptoquialanine B T-644

As Tryptoquialanine A, T-643 with R = H

$C_{26}H_{24}N_4O_7$ 504.498

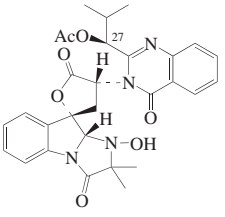
Metab. of *Penicillium digitatum* on citrus fruits. $[\alpha]_D^{22}$ +57.1 (c, 0.14 in EtOH).

Ariza, M.R. *et al., J. Agric. Food Chem.*, 2002, **50**, 6361-6365 (*isol, cd, pmr, cmr*)

Tryptoquivaline A T-645

Tryptoquivaline C. Tryptoquivaline

[55387-45-6]



Absolute Configuration

$C_{29}H_{30}N_4O_7$ 546.579

Metab. of *Aspergillus clavatus*. Tremorgenic toxin. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 155-157°. $[\alpha]_D^{25}$ +130 (c, 0.22 in $CHCl_3$). λ_{max} 228 (ϵ 37000); 275 (ϵ 8550); 305 (ϵ 3800); 317 (ϵ 3040) (EtOH) (Derep). λ_{max} 228 (ϵ 41200); 279 (ϵ 9500); 307 (ϵ 3700); 319 (ϵ 3000) (MeOH) (Berdy).

N-*Deoxy:* ***Deoxytryptoquivaline***
[60676-57-5]
$C_{29}H_{30}N_4O_6$ 530.579
Prod. by *Aspergillus clavatus*. Needles (CH_2Cl_2/hexane). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 150-152°. $[\alpha]_D^{25}$ +56.8 (c, 0.78 in $CHCl_3$). λ_{max} 227 (ϵ 44500); 232 (sh) (ϵ 41900); 252 (sh) (ϵ 18500); 267 (sh) (ϵ 12000); 278 (sh) (ϵ 10300); 304 (ϵ 3300); 318 (sh) (ϵ 2700) (EtOH).

N-*Deoxy,* N-*acetoxy,* O-*de-Ac:* ***Isotryptoquivaline***
[61897-83-4]
$C_{29}H_{30}N_4O_7$ 546.579
Metab. of *Aspergillus fumigatus*. Mp 215-217° dec. $[\alpha]_D^{28}$ +168 (c, 0.23 in $CHCl_3$).

O-*De-Ac, 27-ketone:* ***Tryptoquivaline I***
[66180-23-2]
$C_{27}H_{26}N_4O_6$ 502.526
Isol. from *Aspergillus fumigatus*. Tremorgenic toxin. Leaflets (MeOH/CH_2Cl_2). Mp 232-235.5° dec. $[\alpha]_D^{14}$ +239 (c, 0.16 in $CHCl_3$). λ_{max} 235 (ϵ 31700); 250 (ϵ 21400); 292 (ϵ 9600); 321 (ϵ 6100) (MeOH) (Berdy).

▶ Toxic.

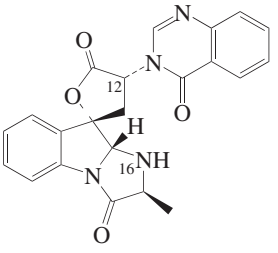
27-Epimer: ***27-Epitryptoquivaline***
[182967-49-3]
$C_{29}H_{30}N_4O_7$ 546.579
Metab. from *Corynascus setosus*. Tremorgenic agent. Needles (MeOH). Mp 225-227°. $[\alpha]_D^{25}$ +138 (c, 0.02 in $CHCl_3$). λ_{max} 209 (sh) (log ϵ 4.67); 289 (sh) (log ϵ 3.83); 306 (sh) (log ϵ 3.54); 318 (sh) (log ϵ 3.44) (MeOH).

Clardy, J. *et al., J.A.C.S.*, 1975, **97**, 663-665 (*ir, uv, pmr, cryst struct*)
Yamazaki, M. *et al., Tet. Lett.*, 1976, **17**, 2861-2864 (*Isotryptoquivaline*)
Büchi, G. *et al., J.O.C.*, 1977, **42**, 244-246 (*Tryptoquivaline, Deoxytryptoquivaline, isol, uv, ir, pmr*)
Yamazaki, M. *et al., Chem. Pharm. Bull.*, 1978, **26**, 111-117 (*Tryptoquivaline I*)
Springer, J.P. *et al., Tet. Lett.*, 1979, **20**, 339-342 (*abs config*)
Hermkens, P.H.H. *et al., Tetrahedron*, 1988, **44**, 1991-2000 (*synth*)
Fujimoto, H. *et al., Chem. Pharm. Bull.*, 1996, **44**, 1843-1848 (*27-Epitryptoquivaline*)
Cole, R.J. *et al., Handbook of Toxic Fungal Metabolites*, Academic Press, 1981, 414

Tryptoquivaline F T-646

Fumitremorgin F. FTF

[61897-89-0]



$C_{22}H_{18}N_4O_4$ 402.409

Isol. from *Aspergillus fumigatus*. Tremorgenic toxin. Fine needles (MeOH). Mp 277° dec. $[\alpha]_D^{15.5}$ -109 (c, 0.006 in $CHCl_3$). λ_{max} 226 (ϵ 33400); 303 (ϵ 2800); 315 (ϵ 2200) (MeOH) (Berdy).

▶ Toxic.

N-*Ac:* [61897-90-3]
Needles (MeOH). Mp 280-283° dec. $[\alpha]_D^{12}$ -116 (c, 0.12 in $CHCl_3$). Stereochem. requires confirmation.

N^{16}-*Hydroxy:* ***Tryptoquivaline H***. *Fumitremorgin H. FTH*
[61949-67-5]
$C_{22}H_{18}N_4O_5$ 418.408
Isol. from *Aspergillus fumigatus*. Tremorigen. Fine needles (MeOH). Mp 274° dec. $[\alpha]_D^{11}$ -155 (c, 0.02 in Me_2CO). λ_{max} 226 (ϵ 33100); 303 (ϵ 3100); 315 (ϵ 2500) (MeOH) (Berdy).

▶ Toxic.

N^{16}-*Acetoxy:* [61897-88-9]
Prisms (MeOH/CH_2Cl_2). Mp 231-234°. $[\alpha]_D^{16.5}$ +243 (c, 0.0095 in Me_2CO).

12-Epimer. ***Tryptoquivaline J***. *FTJ*
[66212-51-9]
$C_{22}H_{18}N_4O_4$ 402.409
Isol. from *Aspergillus fumigatus*. Tremorigen. Fine needles (Me_2CO/MeOH). Mp 254-258° dec. $[\alpha]_D^{14}$ +135 (c, 0.024 in Me_2CO). λ_{max} 225 (ϵ 41000); 302 (ϵ 3900); 310 (ϵ 3100) (MeOH) (Berdy).

▶ Toxic.

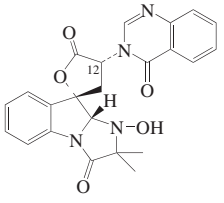
12-Epimer, N^{16}-*hydroxy:* ***Tryptoquivaline E***. *Fumitremorgin E*
[61897-87-8]

$C_{22}H_{18}N_4O_5$ 418.408
Metab. from *Aspergillus fumigatus*. Tremorgenic toxin. Mp 257° dec. $[\alpha]_D^{12}$ +257 (c, 0.009 in $CHCl_3$). λ_{max} 225 (ϵ 32300); 303 (ϵ 3000); 315 (ϵ 2600) (MeOH) (Berdy).

Yamazaki, M. *et al., Chem. Pharm. Bull.*, 1978, **26**, 111-117 (*Tryptoquivalines E,F,H,J*)
Handbook of Secondary Fungal Metabolites, (ed. Cole, R.J. *et al*), Academic Press, 2003, **1**, 391; 395; 399
Afiyatullov, S.S. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2005, **41**, 236-238 (*Tryptoquivaline J, marine isol*)

Tryptoquivaline G T-647

Fumitremorgin G
[61897-91-4]



Absolute Configuration

$C_{23}H_{20}N_4O_5$ 432.435
Metab. of *Aspergillus fumigatus*. Mycotoxin. Prisms (Me_2CO). Mp 240-241.5°. $[\alpha]_D^{11}$ +215 (c, 0.011 in Me_2CO). λ_{max} 226 (ϵ 34300); 302 (ϵ 3000); 315 (ϵ 2500) (MeOH) (Berdy).

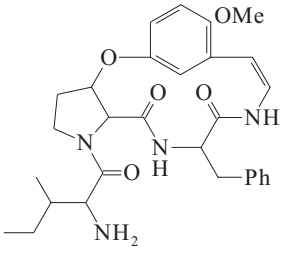
Ac: [61897-92-5]
Prisms (CH_2Cl_2/MeOH). Mp 231-234°. $[\alpha]_D^{16.5}$ +243 (c, 0.0095 in Me_2CO).

12-Epimer: ***Tryptoquivaline L***. *Fumitremorgin L*
[69483-20-1]
$C_{23}H_{20}N_4O_5$ 432.435
Prod. by *Aspergillus fumigatus*. Leaflets (Me_2CO). Mp 275-277° dec. $[\alpha]_D^{25}$ -230 (c, 0.02 in Me_2CO).

Yamazaki, M. *et al., Chem. Pharm. Bull.*, 1978, **26**, 111-117; 1979, **27**, 1611-1617 (*Tryptoquivalines G,L, isol, struct, ir, uv, ms, pmr, cd*)
Büchi, G. *et al., J.A.C.S.*, 1979, **101**, 5084-5086 (*Tryptoquivaline G, synth*)
Ohnuma, T. *et al., Tet. Lett.*, 1981, **22**, 4969-4972 (*±-Tryptoquivaline G, synth*)
Nakagawa, M. *et al., J.A.C.S.*, 1983, **105**, 3709-3710 (*(+)-Tryptoquivaline G, (-)-Tryptoquivaline G, synth, biosynth*)
Handbook of Secondary Fungal Metabolites, (ed. Cole, R.J. *et al*), Academic Press, 2003, **1**, 393

Tscheschamine T-648

[120186-26-7]

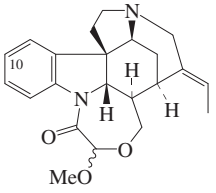


$C_{29}H_{36}N_4O_5$ 520.627
Alkaloid from the stem bark of *Zizyphus sativa* (Rhamnaceae). Amorph. powder. Mp 197-198°.

Shah, A.H. *et al., Heterocycles*, 1988, **27**, 2777 (*isol, uv, ir, pmr, ms, struct*)

Tsilanine, 9CI T-649

[29028-11-3]



Absolute Configuration

$C_{22}H_{26}N_2O_3$ 366.459
Alkaloid from *Strychnos henningsii* twigs (Loganiceae). Cryst. (Me_2CO/hexane). Mp 218-225°. $[\alpha]_D^{20}$ +61 ($CHCl_3$).

O-*De-Me:* **O-*Demethyltsilanine***
[29028-13-5]
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from *Strychnos henningsii* twigs and leaves (Loganiceae). Not obt. pure.

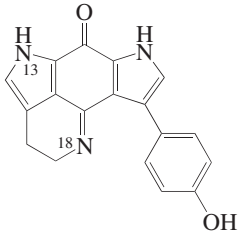
10-Methoxy: ***10-Methoxytsilanine***
$C_{23}H_{28}N_2O_4$ 396.485
Alkaloid from *Strychnos henningsii* twigs (Loganiceae). Cryst. ($CHCl_3$/Et_2O). Mp 160-170°. $[\alpha]_D^{20}$ +50 ($CHCl_3$).

10-Methoxy, O-*de-Me:* **O-*Demethyl-10-methoxytsilanine***. *10-Methoxy*-O-*demethyltsilanine*
[29028-14-6]
$C_{22}H_{26}N_2O_4$ 382.458
Alkaloid from *Strychnos henningsii* twigs and leaves (Loganiceae). Not obt. pure.

Sarfati, R. *et al., Phytochemistry*, 1970, **9**, 1107-1113 (*isol, uv, pmr, ms, struct*)
Wenkert, E. *et al., J.O.C.*, 1978, **43**, 1099 (*cmr, deriv*)

Tsitsikammamine A T-650

[183114-86-5]



$C_{18}H_{13}N_3O_2$ 303.32
Related to Wakayin, W-3. Alkaloid from the South African latrunculid sponge *Tsitsikamma favus* and another sponge. Cytotoxic. Exhibits antimicrobial activity. λ_{max} 242 ; 317 ; 377 (MeOH) (Berdy).

N^{13}-*Me:* ***Tsitsikammamine B***
[183114-88-7]
$C_{19}H_{15}N_3O_2$ 317.346
Alkaloid from *Tsitsikamma favus* and a marine sponge. Cytotoxic. Exhibits antimicrobial activity. λ_{max} 242 ; 317 ; 374 (MeOH) (Berdy).

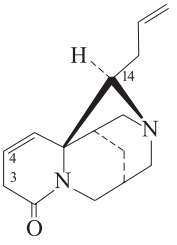
N^{18}-*Hydroxy:* ***Tsitsikammamine A*** **N^{18}-*oxime***
$C_{18}H_{14}N_3O_3^{\oplus}$ 320.327
Alkaloid from *Tsitsikamma favus*. Bright orange-red solid.

N^{18}-*Hydroxy,* N^{13}-*Me:* ***Tsitsikammamine B*** **N^{18}-*oxime***
$C_{19}H_{16}N_3O_3^{\oplus}$ 334.354
Alkaloid from *Tsitsikamma favus*. Bright orange-red solid.

Hooper, G.J. *et al., Tet. Lett.*, 1996, **37**, 7135-7138 (*isol, uv, ir, pmr, cmr*)
Antunes, E.M. *et al., J. Nat. Prod.*, 2004, **67**, 1268-1276 (*oximes*)

Tsukushinamine A T-651

[70711-82-9]



Absolute configuration

$C_{15}H_{20}N_2O$ 244.336
Alkaloid from *Sophora franchetiana* (Fabaceae). Liq. $[\alpha]_D^{25}$ -72.3 (c, 0.56 in EtOH).

Hydrobromide: Mp 260°.

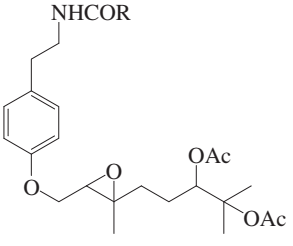
Δ^3-Isomer: ***Tsukushinamine C***
[73575-31-2]
$C_{15}H_{20}N_2O$ 244.336
Minor alkaloid from *Sophora franchetiana* (Fabaceae). Oil. Opt. rotn. not detd.

14-Epimer: ***Tsukushinamine B***
[73610-25-0]
$C_{15}H_{20}N_2O$ 244.336
Alkaloid from various parts of *Sophora franchetiana* (Fabaceae). Oil. $[\alpha]_D^{25}$ -144.4 (EtOH).

Ohmiya, S. *et al., Chem. Pharm. Bull.*, 1979, **27**, 1055 (*isol, uv, ir, pmr, cmr, ms, struct*)
Bordner, J. *et al., Chem. Pharm. Bull.*, 1980, **28**, 1965 (*cryst struct*)
Ohmiya, S. *et al., Phytochemistry*, 1981, **20**, 1997 (*derivs*)

Tubacetine T-652

[144442-82-0]



R = Ph

$C_{29}H_{37}NO_7$ 511.614

Closely related to Acidissiminol, A-77. Alkaloid from aerial parts of *Haplophyllum tuberculatum* (Rutaceae). Microcryst. (Et_2O/hexane). Mp 71.7-72.7°. $[\alpha]_D^{22}$ +12 (c, 0.1 in $CHCl_3$).

Al-Yahya, M.A. *et al., J. Nat. Prod.*, 1992, **55**, 899 (*isol, uv, ir, pmr, cmr, struct*)

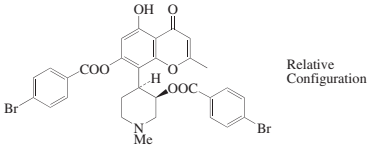
Tubasenecine T-653

[144425-13-8]
As Tubacetine, T-652 with
R = –CH=C$(CH_3)_2$
$C_{27}H_{39}NO_7$ 489.608
Alkaloid from aerial parts of *Haplophyllum tuberculatum* (Rutaceae). Pale yellow gum. $[\alpha]_D^{25}$ +12 (c, 0.1 in $CHCl_3$).

Al-Yahya, M.A. *et al., J. Nat. Prod.*, 1992, **55**, 899 (*isol, uv, ir, pmr, cmr, struct*)

Tubastraine T-654

[114216-90-9]

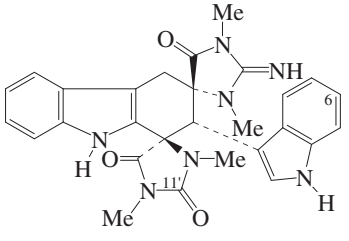


$C_{30}H_{25}Br_2NO_7$ 671.338
Alkaloid from the non-symbiotic marine coral *Tubastrea micrantha*. Glassy compd. Mp 122°. First chromone isol. from a marine invertebrate. Possibly derived from dietary sources.

Alam, M. *et al., Heterocycles*, 1988, **27**, 719 (*isol, ir, pmr, cmr, ms, struct*)

Tubastrindole C T-655

[524067-26-3]



$C_{28}H_{27}N_7O_3$ 509.566
Alkaloid from a stony coral *Tubastrea aurea*. $[\alpha]_D$ -20 (c. 0.04 in MeOH).

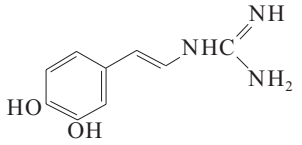
11′-Imide: ***Tubastrindole B***
[524067-25-2]
$C_{28}H_{28}N_8O_2$ 508.582
Alkaloid from *Smenospongia cerebriformis* and a *Tubastrea aurea*. $[\alpha]_D$ -26 (c, 0.07 in MeOH).

6-Bromo, 11′-imide: ***Tubastrindole A***
[524067-24-1]
$C_{28}H_{27}BrN_8O_2$ 587.478
Alkaloid from *Smenospongia cerebriformis* and *Tubastrea aurea*. $[\alpha]_D$ -38 (c, 0.13 in MeOH). λ_{max} 284 (ϵ 2800); 294 (ϵ 2100) (no solvent reported).

Iwagawa, T. *et al., Tet. Lett.*, 2003, **44**, 2533-2535 (*isol, pmr, cmr*)

Tubastrine T-656

2-[(3,4-Dihydroxyphenyl)ethenyl]guanidine, 9CI. 3,4-Dihydroxy-β-guanidinostyrene. β-(Aminoiminomethyl)amino-3,4-dihydroxystyrene
[107585-47-7]



$C_9H_{11}N_3O_2$ 193.205
Constit. of *Aplidium orthium*, *Dendrodoa grossularia* and *Tubastrea aurea*. Shows antiviral props. Light yellow solid. Sol. Me_2CO, MeOH; fairly sol. EtOAc; poorly sol. H_2O. Mp 173-175°. λ_{max} 205 (log ϵ 3.79); 221 (log ϵ 3.79); 287 (log ϵ 3.79); 306 (sh) (log ϵ 3.68) (MeOH).

1,2-Dihydro: ***7,8-Dihydrotubastrine***
$C_9H_{13}N_3O_2$ 195.221
Alkaloid from the sponge *Petrosia* cf. *contignata*. Brown viscous oil. λ_{max} 222 (ϵ 3900); 284 (ϵ 1900) (MeOH).

1,2-Dihydro, di-Me ether: 2-[(3,4-Dimethoxyphenyl)ethyl]guanidine. ***7,8-Dihydro-3,4-di-O-methyltubastrine***
[46719-17-9]
$C_{11}H_{17}N_3O_2$ 223.274
Alkaloid from *Aplidium orthium*. Pale yellow gum. λ_{max} 205 (log ϵ 4.07); 229 (log ϵ 3.52); 281 (log ϵ 3.11) (MeOH).

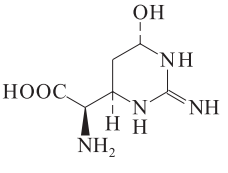
3′-Deoxy: ***3′-Deoxytubastrine***
[160525-08-6 (monohydrochloride)]
$C_9H_{11}N_3O$ 177.205
Alkaloid from the Australian marine sponge *Spongosorites* sp. Shows modest antibiotic activity. Oil (as monohydrochloride trihydrate). λ_{max} 219 (ϵ 13000); 282 (ϵ 19000); 289 ; 308 (EtOH) (Berdy).

4′-Deoxy, 1,2-dihydro: ***4-Deoxy-7,8-dihydrotubastrine***
$C_9H_{13}N_3O$ 179.221
Isol. from the sponge *Petrosia* cf. *contignata*. Brown viscous oil. λ_{max} 214 (ϵ 4700); 274 (ϵ 1400) (MeOH).

Sakai, R. *et al., Chem. Lett.*, 1987, 127-128 (*isol*)
Urban, S. *et al., Aust. J. Chem.*, 1994, **47**, 2279 (*3′-Deoxytubastrine*)
Sperry, S. *et al., J. Nat. Prod.*, 1998, **61**, 859-861 (*Dihydrotubastrines*)
Pearce, A.N. *et al., Tetrahedron*, 2008, **64**, 5748-5755 (*isol, pmr, cmr, ms*)

Tuberactidine T-657

α,2-Diamino-1,4,5,6-tetrahydro-6-hydroxy-4-pyrimidineacetic acid, 9CI. α-(Hexahydro-4-hydroxy-2-iminopyrimidin-6-yl)-glycine
[28945-12-2]



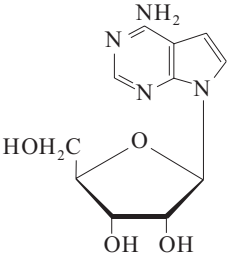
Absolute configuration

$C_6H_{12}N_4O_3$ 188.186
Amino acid component of Tuberactinomycins. Mp 182° dec. (as hydrobromide). $[\alpha]_D^{15}$ -25.8 (c, 0.5 in H_2O) (hydrobromide).

Shiba, T. *et al., Tet. Lett.*, 1970, 3497 (*struct*)
Kitagawa, T. *et al., J. Biochem. (Tokyo)*, 1977, **81**, 1759

Tubercidin T-658

*7-Ribofuranosyl-7*H*-pyrrolo[2,3-*d*]pyrimidin-4-amine, 9CI. 4-Amino-7-ribofuranosyl-7*H*-pyrrolo[2,3-*d*]pyrimidine, 8CI. 7-Deazaadenosine. Sparsomycin A. B 79D. NSC 56408. U 10071. XK 101-1. Antibiotic B 79D. Antibiotic XK 101-1*
[69-33-0]



$C_{11}H_{14}N_4O_4$ 266.256
Nucleoside antibiotic. Isol. from *Streptomyces tubericidus*. Major cytotoxin of *Tolypothrix byssoidea*. Also prod. by *Micromonospora chalcea tubercidica*. Constit. of the sponge *Caulospongia biflabellata*. Antitumour, antifungal and antiviral agent. Nucleoside transporter substrate. Cryst. Mp 247° dec. $[\alpha]_D^{17}$ -67 (50% AcOH). pK_a 5.3. λ_{max} 227 (ϵ 25000); 272 (ϵ 12200) (dil HCl) (Derep). λ_{max} 270 (ϵ 12100) (dil. NaOH) (Derep). λ_{max} 270 (ϵ 12100) (H_2O) (Derep).
▶ LD_{50} (rat, orl) 16 mg/kg. UY8870000

5′-O-Sulfamoyl: ***Antibiotic SF 2494***. *SF 2494*
[114746-65-5]
$C_{11}H_{15}N_5O_6S$ 345.335
From *Streptomyces mirabilis*. Herbicide.

5′-Deoxy: ***5′-Deoxytubercidin***
[41107-17-9]
$C_{11}H_{14}N_4O_3$ 250.257
Isol. from *Didemnum voeltzkowi*. Cryst. (EtOH/C_6H_6). Mp 203-207°. $[\alpha]_D^{23}$ -70.3 (c, 0.48 in DMSO). λ_{max} 270 (ϵ 12700) (MeOH).

5′-α-D-Glucopyranosyl: ***Tubercidin 5′-α-D-glucopyranose***
[117456-78-7]
$C_{17}H_{24}N_4O_9$ 428.398
Found in *Plectonema radiosum* and *Tolypothrix distorta*. Cytotoxic. Antifungal. Sol. H_2O. $[\alpha]_D^{25}$ +10 (c, 0.01 in H_2O). λ_{max} 268 (ϵ 9300) (H_2O) (Derep).

5-Bromo, 5′-deoxy: ***5-Bromo-5′-deoxytubercidin, 9CI***
[95931-82-1]
$C_{11}H_{13}BrN_4O_3$ 329.153
Isol. from *Didemnum voeltzkowi*.

5-Iodo, 5′-deoxy: ***5′-Deoxy-5-iodotubercidin***
[85209-84-3]
$C_{11}H_{13}IN_4O_3$ 376.153
Constit. of *Hypnea valentiae* and *Didemnum voleltzowi*. Smooth muscle relaxant, hypothermic agent, inhibitor of adenosine kinase. Cryst. (Py). Mp 227-228° dec. $[\alpha]_D^{25}$ -55 (c, 0.2 in MeOH).

1′-Epimer, 5-iodo, 5′-deoxy: [85209-85-4]
$C_{11}H_{13}IN_4O_3$ 376.153
Constit. of *Hypnea valentiae* and *Didemnum voleltzowi*. Muscle relaxant. Pale yellow gum.

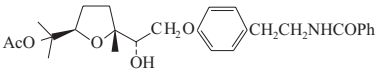
2′-Epimer: Aratubercidin. Ara Tb
[64526-34-7]
$C_{11}H_{14}N_4O_4$ 266.256
Shows antiviral props. Mp 125-126°. $[\alpha]_D^{24}$ +6.9 (c, 0.5 in DMF).

▶ UY8820000

Anzai, K. *et al., J. Antibiot., Ser. A*, 1957, **10**, 201-204 (*isol*)
Mizuno, Y. *et al., J.O.C.*, 1963, **28**, 3329-3331 (*struct, uv, config*)
Smulson, M.E. *et al., J. Biol. Chem.*, 1967, **242**, 2872-2876 (*biosynth*)
Tolman, R.L. *et al., J.A.C.S.*, 1969, **91**, 2102-2108 (*synth, uv, ir, nmr*)
Abola, J. *et al., Acta Cryst. B*, 1973, **29**, 697-703 (*cryst struct*)
Chenon, M.-T. *et al., J.A.C.S.*, 1975, **97**, 4627-4636 (*pmr, cmr*)
Robbins, M.J. *et al., Can. J. Chem.*, 1977, **55**, 1260 (*Aratubercidin*)
Ektova, L.V. *et al., Bioorg. Khim.*, 1978, **4**, 1250-1255; *Sov. J. Bioorg. Chem. (Engl. Transl.)*, 1978, **4**, 907-910 (*synth*)
Fukushima, K. *et al., J. Antibiot.*, 1978, **31**, 377-378 (*ms*)
Japan. Pat., 1978, 78 124 685; *CA*, **90**, 136241v (*isol*)
Uzawa, J. *et al., Org. Magn. Reson.*, 1979, **12**, 612-615 (*cmr*)
Seela, F. *et al., Angew. Chem., Int. Ed.*, 1981, **20**, 97 (*Aratubercidin*)
Kazlauskas, R. *et al., Aust. J. Chem.*, 1983, **36**, 165-170 (*5-iodo-5′-deoxy, 1′-epimer 5-iodo-5′-deoxy*)
Barchi, J.J. *et al., Phytochemistry*, 1983, **22**, 2851-2852 (*isol*)
Seela, F. *et al., Annalen*, 1984, 1972-1980 (*synth, cmr*)
Yoo, J.C. *et al., J. Liq. Chromatogr.*, 1984, **7**, 151-158 (*hplc*)
Bergstrom, D.E. *et al., J. Med. Chem.*, 1984, **27**, 285-292 (*props*)
Cook, A.F. *et al., Nucleosides Nucleotides*, 1984, **3**, 401-411 (*5-Bromo-5′-deoxytubercidin, 5-iodo-5′-deoxy, synth*)
Ramasamy, K. *et al., Tet. Lett.*, 1987, **28**, 5107-5110 (*synth*)
Iwata, M. *et al., CA*, 1988, **109**, 3509 (*SF2494*)
Stewart, J.B. *et al., J. Antibiot.*, 1988, **41**, 1048-1056 (*5′-glucosyl*)
Isono, K. *et al., J. Antibiot.*, 1988, **42**, 1711-1739 (*rev*)
Reddy, A.M. *et al., J. Het. Chem.*, 1990, **27**, 1297-1305 (*ms*)
Plagemann, P.G. *et al., Biochem. Pharmacol.*, 1991, **42**, 247-252 (*pharmacol*)
Mitchell, S.S. *et al., J. Nat. Prod.*, 1996, **59**, 1000-1001 (*5′-deoxy, 5-bromo-5′-deoxy, 5-iodo-5′-doxy*)
Biabani, M.F. *et al., Pharm. Biol.*, 2002, **40**, 302-303 (*isol*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, TNY500

Tuberine T-659

[97400-75-4]



$C_{27}H_{35}NO_6$ 469.577
Alkaloid from the aerial parts of *Haplophyllum tuberculatum* (Rutaceae). Shows strong antibacterial effects on *Staphylococcus aureus* and *E. coli*. Needles (EtOAc/petrol). Mp 150-152°. $[\alpha]_D^{25}$ +12.5 (c, 0.12 in $CHCl_3$).

Sheriha, G.M. *et al., Phytochemistry*, 1985, **24**, 884 (*uv, ir, pmr, cmr, ms, struct, stereochem*)
McPhail, A.T. *et al., Phytochemistry*, 1990, **29**, 3055 (*abs config*)

Tubermycin A T-660

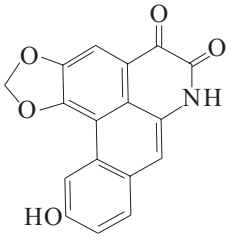
$C_{17}H_{16}N_2O_2$ 280.326
Struct. unknown; prob. an alkyl-substitd. phenazine carboxylic acid. Isol. from *Streptomyces misakiensis*. Antibiotic; active against *Staphylococcus aureus* and *Mycobacterium*. Yellow cryst. (Me_2CO aq.). Sol. AcOH, dioxan, DMF, bases, Me_2CO; fairly sol. MeOH, EtOH, EtOAc, Et_2O, C_6H_6; poorly sol. H_2O. Mp 174°. λ_{max} 254 (ϵ 85000); 370 (ϵ 16500) (MeOH/HCl) (Derep). λ_{max} 256 (ϵ 98300); 365 (ϵ 16000) (MeOH) (Derep).

▶ LD_{50} (mus, ivn) 160 mg/kg.

Isono, K. *et al., J. Antibiot., Ser. A*, 1958, **11**, 264-267 (*isol, uv, ir, struct*)

Tuberosinone T-661

*11-Hydroxy-5*H*-benzo[*g*]-1,3-benzodioxolo[6,5,4-*de*]quinoline-5,6(7*H*)-dione, 9CI*
[81451-87-8]



$C_{17}H_9NO_5$ 307.262
Alkaloid from the roots of *Aristolochia tuberosa* (Aristolochiaceae). Red needles. Mp 340°. λ_{max} 238 (ϵ 37200); 277 (ϵ 13200); 286 (ϵ 14100); 318 (ϵ 11200); 330 (ϵ 14500); 372 (ϵ 8130); 390 (ϵ 8710); 476 (ϵ 16600) (EtOH) (Derep).

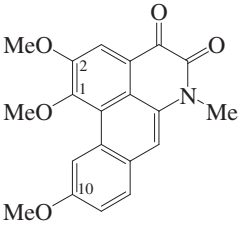
O-*Ac:*
Yellow needles. Mp 340°.

N-*β-D-Glucopyranoside:* ***Tuberosinone* N-*β-D-glucoside***
[81451-88-9]
$C_{23}H_{19}NO_{10}$ 469.404
Alkaloid from the roots of *Aristolochia tuberosa* (Aristolochiaceae). Red needles. Mp 235-237°.

Me ether, N-*Me:* ***Tuberosinone B***
$C_{19}H_{13}NO_5$ 335.315
Alkaloid from *Aristolochia tuberosa*. Red needles. Mp 151-153°.

Zhu, D. *et al., Heterocycles*, 1982, **17**, 345 (*uv, ir, pmr, ms, struct*)
Zhu, D.-Y. *et al., Planta Med.*, 1990, **56**, 514 (*Tuberosinone B*)

Tuberosinone C T-662



$C_{20}H_{17}NO_5$ 351.358
Alkaloid from *Aristolochia tuberosa*. Red needles. Mp 254-256°.

O^2-*De-Me:* ***Aristoliukine C***
[310396-77-1]
$C_{18}H_{13}NO_5$ 323.304
Alkaloid from *Aristolochia kaempferi*. Red needles (MeOH). Mp 220-221° dec. λ_{max} 219 ; 237 ; 246 ; 274 (sh) ; 327 ; 472 (MeOH).

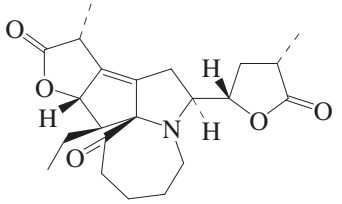
O^1,O^{10}-*Di-de-Me:* ***Triangularine A***
[197006-51-2]
$C_{17}H_{11}NO_5$ 309.278
Alkaloid from the roots of *Aristolochia triangularis*.

O^2,O^{10}-*Di-de-Me:* ***Aristoliukine B***
[217310-32-2]
$C_{17}H_{11}NO_5$ 309.278
Alkaloid from *Aristolochia kaempferi*. Red needles. Mp 249-250° (dec.). λ_{max} 219 ; 235 ; 246 ; 275 (sh) ; 321 (sh) ; 333 ; 373 (sh) ; 480 (MeOH).

Zhu, D.Y. *et al., Planta Med.*, 1990, **56**, 514 (*Tuberosinone C*)
Lin, W. *et al., J. Chin. Pharm. Sci.*, 1997, **6**, 8-13 (*Triangularine A*)
Wu, T.S. *et al., Chem. Pharm. Bull.*, 1998, **46**, 1624-1626 (*Aristoliukine B*)
Wu, T.S. *et al., Biol. Pharm. Bull.*, 2000, **23**, 1216-1219 (*Aristoliukine C*)

Tuberostemoenone T-663

[220784-37-2]

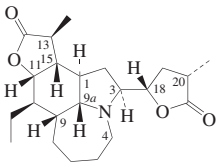


$C_{22}H_{29}NO_5$ 387.475
Constit. of the roots of *Stemona tuberosa*.

Lin, W. *et al., J. Chin. Pharm. Sci.*, 1999, **8**, 1-7

Tuberostemonine T-664

2-(Tetrahydro-4-methyl-5-oxo-2-furanyl)-stenine, 9CI
[6879-01-2]



Absolute Configuration

$C_{22}H_{33}NO_4$ 375.507

Numbering shown as given by Lin *et al.* Alkaloid from *Stemona tuberosa*, *Stemona japonica* and *Stemona sessilifolia* (Stemonaceae). Anthelmintic agent. Needles (EtOH). Poorly sol. hexane. Mp 86-88°. $[\alpha]_D$ -25.4 (Me_2CO). pK_a 6.4 (60% EtOH).

Hydrobromide: Mp 120° dec.

Perchlorate: Mp 242° dec.

N-*Oxide:* ***Tuberostemonine* N-*oxide***
[232921-40-3]
$C_{22}H_{33}NO_5$ 391.506
Alkaloid from the roots of *Stemona tuberosa*.

*1,2,3,9*a-*Tetradehydro:* ***Bisdehydrotuberostemonine***. *Didehydrotuberostemonine*
[106861-40-9]
$C_{22}H_{29}NO_4$ 371.475
Alkaloid from roots of *Stemona tuberosa* (Stemonaceae). Needles (Et_2O). Mp 176-178° (172-174°). $[\alpha]_D$ +105.96 (c, 0.1 in C_6H_6).

*9-Hydroxy, 1,9*a-*didehydro:* ***Tuberostemonol***
[142905-24-6]
$C_{22}H_{31}NO_5$ 389.491
Alkaloid from roots of *Stemona tuberosa* (Stemonaceae). Amorph. $[\alpha]_D^{20}$ +33.54 (c, 0.3 in MeOH).

3-Epimer: ***Tuberostemonine A***
[876313-35-8]
$C_{22}H_{33}NO_4$ 375.507
Minor alkaloid from the roots of *Stemona sessilifolia* (Stemonaceae). Needles (MeOH). Mp 118-120°. $[\alpha]_D$ -65 (c, 1.0 in EtOH). pK_a 5.45 (80% MeOH).

3-Epimer, hydrochloride:
Cryst. + $1H_2O$. Mp 140-141°.

*10-Epimer, 1,2,3,9*a-*tetradehydro:* ***Bisdehydrotuberostemonine B***
[263863-25-8]
$C_{22}H_{29}NO_4$ 371.475
Alkaloid from the roots of *Stemona japonica*.

13-Epimer: ***Tuberostemonine N***
[942579-85-3]
$C_{22}H_{33}NO_4$ 375.507
Alkaloid from *Stemona tuberosa*. Amorph. powder. $[\alpha]_D^{20}$ -24 (c, 0.5 in $CHCl_3$).

*13-Epimer, 4β,9*a-*epoxy:* ***Sessilifoline A***
[929637-35-4]
$C_{22}H_{31}NO_5$ 389.491
Alkaloid from the stems of *Stemona sessilifolia*. Amorph. powder. $[\alpha]_D^{20}$ +31.4 (c, 0.8 in $CHCl_3$).

1,10-Diepimer: ***Tuberostemonine B***
[263870-88-8]
$C_{22}H_{33}NO_4$ 375.507
Alkaloid from the roots of *Stemona japonica*.

*9,10-Diepimer, 1,2,3,9*a-*tetradehydro:* ***Bisdehydrotuberostemonine C***
[263863-26-9]
$C_{22}H_{29}NO_4$ 371.475
Alkaloid from the roots of *Stemona japonica*.

11,15-Diepimer: ***Tuberostemonine K***
[885056-80-4]
$C_{22}H_{33}NO_4$ 375.507
Alkaloid from the roots of *Stemona tuberosa*. Powder. $[\alpha]_D^{20}$ -12.6 (c, 0.1 in MeOH).

*11,15-Diepimer, 1,2,3,9*a-*tetradehydro:* ***Bisdehydroneotuberostemonine***
[160333-27-7]
$C_{22}H_{29}NO_4$ 371.475
From roots of *Stemona tuberosa* (Stemonaceae). Needles (EtOH). Mp 172-174°. $[\alpha]_D^{18.5}$ -32 (c, 1.0 in EtOH).

*11,15-Diepimer, 1-hydroxy, 9,9*a-*didehydro:* ***Neotuberostemonol***
[473925-49-4]
$C_{22}H_{31}NO_5$ 389.491
Alkaloid from *Stemona tuberosa*. Prisms (hexane/EtOAc). Mp 195-197°.

1,9,10-Triepimer: ***Tuberostemonine C***
[263870-89-9]
$C_{22}H_{33}NO_4$ 375.507
Alkaloid from the roots of *Stemona japonica*.

1,11,15-Triepimer: ***Neotuberostemonine***. *Tuberostemonine LG. Stemonine LG*
[143120-46-1]
$C_{22}H_{33}NO_4$ 375.507
Alkaloid from roots of *Stemona tuberosa*. Antitussive agent. Cryst. (EtOH). Mp 160.5-162°. $[\alpha]_D^{20}$ +83 (c, 0.1 in MeOH).

*5′,9,13-Triepimer, 1,2,3,9*a-*tetradehydro:* ***Isobisdehydrotuberostemonine***
[232921-41-4]
$C_{22}H_{29}NO_4$ 371.475
Alkaloid from the roots of *Stemona tuberosa*.

*1,9*a,*11,15-Tetraepimer:* ***Tuberostemonine H***
[670254-76-9]
$C_{22}H_{33}NO_4$ 375.507
Alkaloid from the roots of *Stemona tuberosa*. Needles (hexane/EtOAc). Mp 183-185°. $[\alpha]_D^{20}$ +77.6 (c, 0.1 in MeOH).

*9,11,15,18-Tetraepimer, 1,2,3,9*a-*tetradehydro:* ***Epibisdehydroneotuberostemonine J***
[670254-77-0]
$C_{22}H_{29}NO_4$ 371.475
Alkaloid from the roots of *Stemona tuberosa*. Prisms (hexane/EtOAc). Mp 186-188°. $[\alpha]_D^{20}$ -16.1 (c, 0.1 in MeOH).

*1,9,9*a,*11,15-Pentaepimer:* ***Tuberostemonine J***
[670254-75-8]
$C_{22}H_{33}NO_4$ 375.507
Alkaloid from the roots of *Stemona tuberosa*. Prisms (hexane/EtOAc). Mp 180-182°. $[\alpha]_D^{20}$ +36.4 (c, 0.1 in MeOH).

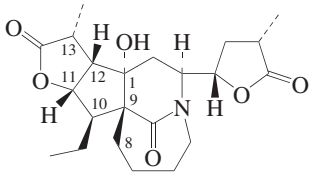
1,11,15,18,20-Pentaepimer: ***Tuberostemonine L***
[947730-01-0]
$C_{22}H_{33}NO_4$ 375.507
Alkaloid from a *Stemona* sp.

*1,3,9*a,*11,15,18-Hexaepimer:* ***Tuberostemonine M***
[947730-02-1]
$C_{22}H_{33}NO_4$ 375.507
Alkaloid from a *Stemona* sp.

Edwards, O.E. *et al., Can. J. Chem.*, 1962, **40**, 455; 2416 (*isol, ir, pmr, struct, epimer*)
Harada, H. *et al., Chem. Comm.*, 1967, 460 (*cryst struct, abs config*)
Götz, M. *et al., Tetrahedron*, 1968, **24**, 2631 (*ir, pmr, struct*)
Lin, W.-H. *et al., J. Nat. Prod.*, 1992, **55**, 571 (*Tuberostemonol, Didehydrotuberostemonine*)
Dao, C.N. *et al., Acta Cryst. C*, 1994, **50**, 1612-1615 (*Neotuberostemonine, cryst struct*)
Ye, Y. *et al., Phytochemistry*, 1994, **37**, 1201 (*Neotuberostemonine, Bisdehydroneotuberostemonine*)
Lin, W. *et al., J. Chin. Pharm. Sci.*, 1999, **8**, 1-7 (*N-oxide, Isodidehydrotuberostemonine*)
Zou, C. *et al., J. Chin. Pharm. Sci.*, 1999, **8**, 185-190 (*Tuberostemonines B,C, Bisdehydrotuberostemonines B,C*)
Jiang, R.-W. *et al., Tetrahedron*, 2002, **58**, 6705-6712 (*Neotuberostemonol*)
Chung, H.-S. *et al., Planta Med.*, 2003, **69**, 914-920 (*Tuberostemonines H,J, Epibisdehydroneotuberostemonine J*)
Wipf, P. *et al., J.A.C.S.*, 2005, **127**, 225-235 (*synth*)
Jiang, R.-W. *et al., J. Nat. Prod.*, 2006, **69**, 749-754 (*Tuberostemonine K, cryst struct*)
Sastraruji, T. *et al., Nat. Prod. Commun.*, 2006, **1**, 813-818 (*Tuberostemonines L,M*)
Greger, H. *et al., Planta Med.*, 2006, **72**, 99-113 (*rev, occur, activity*)
Qian, J. *et al., Helv. Chim. Acta*, 2007, **90**, 326-331 (*Sessilifoline A*)
Schinnerl, J. *et al., Phytochemistry*, 2007, **68**, 1417-1427 (*Tuberostemonine N*)

Tuberostemoninol T-665

[156280-88-5]



$C_{22}H_{31}NO_6$ 405.49
Alkaloid from the roots of *Stemona tuberosa*. Mp 217-219°. $[\alpha]_D$ +124 (c, 0.83 in MeOH).

1-Deoxy, 8α-hydroxy: ***Maireistemoninol***
[954379-67-0]
$C_{22}H_{31}NO_6$ 405.49
Alkaloid from the roots of *Stemona mairei*. Needles. Mp 155-157°. $[\alpha]_D^{24}$ +98.5 (c, 0.24 in $CHCl_3$).

11,12,13-Triepimer: ***Neotuberostemoninol***
[473928-70-0]
$C_{22}H_{31}NO_6$ 405.49
Alkaloid from *Stemona tuberosa*. Prisms (hexane/EtOAc). Mp 190-192°. C-13 stereochem. incorrectly drawn in ref.

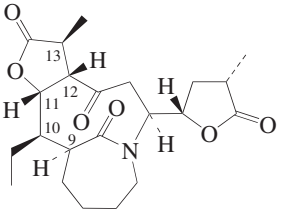
1,9,10,13-Tetraepimer: ***Sessilifoliamide I***

[953391-39-4]
$C_{22}H_{31}NO_6$ 405.49
Alkaloid from the roots of *Stemona sessilifolia*. Prisms (MeOH aq.). Mp 273-275°. $[\alpha]_D$ -0.2 (c, 0.78 in MeOH).

Lin, W.H. *et al., Phytochemistry*, 1994, **36**, 1333-1335 (*isol, ir, pmr, cmr, ms*)
Jiang, R.-W. *et al., Tetrahedron*, 2002, **58**, 6705-6712 (*Neotuberostemoninol*)
Hitotsuyanagi, Y. *et al., Heterocycles*, 2007, **71**, 2035-2040 (*Sessilifoliamide I*)
Cai, X.-H. *et al., Planta Med.*, 2007, **73**, 170-173 (*Maireistemoninol*)

Tuberostemonone T-666

[134822-46-1]



$C_{22}H_{31}NO_6$ 405.49
Config. at C-12 incorrectly shown in earlier papers. Alkaloid from the roots of *Stemona tuberosa* (Stemonaceae). Cubes (Me_2CO). Mp 208-209°. $[\alpha]_D$ +134.8 (c, 0.1 in $CHCl_3$).

11-Epimer, 9,10-didehydro, 9ξ,10ξ-epoxide: ***Epoxytuberostemonone***
[954379-69-2]
$C_{22}H_{29}NO_7$ 419.474
Alkaloid from the roots of *Stemona mairei*. Cryst. Mp 286-288°. $[\alpha]_D^{24}$ -67.5 (c, 0.16 in $CHCl_3$).

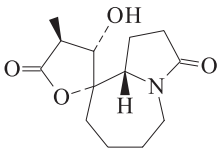
12-Epimer, 9-hydroxy: ***Sessilifoliamide H***
[922500-45-6]
$C_{22}H_{31}NO_7$ 421.489
Alkaloid from the roots of *Stemona sessilifolia*. Prisms. Mp 240-243°. $[\alpha]_D$ -42 (c, 0.1 in $CHCl_3$).

13-Epimer: ***Neotuberostemonone***
[954379-68-1]
$C_{22}H_{31}NO_6$ 405.49
Alkaloid from the roots of *Stemona mairei*. Cryst. Mp 228-230°. $[\alpha]_D^{24}$ +129.6 (c, 0.38 in $CHCl_3$).

Lin, W.-H. *et al., J. Crystallogr. Spectrosc. Res.*, 1991, **21**, 189-194 (*cryst struct*)
Lin, W.-H. *et al., J. Nat. Prod.*, 1992, **55**, 571-576 (*isol, ir, pmr, cmr, ms*)
Cai, X.-H. *et al., Planta Med.*, 2007, **73**, 170-173 (*Neotuberostemonone, Epoxytuberostemonone*)
Hitotsuyanagi, Y. *et al., Tetrahedron*, 2007, **63**, 1008-1013 (*Sessilifoliamide H*)

Tuberostemospironine T-667

[142905-26-8]



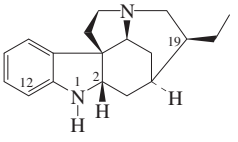
Relative configuration

$C_{13}H_{19}NO_4$ 253.297
Alkaloid from the roots of *Stemona tuberosa* (Stemonaceae). Cubes (Me_2CO). Mp 245-246°. $[\alpha]_D^{16}$ -30 (c, 0.02 in MeOH).

Lin, W.-H. *et al., J. Nat. Prod.*, 1992, **55**, 571-576 (*isol, ir, pmr, cmr, ms, struct*)

Tubifolidine T-668

17-Norcuran, 9CI
[6883-33-6]



Absolute Configuration

$C_{18}H_{24}N_2$ 268.401
Alkaloid from *Pleiocarpa pycnantha* var. *tubicina* (Apocynaceae) and from *Strychnos angolensis*. Prisms (Et_2O/pentane, Me_2CO aq. or by subl.). Mp 176-177°. $[\alpha]_D^{23}$ -67 (c, 0.61 in $CHCl_3$).

N-*Formyl:* Mp 148-149°.

1,2-Didehydro: ***Tubifoline****. 1,2-Didehydro-17-norcuran, 9CI. Decarbomethoxy-19,20-dihydroakuammicine*
[2912-06-3]
$C_{18}H_{22}N_2$ 266.385
Alkaloid from *Pleiocarpa pycnantha* var. *tubicina* (Apocynaceae) and from *Strychnos angolensis*. Cryst. (pentane or by subl.). Mp 124-126°. $[\alpha]_D^{23}$ -342 (c, 0.55 in $CHCl_3$).

1,2-Didehydro; methiodide: Mp 251-253° dec.

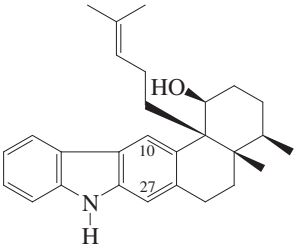
12-Methoxy, 19,20-didehydro: ***19,20-Didehydro-12-methoxytubifolidine****. 19,20-Didehydro-12-methoxy-17-norcuran, 9CI. 16-Decarbomethoxyvinervinine (incorr.)*
[179461-86-0]
$C_{19}H_{24}N_2O$ 296.411
Alkaloid from *Haplophyton crooksii* (Apocynaceae). Glass. Erroneously named as 16-Decarbomethoxyvinervinine in the paper; it is actually 16-Decarbomethoxy-2,16-dihydrovinervinine. 19,20-Didehydro-12-methoxytubifolidine is a better name.

[20823-98-7]

Weissmann, C. *et al., Helv. Chim. Acta*, 1961, **44**, 1877 (*synth, deriv*)
Kump, W.G. *et al., Helv. Chim. Acta*, 1964, **47**, 1497 (*isol, uv, ir, struct*)
Dadson, B.A. *et al., Chem. Comm.*, 1968, 1233 (*synth*)
Wu, A. *et al., Tet. Lett.*, 1975, 2057 (*synth*)
Takano, S. *et al., Tet. Lett.*, 1982, **23**, 881 (*synth*)
Ban, Y. *et al., Tetrahedron*, 1983, **39**, 3657 (*synth*)
Amat, M. *et al., J.O.C.*, 1990, **55**, 6299 (*synth, pmr, cmr*)
Alvarez, M. *et al., Tet. Lett.*, 1990, **31**, 5089 (*synth*)
Delaude, C. *et al., Bull. Soc. R. Sci. Liege*, 1995, **64**, 243-246 (*isol*)
Mroue, M.A. *et al., J. Nat. Prod.*, 1996, **59**, 890-893 (*19,20-Didehydro-12-methoxytubifolidine*)
Soĺ, D. *et al., Tet. Lett.*, 1996, **37**, 5213 (*synth*)
Bonjoch, J. *et al., J.A.C.S.*, 1997, **119**, 7230-7240 (*synth*)
Amat, M. *et al., Tetrahedron: Asymmetry*, 1997, **8**, 935-948 (*synth*)
Shimizu, S. *et al., J.O.C.*, 1998, **63**, 7547-7551 (*synth*)
Mori, M. *et al., J.A.C.S.*, 2003, **125**, 9801-9807 (*Tubifoline, synth*)
Ishikura, M. *et al., Heterocycles*, 2008, **75**, 107-118 (*Tubifoline, synth*)

Tubingensin A T-669

[122951-44-4]



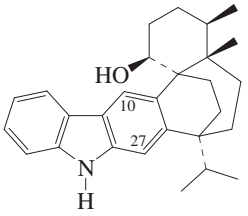
$C_{28}H_{35}NO$ 401.591
Biogenetically related to Aflavinine, A-172. Alkaloid from the sclerotia of *Aspergillus tubingensis* NRRL4700. Exhibits activity against the widespread crop pest *Heliothis zea* and displays *in vitro* antiviral activity against herpes simplex virus type 1. Cytotoxic. Light yellow solid. Mp 95-98°. $[\alpha]_D$ +13.6 (c, 1.0 in $CHCl_3$). λ_{max} 218 (ϵ 14900); 239 (ϵ 18200); 262 (ϵ 6930); 302 (ϵ 6780); 326 (ϵ 480); 340 (ϵ 480) (MeOH) (Derep).

10,27-Dihydro: ***10,27-Dihydrotubingensin A***
[354154-75-9]
$C_{28}H_{37}NO$ 403.606
Alkaloid from *Aspergillus tubingensis*. Solid.

TePaske, M.R. *et al., J.O.C.*, 1989, **54**, 4743-4746 (*isol, uv, pmr, cmr, ms, struct*)
Sings, H.L. *et al., J. Nat. Prod.*, 2001, **64**, 836-838 (*10,27-Dihydrotubingensin A*)

Tubingensin B T-670

[126663-32-9]



$C_{28}H_{35}NO$ 401.591
Isol. from the sclerotia of *Aspergillus tubingensis* NRRL 4700. Cytotoxic. Light yellow cryst. Sol. MeOH, hexane; poorly sol. H_2O. Mp 152-154°. $[\alpha]_D$ -6.7 (c, 0.8 in $CHCl_3$). λ_{max} 218 (ϵ 17200); 237 (ϵ 25500); 260 (ϵ 10100); 299 (ϵ 10100); 325 (ϵ 2200); 338 (ϵ 6700) (MeOH) (Berdy).

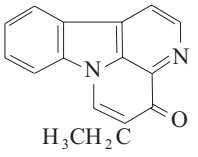
10,27-Dihydro: ***10,27-Dihydrotubingensin B***

[354154-76-0]
$C_{28}H_{37}NO$ 403.606
Alkaloid from *Aspergillus tubingensis*. Solid. $[\alpha]_D^{20}$ -50 (c, 0.1 in MeOH). λ_{max} 207 (sh) (log ϵ 4.02); 227 (log ϵ 4.26); 281 (log ϵ 3.57); 290 (log ϵ 3.52) (MeOH).

TePaske, M.R. *et al., Tet. Lett.*, 1989, **30**, 5965-5968 (*isol, pmr, cmr, struct*)
Sings, H.L. *et al., J. Nat. Prod.*, 2001, **64**, 836-838 (*10,27-Dihydrotubingensin B*)

Tuboflavine T-671

*5-Ethyl-4*H*-indolo[3,2-*de*][1,5]naphthyridin-4-one. 5-Ethylcanthin-4-one*



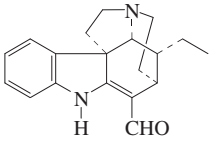
$C_{16}H_{12}N_2O$ 248.284
Alkaloid from *Pleiocarpa tubicina* (Apocynaceae). Yellow needles. Mp 207-208°.

Methiodide: Mp 210-212° dec.

Kump, C. *et al., Helv. Chim. Acta*, 1963, **46**, 498 (*isol, uv, ir, pmr, struct*)
Achenbach, H. *et al., J.A.C.S.*, 1965, **87**, 4177 (*ms*)

Tubotaiwinal T-672

[88721-01-1]



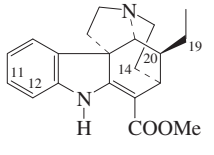
Absolute Configuration

$C_{19}H_{22}N_2O$ 294.396
Alkaloid from the root bark and stem bark of *Strychnos ngouniensis* (Loganiceae). $[\alpha]_D$ +894 (c, 1.17 in $CHCl_3$). $[\alpha]_D$ +613 (c, 1.2 in MeOH).

Massiot, G. *et al., Tetrahedron*, 1983, **39**, 3645 (*isol, uv, ir, pmr, cmr, ms, struct*)

Tubotaiwine T-673

14,19-Dihydrocondylocarpine
[6711-69-9]



Absolute Configuration

$C_{20}H_{24}N_2O_2$ 324.422
Alkaloid from *Tabernaemontana* sp., *Amsonia brevifolia*, *Pleiocarpa tubicina*, *Pleiocarpa pycnantha*, *Aspidosperma limae*, *Ervatamia heyneana* and many other spp. in the Apocynaceae. Also from several *Strychnos* spp. Weak convulsant. Shows mod. cytotoxic activity *vs.* mouse P388 carcinoma cells. Cryst. (Et_2O) (difficult to cryst.). Mp 101-103°. $Bp_{0.001}$ 120-125°. $[\alpha]_D^{22}$ +628 (c, 0.8 in $CHCl_3$). λ_{max} 204 (log ϵ 4.12); 232 (log ϵ 4.01); 298 (log ϵ 3.96); 328 (log ϵ 4.12) (EtOH) (Derep).

Picrate:
Cryst. (Me_2CO aq.). Mp 171-172° dec.

N^4*-Oxide:* ***Tubotaiwine N*^{4}*-oxide***
[40169-69-5]
$C_{20}H_{24}N_2O_3$ 340.421
Alkaloid from *Melodinus aeneus*, *Strychnos mitis*, the roots of *Tabernaemontana holstii*, *Tabernaemontana pachysyphon*, and the root bark of *Conopharyngia johnstonii* (Apocynaceae). Shows stronger cytotoxic activity than Tubotaiwine. Cryst. (Me_2CO). Mp 170° (sinters at 130°) Mp 224° dec. (double Mp). $[\alpha]_D^{22}$ +588 (c, 1.2 in $CHCl_3$). λ_{max} 230 (ϵ 11500); 289 (ϵ 6310); 324 (ϵ 7410) (EtOH) (Derep). λ_{max} 208 ; 224 ; 293 ; 327 (EtOH) (Berdy).

*19,20*E*-Didehydro:* ***Condylocarpine***
[4939-81-5]
$C_{20}H_{22}N_2O_2$ 322.406
Alkaloid from *Diplorhynchus condylocarpon*, *Craspidospermum verticillatum*, *Vallesia antillana*, *Melodinus australis* and some other spp. in the Apocynaceae, also in *Strychnos angolensis* and *Strychnos dolichothyrsa*. Prisms (Et_2O). Mp 167-168° (159-162°). $[\alpha]_D^{20}$ +900 ($CHCl_3$). $[\alpha]_D$ +870 (EtOH). λ_{max} 228 (log ϵ 4.04); 295 (log ϵ 4.01); 328 (log ϵ 4.17) (MeOH).

*19,20*E*-Didehydro,* N^4*-oxide:* ***Condylocarpine N*^{4}*-oxide***
[74918-28-8]
$C_{20}H_{22}N_2O_3$ 338.405
Minor alkaloid from the stems of *Tabernaemontana olivacea* (Apocynaceae). Needles (MeOH). Mp 203-204° dec. $[\alpha]_D^{20}$ +694 ($CHCl_3$). λ_{max} 225 (log ϵ 4.16); 294 (log ϵ 4); 328 (log ϵ 4.03) (MeOH).

11-Hydroxy: ***11-Hydroxytubotaiwine***
[160598-53-8]
$C_{20}H_{24}N_2O_3$ 340.421
Alkaloid from cultured cells of *Aspidosperma quebracho-blanco* (quebracho) (Apocynaceae). Amorph. powder. $[\alpha]_D$ +207 (c, 0.04 in EtOH).

*14*R*-Hydroxy, 19,20*E*-didehydro:* ***14-Hydroxycondylocarpine***
[180869-67-4]
$C_{20}H_{22}N_2O_3$ 338.405
Minor alkaloid from the stem bark of *Kopsia deverrei*. Amorph. $[\alpha]_D^{20}$ +430 (c, 1.2 in $CHCl_3$). λ_{max} 228 (log ϵ 4.01); 294 (log ϵ 3.95); 332 (log ϵ 4.21) (EtOH).

*19*S*-Hydroxy:* ***Lagunamine****. 19-Hydroxytubotaiwine*
[126721-42-4]
$C_{20}H_{24}N_2O_3$ 340.421
Alkaloid from the leaves of *Alstonia scholaris* (Apocynaceae). Prisms (MeOH). Mp 230-235°. $[\alpha]_D^{26}$ +578.7 (c, 0.9 in MeOH).

11-Methoxy: ***11-Methoxytubotaiwine****. 14,19-Dihydro-11-methoxycondylocarpine*
[2122-32-9]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from the bark of *Aspidosperma populifolium* and from *Aspidosperma excelsum* (Apocynaceae). Shows weak antibacterial activity against *Bacillus subtilis* and *Staphylococcus aureus*. Amorph. Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. $[\alpha]_D^{29}$ +213 (c, 0.49 in $CHCl_3$). Blue fluor. in soln. λ_{max} 255 (log ϵ 4.17); 286 (log ϵ 4.04); 327 (log ϵ 4.05) (EtOH).

12-Methoxy: ***12-Methoxytubotaiwine***
[123064-75-5]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from leaves of *Alstonia congensis* (Apocynaceae). $[\alpha]_D$ +305 (c, 0.15 in $CHCl_3$).

*19*R*-Methoxy:* ***19R-Methoxytubotaiwine***
[949932-18-7]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from the stem bark of *Kopsia arborea*. Oil. $[\alpha]_D$ +442 (c, 0.14 in $CHCl_3$). λ_{max} 229 (log ϵ 3.88); 297 (log ϵ 3.75); 329 (log ϵ 3.87) (EtOH).

*19*S*-Methoxy:* ***19S-Methoxytubotaiwine***
[949932-17-6]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from the stem bark of *Kopsia arborea*. Oil. $[\alpha]_D$ +429 (c, 0.24 in $CHCl_3$). λ_{max} 229 (log ϵ 3.95); 297 (log ϵ 3.89); 327 (log ϵ 3.99) (EtOH).

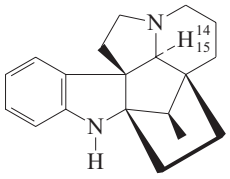
11-Nitro: ***11-Nitrotubotaiwine***
$C_{20}H_{23}N_3O_4$ 369.419
Alkaloid from the stems of *Ervatamia flabelliformis*. Yellow powder (MeOH). $[\alpha]_D^{25}$ -13.9 (c, 0.2 in EtOH).

Stauffacher, D. *et al., Helv. Chim. Acta*, 1961, **44**, 2006-2015 (*Condylocarpine, isol, uv, ir*)
Sandoval, A. *et al., Tet. Lett.*, 1962, 409-414 (*Condylocarpine, uv, ir, pmr, struct, synth*)
Biemann, K. *et al., Tet. Lett.*, 1962, 527 (*Condylocarpine, uv, ms, struct*)
Schumann, D. *et al., Helv. Chim. Acta*, 1963, **46**, 1996 (*Condylocarpine, config*)
Budzikiewicz, H. *et al., Tetrahedron*, 1963, **19**, 1265-1276 (*ms*)
Kump, W.E. *et al., Helv. Chim. Acta*, 1964, **47**, 1497-1503 (*isol*)
Linde, H.H.A. *et al., Helv. Chim. Acta*, 1965, **48**, 1822-1842 (*Condylocarpine*)
Gilbert, B. *et al., Tetrahedron*, 1965, **21**, 1141-1166 (*14,19-Dihydro-14-methoxycondylocarpine*)
Pinar, M. *et al., Helv. Chim. Acta*, 1972, **55**, 2972-2974 (*Tubotaiwine N-oxide*)
Harley-Mason, J. *et al., Pure Appl. Chem.*, 1975, **41**, 167-174 (*synth*)
Wang, A.H.J. *et al., Acta Cryst. B*, 1977, **33**, 2977-2979 (*Condylocarpine, cryst struct*)
Kingston, D.G.I. *et al., J. Nat. Prod.*, 1977, **40**, 215-216 (*isol, oxide*)
Baassou, S. *et al., Phytochemistry*, 1978, **17**, 1449-1450 (*isol, oxide*)
Laguna, A. *et al., Coll. Czech. Chem. Comm.*, 1980, **45**, 1419-1423 (*isol, uv, ir, pmr, ms*)
Achenbach, H. *et al., Z. Naturforsch., B*, 1980, **35**, 885 (*Condylocarpine N-oxide*)
Verpoorte, R. *et al., Planta Med.*, 1983, **48**, 283-289 (*11-Methoxytubotaiwine*)
Caron, C. *et al., Phytochemistry*, 1989, **28**, 1241-1244 (*12-Methoxytubotaiwine*)
Yamauchi, T. *et al., Phytochemistry*, 1990, **29**, 3321-3325 (*Lagunamine*)
Kuehne, M.E. *et al., J.O.C.*, 1991, **56**, 2696-2700 (*synth, uv, ir, pmr, cmr, ms*)
Nkiliza, J. *et al., Tet. Lett.*, 1991, **32**, 1787-1790 (*synth, 19-Hydroxytubotaiwine*)

Aimi, N. *et al., Heterocycles*, 1994, **38**, 2411-2414 (*11-Hydroxytubotaiwine*)
Gràcia, J. *et al., J.O.C.*, 1994, **59**, 3939-3951 (*synth*)
Kuehne, M.E. *et al., Pure Appl. Chem.*, 1994, **66**, 2094-2098 (*Lagunamine, synth*)
Kan, C. *et al., Nat. Prod. Lett.*, 1995, **7**, 275 (*14-Hydroxycondylocarpine*)
Lim, K.-H. *et al., J. Nat. Prod.*, 2007, **70**, 1302-1307 (*19-Methoxytubotaiwine*)
Liang, S. *et al., Helv. Chim. Acta*, 2008, **91**, 239-243 (*11-Nitrotubotaiwine*)

Tuboxenine T-674

2,20-Cycloaspidospermidine, 9CI
[26242-59-1]



$C_{19}H_{24}N_2$ 280.412

Indole alkaloid most closely related to the Aspidofractine type. Minor alkaloid from leaves of *Pleiocarpa pycnantha* var. *tubinica* (Apocynaceae). Cryst. (pentane). Mp 139-140°. $[\alpha]_D^{20}$ +5.4 (c, 0.17 in $CHCl_3$).

Picrate:
Cryst. (MeOH aq. or MeOH/Et_2O). Mp 163-166°.

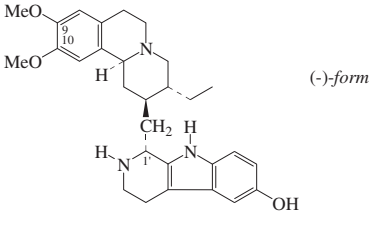
14,15-Didehydro, N*[1]*-*Me:* **N*[1]*-Methyl-14,15-didehydrotuboxenine**
[21196-98-5]
$C_{20}H_{24}N_2$ 292.423
Alkaloid from the roots of *Vinca sardoa* (Apocynaceae). Mp 246-250° (hydrobromide).

[26242-58-0 , 116839-59-9 , 116839-58-8]

Kump, C. *et al., Helv. Chim. Acta*, 1964, **47**, 358; 1497 (*isol, ms, pmr*)
Ahoud, A. *et al., J.A.C.S.*, 1974, **96**, 633 (*struct*)
Hugel, G. *et al., Tet. Lett.*, 1987, **28**, 1773 (*synth*)
Cartier, D. *et al., Heterocycles*, 1988, **27**, 657 (*synth*)
Crippa, S. *et al., Heterocycles*, 1990, **31**, 1663 (*N-Methyldidehydrotuboxenine*)

Tubulosine T-675

10,11-Dimethoxytubulosan-8′-ol, 9CI



(-)-*form*

$C_{29}H_{37}N_3O_3$ 475.63

Several numbering systems have been used. Log P 4.41 (calc).

(-)-*form*
Marckine
[2632-29-3]
Alkaloid from the root bark and stem bark of *Alangium lamarckii* and the bark of *Pogonopus tubulosis* (Alangiaceae, Rubiaceae). Shows amoebicidal and antineoplastic activity. Inhibitor of RNA, DNA and protein biosynth. Cryst. (MeOH). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 259-261° Mp 261-263° Mp 282-283° (evacuated capillary). Pharmacol. active isomer. λ_{max} 228 (1350); 285 (1380) (MeOH). λ_{max} 281 (ϵ 14500) (MeOH) (Berdy). λ_{max} 228 (ϵ 1200); 285 (ϵ 1220) (EtOH) (Berdy). λ_{max} 283 (log ϵ 3.94); 292 (log ϵ 3.84) (EtOH). λ_{max} 283 (log ϵ 4) (0.1*M* NaOH).

O,N-*Di-Ac:* Mp 149-151°.

Me ether: Mp 183°. $[\alpha]_D^{20}$ +15.4 (c, 1 in MeOH).

O*[9]*-*De-Me:* ***9-Demethyltubulosine***
[96948-27-5]
$C_{28}H_{35}N_3O_3$ 461.603
Alkaloid from the trunk bark of *Alangium vitiense* (Alangiaceae). Cryst. ($CHCl_3$). Mp 200°. $[\alpha]_D^{20}$ -40 (c, 1 in Py). λ_{max} 275 (ϵ 11700) (MeOH/HCl) (Derep). λ_{max} 282 (ϵ 10500); 305 (ϵ 8510); 322 (ϵ 4470) (MeOH/NaOH) (Derep). λ_{max} 279 (ϵ 12600) (MeOH) (Derep). λ_{max} 282 (ϵ 12800) (MeOH) (Berdy). λ_{max} 276 (ϵ 11500) (HCl) (Berdy). λ_{max} 282 (ϵ 10800) (NaOH) (Berdy).

▶ LD_{50} (mus, ipr) 150 mg/kg.

O*[10]*-*De-Me:* ***10-Demethyltubulosine***
[86709-00-4]
$C_{28}H_{35}N_3O_3$ 461.603
Alkaloid from the bark and root bark of *Alangium lamarckii* (Alangiaceae). Needles + $2H_2O$ (CH_2Cl_2/MeOH). Mp 198-200°. $[\alpha]_D^{23}$ -51.9 (c, 1 in Py).

1′,2′-Didehydro: ***1′,2′-Didehydrotubulosine***. *1′,2′-Dehydrotubulosine*
[262369-76-6]
$C_{29}H_{35}N_3O_3$ 473.614
Alkaloid from *Alangium lamarckii*. Amorph. powder. $[\alpha]_D^{18}$ +2.1 (c, 0.42 in MeOH). λ_{max} 230 (sh) (log ϵ 4.2); 291 (log ϵ 3.69); 328 (log ϵ 4.04); 370 (sh) (log ϵ 3.67) (MeOH).

1′,2′,3′,4′-Tetradehydro: ***1′,2′,3′,4′-Tetradehydrotubulosine***
[2753-27-7]
$C_{29}H_{33}N_3O_3$ 471.598
Alkaloid from *Pogonopus speciosus*. Amorph. powder. $[\alpha]_D$ -20.4 (c, 0.2 in MeOH). λ_{max} 206 (log ϵ 3.13); 231 (log ϵ 2.88); 296 (log ϵ 2.6); 367 (log ϵ 2.2) (MeOH).

Deoxy: ***Deoxytubulosine***
[2632-30-6]
$C_{29}H_{37}N_3O_2$ 459.63
Alkaloid from *Cassinopsis ilicifolia* and from the fruits and seeds of *Alangium lamarckii* (Icacinaceae, Alangiaceae). Weak amoebicide (*ca.* 1/20th the activity of Emetine). Mp 230-232°. $[\alpha]_D$ -24 ($CHCl_3$). $[\alpha]_D$ -17 ($CHCl_3$). Log P 5.08 (calc).

Deoxy, 8-hydroxy: ***Alangimarckine***
[13849-53-1]
$C_{29}H_{37}N_3O_3$ 475.63
Alkaloid from the leaves of *Alangium lamarckii* (Alangiaceae). Cryst. + 0.5 H_2O (EtOAc/diisopropyl ether). Mp 185-187° dec. $[\alpha]_D^{18}$ -68.5 (c, 0.34 in Py). λ_{max} 283 (3.94); 292 (3.84) (EtOH). λ_{max} 283 (4) (0.1*M*NaOH).

1′-Epimer: ***Isotubulosine***
[5610-39-9]
$C_{29}H_{37}N_3O_3$ 475.63
Alkaloid from the root bark of *Alangium lamarckii* (Alangiaceae). Cryst. (EtOH). Mp 177-178°. $[\alpha]_D^{25}$ -84 (Py).

1′-Epimer, Me ether: Mp 163°. $[\alpha]_D^{20}$ -18.8 (MeOH).

(±)-*form* [16049-31-3]
Synthetic. Cryst. (EtOH aq.). Mp 259-260° (with previous sintering at 255°).

Me ether: [74112-40-6]
Needles (MeOH). Mp 146-148°.

O*[9]*-*De-Me:* [74059-21-5]
Synthetic. Cryst. + $2H_2O$. Mp 213-214° dec.

O*[10]*-*De-Me:* [74059-22-6]
Dihydrate. Mp 199-201° dec.

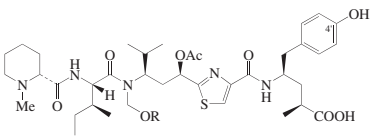
Deoxy: [70428-43-2]
Synthetic. Needles + $1H_2O$ ($CHCl_3$/MeOH). Mp 156-158°.

Deoxy, 8-hydroxy: [65847-00-9]
Synthetic. Cryst. + 0.75 H_2O (EtOH). Mp 157-159° dec.

Brauchli, P. *et al., J.A.C.S.*, 1964, **86**, 1895-1896 (*isol, uv, ir, pmr, ms, struct*)
Battersby, A.R. *et al., Chem. Comm.*, 1965, 315-317 (*Deoxytubulosine, struct, synth*)
Monteiro, H. *et al., Chem. Comm.*, 1965, 317-318 (*Deoxytubulosine*)
Albright, J.D. *et al., J. Nat. Prod.*, 1965, **28**, 212-217 (*isol, uv, ir, pmr*)
Szántay, C. *et al., Acta Chim. Acad. Sci. Hung.*, 1966, **49**, 427-428 (*struct, synth*)
Openshaw, H.T. *et al., Chem. Comm.*, 1966, 131-132 (*synth*)
Salgar, S.S. *et al., Curr. Sci.*, 1966, **35**, 281 (*isol, uv, ir*)
Popelak, A. *et al., Tet. Lett.*, 1966, 1081-1085; 5077-5080 (*Isotubulosine, 10-Demethyltubulosine, struct, uv, pmr, ms*)
Battersby, A.R. *et al., Tet. Lett.*, 1966, 4965-4971 (*Alangimarckine, isol, ir, pmr, ms*)
Szántay, C. *et al., Chem. Ber.*, 1969, **102**, 2270-2272 (*synth, Tubulosine, Isotubulosine*)
Pakrashi, S.C. *et al., Experientia*, 1970, **26**, 933-934 (*isol*)
Pareye, C. *et al., C. R. Hebd. Seances Acad. Sci. Ser. D*, 1973, **277**, 2689-2691 (*Deoxytubulosine, pharmacol*)
Kametani, T. *et al., Can. J. Chem.*, 1979, **57**, 1679-1681 (*Deoxytubulosine, synth*)
Kametani, T. *et al., Heterocycles*, 1979, **13**, 209-215 (*Me ether, synth, ir, pmr*)
Ohba, M. *et al., Heterocycles*, 1980, **14**, 299-301 (*9-Demethyltubulosine, synth, pmr*)
Fujii, T. *et al., Heterocycles*, 1980, **14**, 971-974 (*10-Demethyltubulosine, struct, synth*)
Achari, B. *et al., Planta Med. (Suppl.)*, 1980, 5
Fujii, T. *et al., Alkaloids (Academic Press)*, 1983, **22**, 31-32 (*bibl, pharmacol*)
Brown, R.T. *et al., Tet. Lett.*, 1984, **25**, 3127-3130 (*Deoxytubulosine, synth*)
Fujii, T. *et al., Chem. Pharm. Bull.*, 1985, **33**, 1946-1954 (*Alangimarckine, struct, abs config, uv, ir, pmr, cd*)
Ohba, M. *et al., Chem. Pharm. Bull.*, 1985, **33**, 3724-3730 (*synth, uv, pmr, cmr, ms*)
Kan-Fan, C. *et al., Heterocycles*, 1985, **23**, 1089-1092 (*9-Demethyltubulosine*)
Fujii, T. *et al., Chem. Pharm. Bull.*, 1987, **35**, 2355-2359 (*9-Demethyltubulosine, synth, cd, abs config*)
Ihara, M. *et al., J.C.S. Perkin 1*, 1990, 1469-1476 (*synth*)

Ito, A. *et al., J. Nat. Prod.*, 1999, **62**, 1346-1348 (*Tetradehydrotubulosine*)
Itoh, A. *et al., J. Nat. Prod.*, 2000, **63**, 723-725 (*Didehydrotubulosine*)
Tietze, L.F. *et al., Chem. Eur. J.*, 2004, **10**, 2722-2731 (*synth*)

Tubulysins T-676



Tubulysin A R = -$COCH_2CH(CH_3)_2$
B R = -$COCH_2CH_2CH_3$
C R = -$COCH_2CH_3$
G R = -$COCH{=}C(CH_3)_2$
I R = -$COCH_3$

Absolute Configuration

Prod. by two different species of myxobacteria. Inhibitors of tubulin polymerisation. Potent cytotoxins.

Tubulysin A [205304-86-5]
$C_{43}H_{65}N_5O_{10}S$ 844.08
Prod. by *Archangium gephyra* Ar 315 and *Angiococcus disciformis* An d48. Cryst. (MeOH aq.). Mp 106-108°. $[\alpha]_D^{22}$ +15.3 (c, 5 in MeOH). λ_{max} 205 (log ϵ 4.44); 225 (log ϵ 4.2); 250 (sh) (log ϵ 3.86); 276 (log ϵ 3.25); 287 (log ϵ 3.08) (MeOH).

4′-Deoxy: ***Tubulysin D***
[309935-57-7]
$C_{43}H_{65}N_5O_9S$ 828.081
Prod. by *Angiococcus disciformis* An d48.

Tubulysin B [205304-87-6]
$C_{42}H_{63}N_5O_{10}S$ 830.053
Prod. by *Archangium gephyra* Ar 315.

4′-Deoxy: ***Tubulysin E***
[309935-58-8]
$C_{42}H_{63}N_5O_9S$ 814.054
Prod. by *Angiococcus disciformis* An d48.

Tubulysin C [205304-88-7]
$C_{41}H_{61}N_5O_{10}S$ 816.026
Prod. by *Archangium gephyra* Ar 315.

4′-Deoxy: ***Tubulysin F***
$C_{41}H_{61}N_5O_9S$ 800.027
Prod. by *Angiococcus disciformis* An d48.

Tubulysin G
$C_{43}H_{63}N_5O_{10}S$ 842.064
Prod. by *Archangium gephyra* Ar 315.

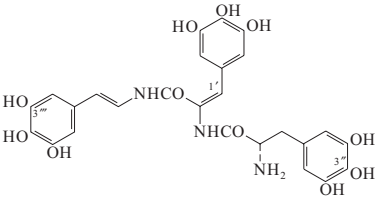
Tubulysin I
$C_{40}H_{59}N_5O_{10}S$ 802
Prod. by *Archangium gephyra* Ar 315.

4′-Deoxy: ***Tubulysin H***
$C_{40}H_{59}N_5O_9S$ 786
Prod. by *Angiococcus disciformis* An d48.

Sasse, F. *et al., J. Antibiot.*, 2000, **53**, 879-885 (*isol, activity*)
Steinmetz, H. *et al., Angew. Chem., Int. Ed.*, 2004, **43**, 4888-4892 (*isol, pmr, cmr, cryst struct*)
Sandmann, A. *et al., Chem. Biol.*, 2004, **11**, 1071-1079 (*prodn*)
Khalil, M.W. *et al., ChemBioChem*, 2006, **7**, 678-683 (*activity*)
Peltier, H.M. *et al., J.A.C.S.*, 2006, **128**, 16018-16019 (*Tubulysin D, synth*)

Tunichrome An1 T-677

[116050-17-0]



$C_{26}H_{25}N_3O_{11}$ 555.497
Isol. from the tunicate *Ascidia nigra*. Blood pigment which selectively accumulates vanadium. λ_{max} 210 (ϵ 68000); 245 (sh); 285 (sh); 340 (ϵ 19600) (MeOH) (Derep).

1′Z-Isomer: ***Tunichrome B1***
[97689-87-7]
$C_{26}H_{25}N_3O_{11}$ 555.497
Isol. from *Ascidia nigra*. Sol. MeOH. Dec. in air on warming. λ_{max} 210 (ϵ 68000); 245 (sh); 285 (sh); 340 (ϵ 19600) (MeOH) (Derep).

3′′-Deoxy: ***Tunichrome An2***
[115982-31-5]
$C_{26}H_{25}N_3O_{10}$ 539.498
Isol. from *Ascidia nigra*. λ_{max} 210 (ϵ 68000); 245 (sh); 285 (sh); 340 (ϵ 19600) (MeOH) (Derep).

1′Z-Isomer, 3′′-deoxy: [133695-74-6]
$C_{26}H_{25}N_3O_{10}$ 539.498
Isol. from *Ascidia nigra*. Unstable.

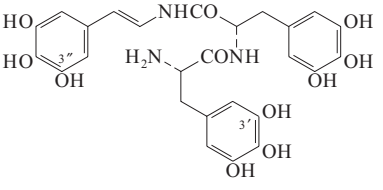
3′′,3′′′-Dideoxy: ***Tunichrome An3***
[115982-32-6]
$C_{26}H_{25}N_3O_9$ 523.498
Isol. from *Ascidia nigra*. λ_{max} 210 (ϵ 68000); 245 (sh); 285 (sh); 340 (ϵ 19600) (MeOH) (Derep).

1′Z-Isomer, 3′′,3′′′-dideoxy: [133695-75-7]
$C_{26}H_{25}N_3O_9$ 523.498
Isol. from *Ascidia nigra*. Unstable.

Bruening, R.C. *et al., J.A.C.S.*, 1985, **107**, 5298-5300 (*Tunichrome B1*)
Bruening, R.C. *et al., J. Nat. Prod.*, 1986, **49**, 193 (*Tunichrome B1*)
Oltz, E.M. *et al., J.A.C.S.*, 1988, **110**, 6162-6172 (*isol*)
Horenstein, B.A. *et al., J.A.C.S.*, 1989, **111**, 6242 (*synth*)
Kim, D. *et al., Chem. Comm.*, 1991, 9 (*isol*)
He, X. *et al., Experientia*, 1992, **48**, 367 (*biosynth*)

Tunichrome Pm 1 T-678

3,5-Dihydroxy-L-tyrosyl-3,5-dihydroxy-N-[2-(3,4,5-trihydroxyphenyl)ethenyl]-L-tyrosinamide, 9CI
[137824-58-9]



$C_{26}H_{27}N_3O_{11}$ 557.513
Isol. from the tunicate *Phallusia mammillata*. Readily chelates vanadium. λ_{max} 210 (ϵ 68000); 245 (sh) ; 285 (sh) ; 340 (ϵ 19600) (MeOH) (Derep). λ_{max} 301 (MeOH) (Berdy).

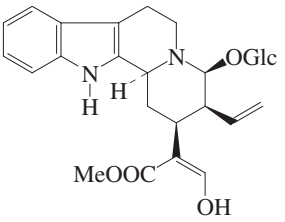
3′-Deoxy: ***Tunichrome Pm 2***
[137824-59-0]
$C_{26}H_{27}N_3O_{10}$ 541.513
Isol. from *Phallusia mammillata*. Readily chelates vanadium. λ_{max} 210 (ϵ 68000); 245 (sh) ; 285 (sh) ; 340 (ϵ 19600) (MeOH) (Derep). λ_{max} 301 (MeOH) (Berdy).

3′′-Deoxy: ***Tunichrome Pm 3***
[137844-97-4]
$C_{26}H_{27}N_3O_{10}$ 541.513
Isol. from *Phallusia mammillata*. Readily chelates vanadium. λ_{max} 210 (ϵ 68000); 245 (sh) ; 285 (sh) ; 340 (ϵ 19600) (MeOH) (Derep).

Bayer, E. *et al., Angew. Chem., Int. Ed.*, 1992, **31**, 52-54 (*isol*)

Turbinatine T-679

[575432-21-2]

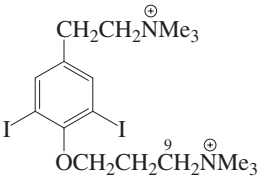


$C_{27}H_{34}N_2O_9$ 530.574
Alkaloid from the leaves of *Chimarrhis turbinata*. Amorph. yellow powder. $[\alpha]_D^{27}$ -8.5 (c. 0.04 in MeOH). λ_{max} 235 (ϵ 5875) (MeOH).

Cardoso, C.L. *et al., J. Nat. Prod.*, 2003, **66**, 1017-1021 (*isol, pmr, cmr, conformn*)

Turbotoxin A T-680

[245128-77-2]
[245128-78-3]



$C_{17}H_{30}I_2N_2O^{2\oplus}$ 532.246
Alkaloid from the Japanese gastropod *Turbo marmorata*. Acetylcholinesterase inhibitor. Isol. as the bis(trifluoroacetate). λ_{max} 226 (ϵ 19000); 239 (sh) (ϵ 9500); 275 (sh) (ϵ 2000) (MeOH) (bistrifluoroacetate).

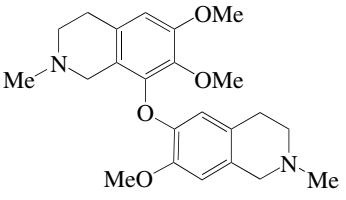
N^9*-De-Me:* ***Turbotoxin B***
[245128-79-4]
[245128-80-7]
$C_{16}H_{27}I_2N_2O^{\oplus}$ 517.211
Alkaloid from *Turbo marmorata*. Isol. as the bis(trifluoroacetate). λ_{max} 225 (ϵ

11000); 239 (sh) (ϵ 5500); 279 (sh) (ϵ 1500) (MeOH) (bistrifluoroacetate).

Kigoshi, H. *et al., Tetrahedron*, 2000, **56**, 9063-9070 (*isol, synth, uv, pmr, cmr*)

Turcberine T-681

[169626-34-0]



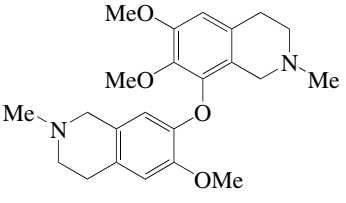
$C_{23}H_{30}N_2O_4$ 398.501

Alkaloid from *Berberis turcomanica*. Oil.

Karimov, A. *et al., Khim. Prir. Soedin.*, 1993, 77; *Chem. Nat. Compd. (Engl. Transl.)*, 1993, **29**, 63

Turconidine T-682

[66113-64-2]



$C_{23}H_{30}N_2O_4$ 398.501

Alkaloid from young shoots of *Berberis turcomanica*. Amorph. λ_{max} 225 (log ϵ 3.87); 284 (log ϵ 3.44) (EtOH).

Karimov, A. *et al., Khim. Prir. Soedin.*, 1993, **29**, 866; *Chem. Nat. Compd. (Engl. Transl.)*, 1993, **29**, 771

Turkestanine T-683

[1361-67-7]

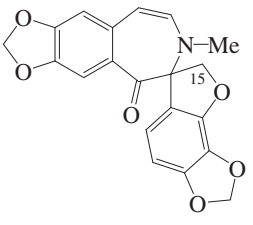
Struct. unknown. Pyrrolizidine alkaloid (?). Alkaloid from *Solenanthus turkestanicus* and *Rindera baldschuanica* (Boraginaceae). Mp 179-180° (?). Co-occurs with Rinderine, in E-12 and Echinatine, E-12. Opt. inactive. The name Turkestanine is not used in the first paper and it is not clear that all of the data given here refers to the same alkaloid.

N-*Oxide:* ***Turkestanine* N-*oxide***

Alkaloid from above-ground parts of *Rindera austroechinata* (Boraginaceae). Mp 196-197°.

Akramov, S.T. *et al., Dokl. Akad. Nauk SSSR*, 1962, **19**, 29-31; 1965, **22**, 35-38

Turkiyenine T-684



$C_{20}H_{15}NO_6$ 365.342

(+)-*form* [92219-92-6]

Alkaloid from *Hypecoum procumbens* (Papaveraceae). Amorph. $[\alpha]_D^{23}$ +72 (c, 0.053 in $CHCl_3$). λ_{max} 217 (ϵ 23400); 254 (sh) (ϵ 17800); 259 (ϵ 19500); 308 (ϵ 5890) (MeOH).

15-Oxo: ***Oxoturkiyenine***

[115598-75-9]

$C_{20}H_{13}NO_7$ 379.325

Alkaloid from *Hypecoum pendulum* (Papaveraceae). Amorph. powder. $[\alpha]_D$ +38 (c, 0.11 in MeOH). $[\alpha]_D$ +75 (c, 0.08 in $CHCl_3$). λ_{max} 217 (ϵ 23400); 254 (sh) (ϵ 17800); 259 (ϵ 19500); 308 (ϵ 5890) (MeOH) (Derep).

(-)-*form* [128778-78-9]

Alkaloid from *Chelidonium majus* (Papaveraceae). Amorph. $[\alpha]_D$ -99 (c, 0.12 in $CHCl_3$). $[\alpha]_D$ -76 (c, 0.11 in MeOH).

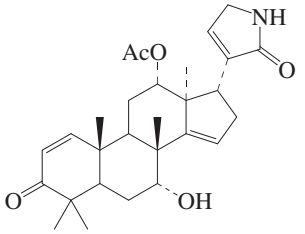
Gözler, T. *et al., J.A.C.S.*, 1984, **106**, 6101-6102 (*(+)-form, uv, ir, pmr, ms, cd, struct*)

Mete, I.E. *et al., J. Nat. Prod.*, 1988, **51**, 272-274 (*(+)-form, Oxoturkiyenine, isol*)

Kadan, G. *et al., J. Nat. Prod.*, 1990, **53**, 531-532 (*(-)-form, isol*)

Turraparvin D T-685

[566935-02-2]



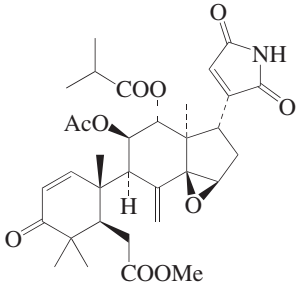
$C_{28}H_{37}NO_5$ 467.604

Constit. of *Turraea parvifolia*. Cryst. Mp 131-133°. $[\alpha]_D^{23}$ +29.8 (c, 0.08 in $CHCl_3$).

Cheplogoi, P.K. *et al., Phytochemistry*, 2003, **62**, 1173-1178 (*isol, pmr, cmr*)

Turrapubesin B T-686

[909410-15-7]



$C_{33}H_{41}NO_{10}$ 611.688

Constit. of *Turraea pubescens*. Amorph. solid. $[\alpha]_D^{20}$ +96.1 (c, 0.23 in MeOH). λ_{max} 231 (log ϵ 4.16) (MeOH).

Wang, X.-N. *et al., Org. Lett.*, 2006, **8**, 3845-3848 (*Turrapubesin B*)

Turumiquirensine T-687

[1361-68-8]

$C_{42}H_{52}N_2O_9^{2\oplus}$ 728.881

Struct. unknown. Quaternary alkaloid from *Croton turumiquirensis* bark (Euphorbiaceae).

Diiodide:

$C_{42}H_{52}I_2N_2O_9$ 982.69

Mp 235° dec.

Dinitrate:

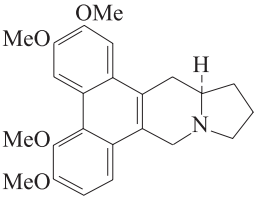
$C_{42}H_{52}N_4O_{15}$ 852.891

Mp 240-241° dec.

Burnell, R.H. *et al., Nature (London)*, 1964, **203**, 296-297 (*isol, uv*)

Tylocrebrine T-688

*9,11,12,13,13*a*,14-Hexahydro-2,3,5,6-tetramethoxydibenzo[*f,h*]pyrrolo[1,2-*b*]isoquinoline, 9CI. 2,3,5,6-Tetramethoxyphenanthroindolizidine*



(*R*)–*form*

$C_{24}H_{27}NO_4$ 393.482

Possesses antineoplastic activity in mouse test systems. Log P 3.96 (calc).

▶ Toxic. Powerful vesicant.

(*R*)-*form* [6879-02-3]

Alkaloid from *Ficus septica* (Moraceae). Pale yellow cryst. (MeOH). Mp 220-222°. $[\alpha]_D^{22}$ +20.5 (c, 0.8 in $CHCl_3$).

▶ LD_{50} (rat, orl) 65 mg/kg. LD_{50} (rat, ivn) 32 mg/kg. YP0175000

Picrate:

Cryst. (MeOH aq.). Mp 144-146°.

Methiodide:

Cryst. (MeOH). Mp 271-274°.

α-N-*Oxide:* ***(10*R*,13*a*R)-Tylocrebrine* N-*oxide***

$C_{24}H_{27}NO_5$ 409.481

Alkaloid from the stems of *Ficus septica*. Pale yellow needles. Mp 205-212° dec. $[\alpha]_D^{25}$ -66.6 (c, 0.02 in MeOH). λ_{max} 244 (log ϵ 4.14); 265 (log ϵ 4.29); 276 (log ϵ 3.71); 310 (log ϵ 3.46); 320 (log ϵ 3.41) (MeOH).

β-N-*Oxide:* ***(10*S*,13*a*R)-Tylocrebrine* N-*oxide***

$C_{24}H_{27}NO_5$ 409.481

Alkaloid from the stems of *Ficus septica*. Pale yellow needles. Mp 215-218° dec. $[\alpha]_D^{25}$ -61.4 (c, 0.08 in MeOH). λ_{max} 245 (log ϵ 3.14); 264 (log ϵ 4.39); 279 (log ϵ 3.91); 285 (log ϵ 3.82); 307 (log ϵ 3.41); 319 (log ϵ 3.38) (MeOH).

(*S*)-*form* [61302-92-9]

Alkaloid from *Tylophora crebriflora*,

Tylophora hirsuta and *Ficus septica*. Possesses antineoplastic activity in mouse test systems. Antiinflammatory agent. Cryst. (MeOH). Mp 218-220° dec. $[\alpha]_D^{24}$ -45 (c, 0.74 in $CHCl_3$). Log P 3.96 (calc). Pharmacol. active isomer. λ_{max} 263 (ϵ 66200); 342 (ϵ 1780); 360 (ϵ 1230) (EtOH) (Berdy).

▶ CNS toxicity observed in humans.

Hydroiodide:
Yellow cryst. + 1MeOH (MeOH aq.). Mp 214-217° dec.

Picrate:
Cryst. (Me_2CO/MeOH). Mp 134-136°.

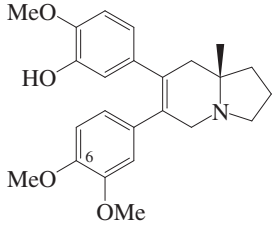
Methiodide:
Yellow cryst. + 1½ H_2O (MeOH). Mp 255-258° dec. $[\alpha]_D^{21}$ -30 (c, 0.30 in MeOH).

(±)-*form* [30061-35-9]
Synthetic. Needles ($CHCl_3$/MeOH). Mp 219-221°.

Methiodide:
Cryst. (MeOH). Mp 264-266° dec.

Gellert, E. *et al., J.C.S.*, 1962, 1008-1014 (*isol, uv, ir, struct, synth*)
Russel, J.H. *et al., Naturwissenschaften*, 1963, **50**, 443-444 (*isol, struct*)
Gellert, E. *et al., J. Med. Chem.*, 1964, **7**, 361-362 (*tox, pharmacol*)
Chauncy, B. *et al., Aust. J. Chem.*, 1970, **23**, 2503-2516 (*synth, uv, ir, pmr*)
Gellert, E. *et al., Aust. J. Chem.*, 1978, **31**, 2095-2097 (*ord, cd, abs config*)
Suffness, M. *et al., Alkaloids (Academic Press)*, 1985, **25**, 156-163 (*pharmacol*)
Damu, A.G. *et al., J. Nat. Prod.*, 2005, **68**, 1071-1075 (*N-oxides*)

Tylohirsuticine T-689



$C_{24}H_{29}NO_4$ 395.497

(*S*)-*form* [111316-24-6]
Minor alkaloid from the aerial parts of *Tylophora hirsuta* (Asclepiadaceae). Light-yellow beads (Me_2CO). Mp 215-217°. $[\alpha]_D^{18}$ +20.8 (c, 0.8 in MeOH).

Ac: Mp 203-204°.

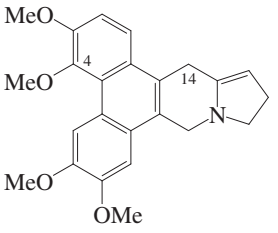
Me ether: Mp 199-202°.

6-Demethoxy, O^7-de-Me, 7-Ac: ***Tyloindicine B***
[126624-13-3]
$C_{24}H_{27}NO_4$ 393.482
Alkaloid from the aerial parts of *Tylophora indica*. Cryst. ($CHCl_3$). Mp 183-185°. $[\alpha]_D^{35}$ +14.3 (c, 1.05 in MeOH).

Ali, M. *et al., Phytochemistry*, 1987, **26**, 2089-2092; 1989, **28**, 3513-3517 (*isol, uv, ir, pmr, ms, struct, Tyloindicine B*)

Tylohirsutinine T-690

[95066-38-9]



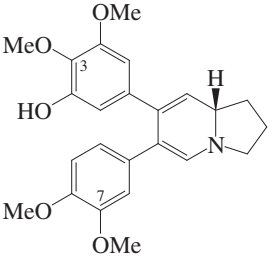
$C_{24}H_{25}NO_4$ 391.466
Alkaloid from the aerial parts of *Tylophora hirsuta* (Asclepiadaceae). Cryst. (Me_2CO). Mp 200-202°.

14-Hydroxy, O^4-de-Me: ***Tylohirsutinidine***
[95066-41-4]
$C_{23}H_{23}NO_5$ 393.438
Alkaloid from the aerial parts of *Tylophora hirsuta* (Asclepiadaceae). Cryst. (Me_2CO). Mp 235-237°. Opt. inactive (racemic).

Bhutani, K.K. *et al., Phytochemistry*, 1984, **23**, 1765-1769 (*isol, uv, ir, pmr, ms, struct*)

Tyloindicine I T-691

[138935-52-1]



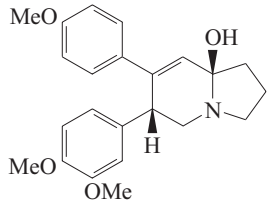
$C_{24}H_{27}NO_5$ 409.481
Alkaloid from *Tylophora indica* (Asclepiadaceae). Cryst. (Me_2CO/MeOH). Mp 215-217° dec. $[\alpha]_D^{30}$ -2.2 (c, 0.44 in AcOH).

4-Deoxy, O^3,O^7-di-de-Me, O^7-Ac: ***Tyloindicine J***
[138935-55-4]
$C_{24}H_{25}NO_5$ 407.465
Alkaloid from *Tylophora indica* (Asclepiadaceae). Light yellow cryst. Mp 180-181° dec. $[\alpha]_D^{30}$ -2.85 (c, 0.57 in AcOH).

Ali, M. *et al., J. Nat. Prod.*, 1991, **54**, 1271-1278 (*isol, uv, ir, pmr, ms, struct, Tyloindicine J*)

Tyloindicine F T-692

[138964-86-0]

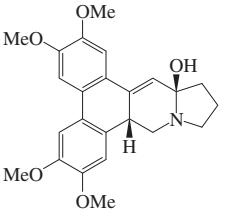


$C_{23}H_{27}NO_4$ 381.471
Alkaloid from *Tylophora indica* (Asclepiadaceae). Cryst. (Me_2CO/MeOH). Mp 245-247° dec. $[\alpha]_D^{30}$ -0.5 (c, 0.05 in AcOH).

Ali, M. *et al., J. Nat. Prod.*, 1991, **54**, 1271-1278 (*isol, uv, ir, pmr, ms, struct*)

Tyloindicine G T-693

[138935-58-7]



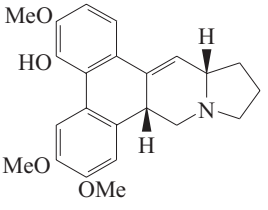
Absolute Configuration

$C_{24}H_{27}NO_5$ 409.481
Alkaloid from *Tylophora indica* (Asclepiadaceae). Cryst. (Me_2CO/MeOH). Mp 237-238° dec. $[\alpha]_D^{30}$ -2.35 (c, 0.47 in AcOH).

Ali, M. *et al., J. Nat. Prod.*, 1991, **54**, 1271-1278 (*isol, uv, ir, pmr, ms, struct*)

Tyloindicine H T-694

[138964-88-2]

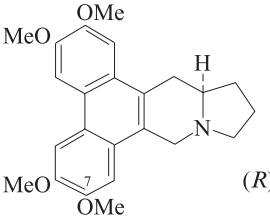


$C_{23}H_{25}NO_4$ 379.455
Alkaloid from *Tylophora indica* (Asclepiadaceae). Cryst. Mp 225-226° dec. $[\alpha]_D^{30}$ -5.5 (c, 0.55 in AcOH).

Ali, M. *et al., J. Nat. Prod.*, 1991, **54**, 1271-1278 (*isol, uv, ir, pmr, ms, struct*)

Tylophorine T-695

9,11,12,13,13a,14-Hexahydro-2,3,6,7-tetramethoxydibenzo[f,h]pyrrolo[1,2-b]isoquinoline, 9CI. 2,3,6,7-Tetramethoxyphenanthroindolizidine



(*R*)–*form*

$C_{24}H_{27}NO_4$ 393.482
Natural (-)-Tylophorine was formerly erroneously assigned (*S*)-config. Anti-asthmatic, antiallergic agent. Shows weak antineoplastic activity. Log P 3.96 (calc).

(*R*)-*form* [111408-21-0]
Alkaloid from *Tylophora asthmatica*, *Tylophora indica*, *Tylophora arebriflora*, *Tylophora hirsuta*, *Tylophora tanake*, *Tylophora flava* and other *Tylophora* spp.; also from *Cynanchum vincetoxicum*, *Pergularia pallida*, *Vincetoxicum officinale* and *Ficus septica* (Asclepiadaceae, Moraceae). Cryst. ($CHCl_3$/EtOH). Mp 286-287° dec. $[\alpha]_D^{25}$ -76.5 (c, 0.04 in $CHCl_3$). $[\alpha]_D^{27}$ -11.6 (c, 1.07 in $CHCl_3$) (synth.). Pharmacol. active isomer. Highly toxic to frogs but low toxicity to mice and guinea pigs. λ_{max} 222 ; 241 ; 250 ; 257 ; 283 ; 288 ; 302 ; 323 (MeOH) (Berdy). λ_{max} 255 ; 290 ; 340 ; 352 (EtOH) (Berdy).
▶ Powerful vesicant.

Hydrochloride:
Cryst. (EtOH aq.). Mp 276-278° dec.

Hydrobromide: Mp 252-255° dec.

N-*Oxide:* ***Tylophorine* N-*Oxide***
[209684-47-9]
$C_{24}H_{27}NO_5$ 409.481
Alkaloid from *Tylophora tanakae*. Fine yellowish prisms (MeOH). Mp 225-235° dec. $[\alpha]_D^{29}$ -8.6 (c, 0.2 in $CHCl_3$/MeOH). λ_{max} 220 (log ϵ 4.39); 238 (log ϵ 4.49); 250 (sh) (log ϵ 4.65); 257 (log ϵ 4.85); 282 (sh) (log ϵ 4.44); 287 (log ϵ 4.48); 302 (log ϵ 4.17) (MeOH).

α-N-*Oxide:*
$C_{24}H_{27}NO_5$ 409.481
Alkaloid from the stems of *Ficus septica*. Pale yellow needles. Mp 210-220° dec. $[\alpha]_D^{25}$ -77.7 (c, 0.02 in MeOH). λ_{max} 241 (log ϵ 4.09); 258 (log ϵ 4.13); 287 (log ϵ 3.84); 303 (log ϵ 3.56); 340 (log ϵ 2.52) (MeOH).

β-N-*Oxide:*
$C_{24}H_{27}NO_5$ 409.481
Alkaloid from the stems of *Ficus septica*. Pale yellow needles. Mp 215-218° dec. $[\alpha]_D^{25}$ -61.4 (c, 0.08 in MeOH). λ_{max} 245 (log ϵ 3.14); 264 (log ϵ 4.39); 279 (log ϵ 3.91); 285 (log ϵ 3.82); 307 (log ϵ 3.41); 319 (log ϵ 3.38) (MeOH).

O^7-*De-Me:* ***7*-Demethyltylophorine***
[165606-55-3]
$C_{23}H_{25}NO_4$ 379.455
Alkaloid from leaves of *Tylophora tanakae*. Mp 250-260° dec. $[\alpha]_D^{27}$ -49.3 (c, 0.25 in $CHCl_3$). λ_{max} 220 ; 237 ; 257 ; 288 ; 302 (MeOH) (Berdy).

O^7-*De-Me,* N-*oxide:* ***7*-Demethyltylophorine* N-*oxide***
[209684-48-0]
$C_{23}H_{25}NO_5$ 395.454
Alkaloid from *Tylophora tanakae*. Fine brownish prisms (MeOH). Mp 194-204° dec. $[\alpha]_D^{28}$ -30.9 (c, 0.1 in $CHCl_3$/MeOH). λ_{max} 220 (log ϵ 4.51); 237 (log ϵ 4.57); 250 (sh) (log ϵ 4.72); 257 (log ϵ 4.9); 282 (sh) (log ϵ 4.5); 288 (log ϵ 4.46); 302 (log ϵ 4.26) (MeOH).

13a-Hydroxy: ***13a*-Hydroxytylophorine***
[95066-46-9]
$C_{24}H_{27}NO_5$ 409.481
Alkaloid from the aerial parts of *Tylophora hirsuta* (Asclepiadaceae). Mp 274-275°. $[\alpha]_D^{25}$ +45 (c, 0.5 in $CHCl_3$).

14β-Hydroxy: ***Tylophorinicine***.
14-Hydroxytylophorine
[87302-57-6]
$C_{24}H_{27}NO_5$ 409.481
Minor alkaloid from the roots of *Tylophora asthmatica* and *Pergularia pallida* (Asclepiadaceae). Mp 210-212° dec. $[\alpha]_D^{25}$ -9.4 (c, 0.04 in $CHCl_3$). λ_{max} 258 (log ϵ 4.4); 287 (log ϵ 4.2); 302 (log ϵ 3.6); 339 (log ϵ 3.1) (MeOH).

(*S*)-*form* [482-20-2]
Obt. by resoln. of racemate or by synth. Mp 292° dec. $[\alpha]_D^{30}$ +12.25 (c, 0.733 in $CHCl_3$). $[\alpha]_D^{25}$ +73 (c, 0.7 in $CHCl_3$). Opt. rotn. gradually decreases in soln.

(±)-*form* [25908-92-3]
Synthetic. Cryst. ($CHCl_3$/EtOH). Mp 292° (263-265°, 287°).

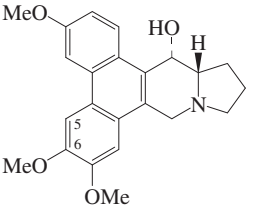
(ξ)-*form*

O-*De-Me:* ***Demethyltylophorine***
[36250-91-6]
$C_{23}H_{25}NO_4$ 379.455
Alkaloid from *Tylophora indica* (Asclepiadaceae). Lepidopteran oviposition stimulant. Mp 235-237° dec. Location of the phenolic group and stereochemistry not detd.

Govindachari, T.R. *et al., J.C.S.*, 1954, 2801-2803 (*isol, uv*)
Govindachari, T.R. *et al., Tetrahedron*, 1958, **4**, 311-324; 1960, **9**, 53-57; 1961, **14**, 284-287 (*uv, struct, synth, resoln*)
Pailer, M. *et al., Monatsh. Chem.*, 1965, **96**, 1094-1102 (*isol, uv, ms*)
Chandrashekar, V. *et al., Curr. Sci.*, 1968, **37**, 432-433 (*isol, synth, oxide*)
Wiegrebe, W. *et al., Annalen*, 1969, **721**, 154-162 (*isol, uv*)
Chauncy, B. *et al., Aust. J. Chem.*, 1970, **23**, 2503-2516 (*synth, uv, ir*)
Herbert, R.B. *et al., Chem. Comm.*, 1970, 121 (*synth*)
Rao, K.V. *et al., J. Pharm. Sci.*, 1971, **60**, 1725-1726 (*isol, Tylophorine, Demethyltylophorine*)
Govindachari, T.R. *et al., J. Indian Chem. Soc.*, 1973, **50**, 1-9 (*rev*)
Govindachari, T.R. *et al., J.C.S. Perkin 1*, 1974, 1161-1165 (*ord*)
Mulchandani, N.B. *et al., Phytochemistry*, 1976, **15**, 1561-1563 (*isol, uv, ir, ms*)
Liepa, A.J. *et al., Chem. Comm.*, 1977, 826-827 (*synth*)
Herbert, R.B. *et al., Chem. Comm.*, 1977, 955-956 (*biosynth*)
Gellert, E. *et al., Aust. J. Chem.*, 1978, **31**, 2095-2097 (*ord*)
Weinreb, S.M. *et al., J.A.C.S.*, 1979, **101**, 5073-5074 (*synth*)
Mangla, V.K. *et al., Tetrahedron*, 1980, **36**, 2489-2490 (*synth*)
Bick, I.R.C. *et al., Alkaloids (Academic Press)*, 1981, **19**, 217 (*tox*)
Khatri, N.A. *et al., J.A.C.S.*, 1981, **103**, 6387-6393 (*synth*)
Bhakuni, D.S. *et al., Tetrahedron*, 1981, **37**, 401-407 (*biosynth*)
Cragg, J.E. *et al., J.C.S. Perkin 1*, 1982, 2477-2485 (*synth*)
Buckley, T.F. *et al., J.O.C.*, 1983, **48**, 4222-4232 (*synth, uv, ir, pmr, ms*)
Iida, H. *et al., J.O.C.*, 1984, **49**, 2412-2418 (*synth, ir, pmr, ms*)
Mulchandani, N.B. *et al., Phytochemistry*, 1984, **23**, 1206 (*Tylophorinicine*)
Bhutani, K.K. *et al., Phytochemistry*, 1985, **24**, 2778-2780 (*13a-Hydroxytylophorine*)
Nordlander, J.E. *et al., J.O.C.*, 1987, **52**, 1627-1630 (*synth, uv, ir, pmr*)
Iwasa, K. *et al., J. Nat. Prod.*, 1988, **51**, 172-175 (*synth, uv*)
Ihara, M. *et al., J.C.S. Perkin 1*, 1990, 2287-2292 (*synth, pmr, cd, abs config*)
Pearson, W.H. *et al., Tetrahedron*, 1994, **50**, 12293-12304 (*synth*)
Abe, F. *et al., Phytochemistry*, 1995, **39**, 695-699 (*7-Demethyltylophorine, Tylophorine*)
Ciufolini, M.A. *et al., J.A.C.S.*, 1996, **118**, 12082-12089 (*synth*)
Comins, D.L. *et al., J.O.C.*, 1997, **62**, 7435-7438 (*synth*)
Abe, F. *et al., Chem. Pharm. Bull.*, 1998, **46**, 767-769 (*N-oxides*)
Jin, Z. *et al., Chin. Chem. Lett.*, 2004, **15**, 1164-1166 (*S-isomer, synth*)
Damu, A.G. *et al., J. Nat. Prod.*, 2005, **68**, 1071-1075 (*N-oxides*)
Fürstner, A. *et al., Chem. Eur. J.*, 2006, **12**, 7398-7410 (*synth*)
Zeng, W. *et al., J.O.C.*, 2008, **73**, 6045-6047 (*synth*)
Wang, K.-L. *et al., Tetrahedron*, 2008, **64**, 7504-7510 (*synth*)

Tylophorinine T-696

9,11,12,13,13a,14-Hexahydro-3,6,7-trimethoxydibenzo[f,h]pyrrolo[1,2-b]isoquinolin-14-ol, 9CI. Pergularinine



(+)-*form*

$C_{23}H_{25}NO_4$ 379.455
Shows weak antineoplastic activity. Log P 3.5 (calc).

(+)-*form* [52437-07-7]
Alkaloid from *Ficus hispida* (Moraceae). Cryst. ($CHCl_3$/EtOH or CH_2Cl_2/Et_2O). Mp 215-216° dec., 229-231° dec. $[\alpha]_D$ +116 (c, 0.25 in $CHCl_3$). $[\alpha]_D$ +161 (c, 1.5 in $CHCl_3$).

Ac:
Cryst. (CH_2Cl_2/hexane). Mp 176-177°.

Deoxy, O^6-*de-Me:* ***Tylophoridicine A***
[457057-53-3]
$C_{22}H_{23}NO_3$ 349.429
Alkaloid from the roots of *Tylophora ovata*. Needles (Me_2CO). Mp 226-228°. $[\alpha]_D^{23}$ +176 (c, 0.25 in $CHCl_3$). λ_{max} 258 (log ϵ 4.53); 286 (log ϵ 4.39); 311 (sh) (log ϵ 3.81); 343 (log ϵ 2.91) (MeOH).

(-)-*form* [571-70-0]
Alkaloid from *Tylophora asthmatica*, *Tylophora cordifolia*, *Tylophora flava*, *Tylophora ovata*, *Tylophora atrafoliculata* and *Tylophora mollissima* and *Pergularia pallida* (Asclepiadaceae). Cryst. ($CHCl_3$ or $CHCl_3$/MeOH). Mp 248-249° (233-235° dec.). $[\alpha]_D^{27}$ -14.2 (c, 1.76 in $CHCl_3$). Largely racemic. Pharmacol. active isomer. λ_{max} 258 (ϵ 40500); 287 (ϵ 21900); 340 (ϵ 820) (EtOH) (Berdy).

Hydrochloride:
Cryst. (EtOH). Mp 257° dec.

N-*Oxide:* ***Tylophorinine* N-*oxide***
[165606-54-2]
$C_{23}H_{25}NO_5$ 395.454
Alkaloid from *Tylophora tanakae*. Solid. $[\alpha]_D^{29}$ +15.1 (c, 0.3 in $CHCl_3$/MeOH). λ_{max} 232 (log ϵ 4.02); 246 (log ϵ 4.21); 263 (log ϵ 4.4); 283 (log ϵ 4.13); 289 (log ϵ 4.14); 315 (log ϵ 3.64) (MeOH).

Ac:
Needles (C_6H_6/petrol or MeOH). Mp 222-223° (177-178°) dec.

Me ether: Mp 218-220°.

O^3-*De-Me:* ***Tylophoridicine E***
[415898-73-6]
$C_{22}H_{23}NO_4$ 365.428
Alkaloid from *Tylophora atrofolliculata*. Brown amorph. solid. Mp 225-226°. $[\alpha]_D^{16}$ +21 (c, 0.74 in $CHCl_3$). λ_{max} 260 (log ϵ 4.63); 286 (log ϵ 4.35); 310 (sh) (log ϵ 3.88) (MeOH).

O^6-*De-Me:* ***Tylophorinidine***
[32523-69-6]
$C_{22}H_{23}NO_4$ 365.428
Alkaloid from *Tylophora asthmatica*, *Tylophora indica*, *Tylophora atrafoliculata*, *Tylophora mollissima*, *Tylophora ovata* and *Pergularia pallida* (Asclepiadaceae). Cryst. (EtOH or CH_2Cl_2/MeOH). Mp 216-218° dec. $[\alpha]_D$ +105 (c, 1.1 in $CHCl_3$). $[\alpha]_D^{25}$ +125 (c, 0.1 in MeOH). λ_{max} 258 (ϵ 43700); 297 (ϵ 28200); 329 (ϵ 9770); 353 (ϵ 6170); 368 (ϵ 2950) (MeOH/NaOH) (Derep). λ_{max} 258 (ϵ 50100); 287 (ϵ 26900); 310 (ϵ 7940); 340 (ϵ 1820); 355 (ϵ 724) (MeOH) (Derep).

O^6-*De-Me,* N-*oxide:* ***Tylophoridicine C***
[790234-58-1]
$C_{22}H_{23}NO_5$ 381.427
Alkaloid from the roots of *Tylophora atrofolliculata*. Powder ($CHCl_3$). Mp 234-237°. $[\alpha]_D^{16}$ +17.1 (c, 0.37 in $CHCl_3$). λ_{max} 260 (log ϵ 4.63); 286 (log ϵ 4.35) (MeOH).

O^6-*De-Me, di-Ac:*
Cryst. (CH_2Cl_2/MeOH). Mp 193-195° dec.

O-*De-Me:* ***Demethyltylophorinine***
[36346-48-2]
$C_{22}H_{23}NO_4$ 365.428
Major constit. of *Tylophora dalzeltii*, also isol. from *Tylophora indica* (Asclepiadaceae). Cryst. + ½H_2O ($CHCl_3$/MeOH). Sol. $CHCl_3$. Mp 253-255°. Prob. identical with Tylophoridicine E or Tylophorinidine. λ_{max} 257 (E1%/1cm 1390); 285 (E1%/1cm 750) (MeOH) (Berdy).

O-*De-Me, di-Ac:* Mp 225-227°.

Deoxy: ***14-Deoxypergularinine****. 3,6,7-Trimethoxyphenanthroindolizidine*
[54781-87-2]
$C_{23}H_{25}NO_3$ 363.455
Alkaloid from roots of *Pergularia pallida* and leaves of *Ficus hispida* (Asclepiadaceae, Moraceae). Pale yellow globules ($CHCl_3$/EtOH). Mp 252-254° (208°) dec. $[\alpha]_D^{25}$ -13.6 (c, 0.25 in $CHCl_3$).

Deoxy, N-*oxide:* ***Deoxytylophorinine* N-*oxide***
[128922-80-5]
$C_{23}H_{25}NO_4$ 379.455
Alkaloid from roots and stems of *Cynanchum komarovii* (Asclepiadaceae).

Deoxy, O^6*-de-Me:* ***Tyloindicine E***
[126783-57-1]
$C_{22}H_{23}NO_3$ 349.429
Alkaloid from aerial parts of *Tylophora indica* (Asclepiadaceae). Brown powder (MeOH). Mp 350° dec. $[\alpha]_D^{35}$ -12 (c, 0.25 in MeOH). CAS numbering. Abs. config. not indicated.

Deoxy, O^6*-de-Me, Ac:* Mp 280-282°.

5-Hydroxy: ***5-Hydroxy-O-methyltylophorinidine***
[111316-26-8]
$C_{23}H_{25}NO_5$ 395.454
Minor alkaloid from aerial parts of *Tylophora hirsuta* (Asclepiadaceae). Cryst. (Me_2CO). Mp 245-247°. $[\alpha]_D^{18}$ +58.97 (c, 0.8 in MeOH).

14-Epimer, N-*oxide:* ***Tylophoridicine F***
[790234-59-2]
$C_{23}H_{25}NO_5$ 395.454
Alkaloid from the roots of *Tylophora atrofolliculata*. Solid ($CHCl_3$). Mp 214-217°. $[\alpha]_D^{16}$ -11 (c, 0.4 in $CHCl_3$).

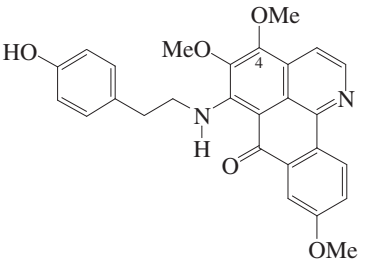
(±)-*form*
Synthetic. Pale yellow cubes (as hydrochloride). Mp 249-252° dec. (hydrochloride).

[62181-70-8]

Govindachari, T.R. *et al., Tetrahedron*, 1961, **14**, 288-295; 1965, **21**, 2573-2578; 1973, **29**, 891-897 (*isol, uv, struct, synth, nmr, ms*)
Govindachari, T.R. *et al., Chem. Ind. (London)*, 1971, 505-506 (*Tylophorinidine, isol, uv, struct*)
Mulchandani, N.B. *et al., Chem. Ind. (London)*, 1971, 505 (*Tylophorinidine, isol, ir, pmr, ms, struct*)
Rao, K.V. *et al., J. Pharm. Sci.*, 1971, **60**, 1725-1726 (*Tylophorinidine, Demethyltylophorinine, isol, uv, ir, pmr*)
Govindachari, T.R. *et al., J. Indian Chem. Soc.*, 1973, **50**, 1-9 (*Tylophorinidine, rev*)
Govindachari, T.R. *et al., Indian J. Chem.*, 1974, **12**, 886-887 (*Tylophorinidine, abs config*)
Wadhawan, V.K. *et al., Acta Cryst. B*, 1976, **32**, 3304-3307 (*Tylophorinidine, cryst struct*)
Herbert, R.B. *et al., Chem. Comm.*, 1976, 865-867 (*biosynth*)
Mulchandani, N.B. *et al., Phytochemistry*, 1976, **15**, 1561-1563 (*synth, uv, ir, ms*)
Bhakuni, D.S. *et al., Tetrahedron*, 1981, **37**, 401-407 (*biosynth*)
Cragg, J.E. *et al., J.C.S. Perkin 1*, 1982, 2477-2485 (*Deoxytylophorinine, synth*)
Venkatachalam, S.R. *et al., Naturwissenschaften*, 1982, **69**, 287-288 (*Deoxypergularinine*)
Ali, M. *et al., Phytochemistry*, 1987, **26**, 2089-2092; 1989, **28**, 3513-3517 (*Tyloindicine E, 5-Hydroxy-O-methyltylophorinidine*)
Abe, F. *et al., Phytochemistry*, 1995, **39**, 695-699 (*N-oxide*)
Zhen, Y.-Y. *et al., Acta Bot. Sin.*, 2002, **44**, 349-353 (*Tylophoridicine A*)
Huang, X.S. *et al., Planta Med.*, 2004, **70**, 441-445 (*Tylophoridicines C-F*)
Wang, K.-L. *et al., Tetrahedron*, 2008, **64**, 7504-7510 (*Deoxytylophorinine, synth*)

Tyraminoporphine T-697

[259682-67-2]



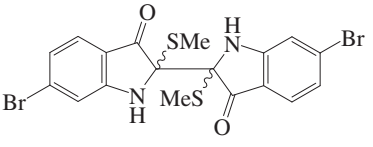
$C_{27}H_{24}N_2O_5$ 456.497
Alkaloid from the roots of *Menispermum dauricum*. Orange prisms (hexane/EtOAc). Mp 229° dec. λ_{max} 216 (log ϵ 4.28); 263 (log ϵ 4.33); 361 (log ϵ 3.58); 450 (log ϵ 3.86); 479 (log ϵ 3.99) (no solvent reported).

4-Demethoxy: ***Daurioxoisoporphine A***
$C_{26}H_{22}N_2O_4$ 426.471
Alkaloid from the rhizomes of *Menispermum dauricum*. Cytotoxic agent. Yellow cryst. ($CHCl_3$). Mp 234-235°. λ_{max} 215 (log ϵ 4.2); 255 (log ϵ 2.5); 448 (log ϵ 3.8); 476 (log ϵ 4.3) (MeOH).

Sugimoto, Y. *et al., Phytochemistry*, 1999, **52**, 1431-1435 (*Tyraminoporphine*)
Yu, B.-W. *et al., J. Nat. Prod.*, 2001, **64**, 968-970 (*Daurioxoisoporphine A*)

Tyriverdin T-698

2,2′-Bis(methylthio)-6,6′-dibromoindigotin



$C_{18}H_{14}Br_2N_2O_2S_2$ 514.261
Mixt. of stereoisomers, Tyriverdins A and B. Prob. artifacts derived from 6-Bromo-3-hydroxy-2-(methylthio)indole, B-328. Isol. from the hypobronchial glands of the gastropod *Thais clavigera*. Also isol. from *Nucella lapilus*. Biosynthetic intermed. in the formn. of 6,6′-Dibromoindigotin, D-325. Light-sensitive light green solid; unstable in soln. λ_{max} 237 (log ϵ 4.37); 252 (log ϵ 4.51); 275 (log ϵ 4.08); 350 (log ϵ 3.41); 402 (log ϵ 3.46); 598 (log ϵ 2.85) (MeOH). λ_{max} 255 ; 280 ; 366 ; 400 ; 595 ($CHCl_3$).

Didebromo: [64648-34-6]
$C_{18}H_{16}N_2O_2S_2$ 356.469
Biosynthetic intermed. of Indigotin, I-72. Unstable compd.

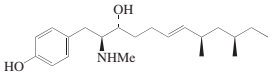
[11051-34-6 , 75714-79-3]

Christophersen, C. *et al., Tet. Lett.*, 1977, 1747-1748 (*struct*)
Christophersen, C. *et al., Tetrahedron*, 1978, **34**, 2779-2781 (*synth, uv, ir, pmr, didebromo*)

Fujise, Y. *et al., Chem. Lett.*, 1980, 631-632 (*isol, uv, ir, pmr, cmr, struct*)
Cooksey, C.J. *et al., Molecules*, 2001, **6**, 736-769 (*rev*)

Tyroscherin T-699

[832150-38-6]



Absolute Configuration

$C_{21}H_{35}NO_2$ 333.513

Abs. config. revised in 2008. Prod. by *Pseudallescheria* sp. Antitumour agent. Powder. Mp 123-127°. $[\alpha]_D^{24}$ -21 (c, 0.35 in MeOH). λ_{max} 225 (ϵ 5500); 278 (ϵ 1100) (MeOH). λ_{max} 225 (ϵ 4300); 240 (ϵ 3600); 286 (ϵ 1100) (MeOH/NaOH).

Stereoisomer (?): ***Antibiotic JM 971B***. *JM 971B*
[92802-16-9]
$C_{21}H_{35}NO_2$ 333.513
From *Leptographium lundbergii* NRRL 12527. Inhibits yeast-like fungi. Sol. MeOH, $CHCl_3$, DMF, DMSO; fairly sol. Et_2O; poorly sol. H_2O, hexane. Stereochem. not determined. λ_{max} 277 (ϵ 1700); 283 (ϵ 1450) (CH_2Cl_2) (Berdy).

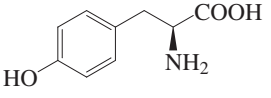
Stereoisomer (?), N-*Me:* ***Antibiotic JM 971A***. *JM 971A*
[92802-17-0]
$C_{22}H_{37}NO_2$ 347.54
From *Leptographium lundbergii* NRRL 12527. Inhibits yeast-like fungi. Sol. MeOH, DMSO, DMF, $CHCl_3$; fairly sol. Et_2O; poorly sol. H_2O, hexane. Stereochem. not determined. λ_{max} 278 (ϵ 1400); 284 (ϵ 1200) (CH_2Cl_2) (Berdy).

Stereoisomer (?), N-*de-Me:* ***Antibiotic JM 971C***. *JM 971C*
[92802-15-8]
$C_{20}H_{33}NO_2$ 319.486
Isol. from *Leptographium lundbergii* NRRL 12527. Inhibits yeast-like fungi. Sol. MeOH, $CHCl_3$, DMF, DMSO; fairly sol. Et_2O; poorly sol. H_2O, hexane. Stereochem. not determined. λ_{max} 277 (ϵ 1450); 283 (ϵ 1230) (CH_2Cl_2) (Berdy).

Ger. Pat., 1984, 3 333 553; *CA*, **102**, 4458 (*Antibiotics JM 971*)
Hayakawa, Y. *et al., J. Antibiot.*, 2004, **57**, 634-638 (*isol, uv, pmr, cmr*)
Katsuta, R. *et al., Tet. Lett.*, 2008, **49**, 7042-7045 (*synth, struct*)

Tyrosine, 9CI, 8CI T-700

α-Amino-4-hydroxybenzenepropanoic acid. 2-Amino-3-(4-hydroxyphenyl)propanoic acid. 4-Hydroxy-α-aminohydrocinnamic acid. p-*Tyrosine. 3*-p-*Hydroxyphenyl-α-alanine. Tyr*
[55520-40-6]



(*S*)-*form*

$C_9H_{11}NO_3$ 181.191

(S)-form
L-form. FEMA 3736
[60-18-4]
Widely distributed in plant and animal proteins. Needles (H_2O). Almost insol. H_2O (0.05 g/100 g at 25°). Mp 290-295° dec. (slow heat) Mp 314-318° dec. approx. (rapid heat). $[\alpha]_D^{20}$ -11.8 (c, 4.0 in 5*M* HCl) (opt. pure). $[\alpha]_D$ -9.01 (11.6% KOH). pK_{a1} 2.2; pK_{a2} 9.11; pK_{a3} 10.07 (phenolic OH). Isoelectric point 5.66. Bitter taste.
▶ Exp. reprod. and teratogenic effects (large doses). YP2275600

Hydrochloride: [16870-43-2]
Mp 239° dec. $[\alpha]_D^{20}$ -8 (c, 4 in 1*M* HCl).

O-*β-D-Glucopyranoside:* ***Tyrosinyl glucoside***
[38292-17-0]
$C_{15}H_{21}NO_8$ 343.333
Isol. from the seeds of *Entada pursaetha* and *Entada scandens*. Also found in the insects *Drosophila* sp. and *Manduca* sp. Needles (EtOH aq.). Mp 282° dec. $[\alpha]_D^{20}$ -62.5 (c, 1.3 in 0.1*M* HCl). $[\alpha]_{Hg}^{20}$ -77 (c, 1 in 0.1*M* HCl).

N-*Octanoyl:* N-*Octanoyltyrosine*. ***Antibiotic CSL 12A***. *CSL 12A*
$C_{17}H_{25}NO_4$ 307.389
Prod. by a cosmid DNA library obt. from soil microorganisms.

N-*Nonanoyl:* N-*Nonanoyltyrosine*. ***Antibiotic CSL 12B***. *CSL 12B*
$C_{18}H_{27}NO_4$ 321.416
Prod. by a cosmid DNA library obt. from soil microorganisms.

N-*Decanoyl:* N-*Decanoyltyrosine*. ***Antibiotic CSL 12C***. *CSL 12C*
$C_{19}H_{29}NO_4$ 335.442
Prod. by a cosmid DNA library obt. from soil microorganisms.

N-*Undecanoyl:* N-*Undecanoyltyrosine*. ***Antibiotic CSL 12D***. *CSL 12D*
$C_{20}H_{31}NO_4$ 349.469
Prod. by a cosmid DNA library obt. from soil microorganisms.

N-*Dodecanoyl:* N-*Dodecanoyltyrosine*. ***Antibiotic CSL 12E***. *CSL 12E*
$C_{21}H_{33}NO_4$ 363.496
Prod. by a cosmid DNA library obt. from soil microorganisms.

N-*(7Z-Dodecenoyl):* N-*(7-Dodecenoyl)-tyrosine*. ***Antibiotic CSL 12J***. *CSL 12J*
$C_{21}H_{31}NO_4$ 361.48
Prod. by a cosmid DNA library obt. from soil microorganisms.

N-*Tridecanoyl:* N-*Tridecanoyltyrosine*. ***Antibiotic CSL 12F***. *CSL 12F*
$C_{22}H_{35}NO_4$ 377.523
Prod. by a cosmid DNA library obt. from soil microorganisms.

N-*Tetradecanoyl:* N-*Tetradecanoyltyrosine*. ***Antibiotic CSL 12G***. *CSL 12G*
$C_{23}H_{37}NO_4$ 391.55
Prod. by a cosmid DNA library obt. from soil microorganisms.

N-*(8Z-Tetradecenoyl):* N-*(8-Tetradecenoyl)tyrosine*. ***Antibiotic CSL 12K***. *CSL 12K*
$C_{23}H_{35}NO_4$ 389.534
Prod. by a cosmid DNA library obt. from soil microorganisms.

N-*Pentadecanoyl:* N-*Pentadecanoyltyrosine*. ***Antibiotic CSL 12H***. *CSL 12H*
$C_{24}H_{39}NO_4$ 405.576
Prod. by a cosmid DNA library obt. from soil microorganisms.

N-*Hexadecanoyl:* N-*Hexadecanoyltyrosine*. ***Antibiotic CSL 12I***. *CSL 12I*
$C_{25}H_{41}NO_4$ 419.603
Prod. by a cosmid DNA library obt. from soil microorganisms.

N-*(9Z-Hexadecenoyl):* N-*(9-Hexadecenoyl)tyrosine*. ***Antibiotic CSL 12L***. *CSL 12L*
$C_{25}H_{39}NO_4$ 417.587
Prod. by a cosmid DNA library obt. from soil microorganisms.

N-*(11Z-Octadecenoyl):* N-*(11-Octadecenoyl)tyrosine*. ***Antibiotic CSL 12M***. *CSL 12M*
$C_{27}H_{43}NO_4$ 445.641
Prod. by a cosmid DNA library obt. from soil microorganisms.

N-*(4,6*R*-Dimethyl-2*E*,4*E*-dodecadienoyl):* ***Gymnastatin N***
$C_{23}H_{33}NO_4$ 387.518
Prod. by the fungus *Arachniotus punctatus*. Plk1 inhibitor. Oil. $[\alpha]_D^{30}$ -32.5 (c, 0.2 in EtOH). Isol. as a mixt. of (2*R*,6′*R*)- and (2*S*,6′*R*)-diastereoisomers to which data refers.

N-*(4,6*R*-Dimethyl-2*E*,4*E*-dodecadienoyl), Me ester:* ***Gymnastatin H***
[229334-21-8]
$C_{24}H_{35}NO_4$ 401.545
Prod. by *Gymnascella dankaliensis* isol. from the sponge *Halichondria japonica*. Oil. $[\alpha]_D^{26}$ +42.3 (c, 0.14 in $CHCl_3$). λ_{max} 238 (log ϵ 4.18); 266 (log ϵ 4.51) (EtOH).

N-*(12-Hydroxy-4,6*R*-dimethyl-2*E*,4*E*-dodecadienoyl):* ***12′-Hydroxygymnastatin N***
$C_{23}H_{33}NO_5$ 403.517
Prod. by the fungus *Arachniotus punctatus*. Oil.

N-*Me: 3-(4-Hydroxyphenyl)-2-(methylamino)propanoic acid*. **N-*Methyltyrosine, 9CI***. *Geoffroyin. Angelin*†. *Andirin. Surinamine. Ratanhin*
[537-49-5]
$C_{10}H_{13}NO_3$ 195.218
Present in bark of legumes *Geoffroea surinamensis*, *Andira anthelmintica* and *Andira retusa*. Also from Ratanhia root (*Krameria* sp.) and seeds of *Combretum zeyheri*. Needles. Mp 257°. $[\alpha]_D^{23}$ +16 (c, 0.42 in 1*M* HCl). $[\alpha]_D$ +31.45 (c, 0.42 in 1*M* NaOH). Dec. at 280°.

N,N-*Di-Me:* N,N-*Dimethyltyrosine*
[17350-74-2]
$C_{11}H_{15}NO_3$ 209.244
Aminoacid from *Lobaria laetevirens*. Cryst. Mp 274°.

N,N,N-*Tri-Me, betaine:* α-*Carboxy-4-hydroxy*-N,N,N-*trimethylbenzeneethana-*

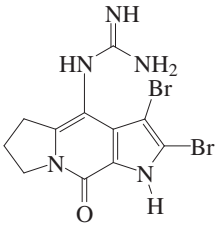
minium(1+), 9CI. Tyrosine betaine.
Maokonine
[69168-08-7]
$C_{12}H_{18}NO_3^{\oplus}$ 224.279
Constit. of *Lobaria laetevirens* and *Ephedra* sp. Hypertensive agent. Mp 257-259°.

[36546-50-6 , 16978-66-8 , 81158-85-2 , 126060-58-0]

Ebata, M. *et al., Bull. Chem. Soc. Jpn.*, 1966, **39**, 2535-2538 (*N-Me, synth*)
Tamada, M. *et al., Planta Med.*, 1978, **34**, 291-293 (*Maokonine*)
Van Heerden, F.R. *et al., Phytochemistry*, 1980, **19**, 2125-2129 (*N-Coumaroyltyrosine*)
Bernard, T. *et al., Phytochemistry*, 1981, **20**, 2325-2326 (*N,N-Dimethyltyrosine*)
Brueckner, C. *et al., Phytochemistry*, 1986, **25**, 2236-2237 (*N-Jasmonoyltyrosine*)
Brady, S.F. *et al., J.A.C.S.*, 2000, **122**, 12903-12904 (*Antibiotics CSL 12*)
Phoon, C.W. *et al., Tetrahedron*, 2004, **60**, 11619-11628 (*Gymnastatin N*)
Kramell, R. *et al., J. Nat. Prod.*, 2005, **68**, 1345-1349 (*N-Jasmonoyltyrosine*)
Amagata, T. *et al., J. Nat. Prod.*, 2006, **69**, 1384-1388 (*Gymnastatin H*)

Ugibohlin U-1

[391936-28-0]

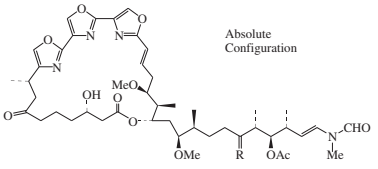


$C_{11}H_{11}Br_2N_5O$ 389.049

Isol. from the marine sponge *Axinella carteri*. Amorph. solid. λ_{max} 208 (log ϵ 3.83); 240 (log ϵ 4.25); 242 (log ϵ 4.27); 269 (log ϵ 3.6) (MeOH).

Goetz, G.H. *et al., J. Nat. Prod.*, 2001, **64**, 1581-1582 (*isol, pmr, cmr*)

Ulapualides U-2



Ulapualide A R = O
Ulapualide B R = H, $OCOCH(OMe)CH_2OMe$

Ulapualide A [100045-73-6]

$C_{46}H_{64}N_4O_{13}$ 881.031

Isol. from *Hexabranchus sanguineus* egg masses. Shows antitumour and antifungal props. Oil. $[\alpha]_D^{21}$ -43.3 (c, 0.3 in MeOH). λ_{max} 246 (ϵ 34000) (MeOH) (Derep).

Ulapualide B [100045-74-7]

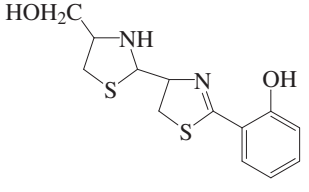
$C_{51}H_{74}N_4O_{16}$ 999.163

Isol. from *Hexabranchus sanguineus* egg masses. Shows antitumour and antifungal props. Sol. MeOH, $CHCl_3$. $[\alpha]_D^{25}$ -21.7 (c, 0.138 in MeOH). λ_{max} 246 (ϵ 33000) (MeOH) (Derep).

Roesener, J.A. *et al., J.A.C.S.*, 1986, **108**, 846-847 (*isol, pmr*)
Chattopadhyay, S.K. *et al., J.C.S. Perkin 1*, 2000, 2415-2428; 2429-2454 (*synth, config*)
Allingham, J.S. *et al., Org. Lett.*, 2004, **6**, 597-599 (*cryst struct, abs config*)
Pattenden, G. *et al., Org. Biomol. Chem.*, 2008, **6**, 1478-1497 (*synth, abs config*)

Ulbactin A U-3

[184971-57-1]



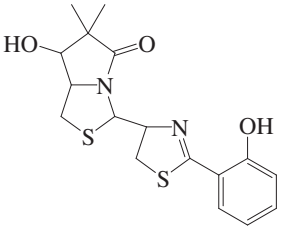
$C_{13}H_{16}N_2O_2S_2$ 296.414

Similar to Pyochelin I, P-832. Prod. by *Vibrio* sp. B-93. Uv absorbant for cosmetics.

Kikuchi, K. *et al., CA*, 1997, **126**, 44673w (*isol*)
Japan. Pat., 1998, 98 101 657; *CA*, **129**, 3913t (*isol*)

Ulbactin B U-4

[184763-21-1]



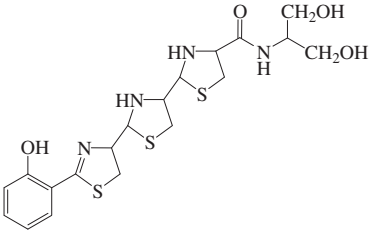
$C_{17}H_{20}N_2O_3S_2$ 364.489

Prod. by *Vibrio* sp. B-93. Uv absorbant for cosmetics.

Kikuchi, K. *et al., CA*, 1997, **126**, 44673w (*isol*)
Japan. Pat., 1998, 98 101 657; *CA*, **129**, 3913t (*isol*)

Ulbactin C U-5

[184971-60-6]



$C_{19}H_{26}N_4O_4S_3$ 470.637

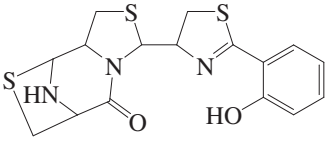
Similar to Yersiniabactin, Y-9. Prod. by *Alteromonas* sp. D-12. Uv absorbant for cosmetics.

Kikuchi, K. *et al., CA*, 1997, **126**, 44673w (*isol*)
Japan. Pat., 1998, 98 101 657; *CA*, **129**, 3913t (*isol*)

Ulbactin D U-6

3-[4,5-Dihydro-2-(2-hydroxyphenyl)-4-thiazolyl]tetrahydro-6,9-imino-1H,3H,5H-thiazolo[4,3-c][1,4]thiazepin-5-one, 9CI

[213185-50-3]



$C_{16}H_{17}N_3O_2S_3$ 379.527

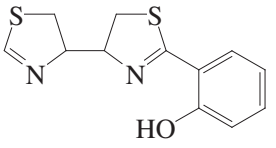
Prod. by *Alteromonas* sp. D-12 (PERM P-15733). Uv absorbant.

Japan. Pat., 1998, 98 245 377; *CA*, **129**, 244217z

Ulbactin E U-7

2-(4,4′,5,5′-Tetrahydro[4,4′-bithiazol]-2-yl)phenol, 9CI. 4,4′,5,5′-Tetrahydro-2-(2-hydroxyphenyl)-4,4′-bithiazole

[213185-52-5]



$C_{12}H_{12}N_2OS_2$ 264.372

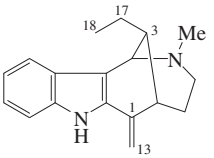
Prod. by *Alteromonas* sp. D-12 (FERM P-15733). Uv absorbant.

Japan. Pat., 1998, 98 245 377; *CA*, **129**, 244217z

Uleine U-8

1-Methylenedasycarpidan, 9CI

[517-81-7]



$C_{18}H_{22}N_2$ 266.385

Alkaloid from *Aspidosperma ulei*, *Aspidosperma australe*, *Aspidosperma formosanum* and *Plumeria lancifolia*. Shows antitumour activity vs. Walker 256 carcinosarcoma. Poorly cryst. substance showing solvation and wide melting range. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 76-78° Mp 115-118° (double Mp; imprecise). $[\alpha]_D$ +18.5 ($CHCl_3$). λ_{max} 307 (ϵ 17000); 316 (ϵ 17000) (MeOH).

Hydrochloride:
Cryst. (2-propanol/Et_2O). Mp 241-242° dec.

Methiodide:
Cryst. (EtOH). Mp 204-206°.

N-*Oxide:* ***Uleine* N-*oxide***. *Pausperadine A*
[878007-11-5]
$C_{18}H_{22}N_2O$ 282.385
Alkaloid from the bark of *Geissospermum vellosii*. Amorph. solid. $[\alpha]_D^{22}$ +2.3 (c, 0.5 in MeOH). λ_{max} 208 (log ϵ 4.03); 242 (sh) (log ϵ 3.65); 307 (log ϵ 3.65) (MeOH).

N-*De-Me:* ***De*-N-*methyluleine***
[3620-83-5]
$C_{17}H_{20}N_2$ 252.358
Alkaloid from the bark of *Aspidosperma dasycarpon* (Apocynaceae). Cryst. ($CHCl_3$). Mp 143-145°. $[\alpha]_D^{26}$ -20 (c, 1.18 in EtOH). λ_{max} 305 (log ϵ 4.24); 312 (log ϵ 4.23) (EtOH).

Didehydro, N-*de-Me:* ***Dehydrode*-N-*methyluleine***

[3620-82-4 ($\Delta^{3(18)}$-isomer), 3620-77-7 (Δ^{17}-isomer)]
$C_{17}H_{18}N_2$ 250.343
Alkaloid from the bark of *Aspidosperma dasycarpon* (Apocynaceae). Mp 220°. Full struct. not known. Double bond located between $C_{3\text{-}18}$ or $C_{17\text{-}18}$. λ_{max} 303 (log ϵ 4.21); 310 (log ϵ 4.21) (EtOH).

1α,13-Dihydro, 13-hydroxy: ***1,13-Dihydro-13-hydroxyuleine****. Dasycarpidan-1-methanol. 1-Hydroxymethyldasycarpidan*
[60865-02-3]
$C_{18}H_{24}N_2O$ 284.4
Alkaloid from *Aspidosperma dasycarpon* and *Aspidosperma formosanum* (Apocynaceae). Amorph. $[\alpha]_D$ -96 (c, 0.25 in EtOH). λ_{max} 211 (log ϵ 4.56); 282 (log ϵ 3.91); 289 (log ϵ 3.87) (EtOH).

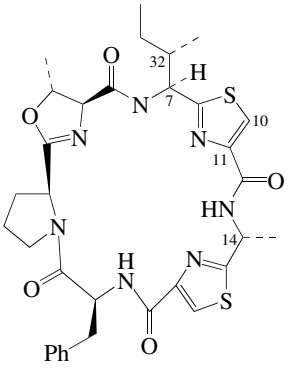
3-Epimer: ***Epiuleine***
[17463-46-6]
$C_{18}H_{22}N_2$ 266.385
Alkaloid from *Aspidosperma formasanum* and *Aspidosperma subincanum* (Apocynaceae). Amorph. Racemate is crystalline. λ_{max} 213 (log ϵ 4.38); 307 (log ϵ 4.28); 315 (log ϵ 4.24) (MeOH).

[19775-51-0 (3-epimer ±-form), 19775-50-9 (±-form)]

Schmutz, J. *et al., Helv. Chim. Acta*, 1957, **40**, 1189-1200 (*isol, uv, ir*)
Büchi, G. *et al., J.A.C.S.*, 1959, **81**, 4433-4434; 1971, **93**, 2492-2501 (*Uleine, Epiuleine, ir, pmr, ms, struct, synth*)
Ondetti, M.A. *et al., Tetrahedron*, 1961, **15**, 160-166 (*isol, uv*)
Ohashi, M. *et al., Experientia*, 1964, 363-364 (*De-N-methyluleine, isol*)
Joule, J.A. *et al., J.C.S.*, 1964, 2777-2790 (*ms, struct*)
Joule, J.A. *et al., Tetrahedron*, 1965, **21**, 1717-1734 (*De-N-methyluleine, Dehydrode-N-methyluleine, 1,13-Dihydro-13-hydroxyuleine*)
Gaskell, A.J. *et al., Chem. Ind. (London)*, 1967, 1089-1090 (*Uleine, Epiuleine, uv, ir, pmr, struct*)
Jackson, A. *et al., J.C.S.(C)*, 1969, 2738-2747 (*Epiuleine, synth*)
Dolby, L.J. *et al., J.O.C.*, 1970, **35**, 3843-3845 (*Epiuleine, synth*)
Barth, G. *et al., Helv. Chim. Acta*, 1972, **55**, 2168-2178 (*uv, cd*)
Garcia, M. *et al., Phytochemistry*, 1976, **15**, 1093-1095 (*Epiuleine, 1,13-Dihydro-13-hydroxyuleine*)
Natsume, M. *et al., Tet. Lett.*, 1980, **21**, 839-840 (*Epiuleine, synth*)
Harris, M. *et al., Tet. Lett.*, 1981, **22**, 331-334 (*Epiuleine, synth*)
Borris, R.P. *et al., J. Nat. Prod.*, 1983, **46**, 200-205 (*cmr*)
Grierson, D.S. *et al., Tetrahedron*, 1983, **39**, 3683-3694 (*Epiuleine, synth*)
Bonjoch, J. *et al., Chem. Comm.*, 1991, 1687-1688 (*synth*)
Saito, M. *et al., Chem. Comm.*, 1997, 765-766 (*synth, abs config*)
Amat, M. *et al., J.O.C.*, 2004, **69**, 8681-8693 (*synth*)
Ishiyama, H. *et al., Heterocycles*, 2005, **66**, 651-658 (*Pausperadine A*)
Baggio, C.H. *et al., Planta Med.*, 2005, **71**, 733-738 (*Uleine, isol, pmr, cmr*)

Ulicyclamide, 9CI U-9

[74839-81-9]



$C_{33}H_{39}N_7O_5S_2$ 677.847

Numbering systems differ. The closely related Lissoclinamides are numbered differently from Ulicyclamide in CAS. Stereochem. given here is tentative as it is not completely clear in the lit. Isol. from the marine tunicate *Lissoclinum patella*. Cytotoxic. Oil. Sol. MeOH, C_6H_6; poorly sol. H_2O, hexane. $[\alpha]_D^{25}$ +35.7 (c, 2.3 in CH_2Cl_2). λ_{max} 248 (ϵ 7900) (MeOH) (Derep).

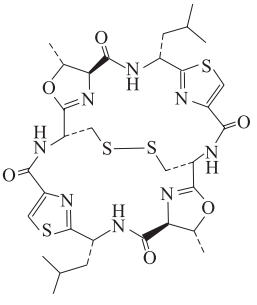
7,14-Diepimer, 10,11α-dihydro: ***Lissoclinamide 3***
[87393-59-7]
[121209-52-7]
$C_{33}H_{41}N_7O_5S_2$ 679.863
Isol. from *Lissoclinum patella*. Sol. $CHCl_3$, MeOH; poorly sol. H_2O. λ_{max} 248 (ϵ 7900) (MeOH) (Derep).

7,32-Diepimer, 10,11α-dihydro: ***Lissoclinamide 2***
[87393-58-6]
$C_{33}H_{41}N_7O_5S_2$ 679.863
Isol. from *Lissoclinum patella*.

Ireland, C. *et al., J.A.C.S.*, 1980, **102**, 5688-5691 (*isol, uv, ir, pmr, ms*)
Wasylyk, J.M. *et al., J.O.C.*, 1983, **48**, 4445-4449 (*isol, ir, pmr, cmr, ms, struct, derivs*)
Schmidt, U. *et al., Angew. Chem., Int. Ed.*, 1985, **24**, 569-571 (*synth*)
Sugiura, T. *et al., Tet. Lett.*, 1987, **28**, 2251-2254 (*synth*)

Ulithiacyclamide U-10

[74847-09-9]



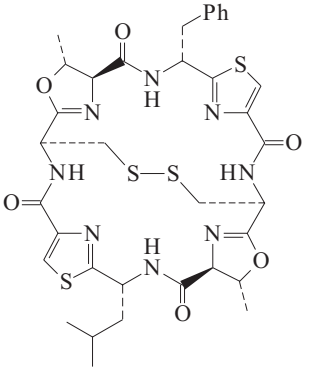
Absolute configuration

$C_{32}H_{42}N_8O_6S_4$ 762.998
Isol. from the marine tunicate *Lissoclinum patella* and from an unidentified sp. of ascidian collected from Rodda Reef, Queensland, Australia. Shows selective metal binding props. Cytotoxic agent. Oil. Sol. MeOH, C_6H_6; poorly sol. H_2O, hexane. $[\alpha]_D^{25}$ +62.4 (c, 2.9 in CH_2Cl_2). λ_{max} 247 (ϵ 7000) (MeOH) (Derep).

Ireland, C. *et al., J.A.C.S.*, 1980, **102**, 5688-5691 (*uv, ir, pmr, cmr, ms, struct*)
Hamamoto, Y. *et al., Chem. Comm.*, 1983, 323-324 (*occur*)
Biskupiak, J.E. *et al., J.O.C.*, 1983, **48**, 2302-2304 (*abs config*)
Kato, S. *et al., Tet. Lett.*, 1986, **27**, 2653-2656 (*synth*)
Schmidt, U. *et al., Tet. Lett.*, 1986, **27**, 3495-3496 (*synth*)
Ishida, T. *et al., J.O.C.*, 1989, **54**, 5337-5343 (*pmr, conformn*)
Morris, L.A. *et al., Tetrahedron*, 2001, **57**, 3185-3197 (*activity*)

Ulithiacyclamide B U-11

[122759-67-5]

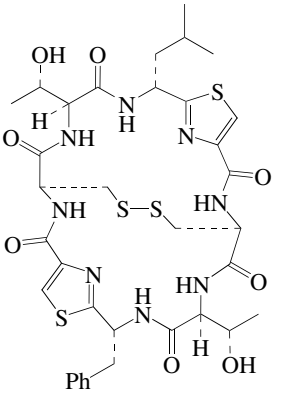


$C_{35}H_{40}N_8O_6S_4$ 797.015
Isol. from the ascidian *Lissoclinum patella*. Potent cytotoxin. Amorph. solid. $[\alpha]_D^{24.5}$ +117 (c, 0.17 in MeOH). λ_{max} 202 (ϵ 154897); 235 (ϵ 63291) (MeOH) (Berdy).

Williams, D.E. *et al., J. Nat. Prod.*, 1989, **52**, 732-739 (*isol, uv, ir, pmr, cmr, ms, struct*)

Ulithiacyclamide E U-12

[218916-92-8]

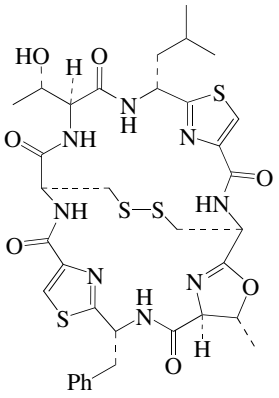


$C_{35}H_{44}N_8O_8S_4$ 833.045
Isol. from the ascidian *Lissoclinum patella*. Amorph. solid. $[\alpha]_D$ +4.9 (c, 0.8 in MeOH).

Fu, X. *et al., J. Nat. Prod.*, 1998, **61**, 1547-1551 (*isol, ir, pmr, cmr, ms*)

Ulithiacyclamide F U-13

[218916-93-9]

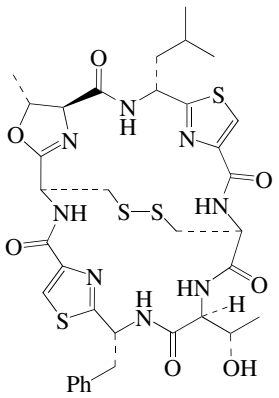


$C_{35}H_{42}N_8O_7S_4$ 815.03
Isol. from the ascidian *Lissoclinum patella*. Amorph. solid. $[\alpha]_D$ +29.6 (c, 0.27 in MeOH).

Fu, X. *et al., J. Nat. Prod.*, 1998, **61**, 1547-1551 (*isol, ir, pmr, cmr*)

Ulithiacyclamide G U-14

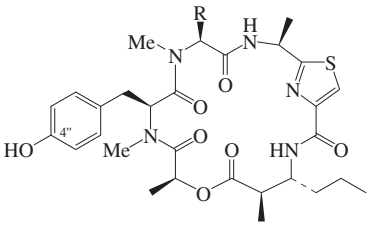
[218916-94-0]



$C_{35}H_{42}N_8O_7S_4$ 815.03
Isol. from the ascidian *Lissoclinum patella*. Amorph. solid. $[\alpha]_D$ +25.6 (c, 0.18 in MeOH).

Fu, X. *et al., J. Nat. Prod.*, 1998, **61**, 1547-1551 (*isol, ir, pmr, cmr, ms*)

Ulongamide B U-15



R = $CH(CH_3)_2$

$C_{32}H_{45}N_5O_7S$ 643.803
Isol. from a Palauan *Lyngbya* sp. Amorph. solid. $[\alpha]_D^{25}$ +10 (c, 0.1 in MeOH). λ_{max} 201 (log ϵ 4.24); 230 (log ϵ 3.87) (MeOH).

4′′-Deoxy: ***Ulongamide A***
$C_{32}H_{45}N_5O_6S$ 627.803
Isol. from a Palauan *Lyngbya* sp. Amorph. solid. $[\alpha]_D^{25}$ +12 (c, 0.73 in MeOH). λ_{max} 201 (log ϵ 4.25); 230 (log ϵ 3.88) (MeOH).

Luesch, H. *et al., J. Nat. Prod.*, 2002, **65**, 996-1000 (*isol, pmr, cmr*)
Alvaredo, C. *et al., Tet. Lett.*, 2007, **48**, 603-607 (*synth*)

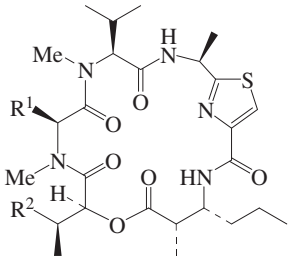
Ulongamide C U-16

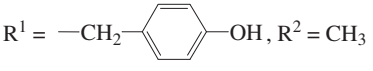
As Ulongamide B, U-15 with R = CH_2Ph

$C_{36}H_{45}N_5O_7S$ 691.847
Isol. from a Palauan *Lyngbya* sp. Amorph. solid. $[\alpha]_D^{25}$ +9 (c, 0.33 in MeOH). λ_{max} 202 (log ϵ 4.54); 230 (log ϵ 4.12) (MeOH).

Luesch, H. *et al., J. Nat. Prod.*, 2002, **65**, 996-1000 (*isol, pmr, cmr*)

Ulongamide D U-17





$C_{34}H_{49}N_5O_7S$ 671.856
Isol. from a Palauan *Lyngbya* sp. Amorph. solid. $[\alpha]_D^{25}$ +22 (c, 0.12 in MeOH). λ_{max} 201 (log ϵ 4.24); 230 (log ϵ 3.89) (MeOH).

Luesch, H. *et al., J. Nat. Prod.*, 2002, **65**, 996-1000 (*isol, pmr, cmr*)

Ulongamide E U-18

As Ulongamide D, U-17 with R^1 = CH_2Ph-4OH, R^2 = CH_2CH_3

$C_{35}H_{51}N_5O_7S$ 685.883
Isol. from a Palauan *Lyngbya* sp. Amorph. solid. $[\alpha]_D^{25}$ +20 (c, 0.4 in MeOH). λ_{max} 202 (log ϵ 4.24); 230 (log ϵ 3.89) (MeOH).

Luesch, H. *et al., J. Nat. Prod.*, 2002, **65**, 996-1000 (*isol, pmr, cmr*)

Ulongamide F U-19

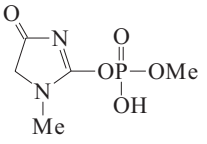
As Ulongamide D, U-17 with R^1 = $CH(CH_3)_2$, R^2 = CH_2CH_3

$C_{31}H_{51}N_5O_6S$ 621.84
Isol. from a Palauan *Lyngbya* sp. Amorph. solid. $[\alpha]_D^{25}$ +25 (c, 0.2 in MeOH). λ_{max} 202 (log ϵ 3.85); 230 (log ϵ 3.5) (MeOH).

Luesch, H. *et al., J. Nat. Prod.*, 2002, **65**, 996-1000 (*isol, pmr, cmr*)

Ulosantoin U-20

[145644-07-1]

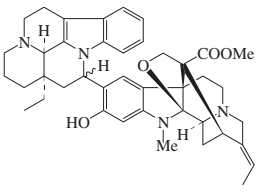


$C_5H_9N_2O_5P$ 208.11
Exists as zwitterion. Isol. from the sponge *Ulosa ruetzleri*. Shows marked insecticidal activity. Acetylcholinesterase inhibitor. Cryst. (Me_2CO/isooctane). Mp 127-128°. λ_{max} 224 (ϵ 5000) (MeOH) (Derep).

Van Wagenen, B.C. *et al., J.O.C.*, 1993, **58**, 335-337 (*isol, uv, ir, pmr, cmr, ms, cryst struct*)

Umbellamine U-21

Hunterine
[21851-24-1]



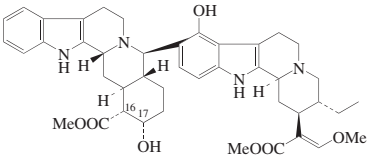
Absolute Configuration

$C_{41}H_{48}N_4O_4$ 660.855
Alkaloid from the root bark of *Hunteria umbellata*, *Hunteria eburnea* and *Hunteria congolana* (Apocynaceae). Needles ($CHCl_3$/MeOH). $[\alpha]_D^{24}$ -217 (c, 0.45 in $CHCl_3$). Dec. >250°.

Neus, N. *et al., Experientia*, 1960, **16**, 302 (*Hunterine*)
Morita, Y. *et al., Helv. Chim. Acta*, 1969, **52**, 89-103 (*isol, uv, ir, pmr, ms, struct*)

Uncaramine U-22

[110883-27-7]



$C_{43}H_{52}N_4O_7$ 736.906
Alkaloid from the leaves of *Uncaria gambier* (Rubiaceae). Cream amorph. powder. Mp 300° dec. $[\alpha]_D$ +20 (c, 0.2 in $CHCl_3$).

17-Epimer: ***Callophylline A***
[141610-96-0]
$C_{43}H_{52}N_4O_7$ 736.906
Alkaloid from the leaves of *Uncaria*

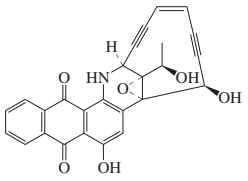
callophylla (Rubiaceae).

16,17-Diepimer: ***Calophylline***
[111322-40-8]
$C_{43}H_{52}N_4O_7$ 736.906
Alkaloid from leaves of *Uncaria callophylla* (Rubiaceae). Yellow powder. Mp 330° dec.

Goh, S.H. *et al., Malays. J. Sci.*, 1986, **8**, 109-113; *CA*, **107**, 214793n (*Callophylline*)
Arnone, A. *et al., J.C.S. Perkin 1*, 1987, 571-578 (*Uncaramine*)
Kam, T.-S. *et al., Phytochemistry*, 1991, **30**, 3441-3444 (*Calophylline A*)

Uncialamycin U-23

[870471-83-3]

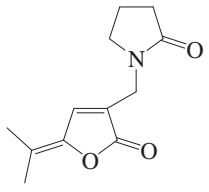


Absolute Configuration

$C_{26}H_{17}NO_6$ 439.423
Prod. by an unidentified *Streptomyces* sp. Antibacterial agent. Bright purple oil. $[\alpha]_D$ +3300 (c, 0.005 in MeOH). λ_{max} 206 (ϵ 25000); 254 (ϵ 33000); 280 (sh) ; 320 (sh) ; 539 (ϵ 9400) (MeOH).

Davies, J. *et al., Org. Lett.*, 2005, **7**, 5233-5236 (*isol, pmr, cmr*)
Nicolaou, K.C. *et al., Angew. Chem., Int. Ed.*, 2007, **46**, 4704-4707; 2008, **47**, 185-189 (*synth, config*)

Uncinine U-24



$C_{12}H_{15}NO_3$ 221.255
Alkaloid from *Artabotrys uncinatus*. Amorph. powder. λ_{max} 204 (log ϵ 3.76); 291 (log ϵ 4.27) (EtOH).

Hsieh, T.-J. *et al., J. Nat. Prod.*, 2001, **64**, 1157-1161

2,4-Undecadiene-7,9-diynoic acid U-25

$H_3CC{\equiv}CC{\equiv}CCH_2CH{=}CHCH{=}CHCOOH$

$C_{11}H_{10}O_2$ 174.199

(2E,4Z)-form

2-Methylpropylamide: 2,4-Undecadiene-7,9-diynoic acid isobutylamide. ***Neopellitorine A***
$C_{15}H_{19}NO$ 229.321
Alkaloid from *Artemisia dracunculus* (tarragon). Yellow oil. λ_{max} 257 (MeOH).

Saadali, B. *et al., Phytochemistry*, 2001, **58**, 1083-1086

2,4-Undecadiene-8,10-diynoic acid U-26

$HC{\equiv}CC{\equiv}CCH_2CH_2CH{=}CHCH{=}CHCOOH$

$C_{11}H_{10}O_2$ 174.199

(2E,4E)-form
trans,trans-*form*

4,6-Heptadiynyl ester: [55309-64-3]
$C_{18}H_{16}O_2$ 264.323
Isol. from *Chrysanthemum macrotum*. Mp 35°.

2-Methylpropylamide: 2,4-Undecadiene-8,10-diynoic acid isobutylamide. N-*(2-Methylpropyl)-2,4-undecadiene-8,10-diynamide*
[13891-74-2]
$C_{15}H_{19}NO$ 229.321
Isol. from *Chrysanthemum frutescens, Achillea macrophylla, Achillea ptarmica, Achillea millefolium* (yarrow), *Otanthus maritimus, Anacyclus clavatus* and other spp. Cryst. (Et_2O/petrol). Mp 99-100°. λ_{max} 252 (Et_2O).

2-Methylbutylamide: N-*(2-Methylbutyl)-2,4-undecadiene-8,10-diynamide*
[99615-78-8]
$C_{16}H_{21}NO$ 243.348
Isol. from *Acmella ciliata*.

3-Methylbutylamide: ***2,4-Undecadiene-8,10-diynoic acid isopentylamide****. 2,4-Undecadiene-8,10-diynecarboxy*-N-*isopentylamide*
[112663-71-5]
$C_{16}H_{21}NO$ 243.348
Isol. from the root, leaf and flowers of *Achillea ptarmica* (Asteraceae). Noncryst.

2-Phenylethylamide: **N-*(2-Phenylethyl)-2,4-undecadiene-8,10-diynamide***
[37064-11-2]
$C_{19}H_{19}NO$ 277.365
Isol. from the roots of *Anacyclus pyrethrum, Achillea ptarmica* and *Achillea falcata*. Cryst. (Et_2O/petrol). Mp 117°. λ_{max} 250 (no solvent reported).

Piperidide: ***2,4-Undecadiene-8,10-diynoic acid piperidide***
$C_{16}H_{19}NO$ 241.332
Alkaloid from *Achillea sudetica* (Asteraceae) and *Achillea ptarmica*. Oil. Not obt. completely pure.

2,3-Didehydropiperidide: ***2,4-Undecadiene-8,10-diynoic acid 2,3-dehydropiperidide***
[52704-38-8]
$C_{16}H_{17}NO$ 239.316
Alkamide from *Otanthus maritimus. Isol. from Achillea millefolium* (yarrow) and *Achillea ptarmica* (Asteraceae). Oil.

(2E,4Z)-form
Shows light-mediated antifungal activity.

2-Methylpropylamide: [113817-70-2]
Identified in *Echinacea angustifolia* and *Echinacea purpurea*. Cryst. (hexane). Mp 61°. λ_{max} 259 (no solvent reported).

2-Methylbutylamide: [99615-79-9]
Isol. from *Acmella ciliata* and roots of *Echinacea purpurea*. Oil. λ_{max} 261 (no solvent reported).

2-Phenylethylamide: [37064-15-6]
Cryst. (Et_2O/petrol). Mp 78°.

(2Z,4E)-form

2-Methylpropylamide: [13894-69-4]
Isol. from roots of *Echinacea purpurea, Echinacea angustifolia, Spilanthes alba*. Cryst. (petrol). Mp 60-61°.

2-Phenylethylamide: [99615-80-2]
Isol. from *Acmella ciliata*.

[52997-51-0 , 92264-88-5]

Bohlmann, F. *et al., Chem. Ber.*, 1966, **99**, 3197; 1967, **100**, 104; 3861; 1972, **105**, 1694; 1973, **103**, 1328; 1974, **107**, 1038; 1975, **108**, 739 (*isol, synth, uv, ir, pmr*)
Jente, R. *et al., Chem. Ber.*, 1972, **105**, 1694 (*synth, isol, ms, struct, pmr, ir, uv*)
Bohlmann, F. *et al., Phytochemistry*, 1980, **19**, 1535 (*isol*)
Greger, H. *et al., Phytochemistry*, 1984, **23**, 1503; 1989, **28**, 2363 (*isol*)
Martin, R. *et al., Phytochemistry*, 1985, **24**, 2295 (*isol, ms, pmr*)
Kuropka, G. *et al., Planta Med.*, 1986, **52**, 244; 1987, **53**, 440 (*isol, uv, ir, pmr, ms, struct*)
Hofer, O. *et al., Tetrahedron*, 1986, **42**, 2707 (*cmr*)
Jakupovic, J. *et al., Phytochemistry*, 1988, **27**, 1135 (*isol*)
Bauer, R. *et al., Phytochemistry*, 1988, **27**, 2339; 1989, **28**, 505 (*isol, pmr, ms, ir, uv*)
Bauer, R. *et al., Planta Med.*, 1989, **55**, 367 (*hplc*)
Binns, S.E. *et al., Planta Med.*, 2000, **66**, 241-242 (*activity, 2-methylpropylamide*)
Kraus, G.A. *et al., Molecules*, 2006, **11**, 758-767 (*2Z,4E-isobutylamide, synth*)

3,5-Undecadiene-8,10-diynoic acid, 9CI U-27

$HC{\equiv}CC{\equiv}CCH_2CH{=}CHCH{=}CHCH_2COOH$

$C_{11}H_{10}O_2$ 174.199

(3E,5E)-form

2-Phenylethylamide: **N-*(2-Phenylethyl)-3,5-undecadiene-8,10-diynamide, 9CI****. 3,5-Undecadiene-8,10-diynoic acid 2-phenylethylamide*
[99615-82-4]
$C_{19}H_{19}NO$ 277.365
Isol. from flower heads of *Acmella ciliata*.

Martin, R. *et al., Phytochemistry*, 1985, **24**, 2295-2300 (*isol, struct, pmr, ms*)

2,4-Undecadienoic acid U-28

$H_3C(CH_2)_5CH{=}CHCH{=}CHCOOH$

$C_{11}H_{18}O_2$ 182.262

(2E,4E)-form

2-Methylpropylamide: ***2,4-Undecadienoic acid isobutylamide****.* N-*(2-Methylpropyl)-2,4-undecadienamide*
[74267-82-6]
$C_{15}H_{27}NO$ 237.384
Alkaloid from *Leucocyclus formosus* (Asteraceae). Yellow cryst. Obt. only in admixture with homologues.

Greger, H. *et al., Phytochemistry*, 1981, **20**,

2579 (*isol, ms, struct*)
Plobeck, N.A. *et al., J.O.C.*, 1991, **56**, 4508 (*synth, cmr*)

2,7,9-Undecatrienoic acid U-29

$H_3CCH{=}CHCH{=}CH(CH_2)_3CH{=}CHCOOH$

$C_{11}H_{16}O_2$ 180.246

(2E,7Z,9E)-form

2-Methylpropylamide: N-*(2-Methylpropyl)-2,7,9-undecatrienamide. 2,7,9-Undecatrienoic acid isobutylamide*
$C_{15}H_{25}NO$ 235.369
Alkaloid from the dried flower buds of *Spilanthes acmella*.

Ramsewak, R.S. *et al., Phytochemistry*, 1999, **51**, 729-732 (*isol, amide, pmr, cmr, ms*)

2-Undecene-8,10-diynoic acid U-30

$HC{\equiv}CC{\equiv}C(CH_2)_4CH{=}CHCOOH$

$C_{11}H_{12}O_2$ 176.215

(E)-form

2-Methylpropylamide: **N-*(2-Methylpropyl)-2-undecene-8,10-diynamide***. *2-Undecene-8,10-diynoic acid isobutylamide*
[99615-81-3]
$C_{15}H_{21}NO$ 231.337
Isol. from flowers of *Acmella ciliata* and *Echinacea angustifolia*. Cryst. (hexane). Mp 69°.

2-Methylbutylamide: **N-*(2-Methylbutyl)-2-undecene-8,10-diynamide***
Isol. from flower heads of *Spilanthes acmella*. $[\alpha]_D$ +4.9 (c, 0.41 in $CHCl_3$).

(Z)-form

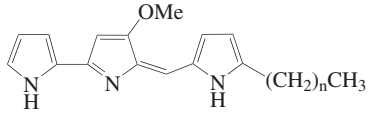
2-Methylpropylamide: [120727-28-8]
Isol. from the roots of *Echinacea angustifolia*. Oil.

2-Methylbutylamide: [120727-30-2]
$C_{16}H_{23}NO$ 245.364
Isol. from the roots of *Echinacea angustifolia*. Oil.

Martin, R. *et al., Phytochemistry*, 1985, **24**, 2295-2300 (*isol, pmr, ms*)
Bauer, R. *et al., Phytochemistry*, 1989, **28**, 505-508 (*isol, pmr, ms*)
Nakatani, N. *et al., Biosci., Biotechnol., Biochem.*, 1992, **56**, 759 (*isol*)
Ramsewak, R.S. *et al., Phytochemistry*, 1999, **51**, 729-732 (*isobutylamide, pmr, cmr*)
Wu, L. *et al., Phytochemistry*, 2004, **65**, 2477-2484 (*isobutylamide, synth, occur*)

Undecylprodiginine U-31

Undecylprodigiosine. Prodigiosin 25c
[13129-81-2]



$C_{25}H_{35}N_3O$ 393.571
Isol. from various *Streptomyces* spp., *Actinomadura pelletieri*, *Streptoverticillium rubrireticuli* and *Nocardia pelletieri*. Also from a marine-derived *Hahella chejuensis*. Antimalarial agent. Weakly active against gram-positive bacteria. Immunosuppressant, bone resorption inhibitor; gastric proton pump inhibitor and antiulcer agent. Sol. MeOH, Et_2O; fairly sol. hexane; poorly sol. H_2O, acids, bases. Exhibits dimorphism. λ_{max} 273 (ϵ 3640); 297 (ϵ 6900); 362 (ϵ 5000); 500 (sh) (ϵ 31500); 530 (ϵ 75900) (MeOH/HCl) (Derep). λ_{max} 285 (ϵ 6050); 325 (ϵ 4850); 467 (ϵ 30600) (MeOH/KOH) (Derep). λ_{max} 273 (ϵ 3640); 297 (ϵ 6900); 362 (ϵ 5000); 500 (sh) (ϵ 31500); 530 (ϵ 75900) (hydrochloride) (Derep).

▶ LD_{50} (mus, ivn) 26.7 mg/kg.

Hydrochloride: [15377-21-6]
Red needles (heptane). Mp 76-78° Mp 106-107° (dimorph.).

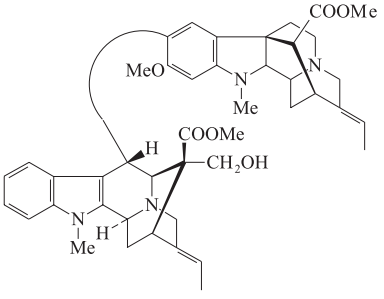
Lower homologue (n = 8): ***Nonylprodiginine***
[34852-34-1]
$C_{23}H_{31}N_3O$ 365.517
Prod. by *Nocardia madurae*, *Nocardia pelletieri* and *Streptomyces* sp. Y-42. Mp 150-155° (as perchlorate salt).

[14960-80-6 , 56247-02-0 , 52340-48-4]

Gerber, N.N. *et al., Appl. Microbiol.*, 1969, **18**, 1-3 (*Nonylprodiginine*)
Gerber, N.N. *et al., J. Antibiot.*, 1971, **24**, 636-640; 1975, **28**, 194-199 (*isol*)
Wasserman, H.H. *et al., Tetrahedron*, 1976, **32**, 1851 (*isol, uv, ir, pmr, struct*)
D'Alessio, R. *et al., Synlett*, 1996, 513 (*synth*)
Fürstner, A. *et al., Angew. Chem., Int. Ed.*, 2003, **42**, 3582-3603 (*rev*)
Kim, D. *et al., J. Appl. Microbiol.*, 2007, **102**, 937-944 (*isol*)
Jolicoeur, B. *et al., Can. J. Chem.*, 2008, **86**, 213-218 (*synth*)

Undulatine† U-32

Alkaloid 20
[123871-90-9]



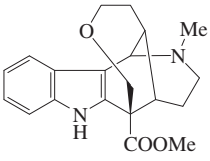
$C_{44}H_{52}N_4O_6$ 732.918
Alkaloid from the trunk bark of *Alstonia sphaerocapitata* and the roots of *Alstonia undulata* (Apocynaceae). Amorph. $[\alpha]_D$ -32 (c, 1 in $CHCl_3$).

De(hydroxymethyl): ***Deformoundulatine***
[123901-45-1]
$C_{43}H_{50}N_4O_5$ 702.892
Alkaloid from the leaves and roots of *Alstonia undulata* (Apocynaceae). Amorph.

Caron, C. *et al., Phytochemistry*, 1984, **23**, 2355 (*isol, uv, ir, pmr, ms*)
Nuzillard, J.-M. *et al., C. R. Hebd. Seances Acad. Sci. Ser. 2*, 1989, **309**, 195 (*isol, uv, cmr, ms, struct*)

Undulifoline U-33

[142750-31-0]



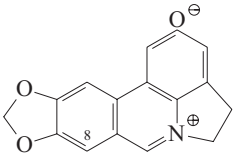
Absolute Configuration

$C_{20}H_{24}N_2O_3$ 340.421
Alkaloid from the stem bark of *Alstonia undulifolia* (Apocynaceae). $[\alpha]_D$ -33 (c, 0.16 in $CHCl_3$). λ_{max} 218 ; 282 ; 290 (MeOH).

Massiot, G. *et al., Phytochemistry*, 1992, **31**, 1078-1079 (*isol, uv, ir, pmr, cmr, ms, struct*)

Ungeremine U-34

Lycobetaine. AT 1840
[2121-12-2]



$C_{16}H_{11}NO_3$ 265.268
Alkaloid from the leaves of *Ungernia minor* and the fruits of *Crinum asiaticum*. Also isol. from the Texas grasshopper *Brachystola magna*. Natural metab. of Lycorine, L-348. DNA intercalator. Shows antineoplastic props. *in vitro*. Mp 270-272° dec.

▶ LD_{50} (rat, orl) 90 mg/kg. Exp. reprod. effects (testicular). OL2827500

Hydrochloride: [2121-16-6]
Mp 314-315° dec.

Hydrobromide: Mp 327-329° dec.

Picrate: Mp 280-282° dec.

8-Methoxy: ***Zeflabetaine***
[105708-77-8]
$C_{17}H_{13}NO_4$ 295.294
Alkaloid from fresh mature seeds of *Zephyranthes flava* (Amaryllidaceae). Light-brown powder (EtOH). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. λ_{max} 262 (ϵ 47860); 292 (ϵ 7940); 305 (ϵ 9550); 415 (ϵ 3550) (MeOH) (Berdy). λ_{max} 267 ; 275 ; 282 ; 292 ; 368 (MeOH-$CHCl_3$) (Berdy). λ_{max} 267 ; 280 ; 435 (MeOH-NaOH) (Berdy).

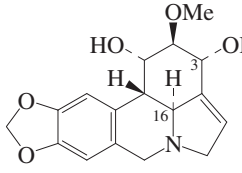
8-Methoxy; hydrochloride:
Yellow powder + $1H_2O$. Mp 300°.

[19488-20-1 , 21326-01-2 , 61221-41-8]

Normatov, M. *et al., Uzb. Khim. Zh.*, 1965, **9**, 25; *CA*, **63**, 7061f (*struct*)
Allayarov, K. *et al., Khim. Prir. Soedin.*, 1970, **6**, 143; *Chem. Nat. Compd. (Engl. Transl.)*, 1970, **6**, 143 (*isol*)
Ru-yun, J. *et al., Drugs of the Future*, 1983, **8**, 118 (*rev*)

Ghosal, S. *et al., J. Chem. Res., Synop.*, 1986, 112 (*isol, uv, pmr, ms, synth*)
Ghosal, S. *et al., Phytochemistry*, 1986, **25**, 1975 (*Zeflabetaine*)
Ghosal, S. *et al., Planta Med.*, 1988, **54**, 114 (*tox*)
Siddiqui, M.A. *et al., Tet. Lett.*, 1990, **31**, 1523 (*synth*)
Lauk, U. *et al., Tet. Lett.*, 1991, **32**, 65 (*synth*)
Stark, L.M. *et al., J.O.C.*, 2000, **65**, 3227-3230 (*synth*)
Pettit, G.R. *et al., J. Nat. Prod.*, 2005, **68**, 1256-1258 (*isol*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, LJB800

Ungminorine U-35



(-)-*form*

$C_{17}H_{19}NO_5$ 317.341

(-)-*form* [27857-09-6]
Alkaloid from the leaves of *Ungernia minor* and from the leaves and bulbs of *Leucojum aestivum* (Amaryllidaceae). Acetylcholinesterase inhibitor. Prisms (Me_2CO). Mp 208-211° (206-208° dec.). $[\alpha]_D^{24}$ -49 (c, 0.67 in EtOH). $[\alpha]_D^{24}$ -31.6 (c, 0.73 in $CHCl_3$).

Methiodide:
Cryst. (Me_2CO/MeOH). Mp 246-248° dec. $[\alpha]_D^{20}$ -42.7 (c, 2.34 in EtOH).

Picrate: Mp 174-175° (170-172°).

N-*Oxide(α-):* ***Ungminorine* N-*oxide***
[119308-28-0]
$C_{17}H_{19}NO_6$ 333.34
Alkaloid from bulbs of *Pancratium maritimum* (Amaryllidaceae). Cryst. (MeOH). Mp 182-184°.

O^3-*Ac:* ***3*-O-*Acetylungminorine***
[101899-55-2]
$C_{19}H_{21}NO_6$ 359.378
Alkaloid from the leaves and bulbs of *Leucojum aestivum* (Amaryllidaceae). Prisms (C_6H_6). Mp 157-160°. $[\alpha]_D^{24}$ -257.1 (c, 0.70 in $CHCl_3$).

Di-Ac:
Needles (Et_2O). Mp 172-174°. $[\alpha]_D^{24}$ -126.8 (c, 0.47 in $CHCl_3$).

O-*De-Me:* ***Pancrassidine***
[69787-51-5]
$C_{16}H_{17}NO_5$ 303.314
Alkaloid from the bulbs of *Pancratium biflorum* infected with *Imperata cylindrica*. Straw-coloured microcryst. (MeOH). Mp 206-208°. $[\alpha]_D^{22}$ -28.2 (c, 0.51 in MeOH).

O-*De-Me, tri-Ac:* Mp 201-204°.

2-Epimer, O-*de-Me:* ***2-Epipancrassidine***
[126381-95-1]
$C_{16}H_{17}NO_5$ 303.314
Alkaloid from the flower-stem fluid of *Crinum latifolium*. Straw-coloured microcryst. (2-propanol). Mp 207-210° dec. $[\alpha]_D^{28}$ -112.5 (c, 0.7 in MeOH).

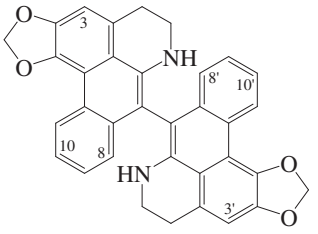
16-Epimer: ***Siculinine***
[126371-96-8]
$C_{17}H_{19}NO_5$ 317.341
Alkaloid from *Sternbergia sicula* (Amaryllidaceae). Amorph. $[\alpha]_D$ -34 (c, 1.9 in MeOH).

(±)-*form*
Alkaloid from *Ungernia vvedenskyi*. Mp 210-212°.

Normatov, M. *et al., Uzb. Khim. Zh.*, 1965, **9**, 25-30; *CA*, **63**, 7061f (*isol*)
Razakov, R. *et al., Khim. Prir. Soedin.*, 1968, **4**, 19-22; *Chem. Nat. Compd. (Engl. Transl.)*, 1968, **4**, 15-17 (*ms*)
Clardy, J.C. *et al., J.A.C.S.*, 1970, **92**, 1781-1782 (*struct*)
Kadyrov, K.A. *et al., Khim. Prir. Soedin.*, 1979, **15**, 418-419; *Chem. Nat. Compd. (Engl. Transl.)*, 1979, **15**, 370-371 (*isol*)
Kobayashi, S. *et al., Chem. Pharm. Bull.*, 1985, **33**, 5258-5263 (*isol, ir, pmr, ms, deriv*)
Ghosal, S. *et al., Phytochemistry*, 1986, **25**, 1097-1102; 1989, **28**, 2535-2537 (*Pancrassidine, 2-Epipancrassidine*)
Suau, R. *et al., Phytochemistry*, 1988, **27**, 3285-3287 (*Ungminorine N-oxide*)
Richomme, P. *et al., J. Nat. Prod.*, 1989, **52**, 1150-1152 (*Siculinine*)
Ingkaninan, K. *et al., J. Nat. Prod.*, 2000, **63**, 803-806 (*isol, pmr, activity*)

Unonopsine U-36

7,7′-Bis(dehydroanonaine). Bidebiline A
[112523-82-7]



$C_{34}H_{24}N_2O_4$ 524.575
Alkaloid from the roots of *Polyalthia debilis* and the bark of *Unonopsis spectabilis*. Yellowish amorph. powder. Mp 240° dec. λ_{max} 261 (log ε 4.65); 335 (log ε 4.1); 384 (log ε 3.89) ($CHCl_3$).

8-Methoxy: ***Bidebiline B***
[543706-57-6]
$C_{35}H_{26}N_2O_5$ 554.601
Alkaloid from the roots of *Polyalthia debilis*. Yellow-green amorph. powder. Mp 245° dec. λ_{max} 260 (log ε 4.69); 335 (log ε 4.22); 384 (log ε 4.08) ($CHCl_3$).

3,3′-Dimethoxy: ***Artabonatine F***
[368422-67-7]
$C_{36}H_{28}N_2O_6$ 584.627
Alkaloid from *Artabotrys uncinatus*. Amorph. powder. λ_{max} 244 (log ε 4.11); 264 (log ε 3.94); 324 (log ε 3.76) (EtOH).

8,8′-Dimethoxy: ***Bidebiline C***
[543706-58-7]
$C_{36}H_{28}N_2O_6$ 584.627
Alkaloid from the roots of *Polyalthia debilis*. Exhibits moderate antimalarial activity. Yellow-green amorph. powder. Mp 210° dec. λ_{max} 266 (log ε 4.72); 334 (log ε 4.29); 384 (log ε 4.16) ($CHCl_3$).

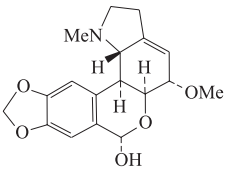
9,9′-Dimethoxy: ***Bidebiline E***
[113425-61-9]
$C_{36}H_{28}N_2O_6$ 584.627
Alkaloid from the roots of *Polyalthia cerasoides*. Pale yellow solid. $[\alpha]_D^{29}$ -42.8 (c, 0.2 in $CHCl_3$). Dec. at 250°. λ_{max} 272 (log ε 4.7); 343 (log ε 4) (MeOH).

10,10′-Dimethoxy: ***Bidebiline D***
[543706-59-8]
$C_{36}H_{28}N_2O_6$ 584.627
Alkaloid from the roots of *Polyalthia debilis*. Yellow-green amorph. powder. Mp 205° dec. λ_{max} 256 (log ε 4.92); 333 (log ε 4.48); 384 (log ε 4.36) ($CHCl_3$).

Laprévote, O. *et al., J. Nat. Prod.*, 1987, **50**, 984-988 (*isol, uv, ir, pmr, ms*)
Hsieh, T.-J. *et al., J. Nat. Prod.*, 2001, **64**, 1157-1161 (*Artabonatine F*)
Kanokmedhakul, S. *et al., J. Nat. Prod.*, 2003, **66**, 616-619; 2007, **70**, 1536-1538 (*Bidebilines*)

Unsevine U-37

[4838-99-7]



Absolute configuration

$C_{18}H_{21}NO_5$ 331.368
Alkaloid from the roots and bulbs of *Ungernia severtzovii* (Amaryllidaceae). Mp 173-174°. $[\alpha]_D^{20}$ +163 (c, 2.5 in $CHCl_3$).

Oxalate:
Cryst. (EtOH). Mp 195-196°.

Methiodide:
Cryst. (EtOH). Mp 249-250°. $[\alpha]_D^{20}$ +146 (c, 1.56 in H_2O).

O-*De-Me,* O^7-*Me:* ***5-Hydroxy-7-O-methyloduline***. *2-Hydroxy-6-*O-*methyloduline*
$C_{18}H_{21}NO_5$ 331.368
Alkaloid from bulbs of *Narcissus* cv. Salome. Mp 245-248°. $[\alpha]_D^{22}$ +91.1 (c, 0.34 in $CHCl_3$). Authors' numbering scheme is nonstandard.

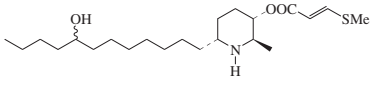
O-*De-Me,* O^7-*Et:* ***Radiatine***†
$C_{19}H_{23}NO_5$ 345.394
Alkaloid from the rhizomes of *Lycoris radiata*. Cryst. (Me_2CO). Mp 171-172.5°. Assumed artifact from processing of the plant with EtOH. 7-config. not defined.

Smirnova, L.S. *et al., Khim. Prir. Soedin.*, 1965, **1**, 322; *Chem. Nat. Compd. (Engl. Transl.)*, 1965, **1**, 252 (*uv, ir*)
Uyeo, S. *et al., Yakugaku Zasshi*, 1965, **85**, 615; *CA*, **63**, 11632e (*Radiatine*)
Razahov, R. *et al., Khim. Prir. Soedin.*, 1967, **3**, 23; *Chem. Nat. Compd. (Engl. Transl.)*, 1967, **3**, 18 (*ms*)

Yagudaev, M.R. *et al., Khim. Prir. Soedin.*, 1970, **6**, 94; *Chem. Nat. Compd. (Engl. Transl.)*, 1970, **6**, 88 (*pmr, struct*)
Clardy, J. *et al., J.O.C.*, 1972, **37**, 49 (*config*)
Almanza, G.R. *et al., Phytochemistry*, 1996, **43**, 1375 (*Hydroxydemethyloduline*)

Uoamine A U-38

[356550-05-5]

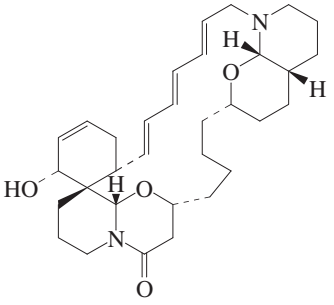


$C_{22}H_{41}NO_3S$ 399.637
Alkaloid from the ascidian *Aplidium uouo*. Oil. $[\alpha]_D$ +5 (c, 0.16 in $CHCl_3$). λ_{max} 275 (ϵ 10740) (EtOH).

Z-Isomer: ***Uoamine B***
[356550-06-6]
$C_{22}H_{41}NO_3S$ 399.637
Alkaloid from *Aplidium uouo*. Oil. $[\alpha]_D$ +8 (c, 0.15 in $CHCl_3$). λ_{max} 283 (ϵ 1372) (EtOH).

McCoy, M.C. *et al., J. Nat. Prod.*, 2001, **64**, 1087-1089 (*Uoamines A,B, isol, pmr, cmr, uv*)

Upenamide U-39

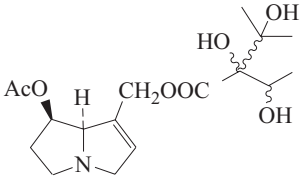


$C_{32}H_{46}N_2O_4$ 522.726
Alkaloid from the Indonesian sponge *Echinochalina* sp. Amorph. solid. $[\alpha]_D$ -9.4 (c, 2.3 in MeOH).

Jimenez, J.I. *et al., J.O.C.*, 2000, **65**, 8465-8469

Uplandicine U-40

7-Acetyl-9-echimidinylretronecine
[74202-10-1]

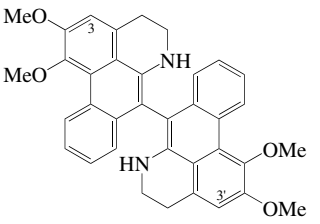


$C_{17}H_{27}NO_7$ 357.403
Ester of *O*-acetylretronecine with echimidinic acid. Alkaloid from the leaves of *Symphytum uplandicum* (Boraginaceae). Noncryst. $[\alpha]_D^{20}$ +0.1 (c, 1.11 in EtOH).

Culvenor, C.C.J. *et al., Aust. J. Chem.*, 1980, **33**, 1105 (*isol, pmr, ms, struct*)

Urabaine U-41

*5,5′,6,6′-Tetrahydro-1,1′,2,2′-tetramethoxy-7,7′-bi-4*H*-dibenzo[*de,g*]quinoline, 9CI*
[108906-93-0]



$C_{36}H_{32}N_2O_4$ 556.66
Alkaloid from the trunk bark of *Oxandra* cf. *major* and roots of *Piptostigma fugax* (Annonaceae). Also isol. from stem bark of *Polyalthia bullata*. Green powder. Mp 280°.

N-*Me:* **N-*Methylurabaine***
[108906-94-1]
$C_{37}H_{34}N_2O_4$ 570.687
Alkaloid from *Oxandra* cf. *major* and *Polyalthia fugax* (Annonaceae). Cryst. (MeOH). Mp 262°.

N,N′-*Di-Me:* **N,N′-*Dimethylurabaine***
[108906-95-2]
$C_{38}H_{36}N_2O_4$ 584.713
Alkaloid from *Oxandra* cf. *major* and *Polyalthia fugax* (Annonaceae). Mp 254°.

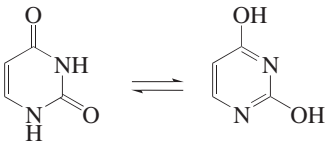
3-Methoxy: ***7-Dehydronornuciferine-7′-dehydro-O-methylisopiline***. *3-Methoxyurabaine*
[182295-42-7]
$C_{37}H_{34}N_2O_5$ 586.686
Alkaloid from stem bark of *Polyalthia bullata*. Yellowish-brown microcryst. (MeOH). Mp >310°.

3,3′-Dimethoxy: ***7,7′-Bisdehydro-O-methylisopiline***. *3,3′-Dimethoxyurabaine*
[182295-40-5]
$C_{38}H_{36}N_2O_6$ 616.712
Alkaloid from stem bark of *Polyalthia bullata*. Yellowish-brown microcryst. (MeOH). Mp 268-270°.

Jossang, A. *et al., Heterocycles*, 1987, **26**, 2191 (*synth, pmr*)
Arango, G. *et al., Phytochemistry*, 1987, **26**, 1227 (*isol, uv, pmr, cmr, ms, struct, derivs*)
Achenbach, H. *et al., Phytochemistry*, 1995, **38**, 1037 (*isol, pmr, cmr*)
Connolly, J.D. *et al., Phytochemistry*, 1996, **43**, 295 (*7,7′-Bisdehydro-O-methylisopiline, 7-Dehydronornuciferine-7′-dehydro-O-methylisopiline*)

Uracil, 8CI, USAN U-42

*2,4(1*H*,3*H*)-Pyrimidinedione, 9CI. 2,4-Dihydroxypyrimidine. 2,4-Pyrimidinediol. Hybar X*
[66-22-8]



$C_4H_4N_2O_2$ 112.088
Dioxo tautomer predominates in solid, soln. and gas phases. Two monooxo tautomers also possible. Widely occurring component of nucleic acids. Normally present in RNA only; an abnormal constit. of DNA as a consequence of cytosine deamination and reincorporation. Removed from DNA by action of DNA-glycosylases. Isol. in free state from ferns *Colysis hemionitedea* and *Microsorium fortunei* in large amts. Used in combination with Tegafur as a potentiator. Inhibits degradn. of the metab. 5-Fluoro-2,4-dihydroxypyrimidine, F-104. Needles (H_2O). Mp 335°. pK_{a1} -3.38; pK_{a2} 9.45; pK_{a3} 13 (25°).
▶ YQ8650000

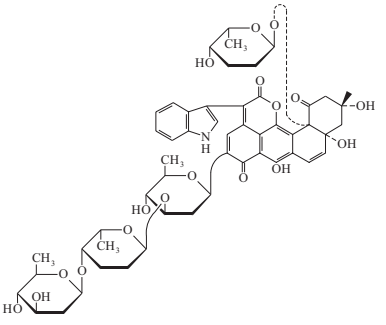
3-Oxide: Uracil N^3*-oxide. 3-Oxyuracil*
[766-44-9]
Prod. by *Streptomyces lydicus* (Mk233, P8541). Antibacterial agent. Cryst. Sol. H_2O. Mp 290-293°.

1-β-D-Riburonofuranoside: ***Antibiotic AJP 117510***. *AJP 117510*
$C_{10}H_{12}N_2O_7$ 272.214
Prod. by an unidentified fungus AJ 117510. Inhibitor of integrin $\alpha_2\beta_1$-collagen binding. Needles. Mp 202-205°. $[\alpha]_D^{23}$ +30.8 (c, 0.5 in H_2O). λ_{max} 261 (ϵ 19100) (H_2O).

Kloetzer, W. *et al., Monatsh. Chem.*, 1964, **95**, 1729-1739 (*oxides*)
Rice, J.M. *et al., J.A.C.S.*, 1965, **87**, 4569 (*ms*)
Stewart, R.F. *et al., Acta Cryst.*, 1967, **23**, 1102 (*cryst struct*)
Ellis, P.D. *et al., J.A.C.S.*, 1973, **95**, 4398 (*cmr*)
Murakami, T. *et al., Yakugaku Zasshi*, 1985, **105**, 655 (*isol*)
Japan. Pat., 1987, 87 143 692; *CA*, **107**, 216184p (*isol, 3-oxide*)
Sato, S. *et al., J. Antibiot.*, 2006, **59**, 251-253 (*AJP 117510*)

Urdamycin D U-43

[104443-44-9]

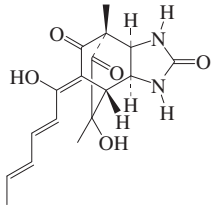


$C_{53}H_{61}NO_{18}$ 1000.061
Anthracycline antibiotic. Prod. by *Streptomyces fradiae*. Active against gram-positive bacteria and tumours. Blue powder. Sol. MeOH, EtOAc; poorly sol. H_2O, hexane. Mp 220° dec. λ_{max} 222 (ϵ 32400); 270 (sh); 324 (ϵ 7500); 412 (ϵ 4200); 600 (ϵ 8500); 625 (sh) (MeOH/NaOH) (Derep). λ_{max} 328 (ϵ 11600); 575 (ϵ 11200) (MeOH) (Derep).

Rohr, J. *et al., J. Antibiot.*, 1988, **41**, 126; 1989, **42**, 1151 (*isol, struct, biosynth*)

Ureidosorbicillinol U-44

[923582-49-4]



Absolute Configuration

$C_{17}H_{20}N_2O_5$ 332.355

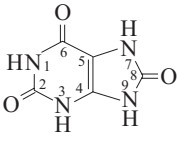
Related to Rezishanone A and Trichotetronine. Isol. from a marine-derived *Paecilomyces marquandii*. Yellow oil. $[\alpha]_D^{25}$ +50 (c, 0.1 in MeOH). λ_{max} 362 (log ε 4.3) (MeOH).

Cabrera, G.M. *et al., J. Nat. Prod.*, 2006, **69**, 1806-1808 (*isol, cd, pmr, cmr, ms*)

Uric acid, 8CI U-45

*7,9-Dihydro-1*H*-purine-2,6,8(3*H*)-trione, 9CI. 2,6,8-Trihydroxypurine. 2,6,8(1*H*,3*H*,9*H*)-Purinetrione*

[69-93-2]



$C_5H_4N_4O_3$ 168.112

Exists in several tautomeric forms. Chief end-product of purine metab. Constit. of urine of carnivorous animals, bird excrement (guano), excrement of reptiles, insects etc. Produced by *Mamestra brassicae*. Present in small amts. in higher plants, esp. seeds. Prod. by marine bacterium strain Cr 11 from *Crassostrea gigas* and by a range of microorganisms from fish and shellfish. Sperm-release pheromone of *Platynereis dumerilii*. Odourless, tasteless, rhombic prisms or plates. Sol. alkalis, glycerol; spar. sol. min. acids; v. spar. sol. H_2O; insol. EtOH, Et_2O. pK_a 5.75; pK_{a2} 10.6. Dec. without melting.

▶ Exp. reprod. effects (male). May evolve HCN when heated. YU7050080

1,3,7,9-Tetra-Me: 1,3,7,9-Tetramethyluric acid. ***Theacrine***

[2309-49-1]

$C_9H_{12}N_4O_3$ 224.219

Isol. from *Camellia sinensis*, *Coffea* spp. and *Theobroma* spp. (tea, coffee and cocao). Needles (H_2O). Spar. sol. Et_2O; sol. hot $CHCl_3$. Mp 229°. Distils without dec. λ_{max} 211 (ε 11860); 231 (ε 6980); 292 (ε 9960) (MeOH).

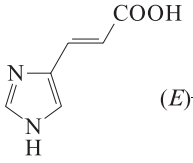
[1198-77-2]

Johnson, T.B. *et al., J.A.C.S.*, 1937, **59**, 1261-1264 (*Theacrine*)
Sutor, D.J. *et al., Acta Cryst.*, 1963, **16**, 97-104 (*Theacrine, cryst struct*)
Lifschitz, C. *et al., Isr. J. Chem.*, 1968, **6**, 827-831 (*ms*)
Kirk-Othmer Encycl. Chem. Technol., 3rd edn., Wiley, 1978, **23**, 608 (*rev, bibl*)
Zheng, X.-Q. *et al., Phytochemistry*, 2003, **60**, 129-134 (*Theacrine*)

Urocanic acid U-46

*3-(1*H*-Imidazol-4-yl)-2-propenoic acid, 9CI. 4-Imidazoleacrylic acid, 8CI. Urocaninic acid*

[104-98-3]



(E)–form

$C_6H_6N_2O_2$ 138.126

Zwitterionic. Found in the stratum corneum of human skin. Sunscreen. Shows antineoplastic activity. Mp 243-245°.

▶ NI3425200

(E)-form [3465-72-3]

Degradn. prod. of histidine. Prod. by *Bacillus subtilis*, *Bacillus cereus*, *Micrococcus lysodeikticus*, *Achromobacter liquidium*, *Micrococcus lysodeikticus* and basidiomycete fungi *Coprinus atramentarius* (common ink cap), *Phallus impudicus* (common stinkhorn). Forms 0.5% of dry weight of human epidermis. Cryst. (dihydrate). Sol. Py, bases; fairly sol. H_2O, butanol, EtOH; poorly sol. EtOAc, hexane. Mp 225° (218-224°). λ_{max} 260 (H_2O) (Berdy).

▶ LD_{50} (mus, ivn) 200 - 400 mg/kg.

Hydrochloride: Mp 189-191°.

Picrate: Mp 218-220°.

Me ester: [70346-51-9]
$C_7H_8N_2O_2$ 152.152
Solid (EtOAc). Mp 100-101° (79-81°). Also descr. as viscous liq.

N^1-(1,1-Dimethyl-3-oxobutyl): 3-[1-(1,1-Dimethyl-3-oxobutyl)imidazol-4-yl]-2-propenoic acid, 9CI
[117082-14-1]
$C_{12}H_{16}N_2O_3$ 236.27
Isol. from rabbit skin tissue. Cryst. (EtOH). Mp 148-149° dec. Poss. artifact.

(Z)-form [7699-35-6]
Mp 175-176°.

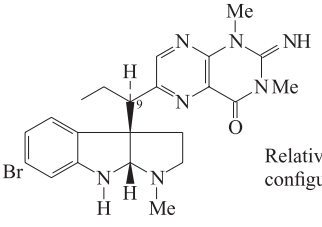
Me ester: [88181-49-1]
Cryst. (toluene). Mp 100-101°.

[6198-55-6]

Aldrich Library of NMR Spectra, 2nd edn., 1983, **2**, 492A (*nmr*)
Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 621A (*ir*)
Edlbacher, S. *et al., Hoppe-Seyler's Z. Physiol. Chem.*, 1942, **276**, 126; 1943, **279**, 63 (*isol, biosynth*)
Biochem. Prep., 1955, **4**, 50 (*synth*)
Gregoire, J. *et al., Bull. Soc. Chim. Belg.*, 1958, **40**, 767 (*isol*)
List, F.H. *et al., Hoppe-Seyler's Z. Physiol. Chem.*, 1960, **319**, 17 (*isol*)
Japan. Pat., 1961, 61 23 094; *CA*, **60**, 2302 (*isol*)
Baden, H. *et al., Nature (London)*, 1966, **210**, 732 (*pmr*)
Shibatari, T. *et al., Appl. Microbiol.*, 1974, **27**, 688 (*biosynth*)
Svinning, T. *et al., Acta Cryst. B*, 1979, **35**, 2813 (*cryst struct*)
Quinn, R. *et al., J.A.C.S.*, 1984, **106**, 4136 (*synth, esters*)
Ienaga, K. *et al., J. Het. Chem.*, 1988, **25**, 1037 (*deriv*)
Shukla, M.K. *et al., Spectrochim. Acta A*, 1995, **51**, 831 (*uv, fluorescence, photochem*)
Blake, A. J. *et al., Acta Cryst. C*, 1997, **53**, 1093-1097 (*cryst struct, Me esters*)
Hanson, K.M. *et al., J.A.C.S.*, 1997, **119**, 2715 (*spectra*)
Mohammad, T. *et al., Org. Prep. Proced. Int.*, 2000, **32**, 581-584 (*Z-form, synth, ir, uv, pmr, cmr*)

Urochordamine A U-47

[151756-66-0]



Relative configuration

$C_{22}H_{26}BrN_7O$ 484.398

Alkaloid from the tunicates *Ciona savignyi* and *Botrylloides* sp. Promotes larvae settlement and metamorphosis in the tunicate. Exhibits antibacterial activity. $[\alpha]_D$ +11.7 (c, 0.263 in $CHCl_3$). λ_{max} 211 (ε 33100); 253 (ε 20000); 313 (ε 4170); 357 (ε 5500) (MeOH) (Derep).

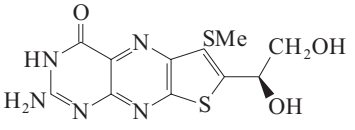
9-Epimer: ***Urochordamine B***
[151851-37-5]
$C_{22}H_{26}BrN_7O$ 484.398
Alkaloid from *Ciona savignyi* and *Botrylloides* sp. Shows antibacterial activity. Metamorphosis promoter and larval settlement inhibitor. $[\alpha]_D$ -36.6 (c, 0.174 in $CHCl_3$). λ_{max} 211 (ε 33100); 253 (ε 20000); 313 (ε 4170); 357 (ε 5500) (MeOH) (Derep).

Tsukamoto, S. *et al., Tet. Lett.*, 1993, **34**, 4819-4822 (*isol, uv, ir, pmr, cmr, struct*)

Urothione U-48

*2-Amino-7-(1,2-dihydroxyethyl)-6-(methylthio)thieno[3,2-g]pteridin-4(3*H*)-one, 9CI*

[17801-77-3]



$C_{11}H_{11}N_5O_3S_2$ 325.372

(R)-form

Orange-red pigment from human urine. Orange cryst. $[\alpha]_D$ -12 (c, 0.24 in 0.05*M* NaOH).

Tri-Ac: [27498-07-3]
Yellow cryst. (Me_2CO/petrol). Mp 220°.

(±)-form [19295-31-9]
Yellow cryst. Mp 260-270° dec.

Koschara, W. *et al., Hoppe-Seyler's Z. Physiol. Chem.*, 1943, **279**, 44 (*isol, synth*)
Goto, M. *et al., Tet. Lett.*, 1967, 4507 (*struct*)
Sakuri, A. *et al., Tet. Lett.*, 1968, 2941 (*synth, struct, uv*)
Horibe, H. *et al., Tet. Lett.*, 1995, **36**, 2631 (*abs config*)

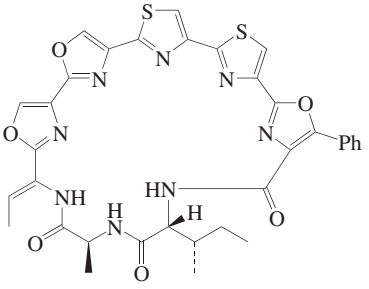
Ursuline† U-49

Struct. unknown. Alkaloid from the stem bark of *Oxandra* cf. *major* (Annonaceae).

Arango, G.J. *et al., Phytochemistry*, 1987, **26**, 2093-2098 (*isol, uv, ir, pmr*)

Urukthapelstatin A U-50

[890085-24-2]



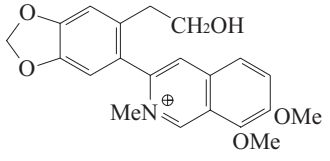
$C_{34}H_{30}N_8O_6S_2$ 710.793

Related to Mechercharstatin A, M-142 and Antibiotic YM 216391, A-1322. Isol. from a marine-derived *Mechercharimyces asporophorigenens* YM11-542. Cytotoxic. Powder. Mp 311° dec. $[\alpha]_D^{22}$ +38 (c, 0.5 in $CHCl_3$). λ_{max} 267 (log ϵ 4.35); 291 (log ϵ 4.52) (MeCN).

Matsuo, Y. *et al., J. Antibiot.*, 2007, **60**, 251-255; 256-260 (*isol, pmr, cmr, cryst struct*)

Usambanoline U-51

[174204-34-3]



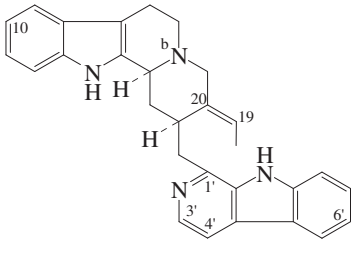
$C_{21}H_{22}NO_5^{\oplus}$ 368.408

Alkaloid from stems of *Zanthoxylum usambarense*. Orange cryst. (MeOH/Et_2O)(as perchlorate). Mp 191° (perchlorate).

Kato, A. *et al., J. Nat. Prod.*, 1996, **59**, 316 (*isol, ir, pmr, cmr, ms, struct*)

Usambarensine U-52

[36150-14-8]



$C_{29}H_{28}N_4$ 432.567

Numbering systems vary. Alkaloid from the roots of *Strychnos usambarensis*, also from *Strychnos dale* and *Strychnos memecycloides* (Loganiceae). Muscarinic receptor antagonist in isolated rat intestine. Shows antiplasmodial, antiamoebic and antimitotic activities. Active against gram-positive bacteria. Powder. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. λ_{max} 233 (ϵ 37153); 291 (ϵ 15850); 339 (ϵ 3390); 349 (ϵ 3390) (MeOH) (Berdy).

N^b-*Oxide:* ***Usambarensine* N^b-*oxide***
$C_{29}H_{28}N_4O$ 448.566
Alkaloid from *Strychnos dale*. Unpubl. results from 1996 review.

N^b-*Me:* ***N^b-Methylusambarensine***
[36150-17-1]
$C_{30}H_{31}N_4^{\oplus}$ 447.602
Quaternary alkaloid from *Strychnos usambarensis* (Loganiceae).

3′,4′-Dihydro: ***Tchibangensine****. 3′,4′-Dihydrousambarensine. 5′,6′-Dihydrousambarensine*
[36150-15-9]
$C_{29}H_{30}N_4$ 434.583
Major alkaloid from the root and stem bark of *Strychnos tchibangensis*. Also from *Strychnos dale* and *Strychnos usambarensis* (Loganiceae). Mp 143-145°. $[\alpha]_D$ +109.7 (c, 0.7 in $CHCl_3$).

3′,4′-Dihydro, N^b*-oxide: 3′,4′-Dihydrousambarensine* N^b*-oxide. 5′,6′-Dihydrousambarensine* N*-oxide*
$C_{29}H_{30}N_4O$ 450.582
Alkaloid from *Strychnos dale*. Unpublished results from 1996 review.

3′,4′-Dihydro, N^b*-Me:* ***N^b-Methyl-3′,4′-dihydrousambarensine****.* N^b*-Methyltchibangensine*
[36150-16-0]
$C_{30}H_{33}N_4^{\oplus}$ 449.617
Quaternary alkaloid from *Strychnos usambarensis* (Loganiceae).

3′,4′-Dihydro, N$^{2'}$*-Me:* ***N$^{2'}$-Methyl-3′,4′-dihydrousambarensine****.* N^4*-Methyl-5′,6′-dihydrousambarensine*
$C_{30}H_{33}N_4^{\oplus}$ 449.618
Quaternary alkaloid from *Strychnos usambarensis*.

19,20β-Dihydro: ***19,20-Dihydrousambarensine***
[144548-37-8]
$C_{29}H_{30}N_4$ 434.583
Alkaloid from root bark of *Strychnos potatorum* (Loganiceae). Also from *Strychnos tchibangensis* and *Strychnos usambarensis*. Active against gram-positive bacteria.

*1′*R*,2′,3′,4′-Tetrahydro:* ***4′,17-Dihydro-17β-tchibangensine****. Tetrahydro-17*R*-usambarensine*
[73034-15-8]
$C_{29}H_{32}N_4$ 436.599
Isol. from the root bark and stem bark of *Strychnos ngouniensis* (Loganiceae). Shows antimicrobial props. Active against gram-positive bacteria. $[\alpha]_D$ +40 (c, 0.5 in EtOH).

*1′*R*,2′,3′,4′-Tetrahydro,* N^b*-oxide(α-):* ***4′,5′,6′,17-Tetrahydro-17*R*-usambarensine* N*-oxide***
[88607-57-2]
$C_{29}H_{32}N_4O^{\oplus}$ 452.598
Alkaloid from *Aspidosperma marcgravianum*. Amorph. powder. $[\alpha]_D$ +15 (c, 0.51 in MeOH).

*1′*R*,2′,3′,4′-Tetrahydro,* N$^{2'}$*-methoxycarbonyl(β-):* ***N$^{b'}$-Carbomethoxy-4′,5′,6′,17-tetrahydro-17*R*-usambarensine***
[88607-55-0]
$C_{31}H_{34}N_4O_2$ 494.635
Alkaloid *Aspidosperma marcgravianum* (Apocynaceaae). Amorph. $[\alpha]_D$ -7 (c, 0.62 in MeOH).

*1′*R*,2′,3′,4′-Tetrahydro,* N$^{2'}$*-ethoxycarbonyl(β-):* ***N$^{b'}$-Carboethoxy-4′,5′,6′,17-tetrahydro-17*R*-usambarensine***
[88607-56-1]
$C_{32}H_{36}N_4O_2$ 508.662
Alkaloid from *Aspidosperma marcgravianum* (Apocynaceaae). Amorph. powder. $[\alpha]_D$ -50 ($CHCl_3$). $[\alpha]_D$ -6 (c, 0.75 In MeOH).

*1′*S*,2′,3′,4′-Tetrahydro:* ***4′,17-Dihydro-17α-tchibangensine****. Tetrahydro-17*S*-usambarensine*
[73034-12-5]
$C_{29}H_{32}N_4$ 436.599
Isol. from the stem bark of *Strychnos ngouniensis* and from *Strychnos dale* (Loganiceae). Active against gram-positive bacteria. $[\alpha]_D$ -11 (c, 1 in EtOH).

6′-Hydroxy: ***10′-Hydroxyusambarensine***
[225939-61-7]
$C_{29}H_{28}N_4O$ 448.566
Alkaloid from *Strychnos usambarensis*. Amorph. powder. λ_{max} 227 (log ϵ 4.18); 253 (log ϵ 3.69); 291 (log ϵ 3.67); 298 (log ϵ 3.75); 362 (log ϵ 3.03) (MeOH).

*6′-Hydroxy, 1′*R*,2′,3′,4′-tetrahydro:* ***10′-Hydroxy-4′,17-dihydro-17β-tchibangensine****. 10′-Hydroxytetrahydro-17*R*-usambarensine*
[88721-08-8]
$C_{29}H_{32}N_4O$ 452.598
Isol. from the root bark and stem bark of *Strychnos ngouniensis* (Loganiceae). Active against gram-positive bacteria. $[\alpha]_D$ +47 (c, 0.5 in EtOH).

*6′-Hydroxy, 1′*S*,2′,3′,4′-tetrahydro:* ***10′-Hydroxy-4′,17-dihydro-17α-tchibangensine****. 10′-Hydroxytetrahydro-17*S*-usambarensine*
[88721-07-7]
$C_{29}H_{32}N_4O$ 452.598
Isol. from the root bark and stem bark of *Strychnos ngouniensis* (Loganiceae). Active against gram-positive bacteria. $[\alpha]_D$ 0 (c, 0.5 in EtOH).

*10-Methoxy, 1′*R*,2′,3′,4′-tetrahydro:* ***Ramiflorine B****. 10-Methoxy-4′,17-dihydro-17β-tchibangensine. 10-Methoxytetrahydrousambarensine*
[173693-53-3]
$C_{30}H_{34}N_4O$ 466.625
Alkaloid from bark of *Aspidosperma ramiflorum*. Mp 194°. $[\alpha]_D^{25}$ +59.2 (c, 1.0 in EtOH).

*10-Methoxy, 1′*S*,2′,3′,4′-tetrahydro:* ***Ramiflorine A****. 10-Methoxy-4′,17-dihydro-*

*17α-tchibangensine. 10-Methoxytetrahydro-17*S*-usambarensine*
[173693-52-2]
$C_{30}H_{34}N_4O$ 466.625
Alkaloid from bark of *Aspidosperma ramiflorum* (Apocynaceae). Mp 159°. $[\alpha]_D^{25}$ +23.52 (c, 1.0 in EtOH).

*6′,10-Dihydroxy, 1′*S*,2′,3′,4′-tetrahydro:* ***10,10′-Dihydroxytetrahydrousambarensine***
[118625-67-5]
$C_{29}H_{32}N_4O_2$ 468.597
Alkaloid from *Strychnos dale.*

*6′,10-Dihydroxy, 1′*S*,2′,3′,4′-tetrahydro, N$^{2'}$-Me:* ***10,10′-Dihydroxy-N$^{4'}$-methyltetrahydrousambarensine***
[118625-69-7]
$C_{30}H_{34}N_4O_2$ 482.624
Alkaloid from *Strychnos dale* and *Strychnos ngouniensis.*

*6′-Methoxy, 10-hydroxy, 1′*S*,2′,3′,4′-tetrahydro:* ***10-Hydroxy-10′-methoxytetrahydrousambarensine***
[118625-66-4]
$C_{30}H_{34}N_4O_2$ 482.624
Alkaloid from *Strychnos dale* and *Strychnos ngouniensis.*

*6′-Methoxy, 10-hydroxy, 1′*S*,2′,3′,4′-tetrahydro, N$^{2'}$-Me: 10-Hydroxy-10′-methoxy-N$^{4'}$-methyltetrahydrousambarensine*
$C_{31}H_{36}N_4O_2$ 496.651
Alkaloid from *Strychnos ngouniensis* and *Strychnos dale.*

*10-Methoxy, 6′-hydroxy, 1′*S*,2,3,4-tetrahydro, N$^{2'}$-Me:* ***1′,2′,3′,4′-Tetrahydro-6′-hydroxy-10-methoxy-N$^{2'}$-methylusambarensine****. 10′-Hydroxy-10-methoxy-N$^{4'}$-methyl-17,4′,5′,6′-tetrahydrousambarensine*
$C_{31}H_{36}N_4O_2$ 496.651
Alkaloid from *Strychnos dale.* Unpubl. results from 1996 review.

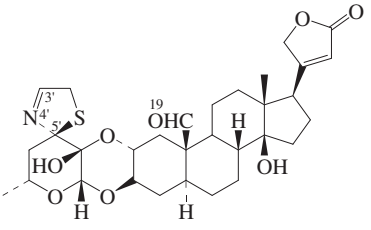
*6′,10-Dimethoxy, 1′*S*,2′,3′,4′-tetrahydro:* ***10,10′-Dimethoxytetrahydrousambarensine***
[101303-79-1]
$C_{31}H_{36}N_4O_2$ 496.651
Alkaloid from the leaves of *Strychnos dale.*

*6′,10-Dimethoxy, 1′*S*,2′,3′,4′-tetrahydro, N$^{2'}$-Me:* ***10,10′-Dimethoxy-N$^{4'}$-methyltetrahydrousambarensine***
[101303-80-4]
$C_{32}H_{38}N_4O_2$ 510.678
Isol. from the leaves of *Strychnos dale* (Loganiceae).

Angenot, L. *et al., J. Pharm. Belg.*, 1971, **26**, 585-588; *CA*, **76**, 72694w (*Usambarensine, Tchibangensine, N^b-Methylusambarensine*)
Dideberg, O. *et al., Acta Cryst. B*, 1975, **31**, 1571-1575 (*cryst struct, Usambarensine*)
Yamada, K. *et al., J.O.C.*, 1975, **40**, 2572-2573 (*synth, config, Tchibangensine*)
Richard, C. *et al., Phytochemistry*, 1978, **17**, 539-541 (*struct, uv, ir, pmr, cmr, ms, Tchibangensine*)
Coune, C.A. *et al., Phytochemistry*, 1980, **19**, 2009-2011 (*cmr*)
Robert, G.M.T. *et al., J. Nat. Prod.*, 1983, **46**, 694-707 (*Tetrahydrousambarensine oxide, Carbalkoxytetrahydrousambarensines*)
Massiot, G. *et al., Tetrahedron*, 1983, **39**, 3645-3656 (*derivs*)
Verpoorte, R. *et al., Tet. Lett.*, 1986, **27**, 239-242 (*Dimethoxytetrahydrousambarensine, Dimethoxy-N-methyltetrahydrousambarensine*)
Caron, C. *et al., Planta Med.*, 1988, **54**, 409-412 (*derivs, activity*)
Massiot, G. *et al., Phytochemistry*, 1992, **31**, 2873 (*19,20-Dihydrousambarensine*)
Wright, C.W. *et al., Phytother. Res.*, 1994, **8**, 149-151 (*activity, isol*)
Bonjeau, K. *et al., Anticancer Res.*, 1996, **16**, 1129-1138 (*activity*)
Marques, M.F.S. *et al., Phytochemistry*, 1996, **41**, 963-967 (*Ramiflorines*)
Delaude, C. *et al., Bull. Soc. R. Sci. Liege*, 1997, **66**, 183-286 (*occur, derivs*)
Frederich, M. *et al., J. Nat. Prod.*, 1999, **62**, 619-621 (*10′-Hydroxyusambarensine, activity*)

Uscharin U-53

[24211-81-2]



$C_{31}H_{41}NO_8S$ 587.733
Constit. of *Asclepias fruticosa* and *Calotropis procera.* Mp 270-271°. $[\alpha]_D$ +29.

▶ Cardiac poison. YV0995600

3′,4′-Dihydro: ***Voruscharin***
[27892-03-1]
$C_{31}H_{43}NO_8S$ 589.749
Constit. of the latex of *Calotropis procera.* Cryst. Mp 165-166°. $[\alpha]_D^{19}$ -60.8 (EtOH).

3′,4′-Dihydro, 3′-oxo: ***2′′-Oxovoruscharin***
[676541-57-4]
$C_{31}H_{41}NO_9S$ 603.732
Constit. of *Calotropis procera* root bark. Numbering systems vary.

3′,4′-Dihydro, 5,6-didehydro, 3′-oxo:
$C_{31}H_{39}NO_9S$ 601.716
Constit. of *Asclepias tuberosa*. Mp 260-280° dec. $[\alpha]_D^{29}$ -9.6 (c, 1.9 in MeOH).

19-Deoxo: ***19-Deoxyuscharin***
[88972-32-1]
$C_{31}H_{43}NO_7S$ 573.749
Constit. of *Asclepias fruticosa.* Pale yellow cryst. ($CHCl_3$). Mp 243.5-244.5°.

19-Deoxo, 15β-hydroxy: ***19-Deoxy-15β-hydroxyuscharin***
[159336-96-6]
$C_{31}H_{43}NO_8S$ 589.749
Constit. of *Asclepias fruticosa.* Amorph. powder. $[\alpha]_D^{22}$ -31.4 (c, 1.1 in MeOH).

16α-Hydroxy: ***16α-Hydroxyuscharin***
[159337-02-7]
$C_{31}H_{41}NO_9S$ 603.732
Constit. of *Asclepias fruticosa.* Amorph. powder. $[\alpha]_D^{22}$ -3.3 (c, 0.4 in MeOH).

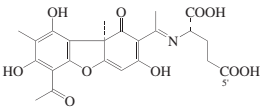
5′-Epimer, 3′, 4′-dihydro, 5,6-didehydro, 3′-oxo, S*-oxide:*
$C_{31}H_{39}NO_{10}S$ 617.716
Constit. of *Asclepias tuberosa*. Mp 240-245° dec. $[\alpha]_D^{26}$ +21.1 (c, 1.1 in MeOH).

17-Epimer, 17-hydroxy: ***17β-Hydroxyuscharin***
[159337-00-5]
$C_{31}H_{41}NO_9S$ 603.732
Constit. of *Asclepias fruticosa.* Amorph. powder. $[\alpha]_D^{22}$ +11.4 (c, 0.7 in MeOH).

Bruschweiter, F. *et al., Helv. Chim. Acta*, 1969, **52**, 2276 (*isol*)
Cheung, H.T.A. *et al., J.C.S. Perkin 1*, 1983, 2827-2835 (*struct, deriv*)
Warashina, T. *et al., Phytochemistry*, 1994, **37**, 217-226 (*derivs*)
Abe, F. *et al., Chem. Pharm. Bull.*, 2000, **48**, 991-993
Van Quaquebeke, E. *et al., J. Med. Chem.*, 2005, **48**, 849-856 (*2′′-Oxovoruscharin*)

Usimine B U-54

[1005771-14-1]



$C_{23}H_{23}NO_{10}$ 473.435
Deriv. of Usnic acid. Constit. of *Ramalina terebrata*. Yellow gum. $[\alpha]_D^{25}$ +159 (c, 0.46 in MeOH). Organism initially reported incorrectly as *Stereocaulon alpinum*. λ_{max} 216 (log ϵ 4.3); 297 (log ϵ 4.2) (MeOH).

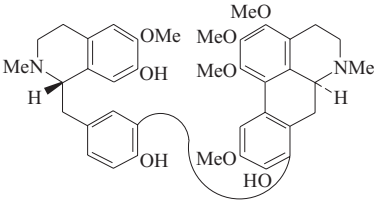
5′-Me ester: ***Usimine A***
[1005771-13-0]
$C_{24}H_{25}NO_{10}$ 487.462
Constit. of *Ramalina terebrata*. Yellow gum. $[\alpha]_D^{25}$ +39 (c, 0.77 in CH_2Cl_2). λ_{max} 216 (log ϵ 4); 297 (log ϵ 4.1) (MeOH).

Z*-Isomer:* ***Usimine C***
[1005771-15-2]
$C_{23}H_{23}NO_{10}$ 473.435
Constit. of *Ramalina terebrata*. Yellow gum. $[\alpha]_D^{25}$ +162 (c, 0.43 in MeOH). λ_{max} 216 (log ϵ 4.3); 297 (log ϵ 4.2) (MeOH).

Seo, C. *et al., J. Nat. Prod.*, 2008, **71**, 710-712; 1322 (*isol, pmr, cmr*)

Uskudaramine U-55

[83983-89-5]

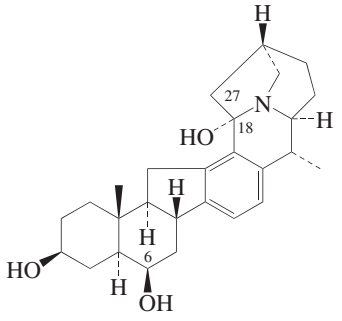


$C_{39}H_{44}N_2O_8$ 668.785
Alkaloid from *Thalictrum minus* var. *microphyllum* (Ranunculaceae). Amorph. $[\alpha]_D^{25}$ +84 (c, 0.15 in MeOH). The first aporphine-benzylisoquinoline dimer bonded through C–C coupling.

Guinaudeau, H. *et al., J.O.C.*, 1982, **47**, 5406 (*uv, cd, pmr, ms, struct*)

Ussuriedine U-56

[125201-07-2]



$C_{27}H_{37}NO_3$ 423.594
Alkaloid from the Chinese herbal drug "ping-bei-mu" (dried bulbs of *Fritillaria ussuriensis*) (Liliaceae). Amorph. powder. Mp 189.5-192.5°. $[\alpha]_D$ +19 (c, 0.79 in $CHCl_3$).

O^{18}-Me: Ussurienine
[116085-12-2]
$C_{28}H_{39}NO_3$ 437.621
Alkaloid artifact from dried bulbs of *Fritillaria ussuriensis* (Liliaceae). Needles (MeOH). Mp 300°. $[\alpha]_D$ +20 (c, 0.92 in $CHCl_3$). λ_{max} 271 (ϵ 1280); 280 (ϵ 1280) (MeOH) (Derep).

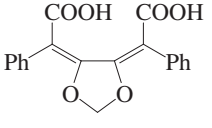
6-Ketone: ***Ussuriedinone***
[125201-08-3]
$C_{27}H_{35}NO_3$ 421.578
Alkaloid from dried bulbs of *Fritillaria ussuriensis* (Liliaceae). Needles (Me_2CO). Mp 268-272°. $[\alpha]_D$ +12 (c, 0.80 in $CHCl_3$).

6-Ketone, O^{18}-Me: Ussurienone
[125941-96-0]
$C_{28}H_{37}NO_3$ 435.605
Alkaloid artifact from dried bulbs of *Fritillaria ussuriensis* (Liliaceae). Amorph. powder. Mp 110-116°. $[\alpha]_D$ +8 (c, 0.71 in $CHCl_3$).

Kitamura, Y. *et al., Tetrahedron*, 1989, **45**, 5755-5766 (*isol, uv, ir, pmr, cmr, ms, cryst struct*)

Ustalic acid U-57

α,α′-(1,3-Dioxolane-4,5-diylidene)bis[-benzeneacetic acid], 9CI. 3,4-(Methylenedioxy)-2,5-diphenyl-2,4-hexadienedioic acid
[470699-70-8]



$C_{19}H_{14}O_6$ 338.316
Isol. from *Tricholoma ustale*. ATPase inhibitor. Toxic principle. Cryst. Mp 200-202°.

2-Hydroxyethylamide: ***Ustalic ethanolamide***
[470699-73-1]
$C_{21}H_{19}NO_6$ 381.384
Isol. from *Tricholoma ustale*. Cryst. Mp 128-131°.

Glycine amide: ***Glycoustalic acid***. *Ustalic glycine amide*
[470699-72-0]
$C_{21}H_{17}NO_7$ 395.368
Isol. from *Tricholoma ustale*. Cryst. Mp 149-152°.

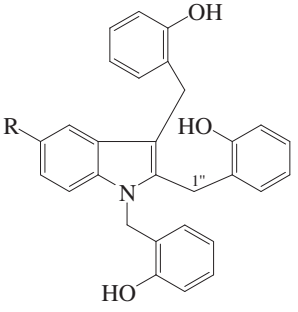
L-Proline amide: ***Ustalic prolinamide***
[470699-71-9]
$C_{24}H_{21}NO_7$ 435.432
Isol. from *Tricholoma ustale*. Cryst. Mp 200-202°. $[\alpha]_D^{20}$ -28 (c, 0.1 in MeOH).

Imide: see 4,8-Diphenyl-5*H*-1,3-dioxolo[4,5-*d*]azepine-5,7(6*H*)-dione, D-816

Sano, Y. *et al., Chem. Comm.*, 2002, 1384-1385 (*isol, pmr, cmr, cryst struct*)
Sawayama, Y. *et al., Biosci., Biotechnol., Biochem.*, 2006, **70**, 2998-3003 (*synth*)
Hayakawa, I. *et al., Tetrahedron*, 2008, **5873**, 5877 (*synth*)

Uvarindole A U-59

[94977-29-4]



R = H

$C_{29}H_{25}NO_3$ 435.521
Alkaloid from the stem bark of *Uvaria angolensis* (Annonaceae). Needles (EtOAc/cyclohexane). Mp 66-68°.

1″-Oxo, N-*de(hydroxybenzyl):* ***Uvarindole C***
[94977-31-8]
$C_{22}H_{17}NO_3$ 343.381
Alkaloid from the stem bark of *Uvaria angolensis* (Annonaceae). Needles ($CHCl_3$). Mp 151-153°.

Waterman, P.G. *et al., Chem. Comm.*, 1984, 1280 (*uv, pmr, cmr, ms, struct*)

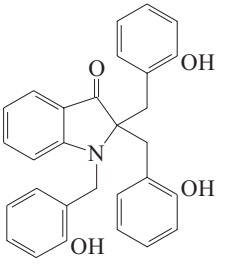
Uvarindole B U-60

[94977-30-7]
As Uvarindole A, U-59 with
R = 2-Hydroxybenzyl
$C_{36}H_{31}NO_4$ 541.645
Alkaloid from the stem bark of *Uvaria angolensis* (Annonaceae). Gummy solid.

Waterman, P.G. *et al., Chem. Comm.*, 1984, 1280 (*pmr, cmr, struct*)

Uvarindole D U-61

[94977-32-9]

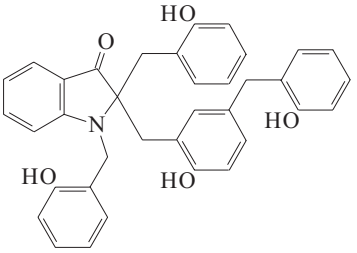


$C_{29}H_{25}NO_4$ 451.521
Alkaloid from the stem bark of *Uvaria angolensis* (Annonaceae). Yellow plates ($CHCl_3$/MeOH). Mp 170-174°.

Waterman, P.G. *et al., Chem. Comm.*, 1984, 1280 (*uv, ir, pmr, cmr, ms, struct*)

Uvarindole E U-62

[113689-35-3]

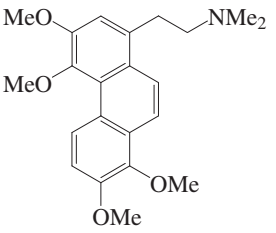


$C_{36}H_{31}NO_5$ 557.645
Tentative struct. Alkaloid from stem bark of *Uvaria angolensis* (Annonaceae).

Muhammad, I. *et al., J. Bangladesh Acad. Sci.*, 1987, **11**, 195; *CA*, **108**, 143090p

Uvariopsamine U-63

*3,4,7,8-Tetramethoxy-*N,N-*dimethyl-1-phenanthreneethanamine, 9CI. 1-(2-Dimethylaminoethyl)-3,4,7,8-tetramethoxyphenanthrene*
[38764-73-7]



$C_{22}H_{27}NO_4$ 369.46
Alkaloid from the bark of *Uvariopsis*

guineensis (Annonaceae). Yellow-orange needles (Me_2CO)(as picrate). Mp 181-182°. (picrate).

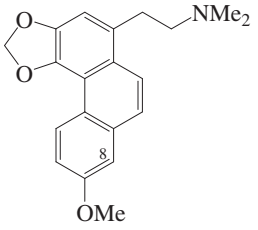
N-*Oxide:* ***Uvariopsamine N-oxide***
[38820-51-8]
$C_{22}H_{27}NO_5$ 385.459
Alkaloid from the bark of *Uvariopsis guineensis* (Annonaceae). Yellow-orange cryst. (Me_2CO)(as picrate). Mp 184-185°. (picrate).

N-*De-Me:* ***Noruvariopsamine***
[38764-74-8]
$C_{21}H_{25}NO_4$ 355.433
Alkaloid from the bark of *Uvariopsis guineensis* (Annonaceae). Mp 224-225° (picrate).

Leboeuf, M. *et al., Phytochemistry*, 1972, **11**, 2833 (*isol, pmr, ms, struct*)

Uvariopsine U-64

9-Methoxy-N,N-*dimethylphenanthro[3,4-d]-1,3-dioxole-5-ethanamine, 9CI. 1-(2-Dimethylaminoethyl)-7-methoxy-3,4-methylenedioxyphenanthrene*
[30147-99-0]



$C_{20}H_{21}NO_3$ 323.391

Aporphine-derived numbering shown. Alkaloid from the bark of *Uvariopsis guineensis* and from *Uvariopsis solheidii* (Annonaceae). Mp 95-96°. λ_{max} 216 (log ϵ 3.09); 236 (log ϵ 5); 258 (log ϵ 5); 284 (log ϵ 2.25); 322 (log ϵ 1.44); 353 (log ϵ 0.43) (MeOH).

8-Methoxy: ***8-Methoxyuvariopsine***
[38820-55-2]
$C_{21}H_{23}NO_4$ 353.417
Alkaloid from the bark of *Uvariopsis guineensis* (Annonaceae). Cryst. (hexane). Mp 99-100°.

Bouquet, A. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1970, **271**, 1100-1102 (*uv, pmr, ms, struct*)
Leboeuf, M. *et al., Phytochemistry*, 1972, **11**, 2833-2840 (*8-Methoxyuvariopsine*)
Lopez-Martin, J. *et al., Chem. Pharm. Bull.*, 2002, **50**, 1613-1615 (*isol, pmr, cmr*)

Vakatidine V-1

[1361-77-9]

$C_{22}H_{33}NO_2$ 343.508

Diterpenoid alkaloid. Struct. unknown. Alkaloid from the roots of *Aconitum palmatum* (Ranunculaceae). Mp 295-296°.

Hydrochloride: Mp 304°.

Hydrobromide: Mp 272-274°.

Singh, N. *et al., J. Indian Chem. Soc.*, 1965, **42**, 49-50 (*uv, ir*)

Vakatisine V-2

[1361-79-1]

[39389-34-9 (chloride)]

$C_{22}H_{34}NO_2^{\oplus}$ 344.516

Struct. unknown. Quaternary alkaloid from the roots of *Aconitum palmatum* (Ranunculaceae). Mp 306° (as chloride). $[\alpha]_D^{22}$ +17.76 (EtOH) (chloride). CAS no. refers to chloride.

Singh, N. *et al., J. Indian Chem. Soc.*, 1965, **42**, 49-50 (*uv, ir*)

Singh, N. *et al., Indian J. Chem.*, 1972, **10**, 953-954 (*ir, pmr*)

Vakatisinine V-3

[1361-78-0]

$C_{22}H_{33}NO_4$ 375.507

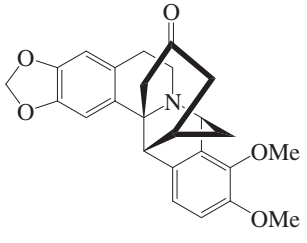
Diterpenoid alkaloid. Struct. unknown. Alkaloid from the roots of *Aconitum palmatum* (Ranunculaceae). Mp 308°.

Hydrochloride: Mp 303°.

Picrolonate: Mp 302° dec.

Singh, N. *et al., J. Indian Chem. Soc.*, 1965, **42**, 49-50 (*uv, ir*)

Valachine V-4



$C_{25}H_{25}NO_5$ 419.476

(±)-*form* [95307-59-8]

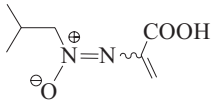
Alkaloid from *Berberis valdiviana* (Berberidaceae). Cryst. (EtOAc/MeOH/Et_2O). Mp 237-238°.

Firdous, S. *et al., Chem. Comm.*, 1984, 1371 (*isol, uv, ir, pmr, ms, struct*)

Valanimycin V-5

2-[(2-Methylpropyl)-ONN-*azoxy]-2-propenoic acid, 9CI*

[101961-60-8]



$C_7H_{12}N_2O_3$ 172.183

Prod. by *Streptomyces viridifaciens* (MG456.4F10; P8146). Active against some bacteria (gram-positive and -negative) and leukaemia and carcinoma. Oil; powder (as NH_3 adduct). Sol. EtOAc, MeOH, H_2O; poorly sol. $CHCl_3$, hexane. Mp 150.5° dec. (NH_3 adduct). pK_a 4.7. λ_{max} 230 (sh) (H_2O) (Derep). λ_{max} 230 (MeOH) (Berdy).

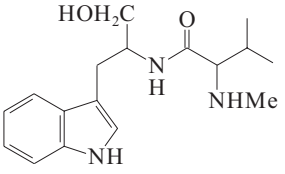
▶ AT2140000

Yamato, M. *et al., J. Antibiot.*, 1986, **39**, 184; 1263 (*isol, biosynth, props*)

Tao, T. *et al., Org. Lett.*, 2003, **5**, 1213-1215 (*biosynth*)

Valindolmycin V-6

[102141-01-5]



$C_{17}H_{25}N_3O_2$ 303.403

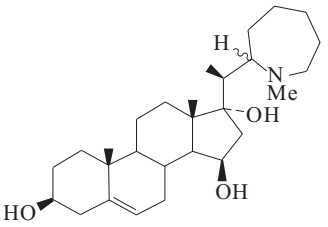
Indole antibiotic. Prod. by *Streptomyces kitasatoensis wenshanensis.* Active against gram-positive bacteria and anaerobes. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. λ_{max} 233 (ϵ 22900); 274 (ϵ 4670); 282 (ϵ 5000); 290 (ϵ 4350) (MeOH) (Berdy).

Jin, W. *et al., CA*, 1989, **111**, 20567d (*isol, struct*)

Valivine V-7

*20-(Hexahydro-1-methyl-1*H-*azepin-2-yl)pregn-5-ene-3,15,17-triol, 9CI*

[85403-65-2]



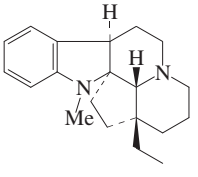
$C_{28}H_{47}NO_3$ 445.684

Struct. dubious. Prob. a piperidine related to Sevcoridinine, S-275 or a solanidane. No further reports to 2006. Alkaloid from *Fritillaria valujevii* (Liliaceae). Cryst. (MeOH). Mp 256-258°. $[\alpha]_D$ -48 (c, 1 in $CHCl_3$/MeOH 1:1).

Samikov, K. *et al., Khim. Prir. Soedin.*, 1982, **18**, 644-646; *Chem. Nat. Compd. (Engl. Transl.)*, 1983, **18**, 610-611 (*isol, ir, ms, pmr*)

Vallesamidine V-8

[19637-77-5]



Absolute Configuration

$C_{20}H_{28}N_2$ 296.455

Alkaloid from *Vallesia dichotoma* (Apocynaceae). Noncryst. $[\alpha]_D$ -55 ($CHCl_3$). λ_{max} 206 (log ϵ 4); 257 (log ϵ 3.65); 301 (log ϵ 3.15) ($CHCl_3$).

Walser, A. *et al., Helv. Chim. Acta*, 1965, **48**, 391-404 (*isol, uv, ir, pmr, ms*)

Brown, S.H. *et al., Ann. Chim. Farm.*, 1968, **90**, 2445 (*cryst struct, ms*)

Dickman, D.A. *et al., J.A.C.S.*, 1989, **111**, 1528-1530 (*synth*)

Heathcock, C.H. *et al., J.O.C.*, 1990, **55**, 798-811 (*synth, ir, pmr, cmr*)

Costa, P.R.R. *et al., Tetrahedron: Asymmetry*, 1993, **4**, 1499-1500 (*synth*)

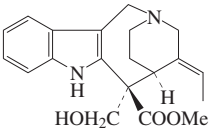
Tanino, H. *et al., Tetrahedron*, 2004, **60**, 3273-3282 (*synth*)

Ho, T.-L. *et al., Helv. Chim. Acta*, 2006, **89**, 249-257 (*synth*)

Vallesamine V-9

*Methyl 4-ethylidene-1,3,4,5,6,7-hexahydro-6-(hydroxymethyl)-2,5-ethano-2*H-*azocino[4,3-*b*]indole-6-carboxylate, 9CI*

[3368-87-4]



Absolute Configuration

$C_{20}H_{24}N_2O_3$ 340.421

Alkaloid from *Vallesia dichotoma*, *Hazunta modesta*, *Tabernaemontana amblyocarpa*, *Tabernaemontana dichotoma* and *Alstonia scholaris* (Apocynaceae). Mp 163-165°. $[\alpha]_D^{27}$ +165 ($CHCl_3$). pK_a 8.2 (33% DMF aq.).

Methiodide: Mp 175-180° dec. $[\alpha]_D^{28}$ +103 (EtOH).

N^b-*Oxide:* ***Vallesamine* N^b-*oxide***

[126594-73-8]

$C_{20}H_{24}N_2O_4$ 356.421

Alkaloid from the leaves of *Alstonia scholaris* (Apocynaceae). Amorph. solid. $[\alpha]_D^{23}$ +76.1 (c, 1.14 in MeOH).

O-*Ac:* **O-*Acetylvallesamine***

[56293-11-9]

$C_{22}H_{26}N_2O_4$ 382.458

Alkaloid from the wood stem and stem bark of *Ervatamia heyneana* and from *Vallesia dichotoma* (Apocynaceae). Shows mod. cytotoxic activity *vs.* mouse P-388 carcinoma. Cryst. (Et_2O/hexane or C_6H_6/hexane). Mp 168-171°. $[\alpha]_D^{25}$ +151 ($CHCl_3$). pK_a 7.85 (33% DMF aq.).

Z-Isomer: **Z-*Vallesamine***

[107657-44-3]

$C_{20}H_{24}N_2O_3$ 340.421

Alkaloid from the leaves of *Alstonia scholaris* (Apocynaceae). Amorph. solid. $[\alpha]_D$ +182 ($CHCl_3$).

Walser, A. *et al., Helv. Chim. Acta*, 1964, **47**, 2072 (*isol, uv, ir, pmr, ms, struct*)

Scott, A.I. *et al., Chem. Comm.*, 1978, 947 (*synth*)

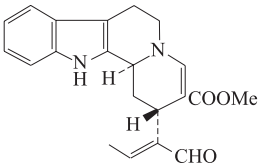
Gunasekera, S.P. *et al., Phytochemistry*, 1980, **19**, 1213 (O-*Acetylvallesamine*)

Perera, P. *et al., Planta Med.*, 1984, **50**, 251 (*isol, uv, ir, pmr, cmr, ms*)

Atta-ur-Rahman, *et al., Heterocycles*, 1987, **26**, 413 (*Z-Vallesamine*)

Yamauchi, T. *et al., Phytochemistry*, 1990, **29**, 3547 (*N^b-oxide*)

Vallesiachotamine V-10



(*E*)–*form*

$C_{21}H_{22}N_2O_3$ 350.416

(*E*)-*form* [5523-37-5]

Alkaloid originally isol. from *Vallesia dichotoma* as a mixt. of geom. isomers and subsequently reported (probably also as a mixt. of isomers) from the roots of *Rhazya orientalis* and the leaves of *Rhazya stricta*. Also present in the seeds of *Strychnos tricalysioides* and from *Amsonia brevifolia*. Shows cytotoxic activity against mouse P-388 and human nasopharynx KB carcinoma cells. Clusters ($CHCl_3$/MeOH). Poorly sol. hexane. Mp 245-247°. $[\alpha]_D^{25}$ +204 (c, 0.1 in $CHCl_3$). λ_{max} 220 (ϵ 35500); 290 (ϵ 79400) (EtOH) (Berdy).

(*Z*)-*form*

Isovallesiachotamine

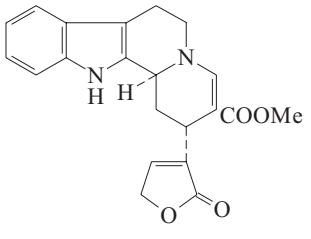
[34384-71-9]

Alkaloid from the seeds of *Strychnos tricalysioides* and *Rhazya stricta* legumes (without seeds)(Loganiceae, Apocynaceae). Prisms ($CHCl_3$/MeOH). Mp 235-237°. $[\alpha]_D^{25}$ -54 (c, 0.06 in $CHCl_3$).

Djerassi, C. *et al., J.A.C.S.*, 1966, **88**, 1792
Evans, D.A. *et al., Phytochemistry*, 1968, **7**, 1429 (*isol*)
Waterman, P.G. *et al., Planta Med.*, 1982, **45**, 28-30 (*isol, uv, ir, pmr, ms*)
Spitzner, D. *et al., Angew. Chem., Int. Ed.*, 1984, **23**, 984 (*synth*)
Atta-ur-Rahman, *et al., J. Nat. Prod.*, 1984, **47**, 388 (*isol, uv, ir, ms*)
Spitzner, D. *et al., J.O.C.*, 1988, **53**, 2274 (*synth*)
Amann, R. *et al., Annalen*, 1996, 349 (*synth*)
Vencato, I. *et al., Acta Cryst. E*, 2006, **62**, 429-431 (*cryst struct*)

Vallesiachotamine lactone V-11

[191288-40-1]



$C_{21}H_{20}N_2O_4$ 364.4

Alkaloid from aerial parts of *Cephaelis dichroa* (Rubiaceae).

Solis, P.N. *et al., Phytochemistry*, 1993, **33**, 1117-1119 (*isol, uv, ir, pmr, ms, struct*)
Engler, A. *et al., Nat. Prod. Lett.*, 1997, **9**, 225-228 (*synth*)

Vallopurfine V-12

[1361-83-7]

$C_{18}H_{23}NO_5$ 333.383

Amaryllidaceae alkaloid. Struct. unknown. Isol. from *Vallota purpurea* (preferred genus name *Cyrtanthus*) (Amaryllidaceae). Mp 244-247° dec. $[\alpha]_D$ -90 (c, 0.2 in EtOH).

Picrate:

Fine needles (Me_2CO). Mp 193° dec.

Döpke, W. *et al., Naturwissenschaften*, 1965, **52**, 347 (*isol, uv, ir*)

Vallotidine V-13

$C_{18}H_{21}NO_5$ 331.368

Amaryllidaceae alkaloid. Struct. unknown. Isol. from *Vallota purpurea* (preferred genus name *Cyrtanthus*) (Amaryllidaceae). Prisms (Me_2CO). Mp 172-173°. $[\alpha]_D^{22}$ +57 (c, 0.25 in $CHCl_3$).

Boit, H.-G. *et al., Chem. Ber.*, 1956, **89**, 1129-1134 (*isol*)

Vallotine V-14

$C_{17}H_{19}NO_5$ 317.341

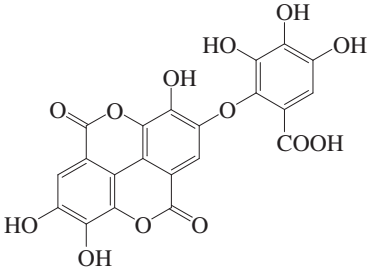
Amaryllidaceae alkaloid. Struct. unknown. Isol. from *Vallota purpurea* (preferred genus name *Cyrtanthus*) (Amaryllidaceae). Prisms (Me_2CO). Mp 217-218° dec. $[\alpha]_D^{22}$ -53 (c, 0.2 in $CHCl_3$).

Boit, H.-G. *et al., Chem. Ber.*, 1956, **89**, 1129-1134 (*isol*)

Valoneic acid dilactone V-15

Valoneic dilactone. Valonaeic dilactone

[60202-70-2]



$C_{21}H_{10}O_{13}$ 470.302

Ellagitannin. Constit. of *Elaeagnus umbellata, Epilobium hirsutum, Lagerstroemia* sp. and *Lythrum salicaria*. Xanthine oxidase inhibitor.

Amide: ***Epilobamide A***. *Valoneic acid amide dilactone*

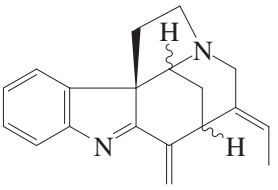
[194298-95-8]

$C_{21}H_{11}NO_{12}$ 469.317

Constit. of the whole plant of *Epilobium hirsutum*.

Schmidt, O.T. *et al., Annalen*, 1955, **591**, 156 (*struct*)
Nawwar, M.A.M. *et al., J. Mass Spectrom.*, 1997, **32**, 645-654 (*Epilobamide A*)

Valparicine V-16



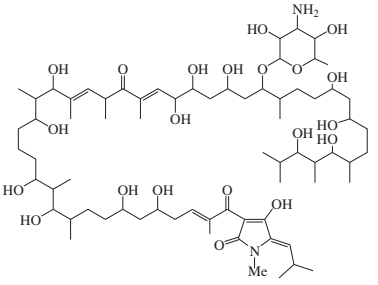
$C_{19}H_{20}N_2$ 276.38

Alkaloid from the stem bark of *Kopsia arborea*. Oil. $[\alpha]_D$ -40 (c, 0.22 in $CHCl_3$). λ_{max} 228 ; 297 (EtOH).

Lim, K.-H. *et al., Tet. Lett.*, 2006, **47**, 5037-5039 (*isol, pmr, cmr*)

Vancoresmycin V-17

[268728-82-1]

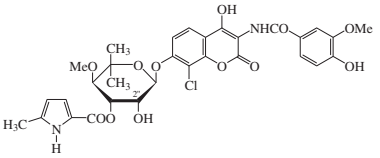


$C_{71}H_{126}N_2O_{21}$ 1343.777

Prod. by *Amycolatopsis* sp. ST 101170. Powder. λ_{max} 234 (log ϵ 4.39); 280 (log ϵ 4.29) (MeOH).

Pat. Coop. Treaty (WIPO), 2000, 00 28 064; *CA*, **132**, 346708q
Hopmann, C. *et al., Tet. Lett.*, 2002, **43**, 435-438 (*isol, pmr, cmr*)

Vanillobiocin V-18



$C_{31}H_{31}ClN_2O_{12}$ 659.045

Coumermycin-type antibiotic. Closely related to Chlorobiocin, C-395 and Novobiocin. Prod. by a mutant of *Streptomyces roseochromogenes*.

Dechloro: ***Declovanillobiocin***

$C_{31}H_{32}N_2O_{12}$ 624.6

Prod. by a mutant of *Streptomyces roseochromogenes*.

2″-(5-Methyl-2-pyrrolecarbonyl) isomer: ***Isovanillobiocin***

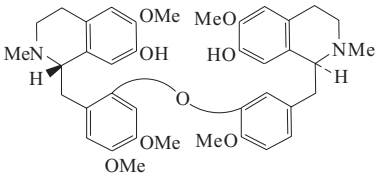
$C_{31}H_{31}ClN_2O_{12}$ 659.045

Prod. by a mutant of *Streptomyces roseochromogenes*.

Freitag, A. *et al., J. Antibiot.*, 2004, **57**, 205-209 (*isol, pmr*)

Vanuatine V-19

[87183-74-2]



$C_{39}H_{46}N_2O_8$ 670.801

Alkaloid from the bark of *Hernandia peltata* (Hernandiaceae). $[\alpha]_D^{25}$ +138 (c, 0.12 in MeOH).

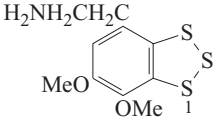
Di-Me ether: $[\alpha]_D^{25}$ +78 (c, 0.12 in MeOH).

Bruneton, J. *et al., J.O.C.*, 1983, **48**, 3957 (*isol, uv, cd, pmr, ms, struct*)

Varacin A V-20

6,7-Dimethoxy-4-benzotrithioleethanamine, 9CI

[162857-71-8]



$C_{10}H_{13}NO_2S_3$ 275.416

Alkaloid from the Far Eastern ascidian *Polycitor* sp.

1-S-*Oxide:* ***Varacin B***
[162901-84-0]
$C_{10}H_{13}NO_3S_3$ 291.416
From *Polycitor* sp.

3-S-*Oxide:* ***Varacin C***
[162857-72-9]
$C_{10}H_{13}NO_3S_3$ 291.416
From *Polycitor* sp.

Ac:
Exhibits potent antifungal and antimicrobial activity. Thin yellow cryst. (MeOH). Mp 140-142°.

Ac, 1-S-*oxide:*
Exhibits potent antifungal and antimicrobial activity. Thin yellow cryst. (MeOH). Mp 131-133°.

Ac, 3-S-*oxide:*
Exhibits potent antifungal and antimicrobial activity. Thin yellow cryst. (MeOH). Mp 70-73°.

5-(Methylthio): 6-(2-Aminoethyl)-3,4-dimethoxy-5-(methylthio)benzotrithiane. ***5-(Methylthio)varacin A***
$C_{11}H_{15}NO_2S_4$ 321.509
Isol. from a *Lissoclinum* sp. Protein kinase C inhibitor. Not in CA. λ_{max} 211 (ϵ 34800); 240 (ϵ 21000); 271 (ϵ 14700) (MeOH) (Berdy).

5-(Methylthio), N,N-*di-Me: 6,7-Dimethoxy*-N,N-*dimethyl-5-(methylthio)-4-benzotrithioleethanamine. 6-(2-Aminoethyl)-3,4-dimethoxybenzotrithiane*
$C_{13}H_{19}NO_2S_4$ 349.563
Isol. from *Lissoclinum japonicum*. Protein kinase C inhibitor. Pale yellow oil (as trifluoroacetate). λ_{max} 209 (ϵ 15900); 238 (ϵ 7410); 277 (ϵ 5960) (MeOH).

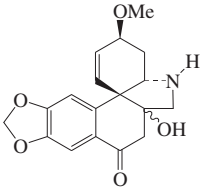
Campagnone, R.S. *et al., Tetrahedron*, 1994, **50**, 12785-12792 (*methylthio derivs*)

Makarieva, T.N. *et al., J. Nat. Prod.*, 1995, **58**, 254 (*isol, ir, pmr, ms, struct*)

Lee, A.H.F. *et al., J.A.C.S.*, 2002, **124**, 13972-13973 (*Varacin C, synth*)

Varadine V-21

[71639-34-4]



Relative Configuration

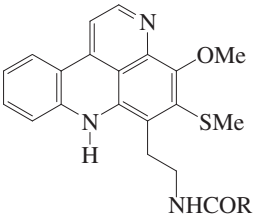
$C_{18}H_{19}NO_5$ 329.352

Unique subtype of Amaryllidaceae alkaloid. Alkaloid from *Hymenocallis arenicola* (Amaryllidaceae). Prisms (Me_2CO). Mp 95°.

Dõpke, W. *et al., Z. Chem.*, 1979, **19**, 215-216

Varamine A V-22

[122093-14-5]



R = CH_2CH_3

$C_{22}H_{23}N_3O_2S$ 393.509

Alkaloid from the tunicate *Lissoclinum vareau*. Cytotoxic agent (about 1 order of magnitude more toxic than the cystodytins which lack the thiomethyl group). Topoisomerase inhibitor. Orange solid. Sol. MeOH, $CHCl_3$. λ_{max} 224 (ϵ 24400); 228 (sh) ; 240 (sh) ; 263 (sh) ; 280 (sh) ; 291 (ϵ 31100); 339 (ϵ 20400); 359 (ϵ 4520); 376 (ϵ 4640); 527 (ϵ 5670); 552 (sh) (pH 2) (Derep). λ_{max} 232 (ϵ 31500); 275 (ϵ 25800); 292 (sh) ; 324 (sh) ; 382 (ϵ 3530); 464 (ϵ 5170); 494 (sh) (MeOH) (Derep).

▶ Toxic.

Molinski, T.F. *et al., J.O.C.*, 1989, **54**, 4256-4259 (*isol, uv, ir, pmr, cmr, ms, struct*)

Varamine B V-23

[122093-16-7]

As Varamine A, V-22 with

R = CH_3

$C_{21}H_{21}N_3O_2S$ 379.482

Alkaloid from the tunicate *Lissoclinum vareau*. Cytotoxic agent. Topoisomerase inhibitor. Orange solid. Sol. MeOH, $CHCl_3$. λ_{max} 224 (ϵ 24400); 228 (sh) ; 240 (sh) ; 263 (sh) ; 280 (sh) ; 291 (ϵ 31100); 339 (ϵ 20400); 359 (ϵ 4520); 376 (ϵ 4640); 527 (ϵ 5670); 552 (sh) (pH 2) (Derep). λ_{max} 232 (ϵ 31500); 275 (ϵ 25800); 292 (sh) ; 324 (sh) ; 382 (ϵ 3530); 464 (ϵ 5170); 494 (sh) (MeOH) (Derep). λ_{max} 234 (ϵ 25900); 274 (ϵ 21400); 382 (ϵ 3040); 462 (ϵ 4320) (MeOH/HCl) (Berdy). λ_{max} 223 (ϵ 20570); 294 (ϵ 27400); 311 (ϵ 17300); 379 (ϵ 4190); 529 (ϵ 4720) (MeOH/HCl) (Berdy).

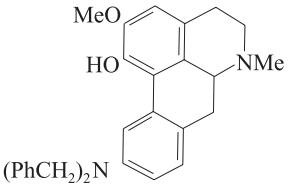
▶ Toxic.

Molinski, T.F. *et al., J.O.C.*, 1989, **54**, 4256-4259 (*isol, uv, ir, pmr, cmr, struct*)

Variabiline† V-24

10-[Bis(phenylmethyl)amino]-5,6,6a,7-tetrahydro-2-methoxy-6-methyl-4H-dibenzo[de,g]quinolin-1-ol, 9CI. 10-(Dibenzylamino)-1-hydroxy-2-methoxyaporphine

[40374-54-7]



$C_{32}H_{32}N_2O_2$ 476.617

(±)-form

Alkaloid from *Ocotea variabilis* (Lauraceae). Mp 116-117°.

Hydrochloride: Mp 230-232° dec.

Hydrochloride (1:2): Mp 185-187° dec.

Cava, M.P. *et al., Tet. Lett.*, 1972, 4647 (*uv, ir, pmr, ms, synth, struct*)

Variceramides V-25

$H_3C(CH_2)_nCOCH(OH)CH(-CH_2OH)NHCO(CH_2)_{20}CH_3$

Isol. from the marine sponge *Ircinia variabilis.*

Variceramide 1 [128733-00-6]
$C_{41}H_{81}NO_4$ 652.095
Has n=14.

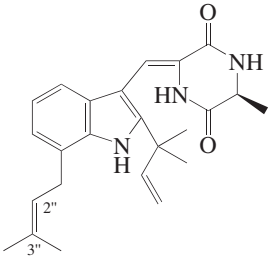
Variceramide 2 [128733-01-7]
$C_{40}H_{79}NO_4$ 638.068
Has n=13.

Variceramide 3 [128733-02-8]
$C_{39}H_{77}NO_4$ 624.042
Has n=12.

Cafieri, F. *et al., Annalen*, 1990, 1141-1142 (*isol, pmr, ms*)

Variecolorin G V-26

[957780-76-6]



$C_{24}H_{29}N_3O_2$ 391.512

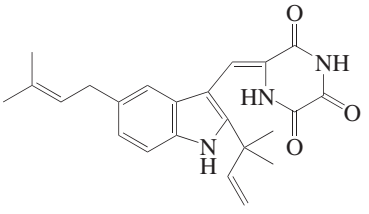
Isol. from *Aspergillus variecolor* B-17. Amorph. powder. $[\alpha]_D^{25}$ -16 (c, 0.1 in MeOH). λ_{max} 201 (log ϵ 3.5); 230 (log ϵ 3.6); 281 (log ϵ 3.1); 338 (log ϵ 3.1) (MeOH).

*2″,3″-Dihydro, 3″-chloro, 2″*R*-hydroxy:* ***Variecolorin F***
[957780-73-3]
$C_{24}H_{30}ClN_3O_3$ 443.972
Isol. from *Aspergillus variecolor* B-17. Amorph. powder. $[\alpha]_D^{25}$ -28 (c, 0.1 in MeOH). λ_{max} 197 (log ϵ 3.7); 228 (log ϵ 3.8); 285 (log ϵ 3.2); 337 (log ϵ 3.3) (MeOH).

Wang, W.-L. *et al., J. Nat. Prod.*, 2007, **70**, 1558-1564 (*isol, cd, pmr, cmr*)

Variecolorin J V-27

[957780-83-5]

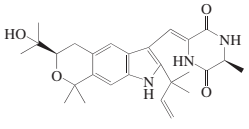


$C_{23}H_{25}N_3O_3$ 391.469
Regioisomer of Neoechinulin. Isol. from *Aspergillus variecolor* B-17. Red powder. λ_{max} 208 (log ϵ 3.7); 232 (log ϵ 3.7); 285 (log ϵ 3.2); 420 (log ϵ 3.1) (MeOH).

Wang, W.-L. *et al., J. Nat. Prod.*, 2007, **70**, 1558-1564 (*isol, pmr, cmr*)

Variecolorin K V-28

[957780-85-7]



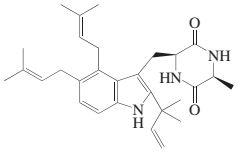
Absolute Configuration

$C_{27}H_{35}N_3O_4$ 465.591
Isol. from *Aspergillus variecolor* B-17. Amorph. powder. $[\alpha]_D^{25}$ -49 (c, 0.1 in MeOH). λ_{max} 210 (log ϵ 3.8); 228 (log ϵ 3.8); 275 (log ϵ 3.3); 340 (log ϵ 3.2) (MeOH).

Wang, W.-L. *et al., J. Nat. Prod.*, 2007, **70**, 1558-1564 (*isol, cd, pmr, cmr*)

Variecolorin L V-29

[957780-87-9]

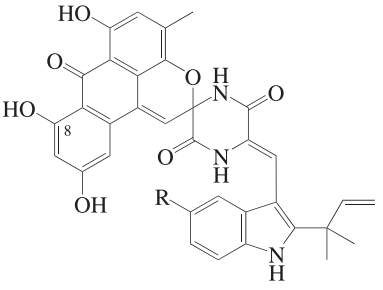


Absolute Configuration

$C_{29}H_{39}N_3O_2$ 461.646
Regioisomer of Echinulin. Isol. from *Aspergillus variecolor* B-17. Amorph. powder. $[\alpha]_D^{25}$ -21 (c, 0.05 in $CHCl_3$). λ_{max} 197 (log ϵ 3.5); 235 (log ϵ 3.5); 293 (log ϵ 3.1) (MeOH).

Wang, W.-L. *et al., J. Nat. Prod.*, 2007, **70**, 1558-1564 (*isol, cd, pmr, cmr*)

Variecolortide A V-30



R = $-CH_2CH{=}C(CH_3)_2$

$C_{39}H_{35}N_3O_7$ 657.721
Prod. by *Aspergillus variecolor* B-17. Weakly antioxidant and cytotoxic. Yellow cryst. (MeOH). Mp 182° dec. $[\alpha]_D^{25}$ +5.5 (c, 0.1 in $CHCl_3$). λ_{max} 229 (log ϵ 4.1); 265 (log ϵ 3.5); 291 (log ϵ 3.6); 368 (log ϵ 3.4) (MeOH).

Wang, W.-L. *et al., Chem. Biodiversity*, 2007, **4**, 2913-2919 (*isol, pmr, cmr, cryst struct*)

Variecolortide B V-31

As Variecolortide A, V-30 with R = H

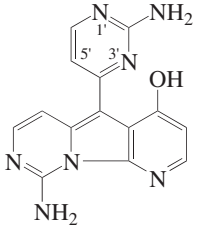
$C_{34}H_{27}N_3O_7$ 589.603
Prod. by *Aspergillus variecolor* B-17. Weakly antioxidant and cytotoxic. Amorph. yellow powder. $[\alpha]_D^{25}$ +4.5 (c, 0.1 in $CHCl_3$). λ_{max} 230 (log ϵ 4); 264 (log ϵ 3.4); 290 (log ϵ 3.5); 359 (log ϵ 3.4) (MeOH).

8-Me ether: ***Variecolortide C***
$C_{35}H_{29}N_3O_7$ 603.63
Prod. by *Aspergillus variecolor* B-17. Amorph. yellow powder. $[\alpha]_D^{25}$ +4 (c, 0.1 in $CHCl_3$). λ_{max} 228 (log ϵ 4.1); 266 (log ϵ 3.4); 289 (log ϵ 3.5); 367 (log ϵ 3.3) (MeOH).

Wang, W.-L. *et al., Chem. Biodiversity*, 2007, **4**, 2913-2919 (*isol, pmr, cmr*)

Variolin B V-32

[156790-85-1]



$C_{14}H_{11}N_7O$ 293.287
Alkaloid from the Antarctic sponge *Kirkpatrickia varialosa*. Cyclin-dependent kinase inhibitor. Antineoplastic agent. Yellow prisms (TFA aq.). Fairly sol. MeOH, DMSO; poorly sol. H_2O. Mp 45° dec. λ_{max} 221 (ϵ 14100); 324 (ϵ 3900); 404 (ϵ 9100); 422 (ϵ 8400) (MeOH) (Berdy). λ_{max} 213 (ϵ 15500); 311 (ϵ 4400); 394 (ϵ 6300) (MeOH-HCl) (Berdy).

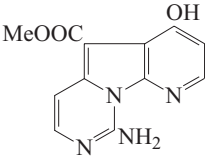
3′,4′,5′,6′-Tetrahydro, $N^{3'}$*-Me:* ***$N^{3'}$-Methyltetrahydrovariolin B***
[155205-63-3]
$C_{15}H_{17}N_7O$ 311.346
From *Kirkpatrickia varialosa*. Shows antifungal activity and moderate cytotoxicity. Light yellow solid. Fairly sol. MeOH, DMSO. Mp 226° dec. $[\alpha]_D$ -22.4 (c, 3.5 in MeOH). λ_{max} 256 (ϵ 9680); 311 (ϵ 8660); 324 (ϵ 9885); 351 (ϵ 6995); 367 (ϵ 6840); 385 (ϵ 3190) (MeOH) (Berdy).

5′-Hydroxy, 1′-Me (zwitterion): ***Variolin A***
[155416-43-6]
$C_{15}H_{13}N_7O_2$ 323.313
Alkaloid from *Kirkpatrickia varialosa*. Weakly cytotoxic. Red solid. Fairly sol. MeOH, DMSO; poorly sol. H_2O. Mp 196° dec. Unstable in base. λ_{max} 254 (ϵ 8945); 315 (ϵ 5375); 469 (ϵ 14570) (MeOH) (Berdy).

Perry, N.B. *et al., Tetrahedron*, 1994, **50**, 3987-3982 (*isol, uv, ir, pmr, cmr, cryst struct*)
Trimurtulu, G. *et al., Tetrahedron*, 1994, **50**, 3993-4000 (*$N^{3'}$-Methyltetrahydrovariolin B, Variolin A*)
Molina, P. *et al., Tet. Lett.*, 2002, **43**, 1005-1007 (*synth*)
Ahaidar, A. *et al., J.O.C.*, 2003, **68**, 10020-10029 (*synth*)
Simone, M. *et al., Eur. J. Cancer*, 2005, **41**, 2366-2377 (*pharmacol*)
Anderson, R.J. *et al., J.O.C.*, 2005, **70**, 6204-6212 (*synth*)
Fresneda, P.M. *et al., J. Med. Chem.*, 2006, **49**, 1217-1221 (*pharmacol*)
Baeza, A. *et al., Tet. Lett.*, 2008, **49**, 4073-4077 (*synth*)

Variolin D V-33

[156790-86-2]

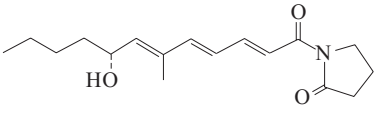


$C_{12}H_{10}N_4O_3$ 258.236
Possibly an artifact. Alkaloid from the Antarctic sponge *Kirkpatrickia varialosa*. Fairly sol. MeOH, DMSO. Mp 248°. λ_{max} 226 (ϵ 11700); 240 (ϵ 14700); 246 (ϵ 14800); 368 (ϵ 12000); 388 (ϵ 9700) (MeOH) (Berdy).

Perry, N.B. *et al., Tetrahedron*, 1994, **50**, 3987 (*isol, uv, ir, pmr, cmr, struct*)

Variotin, JAN V-34

1-(8-Hydroxy-6-methyl-1-oxo-2,4,6-dodecatrienyl)-2-pyrrolidinone, 9CI. 1-(8-Hydroxy-6-methyl-2,4,6-dodecatrienoyl)-2-pyrrolidone, 8CI. ***Pecilocin, BAN, INN.*** *Leofungine. Supral*
[19504-77-9]



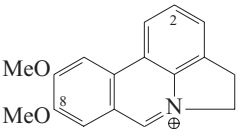
$C_{17}H_{25}NO_3$ 291.389
Isol. from *Paecilomyces variotii* var. *antibioticus*. Antifungal antibiotic. Hygroscopic needles + $1H_2O$ (Et_2O/petrol). Sol. MeOH, CS_2, dioxan, CCl_4, Et_2O. Mp 41.5-42.5°. $[\alpha]_D^{28}$ -5.68 (MeOH). Log P 1.73 (uncertain value) (calc). Unstable, v. air-sensitive. λ_{max} 320 (ϵ 46000) (MeOH) (Derep). λ_{max} 321 (E1%/1cm 1198) (MeOH) (Berdy).

► LD_{50} (mus, ipr) 320 mg/kg. UY5777000

Takeuchi, S. *et al., J. Antibiot.*, 1969, **22**, 179 (*pmr, struct*)
Sakakibara, M. *et al., Agric. Biol. Chem.*, 1973, **37**, 911 (*ir, uv, ms, nmr, synth*)
Ishida, A. *et al., Bull. Chem. Soc. Jpn.*, 1978, **51**, 2077 (*synth, ir, uv, ms, nmr*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 330

Vasconine V-35

*4,5-Dihydro-9,10-dimethoxypyrrolo[3,2,1-*de*]phenanthridinium(1+), 9CI*
[139955-90-1]



$C_{17}H_{16}NO_2^{\oplus}$ 266.319
Alkaloid from whole plants of *Narcissus vasconicus* (Amaryllidaceae). Mp 233-235°. Counterion not specified.

O^8*-De-Me:* ***8*-O-Demethylvasconine***
[170129-28-9]
$C_{16}H_{14}NO_2^{\oplus}$ 252.292
Alkaloid from bulbs of *Crinum kirkii* (Amaryllidaceae). Mp 200-202°. Counterion not specified.

2-Methoxy: ***Tortuosine***
[109644-38-4]
$C_{18}H_{18}NO_3^{\oplus}$ 296.345
Alkaloid from whole plants of *Narcissus tortuosus* (Amaryllidaceae). Mp 242-243°. Counterion not specified.

2-Methoxy, O^9*-de-Me: 4,5-Dihydro-10-hydroxy-2,9-dimethoxypyrrolo[3,2,1-*de*]phenanthridinium(1+).* ***9*-O-Demethyltortuosine***
[353246-57-8]
$C_{17}H_{16}NO_3^{\oplus}$ 282.318
Alkaloid from *Zephyranthes carinata*.

Bastida, J. *et al., J. Nat. Prod.*, 1992, **55**, 122 (*isol, ir, pmr, cmr, ms, struct*)
Parnes, J.S. *et al., J.O.C.*, 1994, **59**, 3497 (*synth*)
Bastida, J. *et al., Phytochemistry*, 1995, **38**, 549; **40**, 1291 (*Tortuosine, 8-O-Demethylvasconine*)
Rosa, A.M. *et al., Tetrahedron*, 1997, **53**, 299 (*synth*)
Stark, L.M. *et al., J.O.C.*, 2000, **65**, 3227-3230 (*Tortuosine, synth*)
Matsuga, M. *et al., Nat. Med. (Tokyo)*, 2001, **55**, 201-204 (*9-O-Demethyltortuosine*)

Vasicinine V-36

Struct. unknown. Prob. quinazoline alkaloid. Alkaloid from the young inflorescences of *Adhatoda vasica* (Acanthaceae). Bronchodilator, expectorant. Mp 208°. Ir 1492, 1590 and 1628 cm^{-1}.

Hydrochloride: Mp 258-260°.

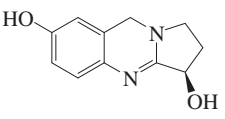
Picrate: Mp 207-210°.

Ac: Mp 239-240°.

Ikram, M. *et al., Pak. J. Sci. Ind. Res.*, 1965, **8**, 76; *CA*, **64**, 9721d (*isol, ir*)

Vasicinol V-37

*1,2,3,9-Tetrahydropyrrolo[2,1-*b*]quinazoline-3,7-diol, 9CI. 7-Hydroxypeganine. 7-Hydroxyvasicine*



(*R*)-*form*

$C_{11}H_{12}N_2O_2$ 204.228
Abs. config. revised in 1996.

(R)-form [5081-51-6]
Alkaloid from *Linaria vulgaris*. Needles (MeOH). Mp 260° dec. $[\alpha]_D^{18}$ -35.5 (c, 0.01 in MeOH). λ_{max} 204 ; 292 (MeOH).

(S)-form [5081-51-6]
Alkaloid from the roots, leaves and seeds of *Adhatoda vasica*, the roots of *Sida cordifolia* and from other *Sida* spp. (Acanthaceae, Malvaceae). Transient hypotensive agent, cardiac depressant. Histamine antagonist, shows mild anticholinesterase activity. Mp 272-273° (260° dec.). $[\alpha]_D^{25}$ +2.5 (c, 0.32 in AcOH). $[\alpha]_D$ +51 (c, 0.5 in 5% AcOH). The low specific rotn. recorded by Ghosal *et al* suggests that their compd. was largely racemic.

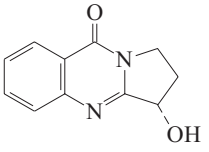
(±)-form
Synthetic. Mp 270-273°.

O^7*-Me:*
Cryst. (H_2O, EtOAc or EtOH). Mp 216-218°.

Späth, E. *et al., Ber.*, 1936, **69**, 384 (*isol*)
Southwick, P.L. *et al., J.A.C.S.*, 1958, **80**, 1168 (*deriv, synth*)
Späth, E. *et al., Monatsh. Chem.*, 1960, **91**, 1150 (*isol*)
Kuffner, F. *et al., Monatsh. Chem.*, 1960, **91**, 1152 (*synth*)
Bhatnagar, A.K. *et al., Indian J. Chem.*, 1966, **4**, 291 (*ms*)
Ghosal, S. *et al., Phytochemistry*, 1975, **14**, 830 (*isol*)
Johne, S. *et al., Alkaloids (Academic Press)*, 1986, **29**, 129 (*rev, pharmacol*)
Joshi, B.S. *et al., Tetrahedron: Asymmetry*, 1996, **7**, 25 (*abs config*)
Hua, H. *et al., Chem. Pharm. Bull.*, 2002, **50**, 1393-1394 (*isol, pmr, cmr*)

Vasicinone V-38

*2,3-Dihydro-3-hydroxypyrrolo[2,1-*b*]quinazolin-9(1*H*)-one, 9CI*



$C_{11}H_{10}N_2O_2$ 202.212
The enantiomer originally isol. was the (-)-form which was originally assigned *R* config. Abs. stereochem. reversed to *S*- in 1996. The *R*-enantiomer has been isolated once.

(R)-form [119364-42-0]
Alkaloid from *Adhatoda vasica*. Cryst. ($CHCl_3$/EtOAc). Mp 201-202°. $[\alpha]_D$ +148 (EtOH).

(S)-form [486-64-6]
Alkaloid from *Biebersteinia multifida*, the seeds and above-ground parts of *Peganum harmala*, the foliage of *Peganum nigellastrum*, the roots of *Sida cordifolia* and the leaves of *Adhatoda vasica*. Also isol. from *Nitraria sibirica* (Biebersteiniaceae, Zygophyllaceae, Malvaceae, Acanthaceae). Shows bronchodilator and weak hypotensive inotropic action. Cryst. (EtOH). Mp 200-201°. $[\alpha]_D$ -129 ($CHCl_3$). $[\alpha]_D$ -100 ($CHCl_3$). $[\alpha]_D$ -78 ($CHCl_3$). These are probably partial racemates.

Hydrochloride: Mp 232-234° dec.

Hydrobromide: Mp 254-255° dec.

Hydroiodide: Mp 222-226° dec.

N^4*-Oxide:* ***Vasicinone* N-oxide**
[168781-19-9]
$C_{11}H_{10}N_2O_3$ 218.212
Alkaloid from *Nitraria komarovii*. Cryst. (Me_2CO). Mp 203-204°.

5-Methoxy: ***5*-Methoxyvasicinone***
[178740-33-5]
$C_{12}H_{12}N_2O_3$ 232.238
Alkaloid from leaves of *Adhatoda vasica*. Cryst. (MeOH). Mp 220-222°.

7-Hydroxy: ***Vasicinolone***
[84847-50-7]
$C_{11}H_{10}N_2O_3$ 218.212
Alkaloid from the roots of *Adhatoda vasica* (Acanthaceae). Mp 279°.

7-Methoxy: ***7*-Methoxyvasicinone***
[178991-89-4]
[178631-31-7 , 178991-88-3]
$C_{12}H_{12}N_2O_3$ 232.238
Alkaloid from leaves of *Adhatoda vasica*. Mp 199-202°.

(±)-form [35387-16-7]
Alkaloid from the inflorescence of *Adhatoda vasica* (Acanthaceae) and from aerial parts of *Galium aparine* collected at flowering (Rubiaceae). Cryst. (MeOH). Mp 209-211° dec. Also obt. by racemisation of (-)-Vasicinone.

5-Methoxy: ***Adhavasinone***
[107783-56-2]
$C_{12}H_{12}N_2O_3$ 232.238
Alkaloid from the leaves of *Adhatoda vasica* (Acanthaceae). Mp 230-232°. Opt. inactive.

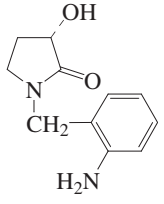
Morris, R.C. *et al., J.A.C.S.*, 1935, **57**, 951 (*synth*)
Mehta, D.R. *et al., J.O.C.*, 1963, **28**, 445 (*isol, uv, ir*)
Onaka, T. *et al., Tet. Lett.*, 1971, 4387 (*synth*)
Ghosal, S. *et al., Phytochemistry*, 1975, **14**, 830 (*isol*)
Szulzewsky, K. *et al., J. Prakt. Chem.*, 1976, **318**, 463 (*abs config*)
Johne, S. *et al., J. Prakt. Chem.*, 1977, **319**, 919 (*cmr*)

Rashkes, Y.V. *et al., Khim. Prir. Soedin.*, 1977, **13**, 378; *Chem. Nat. Compd. (Engl. Transl.)*, 1977, **13**, 320 (*ms*)
Choudhury, M.K. *et al., Naturwissenschaften*, 1979, **66**, 205 (*isol, uv, synth*)
Jain, M.P. *et al., Planta Med.*, 1982, **46**, 250 (*Vascinolone*)
Johne, S. *et al., Alkaloids (Academic Press)*, 1986, **29**, 129 (*rev, pharmacol*)
Chowdhury, B.K. *et al., Chem. Ind. (London)*, 1987, 35 (*Adhavasinone*)
Poi, R. *et al., J. Indian Chem. Soc.*, 1988, **65**, 814 (*isol, R-form*)
Sener, B. *et al., CA*, 1989, **110**, 111673f (*isol*)
Tulyaganov, T.S. *et al., Khim. Prir. Soedin.*, 1993, **29**, 580-582; *Chem. Nat. Compd. (Engl. Transl.)*, 1993, **29**, 509-511 (*Vasicinone N-oxide*)
Magotra, D.K. *et al., Acta Cryst. C*, 1996, **52**, 1491 (*cryst struct, 7-Methoxyvasicinone*)
Eguchi, S. *et al., J.O.C.*, 1996, **61**, 7316-7319 (*synth*)
Thappa, R.K. *et al., Phytochemistry*, 1996, **42**, 1485 (*5-Methoxyvasicinone, 7-Methoxyvasicinone*)
Joshi, B.S. *et al., Tetrahedron: Asymmetry*, 1996, **7**, 25 (*cryst struct, abs config*)
Atta-ur-Rahman, *et al., Nat. Prod. Lett.*, 1997, **10**, 249-256 (*cryst struct*)
Mhaske, S.B. *et al., J.O.C.*, 2002, **66**, 9038-9040 (*synth*)

Vasicol V-39

1-[(2-Aminophenyl)methyl]-3-hydroxy-2-pyrrolidinone, 9CI. Alkaloid AV2

[78720-03-3]



Absolute Configuration

$C_{11}H_{14}N_2O_2$ 206.244

Struct. finally established in 2003. Alkaloid from the roots of *Adhatoda vasica* and from *Peganum harmala*. Oil. $[\alpha]_D^{20}$ -90.4 (c, 0.95 in $CHCl_3$).

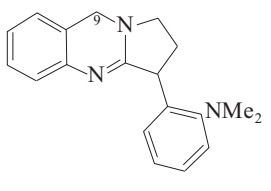
N,O-*Di-Ac:*
Cryst. (Et_2O/petrol). Mp 133-134° (130°).

Dhar, K.L. *et al., Phytochemistry*, 1981, **20**, 319-321 (*isol, pmr, ms*)
Telezhenetskaya, M.V. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1989, **25**, 14-18 (*isol, cryst struct*)
Huang, P.-Q. *et al., Heterocycles*, 2003, **60**, 1833-1841 (*synth, pmr, cmr, abs config*)

Vasicoline V-40

N,N-*Dimethyl-2-(1,2,3,9-tetrahydropyrrolo[2,1-b]quinazolin-3-yl)benzenamine, 9CI. 3-(2-Dimethylaminophenyl)-1,2,3,9-tetrahydropyrrolo[2,1-b]quinazoline*

[33903-13-8]



$C_{19}H_{21}N_3$ 291.395

Alkaloid from *Adhatoda vasica* (Acanthaceae). Cryst. (Me_2CO/heptane). Mp 135°.

9-Oxo: ***Vasicolinone****. 3-[2-(Dimethylamino)phenyl]-2,3-dihydropyrrolo[2,1-b]quinazolin-9(1H)-one, 9CI*

[33903-15-0]

$C_{19}H_{19}N_3O$ 305.379

Alkaloid from *Adhatoda vasica* (Acanthaceae). Cryst. (hexane). Mp 152°.

Johne, S. *et al., Helv. Chim. Acta*, 1971, **54**, 826 (*isol, uv, ir, pmr, ms, struct*)
Kaneko, C. *et al., Heterocycles*, 1985, **23**, 1385 (*synth, ir, pmr, Vasicolinone*)
Kökösi, J. *et al., Tet. Lett.*, 1992, **33**, 2995 (*synth, Vasicolinone*)
Wiedemann, S.H. *et al., J.O.C.*, 2006, **71**, 1969-1976 (*synth*)

Vatamidine, 9CI V-41

[129741-48-6]

As Vatine, V-44 with

n = 6

$C_{88}H_{98}N_{16}$ 1379.849

Alkaloid from aerial parts of *Calycodendron milnei* (Rubiaceae). Platelet aggregation Inhibitor, analgesic, sedative. Amorph. powder. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. $[\alpha]_D^{20}$ +77 (c, 1 in EtOH). λ_{max} 244 (log ϵ 4.56); 306 (log ϵ 4.33) (EtOH).

Adjibadé, Y. *et al., Planta Med.*, 1990, **56**, 212-215 (*isol, uv, ir, pmr, cmr, ms, struct*)

Vatamine, 9CI V-42

[129741-49-7]

As Vatine, V-44 with

n = 5

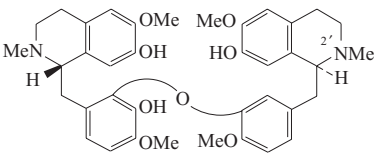
$C_{77}H_{86}N_{14}$ 1207.62

Alkaloid from aerial parts of *Calycodendron milnei* (Rubiaceae). Platelet aggregation inhibitor, analgesic, sedative. Fine needles (MeOH). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 210°. $[\alpha]_D^{20}$ +64 (c, 1 in EtOH). λ_{max} 244 (log ϵ 4.65); 306 (log ϵ 4.42) (EtOH).

Adjibadé, Y. *et al., Planta Med.*, 1990, **56**, 212-215 (*isol, uv, ir, pmr, cmr, ms, struct*)

Vateamine V-43

[87183-75-3]



$C_{38}H_{44}N_2O_8$ 656.774

Alkaloid from the bark of *Hernandia peltata* (Hernandiaceae). $[\alpha]_D^{25}$ +204 (c, 0.14 in MeOH).

$N^{2'}$-*Oxide (β-):* ***Vateamine 2′-β-N-oxide***

[178765-70-3]

$C_{38}H_{44}N_2O_9$ 672.774

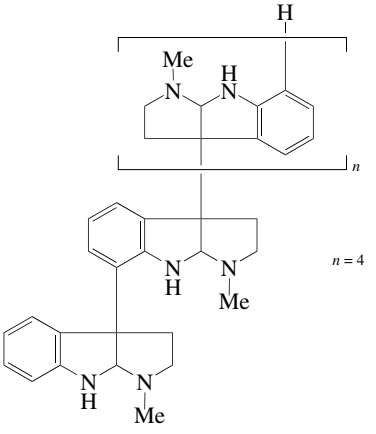
Alkaloid from trunk bark of *Hernandia nymphaeifolia*. Shows strong antiplatelet aggregation activity. Needles (MeOH). Mp 133-135°. $[\alpha]_D^{24}$ +341 (c, 0.11 in $CHCl_3$).

Tri-Me ether: $[\alpha]_D^{25}$ +118 (c, 0.2 in MeOH).

Bruneton, J. *et al., J.O.C.*, 1983, **48**, 3957 (*isol, uv, cd, pmr, ms, struct*)
Chen, J.-J. *et al., Phytochemistry*, 1996, **42**, 1479 (*oxide*)
Chen, J.-J. *et al., Planta Med.*, 1996, **66**, 251-256 (*oxide, activity*)

Vatine, 9CI V-44

[129741-50-0]



$C_{66}H_{74}N_{12}$ 1035.391

Alkaloid from aerial parts of *Calycodendron milnei* (Rubiaceae). Fine needles (MeOH). Mp 206-208°. $[\alpha]_D^{20}$ +57 (c, 1 in EtOH). λ_{max} 244 (log ϵ 4.49); 306 (log ϵ 4.25) (EtOH).

Stereoisomer: ***Vatine A, 9CI***

[129829-05-6]

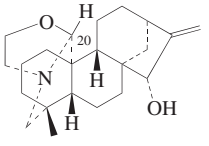
$C_{66}H_{74}N_{12}$ 1035.391

Alkaloid from aerial parts of *Calycodendron milnei* (Rubiaceae). Amorph. powder. $[\alpha]_D^{20}$ +45 (c, 1 in EtOH). λ_{max} 244 (log ϵ 3.43); 306 (log ϵ 4.18) (EtOH).

Adjibadé, Y. *et al., Planta Med.*, 1990, **56**, 212-215 (*isol, uv, ir, pmr, cmr, ms, struct*)

Veatchine, 9CI V-45

[76-53-9]



Absolute Configuration

$C_{22}H_{33}NO_2$ 343.508

Exists as mixt. of C-20 epimers in soln. and in the solid state. Alkaloid from the bark of *Garrya veatchii* (Garryaceae). Prismatic cryst. (Me_2CO). Mp 125.5-128.5° (122-126°). $[\alpha]_D^{30}$ -67.5 (c, 1.35 in $CHCl_3$). Unlike Garryfoline, stable to acid-catalysed rearr.

Hydrochloride: Veatchinium chloride
Cryst. (EtOH/Et_2O). Mp 273-276° (267-271°). $[\alpha]_D^{29}$ -56.2 (c, 1.45 in EtOH). Exists as a ternary iminium salt rather than a protonated salt.

16α,17-Dihydro, 15-ketone: ***Cuauchichicine***
[545-60-8]
$C_{22}H_{33}NO_2$ 343.508
Alkaloid from the bark of *Garrya laurifolia* and the leaves of *Garrya ovata* var. *lindheimeri* (Garryaceae). Cryst. (Et_2O). Mp 152-154°. $[\alpha]_D^{18}$ -69 (c, 1.0 in $CHCl_3$). Unusually, does not exist in the epimeric form at C-20 either in soln. or in the solid state.

▶ YX0800000

16α,17-Dihydro, 15-ketone, hydrochloride: Cryst. (MeOH/Et_2O). Mp 259-262°.

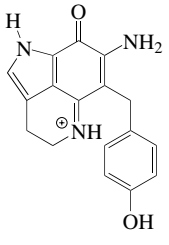
15-Epimer: ***Garryfoline****. Laurifoline*†
[509-30-8]
$C_{22}H_{33}NO_2$ 343.508
Alkaloid from the bark of *Garrya laurifolia* and *Garrya ovata* var. *lindheimeri* (Garryaceae). Cryst. (Et_2O or hexane). Mp 130-133°. $[\alpha]_D$ -60 ($CHCl_3$). pK_a 11.81. Exists as a mixt of C-20-epimers in soln. Rearr. to Garryine, G-25 in hot MeOH. Undergoes acid-cat. rearr. to Cuauchichicine.

15-Epimer, Ac: ***Ovatine***†. *(15β)-Veatchine acetate (ester), 9CI*
[68719-14-2]
$C_{24}H_{35}NO_3$ 385.545
Alkaloid from the bark and leaves of *Garrya ovata* var. *lindheimeri* (Garryaceae). Mp 113-114°. $[\alpha]_D^{22}$ -79.4 (c, 1.0 in $CHCl_3$). Mixt. of C-20-epimers in soln.

Oneto, J.F. *et al., J. Am. Pharm. Assoc.*, 1946, **35**, 204 (*isol*)
Wiesner, K. *et al., Can. J. Chem.*, 1952, **30**, 608 (*isol, struct, ir*)
Wiesner, K. *et al., Chem. Ber.*, 1953, **86**, 800 (*isol, struct, ir*)
Wiesner, K. *et al., Experientia*, 1955, **11**, 255 (*isol, struct, ir*)
Djerassi, C. *et al., J.A.C.S.*, 1955, **77**, 4801; 6633 (*Garryfoline, Cuauchichicine, isol, ir, nomencl*)
Verbrueggen, H. *et al., J.A.C.S.*, 1962, **84**, 2990-2997 (*abs config*)
Pelletier, S.W. *et al., J.A.C.S.*, 1965, **87**, 761; 1977, **99**, 284; 1978, **100**, 7976; 1979, **101**, 6741 (*cmr, cryst struct, abs config, isol, struct*)
Pelletier, S.W. *et al., Tetrahedron*, 1968, **24**, 2019 (*pmr*)
Scott, A.I. *et al., Tetrahedron*, 1971, **27**, 4787 (*cd, ord*)
Pelletier, S.W. *et al., Heterocycles*, 1978, **9**, 1409; 1979, **13**, 277 (*Garryfoline, Ovatine*)
Mody, N.V. *et al., Tetrahedron*, 1978, **34**, 2421 (*cmr*)
Pelletier, S.W. *et al., J.A.C.S.*, 1979, **101**, 6741-6742 (*Cuauchichicine, pmr, cmr, cryst struct*)
Pelletier, S.W. *et al., J. Nat. Prod.*, 1980, **43**, 41 (*rev*)

Veiutamine V-46

[188010-55-1]

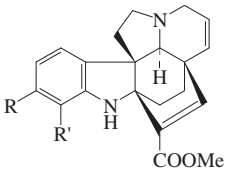


$C_{17}H_{16}N_3O_2^{\oplus}$ 294.332
Alkaloid from the Fijian sponge *Zyzzya fuliginosa*. Potent *in vitro* cytotoxin. Green solid (as trifluoroacetate). λ_{max} 246 ; 344 ; 550 (MeOH). λ_{max} 228 ; 330 ; 470 (MeOH/KOH).

Venables, D.A. *et al., Tet. Lett.*, 1997, **38**, 721 (*isol, uv, ir, pmr, cmr, struct*)
Moro-oka, Y. *et al., Tet. Lett.*, 1999, **40**, 1713-1716 (*synth, pmr, cmr*)

Venacarpine A V-47

[768388-29-0]



Absolute Configuration

R,R' = $-OCH_2O-$

$C_{22}H_{22}N_2O_4$ 378.427
Alkaloid from *Kopsia fruticosa*. Oil. $[\alpha]_D$ +18 (c, 0.43 in $CHCl_3$). λ_{max} 219 (log ϵ 4.46); 244 (log ϵ 4); 280 (log ϵ 3.53) (EtOH).

Kam, T.-S. *et al., Phytochemistry*, 2004, **65**, 2119-2122 (*isol, pmr, cmr, ms*)

Venacarpine B V-48

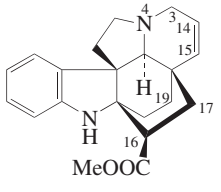
As Venacarpine A, V-47 with
R = H, R′ =OMe

$C_{22}H_{24}N_2O_3$ 364.443
Alkaloid from leaves of *Kopsia fruticosa*. $[\alpha]_D$ +18 (c, 0.43 in $CHCl_3$). λ_{max} 216 (log ϵ 4.27); 243 (log ϵ 3.93); 284 (log ϵ 3.5) (EtOH).

Kam, T.S. *et al., Phytochemistry*, 2004, **65**, 2119-2122 (*isol, pmr, cmr, ms*)

Venalstonine V-49

14,15-Dehydrokopsinine. $\Delta^{14,15}$*-Kopsinine*
[5001-20-7]



Absolute Configuration

$C_{21}H_{24}N_2O_2$ 336.433
Alkaloid from *Alstonia venenata*, *Catharanthus ovalis*, *Catharanthus roseus*, *Melodinus australis*, *Vinca erecta*, *Vinca libanotica* and several other spp. in the Apocynaceae. Prisms (Et_2O/pentane). Mp 132-134° Mp 140-142°. $[\alpha]_D^{23}$ -88.8 (c, 1.406 in $CHCl_3$). λ_{max} 245 (log ϵ 3.87); 292 (log ϵ 3.46) (EtOH).

14α,15α-Epoxide: ***Venalstonidine****. 6,7-Epoxykopsinine. Ld 63*
[26619-93-2]
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from *Alstonia venenata*, *Melodinus australis*, *Melodinus balansae*, *Melodinus celastroides*, *Melodinus polyadenus* and *Catharanthus ovalis* (Apocynaceae). Mp 230-236° (210-214°, 223-225°). $[\alpha]_D$ -96 ($CHCl_3$). λ_{max} 244 (ϵ 7150); 292 (ϵ 2800) (EtOH).

3-Oxo: ***14,15-Didehydro-3-oxokopsinine****. Ld 65*
[4880-84-6]
$C_{21}H_{22}N_2O_3$ 350.416
Alkaloid from *Vinca erecta* and *Melodinus australis*. Mp 231-232°. $[\alpha]_D$ -93 (c, 0.3 in $CHCl_3$). λ_{max} 244 (log ϵ 3.93); 292 (log ϵ 3.42) (EtOH).

3-Oxo, N^4*-oxide:* ***14,15-Didehydro-3-oxokopsinine N-oxide****. Ld 85*
$C_{21}H_{22}N_2O_4$ 366.416
Alkaloid from *Vinca erecta* and *Melodinus australis*. Cryst. (Et_2O). Mp 245-248°. $[\alpha]_D$ -55.

3-Oxo, 14α,15α-epoxide: ***3-Oxovenalstonidine***
[87387-68-6]
$C_{21}H_{22}N_2O_4$ 366.416
Alkaloid from stems and leaves of *Melodinus reticulatus* (Apocynaceae). $[\alpha]_D^{22}$ -15 (c, 1 in $CHCl_3$).

17α-Hydroxy: ***17α-Hydroxy-*** $\Delta^{14,15}$***-kopsinine***
[149355-60-2]
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from the stem bark of *Kopsia teoi*.

17α-Hydroxy, Et ester analogue: ***Kopsiloscine J***
$C_{22}H_{26}N_2O_3$ 366.459
Alkaloid from *Kopsia singapurensis*. Oil. $[\alpha]_D$ +22 (c, 0.23 in $CHCl_3$). λ_{max} 207 (log ϵ 4.41); 241 (log ϵ 3.96); 289 (log ϵ 3.58) (EtOH).

17β-Hydroxy, N*-methoxycarbonyl:* ***N-Carbomethoxy-17β-hydroxy-*** $\Delta^{14,15}$***-kopsinine***
[116988-04-6]
$C_{23}H_{26}N_2O_5$ 410.469
Alkaloid from the stem bark of *Kopsia deverrei* (Apocynaceae). Amorph. $[\alpha]_D^{20}$ -110 (c, 0.50 in $CHCl_3$). λ_{max} 245 (log ϵ 4.21); 280 (log ϵ 3.63); 288 (log ϵ 3.59) (EtOH).

19β-Hydroxy: ***19β-Hydroxyvenalstonine***
[87387-66-4]
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from stems and leaves of *Melodinus reticulatus* (Apocynaceae). $[\alpha]_D^{22}$ -32 (c, 1 in $CHCl_3$).

19β-Hydroxy, 14α,15α-epoxide: ***19-Hydroxyvenalstonidine***
[87387-67-5]
$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from stems and leaves of *Melodinus reticulatus* (Apocynaceae). $[\alpha]_D^{22}$ -25 (c, 1 in $CHCl_3$).

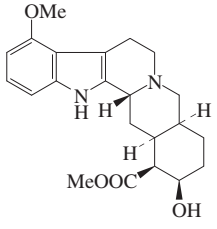
16-Epimer, 17α-hydroxy: ***16-Epi-17α-hydroxy-*** $\Delta^{14,15}$***-kopsinine***
[152243-72-6]
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from the stem bark of *Kopsia teoi*. Amorph. powder. $[\alpha]_D^{20}$ -23 (c, 1.48 in $CHCl_3$).

Linde, H.H.A. *et al., Helv. Chim. Acta*, 1965, **48**, 1822-1842 (*Venalstonidine*)

Das, B. *et al., Tet. Lett.*, 1965, 2239-2244 (*Venalstonine, Venalstonidine*)
Aynilian, G.H. *et al., J. Nat. Prod.*, 1974, **37**, 299-308 (*Venalstonine*)
Ahond, A. *et al., J.A.C.S.*, 1974, **96**, 633-634 (*cmr*)
Sharipov, M. *et al., Khim. Prir. Soedin.*, 1974, **10**, 263-264; 1976, **12**, 401-402; *Chem. Nat. Compd. (Engl. Transl.)*, 1974, **10**, 281; 1976, **12**, 355-356 (*14,15-Didehydro-3-oxokopsinine, 14,15-Didehydro-3-oxokopsinine N-oxide*)
Mehri, M.H. *et al., Phytochemistry*, 1978, **17**, 1451-1452 (*Venalstonine*)
Mehri, H. *et al., Planta Med.*, 1983, **48**, 72-76 (*19-Hydroxyvenalstonine, 19-Hydroxyvenalstonidine, 3-Oxovenalstonidine*)
Kan-Fan, C. *et al., J. Nat. Prod.*, 1988, **51**, 703-707 (*N-Carbomethoxy-17-hydroxy-$\Delta^{14,15}$-kopsinine*)
Varea, T. *et al., J. Nat. Prod.*, 1993, **56**, 2166-2169 (*16-Epi-17α-hydroxy-$\Delta^{14,15}$-kopsinine*)
Kam, T.S. *et al., Phytochemistry*, 1999, **50**, 171-175 (*17α-Hydroxy-$\Delta^{14,15}$-kopsinine*)
Subramaniam, G. *et al., J. Nat. Prod.*, 2008, **71**, 53-57 (*Kopsiloscine J*)

Venenatine V-50

Methyl 17-hydroxy-9-methoxyyohimban-16-carboxylate, 9CI
[1055-75-0]



Absolute Configuration

$C_{22}H_{28}N_2O_4$ 384.474
Alkaloid from *Alstonia venenata* (Apocynaceae). Antihypertensive agent showing similar action to, and synergism with, Reserpine, R-52. Shows antifungal activity. Cryst. + MeOH (MeOH). Mp 123-126° dec. $[\alpha]_D^{24}$ -76.1 ($CHCl_3$). pK_a 7.2 (2-Methoxyethanol).

▶ ZG0820000

Hydroiodide:
Cryst. (Me_2CO). Mp 255-257° dec.

N^4-*Oxide:* ***Venoxidine***
[17206-07-4]
$C_{22}H_{28}N_2O_5$ 400.474
Alkaloid from *Alstonia venenata* (Apocynaceae). Mp 218-219° dec. $[\alpha]_D^{25}$ -58.2 (H_2O). pK_a 4.6 (H_2O).

O-*Ac:*
Cryst. (MeOH). Mp 98-101° dec.

Parent acid: Venenatic acid
[4837-83-6]
Cryst. + $2H_2O$ (EtOH). Mp 245° dec.

3-Epimer: ***Alstovenine****. Isovenenatine*
[4837-79-0]
$C_{22}H_{28}N_2O_4$ 384.474
Alkaloid from *Alstonia venenata* (Apocynaceae). Monoamine oxidase inhibitor. Needles (MeOH). Mp 169-171°. $[\alpha]_D^{24}$ +9.42 ($CHCl_3$).

▶ ZG0830000

3-Epimer, O-*Ac:*
Needles (MeOH). Mp 143° dec.

16-Epimer: ***16-Epivenenatine***
[80735-17-7]
$C_{22}H_{28}N_2O_4$ 384.474
Alkaloid from *Alstonia venenata* (Apocynaceae). Cryst. (Me_2CO/MeOH). Mp 188-190°. $[\alpha]_D^{25}$ -52.68 (EtOH).

17-Epimer: ***17-Epivenenatine****. 9-Methoxy-3-epi-α-yohimbine*
$C_{22}H_{28}N_2O_4$ 384.474
Alkaloid from the stem bark of *Mitragyna africanus.* Amorph. powder. λ_{max} 224 (log ϵ 4.27); 270 (log ϵ 3.6) (MeOH).

3,16-Diepimer: ***16-Epialstovenine***
[80734-61-8]
$C_{22}H_{28}N_2O_4$ 384.474
Alkaloid from *Alstonia venenata* (Apocynaceae). Cryst. (Me_2CO/MeOH). Mp 227-230°. $[\alpha]_D^{25}$ +72.02 (EtOH).

[1056-57-1]

Chatterjee, A. *et al., Tet. Lett.*, 1965, 159-162 (*Venenatine, Venoxidine, isol, uv, ir, pmr, ms, struct*)
Govindachari, T.R. *et al., Tetrahedron*, 1965, **21**, 2951-2956 (*isol, uv, ir, pmr, struct, Venenatine, Alstovenine*)
Chatterjee, A. *et al., Phytochemistry*, 1981, **20**, 1981-1985 (*16-Epivenenatine, 16-Epialstovenine*)
Verpoorte, R. *et al., Org. Magn. Reson.*, 1984, **22**, 328-334 (*cmr*)
Singh, U.P. *et al., Folia Microbiol. (Prague)*, 2000, **45**, 173-176 (*activity*)
Takayama, H. *et al., Chem. Pharm. Bull.*, 2004, **52**, 359-361 (*17-Epivenenatine*)

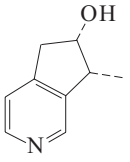
C-Venezueline V-51

Struct. unknown. Alkaloid from calabash curare (*Strychnos* spp.) (Loganiceae). An oxidn. prod. of *C*-Alkaloid D, A-476.

Gorman, A.A. *et al., Alkaloids (London)*, 1971, **1**, 200-338

Venoterpine V-52

Gentialutine. Alkaloid RW47
[17948-42-4]



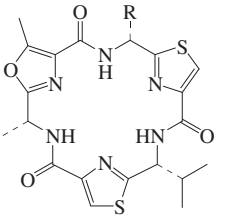
$C_9H_{11}NO$ 149.192
Config. revised in 1985. Alkaloid from *Alstonia venenata*, *Rauwolfia verticillata*, *Lonicera japonica*, *Neisosperma glomerata*, *Melodinus aeneus*, *Gentiana lutea* (yellow gentian), *Strychnos dinklagei*, *Strychnos pungens* and *Camptotheca acuminata*. Mp 130-132°. $[\alpha]_D$ +27 ($CHCl_3$).

O-*Ac:* **O-*Acetylvenoterpine***
[189322-84-7]
$C_{11}H_{13}NO_2$ 191.229
Alkaloid from seeds of *Strychnos pungens.* $[\alpha]_D$ +45 (c, 1.5 in $CHCl_3$).

Arthur, H.R. *et al., Phytochemistry*, 1966, **5**, 977-983 (*isol*)
Arthur, H.R. *et al., Aust. J. Chem.*, 1967, **20**, 2505-2508 (*uv, ir, pmr, ms, struct*)
Ray, A.B. *et al., Tet. Lett.*, 1968, 2763-2765 (*uv, ir, pmr, struct*)
Mitscher, L.A. *et al., Experientia*, 1971, **27**, 16-17 (*config*)
Michel, S. *et al., J. Nat. Prod.*, 1982, **45**, 489-494 (*isol*)
Ravao, T. *et al., Tet. Lett.*, 1985, **26**, 837-838 (*config, cmr*)
Thépenier, P. *et al., Bull. Soc. R. Sci. Liege*, 1996, **65**, 379-382 (*Ac*)

Venturamide A V-53

[312958-58-0]



Absolute Configuration

R = CH_3

$C_{21}H_{24}N_6O_4S_2$ 488.59
Cyclic peptide. Related to Bistratamide A, B-223. Isol. from an *Oscillatoria* sp. Antimalarial agent. Glass. $[\alpha]_D^{25}$ +53.4 (c, 0.001 in MeOH). λ_{max} 224 (log ϵ 4.17) (MeOH).

Linington, R.G. *et al., J. Nat. Prod.*, 2007, **70**, 397-401 (*isol, pmr, cmr*)

Venturamide B V-54

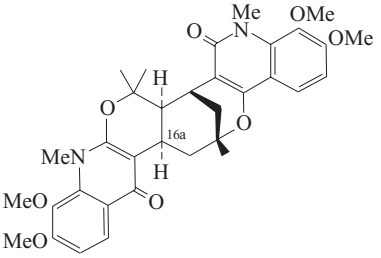
[936098-82-7]
As Venturamide A, V-53 with
R = -CH(OH)CH_3(*R*-)

$C_{22}H_{26}N_6O_5S_2$ 518.617
Isol. from an *Oscillatoria* sp. Antimalarial agent. Glass. $[\alpha]_D^{25}$ +53.6 (c, 0.004 in MeOH). λ_{max} 224 (log ϵ 4.08) (MeOH).

Linington, R.G. *et al., J. Nat. Prod.*, 2007, **70**, 397-401 (*isol, pmr, cmr*)

Vepridimerine C V-55

[82841-72-3]



$C_{34}H_{38}N_2O_8$ 602.683
Alkaloid from the bark of *Vepris louisii* and *Oricia renieri* (Rutaceae). Mp 272°. Racemic.

7a-Epimer: Vepridimerine E
[101541-27-9]
Synthetic. Cryst. (MeOH). Mp 287-288°.

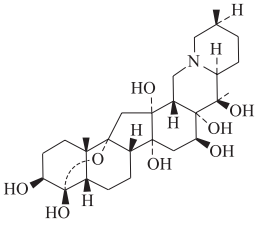
16a-Epimer: ***Vepridimerine D***

[82864-61-7]
$C_{34}H_{38}N_2O_8$ 602.683
Alkaloid from the bark of *Vepris louisii* (Rutaceae). Racemic.

Ngadjui, T.B. *et al., Tet. Lett.*, 1982, **23**, 2041 (*pmr, cmr, struct*)
Ayafor, J.F. *et al., Tet. Lett.*, 1985, **26**, 4529 (*synth*)

Veracevine V-56

4,9-Epoxy-3,4,12,14,16,17,20-cevanehep-tol. Protocevine
[5876-23-3]



Absolute configuration

$C_{27}H_{43}NO_8$ 509.639
Alkaloid from *Schoenocaulon officinale* (Liliaceae). Sabadilla (Veratran D), a mixt. of Cevadine and Veratridine has been used as an insecticide. Mp 181-183°. $[\alpha]_D$ -24 (EtOH).

▶ FL4740000

Perchlorate: Mp 228-230°.

3-Ac: ***Cevacine***
[28111-33-3]
$C_{29}H_{45}NO_9$ 551.676
Alkaloid from *Schoenocaulon officinale* (Liliaceae). Mp 205-207°. $[\alpha]_D^{21}$ -27 (c, 2.67 in $CHCl_3$).

3-Angeloyl: ***Cevadine****. Veratrine*
[62-59-9]
$C_{32}H_{49}NO_9$ 591.74
Alkaloid from *Schoenocaulon officinale*, *Helleborus viridis*, *Veratrum lobelianum* and *Veratrum viride*. Insecticide. Weak hypotensive agent. Shows antifungal activity. Mp 213-214.5°. $[\alpha]_D^{28}$ +13 (c, 0.97 in EtOH).

▶ LD_{50} (mus, ipr) 3.5 mg/kg. FL5600000

3-O-(4-Hydroxy-3-methoxybenzoyl): ***Vanilloylveracevine***
[187237-90-7]
$C_{35}H_{49}NO_{11}$ 659.772
Alkaloid from *Schoenocaulon officinale*. Antihypertensive agent. Shows insecticidal activity. Silky needles (EtOH). Mp 257.5-258.5° dec. $[\alpha]_D^{25}$ +43.6 (c, 1.87 in Py). Log P -0.33 (uncertain value) (calc).

3-O-(3,4-Dimethoxybenzoyl): ***Veratridine***
[71-62-5]
$C_{36}H_{51}NO_{11}$ 673.799
Alkaloid from *Schoenocaulon officinale* and *Veratrum album*. Hypotensive agent. Depolarising agent for neurones and muscle cells via specific sodium channel interaction, similar activity to Batrachotoxin, but weaker. Shows antifungal activity. Noncryst. $[\alpha]_D^{22}$ +8 (EtOH).

▶ LD_{50} (mus, ipr) 1.35 mg/kg. YX5600000

3-Epimer: ***Cevine****. Sabadinine*
[124-98-1]
$C_{27}H_{43}NO_8$ 509.639
Alkaloid from seeds of *Veratrum sabadilla* and product of hydrol. of ester alkaloids (Liliaceae). Mp 172-176° dec. (anhyd.) Mp 110° (hydrate). $[\alpha]_D^{17}$ -17.5 (EtOH).

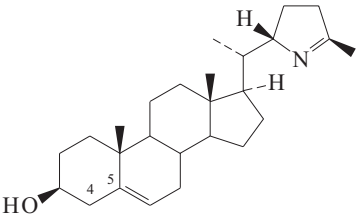
▶ LD_{50} (rat, ipr) 67 mg/kg. FL4550000

3-Epimer, hydrochloride: Mp 247° Mp 239-240° (dihydrate).

Pelletier, S.W. *et al., J.A.C.S.*, 1953, **75**, 3248-3252 (*Cevadine, Veratridine*)
Kupchan, S.M. *et al., J.A.C.S.*, 1953, **75**, 5519-5524 (*Cevacine*)
Barton, D.H.R. *et al., Experientia*, 1954, **10**, 81-90 (*struct, bibl*)
Stuart, D.M. *et al., J. Am. Pharm. Assoc.*, 1956, **45**, 252-256 (*Vanilloylveracevine*)
Kupchan, S.M. *et al., Tetrahedron*, 1959, **7**, 47-61 (*struct*)
Eeles, W.T. *et al., Tet. Lett.*, 1960, **No. 7**, 24-26 (*Cevine, cryst struct*)
Wolters, B. *et al., Planta Med.*, 1970, **19**, 189-193 (*Veracevine, activity*)
Carey, F.A. *et al., Org. Magn. Reson.*, 1980, **14**, 141-144 (*Veracevine, cmr*)
Holan, G. *et al., J. Chromatogr.*, 1984, **288**, 479-483 (*Veracevine, hplc*)
Ujváry, I. *et al., Phytochemistry*, 1997, **44**, 1257-1260 (*Vanilloylveracevine, synth*)
Pesticide Manual, 13th edn., 2003, 725
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, CDG000; Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, VHU000; EBL000

Veracintine V-57

*22,25-Epimino-27-norcholesta-5,25(*N*)-dien-3-ol*
[33596-06-4]



$C_{26}H_{41}NO$ 383.616
Alkaloid from *Veratrum album* (Liliaceae). Shows cytotoxic and antitumour activity. Mp 196-201°. $[\alpha]_D^{25}$ +7.5 (c, 0.825 in $CHCl_3$).

3-O-β-D-Glucopyranoside: ***Glucoveracintine***
[67006-43-3]
$C_{32}H_{51}NO_6$ 545.758
Alkaloid from the aerial parts of *Veratrum album* ssp. *lobelianum* (Liliaceae). Amorph. $[\alpha]_{Hg}^{19}$ +26 (c, 0.69 in MeOH).

3-O-α-L-Rhamnoside: ***Rhamnoveracintine***
[110934-18-4]
$C_{32}H_{51}NO_5$ 529.759
Alkaloid from the aerial parts of *Veratrum album* spp. *lobelianum* (Liliaceae).

O,N-Di-Ac (of 5,24-diene isomer):
Amorph. $[\alpha]_D^{25}$ -98 (EtOH).

Tomko, J. *et al., Tet. Lett.*, 1971, 3041 (*isol, ms, ir, pmr*)
Vassova, A. *et al., Coll. Czech. Chem. Comm.*, 1976, **41**, 2964 (*cmr*)
Grančai, D. *et al., Chem. Zvesti*, 1978, **32**, 120 (*glucoside*)
Fuska, J. *et al., CA*, 1982, **96**, 173914m (*pharmacol*)
Pavelcik, F. *et al., Chem. Zvesti*, 1983, **37**, 145 (*cryst struct*)
Grancai, D. *et al., Chem. Zvesti*, 1986, **40**, 835; *CA*, **107**, 194870e (*Rhamnoveracintine*)

Veragenine† V-58

$C_{31}H_{53}NO_{13}$ 647.759
Struct. unknown. Approx. MF, may be H_{55}. Alkaloid from *Veratrum officinalis* (*Veratrum sabadilla*) (Liliaceae). Mp 262-264°. $[\alpha]_D^{20}$ -4.87 (EtOH).

Vejdělek, Z.J. *et al., Chem. Listy*, 1955, **49**, 1538-1545; *CA*, **50**, 4991

Veralbidine V-59

$C_{37}H_{61}NO_{12}$ 711.888
Steroidal alkaloid. Struct. unknown. Alkaloid from *Veratrum album* (Liliaceae). Prisms (MeOH aq.), pentagonal plates (Me_2CO aq.), fine needles (Et_2O). Mp 181-183°. $[\alpha]_D^{20}$ -11.7 (Py). $[\alpha]_D^{20}$ +5.4 ($CHCl_3$).

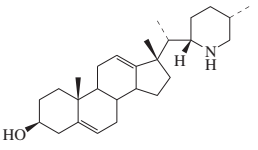
Hydrochloride: Mp 250-251° dec.

Thiocyanate salt: Mp 235-236° dec.

Stoll, A. *et al., Science (Washington, D.C.)*, 1952, **115**, 678

Veralinine V-60

17-Methyl-18-nor-16,28-secosolanida-5,12-dien-3-ol, 9CI. 16-Deoxyveralkamine
[21233-19-2]



Absolute Configuration

$C_{27}H_{43}NO$ 397.643
Alkaloid from *Veratrum album* ssp. *lobelianum* (Liliaceae). Needles (hexane). Mp 124-126°. $[\alpha]_D^{26}$ -80 (c, 0.42 in $CHCl_3$).

N,O-Di-Ac:
Cryst. (Et_2O). Mp 159-161°. $[\alpha]_D^{21}$ -52.8 (c, 0.56 in $CHCl_3$).

Stereoisomer: Veralomidine
[58165-72-3]
Hydrol. prod. of Veralomine. Mp 174-175°. $[\alpha]_D$ -52.23. Said to be epimeric with Veralinine at C_{17}.

Stereoisomer, 3-β-D-glucopyranoside: ***Veralomine***
[58078-63-0]
$C_{33}H_{53}NO_6$ 559.785
Isol. from *Veratrum album* ssp. *lobelianium* (Liliaceae). Mp 275-277°. $[\alpha]_D$ -54.11.

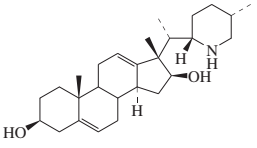
Stereoisomer, 3,4-didehydro: Veralomidene
[58031-31-5]
Hydrol.-dehydration prod. of Veralo-

mine. Mp 175-178°. $[\alpha]_D$ -49.5.

Tomko, J. *et al., Tetrahedron*, 1968, **24**, 6839-6843 (*isol, ms, ir, pmr, struct*)
Shakirov, R. *et al., Khim. Prir. Soedin.*, 1975, **11**, 527-528; *Chem. Nat. Compd. (Engl. Transl.)*, 1975, **11**, 558-559 (*Veralomine*)

Veralkamine V-61

17-Methyl-18-nor-16,28-secosolanida-5,12-diene-3,16-diol, 9CI. Veralcamine
[17155-31-6]



Absolute Configuration

$C_{27}H_{43}NO_2$ 413.642
Alkaloid from *Veratrum album* ssp. *lobelianum* and from *Fritillaria camtschatcensis* (Liliaceae). Cryst. (EtOH). Mp 119-123° Mp 165-169°. $[\alpha]_D^{24}$ -84.1 (c, 0.55 in $CHCl_3$).

Hydroiodide: Mp 264° dec.

O,O-*Di-Ac:* [195244-85-0]
$C_{31}H_{47}NO_4$ 497.717
Alkaloid from *Veratrum lobelianum*.

N,O,O-*Tri-Ac:* Mp 152-154°. $[\alpha]_D^{22}$ -8 ($CHCl_3$).

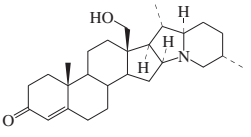
16-Deoxy: see Veralinine, V-60

5α,6,12,13-Tetrahydro: ***Tetrahydroveralkamine***
[17155-36-1]
$C_{27}H_{47}NO_2$ 417.674
Alkaloid from *Veratrum lobelianum*. Cryst. (EtOH). Mp 219-221°. $[\alpha]_D^{25}$ +6.1 (c, 1.2 in $CHCl_3$).

Tomko, J. *et al., Tetrahedron*, 1968, **24**, 4865-4873 (*isol, pmr, ms, ir, struct*)
Höhne, E. *et al., Tetrahedron*, 1968, **24**, 4875-4880 (*cryst struct*)
Tomko, J. *et al., CA*, 1981, **94**, 205391r (*isol*)
Kaneko, K. *et al., Phytochemistry*, 1981, **20**, 327-329 (*isol*)
Foldesiova, V. *et al., CA*, 1997, **127**, 231880u (*isol, derivs*)

Veralobine V-62

18-Hydroxysolanid-4-en-3-one
[6242-49-5]



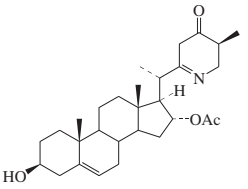
Absolute Configuration

$C_{27}H_{41}NO_2$ 411.626
Alkaloid from *Veratrum album* ssp. *lobelianum* (Liliaceae). Mp 238°. $[\alpha]_D^{26}$ +67 (c, 0.1 in MeOH).

Tomko, J. *et al., Pharmazie*, 1965, **20**, 385 (*isol, struct*)
Tomko, J. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1966, **299**, 347-350 (*struct*)
Höhne, E. *et al., Tetrahedron*, 1966, **22**, 673-678 (*cryst struct*)

Veralodisine V-63

16-(Acetyloxy)-3-hydroxy-16,28-secosolanida-5,22(28)-dien-24-one, 9CI
[52617-23-9]



Absolute Configuration

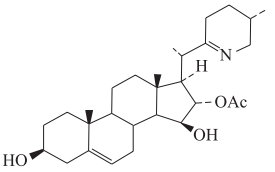
$C_{29}H_{43}NO_4$ 469.663
Alkaloid from *Veratrum album* ssp. *lobelianum* (Liliaceae). Mp 172-174°. $[\alpha]_D$ -92.8 (c, 0.49 in $CHCl_3$).

3-O-*β*-D-*Glucopyranoside:* ***Veralodinine***
[56598-27-7]
$C_{35}H_{53}NO_9$ 631.805
Alkaloid from *Veratrum album* ssp. *lobelianum* (Liliaceae). Cryst. (MeOH). Mp 226-228°. $[\alpha]_D$ -95.4 (c, 0.524 in $CHCl_3$).

Shakirov, R. *et al., Khim. Prir. Soedin.*, 1974, **10**, 44-48; *Chem. Nat. Compd. (Engl. Transl.)*, 1974, **10**, 38-41 (*ir, uv, pmr, ms, struct*)
Samikov, K. *et al., Khim. Prir. Soedin.*, 1975, **11**, 183-188; *Chem. Nat. Compd. (Engl. Transl.)*, 1975, **11**, 193-196 (*Veralodinine*)

Veralosidinine V-64

16-Acetoxy-16,28-secosolanida-5,22(28)-diene-3,5-diol
[52389-14-7]



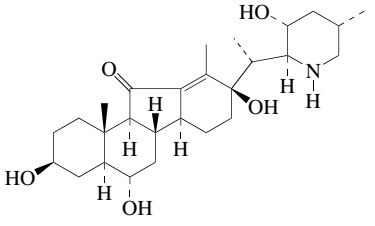
Absolute configuration

$C_{29}H_{45}NO_4$ 471.679
Alkaloid from *Veratrum album* ssp. *lobelianum* (Liliaceae). Mp 220-221°. $[\alpha]_D$ -173 (c, 0.59 in $CHCl_3$).

Shakirov, R. *et al., Khim. Prir. Soedin.*, 1973, **9**, 501; *Chem. Nat. Compd. (Engl. Transl.)*, 1973, **9**, 472 (*ir, uv, pmr, ms, struct*)
Moiseeva, G.P. *et al., Khim. Prir. Soedin.*, 1976, **12**, 623; *Chem. Nat. Compd. (Engl. Transl.)*, 1976, **12**, 557 (*cd*)

Veramanine V-65

[182816-87-1]

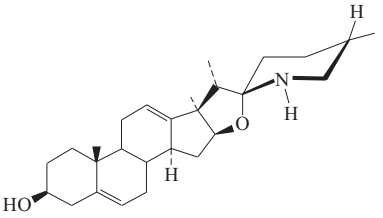


$C_{27}H_{43}NO_5$ 461.64
Alkaloid from rhizomes of *Veratrum album*. Yellow solid. $[\alpha]_D^{25}$ -33.5 (c, 0.08 in $CHCl_3$). λ_{max} 247 (MeOH).

Atta-ur-Rahman, *et al., Phytochemistry*, 1996, **43**, 907 (*isol, uv, ir, pmr, cmr, ms, struct*)

Veramine V-66

17-Methyl-18-norspirosola-5,12-dien-3-ol, 9CI
[21059-48-3]



$C_{27}H_{41}NO_2$ 411.626
Alkaloid from *Veratrum album* ssp. *lobelianum, Veratrum nigrum* and *Veratrum oxysepalum* (Liliaceae). Amorph. $[\alpha]_D^{24}$ -85.6 (c, 0.74 in EtOH). $[\alpha]_D^{24}$ -93.9 (c, 1.04 in $CHCl_3$).

Tomko, J. *et al., Chem. Zvesti*, 1964, **18**, 266 (*isol*)
Adam, G. *et al., CA*, 1972, **77**, 114667t (*struct, ir, uv, pmr, ms*)
Bondarenko, N.V. *et al., Khim. Prir. Soedin.*, 1981, **17**, 527 (*isol*)
Bondarenko, N.V. *et al., Khim. Prir. Soedin.*, 1984, **20**, 263; *Chem. Nat. Compd. (Engl. Transl.)*, 1984, **20**, 248 (*isol*)

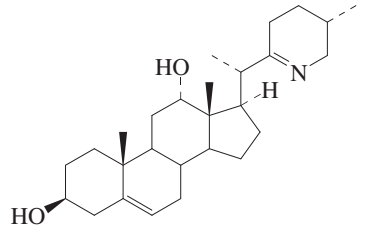
Veraminine V-67

Prob. steroidal alkaloid. Struct. unknown. Alkamine from *Veratrum album* ssp. *lobelianum* (Liliaceae). Mp 201-206°.

Tomko, J. *et al., Chem. Zvesti*, 1964, **18**, 266

Veramitaline V-68

16,28-Secosolanida-5,22(28)-diene-3,12-diol. 22,26-Epiminocholesta-5,22-diene-3,12-diol
[313697-00-6]



$C_{27}H_{43}NO_2$ 413.642
Alkaloid from the roots and rhizomes of *Veratrum taliense*. Needles (MeOH). Mp 217-218°.

Zhou, C.X. *et al., Indian J. Chem., Sect. B*, 2000, **39**, 283-286 (*isol, pmr, cmr*)

Veranovine V-69

Struct. unknown. Alkaloid from *Veratrum viride* (Liliaceae). Prob. a mixt.

Hydrochloride: Mp 190-200°.

U.S. Pat., 1957, 2 787 616; *CA*, **51**, 9102e

Verareine V-70

$C_{27}H_{41}NO$ 395.627

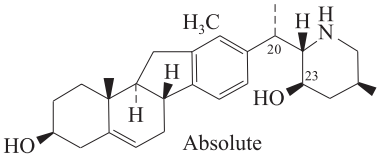
Steroidal alkaloid. Struct. unknown. Alkaloid from *Veratrum album* spp. *lobelianum* (Liliaceae). Mp 150-155°. $[\alpha]_D^{27}$ -13 (EtOH). $[\alpha]_D^{22}$ +6.1 ($CHCl_3$).

Tomko, J. *et al., Chem. Zvesti*, 1964, **18**, 266

Veratramine V-71

14,15,16,17-Tetradehydroveratraman-3,23-diol, 9CI

[60-70-8]



Absolute configuration

$C_{27}H_{39}NO_2$ 409.611

Alkaloid from *Veratrum album* var. *grandiflorum* and several other *Veratrum* spp. (Liliaceae). Shows antifungal activity. Active against *Helicobacter pylori*. Powerful cardiac stimulant. Effect not antagonised by atropine. Mp 209.5-210.5°. $[\alpha]_D^{19}$ -70 (c, 1.56 in MeOH). pK_a 7.49. λ_{max} 268 (MeOH) (Berdy).

► LD_{50} (mus, scu) 4.5 mg/kg. Exp. teratogen. YX5094000

Hydrochloride: Mp 310° (201-202°).

O^3*-β-D-Glucopyranoside:* ***Veratrosine***
[475-00-3]
$C_{33}H_{49}NO_7$ 571.753
Alkaloid from *Veratrum viride* and *Veratrum eschscholtzii* (Liliaceae). Mp 242-243° dec. (236-239°). $[\alpha]_D^{25}$ -53 (c, 0.26 in $CHCl_3$/EtOH 1:1).

► YX7050000

23-Deoxy: ***Verarine****. 23-Deoxyveratramine*
$C_{27}H_{39}NO$ 393.611
From *Veratrum album* ssp. *lobelianum* (Liliaceae). Mp 174-176°. $[\alpha]_D^{25}$ -68.5 (EtOH).

23-Deoxy, N*-Ac:* Mp 195-196°. $[\alpha]_D^{28}$ -14.4 (c, 1.02 in EtOH).

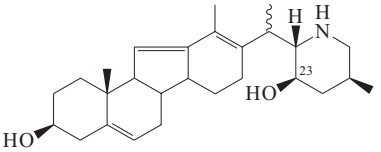
23-Deoxy, O,N*-di-Ac:* Mp 189-190°. $[\alpha]_D^{26}$ -21.3 (c, 1.33 in EtOH).

20-Epimer: ***20-Isoveratramine***
$C_{27}H_{39}NO_2$ 409.611
Alkaloid from *Veratrum patulum*. Prisms. Mp 267-270°. $[\alpha]_D^{23}$ +102.2 (c, 0.09 in MeOH). λ_{max} 207 (log ε 4.32) (EtOH).

20-Epimer, 23-O-β-D-glucopyranoside: ***23-O-β-D-Glucopyranosyl-20-isoveratramine***
[148440-62-4]
$C_{33}H_{49}NO_7$ 571.753
Alkaloid from roots of *Veratrum patulum* (Liliaceae). Amorph. powder. Mp 165°. $[\alpha]_D^{20}$ -95 (c, 1.0 in Py).

Jacobs, W.A. *et al., J. Biol. Chem.*, 1944, **155**, 565 (*isol, Veratrosine*)
Tamm, C. *et al., J.A.C.S.*, 1952, **74**, 3842 (*uv, ir, struct*)
Tomko, J. *et al., Coll. Czech. Chem. Comm.*, 1964, **29**, 2570 (*Verarine*)
Budzikiewicz, H. *et al., Tetrahedron*, 1964, **20**, 2267 (*ms*)
Johnson, W.S. *et al., J.A.C.S.*, 1967, **89**, 4523 (*synth*)
Kupchan, S.M. *et al., J.A.C.S.*, 1968, **90**, 2730 (*config*)
Masamune, T. *et al., Tetrahedron*, 1971, **27**, 3387 (*pmr*)
Sprague, P.W. *et al., Tetrahedron*, 1971, **27**, 4852 (*cmr*)
Han, Y.B. *et al., Yakhak Hoeji*, 1973, **17**, 13-16; 137-140 (*activity*)
Kutney, J.P. *et al., Can. J. Chem.*, 1975, **53**, 1796 (*synth*)
Irsch, E.M. *et al., Annalen*, 1993, 281 (*23-O-β-D-Glucopyranosyl-20-isoveratramine*)
Tezuka, Y. *et al., J. Nat. Prod.*, 1998, **61**, 1078-1081 (*20-Isoveratramine*)
Tezuka, W. *et al., Wakan Iyakugaku Zasshi*, 1999, **16**, 196; *CA*, **132**, 276648u (*activity*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, VHP500

Veratra-5,11,13-triene-3,23-diol V-72



$C_{27}H_{41}NO_2$ 411.626

(3β,22S,23R,25S)-form

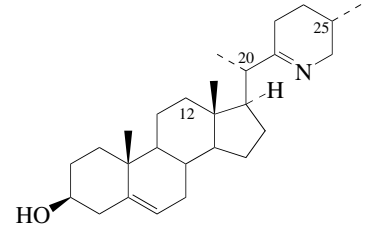
*23-*O*-β-D-Glucopyranoside:* [148440-63-5]
$C_{33}H_{51}NO_7$ 573.768
Alkaloid from roots of *Veratrum patulum* (Liliaceae). Amorph. powder.

Irsch, E.-M. *et al., Annalen*, 1993, 281 (*isol, pmr, cmr, struct*)

Verazine V-73

*16,28-Secosolanida-5,22(28)-dien-3-ol, 9CI. 22,26-Iminocholesta-5,22(*N*)-dien-3-ol. Verasine*

[14320-81-1]



$C_{27}H_{43}NO$ 397.643

Alkaloid from *Veratrum album* ssp. *lobelianum, Veratrum grandiflorum, Veratrum nigrum* (Liliaceae) and *Solanum surinamense*. Shows antifungal activity. Mp 176-178°. $[\alpha]_D^{24}$ -89.7 (EtOH). $[\alpha]_D$ -91 (c, 0.35 in $CHCl_3$). λ_{max} 206 (ε 39800); 243 (ε 630) (MeOH) (Berdy).

*3-*O*-β-D-Glucopyranoside:* ***Verazinine***
[97763-02-5]
$C_{33}H_{53}NO_6$ 559.785
Alkaloid from aerial parts of *Zygadenus sibiricus* (Liliaceae). Cryst. (Me_2CO). $[\alpha]_D$ -112.6 (c, 0.49 in $CHCl_3$).

*22*S,N*-Dihydro: 16,28-Secosolanid-5-en-3-ol, 9CI. 22,26-Epiminocholest-5-en-3-ol.* ***Veramiline****. Oblonginine*
[17463-47-7]
$C_{27}H_{45}NO$ 399.659
Alkaloid from *Veratrum album* ssp. *lobelianum* aerial parts (Liliaceae) and *Veratrum oblongum*. Cryst. (Me_2CO). Mp 198-200°. $[\alpha]_D^{22}$ -49 (c, 0.79 in EtOH). Stereochem. of Oblonginine revised in 1998.

*22*S,N*-Dihydro, 3-*O*-β-D-glucopyranoside: Veramiline 3-*O*-β-D-glucopyranoside*
[128351-76-8]
$C_{33}H_{55}NO_6$ 561.801
Alkaloid from hypogeal parts of *Veratrum taliense* (Liliaceae). Powder (EtOAc/MeOH). Mp 303-305°. $[\alpha]_D^{18}$ -41.9 (c, 0.6 in MeOH).

*22*S,N*-Dihydro,* N,O*-di-Ac:*
Cryst. (Et_2O). Mp 156-157°. $[\alpha]_D^{22}$ -21 (c, 0.72 in EtOH).

4β-Hydroxy: ***4β-Hydroxyverazine***
[215720-25-5]
$C_{27}H_{43}NO_2$ 413.642
Alkaloid from *Solanum surinamense*. Cryst. (MeOH). Mp 163-165°. $[\alpha]_D^{26}$ -12.8 (c, 0.7 in MeOH). λ_{max} 207 (log ε 3.4) (MeOH).

*12β-Hydroxy, 22*S,N*-dihydro:* ***Veramivirine****. 12β-Hydroxyveramiline*
[164178-47-6]
$C_{27}H_{45}NO_2$ 415.658
Alkaloid from roots and rhizomes of *Veratrum viride* (Liliaceae). Needles (MeOH). Mp 229-231°. $[\alpha]_D$ -81 (c, 0.1 in $CHCl_3$).

25β-Hydroxy: ***25β-Hydroxyverazine***
[215720-27-7]
$C_{27}H_{43}NO_2$ 413.642
Alkaloid from *Solanum surinamense*. Cryst. (MeOH). Mp 179-182°. $[\alpha]_D^{26}$ -28 (c, 0.5 in MeOH). λ_{max} 211 (log ε 3.6) (MeOH).

20-Epimer: ***20-Epiverazine***
[145033-50-7]
$C_{27}H_{43}NO$ 397.643
Alkaloid from *Solanum surinamense* and *Veratrum maackii*. Amorph. $[\alpha]_D^{26}$ +6.5 (c, 1.9 in MeOH). λ_{max} 206 (log ε 4.8) (MeOH).

20-Epimer, Δ^4*-isomer, 3-ketone:* ***4,5-Dehydro-5,6-dihydro-3-oxo-20-epiverazine****. 16,28-Secosolanida-4,22(28)-dien-3-one*
[215804-90-3]
$C_{27}H_{41}NO$ 395.627
Alkaloid from *Solanum surinamense*. Amorph. $[\alpha]_D^{26}$ +68 (c, 1 in MeOH). λ_{max} 209 (log ε 4.9); 240 (log ε 5.1) (MeOH).

20-Epimer, 4β-hydroxy: ***4β-Hydroxy-20-epiverazine***
[215720-24-4]
$C_{27}H_{43}NO_2$ 413.642
Alkaloid from *Solanum surinamense*. Powder (MeOH). Mp 107-109°. $[\alpha]_D^{26}$ -20.5 (c, 2 in MeOH). λ_{max} 206 (log ε 3.4) (MeOH).

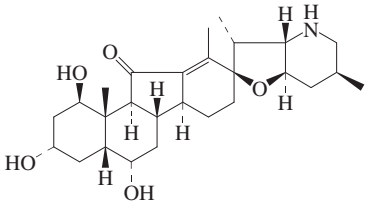
20-Epimer, 25β-hydroxy: ***25β-Hydroxy-20-epiverazine***

[215720-26-6]
$C_{27}H_{43}NO_2$ 413.642
Alkaloid from *Solanum surinamense*.

Adam, G. *et al., Tetrahedron*, 1967, **23**, 167-171 (*isol, struct, ir, ms, uv, pmr*)
Kessar, S.V. *et al., Indian J. Chem.*, 1974, **12**, 1245-1248 (*synth*)
Vassová, A. *et al., Coll. Czech. Chem. Comm.*, 1977, **42**, 3643-3645 (*Veramiline*)
Bondarenko, N.V. *et al., Khim. Prir. Soedin.*, 1979, 415; *Chem. Nat. Compd. (Engl. Transl.)*, 1979, **15**, 366 (*isol*)
Tomko, J. *et al., CA*, 1981, **94**, 205391r (*isol*)
Taskhanova, G.M. *et al., Khim. Prir. Soedin.*, 1985, **21**, 368-369; *Chem. Nat. Compd. (Engl. Transl.)*, 1985, **21**, 343-344 (*Verazine*)
Kusano, G. *et al., Chem. Pharm. Bull.*, 1987, **35**, 4862-4867 (*activity*)
Mizuno, M. *et al., Phytochemistry*, 1990, **29**, 359-361 (*Veramiline 3-O-β-D-glucopyranoside*)
Kadota, S. *et al., Phytochemistry*, 1995, **38**, 777-781 (*Oblonginine*)
El Sayed, K.A. *et al., Phytochemistry*, 1995, **38**, 1547-1550 (*Veramivirine*)
Abdel-Kader, M.S. *et al., J. Nat. Prod.*, 1998, **61**, 1202-1208; 2000, **63**, 1184 (*Solanum surinamense alkaloids*)
Lowe, P.R. *et al., Phytochemistry*, 1998, **47**, 887-890 (*Oblonginine, stereochem*)

Verdine V-74

17,23-Epoxy-5,6-dihydro-1,3,6-trihydroxyveratraman-11-one. 1,3,6-Trihydroxyjervanin-12-en-11-one
[73667-53-5]



$C_{27}H_{41}NO_5$ 459.625
Alkaloid from *Veratrum lobelianum* epigeal parts (Liliaceae). Mp 218-220°.

Nakhatov, I. *et al., Khim. Prir. Soedin.*, 1984, 395; *Chem. Nat. Compd. (Engl. Transl.)*, 375 (*isol, uv, ir, pmr*)
Tashkhodzhaev, B. *et al., Khim. Prir. Soedin.*, 1984, 753; *Chem. Nat. Compd. (Engl. Transl.)*, 711 (*cryst struct*)

Verine V-75

[1361-89-3]

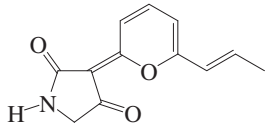
$C_{25}H_{39}NO_2$ 385.589

Steroidal alkaloid. Struct. unknown. Alkamine from *Veratrum album* (Liliaceae). Mp 221-222° dec. $[\alpha]_D^{18}$ -21.12 (c, 1 in $CHCl_3$).

Cionga, E. *et al., Acta Pol. Pharm.*, 1957, **14**, 73-76; *CA*, **52**, 12882c

Vermelhotin V-76

3-[6-(1-Propenyl)-2H-pyran-2-ylidene]-2,4-pyrrolidinedione



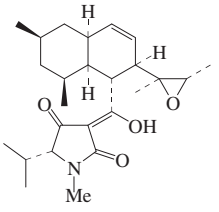
$C_{12}H_{11}NO_3$ 217.224

Tetramic acid. Isol. from an unidentified fungus, IFM 52672. Red needles (CH_2Cl_2/MeOH). Mp 212-214°. λ_{max} 228 (log ϵ 3.82); 234 (log ϵ 3.8); 276 (log ϵ 4.11); 319 (log ϵ 3.5); 332 (log ϵ 3.4); 439 (log ϵ 3.96); 456 (log ϵ 3.95) (MeOH).

Hosoe, T. *et al., Heterocycles*, 2006, **68**, 1949-1953 (*isol, pmr, cmr, cryst struct*)

Vermisporin V-77

[122301-98-8]



Relative Configuration

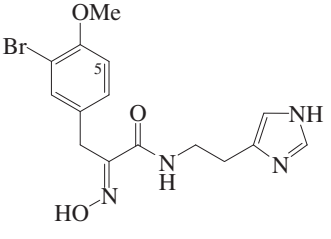
$C_{25}H_{37}NO_4$ 415.572

Tetramic acid deriv. Similar to Antibiotic PF 1052, A-1225. Prod. by *Ophiobolus vermisporus* and *Phoma* sp. FKI-1840. Antibacterial agent. Cryst. Sol. MeOH, Et_2O; poorly sol. hexane, H_2O. $[\alpha]_D^{20}$ +73.8 ($CHCl_3$). $[\alpha]_D$ +55.9 (MeOH). λ_{max} 229 (ϵ 6180); 291 (ϵ 12280) (MeOH).

Japan. Pat., 1988, 190 894; *CA*, **111**, 95600t (*isol*)
Koyama, N. *et al., J. Antibiot.*, 2005, **58**, 338-345 (*isol, struct*)

Verongamine V-78

[150036-88-7]



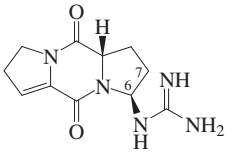
$C_{15}H_{17}BrN_4O_3$ 381.228
Alkaloid from the marine sponge *Verongula gigantea*. Specific histamine H_3-receptor antagonist. Yellow semi-solid or oil. λ_{max} 206 (ϵ 33600); 280 (ϵ 3040); 388 (ϵ 630) (MeOH) (Berdy).

5-Bromo: ***5-Bromoverongamine***
[218931-98-7]
$C_{15}H_{16}Br_2N_4O_3$ 460.124
Metab. of the sponge *Pseudoceratina* sp. Shows antifouling props. Oil. λ_{max} 207 (ϵ 44140) (MeOH).

Mierzwa, R. *et al., J. Nat. Prod.*, 1994, **57**, 175-177 (*isol, uv, ir, pmr, cmr, struct*)
Wasserman, H.H. *et al., J.O.C.*, 1998, **63**, 5581-5586 (*synth*)
Thirionet, I. *et al., Nat. Prod. Lett.*, 1998, **12**, 209-214 (*5-Bromoverongamine, activity*)
Boehlow, T.R. *et al., J.O.C.*, 2001, **66**, 3111-3118 (*synth*)

Verpacamide C V-79

3-(Aminoiminomethyl)-1,2,3,7,8,9a-hexahydro-5H,10H-dipyrrolo[1,2-a:1′,2′-d]pyrazine-5,10-dione
[890152-49-5]



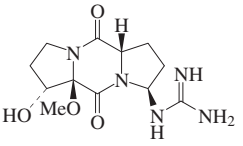
Relative Configuration

$C_{11}H_{15}N_5O_2$ 249.272
Alkaloid from *Axinella vaceleti*. Amorph. solid (as formate salt). $[\alpha]_D^{24}$ +17.4 (c, 0.15 in H_2O) (formate salt).

Vergne, C. *et al., Org. Lett.*, 2006, **8**, 2421-2424 (*isol, pmr, cmr*)

Verpacamide D V-80

[890152-48-4]



Relative Configuration

$C_{12}H_{19}N_5O_4$ 297.313
Alkaloid from *Axinella vaceleti*. Amorph. solid (as formate salt).

Vergne, C. *et al., Org. Lett.*, 2006, **8**, 2421-2424 (*isol, pmr, cmr*)

Verrucarin F V-81

$C_{21}H_{18}N_2O_6$ 394.383

Pyrrole antibiotic. Struct. unknown. Alkaloid from *Myrothecium verrucaria*. Cryst. (Me_2CO/Et_2O or MeOH). Sol. Py; fairly sol. MeOH, butanol; poorly sol. $CHCl_3$, hexane. Mp 237-238°. $[\alpha]_D^{23}$ -1 (c, 0.64 in Py). λ_{max} 202 ; 233 ; 308 (EtOH).

Haerri, E. *et al., Helv. Chim. Acta*, 1962, **45**, 839-853 (*isol*)

Verrucarin G V-82

$C_{15}H_{12}N_2O_6$ 316.27

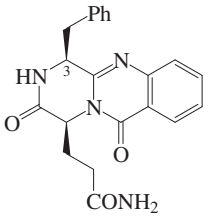
Pyrrole antibiotic. Struct. unknown. Alkaloid from *Myrothecium verrucaria*. Cryst. (Me_2CO/Et_2O). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 118° Mp 131-135° double Mp). λ_{max} 208 ; 254 ; 300 (EtOH).

Haerri, E. *et al., Helv. Chim. Acta*, 1962, **45**, 839-853

Verrucine A V-83

[252032-22-7]

[366787-64-6 (Verrucine D), 366787-58-8 (Verrucine E), 366786-27-8 (Verrucine C)]



Absolute Configuration

$C_{21}H_{20}N_4O_3$ 376.414

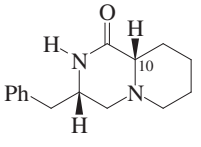
Related to Fumiquinazoline A, F-185 and Anacine, A-966. Prod. by *Penicillium verrucosum*. Amorph. solid. $[\alpha]_D^{22}$ +37 (c, 0.1 in EtOH) (natural). $[\alpha]_D^{30}$ +57 (c, 0.25 in EtOH) (synthetic). Verrucine C, Verrucine D and Verrucine E have also been isol. but not characterized. λ_{max} 227 (sh) (log ϵ 3.65); 272 (log ϵ 3.17); 278 (log ϵ 3.17); 306 (log ϵ 2.82); 317 (log ϵ 2.68) (EtOH).

3-Epimer: ***Verrucine B***
[252032-23-8]
$C_{21}H_{20}N_4O_3$ 376.414
Prod. by *Penicillium verrucosum*. Amorph. solid. $[\alpha]_D^{22}$ +124 (c, 0.08 in EtOH) (natural). $[\alpha]_D^{29}$ +183 (c, 0.19 in EtOH) (synthetic). λ_{max} 227 (sh) (log ϵ 3.56); 272 (log ϵ 2.9); 278 (log ϵ 2.87); 306 (log ϵ 2.69); 317 (log ϵ 2.65) (EtOH).

Larsen, T.O. *et al., J. Nat. Prod.*, 1999, **62**, 1578-1580 (*isol, pmr, cmr*)
Larsen, T.O. *et al., Appl. Environ. Microbiol.*, 2001, **67**, 3630-3635 (*isol*)
Wang, H. *et al., J. Nat. Prod.*, 2001, **64**, 1497-1501 (*synth, pmr, cmr, abs config*)

Verruculotoxin V-84

*Hexahydro-3-(phenylmethyl)-2*H*-pyrido[1,2-a]pyrazin-1(6*H*)-one. 3-Benzyl-1,4-diazabicyclo[4.4.0]decan-5-one*
[56092-63-8]



Absolute Configuration

$C_{15}H_{20}N_2O$ 244.336

Prod. by *Penicillium verruculosum*. Mycotoxin. Large needles (CH_2Cl_2/heptane), cryst. (C_6H_6). Sol. Me_2CO, Et_2O; fairly sol. MeOH, toluene; poorly sol. H_2O, hexane. Mp 152°. $[\alpha]_D^{25}$ -56 (c, 0.25 in MeOH) (synthetic).

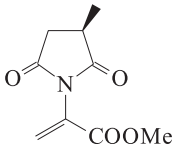
► LD_{50} (ckn, orl) 20 mg/kg; LD_{50} (mus, orl) 20 mg/kg. YX9840000

10-Epimer: ***10-Epiverruculotoxin***
[69651-21-4]
$C_{15}H_{20}N_2O$ 244.336
Prod. by *Penicillium brasilianum*. Powder (EtOAc/hexane). Mp 143-144° (synthetic). $[\alpha]_D^{25}$ +59.6 (c, 0.5 in MeOH) (synthetic).

Cole, R.J. *et al., Toxicol. Appl. Pharmacol.*, 1975, **31**, 465-468 (*isol, uv, ir, pmr, ms*)
MacMillan, J.G. *et al., J.A.C.S.*, 1976, **98**, 246-247 (*synth, cryst struct*)
Frisvad, J.C. *et al., J. Chromatogr.*, 1987, **392**, 333-347; **404**, 195-214 (*chromatog*)
Williams, R.M. *et al., Synthesis*, 1988, 963-966 (*synth, ir, pmr*)
Martens, J. *et al., Tet. Lett.*, 1991, **32**, 1417-1418 (*synth*)
Cole, R.J. *et al., Handbook of Toxic Fungal Metabolites*, Academic Press, 1981, 838

Versimide V-85

Methyl 3-methyl-α-methylene-2,5-dioxo-1-pyrrolidineacetate, 9CI



(*R*)–*form*

$C_9H_{11}NO_4$ 197.19

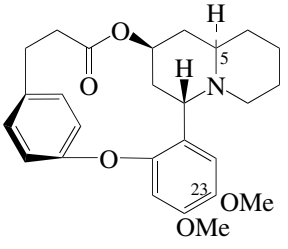
(*R*)-*form* [30270-17-8]
Metab. of *Aspergillus versicolor*. Has contact insecticidal and antibiotic props. Viscous oil. Sol. MeOH, Et_2O; poorly sol. H_2O, hexane. $Bp_{0.003}$ 60°. $[\alpha]_D^{20}$ +22.3 (c, 2 in $CHCl_3$). n_D^{21} 1.4896. λ_{max} 204 (ϵ 10260) (EtOH) (Berdy).

(±)-*form*
Yellow oil.

Brown, A.G. *et al., J.C.S.(C)*, 1970, 2572 (*isol, struct, ir, pmr*)
Cole, M. *et al., Appl. Microbiol.*, 1972, **24**, 660 (*use*)
Brown, A.G. *et al., J.C.S. Perkin 1*, 1972, 65 (*synth, ir, pmr*)

Vertaline V-86

(10α)-Decaline, 9CI. 10-Epidecaline



$C_{26}H_{31}NO_5$ 437.535

(-)-*form* [32886-91-2]
Alkaloid from *Decodon verticillatus* (Lythraceae). Mp 194-196°. $[\alpha]_D^{26}$ -170 (c, 1.25 in $CHCl_3$).

Hydrobromide:
Cryst. (MeOH). Mp 275-278°.

Methiodide:
Cryst. + $1H_2O$ (THF/CH_2Cl_2). Mp 221°.

O^{23}-De-Me: ***Demethylvertaline***
[34437-41-7]
$C_{25}H_{29}NO_5$ 423.508
Alkaloid from *Decodon verticillatus* (Lythraceae). Mp 120-160°.

5-Epimer: ***Decaline****. Epivertaline*
[14727-56-1]
$C_{26}H_{31}NO_5$ 437.535
Alkaloid from *Decodon verticillatus* (Lythraceae). Mp 81-82° (MeOH solvate) Mp 102-118° (dry).

5-Epimer, methiodide:
Cryst. (THF/CH_2Cl_2). Mp 215°.

5-Epimer, O^{23}-de-Me: ***Demethyldecaline***
[34437-42-8]
$C_{25}H_{29}NO_5$ 423.508
Alkaloid from *Decodon verticillatus* (Lythraceae).

(±)-*form* [53494-86-3]
Synthetic. Prisms (MeOH). Mp 224-225°.

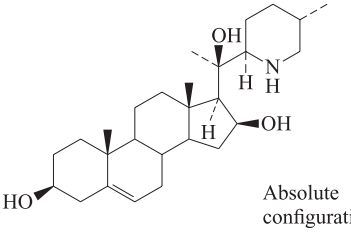
5-Epimer: [50412-65-2]
Synthetic. Needles (MeOH). Mp 196-197°.

5-Epimer, O^{23}-de-Me: [54422-29-6]
Synthetic. Mp 259-261°.

Ferris, J.P. *et al., J.O.C.*, 1962, **27**, 2985 (*isol, uv*)
Hamilton, J.A. *et al., J.A.C.S.*, 1971, **93**, 2939 (*cryst struct*)
Ferris, J.P. *et al., J.A.C.S.*, 1971, **93**, 2953 (*Vertaline, Decaline, Demethyldecaline, Demethylvertaline, isol, pmr, struct, synth*)
Wróbel, J.T. *et al., Tet. Lett.*, 1973, 4293 (*Decaline, synth*)
Hanaoka, M. *et al., Chem. Pharm. Bull.*, 1974, **22**, 973; 1945; 1975, **23**, 2140; 1976, **24**, 1045 (*synth, ir, pmr, uv*)
Corey, E.J. *et al., J.A.C.S.*, 1975, **97**, 654 (*synth*)
Hart, D.H. *et al., J.O.C.*, 1982, **47**, 1555 (*synth, ir, pmr*)
Shishido, K. *et al., Chem. Pharm. Bull.*, 1985, **33**, 532 (*synth, ir, pmr*)

Vertaline B V-87

[118985-28-7]



Absolute configuration

$C_{27}H_{45}NO_3$ 431.657

Structurally unrelated to Vertaline. Alkaloid from the whole plant of *Veratrum taliense* (Liliaceae).

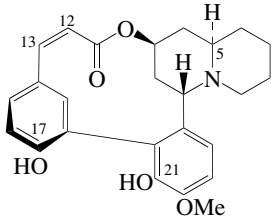
16-Deoxy: ***Stenophylline B***
[91421-75-9]
$C_{27}H_{45}NO_2$ 415.658
Alkaloid from whole plants of *Veratrum stenophyllum*. Cryst. (MeOH). Mp 225-228°.

16-Deoxy, 3-O-β-D-glucopyranoside: ***Stenophylline B 3-O-β-D-glucopyranoside***
[128351-77-9]
$C_{33}H_{55}NO_7$ 577.8
Alkaloid from *Veratrum taliense*. Plates (MeOH). Mp 286-288°. $[\alpha]_D^{18}$ -42.5 (c, 0.1 in MeOH).

Liang, G. *et al., Yaoxue Xuebao*, 1984, **19**, 131-136; *CA*, **101**, 97524p (*Stenophylline B*)
Min, Z.D. *et al., Yaoxue Xuebao*, 1988, **23**, 584-587; *CA*, **110**, 92057q (*Vertaline B*)
Mizuno, M. *et al., Phytochemistry*, 1990, **29**, 359-361 (*Stenophylline B 3-glucoside*)

Verticillatine† V-88

2′,6′′-Dihydroxy-5′′-methoxylythran-12-one, 9CI
[10247-54-8]



$C_{25}H_{27}NO_5$ 421.492

CAS numbering differs from that shown. Alkaloid from *Decodon verticillatus* (Lythraceae). Mp 312°.

Hydrochloride:
Cryst. + 0.5 MeOH (MeOH/Et_2O). Mp 240° dec. $[\alpha]_D$ +119 (c, 1.93 in MeOH).

Di-O-Ac:
Cryst. (cold MeOH). Mp 176-178°. $[\alpha]_D^{26}$ +36 (c, 2.41 in $CHCl_3$).

O^{21}*-Me:* ***Sinicuichine***
[31946-81-3]
$C_{26}H_{29}NO_5$ 435.519
Alkaloid from *Heimia salicifolia* (Lythraceae). Tranquilliser. Mp 187-188° (*in vacuo*). $[\alpha]_D$ +77.8 ($CHCl_3$). Log P 4.17 (calc).

O^{21}*-Me; hydrochloride:* Mp 265-266°.

Di-Me ether: Mp 252° (*in vacuo*).

12,13-Dihydro: ***Dihydroverticillatine***
[10215-02-8]
$C_{25}H_{29}NO_5$ 423.508
Alkaloid from *Lagerstroemia indica* (Lythraceae). Cryst. (MeOH). Mp 260-263° dec.

12,13-Dihydro, O^{21}*-Me:* ***Lagerstroemine****. Indicamine†. Lagerstremine*
[10247-53-7]
$C_{26}H_{31}NO_5$ 437.535
Alkaloid from *Lagerstroemia indica*. Also detected in *Plantago psyllium* seeds (African plantain) (Lythraceae, Plantaginaceae). Cryst. (EtOH). Mp 240°. $[\alpha]_D$ -137 ($CHCl_3$). pK_a 7.7 (EtOH).

12,13-Dihydro, di-Me ether:
Cryst. (Me_2CO/Et_2O). Mp 187-188°. $[\alpha]_D^{26}$ -99 (c, 1.13 in $CHCl_3$).

5-Epimer: ***Dehydrodecodine***
[35323-19-4]
$C_{25}H_{27}NO_5$ 421.492
Alkaloid from *Heimia salicifolia* (Lythraceae). Pale yellow powder. Mp 181-183°. $[\alpha]_D^{20}$ +149.3 (c, 0.15 in MeOH). Dec. above 184° if Mp. is determined *in vacuo*. Stereoisomer of Verticillatine, V-88. λ_{max} 285 (MeOH).

5-Epimer, O^{21}*-Me:* ***Nesodine***
[34628-60-9]
$C_{26}H_{29}NO_5$ 435.519
Alkaloid from *Heimia salicifolia* (Lythraceae). Needles (CH_2Cl_2 or 2-propanol). Mp 190°.

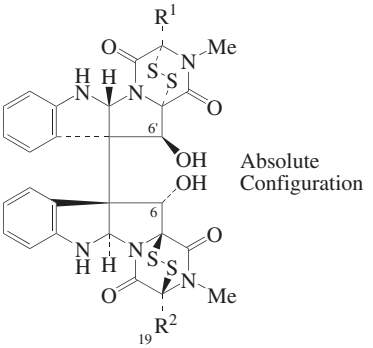
5-Epimer, 12,13-dihydro: ***Decodine***
[26996-01-0]
$C_{25}H_{29}NO_5$ 423.508
Alkaloid from *Decodon verticillatus* (Lythraceae). Cryst. (MeOH). Mp 193-197°. $[\alpha]_D^{26}$ -97 (c, 1.78 in $CHCl_3$).

5-Epimer, 12,13-dihydro, di-Ac:
Cryst. (Et_2O). Mp 202-203°. $[\alpha]_D^{26}$ -66 (c, 1.18 in $CHCl_3$).

Ferris, J.P. *et al., J.O.C.*, 1962, **27**, 2985; 1963, **28**, 817 (*isol, uv, pmr, Verticillatine, Dihydroverticillatine, Lagerstroemine, Decodine*)
Blomster, R.N. *et al., J. Nat. Prod.*, 1964, **27**, 15 (*isol, uv, ir, struct, Sinicuichine*)
Appel, H. *et al., J. Nat. Prod.*, 1965, **28**, 84 (*isol*)
Hörhammer, R.B. *et al., J. Nat. Prod.*, 1970, **33**, 483 (*pmr, struct, Sinicuichine*)
Ferris, J.P. *et al., J.A.C.S.*, 1971, **93**, 2942; 2958 (*Lagerstroemine, Dihydroverticillatine, Nesodine, Decodine*)
Balbaa, S.I. *et al., U. A. R. J. Pharm. Sci.*, 1971, **12**, 35; *CA*, **77**, 156311c (*Lagerstroemine, occur*)
Karawya, M.S. *et al., U. A. R. J. Pharm. Sci.*, 1971, **12**, 53; *CA*, **78**, 13729e (*Lagerstroemine, occur*)
Hörhammer, R.B. *et al., Z. Naturforsch., B*, 1971, **26**, 970 (*Dehydrodecodine*)
Rumalla, C.S. *et al., Phytochemistry*, 2008, **69**, 1756-1762 (*Dehydrodecodine*)

Verticillin A† V-89

[32164-16-2]



Absolute Configuration

$R^1 = R^2 = CH_3$

$C_{30}H_{28}N_6O_6S_4$ 696.852

Epidithiodioxopiperazine-type antibiotic. Isol. from *Verticillium* sp. TM759, *Gliocladium* sp. SCF1168 and a marine *Penicillium* sp. CNC-350. Mycotoxin. Cytotoxin. Yellow needles (Py). Sol. MeOH, dioxan, $CHCl_3$, Py; poorly sol. H_2O, hexane. Mp 202-217° dec. $[\alpha]_D$ +703.7. $[\alpha]_D$ +727 (dioxan). λ_{max} 203 (ϵ 50100); 240 (sh) (ϵ 14100); 301 (ϵ 5370) (Ac_2O/MeOH) (Derep). λ_{max} 306 (ϵ 6300) (dioxan) (Berdy).

▶ LD_{50} (mus, ipr) 7.6 mg/kg. YY1830000

6-Deoxy: ***11-Deoxyverticillin A***
[240480-95-9]
$C_{30}H_{28}N_6O_5S_4$ 680.852
Isol. from a marine *Penicillium* sp. CNC-350. Cytotoxic. Yellow cryst. (CH_2Cl_2/MeOH).

6,6′-Dideoxy: ***11,11′-Dideoxyverticillin A***
[240480-94-8]
$C_{30}H_{28}N_6O_4S_4$ 664.853
Isol. from a marine *Penicillium* sp. CNC-350. Cytotoxic. Solid. $[\alpha]_D$ +624.1.

19-Hydroxy: ***Verticillin B***
[52212-86-9]
$C_{30}H_{28}N_6O_7S_4$ 712.851
From *Verticillium* sp. TM759. Pale-yellow prisms ($CHCl_3$). Sol. MeOH, $CHCl_3$, dioxan, Py; poorly sol. H_2O, Et_2O, hexane. Mp 254-256° dec. $[\alpha]_D$ +704.7 (c, 0.493 in dioxan). λ_{max} 306 (ϵ 5600) (dioxan) (Berdy).

Mono(trisulfide) homologue: ***Gliocladine A***†
[871335-05-6]
$C_{30}H_{28}N_6O_6S_5$ 728.918
Not to be confused with Gliocladine A, G-97. Prod. by *Gliocladium roseum* 1A. Amorph. powder. $[\alpha]_D^{18}$ +553.6 (c, 0.45 in Py). λ_{max} 202 (log ϵ 0.7); 250 (log ϵ 0.37); 256 (log ϵ 0.29); 261 (log ϵ 0.31) (Py).

Mono(tetrasulfide) homologue: ***Gliocladine B***†
[871335-06-7]
$C_{30}H_{28}N_6O_6S_6$ 760.984
Not to be confused with Gliocladine B in G-97. Prod. by *Gliocladium roseum* 1A. Amorph. powder. $[\alpha]_D^{18}$ +555.8 (c, 0.44 in Py). λ_{max} 202 (log ϵ 0.81); 250 (log ϵ 0.57); 256 (log ϵ 0.59); 261 (log ϵ 0.42) (Py).

Katagiri, K. *et al., J. Antibiot., Ser. B*, 1970, **23**, 420-422 (*Verticillin A*)
Minato, H. *et al., J.C.S. Perkin 1*, 1973, 1819-1825 (*Verticillin B*)
Son, B.W. *et al., Nat. Prod. Lett.*, 1999, **13**, 213-222 (*Deoxyverticillin A, Dideoxyverticillin A*)
Dong, J.-Y. *et al., J. Nat. Prod.*, 2005, **68**, 1510-1513 (*Gliocladine A,B*)
Liu, F. *et al., Acta Cryst. E*, 2006, **62**, 974-976 (*cryst struct*)
Cole, R.J. *et al., Handbook of Toxic Fungal Metabolites*, Academic Press, 1981, 606

Verticillin C V-90

As Verticillin A, V-89 with
R^1 = SMe, R^2 = CH_2OH

$C_{30}H_{28}N_6O_7S_5$ 744.917
From *Verticillium* sp. strain TM-759. Shows antibiotic props. Pale-yellow amorph. powder (MeOH aq.). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 230-235° dec. $[\alpha]_D$ +765 (c, 0.506 in dioxan). λ_{max} 303 (ϵ 5500) (dioxan) (Berdy).

Minato, H. *et al., J.C.S. Perkin 1*, 1973, 1819 (*isol, ir, nmr*)

Verticillin D V-91

As Verticillin A, V-89 with
$R^1 = R^2 = -^{13}CH(OH)CH_3$

$C_{32}H_{32}N_6O_8S_4$ 756.904

Epidithiodioxopiperazine-type antibiotic. Prod. by *Gliocladium catenulatum*. Powder. Mp 244-247°. $[\alpha]_D$ +220 (c, 0.1 in MeOH). λ_{max} 214 (ϵ 19000); 304 (ϵ 1900) (MeOH).

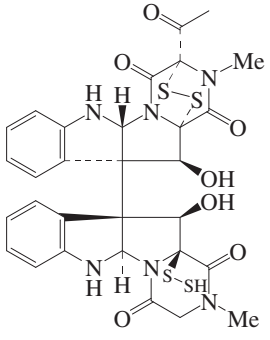
13-Ketone: ***Verticillin F***
$C_{32}H_{30}N_6O_8S_4$ 754.888
Prod. by *Gliocladium catenulatum*. Yellow powder. Mp 221-224°. $[\alpha]_D$ -80 (c, 0.1 in MeOH). λ_{max} 214 (ϵ 18000); 302 (ϵ 1400) (MeOH).

13,13′-Diketone: ***Verticillin E***
$C_{32}H_{28}N_6O_8S_4$ 752.873
Prod. by *Gliocladium catenulatum*. Yellow powder. Mp 211-214°. $[\alpha]_D$ +440 (c, 0.1 in MeOH). λ_{max} 218 (ϵ 26000); 304 (ϵ 4400) (MeOH).

Joshi, B.K. *et al., J. Nat. Prod.*, 1999, **62**, 730-733 (*isol, uv, pmr, cmr*)

Verticillin G V-92

[933785-95-6]



$C_{30}H_{28}N_6O_7S_4$ 712.851
Prod. by *Bionectra byssicola* F120. Antibacterial agent. Powder. $[\alpha]_D^{25}$ +467.6 (c, 0.2 in MeOH). λ_{max} 215 (log ϵ 4.79); 301 (log ϵ 3.79) (MeOH).

Zheng, C.-J. *et al., J. Antibiot.*, 2007, **60**, 61-64 (*isol, pmr, cmr*)

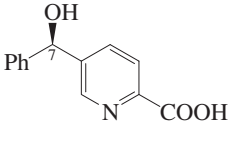
Verticilline† V-93

$C_{19}H_{33}NO_2$ 307.475
Steroidal alkaloid. Struct. unknown. Alkaloid from *Fritillaria verticillata* var. *thunbergii* (Liliaceae). Antihypotensive agent. Smooth muscle relaxant. Mp 148-150°. Sinters from 130°; resolidifies and remelts at 212-213°. Co-occurs with Verticine in C-298.

Fukuda, M. *et al., Nippon Kagaku Zasshi*, 1929, **50**, 74-78; *CA*, **23**, 2930
Ito, S. *et al., Chem. Pharm. Bull.*, 1963, **11**, 1337-1340

Vertilecanine A V-94

5-(Hydroxyphenylmethyl)-2-pyridinecarboxylic acid. 5-(α-Hydroxybenzyl)-2-pyridinecarboxylic acid



$C_{13}H_{11}NO_3$ 229.235

(R)-form
Isol. from *Verticillium lecanii*. Solid. Mp 155-157°. $[\alpha]_D^{23}$ -11 (c, 0.04 in MeOH). λ_{max} 208 (ϵ 5800); 228 (ϵ 1900); 270 (ϵ 1100) (MeOH).

Me ester:
$C_{14}H_{13}NO_3$ 243.262
Isol. from *Verticillium lecanii*. Solid. $[\alpha]_D^{24}$ -7 (c, 0.02 in MeOH). λ_{max} 210 (ϵ 2400); 228 (ϵ 1700); 270 (ϵ 1000) (MeOH).

Glycine amide: ***Vertilecanine B***
$C_{15}H_{14}N_2O_4$ 286.287
Isol. from *Verticillium lecanii*. Solid. $[\alpha]_D^{24}$ +13 (c, 0.03 in MeOH). λ_{max} 210 (ϵ 3300); 228 (ϵ 2500); 270 (ϵ 1500) (MeOH).

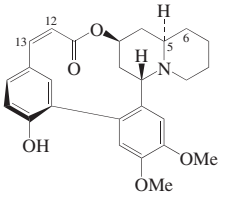
Glycine amide, Me ester:
$C_{16}H_{16}N_2O_4$ 300.313
Isol. from *Verticillium lecanii*. Solid. Mp 119-121°. $[\alpha]_D^{25}$ +9.7 (c, 0.03 in MeOH). λ_{max} 210 (ϵ 3600); 232 (ϵ 2900); 270 (ϵ 1600) (MeOH).

7-Ketone, glycine amide, Me ester: ***Vertilecanine C***
$C_{16}H_{14}N_2O_4$ 298.298
Isol. from *Verticillium lecanii*. Oil. λ_{max} 210 (ϵ 5800); 254 (ϵ 4800); 272 (ϵ 4400) (MeOH).

Soman, A.G. *et al., J. Nat. Prod.*, 2001, **64**, 189-192 (*isol, pmr, cmr*)
Tumer, F. *et al., Russ. Chem. Bull. (Engl. Transl.)*, 2005, **54**, 2466 (*synth*)

Vertine V-95

[10308-13-1]



Absolute Configuration

$C_{26}H_{29}NO_5$ 435.519
CAS numbering is not the same as that shown. Alkaloid from *Decodon verticillatus*, *Heimia salicifolia*, *Heimia myrtifolia* and *Lagerstroemia fauriei* (Lythraceae). Antiinflammatory, hyperglycaemic and hypotensive agent. Sedative. Cryst. (MeOH/$CHCl_3$). Mp 250-252° (245-247°). $[\alpha]_D$ +69.9 (c, 0.1 in MeOH). $[\alpha]_D$ +61 (c, 1 in $CHCl_3$). λ_{max} 285 (MeOH).

▶ OL6150000

Hydrochloride: Mp 322-323°.

Ac:
Cryst. (Et_2O). Mp 183-185°. $[\alpha]_D^{26}$ -92.7 (c, 0.96 in $CHCl_3$).

Me ether: Mp 231-233° (225-228°).

O^{23}*-De-Me:* ***5-Epilyfoline****. 10-Epilyfoline. Demethylvertine*
[128502-80-7]
$C_{25}H_{27}NO_5$ 421.492
Alkaloid from leaves and stems of *Heimia montana*. Yellow powder. $[\alpha]_D^{20}$ -75.9 (c, 0.15 in MeOH). λ_{max} 285 (MeOH).

12,13-Dihydro: ***Decamine****. Dihydrovertine*
[17349-05-2]
$C_{26}H_{31}NO_5$ 437.535
Alkaloid from *Decodon verticillatus* and *Lagerstroemia indica* (Lythraceae). Shows fungicidal props. Cryst. (MeOH). Mp 223-224°. $[\alpha]_D^{26}$ -145 (c, 1.0 in $CHCl_3$). Log P 2.89 (calc).

12,13-Dihydro, Ac:
Cryst. (cold MeOH). Mp 197-198°. $[\alpha]_D^{26}$ -188 (c, 1.16 in $CHCl_3$). Deacylated by hot MeOH.

12,13-Dihydro, 13ξ-hydroxy: ***Heimidine****. Hydroxydihydrovertine*
[36531-11-0]
$C_{26}H_{31}NO_6$ 453.534
Minor alkaloid from *Heimia salicifolia* (Lythraceae). Mp 221-223°. $[\alpha]_D^{20}$ -101.3 (c, 0.15 in MeOH). λ_{max} 285 (MeOH).

12,13-Dihydro, 13ξ-hydroxy, hydrochloride: Mp 316-318°.

*6*R*-Hydroxy:* ***6-Hydroxyvertine****. 9-Hydroxyvertine*
$C_{26}H_{29}NO_6$ 451.518
Alkaloid from the leaves of *Heimia salicifolia*. Powder. $[\alpha]_D^{20}$ +12 (c, 0.15 in MeOH). λ_{max} 283 (MeOH).

5-Epimer: ***Lythrine***
[5286-10-2]
$C_{26}H_{29}NO_5$ 435.519
Alkaloid from *Heimia salicifolia*, *Heimia myrtifolia* and *Lagerstroemia fauriei* (Lythraceae). Cryst. (MeOH). Mp 243-245°. $[\alpha]_D$ +32.5 ($CHCl_3$). $[\alpha]_D$ +40.6 ($CHCl_3$).

5-Epimer, hydrochloride: Mp 325-331°.

5-Epimer, Ac: Mp 172-173°.

5-Epimer, O^{23}*-de-Me:* ***Lyfoline***
[30356-01-5]
$C_{25}H_{27}NO_5$ 421.492
Alkaloid from *Heimia salicifolia*. Yellow powder. Mp 223-224°. $[\alpha]_D^{20}$ +70.6 (c, 0.15 in MeOH). λ_{max} 281 (MeOH).

5-Epimer, 12,13-dihydro: ***Decinine****. Dihydrolythrine. Cryogenine*†
[10183-64-9]
$C_{26}H_{31}NO_5$ 437.535
Alkaloid from *Decodon verticillatus*, *Lagerstroemia indica* and *Lythrum lanceolatum* (Lythraceae). Antiinflammatory agent, shows diuretic activity. Cryst. (MeOH). Mp 222-224°. $[\alpha]_D^{26}$ -142 (c, 1.37 in $CHCl_3$). pK_a 7.4 (50% MeOH).

5-Epimer, 12,13-dihydro, Ac: Mp 197-198°.

*5-Epimer, 12,13-dihydro, 13*S*-hydroxy:* ***Lythridine****. Sinine*
[15299-77-1]
$C_{26}H_{31}NO_6$ 453.534
Alkaloid from *Heimia salicifolia*, *Heimia myrtifolia* and *Lagerstroemia fauriei* (Lythraceae). Cryst. (EtOAc). Mp 218-219°. $[\alpha]_D$ -174.2 ($CHCl_3$). $[\alpha]_D^{20}$ +49.3 (c, 0.15 in MeOH). λ_{max} 280 (MeOH).

*5-Epimer, 12,13-dihydro, 13*S*-hydroxy, hydrochloride:* Mp 330° dec.

Stereoisomer (1): ***Alkaloid ALC 1***
[57572-82-4]
$C_{26}H_{29}NO_5$ 435.519
Alkaloid from *Heimia salicifolia* (Lythraceae). Mp 335-345° dec. $[\alpha]_D^{22}$ +115.6 ($CHCl_3$). Stereochem. undetermined.

Stereoisomer (1), Ac: Mp 126-128°.

Stereoisomer (1), Me ether: Mp 230-233°.

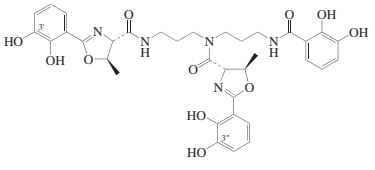
Stereoisomer (2): ***Alkaloid ALC 2***
[57572-83-5]
$C_{26}H_{29}NO_5$ 435.519
Alkaloid from *Heimia salicifolia*. Mp 309-310°. $[\alpha]_D$ +72.3 ($CHCl_3$). Stereochem. undetermined.

Stereoisomer (2), Me ether: Mp 235-237°.

Ferris, J.P. *et al., J.O.C.*, 1962, **27**, 2985 (*isol, uv, ir, synth, Vertine, Decamine, Decinine*)
Blomster, R.N. *et al., J. Nat. Prod.*, 1964, **27**, 15 (*Vertine, Lythrine, Lythridine*)
Douglas, B. *et al., J. Nat. Prod.*, 1964, **27**, 25 (*Vertine, Lythrine, Sinine*)
Zacharias, D.E. *et al., Experientia*, 1965, **21**, 247 (*cryst struct, Lythrine*)
Appel, H. *et al., J. Nat. Prod.*, 1965, **28**, 84 (*isol, Lyfoline*)
Chu, S.C. *et al., Chem. Ind. (London)*, 1966, 1795 (*cryst struct, Sinine*)
Appel, H. *et al., Tet. Lett.*, 1966, 5789 (*Sinine, uv, ms*)
Ferris, J.P. *et al., J.A.C.S.*, 1971, **93**, 2942; 2958; 2963 (*isol, abs config, Vertine, Lythrine, Lyfoline, Decinine*)
Wright, H. *et al., J.A.C.S.*, 1973, **95**, 6467 (*occur, Decinine*)
Dominguez, X.A. *et al., Phytochemistry*, 1975, **14**, 1883 (*isol, ord, ir, pmr, ms, struct, Lythrine*)
Lantos, I. *et al., J.O.C.*, 1977, **42**, 228 (*synth, ir, pmr, ms, Decamine, Decinine*)
Fuji, K. *et al., Chem. Pharm. Bull.*, 1978, **26**, 2515 (*Vertine, Sinine, isol, uv, ir*)
Hedges, S.H. *et al., Chem. Comm.*, 1983, 145 (*biosynth*)
Rother, A. *et al., Phytochemistry*, 1990, **29**, 1683 (*Demethylvertine*)
Xie, X.-Q. *et al., J. Nat. Prod.*, 1995, **58**, 1876 (*10-Epilyfoline*)
Rumalla, C.S. *et al., Phytochemistry*, 2008, **69**, 1756-1762 (*isol, pmr, cmr, cryst struct, 6-Hydroxyvertine, Vertine, 5-Epilyfoline, Heimidine, Lyfoline, Lythridine*)

Vibriobactin V-96

[88217-23-6]



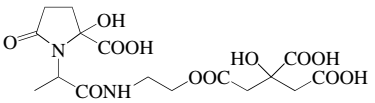
$C_{35}H_{39}N_5O_{11}$ 705.72
Isol. from *Vibrio cholerae*. Siderophore. Powder. Mp 153-155°. Darkens at *ca*. 130°. MF given as $C_{35}H_{41}N_5O_{11}$ in paper. λ_{max} 252 ; 316 (MeOH) (Berdy).

3′,3″-Dideoxy: ***Vulnibactin***
[156368-88-6]
$C_{35}H_{39}N_5O_9$ 673.721
Isol. from *Vibrio vulnificus*. Siderophore. Mp 94-97°. $[\alpha]_D^{25}$ +92.5 (c, 0.80 in MeOH).

Griffiths, G.L. *et al., J. Biol. Chem.*, 1984, **259**, 383 (*isol, struct*)
Bergeron, R.J. *et al., Tetrahedron*, 1985, **41**, 507 (*synth*)
Okujo, N. *et al., BioMetals*, 1994, **7**, 109 (*Vulnibactin*)
Bergeron, R.J. *et al., Synthesis*, 2007, 1033-1037 (*Vulnibactin, synth*)

Vibrioferrin V-97

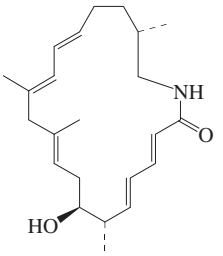
[157568-17-7]



$C_{16}H_{22}N_2O_{12}$ 434.356
Prod. by *Vibrio parahaemolyticus* and a *Marinobacter* sp. Siderophore. Oil. Sol. H_2O, MeOH, Me_2CO, MeCN, DMSO; fairly sol. Et_2O; poorly sol. EtOAc, $CHCl_3$. $[\alpha]_D^{20}$ +13.3 (c, 1.4 in MeOH). λ_{max} 200 (ϵ 4000) (H_2O).

Yamamoto, S. *et al., J. Biochem. (Tokyo)*, 1994, **115**, 868-874 (*isol, struct*)
Yamamoto, S. *et al., Microbiol. Immunol.*, 1994, **38**, 687-693 (*isol, activity*)
Takeuchi, Y. *et al., Chem. Pharm. Bull.*, 1999, **47**, 459-460; 1284-1287 (*synth*)
Amin, S.A. *et al., J.A.C.S.*, 2007, **129**, 478-479 (*isol, props*)

Vicenistatin aglycone V-98



Absolute configuration

$C_{23}H_{35}NO_2$ 357.535

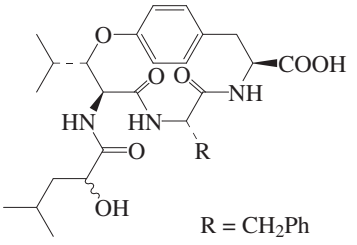
O-*(2,4,6-Trideoxy-4-methylamino-β-D-*ribo-*hexopyranoside):* ***Vicenistatin***
[150999-05-6]
$C_{30}H_{48}N_2O_4$ 500.72
Prod. by *Streptomyces halstedii* HC34. Antitumour agent. Powder. Sol. MeOH, Me_2CO, $CHCl_3$; poorly sol. H_2O, hexane. Mp 151-153°. $[\alpha]_D^{23}$ -3 (c, 0.1 in MeOH). λ_{max} 235 (ϵ 35000); 240 (ϵ 35800); 268 (ϵ 13700) (MeOH).

O-*(2,6-Dideoxy-3-*C*-methyl-β-D-*ribo-*hexopyranoside):* ***Vicenistatin M***
[312532-50-6]
$C_{30}H_{47}NO_5$ 501.705
Minor metab. of *Streptomyces halstedii* HC34. Powder. Mp 201-210°. $[\alpha]_D^{27}$ -4.2 (c, 0.05 in MeOH). λ_{max} 237 (37200); 241 (38000); 268 (13650) (MeOH).

Shindo, K. *et al., J. Antibiot.*, 1993, **46**, 1076 (*isol, pmr, cmr, struct*)
Matsushima, Y. *et al., J. Antibiot.*, 1998, **51**, 688-691 (*synth*)
Arai, H. *et al., Tet. Lett.*, 1998, **39**, 3181-3184 (*synth, abs config*)
Otsuka, M. *et al., Tetrahedron*, 2000, **56**, 8281-8286 (*biosynth*)
Matsushima, Y. *et al., J. Antibiot.*, 2001, **54**, 211-219 (*Vicenistatin M*)
Nishida, H. *et al., Tetrahedron*, 2001, **57**, 8237-8242 (*biosynth*)
Matsushima, Y. *et al., J.C.S. Perkin 1*, 2002, 949-958 (*synth*)
Ogasawara, Y. *et al., Chem. Biol.*, 2004, **11**, 79-86 (*biosynth*)

Vignatic acid A V-99

[181485-19-8]



$C_{30}H_{39}N_3O_7$ 553.654
Constit. of *Vigna radiata* (mung bean). Insecticidal agent. Powder. $[\alpha]_D$ -99 (c, 0.11 in MeOH).

Sugawara, F. *et al., J. Agric. Food Chem.*, 1996, **44**, 3360-3364 (*isol, pmr, cmr, hplc*)

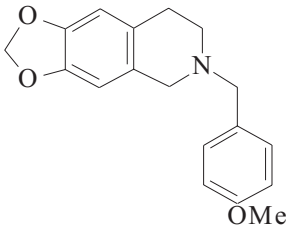
Vignatic acid B V-100

[181485-20-1]
As Vignatic acid A, V-99 with
R = $-CH_2CH(CH_3)_2$
$C_{27}H_{41}N_3O_7$ 519.637
Constit. of *Vigna radiata* (mung bean). Insecticidal agent. Powder. $[\alpha]_D$ -79 (c, 0.16 in MeOH).

Sugawara, F. *et al., J. Agric. Food Chem.*, 1996, **44**, 3360-3364 (*isol, pmr, cmr, hplc*)

Viguine V-101

1,2,3,4-Tetrahydro-2-(4-methoxybenzyl)-6,7-methylenedioxyisoquinoline
[107602-51-7]



$C_{18}H_{19}NO_3$ 297.353
Alkaloid from *Corydalis claviculata* (Papaveraceae). Cryst. (C_6H_6/hexane). Mp 63-64°.

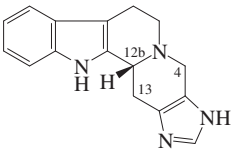
Hydrochloride:
Cryst. (EtOH). Mp 232-233°.

N-*Me:* **N-*Methylviguine***
[136092-29-0]
$C_{19}H_{22}NO_3^{\oplus}$ 312.388
Alkaloid from *Sarcocapnos saetabensis* (Papaveraceae). Powder.

Boente, J.M. *et al., Heterocycles*, 1986, **24**, 3359 (*uv, pmr, ms, struct, synth*)
Blanco, O. *et al., Phytochemistry*, 1991, **30**, 2071 (*N-Methylviguine*)

Villagorgin A V-102

*4,6,7,12,12*b,*13-Hexahydro-1*H-*imidazo[4,5*-g*]indolo[2,3*-a*]quinazoline, 9CI*
[152606-59-2]



$C_{16}H_{16}N_4$ 264.329
Miscellaneous indole alkaloid, not secologanin-derived. CAS numbering shown.

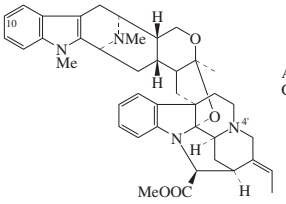
(R)-form
Alkaloid from the gorgonian *Villogorgia rubra*. Shows calmodulin-related antagonist activity. Red amorph. solid. $[\alpha]_D^{20}$ +7.8. Genus name incorrectly given as Villagorgia. λ_{max} 224 (ϵ 25600); 280 (ϵ 52409) (MeOH) (Berdy).

*4,*N,*12*b,*13-Dehydro:* ***1,6,7,12-Tetrahydroimidazo[4,5-g]indolo[2,3-a]quinolizin-5-ium(1+), 9CI. Villagorgin B***
[152606-60-5]
$C_{16}H_{13}N_4^{\oplus}$ 261.305
Alkaloid from the gorgonian *Villogorgia rubra*. Red amorph. solid. Counterion not specified. λ_{max} 228 ; 244 ; 280 ; 338 (MeOH) (Berdy). λ_{max} 222 ; 242 ; 332 (MeOH/HCl) (Berdy).

Espada, A. *et al., Tet. Lett.*, 1993, **34**, 7773-7776 (*isol, uv, ir, pmr, cmr, ms, struct*)
Grazul, R.M. *et al., Nat. Prod. Lett.*, 1994, **5**, 187 (*Villagorgin B, synth*)

Villalstonine V-103

Alkaloid B†
[2723-56-0]



Absolute Configuration

$C_{41}H_{48}N_4O_4$ 660.855
Alkaloid from *Alstonia muelleriana*, *Alstonia macrophylla*, *Alstonia spectabilis*, *Alstonia villosa*, *Alstonia somersetensis* and *Alstonia verticillosa* (Apocynaceae). Cytotoxic. Noncryst. Mp 235-270° dec. $[\alpha]_D$ +79 ($CHCl_3$).

Hydrochloride (1:2):
Cryst. + $4H_2O$ (MeOH/Et_2O). Mp 270° dec. $[\alpha]_D^{25}$ +46.6 (c, 0.995 in 50% MeOH aq.). $[\alpha]_D$ +56.3 (c, 0.5 in H_2O).

Sulfate:
Cryst. + $6H_2O$. Mp 310°. $[\alpha]_D$ +52.94 (c, 1.02 in H_2O).

4′-N-*Oxide:* ***Villalstonine 4′-N-oxide***
[120396-42-1]
$C_{41}H_{48}N_4O_5$ 676.854
Alkaloid from the stem bark of *Alstonia angustifolia* (Apocynaceae).

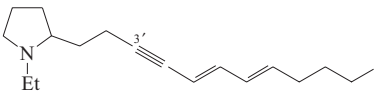
10-Methoxy: ***10-Methoxyvillalstonine***
[120396-40-9]
$C_{42}H_{50}N_4O_5$ 690.881
Alkaloid from the leaves of *Alstonia angustifolia* (Apocynaceae). $[\alpha]_D$ +39 (c, 0.66 in $CHCl_3$).

10-Methoxy, 4′-N-*oxide:* ***10-Methoxyvillalstonine 4′-N-oxide***
[120396-41-0]
$C_{42}H_{50}N_4O_6$ 706.88
Alkaloid from the leaves of *Alstonia angustifolia* (Apocynaceae).

Sharp, T.M. *et al., J.C.S.*, 1934, 1227 (*isol*)
Hesse, M. *et al., Helv. Chim. Acta*, 1965, **48**, 689 (*uv, ms, struct*)
Nordman, C.E. *et al., J.A.C.S.*, 1965, **87**, 2059 (*cryst struct*)
Kishi, T. *et al., Helv. Chim. Acta*, 1966, **49**, 946 (*isol*)
Hesse, M. *et al., Helv. Chim. Acta*, 1966, **49**, 1173 (*struct*)
Hart, N.K. *et al., Aust. J. Chem.*, 1972, **25**, 2739 (*isol*)
Elderfield, R.C. *et al., Phytochemistry*, 1972, **11**, 339 (*isol*)
Burke, D.E. *et al., J.A.C.S.*, 1973, **95**, 546 (*synth*)
Das, B.C. *et al., Tet. Lett.*, 1974, 4299 (*cmr*)
Ghedira, K. *et al., Phytochemistry*, 1988, **27**, 3955 (*Villalstonine N-oxide, 10-Methoxyvillalstone, 10-Methoxyvillalstonine N-oxide*)
Bi, Y. *et al., J.A.C.S.*, 1994, **116**, 9027 (*synth*)
Keawpradub, N. *et al., Planta Med.*, 1999, **65**, 311-315 (*isol, activity*)

Villatamine A V-104

2-(5,7-Dodecadien-3-ynyl)-1-ethylpyrrolidine
[168434-14-8]



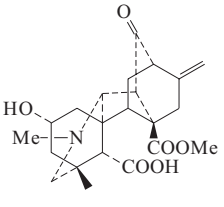
$C_{18}H_{29}N$ 259.434
Alkaloid from the predatory flatworm *Prostheceraeus villatus* and its tunicate prey *Clavelina lepadiformis*. Oil. $[\alpha]_D$ +49 (MeOH). *Prostheceraeus villatus* appears to be an Authors' misspelling of *P. vittatus*. λ_{max} 266 (ϵ 18700) (MeOH) (Berdy).

*3′,4′*E*, 7′,8′-Tetrahydro: 2-(3,5-Dodecadienyl)-1-ethylpyrrolidine.* ***Villatamine B***
[168434-15-9]
$C_{18}H_{33}N$ 263.465
Alkaloid from *Prostheceraeus villatus* and *Clavelina lepadiformis*. Exhibits significant *in vitro* cytotoxicity against human cancer cells. Oil. $[\alpha]_D$ +15 (MeOH). λ_{max} 230 (ϵ 19500) (MeOH) (Berdy).

Kubanek, J. *et al., Tet. Lett.*, 1995, **36**, 6189-6192 (*isol, uv, pmr, cmr, struct*)

Vilmoridine V-105

[159474-79-0]

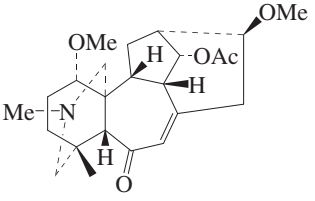


$C_{22}H_{29}NO_6$ 403.474
Alkaloid from roots of *Aconitum vilmorinianum* (Ranunculaceae).

Ding, L.-S. *et al., Huaxue Xuebao*, 1994, **52**, 932; *CA*, **122**, 5461y (*isol, struct*)

Vilmoritine V-106

[143086-35-5]

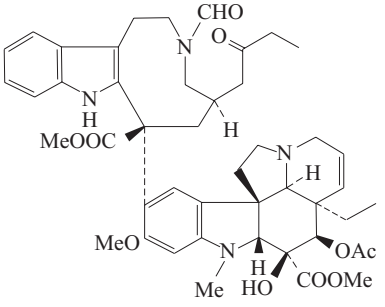


$C_{24}H_{35}NO_5$ 417.544
Alkaloid from the roots of *Aconitum vilmorinianum*.

Ding, L.S. *et al., Huaxue Xuebao*, 1992, **50**, 405-408; *CA*, **117**, 108100f

Vinamidine V-107

Catharinine
[58511-83-4]



$C_{46}H_{56}N_4O_{10}$ 824.969
Alkaloid from *Catharanthus roseus, Catharanthus longifolius* and *Catharanthus ovalis* (Apocynaceae). Amorph. $[\alpha]_D$ -32 (c, 1.1 in $CHCl_3$).

Tafur, S. *et al., J. Pharm. Sci.*, 1975, **64**, 1953 (*isol, uv, ir, cmr, ms*)
Andriamialisoa, R.Z. *et al., Tetrahedron*, 1978, **34**, 677 (*isol, uv, ir, pmr, cmr, ms, cd, cryst struct*)
Bornmann, W.G. *et al., J.O.C.*, 1992, **57**, 1752 (*synth*)

Vinaphamine V-108

[1361-98-4]
Bisindole alkaloid. Struct. unknown. Alkaloid from *Catharanthus roseus* (Apocynaceae). Thin blades (MeOH). Mp 229-235°. Mol. formula not recorded.

Svoboda, G.H. *et al., J. Pharm. Sci.*, 1964, **53**, 1227-1231 (*isol, uv, ir*)

Vinaspine V-109

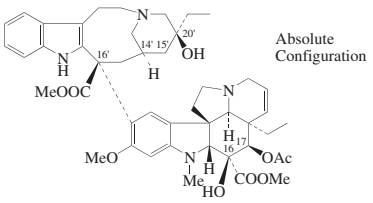
[1361-99-5]
Struct. unknown. Alkaloid from *Catharanthus roseus* (Apocynaceae). Blades (MeOH). Mp 235-238°. pK_a 7.85 (33% DMF aq.).

Svoboda, G.H. *et al., J. Pharm. Sci.*, 1964, **53**,

1227-1231 (*isol, ir, uv*)

Vinblastine, BAN, INN V-110

Vincaleukoblastine, 9CI. Vincaleucoblastine. Velbe. VLB
[865-21-4]



$C_{46}H_{58}N_4O_9$ 810.986
Alkaloid from *Catharanthus roseus* (Apocynaceae) and from *Catharanthus trichophyllus*. Antineoplastic agent, used widely in the treatment of Hodgkin's disease and other lymphomas. Microtubule assembly inhibitor. Shows trypanosomicidal effect. Mp 180-182° (Et_2O solvate) Mp 216° (dry). $[\alpha]_D$ +42 ($CHCl_3$). Log P 4.29 (uncertain value) (calc). λ_{max} 214 (ϵ 53700); 259 (ϵ 16220) (EtOH) (Berdy).

▶ Adverse human effects reported when used therapeutically or from occup. exposure. Skin and respiratory tract irritant. Causes corneal damage in contact with eyes. Central and peripheral neurotoxic effects. Other effects incl. bone-marrow depression and gastrointestinal effects. LD_{50} (rat, ipr) 1 mg/kg. Exp. reprod. and teratogenic effects.
YY8050000

Sulfate salt: ***Vinblastine sulfate, JAN, USAN***. *Blastovin. Exal. Periblastine. Rozevin. Velban. Velbe. LE 29060. NSC 49842*
[143-67-9]
Mp 284-285°. $[\alpha]_D^{26}$ -28 (MeOH).

▶ YY8400000

O-*De-Ac:* ***Deacetylvinblastine***
[3352-69-0]
$C_{44}H_{56}N_4O_8$ 768.948
Alkaloid from *Catharanthus roseus*. Antitumour agent. λ_{max} 214 (E1%/1cm 576); 266 (E1%/1cm 186); 294 (E1%/1cm 126) (EtOH) (Berdy).

▶ YY8150000

O-*De-Ac,* O^{17}*-(2-dimethylaminoacetyl):* ***Vinglycinate, INN***. *Lilly 49040*
[865-24-7]
$C_{48}H_{63}N_5O_9$ 854.054
Antineoplastic agent. Cryst. (Et_2O). Log P 4.19 (uncertain value) (calc).

▶ YY8180300

O-*De-Ac,* O^{17}*-(2-dimethylaminoacetyl); sulfate salt (2:3):* ***Vinglycinate sulfate, USAN***
[7281-31-4]
Cryst. (MeOH/EtOH).

O,O-*Di-Ac:* Mp 168-170°. $[\alpha]_D$ -26.4 ($CHCl_3$).

N-*De-Me:* **N-*Demethylvinblastine***. N-*Deformylvincristine*
$C_{45}H_{56}N_4O_9$ 796.959
Alkaloid from *Catharanthus roseus* (Apocynaceae). Cryst. (EtOH) (as sulfate). Mp 250° dec. (sulfate).

N-*De-Me,* N-*formyl:* see Vincristine, V-128

20′-Deoxy: ***Isoleurosine***. *20′-Deoxyvinblastine. Deoxyvinblastine A. Deoxyvincaleukoblastine A*
[20072-25-7]
$C_{46}H_{58}N_4O_8$ 794.986
Isol. from *Catharanthus roseus* (Apocynaceae). Blades (MeOH). Mp 202-206° dec. $[\alpha]_D^{26}$ +61.2 (c, 1 in $CHCl_3$).

20′-Deoxy, hydroxy: ***Roseamine***
[87571-01-5]
$C_{46}H_{58}N_4O_9$ 810.986
Alkaloid from *Catharanthus roseus* (Apocynaceae). Shows antineoplastic props. Struct. not fully elucidated.

20′-Deoxy, 15′,20′-didehydro: ***15′,20′-Anhydrovinblastine***. *3′,4′-Anhydrovinblastine*
[38390-45-3]
$C_{46}H_{56}N_4O_8$ 792.97
Alkaloid from shoot cultures and freshly picked leaves of *Catharanthus roseus* (Apocynaceae). Antineoplastic agent. Unstable in soln. Undergoes ready aerial oxidn. to Leurosine, L-162 and Catharine, C-197 as well as to the other main antitumour alkaloids of *Catharanthus* spp., Vinblastine, Leurosidine and their deoxy derivs.

Deacetoxy: ***Deacetoxyvinblastine***
$C_{44}H_{56}N_4O_7$ 752.949
Alkaloid from *Catharanthus roseus* (Apocynaceae). Cryst. (MeOH). Mp 183-190° dec. $[\alpha]_D^{26}$ +95.3 ($CHCl_3$).

14′-Hydroxy: ***Leurocolumbine***
[56974-17-5]
$C_{46}H_{58}N_4O_{10}$ 826.985
From *Catharanthus roseus* (Apocynaceae). Antineoplastic and antimitotic agent. Log P 3.08 (uncertain value) (calc). λ_{max} 217 (ϵ 51000); 265 (15600) (MeOH).

15′α-Hydroxy: ***Vincadioline***
[56897-74-6]
$C_{46}H_{58}N_4O_{10}$ 826.985
Alkaloid from the leaves of *Catharanthus roseus* (Apocynaceae). Antimitotic agent. Mp 218-221°. Log P 3.05 (uncertain value) (calc). Proposed struct. No details concerning the elucidation of its struct. have been publ. λ_{max} 217 (ϵ 51090); 265 (ϵ 15660) (MeOH) (Berdy).

16-De(methoxycarbonyl), 16-carbamoyl, O-*de-Ac:* ***Vindesine, BAN, INN, USAN***. *NSC 24567*
[53643-48-4]
$C_{43}H_{55}N_5O_7$ 753.937
Alkaloid from *Catharanthus roseus*. Antineoplastic agent. Cryst. (EtOH/MeOH). Mp 230-232°. $[\alpha]_D^{25}$ +39.4 (c, 1 in MeOH). Log P 2.41 (uncertain value) (calc). λ_{max} 214 (ϵ 53400); 266 (ϵ 17450); 288 (ϵ 13950); 296 (ϵ 12500) (MeOH) (Berdy).

▶ LD_{50} (mus, ivn) 6.3 mg/kg. YY8080000

16-De(methoxycarbonyl), 16-carbamoyl, O-*de-Ac; sulfate:* ***Vindesine sulfate, JAN, USAN***. *Eldisine. Elsedine. Fildesin. Gesidine. Lilly 112531. LY 99094. NSC 245467*
[59917-39-4]
Amorph. solid (2-propanol). Mp 250°.

▶ YY8090000

20′-Epimer: ***Leurosidine***. *Vinrosidine. 20′-Epivinblastine. Lilly 36781*
[15228-71-4]
$C_{46}H_{58}N_4O_9$ 810.986
Alkaloid from *Vinca rosea* (*Catharanthus roseus*) (Apocynaceae). Antineoplastic agent, toxic side effects in clinical trials. Mp 210-212° dec. $[\alpha]_D^{25}$ +55.8 (c, 1 in $CHCl_3$). Log P 4.29 (uncertain value) (calc). λ_{max} 214 ; 265 (EtOH) (Berdy).

▶ LD_{50} (mus, ipr) 50 mg/kg. OH6350000

20′-Epimer, sulfate salt: ***Vinrosidine sulfate***
[18556-44-0]

▶ OK6126000

20′-Epimer, $N^{4'}$*-oxide:* ***Leurosidine*** $\mathbf{N^{b'}}$***-oxide***
$C_{46}H_{58}N_4O_{10}$ 826.985
Isol. from *Catharanthus roseus* (Apocynaceae). Cryst. (Me_2CO). Poorly sol. hexane. Mp 215-218°. $[\alpha]_D^{25}$ +26 (c, 0.5 in $CHCl_3$). λ_{max} 218 ; 288 ; 298 ; 315 (EtOH) (Berdy).

20′-Epimer, tri-Ac: Mp 154-159° dec. $[\alpha]_D^{25}$ +12.6 ($CHCl_3$).

20′-Epimer, 20′-deoxy: ***20′-Deoxyleurosidine***. *Deoxyvincaleukoblastine B*
[21631-00-5]
$C_{46}H_{58}N_4O_8$ 794.986
Alkaloid from the aerial parts of *Catharanthus ovalis* (Apocynaceae).

20′-Epimer, 20′-deoxy, N-*de-Me,* N-*formyl:* ***Vinepidine, INN***. *LY 119863*
[68170-69-4]
[83200-11-7 (sulfate salt)]
$C_{46}H_{56}N_4O_9$ 808.97
Antineoplastic agent. Log P 4.11 (uncertain value) (calc).

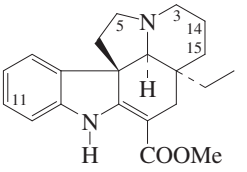
14′,16′,20′-Triepimer: ***Vincovaline***
[61949-65-3]
$C_{46}H_{58}N_4O_9$ 810.986
Alkaloid from *Catharanthus ovalis* (Apocynaceae). $[\alpha]_D$ -118 (c, 1.0 in $CHCl_3$).

Aldrich Library of Infrared Spectra, 3rd edn., 1981, 1511H (*ir*)
Neuss, N. *et al., J.A.C.S.*, 1959, **81**, 4754; 1962, **84**, 1509; 1964, **86**, 1440 (*uv, ir, pmr, struct*)
Svoboda, G.H. *et al., J. Nat. Prod.*, 1961, **24**, 213 (*isol, uv, ir*)
Svoboda, G.H. *et al., J. Pharm. Sci.*, 1961, **50**, 409-413 (*Isoleurosine*)
Svoboda, G.H. *et al., J. Pharm. Sci.*, 1964, **53**, 1227
Bommer, P. *et al., J.A.C.S.*, 1964, **86**, 1439-1440 (*ms*)
Moncrief, J.W. *et al., J.A.C.S.*, 1965, **87**, 4963-4964 (*Leurocristine, cryst struct*)
Johnson, I.S. *et al., Cancer Res.*, 1966, **26**, 2431 (*Vinglycinate, activity*)
Netherlands Pat., 1966, 6 501 121; *CA*, **65**, 18642f (*Vinglycinate*)
Armstrong, J.G. *et al., Cancer Res.*, 1967, **27A**, 221-227 (*Vinglycinate, activity*)
Neuss, N. *et al., Tet. Lett.*, 1967, **8**, 811-816; 1968, 783 (*Leurosidine, struct*)
U.S. Pat., 1968, (*(Roussel-UCLAF)*)3 387 001; *CA*, **69**, 59476n (*synth, vinglycinate*)
Burns, J.H. *et al., Anal. Profiles Drug Subst.*, 1972, **1**, 443 (*rev, uv, ir, pmr, anal*)

Wenkert, E. *et al., J.A.C.S.*, 1973, **95**, 4990-4995 (*cmr*)
Catharanthus Alkaloids, (Eds, Taylor, W.I. *et al*), M. Dekker, 1975, (*pharmacol*)
Neuss, N. *et al., Experientia*, 1975, **31**, 18 (*Deacetoxyvinblastine*)
Wenkert, E. *et al., Helv. Chim. Acta*, 1975, **58**, 1560 (*cmr, struct*)
Tafur, S. *et al., J. Pharm. Sci.*, 1975, **64**, 1953 (*Leurocolumbine*)
U.S. Pat., 1975, (*(Eli Lilly)*)3 887 565; *CA*, **84**, 5230u (*Vincadioline*)
Sieber, S.M. *et al., Cancer Treat. Rep.*, 1976, **60**, 1127 (*pharmacol*)
Dorman, D.E. *et al., Org. Magn. Reson.*, 1976, **8**, 413 (*cmr*)
Langlois, N. *et al., Tet. Lett.*, 1976, **17**, 1099-1102 (*Leurosidine, synth, ms, pmr*)
Andriamialisoa, R.Z. *et al., Tet. Lett.*, 1976, **17**, 2849-2852 (*Vincovaline*)
Atta-ur-Rahman, *et al., Z. Naturforsch., B*, 1976, **31**, 1416 (*rev*)
Kutney, J.P. *et al., J. Nat. Prod.*, 1977, **40**, 107 (*rev*)
Kutney, J.P. *et al., Can. J. Chem.*, 1978, **56**, 2560 (*Vinepidine*)
Langlois, N. *et al., Chem. Comm.*, 1978, 102; 1979, 582 (*Anhydrovinblastine*)
Ger. Pat., 1978, 2 801 748; *CA*, **89**, 197778 (*Vinepidine*)
Burnett, C.J. *et al., J. Med. Chem.*, 1978, **21**, 88 (*Vindesine*)
Scott, A.I. *et al., J.A.C.S.*, 1978, **100**, 6253 (*Anhydrovinblastine*)
Hassam, S.B. *et al., Tet. Lett.*, 1978, 1681 (*biosynth*)
Potier, P. *et al., J.A.C.S.*, 1979, **101**, 2243 (*synth*)
Dana, W.J. *et al., Drug Intell. Clin. Pharm.*, 1980, **14**, 28 (*Vindesine, rev*)
Langlois, N. *et al., Helv. Chim. Acta*, 1980, **63**, 793 (*20′-Deoxyleurosidine*)
Brade, W. *et al., Contrib. Oncol.*, (Eds). Vindesine. S. Karger, Basel, Switz., 1981, **6**, (*book*)
Mukhopadhyay, S. *et al., J. Nat. Prod.*, 1981, **44**, 611-613 (*Leurosidine $N^{b'}$ oxide*)
Baxter, R.L. *et al., Chem. Comm.*, 1982, 791 (*biosynth*)
Kutney, J.P. *et al., Helv. Chim. Acta*, 1982, **65**, 2088 (*biosynth*)
El-Sayed, A. *et al., J. Nat. Prod.*, 1983, **46**, 517-527 (*Roseamine*)
McLauchlan, W.R. *et al., Tetrahedron*, 1983, **39**, 3777 (*biosynth*)
Simonds, R. *et al., Planta Med.*, 1984, **50**, 274 (*N-Demethylvinblastine*)
Magnus, P. *et al., Stud. Org. Chem. (Amsterdam)*, 1986, **25**, 203; 257 (*synth, revs*)
Endo, T. *et al., Planta Med.*, 1987, **53**, 479-482 (*isol*)
Kutney, J.P. *et al., Heterocycles*, 1988, **27**, 1845-1853 (*Vinblastine, Leurosidine, synth*)
Goodbody, A.E. *et al., Phytochemistry*, 1988, **27**, 1713 (*isol, Anhydrovinblastine*)
Kuehne, M.E. *et al., J.O.C.*, 1989, **54**, 3407; 1991, **56**, 513 (*Vinblastine, 20′-Deoxylvinblastine, 20′-Deoxyleurosidine, Vincovaline, synth, uv, ir, pmr, ms*)
Kuehne, M.E. *et al., Alkaloids (Academic Press)*, 1990, **37**, 77 (*synth, rev*)
Neuss, N. *et al., Alkaloids (Academic Press)*, 1990, **37**, 229 (*pharmacol*)
Magnus, P. *et al., J.A.C.S.*, 1990, **112**, 8210; 1992, **114**, 10232 (*synth*)
Muhtadi, F.J. *et al., Anal. Profiles Drug Subst.*, 1992, **21**, 611 (*rev*)
Bornmann, W.G. *et al., J.O.C.*, 1992, **57**, 1752 (*synth*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 504
Andrews, C.W. *et al., J. Het. Chem.*, 1995, **32**, 1011 (*pmr, conformn, Anhydrovinblastine*)
Parish, C.A. *et al., Tetrahedron*, 1998, **54**, 15739-15759 (*cd*)
Bau, R. *et al., J.C.S. Perkin 1*, 2000, 2079-2082 (*cryst struct*)
Schneider, C. *et al., Angew. Chem., Int. Ed.*, 2002, **41**, 4217-4219 (*synth*)
Hardouin, C. *et al., J.O.C.*, 2002, **67**, 6571-6574 (*Anhydrovinblastine, synth, pmr, cmr*)
Hardouin, C. *et al., Org. Lett.*, 2002, **4**, 1151-1153 (*synth*)
Ramnath, N. *et al., Cancer Chemother. Pharmacol.*, 2003, **51**, 227-230 (*Anhydrovinblastine, pharmacol*)
Yokoshima, S. *et al., Pure Appl. Chem.*, 2003, **75**, 29-38 (*synth, bibl*)
Miyazaki, T. *et al., Org. Lett.*, 2007, **9**, 4737-4740 (*synth*)
Ishikawa, H. *et al., J.A.C.S.*, 2008, **130**, 420-421 (*synth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, VGU750; VLA000; VKZ000

Vincadifformine V-111

Methyl 2,3-didehydroaspidospermidine-3-carboxylate, 9CI



(-)-*form*

$C_{21}H_{26}N_2O_2$ 338.449

(+)-*form* [15539-10-3]
Alkaloid from *Amsonia tabernaemontana*, *Amsonia angustifolia*, *Rhazya stricta*, *Tabernaemontana riedelii* (Apocynaceae). Mp 96°. $[\alpha]_D^{25}$ +605 (c, 0.2 in EtOH).

(-)-*form* [3247-10-7]
Alkaloid from *Vinca minor* (Apocynaceae). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 96°. $[\alpha]_D^{20}$ -540 (EtOH) (natural). $[\alpha]_D$ -600 (EtOH) (semisynthetic).

N-*Me:* ***Minovine***
[19074-77-2]
[19621-72-8 , 70469-81-7]
$C_{22}H_{28}N_2O_2$ 352.475
Alkaloid from *Vinca minor* (Apocynaceae). Cryst. (MeOH). Mp 80-82°. $[\alpha]_D$ 0 (MeOH).

11-Hydroxy: ***11-Hydroxyvincadifformine***
[80993-50-6]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from aerial parts of *Melodinus hemsleyanus* (Apocynaceae). Amorph. $[\alpha]_D^{23}$ -502 (c, 0.1 in $CHCl_3$).

15β-Hydroxy: ***15β-Hydroxyvincadifformine***
[119478-89-6]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from the leaves of *Rhazya stricta* (Apocynaceae). $[\alpha]_D$ +240.57 ($CHCl_3$).

11-Methoxy: ***Ervinceine***. *11-Methoxyvincadifformine*
[25858-80-4]
$C_{22}H_{28}N_2O_3$ 368.475
Alkaloid from the epigeal parts of *Vinca erecta* (Apocynaceae). Cryst. (MeOH). Mp 99-100°. $[\alpha]_D^{12}$ -448 (c, 0.09 in $CHCl_3$). An earlier isoln. (1968) of this compd. consisted of impure or incorrectly identified material.

11-Methoxy, N-*oxide:* ***11-Methoxyvincadifformine* N-*oxide***
$C_{22}H_{28}N_2O_4$ 384.474
Alkaloid from epigeal parts of *Vinca erecta* (Apocynaceae). Cryst. (Me_2CO). Sol. H_2O. Mp 150-152°. Struct. unconfirmed; struct. proof was by reference to the impure 1968 isol. of Ervinceine.

5-Oxo: ***5-Oxovincadifformine***. *Ervinidinine*
[23107-01-9]
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from the leaves of *Pterotaberna inconspicua* and *Vinca erecta* (Apocynaceae). Cryst. (MeOH). Mp 265-266° dec. $[\alpha]_D$ -152 (c, 0.25 in MeOH). Identity of Ervinidinine and 5-Oxovincadifformine not certain. Mp. refers to Ervinidinine.

Stereoisomer (?): ***Ervamine***
[6878-14-4]
$C_{21}H_{26}N_2O_2$ 338.449
Alkaloid from *Vinca erecta* and *Catharanthus roseus* (Apocynaceae). Cryst. (EtOH)(as hydroiodide). Mp 198-200° (hydroiodide). $[\alpha]_D$ -502 (c, 0.29 in MeOH). Stereochem. not clear from the abstract.

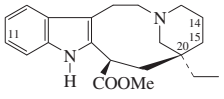
(±)-*form* [18374-17-9]
Alkaloid from *Vinca difformis*, *Rhazya stricta*, *Tabernaemontana riedelii* (Apocynaceae). Shows hypotensive activity, about half that of Reserpine, R-52. Mp 124-125°.

Plat, M. *et al., Bull. Soc. Chim. Fr.*, 1962, 2237 (*isol*)
Mokrý, J. *et al., Experientia*, 1962, **18**, 564 (*Minovine, isol, uv, ir*)
Djerassi, C. *et al., Tet. Lett.*, 1962, 235 (*isol, ms, uv, ir*)
Malikov, V.M. *et al., CA*, 1963, **59**, 11584b (*Ervamine*)
Zachystalová, D. *et al., Chem. Ind. (London)*, 1963, 610 (*Minovine, isol*)
Klyne, W. *et al., Helv. Chim. Acta*, 1965, **48**, 443 (*abs config*)
Rakhimov, D.A. *et al., Khim. Prir. Soedin.*, 1969, **5**, 330; 1970, **6**, 226; *Chem. Nat. Compd. (Engl. Transl.)*, 1969, **5**, 221; 1970, **6**, 280 (*Ervinceine, isol, pmr, struct*)
Ziegler, F.E. *et al., J.A.C.S.*, 1970, **92**, 3492; 1973, **95**, 7146 (*synth*)
Szadon, B. *et al., Tet. Lett.*, 1970, 4615 (*isol*)
Malikov, V.M. *et al., Khim. Prir. Soedin.*, 1971, **7**, 640; *Chem. Nat. Compd. (Engl. Transl.)*, 619 (*Ervinidinine*)
Wenkert, E. *et al., J.A.C.S.*, 1973, **95**, 4990 (*cmr*)
Khalmirzaev, M.M. *et al., Khim. Prir. Soedin.*, 1973, **9**, 806; *Chem. Nat. Compd. (Engl. Transl.)*, 1973, **9**, 776 (*Ervinceine N-oxide*)
Laronze, J.Y. *et al., Tet. Lett.*, 1974, 491 (*synth*)
Kutney, J.P. *et al., Helv. Chim. Acta*, 1975, **58**, 1648 (*Minovine, synth*)
Kutney, J.P. *et al., J.A.C.S.*, 1978, **100**, 4220 (*Ervinceine, synth, ir, uv, pmr*)
Kuehne, M.E. *et al., J.O.C.*, 1979, **44**, 1063; 2477 (*Minovine, Ervinceine, synth, pmr, ir, ms, uv*)
Kuehne, M.E. *et al., J.O.C.*, 1986, **51**, 2913 (*15β-Hydroxyvincadifformine*)

Massiot, G. *et al., Phytochemistry*, 1988, **27**, 1085 (*5-Oxovincadifformine*)
Torrenegra, R. *et al., Phytochemistry*, 1988, **27**, 1843 (*3-Oxovincadifformine*)
Atta-ur-Rahman, *et al., Phytochemistry*, 1988, **27**, 3721 (*15β-Hydroxyvincadifformine*)
Takano, S. *et al., Chem. Lett.*, 1989, 87 (*synth*)
Guo, L.-W. *et al., Phytochemistry*, 1993, **34**, 563 (*11-Hydroxyvincadifformine*)
Kobayashi, S. *et al., Tet. Lett.*, 1999, **40**, 1519-1522 (*synth*)
Yuan, Z.Q. *et al., Org. Lett.*, 2005, **7**, 741-744 (*synth*)
Kalaus, G. *et al., Heterocycles*, 2006, **68**, 257-270 (*15β-Hydroxyvincadifformine, synth*)
Ishikawa, H. *et al., J.A.C.S.*, 2006, **128**, 10596-10612 (*Minovine, synth*)

Vincadine V-112

*Methyl 7-ethyl-1,4,5,6,7,8,9,10-octahydro-2*H*-3,7-methanoazacycloundecino[5,4-*b*]indole-9-carboxylate, 9CI. 16-Carbomethoxyquebrachamine*



(16*R*,20*S*)-*form*

$C_{21}H_{28}N_2O_2$ 340.464

(16*R*,20*S*)-*form* [2896-91-5]
[32790-08-2]
Alkaloid from *Vinca minor*, also identified in the leaves of *Amsonia tabernaemontana* (Apocynaceae). Mp 76°. $[\alpha]_D^{20}$ +92 (EtOH).

N-*Me:* ***Vincaminoreine***. N-*Methylvincadine*
[2411-51-0]
$C_{22}H_{30}N_2O_2$ 354.491
Minor alkaloid from *Vinca minor* (Apocynaceae). Needles (MeOH). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 138-139° (126°). $[\alpha]_D$ +26.5 ($CHCl_3$). pK_a 7.55 (50% EtOH aq.). λ_{max} 230 (log ε 4.59); 288 (log ε 3.93); 296 (log ε 3.91) (EtOH).

14,15-Didehydro: ***14,15-Didehydrovincadine***. *14,15-Dehydrovincadine. 6,7-Dehydrovincadine*
[41222-15-5]
$C_{21}H_{26}N_2O_2$ 338.449
Alkaloid from the leaves of *Amsonia tabernaemontana* (Apocynaceae). Amorph. solid. $[\alpha]_D^{20}$ +65 (c, 0.5 in EtOH). pK_a 6.75 (50% EtOH). Epimerised by silica gel at r.t. to 14,15-Dehydroepivincadine. λ_{max} 226 (log ε 4.58); 284 (log ε 3.9); 292 (log ε 3.86) (EtOH).

(16*R*,20*R*)-*form*
(-)-Epivincadine
[67968-78-9]
Constit. of the leaves of *Amsonia tabernaemontana* (Apocynaceae). Mp 156°. $[\alpha]_D^{20}$ -24 (EtOH). Positively identified but not isol. Constants are for synthetic material.

(16*S*,20*R*)-*form* [36132-39-5]
Alkaloid from the leaves of *Amsonia tabernaemontana* (Apocynaceae). Cryst. (heptane). Mp 76°. $[\alpha]_D^{20}$ -92 (c, 0.5 in EtOH). pK_a 7.2 (50% EtOH).

N-*Me:* [52553-75-0]
Synthetic. Cryst. (EtOH). Mp 129°. $[\alpha]_D$ -27 (c, 1. in EtOH). pK_a 7.5 (50% EtOH).

(16*S*,20*S*)-*form*
(+)-Epivincadine
[41221-70-9]
Constit. of the leaves of *Amsonia tabernaemontana* (Apocynaceae). Mp 156°. $[\alpha]_D^{20}$ +24 (EtOH). Positively identified, but not isol. Constants are for synthetic material.

N-*Me:* ***Vincaminorine***. N-*Methylepivincadine*
[1935-07-5]
$C_{22}H_{30}N_2O_2$ 354.491
Alkaloid from *Vinca minor* (Apocynaceae). Needles (MeOH). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 130-131°. $[\alpha]_D^{21}$ +46 (EtOH). pK_a 5.45 (50% EtOH). λ_{max} 226 ; 282 ; 291 (EtOH) (Berdy).

14,15-Didehydro: ***14,15-Didehydroepivincadine***. *Dehydroepivincadine*
[41222-16-6]
$C_{21}H_{26}N_2O_2$ 338.449
Alkaloid from leaves of *Amsonia tabernaemontana* (Apocynaceae). Solid or foam. $[\alpha]_D$ +90 (c, 0.5 in EtOH) (+65). λ_{max} 226 (log ε 4.57); 285 (log ε 3.94); 292 (log ε 3.91) (EtOH).

11-Methoxy, N-*Me:* ***Vincaminoridine***
[21197-03-5]
$C_{23}H_{32}N_2O_3$ 384.517
Minor alkaloid from *Vinca minor* (Apocynaceae). Cryst. (heptane). Mp 99-100°. $[\alpha]_D^{20}$ +57.7 (c, 1.05 in $CHCl_3$). λ_{max} 232 (log ε 4.57); 288 (sh) (log ε 3.79); 300 (log ε 3.84) (no solvent reported).

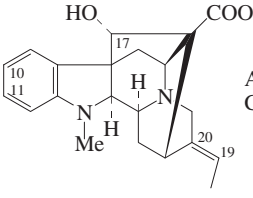
(16*RS*,20*RS*)-*form*
(±)-Epivincadine
[58072-80-3]
Alkaloid from the leaves of *Amsonia tabernaemontana* (Apocynaceae). Cryst. (MeOH). Mp 156-157°. pK_a 5.2 (50% EtOH). λ_{max} 227 (log ε 4.52); 287 (log ε 3.91); 293 (log ε 3.87) (EtOH).

(16*RS*,20*SR*)-*form*
(±)-Vincadine
[19621-74-0]
Alkaloid from the leaves of *Amsonia tabernaemontana* and the leaves and stems of *Amsonia angustifolia* (Apocynaceae). Cryst. (MeOH). Mp 126°. λ_{max} 227 (log ε 4.45); 286 (log ε 3.89); 292 (log ε 3.87) (EtOH).

Trojánek, J. *et al., Coll. Czech. Chem. Comm.*, 1959, **24**, 526-529; 1960, **25**, 2045-2048 (*Vincaminorine, Vincaminoreine, isol, uv, ir*)
Mokrý, J. *et al., Tet. Lett.*, 1962, 1185-1188 (*Vincadine, Vincaminoreine, isol, uv, ir, struct*)
Mokrý, J. *et al., Chem. Ind. (London)*, 1964, 1988-1989 (*Vincaminorine, Vincaminoreine, uv, ir, struct, config*)
Klyne, W. *et al., Helv. Chim. Acta*, 1967, **50**, 115-127 (*ord*)
Kompiš, J. *et al., Coll. Czech. Chem. Comm.*, 1968, **33**, 4328-4336 (*Vincaminoridine*)
Kutney, J.P. *et al., J.A.C.S.*, 1968, **90**, 3891-3893 (*Vincaminoreine, synth*)
Zsadon, B. *et al., Acta Chim. Acad. Sci. Hung.*, 1973, **78**, 207-216; 1978, **96**, 167-181 (*Amsonia tabernaemontana constits*)
Zsadon, B. *et al., Chem. Ind. (London)*, 1973, 229-230 (*Epivincadine, 14,15-Dehydrovincadine, 14,15-Dehydroepivincadine*)
Kutney, J.P. *et al., Helv. Chim. Acta*, 1975, **58**, 1648-1671 (*Vincadine, Vincaminorine, Vincaminoridine, uv, ir, pmr, ms*)
Wenkert, E. *et al., Helv. Chim. Acta*, 1976, **59**, 2711-2723 (*cmr*)
Wenkert, E. *et al., Tetrahedron*, 1981, **37**, 4017 (*synth*)

Vincamajine V-113

[2506-26-5]



Absolute Configuration

$C_{22}H_{26}N_2O_3$ 366.459
Alkaloid from *Vinca major*, *Vinca herbacea*, *Vinca libanotica*, *Alstonia spectabilis*, *Alstonia quaternata*, *Alstonia legouixiae*, *Alstonia odontophora*, *Alstonia constricta* and *Cabucala torulosa* (Apocynaceae). Needles (MeOH). Mp 226.5-227°. $[\alpha]_D^{35}$ -58 (c, 0.5 in MeOH).

Hydrochloride: Mp 259-261° dec. $[\alpha]_D$ -40 (c, 0.38 in H_2O).

O-*Ac:* ***Vincamedine***
[912-27-6]
$C_{24}H_{28}N_2O_4$ 408.496
Alkaloid from *Vinca difformis* and *Vinca major* (Apocynaceae). Mp 185.5-186.5°. $[\alpha]_D^{20}$ -75 (c, 1 in $CHCl_3$). λ_{max} 250 (log ε 3.92); 295 (log ε 3.45) (no solvent reported).

O-*Benzoyl:* **O-*Benzoylvincamajine***
[24190-04-3]
$C_{29}H_{30}N_2O_4$ 470.567
Constit. of the leaves of *Alstonia macrophylla* (Apocynaceae). Mp 267-269°. $[\alpha]_D^{30}$ -147 ($CHCl_3$).

O-*(3,4-Dimethoxybenzoyl):* ***Vincamajine 17*-O-*veratrate***
[154849-47-5]
$C_{31}H_{34}N_2O_6$ 530.619
Alkaloid from leaves of *Alstonia macrophylla* (Apocynaceae). Solid. $[\alpha]_D^{25}$ -129.6 (c, 0.68 in MeOH).

O-*(4-Hydroxy-3,5-dimethoxybenzoyl):* **O-*(4-Hydroxy-3,5-dimethoxybenzoyl)-vincamajine***
[144379-35-1]
$C_{31}H_{34}N_2O_7$ 546.619
Minor alkaloid from roots of *Alstonia angustifolia* (Apocynaceae). λ_{max} 248 ; 290 (MeOH).

O-*(3,4,5-Trimethoxybenzoyl):* **O-*(3,4,5-Trimethoxybenzoyl)vincamajine***
[71385-80-3]
$C_{32}H_{36}N_2O_7$ 560.646
Alkaloid from *Alstonia macrophylla*, *Alstonia boulindaensis* and *Alstonia villosa*.

O-*(3,4,5-Trimethoxybenzoyl),* N^4-*oxide:*

[214263-33-9]
$C_{32}H_{36}N_2O_8$ 576.645
Alkaloid from *Alstonia macrophylla* and *Alstonia villosa*.

O-*(3,4,5-Trimethoxycinnamoyl):* ***3,4,5-Trimethoxycinnamoylvincamajine***
[57800-03-0]
$C_{34}H_{38}N_2O_7$ 586.683
Alkaloid from the root bark of *Alstonia constricta* and from *Alstonia lanceolifera* (Apocynaceae). Noncryst. $[\alpha]_D$ -68 (c, 2.6 in $CHCl_3$). λ_{max} 236 (log ϵ 4.34); 305 (log ϵ 3.71) (EtOH).

N-*De-Me:* ***Quebrachidine***. *Vincarine*
[4835-69-2]
[21641-60-1]
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from *Aspidosperma quebracho-blanco*, *Rauwolfia discolor*, several *Cabucala* spp., *Vinca libanotica*, *Vinca herbacea*, *Vinca erecta*, *Alstonia odontophora*, *Alstonia spectabilis*, *Alstonia macrophylla*, *Alstonia muelleriana*, *Tabernaemontana undulata* and *Tabernaemontana macrocalyx*. Hypotensive agent showing CNS effects. Exp. sedative. Mp 276-278° (264-265°). $[\alpha]_D^{26}$ +54 ($CHCl_3$). $[\alpha]_D$ +14 (c, 0.78 in MeOH). pK_a 6.7. λ_{max} 242 (ϵ 6390); 290 (ϵ 2920) (EtOH).

▶ LD_{50} (mus, ipr) 330 mg/kg.

N-*De-Me,* N^1*-(3,4,5-trimethoxybenzoyl):* ***N^1-Demethylvincamajine N^1-tri-O-methylgallate***
$C_{31}H_{34}N_2O_7$ 546.619
Alkaloid from leaves of *Alstonia macrophylla* (Apocynaceae). Solid. $[\alpha]_D^{25}$ -98.4 (c, 0.56 in MeOH). Erroneously named Vincamajine N^1-tri-*O*-methylgallate in paper. Incorrectly indexed in CA.

N-*De-Me,* O-*(3,4,5-trimethoxybenzoyl):* ***(3,4,5-Trimethoxybenzoyl)quebrachidine***
[31148-63-7]
$C_{31}H_{34}N_2O_7$ 546.619
Alkaloid from the root bark of *Alstonia constricta* (Apocynaceae). Needles (MeOH). Mp 231-232°. $[\alpha]_D$ -36 (c, 1.3 in $CHCl_3$).

10-Hydroxy, O^{17}*-(3,4,5-trimethoxybenzoyl):* ***10-Hydroxy-O^{17}-(3,4,5-trimethoxybenzoyl)vincamajine***
[57800-05-2]
$C_{32}H_{36}N_2O_8$ 576.645
Alkaloid from the aerial parts of *Alstonia lanceolifera* (Apocynaceae). Amorph. $[\alpha]_D$ -43 (c, 1 in $CHCl_3$).

10-Hydroxy, O^{17}*-(3,4,5-trimethoxycinnamoyl):* ***10-Hydroxy-O^{17}-(3,4,5-trimethoxycinnamoyl)vincamajine***
[57808-41-0]
$C_{34}H_{38}N_2O_8$ 602.683
Alkaloid from the aerial parts of *Alstonia lanceolifera* (Apocynaceae). $[\alpha]_D$ -114 (c, 1 in $CHCl_3$).

19ξ-Hydroxy, 19,20-dihydro: ***19-Hydroxyvincamajine***. *Dihydro-19-hydroxyvincamajinine*
[108195-74-0]
$C_{22}H_{28}N_2O_4$ 384.474
Alkaloid from the leaves of *Alstonia macrophylla* (Apocynaceae). λ_{max} 175 (log ϵ 3.5); 247 (log ϵ 3.8) (no solvent reported).

10-Methoxy: ***10-Methoxyvincamajine***
[57800-02-9]
$C_{23}H_{28}N_2O_4$ 396.485
Alkaloid from the aerial parts of *Alstonia lanceolifera* and *Alstonia boulindaensis* (Apocynaceae). Amorph. $[\alpha]_D$ 0 (c, 1 in EtOH). λ_{max} 248 (log ϵ 3.97); 307 (log ϵ 3.63) (EtOH).

10-Methoxy, O-*Ac:* ***10-Methoxyvincamedine***
[94444-30-1]
$C_{25}H_{30}N_2O_5$ 438.522
Alkaloid from leaves, fruit and stem bark of *Alstonia sphaerocapitata* (Apocynaceae). $[\alpha]_D$ -9 (c, 1 in $CHCl_3$). λ_{max} 247 ; 313 (MeOH).

10-Methoxy, O-*Ac,* N^4*-oxide:* ***10-Methoxyvincamedine* N*(4)*-oxide***
[94444-31-2]
$C_{25}H_{30}N_2O_6$ 454.522
Alkaloid from the leaves, fruit and stem bark of *Alstonia sphaerocapitata* (Apocynaceae). $[\alpha]_D$ -2 (c, 1 in $CHCl_3$). λ_{max} 212 ; 248 ; 305 (MeOH).

10-Methoxy, O-*(3,4,5-trimethoxycinnamoyl):* ***10-Methoxy-O-(3,4,5-trimethoxycinnamoyl)vincamajine***. *(3,4,5-Trimethoxycinnamoyl)-10-methoxyvincamajine*
[57800-04-1]
$C_{35}H_{40}N_2O_8$ 616.71
Alkaloid from the aerial parts of *Alstonia lanceolifera* (Apocynaceae). $[\alpha]_D$ -134 (c, 1 in $CHCl_3$).

11-Methoxy: ***11-Methoxyvincamajine***
[132242-26-3]
$C_{23}H_{28}N_2O_4$ 396.485
Alkaloid from the stem of *Tonduzia pittieri* (*Alstonia pittieri*) (Apocynaceae). $[\alpha]_D$ -14 (c, 0.25 in $CHCl_3$). λ_{max} 214 ; 249 ; 296 (MeOH).

11-Methoxy, O-*Ac:* ***11-Methoxyvincamedine***
[142750-28-5]
$C_{25}H_{30}N_2O_5$ 438.522
Alkaloid from leaves of *Tonduzia pittieri* (*Alstonia pittieri*) (Apocynaceae). $[\alpha]_D$ -7.5 (c, 1 in $CHCl_3$).

2-Epimer, 17-ketone, N-*de-Me:* ***Leepacine***
[135649-95-5]
$C_{21}H_{22}N_2O_3$ 350.416
Alkaloid from *Rhazya stricta* (Apocynaceae). Air- and light-sensitive. $[\alpha]_D$ -91 (MeOH). λ_{max} 207 (log ϵ 4.23); 250 (log ϵ 3.59); 298 (log ϵ 3.12) (MeOH).

17-Epimer: ***Vincamajinine***
[1748-05-6]
$C_{22}H_{26}N_2O_3$ 366.459
Alkaloid from aerial parts of *Vinca major* (Apocynaceae). Mp 257-259° Mp 274-275°.

17-Epimer, 11-methoxy: ***17-Epi-11-methoxyvincamajine***. *11-Methoxy-17-epivincamine*
[132268-03-2]
$C_{23}H_{28}N_2O_4$ 396.485
Alkaloid from the stem bark of *Tonduzia pittieri* (*Alstonia pittieri*) (Apocynaceae). $[\alpha]_D$ -12 (c, 0.5 in $CHCl_3$).

Janot, M.-M. *et al., C. R. Hebd. Seances Acad. Sci.*, 1956, **243**, 85-87 (*Vincamedine*)
Gorman, M. *et al., Tet. Lett.*, 1963, 39-46 (*Quebrachidine, isol, uv, ir, pmr, ms, struct*)
Yuldashev, P.K. *et al., Dokl. Chem. (Engl. Transl.)*, 1964, **154**, 212-213; 1965, **163**, 644-645 (*Vincarine*)
Yuldashev, P.K. *et al., Khim. Prir. Soedin.*, 1966, **1**, 110-113; *Chem. Nat. Compd. (Engl. Transl.)*, 1966, **1**, 85-87 (*Vincarine*)
Crow, W.D. *et al., Aust. J. Chem.*, 1970, **23**, 2489-2501 (*Trimethoxycinnamoylvincamajine, O-Trimethoxybenzoylquebrachidine*)
Aynilian, G.H. *et al., J. Nat. Prod.*, 1974, **37**, 299-308 (*Vincamajine, Quebrachidine, isol, uv, ir, ms*)
Lewin, G. *et al., Phytochemistry*, 1975, **14**, 2067-2071 (*10-Methoxyvincamajine, trimethoxycinnamoyl, trimethoxybenzoyl*)
Chatterjee, A. *et al., Tet. Lett.*, 1978, 3879-3882 (*cmr*)
Stöckigt, J. *et al., Tet. Lett.*, 1979, 2615-2618 (*biosynth*)
Khalmirzaev, M.M. *et al., Khim. Prir. Soedin.*, 1980, 426 (*Vincarine*)
Yagudaev, M.R. *et al., Khim. Prir. Soedin.*, 1981, 608-613; *Chem. Nat. Compd. (Engl. Transl.)*, 1982, **17**, 442-446 (*Vincarine*)
Caron, C. *et al., Phytochemistry*, 1984, **23**, 2355-2357 (*10-Methoxyvincamedine, 10-Methoxyvincamedine N-oxide*)
Zhukovich, E.N. *et al., Khim. Prir. Soedin.*, 1985, **21**, 720; *Chem. Nat. Compd. (Engl. Transl.)*, 1986, **21**, 682 (*Vincamajinine*)
Solans, X. *et al., Acta Cryst. C*, 1987, **43**, 1981-1983 (*cryst struct, abs config, Vincamedine*)
Ratnayake, C.K. *et al., Phytochemistry*, 1987, **26**, 868-870 (*19-Hydroxyvincamajine*)
Morfaux, A.-M. *et al., Phytochemistry*, 1990, **29**, 3345-3349 (*11-Methoxyvincamajine, 11-Methoxy-17-epivincamajine*)
Atta-ur-Rahman, *et al., Phytochemistry*, 1991, **30**, 1285-1293 (*Leepacine*)
Said, I.M. *et al., J. Nat. Prod.*, 1992, **55**, 1323-1324 (*O-(4-Hydroxy-3,5-dimethoxybenzoyl)vincamajine*)
Abe, F. *et al., Phytochemistry*, 1994, **35**, 249-252 (*Vincamajine 17-O-veratrate, N^1-Demethylvincamajine N^1-tri-O-methylgallate*)
Abe, F. *et al., Chem. Pharm. Bull.*, 1998, **46**, 1235-1238 (*17-trimethoxybenzoyl, 17-trimethoxybenzoyl N-oxide*)
Yu, J. *et al., J.O.C.*, 2005, **70**, 3963-3979 (*synth*)

Vincamicine V-114

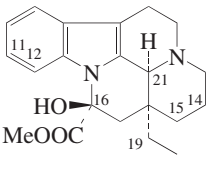
[1362-02-3]

Bisindole alkaloid. Struct. unknown. Alkaloid from *Catharanthus roseus* (Apocynaceae). Needles (MeOH). Mp 224-228° dec. $[\alpha]_D^{26}$ +418 (c, 1 in $CHCl_3$). Mol. formula not recorded.

Svoboda, G.H. *et al., J. Pharm. Sci.*, 1961, **50**, 409-413 (*isol, uv, ir*)

Vincamine, BAN, INN V-115

Methyl 14,15-dihydro-14-hydroxyeburnamenine-14-carboxylate, 9CI. Vincamarine. Minorine. Pervincamine. Vincafor



(+)-*form*

$C_{21}H_{26}N_2O_3$ 354.448
Log P 3.82 (uncertain value) (calc).

(+)-*form* [1617-90-9]
Alkaloid from *Vinca minor*, *Vinca major*, *Vinca erecta*, *Vinca difformis* and *Tabernaemontana rigida* (Apocynaceae). Used in a wide variety of disorders to increase cerebral blood circulation. Antihypertensive agent. Mp 232-233° dec. (190-220°, 274° dec.). $[\alpha]_D^{24}$ +15.3 (c, 0.11 in AcOH) (synthetic). Mp behaviour variable owing to phase change.
► LD_{50} (mus, orl) 1000 mg/kg. YY8575000

Hydrochloride: Vincametrine
Mp 202-212°. Difficult to prepare owing to acid sensitivity of the alkaloid.

Picrate: Mp 228-229°.

14,15-Didehydro: ***14,15-Dehydrovincamine****. 14,15-Didehydrovincamine. Δ^{14}-Vincamine*
[32790-09-3]
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from *Crioceras longiflorus*, *Crioceras dipladeniiflorus*, *Voacanga chalotiana* and *Amsonia elliptica* (Apocynaceae). Mp 221-223° (218°). $[\alpha]_D$ +116 (c, 0.75 in $CHCl_3$).

16-Deoxy, 16,17-didehydro: ***Apovincamine, INN****. Apv*
[4880-92-6]
[65826-02-0]
$C_{21}H_{24}N_2O_2$ 336.433
Alkaloid from *Tabernaemontana rigida* (Apocynaceae) and prod. of dehydration of Vincamine. Cerebral vasodilator. Mp 160-161°. $[\alpha]_D^{26}$ +118 (c, 2.11 in $CHCl_3$). Log P 4.89 (uncertain value) (calc).

16-Deoxy, 14,15,16,17-tetradehydro: ***Apo-14,15-dehydrovincamine****. Apo-Δ^{14}-vincamine*
[50298-88-9]
$C_{21}H_{22}N_2O_2$ 334.417
Alkaloid from the root bark of *Crioceras dipladeniiflorus* (Apocynaceae). Amorph. $[\alpha]_D$ +150 (c, 1.13 in $CHCl_3$).

19-Hydroxy: ***19-Hydroxyvincamine***
$C_{21}H_{26}N_2O_4$ 370.447
Alkaloid from *Vinca minor* (Apocynaceae). Mp 222-225°.

19-Oxo: ***Vincaminine****. Vincareine. 19-Oxovincamine*
[6880-35-9]
$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from *Vinca minor* (Apocynaceae). Mp 208-210° dec. (205-206°). $[\alpha]_D$ +29.5 (Py).

19-Oxo, methiodide: Mp 222° dec.

11-Methoxy: ***Vincine****. 11-Methoxyvincamine*
[4752-37-8]
$C_{22}H_{28}N_2O_4$ 384.474
Alkaloid from *Vinca minor* (Apocynaceae). Needles. Mp 232° (212-214°) (block). $[\alpha]_D$ +39 (c, 1 in Py). $[\alpha]_D$ -10 (c, 1 in $CHCl_3$).

11-Methoxy, 14,15-didehydro: ***14,15-Dehydrovincine****. Δ^{14}-Vincine. 11-Methoxy-Δ^{14}-vincamine*
[32790-04-8]
$C_{22}H_{26}N_2O_4$ 382.458
Alkaloid from *Craspidospermum verticillatum* (Apocynaceae). Cryst. (EtOH). Mp 211°. $[\alpha]_D$ +70 (c, 1 in $CHCl_3$).

11-Methoxy, 19-oxo: ***Vincinine****. 11-Methoxy-19-oxovincamine*
[6880-41-7]
$C_{22}H_{26}N_2O_5$ 398.458
Alkaloid from *Vinca minor* (Apocynaceae). Cryst. (Me_2CO). Mp 202-204° dec. $[\alpha]_D^{20}$ +24 (Py).

11-Methoxy, 10-hydroxy, 14,15-didehydro: ***14,15-Dehydro-10-hydroxy-11-methoxyvincamine****. 14,15-Didehydro-10-hydroxy-11-methoxyvincamine*
$C_{22}H_{26}N_2O_5$ 398.458
Alkaloid from *Ervatamia officinalis*. Amorph. powder. $[\alpha]_D^{20}$ +81.9 (c, 0.11 in $CHCl_3$). λ_{max} 228 (log ϵ 4.29); 276 (log ϵ 3.72); 306 (log ϵ 3.87) (MeOH).

12-Methoxy, 14,15-didehydro: ***14,15-Didehydro-12-methoxyvincamime****. 12-Methoxy-14,15-dehydrovincamine. 12-Methoxy-Δ^{14}-vincamine*
$C_{22}H_{26}N_2O_4$ 382.458
Alkaloid from the root bark of *Crioceras dipladeniiflorus* (Apocynaceae). Cryst. (Me_2CO). Mp 210-211°. $[\alpha]_D$ +96 (c, 1 in $CHCl_3$).

10,11-Dimethoxy, 14,15-didehydro: ***14,15-Dehydro-10,11-dimethoxyvincamine****. 14,15-Didehydro-10,11-dimethoxyvincamine*
$C_{23}H_{28}N_2O_5$ 412.485
Alkaloid from *Ervatamia officinalis*. Amorph. powder. $[\alpha]_D^{20}$ +86.3 (c, 0.9 in $CHCl_3$). λ_{max} 229 (log ϵ 4.41); 276 (log ϵ 3.83); 299 (log ϵ 3.92); 303 (log ϵ 3.93) (MeOH).

16-Epimer: ***16-Epivincamine****. Base TR1*
[6835-99-0]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from *Vinca minor* and *Tabernaemontana rigida* (Apocynaceae). Mp 181-185°. $[\alpha]_D^{22}$ -36.4 (c, 1.036 in $CHCl_3$). $[\alpha]_D^{26}$ -5 (c, 2.69 in Py) (Base TR1). Base TR1, isol. from *Tabernaemontana rigida*, was prob. largely racemic.

16-Epimer, 14,15-didehydro: ***14,15-Dehydro-16-epivincamine****. 16-Epi-Δ^{14}-vincamine*
[32790-10-6]
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from the root bark of *Crioceras longiflorus* and *Crioceras dipladeniiflorus* and from seeds of *Amsonia elliptica* (Apocynaceae). Cryst. (Me_2CO). Mp 185° (181-182°). $[\alpha]_D$ +30 (c, 1.2 in $CHCl_3$).

16-Epimer, 11-methoxy, 14,15-didehydro: ***16-Epi-14,15-dehydrovincine****. 16-Epi-Δ^{14}-vincine*
[32790-05-9]
$C_{22}H_{26}N_2O_4$ 382.458
Alkaloid from *Craspidospermum verticillatum* (Apocynaceae). Noncryst.

16-Epimer, 11-methoxy, 10-hydroxy, 14,15-didehydro: ***14,15-Dehydro-10-hydroxy-11-methoxy-16-epivincamine****. 14,15-Didehydro-10-hydroxy-11-methoxy-16-epivincamine*
$C_{22}H_{26}N_2O_5$ 398.458
Alkaloid from *Ervatamia officinalis*. Amorph. powder. $[\alpha]_D^{20}$ +8.4 (c, 0.19 in $CHCl_3$). λ_{max} 228 (log ϵ 4.25); 277 (log ϵ 3.71); 301 (log ϵ 3.8); 306 (log ϵ 3.81); 311 (log ϵ 3.77) (MeOH).

16-Epimer, 10,11-dimethoxy, 14,15-didehydro: ***14,15-Dehydro-10,11-dimethoxy-16-epivincamine****. 14,15-Didehydro-10,11-dimethoxy-16-epivincamine*
$C_{23}H_{28}N_2O_5$ 412.485
Alkaloid from *Ervatamia officinalis*. Amorph. powder. $[\alpha]_D^{20}$ +19 (c, 0.3 in $CHCl_3$). λ_{max} 228 (log ϵ 4.42); 275 (log ϵ 3.86); 299 (log ϵ 3.91); 303 (log ϵ 3.92) (MeOH).

21-Epimer: ***21-Epivincamine****. Base TR2*
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from *Tabernaemontana rigida* (Apocynaceae). Cryst. (EtOH/CH_2Cl_2). Mp 209-211°. $[\alpha]_D^{26}$ +1.8 (c, 1.45 in Py). Biogenetically most probable struct. (partial racemate) for this substance.

(-)-*form* [38990-16-8]
Synthetic. Mp 227-228.5°. $[\alpha]_D^{20}$ -14.6 (c, 0.5 in AcOH).

(±)-*form* [2122-39-6]
Alkaloid from *Tabernaemontana rigida* (Apocynaceae). Mp 235-236°.

[54615-44-0]

Aldrich Library of NMR Spectra, 2nd edn., 1983, **2**, 942A (*nmr*)
Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 1066D (*ir*)
Schlittler, E. *et al., Helv. Chim. Acta*, 1953, **36**, 2017 (*isol, uv, ir*)
Trojanek, J. *et al., Coll. Czech. Chem. Comm.*, 1961, **26**, 867; 1962, **27**, 2801 (*Vincine, Vinaminine, Vincinine*)
Trojánek, J. *et al., Tet. Lett.*, 1961, **2**, 702-706 (*Vincamine, struct*)
Plat, M. *et al., Bull. Soc. Chim. Fr.*, 1962, 1082 (*ms, uv*)
Strouf, O. *et al., Chem. Ind. (London)*, 1962, 2037 (*Vincine*)
Mokrý, J. *et al., Tet. Lett.*, 1963, 999-1000; 1917-1919 (*Vincamine, pmr, abs config, 16-Epivincamine*)
Holubek, J. *et al., Tet. Lett.*, 1963, **4**, 897-900 (*Vincaminine, Vincinine, struct*)
Machova, J. *et al., Arch. Int. Pharmacodyn. Ther.*, 1964, **150**, 516 (*Apovincamine, pharmacol*)
Mokrý, J. *et al., J. Nat. Prod.*, 1964, **27**, 428 (*19-Hydroxyvincamine*)
Cava, M.P. *et al., J.O.C.*, 1968, **33**, 1055-1059 (*(+)-Vincamine, (±)-Vincamine, Apovincamine, Base TR1, Base TR2*)
Cavé, A. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1971, **272**, 1367 (*14,15-Dehydrovincamine, 14,15-Dehydro-16-epivincamine*)
Kan-Fan, C. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1971, **272**, 1431 (*14,15-Dehydrovincine, 16-Epi-14,15-dehydrovincine*)
Hugel, G. *et al., C. R. Hebd. Seances Acad. Sci. Ser. C*, 1972, **274**, 1350 (*synth*)
Neuss, N. *et al., Helv. Chim. Acta*, 1973, **56**, 2660 (*cmr*)
Bruneton, J. *et al., Phytochemistry*, 1973, **12**, 1475-1480 (*Δ^{14}-Vincamine, 16-Epi-Δ^{14}-vincamine, 12-Methoxy-Δ^{14}-vincamine, Apo-Δ^{14}-vincamine*)

Taylor, W.I. *et al., The Vinca Alkaloids*, M. Dekker, 1973, (*pharmacol*)
Pfäffli, P. *et al., Helv. Chim. Acta*, 1975, **58**, 1131-1145 (*Vincamine, synth, pmr, uv, ir*)
Oppolzer, W. *et al., Helv. Chim. Acta*, 1977, **60**, 1801-1810 (*Vincamine, synth*)
Gibson, K.H. *et al., Tetrahedron*, 1977, **33**, 833-836 (*(±)-Vincamine, synth*)
Aimi, N. *et al., Chem. Pharm. Bull.*, 1978, **26**, 1182 (*14,15-Dehydrovincamine*)
Paracchini, S. *et al., Farmaco, Ed. Sci.*, 1978, **33**, 573 (*synth, 14,15-Dehydrovincamine*)
Rossey, G. *et al., J.O.C.*, 1982, **47**, 4745-4749 (*Vincamine, synth*)
Govindachari, T.R. *et al., Indian J. Chem., Sect. B*, 1983, **22**, 531 (*synth*)
Szabó, L. *et al., Tetrahedron*, 1983, **39**, 3737-3747 (*(+)-Vincamine, synth*)
Vereczkey, L. *et al., Eur. J. Drug Metab. Pharmacokinet.*, 1985, **10**, 89 (*rev*)
Takano, S. *et al., Chem. Comm.*, 1986, 156-158 (*(+)-Vincamine, synth*)
Lounasmaa, M. *et al., Heterocycles*, 1986, **24**, 1663-1665 (*(±)-Vincamine, synth*)
Negwer, M. *et al., Organic-Chemical Drugs and their Synonyms, 6th edn., Akademie-Verlag*, 1987, 6203 (*synonyms*)
Jucker, M. *et al., Neurobiol. Aging*, 1990, **11**, 39 (*Apovincamine, pharmacol*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 1427
Nagy, T. *et al., Heterocycles*, 1997, **45**, 2007-2013 (*(+)-Vincamine, synth*)
Martin, G.E. *et al., J. Het. Chem.*, 1997, **34**, 695-699 (*pmr, N-15 nmr*)
Schultz, A.G. *et al., J.O.C.*, 1997, **62**, 1223-1229 (*(+)-Apovincamine, (+)-Vincamine, synth*)
Desmaele, D. *et al., J.O.C.*, 1997, **62**, 3890-3901 (*(+)-Vincamine, synth*)
Alves, J.C.F. *et al., Tetrahedron: Asymmetry*, 1999, **10**, 297-306 (*synth*)
Kalaus, G. *et al., Tetrahedron*, 2003, **59**, 5661-5666 (*Vincaminine, synth*)
Zhang, H. *et al., J. Nat. Prod.*, 2007, **70**, 54-59 (*Ervatamia officinalis constits*)
England, D.B. *et al., Org. Lett.*, 2007, **9**, 3249-3252 (*(±)-21-Epivincamine, synth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, VLF000

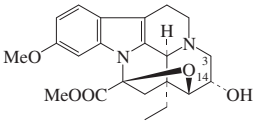
Vincanovine V-116

Struct. unknown. Alkaloid from the aerial parts of *Vinca major* (Apocynaceae). Cryst. (MeOH). Mp 330° dec. $[\alpha]_D^{20}$ -20 (c, 0.49 in EtOH).

Kaul, J.L. *et al., J. Nat. Prod.*, 1966, **29**, 26-34 (*isol, uv, ir*)

Vincarodine V-117

[1362-08-9]



Absolute Configuration

$C_{22}H_{26}N_2O_5$ 398.458
Trace alkaloid from the leaves of *Catharanthus roseus* (Apocynaceae). Blades ($CHCl_3$/MeOH). Mp 253-256° dec. (236-238° dec., 246-247°). $[\alpha]_D^{26}$ -197.4 (c, 1 in $CHCl_3$). λ_{max} 230 (log ϵ 2.82); 272 (log ϵ 2.3); 298 (log ϵ 2.04) (EtOH).

Ac:
Cryst. (MeOH). Mp 180-185°.

14-Deoxy, 3,14-didehydro: ***Craspidospermine***
[59373-42-1]
$C_{22}H_{24}N_2O_4$ 380.443
Alkaloid from the leaves of *Craspidospermum verticillatum* (Apocynaceae). Noncryst. $[\alpha]_D^{20}$ -59 (c, 1 in $CHCl_3$). λ_{max} 230 (log ϵ 4.58); 272 (log ϵ 3.95); 300 (log ϵ 3.57) (EtOH).

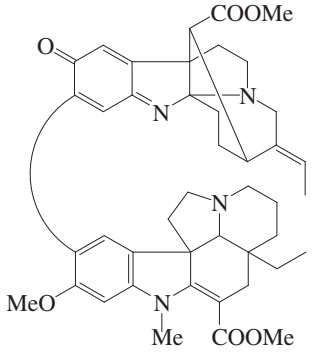
Demethoxy: ***Vincapusine***
[80248-97-1]
$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from the roots and leaves of *Vinca pusilla*. Cryst. (EtOAc/petrol). Mp 263°. $[\alpha]_D$ -122 (c, 0.04 in $CHCl_3$). λ_{max} 228 (log ϵ 4.4); 271 (log ϵ 3.89); 280 (sh) (log ϵ 3.82); 292 (sh) (log ϵ 3.56) (EtOH).

Demethoxy, 14-deoxy, 3,14-didehydro: ***Criocerine***
[55872-13-4]
$C_{21}H_{22}N_2O_3$ 350.416
Alkaloid from *Crioceras dipladeniiflorus* (Apocynaceae). Cryst. (MeOH). Mp 161-162°. $[\alpha]_D$ -27 (c, 0.85 in $CHCl_3$). λ_{max} 269 (log ϵ 3.96); 277 (log ϵ 4.51); 281 (log ϵ 3.86); 391 (log ϵ 3.59) (EtOH).

Svoboda, G.H. *et al., J. Pharm. Sci.*, 1962, **51**, 518-523 (*Vincarodine, isol, uv, ir*)
Neuss, N. *et al., Helv. Chim. Acta*, 1973, **56**, 2660-2666 (*Vincarodine, ir, uv, pmr, cmr, struct*)
Kutney, J.P. *et al., Heterocycles*, 1974, **2**, 73-78 (*Vincarodine, cryst struct*)
Cordell, G.A. *et al., J.O.C.*, 1974, **39**, 431-434 (*Vincarodine, isol, uv, ir, pmr, ms, struct*)
Bruneton, J. *et al., Phytochemistry*, 1975, **14**, 569-571 (*Criocerine, isol*)
Kan-Fan, C. *et al., Bull. Soc. Chim. Fr.*, 1976, 1227-1228 (*Craspidospermine*)
Beugelmans, R. *et al., Tet. Lett.*, 1976, **17**, 435-438 (*Craspidospermine, synth*)
Mitra, A.K. *et al., Phytochemistry*, 1981, **20**, 865-866 (*Vincapusine, isol*)
Moldvai, I. *et al., Synth. Commun.*, 1991, **21**, 965-967; 1992, **22**, 509-512 (*Criocerine, Craspidospermine, synth*)
Moldvai, I. *et al., J.O.C.*, 2006, **71**, 3768-3772 (*Vincapusine, synth*)

Vincarubine V-118

[107290-03-9]

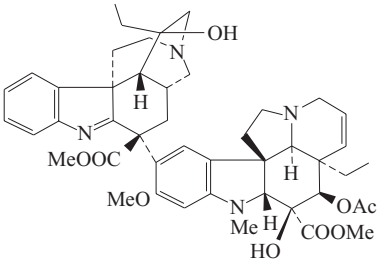


$C_{43}H_{50}N_4O_6$ 718.891
Alkaloid from the leaves of *Vinca minor* (Apocynaceae). Cytotoxic agent. Dark-red solid. Mp 170° dec. $[\alpha]_D^{25}$ -550 (EtOH). λ_{max} 273 (ϵ 16200); 340 (ϵ 19330); 480 (ϵ 2450) (MeOH) (Berdy).

Proksa, B. *et al., Planta Med.*, 1988, **54**, 214 (*isol, uv, ir, pmr, cmr, ms, cd, struct*)

Vincathicine V-119

[57665-10-8]



$C_{46}H_{56}N_4O_9$ 808.97
Alkaloid from *Catharanthus roseus* (Apocynaceae). Noncryst. λ_{max} 213 ; 264 ; 300 (MeOH) (Berdy).

▶ YY8620000

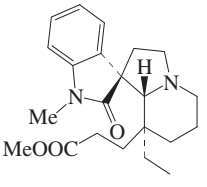
Sulfate:
Blades (MeOH). Mp 320° dec.

Methiodide:
Cryst. (2-propanol). Mp 320° dec.

Svoboda, G.H. *et al., J. Pharm. Sci.*, 1964, **53**, 1227 (*isol, uv, ir, pmr*)
Tafur, S.S. *et al., J.O.C.*, 1976, **41**, 1001 (*pmr, cmr, struct*)
Langlois, N. *et al., Helv. Chim. Acta*, 1980, **63**, 793 (*struct*)

Vincatine V-120

[23185-53-7]



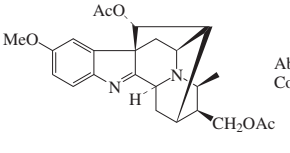
Absolute Configuration

$C_{22}H_{30}N_2O_3$ 370.491
Alkaloid from the leaves of *Vinca minor* (Apocynaceae). Prisms (EtOH). Mp 111-112°. $[\alpha]_D$ -13.5. Enantiomeric config. originally proposed.

Döpke, W. *et al., Tet. Lett.*, 1969, 1701 (*isol, uv, ir, pmr, ms, struct*)
Ali, E. *et al., Heterocycles*, 1982, **19**, 1667 (*synth, ir, pmr, cmr*)
Ali, E. *et al., Tet. Lett.*, 1983, **24**, 2497 (*synth, cd*)
Danielli, B. *et al., J.O.C.*, 1984, **49**, 547 (*abs config*)

Vincawajine V-121

[164176-14-1]



Absolute Configuration

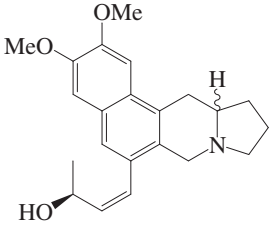
$C_{24}H_{28}N_2O_5$ 424.496

Alkaloid from aerial parts of *Vinca major* (Apocynaceae). $[\alpha]_D$ -10.9 (c, 0.009 in $CHCl_3$).

Atta-ur-Rahman, *et al., Phytochemistry*, 1995, **38**, 1057 (*isol, uv, ir, pmr, cmr, ms, struct*)

Vincetene V-122

4-(7,9,10,11,11a,12-Hexahydro-2,3-dimethoxybenzo[f]pyrrolo[1,2-b]isoquinolin-6-yl)-3-buten-2-ol, 9CI
[72169-92-7]



$C_{22}H_{27}NO_3$ 353.46
Trace alkaloid from *Cynanchum vincetoxicum* (Asclepiadaceae). Unstable liq.

1′,2′-Dihydro, 3′-ketone: ***4-(7,9,10,11,11a,12-Hexahydro-2,3-dimethoxybenzo[f]pyrrolo[1,2-b]isoquinolin-6-yl)-2-butanone, 9CI***
[402943-22-0]
$C_{22}H_{27}NO_3$ 353.46
Alkaloid from *Cynanchum komarovii*. Needles. Mp 164-166°. $[\alpha]_D^{25}$ -71 (c, 0.001 in $CHCl_3$). λ_{max} 235 (log ϵ 3.93); 315 (log ϵ 3.5); 330 (log ϵ 3.54) (MeOH).

Budzikiewicz, H. *et al., Annalen*, 1979, 1212-1231 (*isol, uv, ir, ms, pmr, struct*)
Jirovsky, D. *et al., Monatsh. Chem.*, 2001, **132**, 765-768 (*config*)

Vincolidine V-123

[1362-11-4]

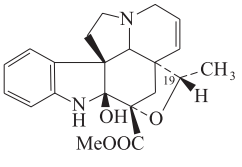
$C_{23}H_{26}N_2O_3$ 378.47

Struct. unknown. Alkaloid from *Catharanthus roseus* (Apocynaceae). Blades (Me_2CO). Mp 165-170°. $[\alpha]_D^{25}$ -25.4 (c, 1 in $CHCl_3$). pK_a 5.45 (33% DMF aq.).

Svoboda, G.H. *et al., J. Nat. Prod.*, 1964, **27**, 203-213 (*isol, ir, uv*)

Vincoline V-124

[11034-66-5]



Absolute configuration

$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from *Catharanthus roseus*, *Vinca libanotica* and *Melodinus balansae* (Apocynaceae). CNS depressant. Mp 230-233°. $[\alpha]_D^{25}$ -32.6 (c, 1 in $CHCl_3$).

► CJ0140000

Me ether: ***Kitraline***
[59086-88-3]
$C_{22}H_{26}N_2O_4$ 382.458
Alkaloid from *Catharanthus ovalis* (Apocynaceae). $[\alpha]_D$ -9 (c, 0.47 in $CHCl_3$).

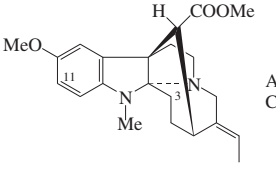
19-Epimer: ***Melobaline***
[38225-08-0]
$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from *Melodinus balansae* (Apocynaceae). Cryst. (MeOH). Mp 200-204°. $[\alpha]_D^{22}$ +205 (c, 1 in $CHCl_3$). Incorr. struct. originally proposed.

19-Epimer, Me ether: ***Kitramine***
[59129-64-5]
$C_{22}H_{26}N_2O_4$ 382.458
Alkaloid from *Catharanthus ovalis* (Apocynaceae). $[\alpha]_D$ -46 (c, 0.45 in $CHCl_3$).

Svoboda, G.H. *et al., J. Nat. Prod.*, 1964, **27**, 203 (*isol, uv, ir*)
Mehri, M.H. *et al., Bull. Soc. Chim. Fr.*, 1972, 3291 (*isol, Melobaline*)
Taylor, W.I. *et al., Catharanthus Alkaloids*, M. Dekker, 1975, (*pharmacol*)
Andriamialisoa, R.Z. *et al., Tet. Lett.*, 1976, 163 (*pmr, ms, struct*)
Damak, M. *et al., Tet. Lett.*, 1976, 167 (*pmr, cmr, ms*)
Langlois, N. *et al., J.O.C.*, 1979, **44**, 2468 (*synth, Kitraline, Kitramine*)
Langlois, N. *et al., Phytochemistry*, 1979, **18**, 467 (*Kitraline, Kitramine*)

Vincorine V-125

Methyl 10-methoxy-1-methyl-2,4(1H)-cyclo-3,4-secoakuammilan-17-oate, 9CI. Vincovine. Desformocabuamine
[33023-08-4]



Absolute Configuration

$C_{22}H_{28}N_2O_3$ 368.475
Alkaloid from *Vinca minor*, *Alstonia vitiensis* and *Cabucala erythrocarpa* (Apocynaceae). Cryst. (EtOH). Mp 93-94°. $[\alpha]_D^{20}$ -139 (c, 1 in EtOH). λ_{max} 254 (log ϵ 4.01); 326 (log ϵ 3.58) (EtOH).

N-*De-Me:* ***1-Norvincorine***
[109028-35-5]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from *Vinca minor* (Apocynaceae). Cryst. (Me_2CO). Mp 219-222°. $[\alpha]_D^{20}$ -165 ($CHCl_3$).

N-*De-Me,* N-*formyl:* ***Demethoxyalstonamide***
[135824-72-5]
$C_{22}H_{26}N_2O_4$ 382.458
Alkaloid from *Alstonia macrophylla* (Apocynaceae). $[\alpha]_D$ +74 (c, 0.005 in $CHCl_3$).

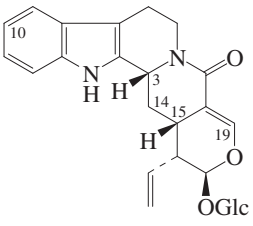
11-Methoxy, N-*de-Me,* N-*formyl:* ***Alstonamide***
[135792-64-2]
$C_{23}H_{28}N_2O_5$ 412.485
Alkaloid from *Alstonia macrophylla* (Apocynaceae). $[\alpha]_D$ +82 (c, 0.062 in $CHCl_3$).

Demethoxy, 3-oxo: ***Vincoridine***
[21290-53-9]
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from *Vinca minor* (Apocynaceae). Cryst. (heptane). Mp 159-160°. $[\alpha]_D^{20}$ -158 (c, 0.87 in $CHCl_3$). 16-Config. uncertain.

Mokrý, J. *et al., Experientia*, 1962, **18**, 564-565 (*isol, uv, ir*)
Kompiš, I. *et al., Coll. Czech. Chem. Comm.*, 1968, **33**, 4328-4336 (*Vincoridine*)
Meisel, H. *et al., Tet. Lett.*, 1971, 1285-1286 (*uv, ir, pmr, ms, struct*)
Douzoua, L. *et al., Phytochemistry*, 1974, **13**, 1994-1995 (*isol, uv, pmr, ms*)
Mansour, M. *et al., Phytochemistry*, 1974, **13**, 2861-2863 (*struct*)
Das, B.C. *et al., Tet. Lett.*, 1974, 4299-4302 (*cmr*)
Mamatas-Kalamaras, S. *et al., Phytochemistry*, 1975, **14**, 1637-1639 (*uv, ms, pmr, struct*)
Proska, B. *et al., Planta Med.*, 1987, **53**, 120 (*Norvincorine*)
Atta-ur-Rahman, *et al., J. Nat. Prod.*, 1991, **54**, 750-754 (*Alstonamide, Demethoxyalstonamide*)

Vincosamide V-126

Vincoside lactam
[23141-27-7]



$C_{26}H_{30}N_2O_8$ 498.532
Alkaloid from *Adina rubescens* (Rubiaceae). Plates + 2.5H_2O (MeOH aq.). Mp 201-202°. $[\alpha]_D$ -118 (c, 2.8 in MeOH).

N^1-*β-D-Glucopyranosyl:* ***N-β-D-Glucopyranosylvincosamide***
$C_{32}H_{40}N_2O_{13}$ 660.674
Alkaloid from the leaves of *Psychotria leiocarpa*. Amorph. yellow powder. λ_{max} 225 ; 275 (sh) (MeOH).

3′-(3,4-Dihydroxycinnamoyl): ***Rubescine****. 3′-Caffeoylvincoside lactam*
[34382-43-9]
$C_{35}H_{36}N_2O_{11}$ 660.676
Alkaloid from *Adina rubescens* (Rubiaceae). Yellow amorph. powder. $[\alpha]_D^{25}$ -121 (c, 0.90 in MOH). Substd. in the glucosyl residue.

6′-(3-Hydroxy-4-methoxycinnamoyl): ***Rhynchophine***
[84638-29-9]
$C_{36}H_{38}N_2O_{11}$ 674.703
Alkaloid from leaves of *Uncaria rhynchophylla* (Rubiaceae). Amorph. powder. $[\alpha]_D^{27}$ -45 (c, 0.7 in MeOH). Substd. in the glucosyl residue.

10-Hydroxy: ***10-Hydroxyvincoside lactam****. 10-Hydroxyvincosamide*
[135531-63-4]
$C_{26}H_{30}N_2O_9$ 514.531
Alkaloid from fruits of *Alangium lamarckii*. Amorph. powder. $[\alpha]_D^{24}$ -120 (c, 0.79 in MeOH).

*10-Hydroxy, 10-*O*-β-D-glucopyranoside:* ***10-Glucosyloxyvincoside lactam***

[38971-68-5]
$C_{32}H_{40}N_2O_{14}$ 676.673
Alkaloid from fresh shoots of *Adina rubescens* (Rubiaceae). Noncryst. $[\alpha]_D^{25}$ -86 ($CHCl_3$) (as octa-Ac).

19-Hydroxy, 3,14-didehydro: ***Naucleoside A***
$C_{26}H_{28}N_2O_9$ 512.515
Alkaloid from the bark of *Nauclea orientalis*. Amorph. orange-yellow solid (MeOH). Mp 171-172°. $[\alpha]_D^{22}$ -48.6 (c, 0.15 in MeOH). λ_{max} 216 (log ϵ 4.02); 260 (log ϵ 3.57); 372 (log ϵ 3.92); 390 (log ϵ 3.89) (MeOH).

19-Hydroxy, 14,15-didehydro: ***Naucleoside****. Naucleocoside*
[121880-11-3]
$C_{26}H_{28}N_2O_9$ 512.515
Alkaloid from the stems of *Nauclea officinalis* (Rubiaceae). Cryst. $[\alpha]_D^{25}$ -149 (c, 0.1 in EtOH aq.). Mp >310°.

3-Epimer: ***Strictosamide****. Strictosidine lactam*
[23141-25-5]
$C_{26}H_{30}N_2O_8$ 498.532
Alkaloid from *Rhazya stricta* (Apocynaceae) and *Nauclea latifolia* (Rubiaceae). Foam. $[\alpha]_D$ -71 (c, 1.4 in MeOH). $[\alpha]_D$ -77 ($CHCl_3$).

3-Epimer, 2′-Ac: ***2′-O-Acetylstrictosamide***
$C_{28}H_{32}N_2O_9$ 540.569
Alkaloid from *Mostuea brunonis*. $[\alpha]_D$ -63 (c, 0.18 in MeOH). λ_{max} 226 (log ϵ 4.5); 313 (log ϵ 3.2); 320 (log ϵ 3.2) (MeOH).

3-Epimer, 10-hydroxy: ***10-Hydroxystrictosamide***
[169871-22-1]
$C_{26}H_{30}N_2O_9$ 514.531
Alkaloid from leaves of *Nauclea orientalis* (Rubiaceae). Extremely unstable in basic soln.

3-Epimer, 19-hydroxy, 14,15-didehydro: ***Naucleoside B***
$C_{26}H_{28}N_2O_9$ 512.515
Alkaloid from the bark of *Nauclea orientalis*. Amorph. orange-yellow solid (MeOH). Mp 189-190°. $[\alpha]_D^{22}$ -58.2 (c, 0.15 in MeOH). λ_{max} 212 (log ϵ 3.68); 260 (log ϵ 3.2); 372 (log ϵ 3.55); 390 (log ϵ 3.52) (MeOH).

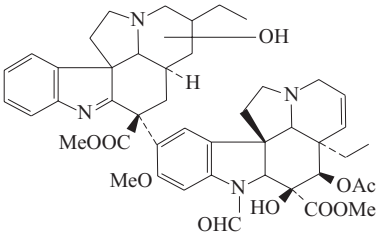
3-Epimer, aglycone, 21-Me ether: ***21-O-Methylstrictosamide aglycone***
$C_{21}H_{22}N_2O_3$ 350.416
Alkaloid from *Sarcocephalus latifolius*. Oil. $[\alpha]_D$ -0.1 (c, 0.06 in $CHCl_3$).

3-Epimer, aglycone, 21-Et ether: ***21-O-Ethylstrictosamide aglycone***
$C_{22}H_{24}N_2O_3$ 364.443
Alkaloid from *Sarcocephalus latifolius*. Oil.

Battersby, A.R. *et al., J.C.S.(C)*, 1969, 1193 (*synth, uv, ir, Vincosamide, Strictosamide*)
De Silva, K.T.D. *et al., Chem. Comm.*, 1971, 905 (*occur, struct, Strictosamide*)
Blackstock, W.P. *et al., Chem. Comm.*, 1971, 910 (*occur, struct*)
Blackstock, W.P. *et al., Tet. Lett.*, 1971, 3727 (*Rubescine*)
Brown, R.T. *et al., Tet. Lett.*, 1972, 3063 (*uv, ir, pmr, ms, cd, struct, 10-Glucosyloxyvincoside lactam*)
Aimi, N. *et al., Chem. Pharm. Bull.*, 1982, **30**, 4046 (*Rhynchophine*)
Lin, M. *et al., Yaoxue Xuebao*, 1989, **24**, 32-36; *CA*, **111**, 74776q (*Nauclecoside*)
Erdelmeier, C.A.J. *et al., Planta Med.*, 1991, **57**, 149 (*10-Hydroxystrictosamide*)
Itoh, A. *et al., J. Nat. Prod.*, 1995, **58**, 1228 (*10-Hydroxyvincoside lactam*)
Takayama, H. *et al., Chem. Pharm. Bull.*, 1997, **45**, 1231-1233 (*Strictosamide, pmr, cmr*)
Takayama, H. *et al., Heterocycles*, 1998, **49**, 49-52 (*10-Hydroxystrictosamide*)
Dai, J.-R. *et al., J. Nat. Prod.*, 1999, **62**, 1427-1429 (*2′-Acetylstrictosamide*)
Zhang, Z. *et al., J. Nat. Prod.*, 2001, **64**, 1001-1005 (*Naucleosides*)
Abreu, P. *et al., Nat. Prod. Lett.*, 2001, **15**, 43-48 (*Strictosamide aglycone ethers*)
Henriques, A.T. *et al., Phytochemistry*, 2004, **65**, 449-454 (*N-Glucosylvincosamide*)

Vincovalicine V-127

[61991-58-0]

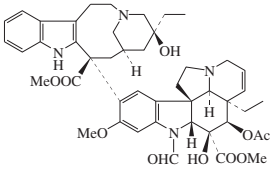


$C_{46}H_{54}N_4O_{10}$ 822.953
Alkaloid from the aerial parts of *Catharanthus ovalis* (Apocynaceae). $[\alpha]_D$ -45 (c, 0.45 in $CHCl_3$).

Langlois, N. *et al., Helv. Chim. Acta*, 1980, **63**, 793-805 (*isol, uv, ir, pmr, ms, cd, struct*)

Vincristine, BAN, INN V-128

22-Oxovincaleukoblastine, 9CI. Leurocristine. Cristovin. Kyocristine. Leucid. Oncovin. Pericristine. Vincosid. Vincrisul. L 37231. Onkovin
[57-22-7]



Absolute Configuration

$C_{46}H_{56}N_4O_{10}$ 824.969
Alkaloid from *Catharanthus roseus* (Apocynaceae). Antineoplastic agent. Used in combination therapies for treatment of acute lymphoblastic leukaemia, Hodgkin's disease and other neoplastic diseases. Blades (MeOH). Mp 218-220° dec. $[\alpha]_D^{25}$ +26.2 (1,2-dichloroethane). Log P 2.9 (uncertain value) (calc). λ_{max} 220 (ϵ 44670); 255 (ϵ 16220); 296 (ϵ 15135) (EtOH) (Berdy).

▶ Adverse human effects reported when used therapeutically or from occup. exposure. Skin irritant. Exp. reprod. and teratogenic effects. LD_{50} (mus, ipr) 5.2 mg/kg. LD_{50} (rat, ivn) 1 mg/kg.
OH6300000

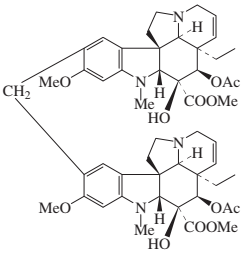
Sulfate salt: Vincristine sulfate, JAN, USAN. Marqibo. NSC 67574
[2068-78-2]
Cryst. (EtOH).

▶ OH6340000

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 1068C (*ir*)
Svoboda, G.H. *et al., J. Nat. Prod.*, 1961, **24**, 173 (*isol, uv, ir*)
Neuss, N. *et al., J.A.C.S.*, 1962, **84**, 1509; 1964, **86**, 1440 (*uv, ir, pmr, struct*)
Moncrief, J.W. *et al., J.A.C.S.*, 1965, **87**, 4963 (*cryst struct*)
Johnson, I.S. *et al., Cancer Chemother. Rep.*, 1968, **52**, 455 (*numerous papers*)
Burns, J.H. *et al., Anal. Profiles Drug Subst.*, 1972, **1**, 463 (*rev, uv, ir, pmr, anal*)
Taylor, W.I. *et al., Catharanthus Alkaloids*, M. Dekker, 1975, (*pharmacol*)
Sieber, S.M. *et al., Cancer Treat. Rep.*, 1976, **60**, 1127-1139 (*pharmacol*)
Potier, P. *et al., J.A.C.S.*, 1979, **101**, 2243 (*synth*)
Brade, W. *et al., Contrib. Oncol.*, Eds., S. Karger, Basel, Switz., 1981, **6**, (*bibl*)
Rao, K.S.P.B. *et al., J. Med. Chem.*, 1985, **28**, 1079 (*tox*)
Kuehne, M.E. *et al., Alkaloids (Academic Press)*, 1990, **37**, 77 (*synth, rev*)
Neuss, N. *et al., Alkaloids (Academic Press)*, 1990, **37**, 229 (*pharmacol*)
Martindale, The Extra Pharmacopoeia, 30th edn., Pharmaceutical Press, 1993, 505
Kuboyama, T. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 2004, **101**, 11966-11970 (*synth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, LEY000; LEZ000

Vindolicine V-129

10,10′-Methylenebisvindoline
[1362-14-7]



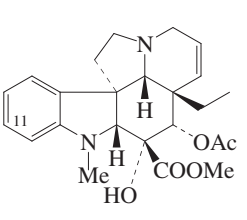
Absolute Configuration

$C_{51}H_{64}N_4O_{12}$ 925.086
Alkaloid from *Catharanthus longifolius* and *Catharanthus roseus* (Apocynaceae). Plates (Et_2O). Mp 248-251° Mp 265-267° dec. (double Mp).

Svoboda, G.H. *et al., J. Pharm. Sci.*, 1961, **50**, 409 (*isol, uv, ir*)
Rabaron, A. *et al., Plant. Med. Phytother.*, 1973, **7**, 53; *CA*, **79**, 63524a (*uv, ir, ms, isol, struct*)

Vindolidine† V-130

Vindorosine, 8CI. Demethoxyvindoline
[5231-60-7]



(+)-*form*

$C_{24}H_{30}N_2O_5$ 426.511

► NM2410000

(+)-*form*
Alkaloid from *Vinca pusilla* (Apocynaceae). Cryst. (C_6H_6). Mp 164-166°. $[\alpha]_D$ +23.5 ($CHCl_3$).

11-Methoxy: ***Vindoline***
[2182-14-1]
$C_{25}H_{32}N_2O_6$ 456.538
Main alkaloid of *Catharanthus roseus* also in *Vinca pusilla* (Apocynaceae). Active against gram-positive bacteria and fungi. Mp 154-155° (172-174°). $[\alpha]_D^{27}$ +42 ($CHCl_3$). λ_{max} 212 ; 250 ; 304 (EtOH) (Berdy).

► CJ0120000

11-Methoxy, O-*de-Ac:* ***Deacetylvindoline***
[3633-92-9]
$C_{23}H_{30}N_2O_5$ 414.5
Alkaloid from *Catharanthus roseus* (Apocynaceae). Cryst. (C_6H_6/petrol or Me_2CO/petrol). Mp 163-165°.

11-Methoxy, deacetoxy: ***Desacetoxyvindoline***
$C_{23}H_{30}N_2O_4$ 398.501
Minor alkaloid from the cotyledons of dark-grown seedlings of *Catharanthus roseus* (Apocynaceae). Biosynth. precursor of Vindoline.

(-)-*form*
Alkaloid from *Catharanthus roseus, Catharanthus longifolius* and *Catharanthus trichophyllus* (Apocynaceae). Needles (C_6H_6/petrol). Mp 167°. $[\alpha]_D^{16}$ -31 ($CHCl_3$).

(±)-*form* [33190-27-1]
Mp 182-185°.

O-*De-Ac:* ***Catharosine***
[2564-23-0]
$C_{22}H_{28}N_2O_4$ 384.474
Alkaloid from *Catharanthus roseus* (Apocynaceae). Needles (C_6H_6/petrol). Mp 141-143°. $[\alpha]_D^{20}$ 0 ($CHCl_3$).

11-Methoxy: [57794-53-3]
Synthetic. Mp 203-205°.

Gorman, M. *et al., J.A.C.S.*, 1962, **84**, 1058-1059 (*ms, pmr, struct*)
Neuss, N. *et al., Bull. Soc. Chim. Fr.*, 1963, 1509 (*pmr*)
Moza, B.K. *et al., Coll. Czech. Chem. Comm.*, 1963, **28**, 1419; 1427; 1964, **29**, 1913 (*isol, uv, ir, pmr, ms, ord, struct*)
Gröger, D. *et al., Naturwissenschaften*, 1964, **51**, 637; 1965, **52**, 132 (*isol, ir, uv, ms, synth, deriv*)
McCapra, F. *et al., Chem. Comm.*, 1965, 537 (*biosynth*)
Moza, B.K. *et al., Chem. Ind. (London)*, 1965, 1260 (*Catharosine*)
Büchi, G. *et al., J.A.C.S.*, 1971, **93**, 3299 (*synth*)
Rasoanaivo, P. *et al., Phytochemistry*, 1972, **11**, 2616 (*isol*)
Chatterjee, A. *et al., Indian J. Chem.*, 1973, **11**, 7 (*isol, uv, ir*)
Wenkert, E. *et al., J.A.C.S.*, 1973, **95**, 4990 (*cmr*)
Taylor, W.I. *et al., Catharanthus Alkaloids*, Marcel Dekker, 1975, (*pharmacol*)
Ando, M. *et al., J.A.C.S.*, 1975, **97**, 6880 (*synth*)
Cordell, G.A. *et al., J. Pharm. Sci.*, 1976, **65**, 366 (*isol*)
Takano, S. *et al., Heterocycles*, 1977, **6**, 1699 (*synth*)
Hernandez, N.M.R. *et al., Rev. Cubana Farm.*, 1977, **11**, 249-255 (*activity*)
Kutney, J.P. *et al., J.A.C.S.*, 1978, **100**, 4220 (*synth*)
Nagakura, N. *et al., J.C.S. Perkin 1*, 1979, 2308 (*biosynth*)
Hernandez, N.M.R. *et al., Rev. Cubana Med. Trop.*, 1979, **31**, 199-204 (*activity*)
Wenkert, E. *et al., Heterocycles*, 1981, **15**, 255 (*cmr*)
Veenstra, S.J. *et al., J.A.C.S.*, 1981, **103**, 4645 (*synth*)
Kutney, J.P. *et al., Helv. Chim. Acta*, 1982, **65**, 2088 (*biosynth*)
Balsevich, J. *et al., Heterocycles*, 1986, **24**, 2415 (*Desacetoxyvindoline*)
Winkler, J.D. *et al., J.A.C.S.*, 1990, **112**, 8971 (*synth*)
Zhou, S.-Z. *et al., Org. Lett.*, 2002, **4**, 443-445 (*synth*)
Ruszkowska, J. *et al., Acta Cryst. C*, 2004, **60**, 377-380 (*Vindoline, Vindolidine, cryst struct*)
Choi, Y. *et al., Org. Lett.*, 2005, **7**, 4539-4542 (*synth*)
Ishikawa, H. *et al., J.A.C.S.*, 2006, **128**, 10596-10612 (*synth*)

Vindolidine† V-131

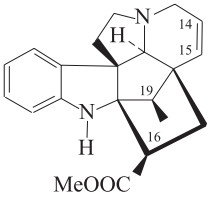
$C_{48}H_{64}N_4O_{10}$ 857.054

Struct. unknown. Bisindole alkaloid. Not the same as Vindolidine, V-130. Alkaloid from *Catharanthus roseus* (Apocynaceae). Microcryst. (MeOH). Mp 244-250° dec. $[\alpha]_D^{26}$ -113.2 (c, 1 in $CHCl_3$).

Svoboda, G.H. *et al., J. Pharm. Sci.*, 1962, **51**, 518-523 (*isol, uv, ir*)

Vindolinine V-132

Methyl 6,7-didehydro-2,20-cycloaspidospermidine-3-carboxylate, 9CI
[5980-02-9]



Absolute configuration

$C_{21}H_{24}N_2O_2$ 336.433
Alkaloid from *Catharanthus roseus, Echium lycopsis* and *Melodinus balansae* (Apocynaceae). Antihyperglycaemic agent. Active against fungi. Mp 214-218°. Log P 1.55 (uncertain value) (calc).

Hydrochloride (1:2): Mp 210-212° dec Mp 250-252°.

Picrate: Mp 268-272°.

N^4*-Oxide:* ***19R-Vindolinine* N-*oxide***. *Vindolinine* N-*oxide*
[41682-54-6]
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from *Catharanthus roseus* and *Melodinus* spp.

14,15-Dihydro: ***Pseudokopsinine***. *14,15-Dihydrovindolinine*
[17172-16-6]
$C_{21}H_{26}N_2O_2$ 338.449
Alkaloid from *Vinca erecta* epigeal parts (Apocynaceae). Shows antihypertensive activity. $[\alpha]_D$ +30.4 (c, 1.51 in MeOH). Log P 2.04 (uncertain value) (calc).

14,15-Dihydro, N^4*-oxide:* ***Pseudokopsinine* N^b-*oxide***
[54387-75-6]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from *Vinca erecta*. Cryst. (petrol). Mp 186-188°.

14,15-Dihydro, 15α-hydroxy: ***15α-Hydroxy-14,15-dihydrovindolinine***
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from *Melodinus morsei* (Apocynaceae). Granular cryst. (EtOH). Mp 172-174°. $[\alpha]_D^{15}$ -26 (c, 0.88 in EtOH).

16β-Hydroxy: ***16β-Hydroxy-19R-vindolinine***
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from aerial parts of *Melodinus hemsleyanus* (Apocynaceae). Needles (Me_2CO). Mp 185° dec. $[\alpha]_D^{10}$ -42.9 (c, 0.2 in $CHCl_3$).

16β-Hydroxy, N^b*-oxide:* ***16β-Hydroxy-19R-vindolinine* N-*oxide***
[222557-89-3]
$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from *Melodinus hemsleyanus.*

19-Epimer. ***19S-Vindolinine***. *19-Epivindolinine*
$C_{21}H_{24}N_2O_2$ 336.433
Alkaloid from the leaves of *Catharanthus roseus* (Apocynaceae). Cryst. (EtOH). Mp 200°. $[\alpha]_D$ +40 (MeOH). Erroneously descr. as 16-epi-19*S*-vindolinine in the original ref. Isomerises in $CHCl_3$ to Vindolinine.

19-Epimer, N^b*-oxide:* ***19S-Vindolinine* N-*oxide***. *19-Epivindolinine* N-*oxide*
[88720-99-4]
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from *Catharanthus roseus* (Apocynaceae). Descr. in the lit. as 16-Epi-19*S*-vindolinine *N*-oxide but this should presumably be revised.

16-Epimer, 14,15-dihydro, 15α-hydroxy: ***15-Hydroxy-14,15-dihydro-16-epivindolinine***
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from *Melodinus morsei* (Apocynaceae). Amorph. powder + $1H_2O$. $[\alpha]_D^{15}$ +28 (c, 1.00 in EtOH).

19-Epimer, 16β-hydroxy: ***16β-Hydroxy-19S-vindolinine***. *16β-Hydroxy-19-epivindolinine*
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from aerial parts of *Melodinus hemsleyanus* (Apocynaceae). Prisms (Me_2CO). Mp 220° dec. $[\alpha]_D^{10}$ -87.5 (c, 0.03 in $CHCl_3$).

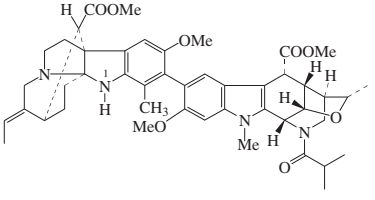
19-Epimer, 16β-hydroxy, N^4*-oxide:* ***16β-Hydroxy-19S-vindolinine* N-*oxide***. *16β-Hydroxy-19-epivindolinine* N-*oxide*
[222557-90-6]
$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from *Melodinus hemsleyanus.*

Janot, M.M. *et al., Bull. Soc. Chim. Fr.*, 1959, 891-892 (*isol*)
Djerassi, C. *et al., Helv. Chim. Acta*, 1964, **47**, 827-836 (*ms, struct*)
Nasyrov, S.-M. *et al., Chem. Comm.*, 1974, 979 (*cryst struct, Pseudokopsinine*)
Ahond, A. *et al., J.A.C.S.*, 1974, **96**, 633-634 (*cmr, struct*)
Sharipov, M.R. *et al., Khim. Prir. Soedin.*, 1974, **10**, 413-414; *Chem. Nat. Compd. (Engl. Transl.)*, 1974, **10**, 422-423 (*Pseudokopsinine N-oxide*)

Rasonaivo, P. *et al., Tet. Lett.*, 1974, 3669-3672 (*abs config*)
Riche, C. *et al., Acta Cryst. B*, 1976, **32**, 1975-1980 (*cryst struct*)
Nasyrov, S.-M. *et al., Khim. Prir. Soedin.*, 1976, **12**, 197-206; *Chem. Nat. Compd. (Engl. Transl.)*, 1976, **12**, 176-183 (*abs config, Pseudokopsinine*)
Hernandez, N.M.R. *et al., Rev. Cubana Farm.*, 1977, **11**, 249-255 (*Vindolinine, activity*)
Hernandez, N.M.R. *et al., Rev. Cubana Med. Trop.*, 1979, **31**, 199-204 (*Vindolinine, activity*)
Atta-ur-Rahman, *et al., Phytochemistry*, 1983, **22**, 1021-1023 (*epimer*)
Atta-ur-Rahman, *et al., Planta Med.*, 1983, **49**, 124-125 (*diepimer oxide*)
Atta-ur-Rahman, *et al., Z. Naturforsch., B*, 1986, **41**, 386-392 (*epimer*)
Guo, L.-W. *et al., Phytochemistry*, 1993, **34**, 563-566 (*16β-Hydroxy-19R-vindolinine, 16β-Hydroxy-19S-vindolinine*)
He, Y.-L. *et al., Phytochemistry*, 1994, **37**, 1055-1057 (*15α-Hydroxy-14,15-dihydrovindolinine, 15α-Hydroxy-14,15-dihydro-16-epivindolinine*)
Yan, K. *et al., Zhongcaoyao*, 1998, **29**, 793-795 (*16-Hydroxyvindolinine N-oxides*)

Vingramine V-133

[215316-92-0]



$C_{46}H_{56}N_4O_8$ 792.97

Alkaloid from the seeds of *Catharanthus roseus*. Shows cytotoxic activity. Amorph. $[\alpha]_D$ -270.4 (c, 0.5 in $CHCl_3$). λ_{max} 217 (sh) (log ϵ 4.69); 231 (log ϵ 4.8); 280 (log ϵ 4.33); 303 (sh) (log ϵ 4.3) (MeOH).

N^1-*Me:* ***Methylvingramine***
[215316-95-3]
$C_{47}H_{58}N_4O_8$ 806.997
Alkaloid from the seeds of *Catharanthus roseus*. Amorph. $[\alpha]_D$ -278 (c, 0.5 in $CHCl_3$). λ_{max} 216 (log ϵ 4.89); 234 (sh) (log ϵ 4.57); 280 (log ϵ 4.12); 297 (log ϵ 4.12); 310 (sh) (log ϵ 4.11) (MeOH).

Jossang, A. *et al., J.O.C.*, 1998, **63**, 7162-7167 (*isol, props, struct, activity*)

Vinomine V-134

[11075-79-9]

$C_{19}H_{22}N_2O_3$ 326.394

Struct. unknown. Alkaloid from *Vinca minor* (Apocynaceae). Prisms (MeOH). Mp 267-268°.

Meisel, H. *et al., Pharmazie*, 1971, **26**, 182 (*isol, uv*)

Vinosidine V-135

[1362-19-2]

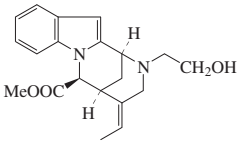
$C_{22}H_{26}N_2O_5$ 398.458

Struct. unknown. Alkaloid from the roots of *Catharanthus roseus* and from *Catharanthus lanceus* (Apocynaceae). Needles (MeOH). Mp 253-257° dec. Cordell *et al* list Vinosidine as a bisindole alkaloid ($C_{44}H_{52}N_4O_{10}$).

Svoboda, G.H. *et al., J. Nat. Prod.*, 1963, **26**, 141-153 (*isol, uv, ir*)
Svoboda, G.H. *et al., J. Pharm. Sci.*, 1963, **52**, 407-408 (*isol, uv, ir*)
Blomster, R.N. *et al., J. Pharm. Sci.*, 1967, **56**, 284-286 (*isol*)
Cordell, G.A. *et al., Alkaloids (Academic Press)*, 1981, **20**, 1; 267 (*rev*)

Vinoxine V-136

[55856-81-0]



Absolute Configuration

$C_{20}H_{24}N_2O_3$ 340.421

Indole alkaloid most closely related to an Akuammicine but with *C*-6/*C*-7 bond cleavage and N^1/*C*-16 bond formation. Alkaloid from *Vinca minor* (Apocynaceae). Noncryst. $[\alpha]_D^{24}$ -18.6 ($CHCl_3$). λ_{max} 221 (log ϵ 4.56); 273 (log ϵ 3.95); 282 (log ϵ 3.9); 291 (log ϵ 3.77) (EtOH).

Hydrochloride: Mp 216-218° dec. $[\alpha]_D^{20}$ -25 (c, 0.89 in $CHCl_3$).

Ac:
Noncryst. $[\alpha]_D^{24}$ -30.8 ($CHCl_3$).

Mokrý, J. *et al., Coll. Czech. Chem. Comm.*, 1967, **32**, 2523-2531 (*isol, uv, ir, ms*)
Volticky, Z. *et al., Coll. Czech. Chem. Comm.*, 1977, **42**, 548-552 (*uv, ms, pmr, cmr, struct*)
Bosch, J. *et al., Tet. Lett.*, 1984, **25**, 3119-3122 (*synth, stereochem*)
Bennasar, M.-L. *et al., J.O.C.*, 1993, **58**, 7756-7767 (*synth*)

Vinsedicine V-137

Bisindole alkaloid. Struct. unknown. Alkaloid from the seeds of *Catharanthus roseus* (Apocynaceae). Mol. formula not reported.

Gorman, M. *et al., J. Nat. Prod.*, 1965, **28**, 259 (*occur*)
Cordell, G.A. *et al., Alkaloids (Academic Press)*, 1981, **20**, 1; 267 (*rev*)

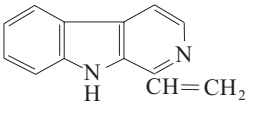
Vinsedine V-138

Bisindole alkaloid. Struct. unknown. Alkaloid from the seeds of *Catharanthus roseus* (Apocynaceae). Mol. formula not reported.

Gorman, M. *et al., J. Nat. Prod.*, 1965, **28**, 259 (*occur*)
Cordell, G.A. *et al., Alkaloids (Academic Press)*, 1981, **20**, 1; 267 (*rev*)

1-Vinyl-β-carboline V-139

*1-Ethenyl-9*H*-pyrido[3,4-*b*]indole, 9CI.* ***Pavettine***
[20127-60-0]



$C_{13}H_{10}N_2$ 194.235

Alkaloid from *Pavetta lanceolata* (Rubiaceae), the bryozoans *Cribricellina cribraria* and *Costaticella hastata* and from *Soulamea raxinifolia* and *Pavetta lanceolata*. Yellowish cryst. Mp 167-169°.

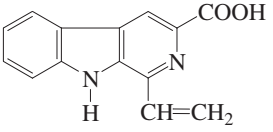
N-*Methoxy:* **N-*Methoxy-1-vinyl-β-carboline***
[69355-01-7]
$C_{14}H_{12}N_2O$ 224.262
Alkaloid from *Picrasma excelsa* (Jamaican quassiawood) (Simaroubaceae). Mp 185-190° dec.

*7-Bromo: 7-Bromo-1-ethenyl-9*H*-pyrido[3,4-*b*]indole. 7-Bromo-1-vinyl-β-carboline.* ***Plakortamine B***
$C_{13}H_9BrN_2$ 273.132
Alkaloid from the sponge *Plakortis nigra*. Cytotoxic. Yellow oil. λ_{max} 214 (ϵ 32000) (no solvent reported).

Jordaan, A. *et al., J. S. Afr. Chem. Inst.*, 1968, **21**, 22 (*isol, uv, ir, pmr, ms, synth*)
Wagner, H. *et al., Tet. Lett.*, 1978, 2777 (*deriv*)
Blackman, A.J. *et al., J. Nat. Prod.*, 1987, **50**, 494-496 (*isol, Costaticella*)
Bracher, F. *et al., Annalen*, 1992, 1315 (*synth, ir, pmr, cmr, ms*)
Rocca, P. *et al., Tetrahedron*, 1993, **49**, 3325 (*synth, ir, pmr, cmr*)
Sandler, J.S. *et al., J. Nat. Prod.*, 2002, **65**, 1258-1261 (*Plakortamine B*)

1-Vinyl-β-carboline-3-carboxylic acid V-140

*1-Ethenyl-9*H*-pyrido[3,4-*b*]indole-3-carboxylic acid, 9CI. 3-Carboxy-1-vinyl-β-carboline*
[85105-51-7]



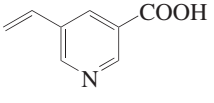
$C_{14}H_{10}N_2O_2$ 238.245

Prod. by actinomycete *Nocardiopsis dassonvillei*. Antiinflammatory and antitumour agent. Cryst. (MeOH/MeCN).

Japan. Pat., 1982, 82 169 481; *CA*, **98**, 126057r

5-Vinyl-3-pyridinecarboxylic acid V-141

5-Ethenyl-3-pyridinecarboxylic acid
[209915-44-6]



$C_8H_7NO_2$ 149.149

Me ester: ***3-Methoxycarbonyl-5-vinylpyridine***
[38940-67-9]
$C_9H_9NO_2$ 163.176
Constit. of *Nauclea diderrichii* (Rubiaceae). Minor constit. of *Jasminum grandiflorum*. Needles (hexane). Mp 50-60°.

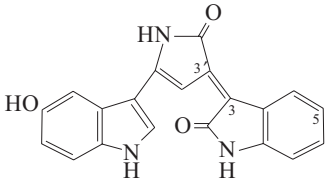
Et ester: [68686-60-2]
$C_{10}H_{11}NO_2$ 177.202

Minor constit. of *Jasminum grandiflorum*.

McLean, S. *et al., Can. J. Chem.*, 1972, **50**, 1478-1485 (*Me ester, isol, synth*)
Toyoda, T. *et al., Agric. Biol. Chem.*, 1978, **42**, 1901-1905 (*esters, isol, ms*)
Bracher, F. *et al., Monatsh. Chem.*, 1995, **126**, 805-809 (*Me ester, synth, spectra*)

Violacein V-142

*3-[1,2-Dihydro-5-(5-hydroxy-1*H*-indol-3-yl)-2-oxo-3*H*-pyrrol-3-ylidene]-1,3-dihydro-2*H*-indol-2-one, 9CI. 3-[2-(5-Hydroxyindol-3-yl)-5-oxo-2-pyrrolin-4-ylidene]-2-indolinone, 8CI. Anorosin*†
[548-54-9]



$C_{20}H_{13}N_3O_3$ 343.341
Violet phenolic pigment produced by *Chromobacterium violaceum*. Also isol. from *Janthinobacterium lividum* and *Pseudoarachniotus roseus*. Antibacterial and antiprotozoal agent. Shows potential as a photochemotherapeutic drug. Antioxidant. Purplish-black needles. Mp 350° dec. λ_{max} 255 (ϵ 14600); 278 (sh) (ϵ 11800); 295 (sh) (ϵ 6900); 370 (ϵ 5200); 568 (ϵ 18600) (MeOH) (Derep). λ_{max} 260 (ϵ 20000); 377 (ϵ 7760); 585 (ϵ 20000) (EtOH) (Derep).

▶ LD_{50} (mus, ipr) 100 mg/kg. NM2203500

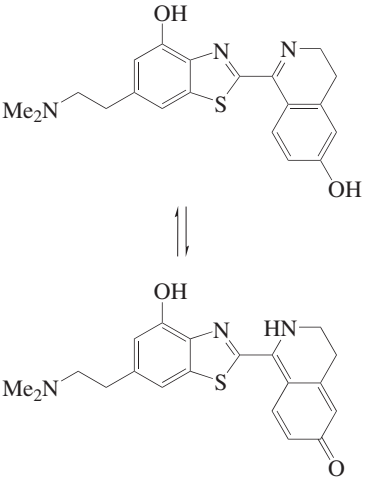
3,3′-Dihydro: [83555-57-1]
$C_{20}H_{15}N_3O_3$ 345.357
Prod. by *Chromobacterium violaceum*. Active against gram-positive and -negative bacteria.

Deoxy: ***Deoxyviolacein***
[5839-61-2]
Minor prod. from *Chromobacterium violaceum*. Dark blue powder. Mp 310° dec. λ_{max} 255 (ϵ 14600); 278 (sh) (ϵ 11800); 295 (sh) (ϵ 6900); 370 (ϵ 5200); 568 (ϵ 18600) (MeOH) (Derep). λ_{max} 260 (ϵ 20000); 377 (ϵ 7760); 585 (ϵ 20000) (EtOH) (Derep).

5-Hydroxy: ***Oxyviolacein***
[132185-16-1]
$C_{20}H_{13}N_3O_4$ 359.34
Blue pigment from *Chromobacterium violaceum*. Sol. EtOH, Me_2CO, dioxan; poorly sol. H_2O. λ_{max} 255 (ϵ 15000); 278 (ϵ 14600); 295 (sh) (ϵ 9000); 370 (ϵ 7000); 560 (ϵ 18000) (MeOH) (Derep). λ_{max} 366 ; 370 ; 426 (MeOH) (Berdy).

Beer, R.J.S. *et al., J.C.S.*, 1949, 885-889; 1958, 755-760 (*isol*)
Ballantine, J.A. *et al., J.C.S.*, 1960, 2292-2299 (*synth*)
de Moss, R.D. *et al., Antibiotics (N.Y.)*, 1967, **2**, 77-81 (*rev*)
Kimmel, K.E. *et al., Can. J. Microbiol.*, 1969, **15**, 111-116 (*biosynth*)
Duran, N. *et al., Ann. Acad. Bras. Cinc.*, 1980, **52**, 297-302; 1983, **55**, 231-234 (*props, isol*)
Hoshino, T. *et al., Agric. Biol. Chem.*, 1987, **51**, 965-968; 2733-2741; 1990, **54**, 2339-2346 (*biosynth*)
Eur. Pat., 1989, (*(Hoechst)*)341 649; *CA*, **112**, 233994y (*Anorosin*)
Noble, J.A. *et al., Diss. Abstr. Int., B*, 1990, **50**, 2919 (*isol, struct*)
Hoshino, T. *et al., J.C.S. Perkin 1*, 1995, 1565-1567 (*biosynth*)
Duran, N. *et al., Crit. Rev. Microbiol.*, 2001, **27**, 201-222 (*pharmacol, rev*)
Wille, G. *et al., Synthesis*, 2001, 759-761 (*synth, ir, uv, pmr, cmr, ms, deoxy*)
Konzen, M. *et al., Bioorg. Med. Chem.*, 2006, **14**, 8307-8313 (*activity*)
Sánchez, C. *et al., ChemBioChem*, 2006, **7**, 1231-1240 (*biosynth*)
Asamizu, S. *et al., Tet. Lett.*, 2007, **48**, 2923-2926 (*biosynth*)

Violatinctamine V-143

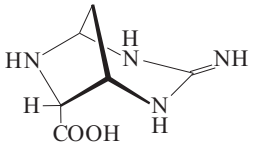


$C_{20}H_{21}N_3O_2S$ 367.471
Alkaloid from *Cystodytes* cf. *violatinctus*. Orange oil.

Chill, L. *et al., Tet. Lett.*, 2004, **45**, 7925-7928 (*isol*)

Viomycidine V-144

3-Amino-2,4,6-triazabicyclo[3.2.1]oct-2-ene-7-carboxylic acid, 9CI. 2,4,6-Triaza-3-iminobicyclo[3.2.1]octane-7-carboxylic acid
[24250-74-6]



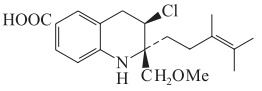
$C_6H_{10}N_4O_2$ 170.171
Acid hydrol. prod. of Viomycin. Mp 200-208° dec. (as hydrochloride). $[\alpha]_D^{30}$ -78 (c, 1.78 in H_2O) (hydrochloride). pK_{a1} 2.8; pK_{a2} 5.87; pK_{a3} 13.4 (66% DMF aq.). pK_{a1} 1.3; pK_{a2} 5.5; pK_{a3} 12.6 (H_2O).

Ac: Mp 256-257°. $[\alpha]_D^{28}$ +41.5 (c, 2.4 in H_2O).

Dyer, J.R. *et al., J.A.C.S.*, 1964, **86**, 5363
Bowie, J.H. *et al., Tet. Lett.*, 1964, 863
Floyd, J.C. *et al., Chem. Comm.*, 1968, 998 (*cryst struct*)
Koyama, G. *et al., J. Antibiot.*, 1969, **22**, 34 (*cryst struct*)
Büchi, G. *et al., J.O.C.*, 1971, **36**, 873

Virantmycin V-145

3-Chloro-2-(3,4-dimethyl-3-pentenyl)-1,2,3,4-tetrahydro-2-(methoxymethyl)-6-quinolinecarboxylic acid, 9CI
[76417-04-4]



$C_{19}H_{26}ClNO_3$ 351.872
Isol. from *Streptomyces nitrosporeus*. Active against viruses and weakly active against fungi. Needles. Sol. MeOH, DMSO, C_6H_6; fairly sol. hexane; poorly sol. H_2O. Mp 59°. $[\alpha]_D^{18}$ -0.05 (c, 1 in $CHCl_3$). λ_{max} 226 (ϵ 3500); 306 (ϵ 8100) (EtOH) (Derep). λ_{max} 223 (ϵ 9900); 283 (ϵ 14900); 300 (ϵ 14000) (MeOH) (Berdy). λ_{max} 214 (E1%/1cm 1950); 270 (E1%/1cm 306) (NaOH aq.) (Berdy).

▶ LD_{50} (mus, ipr) 5 mg/kg. ZA4826100

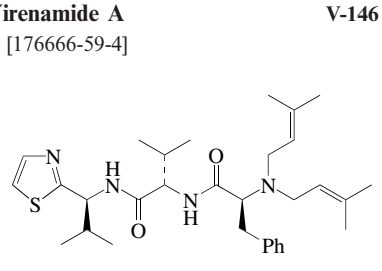
Amide: ***Benzastatin C***
[173429-77-1]
$C_{19}H_{27}ClN_2O_2$ 350.887
Prod. by *Streptomyces nitrosporeus*. Free radical scavenger, neuroprotective agent. Powder. Sol. MeOH, Me_2CO, EtOAc, DMSO; fairly sol. $CHCl_3$; poorly sol. H_2O. Mp 152°. $[\alpha]_D^{18}$ -23 (c, 0.1 in MeOH). λ_{max} 206 (ϵ 35480); 301 (ϵ 15488) (MeOH) (Berdy).

3-Dechloro, 3β-hydroxy: ***Benzastatin D***
[173429-78-2]
$C_{19}H_{27}NO_4$ 333.427
Prod. by *Streptomyces nitrosporeus*. Free radical scavenger. Powder. Mp 220°. $[\alpha]_D$ -30 (c, 0.1 in MeOH).

Omura, S. *et al., J. Antibiot.*, 1980, **33**, 1395; 1996, **52**, 10631 (*isol*)
Nakagawa, A. *et al., J. Antibiot.*, 1981, **34**, 1408 (*isol*)
Omura, S. *et al., Tet. Lett.*, 1981, **22**, 2199 (*struct*)
Pearce, C.M. *et al., J.C.S. Perkin 1*, 1990, 409 (*pmr, abs config*)
Hill, M.L. *et al., Tetrahedron*, 1990, **46**, 4587 (*synth*)
Kim, W.-G. *et al., J. Antibiot.*, 1996, **49**, 20; 26 (*Benzastatin, isol, uv, ir, pmr, cmr, props*)
Morimoto, Y. *et al., Tetrahedron*, 1996, **52**, 10609 (*synth*)
Morimoto, Y. *et al., J. Het. Chem.*, 1998, **35**, 279-284 (*conformn*)
Steinhagen, H. *et al., Org. Lett.*, 1999, **1**, 823-824 (*synth*)
Ori, M. *et al., Tetrahedron*, 2005, **61**, 2075-2104 (*synth*)
Keck, D. *et al., Eur. J. Org. Chem.*, 2006, 4916-4923 (*synth*)

Virenamide A V-146

[176666-59-4]



$C_{31}H_{46}N_4O_2S$ 538.796

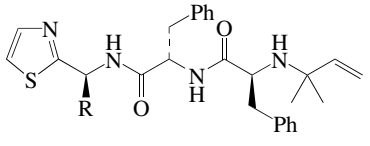
Peptide antibiotic. Isol. from the ascidian *Diplosoma virens*. Cytotoxic agent. Oil. $[\alpha]_D$ -341 (c, 0.1 in $CHCl_3$). λ_{max} 203 (ϵ 7700); 237 (ϵ 4300) (EtOH).

N-*Deprenyl:* ***Virenamide D***
[193264-93-6]
$C_{26}H_{38}N_4O_2S$ 470.678
Isol. from the ascidian *Diplosoma virens*. Oil. $[\alpha]_D$ -65 (c, 0.07 in $CHCl_3$). λ_{max} 202 (ϵ 13700); 239 (ϵ 3050) (MeOH).

Carroll, A.R. *et al., J.O.C.*, 1996, **61**, 4059-4061 (*isol, uv, ir, pmr, cmr, ms*)
Feng, Y. *et al., Aust. J. Chem.*, 1997, **50**, 337-339 (*Virenamide D*)

Virenamide B V-147

[176666-60-7]



R = $CH(CH_3)_2$

$C_{30}H_{38}N_4O_2S$ 518.722

Peptide antibiotic. Isol. from the ascidian *Diplosoma virens*. Cytotoxic agent. Oil. $[\alpha]_D$ -775 (c, 0.1 in $CHCl_3$). λ_{max} 209 (ϵ 13600); 240 (ϵ 4500) (EtOH).

Carroll, A.R. *et al., J.O.C.*, 1996, **61**, 4059-4061 (*isol, uv, ir, pmr, cmr, ms*)
Moody, C.J. *et al., J.O.C.*, 1999, **64**, 8715-8717 (*synth*)

Virenamide C V-148

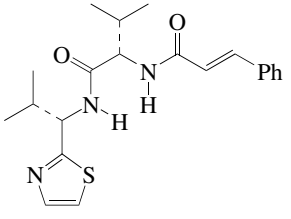
[176666-61-8]
As Virenamide B, V-147 with
R = $-CH_2Ph$
$C_{34}H_{38}N_4O_2S$ 566.766

Peptide antibiotic. Isol. from the ascidian *Diplosoma virens*. Cytotoxic agent. Oil. $[\alpha]_D$ -634 (c, 0.05 in $CHCl_3$). λ_{max} 202 (ϵ 10900); 240 (ϵ 4800) (EtOH).

Carroll, A.R. *et al., J.O.C.*, 1996, **61**, 4059-4061 (*isol, uv, ir, pmr, cmr, ms*)

Virenamide E V-149

[193264-95-8]

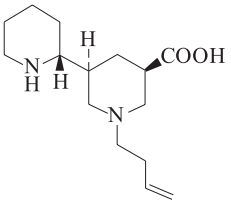


$C_{21}H_{27}N_3O_2S$ 385.529
Isol. from the ascidian *Diplosoma virens*. Oil. $[\alpha]_D$ -40 (c, 0.04 in $CHCl_3$). λ_{max} 216 (ϵ 12700); 222 (ϵ 10800); 274 (ϵ 14150) (MeOH).

Fang, Y. *et al., Aust. J. Chem.*, 1997, **50**, 337-339 (*isol, uv, ir, pmr, cmr, ms*)

Virgidivarine V-150

1′-(3-Butenyl)-[2,3′-bipiperidine]-5′-carboxylic acid, 9CI. 1-(3-Butenyl)-5-(2-piperidyl)-3-piperidinecarboxylic acid
[81633-42-3]



Relative configuration

$C_{15}H_{26}N_2O_2$ 266.383

Biogenetically related to the Sparteine group. Isol. from *Virgilia divaricata* (Fabaceae). Tetragonal cryst. Mp 157°.

de Kok, A.J. *et al., Acta Cryst. B*, 1982, **38**, 466 (*cryst struct*)
Van Eijk, J.L. *et al., Planta Med.*, 1982, **44**, 221 (*isol, ms, ir, pmr, cmr*)

Virgilidine V-151

$C_{10}H_{19}NO$ 169.266

Struct. unknown. Alkaloid from *Virgilia capensis* (Fabaceae). $Bp_{0.01}$ 90°. $[\alpha]_D$ +12 (EtOH). Co-occurs with Virgiline, V-153. Not identical with Octahydro-2*H*-quinolizine-1-methanol, O-58 or Epilupinine, E-95.

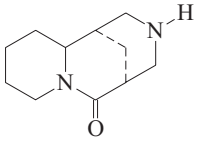
Picrate: Mp 203°.

Methiodide: Mp 256-259°.

White, E.P. *et al., N.Z. J. Sci. Technol., Sect. B*, 1946, **27**, 478-485

Virgilidone V-152

*Decahydro-1,5-methano-6*H*-pyrido[1,2-a][1,5]diazocin-6-one, 9CI*
[135442-76-1]



$C_{11}H_{18}N_2O$ 194.276
Alkaloid from *Virgilia divaricata* and *Virgilia oroboides* (Fabaceae).

N-*(3-Butenyl):* ***Virgiboidine***
[82464-31-1]
$C_{15}H_{24}N_2O$ 248.367
Alkaloid from leaves of *Virgilia oroboides* and *Virgilia divaricata* (Fabaceae).

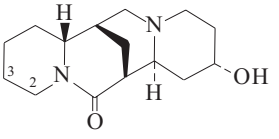
Didehydro: ***Dehydrovirgilidone***
[135442-77-2]
$C_{11}H_{16}N_2O$ 192.26
Alkaloid from *Virgilia divaricata* and *Virgilia oroboides* (Fabaceae). Posn. of double bond not determined.

Didehydro, N-*(3-Butenyl):* ***Dehydrovirgiboidine***
[135556-70-6]
$C_{15}H_{22}N_2O$ 246.352
Alkaloid from *Virgilia divaricata* and *Virgilia oroboides* (Fabaceae). Position of double bond not determined.

Van Eijk, J.L. *et al., Planta Med.*, 1982, **44**, 224 (*Virgiboidine*)
Veen, G. *et al., Phytochemistry*, 1991, **30**, 1891 (*Dehydrovirgiboidine, Virgilidone*)

Virgiline V-153

*Dodecahydro-9-hydroxy-7,14-methano-2*H*,6*H*-dipyrido[1,2-a:1′,2′-e]diazocin-6-one, 9CI. 13-Hydroxyaphylline. 13-Hydroxy-10-oxosparteine*
[2636-61-5]



$C_{15}H_{24}N_2O_2$ 264.367
Alkaloid from seeds of *Virgilia oroboides*, tops of *Virgilia capensis* and from *Lupinus verbasciformis* and *Lupinus hartwegii* (Fabaceae). Prisms (Me_2CO/MeOH). Mp 249-250°. $[\alpha]_D^{20}$ -29.

Methiodide:
Prisms (Me_2CO/MeOH). Mp 173-174° (170-171°).

Ac:
Prisms (Et_2O/Me_2CO). Mp 175-176°.

Tigloyl: ***13α-Tigloyloxyaphylline***. O-*Tigloylvirgiline*
$C_{20}H_{30}N_2O_3$ 346.469
Minor alkaloid from the seeds of *Lupinus hartwegii*. Oil. $[\alpha]_D^{25}$ -17.3 (c, 0.1 in $CHCl_3$).

2-Pyrrolecarboxylate: **O-*(2-Pyrrolylcarbonyl)virgiline***. *Virgiline 2-pyrrolecarboxylate, 8CI*
[18526-91-5]
$C_{20}H_{27}N_3O_3$ 357.452
Alkaloid from branches of *Virgilia oroboides*, leaves of *Readea membranaceae* and *Calpurnia aurea* (Fabaceae, Rubiaceae). Plates (EtOH). Mp 271° (265°). $[\alpha]_D^{20}$ -23 (c, 2.4 in $CHCl_3$).

2-Pyrrolecarboxylate; hydrochloride:
[18526-92-6]
Needles ($EtOH/Me_2CO$). Mp 237-238° dec Mp 293°.

2,3-Didehydro, 2-pyrrolecarboxylate: ***2,3-Dehydro-O-(2-pyrrolylcarbonyl)virgiline***
[18361-82-5]
$C_{20}H_{25}N_3O_3$ 355.436
Alkaloid from leaves of *Readea membranaceae* (Rubiaceae). Shows strong molluscicidal activity. Cryst. (Et_2O). Mp 145° Mp 186-193°. $[\alpha]_D^{20}$ -161 (c, 0.14 in $CHCl_3$).

13-Epimer: ***Lindenianine***
[52539-65-8]
$C_{15}H_{24}N_2O_2$ 264.367
Alkaloid from *Lupinus lindenianus*

and *Lupinus verbasciformis* (Fabaceae). Cryst. ($CHCl_3$/Et_2O). Mp 212-213°.

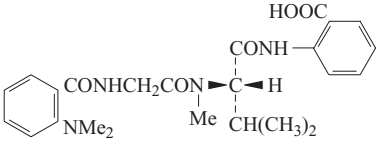
13-Epimer, picrate: [52539-66-9]
Cryst. (Me_2CO/Et_2O). Mp 160-162°.

13-Epimer, Ac: [52539-67-0]
Viscous oil.

White, E.P. *et al., N.Z. J. Sci. Technol., Sect. B*, 1946, **27**, 478 (*isol*)
Gerrans, G.C. *et al., J.C.S.*, 1964, 2202 (*isol, struct*)
White, E.P. *et al., J.C.S.*, 1964, 5243 (*isol, deriv*)
Manchanda, A.H. *et al., J.C.S.(C)*, 1968, 615 (*isol, struct, uv, derivs*)
Nakano, T. *et al., J.O.C.*, 1974, **39**, 3584 (*Lindenianine, isol, struct, cd*)
Anderson, J.N. *et al., J.O.C.*, 1976, **41**, 3441 (*isol*)
Nakano, T. *et al., Planta Med.*, 1976, **29**, 241 (*Virgiline, Lindenianine*)
Kubo, I. *et al., Agric. Biol. Chem.*, 1984, **48**, 2839 (*isol, uv, pmr, derivs*)
Mohamed, M.H. *et al., Pharmazie*, 1999, **54**, 778-780 (*tigloyl*)

Viridic acid V-154

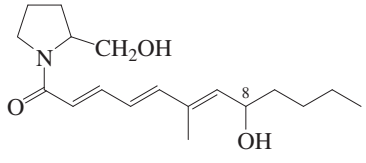
N-*[2-(Dimethylamino)benzoyl]glycyl*-N-*(2-carboxyphenyl)*-N^2-*methylvalinamide, 9CI*
[106283-19-6]



$C_{24}H_{30}N_4O_5$ 454.525
Isol. from *Penicillium viridicatum*. Mycotoxin. Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. λ_{max} 260 (ϵ 15690); 301 (ϵ 5440) (MeOH) (Berdy). λ_{max} 260 (ϵ 15590); 295 (ϵ 4563) (MeOH/HCl) (Berdy). λ_{max} 262 (ϵ 16250); 305 (ϵ 5950) (MeOH/NaOH) (Berdy).

Holzapfel, C.W. *et al., S. Afr. J. Chem.*, 1986, **39**, 75 (*isol, struct, synth*)

Viriditin V-155



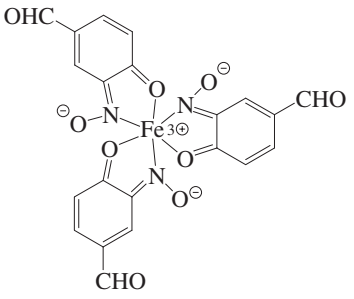
$C_{18}H_{29}NO_3$ 307.432
Prod. by *Aspergillus viridi-nutans.* Yellowish oil. $[\alpha]_D$ -65 (c, 1.2 in $CHCl_3$). λ_{max} 303 (log ϵ 4.53) (MeOH).

8-Me ether: **O-*Methylviriditin***
$C_{19}H_{31}NO_3$ 321.459
Prod. by *Aspergillus viridi-nutans.* Yellowish oil. $[\alpha]_D$ -67 (c, 0.4 in $CHCl_3$). λ_{max} 302 (log ϵ 4.62) (MeOH).

Omolo, J.O. *et al., J. Nat. Prod.*, 2000, **63**, 975-977

Viridomycin A V-156

[52970-22-6]



$C_{21}H_{12}FeN_3O_9$ 506.188
Fe complex of 4-Hydroxy-3-nitrosobenzaldehyde. Prod. by *Streptomyces viridans.* Moderate antibacterial agent. Mp 300°.

Monoalcohol: ***Viridomycin F***
[221394-79-2]
$C_{21}H_{14}FeN_3O_9$ 508.203
Prod. by *Streptomyces* sp. K96-0188. Shows moderate antibacterial, insecticidal and nematocidal activity. Green powder. $[\alpha]_D^{25}$ +6 (c, 0.1 in MeOH). Mp >300°. Has one -CHO group reduced to $-CH_2OH$. λ_{max} 207 (ϵ 21800); 226 (sh) (ϵ 13700); 288 (ϵ 7620); 435 (ϵ 2290); 680 (ϵ 2790) (MeOH).

Blinova, I.N. *et al., Khim. Prir. Soedin.*, 1975, **11**, 490; *Chem. Nat. Compd. (Engl. Transl.)*, 1975, **11**, 506 (*isol*)
Yang, C.C. *et al., Antimicrob. Agents Chemother.*, 1981, **20**, 558 (*props*)
Kurobane, I. *et al., J. Antibiot.*, 1987, **40**, 1131 (*isol, struct, bibl*)
Omura, S. *et al., J. Antibiot.*, 1999, **52**, 61-64 (*Viridomycin F*)

Viridomycin B V-157

[57425-73-7]

Struct. unknown. Co-occurs with 4-Hydroxy-3-nitrosobenzaldehyde. Prob. an aromatic nitroso-Fe complex (uv v. similar to Viridomycin A). Prod. by a number of *Actinomyces* spp., isol. from cultures of *Actinomyces viridis* strain 1876. Amorph. yellow-green powder. Sol. Py, AcOH, DMF; fairly sol. MeOH, H_2O, butanol, EtOH, Me_2CO; poorly sol. EtOAc, hexane. Prob. an aromatic nitroso-Fe complex (uv v. similar to Viridomycin A). λ_{max} 222 ; 294 ; 435 ; 680 (EtOH) (Berdy). λ_{max} 294 ; 430 ; 680 (EtOH/HCl) (Berdy). λ_{max} 296 ; 430 ; 680 (EtOH/NaOH) (Berdy).

Blinova, I.N. *et al., Khim. Prir. Soedin.*, 1975, **11**, 490; *Chem. Nat. Compd. (Engl. Transl.)*, 1975, **11**, 506

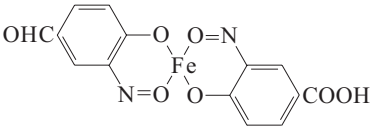
Viridomycin C V-158

[57425-74-8]

Struct. unknown. Co-occurs with 4-Hydroxy-3-nitrosobenzaldehyde. Prob. an aromatic nitroso Fe complex (uv v. similar to Viridomycin A). Prod. by a number of *Actinomyces* spp., isol. from cultures of *Actinomyces viridis* strain 1876. Amorph. yellow-green powder. Sol. AcOH, DMF, Py; fairly sol. MeOH, H_2O, Me_2CO; poorly sol. EtOAc, hexane. λ_{max} 228 ; 294 ; 435 ; 680 (EtOH). λ_{max} 294 ; 435 ; 680 (EtOH-HCl) (Berdy). λ_{max} 294 ; 438 ; 680 (EtOH-NaOH) (Berdy).

Blinova, I.N. *et al., Khim. Prir. Soedin.*, 1975, **11**, 490; *Chem. Nat. Compd. (Engl. Transl.)*, 1975, **11**, 506

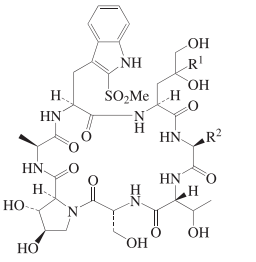
Viridomycin E V-159



$C_{14}H_8FeN_2O_7$ 372.073
Fe complex of 4-Hydroxy-3-nitrosobenzaldehyde and 4-Hydroxy-3-nitrosobenzoic acid. Isol. from *Streptomyces griseus.* Dark-green cryst. Mp 300°. Related to Viridomycin A and Actinoviridin A. λ_{max} 268 (ϵ 22800); 295 (ϵ 21300); 434 (ϵ 6500); 685 (ϵ 6400) (MeOH) (Berdy).

Kurobane, I. *et al., J. Antibiot.*, 1987, **40**, 1131 (*isol, struct*)

Virotoxin V-160



Viroisin, $R^1 = CH_2OH$, $R^2 = CH(CH_3)_2$
Viroidin, $R_1 = CH_3$, $R^2 = CH(CH_3)_2$
[Ala^1]Viroidin, $R^1 = R^2 = CH_3$

A series from *Amanita virosa*.

Viroisin [74113-57-8]
$C_{38}H_{56}N_8O_{16}S$ 912.97
Major toxin from *Amanita virosa*. $[\alpha]_D^{20}$ -22.4. λ_{max} 291 (ϵ 15000) (0.01*N* NaOH) (Derep). λ_{max} 278 (ϵ 15500); 293 (sh) (ϵ 9900); 305 (sh) (ϵ 6300) (H_2O/pH 7) (Derep).
▶ LD_{50} (mus, ipr) 2.5mg/kg. ZA5300000
S-*Deoxy:* ***Desoxoviroisin***. *2-[2-(Methylsulfinyl)-L-tryptophan]viroisin, 9CI*
[74125-17-0]
$C_{38}H_{56}N_8O_{15}S$ 896.971
Toxin from *Amanita virosa*.
▶ ZA5360000

Viroidin
3-(4,5-Dihydroxy-L-leucine)viroisin, 9CI. VD
[53568-33-5]
$C_{38}H_{56}N_8O_{15}S$ 896.971
Toxin from *Amanita virosa*. $[\alpha]_D^{20}$ -13.6. λ_{max} 291 (ϵ 15000) (0.01*N* NaOH)

(Derep). λ_{max} 278 (ϵ 15500); 293 (sh) (ϵ 9900); 305 (sh) (ϵ 6300) (H_2O/pH 7) (Derep).

► ZA5320000

S-*Deoxy:* ***Desoxoviroidin***. *2-[2-(Methylsulfinyl)-L-tryptophan]-3-(4,5-dihydroxy-L-leucine)viroisin, 9CI*
[74125-14-7]
$C_{38}H_{56}N_8O_{14}S$ 880.972
Toxin from *Amanita virosa*.

► ZA5380000

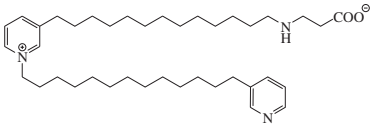
[Ala^1]Viroidin
3-(4,5-Dihydroxy-L-leucine)-4-L-alanine-viroisin
[74125-15-8]
$C_{36}H_{52}N_8O_{15}S$ 868.917
Toxin from *Amanita virosa*.

► ZA5340000

S-*Deoxy:* ***[Ala^1]Desoxoviroidin***. *2-[2-(Methylsulfinyl)-L-tryptophan]-3-(4,5-dihydroxy-L-leucine)-4-L-alanineviroisin, 9CI*
[74125-16-9]
$C_{36}H_{52}N_8O_{14}S$ 852.918
Toxin from *Amanita virosa*.

Faulstich, H. *et al., Biochemistry*, 1980, **19**, 3334-3343 (*struct, pmr, uv, cd*)

Viscosaline V-161

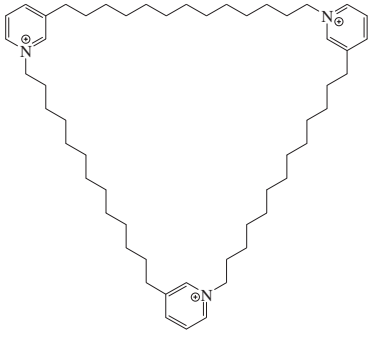


$C_{39}H_{65}N_3O_2$ 607.961
Alkaloid from the sponge *Haliclona viscosa*. CAS no. not found CA 141. λ_{max} 204 ; 264 (MeOH).

Volk, C.A. *et al., Org. Biomol. Chem.*, 2004, **2**, 1827-1830 (*isol, pmr, cmr*)
Shorey, B.J. *et al., Tetrahedron*, 2007, **63**, 5587-5592 (*synth*)

Viscosamine V-162

[606136-89-4]

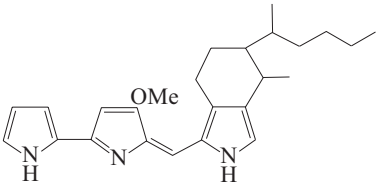


$C_{54}H_{90}N_3^{3\oplus}$ 781.325
Related to Cyclostellettamines, C-910. Alkaloid from the sponge *Haliclona viscosa*. Solid (as trifluoroacetate). λ_{max} 203 ; 267 (MeOH) (TFA salt).

Volk, C. *et al., Org. Lett.*, 2003, **5**, 3567-3569 (*isol, pmr, cmr, ms*)
Timm, C. *et al., Synthesis*, 2006, 2580-2584 (*synth, ir, uv, pmr, cmr*)

Vitamycin A V-163

Prodigiosin 25b
[22373-48-4]

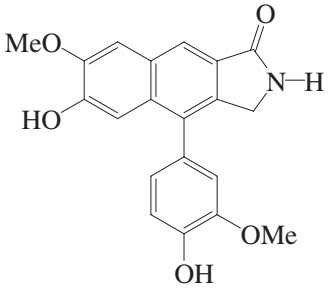


$C_{25}H_{33}N_3O$ 391.555
Pyrrole antibiotic. Isol. from *Actinomyces aureoverticillatus*. Active against gram-positive bacteria. Orange-red cryst. powder (C_6H_6). Sol. MeOH, Et_2O; fairly sol. hexane; poorly sol. H_2O. Mp 192-194°. λ_{max} 295 ; 322 ; 465 ; 495 ; 532 (hexane) (Berdy).

Korenyako, A.I. *et al., CA*, 1962, **57**, 17202 (*biosynth*)
Khokhlova, Y.M. *et al., Biokhimiya (Moscow)*, 1964, **29**, 841 (*pmr, ms, struct*)
Khokhlova, Y.M. *et al., Khim. Prir. Soedin.*, 1968, **4**, 307; *Chem. Nat. Compd. (Engl. Transl.)*, 1968, **4**, 260 (*pmr, ms, struct*)
Makukhina, A.M. *et al., CA*, 1976, **85**, 44853 (*manuf*)

Vitedoamine A V-164

[819861-41-1]



$C_{20}H_{17}NO_5$ 351.358
Alkaloid from the seeds of *Vitex negundo*. Antioxidant. Powder.

Ono, M. *et al., J. Nat. Prod.*, 2004, **67**, 2073-2075 (*isol, pmr, cmr*)

Vitricine V-165

[1362-23-8]

$C_{17}H_{15}NO_3$ 281.31
Struct. unknown. Poss. an aporphine. Alkaloid from *Vitex trifoliata* (Verbenaceae). Conts. 1 OH and one -OCH_2O- group but no OMe or NMe.

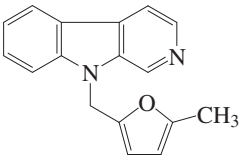
Perchlorate: Mp 178° dec.

Picrate: Mp 228°.

Döpke, W. *et al., Naturwissenschaften*, 1962, **49**, 375 (*isol*)
Shamma, M. *et al., Chem. Rev.*, 1964, **64**, 59-79 (*rev*)

Vittacarboline V-166

9-[(5-Methylfuranyl)methyl]-β-carboline

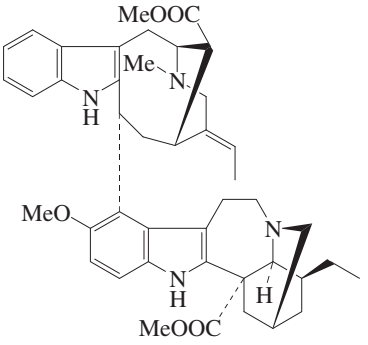


$C_{17}H_{14}N_2O$ 262.31
Alkaloid from the flowers of *Hippeastrum vittatum*. Yellow needles. Mp 157-159°. λ_{max} 240 (log ϵ 4.2); 256 (log ϵ 4.7); 268 (log ϵ 4.26); 291 (log ϵ 3.76); 305 (log ϵ 4.05); 350 (log ϵ 3.45); 370 (log ϵ 3.88); 385 (log ϵ 3.25) (MeOH).

Youssef, D.T.A. *et al., J. Nat. Prod.*, 2001, **64**, 839-841

Voacamidine V-167

[6897-04-7]



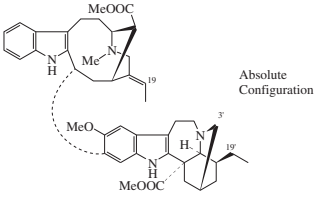
$C_{43}H_{52}N_4O_5$ 704.908
Alkaloid from *Voacanga africana*, *Voacanga schweinfurthii*, *Peschiera echinata* and *Tabernaemontana accedens* (Apocynaceae). Shows v. weak activity against P-388 lymphocytic leukaemia. Needles (C_6H_6). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 128-130° dec. $[\alpha]_D^{24}$ -174.5 ($CHCl_3$).

Hydrochloride (1:2):
Needles (Me_2CO/MeOH). Mp 265-267° dec. $[\alpha]_D^{16.5}$ -166.5 (MeOH).

Renner, U. *et al., Experientia*, 1957, **13**, 468-469 (*uv, ir*)
Renner, U. *et al., Tet. Lett.*, 1964, 283-287 (*struct*)
Achenbach, H. *et al., Chem. Ber.*, 1976, **109**, 3527-3536 (*isol, pmr*)
Richard, B. *et al., J. Nat. Prod.*, 1983, **46**, 283-284 (*isol*)
Braga, R.M. *et al., Phytochemistry*, 1984, **23**, 175-178 (*cmr*)

Voacamine V-168

Voacanginine
[3371-85-5]



$C_{43}H_{52}N_4O_5$ 704.908
Alkaloid from *Voacanga africana*, other *Voacanga* spp., *Tabernaemontana accedens*, *Tabernaemontana dichotoma*, *Tabernaemontana johnstonii*, *Tabernaemontana pachysiphon*, *Peschiera fuchsiaefolia*, *Peschiera laeta*, *Ervatamia orientalis* and several other spp. in the Apocynaceae. Antineoplastic agent, shows strong activity vs. P-388 lymphocytic leukaemia. Also strongly active against gram-positive bacteria and mod. active against gram-negative organisms. Shows antiplasmodial activity. Antimalarial agent. Sol. $CHCl_3$, Me_2CO; fairly sol. MeOH, EtOH. Mp 224°. $[\alpha]_D$ -52 (c, 1 in $CHCl_3$). Log P 7.36 (uncertain value) (calc). λ_{max} 226 ; 288 ; 295 (MeOH) (Berdy). λ_{max} 222 ; 225 (ϵ 30900); 285 ; 286 (ϵ 8700); 293 ; 294 (ϵ 8300) (EtOH) (Berdy).

▶ LD_{50} (mus, ivn) 21.5 mg/kg (as sulfate). NH6737230

N^b-*Oxide:* ***Voacamine* N^b*-oxide***
$C_{43}H_{52}N_4O_6$ 720.907
Alkaloid from *Voacanga africana*, *Voacanga bracteata* and *Tabernaemontana accedens* (Apocynaceae). Mp 216-219° dec. $[\alpha]_D^{20}$ -55 (c, 0.24 in $CHCl_3$).

N-*De-Me:* **N-*Demethylvoacamine***. *13′-Perivoacangine*
[61589-94-4]
$C_{42}H_{50}N_4O_5$ 690.881
Alkaloid from the root bark of *Tabernaemontana accedens* (Apocynaceae). Antineoplastic agent. Shows stronger activity than Voacamine vs. P-388 lymphocytic leukaemia. Cryst. (MeOH). Mp 227° dec. $[\alpha]_D^{20}$ -67 (c, 0.12 in $CHCl_3$). Log P 6.51 (uncertain value) (calc).

19,20α-Dihydro: ***Ervadivaricatine B***
[204581-20-4]
$C_{43}H_{54}N_4O_5$ 706.923
Alkaloid from *Ervatamia divaricata*.

19,20β-Dihydro: ***Ervadivaricatine A***
[11047-69-1]
$C_{43}H_{54}N_4O_5$ 706.923
Alkaloid from *Ervatamia divaricata*.

3′-Hydroxy: ***3-Hydroxyvoacamine***
$C_{43}H_{52}N_4O_6$ 720.907
Trace alkaloid from the root bark of *Tabernaemontana chippii* (Apocynaceae). Active against gram-positive and gram-negative bacteria. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Approx. 1:1 mixt. of 3-epimers. λ_{max} 224 ; 286 ; 294 (MeOH) (Berdy).

*19′*R-*Hydroxy:* ***Voacorine***
[5130-80-3]
$C_{43}H_{52}N_4O_6$ 720.907
Alkaloid from the trunk bark of *Tabernaemontana brachyantha*, and the root and stem bark of *Voacanga africana*, also from *Voacanga schweinfurthii* (Apocynaceae). Antineoplastic agent. Prisms (MeOH or MeOH/Et_2O). Mp 240° Mp 273° Mp 275-280°. Log P 5.15 (uncertain value) (calc).

▶ NH6737000

*19′*S-*Hydroxy:* ***Epivoacorine***
[4835-65-8]
$C_{43}H_{52}N_4O_6$ 720.907
Alkaloid from *Tabernaemontana arborea*, *Tabernaemontana brachyantha*, *Voacanga bracteata* and *Voacanga africana* (Apocynaceae). Shows cytotoxic activity vs. mouse P-388 carcinoma. Cryst. (MeOH). Mp 265° (260° dec.). $[\alpha]_D$ -80 (c, 0.8 in $CHCl_3$). pK_a 6.12 (80% MCS aq.). Log P 5.15 (uncertain value) (calc). λ_{max} 226 (ϵ 42600); 288 (ϵ 14800); 295 (ϵ 13200) (EtOH) (Berdy).

Demethoxy, 3′-oxo: ***Ervahaimine A***
[126398-88-7]
$C_{42}H_{48}N_4O_5$ 688.865
Minor alkaloid from the roots of *Ervatamia hainanensis* (Apocynaceae).

Janot, M.-M. *et al., C. R. Hebd. Seances Acad. Sci.*, 1957, **244**, 1955 (*Voacorine, uv, ir, struct*)
Budzikiewicz, H. *et al., Bull. Soc. Chim. Fr.*, 1963, 1899 (*Voacorine, pmr, ms, struct*)
Büchi, G. *et al., J.A.C.S.*, 1964, **86**, 4631 (*Voacorine, Voacamine, uv, ms, pmr, ir, struct, synth*)
Poisson, J. *et al., Bull. Soc. Chim. Fr.*, 1965, 3549 (*Voacorine, uv, ir, ms, pmr, struct*)
Thomas, D.W. *et al., J.A.C.S.*, 1965, **87**, 5447 (*Voacamine, ms*)
Patel, M.B. *et al., Phytochemistry*, 1973, **12**, 451 (*Epivoacorine*)
Achenbach, H. *et al., Chem. Ber.*, 1976, **109**, 3527 (*Voacamine N-oxide, N-Demethylvoacamine*)
Suffness, M. *et al., Alkaloids (Academic Press)*, 1985, **25**, 216 (*Voacamine, antileukaemic props*)
Van Beek, T.A. *et al., J. Ethnopharmacol.*, 1985, **14**, 315-318 (*3-Hydroxyvoacamine, activity*)
Van Beek, T.A. *et al., J. Nat. Prod.*, 1985, **48**, 400 (*3-Hydroxyvoacamine*)
Feng, X.Z. *et al., J. Nat. Prod.*, 1989, **52**, 928 (*Ervahaimine A*)
Huang, L. *et al., Zhongcaoyao*, 1997, **28**, 451-454; *CA*, **128**, 228465c (*Ervadivaricatines*)
Medeiros, W.L.B. *et al., Magn. Reson. Chem.*, 1999, **37**, 676-681 (*Voacamine, pmr, cmr*)
Federici, E. *et al., Planta Med.*, 2000, **66**, 93 (*Voacamine, activity*)

Voacaminine V-169

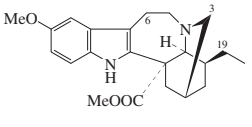
[1362-29-4]

Struct. unknown. Alkaloid from *Voacanga africana* (Apocynaceae). Cryst. (MeOH). Mp 242°. $[\alpha]_D$ -45 (c, 0.44 in $CHCl_3$).

U.S. Pat., 1958, 2 823 204; *CA*, **52**, 11976a
La Barre, J. *et al., Actual. Pharmacol.*, 1961, **14**, 109-124

Voacangine V-170

[510-22-5]



Absolute Configuration

$C_{22}H_{28}N_2O_3$ 368.475
Alkaloid from *Voacanga africana*, several other *Voacanga* spp., *Tabernaemontana johnstonii*, *Tabernaemontana divaricata*, *Tabernanthe pubescens*, *Ervatamia heyneana*, *Pagiantha cerifera* (preferred genus name *Tabernaemontana*), several *Stemmadenia* spp. and other spp. in the Apocynaceae. Probably the most widely distrubuted of the Iboga alkaloids. Shows mod. cytotoxic activity, also some CNS, brachycardial and hypotensive action. Mp 137-138°. $[\alpha]_D$ -42 (c, 1 in $CHCl_3$). λ_{max} 224 (ϵ 32580); 288 (ϵ 10220) (EtOH).

Picrate: Mp 148°.

O-*De-Me:* ***10-Hydroxycoronaridine***
[76129-67-4]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from the leaves of *Tabernanthe pubescens* and from the wood and stem bark of *Ervatamia heyneana* (Apocynaceae). Shows cytotoxic activity *vs.* mouse P-388 carcinoma cells. Shows estrogen-like activity. Amorph. $[\alpha]_D$ -33 (c, 0.5 in $CHCl_3$).

3-Oxo: ***3-Oxovoacangine***
[3306-59-0]
$C_{22}H_{26}N_2O_4$ 382.458
Alkaloid from whole plants of *Ervatamia coronaria* var. *plena*. Also obt. by oxidn. of Voacangine. Prisms (C_6H_6/EtOAc). Mp 252°. $[\alpha]_D$ -52 (c, 0.05 in $CHCl_3$).

19-Oxo: ***Voacryptine***. *19-Oxovoacangine*. *20-Oxovoacangine*
[4995-51-1]
$C_{22}H_{26}N_2O_4$ 382.458
Alkaloid from the bark of *Voacanga africana* and from *Tabernaemontana* sp. (Apocynaceae). Needles (Et_2O). Mp 175-176°. $[\alpha]_D^{22}$ +24.7 (c, 1 in $CHCl_3$). λ_{max} 224 (log ϵ 4.46); 285 (log ϵ 3.98) (no solvent reported).

*3*R-*Hydroxy:* ***10-Methoxyeglandine***
[80981-96-0]
[95840-38-3]
$C_{22}H_{28}N_2O_4$ 384.474
Alkaloid from the stem bark and seeds of *Peschiera echinata* and seeds of *Voacanga scweinfurthii* var. *puberula*. Amorph. Originally descr. as 3,6-Oxidocoronaridine . Struct. revised here in accordance with the new struct. of Eglandine, but this is not confirmed. No further work since 1982.

*3*R-*Hydroxy,* N-*oxide:* ***10-Methoxyeglandine* N-*oxide***
[76129-66-3]
$C_{22}H_{28}N_2O_5$ 400.474
Alkaloid from the wood and stem bark of *Ervatamia heyneana* (Apocynaceae). Cytotoxic agent. $[\alpha]_D^{26}$ +86.6 (c, 0.76 in $CHCl_3$). Struct. and MF revised from that shown in the lit., in accordance with the new struct. of Eglandine. λ_{max} 224 (ϵ 28900); 282 (ϵ 9600) (MeOH) (Berdy).

*3*R-*Methoxy:* ***3*R-*Methoxyvoacangine***
[162229-95-0]
$C_{23}H_{30}N_2O_4$ 398.501
Minor alkaloid from bark of *Tabernaemontana markgrafiana* (Apocynaceae). Amorph. solid. $[\alpha]_D$ -39 (c, 0.4 in $CHCl_3$). Erroneous struct. diag. in paper.

*3*S-*Hydroxy:* ***3*S-*Hydroxyvoacangine***
[56867-76-6]
$C_{22}H_{28}N_2O_4$ 384.474
Alkaloid from tissue cultures of *Tabernaemontana pandacaqui*. λ_{max} 218 ; 279 ; 310 (sh) (no solvent reported).

*19*R-*Hydroxy:* ***19-Epivoacristine***. *19-Epivoacangarine*
[6883-77-8]
$C_{22}H_{28}N_2O_4$ 384.474
Alkaloid from *Voacanga bracteata*, *Trachelospermum jasminoides*, *Tabernaemontana arborea* and *Tabernaemontana dichotoma*. Mp 115°. $[\alpha]_{578}$ -47 ($CHCl_3$). λ_{max} 224 ; 282 ; 298 (MeOH).

*19*R-*Hydroxy, 3-oxo:* ***19-Epi-3-oxovoacristine***. *3-Oxo-19-epivoacristine*
[524729-86-0]
$C_{22}H_{26}N_2O_5$ 398.458
Alkaloid from *Tabernaemontana calcarea*. Pale yellow oil. $[\alpha]_D$ -10 (c, 0.42 in $CHCl_3$). λ_{max} 224 (log ϵ 4.14); 280 (log ϵ 3.82); 294 (log ϵ 3.45) (MeOH).

*19*S-*Hydroxy:* ***Voacristine***. *19-Hydroxyvoacangine*. *Voacangarine*
[545-84-6]
$C_{22}H_{28}N_2O_4$ 384.474
Alkaloid from *Voacanga africana*, *Ervatamia orientalis*, several *Tabernaemontana* and *Pandaca* spp. (Apocynaceae). Shows weak cytotoxicity vs. P-388 leukaemia cells. Also shows CNS, brachycardial and hypotensive activity. Cryst. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 112-114° Mp 163-165° (dimorph.). λ_{max} 222 (log ϵ 4.45); 282 (log ϵ 3.98); 302 (log ϵ 3.9); 314 (sh) (log ϵ 3.64) (MeOH).

► NH6737100

*19*S-*Hydroxy,* O-*de-Me:* ***10-Hydroxyheyneanine***
[77795-14-3]
$C_{21}H_{26}N_2O_4$ 370.447
Alkaloid from the leaves of *Tabernanthe pubescens*, *Peschiera echinata*, *Anartia* cf. *meyeri* (preferred genus name *Tabernaemontana*), and the roots of *Ervatamia hainanensis* (Apocynaceae). Amorph. $[\alpha]_D$ -42 (c, 0.4 in $CHCl_3$).

*19*S-*Hydroxy, 3-oxo:* ***3-Oxovoacristine***. *19-Oxovoacristine*
[84453-51-0]
$C_{22}H_{26}N_2O_5$ 398.458
Alkaloid from the stem bark of *Tabernaemontana citrifolia* (Apocynaceae). Cryst. (MeOH). Mp 251-252°. $[\alpha]_D^{22}$ -35.5 (c, 0.1 in $CHCl_3$).

*19*S-*Acetoxy:* Mp 191-193°. $[\alpha]_D^{23}$ -27 ($CHCl_3$).

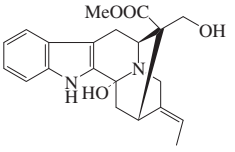
3-Ethoxy: ***3-Ethoxyvoacangine***
[746643-03-8 (*R*-form), 746643-04-9 (*S*-form)]
$C_{24}H_{32}N_2O_4$ 412.528
Alkaloid from the stem bark of *Tabernaemontana divaricata*. Pale yellow oil. Obt. as a mixt. of 3*R*- and 3*S*-epimers. λ_{max} 224 (log ϵ 4.4); 287 (log ϵ 4.09); 299 (log ϵ 4.06) (EtOH).

3ξ-Cyano: ***Voacangine 3-carbonitrile***
[84306-86-5]
$C_{23}H_{27}N_3O_3$ 393.485
Alkaloid from the seeds of *Pterotaberna inconspicua* (preferred genus name *Tabernaemontana*). $[\alpha]_D$ -68 (c, 1.1 in $CHCl_3$). λ_{max} 225 ; 285 ; 300 (MeOH).

Janot, M.-M. *et al., C. R. Hebd. Seances Acad. Sci.*, 1955, **240**, 1800-1801 (*isol*)
Stauffacher, D. *et al., Helv. Chim. Acta*, 1958, **41**, 169-180 (*Voacristine, isol, uv, ir*)
Dickel, D.F. *et al., J.A.C.S.*, 1958, **80**, 123-125 (*isol*)
Bartlett, M.F. *et al., J.A.C.S.*, 1958, **80**, 126-136 (*struct*)
Walls, F. *et al., Tetrahedron*, 1958, **2**, 173-182 (*uv*)
Renner, U. *et al., Experientia*, 1959, **15**, 185-186; 456-457; 1961, **17**, 106 (*Voacristine, Voacryptine, struct*)
Budzikiewicz, H. *et al., Bull. Soc. Chim. Fr.*, 1963, 1899-1905 (*ms*)
Guise, G.B. *et al., Aust. J. Chem.*, 1965, **18**, 1279-1286 (*synth, 3-Oxovoacangine*)
Poisson, J. *et al., Bull. Soc. Chim. Fr.*, 1965, 3549-3352 (*19-Epivoacristine*)
Govindachari, T.R. *et al., Tet. Lett.*, 1965, 3873-3878 (*Voacristine, pmr, ms*)
Goldblatt, A. *et al., Phytochemistry*, 1970, **9**, 1293-1298 (*abs config*)
Bláha, K. *et al., Coll. Czech. Chem. Comm.*, 1974, **39**, 2258-2266 (*Voacristine, abs config*)
Agwada, V.G. *et al., Helv. Chim. Acta*, 1975, **58**, 1001 (*synth, 3-Hydroxyvoacangine*)
Harmouche, A. *et al., Ann. Pharm. Fr.*, 1976, **34**, 31-35 (*pmr*)
Wenkert, E. *et al., Helv. Chim. Acta*, 1976, **59**, 2437-2442 (*cmr*)
Kingston, D.G.I. *et al., J. Pharm. Sci.*, 1978, **67**, 271-272; 272-274 (*activity*)
Gunasekera, S.P. *et al., Phytochemistry*, 1980, **19**, 1213-1218 (*10-Methoxyeglandine* N-*oxide, 10-Hydroxycoronaridine*)
Mulamba, T. *et al., J. Nat. Prod.*, 1981, **44**, 184-189 (*10-Hydroxycoronaridine, 10-Hydroxyheyneanine*)
Ghorbel, N. *et al., J. Nat. Prod.*, 1981, **44**, 717-721 (*10-Methoxyeglandine*)
Kutney, J.P. *et al., Helv. Chim. Acta*, 1982, **65**, 2242-2250 (*3-Oxovoacristine*)
Morfaux, A.M. *et al., Phytochemistry*, 1982, **21**, 1767-1769 (*Voacangine 3-carbonitrile, 3,6-Oxidovoacangine*)
Perera, P. *et al., Planta Med.*, 1983, **47**, 148-150 (*19-Epivoacristine*)
Danieli, B. *et al., Alkaloids (Academic Press)*, 1986, **27**, 1-130 (*rev*)
Atta-ur-Rahman, *et al., Planta Med.*, 1987, **53**, 57-59 (*19-Epivoacristine*)
Sharma, P. *et al., J. Nat. Prod.*, 1988, **51**, 528-531 (*isol, 3-Oxovoacangine*)
Soriano-Garcia, M. *et al., J. Crystallogr. Spectrosc. Res.*, 1989, **19**, 725-732 (*cryst struct*)
Sierra, M.I. *et al., Planta Med.*, 1991, **57**, 543-547 (*isol, 3S-Hydroxyvoacangine*)
Nielsen, H.B. *et al., Phytochemistry*, 1994, **37**, 1729-1735 (*3R-Methoxyvoacangine*)
Masuda, K. *et al., Planta Med.*, 2000, **66**, 169-173 (*10-Hydroxycoronaridine, activity*)
Chaturvedula, V.S.P. *et al., J. Nat. Prod.*, 2003, **66**, 528-531 (*19-Epi-3-oxovoacristine*)
Kam, T.-S. *et al., Chem. Biodiversity*, 2004, **1**, 646-656 (*3-Ethoxyvoacangine*)
Kam, T.-S. *et al., Heterocycles*, 2004, **63**, 845-850 (*3-Oxovoacangine*)
Pereira, P.S. *et al., Quim. Nova*, 2008, **31**, 20-24 (*pmr, cmr*)

Voacarpine V-171

Methyl 3,17-dihydroxysarpagan-16-carboxylate, 9CI
[3650-53-1]



Absolute Configuration

$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from *Voacanga chalotiana* and *Hazunta* spp. (Apocynaceae). Prisms (C_6H_6). Mp 227-228° dec. $[\alpha]_D^{20}$ +43.5 (c, 0.4 in MeOH). λ_{max} 225 (ϵ 31350); 282 (ϵ 6260); 292 (sh) (ϵ 5150) (MeOH).

O,N-*Di-Ac:* Mp 212-213°. $[\alpha]_D^{20}$ -22 (c, 0.7 in MeOH).

N^4-*Me:* ***Vincadiffine***. N^b-*Methylvoacarpine. 3-Oxo-*N^b*-methyl-3,4-secoakuammidine*
[3238-64-0]
$C_{22}H_{26}N_2O_4$ 382.458
Alkaloid from *Vinca difformis* (Apocynaceae). Mp 230° (222°). $[\alpha]_D$ -121 ($CHCl_3$). $[\alpha]_D^{22}$ -70 (MeOH). Zwitterionic, tautomeric with the 3-oxo ring-cleaved amine form.

N^4-*Me, hydrochloride:* Mp 202°.

N^4-*Me, stereoisomer 1 (?):* ***Voacafrine***
[7080-82-2]
$C_{22}H_{26}N_2O_4$ 382.458
Alkaloid from the tree bark of *Voacanga africana* (Apocynaceae). Plates (CH_2Cl_2/Et_2O). Mp 135-137° dec. Suggested struct. 16-Config. undetermined. Either Voacafrine or Voacafricine should be identical with Vincadiffine above, but there has been no further work on these alkaloids. λ_{max} 240 (ϵ 17070); 315 (ϵ 20670) (no solvent reported).

N^4-*Me, stereoisomer 1 (?), hydrochloride:* Plates (Me_2CO/MeOH). Mp 165-167° dec. $[\alpha]_D^{25}$ -107 (c, 1 in MeOH).

N^4-*Me, stereoisomer 2 (?):* ***Voacafricine***
[6817-40-9]
$C_{22}H_{26}N_2O_4$ 382.458
Alkaloid from the bark of *Voacanga africana* (Apocynaceae). Prisms (CH_2Cl_2/Et_2O). Mp 196-198°. Tentative struct. MF may be $C_{22}H_{24}N_2O_4$. See note under Voacafrine above. λ_{max} 238 (ϵ 18570); 315 (ϵ 22500) (no solvent reported).

N^4-*Me, stereoisomer 2 (?); hydrochloride:* Plates. Mp 200-202° dec.

16-Epimer: ***16-Epivoacarpine***
[114027-38-2]
$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from the roots of *Gelsemium elegans* (Loganiaceae). Prisms or plates + $^1/_3H_2O$ (CH_2Cl_2). Mp 162-165° dec. $[\alpha]_D^{22}$ +42.3 (c, 0.20 in $CHCl_3$).

16-Epimer, N^1-*Me:* ***3-Hydroxyvoachalotine***
[53632-75-0]
$C_{22}H_{26}N_2O_4$ 382.458
Alkaloid from the root bark of *Voa-*

canga chalotiana (Apocynaceae). Cryst. (EtOAc). Mp 247°. $[\alpha]_D^{22}$ +9 (c, 1 in $CHCl_3$). λ_{max} 229 (log ϵ 4.62); 286 (log ϵ 3.88) (MeOH).

16-Epimer, N^1*-Me, di-Ac:*
Cryst. (EtOAc). Mp 232°.

16-Epimer, 19Z-isomer: ***(19Z)-16-Epivoacarpine***
$C_{21}H_{24}N_2O_4$ 368.432
Alkaloid from the radix of *Gelsemium sempervirens*. Amorph. powder. λ_{max} 225 (log ϵ 4.49); 282 (log ϵ 3.79); 290 (log ϵ 3.71) (MeOH).

16-Epimer, N^4*-Me:* ***Gelsempervine A***
[865187-17-3]
$C_{22}H_{26}N_2O_4$ 382.458
Alkaloid from the radix of *Gelsemium sempervirens*. Amorph. powder. Solvent-dependent tautomeric equilib. between cyclic zwitterionic and ring-cleaved ketoamine forms. λ_{max} 220 (log ϵ 4.44); 282 (log ϵ 3.71); 290 (log ϵ 3.65) (MeOH) (zwitterion). λ_{max} 224 (log ϵ 4.17); 311 (log ϵ 3.99) (MeCN) (ketoamine).

16-Epimer, N^4*-Me, 17-Ac:* ***Gelsempervine B***
[865187-29-7]
$C_{24}H_{28}N_2O_5$ 424.496
Alkaloid from the radix of *Gelsemium sempervirens*. Amorph. powder. λ_{max} 219 (log ϵ 4.46); 282 (log ϵ 3.74); 290 (log ϵ 3.72); 316 (log ϵ 3.65) (MeOH). λ_{max} 221 (log ϵ 4.07); 312 (log ϵ 3.92) (MeCN).

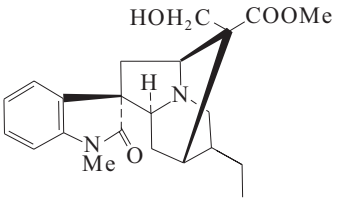
16-Epimer, (19Z)-isomer, N^4*-Me:* ***Gelsempervine C***
[865187-18-4]
$C_{22}H_{26}N_2O_4$ 382.458
Alkaloid from the radix of *Gelsemium sempervirens*. Amorph. powder. λ_{max} 221 (log ϵ 4.54); 281 (log ϵ 3.8); 290 (log ϵ 3.7) (MeOH). λ_{max} 227 (log ϵ 4.27); 309 (log ϵ 4.02) (MeCN).

16-Epimer, (19Z)-isomer, N^4*-Me, 17-Ac:* ***Gelsempervine D***
[865187-20-8]
$C_{24}H_{28}N_2O_5$ 424.496
Alkaloid from the radix of *Gelsemium sempervirens*. Amorph. powder. λ_{max} 220 (log ϵ 4.48); 282 (log ϵ 3.77); 290 (log ϵ 3.71); 315 (log ϵ 3.36) (MeOH). λ_{max} 221 (log ϵ 4.21); 311 (log ϵ 4.01) (MeCN).

Rao, K.V. *et al., J.O.C.*, 1958, **23**, 1455-1456 (*Voacafrine, Voacafricine*)
Denayer-Tournay, M. *et al., Bull. Soc. Chim. Belg.*, 1965, **74**, 170-186 (*Voacarpine, isol, uv, ir, pmr, ms, struct*)
Das, B.C. *et al., Bull. Soc. Chim. Fr.*, 1965, 1903-1904 (*Vincadiffine*)
Weisbach, J.A. *et al., Chem. Ind. (London)*, 1965, 623-633 (*Voacafrine, Voacafricine*)
Braekman, J.C. *et al., Bull. Soc. Chim. Belg.*, 1966, **75**, 465-472 (*Voacarpine, Vincadiffine, abs config*)
Gabetta, B. *et al., Fitoterapia*, 1974, **45**, 32-36 (*3-Hydroxyvoachalotine*)
Bombardelli, E. *et al., Phytochemistry*, 1974, **13**, 2857-2859 (*3-Hydroxyvoachalotine*)
Achenbach, H. *et al., Annalen*, 1982, 1223-1227 (*Vincadiffine, ms*)
Ponglux, D. *et al., Tetrahedron*, 1988, **44**, 5075-5094 (*16-Epivoacarpine*)
Kogure, N. *et al., Tet. Lett.*, 2005, **46**, 5857-5861 (*Gelsempervines A-D, 19Z-16-Epivoacarpine*)

Voachalotine oxindole, 9CI V-172

[26126-84-1]

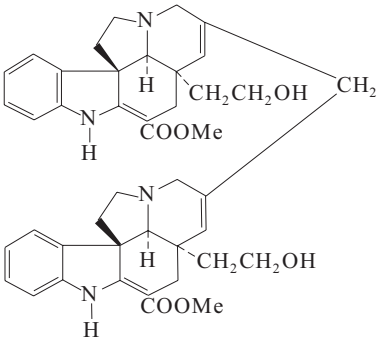


$C_{22}H_{26}N_2O_4$ 382.458
Minor alkaloid from *Voacanga chalotiana* (Apocynaceae). Mp 280-281°. $[\alpha]_D$ -33 ($CHCl_3$).

Braekman, J.-C. *et al., Bull. Soc. Chim. Belg.*, 1969, **78**, 523

Voacinol V-173

14,14′-Methylenebis-18-hydroxytabersonine
[113141-69-8]

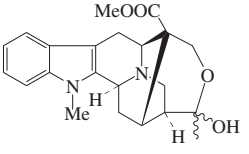


$C_{43}H_{48}N_4O_6$ 716.875
Alkaloid from the leaves of *Voacanga grandifolia* (Apocynaceae). Yellow amorph. solid. $[\alpha]_D^{25}$ -105.5 ($CHCl_3$).

Govindachari, T.R. *et al., Chem. Comm.*, 1987, 1137 (*uv, ir, pmr, cmr, ms, struct*)

Voacoline V-174

[5539-91-3]



Absolute Configuration

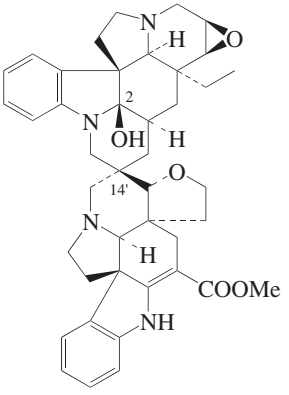
$C_{22}H_{26}N_2O_4$ 382.458
Alkaloid from *Voacanga chalotiana* (Apocynaceae). Needles (Et_2O). Mp 147.5°. $[\alpha]_D^{20}$ -29.8 (c, 0.5 in $CHCl_3$). pK_a 5.7. λ_{max} 230 (ϵ 35000); 285 (ϵ 7300) (MeOH).

3-Hydroxy, N*-de-Me:* ***Voamonine***
[5296-84-4]
$C_{21}H_{24}N_2O_5$ 384.431
Minor alkaloid from *Voacanga chalotiana* (Apocynaceae). Needles (MeOH). Mp 258-250°. λ_{max} 225 (ϵ 41500); 282 (ϵ 7150); 292 (sh) (ϵ 5800) (MeOH).

Braekman, J.C. *et al., Bull. Soc. Chim. Belg.*, 1965, **74**, 170-186; 1969, **78**, 523-538 (*Voamonine*)
Lhoest, G. *et al., Bull. Soc. Chim. Belg.*, 1965, **74**, 534-550 (*Voacoline*)

Voafolidine V-175

[32063-91-5]



$C_{42}H_{48}N_4O_5$ 688.865
Minor alkaloid from leaves of *Voacanga africana* (Apocynaceae). Cryst. (MeOH). Mp 200° dec. $[\alpha]_D$ -300 ($CHCl_3$).

2-Deoxy: ***Voafoline, 9CI***
[31947-67-8]
$C_{42}H_{48}N_4O_4$ 672.866
Alkaloid from the leaves of *Voacanga africana* (Apocynaceae). Cryst. (MeOH). Mp 325° dec. $[\alpha]_D$ -310 ($CHCl_3$).

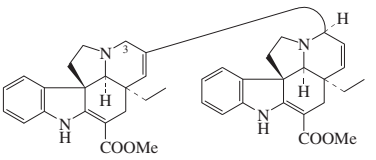
14′-Epimer: Isovoafolidine
[33055-38-8]
Semisynthetic, by redn. of Folicangine, F-117. Mp 225-232° dec. $[\alpha]_D$ -642 ($CHCl_3$).

14′-Epimer, 2-deoxy: ***Isovoafoline***
[31947-66-7]
$C_{42}H_{48}N_4O_4$ 672.866
Alkaloid from the leaves of *Voacanga africana* (Apocynaceae). Cryst. (MeOH). Mp 232° dec. $[\alpha]_D$ -567 ($CHCl_3$).

Kunesch, N. *et al., Bull. Soc. Chim. Fr.*, 1970, 4370 (*isol, uv, ir, pmr, ms, struct*)
Rolland, Y. *et al., J.O.C.*, 1976, **41**, 3270-3275 (*cmr*)
Kunesch, N. *et al., Helv. Chim. Acta*, 1977, **60**, 2854 (*cd, config*)

Voafrine A V-176

[88761-30-2]



$C_{42}H_{46}N_4O_4$ 670.85
Trace alkaloid from cell suspension cultures of *Voacanga africana* (Apocynaceae). Amorph. $[\alpha]_D^{20}$ -8 (c, 0.62 in MeOH).

3ξ-Hydroxy: 3-Hydroxyvoafrine A
Obt. by dimerisation of Tabersonine using a crude enzyme prep. from *Catharanthus roseus*. Amorph. $[\alpha]_D^{20}$ -21 (c, 0.4 in MeOH).

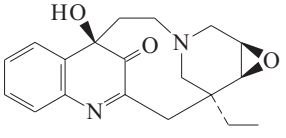
3′-Epimer: ***Voafrine B***
[88824-28-6]
$C_{42}H_{46}N_4O_4$ 670.85
Trace alkaloid from cell suspension cultures of *Voacanga africana* (Apocynaceae). $[\alpha]_D^{20}$ -265 (c, 0.83 in MeOH).

3′-Epimer, 3ξ-hydroxy: 3-Hydroxyvoafrine B
Obt. by dimerisation of Tabersonine using a crude enzyme prep. from *Catharanthus roseus*. Amorph. $[\alpha]_D^{20}$ -68 (c, 0.45 in MeOH).

Stöckigt, J. *et al., Helv. Chim. Acta*, 1983, **66**, 2525 (*isol, uv, ir, pmr, cmr, ms, cd, struct*)
Fahn, W. *et al., Phytochemistry*, 1990, **29**, 127

Voaharine V-177

[142741-23-9]

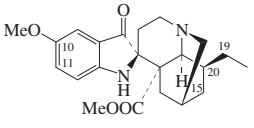


$C_{19}H_{22}N_2O_3$ 326.394
Alkaloid from the leaves of *Tabernaemontana divaricata* (Apocynaceae). Prisms (EtOAc). Mp 176-178°.

Kam, T.-S. *et al., Tet. Lett.*, 1992, **33**, 969-972 (*isol, pmr, cmr, struct*)

Voaluteine V-178

Voacangine pseudoindoxyl. Rupicoline†
[3306-58-9]



Absolute Configuration

$C_{22}H_{28}N_2O_4$ 384.474
Alkaloid from *Rejoua aurantiaca* (preferred genus name *Tabernaemontana*), *Tabernaemontana heyneana* and *Tabernaemontana rupicola* (Apocynaceae). Mp 208° (202-203°). $[\alpha]_D^{18}$ -115 (c, 1 in $CHCl_3$).

Hydrochloride: Mp 265° dec. $[\alpha]_D^{25}$ -228 (c, 1.2 in H_2O).

*19*S*-Hydroxy:* ***Voacristine pseudoindoxyl***. *19-Hydroxyvoaluteine. Montanine*†
[18646-15-6]
$C_{22}H_{28}N_2O_5$ 400.474
Alkaloid from *Tabernaemontana rupicola*, *Tabernaemontana apoda* and *Peschiera lundii* (Apocynaceae). Amorph. Mp 137-138°.

*19*S*-Hydroxy; hydrochloride:*
Cryst. (2-propanol). Mp 261°. $[\alpha]_D^{25}$ -223.5 (c, 0.47 in EtOH).

11-Methoxy: ***Conopharyngine pseudoindoxyl***
[52579-71-2]
$C_{23}H_{30}N_2O_5$ 414.5
Alkaloid from the leaves of *Tabernaemontana pachysiphon* var. *cumminsii* (Apocynaceae). Yellow oil. 7-Config. undetermined.

Demethoxy: ***Coronaridine pseudoindoxyl***
[16620-29-4]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from *Peschiera affinis*, *Tabernaemontana quadrangularis* and *Tabernaemontana olivacea* (Apocynaceae). Yellow oil. Mp 278-279° dec. (as hydrochloride). $[\alpha]_D^{20}$ -163 (c, 0.1 in $CHCl_3$).

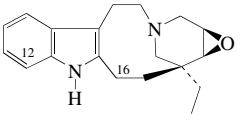
Demethoxy, 15,20-didehydro: ***Rosamine***
[94061-94-6]
$C_{21}H_{24}N_2O_3$ 352.432
Alkaloid from the leaves of *Catharanthus roseus* (Apocynaceae). Amorph. $[\alpha]_D$ +100 ($CHCl_3$).

*10-Demethoxy, 11-methoxy, 19*R*-hydroxy:* ***Ervatine***
$C_{22}H_{28}N_2O_5$ 400.474
Alkaloid from the fruit of *Tabernaemontana heyneana*. Amorph. yellow powder. λ_{max} 228 (log ϵ 3.06); 252 (log ϵ 1.7); 281 (log ϵ 1.3) (MeOH).

Guise, G.B. *et al., Aust. J. Chem.*, 1965, **18**, 927; 1279 (*isol, uv, ir, pmr, struct synth*)
Niemann, C. *et al., J.O.C.*, 1966, **31**, 2265 (*isol, ir, uv, pmr, struct, deriv*)
Thomas, D.W. *et al., Tetrahedron*, 1968, **24**, 4223 (*ms*)
Hwang, B. *et al., J.O.C.*, 1969, **34**, 412 (*Voacristine pseudoindoxyl, synth*)
Crooks, P.A. *et al., J. Pharm. Pharmacol.*, 1973, **25**, 820 (*Coronaridine pseudoindoxyl, Conopharyngine pseudoindoxyl, isol, uv, ir, pmr, struct synth*)
Abreu Matos, F.J. *et al., Phytochemistry*, 1976, **15**, 551 (*Coronaridine pseudoindoxyl, isol*)
Achenbach, H. *et al., Z. Naturforsch., B*, 1980, **35**, 885 (*Coronaridine pseudoindoxyl, isol, uv, ir, pmr, ms*)
Atta-ur-Rahman, *et al., Z. Naturforsch., B*, 1984, **39**, 1292 (*Rosamine*)
Srivastava, S. *et al., Planta Med.*, 2001, **67**, 577-579 (*Ervatine*)

Voaphylline V-179

*13-Ethyl-1*a*,4,5,10,11,12,13,13*a*-octahydro-2*H*-3,13-methanooxireno[9,10]azacycloundecino[5,4-*b*]indole, 9CI. Conoflorine. Ervayunine*



(+)-*form*

$C_{19}H_{24}N_2O$ 296.411
Ervayunine was the (-)-form.

(+)-*form* [15266-46-3]
Alkaloid from *Voacanga africana*, *Conopharyngia longiflora*, several *Tabernaemontana* spp. and other spp. in the Apocynaceae. Cryst. (MeOH). Mp 166-168°. $[\alpha]_D^{24}$ +24.4 (c, 1.04 in $CHCl_3$). pK_a 5.27 (MCS).

N-*Me:* N-*Methylvoaphylline.* ***Hecubine***
[62874-52-6]
$C_{20}H_{26}N_2O$ 310.438
Alkaloid from the leaves and flowers of *Ervatamia coronaria* (Apocynaceae).

12-Methoxy: ***12-Methoxyvoaphylline***
[53904-98-6]
$C_{20}H_{26}N_2O_2$ 326.438
Alkaloid from the leaves of *Crioceras dipladeniiflorus* (Apocynaceae). Cryst. (MeOH). Mp 149-151°. $[\alpha]_D$ +61 (c, 1 in $CHCl_3$).

16β-Hydroxy: ***Voafinine***
[181284-52-6]
$C_{19}H_{24}N_2O_2$ 312.411
Trace alkaloid from leaves of *Tabernaemontana divaricata* (double flower variety). $[\alpha]_D$ -13.5 (c, 0.021 in $CHCl_3$). λ_{max} 237 (log ϵ 3.75); 282 (log ϵ 3.72); 298 (log ϵ 2.84) (EtOH).

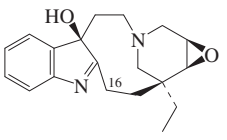
16β-Hydroxy, N^1*-Me:* ***N^1-Methylvoafinine***
[181284-82-2]
$C_{20}H_{26}N_2O_2$ 326.438
Trace alkaloid from leaves of *Tabernaemontana divaricata* (double flower variety). $[\alpha]_D$ -39.1 (c, 0.069 in $CHCl_3$). λ_{max} 217 (log ϵ 3.83); 275 (log ϵ 3.6); 303 (log ϵ 3.04) (EtOH).

(-)-*form* [120202-64-4]
Alkaloid from the roots of *Ervatamia yunnanensis* (Apocynaceae). Mp 153-154°. $[\alpha]_D^{15}$ -26 (c, 0.05 in $CHCl_3$).

Kunesch, N. *et al., Bull. Soc. Chim. Fr.*, 1967, 2155 (*uv, ir, pmr, ms, struct*)
Dugan, J.J. *et al., Helv. Chim. Acta*, 1967, **50**, 60 (*isol, uv, ir, pmr, ms, struct*)
Bruneton, J. *et al., Phytochemistry*, 1974, **13**, 1963 (*isol, uv, pmr, ms, struct, 12-Methoxyvoaphylline*)
Gomez-Gonzalez, C. *et al., CA*, 1977, **87**, 2343j; 1979, **90**, 138069u; 1982, **96**, 214301e (*isol, spectra, Hecubine*)
Wenkert, E. *et al., Heterocycles*, 1979, **12**, 1439 (*cmr*)
Stoeckigt, J. *et al., Z. Naturforsch., C*, 1982, **37**, 857 (*biosynth*)
Atta-ur-Rahman, *et al., Z. Naturforsch., B*, 1983, **38**, 117 (*ms, cmr*)
Gui, L. *et al., Planta Med.*, 1988, **54**, 519 (*Ervayunine*)
Éles, J. *et al., J.O.C.*, 2002, **67**, 7255-7260 (*synth*)
Kam, T.-S. *et al., Org. Biomol. Chem.*, 2003, **1**, 1292-1297 (*Voafinine, N-Methylvoafinine*)

Voaphylline hydroxyindolenine V-180

*13-Ethyl-4,5,11,12,13,13*a*-hexahydro-2*H*-3,13-methanooxireno[9,10]azacycloundecino[5,4-*b*]indol-5*a*(1*aH*)-ol, 9CI*
[18269-16-4]



Absolute Configuration

$C_{19}H_{24}N_2O_2$ 312.411

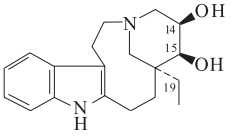
The hydrochloride has a quaternary hexacyclic struct. (cf. Rhazidigenine, R-72). Alkaloid from the leaves of *Voacanga africana* and *Tabernanthe pubescens* (Apocynaceae). Amorph. $[\alpha]_{578}$ -123 ($CHCl_3$).

Hydrochloride:
[34787-55-8 quaternary struct]
$[\alpha]_{578}$ +4 (EtOH).

16-Oxo: ***Voalenine***
[180059-78-3]
$C_{19}H_{22}N_2O_3$ 326.394
Alkaloid from the leaves of *Tabernaemontana divaricata*. Light yellowish oil. $[\alpha]_D$ -445 (c, 0.04 in $CHCl_3$). λ_{max} 204 (log ϵ 4.21); 226 (log ϵ 4.12); 296 (log ϵ 3.79) (EtOH).

Kunesch, N. *et al., Bull. Soc. Chim. Fr.*, 1967, 3551 (*uv, ir, ms, struct*)
Guilhem, J. *et al., Acta Cryst. B*, 1970, **26**, 2029 (*cryst struct*)
Wenkert, E. *et al., Heterocycles*, 1979, **12**, 1439 (*cmr*)
Mulamba, T. *et al., J. Nat. Prod.*, 1981, **44**, 184 (*isol*)
Kam, T.S. *et al., Org. Biomol. Chem.*, 2003, **1**, 1292-1297 (*Voalenine*)

14,15-Voaphyllinediol V-181



(14*R*,15*S*)*-form*

$C_{19}H_{26}N_2O_2$ 314.427

Stereochem. of isolates not certain. Voafinidine was definitely the 14*S*,15*S*-isomer, but the assignments of TC-A and TC-C may be reversed.

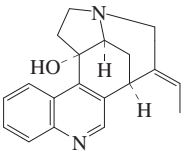
(14*R*,15*S*)*-form*
Alkaloid TC-A
Trace alkaloid from the root bark of *Tabernaemontana chippii* (Apocynaceae).

(14*S*,15*S*)*-form*
Voafinidine*. Alkaloid TC-C*
[180059-77-2]
Minor alkaloid from leaves of *Tabernaemontana divaricata* and root bark of *Tabernaemontana chippii*. Light yellowish oil. $[\alpha]_D$ +57 (c, 0.18 in $CHCl_3$). λ_{max} 233 (log ϵ 4.49); 287 (log ϵ 4.08); 295 (log ϵ 4.07) (EtOH).

19ξ-Hydroxy: ***Alkaloid TC-B***
$C_{19}H_{26}N_2O_3$ 330.426
Trace alkaloid from the root bark of *Tabernaemontana chippii* (Apocynaceae). Tentative struct. and stereochem.

van Beek, T.A. *et al., J. Nat. Prod.*, 1985, **48**, 400 (*TC alkaloids*)
Kam, T.-S. *et al., Org. Biomol. Chem.*, 2003, **1**, 1292-1297 (*Voafinidine*)

Voastrictine V-182



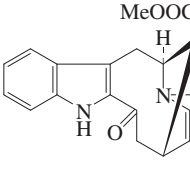
Relative Configuration

$C_{19}H_{20}N_2O$ 292.38
Alkaloid from *Tabernaemontanacorymbosa*. Oil. $[\alpha]_D$ +321 (c, 0.23 in $CHCl_3$). λ_{max} 209 (log ϵ 4.37); 231 (log ϵ 4.32); 283 (log ϵ 3.4); 294 (log ϵ 3.36); 307 (log ϵ 3.27); 321 (log ϵ 3.19) (no solvent reported).

Kam, T.-S. *et al., Tet. Lett.*, 2001, **42**, 4721-4723

Vobasenal V-183

[131653-77-5]



Absolute Configuration

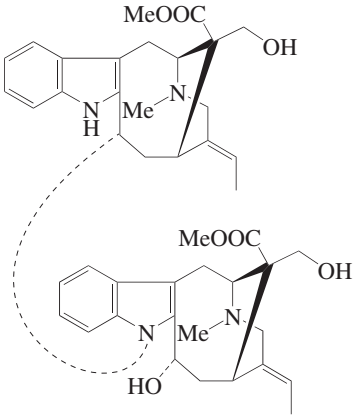
$C_{20}H_{20}N_2O_4$ 352.389
Alkaloid from the leaves and stem bark of *Ervatamia polyneura* (Apocynaceae). $[\alpha]_D$ -62 (c, 0.5 in $CHCl_3$).

16-Epimer: ***16-Epivobasenal***
[131724-58-8]
$C_{20}H_{20}N_2O_4$ 352.389
Alkaloid from the leaves and stem bark of *Ervatamia polyneura* (Apocynaceae). $[\alpha]_D$ +26 (c, 0.4 in $CHCl_3$).

Clivio, P. *et al., Phytochemistry*, 1990, **29**, 3007 (*isol, uv, ir, pmr, cmr, ms, struct*)

Vobasonidine V-184

[442156-08-3]

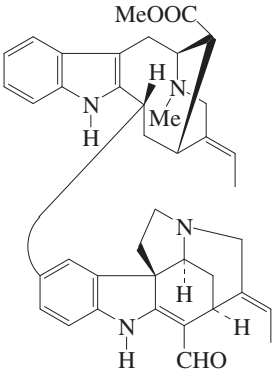


$C_{44}H_{54}N_4O_7$ 750.933
Alkaloid from the leaves of *Tabernaemontana corymbosa*. Light yellow oil. $[\alpha]_D$ -80 (c, 0.31 in $CHCl_3$). λ_{max} 229 (log ϵ 4.2); 286 (log ϵ 3.66); 295 (log ϵ 3.64) (EtOH).

Kam, T.-S. *et al., Helv. Chim. Acta*, 2002, **85**, 1027-1032 (*isol, uv, pmr, cmr*)

Vobatricine V-185

[442156-09-4]

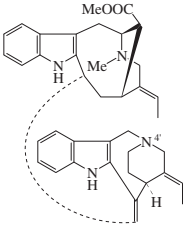


$C_{40}H_{44}N_4O_3$ 628.813
Alkaloid from the stem bark of *Tabernaemontana corymbosa*. Light yellow oil. $[\alpha]_D$ -575 (c, 0.13 in $CHCl_3$). λ_{max} 225 (log ϵ 4.62); 287 (log ϵ 4.16); 295 (log ϵ 4.15); 369 (log ϵ 4.36) (EtOH).

Kam, T.-S. *et al., Helv. Chim. Acta*, 2002, **85**, 1027-1032 (*isol, uv, pmr, cmr*)

Vobparicine V-186

[90930-64-6]



Absolute Configuration

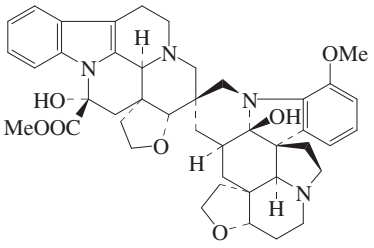
$C_{39}H_{44}N_4O_2$ 600.802
Alkaloid from the root bark of *Tabernaemontana chippii* (Apocynaceae). Active against gram-positive and gram-negative bacteria. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. λ_{max} 222 ; 290 (sh) ; 296 (sh) ; 304 (MeOH) (Berdy).

$N^{4'}$*-Oxide:* ***Vobparicine* N*-oxide***
[98776-10-4]
$C_{39}H_{44}N_4O_3$ 616.802
Trace alkaloid from the root bark of *Tabernaemontana chippii* (Apocynaceae). Active against gram-positive and gram-negative bacteria. Sol. MeOH, $CHCl_3$; poorly sol. H_2O.

Van Beek, T.A. *et al., Tet. Lett.*, 1984, **25**, 2057-2065 (*uv, cd, pmr, cmr, ms, struct*)
Van Beek, T.A. *et al., J. Ethnopharmacol.*, 1985, **14**, 315-318 (*activity*)
Van Beek, T.A. *et al., J. Nat. Prod.*, 1985, **48**, 400-403 (*N-oxide*)

Vobtusamine, 9CI V-187

[84009-34-7]

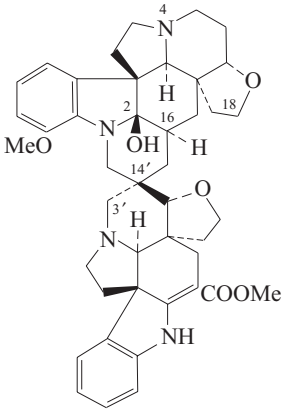


$C_{43}H_{50}N_4O_7$ 734.891
Alkaloid from *Voacanga chalotiana* (Apocynaceae). Cryst. (MeOH). Mp 262° dec. $[\alpha]_D^{21}$ -153 (c, 1.0 in $CHCl_3$). Eburnea-Aspidosperma dimer.

Danieli, B. *et al., J.O.C.*, 1983, **48**, 381 (*uv, ir, pmr, cmr, ms, cd, struct*)

Vobtusine V-188

Papuanine
[19772-79-3]



$C_{43}H_{50}N_4O_6$ 718.891
Alkaloid from *Voacanga africana* and many other *Voacanga* spp., *Hedranthera (Callichilia) barteri* and some other *Callichilia* spp., and a number of other spp. in Apocynaceae. Mp 302° dec. $[\alpha]_D^{22}$ -352 (c, 0.96 in $CHCl_3$).

Hydrochloride (1:2): Mp 242-244°.

O-*De-Me:* ***12-Demethylvobtusine****. Alkaloid F*†
[38790-81-7]
$C_{42}H_{48}N_4O_6$ 704.864
Alkaloid from the roots of *Hedranthera barteri* and the leaves of *Voacanga thouarsii* (Apocynaceae). Cryst. (Me_2CO/hexane/MeOH). Mp 295° (dec.). $[\alpha]_D^{28}$ -273 (c, 0.035 in MeOH).

2-Deoxy: ***Goziline****. 2-Deoxyvobtusine*
[31148-61-5]
$C_{43}H_{50}N_4O_5$ 702.892
Alkaloid from leaves and root bark of *Hedranthera barteri*, leaves of *Voacanga africana* and *Voacanga grandifolia* (Apocynaceae). Cryst. (MeOH). Mp 305° (260°, 270°, 290°) dec. $[\alpha]_D$ -337 (-301, -355) ($CHCl_3$).

3′-Hydroxy: ***3′-Hydroxyvobtusine***
[65967-13-7]
$C_{43}H_{50}N_4O_7$ 734.891
Alkaloid from the root bark of *Voacanga chalotiana* (Apocynaceae). Amorph. solid.

3′-Oxo: ***3′-Oxovobtusine****. Vobtusine lactam*
[50924-04-4]
$C_{43}H_{48}N_4O_7$ 732.875
Alkaloid from the leaves of *Voacanga thouarsii* (Apocynaceae). $[\alpha]_D$ -130 ($CHCl_3$).

3′-Oxo, N^4*-oxide:* ***3′-Oxovobtusine* N-*oxide***
[50924-05-5]
$C_{43}H_{48}N_4O_8$ 748.874
Alkaloid from the leaves of *Voacanga thouarsii* (Apocynaceae). $[\alpha]_D$ -142 (c, 1 in $CHCl_3$).

3′-Oxo, 2-deoxy: ***2-Deoxy-3′-oxovobtusine****. 2-Deoxyvobtusine lactam. Alkaloid D*†
[50924-02-2]
$C_{43}H_{48}N_4O_6$ 716.875
Alkaloid from the leaves of *Voacanga thouarsii* (Apocynaceae). Noncryst. Stereochem. of C-16 and C-14′ unknown.

18-Oxo: ***18-Oxovobtusine****. Vobutsine lactone*
[19772-81-7]
$C_{43}H_{48}N_4O_7$ 732.875
Alkaloid from *Voacanga africana*, *Voacanga grandifolia* and *Voacanga thouarsii* (Apocynaceae). Mp 310° dec. $[\alpha]_D^{22}$ -320 ($CHCl_3$).

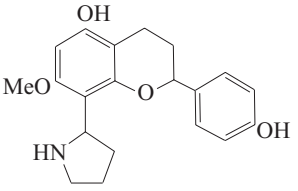
18-Oxo, 2-deoxy: ***2-Deoxy-18-oxovobtusine****. 2-Deoxyvobtusine lactone*
[19772-80-6]
$C_{43}H_{48}N_4O_6$ 716.875
Alkaloid from the leaves of *Voacanga africana* (Apocynaceae). Mp 305° dec. $[\alpha]_D^{22}$ -348 ($CHCl_3$). Stereochem. at C-16 and C-14′ not rigidly assigned.

14′-Epimer, 2-deoxy, 2,16-didehydro: ***Owerrine****. Anhydrodihydroamataine*
[31222-09-0]
$C_{43}H_{48}N_4O_5$ 700.876
Trace alkaloid from the root bark of *Hedranthera barteri* (Apocynaceae). Cryst. (MeOH). Mp 265° dec. $[\alpha]_D^{27}$ -496 (c, 0.613 in $CHCl_3$).

Gorman, A.A. *et al., Helv. Chim. Acta*, 1966, **49**, 2072 (*isol, ir, uv, pmr, ms, struct*)
Poisson, J. *et al., Tetrahedron*, 1966, **22**, 1075 (*uv, ir, pmr, ms, struct*)
Kunesch, N. *et al., Bull. Soc. Chim. Fr.*, 1970, 4370 (*18-Oxovobtusine, 2-Deoxy-18-oxovobtusine*)
Agwada, V. *et al., Helv. Chim. Acta*, 1970, **53**, 1567; 1977, **60**, 2830 (*Goziline, Owerrine*)
Naranjo, J. *et al., Helv. Chim. Acta*, 1972, **55**, 1849 (*12-Demethylvobtusine, Goziline*)
Lefebvre-Soubeyran, O. *et al., Acta Cryst. B*, 1973, **29**, 2855 (*cryst struct*)
Rolland, Y. *et al., Phytochemistry*, 1973, **12**, 2039 (*12-Demethylvobtusine*)
Majumder, P.L. *et al., Phytochemistry*, 1974, **13**, 1261 (*Goziline*)
Rolland, Y. *et al., Bull. Soc. Chim. Fr.*, 1975, 2503 (*3′-Oxovobtusine, 3′-Oxovobtusine N-oxide, 12-Demethylvobtusine*)
Rolland, Y. *et al., J.O.C.*, 1976, **41**, 3270 (*cmr*)
Danieli, B. *et al., Heterocycles*, 1980, **14**, 201 (*3-Hydroxyvobtusine*)

Vochysine V-189

*3,4-Dihydro-2-(4-hydroxyphenyl)-7-methoxy-8-(2-pyrrolidinyl)-2*H*-1-benzopyran-5-ol, 9CI*
[88607-66-3]

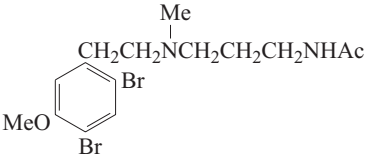


$C_{20}H_{23}NO_4$ 341.406
Alkaloid from the fruits of *Vochysia guianensis* (Vochysiaceae). Cryst. (MeOH). Mp 138°. $[\alpha]_D^{20}$ 0 ($CHCl_3$).

Baudouin, G. *et al., J. Nat. Prod.*, 1983, **46**, 681 (*isol, uv, ir, pmr, cmr, ms, struct*)

Volutamide A V-190

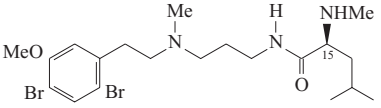
[176181-95-6]



$C_{15}H_{22}Br_2N_2O_2$ 422.159
Alkaloid from the Atlantic bryozoan *Amathia convoluta*. Feeding deterrent to hydroid larvae. Oil. Sol. MeOH, butanol. λ_{max} 285 (ϵ 4200); 292 (ϵ 4100) (MeOH) (Berdy).

Montanari, A.M. *et al., Tetrahedron*, 1996, **52**, 5371-5380 (*isol, uv, ir, pmr, cmr, ms, struct*)

Volutamide B V-191



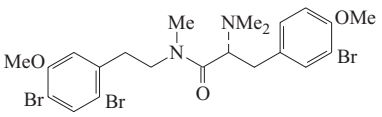
$C_{20}H_{33}Br_2N_3O_2$ 507.308

(*S*)-*form* [176181-96-7]
Alkaloid from the Atlantic bryozoan *Amathia convoluta*. Exhibits antifeedant activity to hydroid larvae. Oil. Sol. MeOH, butanol. $[\alpha]_D$ 0 (c, 0.053 in MeOH). λ_{max} 287 (ϵ 1600); 292 (ϵ 1500) (MeOH) (Berdy).

N^{15}*-Me:* ***Volutamide C***
[176181-97-8]
$C_{21}H_{35}Br_2N_3O_2$ 521.334
From *Amathia convoluta*. Exhibits antifeedant activity to hydroid larvae. Oil. Sol. MeOH, butanol. $[\alpha]_D$ 0 (c, 0.032 in MeOH). λ_{max} 285 (ϵ 2100); 293 (ϵ 1900) (MeOH) (Berdy).

Montanari, A.M. *et al., Tetrahedron*, 1996, **52**, 5371-5380 (*isol, uv, ir, pmr, cmr, ms, cd, struct*)

Volutamide D V-192

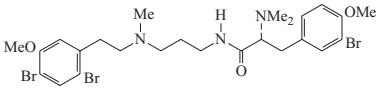


$C_{22}H_{27}Br_3N_2O_3$ 607.179
Sol. MeOH, butanol. λ_{max} 287 (ϵ 3500) (MeOH) (Berdy).

(*R*)-*form* [176182-10-8]
Alkaloid from the Atlantic bryozoan *Amathia convoluta*. Feeding deterrent to hydroid larvae, shows antiinflammatory props. Cryst. (MeOH). $[\alpha]_D$ -12.9 (c, 0.010 in MeOH). Abs. config. not certain.

Montanari, A.M. *et al., Tetrahedron*, 1996, **52**, 5371 (*isol, uv, ir, pmr, cmr, ms, cryst struct*)

Volutamide E V-193



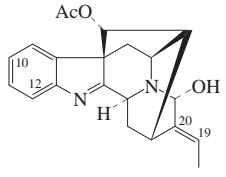
$C_{25}H_{34}Br_3N_3O_3$ 664.274
Sol. MeOH, butanol.

(*R*)-*form* [176182-11-9]
Alkaloid from the Atlantic bryozoan *Amathia convoluta*. Feeding deterrent to hydroid larvae, shows antiinflammatory props. Oil. $[\alpha]_D$ -15.8 (c, 0.014 in MeOH). Abs. config. not certain. λ_{max} 287 (ϵ 3800) (MeOH).

Montanari, A.M. *et al., Tetrahedron*, 1996, **52**, 5371-5380 (*isol, uv, ir, pmr, cmr, struct*)

Vomilenine V-194

1,2,19,20-Tetradehydro-1-demethylajmalan-17,21-diol 17-acetate, 9CI
[6880-50-8]



Absolute Configuration

$C_{21}H_{22}N_2O_3$ 350.416
Alkaloid from roots of *Rauwolfia vomitoria* (Apocynaceae). Cryst. (MeOH). Mp 207°. $[\alpha]_D^{20}$ -72 (c, 0.5 in Py).

O-*β*-*D*-*Glucopyranoside:* ***Raucaffricine***
[31282-07-2]
$C_{27}H_{32}N_2O_8$ 512.558
Alkaloid from the roots of *Rauwolfia caffra*. A major constit. of cell cultures of *Rauwolfia serpentina* (Apocynaceae). Plates (MeOH/EtOAc). Mp 186° (frothing) Mp 220° (double Mp). Originally considered to be the galactoside of Vomilenine.

19,20-Dihydro, Ac: ***21-Acetyl-19,20-dihydrovomilenine****. Alkaloid RCLM 1*
$C_{23}H_{26}N_2O_4$ 394.469
Alkaloid tentatively identified in leaves of *Rauwolfia caffra* (Apocynaceae).

Deoxy: ***Vinorine****. Alkaloid RCL 2. Alkaloid RP7. 21-Deoxyvomilenine*
[34020-07-0]
$C_{21}H_{22}N_2O_2$ 334.417
Alkaloid from *Rauwolfia caffra, Rauwolfia perakensis* and *Vinca minor* (Apocynaceae). Amorph.; cryst. (MeOH)(as nitrate). Mp 235-237° (nitrate). Identity of the various alkaloids descr. under this struct. not well establ. One sample was opt. inactive and prob. racemic. The Mp of the nitrate refers to the salt of Alkaloid RP 7.

10-Methoxy: ***Majorinine****. 10-Methoxy-21-hydroxyvinorine*
[64986-27-2]
$C_{22}H_{24}N_2O_4$ 380.443
Alkaloid from *Vinca minor* (Apocynaceae). Mp 195-196°.

10-Methoxy, deoxy: ***10-Methoxyvinorine***
$C_{22}H_{24}N_2O_3$ 364.443
Alkaloid from aerial parts of *Vinca major* (Apocynaceae) and from *Vinca erecta* (Apocynaceae). Amorph. solid. $[\alpha]_D$ +23.5 (c, 0.2 in $CHCl_3$).

12-Methoxy, deoxy, O-*de-Ac:* **O-*Deacetyl-12-methoxyvinorine***
[70509-81-8]
$C_{20}H_{22}N_2O_2$ 322.406
Alkaloid from stem bark of *Rauwolfia vomitoria* (Apocynaceae). Off-white amorph. powder.

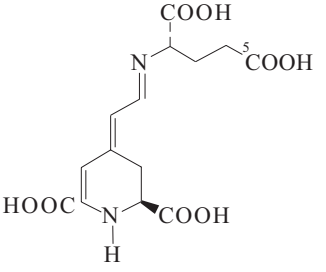
Stereoisomer: ***Raucaffriline***
[107585-43-3]
$C_{21}H_{22}N_2O_3$ 350.416
Alkaloid from *Rauwolfia caffra* (Apocynaceae). Cryst. (EtOAc). Mp 200-201°. Config. not given in CAS.

[1354-08-1]

Hofmann, A. *et al., Helv. Chim. Acta*, 1957, **40**, 1866
Taylor, W.I. *et al., Helv. Chim. Acta*, 1962, **45**, 611 (*ir, uv, pmr, struct*)
Kiang, A.K. *et al., Tetrahedron*, 1966, **22**, 3293 (*Alkaloid RP7*)
Khan, M.A. *et al., Tet. Lett.*, 1970, 5137 (*Raucaffricine, isol, uv, pmr*)
Meisel, H. *et al., Tet. Lett.*, 1971, 1291 (*Vinorine*)
Khalmirzhaev, M.M. *et al., Khim. Prir. Soedin.*, 1973, **9**, 681; *Chem. Nat. Compd. (Engl. Transl.)*, 1973, **9**, 657 (*10-Methoxyvinorine*)
Il'yashenko, L.I. *et al., Khim. Prir. Soedin.*, 1977, **13**, 382; *Chem. Nat. Compd. (Engl. Transl.)*, 1977, **13**, 324 (*Majorinine*)
Sabri, N.N. *et al., Phytochemistry*, 1978, **17**, 2023 (*O-Deacetyl-12-methoxyvomilenine*)
Libot, F. *et al., Phytochemistry*, 1980, **19**, 989 (*cmr*)
Khan, M.A. *et al., Z. Naturforsch., B*, 1982, **37**, 494 (*Raucaffricine, isol, cmr*)
Nasser, A.M.A.G. *et al., Phytochemistry*, 1983, **22**, 2297 (*derivs*)
Schübel, H. *et al., Helv. Chim. Acta*, 1984, **62**, 2078 (*Raucaffricine, pmr, cmr, ms, struct*)
Khan, M.A. *et al., CA*, 1987, **106**, 153050y (*Raucaffriline*)
Takayama, H. *et al., Chem. Pharm. Bull.*, 1991, **39**, 266 (*synth, config*)
Ruyter, C.M. *et al., Helv. Chim. Acta*, 1991, **74**, 1707 (*Raucaffricine, synth*)
Atta-ur-Rahman, *et al., Phytochemistry*, 1995, **38**, 1057 (*10-Methoxyvinorine*)

Vulgaxanthin II V-195

4-[[(1,3-Dicarboxypropyl)imino]ethylidene]-1,2,3,4-tetrahydro-2,6-pyridinedicarboxylic acid, 9CI. Glutamic acid betaxanthin
[1047-87-6]



$C_{14}H_{16}N_2O_8$ 340.289
Yellow pigment from beetroot (*Beta vulgaris*), *Portulaca grandiflora* and *Chenopodium rubrum* cell cultures (Chenopodiaceae, Portulacacceae).

5-Amide: ***Vulgaxanthin I****. Glutamidebetaxanthin*
[904-62-1]
$C_{14}H_{17}N_3O_7$ 339.304
Yellow pigment from *Beta, Portulaca* and *Conophytum* spp. and other plants (Chenopodiaceae, Aizoaceae, Portulacacceae). Food colourant.

5-Alcohol: ***Humilixanthin***
[111534-70-4]
$C_{14}H_{18}N_2O_7$ 326.305
Isol. from the fruits of *Rivina humilis*. Also detected in *Phytolacca acinosa, Phytolacca bogotensis, Delosperma luteum, Lampranthus aurantiacus, Lampranthus peersii* and *Portulaca grandiflora*, and in the yellow-coloured root of *Beta vulgaris* (Phytolaccaceae, Aïzoaceae, Portulacacceae, Chenopodiaceae).

Piattelli, M. *et al., Phytochemistry*, 1965, **4**, 121 (*isol, ir, uv, struct*)
Singer, J.W. *et al., J. Food Sci.*, 1980, **45**, 489 (*isol, use*)
Strack, D. *et al., Phytochemistry*, 1987, **26**, 2285 (*isol, uv, pmr, ms, struct, Humilixanthin*)

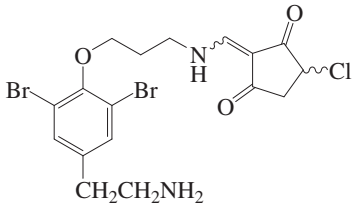
Vulracine V-196

$C_{18}H_{19}NO_3$ 297.353
Struct. unknown. Alkaloid from *Berberis vulgaris* (barberry) (Berberidaceae). Fine needles (Me_2CO). Mp 164°. $[\alpha]_D^{24}$ -114 (c, 0.2 in $CHCl_3$).

Döpke, W. *et al., Naturwissenschaften*, 1963, **50**, 595

Waianaeamine A W-1

[256472-04-5]

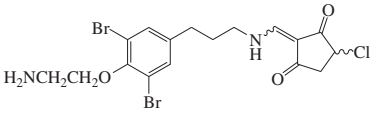


$C_{17}H_{19}Br_2ClN_2O_3$ 494.609
Alkaloid from an undescribed Verongid sponge. $[\alpha]_D^{27}$ +2.6 (c, 0.23 in MeOH). λ_{max} 209 (log ϵ 4.36); 310 (log ϵ 3.89) (MeOH).

Lacy, C. *et al., J. Nat. Prod.*, 2000, **63**, 119-121 (*isol, pmr, cmr, uv*)

Waianaeamine B W-2

[256472-05-6]



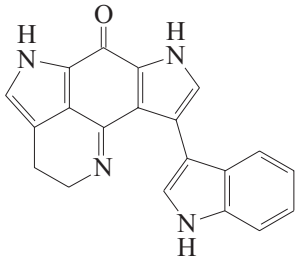
$C_{17}H_{19}Br_2ClN_2O_3$ 494.609
Alkaloid from an undescribed Verongid sponge. $[\alpha]_D^{27}$ -20.9 (c, 0.07 in MeOH). λ_{max} 209 (log ϵ 4.31); 309 (log ϵ 3.84) (MeOH).

Lacy, C. *et al., J. Nat. Prod.*, 2000, **63**, 119-121 (*isol, pmr, cmr, uv*)

Wakayin W-3

*2,3,5,7-Tetrahydro-9-(1*H*-indol-3-yl)-6*H*-dipyrrolo[4,3,2*-de*:2′,3′*-h*]quinolin-6-one, 9CI*

[134781-25-2]



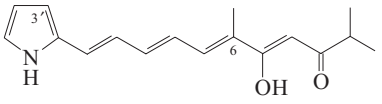
$C_{20}H_{14}N_4O$ 326.357
Related to Tsitsikammamine A, T-650. Alkaloid from the ascidian *Clavelina* sp. Cytotoxic agent. Exhibits antimicrobial activity. Topoisomerase inhibitor. λ_{max} 226 (ϵ 24600); 299 (ϵ 14000); 413 (ϵ 5100); 474 (ϵ 4600) (MeOH/KOH) (Derep). λ_{max} 222 (ϵ 33500); 243 (ϵ 28200); 311 (ϵ 15000) (MeOH) (Derep). λ_{max} 226 (ϵ 24600); 270 (ϵ 14000); 412 (ϵ 5100); 473 (ϵ 4600) (MeOH/NaOH) (Berdy).

Copp, B.R. *et al., J.O.C.*, 1991, **56**, 4596-4597 (*isol, uv, ir, pmr, cmr, struct*)

Wallemia A W-4

*5-Hydroxy-2,6-dimethyl-11-(1*H*-pyrrol-2-yl)-4,6,8,10-undecatetraen-3-one, 9CI*

[50657-01-7]



$C_{17}H_{21}NO_2$ 271.358
Pigment from *Wallemia sebi*. Orange needles (cyclohexane). Mp 107°. Struct. revised in 1984.

3′-Chloro: ***Wallemia E***
[50656-96-7]
$C_{17}H_{20}ClNO_2$ 305.803
Isol. from *Wallemia sebi*. Orange cryst. (Et_2O/petrol). Mp 122-124°.

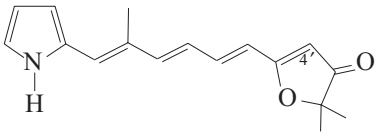
6Z-Isomer: ***Wallemia B***
[50657-00-6]
$C_{17}H_{21}NO_2$ 271.358
Isol. from *Wallemia sebi*. Tentative struct. The struct. given in CAS is erroneous following the structural revision of Wallemia A in 1984.

Badar, Y. *et al., J.C.S. Perkin 1*, 1973, 1416; 1977, 1372 (*isol, struct, uv, pmr, ir, ms, cryst struct*)
Ahmed, F.R. *et al., J. Chem. Res., Synop.*, 1984, 178 (*struct*)
Ahmed, F.R. *et al., J.C.S. Perkin 1*, 1984, 1577 (*synth*)

Wallemia C W-5

*2,2-Dimethyl-5-[5-methyl-6-(1*H*-pyrrol-2-yl)-1,3,5-hexatrienyl]-3(2*H*)-furanone, 9CI*

[50656-99-0]



$C_{17}H_{19}NO_2$ 269.343
Pigment from *Wallemia sebi*. Orange prisms ($CHCl_3$/cyclohexane). Mp 206-208°.

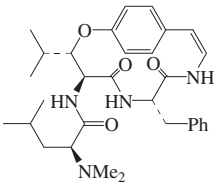
4′-Chloro: ***Wallemia F***
[50656-98-9]
$C_{17}H_{18}ClNO_2$ 303.787
Isol. from *Wallemia sebi*. Red cryst. (cyclohexane). Mp 206-208°.

Geom. isomer: ***Wallemia D***
[50656-97-8]
$C_{17}H_{19}NO_2$ 269.343
Pigment from *Wallemia sebi*. Config. undetermined.

Badar, Y. *et al., J.C.S. Perkin 1*, 1973, 1416 (*isol, struct, uv, ms, pmr, ir*)
Ito, M. *et al., J.C.S. Perkin 1*, 1981, 3255 (*synth*)
Ahmed, F.R. *et al., J. Chem. Res., Synop.*, 1984, 178 (*pmr, struct*)

Waltherine A W-6

[243464-59-7]



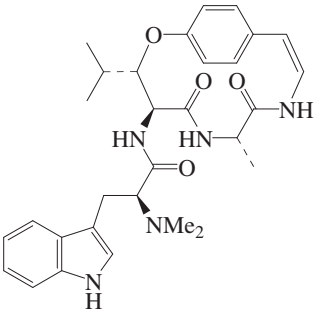
Absolute Configuration

$C_{31}H_{42}N_4O_4$ 534.697
Alkaloid from the root bark of *Waltheria douradinha*. Needles ($CHCl_3$/Et_2O). Mp 234-235°. $[\alpha]_D^{20}$ -229.8 (c, 0.24 in MeOH).

Morel, A.F. *et al., Phytochemistry*, 1999, **51**, 473-477 (*isol, pmr, cmr, ms*)

Waltherine C W-7

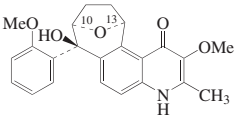
[256445-94-0]



$C_{30}H_{37}N_5O_4$ 531.653
Alkaloid from the bark of *Waltheria douradinha*. Amorph. powder. $[\alpha]_D$ -182 (c, 0.2 in $CHCl_3$).

Morel, A.F. *et al., Tet. Lett.*, 1999, **40**, 9205-9209 (*isol, pmr, cmr, ms*)

Waltherione A W-8



Relative Configuration

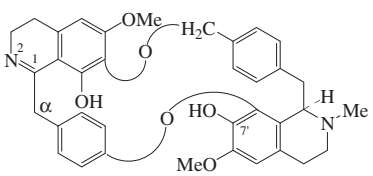
$C_{23}H_{23}NO_5$ 393.438
Stereochem. revised in 2008. Alkaloid from the root bark of *Waltheria douradinha*. Solid ($CHCl_3$/MeOH). Mp 206-207.5°. $[\alpha]_D^{25}$ -25.5 (c, 0.04 in $CHCl_3$).

10,13-Diepimer: ***Waltherione B***
$C_{23}H_{23}NO_5$ 393.438
Alkaloid from the stems of *Waltheria douradinha*. Cryst. ($CHCl_3$/MeOH). Mp 170.5-171°. $[\alpha]_D^{25}$ +2.1 (c, 0.01 in $CHCl_3$).

Hoelzel, S.C.S.M. *et al., Phytochemistry*, 2005, **66**, 1163-1167 (*isol, pmr, cmr*)
Gressier, V. *et al., Phytochemistry*, 2008, **69**, 994-999 (*cryst struct, Waltherione B*)

Warifteine W-9

[30996-86-2]



$C_{36}H_{36}N_2O_6$ 592.69
Alkaloid from the rhizomes of *Cissampelos ovalifolia* (Menispermaceae).

O$^{7'}$-Me: ***Cissampareine****. Methylwarifteine*
[32728-54-4]
$C_{37}H_{38}N_2O_6$ 606.717
Alkaloid from *Cissampelos pareira* whole plant and *Cissampelos ovalifolia* rhizomes (Menispermaceae). Shows antineoplastic props. Rods (Me_2CO). Mp 239-240° dec. $[\alpha]_D^{26}$ -111 (c, 1.05 in $CHCl_3$). Log P 6.78 (uncertain value) (calc). λ_{max} 282 (ϵ 10000); 320 (ϵ 4000) (EtOH) (Berdy).

Di-Me ether: ***Dimethylwarifteine****.* O-*Methylcissampareine*
[7678-91-3]
$C_{38}H_{40}N_2O_6$ 620.744
Alkaloid from the rhizomes of *Cissampelos ovalifolia* (Menispermaceae). Rods (Me_2CO). Mp 192-194°. $[\alpha]_D^{26}$ -121 (c, 1.36 in $CHCl_3$).

1ξ,2-Dihydro: ***Dihydrowarifteine***
[30996-85-1]
$C_{36}H_{38}N_2O_6$ 594.706
Alkaloid from the rhizomes of *Cissampelos ovalifolia* (Menispermaceae).

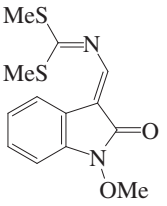
1ξ,2-Dihydro, O$^{7'}$-Me: ***Methyldihydrowarifteine***
[31114-26-8]
$C_{37}H_{40}N_2O_6$ 608.733
Alkaloid from the rhizomes of *Cissampelos ovalifolia* (Menispermaceae). Prisms (MeOH). Mp 208-212°. $[\alpha]_D^{27}$ -157 (c, 0.7 in $CHCl_3$). Phys. props. refer to synthetic material.

1ξ,2-Dihydro, di-Me ether: ***Dimethyldihydrowarifteine****.* O-*Methylcissampereine*
[30994-04-8]
$C_{38}H_{42}N_2O_6$ 622.76
Alkaloid from the rhizomes of *Cissampelos ovalifolia* (Menispermaceae).

α-Oxo, O$^{7'}$-Me: ***Roraimine***
$C_{37}H_{36}N_2O_7$ 620.701
Alkaloid from the roots of *Cissampelos sympodialis*. Amorph. dark yellow powder.

Kupchan, S.M. *et al., J.A.C.S.*, 1966, **88**, 4212 (*Cissampareineisol, uv, ir, pmr, ms, struct, abs config*)
Snedden, W. *et al., Org. Mass Spectrom.*, 1970, **4**, 607 (*struct, ms, derivs*)
Borkakoti, N. *et al., Acta Cryst. B*, 1978, **34**, 482; 490 (*cryst struct, Dimethylwarifteine, Cissampareine*)
Ralph, I. *et al., Heterocycles*, 1981, **16**, 2105 (*biosynth*)
de Lira, G.A. *et al., Fitoterapia*, 2002, **73**, 356-358 (*isol, pmr, cmr*)
Mukherjee, R. *et al., Magn. Reson. Chem.*, 2003, **41**, 213-218 (*pmr, cmr*)

Wasalexin A W-10

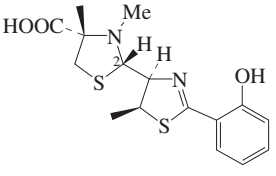


$C_{13}H_{14}N_2O_2S_2$ 294.398
Constit. of *Thalaspi arvense* (stinkweed) and *Wasabia japonica* (Japanese horseradish). Phytoalexin. Yellow solid.

(Z)-Isomer: ***Wasalexin B***
$C_{13}H_{14}N_2O_2S_2$ 294.398
Constit. of *Wasabia japonica* (Japanese horseradish). Phytoalexin. Yellow solid.

Pedras, M.S.C. *et al., Bioorg. Med. Chem. Lett.*, 1999, **9**, 3015-3020 (*isol, synth, pmr, cmr, ms*)
Pedras, M.S.C. *et al., Phytochemistry*, 2003, **64**, 949-956 (*isol, synth, activity*)
Pedras, M.S.C. *et al., J.O.C.*, 2005, **70**, 1828-1834 (*synth*)
Pedras, M.S.C. *et al., Org. Biomol. Chem.*, 2006, **4**, 3526-3535 (*metab*)

Watasemycin A W-11



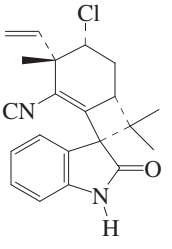
$C_{16}H_{20}N_2O_3S_2$ 352.478
Related to Thiazostatin A, T-373. Prod. by the marine-derived *Streptomyces* sp. TP-A0597. Active against gram-positive and -negative bacteria. Pale yellow powder. Mp 62-65°. $[\alpha]_D^{28}$ +20.5 (c, 0.2 in $CHCl_3$). λ_{max} 212 (log ϵ 4.17); 252 (log ϵ 3.78); 319 (log ϵ 3.45) (MeOH).

2-Epimer: ***Watasemycin B***
$C_{16}H_{20}N_2O_3S_2$ 352.478
Prod. by *Streptomyces* sp. TP-A0597. Active against gram-positive and -negative bacteria. Pale yellow powder. Mp 58-60°. $[\alpha]_D^{28}$ -2.5 (c, 0.2 in $CHCl_3$). λ_{max} 216 (log ϵ 4.21); 286 (log ϵ 3.87); 322 (log ϵ 3.85) (MeOH).

Sasaki, T. *et al., J. Antibiot.*, 2002, **55**, 249-255 (*isol, uv, pmr, cmr*)

Welwitindolinone A isonitrile W-12

[159934-03-9]



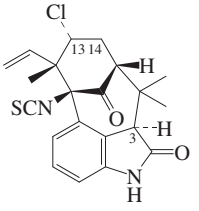
Absolute Configuration

$C_{21}H_{21}ClN_2O$ 352.862
Alkaloid from the freshwater blue-green alga *Hapalosiphon welwitschii*, also from *Westiella intricata* and *Fischerella muscicola*. $[\alpha]_D$ +377 (c, 0.078 in CH_2Cl_2). λ_{max} 212 (ϵ 1720); 250 (ϵ 4000); 290 (ϵ 900) (MeOH).

Stratmann, K. *et al., J.A.C.S.*, 1994, **116**, 9935-9942 (*isol, uv, ir, pmr, cmr*)
Reisman, S.E. *et al., J.A.C.S.*, 2008, **130**, 2087-2100 (*synth*)
Richter, J.M. *et al., J.A.C.S.*, 2008, **130**, 17938-17954 (*synth*)

Welwitindolinone B isothiocyanate W-13

[159993-29-0]



Absolute Configuration

$C_{21}H_{21}ClN_2O_2S$ 400.928
The abs. config. shown is based on that determined crystallographically for Welwistatin. Alkaloid from the blue-green algae *Hapalosiphon welwitschii* (freshwater) and *Westiella intricata* (terrestrial).

N-*Me:* **N-*Methylwelwitindolinone B isothiocyanate***
[159189-03-4]
$C_{22}H_{23}ClN_2O_2S$ 414.955
From *Hapalosiphon welwitschii*. $[\alpha]_D$ -149 (c, 0.071 in CH_2Cl_2).

13,14-Didehydro: ***Welwitindolinone C isothiocyanate***
[159934-04-0]
$C_{21}H_{19}ClN_2O_2S$ 398.912
From *Hapalosiphon welwitschii* and *Westiella intricata*. $[\alpha]_D$ -283 (c, 0.148 in CH_2Cl_2).

13,14-Didehydro, N-*Me:* ***Welwistatin***. N-*Methylwelwitindolinone C isothiocyanate*
[159189-05-6]
$C_{22}H_{21}ClN_2O_2S$ 412.939
Major alkaloid in *Hapalosiphon welwitschii* and *Westiella intricata*. MDR inhibitor. Cytostatic agent. $[\alpha]_D$ -278 (c, 0.77 in CH_2Cl_2). λ_{max} 210 (ϵ 24500); 258 (ϵ 8930); 285 (ϵ 2300) (MeOH) (Berdy).

13,14-Didehydro, N-*Me, isocyanide:* **N-*Methylwelwitindolinone C isonitrile***
[159189-04-5]
$C_{22}H_{21}ClN_2O_2$ 380.873
Alkaloid from terrestrial *Hapalosiphon welwitschii*. $[\alpha]_D$ -117 (c, 0.25 in CH_2Cl_2). Has –NC replacing –NCS. λ_{max} 218 (ϵ 26200); 260 (ϵ 16900); 292 (MeOH) (Berdy).

3-Hydroxy, 13,14-didehydro, N-*Me:* ***3-Hydroxy*-N-*methylwelwitindolinone C isothiocyanate***
$C_{22}H_{21}ClN_2O_3S$ 428.938

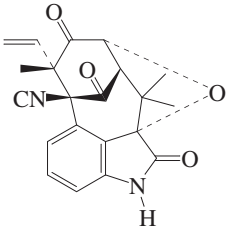
Alkaloid from terrestrial *Fischerella major*. $[\alpha]_D$ -290 (c, 2.6 in CH_2Cl_2). λ_{max} 208 (ϵ 31100); 212 (ϵ 26500); 259 (ϵ 5680) (MeOH).

3-Hydroxy, 13,14-didehydro, N-*Me, isocyanide:* ***3-Hydroxy-N-methylwelwitindolinone C isonitrile***
$C_{22}H_{21}ClN_2O_3$ 396.872
Alkaloid from terrestrial *Fischerella muscicola*. $[\alpha]_D$ -103 (c, 0.4 in CH_2Cl_2). λ_{max} 220 (ϵ 43300); 266 (ϵ 13200); 301 (ϵ 3600) (MeOH).

3-Epimer: ***3-Epiwelwitindolinone B isothiocyanate***
[159249-49-7]
$C_{21}H_{21}ClN_2O_2S$ 400.928
From *Hapalosiphon welwitschii*. Struct. diag. in paper erroneously shows N-Me group.

Stratmann, K. *et al., J.A.C.S.*, 1994, **116**, 9935-9942 (*isol, uv, ir, pmr, cmr*)
Jimenez, J.I. *et al., J. Nat. Prod.*, 1999, **62**, 569-572 (*3-Hydroxy-N-methylwelwitindolinone C derivs*)
Avedaño, C. *et al., Curr. Org. Synth.*, 2004, **1**, 65-82 (*Welwistatin, rev*)

Welwitindolinone D isonitrile W-14



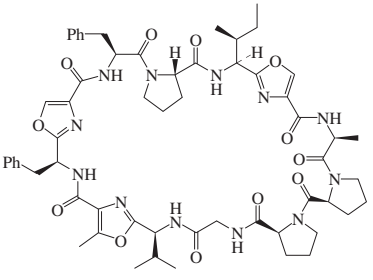
$C_{21}H_{18}N_2O_4$ 362.384

N-*Me:* **N-*Methylwelwitindolinone D isonitrile***
[224559-35-7]
$C_{22}H_{20}N_2O_4$ 376.411
Alkaloid from terrestial *Fischerella major*. $[\alpha]_D$ -30 (c, 0.37 in CH_2Cl_2). λ_{max} 207 (ϵ 3910); 213 (ϵ 3390); 267 (ϵ 824) (MeOH).

Jimenez, J.I. *et al., J. Nat. Prod.*, 1999, **62**, 569-572 (*isol, uv, ir, pmr, cmr, ms*)

Wewakazole W-15

[494798-69-5]

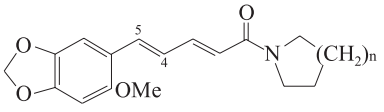


$C_{59}H_{72}N_{12}O_{12}$ 1141.291
Isol. from a *Lyngbya majuscula*. Glassy oil. $[\alpha]_D^{21}$ -46.8 (c, 0.41 in MeOH). λ_{max} 213 (log ϵ 4.55); 221 (log ϵ 4.39) (MeOH).

Nogle, L.M. *et al., Org. Lett.*, 2003, **5**, 3-6 (*isol, pmr, cmr*)

Wisanidine W-16

1-[5-(6-Methoxy-1,3-benzodioxol-5-yl)-1-oxo-2,4-pentadienyl]pyrrolidine, 9CI. 1-[5-(2-Methoxy-4,5-methylenedioxyphenyl)pentadienoyl]pyrrolidine. Okolasine. 6-Methoxytrichostachine



n =1

$C_{17}H_{19}NO_4$ 301.341
λ_{max} 250 (ϵ 10000); 304 (ϵ 14500); 309 (ϵ 13200); 375 (ϵ 21000) (prob. EtOH) (Derep).

(E,E)-form [63424-62-4]
Alkaloid from the seeds and roots of *Piper guineense* (Piperaceae). Yellow cryst. (EtOAc/Et_2O). Mp 171-173°.

4,5-Dihydro: ***α,β-Dihydrowisanidine***
[64494-92-4]
$C_{17}H_{21}NO_4$ 303.357
Alkaloid from seeds of *Piper guineense* (Piperaceae). Cryst. (hexane). Poorly sol. hexane. Mp 82-84°. λ_{max} 300 (ϵ 6020) (MeOH) (Berdy).

Addae-Mensah, I. *et al., Phytochemistry*, 1977, **16**, 757 (*isol, uv, ir, pmr, ms, struct, synth*)
Sondengam, B.L. *et al., Phytochemistry*, 1977, **16**, 1121 (*deriv*)
Sondengam, B.L. *et al., Tet. Lett.*, 1977, 367 (*isol, pmr, struct*)
Scharf, H.D. *et al., Annalen*, 1978, 573 (*synth, ir, pmr, ms*)
Linke, S. *et al., Tetrahedron*, 1978, **34**, 1979 (*synth*)
Vig, O.P. *et al., Indian J. Chem., Sect. B*, 1979, **17**, 427-429 (*synth, deriv*)
Döpke, W. *et al., Z. Chem.*, 1981, **21**, 358 (*deriv*)

Wisanine W-17

1-[5-(6-Methoxy-1,3-benzodioxol-5-yl)-1-oxo-2,4-pentadienyl]piperidine, 9CI. 1-[5-(2-Methoxy-4,5-methylenedioxyphenyl)pentadienoyl]piperidine. 2′-Methoxypiperine
As Wisanidine, W-16 with n = 2

$C_{18}H_{21}NO_4$ 315.368

(E,E)-form [61756-56-7]
Alkaloid from the roots of *Piper guineense* (Piperaceae). Active against gram-positive bacteria. Yellow prismatic cryst. (EtOAc/Et_2O). Mp 179-181°. λ_{max} 250 (ϵ 10000); 304 (ϵ 14150); 309 (ϵ 13180); 318 (ϵ 20890); 371 (ϵ 26300) (MeOH) (Berdy).

4,5-Dihydro: ***4,5-Dihydro-2′-methoxypiperine****. 4,5-Dihydrowisanine*
[62926-59-4]
$C_{18}H_{23}NO_4$ 317.384
Alkaloid from *Piper guineense* (Piperaceae). Active against gram-positive bacteria. Cryst. (C_6H_6/hexane). Poorly sol. hexane. Mp 99-100°. λ_{max} 300 (ϵ 6000) (MeOH) (Berdy).

(2E,4Z)-form
Piperx
[69699-10-1]
Minor alkaloid from the root bark of *Piper guineense* (Piperaceae). Yellow needles (EtOAc). Mp 193-195° (189-190°).

Vig, O.P. *et al., Indian J. Chem., Sect. B*, 1977, **15**, 950 (*synth*)
Addae-Mensah, I. *et al., Phytochemistry*, 1977, **16**, 757 (*isol, uv, ir, pmr, ms, struct*)
Sondengam, B.L. *et al., Tet. Lett.*, 1977, 69 (*deriv*)
Scharf, H.D. *et al., Annalen*, 1978, 573 (*synth, ir, uv, pmr*)
Linke, S. *et al., Tetrahedron*, 1978, **34**, 1979 (*synth, ir, pmr, activity*)
Addae-Mensah, I. *et al., Planta Med.*, 1981, **41**, 200 (*isol, ir, pmr, ms, struct*)
Woode, K.A. *et al., J. Nat. Prod.*, 1984, **47**, 1024 (*cryst struct*)
Okwute, S.K. *et al., Tetrahedron*, 1984, **40**, 2541 (*synth*)

Withananine W-18

Struct. unknown. Alkaloid from *Withania somnifera* (Solanaceae). Mp 75-80° (35-40°).

Picrate: Mp 176-178°.

Aurichloride: Mp 115-119°.

Majumdar, D.N. *et al., Curr. Sci.*, 1952, **21**, 46; *CA*, **47**, 2184b
Majumdar, D.N. *et al., Indian J. Pharm.*, 1955, **17**, 158-161; *CA*, **50**, 3713f

Withanine W-19

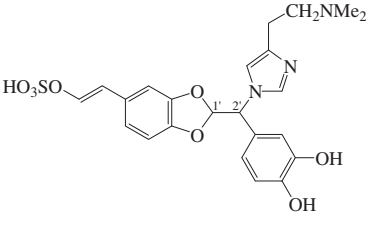
$C_{44}H_{80}N_2O_{12}$ 829.122
Struct. unknown. Alkaloid from *Withania somnifera* (Solanaceae). Cryst. + $1CHCl_3$. Mp 87-88° dec.

Aurichloride: Mp 170-175°.

Majumdar, D.N. *et al., Curr. Sci.*, 1952, **21**, 46; *CA*, **47**, 2184b
Majumdar, D.N. *et al., Indian J. Pharm.*, 1955, **17**, 158-161; *CA*, **50**, 3713f

Wondonine A W-20

[336825-31-1]



$C_{23}H_{25}N_3O_8S$ 503.532
Isol. from the association of sponges, *Jaspis* sp. and *Poecillastra wondoensis*. Yellow gum (as Na salt). $[\alpha]_D^{25}$ -4.8 (c, 0.12 in MeOH) (Na salt). λ_{max} 210 (log ϵ 4.16); 264 (log ϵ 3.94) (MeOH) (Na salt).

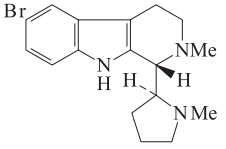
Diastereomer: ***Wondonine B***
[336825-33-3]
$C_{23}H_{25}N_3O_8S$ 503.532

Isol. from the association of sponges, *Jaspis* sp. and *Poecillastra wondoensis*. Yellow gum (as Na salt). $[\alpha]_D^{25}$ +3.6 (c, 0.2 in MeOH) (Na salt). λ_{max} 211 (log ϵ 4.23); 264 (log ϵ 3.25) (MeOH) (Na salt).

Shin, J. *et al., Tet. Lett.*, 2001, **42**, 1965-1968 (*Wondonines A,B*)

Woodinine W-21

[116339-96-9]



Absolute configuration

$C_{17}H_{22}BrN_3$ 348.285

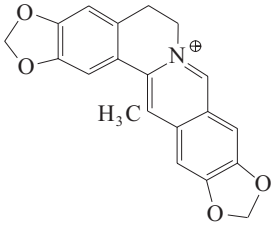
Alkaloid from the ascidian *Eudistoma fragum*. Mp 112-113°. $[\alpha]_D$ -38 (c, 0.6 in MeOH). $[\alpha]_D^{23}$ -80.8 (c, 0.6 in MeOH) (synthetic). λ_{max} 230 (ϵ 38000); 291 (ϵ 8510); 300 (sh) (ϵ 7080) (EtOH) (Derep).

Debitus, C. *et al., J. Nat. Prod.*, 1988, **51**, 799 (*isol, uv, pmr, cmr, ms, cd, struct*)
McNulty, J. *et al., Tet. Lett.*, 1991, **32**, 4875 (*synth, abs config*)
Mahboobi, S. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1992, **325**, 249; 1993, **326**, 33 (*synth, pmr, abs config*)
McNulty, J. *et al., J.C.S. Perkin 1*, 1994, 1329 (*synth*)
Mahboobi, S. *et al., J. Nat. Prod.*, 1997, **60**, 587 (*pmr, cmr, cryst struct*)

Worenine W-22

5,6-Dihydro-14-methylbis[1,3]benzodioxolo[5,6-a:5′,6′-g]quinolizinium(1+), 9CI. 13-Methylpseudocoptisine

[38763-29-0]



$C_{20}H_{16}NO_4^{\oplus}$ 334.351

Probable struct. Originally proposed to have the struct. now given to Corysamine, C-699. Synthetic 13-methylpseudocoptisine has props. closely similar to those of Worenine, although direct comparison has not been possible. Quaternary alkaloid from *Coptis japonica* and *Coptis chinensis* (Ranunculaceae).

Chloride: [38763-54-1]
$C_{20}H_{16}ClNO_4$ 369.803
Yellow needles (H_2O). Mp 295° (nat.) Mp 288-289° (synthetic).

Iodide: [38763-55-2]
$C_{20}H_{16}INO_4$ 461.255
Cryst. (EtOH). Mp 300° Mp 297-299° (synthetic).

Picrate: [38763-56-3]
Cryst. (MeOH). Mp 233°.

Kitasato, Z. *et al., Yakugaku Zasshi*, 1927, **542**, 315 (*isol*)
Schramm, G. *et al., Pharmazie*, 1959, **14**, 405 (*isol*)
Govindachari, T.R. *et al., Indian J. Chem.*, 1971, **9**, 1313 (*synth, struct*)

Wuchuyine W-23

[11034-73-4]

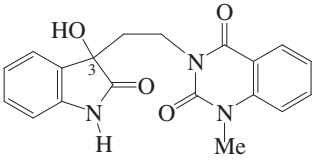
$C_{10}H_{13}NO_2$ 179.218

Struct. unknown. Alkaloid from the fruits of *Evodia rutaecarpa* (Rutaceae). Shows antiviral activity. Cryst. (Me_2CO). Mp 237.5°. $[\alpha]_D$ -68.

Chen, A.L. *et al., J. Am. Pharm. Assoc.*, 1933, **22**, 716-719; *CA*, **27**, 5151 (*isol*)
Chou, S.C. *et al., Med. Pharmacol. Exp.*, 1967, **16**, 407-413; *CA*, **67**, 61622j

Wuchuyuamide I W-24

[263842-26-8]



$C_{19}H_{17}N_3O_4$ 351.361

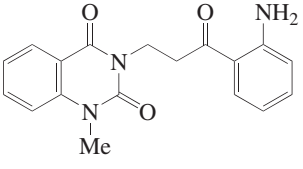
Alkaloid from the fruit of *Evodia rutaecarpa*. Component of Wu Zhu Yu. Needles ($CHCl_3$/MeOH). Mp 261-262°. Racemic.

3-Deoxy: ***Wuchuyuamide II***
[263842-27-9]
$C_{19}H_{17}N_3O_3$ 335.362
Alkaloid from the fruit of *Evodia rutaecarpa*. Component of Wu Zhu Yu. Needles ($CHCl_3$/MeOH). Mp 199-200°. Racemic.

Zuo, G.Y. *et al., Chin. Chem. Lett.*, 2000, **11**, 127-128

Wuchuyuamide III W-25

[1016984-76-1]



$C_{18}H_{17}N_3O_3$ 323.351

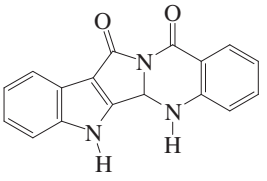
Alkaloid from the fruit of *Evodia officinalis*. Cytotoxic. Prims. Mp 175.6-176.6°. $[\alpha]_D^{25}$ -17 (c, 0.6 in $CHCl_3$). Unaccounted for optical rotation. λ_{max} 226 (log ϵ 3.97); 243 (log ϵ 4.33); 315 (log ϵ 3.38); 325 (log ϵ 3.39); 361 (log ϵ 3.4) ($CHCl_3$).

Jin, H.-Z. *et al., J. Asian Nat. Prod. Res.*, 2007, **9**, 685-688 (*isol, pmr, cmr*)

Wuzhuyurutine A W-26

5,5a-Dihydro-6H-indolo[2′,3′:3,4]pyrrolo[2,1-b]-quinazoline-11,13-dione, 9CI

[912537-94-1]



$C_{17}H_{11}N_3O_2$ 289.293

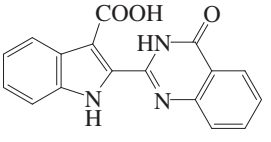
Alkaloid from the unripe fruit of *Evodia rutaecarpa*. Amorph. solid. λ_{max} 223 ; 239 ; 264 ; 323 (MeOH).

Teng, J. *et al., Heterocycles*, 2006, **68**, 1691-1698 (*isol, pmr, cmr, ms*)

Wuzhuyurutine B W-27

2-(1,4-Dihydro-4-oxo-2-quinazolinyl)-1H-indole-3-carboxylic acid, 9CI

[912537-95-2]



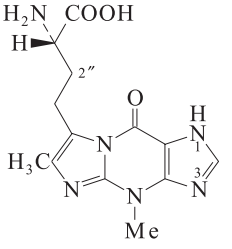
$C_{17}H_{11}N_3O_3$ 305.292

Alkaloid from the unripe fruit of *Evodia rutaecarpa*. Amorph. solid. λ_{max} 220 ; 240 ; 347 ; 364 (MeOH).

Teng, J. *et al., Heterocycles*, 2006, **68**, 1691-1698 (*isol, pmr, cmr, ms*)

Wybutine W-28

Y-base. Y-wye



(S)–form

$C_{13}H_{16}N_6O_3$ 304.308

1*H*-Form shown. Prob. in equilib. with 3*H*-form.

(S)-form [35693-91-5]
Base obt. from eukaryotic tRNAs. Mp 200-204° dec. $[\alpha]_D^{26}$ -40 (c, 0.14 in MeOH).

3-β-D-Ribofuranosyl:
$C_{18}H_{24}N_6O_7$ 436.424
Nucleoside present in tRNAs. Foam. $[\alpha]_D^{23}$ -53.6 (c, 0.344 in MeOH).

2″-Hydroxy:
$C_{13}H_{16}N_6O_4$ 320.307
Base from eukaryotic tRNAs.

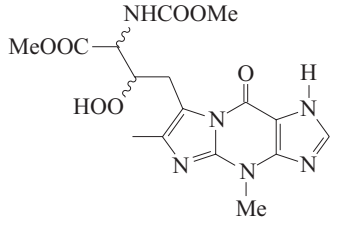
(±)-form
Mp 214-215° dec. (204-206°).

Itaya, T. *et al., Tet. Lett.*, 1985, **26**, 347 (*synth,*

uv, pmr, abs config, bibl)
Itaya, T. *et al., J.C.S. Perkin 1*, 1994, 2759 (*ribofuranosyl*)

Wybutoxine W-29

*Methyl 4,9-dihydro-β-hydroperoxy-α-[(methoxycarbonyl)amino]-4,6-dimethyl-9-oxo-1*H-*imidazo[1,2-*a*]purine-7-butanoate, 9CI. Peroxywybutine*
[36238-44-5]

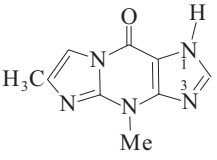


$C_{16}H_{20}N_6O_7$ 408.37
Constit. of phenylalanine tRNA of beef, chicken, calf and rat livers. Also from *Geotrichum candidum* and *Lupinus luteus*. Fluorescent.

Feinberg, A.M. *et al., J.A.C.S.*, 1974, **96**, 7797 (*isol, struct*)
Mochizaki, A. *et al., Bull. Chem. Soc. Jpn.*, 1980, **53**, 813 (*isol, pmr*)

Wye base W-30

*1,4-Dihydro-4,6-dimethyl-9*H-*imidazo[1,2-*a*]purin-9-one, 9CI. 4,9-Dihydro-4,6-dimethyl-9-oxo-1*H-*imidazo[1,2-*a*]purine. Yt base*
[33359-03-4]



$C_9H_9N_5O$ 203.203
1*H*-Form shown in equilib. with 3*H*-form. Nucleotide present in t-RNA from *Torulopsis utilis* and other sources. The most highly modified of the minor nucleotides of t-RNA which are important for codon recognition. Cryst. (H_2O). λ_{max} 227 (ϵ 37000); 231 (ϵ 37100); 255 (ϵ 5000); 284 (ϵ 9700) (H_2O) (pH 1).

3H-form

*3-*O*-β-D-Ribofuranosyl:* ***Wyosine****. Wyo. Yt*
[52662-10-9]
$C_{14}H_{17}N_5O_5$ 335.319
Hypermodified nucleoside from *Torulopsis utilis* phenylalanine-tRNA. Cryst. (H_2O). Mp 233° dec. $[\alpha]_D^{20}$ -57 (c, 0.08 in H_2O). Glycosidic bond extremely labile. λ_{max} 236 ; 295 (H_2O) (pH 4.2-12.1).

Kasai, H. *et al., Biochemistry*, 1976, **15**, 898 (*synth, struct, bibl*)
Nakatsuga, S. *et al., Tet. Lett.*, 1978, 2579 (*synth*)
Itaya, T. *et al., Chem. Pharm. Bull.*, 1985, **33**, 2339 (*synth, bibl*)
Bazin, H. *et al., Tet. Lett.*, 1987, **28**, 275 (*synth, uv, pmr, cmr*)
Glemarec, C. *et al., Tetrahedron*, 1988, **44**, 1273 (*props, bibl*)
Nagamatsu, T. *et al., Chem. Comm.*, 1995, 2041 (*synth*)
Itaya, T. *et al., Chem. Pharm. Bull.*, 2002, **50**, 547-548 (*Wyosine, isol, struct*)

α-Xantherin X-1

$C_{24}H_{23}NO_6$ 421.449

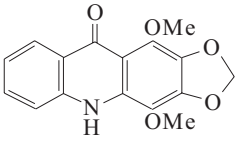
Struct. unknown. Alkaloid from *Zanthoxylum ochroxylum*. Mp 186-187°.

Leprince, M. *et al., Bull. Sci. Pharmacol.*, 1912, **18**, 337-345; *CA*, **6**, 2287 (*isol*)

Xanthevodine X-2

*4,11-Dimethoxy-1,3-dioxolo[4,5-*b*]acridin-10(5*H*)-one, 9CI. 1,4-Dimethoxy-2,3-methylenedioxy-9(10*H*)-acridone. Normelicopidine*

[477-78-1]



$C_{16}H_{13}NO_5$ 299.282

Alkaloid from *Evodia xanthoxyloides*, *Acronychia baueri* and *Melicope leratii* (Rutaceae). Mp 217-218°. λ_{max} 250 (ϵ 22800); 284 (ϵ 28100); 312 (ϵ 9290) (EtOH/NaOH) (Derep). λ_{max} 218 (ϵ 15000); 251 (sh) (ϵ 23400); 282 (ϵ 33900); 304 (sh) (ϵ 10200) (EtOH) (Derep).

Picrate: Mp 194-196°.

N-*Me:* ***Melicopidine***
[475-91-2]
$C_{17}H_{15}NO_5$ 313.309
Alkaloid from *Melicope fareana*, *Teclea natalensis*, *Acronychia baueri* and *Melicope leptococca* (Rutaceae). Mp 121-122°.

▶ JI4630000

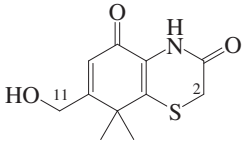
N-*Me; hydrochloride:* Mp 88-90°.

Price, J.R. *et al., Aust. J. Sci. Res., Ser. A*, 1949, **2**, 249 (*isol*)
Crow, W.D. *et al., Aust. J. Sci. Res., Ser. A*, 1949, **2**, 255; 282 (*struct*)
Hughes, G.K. *et al., Aust. J. Sci. Res., Ser. A*, 1952, **5**, 401 (*isol*)
Cannon, J.R. *et al., Aust. J. Sci. Res., Ser. A*, 1952, **5**, 406 (*struct*)
Dallacker, F. *et al., Annalen*, 1966, **691**, 138 (*synth*)
Bowie, J. *et al., Aust. J. Chem.*, 1967, **20**, 1179 (*ms*)
Bert, M. *et al., Phytochemistry*, 1974, **13**, 301 (*isol, pmr, ms*)
Skaltsounis, A.L. *et al., J. Nat. Prod.*, 1983, **46**, 732 (*isol*)

Xanthiazone X-3

*4,8-Dihydro-7-(hydroxymethyl)-8,8-dimethyl-2*H*-1,4-benzothiazine-3,5-dione*

[212701-97-8]



$C_{11}H_{13}NO_3S$ 239.295

Alkaloid from the fruit of *Xanthium strumarium*. Cubic cryst. (MeOH). Mp 159-161°.

*11-*O*-β-D-Glucopyranoside:* ***Xanthiside***
$C_{17}H_{23}NO_8S$ 401.437
Alkaloid from the fruits of *Xanthium pungens* and *Xanthium strumarium*. Amorph. powder; oil (as tetra-Ac). Mp 180-182°. $[\alpha]_D^{25}$ -3.2 (c, 0.67 in $CHCl_3$) (tetra-Ac). λ_{max} 280 (MeOH).

*11-*O*-[3,4-Dihydroxy-*E*-cinnamoyl-(→2)-β-D-glucopyranoside]:*
$C_{26}H_{29}NO_{11}S$ 563.581
Alkaloid from the fruit of *Xanthium strumarium*. Yellow cryst. Mp 186-188°. λ_{max} 248 ; 332 (MeOH).

*2ξ-Hydroxy: 4,8-Dihydro-2-hydroxy-7-(hydroxymethyl)-8,8-dimethyl-2*H*-1,4-benzothiazine-3,5-dione. 2-Hydroxyxanthiazone*
$C_{11}H_{13}NO_4S$ 255.294

*2ξ-Hydroxy, 11-*O*-β-D-glucopyranoside:*
$C_{17}H_{23}NO_9S$ 417.436
Constit. of the fruit of *Xanthium strumarium*. Amorph. powder. Mp 190-192°. λ_{max} 280 (MeOH).

Ma, Y.-T. *et al., Phytochemistry*, 1998, **48**, 1083-1085 (*isol, pmr, cmr, cryst struct*)
Mahmoud, A.A. *et al., Nat. Prod. Res.*, 2005, **19**, 585-589 (*Xanthiside*)
Han, T. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2006, **42**, 567-570 (*glucosides*)
Qin, L. *et al., Fitoterapia*, 2006, **77**, 245-246 (*caffeoylglucoside*)
Dai, Y.-H. *et al., J. Asian Nat. Prod. Res.*, 2008, **10**, 303-305 (*isol, pmr, cmr*)

Xanthicin X-4

$C_{13}H_{15}NO_5$ 265.265

Phenoxazine deriv. Struct. unknown. Prod. by *Streptomyces xanthochromogenes* ATCC 19818. Antifungal agent. Yellow needles (EtOAc). Sol. Me_2CO, EtOAc, MeOH. Mp 211-213° dec. $[\alpha]_D^{15}$ +319 (Me_2CO). λ_{max} 270 (ϵ 35230) (MeOH) (Berdy). λ_{max} 260 (ϵ 33930); 325 (ϵ 23300) (NaOH) (Berdy).

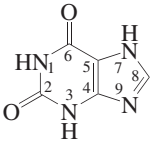
▶ LD_{50} (mus, ipr) 105 mg/kg.

Arishima, M. *et al., CA*, 1958, **52**, 17388ab

Xanthine, 8CI X-5

*3,7-Dihydro-1*H*-purine-2,6-dione, 9CI. 2,6-Dihydroxypurine. 2,6-Purinediol*

[69-89-6]



7*H-form*

$C_5H_4N_4O_2$ 152.112

Exists mainly as 7*H*-dioxo-form in aq. solns. with small amount of 9*H*-dioxo-form. Found in potatoes, coffee beans, etc. Cryst. Mp 350°. pK_{a1} 7.7; pK_{a2} 11.94 (20°). pK_{a1} 0.8; pK_{a2} 7.45; pK_{a3} 11.13 (20°).

▶ LD_{50} (mus, ipr) 500 mg/kg. ZD7700000

*1-Me: 3,7-Dihydro-1-methyl-1*H*-purine-2,6-dione. 1-Methylxanthine*
[6136-37-4]
[28109-92-4]
$C_6H_6N_4O_2$ 166.139
Cryst. (H_2O). Mp 350°.

▶ LD_{50} (mus, ipr) 510 mg/kg. ZD8575000

*3-Me: 3,7-Dihydro-3-methyl-1*H*-purine-2,6-dione. 3-Methylxanthine*
[1076-22-8]
[28109-92-4]
$C_6H_6N_4O_2$ 166.139
Found in human urine. Isol. from the ascidian *Symplegma rubra*. Needles (H_2O). Mp 360° dec. λ_{max} 204 (log ϵ 3.7); 272 (log ϵ 3.3) (MeOH).

▶ LD_{50} (mus, ipr) 894 mg/kg. ZD8750000

1,3-Di-Me: see Theophylline, T-360

*1-Et: 1-Ethyl-3,7-dihydro-1*H*-purine-2,6-dione. 1-Ethylxanthine*
[104285-81-6]
$C_7H_8N_4O_2$ 180.166
Cryst. (MeOH). Mp 300°.

*3-Propyl: 3,7-Dihydro-3-propyl-1*H*-purine-2,6-dione, 9CI. 3-Propylxanthine.* ***Enprofylline, INN, USAN****. Nilyph. Oxeze. D 4028*
[41078-02-8]
$C_8H_{10}N_4O_2$ 194.193
Diuretic, antiasthmatic agent, bronchodilator. Lacks adenosine receptor antagonism of Xanthine. Mp 287-289°. Log P 0.36 (calc).

▶ LD_{50} (rat, orl) 481 mg/kg. UO8439700

*3-(2-Methylpropyl), 1-Me: 3,7-Dihydro-1-methyl-3-(2-methylpropyl)-1*H*-purine-2,6-dione. 3-Isobutyl-1-methylxanthine*
[28822-58-4]
$C_{10}H_{14}N_4O_2$ 222.246
Inhibitor of cyclic AMP phosphodiesterase. Mp 199-201°.

7H-form

7-(2-Deoxy-β-D-ribofuranosyl): ***N⁷-2′-Deoxypseudoxanthosine***
[35912-09-5]
$C_{10}H_{12}N_4O_5$ 268.229
Constit. of the starfish *Asterias rollestoni*. Mp 176-178°.

*7-Me: 3,7-Dihydro-7-methyl-1*H*-purine-2,6-dione, 9CI. 7-****Methylxanthine****. Heteroxanthine*
[552-62-5]
[28109-92-4]
$C_6H_6N_4O_2$ 166.139
Found in urine, sugar cane and other biol. sources, a urinary metab. of caffeine in man. Needles (H_2O). Mp 380° dec.

▶ ZD8925000

*1,7-Di-Me: 3,7-Dihydro-1,7-dimethyl-1*H*-purine-2,6-dione, 9CI.* ***1,7-Dimethylxanthine****. Paraxanthine*
[611-59-6]
$C_7H_8N_4O_2$ 180.166
Present in human urine. Plates (H_2O). Mp 298-299°. pK_{a1} 8.6.

▶ RV9380000

3,7-Di-Me: see Theobromine, T-355

1,3,7-Tri-Me: see Caffeine, C-15

*1,3-Dipropyl, 7-Me: 3,7-Dihydro-7-methyl-1,3-dipropyl-1*H*-purine-2,6-dione, 9CI*
[31542-63-9]
$C_{12}H_{18}N_4O_2$ 250.3
Adenoside A_2-antagonist. Depressant.

Cryst. (Me_2CO/DMF). Mp 116°.

1,3-Bis(3-methyl-2-butenyl), 7-Me: ***7-Methyl-1,3-diprenylxanthine***
$C_{16}H_{22}N_4O_2$ 302.375
Alkaloid from leaves of *Bosistoa floydii* (Rutaceae). Powder.

1,7-Dibenzyl: [140396-45-8]
$C_{19}H_{16}N_4O_2$ 332.361
Cryst. (MeOH). Mp 223.5-225° .

9*H*-*form* [51953-26-5]

*9-Me: 3,9-Dihydro-9-methyl-1*H*-purine-2,6-dione. 9-Methylxanthine*
[1198-33-0]
$C_6H_6N_4O_2$ 166.139
Needles (H_2O). Mp 384° dec.

*1,9-Di-Me: 1,9-Dimethyl-3,9-dihydro-1*H*-purine-2,6-dione, 9CI. 1,9-Dimethylxanthine, 8CI. Isoparaxanthine*
[33073-01-7]
$C_7H_8N_4O_2$ 180.166
Cryst. (HCl aq.). Mp 35°. pK_{a1} 5.99 (20°).

*3,9-Di-Me: 3,9-Dimethyl-3,9-dihydro-1*H*-purine-2,6-dione, 9CI. 3,9-Dimethylxanthine, 8CI*
[15837-08-8]
$C_7H_8N_4O_2$ 180.166
Cryst. (H_2O). Mp 321-322°. pK_{a1} 10.14 (20°).

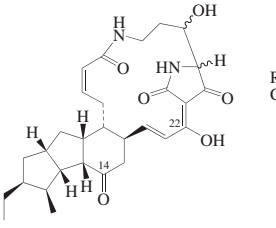
(7H,9H)-form
Imidazolium betaine-form
Minor tautomer.

*7,9-Di-Me: 2,3,6,7-Tetrahydro-7,9-dimethyl-2,6-dioxo-1*H*-purinium hydroxide inner salt, 9CI*
[5752-21-6]
$C_7H_8N_4O_2$ 180.166
Cryst. (MeOH aq.). Mp 378-379° dec.

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 709C (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 213C; 214A (*nmr*)
Traube, W. *et al., Ber.*, 1913, **46**, 3839-3852 (*1,7-di-Me*)
Blitz, H. *et al., Annalen*, 1921, **423**, 200-226 (*1,9-di-Me*)
Sarasin, E. *et al., Helv. Chim. Acta*, 1924, **7**, 713-719 (*7-Me*)
Cook, A.H. *et al., J.C.S.*, 1949, 1069-1071; 1950, 1884-1888 (*1,7-di-Me, 1,9-di-Me*)
U.S. Pat., 1952, 2602795; *CA*, **47**, 4920g (*3-(2-methylpropyl)-1-Me*)
Blicke, F.F. *et al., J.A.C.S.*, 1954, **76**, 3653-3655 (*1,7-di-Me*)
Koppel, H.C. *et al., J.A.C.S.*, 1958, **80**, 2751-2755 (*9-Me*)
Pfleiderer, W. *et al., Annalen*, 1960, **631**, 168-174; 1961, **647**, 155-160 (*9-Me, 1,9-di-Me, 3,9-di-Me*)
Elion, G.B. *et al., J.O.C.*, 1962, **27**, 2478-2491 (*3-Me*)
Birkofer, L. *et al., Chem. Ber.*, 1964, **97**, 934-945 (*7-Me*)
Mizuno, H. *et al., Bull. Chem. Soc. Jpn.*, 1969, **42**, 3099-3105 (*cryst struct*)
Kwiatkowski, J.S. *et al., Theor. Chim. Acta*, 1969, **13**, 149-154 (*uv*)
Montague, W. *et al., Biochem. J.*, 1971, **122**, 115-120 (*3-(2-methylpropyl)-1-Me, pharmacol*)
Lister, J.H. *et al., Chem. Heterocycl. Compd.*, (Weissberger, A. *et al*, Ed.), 1971, (*rev*)
Bergmann, F. *et al., J.C.S.(C)*, 1971, 1676-1682; 1939-1941 (*1,9-di-Me, 3,9-di-Me, pmr*)
Lichtenberg, D. *et al., J.C.S.(C)*, 1971, 1676-1682 (*tautom*)
Ohtsuka, Y. *et al., Bull. Chem. Soc. Jpn.*, 1973, **46**, 506-509 (*Enprofylline, synth*)
Twanmoh, L.-M. *et al., J. Het. Chem.*, 1973, **10**, 187-190 (*pmr*)
Takayama, S. *et al., Chem. Pharm. Bull.*, 1974, **22**, 1200-1202 (*3-Me, synth*)
Kistenmacher, T.J. *et al., Acta Cryst. B*, 1975, **31**, 489-492 (*7-Me*)
Marzilli, L.G. *et al., J.A.C.S.*, 1975, **97**, 3351-3358 (*7-Me*)
Tanabe, T. *et al., Bull. Chem. Soc. Jpn.*, 1976, **49**, 3224-3226 (*3-Me*)
Sekiya, M. *et al., Chem. Pharm. Bull.*, 1976, **24**, 1331-1335 (*synth*)
Coxon, B. *et al., J.O.C.*, 1977, **42**, 3132-3140 (*cmr*)
Saha, S.K. *et al., Indian J. Chem., Sect. B*, 1980, **19**, 325-327 (*ms*)
Stalhandske, C. *et al., Acta Cryst. C*, 1985, **41**, 1517-1520 (*Enprofylline, cryst struct*)
Andersson, K.E. *et al., Curr. Clin. Pract. Ser.*, 1985, **19**, 41 (*Enprofylline, rev*)
Daly, J.W. *et al., J. Med. Chem.*, 1986, **29**, 1305-1308; 1989, **32**, 1231-1237 (*1,3-dipropyl-7-Me, synth*)
Evoniuk, G. *et al., J. Pharmacol. Exp. Ther.*, 1987, **242**, 882-887 (*1,3-dipropyl-7-Me, pharmacol*)
Itaya, T. *et al., Chem. Pharm. Bull.*, 1989, **37**, 1235-1238 (*3,9-di-Me*)
Black, T.H. *et al., Synth. Commun.*, 1989, **19**, 843-850 (*3,7-di-Me*)
Fujii, T. *et al., Chem. Pharm. Bull.*, 1991, **39**, 2855-2862 (*1,7-di-Me*)
Chapman, K.R. *et al., Chest*, 1994, **106**, 1407 (*Enprofylline, clin trial, rev*)
Auzi, A.A. *et al., Phytochemistry*, 1994, **36**, 535-536 (*7-Methyl-1,3-diprenylxanthine*)
Sponer, J. *et al., Struct. Chem.*, 1995, **6**, 281-286 (*tautom*)
Mueller, C.E. *et al., Synthesis*, 1998, 1428-1436 (*Paraxanthine, Isoparaxanthine, synth*)
Lindsay, B.S. *et al., J. Nat. Prod.*, 1999, **62**, 1573-1575 (*3-Me, isol, pmr, cmr, ms*)
Martindale, The Extra Pharmacopoeia, 32nd edn., Pharmaceutical Press, 1999, 1645
Civcir, P.U. *et al., THEOCHEM*, 2001, **545**, 7-15 (*tautom*)
Burnett, F.N. *et al., Tetrahedron*, 2002, **58**, 9567-9578 (*1,7-dibenzyl*)
Li, G.-Q. *et al., J. Chin. Pharm. Sci.*, 2004, **13**, 81-86 (*2′-Deoxypseudoxanthosine*)
Goswami, S. *et al., Eur. J. Org. Chem.*, 2007, 4056-4064 (*synth, ir, pmr*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, PAK300; XCA000

Xanthobaccin A X-6

[227596-81-8]



Relative Configuration

$C_{29}H_{38}N_2O_6$ 510.629

Macrolactam-tetramic acid antibiotic similar to Ikarugamycin. Enolised β-trioxo compd. Prod. from *Stenotrophomonas* sp. SB-K88. Antifungal agent. Amorph. powder (as *O*-22 Na salt). Xanthobaccin B and C have also been isol. but not characterised. λ_{max} 239 (ϵ 18900); 321 (ϵ 9800) (MeOH) (Na salt).

Stereoisomer (?): ***Maltophilin***. *A 90931B. Antibiotic A 90931B*
[184877-66-5]
$C_{29}H_{38}N_2O_6$ 510.629
Prod. by *Stenotrophomonas maltophilia* (formerly *Pseudomonas maltophilia*) and a *Streptomyces* sp. Antifungal agent. λ_{max} 320 (MeOH).

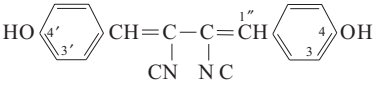
Stereoisomer, 14-alcohol: ***Dihydromaltophilin***. *Antibiotic A 90931A. Antibiotic TAN 883B. A 90931A. TAN 883B*
[138634-40-9]
$C_{29}H_{40}N_2O_6$ 512.645
Prod. by *Streptomyces* sp. Antifungal agent, angiogenesis inhibitor, antiulcer agent, blood vessel growth promotor. Solid. Sol. MeOH. $[\alpha]_D$ +161 (DMF). Identities of Dihydromaltophilin/A 90931A and TAN 883B not certain. λ_{max} 233 (E1%/1cm 410); 318 (E1%/1cm 240) (MeOH) (Berdy). λ_{max} 218 (E1%/1cm 485); 320 (E1%/1cm 340) (MeOH/HCl) (Berdy). λ_{max} 233 (E1%/1cm 445); 315 (E1%/1cm 240) (MeOH/NaOH) (Berdy).

[227596-82-9]

Japan. Pat., 1991, 03 178 988; *CA*, **116**, 57524 (*TAN 883B*)
Jakobi, M. *et al., J. Antibiot.*, 1996, **49**, 1101-1104 (*Maltophilin*)
Graupner, P.R. *et al., J. Antibiot.*, 1997, **50**, 1014-1019 (*Dihydromaltophilin*)
Nakayama, T. *et al., Appl. Environ. Microbiol.*, 1999, **65**, 4334-4339 (*isol, activity*)
Hashidoko, Y. *et al., CA*, 1999, **131**, 184771e (*struct*)
Hashidoko, Y. *et al., Tet. Lett.*, 1999, **40**, 2957-2960 (*isol, uv, pmr, cmr*)

Xanthocillin X X-7

4,4′-(2,3-Diisocyano-1,3-butadiene-1,4-diyl)bisphenol, 9CI. Xanthocillin, BAN. ***Xantocillin, INN***. *Brevicide. Ophthocillin. Trianthil. Xantyrid*
[580-74-5]



$C_{18}H_{12}N_2O_2$ 288.305
Metab. of *Penicillium notatum* and *Eupenicillium egyptiacum*. Cytotoxic. Antibacterial formerly used in feed supplements. Yellow cryst. Sol. MeOH, Et_2O, bases; poorly sol. H_2O, $CHCl_3$, hexane, C_6H_6. Mp 200° dec. λ_{max} 240 (ϵ 14000); 295 (sh) (ϵ 14000); 368 (ϵ 40000); 380 (sh) (ϵ 35000) (2-propanol) (Derep). λ_{max} 243 (ϵ 12020); 374 (ϵ 39800) (EtOH) (Berdy). λ_{max} 252 (ϵ 12300); 398 (ϵ 9550); 430 (ϵ 38900) (EtOH/NaOH) (Berdy).

▶ LD_{50} (mus, ivn) 20 mg/kg; LD_{50} (mus, ipr) 35 mg/kg; LD_{50} (mus, orl) 40 mg/kg. KX1625000

Mono-Me ether: ***4-[2,3-Diisocyano-4-(4-methoxyphenyl)-1,3-butadienyl]phenol, 9CI***

[19559-24-1]
$C_{19}H_{14}N_2O_2$ 302.332
Prod. by *Basipetospora* sp., *Dichotomomyces albus* and *Dichotomomyces cejpii*. Potent inhibitor of prostaglandin biosynth. Active against some gram-positive and -negative bacteria. Yellow cryst. (C_6H_6). Sol. Me_2CO, $CHCl_3$, Et_2O, EtOAc; fairly sol. C_6H_6, EtOH; poorly sol. MeOH, H_2O, hexane. λ_{max} 236 (ϵ 14200); 295 (ϵ 17200); 360 (ϵ 30000) (MeOH) (Derep). λ_{max} 243 (ϵ 10960); 303 (ϵ 10000); 368 (ϵ 16600); 385 (ϵ 14120) (MeOH) (Berdy).

▶ LD_{50} (mus, ipr) 40 mg/kg. KX1700000

4-Me ether, 4′-sulfate: ***Antibiotic BU 4704***. *BU 4704*
[149997-61-5]
$C_{19}H_{14}N_2O_5S$ 382.396
Prod. by an *Aspergillus* sp. Off-white needles (as K salt). Sol. DMSO; fairly sol. MeOH, EtOAc. Mp 165-170° dec. (as K salt). λ_{max} 232 (ϵ 17200); 283 (sh) (ϵ 11000); 356 (ϵ 61900) (MeOH) (Derep). λ_{max} 356 (ϵ 61900) (MeOH/HCl) (Berdy). λ_{max} 283 (ϵ 11000) (MeOH/NaOH) (Berdy).

Di-Me ether: ***Xanthocillin X dimethyl ether***
[4464-33-9]
$C_{20}H_{16}N_2O_2$ 316.359
Metab. of *Aspergillus clavatus* and a *Basipetospora* sp. Yellow needles (CH_2Cl_2/hexane). Sol. Me_2CO, EtOAc, acids, Et_2O; poorly sol. H_2O, hexane. Mp 186° dec. λ_{max} 230 (ϵ 2000); 296 (ϵ 1600); 363 (ϵ 2800); 380 (sh) (ϵ 2000) (MeOH) (Derep). λ_{max} 230 (ϵ 11200); 296 (ϵ 10700); 363 (ϵ 16600); 380 (ϵ 13800) (MeOH) (Berdy). λ_{max} 238 (ϵ 13600); 297 (ϵ 12200); 364 (ϵ 46400) (EtOH) (Berdy).

▶ KX1650000

1″,2″-Dihydro, di-Me ether: ***Antibiotic NK 372135A***. *NK 372135A*
$C_{20}H_{18}N_2O_2$ 318.374
Prod. by *Neosartorya fischeri*. Antifungal agent. Sol. MeOH, EtOAc, $CHCl_3$; poorly sol. H_2O. λ_{max} 225 ; 297 (MeOH) (Berdy).

3-Hydroxy: ***Xanthocillin Y_1***
[38965-69-4]
$C_{18}H_{12}N_2O_3$ 304.304
From *Penicillium notatum*. Yellow needles or rhombs. (EtOAc). Sol. MeOH, Et_2O, EtOH; poorly sol. H_2O, C_6H_6, hexane, $CHCl_3$. λ_{max} 250 (E1%/1cm 520); 375 (E1%/1cm 1650) (MeOH) (Berdy). λ_{max} 243 ; 379 (EtOH) (Berdy).

▶ LD_{50} (mus, ivn) 14 mg/kg; LD_{50} (mus, ipr) 15 mg/kg; LD_{50} (mus, orl) 100 mg/kg. CZ8985000

3′-Hydroxy, 1″,2″-dihydro, di-Me ether: ***Antibiotic NK 372135C***. *NK 372135C*
$C_{20}H_{18}N_2O_3$ 334.374
Prod. by *Neosartorya fischeri*. Antifungal agent. Sol. MeOH, EtOAc, $CHCl_3$; poorly sol. H_2O. λ_{max} 238 ; 291 ; 318 (MeOH) (Berdy). λ_{max} 224 ; 285 ; 290 ; 318 (MeOH) (Berdy).

3,3′-Dihydroxy: ***Xanthocillin Y_2***
[38965-70-7]
$C_{18}H_{12}N_2O_4$ 320.304
From *Penicillium notatum*. Sol. EtOH, Et_2O, MeOH; poorly sol. H_2O, hexane, $CHCl_3$, C_6H_6. λ_{max} 260 (E1%/1cm 320); 382 (E1%/1cm 1500) (MeOH) (Berdy).

▶ LD_{50} (mus, ivn) 18 mg/kg; LD_{50} (mus, ipr) 20.5 mg/kg; LD_{50} (mus, orl) 100 mg/kg. CZ8937750

3-Methoxy, di-Me ether: Methoxyxanthocillin X dimethyl ether
[19764-51-3]
$C_{21}H_{18}N_2O_3$ 346.385
Isol. from a *Aspergillus* sp. and a *Basipetospora* sp. Sol. Me_2CO, EtOAc, Et_2O, $CHCl_3$; poorly sol. H_2O, hexane. λ_{max} 236 (ϵ 14200); 295 (ϵ 17200); 360 (ϵ 30000) (MeOH) (Derep). λ_{max} 238 (ϵ 13600); 297 (ϵ 12200); 364 (ϵ 46400) (EtOH) (Berdy).

3′-Methoxy, 1″,2″-dihydro, di-Me ether: ***Antibiotic NK 372135B***. *NK 372135B*
$C_{21}H_{20}N_2O_3$ 348.401
Prod. by *Neosartorya fischeri*. Antifungal agent. Sol. MeOH, EtOAc, $CHCl_3$; poorly sol. H_2O. $[\alpha]_D^{20}$ +188.7 (c, 1 in MeOH). λ_{max} 226 ; 288 ; 315 (MeOH) (Berdy).

3,5-Dimethoxy, di-Me ether: [663918-81-8]
$C_{22}H_{20}N_2O_4$ 376.411
Isol. from the marine fungus *Basipetospora* sp. Yellow solid.

[149026-37-9]

Hagedorn, I. *et al., Angew. Chem., Int. Ed.*, 1962, **1**, 212 (*synth*)
Ando, K. *et al., J. Antibiot.*, 1968, **21**, 582; 587
Takatsuki, A. *et al., J. Antibiot.*, 1968, **21**, 671; 676 (*Methoxyxanthocillin*)
Zarnack, J. *et al., Pharmazie*, 1971, **26**, 503 (*isol*)
Achenbach, H. *et al., Chem. Ber.*, 1972, **105**, 784; 3061 (*biosynth, derivs*)
Takahashi, C. *et al., Chem. Pharm. Bull.*, 1976, **24**, 2317 (*pmr, derivs*)
Büchi, G. *et al., J.O.C.*, 1977, **42**, 244 (*isol, uv, ir, pmr, deriv*)
Vesonder, R.F. *et al., J. Nat. Prod.*, 1979, **42**, 232 (*isol*)
Britton, D. *et al., Cryst. Struct. Commun.*, 1981, **10**, 1497 (*cryst struct*)
Kitahara, N. *et al., J. Antibiot.*, 1981, **34**, 1556
Herbert, R.B. *et al., Tet. Lett.*, 1984, **25**, 4263
Cable, K.M. *et al., J.C.S. Perkin 1*, 1991, 595 (*biosynth*)
Tsunakawa, M. *et al., J. Antibiot.*, 1993, **46**, 687 (*BU 4704*)
Morino, T. *et al., J. Antibiot.*, 1994, **47**, 1546 (*NK 372135*)
Sakai, R. *et al., Bioorg. Med. Chem.*, 2005, **13**, 6388-6393 (*3,5-dimethoxy di-Me ether*)
Tatsuta, K. *et al., Tet. Lett.*, 2005, **46**, 5017-5020 (*di-Me ether, synth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 8th edn., Van Nostrand Reinhold*, 1992, DVU000; XCS680; XCS700,

C-Xanthocurine X-8

$C_{20}H_{21}N_2O^{\oplus}$ 305.399

Struct. unknown. Alkaloid from calabash curare (*Strychnos* spp.) (Loganiceae). Mp 275° (as picrate). $[\alpha]_D$ +813 (MeOH) (as chloride). Blue-green col. with $Ce(SO_4)_2$.

Giesbrecht, E. *et al., Helv. Chim. Acta*, 1954, **37**, 1974-1982 (*isol, uv*)

Xanthofagarine X-9

$C_{18}H_{22}NO_8$ 380.374

Struct. unknown. Alkaloid from *Fagara microphylla* (Rutaceae). Pale-yellow needles (MeOH). Mp 270-272° dec. (block). Prob. opt. inactive.

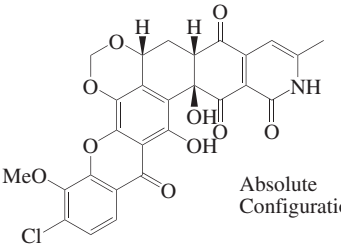
Hydrochloride: Mp 245°.

Picrate: Mp 270°.

Paris, M.R. *et al., Ann. Pharm. Fr.*, 1951, **9**, 479-493 (*isol, uv*)

Xantholipin X-10

[405214-19-9]



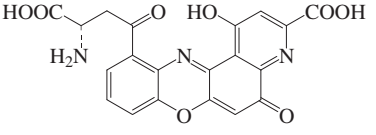
Absolute Configuration

$C_{27}H_{18}ClNO_{10}$
Prod. by a *Streptomyces* sp. Inhibitor of HSP47 gene expression. Yellow powder. $[\alpha]_D$ -303.8 (c, 0.53 in dioxan). λ_{max} 244 (log ϵ 4.54); 271 (log ϵ 4.47); 312 (log ϵ 4.12); 394 (log ϵ 4.03) (MeOH).

Terui, Y. *et al., Tet. Lett.*, 2003, **44**, 5427-5430 (*isol, uv, pmr, cmr, abs config*)

Xanthommatin X-11

*α-Amino-3-carboxy-1-hydroxy-γ,5-dioxo-5*H*-pyrido[3,2-*a*]phenoxazine-11-butanoic acid, 9CI. Urechochrome*
[521-58-4]



$C_{20}H_{13}N_3O_8$ 423.338

(S)-form
Insect metab. found in secretions of *Vanessa urticae* and in eyes of grasshoppers and blowflies (*Calliphora erythrocephala*). Also obt. from eggs of the marine worm *Urechis caupo*. Yellow-brown powder.

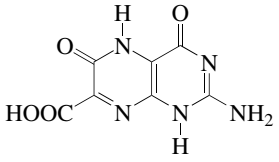
Dihydro: see Dihydroxanthommatin, D-527

Butenandt, A. *et al., Annalen*, 1954, **586**, 217-228; **588**, 106-116; **590**, 75-90 (*isol, struct, synth*)
Linzen, B. *et al., Hoppe-Seyler's Z. Physiol. Chem.*, 1959, **314**, 12-14 (*isol*)
Butenandt, A. *et al., Hoppe-Seyler's Z. Physiol. Chem.*, 1960, **321**, 258-275
Linzen, B. *et al., Adv. Insect Physiol.*, 1974, **10**, 117-246 (*biosynth*)
Kayser, H. *et al., Compr. Insect Physiol. Biochem. Pharmacol.*, 1985, **10**, 367-415 (*rev*)
Martel, R.R. *et al., J. Biol. Chem.*, 1991, **266**, 21392-21398 (*bibl*)

Xanthopterincarboxylic acid X-12

2-Amino-1,4,5,6-tetrahydro-4,6-dioxo-7-pteridinecarboxylic acid, 9CI. 2-Amino-4,6-dihydroxy-7-pteridinecarboxylic acid, 8CI

[2757-91-7]



$C_7H_5N_5O_4$ 223.148

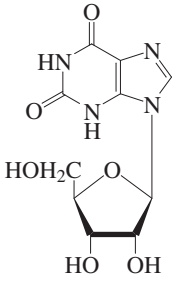
Coenzyme isol. from L-glutamate oxidase of wheat seeds. Orange cryst. + $1H_2O$. Mp >340°.

Tschesche, R. *et al., Chem. Ber.*, 1955, **88**, 81-90 (*synth*)
Pfleiderer, W. *et al., Chem. Ber.*, 1957, **90**, 2624-2631 (*synth*)
Gil'manov, M.K. *et al., Dokl. Akad. Nauk SSSR, Ser. Khim.*, 1989, **309**, 484-487 (*isol*)

Xanthosine, 8CI X-13

3,9-Dihydro-9-β-D-ribofuranosyl-1H-purine-2,6-dione, 9CI. 9-β-D-Ribofuranosylxanthine

[146-80-5]



$C_{10}H_{12}N_4O_6$ 284.228

Prod. by guanine-free mutants of bacteria e.g. *Bacillus subtilis*, *Aerobacter aerogenes*. Also reported from seeds of *Trifolium alexandrinum*. Prismatic cryst. (H_2O). Spar. sol. cold H_2O; v. sol. hot H_2O. $[\alpha]_D^{30}$ -51.2 (c, 8.0 in 0.3*M* NaOH). pK_{a1} 5.67; pK_{a3} 12.85 (25°). Dec. on heating with no distinct melting range. λ_{max} 253 (ϵ 8790) (H_2O).

3′-Phosphate: 3′-Xanthylic acid, 9CI, 8CI

[21089-32-7]
$C_{10}H_{13}N_4O_9P$ 364.208
Mp 200° (as brucine salt). $[\alpha]_D^{20}$ -61.66 (c, 5.0 in NaOH).

5′-Phosphate: Xanthosine 5′-(dihydrogen phosphate), 9CI. 5′-Xanthylic acid, 8CI. Xanthosine monophosphate. Xanthosine 5′-phosphate. XMP

[523-98-8]
[25899-70-1]
$C_{10}H_{13}N_4O_9P$ 364.208
Inhibitor of isoforms I and II of human inosine 5′-monophosphate dehydrogenase. No phys. props. reported.

5′-Triphosphate: [6253-56-1]
[50801-64-4 , 90011-94-2]
$C_{10}H_{15}N_4O_{15}P_3$ 524.168
No phys. props. reported.

5′-O-Sulfate: Xanthosine 5′-sulfate

$C_{10}H_{12}N_4O_9S$ 364.292
Isol. from the venom of the spider *Tegenaria agrestis*.

2′,3′-O-Isopropylidene: [4137-57-9]
$C_{13}H_{16}N_4O_6$ 324.293
Mp 240°.

3-Me: 3-Methylxanthosine

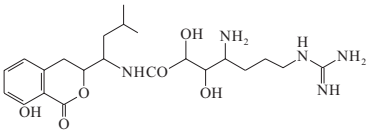
[3080-28-2]
$C_{11}H_{14}N_4O_6$ 298.255
Needles (H_2O). Mp 200° dec.

[5968-90-1]

Magasanik, B. *et al., J. Biol. Chem.*, 1954, **206**, 83 (*isol*)
Bolis, M.E. *et al., J. Biol. Chem.*, 1956, **219**, 917 (*biosynth*)
Jardetzky, C.D. *et al., J.A.C.S.*, 1960, **82**, 222 (*pmr*)
Krishnaswamy, N.P. *et al., Curr. Sci.*, 1966, **35**, 11 (*isol*)
Yoshikawa, M. *et al., Bull. Chem. Soc. Jpn.*, 1967, **40**, 2849-2853 (*5′-phosphate, synth*)
Yamazaki, A. *et al., J.O.C.*, 1967, **32**, 3258 (*synth*)
Holy, A. *et al., Coll. Czech. Chem. Comm.*, 1968, **33**, 2259 (*3′-Xanthylic acid*)
Jones, A.J. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 1970, **65**, 27 (*cmr*)
De Pamphilis, M.L. *et al., Biochemistry*, 1973, **12**, 3714-3724 (*synth, uv, 5′-triphosphate*)
Sowa, T. *et al., Bull. Chem. Soc. Jpn.*, 1975, **48**, 2084-2090 (*phosphate*)
Westhof, E. *et al., Z. Naturforsch., C*, 1975, **30**, 131 (*pmr*)
Koyama, G. *et al., Acta Cryst. B*, 1976, **32**, 969 (*cryst struct*)
Itaya, T. *et al., Chem. Pharm. Bull.*, 1989, **37**, 1235 (*3-Methylxanthosine*)
Ortiz, B. *et al., Eur. J. Biochem.*, 1993, **212**, 263-270 (*pmr, 5′-triphosphate*)
Carr, S.F. *et al., J. Biol. Chem.*, 1993, **268**, 27286-28290 (*5′-phosphate, biol*)
Taggi, A.E. *et al., J.A.C.S.*, 2004, **126**, 10364-10369 (*5′-sulfate*)

Xenocoumacin 1 X-14

[105688-01-5]



$C_{22}H_{35}N_5O_6$ 465.548

Metab. of *Xenorhabdus* bacteria. Shows antiulcer, antiinflammatory and antifungal activity. Antiparasitic agent. Sol. H_2O, MeOH. $[\alpha]_D^{23}$ -57 (c, 0.7 in H_2O). λ_{max} 248 (sh) (ϵ); 347 (ϵ) (0.1*N* NaOH) (Derep). λ_{max} 246 (ϵ 5700); 314 (ϵ 4080) (MeOH) (Derep). λ_{max} 249 (ϵ 5460); 314 (ϵ 3300) (H_2O) (Berdy).

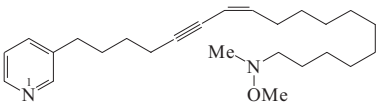
[105762-00-3]

McInerney, B.V. *et al., J. Nat. Prod.*, 1991, **54**, 785 (*isol*)

Xestamine A X-15

N-*Methoxy*-N-*methyl-18-(3-pyridinyl)-11-octadecen-13-yn-1-amine, 9CI*

[131985-15-4]



$C_{25}H_{40}N_2O$ 384.604

Isol. from the marine sponges *Xestospongia wiedenmayeri* and *Calyx podotypa*. Oil. λ_{max} 260 (ϵ 2500); 265 (ϵ 3100); 270 (ϵ 2000) (MeOH) (Derep). λ_{max} 227 (ϵ 12200); 257 (ϵ 2100); 263 (ϵ 2400); 269 (ϵ 1600) (MeOH) (Berdy).

N^1-*Me:* ***Xestamine F***

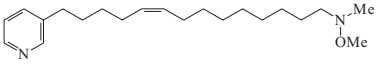
[136945-78-3]
$C_{26}H_{43}N_2O^{\oplus}$ 399.638
Alkaloid from the sponge *Calyx podatypa*. Oil. No counterion specified, presumably chloride. λ_{max} 226 ; 257 ; 269 (MeOH) (Berdy).

Sakemi, S. *et al., J. Nat. Prod.*, 1990, **53**, 995 (*isol, struct*)
Stierle, D.B. *et al., J. Nat. Prod.*, 1991, **54**, 1134 (*Xestamine F*)

Xestamine B X-16

N-*Methoxy*-N-*methyl-14-(3-pyridinyl)-9-tetradecen-1-amine, 9CI*

[131985-16-5]



$C_{21}H_{36}N_2O$ 332.528

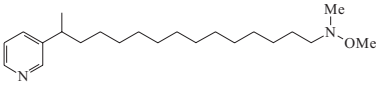
Alkaloid from the marine sponge *Xestospongia wiedenmayeri*. Oil. λ_{max} 260 (ϵ 2500); 265 (ϵ 3100); 270 (ϵ 2000) (MeOH) (Derep). λ_{max} 205 (ϵ 9700); 257 (ϵ 4300); 262 (ϵ 4900); 269 (ϵ 3700) (MeOH) (Berdy).

Sakemi, S. *et al., J. Nat. Prod.*, 1990, **53**, 995 (*isol, struct*)

Xestamine C X-17

N-*Methoxy*-N,ξ-*dimethyl-3-pyridinetetradecanamine, 9CI*

[131985-17-6]



$C_{22}H_{40}N_2O$ 348.571

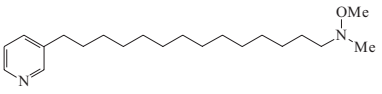
Alkaloid from the marine sponge *Xestospongia wiedenmayeri*. Oil. $[\alpha]_D^{20}$ -12.9 (c, 0.34 in MeOH). λ_{max} 260 (ϵ 2500); 265 (ϵ 3100); 270 (ϵ 2000) (MeOH) (Derep). λ_{max} 205 (ϵ 5200); 256 (ϵ 2700); 262 (ϵ 3100); 269 (ϵ 2300) (MeOH) (Berdy).

Sakemi, S. *et al., J. Nat. Prod.*, 1990, **53**, 995

(*isol, struct*)

Xestamine D X-18

N-*Methoxy*-N-*methyl-3-pyridinetetradecanamine, 9CI*
[136945-76-1]



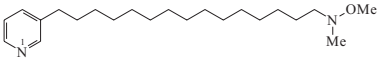
$C_{21}H_{38}N_2O$ 334.544
Alkaloid from the sponge *Calyx podatypa*. Obt. as a mixt. with Xestamine E. λ_{max} 226 (ϵ 8000); 257 (ϵ 2200); 262 (ϵ 2500); 269 (ϵ 2800) (MeOH) (Berdy).

N^1-*Me:* ***Xestamine G***
[136945-79-4]
$C_{22}H_{41}N_2O^{\oplus}$ 349.579
Alkaloid from the sponge *Calyx podatypa*. Obt. as a mixt. with Xestamine H. λ_{max} 226 ; 257 ; 269 (MeOH) (Berdy).

Stierle, D.B. *et al., J. Nat. Prod.*, 1991, **54**, 1134 (*isol, pmr, cmr, struct*)
Wang, Y. *et al., J.O.C.*, 2003, **68**, 3090-3098 (*synth*)

Xestamine E X-19

N-*Methoxy*-N-*methyl-3-pyridinepentadecanamine*
[136945-77-2]



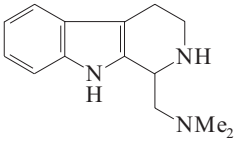
$C_{22}H_{40}N_2O$ 348.571
Alkaloid from the sponge *Calyx podatypa*. Obt. as a mixt. with Xestamine D. λ_{max} 226 ; 257 ; 269 (MeOH) (Berdy).

N^1-*Me:* ***Xestamine H***
[136945-80-7]
$C_{23}H_{43}N_2O^{\oplus}$ 363.605
Alkaloid from the sponge *Calyx podatypa*. Obt. as a mixt. with Xestamine G. λ_{max} 226 ; 257 ; 269 (MeOH) (Berdy).

Stierle, D.B. *et al., J. Nat. Prod.*, 1991, **54**, 1134 (*isol, pmr, cmr, struct*)

Xestoamine X-20

[145237-04-3]

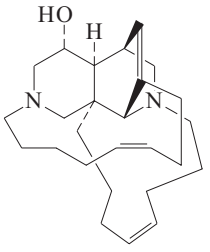


$C_{14}H_{19}N_3$ 229.324
Alkaloid from the New Caledonian sponge *Xestospongia* sp. Amorph. Opt. inactive.

Quirion, J.-C. *et al., J. Nat. Prod.*, 1992, **55**, 1505 (*isol, ir, pmr, cmr, ms, struct*)

Xestocyclamine A X-21

[151232-83-6]

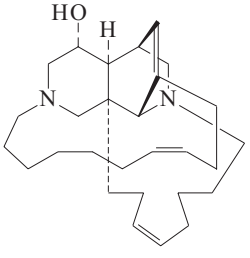


$C_{26}H_{40}N_2O$ 396.615
Alkaloid from the marine sponge *Xestospongia* sp. Protein kinase C inhibitor. $[\alpha]_D$ -13.5 (c, 0.019 in MeOH).

Rodríguez, J. *et al., J.A.C.S.*, 1993, **115**, 10436 (*isol, ir, pmr, cmr, ms*)
Rodríguez, J. *et al., Tet. Lett.*, 1994, **35**, 4719 (*struct*)

Xestocyclamine B X-22

[157207-89-1]

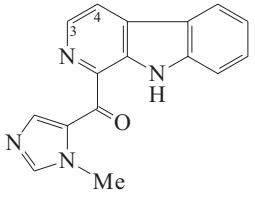


$C_{28}H_{44}N_2O$ 424.668
Alkaloid from the sponge *Xestospongia* sp. Protein kinase inhibitor.

Rodriguez, J. *et al., Tet. Lett.*, 1994, **35**, 4719 (*isol, pmr, cmr, struct*)

Xestomanzamine A X-23

*(1-Methyl-1*H*-imidazol-5-yl)-9*H*-pyrido[3,4-*b*]indol-1-ylmethanone, 9CI*
[164301-25-1]



$C_{16}H_{12}N_4O$ 276.297
Alkaloid from the Okinawan marine sponge *Xestospongia* sp. Yellow needles ($CHCl_3$/MeOH). Mp 185-186°. λ_{max} 221 (ϵ 7400); 257 (ϵ 1700); 300 (ϵ 3900); 395 (ϵ 1600) (MeOH) (Berdy).

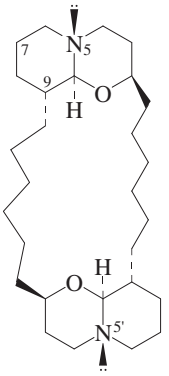
N-*De-Me:* **N-*Demethylxestomanzamine A***
[581782-69-6]
$C_{15}H_{10}N_4O$ 262.27
Alkaloid from an Indonesian sponge. Yellow powder. Mp 192° dec. λ_{max} 218 ; 258 ; 298 ; 356 ; 395 (MeOH).

3,4-Dihydro: ***Xestomanzamine B***
[164301-24-0]
$C_{16}H_{14}N_4O$ 278.313
Alkaloid from *Xestospongia* sp. Exhibits weak cytotoxicity against KB cells. Yellow oil. λ_{max} 222 (ϵ 27200); 270 (ϵ 10300); 298 (ϵ 16500); 388 (ϵ 4500) (MeOH) (Berdy).

Kobayashi, M. *et al., Tetrahedron*, 1995, **51**, 3727-3736 (*isol, uv, ir, pmr, cmr, cryst struct, Xestomanzamine B*)
Molina, P. *et al., Tet. Lett.*, 1996, **37**, 9353-9356 (*synth, Xestomanzamine B*)
Panosyan, F.B. *et al., Can. J. Chem.*, 2001, **79**, 1110-1114 (*synth*)
Burm, B.E.A. *et al., Heterocycles*, 2001, **55**, 495-503 (*synth, Xestomanzamine B*)
Rao, K.V. *et al., J. Nat. Prod.*, 2003, **66**, 823-828 (*N-Demethylxestomanzamine A*)

Xestospongin A X-24

Araguspongine D
[88840-02-2]



Absolute Configuration

$C_{28}H_{50}N_2O_2$ 446.715
The abs. configs. of Xestospongins A and C and Araguspongine B were revised in 1998. The work suggested that the abs. configs. of the other nat. prods. in the series required revision. Araguspongine D was found to be partially racemic Xestospongin A. Isol. from the marine sponge *Xestospongia exigua* and from an Okinawan *Xestospongia* sp. Shows vasodilator props. Cryst. (Et_2O). Mp 135-136°. $[\alpha]_D$ +6.9 (c, 0.84 in $CHCl_3$) (+ 10). Related to Petrosine, P-290.

*7*S*-Hydroxy:* ***7*S*-Hydroxyxestospongin A***
$C_{28}H_{50}N_2O_3$ 462.715
Isol. from *Xestospongia* sp. Cryst. (Me_2CO). Mp 166-167°. $[\alpha]_D$ +4.7 (c, 0.25 in $CHCl_3$).

5,9-Diepimer: ***Xestospongin C****. Araguspongine E*
[88903-69-9]
$C_{28}H_{50}N_2O_2$ 446.715
Isol. from *Xestospongia exigua*. Calcium channel blocker. Inositol triphosphate Ins(1,4,5)P_3 receptor antagonist. Shows vasodilator props. Cryst. (Et_2O). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 149-150°. $[\alpha]_D$ -2.4 (c, 0.54 in $CHCl_3$). Struct. of Araguspongine E revised in 1998.

5,9-Diepimer, 9-hydroxy: ***Xestospongin D****. Araguspongine A*
[88840-00-0]

$C_{28}H_{50}N_2O_3$ 462.715
Isol. from *Xestospongia exigua* and *Haliclona* sp. Also isol. as racemate from sponge *Niphates* sp. Shows vasodilator props, human cancer cell inhibitory and antimicrobial activity. Cryst. (Et_2O). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 156-157°. $[\alpha]_D$ +18.43 (c, 1.08 in $CHCl_3$).

5,9-Diepimer, 9-hydroxy, N^5*-oxide:* ***Araguspongine K***
$C_{28}H_{50}N_2O_4$ 478.714
Alkaloid from *Xestospongia exigua*. Needles. $[\alpha]_D^{25}$ +2.6 (c, 0.35 in $CHCl_3$).

2,2′,5,5′-Tetraepimer: ***Araguspongine M***
$C_{28}H_{50}N_2O_2$ 446.715
Alkaloid from the sponge *Neopetrosia exigua*. $[\alpha]_D$ -4.6 (c, 0.5 in $CHCl_3$).

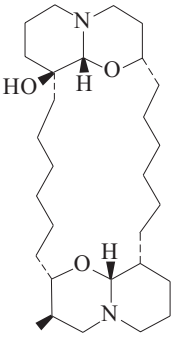
5,5′,9,9′-Tetraepimer: ***Araguspongine B***
[123000-02-2]
$C_{28}H_{50}N_2O_2$ 446.715
Alkaloid from an Okinawan sponge *Xestospongia* sp. Shows vasodilator activity. Somatostatin inhibitor. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Isol. as racemate, both enantiomers characterised. Abs. config. indicated refers to (-)-form ($[\alpha]_D$ -15°). Abs. config. revised in 1998.

[123048-14-6 , 123000-03-3 , 123000-06-6 , 123000-07-7]

Nakagawa, M. *et al., Tet. Lett.*, 1984, **25**, 3227 (*ir, pmr, cmr, struct, cryst struct*)
Kobayashi, M. *et al., Chem. Pharm. Bull.*, 1989, **37**, 1676 (*isol, ir, pmr, cmr, struct, abs config*)
Hoye, T.R. *et al., J.A.C.S.*, 1994, **116**, 2617 (*synth*)
Pettit, G.R. *et al., Bioorg. Med. Chem. Lett.*, 1996, **6**, 1313 (*isol, cryst struct, rac-Xestospongin D*)
Gafni, J. *et al., Neuron*, 1997, **19**, 723-733 (*Xestospongin C, pharmacol*)
Kobayashi, M. *et al., Heterocycles*, 1998, **47**, 195-203 (*pmr, cmr, ms, struct*)
Schultz, A.G. *et al., J.A.C.S.*, 1998, **120**, 8259-8260 (*synth, abs config*)
Matzanke, N. *et al., Org. Prep. Proced. Int.*, 1998, **30**, 3-51 (*rev, synth*)
Moon, S.-S. *et al., J. Nat. Prod.*, 2002, **65**, 249-254 (*Xestospongin D, abs config, 7-Hydroxyxestospongin A*)
Orabi, K.Y. *et al., J. Nat. Prod.*, 2002, **65**, 1782-1785 (*Araguspongines A,K*)
Liu, H. *et al., Mar. Drugs*, 2004, **2**, 154-163 (*Araguspongine M*)

Xestospongin B X-25

[88840-01-1]

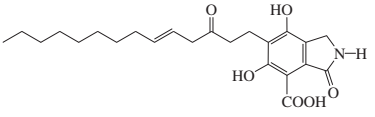


$C_{29}H_{52}N_2O_3$ 476.741
Isol. from the marine sponge *Xestospongia exigua*. Shows vasodilator props. Cryst. (Et_2O). Mp 179-181°. $[\alpha]_D$ +7.1 (c, 0.91 in $CHCl_3$).

Demethyl: ***Demethylxestospongin B***
$C_{28}H_{50}N_2O_3$ 462.715
Alkaloid from a New Caledonian sponge *Xestospongia* sp. Amorph. $[\alpha]_D^{20}$ +6 (c, 0.8 in $CHCl_3$).

Nakagawa, M. *et al., Tet. Lett.*, 1984, **25**, 3227 (*ir, pmr, cmr, struct*)
Quirion, J.-C. *et al., J. Nat. Prod.*, 1992, **55**, 1505 (*Demethylxestospongin B*)

Xylactam X-26



$C_{23}H_{31}NO_6$ 417.501
Similar to Xylaral. Prod. by *Xylaria euglossa*. Powder. λ_{max} 242 ; 277 ; 325 ($CHCl_3$).

Wang, X.-N. *et al., J. Antibiot.*, 2005, **58**, 268-270 (*isol, pmr, cmr, ms*)

Xylaramide† X-27

*2-Hydroxy-*N*-(2-phenylethenyl)propanamide.* N*-(2-Phenethenyl)-2-hydroxypropanamide.* N*-Styryllactamide*

$PhCH{=}CHNHCOCH(OH)CH_3$

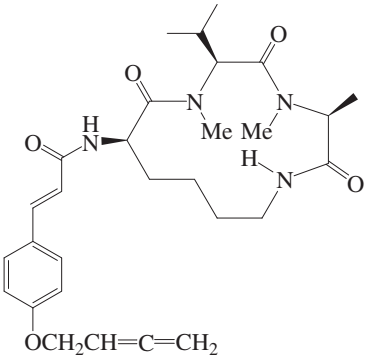
$C_{11}H_{13}NO_2$ 191.229

(±)-(E)-form
Isol. from culture fluid of the ascomycete *Xylaria longipes* A19-91. Oil. Not found in CA indexes. λ_{max} 279 (ε 10600) (MeOH).

Schneider, G. *et al., Z. Naturforsch., C*, 1996, **51**, 802-806 (*isol, uv, ir, pmr, cmr, ms*)

Xyloallenolide A X-28

[329901-31-7]

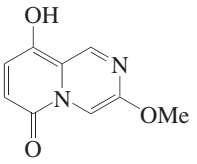


$C_{29}H_{40}N_4O_5$ 524.659
Isol. from *Xylaria* sp. No. 2508. Cryst. Mp 82-85°. $[\alpha]_D^{25}$ -34.6 (c, 0.06 in $CHCl_3$). λ_{max} 217 (ε 38000); 291 (ε 29000) ($CHCl_3$).

Lin, Y. *et al., Tet. Lett.*, 2001, **42**, 449-451 (*isol, ir, pmr, cmr, uv*)

Xylogranatinine X-29

*9-Hydroxy-3-methoxy-6*H*-pyrido[1,2-a]pyrazin-6-one*
[1000974-03-7]

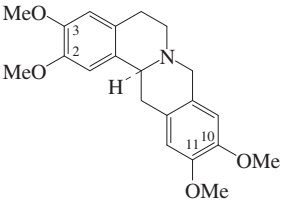


$C_9H_8N_2O_3$ 192.174
Alkaloid from the fruit of the mangrove *Xylocarpus granatum*. Powder. λ_{max} 204 ; 227 ; 296 ; 343 (MeCN).

Zhou, Y. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2007, **43**, 426-428 (*isol, pmr, cmr*)

Xylopinine X-30

*5,8,13,13a-Tetrahydro-2,3,10,11-tetramethoxy-6*H*-dibenzo[a,g]quinolizine, 9CI. Norcoralydine.* O,O*-Dimethylcoreximine.* O,O*-Dimethylgovanine*
[4216-86-8]



(*S*)-*form*

$C_{21}H_{25}NO_4$ 355.433

(S)-form [523-02-4]
Alkaloid from *Xylopia discreta, Xylopia buxifolia, Stephania* spp., *Polyalthia* spp., *Guatteria* spp., *Duguetia* spp., first known as a semisynthetic product. Shows antitussive, central adrenolytic and soporific activities. Inhibitor of atrial activity in guinea pig heart. Light yellow prismatic cryst. ($CHCl_3$/Me_2CO). Mp 182-183° (177°). $[\alpha]_D$ -297 (c, 1 in $CHCl_3$).

▶ HQ1793000

Hydrochloride: Mp 216-219° dec.

Hydrobromide: [51873-48-4]
Needles ($MeOH/Et_2O$). Mp 236-237° (222-225° dec.). $[\alpha]_D$ -227 (c, 1.00 in EtOH).

N-*Oxide (α-):* **cis-*Xylopinine* N-*oxide***
[109063-91-4]
$C_{21}H_{25}NO_5$ 371.432
Alkaloid from the roots of *Stephania suberosa*. $[\alpha]_D^{25}$ -96 (c, 0.41 in MeOH).

N-*Oxide (β-):* **trans-*Xylopinine* N-*oxide***
[109063-90-3]
$C_{21}H_{25}NO_5$ 371.432
Alkaloid from the roots of *Stephania suberosa*. $[\alpha]_D^{25}$ -200 (c, 0.44 in MeOH).

O^3,O^{10},O^{11}*-Tri-de-Me:* ***Artavenustine***
[88668-27-3]
$C_{18}H_{19}NO_4$ 313.352
Minor alkaloid from the stem bark of *Artabotrys venustus*. Amorph. $[\alpha]_D$ -127 (c, 0.26 in EtOH).

O^3,O^{10},O^{11}*-Tri-de-Me, 11-*O*-β-D-gluco-*

pyranoside: ***Dauricoside****. 11-*O*-β-D-Glucopyranosylartavenustine. Artavenustine 11-*O*-β-D-glucopyranoside*
[155416-25-4]
$C_{24}H_{29}NO_9$ 475.494
Alkaloid from rhizomes of *Menispermum dauricum*. Inhibits blood-platelet aggregation. Prisms + $1H_2O$ (MeOH) (as hydrochloride). Mp 216-217° (hydrochloride). $[\alpha]_D^{22}$ -185.5 (c, 0.5 in MeOH).

O^2,O^{10},O^{11}*-Tri-de-Me:* ***Pessoine***
[88668-29-5]
$C_{18}H_{19}NO_4$ 313.352
Alkaloid from trunk bark of *Annona spinescens*. Amorph. $[\alpha]_D^{20}$ -160 (c, 0.2 in MeOH).

O^{10},O^{11}*-Di-de-Me:* ***Spinosine***
[175274-51-8]
$C_{19}H_{21}NO_4$ 327.379
Alkaloid from trunk bark of *Annona spinescens*. Amorph. $[\alpha]_D^{20}$ -35 (c, 0.3 in EtOH).

O^3,O^{11}*-Di-de-Me:* ***Isocoreximine***
$C_{19}H_{21}NO_4$ 327.379
Alkaloid from *Toddalia asiatica*. Light yellowish prisms ($CHCl_3$/MeOH). Mp 238-242°. $[\alpha]_D^{25}$ -361 (c, 0.1 in MeOH). λ_{max} 225 (log ε 3.18); 286 (log ε 2.93) (EtOH).

O^3,O^{10}*-Di-de-Me:* ***10-Demethyldiscretine****. 11-*O*-Methylartavenustine*
[91200-36-1]
$C_{19}H_{21}NO_4$ 327.379
Alkaloid from the stem bark of *Guatteria discolor* and *Artabotrys venustus*. Noncryst. $[\alpha]_D$ -178 (c, 0.27 in MeOH). λ_{max} 208 (log ε 4.49); 226 (sh) (log ε 4.06); 289 (log ε 3.71) (EtOH).

O^2,O^{10}*-Di-de-Me:* ***Govadine***
[60342-43-0]
$C_{19}H_{21}NO_4$ 327.379
Alkaloid from the leaves and stems of *Corydalis govaniana*. Mp 238-240°. $[\alpha]_D$ -128 (Py).

O^2*-De-Me:* ***Govanine****. Corydalis L*
[59444-66-5]
$C_{20}H_{23}NO_4$ 341.406
Alkaloid from leaves and stems of *Corydalis govaniana*. Cryst. (MeOH). Mp 168-170°. $[\alpha]_D^{26}$ -319 ($CHCl_3$). Incorr. descr. as (*R*-).

O^3*-De-Me:* ***Discretine***
[6872-75-9]
$C_{20}H_{23}NO_4$ 341.406
Alkaloid from *Xylopia discreta, Pachypodanthium staudtii, Guatteria discolor* and *Guatteria scandens*. Claimed to have analgesic, antiinflammatory, antipyretic and vasodepressor activity. Fine needles (Me_2CO/Et_2O). Mp 180-181° dec. $[\alpha]_D$ -300 (c, 1.44 in $CHCl_3$).

O^2,O^{11}*-Di-de-Me,* N*-Me:* ***Phellodendrine***
[6873-13-8]
$C_{20}H_{24}NO_4^{\oplus}$ 342.414
Quaternary alkaloid from *Phellodendron amurense*. Prisms (as iodide). Mp 258-258.5° dec. (iodide). $[\alpha]_D^{30}$ -130.

O^2,O^{11}*-Di-de-Me:* ***Coreximine****. Coramine. Alkaloid F29*
[483-45-4]
$C_{19}H_{21}NO_4$ 327.379
Alkaloid from *Dicentra eximia, Papaver somniferum* (opium poppy) and *Corydalis* spp. Prisms ($CHCl_3$). Mp 254-256°. $[\alpha]_D^{25}$ -420 (c, 0.69 in Py).

O^{11}*-De-Me, hydrobromide:* Mp 245-246°. $[\alpha]_D^{20}$ -240 (c, 1.0 in MeOH).

O^{11}*-De-Me:* ***Corytenchine***
[18090-68-1]
$C_{20}H_{23}NO_4$ 341.406
Alkaloid from *Corydalis ochotensis*. Cryst. (MeOH). Mp 257-258°. $[\alpha]_D^{30}$ -268 (c, 0.89 in $CHCl_3$).

(±)-*form* [13407-95-9]
Cryst. (MeOH/Et_2O). Mp 148-149°.

▶HQ1791000

N-*Oxide (α-):* [75821-48-6]
Synthetic. Cryst. (MeOH/$CHCl_3$). Mp 130-135°.

N-*Oxide (β-):* [75821-47-5]
Synthetic. Cryst. (MeOH/$CHCl_3$). Mp 167-168°.

O^3,O^{10}*-Di-de-Me:* [62744-19-8]
Synthetic. Mp 218-220°.

O^2,O^{10}*-Di-de-Me:*Synthetic. Cryst. ($CHCl_3$/MeOH). Mp 240-241°.

O^2*-De-Me:*Synthetic. Mp 170-172°.

O^3*-De-Me, hydrochloride:*
Powder (EtOH). Mp 212-213°.

O^3*-De-Me:* [40225-82-9]
Powder (MeOH or Me_2CO/Et_2O). Mp 182-184° dec. Could not be resolved.

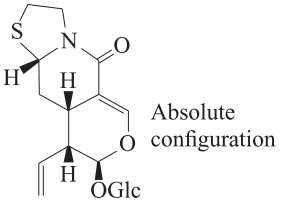
O^2,O^{11}*-Di-de-Me:* [6719-48-8]
Cryst. (EtOH). Mp 233-234°.

O^{11}*-De-Me:* [26863-94-5]
Synthetic. Cryst. ($CHCl_3$/MeOH). Mp 236-237°.

Manske, R.H.F. *et al., Can. J. Res., Sect. B*, 1938, **16**, 81 (*Coreximine*)
Corrodi, H. *et al., Helv. Chim. Acta*, 1956, **39**, 889 (*synth, abs config*)
Schmutz, J. *et al., Helv. Chim. Acta*, 1959, **42**, 335 (*Xylopinine, Discretine, isol, uv, struct*)
Tomita, M. *et al., Yakugaku Zasshi*, 1960, **80**, 880; 1138 (*Phellodendrine*)
Battersby, A.R. *et al., Tetrahedron*, 1961, **14**, 46 (*Coreximine, synth, uv*)
Bernouilli, F. *et al., Helv. Chim. Acta*, 1963, **46**, 323 (*Discretine, struct*)
Ninomiya, I. *et al., Chem. Comm.*, 1973, 137 (*synth*)
Irie, H. *et al., Chem. Pharm. Bull.*, 1973, **21**, 855 (*synth*)
Kametani, T. *et al., Chem. Pharm. Bull.*, 1973, **21**, 907 (*Discretine, synth*)
Tani, C. *et al., Chem. Pharm. Bull.*, 1975, **23**, 313 (*synth*)
Mehra, K. *et al., Indian J. Chem., Sect. B*, 1976, **14**, 58; 216; 844 (*Govadine, Govanine*)
Lu, S.T. *et al., J.C.S. Perkin 1*, 1976, 63 (*Corytenchine, uv, ms, pmr*)
Khamdamov, I. *et al., CA*, 1977, **87**, 15836x (*pharmacol*)
Govindachari, T.R. *et al., Indian J. Chem., Sect. B*, 1977, **15**, 873 (*Corytenchine, synth, uv, pmr, ms*)
Kametani, T. *et al., J.C.S. Perkin 1*, 1977, 1151; 1981, 2830 (*synth*)
Chiang, H.-C. *et al., J.O.C.*, 1977, **42**, 3190 (*synth, 10-Demethyldiscretine*)
Brockmann-Hanssen, E. *et al., J.O.C.*, 1977, **42**, 3588 (*Coreximine, pmr*)
Tourwe, O. *et al., Org. Magn. Reson.*, 1977, **9**, 341 (*pmr*)
Chinnasamy, P. *et al., Tetrahedron*, 1980, **36**, 1515 (*oxides*)
Lin, Z. *et al., Fudan Xuebao, Ziran Kexuebau*, 1981, **20**, 446-449; *CA*, **97**, 39192s (*Corydalis L*)
Ohiri, F.C. *et al., Planta Med.*, 1983, **49**, 162 (*Discretine, pmr*)
Meyers, A.I. *et al., Angew. Chem., Int. Ed.*, 1984, 458 (*synth*)
Mali, R.S. *et al., Indian J. Chem., Sect. B*, 1984, **23**, 268 (*Discretine, synth, uv, pmr*)
Hocquemiller, R. *et al., J. Nat. Prod.*, 1984, **47**, 353 (*10-Demethyldiscretine*)
Cavé, A. *et al., J. Nat. Prod.*, 1986, **49**, 602 (*Artavenustine, 10-Demethyldiscretine*)
Patra, A. *et al., Phytochemistry*, 1987, **26**, 547 (*oxides*)
Dai-Ho, G. *et al., J.O.C.*, 1988, **53**, 5113 (*synth, ir, pmr, cmr*)
Orito, K. *et al., Org. Prep. Proced. Int.*, 1989, **21**, 309 (*synth*)
Czarnocki, Z. *et al., J. Chem. Res., Synop.*, 1992, 334 (*synth*)
Cobas, A. *et al., J.O.C.*, 1992, **57**, 6765 (*synth*)
Hu, S.-M. *et al., Chem. Pharm. Bull.*, 1993, **41**, 1866 (*Dauricoside*)
Takano, S. *et al., Heterocycles*, 1993, **35**, 47 (*synth*)
Queiroz, E.F. *et al., J. Nat. Prod.*, 1996, **59**, 438 (*Spinosine, Pessoine*)
Comins, D.L. *et al., Tetrahedron*, 1997, **48**, 16327-16340 (*synth*)
Tsai, I.-L. *et al., Phytochemistry*, 1998, **48**, 1377-1382 (*Isocoreximine*)
Davis, F.A. *et al., J.O.C.*, 2002, **67**, 1290-1296 (*synth*)
Mujahidin, D. *et al., Eur. J. Org. Chem.*, 2005, 2689-2693 (*synth*)

Xylostosidine X-31

[74518-57-3]



$C_{18}H_{25}NO_8S$ 415.463
Alkaloid from *Lonicera xylosteum* (Caprifoliaceae). Mp 190-191°. $[\alpha]_D^{20}$ -289 (c, 0.56 in MeOH).

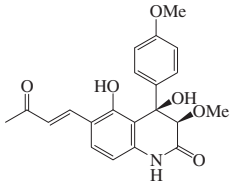
S-*Oxide (*R-*):* ***Loxylostosidine B***
[78184-23-3]
$C_{18}H_{25}NO_9S$ 431.463
Trace alkaloid from *Lonicera xylosteum* (Caprifoliaceae). Noncryst. $[\alpha]_D^{20}$ -287 (c, 0.42 in MeOH).

S-*Oxide (*S-*):* ***Loxylostosidine A***
[78119-20-7]
$C_{18}H_{25}NO_9S$ 431.463
Alkaloid from *Lonicera xylosteum* (Caprifoliaceae). Noncryst. $[\alpha]_D^{20}$ -248 (c, 0.65 in MeOH).

Chaudhuri, R.K. *et al., Helv. Chim. Acta*, 1980, **63**, 1045 (*uv, ir, pmr, cmr, ms, struct*)
Chaudhuri, R.K. *et al., Tet. Lett.*, 1981, 559 (*oxides*)
Tietze, L.F. *et al., Annalen*, 1989, 1241 (*synth, Xylostosidine, Loxylostosidine A*)

Yaequinolone B Y-1

[889659-55-6]



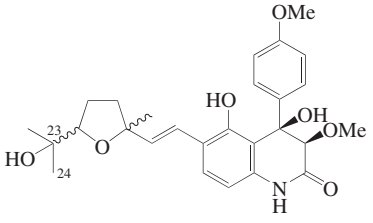
Relative Configuration

$C_{21}H_{21}NO_6$ 383.4
Prod. by *Penicillium* sp. FKI-2140. Insecticidal agent. Pale yellow powder. $[\alpha]_D^{23}$ +41.2 (c, 0.1 in EtOH). λ_{max} 228 (ϵ 15600); 334 (ϵ 7900); 357 (ϵ 8900) (EtOH).

Uchida, R. *et al., J. Antibiot.*, 2006, **59**, 646-651; 652-658 (*isol, pmr, cmr*)

Yaequinolone C Y-2

[889659-56-7]



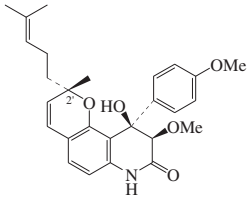
Relative Configuration

$C_{27}H_{33}NO_7$ 483.56
Prod. by *Penicillium* sp. FKI-2140. Insecticidal agent. Pale yellow powder. $[\alpha]_D^{23}$ +32.4 (c, 0.1 in EtOH). λ_{max} 220 (ϵ 25900); 279 (ϵ 13800); 290 (ϵ 10400); 324 (ϵ 12900) (EtOH).

23-Deoxy, 23,24-didehydro: ***Yaequinolone F***
[889659-59-0]
$C_{27}H_{31}NO_6$ 465.545
Prod. by *Penicillium* sp. FKI-2140. Insecticidal agent. Pale yellow powder. λ_{max} 219 (ϵ 20600); 279 (ϵ 11800); 287 (ϵ 9100); 324 (ϵ 10800) (EtOH).

Uchida, R. *et al., J. Antibiot.*, 2006, **59**, 646-651; 652-658 (*isol, pmr, cmr*)

Yaequinolone J_1 Y-3



Relative Configuration

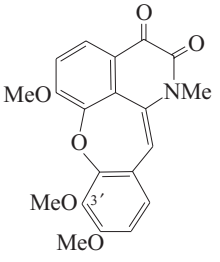
$C_{27}H_{31}NO_5$ 449.546
Prod. by *Penicillium* sp. FKI-2140. Insecticidal agent. Pale yellow powder. $[\alpha]_D^{23}$ -65.6 (c, 0.1 in EtOH). λ_{max} 218 (ϵ 21700); 284 (ϵ 7900); 295 (ϵ 8600); 318 (ϵ 8000); 324 (ϵ 7200) (EtOH).

2′-Epimer: ***Yaequinolone J_2***
$C_{27}H_{31}NO_5$ 449.546
Prod. by *Penicillium* sp. FKI-2140. Pale yellow powder. $[\alpha]_D^{23}$ +181.7 (c, 0.1 in EtOH). λ_{max} 218 (ϵ 17900); 284 (ϵ 9300); 295 (ϵ 9800); 324 (ϵ 8700) (EtOH).

Uchida, R. *et al., Org. Lett.*, 2005, **7**, 5701-5704 (*pmr, cmr, struct*)
Uchida, R. *et al., J. Antibiot.*, 2006, **59**, 646-651; 652-658 (*isol, activity*)

Yagonine Y-4

[95377-96-1]



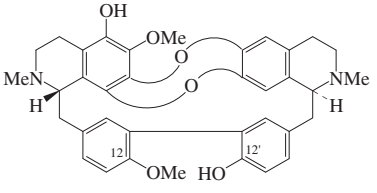
$C_{20}H_{17}NO_6$ 367.357
Alkaloid from *Sarcocapnos enneaphylla* (Papaveraceae). Red needles (EtOH). Mp 226-227°.

O$^{3'}$-De-Me: ***3,4-Dioxosarcocapnidine***
[120186-25-6]
$C_{19}H_{15}NO_6$ 353.331
Trace alkaloid from aerial parts of *Sarcocapnos baetica* ssp. *integrifolia* (Papaveraceae). Orange amorph. solid.

Campello, M.J. *et al., Tet. Lett.*, 1984, **25**, 5933 (*uv, ir, pmr, cmr, ms, struct*)
Castedo, L. *et al., Heterocycles*, 1988, **27**, 2783 (*3,4-Dioxosarcocapnidine*)

Yanangine Y-5

5-Hydroxytiliacorinine
[105705-86-0]



$C_{36}H_{36}N_2O_6$ 592.69
Alkaloid from *Tiliacora triandra* (Menispermaceae). Cryst. + ½ CH_2Cl_2. Mp 237-240°. $[\alpha]_D^{19.2}$ +356 (c, 0.6 in $CHCl_3$).

N$^{2'}$*-De-Me:* ***Noryanangine***
[119002-88-9]
$C_{35}H_{34}N_2O_6$ 578.663
Alkaloid from the aerial parts of *Tiliacora triandra* (Menispermaceae). Cryst. + ½CH_2Cl_2. Mp 196-198°. $[\alpha]_D^{20}$ +295 (c, 0.5 in $CHCl_3$).

O^5*-Me:* **N-*Methyltiliamosine***
[87686-96-2]
$C_{37}H_{38}N_2O_6$ 606.717
Alkaloid from leaves of *Tiliacora racemosa* (Menispermaceae). Mp 142-145° (synth). $[\alpha]_D^{26}$ +281 (c, 0.89 in $CHCl_3$) (synth). $[\alpha]_D^{25}$ +510 (c, 1.5 in $CHCl_3$).

O^5*-Me,* N$^{2'}$*-de-Me:* ***Tiliamosine***
[62592-71-6]
$C_{36}H_{36}N_2O_6$ 592.69
Alkaloid from leaves and stems of *Pachygone ovata* and leaves of *Tiliacora racemosa* (Menispermaceae). Amorph. solid ($CHCl_3$/MeOH). Mp 167-170°. $[\alpha]_D^{25}$ +267 (c, 0.48 in $CHCl_3$).

O^5*-Me,* N$^{2'}$*-de-Me,* O$^{12'}$,N$^{2'}$*-di-Ac:*
Cryst. ($CHCl_3$). Mp 182-184°. $[\alpha]_D^{25}$ +423 (c, 0.35 in $CHCl_3$).

O^5,O$^{12'}$*-Di-Me:*
Semisynthetic; *O,O,N,N*-tetra-Me deriv. of Pachygonamine. Amorph. Mp 157-160°. $[\alpha]_D^{24}$ +230 (c, 0.59 in $CHCl_3$).

O^6*-De-Me,* O^5*-Me:*
Semisynthetic; di-*N*-Me deriv. of Pachygonamine. Cryst. ($CHCl_3$/MeOH). Mp 199-202° dec. $[\alpha]_D^{25}$ +327 (c, 0.43 in $CHCl_3$).

O^6*-De-Me,* O^5*-Me,* N$^{2'}$*-de-Me:* **N-*Methylpachygonamine***
[87686-94-0]
$C_{35}H_{34}N_2O_6$ 578.663
Alkaloid from the leaves and stems of *Pachygone ovata* (Menispermaceae). Amorph. ($CHCl_3$/MeOH). Mp 182-185° dec. $[\alpha]_D^{27}$ +287 (c, 0.23 in MeOH).

O^6*-De-Me,* O^5*-Me, di-*N*-de-Me:* ***Pachygonamine***
[87686-93-9]
$C_{34}H_{32}N_2O_6$ 564.637
Alkaloid from the leaves and stems of *Pachygone ovata* (Menispermaceae). Amorph. ($CHCl_3$). Mp 225-227° dec. $[\alpha]_D^{25}$ +257 (c, 0.28 in MeOH).

O^{12}*-De-Me,* O$^{12'}$*-Me:* ***Tilianangine****. 5-Hydroxyyanangcorinine*
[105801-15-8]
$C_{36}H_{36}N_2O_6$ 592.69
Alkaloid from *Tiliacora triandra* (Menispermaceae). Amorph. Mp 143-149°. $[\alpha]_D^{19.7}$ +258.6 (c, 0.6 in $CHCl_3$).

13′-Hydroxy, O^5*-Me:* ***Tiliacosine***
[412913-17-8]
$C_{37}H_{38}N_2O_7$ 622.716
Alkaloid from the leaves of *Tiliacora racemosa*.

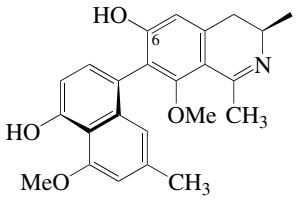
13′-Hydroxy, O^5*-Me,* N$^{2'}$*-de-Me:* ***Tiliasine***
[412913-18-9]
$C_{36}H_{36}N_2O_7$ 608.69
Alkaloid from the leaves of *Tiliacora racemosa*.

Guha, K.P. *et al., Tet. Lett.*, 1976, 4241 (*Tiliamosine, uv, ir, pmr, ms, struct*)
Cassels, B.K. *et al., Heterocycles*, 1980, **14**, 211 (*Tiliamosine, abs config*)
Sultanbawa, M.U.S. *et al., Heterocycles*, 1983, **20**, 1927 (*Pachygonamine, N-Methylpachygonamine*)
Pachaly, P. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1986, **319**, 841; 872 (*Yanangine, isol, uv, ir, pmr, cmr, ms, struct*)
Pachaly, P. *et al., Planta Med.*, 1988, **54**, 433 (*Noryanangine, Norisoyanangine*)
Ray, A.K. *et al., Phytochemistry*, 1989, **28**, 675; 1990, **29**, 1023 (*Tiliamosine, N-Methyltiliamosine, cmr*)
Schiff, P.L. *et al., J. Nat. Prod.*, 1997, **60**, 934-953 (*Tiliamosine, pmr*)

Seal, T. *et al., Nat. Prod. Sci.*, 2001, **7**, 83-86; *CA*, **136**, 322041 (*Tiliacosine, Tiliasine*)

Yaoundamine A Y-6

[188417-17-6]



$C_{24}H_{25}NO_4$ 391.466

Alkaloid from *Ancistrocladus korupensis* (Ancistrocladaceae). Antimalarial agent. Light yellow solid. $[\alpha]_D$ +240 (c, 0.3 in MeOH). λ_{max} 230 (log ϵ 4.64); 310 (log ϵ 4.08); 322 (log ϵ 4.04); 337 (log ϵ 4.03); 381 (log ϵ 4.3) (MeOH).

6-O-α-L-Rhamnopyranoside: ***Yaoundamine B***

[188131-26-2]

$C_{30}H_{35}NO_8$ 537.608

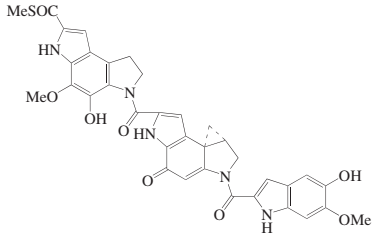
Alkaloid from *Ancistrocladus korupensis*. Antimalarial agent. Light yellow solid. $[\alpha]_D$ -82 (c, 0.3 in MeOH). λ_{max} 230 (log ϵ 4.72); 269 (log ϵ 4.06); 309 (log ϵ 4.11); 317 (log ϵ 4.1) (MeOH). λ_{max} 230 (ϵ 63650); 269 (ϵ 15020); 309 (ϵ 12960); 317 (ϵ 12400) (MeOH) (Berdy).

Bringmann, G. *et al., Tetrahedron*, 1997, **53**, 2817 (*cd, abs config*)

Hallock, Y.F. *et al., Tetrahedron*, 1997, **53**, 8121 (*isol, uv, ir, pmr, cd, cd*)

Yatakemycin Y-7

[606136-98-5]



Absolute Configuration

$C_{35}H_{29}N_5O_8S$ 679.709

Related to Duocarmycin A, D-952 and Rachelmycin, R-4. Struct. revised in 2004. Prod. by *Streptomyces* sp. TP-A0356. Antifungal and cytotoxic agent. Yellow powder. Mp > 220° dec. $[\alpha]_D^{24}$ +99.9 (c, 0.39 in DMF). λ_{max} 210 (ϵ 31200); 278 (sh) ; 310 (sh) ; 382 (ϵ 32600) (MeOH).

Igarashi, Y. *et al., J. Antibiot.*, 2003, **56**, 107-113 (*isol, pmr, cmr, ms, activity*)

Tichenor, M.S. *et al., J.A.C.S.*, 2006, **128**, 15683-15696 (*synth, abs config*)

Okano, K. *et al., Chem. Asian J.*, 2008, **3**, 296-309 (*synth*)

Di Micco, S. *et al., Eur. J. Org. Chem.*, 2008, 2454-2462 (*complex struct*)

Tichenor, M. *et al., Nat. Prod. Rep.*, 2008, **25**, 220-226 (*rev*)

Yemensine Y-8

[1362-35-2]

$C_{18}H_{19}NO_4$ 313.352

Amaryllidaceae alkaloid. Struct. unknown. Isol. from the bulbs of *Crinum yemense* (Amaryllidaceae). Prisms + $1H_2O$ (Me_2CO). Mp 193° dec. $[\alpha]_D^{25}$ +100 (c, 0.2 in $CHCl_3$).

Hydroiodide:

Microcryst. powder (H_2O). Mp 205-206° dec.

Picrate:

Needles (Me_2CO/MeOH). Mp 262-263° dec.

Methiodide:

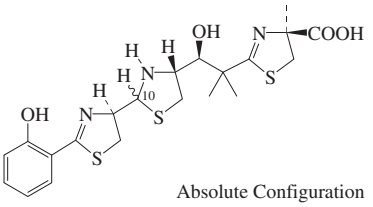
Microcryst. powder (H_2O). Mp 235° dec.

Boit, H.-G. *et al., Chem. Ber.*, 1957, **90**, 2203-2206 (*isol*)

Yersiniabactin Y-9

Yersiniophore

[176707-32-7]



Absolute Configuration

$C_{21}H_{27}N_3O_4S_3$ 481.66

Natural prod. is a mixt. of C-10 epimers. Prod. by *Yersinia enterocolitica*. Siderophore. λ_{max} 255 (log ϵ 3.72); 310 (log ϵ 3.4) (H_2O). λ_{max} 210 ; 250 ; 280 (MeOH) (Berdy). λ_{max} 210 ; 260 ; 320 ; 390 (H_2O) (Berdy).

Drechsel, H. *et al., Annalen*, 1995, 1727-1733 (*isol, uv, cd, pmr, cmr, ir*)

Chambers, C.E. *et al., BioMetals*, 1996, **9**, 157-167 (*isol, struct, props*)

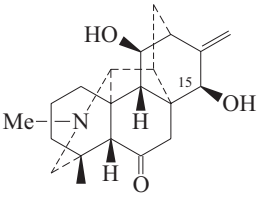
Ino, A. *et al., Tetrahedron*, 2001, **57**, 1897-1902 (*synth, abs config*)

Pfeifer, B.A. *et al., Appl. Environ. Microbiol.*, 2003, **69**, 6698-6702 (*biosynth*)

Yesonine Y-10

Deveratroylyesoline

[116139-64-1]



$C_{21}H_{29}NO_3$ 343.465

Alkaloid from rhizomes of *Aconitum yesoense* var. *macroyesoense* (Ranunculaceae). Amorph. $[\alpha]_D$ +2.4 (c, 0.17 in EtOH).

15-O-(3,4-Dimethoxybenzoyl): ***Yesoline***. *15-Veratroylyesonine*

[116159-74-1]

$C_{30}H_{37}NO_6$ 507.625

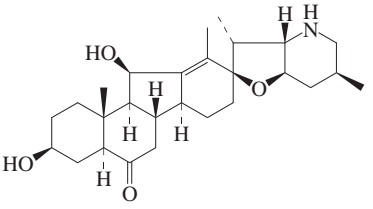
Alkaloid from rhizomes of *Aconitum yesoense* var. *macroyesoense* (Ranunculaceae). Amorph. $[\alpha]_D^{23}$ -10.6 (c, 0.34 in EtOH).

Wada, K. *et al., Heterocycles*, 1988, **27**, 1249; 1989, **29**, 2141 (*isol, uv, ir, pmr, cmr, ms, struct*)

Yibeissine Y-11

17,23-Epoxy-3,11-dihydroxyveratraman-6(5H)-one, 9CI

[143502-51-6]



$C_{27}H_{41}NO_4$ 443.625

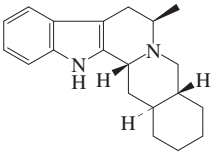
Alkaloid from bulbs of *Fritillaria pallioiflora* (Liliaceae). Cryst. Mp 164.5-166°. $[\alpha]_D^{25}$ -47.6 (c, 0.13 in EtOH).

Xu, Y.J. *et al., Yaoxue Xuebao*, 1992, **27**, 121; *CA*, **117**, 147162x (*isol*)

Yohambinine Y-12

5-Methylyohimban, 9CI. 5-Methylpseudoyohimbane

[109305-83-1]



Absolute Configuration

$C_{20}H_{26}N_2$ 294.439

The struct. shown is almost certainly incorrect. All stereoisom have been synth. and the nat. alkaloid was not identical with any of them. Alkaloid from the roots of *Rauwolfia serpentina* (Apocynaceae). Elongated rods (MeOH). Mp 188-190°. $[\alpha]_D^{20}$ +98 (MeOH). λ_{max} 218 ; 278 (no solvent reported).

Siddiqui, S. *et al., Tet. Lett.*, 1987, **28**, 1311-1312 (*isol, uv, ir, pmr, cmr, ms, struct*)

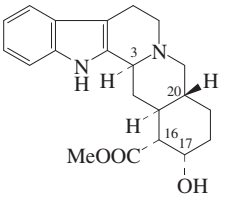
Lohse, C. *et al., Helv. Chim. Acta*, 2002, **85**, 945-961

Yohimbine Y-13

Methyl 17-hydroxyyohimban-16-carboxylate, 9CI. Aphrodine. Corymbin†. Corynine. Hydroergotocin. Quebrachine. Yohimex. Yohimvetol

[146-48-5]

[24252-70-8 (±-form)]



Absolute Configuration

$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from *Alchornea*, *Alstonia*, *Amsonia*, *Aspidosperma*, *Catharanthus*, *Corynanthe*, *Diplorhynchus*, *Rauwolfia*, *Vinca*, *Pausinystalia*, *Pouteria*, *Hunteria* and *Pseudocinchona* (preferred genus name *Corynanthe*) spp. (Apocynaceae, Rubiaceae). Local anaesthetic. Selective α_2-adrenoceptor antagonist. Yohimbine and its stereoisomers are used as tools for study of different adrenoceptor sites. Antidepressant agent used clinically. Shows antihypotensive activity, causes vasopressin release and shows antidiuretic activity. Alleged aphrodisiac. Anxiogenic activity in rodents. Needles (EtOH aq.). Mp 241° (235-236°). $[\alpha]_D^{20}$ +108 (Py). Log P 2.24 (calc).

▶ Adverse human effects by ingestion and skin absorption e.g. cardiotoxic. Transient anxiety also seen following large overdose. LD_{50} (mus, orl) 51 mg/kg. ZG1000000

Hydrochloride: Yohimbine hydrochloride. Gynimbine. Menolysin. Parkimbine. Tosanpin. Yobinol. Yocon. Yohydrol
[65-19-0]
Plates. Mp 302°. $[\alpha]_D^{22}$ +103 (H_2O). Component of Potensan, Vikonon.

▶ LD_{50} (rat, ipr) 55 mg/kg. ZG1015000

Et ester analogue: Ethyl yohimbate
[73840-32-1]
Mp 190°.

▶ LD_{50} (mus, orl) 36 mg/kg. LD_{50} (mus, ipr) 17 mg/kg. ZG0800000

Parent acid: ***Yohimbic acid, INN****. Yohimbinic acid*
[522-87-2]
$C_{20}H_{24}N_2O_3$ 340.421
Alkaloid from the roots of *Rauwolfia serpentina*. α_2-Adrenoceptor antagonist. Cryst. (MeOH or EtOH); cryst. (H_2O)(as monohydrate). Mp 280-300° Mp 265° (monohydrate). $[\alpha]_D$ +148.7. λ_{max} 221 (log ϵ 4.28); 273 (sh) (log ϵ 3.63); 279 (log ϵ 3.64); 288 (log ϵ 3.57) (MeOH).

O-*Ac:* **O-*Acetylyohimbine***
[15471-41-7]
$C_{23}H_{28}N_2O_4$ 396.485
Alkaloid from *Aspidosperma excelsum* (Apocynaceae). Mp 150°.

O-*Ac; hydrochloride:* [14430-18-3]
Mp 274-275° dec.

Me ether: ***17*-O-*Methylyohimbine***
[132339-47-0]
$C_{22}H_{28}N_2O_3$ 368.475
Alkaloid from the roots of *Amsonia elliptica* (Apocynaceae). Prisms ($CHCl_3$). Mp 147°. $[\alpha]_D$ +12 (c, 0.188 in MeOH). λ_{max} 224 ; 288 (sh) ; 292 (MeOH).

3-Epimer: ***Pseudoyohimbine****. ψ-Yohimbine*
[84-37-7]
[25920-66-5 (±-form)]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from *Alstonia quaternata*, *Catharanthus trichophyllus*, *Corynanthe yohimbe*, *Voacanga africana*, *Rauwolfia* spp., *Uncaria attenuata* ssp. *attenuata* and *Uncaria callophylla* (Apocynaceae, Rubiaceae). Mp 293° (268°). $[\alpha]_D^{19}$ +27 (c, 1.0 in Py).

3-Epimer, hydrochloride: Mp 233°. $[\alpha]_D^{20}$ -10 (c, 1.0 in H_2O).

16-Epimer: ***Corynanthine****. Rauhimbine*
[483-10-3]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from *Pseudocinchona africana*, *Corynanthe yohimbe*, *Corynanthe pachyceras*, *Rauwolfia canescens* and *Pausinystalia macroceras* (Rubiaceae, Apocynaceae). Strong α_1-adrenoceptor antagonist, sympatholytic agent. Antileishmanial. Mp 225-226°. $[\alpha]_D$ -123 (EtOH). $[\alpha]_D$ -85 (Py). Log P 2.24 (calc). λ_{max} 226 ; 283 ; 290 (MeOH) (Berdy).

▶ ZG1025000

16-Epimer, hydrochloride: Mp 285-290°. $[\alpha]_D$ -63 (H_2O).

16-Epimer, O-*Ac:* Mp 147°.

16-Epimer, parent acid: Corynanthic acid Mp 337° (284°). $[\alpha]_D$ -85.9 (c, 1 in Py) (-70.7).

17-Epimer: ***β-Yohimbine****. Amsonine*
[549-84-8]
[2516-78-1 (±-form)]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from *Amsonia*, *Aspidosperma*, *Corynanthe*, *Diplorhynchus*, *Rauwolfia*, *Voacanga* and *Pausinystalia* spp. (Apocynaceae, Rubiaceae). Mp 236° (260-262°). $[\alpha]_D$ -47 (-54) (Py). γ-Yohimbine was a mixt. of β-Yohimbine with Yohimbine.

▶ ZG1000030

17-Epimer, hydrochloride: Mp 297°. $[\alpha]_D$ +29 (H_2O).

17-Epimer, N^4*-oxide:* ***β-Yohimbine* N-*oxide***
$C_{21}H_{26}N_2O_4$ 370.447
Alkaloid from the seeds of *Aspidosperma oblongum* (Apocynaceae). Amorph. solid (MeOH). Mp 230°. Config. apparently wrongly assigned in CA.

*17-Epimer, 3(*N*)-dehydro:* ***3,4-Dehydro-β-yohimbine***
[88607-65-2]
$C_{21}H_{25}N_2O_3^{\oplus}$ 353.44
Quaternary alkaloid from the seeds of *Aspidosperma oblongum* (Apocynaceae). $[\alpha]_D$ +114 (c, 0.95 in MeOH).

20-Epimer: ***Alloyohimbine***
[522-94-1]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from *Corynanthe yohimbe*, *Corynanthe paniculata*, *Pausinystalia yohimbe*, *Pausinystalia angolensis* and *Rauwolfia* spp. (Apocynaceae). Mp 165-170° (135-140°). $[\alpha]_D$ -84 (Py).

20-Epimer, hydrochloride: Mp 280°. $[\alpha]_D^{19}$ +33 (H_2O).

20-Epimer, O-*Ac:* ***Acetylalloyohimbine***
[81571-22-4]
$C_{23}H_{28}N_2O_4$ 396.485
Alkaloid from *Rauwolfia nitida* root bark (Apocynaceae). Mp 136°. $[\alpha]_D^{20}$ -25 (Py) (synthetic). $[\alpha]_D^{22}$ -89 (c, 0.01 in $CHCl_3$) (nat.). λ_{max} 225 (log ϵ 4.58); 284 (log ϵ 3.77); 290 (log ϵ 3.65) (MeOH).

3,17-Diepimer: ***3-Epi-β-yohimbine***
[41904-78-3]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from the root of *Rauwolfia linearifolia* (Apocynaceae). Cryst. Mp 201-203°.

16,20-Diepimer: ***α-Yohimbine****. Chalcupine A. Isoyohimbine. Mesoyohimbine. Rauwolscine*
[131-03-3]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from *Alstonia*, *Aspidosperma*, *Corynanthe*, *Pseudocinchona*, *Rauwolfia* and *Vinca* spp. Also from *Pausinystalia croceras* (Apocynaceae, Rubiaceae). Strong selective α_2-adrenoceptor antagonist, also reported to possess aphrodisiac props. Mp 243° (235-236°). $[\alpha]_D^{19}$ -27 (c, 1.0 in EtOH). Log P 2.24 (calc). Serpine was a mixt. of α-Yohimbine with Yohimbine, Y-13. λ_{max} 227 (log ϵ 4.5); 281 (log ϵ 3.93) (no solvent reported).

▶ LD_{50} (rat, ipr) 50 mg/kg. ZG1005000

16,20-Diepimer, hydrochloride: [6211-32-1]
Mp 288°. $[\alpha]_D^{19}$ +58 (c, 1.0 in H_2O).

▶ ZG1035000

17,20-Diepimer: ***17-Epialloyohimbine***
[59952-56-6]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from seeds of *Aspidosperma oblongum*. Amorph. $[\alpha]_D$ -8 (c, 0.74 in $CHCl_3$). λ_{max} 227 (log ϵ 4.78); 274 (log ϵ 3.7); 283 (log ϵ 3.92); 291 (log ϵ 3.85) (EtOH).

3,16,20-Triepimer: ***Isorauhimbine****. 3-Epirauwolscine. Isorauwolscine. Alkaloid Su 3078. 3-Epi-α-yohimbine*
[483-09-0]
$C_{21}H_{26}N_2O_3$ 354.448
Alkaloid from *Rauwolfia serpentina* and *Voacanga africana* (Apocynaceae). Prisms (MeOH aq.). Mp 225°. $[\alpha]_D^{20}$ -104 (c, 0.5 in Py). Polymorphs having lower Mps are formed from other solvs.

3,16,20-Triepimer, hydrochloride:
Prisms (MeOH/Et_2O). Mp 235-240° dec. $[\alpha]_D^{26}$ -75 (c, 1.0 in H_2O).

3,16,20-Triepimer, parent acid: ***Isorauhimbinic acid***
$C_{20}H_{24}N_2O_3$ 340.421
Alkaloid from the roots of *Rauwolfia serpentina*. Cryst. (MeOH). Mp 234-236°. $[\alpha]_D^{28}$ -131 (c, 0.25 in Py). λ_{max} 220 (log ϵ 4.47); 272 (log ϵ 3.82); 279 (log ϵ 3.82); 289 (log ϵ 3.74) (MeOH).

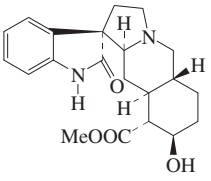
Stereoisomer: **Vinca pusilla *Alkaloid A***
[41787-60-4]
$C_{21}H_{26}N_2O_3$ 354.448
Isol. from *Vinca pusilla*. Mp 269° dec. Of undetd. stereochem., except that it appears to be (3β-).

Aldrich Library of FT-IR Spectra, 1st edn., 1985, **2**, 1068B; 1069B (*ir*)
Aldrich Library of 13C and 1H FT NMR Spectra, 1992, **3**, 614C (*nmr*)
Spiegel, L. *et al., Ber.*, 1903, **36**, 169 (*Yohimbic acid, isol*)
Janot, M.M. *et al., Bull. Soc. Chim. Fr.*, 1949, 509 (*synth*)
Swan, G.A. *et al., J.C.S.*, 1950, 1534-1539 (*struct*)

Marion, L. *et al., Alkaloids (Academic Press)*, 1952, **2**, 369-498 (*rev, bibl, occur*)
Le Hir, A. *et al., Bull. Soc. Chim. Fr.*, 1953, 1027-1032 (*α-Yohimbine, β-Yohimbine, Alloyohimbine, struct*)
Hofmann, A. *et al., Helv. Chim. Acta*, 1954, **37**, 314-320 (*Isorauhimbine, isol*)
Bader, F.E. *et al., J.A.C.S.*, 1955, **77**, 3547-3550 (*Isorauhimbine, struct*)
Goutarel, R. *et al., Helv. Chim. Acta*, 1957, **40**, 156-160 (*Isorauhimbine, struct, config*)
Antonaccio, L.D. *et al., J.A.C.S.*, 1962, **84**, 2161-2169 (*ms*)
Raymond-Hamet, *et al., C. R. Hebd. Seances Acad. Sci.*, 1963, **257**, 2351 (*Yohimbic acid, pharmacol*)
Albright, J.D. *et al., J.O.C.*, 1963, **28**, 38-45 (*pmr*)
Ban, Y. *et al., Tetrahedron*, 1964, **20**, 2877-2884 (*sterochem*)
Benoin, P.R. *et al., Can. J. Chem.*, 1967, **45**, 725-730 (*O-Acetylyohimbine*)
Klyne, W. *et al., Helv. Chim. Acta*, 1967, **50**, 115-125 (*ord*)
Van Tamelen, E.E. *et al., J.A.C.S.*, 1969, **91**, 7315-7333 (*Pseudoyohimbine, synth, bibl*)
Fales, H.M. *et al., J.A.C.S.*, 1970, **92**, 1590-1597 (*ms*)
Stork, G. *et al., J.A.C.S.*, 1972, **94**, 5109-5110 (*β-Yohimbine, Pseudoyohimbine, synth*)
Chatterjee, A. *et al., Indian J. Chem.*, 1973, **11**, 7-8 (*Vinca Pusilla Alkaloid A*)
Ambady, G. *et al., J. Cryst. Mol. Struct.*, 1973, **3**, 37-45 (*cryst struct, abs config*)
Levin, R.H. *et al., J.O.C.*, 1973, **38**, 1983-1986 (*cmr*)
Töke, L. *et al., J.O.C.*, 1973, **38**, 2496-2500 (*Alloyohimbine, Isorauhimbine, synth, abs config*)
Catharanthus Alkaloids, (Eds., Taylor, W.I. *et al*), Marcel Dekker, 1975, (*rev*)
Szantay, C. *et al., Chem. Ber.*, 1976, **109**, 1737-1748 (*α-Yohimbine, β-Yohimbine, synth*)
Miet, C. *et al., Phytochemistry*, 1977, **16**, 803-805 (*pmr*)
Fanso-Free, S.N.Y. *et al., J.A.C.S.*, 1979, **101**, 1549-1553 (*N nmr*)
Wenkert, E. *et al., J.A.C.S.*, 1979, **101**, 5370-5376 (*Yohimbine, Pseudoyohimbine, α-Yohimbine, β-Yohimbine, synth, cmr*)
Amer, M.A. *et al., Phytochemistry*, 1981, **20**, 2569-2573 (*Acetylalloyohimbine*)
Honty, K. *et al., J.O.C.*, 1982, **47**, 5111-5114 (*Isorauhimbine, synth*)
Miyata, O. *et al., Chem. Comm.*, 1983, 1231-1232 (*Alloyohimbine, synth*)
Robert, G.M.T. *et al., J. Nat. Prod.*, 1983, **46**, 708-722 (*Aspidosperma oblongum constits*)
Goldberg, M.R. *et al., Pharmacol. Rev.*, 1983, **35**, 143-180 (*pharmacol, rev*)
Goh, S.H. *et al., Phytochemistry*, 1985, **24**, 880-881 (*Pseudoyohimbine*)
Martin, S.F. *et al., Tet. Lett.*, 1985, **26**, 5227-5230 (*α-Yohimbine, synth*)
Szantay, C. *et al., Alkaloids (Academic Press)*, 1986, **27**, 131-268 (*rev*)
Blasko, G. *et al., Annalen*, 1986, 655-663 (*β-Yohimbine, synth*)
Mekkawi, A.G. *et al., Anal. Profiles Drug Subst.*, 1987, **16**, 731-768 (*rev, synth, anal, pharmacol*)
Sauerwein, M. *et al., Phytochemistry*, 1990, **29**, 3377-3379 (*17-O-Methylyohimbine*)
Hirai, Y. *et al., Tet. Lett.*, 1990, **31**, 4755-4756 (*synth*)
Martinez Perez, J.A. *et al., Phytochemistry*, 1991, **30**, 1352-1353 (*3-Epi-β-yohimbine*)
Friesen, K. *et al., J. Emergency Med.*, 1993, **11**, 287 (*tox*)
Biaggioni, I. *et al., J. Clin. Pharmacol.*, 1994, **34**, 418-423 (*pharmacol, human, rev*)
Heidelbaugh, T.M. *et al., Tet. Lett.*, 1998, **39**, 4757-4760 (*Alloyohimbine, synth*)
Martindale, The Extra Pharmacopoeia, 32nd edn., Pharmaceutical Press, 1999, 941; 1645
Staerk, D. *et al., Planta Med.*, 2000, **66**, 531-536 (*α-Yohimbine, Corynanthine, isol, pmr, cmr*)
Tanaka, M. *et al., Tetrahedron*, 2004, **60**, 2271-2281 (*Alloyohimbine, synth*)
Itoh, A. *et al., J. Nat. Prod.*, 2005, **68**, 848-852 (*Isorauhimbinic acid, isol, pmr, cmr*)
Mergott, D.J. *et al., Org. Lett.*, 2008, **10**, 745-748 (*synth*)
Lewis, R.J. *et al., Sax's Dangerous Properties of Industrial Materials, 10th edn., J. Wiley*, 2000, YBJ000; YBS000; YCA000

β-Yohimbine oxindole Y-14

[88668-03-5]



Absolute Configuration

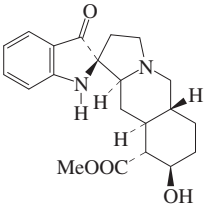
$C_{21}H_{26}N_2O_4$ 370.447

Alkaloid from the seeds of *Aspidosperma oblongum* (Apocynaceae). Amorph. $[\alpha]_D$ -38 (c, 0.32 in MeOH).

Robert, G.M.T. *et al., J. Nat. Prod.*, 1983, **46**, 708-722 (*isol, uv, ir, pmr, ms, cd, struct, synth*)

β-Yohimbine pseudoindoxyl Y-15

[88668-02-4]



Absolute Configuration

$C_{21}H_{26}N_2O_4$ 370.447

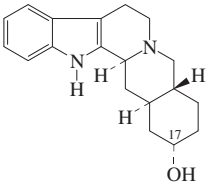
Alkaloid from the seeds of *Aspidosperma oblongum*, from leaves of *Ervatamia corymbosa* and from leaves and root bark of *Ervatamia hirta*. Amorph. $[\alpha]_D$ -431 (c, 1.75 in MeOH). λ_{max} 234 (log ϵ 4.56); 255 (log ϵ 3.91); 407 (log ϵ 3.67) (EtOH).

Robert, G.M.T. *et al., J. Nat. Prod.*, 1983, **46**, 708-722 (*isol, uv, ir, pmr, ms, cd, struct, synth*)
Takayama, H. *et al., Heterocycles*, 1996, **42**, 87-92 (*abs config, cd*)

Yohimbol Y-16

Yohimban-17-ol, 9CI. Corynanthol

[523-13-7]



Absolute Configuration

$C_{19}H_{24}N_2O$ 296.411

Alkaloid from *Hunteria zeylanica* (Apocynaceae). Fine needles. Mp 251-253° (243°). $[\alpha]_D$ -63.4 (-55.4, -38) (MeOH).

N^b-*Me:* ***Yohimbol methosalt***

[100816-28-2]

$C_{20}H_{27}N_2O^{\oplus}$ 311.446

Alkaloid from *Hunteria eburnea* (Apocynaceae). Cryst. + ½ H_2O (Me_2CO aq.) (as chloride). Mp 264-265° (chloride). $[\alpha]_D$ +53 (MeOH) (synthetic). Opt. rotn. of -16° was recorded for natural alkaloid, but this was thought due to contamination with a small amt. of the highly laevorotatory akuammicine methiodide.

10-Methoxy: 10-Methoxyyohimban-17α-ol. ***10-Methoxyyohimbol***

$C_{20}H_{26}N_2O_2$ 326.438

Alkaloid from the roots of *Ochrosia acuminata*. Amorph. powder. $[\alpha]_D^{25}$ +3.3 (c, 0.14 in MeOH).

17-Epimer. ***Epiyohimbol***

[439-70-3]

$C_{19}H_{24}N_2O$ 296.411

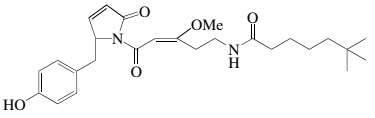
Alkaloid from *Hunteria zeylanica* (Apocynaceae). Mp 258°. $[\alpha]_D^{20}$ -80.1 (c, 2.075 in MeOH).

▶ ZG1255000

Witkop, B. *et al., Annalen*, 1943, **554**, 83-126 (*synth*)
Bartlett, M.F. *et al., J.O.C.*, 1963, **28**, 1445-1449 (*methochloride, isol*)
Mori, K. *et al., Agric. Biol. Chem.*, 1972, **36**, 2605-2606 (*synth*)
Arambewala, L.S.R. *et al., Phytochemistry*, 1981, **20**, 349-350 (*Yohimbol, Epiyohimbol, isol*)
Kametani, T. *et al., J. Het. Chem.*, 1982, **19**, 1217-1219 (*synth*)
Lavaud, C. *et al., Phytochemistry*, 1982, **21**, 445-447 (*isol*)
Salim, A.A. *et al., J. Nat. Prod.*, 2004, **67**, 1719-1721 (*10-Methoxyyohimbol*)

Ypaoamide Y-17

[180965-25-7]



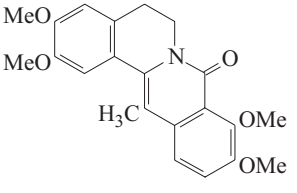
$C_{26}H_{36}N_2O_5$ 456.581

Isol. from a mixed cyanobacteria assemblage, actual source believed to be *Lyngbya majuscula*. Feeding deterrent. Ichthyotoxic. $[\alpha]_D^{19}$ +197 (c, 1.0 in $CHCl_3$). λ_{max} 222 (log ϵ 4.2); 270 (log ϵ 4.1) (MeOH).

Nagle, D.G. *et al., Tet. Lett.*, 1996, **37**, 6263 (*isol, uv, ir, pmr, cmr, struct*)

Yuanamide Y-18

[102421-42-1]

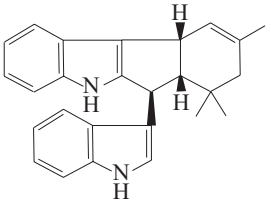


$C_{22}H_{23}NO_5$ 381.427
Alkaloid from aerial parts of *Corydalis bulbosa* (Papaveraceae). Prisms (MeOH). Mp 228-230°. Also descr. as an oil.

Saá, C. *et al., J.O.C.*, 1986, **51**, 2781 (*synth*)
Ito, C. *et al., Phytochemistry*, 1990, **29**, 2044 (*isol, uv, ir, pmr, ms*)

Yuehchukene Y-19

[96624-37-2]



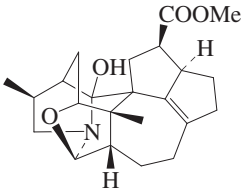
$C_{26}H_{26}N_2$ 366.505
Alkaloid from the roots of *Murraya paniculata*, *Micromelum falcatum* and *Micromelum integerrinum* (Rutaceae). Exhibits potent antiimplantation activity in rats. Racemic. λ_{max} 225 (ϵ 14800); 283 (ϵ 3470); 292 (ϵ 3090) (EtOH) (Derep).

▶ NK8927150

Kong, Y.-C. *et al., Chem. Comm.*, 1985, 47 (*uv, ir, pmr, cmr, ms, struct*)
Kong, Y.-C. *et al., Jiegou Huaxue*, 1985, **4**, 30; *CA*, **104**, 31728p (*cryst struct*)
Kong, Y.-C. *et al., Biochem. Syst. Ecol.*, 1988, **16**, 485 (*isol*)
Kutney, J.P. *et al., Can. J. Chem.*, 1991, **69**, 949 (*synth*)
Cheng, K.-F. *et al., J.C.S. Perkin 1*, 1991, 2955-2959 (*synth, abs config*)
Bergman, J. *et al., Tetrahedron*, 1992, **48**, 759 (*synth*)
Henry, K.J. *et al., Chem. Comm.*, 1993, 510 (*synth*)
Sheu, J.-H. *et al., J.C.S. Perkin 1*, 1998, 1959-1965 (*synth*)
Ishikura, M. *et al., Heterocycles*, 2000, **53**, 553-556; 2201-2220 (*synth*)

Yunnandaphnine E Y-20

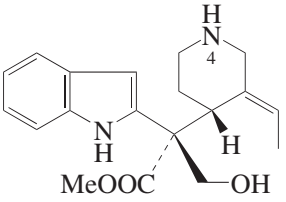
[917955-56-7]



$C_{23}H_{31}NO_4$ 385.502
Alkaloid from *Daphniphyllum yunnanense*. Powder. $[\alpha]_D^{25}$ -88 (c, 0.16 in $CHCl_3$).

Di, Y.-T. *et al., J. Nat. Prod.*, 2006, **69**, 1745-1748 (*isol, pmr, cmr*)

Yunnanensine Y-21



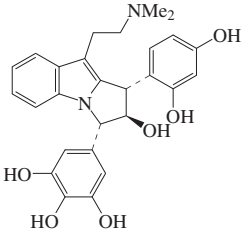
$C_{19}H_{24}N_2O_3$ 328.41
Alkaloid from the stems of *Ervatamia yunnanensis*. Pale yellow powder ($CHCl_3$). Sol. $CHCl_3$. Mp 183-184°.

N^4-*(2-Cyanoethyl):* ***6-Cyano-6,7-secostemmadenine***. *6,7-Seco-6-cyanostemmadenine*
[112448-52-9]
$C_{22}H_{27}N_3O_3$ 381.474
Alkaloid from *Alstonia angustiloba* and *Alstonia pneumatophora* (Apocynaceae). $[\alpha]_D$ +19 (c, 0.5 in $CHCl_3$). Stereochem. not determined.

Zeches, M. *et al., J. Nat. Prod.*, 1987, **50**, 714-720 (*6-Cyano-6,7-secostemmadenine*)
Luo, X.G. *et al., Chin. Chem. Lett.*, 2007, **18**, 697-699 (*Yunnanensine*)

Yuremamine Y-22

[883973-98-6]



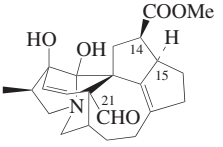
Relative Configuration

$C_{27}H_{28}N_2O_6$ 476.528
Alkaloid from the stem bark of *Mimosa tenuiflora*. Purple-red solid.

Vepsäläinen, J.J. *et al., Planta Med.*, 2005, **71**, 1053-1057 (*isol, pmr, cmr, ms*)

Yuzurimine C Y-23

[57520-21-5]



Absolute Configuration

$C_{23}H_{29}NO_5$ 399.486
Minor alkaloid from the leaves and bark of *Daphniphyllum macropodum* (Daphniphyllaceae). Cryst. (hexane/Me_2CO). Mp 186-187°. $[\alpha]_D^{25}$ +28 (c, 1.33 in $CHCl_3$).

Methiodide:
Needles (Me_2CO/Et_2O). Mp 209-210° dec.

21-Alcohol: ***Macropodumine F***. *Pordamacrine A*
[949172-76-3]
$C_{23}H_{31}NO_5$ 401.502
Alkaloid from the leaves of *Daphniphyllum macropodum*. Vasorelaxant. Oil or amorph. solid. $[\alpha]_D^{23}$ -13.8 (c, 0.53 in $CHCl_3$) (Macropodumine F). $[\alpha]_D^{27}$ -27 (c, 0.2 in MeOH) (Pordamacrine A).

14,15-Didehydro, 21-alcohol: ***Macropodumine G***
[949172-77-4]
$C_{23}H_{29}NO_5$ 399.486
Alkaloid from the leaves of *Daphniphyllum macropodum*. Oil. $[\alpha]_D^{23}$ +73.8 (c, 0.42 in $CHCl_3$). λ_{max} 303 (log ϵ 3.76) (MeOH).

2-Deoxy, 21-alcohol: ***Pordamacrine B***
[951677-64-8]
$C_{23}H_{31}NO_4$ 385.502
Alkaloid from the leaves of *Daphniphyllum macropodum*. Amorph. solid. $[\alpha]_D^{20}$ +37 (c, 0.3 in MeOH).

Toda, M. *et al., Tetrahedron*, 1972, **28**, 1477 (*isol*)
Yamamura, S. *et al., Bull. Chem. Soc. Jpn.*, 1975, **48**, 2120 (*uv, ir, pmr, cmr, ms, struct*)
Li, Z.Y. *et al., Helv. Chim. Acta*, 2007, **90**, 1353-1359 (*Macropodumines F,G*)
Matsuno, Y. *et al., J. Nat. Prod.*, 2007, **70**, 1516-1518 (*Pordamacrines A-B, cryst struct*)

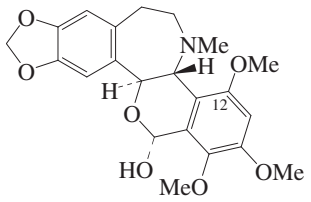
Yuzurimine D Y-24

$C_{24}H_{32}NO_5$ 414.52
Struct. unknown. Alkaloid from *Daphniphyllum macropodum* (Daphniphyllaceae). Mp 194-195°.

Toda, M. *et al., Nippon Kagaku Zasshi*, 1970, **91**, 103-108; *CA*, **73**, 22137j (*isol*)

Zangezurine Z-1

[114216-91-0]



$C_{22}H_{25}NO_7$ 415.442

Probable struct. Biogenetic numbering shown; other schemes also used. Alkaloid from flowering *Papaver zangezuricum* (Papaveraceae). Amorph.

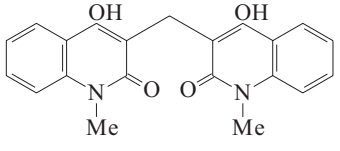
12-Demethoxy: ***Triniifoline***
[201136-31-4]
$C_{21}H_{23}NO_6$ 385.416
Alkaloid from the aerial parts of *Papaver triniifolium*. Amorph. powder. $[\alpha]_D^{20}$ +100 (c, 0.5 in $CHCl_3$). λ_{max} 231 (log ϵ 3.97); 288 (log ϵ 3.67) (MeOH).

12-Demethoxy, Et ether: ***O-Ethyltriniifoline***
[201136-32-5]
$C_{23}H_{27}NO_6$ 413.469
Alkaloid from *Papaver triniifolium*. Amorph. solid. $[\alpha]_D^{20}$ +120 (c, 0.5 in $CHCl_3$). Possible artifact. λ_{max} 234 (log ϵ 4.01); 285 (log ϵ 3.56) (MeOH).

Israilov, I.A. *et al., Khim. Prir. Soedin.*, 1987, **23**, 858; *Chem. Nat. Compd. (Engl. Transl.)*, 715 (*Zangezurine*)
Sari, A. *et al., Planta Med.*, 1997, **63**, 575-576 (*Triniifoline, O-Ethyltriniifoline, isol, uv, ir, pmr, ms*)

Zanthobisquinolone Z-2

[57147-67-8]

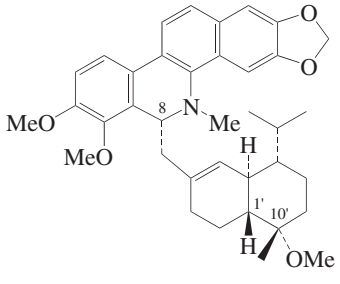


$C_{21}H_{18}N_2O_4$ 362.384
Alkaloid from root wood of *Zanthoxylum simulans* (Szechuan pepper) (Rutaceae). Needles ($CHCl_3$/MeOH). Mp 295-298°.

Chen, I.-S. *et al., Phytochemistry*, 1994, **36**, 237 (*isol, uv, ir, pmr, cmr, ms, struct*)

Zanthocadinanine A Z-3

[1006378-72-8]



Relative Configuration

$C_{37}H_{45}NO_5$ 583.766
Structurally derived from Dihydrochelerythrine, D-407 and the methyl ether of 4-Cadinen-10-ol. Alkaloid from the stem bark of *Zanthoxylum nitidum*. Needles. Mp 190-191°. $[\alpha]_D^{20}$ -71.5 (c, 0.13 in $CHCl_3$). λ_{max} 229 (log ϵ 3.9); 284 (log ϵ 4.2); 320 (sh) (log ϵ 3.1) (MeOH).

1′-Epimer: ***Zanthomuurolanine***
[1006378-70-6]
$C_{37}H_{45}NO_5$ 583.766
Alkaloid from the stem bark of *Zanthoxylum nitidum*. Needles. Mp 198-199°. $[\alpha]_D^{20}$ -51.3 (c, 0.1 in $CHCl_3$). λ_{max} 229 (log ϵ 3.9); 284 (log ϵ 4.53); 322 (sh) (log ϵ 4.05) (MeOH).

10′-Epimer: ***Zanthocadinanine B***
[1006378-73-9]
$C_{37}H_{45}NO_5$ 583.766
Alkaloid from the stem bark of *Zanthoxylum nitidum*. Needles (MeOH). Mp 160-161°. $[\alpha]_D^{20}$ -52.5 (c, 0.16 in $CHCl_3$). λ_{max} 229 (log ϵ 4.67); 284 (log ϵ 4.81); 322 (sh) (log ϵ 4.33) (MeOH).

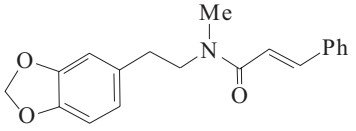
1′,8-Diepimer: ***8-Epizanthomuurolanine***
[1006378-71-7]
$C_{37}H_{45}NO_5$ 583.766
Alkaloid from the stem bark of *Zanthoxylum nitidum*. Oil. $[\alpha]_D^{20}$ +86.9 (c, 0.22 in $CHCl_3$). λ_{max} 227 (log ϵ 4.37); 283 (log ϵ 4.39); 324 (sh) (log ϵ 3.96) (MeOH).

8,10′-Diepimer: ***8-Epizanthocadinanine B***
[1006378-74-0]
$C_{37}H_{45}NO_5$ 583.766
Alkaloid from the stem bark of *Zanthoxylum nitidum*. Needles. Mp 162-163°. $[\alpha]_D^{20}$ +108.1 (c, 0.87 in $CHCl_3$). λ_{max} 228 (log ϵ 4.73); 283 (log ϵ 4.75); 322 (sh) (log ϵ 4.32) (MeOH).

Yang, C.-H. *et al., J. Nat. Prod.*, 2008, **71**, 669-673 (*isol, cd, pmr, cmr, cryst struct*)

Zanthomamide Z-4

[99933-31-0]



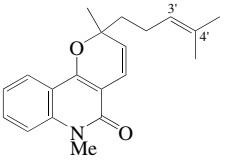
$C_{19}H_{19}NO_3$ 309.364
Alkaloid from the stem bark of *Zanthoxylum thomense* (Rutaceae). Amorph.

N-*De-Me:* ***Zanthomamine***
[121817-67-2]
$C_{18}H_{17}NO_3$ 295.337
Synthetic. Mp 112-114°.

Simeray, J. *et al., Phytochemistry*, 1985, **24**, 2720 (*isol, uv, ir, pmr, ms, struct*)
Adesina, S.K. *et al., Phytochemistry*, 1989, **28**, 839 (*Zanthomamine*)

Zanthosimuline Z-5

[155416-20-9]



$C_{20}H_{23}NO_2$ 309.407
Alkaloid from root bark of *Zanthoxylum simulans* (Szechuan pepper) (Rutaceae). Solid. Mp 127-128°. $[\alpha]_D$ +7 (c, 0.1 in $CHCl_3$).

3′,4′-Dihydro, 3′-oxo: ***Huajiaosimuline***
[155416-21-0]
$C_{20}H_{23}NO_3$ 325.407
Alkaloid from root bark of *Zanthoxylum simulans* (Szechuan pepper) (Rutaceae). Oil.

3′,4′-Dihydro, 3′-hydroxy: ***Simulansine***
[176520-66-4]
$C_{20}H_{25}NO_3$ 327.422
Alkaloid from root bark of *Zanthoxylum simulans* (Szechuan pepper). Oil.

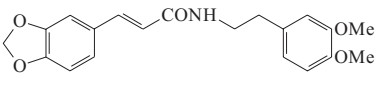
$\Delta^{2'}$-Isomer, 4′-hydroxy: ***Simulenoline***
[198336-56-0]
$C_{20}H_{23}NO_3$ 325.407
Alkaloid from the bark of *Zanthoxylum simulans* (Szechuan pepper) (Rutaceae). Oil. $[\alpha]_D^{23}$ +6.9 (c, 0.2 in $CHCl_3$). λ_{max} 228 (log ϵ 4.33); 256 (sh) (log ϵ 3.86); 336 (log ϵ 3.68); 350 (log ϵ 3.73); 367 (log ϵ 3.56) (EtOH).

$\Delta^{2'}$-Isomer, 4′-hydroperoxy: ***Peroxysimulenoline***
[198336-57-1]
$C_{20}H_{23}NO_4$ 341.406
Alkaloid from the bark of *Zanthoxylum simulans* (Szechuan pepper) (Rutaceae). Oil. λ_{max} 228 (log ϵ 4.33); 256 (sh) (log ϵ 3.86); 336 (log ϵ 3.68); 350 (log ϵ 3.73); 367 (log ϵ 3.56) (EtOH).

Wu, S.-J. *et al., Phytochemistry*, 1993, **34**, 1659-1661 (*isol, uv, ir, pmr, cmr, ms, struct*)
Chen, I.-S. *et al., Phytochemistry*, 1996, **42**, 217-219 (*Simulansine*)
Chen, I.-S. *et al., Phytochemistry*, 1997, **46**, 525-529 (*Simulenoline, Peroxysimulenoline*)
McLaughlin, M.J. *et al., J.O.C.*, 2001, **66**, 1049-1053 (*Huajiaosimuline, Simulenoline, synth*)
Lee, Y.R. *et al., Synthesis*, 2001, 1851-1855 (*synth, ir, pmr*)
Wang, X. *et al., Synthesis*, 2007, 3044-3050 (*synth, ir, pmr*)

Zanthosin Z-6

*3-(1,3-Benzodioxol-5-yl)-*N*-[2-(3,4-dimethoxyphenyl)ethyl]-2-propenamide. 3,4-Methylenedioxycinnamic acid 3,4-dimethoxyphenethylamide*



$C_{20}H_{21}NO_5$ 355.39
Alkaloid from the stem bark of *Zanthoxylum rubescens* (Rutaceae). Needles. Mp 159-161°.

N-*Me:* ***Zanthosinamide***
[119060-90-1]
$C_{21}H_{23}NO_5$ 369.416
Alkaloid from the pericarps of *Zanthoxylum rubescens* (Rutaceae).

3′-Demethoxy: ***Armatamide***
[220458-86-6]
$C_{19}H_{19}NO_4$ 325.363
Alkaloid from the bark of *Zanthoxylum armatum*. Cryst. Mp 159.4°. λ_{max} 202 ; 226 ; 288 ; 320 (MeOH).

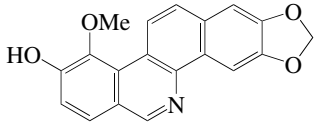
3′-Demethoxy, N-*Me:* ***Podocarpamide***
[121880-09-9]
$C_{20}H_{21}NO_4$ 339.39
Alkaloid from the bark of *Zanthoxylum podocarpum*, other *Zanthoxylum* spp. and *Esenbeckia leiocarpa*.

Bis(demethoxy), N-*Me:* ***Demethoxypodocarpamide***
[132113-92-9]
$C_{19}H_{19}NO_3$ 309.364
Isol. from *Esenbeckia leiocarpa*. Mp 139-141°.

Adesina, S.K. *et al., Pharmazie*, 1988, **43**, 517 (*Zanthosinamide*)
Adesina, S.K. *et al., Planta Med.*, 1989, **55**, 324 (*Zanthosin*)
Ren, L.J. *et al., Yaoxue Xuebao*, 1989, **24**, 67; *CA*, **111**, 74777r (*Podocarpamide*)
Xie, J.X. *et al., CA*, 1990, **111**, 142968 (*Podocarpamide, isol, synth*)
Delle Monache, F. *et al., Gazz. Chim. Ital.*, 1990, **120**, 387 (*isol, pmr, cmr*)
Kalia, N.K. *et al., J. Nat. Prod.*, 1999, **62**, 311-312 (*Armatamide*)

Zanthoxyline Z-7

[202002-14-0]



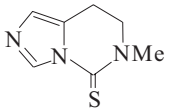
$C_{19}H_{13}NO_4$ 319.316
Alkaloid from the bark of *Zanthoxylum rhoifolium*. Cryst. ($CHCl_3$/Et_2O). Mp 220-222°.

Me ether, N-*Me:* ***Broussonpapyrine***
[942137-65-7]
$C_{21}H_{18}NO_4^{\oplus}$ 348.378
Quaternary alkaloid from the fruit of *Broussonetia papyrifera*. Yellow needles ($CHCl_3$/MeOH). Mp 201-203°. Counterion not specified.

De Moura, N.F. *et al., Phytochemistry*, 1997, **46**, 1443-1446 (*Zanthoxyline*)
Pang, S.-Q. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2007, **43**, 100-102 (*Broussonpapyrine*)

Zapotidine Z-8

6-Methylimidazo[1,5-c]tetrahydropyrimidine-5-thione
[525-84-8]

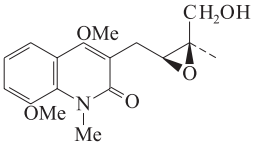


$C_7H_9N_3S$ 167.234
Minor alkaloid from the seeds of *Casimiroa edulis* (Mexican apple) (Rutaceae). Shows little pharmaceutical activity.
Plates (Et_2O). Mp 96-98°.
▶ LD_{50} (mus, ipr) 50 mg/kg.
Picrate: Mp 195-196°.

Kincl, F.A. *et al., J.C.S.*, 1956, 4163 (*isol, uv, ir*)
Mechoulam, R. *et al., J.A.C.S.*, 1961, **83**, 2022 (*pmr, struct*)
Mechoulam, R. *et al., Tetrahedron*, 1967, **23**, 239 (*synth*)
Wróbel, J.T. *et al., Alkaloids (Academic Press)*, 1985, **26**, 56 (*props, synth*)

Zascanol epoxide Z-9

[149998-44-7]



Relative configuration

$C_{17}H_{21}NO_5$ 319.357
Alkaloid from roots of *Zanthoxylum scandens* (Rutaceae). Oil.

Brader, G. *et al., Annalen*, 1993, 355 (*isol, uv, ir, pmr, ms, cd, struct*)

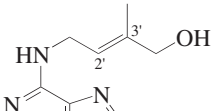
Zeagenin Z-10

$C_{11}H_{20}N_2O_5$ 260.289
Struct. unknown. Isol. from *Gibberella zeae*. Lowers blood lipoprotein levels in mice. Cryst. (MeOH). Mp 169-171°. $[\alpha]_D^{25}$ +4.3 (c, 2.9 in H_2O).

Japan. Pat., 1970, 70 21 634; *CA*, **73**, 108242b

Zeatin Z-11

*2-Methyl-4-(1*H*-purin-6-ylamino)-2-buten-1-ol, 9CI. 6-(4-Hydroxy-3-methyl-2-butenylamino)purine.* N^6*-(ω-Hydroxyisopentenyl)adenine*
[13114-27-7]



(*E*)-*form*

$C_{10}H_{13}N_5O$ 219.246

(*E*)-*form*
trans-*Zeatin*
[1637-39-4]
Isol. from sweet corn *Zea mays* (Poaceae) and numerous other plants. Also from algae, bacteria and basidiomycetes. Induces cell division; most effective of all known natural cytokinins. Sol. H_2O. Mp 212-213° (207-208°). λ_{max} 212 (ε 17050); 270 (ε 16150) (H_2O) (Berdy). λ_{max} 207 (ε 14500); 275 (ε 14650) (HCl) (Berdy). λ_{max} 220 (ε 15900); 276 (ε 14650) (NaOH) (Berdy).
▶ EM9506000
Picrate: Mp 180-190°.
O-*β-D-Glucopyranoside:* [56329-06-7]
$C_{16}H_{23}N_5O_6$ 381.388
Isol. from *Lupinus angustifolius* and other plants. Cryst. (1-butanol). Mp 124-128°.
O-*Ac:* Mp 168-169°.
7-β-D-Glucopyranosyl: ***Raphanatin***
[38165-56-9]
$C_{16}H_{23}N_5O_6$ 381.388
Prod. by *Raphanus sativus* (radish) and crown galls of *Catharanthus roseus*. Cytokinin. Cryst. (MeOH). Mp 266-271° (dec.). $[\alpha]_D^{26}$ -14.8 (c, 3.5 in DMSO).
9-β-D-Glucopyranosyl: [51255-96-0]
$C_{16}H_{23}N_5O_6$ 381.388
Cytokinin, widely distributed in plants. λ_{max} 269 (no solvent reported).
9-β-D-Ribofuranosyl: 9-(β-D-Ribofuranosyl)zeatin. ***Ribosylzeatin***
[6025-53-2]
$C_{15}H_{21}N_5O_5$ 351.361
Isol. from many plants incl. bacteria. Cytokinin, phytotoxin, plant hormone. Sol. H_2O. Mp 180-182°. λ_{max} 265 (ε 19200) (pH 1 H_2O) (Derep). λ_{max} 269 (ε 19400) (pH 13 H_2O) (Derep). λ_{max} 270 (ε 18400) (95% EtOH) (Derep).
9-β-D-Ribofuranosyl, 5″-phosphate: Ribosylzeatin phosphate
[25615-16-1]
[15075-52-2]
$C_{15}H_{22}N_5O_8P$ 431.341
Isol. from *Zea mays* (sweet corn). Cytokinin. Solid.
9-β-D-Ribofuranosyl, O-*β-D-glucopyranoside:* [62512-97-4]
$C_{21}H_{31}N_5O_{10}$ 513.503
Cytokinin, widely distributed in plants. No phys. props. accessible.
9-β-D-Ribofuranosyl, O-*[α-L-arabinopyranosyl-(1→4)-[β-D-galactopyranosyl-(1→2)-α-D-galactopyranosyl-(1→3)-α-L-arabinofuranosyl-(1→3)]-β-D-galactopyranoside]:* ***Gazer***
[171628-14-1]
$C_{43}H_{67}N_5O_{28}$ 1102.019
Constit. of coconut milk (*Cocos nucifera*). Cytokinin. $[\alpha]_D^{25}$ -5.2 (c, 1 in H_2O). λ_{max} 210 (ε 16600); 267 (ε 18200) (H_2O).
9-(2-Deoxy-β-D-ribofuranosyl): ***Zeatin 2-deoxyribofuranoside.*** *2′-Deoxyzeatin riboside*
[124325-91-3]
$C_{15}H_{21}N_5O_4$ 335.362
Prod. by *Pseudomonas amygdali*. Cytokinin. Inhibitor of DNA polymerase I. Oil. $[\alpha]_D^{25}$ -13.5 (c, 0.35 in EtOH).
*2′,3′*S*-Dihydro: 2-Methyl-4-(1*H*-purin-6-ylamino)-1-butanol, 9CI. 6-[(4-Hydroxy-3-methylbutyl)amino]purine.* ***Dihydrozeatin***
[19272-91-4]
[23599-75-9 (general no.)]
$C_{10}H_{15}N_5O$ 221.261
Cytokinin from immature *Lupinus luteus* seeds (Fabaceae). Constit. of numerous plant spp. Present in the brown alga *Sargassum heterophyllum*. Prisms (EtOH/MeCN). Mp 165-166° (154-156°). $[\alpha]_D^{21}$ -12.1 (MeOH). $[\alpha]_D^{22}$ -

15.4 (50% EtOH aq.).

*2′,3′*S*-Dihydro, picrate:*
Yellow needles (EtOH). Mp 187-189°.

2′,3′-Dihydro, O-*β-*D*-glucopyranoside: Dihydrozeatin* O*-glucoside*
[62512-96-3]
$C_{16}H_{25}N_5O_6$ 383.403
Constit. of various plant spp. incl. *Alnus* spp., *Lupinus* sp. and *Phaseolus* sp.

*2′,3′-Dihydro, 9-β-*D*-ribofuranosyl: Dihydrozeatin riboside*
[22663-55-4]
$C_{15}H_{23}N_5O_5$ 353.377
Constit. of numerous plants esp. in the Fabaceae. Prod. by *Pseudomonas* sp. Cytokinin. Sol. H_2O.

Deoxy: N-*(3-Methyl-2-butenyl)-1*H*-purin-6-amine. 6-(3-Methyl-2-butenylamino)purine.* **N^6-*Prenyladenine.*** *6-(γ,γ-Dimethylallylamino)purine.* N^6*-(3-Methyl-2-butenyl)adenine.* N^6*-Isopentenyladenine. 2iP. Bryokinin*
[2365-40-4]
$C_{10}H_{13}N_5$ 203.246
Widespread in plant spp. Prod. by *Corynebacterium fascians* and *Pseudomonas amygdali* and prob. present in brown alga *Sargassum heterophyllum*. Potent cytokinin. Mp 208-209° Mp 237-239° dec. Appears to be difficult to purify. λ_{max} 269 (EtOH). λ_{max} 218 ; 275 (0.1*M* NaOH).

2-Hydroxy: ***2-Hydroxyzeatin***
[29736-32-1]
$C_{10}H_{13}N_5O_2$ 235.245
Prod. by *Pseudomonas syringae*. Cytokinin. Oil. Sol. H_2O. λ_{max} 270 (MeOH).

(*Z*)-*form*
cis-*Zeatin*
[32771-64-5]
A modified nucleoside present in tRNAs. Isol. from *Corynebacterium fascians*. At least 50 times less active than the (*E*)-form. Mp 206-208°.

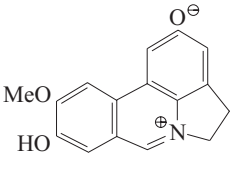
*9-β-*D*-Glucopyranosyl:* cis*-Zeatin 9-glucoside*
[169565-72-4]
$C_{16}H_{23}N_5O_6$ 381.388
Isol. from *Solanum tuberosum* (potatoes).

*9-β-*D*-Ribofuranosyl:* [15896-46-5]
Cryst. (EtOH). Mp 202-205°. λ_{max} 267 (ϵ 20280) (no solvent reported).

Shaw, G. *et al., J.C.S.(C)*, 1966, 921 (*synth, uv, ir*)
Letham, D.S. *et al., Life Sci.*, 1966, **5**, 1999-2004 (*isol, ribosylzeatin phosphate*)
Klambt, D. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 1966, **56**, 52 (*isol, deriv*)
Helgeson, J.P. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 1966, **56**, 60 (*deriv*)
Koshimizu, K. *et al., Tet. Lett.*, 1967, **8**, 1317-1320 (*(-)-Dihydrozeatin, isol, synth*)
Letham, D.S. *et al., Tetrahedron*, 1967, **23**, 479 (*ms, uv, pmr, struct*)
Hecht, S.M. *et al., Phytochemistry*, 1970, **9**, 1173-1180 (*2-Hydroxyzeatin*)
Playtis, A.J. *et al., Biochem. Biophys. Res. Commun.*, 1971, **45**, 1-5 (*synth, 9-ribosyl*)
Leonard, N.J. *et al., J.A.C.S.*, 1971, **93**, 3056 (*synth, uv, pmr, ms*)
Bugg, C.E. *et al., Biochem. Biophys. Res. Commun.*, 1972, **46**, 779-784 (*deoxy, cryst struct*)
Corse, J. *et al., Synthesis*, 1972, **11**, 618 (*synth, pmr*)
Fujii, T. *et al., Tet. Lett.*, 1972, **13**, 3075-3078 (*(-)-Dihydrozeatin, synth*)
Parker, C.W. *et al., Biochem. Biophys. Res. Commun.*, 1973, **55**, 1370-1376 (*synth, 9-glucoside*)
Parker, C.W. *et al., Planta*, 1973, **114**, 199-218 (*Raphanatin, isol, struct, metab*)
Scarbrough, E. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 1973, **70**, 3825 (*cis-Zeatin*)
Parker, C.W. *et al., Planta*, 1974, **115**, 337-344 (*isol, 9-glucosyl*)
Parker, C.W. *et al., Ann. Bot. (London)*, 1975, **39**, 375-376 (*O-glucoside*)
Letham, D.S. *et al., Ann. Bot. (London)*, 1976, **41**, 261-263 (*9-ribosyl O-glucoside*)
Mackenzie, G. *et al., J.C.S. Perkin 1*, 1976, 1446 (*synth*)
Matsubara, S. *et al., Phytochemistry*, 1977, **16**, 933-937 (*(-)-Dihydrozeatin, Dihydrozeatin riboside, synth*)
Wang, T.L. *et al., Planta*, 1977, **135**, 285; 1978, **140**, 151 (*glycosides*)
Cowley, D.E. *et al., Aust. J. Chem.*, 1978, **31**, 1095-1111 (*7-glucopyranosyl, 9-glucopyranosyl*)
Duke, C.C. *et al., Aust. J. Chem.*, 1978, **31**, 1291-1301; 2219 (*O-glucopyranoside, isol, synth, uv, pmr, cmr*)
Yokota, T. *et al., Phytochemistry*, 1980, **19**, 2367-2369 (*deoxy, isol*)
Chen, S.C. *et al., Agric. Biol. Chem.*, 1982, **46**, 2361 (*cmr*)
Corse, J. *et al., J. Plant Growth Regul.*, 1983, **2**, 47; *CA*, **100**, 34316 (*synth, resoln*)
Evidente, A. *et al., Phytochemistry*, 1989, **28**, 2603-2607 (*2-deoxyribosyl, Dihydrozeatin, trans-Zeatin, isol*)
De Napoli, L. *et al., Phytochemistry*, 1990, **29**, 701-709 (*2-deoxyribosyl, synth*)
Shadid, B. *et al., Tetrahedron*, 1990, **46**, 901-912 (*synth, ribosylzeatin phosphate*)
Evidente, A. *et al., Chem. Pharm. Bull.*, 1992, **40**, 1937 (*synth, 2-deoxyribosyl*)
Nicander, B. *et al., Plant Physiol.*, 1995, **109**, 513 (*9-glucoside*)
Kobayashi, H. *et al., Chem. Pharm. Bull.*, 1997, **45**, 260 (*Gazer*)
Jordis, U. *et al., Org. Prep. Proced. Int.*, 1997, **29**, 549-560 (*synth, pmr*)
Tsai, Y.-H. *et al., Helv. Chim. Acta*, 2003, **86**, 2452-2457 (*deoxy, isol*)

Zefbetaine Z-12

[105708-78-9]



$C_{16}H_{13}NO_3$ 267.284
Alkaloid from the fresh, mature seeds of *Zephyranthes flava* (Amaryllidaceae). Brown powder (EtOH). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 300°. λ_{max} 262 (ϵ 50120); 408 (ϵ 6165) (MeOH) (Berdy). λ_{max} 263 ; 278 ; 283 ; 378 (MeOH/HCl) (Berdy). λ_{max} 265 ; 458 (MeOH/NaOH) (Berdy).

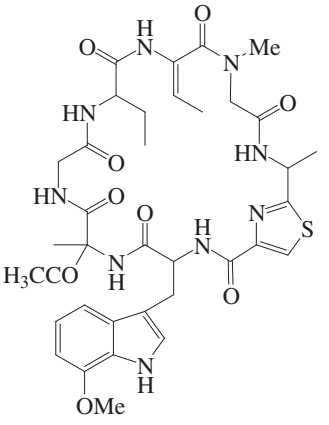
Ac:
Straw-coloured solid (Me_2CO/petrol). Mp 222-225°.

Me ether: ***Criasbetaine***
[103246-12-4]
$C_{17}H_{15}NO_3$ 281.31
Alkaloid from the fruits of *Crinum asiaticum*. Shows antitumour props. Yellow amorph. powder.

Fales, H.M. *et al., J.A.C.S.*, 1956, **78**, 4145 (*Criasbetaine, synth*)
Ghosal, S. *et al., J. Chem. Res., Synop.*, 1986, 112 (*Criasbetaine*)
Ghosal, S. *et al., Phytochemistry*, 1986, **25**, 1975 (*isol, uv, ir, pmr, ms, struct*)
Stark, L.M. *et al., J.O.C.*, 2000, **65**, 3227-3230 (*Criasbetaine, synth*)

Zelkovamycin Z-13

[221197-33-7]

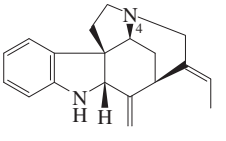


$C_{36}H_{45}N_9O_9S$ 779.872
Cyclic peptide antibiotic. Possible identity with Antibiotic CP 21635. Prod. by *Streptomyces* sp. K96-0670. Antibacterial agent. Powder. $[\alpha]_D^{28}$ +84.3 (c, 0.1 in MeOH). λ_{max} 205 (ϵ 57800); 222 (ϵ 59300); 244 (sh) (ϵ 24000); 284 (ϵ 6000); 292 (ϵ 5300) (MeOH).

Zhang, H. *et al., J. Antibiot.*, 1999, **52**, 29-33; 34-39 (*isol, uv, ir, pmr, cmr, ms*)
Martin, G.E. *et al., J. Nat. Prod.*, 2000, **63**, 543-585 (*N-15 nmr*)

Zenkerene Z-14

16,17,19,20-Tetradehydrocuran, 9CI. Zenkerine†
[56053-17-9]



Absolute Configuration

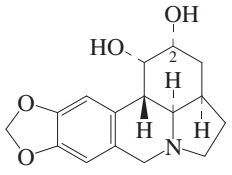
$C_{19}H_{22}N_2$ 278.396
Alkaloid from the root bark of *Strychnos zenkeri*.

N^4*-Oxide:* ***Zenkerene*** **N^b*-oxide.*** *Zenkerine* N^b*-oxide*
[197390-41-3]
$C_{19}H_{22}N_2O$ 294.396
Alkaloid from *Strychnos zenkeri*.

Thepenier, P. *et al., Bull. Soc. R. Sci. Liege*, 1997, **66**, 341-344; *CA*, **127**, 305384j

Zephyranthine Z-15

Trianthine. Ungminoridine



$C_{16}H_{19}NO_4$ 289.33

Historically, Zephyranthine was the (-)-form, Trianthine the (+)-form and Ungminoridine the (±)-form.

(+)-*form* [84236-20-4]

Alkaloid from *Pancratium trianthum*. Cryst. (MeOH). Mp 205-206° (179-180°). $[\alpha]_D$ +51.2.

(-)-*form* [2030-55-9]

Alkaloid from *Zephyranthes candida* (Amaryllidaceae). Cryst. + ½ H_2O. Mp 201-202° dec. $[\alpha]_D^{24}$ -43.17 (c, 0.47 in $CHCl_3$).

Picrate: Mp 194-195° dec.

Methiodide: Mp 294-295° dec.

Di-Ac: Mp 68-70°.

2-Epimer: ***Dihydrolycorine***
$C_{16}H_{19}NO_4$ 289.33
Alkaloid from *Pancratium maritimum* (Amaryllidaceae). Protozoicide which has been used against amoebic dysentery. Shows antifungal activity. Mp 255° (247°) dec.

2-Epimer, di-Ac: ***Nartazine***. *Diacetyldihydrolycorine*
[475-90-1]
$C_{20}H_{23}NO_6$ 373.405
Alkaloid from the bulbs of *Narcissus tazetta*. Also occurs in *Galanthus nivalis* (Amaryllidaceae). Long needles (Me_2CO). Mp 185-186°. $[\alpha]_D^{25}$ -120 (c, 0.25 in $CHCl_3$).

(±)-*form* [21851-15-0]

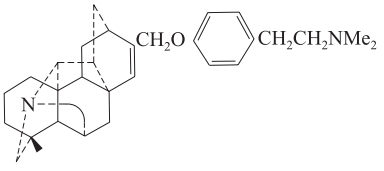
Alkaloid from *Ungernia minor* and *Ungernia vvedenskyi* (Amaryllidaceae). Mp 193-194° Mp 224-225°.

Di-Ac:
Cryst. (Me_2CO). Mp 143-145°.

Boit, H.-G. *et al., Chem. Ber.*, 1956, **89**, 2462 (*Nartazine*)
Nakagawa, Y. *et al., J.C.S.*, 1959, 3736 (*Dihydrolycorine, stereochem*)
Boit, H.-G. *et al., Naturwissenschaften*, 1960, **47**, 109 (*Nartazine*)
Ozeki, S. *et al., Chem. Pharm. Bull.*, 1964, **12**, 253 (*uv, ir, struct*)
Shiro, M. *et al., Chem. Ind. (London)*, 1966, 1229 (*Dihydrolycorine, cryst struct*)
Kotera, K. *et al., Tet. Lett.*, 1966, 2009 (*stereochem*)
Sandberg, F. *et al., Acta Pharm. Suec.*, 1968, **5**, 61; *CA*, **69**, 25043d (*Dihydrolycorine, isol*)
Abduazimov, K.A. *et al., Khim. Prir. Soedin.*, 1968, **4**, 263; *Chem. Nat. Compd. (Engl. Transl.)*, 1968, **4**, 227 (*isol, uv, pmr, ms, struct*)
Miyakado, M. *et al., Phytochemistry*, 1975, **14**, 2717 (*Dihydrolycorine, activity*)
Yamaki, M. *et al., Heterocycles*, 1976, **5**, 163 (*synth*)
Tsuda, Y. *et al., J.C.S. Perkin 1*, 1979, 1358 (*synth*)
Kadyrov, K.A. *et al., Khim. Prir. Soedin.*, 1979, **15**, 418; *Chem. Nat. Compd. (Engl. Transl.)*, 1979, **15**, 370 (*isol*)
Frederik, D.M. *et al., Khim. Prir. Soedin.*, 1982, **18**, 534; *Chem. Nat. Compd. (Engl. Transl.)*, 1992, **18**, 510-511 (*Trianthine*)
Oppolzer, W. *et al., J.A.C.S.*, 1994, **116**, 3139-3140 (*Trianthine, synth*)
Herrera, M.R. *et al., Fitoterapia*, 2001, **72**, 444-448 (*isol, pmr, cmr*)
Wang, Q. *et al., Org. Lett.*, 2004, **6**, 2189-2192 (*synth*)

Zeraconine Z-16

[111313-35-0]



$C_{30}H_{40}N_2O$ 444.659

Alkaloid from *Aconitum zeravschanicum* (Ranunculaceae). Mp 130-131°.

N-*Oxide:* ***Zeraconine* N-*oxide***
[111261-81-5]
$C_{30}H_{40}N_2O_2$ 460.658
Alkaloid from *Aconitum zeravschanicum* (Ranunculaceae). Mp 94-95°.

Vaisov, Z.M. *et al., Khim. Prir. Soedin.*, 1987, 407; *Chem. Nat. Compd. (Engl. Transl.)*, 337

Zeravschanidine Z-17

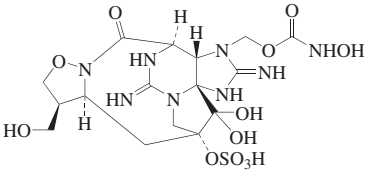
Struct. unknown. Alkaloid from the above-ground parts of *Aconitum zeravschanicum* collected during budding and blooming (Ranunculaceae). Amorph. Mp 85°.

Hydrochloride: Mp 271°. $[\alpha]_D$ +30.61.

Progressov, N.N. *et al., Dokl. Akad. Nauk UzSSR*, 1953, **No. 11**, 19-21; *CA*, **51**, 1539h

Zetekitoxin AB Z-18

Atelopidtoxin
[62996-38-7]



Relative Configuration

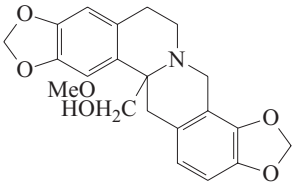
$C_{16}H_{24}N_8O_{12}S$ 552.478

Related to Saxitoxin, S-109. Toxin from the golden frog *Atelopus zeteki* of Panama. Extremely potent sodium channel blocker.

Yotsu-Yamashita, M. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 2004, **101**, 4346-4351 (*isol, pmr, cmr, N-15 nmr, ms*)

Zijinlongine Z-19

*4,6,7,13-Tetrahydro-12-methoxy-12*bH-*bis[1,3]benzodioxolo[5,6-a:4′,5′-g]quinolizine-12*b-*methanol, 9CI*
[133086-83-6]



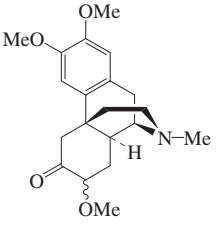
$C_{21}H_{21}NO_6$ 383.4

Alkaloid from the whole plant of *Dactylicapnos torulosa* (Papaveraceae). Cryst. Mp 166-167°.

Zhang, G.L. *et al., Yaoxue Xuebao*, 1990, **25**, 604-607 (*isol*)

Zippeline Z-20

[123750-35-6]



Relative Configuration

$C_{20}H_{27}NO_4$ 345.438

Alkaloid from aerial parts of *Stephania zippeliana* (Menispermaceae). $[\alpha]_D$ +20 (c, 0.60 in $CHCl_3$).

Charles, B. *et al., Can. J. Chem.*, 1989, **67**, 1257

Zizyphine I Z-21

[159509-34-9]

As Zizyphine A, Z-22 with

R = -$CH(CH_3)CH_2CH_3$, R′ = -CH_2Ph

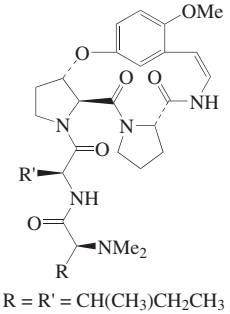
$C_{36}H_{47}N_5O_6$ 645.797

Stereochem. not determined. Alkaloid from bark of *Zizyphus oenoplia* (Rhamnaceae). Mp 135°.

Khokhar, I. *et al., Pak. J. Sci.*, 1993, **45**, 54; *CA*, **122**, 5434s (*isol, pmr, ms*)

Zizyphine A Z-22

Zizyphine†
[51059-42-8]



Absolute Configuration

R = R' = $CH(CH_3)CH_2CH_3$ (*S*-)

$C_{33}H_{49}N_5O_6$ 611.78

Alkaloid from the root bark and stem bark of *Zizyphus oenoplia* and from *Zizyphus jujuba* (Rhamnaceae). Cryst. ($CHCl_3$/petrol). Mp 124-126°. $[\alpha]_D^{20}$ -411 (c, 0.086 in $CHCl_3$).

Hydrochloride: Mp 184-184.5°.

N-*De-Me:* ***Zizyphine B***. *Zizyphinine*
[24604-79-3]
$C_{32}H_{47}N_5O_6$ 597.753
Alkaloid from root and stem bark of *Zizyphus oenoplia* (Rhamnaceae). Amorph. $[\alpha]_D^{24}$ -457 (c, 1 in $CHCl_3$). Revised struct. is consequent on the revised struct. of Zizyphine A.

N-*De-Me; hydrochloride:*
Cryst. + $1H_2O$. Mp 242-243° dec.

O-*De-Me:* ***Zizyphine F***
[55839-64-0]
$C_{32}H_{47}N_5O_6$ 597.753
Alkaloid from stem bark of *Zizyphus oenoplia* and *Zizyphus spina-christi* (Rhamnaceae). Needles (Et_2O). Mp 235°. $[\alpha]_D^{20}$ -277 (c, 0.15 in MeOH).

Ménard, E.L. *et al., Helv. Chim. Acta*, 1963, **46**, 1801 (*isol, uv, ir, pmr*)
Zbiral, E. *et al., Helv. Chim. Acta*, 1965, **48**, 404 (*uv, ir, pmr, ms*)
Tschesche, R. *et al., Tet. Lett.*, 1973, 2577; 1974, 2941 (*ms, struct, Zizyphine F*)
Cassels, B.K. *et al., Tetrahedron*, 1974, **30**, 2461 (*isol*)
Hindenlang, D.M. *et al., Annalen*, 1980, 447 (*cmr*)
Schmidt, U. *et al., Angew. Chem., Int. Ed.*, 1981, **20**, 1026 (*synth, ms*)
Haslinger, E. *et al., Monatsh. Chem.*, 1982, **113**, 95 (*pmr, cmr*)
Schmidt, U. *et al., J.O.C.*, 1983, **48**, 2680 (*synth, cd, pmr, ms*)

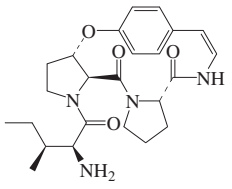
Zizyphine C Z-23

[55323-67-6]
As Zizyphine A, Z-22 with
R = $-CH_2Ph$, R′ = $-CH(CH_3)CH_2CH_3$
$C_{36}H_{47}N_5O_6$ 645.797
Alkaloid from the stem bark of *Zizyphus oenoplia* (Rhamnaceae). Amorph. $[\alpha]_D$ -331 (c, 0.10 in $CHCl_3$). $[\alpha]_D$ -343 (c, 1.0 in MeOH).

Cassels, B.K. *et al., Tetrahedron*, 1974, **30**, 2461 (*isol, uv, ir, pmr, ms, struct*)

Zizyphine G Z-24

*1-(2-Amino-3-methyl-1-oxopentyl)-2,3,3*a*,12*a*,13,14,15,17*a*-octahydro-5,8-ethenodipyrrolo[3,2-b:1′,2′-e][1,5,8]-oxadiazacyclotetradecine-12,17(1*H*,11*H*)-dione, 9CI*
[55839-65-1]



Absolute Configuration

$C_{24}H_{32}N_4O_4$ 440.541
Alkaloid from the stem bark of *Zizyphus oenoplia* (Rhamnaceae). Cryst. (Me_2CO). Mp 130°. $[\alpha]_D^{20}$ -185 (c, 0.19 in MeOH).

Tschesche, R. *et al., Tet. Lett.*, 1974, **15**, 2941-2944 (*isol, pmr, ms, struct*)

Zizyphine K Z-25

[164176-41-4]
As Zizyphine A, Z-22 with
R = $CH(CH_3)_2$, R′ = $CH(CH_3)CH_2CH_3$, *O*-de-Me
$C_{31}H_{45}N_5O_6$ 583.726
Alkaloid from *Zizyphus oenoplia*. Mp 230°.

Khokhar, I. *et al., J. Nat. Sci. Math.*, 1994, **34**, 171-175; *CA*, **123**, 29541w

Zizyphine N Z-26

As Zizyphine A, Z-22 with
R = $-CH(CH_3)CH_2CH_3$(*S*-), R′ = $-CH_2CH(CH_3)_2$
$C_{33}H_{49}N_5O_6$ 611.78
Alkaloid from the roots of *Zizyphus oenoplia* var. *brunoniana*. Shows antimycobacterial and antiplasmodial activity. Mp 117-119°. $[\alpha]_D^{30}$ -326.6 (c, 0.18 in $CHCl_3$). λ_{max} 266 (log ϵ 4.4); 319 (log ϵ 4.28) (EtOH).

N-*De-Me:* ***Zizyphine O***
$C_{32}H_{47}N_5O_6$ 597.753
Alkaloid from the roots of *Zizyphus oenoplia* var. *brunoniana*. Mp 106-108°. $[\alpha]_D^{31}$ -380.2 (c, 0.15 in $CHCl_3$). λ_{max} 268 (log ϵ 4.01); 319 (log ϵ 3.89) (EtOH).

O-*De-Me:* ***Zizyphine P***
$C_{32}H_{47}N_5O_6$ 597.753
Alkaloid from the roots of *Zizyphus oenoplia* var. *brunoniana*. Mp 127-129°. $[\alpha]_D^{31}$ -385.4 (c, 0.15 in $CHCl_3$). λ_{max} 265 (log ϵ 4.73); 321 (log ϵ 4.59) (MeOH).

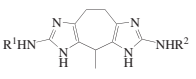
Suksamrarn, S. *et al., Tetrahedron*, 2005, **61**, 1175-1180 (*isol, pmr, cmr, ms*)
He, G. *et al., Org. Lett.*, 2007, **9**, 1367-1369 (*synth*)

Zizyphine Q Z-27

As Zizyphine A, Z-22 with
R = $-CH(CH_3)CH_2CH_3$(*S*-), R′ = $-CH(CH_3)_2$
$C_{32}H_{47}N_5O_6$ 597.753
Alkaloid from the roots of *Zizyphus oenoplia* var. *brunoniana*. Shows antimycobacterial and antiplasmodial props. Mp 140-142°. $[\alpha]_D^{29}$ -345 (c, 0.16 in $CHCl_3$). λ_{max} 265 (log ϵ 3.64); 319 (log ϵ 3.5) (MeOH).

Suksamrarn, S. *et al., Tetrahedron*, 2005, **61**, 1175-1180 (*isol, pmr, cmr, ms*)

Zoamides Z-28



	R^1	R^2
Zoamide A:	$-COCH{=}C(CH_3)_2$	$-COCH{=}C(CH_3)_2$
B:	$-COPh$	$-COCH{=}C(CH_3)_2$
C:	$-COPh$	$-COCH(CH_3)_2$
D:	$-COPh$	$-COCH(CH_3)CH_2CH_3$ (S⁻)

Related to Palyzoanthoxanthins in P-94.

Zoamide A [188558-01-2]
$C_{20}H_{26}N_6O_2$ 382.464
Alkaloid from an undescribed marine zoanthid, *Parazoanthus* sp., collected in the Philippines. Gummy solid. $[\alpha]_D$ 0. λ_{max} 200 (ϵ 20500); 290 (ϵ 18500) (MeOH).

Zoamide C [188558-97-6]
$C_{21}H_{24}N_6O_2$ 392.46
From *Parazoanthus* sp. Gummy solid. $[\alpha]_D$ 0. λ_{max} 225 (ϵ 19600); 270 (ϵ 13600) (MeOH).

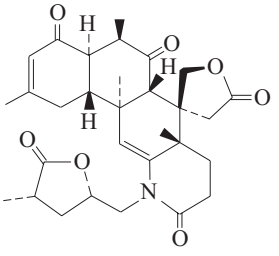
Zoamide B [188558-50-1]
$C_{22}H_{24}N_6O_2$ 404.471
From *Parazoanthus* sp. Solid. $[\alpha]_D$ 0. λ_{max} 220 (ϵ 29000); 290 (ϵ 23500) (MeOH).

Zoamide D [188559-04-8]
$C_{22}H_{26}N_6O_2$ 406.486
From *Parazoanthus* sp. Gummy solid. $[\alpha]_D$ +15.1. λ_{max} 230 (ϵ 17000); 270 (ϵ 14700) (MeOH).

D'Ambrosio, M. *et al., Tet. Lett.*, 1997, **38**, 717 (*isol, uv, ir, pmr, cmr, struct*)

Zoanthamide Z-29

[97877-70-8]

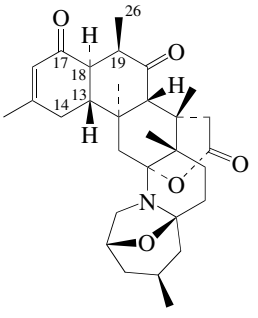


$C_{30}H_{37}NO_7$ 523.625
Alkaloid from an unidentified marine zoanthid, *Zoanthus* sp. Shows antiinflammatory props. Mp 278-280°. $[\alpha]_D$ +133 (c, 0.83 in $CHCl_3$). λ_{max} 235 (ϵ 23900) (MeCN) (Derep).

Rao, C.B. *et al., J.O.C.*, 1985, **50**, 3757 (*isol, uv, ir, pmr, cmr, struct*)

Zoanthamine Z-30

[93426-90-5]



$C_{30}H_{41}NO_5$ 495.658
Alkaloid from a marine zoanthid, *Zoanthus* sp. Cytotoxic agent, antiinflammatory. Interleukin 6 production inhibitor. Mp 306-308°. $[\alpha]_D$ +18 (c, 0.48 in $CHCl_3$). λ_{max} 233 (ϵ 11000) (MeCN) (Derep).

13,14,17,18-Tetradehydro, 17-alcohol: ***Zoanthenol***
[231945-73-6]
$C_{30}H_{39}NO_5$ 493.642
Alkaloid from a zoanthid. Amorph. solid. $[\alpha]_D^{25}$ +7.1 (c, 0.24 in $CHCl_3$).

11-Oxo: ***Zoanthaminone***
[123853-69-0]
$C_{30}H_{39}NO_6$ 509.641
Alkaloid from a marine zoanthid, *Zoanthus* sp. Cryst. $[\alpha]_D$ +30 (c, 0.1 in $CHCl_3$). Mp not recorded. λ_{max} 235 (ϵ 23900) (MeCN) (Derep).

11β-Hydroxy: ***11-Hydroxyzoanthamine***
[231945-77-0]
$C_{30}H_{41}NO_6$ 511.657
Alkaloid from a zoanthid. Amorph. solid. $[\alpha]_D^{25}$ +1.8 (c, 0.23 in $CHCl_3$).

16β-Hydroxy, 17-deoxo, 15β,16-dihydro: ***Zooxanthellamine***
[208256-91-1]
$C_{30}H_{45}NO_5$ 499.689
Alkaloid from cultures of the dinoflagellate *Symbiodinium* sp. Solid. Mp > 300°. $[\alpha]_D^{20}$ +40 (c, 0.05 in MeOH).

26-Hydroxy: 26-Hydroxyzoanthamine. ***Oxyzoanthamine***
[159509-36-1]
$C_{30}H_{41}NO_6$ 511.657
Alkaloid from a *Zoanthus* sp. Cytotoxic agent. Interleukin 6 production inhibitor. Oil.

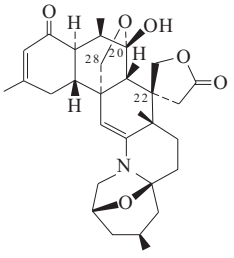
19-Epimer, 26-hydroxy: 26-Hydroxy-19-epizoanthamine. ***Epioxyzoanthamine***
[211049-29-5]
$C_{30}H_{41}NO_6$ 511.657
Alkaloid from a *Zoanthus* sp. Amorph. solid. $[\alpha]_D^{25}$ -17.5 (c, 0.24 in $CHCl_3$).

$\Delta^{15,27}$-Isomer, 16β-hydroxy, 17-deoxo: ***Lobozoanthamine***
$C_{30}H_{43}NO_5$ 497.673
Alkaloid from a *Lobophytum* sp. Amorph. solid. $[\alpha]_D^{25}$ +26 (c, 0.15 in $CHCl_3$).

Rao, C.B. *et al., J.A.C.S.*, 1984, **106**, 7983-7984 (*uv, ir, pmr, cmr, cryst struct*)
Atta-ur-Rahman, *et al., Tet. Lett.*, 1989, **30**, 6825-6828 (*Zoanthaminone*)
Fukuzawa, S. *et al., Heterocycl. Commun.*, 1995, **1**, 207-214 (*Oxyzoanthamine*)
Nakamura, H. *et al., Bull. Chem. Soc. Jpn.*, 1998, **71**, 781-787 (*Zooxanthellamine*)
Daranas, A.H. *et al., Tetrahedron*, 1998, **54**, 7891-7896; 1999, **55**, 5539-5546 (*Epioxyzoanthamine, 11-Hydroxyzoanthamine, Zoanthenol*)
Behenna, D.C. *et al., Angew. Chem., Int. Ed.*, 2008, **47**, 2365-2386 (*rev, biol, chem*)
Fattorusso, E. *et al., Tet. Lett.*, 2008, **49**, 2189-2192 (*Lobozoanthamine*)

Zoanthenamine Z-31

[97877-69-5]



$C_{30}H_{39}NO_6$ 509.641
The abs. config. is prob. as shown by analogy with Norzoanthamine, N-317. Alkaloid from an unidentified marine zoanthid, *Zoanthus* sp. Shows antiinflammatory props. Powder. Mp 238-240°. Slowly dec. in soln. λ_{max} 233 (ϵ 11000) (MeCN) (Derep).

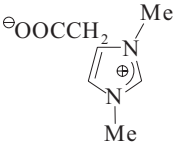
20,28-Deepoxy, 20-ketone: ***28-Deoxyzoanthenamine***
[120314-15-0]
$C_{30}H_{39}NO_5$ 493.642
Alkaloid from the unidentified colonial zoanthid of the genus *Zoanthus*. Potent antiinflammatory and analgesic agent. Mp 305-307°. $[\alpha]_D$ +216 (c, 3.7 in $CHCl_3$). λ_{max} 238 (ϵ 16250) (MeOH) (Berdy).

22-Epimer, 20,28-deepoxy, 20-ketone: ***28-Deoxy-22-epizoanthenamine****. 22-Epi-28-deoxyzoanthenamine*
[120409-36-1]
$C_{30}H_{39}NO_5$ 493.642
Alkaloid from an unidentified *Zoanthus* spp. Antiinflammatory and analgesic agent. Oil. $[\alpha]_D$ +85 (c, 2.36 in $CHCl_3$). λ_{max} 237 (ϵ 14200) (MeOH) (Berdy).

Rao, C.B. *et al., J.O.C.*, 1985, **50**, 3757 (*isol, uv, ir, pmr, cmr, struct*)
Rao, C.B. *et al., Heterocycles*, 1989, **28**, 103 (*Deoxyzoanthenamine, 28-Deoxy-22-epizoanthenamine*)

Zooanemonin Z-32

*4-(Carboxymethyl)-1,3-dimethyl-1*H*-imidazolium hydroxide inner salt, 9CI. 1,3-Dimethyl-4-imidazoleacetic acid betaine. Anemonin*†
[584-91-8]



$C_7H_{10}N_2O_2$ 154.168
Isol. from the mussel *Arca noae*, the sea anemone *Anemonia sulcata* and the sponge *Axinella verrucosa*. Antibacterial, antineoplastic agent. Extremely hygroscopic.

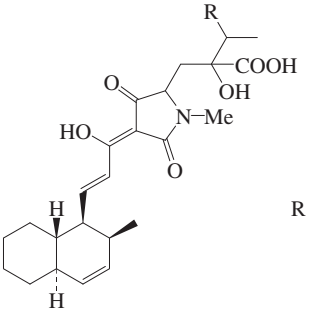
Hydrochloride: Mp 184° (178°).

Picrate: Mp 149-153°.

Kutscher, F. *et al., Hoppe-Seyler's Z. Physiol. Chem.*, 1933, **221**, 38 (*isol*)
Ackermann, D. *et al., Hoppe-Seyler's Z. Physiol. Chem.*, 1953, **294**, 93; **295**, 1; 1954, **296**, 286; 1960, **318**, 281 (*synth, isol, nomencl, struct*)

Zopfiellamide A Z-33

[478945-64-1]



$C_{25}H_{35}NO_6$ 445.555
Tetramic acid deriv. Incorr. MF given in the ref. Prod. by the marine fungus *Zopfiella latipes*. Yellowish cryst. (EtOH). Mp 225-230°. $[\alpha]_D^{22}$ +5.2 (c, 1.1 in $CHCl_3$). λ_{max} 247 (ϵ 11000); 320 (ϵ 10000) (MeOH).

Daferner, M. *et al., Tetrahedron*, 2002, **58**, 7781-7784 (*isol, pmr, cmr*)

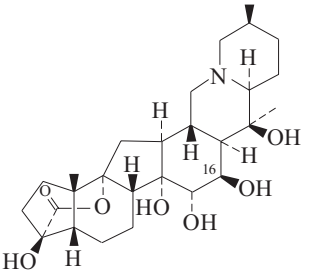
Zopfiellamide B Z-34

[478945-65-2]
As Zopfiellamide A, Z-33 with
R = CH_2CH_3
$C_{26}H_{37}NO_6$ 459.581
Tetramic acid deriv. Prod. by the marine fungus *Zopfiella latipes*. Yellowish oil. $[\alpha]_D^{22}$ -24 (c, 0.3 in $CHCl_3$). λ_{max} 247 (ϵ 3800); 321 (ϵ 3400) (MeOH).

Daferner, M. *et al., Tetrahedron*, 2002, **58**, 7781-7784 (*isol, pmr, cmr*)

Zygadenilic acid δ-lactone Z-35

Zygadenine δ-lactone
[10060-03-4]



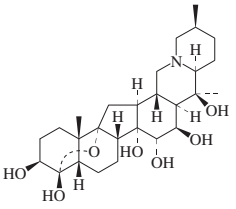
$C_{27}H_{41}NO_7$ 491.623
Alkamine from *Veratrum* spp., isol. from *Veratrum oxysepalum* after hydrol. Mp 252° dec. $[\alpha]_D^{15}$ -59.4 (c, 1.70 in $CHCl_3$).

16-Angeloyl: ***Angeloylzygadenilic acid δ-lactone***
$C_{32}H_{47}NO_8$ 573.725
Alkaloid from the rhizomes of *Veratrum grandiflorum*. Monohydrate. Mp 235°. $[\alpha]_D^{15}$ -10.9 (c, 1.65 in $CHCl_3$). CAS no. not found to 2006.

Tsukamoto, T. *et al., Yakugaku Zasshi*, 1959, **79**, 1102-1106 (*isol, struct*)
Yagi, A. *et al., Chem. Pharm. Bull.*, 1962, **10**, 519-521 (*struct, bibl*)

Zygadenine Z-36

4,9-Epoxy-3,4,14,15,16,20-cevanehexol. 7-Deoxygermine
[545-45-9]



Absolute Configuration

$C_{27}H_{43}NO_7$ 493.639
Alkaloid from *Zygadenus intermedius* and several other *Zygadenus* spp. (Liliaceae). Shows antitumour activity. Mp 218-220° (201-204°, 214°). $[\alpha]_D^{20}$ -48.4 (c, 1.26 in $CHCl_3$).

Hydrochloride: Mp 231-234°.

3-O-β-D-Glucopyranoside: Zygadenine 3-glucoside
[169907-14-6]
$C_{33}H_{53}NO_{12}$ 655.781
Alkaloid from aerial parts of *Astragalus polycanthus*. Cryst. Mp 310-311°. $[\alpha]_D^{30}$ -67 (c, 0.3 in MeOH).

3-Ac: ***Zygacine***
[2777-79-9]
$C_{29}H_{45}NO_8$ 535.676
Alkaloid from *Veratrum album*, *Zygadenus paniculatus*, *Zygadenus venenosus* and *Zygadenus gramineus* . Noncryst. $[\alpha]_D$ -22 ($CHCl_3$).

3-O-(2R-Methylbutanoyl): ***2-Methylbutyrylzygadenine***
[105765-19-3]
$C_{32}H_{51}NO_8$ 577.757
Alkaloid from *Veratrum stamineum*. Mp 175°. $[\alpha]_D$ -7.8 ($CHCl_3$).

3-Angeloyl: ***Angeloylzygadenine***
[67370-02-9]
$C_{32}H_{49}NO_8$ 575.741
Alkaloid from *Veratrum stenophyllum*, *Veratrum maackii* and *Veratrum stamineum* (Liliaceae). Mp 222-224°. $[\alpha]_D$ -35 ($CHCl_3$).

3-Angeloyl, β-N-oxide: ***Angeloylzygadenine β-N-oxide***
[313677-61-1]
$C_{32}H_{49}NO_9$ 591.74
Alkaloid from *Veratrum taliense*. Needles (MeOH). Mp 196-198°.

3-O-(4-Hydroxy-3-methoxybenzoyl): ***Vanilloylzygadenine***
[67370-01-8]
$C_{35}H_{49}NO_{10}$ 643.773
Alkaloid from *Zygadenus venenosus* and *Zygadenus paniculatus*. Mp 258-259°. $[\alpha]_D^{23}$ -27.5 ($CHCl_3$).

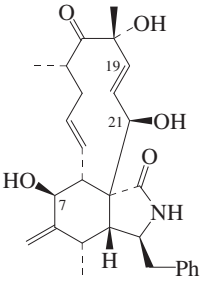
3-O-(3,4-Dimethoxybenzoyl): ***Veratroylzygadenine***
[31329-58-5]
$C_{36}H_{51}NO_{10}$ 657.8
Alkaloid from *Zygadenus venenosus*, *Zygadenus paniculatus*, *Veratrum album* and several other *Veratrum* spp. Moderate hypotensive agent. Mp 278-280° dec. (270-271°). $[\alpha]_D$ -27 ($CHCl_3$).

▶ FL5660000

Heyl, F.W. *et al., J.A.C.S.*, 1949, **71**, 1751-1752 (*isol*)
Stoll, A. *et al., Helv. Chim. Acta*, 1953, **36**, 1570-1575 (*Veratroylzygadenine*)
Kupchan, S.M. *et al., J.A.C.S.*, 1953, **75**, 1025-1029; 1959, **81**, 1925-1928 (*Vallinoylzygadenine, Veratroylzygadenine, struct*)
Kupchan, S.M. *et al., J.A.C.S.*, 1955, **77**, 689-691 (*Zygacine*)
Suzuki, M. *et al., Yakugaku Zasshi*, 1959, **79**, 619-623 (*Angeloylzygadenine*)
Tomko, J. *et al., Planta Med.*, 1962, **10**, 138-142 (*Veratroylzygadenine*)
Yagi, A. *et al., Yakugaku Zasshi*, 1962, **82**, 210-213; *CA*, **58**, 5748b (*2-Methylbutyrylzygadenine*)
Budzikiewicz, H. *et al., Tetrahedron*, 1964, **20**, 2267-2268 (*ms*)
Carey, F.A. *et al., Org. Magn. Reson.*, 1980, **14**, 141-144 (*cmr*)
Liang, G. *et al., Yaoxue Xuebao*, 1984, **19**, 131-136 (*isol, Angeloylzygadenine, Veratroylzygadenine*)
Gupta, R.K. *et al., Indian J. Chem., Sect. B*, 1995, **34**, 1021-1022 (*glucoside*)
Zhou, C.X. *et al., Indian J. Chem., Sect. B*, 2000, **39**, 283-286 (*Angeloylzygadenine N-oxide*)

Zygosporin D Z-37

[25374-67-8]



Absolute Configuration

$C_{28}H_{35}NO_5$ 465.588
Prod. by *Zygosporium masonii* and *Metarhizium anisopliae*. Antibiotic possessing antitumour and antiinflammatory props. Plates (MeOH). Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. Mp 180-190°. $[\alpha]_D^{25}$ -15.5 (c, 0.58 in dioxan). $[\alpha]_D$ +20.6 (c, 0.25 in EtOH).

▶ LD_{50} (mus, ipr) 10 mg/kg. HA5304000

21-Ac: ***Cytochalasin D***. *Zygosporin A*
[22144-77-0]
$C_{30}H_{37}NO_6$ 507.625
Metab. of *Engleromyces goetzii*, *Metarhizium anisopliae* and *Hypoxylon terricola*. Shows antibiotic and cytotoxic props. Inhibits lipid droplet formn. Specific cholesteryl ester synthesis inhibitor. Needles (Me_2CO/petrol). Mp 268-271°. $[\alpha]_D^{25}$ -7.5 (c, 0.55 in dioxan). Log P 1.54 (uncertain value) (calc). λ_{max} 286 (ε 330) (MeOH) (Derep).

▶ LD_{50} (rat, ipr) 0.9 mg/kg. Exp. teratogen. GZ4850000

7,21-Di-Ac: ***Zygosporin F***
[25374-68-9]
$C_{32}H_{39}NO_7$ 549.663
Minor metab. of *Zygosporium masonii*. Shows antibiotic props. similar to Zygosporin D. Prisms (diisopropyl ether). Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. Mp 126-129°. $[\alpha]_D^{24}$ -12 (c, 0.78 in dioxan).

21-Ketone: 7,18-Dihydroxy-16,18-dimethyl-10-phenyl[11]cytochalasa-6(12),13,19-triene-1,17,21-trione
$C_{28}H_{33}NO_5$ 463.572
From *Daldinia* sp. Amorph. solid. $[\alpha]_D$ -38.1 (c, 0.05 in $CHCl_3$).

19α,20β-Epoxide, 21-Ac: ***19,20-Epoxycytochalasin D***
$C_{30}H_{37}NO_7$ 523.625
C-19 stereochem. revised in 2007. Metab. of *Engleromyces goetzii* and *Xylaria hypoxylon*. Cytotoxic. $[\alpha]_D$ -228 (c, 0.03 in $CHCl_3$).

18-Deoxy, 21-Ac: ***Zygosporin E***
[26399-27-9]
[114651-74-0]
$C_{30}H_{37}NO_5$ 491.626
Minor metab. of the fungus *Zygosporium masonii*. Shows antibiotic props. similar to Zygosporin D. Needles (Me_2CO/hexane). Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. Mp 218-223.5°. $[\alpha]_D^{24}$ +6.2 (c, 0.97 in dioxan).

18-Deoxy, di-Ac:
Amorph. powder. Mp 86-89°.

17-Deoxo: ***Cytochalasin J***. *Deacetylcytochalasin H*. *Paspalin PII*. *Kodocytochalasin 2*
[53760-20-6]
$C_{28}H_{37}NO_4$ 451.605
Metab. of a *Phomopsis* sp. Cryst. (Et_2O). Sol. MeOH; poorly sol. H_2O. Mp 274-276° part dec. $[\alpha]_D^{27}$ +47.8 (c, 0.43 in MeOH). Identity with Kodocytochalasin 2 not firmly establ. λ_{max} 260 (MeOH) (Berdy).

▶ LD_{50} (mus, ivn) 5 mg/kg. HA5320000

17-Deoxo, 21-Ac: ***Cytochalasin H***. *Kodocytochalasin 1*. *Paspalin P1*
[53760-19-3]
$C_{30}H_{39}NO_5$ 493.642
Metab. of *Phomopsis* spp. Shows antibiotic and cytotoxic props. Long needles ($CHCl_3$/Et_2O). Mp 258-263°. $[\alpha]_D$ -9 ($CHCl_3$). $[\alpha]_D$ +91.2 (MeOH). Log P 2.74 (uncertain value) (calc). λ_{max} 286 (ε 330) (MeOH) (Derep).

▶ LD_{50} (mus, ivn) 2 mg/kg. HA5306000

17-Deoxo, 18-deoxy, 21-Ac: ***Antibiotic L***

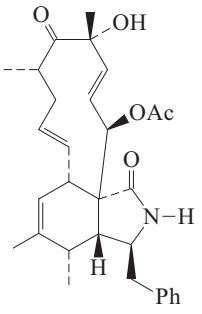
696474. *L 696474*
$C_{30}H_{39}NO_4$ 477.642
Metab. of *Hypoxylon fragiforme* ATCC 20995. HIV-1 protease inhibitor. Cryst. (MeOH). Sol. DMSO, CH_2Cl_2, MeOH; poorly sol. H_2O, hexane. Mp 201°. Log P 4.83 (uncertain value) (calc).

4′-Methoxy, 17-deoxo, 21-Ac: ***Pyrichalasin H***
[111631-97-1]
$C_{31}H_{41}NO_6$ 523.668
Isol. from *Pyricularia grisea*. Phytotoxin. Plates (EtOAc). Sol. MeOH, Et_2O; poorly sol. H_2O. Mp 207-209°. $[\alpha]_D^{23}$ -18.4 (c, 1.05 in $CHCl_3$). $[\alpha]_D^{23}$ +59 (c, 1.05 in MeOH). Has a 4-methoxy substit. on the phenyl ring. λ_{max} 203 (ϵ 22000); 224 (ϵ 17000); 276 (sh) (ϵ 2000); 283 (sh) (ϵ 1640) (EtOH) (Derep).

Aldridge, D.C. *et al., J.C.S.(C)*, 1969, 923 (*isol, struct, nmr*)
Minato, H. *et al., J.C.S.(C)*, 1970, 45 (*Zygosporins*)
Binder, M. *et al., J.C.S. Perkin 1*, 1973, 1146 (*Zygosporins E,F*)
Graf, W. *et al., Helv. Chim. Acta*, 1974, **57**, 1801 (*cmr, biosynth*)
Patwardhan, S.A. *et al., Phytochemistry*, 1974, **13**, 1985 (*isol, ir, pmr*)
Vederas, J.C. *et al., Helv. Chim. Acta*, 1975, **58**, 1886; 1976, **59**, 558 (*biosynth, cmr*)
McMillan, J.A. *et al., Chem. Comm.*, 1977, 105 (*cryst struct*)
Beno, M.A. *et al., J.A.C.S.*, 1977, **99**, 4123 (*cryst struct, pmr, stereochem*)
Cole, R.J. *et al., J. Agric. Food Chem.*, 1981, **29**, 205 (*deriv*)
Chappuis, G. *et al., Helv. Chim. Acta*, 1982, **65**, 521 (*synth, props*)
Vedejs, E. *et al., J.O.C.*, 1982, **47**, 4384 (*synth*)
Magin, D.F. *et al., J. Agric. Food Chem.*, 1984, **32**, 544 (*ms*)
Nukina, M. *et al., Agric. Biol. Chem.*, 1987, **51**, 2625 (*Pyrichalasin F*)
Vedejs, E. *et al., J.A.C.S.*, 1988, **110**, 4822 (*synth*)
Edwards, R.L. *et al., J.C.S. Perkin 1*, 1989, 57 (*isol*)
Thomas, E.J. *et al., J.C.S. Perkin 1*, 1989, 507; 519; 1999, 3269-3283; 3285-3290 (*synth*)
Ondeyka, J. *et al., J. Antibiot.*, 1992, **45**, 671-678; 679-685; 686-691 (*L 696474*)
Maccotta, A. *et al., J.C.S. Perkin 2*, 1993, 729 (*pmr, cmr, conformn*)
Buchanan, M.S. *et al., Phytochemistry*, 1995, **40**, 135; 1996, **41**, 821; **42**, 173 (*21-ketone*)
Espada, A. *et al., Tetrahedron*, 1997, **53**, 6485 (*19,20-Epoxycytochalasin D*)
Namatame, I. *et al., J. Antibiot.*, 2000, **53**, 19-25 (*activity*)
Fujii, Y. *et al., J. Nat. Prod.*, 2000, **63**, 132-135 (*isol, pmr, cmr*)
Jikai, L. *et al., Helv. Chim. Acta*, 2002, **85**, 1439-1442 (*Cytochalasin D, 19,20-Epoxycytochalasin D*)
Haidle, A.M. *et al., Proc. Natl. Acad. Sci. U.S.A.*, 2006, **101**, 12048-12053 (*L 696474, synth*)
Shi, L.-M. *et al., J. Chem. Res.*, 2007, 144-145 (*19,20-Epoxycyclochalasin D, struct*)
Tao, Y. *et al., Magn. Reson. Chem.*, 2008, **46**, 501-505 (*Cytochalasin H*)
Cole, R.J. *et al., Handbook of Toxic Fungal Metabolites*, Academic Press, 1981, 338; 340

Zygosporin G Z-38

[25374-69-0]



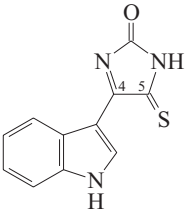
$C_{30}H_{37}NO_5$ 491.626
Minor metab. of the fungus *Zygosporium masonii*. Shows antibiotic props. similar to Zygosporin D, Z-37. Prisms (diisopropyl ether). Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. Mp 115-125°. $[\alpha]_D^{24}$ -82 (c, 0.87 in dioxan).

▶ LD_{50} (mus, ipr) 100 mg/kg. HA5302000

Minato, H. *et al., J.C.S.(C)*, 1970, 45 (*isol, ir, ur, nmr, struct*)
Binder, M. *et al., J.C.S. Perkin 1*, 1973, 1146 (*struct*)
Chappuis, G. *et al., Helv. Chim. Acta*, 1982, **65**, 521 (*synth*)
Cole, R.J. *et al., Handbook of Toxic Fungal Metabolites*, Academic Press, 1981, 341

Zyzzin Z-39

[159509-39-4]



$C_{11}H_7N_3OS$ 229.262
Metab. from the sponge *Zyzza massalis*. Deep orange amorph. solid. Undergoes exchange of the thioxo for the oxo group during aqueous workup. λ_{max} 212 (ϵ 15800); 270 (ϵ 5200); 345 (ϵ 2200); 420 (ϵ 1800); 475 (ϵ 1200) (MeOH) (Berdy).

*3,4-Dihydro, 4-hydroxy: 4-Hydroxy-4-(1*H*-indol-3-yl)-5-thioxo-2-imidazolidinone*
[159308-50-6]
$C_{11}H_9N_3O_2S$ 247.277
Artifact from *Zyzza massalis*. Racemic.

*3,4-Dihydro, 4-methoxy: 4-(1*H*-Indol-3-yl)-4-methoxy-5-thioxo-2-imidazolidinone*
[159308-48-2]
$C_{12}H_{11}N_3O_2S$ 261.304
Artifact from *Zyzza massalis*. Opt. inactive (racemic). The 5-thioxo analogue of Polyandrocarpamide D, P-542.

*5-Oxo analogue: 4-(1*H*-Indol-3-yl)-1*H*-imidazole-2,5-dione*
[159308-52-8]
$C_{11}H_7N_3O_2$ 213.195
Metab. from *Zyzza massalis*. Yellow amorph. solid. Almost certainly an artifact derived from Zyzzin during the isol. procedure.

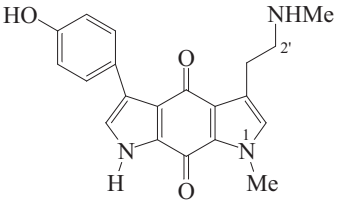
5-Oxo analogue, C*(4),*N*-dihydro: 5-(1*H*-Indol-3-yl)-2,4-imidazolidinedione*
[159308-51-7]
$C_{11}H_9N_3O_2$ 215.211
Metab. of *Zyzza massalis*. Powder. $[\alpha]_D^{25}$ +10 (c, 0.13 in MeOH). Almost certainly a workup artifact originating from the corresp. thioamide.

*5-Oxo analogue, 3,4-dihydro, 4-hydroxy: 5-Hydroxy-5-(1*H*-indol-3-yl)-2,4-imidazolidinedione*
[159308-49-3]
$C_{11}H_9N_3O_3$ 231.21
Artifact from *Zyzza massalis*. Solid (EtOH/hexane). Mp 140° dec. Racemic.

Mancini, I. *et al., Helv. Chim. Acta*, 1994, **77**, 1886-1894 (*isol, pmr, cmr, ms, struct, Zyzza massalis constits*)

Zyzzyanone A Z-40

[784152-58-5]



$C_{20}H_{19}N_3O_3$ 349.388
Alkaloid from the sponge *Zyzzya fuliginosa*. Cytotoxic. Purple solid (as trifluoroacetate salt). Mp 300° dec. (TFA salt). λ_{max} 242 (log ϵ 4.26); 286 (log ϵ 3.9); 342 (log ϵ 3.59); 484 (log ϵ 3.44) (MeOH) (TFA salt). λ_{max} 243 (log ϵ 4.28); 286 (log ϵ 3.96); 346 (log ϵ 3.6); 505 (log ϵ 3.48) (MeOH/KOH) (TFA salt).

$N^{2'}$*-Formyl:* ***Zyzzyanone C***
[866363-60-2]
$C_{21}H_{19}N_3O_4$ 377.399
Alkaloid from *Zyzzya fuliginosa*. Brownish-red solid (as TFA salt). λ_{max} 242 (log ϵ 3.67); 294 (log ϵ 3.24); 349 (log ϵ 2.49); 486 (log ϵ 2.85) (MeOH) (TFA salt).

N^{1}*-De-Me:* ***Zyzzyanone B***
[866363-59-9]
$C_{19}H_{17}N_3O_3$ 335.362
Alkaloid from *Zyzzya fuliginosa*. Purple solid (as TFA salt). λ_{max} 240 (log ϵ 3.99); 281 (log ϵ 3.64); 328 (log ϵ 3.33); 483 (log ϵ 3.08) (MeOH) (TFA salt).

N^{1}*-De-Me,* $N^{2'}$*-formyl:* ***Zyzzyanone D***
[866363-61-3]
$C_{20}H_{17}N_3O_4$ 363.372
Alkaloid from *Zyzzya fuliginosa*. Brownish-red solid (as TFA salt). λ_{max} 241 (log ϵ 3.67); 288 (log ϵ 3.23); 337 (log ϵ 2.95); 487 (log ϵ 2.84) (MeOH) (TFA salt).

Utkina, N.K. *et al., Tet. Lett.*, 2004, **45**, 7491-7494 (*Zyzzyanone A*)
Utkina, N.K. *et al., J. Nat. Prod.*, 2005, **68**, 1424-1427 (*Zyzzyanones B,C,D*)

Name Index

A 10947, A-1097
A 33853, A-1098
A 6413, A-1202
A 65636, A-1099
A 6984, A-1095
A 7413, A-1096
A 75943, A-1100
A 500359A, A-1102
A 503083A, A-1102
A 58365A, A-1101
A 72363A-1, A-746
A 72363A-2, A-746
A 7413A, A-1096
A 89271A, A-685
A 25822A, D-742
A 83094A, I-64
A 2315A, M-35
A 90931A, X-6
A 10255B, A-1103
A 25822B, A-1602
A 58365B, A-1104
A 6984B, A-1095
A 72363B, A-746
A 7413B, A-1096
A 89271B, A-684
A 500359B, C-103
A 503083B, C-103
A 90931B, X-6
A 23187, C-26
A 10255C, A-1105
A 500359C, A-1102
A 58365C, A-1106
A 6984C, A-1095
A 72363C, A-746
A 7413C, A-1096
A 89271C, A-684
A 19C, C-900
A 17002C, M-35
A 25822D, A-1602
A 500359D, A-1102
A 6984D, A-1095
A 7413D, A-1107
A 89271D, A-686
A 10255E, A-1108
A 89271E, A-684
A 10255F, A-1109
A 89271F, A-687
A 17002F, M-35
A 10073, G-179
A 500359G, C-103
A 32256, H-496
A 10255H, A-1110
A 25822H, G-64
A 15104II, M-35
A 300-II, T-496
A 300I, T-496
A 25822L, A-1602
A 25822M, A-1602
A 77543, N-265
A 25822N, A-1602
A 10338, P-961
A 23812, P-891
A 23813, P-891
A 43791, T-392
A 70615, T-447
A 15104V, M-35
A 15104Y, D-324
859A, A-1090
875A, A-1091
AAL Toxin TB_1, A-1
AAL Toxin TB_2, A-1
AAL Toxin TC_1, A-1
AAL Toxin TC_2, A-1
AAL Toxin TD_1, A-1
AAL Toxin TD_2, A-1
AAL Toxin TE_1, A-1
AAL Toxin TE_2, A-1
AAL Toxin, A-1
Aaptamine, A-2
Aaptosamine, A-3
Aaptosine, A-4
AB 97, A-1111
AB 3217A, A-1112
AB 4063A, A-1114
AB 3217B, A-1112
AB 4015B, A-1113
AB 4063B, A-1114
AB 3217C, A-1112
AB 85, F-115
AB 116, K-8
Abbeymycin, A-5
2(3 →20)-Abeo-2,5,7,10,13-pentahydroxy-4(20),11-taxadien-9-one, A-6
11(15 →1)-Abeo-4(20),11-taxadiene-5,9,10,13,15-pentol, A-7
Abereamine 1, A-8
Abereamine 2, A-9
Abereamine 3, A-10
Abereamine 4, A-11
Aberiamide, A-12
Aberiamine, A-13
Abikoviromycin, A-14
Abrasine, A-15
Abresoline, L-53
Absouline *N*-oxide, A-906
Absouline, A-906
ABT35, C-419
Aburatubolactam A, A-16
Aburatubolactam B, A-17
Aburatubolactam C, A-17
Abutiloside A, A-740
Abutiloside B, A-740
Abutiloside H, A-741
Abutiloside I, A-740
Abutiloside J, A-740
Abutiloside K, A-740
Abyssenine A, M-719
Abyssenine B, A-18
Abyssenine C, A-18
Abyssinine A, M-719
Abyssinine B, A-18
Abyssinine C, A-18
Abyssomicin B, A-19
AC 7230, C-26
Acacialactam (incorr.), H-471
Acacipetalin, A-20
Acalyphamide, A-21
Acalyphin, A-22
Acanthamine, D-436
Acanthaminoside, D-436
Acanthamolide, A-23
Acanthene B, I-218
Acanthene C, I-218
Acanthicifoline, J-24
Acanthisonitrile 3, A-24
Acanthisothiocyanate 3, A-24
Acanthoidine, A-25
Acanthoine, A-25
Acanthothamine, P-247
3,5-Acarnidine, A-26
$C_{12:0}$-Acarnidine, A-26
$C_{12:1}$-Acarnidine, A-26
$C_{14:3}$-Acarnidine, A-26
Accedine, A-27
Accedinine, A-28
Accedinisine, A-28
Accel M, B-79
Accelerator M, B-79
Acepox, A-73
Aceprolinum, H-715
Aceropterine, A-29
Acetaldehyde *N*-formyl-*N*-methylhydrazone, G-236
Acetamide, A-30
3-(Acetamidoacetyl)indole, I-132
2-Acetamidobenzamide, A-31
2-Acetamidobenzoic acid, A-31
5-Acetamido-3,5-di-*O*-acetyl-5-deoxy-1,2-*O*-isopropylidene-α-D-glucofuranose, A-727
8-Acetamido-1,15-dichloro-1,14-pentadecadiene-3,12-diyne, D-357
8-Acetamido-1,15-dichloro-1,3,14-pentadecatrien-12-yne, D-357
3-Acetamidodihydro-4,5-dimethyl-2(3*H*)-furanone, A-800
2-Acetamido-3′,4′-dihydroxyacetophenone, A-736
2-Acetamido-1,7-dimethoxyphenanthrene, A-743
3-Acetamido-20-(dimethylamino)pregnan-18-al, D-269
3-Acetamido-20-(dimethylamino)pregnan-18-ol, D-269
2-Acetamidoethyl phosphate, A-768
2-Acetamidoethylamine, E-225
8-Acetamido-1,1,1,15,15,15-hexachloro-3,12-pentadecadiyne, H-213
2-Acetamido-3-hydroxybenzamide, A-787
2-Acetamido-8-(hydroxymethyl)-3*H*-phenoxazin-3-one, A-801
2-Acetamidoimidazole, A-825
5-Acetamido-4-oxo-5-hexenamide, P-630
8-Acetamido-1,1,1,15,15-pentachloro-3,12-pentadecadiyne, H-213
8-Acetamido-1,1,15,15,15-pentachloro-3-pentadecyne, H-213
2-Acetamido-3-pentanone, A-858
2-Acetamidophenol, A-861
2-Acetamido-3*H*-phenoxazin-3-one, A-862
1-(2-Acetamidophenyl)-2-hydroxy-1-propanone, A-32
4-Acetamidopipecolic acid, A-871
2-[(2-Acetamidopropanoyl)amino]benzamide, A-33
1-Acetamidoquinolizidine, A-907
8-Acetamido-1,1,15,15-tetrachloro-1,14-pentadecadiene-3,12-diyne, D-357
8-Acetamido-1,1,15,15-tetrachloro-1-pentadecen-3,12-diyne, D-357
8-Acetamido-1,1,15,15-tetrachloro-3-pentadecyne, H-213
8-Acetamido-1,1,15-trichloro-1,14-pentadecadiene-3,12-diyne, D-357
8-Acetamido-1,15,15-trichloro-1-pentadecen-3-yne, D-357
5-Acetamido-1,1,1-trichloroundecane, T-482
6-Acetamidotridecane, T-506
N-Acetoacetyl-*N*-deacetylcolchicine, D-92
Acetone cyanohydrin, H-617
Acetonic acid, H-617
6-Acetonylacetylcorynoline, B-407
8-Acetonylacetylisocorynoline, B-407
8-Acetonylcorynoline, B-407
8-Acetonyldihydroavicine, A-35
6-Acetonyldihydrochelerythrine, A-34
8-Acetonyldihydrochelerythrine, A-34
11-Acetonyldihydrochelerythrine, A-34
13-Acetonyl-12,13-dihydrochelerythrine, A-34
8-Acetonyldihydronitidine, A-35
6-Acetonyldihydrosanguinarine, A-36
8-Acetonyldihydrosanguinarine, A-36
Acetonylevodiamine, A-37
8-Acetonyl-5-hydroxycorynoline, B-407
2-Acetonyl-5-(2-hydroxypropyl)-1-methylpyrrolidine, H-704
2-Acetonyl-1-methylpyrrolidine, H-759
2-Acetonylpiperidine, P-173
6-Acetonylsanguinarine, A-36
Acetopine, A-38
2-Acetopyridine, A-73
2-Acetopyrrole, A-74
Acetopyrrothine, A-759

2-(Acetoxyacetyl)-1-(2-acetoxyethyl)-1*H*-pyrrole, H-401
2-(Acetoxyacetyl)-1-(2-acetoxypropyl)-1*H*-pyrrole, H-401
7-Acetoxy-9-acetylspicataxine, T-46
10-Acetoxyactinidine, A-125
13-Acetoxyanagyrine, B-20
N^6-Acetoxyaphelandrine, A-1334
2α-Acetoxyaustrospicatine, T-46
28-Acetoxy-N^a-benzoylbuxidienine, B-466
9-Acetoxy-1-benzoyloxy-4,8-dihydroxy-6-nicotinoyloxydihydro-β-agarofuran, P-219
6-Acetoxy-7-benzoyloxy-3-(3,4,5-trimethoxycinnamoyloxy)tropane, M-392
2-*O*-(3-Acetoxybutanoyl)lycorine, L-348
16-Acetoxybuxabenzamidienine, B-456
16-Acetoxycardiopetaline, M-355
7β-Acetoxycatuabine E, M-392
3-Acetoxy-3-(2-chloro-2-isocyanovinyl)-2-oxoindole, I-74
4-Acetoxycycloheximide, D-765
5-Acetoxycycloheximide, D-765
N-Acetoxycytisine, C-938
2-Acetoxy-2′-deacetylaustrospicatine, T-46
2-Acetoxy-2-deacetyl-1-hydroxyaustrospicatine, T-43
18-Acetoxy-N^a-desacetylisoretuline, R-63
19-Acetoxydihydrogelsevirine, G-49
5-Acetoxy-5,6-dihydro-1-(3-phenylpropanoyl)-2(1*H*)-pyridinone, P-463
16-Acetoxy-3,23-dihydroxy-16,28-secosolanidan-4-one, S-349
4-Acetoxy-20-(dimethylamino)-3-phthalimidopregnan-2-ol, D-262
Acetoxyedulinine (incorr.), E-40
23-Acetoxy-25-episoladulcidine, S-442
1-Acetoxy-24,25-epoxy-7,22-dihydroxyergost-4-en-3-one, P-294
11-Acetoxyerysotrine, E-206
2-Acetoxyethylamine, A-767
14-Acetoxygelsedilam, G-43
14-Acetoxygelselegine, G-47
14-Acetoxygelsenicine, G-44
11-Acetoxygraciline, G-151
3-Acetoxyhexadecanoic acid choline ester, P-12
14-Acetoxy-15-hydroxygelsenicine, G-44
2-Acetoxy-1-(hydroxynitrosoamino)heptadecane, P-530
23-Acetoxy-12-hydroxysolasodine, S-453
3-Acetoxy-1*H*-indole, I-104
6-Acetoxy-3-isobutyryloxytropane, M-391
3-Acetoxy-6-isobutyryloxytropane, M-391
2-Acetoxyisotaxodine, H-331
13-Acetoxylupanine, H-554
4β-Acetoxylupanine, H-551
14α-Acetoxymatrine, M-121
14β-Acetoxymatrine, M-121
1-Acetoxy-3-methoxy-10-methylacridone, D-528
7-Acetoxy-1-methoxymethyl-1,2-dehydropyrrolizidine, T-188
4′-*N*-(Acetoxymethoxy)staurosporine, S-498
1-Acetoxymethyl-2-(10-acetoxyundecyl)-4(1*H*)-quinolinone, H-757
1-Acetoxymethyl-2,3-dimethyl-4(1*H*)-quinolinone, H-477
N-Acetoxymethylflindersine, F-90
1-(Acetoxymethyl)-2-formyl-1,2-dihydro-5-hydroxy-7-methoxyisoquinoline, A-39
N-(1-Acetoxymethyl-2-methoxyethyl)-7-methoxy-4-eicosenamide, H-605
1-Acetoxymethyl-2-methyl-4(1*H*)-quinolinone, H-633
1-Acetoxymethyl-2-nonyl-4(1*H*)-quinolinone, H-642
3-(2-Acetoxy-4-methyl-3-oxohexyl)-1*H*-indole, H-535
3-(2-Acetoxy-4-methyl-3-oxopentyl)-1*H*-indole, H-536
1-Acetoxymethyl-2-propyl-4(1*H*)-quinolinone, H-707
3-Acetoxy-2-methyl-4(1*H*)-pyridinone, D-632
2-(Acetoxymethyl)quinoline, Q-37
3-Acetoxynorerythrosuamine, E-218
18-Acetoxynorfluorocurarine, N-301
19-Acetoxy-3-oxotabersonine, O-210
Acetoxyptelefoliarine (incorr.), E-40
4-Acetoxy-2-pyrrolidone, H-718
α-Acetoxyquinaldine, Q-37
4-Acetoxy-2(1*H*)-quinolinone, Q-33
25-Acetoxyrobustine, S-451
Acetoxysecodaphniphylline, S-181
16-Acetoxy-16,28-secosolanida-5,22(28)-diene-3,5-diol, V-64
18-Acetoxysenkirkine, S-245
23-Acetoxysoladulcidine, S-442
2-Acetoxytaxodine, H-331
6-Acetoxy-3-tigloyloxytropane, M-391
23*R*-Acetoxytomatidine, S-442
23*R*-Acetoxytomatine, S-442
3α-Acetoxytropane, M-393
3-Acetoxytropan-6-ol, M-391
10-Acetyl-17-*O*-acetylajmaline, A-217
1-Acetyl-17-(acetyloxy)-20,21-didehydro-19-hydroxy-10,11-dimethoxy-4-methyl-3,4-secocuran-3-one, A-667
3-Acetylaconitine, A-104
13-Acetylacoridine, H-189
6-*O*-Acetylacosepticine, A-92
O-Acetylacosmine, A-107
Acetylacrifoline, L-328
5-Acetylaglaine B, A-199
10-Acetylaglaine B, A-199
1-*O*-Acetylaglaroxin A, P-72
N^1-Acetylagmatine, A-719
17-*O*-Acetylajmaline, A-216
N^2-Acetylalanylanthranilamide, A-33
Acetylalloyohimbine, Y-13
11-*O*-Acetylambelline, A-683
2-(Acetylamino)benzamide, A-31
2-(Acetylamino)benzoic acid, A-31
4-(Acetylamino)-2-butenoic acid, A-717
6-Acetyl-2-amino-7,8-dihydro-4(3*H*)-pteridinone, A-40
3-(Acetylamino)-6,7-dimethoxycoumarin, A-738
2-(Acetylamino)-5,6-epoxy-2-cyclohexene-1,4-dione, A-804
7-[5-[2-(Acetylamino)ethyl]-2-hydroxyphenyl]-9,10-dihydro-3,5,6,8-tetrahydroxy-9,10-dioxo-1,2-anthracenedicarboxylic acid, L-3
5-[(1-Acetylamino)ethyl]-2-methylpyridine, B-248
2-Acetyl-2-amino-4-hydroxyindeno[1,2-*b*]oxet-3(2*H*)-one, C-358
2-Acetyl-3-amino-5-hydroxy-1,4-naphthalenedione, A-41
2-Acetyl-3-amino-5-hydroxy-1,4-naphthoquinone, A-41
N-(*N*-Acetylaminomethyl)cytisine, C-938
3-(Acetylamino)-7-oxabicyclo[4.1.0]hept-3-ene-2,5-dione, A-804
5-(Acetylamino)-4-oxo-5-hexenamide, P-630
2-[4-(Acetylamino)-3-oxo-2-isoxazolidinyl]tetrahydro-5-oxo-2-furancarboxylic acid, L-8
N^2-[2-(Acetylamino)propanoyl]anthranilamide, A-33
8-(Acetylamino)-5,6,7,8-tetrahydro-6,7-dihydroxy-5-(hydroxymethyl)imidazo[1,2-*a*]pyridine-2-acetic acid, N-9
6-Acetyl-2-amino-1,7,8,9-tetrahydro-4*H*-pyrimido[4,5-*b*][1,4]diazepin-4-one, A-52
Acetyl-*trans*-anacrotine, A-967
Acetylanacrotine, A-967
3-Acetyl-15-angeloylgermine, G-70
O-Acetylangustoline, A-1020
N-Acetylanhalamine, T-236
N-Acetylanhalonine, A-1021
14-Acetyl-8-anisoylchasmanine, M-323
2-Acetyl-3-anisoylhetidine, H-161
8-Acetyl-14-anisoylpseudaconine, M-336
8-Acetyl-14-anisoyltalatizamine, M-352
14-Acetyl-8-anisoyltalatizamine, M-352
Acetylannofoline, F-29
N-Acetylanolobine, A-1066
N-Acetylanonaine, R-120
Acetylanonamine, S-245
N-Acetylanthranilic acid, A-31
5-*O*-Acetylapocinchonamine, A-1360
5-*N*-Acetylardeemin, A-1399
N-Acetylasimilobine, D-531
N-Acetylaspidoalbidine, A-1490
N-Acetylaspidospermatidine, A-1497
N-Acetylaspidospermidine, A-1498
1-Acetylaspidospermidine-6,17-diol, A-1067
2-Acetyl-9-azabicyclo[4.2.1]non-2-ene, A-974
O-Acetylbaptifoline, B-20
14-Acetylbearline, G-91
3-*O*-Acetylbeiwutine, M-302
4-Acetylbenzoxazolin-2-one, A-42
4-Acetyl-2(3*H*)-benzoxazolone, A-42
3-Acetyl-14-benzoylaconine, M-331
O-Acetyl-*N*-benzoylbuxalongifoline, B-466
16-*O*-Acetyl-*N*-benzoylbuxidienine, B-466
8-Acetyl-14-benzoylchasmanine, M-323
14-Acetyl-8-benzoylchasmanine, M-323
6-Acetyl-14-benzoyldictyocarpinine, M-307
8-Acetyl-14-benzoylezochasmanine, M-303
14-Acetyl-8-benzoyltalatizamine, M-352
3-Acetyl-5-benzyl-2,4-pyrrolidinedione, A-43
N-Acetylbongardine, B-248
14-Acetylbrowniine, M-309
11-*O*-Acetylbulgarsenine *N*-oxide, B-401
11-*O*-Acetylbulgarsenine, B-401
3-Acetyl-5-*sec*-butyltetramic acid, T-74
N^{20}-Acetylbuxamine E, B-455
N^{20}-Acetylbuxamine G, B-455
28-Acetylbuxanoldine, B-460
18-Acetylcammaconine, M-352
O-Acetylcamptothecin, C-70
17-*O*-Acetylcamptothecinic acid, C-71
Acetylcanescenine, E-12
Acetylcanescine, E-12
15-*N*-Acetylcapparisine, C-97
Acetylcaranine, F-7
1-Acetyl-β-carboline, A-44
1-Acetyl-β-carboline-3-carboxylic acid, A-45
1-Acetyl-3-carboxy-β-carboline, A-45
11-Acetylcardionine, H-192
15-Acetylcardiopetamine, H-190
(+)-Acetylcephalotaxine, C-271
(-)-Acetylcephalotaxine, C-271
Acetylcevedine, C-295
19-*O*-Acetylchaetoglobosin A, C-325
19-*O*-Acetylchaetoglobosin B, C-326
19-*O*-Acetylchaetoglobosin D, C-327
14-Acetylchasmanine, M-323
5-Acetyl-2-chlorotetrahydro-4-methyl-2*H*-1,3-oxazine, A-46
Acetylcholine chloride, A-47
Acetylcholine(1+), A-47
N-Acetylchonemorphine, P-601
N-Acetylcinchonicinol, Q-17
O-Acetylcinnabarine, C-452
N^1-Acetyl-N^2-cinnamoyl-N^1-dihydrocinnamoylputrescine, D-362
14-Acetyl-8-*trans*-cinnamoyltalatizamine, M-352
14-Acetylcolumbidine, M-352
8-Acetylcondelphine, M-352
O-Acetylcorymine, D-410
Acetylcorynoline, C-692
8-*O*-Acetylcorysolidine, R-9
O-Acetylcrotaverrine, S-245
6′-*O*-Acetylcupreine, Q-20
31-Acetylcyclomicrophylline A, C-883
N-Acetylcycloprotobuxine C, C-902
N-Acetylcycloprotobuxine D, C-902
N-Acetylcylindrocarpinol, L-177
O-Acetylcypholophine, C-935
N-Acetylcytisine, C-938
7-*O*-Acetylcytochalasin B, C-943
9-Acetyl-10-deacetylspicataxine, T-47
7-Acetyl-10-deacetyltaxol, T-52
Acetyldebenzoylalopecurine, L-335
N-Acetyl-*N*-debenzoyltaxol, T-52
1′-Acetyl-1,1′,2,3,4,4′,5,5′,6,6′-decahydro-2,3′-bipyridine, A-930
13-Acetyl-5,6,7*a*,8,8*a*,9,12,12*a*,12*b*,13-decahydro-7*a*-hydroxy-10-methyl-10*H*-furo[2,3-*d*]pyrano[3,4-*a*]carbazole-9-carboxaldehyde, M-122
13-Acetyldecarbamoylgonyautoxin II, H-731
13-Acetyldecarbamoylgonyautoxin III, H-731

O-Acetyldecarine, C-356
N-Acetyldehydroanonaine, D-166
15-Acetyl-13-dehydrocardiopetamine, H-190
N-Acetyldehydrodopamine, D-157
16-Acetyl-2,3-dehydroelasine, M-362
N-Acetyl-5,6-dehydrololine, L-234
12-Acetyldehydroluciculine, D-162
12-Acetyldehydrolucidusculine, D-162
14-Acetyldelcosine, M-309
N-Acetyldelectine, M-309
14-Acetyldelectine, M-309
14-*O*-Acetyldelectinine, M-309
14-Acetyldelosine, M-309
6-Acetyldelpheline (incorr.), M-321
1-Acetyldelphisine, M-323
N-Acetyldemethoxycylindrocarine, C-929
3-*O*-Acetyldemethylchlidanthine, G-3
2-Acetyl-2-demethylcolchifoline, C-571
17-*O*-Acetyl-*N*-demethylechitamine, D-410
6-*O*-Acetyldemethylenedelcorine, M-309
N-Acetyl-3-demethylmescaline, H-465
1-*O*-Acetyl-9-*O*-demethylpluviine, P-528
15-Acetyldenudatine, D-221
N-Acetyldeoxycinchonicinol, Q-17
13-*O*-Acetyl-9-deoxyglanduline, H-178
14-*O*-Acetyl-9-deoxyglanduline, H-178
N^a-Acetyl-3-deoxyisostrychnosplendine, S-400
N-Acetyl-*N*-deoxymayfoline, P-356
N-Acetyl-*N*-depropionylaspidoalbine, A-1490
17-*O*-Acetyl-N^a-desacetyl-18-hydroxyisoretuline, R-63
O-Acetyldiaboline B, C-115
Acetyldiaboline, C-115
3-Acetyl-2,5-diamino-1,4-benzoquinone, A-48
7-Acetyl-3,15-diangeloylgermine, G-70
Acetyldicrotaline, D-363
14-Acetyldictyocarpine, M-307
6-Acetyldictyocarpinine, M-307
1-Acetyl-19,20-didehydrocuran-17-ol, R-63
1-Acetyl-19,20-didehydro-16-(23-deoxy-11-oxa-12,24-secostrychinidin-10-yl)-17-norcuran, S-591
1-Acetyl-14,19-didehydro-10,11-dimethoxy-4-methyl-3,4-secocondyfolan-3-one, G-36
N-Acetyl-1,2-didehydrodopamine, D-157
1-Acetyl-19,20-didehydro-17-norcuran-16-one, S-603
1-Acetyl-20,21-didehydro-19-oxocuran-17-al, S-607
O-Acetyl-19,20-didehydroyohimbine, D-378
1-Acetyl-17,18:17,19-diepoxy-11-methoxycuran-20-ol, M-278
N-Acetyl-2,16-dihydroakuammicinal, R-63
9-Acetyl-3,4-dihydro-β-carboline, C-130
7-Acetyl-6,7-dihydro-1,7-dihydroxy-3-methoxy-5*H*-cyclohepta[*b*]quinoline-8,11-dione, C-486
14-Acetyldihydrogadesine, M-321
3-Acetyl-1,5-dihydro-4-hydroxy-5-(1-methylpropyl)-2*H*-pyrrol-2-one, T-74
Acetyldihydrolycopodine, L-341
1-Acetyl-1,5-dihydro-4-methoxy-2*H*-pyrrol-2-one, P-954
9-Acetyl-4,9-dihydro-3*H*-pyrido[3,4-*b*]indole, C-130
5-Acetyl-3,4-dihydro-2*H*-pyrrole, A-49
O-Acetyldihydrosalutaridine, I-318
17-*O*-Acetyl-19,20-dihydrovoachalotine, P-562
21-Acetyl-19,20-dihydrovomilenine, V-194
N-Acetyl-3,4-dihydroxyphenylalanine, A-745
1-Acetyl-16,17-dimethoxyaspidospermidine, P-924
1-Acetyl-16,17-dimethoxyaspidospermidin-6-ol, A-1067
2-Acetyl-4,6-dimethoxyfuro[2,3-*b*]quinoline, A-50
2-Acetyl-4,7-dimethoxyfuro[2,3-*b*]quinoline, A-50
N-Acetyl-3,4-dimethoxyphenethylamine, D-718
N-[2-(2-Acetyl-4,5-dimethoxyphenyl)ethyl]acetamide, D-219
6-Acetyl-1,3-dimethyllumazine, A-51
6-Acetyl-1,3-dimethyl-2,4(1*H*,3*H*)-pteridinedione, A-51
N-Acetyl-3,5-dinitrotyramine, H-481
8-Acetyldolaconine, A-99
3′-*O*-Acetylechihumiline *N*-oxide, E-10
3′-Acetylechimidine, E-11
7-Acetyl-9-echimidinylretronecine, U-40
7-Acetylechinatine, E-12
17-*O*-Acetylechitamine, D-410
2′-*O*-Acetyledulinine, E-40
10-*O*-Acetyledulirin A, T-349
Acetylenedicarboxylic acid, B-447
2′-Acetyl-7-epicephalomannine, T-52
O^{17}-Acetyl-3-epidihydrocorymine, D-410
12-Acetyl-12-epinapelline, N-30
14-Acetylepineoline, M-323
2′-Acetyl-7-epitaxol, T-52
11-*O*-Acetyl-1,2-epoxyambelline, A-683
1-Acetyl-17,19-epoxycuran, S-400
11-Acetyl-1,19-epoxydenudatine, K-48
1-Acetyl-17,19-epoxy-4-methyl-3,4-secocuran-3-one, S-594
O-Acetylerucifoline, E-184
O-Acetylethanolamine, A-767
2-Acetyl-1-ethylpyrrole, A-74
16-*O*-Acetyletioline, S-199
N-Acetyleudistomin L, E-287
5′-Acetyleuropine, E-299
7-Acetyleuropine, E-299
2-Acetylevolitrine, A-50
2′-Acetylevoxine, F-223
8-Acetylexcelsine, D-187
1-Acetylexcelsine, D-187
Acetylfawcettiine, F-29
N-Acetylflavaconitine, M-332
14-Acetylgadesine, G-152
O-Acetylgalanthamine, G-3
O-Acetylgeibalansine, G-29
O-Acetylgeissoschizol, G-33
14-*O*-Acetylgenicunine B, M-349
9-*O*-Acetylglanduline, H-170
13-*O*-Acetylglanduline, H-170
N-Acetylglucobrassicin, I-122
14-*O*-(*N*-Acetylglucosaminyl)teleocidin A, L-367
13-Acetylgomandonine, G-139
Acetylgynuramine, G-233
7-Acetylhackelidine, H-4
12-*O*-Acetylhadiensine, P-516
11-*O*-Acetylhaemanthamine, H-5
3-*O*-Acetylhamayne, H-5
Acetylhaplatine, F-223
Acetylhaplophyllidine, H-57
3′-Acetylheliosupine *N*-oxide, H-94
Acetylheliosupine, H-94
2′-*O*-Acetylheliotrine, H-95
O-Acetylhenningsamide, H-110
O-Acetylhenningsiine, H-111
4-*O*-Acetylhennoxazole A, H-112
9-Acetyl-2-(1-heptenyl)-1,5,9-triazacyclotridecan-4-one, L-230
6-Acetylheteratisine, H-157
8-Acetylheterophyllisine, H-157
11-Acetylhetisine, H-202
13-Acetylhetisine, H-202
13-Acetylhetisinone, H-202
4-Acetyl-2*a*,3,5,6,7,7*b*-hexahydro-3,5-dihydroxy-1*H*-2-oxa-7*a*-azacyclopent[*cd*]inden-1-one, H-741
3-Acetyl-1,4,5,6,7,7*a*-hexahydro-7-methyl-2*H*-pyrrolo[3,2-*b*]pyridin-2-one, L-4
N-Acetylhistamine, H-307
N-Acetylhistidinol, H-308
6″-*O*-Acetylholocalin, H-519
Acetylhomoagmatine, A-859
6-Acetylhomopterin, A-52
N-Acetylhomoveratrylamine, D-718
N-Acetylhordenine, H-357
14-*O*-Acetylhumantenidine, G-44
[*N*′-[5-[[4-[[4-(Acetylhydroxyamino)butyl]amino]-1,4-dioxobutyl]hydroxyamino]pentyl]-*N*-(5-aminopentyl)-*N*-hydroxybutanediamidato(3-)]iron(*III*), F-38
[*N*′-[5-[[4-[[5-(Acetylhydroxyamino)pentyl]amino]-1,4-dioxobutyl]hydroxyamino]pentyl]-*N*-(5-aminopentyl)-*N*-hydroxybutanediamidato(3-)]iron, F-39
N′-[5-[[4-[[5-(Acetylhydroxyamino)pentyl]amino]-1,4-dioxobutyl]hydroxyamino]pentyl]-*N*-(5-aminopentyl)-*N*-hydroxybutanediamide, D-142
5-*N*-Acetyl-15*b*-hydroxyardeemin, A-1399
1-Acetyl-12-hydroxyaspidoalbidine, A-1490
N-Acetyl-11-hydroxyaspidospermatidine, A-1497
N-Acetyl-4-hydroxybenzylamine, H-417
1-Acetyl-4-hydroxy-β-carboline, A-53
1-Acetyl-6-hydroxy-β-carboline, A-54
1-Acetyl-7-hydroxy-β-carboline, A-55
1-Acetyl-8-hydroxy-β-carboline, A-56
N-Acetyl-20-hydroxycylindrocarine, C-929
14-*O*-Acetyl-15-hydroxyhumantenidine, G-44
N-Acetyl-15α-hydroxyirehdiamine F, D-278
N-Acetyl-15β-hydroxyirehdiamine F, D-278
2-Acetyl-5-hydroxy-11-methylfuro[2,3-*c*]acridin-6(11*H*)-one, H-34
4-Acetyl-2-hydroxy-6-methylpyridine, A-70
3-Acetyl-4-(hydroxymethyl)pyrrole, A-57
8-Acetyl-15-hydroxyneoline, M-313
14-Acetyl-10-hydroxyneoline, M-311
2-*O*-Acetyl-7-hydroxyorochrine, H-186
N-Acetyl-8-hydroxyparthenolidine, P-99
2-Acetyl-3-hydroxy-1*H*-pyrrole, A-58
N-Acetyl-9-hydroxyquestiomycin A, A-862
23-*O*-Acetyl-12-hydroxysolasodine (incorr.), S-453
8-*O*-Acetylhyeronimone, A-1325
1-*O*-Acetylhypognavine, H-179
N-Acetylhystrine, O-40
N-[2-(1-Acetyl-1*H*-imidazol-5-yl)ethyl]-*N*-methyl-4-oxodecanamide, H-307
3′-Acetylindicine *N*-oxide, I-68
Acetylindicine, I-68
O-Acetylindolactam V, I-78
3-Acetylindole, A-59
(1-Acetyl-1*H*-indol-3-yl)methyl glucosinolate, I-122
Acetylintegerrimine, S-238
7-Acetylintermedine, I-160
N^3-Acetylirehdiamine F, P-606
2-Acetyl-3-isobutyrylhetidine, H-161
O-Acetyl-6-isocassine, C-183
N-Acetylisocodonocarpine, C-4
Acetylisocorynoline, C-692
11-Acetylisohypognavine, H-203
O-Acetylisopteleflorine, I-290
O-Acetylisoretuline, R-63
O-Acetylisositsirikine, I-319
N^a-Acetylisostrychnosplendine, S-605
14-Acetylisotalatizidine, M-352
O-Acetyljacoline, J-3
O-Acetyljervine, J-36
14-Acetylkarakoline, M-355
8-*O*-Acetylkarasamine, M-355
Acetylknightinol, H-429
N^2-Acetylkomaroidine, T-219
N^2-Acetylkomavine, K-61
N^3-Acetylkynuramine, A-700
Acetyllaburnine, H-629
3′-Acetyllasiocarpine *N*-oxide, L-47
Acetyllasiocarpine, L-47
N-Acetyllatrunculin B, L-62
3-Acetylleptophyllin A, L-119
Acetylleucine, L-153
Acetylleucovernine, G-3
Acetyllithosenine, L-212
Acetyllobscurinol, L-223
Acetyllofoline, F-29
N-Acetylloline *N*-oxide, L-234
N-Acetylloline, L-234
1-Acetylluciculine, N-30
12-Acetylluciculine, N-30
12-Acetyllucidusculine, N-30
Acetyllycoclavine, L-322
Acetyllycofawcine, L-326
Acetyllycofoline, L-328
7-Acetyllycopsamine, I-160
3′-Acetyllycopsamine, I-160
Acetyllycoramine, G-3
(+)-1-*O*-Acetyllycorine, L-348
(-)-1-*O*-Acetyllycorine, L-348
2-Acetyllycorine, L-348

O-Acetyllyngbyatoxin A, L-367
O-Acetylmacralstonine, M-8
O-Acetylmacranthine, M-9
Acetyl-*cis*-madurensine, M-36
Acetylmadurensine, M-36
Acetylmaymyrsine, P-217
3-*O*-Acetylmaytansinol, M-136
N-Acetylmescaline, M-219
O-Acetylmesembrenol, M-224
7-*O*-Acetyl-3-methoxyaegeline, A-153
1-*O*-Acetyl-3′-methoxyaglaroxin A, P-72
1-Acetyl-17-methoxyaspidospermidine, A-1499
1-Acetyl-16-methoxyaspidospermidine-6,17-diol, A-1067
20-*O*-Acetyl-10-methoxycamptothecin, C-70
20-*O*-Acetyl-9-methoxycamptothecin, C-70
17-*O*-Acetyl-9-methoxycamptothecinic acid, C-71
1-Acetyl-4-methoxy-β-carboline, A-53
1-Acetyl-7-methoxy-β-carboline, A-55
1-Acetyl-3-methoxycarbonyl-β-carboline, A-45
O-Acetyl-11-methoxyisoretuline, R-63
20-Acetyl-5-methoxy-7-oxa-15,20,24,27-tetraazatetracyclo[13.9.6.$2^{8,11}$.$1^{2,6}$]tritriaconta-2,4,6(33),8,10,12,31-heptaene-14,26-dione, C-317
2-Acetyl-3-methoxy-1*H*-pyrrole, A-58
N^a-Acetyl-11-methoxystrychnosplendine, S-605
N-Acetyl-5-methoxytryptamine, M-288
4-[2-(Acetylmethylamino)ethyl]-4-(3,4-dimethoxyphenyl)cyclohexanone, A-60
4-[2-(Acetylmethylamino)ethyl]-4-(4-hydroxy-3-methoxyphenyl)-2,4-cyclohexadien-1-one, A-60
1-(*N*-Acetyl-*N*-methylamino)ethyl-7-hydroxy-3,4,6-trimethoxyphenanthrene, M-559
2-Acetyl-7-methyl-7-azabicyclo[3.2.1]oct-2-ene, F-47
6-*O*-Acetyl-14-*O*-methyldelphinifoline, M-309
N-(2-Acetyl-5,6-methylenedioxybenzyl)-6,7-methylenedioxy-1(2*H*)-isoquinolinone, I-305
6-Acetyl-14-*O*-methylforesticine, M-323
2-Acetyl-3-methylindole, A-61
3-Acetyl-1-methylindole, A-59
14-*O*-Acetyl-8-*O*-methyl-18-*O*-[2-(2-methyl-4-oxo-4*H*-quinazolin-3-yl)benzoyl]cammaconine, M-501
3-Acetyl-ω-methyl-ω-(4-oxodecanoyl)histidine, H-307
N-Acetyl-β-methyl-L-phenylalanine 7-carboxy-1-(2-methyloxiranyl)-2,4,6-heptatrienyl ester, A-220
N^a-Acetyl-N^b-methylphlegmarine, P-361
2-Acetyl-3-methylpyrazine, A-62
4-Acetyl-2-methylpyridine, A-67
4-Acetyl-3-methylpyridine, A-68
5-Acetyl-2-methylpyridine, A-69
2-Acetyl-4-methylpyridine, A-63
2-Acetyl-6-methylpyridine, A-64
3-Acetyl-2-methylpyridine, A-65
3-Acetyl-4-methylpyridine, A-66
4-Acetyl-6-methyl-2(1*H*)-pyridinone, A-70
2-Acetyl-1-methylpyrrole, A-74
3-Acetyl-4-methylpyrrole, A-71
N-Acetyl-*N*-methyl-*N*,7*a*-secomesembrine, A-60
N^a-Acetyl-*O*-methylstrychnosplendine, S-605
N^b-Acetyl-N^b-methyltryptamine, M-582
O-Acetylmillaurine, M-613
N-Acetylmitiphylline, M-651
Acetylmonocrotaline, M-688
O-Acetylmontanine, P-57
12-Acetylnapelline *N*-oxide, N-30
1-Acetylnapelline, N-30
12-Acetylnapelline, N-30
3-Acetyl-2,7-naphthyridine, A-72
3-*O*-Acetylnarcissidine *N*-oxide, N-43
3-*O*-Acetylnarcissidine, N-43
18-*O*-Acetylnargenicin A_1, N-276
12-*O*-Acetylneohadiensine, P-516
8-Acetylneoline, M-323
14-Acetylneoline, M-323
3-*O*-Acetylnerbowdine, N-169
O-Acetylnitraraine, N-243
N^b-Acetyl-2-nitrotryptamine, A-771
N-Acetyl-4-nitrotryptophan, N-257
18-*O*-Acetylnodusmicin, N-276
N-Acetylnoradrenaline, N-298
17-*O*-Acetylnorajmaline, A-216
N-Acetylnorloline, L-234
N-Acetylnornantenine, N-29
N-Acetylnornicotine, P-957
N-Acetylnornuciferine, D-531
1-*O*-Acetyl-10-norpluviine, P-528
1-*O*-Acetyl-9-norpluviine, P-528
Acetylnorrauglucine, A-216
17-*O*-Acetylnortetraphyllicine, T-288
14-Acetylnudicaulidine, M-321
4-Acetyloctahydro-2,5-methano-5*H*-pyrido[3,2-*b*]-1,4-oxazine, L-111
2-*O*-Acetylorochrine, H-198
O-Acetyl-8-oxocorynoline, C-692
22-*O*-Acetyl-19-oxodihydroatisine, A-1533
N-Acetyl-2-oxodopamine, A-736
N-Acetyl-β-oxotryptamine, I-132
2-Acetyloxy-*N*-benzoyl-2-phenylethylamine, A-864
3-(Acetyloxy)-3-(2-chloro-2-isocyanoethenyl)-1,3-dihydro-2*H*-indol-2-one, I-74
3-(Acetyloxy)-3-(2-chloro-2-isocyanoethenyl)-2-oxoindole, I-74
17-(Acetyloxy)-1,2-didehydro-1-demethyl-21-methyl-18-norajmalan-19-al, P-240
12-(Acetyloxy)-3,8-didehydro-14-methyl-21-norsenecionan-5,11,16-trione, P-770
12-(Acetyloxy)-3,8-didehydrosenecionan-5,11,16-trione, S-232
7-Acetyloxy-2,9*a*-diethyloctahydro-6,9-dimethyl-7-propyl-2*H*-pyrido[1,2-*a*]pyrazine-1-carboxaldehyde, C-385
3-[5-(Acetyloxy)-4,5-dihydro-3-furanyl]-*N*-(2-hydroxy-5-oxo-1-cyclopenten-1-yl)-2-propenamide, R-34
2-(Acetyloxy)-7,9-dihydroxy-21-methyl-6,21-secohetisan-6,13-dione, M-665
16-(Acetyloxy)-3-hydroxy-16,28-secosolanida-5,22(28)-dien-24-one, V-63
2-[[3-(Acetyloxy)-1-oxohexadecyl]oxy]-*N*,*N*,*N*-trimethylethanaminium(1+), P-12
2-Acetyloxy-*N*,*N*,*N*-trimethylethanaminium, A-47
N-Acetylpachypodanthine, O-87
N^3-Acetylpachysamine A, P-601
1-*O*-Acetylpannellin, P-72
N-Acetylparthenolidine, P-99
O-Acetylpaxdaphnine B, P-139
1′-*O*-Acetylpaxilline, P-140
14-*O*-Acetylperegrine, M-347
6-Acetyl-1-phenazinecarboxylic acid, H-496
4-Acetyl-2-picoline, A-67
4-Acetyl-3-picoline, A-68
5-Acetyl-2-picoline, A-69
6-Acetyl-2-picoline, A-64
2-Acetyl-4-picoline, A-63
3-Acetyl-2-picoline, A-65
3-Acetyl-4-picoline, A-66
2-Acetyl-Δ^1-piperideine, A-76
2-Acetyl-Δ^2-piperideine, A-76
O-Acetylplatydesmine, P-515
O-Acetylporanthericine, P-569
O-Acetylpreperaksine, D-491
1-*O*-Acetylpseudolycorine, P-716
2-*O*-Acetylpseudolycorine, P-716
O-Acetylptelefoliarine, E-40
2-Acetylpteleine, A-50
2-Acetylpyridine, A-73
1-Acetyl-2-(3-pyridinyl)pyrrolidine, P-957
1-Acetyl-9*H*-pyrido[3,4-*b*]indole-3-carboxamide, A-45
1-Acetyl-9*H*-pyrido[3,4-*b*]indole-3-carboxylic acid, A-45
2-Acetylpyrrole, A-74
2-Acetyl-1-pyrroline, A-49
N-Acetylpyrrothine, A-759
N-Acetylquestiomycin A, A-862
2-Acetyl-4(3*H*)-quinazolinone, A-75
Acetylrauglucine, A-216
O-Acetylretuline, R-63
7-*O*-Acetylrinderine, E-12
12-*O*-Acetylrosmarinine, R-133
14-Acetylsachaconitine, M-355
O-Acetylsamandarine, S-44
3-*O*-Acetylsanguinine, G-3
17-Acetylsarpagine, S-89
7-Acetylscorpioidine, S-163
N-Acetylseco-*N*-methyllaurotetanine, M-559
14-*O*-Acetylsenbusine A, M-323
12-Acetylseneciphylline, S-240
O-Acetylsenkirkine, S-245
N-Acetylsepaconitine, A-87
2-Acetylseptentriosine, H-180
Acetylsevedine, C-295
O-Acetylsolasodine, S-456
15-Acetylsongoramine, D-162
Acetylsongorine, N-30
3-*O*-Acetyl-(-)-spectaline, S-388
N^1-Acetylspermidine, S-398
N^5-Acetylspermidine, S-398
N^8-Acetylspermidine, S-398
N-Acetylspermine, S-399
3-Acetylstachyflin, S-492
N-Acetylstepharine, P-643
2′-*O*-Acetylstrictosamide, V-126
N^a-Acetylstrychnosplendine, S-605
O-Acetylsukhodianine, C-733
Acetylsyneilesine, S-658
Acetyltabascanine, S-604
14-Acetyltakaosamine, M-309
14-Acetyltalatizamine, M-352
7-Acetyltaxine A, A-6
2-*O*-Acetyltaxine II, T-273
2-Acetyltaxuspine Z, T-47
14-*O*-Acetyteleocidin A_2, L-367
14-*O*-Acetylteleocidin B_3, T-63
N-Acetyl-Δ^2-tetrahydroanabasine, A-930
1-Acetyl-1,2,3,4-tetrahydro-5-[1-(1*H*-indol-3-ylmethyl)-2-piperidinyl]pyridine, G-155
1-Acetyl-1,2,3,4-tetrahydro-5-(2-piperidinyl)pyridine, A-930
2-Acetyl-1,2,3,4-tetrahydro-1-propyl-β-carboline, T-219
6-Acetyl-1,2,3,4-tetrahydropyridine, A-76
2-Acetyl-3,4,5,6-tetrahydropyridine, A-76
1-Acetyl-1,2,3,4-tetrahydropyridine, T-220
10-*O*-Acetylthapsakin A, T-349
2-(Acetylthiomethyl)quinoline, Q-36
N-Acetyltortuosamine, T-433
3′-*O*-Acetyltrachelanthamine, T-443
6-Acetyl-1,2,3-trimethoxy-9,10-methylenedioxynoraporphine, P-369
O-Acetyltropine tropate, T-632
N^b-Acetyltryptamine, T-639
N-Acetyltryptophanol, A-830
N-Acetyltyramine, H-667
6-Acetylumbrophine, A-92
3-*O*-Acetylungminorine, U-35
13-*O*-Acetylvakhmatine, H-191
O-Acetylvallesamine, V-9
O-Acetylvenoterpine, V-52
8-Acetyl-14-veratroylchasmanine, M-323
17-Acetyl-15-veratroyldictysine, D-370
3-Acetyl-15-veratroylgermine, G-70
17-Acetyl-15-veratroyl-19-oxodictysine, D-370
14-Acetyl-8-veratroyltalatizamine, M-352
3-*O*-Acetylverticine, C-298
3-*O*-Acetylverticinone, C-298
3-Acetylvilmorrianine A, M-303
N-Acetylvincoside, S-583
N-Acetylvinerine, C-1
14-Acetylvirescenine, M-325
9-(3′-Acetylviridifloryl)retronecine, I-68
O-Acetylyamataimine *N*-oxide, B-194
O-Acetylyamataimine, B-194
O-Acetylyohimbine, Y-13
3-Acetylyunaconitine, M-336
Achillamide, T-640
Achillein, H-476
Achyranthine, P-952
β-Acid, D-672
Acidissiminin epoxide, A-77
Acidissiminin, A-77
Acidissiminol epoxide, A-77
Acidissiminol, A-77

Acidomycin, A-78
Aciergocristine, E-155
Aciergocristinine, E-155
Aciergotamine, E-172
Aciergotaminine, E-172
Acinetobactin, A-79
Acinetoferrin, A-80
Acivicin, A-81
Aclidinomycin A, A-82
Aclidinomycin B, A-82
Aclidinomycin C, A-83
Aclidinomycin D, A-82
Acobretine A, M-352
Acobretine B, M-352
Acobretine C, M-352
Acobretine D, M-352
Acobretine E, M-352
Acofamine A, M-337
Acofamine B, M-335
Acofine, A-105
Acoforesticine, M-323
Acoforestine, M-312
Acoforestinine, M-336
Acoforine, M-352
Acomonine, M-309
Aconasutine, M-380
Aconcaguine, A-84
Aconifine, M-302
Aconine 8-linoleate, M-331
Aconine, M-331
Aconitane-1,4,6,7,8,14,16-heptol, A-85
Aconitane-1,4,7,8,9,14,16-heptol, A-86
Aconitane-1,4,8,9,10,14,16-heptol, A-87
Aconitane-1,6,7,8,10,14,16-heptol, A-88
Aconitane-1,4,6,8,14,16-hexol, A-89
Aconitane-1,4,7,8,14,16-hexol, A-90
Aconitane-1,4,8,9,14,16-hexol, A-91
Aconitane-1,6,7,8,14,16-hexol, A-92
Aconitane-1,3,4,7,8,9,14,16-octol, A-93
Aconitane-1,4,7,8,9,10,14,16-octol, A-94
Aconitane-1,4,8,14,16-pentol, A-95
Aconitane-1,6,7,14,16-pentol, A-96
Aconitane-1,8,13,14,16-pentol, A-98
Aconitane-1,8,9,14,16-pentol, A-97
Aconitane-1,8,14,16-tetrol, A-99
Aconitane-1,14,16-triol, A-100
Aconit-19(*N*)-ene-1,6,7,8,14,16-hexol, A-101
Aconit-19(*N*)-ene-1,8,13,14,16-pentol, A-102
Aconit-19(*N*)-ene-1,8,14,16-tetrol, A-103
Aconitilearine, M-314
Aconitine, A-104
Aconitinine, M-320
Aconoridine, M-352
Aconorine, M-352
Aconosine, A-99
Acophine, A-105
Acoridine, H-189
Acorientine, H-206
Acorine, H-189
Acosanine, M-309
Acosepticine, A-92
Acoseptine, A-106
Acoseptridine, M-359
Acoseptridinine, M-352
Acoseptrigine, M-323
Acoseptriginine, M-323
Acoseptrine, A-88
Acoseptrinine, M-309
Acosmine acetate, A-107
Acosmine, A-107
Acotoxinine, M-323
Acovulparine, M-359
Acozerine, A-108
Acrawax C, E-225
Acrawax CT, E-225
Acremoauxin A, A-109
Acremoauxin B, A-110
Acremolactone B, A-111
9-Acridinol, A-112
9(10*H*)-Acridinone, A-112
Acridol, A-112
Acridone, A-112
Acrifoline, C-472
Acrifoline, L-328
Acrifolinol, L-328
Acrignine A, A-113
Acrimarine A, A-114
Acrimarine B, A-114
Acrimarine C, A-115
Acrimarine D, A-115
Acrimarine E, A-114
Acrimarine F, A-114
Acrimarine G, A-114
Acrimarine H, A-114
Acrimarine I, A-116
Acrimarine J, A-116
Acrimarine K, A-114
Acrimarine L, A-115
Acrimarine M, A-114
Acrimarine N, A-114
Acrodontiolamide, A-117
Acromelic acid A, A-118
Acromelic acid B, A-119
Acromelic acid C, A-119
Acromelic acid D, A-118
Acromelic acid E, A-118
Acromelinic acid A, A-118
Acromelinic acid B, A-119
Acronine, A-120
Acronycidine, F-216
Acronycine epoxide, A-120
Acronycine, A-120
Acronydine, A-121
Acrophyllidine, F-212
Acrophylline, F-212
Acrylamide, P-646
Acrylic acid, P-646
6-*O*-Acryloyl-2,3-bis-*O*-(3-nitropropanoyl)-α-D-glucopyranose, G-104
2-*O*-Acryloyl-3,6-bis-*O*-(3-nitropropanoyl)-α-D-glucopyranose, G-104
2-*O*-Acryloyl-3,4,6-tris-*O*-(3-nitropropanoyl)-α-D-glucopyranose, G-104
Acsinatine, H-201
Acsine, A-122
Acsonine, A-123
Actaline, A-210
Acti-Aid, D-765
Actidione, D-765
Actiketal, A-124
Actinac, A-625
Actinidine, A-125
Actinine, A-126
Actinodaphnine, D-346
Actinoleukin, Q-58
Actinophyllic acid, A-127
Actinoplanone A, A-128
Actinoplanone B, A-128
Actinoplanone C, A-128
Actinoplanone D, A-128
Actinoplanone E, A-128
Actinoplanone F, A-128
Actinoplanone G, A-128
Actinoviridin A, H-641
Actiphenol, A-129
Actithiazic acid, A-78
γ-Activity X, I-300
Aculeacin B, A-130
Aculeamine, D-99
Acuminaminoside, A-131
Acuminatopyrone, M-250
Acutiaporberine, A-132
Acutifolidine, L-288
Acutifolidine, P-210
Acutifoline palmitate, L-288
Acutifoline, L-288
Acutine, H-133
Acutudaurine, A-133
Acutumidine, A-134
Acutumine, A-134
Acutuminine, A-134
Acutupyrrocoline, A-135
Adaline, P-235
Adalinine, A-136
Adenine, A-137
3-(9-Adeninyl)propionic acid, A-900
Adenocarpine, A-138
Adenophorine, E-245
Adermin, P-923
Aderoxin, P-923
Adhatodine, A-1045
Adhavasinone, V-38
Adiantifoline, A-139
Adifoline, A-140
Adipamide, H-258
Adipic acid, H-258
Adirubine, A-141
A_3-118D, L-374
Adlumiceine enol lactone, A-142
Adlumiceine, B-120
Adlumidiceine enol lactone, A-144
Adlumidiceine imide, F-172
Adlumidiceine, A-143
Adlumidine, A-145
l-Adlumine, A-146
Adlumine, A-146
Adociaquinone B, A-147
Adonifoline, A-148
Adouetine X, A-149
Adouetine Y′, A-150
Adouetine Y, C-600
Adouetine Z, A-151
Adouetine, A-151
Adrenaline, A-152
Adrenoglomerulotropin, S-285
Adrenolone, A-736
Adrenone, A-736
Adrenor, N-298
Adrucil, F-104
Aducaine, H-751
Aduncamide, H-566
Aegelenine, H-12
Aegeline, A-153
A2-E, O-65
AEP, A-773
Aequaline, D-856
Aerophobin 1, A-154
Aerophobin 2, A-155
Aeroplysinillin, A-156
Aeroplysinin 1, A-157
Aerothionin, A-158
Aeruginascine, H-480
Aerugine, H-695
Aeruginoic acid, H-695
Aeruginol, H-695
Aeruginosamide, A-159
Aeruginosin 101, A-160
Aeruginosin 205A, A-161
Aeruginosin 98A, A-160
Aeruginosin A, A-860
Aeruginosin 205B, A-161
Aeruginosin 98B, A-160
Aeruginosin B, A-162
Aeruginosin 98C, A-160
Aervine, H-445
Aervolanine, C-134
Aervoside, H-445
Aesculetic acid, T-577
Aestivine, A-163
Aestivophoenin A, A-164
Aestivophoenin B, A-165
Aestivophoenin C, A-165
Aethalic acid, H-221
AF 140, A-1115
AF 110, F-197
Affinine, A-166
Affinine, D-124
Affinisine N^b-oxide, T-425
Affinisine oxindole, A-167
Affinisine, T-425
Aflastatin A, A-168
Aflastatin B, A-168
Aflatrem B, A-170
Aflatrem, A-169
β-Aflatrem, A-170
Aflavazole, A-171
Aflavinine, A-172
Afragilimycin A, S-566
Africanine, A-173

Afrinol, M-386
Afrocurarine, A-174
Afzelechin-(4β→2″)-*N*-(*p*-coumaroyl)-6″-hydroxytryptamine, L-265
AG 452, A-176
AG 468, A-176
AG 452a, A-176
AG 379a, H-413
AG 395a, H-413
AG 416a, I-82
AG 432a, I-82
AG 448a, I-82
AG 464a, I-82
AG 379b, H-413
AG 395b, H-413
AG 416b, I-82
AG 432b, I-82
AG 448b, I-82
AG 489b, I-82
AG 505b, I-82
AG 379c, H-413
AG 395c, H-413
AG 416c, I-82
AG 432c, I-82
AG 448c, I-82
AG 432d, I-82
AG 432e, I-82
AG 432f, I-82
AG 432g, I-82
AG 379, H-413
AG 395, H-413
AG 432h, I-82
AG 416, I-82
AG 432, I-82
AG 448, I-82
AG 464, I-82
AG 489, I-82
AG 505, I-82
AG 521, I-82
AG 432i, I-82
AG 55, T-373
Agaricone, A-175
Agaridiol, A-807
Agarin, A-837
Agel 452, A-176
Agel 468, A-176
Agel 452a, A-176
Agel 395a, H-413
Agel 432a, I-82
Agel 448a, I-82
Agel 464a, I-82
Agel 395b, H-413
Agel 432b, I-82
Agel 448b, I-82
Agel 489b, I-82
Agel 505b, I-82
Agel 395c, H-413
Agel 432c, I-82
Agel 448c, I-82
Agel 432d, I-82
Agel 432e, I-82
Agel 432f, I-82
Agel 432g, I-82
Agel 395, H-413
Agel 432h, I-82
Agel 432, I-82
Agel 448, I-82
Agel 464, I-82
Agel 489, I-82
Agel 505, I-82
Agel 521, I-82
Agel 432i, I-82
Ageladine A, A-177
Agelasidine A, A-178
Agelasidine B, A-179
Agelasidine C, A-180
Agelasidine D, A-180
Agelasimine A, A-181
Agelasimine B, A-181
Agelasine A, A-184
Agelasine B, A-184
Agelasine C, A-185
Agelasine D, A-186
Agelasine E, A-187
Agelasine F, A-191
Agelasine G, A-184
Agelasine H, A-184
Agelasine I, A-183
Agelasine, A-182
Agelaspongin, A-188
Agelastatin A, A-189
Agelastatin B, A-189
Agelastatin C, A-189
Agelastatin D, A-189
Ageliferin, A-190
Ageline A, A-191
Ageline B, A-184
Agelocaissarine A_1, A-192
Agelocaissarine A_2, A-192
Agelocaissarine B_1, A-192
Agelocaissarine B_2, A-192
Agelongine, A-193
Agelorin A, A-194
Agelorin B, A-194
Agesamide A, A-195
Agesamide B, A-195
Aglaforbesine A, A-196
Aglaforbesine B, A-196
Aglaiastatin, A-197
Aglaiathioduline, L-114
Aglaidithioduline, A-198
Aglaiduline, B-422
Aglaiformosanin, A-197
Aglaine A, A-199
Aglaine B, A-199
Aglaine C, A-199
Aglairubine, C-456
Aglamide A, L-115
Aglamide B, L-115
Aglamide C, O-67
Aglamide D, P-955
Aglanthine, B-422
Aglaroxin A, P-72
Aglaroxin B, P-72
Aglaroxin C, A-200
Aglaroxin D, A-197
Aglaroxin F, P-72
Aglaroxin G, A-200
Aglaroxin H, A-200
Aglaroxin I, A-200
Aglaroxin J, A-199
Aglaroxin K, A-199
Aglaroxin L, A-199
Aglatenin, A-716
Aglatenol, A-716
Aglaxiflorin A, A-202
Aglaxiflorin B, A-202
Aglaxiflorin C, A-201
Aglaxiflorin D, A-202
Agleptine, L-115
Agmatine, A-719
Agrobactin, A-203
Agrochelin, A-204
Agroclavine I, A-205
Agroclavine, A-205
Agrocybenine, A-206
Agrocybin, H-647
Agropine, A-207
AH 23491X, C-100
AH 135Y, A-129
2088A, H-514
Ailanindole, A-208
Ailantcanthinoside A, H-442
Ailantcanthinoside B, H-438
Ailanthoidine, A-209
AIR, A-827
AIS 2M3, R-33
Ajabicine, A-210
Ajacine, M-309
Ajaconine, A-211
Ajacusine, G-91
Ajadelphine, M-325
Ajadelphinine, M-325
Ajadine, M-309
Ajadinine, M-359
Ajanine, M-309
AJI 9561, A-1116
Ajimaline, A-216
Ajmalan-17,21-diol, A-216
Ajmalicidine, A-214
Ajmalicine hydroxyindolenine, A-213
Ajmalicine oxindole A, M-661
Ajmalicine oxindole B, M-661
Ajmalicine, A-212
Ajmalicinial, A-214
Ajmalicinine, A-215
Ajmalidine, A-216
Ajmalimine, A-216
Ajmaline, A-216
Ajmalinimine, A-217
Ajmalinine, A-218
Ajmalinol, A-216
AJP 117510, U-42
Ajudazol A, A-219
Ajudazol B, A-219
AK toxin I, A-220
AK toxin II, A-221
Akagerine lactone, A-223
Akagerine, A-222
Akalone, A-820
Akanthomycin, A-224
Akarpine, P-424
Akashin A, D-353
Akashin B, D-353
Akashin C, A-225
AK-40-II, O-69
AK-40-I, O-68a
Akiradine, D-187
Akiramidine, A-89
Akiramine, A-89
Akirane, A-89
Akiranine, A-89
Akirine, A-226
Aknadicine, H-70
Aknadilactam, H-70
Aknadine, E-102
Aknadinine, H-70
AK-Ps, O-124
Akuammenine, A-227
Akuammicine N^b-methosalt, A-228
Akuammicine N^b-oxide, A-228
Akuammicine, A-228
Akuammidine, A-229
(*Z*)-Akuammidine, A-229
Akuammigine (4*R*)-*N*-oxide, A-212
Akuammigine (4*S*)-*N*-oxide, A-212
Akuammigine pseudoindoxyl, T-289
Akuammigine, A-212
ψ-Akuammigine, A-232
Akuammiginone, A-230
Akuammiline N^4-oxide, A-231
Akuammiline, A-231
Akuammine *N*-oxide, A-232
Akuammine, A-232
[Ala[1]]Desoxoviroidin, V-160
Alafine, H-629
Alalakine, A-233
Alamarckine, E-72
Alamaridine, A-234
Alamarine, A-235
Alancine, A-1047
Alangamide, E-72
Alangicine, E-72
Alangimarckine, T-675
Alangimaridine, A-235
Alangimarine, A-235
Alangimarinone, A-235
Alangine A, A-236
Alangine B, E-72
Alangine, A-1328
Alanginine, A-237
Alangiobussine, A-238
Alangiobussinine, A-238
Alangiside, A-239
Alanine anhydride, D-769
Alanine cyclic anhydride, D-769
Alaninol, A-894
Alantrypinone, A-240
N-β-Alanyldehydrodopamine, D-157

N-β-Alanyldopamine, A-241
O-Alanylgriseoluteic acid, H-514
N-β-Alanylhistamine, C-157
4-Alanyl-3-isovalin-5-one, A-733
2-Alanyl-3-isoxazolin-5-one, A-850
N-β-Alanylnoradrenaline, N-298
N^6-β-Alanyl-8-oxoadenine, E-177
Alatamide, A-242
Alatamine, P-253
Alaternifoline, M-392
Alatol, H-248
Alatusamine, P-243
Alatusinine, P-253
Albertamine, D-79
Albertidine, M-121
Albertine, L-94
Albiflomanthine, H-5
Albifloranine, C-657
Albine, A-243
Albizzine A, P-40
Albofungin B, A-244
Albofungin, A-244
Alboinone, A-245
Albomaculine, N-171
Albomitomycin A, A-246
Albomitomycin C, A-246
Alborine, A-247
Alboviolaconitine A, M-309
Alboviolaconitine B, L-317
Alboviolaconitine C, L-317
Alboviolaconitine D, A-248
Albovionitine, A-249
Alcaligin, A-250
Alchorneine, A-251
Alchorneinone, A-252
Alchornidine, A-253
Alchornine, A-254
Aldehydecollidine, E-256
Aldisine, A-255
Aldohypaconitine, M-343
α-Aldotripiperideine, A-256
Aldrithiol 2, D-831
Aleicide B, A-257
Aleicide C, A-258
Aleurodiscoester, A-259
Aleurodisconitrile, A-259
Alexine, T-555
Alfileramine, A-260
Alginidine, A-261
Alginine, A-262
Alihirsutine A, A-263
Alioline, A-264
Aljesaconitine A, M-331
Aljesaconitine B, M-331
Geotrichum Alkaloid A 25822A, D-742
Alkaloid A 58365B, A-1104
Buxus Alkaloid 1, A-275
Buxus Alkaloid 2, A-276
Buxus Alkaloid 3, A-277
Buxus Alkaloid 4, A-278
Buxus Alkaloid 5, A-279
Dendrobates Alkaloid 185, A-287
Dendrobates Alkaloid 197, A-288
Dendrobates Alkaloid 203, A-289
Dendrobates Alkaloid 205, A-289
Dendrobates Alkaloid 217, A-290
Dendrobates Alkaloid 225, A-291
Dendrobates Alkaloid 233, A-292
Dendrobates Alkaloid 241, A-361
Dendrobates Alkaloid 245, A-509
Dendrobates Alkaloid 247, A-509
Dendrobates Alkaloid 295, A-293
Dendrobates Alkaloid 301, A-294
Dendrobates Alkaloid 325, A-295
Dendrobates Alkaloid 351, A-296
Fritillaria Alkaloid 5, A-297
Fritillaria Alkaloid 6, A-298
Leuconotis griffithii Alkaloid 308, A-309
Leuconotis Alkaloid 376, A-308
Lycopodium Alkaloid 168, A-312
Lycopodium Alkaloid 258, A-313
Mantella Alkaloid 161, A-318
Mantella Alkaloid 191, A-319
Mantella Alkaloid 317, A-320
Pancratium Alkaloid 31, A-324
Pancratium Alkaloid 6, A-323
Rosmarinus officinalis Alkaloid 2, A-329
Senecio renardi Alkaloid 4, A-332
Sophora Alkaloid 9, A-333
Alkaloid 196, A-907
Alkaloid 302, A-1548
Abrus precatorius Alkaloid A, A-347
Buxus Alkaloid A1, A-348
Buxus Alkaloid A2, A-349
Buxus Alkaloid A3, A-350
Buxus Alkaloid A4, A-351
Buxus Alkaloid A5, A-352
Chondrodendron limaciifolium Alkaloid A, A-353
Daphniphyllum Alkaloid A_1, A-345
Dendrobates Alkaloid 167A, A-354
Dendrobates Alkaloid 181A, A-355
Dendrobates Alkaloid 209A, A-356
Dendrobates Alkaloid 219A′, A-357
Dendrobates Alkaloid 219A, A-357
Dendrobates Alkaloid 223A, A-357
Dendrobates Alkaloid 231A, A-358
Dendrobates Alkaloid 237A, A-359
Dendrobates Alkaloid 239A, A-360
Dendrobates Alkaloid 241A, A-361
Dendrobates Alkaloid 243A′, A-362
Dendrobates Alkaloid 243A, A-362
Dendrobates Alkaloid 251A, A-363
Dendrobates Alkaloid 253A, A-359
Dendrobates Alkaloid 257A, A-364
Dendrobates Alkaloid 265A, A-365
Dendrobates Alkaloid 269A, A-366
Dendrobates Alkaloid 275A′, A-367
Dendrobates Alkaloid 275A, A-367
Dendrobates Alkaloid 277A, A-367
Dendrobates Alkaloid 281A, A-368
Dendrobates Alkaloid 289A, A-367
Dendrobates Alkaloid 297A, A-369
Dendrobates Alkaloid 309A, A-370
Erythrophleum Alkaloid A, A-371
Euonymus Alkaloid A, A-372
Fritillaria Alkaloid A, A-373
Mantella Alkaloid 384A, A-374
Sceletium Alkaloid A_4, A-346
Securidaca longipeduncula Alkaloid A, A-375
Sophora alopecuroides Alkaloid A_1, A-637
Sophora alopecuroides Alkaloid A_2, A-637
Stephania glabra Alkaloid A, A-376
Stephania glabra Alkaloid A, A-377
Stephania japonica Alkaloid A, A-378
Taxus baccata Alkaloid A, A-379
Thermopsis lanceolata Alkaloid A, A-380
Alkaloid A1, A-1337
Alkaloid AA2, F-2
Knightia Alkaloid A, B-96
Dendrobates Alkaloid 223AB, O-41
Dendrobates Alkaloid 239AB, O-41
C-Alkaloid A, C-31
Alkaloid A, C-355
Alkaloid A, C-587
Alkaloid A8, C-115
Dendrobates Alkaloid 223A, D-394
Alkaloid A_2, D-407
Alkaloid AD-IV, D-412
Alkaloid AD-VI, G-33
Dendrobates Alkaloid 233A, E-264
Alkaloid A, G-49
Alkaloid A4, G-87
Dendrobates Alkaloid 235A, H-309
Dendrobates Alkaloid 259A, H-309
Dendrobates Alkaloid 283A, H-309
Dendrobates Alkaloid 285A, H-309
Dendrobates Alkaloid 287A, H-309
Dendrobates Alkaloid 291A, H-309
Alkaloid A, I-342
Alangium Alkaloid AL64, A-381
Alkaloid ALC 1, V-95
Alkaloid ALC 2, V-95
Alkaloid AM 1, A-150
Alkaloid AM 3, A-382
Alkaloid AM 2, C-600
Dendrobates Alkaloid 217A, M-507
Hamelia patens Alkaloid A, M-661
Alkaloid 20A, M-693
Dendrobates Alkaloid 203A, O-52
Dendrobates Alkaloid 205A, O-52
Dendrobates Alkaloid 207A, O-52
Dendrobates Alkaloid 195A, P-794
Dendrobates Alkaloid 211A, P-794
Dendrobates Alkaloid 307A, P-791
Dendrobates Alkaloid 323A, P-791
Dendrobates Alkaloid 341A, P-792
Pseudophryne Alkaloid 258A, P-720
Pseudophryne Alkaloid 272A, P-720
Pseudophryne Alkaloid 286A, P-720
Pseudophryne Alkaloid 346A, P-720
Alkaloid APAL-VII, P-550
Alkaloid AQC2, A-1491
Alkaloid A6, R-167
Alkaloid AV2, V-39
Vinca pusilla Alkaloid A, Y-13
Alangium Alkaloid B1, A-383
Alangium Alkaloid B2, A-384
Alangium Alkaloid B3, A-385
Alangium Alkaloid B4, A-386
Alangium Alkaloid B5, A-387
Asteracantha Alkaloid B1, A-388
Asteracantha Alkaloid B2, A-389
Buxus Alkaloid B1, A-391
Buxus Alkaloid B387, A-397
Buxus Alkaloid B398, A-398
Buxus Alkaloid B426, A-399
Buxus Alkaloid B4, A-392
Buxus Alkaloid B5, A-393
Buxus Alkaloid B6, A-394
Buxus Alkaloid B7, A-395
Buxus Alkaloid B8, A-396
Buxus Alkaloid B, A-390
C-Alkaloid B, A-400
Dendrobates Alkaloid 181B, A-401
Dendrobates Alkaloid 205B, A-402
Dendrobates Alkaloid 219B, A-403
Dendrobates Alkaloid 223B, A-404
Dendrobates Alkaloid 225B, A-405
Dendrobates Alkaloid 231B, A-406
Dendrobates Alkaloid 237B, A-407
Dendrobates Alkaloid 239B, A-408
Dendrobates Alkaloid 249B, A-509
Dendrobates Alkaloid 253B, A-409
Dendrobates Alkaloid 257B, A-410
Dendrobates Alkaloid 265B, A-509
Dendrobates Alkaloid 267B, A-411
Dendrobates Alkaloid 269B, A-412
Dendrobates Alkaloid 279B, A-509
Dendrobates Alkaloid 281B, A-413
Dendrobates Alkaloid 283B, A-414
Dendrobates Alkaloid 297B, A-415
Dendrobates Alkaloid 307B, A-416
Dendrobates Alkaloid 309B, A-417
Euonymus Alkaloid B, A-372
Gentiana macrophylla Alkaloid B, A-418
Mantella Alkaloid 243B, A-511
Mantella Alkaloid 245B, A-511
Mantella Alkaloid 253B, A-419
Mantella Alkaloid 271B, A-420
Mantella Alkaloid 293B, A-421
Mantella Alkaloid 295B, A-422
Pseudophryne Alkaloid 252B, A-423
Skytanthus acutus Alkaloid B, A-424
Sophora griffithii Alkaloid B, A-425
Strychnos camptoneura Alkaloid B, A-426
Thermopsis lanceolata Alkaloid B, A-427
Alkaloid 205B, A-402
Alkaloid 241B, A-428
Dendrobates Alkaloid 195B, B-434
Knightia Alkaloid B, B-96
Dendrobates Alkaloid 197B, D-246
Dendrobates Alkaloid 275B′, D-109
Dendrobates Alkaloid 275B, D-109
Alkaloid B3, D-810
u-Alkaloid B, E-67
Dendrobates Alkaloid 289B, G-65
Alkaloid B, G-181
Dendrobates Alkaloid 235B′, H-127
Dendrobates Alkaloid 235B, H-127

Dendrobates Alkaloid 251B, H-127
Dendrobates Alkaloid 285B, H-309
Dendrobates Alkaloid 287B, H-309
Alkaloid B, I-342
Alkaloid B′, I-12
C-Alkaloid BL, A-429
Alkaloid B, M-309
Alkaloid BNC 1, D-161
Dendrobates Alkaloid 167B, O-56
Dendrobates Alkaloid 209B, O-52
Dendrobates Alkaloid 259B, O-51
Alkaloid B1, O-21
Dendrobates Alkaloid 341B, P-792
Pseudophryne Alkaloid 258B, P-720
Pseudophryne Alkaloid 272B, P-722
Pseudophryne Alkaloid 286B, P-720
Psychotria Alkaloid B, Q-3
Alkaloid B, T-51
Alkaloid B, V-103
Buxus Alkaloid BX10, A-431
Buxus Alkaloid BX6, A-430
Alkaloid 5, C-588
Buxus Alkaloid C, A-435
C-Alkaloid C, A-436
Chamaecytisus Alkaloid C_1, A-432
Chamaecytisus Alkaloid C_2, A-433
Crotalaria goreensis Alkaloid C, A-437
Dendrobates Alkaloid 223C, A-438
Dendrobates Alkaloid 225C, A-439
Dendrobates Alkaloid 237C, A-440
Dendrobates Alkaloid 239C, A-441
Dendrobates Alkaloid 251C, A-442
Dendrobates Alkaloid 279C, A-509
Dendrobates Alkaloid 283C, A-443
Dendrobates Alkaloid 307C, A-444
Dendrobates Alkaloid 309C, A-445
Erythrophleum Alkaloid C, A-446
Euonymus Alkaloid C, A-372
Gentiana macrophylla Alkaloid C, A-447
Leucojum Alkaloid C, A-448
Mantella Alkaloid 205C, A-449
Mantella Alkaloid 211C, A-450
Mantella Alkaloid 235C, A-451
Mantella Alkaloid 243C, A-511
Mantella Alkaloid 245C, A-486
Mantella Alkaloid 261C, A-452
Mantella Alkaloid 321C, A-453
Rauwolfia obscura Alkaloid C_2, A-434
Salicornia herbacea Alkaloid C, A-454
Stephania glabra Alkaloid C, A-455
Voacanga thouarsii Alkaloid C, A-456
Alkaloid C, A-1330
Alkaloid C, A-654
Alkaloid C, A-669
Alkaloid C2, A-457
Alkaloid 1 (Calabash curare), A-342
Alkaloid 2 (Calabash curare), A-343
Alkaloid C, B-94
Alkaloid CB2, A-458
Alkaloid CC 11, A-461
Alkaloid CC 13, A-462
Alkaloid CC 14, A-463
Alkaloid CC 20, A-459
Alkaloid CC 23, A-464
Alkaloid CC 2, A-459
Alkaloid CC 3, A-460
Alkaloid CC 10, A-1005
Alkaloid CC 3b, A-465
Alkaloid CC 12, C-568
Alkaloid CC 19, D-92
Alkaloid CC 5, D-92
Alkaloid CC 6, D-92
Alkaloid CC 7, D-92
Alkaloid CC 1, N-29
Alkaloid CC 24, P-221
Alkaloid C, C-356
Alkaloid CC22, A-1558
Alkaloid CC21, K-99
Lycopodium Alkaloid C, D-114
Alkaloid C, D-510
Alkaloid C1, D-391
Alkaloid C3, D-391
Dendrobates Alkaloid 239CD, O-41
Alkaloid CF 15, C-260
Alkaloid CF 5, C-271
Alkaloid CG 1, T-188
Dendrobates Alkaloid 287C, G-65
u-Alkaloid C, G-211
Alkaloid C, G-44
Dendrobates Alkaloid 285C, H-309
Mantella Alkaloid 275C, H-260
Hortia Alkaloid $C_{22}H_{19}N_3O_3$, A-467
Papaver Alkaloid $C_{21}H_{21}NO_6$, A-466
Alkaloid C, I-12
Alkaloid C, I-342
Dendrobates Alkaloid 195C, M-532
Alkaloid C, M-309
Alkaloid C, M-571
Alkaloid Cm-4, C-684
Alkaloid CM1, S-54
Alkaloid CN1, A-468
Alkaloid CN2, A-469
Aegle marmelos Alkaloid C, O-63
Alkaloid C, P-606
Alkaloid CPC 1, A-626
Alkaloid CPC 2, T-139
Alkaloid CP-P, E-270
Cinchona ledgeriana Alkaloid C, Q-12
Alkaloid C, Q-2
Alkaloid CR1, A-470
Alkaloid CRB 11, A-471
Alkaloid C, S-125
Alkaloid C, S-89
Alkaloid CSA 3, A-472
Buxus Alkaloid D, A-475
C-Alkaloid D, A-476
Cassia Alkaloid D, A-477
Coelidium Alkaloid D, A-478
Dendrobates Alkaloid 223D, A-479
Dendrobates Alkaloid 251D, A-480
Dendrobates Alkaloid 253D, A-481
Dendrobates Alkaloid 285D, A-482
Dendrobates Alkaloid 307D, A-483
Leucojum Alkaloid D, A-484
Mantella Alkaloid 211D, A-485
Mantella Alkaloid 243D, A-486
Mantella Alkaloid 259D, A-452
Mantella Alkaloid 279D, A-487
Melodinus aeneus Alkaloid D, A-488
Narcissus Alkaloid D, A-489
Pandaca caducifolia Alkaloid D, A-490
Rauwolfia obscura Alkaloid D_1, A-473
Rauwolfia obscura Alkaloid D_2, A-474
Salicornia herbacea Alkaloid D, A-491
Stephania glabra Alkaloid D, A-492
Alkaloid 267D, A-495
Alkaloid D, A-649
Alkaloid D1, A-493
Alkaloid D2, A-494
Knightia Alkaloid D, B-95
Alkaloid D2b, D-391
Alkaloid D, C-138
Alkaloid D1, D-391
Darlingia Alkaloid DF, H-429
Alkaloid D_2, G-31
Dendrobates Alkaloid 209D, H-264
Dendrobates Alkaloid 233D, H-127
Dendrobates Alkaloid 237D, H-127
Dendrobates Alkaloid 241D, H-611
Dendrobates Alkaloid 287D, H-309
Alkaloid D3, H-434
Alkaloid D, I-288
Alkaloid D, P-228
Alkaloid D, S-126
Mantella Alkaloid 193D, T-204
Alkaloid D, V-188
Buxus Alkaloid E, A-496
Coelidium Alkaloid E, A-497
Croton linearis Alkaloid E, A-498
Dendrobates Alkaloid 223E, A-499
Dendrobates Alkaloid 237E, A-500
Dendrobates Alkaloid 239E, A-438
Dendrobates Alkaloid 251E, A-359
Lycopodium Alkaloid E, A-501
Muntafara sessilifolia Alkaloid E, A-502
Pandaca caducifolia Alkaloid E, A-503
Skytanthus acutus Alkaloid E, A-504
Sophora microphylla Alkaloid E, A-505
Voacanga thouarsii Alkaloid E, A-506
Alkaloid E, A-638
C-Alkaloid E, C-809
Alkaloid ED, F-2
Dendrobates Alkaloid 285E, H-309
Knightia Alkaloid E, H-428
Alkaloid E, P-228
Alkaloid E, P-742
Alkaloid E, S-126
Alkaloid E7, T-137
Alkaloid 7, F-143
Buxus Alkaloid F, A-507
Dendrobates Alkaloid 223F, A-508
Dendrobates Alkaloid 239F, A-438
Dendrobates Alkaloid 251F′, A-509
Dendrobates Alkaloid 251F, A-509
Mantella Alkaloid 221F, A-510
Mantella Alkaloid 233F, A-451
Mantella Alkaloid 241F, A-511
Mantella Alkaloid 249F, A-512
Mantella Alkaloid 265F, A-513
Mantella Alkaloid 281F, A-514
Pandaca caducifolia Alkaloid F, A-515
Alkaloid F45, A-143
C-Alkaloid F, C-31
Alkaloid F10, C-805
Alkaloid F22, C-76
Alkaloid F30, C-805
Alkaloid F33, C-172
Alkaloid F35, C-172
Alkaloid F3, C-298
Alkaloid F4, C-298
Alkaloid F, D-92
Alkaloid F37, F-174
Alkaloid F38, F-180
Alkaloid F46, F-172
Alkaloid F_K-5, F-174
Knightia Alkaloid F, H-428
Alkaloid FI-A, L-88
Alkaloid FK 1000, S-311
Alkaloid FK 3000, S-311
Alkaloid 6F, M-693
Alkaloid F17, O-16
Alkaloid F48, O-16
Alkaloid FR 5, P-168
Alkaloid F, S-126
Alkaloid F28, S-234
Alkaloid F, V-188
Alkaloid F29, X-30
Dendrobates Alkaloid 239G, A-479
Dendrobates Alkaloid 275G*, A-367*
Lycopodium Alkaloid G, A-516
Mantella Alkaloid 207G, A-517
Mantella Alkaloid 251G, A-451
Mantella Alkaloid 263G, A-452
Mantella Alkaloid 277G, A-452
Pandaca caducifolia Alkaloid G, A-518
Voacanga thouarsii Alkaloid G, A-519
Alkaloid 251G, A-520
Alkaloid GB14, A-521
Alkaloid GB15, A-522
Alkaloid GB16, A-523
Alkaloid GB17, A-524
Alkaloid GB18, A-525
Alkaloid GB10, H-277
Alkaloid GB11, H-277
Alkaloid GB12, H-277
Alkaloid GB13, H-281
Alkaloid GB1, H-277
Alkaloid GB2, H-277
Alkaloid GB3, H-277
Alkaloid GB4, H-277
Alkaloid GB5, H-277
Alkaloid GB6, H-277
Alkaloid GB7, H-277
Alkaloid GB8, H-277
Alkaloid GB9, H-277
C-Alkaloid G, C-809
Alkaloid G, E-130
Alkaloid GF, H-444
Dendrobates Alkaloid 223G, H-345

Alkaloid G, S-125
Dendrobates Alkaloid 255, H-611
Dendrobates Alkaloid 235H, A-509
Mantella Alkaloid 277H, A-452
Alkaloid H, A-676
Dendrobates Alkaloid 249H, E-240
Alkaloid HF1, S-164
Alkaloid HL1, P-667
Alkaloid H, S-126
C-Alkaloid H, T-436
C-Alkaloid I, A-280
Gentiana Alkaloid I, A-301
Voacanga thouarsii Alkaloid I, A-340
Dendrobates histrionicus Alkaloid I, B-428
Dendrobates Alkaloid 207I, E-265
Alkaloid I, E-53
Gentiana Alkaloid II, A-526
Dendrobates histrionicus Alkaloid III, A-366
Sternbergia Alkaloid III, A-527
Alkaloid III, A-970
Dendrobates Alkaloid 209I, O-44
Lycopodium Alkaloid IV, A-344
Solanum Alkaloid IV, A-528
Ungernia Alkaloid IV, A-529
Gentiana cruciata Alkaloid IVb, A-530
Lycopodium annotinum Alkaloid IX, A-531
C-Alkaloid J, A-532
Dendrobates Alkaloid 251J, A-509
H-Alkaloid J, A-1328
Mantella Alkaloid 207J, A-533
Mantella Alkaloid 235J, A-534
Dendrobates Alkaloid 223J, B-443
Alkaloid 195J, D-112
Dendrobates Alkaloid 267J, E-263
Alkaloid J, G-21
Alkaloid J, M-293
Alkaloid J, S-125
Mantella Alkaloid 235K, A-535
Alkaloid K10, A-542
Alkaloid K11, A-543
Alkaloid K2, A-536
Alkaloid K3, A-537
Alkaloid K4, A-537
Alkaloid K5, A-538
Alkaloid K6, A-539
Alkaloid K7, A-540
Alkaloid K9, A-541
Alkaloid KD1, B-96
Alkaloid K8, J-43
Alkaloid K13, L-287
Alkaloid K, S-125
C-Alkaloid K, T-436
Alkaloid 2, L-278
Alkaloid LA 4, A-548
Alkaloid LA 5, A-549
Alkaloid LA 6, A-550
Alkaloid LA 9, A-551
Alkaloid LA 1, E-269
Alkaloid LA 2, E-257
C-Alkaloid L, A-544
Colubrina Alkaloid L, A-545
Mantella Alkaloid 251L, A-546
Alkaloid L10, A-547
Alkaloid L11, A-1062
Alkaloid L7, A-1063
Dendrobates Alkaloid 237L, B-430
Alkaloid LB1, A-552
Alkaloid LBX, A-553
Alkaloid LBY, L-293
Alkaloid LBZ, A-553
Alkaloid LC2, A-554
Alkaloid LC7, A-555
Alkaloid LC1, E-95
Alkaloid LC4, E-95
Alkaloid LC5, E-95
Alkaloid LC8, E-95
Alkaloid L5, D-92
Alkaloid LE1, A-556
Alkaloid L34, F-29
Alkaloid L5, F-71
Alkaloid L9, F-29
Alkaloid L, G-21
Alkaloid L12, L-328
Alkaloid L14, L-341
Alkaloid L1, L-341
Alkaloid L20, L-322
Alkaloid L21, L-280
Alkaloid L23, L-325
Alkaloid L24, L-341
Alkaloid L25, L-325
Alkaloid L26, L-341
Alkaloid L27, L-328
Alkaloid L29, L-328
Alkaloid L2, L-341
Alkaloid L30, L-325
Alkaloid L32, L-321
Alkaloid L33, L-321
Alkaloid L3, L-341
Alkaloid L6, L-287
Alkaloid L8, L-325
Alkaloid LO1, A-557
Alkaloid LO2, A-558
Alkaloid LO3, A-559
Alkaloid LS14, A-560
Alkaloid LV1, A-561
Alkaloid LV1, A-562
Alkaloid LV2, A-563
Alkaloid LV3, A-555
Alkaloid LV3, A-564
Alkaloid LV4, A-565
Alstonia quaternata Alkaloid 3, M-292
Buxus Alkaloid M, A-566
Buxus Alkaloid M, A-567
C-Alkaloid M, A-568
Alkaloid MB 10, A-569
Dendrobates Alkaloid 251M, E-263
Alkaloid M, G-21
Alkaloid MJ1, J-43
Colchicum autumnale Alkaloid M, L-287
Alkaloid MQ-A_3, P-949
Alkaloid MQ-B_2, P-949
Alkaloid MQ-B_4, P-949
Buxus Alkaloid N, A-570
Alkaloid NB, C-754
Alkaloid ND 370, A-571
Alkaloid ND 305B, N-76
Alkaloid ND 363C, N-76
Alkaloid N, G-21
Alkaloid N3, H-290
Alkaloid NP, O-63
C-Alkaloid O, A-572
Alkaloid Or_2, A-573
Alkaloid Or_1, S-39
Dendrobates Alkaloid 357, P-792
Pseudophryne Alkaloid 242, P-720
Pseudophryne Alkaloid 256, P-720
Pseudophryne Alkaloid 270, P-720
Pseudophryne Alkaloid 300, P-722
Pseudophryne Alkaloid 302, P-720
Pseudophryne Alkaloid 316, P-720
Pseudophryne Alkaloid 330, P-722
Pseudophryne Alkaloid 332, P-720
Pseudophryne Alkaloid 512, P-721
Pseudophryne Alkaloid 524, P-721
Pseudophryne Alkaloid 528, P-721
Baptisia Alkaloid P_2, A-574
Baptisia Alkaloid P_4, A-575
C-Alkaloid P, A-576
Lupinus Alkaloid P1, A-577
Lupinus Alkaloid P2, A-578
Mucuna pruriens Alkaloid P, A-579
Alkaloid PAR 1, A-580
Alkaloid PAR 2, A-581
Alkaloid PAR 3, A-582
Alkaloid P3, B-20
Alkaloid P61, D-407
Alkaloid P, E-250
Alkaloid P7, I-242
Alkaloid P4, L-322
Alkaloid PN1, A-955
Alkaloid PO3, A-583
Alkaloid PO4, A-584
Alkaloid PO5, A-247
Alkaloid P2, P-71
Alkaloid P3, P-40
Alkaloid P5, P-71
Alkaloid PP1, A-585
Alkaloid PP1, A-586
C-Alkaloid Q, A-587
Mucuna pruriens Alkaloid Q, A-588
Veratrum Alkaloid Q, A-589
Alkaloid Q, S-200
Alkaloid Q_3, T-425
C-Alkaloid R, A-590
Fritillaria imperialis Alkaloid R, A-591
Lycopodium fawcwttii Alkaloid R, A-592
Mucuna pruriens Alkaloid R, A-593
Alkaloid RA, R-86
Alkaloid RB20, P-241
Alkaloid RB19, T-425
Alkaloid RCL 2, V-194
Alkaloid RCLM 12, M-10
Alkaloid RCLM 1, V-194
Alkaloid RC, R-86
Alkaloid R6, E-99
Alkaloid R1, G-32
Alkaloid R-K, A-247
Alkaloid RL-A, S-327
Alkaloid R-L, G-87
Alkaloid RMB 10, A-594
Alkaloid RMB 1, C-689
Alkaloid RMB 5, C-689
Alkaloid RMB 7, C-689
Alkaloid RP5, P-241
Alkaloid RP7, V-194
Alkaloid RS, R-86
Alkaloid RW47, V-52
Dendrobates Alkaloid 222, S-437
Dendrobates Alkaloid 236, S-437
Alkaloid 3, S-126
C-Alkaloid S, A-597
Mucuna pruriens Alkaloid S, A-598
Voacanga schweinfurthii Alkaloid S_2, A-595
Voacanga schweinfurthii Alkaloid S_3, A-596
Alkaloid SC, E-184
Alkaloid SC2, S-54
Alkaloid SD, S-238
Alkaloid S-F, A-599
Alkaloid SN-A, N-89
Alkaloid SN-b, S-447
Alkaloid SN-c, S-454
Alkaloid SN-d, S-454
Alkaloid SN-e, S-447
Alkaloid SN-f, S-454
Alkaloid Su 3078, Y-13
Mantella Alkaloid 189, T-204
Alkaloid T, C-616
Alkaloid TC-A, V-181
Alkaloid TC-B, V-181
Alkaloid TC-C, V-181
Alkaloid TC-D, A-600
Alkaloid TD-2, T-406
Alkaloid TGL4, C-552
Alkaloid TGL3, T-511
Alkaloid TGS-1, T-514
C-Alkaloid T, S-89
Alkaloid 20, U-32
Veratrum Alkaloid U, A-601
C-Alkaloid UB, A-602
Alkaloid Us 7, A-603
Alkaloid Us 8, A-603
Gentiana Alkaloid V, A-302
Helleborus Alkaloid V, A-305
Lycopodium Alkaloid V, A-310
Pachysandra Alkaloid V, A-322
Dendrobates Alkaloid 223V, B-437
Alkaloid V, H-521
Gentiana Alkaloid VI, A-604
Lycopodium annotinum Alkaloid VI, A-605
Pachysandra terminalis Alkaloid VI, A-607
Rhodophiala bifida Alkaloid VI, A-608
Lycopodium annotinum Alkaloid VII, A-606
Lycopodium annotinum Alkaloid VIII, A-609
Alkaloid V, J-36
Alkaloid V3, M-631
Alkaloid V, T-51
Alkaloid W102, A-1013
Alkaloid W95, H-554
Lycopodium Alkaloid X, A-311

Mucuna pruriens Alkaloid X, A-321
Veratrum Alkaloid X, A-339
Alkaloid X, C-616
Lycopodium annotinum Alkaloid XI, A-610
Pachysandra terminalis Alkaloid XI, A-612
Lycopodium annotinum Alkaloid XII, A-611
Rhodophiala bifida Alkaloid XIII, A-613
Alkaloid XI, T-149
Alkaloid X_1, M-731
Alkaloid X_2, M-731
Pachysandra terminalis Alkaloid XVI, A-614
Rhodophiala bifida Alkaloid XXV, A-615
Pachysandra terminalis Alkaloid XXVII, A-616
C-Alkaloid Y, A-617
Alkaloid YC2, A-618
Alkaloid Y, D-567
Alkaloid YS, P-270
Alkaloid Z, R-125
Alkaloid ZT_1, A-34
Alkaloid ZT_3, A-34
Alkaloid ZT_2, D-408
Aconitum kirinense Alkaloid, A-268
Aconitum koreanum Alkaloid, A-269
Aconitum nemorosum C_{20} Alkaloid, A-265
Aconitum nemorosum C_{23} Alkaloid, A-266
Alstonia constricta Alkaloid, A-270
Ammodendron karelinii Alkaloid, A-271
Aplysina archeri Alkaloid, A-272
Artemisia rutifolia Alkaloid, A-273
Astragalus berterianus Alkaloid, A-274
Callyspongia fibrosa Alkaloid, A-281
Chamaecytisus Alkaloid, A-282
Colchicum luteum Alkaloid, A-283
Crotalaria retusa Alkaloid, A-284
Cytisus laburnum Alkaloid, A-285
Cytisus ruthenicus Alkaloid, A-286
Erythrophleum C_{24} Alkaloid, A-267
Fromia monilis Alkaloid, A-299
Galanthus caucasicus Alkaloid, A-300
Gynura segetum Alkaloid, A-303
Heliotropium europaeum Alkaloid, A-304
Hovea longipes Alkaloid, A-306
Jacmaia incana Alkaloid, A-307
Lycopodium annotinum Alkaloid, A-314
Lycopodium annotinum Alkaloid, A-315
Lycopodium clavatum Alkaloid, A-316
Lycopodium thyoides Alkaloid, A-317
Pancratium sickenbergi Alkaloid, A-325
Papaver rhoeas Alkaloid, A-326
Pseudaxinyssa Alkaloid, A-327
Rhynchosia pyramidalis Alkaloid, A-328
Sceletium namaquense Alkaloid, A-330
Senecio borysthenicus Alkaloid, A-331
Strempeliopsis strempelioides Alkaloid, A-334
Thermopsis lanceolata Alkaloid, A-335
Ulex europaeus Alkaloid, A-336
Uncaria callophylla Alkaloid, A-337
Ungernia severtzovii Alkaloid, A-338
Zephyranthes Alkaloid, A-341
Pseudoceratina crassa Alkaloid, B-323
2-(3-Alkyl-5-chloro-2,6-dihydroxybenzoyl)-4,5-dichloro-1*H*-pyrroles, A-619
2-Alkyl-3,4-dihydroxy-5-hydroxymethylpyridines, A-620
2-Alkyl-3,4-dihydroxyquinolines, A-621
2-Alkyl-5-formylpyrroles, A-624
3-Alkyl-2-formylpyrroles, A-623
2-Alkyl-5-hydroxymethyl-3,4-pyridinediols, A-620
2-Alkyl-3-hydroxy-4(1*H*)-quinolinones, A-621
2-Alkyl-5-(1*H*-indol-3-yl)oxazole, A-622
1-Alkyl-2-methyl-3*H*-carbazole-3,4(9*H*)-dione, C-129
3-(2-Alkyl-5-oxazolyl)-1*H*-indoles, A-622
5-Alkyl-1*H*-pyrrole-2-carboxaldehydes, A-624
3-Alkyl-1*H*-pyrrole-2-carboxaldehydes, A-623
2-Alkyl-3,4-quinolinediols, A-621
Allantoin, A-625
Alliarinoside, H-431
Alline, A-626
Allithiamine, A-627
Alloanodendrine, A-1065
Alloaristoteline, A-1432
d-Allobisnorbiotin, B-214
Allocolchicine, A-537
Allocryptopine, F-2
Alloculantraraminol, C-803
Allocuspareine, G-9
Allodihydrohistrionicotoxin, H-309
Alloelaeocarpiline, E-55
Alloenduracididine, E-80
α-Allokainic acid, K-4
α-Allokaininic acid, K-4
Allomatrine, A-628
5-Allomuscarine, M-773
Allopterin, A-637
Allopumiliotoxin 267A, A-480
Allopumiliotoxin 339A, P-791
Allopumiliotoxin 341A, P-792
Allopumiliotoxin 323B″, P-791
Allopumiliotoxin 323B′, P-791
Allopumiliotoxin 339B, P-791
Allopumiliotoxin 321C, A-453
Allopumiliotoxin 309D, A-629
Allopumiliotoxin 225E, P-795
Allosecurinine, A-630
Allosedamine, S-210
(±)-Allosedamine, S-210
(+)-Allosedamine, S-210
(±)-Allosedridine, S-216
(+)-Allosedridine, S-216
(-)-Allosedridine, S-216
3β-Allosolanidan-3-ol, D-205
Allosophoramine, S-376
Allotetrahydrohistrionicotoxin, H-309
Allothiobinupharidine, A-631
Alloxazine, A-632
Alloyohimbine, Y-13
N-Allylaloperine, A-637
11-Allylcytisine, T-412
1-Allyl-4,5-dibromo-1*H*-pyrrole-2-carboxylic acid, D-339
4-Allyl-6,7-dihydro-5*H*-2-pyrindin-5-one, L-272
2-Allyl-5-(2,3-dihydroxypropyl)decahydroquinoline, A-481
4-Allyl-1-ethylquinolizidine, E-265
N-Allylnitarine, N-246
N-Allylnorgalanthamine, G-3
2-Allyl-5-(2-penten-4-ynyl)decahydroquinoline, A-362
Almazole A, A-633
Almazole B, A-633
Almazole C, A-634
Almazole D, A-635
Almazolone, A-636
Almeine, A-1377
Almocarpin, P-424
Alolycopine, F-28
Alopecuridine, F-30
Alopecurine, L-335
Aloperine, A-637
Alphosyl, A-625
Alpinigenine, A-638
Alpinine, A-638
Alpinine, G-91
Alpinone, M-734
Alpkinidine, A-639
Al-R 2081, P-974
Al-R2397, M-136
Alschomine, A-640
Alstocraline, A-641
Alstofoline, A-654
Alstogustine, E-30
Alstohentine, T-20
Alstolactone, A-642
Alstolagumine, A-228
Alstolenine, A-231
Alstomacroine, A-643
Alstomacroline, A-644
Alstomacrophylline, A-645
Alstomaline, A-646
Alstomicine, A-647
Alstonal, A-648
Alstonamide, V-125
Alstonamine, A-1015
Alstonerinal, T-20
Alstonerine, A-649
Alstonidine, A-650
Alstonilidine, A-651
Alstoniline, O-140
Alstonine, A-652
Alstonisidine, A-653
Alstonisine, A-654
Alstonoxine A, A-655
Alstonoxine B, A-655
Alstophyllal, A-656
Alstophyllan-19-one, A-649
Alstophylline, A-649
Alstopicralamine, P-417
Alstoscholarine, A-657
Alstoumerine, A-658
Alstovenine, V-50
Alstovine, C-589
Alstozine *N*-oxide, S-577
Altaconitine, M-301
Altamycin A, A-659
Altemicidin, A-660
Alteramide A, A-661
Alteramide B, A-661
Alteramine, T-412
Alternatamide A, A-662
Alternatamide B, A-662
Alternatamide C, A-662
Alternatamide D, A-662
Alternidine, C-938
Alternine, T-362
Altersetin, A-663
Althiomycin, A-664
Alvanidine, A-665
Alvanine, A-666
Alvimine, A-667
Alviminine, A-668
Alzegir, L-162
AM $5344A_1$, C-287
AM $5344A_2$, C-287
AM 2498, B-216
AM 2, C-600
AM 404, E-48
AM 6201, R-34
AM 2282, S-498
Amabiline *N*-oxide, A-669
Amabiline, A-669
Amabiline, A-670
Amaminol A, A-671
Amaminol B, A-671
Amamistatin A, A-672
Amamistatin B, A-672
Amanin, A-673
Amaninamide, A-673
Amanitin, A-673
Amanitin, C-419
Amantin, A-673
Amaranthin, B-110
Amarantin, B-110
Amarbellisine, A-674
Amaroridine, H-446
Amarorine, H-446
Amaryllidine, F-7
Amaryllisine, A-675
Amataine, A-676
Amathamide A, A-677
Amathamide B, A-677
Amathamide C, A-678
Amathamide D, A-678
Amathamide E, A-678
Amathamide F, A-678
Amathamide G, A-678
Amathaspiramide A, A-679
Amathaspiramide B, A-679
Amathaspiramide C, A-679
Amathaspiramide D, A-679
Amathaspiramide E, A-679
Amathaspiramide F, A-679
Amatoxin, A-673
Amauromine, A-680
Amazonine, E-99
Ambaline, A-681
Ambalinine, A-682
Ambelline, A-683
Ambiguine A isonitrile, A-684

Ambiguine B isonitrile, A-684
Ambiguine C isonitrile, A-684
Ambiguine D isonitrile, A-685
Ambiguine E isonitrile, A-686
Ambiguine F isonitrile, A-687
Ambiguine G nitrile, A-688
Ambiguine H isonitrile, A-684
Ambiguine I isonitrile, A-686
Ambiguine J isonitrile, A-685
Ambiguine, M-309
Ambinine, A-689
Ambrimine, E-42
Amelizol, C-420
Americine, A-690
Amerovolficine, P-10
Amerovolfine, A-27
Ametycine, M-654
AMG 1, H-713
Amianthine, A-691
Amicin, N-250
Amide C-18, O-32
Amidenin, D-104
N-Amidino-β-alanine, G-208
1-Amidino-3-(3-carboxypropyl)urea, G-140
N-(2-Amidinoethyl)-3-aminocyclopentanecarboxamide, A-692
N-(2-Amidinoethyl)-5-imino-2-pyrrolidinecarboxamide, N-278
N^6-Amidinolysine, H-326
Amidinomycin, A-692
3-Amidinopyrrole, P-943
N-Amidinotaurine, G-204
5-(3-Amidinoureido)-2-aminovaleric acid, G-75
γ-(Amidinoureido)butyric acid, G-140
1-(3-Amidinoureido)-4-(*N*-methylacetamido)butane, N-187
15-Amido-3-demethoxy-2,3-methylenedioxyerythroculine, D-200
Amigal, H-616
Aminalon, A-715
Aminazin, C-417
C_{24} Amine 3β-acetate, A-267
Amin-Glaukosan, H-307
2-Amino-12 methyl-1,3,12-tetradecanetriol, A-693
Aminoacetamide trimethylbetaine, C-119
2-Aminoacetophenone, A-694
(Aminoacetyl)benzene, A-694
2-Aminoadenine, P-817
4-Amino-*N*-(4-aminobutyl)-*N,N*-bis(3-aminopropyl)-1-butanaminium, B-149
α-Amino-5-[[(2-aminocarbonyl-1-carboxyethyl)amino]carbonyl]-2-pyrrolepropanoic acid, A-695
α-Amino-β-(aminocarbonyl)-1,4-dihydro-4-methoxy-1-methyl-4-quinolinepropanoic acid, E-24
8-Amino-9-(aminocarbonyl)-7-oxo-7*H*-phenoxazine-2-carboxylic acid, A-854
α-Amino-2-[(4-amino-4-carboxybutyl)amino]-4*H*-imidazo[4,5-*b*]pyridine-4-hexanoic acid, P-233
2-Amino-α-(2-amino-1-chloroethyl)-1*H*-imidazole-4-methanol, G-79
5-Amino-3-[5-amino-1,6-dihydro-2,6-dioxo-3(2*H*)-pyridinylidene]-2,6(1*H*,3*H*)-pyridinedione, I-70
2-Amino-6-(2-aminoethyl)-3-(3,4-dihydroxyphenyl)-1,4-benzodioxan, A-696
2-Amino-7-(2-aminoethyl)-3-(3,4-dihydroxyphenyl)-1,4-benzodioxan, A-744
2-Amino-5-(2-amino-1-hydroxyethyl)-4,5-dihydro-1*H*-imidazole-4-carboxylic acid, S-565
3-Amino-1-(2-amino-3-hydroxyphenyl)-1-propanone, A-697
4-Amino-1-(2-amino-4-imidazolyl)-2-chloro-1-butanol, G-79
3-Amino-1-(2-aminoimidazolyl)-1-propene, A-701
1-Amino-2-[[(aminoiminomethyl)amino]methyl]cyclopropanecarboxylic acid, C-163
2-Amino-5-[(aminoiminomethyl)amino]pentanoic acid, A-1413
3-Amino-5-[(aminoiminomethyl)amino]pentanoic acid, A-779
5-Amino-*N*-(3-amino-3-iminopropyl)-3,4-dihydro-2*H*-pyrrole-2-carboxamide, N-278
2-Amino-3-(3-amino-1*H*-inden-2-yl)propanoic acid, A-698
2-Amino-5-(aminomethyl)pyrrolo[2,3-*d*]pyrimidin-4(3*H*)-one, A-699
3-Amino-1-(2-aminophenyl)-1-propanone, A-700
2-Amino-3-(3-aminopropanoyl)phenol, A-697
2-Amino-4-(3-amino-1-propenyl)-1*H*-imidazole, A-701
2-Amino-*N*-(3-aminopropyl)-4,7-dihydro-4-oxo-1*H*-pyrrolo[2,3-*d*]pyrimidine-5-carboxamide, E-9
2-Amino-7-[(2-amino-1,4,5,6-tetrahydro-4,6-dioxo-7-pteridinyl)methylene]-1,5,7,8-tetrahydro-4,6-pteridinedione, P-771
3-Aminoandrost-4-en-17-ol, A-702
2-Aminoanisic acid, A-788
4-Amino-1-arabinofuranosyl-2-oxo-1,2-dihydropyrimidine, C-962
4-Amino-1-arabinofuranosyl-2(1*H*)-pyrimidinone, C-962
1-Amino-1(10)-aristolene-2,8,9-trione, A-703
3′-Aminoavarone, A-1560
1-Amino-8-azabicyclo[3.2.1]octane-2,3,4-triol, A-704
2-Aminobenzamide, A-706
4-Amino-1,3-benzenediol, A-705
2-Aminobenzoic acid, A-706
9-Amino-8*H*-benzo[*b*]pyrido[4,3,2-*de*][1,10]phenanthrolin-8-one, H-542
2-Aminobenzoyl 6-deoxy-α-L-talopyranoside, A-706
2-Amino-8-benzoyl-6-hydroxy-3*H*-phenoxazin-3-one, A-707
N^a-(4-Aminobenzoyl)tryptophan, T-640
2-(2-Aminobenzylamino)benzyl alcohol, A-708
2-Amino-3-benzyl-5-(4-hydroxyphenyl)pyrazine, C-559
4-Amino-1-benzyl-1*H*-imidazole, A-826
7-Amino-2,10-bisaboladiene, A-710
3-Amino-8,10-bisaboladiene, A-709
7-Amino-2,11-bisaboladien-10*R*-ol, A-710
7-Amino-2,11-bisaboladien-10*S*-ol, A-710
7-Amino-2,9-bisaboladien-11-ol, A-710
7-Aminobisabolene, A-710
Aminobisabolenol, A-710
7-Amino-2,8-bis(2,4-dihydroxyphenyl)-3*H*-phenoxazin-3-one, A-711
2-Amino-1,4-bis(*p*-hydroxybenzyl)imidazole, I-252
2-Amino-3-(3-bromo-5-chloro-4-hydroxyphenyl)-propanoic acid, A-712
1-Amino-11-bromo-1,2,7,8,13,13*b*-hexahydro[1,6,2]oxathiazepino[2′,3′:1,2]pyrido[3,4-*b*]indol-10-ol, E-287
3-Amino-2-bromo-5-hydroxy-5-vinyl-2-cyclopenten-1-one, A-824
4-Amino-5-bromopyrrolo[2,3-*d*]pyrimidine, A-713
4-Amino-1,3-butanediol, A-714
4-Aminobutanoic acid betaine, A-126
4-Aminobutanoic acid lactam, P-956
4-Aminobutanoic acid trimethylbetaine, A-126
4-Aminobutanoic acid, A-715
4-Amino-1-butanol, A-716
N-(4-Aminobutanoyl)glutamic acid, G-107
4-Amino-2-butenoic acid, A-717
Amino-*tert*-butyl alcohol, A-840
N-(4-Aminobutyl)-β-alanine, P-826
N-(4-Aminobutyl)-*N′*-[4-[(4-aminobutyl)amino]butyl]-1,4-butanediamine, D-290
N-(4-Aminobutylamino)propanoic acid, P-826
N-[3-[(4-Aminobutyl)amino]propyl]acetamide, S-398
N-(4-Aminobutyl)-*N*-(3-aminopropyl)acetamide, S-398
3-[[3-[(4-Aminobutyl)amino]propyl]amino]-7-hydroxycholest-25-en-24-one, S-485
N-(4-Aminobutyl)-*N*-(3-aminopropyl)benzamide, S-398
N-(4-Aminobutyl)-*N*-(3-aminopropyl)-1,4-butanediamine, A-718
N^1-(4-Aminobutyl)-N^1,N^{16}-bis(3-aminopropyl)-N^{16}-[4-[(3-aminopropyl)amino]butyl]hexadecanediamide, T-79
N-(4-Aminobutyl)-1,4-butanediamine, D-252
N′-(4-Aminobutyl)canavalmine, D-291
N-(4-Aminobutyl)-2,3-dihydroxybenzamide, B-422
N-(4-Aminobutyl)-3-(3,4-dihydroxyphenyl)-2-propanamide, C-456
N-(4-Aminobutyl)glutamic acid, G-107
(4-Aminobutyl)guanidine, A-719
N^{10}-(4-Aminobutyl)homohexamine, D-286
N^5-(4-Aminobutyl)homohexamine, D-286
N^{10}-(4-Aminobutyl)homopentamine, D-290
N^5-(4-Aminobutyl)homopentamine, D-290
N^5-(4-Aminobutyl)homospermine, B-150
N-(4-Aminobutyl)-*N*-(3-methyl-2-butenyl)guanidine, S-406
N-(4-Aminobutyl)-*N′*-methylguanidine, A-719
4-(4-Aminobutyl)octadecahydropyrido[1,2-*e*][1,5]diazacycloheptadecin-5(6*H*)-one, O-91
N-(4-Aminobutyl)-*N′*-prenylguanidine, A-719
N-(4-Aminobutyl)-*N*-prenylguanidine, S-406
1-(4-Aminobutyl)tetrahydro-β-carboline, N-80
(4-Aminobutyl)urea, A-720
γ-Aminobutyric acid, A-715
β-Amino-γ-butyrolactone, A-792
3-Amino-ε-caprolactam, A-785
2-[(Aminocarbonyl)amino]pentanediamide, G-108
3-(Aminocarbonyl)-1,4-dihydro-1-methyl-4-oxo-2-quinolinecarboxylic acid, H-728
2-(Aminocarbonyl)hydrazinecarboxylic acid, H-395
2-(Aminocarbonyl)-3-hydroxy-6-methoxy-5-methyl-4-(1-propenyl)benzoic acid, N-194
N-(Aminocarbonyl)-1*H*-indole-3-carboxamide, I-84
11-[5-(Aminocarbonyl)-4-oxo-4*H*-pyran-2-yl]-10-undecenoic acid, H-282
1-(Aminocarbonyl)pyrrolidine, P-951
3-(Aminocarbonyl)-1-β-D-ribofuranosylpyridinium(1+), N-189
α-Amino-3-carboxy-1,5-dihydroxy-γ-oxo-12*H*-pyrido[3,2-*a*]phenoxazine-11-butanoic acid, D-527
4-(2-Amino-2-carboxyethyl)-1-(5-amino-5-carboxy-2-hydroxypentyl)-3-(3-amino-3-carboxypropyl)-5-hydroxypyridinium(1+), P-907
4-(2-Amino-2-carboxyethyl)-1*H*-pyrrole-2-carboxylic acid, A-721
(4-Amino-4-carboxy-2-hydroxybutyl)dimethylsulfonium hydroxide inner salt, D-784
α-Amino-3-carboxy-1-hydroxy-γ,5-dioxo-5*H*-pyrido[3,2-*a*]phenoxazine-11-butanoic acid, X-11
7-Amino-1-carboxy-5-methylphenazinium hydroxide inner salt, A-860
7-Amino-1-carboxy-5-methyl-3-sulfophenazinium betaine, A-162
7-Amino-1-carboxy-5-methyl-3-sulfophenazinium hydroxide inner salt, A-162
11-(Aminocarboxymethyl)tetrodotoxin, C-390
α-Amino-6-carboxy-2-oxo-3-pyridinepropanoic acid, A-722
1-(1-Amino-1-carboxypentyl)-3-[1-(1-amino-1-carboxypentyl)-2-piperidinyl]pyridinium(1+), A-964
1-(5′-Amino-5′-carboxypentyl)pyrrole, A-904
2-Amino-1-carboxy-3*H*-phenoxazin-3-one, A-852
N-[[[(3-Amino-3-carboxypropoxy)amino]imino]-methyl]aspartic acid, C-75
2-Amino-3-(2-carboxy-4-pyrrolyl)propanoic acid, A-721
5-Amino-2-carboxy-1,4,5,6-tetrahydro-4-oxo-3-pyridineacetic acid, G-146
17-Amino-3,7,11-cembratrien-16,2-olid-19-oic acid, A-723
Aminochelin, B-422
α-Amino-3-chloro-4,5-dihydro-5-isoxazoleacetic acid, A-81
7-Amino-6-chloro-3,4-dihydro-1-methyl-2-(methylthio)pyrrolo[4,3,2-*de*]quinolin-8(1*H*)-one, I-193
α-Amino-4-(2-chloroethenyl)-1*H*-pyrrole-3-propanoic acid, A-1277
2-Amino-3-(3-chloro-4-hydroxyphenyl)propanoic acid, A-724
3-(2-Amino-3-chlorophenyl)-4-chloro-1*H*-pyrrole, A-725

4-(2-Amino-3-chlorophenyl)-2,3-dichloro-1*H*-pyrrole, A-725
Aminochloropyrrolnitrin, A-725
3-Aminoconan-12-ol, H-318
α-Amino-*m*-cresol, H-416
α-Amino-*o*-cresol, H-415
α-Amino-*p*-cresol, H-417
4-Aminocrotonic acid, A-717
6-Amino-9-(2-cyanoethyl)purine, A-900
2-Amino-4-cyanopyrimidine, A-903
Aminocyclohexane, C-868
7-Amino-7-demethoxymimosamycin, M-624
6-Amino-6-demethoxymitomycin B, M-654
5-Amino-5-deoxy-1,2:3,6-di-*O*-isopropylidene-α-D-glucofuranose, A-727
5-Amino-5-deoxygalactopyranose, A-726
1-*C*-(5-Amino-5-deoxygalactopyranosyl)butane, B-432
5-Amino-5-deoxygalactose, A-726
5-Amino-5-deoxyglucose, A-727
5-Amino-5-deoxy-1,2-*O*-isopropylidene-α-D-galactofuranose, A-726
5-Amino-5-deoxy-1,2-*O*-isopropylidene-α-D-glucofuranose, A-727
5-Amino-5-deoxy-1,2-*O*-isopropylidene-6-*O*-trityl-α-D-galactofuranose, A-726
2-Amino-2-deoxykealiiquinone, K-25
5-Amino-5-deoxymannose, A-728
8-Amino-1,15-dichloro-1,14-pentadecadiene-3,12-diyne, D-357
2-Amino-4,6-dichloropyridine, A-729
4-Amino-1,13-diguanidino-5-tridecanone, A-730
7-Amino-7,8-dihydro-α-bisabolene, A-710
3-Aminodihydro-4,5-dimethyl-2(3*H*)-furanone, A-800
α-Amino-3,6-dihydro-2,6-dioxo-1(2*H*)-pyrimidinepropanoic acid, I-345
1-(7-Amino-5,8-dihydro-5,8-dioxo-2-quinolinyl)-4-methyl-9*H*-pyrido[3,4-*b*]indole-3-carboxylic acid, L-78
4-Aminodihydro-2(3*H*)-furanone, A-792
2-Amino-4,5-dihydro-1-[(hydroxymethoxyphosphinyl)oxy]-*N,N*-dimethyl-1*H*-imidazole-5-methanamine, A-975
2-Amino-7,8-dihydro-6-(2-hydroxy-1-oxopropyl)-4(1*H*)-pteridinone, S-246
2-Amino-4,5-dihydro-1*H*-imidazole-1-acetic acid, A-731
2-Amino-4,5-dihydro-1*H*-imidazole-4-acetic acid, A-732
6-Amino-6,7-dihydroimidazo[4,5-*d*]pyrimidin-7-one, P-820
2-Amino-7,9-dihydro-6-methoxy-7-methyl-8*H*-purin-8-one, A-753
2-Amino-3,5-dihydro-5-[(4-methoxyphenyl)methylidene]-3-methyl-4*H*-imidazol-4-one, L-152
2-(5-Amino-4,7-dihydro-1-methyl-4,7-dioxo-1*H*-indol-3-yl)-4-thiazolecarboxamide, A-1126
2-Amino-1,5-dihydro-1-methyl-4*H*-imidazol-4-one, C-732
1-Amino-2,3-dihydro-2-methyl-1*H*-indole, D-472
2-Amino-1,5-dihydro-7-methyl-4,6-pteridinedione, C-432
6-Amino-3,7-dihydro-3-methyl-8*H*-purin-8-one, A-819
6-Amino-1,3-dihydro-1-methyl-2*H*-purin-2-one, A-818
6-Amino-7,9-dihydro-9-methyl-8*H*-purin-8-one, A-819
2-Amino-1,7-dihydro-1-methyl-6*H*-purin-6-one, M-467
2-Amino-1,7-dihydro-7-methyl-6*H*-purin-6-one, M-469
2-Amino-3,7-dihydro-3-methyl-6*H*-purin-6-one, M-468
2-Amino-8,9-dihydrooxazolo[4,5-*g*]pyrido[2,1-*c*][1,4]benzodiazepine-7,13(6*H*,7*aH*)-dione, I-20
α-Amino-2,3-dihydro-3-oxo-5-isoxazoleacetic acid, I-8
α-Amino-2,5-dihydro-5-oxo-4-isoxazolepropanoic acid, A-733
2-Amino-4-(2,5-dihydro-5-oxo-2-isoxazolyl)butanoic acid, A-734
2-Amino-1,4-dihydro-4-oxo-6-pteridinecarboxylic acid, A-817
N-[4-[[(2-Amino-1,4-dihydro-4-oxo-6-pteridinyl)methyl]amino]benzoyl]glutamic acid, P-772
4-[(2-Amino-1,4-dihydro-4-oxo-6-pteridinyl)methyl]formylaminobenzoic acid, R-82
2-Amino-4,7-dihydro-4-oxo-7-β-D-ribofuranosyl-1*H*-pyrrolo[2,3-*d*]pyrimidine-5-carboximidamide, A-1387
2-Amino-4,7-dihydro-4-oxo-7-β-D-ribofuranosyl-1*H*-pyrrolo[2,3-*d*]pyrimidine-5-carboxylic acid, C-7
2-Amino-1,7-dihydro-7-(phenylmethyl)-6*H*-purin-6-one, G-210
2-Amino-1,5-dihydro-4,6-pteridinedione, A-750
2-Amino-5,8-dihydro-4,6,7(1*H*)-pteridinetrione, A-925
2-Amino-7,9-dihydro-1*H*-purine-6,8-dione, A-753
6-Amino-1,3-dihydro-2*H*-purin-2-one, A-818
6-Amino-1,7-dihydro-8*H*-purin-8-one, A-819
2-Amino-1,7-dihydro-6*H*-purin-6-one, G-210
4-Amino-1,2-dihydro-3*H*-pyrazolo[3,4-*d*]pyrimidin-3-one, A-820
5-Amino-1,6-dihydro-7*H*-1,2,3-triazolo[4,5-*d*]pyrimidin-7-one, A-735
2-Amino-3′,4′-dihydroxyacetophenone, A-736
2-Amino-4,5-dihydroxybenzoic acid, A-737
3-Amino-6,7-dihydroxy-2*H*-1-benzopyran-2-one, A-738
4-Amino-2,5-dihydroxybenzyl alcohol, A-739
26-Amino-3,16-dihydroxycholestan-22-one, A-740
26-Amino-3,16-dihydroxycholest-5-en-22-one, A-741
3-Amino-6,7-dihydroxycoumarin, A-738
2-Amino-5-[[(4,5-dihydroxy-2-cyclopenten-1-yl)amino]methyl]-1,7-dihydro-4*H*-pyrrolo[2,3-*d*]pyrimidin-4-one, Q-9
2-Amino-5-(4,5-dihydroxycyclopent-1-en-3-ylaminomethyl)pyrrolo[2,3-*d*]pyrimidine, Q-9
2-Amino-4,7-dihydroxy-6-(1,2-dihydroxypropyl)pteridine, I-13
2-Amino-7-(1,2-dihydroxyethyl)-6-(methylthio)thieno[3,2-*g*]pteridin-4(3*H*)-one, U-48
2-Amino-3,4-dihydroxy-5-methoxybenzoic acid, A-922
2-Amino-1,4-dihydroxy-18-methyl-4-aza-3,7,14-nonadecanetrione, L-189
4-Amino-2-(2,3-dihydroxy-3-methylbutyl)benzoic acid, A-742
2-Amino-*N*,3-dihydroxy-*N*-(14-methyl-3,10-dioxopentadecyl)propanamide, L-189
2-Amino-6,8-dihydroxy-7-methylpurine, A-753
2-Amino-6,8-dihydroxy-9-methylpurine, A-753
α-Amino-γ,5-dihydroxy-β-methyl-2-pyridinebutanoic acid, A-796
2-Amino-1,7-dihydroxyphenanthrene, A-743
2-Amino-3-(3,4-dihydroxyphenyl)-2,3-dihydro-1,4-benzodioxin-6-ethanamine, A-696
3-Amino-2-(3,4-dihydroxyphenyl)-2,3-dihydro-1,4-benzodioxin-6-ethanamine, A-744
2-Amino-1-(3,4-dihydroxyphenyl)ethanol, N-298
2-Amino-1-(3,4-dihydroxyphenyl)ethanone, A-736
3-Amino-*N*-[2-(3,4-dihydroxyphenyl)ethenyl]propanamide, D-157
3-Amino-*N*-[2-(3,4-dihydroxyphenyl)ethyl]propanamide, A-241
6-Amino-9-[1-(3,4-dihydroxyphenyl)ethyl]purine, A-137
2-Amino-3-(3,4-dihydroxyphenyl)propanoic acid, A-745
6-Amino-4,5-dihydroxy-3-piperidinecarboxylic acid, A-746
3-Amino-11,12-dihydroxypregnan-20-one, A-747
2-Amino-7-(1,2-dihydroxypropyl)-1,5-dihydro-4,6-pteridinedione, A-748
2-Amino-6-(1,2-dihydroxypropyl)-3-methylpterin-4-one, A-749
2-Amino-6-(1,2-dihydroxypropyl)-4,7(1*H*,8*H*)-pteridinedione, I-13
2-Amino-6-(1,2-dihydroxypropyl)-4(1*H*)-pteridinone, A-749
2-Amino-6-(1,2-dihydroxypropyl)-5,6,7,8-tetrahydro-4(1*H*)-pteridinone, T-142
2-Amino-4,6-dihydroxypteridine, A-750
2-Amino-4,7-dihydroxypteridine, A-751
2-Amino-4,7-dihydroxy-6-pteridinecarboxylic acid, A-752
2-Amino-4,6-dihydroxy-7-pteridinecarboxylic acid, X-12
6-Amino-2,8-dihydroxypurine, A-754
2-Amino-6,8-dihydroxypurine, A-753
4-Amino-3,6-dihydroxy-1*H*-pyrazolo[3,4-*d*]pyrimidine, A-755
25-Amino-3,23-dihydroxystigmast-5-ene-7,22-dione, A-756
3-Amino-6,7-dimethoxy-2*H*-1-benzopyran-2-one, A-738
3-Amino-6,7-dimethoxycoumarin, A-738
4-Amino-1,2-dimethoxy-3*H*-dibenzo[*de*,*g*]quinoline-3,5(6*H*)-dione, T-64
1-Amino-2,3-dimethoxy-7*H*-dibenzo[*de*,*g*]quinolin-7-one, T-62
6-Amino-8,9-dimethoxy-*N,N*-dimethyl-7-(methylthio)benzopentathiepin, L-205
10-Amino-2,3-dimethoxy-4-hydroxyphenanthrene-1-carboxylic acid lactam, T-537
10-Amino-2,4-dimethoxy-1-phenanthrenecarboxylic acid lactam, D-568
2-Amino-7,8-dimethoxy-3*H*-phenoxazin-3-one, A-862
2-Amino-1-(3,4-dimethoxyphenyl)ethanol, M-18
3-Amino-20-dimethylaminopregnane, P-601
7-Amino-1,6-dimethyl-5,8-isoquinolinedione, A-757
2-Amino-14,16-dimethyl-3-octadecanol, A-758
6-Amino-1,3-dimethyl-1*H*-purine-2,8(3*H*,8*H*)-dione, A-754
2-Amino-*N*-(3,10-dioxohexadecyl)-*N*,3-dihydroxypropanamide, N-113
1-Aminodiscorhabdin D, D-852
6-Amino-1,2-dithiolo[4,3-*b*]pyrrol-5(4*H*)-one, A-759
2-Amino-3,5-dodecadiene, D-881
2-Amino-5,7,9-dodecatrien-3-ol, D-345
2-(12-Amino-3,7,9-dodecatrienyl)pyridine, A-760
2-Amino-11-dodecen-3-ol, A-761
4-Amino-2-dodecyl-3-hydroxytetrahydrofuran, A-762
4-Amino-2-dodecyltetrahydro-3-furanol, A-762
3-Amino-22,26-epimino-5α-cholest-22(*N*)-en-16-ol, S-335
3-Amino-22,26-epimino-16,23-epoxycholestan-23-ol, S-346
2-Amino-5,6-epoxy-4-hydroxy-2-cyclohexen-1-one, A-804
3-Amino-5,6-epoxy-4-hydroxy-6-hydroxymethyl-2-cyclohexen-1-one, C-289
3-Amino-16,23-epoxy-16,28-secosolanidan-23-ol, S-346
3-Aminoestra-1,3,5(10)-trien-17-ol, A-763
2-Aminoethanesulfinic acid, A-764
2-Aminoethanesulfonic acid, A-765
2-Aminoethanesulfonothioic acid, A-766
2-Aminoethanol, A-767
3-Amino-5-ethenyl-5-hydroxy-2-cyclopenten-1-one, A-824
4-(2-Aminoethenyl)phenol, H-677
2-Amino-5-ethoxybenzoic acid, A-789
2-Amino-6-ethoxypurine, G-210
2-Aminoethyl dihydrogen phosphate, A-768
S-(2-Aminoethyl) thiosulfate, A-766
N-(2-Aminoethyl)acetamide, E-225
N-(2-Aminoethyl)benzamide, E-225
4-(2-Aminoethyl)-1,2-benzenediol, D-920
α-(1-Aminoethyl)benzenemethanol, A-869
β-Aminoethylbenzene, P-342
5-(2-Aminoethyl)-1,2,3-benzenetriol, T-576
9-(2-Aminoethyl)-6,7-benzopentathiepindiol, L-205
3-(2-Aminoethyl)-6-bromo-2-(1,1-dimethyl-2-propenyl)-1*H*-indole, B-316
3-(2-Aminoethyl)-6-bromoindole, B-356
3-(2-Aminoethyl)-5-bromoindole, B-355
4-(2-Aminoethyl)-2-bromophenol, A-769

3-(1-Aminoethyl)-5-carbomethoxypyridine, A-774
(2-Aminoethyl)cyclohexane, C-869
Aminoethylcysteine ketimine decarboxylated dimer, H-241
3-(2-Aminoethyl)-5,6-dibromoindole, D-343
4-(2-Aminoethyl)-2,6-dibromophenol, D-322
N-[3-[4-(2-Aminoethyl)-2,6-dibromophenoxy]propyl]-7,9-dibromo-10-hydroxy-8-methoxy-1-oxa-2-azaspiro[4.5]deca-2,6,8-triene-3-carboxamide, A-1378
N-[3-[4-(2-Aminoethyl)-2,6-dibromophenoxy]propyl]-α-(hydroxyimino)benzenepropanamide, P-821
2-Amino-9-ethyl-6,8-dihydroxypurine, A-753
6-(2-Aminoethyl)-3,4-dimethoxybenzotrithiane, V-20
9-(2-Aminoethyl)-6,7-dimethoxy-8-(methylthio)-benzopentathiepin, L-205
6-(2-Aminoethyl)-3,4-dimethoxy-5-(methylthio)-benzotrithiane, V-20
5-(2-Aminoethyl)-2,3-dimethoxyphenol, H-465
4-(2-Aminoethyl)-2,6-dimethoxyphenol, T-576
6-(2-Aminoethyl)-2,2-dimethyl-2*H*-1-benzopyran, A-770
4-(2-Aminoethyl)-2,6-dinitrophenol, H-481
N-(2-Aminoethyl)dodecanamide, E-225
4-(2-Aminoethyl)guaiacol, H-566
3-(2-Aminoethyl)-5-hydroxyindole, H-755
4-(2-Aminoethyl)-1*H*-imidazole, H-307
3-(2-Aminoethyl)-1*H*-indole-4,5-diol, D-683
3-(2-Aminoethyl)-1*H*-indole-5,6-diol, D-684
3-(2-Aminoethyl)indole, T-639
3-(2-Aminoethyl)-1*H*-indol-5-ol, H-755
2-(1-Aminoethyl)-*N*-[2-(1*H*-indol-3-yl)ethyl]-4-thiazolecarboxamide, A-1286
2-(2-Aminoethyl)-3-isoxazolin-5-one, I-349
5-(2-Aminoethyl)-3-methoxy-1,2-benzenediol, T-576
9-(2-Aminoethyl)-6-methoxy-7-benzopentathiepinol, L-205
5-(2-Aminoethyl)-2-methoxy-3,4-bis(methylthio)-phenol, L-207
3-(2-Aminoethyl)-5-methoxyindole, M-288
4-(2-Aminoethyl)-2-methoxyphenol, H-566
5-(2-Aminoethyl)-2-methoxyphenol, H-565
5-(1-Aminoethyl)-2-methylpyridine, B-248
3-(2-Aminoethyl)-2-nitroindole, A-771
4-(2-Aminoethyl)-2-nitrophenol, H-640
4-(2-Aminoethyl)phenol, H-667
3-(2-Aminoethyl)phenol, H-678
3-[4-(2-Aminoethyl)phenoxy]bulbispermine, H-5
(2-Aminoethyl)phosphinic acid, A-772
(2-Aminoethyl)phosphonic acid, A-773
(2-Aminoethyl)phosphonous acid, A-772
2-Amino-9-ethyl-6,8(1*H*,9*H*)-purinedione, A-753
5-(1-Aminoethyl)-3-pyridinecarboxylic acid, A-774
5-(2-Aminoethyl)pyrogallol, T-576
3-Amino-2-ethyl-4(3*H*)-quinazolinone, E-247
Aminoethylsulfonic acid, A-765
3-(2-Aminoethyl)-2,4,6-tribromophenol, T-460
1-(2-Aminoethyl)-3,6,7-trimethoxy-4-phenanthrenol, M-559
4-(β-Aminoethyl)veratrole, D-718
4-Amino-11-eudesmene, A-775
6-Amino-4(15)-eudesmene, A-776
1-Amino-2,6,10-farnesatriene, F-12
Aminoformamidine, G-199
N-[4-[(2-Amino-5-formyl-1,4,5,6,7,8-hexahydro-4-oxo-6-pteridinyl)methyl]amino]benzoylglutamic acid, F-121
2-Amino-3-formyl-6-hydroxypyridine, A-821
2-Amino-3-formyl-6-methoxypyridine, A-821
2-Amino-1-formyl-3-oxo-3*H*-phenoxazine-9-carboxylic acid, C-452
2-Amino-9-formyl-3-oxo-3*H*-phenoxazine-1-carboxylic acid, C-452
11-Amino-1(10),4-germacradiene, G-69
α-Aminoglutaric acid lactam, O-206
2-Aminoglutaric acid, G-107
4-Aminoglyoxaline, A-826
2-Aminoglyoxaline, A-825
4-Amino-11-gorgonene, A-777
14-Amino-1(5),7,10(14)-guaiatriene-6,9-dione, A-778
1-Amino-4-guanidinobutane, A-719
1-Amino-19-guanidino-11,15-dihydroxy-4,9,12-triazanonadecane-10,13-dione, S-394
2-Amino-6-guanidinohexanoic acid, H-326
1-Amino-19-guanidino-11-hydroxy-4,9,12-triazanonadecane-10,13-dione, S-394
1-Amino-2-(guanidinomethyl)-1-cyclopropanecarboxylic acid, C-163
2-Amino-4-(guanidinooxy)butanoic acid, C-74
1-Amino-5-guanidinopentane, A-859
3-Amino-5-guanidinopentanoic acid, A-779
1-Amino-20-guanidino-4,8,12,16-tetraazaicosane, A-780
1-Amino-16-guanidino-4,8,12-triazahexadecane, A-781
2-Amino-5-guanidinovaleric acid, A-1413
1-Aminoheptane, H-130
8-Amino-1,1,1,15,15,15-hexachloro-3,12-pentadecadiyne, H-213
2-Amino-11,15-hexadecadien-3-ol, A-783
2-Amino-7,15-hexadecadien-3-ol, A-782
2-Amino-3,5,10,13-hexadecatetraene, H-222
2-Amino-11-hexadecen-3-ol, A-783
2-Amino-15-hexadecen-3-ol, A-783
2-Amino-9-hexadecen-3-ol, A-784
3-(16-Amino-9-hexadecynyl)pyridine, N-224
3-Aminohexahydro-2*H*-azepin-2-one, A-785
2-Amino-3,4,5,6,7,8-hexahydro-α-hydroxy-4,6-dioxo-7-pteridinepropanoic acid, E-216
N-[4-[[(2-Amino-1,4,5,6,7,8-hexahydro-4-oxo-6-pteridinyl)methyl]amino]benzoyl]glutamic acid, T-172
1-Aminohexane, H-261
2-Amino-4′-hydroxyacetophenone, A-786
2-Amino-5-hydroxy-*p*-anisic acid, A-737
1-Amino-2-hydroxybenzene, A-861
β-Amino-α-hydroxybenzenepropanoic acid, A-808
α-Amino-4-hydroxybenzenepropanoic acid, T-700
2-Amino-3-hydroxybenzoic acid, A-787
2-Amino-4-hydroxybenzoic acid, A-788
2-Amino-5-hydroxybenzoic acid, A-789
3-Amino-5-hydroxybenzoic acid, A-790
2-Amino-5-(*p*-hydroxybenzyl)-4-(*p*-methoxybenzyl)-1-methylimidazole, N-3
2-Amino-4-(4-hydroxybenzyl)-1-methyl-1*H*-imidazole, A-791
3-Amino-4-hydroxybutanoic acid, A-792
1-Amino-3-hydroxy-8-decen-5-one, A-793
2-Amino-4-hydroxy-6-(1,2-dihydroxypropyl)pterin, A-749
2-Amino-6-hydroxy-7,9-dimethylpurinium, H-143
β-Amino-α-hydroxyethylbenzene, A-864
4-(2-Amino-1-hydroxyethyl)-1,2-benzenediol, N-298
4-(β-Amino-α-hydroxyethyl)catechol, N-298
p-(β-Amino-α-hydroxyethyl)phenol, O-63
(2-Amino-1-hydroxyethyl)phosphonic acid, A-794
2-Amino-6-hydroxy-8-(4-hydroxybenzoyl)-3*H*-phenoxazin-3-one, A-707
4-Amino-5-hydroxy-1-hydroxymethyl-7-oxabicyclo[4.1.0]hept-3-en-2-one, C-289
2-Amino-4-hydroxy-6-(hydroxymethyl)pteridine, A-802
4-Amino-2-hydroxy-5-(hydroxymethyl)pyrimidine, A-795
2-Amino-4-hydroxy-6-(3-hydroxy-4-phosphonooxy-1-butenyl)pteridine, A-809
2-Amino-4-hydroxy-4-(5-hydroxy-2-pyridinyl)-3-methylbutanoic acid, A-796
3-Amino-2-hydroxy-2-(1*H*-imidazol-4-ylmethyl)-5-methylhexanoic acid, L-160
2-Amino-3-hydroxy-3-(4-imidazolyl)propanoic acid, A-797
2-Amino-4-hydroxy-α-imino-$\Delta^{7(3H)\beta}$-pteridinepropionic acid, L-109
2-Amino-5-hydroxy-4-methoxybenzoic acid, A-737
2-[4-Amino-3-hydroxy-5-methoxy-2,6-bis(3-methyl-2-butenyl)phenyl]-5,7-dihydroxy-4*H*-1-benzopyran-4-one, P-483
2-Amino-8-hydroxy-6-methoxy-7-methylpurine, A-753
2-Amino-1-(4-hydroxy-3-methoxyphenyl)ethanol, N-303
2-Amino-5-(hydroxymethyl)-1,4-benzenediol, A-739
4-Amino-5-(hydroxymethyl)-2-methoxypyrimidine, A-795
3-Amino-4-hydroxymethyl-14-methyl-9,19-cyclopregn-4-en-20-one, A-798
7-Amino-1-hydroxymethyl-6-methyl-5,8-isoquinolinedione, A-799
2-Amino-9-hydroxymethyl-3-oxo-3*H*-phenoxazine-1-carboxylic acid, C-452
2-Amino-1-hydroxy-4-methylpentane, A-838
2-Amino-4-hydroxy-3-methylpentanoic acid, A-800
2-Amino-8-(hydroxymethyl)-3*H*-phenoxazin-3-one, A-801
2-Amino-6-(hydroxymethyl)-4(1*H*)-pteridinone, A-802
4-Amino-2-hydroxy-5-methylpyrimidine, A-803
4-Amino-5-hydroxymethyl-2(1*H*)-pyrimidinone, A-795
3-Amino-5-hydroxy-7-oxabicyclo[4.1.0]hept-3-en-2-one, A-804
8-Amino-1-hydroxyphenazine, A-805
2-Amino-6-hydroxy-3*H*-phenoxazin-3-one, A-862
N-[3-[2-Amino-3-(4-hydroxyphenoxy)phenyl]-3-oxopropyl]-4-hydroxybenzamide, B-289
2-Amino-1-(4-hydroxyphenyl)ethanol, O-63
2-Amino-1-(4-hydroxyphenyl)ethanone, A-786
2-Amino-5-[[[[3-(4-hydroxyphenyl)-2-methoxy-2-propenoyl]amino](imino)methyl]amino]pentanoic acid, A-806
1-(3-Amino-4-hydroxyphenyl)-1,2-propanediol, A-807
3-Amino-2-hydroxy-3-phenylpropanoic acid, A-808
2-Amino-3-(4-hydroxyphenyl)propanoic acid, T-700
2-Amino-6-[3-hydroxy-4-(phosphonooxy)-1-butenyl]-4(1*H*)-pteridinone, A-809
20-Amino-18-hydroxypregna-1,4-dien-3-one, A-810
3-Amino-20-hydroxypregnane, A-880
3-Amino-12-hydroxypregnan-20-one, A-811
3-Amino-14-hydroxypregnan-20-one, A-812
20-Amino-3-hydroxypregn-5-ene, A-886
3-Amino-12-hydroxypregn-15-en-20-one, A-811
3-Amino-15-hydroxypregn-5-en-20-one, A-888
3-Amino-2-hydroxypregn-5-en-16-one, A-813
3-Amino-2-hydroxypregn-5-en-20-one, A-814
2-Amino-3-hydroxy-1-propanesulfonic acid, A-815
2-Amino-6-(1-hydroxypropyl)-8-methyl-4,7(1*H*,8*H*)-pteridinedione, I-13
2-Amino-4-hydroxypteridine, A-816
2-Amino-4-hydroxy-6-pteridinecarboxylic acid, A-817
3-[2-Amino-4-hydroxy-7(3*H*)-pteridinylidene]-2-iminopropanoic acid, L-109
6-Amino-2-hydroxypurine, A-818
6-Amino-8-hydroxypurine, A-819
2-Amino-6-hydroxypurine, G-210
4-Amino-3-hydroxy-1*H*-pyrazolo[3,4-*d*]pyrimidine, A-820
2-Amino-6-hydroxy-3-pyridinecarboxaldehyde, A-821
α-Amino-5-hydroxy-2-pyridinepropanoic acid, A-822
α-Amino-3-hydroxy-1(4*H*)-pyridinepropanoic acid, L-148
2-Amino-4-hydroxypyrimidine, A-823
4-Amino-2-hydroxypyrimidine, C-961
4-Amino-2-hydroxy-5-pyrimidinemethanol, A-795
3-Amino-2-hydroxy-4(3*H*)-quinazolinone, Q-13
3-Amino-23-hydroxysolanidane, A-908
N-(20-Amino-4-hydroxy-4,8,12,17-tetraazaeicos-1-yl)-4-hydroxybenzamide, A-176
2-Amino-4-hydroxy-6-(1,2,3,4-tetrahydroxybutyl)pteridine, A-915
3-Amino-5-hydroxy-5-vinyl-2-cyclopenten-1-one, A-824
2-Aminohypoxanthine, G-210
1-Aminohypoxanthine, P-820
5-Aminoimidazole ribonucleotide, A-827

5-Aminoimidazole riboside, A-827
4(5)-Aminoimidazole, A-826
2-Aminoimidazole, A-825
4,4′-[(2-Amino-1*H*-imidazole-1,4-diyl)bis(methylene)]bisphenol, I-252
β-Amino-1*H*-imidazole-4-propanol, H-308
2-[2-Amino-2-imidazolin-4-yl]acetic acid, A-732
N-[2-(2-Amino-1*H*-imidazol-4-yl)ethyl]-3,5-dibromo-2-hydroxy-α-(hydroxyimino)-4-methoxybenzenepropanamide, P-814
N-[2-(2-Amino-1*H*-imidazol-4-yl)ethyl]-3-(3,5-dibromo-4-methoxyphenyl)-2-propenamide, A-828
3-Amino-*N*-[2-(1*H*-imidazol-4-yl)ethyl]propanamide, C-157
2-Amino-3-(4-imidazolyl)propanol, H-308
3-(2-Amino-1*H*-imidazol-4-yl)-2-propen-1-amine, A-701
2-Amino-6-[[3-(1*H*-imidazol-4-yl)-2-propenoyl]amino]hexanoic acid, I-42
N-[3-(2-Amino-1*H*-imidazol-4-yl)-2-propenyl]-4,5-dibromo-1*H*-pyrrole-2-carboxamide, O-123
2-Amino-1*H*-imidazo[4,5-*b*]pyrazine, A-829
3-Amino-22,26-iminocholestane-16,23-diol, S-336
N-(Aminoiminomethyl)-β-alanine, G-208
[(Aminoiminomethyl)amino]acetic acid, G-200
7-[(Aminoiminomethyl)amino]-*N*-[2-[[4-[(3-aminopropyl)amino]butyl]amino]-1-hydroxy-2-oxoethyl]heptanamide, S-394
2-[4-[(Aminoiminomethyl)amino]-1-azabicyclo[3.1.0]hex-2-yl]-*N*-valylglycine, F-52
4-[(Aminoiminomethyl)amino]butanoic acid, G-201
3-[[[1-[[[4-[(Aminoiminomethyl)amino]butyl]amino]carbonyl]-3-methylbutyl]amino]carbonyl]oxiranecarboxylic acid, R-69
3-[[[4-[(Aminoiminomethyl)amino]butyl]amino]propyl]guanidine, H-305
N-[4-[(Aminoiminomethyl)amino]butyl]-3,5-dibromo-2-hydroxy-α-(hydroxyimino)-4-methoxybenzenepropanamide, P-815
4-[[[(Aminoiminomethyl)amino]carbonyl]amino]-butanoic acid, G-140
N-[4-[[[(Aminoiminomethyl)amino]carbonyl]amino]butyl]-*N*-methylacetamide, N-187
N^5-[[(Aminoiminomethyl)amino]carbonyl]ornithine, G-75
β-(Aminoiminomethyl)amino-3,4-dihydroxystyrene, T-656
2-[(Aminoiminomethyl)amino]ethanesulfinic acid, G-203
2-[(Aminoiminomethyl)amino]ethanesulfonic acid, G-204
O-[(Aminoiminomethyl)amino]homoserine, C-74
4-[(Aminoiminomethyl)amino]-3-hydroxybutanoic acid, G-206
3-[(Aminoiminomethyl)amino]-*N*-(2-hydroxyheptyl)propanamide, P-313
3-[(Aminoiminomethyl)amino]-*N*-(2-methoxyheptyl)-2-methylpropanamide, P-314
5-[(Aminoiminomethyl)amino]-3-(methylamino)-pentanoic acid, A-779
5-[(Aminoiminomethyl)amino]-2-oxopentanoic acid, G-207
N-(Aminoiminomethyl)-4-bromo-1*H*-pyrrole-2-carboxamide, B-319
N^6-(Aminoiminomethyl)-N^2-[(4-bromo-1*H*-pyrrol-2-yl)carbonyl]lysine, B-346
N-[*N*-(Aminoiminomethyl)-2-[3,5-dihydroxy-4-(1-methylethyl)phenyl]glycyl]glycine, R-54
N-[*N*-(Aminoiminomethyl)-2-(4-ethyl-3,5-dihydroxyphenyl)glycyl]glycine, R-55
N-(Aminoiminomethyl)glycine, G-200
3-(Aminoiminomethyl)-1,2,3,7,8,9*a*-hexahydro-5*H*,10*H*-dipyrrolo[1,2-*a*:1′,2′-*d*]pyrazine-5,10-dione, V-79
N^6-(Aminoiminomethyl)lysine, H-326
4-[(Aminoiminomethyl)(3-methyl-2-butenyl)amino]butanoic acid, C-592
N-(Aminoiminomethyl)-*N*-methylglycine, C-731
3-[3-(Aminoiminomethyl)propyl]hexahydropyrrolo[1,2-*a*]pyrazine-1,4-dione, C-841
[3-(Aminoiminomethyl)propylidene]butanedioic acid, L-373
N-(Aminoiminomethyl)-2-pyrrolidineacetic acid, P-950
3-(3-Amino-1*H*-inden-2-yl)alanine, A-698
α-Amino-1*H*-indole-3-propanoic acid, T-640
β-Amino-1*H*-indole-3-propanol, A-830
2-Amino-*N*-[2-[[2-(1*H*-indol-3-yl)ethenyl]amino]-2-oxoethyl]benzamide, P-189
2-Amino-5-(1*H*-indol-3-ylmethyl)-4(5*H*)-oxazolone, A-1092
2-Amino-3-(3-indolyl)propanoic acid, T-640
2-Amino-3-(3-indolyl)-1-propanol, A-830
9-Aminoisoascididemnin, H-542
2-Aminoisocaproic acid, L-153
7-Amino-5,8-isoquinolinedione, A-831
7-Amino-5,8-isoquinolinequinone, A-831
4-Amino-3-isoxazolidinone, A-832
2-Amino-4-(isoxazolin-5-on-2-yl)butanoic acid, A-734
α-Amino-γ-(isoxazolin-5-on-2-yl)butyric acid, A-849
o-Aminomandelic lactam, I-91
Aminomethanamidine, G-199
Aminomethane, M-383
2-Amino-4′-methoxyacetophenone, A-786
2-Amino-3-methoxybenzoic acid, A-787
2-Amino-4-methoxybenzoic acid, A-788
2-Amino-5-methoxybenzoic acid, A-789
2-Amino-3-methoxybenzonitrile, A-787
2-Amino-5-methoxybenzonitrile, A-789
3-Amino-5-methoxybenzonitrile, A-790
1-Amino-4-methoxybutane, A-716
6-Amino-5-methoxy-7*H*-dibenzo[*de*,*h*]quinolin-7-one, L-19
1-Amino-2-methoxy-7*H*-dibenzo[*de,g*]quinolin-7-one, T-62
2-Amino-6-methoxy-7,9-dimethylpurinium(1+), H-143
4-Amino-3-[3-(methoxymethyl)-6,7-dimethyl-2,6-octadienyl]benzamide, B-68
10-Amino-8-methoxy-3,4-methylenedioxy-1-phenanthrenecarboxylic acid lactam, A-1427
2-Amino-*N*-[2-(methoxymethyl)phenyl]benzenemethanamine, A-708
8-Amino-1-methoxyphenazine, A-805
4-Amino-3-methoxyphenol, A-705
4-[[2-Amino-4-[(4-methoxyphenyl)methyl]-1-methyl-1*H*-imidazol-5-yl]methyl]phenol, N-3
2-Amino-6-methoxy-3-pyridinecarboxaldehyde, A-821
4-Amino-2-methoxypyrimidine, C-961
4-Amino-2-methoxy-5-pyrimidinemethanol, A-795
8-Amino-4-methylaconitane-1,3,6,13,14,16,18-heptol, A-833
8-Amino-4-methylaconitane-1,3,6,13,14,15,16,18-octol, A-834
2-Amino-4-(methyl-*NNO*-azoxy)butanoic acid, A-1616
α-Aminomethylbenzenemethanol, A-864
6-(Aminomethyl)-1,2,4-benzenetriol, T-528
α-(Aminomethyl)benzyl alcohol, A-864
1-Amino-3-methyl-2,3-butanediol, A-835
1-Amino-3-methylbutane, M-420
α-(1-Amino-3-methylbutyl)-α-hydroxy-1*H*-imidazole-4-propanoic acid, L-160
5-(Aminomethyl)-4-(carboxymethyl)-1*H*-pyrrole-3-propanoic acid, P-574
7-Aminomethyl-7-deazaguanine, A-699
α-(Aminomethyl)-3,4-dihydroxybenzyl alcohol, N-298
α-(Aminomethyl)-3,4-dimethoxybenzenemethanol, M-18
6-Amino-4-methyl-1,2-dithiolo[4,3-*b*]pyrrol-5(4*H*)-one, A-759
3-(12-Amino-10-methyldodecyl)pyridine, N-226
3-(12-Amino-11-methyldodecyl)pyridine, N-225
3-(Aminomethylene)-1,3-dihydro-2*H*-indole-2-thione, A-836
3-(Aminomethylene)dihydro-2*H*-pyran-2,4(3*H*)-dione, G-62
10-Amino-3,4-methylenedioxy-1-phenanthrenecarboxylic acid lactam, D-567
3-Aminomethyleneindole-2-thione, A-836
3-Amino-2-methylenepropanoic acid, A-841
2-(1-Amino-1-methylethyl)-7*H*-furo[3,2-*g*][1]benzopyran-7-one, P-585
α-(Aminomethyl)-4-hydroxybenzenemethanol, O-63
α-(Aminomethyl)-*p*-hydroxybenzyl alcohol, O-63
α-(Aminomethyl)-4-hydroxy-3-methoxybenzenemethanol, N-303
5-Amino-1-methyl-1*H*-imidazole, A-826
2-Amino-1-methyl-2-imidazolin-4-one, C-732
4-[(2-Amino-1-methyl-1*H*-imidazol-4-yl)methyl]-phenol, A-791
3-(Aminomethyl)indole, I-97
1-Amino-2-methylindoline, D-472
5-(Aminomethyl)-3(2*H*)-isoxazolone, A-837
α-(Aminomethyl)-4-methoxybenzenemethanol, O-63
2-Amino-1-methyl-4-(3,4-methylenedioxybenzyl)-1*H*-imidazole, P-594
3-(Aminomethyl)-1-methylindole, I-97
7-Amino-2-methyl-6-(methylthio)-3,5,8(2*H*)-isoquinolinetrione, P-255
(*S*)-2-Amino-4-methyl-*N*-2-naphthalenylpentanamide, L-153
1-(2-Amino-3-methyl-1-oxopentyl)-2,3,3*a*,12*a*,13,14,15,17*a*-octahydro-5,8-ethenodipyrrolo[3,2-*b*:1′,2′-*e*][1,5,8]-oxadiazacyclotetradecine-12,17(1*H*,11*H*)-dione, Z-24
2-Amino-4-methylpentanamide, L-153
2-Amino-4-methylpentanoic acid, L-153
2-Amino-4-methyl-1-pentanol, A-838
4-Amino-4-methyl-2-pentanone, A-839
4-(Aminomethyl)phenol, H-417
2-(Aminomethyl)phenol, H-415
3-(Aminomethyl)phenol, H-416
(Aminomethyl)phenylcarbinol, A-864
1-Amino-2-methyl-2-propanol, A-840
2-(Aminomethyl)-2-propenoic acid, A-841
2-Amino-1-methyl-4(1*H*)-pteridinone, A-816
6-Amino-1-methylpurine, A-842
6-Amino-2-methylpurine, A-843
6-Amino-3-methylpurine, A-844
2-Amino-7-methyl-6,8-purinediol, A-753
2-Amino-9-methyl-6,8-purinediol, A-753
2-Amino-4-methylpyridine, A-845
4-Amino-5-methyl-2-pyrimidinol, A-803
4-Amino-5-methyl-2(1*H*)-pyrimidinone, A-803
4-Amino-1-methyl-2(1*H*)-pyrimidinone, C-961
6-Amino-1-methyl-2(1*H*)-pyrimidinone, C-961
3-[(4-Amino-2-methyl-5-pyrimidinyl)methyl]-5-(2-hydroxyethyl)-4-methylthiazolium(1+), T-366
N-[(4-Amino-2-methyl-5-pyrimidinyl)methyl]-*N*-[4-hydroxy-1-methyl-2-(2-propenyldithio)-1-butenyl]formamide, A-627
3-Amino-N^b-methylsecovoacarpine, A-846
1-Amino-12-methyltetradecane, M-566
2-Amino-α-(methylthio)-γ-oxobenzenebutanoic acid, T-381
1-Amino-12-methyltridecane, M-579
α-(Aminomethyl)-3,4,5-trimethoxybenzenemethanol, H-557
α-(Aminomethyl)vanillyl alcohol, N-303
4-Aminomimosamycin, M-624
4-Aminomorpholine, M-705
14-Aminomyristic acid, A-911
2-Amino-3-(4-nitro-1*H*-indol-3-yl)propanoic acid, N-257
9-Amininonyl methyl sulfone, M-564
3-Amino-23-norcon-5-enine, C-595
2-Amino-5,9,12,15,17-octadecapentaen-3-ol, A-847
2-Amino-6,9,12,15-octadecatetraen-3-ol, A-848
2-Amino-5,9,12,15-octadecatetraen-3-ol, A-847
1-Amino-2,4-octadiene, O-38
6-Aminooctahydro-1-indolizinol acetate, S-327
4-(2-Amino-4-oxo-2-imidazolidin-5-ylidene)-2-bromo-4,5,6,7-tetrahydropyrrolo[2,3-*c*]azepin-8-one, H-762
α-Amino-5-oxo-2(5*H*)-isoxazolebutanoic acid, A-849
α-Amino-5-oxo-2(5*H*)-isoxazolepropanoic acid, A-850

α-Amino-3-oxo-5-isoxazolidineacetic acid, T-490
α-Amino-5-oxo-3-isoxazoline-4-propionic acid, A-733
8-Amino-7-oxononanoic acid, A-851
α-Amino-5-oxo-3-oxazoline-2-propionic acid, A-850
2-Amino-3-oxo-3*H*-phenoxazine-1-carboxylic acid, A-852
2-Amino-3-oxo-3*H*-phenoxazine-8-carboxylic acid, A-853
2-Amino-3-oxo-3*H*-phenoxazine-1,8-dicarboxylic acid, A-854
2-Amino-3-oxo-3*H*-phenoxazine-1,9-dicarboxylic acid, C-452
1-(2-Amino-1-oxopropyl)-2,3,3*a*,13*a*,14,15,16,18*a*-octahydro-8-methoxy-5,9-metheno-9*H*-dipyrrolo[3,2-*b*:1′,2′-*e*][1,5,8]oxadiazacyclopentadecine-13,18(1*H*,12*H*)-dione, A-855
α-Amino-*N*-[2-oxo-2-[[1-(1,2,3,4-tetrahydro-7-hydroxy-6-methoxy-2-methyl-1-isoquinolinyl)ethyl]amino]ethyl]benzenepropanamide, P-339
22-Amino-2,7,11,15,19-pentaazadocosanimidamide, A-780
1-Aminopentadecane, P-203
5-Amino-2-(1,3,8,10-pentadecatetraenyl)-4-piperidinol, P-713
2-Amino-6-(1,2,3,4,5-pentahydroxypentyl)-4(1*H*)-pteridinone, A-856
2-Aminopentanedioic acid, G-107
2-Amino-3-pentanol, A-857
2-Amino-3-pentanone, A-858
5-Amino-2-pentenoic acid γ-lactam, D-495
N-[3-[[3-[[3-[(5-Aminopentyl)amino]propyl]amino]-propyl]amino]propyl]-4-hydroxy-1*H*-indole-3-acetamide, C-536
(5-Aminopentyl)guanidine, A-859
2-Amino-1,7-phenanthrenediol, A-743
7-Amino-1-phenazinecarboxylic acid, A-860
8-Amino-1-phenazinol, A-805
2-Aminophenol, A-861
2-Amino-3*H*-phenoxazin-3-one, A-862
2-[(4-Aminophenyl)amino]pyrimidine, A-863
2-Amino-1-phenylethanol, A-864
2-Amino-1-phenylethanone, A-694
3-Amino-3-phenyllactic acid, A-808
2-[[(2-Aminophenyl)methyl]amino]benzenemethanol, A-708
1-[(2-Aminophenyl)methyl]-3-hydroxy-2-pyrrolidinone, V-39
4-[(5-Amino-6-phenylmethyl)pyrazinyl]phenol, C-559
4-(2-Aminophenyl)-2-(methylthio)-4-oxobutanoic acid, T-381
1-Amino-4-phenyl-2,7-naphthyridine, A-865
5-(4-Aminophenyl)-2,4-pentadienamide, A-866
5-(4-Aminophenyl)-2,4-pentadienoic acid, A-866
4-Amino-1-phenyl-1-penten-3-ol, A-867
4-Amino-1-phenyl-1-penten-3-one, A-868
2-Amino-1-phenyl-1-propanol, A-869
2-Amino-1-phenyl-1-propanone, A-870
5-(3-Amino-3-phenylpropanoyl)nicotaxine, N-188
2-Amino-γ-picoline, A-845
4-Aminopipecolic acid, A-871
4-Amino-2-piperidinecarboxylic acid, A-871
3-Amino-2-piperidinone, A-872
20-Aminopregna-5,16-diene-2,3-diol, A-874
3-Aminopregna-5,17(20)-diene-2,16-diol, A-873
20-Aminopregna-5,16-dien-3-ol, A-876
3-Aminopregna-5,16-dien-20-ol, A-875
20-Aminopregna-1,4-dien-3-one, A-878
3-Aminopregna-5,17(20)-dien-16-one, A-877
20-Aminopregnane-3,4-diol, A-879
20-Aminopregnan-3-ol, A-881
3-Aminopregnan-20-ol, A-880
20-Aminopregnan-3-one, A-883
3-Aminopregnan-20-one, A-882
20-Aminopregn-5-ene-3,16-diol, A-884
20-Aminopregn-5-en-3-ol, A-886
3-Aminopregn-5-en-20-ol, A-885
3-Aminopregn-5-en-18,20-olide, P-93
20-Aminopregn-4-en-3-one, A-891
3-Aminopregn-16-en-20-one, A-889
3-Aminopregn-17(20)-en-16-one, A-890
3-Aminopregn-5-en-16-one, A-887
3-Aminopregn-5-en-20-one, A-888
6-Amino-3-prenylpurine, T-451
4-Aminoproline, A-905
3-Aminopropanal, A-892
2-Amino-1,3-propanediol, A-893
1-Aminopropane, P-648
2-Amino-1-propanol, A-894
4-(3-Amino-1-propenyl)-1*H*-imidazol-2-amine, A-701
3-Aminopropionaldehyde, A-892
α-Aminopropiophenone, A-870
4-(3-Aminopropoxy)-3,5-dibromobenzeneethanamine, M-679
(3-Aminopropoxy)guanidine, A-895
3-Aminopropyl methyl sulfide, M-578
N^1-(3-Aminopropyl)-N^4-acetyl-1,4-butanediamine, S-398
N-[4-[(3-Aminopropyl)amino]butyl]acetamide, S-398
N^1-[3-[[4-[(3-Aminopropyl)amino]butyl]amino]propyl]bleomycinamide, B-236
N-[[[4-[(3-Aminopropyl)amino]butyl]carbamoyl]-hydroxymethyl]-7-guanidinoheptanamide, S-394
N-[5-[[3-[[3-[(3-Aminopropyl)amino]propyl]amino]propyl]amino]pentyl]-4-hydroxy-1*H*-indole-3-acetamide, C-535
N-(3-Aminopropyl)-*N*′-[3-[(3-aminopropyl)amino]-propyl]-1,4-butanediamine, D-289
N-[3-[[3-[(3-Aminopropyl)amino]propyl]amino]-propyl]-1,4-butanediamine, D-288
N-(3-Aminopropyl)-*N*′-[3-[(3-aminopropyl)amino]-propyl]-1,3-propanediamine, T-456
N-[3-[(3-Aminopropyl)amino]propyl]-1,4-butanediamine, D-249
4-(3-Aminopropyl)-1,2-benzenediol, A-896
N-(3-Aminopropyl)-1,4-butanediamine, S-398
N-(3-Aminopropyl)cadaverine, A-897
N′-(3-Aminopropyl)canavalmine, D-287
5-(3-Aminopropyl)-1,9-diamino-5-azanonane, A-718
N^5-(3-Aminopropyl)homospermidine, A-718
N^1-(3-Aminopropyl)homospermidine, D-250
N-[3-[(3-Aminopropyl)methylamino]propyl]-1,4-butanediamine, D-249
N-(3-Aminopropyl)-*N*-methyl-1,4-butanediamine, S-398
N-(3-Aminopropyl)-*N*-methyl-1,3-propanediamine, D-255
N^4-(3-Aminopropyl)norspermidine, T-622
10-(3-Aminopropyl)octadecahydro-2*H*-pyrido[1,2-*f*][1,6]diazacyclooctadecin-11(6*H*)-one, N-130
N-(3-Aminopropyl)-1,5-pentanediamine, A-897
p-β-Aminopropylphenol, A-898
4-(2-Aminopropyl)phenol, A-898
4-(3-Aminopropyl)phenol, H-350
N-(3-Aminopropyl)-1,3-propanediamine, D-255
N^4-(3-Aminopropyl)spermidine, B-152
7′-*N*-(3-Aminopropyl)squalamine, S-485
6-Aminoprotocatechuic acid, A-737
2-Amino-4,7(1*H*,8*H*)-pteridinedione, A-751
2-Amino-4-pteridinol, A-816
2-Amino-4(1*H*)-pteridinone, A-816
2-Amino-4(3*H*)-pteridinone-6-carboxylic acid, A-817
Aminopteroic acid, A-899
6-Aminopurine, A-137
6-Aminopurine-2,8-diol, A-754
2-Aminopurine-6,8-diol, A-753
6-Amino-1*H*-purine-2,8(3*H*,7*H*)-dione, A-754
6-Amino-9*H*-purine-9-propanoic acid, A-900
6-Amino-8-purinol, A-819
2-Amino-6-purinol, G-210
3-(6-Amino-9*H*-purin-9-yl)-1-(hydroxymethyl)-6-oxabicyclo[3.1.0]hexane-2,4-diol, N-168
4-(6-Amino-9*H*-purin-9-yl)-4-methyl-2-pentanone, G-15
6-[(6-Amino-9*H*-purin-9-yl)methyl]-3-pyridinol, P-151
4-Amino-1*H*-pyrazolo[3,4-*d*]pyrimidine-3,6(2*H*,5*H*)-dione, A-755
1-*C*-(7-Amino-1*H*-pyrazolo[4,3-*d*]pyrimidin-3-yl)-1,4-anhydro-D-ribitol, F-131
4-Amino-2,3-pyridinedicarboxylic acid, A-901
α-Amino-2-pyridinepropanoic acid, A-902
2-Amino-3-(2-pyridinyl)propanoic acid, A-902
9-Aminopyrido[1,2-*a*]indole-6,10-dione, A-208
2-Amino-4-pyrimidinecarboxylic acid, A-903
2-Amino-4-pyrimidinol, A-823
2-Amino-4(1*H*)-pyrimidinone, A-823
4-Amino-2(1*H*)-pyrimidinone, C-961
1-(2-Amino-4-pyrimidinyl)-β-carboline, A-1051
1-(2-Amino-4-pyrimidinyl)-6-methoxy-β-carboline, A-1051
α-Amino-1*H*-pyrrole-1-hexanoic acid, A-904
4-Amino-2-pyrrolidinecarboxylic acid, A-905
1-Aminopyrrolidine, P-949
1-Aminopyrrolizidine, A-906
Aminopyrrolnitrin, A-725
3-Amino-2,4(1*H*,3*H*)-quinazolinedione, Q-13
2-Aminoquinoline, Q-28
α-Aminoquinoline, Q-28
1-Aminoquinolizidine, A-907
4-Aminoresorcinol, A-705
4-Amino-7-β-D-ribofuranosyl-7*H*-pyrrolo[2,3-*d*]pyrimidine-5-carbonitrile, S-53
4-Amino-7-β-D-ribofuranosyl-7*H*-pyrrolo[2,3-*d*]pyrimidine-5-carboxylic acid, S-53
4-Amino-7-ribofuranosyl-7*H*-pyrrolo[2,3-*d*]pyrimidine, T-658
3-Amino-16,28-secosolanida-22,24,26(28)-triene-16,23-diol, S-351
3-Amino-16,28-secosolanid-22(28)-en-16-ol, S-335
Aminosin, I-148
3-Aminosolanidan-23-ol, A-908
6-Amino-1-spiroaxene, S-425
3-Aminospirosolane, S-439
3-Aminospirosol-5-ene, S-446
3-Aminospirostane, S-458
3-Aminospirostan-6-ol, A-909
3-Aminospirostan-9-ol, A-910
N-[2-(Aminosulfonyl)ethyl]-3-bromo-4-hydroxy-α-(hydroxyimino)benzenepropanamide, P-688
18-Amino-2,7,11,15-tetraazaoctadecanimidamide, A-781
2-Amino-3,5-tetradecadiene, T-131
14-Aminotetradecanoic acid, A-911
2-Amino-3,5,13-tetradecatriene, T-131
2-Amino-13-tetradecen-3-ol, A-913
2-Amino-5-tetradecen-3-ol, A-912
3-(14-Amino-3-tetradecenyl)pyridine, T-357
3-(11-Amino-3-tetradecynyl)pyridine, T-357
7-Amino-3,4,4*a*,10*b*-tetrahydro-2,4-dimethylbenzo[*f*]quinolin-6(5*H*)-one, A-914
2-Amino-1,4,7,8-tetrahydro-4,7-dioxo-6-pteridinecarboxylic acid, A-752
2-Amino-1,4,5,6-tetrahydro-4,6-dioxo-7-pteridinecarboxylic acid, X-12
3-(2-Amino-4,5,6,8-tetrahydro-4,6-dioxo-7(3*H*)-pteridinylidene)-2-oxopropanoic acid, E-216
2-Amino-3*a*,5,6,6*a*-tetrahydro-4-(hydroxymethyl)-4*H*-cyclopentoxazole-4,5,6-triol, T-447
7-Amino-3,4,4*a*,10*b*-tetrahydro-2-(hydroxymethyl)-4-methylbenzo[*f*]quinolin-6(5*H*)-one, A-914
3-Amino-1,2,5,6-tetrahydro-5-imino-2,6-pyrazinedibutanamine, B-35
α-Amino-3,4,5,6-tetrahydro-3-methyl-2-(methylamino)-4-pyrimidineacetic acid, S-527
6-Amino-1,2,3,4-tetrahydro-4-oxo-1,3,5-triazine-2-carboxylic acid, T-104
2-Amino-6-(1,2,3,4-tetrahydroxybutyl)-4(1*H*)-pteridinone, A-915
16-Amino-2,6,10,14-tetramethyl-5,10,14-hexadecatrien-4-one, A-916
α-Aminotoluene, B-84
1-Aminotriacontane, T-452
3-Amino-2,4,6-triazabicyclo[3.2.1]oct-2-ene-7-carboxylic acid, V-144
5-Amino-1,1,1-trichloroundecane, T-482
1-Amino-4,12-tridecadien-2-ol, A-917
5-Amino-2-(6,8-tridecadienyl)-4-piperidinol, P-712
6-Aminotridecane, T-506
1-Amino-3-tridecen-2-ol, A-918
1-Amino-5-tridecen-2-ol, A-919
5-(12-Aminotridecyl)hexahydropyrrolo[2,1-*b*]oxazole, A-920

3-(13-Aminotridecyl)pyridine, T-358
2-(12-Aminotridecyl)pyrrolidine, A-921
2-(12-Aminotridecyl)-1-pyrrolidineethanol, A-921
2-Amino-2,3,5-trideoxy-3-methyl-D-arabinonic acid, A-800
2-Amino-2,3,5-trideoxy-3-methyl-L-arabinonic acid, A-800
2-Amino-2,3,5-trideoxy-3-methyl-D-lyxonic acid, A-800
2-Amino-2,3,5-trideoxy-3-methylpentonic acid, A-800
2-Amino-2,3,5-trideoxy-3-methyl-L-ribonic acid, A-800
2-Amino-2,3,5-trideoxy-3-methyl-D-xylonic acid, A-800
2-Amino-5-(trifluoromethoxy)benzoic acid, A-789
2-Amino-3,4,5-trihydroxybenzoic acid, A-922
11-Amino-4,5,9-trihydroxy-2-(hydroxymethyl)-10*H*-benzo[b]fluoren-10-one, S-500
4′-Amino-3′,5,7-trihydroxy-5′-methoxy-2′,8-diprenylisoflavone, I-267
4′-Amino-3′,5,7-trihydroxy-5′-methoxy-2′,6′-diprenylisoflavone, P-483
11-Amino-4,5,9-trihydroxy-2-methyl-10*H*-benzo[*b*]fluoren-10-one, S-501
1-Amino-2,3,4-trihydroxynortropane, A-704
2-Amino-7-(1,2,3-trihydroxypropyl)-4(1*H*)-pteridinone, A-924
2-Amino-6-(1,2,3-trihydroxypropyl)-4(1*H*)-pteridinone, A-923
2-Amino-4,6,7-trihydroxypteridine, A-925
α-Amino-2,3,5-trihydroxytoluene, T-528
2-Amino-3,4,5-trimethoxybenzoic acid, A-922
6-Amino-4,5,9-trimethoxy-7*H*-dibenzo[*de*,*h*]quinolin-7-one, D-89
7-Amino-2,9,10-trimethoxy-1*H*-dibenzo[*de*,*g*]quinolin-1-one, P-56
2-Amino-1-(3,4,5-trimethoxyphenyl)ethanol, H-557
Aminotrimethylcarbinol, A-840
3-Amino-4,4,14-trimethyl-9,19-cyclopregn-17(20)-en-16-one, C-848
4-Amino-3-(3,6,7-trimethyl-2,6-octadienyl)benzamide, B-68
2-Amino-*N,N,N*-trimethyl-2-oxoethanaminium(1+), C-119
5-Amino-*N,N,N*-trimethylpentanaminium(1+), P-229
5-Amino-*N,N,N*-trimethyl-1-pentenaminium(1+), P-232
4-Amino-*N,N,N*-tris(3-aminopropyl)-1-butanaminium, A-926
3-Amino-*N,N,N*-tris(3-aminopropyl)-1-propanaminium(1+), T-622
5-(10-Aminoundecyl)hexahydropyrrolo[2,1-*b*]oxazole, A-927
2-(10-Aminoundecyl)-1-pyrrolidineethanol, P-958
2-(10-Aminoundecyl)pyrrolidine, P-958
3-(2-Aminovinyl)-1*H*-indole, D-172
Aminoxytropine tropate, T-632
Aminozooanemonin, A-928
Amiroside, D-535
Amisine, J-49
Ammocalline, A-929
Ammodendrine, A-930
Ammorosine, A-931
Ammothamnine, M-121
Amphiasterin C_1, A-932
Amphiasterin C_2, A-933
Amphiasterin C_3, A-932
Amphiasterin C_4, A-933
Amphiasterin D_1, A-932
Amphiasterin D_2, A-933
Amphiasterin D_3, A-933
Amphiasterin E_1, A-932
Amphibine A, A-935
Amphibine B, A-936
Amphibine C, A-937
Amphibine D, A-938
Amphibine E, A-939
Amphibine F, A-940
Amphibine G, A-941
Amphibine H, A-942
Amphibine I, A-934
Amphikuemin, A-943
Amphimedine, A-944
Amphimedoside A, A-945
Amphimedoside B, A-946
Amphimedoside C, A-947
Amphimedoside D, H-3
Amphimedoside E, A-948
Amphistin, A-949
Amphitoxin, A-950
Amphorogynine A, H-720
Amphorogynine B, H-720
Amphorogynine C, H-720
Amphorogynine D, H-720
Ampullicin, A-951
Amsoniaefoline, A-952
Amsonine, Y-13
Amsosinine, A-953
Amurenine, T-524
Amurensine, A-954
Amurensinine *N*-oxide A, A-954
Amurensinine *N*-oxide B, A-954
Amurensinine, A-954
Amurine, A-955
Amurinine, A-956
Amurinol I, A-955
Amuroline, A-957
Amuronine, A-957
Amycomycin, A-958
Amygdalin, H-673
Amygdaloidin A, H-121
Amygdaloidin B, H-121
Amygdaloidin C, H-121
Amygdaloside, H-673
Amygdonitrile, H-673
Amythiamicin A, A-959
Amythiamicin B, A-960
Amythiamicin C, A-961
Amythiamicin D, A-962
Anabasamine, A-963
Anabaseine, T-144
Anabasine, JMAF, P-460
Anabilysine, A-964
Anachelin H, A-965
Anacine, A-966
trans-Anacrotine, A-967
Anacrotine, A-967
Anacycline, A-968
Anadoline *N*-oxide, S-163
Anadoline, S-163
Anaferine, A-969
Anagyrine, A-970
Anahygrine, A-971
Analeptin, S-659
Analobine, A-1066
Anandamide, E-48
Anantine, A-972
Anaprel, R-50
Anapterin, A-924
Anarkotin, N-44
Anaspaz, T-632
Anatabine, T-143
Anatalline, A-973
Anatoxin a, A-974
Anatoxin a(s), A-975
Anaxagoreine, P-4
Anchinopeptolide A, A-976
Anchinopeptolide B, A-976
Anchinopeptolide C, A-976
Anchinopeptolide D, A-976
Anchustrigosine, A-977
Ancisheynine, A-978
Ancistine, A-981
Ancistrine, A-990
Ancistrobenomine A, A-982
Ancistrobertsonine A, A-980
Ancistrobertsonine B, A-982
Ancistrobertsonine C, A-980
Ancistrobrevine A, A-979
Ancistrobrevine B, A-980
Ancistrobrevine C, A-981
Ancistrobrevine D, A-990
Ancistrocladeine, A-982
Ancistrocladidine, A-992
Ancistrocladine, A-982
Ancistrocladinine, A-982
Ancistrocladinium A, A-983
Ancistrocladinium B, A-984
Ancistrocladisine, A-985
Ancistrocladonine, A-982
Ancistrocline, A-982
Ancistrocongine, A-986
Ancistrocongolensine, A-987
Ancistrocongoline A, K-91
Ancistrocongoline B, K-91
Ancistrocongoline C, K-91
Ancistrocongoline D, A-990
Ancistroealaensine, A-982
Ancistroealaine A, A-980
Ancistroealaine B, A-980
Ancistrogriffine A, A-979
Ancistrogriffine B, A-990
Ancistrogriffine C, A-979
Ancistrogriffithine A, A-988
Ancistroguineine A, A-980
Ancistroguineine B, A-980
Ancistroheynine A, A-989
Ancistroheynine B, A-992
Ancistrolikokine A, K-91
Ancistrolikokine B, K-91
Ancistrolikokine C, K-91
Ancistrolikokine D, A-980
Ancistrorobertsonine D, A-990
Ancistrotanzanine A, A-991
Ancistrotanzanine B, A-980
Ancistrotanzanine C, A-992
Ancistrotectoriline A, A-980
Ancistrotectoriline B, A-990
Ancistrotectorine, A-992
Ancorinazole, A-993
Ancorinolate A, C-402
Ancorinolate B, I-93
Ancorinolate C, C-402
Ancorinoside A, A-994
Ancorinoside B, A-995
Ancorinoside C, A-996
Ancorinoside D, A-997
Andersobine, H-204
Andersoline, G-91
Andersonidine, M-309
Andersonine, A-998
Andesine, A-999
Andirin, T-700
Andrachamine, B-187
Andrachcine, H-433
Andrachcinidine, A-1000
Andrachcinine, H-433
Andrachnine, A-1001
Andrangine, A-1002
Andranginine, A-1003
Andrimide, A-1004
Androbine, P-221
Androbiphenyline, C-567
Androcimine, P-221
Androcine, P-221
Androcymbine, A-1005
Anemonin, Z-32
Aneurin diphosphate, T-366
Aneurine, T-366
Angchibangkine, A-1006
Angelicastigmine, A-1007
Angelin, T-700
3-(Angeloylamino)-20-(dimethylamino)-5-pregnen-4-one, D-282
Angeloyl-*trans*-anacrotine *N*-oxide, A-967
7-Angeloyldihydroheliotridine, H-233
9-Angeloyldihydroheliotridine, H-233
15-Angeloylgermine, G-70
9-Angeloylhastanecine, H-233
7-Angeloylheliotridine, T-188
6-Angeloyl-3-(*trans*-4-hydroxysenecioyl)tropane, M-391
7-Angeloyl-1-methylenepyrrolizidine *N*-oxide, H-601

7-Angeloyl-1-methylenepyrrolizidine, H-601
6-Angeloyloxyditropan-3-yl itaconate, A-1008
13-(Angeloyloxy)-4-hydroxylupanine, D-606
4-Angeloyloxy-3-hydroxy-13-methoxylupanine, T-557
4-(Angeloyloxy)lupanine, H-551
13-Angeloyloxylupanine, H-554
13-Angeloyloxy-17-oxolupanine, O-188
6-Angeloyloxyplatynecine, D-595
6-Angeloyloxytropan-3-ol, M-391
9-Angeloylplatynecine *N*-oxide, H-233
7-Angeloylplatynecine, H-233
9-Angeloylplatynecine, H-233
9-Angeloylretronecine *N*-oxide, T-188
7-Angeloylretronecine, T-188
9-Angeloylretronecine, T-188
7-Angeloylturneforcidine, H-233
9-Angeloylturneforcidine, H-233
Angeloylturneforcidine, H-233
15-Angeloyl-3-veratroylgermine, G-70
Angeloylzygadenilic acid δ-lactone, Z-35
Angeloylzygadenine β-*N*-oxide, Z-36
Angeloylzygadenine, Z-36
7-Angelylheliotridine trachelanthate, E-31
7-Angelylheliotridine viridiflorate, E-31
7-Angelylheliotrine, L-47
7-Angelyl-9-viridiflorylheliotridine, E-31
Angoline, D-407
Angolinine, N-239
Anguibactin, A-1009
Anguivine, S-456
Angularine, R-133
Angulatamine, P-247
Angulatueoid A, P-218
Angulatueoid B, P-218
Angulatueoid C, T-259
Angulatueoid D, T-259
Angulatueoid E, T-259
Angulatueoid F, T-259
Angulatusine A, P-218
Angusteine, A-1010
Angusticraline, A-1011
Angustidine, A-1012
Angustifoline *N*-carboxyethyl ester, A-1013
Angustifoline *N*-carboxymethyl ester, A-1013
Angustifoline, A-1013
Angustilobine A, A-1014
Angustilobine B acid, A-1015
Angustilobine B N^b-oxide, A-1015
Angustilobine B, A-1015
Angustilocine, L-264
Angustilodine, A-1016
Angustimalal, A-1017
Angustimaline, A-1018
Angustimicine, A-228
Angustine, A-1019
Angustmycin B, A-137
Angustoline, A-1020
Angustureine, P-238
Anhalamine, T-236
Anhalidine, T-236
Anhaline, H-357
Anhalinine, T-236
Anhalonidine, T-237
Anhalonine, A-1021
Anhalotine, T-236
Anhweiaconitine, A-1022
Anhweidelphinine, A-1023
Anhydroadirubine, A-141
Anhydroalstonatine, N-132
Anhydroaposerratinine, F-28
Anhydroberberillic acid, A-1024
Anhydrobuxpiine, C-882
Anhydrocannabisativine, C-83
14,15-Anhydrocapuronidine, D-377
Anhydrodeacetylpaniculine, P-71
Anhydrodehydrotylophorinidine, A-1025
Anhydrodehydrotylophorinine, A-1025
4,9-Anhydro-11-deoxytetrodotoxin, A-1035
Anhydrodihydroamataine, V-188
14,15-Anhydrodihydrocapuronidine, D-377
Anhydrodihydrolycopodine, L-341
Anhydroecgonine methyl ester *N*-oxide, M-395
Anhydroecgonine methyl ester, M-395
Anhydroecgonine, M-395
4,9-Anhydro-6-epitetrodotoxin, A-1035
Anhydroevoxine, F-223
Anhydrohapaloxindole A, A-1026
Anhydrohapaloxindole B, A-1026
Anhydrohapaloxindole M, A-1026
Anhydroharringtonine, A-1027
Anhydrohazuntiphyllidine, H-80
Anhydroholantogenin, A-1028
Anhydroignavinol, H-184
Anhydrolycaconitine, A-106
Anhydrolycocernuine, L-321
Anhydrolycodoline, A-1029
Anhydrolycorinium, A-1030
Anhydrolycorin-7-one, H-290
Anhydromazethramycin, M-137
Anhydromethylpseudolycorine, A-1508
Anhydronupharamine, N-340
4,6′-Anhydrooxysporidinone, A-1031
Anhydroperforine, A-1032
Anhydroperipentamine, A-1033
Anhydropilosine, P-428
Anhydropseudolycorine, A-1508
Anhydroschumannificine, S-145
Anhydroscopin A, A-1044
16,17-Anhydrotacamine, T-12
Anhydrotetracycline, A-1034
4,9-Anhydrotetrodotoxin, A-1035
15′,20′-Anhydrovinblastine, V-110
3′,4′-Anhydrovinblastine, V-110
Anhydrovobasinediol, T-10
Anhygroscopin B, S-53
Anibacanine, M-81
Anibamine, A-1036
Anibine, A-1037
Anicanine, A-1038
Aniflorine, A-1039
2-Anilino-1,4-naphthoquinone, A-1040
2-Anilinoquinoline, Q-28
Anisamide, M-240
Anisamitocin PHO 3, M-136
Anisessine, A-1041
p-Anisic acid, M-240
Anisocycline, A-1042
Anisodamine, H-521
Anisodine, A-1043
Anisoezochasmaconitine, M-323
Anisomycin C, A-1044
Anisomycin D, A-1044
Anisomycin, A-1044
Anisotine, A-1045
14-Anisoylaconine, M-331
14-Anisoylneoline, M-323
14-Anisoyltalatizamine, M-352
N-(2-*p*-Anisylethyl)-*N*-methylcinnamamide, H-144
Ankoline, A-1046
Ankorine, A-1047
Annapawine, A-1048
Annobraine, L-145
Annocherine A, A-1049
Annocherine B, A-1049
Annocherine C, A-1049
Annofoline, F-29
Annolatine, A-1050
Annomontine, A-1051
Annomurine, A-1051
Annonelliptine, A-1052
Annonidine A, A-1053
Annonidine B, A-1054
Annonidine C, A-1055
Annonidine D, A-1056
Annonidine E, A-1055
Annonidine F, A-1057
Annopholine, A-1058
Annopodine, A-1059
Annoretine, A-1060
Annosqualine, A-1061
Annotine, A-1062
Annotinine, A-1063
Annotoxine, A-1062
Annuloline, A-1064
Anodendrine, A-1065
Anolobine, A-1066
Anomaline, A-1067
Anomoian A, A-1068
Anomoline, A-1052
Anomuricine, A-1069
Anomurine, A-1069
Anonaine, R-120
Anonamine, S-245
Anopterimine *N*-oxide, A-1070
Anopterimine, A-1070
Anopterine, A-1071
Anopteryl alcohol, A-1071
Anopteryl 11,12-ditiglate, A-1071
Anopteryl 11-4′-hydroxybenzoate 12-tiglate, A-1071
Anopteryl 12-tiglate, A-1071
Anorldianine N^{27}-oxide, A-1072
Anorldianine, A-1072
Anorosin, V-142
Anosmine, O-45
Anrakorinine, A-1073
Ansamitocin PHO 0, M-136
Ansamitocin PHO 1, M-136
Ansamitocin PHO 2, M-136
Ansamitocin PHO 4, M-136
Ansamitocin P1, M-136
Ansamitocin P2, M-136
Ansamitocin P3′, M-136
Ansamitocin P3, M-136
Ansamitocin P4, M-136
Ansamitocin P_0, M-136
Ansamitocin PND 1, M-136
Ansamitocin PND 2, M-136
Ansamitocin PND 3, M-136
Ansamitocin PND 4, M-136
Ansamitocinoside P1, M-136
Ansamitocinoside P2, M-136
Antazirine, A-1074
Antemovis, H-755
Anthcolorin A, A-1075
Anthcolorin B, A-1075
Anthcolorin C, A-1075
Anthcolorin D, A-1075
Anthcolorin E, A-1076
Anthcolorin F, A-1076
Anthcolorin G, A-1075
Anthcolorin H, A-1075
Anthelvencin A, A-1077
Anthemovister, H-755
Anthirine lactone, A-1329
Anthirine, A-1328
Anthocerodiazonin, A-1078
Anthorine, A-1534
Anthoroidine, H-181
Anthosamine A, A-1079
Anthosamine B, A-1079
Anthracyclinone blue A, A-1080
Anthracyclinone blue B, A-1080
Anthramycin, A-1081
Anthranilamide, A-706
Anthranilic acid, A-706
4-Anthranoyllappaconidine, A-91
Anthranoyllycoctonine, M-309
β-Anthrapyridinequinone, B-71
Anthraserpine, R-50
Anthriscifolcine A, A-92
Anthriscifolcine B, A-92
Anthriscifolcine C, A-88
Anthriscifolcine D, A-88
Anthriscifolcine E, A-88
Antibiotic A 10947, A-1097
Antibiotic A 33853, A-1098
Antibiotic A 6413, A-1202
Antibiotic A 65636, A-1099
Antibiotic A 6984, A-1095
Antibiotic A 7413, A-1096
Antibiotic A 75943, A-1100
Antibiotic A 500359A, A-1102
Antibiotic A 503083A, A-1102
Antibiotic A 58365A, A-1101
Antibiotic A 72363A1, A-746
Antibiotic A 72363A2, A-746

Antibiotic A 89271A, A-685
Antibiotic A 25822A, D-742
Antibiotic A 83094A, I-64
Antibiotic A 2315A, M-35
Antibiotic A 90931A, X-6
Antibiotic A 10255B, A-1103
Antibiotic A 25822B, A-1602
Antibiotic A 58365B, A-1104
Antibiotic A 72363B, A-746
Antibiotic A 89271B, A-684
Antibiotic A 500359B, C-103
Antibiotic A 503083B, C-103
Antibiotic A 90931B, X-6
Antibiotic A 23187, C-26
Antibiotic A 10255C, A-1105
Antibiotic A 500359C, A-1102
Antibiotic A 58365C, A-1106
Antibiotic A 72363C, A-746
Antibiotic A 89271C, A-684
Antibiotic A 19C, C-900
Antibiotic A 17002C, M-35
Antibiotic A 25822D, A-1602
Antibiotic A 500359D, A-1102
Antibiotic A 7413D, A-1107
Antibiotic A 89271D, A-686
Antibiotic A 10255E, A-1108
Antibiotic A 89271E, A-684
Antibiotic A 10255F, A-1109
Antibiotic A 89271F, A-687
Antibiotic A 17002F, M-35
Antibiotic A 10073, G-179
Antibiotic A 500359G, C-103
Antibiotic A 32256, H-496
Antibiotic A 10255H, A-1110
Antibiotic A 25822H, G-64
Antibiotic A 15104II, M-35
Antibiotic A 300-II, T-496
Antibiotic A 300I, T-496
Antibiotic A 25822L, A-1602
Antibiotic A 25822M, A-1602
Antibiotic A 77543, N-265
Antibiotic A 25822N, A-1602
Antibiotic A 10338, P-961
Antibiotic A 23812, P-891
Antibiotic A 23813, P-891
Antibiotic A 43791, T-392
Antibiotic A 70615, T-447
Antibiotic A 15104V, M-35
Antibiotic A 15104Y, D-324
Antibiotic 106-7, A-832
Antibiotic 1270, A-1084
Antibiotic 17452, A-832
Antibiotic 176, A-1195
Antibiotic 2158, A-1084
Antibiotic 35763, A-1151
Antibiotic 41043, A-1152
Antibiotic 41494, A-1153
Antibiotic 5102-2, A-1085
Antibiotic 5915, A-832
Antibiotic 6604-4, A-78
Antibiotic 68-1147, A-1082
Antibiotic 69, A-1083
Antibiotic 8217, A-832
Antibiotic 9408, A-1086
Antibiotic 0231A, A-1088
Antibiotic 116A, A-664
Antibiotic 2096A, A-1093
Antibiotic 2197A, A-1094
Antibiotic 593A, A-1089
Antibiotic 859A, A-1090
Antibiotic 875A, A-1091
Antibiotic 927A, A-1092
Antibiotic AB 97, A-1111
Antibiotic AB 3217A, A-1112
Antibiotic AB 4063A, A-1114
Antibiotic AB 3217B, A-1112
Antibiotic AB 4015B, A-1113
Antibiotic AB 4063B, A-1114
Antibiotic AB 3217C, A-1112
Antibiotic AB 85, F-115
Antibiotic AB 116, K-8
Antibiotic AC 7230, C-26
Antibiotic 167A, C-287
Antibiotic 2562A, C-395
Antibiotic 460A, C-936
Antibiotic 49A, C-830
Antibiotic A_3-118D, L-374
Antibiotic AF 140, A-1115
Antibiotic AF 110, F-197
Antibiotic AG 55, T-373
Antibiotic AH 135Y, A-129
Antibiotic 2088A, H-514
Antibiotic AIL-B, N-131
Antibiotic AIS 2M3, R-33
Antibiotic AJI 9561, A-1116
Antibiotic AJP 117510, U-42
Antibiotic AK-Ps, O-124
Antibiotic Al-R 2081, P-974
Antibiotic Al-R2397, M-136
Antibiotic AM 5344A_1, C-287
Antibiotic AM 5344A_2, C-287
Antibiotic AM 6201, R-34
Antibiotic AM 2282, S-498
Antibiotic A, M-653
Antibiotic 2814A, N-180
Antibiotic 1494A, O-134
Antibiotic A528, Q-60
Antibiotic ASK 753, A-1117
Antibiotic AS-N-7A, A-1118
Antibiotic AT 125, A-81
Antibiotic AT 2433, A-1119
Antibiotic 145-A, T-496
Antibiotic ATF 606, M-159
Antibiotic AX 1, A-246
Antibiotic AX 2, I-246
Antibiotic Azx, M-396
Antibiotic B 4317, A-1122
Antibiotic B 90063, A-1123
Antibiotic B 4607A, H-514
Antibiotic B 41A_3, M-607
Antibiotic B 41A_4, M-608
Antibiotic B 4607B, H-514
Antibiotic B 41B_2, M-607
Antibiotic B 41B_3, M-608
Antibiotic B 79B, S-384
Antibiotic B 4607C, H-514
Antibiotic B 41C_1, M-607
Antibiotic B 41D, M-609
Antibiotic B 79D, T-658
Antibiotic B 1625F$A_{2\beta\text{-}1}$, A-1124
Antibiotic B 41F, M-609
Antibiotic B 41G, M-609
Antibiotic B 371, I-216
Antibiotic B 14437, S-53
Antibiotic B 870, T-390
Antibiotic BA 181314A, A-1125
Antibiotic BA 90912, S-53
Antibiotic 0231B, A-1088
Antibiotic 1401B, A-1120
Antibiotic 2096B, A-1093
Antibiotic 4181B, A-1121
Antibiotic 460B, A-1309
Antibiotic B057-250A, M-588
Antibiotic BBM 2040A, C-373
Antibiotic BBM 928A, L-312
Antibiotic BBM 2040B, C-374
Antibiotic BBM 928B, L-312
Antibiotic BBM 928C, L-312
Antibiotic B057-250B, M-588
Antibiotic BC 41C_2, M-608
Antibiotic 167B, C-287
Antibiotic 2562B, C-395
Antibiotic B057-250C, M-588
Antibiotic B057-250D, M-588
Antibiotic BE 10988, A-1126
Antibiotic BE 14106, A-1127
Antibiotic BE 22179, A-1128
Antibiotic BE 48021, A-1129
Antibiotic BE 52211, A-1130
Antibiotic BE 54017, A-1131
Antibiotic BE 54476, A-1132
Antibiotic BE 55051, A-1133
Antibiotic BE 67251, A-1134
Antibiotic BE 19412A, A-1135
Antibiotic BE 54238A, A-1136
Antibiotic BE 45722A, D-126
Antibiotic BE 19412B, A-1135
Antibiotic BE 39907B, A-853
Antibiotic BE 52211B, A-1137
Antibiotic BE 54238B, A-1136
Antibiotic BE 45722B, D-126
Antibiotic BE 13793C, A-1393
Antibiotic BE 52211C, A-1137
Antibiotic BE 45722C, D-126
Antibiotic BE 12233, H-747
Antibiotic BE 18591, T-22
Antibiotic B057-250E, M-588
Antibiotic 2088B, H-514
Antibiotic 10204-BII, F-48
Antibiotic BK 97B1, B-64
Antibiotic BK 97B2, B-65
Antibiotic BM 1, A-1606
Antibiotic BM 123γ_2, C-460
Antibiotic BM 123$_{\gamma 1}$, C-459
Antibiotic BM 123β_1, G-117
Antibiotic 434B, M-413
Antibiotic BMG 162 aF_2, S-394
Antibiotic BMS 199687, N-265
Antibiotic BMY 41219, A-1393
Antibiotic BMY 42428, A-1138
Antibiotic BMY 28565, F-33
Antibiotic BMY 40660, H-417
Antibiotic BMY 28886, L-7
Antibiotic BMY 28566, M-158
Antibiotic BMY 28121, P-573
Antibiotic BMY 42448, P-969
Antibiotic BMY 28662, Q-11
Antibiotic BMY 41950, S-498
Antibiotic BN 229A, H-563
Antibiotic BN 227F, H-563
Antibiotic BN 227, H-563
Antibiotic 4738 B, P-833
Antibiotic BR 040, A-1139
Antibiotic BR 042, A-1139
Antibiotic BS 75A, C-574
Antibiotic BT 38, A-801
Antibiotic BU 3557A_3, A-1315
Antibiotic BU 4601A, A-789
Antibiotic BU 2349A, G-131
Antibiotic BU 3557A_1, K-17
Antibiotic BU 3557A_2, K-18
Antibiotic BU 2313A, N-264
Antibiotic BU 4601B, A-789
Antibiotic BU 2349B, G-132
Antibiotic BU 3557B_1, K-17
Antibiotic BU 3557B_2, K-17
Antibiotic BU 3557B_3, K-18
Antibiotic BU 2313B, N-264
Antibiotic BU 620, C-711
Antibiotic BU 4601C, A-789
Antibiotic BU 2349C, G-133
Antibiotic BU 3557C_1, K-17
Antibiotic BU 3557C_2, K-19
Antibiotic BU 3557C_3, K-20
Antibiotic BU 3557C_4, K-20
Antibiotic BU 3557C_5, K-17
Antibiotic BU 3557D_1, A-1315
Antibiotic BU 3557D_2, K-21
Antibiotic BU 3557D_3, K-20
Antibiotic BU 3557D_4, K-21
Antibiotic BU 4664L, D-297
Antibiotic BU 4514N, A-1140
Antibiotic BU 4146T, L-7
Antibiotic BU 2916T, P-573
Antibiotic BU 3845T, Q-11
Antibiotic BU 4704, X-7
Antibiotic C 73, A-129
Antibiotic C 14482A_1, D-876
Antibiotic C 304A, H-408
Antibiotic C 14482B_1, D-877
Antibiotic C 5507, C-954
Antibiotic C 15003 deClQNDO, M-136
Antibiotic C 15003 deClQO, M-136
Antibiotic C 15003 P 4 βHY, M-136
Antibiotic C 15003 P 4 γHY, M-136
Antibiotic C 9154, P-337
Antibiotic C 15003 PHM1, M-136
Antibiotic C 15003 PHM2, M-136
Antibiotic C 15003 PHM3, M-136

Antibiotic C 15003 PHM4, M-136
Antibiotic C 15003 PHO 0, M-136
Antibiotic C 15003 PHO 1, M-136
Antibiotic C 15003 PHO 4, M-136
Antibiotic C 15003P0, M-136
Antibiotic C 15003P1, M-136
Antibiotic C 15003P2, M-136
Antibiotic C 15003P3′, M-136
Antibiotic C 15003P3, M-136
Antibiotic C 15003P4, M-136
Antibiotic C 15003 PND 4 βHY, M-136
Antibiotic C 15003 PND 1, M-136
Antibiotic C 15003 PND 2, M-136
Antibiotic C 15003 PND 3, M-136
Antibiotic C 15003 PND 4, M-136
Antibiotic C 15003 QNDO, M-136
Antibiotic C 73X, A-129
Antibiotic 354, C-521
Antibiotic 900447, C-427
Antibiotic CA 39A, S-500
Antibiotic CA 39B, S-500
Antibiotic CC 1065, R-4
Antibiotic 2096C, D-498
Antibiotic CGP 39360, S-498
Antibiotic CGP 58546, S-498
Antibiotic CH 777A, N-180
Antibiotic 2088C, H-514
Antibiotic CI 4, C-841
Antibiotic CJ 12662, A-1141
Antibiotic CJ 12663, A-1141
Antibiotic CJ 15696, A-1145
Antibiotic CJ 16169, A-1145
Antibiotic CJ 16170, A-1142
Antibiotic CJ 16171, A-1143
Antibiotic CJ 16173, A-1144
Antibiotic CJ 16174, A-1145
Antibiotic CJ 16196, A-1146
Antibiotic CJ 16197, A-1146
Antibiotic CJ 16264, A-1147
Antibiotic CJ 16367, A-1148
Antibiotic CJ 17572, A-1149
Antibiotic CJ 17665, A-1470
Antibiotic CJ 21058, A-1150
Antibiotic CJ 13136, D-760
Antibiotic CJ 13217, D-760
Antibiotic CJ 13536, D-760
Antibiotic CJ 13564, D-760
Antibiotic CJ 13565, D-762
Antibiotic CJ 13566, D-762
Antibiotic CJ 13567, D-762
Antibiotic CJ 13568, D-762
Antibiotic CJ 14877, D-666
Antibiotic CJ 14897, D-666
Antibiotic CJ 15335, D-666
Antibiotic 2908C, K-47
Antibiotic 547C, O-131
Antibiotic CP 35763, A-1151
Antibiotic CP 41043, A-1152
Antibiotic CP 41494, A-1153
Antibiotic CP 47444, N-276
Antibiotic CP 51467, N-48
Antibiotic CP 52726, N-49
Antibiotic CP 52748, N-50
Antibiotic CP 57820, N-276
Antibiotic CP 61405, R-136
Antibiotic CP 46192, T-391
Antibiotic CS 79A, C-169
Antibiotic CS 79B, C-169
Antibiotic CSL 12A, T-700
Antibiotic CSL 12B, T-700
Antibiotic CSL 12C, T-700
Antibiotic CSL 12D, T-700
Antibiotic CSL 12E, T-700
Antibiotic CSL 12F, T-700
Antibiotic CSL 12G, T-700
Antibiotic CSL 12H, T-700
Antibiotic CSL 12I, T-700
Antibiotic CSL 12J, T-700
Antibiotic CSL 12K, T-700
Antibiotic CSL 12L, T-700
Antibiotic CSL 12M, T-700
Antibiotic CV 1, A-1154
Antibiotic CW 69A, C-129
Antibiotic CW 69B, C-129
Antibiotic CW 69, C-129
Antibiotic CW 69C, C-129
Antibiotic CW 69D, C-129
Antibiotic CW 69E, C-129
Antibiotic CW 69F, C-129
Antibiotic 0089D, A-1155
Antibiotic DC 102, A-1157
Antibiotic DC 105, A-1158
Antibiotic DC 81, A-1156
Antibiotic DC 8118A, A-1159
Antibiotic DC 88A, D-952
Antibiotic DC $89A_1$, D-953
Antibiotic DC $89A_2$, D-954
Antibiotic DC 59A, S-231
Antibiotic DC 8118B, A-1159
Antibiotic DC $89B_1$, D-953
Antibiotic DC 86C, H-496
Antibiotic DC 113, D-956
Antibiotic DC 52d, Q-22
Antibiotic DC 59H, S-231
Antibiotic DC 107, L-82
Antibiotic DC 86M, H-496
Antibiotic DC 62, P-660
Antibiotic DC 52, Q-21
Antibiotic DC 86R, H-496
Antibiotic DC 86Y, H-496
Antibiotic 2096D, D-522
Antibiotic DO 248A, R-54
Antibiotic DO 248B, R-55
Antibiotic DOB 41, A-1160
Antibiotic E 733A, A-832
Antibiotic E 212, S-53
Antibiotic 1252, E-61
Antibiotic E129A, O-131
Antibiotic EC 40, D-761
Antibiotic ECO 02301, A-1161
Antibiotic EGS 1300-1, A-1162
Antibiotic EM 4940A, S-295
Antibiotic EM 5596, N-101
Antibiotic EM 5519, S-2
Antibiotic F 1778, A-1163
Antibiotic F 1839A, A-1164
Antibiotic F 1839B, A-1164
Antibiotic F 10C, A-1165
Antibiotic F 1839C, A-1164
Antibiotic F 1839D, A-1164
Antibiotic F 1839E, A-1164
Antibiotic F 1839F, A-1164
Antibiotic F 2787, H-729
Antibiotic F 1839J, A-1164
Antibiotic F 4708, S-490
Antibiotic 4-215, F-131
Antibiotic FA 4283, A-1166
Antibiotic 31F508α1, B-140
Antibiotic 31F508α2, B-140
Antibiotic 31F508β1, B-140
Antibiotic 31F508β2, B-140
Antibiotic 4849F, B-73
Antibiotic F6, B-403
Antibiotic FCRC A48, F-152
Antibiotic FD 838, A-1167
Antibiotic FD 839, A-1168
Antibiotic FD 991, Q-58
Antibiotic 610FF, E-235
Antibiotic FKI 0550, A-758
Antibiotic FL 120B′, A-1169
Antibiotic FL 120B, A-1169
Antibiotic FL 657C, T-496
Antibiotic FO 7314, A-1407
Antibiotic FO 2047, P-333
Antibiotic FR 225656, A-1172
Antibiotic FR 225659, A-1173
Antibiotic FR 252921, A-1174
Antibiotic FR 252922, A-1175
Antibiotic FR 256523, A-1175
Antibiotic FR 3383, A-1170
Antibiotic FR 66979, A-1171
Antibiotic FR 900148, A-1176
Antibiotic FR 900220, A-680
Antibiotic FR 900482, A-1177
Antibiotic FR 901483, A-1178
Antibiotic FR 900216B, R-83
Antibiotic FR 900216C, R-83
Antibiotic FR 900483, D-420
Antibiotic FR 900411, E-242
Antibiotic FR 900216F, R-83
Antibiotic FR 177391, H-76
Antibiotic FR 900494, K-41
Antibiotic G 1499-2, A-1179
Antibiotic G 1549, H-563
Antibiotic 3780, G-210
Antibiotic GE 2270, A-1180
Antibiotic GE 37468A, A-1181
Antibiotic GE $2270B_1$, A-1180
Antibiotic GE 37468B, A-1181
Antibiotic GE 37468C, A-1181
Antibiotic GE $2270D_1$, A-1180
Antibiotic GE 2270E, A-1180
Antibiotic GE 2270T, A-1180
Antibiotic GERI-BP001 A, T-500
Antibiotic GERI-BP001 B, T-500
Antibiotic GERI-BP001 M, T-500
Antibiotic GKK $1032A_1$, A-1182
Antibiotic GKK $1032A_2$, A-1182
Antibiotic GKK 1032B, A-1183
Antibiotic GM 95, T-66
Antibiotic GT 32A, A-1127
Antibiotic GT 32B, A-1127
Antibiotic HA 23, A-1184
Antibiotic HA 9, O-124
Antibiotic HQ 24A, T-370
Antibiotic HS 3, P-974
Antibiotic I 1431, A-832
Antibiotic I 639A, D-769
Antibiotic I 693B, D-769
Antibiotic IA 887, N-180
Antibiotic IC 202A, A-1185
Antibiotic IC 202B, A-1186
Antibiotic IC 202C, A-1187
Antibiotic ICM 0201, A-1188
Antibiotic IM 8443T, C-815
Antibiotic IT 143C, P-421
Antibiotic IT 143D, P-421
Antibiotic IV-3, M-70
Antibiotic J 104303, A-1393
Antibiotic JBIR-02, P-421
Antibiotic JM 971A, T-699
Antibiotic JM 971B, T-699
Antibiotic JM 971C, T-699
Antibiotic K 300, A-832
Antibiotic K 252a, A-1189
Antibiotic K 82A, L-78
Antibiotic K 16A, M-76
Antibiotic K 252b, A-1189
Antibiotic K 73, C-901
Antibiotic K 252c, A-1190
Antibiotic K 252d, A-1190
Antibiotic K 93-0711-I_1, M-34
Antibiotic K 93-0711-I_2, M-34
Antibiotic K 117, N-180
Antibiotic K01-0509B, G-185
Antibiotic KC 7367A, M-85
Antibiotic KC 7367B, M-85
Antibiotic KF 8940, H-133
Antibiotic KG 431A, A-1191
Antibiotic KG 431B, I-100
Antibiotic KR 025, M-807
Antibiotic KSB 1939H3, M-607
Antibiotic KSB 193944, M-607
Antibiotic KSM 2690B, O-155
Antibiotic KSM 2690C, O-155
Antibiotic K_3-Ye, P-327
Antibiotic L 11-1, A-1192
Antibiotic L 13365, A-1193
Antibiotic L 654040, A-1194
Antibiotic L 681176, A-1195
Antibiotic L 696475, A-1196
Antibiotic L 697318, A-1196
Antibiotic L 755807, A-1197
Antibiotic L 970843, A-1198
Antibiotic L 970844, A-1198
Antibiotic L 52-71A, A-1304
Antibiotic L 657398, B-89
Antibiotic L 52-71B, A-1304
Antibiotic L 892-4, C-837

Antibiotic L 954967, N-269
Antibiotic L 156586, O-131
Antibiotic L 156587, O-131
Antibiotic L 156588, O-131
Antibiotic L 746628, P-584
Antibiotic L 696474, Z-37
Antibiotic LK6A, L-354
Antibiotic LL C10037α, A-804
Antibiotic LL-AP-191γ, L-90
Antibiotic LL-BH872α, A-1199
Antibiotic LL-BM $123_{\gamma 1}$, C-459
Antibiotic LL-BM $123_{\gamma 2}$, C-460
Antibiotic LL-BM $123\beta_1$, G-117
Antibiotic LL-BO 2964, A-1200
Antibiotic LL-E19085α, C-473
Antibiotic LL-14E605α, G-126
Antibiotic LL-E605β, G-126
Antibiotic LL-49F233α, A-1201
Antibiotic LL-F42248α, P-974
Antibiotic LU 1, H-616
Antibiotic M 259, A-1202
Antibiotic M 146791, C-837
Antibiotic M 4582, H-408
Antibiotic M 193, S-498
Antibiotic MBH 001, A-1203
Antibiotic MBP 039-06, A-1204
Antibiotic MBP 049-13, A-1205
Antibiotic MDL 62879, A-1180
Antibiotic Mer-A 2026A, P-421
Antibiotic Mer-A 2026B, P-421
Antibiotic Mer-WF 1726, C-945
Antibiotic MF 5810, O-134
Antibiotic 610MF, A-1206
Antibiotic MG 883-$12F_2$, S-569
Antibiotic MH 072, A-1199
Antibiotic MH 435A, E-144
Antibiotic MH 435B, E-144
Antibiotic MI 481-42F4A, A-959
Antibiotic MI 481-42F4B, A-960
Antibiotic MI 481-42F4C, A-961
Antibiotic MI 481-42F4D, A-962
Antibiotic MI 19827, M-607
Antibiotic MI 198Z1, M-607
Antibiotic MJ 347-81F4-A, N-266
Antibiotic MJ 347-81F4-B, N-266
Antibiotic MK 61, N-278
Antibiotic ML 1532II, C-900
Antibiotic MLR 52, S-498
Antibiotic MM 14201, A-804
Antibiotic MM 21801, A-759
Antibiotic MMC 4, M-654
Antibiotic MP 105, A-772
Antibiotic MPC 1001F, A-1207
Antibiotic MR 93A, M-159
Antibiotic MR 93B, O-156
Antibiotic MRL 3120, F-97
Antibiotic MS 681, A-1208
Antibiotic MSD 819, C-416
Antibiotic MSD 92, D-498
Antibiotic MT 35214, A-804
Antibiotic MT 36531, A-804
Antibiotic MT 1882-II, P-421
Antibiotic MT 1882-I, P-421
Antibiotic MY 336a, A-1209
Antibiotic MY 12-62a, H-133
Antibiotic MY 12-62c, H-134
Antibiotic MYC 8005, A-1210
Antibiotic N 461, C-102
Antibiotic N 13, R-160
Antibiotic NA 22598A_1, A-1211
Antibiotic NA 30851A, A-1212
Antibiotic NA 337, T-213
Antibiotic NFAT 68, A-1213
Antibiotic NG 311, A-1214
Antibiotic NG 391, A-1215
Antibiotic NG 392, A-1215
Antibiotic NG 393, A-1215
Antibiotic NG 129, S-490
Antibiotic NG 242, S-490
Antibiotic NG 243, S-490
Antibiotic NG 245, S-490
Antibiotic NI 15501A, A-33
Antibiotic NJ 21, A-832
Antibiotic NK 30424A, A-1216
Antibiotic NK 170204A, P-421
Antibiotic NK 372135A, X-7
Antibiotic NK 170204B, A-1217
Antibiotic NK 30424B, A-1216
Antibiotic NK 372135B, X-7
Antibiotic NK 372135C, X-7
Antibiotic NK 26588, I-179
Antibiotic NP 522, A-1218
Antibiotic NP 101A, A-31
Antibiotic NP 25302, B-242
Antibiotic NP 25301, D-224
Antibiotic NPI 0047, S-28
Antibiotic NPI 0052, S-28
Antibiotic NRCS 15, A-1219
Antibiotic 14752-2, O-131
Antibiotic OM 704A, D-295
Antibiotic OM 704B, D-295
Antibiotic OM 5714, I-161
Antibiotic OPC 15161, A-1220
Antibiotic P 42-1, A-244
Antibiotic P 725C, O-151
Antibiotic PA 106, A-1044
Antibiotic PA 94, A-832
Antibiotic PA 95, A-78
Antibiotic PA 155A, I-102
Antibiotic PA 114A, O-131
Antibiotic PA 371ϵ, I-300
Antibiotic PA 371γ, I-300
Antibiotic 64p-A, T-603
Antibiotic PBA, A-1081
Antibiotic PD 116152, A-1221
Antibiotic PDE I, A-1222
Antibiotic PDE II, A-1223
Antibiotic PF 1018, A-1224
Antibiotic PF 1052, A-1225
Antibiotic PF 1140, A-1226
Antibiotic PF 1163A, A-1227
Antibiotic PF 1198A, A-240
Antibiotic PF 1126A, C-208
Antibiotic PF 1138A, C-209
Antibiotic PF 1163B, A-1227
Antibiotic PF 1198B, A-240
Antibiotic PF 1126B, C-208
Antibiotic PF 1138B, C-209
Antibiotic PF 1101B, S-282
Antibiotic PF 1191, K-5
Antibiotic 15003 PHO 2, M-136
Antibiotic 15003 PHO 3, M-136
Antibiotic PI 091, A-1228
Antibiotic PI 290, B-29
Antibiotic PM 94128, A-1229
Antibiotic PM 93135, T-384
Antibiotic PO 1227A, Q-37
Antibiotic PO 1227B, Q-37
Antibiotic PSA, A-759
Antibiotic PSB, A-759
Antibiotic PSC_1, A-759
Antibiotic PSC_2, A-759
Antibiotic Q 11270A, A-1164
Antibiotic Q 20547A, A-1311
Antibiotic Q 11270B, A-1164
Antibiotic Q 20547C, A-1310
Antibiotic 1491, Q-58
Antibiotic 59266, Q-58
Antibiotic 6270, Q-61
Antibiotic R 39FF, M-430
Antibiotic R 39MF, A-1230
Antibiotic R 39SF, A-1231
Antibiotic RK 4415, A-124
Antibiotic RK 1441A, A-1232
Antibiotic RK 1441B, A-1232
Antibiotic RK 1409B, S-498
Antibiotic RK 286C, S-498
Antibiotic RK 286D, A-1190
Antibiotic RK 1061G, L-188
Antibiotic RK 1061H, L-188
Antibiotic RK 1409, S-498
Antibiotic RK-F 1010, T-96
Antibiotic RKS 1778, A-1196
Antibiotic Ro 1-9213, A-832
Antibiotic Ro 5-9000, A-1081
Antibiotic Ro 09-0049, P-337
Antibiotic Ro 21-4958, R-151
Antibiotic RP 13252, A-1234
Antibiotic RP 6798, A-1233
Antibiotic RP 18631, C-395
Antibiotic RP 55185, C-545
Antibiotic RP 59451, C-545
Antibiotic RP 5278, S-569
Antibiotic RUG 13A, R-157
Antibiotic RUG 13B, R-157
Antibiotic S 433, A-1235
Antibiotic S 53210A, A-1236
Antibiotic S 54832A, A-1237
Antibiotic S 54832A-IV, A-1237
Antibiotic S $632A_2$, M-561
Antibiotic S $632A_3$, M-561
Antibiotic S $632A_1$, S-563
Antibiotic S $632B_1$, M-561
Antibiotic S $632B_2$, M-561
Antibiotic S 551II, R-34
Antibiotic 1037, S-53
Antibiotic 230, S-498
Antibiotic 6741-21, S-321
Antibiotic SA $3097B_1$, A-1044
Antibiotic SA $3097B_2$, A-1044
Antibiotic SA $3097C_1$, A-1044
Antibiotic SA $3097C_2$, A-1044
Antibiotic SA $3097D_1$, A-1044
Antibiotic SA $3097D_2$, A-1044
Antibiotic SA4-3, A-5
Antibiotic SAB 711, A-1238
Antibiotic SB 202327, A-1486
Antibiotic SB 203207, A-660
Antibiotic SB 203208, A-660
Antibiotic SB 212305, A-1239
Antibiotic SB 217452, A-1240
Antibiotic SB 219383, A-1241
Antibiotic SB 253514, A-1242
Antibiotic SB 253517, A-1242
Antibiotic SB 253518, A-1242
Antibiotic SB 291071, A-1242
Antibiotic SB 291072, A-1242
Antibiotic SB 291073, A-1242
Antibiotic SB 315021, A-1243
Antibiotic SB 212021, H-665
Antibiotic SB 200437, P-90
Antibiotic SB 203105, P-90
Antibiotic 446-S3-1, C-103
Antibiotic Sch 210971, A-1250
Antibiotic Sch 210972, A-1250
Antibiotic Sch 213766, A-1250
Antibiotic Sch 40832, A-1244
Antibiotic Sch 40873, A-1245
Antibiotic Sch 42137, A-1246
Antibiotic Sch 52900, A-1247
Antibiotic Sch 52901, A-1247
Antibiotic Sch 538415, A-1251
Antibiotic Sch 54445, A-1248
Antibiotic Sch 56036, A-1249
Antibiotic Sch 725424, A-1252
Antibiotic Sch 18640A, A-1082
Antibiotic Sch 18640B, A-1082
Antibiotic Sch 575948, C-721
Antibiotic Sch 38513, F-115
Antibiotic Sch 38516, F-115
Antibiotic Sch 38518, F-115
Antibiotic Sch 39185, F-115
Antibiotic Sch 42282, F-115
Antibiotic Sch 42729, F-115
Antibiotic Sch 18640, T-392
Antibiotic SEN 34, H-562
Antibiotic SEN 215, T-424
Antibiotic SF 1346, A-822
Antibiotic SF 1508, A-1253
Antibiotic SF 1739, A-1254
Antibiotic SF 2140, A-1255
Antibiotic SF 2312, A-1256
Antibiotic SF 2364, A-1157
Antibiotic SF 2369, A-1257
Antibiotic SF 2370, A-1189
Antibiotic SF 2425, A-1258
Antibiotic SF 2538, A-902
Antibiotic SF 2695, A-1259
Antibiotic SF 2768, A-1260

Antibiotic SF 2771, A-1261
Antibiotic SF 2809, A-1262
Antibiotic SF 337, A-735
Antibiotic SF 973A, A-14
Antibiotic SF 2738A, C-574
Antibiotic SF 2080A, D-356
Antibiotic SF 2582A, D-954
Antibiotic SF 2583A, O-157
Antibiotic SF 2741A, P-641
Antibiotic SF 2197B, A-1263
Antibiotic SF 973B, A-14
Antibiotic SF 2738B, C-574
Antibiotic SF 2582B, D-953
Antibiotic SF 2420B, M-491
Antibiotic SF 2583B, O-157
Antibiotic SF 2080B, P-963
Antibiotic SF 2741B, P-642
Antibiotic SF 2738, C-574
Antibiotic SF 2738C, C-575
Antibiotic SF 2582C, D-954
Antibiotic SF 2080C, P-964
Antibiotic SF 1917, D-73
Antibiotic SF 2441, D-765
Antibiotic SF 2738D, C-576
Antibiotic SF 2080D, P-964
Antibiotic SF 2738E, C-577
Antibiotic SF 2080E, P-965
Antibiotic SF 2738F, C-578
Antibiotic SF 2080F$_{2a}$, P-966
Antibiotic SF 2080F$_{2b}$, P-966
Antibiotic SF 2080F$_1$, P-966
Antibiotic SF 2080F$_3$, P-966
Antibiotic SF 1739HP, N-32
Antibiotic SF 2636, I-216
Antibiotic SF 2494, T-658
Antibiotic S-GI, H-616
Antibiotic SL 3238, F-197
Antibiotic SM 35, A-853
Antibiotic SM 76, A-853
Antibiotic SM 43, G-180
Antibiotic SMTP 7, A-1264
Antibiotic SMTP 8, A-1265
Antibiotic SMTP 7D, A-1264
Antibiotic SMTP 8D, A-1265
Antibiotic SMTP 4D, S-332
Antibiotic SMTP 5D, S-333
Antibiotic SMTP 6D, S-334
Antibiotic SMTP O, S-490
Antibiotic SMTP 1, S-490
Antibiotic SMTP 2, S-490
Antibiotic SN 198B, D-203
Antibiotic SN 198C, P-421
Antibiotic SN 198D, D-203
Antibiotic SN 198E, P-421
Antibiotic SPF 32629A, A-1266
Antibiotic SPF 32629B, A-1267
Antibiotic SQ 02-S-L1, A-1268
Antibiotic SQ 02-S-L2, S-492
Antibiotic SQ 02-S-V2, A-1269
Antibiotic SQ 02-S-V1, S-492
Antibiotic SS 20846A, H-658
Antibiotic SS 46506A, P-974
Antibiotic SS 228B, A-1270
Antibiotic SW 163C, A-1271
Antibiotic SW 163D, A-1304
Antibiotic SW 163E, A-1304
Antibiotic SW 163F, A-1304
Antibiotic SW 163G, A-1304
Antibiotic SW-B, T-603
Antibiotic T 988A, G-99
Antibiotic T 988B, A-1272
Antibiotic T 988C, G-99
Antibiotic T 41348, H-514
Antibiotic T 1384, N-180
Antibiotic 46192, T-391
Antibiotic 6739-15, T-392
Antibiotic 6761-31, T-392
Antibiotic TA 3037A, A-1273
Antibiotic TAN 1263, A-1275
Antibiotic TAN 1280, A-1276
Antibiotic TAN 1307, A-1277
Antibiotic TAN 1813, A-1278
Antibiotic TAN 2020, A-1279
Antibiotic TAN 883, A-1274
Antibiotic TAN 1030A, A-1281
Antibiotic TAN 1057A, A-1282
Antibiotic TAN 1251A, A-1284
Antibiotic TAN 876A, A-1280
Antibiotic TAN 950A, A-733
Antibiotic TAN 1771A, D-574
Antibiotic TAN 868A, K-43
Antibiotic TAN 1169A, P-400
Antibiotic TAN 749A, S-389
Antibiotic TAN 1057B, A-1282
Antibiotic TAN 1251B, A-1284
Antibiotic TAN 876B, A-1283
Antibiotic TAN 1771B, D-572
Antibiotic TAN 868B, K-43
Antibiotic TAN 1169B, P-400
Antibiotic TAN 883B, X-6
Antibiotic TAN 1142, C-325
Antibiotic TAN 1057C, A-1285
Antibiotic TAN 1251C, A-1284
Antibiotic TAN 749C, S-389
Antibiotic TAN 1057D, A-1285
Antibiotic TAN 1251D, A-1284
Antibiotic TAN 588, L-8
Antibiotic TAN 999, S-498
Antibiotic TK 57-164A, D-98
Antibiotic TK 57-164B, D-98
Antibiotic TM 64, A-1286
Antibiotic TMC 169, A-1502
Antibiotic TMC 260, A-1290
Antibiotic TMC 52, A-1287
Antibiotic TMC 66, A-1288
Antibiotic TMC 69, A-1289
Antibiotic TMC 120A, A-1294
Antibiotic TMC 135A, A-1295
Antibiotic TMC 1A, A-1291
Antibiotic TMC 2A, A-1292
Antibiotic TMC 95A, A-1293
Antibiotic TMC 49A, P-343
Antibiotic TMC 120B, A-1294
Antibiotic TMC 135B, A-1296
Antibiotic TMC 2B, A-1292
Antibiotic TMC 95B, A-1293
Antibiotic TMC 34, C-634
Antibiotic TMC 120C, A-1294
Antibiotic TMC 1C, A-1297
Antibiotic TMC 2C, A-1292
Antibiotic TMC 52C, A-1287
Antibiotic TMC 95C, A-1293
Antibiotic TMC 1D, A-1297
Antibiotic TMC 52D, A-1287
Antibiotic TMC 95D, A-1293
Antibiotic TMC 1E, M-89
Antibiotic TMC 1F, M-87
Antibiotic TMC 1G, M-88
Antibiotic TMC 205, M-408
Antibiotic TPU 0037A, L-353
Antibiotic TPU 0037B, L-353
Antibiotic TPU 0037C, L-353
Antibiotic TPU 0037D, L-353
Antibiotic TS 885, M-561
Antibiotic Tu 2480F$_1$, P-893
Antibiotic Tu 2480F$_2$, P-893
Antibiotic Tu 2480F$_3$, P-893
Antibiotic Tu 2480F$_4$, P-893
Antibiotic U 106305, A-1299
Antibiotic U 42126, A-81
Antibiotic U 43795, A-81
Antibiotic U 62162, A-1298
Antibiotic U 27810, B-104
Antibiotic U 77779, B-229
Antibiotic U 54703, C-521
Antibiotic U 11994, D-232
Antibiotic U 9361, D-765
Antibiotic U 54702D, C-521
Antibiotic U 20207, E-229
Antibiotic U 47929, F-52
Antibiotic U 48266, F-33
Antibiotic U 15965, L-166
Antibiotic U 24792, L-241
Antibiotic U 77863, M-513
Antibiotic U 59760, N-276
Antibiotic U 59761, N-276
Antibiotic U 61732, N-276
Antibiotic U 22662, P-876
Antibiotic U 24544, P-919
Antibiotic U 48160, Q-61
Antibiotic U 19183, S-384
Antibiotic UCA 1064A, A-1602
Antibiotic UCA 1064B, A-1602
Antibiotic UCF1B, M-88
Antibiotic UCF1C, M-87
Antibiotic UCH 15A, A-1300
Antibiotic UCH 15B, A-1300
Antibiotic UCN 01, S-498
Antibiotic UCN 02, S-498
Antibiotic UCS 1025A, A-1301
Antibiotic UCS 1025B, A-1301
Antibiotic UK 1, A-1302
Antibiotic UK 2, A-1303
Antibiotic UK 63052, A-1304
Antibiotic UK 88051, A-1141
Antibiotic UK 3A, A-1303
Antibiotic UK 111866, P-90
Antibiotic USF 19A, A-1305
Antibiotic USF 142A, M-512
Antibiotic USF 406C, D-681
Antibiotic USF 406D, D-681
Antibiotic vD 844, O-124
Antibiotic vD 846, O-124
Antibiotic VM 55595, A-1306
Antibiotic VM 55598, A-1486
Antibiotic VM 55599, A-1307
Antibiotic VM 29919, P-90
Antibiotic VM 54158, P-91
Antibiotic VM 54159, P-90
Antibiotic VM 55594, P-91
Antibiotic VM 55596, P-90
Antibiotic VM 55597, P-90
Antibiotic 10381V, S-638
Antibiotic WB 2838, A-725
Antibiotic WF 14865, A-1308
Antibiotic WF 6237, A-680
Antibiotic WF 11231A, A-1178
Antibiotic WF 14861A, A-1309
Antibiotic WF 16775A$_1$, A-1535
Antibiotic WF 16775A$_2$, A-1535
Antibiotic WF 1360B, R-83
Antibiotic WF 1360C, R-83
Antibiotic WF 1360F, R-83
Antibiotic WF 1360, R-83
Antibiotic WIN 64745, A-1310
Antibiotic WIN 64821, A-1311
Antibiotic WJ 35, A-1312
Antibiotic WJ 85, A-1313
Antibiotic WJ 85B, A-1313
Antibiotic WK 5344A, F-45
Antibiotic WK 5344B, F-45
Antibiotic 10381W, P-641
Antibiotic WS 1921, A-1314
Antibiotic WS 30581A, A-622
Antibiotic WS 75624A, A-1315
Antibiotic WS 9659A, L-76
Antibiotic WS 30581B, A-622
Antibiotic WS 75624B, A-1316
Antibiotic WS 63967B, C-129
Antibiotic WS 9659B, L-76
Antibiotic WS 63967, C-129
Antibiotic WS 30581C, A-622
Antibiotic WS 63967D, C-129
Antibiotic WS 63967E, C-129
Antibiotic WS 63967F, C-129
Antibiotic X 14885A, A-1087
Antibiotic X 14547A, I-64
Antibiotic X 53III, Q-58
Antibiotic X 948, Q-58
Antibiotic XK 211, A-1317
Antibiotic XK 101-1, T-658
Antibiotic 10381X, P-642
Antibiotic XR 587, S-571
Antibiotic Y 03559J-A, A-1318
Antibiotic Y 05460MA, A-1319
Antibiotic Y 16482α, S-2
Antibiotic Y 16482β, S-2
Antibiotic Y 16601, S-2
Antibiotic Y 16760, S-2

Antibiotic YC 73, F-97
Antibiotic YCM 1008A, A-1320
Antibiotic Y1, K-37
Antibiotic YL 03709B-A, D-574
Antibiotic YL 0358M-A, H-77
Antibiotic YL 0358M-B, H-77
Antibiotic YL 02729S, M-491
Antibiotic YM 193221, A-1321
Antibiotic YM 215343, A-1340
Antibiotic YM 216391, A-1322
Antibiotic YM 47522, D-574
Antibiotic YM 30059, M-491
Antibiotic YM 266183, T-383
Antibiotic YM 266184, T-383
Antibiotic YN 0165JA, A-1323
Antibiotic YP 0298L-C, L-76
Antibiotic 10381Y, S-638
Antibiotic YSI 40-2, M-177
Antibiotic Y-T 0678H, B-72
Antibiotic YUA 001, H-667
Antibiotic 1745Z_3A, O-131
Antibiotic ZG 1494α, O-134
Antibiotic ZHD 0501, A-1324
Antibiotic 10381Z_1, S-638
Antibiotic 10381Z_2, S-638
3*C*-Antibiotic, P-321
Antidesmone, A-1325
Antidysentericine, C-595
Antiepilepsirine, M-444
Antifungin, A-1326
Antilirium, P-400
Antillaridine, S-458
Antillidine, S-458
Antineoplaston A10, D-808
(-)-Antioquine, C-643
(+)-Antioquine, R-114
Antiostatin B, A-1327
Antipellagra factor, P-895
Antirhine lactone, A-1329
Antirhine α-*N*-methosalt, A-1328
Antirhine β-*N*-methosalt, A-1328
Antirhine, A-1328
Antofine α-*N*-oxide, A-1330
Antofine β-*N*-oxide, A-1330
Antofine, A-1330
Antramycin, A-1081
Antrodin B, H-684
Antrodin C, H-684
Antrodin D, H-684
Antrodin E, H-684
Antropyrroledione, H-684
AnTx, A-974
Anzatax, T-52
1494A, O-134
Aobamidine, A-144
Aobamine, C-676
Apateline, A-1331
Apc, A-1332
APEA, A-892
Aphanorphine, A-1333
APHE 1, A-622
APHE 2, A-622
APHE 3, A-622
APHE 4, A-622
Aphelandrine, A-1334
Aphrodine, Y-13
Aphyllic acid, A-1335
Aphyllidine, A-1336
Aphyllidinic acid, A-1335
Aphylline N^{16}-oxide, A-1337
Aphylline, A-1337
Aphyllinic acid, A-1335
Apicularen A, A-1338
Apicularen B, A-1338
Apiodionene, A-1339
Apiosporamide, A-1340
6′-Apiosyllotaustralin, H-572
Aplaminal, A-1341
Aplaminone, A-1342
Aplicyanin A, A-1343
Aplicyanin B, A-1343
Aplicyanin C, A-1343
Aplicyanin D, A-1343
Aplicyanin E, A-1343
Aplicyanin F, A-1343
Aplidiamine, A-819
Aplidinone A, A-1344
Aplidinone B, A-1345
Aplidinone C, A-1345
Aplidite A, A-1346
Aplidite B, A-1346
Aplidite C, A-1346
Aplidite D, A-1346
Aplidite E, A-1346
Aplidite F, A-1346
Aplidite G, A-1346
Aplysamine 1, M-679
Aplysamine 2, P-823
Aplysamine 3, P-823
Aplysamine 4, P-823
Aplysamine 5, P-823
Aplysepine, A-1347
Aplysidine, T-360
Aplysillamide A, A-719
Aplysillamide B, A-719
Aplysinafulvin, A-1348
Aplysinamisine I, A-1349
Aplysinamisine II, A-1350
Aplysinamisine III, A-1378
Aplysinellin A, A-1351
Aplysinellin B, A-1352
Aplysinketal A, A-1353
Aplysinketal B, A-1354
Aplysinone A, A-1355
Aplysinone B, A-192
Aplysinone C, A-1355
Aplysinone D, A-1356
Aplysinopsin, A-1357
Aplyzanzine A, A-1358
Apoatropine, A-1359
Apocavidine, C-222
Apochlorine, A-1361
Apocinchonamine, A-1360
Apocrotonosine, T-524
Apo-14,15-dehydrovincamine, V-115
Apodihydrocinchonamine, A-1360
Apodine, M-666
Apodinine, M-666
Apoferrorosamine, D-504
Apogalanthamine, A-1361
Apogeissoschizine, A-1362
Apoglaziovine, T-524
(±)-Apoglaziovine, T-524
(+)-Apoglaziovine, T-524
Apohaemanthamine, A-1363
Apohemanthamine, A-1363
Apohyoscine, A-1364
Apokhlorin, A-1361
Aponoratropine, A-1359
Aponorhyoscine, A-1364
Apophedrin, A-864
Apoplon, R-52
Aporheine *N*-methosalt, R-120
Aporheine, R-120
Aporphinium DVT, H-751
Aposcopolamine, A-1364
Apotacamine, T-12
Apoterin, R-50
Apovincamine, V-115
Apo-Δ^{14}-vincamine, V-115
Apparicine, A-1365
Apratoxin A, A-1366
Apratoxin B, A-1366
Apratoxin C, A-1367
Apv, V-115
A528, Q-60
AQC-3, R-76
Aquamycin, B-447
Aquaticine, A-1368
Aquifoline, I-328
Aquifoliunine EIII, P-247
Aquifoliunine EII, P-247
Aquifoliunine EI, P-247
Aquifoliunine EIV, P-247
Aquiledine, A-1369
Aquileginine, A-1370
Ara Tb, T-658
Arabinofuranosylcytosine, C-962
Arabinosylcytosine, C-962
Arachidonic acid, E-48
O-Arachidonoyl ethanolamine, E-48
1-*O*-Arachidonoyllycorine, L-348
Arachidonylethanolamide, E-48
N^b-Arachidoyltryptamine, T-639
N-Arachidylanthranilic acid, A-706
Arachine, C-419
Ara-doridosine, A-818
Aragupetrosine A, A-1371
Araguspongine A, X-24
Araguspongine B, X-24
Araguspongine C, A-1372
Araguspongine D, X-24
Araguspongine E, X-24
Araguspongine F, A-1373
Araguspongine G, A-1373
Araguspongine H, A-1374
Araguspongine J, A-1374
Araguspongine K, X-24
Araguspongine L, A-1372
Araguspongine M, X-24
Aralionine A, A-1375
Aralionine B, C-600
Aralionine C, A-1375
Aralionine, A-1375
Araliopdimerine A, A-1376
Araliopdimerine B, A-1376
Araliopdimerine C, P-87
Araliopsine, A-1377
Araliopsinine, F-90
Araplysillin I N^{20}-sulfamate, A-1378
Araplysillin I, A-1378
Araplysillin II, A-1378
Araplysillin III, A-1379
Araquine, C-419
Araregai toxin, T-298
Aratubercidin, T-658
Arboflorine, A-1380
Arboloscine, A-1381
Arbophylline, A-1382
Arborescidine A, O-48
Arborescidine B, A-1383
Arborescidine C, A-1383
Arborescidine D, A-1383
Arboreumine, A-1384
Arboricine, A-1385
Arboricine, D-657
Arboricinine, A-1386
Arborine, B-93
Arborinine, T-516
Arcaine, D-400
Archaeosine, A-1387
Archazolide A, A-1388
Archazolide B, A-1389
Archazolide C, A-1388
Archazolide D, A-1388
Archerine, A-1390
Archil, O-102
Arcutine, A-1391
Arcutinidine, A-1391
Arcutinine, A-1391
Arcyriacyanin A, A-1392
Arcyriaflavin A, A-1393
Arcyriaflavin B, A-1393
Arcyriaflavin C, A-1393
Arcyriaflavin D, A-1393
Arcyriarubin A, A-1394
Arcyriarubin B 6′-sulfate, A-1394
Arcyriarubin B, A-1394
Arcyriarubin C, A-1394
Arcyriaverdin C, A-1395
Arcyrin A, A-1396
Arcyrin B, A-1396
Arcyroxepin A, A-1398
Arcyroxepin B, A-1398
Arcyroxindole A, A-1397
Arcyroxocin A, A-1398
Arcyroxocin B, A-1398
Ardeemin, A-1399
Ardine, M-436

Arecaidine, T-205
Arecaine, T-205
Arecolidine, A-1400
Arecoline, T-205
Arenaine, A-1401
Arenarine A, A-1402
Arenarine B, A-1402
Arenarine C, A-55
Arenarine D, A-55
Arenine, A-1403
Arenosclerin A, A-1404
Arenosclerin B, A-1404
Arenosclerin C, A-1404
Arenosclerin D, A-1404
Arenosclerin E, A-1405
Arestrictin A, A-1406
Arestrictin B, A-1406
Arg, A-1413
Argadin, A-1407
Argemexicaine A, A-1408
Argemexicaine B, A-1409
(-)-Argemonine *N*-methosalt, A-1410
(-)-Argemonine *N*-oxide, A-1410
Argemonine, A-1410
Argenaxine, C-72
Argentamine, B-20
Argentinamine, A-1411
Argentine, A-1412
Argentinine *N*-oxide, A-1532
Argentinine, A-1532
L-Arginine, A-1413
β-Arginine, A-779
Arginine, A-1413
N-(N^2-L-Argininyl)cantharimide, C-89
Argiopine, A-1414
Argiopinin I, A-1415
Argiopinin II, A-1415
Argiopinin III, A-1417
Argiopinin IV, A-1416
Argiopinin V, A-1416
Argiotoxin 636, A-1414
Argiotoxin 659, A-1417
Argiotoxin 673, A-1418
Arglecin, A-1419
Argutane A, A-1420
Argutane B, A-1420
Argvalin, A-1421
Argyrolobine, A-1336
Ariakemicin A, A-1422
Ariakemicin B, A-1422
Aribine, M-426
Aricine pseudoindoxyl, T-289
Aricine, A-1423
Ariskanin A, D-636
Ariskanin B, T-568
Ariskanin C, T-568
Ariskanin D, T-569
Ariskanin E, T-569
Aristinic acid, M-262
Aristo red, A-1424
Aristoaristone, A-1425
Aristocarbinol, A-1442
Aristofolin A, M-263
Aristofolin B, M-263
Aristofolin C, M-263
Aristofolin D, M-263
Aristofruticosine, A-1426
Aristolactam A Ia, T-539
Aristolactam A II, D-567
Aristolactam A IIIa, T-540
Aristolactam A III, T-540
Aristolactam B II, D-567
Aristolactam B III *N*-glucoside, T-540
Aristolactam B III, T-540
Aristolactam B I, T-539
Aristolactam C II, A-1428
Aristolactam C III, A-1428
Aristolactam C IV, A-1428
Aristolactam D II, A-1428
Aristolactam D III, A-1428
Aristolactam E, T-252
Aristolactam F I, D-567
Aristolactam F II, T-537
Aristolactam F, T-540
Aristolactam I *N*-(6′-*trans*-*p*-coumaroyl)-β-D-glucopyranoside, A-1427
Aristolactam I *N*-glucoside, A-1427
Aristolactam Ia *N*-β-D-glucoside, A-1427
Aristolactam Ia *O*-glucoside, A-1427
Aristolactam I, A-1427
Aristolactam Ia, A-1427
Aristolactam II, D-567
Aristolactam IIIa *N*-glucoside, A-1429
Aristolactam IIIa *O*-glucoside, A-1429
Aristolactam III, A-1429
Aristolactam IIIa, A-1429
Aristolactam IV, T-253
Aristolactam, A-1427
Aristolamide, M-263
Aristolarine, A-1430
Aristolasene, A-1431
Aristolasicol, A-1432
Aristolasicolone, A-1432
Aristolasicone, A-1432
Aristolasol, A-1433
Aristolic acid, M-263
Aristolin, A-1434
Aristolinic acid, M-263
Aristoliukine A, A-1428
Aristoliukine B, T-662
Aristoliukine C, T-662
Aristolochia yellow, M-262
Aristolochic acid A, M-262
Aristolochic acid BII methyl ester, D-636
Aristolochic acid B, M-447
Aristolochic acid C, H-600
Aristolochic acid D, T-266
Aristolochic acid E, T-267
Aristolochic acid Ia methyl ester, M-262
Aristolochic acid Ia, M-262
Aristolochic acid II methyl ester, M-447
Aristolochic acid III methyl ester, H-600
Aristolochic acid IIIa, H-600
Aristolochic acid III, H-600
Aristolochic acid II, M-447
Aristolochic acid I, M-262
Aristolochic acid IV methyl ester, T-266
Aristolochic acid IVa, T-266
Aristolochic acid IV, T-266
Aristolochic acid Va, T-265
Aristolochic acid VIa, T-264
Aristolochic acid VII methyl ester, T-267
Aristolochic acid VIIa, T-267
Aristolochic acid VII, T-267
Aristolochic acid V, T-265
Aristolochic acid, M-262
Aristolochine, C-812
Aristolochin, M-262
Aristolochin, T-266
Aristolodione, C-273
Aristoloin I, A-1435
Aristoloin II, A-1435
Aristololactam, A-1427
Aristoloside, T-266
Aristoloterpenate I, A-1436
Aristoloterpenate II, A-1436
Aristoloterpenate III, A-1436
Aristoloterpenate IV, A-1436
Aristomakine, A-1437
Aristomakinine, A-1437
Aristomanoside, H-566
Aristone, A-1438
Aristophyllide A, A-1439
Aristophyllide B, A-1439
Aristophyllide C, A-1439
Aristophyllide D, A-1439
Aristoquinoline A, A-1440
Aristoquinoline B, A-1440
Aristoquinoline C, A-1440
Aristoserratenine, A-1441
Aristoserratine, A-1442
Aristoteline, A-1442
Aristotelinine, S-259
Aristotelinone, A-1442
Aristotelone, A-1430
Aristoyagonine, A-1443
Arizonine, T-163
Armatamide, Z-6
Armepavine, A-1444
Armillarisin B, H-688
Arnoamine A, A-1445
Arnoamine B, A-1445
Arnottianamide, A-1446
Arolycoricidine, C-744
Arolycoricidinol, C-744
Aromadendrane 1-isonitrile, A-1447
Aromadendrane 1-isothiocyanate, A-1447
Aromoline, O-1
Arosine, G-93
Arosinine, G-93
Artabonatine A, A-1448
Artabonatine B, G-213
Artabonatine C, A-1449
Artabonatine D, A-1449
Artabonatine E, A-1448
Artabonatine F, U-36
Artabotrine, C-272
Artabotrinine, A-1066
Artacinatine, A-1450
Artarine, D-407
Artavenustine 11-*O*-β-D-glucopyranoside, X-30
Artavenustine, X-30
Artemicidine, A-660
Arterenol, N-298
Arterenone, A-736
Arthrobactin, A-1451
Artrichine, C-569
Arudonine, S-456
Arundacine, A-1452
Arundamine, A-1452
Arundanine, A-1452
Arundarine, A-1453
Arundine, M-436
Arundinine, A-1454
Arvelexin, H-524
Aryapavine, M-140
Asaramide, A-1455
Ascidiacyclamide, A-1456
Ascidiathiazone A, A-1457
Ascidiathiazone B, A-1458
Ascididemin, A-1459
Ascididemnin, A-1459
Ascochalasin, A-1460
Ascophylline, P-229
Ascorbigen A, A-1461
Ascorbigen B, A-1461
Ascorbigen, A-1461
Ascosalipyrrolidinone A, A-1462
Ascosalipyrrolidinone B, A-1462
Ascosonchine, O-205
Asimicilone, A-1463
Asimilobine 2-glucoside, D-531
Asimilobine, D-531
ASK 753, A-1117
ASL 279, D-920
Asmarine A, A-1465
Asmarine B, A-1465
Asmarine C, A-1466
Asmarine D, A-1466
Asmarine E, A-1466
Asmarine F, A-1466
Asmarine G, A-1465
Asmarine H, A-1465
Asmarine I, A-1464
Asmarine J, A-1464
Asmarine K, A-1465
AS-N-7A, A-1118
Asparagamine A, S-515
Aspartic acid betaxanthin, M-646
1-L-Aspartic acid-α-amanitin, A-673
1-L-Aspartic acid-3-(*S*)-4-hydroxy-L-isoleucine-α-amanitin, A-673
1-L-Aspartic acid-3-isoleucine-α-amanitin, A-673
1-L-Aspartic acid-4-(2-mercapto-L-tryptophan)-α-amanitin, A-673
L-Aspartyl-L-N^2-hydroxyaspartyl-D-cycloserine, A-1467
N^{α}-Aspartyllombricine, L-240
Asperazine, A-1468

Asperfumoid, A-1469
Aspergamide A, A-1470
Aspergamide B, A-1470
Aspergillamide A, A-1471
Aspergillamide B, A-1471
Aspergillazine A, A-1472
Aspergillazine B, A-1473
Aspergillazine C, A-1473
Aspergillazine D, A-1474
Aspergillazine E, A-1474
Aspergillic acid, A-1475
Aspergillimide, A-1486
Aspergillin PZ, A-1476
Aspergillin, A-1475
Aspergillitine, A-1477
Asperlicin B, A-1478
Asperlicin C, A-1479
Asperlicin D, A-1480
Asperlicin E, A-1481
Asperlicin, A-1478
Aspernigerin, A-1482
Aspernigrin A, A-1483
Aspernigrin B, A-1484
Aspernomine, A-1485
Asperparaline A, A-1486
Asperparaline B, A-1486
Asperparaline C, A-1486
Aspertine A, H-433
Aspertine B, A-1487
Aspertine C, B-187
Aspertine D, H-433
Asperumine *N*-oxide, T-188
Asperumine, T-188
Aspidexcelcine, A-1488
Aspidexcine, A-1489
Aspidoalbidine, A-1490
Aspidoalbine, A-1490
Aspidocarpine, P-924
Aspidochibine, A-1491
Aspidodasycarpine, A-1492
Aspidodispermine, A-1493
Aspidofendlerine, A-1490
Aspidofiline, A-1494
Aspidofractine, K-78
Aspidofractinine, A-1494
Aspidofractinin-16-ol, H-406
Aspidolimidine, A-1490
Aspidolimidinol, L-177
Aspidolimine, P-924
Aspidophylline A, A-1495
Aspidophytine, A-1496
Aspidosine, A-1499
Aspidospermatidine, A-1497
Aspidospermatine, A-1497
Aspidospermidine, A-1498
epi-Δ^1-ψ-Aspidospermidine, D-377
Δ^1-ψ-Aspidospermidine, D-377
Aspidospermidose, A-1498
Aspidospermine, A-1499
Aspidospermiose, A-1498
Aspochalamin A, A-1500
Aspochalamin B, A-1500
Aspochalamin C, A-1500
Aspochalamin D, A-1500
Aspochalasin A, A-1502
Aspochalasin B, A-1502
Aspochalasin C, A-1502
Aspochalasin D, A-1502
Aspochalasin E, A-1502
Aspochalasin F, A-1503
Aspochalasin G, A-1502
Aspochalasin H, A-1502
Aspochalasin I, A-1501
Aspochalasin J, A-1501
Aspochalasin K, A-1502
Aspochalasin Z, A-1502
Aspoquinolone A, A-1504
Aspoquinolone B, A-1504
Aspoquinolone C, A-1505
Aspoquinolone D, A-1505
Asposterol, A-1502
Aspyridone A, A-1506
Aspyridone B, A-1506
Assamicadine, A-1507
Assoanine, A-1508
Astechrome, A-1509
Asteranthine, A-1510
Asterin A, A-1511
Asterin B, A-1511
Asterinin A, A-1512
Asterinin B, A-1512
Asterinin C, A-1513
Asterinin D, A-1523
Asterinin E, A-1523
Asterinin F, A-1523
Asterionellin A, A-1514
Asterionellin B, A-1515
Asterionellin C, A-1515
Asteropterin, A-1516
Asterredione, A-1517
Asterridinone, A-1518
Asterriquinol D, A-1519
Asterriquinone A1 hydroquinone, A-1519
Asterriquinone A1, A-1520
Asterriquinone A2, A-1521
Asterriquinone A3, A-1521
Asterriquinone A4, A-1521
Asterriquinone B1, A-1521
Asterriquinone B2, A-1521
Asterriquinone B3, A-1521
Asterriquinone B4, A-1521
Asterriquinone C1 hydroquinone, A-1519
Asterriquinone C1, A-1521
Asterriquinone C2, A-1521
Asterriquinone CT1, A-1521
Asterriquinone CT2, A-1521
Asterriquinone CT3, A-1521
Asterriquinone CT4, A-1521
Asterriquinone CT5, A-1521
Asterriquinone D hydroquinone, A-1519
Asterriquinone D, A-1521
Asterriquinone E, A-1521
Asterriquinone monoacetate, A-1520
Asterriquinone PM 53, A-1521
Asterriquinone SU 5501, A-1521
Asterriquinone SU 5503, A-1521
Asterriquinone SU 5220, I-191
Asterriquinone SU5228, A-1521
Asterriquinone SU5500, A-1521
Asterriquinone SU5504, A-1520
Asterriquinone, A-1520
Asterubin, A-1522
Astin J, A-1523
Astramorph P/F, M-704
Astrimalvine A *N*-oxide, M-393
Astrimalvine B, M-393
Astrocasine, A-1524
Astrophylline, A-1525
AT 125, A-81
AT 2433, A-1119
AT 2433A_1, A-1119
AT 2433A_2, A-1119
AT 2433B_1, A-1119
AT 2433B_2, A-1119
AT 1001, H-616
AT 1840, U-34
Atalafoline B, P-207
Atalafoline, P-206
Atalanine, A-1526
trans-Atalantine, A-1526
Atalaphyllidine, A-1527
Atalaphyllidine, T-548
Atalaphylline dimethyl ether, T-546
Atalaphylline, T-546
Atalaphyllinine, S-278
Ataline, A-1528
Atanine, A-1529
Atanisatine, A-1530
Atelopidtoxin, Z-18
Atemoine, K-6
ATF 606, M-159
Atheroline, O-178
Atherophylline, P-923
Atherospermidine, A-1531
Atherosperminine *N*-oxide, A-1532
Atherosperminine, A-1532
Atherospermoline, T-286
Athrocupressine, C-588
Atidine, A-1533
Atisine azomethine, A-1609
Atisine, A-1534
Atisinium chloride, A-1534
Atpenin, A-1535
Atractylenolactam, A-1536
Atropamine, A-1359
Atropigen, T-632
Atropine methonitrate, T-632
Atropine oxide hydrochloride, T-632
Atropine oxide, T-632
Atropine propionate, T-632
Atropine sulfate, T-632
Atropine, T-632
Atropisol, T-632
Atropoylnortropan-3-ol, A-1359
Atropurpursine, M-329
Atropyltropein, A-1359
Atroscine, S-159
Aucherine, A-1538
Aucubinine A, C-562
Aucubinine B, C-562
Audouine, D-401
Augmentin, G-201
Augustamine, A-1539
Augustine, C-748
Aulamine, L-348
Aulosirazole, A-1540
Aurachin A, A-1541
Aurachin B, A-1542
Aurachin C, A-1543
Aurachin D, A-1543
Aurachin E, A-1544
Aurachin F, A-1545
Aurachin G, A-1546
Aurachin H, A-1546
Aurachin I, A-1546
Auranthine, A-1547
Aurantiamine, A-1548
Aurantioclavine, A-1549
Aurantiomide A, A-966
Aurantiomide B, A-966
Aurantiomide C, A-966
Aurantoside A, A-1550
Aurantoside B, A-1550
Aurantoside C, A-1551
Aurantoside D, A-1552
Aurantoside E, A-1552
Aurantoside F, A-1553
Aurantoside G, A-1554
Aurantoside H, A-1554
Aurantoside I, A-1554
Aureine, S-238
Aureothricin, A-759
Aureoverticillactam, A-1555
Auricularine, B-253
Auriculine, P-39
Auroramine, S-192
Aurotensine, S-164
Austamide, A-1556
Australiflorine, T-555
Australine, T-555
Austroconitine A, M-355
Austroconitine B, M-303
Austrodimerine, A-1557
Austronine, P-252
Austrospicatine, T-48
Austrotaxine, P-224
Austyn, T-360
Autumnaline, A-1558
Auxarconjugatin A, A-1559
Auxarconjugatin B, A-1559
Auxarconjugatin C, A-1559
Auxoperan, C-420
AV toxin C, A-862
AV toxin D, T-599
AV toxin E, T-599
Avadharidine, P-776
Avarol, A-1560
Avenalumin I, A-789
Avenalumin II, A-1561

Avenalumin III, A-1562
Avenanthramide 1, A-789
Avenanthramide 2, A-737
Avenanthramide A, A-789
Avenanthramide B, A-789
Avenanthramide C, A-789
Avenanthramide D, A-1563
Z-Avenanthramide E, A-1563
Avenanthramide E, A-1563
Avenanthramide G, A-788
Avenanthramide L, A-1564
Avicennamine, A-1565
Avicine, A-1566
Avinosol, A-1567
Avrainvillamide, A-1470
Awaine, A-1568
Awajanomycin, A-1569
AX 2, I-246
Axamide 1, A-1570
Axamide 2, A-1571
Axamide 4, A-1570
Axamide 3, S-425
Axialit, E-157
Axillaridine A, D-274
Axillaridine, A-1572
Axillarine A, D-264
Axillarine B, D-263
Axillarine C, D-262
Axillarine D, D-262
Axillarine E, D-262
Axillarine F, D-262
Axillarine, A-1572
Axinellamide, A-1573
Axinellamine A, A-1574
Axinellamine A, M-496
Axinellamine B, A-1574
Axinellamine B, A-1575
Axinellamine C, A-1574
Axinellamine D, A-1574
Axinohydantoin, A-1576
(*Z*)-Axinohydantoin, A-1576
Axinyssimide A, A-1577
Axinyssimide B, A-1578
Axinyssimide C, A-1578
Axisonitrile 1, A-1570
Axisonitrile 2, A-1571
Axisonitrile 4, A-1570
Axisonitrile 3, S-425
Axisothiocyanate 1, A-1570
Axisothiocyanate 2, A-1571
Axisothiocyanate 4, A-1570
Axisothiocyanate 3, S-425
Axsain, C-100
Ayuthianine, T-522
Azaacridone A, A-1579
2-Azaanthraquinone, B-71
Azabenzene, P-894
6-Azabenzo[*b*]carbazole, Q-19
1-Azabicyclo[4.3.0]nonane-7,8-diol, O-46
9-Azabicyclo[3.3.1]nonan-3-one, A-1580
1-(9-Azabicyclo[4.2.1]non-2-en-2-yl)ethanone, A-974
1-(9-Azabicyclo[4.2.1]non-2-en-2-yl)-1-propanone, H-325
8-Azabicyclo[3.2.1]octane-2,3-diol, A-1581
8-Azabicyclo[3.2.1]octane-2,6-diol, A-1582
8-Azabicyclo[3.2.1]octane-2,7-diol, A-1583
8-Azabicyclo[3.2.1]octane-3,6-diol, A-1584
8-Azabicyclo[3.2.1]octane-3,7-diol, A-1585
8-Azabicyclo[3.2.1]octane-1,2,3,4,6-pentol, A-1586
8-Azabicyclo[3.2.1]octane-1,2,3,4-tetrol, A-1587
8-Azabicyclo[3.2.1]octane-1,2,3,6-tetrol, A-1588
8-Azabicyclo[3.2.1]octane-1,2,4,7-tetrol, A-1589
8-Azabicyclo[3.2.1]octane-1,2,3-triol, A-1590
8-Azabicyclo[3.2.1]octane-1,2,4-triol, A-1591
8-Azabicyclo[3.2.1]octane-1,2,7-triol, A-1592
8-Azabicyclo[3.2.1]octane-1,3,4-triol, A-1593
8-Azabicyclo[3.2.1]octane-2,3,4-triol, A-1594
8-Azabicyclo[3.2.1]octane-2,3,6-triol, A-1595
8-Azabicyclo[3.2.1]octane-3,6,7-triol, A-1596
8-Azabicyclo[3.2.1]octan-3-ol, A-1597
1-Azabicyclo[3.3.0]oct-3-en-2-one, T-229
8-Azabicyclo[3.2.1]oct-3-yl 3,4-dimethoxybenzoate, C-633
Azacridone A, A-1579
Azacyclohexane, P-454
Azacyclopentane, P-949
N-(3-Azacyclotetradec-1-ylpropyl)-1,3-propanediamine, M-715
N-(3-Azacyclotridec-1-ylpropyl)-1,3-propanediamine, M-714
Azacyclo-6-undecene, A-1598
4-Aza-1,8-diguanidinooctane, H-305
1-Aza-1,2-dihydro-7,8,9,10-tetramethoxy-4-methyl-2-oxoanthracene, T-277
9-Azafluorene, C-120
8-Azaguanine, A-735
8-Azaguanosine 5′-phosphate, A-735
8-Azaguanosine, A-735
3-Aza-*A*-homoandrostan-17-ol 1,4-epoxide, E-127
3-Aza-*A*-homoandrostan-16-ol, S-47
15-Aza-*D*-homoergosta-8,14,24(28)-trien-3-ol, A-1602
3-Aza-6-hydroxybicyclo[3.3.0]oct-1(5)-ene-2,4-dione, M-70
1-Azaindene, I-79
8-*O*-Azaloyl-14-benzoylaconine, M-331
Azamerone, A-1599
Azamonosporascone, D-534
Azan, A-735
2-Azanaphthalene, I-301
1-Azanaphthalene, Q-29
4-Azaskatole, M-551
Azaspiracid 10, A-1600
Azaspiracid 11, A-1600
Azaspiracid 12, A-1600
Azaspiracid 1, A-1600
Azaspiracid 2, A-1600
Azaspiracid 3, A-1600
Azaspiracid 4, A-1600
Azaspiracid 5, A-1600
Azaspiracid 6, A-1600
Azaspiracid 7, A-1600
Azaspiracid 8, A-1600
Azaspiracid 9, A-1600
Azaspirene, A-1601
2-Azaspiro[5.5]undecan-7-ol, N-241
15-Azasterol, A-1602
1-Aza-2,5,8-trioxacyclononane, A-1603
Azatyrosine, A-822
Azcarpine, A-1604
6*H*-Azepino[3′,2′:4,5]cyclopent[1,2-*g*]indole-7,11-dione, M-694
Azepinomycin, A-1605
Azepinostatin, B-9
3,3-Azetidinediol, A-1606
3-Azetidinone, A-1606
6-Azidotetrazolo[5,1-*a*]phthalazine, A-1607
Azimine, A-1608
Azine, P-894
Azitine, A-1609
Azomycin, N-250
4-Azoniaspiro[3.3]heptane-2,6-diol, A-1610
Azotobactin D, A-1611
Azotobactin G173, A-1612
Azotobactin P19, A-1613
Azoverdin A, A-1614
Azoverdin G, A-1615
Azoverdin, A-1614
Azoxybacilin, A-1616
Aztequine, A-1617
Azx, M-396
B 4317, A-1122
B 90063, A-1123
B 4607A, H-514
B 41A_3, M-607
B 41A_4, M-608
B 4607B, H-514
B 41B_2, M-607
B 41B_3, M-608
B 79B, S-384
B 4607C, H-514
B 41C_1, M-607
B 41D, M-609
B 79D, T-658
B 1625$FA_{2β-1}$, A-1124
B 41F, M-609
B 41G, M-609
B 371, I-216
B 14437, S-53
B 870, T-390
BA 180265A, A-244
BA 181314A, A-1125
Ba 29837, D-142
Ba 33112, D-142
BA 90912, S-53
4181B, A-1121
460B, A-1309
1401B, A-1120
0231B, A-1088
Bacillamide A, B-1
Bacillamide B, B-1
Bacillamide C, B-1
Bacillibactin, B-2
Bacimethrin, A-795
Backebergine, I-302
Bactropone, B-72
Badianic acid, M-240
Baeocystine, H-480
Bagougeramine A, B-3
Bagougeramine B, B-4
Bagren, E-157
Bahamamide, B-5
Bahienoside A, B-6
Bahienoside B, B-6
Baicalidine, B-7
Baicaline, B-7
Baikeidine, H-11
Baikeine, H-11
Baikiain betaine, T-221
Baikiain, T-221
Baimonidine, C-298
Baiyumine A, A-120
Baiyumine B, P-616
Bakankoside, B-8
Bakankosine, B-8
Balanoglossol, T-466
Balanol, B-9
Balasubramide, B-10
Baldrianic acid, M-409
Baleabuxaline I, B-11
Baleabuxidienine I, B-466
Baleabuxidine F, B-12
Baleabuxidine I, B-12
Baleabuxidine, B-12
Baleabuxine, C-920
Baleabuxoxazine C, C-851
Balfourine, M-366
Balfourodine, B-13
Balfourodinium, B-14
Balfourolone, L-288
Baloxine, M-631
Balsamide, M-18
Balsoxine, D-650
Baluchistanamine, S-192
Baluchistine, O-1
B057-250A, M-588
Banisterine, H-592
Banlangenjiasu, R-11
Bannucine, B-15
Banyascyclamide A, D-381
Banyascyclamide B, B-16
Banyascyclamide C, B-17
Banyaside A, B-18
Banyaside B, B-19
Baogongteng A, A-1582
Baogongteng C, A-1582
BAP, A-137
Baptifoline, B-20
Baptitoxine, C-938
Barbaleucamide A, B-21
Barbaleucamide B, B-21
Barbamide, B-22
Barbarin, P-346
Barbatin C, T-535
Barbeline, M-358
Barbinidine, M-321

Barbinine, G-91
Barbital, B-23
Barbitone, B-23
Barettin bromobenzisoxazolone, B-25
Barettin, B-24
Bargustanine, B-26
Barrenazine A, B-27
Barrenazine B, B-27
Barterin, D-565
Barterine, S-595
Fritillaria Base 5, A-297
Fritillaria Base 6, A-298
Lycopodium Base 168, A-312
Lycopodium Base 258, A-313
Pancratium Base 31, A-324
Pancratium Base 6, A-323
Senecio renardi Base 4, A-332
Sophora Base 9, A-333
Sophora alopecuroides Base A_1, A-637
Sophora alopecuroides Base A_2, A-637
Stephania glabra Base A, A-376
Stephania Base A, A-378
Base A, D-888
Base B, D-888
Crotalaria goreensis Base C, A-437
Leucojum Base C, A-448
Leucojum Base D, A-484
Narcissus Base D, A-489
Lycopodium Base E, A-501
Sophora Base E, A-505
Lycopodium Base G, A-516
Sternbergia Base III, A-527
Lycopodium Base IV, A-344
Ungernia Base IV, A-529
Lycopodium Base IX, A-531
Base LV1, M-731
Mucuna pruriens Base P, A-579
Mucuna pruriens Base Q, A-588
Fritillaria Base R, A-591
Lycopodium Base R, A-592
Mucuna pruriens Base R, A-593
Mucuna pruriens Base S, A-598
Base T, D-114
Base TR1, V-115
Base TR2, V-115
Lycopodium Base V, A-310
Pachysandra Base V, A-322
Lycopodium Base VI, A-605
Pachysandra Base VI, A-607
Rhodophiala Base VI, A-608
Lycopodium Base VII, A-606
Lycopodium Base VIII, A-609
Lycopodium Base X, A-311
Mucuna pruriens Base X, A-321
Lycopodium Base XI, A-610
Lycopodium Base XII, A-611
Rhodophiala Base XIII, A-613
Pachysandra Base XVI, A-614
Rhodophiala Base XXV, A-615
Pachysandra Base XXVII, A-616
Basiliskamide A, D-572
Basiliskamide B, D-572
Bassianin, B-28
Bassiatin, B-29
Bassinic acid, O-32
Bastadin 10, B-32
Bastadin 11, B-32
Bastadin 12, B-32
Bastadin 13, B-33
Bastadin 14, B-32
Bastadin 15, B-32
Bastadin 16, B-34
Bastadin 17, B-34
Bastadin 18, B-34
Bastadin 19, B-33
Bastadin 1, B-30
Bastadin 20, B-33
Bastadin 21, B-33
Bastadin 22, B-32
Bastadin 23, B-32
Bastadin 24, B-32
Bastadin 2, B-30
Bastadin 3, B-31
Bastadin 4, B-32
Bastadin 5, B-32
Bastadin 6, B-32
Bastadin 7, B-32
Bastadin 8, B-32
Bastadin 9, B-32
Bastadin 12 (obsol.), B-33
Bastadin 9 (obsol.), B-32
Bataconine, M-323
Batrachamine, B-35
Batrachotoxin, B-36
Batrachotoxinin A *cis*-crotonate, B-36
Batrachotoxinin A *trans*-crotonate, B-36
Batrachotoxinin A homocrotonoate, B-36
Batrachotoxinin A, B-36
Batzelladine A, B-37
Batzelladine B, B-38
Batzelladine C, B-39
Batzelladine D, B-40
Batzelladine E, B-41
Batzelladine F, B-42
Batzelladine G, B-43
Batzelladine H, B-44
Batzelladine I, B-44
Batzelladine J, B-45
Batzelladine K, B-46
Batzelladine L, B-47
Batzelladine M, B-48
Batzelladine N, B-42
Batzellaside A, B-49
Batzellaside B, B-50
Batzellaside C, B-51
Batzelline A, B-52
Batzelline B, B-52
Batzelline C, B-52
Batzelline D, B-52
Bauerine A, C-399
Bauerine B, D-355
Bauerine C, D-351
Bauhinin, L-213
Baytopine, P-221
BB 3, A-55
BB 4, A-54
BBM 2040A, C-373
BBM 928A, L-312
BBM 2040B, C-374
BBM 928B, L-312
BBM 928C, L-312
B057-250B, M-588
BC 41C_2, M-608
B057-250C, M-588
5-*epi*-*cis*-275B′, D-109
5-*epi*-*trans*-275B, D-109
B057-250D, M-588
BE 10988, A-1126
BE 14106, A-1127
BE 22179, A-1128
BE 48021, A-1129
BE 52211, A-1130
BE 54017, A-1131
BE 54476, A-1132
BE 55051, A-1133
BE 67251, A-1134
BE 19412A, A-1135
BE 54238A, A-1136
BE 45722A, D-126
BE 19412B, A-1135
BE 39907B, A-853
BE 52211B, A-1137
BE 54238B, A-1136
BE 45722B, D-126
BE 13793C, A-1393
BE 52211C, A-1137
BE 45722C, D-126
BE 12233, H-747
BE 18591, T-22
Bearline, G-91
Bebeerine, C-812
Bebuxine, C-917
Becatecarin, R-32
Beccapoline, B-53
Beccapolinium, B-53
Beccapolydione, B-53
Bechuanine, P-221
Becilan, P-923
Beecheyamide, M-280
Begonanline, H-458
Behenic acid tryptamide, T-639
N^b-Behenoyltryptamine, T-639
Beilupeimine, B-54
Beiwucine, M-302
Beiwudine, F-147
Beiwusine A, A-1533
Beiwusine B, A-1533
Beiwutine, M-302
Belamarine, F-7
Belarine, I-329
Belemine, B-55
Belladine, N-288
α-Belladonnine, B-56
Belladonnine, B-56
β-Belladonnine, B-56
Bellamarine, F-7
Bellaradine, C-818
Bellendine, B-57
B057-250E, M-588
Bendopa, A-745
Benethenamine, P-342
Bengacarboline, B-58
Bengamide A, B-60
Bengamide B, B-60
Bengamide C, B-60
Bengamide D, B-60
Bengamide E, B-60
Bengamide F, B-60
Bengamide G, B-60
Bengamide H, B-60
Bengamide I, B-60
Bengamide J, B-60
Bengamide K, B-59
Bengamide L, B-60
Bengamide M, B-60
Bengamide N, B-60
Bengamide O, B-60
Bengamide P, B-60
Bengamide Q, B-60
Bengamide R, B-60
Bengamide Y, B-60
Bengamide Z, B-60
Bengazole A, D-95
Bengazole B, D-95
Bengazole B_1, D-95
Bengazole C_2, B-61
Bengazole C_3, B-61
Bengazole C_4, B-61
Bengazole C_6, B-61
Bengazole C, D-95
Bengazole D_2, B-61
Bengazole D_3, B-61
Bengazole D_4, B-61
Bengazole D, D-95
Bengazole E, D-95
Bengazole F, D-95
Bengazole G, D-95
Bengazole Z, B-61
Benhamycin, B-62
Beninine, B-63
Benthocyanin A, B-64
Benthocyanin B, B-64
Benthocyanin C, B-65
Benthophoenin, B-66
Benzaldehyde cyanohydrin, H-673
2-Benzamidobenzoic acid, B-67
6-(2-Benzamidoethyl)-2,2-dimethyl-2*H*-1-benzopyran, A-770
2-Benzamido-4-hydroxybenzoic acid, B-67
2-Benzamido-4-methoxybenzoic acid, B-67
Benzastatin A, B-68
Benzastatin B, B-68
Benzastatin C, V-145
Benzastatin D, V-145
Benzastatin E, B-69
Benzastatin F, B-69
Benzastatin G, B-70
Benzastatin H, B-68
Benzastatin I, B-68

Benzathine tenuazonate, T-74
2-Benzazine, I-301
1-Benzazine, Q-29
1-Benzazole, I-79
Benzeneacetamide, P-336
Benzeneacetic acid, P-336
Benzeneacetonitrile, P-336
Benzeneethanamine, P-342
Benzenemethanamine, B-84
Benzenepropanenitrile, P-350
Benzenepropanoic acid, P-350
Benz[*g*]isoquinoline-5,10-dione, B-71
1,2-Benzisoxazole-3,6-diol, B-72
Benzo[*f*]-1,3-benzodioxolo[6,5,4-*cd*]indol-5(6*H*)-one, D-567
8*H*-Benzo[*g*]-1,3-benzodioxolo[6,5,4-*de*]quinolin-8-one, L-194
3,4-Benzo-γ-carboline, I-110
Benzo[*c*]cinnoline-1,10-diol, B-73
1,3-Benzodioxole-5-carboxylic acid, M-442
1,3-Benzodioxole-5-nonanoic acid, M-454
[1,3]Benzodioxolo[5,6-*c*]-1,3-dioxolo[4,5-*i*]phenanthridine, S-56
[1,3]Benzodioxolo[5,6-*h*]quinolin-3-ol, H-599
3-(1,3-Benzodioxol-5-yl)-*N*-[2-(1,3-benzodioxol-5-yl)ethyl]-2-propenamide, D-799
3-(1,3-Benzodioxol-5-yl)-*N*-[2-(3,4-dimethoxyphenyl)ethyl]-2-propenamide, Z-6
2-[2-(1,3-Benzodioxol-5-yl)ethenyl]-4-methoxyquinoline, M-265
N-[2-(1,3-Benzodioxol-5-yl)ethyl]cyclopropanecarboxamide, R-142
2-[2-(1,3-Benzodioxol-5-yl)ethyl]-4-methoxyquinoline, C-822
2-[2-(1,3-Benzodioxol-5-yl)ethyl]quinoline, D-645
1-[2-(1,3-Benzodioxol-5-yl)ethyl]-1,2,3,4-tetrahydro-6,7-dimethoxy-2-methylisoquinoline, D-978
2-[2-(1,3-Benzodioxol-5-yl)ethyl]-1,2,3,4-tetrahydro-1-methylquinoline, G-9
2-(1,3-Benzodioxol-5-yl)-4-methoxyquinoline, M-264
13-(1,3-Benzodioxol-5-yl)-*N*-(3-methylbutyl)-2,4,12-tridecatrienamide, G-224
5-(1,3-Benzodioxol-5-ylmethyl)-1,3-dioxolo[4,5-*g*]isoquinoline, M-672
1-(1,3-Benzodioxol-5-ylmethyl)-6-methoxy-7-isoquinolinol, S-274
4-(1,3-Benzodioxol-5-ylmethyl)-1-methyl-1*H*-imidazol-2-amine, P-594
7-(1,3-Benzodioxol-5-yl)-*N*-(2-methylpropyl)-2,4-heptadienamide, C-387
7-(1,3-Benzodioxol-5-yl)-*N*-(2-methylpropyl)-2,6-heptadienamide, F-232
16-(1,3-Benzodioxol-5-yl)-*N*-(2-methylpropyl)-2,4,15-hexadecatrienamide, B-266
15-(1,3-Benzodioxol-5-yl)-*N*-(2-methylpropyl)-2,4-pentadecadienamide, B-265
15-(1,3-Benzodioxol-5-yl)-*N*-(2-methylpropyl)-2,4,13-pentadecatrienamide, B-265
15-(1,3-Benzodioxol-5-yl)-*N*-(2-methylpropyl)-2,4,12-pentadecatrienamide, B-265
15-(1,3-Benzodioxol-5-yl)-*N*-(2-methylpropyl)-2,4,14-pentadecatrienamide, B-265
5-(1,3-Benzodioxol-5-yl)-*N*-(2-methylpropyl)-2,4-pentadienamide, P-462
5-(1,3-Benzodioxol-5-yl)-*N*-(2-methylpropyl)-2-pentenamide, P-462
5-(1,3-Benzodioxol-5-yl)-*N*-(2-methylpropyl)-4-pentenamide, P-462
3-(1,3-Benzodioxol-5-yl)-*N*-(2-methylpropyl)-2-propenamide, M-457
13-(1,3-Benzodioxol-5-yl)-*N*-(2-methylpropyl)-2,4,12-tridecatrienamide, G-224
11-(1,3-Benzodioxol-5-yl)-*N*-(2-methylpropyl)-2,8,10-undecatrienamide, P-469
2-(1,3-Benzodioxol-5-yl)-1-methyl-4(1*H*)-quinolinone, G-171
5-(1,3-Benzodioxol-5-yl)-*N*-(10-methyl-5-undecenyl)-2,4-pentadienamide, S-653
2-(1,3-Benzodioxol-5-yl)-1,2,4*a*,5,6,7,8,8*a*-octahydro-*N*-(2-methylpropyl)-1-naphthalenecarboxamide, C-896
1-[[2-(1,3-Benzodioxol-5-yl)-1,2,4*a*,5,6,7,8,8*a*-octahydro-1-naphthalenyl]carbonyl]pyrrolidine, C-909
3-[5-(1,3-Benzodioxol-5-yl)-2-oxazolyl]pyridine, T-299
1-[10-(1,3-Benzodioxol-5-yl)-1-oxo-9-decenyl]pyrrolidine, I-266
1-[7-(1,3-Benzodioxol-5-yl)-1-oxo-2,4-heptadienyl]-piperidine, P-452
1-[7-(1,3-Benzodioxol-5-yl)-1-oxo-2,6-heptadienyl]-pyrrolidine, M-452
1-[7-(1,3-Benzodioxol-5-yl)-1-oxo-2,4,6-heptatrienyl]piperidine, P-452
1-[7-(1,3-Benzodioxol-5-yl)-1-oxo-2,4,6-heptatrienyl]pyrrolidine, P-453
1-[7-(1,3-Benzodioxol-5-yl)-1-oxo-6-heptenyl]piperidine, P-465
1-[7-(1,3-Benzodioxol-5-yl)-1-oxo-2-heptenyl]piperidine, P-465
1-[7-(1,3-Benzodioxol-5-yl)-1-oxo-6-heptenyl]pyrrolidine, M-452
1-[9-(1,3-Benzodioxol-5-yl)-1-oxo-2,8-nonadienyl]-piperidine, P-464
1-[9-(1,3-Benzodioxol-5-yl)-1-oxo-2,8-nonadienyl]-pyrrolidine, M-455
1-[9-(1,3-Benzodioxol-5-yl)-1-oxo-2,4,8-nonatrienyl]pyrrolidine, M-455
1-[9-(1,3-Benzodioxol-5-yl)-1-oxo-8-nonenyl]pyrrolidine, M-455
1-[8-(1,3-Benzodioxol-5-yl)-1-oxo-7-octadecenyl]-piperidine, P-470
1-[5-(1,3-Benzodioxol-5-yl)-1-oxo-2,4-pentadienyl]-piperidine, P-467
1-[5-(1,3-Benzodioxol-5-yl)]-1-oxo-2,4-pentadienyl-pyrrolidine, T-495
1-[5-(1,3-Benzodioxol-5-yl)-1-oxo-2-pentenyl]piperidine, P-467
1-[3-(1,3-Benzodioxol-5-yl)-1-oxo-2-propenyl]piperidine, M-444
1-[13-(1,3-Benzodioxol-5-yl)-1-oxo-2,4,12-tridecatrienyl]piperidine, P-448
1-[13-(1,3-Benzodioxol-5-yl)-1-oxo-2,4,12-tridecatrienyl]pyrrolidine, B-263
1-[11-(1,3-Benzodioxol-5-yl)-1-oxo-2,4,10-undecatrienyl]piperidine, P-471
5-(1,3-Benzodioxol-5-yl)-2-phenyloxazole, D-650
3-(1,3-Benzodioxol-5-yl)-2-propenoic acid, M-457
2-(1,3-Benzodioxol-5-yl)quinoline, M-458
1-(1,3-Benzodioxol-5-yl)-1,2,3,4-tetrahydro-6,7-dimethoxy-2-methylisoquinoline, C-796
6,7-Benzolumazine, A-632
Benzomalvin A, B-74
Benzomalvin B, B-74
Benzomalvin C, B-74
Benzomalvin D, B-74
Benzo[*c*][2,7]naphthyridin-4-ol, B-75
Benzo[*c*][2,7]naphthyridin-4(3*H*)-one, B-75
Benzo[*g*]pteridine-2,4(3*H*,10*H*)-dione, A-632
Benzo[*g*]pteridine-2,4(1*H*,3*H*)-dione, A-632
Benzopyridine, I-301
2,3-Benzopyrrole, I-79
4-(3*H*-Benzo[*a*]pyrrolo[2,3-*c*]phenazin-1-yl)phenol, H-674
Benzosimuline, B-76
Benzothiazole, B-77
2,6-Benzothiazolediol, B-78
2-Benzothiazolethiol, B-79
2(3*H*)-Benzothiazolethione, B-79
2-Benzothiazolinethione, B-79
2-Benzothiazolinone, B-80
2-Benzothiazolol, B-80
2(3*H*)-Benzothiazolone, B-80
2,4-Benzoxazolediol, B-81
2,6-Benzoxazolediol, B-82
2-Benzoxazolinone, B-83
2-Benzoxazolol, B-83
2(3*H*)-Benzoxazolone, B-83
N-Benzoyl-4-(4-acetoxyneryloxy)phenethylamine, A-77
N-Benzoyl-*O*-acetylbuxodienine E, B-456
N-Benzoyl-16-acetylcycloxobuxidine, B-12
N-Benzoyl-*O*-acetylcycloxobuxoline F, C-921
14-Benzoylaconine, M-331
10-Benzoyl-9(10*H*)-acridinone, A-112
2-(Benzoylamino)acetophenone, A-694
2-(Benzoylamino)benzoic acid, B-67
1-[4-(Benzoylamino)butyl]hexahydro-5-methyl-4-phenyl-1,5-diazocin-2(1*H*)-one, D-927
2-(Benzoylamino)ethylphosphonic acid, A-773
2-(Benzoylamino)-1-phenylethanol, A-864
N-Benzoylanthranilic acid, B-67
N-Benzoylbaleabuxidienine F, B-466
Benzoylbaleabuxidine F, B-12
14-Benzoylbrowniine, M-309
8-Benzoyl-2-[3-(1-butenyl)oxiranyl]-9-hydroxy-8-methoxy-3-methyl-1-oxa-7-azaspiro[4.4]non-2-ene-4,6-dione, S-660
N-Benzoylbuxahyrcanine, B-451
N-Benzoylbuxidienine F, B-466
N-Benzoylbuxidienine, B-466
N-Benzoylbuxocyclamine F, B-474
N-Benzoylbuxodienine E, B-456
N-Benzoyl-*N*′-cinnamoylputrescine, C-456
N-Benzoylcyclobuxophylline M, C-848
N-Benzoylcyclomicrophylline C, C-883
3-Benzoylcyclomicrophylline F, C-883
N-Benzoylcycloprotobuxine C, C-902
N-Benzoylcycloprotobuxoline C, C-903
N-Benzoylcycloprotobuxoline D, C-903
N^3-Benzoylcycloxobuxidine F, B-12
N^3-Benzoylcycloxobuxine F, C-920
N-Benzoylcycloxobuxoline F, C-921
N^1-Benzoylcylindrocarine, C-929
18-Benzoyldavisinol, H-168
5-Benzoyl-5-deacetylwilforidine, P-253
14-Benzoyldelcosine, M-309
14-*O*-Benzoyldelphonine, M-312
Benzoyldeoxyaconine, M-343
O^{28}-Benzoyl-16-deoxybuxidienine C, B-466
14-Benzoyldictyocarpine, M-307
2-Benzoyl-1,2-dihydro-6-acetonylpyridine, S-212
N^3-Benzoyldihydrocyclomicrophylline F, C-883
14-Benzoyldihydrogadesine, M-321
1-(6-Benzoyl-1,6-dihydro-2-pyridinyl)-2-propanone, S-212
N-(7-Benzoyl-5,8-dioxo-3-phenyl-2-oxa-6,9-diazabicyclo[10.2.2]hexadeca-10,12,14,15-tetraen-4-yl)-2-(dimethylamino)-3-methylpentanamide, A-1375
Benzoylecgonine methyl ester, C-537
Benzoylecgonine, E-8
Benzoyleneurea, Q-13
14-Benzoylepiscopalisinine, A-97
14-Benzoyl-8-*O*-ethylaconine, M-331
α-Benzoylethylamine, A-870
14-*O*-Benzoyl-8-*O*-ethylbikhaconine, M-312
14-Benzoylgadesine, G-152
6-Benzoylheteratisine, H-157
N-Benzoyl-4-hydroxyanthranilic acid, B-67
N-Benzoyl-20-hydroxycylindrocarine, C-929
11-*O*-Benzoyl-4-hydroxyepilupinine, H-482
N-Benzoyl-2-hydroxy-2-(4-methoxyphenyl)ethylamine, T-67
N-Benzoyl-2-hydroxy-2-phenylethylamine, A-864
Benzoylhypaconine, M-343
O-Benzoyl-6-isocassine, C-183
1-Benzoylkarasamine, M-355
Benzoyllaburnine, H-629
14-Benzoylmesaconine, M-331
N-Benzoylmescaline, M-219
N-Benzoyl-4-methoxyanthranilic acid, B-67
14-Benzoyl-8-*O*-methylaconine, M-331
Benzoylmethylamine, A-694
14-*O*-Benzoyl-8-*O*-methylbikhaconine, M-312
14-Benzoylneoline, M-323
14-Benzoylnudicaulidine, M-321
5″-*O*-Benzoyloxyanthin, H-673
3-Benzoyloxy-6-hydroxy-7-(2-hydroxy-3-phenylpropanoyloxy)nortropane, A-1596
2-Benzoyloxy-3-hydroxynortropane, A-1581
6-Benzoyloxy-3-isobutanoyloxynortropane, A-1584
13-Benzoyloxylupanine, H-554
3α-Benzoyloxynortropane, A-1597
3-Benzoyloxynortropan-6-ol, A-1584
13-Benzoyloxy-17-oxolupanine, O-188

7-Benzoyloxy-3-(3,4,5-trimethoxycinnamoyloxy)-tropan-6-ol, M-392
7-Benzoyloxytropane-3,6-diol, M-392
3-Benzoyloxytropan-6-ol, M-391
6-Benzoyloxy-3-tropanone, M-391
14-*O*-Benzoylperegrine, M-347
N-Benzoyl-*N*-phenylaminomethylcarbinol, H-485
15-Benzoylpseudokobusine, H-205
14-Benzoylsachaconitine, M-355
O-Benzoylsaphenic acid, H-496
N^5-Benzoylspermidine, S-398
N-Benzoylstaurosporine, S-498
14-*O*-Benzoyltakaosamine, M-309
14-Benzoyltalatizamine, M-352
3-*O*-Benzoylteloidine, M-392
O-Benzoyltombozine, T-425
2α-Benzoyltropane, F-46
Benzoyltropein, M-393
N-Benzoyltyramine methyl ether, M-280
N-Benzoyltyramine, H-667
O-Benzoylvincamajine, V-113
Benztryptamide, T-639
Benzyl cyanide, P-336
Benzyl nitrile, P-336
Benzylacetic acid, P-350
2-Benzyl-*O*-acetyltropanol, B-96
N-Benzyladenine, A-137
Benzylamine, B-84
6-(Benzylamino)-2-(2-hydroxyethylamino)-9-methylpurine, O-90
6-Benzylaminopurine, A-137
N-Benzylbenzamide, B-84
N-Benzylbenzeneacetamide, P-336
2-Benzyl-3-*O*-benzoyltropanol, B-96
5-Benzyl-3-benzylidene-1-hydroxy-2,6(1*H*,3*H*)-pyrazinedione, S-152
N-Benzylbiotin, B-139
Benzylcarbamide, B-97
2-Benzyl-5-carbamoyl-4(1*H*)-pyridinone, A-1483
3-Benzyl-1,4-diazabicyclo[4.4.0]decan-5-one, V-84
5-Benzyl-2,5-dihydro-4-hydroxy-3-(2,4,6-octatrienoyl)-1*H*-pyrrol-2-one, B-85
6-Benzyl-1,2-dihydro-4-hydroxy-2-oxo-3-pyridinecarboxaldehyde, C-142
3-Benzyl-1,2-dihydro-1-hydroxy-4-pyridinecarboxaldehyde, M-2
3-Benzyl-3,4-dihydro-4-methyl-1*H*-1,4-benzodiazepine-2,5-dione, C-890
2-Benzyl-2,3-dihydro-1-methyl-4(1*H*)-quinazolinone, G-127
4-Benzyl-1,4-dihydro-3-oxo-3*H*-pyrrolo[2,1-*c*][1,4]oxazine-6-carboxaldehyde, B-86
6-Benzyl-2,4-dihydroxy-3-pyridinecarboxaldehyde, C-142
2-Benzyl-3,6-dihydroxytropane, B-94
2-Benzyl-3,7-dihydroxytropane, B-95
5-Benzyl-3-(2,4,6,8,10-dodecapentaenoyl)-2,5-dihydro-4-hydroxy-1*H*-pyrrol-2-one, B-87
3-Benzyl-4-formyl-1,2-dihydro-1-hydroxypyridine, M-2
α-Benzyl-2-formyl-5-hydroxymethyl-1*H*-pyrrole-1-acetic acid, F-138
6-Benzyl-3-formyl-4-hydroxy-2-pyridone, C-142
N-Benzylhexadecanamide, H-221
3-Benzylhexahydro-7-hydroxypyrrolo[1,2-*a*]pyrazine-1,4-dione, C-873
3-Benzylhexahydropyrrolo[1,2-*a*]pyrazine-1,4-dione, C-891
5-Benzyl-1-hydroxy-3-(hydroxybenzylidene)-2,6(1*H*,3*H*)-pyrazinedione, S-152
5-Benzyl-3-hydroxy-2-isopropylpyrazine, B-88
2-Benzyl-3-hydroxy-1-methyl-5-nonylpyrrolidine, B-89
2-Benzyl-3-hydroxypyrazine, B-90
2-Benzyl-4-hydroxyquinazoline, B-93
2-Benzyl-3-hydroxytropane, B-96
3-Benzylidene-3,4-dihydro-2-oxo-2*H*-1,4-benzoxazine-5-carboxylic acid, A-1273
3-Benzylidene-6-(hydroxymethyl)-1,4-dimethyl-6-(methylthio)-2,5-piperazinedione, B-91
2-Benzyl-5-(3-indolyl)oxazole, A-622
N-Benzylisopropylamine, B-84
3-Benzyl-6-isopropyl-4-methyl-2,5-morpholinedione, B-29
6-Benzyl-3-isopropyl-2-pyrazinol, B-88
6-Benzyl-3-isopropyl-2(1*H*)-pyrazinone, B-88
N-Benzyl-*N*′-(4-methoxybenzyl)urea, D-302
2-Benzyl-3-methoxypyrazine, B-90
2-Benzyl-4-methoxyquinazoline, B-93
2-Benzyl-8-methyl-8-azabicyclo[3.2.1]octan-3-ol, B-96
Benzylmethylnitrosamine, B-84
N-Benzyl-*N*-methyl-1-pentadecylamine, P-203
2-Benzyl-1-methyl-4(1*H*)-quinazolinone, B-93
N-Benzyl-13-oxo-9,11-octadecadienamide, O-191
N-Benzyl-5-oxo-6,8-octadecadienamide, O-189
N-Benzyl-9-oxo-12,15-octadecadienamide, O-190
N-Benzyl-9-oxo-12-octadecenamide, O-193
6-Benzyl-4-oxo-4*H*-pyran-3-carboxamide, B-92
6-Benzyl-4-oxo-4*H*-pyran-3-carboxylic acid, B-92
4-Benzyloxy-1,5-dihydro-2*H*-pyrrol-2-one, P-954
6-Benzyloxypurine, P-820
N-Benzyl-2-phenylacetamide, P-336
Benzyl-2-phenylethylamine, P-342
N-Benzylphthalimide, P-383
3-Benzylpyrazinol, B-90
3-Benzyl-2(1*H*)-pyrazinone, B-90
3-Benzyl-2,4(1*H*,3*H*)-quinazolinedione, Q-13
2-Benzyl-4(3*H*)-quinazolinone, B-93
N-Benzyl-15-tetracosenamide, T-120
4-Benzyl-3,6-tropanediol, B-95
2-Benzyl-3,6-tropanediol, B-94
2-Benzyl-3-tropanol, B-96
Benzylurea, B-97
18-*O*-Benzylwilfortrine, P-253
Berbacolorflammine, C-171
Berbamine 2′-β-*N*-oxide, I-328
Berbamine, I-328
Berbamunine, B-98
Berbenine, I-328
Berberal, B-101
Berberal, B-99
Berberastine, T-321
Berbericine, B-101
Berbericinine, P-34
Berberilycine, B-100
Berberine chloroform, P-35
Berberine, B-101
Berberinol, O-216
Berberrubine, B-101
Berbervirine, C-72
Berbibuxine, C-23
Berbidine, B-102
Berbilaurine, L-67
Berbithine, B-103
Berbivaldine, P-15
Berisol, B-101
Berlambine, O-216
Berninamycin A, B-104
Berninamycin B, B-104
Bernumicine, B-105
Bernumidine, B-106
Bernumine, B-106
Berpodine, B-107
Bervulcine, B-108
Betalamic acid, B-109
Betalin S, T-366
Betanidin 6-(2^G-glucosylrutinoside), B-110
Betanidin rhamnosophoroside, B-110
Betanidin 5-sophoroside, B-110
Betanidin 6-sophoroside, B-110
Betanidin, B-110
Betanin, B-110
Betaxin, T-366
Betonicine, H-476
Bewon, T-366
Bgugaine, T-135
2088B, H-514
Bharatamine, B-111
Bharhingine, B-112
Bhesine, T-139
Bhimamycin C, B-113
Bhimamycin D, B-114
Bhimberine, I-319
10,10′-Bi[*N*-acetyl-11,12-dihydroxyaspidospermidine], B-115
Bianfugecine, B-116
Bianfugedine, B-117
Bianfugenine, D-90
Bicarbamic acid, H-395
N,N′-Bi-β-carboline, B-146
Bicoloridine alcohol, M-347
Bicoloridine, M-347
Bicolorine 14-*O*-acetate, M-347
Bicolorine 6-*O*-acetate, M-347
Bicolorine, M-347
Bicolorine, M-448
Bicucine, B-118
Bicuculline, B-119
Bicucullinidine, B-120
Bicucullinine, A-143
Bicyclomahanimbicine, B-121
Bicyclomahanimbine, B-122
Bidebiline A, U-36
Bidebiline B, U-36
Bidebiline C, U-36
Bidebiline D, U-36
Bidebiline E, U-36
3,3′-Bi(2,5-dibromoindole), T-108
3,3′-Bi(2,6-dibromoindole), T-109
3,3′-Bi[4,6-dibromo-2-methylthio-1*H*-indole], T-110
Biemnadin, B-123
Biemnidin, D-929
Bietaserpine, R-52
Biflorine, B-124
Biflorine, P-667
Biflorone, B-125
4,4′′-Bi[*N*-4-hydroxycinnamoylserotonin], B-126
12,12′-Bi[11-hydroxycoronaridine], B-127
2,2′-Bi(1-hydroxy-6,8-dimethoxy-3-methylcarbazole), C-503
4,4′′-Bi[*N*-(4-hydroxy-3-methoxycinnamoyl)serotonin], B-126
1,1′-Bi[2-hydroxy-3-methylcarbazole], B-128
Bi[5-hydroxynoracronycine], B-129
2,2′-Bi[3-hydroxy-4(1*H*)-pyridinone], T-249
3,3′-Bi-1*H*-indole-5,5′,6,6′-tetrol, B-130
[3,3′-Biindoline]-2,2′-dione, B-131
$\Delta^{2,2'}$-Biindoline-3,3′-dione, I-72
$\Delta^{2,3'}$-Biindoline-2′,3-dione, I-73
8′,11*O*-Biisocorydine, B-132
8,8′-Biisocorydine, B-133
Bikhaconine, M-312
Bikhaconitine, M-312
8,8′-Bikoenigine, B-134
Bikoeniquinone A, B-135
Bilain A, B-136
Bilain C, B-136
Bilineurine, C-419
Cypridina Biluciferol, B-137
Cypridina Biluciferyl, B-137
Bimanol, D-730
2,3′-Bi(1-methylpyrrolidine), B-147
2,2′-Bimorphine, M-703
4,4′-Binecatorone, N-85
Biochanin C, B-138
Biocolina, C-419
Bionectin A, G-99
Bionectin B, G-99
Bionectin C, G-97
Biopten, T-142
Biopterin glucose, A-749
7-Biopterin, A-924
Biopterin, A-749
Biotin sulfoxide, B-139
Biotinamide, B-139
γ-Biotin, B-139
Biotin, B-139
Bioxalomycin α1, B-140
Bioxalomycin α2, B-140
Bioxalomycin β1, B-140
Bioxalomycin β2, B-140
1,1′-Bipiperidine, B-141
Bipowine, B-142
Bipowinone, B-143
$\Delta^{2,2'}$-Bipseudoindoxyl, I-72

Bipy, B-144
2,2′-Bipyridine, B-144
2,3′-Bipyridine, B-145
[2,2′-Bipyridine]-3,3′,4,4′-tetrol, T-249
9,9′-Bi-9*H*-pyrido[3,4-*b*]indole, B-146
α,α′-Bipyridyl, B-144
2,2′-Bipyridyl, B-144
2,3′-Bipyrrolidine, B-147
Biquidone, B-71
Birnbaumin A, B-148
Birnbaumin B, B-148
N,1-Bis[3-(acetylhydroxyamino)propyl]-3-hydroxy-2,5-dioxo-3-pyrrolidineacetamide, S-134
N,*N*′-Bis(agmatine)oxamide, B-178
Bisaknadinine, H-70
Bis(4-aminobutyl)bis(3-aminopropyl)ammonium(1+), B-149
N,*N*′-Bis(4-aminobutyl)-1,4-butanediamine, B-150
2,6-Bis(4-aminobutyl)-3,5-diiminopiperazine, B-35
N^5,N^{10}-Bis(4-aminobutyl)homopentamine, D-290
N^5,N^{15}-Bis(4-aminobutyl)homopentamine, D-290
N^5,N^{10}-Bis(4-aminobutyl)homospermine, B-150
3,3′-Bis(aminocarbonyl)-5,5′-dicarboxydiphenyl ether, D-815
Bis[3-(2-aminoethyl)-6-bromo-1*H*-indol-2-yl] disulfide, B-163
3,3′-Bis(2-aminoethyl)-5,5′-dibromo-4,4′-bi-1*H*-indole-7,7′-diol, D-206
4,10-Bis(2-aminoethyl)-1,7-dimethoxydibenzo[*c*,*g*][1,2,5,6]-tetrathiocin-2,8-diol, L-208
1,28-Bis[(3-amino-2-hydroxypropyl)amino]-3,6,9,12,15,18,25-octacosaheptaene, R-71
N,*N*′-Bis[4-[(aminoiminomethyl)amino]butyl]ethanediamide, B-178
1,3-Bis[(4-aminomethyl)phenyl]-2-octadecanoylglycerol, B-151
Bis(3-aminopropyl)amine, D-255
N,*N*-Bis(3-aminopropyl)-1,4-butanediamine, B-152
N,*N*′-Bis(3-aminopropyl)-1,4-butanediamine, S-399
N,*N*′-Bis(3-aminopropyl)-1,2-ethanediamine, B-153
N^5,N^5-Bis(3-aminopropyl)homospermidine, B-149
N,*N*-Bis(3-aminopropyl)methylamine, D-255
N^4,N^4-Bis(3-aminopropyl)norspermidine, T-622
N,*N*′-Bis(3-aminopropyl)-1,3-propanediamine, B-154
N,*N*-Bis(3-aminopropyl)-1,3-propanediamine, T-622
N^4,N^4-Bis(3-aminopropyl)spermidine, A-926
Bis(3-aminopropyl)tetramethylenediamine, S-399
Bisancorinolate B, B-155
Bisaprasin 11′-sulfate, P-686
Bisaprasin, P-686
Bisaristone A, B-156
Bisavenanthramide B_1, B-157
Bisavenanthramide B_2, B-158
Bisavenanthramide B_3, B-160
Bisavenanthramide B_4, B-160
Bisavenanthramide B_5, B-159
Bisavenanthramide B_6, B-160
8*H*-Bis[1,3-benzodioxolo[6,5,4-*de*:4′,5′-*g*]quinolin-8-one, H-150
4,5-Bis(1,3-benzodioxol-5-ylmethyl)-1-methyl-1*H*-imidazol-2-amine, L-150
N,*N*′-Bis(2,10-bisaboladien-7-yl)urea, B-161
3,3′-Bis(5-bromo-4-chloro-7-methoxy-1*H*-indole), D-309
N,*N*′-Bis[3-(3-bromo-4-hydroxyphenyl)-2-oximidopropanoyl]cystamine, P-686
2,2-Bis(6-bromo-3-indolyl)ethylamine, B-162
2,4-Bis(6-bromo-3-indolyl)imidazole, N-312
2,5-Bis(6-bromo-3-indolyl)-1-methylpiperazine, D-929
2,5-Bis(6-bromo-3-indolyl)piperazine, D-929
Bis(6-bromo-2-tryptaminyl) disulfide, B-163
N,*N*′-Bis[3-(carboxyamino)-4-methylphenyl]urea, B-164
N^1,N^4-Bis(2-carboxyethyl)-1,4-butanediamine, S-397
Biscephalezomine A, B-165
Biscephalezomine B, B-166
Biscephalezomine C, B-167
Biscephalezomine D, B-165
Biscephalezomine E, B-166
N^2,N^2-Bis(chloromethyl)tetrandrinium, T-286
3,6-Bis(5-chloro-2-piperidinyl)-2,5-piperazinedione, A-1089
4,4′′-Bis(*N*-*p*-coumaroylserotonin), B-126
Biscryptolepine, B-168
2′,7-Bisdeacetoxyaustrospicatine, T-49
7,7′-Bis(dehydroanonaine), U-36
7,7′-Bisdehydro-*O*-methylisopiline, U-41
Bisdehydroneostemonine, N-140
Bisdehydroneostemoninine, B-169
Bisdehydroneotuberostemonine, T-664
Bisdehydroprotostemonine, P-670
Bisdehydrostemocochinine, P-670
Bisdehydrostemonine, S-519
Bisdehydrostemoninine A, B-170
Bisdehydrostemoninine B, B-170
Bisdehydrostemoninine, S-521
Bisdehydrotuberostemonine B, T-664
Bisdehydrotuberostemonine C, T-664
Bisdehydrotuberostemonine, T-664
N,*O*-Bis(demethyl)buchenavianine, D-662
N,*N*′-Bis(2,3-dibromo-4,5-dihydroxybenzyl)-*N*-(3-methoxycarbonylpropyl)urea, D-312
N^1,N^4-Bis(4,4-dicarboxy-3-hydroxy-1-oxobutyl)-1,4-butanediamine, R-80
7,7′-Bis(6*a*,7-didehydrowilsonirine), B-142
N,*N*′-Bis(2,4-diethyl-4-hexenyl)guanidine, T-617
N^1,N^{10}-Bis(dihydrocaffeoyl)spermidine, S-398
1,10-Bis(dihydrocaffeoyl)spermine, S-399
1,14-Bis(dihydrocaffeoyl)spermine, S-399
1,3-Bis(13,14-dihydro-13-methyl[1,3]benzodioxolo[5,6-*c*]-1,3-dioxolo[4,5-*f*]phenanthridin-14-yl)-2-propanone, S-54
N^2,N^6-Bis(2,3-dihydroxybenzoyl)lysinol, M-806
N,*N*′′-Bis(2,3-dihydroxybenzoyl)spermidine, S-398
N^1,N^{10}-Bis(3,4-dihydroxybenzoyl)spermidine, S-398
N,*N*′-Bis(3,4-dihydroxycinnamoyl)-1,4-butanediamine, D-362
N,*N*′-Bis[2-(3,5-diiodo-4-methoxyphenyl)ethyl]urea, B-171
6,7-Bis(3,4-dimethoxyphenyl)-1,2,3,5,8,8*a*-hexahydroindolizine, S-248
3,5-Bis(γ,γ-dimethylallyl)indole, B-200
3,6-Bis(γ,γ-dimethylallyl)indole, B-201
3,7-Bis(γ,γ-dimethylallyl)indole, B-202
1,4-Bis(dimethylamino)butane, T-281
1,4-Bis(dimethylamino)-2-butene, B-423
N,*N*-Bis[4-(dimethylamino)butyl]hexanamide, S-340
4,4′-Bis(dimethylamino)dibutylamine, S-340
3,3′-Bis(dimethylamino)dipropylamine, D-255
3,3′-Bis(dimethylamino)-*N*-methyldipropylamine, D-255
3,20-Bis(dimethylamino)pregnane, P-601
3,20-Bis(dimethylamino)pregnan-4-ol, D-266
N,*N*′-Bis(20-dimethylaminopregnan-3-yl)-*N*-methylthiourea, J-23
1,5-Bis(1,3-dimethyl-6-lumazinyl)-2-methyl-1,5-pentanedione, B-172
Bis(2,4-dimethyl-6-nitrophenyl)diazene, T-282
N,*N*-Bis(3,7-dimethyl-2,6-octadienyl)guanidine, B-173
N,*N*′-Bis(3,7-dimethyl-2,6-octadienyl)guanidine, B-174
3,5-Bis[(3,3-dimethyloxiranyl)methyl]-1*H*-indole, B-200
3,6-Bis[(3,3-dimethyloxiranyl)methyl]-1*H*-indole, B-201
N,*N*′-Bis(2,6-dimethylphenyl)-2,2,4,4-tetramethyl-1,3-cyclobutanediimine, B-175
2,5-Bis[1-(1,1-dimethyl-2-propenyl)-1*H*-indol-3-yl]-3,6-dihydroxy-2,5-cyclohexadiene-1,4-dione, A-1520
2,5-Bis[2-(1,1-dimethyl-2-propenyl)-1*H*-indol-3-yl]-3,6-dihydroxy-2,5-cyclohexadiene-1,4-dione, H-288
2,5-Bis[1-(1,1-dimethyl-2-propenyl)-1*H*-indol-3-yl]-3,6-dimethoxy-1,4-benzenediol, A-1519
Biselide A, H-76
Biselide B, H-76
Biselide C, H-76
Biselide D, H-76
1,1-Bis(8,9-epoxy-6,8-dimethylergoline), B-176
N,*N*′-Bis[4-(ethylamino)butyl]-1,4-butanediamine, B-150
1,2-Bis(ethylamino)ethane, E-225
N,*N*′-Bis(2-ethylhexanoyl)guanidine, L-174
4,4′′-Bis(*N*-feruloyl)serotonin, B-126
N^1,N^8-Bis(glutathionyl)spermidine, T-636
Bis(gorgiacerol)amine, B-177
N,*N*′-Bis(4-guanidinobutyl)oxamide, B-178
Bishaconitine, B-179
Bishatisine, B-180
Bishomodeoxyharringtonine, H-66
Bishomopalytoxin, P-42
1,14-Bis(homovanilloyl)spermine, S-399
1,3-Bis(11-hydrochelerythrinyl)acetone, C-355
1,3-Bis(6-hydrochelerythrinyl)acetone, C-355
1,3-Bis(8-hydrochelerythrinyl)acetone, C-355
1,3-Bis(11-hydrosanguinarinyl)acetone, S-54
1,3-Bis(8-hydrosanguinarinyl)acetone, S-54
2,3-Bis(4-hydroxybenzoyl)-5-(4-hydroxyphenyl)-pyrazine, B-258
N,*N*-Bis(4-hydroxybenzyl)hydroxylamine, B-181
3,11-Bis-*O*-(3-hydroxybutanoyl)hamayne, H-5
2,6-Bis(2-hydroxybutyl)-1-methyl-Δ^3-piperideine, D-391
2,6-Bis(2-hydroxybutyl)-1-methylpiperidine, D-391
N,*N*′-Bis(4-hydroxycinnamoyl)-1,4-butanediamine, D-362
N^1,N^{10}-Bis(4-hydroxycinnamoyl)spermidine, S-398
N,*N*′-Bis(4-hydroxy-3,5-dimethoxycinnamoyl)-1,4-butanediamine, D-362
Bis(2-hydroxyethyl)amine, D-388
Bis(7-hydroxygirinimbine A), B-212
5,5′-Bis(6-hydroxygirinimbine A), K-117
Bis(7-hydroxygirinimbine B), B-211
Bis(5-hydroxy-1*H*-indol-3-yl)ethanedione, H-782
3,4-Bis(5-hydroxy-1*H*-indol-3-yl)-1*H*-pyrrole-2-carboxylic acid, B-182
3,4-Bis(6-hydroxy-1*H*-indol-3-yl)-1*H*-pyrrole-2,5-dione, A-1394
N,*N*′-Bis(4-hydroxy-3-methoxycinnamoyl)-1,4-butanediamine, D-362
3,3′-Bis-3-[(4-hydroxy-2-methoxyphenyl)-2-propenamide], B-183
2,5-Bis(1-hydroxy-3-methylbutyl)-3,6-dimethylpyrazine, B-184
Bis(*N*-hydroxy-*N*-methylmethanethioamidato-*O*,*S*)copper, F-97
Bis(*N*-hydroxy-*N*-methylmethanethioamidato-*O*,*S*)nickel, F-98
2,6-Bis(hydroxymethyl)-3,4-piperidinediol, B-185
2,6-Bis(hydroxymethyl)-3,4,5-piperidinetriol, B-186
6,8-Bis[10-(5-hydroxy-6-methyl-2-piperidinyl)decyl]-1*H*-indolizinium, J-57
2,6-Bis(1-hydroxy-2-methylpropyl)-1*H*,5*H*-pyrrolo[2,3-*b*]indole-4,8-dione, T-105
3-[2,5-Bis(hydroxymethyl)-1*H*-pyrrol-1-yl]-4,5-dimethyl-2(5*H*)-furanone, F-193
N,*N*′-Bis(2-hydroxy-5-oxo-1-cyclopenten-1-yl)-2,4,6,8,10,12,14-hexadecaheptaenediamide, L-178
2,6-Bis(2-hydroxypentyl)-1-methylpiperidine, B-187
2,6-Bis(2-hydroxypentyl)piperidine, B-187
3,6-Bis(4-hydroxyphenyl)-1,2,4,5-benzenetetrol, T-97
2,6-Bis(2-hydroxy-2-phenylethyl)-1-methylpiperidine, L-218
3,3′-Bis[(4-hydroxyphenyl)methylene]-[1,1′-bicyclopent[*b*]indole]-2,2′(3*H*,3′*H*)-dione, S-168
3,4-Bis(4-hydroxyphenyl)-1*H*-pyrrole-2,5-dicarboxylic acid, B-188
3,4-Bis(8-hydroxy-4-quinolinyl)-γ-butyrolactone, B-358
Bisindigotin, B-189
Strempeliopsis Bisindole base, A-334
7,7-Bis(3-indolyl)-*p*-cresol, D-692
2,5-Bis(1*H*-indol-3-yl)-3,6-dimethoxy-1,4-benzenediol, A-1519
2,2-Bis(3-indolyl)indoxyl, T-87

3,4-Bis(1*H*-indol-3-yl)maleic anhydride, P-491
2,3-Bis(1*H*-indol-3-yl)maleimide, A-1394
3,3′-Bis(indolylmethyl)dimethylammonium, B-190
2,5-Bis(1*H*-indol-3-ylmethyl)pyrazine, B-191
2,2′-Bisinomenine, S-313
1,1′-Bisinomenine, S-313
8′,11*O*-Bisisocorydine, B-132
8′,11*O*-Bisisocorydine, B-133
2,5-Bis[(3-isocyanobutanoyl)amino]-1-pentanol, A-1257
20,25-Bisisoetioline, S-199
Bisisomahanine, B-192
Bisjatrorrhizine, B-193
8,8′-Biskoenigine, B-134
Bisline, B-194
Bismahanine, B-195
2,4-Bis(5-methoxy-1,3-benzodioxol-6-yl)-1,3-cyclobutanedicarboxylic acid bispyrrolidide, B-196
1,1′-[[2,4-Bis(6-methoxy-1,3-benzodioxol-5-yl)-1,3-cyclobutanediyl]dicarbonyl]bispiperidine, B-198
1,1′-[[2,4-Bis(6-methoxy-1,3-benzodioxol-5-yl)-1,3-cyclobutanediyl]dicarbonyl]bispyrrolidine, B-196
N,*N*′-Bis(4-methoxybenzyl)urea, D-302
Bis(9-methoxy-9*H*-carbazol-3-ylmethyl) ether, O-219
N-[1,3-Bis(methoxycarbonyl)propyl]-2,3-dihydro-2-(4-hydroxy-3-methoxyphenyl)-3-hydroxymethyl-7-methoxy-5-benzofuranpropenamide, B-197
Bis(7-methoxygirinimbine A), B-212
2,4-Bis(2-methoxy-4,5-methylenedioxyphenyl)-1,3-cyclobutanecarboxylic acid dipiperidide, B-198
4,5-Bis[(4-methoxyphenyl)methyl]-1*H*-imidazol-2-amine, N-6
1,4-Bis(methylamino)butane, B-422
N,*N*-Bis(3-methyl-2-butenyl)guanidine, B-199
N,*N*′-Bis(3-methyl-2-butenyl)guanidine, P-769
3,5-Bis(3-methyl-2-butenyl)-1*H*-indole, B-200
3,6-Bis(3-methyl-2-butenyl)-1*H*-indole, B-201
3,7-Bis(3-methyl-2-butenyl)-1*H*-indole, B-202
3,6-Bis[5-(3-methyl-2-butenyl)-1*H*-indol-3-yl]-furo[3,2-*b*]furan-2,5-dione, C-548
3,15-Bis(2-methylbutyryl)germine, G-70
1,2:9,10-Bis(methylenedioxy)aporphine, N-125
1,2:10,11-Bis(methylenedioxy)aporphine, O-143
2,3:7,8-Bis(methylenedioxy)benzo[*c*]phenanthridine, S-56
1,2:9,10-Bismethylenedioxynoraporphine, N-125
1,2:10,11-Bismethylenedioxynoraporphine, O-143
1,2:10,11-Bis(methylenedioxy)oxoaporphine, H-150
2,3:9,10-Bis(methylenedioxy)-8-oxoprotoberberine, D-409
2,3:8,9-Bis(methylenedioxy)pavinane, E-221
2,3:9,10-Bismethylenedioxyprotoberberine, C-638
N-[3,7-Bis(1-methylethyl)-5,8-dioxo-2-oxa-6,9-diazabicyclo[10.2.2]hexadeca-10,12,14,15-tetraen-4-yl]-2-(dimethylamino)-4-methylpentanamide, M-794
2,5-Bis(1-methylethyl)pyrazine, D-700
2,6-Bis(1-methylethyl)pyrazine, D-701
6,6′-[1,2-Bis(2-methyl-1-propenyl)-1,2-ethanediyl]-bis-1*H*-indole, I-248
2,5-Bis(2-methylpropyl)pyrazine, B-203
3,6-Bis(2-methylpropyl)-2,5-pyrazinediol 1,4-dioxide, P-788
3,6-Bis(1-methylpropyl)-2-pyrazinol, B-204
3,6-Bis(1-methylpropyl)-2(1*H*)-pyrazinone, B-204
3,6-Bis(2-methylpropyl)-2(1*H*)-pyrazinone, F-76
1,3-Bis(1-methyl-2-pyrrolidinyl)-2-propanol, D-413
1,3-Bis(1-methyl-2-pyrrolidinyl)-2-propanone, C-818
3,5-Bis(1-methyl-2-pyrrolidinyl)pyridine, D-832
N,*N*′-Bis[6-(methylsulfinyl)hexyl]urea, D-829
2,6-Bis(methylthio)-1,4-benzoquinone 1-semicarbazone, D-229
2,2′-Bis(methylthio)-6,6′-dibromoindigotin, T-698
Bis(*N*-methylthioformohydroxamato)copper, F-97
N,*N*′-Bis[6-(methylthio)hexyl]urea, D-829
N,*N*′-Bis[3-(methylthio)-2-propenoyl]putrescine, A-198
Bismorphine A, B-205
Bismorphine B, B-206
Bismurrayafoline A, B-207
Bismurrayafoline B, B-208
Bismurrayafoline C, B-209
Bismurrayafoline D, B-209
Bismurrayafoline E, B-210
Bismurrayafolinol, B-207
6,8′-Bismurrayamine A, B-211
8,8′-Bismurrayamine A, B-212
Bismurrayaquinone A, B-213
Bis(naamidinato A)zinc(*II*), N-1
Bis(naamidinato G)zinc(*II*), N-1
Bisnor-*C*-alkaloid D, A-476
Bisnor-*C*-alkaloid H di-*N*-oxide, T-436
Bisnor-*C*-alkaloid H *N*-oxide, T-436
Bisnor-*C*-alkaloid H, T-436
17,18-Bisnorantidesmone, A-1325
Bisnorargemonine, A-1410
N,*N*′-Bisnoraromoline, O-1
d-Bisnorbiotin, B-214
Bisnorbiotin, B-214
2,2′-Bisnorcocsulinine, C-552
Bisnor-*C*-curarine, C-809
Bisnordihydrotoxiferine di-*N*-oxide, T-436
Bisnordihydrotoxiferine *N*-oxide, T-436
Bisnordihydrotoxiferine, T-436
Bisnorephedrine, A-864
N-Bisnorgramine, I-97
2,2′-Bisnorguattaguianine, G-212
Bisnorobamegine, I-328
2,2′-Bisnorphaeanthine, P-301
Bisnorthalphenine, T-345
Bisnorthalrugosine, I-328
1,3-Bis(octahydro-6-hydroxy-7-methyl-6-phenyl-5-indolizinyl)-2-propanone, D-212
2,6-Bis(2-oxobutyl)piperidine, D-391
1,2-Bis(3-oxo-2-piperidyl)ethane, E-226
7,7′-Bispancoridine, B-143
Bisparthenolidine, B-215
N,*N*′-Bis(phenylacetyl)putrescine, B-422
N,*N*′-Bis(2-phenylethyl)urea, B-216
10-[Bis(phenylmethyl)amino]-5,6,6*a*,7-tetrahydro-2-methoxy-6-methyl-4*H*-dibenzo[*de,g*]quinolin-1-ol, V-24
N,*N*-Bis(phenylmethyl)benzenemethanamine, T-457
2,5-Bis(phenylmethyl)hexahydropyrazine, D-301
3,6-Bis(phenylmethyl)-2,5-pyrazinediol, D-300
N,*N*′-Bis(phenylmethyl)urea, D-302
Bispsammaplin A, B-217
Bispyrafoline D, B-192
Bispyrithione magsulfex, D-831
Bissecodehydrocyclopiazonic acid, B-218
Bistabersonine, T-11
Bistellettadine A, B-219
Bistellettadine B, B-220
2,5-Bis(1,2,3,4-tetrahydroxybutyl)pyrazine, B-221
Bistratamide A, B-223
Bistratamide B, B-223
Bistratamide C, B-224
Bistratamide D, B-225
Bistratamide E, B-226
Bistratamide F, B-225
Bistratamide G, B-225
Bistratamide H, B-226
Bistratamide I, B-222
Bistratamide J, B-227
Bistribromopyrrole, H-212
1,1′-[[2,4-Bis(3,4,5-trimethoxyphenyl)-1,3-cyclobutanediyl]dicarbonyl]bis[5,6-dihydro-2(1*H*)-pyridone], P-474
Bitlisine, B-228
Bizelesin, B-229
BK 97B1, B-64
BK 97B2, B-65
Blacknidine, M-348
Blacknine, M-321
Blasticidin A, B-230
Blastmycetin A, B-231
Blastmycetin B, B-232
Blastmycetin C, B-232
Blastmycetin D, B-233
Blastmycetin E, B-234
Blastmycetin F, B-235
Blastovin, V-110
Bleekerine, A-652
Bleomycin A_6, B-236
Blepharigenin, H-409
Blepharin, H-409
Bluensidine, B-237
Blumeanine, B-238
BM 1, A-1606
BM 123γ_2, C-460
BM 123$_{\gamma 1}$, C-459
BM 123β_1, G-117
BMG 162 aF_2, S-394
BMS 310705, E-111
BMS 199687, N-265
BMS 181176, R-32
BMS 181173, S-394
BMS 181339-01, T-52
BMS 184476, T-52
BMS 188797, T-52
BMY 41219, A-1393
BMY 42428, A-1138
BMY 28565, F-33
BMY 40660, H-417
BMY 28886, L-7
BMY 28566, M-158
BMY 28121, P-573
BMY 42448, P-969
BMY 28662, Q-11
BMY 27557, R-32
BMY 41950, S-498
BMY 42215-1, S-394
BN 229A, H-563
BN 227F, H-563
BN 227, H-563
BOA, B-83
Bocconine, C-360
Bocconoline, B-239
Bodamine, B-240
Bodyfolin®, T-172
Boehmeriasine A, B-241
Boehmeriasine B, B-241
(*E*)-Bogorin, Q-14
(*Z*)-Bogorin, Q-14
Bohemamine B, B-242
Bohemamine C, B-242
Bohemamine, B-242
Bokitamine, A-811
Boldine N^{β}-oxide, B-243
Boldine, B-243
Boletic acid, F-173
Boletocrocin A, H-220
Boletocrocin B, H-220
Boletocrocin C, D-890
Boletocrocin D, T-126
Boletocrocin E, H-220
Boletocrocin F, H-220
Boletocrocin G, H-220
Bonabiline A, B-244
Bonabiline B, B-244
Bonafousine, B-245
Bonellidine, L-240
Boneratamide A, B-246
Boneratamide B, B-247
Boneratamide C, B-247
Bongardamine, D-888
Bongardine, B-248
Bonvalol, M-305
Bonvalone, M-305
Bonvalotidine A, M-305
Bonvalotidine B, M-305
Bonvalotidine C, M-305
Bonvalotine, M-305
Bonzakaline, G-143
Boophiline, B-249
Borbonicine, B-250
Borrecapine, B-251
Borrecoxine, B-251
Borreline, B-252
Borrerine, M-521
Borreverine, B-253
Boschniakine, B-254
Boschniakinic acid, B-254

Bosistidine, T-580
Bosistine, T-546
Bosmin, A-152
Bostrycoidin, B-255
Botryllamide A, B-256
Botryllamide B, B-256
Botryllamide C, B-256
Botryllamide D, B-256
Botryllamide E, B-256
Botryllamide F, B-256
Botryllamide G, B-256
Botryllamide H, B-257
Botryllazine A, B-258
Botryllazine B, B-259
Bouchardatine, B-260
Bougainvillein r-I, B-110
Bougainvillein r-II, B-110
Bougainvillein r-III, B-110
Bougainvillein r-IV, B-110
Bougainvillein r-V, B-110
Bougainvillein-v, B-110
Bowdensine, B-261
Bowdichine, A-107
Boxazomycin A, B-262
Boxazomycin B, B-262
Boxazomycin C, B-262
BP 2, O-197
BP 179, T-52
BR 040, A-1139
BR 042, A-1139
Brachyaconitine, M-331
Brachyamide A, B-263
Brachyamide B, M-455
Brachycerine, B-264
Brachystamide A, B-265
Brachystamide B, B-265
Brachystamide C, B-265
Brachystamide D, B-266
Brachystamide E, B-266
Brachystemidine A, B-267
Brachystemidine B, B-268
Brachystemidine C, B-268
Brachystemidine D, B-268
Brachystemidine E, B-268
Brachystemidine F, B-269
Brachystemidine G, B-270
Brachystine, B-271
Bractamine, B-272
Bractavine, O-110
Bractazonine, B-273
Bracteatine, B-274
Bracteine, B-275
Bracteoline, B-276
Bradyoxetin, B-277
Brafouedine, A-1365
Brasiliamide A, B-278
Brasiliamide B, B-279
Brasiliamide C, B-279
Brasiliamide D, B-279
Brasiliamide E, B-279
Brasilibactin A, N-265
Brasilicardin A, B-280
Brasilicardin B, B-280
Brasilicardin C, B-280
Brasilicardin D, B-280
Brasilidine A, B-281
Brassicanal A, M-201
Brassicanal B, B-282
Brassicanal C, B-283
Brassicanate A, M-202
Brassidic acid, D-880
Brassilexin, I-336
Brassinin, B-284
Brassitin, B-285
Bravomicin A, B-286
Bravomicin B, B-286
Bravomicin C, B-286
Bravomicin D, B-287
Bravomicin E, B-287
Bravomicin F, B-287
Braznitidumine, B-288
Bredilonine, P-962
Brefelamide, B-289
Breoganine, C-805
Brevianamide E, B-290
Brevianamide F, C-899
Brevicarine, B-291
Brevicide, X-7
Brevicolline, B-292
Brevicompanine A, B-293
Brevicompanine B, F-160
Brevicompanine C, B-294
Brevigellin, B-295
Brevinic acid, B-296
Brevioxime, B-297
Bripiodionene, B-298
Brocadopa, A-745
Brochodine, C-555
Brolitene, H-488
Bromcholitin, T-246
Bromergocryptine, E-157
Bromergon, E-157
2-Bromoageliferin, A-190
2-Bromoaldisine, A-255
6-Bromoaplysinopsin, A-1357
Bromobenzisoxazolone Barettin, B-25
6-Bromo-2-(6-bromo-1,3-dihydro-3-oxo-2*H*-indol-2-ylidene)-1,2-dihydro-3*H*-indol-3-one, D-325
6-Bromo-1-(3-bromo-4-hydroxybenzoyl)-9*H*-pyrido[3,4-*b*]indole, H-411
3-Bromo-2-(5-bromo-2-hydroxyphenyl)-4,5-dichloropyrrole, P-966
6-Bromo-β-(6-bromo-1*H*-indol-3-yl)-1*H*-indole-3-ethanamine, B-162
3-Bromo-4-(3-bromo-2-nitrophenyl)-1*H*-pyrrole, D-305
6-Bromo-β-carboline, B-299
7-Bromo-β-carboline, B-300
7-Bromocavernicolenone, B-301
5-Bromocavernicolin, C-221
Bromochelonin B, C-362
Bromochloroacetamide, B-302
Bromochloroacetic acid, B-302
Bromochloroacetonitrile, B-302
7-Bromo-5-chlorocavernicolin, C-221
Bromochlorocyanomethane, B-302
6-Bromo-3-chloro-1*H*-indole, B-303
7-Bromo-5-(2-chlorophenyl)-1,3-dihydro-3-hydroxy-2*H*-1,4-benzodiazepin-2-one, B-304
3-Bromo-5-chlorotyrosine, A-712
3-Bromo-5-chloroverongiaquinol, H-650
Bromocriptine mesilate, E-157
Bromocriptine, E-157
Bromocryptine, E-157
6-Bromo-3-(cyanomethyl)indole, B-332
6-Bromo-6-dechloropenitrem A, P-194
6-Bromo-3′-deimino-2′,4′-bis(demethyl)-3′-oxoaplysinopsin, A-1357
6-Bromo-3′-deimino-3′-oxoaplysinopsin, A-1357
6-Bromo-2′-*N*-demethylaplysinopsin, A-1357
6-Bromo-4′-*N*-demethylaplysinopsin, A-1357
6-Bromo-2′-*N*-demethyl-*N*-3′-methylaplysinopsin, A-1357
Bromodeoxytopsentin, T-432
5-Bromo-5′-deoxytubercidin, T-658
9-[3-Bromo-2-(2,3-dibromo-4,5-dihydroxybenzyl)-4,5-dihydroxybenzyl]adenine, B-305
7-[3-Bromo-2-(2,3-dibromo-4,5-dihydroxybenzyl)-4,5-dihydroxybenzyl]-3,7-dihydro-1*H*-purine-2,6-dione, B-306
N-[3-Bromo-2-(2,3-dibromo-4,5-dihydroxybenzyl)-4,5-dihydroxybenzyl]-*N*′-(3-methoxycarbonylpropyl)urea, B-307
6-Bromo-1-(3,5-dibromo-4-hydroxybenzoyl)-9*H*-pyrido[3,4-*b*]indole, H-411
7-Bromo-1-(3,5-dibromo-4-hydroxybenzoyl)-9*H*-pyrido[3,4-*b*]indole, H-411
7-Bromo-2,3-dichloro-1*H*-indole, B-308
14-Bromo-7,8-didehydro-3-dihydrodiscorhabdin C, D-851
6-Bromo-1′,8-dihydroaplysinopsin, A-1357
6-Bromo-1,2-dihydro-2,2-bis(methylthio)-3*H*-indol-3-one, B-309
14-Bromo-3-dihydro-7,8-didehydrodiscorhabdin C, D-851
14-Bromo-3-dihydrodiscorhabdin C, D-851
19-Bromo-3,4-dihydroeudistomin U, I-119
10-Bromo-6,7-dihydrohomofascaplysate A, H-332
6-Bromo-1′,8-dihydro-1′-hydroxyaplysinopsin, A-1357
6-Bromo-1,2-dihydro-2-hydroxymethyl-2-methoxy-3*H*-indol-3-one, M-115
5-Bromo-1,2-dihydro-3*H*-indol-3-one, B-324
6-Bromo-1,2-dihydro-3*H*-indol-3-one, B-325
6-Bromo-1′,8-dihydro-1′-methoxyaplysinopsin, A-1357
7-Bromo-2,3-dihydro-2-methyl-3-[(methylthio)-methyl]-1*H*-2,4,10*b*-triazafluoranthen-8-ol, E-283
6-Bromo-1-(3,4-dihydro-2*H*-pyrrol-5-yl)-9*H*-pyrido[3,4-*b*]indole, E-288
7-Bromo-1-(3,4-dihydro-2*H*-pyrrol-5-yl)-9*H*-pyrido[3,4-*b*]indole, E-285
6-Bromo-1-(3,4-dihydro-2*H*-pyrrol-5-yl)-9*H*-pyrido[3,4-*b*]indol-8-ol, E-280
7-Bromo-1-(3,4-dihydro-2*H*-pyrrol-5-yl)-9*H*-pyrido[3,4-*b*]indol-6-ol, E-285
6-Bromo-4,5-dihydroxyindole, B-310
6-Bromo-4,7-dihydroxyindole, B-311
2-Bromo-6,8-dihydroxy-7-propyl-9*H*-pyrrolo[2,1-*b*][1,3]benzoxazin-9-one, S-571
7-Bromo-2,4-dihydroxyquinazoline, B-312
6-Bromo-2,4-dihydroxyquinoline, B-313
11-Bromo-3,12-dihydroxy-2,2,4,10-tetramethyl-4,6,8,10,14,16-eicosahexaen-18-ynamide, C-497
6-Bromo-2-(1,1-dimethylallyl)tryptamine, B-316
7-Bromo-1-[2-(dimethylamino)ethyl]-β-carboline, P-507
12-[3-Bromo-2-[2-(dimethylamino)ethyl]-5-hydroxy-4-methoxyphenyl]-2,6,10-trimethyl-2,10-dodecadien-5-one, A-1342
5-Bromo-3-(2-dimethylaminoethyl)indole, B-355
5-Bromo-*N*,*N*-dimethyl-1*H*-indole-3-ethanamine, B-355
6-Bromo-3*a*-(3,7-dimethyl-2,6-octadienyl)-1,2,3,3*a*,8,8*a*-hexahydro-1-methylpyrrolo[2,3-*b*]indol-7-ol, B-314
6-Bromo-2-(1,1-dimethyl-2-propenyl)-1*H*-indole-3-carboxaldehyde, B-315
6-Bromo-2-(1,1-dimethyl-2-propenyl)-1*H*-indole-3-ethanamine, B-316
N-[2-[6-Bromo-2-(1,1-dimethyl-2-propenyl)-1*H*-indol-3-yl]ethyl]-*N*-methylmethanesulfonamide, B-316
6-Bromo-2-(1,1-dimethyl-2-propenyl)tryptamine, B-316
7-Bromo-*N*,*N*-dimethyl-9*H*-pyrido[3,4-*b*]indole-1-ethanamine, P-507
5-Bromo-N^b,N^b-dimethyltryptamine, B-355
p-Bromo-α,α-diphenylacetanilide, B-344
14-Bromodiscorhabdin C, D-851
7-Bromo-1-ethenyl-9*H*-pyrido[3,4-*b*]indole, V-139
6-Bromo-1′-ethoxy-1′,8-dihydroaplysinopsin, A-1357
7-Bromo-4-(2-ethoxyethyl)quinoline, B-317
6-Bromo-1-ethyl-β-carboline, B-318
6-Bromo-1-ethyl-9*H*-pyrido[3,4-*b*]indole, B-318
10-Bromofascaplysin, F-13
3-Bromofascaplysin, F-13
2-Bromofestuclavin, F-49
6-Bromo-3-formyl-2-(1,1-dimethyl-2-propenyl)indole, B-315
6-Bromo-3-formyl-5-hydroxyindole, B-327
6-Bromo-3-formylindole, B-333
5′-Bromo-5-formyl-4-methoxy-2,2′-bipyrrole, B-339
3-Bromo-5′-formyl-4′-methoxy-2,2′-bipyrrole, B-338
6-Bromo-N^b-formyl-N^b-methyltryptamine, B-356
6-Bromogranulatimide, G-169
4-Bromo-2-(guanidinomethyl)pyrrole, B-319
3-Bromohomofascaplysin B1, H-335
3-Bromohomofascaplysin B, H-334
3-Bromohomofascaplysin C, H-336
6-Bromo-3-(hydroxyacetyl)-1*H*-indole, B-320
6-Bromo-1-(4-hydroxybenzoyl)-9*H*-pyrido[3,4-*b*]indole, H-411
1-(3-Bromo-4-hydroxybenzoyl)-9*H*-pyrido[3,4-*b*]indole, H-411

5-Bromo-6-hydroxy-β-carboline, B-321
7-Bromo-6-hydroxy-β-carboline, B-322
14-Bromo-1-hydroxydiscorhabdin V, D-849
3-Bromo-4-hydroxy-α-(hydroxyimino)-*N*-[2-(1*H*-imidazol-4-yl)ethyl]benzenepropanamide, B-323
5-Bromo-3-hydroxy-1*H*-indole, B-324
6-Bromo-3-hydroxy-1*H*-indole, B-325
6-Bromo-5-hydroxy-1*H*-indole, B-326
6-Bromo-5-hydroxy-1*H*-indole-3-carboxaldehyde, B-327
5-Bromo-*N*-hydroxy-1*H*-indole-3-ethanamine, B-355
N-(3-Bromo-β-hydroxy-4-methoxyphenethyl)tryptamine, C-362
6-Bromo-3-hydroxy-2-(methylthio)indole, B-328
2-(3-Bromo-4-hydroxyphenyl)ethylamine, A-769
[2-(3-Bromo-4-hydroxyphenyl)ethyl]ethanediamide, B-329
N-[2-(3-Bromo-4-hydroxyphenyl)ethyl]-α-oxo-1*H*-indole-3-acetamide, P-541
2-[[3-(3-Bromo-4-hydroxyphenyl)-2-(hydroxyimino)-1-oxopropyl]amino]ethyl thiocyanate, P-687
5-Bromo-6-hydroxy-9*H*-pyrido[3,4-*b*]indole, B-321
7-Bromo-6-hydroxy-1-(2-pyrrolyl)-β-carboline, E-285
6-Bromo-4-hydroxy-2(1*H*)-quinolinone, B-313
3-Bromo-4-hydroxy-*N*,*N*,*N*-trimethylbenzeneethanaminium, A-769
5-Bromo-*N*′-hydroxytryptamine, B-355
3-Bromohymenialdisine, H-762
5-Bromohypaphorine, H-764
6-Bromohypaphorine, H-764
6-Bromoindigo, D-325
6-Bromoindigotin, D-325
6-Bromoindirubin, I-73
6-Bromo-1*H*-indole-3-acetamide, B-332
5-Bromo-1*H*-indole-3-acetic acid, B-331
6-Bromo-1*H*-indole-3-acetic acid, B-332
6-Bromo-1*H*-indole-3-acetonitrile, B-332
3-Bromo-1*H*-indole, B-330
6-Bromoindole-3-carbaldehyde, B-333
6-Bromo-1*H*-indole-3-carboxaldehyde, B-333
6-Bromo-1*H*-indole-3-carboxylic acid, B-334
6-Bromo-1*H*-indole-4,5-diol, B-310
6-Bromo-1*H*-indole-4,7-diol, B-311
6-Bromo-1*H*-indole-2,3-dione, B-335
5-Bromo-1*H*-indole-3-ethanamine, B-355
6-Bromo-1*H*-indole-3-ethanamine, B-356
5-Bromo-1*H*-indol-3-ol, B-324
6-Bromo-1*H*-indol-5-ol, B-326
6-Bromo-1*H*-indol-3-ol, B-325
5-Bromo-3-indolone, B-324
6-Bromo-3-indolone, B-325
4-(6-Bromo-1*H*-indol-3-yl)-3-buten-2-one, I-117
N^{α}-(6-Bromo-1*H*-indol-3-ylcarbonyl)arginine, I-120
N^{α}-(6-Bromo-1*H*-indol-3-ylcarbonyl)enduracididine, E-80
N^{α}-(6-Bromo-1*H*-indol-3-ylcarbonyl)histidine, I-121
3-Bromo-α-[[[2-(1*H*-indol-3-yl)ethyl]amino]-methyl]-4-methoxybenzenemethanol, C-362
N-[2-(6-Bromo-1*H*-indol-3-yl)ethyl]-*N*-methylformamide, B-356
(6-Bromo-1*H*-indol-3-yl)glyoxylic acid, B-342
1-(6-Bromo-1*H*-indol-3-yl)-2-hydroxyethanone, B-320
3-(6-Bromo-1*H*-indol-3-yl)-2-propenoic acid, B-336
6-Bromoindoxyl, B-325
Bromoiodoacetamide, B-337
Bromoiodoacetic acid, B-337
N-[2-[3-Bromo-5-iodo-4-[3-[(3-methyl-1-oxo-2-butenyl)amino]propoxy]phenyl]ethyl]-4-hydroxybenzeneacetamide, D-333
6-Bromoisatin, B-335
19-Bromoisoeudistomin U (incorr.), I-119
2-Bromoleptoclinidinone, A-1459
2-Bromomaleimide, B-350
5′-Bromo-4-methoxy-2,2′-bipyrrole-5-carboxaldehyde, B-339
3′-Bromo-4-methoxy-2,2′-bipyrrole-5-carboxaldehyde, B-338
4-Bromo-N^2-methoxymethyl-1*H*-pyrrole-2-carboxamide, B-348
5-Bromo-N^2-(methoxymethyl)-1*H*-pyrrole-2-carboxamide, B-349
3-[2-[[2-(3-Bromo-4-methoxyphenyl)-2-hydroxyethyl]amino]ethyl]indole, C-362
6-Bromo-7-(methylamino)-5,8-isoquinolinedione, A-831
5-Bromo-1-[1-(methylamino)-2-(methylthio)ethyl]-9*H*-pyrido[3,4-*b*]indol-6-ol, E-282
6-Bromo-1-methyl-β-carboline, B-340
N-Bromo-*N*-methylformamide, M-463
4-Bromo-N^7-methylphakellin, B-343
6-Bromo-N^b-methyl-N^a-prenyltryptamine, B-356
7-Bromo-α-(2-methylpropyl)-9*H*-pyrido[3,4-*b*]indole-1-methanamine, E-278
6-Bromo-1-methyl-9*H*-pyrido[3,4-*b*]indole, B-340
7-Bromo-9-[[4-(methylthio)-1*H*-imidazol-3-yl]-methyl]-9*H*-pyrido[3,4-*b*]indole, D-380
6-Bromo-2-(methylthio)-1*H*-indol-3-ol, B-328
6-Bromo-2-(methylthio)-3*H*-indol-3-one, B-341
7-Bromo-5-methyl-1,3,7-triazecine-2,6,8(1*H*,3*H*,7*H*)-trione, R-70
2-Bromomyrothenone B, A-824
Bromonitrin A, D-305
Bromonitrin B, D-305
Bromonitrin C, D-305
3-(3-Bromo-2-nitrophenyl)-1*H*-pyrrole, P-961
Bromonorharman, B-299
6-Bromo-α-oxo-1*H*-indole-3-acetamide, B-342
6-Bromo-α-oxo-1*H*-indole-3-acetic acid, B-342
4-Bromopalauamine, P-18
6-Bromopenitrem E, P-194
4-Bromophakellin, B-343
N-(4-Bromophenyl)-2,2-diphenylacetamide, B-344
N-(4-Bromophenyl)-α-phenylbenzeneacetamide, B-344
6-Bromo-N^1-propionylaplysinopsin, A-1357
5-Bromopsammaplin A, P-686
7-Bromo-9*H*-pyrido[3,4-*b*]indole, B-300
6-Bromo-9*H*-pyrido[3,4-*b*]indole, B-299
5-Bromo-9*H*-pyrido[3,4-*b*]indol-6-ol, B-321
7-Bromo-9*H*-pyrido[3,4-*b*]indol-6-ol, B-322
1-(7-Bromo-9*H*-pyrido[3,4-*b*]-indol-1-yl)-3-methyl-1-butanone, E-279
N^2-(4-Bromo-1*H*-pyrrole-2-carbonyl)arginine, B-345
N^2-(4-Bromo-1*H*-pyrrole-2-carbonyl)homoarginine, B-346
N^6-(4-Bromo-1*H*-pyrrole-2-carbonyl)lysine, B-347
5-Bromo-1*H*-pyrrole-2-carboxamide, B-349
4-Bromo-1*H*-pyrrole-2-carboxylic acid, B-348
5-Bromo-1*H*-pyrrole-2-carboxylic acid, B-349
3-Bromo-1*H*-pyrrole-2,5-dione, B-350
6-Bromo-1-(1-pyrrolin-2-yl)-β-carboline, E-288
Bromopyrrolnitrin A, D-305
Bromopyrrolnitrin B, D-305
Bromopyrrolnitrin C, D-305
5-Bromo-1*H*-pyrrolo[2,3-*d*]pyrimidin-4-amine, A-713
5-Bromo-7*H*-pyrrolo[2,3-*d*]pyrimidine, B-351
7-Bromo-1-(1*H*-pyrrol-2-yl)-9*H*-pyrido[3,4-*b*]indol-6-ol, E-285
7-Bromo-2,4-quinazolinediol, B-312
7-Bromo-2,4(1*H*,3*H*)-quinazolinedione, B-312
6-Bromo-2,4-quinolinediol, B-313
Bromorebeccamycin, R-32
14-Bromoreticulatate, R-57
14-Bromoreticulatine, R-57
14-Bromoreticulatol, R-58
Bromosalinosporamide, S-28
Bromosceptrine, S-124
3-Bromosecofascaplysin A, S-186
3-Bromosecofascaplysin B, S-186
3-Bromostyloguanidine, S-611
6-Bromo-1,2,3,4-tetrahydro-7,8-dihydroxy-3-isoquinolinecarboxylic acid, B-352
8-Bromo-1,2,3,4-tetrahydro-6,7-dihydroxy-3-isoquinolinecarboxylic acid, B-353
6-Bromo-1,2,3,4-tetrahydro-8-hydroxy-7-methoxy-3-isoquinolinecarboxylic acid, B-352
8-Bromo-1,2,3,4-tetrahydro-6-hydroxy-7-methoxy-3-isoquinolinecarboxylic acid, B-353
7-Bromo-2,3,4,9-tetrahydro-1-(1*H*-imidazol-4-ylmethyl)-1*H*-pyrido[3,4-*b*]indole, L-199
6-Bromo-2,3,4,9-tetrahydro-2-methyl-α-[(4-methylphenyl)methyl]-1*H*-pyrido[3,4-*b*]indole-1-methanamine, E-281
5-(2-Bromo-5,6,7,8-tetrahydro-8-oxopyrrolo[2,3-*c*]azepin-4(1*H*)-ylidene)-2,4-imidazolidinedione, A-1576
6-Bromo-1,3,4,5-tetrahydropyrrolo[4,3,2-*de*]quinoline-7,8-dione, D-13
6-Bromotopsentin A, T-432
21-Bromotopsentin A, T-432
Bromotopsentin, T-432
4(7)-Bromo-2,3,7(2,3,4)-trichloro-1*H*-indole, B-354
3-Bromo-*N*,*N*,*N*-trimethyltyramine, A-769
5-Bromotryptamine, B-355
6-Bromotryptamine, B-356
3-Bromotyramine, A-769
Oceanapia Bromotyrosine alkaloid, B-357
5-Bromoverongamine, V-78
3-Bromoverongiaquinol, H-650
7-Bromo-1-vinyl-β-carboline, V-139
Bronkaid, A-152
Broussonetine A, B-367
Broussonetine B, B-367
Broussonetine C, B-367
Broussonetine D, B-367
Broussonetine E, B-367
Broussonetine F, B-367
Broussonetine G, B-360
Broussonetine H, B-361
Broussonetine I, B-359
Broussonetine J, B-359
Broussonetine J_1, B-359
Broussonetine J_2, B-359
Broussonetine K, B-367
Broussonetine L, B-367
Broussonetine M, B-367
Broussonetine M_1, B-367
Broussonetine N, B-362
Broussonetine O, B-367
Broussonetine P, B-367
Broussonetine Q, B-367
Broussonetine R, B-363
Broussonetine S, B-367
Broussonetine T, B-367
Broussonetine U, B-364
Broussonetine U_1, B-367
Broussonetine V, B-367
Broussonetine W, B-365
Broussonetine X, B-365
Broussonetine Y, B-367
Broussonetine Z, B-366
Broussonetine, B-358
Broussonetinine A, B-367
Broussonetinine B, B-367
Broussonpapyrine, Z-7
Brovon, P-79
Browniine, M-309
Bruceacanthinoside, H-442
Bruceolline A, H-446
Bruceolline B, H-442
Bruceolline C, T-530
Bruceolline D, B-368
Bruceolline E, B-368
Bruceolline F, T-25
Bruceolline G, H-446
Brucine *N*-oxide, S-589
Brucine, S-589
Brugine, B-369
Bruneomycin, S-569
Brunfelsamidine, P-943
Brunfelsine, B-370
Brunnein A, T-206
Brunnein B, T-206
Brunnein C, T-224
Brunonine, B-371
Brunsbelline, A-683
Brunsdonnine, B-372
Brunsvigine, P-57
Brunsvinine, B-373
Brussalexin A, B-374

Bryamycin, T-392
Bryokinin, Z-11
BS 75A, C-574
BS Factor, T-284
BT 38, A-801
BU 3557A_3, A-1315
BU 4601A, A-789
BU 2349A, G-131
BU 3557A_1, K-17
BU 3557A_2, K-18
BU 2313A, N-264
BU 4601B, A-789
BU 2349B, G-132
BU 3557B_1, K-17
BU 3557B_2, K-17
BU 3557B_3, K-18
BU 2313B, N-264
BU 620, C-711
BU 4601C, A-789
BU 2349C, G-133
BU 3557C_1, K-17
BU 3557C_2, K-19
BU 3557C_3, K-20
BU 3557C_4, K-20
BU 3557C_5, K-17
BU 3557D_1, A-1315
BU 3557D_2, K-21
BU 3557D_3, K-20
BU 3557D_4, K-21
BU 4664L, D-297
BU 4514N, A-1140
BU 3420T, D-959
BU 4146T, L-7
BU 2916T, P-573
BU 3845T, Q-11
BU 4704, X-7
Bubbialidine, B-375
Bubbialine, B-375
Buchananine, B-376
Buchapine, B-377
Bucharaine, B-378
Bucharamine, B-379
Bucharidine, B-380
Buchenavianine, D-662
Buchnerine, P-673
Buchtienine, B-381
Buddamine, B-382
Budelphine, H-123
Budmunchiamine A, B-383
Budmunchiamine B, B-384
Budmunchiamine C, B-387
Budmunchiamine D, B-387
Budmunchiamine E, B-387
Budmunchiamine F, B-383
Budmunchiamine G, B-387
Budmunchiamine H, B-387
Budmunchiamine I, B-387
Budmunchiamine K, B-389
Budmunchiamine L1, B-385
Budmunchiamine L2, B-386
Budmunchiamine L3, B-383
Budmunchiamine L4, B-385
Budmunchiamine L4, B-387
Budmunchiamine L5, B-388
Budmunchiamine L5, B-389
Budmunchiamine L6, B-389
Buesgeniine, B-390
Bufagin, E-132
Buflavine, A-1361
Bufobutanoic acid, H-755
Bufochrome, A-923
Bufopyramide, B-391
Bufoserotonin A, H-755
Bufoserotonin B, H-755
Bufoserotonin C, B-392
Bufotenidine *O*-sulfate, B-393
Bufotenidine, B-393
Bufotenine *O*-glucoside *N*-oxide, B-393
Bufotenine *O*-glucoside, B-393
Bufotenine *N*-oxide, B-393
Bufotenine, B-393
Bufothionine, D-153
Bufotoxin, B-394
Bufoviridine, B-393
Bujeine, B-395
Bukittinggine, B-396
Bulbisine, B-261
Bulbispermine, H-5
Bulbocapnine β-*N*-oxide, B-397
Bulbocapnine, B-397
Bulbocodine, B-398
Bulbodione, B-399
Bulgaramine, B-400
Bulgarsenine, B-401
Bulgecin A, B-402
Bulgecin B, B-403
Bulgecin C, B-404
Bulgecinine, H-516
Bullatine A, B-405
Bullatine B, M-323
Bullatine C, M-323
Bullatine D, B-406
Bullatine E, M-313
Bullatine F, M-313
Bullatine G, N-30
Bulleyanaline, B-407
Bulleyanine, B-407
Bulleyanitine A, M-359
Bulleyanitine B, B-408
Bulleyanitine C, B-409
Bungeanine, B-410
Bungeanool, T-129
Buntanbismine, B-411
Buntanine, T-271
Buntanmine A, P-616
Buphacetine, B-412
Buphanamine, B-413
Buphanidrine, P-581
Buphanine, B-414
(+)-Buphanisine, C-748
(-)-Buphanisine, C-748
Buphanitine, N-169
Bupicomide, B-445
Buprestin A, B-415
Buprestin B, B-416
Burmannaline, B-417
Burmannine, B-418
Burnamicine, B-419
Burnamine, B-420
Bursanine, A-139
Buscopan, S-159
N,*N*′-(1,3-Butadiene-1,4-diyl)bis[2-hydroxy-3-methylbutanamide], P-375
1,3-Butadiene-1,1,4,4-tetracarboxylic acid, B-421
1,4-Butanediamine, B-422
Butane-1,4-dicarboxylic acid, H-258
N,*N*′-1,4-Butanediylbisacetamide, B-422
N,*N*′-1,4-Butanediylbis-β-alanine, S-397
N,*N*′-1,4-Butanediylbisbenzamide, B-422
N,*N*′-1,4-Butanediylbis[benzeneacetamide], B-422
N,*N*‴-1,4-Butanediylbisguanidine, D-400
1,1′-(1,4-Butanediyl)bis[hexahydro-5-methyl-4-phenyl-1,5-diazocin-2(1*H*)-one], H-324
N,*N*′-1,4-Butanediylbis[3-(4-hydroxyphenyl)-2-propenamide], D-362
2,2′-[1,4-Butanediylbis[imino(2-oxo-2,1-ethanediyl)]]bis[2-hydroxybutanedioic acid], R-80
N,*N*′-1,4-Butanediylbis[*N*-methylbenzamide], B-422
Butanoyllupinine, O-58
N-Butanoylpyrrothine, A-759
2-Butene-1,4-diamine, B-423
(*E*)-2-Butenedioic acid, F-173
3-*O*-(2*E*-Butenoyl)-11-*O*-(3-hydroxybutanoyl) hamayne, H-5
1′-(3-Butenyl)-[2,3′-bipiperidine]-5′-carboxylic acid, V-150
3-(2-Butenyl)-4-ethoxy-8-hydroxy-1-methyl-2(1*H*)-quinolinone, G-124
5-(2-Butenylidene)-3-ethyl-1,2,3,4,5,7*a*-hexahydro-4*aH*-1-pyrindine-4,4*a*-diol, B-424
3-(3-Butenyl)-1,2,3,4,5,6,11,11*a*-octahydro-1,5-methano-10*H*-pyrido[1,2-*a*][1,5]diazocin-10-one, A-554
8-(3-Butenyl)octahydro-5-(2-penten-4-ynyl)indolizine, A-511
8-(3-Butenyl)octahydro-5-(4-pentynyl)indolizine, A-511
5-(3-Butenyl)picolinic acid, B-425
1-(3-Butenyl)-5-(2-piperidyl)-3-piperidinecarboxylic acid, V-150
5-(3-Butenyl)-2-pyridinecarboxylic acid, B-425
4-(1-Butenyl)-1,6,7,8-tetrahydro-6,8-dimethylcyclopent[*g*]indole, I-338
5-(1-Butenyl)-1,6,7,8-tetrahydro-6,8-dimethylcyclopent[*g*]indole, T-595
5-(1-Butenyl)-3,4,6,7-tetrahydro-3-methyl-2*H*-cyclopenta[*b*]pyridine, P-932
4-(1-Butenyl)-1,6,7,8-tetrahydro-5,6,8-trimethylcyclopent[*g*]indole, H-142
1-Butoxycarbonyl-β-carboline, C-132
3-(Butoxymethyl)-6,7-dihydro-8(5*H*)-indolizinone, D-447
Butropine, M-393
tert-Butyl *N*-(2-aminoethyl)carbamate, E-225
Butyl *N*-(2-phenylethyl)carbamate, P-343
2-Butyl-1-azacyclohexene, B-446
7-Butyl-2-chloro-6,8-dihydroxy-9*H*-pyrrolo[2,1-*b*][1,3]benzoxazin-9-one, B-429
4(5)-Butyl-2-chloro-5(4)-formyl-1*H*-imidazole, B-426
5(4)-Butyl-2-chloro-1*H*-imidazole-4(5)-carboxaldehyde, B-426
Butylcycloheptylprodigiosine, B-427
2-Butyldecahydroquinoline, B-428
1β-*C*-Butyl-1-deoxygalactonojirimycin, B-432
N-Butyldeoxynojirimycin, H-616
7-Butyl-1,2-dichloro-6,8-dihydroxy-9*H*-pyrrolo[2,1-*b*][1,3]benzoxazin-9-one, B-429
5-Butyl-6,8-diethylindolizidine, B-430
5-Butyl-6,8-diethyloctahydroindolizine, B-430
7-Butyl-5,10-dihydro-4,6,9-trihydroxy-8-methoxy-5,10-dioxobenzo[*g*]quinoline-2-carboxylic acid, I-264
2-*sec*-Butyl-3,4-dihydroxy-5-hydroxymethylpyridine, A-620
3-Butyl-2,5-dimethylpyrazine, B-431
Butyl-DNJ, H-616
N,*N*′-Butylenebis(cantharimide), P-650
4-Butyl-*N*-feruloylphenethylamine, B-441
2-Butyl-5-heptyl-3,4-dihydro-2*H*-pyrrole, D-246
2-Butyl-5-heptyl-1-methylpyrrolidine, D-246
5-Butyl-2-heptyl-Δ^1-pyrroline, D-246
2-Butyl-6-hydroxymethyl-3,4,5-piperidinetriol, B-432
6-*tert*-Butyl-1-hydroxy-3-[2-(methylthio)ethyl]-2(1*H*)-pyrazinone, B-433
3-Butyl-8-hydroxy-5-propylindolizidine, B-438
2-Butyl-5-(3-indolyl)oxazole, A-622
3-Butyllehmizidine, B-439
2-*sec*-Butyl-3-methoxypyrazine, M-272
3-Butyl-5-methylindolizidine, B-434
N-Butyl-*O*-methyllachnanthopyridone, L-5
4-(4-Butyl-3-methyl-5-oxo-1-imidazolidinyl)-7-(1-methylethyl)-3-phenyl-2-oxa-6,9-diazabicyclo[10.2.2]hexadeca-10,12,14,15-tetraene-5,8-dione, S-93
2-Butyl-1-methylpiperidine, B-442
3-Butyl-2-methylprodiginine, P-636
2-Butyl-5-(8-nonenyl)pyrrolidine, D-246
3-Butyloctahydro-8-hydroxy-5-propylindolizine, B-438
1-(3-Butyloctahydro-5-indolizinyl)-1-propanone, B-436
3-Butyloctahydro-5-methylindolizine, B-434
3-Butyloctahydro-5-(4-pentenyl)indolizine, B-435
3-Butyloctahydro-5-propanoylindolizine, B-436
8-Butyloctahydro-5-propyl-1*H*-indolizine, B-437
3-Butyloctahydro-5-propyl-8-indolizinol, B-438
3-Butyloctahydro-1*H*-pyrrolo[1,2-*a*]azepine, B-439
4-*tert*-Butyl-2-oxazolidinone, B-440
3-Butyl-5-(4-pentenyl)indolizidine, B-435
N-[2-(4-Butylphenyl)ethyl]-3-(4-hydroxy-3-methoxyphenyl)-2-propenamide, B-441
5-Butylpicolinic acid, B-445
2-Butylpiperidine, B-442
3-Butyl-5-propanoylindolizidine, B-436
5-Butyl-8-propylindolizidine, B-443
8-Butyl-5-propylindolizidine, B-437

3-Butyl-5-propylindolizidine, O-41
3-Butylpyridine, B-444
5-Butyl-2-pyridinecarboxylic acid, B-445
Butylscopolammonium bromide, S-159
2-Butyl-3,4,5,6-tetrahydropyridine, B-446
2-*sec*-Butyl-2-thiazoline, D-475
2-Butyl-3,4,5-trihydroxy-6-hydroxymethylpiperidine, B-432
Butynediamide, B-447
2-Butynedioic acid, B-447
8-(3-Butynyl)octahydro-5-(2-penten-4-ynyl)indolizine, A-511
8-(3-Butynyl)octahydro-5-(4-pentynyl)indolizine, A-511
Butyrobetaine, A-126
γ-Butyrobetaine, A-126
Butyrolactam, P-956
6-*O*-Butyrylcastanospermine, C-188
Butyrylcholine, C-419
N-Butyryl-*N*-depropionyldecorticasine, L-234
8-Butyryl-1,2,3,5,6,8*a*-hexahydroindolizine, E-58
8-Butyryl-7-hydroxyindolizidine, E-59
13-Butyryloxylupanine, H-554
3-Butyryloxytropane, M-393
Buxabenzacine, B-460
Buxabenzacinine, B-460
Buxabenzamidienine, B-455
Buxabenzamidine, B-455
Buxadienine, B-460
Buxafuranamide, B-448
O^{10}-Buxafuranamine, B-449
O^{6}-Buxafuranamine, B-450
Buxahejramine, B-466
Buxahyrcanine, B-451
Buxakarachiamine, B-466
Buxakashmiramine, C-888
Buxalfine, B-452
Buxalfol, B-452
Buxaline C, C-902
Buxalongifolamidine, B-453
Buxalongifoline, B-466
Buxalphine, B-452
Buxaltine H, B-454
Buxaltine, B-454
Buxamideine K, B-457
Buxamine A, B-455
Buxamine B, B-455
Buxamine C, B-455
Buxamine E, B-455
Buxamine F, B-455
Buxamine G, B-455
Buxamine I, B-455
Buxamine, B-455
Buxaminol A, B-456
Buxaminol B, B-456
Buxaminol C, B-456
Buxaminol E, B-456
Buxaminol G, B-466
Buxaminol I, B-456
Buxaminol, B-456
Buxaminone, B-457
Buxanaldinine, B-458
Buxandonine L, B-459
Buxandonine, B-459
Buxandrine F, C-883
Buxandrine, C-883
Buxanine M, C-848
Buxanine, C-848
Buxanoldine, B-460
Buxapapilinine, B-477
Buxapapinolamine, B-461
Buxaprogestine, A-891
Buxaquamarine, B-462
Buxarine F, C-917
Buxarine, C-917
Buxasamarine, C-917
Buxatine, C-920
Buxazidine B, C-883
Buxazidine I, C-883
Buxazine, B-463
Buxbarbarine K, B-457
Buxdeltine, B-464
Buxene O, C-848
Buxene, C-848
Buxenine G, B-455
Buxenone M, C-848
Buxenone, C-848
Buxepidine, C-883
Buxeridine C, C-902
Buxeridine, C-902
Buxetine, B-465
Buxidienine F, B-466
Buxidienine I, B-466
Buxidine F, B-12
Buxidine F, C-883
Buxidine, C-883
Buxifoliadine A, T-546
Buxifoliadine B, T-546
Buxifoliadine C, T-580
Buxifoliadine D, B-467
Buxifoliadine E, B-468
Buxifoliadine F, B-469
Buxifoliadine G, B-470
Buxifoliadine H, P-207
Buxifoline, B-471
Buxippine K, B-482
Buxiramine D, B-472
Buxiramine, B-472
Buxirane, B-460
Buxisine, B-474
Buxithienine M, C-848
Buxitrienine C, B-473
Buxizine, C-883
Buxmicrophylline A, C-917
Buxmicrophylline B, C-848
Buxmicrophylline C, C-883
Buxmicrophylline D, C-881
Buxocyclamine A, B-474
Buxocyclamine I, B-474
Buxodienine E, B-456
Buxodienine I, B-456
Buxomegine, A-886
Buxomeline, B-475
Buxotrienine, B-476
Buxoxybenzamine, B-477
Buxozine C, B-478
Buxpapamine, B-479
Buxpapine, B-480
Buxpapinine, B-481
Buxpiine K, B-482
Buxpiine, B-482
Buxpsiine K, B-457
Buxpsiine, B-457
Buxtauine M, B-482
Buxtauine, B-482
Buxupapine, B-483
Buzonamine, B-484
C 73, A-129
C 14482A_1, D-876
C 304A, H-408
C 14482B_1, D-877
C 5507, C-954
C 15003 deClQNDO, M-136
C 15003 deClQO, M-136
C 15003 P 4 βHY, M-136
C 15003 P 4 γHY, M-136
C 9154, P-337
C 15003 PHM1, M-136
C 15003 PHM2, M-136
C 15003 PHM3, M-136
C 15003 PHM4, M-136
C 15003 PHO 0, M-136
C 15003 PHO 1, M-136
C 15003 PHO 2, M-136
C 15003 PHO 3, M-136
C 15003 PHO 4, M-136
C 15003P0, M-136
C 15003P1, M-136
C 15003P2, M-136
C 15003P3′, M-136
C 15003P3, M-136
C 15003P4, M-136
C 15003 PND 4 βHY, M-136
C 15003 PND 1, M-136
C 15003 PND 2, M-136
C 15003 PND 3, M-136
C 15003 PND 4, M-136
C 15003 QNDO, M-136
C 73X, A-129
CA 39A, S-500
CA 39B, S-500
(+)-Caaverine, D-531
(-)-Caaverine, D-531
Cabbage identification factor 1, D-517
Caberine, C-191
Caberoline, R-21
Caboxine A, C-1
Cabuamine, D-410
Cabucine, A-1423
Cabucinine, R-28
Cabucraline 10-carboxaldehyde, C-191
Cabucraline N^4-oxide, C-191
Cabucraline, C-191
Cabudine, C-2
Cabufiline, C-3
Cactine, H-357
Cadabicine diacetate, C-4
Cadabicine methyl ether, C-4
Cadabicine, C-4
Cadabine, S-491
Cadambine acid, C-5
Cadambine, C-5
Cadamine, C-6
Cadaverine, P-229
Cadeguomycin, C-7
Cadiaine, H-554
Cadiamine hydroxyphenylacetate, C-8
Cadiamine 2-pyrrolecarboxylate, C-8
Cadiamine, C-8
Caeruline, M-379
Caerulomycin A, C-9
Caerulomycin B, C-9
Caerulomycin C, C-9
Caerulomycin D, C-10
Caerulomycin E, C-11
Caerulomycin, C-9
Caerunine, M-361
Caesalpinine A, C-12
Cafamycin, C-13
Cafcit, C-15
Caffaeoschizine, C-14
Caffedymine, D-920
Caffeic acid, D-653
Caffeine citrate, C-15
Caffeine, C-15
N-Caffeoyl DOPA, C-534
N^5-Caffeoyl-N^1-*p*-coumaroyl-N^{10}-feruloylspermidine, S-398
N^{10}-Caffeoyl-N^1,N^5-di-*p*-coumaroylspermidine, S-398
N^5-Caffeoyl-N^1,N^{10}-di-*p*-coumaroylspermidine, S-398
N^1-Caffeoyl-N^{10}-feruloylspermidine, S-398
Caffeoylferuloylspermidine, S-398
N-trans-Caffeoyl-*O*-methyltyramine, M-280
1-[Caffeoyloxy(carboxy)methoxy]-1*H*-pyrrole-2,3,5-tricarboxylic acid, C-16
4′-*O*-Caffeoylprunasin, H-673
Caffeoylputrescine, C-456
Caffeoylspermidine, S-398
N-Caffeoyltryptophan, T-640
N-cis-Caffeoyltyramine, H-667
N-trans-Caffeoyltyramine, H-667
3′-Caffeoylvincoside lactam, V-126
Cafipel, C-15
Cairomycin C, C-17
Caissarine A, P-813
Caissarine B, C-18
Caissarine C, A-158
Caissarone, C-19
Cajanifoline, D-605
Calabacine, C-20
Calabatine, C-21
Calafatimine, C-22
Calafatine 2′α-*N*-oxide, C-23
Calafatine 2′β-*N*-oxide, C-23
Calafatine, C-23
Calafianine, C-24

Calanthoside, H-534
Calcaridine A, C-25
Calcimycin, C-26
Calcium folinate, F-121
Calcium levofolinate, F-121
Caldaphnidine A, C-27
Caldaphnidine B, P-137
Caldaphnidine C, C-28
Caldaphnidine D, C-29
Caldaphnidine E, C-30
Caldaphnidine F, D-37
Caldensine, D-567
Caldine, D-255
Caldoheptamine, P-199
Caldohexamine, T-107
Caldopentamine, T-456
C-Calebassine A, C-31
C-Calebassine, C-31
Calebassine, C-31
Calebassinine 1, C-32
Caledonin, C-33
Caledonine, Q-1
Californidine, E-221
Californine, E-221
Calimycin, C-26
Calipamine, M-18
Calliactine, C-34
Callichiline, C-35
Calligonidine, T-202
Calligonine, T-202
Callimorphine, C-36
Callipeltoside A, C-37
Callophylline A, U-22
Callophylline B, C-38
Callosine, C-39
Callyspongamide A, H-117
Calophylline, U-22
Calothrixin A, I-107
Calothrixin B, I-107
Calpaurine, T-557
Calpurmenine, C-40
Calpurnine, H-554
Calvine, C-41
Calycanthidine, C-382
Calycanthine, C-42
Calycilactone A, C-43
Calycine, C-44
Calycinine A, D-33
Calycinine, D-846
Calyciphylline A, D-55
Calyciphylline B, C-45
Calyciphylline C, C-46
Calyciphylline D, C-47
Calyciphylline E, C-48
Calyciphylline F, C-49
Calyciphylline G, C-50
Calyciphylline H, C-51
Calyciphylline I, C-51
Calyciphylline J, C-52
Calyciphylline K, D-34
Calyciphylline L, H-330
Calyciphylline M, D-24
Calycosidine, C-53
Calycotomine, C-54
Calyculin A, C-55
Calyculin B, C-55
Calyculin C, C-56
Calyculin D, C-56
Calyculin E, C-55
Calyculin F, C-55
Calyculin G, C-56
Calyculin H, C-56
Calyculin J, C-57
Calyculinamide A, C-55
Calyculinamide B, C-55
Calyculinamide F, C-55
Calydaphninone, C-58
Calystegine A_3, A-1590
Calystegine A_5, A-1593
Calystegine A_6, A-1592
Calystegine A_7, A-1591
Calystegine B_1, A-1588
Calystegine B_2, A-1587
Calystegine B_3, A-1587
Calystegine B_4, A-1587
Calystegine B_5, A-1589
Calystegine C_1, A-1586
Calystegine C_2, A-1586
Calystegine N_1, A-704
Calystegine, C-59
Calyxamine A, C-60
Calyxamine B, C-60
Calyxinin, D-292
Calyxoside, D-292
Camalexin, T-372
Cammaconine, M-352
Camoensidine *N*-oxide, C-61
Camoensidine, C-61
Camoensine, C-62
Campedine, C-63
Campestrine, C-64
Camphorataimide B, H-684
Camphorataimide C, H-684
Camphorataimide D, H-684
Camphorataimide E, H-684
Camptacumanine, C-65
Camptacumotine, C-66
Camptine, C-67
Camptinine, C-68
Camptoneurine, C-69
Camptothecin, C-70
Camptothecinic acid, C-71
Campylocine, G-152
Campylotine, M-309
Camtschatcanidine, S-345
Canadaline, C-72
α-Canadine, C-73
Canadine, C-73
β-Canadine, C-73
Canadinic acid, C-72
Canangine, I-65
Cananodine, G-190
Canavalmine, D-251
Canavanine, C-74
Canavaninosuccinic acid, C-75
Canavanosuccinic acid, C-75
Cancentrine, C-76
Candicine, H-357
Candicusine, L-175
Candidine, C-77
Candimine, C-78
Caneine, C-79
Canelilline, A-1038
Canelillinoxine, C-80
Canembine, C-81
Canescenine, E-12
Canescensterone, H-244
Canescic acid, D-687
Canescine, D-234
Canescine, E-12
Canforemetina, E-72
Cangorin A, H-119
Cangorin B, H-119
Cangorin C, H-119
Cangorin D, H-119
Cangorin E, H-119
Cangorin F, H-119
Cangorin G, H-119
Cangorin H, H-119
Cangorin I, H-119
Cangorin J, H-248
Cangorinine EI, P-247
Cangorinine WII, P-252
Cangorinine WI, P-252
Cannabiloid B, C-82
Cannabisativine, C-83
Cannabisin A, C-84
Cannabisin B, C-85
Cannabisin C, C-85
Cannabisin D, C-85
Cannabisin E, C-86
Cannabisin F, C-86
Cannabisin G, C-87
Cannabisin H, C-88
Cantabricine, M-108
Cantharimide, C-89
Canthin-2,6-dione, I-105
Canthin-6-one *N*-oxide, C-90
Canthin-6-one, C-90
Canthiumine, C-91
Cantleyine, C-92
Cantuzumab mertansine, M-135
Capauridine, C-93
Capaurimine, C-93
Capaurine, C-93
Capitavine, C-94
Capitelline, C-95
Capnoidine, A-145
Capnosine, S-234
Capnosinine, S-234
Cappamensine, C-96
Capparidisine, C-97
Cappariloside A, H-524
Cappariloside B, H-524
Capparine A, S-426
Capparine B, M-201
Capparisine, C-97
Capparisinine, C-97
Caprazamycin, C-98
Capreoline, F-176
Capreomycidine, C-99
Capric acid, D-115
Caprinic acid, D-115
Caprolactin A, A-785
Caprolactin B, A-785
13-Caproyloxylupanine, H-554
Capsacutin, C-100
Capsaicin glucoside, C-100
Capsaicin, C-100
Capsaicinol, C-101
Capsaiene, C-100
Capsiamide, A-30
Capsicastrine, S-200
Capsimine 3-glucoside, S-200
Capsimine, S-200
Capsimycin, C-102
Captax, B-79
Capuramycin, C-103
Capuronidine, D-377
Capuronine, C-104
Capuvosidine, C-105
Capuvosine, C-106
Caracasanamide, C-107
Caracasandiamide, C-108
Caracurine I, C-109
Caracurine II dimethosalt, C-111
Caracurine II, C-111
Caracurine III, C-112
Caracurine IV, C-113
Caracurine IX, C-114
Caracurine V dimethosalt, C-110
Caracurine V di-*N*-oxide, C-110
Caracurine V *N*-oxide, C-110
Caracurine V, C-110
Caracurine VII, C-115
Caracurine VIII, C-116
Caracurine VI, T-436
Caranine, F-7
Carapanaubine *N*-oxide, C-117
Carapanaubine, C-117
Carategine, C-118
Carazostatin, H-132
Carbalexin A, D-616
Carbalexin B, D-618
Carbalexin C, D-617
Carbamamidine, G-199
Carbamic acid nitrile, C-823
Carbamidine, G-199
Carbamite, D-818
Carbamonitrile, C-823
N-Carbamoylanonaine, R-120
N-Carbamoylasimilobine, D-531
1-Carbamoyl-β-carboline, C-132
1-*O*-Carbamoyl-3-deoxy-3-guanidino-*scyllo*-inositol, B-237
N′-(2-Carbamoylethyl)-4-[(2-guanidinoacetimidoyl)amino]-1,1′-dimethyl-*N*,4′-bi[pyrrole-2-carboxamide], N-180
N^{α}-Carbamoylglutamine amide, G-108

2-Carbamoyl-3-methoxy-1,4-naphthoquinone, H-638
N-Carbamoyl-2-methoxypyrrolidine, P-955
4-(Carbamoylmethyl)-4-hydroxy-2,5-cyclohexadien-1-one, H-650
2-Carbamoyl-4-methylquinazoline, M-555
(Carbamoylmethyl)trimethylammonium(1+), C-119
N-Carbamoylputrescine, A-720
N-Carbamoylpyrrolidine, P-951
1-Carbamoyl-2-pyrrolidone, S-487
N-Carbamoylserotonin, H-755
N-Carbamoylstaurosporine, S-498
N-Carbamoylstepharine, P-643
6-Carbamoyluracil, D-669
Carbanilide, D-818
Carbazole, C-120
9*H*-Carbazole-3-carboxaldehyde, C-121
2-Carbazolecarboxylic acid (obsol.), C-122
9*H*-Carbazole-3-carboxylic acid, C-122
9*H*-Carbazole-2,7-diol, C-123
9*H*-Carbazole-3-methanol, C-124
Carbazoline, C-130
Carbazomadurin A, C-125
Carbazomadurin B, C-126
Carbazomarin A, C-127
Carbazomycin A, D-571
Carbazomycin B, D-571
Carbazomycin C, T-543
Carbazomycin D, T-543
Carbazomycin E, H-561
Carbazomycin F, H-561
Carbazomycin G, C-128
Carbazomycin H, C-128
Carbazomycinal, H-561
Carbazoquinocin, C-129
2-Carbethoxycarbazole, C-122
1-Carbethoxy-β-carboline, C-132
3-Carbethoxyharman, M-427
9-Carbethoxy-3-methyl-9*H*-carbazole, M-424
Carbimide, C-823
Carbinamine, M-383
1-Carbobutoxy-β-carboline, C-132
Carbodiimide, C-823
$N^{b'}$-Carboethoxy-4′,5′,6′,17-tetrahydro-17*R*-usambarensine, U-52
Carbohydroquinonic acid, D-536
β-Carboline, C-130
2-Carboline, C-130
β-Carboline-1-carboxaldehyde, C-131
β-Carboline-1-carboxamide, C-132
β-Carboline-1-carboxylic acid, C-132
β-Carboline-3-carboxylic acid, C-133
β-Carboline-1-propanoic acid, C-134
β-Carboline-1,3,4-trione, C-135
β-Carbolin-1-yl 4,8-dimethoxy-β-carbolin-1-ylethyl ketone, P-406
β-Carbolin-1-yl 3-(4,8-dimethoxy-β-carbolin-1-yl)-1-methoxypropyl ketone, P-408
2-(β-Carbolin-1-yl)-5-hydroxymethylfuran, P-270
1-(β-Carbolin-1-yl)-3-hydroxy-1-propanone, C-136
4-(β-Carbolin-1-yl)-4-oxobutanoic acid, C-137
1-(β-Carbolin-1-yl)-3,4,5-trihydroxy-1-pentanone, C-138
2-Carbomethoxycarbazole, C-122
1-Carbomethoxy-β-carboline, C-132
16-Carbomethoxy-18,19-dihydronaufoline, N-63
3-Carbomethoxy-1,7-dihydroxy-9*H*-carbazole, D-559
1-Carbomethoxy-4,8-dimethoxy-β-carboline, D-561
3-Carbomethoxyharman, M-427
16-Carbomethoxy-16-hydroxy-14,15-epoxy-3-oxo-1,2-dehydroaspidospermidine, M-297
N-Carbomethoxy-17-hydroxykopsinine, K-78
N-Carbomethoxy-17β-hydroxy-$\Delta^{14,15}$-kopsinine, V-49
3-Carbomethoxy-1-hydroxy-6-methoxycarbazole, D-558
Carbomethoxyibogamine, C-657
3-Carbomethoxy-7-methoxycarbazole, H-455
16-Carbomethoxynaufoline, N-63
16-Carbomethoxyquebrachamine, V-112
$N^{b'}$-Carbomethoxy-4′,5′,6′,17-tetrahydro-17*R*-usambarensine, U-52
Carbonarin C, C-139
Carbonarin D, C-140
Carbonarin E, C-141
Carbonarone A, B-92
Carbonarone B, C-142
Carbonic acid diureide, T-627
N,N′-Carbonimidoylbis[2-ethylhexanamide], L-174
2,2′-(Carbonimidoyldi-4,1-phenylene)bis-3-oxetanamine, B-277
3,3′-Carbonylbiscytisine, A-1412
1,1′-Carbonylbis[3-ethylpiperidine], S-581
3,3′-Carbonylbis[1,2,3,4,5,6-hexahydro-1,5-methano-2*H*-pyrido[1,2-*a*][1,5]diazocin-5-one], A-1412
6,6′-[Carbonylbis(imino-1*H*-indole-5,2-diylcarbonyl)]bis[8-(chloromethyl)-3,6,7,8-tetrahydro-1-methylbenzo[1,2-*b*:4,3-*b*′]dipyrrol-4-ol], B-229
[Carbonylbis[imino(6-methyl-3,1-phenylene)]]biscarbamic acid, B-164
N,N′-Carbonylbis-3-veratroyloxynortropane, S-622
Carbonyldiurea, T-627
Carbostyril-4-carboxylic acid, H-723
Carbostyril, Q-50
N-Carboxamidostaurosporine, S-498
N-Carboxamidostepharine, P-643
2-[(Carboxyacetyl)amino]benzoic acid, A-706
2-Carboxy-4-acetylaminopiperidine, A-871
5-Carboxyamino-2,4-imidazolidinedione, D-804
11-Carboxyanatoxin a, C-143
1-(*o*-Carboxyanilino)-1-deoxyfructose, F-161
11-(4-Carboxybutyramido)-11-deoxy-1-epilupinine methyl ester, O-59
2-Carboxy-4-(5-carboxy-1-methyl-1,3-hexadienyl)-3-pyrrolidineacetic acid, D-912
2-Carboxy-4-(5-carboxy-1-methyl-1,4-hexadienyl)-3-pyrrolidineacetic acid, I-228
2-Carboxy-4-(5-carboxy-1-methyl-2-hexenylidene)-3-pyrrolidineacetic acid, I-229
2-Carboxy-4-(5-carboxy-1-methyl-1,3-pentadienyl)pyrrolidineacetic acid, N-297
3-Carboxy-1-(carboxymethyl)pyridinium betaine, C-144
5-[5-Carboxy-4-(carboxymethyl)-3-pyrrolidinyl]-1,6-dihydro-6-oxo-2-pyridinecarboxylic acid, A-118
3-[5-Carboxy-4-(carboxymethyl)-3-pyrrolidinyl]-1,6-dihydro-6-oxo-2-pyridinecarboxylic acid, A-119
4-[[[1-Carboxy-2-(6-carboxy-2-oxo-2*H*-pyran-4-yl)ethyl]imino]ethylidene]-1,2,3,4-tetrahydro-2,6-pyridinedicarboxylic acid, M-769
5-Carboxycorynanthine, C-145
7-Carboxy-7-deazaguanosine, C-7
16-Carboxy-3,4,14,15,16,17,18,19,20,21-decadehydroyohimbanium methyl ester, O-140
2-Carboxy-1-[(2,6-dicarboxy-2,3-dihydro-4(1*H*)-pyridinylidene)ethylidene]-2,3-dihydro-5,6-dihydroxy-1*H*-indolium hydroxide inner salt, B-110
5-Carboxy-3,4-didehydrostrictosidine, C-153
2-Carboxy-3,4-dihydro-α-hydroxy-5-(2-pyridinyl)-2*H*-pyrrole-4-acetic acid, P-637
α-Carboxy-2,3-dihydro-β-hydroxy-*N,N,N*-trimethyl-2-thioxo-1*H*-imidazole-4-ethanaminium hydroxide inner salt, H-484
4-[[[Carboxy(2,3-dihydro-3-oxo-5-isoxazolyl)methyl]imino]ethylidene]-1,2,3,4-tetrahydro-2,6-pyridinedicarboxylic acid, M-768
α-Carboxy-2,3-dihydro-*N,N,N*-trimethyl-2-thioxo-1*H*-imidazole-4-ethanaminium hydroxide inner salt, E-173
4-[[[1-Carboxy-2-(3,4-dihydroxyphenyl)ethyl]imino]ethylidene]-1,2,3,4-tetrahydro-2,6-pyridinedicarboxylic acid, D-921
α-Carboxy-3,4-dihydroxy-*N,N,N*-trimethylbenzeneethanaminium(1+), A-745
4-Carboxy-1,3-dimethyl-1*H*-imidazolium hydroxide inner salt, N-318
2-Carboxy-1,1-dimethylpiperidinium hydroxide inner salt, H-348
3-Carboxy-1,1-dimethylpyrrolidinium hydroxide inner salt, P-952
2-Carboxy-1,1-dimethylpyrrolidinium hydroxide inner salt, S-491
5-(2-Carboxy-1-ethenyl)-4-methoxyfuro[2,3-*b*]pyridine-6-carboxylic acid, R-88
58-(1-Carboxyethenyl)sulfomycin I, P-640
N^2-(2-Carboxyethyl)arginine, A-1413
N^{16}-Carboxyethyldihydroroquefortine C, R-125
3-(2-Carboxyethyl)-1,4-dimethylpyridinium, C-146
1-(1-Carboxyethyl)-3,4-dimethyl-1*H*-pyrrole, D-780
N-(Carboxyethyl)glycine, C-147
2-Carboxy-3-ethyl-12*H*-indolo[2,3-*a*]quinolizin-5-ium inner salt, F-82
2-(2-Carboxyethyl)-3-isoxazolin-5-one, O-185
N-(1-Carboxyethyl)mescaline, M-219
1-(1-Carboxyethyl)-2-methylpropyl 3-[[5-[(aminoiminomethyl)amino]-1-oxopentyl]oxy]-2,4-dimethylpentanoate, A-1279
7-Carboxyevodiamine, E-310
16-Carboxyherbavine, M-50
1-Carboxyhexahydro-4-(3-methyl-2-butenyl)-1*H*-pyrrolizinium, A-1065
1-Carboxy-3-[(4-hydroxybenzoyl)oxy]-*N,N,N*-trimethyl-2-propanaminium inner salt, A-792
2-Carboxy-3-hydroxy-1,1-dimethylpyrrolidinium hydroxide inner salt, H-740
2-Carboxy-4-hydroxy-1,1-dimethylpyrrolidinium hydroxide inner salt, H-476
3-Carboxy-1-(2-hydroxyethyl)pyridinium betaine, P-897
4-[(2-Carboxy-2-hydroxyethyl)thio]-2-piperidinecarboxylic acid, P-787
2-Carboxy-4-(1-hydroxy-1-methylethyl)-3-pyrrolidineacetic acid, K-4
2-Carboxy-5-hydroxy-6-methylpiperidine, H-613
N^2-(3-Carboxy-2-hydroxy-1-oxopropyl)arginine, A-1413
4-[[[Carboxy-(4-hydroxyphenyl)ethyl]imino]ethylidene]-1,2,3,4-tetrahydro-2,6-pyridinedicarboxylic acid, P-576
2-Carboxy-3-hydroxypiperidine, H-696
α-Carboxy-4-hydroxy-*N,N,N*-trimethylbenzeneethanaminium(1+), T-700
3-Carboxyhyrtiomanzamine, D-933
16-Carboxyisoherbavine, M-50
4-(Carboxymethoxymethyl)-1,3-dimethyl-1*H*-imidazolium hydroxide inner salt, E-15
17-Carboxy-12-methoxy-N^b-methylechitamidine, E-30
Carboxymethyl 5,10-dihydro-1-phenazinecarboxylate, P-319
N-(Carboxymethyl)-β-alanine, C-147
3-(Carboxymethylamino)propanoic acid, C-147
3-(Carboxymethylamino)propionitrile, C-147
N^2-(Carboxymethyl)arginine, A-38
3-Carboxy-2-methyl-β-carbolinium, C-133
8-Carboxymethyldihydrochelerythrine, D-408
4-(Carboxymethyl)-1,3-dimethyl-1*H*-imidazolium hydroxide inner salt, Z-32
17-Carboxy-N^b-methylechitamidine, E-30
2-Carboxy-4-(1-methylethenyl)-3-pyrrolidineacetic acid, K-4
(Carboxymethyl)guanidine, G-200
N^2-(2-Carboxymethyl-2-hydroxysuccinoyl)arginine, A-1413
4-[[(Carboxymethyl)imino]ethylidene]-1,2,3,4-tetrahydro-2,6-pyridinedicarboxylic acid, P-577
1-(Carboxymethyl)-2-iminoimidazolidine, A-731
1-(Carboxymethyl)-2-imino-3-phosphonoimidazolidine, A-731
3-Carboxymethyl-4-isopropenylproline, K-4
2-Carboxy-1-methylisoquinolinium hydroxide inner salt, Q-31
2-Carboxymethyl-3-isoxazolin-5-one, O-184
N-(Carboxymethyl)mescaline, M-219
1-Carboxymethyl-4-methoxy-2-(8-nonenyl)pyridinium (1+), M-699
1-Carboxymethylnicotinic acid, C-144
1-(1-Carboxy-2-methylpropyl)-3,4-dimethyl-1*H*-pyrrole, D-779
2-Carboxy-1-methylpyridinium betaine, C-148
3-Carboxy-1-methylpyridinium betaine, C-149

3-Carboxy-1-methylpyridinium hydroxide inner salt, C-149
2-Carboxy-1-methylpyridinium hydroxide inner salt, C-148
3-Carboxy-2-methyl-9*H*-pyrido[3,4-*b*]indolinium inner salt, C-133
2-Carboxy-1-methylquinolinium betaine, Q-31
4-[[*N*-[1-Carboxy-3-(methylsulfinyl)propyl]formimido]methylene]-1,2,3,4-tetrahydro-2,6-pyridinedicarboxylic acid, M-645
4-[[[1-Carboxy-3-(methylsulfinyl)propyl]imino]ethylidene]-1,2,3,4-tetrahydro-2,6-pyridinedicarboxylic acid, M-645
N-(Carboxymethyl)tryptophan, K-62
12-Carboxymonascorubramine, C-150
Carboxymycobactins, C-151
3-(2-Carboxy-5-oxo-1-piperidinyl)thioalanylglycine, C-831
3-(6-Carboxy-2-oxo-4-pyridinyl)alanine, A-722
2-(5-Carboxypentyl)-4-thiazolidone, A-78
3-(2-Carboxyphenyl)-4(3*H*)-quinazolinone, Q-14
4-Carboxyproline, P-953
5-[(3-Carboxypropyl)amino]-2-hydroxy-3-tridecyl-1,4-benzoquinone, C-152
N-(3-Carboxypropyl)-*N*-(3-methyl-2-butenyl)guanidine, C-592
5-Carboxy-2-(2-pyridyl)-1-pyrroline-3-glycolic acid, P-637
4-[2-(2-Carboxy-1-pyrrolidinyl)ethenyl]-2,3-dihydro-2,6-pyridinedicarboxylic acid, I-67
3-(2-Carboxy-4-pyrrolyl)alanine, A-721
5α-Carboxystrictosamide, T-150
5-Carboxystrictosidine, C-153
5-Carboxytetrahydroalstonine, C-154
3-Carboxy-1,2,3,4-tetrahydro-β-carboline-1-propanoic acid, C-155
3-Carboxy-1,2,3,5-tetrahydro-8-hydroxy-5-oxo-6-indolizinepropanoic acid, A-1101
4-Carboxy-1,3,4,6-tetrahydro-9-hydroxy-6-oxo-2*H*-quinolizine-7-propanoic acid, A-1104
6-Carboxy-1,2,3,4-tetrahydro-7-phenylquinolizinium inner salt, C-496
1-*C*-(3-Carboxy-2,3,4,9-tetrahydro-1*H*-pyrido[3,4-*b*]indol-1-yl)pentitol, T-215
4-Carboxy-2-thiazolidinethione, T-394
α-Carboxy-*N,N,N*-trimethyl-1*H*-indole-3-ethanaminium hydroxide inner salt, H-764
3-Carboxy-*N,N,N*-trimethyl-1-propanaminium hydroxide inner salt, A-126
1-Carboxytrypargine, C-156
5α-Carboxyvincosamide, T-150
3-Carboxy-1-vinyl-β-carboline, V-140
3-(1-Carboxyvinyloxy)benzoic acid, D-224
Carcinine, C-157
Carcrisine A, C-756
Carcrisine B, C-757
Cardinalic acid, D-677
Cardiochrysine, C-158
Cardiodine, H-169
Cardionidine, C-159
Cardionine, H-192
Cardiopetalidine, M-353
Cardiopetaline, M-356
Cardiopetamine, H-190
Cardiopidine, H-174
Cardiopimine, H-174
Cardiopine, H-174
Cardiopinine, H-174
Cardiospermin 5-*p*-coumarate, D-622
Cardiospermin 5-(4-hydroxybenzoate), D-622
Cardiospermin 5-sulfate, D-622
Cardiospermin, D-622
Cardiosteril, D-920
Carduchorone, T-317
Caribaeolin, C-161
Caribaeorane, C-160
Caribaeoside, C-161
Caribine, C-162
Carinatine, P-716
Carinatumine A, H-375
Carinatumine B, H-376
Carinatumine C, H-380
Carmichaeline, M-355
Carnavaline, C-183
Carnegine, T-167
Carnine, I-148
Carnosadine, C-163
Carococculine, C-164
Carolinianine, L-321
Carolisterol A, C-165
Carolisterol B, C-165
Carolisterol C, C-165
Carosidine, C-166
Carosine, C-167
Carpacil, R-52
ψ-Carpaine, C-168
Carpaine, C-168
Carpidine, P-428
Carpiline, P-428
Carpoxidine, O-94
Carquinostatin A, C-169
Carquinostatin B, C-169
Carteramine A, S-611
Cartormin, C-170
Caryachine *N*-methosalt, E-220
Caryachine *N*-oxide, E-220
Caryachine, E-220
(±)-Caryachine, E-220
Caryolivine, C-171
cis-Caseadine *N*-oxide, C-172
Caseadine, C-172
Caseadinium(1+), C-173
Casealutine, I-210
cis-Caseamine *N*-oxide, C-172
Caseamine, C-172
Caseanadine, C-174
Caseanine, T-212
Cashmiradelphine, P-776
Casimidine, H-307
Casimirine, C-175
Casimiroedine, C-176
Casimiroin, C-177
Cassaide, N-289
Cassaidine, C-178
Cassaine, C-178
Cassamedine, C-179
Cassameridine, C-179
Cassamide (obsol.), N-299
Cassamidine, N-300
Cassamine, N-300
Cassiadinine, C-180
Cassiarine A, C-181
Cassiarine B, C-182
Cassine, C-183
Cassinicine, S-388
Cassinine, P-251
Cassipoureamide A, C-184
Cassipoureamide B, C-185
Cassipourine, C-186
Cassipurine, C-186
Cassyfiline, O-27
Cassyformine, P-209
Cassythic acid, C-187
Cassythicine, D-346
(-)-Cassythicine, D-346
Cassythidine, N-125
Cassythine, O-27
Castanospermine, C-188
Castoramine, D-227
Casuarine 6-α-D-glucoside, T-262
Casuarine, T-262
Catacandin, C-189
Catalaudesmine, D-606
Catalauverine, D-606
Cataline, C-190
Catalpifoline, T-248
Catechol-4-carboxylic acid, D-536
Catechol-4,5-dicarboxylic acid, D-533
Cathafiline, D-346
Cathafoline N^4-oxide, C-191
Cathafoline, C-191
Cathaformine, O-27
Cathalanceine, C-192
Cathanneine, C-213
Cathaphylline, C-193
Catharanthamine, C-194
Catharanthine, C-195
ψ-Catharanthine, P-733
Catharicine, C-196
Catharine, C-197
Catharinensine, R-90
Catharinine, V-107
Catharosine, V-130
Catharsitoxin A, C-198
Catharsitoxin B, C-199
Catharsitoxin C, C-200
Catharsitoxin D, M-528
Catharsitoxin E, M-527
Catharsitoxin F, I-280
Cathedulin E3, C-201
Cathedulin E4, C-201
Cathedulin E2, P-218
Cathedulin E5, P-247
Cathedulin E6, P-247
Cathedulin E8, P-218
Cathedulin K11, C-201
Cathedulin K17, C-202
Cathedulin K19, C-203
Cathedulin K20, C-201
Cathedulin K12, P-247
Cathedulin K15, P-247
Cathedulin K1, P-247
Cathedulin K2, P-247
Cathedulin K6, P-247
Cathedulin 2, P-218
Cathedulin Y10, C-206
Cathedulin Y7, C-204
Cathedulin Y9, C-205
Cathedulin Y1, P-247
Cathedulin Y8, P-218
Cathenamine, C-207
Cathestatin A, C-208
Cathestatin B, C-208
Cathestatin C, C-209
Cathidine A, C-210
Cathidine B, C-211
Cathindine, C-212
Cathine, A-869
Cathinone, A-870
Cathovaline, C-213
Cathovalinine, H-743
Catuabine A, M-391
Catuabine B, M-391
Catuabine C, M-391
Catuabine D, M-391
Catuabine E *N*-oxide, M-391
Catuabine E, M-391
Catuabine F, M-391
Catuabine G, M-392
Catuabine H, M-391
3α*H*-Catuabine H, M-391
Catuabine I, M-391
Caulerpicin, C-214
Caulerpin diacid, D-415
Caulerpin, D-415
Caulerpinic acid, D-415
Caulersin, C-215
Caulibugulone A, A-831
Caulibugulone B, A-831
Caulibugulone C, A-831
Caulibugulone D, A-831
Caulibugulone E, A-831
Caulibugulone F, A-831
Caulidine A, C-216
Caulidine B, C-217
Caulilexin A, M-434
Caulilexin B, I-97
Caulilexin C, I-81
Caulindole A, C-218
Caulindole B, C-218
Caulindole C, C-219
Caulindole D, C-219
Caulitenin, A-716
Caulophylline, C-938
Caulophyllumine A, P-522
Caulophyllumine B, C-220
Cavanine, S-149
Cavernicolin 1, C-221

Cavernicolin 2, C-221
Cavidine, C-222
Cavincidine, C-223
Cavincine, C-224
Cavinine, A-683
Caymandimerine, C-225
CB 154, E-157
CC 3, D-229
CC 1065, R-4
β-CCA methylamide, C-133
CCU 18, D-229
2096C, D-498
Ceanothamine A, F-151
Ceanothamine B, A-149
Ceanothine A, C-226
Ceanothine B, S-165
Ceanothine C, C-227
Ceanothine D, C-228
Ceanothine E, C-229
Cebin V, O-131
Ceciline, C-230
Ceflatonin®, H-66
Celabenzine, P-356
Celacinnine, P-356
Celafurine, P-356
Celahinine A, P-247
Celallocinnine, P-356
Celapagine, T-258
Celapanigine, T-258
Celapanine, T-258
Celastramycin A, C-231
Celastromelidine, C-232
Celastromeline, C-233
Celenamide A, C-234
Celenamide B, C-235
Celenamide C, C-236
Celenamide D, C-237
Celenamide E, C-238
Celeromycalin, P-774
Celesticetin C, C-239
Celesticetin, C-239
Celgosivir hydrochloride, C-188
Celgosivir, C-188
Celliamine, C-240
Cellocidin, B-447
Celogentin A, C-241
Celogentin B, C-241
Celogentin C, C-242
Celogentin D, C-241
Celogentin E, M-702
Celogentin F, M-702
Celogentin G, C-243
Celogentin H, C-243
Celogentin J, C-243
Celogentin K, C-244
Celorbicol, T-542
Celosianin I, B-110
Celosianin II, B-110
Celtine, C-805
Celtisine, C-805
Cenocladamide, C-245
cis-Centcyamine, M-288
Centcyamine, M-288
Centralite I, D-818
Centralite II, D-818
Centralite III, D-818
Cepabactin, H-563
Cepaciachelin, C-246
Cepaciamide A, C-247
Cepaciamide B, C-248
Cepafungin I, G-96
Cepafungin II, G-96
Cepafungin III, G-96
Cephaeline, E-72
cis-Cephaeloside, I-167
trans-Cephaeloside, I-167
Cephakicine, S-311
Cephalandole A, C-249
Cephalandole B, C-250
Cephalandole C, C-251
Cephalezomine A, C-252
Cephalezomine B, C-252
Cephalezomine C, I-238
Cephalezomine D, I-238
Cephalezomine E, H-66
Cephalezomine F, H-66
Cephalezomine G, C-253
Cephalezomine H, C-253
Cephalezomine J, C-271
Cephalezomine K, H-66
Cephalezomine L, H-66
Cephalezomine M, T-51
Cephalimysin A, C-254
Cephalinone A, C-255
Cephalinone B, C-256
Cephalinone C, C-257
Cephalinone D, C-258
Cephalocyclidine A, C-259
Cephalofortuneine, C-260
Cephalomannine, T-52
Cephalostatin 10, C-261
Cephalostatin 11, C-261
Cephalostatin 12, C-268
Cephalostatin 13, C-268
Cephalostatin 14, C-261
Cephalostatin 15, C-262
Cephalostatin 16, C-269
Cephalostatin 17, C-261
Cephalostatin 18, C-261
Cephalostatin 19, C-261
Cephalostatin 1, C-261
Cephalostatin 2, C-261
Cephalostatin 3, C-262
Cephalostatin 4, C-261
Cephalostatin 5, C-263
Cephalostatin 6, C-264
Cephalostatin 7, C-265
Cephalostatin 8, C-266
Cephalostatin 9, C-267
Cephalotaxidine, C-270
Cephalotaxinamide, C-271
Cephalotaxine 4-methyl 2-hydroxy-2-(3-hydroxy-3-methylbutyl)butanedioate (ester), H-66
Cephalotaxine α-*N*-oxide, C-271
Cephalotaxine β-*N*-oxide, C-271
Cephalotaxine, C-271
Cephalotaxinone, C-271
Cephamonine, S-313
Cephamorphinanine, S-311
Cephamuline, S-313
Cepharadione A, C-272
Cepharadione B, C-273
Cepharamine, C-274
Cepharanoline, C-275
Cepharanone A *N*-β-D-glucoside, D-567
Cepharanone A, D-567
Cepharanone B, D-567
Cepharanone C, T-252
Cepharanthine 2′-β-*N*-oxide, C-275
Cepharanthine, C-275
Cephasamine, C-276
Cephasugine, S-311
Cephatonine, R-161
Cerasodine, O-202
Cerasonine, O-202
Ceratamine A, C-277
Ceratamine B, C-277
Ceratinamide A, P-695
Ceratinamide B, P-695
Ceratinamine, M-679
Ceratinic acid, H-214
Ceratocapnidine, C-278
Ceratocapnine, C-278
Ceratonicine, C-279
Ceratospongamide, C-280
Cerespan, P-79
Ceric acid, H-214
Ceridimine, C-281
Cerinic acid, H-214
Cermizine A, C-282
Cermizine B, C-283
Cermizine C, D-783
Cermizine D, C-284
Cernuine *N*-oxide, L-321
Cernuine, L-321
Cerotic acid, H-214
N^b-Cerotoyltryptamine, T-639
Cerpegin, C-285
Cerulenin, C-286
Cerulomycin, C-9
Cervinomycin A_1, C-287
Cervinomycin A_2, C-287
Cervoxan, E-6
Cespitulactam A, C-288
Cespitulactam B, C-288
Cespitulactam C, C-288
Cespitulactam D, C-288
Cespitulactam E, C-288
Cespitulactam F, C-288
Cespitulactam G, C-288
Cespitulactam H, C-288
Cespitulactam I, C-288
Cespitulactam J, C-288
Cespitulactam K, C-288
Cetoniacytone A, C-289
Cetoniacytone B, C-289
Cevacine, V-56
Cevadine, V-56
3,6-Cevanediol, C-290
3,4,12,14,16,17,20-Cevaneheptol, C-291
3,6,12,14,16,20-Cevanehexol, C-292
3,6,14,16,20-Cevanepentol, C-293
3,6,14-Cevanetriol, C-295
3,6,15-Cevanetriol, C-296
3,6,16-Cevanetriol, C-297
3,6,20-Cevanetriol, C-298
3,6,7-Cevanetriol, C-294
5-Cevaniden-3-ol, P-633
Cevanine, C-299
12,14,16-Cevatriene-3,6-diol, C-300
Cevedine *N*-oxide, C-295
Cevedine, C-295
Cev-13(17)-ene-3,6-diol, C-308
Cev-5-ene-3,20-diol, C-301
Cev-8(14)-ene-1,3-diol, C-304
Cev-8(14)-ene-3,11-diol, C-306
Cev-8(14)-ene-3,15-diol, C-307
Cev-8(14)-ene-3,6-diol, C-305
Cev-8-ene-3,11-diol, C-303
Cev-8-ene-3,6-diol, C-302
Cev-12-ene-3,6,15-triol, C-312
Cev-23-ene-3,6,16-triol, C-297
Cev-5-ene-3,16,20-triol, C-309
Cev-8-ene-3,6,20-triol, C-310
Cev-8-ene-3,6,23-triol, C-311
Cev-5-en-3-ol, C-313
Ceverine *N*-oxide, C-295
Ceverine, C-295
Cevine, V-56
Ceylanicine, C-314
Ceylanine, C-315
Cezomycin, C-26
CGP 39360, S-498
CGP 41251, S-498
CGP 58546, S-498
CG-SI-1, E-248
CG-SI-2, E-248
CGX 635, H-66
CH 777A, N-180
CH 846, E-6
2088C, H-514
Chabamide, C-316
Chaboside, C-70
α-Chaconine, S-345
β_1-Chaconine, S-345
β_2-Chaconine, S-345
γ-Chaconine, S-345
Chaenorhine, C-317
Chaenorpine, C-318
Chaetochalasin A, C-319
Chaetocin B, C-321
Chaetocin C, C-322
Chaetocin, C-320
Chaetocochin A, C-323
Chaetocochin B, C-323
Chaetocochin C, C-324
Chaetoglobosin A, C-325
Chaetoglobosin B, C-326
Chaetoglobosin 510, C-329

Chaetoglobosin 540, C-329
Chaetoglobosin 542, C-329
Chaetoglobosin C, C-325
Chaetoglobosin D, C-327
Chaetoglobosin E, C-326
Chaetoglobosin F, C-325
Chaetoglobosin F_{ex}, C-327
Chaetoglobosin G, C-326
Chaetoglobosin J, C-328
Chaetoglobosin K, C-329
Chaetoglobosin L, C-329
Chaetoglobosin M, C-329
Chaetoglobosin N, C-330
Chaetoglobosin O, C-326
Chaetoglobosin P, C-330
Chaetoglobosin Q, C-331
Chaetoglobosin R, C-331
Chaetoglobosin T, C-328
Chaetoglobosin U, C-332
Chaetoindicin A, C-333
Chaetoindicin B, C-334
Chaetoindicin C, C-334
Chaetomin B, C-335
Chaetomin, C-335
Chaetominine, C-336
Chaetracin A, C-372
Chairamidine, C-337
Chairamine, C-338
Chakranine, I-208
Chaksine, C-339
Chalciporone, C-340
Chalcostrobamine, C-341
Chalcupine A, Y-13
Chaloridone, C-342
Chamaedrone, C-343
Chamaetin, H-551
Chamobtusine A, C-344
Chandrananimycin A, A-862
Chandrananimycin B, A-862
Chandrananimycin C, C-345
Chandrine, C-346
Channaine, C-347
Chanoclavine I acid, C-348
Chanoclavine I aldehyde, C-348
Chanoclavine I fructoside, C-348
Chanoclavine I fructosylfructoside, C-348
Chanoclavine I, C-348
Chanoclavine II, C-348
(±)-Chanoclavine II, C-348
Chanoclavine, C-348
Chanofruticosine methyl ester, M-296
Charamin, A-1610
Charine, D-253
Chartellamide A, C-349
Chartellamide B, C-349
Chartelline A, C-350
Chartelline B, C-350
Chartelline C, C-350
Chasmaconitine, M-312
Chasmanine, M-323
Chasmanthinine, M-312
Chatinine, C-351
Chavicine, P-467
Cheilanthifoline, S-307
Chelamidine, C-352
Chelamine, C-353
Chelelactam, C-354
Chelerythridimerine, C-355
Chelerythrine pseudoethanolate, D-407
Chelerythrine pseudomethanolate, D-407
Chelerythrine, C-356
ψ-Chelerythrine, S-56
Chelidamine, S-612
Chelidimerine, S-54
Chelidonine, C-357
Cheliensisamine, C-358
Cheliensisine, C-359
Chelilutine, C-356
Chelirubine, C-360
Chellespontine, A-1533
Chelonin A, C-361
Chelonin B, C-362
Chelonin C, C-363
Chemetron 100, E-225
Chemosan, A-736
Chenabine, J-37
Chenabinol methyl ether, J-37
Chenabinol, J-37
Chenoalbicin, C-364
Chenopodine, L-153
Chenorrhine, C-317
Cheratamine, C-365
Cherianoine, C-366
Cherimoline, C-367
Cherinonaine, C-368
Cheritamine, T-639
Cherylline, C-369
Chestnutamide, C-370
Chetocin B, C-321
Chetocin C, C-322
Chetocin, C-320
Chetomin B, C-335
Chetomin, C-335
Chetoseminudin A, C-335
Chetoseminudin B, C-371
Chetoseminudin C, C-371
Chetracin A, C-372
Chevalieramide, B-421
Chiapenine ES III, P-253
Chiapenine ES II, P-253
Chiapenine ES I, P-253
Chiapenine ES IV, P-253
Chicamycin A, C-373
Chicamycin B, C-374
Chidlovine, T-451
Chilenamine, L-91
Chilenine, C-375
Chileninone, B-101
Chillanamine, C-376
Chilocorine A, C-377
Chilocorine B, C-378
Chilocorine C, C-379
Chilocorine D, C-380
Chilocorine, C-377
Chiloenamine, C-381
Chiloenine, C-381
Chimanine A, H-707
Chimanine B, P-647
Chimanine C, P-647
Chimanine D, P-647
Chimonamidine, D-916
Chimonanthidine, C-382
Chimonanthine, C-382
Chinentaxunine, A-7
Chinese bittersweet alkaloid I, C-383
Chinese bittersweet alkaloid II, C-384
Chinese bittersweet alkaloid III, C-385
Chingazumianine, C-386
Chingchengenamide A, C-387
Chingchengenamide B, C-387
Chinpeimine, C-388
Chippiine, C-389
Chiriquitoxin, C-390
Chisitine 1, C-391
Chisitine 2, C-392
Chitosenine, G-21
Chitraline, P-16
Chivosazole A, C-393
Chivosazole A_1, C-393
Chivosazole B, C-393
Chivosazole C, C-393
Chivosazole D, C-393
Chivosazole E, C-393
Chivosazole F, C-393
Chlidanthine, G-3
Chloptosin, C-394
Chlordelazin, C-417
Chloroalbofungin, A-244
Chlorobiocin, C-395
6-Chlorobohemamine C, B-242
3-Chloro-5-bromotyrosine (incorr.), A-712
4-Chlorobutyl veratrate, D-706
N-(4-Chlorobutyl)butanamide, C-396
3-Chloro-9*H*-carbazole, C-397
6-Chloro-β-carboline, C-398
7-Chloro-β-carboline, C-399
7-Chlorocavernicolenone, B-301
5-Chlorocavernicolin, C-221
2-Chloro-5-(3-chloro-2,2-dimethyl-6-methylenecyclohexyl)-3-methylenepentyl carbonimidic dichloride, D-349
3-Chloro-4-(3-chloro-4-fluoro-2-nitrophenyl)-1*H*-pyrrole, P-961
[2-Chloro-2-[4-chloro-5-hydroxy-3-methyl-3-(4-methyl-3-pentenyl)cyclohexylidene]ethyl]carbonimidic dichloride, C-400
3-Chloro-4-(3-chloro-6-hydroxy-2-nitrophenyl)-1*H*-pyrrole, P-961
4-Chloro-1-(chloromethyl)octahydro-5-methyleneazocine, O-224
3-Chloro-4-(3-chloro-2-nitrophenyl)-1*H*-pyrrole, P-961
2-Chloro-6-(4-chloro-1*H*-pyrrol-3-yl)benzenamine, A-725
4-Chloro-2-(4-chloro-1*H*-pyrrol-3-yl)-3-nitrophenol, P-961
7-Chloro-6-demethylcepharadione B, C-273
Chlorodeoxyevoxine, F-223
6′-Chlorodeoxyfloridanine, O-92
Chlorodeoxysceleratine, S-122
Chlorodesnkolbisine, F-221
Chlorodesoxyevoxine, F-223
3-Chloro-2,7-dibromoindole, D-308
5-Chloro-2-(3,5-dichloro-2-hydroxyphenyl)-3-nitropyrrole, P-965
20-Chloro-15,20-dihydro-12,15-dihydroxysenecionan-11,16-dione, J-4
2-Chloro-2,3-dihydro-5-imino-1*H*-pyrrolizin-7*a*(5*H*)-ol, C-521
3-Chloro-11,12-dihydroindolo[2,3-*a*]carbazole, C-401
4-Chloro-5,6-dihydroxy-1*H*-indole, C-402
4-Chloro-5,6-dihydroxy-1*H*-indole-1-sulfonic acid, C-402
2-Chloro-1,6-dihydroxyphenazine, C-415
2-Chloro-6,8-dihydroxy-7-propyl-9*H*-pyrrolo[2,1-*b*][1,3]benzoxazin-9-one, S-571
4-Chloro-6,7-dimethoxy-2-benzoxazolinone, D-708
2-Chloro-10-(3-dimethylaminopropyl)phenothiazine, C-417
3-Chloro-2-(3,4-dimethyl-3-pentenyl)-1,2,3,4-tetrahydro-2-(methoxymethyl)-6-quinolinecarboxylic acid, V-145
2-Chloro-*N*,*N*-dimethyl-10*H*-phenothiazine-10-propanamine, C-417
Chlorodysinosin A, D-975
3-Chloro-2-ethenyl-1-isocyano-2-methyl-5-(1-methylethenyl)spiro[bicyclo[4.1.0]heptane-7,3′-[3*H*]indol]-2′(1′*H*)-one, H-51
8-Chloro-9-ethenyl-2,6,6*a*,7,8,9,10,10*a*-octahydro-10-isocyano-6,6,9-trimethylnaphth[1,2,3-*cd*]indole, H-48
(3-Chloro-5-ethyl-2,6-dihydroxyphenyl)(4,5-dichloro-1*H*-pyrrol-3-yl)methanone, A-1283
2-Chloro-7-ethyl-6,8-dihydroxy-9*H*-pyrrolo[1,2-*b*][1,3]benzoxazin-9-one, C-403
2-Chloro-7-ethyl-8-hydroxy-6-methoxy-9*H*-pyrrolo[1,2-*b*][1,3]benzoxazin-9-one, C-403
2-Chloro-7-ethyl-8-hydroxy-6-methyl-9*H*-pyrrolo[1,2-*b*][1,3]benzoxazin-9-one, C-404
3-Chloro-*N*-formylnornantenine, N-29
Chlorofusin, C-405
2-Chlorohuperzine E, H-378
3-Chloro-4-hydroxybenzeneacetic acid, C-407
12-Chloro-11-hydroxydibromoisophakellin, D-328
erythro-3″-Chloro-2″-hydroxyechiumine, E-31
2-[1-Chloro-2-hydroxy-1-(hydroxymethyl)ethyl]-1,11-dihydro-5-hydroxy-11-methylfuro[2,3-*c*]acridin-6(2*H*)-one, R-167
5-Chloro-2-hydroxy-6-methoxybenzoxazole, C-406
2-Chloro-8-hydroxy-6-methoxy-7-propyl-9*H*-pyrrolo[2,1-*b*][1,3]benzoxazin-9-one, S-571
7-(3-Chloro-2-hydroxy-3-methylbutoxy)-4-methoxyfuro[2,3-*b*]quinoline, F-212
7-*O*-(3-Chloro-2-hydroxy-3-methylbutyl)haplopine, F-223
(3-Chloro-4-hydroxyphenyl)acetamide, C-407
(3-Chloro-4-hydroxyphenyl)acetic acid, C-407

3-Chloro-4-hydroxy-2-piperidinone, C-408
Chlorohyellazole, M-270
4-Chloro-1*H*-indole-3-acetic acid, C-410
3-Chloro-1*H*-indole, C-409
4-Chloro-1*H*-indole-5,6-diol, C-402
4-Chloro-5-(3-indolyl)oxazole, O-157
Chloroiodoacetamide, C-411
Chloroiodoacetic acid, C-411
Chlorolissoclimide, D-354
5-Chloro-6-methoxy-2-benzoxazolinone, C-406
5-Chloro-6-methoxy-2(3*H*)-benzoxazolone, C-406
5-Chloro-6-methoxy-1-methyl-1*H*-indole-2,3-dione, C-412
5-Chloro-6-methoxy-1-methylisatin, C-412
6-Chloro-3-methoxy-2-methyl-1-phenyl-9*H*-carbazole, M-270
6-Chloro-7-(methylamino)-5,8-isoquinolinedione, A-831
N-Chloromethylbulgarsenine, B-401
7-Chloro-9-methyl-β-carboline, C-399
6-Chloro-2-methyl-β-carbolinium, C-398
4-(Chloromethyl)-2,16-didehydro-16-(methoxycarbonyl)condyfolanium, C-413
N-Chloromethyl-*N*,*N*-dimethyltryptamine, D-785
Chloromethyleneaffinisinium, T-425
4-Chloromethylene-1,2,3,4-tetrahydro-6-hydroxy-8-methylquinoline, C-414
4-Chloromethylene-1,2,3,4-tetrahydro-8-methyl-6-quinolinol, C-414
N-Chloromethylnarcissidinium, N-43
N^2-Chloromethyltetrandrinium, T-286
3-Chloro-4-(2-nitrophenyl)pyrrole, P-961
6-Chloronorharman, C-398
7-Chloronorharman, C-399
3-(4-Chloro-5-oxazolyl)-1*H*-indole, O-157
2-Chloro-1,6-phenazinediol, C-415
2-(6-Chloro-3-pyridinyl)-7-azabicyclo[2.2.1]heptane, E-87
7-Chloro-9*H*-pyrido[3,4-*b*]indole, C-399
6-Chloro-9*H*-pyrido[3,4-*b*]indole, C-398
Chloropyrrolnitrin, P-961
6-Chloro-2-quinoxalinecarboxylic acid, C-416
Chlororaphin, P-319
8-Chlororugulovasine A, R-157
8-Chlororugulovasine B, R-157
6-Chloro-1,3,4,5-tetrahydro-1-methyl-2-(methylthio)pyrrolo[4,3,2-*de*]quinoline-7,8-dione, B-52
1-(2-Chlorotetrahydro-4-methyl-2*H*-1,3-oxazin-5-yl)ethanone, A-46
6-Chloro-8*H*-thieno[2,3-*b*]indole-2-carboxamide, T-374
3-Chlorotyrosine, A-724
Chloroxylonine, F-223
Chlorpromazine, C-417
Choisyine, C-418
Cholergol, D-669
Choline acetate, A-47
Choline chloride, C-419
Choline fenofibrate, C-419
Choline 4-hydroxy-3,5-dimethoxycinnamate, S-308
Choline imidazole-4-acrylate, M-739
Choline orotate, D-669
Choline perchlorate nitrate, C-419
Choline theophyllinate, C-419
Choline urocanate, M-739
Choline, C-419
Cholinesulfuric acid, C-419
Cholinophylline, C-419
Chondocurarine, C-420
Chondocurine, C-420
Chondodendrine, C-812
Chondriamide A, C-421
Chondriamide B, C-421
Chondriamide C, C-421
Chondrochloren A, C-422
Chondrochloren B, C-422
Chondrocurarine, C-420
Chondrocurine, C-420
Chondrofoline, C-812
Chonemorphine, P-601
Chrestifoline A, C-423
Chrestifoline B, C-424
Chrestifoline C, C-425
Chrestifoline D, B-207
Chromopyrrolic acid, L-329
Chromoviridan, C-426
Chromoxymycin, C-427
Chrycentrine, C-428
Chrysanthemine, S-491
Chrysanthone, P-892
Chrysogine, H-499
Chrysopentamine, C-429
Chrysophysarin A, C-430
Chrysopine, C-431
Chrysopterin, C-432
Chrysotricine, C-433
Chuanbeinone, C-290
Chuanfumine, C-434
Chuanghsinmycin, D-480
Chuangxinmycin, D-480
Chuan-wu base A, C-435
Chuan-wu base B, C-436
Chuanxiongzine, T-284
Chuchuhuanine EIII, P-244
Chuchuhuanine EII, P-244
Chuchuhuanine EI, P-244
Chuchuhuanine EIV, P-244
Chuchuhuanine EVII, P-244
Chuchuhuanine EVI, P-244
Chuchuhuanine EV, P-244
Chuchuhuanine WI, P-243
Chysin A, P-960
Chysin B, P-960
Chysine, P-960
C.I. 75160, B-101
CI 4, C-841
CI 75800, D-325
C.I. 75780, I-72
C.I. 75790, I-73
C.I. Natural Blue 1, I-72
C.I. Natural Red 33, B-110
C.I. Natural Red 28, O-102
C.I. Natural Violet 1, D-325
C.I. Natural White 1, G-210
C.I. Vat Blue 1, I-72
Ciba 12669A, D-92
Ciba 33112, D-142
Cibarian, G-104
Cichorine, C-437
Cicloheximide, D-765
Cicutine, P-652
CIF 1, D-517
CIF 2, D-517
CIF 3, D-517
Ciliaphylline *N*-oxide, R-134
Ciliaphylline, R-134
Ciliapterin, A-749
Ciliatamide A, C-438
Ciliatamide B, C-438
Ciliatamide C, C-439
Ciliatine, A-773
Cimicidine, D-144
Cimiciduphytine, C-440
Cimicifine A, N-247
Cimicifugadine, N-247
Cimicifugamide, H-566
Cimicine, D-144
Cimiciphytine, C-441
Cimilophytine, C-442
Cimipronidine, P-950
Cinachyramine, C-443
Cinchamidine, C-446
Cinchonaminal, C-444
Cinchonamine, C-444
Cinchonaminone, C-445
Cinchonan-9-ol, C-446
Cinchonan-9-ol, C-447
Cinchonan-9-one, C-446
Cinchonicine, Q-17
Cinchonicinol, Q-17
Cinchonidicinol, Q-17
Cinchonidine, C-446
Cinchonidinone, C-446
Cinchonifine, C-447
Cinchoninaldehyde, Q-30
Cinchonine, C-447
ψ-Cinchonine, C-447
Cinchoninic acid, Q-32
Cinchoninone, C-446
Cinchoninonitrile, Q-32
Cinchophyllamine, C-448
3α,17α-Cinchophylline, C-448
3α,17β-Cinchophylline, C-448
3β,17α-Cinchophylline, C-448
3β,17β-Cinchophylline, C-448
Cinchotine, C-447
Cinchotoxine, Q-17
Cinchovatine, A-1423
Cinegalleine, H-554
Cinegalline, H-554
Cinereain, C-449
Cinereapyrrole A, B-182
Cinereapyrrole B, B-182
Cineroctine, H-554
Cinevanine, H-554
Cineverine, H-554
Cinnabaramide A, C-450
Cinnabaramide B, C-450
Cinnabaramide C, C-450
Cinnabaramide D, C-450
Cinnabaramide E, C-450
Cinnabaramide F, C-451
Cinnabaramide G, C-451
Cinnabaric acid, C-452
Cinnabarine, C-452
Cinnabarinic acid, C-452
Cinnaloid, R-50
Cinnamic acid 2-hydroxy-2-(*p*-methoxyphenyl)ethylamide, A-153
Cinnamic acid *p*-methoxyphenethylamide, H-144
Cinnamic acid pyrrolide, C-457
Cinnamic acid pyrrolidide, C-458
Cinnamolaurine, C-453
Cinnamonin, A-78
3-[2-(Cinnamoylamino)ethyl]-3-hydroxy-2-indolinone, C-454
1′-Cinnamoyl-2,3′-bipiperidine, A-1525
Cinnamoylcocaine, E-8
(*Z*)-Cinnamoylcocaine, E-8
1′-Cinnamoyl-1,1′,2,3,4,4′,5,5′,6,6′-decahydro-2,3′-bipyridine, A-138
N-Cinnamoyl-2,4′-dihydroxyphenethylamine, O-63
Cinnamoylecgonine methyl ester, E-8
8-*O*-Cinnamoylgraciline, G-152
N^{α}-Cinnamoylhistamine, C-455
N-Cinnamoyl-20-hydroxycylindrocarine, C-929
N-Cinnamoyl-2-hydroxy-2-(4-methoxyphenyl)ethylamine, A-153
N^1-Cinnamoyl-N^4-(4-hydroxytigloyl)putrescine, C-456
N-Cinnamoyl-2-methoxypyrrolidine, P-955
N-Cinnamoyl-2-(2-methylbutanoylamino)pyrrolidine, O-67
N^1-Cinnamoyl-N^4-(2-methylbutanoyl)putrescine, C-456
N^{α}-Cinnamoyl-N^{α}-methylhistamine *N*-glucoside, C-176
cis-N^{α}-Cinnamoyl-N^1-methylhistamine, C-455
trans-N^{α}-Cinnamoyl-N^1-methylhistamine, C-455
N-Cinnamoyl-2-(2-methylpropanoylamino)pyrrolidine, P-479
N^1-Cinnamoyl-N^4-(2-methylpropanoyl)putrescine, C-456
8-*O*-*trans*-Cinnamoylneoline, M-323
14-Cinnamoylneoline, M-323
N-Cinnamoylnorcuskhygrine, D-211
14-*cis*-Cinnamoylnudicaulidine, M-321
14-*trans*-Cinnamoylnudicaulidine, M-321
N-Cinnamoyloctopamine, O-63
cis-13-Cinnamoyloxylupanine, H-554
trans-13-Cinnamoyloxylupanine, H-554
cis-13-Cinnamoyloxy-17-oxolupanine, O-188
trans-13-Cinnamoyloxy-17-oxolupanine, O-188
6-*trans*-Cinnamoyloxy-3-propanoyloxynortropane, A-1584
3-Cinnamoyloxy-6,7-tropanediol, M-392
3-Cinnamoyloxytropan-6-ol, M-391
N-Cinnamoylphenethylamine, P-344

9-Cinnamoyl-4-phenyl-1,5,9-triazacyclotridec-12-en-2-one, P-265
N-Cinnamoyl-*O*-prenyloctopamine, O-63
N-Cinnamoyl-*p*-prenyloxyphenethylamine, H-667
N-Cinnamoylputrescine, C-456
1-Cinnamoyl-1*H*-pyrrole, C-457
1-Cinnamoylpyrrolidine, C-458
N-Cinnamoyl-2-pyrrolidinone, P-956
14-*O*-*trans*-Cinnamoyltalatizamine, M-352
N-Cinnamoyl-Δ^2-tetrahydroanabasine, A-138
N^1-Cinnamoyl-N^4-tigloylputrescine, C-456
1-Cinnamoyl-2,4,5-trimethylpiperazine, D-769
N-Cinnamoyltyramine, H-667
Cinobufotenine, B-393
Cinodine hydrochloride, C-459
Cinodine I, C-459
Cinodine II, C-460
CinQuin, Q-18
Circinadine A, M-304
Circinadine B, M-304
Circinamide, C-461
Circinasine A, M-306
Circinasine B, M-334
Circinasine C, M-304
Circinasine D, M-319
Circinasine E, M-319
Circinasine F, M-334
Circinatin, C-462
Circumdatin A, C-463
Circumdatin B, C-463
Circumdatin C, C-464
Circumdatin D, C-465
Circumdatin E, C-465
Circumdatin F, C-464
Circumdatin G, C-464
Circumdatin H, C-465
Circumdatin J, C-465
Cirsiumamide, P-456
Cissaglaberrimine, C-466
Cissamine, C-833
Cissampareine, W-9
Cissampentin, C-467
Cissampine, C-833
Cissetin, C-468
Citbismine A, C-469
Citbismine B, C-469
Citbismine C, C-469
Citbismine D, C-470
Citbismine E, C-469
Citbismine F, C-469
Citbrasine, P-205
Citisine, C-938
Citorellamine, C-471
Citpressine II, T-243
Citpressine I, T-243
Citraconimide, M-542
Citracridone I, C-472
Citracridone II, C-472
Citracridone III, C-472
Citramine, P-206
Citreamicin α, C-473
Citreamicin β, C-474
Citreamicin η, C-476
Citreamicin γ, C-475
Citreamicin ξ, C-473
Citreoazopyrone, C-477
Citridone A, C-478
Citridone B′, C-479
Citridone B, C-479
Citridone C, C-480
Citridone D, C-481
Citrinadin A, C-482
Citrinadin B, C-482
Citriodorol, C-483
Citropone A, C-484
Citropone B, C-485
Citropone C, C-486
Citrovorin, P-772
Citrovorum factor, F-121
Citrusamine, T-518
Citrusinine II, T-242
Citrusinine I, T-242
Cividiclavine, C-487
CJ 12662, A-1141
CJ 12663, A-1141
CJ 15696, A-1145
CJ 16169, A-1145
CJ 16170, A-1142
CJ 16171, A-1143
CJ 16173, A-1144
CJ 16174, A-1145
CJ 16196, A-1146
CJ 16197, A-1146
CJ 16264, A-1147
CJ 16367, A-1148
CJ 17572, A-1149
CJ 17665, A-1470
CJ 21058, A-1150
CJ 13136, D-760
CJ 13217, D-760
CJ 13536, D-760
CJ 13564, D-760
CJ 13565, D-762
CJ 13566, D-762
CJ 13567, D-762
CJ 13568, D-762
CJ 14877, D-666
CJ 14897, D-666
CJ 15335, D-666
CL 98984, C-459
CL 307782, F-121
Cladioxazole, C-488
Cladobotryal, A-1145
Clarkeanidine, C-174
Clathculine A, C-489
Clathculine B, C-489
Clathramide A, C-490
Clathramide B, C-490
Clathramide C, C-490
Clathramide D, C-490
Clathridine A, C-491
Clathridine B, C-492
Clathridine C, C-493
Clathridine Zn, C-491
Clathridine-9-*N*-(2-sulfoethyl)imine, C-494
Clathrodine, O-123
Clathrotropine, C-495
Clathryimine A, C-496
Clathryimine B, C-496
Clathrynamide A, C-497
Clathrynamide B, C-497
Clathrynamide C, C-497
(6*E*)-Clathyrnamide A, C-497
Clausamide II, P-348
Clausamide I, P-348
Clausamine A, C-498
Clausamine B, C-498
Clausamine C, C-498
Clausamine D, C-507
Clausamine E, C-499
Clausamine F, C-499
Clausamine G, C-499
Clausanitine, C-500
Clausenal, D-554
Clausenalene, D-615
Clausenamide, C-502
ζ-Clausenamide, C-501
Clausenamine A, C-503
Clausenapin, C-504
Clausenaquinone A, C-505
Clausenatine A, M-729
Clausenine, D-613
Clausenlactam, D-294
Clausenol, D-613
Clausevatine D, C-506
Clausevatine E, C-506
Clausevatine F, C-506
Clausevatine G, C-506
Clausine A, D-557
Clausine B, T-533
Clausine C, H-455
Clausine D, C-507
Clausine E, H-452
Clausine F, C-507
Clausine G, D-558
Clausine H, D-560
Clausine I, D-552
Clausine J, T-532
Clausine K, D-560
Clausine L, H-453
Clausine M, H-455
Clausine N, H-455
Clausine O, D-556
Clausine P, D-614
Clausine Q, D-553
Clausine R, D-559
Clausine S, H-125
Clausine T, C-508
Clausine TY, D-560
Clausine U, H-125
Clausine V, C-123
Clausine W, C-508
Clauszoline A, C-509
Clauszoline B, C-510
Clauszoline C, D-560
Clauszoline D, H-125
Clauszoline E, M-757
Clauszoline F, M-729
Clauszoline G, M-757
Clauszoline H, C-511
Clauszoline I, H-452
Clauszoline J, D-560
Clauszoline K, H-450
Clauszoline L, H-455
Clauszoline M, D-557
Clavamine, C-512
Clavatine, F-73
Clavatoxine, F-73
Clavepictine A, C-513
Clavepictine B, C-513
Clavicipitic acid I, C-514
Clavicipitic acid II, C-514
cis-Clavicipitic acid, C-514
trans-Clavicipitic acid, C-514
Claviculine, S-80
Clavizepine, C-515
Clavolonine, F-29
Clavosine A, C-516
Clavosine B, C-516
Clavosine C, C-516
Clavulazine, C-517
Clavulazol A, C-518
Clavulazol B, C-519
Clavulinin, C-520
Clazamycin A, C-521
Clazamycin B, C-521
Clazamycin, C-521
7-Cl-DIBOA-Glc, H-409
Cleavamine, C-522
Cleistopholine, M-399
Clemaine, C-523
Cleomycin B_2, C-524
Cleregil, D-730
3,14-Clerodadiene-13,18-diol, C-525
Clinacoside C, C-526
Clionamide, C-527
Clivacetine, C-532
Clivatine, C-532
Cliviaaline, C-528
Cliviahaksine, C-528
Cliviamartine, C-532
Cliviasindhine, L-348
Cliviasine, C-532
Cliviasyline (incorr.), C-529
Clividine, C-532
Clivimine, M-629
Clivisyaline, C-529
Clivojuline, C-530
Clivonidine, C-531
Clivonine, C-532
Clivorine, C-533
Clolimalongine, L-176
Clorobiocin, C-395
Closina, A-832
Clovamide, C-534
CNS 2103, C-535
CNS 2104, C-536
CO 61, H-715
547C, O-131

Cocaine hydrochloride, C-537
Cocaine, C-537
ψ-Cocaine, C-537
Cocamine, T-634
Cocarboxylase, T-366
Coccinelline, D-886
Coccinine, P-57
Coccoline, E-202
Coccolinine, E-202
Coccudienone, E-199
Cocculidine *N*-oxide, C-538
Cocculidine, C-538
Cocculidinone, C-539
Cocculimine, I-207
Cocculine, C-538
Cocculitine, C-539
Cocculitinine, C-539
Cocculolidine, C-540
Coccuorbiculatine A, C-541
Coccutrine, C-542
Coccuvine, C-543
Coccuvinine, C-543
Cochinchistemonine, C-544
Cochinchistemoninone, C-544
Cochinmicin I, C-545
Cochinmicin II, C-545
Cochinmicin III, C-545
Cochinmicin IV, C-545
Cochinmicin V, C-545
Cochlearenine, C-546
Cochlearine, M-393
Cochliodinol, C-547
Cochliodinone, C-548
Coclafine, C-538
Coclamine, C-549
Coclanoline, R-59
Coclaurine, H-275
Coclifoline, C-550
Coclobine, C-551
Cocsarmine, H-752
Cocsiline, C-552
Cocsilinine, C-552
Cocsoline 2′-β-*N*-oxide, I-339
Cocsoline, I-339
Cocsuline 2-*N*-oxide, I-339
Cocsuline, I-339
Cocsulinine, C-552
Cocsupendine, C-553
Codamine *cis*-*N*-oxide, C-554
Codamine, C-554
Codaphniphylline, D-68
Codeigene, C-555
Codeine aminoxyde, C-555
Codeine *N*-oxide, C-555
Codeine phosphate, C-555
Codeine sulfate, C-555
Codeine, C-555
β-Codeine, N-134
Codeinfos, C-555
Codeinone methyl enol ether, T-350
Codeinone, C-555
Codeisan, C-555
Codeophen, C-555
Codethyline, M-704
Codicept, C-555
Codlin, C-555
Codonocarpine, C-556
Codonopsine, C-557
Codonopsinine, C-557
Codonopsinol, R-10
Codopiloic acid, O-152
Coelenteramide, C-558
Coelenteramine, C-559
Coelenterazine, C-560
Coelibactin, C-561
Coelobillardierine, C-562
Coelosperminone, C-562
Coenzyme F, P-772
Coenzyme PQQ, M-236
Coenzyme R, B-139
Coerulescine, H-359
Coffearin, C-149
Coffeine, C-15
CoF, P-772
Cogmine, P-400
Coharmine, H-591
Cohirsine, C-563
Cohirsinine, C-564
Cohirsitine, C-565
Cohirsitinine, C-566
Coixlactam B, D-451
Coixol, B-82
Colamine, A-767
Colcemid, D-92
Colchameine, D-92
Colchamine, D-92
Colchibiphenyline, C-567
Colchiceine methyl ether, C-569
Colchiceine, D-92
Colchiciline, C-568
Colchicine, C-569
Colchicoside, D-92
Colchiethanamine, C-570
Colchiethine, C-570
Colchifoleine, C-571
Colchifoline, C-571
Colchilutine, C-572
Colchiritchine, C-573
Colchisol, C-569
Colletine, H-275
Collismycin A, C-574
Collismycin B, C-574
Collismycin C, C-575
Collismycin D, C-576
Collismycin E, C-577
Collismycin F, C-578
Collismycin, C-574
Collutine *N*-oxide, A-1005
Collutine, A-1005
Colorflammine, S-544
Colsaloid, C-569
Colubricidin A, C-579
β-Colubrine *N*-oxide, S-589
α-Colubrine, S-589
β-Colubrine, S-589
Colubrinol acetate, T-450
Colubrinol, T-450
Columbamine, P-34
Columbianine, M-352
Columbidine, M-352
Columellarine, C-580
Combretine A, H-476
Combretine B, H-476
Commersonine, D-205
Communesin A, C-581
Communesin B, C-582
Communesin C, C-582
Communesin D, C-581
Communesin D, C-582
Communesin E, C-581
Communesin F, C-581
Communesin G, C-583
Communesin H, C-584
Comoramide A, C-585
Comoramide B, C-586
Comosidine, L-278
Comosiline, F-143
Comosimine, S-125
Comosine, C-587
Comosivine, C-588
Compactinervine, C-589
Complanadine A, C-590
Complanadine B, C-590
Complanadine C, C-591
Complanadine D, C-590
Complanatin, C-592
Complanatine, L-341
Compound 42339, A-120
Compound CC 3, D-229
Compound CCU 18, D-229
Comptonine, T-48
$ComX_{RO-E-2}$ pheromone, C-593
$ComX_{RO-H-1}$ pheromone, C-594
Conaconitine, M-351
Cona-1,4-dienin-3-one, H-314
3,5-Conadien-7-one, F-198
Conambine, M-309
Conamine, C-595
Conan-5-en-3-ol, L-56
Conarrhimine, C-595
Cona-1,4,14-trienin-3-one, H-314
Concavine, C-596
Conchairamidine, C-597
Conchairamine, C-598
Conchinine, Q-18
Concinnamide, H-471
Concneorine, M-393
Concurchine, C-610
Concuressine, C-601
Concusconine, C-599
Condaline A, C-600
Condelphine, M-352
Condensamine, C-115
Condurangamine A, P-603
Condurangamine B, P-603
Condylocarpine N^4-oxide, T-673
Condylocarpine, T-673
Con-5-enin-3-amine, C-595
Con-5-enin-3-ol, L-56
Conessidine, C-610
Conessimine, C-595
Conessine, C-601
Confolidine, C-633
Confoline, C-633
Confusadine, F-212
Confusameline, F-212
Conglobatin, C-602
Congocidine, N-180
α-Conhydrine, C-603
Conhydrine, C-603
ψ-Conhydrine, P-653
Conhydrinone, C-604
Conicamine, D-172
Conicaquinone A, C-605
Conicaquinone B, C-606
Conicine, P-652
Coniine, P-652
Conimine, C-595
Conioidine A, C-607
Conioidine B, C-607
Coniosetin, C-608
Coniothyriomycin, C-609
Conkurchine, C-610
Conkuressine, C-601
Conodiparine A, C-611
Conodiparine B, C-612
Conodiparine C, C-611
Conodiparine D, C-612
Conodiparine E, C-611
Conodiparine F, C-612
Conodirinine A, C-613
Conodirinine B, C-614
Conoduramine, C-615
Conodurine, C-616
Conodurinine, C-616
Conodusarine, E-189
Conodutarine A, C-617
Conodutarine B, C-617
Conoflorine, V-179
Conofoline, C-618
Conolidine, E-191
Conolline, C-619
Conolobine A, E-191
Conolobine B, E-191
Cononitarine A, C-612
Cononitarine B, C-612
Conopharyngine hydroxyindolenine, C-658
Conopharyngine oxindole, C-726
Conopharyngine pseudoindoxyl, V-178
Conopharyngine, A-886
Conopharyngine, C-620
Conophyllidine, C-621
Conophylline, C-621
Conophyllinine, C-621
Conquinamine, Q-12
Conquinine, Q-18
Consabatine, C-622
Consiculine, C-622
Consolarine, M-321

Consolidine, C-623
Consolidine, M-309
Consolinine, M-323
Consorientaline, A-1533
Consperine, B-407
Constrictosine, C-624
Contomin, C-417
Contorine, H-161
Contorsine, H-161
Contortine, H-161
Contortumine, A-98
Convergine, D-886
Convolacine, M-391
Convolamine *N*-oxide, C-633
Convolamine, C-633
Convolicine, C-633
Convolidine, C-633
Convoline, C-633
Convolutamide A, D-96
Convolutamide B, D-96
Convolutamide C, D-96
Convolutamide D, D-96
Convolutamide E, D-96
Convolutamide F, D-96
Convolutamine A, C-625
Convolutamine B, C-625
Convolutamine C, C-625
Convolutamine D, C-626
Convolutamine E, C-627
Convolutamine F, C-625
Convolutamine G, C-625
Convolutamine H, C-628
Convolutamydines, C-629
Convolutindole A, C-630
Convolvicine, C-631
Convolvidine, C-632
Convolvine, C-633
Convosine, C-633
Copiamycin, C-634
Coprogen B, C-635
Coprogen, C-635
Coproverdine, C-636
Copsinine, K-78
Copsomycin, C-637
Coptisine, C-638
Corallistine, C-639
Coramine, X-30
Coranicine, C-640
Corcovadine, P-462
Cordatanine, H-440
Cordatine A, S-201
Cordatine B, S-201
Cordianin, A-625
Cordifoline, C-641
Cordiline, C-303
Cordizine, C-642
Cordobimine, O-28
Cordobine, C-643
(±)-Cordrastine I, C-644
(-)-Cordrastine I, C-644
(±)-Cordrastine II, C-644
(-)-Cordrastine II, C-644
Cordrastine, C-644
Cordyformamide, C-645
Cordypyridone A, C-646
Cordypyridone B, C-646
Cordypyridone C, C-647
Cordypyridone D, C-647
Corepanine, M-309
Coreximine, X-30
Corftaline, H-394
Corgoine, S-234
Coriacenine A, C-648
Coriacenine B, C-648
Coriacenine C, C-649
Coriacenine D, C-649
Coriacenine E, C-650
Corialstonidine, C-651
Corialstonine, C-652
Corifine, C-697
Coriphidine, C-696
Corledine, A-146
Corlumidine, C-653
Corlumine, C-653
Cornigereine, C-654
Cornigerine, C-654
Cornocentin, E-164
Cornucervine, C-655
Corollin, G-104
Coromandaline, T-443
Coromandalinine, A-669
Coronafacic acid, C-656
N-Coronafacoylalloisoleucine, C-656
N-Coronafacoylisoleucine, C-656
N-Coronafacoylserine, C-656
N-Coronafacoylthreonine, C-656
N-Coronafacoylvaline, C-656
Coronarian, G-104
Coronaridine hydroxyindolenine, C-658
Coronaridine pseudoindoxyl, V-178
Coronaridine, C-657
Coronillin, G-104
Corpaine, R-9
Corphthaline, H-394
Correantine A, C-659
Correantine B, C-660
Correantine C, C-661
Correantoside, C-662
Corsevine, K-88
Corsevinine, K-89
Corsutine, C-663
Cortamidine oxide, C-664
Corticrocin, T-126
Cortistatin A, C-665
Cortistatin B, C-665
Cortistatin C, C-665
Cortistatin D, C-665
Cortistatin J, C-665
Cortistatine E, C-667
Cortistatine F, C-666
Cortistatine G, C-667
Cortistatine H, C-667
Cortistatine K, C-668
Cortistatine L, C-668
Corumdefine, M-325
Corumdizine, D-370
Corumdizinine, D-370
Corunnine, O-178
Coruscine, C-669
Corybrachylobine, C-686
Corybulbine, C-675
Corycavamine, C-670
Corycavidine, C-671
Corycavine, C-670
Corycidine, C-672
Corycularicine, C-804
Corydaine, C-673
Corydalactam, E-250
Corydaldine, I-305
Corydalic acid methyl ester, C-674
Corydalic acid, C-674
Corydalidzine, C-675
Corydaline, C-675
Corydalis A, C-675
Corydalis B, T-212
Corydalis C, P-667
Corydalis E, S-612
Corydalis G, C-675
Corydalis L, X-30
Corydalisol, C-676
Corydalispirone, H-766
Corydalmine α-*N*-oxide, C-677
Corydalmine β-*N*-oxide, C-677
Corydalmine, C-677
Corydamine, C-678
Corydecumbine, C-679
Corydendramine A, C-680
Corydendramine B, C-680
Corydicine, C-681
Corydine *N*-oxide, C-682
Corydine, C-682
Corydinemethine, C-683
Corydinine, P-667
Corydione, C-684
Corygovanine, C-685
Coryincine, C-692
Corymbin, Y-13
Corymine hemiacetal, D-410
Corymine, D-410
Corymotine, C-686
Corynantheal, D-412
Corynantheidinaline, C-687
Corynantheidinalinic acid, C-688
Corynantheidine, C-689
Corynantheidol, D-412
Corynantheine, C-689
Corynantheol, D-412
Corynanthic acid, Y-13
Corynanthine, Y-13
Corynanthol, Y-16
Corynebactin, B-2
Coryneine, C-690
Corynine, Y-13
Corynocarpin, G-104
Corynolamine, C-691
Coryneline *O*-sulfate, C-692
Corynoline, C-692
Corynoloxine, C-693
Corynoxeine, R-90
Corynoxidine, T-212
Corynoxine A, R-90
Corynoxine B, R-90
Corynoxine, R-90
Corypalline, T-158
Corypalmine, C-694
Coryphanthine, C-695
Coryphenanthrine, M-559
Coryphidine, C-696
Coryphine, C-697
Coryrutine, C-698
Corysamine, C-699
Corysolidine, R-9
Corystewartine, C-700
Corytenchine, X-30
Corytenchirine, C-701
Corytensine, E-43
Corytuberine methosalt, C-702
Corytuberine, C-702
Coryximine, C-676
Coryzeylamine, C-703
Cosaldon, T-355
Coscinamide A, C-704
Coscinamide B, C-704
Coscinamide C, C-704
Cossonidine, H-162
Cossonine, H-185
Costaclavine, F-49
Costaricine, D-88
Costinone A, C-705
Costinone B, C-706
Cotarnine, N-292
Cotarnoline, C-707
Cotinine fumarate, C-708
Cotinine, C-708
Coulteroberbinone, C-709
Coulteropine, P-667
Coumamycin, C-711
Coumaperine, C-710
m-Coumaric acid, H-690
p-Coumaric acid, H-691
N^1-*cis*-*p*-Coumaroylagmatine, A-719
N^1-*trans*-*p*-Coumaroylagmatine, A-719
4-*O*-*p*-Coumaroylbetonicine, H-476
N^5-*p*-Coumaroyl-N^1,N^{10}-diferuloylspermidine, S-398
N^5-*trans*-*p*-Coumaroyl-N^1,N^{14}-di-*trans*-feruloylspermine, S-399
N-*cis*-*p*-Coumaroyl-DOPA, A-745
N-*trans*-*p*-Coumaroyl-DOPA, A-745
N^1-*p*-Coumaroyl-N^4-feruloylputrescine, D-362
N-*cis*-(*p*-Coumaroyl)glutamic acid, G-107
1-Coumaroyl-2-hydroxyputrescine, D-248
N-*E*-*p*-Coumaroyl-5-methoxytryptamine, M-288
N-*Z*-*p*-Coumaroyl-5-methoxytryptamine, M-288
5-*O*-*p*-Coumaroylnigrumin, H-509
N-*cis*-*p*-Coumaroyloctopamine, O-63
N-*trans*-*p*-Coumaroyloctopamine, O-63
N-*trans*-*p*-Coumaroyl-2-phenylethylamine, P-342
N-*p*-Coumaroylpipecolic acid, P-456

4′-*O*-*p*-Coumaroylprunasin, H-673
4-Coumaroylputrescine, C-456
N^b-*cis*-*p*-Coumaroylserotonin, H-755
N^b-*p*-Coumaroylserotonin, H-755
4-[*N*-(*p*-Coumaroyl)serotonin-4′′-yl]-*N*-feruloylserotonin, B-126
p-Coumaroylspermidine, S-398
N^b-*p*-Coumaroyltryptamine, T-639
N-*p*-*cis*-Coumaroyltyramine, H-667
N-*p*-*trans*-Coumaroyltyramine, H-667
Coumermycin A_1, C-711
Coumermycin A_2, C-712
Coumermycin, C-711
Coumidine, C-178
Coumingaine, C-713
Coumingidine, C-178
Coumingine, C-178
Couroupitine A, I-108
Couroupitine B, I-73
Coxylase, T-366
Coyhaiquine, C-714
Coyhaiquinine, C-714
Cozymase II, T-366
CP 35763, A-1151
CP 41043, A-1152
CP 41494, A-1153
CP 20, D-632
CP 47444, N-276
CP 51467, N-48
CP 52726, N-49
CP 52748, N-50
CP 57820, N-276
CP 61405, R-136
CP 46192, T-391
CPC 1, A-626
CPT, C-70
Crabbine, I-208
Crambene, H-659
Crambescidic acid, P-774
Crambescidin acid, C-716
Crambescidin 359, C-715
Crambescidin 431, C-716
Crambescidin 800, C-717
Crambescidin 816, C-717
Crambescidin 826, C-718
Crambescidin 830, C-719
Crambescidin 844, C-720
Crambescidin 657 methyl ester, N-115
Crambescidin 657, N-115
Crambescin A, C-721
Crambescin B, C-722
Crambescin C1, C-723
Crambescin C2, C-724
Crambidine, C-725
Crambine A, C-721
Crambine B, C-722
Crambine C1, C-723
Crambine C2, C-724
Craniformin, D-229
Craspidospermine, V-117
Crassanine, C-726
Crassicaudine, M-323
Crassicaulidine, M-337
Crassicauline A, M-312
Crassicauline B, H-196
Crassicauline II, H-196
Crassicauline I, M-312
Crassicaulisine, M-313
Crassicausine, M-312
Crassicautine, M-336
Crassifolazonine, C-727
Crassifoline methine, C-729
Crassifoline, C-728
Craugsodine, C-730
Creatine, C-731
Creatinine, C-732
Creatonotine *N*-oxide, T-188
Crebanine *N*-oxide, C-733
Crebanine, C-733
Cremastrine, H-629
Crenatidine, D-686
Crenatine A, D-838
Crenatine, M-290
Crenulatine, C-734
Crepidamine, C-735
Crepidine, C-736
Criamide A, C-737
Criamide B, C-737
Criasbetaine, Z-12
Criasiaticidine A, P-586
Cribetamine, N-169
Cribochaline A, H-3
Cribrochalinamine oxide A, C-738
Cribrochalinamine oxide B, C-739
Cribronic acid, D-661
Cribrostatin 1, A-757
Cribrostatin 3, A-799
Cribrostatin 5, A-799
Cribrostatin 7, A-799
Cribrostatin 6, C-740
Cribrostatin 2, M-624
Cribrostatin 4, R-42
Crinafolidine, C-741
Crinafoline, A-683
Crinalbine, C-743
Crinamabine, C-742
Crinamidine, C-743
Crinamine, H-5
Crinan-1,2-diol, A-670
Crinan-3-ol, C-748
Crinasiadine, C-744
Crinasiatine, C-745
Crinatine, C-746
Crinatine, C-747
Crinidine, C-748
Crinine, C-369
Crinine, C-748
Crinisine, C-749
Crinosine, C-750
Criocerine, V-117
Criophylline, C-751
Cripaline, P-579
Cripowellin A, C-752
Cripowellin B, C-753
Crispanine, C-754
Crispatine, F-168
Crispine A, C-756
Crispine B, C-756
Crispine C, C-757
Crispine D, C-758
Crispine E, C-759
Crispine, C-755
Crispulidine, M-346
Cristadine, P-80
Cristovin, V-128
Criwelline, T-53
Croaegyptine, C-760
Croalbidine, C-761
Croalbinecine, D-597
Crobarbatine, C-762
Croburhine, C-771
Crocacin A, C-763
Crocacin B, C-763
Crocacin C, C-763
Crocacin D, C-763
Crocandine, C-764
Croceaine A, B-264
Croceaine B, B-264
Croceocurine, C-765
Crociflorine, C-766
Crociflorinine, C-766
Crociflorinone, J-43
Cronaburmine, C-767
Crooksidine, D-120
Crooksiine, C-441
Croomine, S-523
Croomionidine, P-606
Cropodine, C-768
Crosemperine, C-769
Crotaflorine, M-36
Crotafoline, C-770
Crotalaburnine, A-967
Crotalarine lactone, C-772
Crotalarine, C-771
Crotaleschenine, C-773
Crotananine, C-774
Crotanecine, C-775
Crotastriatine, N-219
Crotaverrine, S-245
Crotoflorine, P-643
Crotonine, C-776
Crotonosine, P-643
Crotsparine, P-643
Crotsparinine, C-781
Crucigasterin 275, A-847
Crucigasterin 277, A-847
Cruentaren A, C-777
Cruentaren B, C-778
Cruentine A, C-779
Cruentine B, C-780
Crychine, E-221
Crykonisine, H-424
Cryogenine, V-95
Cryprochine, C-781
Cryptadine A, C-782
Cryptadine B, C-782
Cryptanthine, D-607
Cryptaustoline, C-783
Cryptocavine, C-790
Cryptocin, C-784
Cryptocurine, K-103
Cryptodorine, N-125
Cryptoheptine, C-785
Cryptolepicarboline, C-786
Cryptolepine, I-109
Cryptolepinoic acid, I-111
Cryptolepinone, D-505
Cryptomisrine, C-787
Cryptopalmatine, M-734
Cryptophorine, C-788
Cryptophorinine, C-789
Cryptopine, C-790
Cryptopleuridine, C-791
Cryptopleurine, C-792
Cryptopleurospermine, C-793
Cryptoquindoline, C-794
Cryptosanguinolentine, I-110
Cryptospirolepine, C-795
Cryptostyline I, C-796
Cryptostyline II, C-797
Cryptostyline III, C-797
Cryptotackieine, Q-19
Cryptowolidine, C-798
Cryptowoline, C-798
Cryptowolinol, C-798
Cryspatine, F-168
Crystalloiodinine A, P-321
Crystalloiodinine B, P-321
Crystamidine, C-799
CS 79A, C-169
CS 79B, C-169
CSA 3, A-472
CSL 12A, T-700
CSL 12B, T-700
CSL 12C, T-700
CSL 12D, T-700
CSL 12E, T-700
CSL 12F, T-700
CSL 12G, T-700
CSL 12H, T-700
CSL 12I, T-700
CSL 12J, T-700
CSL 12K, T-700
CSL 12L, T-700
CSL 12M, T-700
CT 2103, T-52
Cuanzine, C-800
Cuauchichicine, V-45
Cucoline, S-313
Cucubalactam, C-801
Cucumopine, C-802
Cucurbitoside L, H-414
Culacorine, C-805
Culantraramine *N*-oxide, C-803
Culantraramine, C-803
Culantraraminol *N*-oxide, C-803
Culantraraminol, C-803
Cularicine, C-804
cis-Cularidine *N*-oxide, C-805

trans-Cularidine *N*-oxide, C-805
Cularidine, C-805
Culamine, C-805
cis-Culamine *N*-oxide, C-805
Culamine, C-805
Cultithalminine, T-340
m-Cumaric acid, H-690
p-Cumaric acid, H-691
Cupreine, Q-20
Curacautine, C-806
Curacin A, C-807
Curacin B, C-807
Curacin C, C-807
Curacin D, C-808
Curane B, C-420
16α-Curan-17-ol, G-34
C-Curarine I, C-809
C-Curarine II, C-31
C-Curarine III, N-301
C-Curarine, C-809
Curarine, C-420
Curassanecine, H-517
Curassavine *N*-oxide, C-810
Curassavine, C-810
Curassavinine, C-810
Curicycleatjenine, C-811
Curicycleatjine, C-811
Curine, C-812
Currayangine, C-813
Currayanine, C-814
Curromycin A, C-815
Curromycin B, C-815
Curryangine, C-813
Curryanine, C-814
Curtisin, D-634
Curvupallide A, C-816
Curvupallide B, C-816
Curvupallide C, C-816
Cuscamidine, C-817
Cuscohygrine, C-818
Cusconidine, C-819
Cusconine, C-820
Cusculine, P-206
Cuscutamine, H-237
Cuskhygrine, C-818
Cuspanine, P-206
Cuspareine, C-821
Cusparine, C-822
Cuspidaline, D-88
CV 1, A-1154
CW 69A, C-129
CW 69B, C-129
CW 69, C-129
CW 69C, C-129
CW 69D, C-129
CW 69E, C-129
CW 69F, C-129
CX 59, H-480
CY 39, H-480
Cyanamide, C-823
5-(ω-Cyanoalkyl)-2-pyrrolecarboxaldehydes, F-141
4-Cyano-1,3-benzenediol, D-535
2-Cyano-2-butanol, H-572
1-Cyano-3-buten-2-ol, H-659
3-Cyanocarbazole, C-122
1-Cyano-β-carboline, C-132
3-(Cyanocarbonyl)indole, O-182
3*S*-Cyanocoronaridine, C-657
3-Cyano-*N*-[6-[[(3-cyano-1-oxobutyl)amino]-methyl]tetrahydro-2-hydroxy-2*H*-pyran-3-yl] butanamide, A-1260
Cyanocycline A, C-830
Cyanocycline B, C-830
Cyanocycline C, C-830
Cyanocycline D, C-824
Cyanocycline F, C-830
5-Cyano-7-deazaguanosine, C-7
5-Cyano-2,3-dibromopyrrole, D-339
4-Cyano-1,2-dimethoxybenzene, D-706
6-Cyano-1,3-dimethyluracil, D-669
5-(12-Cyano-6-dodecenyl)-2-pyrrolecarboxaldehyde, C-825
5-(20-Cyanoeicosyl)-1*H*-pyrrole-2-carboxaldehyde, F-141
N-(2-Cyanoethyl)glycine, C-147
3-(2-Cyanoethyl)indole, I-100
2-(2-Cyanoethyl)-3-isoxazolin-5-one, O-185
5-(21-Cyanoheneicosyl)-1*H*-pyrrole-2-carboxaldehyde, F-141
5-(17-Cyanoheptadecyl)-1*H*-pyrrole-2-carboxaldehyde, F-141
3-Cyano-2-hydroxy-4-methoxypyridine, D-668
3-Cyano-μ-hydroxy-3-methyloxiranetridecanoic acid, A-1318
3-Cyano-2-hydroxymethyl-2-propen-1-ol, H-510
3-Cyano-4-hydroxy-1-methyl-2-pyridone, D-668
N-[1-Cyano-2-(4-hydroxyphenyl)ethenyl]formamide, C-826
3-(2-Cyano-3-hydroxyphenyl)-2-hydroxy-*N*-[2-(4-hydroxyphenyl)ethenyl]-2-propenamide, B-257
2-Cyano-3-hydroxyquinoline, H-724
5-(23-Cyano-23-hydroxy-6-tricosenyl)-1*H*-pyrrole-2-carboxaldehyde, C-827
3-Cyanoindole, I-90
4-Cyanoindoloquinolizidine, O-49
2-[Cyano(3-indolyl)methylene]-3-indolone, D-487
Cyanoiodomethane, I-163
4-Cyanoisoxazole, I-346
2-Cyano-4-methoxyaniline, A-789
2-Cyano-6-methoxyaniline, A-787
3-Cyano-5-methoxyaniline, A-790
5-Cyano-6-methoxyindolo[2,3-*a*]carbazole, C-828
5-Cyano-6-methoxy-11-methylindolo[2,3-*a*]-carbazole, C-828
3-Cyano-4-methoxy-1-methyl-2-pyridone, R-96
6-Cyano-4-methoxy-5-(methylthio)-2,2′-bipyridine, C-576
3-Cyano-4-methoxypyridine 1-oxide, H-709
3-Cyano-4-methoxypyridine, H-709
3-Cyano-6-methoxypyridine, H-711
3-Cyano-4-methoxy-2-pyridone, D-668
4-Cyano-6-methoxyquinoline, H-726
4-(Cyanomethyl)-1,3-benzenediol, D-646
(Cyanomethyl)benzene, P-336
5-Cyano-7-(3-*O*-methyl-5-deoxy-β-D-*erythro*-pent-4-enofuranosyl)pyrrolo[2,3-*d*]pyrimidin-4-one, M-778
4-Cyano-1,2-methylenedioxybenzene, M-442
2-Cyanomethylene-1-glucosyloxy-3-hydroxy-4,5-dimethoxycyclohexane, S-302
2-(Cyanomethylene)-1,3-propanediol, H-510
2-(Cyanomethyl)-6-ethoxypyridine, H-708
3-(Cyanomethyl)-4-hydroxyindole, H-524
3-Cyanomethyl-3-hydroxy-1*H*-indol-2(3*H*)-one, C-829
3-Cyanomethyl-3-hydroxyoxindole, C-829
3-Cyano-1-methyl-1*H*-indole, I-90
3-Cyanomethyl-1*H*-indole, I-81
3-Cyano-5-methylisoxazole, M-479
3-(Cyanomethyl)-4-methoxyindole, H-524
3-(Cyanomethyl)-6-methoxyindole, H-526
2-Cyanomethyl-1-methylpyrrolidine, P-950
N′-Cyano-*N*′-methylmolokaiamine, M-679
4-(Cyanomethyl)phenol, H-672
3-Cyanomethyl-6-prenylindole, H-497
1-Cyano-2-methyl-2-propanol, H-573
3-Cyano-2-methyl-2-propen-1-ol, H-576
3-Cyano-1-methyl-4(1*H*)-pyridinone, H-709
5-Cyano-1-methyl-2(1*H*)-pyridinone, H-711
3-Cyano-1-methyl-2-pyridone, R-95
5-Cyano-2-methylpyrimidine, M-539
2-Cyano-1-methyl-1*H*-pyrrole, P-944
1-Cyano-4-(methylthio)butane, M-203
Cyanomycin, P-833
Cyanonaphthyridinomycin, C-830
5-(19-Cyanononadecyl)-1*H*-pyrrole-2-carboxaldehyde, F-141
9-Cyanononyl methyl sulfone, M-563
1-Cyanophenazine, P-319
1-Cyano-2-phenylethane, P-350
Cyanophenylmethane, P-336
3-(Cyanophenylmethylene)-5-(3,7-dimethyl-2,6-octadienyl)-2,3,5,10-tetrahydro-2-oxo-1-phenazinecarboxylic acid, B-65
5-Cyano-1-phenyl-1*H*-pyrazole, P-890
3-Cyano-1-phenyl-1*H*-pyrazole, P-890
2-Cyano-1-phenyl-1*H*-pyrrole, P-944
2-Cyano-2-propanol, H-617
N-Cyano-*sec*-pseudobrucine, I-12
N-Cyano-*sec*-pseudostrychnine, I-12
Cyanopterin, A-802
3-Cyanopyrazole, P-890
2-Cyanopyrrole, P-944
4-Cyanoquinoline, Q-32
Cyanoquinonamine, S-2
4-Cyanoresorcinol, D-535
6-Cyano-6,7-secostemmadenine, Y-21
5-(23-Cyano-6-tricosenyl)-1*H*-pyrrole-2-carboxaldehyde, C-827
Cyanotubercidin, S-53
6-Cyanouracil, D-669
Cyathocaline, T-565
CYB 3, H-717
Cycasindene, A-698
Cycasin, M-397
Cycasthioamide, C-831
Cycemanine, C-677
Cyclamenol, C-832
Cyclamidomycin, P-876
α-Cyclanoline, C-833
Cyclanoline, C-833
β-Cyclanoline, C-833
Cycleabarbatine, I-328
Cycleacurine, C-812
Cycleadrine, T-286
Cycleahomine, T-286
Cycleaneonine, C-834
Cycleanine N^2-oxide, C-835
Cycleanine, C-835
Cycleanorine, T-286
Cycleapeltine, R-46
Cycleatjehenine, C-836
Cycleatjehine, C-836
γ-Cyclic diglutamic acid, D-803
Cyclizidine, C-837
Cyclo(alanylalanyl), D-769
Cyclo(alanyl-4-hydroxyprolyl), C-838
Cyclo(alanylprolyl), C-839
Cycloanchinopeptolide C, C-840
Cycloanthranilylproline, D-502
Cyclo(arginylprolyl), C-841
2,20-Cycloaspidospermidine, T-674
Cyclobaleabuxine, C-883
Cyclobastadin 1, B-32
Cyclobastadin 2, B-32
Cyclobastadin 3, B-32
Cyclobastadin 4, B-32
Cyclobrassinin sulfoxide, C-842
Cyclobrassinin, C-842
Cyclobrassinone, C-843
Cyclobullatine A, C-846
Cyclobuxamidine, B-474
Cyclobuxamine A, C-846
Cyclobuxamine H, C-846
Cyclobuxamine I, C-846
Cyclobuxamine, C-846
Cyclobuxaphylamine, C-844
Cyclobuxargentine G, C-845
Cyclobuxidine F, C-883
Cyclobuxine A, C-846
Cyclobuxine B, C-846
Cyclobuxine D, C-846
Cyclobuxine I, C-846
Cyclobuxine, C-846
Cyclobuxomicreine K, C-882
Cyclobuxomicreine, C-882
Cyclobuxomicreinine, C-847
Cyclobuxophylline K, C-848
Cyclobuxophylline M, C-848
Cyclobuxophylline O, C-848
Cyclobuxophylline, C-848
Cyclobuxophyllinine M, C-848
Cyclobuxophyllinine, C-848
Cyclobuxosuffrine K, C-912
Cyclobuxosuffrine, C-912
Cyclobuxoviramine, C-849
Cyclobuxoviricine, C-850
Cyclobuxoviridine B, C-850

Cyclobuxoviridine L, C-850
Cyclobuxoviridine, C-850
Cyclobuxoxazine A, C-851
Cyclobuxoxazine C, C-851
Cyclobuxoxazine, C-851
Cyclobuxoxine, B-482
Cyclobuxupaline C, C-902
Cyclocapitelline, C-433
Cyclocarbamide A, C-852
Cyclocarbamide B, C-852
Cyclocelabenzine, C-853
Cyclocide, C-962
Cyclocinamide A, C-854
Cyclocinamide B, C-854
Cycloclausenamide, C-855
Cycloclavine, C-856
Cyclocreatine, A-731
Cyclo(dehydroprolyltryptophyl), C-899
Cyclodercitine, C-857
Cyclo(2,3-didehydroprolyl)[2-(1,1-dimethyl-2-propenyl)tryptophyl], C-861
Cyclodidemnamide B, C-859
Cyclodidemnamide, C-858
Cyclodidemniserinol, C-860
N,α′,*N*′,α-Cyclodi(4-methylaminobenzeneethanol), D-745
Cyclo[2-(1,1-dimethyl-2-propenyl)tryptophyl]prolyl, C-861
Cyclodopa glucoside, C-862
Cyclodopa, C-862
14,18-Cyclo-21,23-epoxyapotirucallane-3,7,21,24,25-pentol, C-863
Cyclofoveoglin, C-864
Cyclo(glycylprolyl), C-865
Cycloguineense A, C-866
Cycloguineense B, C-866
Cyclohaliclonamines, C-867
Cycloheptaphylline, M-757
Cycloheptazoline, M-757
Cyclohexanamine, C-868
Cyclohexaneethanamine, C-869
Cycloheximide, D-765
Cyclohexylamine, C-868
2-Cyclohexylethylamine, C-869
O^6-Cyclohexylmethylguanine, G-210
Cyclo(homoleucylprolyl), C-870
Cyclo(4-hydroxyprolylleucyl), C-871
Cyclo(2-hydroxyprolylphenylalanyl), C-872
Cyclo(4-hydroxyprolylphenylalanyl), C-873
Cyclo(4-hydroxyprolyltyrosyl), C-874
Cyclo(isoleucylprolyl), C-875
Cyclokoreanine A, C-917
Cyclokoreanine B, C-917
Cyclo(leucylprolyl), C-876
Cyclomahanimbine, C-814
Cyclomalayanine B, C-915
Cyclomalayanine, C-915
Cyclomarazine A, C-877
Cyclomarazine B, C-877
Cyclomegistine B, C-879
Cyclomegistine, C-878
Cyclo(methionylprolyl), C-880
Cyclomethoxazine B, C-881
Cyclomethyldecylprodiginine, M-429
Cyclomicrobuxamine, B-482
Cyclomicrobuxeine K, C-882
Cyclomicrobuxeine, C-882
Cyclomicrobuxine, B-482
Cyclomicrobuxinine, B-482
Cyclomicrophyllidine A, C-883
Cyclomicrophylline A, C-883
Cyclomicrophylline B, C-883
Cyclomicrophylline C, C-883
Cyclomicrophylline I, C-883
Cyclomicrosine C, C-883
Cyclomicrosine, C-883
Cyclomicuranine L, C-884
Cyclomikuranine, C-884
Cyclomycin, A-832
Cyclomyrsinol, C-885
Cycloneosamandione, C-886
Cyclononylprodiginine, N-285
Cyclononylprodigiosin, N-285
Cycloornithine, A-872
Cyclooroidin, C-887
Cyclopamine, J-36
Cyclopapilosine D, C-888
Cyclopapilosine I, C-888
Cyclopenin, C-889
Cyclopenol, C-889
Cyclopeptine, C-890
Cyclo(phenylalanylprolyl), C-891
Cyclopiamide, C-892
Cyclopiamine A, C-893
Cyclopiamine B, C-893
Cyclopiazonic acid imine, C-895
β-Cyclopiazonic acid, B-218
α-Cyclopiazonic acid, C-894
Cyclopiperstachine, C-896
Cycloposine, J-36
Cycloprodigiosin, C-897
Cyclo(prolylglycyl), C-865
Cyclo(prolylmethionyl), C-880
Cyclo(prolyl-3-nitrotyrosyl), C-900
Cyclo(prolylprolyl), C-898
Cyclo(prolyltryptophyl), C-899
Cyclo(prolyltyrosyl), C-900
Cyclo(prolylvalyl), C-901
Cycloprotobuxinamine, C-883
Cycloprotobuxine A, C-902
l-Cycloprotobuxine C, C-902
Cycloprotobuxine C, C-902
Cycloprotobuxine D, C-902
Cycloprotobuxine F, C-902
Cycloprotobuxine I, C-902
Cycloprotobuxoline I, C-903
Cyclorocaglamide, C-904
Cyclorolfeibuxine A, C-883
Cyclorolfeibuxine C, C-883
Cyclorolfeine, C-905
Cyclorolfoxazine, C-906
2,11-Cyclo-11,12-secoaspidospermidine, M-188
12,16-Cyclo-1,12-secodaphnan-23-oic acid, H-346
18,28-Cyclo-16,28-secosolanid-5-en-3-ol, P-633
Cycloserine, A-832
Cycloshermilamine D, C-907
Cyclosmenospongine, C-908
Cyclostachine A, C-909
Cyclostachine B, C-909
Cyclostellettamines, C-910
Cyclostrychnine, C-911
Cyclosuffrobuxine K, C-912
Cyclosuffrobuxine, C-912
trans-Cyclosuffrobuxinine M, C-912
Cyclosuffrobuxinine M, C-912
Cyclosuffrobuxinine, C-912
Cyclothiazomycin, C-913
Cyclotryprostatin A, C-914
Cyclotryprostatin B, C-914
Cyclotryprostatin C, C-914
Cyclotryprostatin D, C-914
Cyclo(tryptophanylprolyl), C-899
Cyclo(tryptophylprolyl), C-899
Cyclovirobuxeine A, C-915
Cyclovirobuxeine B, C-915
Cyclovirobuxeine F, C-916
Cyclovirobuxeine I, C-915
Cyclovirobuxine A, C-917
Cyclovirobuxine C, C-917
Cyclovirobuxine D, C-917
Cyclovirobuxine F, C-917
Cyclovirobuxine I, C-917
3,5′-Cycloxanthosine, C-918
Cycloxazoline, C-919
Cycloxobuxidine F, B-12
Cycloxobuxidine I, B-12
Cycloxobuxine I, C-920
Cycloxobuxoline I, C-921
Cycloxobuxoviricine, C-884
Cycloxobuxoxazine C, C-851
Cycloxyisoschelhammericine, S-125
Cyclozoanthamine, C-922
Cygnine, C-923
Cylindramide, C-924
Cylindricine A, C-926
Cylindricine B, C-925
Cylindricine C, C-926
Cylindricine D, C-926
Cylindricine E, C-926
Cylindricine F, C-926
Cylindricine G, C-927
Cylindricine H, L-102
Cylindricine I, L-102
Cylindricine J, C-928
Cylindricine K, C-926
Cylindrocarine, C-929
Cylindrocarpidine, C-929
Cylindrocarpine, C-929
Cylindrocarpinol, L-177
Cylindrospermopsin, C-930
Cynaustine, A-669
Cynaustraline, T-443
Cynodine, C-931
Cynoglossamine, E-12
Cynoglossophine, H-94
Cynolujine, C-932
Cynometrine, C-933
Cynthichlorine, C-934
Cypholophine, C-935
Cyphoplectine, M-352
Cypridina luciferin, L-281
Cypridina oxyluciferin, O-222
Cyprino-Pourpre B, A-752
Cystamidin A, P-948
Cystaminesulfinic acid, A-764
Aspergillus oryzae Cysteine protease inhibitors, C-936
Cysteinolic acid, A-815
4-*S*-Cysteinyltetrodotoxin, T-298
Cystodamine, A-1459
Cystodytin A, D-97
Cystodytin B, D-97
Cystodytin C, D-97
Cystodytin D, D-97
Cystodytin E, D-97
Cystodytin F, D-97
Cystodytin G, D-97
Cystodytin H, D-97
Cystodytin I, D-97
Cystodytin J, D-97
Cystodytin K, D-97
Cystothiazole A, M-177
Cystothiazole B, M-177
Cystothiazole C, M-177
Cystothiazole D, M-177
Cystothiazole E, C-937
Cystothiazole F, M-177
Cystothiazole G, M-181
L-Cytidine, C-961
Cytisine *N*-oxide, C-938
12-Cytisineacetamide, C-939
12-Cytisineacetic acid, C-939
Cytisine, C-938
5-(12-Cytisinylmethyl)-6-hydroxylupanine, C-940
Cytiton, C-938
Cytoblastin, C-941
Cytochalasin A, C-943
Cytochalasin B, C-943
Cytochalasin C, C-944
Cytochalasin D, Z-37
Cytochalasin E, C-945
Cytochalasin F, C-946
Cytochalasin G, C-947
Cytochalasin H, Z-37
Cytochalasin J, Z-37
Cytochalasin K, C-948
Cytochalasin K, C-949
Cytochalasin L, C-950
Cytochalasin M, C-951
Cytochalasin N, C-944
Cytochalasin N, C-953
Cytochalasin N_{pho}, C-953
Cytochalasin O, C-952
Cytochalasin O, C-953
Cytochalasin O_{pho}, C-953
Cytochalasin P, C-952
Cytochalasin P_{pho}, C-952
Cytochalasin Q, C-954

Cytochalasin R, C-954
Cytochalasin S, C-955
Cytochalasin T, C-943
Cytochalasin U, A-1196
Cytochalasin U, C-956
Cytochalasin V, C-942
Cytochalasin W, C-957
Cytochalasin X, C-958
Cytochalasin Y, C-958
Cytochalasin Z, C-947
Cytochalasin Z_1, C-943
Cytochalasin Z_2, C-943
Cytochalasin Z_3, C-943
Cytochalasin Z_4, C-943
Cytochalasin Z_5, C-943
Cytochalasin Z_6, C-946
Cytochalasin Z_7, C-959
Cytochalasin Z_8, C-959
Cytochalasin Z_9, C-959
Cytokinin B, A-137
Cytolipin, M-485
Cytomycin, C-960
Cytosine arabinoside, C-962
Cytosine, C-961
Cytosporone A, C-963
Cytosporone B, C-963
Cytosporone F, C-963
Cytosporone G, C-963
Cytosporone H, C-963
Cytosporone I, C-963
Cytostal, D-92
Cytosylglucuronic acid, C-961
Cytoxazone, C-964
D 4028, X-5
DAB-1, D-593
Dactylamide A, D-1
Dactylamide B, D-2
Dactylicapnosine, D-3
Dactylicapnosinine, D-4
Dactylidine, D-5
Dactyline, D-6
Daechualkaloid A, M-77
Daechualkaloid C, L-193
Daechualkaloid E, D-531
Daechucyclopeptide I, P-25
Daechuine S27, A-942
Daechuine S3, D-7
Daechuine S7, D-8
Daechuine S8-1, D-9
Daechuine S1, F-150
Daechuine S2, F-151
Daechuine S4, F-149
Daechuine S5, M-189
Daechuine S9, M-720
Daechuine S10, N-338
Daechuine S26, P-25
Daechuine S6, P-25
Daijisong, C-812
Dakaramine, D-10
Dalomycin T, D-11
Damascenenic acid, A-787
Damascenic acid, A-787
Damascenine, A-787
Damascinine, D-256
Damazor, A-736
Dambullin, D-12
Daminine, A-193
Damipipecoline, H-697
Damirone A, D-13
Damirone B, D-13
Damirone C, D-13
Damituricine, H-476
Danaidal, D-14
Danaidone, L-263
Danguyelline, P-209
Dankastatin A, D-15
Dankastatin B, D-15
Danomycin, D-16
Danoxamine, D-16
Danshensuan A, D-648
Danshensu, D-648
Danuphylline A, D-17
Danuphylline, D-17
Daphcalycic acid, D-18
Daphcalycine, D-19
Daphcalycinosidine A, D-18
Daphcalycinosidine B, D-20
Daphcalycinosidine C, D-55
Daphgraciline, D-50
Daphgracine, D-51
Daphlongeramine A, D-21
Daphlongeranine A, D-22
Daphlongeranine B, D-23
Daphmacrine, D-24
Daphmacropodine, D-24
Daphmacropodosidine A, D-20
Daphmacropodosidine B, D-20
Daphmanidine A, D-25
Daphmanidine B, D-26
Daphmanidine C, D-27
Daphmanidine D, D-27
Daphmanidine E, D-25
Daphmanidine F, D-25
Daphnandrine, O-1
Daphnan-23-oic acid, H-330
Daphnarcine, D-28
Daphnezomic acid, D-51
Daphnezomine A, D-29
Daphnezomine B, D-29
Daphnezomine C, D-30
Daphnezomine D, D-31
Daphnezomine E, D-68
Daphnezomine F, D-32
Daphnezomine G, D-32
Daphnezomine H, D-53
Daphnezomine I, D-53
Daphnezomine J, D-33
Daphnezomine K, D-33
Daphnezomine L, D-34
Daphnezomine M, D-35
Daphnezomine N, D-35
Daphnezomine O, D-36
Daphnezomine P, D-37
Daphnezomine Q, D-38
Daphnezomine R, D-51
Daphnezomine S, D-53
Daphnicadine, D-39
Daphnicaline, D-40
Daphnicamine, D-41
Daphnicyclidine A, D-42
Daphnicyclidine B, D-42
Daphnicyclidine C, D-42
Daphnicyclidine D, D-43
Daphnicyclidine E, D-43
Daphnicyclidine F, D-43
Daphnicyclidine G, D-43
Daphnicyclidine H, D-44
Daphnicyclidine J, D-45
Daphnicyclidine K, D-46
Daphnicyclidine L, D-47
Daphniglaucine A, D-48
Daphniglaucine B, D-48
Daphniglaucine C, D-49
Daphniglaucine D, D-55
Daphniglaucine E, D-55
Daphniglaucine F, D-55
Daphniglaucine G, D-55
Daphniglaucine H, D-55
Daphniglaucine J, D-33
Daphniglaucine K, D-33
Daphnigraciline, D-50
Daphnigracine, D-51
Daphnijsmine, D-33
Daphnilactone A, D-52
Daphnilactone B *N*-oxide, D-53
Daphnilactone B, D-53
Daphnilongeranine A, D-54
Daphnilongeranine B, D-69
Daphnilongeranine C, D-55
Daphnilongeranine D, D-68
Daphnilongeridine, D-63
Daphnilongerine, D-56
Daphnilongertone, D-57
Daphnimacrine, D-58
Daphnimacropine, D-68
Daphnimacropodine A, D-59
Daphnimacropodine B, D-49
Daphnimacropodine C, D-49
Daphnimacropodine D, D-53
Daphnine, D-60
Daphnioldhanine A, D-61
Daphnioldhanine B, D-61
Daphnioldhanine C, D-62
Daphnioldhanine D, D-63
Daphnioldhanine E, D-63
Daphnioldhanine F, D-63
Daphnioldhanine G, D-63
Daphnioldhanine H, D-68
Daphnioldhanine I, D-63
Daphnioldhanine J, D-64
Daphnioldhanine K, D-56
Daphnipaxianine A, D-65
Daphnipaxianine B, D-65
Daphnipaxianine C, D-69
Daphnipaxianine D, D-66
Daphnipaxinine, D-67
Daphniphyllamine, D-68
Daphniphyllidine, D-68
Daphniphylline *N*-oxide, D-68
Daphniphylline, D-68
Daphniteijsmine, S-181
Daphniyunnine A, D-55
Daphniyunnine B, L-246
Daphniyunnine C, L-245
Daphniyunnine D, D-69
Daphniyunnine E, D-69
Daphnoline, O-1
Daphtenidine A, D-70
Daphtenidine B, D-71
Daphtenidine C, D-72
Daphtenidine D, D-33
Dapiramicin A, D-73
Dapiramicin B, D-73
Darcyribeirine, R-51
Dardanin, D-730
Darienine, T-565
Darlingianine, D-74
Darlingine *N*-oxide, D-75
Darlingine, D-75
Darlinine, D-76
Darlucin A, D-77
Darlucin B, D-78
Darvasamine, D-79
Darvasine, D-80
Darvasoline, D-81
Daryamide A, D-82
Daryamide B, D-82
Daryamide C, D-82
Dasycarine, D-83
Dasycarpamine, P-625
Dasycarpidan-1-methanol, U-8
Dasycarpidan-1-one, D-84
Dasycarpidol, D-84
Dasycarpidone, D-84
Dasycarpine, D-85
Dasycarponilide, L-213
Dasycarponin, L-213
Dasyclamide, C-456
Dasymachaline α-*N*-oxide, D-948
Dasymachaline, D-948
Dasyrachine, D-86
Datumetine, M-393
Daturamine, A-1043
Daturine, T-632
Daucine, D-87
Dauricicoline, D-88
Dauriciline, D-88
Dauricine, D-88
Dauricinoline, D-88
Dauricoline, D-88
Dauricoside, X-30
Dauricumidine, A-134
Dauricumine, A-134
Daurine, Q-47
Daurinoline, D-88
Daurioxoisoporphine A, T-697
Daurioxoisoporphine B, D-89
Daurioxoisoporphine C, D-89
Daurioxoisoporphine D, M-199

Dauriporphine, D-90
Dauriporphinoline, D-90
Daurisoline, D-88
Davallioside A, D-91
Davallioside B, D-91
Davidisine A, M-309
Davidisine B, M-309
Davisine, H-162
Davisinol, H-168
DBP-Br_5Cl, P-201
DBP-Br_3Cl_3, T-476
DC 102, A-1157
DC 105, A-1158
DC 81, A-1156
DC 8118A, A-1159
DC 88A, D-952
DC $89A_1$, D-953
DC $89A_2$, D-954
DC 59A, S-231
DC 8118B, A-1159
DC $89B_1$, D-953
DC 86C, H-496
DC 113, D-956
DC 52d, Q-22
DC 59H, S-231
DC 107, L-82
DC 86M, H-496
DC 62, P-660
DC 52, Q-21
DC 86R, H-496
DC 86Y, H-496
2096D, D-522
2′-Deacetoxyaustrospicatine, T-48
2′-Deacetoxyaustrotaxine, P-224
Deacetoxy-*trans*-1′-epierioaustralasine hydrate, E-180
Deacetoxy-*trans*-erioaustralasine hydrate, E-180
Deacetoxy-*trans*-erioaustralasine, E-179
Deacetoxyleurosine, L-162
5-Deacetoxy-5-oxosenampeline G, S-233
7-Deacetoxytaxuspine J, A-7
Deacetoxyvinblastine, V-110
Deacetylaglaine A, A-199
14-Deacetylajadine, M-309
Deacetylakuammiline, A-231
Deacetylambiguine, M-309
14-Deacetylandersoline, G-91
Deacetylanisomycin, A-1044
Deacetylaspidospermine, A-1499
7-Deacetylaustrospicatine, T-48
2′-Deacetylaustrospicatine, T-48
2′-Deacetylaustrotaxine, P-224
14-Deacetyl-18-benzoyl-18-demethylpubescenine, M-309
Deacetyl-*O*-benzoyl-5,10-dimethoxyakuammiline, A-231
6-Deacetylbicoloridine, M-347
Deacetylbowdensine, B-261
Deacetylcathovaline, C-213
10-Deacetylcephalomannine, T-52
N-Deacetylcolchiceine, D-92
N-Deacetylcolchicine, D-92
Deacetylcytochalasin C, C-944
Deacetylcytochalasin H, Z-37
Deacetyldaphnijsmine, D-33
Deacetyldeformylpicraline, P-417
10-Deacetyl-10-dehydro-7-acetyltaxol A, T-52
Deacetyldelphinine, M-312
Deacetylde-*O*-methylanisomycin, A-1044
N-Deacetyl-2-demethyl-*N*-formylcolchicine, D-92
N-Deacetyl-3-demethyl-*N*-formylcolchicine, D-92
14-Deacetyl-18-demethylpubescenine, M-309
Deacetyldiaboline, C-115
N-Deacetyl-2,3-didemethylcolchicine, D-92
Deacetyl-1,2β-dihydroakuammiline, A-231
Deacetyl-1,2-dihydro-5-oxoakuammiline, A-231
Deacetyl-5β,11-dimethoxyakuammiline, A-231
N-Deacetyl-6,7-di-*O*-methylisoipecosidic acid, I-167
N-Deacetyl-*N,N*-dimethyl-β-lumicolchicine, L-287
N-Deacetyl-*N,N*-dimethyl-γ-lumicornigerine, A-382
Deacetyleleutherobin, E-64
De-*O*-acetyl-1-epiaconitine, M-331
Deacetylepipachysamine A, P-601
Deacetyl-6-epipubescenine, M-309
10-Deacetyl-7-epitaxol, T-52
Deacetyl-19,20-epoxycytochalasin C, C-944
Deacetylepoxycytochalasin H, E-129
Deacetyl-19,20-epoxycytochalasin Q, C-954
6-*O*-Deacetyleuonine, P-252
8-*O*-Deacetyleuonine, P-252
2-*O*-Deacetyleuonine, P-252
O^2-Deacetylevonine, P-248
Deacetylfawcettiine, F-29
N-Deacetylfinaconitine, A-94
N-Deacetyl-*N*-formylcolchicine, D-92
N-Deacetyl-*N*-formyl-2-*O*-demethyl-β-lumicolchicine, L-287
N-Deacetyl-*N*-formyl-β-lumicolchicine, L-287
N-Deacetyl-*N*-formyl-γ-lumicolchicine, L-287
20-Deacetyl-20-formyl-17-methylalstonisine, A-648
Deacetylgeyerline, G-91
Deacetylhanamisine, H-195
Deacetylhectochlorin, H-84
Deacetylhemsleyanine, M-303
Deacetylheterophylloidine, H-161
10-Deacetyl-10-(β-hydroxybutyryl)cephalomannine, T-52
10-Deacetyl-10-(β-hydroxybutyryl)taxol B, T-52
10-Deacetyl-10-(3-hydroxybutyryl)taxol, T-52
6-Deacetyl-10-hydroxyperegrine, M-322
Deacetylhypaconitine, M-343
2-De-*O*-acetylhyponine C, P-247
Deacetylipecoside, I-167
14-Deacetyl-14-isobutyrylajadine, M-309
14-Deacetyl-14-isobutyrylnudicauline, G-91
Deacetylisoipecoside, I-167
N-Deacetylkuanoniamine D, D-93
N-Deacetyllappaconitine, A-91
Deacetyllutessine, L-310
Deacetyllycoclavine, L-322
Deacetyllythramine, L-378
N^2-Deacetyl-N^2-(3-mercapto-1-oxopropyl)maytansine, M-135
Deacetylmetaplexigenin, P-223
O-Deacetyl-12-methoxyvinorine, V-194
2′-De(acetylmethylamino)maytansine, M-136
3-De[2-(acetylmethylamino)-1-oxopropyloxy]-3-hydroxymaytansine, M-136
N-Deacetyl-*N*-methylcolchiceine, D-92
N-Deacetyl-6-*O*-methylipecosidic acid, I-167
N-Deacetyl-6-*O*-methylisoipecosidic acid, I-167
N-Deacetyl-7-*O*-methylisoipecosidic acid, I-167
14-Deacetylnudicauline, G-91
N-Deacetyl-*N*-3-oxobutyrylcolchicine, D-92
10-Deacetyl-10-oxo-7-epicephalomannine, T-52
10-Deacetyl-10-oxo-7-*epi*-taxol, T-52
8-Deacetyl-8-palmitoylvilmorrianine C, M-323
Deacetylpaniculine, P-71
6-*O*-Deacetylperegrine, M-347
Deacetylpicraline 3,4,5-trimethoxybenzoate, B-420
Deacetylpicraline, B-420
14-Deacetylpubescenine 14-methyl ether, M-309
14-*O*-Deacetylpubescenine, M-309
Deacetylpyrifolidine, P-924
N-Deacetylranaconitine, A-86
N-Deacetylretuline, R-63
Deacetylrigidusol, C-525
N-Deacetylscaconitine, M-352
Deacetylsiwanine A, M-362
Deacetylsolaphyllidine, S-349
N-Deacetylspermostrychnine, S-400
Deacetylspiramine F, A-211
Deacetylspiramine S, A-1534
Deacetylstrychnobrasiline, S-594
Deacetylsubcumine, M-323
Deacetylsungpaconitine, M-303
Deacetyltatsiensine, M-371
2-Deacetyltaxine A, A-6
10-Deacetyltaxol C, T-52
10-Deacetyltaxol, T-52
10-Deacetyltaxuyunnanine A, T-52
O-Deacetyl-1,2,4,5-tetrahydro-2-hydroxy-1-methylakuammilinium(1+), D-94
Deacetylveralosine, S-199
Deacetylvinblastine, V-110
Deacetylvindoline, V-130
10-Deacetyl-7-xylosylcephalomannine, T-52
10-Deacetyl-7-xylosyltaxol B, T-52
10-Deacetyl-7-xylosyltaxol C, T-52
10-Deacetyl-7-xylosyltaxol, T-52
8-Deacetylyunaconitine, M-336
Deacetylyuzurimine A, D-33
Deacylbengazole C, D-95
Deacylconvolutamide, D-96
Deacylcynanchogenin, T-268
Deacylcystodytin, D-97
Deacyldrevogenin, P-602
Deacylisariotin, D-98
O-Deacylpachysandrine B, D-266
1-Deacylwilfordine, P-253
Deaminocanavanine, H-235
3-Deamino-22-*O*-ethyl-3-hydroxysolanocapsine, D-99
3-Deamino-3-hydroxysolanocapsine, D-99
Deaner, D-730
Deanol aceglumate, D-730
Deanol acetamidobenzoate, D-730
Deanol, D-730
7-Deazaadenosine, T-658
Debenzoylalopecurine, L-335
Debenzoylaralionine A, D-100
N-Debenzoyl-*N*-butanoyl-10-deacetylpaclitaxel, T-52
N-Debenzoyl-*N*-cinnamoylpaclitaxel, T-52
Debenzoylhimandrine, H-277
N-Debenzoyllucentamycin A, D-101
N-Debenzoyl-*N*-(α-methylbutyryl)paclitaxel, T-52
2-Debenzoyl-2-nicotinoylwilforine, P-252
N-Debenzoyl-*N*-propanoyl-10-deacetylpaclitaxel, T-52
2-Debenzoyl-2-tigloylpaclitaxel, T-52
Debenzoylzucchini factor B, M-730
Debilic acid, D-102
14-Debromoaplysamine 4, P-823
14-Debromoaraplysillin I, A-1378
Debromoaxinohydantoin, A-1576
(*Z*)-Debromoaxinohydantoin, A-1576
Debromoclathrynamide A, C-497
(4*E*,6*E*)-Debromoclathrynamide A, C-497
trans-6″-Debromo-3,4-dihydrohamacanthin A, H-40
trans-6′-Debromo-3,4-dihydrohamacanthin A, H-40
cis-6″-Debromo-3,4-dihydrohamacanthin B, H-41
cis-6′-Debromo-3,4-dihydrohamacanthin B, H-41
2-Debromodispacamide A, D-863
Debromodispacamide B, D-863
Debromodispacamide D, D-863
Debromoeudistomin K, E-287
Debromoflustramine B, F-108
Debromogrenadadiene, H-131
(*R*)-6″-Debromohamacanthin A, H-40
(*R*)-6′-Debromohamacanthin A, H-40
6′-Debromohamacanthin B, H-41
(*R*)-6″-Debromohamacanthin B, H-41
(*R*)-6′-Debromohamacanthin B, H-41
Debromohymenialdisine, H-762
(10*E*)-Debromohymenialdisine, H-762
2-Debromohymenine, O-66
6-Debromolongamide A, L-242
5-Debromomidpacamide, M-604
2-Debromoodiline, O-66
Debromooxysceptrine, O-225
14-Debromoprearaplysillin I, P-821
Debromosceptrine, S-124
Debromoshermilamine A, S-286
2-Debromostevensine, O-66
2-Debromotaurodispacamide A, T-39
2,4-Decadienamide, D-104
2,8-Decadiene-4,6-diynoic acid isobutylamide, D-103
2,8-Decadiene-4,6-diynoic acid isopentylamide, D-103
2,8-Decadiene-4,6-diynoic acid 2-phenylethylamide, D-103
2,8-Decadiene-4,6-diynoic acid, D-103
2,4-Decadienoic acid dehydropiperidide, D-125

2,4-Decadienoic acid *p*-hydroxyphenethylamide, H-668
2,4-Decadienoic acid isobutylamide, D-106
2,4-Decadienoic acid isopentylamide, D-104
2,4-Decadienoic acid 2-methylbutylamide, D-104
2,4-Decadienoic acid 2-phenylethylamide, D-104
2,4-Decadienoic acid piperidide, D-104
2,4-Decadienoic acid pyrrolidide, D-104
6,8-Decadienoic acid, D-105
2,4-Decadienoic acid, D-104
N^{ω}-2,4-Decadienoylhistamine, H-307
1-(2,4-Decadienoyl)pyrrolidine, D-104
5-(1,3-Decadienyl)indolizidine, D-107
5-(1,3-Decadienyl)octahydroindolizine, D-107
6-(1,3-Decadienyl)octahydro-4-methyl-2*H*-quinolizin-3-ol, C-513
2,8-Decadien-6-ynoic acid, D-108
2,8-Decadien-6-ynoic 2-phenylethylamide, D-108
Decahydro-2,5-bis(4-pentenyl)quinoline, D-109
Decahydro-2,5-bis(2-propenyl)quinoline, A-357
1-(Decahydro-4,6-dihydroxy-4,7-dimethyl-6-phenyl-1*H*-pyrrolo[2,1,5-*de*]quinolizin-3-yl)ethanone, C-736
Decahydro-3,3-dimethyl-2*H*-oxireno[*d*]pyrrolo[2,1-*a*]isoquinoline, B-484
Decahydro-2,5-dipropylquinoline, A-357
Decahydro-3-hydroxy-5-(5-hydroxyoctyl)-2-methylquinoline, L-104
Decahydro-10-[(3-hydroxy-2,4,6-octadecatrienoyl)amino]-1,11*a*,11*b*-trihydroxy-2*H*-pyrazino[1,2-*a*]pyrrolo[2,1-*c*]pyrazine-3,6,9-trione, D-110
7-[5-(Decahydro-4*a*-hydroxy-1,2,5,5-tetramethyl-1-naphthalenyl)-3-methyl-2-pentenyl]-3,7-dihydro-2,3-dimethyl-6*H*-purin-6-one, D-111
Decahydro-5-(1*H*-indol-3-ylmethyl)-1,4*a*-dimethyl-6-methylene-1-(4-methyl-3-pentenyl)-2-naphthalenol, E-74
3,4,7,7*a*,8,9,10,11,13,14-Decahydro-7,14-methano-2*H*,6*H*-dipyrido[1,2-*a*:1′,2′-*e*][1,5]diazocin-6-one, A-1336
1,7,7*a*,8,9,10,11,13,14,14*a*-Decahydro-7,14-methano-2*H*,6*H*-dipyrido[1,2-*a*:1′,2′-*e*][1,5]diazocin-2-one, M-731
Decahydro-1,5-methano-6*H*-pyrido[1,2-*a*][1,5]diazocin-6-one, V-152
Decahydro-8′-methoxy-4-methyl-3′-(tetrahydro-4-methyl-5-oxo-2-furanyl)spiro[furan-2(5*H*),9′-[9*H*]pyrrolo[1,2-*a*]azepin]-5-one, S-523
Decahydro-1-methyl-5,7-diphenyl-6-(3,4,5,6-tetrahydro-2-pyridinyl)quinoline, L-220
Decahydro-5-methyl-2-(2,4-pentadienyl)quinoline, A-403
Decahydro-9*a*-methyl-2-propyl-2*H*-[1,3]oxazino[2,3,4-*de*]quinolizine, P-570
Decahydro-2-methyl-5-propylquinoline, D-112
Decahydro-5-methyl-2-propylquinoline, P-794
Decahydro-3-methyl-1*H*-pyrano[2,3-*g*]indolizin-1-one, E-60
1,2,3,3*a*,4,5,6,6*a*,7,9*a*-Decahydro-8-methylpyrido[2,1,6-*de*]quinolizine, H-295
1,2,4,5,6,6*a*,7,8,9,9*a*-Decahydro-2-methylpyrido[2,1,6-*de*]quinolizine, P-649
Decahydro-3-methylpyrrolo[2,1-*f*][1,6]naphthyridin-1(2*H*)-one, E-57
Decahydro-1-methyl-8-(tetrahydro-4-methyl-5-oxo-2-furanyl)-2*H*-furo[3,2-*c*]pyrrolo[1,2-*a*]azepin-2-one, S-519
Decahydro-2-(3,4-pentadienyl)-5-(2-penten-4-ynyl)quinoline, A-366
Decahydro-5-(2-penten-4-ynyl)-2-(2-propenyl)quinoline, A-362
Decahydro-2-(2-penten-4-ynyl)quinoline, A-289
Decahydro-5-pentyl-5*H*-pyrido[1,2-*c*]pyrrolo[1,2-*a*]pyrimidine, T-293
3,4,5,6,8,9,10,11,12,13-Decahydro-9-phenyl-2,13-methano-2*H*-2,6,10-benzotriazacyclopentadecine-1,7-dione, I-222
Decahydro-8-(1-piperidinylmethyl)isoquinoline, D-113
Decahydro-4-(2-propenyl)-1,5-methano-8*H*-pyrido[1,2-*a*][1,5]diazocin-8-one, A-1013
Decahydro-2-propylquinoline, A-401
1,5,6,7,7*a*,8,9,10,11,12*a*-Decahydro-2-(2-pyrrolidinylmethyl)-2*H*-pyrano[2,3,4-*ij*]pyrido[1,2-*b*][2,7]naphthyridine, H-352
1,2,3,3*a*,5,6,11,11*b*,12,13-Decahydropyrrolo[2′′,1′′:2′,3′]pyrimido [1′,6′:1,2]pyrido[3,4-*b*]indole, E-54
Decahydro-2,5,8-trimethyl-2*H*-1-oxa-4,7,9*b*-triazaphenalene, D-114
Decaisnine, P-221
(10α)-Decaline, V-86
Decaline, V-86
Decamine, V-95
Decanoic acid isobutylamide, D-115
Decanoic acid, D-115
3-Decanoyl-5-methylpyridine, M-538
5-Decanoyl-2-nonylpyridine, D-116
N-Decanoyltyrosine, T-700
Decarbamoyl-12-deoxysaxitoxin, S-109
Decarbamoylgonyautoxin I, H-731
Decarbamoylgonyautoxin II, H-731
Decarbamoylgonyautoxin III, H-731
Decarbamoylgonyautoxin IV, H-731
Decarbamoyl-11α-hydroxyneosaxitoxin, H-731
Decarbamoyl-11β-hydroxyneosaxitoxin, H-731
Decarbamoyl-11α-hydroxysaxitoxin, H-731
Decarbamoyl-11β-hydroxysaxitoxin, H-731
Decarbamoylneosaxitoxin, S-109
10-Decarbamoyloxy-9-dehydromitomycin B, M-656
10-Decarbamoyloxy-9-dehydroporfiromycin, M-655
Decarbamoyloxygonyautoxin II, H-731
Decarbamoyloxygonyautoxin III, H-731
Decarbamoyloxysaxitoxin, S-109
Decarbamoylsaxitoxin, S-109
Decarbomethoxyapocuanzine, D-117
Decarbomethoxy-19,20-dihydroakuammicine, T-668
16′-Decarbomethoxy-19,20-dihydroconoduramine, D-118
Decarbomethoxydihydrogambirtannine, D-434
16′-Decarbomethoxy-19,20-dihydrovoacamine, T-8
16-Decarbomethoxy-19,20-dihydrovobasine, D-119
16′-Decarbomethoxy-20-epi-19,20-dihydroconoduramine, D-118
16′-Decarbomethoxy-20-epidihydrovoacamine, T-8
16-Decarbomethoxy-20-epi-19,20-dihydrovobasine, D-119
Decarbomethoxyerymelanthine, E-198
16′-Decarbomethoxy-3′-hydroxyconodurine, C-616
N-Decarbomethoxykopsaporine, K-66
Decarbomethoxykopsifine, K-69
Decarbomethoxykopsine, K-76
Decarbomethoxynauclechine, N-63
Decarbomethoxytetrahydrosecamine, S-174
Decarbomethoxytetrahydrosecodine, D-120
16-Decarbomethoxyvinervinine (incorr.), T-668
16-Decarbomethoxyvoacamine pseudoindoxyl, D-121
Decarbomethoxyvoacangarine, I-4
2-Decarboxybetanidin, D-122
2-Decarboxybetanin, D-122
Decarboxydehydrosanguinone A, S-58
Decarboxydidehydrosanguinone A, S-58
2-Decarboxyphyllocactin, D-122
Decarine acetate, C-356
Decarine, C-356
2,4,6,8-Decatetraenoic acid dehydropiperidide, D-125
6-(1,3,5,7-Decatetraenyl)-1,2-dimethyl-3-piperidinol, C-788
2,4,6-Decatrienoic acid dehydropiperidide, D-125
2,4,8-Decatrienoic acid isobutylamide, D-123
2,4,8-Decatrienoic acid, D-123
2,6,8-Decatrienoic acid, D-124
6-(1,3,5-Decatrienyl)-3-hydroxy-2-hydroxymethyl-1-methylpiperidine, M-600
6-(1,3,5-Decatrienyl)-3-hydroxy-1-methyl-2-piperidinemethanol, M-600
5-(1,3,5-Decatrienyl)indolizidine, D-107
6-(1,3,5-Decatrienyl)-3-methoxy-1,2-dimethylpiperidine, C-788
5-(1,3,5-Decatrienyl)octahydroindolizine, D-107
Decatromicin A, D-126
Decatromicin B, D-126
Decaturin A, D-127
Decaturin B, D-127
Decaturin C, D-127
Decaturin D, D-128
2-Decene-6,8-diynoic acid isobutylamide, D-130
2-Decene-6,8-diynoic acid, D-130
2-Decene-4,6-diynoic acid, D-129
2-Decene-4,6,8-triynoic acid isopentylamide, D-131
2-Decene-4,6,8-triynoic acid 2-phenylethylamide, D-131
2-Decene-4,6,8-triynoic acid, D-131
2-Decenoic acid isobutylamide, D-132
2-Decenoic acid, D-132
2-(3-Decenyl)-1,6-diazacyclododec-8-ene-7,12-dione, B-5
2-(1-Decenyl)-4-hydroxyquinoline, D-139
5-(2-Decenyl)indolizidine, D-133
5-(2-Decenyl)octahydroindolizine, D-133
2-(1-Decenyl)-4(1*H*)-quinolinone, D-139
N-(3-Decenyl)sulfamic acid, D-134
Dechloroacutumine, A-134
Dechlorobarbamide, B-22
6-Dechlorobatzelline C, D-13
Dechlorodauricumine, A-134
Dechloro-4,5-deepoxy-*N*-demethylmaytansinol, M-136
Dechloro-*N*-deepoxymaytansinol, M-136
10-Dechlorodysideathiazole, D-970
Dechlorofontonamide, F-126
10-Dechloro-*N*-methyldysideathiazole, D-970
6-Dechloropenitrem A, P-194
Decinine, V-95
Decipinol ester A, H-255
Decipinone A, H-255
Declovanillobiocin, V-18
Decodine, V-88
Decoic acid (obsol.), D-115
Decorticasine, L-234
Decumbenine B, D-136
Decumbenine C, H-767
Decumbenine, D-135
Decumbensine, E-43
Decursivine, D-137
Decussine, D-138
21-Decyano-25-dihydrosaframycin A, S-4
2-Decyl-4-hydroxyquinoline, D-139
Decylic acid, D-115
2-Decyl-4-quinolinol, D-139
2-Decyl-4(1*H*)-quinolinone *N*-oxide, D-139
2-Decyl-4(1*H*)-quinolinone, D-139
2,5-De(epidithio)-2,5-(epitrithio)chaetocin, C-321
Deepoxybohemamine, B-242
17,18-Deepoxycaracurine II, D-910
Deet, ESA, M-398
N-Deethylaconitine, M-331
N-Deethylanthranoyllycoctonine, M-309
N-Deethyldehydrolucidusculine, D-162
N-Deethyldelphatine, M-309
N-Deethyldelsine, M-309
N-Deethyl-*N*,19-didehydrosachaconitine, M-378
N-Deethyl-*N*-formylbrowniine, M-309
N-Deethyl-*N*-formyllycaconitine, L-317
Deethylibophyllidine, D-140
16-Deethylindanomycin, I-64
N-Deethyllycaconitine-*N*-aldehyde, L-317
N-Deethyllycoctonine, M-309
N-Deethyl-*N*-methyl-12-epinapelline, N-30
8-*O*-Deethyl-8-*O*-methylkongboenine, M-312
N-Deethylmethyllycaconitine, G-91
N-Deethyl-14-*O*-methylperegrine, M-347
N-Deethylsongoramine, D-162
N-Deethylsongorine, N-30
19-*O*-Deethylspiramine N, B-371
O-Deethyltalaroconvolutin C, D-141
Deferiprone, D-632
Deferoxamine hydrochloride, D-142
Deferoxamine, D-142
Deformoundulatine, U-32

Deformylcorymine, D-236
Deformylcoryzeylamine, D-143
N-Deformyldichotamine, D-144
Deformylflustrabromine B, B-356
Deformylflustrabromine, B-316
Deformylstemmedenine, S-510
Deformyltalbotinic acid methyl ester, D-145
Deformylvallesine, A-1499
N-Deformylvincristine, V-110
Deglucopterocereine *N*-oxide, T-178
Deglucopterocereine, T-178
Sambucus nigra Degraded cyanogenic glycosides, D-146
Dehassiline, D-147
Dehatridine, C-171
Dehatrine, D-148
Dehatriphine, D-149
DEHSPM, B-150
19,20-Dehydro-*O*-acetylyohimbine, D-378
Dehydroacosanine, M-309
Dehydroactidione, D-765
19,20-Dehydroadirubine acetate, A-141
Dehydroaglaiastatin, A-197
Dehydroajmalicine, C-207
Dehydroalbine, A-243
Δ^5-Dehydroalbine, A-243
Dehydroanacycline, A-968
Dehydroangustifoline, A-1013
4,5-Dehydroanhydrolycorine, H-290
4,5-Dehydroanhydropseudolycorine, A-1508
Dehydroanonaine, D-166
Dehydroantofine, A-1025
1,2-Dehydroapateline, K-115
Dehydroapocavidine, D-150
Dehydroaporheine, D-166
9,10-Dehydroaristoteline, A-1442
1,2-Dehydroaspidospermidine *N*-oxide, E-3
1,2-Dehydro-ψ-aspidospermidine, D-377
1,2-Dehydroaspidospermidine, E-3
Dehydroazasirosterol, D-151
Dehydrobatzelladine C, D-152
1,2-Dehydrobeninine, B-63
Dehydrobhesine, T-139
Dehydrobicoloridine, G-152
α-Dehydrobiotin, L-166
Dehydroboldine, D-159
Dehydroborrecapine, B-251
Dehydrobrevicolline, B-292
14-Dehydrobrowniine, M-309
Dehydrobufotenine, D-153
18,19-Dehydrocamptothecin, C-70
Dehydrocancentrine A, C-76
Dehydrocancentrine B, C-76
3,4-Dehydro-5-carboxystrictosidine, C-153
Dehydrocardiopetaline, G-152
Dehydrocarpaine I, C-168
Dehydrocarpaine II, C-168
Dehydrocavidine, D-150
Dehydrochelanthifoline, G-181
17,4′-Dehydro-3α-cinchophylline, C-448
2-Dehydrococcinelline, H-295
Dehydrocoelenterazine, C-560
7,8-Dehydrocoelobillardierine, C-562
Dehydrocommersonine, D-205
Dehydrocoreximine, P-719
5,6-Dehydrocoronaridine, C-657
Dehydrocorybulbine, D-154
Dehydrocorydaline, D-154
Dehydrocorydalmine, P-34
Dehydrocorydine, C-682
1,2-Dehydrocorypalline, D-421
Dehydrocorypalmine, P-34
Dehydrocorytenchine, P-719
Dehydrocrambescin A, D-155
Dehydrocrambine A, D-155
Dehydrocrebanine, C-733
Dehydrocrenatidine, D-686
Dehydrocrenatine, M-290
3,4-Dehydrocycleanine, C-835
Dehydrocycloheximide, D-765
Dehydrocyclopeptine, C-890
Dehydrocyclostellettamine D, C-910
Dehydrocyclostellettamine E, C-910
11,12-Dehydrocytisine, C-938
12,13-Dehydrocytisine, C-938
Dehydrodaphnigraciline, D-50
Dehydrodaphnigracine, D-51
Dehydrodarlingianine, D-74
Dehydrodarlinine, D-76
2-Dehydrodeacetylheterophylloidine, H-161
Dehydrodecodine, V-88
6-Dehydrodelcorine, M-309
14-Dehydrodelcosine, M-309
2,3-Dehydrodelcosine, M-363
6-Dehydrodelpheline, M-321
1-Dehydrodelphisine, M-323
Dehydrodelsoline, G-152
Dehydrodeltamine, M-307
Dehydrodeltatsine, G-152
2,3-Dehydro-6-*O*-demethyldelcosine, M-363
Dehydrode-*N*-methyluleine, U-8
5,6-Dehydrodemissine, S-345
Dehydrodeoxynupharidine, D-227
1,2-Dehydrodesacetylretuline, R-63
2,16-Dehydrodiaboline, C-115
Dehydrodicentrine, D-156
2,3-Dehydrodictyocarpine, M-362
15-Dehydrodictysine, D-370
3,4-Dehydro-8,10-diethyllobelidiol, D-391
5,8′-Dehydrodiferulic acid, D-395
24,25-Dehydro-10,11-dihydroaflavinine, A-172
24,25-Dehydro-10,11-dihydro-20-epi-20-hydroxyaflavinine, A-172
24,25-Dehydro-10,11-dihydro-20-hydroxyaflavinine, A-172
24,25-Dehydro-10,11-dihydro-13-oxoaflavinine, A-172
4,5-Dehydro-5,6-dihydro-3-oxo-20-epiverazine, V-73
14,15-Dehydro-10,11-dimethoxy-16-epivincamine, V-115
14,15-Dehydro-10,11-dimethoxyvincamine, V-115
Dehydrodioxolide A, D-807
Dehydrodioxolide B, D-807
Dehydrodiscretamine, P-34
Dehydrodiscretine, P-719
Dehydrodisecocyclopiazonic acid, B-218
Dehydrodopamine, D-157
19,20-Dehydroedulirin A, T-349
19,20-Dehydroedulisone A, E-41
Dehydroeldelidine, M-307
Dehydroelymoclavine, A-205
Dehydro-16-epiaffinisine, G-23
2,3-Dehydroepiaphylline, A-1337
6,7-Dehydro-20-epiminovincinine, H-743
14,15-Dehydro-19-epiminovincinine, H-743
Dehydroepivincadine, V-112
14,15-Dehydro-16-epivincamine, V-115
19,20-Dehydroervatamine, E-190
10,11-Dehydroerysodine, E-203
10,11-Dehydroerysovine, E-203
Dehydro-α-erythroidine, E-215
Dehydroevodiamine, D-158
13,13*b*-Dehydroevodiamine, D-158
6*a*,7-Dehydrofloripavidine, D-164
1,2-Dehydrofluorodaturatin (incorr.), H-444
4,5-Dehydrofluorodaturatin, H-444
1,2-Dehydrofluorodaturine (incorr.), H-444
Dehydroformouregine, T-521
6*a*,7-Dehydro-*N*-formylnornantenine, N-29
1,2-Dehydrofuchsisenecionine, T-188
4-Dehydrofuntumafrine B, A-891
Dehydrofusaric acid, B-425
4,21-Dehydrogeissoschizine, G-32
1,2-Dehydrogeissoschizoline, G-34
Dehydrogentianine lactam, G-60
Dehydroglaucine, D-159
Dehydroguattescine, G-214
5′,6′-Dehydroguiachrysine, S-593
5′,6′-Dehydroguiaflavine, G-219
Dehydroheliamine, D-421
Dehydrohernandaline, H-147
Dehydrohetisine, H-202
14,15-Dehydroholadienine, H-314
Dehydrohuangshanine, H-366
19,20-Dehydro-6-hydroxyervatamine, E-190
14,15-Dehydro-10-hydroxy-11-methoxy-16-epivincamine, V-115
14,15-Dehydro-10-hydroxy-11-methoxyvincamine, V-115
Δ^5-Dehydro-13-hydroxymultiflorine *N*-oxide, M-731
Δ^5-Dehydro-13-hydroxymultiflorine, M-731
18-Dehydro-10-hydroxynigritanine, O-21
3,4-Dehydro-5-hydroxy-2-piperidone, D-458
8*a*,8*b*-Dehydro-8-hydroxyptilocaulin, P-773
7,8-Dehydro-1-hydroxyrutaecarpine, R-168
6,7-Dehydro-19-hydroxyschizozygine, S-137
14-Dehydro-10-hydroxytermisine, T-90
1′,2-Dehydrohygrine, H-759
14-Dehydroiliensine, M-309
Dehydroindoxyl, I-106
2,3-Dehydro-α-isoaphylline, A-1337
Dehydroisoapocavidine, D-150
Dehydroisoboldine, D-159
Dehydroisochalciporone, C-340
Dehydroisocinchophyllamine, C-448
Dehydroisocorydione, S-367
Dehydroisocorypalmine, P-34
Dehydroisolaureline, D-175
Dehydroisolongistrobine, D-160
5,6-Dehydro-α-isolupanine, D-161
5,17-Dehydroisomatrine, D-80
18,19-Dehydro-3-isoreserpiline, R-51
Dehydroisosenaetnine, S-232
(+)-Dehydroisosenaetnine, S-232
5,6-Dehydro-α-isosparteine, D-168
16,17-Dehydroisostrychnobiline, S-591
Dehydroisothebaine, T-525
Dehydrojoubertiamine, J-49
11-Dehydrokobusine, H-167
1′,2′-Dehydrokohatine 2β-*N*-oxide, K-56
Dehydrokohatine, K-56
14,15-Dehydrokopsinine, V-49
Dehydrokuanoniamine B, D-93
Dehydrolirinidine, D-164
Dehydrolirioferine, D-159
5,6-Dehydrololinine, L-234
Dehydroluciculine, D-162
Dehydrolucidusculine, D-162
5,6-Dehydrolupanine, D-161
2,3-Dehydrolycaonic acid piperidide, O-194
2,3-Dehydrolycaonic acid pyrrolidide, O-194
2,3-Dehydrolycaonic acid, O-194
Dehydrolycocaroline, L-320
Dehydrolycopecurine, L-335
5,6-Dehydromalouphyllinol, D-279
Dehydromatricaria ester, D-131
Dehydromatricaric acid isobutylamide, D-131
Dehydromatricaric acid, D-131
5,17-Dehydromatrine *N*-oxide, L-93
5,17-Dehydromatrine, L-93
7,11-Dehydromatrine, L-94
12,13-Dehydromatrine, L-81
Dehydro-4-methoxycyclobrassinin, M-276
19,20-Dehydro-10-methoxydihydrocorynantheol, G-33
7,8-Dehydro-1-methoxyrutaecarpine, R-168
19,20-Dehydro-10-methoxytalcarpine, T-20
14,15-Dehydro-*N*-methylaspidospermidine, A-1498
Dehydro-8-methyl-10-ethyllobelidiol, H-434
1,2-Dehydromicranthine, K-115
3,4,5,6-Dehydromitragynine, M-657
3-Dehydromitragynine, M-657
Dehydromonocrotaline, M-688
Dehydromorphine, M-703
5-Dehydromultiflorine, M-731
Dehydromultiflorine, M-731
Dehydronantenine, N-29
Dehydronapelline, D-162
3,4-Dehydroneoipecoside, I-167
Dehydroneolitsine, N-125
18,19-Dehydronigritanine, O-21
Dehydroniranin A, N-235
Dehydroniranin B, N-235
Dehydronorcyclodercitine, C-857
Dehydronorerythrosuamide, N-299
Dehydronorerythrosuamine, N-299

6,6*a*-Dehydronorglaucine, D-159
6*a*,7-Dehydronorglaucine, D-159
6,6*a*-Dehydronorlaureline, L-72
1,2-Dehydro-2-norlimacusine, C-551
Dehydronormacrostomine, D-163
Dehydronornuciferine, D-164
7-Dehydronornuciferine-7′-dehydro-*O*-methylisopiline, U-41
3,4-Dehydronoroxyhydrastinine, I-305
7(11)-Dehydro-13-norpilocarpine, N-295
Dehydronortehaunine, I-307
1,2-Dehydro-2′-nortelobine, K-115
Dehydronorweberine, T-276
Dehydronuciferine, D-164
18-Dehydroochrolifuanine A, O-21
18-Dehydroochrolifuanine E, O-21
18-Dehydroochrolifuanine F, O-21
Dehydroocopodine, L-158
Dehydroocoteine, O-27
Dehydroodorine, O-67
Dehydroorientalidine, A-584
19,20-Dehydro-5-oxoervatamine, E-190
10,11-Dehydro-8-oxoerythraline, C-799
14-Dehydro-18-oxoholadienine, H-314
2,3-Dehydro-10-oxo-α-isosparteine, A-1337
Dehydropachycereine, T-233
Dehydrophanostenine, D-156
Dehydrophenylahistin, P-338
Dehydrophomin, C-943
3,4-Dehydro-2-piperidone, D-495
Dehydropipernonaline, P-464
Dehydropredicentrine, D-159
Watasenia Dehydropreluciferin, C-560
12,13-Dehydroprolyl-2-(1,1-dimethylallyltryptophyl)diketopiperazine, C-861
12,13-Dehydroprolyltryptophyldiketopiperazine, C-899
Dehydroprotostemonine, P-670
Dehydropseudocheilanthifoline, T-325
8*a*,8*b*-Dehydroptilocaulin, P-773
Dehydropuntarenine, D-165
2,3-Dehydro-*O*-(2-pyrrolylcarbonyl)virgiline, V-153
19,20-Dehydroreserpiline, R-51
19-Dehydroreserpine, D-233
Dehydroretrofractamide C (incorr.), R-60
Dehydroroemerine, D-166
7,8-Dehydrorutaecarpine, R-168
Dehydroryanodine, R-175
Dehydrosalsolidine, D-627
Dehydro-γ-sanshool, T-127
16-Dehydrosarcovagine D, D-260
Dehydrosaulatine, D-167
Dehydroschoberine, S-140
Dehydroscoulerine, P-34
Dehydrosenaetnine, S-232
Dehydrosinomenine, S-313
Δ^4-Dehydroskytanthine, S-326
Δ^{4a}-Dehydroskytanthine, S-326
Dehydrosolenopsin B, M-580
Dehydrosolenopsin C, M-504
1-Dehydrosongorine, N-30
Δ^7-Dehydrosophoramine, S-376
13,14-Dehydrosophoridine *N*-oxide, S-371
13,14-Dehydrosophoridine, S-371
11,12-Dehydrosparteine, D-168
2,3-Dehydro-β-stachydrine, D-169
Dehydrostephalagine, S-536
Dehydrostephanine, T-522
Dehydrostepholidine, P-34
Dehydrostesakine, C-733
3,4-Dehydrostrictosidine, S-583
3,4-Dehydrostrictosidinic acid, S-583
14-Dehydrotalatizamine, M-352
1,2-Dehydrotelobine, K-115
4,6-Dehydro-1,2,4,5-tetrahydro-2,5-dioxopilocarpine, E-272
14-Dehydrotetrastachyne, T-294
14,15-Dehydrotetrastachynine, T-295
Dehydrothalebanin A, T-303
Dehydrothalebanin B, T-303
Dehydrothalicarpine, D-170
Dehydrothalicmine, O-27
Dehydrothalicsimidine, P-208
Dehydrothalictricavine, D-171
Dehydrothalifaberine, T-322
Dehydrothaliporphine, D-159
Dehydrothalmelatine, D-170
Dehydrotomatine, S-456
Dehydrotrewiasine, T-450
Dehydrotryptamine, D-172
1′,2′-Dehydrotubulosine, T-675
Dehydrotylophorine, A-1025
Dehydroverrucosine, F-160
6,7-Dehydrovincadine, V-112
14,15-Dehydrovincadine, V-112
14,15-Dehydrovincamine, V-115
14,15-Dehydrovincine, V-115
Dehydrovirgiboidine, V-152
Dehydrovirgilidone, V-152
Dehydrovoachalotine, D-173
1-Dehydroxybaccatin III, E-138
6-Dehydroxy-O^{10}-buxafuranamine, B-449
2-Dehydroxy-O^2-buxafuranamine, D-174
Dehydroxycapuvosine, C-106
4*a*-Dehydroxycrinamabine, A-670
Dehydroxyervataminol, E-190
10-Dehydroxyflavaconitine, M-343
Dehydroxyhaplocidine, A-1490
17-Dehydroxykopsingine, K-66
Dehydroxylopine, D-175
16-De(hydroxymethyl)-4-demethyl-16-(methoxycarbonyl)fluorocurine, F-99
6-De(hydroxymethyl)-6-epitetrodotoxin, T-298
Dehydroxymethylflazine, F-85
Dehydroxymethylvoachalotinol, T-425
Dehydroxypaxilline, P-140
19,20-Dehydro-α-yohimbine, D-378
19,20-Dehydro-β-yohimbine, D-378
19-Dehydroyohimbine, D-378
3,4-Dehydro-β-yohimbine, Y-13
Delafrine, C-297
Delafrinone, C-297
Delagoenine, D-176
Delagoensine, D-177
Delajacine, M-309
Delajacirine, M-309
Delajadine, M-309
Delamide, D-178
Delaminomycin A, D-179
Delaminomycin B, D-179
Delaminomycin C, D-179
Delartine, G-91
Delatine, H-202
Delatisine, D-180
Delavaconitine C, A-99
Delavaconitine D, A-99
Delavaconitine E, A-98
Delavaconitine F, A-98
Delavaconitine G, A-102
Delavaconitine, A-98
Delavaine A, D-182
Delavaine B, D-183
Delavaine, D-181
Delavayine A, D-184
Delavayine B, D-185
Delavayine C, D-186
Delavayine, D-181
Delavine, C-290
Delavinone, C-290
Delbidine, T-552
Delbine, A-85
Delbine, F-221
Delbiterine, M-309
Delbonine, M-309
Delbotine, M-309
Delboxine, D-187
Delbruline, M-309
Delbrunine, M-309
Delbruninol, M-309
Delbrusine, M-309
Delcaine, C-537
Delcarduchol, S-170
Delcaroline, M-339
Delcoline, M-309
Delcoridine, M-309
Delcorine, M-309
Delcorinine, M-309
Delcosine, M-309
Delectine, M-309
Delectinine, M-309
Delelatine, M-321
Delfissinol, H-207
Delflexine, D-188
Delfrenine, D-189
Delgramine, H-175
Delimmun, I-148
Delmenzine, M-321
Delnudine, D-190
Delnuttaline, T-551
Delnuttidine, H-198
Delnuttine, H-208
Delorine, D-191
Delosine, M-309
Delpetine, M-307
Delphamine, M-309
Delphatambine, M-665
Delphatine, M-309
Delphatisine A, A-1534
Delphatisine B, D-192
Delphelatine, M-307
Delpheline, M-321
Delphicrispuline, A-95
Delphidine, M-323
Delphigraciline, H-169
Delphinifoline, M-309
Delphinine, M-312
Delphiperegrine, M-321
Delphirine, M-323
Delphisine, M-323
Delphoccine, D-193
Delphonine, M-312
Delphoorine, D-194
Delpoline, M-355
Delporphine, P-208
Delpyrine, D-195
Delretine, M-307
Delsemidine, G-91
Delsemine, D-196
Delsine, M-309
Delsoline, M-309
Delsonine, M-309
Delstaphidine, G-152
Delstaphigine, M-312
Delstaphinine, G-152
Delstaphisagnine, M-323
Delstaphisagrine, M-323
Delstaphisine, M-323
Delstaphisinine, M-323
Deltaline, M-307
Deltamine, M-307
Deltatsine, M-309
Delterine, M-307
Delvestidine, M-309
Delvestine, M-309
Demalonylcopiamycin, C-634
Demalonylmethylcopiamycin, C-634
Demanol aceglumate, D-730
Demanyl phosphate, D-197
Demecolceine, D-92
Demecolcine, D-92
Demecolcinone, D-198
Demerarine, R-46
5-Demethoxy IT 143B, P-421
Demethoxyabresoline, L-53
Demethoxyalstonamide, V-125
Demethoxyalstoniline, O-140
Demethoxyaniflorine, A-1039
Demethoxyanomaline, A-1067
Demethoxyaspidospermine, A-1498
16-De(methoxycarbonyl)-17-deoxy-19,20-dihydro-19-hydroxy-21-methyl-18-nortalbotine, S-600
Demethoxycarbonyldihydrogambirtannine, D-434
16-De(methoxycarbonyl)-19,20-dihydrovobasine, D-119
16-Demethoxycarbonyl-20-epiervatamine, M-293
Demethoxycarbonyl-3,4,15,16,17,18-hexahydrogambirtannine, D-434
Demethoxycarbonylkopsifine, K-69

1-Demethoxycarbonyl-12-methoxyfruticosine, F-163
16-Demethoxycarbonylpagicerine, P-10
10,11-Demethoxychippiine, C-389
Demethoxychoisyine, C-418
17-Demethoxycorynoxine B, R-90
30-Demethoxycurromycin A, C-815
(±)-Demethoxycyclindrocarpidine, C-929
Demethoxycylindrocarpidine, C-929
16-Demethoxydelavaine A, D-182
16-Demethoxydelavaine B, D-183
10-Demethoxy-21-deoxykopsidasine, K-71
Demethoxy-4,5-dioxodehydroasimilobine, C-273
11-Demethoxy-3-epimyrtoidine, M-803
3-Demethoxyerythratidinone, D-199
3-Demethoxyfaberonine, T-333
Demethoxyfumitremorgin C, F-190
(19*E*)-18-Demethoxygardfloramine, G-18
(19*E*)-18-Demethoxygardneramine, G-20
Demethoxyguadiscine, G-188
α-Demethoxyhaemanthamine, H-9
β-Demethoxyhaemanthamine, H-9
Demethoxyhoerhammerinine, H-743
8-Demethoxyhostasine, H-362
1-Demethoxyhumantenine, H-367
4′-Demethoxy-6′-hydroxydecaline, L-11
18-Demethoxy-16-hydroxygardneramine oxindole, G-21
Demethoxyisomigrastatin, I-245
17-Demethoxyisorhyncophylline, R-90
10-Demethoxykopsidasinine, K-68
Demethoxykopsingine, K-66
10-Demethoxy-12-methoxykopsidasinine, K-68
3-Demethoxy-2,3-methylenedioxyerythrouline, D-200
8-Demethoxy-10-*O*-methylhostasine, H-362
16-Demethoxymethyllycaconitine, G-91
4-Demethoxymichigazone, M-590
11-Demethoxymyrtoidine, M-803
Demethoxypalosine, A-1498
3′-Demethoxypiplartine, P-473
Demethoxypodocarpamide, Z-6
Demethoxyprodigiosin, P-636
18-Demethoxypubescenine, M-321
Demethoxypurpeline, T-288
6-Demethoxypyrifoline, K-78
11-Demethoxyreserpine, D-234
ar-Demethoxyrindline, H-323
8-Demethoxyrunanine, R-161
10′-Demethoxystreptonigrin, S-569
21-Demethoxysulfomycin I, S-638
12-Demethoxytabernulosine, P-417
11-Demethoxytomaymycin, T-424
Demethoxyvandrikine, M-666
Demethoxyvindoline, V-130
Demethyl Antibiotic UK 1, A-1302
Demethyl UK 1, A-1302
9-De-*O*-methylaaptamine, A-2
N-Demethylaccedine, A-27
Demethylaccedinisine, A-28
14-*O*-Demethyl-14-acetylanhweidelphinine, A-1023
9-*O*-Demethyl-9-*O*-acetylhomolycorine, L-347
De-*N*-methylacronycine, A-120
O^6-Demethyladiantifoline, A-139
N-Demethyladouetine X, A-149
N-Demethyladouetine Y′, A-150
N-Demethyladouetine Z, A-151
Demethylalangiside, A-239
N^a-Demethylalfileramine, A-260
N^b-Demethylalfileramine, A-260
2-Demethylallocolchicine, A-537
N-Demethylalpinine, A-638
N^b-Demethylalstogustine *N*-oxide, E-30
N^b-Demethylalstogustine, E-30
N-Demethylalstonal, A-648
N^1-Demethylalstonerinal, T-20
N^4-Demethylalstonerinal, T-20
N^4-Demethylalstonerine, A-649
N-Demethylalstonisine, A-654
N^b-Demethylalstophyllal oxindole, A-648
N^b-Demethylalstophylline oxindole, A-654
N^1-Demethylalstophylline, A-649
4′-Demethylamino-4′,5′-dihydroxystaurosporine, S-498
4′-Demethylamino-4′-hydroxy-3′-epistaurosporine, S-498
4′-Demethylamino-4-hydroxystaurosporine, S-498
4′-Demethylamino-4′-nitrostaurosporine, S-498
N-Demethylamphibine H, A-942
6-*O*-Demethylancistrobenomine A, A-982
4′-*O*-Demethylancistrocladine, A-982
6-*O*-Demethylancistrocladisine, A-985
5′-*O*-Demethylancistrocline, A-982
6-*O*-Demethylancistroealaine A, A-980
N-Demethylanisamitocin P3, M-136
De-*O*-methylanisomycin, A-1044
N-Demethylansamitocin P1, M-136
N-Demethylansamitocin P2, M-136
N-Demethylansamitocin P4, M-136
6-Demethylanthranoyllycoctonine, M-309
6-Demethylantofine, A-1330
2′-*N*-Demethylaplysinopsin, A-1357
N-Demethylarmepavine, A-1444
O-Demethylaspidocarpine, P-924
Demethylaspidospermine, A-1499
Demethylasterriquinone B1, A-1521
N-Demethylbelladine, N-288
6-*O*-Demethylberbamine, I-328
10-*O*-Demethylbrucine, S-589
N-Demethylbuchenavianine, D-662
O-Demethylbuchenavianine, D-662
8-*O*-Demethylbuflavine, A-1361
7-Demethylcalafatine, C-23
N-Demethylcalyculin A, C-55
N-Demethylcapitavine, C-94
N-Demethylcapuvosine, C-106
N-Demethylcarboethoxymacronine, P-626
O-Demethylcarnegine, T-162
N-Demethylcelesticetin, C-239
O-Demethylcelesticetin, C-239
7′-*O*-Demethylcephaeline, E-72
9-*O*-Demethylcephaeline, E-72
Demethylcephaeline, E-72
10-*O*-Demethylcephaeline, E-72
Demethylcephalotaxine, C-271
Demethylcephalotaxinone, I-201
Demethylceridimine, C-281
De-*O*-methylcervinomycin A_2, C-287
11-Demethylcezomycin, C-26
N-Demethylchelidonine, C-357
N-Demethyl-*meso*-chimonanthine, C-382
N-Demethylcitracridone I, C-472
Demethylcoclaurine, H-275
12-*O*-Demethylcoclobine, C-551
2-Demethylcolchiceine, D-92
3-Demethylcolchiceine, D-92
2-Demethylcolchiciline, C-568
10-Demethylcolchicine, D-92
2-Demethylcolchicine, D-92
3-Demethylcolchicine, D-92
2-Demethylcolchifoline, C-571
N-Demethylcolletine, H-275
N-Demethylconoduramine, C-615
Demethylconoduramine, C-615
N-Demethylconodurine, C-616
N-Demethylcorymine, D-410
Demethylcorynantheidine, C-689
Demethylcorynantheine, C-689
Demethylcrinamine, H-5
O-Demethylcriwelline, T-53
N-Demethylcrychine, E-221
1-*O*-Demethylcryprochine, C-781
10-De-*O*-methylcryptaustoline, C-783
6′-*O*-Demethyl-(-)-curine, C-812
N-Demethylcyanocycline A, C-830
N-Demethylcyclomicuranine L, C-884
N-Demethylcyclomikuranine, C-884
N^1-Demethylcynodine, C-931
N^1-Demethylcynometrine, C-933
De-*N*-methyldasycarpidone, D-84
N-Demethyldasymachaline, D-948
N′-Demethyldauricine, D-88
N-Demethyldauricine, D-88
3-Demethyl-*N*-deacetylcolchicine, D-92
Demethyldecaline, V-86
N-Demethyl-4,5-deepoxymaytansinol, M-136
N-Demethyl-20-deethylsuaveoline, S-220
1-De-*O*-methyldehydroformouregine, T-521
14-*O*-Demethyldelboxine, D-187
18-*O*-Demethyldelcosine, M-309
O^1-Demethyldelelatine, M-321
6-Demethyldelphatine, M-309
16-Demethyldelphatine, M-309
16-*O*-Demethyldelsoline, M-309
16-Demethyldeltaline, M-307
2-Demethyldemecolcine, D-92
3-Demethyldemecolcine, D-92
N-Demethyldendrobine, D-210
7-*O*-Demethyl-6-deoxybostrycoidin, B-255
30-Demethyl-8-deoxylydicamycin, L-353
7-Demethyldeoxynupharidine, D-201
O^6-Demethyl-9,12-dideoxy-12-oxolythrancine, L-379
4-Demethyl-20,21-dihydroalstophyllan-17-ol, R-22
Demethyldihydrocorynantheine, C-689
N-Demethyldihydrogalanthamine, G-3
O-Demethyldihydrogalanthamine, G-3
Demethyldihydrogalanthamine, G-3
O-Demethyl-2,7-dihydro-*C*-homo-α-erythroidine, 10CI, P-315
N-Demethyl-1,2-dihydro-*N*-hydroxy-1-oxoacronycine, D-417
N-Demethyl-5,6-dihydrooxysanguinarine, D-510
N^a-Demethyldihydropurpeline, T-288
5′-*O*-Demethyl-*ent*-dioncophylleine A, D-793
5′-*O*-Demethyldioncophylline A, D-793
7′-*O*-Demethyl-α,α′-dioxostebisimine, S-502
N-Demethyldiscarine B, D-836
10-Demethyldiscretine, X-30
N-Demethyldoryphornine, I-305
13-Demethyldysidenin, D-972
N-Demethylechitamine *N*-oxide, D-410
N-Demethylechitamine, D-410
Demethyleleutherobin, E-64
Demethyleneberberine, P-34
9,10-Demethylene-9,10-dehydrosanguinarine, C-356
Demethylenedelcorine, M-309
Demethylenedelpheline, M-321
Demethyleneeldelidine, M-307
9,10-Demethylenesanguinarine, C-356
N-Demethyl-16-epiaccedine, A-27
6-*O*-Demethyl-7-epiancistrobrevine D, A-990
N-Demethyl-3-epimacronine, P-626
O-Demethyl-3-epimacronine, P-626
5′-*O*-Demethyl-7-epi-8-*O*-methyldioncophylline A, D-793
N-Demethylequisetin, E-142
O^3-Demethylerysodine, E-203
N-Demethyleschscholtzine, E-221
N-Demethyl-*N*-ethoxycarbonylmacronine, P-626
9-*O*-Demethyl-7-*O*-ethyllycorenine, L-347
7-*O*-Demethylevolitrine, F-212
N-Demethyl-*N*-formyldehydronuciferine, D-164
N-Demethyl-*N*-formylleurosine, L-162
N-Demethyl-*N*-formylmesembrenone, M-224
N^{20}-Demethyl-N^{20}-formylsalonine B, A-876
N-Demethylfrangufoline, F-150
N-Demethylfrangulanine, F-151
N-Demethylgalanthamine, G-3
O-Demethylgalanthamine, G-3
9-*O*-Demethylgalwesine, H-504
O^{18}-Demethylgardneramine oxindole, G-21
16*R*-O^{18}-Demethylgardneramine oxindole, G-21
O^{18}-Demethylgardneramine, G-20
N-Demethylglaudine, G-87
Demethylgrossamide, G-182
O-Demethylhaemanthamine, H-5
5′-*O*-Demethylhamatine, A-982
5′-*O*-Demethylhamatinine, A-982
N^b-Demethylharappamine, M-667
N-Demethylharzianic acid, H-67
4-Demethylhasubanonine, H-70
O^3-Demethylhasubanonine, H-70
N-Demethylhemsine B, H-105
5-*O*-Demethylhernandezine, H-148

2′-Demethylhernandezine, H-148
O^3-Demethylhernandifoline, L-244
O^3-Demethylhippeastidine, H-293
18-De-*O*-methylholinidine, C-588
9-*O*-Demethylhomolycorine α-*N*-oxide, L-347
9-*O*-Demethylhomolycorine, L-347
4-Demethylhumantenine, H-367
11-*O*-Demethylhumantenirine, H-367
N-Demethylhuperzinine, H-388
3-De-*O*-methyl-14α-hydroxyisotylocrebrine *N*-oxide, I-342
3-De-*O*-methyl-14α-hydroxyisotylocrebrine, I-342
N-Demethyl-3-(3-hydroxyisovaleroyl)maytansinol, M-136
N-Demethylhygrine, H-759
1-Demethylhypaconitine, M-343
De-*N*-methylicaceine, I-11
N-Demethylintegerrenine, I-154
N-Demethylintegerrine, I-156
N-Demethylisaomuronine, C-781
Demethylisoalangiside, A-239
O-Demethylisobrucine, P-672
14-*O*-Demethyl-14-isobutyrylanhweidelphinine, A-1023
7′-*O*-Demethylisocephaeline, E-72
10-*O*-Demethylisocephaeline, E-72
N-Demethylisocorydione, S-367
13-Demethylisodysidenin, D-972
8-*O*-Demethylisomigrastatin, I-245
De-*N*-methyl-1-isoremerine, S-546
N-Demethylisorhoeadine, R-86
6-*O*-Demethylisotetrandrine, I-328
7-*O*-Demethylisothalicberine, I-329
3-De-*O*-methylisotylocrebrine, I-342
N-Demethyljubanine A, J-51
O^{12}-Demethylkesselringine, K-36
4-Demethyl-9-ketoepothilone C, E-115
1-De-*O*-methyllappaconitine, A-91
Demethyllasubine II, L-53
Demethyllasubine I, L-53
12-*O*-Demethyllauberine, L-67
Demethyllauterine, O-187
12-*O*-Demethyllimacusine, L-175
De-*O*-methyllissoclinotoxin A, L-205
2-*O*-Demethyl-β-lumicolchicine, L-287
2-*O*-Demethyl-γ-lumicolchicine, L-287
3-*O*-Demethyl-β-lumicolchicine, L-287
3-*O*-Demethyl-γ-lumicolchicine, L-287
N-Demethyllunidonine, L-295
14-*O*-Demethyllycaconitine, L-317
N-Demethyllycoramine, G-3
O-Demethyllycoramine, G-3
30-Demethyllydicamycin, L-353
N-Demethylmacronine, P-626
O-Demethylmacronine, P-626
8-*O*-Demethylmaritidine, M-108
9-*O*-Demethylmaritidine, M-108
N-Demethylmasonine, O-68
N-Demethylmaytanacine, M-136
$N^{2'}$-Demethylmaytanbutine, M-135
11-Demethylmecambrine, M-140
O-Demethylmenisarine, M-197
3-Demethylmescaline, H-465
N-Demethylmesembranol, M-226
4′-*O*-Demethylmesembranol, M-224
N-Demethylmesembrenol, M-224
4′-*O*-Demethylmesembrenol, M-224
4′-*O*-Demethylmesembrenone, M-224
O^4-Demethylmetaphanine, M-233
N^b-Demethyl-12-methoxyalstogustine, E-30
9-Demethyl-8-methoxydihydrochelerythrine, D-407
4-Demethyl-11-methoxyhumantenine, H-367
O-Demethyl-10-methoxytsilanine, T-649
9-De-*O*-methyl-N^l-methylaaptamine, A-2
3-*O*-Demethyl-2-*O*-methylalangiside, A-239
4′-*O*-Demethyl-6-*O*-methylancistrocladine, A-982
2′-*N*-Demethyl-*N*-3′-methylaplysinopsin, A-1357
4-Demethyl-*N*-methylatanine, A-1529
3-Demethyl-*N*-methyldemecolcine, D-92
5′-*O*-Demethyl-8-*O*-methyldioncophylline A, D-793
6-*O*-Demethyl-8-*O*-methyl-7-epiancistrobrevine D, A-990
5′-*O*-Demethyl-8-*O*-methyl-7-epidioncophylline A, D-793
4′-*O*-Demethyl-6-*O*-methylhamatine, A-982
3-*O*-Demethyl-2-*O*-methylisoalangiside, A-239
9-*O*-Demethyl-7-*O*-methyllycorenine, L-347
O^{12}-Demethyl-$O^{12'}$-methylrodiasine, R-114
O-Demethyl-*N*-methyltorulosine, T-434
O^3-Demethyl-17-methylyuzurine, D-51
N-Demethylmitiphylline, M-651
8-*O*-Demethylmollisine, M-678
O-Demethylmucronine D, M-720
Demethylmurrayanine, H-447
N-Demethylmyrianthine C, M-794
Demethylmyxothiazole A, M-807
Demethylneoalangiside, A-239
Demethylneodrupacine, D-202
N-Demethylnicaustrine, T-47
N-Demethylnitidine, N-239
De-*N*-methylnoracronycine, A-120
4-Demethylnorhasubanonine, H-70
8-*O*-Demethylnornitidine, N-239
N-Demethylnuciferine, D-531
N-Demethylnummularine D, M-720
De-*N*-methyl-α-obscurine, O-5
De-*N*-methyl-β-obscurine, O-5
Demethyloctopine, A-38
N-Demethyloligophyline, O-82
De-*O*-methylolivoretin B, T-63
N-Demethyloreodine, G-87
4-Demethyl-9-oxoepothilone D(1), E-117
4-Demethyl-9-oxoepothilone D(2), E-117
4-Demethyl-16-oxohasubanonine, H-70
Demethyloxolaureline, O-187
Demethyloxyaaptamine, M-241
9-Demethyloxychelerythrine, D-407
N-Demethyloxysanguinarine, D-510
O^{14}-Demethylpacidine, M-321
O-Demethylpalosine, A-1499
N-Demethylpamamycin 593A, P-43
N-Demethylpamamycin 593B, P-43
2′-Demethylpanurensine, P-76
N^b-Demethylpapillotrienine, B-473
N-Demethylparaensidimerine C, P-87
Demethylpeceyline, P-148
7-*O*-Demethylpeinamine, P-171
7-Demethylpiericidin A_1, D-203
4′-*O*-Demethylpiplartine, P-473
N-Demethylpleiocorine, P-519
De-*O*-methylprodigiosin, P-636
9-Demethylprotoemetinol, P-664
10-Demethylprotoemetinol, P-664
De-*O*-methylpseurotin A, P-738
9-Demethylpsychotrine, E-72
18-Demethylpubescenine, M-309
N-Demethylpuqietinone, P-807
O-Demethylpurpureine, P-208
N^a-Demethylquaternine, P-417
O-Demethylrenierol acetate, R-45
O-Demethylrenierone, R-45
7-Demethyl-4′-rhamnopiericidin A_1, D-203
17-De-*O*-methylrhizoxin, R-83
N-Demethylrhoeadine, R-86
N-Demethylricinine, D-668
O-Demethylricinine, D-668
2′-Demethylrodiasine, R-114
N-Demethylrohitukine 3′-acetate, R-121
N-Demethylrugulovasine A, R-157
N-Demethylrugulovasine B, R-157
16-Demethylsachaconitine, M-355
26-Demethylsaframycin Y_3, S-13
N-Demethylsambutoxin, S-48
N-Demethylsanjoinine A, F-150
N^3-Demethylsaracodine, P-601
N-Demethylscutianine A, S-165
6-*O*-Demethylsecoantofine, S-248
Demethylsecologanol, D-204
N-Demethylsemperviraminone, S-227
4-*O*-Demethylsimmondsin, S-302
N-Demethylsinomenine, S-313
N-Demethylsonodione, S-367
1-Demethylsonodione, S-367
13-Demethylspirolide C, S-432
13-Demethylspirolide D, S-432
De-*O*-methylstaurosporine, S-498
4′-*N*-Demethylstaurosporine, S-498
7′-*O*-Demethylstebisimine, S-502
2-*O*-Demethylstephodeline, T-28
6-Demethylstreptonigrin, S-569
10′-Demethylstreptonigrin, S-569
N^4-Demethyltabernamine, T-8
6-De-*O*-methyltakatonine, T-16
17-*O*-Demethyltaxodine, T-51
O-Demethyltazettine, T-53
N^{13}-Demethylteleocidin A_1, L-367
N-Demethylteleocidin B_1, T-63
N-Demethylteleocidin B_4, T-63
De-*O*-methyltenuicausine, T-77
2′-*N*-Demethyltetrandrine, T-286
2′-Demethylthalibrunine, T-311
7-*O*-Demethylthalicberine, T-313
2-*O*-Demethylthalicthuberine, T-318
3-*O*-Demethylthalicthuberine, T-318
N^2-Demethylthalidasine, T-320
6′-*O*-Demethylthalifaboramine, T-322
9-Demethylthalimonine, T-330
2-Demethylthalimonine, T-330
5-*O*-Demethylthalistyline, T-337
N-Demethylthalistyline, T-337
N-Demethylthalphenine, T-345
5-*O*-Demethylthalrugosaminine, T-346
N-Demethylthalrugosidine, T-320
7-*O*-Demethylthalrugosinone, T-320
(Demethylthio)cystodytin B, D-823
N-Demethylthiolutin, A-759
11-De-*O*-methyltomaymycin, T-424
9-*O*-Demethyltortuosine, V-35
1-Demethyltoxoflavin, R-66
Demethyltrewiasine, T-450
3-Demethyltrichocereine, H-465
1-*O*-Demethyltricornine, M-309
12-*O*-Demethyltrilobine, I-339
O-Demethyltsilanine, T-649
9-Demethyltubulosine, T-675
10-Demethyltubulosine, T-675
14-*O*-Demethyltuguaconitine, D-187
7-Demethyltylophorine *N*-oxide, T-695
7-Demethyltylophorine, T-695
Demethyltylophorine, T-695
Demethyltylophorinine, T-696
De-*N*-methyluleine, U-8
8-*O*-Demethylvasconine, V-35
Demethylvertaline, V-86
Demethylvertine, V-95
N-Demethylvinblastine, V-110
N^1-Demethylvincamajine N^1-tri-*O*-methylgallate, V-113
18-Demethylvirescenine, M-325
N-Demethylvoacamine, V-168
12-Demethylvobtusine, V-188
1-Demethylwinkleridine, M-325
N-Demethylxestomanzamine A, X-23
Demethylxestospongin B, X-25
Demissidine, D-205
Demissine, D-205
$β_1$-Demissine, D-205
$Δ^5$-Demissine, S-345
Dendramine, D-210
Dendridine A, D-206
Dendrine, D-207
Dendroamide A, D-208
Dendroamide B, D-209
Dendroamide C, D-209
Dendroban-12-one, D-210
Dendrobine *N*-oxide, D-210
Dendrobine, D-210
cis-Dendrochrysanine, H-759
trans-Dendrochrysanine, H-759
Dendrochrysine, D-211
Dendrocrepine, D-212
Dendrodoine, D-213
Dendronobilin A, D-214
Dendroprimine, O-42
Dendrowardine, D-215
Dendroxine, D-216

Densiberine, P-79
Densiflorine, D-217
Densiflorine, D-218
Densinine, D-219
Denudatidine, D-220
Denudatine, D-221
Deoxaphomin, A-1460
13-Deoxo-13-acetyloxy-1-deoxytaxine B, T-47
13-Deoxo-13-acetyloxytaxine B, T-45
Deoxoamphimedine, D-222
Deoxoangustifoline, A-1013
8-Deoxoantidesmone, A-1325
Deoxoapodine, M-666
Deoxoaralionine A, A-1375
Deoxoaristolasicone, A-1432
15-Deoxo-13-deoxy-15-hydroxymadumycin I, M-35
3-Deoxo-3-hydroxylunarine, L-293
9-Deoxo-9α-hydroxytaxol, T-52
11-Deoxojervine, J-36
2-Deoxoparaherquamide A, P-90
13-Deoxy-13-acetyloxy-1-deoxynortaxine B, T-47
3-Deoxyaconine 8-linoleate, M-343
Deoxyaconitine, M-343
5-Deoxyadenophorine, E-244
1-Deoxyadenophorine, E-254
Deoxyadifoline, A-140
Deoxyadrenaline, E-98
1-Deoxy-D-allonojirimycin, H-616
1-Deoxy-D-altronojirimycin, H-616
1-Deoxy-L-altronojirimycin, H-616
2-Deoxy-2-aminokealiiquinone, K-25
25-Deoxy-25-aminosaframycin A, S-11
Deoxyamphimedine, D-222
Deoxyangustifoline, A-1013
Deoxyaniflorine, A-1039
Deoxyaralionine A, A-1375
Deoxyaspergillic acid, A-1475
Deoxyaspidodispermine, A-1493
17-Deoxyaspochalasin C, A-1502
12-Deoxyaxillarine, A-1572
10-Deoxy-4,4′-binecatorone, N-85
3-Deoxyblastmycetin B, B-232
3-Deoxyblastmycetin C, B-232
6-Deoxybostrycoidin, B-255
Deoxybrevianamide E, C-861
3-Deoxybuxandonine, B-459
28-Deoxybuxanoldine, B-460
16-Deoxybuxidienine C, B-466
Deoxycalyciphylline B, C-45
20-Deoxycamptothecin, C-70
7-Deoxycephalofortuneine, H-331
13-Deoxychilenine, C-375
Deoxychromoviridan, C-426
13-Deoxycopiamycin, C-634
Deoxycordifoline lactam, D-223
Deoxycordifoline, C-641
3-Deoxycrassicaulidine, M-313
4*a*-Deoxycrinamabine, A-670
9-Deoxycurtisin, H-635
7-Deoxycylindrospermopsin, C-930
2-Deoxydaphnezomine S, D-53
8-Deoxy-14-dehydroaconosine, A-100
Deoxydehydrochorismic acid, D-224
Deoxydehydromutaaspergillic acid, M-462
8-Deoxy-13-dehydroserratinine, S-257
Deoxydelcorine, M-325
6-Deoxydelpheline, M-348
Deoxydelsoline, M-328
18-Deoxydiaboline, R-63
1-Deoxydiacetyltaxine B, T-273
7-Deoxy-*trans*-dihydronarciclasine, N-37
4-Deoxy-7,8-dihydrotubastrine, T-656
Deoxydipthocarpaine, D-828
Deoxydipthocarpamine, D-828
Deoxydiptocarpaine, D-828
Deoxydiptocarpamine, D-828
Deoxydynemicin A, D-959
7-Deoxy-6-epicastanospermine, C-188
17-Deoxyepilamprolobine, L-26
11-Deoxy-4-epitetrodotoxin, T-298
28-Deoxy-22-epizoanthenamine, Z-31
Deoxyepothilone A, E-115
Deoxyepothilone B, E-117
18-Deoxy-19,20-epoxycytochalasin R, C-954
11-Deoxy-6,11-epoxy-13-methylchelidonine, C-693
4′-Deoxy-3′,4′-epoxy-22-oxovincaleukoblastine, L-162
4′-Deoxy-3′,4′-epoxyvincaleucoblastine, L-162
4-Deoxyester A, R-175
4-Deoxyeuonymine, P-244
6-Deoxyfagomine, M-516
11-Deoxyfistularin 3, F-70
19-Deoxyfistularin 3, F-70
10-Deoxyflavaconitine, M-343
2′-*N*-(1-Deoxy-β-D-fructopyranos-1-yl)cephaeline, E-72
2′-*N*-(1-Deoxy-β-D-fructopyranos-1-yl)neocephaeline, E-72
Deoxyfructosazine, T-250
1-Deoxy-D-galactonojirimycin, H-616
1-Deoxy-D-galactostatin, H-616
7-Deoxygermine, Z-36
9-Deoxyglanduline, H-178
Deoxyguadiscidine, G-188
1-Deoxy-D-gulonojirimycin, H-616
1-Deoxy-L-gulonojirimycin, H-616
Deoxyharringtonic acid, H-66
Deoxyharringtonine, H-66
1-Deoxy-1-(1,2,3,6,7,8-hexahydro-2,6,8-trioxo-4*H*-imidazo[4,5-*g*]pteridin-4-yl)-D-ribitol, R-166
Deoxyhomoharringtonine, H-66
7-Deoxy-α-homomannonojirimycin, H-607
7-Deoxy-β-homomannonojirimycin, H-607
7-Deoxy-α-homonojirimycin, H-607
10-Deoxy-17-hydroxyakuammine, A-232
Deoxyhydroxyaspergillic acid, A-1475
4-Deoxy-20-hydroxyryanodine, R-175
19-Deoxy-15β-hydroxyuscharin, U-53
9-Deoxyhypognavine, H-195
1-Deoxyhypognavine, H-200
1-Deoxyhypognavinol, H-200
1-Deoxy-D-idonojirimycin, H-616
1-Deoxy-L-idonojirimycin, H-616
1-Deoxy-1,5-imino-D-allitol, H-616
1-Deoxy-1,5-imino-D-gulitol, H-616
Deoxyindolizomycin, I-101
5′-Deoxy-5-iodotubercidin, T-658
Deoxyisocalyciphylline B, C-45
Deoxyjesaconitine, M-343
11-Deoxykobusine, H-172
Deoxykopsijasminilam, K-72
9-Deoxylappaconitine, A-95
20′-Deoxyleurosidine, V-110
13-Deoxyludaconitine, M-303
18-Deoxylycoctonine, M-321
Deoxylycorenine, L-347
8-Deoxylydicamycin, L-353
9-Deoxylythrancine, L-377
8′-Deoxymalyngamide C, D-225
Deoxymalyngamide C, D-225
1-Deoxymannonojirimycin, H-616
6-Deoxymanzamine X, M-91
4-Deoxymayteine, P-244
Deoxymesaconitine, M-343
2′-Deoxy-3-methyladenosine, A-844
6-Deoxy-8-methylbostrycoidin, D-226
N-Deoxymilitarinone A, M-610
5-Deoxymiriamide, D-639
Deoxymutaaspergillic acid, M-462
7-Deoxynarciclasine, N-37
18-Deoxynargenicin A_1, N-276
Deoxyneo-β-hydroxyaspergillic acid, F-76
1-Deoxynojirimycin 6-phosphate, H-616
1-Deoxynojirimycin, H-616
1-Deoxy-5-nornojirimycin, P-458
N-Deoxynortryptoquivaline, N-315
Deoxynortryptoquivalone, N-315
Deoxynupharidine, D-227
Deoxynupharidine-6,7-diol, D-227
Deoxynybomycin, N-346
15-Deoxyoxalicine A, O-148
15-Deoxyoxalicine B, O-148
19-Deoxy-11-oxofistularin 3, F-70
2-Deoxy-2-(5-oxo-2-pyrrolidinecarboxamido)glucopyranose, P-937
1-Deoxy-1-oxosongorine, N-30
2-Deoxy-18-oxovobtusine, V-188
2-Deoxy-3′-oxovobtusine, V-188
6′-Deoxyoxysporidinone, O-226
1-Deoxypaclitaxel, E-138
Deoxypalustrine, P-40
Deoxypalytoxin, P-42
7-Deoxypancratistatine, P-58
14-Deoxyparsonsianidine, P-96
14-Deoxyparsonsianine, P-97
16-Deoxyparsonsianine, P-97
Deoxypeganidine, P-164
Deoxypeganine *N*-oxide, T-231
Deoxypeganine, T-231
14-Deoxypergularinine, T-696
4-Deoxyphorbol, T-275
1′-Deoxypsammaplysin D, P-695
N^7-2′-Deoxypseudoxanthosine, X-5
7-Deoxypubescenine, M-323
Deoxypumiliotoxin 251H, D-228
(3*R*)-Deoxypumiloside, P-796
(3*S*)-Deoxypumiloside, P-796
Deoxypyridinoline, P-907
1-Deoxy-1-[2-(3-pyridinyl)-1-pyrrolidinyl]-β-D-fructopyranose, P-957
Deoxyrhexifoline, B-254
Deoxyrubroflavin, D-229
1-Deoxysecofascaplysin A, R-57
Deoxysepiapterin, S-246
8-Deoxyserratinidine, S-256
8-Deoxyserratinine, S-257
15-Deoxyspergualin, S-394
1-Deoxy-D-talonojirimycin, H-616
3′-Deoxytalopiericidin A_1, P-421
9-Deoxytauroacidin B, T-39
1-Deoxytaxol, E-138
1-Deoxy-1-[1,3,4,7-tetrahydro-6-(hydroxymethyl)-2,4,7-trioxo-8(2*H*)-pteridinyl]-D-ribitol, P-382
5-Deoxytetrodotoxin, T-510
11-Deoxytetrodotoxin, T-298
Deoxythalidastine, T-321
Deoxytopsentin, T-432
C-Deoxytoxiferine, T-436
5′-Deoxytoyocamycin, S-53
Deoxytryptoquivaline, T-645
3′-Deoxytubastrine, T-656
5′-Deoxytubercidin, T-658
Deoxytubulosine, T-675
Deoxytylophorinine *N*-oxide, T-696
19-Deoxyuscharin, U-53
Deoxyvasicine, T-231
Deoxyvasicinone *N*-oxide, D-503
Deoxyvasicinone, D-503
16-Deoxyveralkamine, V-60
23-Deoxyveratramine, V-71
Deoxyverrucarin E, A-71
11-Deoxyverticillin A, V-89
Deoxyvinblastine A, V-110
20′-Deoxyvinblastine, V-110
Deoxyvincaleukoblastine A, V-110
Deoxyvincaleukoblastine B, V-110
Deoxyviolacein, V-142
2-Deoxyvobtusine lactam, V-188
2-Deoxyvobtusine lactone, V-188
2-Deoxyvobtusine, V-188
21-Deoxyvomilenine, V-194
16-Deoxy-Wieland-Gumlich aldehyde, R-63
Deoxyyuzurimine, D-33
2′-Deoxyzeatin riboside, Z-11
28-Deoxyzoanthenamine, Z-31
Dephosphonocalyculin A, C-55
Deplancheine, D-230
Deppeaninol, T-141
N-Depropionyldecorticasine, L-234
Deracil, D-518
Dercitamide, D-93
Dercitamine, D-93
Dercitine, D-231
Dermalex, A-625
Derquantel, P-90
Desacetoxydaphniphylline, D-68
Desacetoxyvindoline, V-130
Desacetylcolchiceine, D-92

Desacetylcolchicine, D-92
Desacetyldaphnijsmine, D-33
Desacetyldesformoakuammiline, S-576
Desacetyldoronine, O-92
N^{a}-Desacetyl-18-hydroxyisoretuline, R-63
Desacetylisoretulinal, R-63
N^{a}-Desacetylisoretuline, R-63
Desacetylisoretuline, R-63
Desacetylneoprotoveratrine, P-674
O-Desacetylpachysandrine B, D-266
Desacetylprotoveratrine A, P-674
Desacetylprotoveratrine B, P-674
Desacetylretuline, R-63
Desacetylspermostrychnine, S-400
Desacetyltacraline, T-15
1-Desacetylwilfortrine, P-253
Desacylcynanchogenin, T-268
Desacylkondurangogenin C, P-603
O,*N*-Desacyl-*N*-methylpachysandrine A, D-266
Desaminocanavanine, H-235
3-Desamino-22-*O*-ethyl-3-hydroxysolanocapsine, D-99
3-Desamino-3-hydroxysolanocapsine, D-99
Desanthraserpidine, D-687
Desatrine, P-674
Desbenzoylaralionine A, D-100
Descarbomethoxyconopharyngine, I-4
16-Descarbomethoxy-16,17-dihydro-17-hydroxy-19-epiajmalicine, A-214
16*R*-Descarbomethoxytacamine, T-13
16*S*-Descarbomethoxytacamine, T-13
2-Descarboxybetanidin, D-122
2-Descarboxybetanin, D-122
2-Descarboxyphyllocactin, D-122
Deschloroanhydroaureomycin, A-1034
11-Deschlororebeccamycin, R-32
Desclidium, Q-17
Descresept, M-262
Desdamethine, D-232
Desdanine, P-876
Deserpideine, D-233
Deserpidic acid, D-687
Deserpidine, D-234
Deserpidinic acid, D-687
N-Desethyl-*N*-methylaconitine, M-331
N-Desethyl-19-oxoanthranoyllycoctonine, H-123
N-Desethylpacifiline, H-123
Desferal, D-142
Desferrin, D-142
Desferrioxamine mesilate, D-142
Desferrioxamine, D-142
Desferrithiocin, D-235
Desferroferrithiocin, D-235
Desformoakuammidinol, T-425
Desformocabuamine, V-125
Desformocorymine, D-236
Desformylstemmadenine, S-510
Deshydroxyacetylhenningsamide, H-110
Deshydroxyacetylhenningsiine, H-111
Desmethoxychoisyine, C-418
Desmethoxyiboluteine, I-5
N-Desmethoxyrankinidine, H-367
Des-*N*-methylacronycine, A-120
Des-N^{1a}-methylanhydromacralstonine, M-8
N-Desmethylarmepavine, A-1444
Des-*N*-methylavicine, A-1566
Desmethylcephalotaxinone, I-201
Des-*N*-methylchelerythrine, C-356
Des-*N*-methylcitpressine II, T-243
Des-*N*-methylcitpressine I, T-243
2-Desmethylcolchicine, D-92
$N^{2'}$-Desmethylcycleanine, C-835
O-Desmethyldihydrochelerithrinyl-11-acetone, A-34
O-Desmethyldihydrochelerithrinyl-8-acetone, A-34
N-Desmethyl-1,2-dihydro-1-hydroxyacronycine, D-417
Desmethyleleutherobin, E-64
Desmethylemetine, E-72
3-Desmethylerysovine, E-203
Des-*N*-methylfastigiatine, F-17
5′-Des-*O*-methylharringtonine, H-66
3′′-Des-*O*-methylharringtonine, H-66
5′-Des-*O*-methylhomoharringtonine, H-66
3′′-Des-*O*-methylhomoharringtonine, H-66
7′-Desmethylhuangshanine, H-366
N-Desmethylindolactam V, I-78
5′-Des-*O*-methylisoharringtonine, I-238
N-Desmethyljubanine B, J-52
Desmethylmyxothiazole A, M-807
N-Desmethylnitidine, N-239
Des-*N*-methylnoracronycine, A-120
N-Desmethylnuciferine, D-531
Des-*O*-methylolivoretin C, O-88
Desmethylphidolopin, P-357
13-Desmethylspirolide C, S-432
N-Desmethylthalidezine, H-148
Desmethylzanthophylline, F-90
Desmodilactone, A-800
Desmodimine, D-237
Desmotrichinine, D-238
Desoxoviroidin, V-160
Desoxoviroisin, V-160
12-Desoxyaxillarine, A-1572
16-Desoxybuxidienine, B-466
Desoxycabufiline, C-3
Desoxycordifoline, C-641
Desoxycordifolinic acid, C-641
Desoxycyclobuxoxazine A, C-851
Desoxyepinephrine, E-98
4-Desoxyevonine, P-248
17-Desoxy-*cis*-lamprolobine, L-26
14-Desoxy-13*a*-methyltylohirsutinidine, M-583
2-Desoxyryosenaminol, H-166
Desoxysarpagine, T-425
Desoxy-Wieland-Gumlich aldehyde, C-115
Desthiobiotin, M-499
Detamide, M-398
Dethiobiotin, M-499
Dethiotetrakis(methylthio)chetomin, D-239
Dethiotetra(methylthio)chetomin, D-239
Detoxinine, D-240
Deveratroylyesoline, Y-10
DGCC, D-243
DGTA, D-244
DGTS, D-245
DHA-paclitaxel, T-52
DHBOA-Glc, D-538
DHQD-CLB, Q-18
Dhurrin 6′-glucoside, H-520
Dhurrin, H-520
Diaboline *N*-oxide, C-115
Diaboline, C-115
Diabroticin A, D-241
Diabroticin B, D-241
Diacetonamine, A-839
2,5-Diacetonyl-1-methylpyrrolidine, H-704
1,14-Diacetoxy-9-benzoyloxy-4,6-dihydroxy-2-isobutanoyloxy-8-nicotinoyloxydihydro-β-agarofuran, H-119
8,9-Diacetoxy-1-benzoyloxy-4-hydroxy-6-nicotinoyloxydihydro-β-agarofuran, P-219
3,4-Diacetoxy-*N*-cinnamoylpyrrolidine, S-87
2,4-Diacetoxyepipachysamine D, D-262
2,16-Diacetoxy-9,11-epoxybuxamidine, B-477
2,14-Diacetoxy-1-furoyloxydihydro-6-(2-methylbutanoyloxy)-9-nicotinoyloxy-β-agarofuran, H-247
2,6-Diacetoxy-9-furoyloxydihydro-14-(2-methylbutanoyloxy)-1-nicotinoyloxy-β-agarofuran, H-247
2,14-Diacetoxy-1-furoyloxydihydro-6-(2-methylpropanoyloxy)-9-nicotinoyloxy-β-agarofuran, H-247
2,6-Diacetoxy-9-furoyloxydihydro-14-(2-methylpropanoyloxy)-1-nicotinoyloxy-β-agarofuran, H-247
8,14-Diacetylaconosine, A-99
3,7-Diacetyl-15-angeloylgermine, G-70
Diacetylanthranilic acid, A-31
16,28-Diacetylbuxanoldine, B-460
Diacetylcevedine, C-295
8,14-Diacetylchasmanine, M-323
O,*N*-Diacetyl-*N*-demethylgalanthamine, G-3
11,13-Di-*O*-acetyl-9-deoxyglanduline, H-178
Diacetyldihydrolycorine, Z-15
N,2-Diacetyl-4,5-dimethoxyphenethylamine, D-219
Di-*O*-acetyl-3-epidihydrocorymine, D-410
N,*N*-Diacetylepipachysamine C, P-601
11,13-Di-*O*-acetylglanduline, H-170
Diacetylglycoperine, F-223
6,8-Diacetylheteratisine, H-157
11,13-Diacetylhetisine, H-202
1,15-Di-*O*-acetylhypognavine, H-179
3′,7-Diacetylintermedine, I-160
Diacetylisohypognavine, H-203
Di-*O*-acetylleptinidine, L-116
Diacetyllycofoline, L-328
3′,7-Diacetyllycopsamine, I-160
1,2-Di-*O*-acetyllycorine, L-348
O,*O*-Diacetylmacranthine, M-9
8,14-Diacetylneoline, M-323
1,14-Diacetylneoline, M-323
N,*O*-Diacetylnornuciferidine, P-4
N,*O*-Diacetylnoroliveroline, O-87
1,10-Diacetyl-10-norpluviine, P-528
Diacetylpseudaconitine, M-336
6,7-Di-*O*-acetylsinococuline, S-311
7,10-Diacetyltaxine A, A-6
Diacetyltaxine B, T-45
2′,7-Diacetyltaxol, T-52
N^{b}-Diacetyltryptamine, T-639
3,5-Diacyl-1,4-dihydro-4-nonylpyridines, D-242
1,2-Diacylglyceryl-3-(*O*-carboxyhydroxymethyl)-choline, D-243
1,2-Diacylglyceryl-*O*-2′-(hydroxymethyl)-*N*,*N*,*N*-trimethyl-β-alanine, D-244
4-*O*-(1,2-Diacylglyceryl)-*N*,*N*,*N*-trimethylhomoserine, D-245
Dialanine anhydride, D-769
Dialanine dianhydride, D-769
2,5-Dialkylpyrrolidines, D-246
2,4-Dialkylthiazoles, D-247
2,5-Diallyldecahydroquinoline, A-357
Diamethine, C-420
Diamid Y, D-889
Diamidinocadaverine, D-401
Diamidinospermidine, H-305
1,7-Diamino-4-azaheptane, D-255
1,9-Diamino-4-azanonane, A-897
1,9-Diamino-5-azanonane, D-252
1,8-Diamino-4-azaoctane, S-398
1,4-Diaminobutane, B-422
1,4-Diaminobutane-*N*,*N*′-dipropanoic acid, S-397
1,4-Diamino-2-butanol, D-248
1,4-Diamino-2-butene, B-423
3,20-Diamino-9,19-cyclopregnan-2-ol, C-903
1,10-Diamino-4,7-diazadecane, B-153
1,12-Diamino-4,8-diazadodecane, D-249
1,12-Diamino-4,9-diazadodecane, S-399
1,14-Diamino-5,10-diazatetradecane, B-150
1,13-Diamino-4,9-diazatridecane, D-250
1,13-Diamino-5,9-diazatridecane, D-251
1,11-Diamino-4,8-diazaundecane, B-154
4,4′-Diaminodibutylamine, D-252
α,α′-Diamino-6′,7′-dihydro-6′,7′-dioxo-[2,4′-bi-1*H*-indole]-3,3′-dipropanoic acid, T-641
α,2-Diamino-4,5-dihydro-1*H*-imidazole-4-propanoic acid, E-80
5,5′-Diamino-4,4′-dihydroxy-3,3′-diaza-2,2′-diphenoquinone, I-70
4,5-Diamino-2,6-dihydroxypyrimidine, D-254
2,4-Diamino-5,6-dihydroxypyrimidine, D-253
3,20-Diamino-4,14-dimethyl-9,19-cyclopregnane, B-474
3,20-Diamino-4,14-dimethyl-9,19-cyclopregnane-4-methanol, C-888
3,20-Diamino-4,14-dimethyl-9,19-cyclopregnan-16-ol, C-846
3,3′-Diaminodipropylamine, D-255
4,5-Diaminoeicosane, E-47
1,2-Diaminoethane, E-225
2,4-Diamino-3-hydroxybenzoic acid, D-256
3,20-Diamino-16-hydroxy-4,14-dimethyl-9,19-cyclopregnane-4-methanol, C-883
3,20-Diamino-16-hydroxy-4,14-dimethyl-9,19-cyclopregn-6-ene-4-methanol, C-883
3,20-Diamino-16-hydroxy-4-hydroxymethyl-4,14-dimethyl-9,19-cyclopregnan-11-one, B-12

3,20-Diamino-4-hydroxymethyl-4,14-dimethyl-9,19-cyclopregnan-16-one, C-883
3,20-Diamino-4-hydroxypregnane, D-266
3,20-Diamino-15-hydroxypregn-5-ene, D-278
3,20-Diamino-18-hydroxypregn-5-ene, D-279
3,20-Diamino-18-hydroxypregn-5-ene-11,16-dione, D-257
2′,3-Diamino-3′-hydroxypropiophenone, A-697
2,6-Diamino-5-hydroxy-4(1*H*)-pyrimidinone, D-253
3,20-Diamino-28-hydroxy-4,4,14-trimethyl-9,19-cyclopregnan-11-one, C-921
α,3-Diamino-1*H*-indene-2-propanoic acid, A-698
2,6-Diamino-4-methyl-1*H*-cyclohepta[1,2-*d*:4,5-*d*′]diimidazole, P-94
2,8-Diamino-4-methyl-1*H*-cyclohepta[1,2-*d*:3,4-*d*′]diimidazole, P-737
3,20-Diamino-4-methylene-14-methyl-9,19-cyclopregnan-16-ol, C-846
3,20-Diamino-11-methylenepregnane, M-460
3,3′-Diamino-*N*-methylpropylamine, D-255
1,17-Diamino-9-octadecene, O-35
2,5-Diamino-5-oxopentanoic acid, G-108
1,5-Diaminopentane, P-229
1,5-Diamino-1-pentene, P-232
3,20-Diaminopregna-14,16-diene, P-600
3,20-Diaminopregna-4,14-diene, P-598
3,20-Diaminopregna-5,16-diene, P-599
3,20-Diaminopregna-4,14-dien-2-ol, D-258
3,20-Diaminopregna-4,16-dien-2-ol, D-259
3,20-Diaminopregna-2,16-dien-4-one, D-260
3,20-Diaminopregna-5,14-dien-4-one, D-261
3,20-Diaminopregnan-18-al, D-269
3,20-Diaminopregnane-2,4-diol, D-262
3,20-Diaminopregnane-4,12-diol, D-263
3,20-Diaminopregnane-4,16-diol, D-264
3,20-Diaminopregnane, P-601
3,20-Diaminopregnan-11-ol, D-267
3,20-Diaminopregnan-12-ol, D-268
3,20-Diaminopregnan-18-ol, D-269
3,20-Diaminopregnan-2-ol, D-265
3,20-Diaminopregnan-4-ol, D-266
3,20-Diaminopregn-14-ene-2,4-diol, D-272
3,20-Diaminopregn-16-ene-2,4-diol, D-273
3,20-Diaminopregn-5-ene-15,18-diol, D-270
3,20-Diaminopregn-5-ene-16,18-diol, D-271
3,20-Diaminopregn-14-ene, P-607
3,20-Diaminopregn-16-ene, P-608
3,20-Diaminopregn-4-ene, P-605
3,20-Diaminopregn-5-ene, P-606
3,20-Diaminopregn-16-en-4-ol, D-280
3,20-Diaminopregn-2-en-4-ol, D-274
3,20-Diaminopregn-4-en-2-ol, D-275
3,20-Diaminopregn-5-en-15-ol, D-278
3,20-Diaminopregn-5-en-18-ol, D-279
3,20-Diaminopregn-5-en-2-ol, D-276
3,20-Diaminopregn-5-en-4-ol, D-277
3,20-Diaminopregn-2-en-4-one, D-281
3,20-Diaminopregn-5-en-4-one, D-282
2′,3-Diaminopropiophenone, A-700
4-[[(2,4-Diamino-6-pteridinyl)methyl]amino]benzoic acid, A-899
4-[[(2,4-Diamino-6-pteridinyl)methyl]methylamino]benzoic acid, A-899
p-[*N*-2,4-Diamino-6-pteridyl]methylaminobenzoic acid, A-899
2,6-Diaminopurine, P-817
5,6-Diamino-2,4-pyrimidinediol, D-254
2,4-Diamino-5,6-pyrimidinediol, D-253
5,6-Diamino-2,4(1*H*,3*H*)-pyrimidinedione, D-254
1,20-Diamino-4,8,12,16-tetraazaeicosane, D-283
1,20-Diamino-4,8,12,17-tetraazaeicosane, D-284
1,20-Diamino-4,8,13,17-tetraazaeicosane, D-285
1,24-Diamino-5,10,15,20-tetraazatetracosane, D-286
α,2-Diamino-1,4,5,6-tetrahydro-6-hydroxy-4-pyrimidineacetic acid, T-657
α,2-Diamino-1,4,5,6-tetrahydro-4-pyrimidineacetic acid, C-99
α,2-Diamino-1,4,5,6-tetrahydro-4-pyrimidinepropanoic acid, T-199
α,α′-Diamino-5,5′,6,6′-tetrahydroxy-3,3′-biphenyldipropanoic acid, A-745
1,17-Diamino-4,9,13-triazaheptadecane, D-287
1,16-Diamino-4,8,12-triazahexadecane, D-288
1,16-Diamino-4,8,13-triazahexadecane, D-289
1,19-Diamino-6,11,16-triazanonadecane, D-290
1,18-Diamino-5,9,14-triazaoctadecane, D-291
1,15-Diamino-4,8,12-triazapentadecane, T-456
2,27-Diamino-3,26,28-trihydroxy-11-octacosanone, D-292
3,20-Diamino-4,4,14-trimethyl-9,19-cyclopregnan-16-ol, C-917
3,20-Diamino-4,4,14-trimethyl-9,19-cyclopregnan-11-one, C-920
3,20-Diamino-4,4,14-trimethyl-9,19-cyclopregn-11-en-16-ol, C-917
3,20-Diamino-4,4,14-trimethyl-9,19-cyclopregn-6-en-16-ol, C-915
5,6-Diaminouracil, D-254
7,9-Diangeloylheliotridine, T-188
7,9-Diangeloyl-1-hydroxy-*N*-methylplatynecium(1+), D-596
Diangeloylplatynecine, H-233
Diangoutengjian I, A-953
Dianthalexine, H-675
Dianthramide A (obsol.), B-67
Dianthramide B (obsol.), B-67
Dianthramide B, B-67
Dianthramide P, A-1563
Dianthramide R, B-67
Dianthramide S methyl ester, B-67
Dianthramide S, B-67
Dianthramine, I-45
Diaporthichalasin, P-376
Diatom polyamines, D-293
1,4-Diazabicyclo[4.3.0]nonane-2,5-dione, C-865
1,13-Diazacyclotetracosane-2,14-dione, D-294
4,9-Diazadodecanedioic acid, S-397
1,6-Diazafluoranthene, I-65
2,9-Diazafluorene, C-130
2,9-Diazaphenanthren-1(2*H*)-one, B-75
Diazaquinomycin A, D-295
Diazaquinomycin B, D-295
Diazaquinomycin C, D-296
Diazepinomicin, D-297
1,3-Diazole, I-35
6-Diazo-3-methyl-4-(1,3,5-trimethyl-1-hexenyl)-2,5,7,8(1*H*,6*H*)-quinolinetetrone, L-12
Diazonamide A, D-298
Diazonamide B, D-298
Diazonamide C, D-298
Diazonamide D, D-298
Diazonamide E, D-298
Dibenzo[*b,j*]dipyrido[4,3,2-*de*:2′,3′,4′-*gh*][1,10]phenanthroline, D-299
Dibenzopyrrole, C-120
3,6-Dibenzoyloxytropane, M-391
3,7-Dibenzoyloxytropan-6-ol, M-392
N^1,N^{10}-Dibenzoylspermidine, S-398
10-(Dibenzylamino)-1-hydroxy-2-methoxyaporphine, V-24
3,6-Dibenzyl-2,5-dihydroxypyrazine, D-300
1,3-Dibenzyl-4,5-dimethylimidazolium(1+), D-750
2,5-Dibenzyl-1,4-dimethylpiperazine, D-301
N,*N*′-Dibenzyl-2-hydroxybutanediamide, M-72
2,5-Dibenzyl-3-hydroxy-6-methoxypyrazine 1-oxide, D-300
2,5-Dibenzyl-3-hydroxy-6-methoxypyrazine, D-300
3,6-Dibenzyl-5-hydroxy-2(1*H*)-pyrazinone, D-300
N,*N*′-Dibenzylmalamide, M-72
2,5-Dibenzylpiperazine, D-301
1,3-Dibenzyl-2,4,5-trimethylimidazolium(1+), T-607
N,*N*′-Dibenzylurea, D-302
DIBOA-Glc, H-409
DIBOA, H-409
Dibromoacetamide, D-303
Dibromoacetic acid, D-303
Dibromoacetonitrile, D-303
Dibromoagelaspongin methyl ether, A-188
Dibromoagelaspongin, A-188
2,2′-Dibromoageliferin, A-190
4,6-Dibromo-2,3-bis(methylsulfinyl)-1*H*-indole, D-304
4,6-Dibromo-2,3-bis(methylthio)-1*H*-indole, D-304
2,4-Dibromo-5-(5-bromo-2-hydroxybenzoyl)-3-chloropyrrole, P-966
3,4-Dibromo-2-(5-bromo-2-hydroxybenzoyl)-5-chloropyrrole, P-966
2,3-Dibromo-4-(3-bromo-2-nitrophenyl)-1*H*-pyrrole, D-305
2,3-Dibromo-4-(5-bromo-2-nitrophenyl)-1*H*-pyrrole, D-305
Dibromocantharelline, D-328
2,7-Dibromo-9*H*-carbazole, D-306
3,6-Dibromo-9*H*-carbazole, D-307
4,6-Dibromo-3-(2-chloroethyl)-1,3-dihydro-3-hydroxy-2*H*-indol-2-one, C-629
2,7-Dibromo-3-chloro-1*H*-indole, D-308
Dibromocyanomethane, D-303
2,3-Dibromo-4-cyano-5-methoxycarbonylpyrrole, D-340
2,6-Dibromo-4-(cyanomethyl)anisole, D-321
3,5-Dibromo-1-cyanomethyl-4-methoxy-3,5-cyclohexadiene-1,2-diol, A-157
2,6-Dibromo-4-(cyanomethyl)phenol, D-321
5,6-Dibromo-2′-*N*-demethylaplysinopsin, A-1357
Dibromodeoxytopsentin, T-432
5,5′-Dibromo-4,4′-dichloro-7,7′-dimethoxy-3,3′-bi-1*H*-indole, D-309
4,7-Dibromo-2,3-dichloro-1*H*-indole, D-310
4,6-Dibromo-1,3-dihydro-3-hydroxy-3-(2-hydroxyethyl)-2*H*-indol-2-one, C-629
4,6-Dibromo-1,3-dihydro-3-hydroxy-3-methyl-2*H*-indol-2-one, C-629
4,6-Dibromo-1,3-dihydro-3-hydroxy-3-(2-oxopropyl)-2*H*-indol-2-one, C-629
6,7-Dibromo-3,4-dihydro-4-hydroxypyrrolo[1,2-*a*]pyrazin-1(2*H*)-one, L-242
2,4-Dibromo-3,6-dihydroxybenzeneacetamide, D-313
2,4-Dibromo-3,6-dihydroxybenzeneacetic acid, D-313
3,5-Dibromo-2,4-dihydroxybenzeneacetic acid, D-314
7-(2,3-Dibromo-4,5-dihydroxybenzyl)-3,7-dihydro-1*H*-purine-2,6-dione, D-311
N-(2,3-Dibromo-4,5-dihydroxybenzyl)-*N*′-(3-methoxycarbonylpropyl)urea, D-312
3,5-Dibromo-1,6-dihydroxy-4-methoxy-2,4-cyclohexadiene-1-acetonitrile, A-157
2,4-Dibromo-3,6-dihydroxyphenylacetamide, D-313
2,4-Dibromo-3,6-dihydroxyphenylacetic acid, D-313
3,5-Dibromo-2,4-dihydroxyphenylacetic acid, D-314
6,7-Dibromo-2,4-dihydroxyquinoline, D-315
3,5-Dibromo-β,4-dimethoxy-*N*-methylbenzenepropanamine, D-331
3,5-Dibromo-4-[3-(dimethylamino)propoxy]cinnamic acid, D-323
5,6-Dibromo-*N*,*N*-dimethyl-1*H*-indole-3-ethanamine, D-343
5,6-Dibromo-N^b,N^b-dimethyltryptamine, D-343
4,6-Dibromo-3-ethenyl-1,3-dihydro-3-hydroxy-2*H*-indol-2-one, C-629
3,5-Dibromo-4-ethoxy-1-hydroxy-4-methoxy-2,5-cyclohexadien-1-acetamide, D-316
6,8-Dibromo-1-ethyl-β-carboline, B-318
4,5-Dibromo-1-ethyl-1*H*-pyrrole-2-carboxylic acid, D-339
3,10-Dibromofascaplysin, F-13
4,5-Dibromo-2-furancarboxamide, D-317
4,5-Dibromo-2-furancarboxylic acid, D-317
4,5-Dibromo-2-furoic acid, D-317
3,5-Dibromo-4-hydroxybenzeneacetic acid, D-321
3,5-Dibromo-4-hydroxybenzeneacetonitrile, D-321
3,5-Dibromo-4-hydroxybenzeneethanamine, D-322
1-(3,5-Dibromo-4-hydroxybenzoyl)-9*H*-pyrido[3,4-*b*]indole, H-411
3,5-Dibromo-4-hydroxybenzyl cyanide, D-321
3,5-Dibromo-4-hydroxycinnamic acid, D-323
3,5-Dibromo-1-hydroxy-4,4-dimethoxy-2,5-cyclohexadiene-1-acetamide, D-318
7,9-Dibromo-10-hydroxy-8-methoxy-6-methyl-1-oxa-2-azaspiro[4.5]deca-2,6,8-triene-3-carboxylic acid, D-319

7,9-Dibromo-10-hydroxy-8-methoxy-1-oxa-2-azaspiro[4.5]deca-2,6,8-triene-3-carboxylic acid, D-320
3,5-Dibromo-2-hydroxy-4-methoxyphenylacetamide, D-314
2,3-Dibromo-5-hydroxymethylpyrrole, D-342
3,5-Dibromo-4-hydroxyphenethyltrimethylammonium, D-322
3,5-Dibromo-4-hydroxyphenylacetamide, D-321
1,3-Dibromo-5-[2-[(4-hydroxyphenyl)acetamido]ethyl]-2-[3-(3-methyl-2-butenamido)propoxy]benzene, D-333
(3,5-Dibromo-4-hydroxyphenyl)acetic acid, D-321
2-(3,5-Dibromo-4-hydroxyphenyl)ethylamine, D-322
3-(3,4-Dibromo-5-hydroxyphenyl)-3-hydroxy-2-pyrrolidinone, D-96
3-(3,5-Dibromo-4-hydroxyphenyl)-2-propenoic acid, D-323
2-(3,5-Dibromo-2-hydroxyphenyl)-3,4,5-tribromopyrrole, D-324
6,7-Dibromo-4-hydroxy-2(1*H*)-quinolinone, D-315
3,5-Dibromo-4-hydroxy-*N,N,N*-trimethylbenzeneethanaminium, D-322
6,6′-Dibromoindigo, D-325
6,6′-Dibromoindigotin, D-325
6,6′-Dibromoindirubin, I-73
4,6-Dibromo-1*H*-indole, D-327
3,6-Dibromo-1*H*-indole, D-326
5,6-Dibromo-1*H*-indole-3-ethanamine, D-343
Dibromoisophakellin, D-328
Dibromomaleimide, D-341
3,5-Dibromo-4-methoxybenzeneacetonitrile, D-321
2,4-Dibromo-5-methoxybenzeneethanamine, D-330
3,5-Dibromo-4-methoxybenzeneethanamine, D-322
3,5-Dibromo-4-methoxybenzyl cyanide, D-321
N^{10}-(3,5-Dibromo-4-methoxycinnamoyl)spermidine, S-398
5,7-Dibromo-6-methoxy-1*H*-indole, D-329
4,5-Dibromo-N^2-methoxymethyl-1*H*-pyrrole-2-carboxamide, D-339
2,3-Dibromo-5-(methoxymethyl)-1*H*-pyrrole, D-342
N-[2-(3,5-Dibromo-4-methoxyphenyl)ethenyl]-3-(4-hydroxyphenyl)-2-methoxy-2-propenamide, B-256
2-(2,4-Dibromo-5-methoxyphenyl)ethylamine, D-330
(3,5-Dibromo-4-methoxyphenyl)ethylamine, D-322
3-(3,5-Dibromo-4-methoxyphenyl)-2-methoxy-*N*-methylpropylamine, D-331
3,5-Dibromo-4-methoxy-*N,N,N*-trimethylbenzeneethanaminium, D-322
4,6-Dibromo-2-methyl-1*H*-indole, D-332
5,6-Dibromo-*N*-methyl-1*H*-indole-3-ethanamine, D-343
Dibromo-N^1-methylisophakellin, D-328
2,3-Dibromo-*N*-methylmaleimide, D-341
4,5-Dibromo-1-methyl-*N*-[3-(1-methyl-2,5-dioxo-4-imidazolidinyl)propyl]-1*H*-pyrrole-2-carboxamide, M-604
N-[2-[3,5-Dibromo-4-[3-[(3-methyl-1-oxo-2-butenyl)amino]propoxy]phenyl]ethyl]-4-hydroxybenzeneacetamide, D-333
4,5-Dibromo-1-methyl-1*H*-pyrrole-2-carboxylic acid, D-339
3,4-Dibromo-1-methyl-1*H*-pyrrole-2,5-dione, D-341
4,6-Dibromo-2-(methylsulfinyl)-3-(methylthio)-1*H*-indole, D-304
4,6-Dibromo-3-(methylsulfinyl)-2-(methylthio)-1*H*-indole, D-304
4,6-Dibromo-2-methylthio-1*H*-indole, D-334
5,6-Dibromo-N^b-methyltryptamine, D-343
5-[3,5-Dibromo-4-[(2-oxo-5-oxazolidinyl)methoxy]phenyl]-2-oxazolidinone, D-335
4,5-Dibromopalauamine, P-18
(+)-Dibromophakellin, B-343
(-)-Dibromophakellin, B-343
Dibromophakellstatin, D-336
2,3-Dibromo-*N*-phenylmaleimide, D-341
3,4-Dibromo-1-phenyl-1*H*-pyrrole-2,5-dione, D-341
4,5-Dibromopyromucic acid, D-317
4,5-Dibromo-1*H*-pyrrole-2-carbonitrile, D-339
4,5-Dibromo-1*H*-pyrrole-2-carboxamide, D-339
4,5-Dibromo-1*H*-pyrrole-2-carboxylic acid, D-339
2,5-Dibromo-1*H*-pyrrole-3-carboxylic acid, D-338
2,3-Dibromo-1*H*-pyrrole, D-337
4,5-Dibromo-1*H*-pyrrole-2,3-dicarboxylic acid, D-340
3,4-Dibromo-1*H*-pyrrole-2,5-dione, D-341
4,5-Dibromo-1*H*-pyrrole-2-methanol, D-342
6,7-Dibromo-2,4-quinolinediol, D-315
Dibromosceptrine, S-124
2,3-Dibromostyloguanidine, S-611
6,7-Dibromo-1,2,3,4-tetrahydro-1-oxopyrrolo[1,2-*a*]pyrazine-4-acetic acid, L-243
3,5-Dibromo-*N,N,N,O*-tetramethyltyramine, D-322
6,21-Dibromotopsentin A, T-432
2,4-Dibromo-6-(3,4,5-tribromo-1*H*-pyrrol-2-yl)-phenol, D-324
3,5-Dibromo-*N,N,N*-trimethyltyramine, D-322
5,6-Dibromotryptamine, D-343
3,5-Dibromotyramine, D-322
3,5-Dibromoverongiaquinol, H-650
3,6-Di-*sec*-butyl-2-hydroxypyrazine, B-204
N^5,N^{10}-Dicaffeoyl-N^1-*p*-coumaroylspermidine, S-398
N^5,N^{10}-Dicaffeoyl-N^1-feruloylspermidine, S-398
N^1,N^4-Dicaffeoylputrescine, D-362
Dicaffeoylspermidine, S-398
5,5‴-Dicapsaicin, D-344
Dicarbamoylurea, T-627
2,3-Dicarbomethoxy-1-methyl-4(1*H*)-quinolinone, H-728
4-[[(1,2-Dicarboxyethyl)imino]ethylidene]-1,2,3,4-tetrahydro-2,6-pyridinedicarboxylic acid, M-646
4-[[(1,3-Dicarboxypropyl)imino]ethylidene]-1,2,3,4-tetrahydro-2,6-pyridinedicarboxylic acid, V-195
4,6-Dicarboxy-4,5,6,7-tetrahydro-1*H*-imidazo[4,5-*c*]pyridine-4-propanoic acid, C-802
Dicarprine A, D-345
Dicarprine B, D-345
Dicarprine C, D-345
Dicentrine methine, M-559
Dicentrine, D-346
Dicentrinone, D-347
Dichloroacetamide, D-348
Dichloroacetic acid, D-348
2,3-Dichloro-4-(3-chloro-5-ethyl-2,6-dihydroxybenzoyl)pyrrole, A-1283
2,3-Dichloro-4-(3-chloro-5-hexyl-2,6-dihydroxybenzoyl)pyrrole, C-231
2,3-Dichloro-4-(3-chloro-2-nitrophenyl)-1*H*-pyrrole, P-961
2,4-Dichloro-6-(5-chloro-3-nitro-1*H*-pyrrol-2-yl)-phenol, P-965
2,10-Dichloro-6,11-cyclo-3(15),7(14)-farnesadien-1-yl carbonimidic dichloride, D-349
2,3-Dichloro-5-(3,5-dichloro-2-hydroxybenzoyl)-pyrrole, P-964
2,3-Dichloro-5-(3,5-dichloro-2-hydroxybenzyl)-4-nitropyrrole, P-963
2,4-Dichloro-6-[(4,5-dichloro-3-nitro-1*H*-pyrrol-2-yl)methyl]phenol, P-963
3,8-Dichloro-11,12-dihydroindolo[2,3-*a*]carbazole, D-350
1,11-Dichloro-12,13-dihydro-12-(4-*O*-methyl-β-D-glucopyranosyl)-5*H*-indolo[2,3-*a*]pyrrolo[3,4-*c*]carbazole-5,7(6*H*)-dione, R-32
7,8-Dichloro-2,9-dihydro-9-methylpyrido[3,4-*b*]indol-1-one, D-351
2,3-Dichloro-5-(2,6-dihydroxybenzoyl)pyrrole, P-834
1,2-Dichloro-6,8-dihydroxy-7-propyl-9*H*-pyrrolo[2,1-*b*][1,3]benzoxazin-9-one, S-571
2,4-Dichloro-6-(dimethylamino)pyridine, A-729
4,6-Dichloro-*N,N*-dimethyl-2-pyridinamine, A-729
Dichloroethanoic acid, D-348
1,2-Dichloro-7-ethyl-6,8-dihydroxy-9*H*-pyrrolo[1,2-*b*][1,3]benzoxazin-9-one, C-403
6,14-Dichloro-5-hydroxy-3(14),9-axinyssadien-15-yl carbonimidic dichloride, C-400
1,2-Dichloro-8-hydroxy-6-methoxy-7-propyl-9*H*-pyrrolo[2,1-*b*][1,3]benzoxazin-9-one, S-571
7,8-Dichloro-1-hydroxy-9-methyl-β-carboline, D-351
1,2-Dichloro-8-hydroxy-6-methyl-7-propyl-9*H*-pyrrolo[1,2-*b*][1,3]benzoxazin-9-one, D-352
(3,5-Dichloro-2-hydroxyphenyl)(4,5-dichloro-1*H*-pyrrol-2-yl)methanone, P-964
2-(3,5-Dichloro-2-hydroxyphenyl)-3,4,5-trichloropyrrole, D-324
6,6′-Dichloroindigotin, D-353
Dichlorolissoclimide, D-354
α-(Dichloromethoxymethyl)-β-hydroxy-4-nitrobenzenepropanamide, A-117
7,8-Dichloro-9-methyl-β-carboline, D-355
5-(3,3-Dichloro-2-methylpropyl)-4-hydroxy-3,3-dimethyl-2-pyrrolidinone, D-966
7,8-Dichloro-9-methylpyrido[3,4-*b*]indole, D-355
7,8-Dichloro-9-methyl-9*H*-pyrido[3,4-*b*]indol-1-ol, D-351
2,3-Dichloro-4-(2-nitrophenyl)-1*H*-pyrrole, P-961
2,3-Dichloro-4-nitro-1*H*-pyrrole, D-356
1,15-Dichloro-1,14-pentadecadiene-3,12-diyn-8-amine, D-357
4,6-Dichloro-2-pyridinamine, A-729
(4,5-Dichloro-1*H*-pyrrol-2-yl)(2,6-dihydroxyphenyl)methanone, P-834
2,3-Dichloro-1-(2,3,4-trichloro-6-hydroxyphenyl)-pyrrole, N-136
2,4-Dichloro-6-(2,3,4-trichloro-1*H*-pyrrol-5-yl)-phenol, D-324
Dichloroverongiaquinol, H-650
Dichomine, D-358
Dichotamine, D-144
Dichotine, D-359
Dichotomide I, A-45
Dichotomide II, D-360
Dichotomine A, A-45
Dichotomine B, D-579
Dichotomine C, D-579
Dichotomine D, D-579
Dichroidine, D-361
Dichroine A, I-232
Dichroine B, F-31
β-Dichroine, F-31
α-Dichroine, I-232
N^1,N^4-Di-*E*-cinnamoyl-2,3-dehydroputrescine, B-423
N^1,N^4-Di-*trans*-cinnamoyl-2-hydroxyputrescine, D-248
N,*N*′-Dicinnamoylputrescine, D-362
N^1,N^8-Dicinnamoylspermidine, S-398
N^5,N^{10}-Di-*p*-coumaroyl-N^1-feruloylspermidine, S-398
N^1,N^4-Di-*p*-coumaroylputrescine, D-362
N^1,N^{10}-Dicoumaroylspermidine, S-398
N^1,N^5-Di-*p*-coumaroylspermidine, S-398
Dicrotaline, D-363
Dictamnine, F-224
Dictangustine A, F-211
Dictizine, D-370
Dictyocarpine, M-307
Dictyocarpinine, M-307
Dictyodendrine A, D-364
Dictyodendrine B, D-365
Dictyodendrine C, D-366
Dictyodendrine D, D-366
Dictyodendrine E, M-247
Dictyodiamine, P-601
Dictyolomide A, D-367
Dictyolomide B, D-367
Dictyolucidamine, D-368
Dictyolucidine, D-368
Dictyophlebine, P-601
Dictyopterin, A-749
Dictyoquinazole A, D-369
Dictyoquinazole B, D-369
Dictyoquinazole C, D-369
Dictysine acetonide, D-370
Dictysine, D-370
Dictyzine, D-370

4,5-Dicyano-1,2-benzenediol, D-533
3,5-Dicyano-2,6-dimethylpyridine, D-776
2,5-Dicyanopyrrole, P-946
2′,7-Dideacetoxyaustrospicatine, T-49
7,9-Dideacetylaustrospicatine, T-48
O^2,O^6-Dideacetylevonine, P-248
1,6-Dideacetylevonine, P-248
6′,6″-Didebromo-3,4-dihydrohamacanthin B, H-41
(*S*)-6′,6″-Didebromohamacanthin A, H-40
(*R*)-6′,6″-Didebromohamacanthin B, H-41
Didebromosceptrine, S-124
3,5-Didecanoylpyridine, D-371
6,8-Di-1-decenyl-2,3-dihydro-5,7-dimethyl-1*H*-indolizinium, D-372
9,11-Didechloro-13-demethylisodysidenin, D-972
Didechloro-4′-*O*-demethylrebeccamycin, A-1393
9,10-Didechloro-*N*-methyldysideathiazole, D-970
2,5:2′,5′-Dide(epidithio)-2,5:2′,5′-bis(epitetrathio)-6,6′-dihydroxychetocin, C-372
2,5:2′,5′-Dide(epidithio)-2,2′,5,5′-tetrakis(-methylthio)chetomin, D-239
8,9-Didehydoryanodine, R-175
19,20-Didehydroaconitane-1,8,14,16-tetrol, A-103
Didehydroaglaiastatin, A-197
19,20-Didehydroajmalan-17-ol, T-288
1,2-Didehydro-*N*-β-alanyldopamine, D-157
11,12-Didehydroaloperine, A-637
12,13-Didehydroanacycline, A-968
1,2-Didehydroancistrobertsonine D, A-985
Didehydroaporheine, D-166
1,2-Didehydroaspidospermidine, E-3
1,2-Didehydrobeninine, B-63
13,14-Didehydro-[14,14′-bimatridine]-15,15′-dione, G-137
Didehydrobrevicolline, B-292
12,13-Didehydrocarpaine, C-168
5,6-Didehydro-3,20-cevanediol, C-301
8,14-Didehydro-3,11-cevanediol, C-306
8,14-Didehydro-3,15-cevanediol, C-307
8,9-Didehydro-3,6-cevanediol, C-302
8,14-Didehydro-1,3-cevanediol, C-304
8,14-Didehydro-3,6-cevanediol, C-305
8,9-Didehydro-3,11-cevanediol, C-303
5,6-Didehydro-3,16,20-cevanetriol, C-309
8,9-Didehydro-3,6,23-cevanetriol, C-311
12,13-Didehydro-3,6,15-cevanetriol, C-312
23,24-Didehydro-3,6,16-cevanetriol, C-297
8,9-Didehydro-3,6,20-cevanetriol, C-310
5,6-Didehydrocevan-3-ol, C-313
14,19-Didehydrocondyfolan, A-1497
16,17-Didehydrodemethoxyisomigrastatin, I-245
10,11-Didehydro-4-demethylepothilone D, E-117
10,11-Didehydro-6-demethylepothilone D, E-117
16,17-Didehydro-8-*O*-demethylisomigrastatin, I-245
1′,2′-Didehydro-2′-demethylpheanthine, D-148
13′,19′-Didehydro-19′-deoxy-28,44-dihydro-41,44-dihydroxymicrococcin P, T-383
16,17-Didehydro-17-deoxygardneramine oxindole, G-21
14,15-Didehydro-8-deoxylydicamycin, L-353
16,17-Didehydro-9-de-2-piperidinylormosanine, A-637
15,16-Didehydro-14,16-diformylcorynan-17-oic acid, C-688
7,8-Didehydro-3-dihydrodiscorhabdin C, D-851
12,13-Didehydro-13,14-dihydro-α-erythroidine, 10CI, E-215
11,12-Didehydro-10,11-dihydro-20-hydroxyaflavinine, A-172
24,25-Didehydro-10,11-dihydro-20-hydroxyflavinone, H-541
1,6-Didehydro-12,17-dihydro-3-hydroxy-*C*-homo-16(15*H*)-oxaerythrinan-15-one, 11CI, P-315
11,12-Didehydro-12,13-dihydro-9-oxoepothilone D, E-117
1,2-Didehydro-3,11-dihydroxycrinane, H-5
7,8-Didehydro-4,7-dihydroxy-3,8-dimethoxy-17-methylmorphinan-6-one, C-164
14,15-Didehydro-10,11-dimethoxy-16-epivincamine, V-115
1,2-Didehydro-3,15-dimethoxyerythrinan, I-207
1,6-Didehydro-3,15-dimethoxyerythrinan-2-ol, C-539
1,6-Didehydro-3,17-dimethoxyerythrinan-15-ol, C-542
1,6-Didehydro-3,15-dimethoxyerythrinan-16-ol, D-431
1,6-Didehydro-3,16-dimethoxyerythrinan-15-ol, D-431
1,6-Didehydro-3,16-dimethoxy-*C*-homoerythrinan-15-ol, T-51
8,14-Didehydro-3,8-dimethoxymorphinan-4,6,7-triol, S-311
14,15-Didehydro-10,11-dimethoxyvincamine, V-115
8,9-Didehydro-6,8-dimethylergoline, A-205
14,15-Didehydro-10,22-dioxokopsane, D-805
Didehydrodopamine, D-157
19,20-Didehydroedulirin A, T-349
19,20-Didehydroedulisone A, E-41
6,16-Didehydro-20-episilicine, M-293
14,15-Didehydroepivincadine, V-112
10,11-Didehydroepothilone D, E-117
19,20-Didehydro-17,18-epoxycuran, C-115
19,20-Didehydro-17,18-epoxycuran-17-ol, C-115
19,20-Didehydro-17,18-epoxy-11,17-dimethoxycuran, C-115
6,7-Didehydro-8,10-epoxy-3,7-dimethoxy-17-methylhasubanan-4,8-diol, P-658
7,8-Didehydro-4,5-epoxy-3-methoxy-17-methylmorphinan-6,14-diol, H-462
7,8-Didehydro-4,5-epoxy-3-methoxy-17-methylmorphinan-6-ol, C-555
8,14-Didehydro-4,5-epoxy-3-methoxy-17-methylmorphinan-6-ol, N-134
7,8-Didehydro-4,5-epoxy-3-methoxy-17-methylmorphinan-6-one, C-555
7,8-Didehydro-4,5-epoxy-17-methylmorphinan-3,6-diol, M-704
6,7-Didehydro-8,10-epoxy-3,4,7-trimethoxy-17-methylhasubanan-8-ol, P-639
19,20-Didehydroervatamine, E-190
1,2-Didehydro-7-ethyl-20,21-dinoraspidospermidine, D-377
16,17-Didehydro-21-ethyl-4-methyl-7,20-cycloatidane-11,15-diol, D-221
1,2-Didehydrogeissoschizoline, G-34
4,20-Didehydrogelsedine, G-44
4,20-Didehydrogelsemicine, G-44
4,5-Didehydroguadiscine, G-188
Didehydro-3′-hydroxyaglaiastatin, A-197
1,2-Didehydro-12-hydroxyaspidospermidine, E-3
8,9-Didehydro-20-hydroxy-3-cevanone, H-461
6*a*,7-Didehydro-7-hydroxy-1,2-dimethoxyaporphine, D-373
3,4-Didehydro-19-hydroxy-16,17-dimethoxy-1-methylaspidospermidin-21-oic acid, γ-lactone, A-1496
7,8-Didehydro-4-hydroxy-3,7-dimethoxy-17-methylhasubanan-6-one, C-274
5,6-Didehydro-4-hydroxy-3,6-dimethoxy-17-methylmorphinan-7-one, I-318
5,6-Didehydro-2-hydroxy-3,6-dimethoxy-17-methylmorphinan-7-one, P-31
7,8-Didehydro-4-hydroxy-3,7-dimethoxy-17-methylmorphinan-6-one, S-313
6*a*,7-Didehydro-7-hydroxy-1,2-dimethoxynoraporphine, D-373
20,21-Didehydro-17-hydroxy-1,4-dimethyl-4,21-secosarpagan-19(20*H*)-one, M-17
19,20-Didehydro-6-hydroxyervatamine, E-190
4,20-Didehydro-14-hydroxygelsedine, G-44
4,20-Didehydro-14-hydroxygelsemicine, G-44
16,17-Didehydro-17-hydroxy-16-(hydroxymethyl)-corynan-5-carboxylic acid, D-374
7,11-Didehydro-13-hydroxymatridin-15-one, L-94
14,15-Didehydro-10-hydroxy-11-methoxy-16-epivincamine, V-115
14,15-Didehydro-10-hydroxy-11-methoxyvincamine, V-115
14,15-Didehydro-12-hydroxy-N^1-methylaspidofractinine, A-1494
19,20-Didehydro-17-hydroxy-4-methyl-1,16-cyclocorynanium, M-130
9,10-Didehydro-*N*-(2-hydroxy-1-methylethyl)-6-methylergoline-8-carboxamide, E-164
1,6-Didehydro-12-(hydroxymethyl)-3-methoxy-*C*-homo-D-nor-16-oxaerythrinan-15(12*H*)-one, I-263
1,2-Didehydro-20-hydroxypseudoaspidospermidine, D-377
1,3*a*-Didehydro-8-hydroxyptilocaulin, D-375
2,16-Didehydro-23-hydroxyretuline, N-301
6,7-Didehydro-19-hydroxyschizozygine, S-137
13,19-Didehydro-12-hydroxysenecionan-11,16-dione, S-240
7,8-Didehydro-4-hydroxy-3,7,8-trimethoxy-17-methylhasubanan-6-one, H-70
6,6*a*-Didehydro-11-hydroxy-1,2,10-trimethoxynoraporphine, H-97
14,15-Didehydroisoeburnamine, E-6
16,17-Didehydroisomigrastatin, I-245
5,6-Didehydro-α-isosparteine, D-168
1′,2′-Didehydroisostemofoline, S-515
Didehydrojoubertiamine, J-49
1′,2′-Didehydrokohatamine, K-56
16,17-Didehydrokopsinine, K-71
Didehydrokrigenamine, K-102
17,18-Didehydroloesenerine, L-230
16,17-Didehydroloesenerin-18-ol, L-230
5,6-Didehydrolupanine, D-161
8,15-Didehydro-1(18*H*)-lycodinone, H-376
11,12-Didehydrolycopodane-5,8-diol, L-328
11,12-Didehydromakomakin-10-one, H-310
5,17-Didehydromatridin-15-one, D-80
5,17-Didehydromatridin-15-one, I-241
5,17-Didehydromatridin-15-one, L-93
7,11-Didehydromatridin-15-one, L-94
12,13-Didehydromatridin-15-one, L-81
13,14-Didehydromatridin-15-one, S-371
5,17-Didehydromatrine, L-93
Didehydro-3′-methoxyaglaiastatin, A-197
19,20-Didehydro-9-methoxy-4,17-cyclocorynanium, A-572
2,16-Didehydro-11-methoxydiaboline, C-115
19,20-Didehydro-N^1-methoxyervatamine, E-190
1,6-Didehydro-3-methoxyerythrinan-15-ol, C-538
4,20-Didehydro-11-methoxygelsedine, G-44
14,15-Didehydro-12-methoxy-N^1-methylaspidofractinine, A-1494
1,6-Didehydro-3-methoxy-15,16-[methylenebis(oxy)]erythrinan-2-ol, E-208
19,20-Didehydro-12-methoxy-17-norcuran, T-668
19,20-Didehydro-12-methoxytubifolidine, T-668
14,15-Didehydro-12-methoxyvincamine, V-115
ent-14,15-Didehydro-N^1-methylaspidospermidine, A-1498
6,7-Didehydro-1-methylaspidospermidine, A-1498
14,15-Didehydro-11,12-methylenedioxykopsinaline, K-74
9,10-Didehydro-6-methylergoline-8-carboxylic acid, L-370
19,21-Didehydro-4-methyl-16-methylene-14,20-cycloveatchane-11,12-diol 12-(2-methyl-2-butenoate), A-1070
3,14-Didehydro-19-methylnormalindine, D-376
Didehydromirabazole A, M-634
1,3-Didehydronitrarine, N-246
4*a*,*N*-Didehydronoraugustamine, A-1539
1,2-Didehydro-17-norcuran, T-668
Didehydroocoteine, O-27
16,17-Didehydroormosanine, P-529
10,11-Didehydro-9-oxoepothilone D, E-117
19,20-Didehydro-5-oxoervatamine, E-190
4,20-Didehydro-19-oxogelsedine, G-44
14,15-Didehydro-3-oxokopsinine *N*-oxide, V-49
14,15-Didehydro-3-oxokopsinine, V-49
14,15-Didehydro-3-oxorhazinilam, R-76
16,17-Didehydropanamine, O-114
1,5-Didehydroproline, D-501
1,2-Didehydropseudoaspidospermidine, D-377
Didehydroroemerine, D-166
9,21-Didehydroryanodine, R-175
19,21-Didehydro-6,21-secohetisan-5,15-diol, T-427
1,13-Didehydro-10,11-secomultiflorine, A-554
4,4*a*-Didehydroskytanthine, S-326

4*a*,5-Didehydroskytanthine, S-326
7,8-Didehydrosophoramine, S-376
13,14-Didehydrosophoridine, S-371
11,12-Didehydrosparteine, D-168
1′,2′-Didehydrostemofoline *N*-oxide, S-515
1′,2′-Didehydrostemofoline, S-515
Didehydrostemonine, S-519
1-*O*,19-Didehydrotakaosamine, G-152
3,4-Didehydrotalbotine, T-19
19,20-Didehydrotalcarpine, T-20
12,13-Didehydro-2,7,13,14-tetrahydro-α-erythroidine, E-215
7,8-Didehydro-2,3,7,8-tetramethoxyhasubanan-6-one, R-161
7,8-Didehydro-3,4,7,8-tetramethoxy-17-methylhasubanan-6,16-dione, H-70
7,8-Didehydro-3,4,7,8-tetramethoxy-17-methylhasubanan-6-one, H-70
6′-[(6*a*,7-Didehydro-1,2,10-trimethoxyaporphin-9-yl)oxy]codamine, D-170
1,6-Didehydro-3,15,16-trimethoxyerythrinan-2-ol, E-207
1,6-Didehydro-3,15,16-trimethoxy-*C*-homoerythrinan-2,7-diol, C-260
7,8-Didehydro-3,7,8-trimethoxy-17-methylhasubanan-4,6-diol, H-70
Didehydrotryptamine, D-172
Didehydrotuberostemonine, T-664
1′,2′-Didehydrotubulosine, T-675
14,15-Didehydrovincadine, V-112
14,15-Didehydrovincamine, V-115
14,15-Didehydrovincamone, E-6
14,15-Didehydrovincanol, E-6
16,17-Didehydroyohimban-17-methanol, N-243
19,20-Didehydro-α-yohimbine, D-378
19,20-Didehydro-β-yohimbine, D-378
19,20-Didehydroyohimbine, D-378
Didemethoxycarbonyltetrahydrosecamine, S-174
Dide-*O*-methylaaptamine 9-sulfate, A-2
Dide-*O*-methylaaptamine, A-2
N^a,N^b-Didemethylalfileramine, A-260
5′,6-Di-*O*-demethylancistroealaine A, A-980
Didemethylasterriquinone D, A-1521
N,O-Didemethylcelesticetin, C-239
1,2-Didemethylcolchicine, D-92
2,3-Didemethylcolchicine, D-92
N,N′-Didemethylculantraramine, C-803
O^7,$O^{7'}$-Didemethylcycleanine, C-835
2,3-Didemethyl-*N*-deacetylcolchicine, D-92
1,14-Didemethyldelpheline, M-321
2,3-Didemethyldemecolcine, D-92
4,4′-Didemethyl-18,18′-dideoxytoxiferine I, T-436
Dide-*O*-methyl-4-*O*-α-D-glucopyranosylsimmondsin, S-302
N,N-Didemethylgrossularine 1, G-183
3,4-Dide-*O*-methyl-14α-hydroxyisotylocrebrine *N*-oxide, I-342
3,6-Dide-*O*-methyl-14α-hydroxyisotylocrebrine, I-342
N^a,18-Didemethyl-19-hydroxy-N^b-methylsuaveoline, M-10
13,19-Didemethyl-27-hydroxyspirolide C, S-432
C,N-Didemethylindolmycin, A-1092
N^a,N^b-Didemethylisoalfileramine, I-188
3,6-Dide-*O*-methylisotylocrebrine, I-342
4′,4″-Dide-*O*-methyljulandine, J-54
O^7,O^{12}-Didemethylnorthalibrine, T-309
Dide-*O*-methylsimmondsin, S-302
13,19-Didemethylspirolide C, S-432
4′-*N*,*O*-Didemethylstaurosporine, S-498
Dide-*O*-methylvaracin, L-205
Didemnimide A, D-379
Didemnimide B, D-379
Didemnimide C, D-379
Didemnimide D, D-379
Didemnimide E, D-379
Didemnoline A, D-380
Didemnoline B, D-380
Didemnoline C, D-380
Didemnoline D, D-380
13,15-Dideoxyaconitine, M-303
11,17-Dideoxyagelorin A, A-194
11,17-Dideoxyagelorin B, A-194
1,4-Dideoxyallonojirimycin, H-615
1,4-Dideoxyaltronojirimycin, H-615
10,10′-Dideoxy-4,4′-binecatorone, N-85
18,18′-Dideoxy-2,2′-epoxytoxiferine I, C-809
11,19-Dideoxyfistularin 3, F-70
2,6-Dideoxy-7-*O*-β-D-glucopyranosyl-2,6-imino-D-*glycero*-L-*gulo*-heptitol, B-186
2,5-Dideoxy-2,5-iminoallitol, D-542
2,5-Dideoxy-2,5-imino-L-altritol, D-542
1,5-Dideoxy-1,5-imino-D-altritol, H-616
1,5-Dideoxy-1,5-imino-L-altritol, H-616
1,4-Dideoxy-1,4-imino-D-arabinitol, D-593
1,4-Dideoxy-1,4-imino-L-arabinitol, D-593
1,5-Dideoxy-1,5-imino-D-arabinitol, P-458
1,5-Dideoxy-1,5-imino-L-arabinitol, P-458
2,5-Dideoxy-2,5-imino-D-fucitol, D-591
2,5-Dideoxy-2,5-iminogalactitol, D-542
1,5-Dideoxy-1,5-imino-D-galactitol, H-616
1,5-Dideoxy-1,5-imino-L-galactitol, H-616
2,5-Dideoxy-2,5-imino-D-glucitol, D-542
1,5-Dideoxy-1,5-imino-D-glucitol, H-616
1,5-Dideoxy-1,5-imino-L-glucitol, H-616
1,4-Dideoxy-1,4-imino-5-*O*-β-D-glucopyranosyl-D-arabinitol, D-593
1,5-Dideoxy-1,5-imino-L-gulitol, H-616
2,6-Dideoxy-2,6-imino-L-gulonic acid, T-579
2,6-Dideoxy-2,6-iminoheptitol, B-186
2,5-Dideoxy-2,5-imino-D-*glycero*-D-*talo*-heptitol, D-580
2,5-Dideoxy-2,5-imino-*glycero*-D-*galacto*-heptitol, D-580
2,5-Dideoxy-2,5-imino-*glycero*-D-*manno*-heptitol, D-580
2,5-Dideoxy-2,5-iminoheptitol, D-580
1,5-Dideoxy-1,5-iminohexitol, H-616
2,5-Dideoxy-2,5-imino-L-iditol, D-542
1,5-Dideoxy-1,5-imino-D-iditol, H-616
1,5-Dideoxy-1,5-imino-L-iditol, H-616
2,6-Dideoxy-2,6-imino-L-idonic acid, T-579
1,4-Dideoxy-1,4-imino-D-lyxitol, D-593
1,4-Dideoxy-1,4-imino-L-lyxitol, D-593
1,5-Dideoxy-1,5-imino-D-lyxitol, P-458
1,5-Dideoxy-1,5-imino-L-lyxitol, P-458
2,5-Dideoxy-2,5-imino-D-mannitol, D-542
1,5-Dideoxy-1,5-imino-D-mannitol, H-616
1,5-Dideoxy-1,5-imino-L-mannitol, H-616
1,4-Dideoxy-1,4-iminopentitol, 11CI, D-593
1,5-Dideoxy-1,5-iminopentitol, P-458
1,4-Dideoxy-1,4-imino-D-ribitol, D-593
1,4-Dideoxy-1,4-imino-L-ribitol, D-593
1,5-Dideoxy-1,5-iminoribitol, P-458
1,5-Dideoxy-1,5-imino-D-talitol, H-616
1,4-Dideoxy-1,4-imino-D-xylitol, D-593
1,4-Dideoxy-1,4-imino-L-xylitol, D-593
2,5-Dideoxy-2,5-imino-D-xylitol, D-593
1,5-Dideoxy-1,5-iminoxylitol, P-458
Dideoxyluzopeptin C, L-312
Dideoxymalyngamide C, D-225
1,4-Dideoxymannonojirimycin, H-615
2′,3′-Dideoxy-5-methylcytidine, A-803
1,5-Dideoxy-1,5-(methylimino)-D-glucitol, H-616
1,6-Dideoxynojirimycin, M-517
18,18′-Dideoxytoxiferine I, T-436
11,11′-Dideoxyverticillin A, V-89
Didesacetylprotoveratrine A, P-674
Didmolamide A, D-381
Didmolamide B, D-382
Didymeline, D-383
Dielsine, D-384
Dielsine, D-385
Dielsinol, D-385
Dielsiquinone, M-97
Dienomycin A, D-386
Dienomycin B, D-386
Dienomycin C, D-386
Dienone II, K-100
Dienone I, K-100
7,7*a*-Diepialexine, T-555
7,8-Diepialexine, T-555
1,7*a*-Diepialexine, T-555
1,8-Diepialexine, T-555
3,7*a*-Diepialexine, T-555
3,8-Diepialexine, T-555
2,3-Diepiaustraline, T-555
6,7-Diepicastanospermine, C-188
3,4-Diepifagomine, H-614
3,4-Diepi-α-homonojirimycin, B-186
2,8-Diepilentiginosine, O-46
16,17-Diepipseudoreserpine, R-52
16,20-Diepisilicine, M-293
22,25-Diepisycophantine, S-456
11,13:11,16-Diepoxy-16,17-dihydro-11,12-secohetisan-2-ol, D-387
14,20:18,20-Diepoxypregnan-3-ol, A-1028
8,9:8′,9′-Diepoxy-6,6′,8,8′-tetramethyl-1,1′-biergoline, B-176
Diethanolamine, D-388
4,4-Diethoxy-1-hydroxy-2,5-cyclohexadiene-1-acetamide, H-650
3,3-Diethoxy-1-propylamine, A-892
2,4-Diethoxyquinoline, Q-33
6,7-Diethoxy-1,2,3,4-tetrahydroisoquinoline, T-158
Diethoxythiobinupharidine, T-380
Diethyl 1*H*-indole-1,3-dicarboxylate, I-90
Diethyl 4,4′-(methylenediimino)bisbenzoate, D-919
Diethyl (2-phthalimidoethyl)phosphonate, A-773
2-Diethylaminoethylamine, E-225
1-(2-Diethylaminoethyl)-8-hydroxy-4-methoxy-β-carboline, P-412
5,5-Diethylbarbituric acid, B-23
N,N-Diethylbenzeneacetamide, P-336
N,N-Diethyl-1,4-butanediamine, B-422
2,5-Diethyl-3,6-dimethylpyrazine, D-389
2,6-Diethyl-3,5-dimethylpyrazine, D-390
N,N′-Diethyl-*N,N′*-diphenylurea, D-818
N,N′-Diethyl-1,2-ethanediamine, E-225
N,N-Diethyl-1,2-ethanediamine, E-225
N^1,N^{14}-Diethylhomospermine, B-150
8,10-Diethyllobelidiol, D-391
8,10-Diethyllobelionol, D-391
Diethylmalonylurea, B-23
α,α′-Diethyl-1-methyl-2,6-piperidinediethanol, D-391
2,3-Diethyl-5-methylpyrazine, D-392
3,5-Diethyl-2-methylpyrazine, D-393
8,10-Diethylnorlobelidione, D-391
8,10-Diethylnorlobelionol, D-391
6,8-Diethyloctahydro-5-pentylindolizine, E-263
6,8-Diethyloctahydro-5-propyl-1*H*-indolizine, D-394
6,8-Diethyl-5-pentylindolizidine, E-263
6,8-Diethyl-5-propylindolizidine, D-394
5,5-Diethyl-2,4,6(1*H*,3*H*,5*H*)-pyrimidinetrione, B-23
α,α′-Diethyl-1,2,5,6-tetrahydro-1-methyl-2,6-pyridinediethanol, D-391
Diethyltoluamide, M-398
5,8′-Diferulic acid, D-395
N^1,N^4-Diferuloylputrescine, D-362
N^1,N^{10}-Diferuloylspermidine, S-398
N^5,N^{10}-Diferuloylspermidine, S-398
Diferuloylspermine, S-399
Difforine, D-396
Difforlemenine, D-397
Difforlemenitine, D-398
Diffusomycin, O-155
Diforene, D-730
2′,6′-Di-*O*-galloylprunasin, H-673
3′,6′-Di-*O*-galloylprunasin, H-673
4′,6′-Di-*O*-galloylprunasin, H-673
Digenic acid, K-4
Digenin, K-4
N,N′-Digeranylguanidine, B-174
Digittine, D-606
N,N′-Di(D-glucopyranosyl)trichotomine, T-497
Digonazole, B-61
Digracine, D-399
1,4-Diguanidinobutane, D-400
N-(3,4-Diguanidinobutanoyl)dopa, H-46
1,5-Diguanidinopentane, D-401
3,5-Di-5-hexenylpyrrolizidine, D-402
Dihomogammalinolenic acid, E-52

Dihomo-γ-linolenic acid, E-52
Dihomosedinone, D-403
Dihydroabikoviromycin, A-14
Dihydroacacipetalin, A-20
Dihydroaeruginoic acid, H-695
Dihydroagroclavine, F-49
Dihydroajaconine, A-1533
19,20-Dihydroakuammicine, A-228
2β,16β-Dihydroakuammicinol, R-63
1,2β-Dihydroakuammiline, A-231
Dihydroalamarine, A-235
Dihydroalatamide, M-280
14,15-Dihydroallosecurinine-15-ol, A-630
Dihydroambelline, A-683
Dihydroampullicin, A-951
8,14-Dihydroamurine, A-955
13*b*,14-Dihydroangustine, A-1019
18,19-Dihydroangustine, A-1019
3,14-Dihydroangustine, A-1019
3,14-Dihydroangustoline, A-1020
Dihydroantirhine α-methochloride, A-1328
Dihydroantirhine β-*N*-methosalt, A-1328
Dihydroantirhine, A-1328
(20*S*)-Dihydroantirhine, A-1328
1′,8-Dihydroaplysinopsin, A-1357
Dihydroarcyriacyanin A, A-1392
Dihydroarcyriarubin B, A-1394
Dihydroarcyriarubin C, A-1394
Dihydroarcyroxocin A, A-1398
Dihydroaspidospermatine, A-1497
Dihydroatisine, A-1533
12,13-Dihydroaustamide, A-1556
Dihydroavicine, D-404
24,28-Dihydro-15-azasterol, A-1602
5,6-Dihydroazoverdin G, A-1615
8,9-Dihydrobarettin, B-24
2,3-Dihydrobellendine, B-57
9,10-Dihydro-5*H*,7*H*-benzo[*f*][1,3]dioxolo[6,7]isoquino[8,1,2-*hij*][3,1]benzoxazine, D-946
3,4-Dihydro-2*H*-1,3-benzoxazin-2-one, D-405
Dihydroberberine, L-23
3′,4′-Dihydro-3,5′-bi(*N*-methylcytisine), D-704
7,8-Dihydrobiopterin, A-749
6,7-Dihydrobis[1,3]benzodioxolo[5,6-*a*:4′,5′-*g*]quinolizinium, C-638
2,3-Dihydro-6,8-bis[10-(5-hydroxy-6-methyl-2-piperidinyl)decyl]-1*H*-indolizinium, J-57
Dihydro-4,5-bis(8-hydroxy-4-quinolinyl)-2(3*H*)-furanone, B-358
7,8-Dihydro-1,1′-bisinomenine, S-313
2,3-Dihydro-6,8-bis(4-methoxyphenyl)-1*H*-indolizinium(1+), F-54
3′,4′-Dihydro-3,5′-bithermopsine, D-871
Dihydrobocconine, D-510
Dihydrobufothionine, B-393
Dihydrobungeanool, T-133
Dihydrocadambine, D-406
3β-Dihydrocadambine, D-406
N-Dihydrocaffeoyltyramine, H-667
4,5-Dihydrocanthin-6-one, C-90
2,3-Dihydrocapitavine, C-94
Dihydrocapsaicin glucoside, C-100
Dihydrocapsaicin, C-100
Dihydrocapuvosidine, C-105
20-Dihydrochaetoglobosin A, C-325
Dihydrochanoclavine I, C-348
Dihydrochelerythrine, D-407
Dihydrochelerythrinyl-8-acetaldehyde, D-408
Dihydrochelilutine, D-407
Dihydrochelirubine, D-510
Dihydrocheminortoxiferine, R-63
10,11-Dihydrocinchonan-9-ol, C-446
(9*S*)-10,11-Dihydrocinchonan-9-ol, C-447
Dihydrocinchonicinol, Q-17
10,11-Dihydrocinchonidine, C-446
10,11-Dihydrocinchonine, C-447
18,19-Dihydrocinchophyllamine, C-448
Dihydrocinnamic acid, P-350
N-Dihydrocinnamoyl-20-hydroxycylindrocarine, C-929
(+)-Dihydrocleavamine, C-522
(-)-Dihydrocleavamine, C-522
1,2-Dihydrocomosidine, L-278
Dihydroconcuressine, C-601
14,19-Dihydrocondylocarpine, T-673
Dihydroconessine, C-601
Dihydroconkuressine, C-601
4′-Dihydroconsabatine, C-622
5,6-Dihydroconstrictosine, C-624
Dihydrocoptisine, D-409
Dihydrocorymine, D-410
Dihydrocorynantheine *N*-oxide, C-689
Dihydrocorynantheine pseudoindoxyl, D-411
Dihydrocorynantheine, C-689
Dihydrocorynantheol *N*-metho salt, D-412
Dihydrocorynantheol *N*-oxide, D-412
Dihydrocorynantheol, D-412
Dihydro-*p*-coumaric acid, H-689
Dihydrocrinine, C-748
Dihydrocupreine, Q-20
Dihydrocuscohygrine, D-413
Dihydrocycloakagerine, D-414
5,6-Dihydro-7*H*-cyclohepta[*c*]pyridin-7-one, P-157
Dihydrocyclomicrophyllidine A, C-883
Dihydrocyclomicrophylline A, C-883
Dihydrocyclomicrophylline C, C-883
Dihydrocyclomicrophylline F, C-883
Dihydrocyclomicrophylline I, C-883
5,12-Dihydrocycloocta[1,2-*b*:5,6-*b*′]diindole-6,13-dicarboxylic acid, D-415
1,3-Dihydrocyclopentapyrimidin-2-one, D-416
Dihydrodarlingianine, D-74
5,11-Dihydrodarlingine, D-75
2,3-Dihydrodarlingine, D-75
2,3-Dihydrodauriporphine, D-90
3,14-Dihydrodecussine, D-138
3-Dihydro-7,8-dehydrodiscorhabdin C, D-851
16,17-Dihydro-17-demethoxyisorhyncophylline *N*-oxide, R-90
16,17-Dihydro-17-demethoxyisorhyncophylline, R-90
8,9-Dihydro-3′-demethoxypiplartine, P-473
Dihydrodeoxybromotopsentin, T-432
Dihydrodesoxycernuine, L-321
Dihydrodesoxylycocernuine, L-321
6″,7″-Dihydro-5,5‴-dicapsaicin, D-344
1,2-Dihydro-1,2-dihydroxyacronycine, D-417
cis-1,2-Dihydro-1,2-dihydroxyacronydine, A-121
trans-1,2-Dihydro-1,2-dihydroxyacronydine, A-121
3,4-Dihydro-3,4-dihydroxy-1,4-benzoxazin-2-one, D-436
1,2-Dihydro-1,2-dihydroxy-*N*-demethylacronycine, D-417
4,5-Dihydro-1,9-dihydroxy-2,11-dimethoxy-7*H*-dibenzo[*de*,*g*]quinolin-7-one, D-418
4,5-Dihydro-1,9-dihydroxy-2,11-dimethoxy-7-oxoaporphine, D-418
14,19-Dihydro-8,12-dihydroxy-4,19-dimethyl-11,15-dioxocrotalananium, C-769
2,3-Dihydro-5,6-dihydroxy-1,1-dimethylindolium(1+), D-419
2,11-Dihydro-5,10-dihydroxy-2,11-dimethyl-2-(4-methyl-3-pentenyl)-6*H*-pyrano[3,2-*b*]acridin-6-one, G-123
3,12-Dihydro-6,11-dihydroxy-3,3-dimethyl-7*H*-pyrano[2,3-*c*]acridin-7-one, A-1527
3-(6,7-Dihydro-8,9-dihydroxyfarnesyl)indole, T-605
3,4-Dihydro-3,4-dihydroxy-2-(hydroxymethyl)-2*H*-pyrrole, D-420
2,3-Dihydro-5,6-dihydroxy-1*H*-indole-2-carboxylic acid, C-862
3,4-Dihydro-6,7-dihydroxyisoquinoline, D-421
3,4-Dihydro-6,7-dihydroxy-1(2*H*)-isoquinolinone, I-305
32,33-Dihydro-6,31-dihydroxymanzamine A, M-91
cis-1,2-Dihydro-1,2-dihydroxymedicosmine, A-121
3,4-Dihydro-4,5-dihydroxy-3-methoxy-4-(4-methoxyphenyl)-2(1*H*)-quinolinone, D-422
7,8-Dihydro-6,10-dihydroxy-7-methoxy-3-methylbenz[*g*]isoquinolin-9(6*H*)-one, P-892
3,4-Dihydro-3,4-dihydroxy-4-(4-methoxyphenyl)-2(1*H*)-quinolinone, D-422
3,12-Dihydro-6,11-dihydroxy-10-methoxy-3,3,12-trimethyl-7*H*-pyrano[2,3-*c*]acridin-7-one, C-472
2,11-Dihydro-5,10-dihydroxy-12-methoxy-2,2,11-trimethyl-6*H*-pyrano[3,2-*b*]acridin-6-one, P-879
1,4-Dihydro-3,7-dihydroxy-8-(3-methyl-2-butenyl)-4-oxo-2-quinolinecarboxylic acid, T-584
14,19-Dihydro-12,13-dihydroxy-14-methylcrotalanan-11,15-dione, C-771
14,19-Dihydro-12,13-dihydroxy-19-methylcrotalanan-11,15-dione, T-488
3,4-Dihydro-3,4-dihydroxy-1-methyl-3-(3-methyl-2-butenyl)-2(1*H*)-quinolinone, P-440
15,20-Dihydro-12,14-dihydroxy-4-methyl-4,8-seco-senecionan-8,11,16-trione, S-658
14,19-Dihydro-12,13-dihydroxy-20-norcrotalanan-11,15-dione, M-688
2,3-Dihydro-3,5-dihydroxy-2-oxo-1*H*-indole-3-acetic acid, D-423
2,3-Dihydro-3,7-dihydroxy-2-oxo-1*H*-indole-3-acetic acid, D-424
1,4-Dihydro-5,8-dihydroxy-4-oxo-2-quinolinecarboxylic acid, T-586
2,7-Dihydro-2,7-dihydroxypleiocarpamine, A-617
15,20-Dihydro-12,15-dihydroxysenecionan-11,16-dione, B-194
1,2-Dihydro-2,12-dihydroxysenecionan-11,16-dione, R-133
N-(6,7-Dihydro-4,9-dihydroxy-3,10,11-trimethoxy-5*H*-dibenzo[*a*,*c*]cyclohepten-5-yl)acetamide, C-567
9,9*a*-Dihydro-3,9-di-1*H*-indol-3-ylfuro[3′,2′:3,4]cyclopent[1,2-*b*]indol-2(8*H*)-one, M-60
5,6-Dihydro-9,10-dimethoxybenzo[*g*]-1,3-benzodioxolo[5,6-*a*]quinolizinium(1+), B-101
11,12-Dihydro-8,9-dimethoxybenzo[*a*]-1,3-benzodioxolo[4,5-*g*]quinolizinium, G-181
12,13-Dihydro-1,2-dimethoxy-α,12-dimethyl[1,3]-benzodioxolo[5,6-*c*]phenanthridine-13-methanol, H-490
5,6-Dihydro-1,2-dimethoxy-6,7-dimethyl-4*H*-dibenzo[*de*,*g*]quinoline-3,9-diol, G-147
1,2-Dihydro-4,10-dimethoxy-α,α-dimethyldifuro[2,3-*b*:3′,2′-*f*]quinoline-2-methanol, C-418
3,4-Dihydro-6,8-dimethoxy-1,3-dimethylisoquinoline, D-425
8,13-Dihydro-2,3-dimethoxyindolo[2′,3′:3,4]pyrido[2,1-*b*]quinazolin-5(7*H*)-one, E-305
3,4-Dihydro-6,7-dimethoxyisocarbostyril, I-305
3,9-Dihydro-6,8-dimethoxy-2-isopropenyl-9-methylfuro[2,3-*b*]quinolin-4(*H*)-one, P-756
3,4-Dihydro-6,7-dimethoxyisoquinoline, D-421
3,4-Dihydro-6,7-dimethoxy-1-isoquinolinol, I-305
3,4-Dihydro-6,7-dimethoxy-1(2*H*)-isoquinolinone, I-305
5,6-Dihydro-9,10-dimethoxy-13-methylbenzo[*g*]-1,3-benzodioxolo[5,6-*a*]quinolizinium, D-171
12,13-Dihydro-1,2-dimethoxy-12-methyl[1,3]benzodioxolo[5,6-*c*]phenanthridine-13-acetaldehyde, D-408
12,13-Dihydro-1,2-dimethoxy-12-methyl[1,3]benzodioxolo[5,6-*c*]phenanthridine, D-407
12,13-Dihydro-2,3-dimethoxy-12-methyl[1,3]benzodioxolo[5,6-*c*]phenanthridine, D-482
12,13-Dihydro-1,2-dimethoxy-12-methyl[1,3]benzodioxolo[5,6-*c*]phenanthridine-13-methanol, B-239
7-(5,6-Dihydro-1,2-dimethoxy-6-methyl-4*H*-dibenzo[*de*,*g*]quinolin-7-yl)-2-methoxy-1*H*-dibenzo[*de*,*g*]quinolin-1-one, T-628
10,11-Dihydro-7,8-dimethoxy-13-methyl-10,5-(iminomethano)-5*H*-benzo[4,5]cyclohepta[1,2-*f*]-1,3-benzodioxole, R-36
8,14-Dihydro-2,3-dimethoxy-14-methylindolo[2′,3′:3,4]pyrido[2,1-*b*]quinazolin-5(7*H*)-one, E-309
3,4-Dihydro-6,7-dimethoxy-1-methylisoquinoline, D-627
3,4-Dihydro-6,7-dimethoxy-2-methylisoquinolinium(1+), D-421
3,4-Dihydro-6,7-dimethoxy-1-methyl-8-isoquinolinol, D-439

3,4-Dihydro-6,7-dimethoxy-2-methyl-1(2*H*)-isoquinolinone, I-305
3,9-Dihydro-6,8-dimethoxy-9-methyl-2-(1-methylethenyl)furo[2,3-*b*]quinolin-4(2*H*)-one, P-756
2,3-Dihydro-4,8-dimethoxy-9-methyl-2-(1-methylethyl)furo[2,3-*b*]quinolinium, B-14
3,4-Dihydro-5-(4,5-dimethoxy-2-methyl-1-naphthalenyl)-8-hydroxy-6-methoxy-1,3-dimethylisoquinoline, D-444
3,4-Dihydro-5-(4,5-dimethoxy-2-methyl-1-naphthalenyl)-6-methoxy-1,3-dimethyl-8(2*H*)-isoquinolinone, D-444
12,13-Dihydro-1,2-dimethoxy-12-methyl-13-(2-oxopropyl)-1,3-benzodioxolo[5,6-*c*]phenanthridine, A-34
1,2-Dihydro-3,4-dimethoxy-1-methylpyridine, A-1400
6-(1,3-Dihydro-6,7-dimethoxy-3-oxo-1-isobenzofuranyl)-7,8-dihydro-1,3-dioxolo[4,5-*g*]isoquinolin-5(6*H*)-one, B-99
2,3-Dihydro-8,9-dimethoxy-1*H*-pyrrolo[2,1-*a*]isoquinolinium, C-756
4,5-Dihydro-9,10-dimethoxy-7*H*-pyrrolo[3,2,1-*de*]-phenanthridine, A-1508
4,5-Dihydro-9,10-dimethoxypyrrolo[3,2,1-*de*]phenanthridinium(1+), V-35
3,5-Dihydro-6,7-dimethoxy-2,3,3-trimethylfuro[3,2-*c*]quinolin-4(2*H*)-one, O-82
6,8-Dihydro-8,8-dimethyl-5*H*-benzo[*g*]-1,3-benzodioxolo[6,5,4-*de*]quinolin-10-ol, G-188
5,6-Dihydro-3,10-di-*O*-methylconstrictosine, C-624
6,7-Dihydro-2,3-dimethyl-5*H*-cyclopentapyrazine, D-426
Dihydro-4,6-dimethyl-4*H*-1,3,5-dithiazine, D-427
4,5-Dihydro-2,4(5)-dimethyl-1*H*-imidazole, D-428
1,4-Dihydro-4,6-dimethyl-9*H*-imidazo[1,2-*a*]purin-9-one, W-30
2,9-Dihydro-2,2-dimethyl-7-(3-methylbutyl)pyrano[3,2-*g*]indole, A-1510
3,7-Dihydro-*N*,3-dimethyl-2-(methylimino)-2*H*-purin-6-amine, I-48
3,11-Dihydro-3,8-dimethyl-3-(4-methyl-3-pentenyl)pyrano[3,2-*a*]carbazole-7,10-dione, P-888
3,7-Dihydro-3,10-dimethyl-3-(4-methyl-3-pentenyl)pyrano[2,3-*c*]carbazole, E-301
3,11-Dihydro-3,8-dimethyl-3-(4-methyl-3-pentenyl)pyrano[3,2-*a*]carbazole, M-46
3,11-Dihydro-3,5-dimethyl-3-(4-methyl-3-pentenyl)pyrano[3,2-*a*]carbazol-9-ol, M-47
4,9-Dihydro-4,6-dimethyl-9-oxo-1*H*-imidazo[1,2-*a*]purine, W-30
3,7-Dihydro-1,3-dimethyl-1*H*-purine-2,6-dione, T-360
3,7-Dihydro-3,7-dimethyl-1*H*-purine-2,6-dione, T-355
3,7-Dihydro-1,7-dimethyl-1*H*-purine-2,6-dione, X-5
1,7-Dihydro-1,7-dimethyl-6*H*-purin-6-one, P-820
1,9-Dihydro-1,9-dimethyl-6*H*-purin-6-one, P-820
3,7-Dihydro-3,7-dimethyl-6*H*-purin-6-one, P-820
3,9-Dihydro-3,9-dimethyl-6*H*-purin-6-one, P-820
3,11-Dihydro-3,3-dimethylpyrano[3,2-*a*]carbazole-5-carboxaldehyde, M-757
2,6-Dihydro-2,2-dimethyl-5*H*-pyrano[3,2-*c*]quinolin-5-one, F-90
2,8-Dihydro-6,8-dimethylpyrimido[5,4-*e*]-1,2,4-triazine-3,5,7(6*H*)-trione, D-498
4,5-Dihydro-2,3-dimethylthiazolium(1+), D-479
7,8-Dihydro-3,4-di-*O*-methyltubastrine, T-656
Dihydrodioscorine, D-798
4-(3,4-Dihydro-1,1-dioxido-2*H*-1,4-thiazin-6-yl)-phenol, D-457
6,12-Dihydro-6,12-dioxoindolo[2,1-*b*]quinazoline, I-108
5,15-Dihydro[1,3]dioxolo[4,5-*g*]indolo[2′,3′:3,4]pyrido[2,1-*b*]quinazolin-8(6*H*)-one, E-306
7,8-Dihydro-1,3-dioxolo[4,5-*g*]isoquinolin-5(6*H*)-one, I-305
4,5-Dihydro-4,5-dioxo-1*H*-pyrrolo[2,3-*f*]quinoline-2,7,9-tricarboxylic acid, M-236
5,6-Dihydro-3,6-dioxo-1,2,4-triazine-4(3*H*)-carboxylic acid, D-429
4,5-Dihydro-2,5-diphenyloxazole, D-430
3-Dihydrodiscorhabdin C, D-851
7,8-Dihydro-1,1′-disinomenine, S-313
Dihydroeburnamenine, E-5
Dihydroelaeocarpidine, T-34
15,16-Dihydroelaeocarpine, E-55
13,16-Dihydroelaeocarpine, P-714
3,4-Dihydroellipticine, E-67
Dihydroelymoclavine, F-49
1,2-Dihydro-3-epimacronine, P-626
Dihydroepistephamiersine 6-acetate, L-244
Dihydroergocornine, E-153
Dihydroergocristine mesilate, E-155
Dihydroergocristine, E-155
Dihydroergosine, E-169
Dihydroergotamine mesylate, E-172
Dihydroergotamine, E-172
19,20-Dihydroervahanine A, E-189
Dihydroerysodine, D-431
Dihydroerysotrine, D-431
Dihydroerysovine, D-431
Dihydroerythraline, E-208
3,4-Dihydroeudistomin U, I-119
Dihydroevocarpine, H-750
N-Dihydroferuloyltyramine, H-667
Dihydroferuperine, C-710
6,7-Dihydroflavopereirine, F-84
Dihydroflustramine C *N*-oxide, F-106
Dihydroflustramine C, F-106
7,8-Dihydrofolic acid, P-772
2,3-Dihydro-1-formyl-2-hydroxy-5-methoxy-6-methyl-1*H*-indole, D-432
2,3-Dihydro-1-formyl-5-methoxy-6-methyl-1*H*-indole, D-432
Dihydrofumariline 1, F-176
Dihydrofumariline 2, F-176
Dihydrofumariline, F-176
4-Dihydrofuntumafrine C, A-891
6,7-Dihydro-4*H*-furo[2,3-*c*]azepine-4,8(5*H*)-dione, D-433
Dihydrogadesine, M-321
Dihydrogagaminine, P-602
Dihydrogambirtannine, D-434
Dihydrogephyrotoxin, G-65
Dihydroglyparvin A, T-478
Dihydrohaemanthamine, H-5
Dihydrohalichondramide, H-15
cis-3,4-Dihydrohamacanthin A, H-40
trans-3,4-Dihydrohamacanthin A, H-40
cis-3,4-Dihydrohamacanthin B, H-41
Dihydrohaplamine, F-90
Dihydrohaplocine (incorr.), L-177
Dihydroharman, M-426
Dihydroharmine, H-592
Dihydroheliotridine, H-233
3,4-Dihydro-5-(5-hexenyl)-2-nonyl-2*H*-pyrrole, D-435
Dihydrohistrionicotoxin, H-309
Dihydroholaphyllamine, A-882
6,7-Dihydrohomoerysotrine, L-278
2,7-Dihydrohomoerysotrine, T-51
2,7-Dihydrohomoerysovine, T-51
6,7-Dihydrohomoerythraline, C-587
2,7-Dihydrohomo-β-erythroidine, P-315
Dihydro-*N*-hydroxyabikoviromycin, A-14
10,11-Dihydro-24-hydroxyaflavinine, A-172
19,20-Dihydro-19-hydroxyakuammicine, E-30
16,22-Dihydro-16-hydroxyapparicine, A-1365
8,9-Dihydro-11-hydroxyascididemin, A-1459
12,13-Dihydro-12-hydroxyaustamide, A-1556
10,11-Dihydro-8-hydroxy-9*H*-benzo[*b*]pyrido[4,3,2-*de*][1,10]phenanthrolin-9-one, L-2
4,5-Dihydro-2-(6-hydroxy-2-benzothiazolyl)-4-thiazolecarboxylic acid, L-282
3,4-Dihydro-3-hydroxy-1,4-benzoxazin-2-one, D-436
7,8-Dihydro-8-hydroxyberberine, O-216
1,2-Dihydro-9-hydroxy-6-canthinone, H-444
2,3-Dihydro-4′-hydroxycapitavine, C-94
3,4-Dihydro-7-hydroxy-β-carboline-1-carboxylic acid, H-459
16,17-Dihydro-17-hydroxycathenamine, C-207
1,3-Dihydro-3-[(4-hydroxy-3-cinnolinyl)methylene]-2*H*-indol-2-one, S-132
18,19-Dihydro-9-hydroxycorynantheine, G-13
5,6-Dihydro-4-hydroxycyclopenta[*c*]pyrrole-1,3(2*H*,4*H*)-dione, M-70
1,2-Dihydro-2-hydroxy-*N*-demethyl-1-oxonoracronycine, A-120
2,3-Dihydro-1-(4-hydroxy-3,5-dimethoxycinnamoyl)-4*H*-pyridin-4-one, C-245
3,4-Dihydro-8-hydroxy-6,7-dimethoxy-1,2-dimethylisoquinolinium inner salt, D-439
3,4-Dihydro-8-hydroxy-6,7-dimethoxyisoquinoline, D-437
1,3-Dihydro-3-hydroxy-4,9-dimethoxy-3-methyl-2*H*-benz[*f*]indol-2-one, D-438
3,4-Dihydro-8-hydroxy-6,7-dimethoxy-1-methylisoquinoline, D-439
3,4-Dihydro-8-hydroxy-6,7-dimethoxy-2-methylisoquinolinium inner salt, D-437
3,4-Dihydro-1-[(2-hydroxy-3,4-dimethoxyphenyl)-methylene]-6,7-dimethoxy-2(1*H*)-isoquinolinecarboxaldehyde, P-554
4,5-Dihydro-10-hydroxy-2,9-dimethoxypyrrolo[3,2,1-*de*]phenanthridinium(1+), V-35
2,3-Dihydro-6-hydroxy-α,α-dimethylfuro[2,3-*b*]quinoline-2-methanol, R-97
3,12-Dihydro-6-hydroxy-3,3-dimethyl-5-(3-methyl-2-butenyl)-7*H*-pyrano[2,3-*c*]acridin-7-one, S-278
4-(2,3-Dihydro-2-hydroxy-5,7-dimethyl-3-oxo-2-benzofuranyl)-2,6-piperidinedione, A-124
1,4-Dihydro-3-hydroxy-1,4-dioxo-2-naphthalenecarboxylic acid, H-638
16,17-Dihydro-17-hydroxy-19-epicathenamine, A-215
14,19-Dihydro-12-(1-hydroxyethyl)-17,20-dinorcrotalanan-11,15-dione, C-767
2,3-Dihydro-2-(1-hydroxyethyl)-2-methylquinazolin-4(1*H*)-one, D-440
2,3-Dihydro-3-(1-hydroxyethyl)pyrrolo[1,2-*a*]pyrazine-1,4-dione, M-19
3′,4′-Dihydro-4′-hydroxyflindersine, F-90
18,19-Dihydro-19-hydroxygelsemine, G-49
3,4-Dihydro-3-hydroxygraciline, G-151
3,4-Dihydro-7-hydroxy-1-(4-hydroxybenzoyl)-6-methoxyisoquinoline, L-252
3,4-Dihydro-6-hydroxy-4-(4-hydroxy-3,5-dimethoxyphenyl)-3-hydroxymethyl-5,7-dimethoxy-2-naphthalenecarboxylic acid, T-395
2,3-Dihydro-4-hydroxy-2-(2-hydroxyethyl)-1*H*-isoindol-1-one, D-442
3,4-Dihydro-7-hydroxy-6-(5-hydroxy-1*H*-indol-3-yl)-1*H*-azepino[5,4,3-*cd*]indole-4-carboxylic acid, H-778
4,8-Dihydro-2-hydroxy-7-(hydroxymethyl)-8,8-dimethyl-2*H*-1,4-benzothiazine-3,5-dione, X-3
2,3-Dihydro-8-hydroxy-2-(1-hydroxy-1-methylethyl)-4-methoxy-9-methylfuro[2,3-*b*]quinolinium, B-14
2,3-Dihydro-6-hydroxy-2-(1-hydroxy-1-methylethyl)-4-methoxy-9-methylfuro[2,3-*b*]quinolinium(1+), R-93
3,9-Dihydro-6-hydroxy-2-(1-hydroxy-1-methylethyl)-9-methylfuro[2,3-*b*]quinolin-4(2*H*)-one, R-91
2,3-Dihydro-7-hydroxy-2-(4-hydroxyphenyl)-4*H*-1-benzopyran-4-one, D-581
3,6-Dihydro-6-hydroxy-6-(hydroxyphenylmethyl)-3,5-dimethoxy-3-(1-methylethyl)-2(1*H*)-pyrazinone, T-85
3,4-Dihydro-4-hydroxy-5-(3-hydroxy-2-pyridinyl)-4-methyl-2*H*-pyrrole-2-carboxamide, S-295
2,3-Dihydro-5-hydroxy-1*H*-indole, D-465
1,3-Dihydro-3-hydroxy-2*H*-indole-2-thione, H-534
1,3-Dihydro-3-hydroxy-2*H*-indol-2-one, I-91
1,3-Dihydro-5-hydroxy-2*H*-indol-2-one, I-92
3-(2,3-Dihydro-3-hydroxy-1*H*-indol-3-yl)-2-oxopropanoic acid, D-441
3-[1,2-Dihydro-5-(5-hydroxy-1*H*-indol-3-yl)-2-oxo-3*H*-pyrrol-3-ylidene]-1,3-dihydro-2*H*-indol-2-one, V-142
2,3-Dihydro-4-hydroxy-1*H*-isoindol-1-one, D-442
16,17-Dihydro-17-hydroxyisomitraphylline, M-661

3,4-Dihydro-1-hydroxyisoquinoline, D-469
3,4-Dihydro-2-hydroxy-1(2*H*)-isoquinolinone, D-469
19,20-Dihydro-10-hydroxyisositsirikine, I-319
12,13-Dihydro-12-hydroxyisostrychnine, P-672
5α,6-Dihydro-1α-hydroxyjervine, J-36
5β,6-Dihydro-1β-hydroxyjervine, J-36
8,9-Dihydro-9-hydroxylactimidomycin, I-245
8,9-Dihydro-8-hydroxylactimidomycin, L-7
3,4-Dihydro-6-hydroxymanzamine A, M-91
32,33-Dihydro-31-hydroxymanzamine A, M-91
11,12-Dihydro-9-hydroxy-8-methoxybenzo[*a*]-1,3-benzodioxolo[4,5-*g*]quinolizinium, G-181
1,2-Dihydro-1-(α-hydroxy-4-methoxybenzyl)-6,7-methylenedioxyisoquinoline, M-242
1,9-Dihydro-1-hydroxy-3-methoxy-1,2-dimethyl-4*H*-carbazol-4-one, C-128
4-(3,4-Dihydro-8-hydroxy-6-methoxy-1,3-dimethylisoquinolin-5-yl)-8-methoxy-3-methyl-1-naphthalenol, D-444
8,13-Dihydro-2-hydroxy-3-methoxyindolo[2′,3′:3,4]pyrido[2,1-*b*]quinazolin-5(7*H*)-one, E-308
3,4-Dihydro-7-hydroxy-6-methoxy-1(2*H*)-isoquinolinone, I-305
3,4-Dihydro-4-hydroxy-3-methoxy-4-(4-methoxyphenyl)-2(1*H*)-quinolinone, D-422
2,3-Dihydro-2-hydroxy-5-methoxy-6-methyl-1*H*-indole-1-carboxaldehyde, D-432
1,3-Dihydro-3-hydroxy-4-methoxy-3-methyl-2*H*-indol-2-one, D-443
2,3-Dihydro-6-hydroxy-4-methoxy-5-methyl-1*H*-isoindol-1-one, C-437
3,4-Dihydro-6-hydroxy-7-methoxy-2-methylisoquinolinium(1+), D-421
3,4-Dihydro-7-hydroxy-6-methoxy-2-methylisoquinolinium(1+), D-421
3,4-Dihydro-5-(4-hydroxy-5-methoxy-2-methyl-1-naphthalenyl)-6,8-dimethoxy-1,3-dimethylisoquinoline, D-444
3,4-Dihydro-5-(4-hydroxy-5-methoxy-2-methyl-1-naphthalenyl)-8-hydroxy-6-methoxy-1,3-dimethylisoquinoline, D-444
3,4-Dihydro-5-(4-hydroxy-5-methoxy-2-methyl-1-naphthalenyl)-6-methoxy-1,3-dimethyl-8(2*H*)-isoquinolinone, D-444
1,2-Dihydro-4-hydroxy-3-methoxy-1-methylquinoline, E-13
1,5-Dihydro-4-[(4-hydroxy-3-methoxyphenyl)-methyl]-3-(4-hydroxyphenyl)-2*H*-pyrrol-2-one, C-141
1-[2,3-Dihydro-2-(4-hydroxy-3-methoxyphenyl)-3-(2-pyrrolidinyl)-1,4-benzodioxin-6-yl]-2-(1-pyrrolidinyl)ethanone, H-770
2,11-Dihydro-5-hydroxy-10-methoxy-2,2,11-trimethyl-6*H*-pyrano[3,2-*b*]acridin-6-one, J-59
3*a*,4-Dihydro-2-hydroxymethyl-1,3-benzodioxole-5-carboxamide, D-807
2,3-Dihydro-3-(3-hydroxy-2-methyl-1-butenyl)-3-methyl-7-phenylfuro[3,2-*c*]pyridine-2,4-diol, A-1146
7,8-Dihydro-2-hydroxy-N^6-(3-methylbutyl)adenine, A-818
7,8-Dihydro-2-hydroxy-6-(3-methylbutylamino)-purine, A-818
3,4-Dihydro-7-hydroxy-1-methyl-β-carboline-3-carboxylic acid, T-206
3,4-Dihydro-7-hydroxy-1-methyl-β-carboline, H-592
4,8-Dihydro-7-(hydroxymethyl)-8,8-dimethyl-2*H*-1,4-benzothiazine-3,5-dione, X-3
7,8-Dihydro-4-hydroxy-6-methyl-1,3-dioxolo[4,5-*g*]isoquinolinium(1+), C-707
3,4-Dihydro-3-hydroxy-1-methyl-4,5-diphenyl-2(1*H*)-pyridinone, D-445
2,3-Dihydro-2-(1-hydroxy-1-methylethyl)-4,8-dimethoxy-9-methylfuro[2,3-*b*]quinolinium, B-14
3,9-Dihydro-2-(1-hydroxy-1-methylethyl)-8-methoxy-9-methylfuro[2,3-*b*]quinolin-4(2*H*)-one, B-13
7,10-Dihydro-8-(1-hydroxy-1-methylethyl)-10-methyl-1,3-dioxolo[4,5-*h*]furo[2,3-*b*]quinolin-6(8*H*)-one, H-549
3,5-Dihydro-2-(1-hydroxy-1-methylethyl)-5-methylfuro[3,2-*c*]quinolin-4(2*H*)-one, A-1377
3,9-Dihydro-2-(1-hydroxy-1-methylethyl)-9-methylfuro[2,3-*b*]quinolin-4(2*H*)-one, I-268
3,9-Dihydro-2-(1-hydroxy-1-methylethyl)-9-methyl-7,8-methylenedioxyfuro[2,3-*b*]quinolin-4(2*H*)-one, H-549
7,8-Dihydro-8-hydroxymethylfagaridine, B-239
6,7-Dihydro-4-(hydroxymethyl)-2-(*p*-hydroxyphenethyl)-7-methyl-5*H*-2-pyrindinium(1+), D-446
6,7-Dihydro-3-hydroxymethyl-8(5*H*)-indolizinone, D-447
3,4-Dihydro-5-hydroxy-2-methyl-1(2*H*)-isoquinolinone, I-304
5,6-Dihydro-3-hydroxymethyl-9-methoxy-6-methyl-1,2-methylenedioxy-4*H*-dibenzo[*de,g*]-quinoline, C-2
3,4-Dihydro-8-hydroxy-2-methyl-6,7-methylenedioxyisoquinolinium(1+), C-707
1,11-Dihydro-5-hydroxy-11-methyl-2-(1-methylethenyl)furo[2,3-*c*]acridin-6(2*H*)-one, R-167
[3,4-Dihydro-5-(hydroxymethyl)-4-methyl-3-oxopyrazinyl]guanidine, S-553
1,5-Dihydro-5-hydroxy-3-methyl-1-(4-methyl-5-oxo-2-pyrrolidinyl)-2*H*-pyrrol-2-one, H-467
1-[[1,5-Dihydro-4-(hydroxymethyl)-1-methyl-5-oxo-2*H*-pyrrol-2-ylidene]acetyl]-1,5-dihydro-4-methoxy-2*H*-pyrrol-2-one, P-783
2,3-Dihydro-4-hydroxy-3-methyl-2-(1-methyl-1-propenyl)-7-phenylfuro[3,2-*c*]pyridine-3-methanol, A-1142
10-(20,21-Dihydro-21-hydroxy-21-methyl-18-norallostophyllan-19-yl)-11-methoxyalstophyllan-19-one, M-8
1,5-Dihydro-5-hydroxy-5-(6-methyl-2,4-octadienyl)-2*H*-pyrrol-2-one, A-1573
2,5-Dihydro-4-hydroxy-1-methyl-3-(1-oxo-2,4,6-octatrienyl)-5-(phenylmethyl)-1*H*-pyrrol-2-one, B-85
1,2-Dihydro-4-hydroxy-1-methyl-2-oxo-3-pyridinecarbonitrile, D-668
1,5-Dihydro-5-hydroxy-3-methyl-1-(5-oxo-2-pyrrolidinyl)-2*H*-pyrrol-2-one, D-448
5,6-Dihydro-5-hydroxy-3-methyl-6-phenyl-3-benzazocin-4(3*H*)-one, C-501
2,3-Dihydro-4-hydroxy-2-(1-methyl-1-propenyl)-5-phenylfuro[2,3-*b*]pyridine-3,3-dimethanol, A-1145
3,6-Dihydro-10-hydroxy-9-methyl-4*H*-pyrido[4,3-*f*][1,4]oxazocin-4-one, P-159
6,7-Dihydro-7-hydroxy-7-methyl-5*H*-2-pyrindine-4-carboxaldehyde, E-296
6,7-Dihydro-7-(hydroxymethyl)-5*H*-2-pyrindin-5-one, C-562
3,4-Dihydro-2-(hydroxymethyl)-2*H*-pyrrole-3,4-diol, D-420
2,3-Dihydro-7-(hydroxymethyl)-1*H*-pyrrolizin-1-one, L-263
1,5-Dihydro-5-hydroxy-3-methyl-2*H*-pyrrol-2-one, D-449
7,8-Dihydro-8′-hydroxy-6-methylspiro[1,3-dioloxo[4,5-*g*]isoquinoline-5(6*H*),7′-[7*H*]indeno[4,5-*d*][1,3]dioxol]-6′(8′*H*)-one, C-673
2,3-Dihydro-3-hydroxy-3-methylthiazolo[3,2-*a*]indole-9-carboxaldehyde, B-282
5*a*,9*a*-Dihydro-5*a*-hydroxymillaurine, M-613
16,17-Dihydro-17-hydroxymitraphylline, M-661
3,7-Dihydro-7-[(4-hydroxy-3-nitrophenyl)methyl]-1,3-dimethyl-1*H*-purine-2,6-dione, P-357
14,19-Dihydro-13-hydroxy-20-norcrotalanan-11,15-dione, F-168
N-[5-[(1,6-Dihydro-2-hydroxy-5-octanamido-6-oxo-3-pyridyl)imino]-1,2,5,6-tetrahydro-2,6-dioxo-3-pyridyl]octanamide, D-450
1*a*,2-Dihydro-1*a*-hydroxy-6*bH*-oxireno[*b*]indole-6*b*-acetic acid, M-758
2,5-Dihydro-4-hydroxy-3-(1-oxo-2,4,6,8,10-dodecapentaenyl)-5-(phenylmethyl)-1*H*-pyrrol-2-one, B-87
2,3-Dihydro-3-hydroxy-2-oxo-1*H*-indole-3-acetic acid, D-451
2,3-Dihydro-5-hydroxy-2-oxo-1*H*-indole-3-acetic acid, D-453
2,3-Dihydro-4-hydroxy-2-oxo-1*H*-indole-3-acetic acid, D-452
2,3-Dihydro-3-hydroxy-2-oxo-1*H*-indole-3-acetonitrile, C-829
2,3-Dihydro-4-hydroxy-2-oxo-1*H*-indole-3-acetonitrile, D-452
2,3-Dihydro-3-hydroxy-α-oxo-1*H*-indole-3-propanoic acid, D-441
N-[2-(2,3-Dihydro-3-hydroxy-2-oxo-1*H*-indol-3-yl)ethyl]-3-phenyl-2-propenamide, C-454
32,33-Dihydro-6-hydroxy-35-oxomanzamine A, M-91
2,5-Dihydro-4-hydroxy-3-(1-oxo-2,4,6-octatrienyl)-5-(phenylmethyl)-1*H*-pyrrol-2-one, B-85
2,5-Dihydro-3-hydroxy-5-oxo-4-(1-oxo-2,4,6-octatrienyl)-1*H*-pyrrole-2-acetic acid, A-1204
1,2-Dihydro-4-hydroxy-2-oxo-3-pyridinecarboxylic acid, D-668
1,4-Dihydro-6-hydroxy-4-oxo-2-quinolinecarboxylic acid, D-675
1,2-Dihydro-6-hydroxy-2-oxo-4-quinolinecarboxylic acid, D-672
1,2-Dihydro-8-hydroxy-2-oxo-4-quinolinecarboxylic acid, D-673
1,4-Dihydro-3-hydroxy-4-oxo-2-quinolinecarboxylic acid, D-674
1,4-Dihydro-7-hydroxy-4-oxo-2-quinolinecarboxylic acid, D-676
1,4-Dihydro-8-hydroxy-4-oxo-2-quinolinecarboxylic acid, D-677
7,8-Dihydro-8-hydroxypalmatine, O-213
20*R*,21*S*-Dihydro-10-hydroxyperaksine, D-491
3,4-Dihydro-6-(4-hydroxyphenyl)-1,1-dioxo-2*H*-1,4-thiazine, D-457
3,4-Dihydro-2-(4-hydroxyphenyl)-7-methoxy-8-(2-pyrrolidinyl)-2*H*-1-benzopyran-5-ol, V-189
3,4-Dihydro-3-[(4-hydroxyphenyl)methylene]cyclopent[*b*]indole-1,2-dione, N-323
2,3-Dihydro-6-(4-hydroxyphenyl)-7-methyl-1*H*-indolizinium, I-170
4,5-Dihydro-2-(2-hydroxyphenyl)-4-methyl-4-thiazolecarboxylic acid, D-454
4,5-Dihydro-2-(2-hydroxyphenyl)-4-oxazolecarboxylic acid, D-455
5,6-Dihydro-3-[2-(4-hydroxyphenyl)-2-oxoethyl]-2(1*H*)-pyridinone, D-456
3,4-Dihydro-6-(4-hydroxyphenyl)-2*H*-1,4-thiazine, D-457
4,5-Dihydro-2-(2-hydroxyphenyl)-4-thiazolemethanol, H-695
2-[4,5-Dihydro-2-(2-hydroxyphenyl)-4-thiazolyl]-3-methyl-4-thiazolidinecarboxylic acid, P-832
3-[4,5-Dihydro-2-(2-hydroxyphenyl)-4-thiazolyl]tetrahydro-6,9-imino-1*H*,3*H*,5*H*-thiazolo[4,3-*c*][1,4]thiazepin-5-one, U-6
6,7-Dihydro-4-(1-hydroxypropyl)-5*H*-2-pyrindin-5-one, L-272
5,6-Dihydro-5-hydroxy-2(1*H*)-pyridinone, D-458
4,5-Dihydro-2-(3-hydroxy-2-pyridinyl)-4-methyl-4-thiazolecarboxylic acid, D-235
2,3-Dihydro-1-hydroxy-1*H*-pyrrolizine-7-carboxaldehyde, D-14
1,3-Dihydro-3-hydroxy-2*H*-pyrrol-2-one, D-459
1,5-Dihydro-5-hydroxy-2*H*-pyrrol-2-one, D-460
1,5-Dihydro-4-hydroxy-2*H*-pyrrol-2-one, P-954
2,3-Dihydro-5-hydroxypyrrolo[2,1-*b*]quinazolin-9(1*H*)-one, D-503
2,3-Dihydro-3-hydroxypyrrolo[2,1-*b*]quinazolin-9(1*H*)-one, V-38
3,4-Dihydro-6-hydroxy-2(1*H*)-quinolinone, D-461
14,15-Dihydro-14-hydroxysecurinan-11-one, S-208
15,20-Dihydro-12-hydroxysenecionan-11,16-dione, B-194
1,2-Dihydro-12-hydroxysenecionan-11,16-dione, P-516
5,6-Dihydro-1-hydroxy-2,3,10,11-tetramethoxydibenzo[*a,g*]quinolizinium(1+), S-531
1,13-Dihydro-13-hydroxyuleine, U-8
Dihydro-19-hydroxyvincamajinine, V-113
7,8-Dihydroimidazo[1,5-*c*]pyrimidin-5(6*H*)-one, D-462

2,3-Dihydro-2-imino-1,3-dimethyl-1*H*-imidazole-4-acetic acid, A-928
Dihydroimpranine, I-54
8,9-Dihydroindanomycin, I-64
6,7-Dihydro-8(5*H*)-indolizinone, D-463
11,12-Dihydroindolo[2,3-*a*]carbazole, D-464
2,3-Dihydro-1*H*-indol-5-ol, D-465
1,2-Dihydro-3*H*-indol-3-one, I-104
1,3-Dihydro-2*H*-indol-2-one, I-103
8,13-Dihydroindolo[2′,3′:3,4]pyrido[1,2-*b*][2,7]naphthyridin-5(7*H*)-one, N-70
8,13-Dihydroindolo[2′,3′:3,4]pyrido[2,1-*b*]quinazolin-5(7*H*)-one, R-168
12,13-Dihydro-5*H*-indolo[2,3-*a*]pyrrolo[3,4-*c*]carbazole-5,7(6*H*)-dione, A-1393
2,9-Dihydro-1*H*-indolo[3,2-*f*]pyrrolo[2,3,4-*gh*]phenanthridine-1,8-diol, A-1396
5,5*a*-Dihydro-6*H*-indolo[2′,3′:3,4]pyrrolo[2,1-*b*]-quinazoline-11,13-dione, W-26
5*a*,6-Dihydro-3-(1*H*-indol-3-yl)-1,4-dimethoxy-10*bH*-benzofuro[2,3-*b*]indole-2,10*b*-diol, D-466
3,4-Dihydro-3-(1*H*-indol-3-yl)methyl-1*H*-1,4-benzodiazepine-2,5-dione, D-467
6,7-Dihydro-7-(1*H*-indol-3-ylmethyl)quinazolino[3,2-*a*][1,4]benzodiazepine-5,13-dione, A-1479
5,6-Dihydro-3-[2-(1*H*-indol-3-yl)-2-oxoethyl]-2(1*H*)-pyridinone, D-468
3-[1,5-Dihydro-4-(1*H*-indol-3-yl)-5-oxo-2*H*-pyrrol-2-ylidene]-1,3-dihydro-2*H*-indol-2-one, P-711
5*a*,6-Dihydro-3-(1*H*-indol-3-yl)-1,2,4-trimethoxy-10*bH*-benzofuro[2,3-*b*]indol-10*b*-ol, D-466
Dihydroisoalamarine, A-235
5,11-Dihydroisobellendine, I-194
3,4-Dihydroisocarbostyril, D-469
Dihydroisoconessimine, C-595
Dihydroisokomarovine, Q-53
8,9-Dihydroisoorientalinone, O-112
Dihydroisopelletierine, S-216
3,5-Dihydro-2-isopropenyl-5-methylfuro[3,2-*c*]quinolin-4(2*H*)-one, A-1377
2,3-Dihydro-2-isopropyl-4,8-dimethoxy-9-methylfuro[2,3-*b*]quinolinium, B-14
3,9-Dihydro-2-isopropyl-7,8-methylenedioxy-9-methylfuro[2,3-*b*]quinolin-4(2*H*)-one, L-296
3,4-Dihydro-6,7-isoquinolinediol, D-421
3,4-Dihydro-1,6,7-isoquinolinetriol, I-305
3,4-Dihydro-1-isoquinolinol, D-469
3,4-Dihydro-1(2*H*)-isoquinolinone, D-469
8,9-Dihydroisoroemerialinone, O-112
Dihydroisosakerol, G-68
Dihydroisosetoclavine, S-273
19,20-Dihydroisostrychnine, P-672
4,5-Dihydro-3(2*H*)-isoxazolone, I-347
Dihydrojasminine, J-25
Dihydrojaspisamide, H-15
Dihydrojoubertiamine, J-49
9,10-Dihydrokeramadine, K-29
2,3-Dihydrokoniamborine, K-64
Dihydrokoumine, K-96
Dihydrokreysiginone, K-100
Dihydrokurchessine, P-601
8,9-Dihydrolactimidomycin, L-7
Dihydrolamellarin B, L-24
Dihydrolatumcidin, A-14
5,6-Dihydrolepidine, L-116
Dihydroleptopine, L-122
Dihydrolinaresine, R-156
Dihydrolongicaudatine Y, L-250
Dihydrolongicaudatine, L-249
Dihydroluciduline, L-280
Dihydrolycolucine, L-277
Dihydrolycopodine, L-341
Dihydrolycorine, Z-15
α-Dihydrolysergol, F-49
Dihydrolysergol, F-49
Dihydrolythrine, V-95
Dihydromacarpine, D-510
Dihydromaleimide β-D-glucoside, D-460
Dihydromaleimide, D-460
Dihydromaltophilin, X-6
3,4-Dihydromanzamine A *N*-oxide, M-91
3,4-Dihydromanzamine A, M-91
3,4-Dihydromanzamine J, M-94
Dihydromelosmine, M-194
2,3-Dihydromenisporphine, M-199
6,7-Dihydro-10-methoxy-5*H*-benzo[*g*]-1,3-benzodioxolo[6,5,4-*de*]quinoline, D-175
5,6-Dihydro-1-[3-(7-methoxy-1,3-benzodioxol-5-yl)-1-oxopropyl]-2(1*H*)-pyridinone, D-470
5,6-Dihydro-*N*-[3-(7-methoxy-1,3-benzodioxol-5-yl)-2-propenoyl]-2(1*H*)-pyridinone, D-470
1,2-Dihydro-1-(4-methoxybenzoyl)-6,7-methylenedioxyisoquinoline, M-242
3,4-Dihydro-3-(4-methoxybenzyl)-4-methyl-1*H*-1,4-benzodiazepine-2,5-dione, C-890
2,3-Dihydro-2-(4-methoxybenzyl)-1-methyl-4(1*H*)-quinazolinone, G-127
7,8-Dihydro-8-methoxyberberine, O-216
3,11-Dihydro-11-[(1-methoxy-9*H*-carbazol-3-yl)-methyl]-3,5-dimethyl-3-(4-methyl-3-pentenyl)-pyrano[3,2-*a*]carbazole, C-425
3,11-Dihydro-11-[(1-methoxy-9*H*-carbazol-3-yl)-methyl]-3,3,5-trimethylpyrano[3,2-*a*]carbazole, C-424
8,13-Dihydro-1-(methoxycarbonyl)-7*H*-benz[*g*]indolo[2,3-*a*]quinolizin-6-ium(1+), O-140
14,19-Dihydro-11-methoxycondylocarpine, T-673
19,20-Dihydro-11-methoxydiaboline, C-115
2,3-Dihydro-4-methoxy-α,α-dimethylfuro[2,3-*b*]quinoline-2-methanol, P-515
3,11-Dihydro-10-methoxy-3,5-dimethyl-3-(4-methyl-3-pentenyl)pyrano[3,2-*a*]carbazole, M-47
7,9-Dihydro-2-methoxy-1,9-dimethyl-1*H*-purine-6,8-dione, L-165
3,7-Dihydro-2-methoxy-3,7-dimethyl-6*H*-purin-6-one, T-355
3,4-Dihydro-6(8)-methoxy-5,8(5,6)-dimethyl-1*H*-pyrano[3,4-*c*]pyridin-1-one, G-57
3,4-Dihydro-5-methoxy-2,2-dimethyl-2*H*-pyrano[2,3-*b*]quinoline, M-251
7,8-Dihydro-4-methoxy-1,3-dioxolo[4,5-*g*]isoquinoline, N-292
1,2-Dihydro-9-methoxyellipticine, M-252
2-(2,3-Dihydro-4-methoxyfuro[2,3-*b*]quinolin-2-yl)-1,2-propanediol, D-945
2,3-Dihydro-5-methoxy-1*H*-indole, D-465
11,12-Dihydro-6-methoxyindolo[2,3-*a*]carbazole-5-carbonitrile, C-828
1,3-Dihydro-5-methoxy-2*H*-indol-2-one, I-92
8,13-Dihydro-10-methoxyindolo[2′,3′:3,4]pyrido[2,1-*b*]quinazolin-5(7*H*)-one, H-361
7,12-Dihydro-10-methoxyindolo[2,3*a*]quinolizin-4(6*H*)-one, H-63
3,4-Dihydro-6-methoxy-1,7-isoquinolinediol, I-305
14,15-Dihydro-10-methoxykopsinone, K-80
2,3-Dihydro-5-methoxy-3-[4-(methylamino)phenyl]pyrrolo[2,1-*b*]quinazolin-9(1*H*)-one, S-264
6,7-Dihydro-10-methoxy-7-methyl-5*H*-benzo[*g*]-1,3-benzodioxolo[6,5,4-*de*]quinoline-4-methanol, C-2
3,11-Dihydro-5-[(1-methoxy-3-methyl-9*H*-carbazol-9-yl)methyl]-3,3-dimethylpyrano[3,2-*a*]carbazole, M-745
3,11-Dihydro-5-[(1-methoxy-3-methyl-9*H*-carbazol-9-yl)methyl]-3-methyl-3-(4-methyl-3-pentenyl)pyrano[3,2-*a*]carbazole, M-753
3,4-Dihydro-6-methoxy-1-methyl-β-carboline, H-591
3,4-Dihydro-7-methoxy-1-methyl-β-carboline, H-592
8,9-Dihydro-4-methoxy-7-methyl-1,3-dioxolo[4,5-*f*]isoquinolin-6(7*H*)-one, T-306
5,6-Dihydro-1-(3-methoxy-4,5-methylenedioxycinnamoyl)-2(1*H*)-pyridinone, D-470
3,4-Dihydro-8-methoxy-6,7-methylenedioxyisoquinoline, N-292
3,4-Dihydro-3-methoxy-8,9-methylenedioxyphenanthridine, M-448
1-[(4,5-Dihydro-3-methoxy-4-methylene-1*H*-pyrrol-2-yl)thio]-1-tridecanone, I-171
1,5-Dihydro-4-methoxy-5-(1-methylethyl)-1-(6,6,6-trichloro-3-methoxy-5-methyl-1-oxo-2-hexenyl)-2*H*-pyrrol-2-one, D-973
10,11-Dihydro-7-methoxy-13-methyl-11,5-(iminomethano)-5*H*-benzo[4,5]cyclohepta[1,2-*f*]-1,3-benzodioxol-8-ol, A-954
2,3-Dihydro-5-methoxy-6-methyl-1*H*-indole-1-carboxaldehyde, D-432
1,3-Dihydro-5-methoxy-1-methyl-2*H*-indol-2-one, I-92
8,14-Dihydro-10-methoxy-14-methylindolo[2′,3′:3,4]pyrido[2,1-*b*]quinazolin-5(7*H*)-one, D-158
7,12-Dihydro-10-methoxy-2-methylindolo[2,3-*a*]quinolizin-4(6*H*)one, H-62
2,3-Dihydro-5-methoxy-6-methyl-7-[(3-methyl-2-butenyl)oxy]-1-oxo-4(1*H*)-isoindolecarboxylic acid, D-957
3,4-Dihydro-7-methoxy-2-methyl-5,6-methylenedioxyisoquinolinium(1+), T-344
3,4-Dihydro-7-methoxy-2-methyl-5,6-methylenedioxy-1(2*H*)-isoquinolinone, T-306
1,2-Dihydro-5-(4-methoxy-2-methyl-1-naphthalenyl)-3-methyl-6,8-isoquinolinediol, A-986
6,7-Dihydro-3-methoxy-2-methyl-5-octyl-4,8(1*H*,5*H*)-quinolinedione, A-1325
1,2-Dihydro-4-methoxy-1-methyl-2-oxo-3-pyridinecarbonitrile, R-96
4,9-Dihydro-7-methoxy-1-methyl-3*H*-pyrido[3,4-*b*]indole, H-592
1,5-Dihydro-4-methoxy-1-methyl-2*H*-pyrrol-2-one, P-954
1,2-Dihydro-3-methoxy-1-methyl-4-quinolinol, E-13
3,4-Dihydro-6-methoxy-2-methyl-7-[(1,2,3,4-tetrahydro-6,7-dimethoxy-2-methyl-8-isoquinolinyl)oxy]-1(2*H*)-isoquinolinone, B-102
7,8-Dihydro-8-methoxynitidine, D-482
1,2-Dihydro-4-methoxy-2-oxo-3-pyridinecarbonitrile, D-668
1,4-Dihydro-7-methoxy-4-oxo-2-quinolinecarboxylic acid, D-676
1,2-Dihydro-8-methoxy-2-oxo-4-quinolinecarboxylic acid, D-673
1,4-Dihydro-6-methoxy-4-oxo-2-quinolinecarboxylic acid, D-675
13,14-Dihydro-4-methoxyoxypalmatine, T-301
14,15-Dihydro-15-methoxyphyllochrysine, A-630
4,5-Dihydro-2′-methoxypiperine, W-17
1,5-Dihydro-5-methoxy-2*H*-pyrrol-2-one, D-460
1,3-Dihydro-3-methoxy-2*H*-pyrrol-2-one, D-459
1,5-Dihydro-4-methoxy-2*H*-pyrrol-2-one, P-954
1,2-Dihydro-2-methoxyrhazimine, R-73
3,6-Dihydro-4-methoxy-α,α,6-trimethyl-2*H*-furo[2,3-*f*][2,3]benzoxazine-2-methanol, E-294
3,5-Dihydro-6-methoxy-2,3,3-trimethylfuro[3,2-*c*]quinolin-4(2*H*)-one, O-82
7,9-Dihydro-2-methoxy-1,7,9-trimethyl-1*H*-purine-6,8-dione, L-165
3,12-Dihydro-6-methoxy-3,3,12-trimethyl-7*H*-pyrano[2,3-*c*]acridin-7-one, A-120
2,11-Dihydro-9-methoxy-2,2,8-trimethylpyrano[2,3-*a*]carbazole, C-511
3,11-Dihydro-5-methoxy-3,3,8-trimethylpyrano[3,2-*a*]carbazole, P-883
3,11-Dihydro-9-methoxy-3,3,8-trimethylpyrano[3,2-*a*]carbazole, P-883
3,4-Dihydro-3-methoxytrisphaeridine, M-448
10,11-Dihydro-7-(methylamino)benzo[*b*]pyrrolo[4,3,2-*de*][1,10]phenanthrolin-8(9*H*)-one, P-503
6,7-Dihydro-7-methyl-5*H*-benzo[*g*]-1,3-benzodioxolo[6,5,4-*de*]quinoline-11,12-dione, M-445
5,6-Dihydro-5-methyl-1,3-benzodioxolo[5,6-*c*][1,3]dioxolo[4,5-*f*]phenanthridine, D-404
13,14-Dihydro-13-methyl[1,3]benzodioxolo[5,6-*c*]-1,3-dioxolo[4,5-*i*]phenanthridine, D-510
13,14-Dihydro-13-methyl[1,3]benzodioxolo[5,6-*c*]-1,3-dioxolo[4,5-*i*]phenanthridine-14-methanol, H-596
9,14-Dihydro-14-methyl-5*H*-benzo[2,3][1,7]-naphthyridino[8,7-*b*]quinazolin-5-one, E-311
7,8-Dihydro-*N*-methylberberine, L-23
6,7-Dihydro-13-methylbis[1,3]benzodioxolo[5,6-*a*:4′,5′-*g*]quinolizinium, C-699

5,6-Dihydro-14-methylbis[1,3]benzodioxolo[5,6-*a*:5′,6′-*g*]quinolizinium(1+), W-22
5,6-Dihydro-5-methyl-2,3:7,8-bis(methylenedioxy)-benzo[*c*]phenanthridine, D-510
1,3-Dihydro-3-(3-methyl-2-butenylidene)-2*H*-indol-2-one, D-471
1,3-Dihydro-6-(3-methyl-2-butenyl)-2*H*-indol-2-one, H-701
3,4-Dihydro-1-methyl-β-carboline, M-426
3-(3,4-Dihydro-12-methyl-5-cytisyl)-12-methylcytisine, D-704
7,8-Dihydro-6-methyl-1,3-dioxolo[4,5-*g*]isoquinolin-5(6*H*)-one, I-305
3,7-Dihydro-7-methyl-1,3-dipropyl-1*H*-purine-2,6-dione, X-5
3,4-Dihydro-2-methylellipticine, E-67
3,4-Dihydro-6,7-methylenedioxy-1(2*H*)-isoquinolinone, I-305
6,7-Dihydro-7-methylene-5*H*-2-pyrindin-5-ol, C-562
10,11-Dihydro-8-(1-methylethyl)-11-(2-methylpropylidene)-6*H*-oxepino[2,3-*d*]pyrazino[1,2-*a*]pyrimidine-6,9(8*H*)-dione, C-449
[3-[1,6-Dihydro-5-(1-methylethyl)-6-oxopyrazinyl]-propyl]guanidine, A-1421
4,5-Dihydro-6-(*N*-methylformamido)-5-oxo-1,2-dithiolo[4,3-*b*]pyrrole, O-124
N-(2,5-Dihydro-3-methyl-2-furanyl)-4-hydroxy-L-glutamine, L-256
6,7-Dihydro-3-methylimidazo[1,2-*a*]pyridin-8(5*H*)-one, S-293
11,12-Dihydro-14-methyl-11,5-(iminomethano)-5*H*-cyclohepta[1,2-*f*:4,5-*f*′]bis[1,3]benzodioxole, R-35
2,3-Dihydro-2-methyl-1*H*-indol-1-amine, D-472
2,3-Dihydro-2-methyl-1*H*-indole-1-carboxaldehyde, D-472
2,3-Dihydro-2-methylindole, D-472
8,13-Dihydro-2-methylindolo[2′,3′:3,4]pyrido[1,2-*b*][2,7]naphthyridin-5(7*H*)-one, A-1012
Dihydro-*O*-methylmacusine B, T-425
7,9-Dihydro-9-methyl-6-(methylamino)-8*H*-purin-8-one, A-819
5,10-Dihydro-5-methyl-9-(3-methyl-2-butenyl)-1-phenazinecarboxylic acid, M-418
3,4-Dihydro-2-methyl-6,7-methylenedioxy-2(1*H*)-isoquinolinone, I-305
3,5-Dihydro-5-methyl-2-(1-methylethenyl)furo[3,2-*c*]quinolin-4(2*H*)-one, A-1377
7,10-Dihydro-10-methyl-8-(1-methylethyl)-1,3-dioxolo[4,5-*h*]furo[2,3-*b*]quinolin-6(8*H*)-one, L-296
2,3-Dihydro-7-methyl-2-(1-methylethyl)furo[3,2-*h*]isoquinolin-3-one, A-1294
1,5-Dihydro-3-methyl-1-(4-methyl-5-oxo-2-pyrrolidinyl)-2*H*-pyrrol-2-one, H-467
3,11-Dihydro-3-methyl-3-(4-methyl-3-pentenyl)-pyrano[3,2-*a*]carbazole-5-carboxaldehyde, M-47
5,6-Dihydro-4-methyl-6-[(1-methyl-2-piperidinyl)-methyl]-2*H*-pyran-2-one, D-951
1,5-Dihydro-4-methyl-5-(2-methylpropylidene)-2*H*-pyrrol-2-one, P-784
3,7-Dihydro-1-methyl-3-(2-methylpropyl)-1*H*-purine-2,6-dione, X-5
1,4-Dihydro-1-methyl-2,7-naphthyridin-3(2*H*)-one, J-24
20,21-Dihydro-21-methyl-18-noralstophyllan-19-al, T-20
19,20-Dihydro-21-methyl-18-norsarpagan-17,19-diol, D-491
N-[3-[[3-(3,4-Dihydro-5-methyl-4-oxo-2*H*-1-benzopyran-2-yl)propyl]amino]propyl]hexanamide, A-1033
2,3-Dihydro-1-(2-methyl-3-oxodecanoyl)pyrrole, D-473
2,3-Dihydro-1-(2-methyl-3-oxo-8-decenoyl)-1*H*-pyrrole, M-553
N-(4,5-Dihydro-4-methyl-5-oxo-1,2-dithiolo[4,3-*b*]pyrrol-6-yl)butanamide, A-759
N-(4,5-Dihydro-4-methyl-5-oxo-1,2-dithiolo[4,3-*b*]pyrrol-6-yl)-3-methylbutanamide, A-759
1,4-Dihydro-1-methyl-4-oxo-3-pyridinecarbonitrile, H-709
1,2-Dihydro-1-methyl-2-oxo-3-pyridinecarbonitrile, R-95
1,6-Dihydro-1-methyl-6-oxo-3-pyridinecarboxylic acid, H-711
1,5-Dihydro-3-methyl-1-(5-oxo-2-pyrrolidinyl)-2*H*-pyrrol-2-one, D-448
3-(1,2-Dihydro-2-methyl-1-oxopyrrolo[1,2-*a*]pyrazin-3-yl)propylguanidine, P-242
(1,5-Dihydro-3-methyl-2-oxo-2*H*-pyrrol-5-yl)-1,5-dihydro-5-hydroxy-3-methyl-2*H*-pyrrol-2-one, H-467
1-(2,5-Dihydro-4-methyl-5-oxo-1*H*-pyrrol-2-yl)-4-methyl-5-oxoproline, D-474
5,6-Dihydro-5-methyl-2,3,7,8,10-pentamethoxy-benzo[*c*]phenanthridine, D-509
1,5-Dihydro-5-methyl-1-phenazinone, P-833
3,4-Dihydro-4-methyl-3-(phenylmethyl)-1*H*-1,4-benzodiazepine-2,5-dione, C-890
6,7-Dihydro-6-methyl-7-(phenylmethylene)quinazolino[3,2-*a*][1,4]benzodiazepine-5,13-dione, B-74
3-[5,6-Dihydro-5-methyl-6-(1-propenyl)-2*H*-pyran-2-ylidene]-2,4-pyrrolidinedione, A-1339
[3-[1,6-Dihydro-5-(2-methylpropyl)-6-oxopyrazinyl]propyl]guanidine, A-1419
4,5-Dihydro-2-(1-methylpropyl)thiazole, D-475
3,7-Dihydro-7-methyl-1*H*-purine-2,6-dione, X-5
3,7-Dihydro-1-methyl-1*H*-purine-2,6-dione, X-5
3,7-Dihydro-3-methyl-1*H*-purine-2,6-dione, X-5
3,9-Dihydro-9-methyl-1*H*-purine-2,6-dione, X-5
1,7-Dihydro-1-methyl-6*H*-purin-6-one, P-820
1,7-Dihydro-7-methyl-6*H*-purin-6-one, P-820
3,7-Dihydro-3-methyl-6*H*-purin-6-one, P-820
1,9-Dihydro-9-methyl-6*H*-purin-6-one, P-820
2,7-Dihydro-7-methyl-3*H*-pyrazolo[4,3-*e*][1,2,4]triazin-3-one, N-320
4,9-Dihydro-1-methyl-3*H*-pyrido[3,4-*b*]indole, M-426
4,9-Dihydro-1-methyl-3*H*-pyrido[3,4-*b*]indol-7-ol, H-592
6,7-Dihydro-7-methyl-5*H*-2-pyrindine-5,7-diol, O-160
6,7-Dihydro-7-methyl-5*H*-2-pyrindine, N-287
6,7-Dihydro-7-methyl-5*H*-2-pyrindin-5-ol, C-562
6,7-Dihydro-7-methyl-5*H*-pyrindin-5-one, C-562
3,4-Dihydro-3-methyl-2*H*-pyrrole-2-carboxylic acid, D-477
2,3-Dihydro-3-methyl-1*H*-pyrrole, D-476
2,3-Dihydro-7-methyl-1*H*-pyrrolizin-1-one, L-263
7,8-Dihydro-3-methylpyrrolo[1,2-*a*]pyrimidin-2(6*H*)-one, D-478
21-(3,4-Dihydro-3-methyl-2*H*-pyrrol-5-yl)-3-hydroxy-20-methylpregnane-6,21-dione, P-279
21-(3,4-Dihydro-3-methyl-2*H*-pyrrol-5-yl)-3-hydroxy-20-methylpregnane-4,21-dione, S-339
21-(3,4-Dihydro-3-methyl-2*H*-pyrrol-5-yl)-3-hydroxy-20-methylpregn-5-en-21-one, T-423
20-(3,4-Dihydro-5-methyl-2*H*-pyrrol-2-yl)pregn-4-en-3-one, M-550
5,10-Dihydro-5-methyl-11*H*-quindolin-11-one, D-505
1,4-Dihydro-1-methylquinoline, D-507
1,3-Dihydro-1-methyl-4-(2-quinolinyl)-2*H*-imidazol-2-one, M-28
7,8-Dihydro-6-methylspiro[1,3-dioxolo[4,5-*g*]isoquinoline-5(6*H*),7′-[7*H*]indeno[4,5-*d*][1,3]dioxol]-8′(6′*H*)-one, F-176
8,9-Dihydro-*N*-methylstepharine, C-781
4,9-Dihydro-2-(methylsulfinyl)-1,3-thiazino[6,5-*b*]indole, C-842
Dihydro-6-(methylsulfonyl)-1,2,3-dithiazin-4(3*H*)-one, S-162
1,2-Dihydro-*O*-methyltazettine, T-53
4,5-Dihydro-2-methylthiazole, D-479
3,5-Dihydro-3-methyl-2*H*-thiopyrano[4,3,2-*cd*]indole-2-carboxylic acid, D-480
4,9-Dihydro-2-(methylthio)-1,3-thiazino[6,5-*b*]indole, C-842
1-[4,9-Dihydro-2-(methylthio)-1,3-thiazino[6,5-*b*]indol-4-yl]-2-propanone, D-481
Dihydromonticamine, A-95
Dihydromurrayacine, M-757
Dihydromyricoidine, L-230
9,9*a*-Dihydronaphtho[2,3-*c*]isoxazol-3(1*H*)-one, N-31
cis-Dihydronarciclasine, N-37
trans-Dihydronarciclasine, N-37
Dihydronematophin, T-639
Dihydronitidine, D-482
Dihydronitraraine, N-243
Dihydronitraridine, Q-52
1-[1,4-Dihydro-4-nonyl-5-(1-oxodecyl)-3-pyridinyl]-1-dodecanone, D-242
1,1′-(1,4-Dihydro-4-nonyl-3,5-pyridinediyl)bis[1-decanone], D-242
1,1′-(1,4-Dihydro-4-nonyl-3,5-pyridinediyl)bis[1-dodecanone], D-242
Dihydronorpurpeline, T-288
8,14-Dihydronorsalutaridine, I-318
14,15-Dihydro-A-norsecurinan-11-one, N-307
Dihydronorsecurinine, N-307
Dihydronudaurine, A-955
Dihydroobscurinervidine, O-7
Dihydroobscurinervine, O-8
1,2-Dihydro-2-octadecyl-3*H*-indol-3-one, H-646
11,12-Dihydroorientalinone, O-112
2,3-Dihydro-4-oxa-1,3*a*-diazacyclohepta[*def*]fluoren-10(1*H*)-one, H-772
7,8-Dihydro-8-oxoadenine, A-819
12,13-Dihydro-8-oxoberberine, C-73
7,9-Dihydro-1-(3-oxobutyl)-1*H*-purine-6,8-dione, P-818
7,9-Dihydro-9-(3-oxobutyl)-1*H*-purine-6,8-dione, P-818
N-(4,5-Dihydro-5-oxo-1,2-dithiolo[4,3-*b*]pyrrol-6-yl)hexanamide, A-759
N-(4,5-Dihydro-5-oxo-1,2-dithiolo[4,3-*b*]-pyrrol-6-yl)propanamide, A-759
1-(2,3-Dihydro-2-oxo-3-furanyl)-5-(hydroxymethyl)-1*H*-pyrrole-2-carboxaldehyde, D-483
7,8-Dihydro-8-oxoguanine, A-753
2,3-Dihydro-1-(1-oxo-4,6,8,12-hexadecatetraen-10-ynyl)-1*H*-pyrrole, H-223
2,3-Dihydro-2-oxo-1*H*-imidazole-4-carboxylic acid, D-484
2,3-Dihydro-2-oxo-1*H*-indole-3-acetic acid, D-485
Dihydro-3-oxoindole, I-104
5,11-Dihydro-α-oxoindolo[3,2-*b*]carbazole-6-acetic acid, M-62
3-(1,2-Dihydro-2-oxo-3*H*-indol-3-ylidene)-1,3-dihydro-2*H*-indol-2-one, B-131
3-(1,3-Dihydro-3-oxo-2*H*-indol-2-ylidene)-1,3-dihydro-2*H*-indol-2-one, I-73
2-(1,3-Dihydro-3-oxo-2*H*-indol-2-ylidene)-7-hydroxycyclopent[*g*]indol-3(2*H*)-one, D-486
α-(1,3-Dihydro-3-oxo-2*H*-indol-2-ylidene)-1*H*-indole-3-acetonitrile, D-487
6-(1,3-Dihydro-3-oxo-2*H*-indol-2-ylidene)indolo[2,1-*b*]quinazolin-12(6*H*)-one, C-77
11,33-Dihydro-10-oxopenitrem B, P-194
1,4-Dihydro-4-oxo-6-(phenylmethyl)-3-pyridinecarboxamide, A-1483
1,5-Dihydro-1-(1-oxo-3-phenylpropyl)-2*H*-pyrrol-2-one, S-86
1,8-Dihydro-1-(1-oxopropyl)lycodin-8-one, G-228
N-(7,8-Dihydro-8-oxo-*H*-purin-6-yl)-β-alanine, E-177
1,6-Dihydro-6-oxo-2-pyridineacetic acid, H-708
1,6-Dihydro-6-oxo-3-pyridinecarboxylic acid, H-711
1,4-Dihydro-4-oxo-3-pyridinecarboxylic acid, H-709
12,13-Dihydro-13-oxopyrido[1,2-*a*:3,4-*b*′]diindol-5-ium(1+), F-13
2,3-Dihydro-1-oxo-1*H*-pyrrolizine-7-carboxaldehyde, D-14
2,3-Dihydro-1-oxo-1*H*-pyrrolizine-3-carboxylic acid, D-488
1,2-Dihydro-1-oxo-4-(1*H*-pyrrol-2-yl)-3-isoquinolinecarboxylic acid, M-104
2-(1,4-Dihydro-4-oxo-2-quinazolinyl)-1*H*-indole-3-carboxylic acid, W-27
1,2-Dihydro-2-oxo-4-quinolinecarboxaldehyde, H-721
1,4-Dihydro-4-oxo-2-quinolinecarboxylic acid, H-725

1,2-Dihydro-2-oxo-4-quinolinecarboxylic acid, H-723
1,4-Dihydro-4-oxo-2,3-quinolinedicarboxylic acid, H-728
1,4-Dihydro-4-oxo-2-quinolinehexanoic acid, M-68
1,4-Dihydro-4-oxo-1-β-D-ribofuranosyl-3-pyridinecarboxamide, H-709
5,6-Dihydro-1-[1-oxo-3-(3,4,5-trimethoxyphenyl)-2-propenyl]-2(1*H*)-pyridinone, P-473
1,5-Dihydro-1-[1-oxo-3-(3,4,5-trimethoxyphenyl)-propyl]-2*H*-pyrrol-2-one, D-489
16,16′-Dihydro-17,17′-oxybisnordihydrotoxiferine, M-120
5,6-Dihydro-2-(1,3-pentadienyl)-4(1*H*)-pyridinone, D-490
Dihydropentagynine, M-347
5,6-Dihydro-2,3,4,9,10-pentamethoxydibenzo[*a,g*]-quinolizinium(1+), A-1042
20*R*,21*S*-Dihydroperaksin-17-al, D-491
Dihydroperaksine, D-491
20*R*,21*S*-Dihydroperaksine, D-491
Dihydroperfamine, P-254
(+)-Dihydroperfamine, P-254
Dihydroperfaminole, H-57
Dihydroperimargine, P-259
Dihydroperiphylline, P-265
5,10-Dihydrophencomycin methyl ester, P-320
5,6-Dihydro-1-(3-phenylpropanoyl)-2(1*H*)-pyridinone, P-463
2,3-Dihydro-1-phenyl-1*H*-pyrrole, D-499
5,6-Dihydro-3-phenyl-4*H*-pyrrolo[1,2-*b*]pyrazole, D-492
Dihydropinidine, M-529
10,11-Dihydropipercide, R-60
4,5-Dihydropiperettine, P-452
6,7-Dihydropiperettine, P-452
$\Delta^{\alpha,\beta}$-Dihydropiperine, P-467
4,5-Dihydropiperlonguminine, P-462
$\Delta^{\alpha,\beta}$-Dihydropiperlonguminine, P-462
8,9-Dihydropiplartine, P-473
24,25-Dihydroplakinamine A, P-496
Dihydroplakinamine K, P-496
19,20-Dihydropolyneuridine, P-562
Dihydropontevedrine, P-566
Dihydropresecamine, P-624
20-Dihydroprochaetoglobosin II, C-328
3,4-Dihydro-5-propanoyl-2*H*-pyrrole, D-493
6,7-Dihydro-4-(2-propenyl)-5*H*-cyclopenta[*c*]pyridin-5-one, L-272
3,7-Dihydro-3-propyl-1*H*-purine-2,6-dione, X-5
20-Dihydroprotochaetoglobosin III, C-325
Dihydroprotoemetine, P-664
Dihydroprotopine, P-667
Dihydropsychotrine, E-72
1,5-Dihydro-2,4,6(3*H*)-pteridinetrione, D-494
7,8-Dihydropterin-6-carboxylic acid, A-817
7,8-Dihydropteroylglutamic acid, P-772
Dihydropumiliotoxin A, A-370
7,9-Dihydro-1*H*-purine-6,8-dione, P-818
3,7-Dihydro-1*H*-purine-2,6-dione, X-5
7,9-Dihydro-1*H*-purine-2,6,8(3*H*)-trione, U-45
1,7-Dihydro-6*H*-purin-6-one, P-820
Dihydropyoverdin Pp 2, P-869
Dihydropyracrimycin A, P-876
7,8-Dihydro-5*H*-pyrano[3,4-*b*]pyrazine-7-methanol, C-517
3,4-Dihydro-1*H*-pyrano[3,4-*c*]pyridin-1-one, G-54
5,6-Dihydropyridin-2-ol, D-495
5,6-Dihydro-2(1*H*)-pyridinone, D-495
3,4-Dihydro-5-(2-pyridinyl)-2*H*-pyrrole-2-carboxylic acid, D-496
2,9-Dihydro-1*H*-pyrido[3,4-*b*]indol-1-one, P-914
5,6-Dihydro-2(1*H*)-pyridone, D-495
Dihydro-2,4(1*H*,3*H*)-pyrimidinedione, D-497
4,8-Dihydropyrimido[5,4-*e*]-1,2,4-triazine-3,5,7(6*H*)-trione, D-498
3,4-Dihydro-2*H*-pyrrole-2-carboxylic acid, D-501
2,3-Dihydro-1*H*-pyrrole, D-499
3,4-Dihydro-2*H*-pyrrole, D-500
2,3-Dihydro-1*H*-pyrrolizine-7-carboxaldehyde, D-14
11,11*a*-Dihydro-1*H*-pyrrolizino[3,2-*b*]quinoline-3,10(2*H*,5*H*)-dione, C-370
6,7-Dihydropyrrolo[2,3-*c*]azepine-4,8(1*H*,5*H*)-dione, A-255
2,3-Dihydro-1*H*-pyrrolo[2,1-*c*][1,4]benzodiazepine-5,11(10*H*,11*aH*)-dione, D-502
5,9-Dihydro-1*H*-pyrrolo[3′,4′:6,7]cyclohepta[2,1-*b*:4,3-*c*′*d*′]diindole-1,3(2*H*)-dione, A-1392
5,10-Dihydro-1*H*-pyrrolo[3′,4′:4,5]oxocino[2,3-*b*:6,7,8-*c*′*d*′]diindole-1,3(2*H*)-dione, A-1398
2,3-Dihydropyrrolo[2,1-*b*]quinazolin-9(1*H*)-one, D-503
1-(3,4-Dihydro-2*H*-pyrrol-5-yl)ethanone, A-49
3-(3,4-Dihydro-2*H*-pyrrol-5-yl)-2-hydroxy-2-propenamide, P-877
1-(2,3-Dihydro-1*H*-pyrrol-1-yl)-2-methyl-1,3-decanedione, D-473
1-(2,3-Dihydro-1*H*-pyrrol-1-yl)-2-methyl-8-decene-1,3-dione, M-553
2-(3,4-Dihydro-2*H*-pyrrol-5-yl)-1-piperidinecarboxaldehyde, S-330
1-(3,4-Dihydro-2*H*-pyrrol-5-yl)-1-propanone, D-493
3-(3,4-Dihydro-2*H*-pyrrol-5-yl)-2-propenamide, P-876
2-(3,4-Dihydro-2*H*-pyrrol-5-yl)pyridine, D-504
3-(3,4-Dihydro-2*H*-pyrrol-5-yl)pyridine, M-792
1-(3,4-Dihydro-2*H*-pyrrol-5-yl)-9*H*-pyrido[3,4-*b*]indole, E-288
Dihydroquinamine, Q-12
5,10-Dihydro-11*H*-quindolin-11-one, D-505
5,6-Dihydro-11*H*-quinindolin-11-one, D-506
1,4-Dihydroquinoline, D-507
6,7-Dihydroquinolino[3,2-*a*][1,4]benzodiazepine-5,13-dione, S-154
Dihydroretrofractamide B, R-60
Dihydroretrofractamide C, R-60
Dihydroretrorsine, P-516
5,21-Dihydrorhazinilam, R-76
3,9-Dihydro-9-β-D-ribofuranosyl-1*H*-purine-2,6-dione, X-13
1,9-Dihydro-9-β-D-ribofuranosyl-6*H*-purin-6-one, I-148
1,4-Dihydro-3-β-D-ribofuranosyl-7*H*-pyrazolo[4,3-*d*]pyrimidin-7-one, F-132
1,9-Dihydro-9-β-D-ribopyranosyl-6*H*-purin-6-one, P-820
3,12-Dihydroroquefortine, R-125
Dihydrorostratine, P-602
Dihydrorugosinone, R-156
Dihydroruine, D-621
Dihydrorutaecarpine, D-508
13*b*,14-Dihydrorutaecarpine, D-508
25-Dihydrosaframycin A, S-4
25-Dihydrosaframycin B, S-4
8,14-Dihydrosalutaridine, I-318
Dihydrosanguilutine, D-509
Dihydrosanguinarine, D-510
5,6-Dihydrosarconidine, P-608
Dihydrosarcostin, P-602
Dihydrosauvagnine, S-108
6,7-Dihydroschelhammeridine, C-587
Dihydroschoberine, D-113
Dihydrosecamine, S-174
Dihydrosecocepharanthine, S-179
15,20-Dihydrosecodine, S-184
16,17-Dihydrosecodine, S-184
16,17-Dihydrosecodin-17-ol, S-184
Dihydrosecoquettamine, S-197
Dihydrosecurinine, S-206
Dihydrosedinine, S-214
Dihydrosenkirkine, S-245
Dihydroshihunine, D-511
N-(Dihydrosinapoyl)tyramine, D-512
(16*R*)-Dihydrositsirikine, S-325
(16*S*)-Dihydrositsirikine, S-325
Dihydrosolanidine T, D-205
Dihydrosolasodine A, S-200
Dihydrosolasodine, S-445
Dihydrosolasuaveoline, S-445
Dihydrosongorine, N-30
6′,7′-Dihydrospiro[cyclohexane-1,8′(5′*H*)-imidazo[1,2-*a*]pyridin]-2-ol, N-240
11,12-Dihydrostemofoline, S-515
Dihydrostemoninine, S-521
8,9-Dihydrostepharine, C-781
3′,4′-Dihydrostephasubine, E-102
Dihydrostrobiline, S-587
19,20-Dihydrotabernamine, T-8
Dihydrotaxilamine, T-50
Dihydrotaxol, T-52
4′,17-Dihydro-17α-tchibangensine, U-52
4′,17-Dihydro-17β-tchibangensine, U-52
5,8-Dihydro-6-(5,6,7,8-tetrahydro-6-methyl-1,3-dioxolo[4,5-*g*]isoquinolin-5-yl)furo[3,4-*e*]-1,3-benzodioxol-8-ol, E-43
5,6-Dihydro-2,3,10,11-tetramethoxydibenzo[*a,g*]-quinolizinium(1+), P-719
5,6-Dihydro-2,3,9,10-tetramethoxydibenzo[*a,g*]quinolizinium(1+), P-34
5,6-Dihydro-2,3,10,11-tetramethoxy-8*H*-dibenzo[*a,g*]quinolizin-8-one, O-202
3,4-Dihydro-5,6,7,8-tetramethoxyisoquinoline, T-276
5,6-Dihydro-2,3,7,8-tetramethoxy-5-methylbenzo[*c*]phenanthridine-6-acetic acid, D-513
5,6-Dihydro-2,3,7,8-tetramethoxy-5-methylbenzo[*c*]phenanthridin-6-one, D-514
5,6-Dihydro-1,2,9,10-tetramethoxy-6-methyl-4*H*-dibenzo[*de,g*]quinoline, D-159
3,4-Dihydro-5,6,7,8-tetramethoxy-1-methylisoquinoline, T-233
5,6-Dihydro-2,3,7,8-tetramethoxy-5-methyl-6-oxobenzo[*c*]phenanthridine, D-514
3,9-Dihydro-2,3,3,9-tetramethylfuro[2,3-*b*]quinolin-4(2*H*)-one, I-19
3,9-Dihydro-2,2,3,9-tetramethylfuro[2,3-*b*]quinolin-4(2*H*)-one, L-88
3,5-Dihydro-2,3,3,5-tetramethylfuro[3,2-*c*]quinolin-4(2*H*)-one, O-82
6,7-Dihydro-1,3,6,6-tetramethyl-8(5*H*)-isoquinolinone, D-515
Dihydrothalictrinine, T-310
Dihydrothalmethine, T-313
4-(3,4-Dihydro-2*H*-1,4-thiazin-6-yl)phenol, D-457
3-(4,5-Dihydro-2-thiazolecarbonyl)-1*H*-indole, D-516
1,2-Dihydrothiazolo[2′,3′:2,3]pyrimido[4,5-*b*]indole-1-carboxylic acid, D-517
(4,5-Dihydro-2-thiazolyl)-1*H*-indole-3-ylmethanone, D-516
2,3-Dihydro-2-thioxo-4(1*H*)-pyrimidinone, D-518
3,4-Dihydro-4-thioxo-2(1*H*)-pyrimidinone, H-556
4,5-Dihydro-2-thioxo-4(3*H*)-thiazolecarboxylic acid, T-394
Dihydrotoddaline, D-407
Dihydrotomatillidine, T-423
C-Dihydrotoxiferine I, T-436
13-Dihydro-2,9,13-triacetyltaxine B, T-45
3,4-Dihydro-1,6,7-trihydroxyisoquinoline, I-305
15,20-Dihydro-12,15,18-trihydroxy-14-methyl-21-norsenecionan-11,16-dione, S-122
15,20-Dihydro-12,15,20-trihydroxy-4-methyl-4,8-secosenecionan-8,11,16-trione, O-92
1,4-Dihydro-3,7,8-trihydroxy-4-oxo-2-quinolinecarboxylic acid, T-272
1,5-Dihydro-3,4,5-trihydroxy-2*H*-pyrrol-2-one, D-519
15,20-Dihydro-12,15,20-trihydroxysenecionan-11,16-dione, J-3
5,10-Dihydro-4,6,8-trihydroxy-10-(3,7,11-trimethyl-2,6,10-dodecatrienyl)-11*H*-dibenzo[*b,e*][1,4]diazepin-11-one, D-297
3,12-Dihydro-6,10,11-trihydroxy-3,3,12-trimethyl-7*H*-pyrano[2,3-*c*]acridin-7-one, C-472
5,6-Dihydro-1-(3,4,5-trimethoxycinnamoyl)-2(1*H*)-pyridinone, P-473
3,4-Dihydro-5,8,9-trimethoxy-2,2-dimethyl-2*H*-pyrano[2,3-*b*]quinoline, M-251
8,13-Dihydro-2,3,10-trimethoxyindolo[2′,3′:3,4]pyrido[2,1-*b*]quinazolin-5(7*H*)-one, E-307
3,4-Dihydro-5,6,7-trimethoxyisoquinoline, I-307
10,11-Dihydro-3,7,8-trimethoxy-12-methyl-10,5-(iminomethano)-5*H*-dibenzo[*a,d*]cyclohepten-4-ol, I-333

10,11-Dihydro-3,7,8-trimethoxy-12-methyl-10,5-(iminomethano)-5*H*-dibenzo[*a,d*]cyclohepten-2-ol, T-336
3,4-Dihydro-*ar*-trimethoxy-1-methylisoquinoline, D-520
3,4-Dihydro-5,6,7-trimethoxy-2-methyl-1(2*H*)-isoquinolinone, I-304
2,3-Dihydro-4,7,8-trimethoxy-9-methyl-2-(1-methylethenyl)furo[2,3-*b*]quinolinium, D-720
2,3-Dihydro-4,6,8-trimethoxy-9-methyl-2-(1-methylethenyl)furo[2,3-*b*]quinolinium(1+), P-757
1,2-Dihydro-4,7,8-trimethoxy-2-oxo-3-quinolinecarboxaldehyde, G-119
1,2-Dihydro-4,6,7-trimethoxy-2-oxo-3-quinolinecarboxaldehyde, M-175
1,9-Dihydro-5-[(2,4,4-trimethyl-1-cyclohexen-1-yl)methyl]phenazin-1-one, L-76
5,6-Dihydro-3,6,6-trimethyl-7*H*-cyclopenta[*c*]pyridin-7-one, D-525
1,4-Dihydro-4,6,7-trimethyl-9*H*-imidazo[1,2-*a*]purin-9-one, D-521
2,7-Dihydro-2,5,7-trimethyl-5*H*-imidazo[4,5-*e*]-1,2,4-triazine-3,6-dione, D-522
7,8-Dihydro-2,7,7-trimethyl-1*H*-isoindolo[4,5,6-*cd*]indole-1,9(2*H*)dione, C-892
3,9-Dihydro-1,3,9-trimethyl-8-nitroso-1*H*-purine-2,6-dione, D-523
3,7-Dihydro-1,3,7-trimethyl-1*H*-purine-2,6-dione, C-15
3,7-Dihydro-3,3,10-trimethylpyrano[2,3-*c*]carbazole, E-300
3,11-Dihydro-3,3,5-trimethylpyrano[3,2-*a*]carbazole, G-81
5,8-Dihydro-1,8,8-trimethyl-1*H*-pyrano[3,4-*b*]pyridine-4,6-dione, D-524
4,8-Dihydro-4,6,8-trimethylpyrimido[5,4-*e*]-1,2,4-triazine-3,5,7(6*H*)-trione, D-498
2,8-Dihydro-2,6,8-trimethylpyrimido[5,4-*e*]-1,2,4-triazine-3,5,7(6*H*)-trione, D-498
5,6-Dihydro-3,6,6-trimethyl-7*H*-2-pyrindin-7-one, D-525
2,5-Dihydro-2,4,5-trimethylthiazole, D-526
7,8-Dihydrotubastrine, T-656
10,27-Dihydrotubingensin A, T-669
10,27-Dihydrotubingensin B, T-670
Dihydrouracil, D-497
5′,6′-Dihydrousambarensine *N*-oxide, U-52
3′,4′-Dihydrousambarensine N^b-oxide, U-52
5′,6′-Dihydrousambarensine, U-52
19,20-Dihydrousambarensine, U-52
3′,4′-Dihydrousambarensine, U-52
18,19-Dihydrousambaridine Br, O-21
18,19-Dihydrousambaridine Vi, O-21
18,19-Dihydrousambarine, O-21
Dihydroverticillatine, V-88
Dihydrovertine, V-95
Dihydrovincarpine, F-82
14,15-Dihydrovindolinine, V-132
Dihydrovomifoline, D-491
Dihydrowarifteine, W-9
α,β-Dihydrowisanidine, W-16
4,5-Dihydrowisanine, W-17
Dihydroxanthommatin, D-527
Dihydroxyacidissiminol, A-77
1,3-Dihydroxy-9(10*H*)-acridinone, D-528
1,7-Dihydroxy-9(10*H*)-acridinone, D-529
1,8-Dihydroxy-9(10*H*)-acridinone, D-530
1,3-Dihydroxyacridone, D-528
1,7-Dihydroxyacridone, D-529
1,8-Dihydroxyacridone, D-530
2,8-Dihydroxyadenine, A-754
Dihydroxyaerothionin, A-158
20,25-Dihydroxyaflavinine, A-172
3′,19-Dihydroxyaglaine C, A-199
2,4-Dihydroxyaniline, A-705
Dihydroxyanopterine, A-1071
4,5-Dihydroxyanthranilic acid, A-737
2*R*,9*R*-Dihydroxyaphyllidine, A-1336
2*S*,9*R*-Dihydroxyaphyllidine, A-1336
2,7-Dihydroxyapogeissoschizine, A-1362
1,2-Dihydroxyaporphine, D-531
2,3-Dihydroxyarcyriaflavin A, A-1393
2′,3′-Dihydroxyasteranthine, A-1510
3,3-Dihydroxyazetidine, A-1606
2-(2,5-Dihydroxybenzamido)benzoic acid, D-532
2,4-Dihydroxybenzeneacetic acid, D-646
α,3-Dihydroxybenzeneacetic acid, H-519
α,4-Dihydroxybenzeneacetic acid, H-520
4,5-Dihydroxy-1,2-benzenedicarboxylic acid, D-533
α,β-Dihydroxybenzenepropanoic acid, D-651
3,4-Dihydroxybenzenepropanoic acid, D-652
5,7-Dihydroxy-2*H*-benz[*b*]isoindole-4,9-dione, D-534
3,6-Dihydroxy-1,2-benzisoxazole, B-72
2,4-Dihydroxybenzoic acid, D-535
3,4-Dihydroxybenzoic acid, D-536
2,4-Dihydroxybenzonitrile, D-535
2,6-Dihydroxybenzothiazole, B-78
2,7-Dihydroxy-2*H*-1,4-benzoxazin-3(4*H*)-one, D-538
2,5-Dihydroxy-2*H*-1,4-benzoxazin-3(4*H*)-one, D-537
2,4-Dihydroxy-2*H*-1,4-benzoxazin-3(4*H*)-one, H-409
2,4-Dihydroxybenzoxazole, B-81
2,6-Dihydroxybenzoxazole, B-82
2-[2-(2,5-Dihydroxybenzoyl)amino]-5-hydroxybenzoic acid, D-539
N-(2,4-Dihydroxybenzoyl)anthranilic acid, B-67
5-(3,4-Dihydroxybenzoyl)-4,8-dihydroxy-2-quinolinecarboxylic acid, T-512
3,4-Dihydroxybenzoylformic acid, D-649
N-(3,4-Dihydroxybenzoyl)glutamic acid, G-107
N-(2,4-Dihydroxybenzoyl)-4-hydroxyanthranilic acid, B-67
N-(2,5-Dihydroxybenzoyl)-5-hydroxyanthranilic acid, D-539
N-(2,4-Dihydroxybenzoyl)-4-methoxyanthranilic acid, B-67
N-(2,6-Dihydroxybenzoyl)-*O*-methyltyramine, M-280
N-(2,3-Dihydroxybenzoyl)putrescine, B-422
8-(3,4-Dihydroxybenzyl)-2,3,10,11-berbintetrol, D-541
8-(3,4-Dihydroxybenzyl)-2,3,9,10-berbintetrol, D-540
1-(3,4-Dihydroxybenzyl)-6,7-dihydroxyisoquinoline, P-80
1-(3,4-Dihydroxybenzyl)-6,7-dimethoxyisoquinoline, P-80
1-(3,4-Dihydroxybenzyl)-7-hydroxy-6-methoxyisoquinoline, P-80
N-(3,4-Dihydroxybenzyl)tyramine, N-288
3,4-Dihydroxy-2,5-bis (hydroxymethyl)pyrrolidine, D-542
1,2-Dihydroxy-3,5-bis (hydroxymethyl)-1*H*-pyrrolizidine, D-543
2,5-Dihydroxy-3,6-bis[5-(3-methyl-2-butenyl)-1*H*-indol-3-yl]-2,5-cyclohexadiene-1,4-dione, C-547
1,8-Dihydroxy-2,3:9,10-bis(methylenedioxy)protoberberine, D-409
5-(1,3-Dihydroxybutyl)-1,2-dihydroxy-3-(hydroxymethyl)-1*H*-pyrrolizidine, T-553
5-(1,3-Dihydroxybutyl)hyacinthacine A_1, T-553
4,5-Dihydroxycanthin-6-one, D-546
5,11-Dihydroxycanthin-6-one, D-548
5,9-Dihydroxycanthin-6-one, D-547
8,9-Dihydroxycanthin-6-one, D-549
9,10-Dihydroxycanthin-6-one, D-550
1,9-Dihydroxycanthin-6-one, D-544
10,11-Dihydroxycanthin-6-one, D-551
1,11-Dihydroxycanthin-6-one, D-545
2,7-Dihydroxycarbazole, C-123
2,7-Dihydroxy-9*H*-carbazole-3-carboxaldehyde, D-556
2,8-Dihydroxy-9*H*-carbazole-3-carboxaldehyde, D-557
1,6-Dihydroxy-9*H*-carbazole-3-carboxaldehyde, D-552
1,7-Dihydroxy-9*H*-carbazole-3-carboxaldehyde, D-553
1,8-Dihydroxy-9*H*-carbazole-3-carboxaldehyde, D-554
2,6-Dihydroxy-9*H*-carbazole-3-carboxaldehyde, D-555
1,6-Dihydroxy-9*H*-carbazole-3-carboxylic acid, D-558
1,7-Dihydroxy-9*H*-carbazole-3-carboxylic acid, D-559
2,7-Dihydroxy-9*H*-carbazole-3-carboxylic acid, D-560
4,8-Dihydroxy-β-carboline-1-carboxylic acid, D-561
2,4-Dihydroxycelorbicol, P-215
1,3-Dihydroxy-$\Delta^{8(14)}$-cevanene, C-304
3,6-Dihydroxy-$\Delta^{12,14,16}$-cevanene, C-300
3,6-Dihydroxycevanine, C-290
3,14-Dihydroxy-6-cevanone, C-295
3,16-Dihydroxy-6-cevanone, C-297
3,20-Dihydroxy-6-cevanone, C-298
6,12-Dihydroxycevan-3-one, D-563
3,25-Dihydroxycevan-6-one, D-562
2,6-Dihydroxycinchoninic acid, D-672
2,8-Dihydroxycinchoninic acid, D-673
3,4-Dihydroxycinnamic acid, D-653
3,5-Dihydroxycinnamic acid, D-654
N-(3,4-Dihydroxycinnamoyl)-1,4-butanediamine, C-456
N-(3,4-Dihydroxycinnamoyl)DOPA, C-534
N-(3,4-Dihydroxycinnamoyl)-5-hydroxyanthranilic acid, A-789
Dihydroxycitracridone I, C-472
18,19*R*-Dihydroxycoronaridine, C-657
2,3-Dihydroxycycloarta-22,24-dien-26-oic acid, D-564
2,3-Dihydroxy-9,19-cyclolanost-22,24-dien-26-oic acid, D-564
1,4-Dihydroxy-2-cyclopentene-1-carboxamide, D-565
1,4-Dihydroxy-2-cyclopentene-1-carboxylic acid, D-565
7-(4,5-Dihydroxy-2-cyclopent-1-en-3-ylaminomethyl)-7-deazaguanine, Q-9
4,5-Dihydroxy-2-decenoic acid piperidide, D-566
4,5-Dihydroxy-2-decenoic acid, D-566
3,11-Dihydroxy-1,2-dehydrocrinane, H-5
3,10-Dihydroxydibenz[*c,g*]azecin-13(14*H*)-one, C-624
1,2-Dihydroxydibenz[*cd,f*]indol-4(5*H*)-one, D-567
1,3-Dihydroxydibenz[*cd,f*]indol-4(5*H*)-one, D-568
1,2-Dihydroxy-7*H*-dibenzo[*de,g*]quinolin-7-one, L-193
2,2′-Dihydroxydiethylamine, D-388
1,2-Dihydroxy-1,2-dihydroacronycine, D-417
cis-1,2-Dihydroxy-1,2-dihydroacronydine, A-121
trans-1,2-Dihydroxy-1,2-dihydroacronydine, A-121
3′,4′-Dihydroxy-3′,4′-dihydroflindersine, F-90
2,3-Dihydroxydihydromaleimide, D-519
cis-1,2-Dihydroxy-1,2-dihydromedicosmine, A-121
2,5-Dihydroxy-3,6-diisobutylpyrazine *N,N*-dioxide, P-788
1,6-Dihydroxy-3,5-dimethoxyacridone, T-243
2,9-Dihydroxy-1,10-dimethoxyaporphine, B-243
1,10-Dihydroxy-2,9-dimethoxyaporphine, B-276
1,11-Dihydroxy-2,10-dimethoxyaporphine, C-702
1,9-Dihydroxy-2,10-dimethoxyaporphine, I-196
1,2-Dihydroxy-9,10-dimethoxyaporphine, L-52
2,10-Dihydroxy-1,9-dimethoxyaporphine, L-195
1,9-Dihydroxy-2,3-dimethoxyaporphine, T-244
10,11-Dihydroxy-1,2-dimethoxyaporphine, T-248
2,10-Dihydroxy-1,11-dimethoxyaporphine, T-248
2,11-Dihydroxy-1,10-dimethoxyaporphine, T-248
1,10-Dihydroxy-2,11-dimethoxyaporphine, T-248
2,4-Dihydroxy-6,7-dimethoxy-2*H*-1,4-benzoxazin-3(4*H*)-one, T-526
2,4-Dihydroxy-7,8-dimethoxy-2*H*-1,4-benzoxazin-3(4*H*)-one, T-527
4,4′-Dihydroxy-3,5′-dimethoxy-α,3′-bicinnamic acid, D-395
3,3′-(6,6′-Dihydroxy-2,2′-dimethoxy-[1,1′-biphenyl]-3,3′-diyl)bis[2-propenamide], B-183
4,4′-Dihydroxy-2,2′-dimethoxy-3,3′-dicinnamide, B-183
3,11-Dihydroxy-2,10-dimethoxy-5,6-dihydroprotoberberine, P-719

5,8-Dihydroxy-4,7-dimethoxy-2,6-dimethylisoquinolinium(1+), D-569
1,6-Dihydroxy-3,5-dimethoxy-4-(2-hydroxy-3-methyl-3-butenyl)-10-methylacridone, P-616
1,3-Dihydroxy-5,6-dimethoxy-10-methylacridone, T-243
1,5-Dihydroxy-2,3-dimethoxy-10-methylacridone, T-241
1,5-Dihydroxy-3,4-dimethoxy-10-methylacridone, T-242
1,5-Dihydroxy-3,6-dimethoxy-10-methylacridone, T-243
1,6-Dihydroxy-3,5-dimethoxy-10-methylacridone, T-243
3,9-Dihydroxy-1,2-dimethoxy-7-methyldehydroaporphine, G-147
1,6-Dihydroxy-3,5-dimethoxy-10-methyl-4-(3-methyl-2-butenyl)-9(10*H*)-acridinone, P-616
1,11-Dihydroxy-2,10-dimethoxy-6-methyl-7-oxo-7*H*-dibenzo[*de,g*]quinolinium, G-93
2,9-Dihydroxy-1,10-dimethoxynoraporphine, B-243
1,10-Dihydroxy-2,9-dimethoxynoraporphine, B-276
1,11-Dihydroxy-2,10-dimethoxynoraporphine, C-702
1,9-Dihydroxy-2,10-dimethoxynoraporphine, I-196
2,10-Dihydroxy-1,9-dimethoxynoraporphine, L-195
1,9-Dihydroxy-2,3-dimethoxynoraporphine, T-244
10,11-Dihydroxy-1,2-dimethoxynoraporphine, T-248
2,10-Dihydroxy-1,11-dimethoxynoraporphine, T-248
2,11-Dihydroxy-1,10-dimethoxynoraporphine, T-248
3,9-Dihydroxy-1,2-dimethoxynoraporphine, T-244
1,10-Dihydroxy-2,11-dimethoxynoraporphine, T-248
2,9-Dihydroxy-3,8-dimethoxypavinane, A-1410
1,8-Dihydroxy-2,9-dimethoxypavinane, P-514
3,4-Dihydroxy-2-(3,4-dimethoxyphenyl)-1,5-dimethylpyrrolidine, C-557
2,4-Dihydroxy-7,8-dimethoxyquinoline, Q-43
9,10-Dihydroxy-2,3-dimethoxytetrahydroprotoberberine, D-570
3,9-Dihydroxy-2,10-dimethoxytetrahydroprotoberberine, I-315
3,4-Dihydroxy-1,2-dimethylcarbazole, D-571
7,9-Dihydroxy-8,10-dimethyl-2,4-dodecadienoic acid, D-572
6,8-Dihydroxy-3,4-dimethyl-1(2*H*)-isoquinolinone, T-544
3,5-Dihydroxy-2,6-dimethyl-7-(2-methyl-4-thiazolyl)-6-heptenoic acid, D-628
7,18-Dihydroxy-16,18-dimethyl-10-phenyl[11]cytochalasa-6(12),13-diene-1,21-dione, T-545
7,19-Dihydroxy-16,18-dimethyl-10-phenyl[11]cytochalasa-6(12),13-diene-1,21-dione, T-545
12,18-Dihydroxy-16,18-dimethyl-10-phenyl[11]cytochalasa-6,13,19-triene-1,21-dione, H-473
7,18-Dihydroxy-16,18-dimethyl-10-phenyl[11]cytochalasa-6(12),13,19-triene-1,21-dione, T-545
7,18-Dihydroxy-16,18-dimethyl-10-phenyl[11]cytochalasa-6(12),13,19-triene-1,17,21-trione, Z-37
7,17-Dihydroxy-16,18-dimethyl-10-phenyl-22-oxa[12]cytochalasa-6(12),13,19-triene-1,21-dione, C-959
7,18-Dihydroxy-16,18-dimethyl-10-phenyl-22-oxa[12]cytochalasa-6(12),13,19-triene-1,21-dione, D-573
7,9-Dihydroxy-8,10-dimethyl-2,4-tridecadienoic acid, D-574
5,5′-Dihydroxydiphenylamine-2,2′-dicarboxylic acid, I-45
3,6-Dihydroxy-4,5-diphenyl-2-piperidinone, D-575
6,11-Dihydroxy-2,7,9-dodecatrienoic acid, D-576
8,11-Dihydroxy-2,4,9-dodecatrienoic acid, D-577
10,11-Dihydroxy-2,6,8-dodecatrienoic acid, D-578
threo-2″,3″-Dihydroxyechiumine, E-31
16,17-Dihydroxy-11-epilepenine, L-51
1-(1,2-Dihydroxyethyl)-β-carboline-3-carboxylic acid, D-579
2-(1,2-Dihydroxyethyl)-3,4-dihydroxy-5-(hydroxymethyl)pyrrolidine, D-580
1-(1,2-Dihydroxyethyl)-3-hydroxymethyl-β-carbazole, P-893
1-(1,2-Dihydroxyethyl)-4-methoxy-β-carboline, H-493
1-(1,2-Dihydroxyethyl)-9*H*-pyrido[3,4-*b*]indole-3-carboxylic acid, D-579
3-(8,9-Dihydroxyfarnesyl)indole, T-605
8*S*,11*S*-Dihydroxyfawcettidine, F-28
2*S*,11*S*-Dihydroxyfawcettidine, F-28
4′,7-Dihydroxyflavanone, D-581
3α,13-Dihydroxyforesaconitine, M-336
12,13-Dihydroxyfumitremorgin C, F-190
4,5-Dihydroxyfuro[2,3-*b*]quinoline, F-210
4,6-Dihydroxyfuro[2,3-*b*]quinoline, F-211
4,7-Dihydroxyfuro[2,3-*b*]quinoline, F-212
4,8-Dihydroxyfuro[2,3-*b*]quinoline, F-213
5,7-Dihydroxyfuro[2,3-*b*]quinolin-4(9*H*)-one, F-219
6,7-Dihydroxyfuro[2,3-*b*]quinolin-4(9*H*)-one, F-221
6,8-Dihydroxyfuro[2,3-*b*]quinolin-4(9*H*)-one, F-222
7,8-Dihydroxyfuro[2,3-*b*]quinolin-4(9*H*)-one, F-223
14,15-Dihydroxygelsenicine, G-44
Dihydroxygirinimbine, D-582
3,4-Dihydroxy-β-guanidinostyrene, T-656
2-(3,6-Dihydroxyheptyl)-3,4-dihydroxy-5-hydroxymethylpyrrolidine, D-583
13-(1,2-Dihydroxyheptyl)-1,4,5,6,7,8,9,10,11,13,16,16*a*-dodecahydropyrido[2,1-*d*][1,5,9]triazacyclotridecin-2(3*H*)-one, C-83
2-(3,6-Dihydroxyheptyl)-5-hydroxymethyl-3,4-pyrrolidinediol, D-583
11,15-Dihydroxyhetisan-2,13-dione, H-190
6,13-Dihydroxyhetisan-11-one, D-584
9,13-Dihydroxyhetisan-2-one, D-585
13,15-Dihydroxyhetisan-2-one, D-586
6,13-Dihydroxyhetisan-2-one, H-198
11,13-Dihydroxyhetisan-2-one, H-202
2,6-Dihydroxyhetisan-13-one, H-198
6-(4,15-Dihydroxyhexadecyl)-3-hydroxy-2-methylpiperidine, A-477
3,4-Dihydroxyhydrocinnamic acid, D-652
α,β-Dihydroxyhydrocinnamic acid, D-651
4,8-Dihydroxy-5-(4-hydroxybenzoyl)-2-quinolinecarboxylic acid, T-512
6,7-Dihydroxy-1-(4-hydroxybenzyl)isoquinoline, H-424
1,2-Dihydroxy-5-(3-hydroxybutyl)-3-(hydroxymethyl)-1*H*-pyrrolizidine, T-553
3,4-Dihydroxy-1-(2-hydroxyethyl)-2-(hydroxymethyl)pyrrolidine, D-593
3,4-Dihydroxy-2-(1-hydroxyethyl)-5-(hydroxymethyl)pyrrolidine, D-587
3,4-Dihydroxy-2-(2-hydroxyethyl)-5-(hydroxymethyl)pyrrolidine, H-492
3,4-Dihydroxy-2-(1-hydroxyethyl)pyrrolidine, D-588
3,4-Dihydroxy-2-(3-hydroxy-4-methoxyphenyl)-5-hydroxymethylpyrrolidine, R-10
2,5-Dihydroxy-4-(hydroxymethyl)acetanilide, A-739
3,4-Dihydroxy-3-hydroxymethylbutanoic acid, D-589
1,5-Dihydroxy-4-(2-hydroxy-3-methyl-3-butenyl)-3-methoxy-10-methylacridone, T-581
6,7-Dihydroxy-1-hydroxymethyl-1,2-dehydro-8α-pyrrolizidine, C-775
3,4-Dihydroxy-2-hydroxymethyl-5-(1-hydroxypentyl)pyrrolidine, H-602
3,4-Dihydroxy-2-(hydroxymethyl)-5-(2-hydroxypropyl)pyrrolidine, D-665
3,4-Dihydroxy-5-hydroxymethyl-2-isobutylpyridine, A-620
6,7-Dihydroxy-1-hydroxymethylisoquinoline, D-590
3,4-Dihydroxy-2-(hydroxymethyl)-5-methylpyrrolidine, D-591
1,2-Dihydroxy-3-hydroxymethyl-5-methyl-1*H*-pyrrolizidine, D-592
3,4-Dihydroxy-5-(hydroxymethyl)-3-[3-(3-nonyloxiranyl)-1-oxo-2-propenyl]-2-pyrrolidinone, P-584
3-[4,5-Dihydroxy-4-(hydroxymethyl)-L-norvaline]-phallacidin, P-309
7-[4,5-Dihydroxy-4-(hydroxymethyl)-L-norvaline]-phalloidin, P-310
3,4-Dihydroxy-2-(hydroxymethyl)-5-(1,5,7,12,13-pentahydroxytridecyl)pyrrolidine, B-367
3,4-Dihydroxy-2-(hydroxymethyl)piperidine, H-614
3,4-Dihydroxy-2-(hydroxymethyl)pyrrolidine, D-593
3,4-Dihydroxy-α-(hydroxymethyl)-2,5-pyrrolidinedimethanol, D-580
3,4-Dihydroxy-5-(hydroxymethyl)-1-pyrrolidineethanol, H-492
3,4-Dihydroxy-2-hydroxymethyl-1-pyrrolidinepropanamide, D-593
1,2-Dihydroxy-3-hydroxymethyl-1*H*-pyrrolizidine, D-594
1,2-Dihydroxy-7-hydroxymethylpyrrolizidine, D-595
1,7-Dihydroxy-1-hydroxymethylpyrrolizidine, D-596
2,7-Dihydroxy-1-hydroxymethylpyrrolizidine, D-597
1,2-Dihydroxy-3-(hydroxymethyl)-5-(1,3,4-trihydroxybutyl)-1*H*-pyrrolizidine, T-553
2,4(5)-Dihydroxyimidazole, I-40
5,6-Dihydroxy-1*H*-indole-2-carboxylic acid, D-598
5,6-Dihydroxyindole, I-93
6,7-Dihydroxyindole, I-94
2,3-Dihydroxyindole, I-91
2,5-Dihydroxy-1*H*-indole, I-92
α,5-Dihydroxy-1*H*-indole-3-propanoic acid, H-506
3,5-Dihydroxy-2-indolinone-3-acetic acid, D-423
3,7-Dihydroxy-2-indolinone-3-acetic acid, D-424
1,2-Dihydroxyindolizidine, O-46
4,5-Dihydroxy-6*H*-indolo[3,2,1-*de*][1,5]naphthyridin-6-one, D-546
5,11-Dihydroxy-6*H*-indolo[3,2,1-*de*][1,5]naphthyridin-6-one, D-548
5,9-Dihydroxy-6*H*-indolo[3,2,1-*de*][1,5]naphthyridin-6-one, D-547
9,10-Dihydroxy-6*H*-indolo[3,2,1-*de*][1,5]naphthyridin-6-one, D-550
1,9-Dihydroxy-6*H*-indolo[3,2,1-*de*][1,5]naphthyridin-6-one, D-544
8,9-Dihydroxy-6*H*-indolo[3,2,1-*de*][1,5]naphthyridin-6-one, D-549
10,11-Dihydroxy-6*H*-indolo[3,2,1-*de*][1,5]naphthyridin-6-one, D-551
1,11-Dihydroxy-6*H*-indolo[3,2,1-*de*][1,5]naphthyridin-6-one, D-545
6,7-Dihydroxy-5-(isobutyliminomethyl)-8-isopropyl-2-methyl-1,4-naphthoquinone, G-145
4,5-Dihydroxy-*N*-isobutyl-2-octenamide, D-637
6,7-Dihydroxy-3-isocyano-2*H*-1-benzopyran-2-one, D-599
6,7-Dihydroxy-3-isocyanocoumarin, D-599
19,20-Dihydroxyisoechinulin A, I-230
6-*O*-(1,3-Dihydroxyisopropyl)inosine, I-148
6,7-Dihydroxyisoquinoline, I-302
7,8-Dihydroxyisoquinoline, I-303
6,7-Dihydroxy-1,3,4(2*H*)-isoquinolinetrione, D-600
6,7-Dihydroxy-1(2*H*)-isoquinolinone, I-305
6,8-Dihydroxy-1(2*H*)-isoquinolinone, I-306
6,9-Dihydroxy-13-labdene-16,15-lactam, D-601
3,18-Dihydroxylanosta-8,22,24-trien-26-oic acid, D-602
3,15-Dihydroxy-5,12-lathyradien-14-one, D-603
3-(4,5-Dihydroxy-L-leucine)-4-L-alanineviroisin, V-160
3-(4,5-Dihydroxy-L-leucine)viroisin, V-160
4,5-Dihydroxy-N^b-lignoceroyltryptamine, D-683
N^2-(15,16-Dihydroxylinoleoyl)glutamine, G-108
6,7-Dihydroxylittorine, M-392
12,13-Dihydroxylupanine, C-40

8,13-Dihydroxylupanine, D-607
10,13-Dihydroxylupanine, D-608
3,13-Dihydroxylupanine, D-605
3,4-Dihydroxylupanine, D-604
4,13-Dihydroxylupanine, D-606
4,6α-Dihydroxylycopodine, F-73
7,8β-Dihydroxylycopodine, F-29
4,12-Dihydroxylycopodine, L-344
18,18′-Dihydroxymatopensine, M-120
5,9-Dihydroxymatridin-15-one, S-377
5α,9α-Dihydroxymatrine, S-377
2,7-Dihydroxymavacurine, A-617
3,4-Dihydroxymaytol, P-217
1,3-Dihydroxy-5-methoxyacridone, T-518
1,8-Dihydroxy-3-methoxyacridone, T-520
2,7-Dihydroxy-1-methoxyaporphine, P-4
1,10-Dihydroxy-2-methoxyaporphine, T-524
1,11-Dihydroxy-2-methoxyaporphine, T-525
2,4-Dihydroxy-7-methoxy-2*H*-1,4-benzoxazin-3(4*H*)-one, D-538
3-(2,6-Dihydroxy-4-methoxybenzoyl)pyridine, D-609
4,10-Dihydroxy-5-methoxycanthin-6-one, T-531
1,7-Dihydroxy-6-methoxy-9*H*-carbazole-3-carboxaldehyde, T-532
3,4-Dihydroxy-α-(methoxycarbonyl)-*N,N,N*-trimethylbenzeneethanaminium(1+), A-745
N-(3,4-Dihydroxy-5-methoxycinnamoyl)-1,4-butanediamine, C-456
12,18-Dihydroxy-19-methoxy-16,18-dimethyl-10-phenyl[11]cytochalasa-6,13-diene-1,21-dione, H-473
7,18-Dihydroxy-19-methoxy-16,18-dimethyl-10-phenyl[11]cytochalasa-6(12),13-diene-1,21-dione, T-545
1,5-Dihydroxy-3-methoxy-2,4-diprenylacridone, T-546
1,7-Dihydroxy-6-methoxyisoquinoline, I-305
3,4-Dihydroxy-13-methoxylupanine, T-557
2′,6′′-Dihydroxy-5′′-methoxylythran-12-one, V-88
2,5-Dihydroxy-4-(methoxymethyl)acetanilide, A-739
1,3-Dihydroxy-5-methoxy-10-methylacridone, T-518
1,5-Dihydroxy-3-methoxy-10-methylacridone, T-518
1,6-Dihydroxy-3-methoxy-10-methylacridone, T-519
1,8-Dihydroxy-3-methoxy-10-methylacridone, T-520
5,7-Dihydroxy-6-methoxy-1-methyl-4-azafluoren-9-one, T-565
6,9-Dihydroxy-7-methoxy-3-methylbenz[*g*]isoquinoline-5,10-dione, B-255
1,5-Dihydroxy-3-methoxy-10-methyl-2,4-diprenylacridone, T-546
7,8-Dihydroxy-6-methoxy-4-methyl-5*H*-indeno[1,2-*b*]pyridin-5-one, T-563
7,9-Dihydroxy-8-methoxy-4-methyl-5*H*-indeno[1,2-*b*]pyridin-5-one, T-565
1,3-Dihydroxy-5-methoxy-10-methyl-2-prenylacridone, T-580
1,5-Dihydroxy-3-methoxy-10-methyl-4-prenylacridone, T-581
3,6-Dihydroxy-4-methoxy-1-methyl-2(1*H*)-pyridinone, H-146
2,7-Dihydroxy-1-methoxynoraporphine, P-4
1,10-Dihydroxy-2-methoxynoraporphine, T-524
5,7-Dihydroxy-6-methoxyonychine, T-565
5,7-Dihydroxy-2-[[1-(4-methoxy-2-oxo-2*H*-pyran-6-yl)-2-phenylethyl]amino]-1,4-naphthoquinone, D-610
2,8-Dihydroxy-6-methoxy-2-pentylisoquinoline, R-163
3,4-Dihydroxy-5-methoxyphenethylamine, T-576
3,4-Dihydroxy-2-(4-methoxyphenyl)-1,5-dimethylpyrrolidine, C-557
(2,6-Dihydroxy-4-methoxyphenyl)-3-pyridinylmethanone, D-609
4,7-Dihydroxy-8-methoxyquinoline, Q-48
2,4-Dihydroxy-6-methoxyquinoline, Q-46
2,4-Dihydroxy-8-methoxyquinoline, Q-47
3,12-Dihydroxy-11-methoxystrychnine, P-726
7,18-Dihydroxy-4-methylaconit-8(15)-en-14-one, D-611
1,3-Dihydroxy-10-methylacridone, D-528
1,7-Dihydroxy-10-methylacridone, D-529
1,8-Dihydroxy-10-methylacridone, D-530
3′,4′-Dihydroxy-2-methylaminoacetophenone, A-736
3,4-Dihydroxy-α-[(methylamino)methyl]benzyl alcohol, A-152
14,15-Dihydroxy-*N*-methylaspidospermidine, A-1498
2,15-Dihydroxy-7-methyl-6-azabicyclo[11.3.0]hexadec-3-en-5-one, I-18
5,6-Dihydroxy-1-methyl-4-azafluorenone, D-626
6,7-Dihydroxy-1-methyl-4-aza-9-fluorenone, D-625
7,8-Dihydroxy-1-methyl-4-azafluoren-9-one, D-624
2,7-Dihydroxy-1-methyl-4-azafluorenone, D-623
1,2-Dihydroxy-12-methyl[1,3]benzodioxolo[5,6-*c*]phenanthridinium(1+), C-356
1,8-Dihydroxy-3-methylbenzo[*b*]phenanthridine-7,12-dione, D-612
8,9-Dihydroxy-4-methyl-10*H*-[1]benzopyrano[3,2-*b*]pyridin-10-one, P-638
1,3-Dihydroxy-4-(3-methyl-2-butenyl)-9(10*H*)-acridinone, D-664
2,7-Dihydroxy-1-(3-methyl-2-butenyl)-9*H*-carbazole-3-carboxaldehyde, H-125
2,8-Dihydroxy-1-(3-methyl-2-butenyl)-9*H*-carbazole-3-carboxaldehyde, H-125
4,7-Dihydroxy-3-(3-methyl-2-butenyl)-2(1*H*)-quinolinone, T-582
4,8-Dihydroxy-3-(3-methyl-2-butenyl)-2(1*H*)-quinolinone, T-583
7-(2,3-Dihydroxy-3-methylbutoxy)-8-methoxydictamnine, F-223
8-(2,3-Dihydroxy-3-methylbutoxy)-4-methoxy-1-methyl-2(1*H*)-quinolinone, F-122
4-(2,3-Dihydroxy-3-methylbutoxy)-1-methyl-2(1*H*)-quinolinone, H-53
N-(2,3-Dihydroxy-3-methylbutyl)acetamide, A-835
1-(2,3-Dihydroxy-3-methylbutyl)-2,7-dihydroxy-9*H*-carbazole-3-carboxaldehyde, H-125
3-(2,3-Dihydroxy-3-methylbutyl)-4,8-dimethoxy-1-methyl-2(1*H*)-quinolinone, L-288
3-(2,3-Dihydroxy-3-methylbutyl)-4,7-dimethoxy-1-methyl-2(1*H*)-quinolinone, T-582
3-(2,3-Dihydroxy-3-methylbutyl)-5-(2,3-epoxy-3-methylbutyl)-1*H*-indole, B-200
3-(2,3-Dihydroxy-3-methylbutyl)-4-methoxy-1-methyl-2(1*H*)-quinolinone, E-40
3-(2,3-Dihydroxy-3-methylbutyl)-6-(3-methyl-2-butenyl)-1*H*-indole, B-201
3-(2,3-Dihydroxy-3-methylbutyl)-5-(3-methyl-1-oxo-2-butenyl)-1*H*-indole, B-200
3-(2,3-Dihydroxy-3-methylbutyl)-4,6,8-trimethoxy-1-methyl-2(1*H*)-quinolinone, P-755
2,7-Dihydroxy-6-methyl-9*H*-carbazole-1-carboxaldehyde, D-619
1,6-Dihydroxy-3-methyl-9*H*-carbazole, D-613
1,7-Dihydroxy-6-methyl-9*H*-carbazole, D-614
2,3-Dihydroxy-6-methyl-9*H*-carbazole, D-615
2,5-Dihydroxy-3-methyl-9*H*-carbazole, D-616
2,6-Dihydroxy-3-methyl-9*H*-carbazole, D-617
2,8-Dihydroxy-3-methyl-9*H*-carbazole, D-618
6,7-Dihydroxy-1-methyl-β-carboline, D-620
7,8-Dihydroxy-1-methyl-β-carboline, D-621
4-(5,7-Dihydroxy-2-methyl-6-chromanyl)-2-piperidone, D-629
3,6-Dihydroxy-1-methyl-4,5-diphenyl-2-piperidinone, D-575
2,4-Dihydroxy-3-methylenebutanoic acid, D-622
4,7-Dihydroxy-1,2-methylenedioxyaporphine, S-534
7,8-Dihydroxy-2,3-methylenedioxy-5-methylbenzo[*c*]phenanthridinium(1+), C-356
8,9-Dihydroxy-4-methyl-5*H*-indeno[1,2-*b*]pyridin-5-one, D-626
3,7-Dihydroxy-4-methyl-5*H*-indeno[1,2-*b*]pyridin-5-one, D-623
6,7-Dihydroxy-4-methyl-5*H*-indeno[1,2-*b*]pyridin-5-one, D-624
7,8-Dihydroxy-4-methyl-5*H*-indeno[1,2-*b*]pyridin-5-one, D-625
6,8-Dihydroxy-3-methylisocarbostyril, T-566
6,7-Dihydroxy-1-methylisoquinoline, D-627
6,8-Dihydroxy-3-methyl-1(2*H*)-isoquinolinone, T-566
1,3-Dihydroxy-10-methyl-4-(3-methyl-2-butenyl)-9(10*H*)-acridinone, D-664
6,7-Dihydroxy-2-methyl-5-[[(3-methylbutyl)imino]-methyl]-8-(1-methylethyl)-1,4-naphthalenedione, G-145
3,5-Dihydroxy-6-methyl-7-(2-methyl-4-thiazolyl)-6-heptenoic acid, D-628
4-(5,7-Dihydroxy-2-methyl-4-oxo-4*H*-1-benzopyran-6-yl)-1-methyl-2-piperidinone, D-629
4-(5,7-Dihydroxy-2-methyl-4-oxo-4*H*-1-benzopyran-6-yl)-2-piperidinone, D-629
3-(3,5-Dihydroxy-4-methyl-1-oxo-6-octenyl)-2,4-pyrrolidinedione, P-589
4,5-Dihydroxy-1-methyl-3-oxo-2-(trichloromethyl)-3*H*-indolium(1+), D-630
4,5-Dihydroxy-1-methyl-2-piperidinecarboxylic acid, D-661
3,4-Dihydroxy-2-methylpiperidine, M-516
5,7-Dihydroxy-6-(1-methylpiperidin-2-yl)flavone, C-94
1,3-Dihydroxy-10-methyl-4-prenylacridone, D-664
1,5-Dihydroxy-10-methyl-2-prenylacridone, T-580
2,7-Dihydroxy-6-methyl-1-prenylcarbazole, E-275
2,6-Dihydroxy-3-methyl-5-prenyl-9*H*-carbazole, G-110
4,5-Dihydroxy-*N*-(2-methylpropyl)-2-decenamide, D-566
8,11-Dihydroxy-*N*-(2-methylpropyl)-2,4,9-dodecatrienamide, D-577
4,5-Dihydroxy-*N*-(2-methylpropyl)-2-octenamide, D-637
2,5-Dihydroxy-3-methylpyrazine, D-631
3,4-Dihydroxy-2-methylpyridine, D-632
3,5-Dihydroxy-6-methyl-2(1*H*)-pyridinone, T-567
2,4-Dihydroxy-5-methylpyrimidine, T-401
3,4-Dihydroxy-α-methyl-2,5-pyrrolidinedimethanol, D-587
5,7-Dihydroxy-6-(1-methylpyrrolidinyl)flavone, I-233
5,7-Dihydroxy-6-(1-methyl-2-pyrrolidinyl)-2-phenyl-4*H*-1-benzopyran-4-one, I-233
2,4-Dihydroxy-5-methylquinazoline, D-633
2,3-Dihydroxy-21-methyl-6,21-secohetisan-6,13-dione, H-161
10,10′-Dihydroxy-$N^{4'}$-methyltetrahydrousambarensine, U-52
1,9-Dihydroxy-4-(methylthio)canthin-6-one, D-634
1,9-Dihydroxy-4-methylthio-6*H*-indolo[3,2,1-*de*][1,5]naphthyridin-6-one, D-634
1,4-Dihydroxymimosamycin, M-624
30,32-Dihydroxymycalolide A, M-779
5,8-Dihydroxy-2-naphthalenecarboxylic acid, D-635
5,8-Dihydroxy-2-naphthoic acid, D-635
6,6′-Dihydroxyneothiobinupharidine, T-380
2,4-Dihydroxynicotinic acid, D-668
3,4-Dihydroxy-10-nitro-1-phenanthrenecarboxylic acid, D-636
3,7-Dihydroxy-1,8-nonadiene-1,9-dicarboxylic acid, D-685
5,13-Dihydroxynoracronycine, A-1527
11,12-Dihydroxynorcona-*N*(18),1,4-trienin-3-one, H-322
2,3-Dihydroxynortropane, A-1581
2,6-Dihydroxynortropane, A-1582
2,7-Dihydroxynortropane, A-1583
3β,6β-Dihydroxynortropane, A-1584
3,6-Dihydroxynortropane, A-1584
3,7-Dihydroxynortropane, A-1585
N^2-(15,16-Dihydroxy-9,12-octadecadienoyl)glutamine, G-108
3,5-Dihydroxy-2-octanoylphenylacetic acid, C-963
4,5-Dihydroxy-2-octenoic acid, D-637
6,7-Dihydroxyonychine, D-625
2,7-Dihydroxyonychine, D-623
3,4-Dihydroxy-α-oxobenzeneacetic acid, D-649
3,4-Dihydroxy-6-oxo-1-cyclohexene-1-acetic acid, D-638

3,4-Dihydroxy-6-oxo-1-cyclohexene-1-acetonitrile, D-638
1-(4,5-Dihydroxy-1-oxo-2-decenyl)piperidine, D-566
3,5-Dihydroxy-2-(1-oxooctyl)benzeneacetic acid, C-963
(1,5-Dihydroxy-2-oxo-3-pyrrolidinyl)phosphonic acid, A-1256
3,5-Dihydroxy-2-[[1-oxo-3-(3,4,5-trihydroxyphenyl)-2-propenyl]amino]benzoic acid, D-639
4,5-Dihydroxy-N^b-pentacosanoyltryptamine, D-683
4-(3,4-Dihydroxy-1-pentenyl)oxazole, M-159
2,3-Dihydroxy-1-phenazinecarboxylic acid, D-640
2,6-Dihydroxy-1-phenazinecarboxylic acid, D-641
2,9-Dihydroxy-1-phenazinecarboxylic acid, D-642
3,6-Dihydroxy-1-phenazinecarboxylic acid, D-643
4,9-Dihydroxy-1,6-phenazinedicarboxylic acid, D-644
1,6-Dihydroxyphenazine, P-321
1,8-Dihydroxyphenazine, P-322
1,9-Dihydroxyphenazine, P-323
2,3-Dihydroxyphenazine, P-324
Di(2-hydroxy-1-phenazinyl)methane, M-440
N-(3,4-Dihydroxyphenethyl)acetamide, D-920
3,4-Dihydroxyphenethylamine, D-920
2-(3,4-Dihydroxyphenethyl)quinoline, D-645
(3,4-Dihydroxyphenethyl)trimethylammonium, C-690
5-[(3,5-Dihydroxyphenoxy)methyl]-3-pyridinol, D-238
(2,4-Dihydroxyphenyl)acetic acid, D-646
α,3-Dihydroxyphenylacetic acid, H-519
α,4-Dihydroxyphenylacetic acid, H-520
(2,4-Dihydroxyphenyl)acetonitrile, D-646
3,4-Dihydroxyphenylalanine, A-745
2-(3,4-Dihydroxyphenyl)-3,4-dihydro-6,8-bis(octahydro-2,4,7-trimethyl-1*H*-2-pyridin-1-yl)-2*H*-1-benzopyran-3,5,7-triol, K-81
2-(2,3-Dihydroxyphenyl)-4,5-dihydro-*N*-hydroxy-*N*-[2-(1*H*-imidazol-4-yl)ethyl]-4-thiazolecarboxamide, A-1009
2-(3,4-Dihydroxyphenyl)ethenamine, D-157
N-[2-(3,4-Dihydroxyphenyl)ethenyl]acetamide, D-157
N-[2-(2,5-Dihydroxyphenyl)ethenyl]formamide, E-144
2-[(3,4-Dihydroxyphenyl)ethenyl]guanidine, T-656
9-[1-(3,4-Dihydroxyphenyl)ethyl]adenine, A-137
2-(3,4-Dihydroxyphenyl)ethylamine, D-920
N-[2-(2,5-Dihydroxyphenyl)ethyl]formamide, E-144
(3,4-Dihydroxyphenyl)glyoxylic acid, D-649
3-(3,4-Dihydroxyphenyl)-2-hydroxy-2-methylpropanoic acid, D-647
3-(3,4-Dihydroxyphenyl)-2-hydroxypropanoic acid, D-648
3-(3,4-Dihydroxyphenyl)lactamide, D-648
3-(3,4-Dihydroxyphenyl)lactic acid, D-648
1-(3,4-Dihydroxyphenyl)-2-methylaminoethanol, A-152
1-(3,4-Dihydroxyphenyl)-2-(methylamino)ethanone, A-736
1-[(3,4-Dihydroxyphenyl)methyl]-6,7-isoquinolinediol, P-80
2-(3,4-Dihydroxyphenyl)-2-oxoacetic acid, D-649
N-[3-(3,4-Dihydroxyphenyl)-1-oxo-2-propenyl]-3-hydroxytyrosine, C-534
5-(3,4-Dihydroxyphenyl)-2-phenyloxazole, D-650
2,3-Dihydroxy-3-phenylpropanoic acid, D-651
3-(3,4-Dihydroxyphenyl)propanoic acid, D-652
3-(3,4-Dihydroxyphenyl)-2-propenoic acid, D-653
3-(3,5-Dihydroxyphenyl)-2-propenoic acid, D-654
3α-(2,3-Dihydroxy-2-phenylpropionyl)-6β,7β-epoxytropane, A-1043
3-(3,4-Dihydroxyphenyl)-1-propylamine, A-896
N-(2,5-Dihydroxyphenyl)pyridinium(1+), D-655
4,5-Dihydroxy-2-phenylquinoline, D-658
4,6-Dihydroxy-2-phenylquinoline, D-659
4,7-Dihydroxy-2-phenylquinoline, D-660
2,3-Dihydroxy-4-phenylquinoline, D-656
2,4-Dihydroxy-3-phenylquinoline, D-657
7,11α-Dihydroxyphlegmariurine B, P-363
4,5-Dihydroxyphthalic acid, D-533
4,5-Dihydroxypipecolic acid 4-sulfate, D-661
4,5-Dihydroxypipecolic acid, D-661
4,5-Dihydroxy-2-piperidinecarboxylic acid, D-661
3,4-Dihydroxy-2-piperidinemethanol, H-614
5,7-Dihydroxy-8-(2-piperidinyl)flavone, D-662
2,7-Dihydroxypleiocarpamine, A-617
1,3-Dihydroxy-2-prenylacridone, D-663
1,3-Dihydroxy-4-prenylacridone, D-664
2′-*O*-*trans*-[4-(1,3-Dihydroxypropoxy)-3-methoxycinnamoyl]alangiside, A-239
2,3-Dihydroxypropyl 1-hydroxy-4-methyl-1*H*-pyrrole-2-carboxylate, G-111
2-(1,2-Dihydroxypropyl)-3,4-dihydroxy-5-(hydroxymethyl)pyrrolidine, D-665
3,3-(2,3-Dihydroxypropyl)diindole, D-693
1-(1,2-Dihydroxypropyl)-4-hydroxy-3-methoxy-2-methyl-6-prenyl-9*H*-carbazole, N-103
6-(1,2-Dihydroxypropyl)isoxanthopterin, I-13
5-(1,2-Dihydroxypropyl)-2-pyridinecarboxylic acid, D-666
2,4-Dihydroxypteridine, P-762
6,8-Dihydroxypurine, P-818
2,6-Dihydroxypurine, X-5
6-(6,8-Dihydroxy-9-purinyl)suberosanone, D-667
2,4-Dihydroxy-3-pyridinecarboxylic acid, D-668
5,10-Dihydroxy-6*H*-pyrido[4,3,2-*kl*]acridin-6-one, N-85
4,8-Dihydroxypyrido[3,4-*b*]indole-1-carboxylic acid, D-561
2,6-Dihydroxy-4-pyrimidinecarboxylic acid, D-669
2,4-Dihydroxypyrimidine, U-42
β-(2,4-Dihydroxy-3-pyrimidinyl)alanine, I-345
4,5-Dihydroxy-1*H*-pyrrole-3-carboxylic acid, D-670
3,4-Dihydroxy-2,5-pyrrolidinedimethanol, D-542
4,6-Dihydroxyquinaldinic acid, D-675
4,7-Dihydroxyquinaldinic acid, D-676
4,8-Dihydroxyquinaldinic acid, D-677
3,4-Dihydroxyquinaldinic acid, D-674
2,4-Dihydroxyquinazoline, Q-13
4,8-Dihydroxy-2-quinolinecarbothioic acid, D-671
4,6-Dihydroxy-2-quinolinecarboxylic acid, D-675
4,7-Dihydroxy-2-quinolinecarboxylic acid, D-676
4,8-Dihydroxy-2-quinolinecarboxylic acid, D-677
2,6-Dihydroxy-4-quinolinecarboxylic acid, D-672
2,8-Dihydroxy-4-quinolinecarboxylic acid, D-673
3,4-Dihydroxy-2-quinolinecarboxylic acid, D-674
4,8-Dihydroxyquinoline, Q-35
2,4-Dihydroxyquinoline, Q-33
3,8-Dihydroxyquinoline, Q-34
4,6-Dihydroxy-2(1*H*)-quinolinone, Q-46
4,8-Dihydroxy-2(1*H*)-quinolinone, Q-47
7,8-Dihydroxy-4(1*H*)-quinolinone, Q-48
3,4-Dihydroxy-2(1*H*)-quinolinone, Q-45
7,8-Dihydroxyrutaecarpine, R-168
1,2-Dihydroxyrutaecarpine, R-168
3,6-Dihydroxy-11,12-secocevan-18-one, H-370
2,15-Dihydroxy-6,21-secohetisan-6,13-dione, S-170
3,23-Dihydroxy-16,28-secosolanida-22,24,26(28)-trien-6-one, P-280
6,12-Dihydroxysenecionan-11,16-dione, A-967
12,18-Dihydroxysenecionan-11,15-dione, R-62
4,6α-Dihydroxyserratidine, A-1029
12,17-Dihydroxysolasodine, S-454
17,23-Dihydroxyspermostrychnine, S-400
3,12-Dihydroxyspirosol-5-en-27-oic acid, S-454
3,11-Dihydroxystaurosporine, S-498
12,16-Dihydroxystrychnine, P-726
3,12-Dihydroxystrychnine, P-726
11,19*R*-Dihydroxytabersonine, H-743
1,11-Dihydroxy-1,6,11,16-tetraazacycloeicosane-2,5,12,15-tetrone, A-250
4,5-Dihydroxy-N^b-tetracosanoyltryptamine, D-683
10,10′-Dihydroxytetrahydrousambarensine, U-52
1,6-Dihydroxy-2,3,4,5-tetramethoxy-10-methylacridone, H-242
4-(3,11-Dihydroxy-2,6,10,12-tetramethyl-9,13-dioxo-1,5-pentadecadienyl)-2-methylthiazole, D-678
5,13-Dihydroxy-4,6,10,14-tetramethyl-15-(2-methyl-4-thiazolyl)-10,14-pentadecadiene-3,7-dione, D-678
5,13-Dihydroxy-2,4,6,14-tetramethyl-15-(2-methyl-4-thiazolyl)-10,14-pentadecadien-3-one, D-679
3,5′-Dihydroxythalifaboramine, T-322
syn-6,6′-Dihydroxythiobinupharidine sulfoxide, T-380
6,6′-Dihydroxythiobinupharidine, T-380
6,6′-Dihydroxythionuphlutine B, T-380
α,4-Dihydroxytoluene, H-414
α,3-Dihydroxy-α-toluic acid, H-519
α,4-Dihydroxy-α-toluic acid, H-520
Dihydroxytriangularine, D-680
4,5-Dihydroxy-N^b-tricosanoyltryptamine, D-683
2,4-Dihydroxy-1,9,10-trimethoxyaporphine, C-190
3,11-Dihydroxy-1,2,10-trimethoxyaporphine, P-209
3,9-Dihydroxy-1,2,10-trimethoxyaporphine, P-208
1,3-Dihydroxy-2,5,6-trimethoxy-10-methylacridone, P-206
1,5-Dihydroxy-2,3,4-trimethoxy-10-methylacridone, P-205
1,6-Dihydroxy-2,3,5-trimethoxy-10-methylacridone, P-206
1,6-Dihydroxy-3,4,5-trimethoxy-10-methylacridone, P-207
1,4-Dihydroxy-2,9,10-trimethoxynoraporphine, C-190
1,9-Dihydroxy-2,3,10-trimethoxynoraporphine, P-208
3,11-Dihydroxy-1,2,10-trimethoxynoraporphine, P-209
4,14-Dihydroxy-3,6,7-trimethoxyphenanthroindolizidine, I-342
3,4-Dihydroxy-*N,N,N*-trimethylbenzenethanaminium(1+), C-690
N-(2,4-Dihydroxy-3,5,6-trimethylbenzoyl)glycine, D-681
4,5-Dihydroxy-*N,N,N*-trimethyl-1-hexanaminium(1+), M-772
2,4-Dihydroxy-3,3,4-trimethyl-5-oxoproline, D-682
2,4-Dihydroxy-3,3,4-trimethyl-5-oxo-2-pyrrolidinecarboxylic acid, D-682
2,4-Dihydroxy-3,3,4-trimethylpyroglutamic acid, D-682
2,6-Dihydroxytropane, A-1582
3,6-Dihydroxytropane, M-391
6,7-Dihydroxytropan-3-yl benzoate, M-392
4,5-Dihydroxytryptamine, D-683
5,6-Dihydroxytryptamine, D-684
3,5-Dihydroxy-L-tyrosyl-3,5-dihydroxy-*N*-[2-(3,4,5-trihydroxyphenyl)ethenyl]-L-tyrosinamide, T-678
4,8-Dihydroxy-2,9-undecadienediamide, D-685
4,8-Dihydroxy-2,9-undecadienedioic acid, D-685
3,23-Dihydroxyveratra-7,12(14)-dien-6-one, T-588
3,23-Dihydroxyveratraman-6(5*H*)-one, S-526
18,19-Dihydroxy-ψ-vincadifformine, P-733
19,20-Dihydroxy-ψ-vincadifformine, P-733
4,8-Dihydroxy-1-vinyl-β-carboline, D-686
17,18-Dihydroxyyohimban-16-carboxylic acid, D-687
3,17-Dihydroxyzenkerine, D-688
Dihydrozeatin *O*-glucoside, Z-11
Dihydrozeatin riboside, Z-11
Dihydrozeatin, Z-11
Diimidotricarbonic diamide, T-627
Diindogen, I-72
3,3-Di-1*H*-indol-3-yl-2-butanone, D-689
4,5-Di-6-indolyl-2,7-dimethyl-2,6-octadiene, I-248
1,5-Di-6-indolyl-3,7-dimethyl-2,6-octadiene, M-692
Di-1*H*-indol-3-ylethanedione, H-782
1,1-Di(3-indolyl)ethane, S-564
2,2-Di(3-indolyl)ethyl acetate, S-564
3,4-Di-1*H*-indol-3-yl-2,5-furandione, P-491
4,5-Di-1*H*-indol-3-yl-2,3-furandione, P-490
3,4-Di-1*H*-indol-3-yl-2(5*H*)-furanone, D-690
Di-3-indolylglyoxal, H-782
2,2-Di-3-indolyl-3-indolone, T-87
3,3-Di-3-indolyl-2-indolone, T-88
Di-3-indolylmethane, M-436
2,2-Di-1*H*-indol-3-yl-4-methylpentanoic acid, D-691
4-[(Di-1*H*-indol-3-yl)methyl]phenol, D-692

3,3-Di-1*H*-indol-3-yl-1,2-propanediol, D-693
2,2-Di-1*H*-indol-3-ylpropanoic acid, D-694
1,3-Di-1*H*-indol-3-yl-2-propanone, M-67
3,4-Di-1*H*-indol-3-yl-1*H*-pyrrole-2,5-dicarboxylic acid, L-329
3,4-Di-1*H*-indol-3-yl-1*H*-pyrrole-2,5-dione, A-1394
3,5-Di-1*H*-indol-3-yl-2*H*-pyrrol-2-one, P-675
Diiodoacetamide, D-695
Diiodoacetic acid, D-695
3,6-Diiodo-9*H*-carbazole, D-696
3,5-Diiodo-4-methoxybenzenethanamine, D-697
3-(3,5-Diiodo-4-methoxyphenyl)-2-dimethylamino-3′-(3-iodo-4-methoxyphenyl)-2′-methylamino-*N,N′*-(1,5-pentanediyl)bispropanamide, D-729
(3,5-Diiodo-4-methoxyphenyl)ethylamine, D-697
3-(3,5-Diiodo-4-methoxyphenyl)-3′-(3-iodo-4-methoxyphenyl)-*N,N′*-(1,5-pentanediyl)bis[2-dimethylaminopropanamide], D-729
N-[2-[3,5-Diiodo-4-[3-[(3-methyl-1-oxo-2-butenyl)amino]propoxy]phenyl]ethyl]-4-hydroxybenzeneacetamide, D-333
3,5-Diisobutyl-6-isopropyl-2-piperazinone, P-445
2,5-Diisobutylpyrazine, B-203
3,6-Diisobutyl-2(1*H*)-pyrazinone, F-76
7,20-Diisocyanoadociane, D-698
4,4′-(2,3-Diisocyano-1,3-butadiene-1,4-diyl)bisphenol, X-7
7,20-Diisocyanoisocycloamphilectane, D-698
4-[2,3-Diisocyano-4-(4-methoxyphenyl)-1,3-butadienyl]phenol, X-7
N,N-Diisopentenylguanidine, B-199
N,N′-Diisopentenylguanidine, P-769
3,5-Diisopentenylindole, B-200
3,6-Diisopentenylindole, B-201
3,7-Diisopentenylindole, B-202
2,5-Diisopentyl-3,6-dimethylpyrazine, B-184
Diisopropyl 2-aminoethyl phosphate, A-768
N,N-Diisopropylethylenediamine, E-225
2,5-Diisopropyl-3-methoxypyrazine, D-699
N,N-Diisopropyl-5-methoxytryptamine, M-288
2,5-Diisopropylpyrazine, D-700
2,6-Diisopropylpyrazine, D-701
Diisoretronecanyl *p,p′*-dihydroxy-α-truxillate, T-364
Aspergillus niger Diketopiperazine dimer, D-702
Diketotetrahydroglyoxaline, I-40
Dilemmaone A, D-703
Dilemmaone B, D-703
Dilemmaone C, D-703
Dilupanine, L-302
DIMBOA, D-538
DIMBOA-Glc, D-538
Dimeberine chloride, C-420
Dimethamine, D-704
1,3-Dimethoxyacridone, D-528
10,11-Dimethoxyajmalicine, R-51
10,11-Dimethoxyajmalicinine, A-215
5,10-Dimethoxyalstolenine, A-231
10,11-Dimethoxyalstonine, A-652
2,4-Dimethoxyaniline, A-705
Dimethoxyanthraserpine, R-50
1,2-Dimethoxyaporphine, D-531
11,12-Dimethoxyaspidofractinine, A-1494
16,17-Dimethoxyaspidofractinine, A-1494
5,6-Dimethoxy-1-azafluoroanthene, T-498
3,4-Dimethoxybenzaldehyde *N*-(3,4-dimethoxybenzoyl)hydrazone, D-705
4,5-Dimethoxy-1,2-benzenedicarboxylic acid, D-533
3,4-Dimethoxybenzeneethanamine, D-718
3,4-Dimethoxybenzenepropanamine, A-896
9,10-Dimethoxy-8*H*-benzo[*g*]-1,3-benzodioxolo[6,5,4-*de*]quinolin-8-one, O-170
4,10-Dimethoxy-8*H*-benzo[*g*]-1,3-benzodioxolo[6,5,4-*de*]quinolin-8-one, O-168
1,10-Dimethoxybenzo[*c*]cinnoline, B-73
1,2-Dimethoxy[1,3]benzodioxolo[5,6-*c*]phenanthridine, C-356
2,3-Dimethoxy[1,3]benzodioxolo[5,6-*c*]phenanthridine, N-239
2,13-Dimethoxy[1,3]benzodioxolo[5,6-*c*]phenanthridin-1-ol, C-356
4-(4,5-Dimethoxy-1,3-benzodioxol-6-yl)-2-(5-methoxy-1,3-benzodioxol-6-yl)-1,3-cyclobutanedicarboxylic acid bispyrrolidide, B-196
1,1′-[[2-(6,7-Dimethoxy-1,3-benzodioxol-5-yl)-4-(6-methoxy-1,3-benzodioxol-5-yl)-1,3-cyclobutanediyl]dicarbonyl]bispyrrolidine, B-196
1-[3-(6,7-Dimethoxy-1,3-benzodioxol-5-yl)-1-oxo-2-propenyl]pyrrolidine, P-163
3,4-Dimethoxybenzoic acid carbonylbis(8-azabicyclo[3.2.1]octane-8,3-diyl) ester, S-622
3,4-Dimethoxybenzoic acid 3,4-dimethoxybenzylidenehydrazide, D-705
3,4-Dimethoxybenzoic acid [(3,4-dimethoxyphenyl)methylene]hydrazide, D-705
3,4-Dimethoxybenzoic acid 1,2-ethanediylbis(8-azabicyclo[3.2.1]octane-8,3-diyl) ester, C-632
3,4-Dimethoxybenzoic acid, D-706
8,9-Dimethoxy-1*H*-benzo[*de*][1,6]naphthyridine, A-2
8,9-Dimethoxy-6-benzopentathiepinethanamine, L-205
6,7-Dimethoxy-4-benzotrithioleethanamine, V-20
2,7-Dimethoxy-2*H*-1,4-benzoxazin-3(4*H*)-one, D-538
5,6-Dimethoxy-2-benzoxazolinone, D-707
5,6-Dimethoxy-2(3*H*)-benzoxazolone, D-707
6,7-Dimethoxy-1(3*H*)-benzoxazolone, D-708
N-(3,4-Dimethoxybenzoyl)isobutylamine, D-706
N-(2,5-Dimethoxybenzoyl)mescaline, M-219
8-(3,4-Dimethoxybenzoyl)neoline, M-323
14-(3,4-Dimethoxybenzoyl)neoline, M-323
3α-(3,4-Dimethoxybenzoyloxy)nortropane, C-633
15-(3,4-Dimethoxybenzoyl)pseudokobusine, H-205
3,4-Dimethoxybenzoylreserpic acid methyl ester, R-50
(3,4-Dimethoxybenzyl)(4-methoxyphenethyl)-methylamine, N-288
1-(3,4-Dimethoxybenzyl)-1,2,3,4-tetrahydro-6-hydroxy-7-methoxy-2-methylisoquinoline, P-715
1-(3,4-Dimethoxybenzyl)-1,2,3,4-tetrahydro-6,7-methylenedioxy-2-methylisoquinoline, R-123
N,N′-Di(4-methoxybenzyl)urea, D-302
3,10-Dimethoxy-1,2:8,9-bis(methylenedioxy)aporphine, H-243
4,5-Dimethoxycanthin-6-one, D-546
5,11-Dimethoxycanthin-6-one, D-548
5,9-Dimethoxycanthin-6-one, D-547
9,10-Dimethoxycanthin-6-one, D-550
1,11-Dimethoxycanthin-6-one, D-545
2,7-Dimethoxycarbazole, C-123
1,6-Dimethoxy-9*H*-carbazole-3-carboxaldehyde, D-552
1,8-Dimethoxy-9*H*-carbazole-3-carboxaldehyde, D-554
2,6-Dimethoxy-9*H*-carbazole-3-carboxaldehyde, D-555
2,7-Dimethoxy-9*H*-carbazole-3-carboxaldehyde, D-556
2,7-Dimethoxy-9*H*-carbazole-3-carboxylic acid, D-560
4,8-Dimethoxy-β-carboline, D-709
3,4-Dimethoxycinnamic acid isobutylamide, D-653
3,5-Dimethoxycinnamic acid pyrrolidide, D-654
3,5-Dimethoxycinnamic acid, D-654
N^1-(3,4-Dimethoxycinnamoyl)agmatine, A-719
N-(3,4-Dimethoxycinnamoyl)isobutylamide, D-653
N-(3,4-Dimethoxycinnamoyl)-Δ^3-piperidin-2-one, P-473
N-(3,5-Dimethoxycinnamoyl)pyrrolidine, D-654
5,6-Dimethoxycleistopholine, M-399
6,7-Dimethoxycleistopholine, M-399
Dimethoxydesanthraserpidine, D-687
1,9-Dimethoxy-8*H*-5,8-diazabenz[*cd*]azulene, A-4
1,3-Dimethoxydibenz[*cd,f*]indol-4(5*H*)-one, D-568
5,9-Dimethoxy-7*H*-dibenzo[*de,h*]quinolin-7-one, B-116
1,2-Dimethoxydibenz[*de,g*]quinolin-7-one, L-193
5,6-Dimethoxydictamnine, F-218
5,7-Dimethoxydictamnine, F-219
6,7-Dimethoxydictamnine, F-221
6,8-Dimethoxydictamnine, F-222
7,8-Dimethoxydictamnine, F-223
10,11-Dimethoxy-18,19-dihydro-16*S*-sitsirikine, S-325
6,8-Dimethoxy-2,4-dihydroxyquinoline, Q-42
6,7-Dimethoxy-1-(3,4-dimethoxybenzoyl)isoquinoline, P-77
6,7-Dimethoxy-1-(3,4-dimethoxybenzyl)-isoquinoline, P-79
4,5-Dimethoxy-12,12-dimethyl-12*H*-[1]benzoxepino[2,3,4-*ij*]isoquinoline-6,10-diol, G-148
1′,8-Dimethoxy-3′,6-dimethyl-3,9′-bi-9*H*-carbazole, M-751
1,1′-Dimethoxy-3,3′-dimethyl-4,9′-bi-9*H*-carbazole, M-755
7,7′-Dimethoxy-3,3′-dimethyl-8,8′-bis(3-methyl-2-butenyl)[2,2′-bi-9*H*-carbazole]-1,1′-diol, B-208
3,4-Dimethoxy-1,2-dimethyl-9*H*-carbazole, D-571
2,3-Dimethoxy-7,7-dimethyl-7*H*-dibenzo[*de,g*]quinoline-1,9-diol, M-194
5,11-Dimethoxy-3,3-dimethyl-3*H*-furano[2,3-*b*]pyrano[3,2-*f*]quinoline, A-121
5,7-Dimethoxy-*N,N*-dimethyl-1*H*-indole-3-methanamine, D-733
1,5-Dimethoxy-*N,N*-dimethyl-1*H*-indole-3-methanamine, D-734
6,8-Dimethoxy-1,3-dimethylisoquinoline, D-710
6′,12′-Dimethoxy-2,2′-dimethyl-6,7-[methylenebis(oxy)]oxyacanthan, C-275
6,7-Dimethoxy-*N,N*-dimethyl-5-(methylthio)-4-benzotrithioleethanamine, V-20
3,4-Dimethoxy-*N,N*-dimethyl-1-phenanthreneethanamine, A-1532
1,2-Dimethoxy-*N,N*-dimethylphenanthro[2,3-*d*][1,3]dioxole-4-ethanamine, T-318
3,16-Dimethoxy-*N,N*-dimethylpregn-5-en-20-amine, A-884
6′,7′-Dimethoxy-2,2′-dimethylthalman-6,12-diol, D-944
4,11-Dimethoxy-1,3-dioxolo[4,5-*b*]acridin-10(5*H*)-one, X-2
4,9-Dimethoxy-1,3-dioxolo[4,5-*g*]furo[2,3-*b*]quinoline, F-217
9,10-Dimethoxy-1,3-dioxolo[4,5-*g*]furo[2,3-*b*]quinoline, F-215
Dimethoxyeburnamonine, E-6
3,3-Dimethoxy-22,26-epiminocholestane, S-350
10,11-Dimethoxy-17-epi-α-yohimbine, S-251
4,6-Dimethoxyfuro[2,3-*b*]quinoline, F-211
4,7-Dimethoxyfuro[2,3-*b*]quinoline, F-212
4,5-Dimethoxyfuro[2,3-*b*]quinoline, F-210
4,8-Dimethoxyfuro[2,3-*b*]quinoline, F-213
4,8-Dimethoxyfuro[2,3-*b*]quinolin-5-ol, F-220
4,6-Dimethoxyfuro[2,3-*b*]quinolin-7-ol, F-221
4,7-Dimethoxyfuro[2,3-*b*]quinolin-6-ol, F-221
4,7-Dimethoxyfuro[2,3-*b*]quinolin-8-ol, F-223
4,8-Dimethoxyfuro[2,3-*b*]quinolin-7-ol, F-223
1-[(6,7-Dimethoxyfuro[2,3-*b*]quinolin-4-yl)oxy]-3-methyl-2,3-butanediol, F-221
8,9-Dimethoxygeibalansine, G-29
1,4-Dimethoxyglucobrassicin, I-122
5,7-Dimethoxygramine, D-733
1,5-Dimethoxygramine, D-734
3′,8-Dimethoxygraveoline, G-171
3,4-Dimethoxyhydrocinnamic isobutylamide, D-652
2,9-Dimethoxy-1-hydroxynoraporphine (incorr.), T-523
2,6-Dimethoxy-5-hydroxyonychine, T-562
2,9-Dimethoxy-3-hydroxypavinane (incorr.), H-464
3,8-Dimethoxy-9-hydroxypavinane (incorr.), H-464
7,8-Dimethoxy-4-hydroxy-2(1*H*)-quinolinone, Q-43
5,6-Dimethoxyindeno[1,2,3-*ij*]isoquinoline, T-498
5,6-Dimethoxyindeno[1,2,3-*ij*]isoquinolin-9-ol, T-498
5,6-Dimethoxy-1*H*-indole-2-carboxylic acid, D-598
1,11-Dimethoxy-6*H*-indolo[3,2,1-*de*][1,5]naphthyridin-6-one, D-545
2,3-Dimethoxyindolo[2′,3′:3,4]pyrido[2,1-*b*]quinazolin-5(13*H*)-one, E-305
Dimethoxyipomine, I-165
5,6-Dimethoxy-1,3-isobenzofurandione, D-533

5,6-Dimethoxy-1*H*-isoindole-1,3(2*H*)-dione, D-533
10,11-Dimethoxyisomitraphylline, C-117
6,7-Dimethoxyisoquinoline, I-302
7,8-Dimethoxyisoquinoline, I-303
6,7-Dimethoxy-1(2*H*)-isoquinolinone, I-305
(6,7-Dimethoxy-1-isoquinolinyl)(2-hydroxy-3,4-dimethoxyphenyl)methanone, T-50
4-[(6,7-Dimethoxy-1-isoquinolinyl)methyl]phenol, H-424
11,12-Dimethoxykopsine, K-76
8,9-Dimethoxyliriodenine, O-170
5,8-Dimethoxymaculine, F-214
6,7-Dimethoxy-1-(4-methoxybenzyl)isoquinoline, H-424
11,12-Dimethoxy-*N*-methoxycarbonylkopsinaline, K-74
8,9-Dimethoxy-*N*-methoxycarbonyl-1,2-methylenedioxynoraporphine, C-733
4,8-Dimethoxy-1-(2-methoxyethyl)-β-carboline, P-407
4,8-Dimethoxy-1-(2-methoxyethyl)-9*H*-pyrido[3,4-*b*]indole, P-407
4,6-Dimethoxy-5-(3-methoxy-3-methyl-1-butenyl)-furo[2,3-*b*]quinoline, H-578
4,7-Dimethoxy-3-(methoxymethyl)-2(1*H*)-quinolinone, S-221
6,7-Dimethoxy-4-(4-methoxyphenyl)-1-methyl-1*H*-naphth[2,3-*d*]imidazole-2,5,8(3*H*)-trione, K-25
5,8-Dimethoxy-2-(3-methoxyphenyl)-3-propyl-4(1*H*)-quinolinone, D-711
5,6-Dimethoxy-2-(3-methoxyphenyl)-4(1*H*)-quinolinone, D-712
5,7-Dimethoxy-4-(4-methoxyphenyl)-2(1*H*)-quinolinone, D-713
2,3-Dimethoxy-6-(10-methoxy-3,7,11-trimethyl-2,4,7,11-tridecatetraenyl)-5-methyl-4-pyridinol, A-257
1,3-Dimethoxy-10-methylacridone, D-528
3,6-Dimethoxy-9-[2-(methylamino)ethyl]dibenz[*b,f*]oxepin-4-ol, S-198
7,9-Dimethoxy-3-methylbenz[*g*]isoquinoline-5,10-dione, B-255
1,2-Dimethoxy-6-methyl-4*H*-benzo[*de*][1,3]benzodioxolo[5,6-*g*]quinoline-4,5(6*H*)-dione, C-684
9,10-Dimethoxy-7-methyl-5*H*-benzo[*g*]-1,3-benzodioxolo[6,5,4-*de*]quinoline-5,6(7*H*)-dione, D-802
5,7-Dimethoxy-13-methyl[1,3]benzodioxolo[5,6-*c*]-1,3-dioxolo[4,5-*i*]phenanthridinium(1+), C-360
1,2-Dimethoxy-13-methyl[1,3]benzodioxolo[5,6-*c*]phenanthridine, M-494
1,2-Dimethoxy-12-methyl[1,3]benzodioxolo[5,6-*c*]phenanthridinium(1+), C-356
2,3-Dimethoxy-12-methyl[1,3]benzodioxolo[5,6-*c*]phenanthridinium(1+), N-239
1,2-Dimethoxy-12-methyl[1,3]benzodioxolo[5,6-*c*]phenanthridin-13(12*H*)-one, D-407
2,3-Dimethoxy-12-methyl[1,3]benzodioxolo[5,6-*c*]phenanthridin-13(12*H*)-one, D-482
5,10-Dimethoxy-4-methylbenzo[*g*]quinoline, A-1058
6,7-Dimethoxy-4-methylbenzo[*g*]quinoline-5,10-dione, M-399
5,10-Dimethoxy-4-methylbenzo[*g*]quinolin-2(1*H*)-one, K-6
1,1′-Dimethoxy-3′-methyl-3,9′-bi-9*H*-carbazole, M-752
2,4-Dimethoxy-3-(3-methyl-2-butenyl)cinnamic acid piperidide, D-721
6,8-Dimethoxy-7-(3-methyl-2-butenyl)-1,3-dioxolo[4,5-*h*]quinoline, D-715
4,7-Dimethoxy-8-(3-methyl-2-butenyl)furo[2,3-*b*]quinoline, H-570
4,8-Dimethoxy-8-(3-methyl-2-butenyl)furo[2,3-*b*]quinolin-7(8*H*)-one, P-254
4,6-Dimethoxy-8-(3-methyl-2-butenyloxy)furo[2,3-*b*]quinoline, F-222
4,8-Dimethoxy-7-[(3-methyl-2-butenyl)oxy]-furo[2,3-*b*]quinoline, F-223
1-[3-[2,4-Dimethoxy-3-(3-methyl-2-butenyl)phenyl]-1-oxo-2-propenyl]piperidine, D-721
4,8-Dimethoxy-3-(3-methyl-2-butenyl)-2(1*H*)-quinolinone, T-583
2,7-Dimethoxy-6-methyl-9*H*-carbazole-1-carboxaldehyde, D-619
2,6-Dimethoxy-3-methyl-9*H*-carbazole, D-617
1,6-Dimethoxy-3-methyl-9*H*-carbazole, D-613
1,7-Dimethoxy-6-methyl-9*H*-carbazole, D-614
2,5-Dimethoxy-3-methyl-9*H*-carbazole, D-616
6,7-Dimethoxy-3-methyl-1*H*-carbazole-1,4(9*H*)-dione, K-55
6,7-Dimethoxy-3-methyl-9*H*-carbazol-1-ol, T-559
6,7-Dimethoxy-1-methyl-β-carboline, D-620
10,11-Dimethoxy-1-methyldeacetylpicraline benzoate, B-420
10,11-Dimethoxy-1-methyldeacetylpicraline 3,4,5-trimethoxybenzoate, B-420
10,11-Dimethoxy-1-methyldeacetylpicraline, B-420
1,2-Dimethoxy-6-methyl-4*H*-dibenzo[*de,g*]quinoline-4,5(6*H*)-dione, C-273
1,2-Dimethoxy-7-methyl-4*H*-dibenzo[*de,g*]quinoline-4,5(6*H*)-dione, G-175
6,11-Dimethoxy-5-methyl-1,3-dioxo[4,5-*b*]acridin-10(5*H*)-one, T-56
4,5-Dimethoxy-11-methyl-1,3-dioxolo[4,5-*c*]acridin-6(11*H*)-one, M-169
8,9-Dimethoxy-13-methyl-1,3-dioxolo[6,7]indeno[2,1-*a*][3]benzazepinium(1+), L-15
1,4-Dimethoxy-2,3-methylenedioxy-9(10*H*)-acridone, X-2
10,11-Dimethoxy-1,2-methylenedioxyaporphine, B-397
3,9-Dimethoxy-1,2-methylenedioxyaporphine, B-471
8,9-Dimethoxy-1,2-methylenedioxyaporphine, C-733
9,10-Dimethoxy-1,2-methylenedioxyaporphine, D-346
1,2-Dimethoxy-9,10-methylenedioxyaporphine, N-29
7,9-Dimethoxy-2,3-methylenedioxybenzo[*c*]phenanthridine, D-714
8,9-Dimethoxy-2,3-methylenedioxybenzo[*c*]phenanthridine, N-239
8,9-Dimethoxy-2,3-methylenedioxybenzo[*c*]phenanthridin-6(5*H*)-one, D-482
9,10-Dimethoxy-2,3-(methylenedioxy)berbine, C-73
9,10-Dimethoxy-2,3-(methylenedioxy)berbin-13-ol, O-94
2,3-Dimethoxy-4,5-methylenedioxycinnamic acid pyrrolididide, P-163
1-[2,3-Dimethoxy-4,5-(methylenedioxy)cinnamoyl]pyrrolidine, P-163
3,4-Dimethoxy-11,12-methylenedioxy-8,14-dioxohexahydroisohomoprotoberberine, P-801
4,5-Dimethoxy-6,7-methylenedioxyfuro[2,3-*b*]quinoline, F-215
4,8-Dimethoxy-6,7-methylenedioxyfuro[2,3-*b*]quinoline, F-217
6,7-Dimethoxy-3,4-methylenedioxy-10-nitro-1-phenanthrenecarboxylic acid, T-265
6,8-Dimethoxy-3,4-methylenedioxy-10-nitro-1-phenanthrenecarboxylic acid, T-266
7,8-Dimethoxy-3,4-methylenedioxy-10-nitro-1-phenanthrenecarboxylic acid, T-267
10,11-Dimethoxy-1,2-methylenedioxynoraporphine, B-397
3,9-Dimethoxy-1,2-methylenedioxynoraporphine, B-471
9,10-Dimethoxy-1,2-methylenedioxynoraporphine, D-346
9,11-Dimethoxy-1,2-methylenedioxynoraporphine, D-846
1,2-Dimethoxy-10,11-methylenedioxynoraporphine, L-10
1,2-Dimethoxy-9,10-methylenedioxynoraporphine, N-29
3,11-Dimethoxy-1,2-methylenedioxynoraporphine, T-245
1,2-Dimethoxy-9,10-methylenedioxyoxoaporphine, O-195
2,3-Dimethoxy-8,9-methylenedioxypavinane, E-220
6,8-Dimethoxy-3,4-methylenedioxy-1-phenanthrenecarboxylic acid, M-263
2,4-Dimethoxy-7,8-methylenedioxy-3-prenylquinoline, D-715
4,7-Dimethoxy-2,3-methylenedioxyquinoline, Q-40
6,7-Dimethoxy-*N*-methylflindersine, F-90
7,8-Dimethoxy-*N*-methylflindersine, F-90
4,5-Dimethoxy-11-methylfuro[2,3-*c*]acridin-6(11*H*)-one, T-351
6,8-Dimethoxy-9-methylfuro[2,3-*b*]quinolin-4(9*H*)-one, F-222
5,7-Dimethoxy-9-methylfuro[2,3-*b*]quinolin-4(9*H*)-one, F-219
7,8-Dimethoxy-4-methyl-5*H*-indeno[1,2-*b*]pyridin-5-one, D-625
2,3-Dimethoxy-14-methylindolo[2′,3′:3,4]pyrido[2,1-*b*]quinazolin-5(14*H*)-one, E-309
6,7-Dimethoxy-2-methylisocarbostyril, I-305
5,6-Dimethoxy-2-methyl-1*H*-isoindole-1,3(2*H*)-dione, D-533
6,7-Dimethoxy-1-methylisoquinoline, D-627
6,7-Dimethoxy-2-methyl-1,3,4(2*H*)-isoquinolinetrione, D-600
6,7-Dimethoxy-2-methylisoquinolinium(1+), I-302
6,7-Dimethoxy-2-methyl-1(2*H*)-isoquinolinone, I-305
4,8-Dimethoxy-1-methyl-3-(3-methyl-2-butenyl)-2(1*H*)-quinolinone, T-583
2,3-Dimethoxy-16-methyl-10,11-[methylenebis(oxy)]rheadan-8-ol, G-87
1,2-Dimethoxy-10-methyl-3,4-methylenedioxyacridone, M-169
1,5-Dimethoxy-10-methyl-2,3-methylenedioxyacridone, T-56
7,8-Dimethoxy-10-methyl-2′,3′-methylenedioxy-1,2-benzophenanthridinium(1+), C-356
2,3-Dimethoxy-13-methyl-9,10-(methylenedioxy)-berbine, C-222
6,7-Dimethoxy-2-methyl-1-(3,4-methylenedioxyphenyl)isoquinolinium(1+), C-796
4,8-Dimethoxy-1-methyl-6,7-methylenedioxy-3-prenyl-2(1*H*)-quinolinone, P-750
2,6-Dimethoxy-3-methyl-5-(1-methylethyl)pyrazine, I-272
4,8-Dimethoxy-1-methyl-3-(3-methyl-2-oxo-3-butenyl)-2(1*H*)-quinolinone, T-583
4,8-Dimethoxy-1-methyl-3-(3-methyl-2-oxobutyl)-2(1*H*)-quinolinone, T-583
7-(4,5-Dimethoxy-2-methyl-1-naphthalenyl)-3,4-dihydro-6,8-dimethoxy-1,3-dimethylisoquinoline, A-985
7-(4,5-Dimethoxy-2-methyl-1-naphthalenyl)-3,4-dihydro-6-methoxy-1,3-dimethyl-8-isoquinolinol, A-981
5-(4,5-Dimethoxy-2-methyl-1-naphthalenyl)-1,2-dihydro-8-methoxy-3-methyl-6-isoquinolinol, A-987
5-(4,5-Dimethoxy-2-methyl-1-naphthalenyl)-1,2,3,4-tetrahydro-6,8-dimethoxy-1,2,3-trimethylisoquinoline, A-982
7-(4,5-Dimethoxy-2-methyl-1-naphthalenyl)-1,2,3,4-tetrahydro-1,3-dimethyl-8-isoquinolinol, D-793
7-(4,5-Dimethoxy-2-methyl-1-naphthalenyl)-1,2,3,4-tetrahydro-8-methoxy-1,3-dimethyl-6-isoquinolinol, A-990
5-(4,5-Dimethoxy-2-methyl-1-naphthalenyl)-1,2,3,4-tetrahydro-8-methoxy-1,3-dimethyl-6-isoquinolinol, A-982
4,8-Dimethoxy-3-(3-methyl-2-oxo-3-butenyl)-2(1*H*)-quinolinone, T-583
3,4-Dimethoxy-*N*-methylphenethylamine, D-718
3,6-Dimethoxy-1-methyl-2-phenyl-4(1*H*)-quinolinone, D-716
5,6-Dimethoxy-*N*-methylphthalimide, D-533
10,11-Dimethoxy-1-methylpicraline, B-420
1-(Dimethoxymethyl)piperidine, P-455
6,7-Dimethoxy-1-methyl-9*H*-pyrido[3,4-*b*]indole, D-620
4,6-Dimethoxy-1-methyl-2(1*H*)-quinolinone, Q-46
3,4-Dimethoxy-1-methyl-2(1*H*)-quinolinone, Q-45
4,8-Dimethoxy-1-methyl-2(1*H*)-quinolinone, Q-47
10,10′-Dimethoxy-$N^{4'}$-methyltetrahydrousambarensine, U-52

10,11-Dimethoxymitraphylline, C-117
7,8-Dimethoxymyrtopsine, M-804
5,8-Dimethoxy-2-naphthalenecarboxamide, D-635
10,11-Dimethoxynareline, N-47
10,12-Dimethoxynareline, N-47
8,9-Dimethoxy-6-nitrophenanthro[3,4-*d*]-1,3-dioxole-5-carboxylic acid, T-267
8,10-Dimethoxy-6-nitrophenanthro[3,4-*d*]-1,3-dioxole-5-carboxylic acid, T-266
1,2-Dimethoxynoraporphine, D-531
6,7-Dimethoxyonychine, D-625
3,4-Dimethoxy-α-oxobenzeneacetic acid, D-649
3-(1,1-Dimethoxy-2-oxoethoxy)-9,10-dihydro-1-methoxy-9-oxo-4-acridinecarboxaldehyde, D-717
7,7′-Dimethoxyperonatin B, P-271
2-(3,4-Dimethoxyphenacyl)pyrrolidine, R-165
N-(1,7-Dimethoxy-2-phenanthrenyl)acetamide, A-743
1,6-Dimethoxyphenazine, P-321
1,8-Dimethoxyphenazine, P-322
1,9-Dimethoxyphenazine, P-323
2,3-Dimethoxyphenazine, P-324
3,4-Dimethoxyphenethylamine, D-718
2-(3,4-Dimethoxyphenethyl)quinoline, D-645
1,2-Dimethoxy-3*H*-phenoxazin-3-one, T-599
6-(3,4-Dimethoxyphenyl)-3,4-dihydro-4-oxobenzo[*c*][2,7]naphthyridinium(1+), P-269
2-(2,3-Dimethoxyphenyl)-5,8-dimethoxy-3-propyl-4(1*H*)-quinolinone, D-711
2-(3,4-Dimethoxyphenyl)-5,6-dimethoxy-4(1*H*)-quinolinone, D-712
1-(3,4-Dimethoxyphenyl)-2-dimethylaminoethanol, M-18
4-(3,4-Dimethoxyphenyl)-4-[2-(dimethylamino)ethyl]-2-cyclohexen-1-ol, J-50
4-(3,4-Dimethoxyphenyl)-4-[2-(dimethylamino)ethyl]-2-cyclohexen-1-one, J-49
2-(3,4-Dimethoxyphenyl)-1,5-dimethyl-3,4-pyrrolidinediol, C-557
N-[2-(2,4-Dimethoxyphenyl)ethenyl]-3-pyridinecarboxamide, D-719
N-(3,4-Dimethoxyphenylethyl)cinnamide, L-87
N-[2-(3,4-Dimethoxyphenyl)ethyl]-3,4-dimethoxybenzeneacetamide, H-351
2-[(3,4-Dimethoxyphenyl)ethyl]guanidine, T-656
2-[2-(3,4-Dimethoxyphenyl)ethyl]-4-hydroxyquinoline, G-11
4-[2-(3,4-Dimethoxyphenyl)ethyl]-5-methyl-1*H*-imidazole-2-butanol, C-935
2-[2-(3,4-Dimethoxyphenyl)ethyl]quinoline, D-645
1-[2-(3,4-Dimethoxyphenyl)ethyl]-1,2,3,4-tetrahydro-6,7-dimethoxy-2-methylisoquinoline, H-338
8-(3,4-Dimethoxyphenyl)-1,3,4,6,9,9*a*-hexahydro-7-(4-methoxyphenyl)-2*H*-quinolizine, J-54
3*a*-(3,4-Dimethoxyphenyl)-2,3,3*a*,6,7,7*a*-hexahydro-1-methyl-1*H*-indol-6-ol, M-224
3*a*-(3,4-Dimethoxyphenyl)-1,2,3,3*a*,4,5-hexahydro-1-methyl-6*H*-indol-6-one, M-225
3*a*-(3,4-Dimethoxyphenyl)-2,3,3*a*,4,5,9*b*-hexahydro-1-methyl-1*H*-pyrrolo[2,3-*f*]quinoline, A-346
2-(2,3-Dimethoxyphenyl)-4-hydroxy-5,8-dimethoxy-3-propylquinoline, D-711
2-(3,4-Dimethoxyphenyl)-4-hydroxy-5,6-dimethoxyquinoline, D-712
N-[2-(3,4-Dimethoxyphenyl)-2-hydroxyethyl]benzamide, M-18
N-[2-(3,4-Dimethoxyphenyl)-2-hydroxyethyl]-*N*-methylformamide, M-18
3-(3,4-Dimethoxyphenyl)-*N*-[4-[[imino[(3-methyl-2-butenyl)amino]methyl]amino]butyl]-2-propenamide, C-107
N-[2-(3,4-Dimethoxyphenyl)-2-methoxyethyl]benzamide, M-18
2-(3,4-Dimethoxyphenyl)-3-(4-methoxyphenyl)quinolizidine, K-23
4-(3,4-Dimethoxyphenyl)-4-[2-(methylamino)ethyl]-2-cyclohexen-1-ol, J-50
4-[2-[[(3,4-Dimethoxyphenyl)methyl]amino]ethyl]-phenol, N-288
7-(3,4-Dimethoxyphenyl)-7-(2-methylaminoethyl)-5,6,7,8-tetrahydroquinoline, T-433
N-[(3,4-Dimethoxyphenyl)methyl]-4-methoxy-*N*-methylbenzeneethanamine, N-288
1-[(3,4-Dimethoxyphenyl)methyl]-1,2,3,4-tetrahydro-7-methoxy-2-methyl-6-isoquinolinol, P-715
5-[(3,4-Dimethoxyphenyl)methyl]-5,6,7,8-tetrahydro-6-methyl-1,3-dioxolo[4,5-*g*]isoquinoline, R-123
4-[6-(3,4-Dimethoxyphenyl)-2-morphinolinyl]phenol, C-363
3*a*-(3,4-Dimethoxyphenyl)octahydro-1-methyl-6*H*-indol-6-one, M-226
4-(3,4-Dimethoxyphenyl)octahydro-2*H*-quinolizin-2-ol, L-53
1-[3-(3,4-Dimethoxyphenyl)-1-oxopropyl]-1*H*-pyrrole, P-351
5-(3,4-Dimethoxyphenyl)-2-phenyloxazole, D-650
3-(3,4-Dimethoxyphenyl)propanamide, D-652
3-(3,4-Dimethoxyphenyl)propanoic acid 2-methylpropylamide, D-652
3-(3,4-Dimethoxyphenyl)propanoic acid pyrrolidide, P-351
1-[3-(3,4-Dimethoxyphenyl)propanoyl]-5,6-dihydro-2(1*H*)-pyridinone, P-473
N-[3-(3,4-Dimethoxyphenyl)propanoyl]pyrrole, P-351
3-(3,4-Dimethoxyphenyl)propylamine, A-896
1-(3,4-Dimethoxyphenyl)-2-(2-pyrrolidinyl)ethanone, R-165
4,6-Dimethoxy-2-phenylquinoline, D-659
1-(3,4-Dimethoxyphenyl)-1,2,3,4-tetrahydro-6,7-dimethoxy-2-methylisoquinoline, C-797
6-(3,4-Dimethoxyphenyl)-5,6,7,8-tetrahydro-*N*-methyl-6-quinolineethanamine, T-433
4,5-Dimethoxyphthalic acid, D-533
10,11-Dimethoxypicraphylline, P-404
3,4-Dimethoxy-ω-(2-piperidyl)acetophenone, P-522
7,8-Dimethoxyplatydesmine, D-720
(2,4-Dimethoxy-3-prenylcinnamoyl)piperidine, D-721
4,6-Dimethoxy-7-prenyloxyfuro[2,3-*b*]quinoline, F-221
4,7-Dimethoxy-6-prenyloxyfuro[2,3-*b*]quinoline, F-221
4,7-Dimethoxy-8-prenyloxyfuro[2,3-*b*]quinoline, F-223
4,8-Dimethoxy-9*H*-pyrido[3,4-*b*]indole, D-709
β,4-Dimethoxy-9*H*-pyrido[3,4-*b*]indole-1-ethanol, H-560
3-(4,8-Dimethoxy-9*H*-pyrido[3,4-*b*]indol-1-yl)-1-(9*H*-pyrido[3,4-*b*]indol-1-yl)-1-propanone, P-406
2,3-Dimethoxypyrido[2,3-*b*]pyrazine, D-722
3′,4′-Dimethoxy-2-pyrrolidin-2-yl-acetophenone, R-165
7,8-Dimethoxyquestiomycin A, A-862
2,4-Dimethoxyquinazoline, Q-13
6,8-Dimethoxy-2,4-quinolinediol, Q-42
7,8-Dimethoxy-2,4-quinolinediol, Q-43
2,4-Dimethoxyquinoline, Q-33
7,8-Dimethoxy-4-quinolinol, Q-48
1,4-Dimethoxy-2(1*H*)-quinolinone, Q-33
4,8-Dimethoxy-2(1*H*)-quinolinone, Q-47
7,8-Dimethoxy-4(1*H*)-quinolinone, Q-48
3,4-Dimethoxy-2(1*H*)-quinolinone, Q-45
4,9-Dimethoxysampangine, S-49
Dimethoxyscytonemin, T-279
3,3-Dimethoxy-16,28-secosolanidane, S-350
5,10-Dimethoxystrictamine, S-576
10,11-Dimethoxystrychnine, S-589
10,11-Dimethoxystrychnobrasiline, S-594
N,*N*′′-[1-(3,4-Dimethoxystyryl)-2-butenylene]diformamidine, A-25
N-(2,4-Dimethoxystyryl)-3-pyridinecarboxamide, D-719
6,7-Dimethoxy-3-(1,2,3,4-tetrahydro-6,7-dimethoxy-2-methyl-1-isoquinolinyl)-1(3*H*)-isobenzofuranone, C-644
6,7-Dimethoxy-3-(5,6,7,8-tetrahydro-4-methoxy-6-methyl-1,3-dioxolo[4,5-*g*]isoquinolin-5-yl)-1(3*H*)-isobenzofuranone, N-44
10,10′-Dimethoxytetrahydrousambarensine, U-52
2,3-Dimethoxy-1,5,6-trihydroxy-10-methylacridone, P-206
5,6-Dimethoxy-2-(2,3,6-trimethoxyphenyl)-4(1*H*)-quinolinone, D-712
10,11-Dimethoxytubulosan-8′-ol, T-675
3,5-Dimethoxytyramine, T-576
10,11-Dimethoxyuncarine D, C-117
10,11-Dimethoxyuncarine F, C-117
3,3′-Dimethoxyurabaine, U-41
4,7-Dimethoxy-1-vinyl-β-carboline, D-723
4,8-Dimethoxy-1-vinyl-β-carboline, D-686
4,9-Dimethoxy-1-vinylβ-carboline, D-724
10,11-Dimethoxy-α-yohimbine, S-251
Dimethyl N^2-creatininylphosphate, D-725
Dimethyl 4,9-dihydroxy-1,6-phenazinedicarboxylate, D-644
Dimethyl 6,6′-(1,2-dimethyl-1,2-ethanediyl)bis[1-phenazinecarboxylate], P-331
Dimethyl (dithiodiethylene)dicarbamate, P-622
Dimethyl lycogalate A, L-329
Dimethyl lycogalate B, L-329
Dimethyl lycogalate C, L-329
Dimethyl 21-oxo-11,21-cycloaspidopermidine-1,2-dicarboxylate, M-296
Dimethyl (*E*)-rhoifolinate, R-88
Dimethyl (*Z*)-rhoifolinate, R-88
3-(β,β-Dimethylacryloylamino)-20-dimethylaminopregnane, P-601
β,β-Dimethylacrylylcholine, C-419
O-β,β-Dimethylacrylylfuntuphyllamine C, A-881
N,O-Dimethylactinodaphnine, D-346
N^1,$N^{1'}$-Dimethylageliferin, A-190
7,8-Dimethylalloxazine, L-285
6-(γ,γ-Dimethylallylamino)purine, Z-11
8-(1,1-Dimethylallyl)confusameline, D-771
3-(3,3-Dimethylallyl)-4-(3,3-dimethylallyloxy)-2-quinolone, A-1529
3-(1,1-Dimethylallyl)-3-(3,3-dimethylallyl)-1,2,3,4-tetrahydro-2,4-quinolinedione, B-377
O-(3,3-Dimethylallyl)halfordinol, H-12
3-(γ,γ-Dimethylallyl)indole, M-411
8-(Dimethylallyl)-7-methoxydictamnine, H-570
8-(3,3-Dimethylallyloxy)-7-methoxy-*N*-methylflindersine, F-90
8-(3,3-Dimethylallyloxy)-*N*-methylflindersine, F-90
N-2-[4-(3,3-Dimethylallyloxy)phenyl]ethylcinnamide, H-667
α,α-Dimethylallylpaspalinine, A-169
3-(3,3-Dimethylallyl)-4,7,8-trimethoxy-2(1*H*)-quinolinone, P-625
4-(3,3-Dimethylallyl)tryptophan, M-419
Dimethylamine, D-726
2-(*N,N*-Dimethylamino)acetophenone, A-694
1-[(Dimethylamino)acetyl]-2,3,3*a*,13,14,15*a*-hexahydro-13-(1-methylpropyl)-5,8-ethenopyrrolo[3,2-*b*][1,5,8]oxadiazacyclotetradecine-12,15(1*H*,11*H*)-dione, N-332
3-Dimethylaminoacetyl-5-methoxyindole, D-727
N-[2-(Dimethylamino)benzoyl]glycyl-*N*-(2-carboxyphenyl)-N^2-methylvalinamide, V-154
4-(Dimethylamino)butanoic acid, A-715
4-(Dimethylamino)-1-butanol, A-716
N′-[4-(Dimethylamino)butyl]-*N*,*N*-dimethyl-1,4-butanediamine, S-340
N-[4-(Dimethylamino)butyl]-*p*-hydroxy-*N*-methylcinnamamide, C-456
N-[4-(Dimethylamino)butyl]-3-(4-hydroxyphenyl)-*N*-methyl-2-propenamide, C-456
N-[3-[[4-(Dimethylamino)butyl]methylamino]propyl]-3-methyl-2,4-dodecadienamide, T-609
N-[3-[[4-(Dimethylamino)butyl]methylamino]propyl]-3-methyldodecanamide, T-609
N-[3-[[4-(Dimethylamino)butyl]methylamino]propyl]-3-methyl-2-dodecenamide, T-609
N-[3-[[4-(Dimethylamino)butyl]methylamino]propyl]-5-methyl-2,4-tetradecadienamide, T-610
N-[3-[[4-(Dimethylamino)butyl]methylamino]propyl]-5-methyl-3-tetradecenamide, T-611
3-Dimethylamino-5-conanene, C-601
3-Dimethylaminoconan-5-ol, H-315
3-(Dimethylamino)con-5-enine, C-601
3-Dimethylaminocon-5-enin-12-ol, H-318

2-(Dimethylamino)-1,5-dihydro-5-(1*H*-indol-3-yl)-5-(2-oxopropyl)-4*H*-imidazol-4-one, D-728
17-(Dimethylamino)-3,6-dihydroxy-4-methyl-15-oxaandrost-7-ene-4-carboxylic acid, I-11
α-(Dimethylamino)-3,5-diiodo-*N*-[5-[[3-(3-iodo-4-methoxyphenyl)-2-(methylamino)-1-oxopropyl]amino]pentyl]-4-methoxybenzenepropanamide, D-729
20-(Dimethylamino)-3,16-dimethoxypregn-5-ene, A-884
3-(Dimethylamino)-4,14-dimethyl-9,19-cyclopregn-16-en-20-one, C-882
1-(Dimethylamino)-5,12-dimethyl-5,9-diazaheneicos-11-en-10-one, T-609
2-(Dimethylamino)-*N*-[5,8-dioxo-3-phenyl-7-(phenylmethyl)-2-oxa-6,9-diazabicyclo[10.2.2]hexadeca-10,12,14,16-tetraen-4-yl]-3-methylbutanamide, I-155
2-(Dimethylamino)ethanol, D-730
3-(Dimethylamino)-5-ethenyl-5-hydroxy-2-cyclopenten-1-one, A-824
4-[4-[2-(Dimethylamino)ethoxy]phenyl]-4-[2-(dimethylamino)ethyl]cyclohexanone, J-49
2-(Dimethylamino)ethyl benzoate, D-730
2-Dimethylaminoethyl cinnamate, D-730
4-[2-(Dimethylamino)ethyl]-1,2-benzenediol, D-920
α-[1-(Dimethylamino)ethyl]benzenemethanol, D-738
6-[2-(Dimethylamino)ethyl]-1,3-benzodioxole-5-carboxylic acid, F-175
5-[[6-[2-(Dimethylamino)ethyl]-1,3-benzodioxol-5-yl]acetyl]-1,3-benzodioxole-4-carboxylic acid, A-143
6-[[6-[2-(Dimethylamino)ethyl]-1,3-benzodioxol-5-yl]carbonyl]furo[3,4-*e*]-1,3-benzodioxol-8(6*H*)-one, N-51
7-[6-[2-(Dimethylamino)ethyl]-1,3-benzodioxol-5-yl]-6,7-dihydro-9*H*-1,3-dioxolo[4,5-*h*][2]benzopyran-9-one, P-276
[6-[2-(Dimethylamino)ethyl]-1,3-benzodioxol-5-yl](3-hydroxy-4-methoxyphenyl)ethanedione, C-793
6-[[6-[2-(Dimethylamino)ethyl]-1,3-benzodioxol-5-yl]methyl]-6,7-dihydro-6-hydroxy-8*H*-1,3-dioxolo[4,5-*e*]isoindol-8-one, F-191
6-[[6-[2-(Dimethylamino)ethyl]-1,3-benzodioxol-5-yl]methylene]-6,7-dihydro-8*H*-1,3-dioxolo[4,5-*e*]isoindol-8-one, F-172
3-[[6-[2-(Dimethylamino)ethyl]-1,3-benzodioxol-5-yl]methylene]-6,7-dimethoxy-1(3*H*)-isobenzofuranone, M-472
6-[[6-[2-(Dimethylamino)ethyl]-1,3-benzodioxol-5-yl]methylene]furo[3,4-*e*]-1,3-benzodioxol-8(6*H*)-one, A-144
2-(Dimethylaminoethyl)-3′,6-dihydroxy-4′,5-dimethoxystilbene, C-729
1-[2-(Dimethylamino)ethyl]-3,8-dimethoxy[1]benzopyrano[5,4,3-*cde*][1]benzopyran-5,10-dione, T-36
9-[2-(Dimethylamino)ethyl]-3,6-dimethoxydibenz[*b,f*]oxepin-4-ol, S-198
1-(2-Dimethylaminoethyl)-3,4-dimethoxy-6,7-methylenedioxyphenanthrene, T-318
1-Dimethylaminoethyl-3,4-dimethoxyphenanthrene, A-1532
5-[2-(Dimethylamino)ethyl]-2,3-dimethoxyphenol, H-465
5-[[2-[2-(Dimethylamino)ethyl]-4,5-dimethoxyphenyl]acetyl]-1,3-benzodioxole-4-carboxylic acid, B-120
7-[2-[2-(Dimethylamino)ethyl]-4,5-dimethoxyphenyl]-6*H*-indeno[4,5-*d*]-1,3-dioxole-6,8(7*H*)-dione, D-217
6-[[2-[2-(Dimethylamino)ethyl]-4,5-dimethoxyphenyl]methylene]-6,7-dihydro-8*H*-1,3-dioxolo[4,5-*e*]isoindol-8-one, F-171
6-[[2-[2-(Dimethylamino)ethyl]-4,5-dimethoxyphenyl]methylene]furo[3,4-*e*]-1,3-benzodioxol-8(6*H*)-one, A-142
5-[2-[2-[2-(Dimethylamino)ethyl]-4,5-dimethoxyphenyl]-2-oxoethyl]-1,3-dioxole-4-carboxylic acid, B-120
3-(2-Dimethylaminoethyl)-5-hydroxyindole, B-393
3-(2-Dimethylaminoethyl)-4-hydroxyindole, H-480
1-(2-Dimethylaminoethyl)-3-hydroxy-4-methoxyphenanthrene, A-1532
3-[2-(Dimethylamino)ethyl]-2-[2-(3-hydroxy-4-methoxyphenyl)ethenyl]-6-methoxyphenol, C-729
4-[2-(Dimethylamino)ethyl]-4-(4-hydroxyphenyl)-2,5-cyclohexadien-1-one, J-49
4-[2-(Dimethylamino)ethyl]-4-(4-hydroxyphenyl)-cyclohexanone, J-49
4-[2-(Dimethylamino)ethyl]-4-(4-hydroxyphenyl)-2-cyclohexen-1-one, J-49
4-(2-Dimethylaminoethyl)-2-(4-hydroxyphenyl)-7-methoxybenzofuran, S-197
4-[2-(Dimethylamino)ethyl]imidazole, D-731
3-(2-Dimethylaminoethyl)indole, D-785
3-(2-Dimethylaminoethyl)-1*H*-indol-5-ol, B-393
3-(2-Dimethylaminoethyl)-1*H*-indol-4-ol, H-480
3-(2-Dimethylaminoethyl)-2*H*-indol-2-one, H-754
6-[[6-[2-(Dimethylamino)ethyl]-4-methoxy-1,3-benzodioxol-5-yl]acetyl]-2,3-dimethoxybenzoic acid, N-35
3-[[6-[2-(Dimethylamino)ethyl]-4-methoxy-1,3-benzodioxol-5-yl]methylene]-2,3-dihydro-6,7-dimethoxy-1*H*-isoindol-1-one, N-36
4-[4-[2-(Dimethylamino)ethyl]-7-methoxy-2-benzofuranyl]phenol, S-197
3-[2-(Dimethylamino)ethyl]-1-methoxy-10*H*-[1,3]dioxolo[6,7]phenanthro[4,5-*bcd*]pyran-10-one, T-327
3-[2-(Dimethylamino)ethyl]-1-methoxyindole, D-785
3-[2-(Dimethylamino)ethyl]-6-methoxy-2-[2-(4-methoxyphenyl)ethenyl]phenol, L-96
1-(2-Dimethylaminoethyl)-6-methoxy-3,4-methylenedioxyphenanthrene, I-343
1-(2-Dimethylaminoethyl)-7-methoxy-3,4-methylenedioxyphenanthrene, U-64
1-[2-(Dimethylamino)ethyl]-4-methoxy-3-phenanthrenol, A-1532
4-[2-(Dimethylamino)ethyl]-2-methoxyphenol, H-566
4-[2-(Dimethylamino)ethyl]-4-(4-methoxyphenyl)-cyclohexanone, J-49
1-[2-(Dimethylamino)ethyl]-4-methoxy-9*H*-pyrido[3,4-*b*]indol-8-ol, P-412
2-[2-(Dimethylamino)ethyl]-4,5-methylenedioxybenzoic acid, F-175
1-(2-Dimethylaminoethyl)-3,4-methylenedioxyphenanthrene, S-546
3-(2-Dimethylaminoethyl)oxindole, H-754
4-(2-Dimethylaminoethyl)phenol, H-357
2-Dimethylaminoethylphosphonic acid, A-773
1-(2-Dimethylaminoethyl)-3,4,6,7-tetramethoxyphenanthrene, M-559
1-(2-Dimethylaminoethyl)-3,4,7,8-tetramethoxyphenanthrene, U-63
1-(2-Dimethylaminoethyl)-2,3,4-trimethoxy-6,7-methylenedioxyphenanthrene, T-328
1-(2-Dimethylaminoethyl)-2,3,4-trimethoxyphenanthrene, M-238
4-(Dimethylamino)-1,4,4*a*,5,12,12*a*-hexahydro-3,10,11,12*a*-tetrahydroxy-6-methyl-1,12-dioxo-2-naphthacenecarboxamide, A-1034
4-[2-(Dimethylamino)-1-hydroxyethyl]-1,2-benzenediol, A-152
20-(Dimethylamino)-16-hydroxy-3-(3-isopropyllactam)pregnan-4-one, P-8
20-(Dimethylamino)-16-hydroxy-3-(3-isopropyl-2-oxo-1-azetidinyl)pregnan-4-one, P-8
20-(Dimethylamino)-16-hydroxy-3-(3-isopropyl-2-oxo-1-azetidinyl)pregn-2-en-4-one, P-8
2-(Dimethylamino)-3-hydroxy-*N*-[7-(2-methylpropyl)-5,8-dioxo-3-phenyl-2-oxa-6,9-diazabicyclo[10.2.2]hexadeca-10,12,14,16-tetraen-4-yl]butanamide, N-331
2-(Dimethylamino)-1-(4-hydroxyphenyl)-8,10-dimethyl-6-dodecen-3-one, A-1321
20-(Dimethylamino)-2-hydroxy-3-phthalimidopregnan-4-yl acetate, D-262
20-(Dimethylamino)-18-hydroxypregna-1,4-dien-3-one, A-810
3-(Dimethylamino)-2-hydroxypregn-5-en-18,20-olide, L-30
3-(Dimethylamino)-2-hydroxypregn-5-en-16-one, A-813
3-(Dimethylamino)-2-hydroxypregn-5-en-20-one, A-814
2-Dimethylamino-6-hydroxypurine, G-210
20-(Dimethylamino)-16-hydroxy-4,4,14-trimethyl-9,19-cyclopregnan-3-one, C-884
3-(Dimethylamino)-5-hydroxy-5-vinyl-2-cyclopenten-1-one, A-824
20-(Dimethylamino)-18-ikemaoyl-3-(methylamino)pregn-5-ene-15,18-diol, D-270
2-[[(Dimethylamino)iminomethyl]amino]ethanesulfonic acid, A-1522
2-(Dimethylamino)-5-(1*H*-indol-3-yl)-4*H*-imidazol-4-one, D-732
2-(Dimethylamino)-*N*-[7-(1*H*-indol-3-ylmethyl)-5,8-dioxo-3-phenyl-2-oxa-6,9-diazabicyclo[10.2.2]hexadeca-10,12,14,16-tetraen-4-yl]-3-methylbutanamide, I-156
2-(Dimethylamino)-*N*-[7-(1*H*-indol-3-ylmethyl)-3-(1-methylethyl)-5,8-dioxo-2-oxa-6,9-diazabicyclo[10.2.2]hexadeca-10,12,14,15-tetraen-4-yl]-4-methylpentanamide, T-300
4-(Dimethylamino)-6-(1*H*-indol-3-yl)-2*H*-1,3,5-oxadiazin-2-one, A-245
20-(Dimethylamino)-3-(3-isopropyl-2-oxo-1-azetidinyl)pregn-2-en-4-one, P-8
17-Dimethylaminolobohedleolide (incorr.), A-723
2-(Dimethylamino)-1-(5-methoxy-1*H*-indol-3-yl)ethanone, D-727
12-(Dimethylamino)-15-methoxy-9-(1-methylpropyl)-6-(2-methylpropyl)-4,7,10-triazabicyclo[12.3.1]octadeca-1(18),2,14,16-tetraene-5,8,11-trione, M-719
12-(Dimethylamino)-15-methoxy-9-(1-methylpropyl)-6-(phenylmethyl)-4,7,10-triazabicyclo[12.3.1]octadeca-1(18),2,14,16-tetraene-5,8,11-trione, M-718
20-(Dimethylamino)-3-methoxypregna-5,16-diene, A-876
20-(Dimethylamino)-3-methoxypregn-5-en-16-ol, A-884
20-Dimethylamino-3-methylaminopregnane, P-601
20-(Dimethylamino)-3-(methylamino)pregnan-4-ol, D-266
20-(Dimethylamino)-3-(methylamino)pregn-5-ene-16,18-diol, D-271
20-(Dimethylamino)-3-(methylamino)pregn-14-ene, P-607
20-(Dimethylamino)-3-(methylamino)pregn-5-en-15-ol, D-278
α-[(Dimethylamino)methyl]benzenemethanol, A-864
α-[(Dimethylamino)methyl]benzyl alcohol, A-864
20-Dimethylamino-14-methyl-9,19-cyclopregnan-3-one, B-459
α-[(Dimethylamino)methyl]-3,4-dimethoxybenzenemethanol, M-18
3-[(Dimethylamino)methyl]-1,5-dimethoxyindole, D-734
3-[(Dimethylamino)methyl]-5,7-dimethoxyindole, D-733
3-(Dimethylaminomethyl)-1-(1,1-dimethyl-2-propenyl)-1*H*-indole, D-736
3-(Dimethylaminomethyl)-5-ethoxyindole, D-734
α-(Dimethylamino)-*N*-[3-(1-methylethyl)-7-(2-methylpropyl)-5,8-dioxo-2-oxa-6,9-diazabicyclo[10.2.2]hexadeca-10,12,14,15-tetraen-4-yl]-1*H*-indole-3-propanamide, N-334
3-[(Dimethylamino)methyl]-5-hydroxyindole, D-734
3-[(Dimethylamino)methyl]-7-hydroxyindole, D-735
3-[(Dimethylamino)methyl]indole, D-736
3-[(Dimethylamino)methyl]-1*H*-indol-5-ol, D-734
3-[(Dimethylamino)methyl]-1*H*-indol-7-ol, D-735
3-(Dimethylaminomethyl)-5-methoxyindole, D-734
3-[(Dimethylamino)methyl]-7-methoxyindole, D-735

3-(Dimethylamino)-14-methyl-4-methylene-9,19-cyclopregn-17(20)-en-16-one, C-912
3-(Dimethylamino)-14-methyl-4-methylene-9,19-cyclopregn-16-en-20-one, C-882
2-(Dimethylamino)-3-methyl-*N*-[7-(1-methylethyl)-5,8-dioxo-3-phenyl-2-oxa-6,9-diazabicyclo[10.2.2]hexadeca-10,12,14,15-tetraen-4-yl]-pentanamide, S-92
2-(Dimethylamino)-3-methyl-*N*-[3-(1-methylethyl)-7-(2-methylpropyl)-5,8-dioxo-2-oxa-6,9-diazabicyclo[10.2.2]hexadeca-10,12,14,15-tetraen-4-yl]-pentanamide, F-151
2-(Dimethylamino)-3-methyl-*N*-[7-(2-methylpropyl)-5,8-dioxo-3-phenyl-2-oxa-6,9-diazabicyclo[10.2.2]hexadeca-10,12,14,16-tetraen-4-yl]-pentanamide, I-154
2-(Dimethylamino)-4-methyl-*N*-[7-(1-methylpropyl)-5,8-dioxo-3-phenyl-2-oxa-6,9-diazabicyclo[10.2.2]hexadeca-10,12,14,15-tetraen-4-yl]-pentanamide, M-793
3-(Dimethylaminomethyl)phenol, H-416
1-(Dimethylamino)-2-methyl-2-propanol, A-840
α-(Dimethylamino)-*N*-[7-(2-methylpropyl)-5,8-dioxo-3-phenyl-2-oxa-6,9-diazabicyclo[10.2.2]hexadeca-10,12,14,15-tetraen-4-yl]benzenepropanamide, C-229
3-(Dimethylaminomethyl)trimethoxyindole, D-734
α-(Dimethylamino)-*N*-(1,2,11,12,14,15,16,16*a*-octahydro-1,12-dioxo-10-phenyl-5,8-etheno-10*H*-pyrrolo[1,2-*e*][1,5,8]oxadiazacyclotetradecin-11-yl)benzenepropanamide, C-91
1-[2-(Dimethylamino)-1-oxo-3-phenylpropyl]-2,3,3*a*,13*a*,14,15,16,18*a*-octahydro-8-methoxy-5,9-metheno-9*H*-dipyrrolo[3,2-*b*:1′,2′-*e*][1,5,8]oxadiazacyclopentadecine-13,18(1*H*,12*H*)-dione, D-737
1-[2-(Dimethylamino)-1-oxo-3-phenylpropyl]-1,2,3,3*a*,12,14,15,16*a*-octahydro-8-methoxy-14-(2-methylpropyl)-5,9-metheno-9*H*-pyrrolo[3,2-*b*][1,5,8]oxadiazacyclopentadecine-13,16-dione, N-330
20-(Dimethylamino)-3-oxopregna-1,4-dien-18-al, A-810
3-[2-(Dimethylamino)phenyl]-2,3-dihydro-3-hydroxy-5-methoxypyrrolo[2,1-*b*]quinazolin-9(1*H*)-one, A-1039
3-[2-(Dimethylamino)phenyl]-2,3-dihydropyrrolo[2,1-*b*]quinazolin-9(1*H*)-one, V-40
2-Dimethylamino-1-phenylethanol, A-864
3-(Dimethylamino)-1-(2-phenylethyl)-2,6-piperidinedione, P-385
1-(1-Dimethylamino-2-phenylethyl)-9*H*-pyrido[3,4-*b*]indol-6-ol, E-284
7-[4-(Dimethylamino)phenyl]-*N*-hydroxy-4,6-dimethyl-7-oxo-2,4-heptadienamide, T-496
2-Dimethylamino-1-phenyl-1-propanol, D-738
3-(2-Dimethylaminophenyl)-1,2,3,9-tetrahydropyrrolo[2,1-*b*]quinazoline, V-40
3-(Dimethylamino)pregna-5,17(20)-diene-2,16-diol, A-873
20-(Dimethylamino)pregna-1,4-dien-3-one, A-878
N-[3-(Dimethylamino)pregna-14,16-dien-20-yl]-*N*-methylformamide, P-600
20-(Dimethylamino)pregnan-3-ol, A-881
20-(Dimethylamino)pregnan-3-one, A-883
3-(Dimethylamino)pregnan-20-one, A-882
20-Dimethylaminopregn-5-en-3-ol, A-886
20-Dimethylaminopregn-4-en-3-one, A-891
3-(Dimethylamino)pregn-17(20)-en-16-one, A-890
3-Dimethylaminopregn-16-en-20-one, A-889
3-Dimethylaminopregn-5-en-20-one, A-888
N′-[3-(Dimethylamino)propyl]-*N,N*-dimethyl-1,3-propanediamine, D-255
3-(3-Dimethylaminopropyl)-1(3*H*)-isobenzofuranone, D-739
3-(3-Dimethylaminopropyl)phthalide, D-739
N-[3-(Dimethylamino)propyl]-*N,N*′,*N*′-trimethyl-1,3-propanediamine, D-255
20-(Dimethylamino)-2′,3,3′,4-tetrahydro-3′-methylpregn-3-eno[3,4-*d*]oxazole, A-612
2-Dimethylamino-6-(1,2,3-trihydroxypropyl)-4(3*H*)-pteridinone, A-923
20-(Dimethylamino)-4,4,14-trimethyl-9,19-cyclopregn-1-en-3-one, C-850
Dimethylammonium chloride, D-726
O,N-Dimethylancistrocladine, A-982
N,N-Dimethylanomurine, A-1069
N-[4-(Dimethylarsinoyl)butanoyl]aminoethylsulfonic acid, D-740
N-[4-(Dimethylarsinoyl)butanoyl]taurine, D-740
Di-*O*-methylasterriquinol D, A-1519
3,5-Di-*O*-methylatalaphylline, T-546
1,9-Dimethyl-9-azabicyclo[3.3.1]nonan-3-one, M-389
3,8-Dimethyl-2-azabicyclo[2.2.2]oct-2-en-5-one, M-139
4,4-Dimethyl-15-aza-*D*-homoergosta-8,14,24(28)-trien-3-ol, D-742
6,6-Dimethyl-2-azaspiro[4.4]non-1-ene, D-741
4,4-Dimethyl-15-azasterol, D-742
7,8-Dimethylbenzo[*g*]pteridine-2,4(1*H*,3*H*)-dione, L-285
(2,2-Dimethyl-2*H*-1-benzopyran-6-yl)ethanamine, A-770
N-[2-(2,2-Dimethyl-2*H*-1-benzopyran-6-yl)ethyl]-benzamide, A-770
N-[2-(2,2-Dimethyl-2*H*-1-benzopyran-6-yl)ethyl]-*N*-methyl-3-pyridinecarboxamide, A-770
N-[2-(2,2-Dimethyl-2*H*-1-benzopyran-6-yl)ethyl]-3-pyridinecarboxamide, A-770
3,3′-Dimethyl-[1,1′-bi-9*H*-carbazole]-2,2′-diol, B-128
3,3′-Dimethyl-[2,2′-bi-1*H*-carbazole]-1,1′,4,4′(9*H*,9′*H*)-tetrone, B-213
1,1′-Dimethyl-2,2′-bipyridinium(2+), B-144
1,1′-Dimethyl-3,3′-bipyridinium(2+), D-743
N,N′-Dimethyl-3,3′-bipyridyl(2+), D-743
1,1′-Dimethyl-2,3′-bipyrrolidine, B-147
1-(1,1′-Dimethyl[2,3′-bipyrrolidin]-2′-yl)-2-propanone, M-548
1-(1,1′-Dimethyl[2,3′-bipyrrolidin]-5′-yl)-2-propanone, M-549
5,5′-Dimethyl-11,11′-bi-5*H*-quindoline, B-168
2,5-Dimethyl-3,6-bis(3-methylbutanoyl)pyrazine, B-184
2,5-Dimethyl-3,6-bis(3-methylbutyl)pyrazine, B-184
3,6-Dimethyl-α,α′-bis(2-methylpropyl)-2,5-pyrazinemethanol, B-184
N,N′-Dimethyl-1,4-butanediamine, B-422
N,N-Dimethyl-1,4-butanediamine, B-422
2,7-Dimethyl-5,10-[2]butenophenazine-11,14-dione, D-744
1,2-Dimethyl-9*H*-carbazole-3,4-diol, D-571
1,2-Dimethyl-9*H*-carbazole-3,4,6-triol, T-543
N,N-Dimethylciliatine, A-773
N,O-Dimethylcocsoline, I-339
N,N-Dimethylcon-5-enin-3-amine, C-601
N,N-Dimethyl-(+)-coniine, P-652
3,10-Di-*O*-methylconstrictosine, C-624
O,O-Dimethylcoreximine, X-30
O,O-Dimethylcorytuberine, T-248
N,O-Dimethylcrotsparine, P-643
O,O-Dimethyl-(-)-curine, C-812
2,2′-Dimethylcycleaninium, C-835
4,14-Dimethyl-9,19-cyclopregnane-3,20-diamine, B-474
N,N′-Dimethylcyclovirobuxine D, C-917
6,6′-Di-*O*-methyldauricoline, D-88
O,O-Dimethyl-1′,2′-dehydronorkohatine, K-56
2,9-Dimethyl-2,9-diazatricyclo[10.2.2.2^{5,8}]octadeca-5,7,12,14,15,17-hexaene-3,10-diol, D-745
1,9-Dimethyl-3,9-dihydro-1*H*-purine-2,6-dione, X-5
3,9-Dimethyl-3,9-dihydro-1*H*-purine-2,6-dione, X-5
Dimethyldihydrowarifteine, W-9
N,N-Dimethyl-3,4-dihydroxyphenethylamine, D-920
N,N-Dimethyl-3,4-dimethoxyphenethylamine, D-718
2,6-Dimethyldinicotinic acid, D-776
1,3-Dimethyl-2,6-dioxopyrimidine, D-777
N,N′-Dimethyl-*N,N*′-diphenylurea, D-818
4,6-Dimethyl-2,4-dodecadienamide, D-746
4,6-Dimethyl-2,4-dodecadienoic acid, D-746
N^{b}-(3,5-Dimethyl-2,4-dodecadienoyl)tryptamine, T-639
N,N-Dimethyldopamine, D-920
O,O-Dimethyldopamine, D-718
Di(α-methylene-γ-butyrolactonyl)amine, I-46
Dimethylenedicytisine, T-362
6,14-Di-*O*-methyl-6-epiforesticine, M-323
6,8-Dimethylergolin-9-ol, F-181
N-Dimethylethanolamine, D-730
4-(1,1-Dimethylethyl)-2-oxazolidinone, B-440
Dimethylformamide, D-747
N,N-Dimethylfuntumine, A-882
O,O-Dimethylgovanine, X-30
O,O-Dimethylgrisabine, G-177
1,3-Dimethylguanine, D-748
N^{2},*N*^{2}-Dimethylguanine, G-210
1,7-Dimethylguanine, M-467
1,9-Dimethylguanine, M-467
3,7-Dimethylguanine, M-468
3,9-Dimethylguanine, M-468
7,9-Dimethylguaninium, H-143
N-Dimethylheliamine, T-158
7-[2′-(1,6-Dimethyl-2,4-heptadienyl)[2,4′-bithiazol]-4-yl]-3,5-dimethoxy-4-methyl-2,6-heptadienamide, M-807
N,O-Dimethylhernovine, T-248
4-(1,5-Dimethyl-1,3-hexadienyl)-1-isocyano-1-methylcyclohexane, I-213
N^{α},*N*^{α}-Dimethylhistamine, D-731
Dimethylholamine, A-888
Dimethylholaphyllamine, A-888
Dimethylhuperzine A, H-375
N,N-Dimethyl-3-hydroxy-4,5-dimethoxyphenethylamine, H-465
Dimethyl-2-hydroxyethylamine, D-730
1,7-Dimethylhypoxanthine, P-820
1,9-Dimethylhypoxanthine, P-820
3,7-Dimethylhypoxanthine, P-820
3,9-Dimethylhypoxanthine, P-820
1,3-Dimethyl-4-imidazoleacetic acid betaine, Z-32
1,3-Dimethyl-4-imidazolecarboxylic acid betaine, N-318
4,5-Dimethylimidazole, D-750
2,4(5)-Dimethylimidazole, D-749
N,N-Dimethyl-1*H*-imidazole-4-ethanamine, D-731
1,4-Dimethyl-1*H*-imidazole, M-473
1,5-Dimethyl-1*H*-imidazole, M-473
2,4-Dimethyl-2-imidazoline, D-428
1,9-Dimethyl-6-imino-8-oxopurine, T-194
1,7-Dimethyl-1*H*-indole-3-carboxaldehyde, M-475
2,4-Dimethyl-1*H*-indole, D-751
N,N-Dimethyl-1*H*-indole-3-ethanamine, D-785
1,3-Dimethyl-1*H*-indole, M-474
N,N-Dimethyl-1*H*-indole-3-methanamine, D-736
5,7-Dimethylindolizidine, O-42
N^{1},*N*^{1}-Dimethylisoageliferin, A-190
4,4′-Dimethylisoborreverine, I-198
7,7′-*O,O*-Dimethylisochondodendrine, C-835
N,O-Dimethylisocorydine, T-248
1,3-Dimethylisoguanine, A-818
3,7-Dimethylisoguanine, A-818
1,3-Dimethylisoguaninium, A-818
N,N-Dimethyl-L-isoleucyl-*N*-[7-(1*H*-indol-3-ylmethyl)-3,3-dimethyl-5,8,11-trioxo-2-oxa-6,9-diazabicyclo[10.2.2]hexadeca-12,14,15-trien-4-yl]-L-valinamide, H-763
O,N-Dimethylisopiline, T-521
3,4-Dimethyl-1,6,8-isoquinolinetriol, T-544
N,N-Dimethyllindcarpine, T-248
N,N′-Dimethyllindoldhamine, D-88
O,N-Dimethylliriodendronine, L-193
O,O-Dimethylmagnoflorine, T-248
N,N-Dimethylmethanamine *N*-oxide, T-601
N,N-Dimethylmethanamine, T-600
2,5-Dimethyl-6-methoxy-4,7-isoindolequinone, M-248
N,N-Dimethyl-4-methoxyphenethylamine, M-280
N,N-Dimethyl-3-methoxytyramine, H-566
3,4-Dimethyl-7-(methylamino)-5,8-isoquinolinedione, D-752
3,4-Dimethyl-7-(methylamino)-5,8-isoquinolinequinone, D-752

N,N′-Dimethyl-*N*-[3-(methylamino)propyl]-1,3-propanediamine, D-255
2,5-Dimethyl-3-(3-methylbutanoyl)-6-(3-methyl-2-butenoyl)pyrazine, B-184
3,6-Dimethyl-1-(3-methyl-2-butenyl)-9*H*-carbazole, D-753
2,5-Dimethyl-3-(3-methyl-1-butenyl)-6-(3-methylbutyl)pyrazine, B-184
2,5-Dimethyl-3-(3-methyl-2-butenyl)-6-(3-methylbutyl)pyrazine, B-184
2,5-Dimethyl-3-(3-methyl-2-butenyl)pyrazine, D-754
2,5-Dimethyl-3-(3-methylbutyl)pyrazine, D-754
2,5-Dimethyl-3-(2-methylbutyl)pyrazine, D-755
α,α-Dimethyl-6-(1-methylethyl)pyrazinemethanol, D-701
α,α-Dimethyl-5-(3-methyl-1-oxo-2-butenyl)-1*H*-indole-3-propanal, D-756
2,5-Dimethyl-3-(2-methylpropyl)pyrazine, D-757
2,2-Dimethyl-5-[5-methyl-6-(1*H*-pyrrol-2-yl)-1,3,5-hexatrienyl]-3(2*H*)-furanone, W-5
2,5-Dimethyl-3-(methylthio)pyrazine, D-758
N,N-Dimethyl-5-(methylthio)varacin, L-205
N,O-Dimethylmicranthine, M-591
O,O-Dimethylmunitagine, P-514
N^1,N^3-Dimethylnaamine D, N-6
N,O-Dimethylnandigerine, B-397
α-(4,8-Dimethyl-3,7-nonadienyl)-1,2-dihydro-α,4-dimethylfuro[2,3-*c*]quinoline-2-methanol 5-oxide, A-1541
3-(4,8-Dimethyl-3,7-nonadienyl)-3,5-dimethyl-3*H*-pyrano[2,3-*c*]quinoline 6-oxide, A-1545
α-(4,8-Dimethyl-1,3,7-nonatrienyl)-2,3-dihydro-α,4-dimethylfuro[3,2-*c*]quinoline-2-methanol 5-oxide, A-1546
N,2-Dimethyl-6-nonylpiperidine, M-492
O,N-Dimethylnorbelladine, N-288
6-(3,7-Dimethyl-2,6-octadienyl)-2,3-dihydro-7-hydroxy-5-methoxy-2-(2-phenylethyl)-1*H*-isoindol-1-one, H-145
5-(3,7-Dimethyl-2,6-octadienyl)-2,5-dihydro-2-oxo-3-phenylfuro[2,3-*b*]phenazine-11-carboxylic acid, B-64
5-(3,7-Dimethyl-2,6-octadienyl)-2,5-dihydro-2-oxo-3-phenylfuro[2,3-*b*]phenazine-9-carboxylic acid, B-64
2-(3,7-Dimethyl-2,5-octadienyl)-4,6-dihydroxy-5-methyl-3-propylpyridine, I-179
2-(3,7-Dimethyl-2,6-octadienyl)-1,3-dimethyl-4(1*H*)-quinolinone, D-760
1-(3,7-Dimethyl-2,6-octadienyl)-2-hydroxy-9*H*-carbazole-3-carboxaldehyde, M-729
8-(3,7-Dimethyl-2,6-octadienyl)-7-hydroxy-3-methyl-1*H*-carbazole-1,4(9*H*)-dione, M-767
6-(3,7-Dimethyl-2,5-octadienyl)-4-hydroxy-3-methyl-5-propyl-2(1*H*)-pyridinone, I-179
2-(3,7-Dimethyl-2,6-octadienyl)-4-hydroxy-3-methylquinoline, D-760
2-(3,7-Dimethyl-2,6-octadienyl)-4-hydroxyquinoline, D-762
3-(3,7-Dimethyl-2,6-octadienyl)-1*H*-indole, D-759
8-(3,7-Dimethyl-2,6-octadienyl)-7-methoxy-3-methyl-1*H*-carbazole-1,4(9*H*)-dione, M-767
1-(3,7-Dimethyl-2,6-octadienyl)-3-methyl-9*H*-carbazole-2,7-diol, E-277
1-(3,7-Dimethyl-2,6-octadienyl)-6-methyl-9*H*-carbazole-2,7-diol, E-276
4-(3,7-Dimethyl-2,6-octadienyl)-6-methyl-9*H*-carbazol-3-ol, E-302
2-(3,7-Dimethyl-2,6-octadienyl)-3-methyl-1-(methylthiomethyl)-4(1*H*)-quinolinone, D-760
2-(3,7-Dimethyl-2,6-octadienyl)-3-methyl-4-quinolinol, D-760
2-(3,7-Dimethyl-2,6-octadienyl)-1-methyl-4(1*H*)-quinolinone, D-762
2-(3,7-Dimethyl-2,6-octadienyl)-3-methyl-4(1*H*)-quinolinone, D-760
4-(3,7-Dimethyl-2,6-octadienyl)-1*H*-pyrrole-2-carboxylic acid, D-761
2-(3,7-Dimethyl-2,6-octadienyl)-4(1*H*)-quinolinone, D-762
2-(3,7-Dimethyl-2,6-octadienyl)-1,3,5-trihydroxy-10-methyl-9(10*H*)-acridinone, G-121
6-(2,5-Dimethyloctylidene)octahydro-8-methyl-7,8-indolizinediol, A-629
α-(3,3-Dimethyloxiranyl)-1*H*-indole-7-methanol, M-414
4-(3,3-Dimethyloxiranyl)-2-methylindolo[2,3-*a*]quinolizine, H-88
2-[5-[(3,3-Dimethyloxiranyl)methyl]-1*H*-indol-3-yl]-3-methyl-1,3-butanediol, E-134
3-[(3,3-Dimethyloxiranyl)methyl]-6-(3-methyl-2-butenyl)-1*H*-indole, B-201
N^6,9-Dimethyl-8-oxoadenine, A-819
4,8-Dimethyl-15-oxo-16-aza-18-norandrost-13-ene-4-carboxylic acid, D-763
4,8-Dimethyl-17-oxo-16-aza-18-norandrost-13-ene-4-carboxylic acid, D-764
N^9-(1,1-Dimethyl-3-oxobutyl)adenine, G-15
3-[1-(1,1-Dimethyl-3-oxobutyl)imidazol-4-yl]-2-propenoic acid, U-46
4-[2-(3,5-Dimethyl-2-oxocyclohexyl)-2-hydroxyethyl]-2,6-piperidinedione, D-765
3-(6,8-Dimethyl-1-oxo-2,4,6-decatrienyl)-1,4-dihydroxy-5-(4-hydroxyphenyl)-2(1*H*)-pyridinone, B-28
3-(8,10-Dimethyl-1-oxo-2,4,6,8-dodecatetraenyl)-4-hydroxy-5-(4-hydroxyphenyl)-2(1*H*)-pyridinone, F-10
1,7-Dimethyl-8-oxo-9*H*-guanine, A-753
α,5-Dimethyl-2-oxo-4-imidazolidinehexanoic acid, M-432
1,3-Dimethyl-8-oxoisoguanine, A-754
3-(4,6-Dimethyl-1-oxo-2,4-octadienyl)-1,4-dihydroxy-5-(4-hydroxyphenyl)-2(1*H*)-pyridinone, T-72
4-[3-(3,5-Dimethyl-6-oxo-2-piperidinylidene)-2-oxopropyl]-2,6-piperidinedione, E-92
4-[(2,2-Dimethyl-1-oxopropyl)amino]butanoic acid, A-715
1,3-Dimethyl-6-(1-oxopropyl)-2,4(1*H*,3*H*)-pteridinedione, H-702
O,N-Dimethylpapaverrubine D, G-87
7′,12-Di-*O*-methylpedroamine, D-88
3,5-Dimethyl-2-pentylpyrazine, D-766
N,N-Dimethylphenanthro[3,4-*d*]-1,3-dioxole-5-ethanamine, S-546
N,N-Dimethylphenethylamine, P-342
N,N-Dimethylphenylalanyl-*N*-[5,8-dioxo-3-phenyl-7-(phenylmethyl)-2-oxa-6,9-diazabicyclo[10.2.2]-hexadeca-10,12,14,15-tetraen-4-yl]prolinamide, A-151
N,N-Dimethyl-1-phenylethanolamine, A-864
N,3-Dimethyl-*N*-(2-phenylethenyl)butanamide, T-303
2,5-Dimethyl-3-(2-phenylethenyl)pyrazine, D-767
3,4-Dimethyl-5-phenyl-2-oxazolidinone, M-511
2,6-Dimethyl-4-phenyl-3,5-pyridinedicarboxylic acid, D-768
N,N′-Dimethylphlegmarine, P-361
N,O-Dimethylphylline, T-177
Di-*O*-methylphyllostemine β-*N*-oxide, S-248
3,6-Dimethyl-2,5-piperazinedione, D-769
2,6-Dimethylpiperidine, D-770
α,6-Dimethyl-2-piperidineethanol, H-705
4-[2-(1,6-Dimethyl-2-piperidinyl)ethenyl]decahydro-3-methylnaphtho[2,3-*c*]furan-1(3*H*)-one, H-280
21-(1,5-Dimethyl-2-piperidinyl)pregn-20-ene-3,6-diol, S-275
20-(1,5-Dimethyl-2-piperidinyl)-pregn-5-ene-3,16,18-triol, A-1073
O,N-Dimethylporphyroxine, G-87
3,6-Dimethyl-1-prenyl-9*H*-carbazole, D-753
2,5-Dimethyl-3-prenylpyrazine, D-754
2-[2-(1,1-Dimethyl-2-propenyl)-1*H*-indol-3-yl]-5-(1*H*-indol-3-yl)-3,6-dimethoxy-1,4-benzenediol, A-1519
1-(1,1-Dimethyl-2-propenyl)-3-[4-(1*H*-indol-3-yl)-2,3,5,6-tetramethoxyphenyl]-1*H*-indole, A-1519
8-(1,1-Dimethyl-2-propenyl)-4-methoxyfuro[2,3-*b*]quinolin-7-ol, D-771
3-(1,1-Dimethyl-2-propenyl)-5-(3-methyl-2-butenyl)-1*H*-indole, C-216
3-[[2-(1,1-Dimethyl-2-propenyl)-5-(3-methyl-2-butenyl)-1*H*-indol-3-yl]methylene]-6-methyl-2,5-piperazinedione, I-230
3-(1,1-Dimethyl-2-propenyl)-3-(3-methyl-2-butenyl)-2,4(1*H*,3*H*)-quinolinedione, B-377
3-(1,1-Dimethyl-2-propenyl)-5-(3-oxo-1-butenyl)-1*H*-indole, C-217
3-(1,1-Dimethyl-2-propenyl)-5-prenylindole, C-216
1,3-Dimethyl-6-propionyllumazine, H-702
2,5-Dimethyl-3-propylpyrazine, D-772
3,5-Dimethyl-2-propylpyrazine, D-773
N^2,N^8-Dimethylpseudozoanthoxanthin A, P-737
N^8,N^8-Dimethylpseudozoanthoxanthin A, P-737
1,N^8-Dimethylpseudozoanthoxanthin A, P-737
Dimethylpseudozoanthoxanthin, P-737
6,7-Dimethyl-7*H*-purine, M-535
6,9-Dimethyl-9*H*-purine, M-535
1,6-Dimethyl-1*H*-purine, M-535
2′,2′-Dimethyl(pyrano-5′,6′:3,4)-1,5-dihydroxy-6-methoxy-10-methylacridone, C-472
2,5-Dimethylpyrazine, D-774
3,5-Dimethyl-2-pyrazinol, H-474
3,6-Dimethyl-2-pyrazinol, H-475
3,5-Dimethyl-2(1*H*)-pyrazinone, H-474
3,6-Dimethyl-2(1*H*)-pyrazinone, H-475
2,6-Dimethylpyridine, D-775
2,6-Dimethyl-3,5-pyridinedicarboxylic acid, D-776
α,6-Dimethyl-3-pyridinemethanamine, B-248
1,2-Dimethylpyridinium iodide, M-537
5,11-Dimethyl-6*H*-pyrido[4,3-*b*]carbazole, E-67
1,5-Dimethyl-6*H*-pyrido[4,3-*b*]carbazole, O-83
N,1-Dimethyl-9*H*-pyrido[3,4-*b*]indole-4-butanamine, B-291
N,2-Dimethyl-5-pyrimidinecarboxamide, M-539
1,3-Dimethyl-2,4(1*H*,3*H*)-pyrimidinedione, D-777
6,8-Dimethylpyrimido[5,4-*e*]-1,2,4-triazine-5,7(6*H*,8*H*)-dione, F-48
1,6-Dimethylpyrimido[5,4-*e*]-1,2,4-triazine-5,7(1*H*,6*H*)-dione, R-66
2,4-Dimethyl-1*H*-pyrrole-3-carboxylic acid, D-778
1,3-Dimethyl-1*H*-pyrrole-2,5-dione, M-542
β,3-Dimethyl-1-pyrrolidinebutanol, M-484
α,1-Dimethyl-2-pyrrolidineethanol, H-760
1,3-Dimethylpyrrolidine, M-544
2-(3,4-Dimethyl-1*H*-pyrrol-1-yl)-3-methylbutanoic acid, D-779
2-(3,4-Dimethyl-1*H*-pyrrol-1-yl)propanoic acid, D-780
2,4-Dimethylquinazoline, D-781
1,3-Dimethyl-2,4(1*H*,3*H*)-quinazolinedione, Q-13
2,2-Dimethyl-4(1*H*,3*H*)-quinazolinone, D-782
1,2-Dimethyl-4(1*H*)-quinazolinone, H-632
4,8-Dimethyl-6-quinolinol, H-478
5,7-Dimethyl-6-quinolinol, H-479
2,3-Dimethyl-4-quinolinol, H-477
2,3-Dimethyl-4(1*H*)-quinolinone, H-477
1,2-Dimethyl-4(1*H*)-quinolinone, H-633
2,4-Dimethylquinolizidine, D-783
N^b,N^b-Dimethylserotonin, B-393
2,4′-Dimethylspiro[2-azabicyclo[2.2.2]octane-5,2′-[2*H*]pyran]-6′(3′*H*)-one, D-798
2,5-Dimethyl-3-styrylpyrazine, D-767
5-Dimethylsulfonio 2-amino-4-hydroxypentanoate, D-784
3-(Dimethylsulfonio)-*N,N,N*-trimethylpropanaminium(2+), T-612
N,N-Dimethyl-2-(1,2,3,9-tetrahydropyrrolo[2,1-*b*]quinazolin-3-yl)benzenamine, V-40
2,5-Dimethyl-5,6,7,8-tetrahydroquinoline, T-171
N,N′-Dimethyltetrandrinium, T-286
N,O-Dimethylthaicanine, T-301
O,O-Dimethylthalisopidine, T-346
N,N′-Di(6-methylthiohexyl)urea, D-829
N,N-Dimethyltryptamine *N*-oxide, D-785
N,N-Dimethyltryptamine, D-785
N,N-Dimethyltryptophan methocation methyl ester, T-640
N,N-Dimethyltryptophan, T-640
Dimethyltubocurarine, C-420
Dimethyltubocurarinium chloride, C-420
N,N-Dimethyltyramine, H-357

N,N-Dimethyltyrosine, T-700
N,N′-Dimethylurabaine, U-41
1,3-Dimethyluracil, D-777
14-(*N,N*-Dimethyl-L-valyloxy)paspalinine, P-109
Dimethylwarifteine, W-9
1,3-Dimethylxanthine, T-360
3,7-Dimethylxanthine, T-355
1,9-Dimethylxanthine, X-5
3,9-Dimethylxanthine, X-5
1,7-Dimethylxanthine, X-5
3*R*,3′*R*-Dimethylxestospongin C, A-1374
N,N-Dimethylxylopine, A-1066
N,N-Dimethylzenkerine, T-524
Dimsulf, D-726
N,N-Dinerolylguanidine, B-173
Dinicotinic acid, P-902
Dinicotinic amide, P-902
3,5-Dinitrotyramine, H-481
Dinklacorine, T-406
Dinklageine, D-786
Dinklageine, D-787
Dinor-*C*-alkaloid H, T-436
Dinorcapsaicin, C-100
19,23-Dinorcona-1,3,5(10),14-tetraenin-3-ol, D-788
N-Dinorgramine, I-97
Dinorperipentadenine, P-262
N,N′-Dioctadecanoylethanediamine, E-225
Diolamine, D-388
N,N′-Dioleoylethylenediamine, E-225
Diolmycin A1, D-789
Diolmycin A2, D-789
Dioncolactone A, D-790
Dioncopeltine A, D-793
Dioncophyllacine A, D-791
ent-Dioncophylleine A, D-793
Dioncophylleine A, D-793
Dioncophylleine D, D-792
Dioncophylline A, D-793
Dioncophylline B, D-794
Dioncophylline C, D-795
Dioncophyllinol B, D-796
Dionina, M-704
Diopterin, P-772
Dioscoretine, D-797
Dioscorine *N*-oxide, D-798
Dioscorine, D-798
Dioxamide, D-799
Dioxamine, D-799
Dioxapyrrolomycin, P-974
Dioxibrassinin, D-811
Dioxindole-3-acetic acid, D-451
Dioxindole, I-91
Dioxinoacrimarine A, D-800
4,5-Dioxoartacinatine, A-1450
3,18-Dioxo-1,4-conadienine, H-314
5,6-Dioxocoronaridine, C-657
Dioxocularine, D-801
1-(1,6-Dioxo-2,4-decadienyl)piperidine, O-174
4,5-Dioxodehydroasimilobine, C-273
4,5-Dioxodehydrocrebanine, D-802
4,5-Dioxodehydronantenine, C-684
5,10-Dioxo-1,6-diazacyclodecane-2,7-dicarboxylic acid, D-803
10,11-Dioxo-2-epierythratidine, E-207
10,11-Dioxoerysotrine, E-203
10,11-Dioxoerythraline, E-205
10,11-Dioxoerythratidinone, E-207
10,11-Dioxoerythratine, E-208
3,6-Dioxohexahydropyrrolo[1,2-*a*]pyrazine (incorr.), C-865
11,16-Dioxoholarrhimine, D-257
1,14-Dioxo-2-hydroxy-7,8-(methylenedioxy)-12,13-dimethoxyaporhoeadane, C-375
2,4-Dioxoimidazolidine, I-40
4-(2,5-Dioxo-4-imidazolidinyl)carbamic acid, D-804
(2,5-Dioxo-4-imidazolidinyl)urea, A-625
10,17-Dioxo-β-isosparteine, I-322
10,22-Dioxokopsane, D-805
Dioxolamycin, D-806
α,α′-(1,3-Dioxolane-4,5-diylidene)bis[benzeneacetic acid], U-57
5-(1,3-Dioxolan-2-yl)-1*H*-indole, I-87
Dioxolide A, D-807
Dioxolide B, D-807
1,3-Dioxolo[4,5-*g*]isoquinoline, M-446
1,3-Dioxolo[4,5-*g*]isoquinolin-5(6*H*)-one, I-305
5-(1,3-Dioxolo[4,5-*f*]isoquinolin-8-yl)-1,3-benzadioxole-4-methanol, D-136
6-(1,3-Dioxolo[4,5-*g*]isoquinolin-5-ylmethyl)-2,3-dimethoxyphenol, B-103
[1,3]Dioxolo[4,5-*j*]phenanthridine, M-448
[1,3]Dioxolo[4,5-*f*]phenanthridin-6(5*H*)-one, C-744
7*H*-[1,3]Dioxolo[4,5-*j*]pyrrolo[3,2,1-*de*]phenanthridine, H-290
7*H*-[1,3]Dioxolo[4,5-*j*]pyrrolo[3,2,1-*de*]phenanthridin-7-one, H-290
1-(1,12-Dioxo-2-octadecenyl)piperidine, O-194
1-(1,12-Dioxo-2-octadecenyl)pyrrolidine, O-194
1-(1,12-Dioxooctadecyl)piperidine, O-192
1-(1,12-Dioxooctadecyl)pyrrolidine, O-192
N-[2,6-Dioxo-1-(2-phenylethyl)-3-piperidinyl]-2-methylbutanamide, J-58
N-(2,6-Dioxo-3-piperidinyl)benzeneacetamide, D-808
5,6-Dioxopleiocarpine, K-78
10,11-Dioxopleiocarpine, K-78
6-(6,8-Dioxo-1-purinyl)suberosanone, D-809
N-[5-(2,5-Dioxo-1-pyrrolidinyl)pentyl]-*N*-hydroxybenzeneacetamide, T-100
3,4-Dioxosarcocapnidine, Y-4
10,17-Dioxosparteine, D-810
2,17-Dioxosparteine, O-188
Dioxybrassinin, D-811
Dipegine, D-812
Dipeginol, D-812
2,6-Di-4-pentenylpiperidine, D-813
2,6-Diphenacylpiperidine, L-218
Diphenazithionin, D-814
N,N′-Diphenethylurea, B-216
4,5-Diphenoxy-1,2-dicyanobenzene, D-533
Diphenyl ether-3,3′,5,5′tetracarboxylic acid, D-815
4,8-Diphenyl-5*H*-1,3-dioxolo[4,5-*d*]azepine-5,7(6*H*)-dione, D-816
Diphenylenimine, C-120
8,10-Diphenyllobelidiol, L-218
8,10-Diphenyllobelidione, L-218
8,10-Diphenyllobelionol, L-219
8,10-Diphenylnorlobelidiol, L-218
8,10-Diphenylnorlobelidione, L-218
3,5-Diphenyl-2-oxazolidinone, P-347
2,5-Diphenyl-2-oxazoline, D-430
α,α′-Diphenyl-2,6-piperidinediethanol, L-218
2,3-Diphenyl-1*H*-pyrrole, D-817
N,N′-Diphenylurea, D-818
Diphosphothiamine, T-366
Diphyllin, C-357
Diphylline, C-357
Dipicolinic acid, P-901
Dipiperamide A, D-819
Dipiperamide B, D-819
Dipiperamide C, D-820
Dipiperamide D, D-821
Dipiperamide E, D-822
1,1′-Dipiperidine, B-141
3,3′-(2,4-Dipiperidinediyl)bispyridine, A-973
1,3-Di-2-piperidinyl-2-propanone, A-969
Diplamine, D-823
Diploceline, I-319
Diplorrhyncine, M-713
Dippinine A, C-389
Dippinine B, C-389
Dippinine C, D-824
Dippinine D, D-824
N,N-Diprenylguanidine, B-199
N,N′-Diprenylguanidine, P-769
3,5-Diprenylindole, B-200
3,6-Diprenylindole, B-201
3,7-Diprenylindole, B-202
5,20-Dipropyl-1,16-dioxa-4,19-diazacyclotriaconta-10,25-diene-15,30-dione, D-825
5,20-Dipropyl-1,16-dioxa-4,19-diazacyclotriaconta-7,10,22,25-tetraene-15,30-dione, D-825
5,20-Dipropyl-1,16-dioxa-4,19-diazacyclotriaconta-7,10,25-triene-15,30-dione, D-825
Dipropylenetriamine, D-255
5,8-Dipropylindolizidine, O-44
8,10-Dipropyllobelidiol, B-187
α,α′-Dipropyl-2,6-piperidinediethanol, B-187
Diptaline, D-826
Diptamine, D-827
Dipterine, M-582
Dipthaline, D-826
Dipthamine, D-827
Dipthocarpaine, D-828
Dipthocarpamine, D-828
Dipthocarpidine, D-829
Dipthocarpilidine, D-830
Diptocarpaine, D-828
Diptocarpamine, D-828
Diptocarpidine, D-829
Diptocarpilidine, D-830
Diptocarpiline, D-829
Di-2-pyridinyl disulfide, D-831
2,2′-Dipyridyl disulfide, D-831
2,3′-Dipyridyl, B-145
2,4-Di-3-pyridylpiperidine, A-973
Dipyrithione, D-831
3,5-Di-2-pyrrolidinylpyridine, D-832
5*H*,10*H*-Dipyrrolo[1,2-*a*:1′,2′-*d*]pyrazine-5,10-dione, D-833
Di-10*H*-quindolin-11-ylmethanone, C-787
Dirin, B-101
Dirosine, G-212
Discarene C, D-834
Discarene D, D-835
Discarine A, A-935
Discarine B, D-836
Discarine C, D-837
Discarine D, D-838
Discarine E, D-839
Discarine F, A-149
Discarine G, A-150
Discarine H, F-149
Discarine I, D-836
Discarine K, D-836
Discarine L, F-151
Discarine M, D-840
Discarine N, D-841
Discarine X, N-334
Discobahamin A, D-842
Discobahamin B, D-843
Discodermide, D-844
Discodermindole, D-845
Discoguattine, D-846
Discokiolide A, D-847
Discokiolide B, D-848
Discokiolide C, D-848
Discokiolide D, D-848
Discolorine, A-957
Discorhabdin A, D-850
Discorhabdin B, D-850
Discorhabdin C, D-851
Discorhabdin D, D-852
Discorhabdin E, D-851
Discorhabdin G, D-851
Discorhabdin H, D-853
Discorhabdin I, D-850
Discorhabdin L, D-852
Discorhabdin N, D-852
Discorhabdin P, D-851
Discorhabdin Q, D-850
Discorhabdin R, D-850
Discorhabdin S, D-854
Discorhabdin T, D-854
Discorhabdin U, D-854
Discorhabdin V, D-849
Discorhabdin W, D-855
Discretamine, D-856
Discretine, X-30
Discretinine, C-694
N^1,N^4-Disinapoylputrescine, D-362
Disinapoylspermidine, S-398
Disinapoylspermine, S-399
2,2′-Disinomenine, S-313
1,1′-Disinomenine, S-313

Disorazole A_1, D-859
Disorazole A_2, D-859
Disorazole A_3, D-859
Disorazole A_4, D-859
Disorazole A_5, D-859
Disorazole A_6, D-859
Disorazole A_7, D-859
Disorazole B_1, D-859
Disorazole B_2, D-859
Disorazole B_3, D-859
Disorazole B_4, D-859
Disorazole C_1, D-857
Disorazole C_2, D-858
Disorazole D_1, D-859
Disorazole D_2, D-859
Disorazole D_3, D-859
Disorazole D_4, D-859
Disorazole D_5, D-859
Disorazole E_1, D-859
Disorazole E_2, D-859
Disorazole E_3, D-859
Disorazole F_1, D-859
Disorazole F_2, D-859
Disorazole F_3, D-859
Disorazole G_1, D-860
Disorazole G_2, D-861
Disorazole G_3, D-862
Disorazole H, D-859
Disorazole I, D-859
Dispacamide A, D-863
Dispacamide B, D-863
Dispacamide C, D-863
Dispacamide D, D-863
Dispegatrine, D-864
Dispyrin, D-865
Distamycin A, D-866
Distamycin 3, D-866
N,N′-Distearoylethylenediamine, E-225
Distichamine, D-867
Distichine, P-581
Distomadine A, D-868
Distomadine B, D-869
15,34-Di-*O*-sulfatobastadin 7, B-32
Cortinarius Disulfide, D-870
Ditabersonine, T-11
Ditaine, D-410
Dithermamine, D-871
5,5′-Dithiobis[1,4-dihydro-4-oxo-6-(2-pentyl-4-oxazolyl)-2-pyridinecarboxaldehyde], A-1123
5,5′-Dithiobis[4-hydroxy-6-(2-pentyl-4-oxazolyl)-2-pyridinecarboxaldehyde], A-1123
[2,2′-Dithiobis[pyridine] 1,1′-dioxide-*O*,*O′*,*S*][sulfato(2-)-*O*]magnesium, D-831
2,2′-Dithiobispyridine, D-831
Dithiocolchicine, D-872
2-(1,3-Dithiolan-2-yl)-1*H*-pyrrole, P-942
Dithyreanitrile, D-873
3,6-Ditigloyloxynortropane, A-1584
3,6-Ditigloyloxytropane, M-391
3,6-Ditigloyloxytropan-7-ol, M-392
3,6-Ditigloyltropanediol, M-391
1,4-Ditropine α-isatropate, B-56
1,4-Ditropine β-isatropate, B-56
1,4-Ditropine isatropate, B-56
Ditryptophenaline, D-874
Diurobromine, T-355
Divaricine, G-31
Divarine, D-875
Divicine, D-253
DL 152, R-52
DM SHT, B-393
DMF, D-747
DM1, M-135
DMT, D-785
Dnacin A_1, D-876
Dnacin B_1, D-877
DO 248A, R-54
DO 248B, R-55
DOB 41, A-1160
Docosahexaenoic acid-paclitaxel, T-52
Docosahydro-1*H*-pyrido[1,2-*f*][1,5,10]triazacyclodocosin-10(11*H*)-one, I-259
3-[2-(Docosanoylaminoethyl)]indole, T-639
N-Docosanoylanthranilic acid, A-706
N^b-Docosanoylserotonin, H-755
N^b-Docosanoyltryptamine, T-639
2,4,10-Docosatrienoic isobutylamide, D-878
6-Docosenamide, D-879
13-Docosenamide, D-880
6-Docosenoic acid, D-879
13-Docosenoic acid, D-880
N-(13-Docosenoyl)anthranilic acid, A-706
N^b-(13*Z*-Docosenoyl)serotonin, H-755
3,5-Dodecadien-2-amine, D-881
2,4-Dodecadiene-8,10-diynoic acid isobutylamide, D-882
2,4-Dodecadiene-8,10-diynoic acid 2-methylbutylamide, D-882
2,4-Dodecadiene-8,10-diynoic acid, D-882
2,4-Dodecadienoic acid *p*-hydroxyphenethylamide, H-669
2,4-Dodecadienoic acid isobutylamide, D-883
2,4-Dodecadienoic acid pyrrolidide, D-883
2,4-Dodecadienoic acid, D-883
2,8-Dodecadienoic acid, D-884
1-(2,4-Dodecadienoyl)pyrrolidine, D-883
2-(3,5-Dodecadienyl)-1-ethylpyrrolidine, V-104
N-(3,6-Dodecadienyl)sulfamic acid, D-885
2-(5,7-Dodecadien-3-ynyl)-1-ethylpyrrolidine, V-104
1-[[Dodecahydro-6,9-bis(methylene)-2-oxoazuleno[4,5-*b*]furan-3-yl]methyl]proline, I-162
Dodecahydro-1*H*,5*H*,10*H*-dipyrido[2,1-*f*:3′,2′,1′-*ij*][1,6]naphthyridin-10-one, M-121
Dodecahydro-1*H*,4*H*,9*H*-dipyrido[2,1-*b*:3′,2′,1′-*ij*]-quinazoline, S-140
Dodecahydro-2-hydroxy-7,14-methano-4*H*,6*H*-dipyrido[1,2-*a*:1′,2′-*e*]diazocin-4-one, H-551
Dodecahydro-9-hydroxy-7,14-methano-2*H*,6*H*-dipyrido[1,2-*a*:1′,2′-*e*]diazocin-6-one, V-153
Dodecahydro-1-hydroxy-11-methyl-1,9-ethanobenzo[*i*]quinolizin-14-one, 13CI, F-73
1,4,5,6,7,8,9,10,11,13,14,16*a*-Dodecahydro-13-(1-hydroxypropyl)pyrido[2,1-*d*][1,5,9]triazacyclotridecin-2(3*H*)-one, P-40
Dodecahydro-7-(1*H*-indol-3-ylmethyl)-α,α,6*a*,10*b*-tetramethyl-8-methylene-1*H*-naphtho[2,1-*b*]pyran-3-methanol, E-75
Dodecahydro-7,14-methano-2*H*,6*H*-dipyrido[1,2-*a*:1′,2′-*e*]diazocine, S-385
Dodecahydro-2-methylpyrido[2,1,6-*de*]quinolizine, D-886
Dodecahydro-5-(1-oxobutyl)-6*H*-pyrido[2,1-*f*][1,6]naphthyridin-6-one, H-38
Dodecahydro-2,3,7,10-tetramethylcyclopenta[*b*]-quinolizine, A-509
Dodecahydro-3,4,7,10-tetramethylcyclopenta[*b*]-quinolizine-2-methanol, A-509
Dodecahydro-2,3,7,10-tetramethylcyclopenta[*b*]-quinolizin-2-ol, A-509
Dodecahydro-1*H*,6*H*-[1,2,5,6]tetrathiocino[3,4-*a*:8,7-*a′*]dipyrrolizine, C-186
1,1*a*,2,4,4*a*,5,5*a*,6,6*a*,7,8,8*a*-Dodecahydro-2*aH*-3-thia-4-azacyclopenta[*mno*]pentaleno[2,1,6,5-*fghi*]aceanthrylene-2*a*-carboxylic acid, D-887
Dodecahydro-3,7,10-trimethylcyclopenta[*b*]quinolizine-2-carboxaldehyde, A-509
Dodecahydro-3,7,10-trimethylcyclopenta[*b*]quinolizine-2-methanol, A-509
Dodecahydro-2,5,8-trimethyl-1,4,7,9*b*-tetraazaphenalene, D-888
Dodecanamide, D-889
Dodecanoic acid, D-889
N-Dodecanoyltyrosine, T-700
2,4,6,8,10-Dodecapentaenedioic acid, D-890
2,4,8,11-Dodecatetraenoic acid isobutylamide, D-892
2,4,8,10-Dodecatetraenoic acid, D-891
2,4,8,11-Dodecatetraenoic acid, D-892
2,6,8,10-Dodecatetraenoic acid, D-893
6-(1,3,5,9-Dodecatetraenyl)-2-methyl-3-piperidinol, C-680
6-(1,3,7,9-Dodecatetraenyl)-2-methyl-3-piperidinol, C-680
2,4,8-Dodecatrienoic acid isobutylamide, D-895
2,4,6-Dodecatrienoic acid, D-894
2,4,8-Dodecatrienoic acid, D-895
2,4,10-Dodecatrien-8-ynoic acid isobutylamide, D-896
2,4,10-Dodecatrien-8-ynoic acid, D-896
2-Dodecene-8,10-diynoic acid isobutylamide, D-897
2-Dodecene-8,10-diynoic acid, D-897
N-(7-Dodecenoyl)tyrosine, T-700
2-(1*E*-Dodecenyl)-4-hydroxyquinoline, D-898
2-(1*Z*-Dodecenyl)-4-hydroxyquinoline, D-898
2-(1*E*-Dodecenyl)-4(1*H*)-quinolinone, D-898
2-(1*Z*-Dodecenyl)-4(1*H*)-quinolinone, D-898
2-Dodecyl-4-hydroxyquinoline, D-898
2-Dodecyl-1-methyl-4(1*H*)-quinolinone, D-898
3-Dodecylpyridine, D-899
2-Dodecyl-4-quinolinol, D-898
2-Dodecyl-4(1*H*)-quinolinone, D-898
Dogo base, H-163
Doisuthine, D-900
Dolabellin, D-901
Dolaconine, A-99
Dolastatin 10, D-907
Dolastatin 18, D-908
Dolastatin 1, D-902
Dolastatin 2, D-904
Dolastatin 3, D-905
Dolastatin 4, D-906
Dolastatin E, D-909
Dolastatin I, D-903
Dolichantoside, S-583
Dolichocurine, D-910
Dolichotheline, H-307
Dolichothine, D-911
Dolichotine A, M-352
Dolichotine B, M-352
Dolichotine C, M-352
Dolichotine D, M-323
Dolichotine E, M-312
Domesticine, N-29
Domestine, N-29
Domoic acid, D-912
Domoilactone A, D-913
Domoilactone B, D-913
Donasine, D-914
Donaxamine, I-97
Donaxanine, D-915
Donaxaridine, D-916
Donaxarine, D-917
Donaxine, D-736
Dongbeinine, C-290
Dongbeirine, C-290
Donglingine, D-918
Donine, D-919
DOPA betaine, A-745
DOPA, A-745
Dopamine 3-glucoside, D-920
Dopamine 4-glucoside, D-920
Dopamine hydrochloride, D-920
Dopamine lutine, I-93
Dopamine methosalt, C-690
Dopaminebetaxanthin, M-647
Dopamine, D-920
Dopar, A-745
Dopastat, D-920
Dopaxanthin, D-921
Doranine, D-736
Doriasenine, D-922
Dorimidazole A, A-791
Doronenine, B-401
Doronine, O-92
Dorrigocin A, D-923
Dorrigocin B, D-924
Doryafranine, C-453
Doryanine, I-305
Doryflavine, D-925
Doryphorine, D-926
Doryphornine, I-305
Dothiorelone A, C-963
Dothiorelone B, C-963
Dothiorelone C, C-963
Dovyalicin A, D-927
Dovyalicin B, D-927
Dovyalicin C, D-928

Dovyalicin D, D-928
Dovyalicin E, D-927
Dovyalicin F, S-398
Dracocephin A_1, T-572
Dracocephin A_2, T-572
Dracocephin A_3, T-572
Dracocephin A_4, T-572
Dracocephin B_1, T-573
Dracocephin B_2, T-573
Dracocephin B_3, T-573
Dracocephin B_4, T-573
Dracocephin C_1, T-572
Dracocephin C_2, T-572
Dracocephin C_3, T-572
Dracocephin C_4, T-572
Dracocephin D_1, T-573
Dracocephin D_2, T-573
Dracocephin D_3, T-573
Dracocephin D_4, T-573
Dragabine, S-411
Dragmacidin A, D-929
Dragmacidin B, D-929
Dragmacidin C, D-929
Dragmacidin D, D-930
Dragmacidin E, D-931
Dragmacidin F, D-932
Dragmacidin, D-929
Dragmacidonamine A, D-933
Dragmacidonamine B, D-933
Dragonic acid, M-240
Drazepinone, D-934
Dregamine, D-935
Dregaminic acid, D-935
Dregaminol methyl ether, D-935
Dregaminol, D-935
Drewamine, M-705
Drimentine A, D-936
Drimentine B, D-937
Drimentine C, D-937
Drimentine D, D-938
Drimentine E, D-939
Drimiopsine A, D-940
Drimiopsine B, D-940
Dripterin, P-772
Drodrenin, H-566
Drosopterin, D-941
Drupacine, D-942
Drupangtonine, D-943
Dryadine, D-944
Dryadodaphnine, D-944
Drymaritine, H-441
Dst 3, D-866
DTPA, P-421
Dubamine, M-458
Dubinidine, D-945
Dubinine, D-945
Dubirheine, R-86
Dubiusine, H-504
Duboisine, T-632
Duciformine, B-194
Duckeine, D-609
Duclouxine, M-342
Duguecalyne, D-946
Duguenaine, D-946
Duguespixine, D-947
Duguetine, D-948
Duguevalline, D-949
Duguevanine, D-950
Duguexine *N*-oxide, P-781
Duguexine, P-781
Dumetorine, D-951
Duocarmycin A, D-952
Duocarmycin B_1, D-953
Duocarmycin B_2, D-954
Duocarmycin C_1, D-953
Duocarmycin C_2, D-954
Duocarmycin D, D-955
Duocarmycin SA, D-956
Duramorph, M-704
Duraquin, Q-18
Duraspan, C-555
Duricaulic acid, D-957
Dutadrupine, D-958
Dynemicin A, D-959
Dynemicin C, D-959
Dynemicin L, D-960
Dynemicin M, D-961
Dynemicin N, D-960
Dynemicin O, D-961
Dynemicin P, D-961
Dynemicin Q, D-961
Dysazecine, D-962
Dyshomerythrine, D-963
Dysibetaine PP, D-965
Dysibetaine, D-964
Dysidamide B, D-966
Dysidamide C, D-966
Dysidamide D, D-966
Dysidamide E, D-966
Dysidamide F, D-966
Dysidamide G, D-966
Dysidamide H, D-966
Dysidamide, D-966
Dysidazirine, D-967
Dysideaproline A, D-968
Dysideaproline B, D-968
Dysideaproline C, D-968
Dysideaproline D, D-968
Dysideaproline E, D-968
Dysideaproline F, D-968
Dysideapyrrolidone, D-969
Dysideathiazole, D-970
Dysidenamide, D-971
Dysidenin, D-972
Dysidine, D-973
Dysiherbaine, D-974
Dysinosin A, D-975
Dysinosin B, D-976
Dysinosin C, D-976
Dysinosin D, D-976
Dysithiazolamide, D-977
Dysoxyline, D-978
Dyspropterin, T-142
E 162, B-110
E 64, R-69
E 212, S-53
E129A, O-131
EB 82B, H-214
Ebeiedine, C-290
Ebeienine, C-308
Ebeiensine, P-168
Ebeietinone, E-1
Ebeinone, C-308
Ebenifoline EIII, P-247
Ebenifoline EII, P-247
Ebenifoline EI, P-247
Ebenifoline EIV, P-244
Ebenifoline EV, P-247
Ebenifoline WII, P-252
Ebenifoline WI, P-252
Ebornoxin, E-6
Ebracteolatinoside A, E-2
Eburcine, E-4
Eburenine, E-3
Eburine, E-4
Eburnal, E-6
Eburnamenine, E-5
Eburnamine, E-6
Eburnaminol, E-6
Eburnamonine N^4-oxide, E-6
Eburnamonine, E-6
(±)-Eburnamonine, E-6
(-)-Eburnamonine, E-6
Eburnan, E-5
Eburnaphylline, E-7
Eburnoxine, E-6
EC 40, D-761
Ecgonidine, M-395
Ecgonine methyl ester benzoate, C-537
Ecgonine methyl ester, E-8
Ecgonine, E-8
Echcin I, P-198
Echiguanine B, E-9
Echihumiline *N*-oxide, E-10
Echihumiline, E-10
Echimidine *N*-oxide, E-11
Echimidine, E-11
Echinacein, D-893
Echinatine *N*-oxide, E-12
Echinatine, E-12
Echinine, E-13
Echinitine, E-12
Echinobetaine A, E-14
Echinobetaine B, E-15
Echinoclathrine A, E-16
Echinoclathrine B, E-17
Echinoclathrine C, E-17
Echinomycin, Q-58
Echinophyllin A, E-18
Echinophyllin B, E-19
Echinophyllin C, E-20
Echinophyllin D, E-21
Echinophyllin E, E-22
Echinophyllin F, E-23
Echinopsidine, M-558
Echinopsine, M-558
Echinoramine I, E-24
Echinorine, M-275
Echinoserine, E-25
Echinosporamicin, E-26
Echinosulfone A, E-27
Echinosulfonic acid A, E-28
Echinosulfonic acid B, E-28
Echinosulfonic acid C, E-28
Echinosulfonic acid D, E-28
Echinozolinone, E-29
Echitamidine N^b-oxide 19-glucoside, E-30
Echitamidine N^b-oxide, E-30
Echitamidine, E-30
Echitamine, D-410
Echitaminic acid, D-410
Echitoserpidine, M-631
Echitoserpine, M-631
Echitovenaldine, M-631
Echitovenidine, M-631
Echitoveniline, M-631
Echitovenine, M-631
Echiumine, E-31
Echiupinine *N*-oxide, E-32
Echiupinine, E-32
Ecliptalbine, E-33
ECO 02301, A-1161
ECO 4601, D-297
Ecteinascidin 759A, E-37
Ecteinascidin 759B, E-37
Ecteinascidin 759C, E-37
Ecteinascidin 583, E-35
Ecteinascidin 594, E-34
Ecteinascidin 596, E-35
Ecteinascidin 597, E-35
Ecteinascidin 722, E-36
Ecteinascidin 729, E-37
Ecteinascidin 736, E-36
Ecteinascidin 743, E-37
Ecteinascidin 745, E-37
Ecteinascidin 770, E-37
Ecteinascidin 786, E-37
Ectoine, T-207
Edeine, E-38
Edpetilidine, C-290
Edpetilidinine, S-275
Edpetiline, C-298
Edpetilinine, S-275
Edpetine, E-39
Edpetinosine, C-290
Edpetisidine, C-310
Edpetisidinine, C-312
Edpetisine, H-461
Edpetisinine, C-296
Eduardine, C-290
Eduardinine, C-290
Eduleine, D-660
Edulimide, D-362
Eduline, D-659
Edulinine, E-40
Edulirin A, T-349
Edulisone A, E-41
Edulisone B, E-41
Edulitine, Q-47

Edwardine, C-290
Edwardinine, C-290
E297, F-173
Efatine, E-42
Efirine, I-339
Efudex, F-104
E620, G-107
Egeline, A-153
Egenine, E-43
Eglandine, C-657
Eglandulosine, C-657
Egonine, E-44
EGS 1300-1, A-1162
Egyt 402, N-303
E355, H-258
Ehretinine, H-630
Ehretioside A_1, S-302
Ehretioside A_2, S-302
Ehretioside A_3, S-302
Ehretioside B, D-646
2,4-Eicosadienoic acid isobutylamide, E-45
2,14-Eicosadienoic acid piperidide, E-46
2,4-Eicosadienoic acid piperidide, E-45
2,11-Eicosadienoic acid pyrrolidide, P-949
3,6-Eicosadienoic acid pyrrolidide, P-949
2,4-Eicosadienoic acid pyrrolidide, T-491
2,4-Eicosadienoic acid, E-45
2,14-Eicosadienoic acid, E-46
N-(2,14-Eicosadienoyl)piperidine, E-46
N-(2,4-Eicosadienoyl)piperidine, E-45
N-(2,11-Eicosadienoyl)pyrrolidine, P-949
N-(3,6-Eicosadienoyl)pyrrolidine, P-949
N-(2,4-Eicosadienoyl)pyrrolidine, T-491
4,5-Eicosanediamine, E-47
Eicosanoic acid pyrrolidide, T-491
N-Eicosanoylanthranilic acid, A-706
N-Eicosanoylpyrrolidine, T-491
N^b-Eicosanoylserotonin, H-755
N^b-Eicosanoyltryptamine, T-639
5,8,11,14-Eicosatetraenoic acid, E-48
N-(5,8,11,14-Eicosatetraenoyl)taurine, A-765
2,4,14-Eicosatrienoic acid isobutylamide, E-50
2,4,8-Eicosatrienoic acid isobutylamide, E-49
8,11,14-Eicosatrienoic acid, E-52
2,4,14-Eicosatrienoic acid, E-50
2,4,16-Eicosatrienoic acid, E-51
2,4,8-Eicosatrienoic acid, E-49
2-Eicosenoic acid pyrrolidide, T-491
4-(14*Z*-Eicosenoyloxy)-3-methyl-2-butenenitrile, H-576
N-(2-Eicosenoyl)pyrrolidine, T-491
N^b-(11*Z*-Eicosenoyl)serotonin, H-755
3-(12*Z*-Eicosenylidene)-2-methyl-1-pyrroline, L-37
2-(Eicosylthio)-4,5-dihydro-3-methoxy-4-methylene-1*H*-pyrrole, I-172
Eilatin, D-299
Ejap 13, P-220
Ejap 14, P-220
Ekapterin, E-216
Ekeberginine, C-507
Ekomine, T-632
EL Base 2, E-297
EL Base 3, E-297
EL Base 1, I-65
Elacomine, E-53
Eladine, M-321
Elaeocarpenine, I-231
Elaeocarpidine, E-54
Elaeocarpiline, E-55
Elaeocarpine, E-56
Elaeokanidine A, E-57
Elaeokanidine B, E-57
Elaeokanidine C, E-57
Elaeokanine A, E-58
Elaeokanine B, E-58
Elaeokanine C, E-59
Elaeokanine D, E-60
Elaeokanine E, E-60
Elaidamide, O-37
Elaidic acid, O-37
Elaiomycin, E-61
Elanine, G-91
Elan, T-360
Elasine, M-307
Elatine, G-91
Elatrine, E-62
Eldelidine, M-307
Eldeline, M-307
Eldisine, V-110
Eleagnine, T-202
Elegansamine, E-63
Elegantine, M-50
Elegantissine, M-50
Eleocarpidine, E-54
Eleocarpiline, E-55
Eleocarpine, E-56
Eleokanidine A, E-57
Eleokanidine B, E-57
Eleokanidine C, E-57
Eleokanine A, E-58
Eleokanine B, E-58
Eleokanine C, E-59
Eleokanine D, E-60
Eleokanine E, E-60
Eletefine, S-541
Z-Eleutherobin, E-64
Eleutherobin, E-64
Eleuthoside A, E-64
Eliamide, E-65
Elisabethamine, E-66
Elixophyllin, T-360
Elliptamine, R-51
Ellipticine N^2-oxide, E-67
Ellipticine, E-67
Elliptifoline, A-199
Elliptinine, E-68
Elliptinol, E-69
Elloxazinone A, A-854
Elloxazinone B, A-854
Elmerrillicine, E-70
Elsedine, V-110
Elwesine, C-748
Elymoclavine *O*-β-D-fructofuranoside, A-205
Elymoclavine *O*-β-D-fructofuranosyl-(2→1)-*O*-β-D-fructofuranoside, A-205
Elymoclavine, A-205
EM 4940A, S-295
EM 5596, N-101
EM 5519, S-2
E296, M-72
Emarginatine A, P-246
Emarginatine B, P-246
Emarginatine C, P-246
Emarginatine D, P-246
Emarginatine E, P-246
Emarginatine F, P-246
Emarginatine G, P-246
Emarginatine H, P-246
Emarginatinine, P-253
Emeheterone, D-300
Emeniveol, E-71
Emetamine, E-72
Emetinal, E-72
Emetine hydrochloride, E-72
Emetine, E-72
Emetoplisc, E-72
Emiline, E-73
Emimycin, P-889
Emindole DA, E-74
Emindole DB, E-75
Emindole PA, E-76
Emindole PB, E-77
Emindole PC, E-76
Emindole SA, E-74
Emindole SB, E-78
Enactin Ia, N-113
Enactin Ib, N-113
Enactin IVa, L-189
Enactin IVb, N-113
Enactin Va, L-189
Enactin Vb, N-113
Enactin VIb, N-113
Enantiorhizoferrin, R-80
Encol, E-72
Endabuse, I-4
Endecaphyllin A, G-104
Endecaphyllin A_1, G-104
Endecaphyllin A_2, G-104
Endecaphyllin B, G-104
Endecaphyllin B_1, G-104
Endecaphyllin C, G-104
Endecaphyllin C_1, G-104
Endecaphyllin D, G-104
Endecaphyllin E, G-104
Endecaphyllin X, G-104
Endolobine, T-288
Endophenazine A, M-418
Endophenazine B, E-79
Endophenazine C, M-418
Endophenazine D, P-319
Enduracididine, E-80
Energlut, G-108
Engleromycin, E-81
Enicoflavine, E-82
Enkleine, E-83
Enneaphylline, C-805
Enprofylline, X-5
Entadamide A β-D-glucoside, E-84
Entadamide A, E-84
Entadamide B, E-85
Entadamide C, E-84
Enteramine, H-755
Enterobactin, E-86
Enterocarpam II, T-539
Enterocarpam I, T-251
Enterochelin, E-86
Epchrosine, A-1365
Ephedradine A, A-1334
Ephedradine B, A-1334
Ephedradine C, A-1334
Ephedradine D, A-1334
Ephedralone, D-676
Ephedrine hydrochloride, M-386
Ephedrine sulfate, M-386
Ephedrine, M-386
ψ-Ephedrine, M-386
(±)-ψ-Ephedrine, M-386
(±)-Ephedrine, M-386
(+)-Ephedrine, M-386
(-)-ψ-Ephedrine, M-386
Ephedrone, A-870
Ephedroxane, M-511
12-Epiacetyldehydronapelline, D-162
16-Epiaffinine, A-166
16-Epiaffinisine, T-425
Epiagelasine C, A-185
4-Epiaglaine A, A-199
15-Epiajaconine, A-211
19-Epiajmalicine, A-212
Epiajmaline, A-216
16-Epiakuammiline, A-231
7*a*-Epialexaflorine, T-555
8-Epialexaflorine, T-555
7-Epialexine, T-555
7*a*-Epialexine, T-555
8-Epialexine, T-555
Epiallocorynantheine, C-689
Epialloelaeocarpiline, E-55
3-Epi-5-allomuscarine, M-773
17-Epialloyohimbine, Y-13
Epialpinine, A-638
19-Epialstogustine, E-30
19-Epialstonine, A-652
16-Epialstovenine, V-50
Epiamauromine, A-680
Epiamurinine, A-956
7-Epiancistrobrevine D, A-990
1-Epiancistrocladine, A-982
15-Epiansamitocin PHO 0, M-136
15-Epiansamitocin PHO 1, M-136
15-Epiansamitocin PHO 3, M-136
15-Epiansamitocin PHO 4, M-136
20-Epiantirhine, A-1328
3-Epiantirhine, A-1328
Epiaphylline, A-1337
Epiapocavidine, T-319
3-Epiaristoserratenine, A-1441
2-Epiaristotelone, A-1430

16-Epiaspidodasycarpine, A-1492
20,21-Epiaspidospermidine *N*-oxide, A-1498
5,19-Epiaspidospermidine, A-1498
20,21-Epiaspidospermidine, A-1498
1-Epiaustraline 2-glucoside, T-555
7-Epiaustraline, T-555
7*a*-Epiaustraline, T-555
1-Epiaustraline, T-555
3-Epiaustraline, T-555
10-Epiaxisonitrile 3, S-425
13-Epibaptifoline, B-20
3-Epibassiatin, B-29
Epibatidine, E-87
30-Epibatzelladine D, B-40
Epiberberine, G-181
Epiberbivaldine, P-15
Epibisdehydroneotuberostemonine J, T-664
1-Epibowdensine, B-261
Epibubbialine, B-375
Epibuphanisine, C-748
2-Epicalvine, C-41
22-Epicapsimine, S-200
6-Epicastanospermine, C-188
6-Epicasuarine, T-262
3-Epicasuarine, T-262
Epicataline, C-190
3-Epicatuabine H, M-391
2-Epicephalofortuneine, C-260
7-Epicephalomannine, T-52
Epicephalotaxine, C-271
6-Epichasmanine, M-323
14-Epichelidonine, C-357
Epicinchonicinol, Q-17
17-Epicinchophyllamine, C-448
3-Epicinchophyllamine, C-448
Epicoccamide B, E-88
Epicoccamide C, E-88
Epicoccamide, E-88
Epicoccarine A, E-89
Epicoccarine B, E-89
Epicoccin A, E-91
Epicoccin B, E-90
Epicoccin C, E-91
Epicoccin D, E-91
1′-Epicolchicoside, D-92
3-Epicomosine, C-587
3-Epiconamine, C-595
20-Epicorreantine B, C-660
6-Epicorynoline, C-692
14-Epicorynoline, C-692
Epicorynoxidine, T-212
Epicostaclavine, F-49
1-Epicrassicaudine, M-323
3-Epicrinamine, H-5
Epicrinine, C-748
5-Epiculantraraminol, C-803
7-Epicylindrospermopsin, C-930
Epidapiramicin A, D-73
Epidarlinine, D-76
3-Epidasycarpidone, D-84
16-Epideacetylakuammiline N^4-oxide, A-231
16-Epideacetylakuammiline, A-231
1-Epideacetylbowdensine, B-261
7-Epi-10-deacetyl-10-oxotaxuyunnanine A, T-52
7-Epi-10-deacetyltaxuyunnanine A, T-52
10-Epidecaline, V-86
20-Epi-16-decarbomethoxy-19,20-dihydrovobasine, D-119
Epi-α-Decumbensine, E-43
16-Epidehydroaffinisine, G-23
12-Epidehydrolucidusculine, D-162
12-Epidehydronapelline, D-162
16-Epi-14,15-dehydrovincine, V-115
5-Epidemethoxyabresoline, L-53
1-Epidemethoxybowdensine, A-670
5-Epi-4′-*O*-demethylancistrobertsonine C, A-980
5-Epidemissidine, D-205
8*a*-Epidendroprimine, O-42
7-Epideoxynupharidine, D-227
1-Epideoxynupharidine, D-227
7-Epideoxynupharidine-6,7-diol, D-227
22-Epi-28-deoxyzoanthenamine, Z-31
Epidermin, H-573
Epiderstatin, E-92
Epidicentrine, N-29
19-Epidifforlemenitine, D-398
6-Epidihomosedinone, D-403
2,3-Epidihydrobellendine, B-57
3-Epidihydrocorymine 17-acetate, D-410
3-Epidihydrocorymine 3-acetate, D-410
3-Epidihydrocorymine, D-410
3-Epidihydrocorynantheol *N*-methosalt, D-412
Epidihydrofawcettidine, F-28
3-Epi-2,7-dihydrohomoerysotrine, T-51
3-Epi-3,4-dihydro-3-hydroxygraciline, G-151
Epidihydropinidine, M-529
3-Epidihydroquinamine, Q-12
3-Epi-6,7-dihydroschelhammeridine, C-587
Epidihydroshihunine, D-511
11-Epi-16,17-dihydroxylepenine, L-51
3-Epi-2,18-dimethoxyschelhammericine, D-963
7-Epidioncophylline A, D-793
1-Epidioncophylline B, D-794
2-Epi-10,11-dioxoerythratidine, E-207
16-Epidiploceline, I-319
5′-Epidomoic acid, D-912
13-Epidorrigocin A, D-923
20-Epidregamine, D-935
5-Epidysidamide G, D-966
25-Epiebeiedinone, C-290
16-Epieburnamine, E-6
20-Epi-19ξ-echitamidine, E-30
19-Epi-(+)-echitoveniline, M-631
Epielaeocarpiline, E-55
16-Epielasine, M-307
Epielwesine, C-748
11-Epiephedradine A, A-1334
3-Epi-17-epicinchophyllamine, C-448
1-Epi-7-epideoxynupharidine, D-227
6-Epi-16-epiormosanine, O-115
1-Epi-1′-epithiobinupharidine, T-380
5′-Epiergocryptine, E-158
Epiervafolidene, E-186
3-Epiervafolidine, E-186
20-Epiervatamine, E-190
11-Epierythrartine *N*-oxide, E-206
11-Epierythrartine, E-206
2-Epierythratidine, E-207
2-Epierythratine, E-208
11-Epierythrinine, E-205
2-Epi-2-*O*-ethylcephalofortuneine, C-260
25-Epietioline, S-199
16-Epiexcelsinine, M-291
4-Epifagomine, H-614
3-Epifagomine, H-614
12-Epifinetianine, N-30
12-Epifischerindole G isonitrile, F-63
12-Epifischerindole I isonitrile, F-63
12-Epifischerindole U isonitrile, F-63
12-Epifischerindole U isothiocyanate, F-63
11-Epifistularin 3, F-70
6-Epiforesticine, M-323
Epifortuneine, F-143
Epifrin, A-152
Epifuntumidine, A-880
15-Epifuziline, M-313
Epigalanthamine, G-3
Epiglaucamine, G-87
Epiglaudine, G-87
Epiglaufidine, C-682
Epiglucoisatisin, G-102
Epiglucosylngouniensine, N-186
Epiguaipyridine, G-190
Epiguanine, M-469
11-Epihaemanthamine, H-5
3-Epihaemanthidine, H-6
12-Epihapalindole C, H-49
12-Epihapalindole D isothiocyanate, H-49
12-Epihapalindole E, H-49
12-Epihapalindole F isothiocyanate, H-49
12-Epihapalindole G, H-48
12-Epihapalindole H, H-48
12-Epihapalindole J, H-48
12-Epihapalindole Q, H-49
Epihernandolinol, H-70
Epiheteroconessine, P-606
19-Epiheyneanine, C-657
2-Epihomoerythratine, S-126
Epihomolycorine, L-347
6-Epi-α-homomannojirimycin, B-186
4-Epi-α-homonojirimycin, B-186
18-Epihomoormosanine, J-16
6-Epihomosedinone, H-347
16-Epi-10-hydroxyaffinine, A-166
13-Epihydroxyanagyrine, B-20
2-Epihydroxyisotaxodine, H-331
1-Epi-12β-hydroxykarasamine, M-350
16-Epi-17α-hydroxy-$\Delta^{14,15}$-kopsinine, V-49
Epihydroxylupanine, H-554
17-Epi-12-hydroxy-11-methoxydiaboline, C-115
2-Epi-3-hydroxyquebrachidine, H-139
3-Epi-12-hydroxyschelhammericine, S-126
13-Epihydroxysparteine, T-361
19-Epi-23-hydroxyspermostrychnine, S-400
2-Epi-3-hydroxyvincamajine, H-139
20-Epiibophyllidine, I-6
19-Epiiboxygaine, I-4
3-Epiignavinol, H-184
Epiindolactam V, I-78
19-Epi-3-isoajmalicine, A-212
19-Epiisoatisine, I-192
17-Epiisocinchophyllamine, C-448
6-Epiisocorynoline, C-692
α-Epiisocycloheximide, D-765
Epiisoelaeocarpiline, E-55
Epiisopilosine, P-428
Epiisopiloturine, P-430
16-Epi-*Z*-isositsirikine, I-319
16-Epiisositsirikine, I-319
19-Epiisovoacristine, I-344
Epijoubertinamine, J-50
3-Epikarounidiol, M-730
22-Epikopsanol, K-65
Epikopsan-22-ol-10-lactam, D-805
Epikopsanol-10-lactam, D-805
17-Epikopsaporine, K-66
16-Epikopsinine, K-78
17-Epikopsinol, K-66
23-Epikuroyurinidine, K-114
Epilachnadiene, E-93
Epilachnene, E-93
Epilamprolobine *N*-oxide, L-26
Epilamprolobine, L-26
Epilapidilectinol, L-43
16-Epilatrunculin B, L-62
2-Epilentiginosine, O-46
11-Epileontidane, E-94
11-Epilepenine, L-105
Epileuconolam, L-155
(±)-Epi-LL-C10037α, A-804
Epilobamide A, V-15
Epilobscurinol, L-223
31-Epilolitrem B, L-236
31-Epilolitrem F, L-236
31-Epilolitrem N, L-237
35-Epilolitrem N, L-237
Epilotaustralin, H-572
12-Epilucidusculine, N-30
Epilucumin, H-673
Epilupinine *cis*-*p*-coumarate, E-95
Epilupinine *N*-oxide, E-95
Epilupinine, E-95
Epilupinyl acetate *N*-oxide, E-95
Epilupinyl acetate, E-95
Epilupinyl *trans*-*p*-acetoxycinnamate, E-95
Epilupinyl *trans*-*p*-coumarate, E-95
Epilupinyl *trans*-ferulate, E-95
Epilupinyl *cis*-*p*-rhamnosylcoumarate, E-95
Epilupinyl *trans*-*p*-rhamnosylcoumarate, E-95
Epilupinyl rhamnosylferulate, E-95
12-Epilycodoline *N*-oxide, L-325
12-Epilycodoline, L-325
2-Epilycorine, L-348
5-Epilyfoline, V-95
10-Epilyfoline, V-95
3-Epimacronine, P-626
Epimalbrancheamide, M-69
1-Epimanzamine D, M-91

3-Epimaritidine, M-108
Epimaritinamine, M-108
10-Epimartensine A, M-110
19-Epimeloscandonine, M-192
3-Epimeloscine *N*-oxide, M-193
17-Epimeloscine, M-193
3-Epimeloscine, M-193
13-Epimethoxylupanine, H-554
17-Epi-11-methoxy-17-*O*-methyldiaboline, C-115
Epimethoxynaucleaorine, N-62
3-Epi-18-methoxyschelhammericine, D-963
17-Epi-11-methoxyvincamajine, V-113
17-Epi-11-methoxy-α-yohimbine, M-292
16-Epimethuenine *N*-oxide, M-293
16-Epimethuenine, M-293
16-Epi-17-*O*-methylaffinine, A-166
16-Epi-*N*-methylaffinine, A-166
5-Epi-6-*O*-methylancistrobertsonine A, A-980
9-Epi-*N*-methyldihydroquinicinol, Q-17
7-Epi-*N*-methyldioncophylline A, D-793
Epi-17-*O*-methylkribine, K-101
Epi-21-*O*-methylkribine, K-101
1-Epi-2-*N*-methylmanzamine D, M-91
20-Epi-*N*-methylparavallarine, P-93
16-Epi-*O*-methyl-Δ^{14}-vincanol, E-6
22,26-Epiminocholesta-5,22(*N*)-diene-3,16-diol, S-199
22,26-Epiminocholesta-5,22-diene-3,12-diol, V-68
22,26-Epiminocholest-22(*N*)-ene-3,16-diol, S-338
22,26-Epiminocholest-5-ene-3,16-diol, S-200
22,26-Epiminocholest-22(28)-en-3-ol, S-337
22,26-Epiminocholest-5-en-3-ol, V-73
23,26-Epimino-3-hydroxycholest-23(*N*)-ene-4,22-dione, S-339
22,25-Epimino-27-norcholesta-5,25(*N*)-dien-3-ol, V-57
22,25-Epimino-27-norcholesta-4,24-dien-3-one, M-550
18,20-Epiminopregna-4,6,18(11)-trien-3-one, M-59
19,20-Epiminopregn-5-en-3-amine, C-595
19-Epiminovincinine, M-631
(19*R*)-Epimisiline, H-743
(19*S*)-Epimisiline, H-743
3-Epimuscarine, M-773
Epimyrtine, O-53
3-Epimyrtoidine, M-803
15-Epinagarine, M-313
Epinal, A-152
12-Epinapelline *N*-oxide, N-30
1-Epinapelline, N-30
12-Epinapelline, N-30
Epinardine A, E-96
Epinardine B, E-97
Epinardine C, E-97
Epinardine D, E-97
5-Epinareline ethyl ether, N-47
19-Epinaucleaorine, N-62
17-Epinaucleidinal, N-74
6-Epineoline, M-323
1-Epineoline, M-323
6-Epineolinine, M-323
7-Epineoptilocaulin, P-773
8-Epineosarracine, S-90
9-Epineoxaline, N-149
Epinephrine bitartrate, A-152
Epinephrine borate, A-152
Epinephrine, A-152
Epinephryl borate, A-152
Epingouniensine, N-186
Epinine, E-98
3-Epinitrarine, N-246
Epinorgalanthamine, G-3
Epinorlycoramine, G-3
16-Epinormacusine B, T-425
17-Epinorseredamine, T-288
6-Epi-11-nortetrodotoxin, T-298
27-Epinortryptoquivaline, N-315
Epinorzoanthamine, N-317
3-Epinuphamine, N-340
3-Epinupharamine, N-340
7-Epinupharidine, D-227
Epiodorine, O-67
16-Epiolivoretin A, T-63
Epiophiocarpine, O-94
11-Epiorantine, A-1334
6-Epioreobeiline, O-103
16-Epiormosanine, O-115
18-Epiormosanine, O-115
Epioxodaphnigraciline, D-50
8-Epi-9-oxoepothilone D, E-117
16-Epi-6-oxosilicine, M-293
19-Epi-3-oxovoacristine, V-170
2′-Epioxysporidinone, O-226
Epioxyzoanthamine, Z-30
Epipachysamine A, P-601
Epipachysamine B, P-601
Epipachysamine C, P-601
Epipachysamine D, P-601
Epipachysamine E 5-en-4-one, D-282
Epipachysamine E, P-601
Epipachysamine F, P-601
3-Epipachysamine H, P-601
Epipachysandrine A, D-266
16-Epipanarine, T-425
2-Epipancrassidine, U-35
20-Epipandoline, P-733
14-Epipapaverrubine B, G-87
14-Epipapaverrubine D, G-87
3-Epipapyramine, P-86
Epipassicoriacin, D-565
4-Epiphyllanthine, P-386
24-Epipinnatasterone, H-244
Epipleiocarpamine N^4-oxide, P-518
19′-Epipleiomutinine, P-827
Epipodopetaline, E-99
Epipolasin A, E-100
Epiporphyroxine, G-87
Epipseudoconhydrine, P-653
6-Epipubescenine, M-309
Epipyridone, E-101
16-Epipyroaconitine, H-122
16-Epipyrohypaconitine, H-254
16-Epipyrojesaconitine, H-122
16-Epipyromesaconitine, H-122
Epiquinamide, A-907
Epiquinamine, Q-12
Epiquinidine, Q-18
Epiquinine, Q-20
3-Epirauvanine, R-51
Epirauviridine, R-27
3-Epirauwolscine, Y-13
Epiremijinine, R-40
3-Epirescinnamine, R-50
16-Epirhazinaline, R-75
Epirubijervine, R-144
3-Epiryanodine, R-175
Episarcodonin α, S-76
Episarcodonin β, S-76
Episarcodonin, S-76
Episarcotrine A, S-82
Episarcotrine B, S-82
Episarcotrine C, S-82
Episarcoviolin α, S-76
16-Episarpagine, S-89
8-Episarracine *N*-oxide, S-90
8-Episarracine, S-90
Episcandomeline, S-120
Episcandomelonine, S-121
3-Epischelhammericine, S-126
3-Epischelhammeridine, S-125
3-Epischelhammerine, S-126
3-Epischellhammericine B, T-51
19-Epischolaricine, E-30
Episcopalidine, H-161
Episcopalisine, A-97
Episcopalisinine, A-97
Episcopalitine, A-99
2-Episecurinine, A-630
15-Episenbusine C, M-313
19-Episerpentine, A-652
6-Episevedine, C-295
16-Episilicine, M-293
20-Episilicine, M-293
14-Episinomenine, S-313
16-Episitsirikine, S-325
5-Epismenospongiarine, S-329
5-Epismenospongidine, S-329
5-Epismenospongine, S-329
5-Epismenospongorine, S-329
Episolacapine, S-336
5-Episophocarpine, S-371
S-Episparsomycin, S-384
15-Epistemmadenine, S-510
12-Epistemocochinine, P-670
15-Epistenine, S-528
Epistephamiersine, S-537
Epistephanine, E-102
Episteporphine, S-549
3-Epistrictosidinic acid, S-583
22-Episycophantine, S-456
Epitabernaemontanine, D-935
16-Epitacamine, T-12
20-Epitalcarpine, T-20
7-Epitaxol B, T-52
7-Epitaxol, T-52
7-Epitaxuyunnanine A, T-52
3-Epitazattadiol, E-44
3-Epitazettine, T-53
17-Epitetraphyllicine, T-288
Epitetraphyllin B, D-565
4-Epitetrodotoxin, T-298
6-Epitetrodotoxin, T-298
1-Epithiobinupharidine, T-380
1′-Epithiobinupharidine, T-380
16-Epitombozine, T-425
Epitrate, A-152
10-Epitrewiasine, T-450
Epitrichoponamic acid, T-493
Epitruxilline, T-634
27-Epitryptoquivaline, T-645
Epiuleine, U-8
Epivaldiberine, P-15
Epivaldivianine, P-15
16-Epivenenatine, V-50
17-Epivenenatine, V-50
20-Epiverazine, V-73
10-Epiverruculotoxin, V-84
Epivertaline, V-86
20′-Epivinblastine, V-110
(±)-Epivincadine, V-112
(+)-Epivincadine, V-112
(-)-Epivincadine, V-112
16-Epi-Δ^{14}-vincamine, V-115
16-Epivincamine, V-115
21-Epivincamine, V-115
16-Epi-Δ^{14}-vincine, V-115
19-Epivindolinine *N*-oxide, V-132
19-Epivindolinine, V-132
Epivittatine, C-748
19-Epivoacangarine, V-170
16-Epivoacarpine, V-171
(19*Z*)-16-Epivoacarpine, V-171
Epivoacorine, V-168
19-Epivoacristine hydroxyindolenine, C-658
19-Epivoacristine, V-170
16-Epivobasenal, V-183
16-Epivobasine, P-268
16-Epivobasinic acid, P-268
Epivolkenin, D-565
13-Epiwanpeinine A, C-298
3-Epiwelwitindolinone B isothiocyanate, W-13
3-Epiwilsonine, F-143
3-Epiwilsonione, F-143
13-Epiyenhusomine, R-9
3-Epi-α-yohimbine, Y-13
3-Epi-β-yohimbine, Y-13
Epiyohimbol, Y-16
8-Epizanthocadinanine B, Z-3
8-Epizanthomuurolanine, Z-3
Epizoanthoxanthin A, P-94
Epizoanthoxanthin B, P-94
EPO 906, E-111
Epocarbazolin A, E-103
Epocarbazolin B, E-104
Epohelmin A, E-105
Epohelmin B, E-105
Epolactaene, E-106
Epostatin, E-107
Epothilone A, E-110

Epothilone A_1, E-108
Epothilone A_2, E-108
Epothilone A_8, E-109
Epothilone A_9, E-110
Epothilone B, E-111
Epothilone B_{10}, E-111
trans-Epothilone C_1, E-112
trans-Epothilone C_2, E-112
Epothilone C, E-115
Epothilone C_1, E-112
Epothilone C_2, E-112
Epothilone C_3, E-113
Epothilone C_4, E-114
Epothilone C_5, E-115
Epothilone C_6, E-115
Epothilone C_7, E-115
Epothilone C_8, E-115
Epothilone C_9, E-115
Epothilone D, E-117
Epothilone D_1, E-116
Epothilone D_2, E-116
Epothilone D_5, E-117
Epothilone E, E-110
Epothilone F, E-111
Epothilone G_1, E-118
Epothilone G_2, E-119
Epothilone H_1, E-118
Epothilone H_2, E-119
Epothilone I_1, E-120
Epothilone I_2, E-121
Epothilone I_3, E-122
Epothilone I_4, E-123
Epothilone I_5, E-124
Epothilone I_6, E-124
Epothilone K, E-125
Epothilone tetrahydrofuran, E-126
Epoxyagroclavine I, A-205
19,20-Epoxyakuammicine, A-228
1,2-Epoxyambelline, A-683
19,20-Epoxyapparicine, A-1365
19,21-Epoxyaspidospermidine, A-1490
2′,3′-Epoxyasteranthine, A-1510
6,7-Epoxy-3-atropolyoxytropane, A-1364
1,4-Epoxy-3-aza-*A*-homoandrostan-17-ol, E-127
1,4-Epoxy-3-aza-*A*-homoandrostan-16-ol, S-44
4,7′-Epoxy-3,8′-bilign-7-ene-3′,4′,5,9,9′-pentol, E-128
4,9-Epoxy-3,4,7,14,15,16,20-cevaneheptol, G-70
4,9-Epoxy-3,4,12,14,16,17,20-cevaneheptol, V-56
4,9-Epoxy-3,4,14,15,16,20-cevanehexol, Z-36
4,9-Epoxy-3,4,6,7,14,15,16,20-cevaneoctol, P-674
4,7-Epoxy-3,14,16,20-cevanetetrol, N-116
10,11-Epoxycolchicine (obsol.), O-220
1,6-Epoxycomosivine, C-588
19,20-Epoxyconoduramine, C-615
17,19-Epoxycuran-3-ol, S-605
19β,20β-Epoxycytochalasin C, C-944
19,20-Epoxycytochalasin C, C-944
19,20-Epoxycytochalasin D, Z-37
Epoxycytochalasin H, E-129
19,20-Epoxycytochalasin N, C-944
19,20-Epoxycytochalasin Q, C-954
19,20-Epoxycytochalasin R, C-954
8,9-Epoxy-2-decene-4,6-diynoic acid, D-103
2′,3′-Epoxy-4-*O*-demethyl-*N*-methylatanine, A-1529
1,19-Epoxydenudatine, K-48
19,20-Epoxy-18-deoxycytochalasin Q, C-954
19,20-Epoxy-18-deoxycytochalasin R, C-954
17,19-Epoxy-19,20-dihydroakuammilan, L-16
2,3-Epoxy-2,3-dihydro-2-hydroxy-1*H*-indole-3-acetic acid, M-758
15,20-Epoxy-15,20-dihydro-12-hydroxysenecionan-11,16-dione, J-2
17,19-Epoxy-19,20-dihydro-19-hydroxy-1,4,21-trimethyl-18-norsarpaganium, M-29
17,23-Epoxy-5,6-dihydro-3-hydroxyveratraman-11-one, H-371
17,19-Epoxy-19,20-dihydro-21-methyl-18-norsarpagan-17-ol, P-241
6,17-Epoxy-19,20-dihydro-1-methylsarpagan-17,21-diol, E-130
17,19-Epoxy-19,20-dihydro-1-methylsarpagan-21-ol, T-21
12,16-Epoxy-16,17-dihydronapelline, E-131
3,4-Epoxy-8,9-dihydropiplartine, P-473
17,23-Epoxy-5,6-dihydro-1,3,6-trihydroxyveratraman-11-one, V-74
17,23-Epoxy-5,6-dihydroveratraman-2,3,6-triol, K-114
14,15-Epoxy-3,5-dihydroxybufa-20,22-dienolide, E-132
6,7-Epoxy-18,19-dihydroxy-16,18-dimethyl-10-phenyl[11]cytochalas-13-ene-1,21-dione, H-473
24,25-Epoxy-7,22-dihydroxyergosta-1,4-dien-3-one, P-295
19,20-Epoxy-12,15-dihydroxy-11-methoxy-*N*-methyl-*sec*-pseudostrychnine, I-12
19,20-Epoxy-12,15-dihydroxy-*N*-methyl-*sec*-pseudostrychnine, I-12
17,23-Epoxy-3,11-dihydroxyveratraman-6(5*H*)-one, Y-11
19,20-Epoxy-11,12-dimethoxyicajine, I-12
8,10-Epoxy-3,7-dimethoxy-17-methylhasubanan-4,6,8-triol, L-244
19,20-Epoxy-11,12-dimethoxy-*N*-methyl-*sec*-pseudostrychnine, I-12
8-(2,3-Epoxy-3,3-dimethylallyloxy)-7-methoxy-*N*-methylflindersine, F-90
16,17-Epoxy-4,21-dimethyl-7,20-cycloatidane-1,13,15-triol, G-139
3,6-Epoxydodecanoic acid pyrrolide, H-269
2″,3″-Epoxyechiumine, E-31
7,10-Epoxyepothilone, E-126
1,19-Epoxy-20-ethyl-4-methylaconitane-7,8,14-triol, G-152
5,11-Epoxy-1,4,6,8,9,14-eudesmanehexol, H-249
Epoxyfumitremorgin C, F-190
4,7-Epoxyhexahydro-3*a*-methyl-2-phenyl-1*H*-isoindole-1,3(2*H*)-dione, P-17
8,10-Epoxy-8-hydroxy-3,4-dimethoxy-17-methylhasubanan-7-one, M-233
19,20-Epoxy-14-hydroxy-10,11-dimethoxy-*N*-methyl-*sec*-pseudostrychnine, I-12
6,7-Epoxy-18-hydroxy-16,18-dimethyl-10-phenyl[11]cytochalasa-13,19-diene-1,21-dione, H-473
19,20-Epoxy-15-hydroxyicajine, I-12
6,7-Epoxy-18-hydroxy-19-methoxy-16,18-dimethyl-10-phenyl[11]cytochalas-13-ene-1,21-dione, H-473
19,20-Epoxy-15-hydroxy-12-methoxyicajine, I-12
19,20-Epoxy-12-hydroxy-11-methoxy-*N*-methyl-*sec*-pseudostrychnine, I-12
19,20-Epoxy-15-hydroxy-12-methoxy-*N*-methyl-*sec*-pseudostrychnine, I-12
19,20-Epoxy-15-hydroxy-11-methoxyvomicine, I-12
19,20-Epoxy-12-hydroxy-*N*-methyl-*sec*-pseudostrychnine, I-12
19,20-Epoxy-15-hydroxy-*N*-methyl-*sec*-pseudostrychnine, I-12
1,2-Epoxy-1-hydroxymethylpyrrolizidine, E-133
19,20-Epoxy-15-hydroxynovacine, I-12
23,26-Epoxy-3-hydroxy-16,28-secosolanid-22(28)-en-6-one, K-89
12,13-Epoxy-19-hydroxysenecionan-11,16-dione, E-184
14,15-Epoxy-11-hydroxytabersonine, T-11
17,23-Epoxy-3-hydroxyveratraman-11-one, J-36
19,20α-Epoxy-15-hydroxyvomicine, I-12
1β,2β-Epoxyisoretronecanol, E-133
14,15-Epoxykopsingine, K-66
6,7-Epoxykopsinine, V-49
6,7-Epoxylatrunculin A, L-61
N^2-(15,16-Epoxylinoleoyl)glutamine, G-108
6,7-Epoxylittorine, S-158
6,21-Epoxy-17-methoxyaspidospermidine, B-63
1,19-Epoxy-11-methoxydenudatine, K-48
19,20-Epoxy-10-methoxyicajine, I-12
19,20-Epoxy-12-methoxyicajine, I-12
19,20-Epoxy-10-methoxy-*N*-methyl-*sec*-pseudostrychnine, I-12
19,20-Epoxy-12-methoxy-*N*-methyl-*sec*-pseudostrychnine, I-12
1,2-Epoxy-1-methoxymethylpyrrolizidine, E-133
6,17-Epoxy-11-methoxysarpagan, G-23
19,20-Epoxy-11-methoxyvomicine, I-12
2,7-Epoxy-1-methylaminopyrrolizidine, L-234
1,4-Epoxy-20-methyl-3-aza-*A*-homopregn-14-en-16-one, S-45
2-[3-(3,4-Epoxy-3-methyl-1-butenyl)-4-hydroxyphenyl]-*N*-methylethylamine, E-135
5-(2,3-Epoxy-3-methylbutyl)-3-[2-hydroxy-1-(hydroxymethyl)-2-methylpropyl]-1*H*-indole, E-134
3-(2,3-Epoxy-3-methylbutyl)-4-hydroxy-7-methoxy-1-methyl-2(1*H*)-quinolinone, T-582
3-(2,3-Epoxy-3-methylbutyl)-5-(3-hydroxy-3-methyl-1-butenyl)-1*H*-indole, B-200
3-(2,3-Epoxy-3-methylbutyl)-2-(3-hydroxy-3-methyl-1-butenyl)-1*H*-indole, H-257
3-(2,3-Epoxy-3-methylbutyl)-4-hydroxy-*N*-methyl-2-quinolone, A-1529
3-(2,3-Epoxy-3-methylbutyl)-5-(3-methyl-1,3-butadienyl)-1*H*-indole, B-200
3-(2,3-Epoxy-3-methylbutyl)-5-(3-methyl-2-butenyl)-1*H*-indole, B-200
1,17-Epoxy-1-methyldasycarpidan, G-76
1,2-Epoxy-2-methyl-4-(*N*-methyltyraminyl)-3-butene, E-135
19,20-Epoxy-*N*-methyl-*sec*-pseudobrucine, I-12
8,9-Epoxy-9-methylstreptimidone, M-561
13,17-Epoxy-8,10(18)-myrsinadiene-3,5,7,14,15,17-hexol, E-136
17,18-Epoxymyxothiazole, M-807
16,17-Epoxynepapakistamine A, D-273
2,3-Epoxy-6,8-nonadiynoic acid 2-phenylethylamide, E-137
1,2-Epoxy-6,8-nonadiynoic acid styrylamide, E-137
2,3-Epoxy-6,8-nonadiynoic acid, E-137
14,15-Epoxynorsecurinine, N-307
19,20-Epoxynovacine, I-12
N^2-(15,16-Epoxy-9,12-octadecadienoyl)glutamine, G-108
2,3-Epoxy-4-oxo-7,10-dodecadienamide, C-286
14,15-Epoxy-3-oxovincadifformine, O-210
4,7′-Epoxy-3′,4′,5,9,9′-pentahydroxy-3,8′-bilign-7-ene, E-128
5,20-Epoxy-2,4,7,10,13-pentahydroxy-11-taxen-9-one, E-138
2,3-Epoxy-3-phenylpropanoic acid, P-348
3,4-Epoxy-2-piperidone, O-146
3,4-Epoxypipermethystine, P-463
1,2-Epoxypowelline, C-743
18,20-Epoxypregnane-3,14,20-triol, H-316
2-(1,2-Epoxypropyl)quinoline, P-647
Epoxyquinomicin A, C-289
Epoxyquinomicin B, C-289
Epoxyquinomicin C, C-289
Epoxyquinomicin D, C-289
6,7-Epoxyracemigerine, R-1
1,6-Epoxyrobustivine, C-588
16,17-Epoxysarcovagenine D, D-260
Epoxysarmentosin, H-509
17,19-Epoxysarpagan-19(20*H*)-ol, T-616
14,15-Epoxyscandine, S-118
16,23-Epoxy-16,28-secosolanidane-3,23-diol, D-99
16,23-Epoxy-16,28-secosolanidane-3,23,27-triol, E-139
16,23-Epoxy-16,28-secosolanid-22(28)-ene-3,20,23,27-tetrol, E-140
14α,15α-Epoxytabersonine, T-11
14β,15β-Epoxytabersonine, T-11
5,20-Epoxy-11-taxene-1,2,4,7,9,10,13-heptol, E-141
4,5-Epoxy-2-tetradecenoic acid, T-124
8,10-Epoxy-3,4,7,8-tetramethoxy-17-methylhasubanan-6,16-dione, S-537
8,10-Epoxy-3,4,7,8-tetramethoxy-17-methylhasubanan-6-one, S-537
6,7-Epoxytropan-3-ol, S-158
6,7-Epoxy-3-tropanyl 2,3-dihydroxy-2-phenylpropionate, A-1043
Epoxytuberostemonone, T-666
3,4-Epoxyvalerolactam, O-146
3,17-Epoxyvobasan, T-10

19,20-Epoxyvomicine, I-12
Equisetin, E-142
Equisetonine, E-143
Erbstatin, E-144
Ercinamine, A-231
Ercinaminine, A-231
Ercine, E-145
Erebusinone, A-697
Erectine, K-78
Eremophilene lactam, E-146
Eremursine, H-357
Ergamine, H-307
Ergine, L-370
Erginine, L-370
β,β-Ergoannam, E-147
Ergobalansine, E-148
Ergobalansinine, E-148
Ergobasine, E-164
Ergobasinine, E-164
Ergobine, E-149
Ergobutine, E-150
Ergobutyrine, E-151
Ergoclavinine, E-169
Ergocornam, E-152
Ergocornine, E-153
Ergocorninine, E-153
Ergocristam, E-154
Ergocristine, E-155
Ergocristinine, E-155
Ergocryptam, E-156
α-Ergocryptine, E-157
Ergocryptine, E-157
β-Ergocryptine, E-158
α-Ergocryptinine, E-157
β-Ergocryptinine, E-158
γ-Ergocryptinine, E-159
Ergogaline, E-160
Ergoheptine, E-161
Ergohexine, E-162
Ergokryptine, E-157
β-Ergokryptine, E-158
γ-Ergokryptinine, E-159
Ergoladinine, E-163
Ergomar, E-172
Ergometrine maleate, E-164
Ergometrine, E-164
Ergometrinine, E-164
Ergomolline, E-157
Ergonine, E-165
Ergonovine maleate, E-164
Ergonovine, E-164
Ergonovinine, E-164
Ergoptine, E-167
β-Ergoptine, E-166
Ergoptinine, E-167
β-Ergoptinine, E-166
Ergosecalinine, E-168
Ergosine, E-169
Ergosine, E-170
Ergosinine, E-169
Ergostate, E-172
Ergostetrine, E-164
Ergostine, E-171
Ergostinine, E-171
Ergotamine tartrate, E-172
Ergotamine, E-172
Ergotaminine, E-172
Ergothioneine, E-173
Ergotocin, E-164
Ergotrate, E-164
Ergovalide, L-372
Ergovaline, E-174
Eribusinone, A-697
Ericamycin, E-175
Erichsonine, E-176
Ericinine, C-1
Erinacean, E-177
Erinacerin A, E-178
Erinicine, I-209
Erinine, I-209
Erioaustralasine hydrate, E-180
cis-Erioaustralasine, E-179
trans-Erioaustralasine, E-179
Erioaustralasine, E-179
Eripinal, E-181
Eripine, E-182
Erizomycin, P-919
Erketin, E-72
Ermetrine, E-164
Erromangine, I-325
Erucalexin, E-183
Erucic acid, D-880
Eruciflorine, S-238
Erucifoline *N*-oxide, E-184
Erucifoline, E-184
Eruginoic acid, H-695
Eruginosin A, A-860
Eruginosin B, A-162
Ervadivaricatine A, V-168
Ervadivaricatine B, V-168
Ervafolene, E-185
Ervafolidene, E-186
Ervafolidine, E-186
Ervafoline, E-185
Ervahaimine A, V-168
Ervahaimine B, C-615
Ervahainamidine A, E-187
Ervahainamidine B, E-188
Ervahanine A, E-189
Ervahanine B, C-615
Ervahanine C, C-616
Ervamicine, T-11
Ervamine, V-111
Ervamycine, T-11
Ervatamine, E-190
Ervaticine, E-191
Ervatine, V-178
Ervatinine, S-493
Ervayunine, V-179
Ervinceine, V-111
Ervincidine, T-425
Ervincine, P-417
Ervincinine, T-11
Ervine, A-212
Ervine, H-445
Ervinidine, E-192
Ervinidinine, V-111
Ervinine, K-78
Ervitsine, E-193
Ervolanine, C-134
Ervoside, H-445
Erybidine, E-194
Erycibelline, A-1583
Erycinine, C-1
Erylusamine TA, E-195
Erylusidine, E-196
Erylusine, E-197
Erymelanthine, E-198
Erysodienone, E-199
Erysodine, E-203
Erysodinophorine, E-200
Erysoflorinone, E-207
Erysoline, E-203
Erysonine, E-203
Erysophorine, E-201
Erysopine, E-203
Erysopinophorine, E-200
Erysopitine, E-207
Erysosalvine, E-207
Erysosalvinone, E-207
Erysothiopine, E-203
Erysothiovine, E-203
Erysotine, E-207
Erysotinone, E-207
Erysotramidine, E-202
Erysotrine *N*-oxide, E-203
Erysotrine, E-203
Erysovine, E-203
Erytharbine, E-202
Erythbidine B, E-205
Erythlaurine, E-204
Erythraline, E-205
Erythramide, E-204
Erythramine, E-208
Erythrartine *N*-oxide, E-206
Erythrartine, E-206
Erythrascine, E-206
Erythratidine, E-207
Erythratidinone, E-207
Erythratine, E-208
Erythratinone, E-208
Erythravine, E-203
Erythreidine, E-209
Erythreine, E-210
Erythricine, G-59
Erythrinarbine, T-629
Erythrinine, E-205
Erythrinine, E-211
Erythrinitol, E-199
Erythristemine *N*-oxide, E-206
Erythristemine, E-206
Erythritol, E-199
Erythrocarine, E-205
Erythrococcamide A, E-212
Erythrococcamide B, E-213
Erythrococcamide C, E-214
Erythroculine, E-204
α-Erythroidine, E-215
β-Erythroidine, E-215
Erythromotidienone, E-202
Erythrophlamide (obsol.), N-299
Erythrophlamine, N-300
Erythrophleguine, N-300
Erythrophleine, N-300
Erythropterin, E-216
Erythrorotundine, M-392
Erythroskyrin, E-217
Erythrosotidienone, E-205
Erythrosuamine, E-218
Erythrosuavine, E-219
Erythrozeylanine A, M-391
Erythrozeylanine B, M-393
Erythrozeylanine C, M-391
Escholamidine, I-317
Escholamine, M-672
Escholerine, P-674
Escholidine, C-73
Escholine, C-702
Escholinine, R-123
Eschscholtzidine *N*-methosalt, E-220
Eschscholtzidine *N*-oxide, E-220
Eschscholtzidine, E-220
Eschscholtzine *N*-methosalt, E-221
Eschscholtzine *N*-oxide, E-221
Eschscholtzine, E-221
Eschscholtzinone, E-221
Escopolamina, S-159
Esculeogenin A, S-444
Esculeogenin B, E-139
Esculeoside A, S-444
Esculeoside B, E-139
Esculeoside C, E-140
Esculetic acid, T-577
Eseramine, P-400
Eseridine, G-51
Eserine aminoxide, G-51
Eserine oxide, G-51
Eserine, P-400
Eserocil, P-400
Esholine, C-702
Eskalin V, O-131
Eskamicin, O-131
Esmeraldine A, E-222
Esmeraldine B, E-223
Esmodil, M-284
Espinidine, B-98
Espinine, B-98
Esromistin, P-400
Estatin A, E-224
Estatin B, E-224
Estivine, A-163
ET 759C, E-37
ET 743, E-37
Ethanamide, A-30
Ethanamine, E-233
1,2-Ethanediamine, E-225
N,N′-1,2-Ethanediylbisacetamide, E-225
N,N′-1,2-Ethanediylbis[*N*-acetylacetamide], E-225
N,N′-1,2-Ethanediylbisbenzamide, E-225

N,N′-1,2-Ethanediylbisdodecanamide, E-225
2,2′-(1,2-Ethanediyl)bis[1-methyl-3-piperidinone], E-226
N,N′-1,2-Ethanediylbis(octadecanamide), E-225
N′,N″-1,2-Ethanediylbis-1,3-propanediamine, B-153
Ethanolamine *O*-phosphate, A-768
Ethanolamine, A-767
Ethaphene, S-659
6-Ethenyl-3,4,4*b*,5,6,7,8,9,10*b*,12-decahydro-12-hydroxy-5-methyl-1*H*-pyrido[4′,3′:4,5]pyrano[3,2-*h*]isoquinoline-1,10(2*H*)-dione, E-227
1-Ethenyl-8,13-dihydroindolo[2′,3′:3,4]pyrido[1,2-*b*][2,7]naphthyridin-5(7*H*)-one, A-1019
5-Ethenyl-3,4-dihydro-2,7-naphthyridin-1(2*H*)-one, G-60
5-Ethenyl-3,4-dihydro-1*H*-pyrano[3,4-*c*]pyridin-1-one, G-59
1-Ethenyl-4,9-dimethoxy-9*H*-pyrido[3,4-*b*]indole, D-724
1-Ethenyl-4,7-dimethoxy-9*H*-pyrido[3,4-*b*]indole, D-723
1-Ethenyl-4,8-dimethoxy-9*H*-pyrido[3,4-*b*]indole, D-686
3-(2-Ethenyl-4,6-dimethylcyclohexyl)-1,4-dihydroxy-2(1*H*)-pyridinone, P-922
4-Ethenyl-3-ethoxy-1,3,4,5,6,7-hexahydro-8*H*-pyrano[3,4-*c*]pyridin-8-one, S-408
1-Ethenyl-4-methoxy-9*H*-pyrido[3,4-*b*]indole, M-290
[3-Ethenyl-3-methyl-5-(2-methyl-1-propenyl)-2-pyrrolidinyl]-1*H*-indol-3-ylmethanone, B-251
5-Ethenyl-4-methylthiazole, M-585
16-Ethenyloxayohimban-17-ol, E-228
2-(3-Ethenyl-4-piperidinyl)-1-[3-(2-hydroxyethyl)-1*H*-indol-2-yl]ethanone, C-445
3-(3-Ethenyl-4-piperidinyl)-1-(6-methoxy-4-quinolinyl)-1-propanone, Q-17
7-Ethenyl-2-(2-propenyl)-1-azaspiro[5.5]undecan-8-ol, H-309
5-Ethenyl-3-pyridinecarboxylic acid, V-141
1-Ethenyl-9*H*-pyrido[3,4-*b*]indole-3-carboxylic acid, V-140
1-Ethenyl-9*H*-pyrido[3,4-*b*]indole-4,8-diol, D-686
1-Ethenyl-9*H*-pyrido[3,4-*b*]indole, V-139
1-Ethenyl-9*H*-pyrido[3,4-*b*]indol-8-ol, H-758
12-Ethenyl-5,6,13,13*a*-tetrahydro-2-hydroxy-3-methoxy-8*H*-isoquino[2,1-*b*][2,7]naphthyridin-8-one, A-235
Ethenyltrimethylammonium(1+), T-615
3-(2-Ethenyl-2,4,6-trimethylcyclohexyl)-1,4-dihydroxy-2(1*H*)-pyridinone, C-646
2-[[(1-Ethenyl-1,5,9-trimethyl-4,8-decadienyl)sulfonyl]ethyl]guanidine, A-178
Ethesdanine, E-229
9-Ethoxyacridine, A-112
9-Ethoxyaristolactam I, T-251
4-Ethoxybenzo[*c*][2,7]naphthyridine, B-75
1-Ethoxycarbonyl-β-carboline, C-132
3-Ethoxycarbonyl-β-carboline, C-133
12-Ethoxycarbonylcytisine, C-938
N-Ethoxycarbonyldemecolcine, D-92
N-Ethoxycarbonyllaurotetanine, L-75
N-Ethoxycarbonylprolinamide, E-230
4-Ethoxycarbonyl-2-(1*H*)-quinolinone, H-723
N^{16}-Ethoxycarbonylroquefortine D, R-125
2-Ethoxycarbonyltetrahydroharman, T-202
2-Ethoxycarbonyl-1,2,3,4-tetrahydro-1-methyl-β-carboline, T-202
5-Ethoxychelerythrine, C-356
3-Ethoxycoronaridine, C-657
8α-Ethoxy-*N*-demethylpretazettine, P-626
8β-Ethoxy-*N*-demethylpretazettine, P-626
8-Ethoxydihydrochelerythrine, D-407
Ethoxydihydrosanguinarine, D-510
15β-Ethoxy-14,15-dihydroviroallosecurinine, A-630
4-Ethoxy-7,8-dimethoxyfuro[2,3-*b*]quinoline, F-223
6-Ethoxy-1,2-dimethoxy-12-methyl[1,3]benzodioxolo[5,6-*c*]phenanthridinium(1+), C-356
12-Ethoxy-7,8-dimethoxy-5-methyl-2,3-methylenedioxybenzo[*c*]phenanthridinium(1+), C-356
2-Ethoxy-*N,N*-dimethylethanamine, D-730
7-Ethoxy-2,6-dimethyl-3,5,8(2*H*)-isoquinolinetrione, M-624
3-Ethoxy-19-epiheyneanine, C-657
11-Ethoxy-3-formamidotheonellin, I-213
4-Ethoxyfuro[2,3-*b*]quinoline, F-224
4-Ethoxyhexahydro-3*a*-hydroxy-1*H*-indole-2,6-dione, E-231
3-Ethoxyheyneanine, C-657
4-Ethoxy-1-hydroxy-4-methoxy-2,5-cyclohexadiene-1-acetamide, H-650
4-Ethoxy-8-hydroxy-1-methyl-3-(3-methyl-2-butenyl)-2(1*H*)-quinolinone, T-583
2-Ethoxy-4-hydroxyquinoline, Q-33
3-Ethoxy-1*H*-indole, I-104
16-Ethoxyisomatopensine, M-120
13-Ethoxylupanine, H-554
4-Ethoxy-8-methoxyfuro[2,3-*b*]quinoline, F-213
N-[2-Ethoxy-2-(4-methoxyphenyl)ethyl]cinnamide, A-153
3-(Ethoxymethyl)-6,7-dihydro-8(5*H*)-indolizinone, D-447
2-Ethoxy-3-methylpyrazine, H-624
4-Ethoxy-2-methylpyridine, H-625
4-Ethoxy-2-methylquinoline, H-633
8-Ethoxy-3-oxo-1,2-dehydroretrorsine, E-232
1-Ethoxyphenazine, P-327
8α-Ethoxyprecriwelline, P-626
6-Ethoxy-1*H*-purin-2-amine, G-210
Ethoxypyrazine, P-889
4-Ethoxy-3-pyridinecarboxylic acid, H-709
6-Ethoxy-3-pyridinecarboxylic acid, H-711
4-Ethoxyquinaldine, H-633
4-Ethoxyquinazoline, Q-14
6-Ethoxy-4-quinolinecarboxylic acid, H-726
2-Ethoxy-4-quinolinecarboxylic acid, H-723
2-Ethoxyquinoline, Q-50
3-Ethoxyquinoline, Q-49
2-Ethoxy-4(1*H*)-quinolinone, Q-33
16-Ethoxystrychnine, P-726
Ethoxythiobinupharidine, T-380
3-Ethoxyvoacangine, V-170
Ethyl 2-aminobenzoate, A-706
Ethyl 2-(aminocarbonyl)-1-pyrrolidinecarboxylate, E-230
Ethyl β-carboline-2*N*-oxide-1-propionate, C-134
Ethyl β-carboline-1-propionate, C-134
Ethyl centralite, D-818
Ethyl *N*-docosanoylanthranilate, A-706
Ethyl harman-3-carboxylate, M-427
Ethyl hydrogen 2-aminoethyl phosphate, A-768
Ethyl iodoacetate, I-163
Ethyl 3-methyl-9*H*-carbazole-9-carboxylate, M-424
Ethyl *N*-(2-phenylethyl)carbamate, P-343
Ethyl 2-pyridyl ketone, P-645
Ethyl (raframidin-15-yl)acetate, R-35
Ethyl 6-[(1,2,3,4-tetrahydro-7-methoxy-2-methyl-1-oxo-8-isoquinolinyl)oxy]-1,3-benzodioxole-5-carboxylate, C-279
Ethyl 3,4,5,6-tetrahydro-2-pyridyl ketone, T-217
Ethyl yohimbate, Y-13
8-*O*-Ethylaconorine, M-352
10-Ethylacridone, A-112
O-Ethylakagerine lactone, A-223
17-*O*-Ethylakagerine, A-222
O-Ethylalpinigenine, A-638
Ethylamine, E-233
Ethylaminesulfonic acid, A-765
2-(Ethylamino)-4,5-dihydroxybenzamide, A-737
2-Ethylaminoethylamine, E-225
19-*O*-Ethylangustoline, A-1020
N-Ethylanhalonine, A-1021
N-3′-Ethylaplysinopsin, A-1357
N^5-Ethylaurantioclavine, A-1549
11-Ethyl-12-azacyclotetradec-5-en-14-olide, E-93
N-Ethyl-1,4-butanediamine, B-422
6-Ethylcanthin-4-one, N-302
5-Ethylcanthin-4-one, T-671
1-Ethyl-β-carboline, E-234
1-Ethyl-β-carboline-2*N*-oxide, E-234
2-*O*-Ethylcephalofortuneine, C-260
Ethylcyclononylprodigiosin, E-235
N-Ethylcytisine, C-938
2-Ethyldecahydro-5-methylquinoline, A-355
5-Ethyldecahydro-2-(2-penten-4-ynyl)quinoline, A-358
2-Ethyldecahydroquinoline, A-354
N-Ethyl-*N*-demethyldictysine, D-370
N-Ethyl-*N*-desmethyldelphinine, M-312
Ethyldiaboline, C-115
Ethyldihydrocuprein, Q-20
α-Ethyl-9,11-dihydro-α-hydroxy-8-hydroxymethyl-9-oxoindolizino[1,2-*b*]quinoline-7-acetic acid, C-71
3-Ethyl-1,3-dihydro-3-methoxy-2*H*-indol-2-one, E-236
3-Ethyldihydro-4-(1-methyl-1*H*-imidazol-5-yl)-methyl-2(3*H*)-furanone, P-424
3-Ethyl-4,5-dihydro-2-methylthiazolium(1+), D-479
5-Ethyl-3,4-dihydro-2-pentyl-2*H*-pyrrole, D-246
2-Ethyl-3,4-dihydro-5-pentyl-2*H*-pyrrole, D-246
1-Ethyl-3,7-dihydro-1*H*-purine-2,6-dione, X-5
3-Ethyl-2,7-dihydroxy-4,8-dimethoxyquinoline, H-60
6-Ethyl-3,4-dihydroxy-2-hydroxymethylpiperidine, E-244
20-Ethyl-6,8-dihydroxy-1-methoxy-4-methylheteratisan-14-one, H-157
1-Ethyl-4,8-dimethoxy-β-carboline, D-686
9-Ethyl-7,8-dimethoxyfuro[2,3-*b*]quinolin-4(9*H*)-one, F-223
1-Ethyl-4,8-dimethoxy-9*H*-pyrido[3,4-*b*]indole, D-686
5-Ethyl-2,3-dimethylpyrazine, E-239
2-Ethyl-3,5-dimethylpyrazine, E-237
3-Ethyl-2,5-dimethylpyrazine, E-238
N-Ethyl-*N,N′*-diphenylurea, D-818
1-Ethyldodecahydro-9*a*-methylpyrido[2,1,6-*de*]quinolizin-2-ol, P-569
4-Ethyldodecahydro-2,3,7,10-tetramethylcyclopenta[*b*]quinolizin-2-ol, A-509
4-Ethyldodecahydro-3,7,10-trimethylcyclopenta[*b*]-quinolizine-2-methanol, A-509
O-Ethyleburnamine, E-6
N,N′-Ethylenebis(diacetamide), E-225
N,N′-Ethylenebis(octadecanamide), E-225
Ethylenediamine, E-225
trans-Ethylene-1,2-dicarboxylic acid, F-173
N-Ethyl-1,2-ethanediamine, E-225
8-Ethyl-5-(1-ethyl-1-butenyl)-6-methylindolizidine, E-240
8-Ethyl-5-(1-ethyl-1-butenyl)octahydro-6-methylindolizine, E-240
2-Ethyl-3-[2-(3-ethylpiperidino)ethyl]indole, D-120
Ethylevoxine, F-223
1α-*C*-Ethylfagomine, E-244
O-Ethylglaucamine, G-87
6-*O*-Ethylguanine, G-210
N-Ethylhastanecine trachelanthate, E-241
8-Ethyl-5-(1,4-heptadien-6-ynyl)octahydroindolizine, A-486
8-Ethyl-5-(1-hepten-6-ynyl)octahydroindolizine, A-486
2-Ethyl-5-heptyl-3,4-dihydro-2*H*-pyrrole, D-246
5-Ethyl-2-heptyl-Δ^1-pyrroline, D-246
2-Ethyl-5-heptyl-Δ^1-pyrroline, D-246
4-Ethyl-2,4-hexadienoic acid, E-242
5-Ethyl-1,4,7,8,9,10-hexahydro-2*H*-3,7-methanoazacycloundecino[5,4-*b*]indole, C-522
13-Ethyl-4,5,11,12,13,13*a*-hexahydro-2*H*-3,13-methanooxireno[9,10]azacycloundecino[5,4-*b*]indol-5*a*(1*aH*)-ol, V-180
12-Ethyl-1,2,7*b*,8,12*b*,12*c*-hexahydro-2-methoxy-2-methylpyrido[4,3-*b*]pyrrolo[1,2,3-*lm*]carbazole, L-31
1-Ethyl-5-(7-hydroxy-1,3-benzodioxol-5-yl)-2-piperidinone, C-63
3-Ethyl-7-hydroxy-4,8-dimethoxy-2(1*H*)-quinolinone, H-60
22-Ethyl-19-hydroxy-15,16-dimethoxy-4,5-secoobscurinervan-21-oic acid γ-lactone, A-233
6-Ethyl-8-(2-hydroxyethyl)-5-pentylindolizidine, E-263
4-Ethyl-2-(hydroxyimino)-5-nitro-3-hexenamide, E-243

1-Ethyl-8-hydroxy-4-methoxy-β-carboline, D-686
1-Ethyl-5-(3-hydroxy-4,5-methylenedioxyphenyl)-2-piperidone, C-63
α-Ethyl-5-hydroxy-6-methyl-2-piperidinedecanol, P-655
6-Ethyl-2-hydroxymethyl-3,4-piperidinediol, E-244
2-Ethyl-6-hydroxymethyl-3,4,5-piperidinetriol, E-245
4-Ethyl-4-hydroxy-1*H*-pyrano[3′,4′:6,7]indolizino[1,2-*b*]quinoline-3,14(4*H*,12*H*)-dione, C-70
2-Ethyl-3-hydroxypyrazine, E-246
2-Ethyl-4-hydroxyquinazoline, E-247
3-Ethylidenebutyric acid, M-506
3-Ethylidene-1,3-dihydro-2*H*-indol-2-one, E-248
α-Ethylidene-2,5-dihydro-3-methyl-2,5-dioxo-1*H*-pyrrole-1-acetic acid, P-179
5-Ethylidene-4,4*a*-epoxy-2,3,4,4*a*-tetrahydro-1-pyrindene, A-14
N′-Ethylidene-*N*-formyl-*N*-methylhydrazine, G-236
2-Ethylidene-1,2,3,10,11,11*a*-hexahydro-8-hydroxy-7,11-dimethoxy-5*H*-pyrrolo[2,1-*c*][1,4]benzodiazepin-5-one, T-424
4-Ethylidene-2*a*,3,4,6,7,7*b*-hexahydro-3-hydroxy-1*H*-2-oxa-7*a*-azacyclopent[*cd*]inden-1-one, S-560
4-Ethylidene-1,3,4,5,6,7-hexahydro-6-methylene-2,5-ethano-2*H*-azocino[4,3-*b*]indole, A-1365
4-Ethylidene-1,3,4,5,6,8-hexahydro-2-methyl-13-methylene-1,5-methanoazonino[4,3-*b*]indol-7(2*H*)-one, E-193
3-Ethylidenehexahydropyrrolo[1,2-*a*]pyrazine-1,4-dione, E-249
Ethylidenemethylhydrazinecarboxaldehyde, G-236
5-Ethylidene-1,2,3,4,5,6,7,9-octahydro-6-(2-hydroxyethyl)-3-methyl-8*H*-azecino[5,4-*b*]indol-8-one, B-419
α-Ethylidene-1,2,3,3*a*,4,5,6,7-octahydro-7-hydroxy-3-methyl-3,7*a*-diazacyclohepta[*jk*]fluorene-5-acetaldehyde, A-222
3-Ethylidene-1,2,3,4,6,7,12,12*b*-octahydroindolo[2,3-*a*]quinolizine, D-230
4-Ethylidene-1,3,4,4*a*,5,7,12,12*a*-octahydro-2-methylpyrido[3′,4′:4,5]cyclohept[1,2-*b*]indol-6(2*H*)-one, M-293
3-Ethylideneoxindole, E-248
3-Ethylidene-2-pyrrolidinone, E-250
7-Ethylidene-1*a*,2,3,7-tetrahydrocyclopent[*b*]oxireno[*c*]pyridine, A-14
2-Ethylidene-1,2,3,11*a*-tetrahydro-5*H*-pyrrolo[2,1-*c*][1,4]benzodiazepin-5-one, P-660
5-Ethyl-4*H*-indolo[3,2-*de*][1,5]naphthyridin-4-one, T-671
3-Ethyl-12*H*-indolo[2,3-*a*]quinolizin-5-ium, F-84
2-Ethyl-5-(3-indolyl)oxazole, A-622
1-Ethyl-3-isobutylpiperidine, M-530
2-Ethyllactic acid, H-572
5-Ethyl-9-methoxycanthin-6-one, L-300
1-Ethyl-4-methoxy-β-carboline, M-290
9-Ethyl-7-methoxyfuro[2,3-*b*]quinolin-4(9*H*)-one, F-212
3-Ethyl-6-methoxy-5-methyl-2-[2-(3-methyl-4-phenyl-3-butenyl)-4-oxazolyl]-4*H*-pyran-4-one, P-334
2-Ethyl-11-methoxy-3-methyl-3*H*-[1,6]naphthyridino[6,5,4-*def*]quinoxaline, E-251
3-Ethyl-3-methoxyoxindole, E-236
3-Ethyl-2-methoxypyrazine, E-246
1-Ethyl-4-methoxy-9*H*-pyrido[3,4-*b*]indol-8-ol, D-686
2-Ethyl-3-methyl-2-butenedioic acid, E-252
1-Ethyl-3-(2-methylbutyl)piperidine, E-253
N-Ethyl-*N*′-methyl-*N*,*N*′-diphenylurea, D-818
N-Ethyl-*N*′-methyl-1,2-ethanediamine, E-225
N-Ethyl-*N*′-methylethylenediamine, E-225
2-Ethyl-3-methylfumaric acid, E-252
Ethylmethylglycollic acid, H-572
10-Ethyl-8-methyllobelidiol, H-434
2-Ethyl-3-methylmaleic acid, E-252
2-Ethyl-3-methylmaleimide, E-252
21-Ethyl-4-methyl-16-methylene-7,20-cycloveatchane-1,12,15-triol, N-30
α-Ethyl-1-methyl-α′-phenyl-2,6-piperidinediethanol, L-86
2-Ethyl-6-methyl-3,4,5-piperidinetriol, E-254
1-Ethyl-3-(2-methylpropyl)piperidine, M-530
2-Ethyl-5-methylpyrazine, E-255
5-Ethyl-4-methyl-3-pyridinecarboxylic acid, E-257
5-Ethyl-2-methylpyridine, E-256
1-Ethyl-2-methylpyridinium bromide, M-537
1-Ethyl-2-methylpyridinium iodide, M-537
5-Ethyl-2-methyl-11*H*-pyrido[3,4-*a*]carbazolium(1+), E-258
3-Ethyl-4-methyl-1*H*-pyrrole-2,5-dione, E-252
2-Ethyl-4-methylquinazoline, E-259
2-Ethyl-1-methyl-4(1*H*)-quinazolinone, E-247
1-Ethyl-4-methylsulfonyl-β-carboline, E-260
1-Ethyl-4-(methylsulfonyl)-9*H*-pyrido[3,4-*b*]indole, E-260
2-Ethyl-4-methylthiazole, E-261
1-Ethyl-2-methylthiazolium(1+), M-400
Ethylmorphine, M-704
(4-Ethylmorpholino-N^4)trihydroboron, M-705
O-Ethylnareline, N-47
4-Ethyl-5-nitro-2-oxo-3-hexenamide oxime, E-243
O-Ethylnordictamnine, F-224
O-Ethylnor-γ-fagarine, F-213
8-Ethylnorlobelol I, H-435
N-Ethylnornicotine, P-957
O-Ethylnorskimmianine, F-223
O-Ethylnupharamine, N-340
7-Ethyl-1,4,5,6,7,8,10,14*b*-octahydro-1,2-dioxo-2*H*-3,7-methanoazacycloundecino[5,4-*b*]indole-9-carboxylic acid methyl ester, E-192
7-Ethyl-1,4,5,6,7,8,9,10-octahydro-2*H*-3,7-methanoazacycloundecino[5,4-*b*]indole, Q-6
5-Ethyl-1,4,5,6,7,8,9,10-octahydro-2*H*-methanoazacycloundecino[5,4-*b*]indol-6-ol, C-104
7-Ethyl-1,2,4,5,6,7,8,9-octahydro-14*bH*-3,7-methanoazacycloundecino[5,4-*b*]indol-14*b*-ol, R-72
13-Ethyl-1*a*,4,5,10,11,12,13,13*a*-octahydro-2*H*-3,13-methanooxireno[9,10]azacycloundecino[5,4-*b*]indole, V-179
1*b*-Ethyl-1*a*,1*b*,3,4,8*c*,9,10,10*a*-octahydro-2*H*-oxireno[4,5-*b*]pyrido[3,2-*c*]carbazole, E-262
6-Ethyloctahydro-5-pentyl-8-indolizineethanol, E-263
1-Ethyloctahydro-4-(4-pentynyl)-2*H*-quinolizine, E-264
1-Ethyloctahydro-4-(2-propenyl)-2*H*-quinolizine, E-265
O-Ethyloreogenine, G-87
5-Ethyl-1-oxa-4-azacyclopentadec-10-en-15-one, E-93
5-Ethyl-2-pentyl-Δ^1-pyrroline, D-246
2-Ethyl-5-pentyl-Δ^1-pyrroline, D-246
1-Ethyl-4-(4-pentynyl)quinolizidine, E-264
8-Ethyl-10-phenyldehydrolobelidiol, L-221
8-Ethyl-10-phenyldehydrolobelionol, L-221
8-Ethyl-10-phenyllobelidiol, L-86
5-Ethyl-α-picoline, E-256
α-Ethyl-2-piperidineethanol, H-435
α-Ethyl-2-piperidinemethanol, C-603
1-Ethyl-4-(2-propenyl)quinolizidine, E-265
8-Ethyl-10-propyllobelidiol, H-433
2-(1-Ethylpropyl)-4-methoxyquinoline, E-266
2-(1-Ethylpropyl)-1-methyl-4(1*H*)-quinolinone, E-267
3-Ethylpyrazinol, E-246
3-Ethyl-2(1*H*)-pyrazinone, E-246
5-Ethyl-3-pyridinecarboxylic acid, E-269
3-Ethylpyridine, E-268
1-Ethyl-9*H*-pyrido[3,4-*b*]indole, E-234
1-Ethyl-1*H*-pyrrole-2-carboxaldehyde, P-942
3-Ethyl-2-pyrrolidinone, E-270
3-(1-Ethyl-2-pyrrolidinyl)pyridine, P-957
2-Ethyl-4-quinazolinol, E-247
2-Ethyl-4(3*H*)-quinazolinone, E-247
1-Ethyl-4(1*H*)-quinazolinone, Q-14
3-Ethyl-4(3*H*)-quinazolinone, Q-14
N^1-Ethylquinine, Q-20
O-Ethylrhoeagenine, R-86
N^{16}-Ethylroquefortine C, R-125
8-*O*-Ethylsachaconitine, M-355
21-*O*-Ethylstrictosamide aglycone, V-126
β-*O*-Ethylsynephrine, S-659
N-Ethyltetrahydrocytisine, T-149
2-Ethyl-1,2,3,4-tetrahydro-6,7-dihydroxy-1,1-dimethylisoquinoline, T-152
4-Ethyl-1,6,7,8-tetrahydro-6,8-dimethylcyclopent[*g*]indole, T-594
2-Ethyl-1,2,3,4-tetrahydro-1,1-dimethyl-6,7-isoquinolinediol, T-152
3-Ethyl-1,2,3,4-tetrahydro-1,3-dimethylisoquinoline, E-271
α^2-Ethyl-1,2,3,6-tetrahydro-α^6,1-dimethyl-2,6-pyridinediethanol, H-434
2-Ethyl-5,6,7,8-tetrahydro-3-methylimidazo[1,2-*a*]pyridine, C-199
3-Ethyl-5,6,7,8-tetrahydro-2-methylimidazo[1,2-*a*]pyridine, C-198
α^6-Ethyl-1,2,3,6-tetrahydro-1-methyl-α^2-propyl-2,6-pyridinediethanol, H-433
5-[(4-Ethyltetrahydro-5-oxo-3-furanyl)methylidene]-1-methyl-2,4-imidazolidinedione, E-272
4-Ethyl-1,6,7,8-tetrahydro-5,6,8-trimethylcyclopent[*g*]indole, H-141
2-(5-Ethyl-1,3,4,7-tetramethyl-1*H*-inden-6-yl)-1*H*-pyrrole, T-593
8-*O*-Ethyl-3,14,15-tribenzoylaconine, M-331
2-Ethyl-3,4,5-trihydroxy-6-hydroxymethylpiperidine, E-245
2-Ethyl-3,4,5-trihydroxy-6-methylpiperidine, E-254
Ethyltrimethylpyrazine, E-273
O-Ethyltriniifoline, Z-1
1-Ethylxanthine, X-5
Ethynedicarboxylic acid, B-447
Etilevodopa, A-745
Etioline 3-glucoside, S-199
Etioline, S-199
Etiolinine, S-199
Eubron, E-6
Euchrestifoline, E-274
Euchrestine A, E-275
Euchrestine B, E-276
Euchrestine C, E-276
Euchrestine D, E-277
Euchrestine E, E-276
Eudermol, N-190
Eudisin A, I-119
Eudisin B, I-119
Eudistalbin A, E-278
Eudistalbin B, E-279
Eudistomidin A, E-280
Eudistomidin B, E-281
Eudistomidin C, E-282
Eudistomidin D, B-321
Eudistomidin E, E-283
Eudistomidin F, E-283
Eudistomin A, E-285
Eudistomin B, E-286
Eudistomin C, E-287
Eudistomin D, B-321
Eudistomin E, E-287
Eudistomin F, E-287
Eudistomin G, E-285
Eudistomin H, E-288
Eudistomin I, E-288
Eudistomin J, B-322
Eudistomin K sulfoxide, E-287
Eudistomin K, E-287
Eudistomin L, E-287
Eudistomin M, E-285
Eudistomin N, B-299
Eudistomin O, B-300
Eudistomin P, E-285
Eudistomin Q, E-285
Eudistomin R, E-289
Eudistomin S, E-289
Eudistomin T, E-289
Eudistomin U, I-119
Eudistomin V, E-287
Eudistomin V, E-288
Eudistomin W, E-290
Eudistomin X, E-284
Eudistomin Y_1, H-411
Eudistomin Y_2, H-411

Eudistomin Y_3, H-411
Eudistomin Y_4, H-411
Eudistomin Y_5, H-411
Eudistomin Y_6, H-411
Eudistomin Y_7, H-411
Eudistone A, E-291
Eudistone B, E-292
Eugenine A, E-293
Eugenine B, E-294
Eugenine, L-347
Euglenapterin, A-923
Eumydrin, T-632
Euojaponin A, P-247
Euojaponin C, P-247
Euojaponin D, P-252
Euojaponin F, P-252
Euojaponin G, P-252
Euojaponin I, P-247
Euojaponin J, P-243
Euojaponin K, P-252
Euojaponin L, P-247
Euojaponin M, P-247
Euojaponin N, P-243
Euonine, P-252
Euonymine, P-247
Euonyminol, N-281
Euophelline, P-247
Euoverrine A, P-247
Euoverrine B, P-252
Euphocharacin A, H-252
Euphocharacin B, H-252
Euphocharacin C, H-252
Euphocharacin D, H-252
Euphocharacin E, P-222
Euphocharacin F, P-222
Euphocharacin G, P-222
Euphocharacin H, P-222
Euphocharacin I, P-222
Euphocharacin J, P-222
Euphocharacin K, P-222
Euphocharacin L, H-252
Euphococcinine, M-389
Euphodendroidin C, H-120
Euphodendroidin G, H-120
Euphodendroidin I, H-120
Euphorbia factor L_{11}, T-263
Euphosalicin, E-295
Euphrosine, E-296
Euphyllin, T-360
Eupolauramine, E-297
Eupolauridine *N*-oxide, I-65
Eupolauridine-di-*N*-oxide, I-65
Eupolauridine, I-65
Eupomatidine 1, S-49
Eupomatidine 2, S-49
Eupomatidine 3, S-49
Euquinine, Q-20
Euroline, E-298
Europine *N*-oxide, E-299
Europine, E-299
Eustifoline A, E-300
Eustifoline B, E-301
Eustifoline C, E-302
Eustifoline D, M-465
Eusynstyelamide, E-303
Euthyroideone A, E-304
Euthyroideone B, E-304
Euthyroideone C, E-304
Euxylophoricine A, E-305
Euxylophoricine B, E-305
Euxylophoricine C, E-306
Euxylophoricine D, E-307
Euxylophoricine E, E-307
Euxylophoricine F, E-308
Euxylophorine B, E-309
Euxylophorine C, E-309
Euxylophorine D, E-309
Euxylophorine, E-309
Evellerine, F-212
Ever 1, P-217
Ever 6, H-248
Ever 7, H-248
Evizon, S-485
Evocarpine, H-750
Evodiamide, M-582
Evodiamine, E-310
Evodiaxinine, E-311
Evodine, F-223
Evoeuropine, A-1444
Evoevoline, E-312
Evolatine, F-221
Evoline, E-313
Evolitrine, F-212
Evomeliaefolin, E-314
Evomerrine, E-315
Evomine, E-316
Evonimine, P-252
Evonine, P-248
Evonoline, P-248
Evopine, E-317
Evoprenine, T-516
Evorine, P-248
Evoxanthidine, T-516
Evoxanthine, T-516
Evoxine acetate, F-223
Evoxine, F-223
Evoxoidine, F-223
Evozine, P-248
Exal, V-110
Exceconidine, A-92
Exceconitine, M-309
Excelsine, D-187
Excelsinine, M-291
Excentricine, E-318
Exfoliazone, A-801
Exicarbamate, S-425
Exiguamide, S-425
Exiguamine A, E-319
Exigurin, S-425
Eximidine, E-320
Eximine, D-346
Exochomine, E-321
Exozoline, C-814
Ezochasmaconitine, M-323
Ezochasmanine, M-303
F 1778, A-1163
F 1839A, A-1164
F 1839B, A-1164
F 10C, A-1165
F 1839C, A-1164
F 1839D, A-1164
F 1839E, A-1164
F 1839F, A-1164
F 2787, H-729
F 1839J, A-1164
F 4708, S-490
FA 4283, A-1166
Faberidine, T-333
Faberonine, H-366
Fabianine, F-1
Fabioline, B-141
Factor M, O-131
Factor S, B-139
Lactobacillus casei Factor, P-772
Fademin, F-79
FAD, F-79
Fagara base, H-751
cis-Fagaramide, M-457
trans-Fagaramide, M-457
Fagaridine, C-356
Fagarine I, F-2
Fagarine II, F-3
Fagarine III, F-4
α-Fagarine, F-2
β-Fagarine, F-223
γ-Fagarine, F-213
Fagaronine, F-5
Fagomine, H-614
Fagopyrine, F-6
Falaconitine, M-365
Falcarindiol, H-116
Falcatine, F-7
Falconericine, M-323
Falconeridine, M-323
Falconerine 8-acetate, M-303
Falconerine, M-303
Faleoconitine, M-336
Fangchinoline 2′α-*N*-oxide, T-286
Fangchinoline 2′β-*N*-oxide, T-286
Fangchinoline, T-286
Fangchirine, D-148
Fannine, A-1490
Faralaotrine, R-46
Farcinicin, A-759
Farcinicine, A-759
Fareanine, F-8
Farfugine, H-233
Fargesine, F-9
Farinosone A, F-10
Farinosone B, F-10
Farinosone C, F-11
Farmiserina, A-832
2,6,10-Farnesatrien-1-amine, F-12
Farnesylamine, F-12
2-Farnesylindole, T-604
3-Farnesylindole, T-605
Fascaplysin A, F-13
Fascaplysin B, F-13
Fascaplysin, F-13
Fasciospongine A, F-14
Fasciospongine B, F-14
Fasicularine, F-15
Fasmerianamine A, F-16
Fasmerianamine B, F-16
Fastigiatine, F-17
Fastrine, F-18
Fastudine, F-19
Fastunine, F-20
Fastusidine, F-21
Fastusine, F-22
Fastusinine, F-23
Fauridine, F-24
Faurine, F-25
Fauripavine, F-26
Faurithaline, F-27
Fawcettidine, F-28
Fawcettiine, F-29
Fawcettimine, F-30
4849F, B-73
F6, B-403
31F508α1, B-140
31F508α2, B-140
31F508β1, B-140
31F508β2, B-140
FCRC A48, F-152
FD 838, A-1167
FD 839, A-1168
FD 991, Q-58
Febrifugine, F-31
Fedamazine, F-32
Feldamycin, F-33
Felipealbizine A, B-386
Felipealbizine B, B-389
Fellutanine D, G-234
FEMA 2421, A-706
FEMA 2682, A-706
FEMA 3147, A-74
FEMA 3184, A-74
FEMA 3202, A-74
FEMA 3251, A-73
FEMA 3813, A-765
FEMA 3819, A-1413
FEMA 2224, C-15
FEMA 2787, C-100
FEMA 3404, C-100
FEMA 2364, D-115
FEMA 2614, D-889
FEMA 3272, D-774
FEMA 3336, D-392
FEMA 3540, D-775
FEMA 3555, D-247
FEMA 3798, D-535
FEMA 3898, D-500
FEMA 3913, D-132
FEMA 3916, D-393
FEMA 3917, D-426
FEMA 3150, E-237
FEMA 3154, E-255
FEMA 3394, E-268

FEMA 3546, E-256
FEMA 3680, E-261
FEMA 2488, F-173
FEMA 3189, F-201
FEMA 3284, F-200
FEMA 3285, G-107
FEMA 3684, G-108
FEMA 2011, H-258
FEMA 2832, H-221
FEMA 3204, H-495
FEMA 3205, H-495
FEMA 2593, I-79
FEMA 2978, I-301
FEMA 3554, I-283
FEMA 3940, I-285
FEMA 3297, L-153
FEMA 2655, M-72
FEMA 2718, M-384
FEMA 3019, M-474
FEMA 3102, M-409
FEMA 3132, M-273
FEMA 3133, M-483
FEMA 3219, M-420
FEMA 3309, M-536
FEMA 3313, M-585
FEMA 3433, M-272
FEMA 3463, M-505
FEMA 3716, M-569
FEMA 3945, M-240
FEMA 2815, O-37
FEMA 3035, O-32
FEMA 2878, P-336
FEMA 2908, P-454
FEMA 2909, P-467
FEMA 2966, P-894
FEMA 3220, P-342
FEMA 3302, P-889
FEMA 3383, P-237
FEMA 3523, P-949
FEMA 2975, Q-20
FEMA 2976, Q-20
FEMA 2977, Q-20
FEMA 3470, Q-29
FEMA 3237, T-284
FEMA 3241, T-600
FEMA 3244, T-613
FEMA 3322, T-366
FEMA 3591, T-355
FEMA 3736, T-700
Fenactil, C-417
Fendleridine, A-1490
Fendlerine, A-1490
Fendlispermine, A-1498
Fenfangjine A, T-286
Fenfangjine B, T-286
Fenfangjine C, T-286
Fenfangjine D, C-171
Fenfangjine F, S-546
Fenfangjine G, S-311
Fenfangjine H, F-34
Fenfangjine I, F-34
Feretine, A-151
Ferriaspergillin, A-1475
Ferribactin G173, F-35
Ferricrocin, F-36
Ferrimycin A_1, F-37
Ferrineoaspergillin, F-76
Ferrioxamine A_2, F-38
Ferrioxamine B, F-39
Ferrioxamine C, F-40
Ferrioxamine D, F-39
Ferrioxamine D_1, F-39
Ferrioxamine D_2, F-41
Ferrioxamine E, F-42
Ferrioxamine F, F-43
Ferrioxamine H, F-44
Ferrithiocin, D-235
Ferropyrimine, D-496
Ferrorosamine A, D-496
Ferroverdin A, F-45
Ferroverdin B, F-45
Ferroverdin C, F-45
Ferroverdin, F-45
Ferrugine, F-46
Ferruginine, F-47
N^1-*trans*-Feruloylagmatine, A-719
2′-*O*-*trans*-Feruloylalangiside, A-239
N-Feruloylanthranilic acid, A-1563
O-Feruloylcassine, C-183
Feruloylcholine, C-419
6′-*O*-Feruloyldemethylalangiside, A-239
2′-*O*-*trans*-Feruloyldemethylalangiside, A-239
2′-*O*-*trans*-Feruloyl-3-*O*-demethyl-2-*O*-methylalangiside, A-239
N-*trans*-Feruloyl-3,5-dimethoxytyramine, T-576
N-*trans*-Feruloyldopamine, D-920
N-(4′-*O*-Feruloylferuloyl)tyramine, H-271
N^{α}-Feruloylhistamine, C-455
N-Feruloyl-5-hydroxyanthranilic acid, A-789
N-*trans*-Feruloyl-*N*′-(4-hydroxybenzoyl)putrescine, C-456
1-Feruloyl-2-hydroxyputrescine, D-248
6′-*trans*-Feruloyllyaloside, L-316
N-*cis*-Feruloyl-3-methoxytyramine, H-566
N-*trans*-Feruloyl-3-methoxytyramine, H-566
N-*trans*-Feruloyl-3-*O*-methyldopamine, H-566
N-*trans*-Feruloyl-4-*O*-methyldopamine, H-565
N-*trans*-Feruloyl-β-*O*-methyloctopamine, O-63
5-*O*-Feruloylnigrumin, H-509
N-*trans*-Feruloylnormetanephrine, N-303
N-*cis*-Feruloyloctopamine, O-63
N-*trans*-Feruloyloctopamine, O-63
N-*trans*-Feruloyl-*R*-octopamine, O-63
N-*trans*-Feruloyl-*S*-octopamine, O-63
ω-Feruloyloxylupinane, O-58
N-*trans*-Feruloyl-β-*O*-propyloctopamine, O-63
Feruloylputrescine, C-456
N^b-(*E*)-Feruloylserotonin, H-755
N^b-(*Z*)-Feruloylserotonin, H-755
2′-*O*-Feruloylsimmondsin, S-302
Feruloylspermidine, S-398
N^b-Feruloyltryptamine, T-639
N-*cis*-Feruloyltyramine, H-667
N-*trans*-Feruloyltyramine, H-667
Feruperine, C-710
Fervenulin, F-48
Fervenulone, D-498
Festucine, L-234
Festuclavine, F-49
Fetidine, T-333
Fetisinine, P-280
FG 7142, C-133
FI 6426, D-866
Fiancine, H-9
Fibraminine, F-50
Fibranine, F-51
Ficellomycin, F-52
Ficine, F-53
Ficuseptine A, P-228
Ficuseptine B, F-55
Ficuseptine C, F-55
Ficuseptine D, I-342
Ficuseptine, F-54
Fildesin, V-110
Filfiline, D-878
Filifoline, A-683
Filiformine, T-315
Finaconitine, A-94
Finetiadine, P-776
Finetianine, N-30
Firefly luciferin, L-282
Firefly oxyluciferin, F-56
Fiscalin A, F-57
Fiscalin B, F-58
Fiscalin C, F-59
Fischerellin A, F-60
Fischerellin B, F-61
Fischerindole L, F-63
Fischerin, F-62
Fisostin, P-400
Fissiceine, O-170
Fissicesine *N*-oxide, F-64
Fissicesine, F-64
Fissilandione, F-65
Fissisaine, A-1042
Fissistigine A, D-846
Fissistigine B, F-66
Fissistigine C, F-80
Fissoldhimine, F-67
Fissoldine, D-846
Fissumine, D-585
Fistularin 1, F-68
Fistularin 2, F-69
Fistularin 3, F-70
Fistulosin, H-646
FK 1000, S-311
FK 3000, S-311
FK317, A-1177
FK973, A-1177
FK409, E-243
FKI 0550, A-758
FL 120B′, A-1169
FL 120B, A-1169
FL 657C, T-496
Flabellazole A, S-610
Flabellazole B, S-610
Flabellidine, F-71
Flabelliformide A, F-72
Flabelliformide B, F-72
Flabelliformine, F-73
Flabelliformine, F-74
Flabelline, F-75
Flaconitine, A-104
Flagecidin, A-1044
Flamitajin, F-79
Flanin F, F-79
Flavacol, F-76
Flavaconidine, M-332
Flavaconijine, M-343
Flavaconitine, M-332
Flavadine, N-30
Aglaia dasyclada Flavagline compound 1, F-77
Aglaia dasyclada Flavagline compound 2, F-78
Flavamine, N-30
Flavin, A-632
(+)-Flavinantine, F-80
(-)-Flavinantine, F-80
Flavinat, F-79
Flavindin, I-111
Flavine adenine dinucleotide, F-79
Flavinine, F-80
Flavipucine, F-81
Flavisiamine A, M-296
Flavisiamine C, M-296
Flavisiamine D, M-296
Flavitan, F-79
Flavocarpine, F-82
Flavocristamide A, S-634
Flavocristamide B, S-634
Flavolipids, F-83
Flavopereirine, F-84
Flazine methyl ester, F-85
Flazine methyl ether, F-85
Flazine, F-85
Fleephilone, F-86
Flexamine, F-87
Flexicorine, F-88
Flexine, F-89
Flexinine, C-748
Flindersiamine, F-217
Flindersine, F-90
Floramultine, P-221
Floramultinine, F-91
Floribundine, D-531
Floricaline, O-92
Floridanine, O-92
Floridimine, F-92
Floridine, F-92
Floridinine, F-92
Floripavidine, D-531
Floripavine, S-39
Florosenine, O-137
Flueggeine, F-95
Flueggenine A, F-93
Flueggenine B, F-94
Fluggeaine ether, N-307
Fluggeainol, N-307
Fluggeine, F-95
Fluopsin B, F-96

Fluopsin C, F-97
Fluopsin F, F-96
Fluopsin N, F-98
Fluorocarpamine *N*-oxide, F-99
Fluorocarpamine, F-99
C-Fluorocurarine, N-301
C-Fluorocurine, F-100
Fluorocurine, F-100
ψ-Fluorocurine, F-101
C-Fluorocurinine, F-102
Fluorodaturatin, H-444
5-Fluoro-3,4-dihydro-2,4-dioxo-1(2*H*)-pyrimidineacetic acid, F-103
5-Fluoro-2,4-dihydroxypyrimidine, F-104
Fluoroindolocarbazole A, R-32
Fluoroindolocarbazole B, R-32
Fluoroindolocarbazole C, R-32
5-Fluoro-1-(methoxycarbonylmethyl)uracil, F-103
Fluoroplex, F-104
5-Fluoro-2,4-pyrimidinediol, F-104
5-Fluoro-2,4(1*H*,3*H*)-pyrimidinedione, F-104
4-Fluoropyrrolnitrin, P-961
Fluorosolimoesines, F-105
Fluorouracil, F-104
5-Fluorouracil, F-104
Fluracil, F-104
Flustrabromine, B-316
Flustramide A, F-106
Flustramide B, F-108
Flustramine A, F-106
Flustramine B, F-108
Flustramine C, F-106
Flustramine D *N*-oxide, F-107
Flustramine D, F-107
Flustramine E, F-108
Flustraminol A, F-109
Flustraminol B, F-110
Flustrarine B, F-111
Flutimide, F-112
Fluvibactin, F-113
Fluviol A, M-285
Fluviol B, M-285
Fluviol C, M-285
Fluviol D, F-114
Fluviol E, M-285
Fluvirucin B, F-115
Fluvirucin B_2, F-115
Fluvirucin B_4, F-115
Fluvirucin B_5, F-115
Fmoc-L-DOPA, A-745
FO 7314, A-1407
FO 2047, P-333
Foetidine I, F-116
Foetidine II, F-116
Foetidine, T-333
Folacin, P-772
Foliacraline, A-641
Foliamin, P-772
Folic acid conjugate, P-772
Folic acid, P-772
Folicangine, F-117
Folicanthine, C-382
Folidine, F-122
Folifidine, Q-47
Folifine, R-92
Folifinine, F-118
Folimidine, F-119
Folimine, Q-47
Foliminine, F-120
Folinic acid, F-121
Foliosidine acetonide, F-122
Foliosidine, F-122
Foliosine, G-171
Foliphorine, F-122
Folipidine, F-123
Folisine, I-268
Folvite, P-772
Fontaineine, F-124
Fontaphilline, F-125
Fontonamide, F-126
Forbagline A, F-127
Forbagline B, F-127
Aglaia dasyclada Forbagline-like compound, F-128
Fordimine, H-376
Fordine, H-375
Foresaconitine, M-323
Foresticine, M-323
Forestine, M-312
7-Formamidino-7-deazaguanosine, A-1387
10α-Formamidoalloaromadendrane, A-1571
1-Formamidoaromadendrane, A-1447
3-Formamido-8,10-bisaboladiene, A-709
4-Formamido-11-eudesmene, A-775
11-Formamido-5-eudesmene, F-129
6-Formamido-4(15)-eudesmene, I-218
4-Formamido-11-gorgonene, A-777
2-(Formamido)-3-(4-hydroxyphenyl)-2-propenenitrile, C-826
3-Formamidotheonellin, I-213
Formobactin, F-130
Formosanine, M-661
Formouregine, T-521
Formycin A, F-131
Formycin B, F-132
Formycin, F-131
N-Formylalbine, A-243
N^4-Formylalstonisine, A-654
3-(Formylamino)-6,7-dihydroxycoumarin, A-738
4-Formylaminomaaliane, E-100
5-(Formylamino)-6-(methylamino)-2,4-pyrimidinedione, H-761
5-(Formylamino)-6-(methylamino)uracil, H-761
3-(Formylaminomethyl)-1-methoxyindole, I-97
N′-Formylammodendrine, A-930
N-Formylangustifoline, A-1013
N-Formylanhalamine, T-236
N-Formylanhalinine, T-236
N-Formylanhalonidine, T-237
N-Formylanhalonine, A-1021
N-Formylanolobine, A-1066
N-Formylanonaine, R-120
N-Formylbuxamine B, B-455
N^{20}-Formylbuxaminol E, B-456
N-Formylbuxifoline, B-471
2-Formylcarbazole (obsol.), C-121
3-Formylcarbazole, C-121
1-Formyl-β-carboline, C-131
4-Formylcarbostyril, H-721
N-Formylchonemorphine, P-601
Formylcinegalleine, H-554
8-Formylconfusameline, E-315
N-Formylconkurchine, C-610
N-Formylconvolvine, C-633
N-Formylcorydamine, C-678
N-Formylcyclomicrobuxeine (incorr.), C-882
N-Formylcyclovirobuxeine B, C-915
N-Formylcyclovirobuxine B (incorr.), C-915
N-Formylcylindrocarine, C-929
N-Formylcylindrocarpinol, L-177
N-Formylcytisine, C-938
N-Formyldehydroanonaine, D-166
7-Formyldehydrohernangerine, F-133
7-Formyldehydronornantentine, F-134
7-Formyldehydroovigerine, F-135
N-Formyldehydroovigerine, O-143
7-Formyldehydrothalicsimidine, F-136
N-Formyldehydrotryptamine, D-172
N-Formyldemecolcine, D-92
N-Formyl-*N*-demethylharappamine, M-667
N-Formyl-3-demethylmescaline, H-465
N-Formyl-14,15-didehydroaspidofractinine, A-1494
N^1-Formyl-14,15-didehydro-12-hydroxyaspidofractinine, A-1494
4-Formyl-2,3-dihydro-1*H*-azepine-2,7-dicarboxylic acid, M-770
1-Formyl-2,3-dihydro-3-(2-hydroxymethyl-4-methoxyphenyl)-6-methoxy-4(1*H*)-quinazolinone, D-369
1-Formyl-6,7-dihydro-7-oxo-5*H*-pyrrolizine, D-14
1-Formyl-6,7-dihydro-5*H*-pyrrolizine, D-14
N-Formyl-1,2-dihydrorenierol acetate, R-45
N-Formyl-1,2-dihydrorenierol propionate, R-45
(+)-*N*-Formyl-1,2-dihydrorenierone, R-45
(-)-*N*-Formyl-1,2-dihydrorenierone, R-45
14-Formyldihydrorutaecarpine, D-508
6-Formyl-1,7-dihydroxycarbazole, D-557
3-Formyl-1,6-dihydroxycarbazole, D-552
3-Formyl-1,7-dihydroxy-9*H*-carbazole, D-553
3-Formyl-1,8-dihydroxycarbazole, D-554
3-Formyl-2,6-dihydroxycarbazole, D-555
3-Formyl-2,7-dihydroxycarbazole, D-556
1-Formyl-2,7-dihydroxy-6-methylcarbazole, D-619
3-Formyl-2,7-dihydroxy-1-prenylcarbazole, H-125
3-Formyl-2,8-dihydroxy-1-prenylcarbazole, H-125
N-Formyl-11,12-dimethoxyaspidofractinine, A-1494
3-Formyl-1,6-dimethoxy-9*H*-carbazole, D-552
3-Formyl-1,8-dimethoxycarbazole, D-554
3-Formyl-2,6-dimethoxycarbazole, D-555
3-Formyl-2,7-dimethoxycarbazole, D-556
1-Formyl-2,7-dimethoxy-6-methylcarbazole, D-619
9-(2-Formyl-4,5-dimethoxyphenoxy)-1,2,3,10-tetramethoxyoxoaporphine, O-179
Formyldimethylamine, D-747
3-Formyl-1,7-dimethylindole, M-475
N-Formylduguevanine, D-950
N^a-Formylechitamidine, E-30
N^{20}-Formylepipachysamine F, P-601
N-Formylflavaconitine, M-332
3-Formyl-1-geranyl-2,8-dihydroxycarbazole, M-729
3-Formyl-1-geranyl-2-hydroxycarbazole, M-729
6-Formyl-1-geranyl-7-hydroxy-2-methoxycarbazole, E-276
N-Formylharappamine, M-667
2-Formyl-5-(6-heneicosenyl)-1*H*-pyrrole, H-109
N-Formylhernangerine, N-25
N-Formyl-4-hydroxybenzeneacetamide, H-672
6-Formyl-1-hydroxycarbazole, H-451
6-Formyl-2-hydroxycarbazole, H-450
3-Formyl-1-hydroxycarbazole, H-447
3-Formyl-2-hydroxycarbazole, H-448
3-Formyl-6-hydroxycarbazole, H-449
1-Formyl-4-hydroxy-β-carboline, H-456
N-Formyl-20-hydroxycylindrocarine, C-929
8-Formyl-7-hydroxydictamnine, E-315
1-Formyl-7-hydroxy-6,7-dihydro-5*H*-pyrrolizine, D-14
6-Formyl-7-hydroxy-1,3-dimethoxycarbazole, T-533
3-Formyl-4-hydroxyindole, H-527
3-Formyl-5-hydroxyindole, H-528
3-Formyl-6-hydroxyindole, H-529
6-Formyl-7-hydroxy-1-methoxycarbazole, D-557
3-Formyl-1-hydroxy-6-methoxycarbazole, D-552
3-Formyl-2-hydroxy-6-methoxycarbazole, D-555
3-Formyl-2-hydroxy-7-methoxycarbazole, D-556
3-Formyl-7-hydroxy-1-methoxy-9*H*-carbazole, D-553
8-Formyl-7-hydroxy-4-methoxyfuro[2,3-*b*]quinoline, E-315
1-Formyl-7-hydroxy-2-methoxy-6-methylcarbazole, D-619
1-Formyl-2-hydroxy-5-methoxy-6-methylindoline, D-432
3-Formyl-2-hydroxy-6-methoxy-1-prenylcarbazole, H-125
3-Formyl-2-hydroxy-7-methoxy-1-prenylcarbazole, H-125
1-Formyl-3-hydroxy-6-methylcarbazole, H-589
2-Formyl-5-hydroxymethyl-1*H*-pyrrole-1-butanoic acid, F-137
2-Formyl-5-(hydroxymethyl)pyrrole, H-626
4-(2-Formyl-5-hydroxymethyl-1*H*-pyrrol-1-yl)butanoic acid, F-137
2-(2-Formyl-5-hydroxymethyl-1*H*-pyrrol-1-yl)-3-phenylpropanoic acid, F-138
3-(2-Formyl-5-hydroxymethyl-1*H*-pyrrol-1-yl)-2,5-pyrrolidinedione, F-139
3-Formyl-1-hydroxy-4-prenylcarbazole, C-507
3-Formyl-2-hydroxy-7-prenylcarbazole, C-500
6-Formyl-3-hydroxy-4-prenylcarbazole, H-577
3-Formyl-2-hydroxy-1-prenylcarbazole, H-125
4-Formyl-2-hydroxyquinoline, H-721
4-Formyl-8-hydroxyquinoline, H-722
3-Formyl-2-hydroxy-4,6,7-trimethoxyquinoline, M-175
N-Formyl-3-indoleacrylamide, I-136
5-Formylindole, I-87

7-Formylindole, I-88
3-Formylindole, I-86
3-Formyl-1*H*-indole-2-sulfonic acid, F-140
3-Formylindolyl methyl disulfide, M-434
N-Formyl-3-(1*H*-indol-3-yl)-2-propenamide, I-136
N^{20}-Formylirehdiamine C, P-606
N-Formylirehline, C-610
N-Formylismine, I-186
N^{α}-Formylkopsanol, K-65
N-Formylloline, L-234
4-Formyl-*N*-mercaptocarbostyril, H-721
3-Formyl-2-mercaptoindole, M-201
4-Formyl-1-mercapto-2(1*H*)-quinolinone, H-721
N-Formylmescaline, M-219
N-Formyl-12-methoxyaspidoalbidine, A-1490
N-Formyl-17-methoxyaspidoalbidine, A-1490
N-Formyl-12-methoxyaspidofractinine, A-1494
6-Formyl-4-methoxy-2,2′-bipyridine, C-11
5-Formyl-4-methoxy-2,2′-bipyrrole, M-244
6-Formyl-1-methoxycarbazole, H-451
6-Formyl-2-methoxycarbazole, H-450
3-Formyl-1-methoxycarbazole, H-447
3-Formyl-2-methoxycarbazole, H-448
3-Formyl-6-methoxycarbazole, H-449
3-Formyl-8-methoxycarbazole, H-451
1-Formyl-4-methoxy-β-carboline, H-456
N^{a}-Formyl-12-methoxyechitamidine, E-30
1-Formyl-3-methoxy-6-methylcarbazole, H-589
1-Formyl-5-methoxy-6-methylindoline, D-432
2-Formyl-5-methoxymethyl-1*H*-pyrrole-1-butanoic acid, F-137
2-Formyl-5-(methoxymethyl)-1*H*-pyrrole, H-626
3-Formyl-2-methoxy-8-prenylcarbazole, A-1530
3-Formyl-1-methoxy-4-prenylcarbazole, C-507
3-Formyl-2-methoxy-1-prenylcarbazole, H-125
4-Formyl-8-methoxyquinoline, H-722
(*Z*)-16-Formyl-5α-methoxystrictamine, R-75
Formylmethylamine, M-463
N-Formyl-*O*-methylanhalonidine, T-237
9-Formyl-3-methyl-9*H*-carbazole, M-424
3-Formyl-2-(methyldithio)indole, M-434
3-Formyl-2,3′-methylenebisindole, M-65
3-(Formylmethyl)indole, I-80
3-Formyl-7-methylindole, M-475
N-Formyl-2-methylindoline, D-472
N-Formyl-*O*-methylisopiline, T-521
3-(2-Formyl-2-methylpropyl)-5-(3-methyl-1-oxo-2-butenyl)-1*H*-indole, D-756
3-Formyl-2-(methylthio)indole, M-201
N^{b}-Formyl-N^{b}-methyltryptamine, M-582
N-Formyl-*N*-methyltyramine, H-667
N-Formylnandigerine, N-25
N-Formylnorcyclomicrobuxeine, C-882
N-Formylnorephedrine, A-869
N-Formylnorgalanthamine, G-3
N-Formylnorloline, L-234
N-Formylnormacromerine, M-18
N-Formylnornantenine, N-29
N-Formylnornicotine, P-957
N-Formylnornuciferine, D-531
N-Formylnorpurpureine, P-208
2-Formyl-2-northalidasine, T-320
N-Formylovigerine, O-143
5-Formyloxycorynoline, C-692
N^{a}-Formyloxydeoxy-Wieland-Gumlich aldehyde, C-115
3-Formyloxy-6-tigloyloxytropane, M-391
N-Formylpapilicine, B-455
N-Formylpiperidine, P-455
2-(1-Formyl-2-piperidyl)-1-pyrroline, S-330
3-(*N*-Formyl-2-piperidyl)quinolizidine, L-97
N-Formylpsammaplysin A, P-695
12-Formylpteroic acid, R-82
Formylpteroylglutamic acid, F-121
N-Formylpurpureine (incorr.), P-208
N-Formylputerine, P-781
5-Formyl-1*H*-pyrrole-2-alkanenitriles, F-141
N-Formyl-1*H*-pyrrole-2-carboxamide, P-944
5-Formyl-1*H*-pyrrole-2-carboxylic acid, F-142
2-Formylpyrrole, P-942
24-(5-Formyl-1*H*-pyrrol-2-yl)-2-hydroxy-18-tetracosenenitrile, C-827
(5-Formyl-1*H*-pyrrol-2-yl)methyl 4-hydroxybutanoate, H-626
13-(5-Formyl-1*H*-pyrrol-2-yl)-7-tridecenenitrile, C-825
N-Formylquestiomycin B, A-861
4-Formylquinoline, Q-30
N^{6}-Formylroquefortine C, R-125
N-Formylstaurosporine, S-498
N-Formylstepharine, P-643
16-Formylstrictamine, R-75
N-Formyl-4,5,6*a*,7-tetradehydro-7-hydroxyglaucine, D-159
3-Formyl-4,5,6,7-tetrahydro-4,5-dihydroxy-1*H*-indole, T-156
5-Formyl-5,6,7,8-tetrahydrofolic acid, F-121
1-Formyl-1,2,3,4-tetrahydro-3-(2-hydroxymethyl-4-methoxyphenyl)-6-methoxyquinazoline, D-369
9-Formyl-1,2,3,4-tetrahydro-7-methoxy-β-carboline, P-916
N-Formyltortuosamine, T-433
6-Formyl-1,3,7-trihydroxycarbazole, T-533
3-Formyl-1,6,7-trihydroxycarbazole, T-532
5-Formyl-4,6,8-trihydroxy-1-methoxycarbonylphenazine, L-241
O-Formyltropine tropate, T-632
11-Formyl-2,4,8,10-undecatetraenoic acid, O-176
N-Formylxylopine, A-1066
Forrestine, P-247
Forticine, C-290
Fortucine, P-528
Fortuneine, F-143
Fortunine, S-125
Foveoglin A, F-144
Foveoglin B, F-144
Foxy, M-288
FR 225656, A-1172
FR 225659, A-1173
FR 252921, A-1174
FR 252922, A-1175
FR 256523, A-1175
FR 3383, A-1170
FR 66979, A-1171
FR 900148, A-1176
FR 900220, A-680
FR 900482, A-1177
FR 901483, A-1178
FR 900216B, R-83
FR 900447, C-427
FR 900216C, R-83
FR 900483, D-420
FR 900409, E-243
FR 900411, E-242
FR 900216F, R-83
FR 177391, H-76
FR 900494, K-41
FR 005759, P-961
Fragilamide, F-145
Fragin, F-146
Francheline, F-147
Franchetine, F-147
Franchetine, F-148
Franganine, F-149
Frangufoline, F-150
Frangulanine, F-151
Frankiamide, C-26
Fredericamycin A, F-152
Fredericamycin B, F-153
Fredericamycin E, F-154
Fritillarine, C-298
Fritillarizine, C-301
Fritilline A, F-155
Fritilline B, F-156
Fritimine, F-157
Fromiamycalin, F-158
FRT-A, F-162
FRT-B, F-81
Fructigenine A, F-159
Fructigenine B, F-160
D-Fructosazine, B-221
2-(Fructosylamino)benzoic acid, F-161
Fruit rot toxin A, F-162
Fruit rot toxin B, F-81
Fruticosamine, F-163
Fruticosine, F-163
Fruticosoline, F-164
Fruticosonine, F-164
FTB, N-315
FTF, T-646
FTH, T-646
FTJ, T-646
Fuchsiaefoline, M-237
Fuchsisenecionine, H-233
5-FU, F-104
Fugapavine, M-141
Fugu poison, T-298
Fukinotoxin, P-277
Fuligorubin A, F-165
Fulvanine A, F-166
Fulvanine B, F-166
Fulvanine C, F-166
Fulvanine D, F-166
Fulvanine E, F-167
Fulvine *N*-oxide, F-168
Fulvine, F-168
Fumadensine, F-169
Fumaflorine, F-170
Fumaramidine, F-171
Fumaramidmycin, P-337
Fumaramine, F-172
Fumaric acid isobutylamide, F-173
Fumaric acid, F-173
Fumaricine, F-174
Fumaridine, N-36
Fumariflorine ethyl ester, F-175
Fumariflorine, F-175
Fumarilicine, F-174
Fumariline, F-176
Fumarine, P-667
Fumarinine, F-177
Fumaritine *N*-methosalt, F-174
Fumaritine *N*-oxide, F-174
Fumaritine, F-174
Fumaritridine, F-178
Fumaritrine, F-178
Fumarizine, F-179
Fumarofine, F-180
Fumarophycine, F-174
Fumarostelline, F-180
Fumigaclavine A, F-181
Fumigaclavine B, F-181
Fumigaclavine C, F-182
Fumimycin, F-183
Fumiquinazoline A, F-185
Fumiquinazoline B, F-185
Fumiquinazoline C, F-186
Fumiquinazoline D, F-187
Fumiquinazoline E, F-185
Fumiquinazoline F, F-188
Fumiquinazoline G, F-188
Fumiquinazoline H, F-189
Fumiquinazoline I, F-184
Fumitremorgin C, F-190
Fumitremorgin D, N-315
Fumitremorgin E, T-646
Fumitremorgin F, T-646
Fumitremorgin G, T-647
Fumitremorgin H, T-646
Fumitremorgin L, T-647
Fumitremorgin M, N-315
Fumitremorgin N, N-315
Fumjudaine, S-612
Fumschleicherine, F-191
Fumvailine, F-192
Funebradiol, F-193
Funebral, F-194
Funebrine, F-195
Fungerin, F-196
Fungicide PF 1140, A-1226
Funiculosin, F-197
Funiferine *N*,*N*′-dimethosalt, R-114
Funiferine *N*-oxide, R-114
Funiferine, R-114
Funtessine, H-318
Funtudiamine A, P-601
Funtudiamine B, P-601
Funtudienine, F-198

Funtuline, L-56
Funtumafrine B, A-883
Funtumafrine C, A-883
Funtumidine, A-880
Funtumine, A-882
Funtuphyllamine A, A-881
Funtuphyllamine B, A-881
Funtuphyllamine C, A-881
Furacridone, F-206
3-Furancarbinol, F-199
3-Furanmethanol, F-199
6-(3-Furanyl)-β,3-dimethyl-2-piperidinebutanol, N-340
6-(3-Furanyl)-1,6,7,8,9,9*a*-hexahydro-9-(hydroxymethyl)-2*H*-quinolizine-3-carboxaldehyde, N-339
5-(3-Furanyl)-8-methylindolizidine, F-202
4-[6-(3-Furanyl)-3-methyl-2-piperidinyl]-2-methyl-2-buten-1-ol, N-340
1-(2-Furanylmethyl)-1*H*-pyrrole, F-200
2-[(2-Furanylmethyl)thio]-6-methylpyrazine, F-201
4-(3-Furanyl)octahydro-1,7-dimethyl-2*H*-quinolizine, D-227
5-(3-Furanyl)octahydro-8-methylindolizine, F-202
1-[5-(2-Furanyl)pyrazinyl]-1,2,4-butanetriol, C-776
1-(2-Furanyl)-9*H*-pyrido[3,4-*b*]indole-3-carboxylic acid, F-85
2-Furanyl-5-(1,2,4-trihydroxybutyl)pyrazine, C-776
6-(3-Furanyl)-α,α,3-trimethyl-3-piperidinepropanol, N-340
3-Furfuryl alcohol, F-199
3-Furfuryl 2-pyrrolecarboxylate, F-199
N-(2-Furfuryl)pyrrole, F-200
Furoclausine A, F-203
Furoclausine B, F-204
Furoerioaustralasine, F-205
Furofoline I, F-206
Furofoline II, F-207
Furofoline, F-206
Furomegistine II, F-208
Furomegistine I, R-88
Furoparadine, F-209
Furo[2,3-*b*]quinoline-4,5-diol, F-210
Furo[2,3-*b*]quinoline-4,6-diol, F-211
Furo[2,3-*b*]quinoline-4,7-diol, F-212
Furo[2,3-*b*]quinoline-4,8-diol, F-213
Furo[2,3-*b*]quinoline-4,5,6,7,8-pentol, F-214
Furo[2,3-*b*]quinoline-4,5,7,8-tetrol, F-216
Furo[2,3-*b*]quinoline-4,5,6,7-tetrol, F-215
Furo[2,3-*b*]quinoline-4,6,7,8-tetrol, F-217
Furo[2,3-*b*]quinoline-4,5,6-triol, F-218
Furo[2,3-*b*]quinoline-4,5,7-triol, F-219
Furo[2,3-*b*]quinoline-4,5,8-triol, F-220
Furo[2,3-*b*]quinoline-4,6,7-triol, F-221
Furo[2,3-*b*]quinoline-4,6,8-triol, F-222
Furo[2,3-*b*]quinoline-4,7,8-triol, F-223
Furo[2,3-*b*]quinolin-4-ol, F-224
Furo[2,3-*b*]quinolin-4(9*H*)-one, F-224
Furostifoline, M-464
18-*O*-(3-Furoyl)wilfortrine, P-253
Fusaric acid, B-445
Fusaricide, F-225
Fusarin A, F-226
Fusarin C, F-227
Fusarin D, F-226
Fusarin F, F-228
Fusarin X, F-227
Fusarin, B-444
Fusarinin, B-444
Fusarinine C, F-231
Fusarinolic acid, H-436
Fuscaine, D-433
Fuscin, A-1576
Fuscoatramide, A-715
Fuscusine, F-229
Fuseine, F-230
Fusigen, F-231
Futoamide, F-232
Fuziline, M-313
Fuzitine, T-248
Fysostigmine, P-400
G 1499-2, A-1179
G 1549, H-563
GABA, A-715
Gabonine, G-1
Gabunamine, C-615
Gabunine, C-616
Gadeline, G-152
Gadenine, M-307
Gadesine, G-152
Gagamine, P-610
Gagaminine, P-610
4-*O*-α-D-Galactopyranosylcalystegine B_2, A-1587
2-*O*-α-D-Galactopyranosyl-1-deoxymannonojirimycin, H-616
6-*O*-α-D-Galactopyranosyl-1-deoxynojirimycin, H-616
2-*O*-α-D-Galactopyranosyl-1-deoxynojirimycin, H-616
5-*O*-α-D-Galactopyranosyl-α-homonojirimycin, B-186
Galactostatin, A-726
Galactosylqueuosine, Q-9
Galantamine hydrobromide, G-3
Galantamine, G-3
Galanthamidine, G-2
Galanthamine *N*-oxide, G-3
Galanthamine, G-3
Galanthaminne, G-3
Galanthidine, L-348
Galanthindole, G-4
Galanthine, P-716
Galanthusine, G-5
Galantin I, G-6
Galantin II, G-7
Galasine, G-8
Galbazine, M-273
Galegine, M-410
Galipeine, C-821
Galipine, G-11
Galipinine, G-9
Galipoidine, G-10
Galipoline, G-11
6′-*O*-Galloylprunasin, H-673
O-Galloyltyramine, H-667
6′-*O*-Galoylsambunigrin, H-673
Galwesine, H-504
Gamalon, A-715
Gambirdine, M-661
Gambireine, G-13
Gambirine, G-13
Gambirtannine, D-434
Gancidin W, C-876
Gandharamine, G-14
Ganoderpurine, G-15
Ganodine, H-626
Ganoine, H-626
Garceine, G-16
Gardenamide A, G-17
Gardfloramine, G-18
Gardmultine, G-19
Gardneramine N^4-oxide, G-20
Gardneramine oxindole, G-21
16*R*-Gardneramine oxindole, G-21
Gardneramine, G-20
Gardnerine, G-22
Gardnutine, G-23
Gardquinolone, G-24
Garryfoline, V-45
Garryine, G-25
Gasabiimine, G-26
Gastrodamine, B-181
Gastrodigenin, H-414
Gaultherialine A, G-27
Gazer, Z-11
GB 13, H-281
GB 1, H-277
GB4 Toxin, G-28
GC 1, H-731
GC 2, H-731
GC 3, S-109
GD 0039, S-650
GDIMBOA, H-409
GE 2270, A-1180
GE 2270A, A-1180
GE 37468A, A-1181
GE $2270B_1$, A-1180
GE $2270B_2$, A-1180
GE 37468B, A-1181
GE $2270C_1$, A-1180
GE 37468C, A-1181
GE $2270C_{2a}$, A-1180
GE $2270C_{2b}$, A-1180
GE $2270D_1$, A-1180
GE $2270D_2$, A-1180
GE 2270E, A-1180
GE 2270T, A-1180
Geamine, S-565
Gebeline, G-137
Geibalansine, G-29
Geijedimerine, G-30
Geissolosimine, G-31
Geissoschizal, G-33
Geissoschizine methyl ether, G-32
Geissoschizine, G-32
Geissoschizol, G-33
Geissoschizoline N^4-oxide, G-34
Geissoschizoline, G-34
Geissospermine, G-35
Geissovelline, G-36
Gelliusine A, G-37
Gelliusine B, G-37
Gelliusine C, G-38
Gelliusine D, G-39
Gelliusine E, G-40
Gelliusine F, G-40
Gelsamydine, G-41
Gelsebanine, G-42
Gelsedilam, G-43
Gelsedine, G-44
Gelsefuranidine, G-45
Gelseiridone, G-46
Gelselegine, G-47
Gelsemamide, G-48
Gelsemicine, G-44
Gelsemine *N*-oxide, G-49
Gelsemine, G-49
Gelsemoxonine, G-50
Gelsempervine A, V-171
Gelsempervine B, V-171
Gelsempervine C, V-171
Gelsempervine D, V-171
Gelsenicine, G-44
Gelsevirine, G-49
Genatropine, T-632
Geneserine, G-51
Geniconitine, M-323
Geniculatine A, M-323
Geniculatine B, M-323
Geniculatine C, M-352
Geniculatine D, M-352
Genicunine A, M-355
Genicunine B, M-349
Genicunine C, M-326
Geninthiocin, B-104
Genipamide, G-52
Genistein, I-321
Genocodein, C-555
Genomorphine, M-704
Genostrychnine, S-589
Gentiacraline, G-53
Gentialutine, V-52
Gentianadine, G-54
Gentianaine, G-62
Gentianal, G-55
Gentianamine, G-56
Gentiananine, G-57
Gentianidine, G-58
Gentianine lactam, G-60
Gentianine, G-59
Gentiatibetine, G-61
Gentiocrucine, G-62
Gentioflavine, G-63
Gentiotibetine, G-61
Gentrymine A, T-182
Gentrymine B, T-182
Geodin A, C-924
Geoffroyin, T-700
Geometricin A, S-652

Geotrichum alkaloid A 25822B, A-1602
Geotrichum alkaloid A 25822D, A-1602
Geotrichum alkaloid A 25822H, G-64
Geotrichum alkaloid A 25822L, A-1602
Geotrichum alkaloid A 25822M, A-1602
Geotrichum alkaloid A 25822N, A-1602
Geovanine, K-6
Gephyrotoxin 223AB, O-41
Gephyrotoxin 239AB, O-41
Gephyrotoxin 167B, O-56
Gephyrotoxin 239CD, O-41
Gephyrotoxin, G-65
Geralbine, G-66
Geraldoamine, D-88
Gerambullal, G-67
Gerambullindiol, G-68
Gerambullin, G-68
Gerambullol, G-68
1-Geranyl-2,7-dihydroxy-3-methylcarbazole, E-277
1-Geranyl-2,7-dihydroxy-6-methylcarbazole, E-276
O-Geranylhalfordinol, H-12
4-Geranyl-3-hydroxy-6-methylcarbazole, E-302
8-Geranyl-7-hydroxy-3-methylcarbazole-1,4-quinone, M-767
7-Geranylindolactam V, I-78
3-Geranylindole, D-759
Geranyllinaloyl formamide, I-221
Geranyllinaloyl isocyanide, I-221
Geranyllinaloyl isothiocyanate, I-221
4-Geranyl-1*H*-pyrrole-2-carboxylic acid, D-761
2-Geranyl-1,3,5-trihydroxy-1-methylacridone, G-121
GERI-BP001 A, T-500
GERI-BP001 B, T-500
GERI-BP001 M, T-500
1(10),4-Germacradien-11-amine, G-69
Germanitrine, G-70
Germbudine, G-70
Germerine, G-70
Germidine, G-70
Germinaline, G-70
Germinalinine, G-70
Germine, G-70
Germinine, G-70
Germinitrine, G-70
Germitetrine B, G-70
Germitetrine, G-70
Germitrine, G-70
Gerontine, S-399
Gerrardamine, G-71
Gerrardine, G-72
Gerrardoline, G-73
Gesashidine A, H-781
Gesidine, V-110
Geyeridine, T-552
Geyerine, T-552
Geyerinine, H-176
Geyerline, G-91
GGBA, G-201
Gigactonine, M-309
Gigantamide A, G-74
Gigantine, T-174
Gigartinine, G-75
Gilbertine, G-76
Gilgitine, P-800
Gilletine, C-552
Gilurytmal, A-216
Gilvusmycin, R-4
Gindaricine, G-77
Gindarine, T-212
Gindarinine, P-34
Ginkgotoxin, P-923
Ginsenine, G-78
Giracodazole, G-79
Giraldine A, M-371
Giraldine B, M-371
Giraldine C, M-371
Giraldine D, M-371
Giraldine E, M-363
Giraldine F, M-371
Giraldine G, D-196
Giraldine H, D-196
Giraldine I, M-356
Girgensohnine, G-80
Girgensonine, G-80
Girinimbilol, M-728
Girinimbine, G-81
Girolline, G-79
Gitingensine, P-93
GKK 1032A_1, A-1182
GKK 1032A_2, A-1182
GKK 1032B, A-1183
Glabratine, G-82
Glabredelphinine, M-371
Glabrin, D-661
Glaciapyrrole A, G-83
Glaciapyrrole B, G-84
Glaciapyrrole C, G-85
Glanduline, H-170
Glandulosine, H-178
Glandulosine, M-309
Glansreginin A, G-86
Glansresinoside A, G-86
Glaucamine, G-87
Glaucedine, M-309
Glaucenamide, G-88
Glaucenine, M-307
Glaucentrine, C-682
Glaucephine, M-307
Glaucerine, M-307
Glaucescine, G-89
Glaucescinine, G-90
Glaucic acid, F-173
Glaucine methyl methine, M-559
Glaucine, T-246
Glaucon, A-152
Glaudelsine, G-91
Glaudine, G-87
Glaufidine, C-682
Glaufine, T-248
Glaufinine, T-248
Glaufiridine, C-682
Glauflavine, G-92
Glaunidine, G-93
Glaunine, G-93
Glaupavine, G-87
Glauvent, T-246
Glauvine, O-178
Glazen, P-643
Glaziovine, P-643
Glenodinine, G-95
Glicomarine, S-274
Glidobactamine, G-96
Glidobactin A, G-96
Glidobactin B, G-96
Glidobactin C, G-96
Glidobactin D, G-96
Glidobactin E, G-96
Glidobactin F, G-96
Glidobactin G, G-96
Glidobactin H, G-96
Glidobactin PF1, G-96
Gliocladine A, G-97
Gliocladine A, V-89
Gliocladine B, G-97
Gliocladine B, V-89
Gliocladine C, G-98
Gliocladine C, G-99
Gliocladine D, G-99
Gliocladine E, G-99
Glioclatine, G-99
Gln, G-108
Globiferine, T-488
Glochidacuminoside D, H-520
Glochidiatusamide, C-456
Glochidiatusin, C-456
Glochidicine, G-100
Glochidine, G-101
Glomerine, H-632
Glomerulatine A, C-42
Glomerulatine B, C-42
Glomerulatine C, C-42
Gloriosamine A, C-654
Gloriosamine B, C-654
Gloriosamine C, C-568
Gloriosamine D, C-568
Gloriosine, D-92
Glossobalol, D-327
Glucobrassicin, I-122
Glucodichotomine B, D-579
Glucoerysodine, E-203
15-Glucoerysopine, E-203
16-Glucoerysopine, E-203
Glucohaplopine, F-223
Glucoindican, I-104
Glucoisatisin, G-102
Glucopiericidin A, P-421
Glucopiericidin B, P-421
Glucopiericidinol A_1, P-422
Glucopiericidinol A_2, P-422
Glucoprunasin, H-673
α-D-Glucopyranose 1,3,6-tri-3-pyridinecarboxylate, A-458
β-D-Glucopyranose 1,2,6-tri-1*H*-pyrrole-2-carboxylate, B-415
β-D-Glucopyranose-6-(4-hydroxybenzoate) 1,2-di-1*H*-pyrrole-2-carboxylate, B-416
β-D-Glucopyranosyl anthranilate, A-706
6′-*O*-α-D-Glucopyranosylalangiside, A-239
6′-*O*-β-D-Glucopyranosylalangiside, A-239
3′-*O*-β-D-Glucopyranosylalangiside, A-239
11-*O*-β-D-Glucopyranosylartavenustine, X-30
20-*O*-β-D-Glucopyranosylcamptothecin, C-70
6′-*O*-α-D-Glucopyranosyl-3-*O*-demethyl-2-*O*-methylalangiside, A-239
4-*O*-β-D-Glucopyranosyl-1-deoxymannonojirimycin, H-616
2-*O*-β-D-Glucopyranosyl-1-deoxymannonojirimycin, H-616
3-*O*-β-D-Glucopyranosyl-1-deoxymannonojirimycin, H-616
4-*O*-α-D-Glucopyranosyl-1-deoxynojirimycin, H-616
4-*O*-β-D-Glucopyranosyl-1-deoxynojirimycin, H-616
6-*O*-β-D-Glucopyranosyl-1-deoxynojirimycin, H-616
2-*O*-α-D-Glucopyranosyl-1-deoxynojirimycin, H-616
2-*O*-β-D-Glucopyranosyl-1-deoxynojirimycin, H-616
3-*O*-α-D-Glucopyranosyl-1-deoxynojirimycin, H-616
3-*O*-β-D-Glucopyranosyl-1-deoxynojirimycin, H-616
N-(5-β-D-Glucopyranosyl-2,3-dihydroxybenzoyl)-serine, S-33
4-*O*-β-D-Glucopyranosylfagomine, H-614
3-*O*-β-D-Glucopyranosylfagomine, H-614
7-*O*-β-D-Glucopyranosyl-α-homonojirimycin, B-186
20-*O*-β-D-Glucopyranosyl-18-hydroxycamptothecin, C-70
N-[2-(1-β-D-Glucopyranosyl-1*H*-imidazol-4-yl)ethyl]-*N*-methyl-3-phenyl-2-propenamide, C-176
3′-*O*-α-D-Glucopyranosylinosine, I-148
6″-*O*-α-D-Glucopyranosylipecoside, I-167
6″-*O*-β-D-Glucopyranosylipecoside, I-167
23-*O*-β-D-Glucopyranosyl-20-isoveratramine, V-71
2-β-D-Glucopyranosyl-3-isoxazolin-5-one, I-349
4-*O*-α-D-Glucopyranosylmoranoline, H-616
1-(3-Glucopyranosyloxybutanoyl)pancratistatine, P-58
9-β-D-Glucopyranosyloxycamptothecin, C-70
11-*O*-β-D-Glucopyranosyloxycanthin-6-one, H-446
(4′-β-D-Glucopyranosyloxycinnamoyl)lupinine, O-58
N-[[3-(β-D-Glucopyranosyloxy)-2,3-dihydro-2-oxo-1*H*-indol-3-yl]acetyl]aspartic acid, G-103
[6-(β-D-Glucopyranosyloxy)-2-hydroxy-3,4-dimethoxycyclohexylidene]acetonitrile, S-302
4-(β-D-Glucopyranosyloxy)-2-(hydroxymethyl)-2-butenenitrile, H-509
4-(β-D-Glucopyranosyloxy)-3-(hydroxymethyl)-2-butenenitrile, H-510
(4′-*O*-β-D-Glucopyranosyloxy-3′-methoxycinnamoyl)lupinine, O-58

2-(β-D-Glucopyranosyloxy)-3-methyl-2-butenenitrile, A-20
2-(β-D-Glucopyranosyloxy)-2-methylpropanenitrile, H-617
8-Glucopyranosyloxystylopine, S-612
9-β-D-Glucopyranosyloxytetrahydroalstonine, M-658
3-(β-D-Glucopyranosyloxy)-1,2,3,6-tetrahydro-2-hydroxy-4-methoxy-1-methyl-6-oxo-3-pyridinecarbonitrile, A-22
N-β-D-Glucopyranosylquestiomycin A, A-862
N-β-D-Glucopyranosylvincosamide, V-126
Glucose 3-nitropropanoates, G-104
Glucosylngouniensine, N-186
β-D-Glucosyloxyazoxymethane, M-397
8-Glucosyloxyharmine, D-621
10-Glucosyloxyvincoside lactam, V-126
Glucoveracintine, V-57
Glu, G-107
Glumin, G-108
Glusun I, G-105
Glusun II, G-106
Glutamic acid 5-amide, G-108
Glutamic acid betaxanthin, V-195
Glutamic acid, G-107
Glutamicine, F-81
Glutamidebetaxanthin, V-195
Glutamine, G-108
γ-Glutamine, G-108
Glutaminic acid, G-107
2-(β-Glutaminylaminoethyl)-3-isoxazolin-5-one, I-349
γ-Glutaminyl-4-hydroxybenzene, G-108
Glutamycin, F-81
N-(γ-Glutamyl)ethanolamine, G-108
γ-Glutamyl-β-(isoxazolin-5-on-2-yl)alanine, A-850
γ-L-Glutamyl-L-pipecolic acid, P-456
5-(Glutarimidomethyl)quinolizidine, L-26
Glutaven, G-108
Glutimic acid lactam, O-206
Glutimic acid, O-206
Glutiminic acid, O-206
Glyantrypine, G-109
Glybomine A, D-616
Glybomine B, G-110
Glybomine C, G-110
Glycarpine, F-219
Glycerinopyrin, G-111
2-*O*-Glycerophosphoryllycorine, L-348
N-Glyceryltaurine, A-765
Glycinebetaxanthin, P-577
Glycinylilimaquinone, S-329
Glycoamide A, D-900
Glycoamide B, D-900
Glycobismine A, G-112
Glycobismine B, G-113
Glycobismine C, G-113
Glycobismine D, G-114
Glycobismine E, G-115
Glycobismine F, G-115
Glycobismine G, G-116
Glycoborine, H-588
Glycoborinine, E-300
Glycocinnaspermicidin A, G-117
Glycocinnaspermicidin B, C-459
Glycocinnaspermicidin C, C-460
Glycocinnaspermicidin D, G-117
Glycocitlone A, G-118
Glycocitlone B, G-118
Glycocitlone C, G-118
Glycocitridine, G-119
Glycocitrine III, G-121
Glycocitrine I, T-581
Glycocitrine IV, T-270
Glycocitrine V, G-120
Glycocitrine VI, G-122
Glycocyamine, G-200
Glycofoline, G-123
Glycofolinine, P-207
Glycohaplopine, F-223
Glycollylurea, I-40
Glycolone, G-124
Glycolone, T-583
Glycomarine, S-274
Glycomaurin, E-300
Glycomaurrol, G-125
Glycoperine, F-223
Glycophylone, T-583
Glycophymine, B-93
Glycophymoline, B-93
Glycorine, M-556
Glycosine, B-93
Glycosinine, H-448
Glycosmicine, Q-13
Glycosminine, B-93
Glycosolone, T-583
Glycothiohexide α, G-126
Glycothiohexide β, G-126
Glycothiomin A, M-577
Glycothiomin B, M-577
Glycoustalic acid, U-57
Glycozolicine, H-584
Glycozolidal, D-555
Glycozolidine, D-617
Glycozolidol, D-617
Glycozoline A, G-127
Glycozoline B, G-127
Glycozoline, H-587
Glycozolinine, H-587
Glycozolinol, H-587
Glycozolone A, G-127
Glycozolone B, G-127
O-Glycylgriseoluteic acid, H-514
Glyfoline, H-242
Glymontanine A, G-128
Glymontanine B, G-129
Glyoxaline, I-35
Glyoxalone-4-carboxylic acid, D-484
Glyoxylic diureide, A-625
Glyparvin A, T-478
Glypetelotine, G-130
Glysperin A, G-131
Glysperin B, G-132
Glysperin C, G-133
Glyyunnanenine, H-764
GM 95, T-66
Gnidine, G-134
Gnidinine, G-135
Gnidioidine, L-328
α-Gnoscopine, N-44
Gnoscopine, N-44
β-Gnoscopine, N-44
Goadsporin, G-136
GOBAB, A-792
Goebeline, G-137
Golceptine, P-716
Goleptine, P-716
Golmaenone, G-138
Gomaline, S-576
Gomandonine, G-139
Gomezine, A-1365
Gomphrenin I, B-110
Gomphrenin II, B-110
Gomphrenin III, B-110
Gomphrenin V, B-110
Gongrine, G-140
Gonioffithine, T-539
Goniomine, G-141
Goniomitine, G-142
Goniopedaline, T-537
Goniopetaline (incorr.), T-537
Goniothalactam, T-540
Gonyautoxin I, H-731
Gonyautoxin II, H-731
Gonyautoxin III, H-731
Gonyautoxin IV, H-731
Gonyautoxin VIII, H-731
Gonyautoxin VI, S-109
Gonyautoxin V, S-109
Gorchacoine, G-143
Gortschakoine, G-143
Goshuyuamide II, G-144
Goshuyuamide I, T-146
Gossyrubilone, G-145
Gostatin, G-146
Gosuiamide II, G-144
Gosuiamide I, T-146
Goudotianine, G-147
Gouregine, G-148
Govadine, X-30
Govanine, X-30
Goziline, V-188
Gracicleistanthoside, G-149
Gracilamine, G-150
Graciline, G-151
Graciline, G-152
Gracinine, M-308
Grahamine, G-153
Grahamine, M-688
Gramine methosalt, D-736
Gramine *N*-oxide, D-736
Gramine, D-736
Graminifoline, G-154
Gramminifoline, G-154
Gramodendrine, G-155
Granatan-3-one, A-1580
Granatonine, A-1580
Grandiamide A, G-156
Grandiamide B, C-456
Grandiamide C, C-456
Grandiamide D, C-456
Grandifloricine, G-91
Grandiflorine, G-91
Grandiflorine, R-94
Grandifloritine, G-157
Grandifoline, A-676
Grandifoline, G-158
Grandirubrine, G-159
Grandisine A, G-160
Grandisine B, G-161
Grandisine C, G-162
Grandisine D, G-163
Grandisine E, G-164
Grandisine F, G-165
Grandisine G, G-166
Grandisine III, T-243
Grandisine II, T-243
Grandisine I, T-243
Grandisinine, P-616
Granegillin, A-1475
Granjine, C-643
Grantaline, G-167
Grantianine, G-168
Granulatamide A, T-639
Granulatamide B, T-639
Granulatimide, G-169
Grassypeptolide, G-170
Gravacridonechlorine, R-167
Gravacridonediol acetate, R-167
Gravacridonediol glucoside, R-167
Gravacridonediol methyl ether, R-167
Gravacridonediol, R-167
Gravacridonetriol glucoside, R-167
Gravacridonetriol, R-167
Gravacridonol monoglucoside, R-167
Gravacridonolchlorine, R-167
Gravacridonol, R-167
Graveoline, G-171
Graveolinine, M-264
Gravidox, P-923
Grayanin, H-673
3-Greenwayodendrinol, G-172
3-Greenwayodendrinone, G-172
Grenadadiene, H-131
Grenadamide, H-131
Griffiazanone A, G-174
Griffiazanone B, M-97
Griffinine, G-173
Griffithazanone A, G-174
Griffithdione, G-175
Griffithinam, T-539
Griffithine, G-176
Griffonin, L-213
Grisabine, G-177
Grisabutine, G-177
Griseoluteic acid, H-514
Griseolutein A, H-514
Griseolutein B, H-514
Griseoviridin, G-178

Grisonomycin, G-179
Grixazone A, G-180
Grixazone B, G-180
Groenlandicine, G-181
Grossamide K, E-128
Grossamide, G-182
Grossularine 1, G-183
Grossularine 2, G-184
GS 1, G-44
GS 2, G-44
GS 3, G-50
GT 1012, A-216
GT 32A, A-1127
GT 32B, A-1127
GTX1, H-731
GTX2, H-731
GTX3, H-731
GTX4, H-731
GTX8, H-731
GTX5, S-109
GTX6, S-109
Guacolidine, G-214
Guacoline, G-214
Guadinomic acid, G-185
Guadinomine A, G-186
Guadinomine B, G-186
Guadinomine C_1, G-187
Guadinomine C_2, G-187
Guadiscidine, G-188
Guadiscine, G-188
Guadiscoline, G-188
C-Guaianine, G-189
Guaipyridine, G-190
Guamamide, G-191
Guanacastepene D, G-192
Guanacastepene H, G-193
Guanazole, A-735
Guan-fu base A, H-189
Guan-fu base B, H-189
Guan-fu base C, G-194
Guan-fu base D, G-195
Guan-fu base E, G-196
Guan-fu base F *N*-oxide, H-189
Guan-fu base F, H-189
Guan-fu base G, H-189
Guan-fu base H, A-1534
Guan-fu base I, H-189
Guan-fu base K, G-197
Guan-fu base O, H-189
Guan-fu base P, H-189
Guan-fu base R, H-189
Guan-fu base S, G-198
Guan-fu base Y, H-189
Guan-fu base Z *N*-oxide, H-189
Guan-fu base Z, H-189
Guanidineacetic acid, G-200
Guanidine, G-199
Guanidinepropionic acid, G-208
Guanidinoacetic acid, G-200
4-Guanidinobutanoic acid, G-201
4-Guanidino-1-butanol, H-432
4-Guanidinobutyl syringate, H-432
4-Guanidinobutylamine, A-719
N-(4-Guanidinobutyl)-2-(4-hydroxyphenyl)-2-oxoacetamide, G-202
1-(4-Guanidinobutyloxy)-6-hydroxy-β-carboline, T-225
4-Guanidinobutyramide, G-201
2-Guanidinoethanesulfinic acid, G-203
2-Guanidinoethanesulfonic acid, G-204
O^3-(2-Guanidinoethoxyphosphinicoserine), L-240
1-(2-Guanidinoethyl)-1,2,3,4-tetrahydro-6-hydroxymethyl-β-carboline, G-205
1-(2-Guanidinoethyl)-2,3,4,9-tetrahydro-1*H*-pyrido[3,4-*b*]indole-6-methanol, G-205
4-Guanidino-3-hydroxybutanoic acid, G-206
3-Guanidino-6-hydroxymethyl-1-methylpyrazin-2-one, S-553
N-(5-Guanidino-2-hydroxypentanoyl)phenylalanine, M-682
N-(3-Guanidinoisobutyryl)-2-methoxyheptylamine, P-314
5-Guanidino-3-methylaminopentanoic acid, A-779
5-Guanidino-2-oxopentanoic acid, G-207
γ-Guanidinooxypropylamine, A-895
3-Guanidinopropanoic acid, G-208
N-(3-Guanidinopropionyl)-2-hydroxyheptylamine, P-313
4-[[(3-Guanidinopropyl)amino]butyl]guanidine, H-305
(3-Guanidinopropylidene)succinic acid, L-373
1-(3-Guanidinopropyl)-1,2,3,4-tetrahydro-β-carboline, T-637
Guanidinotaurine, G-204
3-(3-Guanidinylpropyl)hexahydropyrrolo[1,2-*a*]pyrazine-1,4-dione, C-841
6-(3-Guanidinylpropyl)-3-isopropyl-2(1*H*)-pyrazinone, A-1421
3-Guanidinylpyridine, G-209
Guanine N^7-oxide, G-210
Guanine, G-210
Guanopterin, A-818
Guanosinepropionic acid, H-730
N-Guanylglycine, G-200
γ-(Guanylureido)butanoic acid, G-140
Guaranine, C-15
Guatambuine, G-211
Guatambuinine, O-83
Guattaguianine, G-212
Guattamine, O-28
Guattaminone, O-28
Guatteboline, E-102
Guattegaumerine, D-88
Guatterine *N*-oxide, G-213
Guatterine, G-213
Guattescidine, G-214
Guattescine, G-214
Guattouregidine, G-215
Guattouregine, G-215
Guayewuanine A, M-316
Guayewuanine B, M-336
Guayulamine A, G-216
Guayulamine B, G-217
Guenerine, M-367
Guettardine, G-218
Guiachrysine, S-593
Guiaflavine, G-219
Guianensine, G-220
Guillauminiine, G-221
Guineamide A, G-222
Guineamide B, G-223
Guineensine, G-224
Guinesine A, M-547
Guinesine B, M-547
Guinesine C, M-547
Gusanlung A, C-73
Gusanlung B, C-73
Gusanlung C, G-225
Gusanlung D, G-226
Gusperimus trihydrochloride, S-394
Gusperimus, S-394
Gutingimycin, G-227
Guvacine, T-223
Guvacoline, T-223
Guyonianin A, H-120
Gyalanine A, D-182
Gyalanine B, D-183
Gymnaconitine, M-352
Gymnamide, D-746
Gymnamine, G-228
Gymnandine, D-221
Gymnastatin F, G-229
Gymnastatin G, G-229
Gymnastatin H, T-700
Gymnastatin L, G-230
Gymnastatin N, T-700
Gymnastatin Q, G-229
Gymnastatin R, G-229
Gymnasterone A, G-231
Gymnodimine B, G-232
Gymnodimine C, G-232
Gymnodimine, G-232
Gynergen, E-172
Gynesis, C-149
Gynimbine, Y-13
Gynuramine, G-233
Gypsetin, G-234
Gyroamericine, P-301
Gyrocarpine, G-235
Gyrocarpusine, L-175
Gyrolidine, G-235
Gyromitrin, G-236
HA 23, A-1184
HA 9, O-124
Habaenine A, H-124
Habaenine B, M-312
Habbemine A, H-1
Habbemine B, H-1
Habranthine, H-2
Habropetaline A, D-793
Hachijodines, H-3
Hackelidine, H-4
Hadiensine, P-516
Hadranthine A, I-31
Hadranthine B, I-31
Haemanthamine, H-5
Haemanthidine, H-6
Haemanthine, N-169
dibasic-Haematinic acid, E-252
Haematopodin B, H-8
Haematopodin, H-7
Haemodan, A-736
Haemultine, H-9
Haiderine, J-17
Hainanensine, H-10
Hainaneoside A, P-610
Hainaneoside B, P-610
α-Hainanine, C-694
Haitinosporine, D-570
Hakurirodine, H-11
Halaminol A, A-913
Halaminol B, A-761
Halaminol C, A-912
Halaminol D, A-848
Halfordamine, Q-42
Halfordine, H-12
Halfordinine, F-217
Halfordinol, H-12
Halfordinone, H-12
Halichlorine, H-13
Halichonadin A, H-14
Halichonadin B, A-776
Halichonadin C, I-218
Halichonadin D, A-776
Halichondramide, H-15
Halichondramine, A-1404
Halichondriasulfonic acid, G-204
Haliclamine A, H-16
Haliclamine B, H-16
Haliclamine C, H-17
Haliclamine D, H-18
Haliclonacyclamine A, H-19
Haliclonacyclamine B, H-19
Haliclonacyclamine C, H-19
Haliclonacyclamine D, H-19
Haliclonacyclamine E, A-1404
Haliclonacyclamine F, A-1404
Haliclonadiamine, P-84
Haliclonamide A, H-20
Haliclonamide B, H-20
Haliclonamide C, H-20
Haliclonamide D, H-21
Haliclonamide E, H-21
Haliclorensin, M-433
Halicyclamine A, H-22
Halicyclamine B, H-23
Haligramide A, H-24
Haligramide B, H-24
Halimedin, H-25
Halipeptin A, H-26
Halipeptin B, H-26
Halipeptin C, H-27
Halipeptin D, H-26
Halishigamide A, H-15
Halishigamide B, H-28
Halishigamide C, H-29
Halishigamide D, H-30
Halisulfate 1, H-31
Halitoxin, H-32

Halitulin, H-33
Hallacridone, H-34
Hallucinex, M-219
Halocyamine A, H-35
Halocyamine B, H-36
Halosaline, H-37
Halostachine, A-864
Haloxine, H-38
Haloxyline A, H-39
Haloxyline B, H-39
Haloxynine, H-37
Halxazone, M-253
Hamacanthin A, H-40
Hamacanthin B, H-41
Hamatine, A-982
Hamatinine, A-982
Hamayne, H-5
Hamigeramide, H-42
Hamigeramine, H-44
Hamigeran D, H-43
Hamigeroxalamic acid, H-44
Haminol A, P-912
Haminol B, P-912
Haminol C, P-910
Haminol 1, P-911
Haminol 2, P-911
Haminol 3, P-911
Haminol 4, P-911
Haminol 5, P-913
Haminol 6, P-913
Hammarbine, K-28
Hanadamine, H-45
Hanamisine, H-195
Hanamiyama base, H-195
Hanasanagin, H-46
Hanishin, L-243
Hanjisong, T-286
Haouamine A, H-47
Haouamine B, H-47
Hapalindole A, H-48
Hapalindole B, H-48
Hapalindole C, H-49
Hapalindole D, H-49
Hapalindole E, H-49
Hapalindole F, H-49
Hapalindole G, H-48
Hapalindole H, H-48
Hapalindole I, H-48
Hapalindole J, H-48
Hapalindole K, H-48
Hapalindole L, H-48
Hapalindole M, H-48
Hapalindole N, H-48
Hapalindole O, H-48
Hapalindole P, H-48
Hapalindole Q, H-49
Hapalindole T, H-50
Hapalindole U, H-48
Hapalindole V, H-48
Hapalindolinone A, H-51
Hapalindolinone B, H-51
Hapalonamide G, H-52
Hapalonamide H, H-52
Hapalonamide V, H-52
Hapepunine 3-β-cellobioside, S-200
Hapepunine 3-neohesperidoside, S-200
Hapepunine, S-200
Haplafine, H-53
Haplamide, B-422
Haplamidine, C-456
Haplamine, F-90
Haplaphine, H-53
Haplatine, F-223
Haplobine, F-223
Haplobucharine, H-56
Haplobungine, Q-43
Haplocidine, A-1490
Haplocidiphytine, H-54
Haplocine, A-1490
Haplodimerine, H-55
Haplofidine, F-213
Haplofoline, H-56
Haploperine, F-223
Haplophidine, F-213
Haplophydine, F-213
Haplophyllidine, H-57
Haplophylline, F-90
Haplophytine A, F-90
Haplophytine B, F-223
Haplophytine, H-58
Haplopine prenyl ether, F-223
Haplopine, F-223
Haplosamine, H-59
Haploscleridamine, L-199
Haplosidine, F-223
Haplosine, H-60
Haplosinine, F-223
Haplotubine, F-223
Haplotubinone, H-61
Haplotusine, Q-33
Hapovine, H-657
Harappamine, M-667
Harepermine, C-290
Hareperminoside, C-290
Harmalacidine, T-226
Harmalacinine, H-62
Harmalan N^b-oxide, M-426
Harmalanine, H-63
Harmalan, M-426
Harmalicine, P-916
Harmalidine, H-64
Harmaline, H-592
Harmalinic acid, H-459
Harmalol, H-592
Harman carboxamide, C-132
Harman-3-carboxylic acid, M-427
Harmanine, M-426
Harman, M-426
Harmic acid methyl ester, H-459
Harmic amide, H-459
Harmicine, H-65
Harmidine, H-592
Harmine *N*-oxide, H-592
Harmine, H-592
γ-Harmine, M-260
Harmol, H-592
Harmonine, O-35
Harmonyl, D-234
Harringtonine, H-66
Harvatrate, T-632
Harzianic acid, H-67
Harzianopyridone, H-68
Hastacine, H-69
Hastanecine, H-233
Hasubanonine, H-70
Hasunohanin, H-71
Haterumaimide A, D-354
Haterumaimide B, H-74
Haterumaimide C, H-73
Haterumaimide D, H-74
Haterumaimide E, H-74
Haterumaimide F, H-75
Haterumaimide G, H-75
Haterumaimide H, H-75
Haterumaimide I, H-72
Haterumaimide J, H-75
Haterumaimide K, H-75
Haterumaimide L, H-74
Haterumaimide M, H-74
Haterumaimide N, D-354
Haterumaimide O, D-354
Haterumaimide P, D-354
Haterumaimide Q, D-354
Haterumalide A, H-76
Haterumalide B, H-76
Haterumalide E, H-76
Haterumalide NA, H-76
Haterumalide NB, H-76
Haterumalide NC, H-76
Haterumalide ND, H-76
Haterumalide NE, H-76
Haterumalide X, H-76
Hatomamicin, H-77
Haumanamide, D-763
Havanine, H-78
Havanine, S-199
Hayatidine, C-420
Hayatine, C-812
Hayatinine, C-812
Hazaleamide, T-129
Hazuntamine, H-79
Hazuntine, T-11
Hazuntinine, T-11
Hazuntiphyllidine, H-80
Hazuntiphylline, H-81
HBOA-Glc, H-409
HBOA, H-409
HDMBOA, D-538
HDMBOA-Glc, D-538
Hebeirubescensin A, H-82
Hebridamine, H-83
Hectochlorin, H-84
Hectorine, H-518
Hecubine, V-179
Hederacine A, H-85
Hederacine B, H-85
Hediamine, H-86
Hedonegamin, A-763
Hedrantherine, M-666
Hedycarine, C-54
Hedyocapitelline, H-87
Hedyocapitine, H-88
Heilonine, C-300
Heimidine, V-95
Heimine, H-89
Heinsiagenin A, H-90
Heleurine *N*-oxide, A-669
Heleurine, A-669
Heliamine, T-158
Helibracteatinecine, D-596
Helibracteatine, D-596
Helibracteatinine, D-596
Helibractinecine, D-596
Helicocerin, C-286
Helietidine, H-91
Helifoline, D-597
Helindicine, H-92
Heliocoromandaline, T-443
Heliocurassavicine *N*-oxide, T-443
Heliocurassavicine, T-443
Heliocurassavine, C-810
Heliocurassavinine, T-443
Heliohoustine, T-188
Heliopsin, O-31
Heliospathine, T-188
Heliospathuline, H-93
Heliosupine *N*-oxide, H-94
Heliosupine, H-94
Heliotridine, T-188
Heliotrine *N*-oxide, H-95
Heliotrine, H-95
Heliotropamide, H-96
Heliotropic acid, M-442
Heliovicine, T-443
Heliovinine, A-669
Heliparvifoline, F-221
Heliscabine, D-596
Hellaradine, C-818
Helquinoline, T-201
Hemanthamine, H-5
Hemanthidine, H-6
Hemanthine, N-169
Hemiargine A, T-248
Hemiargine B, H-97
Hemiargine C, M-559
Hemiargine D, E-271
Hemiargyrine, C-701
Hemiasterlin A, H-98
Hemiasterlin C, H-99
Hemiasterlin, H-98
Hemibastadin 1, H-100
Hemibastadin 2, H-100
Hemibastadin 3, H-100
Hemibastadinol 1, H-101
Hemibastadinol 2, H-101
Hemibastadinol 3, H-101
Hemicalyculin A, H-102
Hemifistularin 3, H-103
Hemileptagline, A-198

m-Hemipimide, D-533
m-Hemipinic acid, D-533
Hemipyocyanine, P-327
Hemitoxiferine I, C-115
Hemometina, E-72
Hemsine A, H-104
Hemsine B, H-105
Hemsine C, H-106
Hemsine D, H-107
Hemsleyadine, M-306
Hemsleyanidine, M-306
Hemsleyanine A, M-306
Hemsleyanine B, M-306
Hemsleyanine C, M-319
Hemsleyanine D, M-319
Hemsleyanine, M-303
Hemsleyanisine (incorr.), M-306
Hemsleyasine, M-338
Hemsleyatine, A-833
Henderine, H-108
3-(12*Z*-Heneicosenylidene)-2-methyl-1-pyrroline, L-37
13-(12-Heneicosenyl)-1*H*-pyrrole-2-carboxaldehyde, A-623
5-(6-Heneicosenyl)-1*H*-pyrrole-2-carboxaldehyde, H-109
Henningsamide, H-110
Henningsamine, C-115
Henningsiine *N*-oxide, H-111
Henningsiine, H-111
Henningsoline, C-115
Hennoxazole A, H-112
Hennoxazole B, H-112
Hennoxazole C, H-112
Hennoxazole D, H-112
Hennoxazole E, H-112
Hennoxazole F, H-113
Hennoxazole G, H-113
Henrycinol A, H-114
Henrycinol B, H-114
Hepacholine, C-419
m-Hepimic anhydride, D-533
1,5,9,13,17,21,25-Heptaazapentacosane, P-199
2,4,4′,5,5′,6,6′-Heptabromo-2′,3-bis(methylthio)-1,3′-bi-1*H*-indole, P-200
2,3,3′,4,4′,5,5′-Heptachloro-1′-methyl-1,2′-bi-1*H*-pyrrole, H-115
N^b-Heptacosanoyl-4,5-dihydroxytryptamine, D-683
1,9-Heptadecadiene-4,6-diyne-3,8-diol, H-116
14-Heptadecene-4,16-diynoic acid, H-117
3-(12*Z*-Heptadecenylidene)-2-methyl-1-pyrroline, L-37
5-(9*Z*-Heptadecenyl)-1*H*-pyrrole-2-carboxaldehyde, A-624
8-(13-Heptadecenyl)-1,5,9,13-tetraazacycloheptadecan-6-one, B-388
3-Heptadecylidene-2-methyl-1-pyrroline, L-37
5-(4,6-Heptadienyl)octahydro-8-methylindolizine, H-127
1,2,3,4,6,9,14-Heptahydroxydihydro-β-agarofuran, H-118
1,2,4,6,8,9,14-Heptahydroxydihydro-β-agarofuran, H-119
2,3,5,7,8,9,15-Heptahydroxy-6(17),11-jatrophadien-14-one, H-120
3,5,7,8,9,13,15-Heptahydroxy-6(17),11-jatrophadien-14-one, H-121
1,3,6,13,14,16,18-Heptahydroxy-4-methylaconitan-15-one, H-122
1,6,7,8,14,16,18-Heptahydroxy-4-methylaconitan-19-one, H-123
1,6,8,13,14,16,18-Heptahydroxy-4-methylaconitan-19-one, H-124
1-Heptanamine, H-130
N-Heptanoylsolamine, S-340
Heptaphylline, H-125
2-(1,3,5-Heptatrienyl)-3,4,5,6-tetrahydropyridine, N-213
Heptazolicine, M-757
Heptazolidine, P-883
Heptazoline, H-125
2-(3-Heptenyl)-2,6-dihydro-3-methyl-5*H*-pyrano[3,2-*c*]pyridin-5-one, A-1166
2-(2-Heptenyl)-4-hydroxy-3-methylquinoline, H-126
2-(1-Heptenyl)-4-hydroxyquinoline, H-133
5-(4-Heptenyl)-8-methylindolizidine, H-127
5-(6-Heptenyl)-8-methylindolizidine, H-127
2-(2-Heptenyl)-3-methyl-4-quinolinol, H-126
2-(2-Heptenyl)-3-methyl-4(1*H*)-quinolinone, H-126
5-(4-Heptenyl)octahydro-8-methylindolizine, H-127
2-(6-Heptenyl)-6-(4-pentenyl)piperidine, H-128
2-(1-Heptenyl)-4(1*H*)-quinolinone, H-133
2-(4-Heptenyl)-4(1*H*)-quinolinone, H-133
2-(5-Heptenyl)-6,7,8,8*a*-tetrahydro-3-methyl-4*H*-pyrrolo[2,1-*b*][1,3]oxazin-4-one, H-129
1-Heptylamine, H-130
2-Heptyl-1-cyclopropanepropanoic acid, H-131
2-Heptyl-1,2-dihydro-2-hydroxy-6-methoxy-4-methyl-3*H*-indol-3-one, M-183
5-Heptyl-6,7-dihydro-3-methoxy-2-methyl-4,8(1*H*,5*H*)-quinolinedione, A-1325
1-[4-[4-Heptylhexahydro-5-methyl-2-oxo-1,5-diazocin-1(2*H*)-yl]butyl]hexahydro-5-methyl-4-pentyl-1,5-diazocin-2(1*H*)-one, H-354
2-Heptyl-2-hydroxy-6-methoxy-4-methylpseudooxindole, M-183
1-Heptyl-3-hydroxy-2-methyl-9*H*-carbazole, H-132
2-Heptyl-4-hydroxy-3-methylquinoline, H-126
2-Heptyl-4-hydroxyquinoline *N*-oxide, H-133
3-Heptyl-3-hydroxy-2,4(1*H*,3*H*)-quinolinedione, H-134
2-Heptyl-4-hydroxyquinoline, H-133
2-Heptyl-3-hydroxy-4(1*H*)-quinolinone, A-621
2-Heptyl-8-methoxy-1-methyl-4(1*H*)-quinolinone, H-133
2-Heptyl-4-methoxyquinoline, H-133
1-Heptyl-2-methyl-3*H*-carbazole-3,4(9*H*)-dione, C-129
1-Heptyl-2-methyl-9*H*-carbazol-3-ol, H-132
5-Heptyl-8-methylindolizidine, H-127
3-Heptyl-2-methylprodiginine, P-636
3-Heptyl-5-methylpyrrolizidine, H-135
2-Heptyl-3-methyl-4-quinolinol, H-126
2-Heptyl-1-methyl-4(1*H*)-quinolinone, H-133
2-Heptyl-3-methyl-4(1*H*)-quinolinone, H-126
2-Heptylpyrrole sulfamate, H-136
2-Heptylpyrrole, H-136
2-Heptyl-3,4-quinolinediol, A-621
2-Heptyl-4-quinolinol, H-133
2-Heptyl-4(1*H*)-quinolinone, H-133
Herbaceine, H-137
Herbadine, H-139
Herbaine, H-137
Herbaline, C-117
Herbamide A, H-138
Herbamine, H-139
Herbavine, M-50
Herbavinine, M-50
Herbicidal substance 1328-2, C-852
Herbicidal substance 1328-3, C-852
Herbindole A, H-140
Herbindole B, H-141
Herbindole C, H-142
Herbipoline, H-143
Herboksine, M-50
Herboxine, M-50
Herclavine, H-144
Herculin, D-884
Hericenone B, H-145
Hericerin, H-145
Hermidin, H-146
Hermitamide A, P-342
Hermitamide B, T-639
Hernagine, T-248
Hernandaline, H-147
Hernandalinol, H-147
Hernandezine 2′-*N*-oxide, H-148
Hernandezine, H-148
Hernandifoline, L-244
Hernandine, H-149
Hernandine, L-244
Hernandine, P-209
Hernandoline, H-70
Hernandolinol, H-70
Hernandonine, H-150
Hernangerine, N-25
Hernanymphine, O-195
Hernovine, O-143
Hernovine, T-248
Herperal, D-866
Herpestine, H-151
Herquline A, H-152
Herquline B, H-153
Herveline A, H-154
Herveline B, H-154
Herveline C, H-154
Herveline D, H-154
Hervine, I-319
Hesperaline, C-419
Heteratisine, H-157
Heteroauxin, I-81
Heterocarpine, H-158
Heterocodeine, M-704
Heteromine A, H-143
Heteromine B, H-143
Heteromine C, H-143
Heteromine D, H-143
Heteromine E, H-143
Heteromine F, H-159
Heteromine G, H-159
Heteromine H, H-159
Heterophyllidine, H-157
Heterophylline, A-1423
Heterophylline, H-157
Heterophylline, M-502
Heterophylline, T-256
Heterophyllisine, H-157
Heterophylloidine, H-161
Heteropsine, H-160
Heteroxanthine, X-5
Het_{389}, H-155
Het_{403}, H-156
Hetidine, H-161
Hetisan-2,15-diol, H-163
Hetisan-6,11-diol, H-164
Hetisan-1,15-diol, H-162
Hetisan-11,15-diol, H-167
Hetisan-11,18-diol, H-168
Hetisan-6,13-diol, H-165
Hetisan-9,15-diol, H-166
Hetisan-1,2,3,11,13,14-hexol, H-169
Hetisan-2,3,9,11,13,14-hexol, H-170
Hetisan-13-ol, H-171
Hetisan-15-ol, H-172
Hetisan-11-one, H-173
Hetisan-13-one, H-171
Hetisan-1,2,11,13,19-pentol, H-175
Hetisan-1,2,3,11,13-pentol, H-174
Hetisan-2,3,11,13,14-pentol, H-178
Hetisan-2,3,6,11,13-pentol, H-176
Hetisan-2,3,7,9,15-pentol, H-177
Hetisan-1,2,9,15-tetrol, H-179
Hetisan-1,2,11,13-tetrol, H-181
Hetisan-1,2,9,19-tetrol, H-180
Hetisan-2,11,13,14-tetrol, H-189
Hetisan-2,11,13,15-tetrol, H-190
Hetisan-2,11,13,19-tetrol, H-191
Hetisan-2,3,11,13-tetrol, H-185
Hetisan-2,3,6,13-tetrol, H-182
Hetisan-2,3,7,13-tetrol, H-183
Hetisan-2,3,9,15-tetrol, H-184
Hetisan-2,6,7,13-tetrol, H-186
Hetisan-2,7,13,15-tetrol, H-188
Hetisan-2,7,9,15-tetrol, H-187
Hetisan-6,11,12,15-tetrol, H-192
Hetisan-7,11,15,19-tetrol, H-193
Hetisan-2,11,13-triol, H-202
Hetisan-2,6,13-triol, H-198
Hetisan-1,2,13-triol, H-194
Hetisan-1,2,15-triol, H-195
Hetisan-1,7,13-triol, H-196
Hetisan-1,7,15-triol, H-197
Hetisan-11,15,19-triol, H-209
Hetisan-11,15,20-triol, H-210

Hetisan-2,11,15-triol, H-203
Hetisan-2,7,11-triol, H-199
Hetisan-2,9,15-triol, H-200
Hetisan-2,9,19-triol, H-201
Hetisan-3,15,19-triol, H-204
Hetisan-6,11,15-triol, H-205
Hetisan-6,13,15-triol, H-206
Hetisan-7,11,13-triol, H-207
Hetisan-7,11,15-triol, H-208
Hetisine, H-202
Hetisinone, H-202
1,5,7,13,17,22-Hexaazadocosane, D-283
1,5,9,13,18,22-Hexaazadocosane, D-284
1,5,9,14,18,22-Hexaazadocosane, D-285
1,5,9,13,17,21-Hexaazaheneicosane, T-107
1,6,11,16,21,26-Hexaazahexacosane, D-286
2,2′,3,4′,5,5′-Hexabromo-1,3′-bi-1*H*-indole, H-211
3,3′,4,4′,5,5′-Hexabromo-2,2′-bi-1*H*-pyrrole, H-212
2,4,4′,5′,6,6′-Hexabromo-2′,3-bis(methylthio)-1,3′-bi-1*H*-indole, P-200
2,4,4′,5,6,6′-Hexabromo-2′,3-bis(methylthio)-1,3′-bi-1*H*-indole, P-200
3,3′,4,4′,5,5′-Hexabromo-1,1′-dimethyl-2,2′-bi-1*H*-pyrrole, H-212
1,1,1,15,15,15-Hexachloro-3,12-pentadecadiyn-8-amine, H-213
Hexacosanoic acid isobutylamide, H-214
Hexacosanoic acid, H-214
N^b-Hexacosanoyltryptamine, T-639
2,9-Hexadecadiene-12,14-diynoic acid isobutylamide, H-215
2,9-Hexadecadiene-12,14-diynoic acid, H-215
2,4-Hexadecadienoic acid piperidide, H-216
2,7-Hexadecadienoic acid pyrrolide, H-217
3,6-Hexadecadienoic acid pyrrolidide, P-949
2,4-Hexadecadienoic acid, H-216
2,7-Hexadecadienoic acid, H-217
N-(3,6-Hexadecadienoyl)pyrrolidine, P-949
6,8-Hexadecadien-10-ynoic acid pyrrolidide, H-219
6,8-Hexadecadien-10-ynoic acid, H-219
2,7-Hexadecadien-10-ynoic acid, H-218
2,4,6,8,10,12,14-Hexadecaheptaenedioic acid, H-220
Hexadecanamide, H-221
Hexadecanoic acid 2-phenylethylamide, P-342
Hexadecanoic acid pyrrolidide, P-949
Hexadecanoic acid, H-221
N-Hexadecanoylarginine, A-1413
N^2-Hexadecanoylglutamine, G-108
N-Hexadecanoylputrescine, B-422
N-Hexadecanoylpyrrolidine, P-949
Hexadecanoylsolamine, S-340
N^b-Hexadecanoyltryptamine, T-639
N-Hexadecanoyltyrosine, T-700
3,5,10,13-Hexadecatetraen-2-amine, H-222
2,6,8,12-Hexadecatetraen-10-ynoic acid dehydropyrrolidide, H-223
2,6,8,12-Hexadecatetraen-10-ynoic acid isobutylamide, H-223
2,6,8,12-Hexadecatetraen-10-ynoic acid, H-223
2,6,8-Hexadecatrien-10-ynoic acid pyrrolide, H-224
2,6,8-Hexadecatrien-10-ynoic acid, H-224
2,7-Hexadeca-10-ynoic acid pyrrolide, H-218
2,7-Hexadeca-10-ynoic acid pyrrolidide, H-218
2-Hexadecenoic acid pyrrolidide, P-949
N-(9*Z*-Hexadecenoyl)arginine, A-1413
N^2-(9-Hexadecenoyl)glutamine, G-108
N-(2-Hexadecenoyl)pyrrolidine, P-949
N-(2-Hexadecenoyl)solamine, S-340
N-(9-Hexadecenoyl)tyrosine, T-700
7-Hexadecen-10-ynoic acid pyrrolide, H-225
7-Hexadecen-10-ynoic acid, H-225
3-Hexadecylidene-2-methyl-1-pyrroline, L-37
N-Hexadecyl-*N*-nitrosohydroxylamine, N-254
8-Hexadecyl-1,5,9,13-tetraazacycloheptadecan-6-one, B-385
6,7,8,9,10,14-Hexadehydro-4,5-epoxy-3,6-dimethoxy-17-methylthebinan, H-226
7,8,11,12,13,14-Hexadehydromatridin-15-one, S-376
1,2,6,7,10,11-Hexadehydro-3-methoxy-15,16-[methylenebis(oxy)]erythrinan-8-one, C-799
3,4,5,6,18,19-Hexadehydroochropposinine, T-136
Hexadellin A, A-1378
Hexadellin B, H-227
Hexadellin C, H-228
3-(3,5-Hexadiynyl)oxiranecarboxylic acid, E-137
3-(3,5-Hexadiynyl)-*N*-(2-phenylethenyl)oxiranecarboxamide, E-137
3-(3,5-Hexadiynyl)-*N*-(2-phenylethyl)oxiranecarboxamide, E-137
Hexahydroaniline, C-868
3,4,5,6,7,8-Hexahydro-1,7-benzodiazecin-2(1*H*)-one, H-229
Hexahydroberberonic acid, P-457
1′,2,2′,3,3′,9′-Hexahydro[1,9′-bipyrrolo[2,1-*b*]quinazolin]-9(1*H*)-one, D-812
1,2,3,3*a*,6,7-Hexahydrocyclopenta[*d*]pyrrolo[2,1-*b*][1,3]oxazin-8(5*H*)-one, M-77
1,4,5,6,7,8-Hexahydro-1,3-diazocine-2,4-dicarboxylic acid, H-230
1,2,3,10,11,11*a*-Hexahydro-8,11-dihydroxy-3,7-dimethoxy-5*H*-pyrrolo[2,1-*c*][1,4]benzodiazepin-5-one, A-1232
1*a*,2,4,9,10,10*a*-Hexahydro-5,10-dihydroxy-1*a*-methyl-2,4,9-trioxo-3*H*-benz[*b*]oxireno[*h*]carbazole-3-carbonitrile, K-37
Hexahydro-1,2-dihydroxy-1*H*-pyrrolizine-3,5-dimethanol, D-543
Hexahydro-1,7-dihydroxy-1*H*-pyrrolizine-1-methanol, D-596
Hexahydro-6,7-dihydroxy-1*H*-pyrrolizine-1-methanol, D-595
4-(7,9,10,11,11*a*,12-Hexahydro-2,3-dimethoxybenzo[*f*]pyrrolo[1,2-*b*]isoquinolin-6-yl)-2-butanone, V-122
4-(7,9,10,11,11*a*,12-Hexahydro-2,3-dimethoxybenzo[*f*]pyrrolo[1,2-*b*]isoquinolin-6-yl)-3-buten-2-ol, V-122
1,2,3,5,6,10*b*-Hexahydro-8,9-dimethoxypyrrolo[2,1-*a*]isoquinoline, C-756
5*b*,6,7,12*b*,13,14-Hexahydro-5*b*,13-dimethyl[1,3]-benzodioxolo[5,6-*c*]-1,3-dioxolo[4,5-*i*]phenanthridin-6-ol, C-692
Hexahydro-3*a*,7*a*-dimethyl-4,7-epoxy-2*H*-isoindole-1,3-dione, C-89
1,2,3,4,5,13-Hexahydro-5,7-dimethyl-2-(1-methylethenyl)-1,5-methanooxocino[3,2-*a*]carbazole, C-814
1,2,3,4,5,13-Hexahydro-5,7-dimethyl-2-(1-methylethyl)-1,5-methanooxocino[3,2-*a*]carbazole, C-814
Hexahydro-2,2-dimethyl-7′-nitrospiro[cyclopentane-1,1′-[1*H*]pyrrolizine], N-252
Hexahydro-2,4-dioxopyrimidine, D-497
1,3,4,6,8,9-Hexahydrodipyrano[3,4-*b*:3′,4′-*e*]pyrazine-3,8-dimethanol, P-41
2,3,4,5,11,12-Hexahydro-6*H*,13*a*H-3*a*,5*a*-ethano-1*H*-indolizino[8,1-*cd*]carbazole, A-1494
Hexahydro-7*a*-(1-ethoxyethoxy)-3*H*-pyrrolizin-3-one, H-234
Hexahydrofugapavine, L-214
1,2,3,3′,11,11′-Hexahydro-3,3,3′,3′,5,5′-hexamethyl-1,8′-bipyrano[3,2-*a*]carbazole, M-748
Hexahydro-3-(4-hydroxybenzyl)pyrrolo[1,2-*a*]pyrazine-1,4-dione, C-900
1,2,3,5,6,7-Hexahydro-11-hydroxy-2,12-dimethoxydibenzo[*b*,*i*]quinolizin-9(14*H*)-one, C-564
1-[4-[Hexahydro-4-(2-hydroxyheptyl)-5-methyl-2-oxo-1,5-diazocin-1(2*H*)-yl]butyl]hexahydro-5-methyl-4-pentyl-1,5-diazocin-2(1*H*)-one, H-355
1-[4-[Hexahydro-4-(2-hydroxyheptyl)-5-methyl-2-oxo-1,5-diazocin-1(2*H*)-yl]butyl]hexahydro-5-methyl-4-phenyl-1,5-diazocin-2(1*H*)-one, H-353
Hexahydro-7-hydroxy-3-[(4-hydroxyphenyl)-methyl]pyrrolo[1,2-*a*]pyrazine-1,4-dione, C-874
α-(Hexahydro-4-hydroxy-2-iminopyrimidin-6-yl)-glycine, T-657
1,2,3,10,11,11*a*-Hexahydro-9-hydroxy-11-(1*H*-indol-3-yl)-5*H*-pyrrolo[2,1-*c*][1,4]benzodiazepin-5-one, T-411
1,2,3,10,11,11*a*-Hexahydro-2-hydroxy-11-methoxy-5*H*-pyrrolo[2,1-*c*][1,4]benzodiazepin-5-one, A-5
Hexahydro-3-hydroxymethyl-5-methyl-1*H*-pyrrolizine-1,2-diol, D-592
Hexahydro-3-hydroxymethyl-5-methyl-1*H*-pyrrolizine-1,2,6,7-tetrol, T-261
Hexahydro-3-hydroxymethyl-5-methyl-1*H*-pyrrolizine-1,2,7-triol, T-554
Hexahydro-7-hydroxy-3-(2-methylpropyl)pyrrolo[1,2-*a*]pyrazine-1,4-dione, C-871
Hexahydro-2-hydroxy-2-methyl-1*H*-pyrrolizine-1-carboxylic acid, H-231
Hexahydro-3-hydroxymethyl-1*H*-pyrrolizine-1,2-diol, D-594
Hexahydro-7-(hydroxymethyl)-1*H*-pyrrolizine-1,6-diol, D-597
Hexahydro-3-(hydroxymethyl)-1*H*-pyrrolizine-1,2,6,7-tetrol, T-262
Hexahydro-3-(hydroxymethyl)-1*H*-pyrrolizine-1,2,7-triol, T-555
Hexahydro-7-hydroxy-3-methylpyrrolo[1,2-*a*]pyrazine-1,4-dione, C-838
Hexahydro-3-[(4-hydroxy-3-nitrophenyl)methyl]-pyrrolo[1,2-*a*]pyrazine-1,4-dione, C-900
1,2,3,4,5,6-Hexahydro-3-(3-hydroxy-2-oxobutyl)-1,5-methano-8*H*-pyrido[1,2-*a*][1,5]diazocin-8-one, S-378
3,4,6,7,8,9-Hexahydro-10-hydroxy-2,2,6,6,9-pentamethyl-2*H*,14*H*-dipyrano[2,3-*a*:2′,3′-*c*]acridin-14-one, M-401
1,2,3,3*a*,7,7*a*-Hexahydro-3*a*-(4-hydroxyphenyl)-1-methyl-6*H*-indol-6-one, S-123
Hexahydro-7-hydroxy-3-(phenylmethyl)pyrrolo[1,2-*a*]pyrazine-1,4-dione, C-873
Hexahydro-8*a*-hydroxy-3-(phenylmethyl)pyrrolo[1,2-*a*]pyrazine-1,4-dione, C-872
1,2,3,4,7,8-Hexahydro-6-(4-hydroxyphenyl)-8-(2,3,4,5-tetrahydroxypentyl)-2,4,7-pteridinetrione, H-232
Hexahydro-6-hydroxy-1*H*-pyrrolizine-1-carboxylic acid, H-720
Hexahydro-1-hydroxy-1*H*-pyrrolizine-1-methanol, H-517
Hexahydro-2-hydroxy-1*H*-pyrrolizine-1-methanol, H-518
Hexahydro-7-hydroxy-1*H*-pyrrolizine-1-methanol, H-233
Hexahydro-7*a*-hydroxy-3*H*-pyrrolizin-3-one, H-234
4,6,7,12,12*b*,13-Hexahydro-1*H*-imidazo[4,5-*g*]indolo[2,3-*a*]quinazoline, V-102
Hexahydro-3-imino-1,2,4-oxadiazepine-3-carboxylic acid, H-235
α-(Hexahydro-2-imino-4-pyrimidyl)glycine, C-99
2,3,5,6,11,11*b*-Hexahydro-1*H*-indolizino[8,7-*b*]indole, H-65
1-(1,2,3,5,6,8*a*-Hexahydro-8-indolizinyl)-1-butanone, E-58
N-[(Hexahydro-8(5*H*)-indolizinylidene)methyl]acetamide, T-73
1,2,3,4,6,7-Hexahydroindolo[2,3-*a*]quinolizine, I-113
Hexahydro-3-(1*H*-indol-3-ylmethyl)pyrrolo[1,2-*a*]pyrazine-1,4-dione, C-899
1,2,3,4,5,6-Hexahydro-5-(1*H*-indol-3-yl)-4-oxoazepino[4,5-*b*]indole-2-carboxylic acid, M-66
1,2,3,10,11,11*a*-Hexahydro-11-[4-(1*H*-indol-3-yl)-2-oxo-3-butenylidene]-5*H*-pyrrolo[2,1-*c*][1,4]benzodiazepin-5-one, H-236
Hexahydro-3-isopropylpyrrolo[1,2-*a*]pyrazine-1,4-dione, C-901
Hexahydromecambrine, L-214
1,2,3,4,5,6-Hexahydro-1,5-methano-8*H*-pyrido[1,2-*a*][1,5]diazocin-8-one, C-938
2,3,5,6,7,8-Hexahydro-3′-methoxy-4′,9-dimethylspiro[1*H*-cyclopenta[*b*]pyrrolo[1,2-*a*]azepine-11(10*H*),2′(5′*H*)-furan]-5′,10-dione, S-518
11,12,13,14,14*a*,15-Hexahydro-6-methoxy-9*H*-1,3-dioxolo[6,7]phenanthro[9,10-*b*]quinolizin-12-ol, C-791
4*a*,5,9,10,11,12-Hexahydro-3-methoxy-11-methyl-6*H*-benzofuro[3*a*,3,2-*ef*][2]benzazepin-6-ol, G-3
Hexahydro-7*a*-methoxy-3*H*-pyrrolizin-3-one, H-234
20-(Hexahydro-1-methyl-1*H*-azepin-2-yl)pregn-5-ene-3,15-diol, R-79

20-(Hexahydro-1-methyl-1*H*-azepin-2-yl)pregn-5-ene-3,15,17-triol, V-7
Hexahydro-3-(3-methylbutyl)pyrrolo[1,2-*a*]pyrazine-1,4-dione, C-870
Hexahydro-1-methylene-1*H*-pyrrolizine, M-461
2,3,5,6,7,7*a*-Hexahydro-7-methylene-1*H*-pyrrolizin-1-ol, H-601
Hexahydro-3-(1-methylethyl)pyrrolo[1,2-*a*]pyrazine-1,4-dione, C-901
6-(Hexahydro-8-methyl-6(5*H*)-indolizinylidene)-5-methyl-2-hexanol, D-228
4-(1,2,3,5,8,8*a*-Hexahydro-7-methyl-6-indolizinyl)-phenol, I-165
Hexahydro-2-methyl-4*H*,7*H*-methano-2*H*-1,3-benzoxazocine 3-oxide, S-292
Hexahydro-*N*-methyl-2,4-methano-4*H*-furo[3,2-*b*]pyrrol-3-amine, L-234
Hexahydro-4-methyl-2,5-methano-2*H*-furo[3,2-*b*]pyrrol-6-ol, S-160
Hexahydro-6-methyl-3-methylenepyrrolo[1,2-*a*]pyrazine-1,4-dione, A-1261
5,7,8,13,13*b*,14-Hexahydro-14-methyl-5-oxoindolo[2′,3′:3,4]pyrido[2,1-*b*]quinazoline-7-carboxylic acid, E-310
2,3,6,7,8,9-Hexahydro-10-methyl-2-phenylcyclohepta[*b*]pyran-5,8-imin-4(5*H*)-one, S-586
1,2,3,4,5,6-Hexahydro-3-methyl-4-(2-propenyl)-1,5-methano-5*H*-pyrido[1,2-*a*][1,5]diazocin-8-one, T-412
Hexahydro-α-methyl-5-propyl-1*H*-pyrrolizine-3-hexanol, H-500
Hexahydro-3-(2-methylpropyl)pyrrolo[1,2*a*]pyrazine-1,4-dione, C-876
Hexahydro-3-(1-methylpropyl)pyrrolo[1,2-*a*]pyrazine-1,4-dione, C-875
2,4*a*,5,6,7,7*a*-Hexahydro-7-methyl-1*H*-2-pyrindine-4-carboxaldehyde, L-182
Hexahydro-7-methyl-1*H*-pyrrolizin-1-ol, H-630
Hexahydro-α-methylpyrrolo[2,1-*b*]oxazole-5-decanamine, A-927
Hexahydro-α-methylpyrrolo[2,1-*b*]oxazole-5-dodecanamine, A-920
Hexahydro-3-methylpyrrolo[1,2-*a*]pyrazine-1,4-dione, C-839
2,5,6,8,9,9*b*-Hexahydro-2-methyl-3*H*,4*H*,7*H*-1,2,3*a*,6*a*-tetraazaphenalene, C-443
Hexahydro-3-[2-(methylthio)ethyl]pyrrolo[1,2-*a*]pyrazine-1,4-dione, C-880
1,2,3,4,7,8-Hexahydro-8-methyl-2,4,7-trioxopteridine, P-763
Hexahydro-6*bH*-oxireno[*a*]pyrrolizine-6*b*-methanol, E-133
2,3,5,6,11,11*b*-Hexahydro-3-oxo-1*H*-indolizino[8,7-*b*]indole-5-carboxylic acid, H-237
Hexahydro-2-oxo-α-methyl-1*H*-thieno[3,4-*d*]imidazole-4-pentanoic acid, M-402
1,2,3,10,11,11*a*-Hexahydro-11-(2-oxopropylidene)-5*H*-pyrrolo[2,1-*c*][1,4]benzodiazepin-5-one, H-238
4-(1,2,3,10,11,11*a*-Hexahydro-5-oxo-5*H*-pyrrolo[2,1-*c*][1,4]benzodiazepin-11-ylidene)-3-oxobutanoic acid, H-239
Hexahydro-2-oxo-1*H*-selenolo[3,4-*d*]imidazole-4-pentanoic acid, S-219
Hexahydro-2-oxo-1*H*-thieno[3,4-*d*]imidazole-4-pentanoic acid, B-139
Hexahydro-2-oxo-1*H*-thieno[3,4-*d*]imidazole-4-propanoic acid, B-214
5-(Hexahydro-2-oxo-1*H*-thieno[3,4-*d*]imidazol-4-yl)-2-pentenoic acid, L-166
9,11,12,13,13*a*,14-Hexahydro-2,3,4,6,7-pentamethoxydibenzo[*f,h*]pyrrolo[1,2-*b*]isoquinoline, P-228
3,4,6,7,8,9-Hexahydrophenazine, H-240
Hexahydro-3-(phenylmethyl)-2*H*-pyrido[1,2-*a*]pyrazin-1(6*H*)-one, V-84
Hexahydro-3-(phenylmethyl)pyrrolo[1,2-*a*]pyrazine-1,4-dione, C-891
Hexahydropicolinic acid, P-456
1,2,3,5,6,8*a*-Hexahydro-α-propyl-8-indolizidinemethanol, E-58
7-(Hexahydro-5-propyl-1*H*-pyrrolizin-3-yl)-2-heptanone, H-500
Hexahydropyridine, P-454
Hexahydro-1*H*-pyrrolizin-1-amine, A-906
Hexahydro-1*H*-pyrrolizine-1-carboxylic acid, P-960
Hexahydro-1*H*-pyrrolizine-1-methanol, H-629
3,4,7,8,10,10*a*-Hexahydro-2*H*,5*H*-pyrrolo[2,1-*c*:3,4-*b*′]bis[1,4]thiazin-5-one, H-241
Hexahydropyrrolo[1,2-*a*]pyrazine-1,4-dione, C-865
N-[(Hexahydro-2*H*-quinolizin-1(6*H*)-ylidene)-methyl]acetamide, L-305
1′′,2′′,3′′,4′′,5′′,6′′-Hexahydro-2,3′:5,2′′-terpyridine, A-963
7*a*,8,11,12,13,14-Hexahydro-11,14,16,17-tetrahydroxy-9-methoxy-3-methyl-2*H*-xanthe-no[2′,3′:6,7][1,3]benzodioxino[4,5-*fg*]isoquinoline-1,15-dione, S-301
9,11,12,13,13*a*,14-Hexahydro-3,4,6,7-tetramethoxydibenzo[*f,h*]pyrrolo[1,2-*b*]isoquinoline, I-342
9,11,12,13,13*a*,14-Hexahydro-2,3,5,6-tetramethoxydibenzo[*f,h*]pyrrolo[1,2-*b*]isoquinoline, T-688
9,11,12,13,13*a*,14-Hexahydro-2,3,6,7-tetramethoxydibenzo[*f,h*]pyrrolo[1,2-*b*]isoquinoline, T-695
9*a*,10,11,12,13,13*a*-Hexahydro-2,9,9,12-tetramethyl-1,12-epoxy-9*H*-indolo[3,2,1-*de*]phenanthridine, C-813
Hexahydro-6,7,8-trihydroxy-5-(hydroxymethyl)imidazo[1,2-*a*]pyridine-2,3-dione, K-41
Hexahydro-1,2,7-trihydroxy-1*H*-pyrrolizidine-3,5-dimethanol, T-529
9,11,12,13,13*a*,14-Hexahydro-2,3,6-trimethoxydibenzo[*f,h*]pyrrolo[1,2-*b*]isoquinoline, A-1330
9,11,12,13,13*a*,14-Hexahydro-3,6,7-trimethoxydibenzo[*f,h*]pyrrolo[1,2-*b*]isoquinolin-14-ol, T-696
11,12,13,14,14*a*,15-Hexahydro-3,6,7-trimethoxy-9*H*-phenanthro[9,10-*b*]quinolizine, B-241
11,12,13,14,14*a*,15-Hexahydro-2,3,6-trimethoxy-9*H*-phenanthro[9,10-*b*]quinolizine, C-792
1,2,3,3*a*,4,5-Hexahydro-9,10,11-trimethoxypyrrolo[3,2,1-*de*]phenanthridinium(1+), R-130
2,3,4,4*a*,9,9*a*-Hexahydro-2,4*a*,9-trimethyl-1,2-oxazino[6,5-*b*]indol-6-ol methylcarbamate (ester), G-51
1,2,3,3*a*,8,8*a*-Hexahydro-1,3*a*,8-trimethylpyrrolo[2,3-*b*]indol-5-ol methylcarbamate (ester), P-400
Hexahydro-1,4,7,2-trioxaazonine, A-1603
1,2,3,4,5,6-Hexahydroxyacridone, H-242
1,2,3,8,9,10-Hexahydroxyaporphine, H-243
2,3,14,20,24,25-Hexahydroxycholest-7-en-6-one, H-244
3,5,7,13,15,18-Hexahydroxy-6,12-cyclo-14-lathyrone, H-245
1,2,4,6,8,9-Hexahydroxydihydro-β-agarofuran, H-246
1,2,4,6,9,14-Hexahydroxydihydro-β-agarofuran, H-247
1,2,6,8,9,14-Hexahydroxydihydro-β-agarofuran, H-248
1,4,6,8,9,14-Hexahydroxydihydro-β-agarofuran, H-249
1,3,4,6,8,13-Hexahydroxy-10,11-dimethyl-2,5-di-2-piperidinylphenanthro[1,10,9,8-*opqra*]perylene-7,14-dione, F-6
2,3,5,7,8,15-Hexahydroxy-6(17),11-jatrophadiene-9,14-dione, H-250
2,3,5,7,9,15-Hexahydroxy-6(17),11-jatrophadien-14-one, H-251
2,3,5,8,9,15-Hexahydroxy-6(17),11-jatrophadien-14-one, H-252
1,6,13,14,16,18-Hexahydroxy-4-methylaconitan-15-one, H-254
1,6,7,8,14,16-Hexahydroxy-4-methylaconitan-19-one, H-253
3,5,7,13,15,17-Hexahydroxy-8,10(18)-myrsinadien-14-one, H-255
3,8,14,15,16,18-Hexahydroxypregnan-20-one, H-256
2′,3′,4,4′′,5′,6′-Hexahydroxy-*p*-terphenyl, T-97
3,5-Hexalobine A, B-200
3,6-Hexalobine A, B-201
3,5-Hexalobine B, B-200
3,6-Hexalobine B, B-201
ent-3,6-Hexalobine C, B-201
3,5-Hexalobine C, B-200
3,6-Hexalobine C, B-201
3,5-Hexalobine D, B-200
(*E*)-3,6-Hexalobine E, B-201
(*Z*)-3,6-Hexalobine E, B-201
3,5-Hexalobine E, B-200
2,3-Hexalobine E, H-257
Hexalupine, T-363
N^2,N^2,N^8,N^8,1,4-Hexamethyl-1*H*-cyclohepta[1,2-*d*:3,4-*d*′]diimidazole-2,8-diamine, P-737
1,1,2,2,6,6-Hexamethyl-4-oxopiperidinium(1+), T-283
1,1,2,2,6,6-Hexamethyl-4-piperidinone, T-283
1-Hexanamine, H-261
Hexanediamide, H-258
Hexanedioic acid, H-258
20-Hexanoylcamptothecin, C-70
5-Hexanoyl-5-hydroxy-*N*-isobutyl-2-pyrrolidinone, P-449
20-Hexanoyl-10-methoxycamptothecin, C-70
N-Hexanoylnornicotine, P-957
N-Hexanoylsolamine, S-340
N^5-Hexanoylspermidine, S-398
[3-(1-Hexenyl)-*ONN*-azoxy]-1,2-butanediol, A-1199
[3-(1-Hexenyl)-*O,N,N*-azoxy]-2-butanol, M-85
[3-(1-Hexenyl)-*ONN*-azoxy]-1-hydroxy-2-butanone, A-1199
2-(5-Hexenyl)-3,4-dihydro-5-nonyl-2*H*-pyrrole, H-259
2-(1-Hexenyl)-4-hydroxyquinoline, H-263
2-(5-Hexenyl)-1-methyl-5-(8-nonenyl)pyrrolidine, D-246
2-(5-Hexenyl)-1-methyl-5-nonylpyrrolidine, D-246
2-(5-Hexenyl)-5-(8-nonenyl)pyrrolidine, D-246
5-(5-Hexenyl)-2-(8-nonenyl)-Δ^1-pyrroline, D-246
2-(5-Hexenyl)-5-(8-nonenyl)-Δ^1-pyrroline, D-246
2-(5-Hexenyl)-5-nonyl-Δ^1-pyrroline, D-435
3-(5-Hexenyl)octahydro-5-(4-pentenyl)indolizine, H-260
3-(5-Hexenyl)-5-(4-pentenyl)indolizidine, H-260
2-(5-Hexenyl)-5-pentylpyrrolidine, D-246
2-(1-Hexenyl)-4-quinolinol, H-263
2-(1-Hexenyl)-4(1*H*)-quinolinone, H-263
2-(3-Hexenyl)-1,2,3,4-tetrahydro-6*H*-pyrido[1,2-*a*]quinolin-6-one, D-367
22-(2-Hexenyl)-9,10,12-trihydroxy-17-methylazacyclodocosa-3,5,7,13,15,17,19-heptaen-2-one, A-1555
1-Hexylamine, H-261
5-Hexyl-6,7-dihydro-3-methoxy-2-methyl-4,8(1*H*,5*H*)-quinolinedione, A-1325
2-Hexyl-3,5-dimethylpyrazine, H-262
N-Hexylhexahydro-1,3-dimethyl-*N*-pentyl-2-pyrimidinedecanamine, A-13
2-Hexyl-4-hydroxyquinoline *N*-oxide, H-263
2-Hexyl-4-hydroxyquinoline, H-263
2-Hexyl-3-hydroxy-4(1*H*)-quinolinone, A-621
5-Hexylindolizidine, H-264
2-Hexyl-8-methoxy-1-methyl-4(1*H*)-quinolinone, H-265
1-Hexyl-2-methyl-3*H*-carbazole-3,4(9*H*)-dione, C-129
3-Hexyl-5-methylindolizidine, H-266
3-Hexyl-2-methylprodiginine, P-636
5-Hexyloctahydroindolizine, H-264
3-Hexyloctahydro-5-methylindolizine, H-266
3-Hexylpyridine, H-267
2-Hexylpyrrole sulfamate, H-268
2-Hexylpyrrole, H-268
2-Hexyl-3,4-quinolinediol, A-621
2-Hexyl-4-quinolinol, H-263
2-Hexyl-4(1*H*)-quinolinone *N*-oxide, H-263
2-Hexyl-4(1*H*)-quinolinone, H-263
1-[(5-Hexyltetrahydro-2-furanyl)acetyl]-1*H*-pyrrole, H-269
Hexyltheobromine, T-355
Heyden Antibiotic 9, O-124
Heyneanine hydroxyindolenine, C-658
Heyneanine, C-657
Heyneatine, H-270

HH 50, C-100
Hibiscusamide, T-576
Hibiscuwanin A, H-271
Hibiscuwanin B, H-271
Hibispeptin A, H-272
Hibispeptin B, H-273
Hicksoane A, H-274
Hicksoane B, H-274
Hicksoane C, H-274
Hidorin M7, O-32
Higenamine, H-275
Himalayamine, H-276
Himandravine, H-280
Himandreline, H-277
Himandridine, H-277
Himandrine, H-277
Himanimide A, H-278
Himanimide B, H-278
Himanimide C, H-278
Himanimide D, H-278
Himanthine, H-279
Himbacine, H-280
Himbadine, H-281
Himbeline, H-280
Himbosine, H-277
Himeic acid A, H-282
Himeic acid B, H-282
Himeic acid C, H-283
Himeradine A, H-284
Himgaline, H-285
Himgravine, H-280
Himgrine, H-286
Hinckdentine A, H-287
Hindaricine, G-77
Hindarine, T-212
Hindarinine, P-34
Hinnuliquinone, H-288
Hippacine, H-289
Hippacine, P-586
Hippadine, H-290
Hippamine, L-348
Hippandrine, H-291
Hippauline, H-292
Hippawine, H-6
Hippeastidine, H-293
Hippeastrine *N*-oxide, H-294
Hippeastrine, H-294
Hippocasine *N*-oxide, H-295
Hippocasine, H-295
Hippocrateine III, H-296
Hippocrateine II, P-246
Hippocrateine I, P-246
Hippodamine, D-886
Hippophaine, H-755
Hippospongin C, H-297
Hippospongin E, H-298
Hippospongin F, H-298
Hippospongine, D-731
Hiptagin, G-104
Hirsuteine, C-689
Hirsutellone A, H-299
Hirsutellone B, H-300
Hirsutellone C, H-300
Hirsutellone D, H-301
Hirsutellone E, H-302
Hirsutellone F, H-303
Hirsutine *N*-oxide, C-689
Hirsutine, C-689
Δ^{18}-Hirsutine, C-689
Hirsutine, J-17
Hirudinoidine A, H-304
Hirudinoidine B, H-304
Hirudinoidine C, H-304
Hirudonine, H-305
Hispaconitine, A-85
Hispidine, S-248
Hispidospermidine, H-306
Histamine dihydrochloride, H-307
Histamine phosphate, H-307
Histamine, H-307
Histaminol, I-38
Histamyl, H-307
Histapon, H-307
Histidinol, H-308
Histidol, H-308
Δ^{17}-*trans*-Histrionicotoxin 283A, H-309
Histrionicotoxin D, G-65
Histrionicotoxins, H-309
HL 523, G-201
HMBOA, D-538
HMBOA-Glc, D-538
HMQ, H-126
HO 452, A-176
HO 416b, I-82
HO 395, H-413
Hobartidiol, H-310
Hobartine, H-310
Hodgkinsine B, H-311
Hodgkinsine, H-311
Hodgsonine, C-533
Hodorine, H-312
Hoe 933, H-554
Hoerhammericine, H-743
Hoerhammerinine, H-743
Hoffmannseggiamide A, P-462
Hoffmannseggiamide B, P-462
Hoheconsoline, M-323
Hohenackeridine, D-187
Hohenackerine, M-325
Hokbusine A, M-331
Hokbusine B, M-355
Holacetine, A-881
Holacimine, H-313
Holacine, K-113
Holadienine, H-314
Holadysamine, A-875
Holadysenterine, D-279
Holadysine, A-887
Holafebrine, A-886
Holafrine, H-318
Holaline, H-315
Holamide, H-314
Holamine, A-888
Holaminol, A-885
Holantogenin, H-316
Holantosine A, H-316
Holantosine B, A-1028
Holantosine C, H-316
Holantosine D, A-1028
Holantosine E, H-316
Holantosine F, A-1028
Holaphyllamine, A-888
Holaphyllidine, A-885
Holaphylline, A-888
Holaphyllinol, A-885
Holaromine, H-317
Holarrheline, H-318
Holarrhenine, H-318
Holarrhesine, H-318
Holarrhessimine, H-319
Holarrhetine, H-318
Holarrhidine, D-279
Holarrhimine, D-279
Holarrhine, H-320
Holarricine, D-257
Holarrifine, P-606
Holeinine, R-51
Holidine, H-321
Holidinine, C-588
Holomycin, A-759
Holonamine, H-322
Holothin, A-759
Holstiine, H-323
Holstiline, H-323
Holyrine A, A-1190
Holyrine B, A-1190
Homaline, H-324
Homarine, C-148
Homoaerothionin, A-158
Homoagmatine, A-859
α-Homoallonojirimycin, B-186
Homoamericine, T-300
Homoanatoxin a, H-325
Homoanisylamine, M-280
HomoAnTx, H-325
Homoarecoline, T-205
Homoarginine, H-326
Homoaromoline, O-1
Homobatrachotoxin, B-36
Homobuxaquamarine, H-327
Homocaldohexamine, D-283
Homocaldopentamine, D-288
Homocapsaicin, C-100
Homochasmanine, M-323
α-Homochelidonine, C-352
Homochelidonine, C-352
β-Homochelidonine, F-2
γ-Homochelidonine, F-2
Homocinchonidine, H-328
Homoclausenamide, D-445
Homocryptolepinone, H-329
Homocylindrocarpidine, C-929
Homodaphniphyllic acid, H-330
Homodasycarpine, J-16
Homodeoxyharringtonine, H-66
Homodihydrocapsaicin, C-100
Homodolastatin 3, D-905
Homodopamine, A-896
Homoepilachnene, E-93
Homo-6-epipodopetaline, H-341
Homoerysotine, H-331
Homoerythratine, S-126
Homofascaplysate A, H-332
Homofascaplysin A, H-333
Homofascaplysin B1, H-335
Homofascaplysin B, H-334
Homofascaplysin C, H-336
Homofluorodaturatin, H-337
β-Homofuconojirimycin, H-607
α-Homogalactostatin, B-186
Homoglomerine, E-247
Homoglycosolone, T-583
Homoharringtonine, H-66
Homoharzianic acid, H-67
Homohexamine, D-286
Homohydroxydolabellin, H-503
Homohygrinic acid, P-950
Homoindanomycin, I-64
Homolaudanosine, H-338
Homoleucylprolyl anhydride, C-870
Homolinearisine, P-643
γ-Homolinolenic acid, E-52
Homo-γ-linolenylethanolamide, E-52
Homolycorine *N*-oxide, L-347
Homolycorine, L-347
α-Homomannojirimycin, B-186
β-Homomannojirimycin, B-186
Homomoenjodaramine, H-339
Homomoschatoline, M-712
Homoneoharringtonine, N-117
α-Homonojirimycin, B-186
β-Homonojirimycin, B-186
Homoormosanine, J-16
Homopahutoxin, P-12
Homopalytoxin, P-42
Homopentamine, D-290
Homophleine, H-340
Homopiptanthine, H-341
Homoplatensimide, H-342
Homopodopetaline, H-341
β-Homoproline, P-950
Homoproline, P-456
Homopseudopteroxazole, H-343
Homopseudozoanthoxanthin, P-737
Homopumiliotoxin 317, A-320
Homopumiliotoxin 319A, H-344
Homopumiliotoxin 319B, H-344
Homopumiliotoxin 321B, H-344
Homopumiliotoxin 249F, A-512
Homopumiliotoxin 207G, A-517
Homopumiliotoxin 223G, H-345
Homopumiliotoxin 235J, A-534
Homopumiliotoxin 251L, A-546
26-Homosaframycin Y_3, S-12
Homosecodaphniphyllic acid, H-346
Homosedinone, H-347
as-Homospermidine, A-897
sym-Homospermidine, D-252
Homospermine, B-150

Homostachydrine, H-348
Homostephanoline, H-70
Homosweetinine, H-341
Homothalicrine, O-1
Homothapoxepine A, T-348
Homothapsakin A, T-349
Homothermohexamine, D-285
Homothermopsine, H-349
Homotoluic acid, P-350
Homotrilobine, I-339
Homotrypanothione, T-636
Homotyramine, H-350
Homovanillylamine, H-566
N-Homoveratroylhomoveratrylamine, H-351
Homoveratrylamine, D-718
Honyumine, J-59
Hookerianamide A, D-273
Hookerianamide B, D-262
Hookerianamide C, D-265
Hookerianamide H, D-281
Hookerianamide I, P-601
Hookerianamine A, P-607
Hopamidine, P-943
Hopeanine, H-352
Hopromalinol, H-353
Hopromine, H-354
Hoprominol, H-355
Hordatine A glucoside, H-356
Hordatine A, H-356
Hordatine B glucoside, H-356
Hordatine B, H-356
Hordenine *O*-(6′′-*O*-*trans*-cinnamoyl-3′-*O*-β-D-glucopyranosyl-α-L-rhamnopyranoside), H-357
Hordenine *O*-(6′′-*O*-*p*-coumaroyl-3′-*O*-β-D-glucopyranosyl-α-L-rhamnopyranoside), H-357
Hordenine *O*-glucoside, H-357
Hordenine *O*-rhamnoside, H-357
Hordenine, H-357
Horhammericine, H-743
Horhammerinine, H-743
Hormaomycin, H-358
Hormex, I-83
Hormodin, I-83
Horridine, P-247
Horsfiline, H-359
Hortesin, H-360
Hortiacine, H-361
Hortiamide, H-667
Hortiamine, D-158
Hostasine, H-362
Hostasinine A, H-363
Hosukinidine, H-364
Hoveine, H-365
Hovenine A, F-151
HPPA, H-689
HQ 24A, T-370
HS 3, P-974
5 HT, H-755
HTX-235A, H-309
HTX-259A, H-309
HTX-283A, H-309
HTX-285A, H-309
HTX-287A, H-309
HTX-291A, H-309
Δ^{17}-*trans*-HTX-283A, H-309
HTX-285B, H-309
HTX-287B, H-309
HTX-285C, H-309
HTX-287D, H-309
HTX-285E, H-309
Huajiaosimuline, Z-5
Huangshanine, H-366
Huazhongilexol, L-213
huC242-DM1, M-135
Humantenidine, G-44
Humantenine, H-367
Humanteniridine, R-15
Humantenirine, H-367
Humantenmine, G-44
Humilixanthin, V-195
Humosine A, E-43
huN901-DM1, M-135
Hunnemannine, F-2
Huntabrine, G-33
Hunteracine, H-368
Hunterburnine α-*N*-metho salt, A-1328
Hunterburnine β-*N*-metho salt, A-1328
Hunterburnine, A-1328
Hunteriamine, H-369
Hunteriatryptamine, C-281
Hunterine, E-6
Hunteridine, E-6
Hunteriline, E-6
Hunterine, U-21
Hunterioside B, S-583
Hunterioside, S-583
Huntrabrine *N*-metho salt, G-33
Huntrabrine, G-33
Hupehemonoside, C-298
Hupehenidine, H-370
Hupehenine, C-290
Hupeheninoside, C-290
Hupehenirine, C-290
Hupehenisine, H-371
Hupehenizine, C-290
Hupehenizioside, C-290
Hupeol, H-372
Huperserratinine, S-257
Huperzine A, H-375
Huperzine B, H-376
Huperzine C, H-388
Huperzine D, H-388
Huperzine E′, H-377
Huperzine E, H-378
Huperzine F′, H-377
Huperzine F, H-378
Huperzine G, F-75
Huperzine H, H-379
Huperzine I, H-373
Huperzine J, H-380
Huperzine K, H-380
Huperzine L, H-380
Huperzine O, H-378
Huperzine P, H-381
Huperzine Q *N*-oxide, H-382
Huperzine Q, H-382
Huperzine R, H-383
Huperzine S, H-384
Huperzine T, H-385
Huperzine U, H-386
Huperzine V, H-374
Huperzine W, H-387
Huperzinine C, H-389
Huperzinine N^{13}-oxide, H-388
Huperzinine, H-388
Hurghamide A, A-841
Hurghamide B, A-841
Hurghamide C, A-841
Hurghamide D, A-841
Hurghamide E, A-841
Hurghamide F, A-841
Hurghamide G, A-841
Hyacinthacine A_1, D-594
Hyacinthacine A_2, D-594
Hyacinthacine A_3, D-592
Hyacinthacine A_4, D-592
Hyacinthacine A_5, D-592
Hyacinthacine A_6, D-592
Hyacinthacine A_7, D-592
Hyacinthacine B_1, D-543
Hyacinthacine B_2, D-543
Hyacinthacine B_3, T-554
Hyacinthacine B_4, T-554
Hyacinthacine B_5, T-554
Hyacinthacine B_6, T-554
Hyacinthacine B_7, T-554
Hyacinthacine C_1, T-261
Hyacinthacine C_2, T-529
Hyacinthacine C_3, T-529
Hyacinthacine C_4, T-261
Hyacinthacine C_5, T-261
Hyacinthoside, S-345
Hyalbidone, E-226
Hyatelactam, H-390
Hybar X, U-42
Hydantoin, I-40
Hyderabadine, H-391
Hydnellin A, S-76
Hydnellin B, H-392
Hydrachine A, N-110
Hydrakouminol, H-393
Hydrastidine, H-394
Hydrastine a, H-394
Hydrastine b, H-394
Hydrastine imide, N-36
Hydrastine, H-394
(±)-α-Hydrastine, H-394
(±)-β-Hydrastine, H-394
(+)-α-Hydrastine, H-394
(+)-β-Hydrastine, H-394
(-)-α-Hydrastine, H-394
(-)-β-Hydrastine, H-394
1,2-Hydrazinedicarboxylic acid, H-395
Hydrazobisformic acid, H-395
Hydrazodicarboxylic acid, H-395
Hydrazodiformic acid, H-395
Hydrazoformic acid, H-395
Hydrocaffeic acid, D-652
1,3-(8-Hydrochelerythrinyl-8′-hydro-*N*-norchelerythrinyl)acetone, C-355
Hydrocinchonidine, C-446
Hydrocinchonine, C-447
Hydrocinnamic acid, P-350
Hydrocinnamonitrile, P-350
Hydroconchinene, Q-18
Hydroconquinine, Q-18
Hydrocotarnine, H-396
Hydrocotyline, H-397
Hydrocupreine, Q-20
Hydroergotocin, Y-13
Hydrogen cyanamide, C-823
Hydrohydrastinine, H-398
7-Hydro-8-methylpteroylglutamylglutamic acid, P-772
7-Hydroperoxy-17-hydroxy-16,18-dimethyl-10-phenyl[11]cytochalasa-5,13,19-triene-1,21-dione, H-399
5-(2-Hydroperoxy-3-methyl-3-butenyl)-4,6,7-trimethoxyfuro[2,3-*b*]quinoline, H-580
5-(3-Hydroperoxy-3-methyl-1-butenyl)-4,6,7-trimethoxyfuro[2,3-*b*]quinoline, H-578
7-Hydroperoxyphlegmariurine B, P-363
11α-Hydroperoxyphlegmariurine B, P-363
β-Hydropiperylpiperidine, P-467
Hydroquine, Q-18
Hydroquinidine, Q-18
Hydroquinine, Q-20
Hydrorhombinine, L-302
Hydrospilanthol, D-105
Hydrouracil, D-497
4-Hydroxyacanthamine, D-436
2-Hydroxyacetanilide, A-861
10-Hydroxyacetyldihydrolycopodine, P-71
6-Hydroxy-13-*O*-acetylhetisinone, T-552
3-(Hydroxyacetyl)-1*H*-indole, H-400
15α-Hydroxy-*N*-acetylirehdiamine F, D-278
15β-Hydroxy-*N*-acetylirehdiamine F, D-278
2-(Hydroxyacetyl)-1*H*-pyrrole, H-401
N-Hydroxyacetylquestiomycin A, A-862
10-Hydroxyaconitine, M-302
2-Hydroxyaconitine, M-301
9-Hydroxyacridine, A-112
1-Hydroxy-9(10*H*)-acridinone, H-402
1-Hydroxyacridone, H-402
22-Hydroxyacuminatine, H-403
8-Hydroxyadenine, A-819
11-Hydroxyaerothionin, A-158
18-Hydroxyaffinisine, T-425
20-Hydroxyaflavinine, A-172
3′-Hydroxyaglaine B, A-199
3′-Hydroxyaglaine C, A-199
2′-Hydroxyaglaroxin B, P-72
12-Hydroxyajmaline, A-216
10-Hydroxyakagerine, A-222
Hydroxyakalone, A-755
10-Hydroxyakuammicine, A-228
12-Hydroxyakuammicine, A-228

14-Hydroxyakuammicine, M-713
17-Hydroxy-ψ-akuammigine, A-232
16-Hydroxyalloibogamine, H-404
17-Hydroxyalloibogamine, H-404
4-Hydroxyallosedamine, S-210
3-Hydroxyallosedamine, S-210
16-Hydroxyalstonal, A-648
16-Hydroxyalstonisine, A-654
Hydroxyamfetamine, A-898
γ-Hydroxy-β-aminobutyric acid, A-792
4-Hydroxy-α-aminohydrocinnamic acid, T-700
Hydroxyamphetamine hydrobromide, A-898
Hydroxyamphetamine, A-898
Hydroxyanagyrine, A-970
13-Hydroxyanagyrine, B-20
Hydroxyanantine, A-972
2α-Hydroxy-9-angeloyloxy-(-)-trachelanthamidine *N*-oxide, H-518
23-Hydroxyanguivine, S-450
15-Hydroxyangustilobine A, A-1014
10-Hydroxyangustine, A-1019
4-Hydroxyanhydrolycorine, H-290
o-Hydroxyaniline, A-861
3-Hydroxyanisotine, A-1045
N^9-Hydroxyannomontine, A-1051
4-Hydroxyanonaine, S-549
Hydroxyanopterine, A-1071
7-Hydroxyanopteryl 11-benzoate 12-tiglate, A-1071
7-Hydroxyanopteryl 11-4′-hydroxybenzoate 12-tiglate, A-1071
15-Hydroxyansamitocin P1, M-136
15-Hydroxyansamitocin P2, M-136
15-Hydroxyansamitocin P3, M-136
15-Hydroxyansamitocin P4, M-136
15-Hydroxyansamitocin P_0, M-136
30-Hydroxyansamitocin P1, M-136
30-Hydroxyansamitocin P2, M-136
30-Hydroxyansamitocin P3, M-136
30-Hydroxyansamitocin P4, M-136
4-Hydroxyanthranilic acid, A-788
5-Hydroxyanthranilic acid, A-789
3-Hydroxyanthranilic acid, A-787
10-Hydroxyantirhine, A-1328
14-Hydroxyantofine β-*N*-oxide, A-1330
14-Hydroxyantofine, A-1330
5′-Hydroxyapateline, A-1331
N^6-Hydroxyaphelandrine, A-1334
13α-Hydroxyaphyllidine, A-1336
2*R*-Hydroxyaphyllidine, A-1336
2*S*-Hydroxyaphyllidine, A-1336
2α-Hydroxyaphylline, A-1337
Hydroxyaphylline, H-405
13-Hydroxyaphylline, V-153
N-Hydroxyapiosporamide, A-1340
10-Hydroxyapparicine, A-1365
5-Hydroxyarborinine, T-241
N-Hydroxyarcyroxocin B, A-1398
N-Hydroxyaristolactam BII, D-567
N-Hydroxyaristolactam II, D-567
7-Hydroxyaristolactam I, T-251
9-Hydroxyaristolactam I, T-251
7-Hydroxyaristolochic acid A, T-267
17-Hydroxyaristoteline, A-1442
11-Hydroxyascididemin, A-1459
6-Hydroxyasimilobine, P-4
Hydroxyaspergillic acid, A-1475
16-Hydroxyaspidofractinine, H-406
12-Hydroxy-Δ^1-aspidospermidine, E-3
6-Hydroxyatropine, H-521
1-(4-Hydroxy-9-azabicyclo[4.2.1]non-2-en-2-yl)-1-propanone, H-325
5-Hydroxy-1-azabicyclo[3.3.0]octan-2-one, H-234
5-Hydroxy-1-azabicyclo[3.3.0]oct-3-en-2-one, T-189
3-Hydroxybaikiain, T-187
10-Hydroxybarterine, S-595
4-Hydroxybatrachotoxin, B-36
(2-Hydroxybenzamido)benzoic acid, B-67
4-Hydroxybenzeneacetamide, H-672
α-Hydroxybenzeneacetamide, H-671
4-Hydroxybenzeneacetic acid, H-672
α-Hydroxybenzeneacetonitrile, H-673
4-Hydroxybenzeneethanol, H-676
4-Hydroxybenzenemethanol, H-414
α-Hydroxybenzenepropanoic acid 8-methyl-8-azabicyclo[3.2.1]oct-3-yl ester, L-216
4-Hydroxybenzenepropanoic acid, H-689
6-Hydroxy-1,2-benzisoxazol-3(2*H*)-one, B-72
10-Hydroxybenzo[*f*]-1,3-benzodioxolo[6,5,4-*cd*]indol-5(6*H*)-one, A-1429
11-Hydroxy-5*H*-benzo[*g*]-1,3-benzodioxolo[6,5,4-*de*]quinoline-5,6(7*H*)-dione, T-661
N-[6-(6-Hydroxy-1,3-benzodioxol-5-yl)-naphtho[2,3-*d*]-1,3-dioxol-5-yl]-*N*-methylformamide, I-159
4-Hydroxybenzo[*c*][2,7]naphthyridine, B-75
11-Hydroxy-2*H*-benzo[*c*]pyrano[2,3-*h*]cinnolin-2-one, N-84
9-Hydroxy-8*H*-benzo[*b*]pyrido[4,3,2-*de*][1,10]phenanthrolin-8-one, H-542
7-Hydroxy-2*H*-1,4-benzothiazin-3(4*H*)-one, H-407
6-Hydroxy-5-benzothiazoleacetic acid, H-408
2-Hydroxybenzothiazole, B-80
6-Hydroxy-2(3*H*)-benzothiazolone, B-78
2-(6-Hydroxy-2-benzothiazolyl)-4(5*H*)-thiazolone, F-56
2-Hydroxy-2*H*-1,4-benzoxazin-3(4*H*)-one, H-409
2-Hydroxybenzoxazole, B-83
4-Hydroxy-2-benzoxazolinone, B-81
6-Hydroxy-2-benzoxazolinone, B-82
4-Hydroxy-2(3*H*)-benzoxazolone, B-81
6-Hydroxy-2(3*H*)-benzoxazolone, B-82
6-[[[4-[(4-Hydroxybenzoyl)amino]butyl]amino]carbonyl]-1,3-dimethyl-2,4(1*H*,3*H*)-pteridinedione, H-410
N-[4-(4-Hydroxybenzoylamino)butyl]-1,3-dimethyllumazine-6-carboxamide, H-410
N-[5-(4-Hydroxybenzoylamino)pentyl]-1,3-dimethyllumazine-6-carboxamide, H-410
N-(2-Hydroxybenzoyl)anthranilic acid, B-67
N^2-(4-Hydroxybenzoyl)arginine, A-1413
1-(4-Hydroxybenzoyl)-β-carboline, H-411
(4-Hydroxybenzoyl)choline, C-419
1-(4-Hydroxybenzoyl)-6,7-dimethoxy-2-methylisoquinolinium, G-14
4-Hydroxybenzoylformic acid, H-687
N-(4-Hydroxybenzoyl)glutamic acid, G-107
2-(4-Hydroxybenzoyl)-4(5)-(4-hydroxyphenyl)-1*H*-imidazole, H-412
2-(4-Hydroxybenzoyl)-6-(4-hydroxyphenyl)pyrazine, B-259
6-(4-Hydroxybenzoyl)-5-(4-hydroxyphenyl)-1*H*-pyrrolo[2,3-*d*]pyrimidine-2,4(3*H*,7*H*)-dione, R-98
N-(2-Hydroxybenzoyl)-4-methoxyanthranilic acid, B-67
N-(2-Hydroxybenzoyl)-*O*-methyltyramine, M-280
3α-(4-Hydroxybenzoyloxy)tropane, M-393
3β-(4-Hydroxybenzoyloxy)tropane, M-393
3-(*m*-Hydroxybenzoyloxy)tropane, M-393
3-Hydroxy-6-benzoyloxytropane, M-391
Agelenopsis aperta Hydroxybenzoylpentamine toxins, H-413
1-(4-Hydroxybenzoyl)-9*H*-pyrido[3,4-*b*]indole, H-411
m-Hydroxybenzoyltropine, M-393
N-(2-Hydroxybenzoyl)tyramine, H-667
4-Hydroxybenzyl alcohol, H-414
4-Hydroxybenzyl cyanide, H-672
6*N*-(3-Hydroxybenzyl)adenine, A-137
4-Hydroxybenzylamine, H-417
2-Hydroxybenzylamine, H-415
3-Hydroxybenzylamine, H-416
(4-Hydroxybenzyl)aminoformic acid, H-421
(4-Hydroxybenzyl)aminothioformic acid, H-427
8-(4-Hydroxybenzyl)-2,3,10,11-berbintetrol, H-419
8-(4-Hydroxybenzyl)-2,3,9,10-berbintetrol, H-418
8-(4-Hydroxybenzyl)-2,3,10-berbintriol, H-420
(4-Hydroxybenzyl)carbamic acid, H-421
8-(4-Hydroxybenzyl)-2,3-dimethoxy-10-berbinol, H-420
1-(4-Hydroxybenzyl)-6,7-dimethoxyisoquinoline, H-424
5-(*p*-Hydroxybenzyl)hydantoin, H-423
2-(4-Hydroxybenzyl)imidazole, H-422
5-(4-Hydroxybenzyl)-2,4-imidazolidinedione, H-423
1-(4-Hydroxybenzyl)-6,7-isoquinolinediol, H-424
8-(4-Hydroxybenzyl)-2-methoxy-3,10,11-berbintriol, H-419
4-(*p*-Hydroxybenzyl)-6-methoxy-β-carboline, C-230
1-(4-Hydroxybenzyl)-6,7-methylenedioxyisoquinoline, H-424
2-(4-Hydroxybenzyl)-4-oxo-2-azetidinecarboxylic acid, H-425
2-(4-Hydroxybenzyl)-*N*-phenylmaleimide, O-100
5-(4-Hydroxybenzyl)-2-pyridinecarboxylic acid, H-426
5-(α-Hydroxybenzyl)-2-pyridinecarboxylic acid, V-94
(4-Hydroxybenzyl)thiocarbamic acid, H-427
2-(α-Hydroxybenzyl)-3,6-tropanediol, H-428
2-(α-Hydroxybenzyl)-3-tropanol, H-429
7-Hydroxybiopterin, I-13
6-Hydroxy-3,3-bis(3,7-dimethyl-2,6-octadienyl)-2,4(1*H*,3*H*)-quinolinedione, S-276
3-Hydroxy-4,5-bis(hydroxymethyl)-2-methylpyridine, P-923
11-Hydroxy-1,2:9,10-bis(methylenedioxy)noraporphine, P-211
12′-Hydroxy-2′,5′-bis(1-methylethyl)ergotaman-3′,6′,18-trione, E-153
3-Hydroxy-2,5-bis(1-methylpropyl)pyrazine, B-204
1-Hydroxy-3,6-bis(1-methylpropyl)-2(1*H*)-pyrazinone, B-204
1-Hydroxy-3,6-bis[2-(methylthio)ethyl]-2(1*H*)-pyrazinone, H-430
4-Hydroxy-2,6-bis(methylthio)phenyl-1-azoformamide, D-229
2-[4-Hydroxy-2,6-bis(methylthio)phenyl]diazenecarboxamide, D-229
6-Hydroxyblepharin, H-409
6′-Hydroxybudmunchiamine C, B-387
6′-Hydroxybudmunchiamine K, B-389
4-Hydroxybulbocapnine, B-397
6α-Hydroxybuphanidrine, P-581
6-Hydroxy-(+)-buphanisine, C-748
6-Hydroxy-(-)-buphanisine, C-748
Hydroxybutanedioic acid, M-72
11-*O*-(3-Hydroxybutanoyl)hamayne, H-5
1-(3-Hydroxybutanoyl)pancratistatine, P-58
3-*O*-(3-Hydroxybutanoyl)tazettinol, T-53
4-Hydroxy-2-butenoic acid, H-431
5-(3-Hydroxybutyl)-7-epiaustraline, T-553
(4-Hydroxybutyl)guanidine, H-432
5-(3-Hydroxybutyl)hyacinthacine A_1, T-553
5-(3-Hydroxybutyl)hyacinthacine A_2, T-553
2-(2-Hydroxybutyl)-6-(2-hydroxypentyl)-1-methylpiperidine, H-433
2-(2-Hydroxybutyl)-6-(2-hydroxypentyl)piperidine, H-433
6-(2-Hydroxybutyl)-2-(2-hydroxypropyl)-1-methyl-Δ^3-piperideine, H-434
2-(2-Hydroxybutyl)-6-(2-hydroxypropyl)-1-methylpiperidine, H-434
6-(2-Hydroxybutyl)-1-methyl-2-(2-oxobutyl)-Δ^3-piperideine, D-391
2-(2-Hydroxybutyl)-1-methyl-6-(2-oxobutyl)piperidine, D-391
2-(2-Hydroxybutyl)-*N*-methylpiperidine, H-435
N-(4-Hydroxybutyl)-3-(methylthio)-2-propenamide, A-716
2-(2-Hydroxybutyl)-6-(2-oxobutyl)piperidine, D-391
5-(3-Hydroxybutyl)picolinic acid, H-436
2-(2-Hydroxybutyl)piperidine, H-435
5-(3-Hydroxybutyl)-2-pyridinecarboxylic acid, H-436
2-(4-Hydroxybutyl)-4-quinazolinol, H-437
2-(4-Hydroxybutyl)-4(3*H*)-quinazolinone, H-437
30-Hydroxybuxamine A, B-466
16-Hydroxybuxaminone, B-457
18-Hydroxycabucraline, C-191
12-Hydroxycamoensidine, C-61
12α-Hydroxycamoensine, C-62
10-Hydroxycamptothecin, C-70
11-Hydroxycamptothecin, C-70

18-Hydroxycamptothecin, C-70
13-Hydroxycanadine, O-94
8-Hydroxycantharimide, C-89
9-Hydroxycanthin-6-one N^3-oxide, H-444
11-Hydroxycanthin-6-one *N*-oxide, H-446
4-Hydroxycanthin-6-one, H-440
5-Hydroxycanthin-4-one, H-441
5-Hydroxycanthin-6-one, H-442
8-Hydroxycanthin-6-one, H-443
9-Hydroxycanthin-6-one, H-444
1-Hydroxycanthin-6-one, H-438
10-Hydroxycanthin-6-one, H-445
11-Hydroxycanthin-6-one, H-446
2-Hydroxycanthin-6-one, H-439
8-Hydroxycantleyine *cis*-*p*-coumarate, C-92
8-Hydroxycantleyine *trans*-*p*-coumarate, C-92
4′-Hydroxycapitavine, C-94
ω-Hydroxycapsaicin, C-100
7-Hydroxy-9*H*-carbazole-3-carboxaldehyde, H-450
6-Hydroxy-9*H*-carbazole-3-carboxaldehyde, H-449
8-Hydroxy-9*H*-carbazole-3-carboxaldehyde, H-451
1-Hydroxy-9*H*-carbazole-3-carboxaldehyde, H-447
2-Hydroxy-9*H*-carbazole-3-carboxaldehyde, H-448
8-Hydroxy-2-carbazolecarboxylic acid (obsol.), H-454
7-Hydroxy-9*H*-carbazole-3-carboxylic acid, H-455
1-Hydroxy-9*H*-carbazole-3-carboxylic acid, H-452
2-Hydroxy-9*H*-carbazole-3-carboxylic acid, H-453
6-Hydroxy-9*H*-carbazole-3-carboxylic acid, H-454
4-Hydroxy-β-carboline-1-carboxaldehyde, H-456
4-Hydroxy-β-carboline-1-carboxylic acid, H-457
6-Hydroxy-β-carboline-1-carboxylic acid, H-458
7-Hydroxy-β-carboline-1-carboxylic acid, H-459
6-Hydroxy-β-carboline, P-915
7-Hydroxy-β-carboline, P-916
8-Hydroxy-β-carboline, P-917
1-Hydroxy-β-carboline, P-914
7-Hydroxy-β-carboline-1-propanoic acid, C-134
2-Hydroxy-3-carbomethoxycarbazole, H-453
4-Hydroxycarbostyril, Q-33
16-Hydroxycardiopetaline, M-355
15-Hydroxycaribaeorane, C-160
19-Hydroxycassaine, C-178
6-Hydroxycassamine, N-300
14-Hydroxycathovaline, C-213
7β-Hydroxycatuabine D, M-392
7β-Hydroxycatuabine E, M-392
7β-Hydroxycatuabine F, M-392
7α-Hydroxycatuabine H, M-392
7β-Hydroxycatuabine H, M-392
7β-Hydroxycatuabine I, M-392
3-Hydroxycelacinnine, P-356
11β-Hydroxycephalotaxine β-*N*-oxide, C-271
4-Hydroxycephalotaxine, C-271
11-Hydroxycephalotaxine, C-271
3-Hydroxycephalotaxine, C-271
7-Hydroxyceratinamine, M-679
20-Hydroxy-3,6-cevanedione, C-298
6-Hydroxy-3-cevanone, C-290
3-Hydroxy-6-cevanone, C-290
7-Hydroxycev-4-ene-3,18-dione, H-460
3-Hydroxycev-13(17)-en-6-one, C-308
3-Hydroxycev-8-en-6-one, C-302
20-Hydroxycev-8-en-3-one, H-461
3-Hydroxycezomycin, C-26
12-Hydroxychasmaconitine, M-342
12-Hydroxychelerythrine, C-356
10-Hydroxychelidonine, C-353
5-Hydroxychelirubine, C-360
12-Hydroxychelirubine, C-360
3-Hydroxychlorolissoclimide, H-74
8-Hydroxycinchoninaldehyde, H-722
6-Hydroxycinchoninic acid, H-726
2-Hydroxycinchoninic acid, H-723
p-Hydroxycinnamic acid, H-691
m-Hydroxycinnamic acid, H-690
N-*p*-Hydroxycinnamoylanthranilic acid, A-1563
(4-Hydroxycinnamoyl)lupinine, O-58
4-Hydroxycinnamoylputrescine, C-456
N′-(4-Hydroxycinnamoyl)-*N,N,N′*-trimethylputrescine, C-456
14-Hydroxycodeine, H-462
14-Hydroxycodeinone, H-462
6-Hydroxycolchicine, C-568
3-Hydroxy-α-colubrine, P-726
3-Hydroxy-β-colubrine, P-726
10-Hydroxy-α-colubrine, S-589
2-Hydroxycomosivine, C-588
11-Hydroxycona-1,4-dienine-3,18-dione, H-314
11α-Hydroxycona-1,4-dienin-3-one, H-314
14-Hydroxycondylocarpine, T-673
12-Hydroxyconessimine, H-318
7α-Hydroxyconessine, C-601
12-Hydroxyconessine, H-318
19′*R*-Hydroxyconoduramine, C-615
19′*S*-Hydroxyconoduramine, C-615
3′-Hydroxyconoduramine, C-615
19′*R*-Hydroxyconodurine, C-616
19′*S*-Hydroxyconodurine, C-616
3′-Hydroxyconodurine, C-616
3-Hydroxyconopharyngine hydroxyindolenine, C-658
19-Hydroxyconopharyngine, C-620
3-Hydroxyconopharyngine, C-620
(±)-19-Hydroxycoronaridine, C-657
3-Hydroxycoronaridine, C-657
11-Hydroxycoronaridine, I-344
10-Hydroxycoronaridine, V-170
10-Hydroxycorreantoside, C-662
9-Hydroxycorynantheine, G-13
5-Hydroxycorynoline, C-692
(±)-5-Hydroxycorynoline, C-692
12*R*-Hydroxycorynoloxine, C-693
7-Hydroxycossonidine, H-197
N^{α}-*p*-Hydroxycoumaroyltryptophan, T-640
16-Hydroxycrambescidin 359, C-715
4-Hydroxycrebanine, C-733
8-Hydroxycrenatine, D-686
6α-Hydroxycrinamidine, C-743
6-Hydroxycrinamidine, C-743
6-Hydroxycrinamine, H-6
6-Hydroxycrinine, C-748
6α-Hydroxycroomine, S-523
4-Hydroxycrotonic acid, H-431
12-Hydroxycrychine, E-221
1-Hydroxycryprochine, C-781
Hydroxycryptolepine, D-505
15*R*-Hydroxycryptopleurine, C-792
16-Hydroxycyclobuxoviridine L, C-884
11-Hydroxy-4,17-cyclocorynanium(1+), O-96
5-Hydroxycycloheximide, D-765
21-Hydroxycyclolochnerine, T-21
30-Hydroxycyclomicrobuxene, A-798
20-Hydroxycylindrocarine, C-929
12-Hydroxycytisine, C-938
Hydroxydanaidal, D-14
Hydroxydaphgraciline, D-50
11-Hydroxydaphnigracine, D-51
10-Hydroxydarlingine, D-75
7-Hydroxydavisine, H-197
2-Hydroxy-2′-deacetoxyaustrospicatine, T-46
10-Hydroxydeacetylakuammiline, A-231
3′-Hydroxy-16′-decarbomethoxyconodurine, C-616
16-Hydroxy-16-decarbomethoxytetrahydrosecamine, S-174
6-(5-Hydroxy-1,3,7-decatrienyl)-1,2-dimethyl-3-piperidinol, C-789
20-Hydroxy-1,2-dehydro-Ψ-aspidospermidine, D-377
8-Hydroxydehydrocrenatine, D-686
6-Hydroxydehydrocrenatine, M-290
9-Hydroxy-2,3-dehydrodeoxypeganine, D-503
7-Hydroxydehydroglaucine, D-159
13-Hydroxy-7,11-dehydromatrine, L-94
10-Hydroxy-18,19-dehydronigritanine, O-21
3-Hydroxy-6*a*,7-dehydronuciferine, T-521
23-Hydroxy-2,16-dehydroretuline, N-301
6-Hydroxydehydroskytanthine, I-62
7-Hydroxydehydrothalicsimidine, P-208
17-Hydroxydehydrovoachalotine, D-173
12-Hydroxydelcosine, M-340
10-Hydroxydelsoline, M-339
12-Hydroxy-11-demethoxy-3-epimyrtoidine, M-803
17-Hydroxydemethoxyisomigrastatin, I-245
16-Hydroxy-N^b-demethylalstophylline oxindole, A-654
1′-Hydroxy-9-*O*-demethylcephaeline, E-72
10-Hydroxy-*N*-demethyl-19,20-dehydroraumacline, R-22
3′-Hydroxy-N^4-demethylervahanine A, E-189
3′-Hydroxy-N^4-demethylervahanine B, C-615
16-Hydroxy-9-*O*-demethylgalwesine, H-504
5-Hydroxy-10-*O*-demethylhomolycorine, H-504
17-Hydroxy-8-*O*-demethylisomigrastatin, I-245
3-Hydroxy-6′-demethyl-9-*O*-methylthalifaboramine, T-322
Hydroxy-de-*N*-methyl-α-obscurine, O-5
4α-Hydroxy-N^3-demethylplakinamine B, P-497
11-Hydroxy-4′-*N*-demethylstaurosporine, S-498
3-Hydroxy-4′-*N*-demethylstaurosporine, S-498
3-Hydroxy-*O*-demethylstaurosporine, S-498
3′-Hydroxy-N^4-demethyltabernamine, T-8
3-Hydroxy-6′-*O*-demethylthalifaboramine, T-322
2-Hydroxydendrobine, D-210
4-Hydroxydendroxine, D-216
6-Hydroxydendroxine, D-216
10-Hydroxy-3-deoxyaconitine, M-332
2-Hydroxy-3-deoxyaconitine, M-330
10-Hydroxydeoxycamptothecin, C-70
11β-Hydroxydeoxyharringtonine, H-66
10-Hydroxy-13-deoxypaxilline, P-140
14*a*-Hydroxy-4*b*-deoxypaxilline, P-140
3-Hydroxy-4-deoxypaxilline, P-140
9-Hydroxydeoxypeganine, D-503
1-Hydroxydeoxypeganine, T-231
5-Hydroxydeoxyvasicinone, D-503
Hydroxydesaminohistidine, H-523
3′*S*-Hydroxy-5′-des-*O*-methylharringtonine, H-66
1′′*S*-Hydroxy-3′′-des-*O*-methylharringtonine, H-66
3-Hydroxydiaboline, C-115
4-Hydroxydianthramide B methyl ester, B-67
4-Hydroxydianthramide B, B-67
4-Hydroxydianthramide R, B-67
Hydroxydianthramide S methyl ester, B-67
4-Hydroxydianthramide S, B-67
4-Hydroxydicentrine, D-346
7-Hydroxydicentrine, D-948
7-Hydroxydictamnine, F-212
8-Hydroxydictamnine, F-213
27-Hydroxy-13,19-didemethylspirolide C, S-432
1-Hydroxy-5,11-dideoxytetrodotoxin, T-510
N-Hydroxydihydroabikoviromycin, A-14
Hydroxy-19,20-dihydroakuammicine, A-228
18(19)-Hydroxy-19,20-dihydroakuammicine, A-228
19ξ-Hydroxy-19,20*R*-dihydroakuammicine, E-30
15′-Hydroxy-14′,15′-dihydroborreverine, B-253
8-Hydroxydihydrochelerythrine, D-407
5-Hydroxydihydrochelirubine, D-510
10-Hydroxydihydrocorynantheine, C-689
10-Hydroxydihydrocorynantheol, D-412
19*S*-Hydroxydihydrocorynantheol, D-412
10-Hydroxy-3,14-dihydrodecussine, D-138
1-Hydroxy-1,2-dihydro-*N*-desmethylacronycine, D-417
15-Hydroxy-14,15-dihydro-16-epivindolinine, V-132
4′-Hydroxy-3′,4′-dihydroflindersine, F-90
19-Hydroxydihydrogelsemine, G-49
19*R*-Hydroxydihydrogelsevirine, G-49
19*S*-Hydroxydihydrogelsevirine, G-49
15′-Hydroxy-14′,15′-dihydroisoborreverine, I-198
19-Hydroxy-16,17-dihydromayumbine, A-953
17-Hydroxydihydromyrsinol, E-136
7′-Hydroxy-7′,8′-dihydropleurostyline, P-523
20-Hydroxydihydrorankinidine, H-367
8-Hydroxydihydrosanguinarine, D-510
12-Hydroxydihydrosanguinarine, D-510
10′-Hydroxy-4′,17-dihydro-17α-tchibangensine, U-52
10′-Hydroxy-4′,17-dihydro-17β-tchibangensine, U-52
10-Hydroxy-18,19-dihydrousambarine, O-21
11-Hydroxy-18,19-dihydrousambarine, O-21

Hydroxydihydrovertine, V-95
15α-Hydroxy-14,15-dihydrovindolinine, V-132
2-Hydroxy-3-(3,4-dihydroxyphenyl)propanamide, D-648
1-Hydroxy-2,3-dimethoxyacridone, T-516
1-Hydroxy-3,5-dimethoxyacridone, T-518
7-Hydroxy-1,2-dimethoxyaporphine, P-4
1-Hydroxy-2,10-dimethoxyaporphine, T-524
1-Hydroxy-2,11-dimethoxyaporphine, T-525
1-Hydroxy-2,3-dimethoxyaporphine, T-521
1-Hydroxy-2,9-dimethoxyaporphine, T-523
10-Hydroxy-1,2-dimethoxyaporphine, T-524
11-Hydroxy-1,2-dimethoxyaporphine, T-525
2-Hydroxy-1,10-dimethoxyaporphine, T-524
2-Hydroxy-1,3-dimethoxyaporphine, T-521
3-Hydroxy-1,2-dimethoxyaporphine, T-521
5-Hydroxy-4,7-dimethoxybenz[*g*]isoquinolin-1(2*H*)-one, E-83
4-Hydroxy-2,3-dimethoxybenzo[*g*]quinoline-5,10-dione, S-161
2-Hydroxy-4,7-dimethoxy-2*H*-1,4-benzoxazin-3(4*H*)-one, D-538
2-Hydroxy-6,7-dimethoxybenzoxazole, D-708
8-Hydroxy-6,9-dimethoxy-12*H*-[1]-benzoxepino[2,3,4-*ij*]isoquinolin-12-one, S-73
1-(2-Hydroxy-3,4-dimethoxybenzoyl)-6,7-dimethoxyisoquinoline, T-50
O-(4-Hydroxy-3,5-dimethoxybenzoyl)vincamajine, V-113
3-(4-Hydroxy-3,5-dimethoxybenzylidene)-2-indolinone, H-463
1-(2-Hydroxy-3,4-dimethoxybenzyl)-6,7-methylenedioxyisoquinoline, B-103
9-(2-Hydroxy-4,5-dimethoxybenzyloxy)-1,2,3,10-tetramethoxyoxoaporphine, O-203
10-Hydroxy-1,11-dimethoxycanthin-6-one, T-530
2-Hydroxy-6,8-dimethoxy-9*H*-carbazole-3-carboxaldehyde, T-533
N-(4-Hydroxy-3,5-dimethoxycinnamoyl)-Δ^2-piperidin-4-one, C-245
5-Hydroxy-6,7-dimethoxycleistopholine, M-399
6-Hydroxy-7,8-dimethoxycleistopholine, M-399
1-Hydroxy-4,4-dimethoxy-2,5-cyclohexadiene-1-acetamide, H-650
1-Hydroxy-2,3-dimethoxydibenz[*cd,f*]indol-4(5*H*)-one, T-537
2-Hydroxy-1,3-dimethoxy-7*H*-dibenzo[*de,g*]quinolin-7-one, M-712
9-Hydroxy-1,2-dimethoxy-7*H*-dibenzo[*de,g*]quinolin-7-one, P-275
8-Hydroxy-6,7-dimethoxy-3,4-dihydroisoquinolinium inner salt, D-437
4-Hydroxy-3,6-dimethoxy-1,2-dimethylcarbazole, T-543
3-Hydroxy-4,5-dimethoxydimethylphenethylamine, H-465
12*b*-Hydroxy-9,10-dimethoxy-6*H*-1,3-dioxolo[4,5-*h*]isoindolo[1,2-*b*][3]benzazepine-8,13(5*H*,12*bH*)-dione, C-375
8-Hydroxy-1,3-dimethoxy-2,7-diprenylacridone, T-548
1-Hydroxy-3,5-dimethoxy-2,4-diprenylacridone, T-546
5-Hydroxy-4,8-dimethoxyfuro[2,3-*b*]quinoline, F-220
6-Hydroxy-4,7-dimethoxyfuro[2,3-*b*]quinoline, F-221
7-Hydroxy-4,6-dimethoxyfuro[2,3-*b*]quinoline, F-221
7-Hydroxy-4,8-dimethoxyfuro[2,3-*b*]quinoline, F-223
8-Hydroxy-4,7-dimethoxyfuro[2,3-*b*]quinoline, F-223
9-Hydroxy-5,6-dimethoxyindeno[1,2,3-*ij*]isoquinoline, T-498
1-Hydroxy-6,7-dimethoxyisoquinoline, I-305
4-Hydroxy-5,8-dimethoxy-2-(3-methoxyphenyl)-3-propylquinoline, D-711
4-Hydroxy-5,6-dimethoxy-2-(3-methoxyphenyl)-quinoline, D-712
8-Hydroxy-5,7-dimethoxy-4-(4-methoxyphenyl)-2(1*H*)-quinolinone, D-713
1-Hydroxy-3,4-dimethoxy-10-methylacridone, T-517
1-Hydroxy-3,5-dimethoxy-10-methylacridone, T-518
5-Hydroxy-2,6-dimethoxy-1-methyl-4-aza-9-fluorenone, T-562
5-Hydroxy-6,7-dimethoxy-1-methyl-4-azafluoren-9-one, T-565
6-Hydroxy-2,7-dimethoxy-1-methyl-4-azafluorenone, T-561
6-Hydroxy-5,8-dimethoxy-1-methyl-4-azafluoren-9-one, T-564
7-Hydroxy-2,8-dimethoxy-1-methyl-4-aza-9-fluorenone, T-560
7-Hydroxy-5,6-dimethoxy-1-methyl-4-azafluoren-9-one, T-565
6-Hydroxy-7,8-dimethoxy-4-methylbenzo[*g*]quinoline-5,10-dione, M-399
7-Hydroxy-3,4-dimethoxy-5-methylbenzo[*h*]quinolin-2(1*H*)-one, A-1463
4-Hydroxy-3,6-dimethoxy-2-methyl-9*H*-carbazole-1-carboxaldehyde, H-561
1-Hydroxy-6,7-dimethoxy-3-methylcarbazole, T-559
1-Hydroxy-2,11-dimethoxy-6-methyl-7*H*-dibenzo[d*e*,*g*]quinolinium hydroxide inner salt, A-583
5-Hydroxy-1,2-dimethoxy-7-methyl-4*H*-dibenzo[-*de*,*g*]quinolin-4-one, G-173
8-Hydroxy-9,10-dimethoxy-1,2-methylenedioxyaporphine, L-158
9-Hydroxy-3,10-dimethoxy-1,2-methylenedioxyaporphine, O-27
11-Hydroxy-1,10-dimethoxy-2,3-methylenedioxyaporphine, O-25
11-Hydroxy-3,9-dimethoxy-1,2-methylenedioxynoraporphine, D-950
9-Hydroxy-3,10-dimethoxy-1,2-methylenedioxynoraporphine, O-27
1-Hydroxy-2,3-dimethoxy-9,10-methylenedioxynoraporphine, P-369
10-Hydroxy-3,11-dimethoxy-1,2-methylenedioxynoraporphine, P-209
11-Hydroxy-3,10-dimethoxy-1,2-methylenedioxynoraporphine, P-209
2-Hydroxy-1,3-dimethoxy-9,10-methylenedioxynoraporphine, P-369
3-Hydroxy-1,2-dimethoxy-9,10-methylenedioxynoraporphine, P-369
9-Hydroxy-2,8-dimethoxy-3,4-methylenedioxypavinane, T-330
2-Hydroxy-8,9-dimethoxy-3,4-methylenedioxypavinane, T-330
7-Hydroxy-3,6-dimethoxy-4-methyl-5*H*-indeno[1,2-*b*]pyridin-5-one, T-560
8-Hydroxy-6,9-dimethoxy-4-methyl-5*H*-indeno[1,2-*b*]pyridin-5-one, T-564
9-Hydroxy-3,8-dimethoxy-4-methyl-5*H*-indeno[1,2-*b*]pyridin-5-one, T-562
9-Hydroxy-7,8-dimethoxy-4-methyl-5*H*-indeno[1,2-*b*]pyridin-5-one, T-565
7-Hydroxy-8,9-dimethoxy-4-methyl-5*H*-indeno[1,2-*b*]pyridin-5-one, T-565
8-Hydroxy-3,7-dimethoxy-4-methyl-5*H*-indeno[1,2-*b*]pyridin-5-one, T-561
7-Hydroxy-6,8-dimethoxy-2-methyl-1(2*H*)-isoquinolinone, C-366
1-Hydroxy-2,3-dimethoxy-6-methyl-7-oxo-7*H*-dibenzo[*de,g*]quinolinium inner salt, M-712
3-Hydroxy-4,5-dimethoxymethylphenethylamine, H-465
4-Hydroxy-3,8-dimethoxy-1-methyl-2(1*H*)-quinolinone, Q-41
1-Hydroxy-2,10-dimethoxynoraporphine, T-524
1-Hydroxy-2,3-dimethoxynoraporphine, T-521
1-Hydroxy-2,9-dimethoxynoraporphine, T-523
10-Hydroxy-1,2-dimethoxynoraporphine, T-524
2-Hydroxy-1,3-dimethoxynoraporphine, T-521
3-Hydroxy-1,2-dimethoxynoraporphine, T-521
18-Hydroxy-11,17-dimethoxyohimban-16-carboxylic acid, R-50
5-Hydroxy-6,7-dimethoxyonychine *N*-oxide, T-565
5-Hydroxy-6,7-dimethoxyonychine, T-565
6-Hydroxy-2,7-dimethoxyonychine, T-561
6-Hydroxy-5,8-dimethoxyonychine, T-564
7-Hydroxy-2,8-dimethoxyonychine, T-560
7-Hydroxy-5,6-dimethoxyonychine, T-565
3-Hydroxy-1,2-dimethoxy-5-oxonoraporphine, T-571
2-Hydroxy-3,8-dimethoxypavinane, H-464
3-Hydroxy-4,5-dimethoxyphenethylamine, H-465
4-Hydroxy-3,5-dimethoxyphenethylamine, T-576
4-[(2-Hydroxy-4,5-dimethoxyphenyl)amino]-3-hydroxy-4-oxobutanoic acid, H-466
N-[2-(3-Hydroxy-4,5-dimethoxyphenyl)ethyl]acetamide, H-465
N-(2-Hydroxy-4,5-dimethoxyphenyl)-α-malamic acid, H-466
N-[6-(2-Hydroxy-3,4-dimethoxyphenyl)-naphtho[2,3-*d*]-1,3-dioxol-5-yl]-*N*-methylformamide, A-1446
2-[[3-(4-Hydroxy-3,5-dimethoxyphenyl)-1-oxo-2-propenyl]oxy]-*N,N,N*- trimethylethanaminium(1+), S-308
2-Hydroxy-4-(3,4-dimethoxyphenyl)quinolizidine, L-53
4′-Hydroxy-2′,3′-dimethoxy-2-(2-piperidyl)acetophenone, P-522
2-Hydroxy-4,8-dimethoxy-3-prenylquinoline, T-583
4-Hydroxy-7,8-dimethoxyquinoline, Q-48
2-Hydroxy-3,4-dimethoxyquinoline, Q-45
4-Hydroxy-6,8-dimethoxy-2(1*H*)-quinolinone, Q-42
12-Hydroxy-10,11-dimethoxystrychnobrasiline, S-594
4-Hydroxy-5,6-dimethoxy-2-(2,3,6-trimethoxyphenyl)quinoline, D-712
18-Hydroxy-11,17-dimethoxyyohimban-16-methanol, R-49
N-2-Hydroxy-2-[4-(3,3-dimethylallyloxy)phenyl]ethylcinnamide, O-63
5-Hydroxy-3,4′-dimethyl-[1,2′-bipyrrole]-2,5′(2′*H*,5*H*)-dione, H-467
6-(4-Hydroxy-1,3-dimethyl-2-butenylamino)purine, M-586
11-Hydroxy-4,6-dimethyl-2,4-dodecadienoic acid, D-746
1-Hydroxy-6-(1,1-dimethylethyl)-3-[2-(methylthio)ethyl]-2(1*H*)-pyrazinone, B-433
2-(14-Hydroxy-14,15-dimethylhexadecyl)-3-methoxy-4(1*H*)-quinolinone, H-468
2-(14-Hydroxy-14,15-dimethylhexadecyl)-4(1*H*)-quinolinone, H-468
11-Hydroxy-4,12-dimethyl-13-(2-methyl-4-thiazolyl)-8,12-tridecadien-3-one, H-469
9-Hydroxy-6,10-dimethyl-11-(2-methyl-4-thiazolyl)-6,10-undecadien-3-one, H-470
6-Hydroxy-2,6-dimethyl-2,7-octadienoic acid, H-471
2-(1-Hydroxy-3,7-dimethyl-2,6-octadienyl)-1-methyl-4(1*H*)-quinolinone, D-762
2-(3-Hydroxy-3,7-dimethyl-1,6-octadienyl)-1-methyl-4(1*H*)-quinolinone, D-762
4-(2-Hydroxy-5,7-dimethyl-4-oxo-6,8-decadienyl)-2,6-piperidinedione, M-561
4-(2-Hydroxy-5,7-dimethyl-4-oxo-6,8-nonadienyl)-2,6-piperidinedione, S-563
3-Hydroxy-2,3-dimethyl-5-oxoproline, H-472
3-Hydroxy-2,3-dimethyl-5-oxo-2-pyrrolidinecarboxylic acid, H-472
4-(3-Hydroxy-2,6-dimethyl-9-oxo-1,5-undecadienyl)-2-methylthiazole, H-470
3-(2-Hydroxy-3,5-dimethylphenacyl)glutarimide, A-129
4-Hydroxy-*N,N*-dimethylphenethylamine, H-357
7-Hydroxy-16,18-dimethyl-10-phenyl[11]cytochalasa-6(12),13-diene-1,21-dione, T-545
17-Hydroxy-16,18-dimethyl-10-phenyl[11]cytochalasa-6,13,19-triene-1,21-dione, H-473
18-Hydroxy-16,18-dimethyl-10-phenyl[11]cytochalasa-6,13,19-triene-1,21-dione, H-473

7-Hydroxy-16,18-dimethyl-10-phenyl[11]cytochalasa-6(12),13,19-triene-1,21-dione, T-545
4-[2-(2-Hydroxy-3,5-dimethylphenyl)-2-oxoethyl]-2,6-piperidinedione, A-129
5-Hydroxy-1,6-dimethyl-2-piperidinedodecanol, J-55
5-Hydroxy-α,6-dimethyl-2-piperidinetridecanol, S-388
5-Hydroxy-α,6-dimethyl-2-piperidineundecanol, C-183
6-Hydroxy-7,9-dimethyl-7*H*-purinium hydroxide inner salt, P-820
2-Hydroxy-3,5-dimethylpyrazine, H-474
3-Hydroxy-2,5-dimethylpyrazine, H-475
3-Hydroxy-1,2-dimethyl-4(1*H*)-pyridinone, D-632
8-Hydroxy-5,11-dimethylpyrido[4,3-*b*]carbazole, E-67
4-Hydroxy-*N,N*-dimethyl-3-pyrrolidinecarboxylate, H-716
4-Hydroxy-1,1-dimethylpyrrolidinium-2-carboxylate, H-476
5-Hydroxy-2,6-dimethyl-11-(1*H*-pyrrol-2-yl)-4,6,8,10-undecatetraen-3-one, W-4
4-Hydroxy-2,3-dimethylquinoline, H-477
6-Hydroxy-4,8-dimethylquinoline, H-478
6-Hydroxy-5,7-dimethylquinoline, H-479
4-Hydroxy-3,3-dimethyl-1-(4,4,4-trichloro-3-methyl-1-oxobutyl)-5-(3,3,3-trichloro-2-methylpropyl)-2-pyrrolidinone, D-966
4-Hydroxy-*N*,*N*-dimethyltryptamine, H-480
4-Hydroxy-2,6-dinitrophenethylamine, H-481
N-2-[(4-Hydroxy-3,5-dinitrophenyl)ethyl]acetamide, H-481
2-(4-Hydroxy-3,5-dinitrophenyl)ethylamine, H-481
12-Hydroxy-19,20-dinorcrotalanan-11,15-dione, C-762
5-Hydroxydioxindole-3-acetic acid, D-423
16-Hydroxy-3,18-dioxo-1,4,14-conatrienine, H-314
3-(2-Hydroxy-1,4-dioxopentyl)indole, H-537
4-[(4-Hydroxy-3,6-dioxo-5-tridecyl-1,4-cyclohexadien-1-yl)amino]butanoic acid, C-152
6-Hydroxydiscodermindole, D-845
1-(22-Hydroxy-2,4-docosadienoyl)piperidine, H-39
N-(3-Hydroxydodecanoyl)nornicotine, P-957
6-(2-Hydroxydodecyl)-2-(hydroxymethyl)-3,4-piperidinediol, B-49
3-(1-Hydroxydodecylidene)-1,5-dimethyl-2,4-pyrrolidinedione, M-191
6-(11-Hydroxydodecyl)-3-methoxy-2-methyl-4(1*H*)-pyridinone, M-184
5-Hydroxydopamine, T-576
2-Hydroxydyshomerythrine, D-963
19*R*-Hydroxyeburnamine, E-6
7-Hydroxyechinozolinone, E-29
N-(3-Hydroxyeicosanoyl)anthranilic acid, A-706
14-Hydroxyelegansamine, E-63
8-Hydroxyellipticine, E-67
12-Hydroxyellipticine, E-67
9-Hydroxyellipticine, M-252
9-Hydroxyelymoclavine, M-671
10-Hydroxy-16-epiaffinine, A-166
18-Hydroxyepialloyohimbine, D-687
4-Hydroxy-7-epichuchuhuanine EV, P-247
19′*S*-Hydroxy-3-epiervafolidine, E-186
11-Hydroxyepierythratidine, E-207
3′-Hydroxyepiglucoisatisin, G-102
4-Hydroxyepilupinine, H-482
12-Hydroxy-19-epimalagashanine, M-58
9-Hydroxyepimeloscine, M-193
10-Hydroxyepi-17-*O*-methylkribine, K-101
10-Hydroxyepi-21-*O*-methylkribine, K-101
3-Hydroxy-23,26-epiminocholest-23(*N*)-ene-6,22-dione, P-279
3-Hydroxy-22,26-epiminocholest-22(*N*)-en-6-one, H-483
3α-Hydroxy-12-epinapelline, N-30
8α-Hydroxy-7-epineoptilocaulin, P-773
2-Hydroxyepipachysamine D, D-265
11-Hydroxyepipachysamine E, D-267
19-Hydroxy-20-epipandoline, P-733
25β-Hydroxy-20-epiverazine, V-73
4β-Hydroxy-20-epiverazine, V-73
16β-Hydroxy-19-epivindolinine *N*-oxide, V-132
16β-Hydroxy-19-epivindolinine, V-132
26-Hydroxy-19-epizoanthamine, Z-30
8-Hydroxyergine, L-370
8-Hydroxyerginine, L-370
8-Hydroxy-α-ergocryptine, E-157
8-Hydroxyergotamine, E-172
β-Hydroxyergothioneine, H-484
19′-Hydroxyervafolene, E-185
19′*R*-Hydroxyervafolidine, E-186
19′-Hydroxyervafoline, E-185
19*S*-Hydroxyervahanine A, E-189
11-Hydroxyerysodine, E-206
11-Hydroxyerysotine, E-207
11-Hydroxyerysotinone, E-207
11β-Hydroxyerysotramidine, E-202
11-Hydroxyerysotrine, E-206
11-Hydroxyerysovine, E-206
11-Hydroxyerythratidine, E-207
11-Hydroxy-*epi*-erythratine, E-208
11-Hydroxyerythratine, E-208
11α-Hydroxyerythravine, E-206
12-Hydroxyeschscholtzidine, E-220
12-Hydroxyeschscholtzine, E-221
2-Hydroxyethylamine, A-767
7-[(2-Hydroxyethyl)amino]-5,8-isoquinolinedione, A-831
1-(2-Hydroxyethyl)-2-(12-aminotridecyl)pyrrolidine, A-921
N-(1-Hydroxyethyl)benzanilide, H-485
N-(2-Hydroxyethyl)-3,3-bis(methylthio)propanamide, E-85
1-(1-Hydroxyethyl)-β-carboline-3-carboxylic acid, A-45
1-(1-Hydroxyethyl)-β-carboline, H-486
1-(2-Hydroxyethyl)-β-carboline, H-487
N-(2-Hydroxyethyl)cinnamamide, H-488
3-(1-Hydroxyethyl)coronaridine, H-489
N-(2-Hydroxyethyl)cytisine, C-938
8-(1-Hydroxyethyl)dihydrochelerythrine, H-490
8-(2-Hydroxyethyl)dihydrosanguinarine, H-491
N-(2-Hydroxyethyl)gardenamide A, G-17
N-(2-Hydroxyethyl)hexadecanamide, P-38
2-(2-Hydroxyethyl)-5-(hydroxymethyl)-3,4-pyrrolidinediol, H-492
N-(2-Hydroxyethyl)-3-(4-hydroxyphenyl)-*N*-methyl-2-propenamide, H-488
3-(2-Hydroxyethyl)indole, I-96
N-(2-Hydroxyethyl)lachnanthopyridone, L-5
N-(2-Hydroxyethyl)linoleamide, A-767
1-(2-Hydroxyethyl)-4-methoxy-β-carboline, H-493
3-(1-Hydroxyethyl)-5-methoxycarbonylpyridine, H-498
3-(2-Hydroxyethyl)-5-methoxyindole, H-505
3-(2-Hydroxyethyl)-6-(3-methyl-2-butenyl)indole, H-497
N-(2-Hydroxyethyl)-*N*-methylcinnamamide, H-488
N-(2-Hydroxyethyl)-*N*-methyl-*p*-hydroxycinnamamide, H-488
3-(1-Hydroxyethyl)-4-methyl-5-methoxycarbonylpyridine, H-494
2-(1-Hydroxyethyl)-2-methyl-4-(2-methylpropyl)-5(2*H*)-oxazolone, A-1203
N-(2-Hydroxyethyl)-*N*-methyl-3-phenyl-2-propenamide, H-488
5-(1-Hydroxyethyl)-4-methyl-3-pyridinecarboxylic acid, H-494
5-(2-Hydroxyethyl)-4-methylthiazole, H-495
N-(2-Hydroxyethyl)-3-(methylthio)-2-propenamide, E-84
N-(2-Hydroxyethyl)monascorubramine, M-686
N-(2-Hydroxyethyl)-9,12-octadecadienamide, A-767
2-(1-Hydroxyethyl)-3-(4-oxazolyl)-2-butenal, O-156
N-(2-Hydroxyethyl)palmitamide, P-38
6-(1-Hydroxyethyl)-1-phenazinecarboxylic acid, H-496
N-(1-Hydroxyethyl)-*N*-phenylbenzamide, H-485
N-(2-Hydroxyethyl)-3-phenyl-2-propenamide, H-488
3-(2-Hydroxyethyl)-6-prenylindole, H-497
5-(1-Hydroxyethyl)-3-pyridinecarboxylic acid, H-498
2-(1-Hydroxyethyl)-3,4-pyrrolidinediol, D-588
2-(1-Hydroxyethyl)-4(3*H*)-quinazolinone, H-499
3-(2-Hydroxyethyl)-4(3*H*)-quinazolinone, Q-14
5-(2-Hydroxyethyl)thiazole, T-371
N^1-(2-Hydroxyethyl)thymine, T-401
(2-Hydroxyethyl)trimethylammonium, C-419
4-(2-Hydroxyethyl)-5-vinylnicotinic lactone, G-59
Hydroxyeupolauramine, E-297
2-Hydroxyeustifoline A, E-300
Hydroxyevodiamine, T-226
11*S*-Hydroxyfawcettidine, F-28
6α-Hydroxyflabelliformine, F-73
3α-Hydroxyforesaconitine, M-303
2-Hydroxyformanilide, A-861
13-Hydroxyfranchetine, F-147
3-Hydroxyfranchetine, F-147
Hydroxyfungerin A, F-196
Hydroxyfungerin B, F-196
8-Hydroxy-10*H*-furo[3,2-*a*]carbazole-4-carboxaldehyde, F-203
4-Hydroxyfuro[2,3-*b*]quinoline, F-224
6-Hydroxyfuro[2,3-*b*]quinolin-4(9*H*)-one, F-211
7-Hydroxyfuro[2,3-*b*]quinolin-4(9*H*)-one, F-212
8-Hydroxyfuro[2,3-*b*]quinolin-4(9*H*)-one, F-213
4-Hydroxygalegine, H-579
16-Hydroxygalwesine, H-504
7-Hydroxygancidin W, C-871
16-Hydroxygardneramine oxindole, G-21
Hydroxygardnutine, G-23
10-Hydroxygeissoschizol, G-33
14α-Hydroxygelsamydine, G-41
19α-Hydroxygelsamydine, G-41
14-Hydroxygelsedine, G-44
14-Hydroxygelsemicine, G-44
14-Hydroxygelsenicine, G-44
β-Hydroxygerambullal, G-67
β-Hydroxygerambullin, G-68
β-Hydroxygerambullol, G-68
1-Hydroxy-3-geranyloxy-4-methoxy-10-methylacridone, T-517
6-Hydroxygermine, P-674
3-Hydroxyglaucine, P-208
4-Hydroxyglucobrassicin, I-122
3-Hydroxyglucoisatisin, G-102
13-Hydroxyglucopiericidin A, P-421
5-Hydroxygramine, D-734
7-Hydroxygramine, D-735
3′-Hydroxygraveoline, G-171
8-Hydroxyguanine, A-753
7-Hydroxyguanine, G-210
12′-Hydroxygymnastatin N, T-700
22-Hydroxyhalicyclamine A, H-22
10-Hydroxyhapalindole G, H-48
6-Hydroxyharman, H-591
7-Hydroxyharman, H-592
8-Hydroxyharman, H-593
11-Hydroxyhedranthine, M-666
17-Hydroxyhedranthine, M-666
18-Hydroxyheinsiagenin A, H-90
16-Hydroxyhenningsiine, H-111
3-Hydroxyhenningsiine, H-111
7-Hydroxyheptaphylline, H-125
3-(6-Hydroxyheptyl)-5-methylpyrrolizidine, H-135
3-(6-Hydroxyheptyl)-5-propylpyrrolizidine, H-500
N-Hydroxyhernangerine, N-25
6-Hydroxyhetisan-2,13-dione, H-198
6-Hydroxyhetisan-11-one, H-164
15-Hydroxyhetisan-11-one, H-167
13-Hydroxyhetisan-11-one, S-420
14-Hydroxyhetisine, H-189
14-Hydroxyhetisinone *N*-oxide, H-189
N-(3-Hydroxyhexadecanoyl)nornicotine, P-957
16-Hydroxy-4-hexadecenoic acid, H-501
3-(1-Hydroxyhexadecylidene)-1,5-dimethyl-2,4-pyrrolidinedione, M-191
3-(1-Hydroxyhexadecylidene)-1-methyl-2,4-pyrrolidinedione, M-191
4-Hydroxy-2-hexenoic acid, H-502
3-[(4-Hydroxy-1-hexenyl)-*ONN*-azoxy]-1,2-butanediol, A-1199
4-[2-(3-Hydroxy-1-hexenyl)-4-methylphenyl]-3-butenamide, L-262
11-Hydroxyheyneanine, I-344

10-Hydroxyheyneanine, V-170
β-Hydroxyhistidine, A-797
17-Hydroxyhobartine, H-310
15-Hydroxyholamine, A-888
11-Hydroxyhomoaerothionin, A-158
12-Hydroxyhomoaerothionin, A-158
4-Hydroxyhomoanatoxin a, H-325
4-Hydroxyhomobatrachotoxin, B-36
10-Hydroxyhomochelidonine, C-352
17-Hydroxyhomodaphniphyllic acid, H-330
11α-Hydroxyhomodeoxyharringtonine, H-66
11β-Hydroxyhomodeoxyharringtonine, H-66
Hydroxyhomodolabellin, H-503
5-Hydroxyhomolycorine, H-504
11-Hydroxyhumantenine, H-367
15-Hydroxyhumantenine, H-367
6β-Hydroxyhuperzine A, H-375
10-Hydroxyhuperzine A, H-375
11-Hydroxyhuperzine B, H-376
5-Hydroxyhydantoin, H-522
p-Hydroxyhydrocinnamic acid, H-689
5-Hydroxy-3-(hydroxyacetyl)-1*H*-indole, H-400
4-Hydroxy-2-(6-hydroxy-2-benzothiazolyl)thiazole, F-56
5-Hydroxy-*N*-(4-hydroxybenzoyl)anthranilic acid, A-789
4-Hydroxy-*N*-(2-hydroxybenzoyl)anthranilic acid, B-67
7-Hydroxy-1-(4-hydroxybenzoyl)-6-methoxyisoquinoline, G-14
7-Hydroxy-1-(4-hydroxybenzyl)-6-methoxyisoquinoline, H-424
4-Hydroxy-*N*-(4-hydroxycinnamoyl)anthranilic acid, A-788
5-Hydroxy-*N*-(4-hydroxycinnamoyl)anthranilic acid, A-789
3-Hydroxy-6-(5-hydroxy-1,3,7-decatrienyl)-1,2-dimethylpiperidine, C-789
4-Hydroxy-N^4-(2-hydroxy-4,5-dimethoxyphenyl)-glutamine, J-62
4-Hydroxy-2-(14-hydroxy-14,15-dimethylhexadecyl)quinoline, H-468
3-Hydroxy-*N*-[10-hydroxy-5,11-dimethyl-2-(1-methylpropylidene)-3,7,12-trioxo-9-(3-pyridylmethyl)-1,4-dioxa-8-azacyclododec-6-yl]-2-pyridinecarboxamide, P-919
8-Hydroxy-6-(6-hydroxy-2,5-dimethyl-4-octenylidene)-8-methylindolizidine, P-791
4-Hydroxy-3-(2-hydroxy-1,2-dimethylpropyl)-1-methyl-2(1*H*)quinolinone, R-31
3-Hydroxy-1-(22-hydroxy-2,4-docosadienoyl)piperidine, H-39
3-Hydroxy-6-(11-hydroxydodecyl)-2-hydroxymethylpiperidine, P-656
4-Hydroxy-6-(11-hydroxydodecyl)-3-methoxy-2-methylpyridine, M-184
3-Hydroxy-6-(11-hydroxydodecyl)-2-methylpiperidine, C-183
3-Hydroxy-6-(10-hydroxydodecyl)-2-methylpiperidine, P-655
4-Hydroxy-*N*-(2-hydroxyethyl)-1,2-dithiolane-3-carboxamide, C-184
5-Hydroxy-1-(1-hydroxyethyl)-2-(2-hydroxyethyl)-3-methyl-2*H*-benz[*b*]isoindole-4,9-dione, B-113
3-Hydroxy-*N*-(2-hydroxyethyl)-2-(hydroxymethyl)-pyrrolidine, H-717
5-Hydroxy-3-(2-hydroxyethyl)-1*H*-indole, H-505
4-Hydroxy-2-(2-hydroxyethyl)-1-isoindolinone, D-442
5-Hydroxy-*N*-(2-hydroxyethyl)-1,2,3-trithiane-4-carboxamide, C-185
5-Hydroxy-4-[[5-hydroxy-5-(hydroxymethyl)-2-methoxy-3-oxo-1-cyclohexen-1-yl]amino]pentanoic acid, M-789
5-Hydroxy-2-[5-hydroxy-2-(hydroxymethyl)-4-pyrimidinyl]-7-methyl-4-benzoxazolecarboxamide, B-262
2-Hydroxy-3-(5-hydroxy-1*H*-indol-3-yl)propanoic acid, H-506
7-Hydroxy-1-(4-hydroxy-3-methoxybenzyl)-6-methoxyisoquinoline, P-80
4-Hydroxy-2-(2-hydroxy-4-methoxyphenyl)-5,8-dimethoxy-3-propylquinoline, H-567
5-Hydroxy-4-(4-hydroxy-3-methoxyphenyl)-4-(2-imidazolyl)-1,2,3-trithiane, H-507
4-Hydroxy-α-[(4-hydroxy-3-methoxyphenyl)methylene]-*N*-[2-(4-hydroxyphenyl)ethyl]-3,5-dimethoxybenzeneacetamide, S-488
2-Hydroxy-3-(4-hydroxy-3-methoxyphenyl)-2-methylpropanamide, D-647
7-Hydroxy-4-(hydroxymethyl)aconit-8(15)-en-14-one, D-611
4-Hydroxy-7-[1-hydroxy-2-(methylamino)ethyl]-2(3*H*)-benzothiazolone, H-508
7-Hydroxy-8-(2-hydroxy-6-methylbenzoyl)indolizidine, I-231
2-Hydroxy-3-hydroxymethyl-3-butenenitrile, D-622
4-Hydroxy-3-hydroxymethyl-2-butenenitrile, H-510
2-Hydroxy-3-hydroxymethyl-3-butenoic acid, D-622
4-Hydroxy-2-(hydroxymethyl)-2-butenoic acid, H-509
4-Hydroxy-3-hydroxymethyl-2-butenoic acid, H-510
2-Hydroxy-1-(2-hydroxy-3-methyl-3-butenyl)-9*H*-carbazole-3-carboxaldehyde, H-125
8-Hydroxy-7-(3-hydroxy-3-methylbutyl)-4-methoxyfuro[2,3-*b*]quinoline, F-118
6-Hydroxy-2-(3-hydroxy-3-methylbutyl)-4(1*H*)-quinolinone, H-511
7-Hydroxy-2-(3-hydroxy-3-methylbutyl)-4(1*H*)-quinolinone, H-512
7-Hydroxy-1-hydroxymethyl-1,2-didehydropyrrolizidine, T-188
5-Hydroxy-2-(1-hydroxy-1-methylethyl)-11-methylfuro[2,3-*c*]acridin-6(11*H*)-one, F-207
1-Hydroxy-6-(1-hydroxy-1-methylethyl)-3-(2-methylpropyl)-2(1*H*)-pyrazinone, M-462
7-Hydroxy-4-(5-hydroxymethyl-2-furanyl)-2(1*H*)-quinolinone, H-513
6-Hydroxy-1-hydroxymethyl-7-methoxyisoquinoline, D-590
3-Hydroxy-5-hydroxymethyl-4-methoxymethyl-2-methylpyridine, P-923
5-Hydroxy-6-(hydroxymethyl)-α-methyl-2-piperidineundecanol, P-656
3-Hydroxy-4-(hydroxymethyl)-α-(2-methylpropyl)-2-azetidineundecanol, P-175
3-(2-Hydroxy-1-hydroxymethyl-2-methylpropyl)-1*H*-indole, T-24
3-(2-Hydroxy-1-hydroxymethyl-2-methylpropyl)-6-prenylindole, M-480
3-Hydroxy-2-hydroxymethyl-6-(7-oxododecyl)piperidine, I-286
3-Hydroxy-2-hydroxymethyl-6-(8-oxododecyl)piperidine, I-287
3-Hydroxy-2-hydroxymethyl-6-(10-oxododecyl)piperidine, P-657
3-Hydroxy-2-hydroxymethyl-6-(11-oxododecyl)piperidine, P-656
9-Hydroxy-6-hydroxymethyl-1-phenazinecarboxylic acid, H-514
5-Hydroxy-2-(hydroxymethyl)piperidine, H-699
12-[5-Hydroxy-6-(hydroxymethyl)-2-piperidinyl]-5-dodecanone, I-287
12-[5-Hydroxy-6-(hydroxymethyl)-2-piperidinyl]-6-dodecanone, I-286
12-[5-Hydroxy-6-(hydroxymethyl)-2-piperidinyl]-2-dodecanone, P-656
12-[5-Hydroxy-6-(hydroxymethyl)-2-piperidinyl]-3-dodecanone, P-657
4-Hydroxy-5-hydroxymethylproline, H-516
1-Hydroxy-6-(1-hydroxy-1-methylpropyl)-3-(2-methylpropyl)-2(1*H*)-pyrazinone, A-1475
1-Hydroxy-6-(1-hydroxy-1-methylpropyl)-3-(1-methylpropyl)-2(1*H*)-pyrazinone, B-204
5-Hydroxy-2-(hydroxymethyl)pyridine, H-515
3-Hydroxy-20-(5-hydroxy-3-methyl-6-pyridinyl)-pregnan-6-one, P-280
4-Hydroxy-5-hydroxymethyl-2-pyrrolidinecarboxylic acid, H-516
3-Hydroxy-2-(hydroxymethyl)-1-pyrrolidineethanol, H-717
3-Hydroxy-2-(hydroxymethyl)pyrrolidine, H-717
1-Hydroxy-1-hydroxymethylpyrrolizidine, H-517
1-Hydroxy-7-hydroxymethylpyrrolizidine, H-233
2-Hydroxy-1-hydroxymethylpyrrolizidine, H-518
6-Hydroxy-7-(hydroxymethyl)-3-(1*H*-pyrrol-3-yl)-1*H*-2-benzopyran-1-one, I-71
4-Hydroxy-2-(12-hydroxy-12-methyltridecyl)quinoline, H-636
α-Hydroxy-4-(1-hydroxy-2,4-octadienylidene)-1-methyl-α-(1-methylethyl)-3,5-dioxo-2-pyrrolidinepropanoic acid, H-67
4-Hydroxy-6-(10-hydroxy-3,7,9,12,13-pentamethyl-2,5,7,11,13-pentadecapentaenyl)-3-methoxy-5-methyl-2(1*H*)-pyridinone, A-1217
2-Hydroxy-2-(3-hydroxyphenyl)acetic acid, H-519
2-Hydroxy-2-(4-hydroxyphenyl)acetic acid, H-520
N-[2-Hydroxy-2-(4-hydroxyphenyl)ethyl]cinnamide, O-63
4-Hydroxy-*N*-[2-(4-hydroxyphenyl)ethyl]-3,5-dimethoxybenzenepropanamide, D-512
N-[2-Hydroxy-2-(4-hydroxyphenyl)ethyl]-3-phenyl-2-propenamide, O-63
4-Hydroxy-2-(2-hydroxy-2-phenylethyl)piperidine, S-210
3-Hydroxy-1-(4-hydroxyphenyl)-4-(1*H*-indol-3-yl)-2-butanone, H-538
4-Hydroxy-1-(3-hydroxyphenyl)-3(2*H*)-isoquinolinone, P-377
3-Hydroxy-5-(hydroxyphenylmethyl)-1-methyl-4-phenyl-2-pyrrolidinone, C-502
5-Hydroxy-1-(4-hydroxyphenyl)-2-pyrrolidinone, L-110
3-Hydroxy-4-(3-hydroxyphenyl)-2(1*H*)-quinolinone, D-656
2-[3-Hydroxy-2-[[(3-hydroxy-2-pyridinyl)carbonyl]amino]]-4-benzoxazolecarboxylic acid, A-1098
6-Hydroxy-2-(4-hydroxy-2-thiazolyl)benzothiazole, F-56
4-Hydroxyhygrinic acid, H-715
6-Hydroxyhyoscyamine *N*-oxide, H-521
6-Hydroxyhyoscyamine, H-521
19*R*-Hydroxyibogamine pseudoindoxyl, I-5
20*R*-Hydroxyibogamine pseudoindoxyl, I-5
19*R*-Hydroxyibogamine, I-4
19*S*-Hydroxyibogamine, I-4
15-Hydroxyicajine, I-12
α-Hydroxy-1*H*-imidazole-4-propanoic acid, H-523
5-Hydroxy-2,4-imidazolidinedione, H-522
2-Hydroxy-*N*-[2-(1*H*-imidazol-4-yl)ethyl]-4-oxodecanamide, H-307
2-Hydroxy-3-(4-imidazolyl)propanoic acid, H-523
2-Hydroxy-5-iminoazacyclopent-3-ene, I-51
1,1′-[(Hydroxyimino)bis(1-amino-2-hydroxy-2,1-ethanediyl)]bis[4(1*H*)-pyridinone], M-623
4,4′-[(Hydroxyimino)bis(methylene)]bisphenol, B-181
3-Hydroxyiminoindole, I-106
4*a*-Hydroxyincarvilline, I-62
6-Hydroxy-1*H*-indole-3-acetamide, H-526
2-Hydroxy-1*H*-indole-3-acetic acid, D-485
5-Hydroxy-1*H*-indole-3-acetic acid, H-525
4-Hydroxy-1*H*-indole-3-acetic acid, H-524
6-Hydroxy-1*H*-indole-3-acetic acid, H-526
4-Hydroxy-1*H*-indole-3-acetonitrile, H-524
6-Hydroxyindole-3-acetylphenylalanine, H-526
6-Hydroxyindole-3-acetylvaline, H-526
7-Hydroxy-3-indoleacrylic acid, I-136
1-(5-Hydroxy-1*H*-indole-3-carbonyl)-9*H*-pyrido[3,4-*b*]indol-6-ol, P-488
4-Hydroxy-1*H*-indole-3-carboxaldehyde, H-527
5-Hydroxy-1*H*-indole-3-carboxaldehyde, H-528
6-Hydroxy-1*H*-indole-3-carboxaldehyde, H-529
5-Hydroxy-1*H*-indole-3-carboxylic acid, H-530
6-Hydroxy-1*H*-indole-3-carboxylic acid, H-531
1-Hydroxy-1*H*-indole-3-carboxylic acid, I-90
6-Hydroxy-1*H*-indole-2,3-dione, H-533
4-Hydroxy-1*H*-indole-2,3-dione, H-532
5-Hydroxy-1*H*-indole-3-ethanol, H-505
2-Hydroxyindole, I-103
3-Hydroxyindole, I-104
α-Hydroxy-1*H*-indole-3-propanoic acid, H-539
3-Hydroxy-1*H*-indole-2-thiol, H-534
5-Hydroxyindoline, D-465

4-Hydroxy-6*H*-indolo[3,2,1-*de*][1,5]naphthyridin-6-one, H-440
5-Hydroxy-4*H*-indolo[3,2-*de*][1,5]naphthyridin-4-one, H-441
5-Hydroxy-6*H*-indolo[3,2,1-*de*][1,5]naphthyridin-6-one, H-442
8-Hydroxy-6*H*-indolo[3,2,1-*de*][1,5]naphthyridin-6-one, H-443
9-Hydroxy-6*H*-indolo[3,2,1-*de*][1,5]naphthyridin-6-one, H-444
1-Hydroxy-6*H*-indolo[3,2,1-*de*][1,5]naphthyridin-6-one, H-438
10-Hydroxy-6*H*-indolo[3,2,1-*de*][1,5]naphthyridin-6-one, H-445
11-Hydroxy-6*H*-indolo[3,2,1-*de*][1,5]naphthyridin-6-one, H-446
2-Hydroxy-6*H*-indolo[3,2,1-*de*][1,5]naphthyridin-6-one, H-439
N-(6-Hydroxy-1*H*-indol-3-ylacetyl)phenylalanine, H-526
N-(6-Hydroxy-1*H*-indol-3-ylacetyl)valine, H-526
2-Hydroxy-1-(1*H*-indol-3-yl)-9*H*-carbazole-3-carboxylic acid, P-495
2-Hydroxy-1-(1*H*-indol-3-yl)ethanone, H-400
5-Hydroxy-5-(1*H*-indol-3-yl)-2,4-imidazolidinedione, Z-39
5-(5-Hydroxy-1*H*-indol-3-yl)-3-(1*H*-indol-3-yl)-2*H*-pyrrol-2-one, P-675
3-(5-Hydroxy-3-indolyl)lactic acid, H-506
4-Hydroxyindol-3-ylmethyl glucosinolate, I-122
2-Hydroxy-1-(1*H*-indol-3-yl)-4-methyl-3-hexanone, H-535
2-Hydroxy-1-(1*H*-indol-3-yl)-5-methyl-3-hexanone, S-101
2-(Hydroxy-1*H*-indol-3-ylmethyl)-1-methyl-5-(2-methylbutyl)-4-imidazolidinone, M-110
2-Hydroxy-1-(1*H*-indol-3-yl)-4-methyl-3-pentanone, H-536
2-(6-Hydroxy-3-indolyl)-2-oxoacetic acid, H-654
N-[1-Hydroxy-2-(1*H*-indol-3-yl)-2-oxoethyl]acetamide, I-132
4-Hydroxy-5-(3-indolyl)-5-oxo-2-pentanone, H-537
3-[2-(5-Hydroxyindol-3-yl)-5-oxo-2-pyrrolin-4-ylidene]-2-indolinone, V-142
2-Hydroxy-1-(1*H*-indol-3-yl)-1,4-pentanedione, H-537
3-Hydroxy-4-(1*H*-indol-3-yl)-1-phenyl-2-butanone, H-538
2-Hydroxy-3-(3-indolyl)propanoic acid, H-539
3-(7-Hydroxy-1*H*-indol-3-yl)-2-propenoic acid, I-136
2-Hydroxy-3-(1*H*-indol-3-yl)-2-propenoic acid, I-133
4-Hydroxy-4-(1*H*-indol-3-yl)-5-thioxo-2-imidazolidinone, Z-39
6-Hydroxyinfractine, C-134
19-Hydroxyingol, H-540
21-Hydroxyintegerrimine, S-238
4*R*-Hydroxyipecoside, I-167
15β-Hydroxyirehdiamine H, D-278
4-Hydroxyisatin, H-532
6-Hydroxyisatin, H-533
20-*epi*-Hydroxyisoaflavinine, H-541
20-Hydroxyisoaflavinine, H-541
23-Hydroxyisoanguivine, S-450
9-Hydroxyisoascididemnin, H-542
7-Hydroxyisoatisine, I-192
2-Hydroxyisobutylamine, A-840
6-Hydroxy-*N*-isobutyl-2,4-decadienamide, D-106
4-Hydroxy-*N*-isobutyl-2-hexenamide, H-502
1-Hydroxy-3-isobutyl-6-isopropyl-2(1*H*)-pyrazinone, M-462
1-Hydroxy-3-isobutyl-6-[2-(methylthio)ethyl]-2(1*H*)-pyrazinone, H-620
1-Hydroxy-6-isobutyl-3-[2-(methylthio)ethyl]-2(1*H*)-pyrazinone, H-621
N-(2-Hydroxyisobutyl)-2,4-tetradecadienamide, T-124
N-(2-Hydroxyisobutyl)-2,4,8,10,12-tetradecapentaenamide, T-127
12-Hydroxy-*N*-isobutyl-2,4,8,10-tetradecatetraenamide, H-744
11-Hydroxy-*N*-isobutyl-2,4,8-tetradecatrienamide, H-745
N-(2-Hydroxyisobutyl)-2,4,8-tetradecatrienamide, T-133
2-Hydroxyisobutyric acid, H-617
2-Hydroxyisobutyronitrile, H-617
13-Hydroxyisocyclocelabenzine, I-222
19*R*-Hydroxyisoeburnamine, E-6
4-Hydroxy-1-isoindolinone, D-442
4-Hydroxyisoleucine, A-800
3-(4-Hydroxy-L-isoleucine)-α-amanitin, A-673
17-Hydroxyisomigrastatin, I-245
15-Hydroxyisoneolaugerine, N-122
N^6-(ω-Hydroxyisopentenyl)adenine, Z-11
6-Hydroxy-*N*-isopentenyldendroxine, D-216
2-Hydroxyisopropylamine, A-894
8-Hydroxy-7-isopropyl-3-methylbenz[*cd*]indol-2(1*H*)-one, P-631
1-Hydroxy-6-isopropyl-3-(1-methylpropyl)-2(1*H*)-pyrazinone, H-543
1-Hydroxy-6-isopropyl-3-[2-(methylthio)ethyl]-2(1*H*)-pyrazinone, H-544
2-Hydroxy-3-isopropylpyrazine, H-545
2-Hydroxy-5-isopropylpyrazine, H-546
2-Hydroxy-6-isopropylpyrazine, H-547
12-Hydroxyisoretulinal, R-63
16-Hydroxyisoretulinal, R-63
18-Hydroxyisoretuline, R-63
12-Hydroxyisorubijervine, I-310
Hydroxy-γ-isosanshool, T-127
7-Hydroxy-β-isosparteine, H-738
14-Hydroxyisostephodeline, T-511
12′-Hydroxyisostrychnobiline, S-591
18-Hydroxyisosungucine, S-642
10-Hydroxyisotalatizidine, M-326
15-Hydroxyisotalatizidine, M-327
2-Hydroxyisotaxodine, H-331
5-Hydroxy-3-isothiocyanato-4-methoxyindole, H-548
10-Hydroxyisotrilobine, I-339
14α-Hydroxyisotylocrebrine *N*-oxide, I-342
3-Hydroxyisovaleric acid, H-573
3-(3-Hydroxyisovaleroyl)maytansinol, M-136
3-(4-Hydroxyisovaleroyl)maytansinol, M-136
β-Hydroxyisovalerylcassaine, C-178
3-Hydroxyisovoacangine, I-344
4-Hydroxyisoxazole, I-348
5-Hydroxyisoxazole, I-349
18-Hydroxyjaconine, J-4
1′-Hydroxykainic acid, K-4
10β-Hydroxykarakoline, M-349
12β-Hydroxykarasamine 8-*O*-acetate, M-350
12β-Hydroxykarasamine, M-350
22-Hydroxy-10-kopsanone, D-805
17-Hydroxykopsaporine, K-66
11-Hydroxykopsingine, K-66
Hydroxykopsinine II, K-78
Hydroxykopsinine I, K-78
17α-Hydroxy-$\Delta^{14,15}$-kopsinine, V-49
3-Hydroxykynuramine, A-697
6-Hydroxykynurenic acid, D-675
1-Hydroxylaminopropane, P-648
9β-Hydroxylamprolobine, L-26
10-Hydroxylanciferine, L-29
Hydroxylanyuamide III, T-129
Hydroxylanyuamide II, O-212
Hydroxylanyuamide I, O-211
Hydroxylappaconine, A-86
7-Hydroxylathyrol, T-263
Hydroxylelobanidine, L-86
2-Hydroxylenticellarine, L-92
11-Hydroxyleontine, L-99
11-Hydroxylettowianthine, L-145
3-(4-Hydroxy-D-leucine)phallacidin, P-307
7-(4-Hydroxy-L-leucine)phalloidin, P-312
21′-Hydroxyleurosine, L-162
N^2-(17-Hydroxylinolenoyl)glutamine, G-108
N^2-(17-Hydroxylinoleoyl)glutamine, G-108
Hydroxylipoxamycin, L-189
10-Hydroxyliriodenine, O-187
11-Hydroxyliriodenine, O-204
18-Hydroxylochnerine, S-89
Hydroxylucilactaene, L-283
Hydroxylunacridine, L-288
Hydroxylunacrine, B-13
Hydroxylunidine, P-759
Hydroxylunidonine, L-295
Hydroxylunine, H-549
Hydroxyluninium(1+), I-290
13-Hydroxylupanine *p*-hydroxyphenylacetate, H-554
13-Hydroxylupanine phenylacetate, H-554
4-Hydroxylupanine, H-551
6-Hydroxylupanine, H-552
Hydroxylupanine, H-554
12-Hydroxylupanine, H-553
13-Hydroxylupanine, H-554
3-Hydroxylupanine, H-550
12-(6-Hydroxy-5-lupaninylmethyl)cytisine, C-940
Hydroxylyalidine, L-314
10-Hydroxylyalosidic acid, L-316
11-Hydroxylycodine, L-324
6-Hydroxylycodoline, L-325
6α-Hydroxylycopodine, L-322
6β-Hydroxylycopodine, L-322
7-Hydroxylycopodine, L-341
11α-Hydroxylycopodine, L-341
12-Hydroxylycopodine, L-325
8*S*-Hydroxylycothunine, F-30
2*R*-Hydroxylycothunine, F-30
8-Hydroxylysergic acid amide, L-370
Hydroxylysylpyridinoline, P-907
α-Hydroxymagnocurarine, H-555
1*a*-Hydroxymagnocurarine, H-555
12-Hydroxymalagashanine, M-58
13β-Hydroxymamanine, M-79
m-Hydroxymandelic acid, H-519
p-Hydroxymandelic acid, H-520
p-Hydroxymandelonitrile glucoside, H-520
6-Hydroxymanzamine A, M-91
8-Hydroxymanzamine A, M-91
8-Hydroxymanzamine B, M-92
8-Hydroxymanzamine D, M-91
6-Hydroxymanzamine E, M-91
8-Hydroxymanzamine J, M-94
17-Hydroxymappicine glucoside, M-96
19-Hydroxymappicine, M-96
3′-Hydroxymarikarin, A-197
18-Hydroxymatopensine, M-120
11-Hydroxymatridin-15-one, D-81
11-Hydroxymatridin-15-one, L-99
5-Hydroxymatridin-15-one, S-377
14β-Hydroxymatrine N^1-oxide, M-121
11-Hydroxymatrine, D-81
9α-Hydroxymatrine, M-121
13α-Hydroxymatrine, M-121
14α-Hydroxymatrine, M-121
14β-Hydroxymatrine, M-121
3α-Hydroxymatrine, M-121
5-Hydroxymatrine, S-377
12-Hydroxymauiensine, T-288
6-Hydroxymelatonin, D-684
β-Hydroxy-2-mercaptohistidine trimethylbetaine, H-484
3-Hydroxy-2-mercaptoindole, H-534
4-Hydroxy-2-mercaptopyrimidine, D-518
2-Hydroxy-4-mercaptopyrimidine, H-556
β-Hydroxymescaline, H-557
4-Hydroxy-2-methoxyacetanilide, A-705
12-Hydroxy-11-methoxy-*N*-acetylnor-*C*-fluorocurarimine, N-301
12-Hydroxy-11-methoxy-N^a-acetylstrychnosplendine, S-605
1-Hydroxy-3-methoxyacridone, D-528
19-Hydroxy-3′-methoxyaglaine C, A-199
16-Hydroxy-11-methoxyalstonal, A-648
14-Hydroxy-11-methoxyalstonisine, A-654
1-Hydroxy-2-methoxyaporphine, D-531
2-Hydroxy-1-methoxyaporphine, D-531
4-Hydroxy-3-methoxybenzamide, D-536
5-Hydroxy-7-methoxy-2*H*-benz[*b*]isoindole-4,9-dione, D-534
10-Hydroxy-12-methoxy-8*H*-benzo[*g*]benzodioxolo[6,5,4-*de*]quinolin-8-one, O-183
10-Hydroxy-9-methoxybenzo[*g*]-1,3-benzodioxolo[5,6-*a*]quinolizinium(1+), T-321

2-Hydroxy-7-methoxy-2*H*-1,4-benzoxazin-3(4*H*)-one, D-538
4-Hydroxy-2-methoxy-2*H*-1,4-benzoxazin-3(4*H*)-one, H-409
2-Hydroxy-6-methoxybenzoxazole, B-82
2-(4-Hydroxy-3-methoxybenzoyl)imidazole, H-558
N-(2-Hydroxy-4-methoxybenzoyl)-4-methoxyanthranilic acid, B-67
N-(2-Hydroxy-6-methoxybenzoyl)-*O*-methyltyramine, M-280
2-(4-Hydroxy-3-methoxybenzoyl)thiazole, H-569
1-(3-Hydroxy-4-methoxybenzyl)-6,7-dimethoxyisoquinoline, P-80
N-(3-Hydroxy-4-methoxybenzylidene)-4′-hydroxyphenethylamine, C-730
2-(4-Hydroxy-3-methoxybenzyl)imidazole, H-422
1-(3-Hydroxy-4-methoxybenzyl)-6,7-methylenedioxyisoquinoline, I-317
1-(α-Hydroxy-4-methoxybenzyl)-6,7-methylenedioxyisoquinoline, M-242
5-Hydroxy-4-methoxy-2,3-bis(methylthio)phenethylamine, L-207
10-Hydroxy-3-methoxycanthin-2,6-dione, I-105
5-Hydroxy-4-methoxy-6-canthinone 3-*N*-oxide, D-546
4-Hydroxy-5-methoxycanthin-6-one, D-546
5-Hydroxy-4-methoxycanthin-6-one, D-546
8-Hydroxy-9-methoxycanthin-6-one, D-549
1-Hydroxy-11-methoxycanthin-6-one, D-545
1-Hydroxy-9-methoxycanthin-6-one, D-544
10-Hydroxy-9-methoxycanthin-6-one, D-550
11-Hydroxy-1-methoxycanthin-6-one, D-545
11-Hydroxy-10-methoxycanthin-6-one, D-551
2-Hydroxy-7-methoxy-9*H*-carbazole-3-carboxaldehyde, D-556
2-Hydroxy-8-methoxy-9*H*-carbazole-3-carboxaldehyde, D-557
7-Hydroxy-1-methoxy-9*H*-carbazole-3-carboxaldehyde, D-553
1-Hydroxy-6-methoxy-9*H*-carbazole-3-carboxaldehyde, D-552
2-Hydroxy-6-methoxy-9*H*-carbazole-3-carboxaldehyde, D-555
7-Hydroxy-2-methoxy-9*H*-carbazole-1,6-dicarboxaldehyde, M-760
12-Hydroxy-*N*-methoxycarbonyl-$\Delta^{16,17}$-kopsinine, K-71
2-Hydroxy-8-methoxycepharanone A, T-254
(4-Hydroxy-3-methoxycinnamoyl)histamine, C-455
5-Hydroxy-6-methoxycleistopholine, M-399
6-Hydroxy-7-methoxycleistopholine, M-399
11-Hydroxy-12-methoxycoptisine, H-559
8-Hydroxy-9-methoxycrinine, M-108
12-Hydroxy-11-methoxydiaboline, C-115
1-Hydroxy-2-methoxydibenz[*cd,f*]indol-4(5*H*)-one, D-567
2-Hydroxy-1-methoxy-4*H*-dibenzo[*de,g*]quinoline-4,5-dione, C-273
2-Hydroxy-1-methoxy-7*H*-dibenzo[*de*,*g*]quinolin-7-one, L-193
5-Hydroxy-8-methoxydictamnine, F-220
7-Hydroxy-6-methoxydictamnine, F-221
7-Hydroxy-8-methoxydictamnine, F-223
8-Hydroxy-7-methoxydictamnine, F-223
9-Hydroxy-7-methoxy-3,8-dimethylbenz[*g*]isoquinoline-5,10-dione, D-226
4-Hydroxy-3-methoxy-1,2-dimethylcarbazole, D-571
8-Hydroxy-4-methoxy-α,α-dimethylfuro[2,3-*b*]-quinoline-7-propanol, F-118
4-Hydroxy-3-methoxydimethylphenethylamine, H-566
1-(1-Hydroxy-2-methoxyethyl)-β-carboline, A-1402
1-(1-Hydroxy-2-methoxyethyl)-4-methoxy-β-carboline, H-560
7-Hydroxy-9-methoxyflindersine, F-90
8-Hydroxy-6-methoxyflindersine, F-90
7-Hydroxy-4-methoxyfuro[2,3-*b*]quinoline-8-carboxaldehyde, E-315
8-Hydroxy-4-methoxyfuro[2,3-*b*]quinoline, F-213
19*R*-Hydroxy-11-methoxygelselegine, G-47
14-Hydroxy-11-methoxygelsenicine, G-44
12-Hydroxy-11-methoxyhenningsamine, C-115
1-Hydroxy-11-methoxy-6*H*-indolo[3,2,1-*de*][1,5]-naphthyridin-6-one, D-545
6-Hydroxy-7-methoxyisoquinoline, I-302
6-Hydroxy-7-methoxy-1-isoquinolinemethanol, D-590
7-Hydroxy-6-methoxy-1(2*H*)-isoquinolinone, I-305
4-Hydroxy-13-methoxylupanine, D-606
1-Hydroxy-3-methoxy-10-methylacridone, D-528
3-Hydroxy-1-methoxy-10-methylacridone, D-528
5-Hydroxy-6-methoxy-1-methyl-4-azafluoren-9-ol, D-626
5-Hydroxy-6-methoxy-1-methyl-4-aza-9-fluorenone, D-626
7-Hydroxy-2-methoxy-1-methyl-4-aza-9-fluorenone, D-623
7-Hydroxy-8-methoxy-1-methyl-4-azafluoren-9-one, D-624
2-Hydroxy-1-methoxy-12-methyl[1,3]benzodioxolo[5,6-*c*]phenanthridin-13(12*H*)-one, D-407
6-Hydroxy-7-methoxy-4-methylbenzo[*g*]quinoline-5,10-dione, M-399
3-Hydroxy-7-methoxy-2-methyl-4*H*-1,4-benzoxazine-4-carboxaldehyde, C-96
2-Hydroxy-6-methoxy-1-(3-methyl-2-butenyl)-9*H*-carbazole-3-carboxaldehyde, H-125
2-Hydroxy-7-methoxy-1-(3-methyl-2-butenyl)-9*H*-carbazole-3-carboxaldehyde, H-125
1-Hydroxy-3-methoxy-2-(3-methyl-2-butenyl)-10-methylacridone, D-663
3-(2-Hydroxy-3-methoxy-3-methylbutyl)-5-(3-methyl-1-oxo-2-butenyl)-1*H*-indole, B-200
5-Hydroxy-4-methoxy-3-methylcanthin-2,6-dione, I-105
7-Hydroxy-2-methoxy-6-methyl-9*H*-carbazole-1-carboxaldehyde, D-619
4-Hydroxy-3-methoxy-2-methyl-9*H*-carbazole-1-carboxaldehyde, H-561
6-Hydroxy-2-methoxy-3-methyl-9*H*-carbazole, D-617
1-Hydroxy-6-methoxy-3-methyl-9*H*-carbazole, D-613
2-Hydroxy-5-methoxy-3-methyl-9*H*-carbazole, D-616
2-Hydroxy-6-methoxy-3-methyl-9*H*-carbazole, D-617
2-Hydroxy-8-methoxy-3-methyl-9*H*-carbazole, D-618
7-Hydroxy-3-methoxy-6-methyl-1*H*-carbazole-1,4-(9*H*)-dione, C-505
7-Hydroxy-1-methoxymethyl-1,2-dehydropyrrolizidine, T-188
3-Hydroxy-6-methoxy-1-methyl-4,5-diphenyl-2-piperidinone, D-575
11-Hydroxy-10-methoxy-1,2-methylenedioxyaporphine, B-397
9-Hydroxy-8-methoxy-1,2-methylenedioxyaporphine, C-733
9-Hydroxy-10-methoxy-1,2-methylenedioxyaporphine, D-346
10-Hydroxy-9-methoxy-1,2-methylenedioxyaporphine, D-346
11-Hydroxy-9-methoxy-1,2-methylenedioxyaporphine, D-846
11-Hydroxy-3-methoxy-1,2-methylenedioxyaporphine, E-70
1-Hydroxy-2-methoxy-9,10-methylenedioxyaporphine, N-29
10-Hydroxy-11-methoxy-1,2-methylenedioxyaporphine, N-25
2-Hydroxy-1-methoxy-9,10-methylenedioxyaporphine, N-29
7-Hydroxy-8-methoxy-1,2-methylenedioxyaporphine, T-522
7-Hydroxy-6-methoxy-1-(3,4-methylenedioxybenzyl)isoquinoline, S-274
8-Hydroxy-4-methoxy-6,7-methylenedioxyfuro[2,3-*b*]quinoline, F-217
2-Hydroxy-8-methoxy-3,4-methylenedioxy-10-nitro-1-phenanthrenecarboxylic acid, T-264
6-Hydroxy-7-methoxy-3,4-methylenedioxy-10-nitro-1-phenanthrenecarboxylic acid, T-265
6-Hydroxy-8-methoxy-3,4-methylenedioxy-10-nitro-1-phenanthrenecarboxylic acid, T-266
7-Hydroxy-8-methoxy-3,4-methylenedioxy-10-nitro-1-phenanthrenecarboxylic acid, T-267
8-Hydroxy-7-methoxy-3,4-methylenedioxy-10-nitro-1-phenanthrenecarboxylic acid, T-267
11-Hydroxy-10-methoxy-1,2-methylenedioxynoraporphine, B-397
8-Hydroxy-9-methoxy-1,2-methylenedioxynoraporphine, C-733
9-Hydroxy-10-methoxy-1,2-methylenedioxynoraporphine, D-346
9-Hydroxy-11-methoxy-1,2-methylenedioxynoraporphine, D-846
10-Hydroxy-9-methoxy-1,2-methylenedioxynoraporphine, D-346
11-Hydroxy-9-methoxy-1,2-methylenedioxynoraporphine, D-846
11-Hydroxy-3-methoxy-1,2-methylenedioxynoraporphine, E-70
2-Hydroxy-1-methoxy-10,11-methylenedioxynoraporphine, L-10
1-Hydroxy-2-methoxy-9,10-methylenedioxynoraporphine, N-29
10-Hydroxy-11-methoxy-1,2-methylenedioxynoraporphine, N-25
2-Hydroxy-1-methoxy-9,10-methylenedioxynoraporphine, N-29
9-Hydroxy-11-methoxy-1,2-methylenedioxyoxoaporphine, O-183
2-Hydroxy-3-methoxy-8,9-methylenedioxypavinane, E-220
1-Hydroxy-2-methoxy-8,9-methylenedioxypavinane, N-104
6-Hydroxy-8-methoxy-3,4-methylenedioxy-1-phenanthrenecarboxylic acid, M-263
7-Hydroxy-8-methoxy-3,4-methylenedioxy-1-phenanthrenecarboxylic acid, M-263
6-Hydroxy-2-methoxy-3-methylene-10-propenylidene-2-azaspiro[4.5]dec-8-ene-1,4,7-trione, T-625
7-Hydroxy-3-methoxy-4-methyl-5*H*-indeno[1,2-*b*]pyridin-5-one, D-623
7-Hydroxy-6-methoxy-4-methyl-5*H*-indeno[1,2-*b*]pyridin-5-one, D-624
8-Hydroxy-9-methoxy-4-methyl-5*H*-indeno[1,2-*b*]pyridin-5-one, D-626
9-Hydroxy-8-methoxy-4-methyl-5*H*-indeno[1,2-*b*]pyridin-5-one, D-626
7-Hydroxy-8-methoxy-1-methyl-5*H*-indeno[1,2-*b*]pyridin-5-one, D-625
8-Hydroxy-7-methoxy-1-methyl-5*H*-indeno[1,2-*b*]pyridin-5-one, D-625
6-Hydroxy-5-methoxy-2-methyl-1*H*-isoindole-1,3(2*H*)-dione, D-533
7-Hydroxy-6-methoxy-1-methylisoquinoline, D-627
7-Hydroxy-6-methoxy-2-methyl-1(2*H*)-isoquinolinone, I-305
4-Hydroxy-8-methoxy-1-methyl-3-(3-methyl-2-butenyl)-2(1*H*)-quinolinone, T-583
8-Hydroxy-4-methoxy-1-methyl-3-(3-methyl-2-butenyl)-2(1*H*)-quinolinone, T-583
1-Hydroxy-2-methoxy-10-methyl-3,4-methylenedioxyacridone, M-169
1-Hydroxy-3-methoxy-10-methyl-5,6-methylenedioxyacridone, T-243
1-Hydroxy-5-methoxy-10-methyl-2,3-methylenedioxyacridone, T-56
5-Hydroxy-4-(methoxymethyl)-6-methyl-3-pyridinemethanol, P-923
3-Hydroxy-4-methoxy-3-methyloxindole, D-443
4-Hydroxy-3-methoxymethylphenethylamine, H-566
3-Hydroxy-4-methoxy-*N*-methylphenethylamine, H-565
6-Hydroxy-5-methoxy-*N*-methylphthalimide, D-533
6-Hydroxy-4-methoxy-5-methylphthalimidine, C-437
1-Hydroxy-3-methoxy-10-methyl-2-prenylacridone, D-663

7-Hydroxy-2-methoxy-6-methyl-1-prenylcarbazole, E-275
2-Hydroxy-6-methoxy-3-methyl-5-prenyl-9*H*-carbazole, G-110
1-Hydroxy-7-methoxy-3-methyl-8-prenylcarbazole, M-759
1-Hydroxy-2-methoxy-10-methyl-3-prenyloxyacridone, T-516
12-Hydroxy-11-methoxy-*N*-methyl-*sec*-pseudostrychnine, I-12
3-Hydroxy-4-methoxy-1-methyl-2,6(1*H*,3*H*)-pyridinedione, H-146
6-Hydroxy-5-methoxy-1-methyl-2,3,4(1*H*)-pyridinetrione, H-562
1-Hydroxy-5-methoxy-6-methyl-2(1*H*)-pyridinone, H-563
5-Hydroxy-4-methoxymethyl-1*H*-pyrrole-3-carboxylic acid, H-564
6-Hydroxy-4-methoxy-1-methyl-2(1*H*)-quinolinone, Q-46
8-Hydroxy-4-methoxy-1-methyl-2(1*H*)-quinolinone, Q-47
17-Hydroxy-10-methoxy-4-methylsarpaginium, S-89
10′-Hydroxy-10-methoxy-$N^{4'}$-methyl-17,4′,5′,6′-tetrahydrousambarensine, U-52
10-Hydroxy-10′-methoxy-$N^{4'}$-methyltetrahydrousambarensine, U-52
5-Hydroxy-3-methoxynaphth[2,3-*d*]isothiazole-4,9-dione, A-1540
10-Hydroxy-9-methoxy-6-nitrophenanthro[3,4-*d*]-1,3-dioxole-5-carboxylic acid, T-265
4-Hydroxy-8-methoxy-6-nitrophenanthro[3,4-*d*]-1,3-dioxole-5-carboxylic acid, T-264
10-Hydroxy-8-methoxy-6-nitrophenanthro[3,4-*d*]-1,3-dioxole-5-carboxylic acid, T-266
1-Hydroxy-2-methoxynoraporphine, D-531
2-Hydroxy-1-methoxynoraporphine, D-531
12-Hydroxy-11-methoxynor-*C*-fluorocurarine, N-301
5-Hydroxy-6-methoxyonychine, D-626
6-Hydroxy-7-methoxyonychine, D-625
7-Hydroxy-2-methoxyonychine, D-623
7-Hydroxy-6-methoxyonychine, D-625
4-Hydroxy-26-methoxy-2-oxa-11,15,20-triazatricyclo[22.2.2.1^{3,7}]nonacosa-3,5,7(29),8,22,24,26,27-octaene-10,21-dione, C-556
14-Hydroxy-11-methoxy-19-oxogelsenicine, G-44
6-[1-(3-Hydroxy-2-methoxy-1-oxopropoxy)ethyl]-1-phenazinecarboxylic acid, A-1160
8-Hydroxy-6-methoxy-3-pentylisocarbostyril, R-163
8-Hydroxy-6-methoxy-3-pentyl-1(2*H*)-isoquinolinone, R-163
7-Hydroxy-7′-methoxyperonatin B, P-271
2-(4-Hydroxy-3-methoxyphenacyl)piperidine, P-522
1-Hydroxy-6-methoxyphenazine, P-321
4-Hydroxy-3-methoxyphenethylamine, H-566
3-Hydroxy-4-methoxyphenethylamine, H-565
N-β-Hydroxy-β-*p*-methoxyphenethylcinnamamide, A-153
4-Hydroxy-3-methoxyphenylalanine, A-745
2-(2-Hydroxy-4-methoxyphenyl)-5,8-dimethoxy-3-propyl-4(1*H*)-quinolinone, H-567
N-[2-Hydroxy-2-(4-methoxyphenyl)ethyl]benzamide, T-67
N-[2-(3-Hydroxy-4-methoxyphenyl)ethyl]-3-methyl-2-dodecenamide, H-679
N-[2-(4-Hydroxy-3-methoxyphenyl)ethyl]-3-methyl-2-dodecenamide, H-679
N-[2-Hydroxy-2-(4-methoxyphenyl)ethyl]-3-phenyl-2-propenamide, A-153
4-(4-Hydroxy-3-methoxyphenyl)-4-(1*H*-imidazol-2-yl)-1,2,3-trithian-5-ol, H-507
N-[(4-Hydroxy-3-methoxyphenyl)methyl]decanamide, C-100
N-[(4-Hydroxy-3-methoxyphenyl)methyl]-9-hydroxy-8-methyl-6-nonenamide, C-100
N-[(4-Hydroxy-3-methoxyphenyl)methyl]-9-methyldecanamide, C-100
N-[(4-Hydroxy-3-methoxyphenyl)methyl]-8-methyl-6-decenamide, C-100
N-[(4-Hydroxy-3-methoxyphenyl)methyl]-9-methyl-7-decenamide, C-100
N-[(4-Hydroxy-3-methoxyphenyl)methyl]-6-methyl-4-heptenamide, C-100
N-[(4-Hydroxy-3-methoxyphenyl)methyl]-8-methylnonanamide, C-100
N-[(4-Hydroxy-3-methoxyphenyl)methyl]-8-methyl-6-nonenamide, C-100
N-[(4-Hydroxy-3-methoxyphenyl)methyl]-7-methyloctanamide, C-100
N-[(4-Hydroxy-3-methoxyphenyl)methyl]-7-methyl-5-octenamide, C-100
N-[(4-Hydroxy-3-methoxyphenyl)methyl]-10-methyl-8-undecenamide, C-100
N-[(4-Hydroxy-3-methoxyphenyl)methyl]nonanamide, C-100
N-[(4-Hydroxy-3-methoxyphenyl)methyl]-6-nonenamide, C-100
N-[(4-Hydroxy-3-methoxyphenyl)methyl]octanamide, C-100
2-(4-Hydroxy-3-methoxyphenyl)-1-methyl-4(1*H*)-quinolinone, F-119
4-Hydroxy-4-(4-methoxyphenyl)-1-methyl-5-thioxo-2-imidazolidinone, H-568
2-(4-Hydroxy-3-methoxyphenyl)-2-oxoacetamide, D-649
1-(4-Hydroxy-3-methoxyphenyl)-2-(2-piperidinyl)ethanone, P-522
1-(4-Hydroxy-3-methoxyphenyl)-2-(2-pyrrolidinyl)ethanone, R-165
4-Hydroxy-5-methoxy-2-phenylquinoline, D-658
α-(4-Hydroxy-3-methoxyphenyl)-2-thiazolemethanol, H-569
(4-Hydroxy-3-methoxyphenyl)-2-thiazolylmethanone, H-569
4′-Hydroxy-3′-methoxy-2-(2-piperidyl)acetophenone, P-522
7-Hydroxy-4-methoxy-8-prenylfuro[2,3-*b*]quinoline, H-570
2-Hydroxy-4-methoxy-3-prenylquinoline, A-1529
9-Hydroxy-3-methoxy-6*H*-pyrido[1,2-*a*]pyrazin-6-one, X-29
9-Hydroxy-10-methoxy-7*H*-pyrrolo[3,2,1-*de*]phenanthridin-7-one, P-586
8-Hydroxy-4-methoxy-2-quinolinecarbothioic acid, D-671
8-Hydroxy-4-methoxy-2-quinolinecarboxylic acid, D-677
4-Hydroxy-6-methoxy-2-quinolinecarboxylic acid, D-675
4-Hydroxy-8-methoxy-2-quinolinecarboxylic acid, D-677
2-Hydroxy-8-methoxy-4-quinolinecarboxylic acid, D-673
2-Hydroxy-4-methoxyquinoline, Q-33
4-Hydroxy-6-methoxy-2(1*H*)-quinolinone, Q-46
4-Hydroxy-8-methoxy-2(1*H*)-quinolinone, Q-47
7-Hydroxy-8-methoxy-4(1*H*)-quinolinone, Q-48
12-Hydroxy-11-methoxyspermostrychnine, S-400
12-Hydroxy-11-methoxystrychnine N^b-oxide, S-589
10-Hydroxy-11-methoxystrychnine, S-589
12-Hydroxy-11-methoxystrychnine, S-589
12-Hydroxy-11-methoxystrychnobrasiline, S-594
12-Hydroxy-11-methoxystrychnofendlerine, S-594
2-(4-Hydroxy-3-methoxystyryl)pyrrolidine, N-305
20-Hydroxy-16-methoxytabersonine, H-743
10-Hydroxy-11-methoxytabersonine, T-11
15-Hydroxy-16-methoxytabersonine, T-11
12-Hydroxy-16-methoxy-11,12,13,14-tetradehydrocamoensine, H-571
10-Hydroxy-10′-methoxytetrahydrousambarensine, U-52
4-Hydroxy-3-methoxy-*N,N,N*-trimethylbenzeneethanaminium, H-566
3-Hydroxy-4-methoxy-*N,N,N*-trimethylbenzeneethanaminium, H-565
4-Hydroxy-3-methoxytrimethylphenethylammonium, H-566
5-Hydroxy-6-methoxytryptamine, D-684
6-Hydroxy-5-methoxytryptamine, D-684
8-Hydroxy-4-methoxy-1-vinyl-β-carboline, D-686
6-Hydroxy-4-methoxy-1-vinyl-β-carboline, M-290
1-Hydroxy-10-methylacridone, H-402
8-Hydroxy-3-methyladenine, A-819
10-Hydroxy-17-*O*-methylakagerine, A-222
5-Hydroxymethylakuammiline, A-231
2-Hydroxy-ω-methylallophanic acid, M-385
Hydroxy[(methylamino)carbonyl]carbamic acid, M-385
17-Hydroxy-20-(methylamino)-19,21-dinorchola-4,11-diene-3,22-dione, S-415
4-[1-Hydroxy-2-(methylamino)ethyl]-1,2-benzenediol, A-152
p-(α-Hydroxy-β-methylaminoethyl)phenol, S-659
4-Hydroxy-α-[(methylamino)methyl]benzenemethanol, S-659
3-Hydroxy-6-(methylamino)-6-(2-methylpropyl)-3-(phenylmethyl)-2,5-morpholinedione, M-231
18-Hydroxy-20-(methylamino)pregna-1,4-dien-3-one, A-810
20-Hydroxy-3-(methylamino)pregn-5-en-18,20-olide, P-93
2-Hydroxy-3-(methylamino)pregn-5-en-16-one, A-813
2-Hydroxy-6-methylamino-9*H*-purine, A-818
6-Hydroxy-2-methylaminopurine, G-210
3-Hydroxy-8-methyl-8-azabicyclo[3.2.1]octane-2-carboxylic acid, E-8
6-Hydroxy-8-methyl-8-azabicyclo[3.2.1]octan-3-one, M-391
1-(3-Hydroxy-8-methyl-8-azabicyclo[3.2.1]oct-2-en-2-yl)-3-phenyl-2-propen-1-one, C-341
6-Hydroxy-8-methyl-8-azabicyclo[3.2.1]oct-3-yl α-(hydroxymethyl)benzeneacetate, H-521
10-Hydroxy-19-methylazacycloeicosa-3,5,7,11,13,15,17-heptaen-2-one, C-832
6-Hydroxy-1-methyl-4-azafluorenone, O-93
2-Hydroxy-1-methyl-4-azafluorenone, O-93
7-(Hydroxymethyl)benz[6,7]indolizino[1,2-*b*]quinolin-11(13*H*)-one, H-403
6-Hydroxy-3-methyl-2(3*H*)-benzothiazolone, B-78
4-[1-[(2-Hydroxy-6-methylbenzoyl)oxy]ethyl]-6-methyl-6*H*,10*H*-pyrido[3,2-*a*:5,6,1-*d*′,*e*′]diphenazine-11,17-dicarboxylic acid, E-223
2-Hydroxy-2-methylbutanoic acid, H-572
3-Hydroxy-3-methylbutanoic acid, H-573
4-Hydroxy-3-methyl-2-butenenitrile, H-576
4-Hydroxy-3-methyl-2-butenoic acid, H-576
4-Hydroxy-2-methyl-2-butenoic acid, H-575
2-Hydroxymethyl-2-butenoic acid, H-574
6-(4-Hydroxy-3-methyl-2-butenylamino)purine, Z-11
1-Hydroxy-4-(3-methyl-2-butenyl)-9*H*-carbazole-3-carboxaldehyde, C-507
2-Hydroxy-7-(3-methyl-2-butenyl)-9*H*-carbazole-3-carboxaldehyde, C-500
2-Hydroxy-1-(3-methyl-2-butenyl)-9*H*-carbazole-3-carboxaldehyde, H-125
6-Hydroxy-5-(3-methyl-2-butenyl)-9*H*-carbazole-3-carboxaldehyde, H-577
5-(3-Hydroxy-3-methyl-1-butenyl)-4,6-dimethoxyfuro[2,3-*b*]quinoline, H-578
3-(2-Hydroxy-3-methyl-3-butenyl)-2,4-dimethoxy-7,8-methylenedioxyquinoline, D-715
(4-Hydroxy-3-methyl-2-butenyl)guanidine, H-579
2-Hydroxy-5-(3-methyl-2-butenyl)-3*H*-indol-3-one, M-415
2-Hydroxy-6-(3-methyl-2-butenyl)-3*H*-indol-3-one, M-416
3-(3-Hydroxymethyl-2-butenyl)-7-(3-methyl-2-butenyl)-1*H*-indole, B-202
3-(2-Hydroxy-3-methyl-3-butenyl)-5-(3-methyl-1-oxo-2-butenyl)-1*H*-indole, B-200
N-[2-Hydroxy-2-[4-[(3-methyl-2-butenyl)oxy]phenyl]ethyl]-3-phenyl-2-propenamide, O-63
6-(3-Hydroxy-3-methyl-1-butenyl)-1-phenazinecarboxylic acid, M-417
5-(2-Hydroxy-3-methyl-3-butenyl)-4,6,7-trimethoxyfuro[2,3-*b*]quinoline, H-580
3-(2-Hydroxy-3-methyl-3-butenyl)-4,6,8-trimethoxy-1-methyl-2(1*H*)-quinolinone, P-755
3-(2-Hydroxy-3-methyl-3-butenyl)-4,7,8-trimethoxy-2(1*H*)-quinolinone, P-625
4-(4-Hydroxy-3-methyl-2-butenyl)tryptophan, M-419

4-(2-Hydroxy-3-methyl-3-butenyl)yukocitrine, H-581
6-[(4-Hydroxy-3-methylbutyl)amino]purine, Z-11
3-(2-Hydroxy-3-methylbutyl)-4,8-dimethoxy-1-methyl-2(1*H*)-quinolinone, L-288
2-(1-Hydroxy-3-methylbutyl)-3,6-dimethyl-5-(3-methylbutanoyl)pyrazine, B-184
2-(1-Hydroxy-3-methylbutyl)-3,6-dimethyl-5-(3-methyl-2-butenoyl)pyrazine, B-184
2-(1-Hydroxy-3-methylbutyl)-3,6-dimethyl-5-(3-methylbutyl)pyrazine, B-184
9-(3-Hydroxy-3-methylbutyl)-7-methoxyfuro[2,3-*b*]quinolin-4(9*H*)-one, F-212
3-(2-Hydroxy-3-methylbutyl)-8-methoxy-1-methyl-4(1*H*)-quinolinone, P-426
3-Hydroxy-3-methylbutyric acid, H-573
5-Hydroxymethylcanthin-6-one, H-582
3-(Hydroxymethyl)-9*H*-carbazole, C-124
3-Hydroxy-6-methyl-9*H*-carbazole-1-carboxaldehyde, H-589
4-Hydroxy-6-methyl-9*H*-carbazole, H-588
1-Hydroxy-3-methyl-9*H*-carbazole, H-583
1-Hydroxy-6-methyl-9*H*-carbazole, H-584
2-Hydroxy-3-methyl-9*H*-carbazole, H-585
2-Hydroxy-7-methyl-9*H*-carbazole, H-586
3-Hydroxy-6-methyl-9*H*-carbazole, H-587
6-Hydroxy-1-methyl-β-carboline, H-591
7-Hydroxy-1-methyl-β-carboline, H-592
8-Hydroxy-1-methyl-β-carboline, H-593
1-Hydroxymethyl-β-carboline, H-590
8-Hydroxy-2-methyl-β-carbolinium, P-917
16-Hydroxymethylceridimine, C-281
5-Hydroxy-*N*-methylcorydaline, I-304
10-Hydroxy-N^b-methylcorynantheol, D-412
4-Hydroxy-3-methylcrotonic acid, H-576
5-Hydroxymethylcytosine, A-795
1-Hydroxymethyldasycarpidan, U-8
3-(1-Hydroxy-4-methyl-2,4,6,8-decatetraenylidene)-2,4-pyrrolidinedione, R-30
9-Hydroxy-3-methyl-2-decenoic acid, H-594
12-Hydroxy-N^1-methyl-14,15-didehydroaspidofractinine, A-1494
1-Hydroxymethyl-1,2-didehydropyrrolizidine, S-644
8-Hydroxymethyldihydrochelerythrine, B-239
6-Hydroxymethyldihydronitidine, H-595
8-Hydroxymethyldihydronitidine, H-595
8-Hydroxymethyldihydrosanguinarine, H-596
1-Hydroxymethyl-6,7-dimethoxyisoquinoline *N*-oxide, D-590
3-Hydroxymethyl-6,8-dimethoxy-1-methylisoquinoline, D-710
8-(Hydroxymethyl)-2,4-dimethoxy-3*H*-phenoxazin-3-one, M-590
8-(Hydroxymethyl)-6,11-dimethyl-2*H*,4*H*-oxazolo[5,4,3-*ij*]pyrido[3,2-*g*]quinoline-4,10(11*H*)-dione, N-346
N-Hydroxy-*N*-(15-methyl-3,10-dioxopentadecyl)-seramide, L-189
N-(3-Hydroxy-10-methyldodecanoyl)nornicotine, P-957
N-(3-Hydroxy-11-methyldodecanoyl)nornicotine, P-957
1-(8-Hydroxy-6-methyl-2,4,6-dodecatrienoyl)-2-pyrrolidone, V-34
3-(1-Hydroxy-10-methyldodecylidene)-1,5-dimethyl-2,4-pyrrolidinedione, M-191
3-(1-Hydroxy-11-methyldodecylidene)-1,5-dimethyl-2,4-pyrrolidinedione, M-191
3-(1-Hydroxy-4-methyldodecylidene)-1,5-dimethyl-2,4-pyrrolidinedione, M-191
3-(1-Hydroxy-5-methyldodecylidene)-1,5-dimethyl-2,4-pyrrolidinedione, M-191
2-(10-Hydroxy-10-methyldodecyl)-3-methoxy-4(1*H*)-quinolinone, H-597
2-(11-Hydroxy-11-methyldodecyl)-3-methoxy-4(1*H*)-quinolinone, H-598
9-Hydroxy-1,2-methylenedioxyaporphine, A-1066
10-Hydroxy-1,2-methylenedioxyaporphine, L-72
7-Hydroxy-1,2-methylenedioxyaporphine, O-87
11-Hydroxy-1,2-methylenedioxyaporphine, P-781
4-Hydroxy-1,2-methylenedioxyaporphine, S-549
3-Hydroxy-8,9-methylenedioxybenzo[*h*]quinoline, H-599
8-Hydroxy-6,7-methylenedioxydictamnine, F-217
7-Hydroxy-1,2-methylenedioxy-9,10-dimethoxyaporphine, D-948
1-Hydroxy-6,7-methylenedioxyisoquinoline, I-305
7-Hydroxy-1,2-methylenedioxy-9-methoxyaporphine, O-85
6-Hydroxy-3,4-methylenedioxy-10-nitro-1-phenanthrenecarboxylic acid, H-600
8-Hydroxy-3,4-methylenedioxy-10-nitro-1-phenanthrenecarboxylic acid, M-262
9-Hydroxy-1,2-methylenedioxynoraporphine, A-1066
3-Hydroxy-1,2-methylenedioxynoraporphine, C-466
7-Hydroxy-1,2-methylenedioxynoraporphine, O-87
11-Hydroxy-1,2-methylenedioxynoraporphine, P-781
3-Hydroxy-8,9-methylenedioxyphenanthridine, M-448
2-(3-Hydroxy-4,5-methylenedioxyphenyl)-1-methyl-4(1*H*)-quinolinone, G-171
8-Hydroxy-6,7-methylenedioxy-5-prenyldictamnine, T-57
7-Hydroxy-1-methylenepyrrolizidine *N*-oxide, H-601
7-Hydroxy-1-methylenepyrrolizidine, H-601
6-Hydroxy-3-*O*-methylepimaritidine, P-86
1-Hydroxymethyl-1,2-epoxypyrrolizidine, E-133
3-(Hydroxymethyl)-9-ethyl-9*H*-carbazole, C-124
2-(1-Hydroxy-1-methylethyl)-2,3-dihydrofuro[2,3-*b*]quinolin-6-ol, R-97
2-(1-Hydroxy-1-methylethyl)-6-isopropylpyrazine, D-701
2-(1-Hydroxy-1-methylethyl)-3-methoxypyrazine, H-545
12′-Hydroxy-2′-(1-methylethyl)-5′-(2-methylpropyl)ergotaman-3′,6′,18-trione, E-157
1-Hydroxy-6-(1-methylethyl)-3-(1-methylpropyl)-2(1*H*)-pyrazinone, H-543
1-Hydroxy-6-(1-methylethyl)-3-(2-methylpropyl)-2(1*H*)-pyrazinone, M-462
1-Hydroxy-6-(1-methylethyl)-3-[2-(methylthio)ethyl]-2(1*H*)-pyrazinone, H-544
12′-Hydroxy-2′-(1-methylethyl)-5′-(phenylmethyl)ergotaman-3′,6′,18-trione, E-155
2-Hydroxy-3-(1-methylethyl)pyrazine, H-545
4-Hydroxy-4-(1-methylethyl)-1-(8,10,12-trimethyl-1-oxo-2,4,6,8-tetradecatetraenyl)-6-oxa-3-azabicyclo[3.1.0]hexan-2-one, A-1197
α-1-*C*-(Hydroxymethyl)fagomine, B-185
N-Hydroxymethylflindersine, F-90
3-(Hydroxymethyl)furan, F-199
1-(5-Hydroxymethyl-2-furanyl)-γ-carboline, I-262
1-[5-(Hydroxymethyl)-2-furanyl]-9*H*-pyrido[3,4-*b*]indole-3-carboxylic acid, F-85
5-Hydroxy-11-methylfuro[2,3-*c*]acridin-6(11*H*)-one, F-206
6-Hydroxy-9-methylfuro[2,3-*b*]quinolin-4(9*H*)-one, F-211
18-Hydroxy-14-*O*-methylgadesine, G-152
20-(Hydroxymethyl)gelsedine, G-47
N-(3-Hydroxy-3-methylglutaroyl)tryptophan, T-640
8-Hydroxy-7-methylguanine, A-753
8-Hydroxy-9-methylguanine, A-753
16-Hydroxy-*N*-methyl-4-hexadecenamide, H-501
2-Hydroxymethyl-5-(1-hydroxypentyl)-3,4-pyrrolidinediol, H-602
4-Hydroxymethyl-2-(2-hydroxyphenyl)-2-thiazoline, H-695
2-(Hydroxymethyl)-6-(2-hydroxytridecyl)-3,4-piperidinediol, B-51
2-(Hydroxymethyl)-6-(2-hydroxyundecyl)-3,4-piperidinediol, B-50
1-Hydroxy-4-methyl-1*H*-imidazole, M-473
1-Hydroxy-5-methyl-1*H*-imidazole, M-473
4-(Hydroxymethyl)-1*H*-indeno[1,2-*b*]pyridine-2,5-dione, D-385
8-Hydroxy-4-methyl-5*H*-indeno[1,2-*b*]pyridin-5-one, O-93
3-Hydroxy-4-methyl-5*H*-indeno[1,2-*b*]pyridin-5-one, O-93
7-Hydroxymethylindole, I-99
3-Hydroxymethylindole, I-98
α-Hydroxy-1-methyl-1*H*-indole-3-propanoic acid, H-539
8-Hydroxymethylindolizidine, O-47
5-(Hydroxymethyl)-6*H*-indolo[3,2,1-*de*][1,5]-naphthyridin-6-one, H-582
2-Hydroxy-3-(1-methylindolyl)propanoic acid, H-539
3-Hydroxymethyl-1-isopentylpyrrolidine, M-421
1-Hydroxymethyl-6,7-isoquinolinediol, D-590
N^1-Hydroxymethyl-(16*S*)-isositsirikine, I-319
10-Hydroxy-17-*O*-methylkribine, K-101
10-Hydroxy-21-*O*-methylkribine, K-101
6-Hydroxymethyllumazine, H-623
10-Hydroxymethyllycaconitine, G-91
14-Hydroxy-15-methyllycopodan-5-one, F-73
8-Hydroxy-2-*N*-methylmanzamine D, M-91
5-Hydroxymethyl-9-methoxycanthin-6-one, H-582
3-(Hydroxymethyl)-9-methoxy-9*H*-carbazole, C-124
6-Hydroxymethyl-1-methoxycarbazole, H-604
3-Hydroxymethyl-1-methoxycarbazole, H-603
N-(1-Hydroxymethyl-2-methoxyethyl)-7-methoxy-4-eicosenamide, H-605
5-(Hydroxymethyl)-9-methoxy-6*H*-indolo[3,2,1-*de*][1,5]naphthyridin-6-one, H-582
1-(Hydroxymethyl)-7-methoxy-6-methyl-5,8-isoquinolinedione, R-45
6-Hydroxymethyl-4-methoxy-5-(methylthio)-2,2′-bipyridine, C-575
6-Hydroxymethyl-9-methoxy-1-phenazinecarboxylic acid, H-514
8-(Hydroxymethyl)-2-methoxy-3*H*-phenoxazin-3-one, M-590
3-(2-Hydroxymethyl-4-methoxyphenyl)-6-methoxy-4(3*H*)-quinazolinone, D-369
5-(Hydroxymethyl)-4-(4-methoxyphenyl)-2-oxazolidinone, C-964
16-Hydroxy-14-methyl-3-(methylamino)-4-methylene-9,19-cyclopregnan-20-one, B-482
2-Hydroxymethyl-2′-methylamino-4,5-methylenedioxybiphenyl, I-186
3-Hydroxy-3-methyl-2-[6-(3-methyl-2-butenyl)-1*H*-indol-3-yl]butyl hexanoate, M-480
3-Hydroxy-3-methyl-2-[6-(3-methyl-2-butenyl)-1*H*-indol-3-yl]butyl 9*Z*,12*Z*-octadecadienoate, M-480
3-Hydroxy-3-methyl-2-[6-(3-methyl-2-butenyl)-1*H*-indol-3-yl]butyl 9*Z*-octadecenoate, M-480
N-[1-(Hydroxymethyl)-3-methylbutyl]acetamide, A-838
3-(2-Hydroxymethyl-3,4-methylenedioxyphenyl)-5,6-methylenedioxyisoquinoline, D-136
8-Hydroxy-3-methyl-7-(1-methylethyl)benz[*cd*]indol-2(1*H*)-one, P-631
5-Hydroxymethyl-2-(1-methylethyl)-3,4-pyridinediol, A-620
3-(Hydroxymethyl)-4-(1-methyl-1*H*-imidazol-5-yl)-1-phenyl-1-butanone, H-606
4-(Hydroxymethyl)-2-methyl-1*H*-indole, M-478
5-Hydroxy-3-methyl-1-(3-methyl-2-oxo-5-pyrrolidinyl)-3-pyrrolin-2-one, H-467
5-Hydroxy-3-methyl-1-(3-methyl-2-oxo-2*H*-pyrrolin-5-yl)-3-pyrrolin-2-one, H-467
8-Hydroxy-8-methyl-6-(2-methylpentylidene)indolizidine, A-359
2-(Hydroxymethyl)-6-methyl-3,4,5-piperidinetriol, H-607
6-[5-(Hydroxymethyl)-1-methyl-3-piperidinyl]-2(1*H*)-pyridinone, K-108
8-[1-(Hydroxymethyl)-2-methyl-2-propenyl]-7-methoxy-2*H*-1-benzopyran-2-one, I-249
5-Hydroxymethyl-2-(1-methylpropyl)-3,4-pyridinediol, A-620
5-Hydroxymethyl-2-(2-methylpropyl)-3,4-pyridinediol, A-620
4-(Hydroxymethyl)-6-methyl-2,3,5-pyridinetriol, H-608
5-Hydroxymethyl-1-methylpyrrolecarboxaldehyde, H-626

2-(Hydroxymethyl)-5-methyl-3,4-pyrrolidinediol, D-591
2-Hydroxymethyl-4-methylquinazoline, H-609
3-Hydroxy-5-methyl-1-naphthalenecarboxylic acid, H-610
3-Hydroxy-5-methyl-1-naphthoic acid, H-610
N-Hydroxy-14-methyl-*N*-nitrosopentadecanamine, N-253
N-Hydroxy-12-methyl-*N*-nitrosotridecanamine, N-255
4-Hydroxy-3-methyl-2-(2-nonenyl)quinoline, M-491
1-Hydroxy-3-methyl-2-(2-nonenyl)-4(1*H*)-quinolinone, M-491
4-Hydroxy-2-methyl-6-nonylpiperidine, H-611
12-Hydroxy-14-methyl-21-norsenecionan-11,16-dione, S-241
12-Hydroxy-14-methyl-18-norsenecionan-8,11,16-trione, C-770
5-Hydroxy-5-(6-methyl-2,4-octadienyl)-3-pyrrolin-2-one, A-1573
5-Hydroxy-7-*O*-methyloduline, U-37
2-Hydroxy-6-*O*-methyloduline, U-37
1-(8-Hydroxy-6-methyl-1-oxo-2,4,6-dodecatrienyl)-2-pyrrolidinone, V-34
3-Hydroxy-2-methyl-6-(11-oxododecyl)piperidine, C-183
3-Hydroxy-2-methyl-6-(10-oxododecyl)piperidine, P-655
3-Hydroxy-6-methyl-2-(11-oxododecyl)pyridine, H-612
1-(3-Hydroxy-10-methyl-1-oxododecyl)-2-(3-pyridinyl)pyrrolidine, P-957
1-(3-Hydroxy-11-methyl-1-oxododecyl)-2-(3-pyridinyl)pyrrolidine, P-957
3-(2-Hydroxy-4-methyl-3-oxohexyl)-1*H*-indole, H-535
1-(3-Hydroxy-14-methyl-1-oxopentadecyl)-2-(3-pyridinyl)pyrrolidine, P-957
3-(2-Hydroxy-4-methyl-3-oxopentyl)-1*H*-indole, H-536
6-Hydroxy-2-methyl-5-(1-oxopropyl)-2*H*-1,4-oxazine-3-carboxylic acid, O-151
4-Hydroxy-2-methyl-6-(2-oxopropyl)piperidine, H-622
5-Hydroxy-3-methyl-1-(2-oxo-5-pyrrolidinyl)-3-pyrrolin-2-one, D-448
3-Hydroxy-2-methyl-6-(13-oxotetradecyl)piperidine, S-388
1-(3-Hydroxy-12-methyl-1-oxotetradecyl)-2-(3-pyridinyl)pyrrolidine, P-957
1-(3-Hydroxy-13-methyl-1-oxotetradecyl)-2-(3-pyridinyl)pyrrolidine, P-957
1-(3-Hydroxy-12-methyl-1-oxotridecyl)-2-(3-pyridinyl)pyrrolidine, P-957
1-(3-Hydroxy-10-methyl-1-oxoundecyl)-2-(3-pyridinyl)pyrrolidine, P-957
N-(3-Hydroxy-14-methylpentadecanoyl)nornicotine, P-957
3-(1-Hydroxy-13-methylpentadecylidene)-1-methyl-2,4-pyrrolidinedione, M-191
3-(1-Hydroxy-14-methylpentadecylidene)-1-methyl-2,4-pyrrolidinedione, M-191
N,N′-[1-(Hydroxymethyl)-1,5-pentanediyl]bis[2,3-dihydroxybenzamide], M-806
N^b-(2-Hydroxy-3-methylpentanoyl)tryptamine, T-639
N-[2-(1-Hydroxy-4-methylpentyl)]acetamide, A-838
4-Hydroxy-3-methyl-2-pentylquinoline, M-508
10-Hydroxy-*N*-methylpericyclivine, S-89
1-Hydroxy-5-methylphenazinium hydroxide inner salt, P-833
β-Hydroxy-*N*-methylphenethylamine, A-864
p-Hydroxymethylphenol, H-414
3-Hydroxy-8-methyl-α-phenyl-8-azabicyclo[3.2.1]octane-2-methanol, H-429
12′-Hydroxy-2′-methyl-5′-(phenylmethyl)ergotaman-3′,6′,18-trione, E-172
3-Hydroxy-2-methyl-6-(9-phenylnonyl)piperidine, I-177
(2-Hydroxy-6-methylphenyl)(octahydro-7-hydroxy-8-indolizinyl)methanone, I-231
N-[3-[2-[2-(2-Hydroxy-6-methylphenyl)-2-oxoethyl]-1-pyrrolidinyl]propyl]hexanamide, P-262
4-Hydroxy-1-methyl-α-phenylpiperidineethanol, S-210
6-(3-Hydroxy-2-methyl-3-phenylpropanoyloxy)-3,7-tropanediol, M-392
3-Hydroxy-3-(2-methylphenyl)-2-propenamide, M-512
3-Hydroxy-2-methyl-1-phenyl-4(1*H*)-pyridinone, D-632
4-Hydroxy-1-methyl-3-phenyl-2(1*H*)-quinolinone, D-657
5-Hydroxy-1-methyl-2-phenyl-4(1*H*)-quinolinone, D-658
5-Hydroxy-6-methylpipecolic acid, H-613
5-Hydroxy-6-methyl-2-piperidinecarboxylic acid, H-613
6-(Hydroxymethyl)-3,4-piperidinediol, H-615
2-(Hydroxymethyl)-3,4-piperidinediol, H-614
5-Hydroxy-6-methyl-2-piperidinedodecanoic acid, S-409
5-Hydroxy-6-methyl-2-piperidinedodecanol, J-55
6-(Hydroxymethyl)-2,3,4,5-piperidinetetrol, A-727
6-Hydroxymethyl-2,3,4,5-piperidinetetrol, A-726
2-(Hydroxymethyl)-3,4,5-piperidinetriol, 12CI, H-616
5-Hydroxy-6-methyl-2-piperidineundecanoic acid, L-120
6-(Hydroxymethyl)-3-piperidinol, H-699
4′-Hydroxy-2-(1-methylpiperidin-2-yl)acetophenone, P-522
12-(5-Hydroxy-6-methyl-2-piperidinyl)-1,2-dodecanediol, L-119
12-(5-Hydroxy-6-methyl-2-piperidinyl)-2-dodecanone, C-183
12-(5-Hydroxy-6-methyl-2-piperidinyl)-3-dodecanone, P-655
16-(5-Hydroxy-6-methyl-2-piperidinyl)-2,13-hexadecanediol, A-477
1-(4-Hydroxy-6-methyl-2-piperidinyl)-2-propanone, H-622
14-(5-Hydroxy-6-methyl-2-piperidinyl)-2-tetradecanone, S-388
16-Hydroxymethylpleiocarpamine, P-518
3-Hydroxy-6-methyl-4-prenylcarbazole, G-125
2-Hydroxy-3-methyl-1-prenylcarbazole, M-728
2-Hydroxy-6-methyl-3-prenylcarbazole, S-291
1-Hydroxy-10-methyl-3-prenyloxyacridone, D-528
3-Hydroxy-10-methyl-1-prenyloxyacridone, D-528
3-Hydroxy-4-methylproline, H-627
3-Hydroxy-5-methylproline, H-628
2-Hydroxy-2-methylpropanenitrile, H-617
2-Hydroxy-2-methylpropanoic acid, H-617
6-Hydroxy-*N*-(2-methylpropyl)-2,4-decadienamide, D-106
4-Hydroxy-*N*-(2-methylpropyl)-2-hexenamide, H-502
2-(1-Hydroxy-1-methylpropyl)-3-methoxypyrazine, H-618
2-(1-Hydroxy-2-methylpropyl)-3-methoxypyrazine, H-619
1-Hydroxy-5-(2-methylpropyl)-3-(2-methylpropylidene)-2,6(1*H*,3*H*)-pyrazinedione, F-112
1-Hydroxy-6-(1-methylpropyl)-3-(2-methylpropyl)-2(1*H*)-pyrazinone, A-1475
6-(1-Hydroxy-1-methylpropyl)-3-(1-methylpropyl)-2(1*H*)-pyrazinone, B-204
6-(2-Hydroxy-2-methylpropyl)-3-(2-methylpropyl)-2(1*H*)-pyrazinone, F-76
1-Hydroxy-3-(2-methylpropyl)-6-[2-(methylthio)ethyl]-2(1*H*)-pyrazinone, H-620
1-Hydroxy-6-(2-methylpropyl)-3-[2-(methylthio)ethyl]-2(1*H*)-pyrazinone, H-621
5-Hydroxy-1-(2-methylpropyl)-5-(1-oxohexyl)-2-pyrrolidinone, P-449
N-(2-Hydroxy-2-methylpropyl)-8-oxo-2,4-tetradecadienamide, O-211
N-(2-Hydroxy-2-methylpropyl)-12-oxo-2,4,8-tetradecatrienamide, O-212
N-(2-Hydroxy-2-methylpropyl)-2,9-pentadecadiene-12,14-diynamide, P-202
4-Hydroxy-2-methyl-6-propylpiperidine, H-622
5-Hydroxymethyl-2-propyl-3,4-pyridinediol, A-620
4-Hydroxy-2-(1-methylpropyl)quinoline, M-531
7-Hydroxy-*N*-(2-methylpropyl)-2,8-tridecadiene-10,12-diynamide, H-748
15-Hydroxy-*N*-methyl-*sec*-pseudostrychnine, I-12
6-(Hydroxymethyl)-2,4(1*H*,3*H*)-pteridinedione, H-623
6-Hydroxymethylpterin, A-802
2-Hydroxy-3-methylpyrazine, H-624
5-Hydroxy-3-methyl-2(1*H*)-pyrazinone, D-631
5-Hydroxy-6-methyl-3,4-pyridinedimethanol, P-923
4-Hydroxy-2-methylpyridine, H-625
3-Hydroxymethylpyridine, P-904
3-Hydroxy-2-methyl-4(1*H*)-pyridinone, D-632
12-(3-Hydroxy-6-methyl-2-pyridinyl)-2-dodecanone, H-612
α′-(Hydroxymethyl)-9*H*-pyrido[3,4-*b*]indole-1,3-dimethanol, P-893
4-Hydroxy-5-methyl-2(1*H*)-pyrimidinone, T-401
5-(Hydroxymethyl)-1*H*-pyrrole-2-carboxaldehyde, H-626
1-Hydroxymethyl-2-pyrrolecarboxaldehyde, P-942
3-Hydroxy-4-methyl-2-pyrrolidinecarboxylic acid, H-627
3-Hydroxy-5-methyl-2-pyrrolidinecarboxylic acid, H-628
2-(Hydroxymethyl)-3,4-pyrrolidinediol, 12CI, D-593
5-Hydroxy-3-methyl-3-pyrrolin-2-one, D-449
1-Hydroxymethylpyrrolizidine methyl 2-*O*-acetyl-2-isopropylmalate, H-631
7-Hydroxymethyl-1,2-pyrrolizidinediol, D-595
7-Hydroxymethyl-1,6-pyrrolizidinediol, D-597
1-Hydroxymethyl-1,7-pyrrolizidinediol, D-596
1-Hydroxy-7-methylpyrrolizidine, H-630
1-Hydroxymethylpyrrolizidine, H-629
1-[4-(Hydroxymethyl)-1*H*-pyrrol-3-yl]ethanone, A-57
1-[5-(Hydroxymethyl)-1*H*-pyrrol-2-yl]-12,15-heneicosadien-1-one, M-776
1-[5-(Hydroxymethyl)-1*H*-pyrrol-2-yl]-12,15,18-heneicosatrien-1-one, M-776
1-[5-(Hydroxymethyl)-1*H*-pyrrol-2-yl]-14-heneicosen-1-one, M-776
1-[5-(Hydroxymethyl)-1*H*-pyrrol-2-yl]-16-methyl-1-heptadecanone, M-776
1-[5-(Hydroxymethyl)-1*H*-pyrrol-2-yl]-1-nonadecanone, M-776
1-[5-(Hydroxymethyl)-1*H*-pyrrol-2-yl]-14-nonadecen-1-one, M-776
1-[5-(Hydroxymethyl)-1*H*-pyrrol-2-yl]-7,10,13,16,19,22-pentacosahexaen-1-one, M-776
1-[5-(Hydroxymethyl)-1*H*-pyrrol-2-yl]-10,13,16,19,22-pentacosapentaen-1-one, M-776
1-[5-(Hydroxymethyl)-1*H*-pyrrol-2-yl]-13,16,19,22-pentacosatetraen-1-one, M-776
1-[5-(Hydroxymethyl)-1*H*-pyrrol-2-yl]-14,17-tricosadien-1-one, M-776
1-[5-(Hydroxymethyl)-1*H*-pyrrol-2-yl]-11,14,17,20-tricosatetraen-1-one, M-776
1-[5-(Hydroxymethyl)-1*H*-pyrrol-2-yl]-14,17,20-tricosatrien-1-one, M-776
4-Hydroxy-3-methylquinaldine, H-477
4-Hydroxy-2-methylquinazoline, H-632
4-Hydroxy-2-methylquinoline, H-633
4-(Hydroxymethyl)quinoline, Q-38
2-(Hydroxymethyl)quinoline, Q-37
1-Hydroxymethylquinolizidine, O-58
19(*S*)-Hydroxy-N^b-methylraumacline, R-22
2-Hydroxy-*N*-methylsalignamine, A-874
12-Hydroxy-4-methyl-4,8-secosenecionan-8,11,16-trione, S-245
3-Hydroxy-28-methyl-16,28-secosolanidan-6-one, P-807
7-Hydroxy-*O*-methylsolanocapsine, S-346
10-Hydroxymethylsparteine, H-634
5′-Hydroxy-4′-*N*-methylstaurosporine, S-498
3-Hydroxy-4′-*N*-methylstaurosporine, S-498
5-Hydroxy-9-methylstreptimidone, M-561
13β-Hydroxy-*N*-methylstylopinium, S-612
3-Hydroxy-2-(methylsulfonyl)-1*H*-indole, H-534
N-(3-Hydroxy-12-methyltetradecanoyl)nornicotine, P-957

N-(3-Hydroxy-13-methyltetradecanoyl)nornicotine, P-957
3-(1-Hydroxy-12-methyltetradecylidene)-1,5-dimethyl-2,4-pyrrolidinedione, M-191
3-(1-Hydroxy-13-methyltetradecylidene)-1,5-dimethyl-2,4-pyrrolidinedione, M-191
3-(1-Hydroxy-5-methyltetradecylidene)-1,5-dimethyl-2,4-pyrrolidinedione, M-191
3-(1-Hydroxy-12-methyltetradecylidene)-1-methyl-2,4-pyrrolidinedione, M-191
3-(1-Hydroxy-13-methyltetradecylidene)-1-methyl-2,4-pyrrolidinedione, M-191
1-Hydroxy-4-(methylthio)canthin-6-one, H-635
3-Hydroxy-2-(methylthio)-1*H*-indole, H-534
1-Hydroxy-4-methylthio-6*H*-indolo[3,2,1-*de*][1,5]-naphthyridin-6-one, H-635
N-(3-Hydroxy-12-methyltridecanoyl)nornicotine, P-957
3-(1-Hydroxy-12-methyltridecylidene)-1-methyl-2,4-pyrrolidinedione, M-191
2-(12-Hydroxy-12-methyltridecyl)-3-methoxy-4(1*H*)-quinolinone, H-636
2-(12-Hydroxy-12-methyltridecyl)-4(1*H*)-quinolinone, H-636
5-Hydroxymethyl-1-[2-(3,4,5-trimethoxyphenyl)ethyl]-2-pyrrolecarboxaldehyde, P-296
5-Hydroxy-N^{ω}-methyltryptamine, H-755
2-Hydroxy-*N*-methyltryptamine, H-754
N^{b}-Hydroxy-N^{b}-methyltryptamine, M-582
5-Hydroxy-*O*-methyltylophorinidine, T-696
N-(3-Hydroxy-10-methylundecanoyl)nornicotine, P-957
3-Hydroxy-*N*-methylwelwitindolinone C isonitrile, W-13
3-Hydroxy-*N*-methylwelwitindolinone C isothiocyanate, W-13
16-Hydroxymethylyohimb-16-ene, N-243
2-Hydroxy-1′-methylzeatin, M-586
23-Hydroxymilbemycin α2, M-607
23-Hydroxymilbemycin α3, M-608
26-Hydroxymilbemycin α1, M-607
26-Hydroxymilbemycin α2, M-607
26-Hydroxymilbemycin α3, M-608
4-Hydroxymimosamycin, M-624
Hydroxyminaline, H-714
7-Hydroxymitragynine, M-657
9-Hydroxymukanadin B, M-727
13α-Hydroxymultiflorine, M-731
13β-Hydroxymultiflorine, M-731
Hydroxymuscopyridine A, M-774
Hydroxymuscopyridine B, M-774
30-Hydroxymycalolide A, M-779
32-Hydroxymycalolide A, M-779
38-Hydroxymycalolide B, M-779
Hydroxymyoscorpine, E-31
17-Hydroxymyrsinol (incorr.), E-136
14-Hydroxynaamidine A, N-1
14-Hydroxynaamidine G, N-1
N-Hydroxynandigerine, N-25
Hydroxynantenine, N-29
10-Hydroxy-18-(*N*-naphthalenyl-*N*-phenylamino)-betaenone C, H-637
3-Hydroxy-1,4-naphthoquinone-2-carboxylic acid, H-638
β-Hydroxyneoaspergillic acid, F-76
3′-Hydroxyneoharringtonine, N-117
1′′-Hydroxyneoharringtonine, N-117
7-Hydroxyneolamellarin A, N-121
5-Hydroxyneolamellarin B, N-121
10-Hydroxyneoline, M-311
15-Hydroxyneoline, M-313
11α-Hydroxyneosaxitoxin, H-731
11β-Hydroxyneosaxitoxin, H-731
N′-Hydroxyneosaxitoxin, S-109
Hydroxyneosenkirkine, S-245
6′-Hydroxyneothiobinupharidine, T-380
6-Hydroxyneothiobinupharidine, T-380
4′-Hydroxynewbouldine, N-185
4-Hydroxynicotinamide, H-709
6-Hydroxynicotinic acid, H-711
4-Hydroxynicotinic acid, H-709
10-Hydroxynigritanine, O-21
N^{7}-(4-Hydroxy-3-nitrobenzyl)theophylline, P-357
17-Hydroxy-10-nitroestr-4-en-3-one, H-639
10-Hydroxy-6-nitrophenanthro[3,4-*d*]-1,3-dioxole-5-carboxylic acid, H-600
4-Hydroxy-2-nitrophenethylamine, H-640
N-(4-Hydroxy-3-nitrophenylethyl)acetamide, H-640
2-(4-Hydroxy-3-nitrophenyl)ethylamine, H-640
N-[2-(Hydroxynitrosamino)-3-methylbutyl]octanamide, F-146
2-(Hydroxynitrosoamino)-12-methyl-1,3,12-tetradecanetriol, A-693
4-Hydroxy-3-nitrosobenzoic acid, H-641
N-Hydroxy-*N*-nitrosohexadecanamine, N-254
6-Hydroxynobiline, N-262
9-Hydroxynominine, H-166
2-Hydroxynominine, H-163
4-Hydroxy-2-(3,6-nonadienyl)quinoline, H-642
4-Hydroxy-2-(1-nonenyl)quinoline, H-642
3-Hydroxy-3-nonyl-2,4(1*H*,3*H*)-quinolinedione, H-643
4-Hydroxy-2-nonylquinoline, H-642
3-Hydroxy-2-nonyl-4(1*H*)-quinolinone, A-621
2-(9-Hydroxynonyl)-4(1*H*)-quinolinone, H-642
5-Hydroxynoracronycine, A-1527
3-Hydroxynorallosedamine, S-210
3-Hydroxy-19-norcona-1,3,5(10),14-tetraene, D-788
11-Hydroxy-23-norcona-1,4,18(22)-trienin-3-one, H-322
12-Hydroxynorcona-*N*(18),1,4-trienin-3-one, H-322
3-Hydroxy-11-norcytisine, H-644
7-Hydroxynordicentrine, D-948
18-Hydroxynordihydrotoxiferine, T-436
3β-Hydroxynorerythrosuamide, N-299
18-Hydroxynorfluorocurarine, N-301
6′-Hydroxy-9-normethylbudmunchiamine K, B-389
4-Hydroxynornantenine, N-29
3-Hydroxynornuciferine, T-521
16-Hydroxy-22-norparsonsine, P-97
12-Hydroxy-18-norsenecionan-11,16-dione, N-219
10-Hydroxynortetraphyllicine, T-288
N-Hydroxynorthalicthuberine, T-318
3-Hydroxynortropane, A-1597
11-Hydroxynorzoanthamine, N-317
3-Hydroxynorzoanthamine, N-317
30-Hydroxynorzoanthamine, N-317
15-Hydroxynovacine, I-12
3-Hydroxynuciferine, T-521
10-Hydroxynudicaulidine, M-307
Hydroxynybomycin, N-346
N^{2}-(17-Hydroxy-9,12-octadecadienoyl)glutamine, G-108
N^{2}-(17-Hydroxy-9,12,15-octadecatrienoyl)glutamine, H-645
3-Hydroxy-2-octadecylindole, H-646
8-Hydroxy-2,4,6-octatriynamide, H-647
8-Hydroxy-2,4,6-octatriynoic acid, H-647
4-Hydroxy-2-(1-octenyl)quinoline, H-648
4-Hydroxy-2-octylquinoline *N*-oxide, H-648
4-Hydroxy-2-octylquinoline, H-648
3-Hydroxy-2-octyl-4(1*H*)-quinolinone, A-621
6-Hydroxyonychine, O-93
2-Hydroxyonychine, O-93
N-Hydroxyovigerine, O-143
8-Hydroxy-12,28-oxamanzamine A, M-91
6-Hydroxy-12,34-oxamanzamine E, M-91
3-Hydroxy-2-(4-oxazolylmethylene)butanal, O-156
4-Hydroxy-1-(4-oxazolyl)-1-penten-3-one, M-159
6-(2-Hydroxy-2-oxido-4*H*-1,3,2-dioxaphosphorin-6-yl)-2,4(1*H*,3*H*)-pteridinedione, H-649
4-Hydroxyoxindole-3-acetic acid, D-452
5-Hydroxyoxindole-3-acetic acid, D-453
4-Hydroxyoxindole-3-acetonitrile, D-452
5-Hydroxyoxindole, I-92
3-Hydroxyoxindole, I-91
12*R*-Hydroxy-11-oxoaerothionin, A-158
12*S*-Hydroxy-11-oxoaerothionin, A-158
8-Hydroxy-1-oxo-2-azaspiro[4.5]deca-6,9-diene-3-carboxylic acid, S-424
4-Hydroxy-α-oxobenzeneacetic acid, H-687
N-(3-Hydroxy-2-oxobutyl)cytisine, S-378
3-(1-Hydroxy-3-oxobutyl)-4,7,8-trimethoxy-2(1*H*)-quinolinone, E-314
18-Hydroxy-3-oxo-1,4,14-conatrienine, H-314
5-Hydroxy-6-oxocoronaridine, C-657
19-Hydroxy-3-oxocoronaridine, C-657
1-Hydroxy-4-oxo-2,5-cyclohexadiene-1-acetamide, H-650
1-Hydroxy-4-oxo-2,5-cyclohexadiene-1-acetic acid, H-650
N-(3-Hydroxy-1-oxocyclopent-2-en-2-yl)-3-(4-hydroxy-3-methoxyphenyl)propenamide, H-651
ω-(2-Hydroxy-4-oxodecanoyl)histidine, H-307
3-Hydroxy-2-oxodendrobine, D-210
1-(3-Hydroxy-1-oxododecyl)-2-(3-pyridinyl)pyrrolidine, P-957
8-Hydroxy-3-oxo-1,7(11)-eremophiladien-12,8-lactam, H-652
8-Hydroxy-1-oxo-7(11)-eremophilene-12,8-lactam, H-653
10-Hydroxy-11-oxoerysotrine, E-203
14-Hydroxy-19-oxogelsenicine, G-44
1-(3-Hydroxy-1-oxohexadecyl)-2-(3-pyridinyl)pyrrolidine, P-957
14-Hydroxy-19-oxohumantenmine, G-44
6-Hydroxy-α-oxo-1*H*-indole-3-acetic acid, H-654
2-Hydroxy-17-oxo-β-isosparteine, I-322
25-Hydroxy-24-oxokibdelone C, H-655
13-Hydroxy-17-oxolupanine, O-188
15-Hydroxy-17-oxolupanine, O-188
N-(5-Hydroxy-2-oxo-7-oxabicyclo[4.1.0]hept-3-en-3-yl)acetamide, A-804
4-(4-Hydroxy-3-oxo-1-pentenyl)oxazole, M-159
α-(3-Hydroxy-5-oxo-4-phenyl-2(5*H*)-furanylidene)-benzeneacetic acid, P-790
4-Hydroxy-2-oxo-6-(phenylmethyl)-1*H*-pyridine-3-carboxaldehyde, C-142
7-Hydroxy-Δ^{1}-3-(2-oxopropyl)coronaridine, O-199
N-[2-(2-Hydroxy-1-oxopropyl)phenyl]acetamide, A-32
3-Hydroxy-9-oxo-9,10-seco-1,3,5-conatriene, D-383
7-Hydroxy-3-oxo-3,7-secorhynchophylline, H-656
4-Hydroxy-2-oxosparteine, H-551
13-Hydroxy-2-oxosparteine, H-554
13α-Hydroxy-4-oxosparteine, T-361
13-Hydroxy-10-oxosparteine, V-153
2-Hydroxy-5-oxo-4-[(4,6,8-trimethyl-1-oxo-2,7-nonadienyl)amino]-7-oxabicyclo[4.1.0]hept-3-ene-2-pentanoic acid, A-1298
20*S*-Hydroxy-7-oxovincadifformine, M-631
14β-Hydroxyoxymatrine, M-121
12*β*-Hydroxypachysandrine A, D-263
16β-Hydroxypachysandrine A, D-264
19-Hydroxypachysiphine, H-743
8-Hydroxypalmatine, O-213
7α-Hydroxyparavallarine, P-93
7β-Hydroxyparavallarine, P-93
11α-Hydroxyparavallarine, P-93
10-Hydroxy-*cis*-paspalic acid amide, P-107
10-Hydroxy-*trans*-paspalic acid amide, P-107
14-Hydroxypaspalinine, P-109
N-Hydroxypaxdaphnine B, P-139
14*a*-Hydroxypaxilline, P-140
7-Hydroxypeganine, V-37
6-Hydroxypellitorine, D-106
3-(1-Hydroxypentadecylidene)-1-methyl-2,4-pyrrolidinedione, M-191
4-Hydroxy-2-pentadecylquinoline, H-657
4-Hydroxy-2-(1,3-pentadienyl)piperidine, H-658
14-Hydroxy-2,3,4,6,7-pentamethoxyphenanthroindolizidine, P-228
3-Hydroxy-4-pentenenitrile, H-659
3-Hydroxy-4-pentenoic acid, H-659
4-Hydroxy-2-(1*E*-pentenyl)quinoline, H-660
4-Hydroxy-2-(1*Z*-pentenyl)quinoline, H-660
2-(2-Hydroxypentyl)-*N*-methylpiperidine, H-37
2-(2-Hydroxypentyl)-6-(2-oxopropyl)piperidine, A-1000
2-(2-Hydroxypentyl)piperidine, H-37
5-Hydroxy-2-pentylpiperidine, P-236
4-Hydroxy-2-pentylquinoline *N*-oxide, H-660
4-Hydroxy-2-pentylquinoline, H-660

3-Hydroxy-2-pentyl-4(1*H*)-quinolinone, A-621
10-Hydroxyperegrine, M-322
10-Hydroxypericyclivine, S-89
p-Hydroxyphenacylamine, A-786
1-Hydroxyphenazine 10-oxide, P-327
2-Hydroxy-1-phenazinecarboxylic acid, H-661
4-Hydroxy-1-phenazinecarboxylic acid, H-662
6-Hydroxy-1-phenazinecarboxylic acid, H-663
9-Hydroxy-1-phenazinecarboxylic acid, H-664
4-Hydroxy-1,6-phenazinedicarboxylic acid, H-666
2-Hydroxy-1,6-phenazinedicarboxylic acid, H-665
1-Hydroxyphenazine, P-327
2-Hydroxyphenazine, P-328
p-Hydroxyphenethyl alcohol, H-676
N-(*p*-Hydroxyphenethyl)acetamide, H-667
N-(*p*-Hydroxyphenethyl)actinidine, A-125
4-Hydroxyphenethylamine, H-667
3-Hydroxyphenethylamine, H-678
4-[[(*p*-Hydroxyphenethyl)amino]methyl]pyrocatechol, N-288
N-(4-Hydroxyphenethyl)-2,4-decadienamide, H-668
N-(4-Hydroxyphenethyl)-2,4-dodecadienamide, H-669
N-(4-Hydroxyphenethyl)-2,4-tetradecadienamide, H-670
p-Hydroxyphenopyrrozin, P-333
N-(2-Hydroxyphenyl)acetamide, A-861
p-Hydroxyphenylacetamide, H-672
2-Hydroxy-2-phenylacetamide, H-671
4-Hydroxyphenylacetic acid, H-672
4-Hydroxyphenylacetonitrile, H-672
2-Hydroxy-2-phenylacetonitrile, H-673
3-(4-Hydroxyphenylacetoxy)tropane, M-393
N-[2-(4-Hydroxyphenyl)acetyl]formamide, H-672
p-Hydroxyphenylacrylic acid, H-691
3-*p*-Hydroxyphenyl-α-alanine, T-700
N-(4-Hydroxyphenyl)arachidonylamide, E-48
8-Hydroxy-2-phenyl-1-benzazocine, P-340
5-Hydroxy-7-phenyl-1*H*-benz[*de*]isoquinoline-1,6(2*H*)-dione, L-5
1-(4-Hydroxyphenyl)-3*H*-benzo[*a*]pyrrolo[2,3-*c*]phenazine, H-674
7-Hydroxy-2-phenyl-4*H*-3,1-benzoxazin-4-one, H-675
6-(4-Hydroxyphenyl)-2,8-bis(phenylmethyl)imidazo[1,2-*a*]pyrazin-3(7*H*)-one, C-560
2-[4-(4-Hydroxyphenyl)-1,3-butadienyl]-4*H*-3,1-benzoxazin-4-one, A-1562
4-Hydroxyphenyldi-3-indolylmethane, D-692
2-(4-Hydroxyphenyl)-6-(3,4-dimethoxyphenyl)-morpholine, C-363
N-(4-Hydroxyphenyl)-5,8,11,14-eicosatetraenamide, E-48
2-(4-Hydroxyphenyl)ethanol, H-676
2-(4-Hydroxyphenyl)ethenamine, H-677
19-(4-Hydroxyphenyl)-10*H*-1,10-ethenochromeno[2,3-*b*]indole-6,8,18-triol, N-327
2-[2-(4-Hydroxyphenyl)ethenyl]-1-methylpiperidine, C-220
2-Hydroxy-*N*-(2-phenylethenyl)propanamide, X-27
2-(4-Hydroxyphenyl)ethyl carbamate, H-676
N-(*p*-Hydroxyphenyl)ethyl *p*-hydroxycinnamide, H-667
N-[2-(4-Hydroxyphenyl)ethyl]acetamide, H-667
2-Hydroxy-2-phenylethylamine, A-864
2-(3-Hydroxyphenyl)ethylamine, H-678
2-(*p*-Hydroxyphenyl)ethylamine, H-667
4-[[[2-(4-Hydroxyphenyl)ethyl]amino]methyl]-1,2-benzenediol, N-288
N-[2-(4-Hydroxyphenyl)ethyl]benzamide, H-667
N-[2-(4-Hydroxyphenyl)ethyl]cinnamide, H-667
N-[2-(4-Hydroxyphenyl)ethyl]dotriacontanamide, A-21
9-Hydroxy-*N*-(2-phenylethyl)hexadecanamide, P-342
5-[[[2-(4-Hydroxyphenyl)ethyl]imino]methyl]-2-methoxyphenol, C-730
N-[2-(4-Hydroxyphenyl)ethyl]-2-methylbutanamide, H-667
N-[2-(4-Hydroxyphenyl)ethyl]-3-methyldodecanamide, H-679
N-[2-(4-Hydroxyphenyl)ethyl]-3-methyl-2-dodecenamide, H-679
2-(2-Hydroxy-2-phenylethyl)-1-methyl-6-(2-oxobutyl)piperidine, H-347
2-(2-Hydroxy-2-phenylethyl)-1-methyl-6-(2-oxopentyl)piperidine, D-403
2-(2-Hydroxy-2-phenylethyl)-1-methylpiperidine, S-210
1-[6-(2-Hydroxy-2-phenylethyl)-1-methyl-2-piperidinyl]-2-butanone, H-347
1-[6-(2-Hydroxy-2-phenylethyl)-1-methyl-2-piperidinyl]-2-pentanone, D-403
2-[6-(2-Hydroxy-2-phenylethyl)-1-methyl-2-piperidinyl]-1-phenylethanone, L-219
1-[6-(2-Hydroxy-2-phenylethyl)-1-methyl-2-piperidinyl]-2-propanone, S-215
2-(2-Hydroxy-2-phenylethyl)-1-methylpyrrolidine, P-970
1-(1-Hydroxy-2-phenylethyl)-9*H*-pyrido[3,4-*b*]indol-6-ol, E-290
N-[2-(4-Hydroxyphenyl)ethyl]tetracosanamide, H-667
N-[2-(4-Hydroxyphenyl)ethyl]tiglamide, H-667
N-(2-Hydroxyphenyl)formamide, A-861
4-Hydroxyphenylglycollic acid, H-520
3-Hydroxyphenylglycollic acid, H-519
p-Hydroxyphenylglyoxylic acid, H-687
2-(2-Hydroxyphenyl)-4-(hydroxymethyl)thiazole, H-695
6-(4-Hydroxyphenyl)-2-[(4-hydroxyphenyl)methyl]-8-(phenylmethyl)imidazo[1,2-*a*]pyrazin-3(7*H*)-one, C-560
4-Hydroxy-2-(phenylimino)-1(2*H*)-naphthalenone, A-1040
1-(4-Hydroxyphenyl)-4-(1*H*-indol-3-yl)-2,3-butanediol, D-789
2-(4-Hydroxyphenyl)-3-isobutylmaleimide, H-684
1-(4-Hydroxyphenyl)-2-isocyanoethene, H-680
Hydroxyphenylmalonic acid, H-688
2′-*O*-[3-(4-Hydroxyphenyl)-2-methoxypropenoyl]-3′-*O*-[3-(1*H*-imidazol-4-yl)propenoyl]-*S*-methyl-5′-thioadenosine, H-681
1-(*p*-Hydroxyphenyl)-2-methylaminoethanol, S-659
3-(4-Hydroxyphenyl)-2-(methylamino)propanoic acid, T-700
[(4-Hydroxyphenyl)methyl]carbamic acid, H-421
[(4-Hydroxyphenyl)methyl]carbamothioic acid, H-427
3-(4-Hydroxyphenyl)-*N*-[4-(3-methyl-2,5-dioxo-1-pyrrolidinyl)butyl]-2-propenamide, H-682
5-[(4-Hydroxyphenyl)methylene]-2-thioxo-4-imidazolidinone, H-683
6-(4-Hydroxyphenyl)-7-methyl-1,2,3,5,8,8*a*-hexahydroindolizine, I-165
5-[(4-Hydroxyphenyl)methyl]-2-(1*H*-indol-3-yl)-3-morpholinone, O-154
2-[[(4-Hydroxyphenyl)methyl]methylamino]-*N*-[2-(1*H*-indol-3-yl)ethenyl]-4-methylhexanamide, F-145
2-(Hydroxyphenylmethyl)-8-methyl-8-azabicyclo[3.2.1]octane-3,6-diol, H-428
2-[(4-Hydroxyphenyl)methyl]-4-oxo-2-azetidinecarboxylic acid, H-425
3-[(4-Hydroxyphenyl)methyl]-1-phenyl-1*H*-pyrrole-2,5-dione, O-100
3-(4-Hydroxyphenyl)-*N*-methylpropanamide, H-689
3-(4-Hydroxyphenyl)-4-(2-methylpropyl)-1*H*-pyrrole-2,5-dione, H-684
5-[(4-Hydroxyphenyl)methyl]-2-pyridinecarboxylic acid, H-426
5-(Hydroxyphenylmethyl)-2-pyridinecarboxylic acid, V-94
6-Hydroxy-α-phenylmethyl-9*H*-pyrido[3,4-*b*]indole-1-methanol, E-290
2-(4-Hydroxyphenyl)-1-methyl-4(1*H*)-quinolinone, H-685
2-(4-Hydroxyphenyl)-5-(methylthio)thiazole, T-508
1-Hydroxy-4-phenyl-2,7-naphthyridine, H-686
2-(2-Hydroxyphenyl)-2-oxazoline-4-carboxylic acid, D-455
2-(4-Hydroxyphenyl)-2-oxoacetic acid, H-687
1-[5-(4-Hydroxyphenyl)-1-oxo-2,4-pentadienyl]piperidine, C-710
1-[3-(4-Hydroxyphenyl)-1-oxopropyl]-1*H*-pyrrole, P-351
5-(4-Hydroxyphenyl)-2,4-pentadienoic acid piperidide, C-710
N-[5-(4-Hydroxyphenyl)-2,4-pentadienoyl]piperidine, C-710
3-(4-Hydroxyphenyl)-4-phenyl-1*H*-pyrrole-2,5-dicarboxylic acid, B-188
2-Hydroxy-2-phenylpropanediamide, H-688
Hydroxyphenylpropanedioic acid, H-688
3-(4-Hydroxyphenyl)propanoic acid pyrrolidide, P-351
3-(4-Hydroxyphenyl)propanoic acid, H-689
3-(4-Hydroxyphenyl)propanoylcholine, C-419
N-[3-(4-Hydroxyphenyl)propanoyl]pyrrole, P-351
3-(3-Hydroxyphenyl)-2-propenoic acid, H-690
3-(4-Hydroxyphenyl)-2-propenoic acid, H-691
3-(*p*-Hydroxyphenyl)propionic acid, H-689
3α-(2-Hydroxy-3-phenylpropionyloxy)tropane, L-216
1-(4-Hydroxyphenyl)-2-propylamine, A-898
3-(*p*-Hydroxyphenyl)propylamine, H-350
5-(4-Hydroxyphenyl)-2-(3-pyridyl)oxazole, H-12
3-(2-Hydroxyphenyl)-4(3*H*)-quinazolinone, Q-14
4-Hydroxy-2-phenylquinoline, H-693
3-(4-Hydroxyphenyl)quinoline, H-692
4-Hydroxy-3-phenyl-2(1*H*)-quinolinone, D-657
5-Hydroxy-2-phenyl-4(1*H*)-quinolinone, D-658
6-Hydroxy-2-phenyl-4(1*H*)-quinolinone, D-659
7-Hydroxy-2-phenyl-4(1*H*)-quinolinone, D-660
3-Hydroxy-4-phenyl-2(1*H*)-quinolinone, D-656
6-(*p*-Hydroxyphenyl)-8-(1-D-ribityl)-2,4,7-trioxohexahydropteridine, H-232
6-(4-Hydroxyphenyl)-8-D-ribosyl-2,4,7(1*H*,3*H*,8*H*)-pteridinetrione, H-232
2-(2-Hydroxyphenyl)-4-thiazolecarboxaldehyde, H-695
2-(2-Hydroxyphenyl)-4-thiazolecarboxylic acid, H-695
2-(2-Hydroxyphenyl)thiazole, H-694
2-(4-Hydroxyphenyl)-*N*,*N*,*N*-trimethylethenaminium, H-742
[2-(4-Hydroxyphenyl)vinylamino]iminoacetic acid, H-44
[2-(4-Hydroxyphenyl)vinyl]oxamic acid, H-44
7-Hydroxyphlegmariurine B, P-363
8β-Hydroxyphlegmariurine B, P-363
11α-Hydroxyphlegmariurine B, P-363
2α-Hydroxyphlegmariurine B, P-363
2-(Hydroxyphosphinyl)ethylamine, A-772
4-Hydroxyphthalimidine, D-442
5-Hydroxypicolinic acid, H-710
3-Hydroxypipecolic acid, H-696
4-Hydroxypipecolic acid, H-697
5-Hydroxypipecolic acid, H-698
4-Hydroxy-2-piperidinecarboxylic acid, H-697
5-Hydroxy-2-piperidinecarboxylic acid, H-698
3-Hydroxy-2-piperidinecarboxylic acid, H-696
5-Hydroxy-2-piperidinemethanol, H-699
4-Hydroxy-α-(1-piperidinyl)benzeneacetonitrile, G-80
3-[3-(3-Hydroxy-2-piperidinyl)-2-oxopropyl]-4(3*H*)-quinazolinone, F-31
N-Hydroxypiperolactam A, D-567
11-Hydroxypleiocarpamine, P-518
7-Hydroxypleurocorine, H-700
7-Hydroxypleurostyline, P-523
6α-Hydroxypowelline, P-581
2-Hydroxy-6-prenylindole, H-701
2-Hydroxy-3-prenyl-4-prenyloxyquinoline, A-1529
4-Hydroxyproline betaine, H-476
3-Hydroxyproline dimethylbetaine, H-740
Hydroxyproline leucine anhydride, C-871
4-Hydroxyproline, H-715
2-(2-Hydroxypropanoyl)acetanilide, A-32
2-[(2-Hydroxypropanoyl)amino]benzamide, A-706
1-(3-Hydroxypropanoyl)-β-carboline, C-136
6-(β-Hydroxypropionyl)-1,3-dimethyllumazine, H-702
6-(β-Hydroxypropionyl)-3-methyllumazine, H-702
N-Hydroxypropylamine, P-648

1-(2-Hydroxypropyl)-3,4-dimethoxy-2-methyl-9*H*-carbazole, S-573
6-(1-Hydroxypropyl)-1,3-dimethyllumazine, H-702
6-(1-Hydroxypropyl)lumazine, H-702
Hydroxypropyllycodine, H-703
7-(1-Hydroxypropyl)-8-methylindolizino[1,2-*b*]quinolin-9(11*H*)-one, M-96
6-(1-Hydroxypropyl)-8-methylisoxanthopterin, I-13
6-(1-Hydroxypropyl)-1-methyllumazine, H-702
6-(1-Hydroxypropyl)-3-methyllumazine, H-702
1-(2-Hydroxypropyl)-2-methyl-6-(3-methyl-2-butenyl)-3*H*-carbazole-3,4(9*H*)-dione, C-169
2-(2-Hydroxypropyl)-1-methyl-5-(2-oxopropyl)pyrrolidine, H-704
2-(2-Hydroxypropyl)-6-methylpiperidine, H-705
2-(2-Hydroxypropyl)-1-methylpyrrolidine, H-760
1-[5-(2-Hydroxypropyl-1-methyl-2-pyrrolidinyl)]-2-propanone, H-704
2-(1-Hydroxypropyl)piperidine, C-603
5-Hydroxy-2-propylpiperidine, P-653
2-(2-Hydroxypropyl)piperidine, S-216
6-(1-Hydroxypropyl)-2,4(1*H*,3*H*)-pteridinedione, H-702
2-(3-Hydroxypropyl)-4(3*H*)-quinazolinone, H-706
4-Hydroxy-2-propylquinoline, H-707
17-Hydroxypseudoakuammigine, A-232
8-Hydroxypseudocoptisine, P-710
8*b*-Hydroxyptilocaulin, P-773
6-Hydroxypurine, P-820
2-Hydroxyputrescine, D-248
2-Hydroxypyrazine, P-889
6-Hydroxy-2-pyridineacetic acid, H-708
5-Hydroxy-2-pyridinecarboxylic acid, H-710
4-Hydroxy-3-pyridinecarboxylic acid, H-709
6-Hydroxy-3-pyridinecarboxylic acid, H-711
5-Hydroxy-2-pyridinemethanol, H-515
3-Hydroxypyridine, P-906
4-Hydroxy-2-[4-(2-pyridinyl)-1,3-butadienyl]benzoic acid, H-712
N-[(5-Hydroxy-2-pyridinyl)methyl]adenosine, H-713
6-(5-Hydroxy-2-pyridinylmethylamino)-9β-ribofuranosylpurine, H-713
2-Hydroxy-3-(4-pyridinyl)-2-propenoic acid, O-205
4-Hydroxy-9*H*-pyrido[3,4-*b*]indole-1-carboxaldehyde, H-456
4-Hydroxy-9*H*-pyrido[3,4-*b*]indole-1-carboxylic acid, H-457
6-Hydroxy-9*H*-pyrido[3,4-*b*]indole-1-carboxylic acid, H-458
7-Hydroxy-9*H*-pyrido[3,4-*b*]indole-1-carboxylic acid, H-459
1-(4-Hydroxy-9*H*-pyrido[3,4-*b*]indol-1-yl)ethanone, A-53
1-(6-Hydroxy-9*H*-pyrido[3,4-*b*]indol-1-yl)ethanone, A-54
1-(7-Hydroxy-9*H*-pyrido[3,4-*b*]indol-1-yl)ethanone, A-55
1-(8-Hydroxy-9*H*-pyrido[3,4-*b*]indol-1-yl)ethanone, A-56
3-Hydroxy-1-(9*H*-pyrido[3,4-*b*]indol-1-yl)-1-propanone, C-136
4-Hydroxypyrido[4,3,2-*mn*]pyrrolo[3,2,1-*de*]acridine, A-1445
β-(5-Hydroxy-2-pyridyl)alanine, A-822
4-Hydroxy-11-*O*-(2-pyrrolecarbonyl)epilupinine, H-482
10-Hydroxy-13-(2-pyrrolecarbonyloxy)lupanine, D-608
4-Hydroxy-1*H*-pyrrole-2-carboxylic acid, H-714
2-Hydroxy-1-pyrrolidinecarboxaldehyde, P-955
4-Hydroxy-2-pyrrolidinecarboxylic acid, H-715
4-Hydroxy-3-pyrrolidinecarboxylic acid, H-716
3-Hydroxy-2-pyrrolidinemethanol, H-717
2-Hydroxypyrrolidine, P-955
4-Hydroxy-2-pyrrolidinone, H-718
5-Hydroxy-2-pyrrolidinone, H-719
4-Hydroxy-2-pyrrolidone, H-718
5-Hydroxy-2-pyrrolidone, H-719
6-Hydroxy-1-(1-pyrrolin-2-yl)-β-carboline, E-285
6-Hydroxy-1-pyrrolizidinecarboxylic acid, H-720
6-Hydroxy-1-(2-pyrrolyl)-β-carboline, E-285
1-(3-Hydroxy-1*H*-pyrrol-2-yl)ethanone, A-58
14β-Hydroxyquebrachamine, Q-6
6-Hydroxyquestiomycin A, A-862
3-Hydroxyquinaldic acid, H-724
4-Hydroxyquinaldine, H-633
α-Hydroxyquinaldine, Q-37
4-Hydroxyquinaldinic acid, H-725
4-Hydroxyquinazoline, Q-14
9-Hydroxy-10*H*-quindoline, I-112
3-Hydroxyquinine, Q-20
8-Hydroxy-4-quinolinecarboxaldehyde, H-722
2-Hydroxy-4-quinolinecarboxaldehyde, H-721
6-Hydroxy-4-quinolinecarboxamide, H-726
3-Hydroxy-2-quinolinecarboxylic acid, H-724
4-Hydroxy-2-quinolinecarboxylic acid, H-725
6-Hydroxy-4-quinolinecarboxylic acid, H-726
8-Hydroxy-2-quinolinecarboxylic acid, H-727
2-Hydroxy-4-quinolinecarboxylic acid, H-723
4-Hydroxy-2,3-quinolinedicarboxylic acid, H-728
2-Hydroxyquinoline, Q-50
3-Hydroxyquinoline, Q-49
8-Hydroxy-2(1*H*)-quinolinone-4-carboxylic acid, D-673
3-Hydroxy-4(1*H*)-quinolinone-2-carboxylic acid, D-674
4-Hydroxy-2(1*H*)-quinolinone, Q-33
8-Hydroxy-4(1*H*)-quinolinone, Q-35
2-Hydroxy-4(1*H*)-quinolinone, Q-33
10-Hydroxyranaconitine, A-94
11-Hydroxyrankinidine, H-367
6α-Hydroxyraumacline, R-22
14α-Hydroxyrauniticine, A-212
4-Hydroxy-*N*-resorcylanthranilic acid, B-67
12*S*-Hydroxyretroisosenine, N-89
13*R*-Hydroxyretroisosenine, N-89
12-Hydroxyretulinal, R-63
13β-Hydroxyribasine, R-94
5-Hydroxy-1-β-D-ribofuranosyl-1*H*-imidazole-4-carboxaldehyde, H-729
N-(6-Hydroxy-9-β-D-ribofuranosyl-9*H*-purin-2-yl)alanine, H-730
4-Hydroxy-3-ribofuranosyl-1*H*-pyrazole-5-carboxamide, P-891
N-Hydroxyrobustine, S-456
4-Hydroxyroemerine, S-549
Hydroxyroxburghiline, O-67
1-Hydroxyrutacridone epoxide, R-167
20-Hydroxyrutacridone epoxide, R-167
7-Hydroxyrutaecarpine, R-168
1-Hydroxyrutaecarpine, R-168
11-Hydroxyrutaecarpine, R-168
3-Hydroxyrutaecarpine, R-168
7-Hydroxyryosenamine, H-187
21-Hydroxysaframycin B, S-8
4-Hydroxy-*N*-salicoylanthranilic acid, B-67
2-Hydroxysalignarine E, D-275
8-Hydroxysampangine, S-49
12-Hydroxysanguinarine, C-360
Hydroxy-α-sanshool, D-893
Hydroxy-β-sanshool, D-893
Hydroxy-γ-sanshool, T-127
4-Hydroxysarcocapnidine, S-73
4-Hydroxysarcocapnine, S-73
3-Hydroxysarpagine, A-27
11-Hydroxysaxitoxin, H-731
N′-Hydroxysaxitoxin, S-109
10-Hydroxyscandine, S-118
α-Hydroxyscopolamine, A-1043
3-Hydroxy-9,10-seco-1,3,5,8(14)-conatetraen-9-one, D-383
3-Hydroxy-9,10-seco-1,3,5-conatrien-9-one, D-383
3-Hydroxy-3,4-secocoronaridine, H-732
3-Hydroxy-16,28-secosolanid-22(28)-ene-6,23-dione, P-281
3-Hydroxy-16,28-secosolanid-22(28)-en-6-one, H-483
12-Hydroxy-12,24-secostrychnidin-10-one, P-672
4-Hydroxysecurinine, P-386
4-Hydroxysedamine, S-210
5-Hydroxysedamine, S-210
Hydroxysedinol, S-215
Hydroxysedinone, S-215
9-Hydroxysenbusine A, M-310
12-Hydroxysenecionan-11,16-dione, S-238
3-(*trans*-4-Hydroxysenecioyl)-6-senecioyltropane, M-391
Hydroxysenkirkine, S-245
18-Hydroxysenkirkine, S-245
13*a*-Hydroxysepticine, S-248
4-Hydroxyserratidine, A-1029
6α-Hydroxyserratidine, A-1029
Hydroxyskytanthine I, H-735
Hydroxyskytanthine II, H-736
4-Hydroxyskytanthine, H-735
4*a*-Hydroxyskytanthine, H-733
7-Hydroxyskytanthine, H-736
7*a*-Hydroxyskytanthine, H-734
6-Hydroxyskytanthine, I-62
4-Hydroxysmirnovine, S-406
15α-Hydroxysoladulcidine, S-441
15β-Hydroxysoladulcidine, S-441
2-Hydroxysoladulcidine, S-440
23*R*-Hydroxysoladulcidine, S-442
12α-Hydroxysolamargine, S-447
12β-Hydroxysolamargine, S-447
18-Hydroxysolanid-4-en-3-one, V-62
23-Hydroxysolanthrene, L-116
N-Hydroxysolasodine, S-456
15α-Hydroxysolasodine, S-448
15β-Hydroxysolasodine, S-448
23*S*-Hydroxysolasodine, S-450
12α-Hydroxysolasonine, S-447
12β-Hydroxysolasonine, S-447
9-Hydroxysophocarpine *N*-oxide, S-371
5-Hydroxysophocarpine, S-371
9α-Hydroxysophocarpine, S-371
12α-Hydroxysophocarpine, S-371
12β-Hydroxysophocarpine, S-371
9α-Hydroxysophoramine *N*-oxide, S-376
7α-Hydroxysophoramine, S-376
9α-Hydroxysophoramine, S-376
14β-Hydroxysophoridine, S-380
3α-Hydroxysophoridine, S-380
4-Hydroxysparteine, H-737
7-Hydroxysparteine, H-738
14-Hydroxysparteine, H-739
12α-Hydroxysparteine, R-56
13-Hydroxysparteine, T-361
7-Hydroxyspeciociliatine, M-657
7-Hydroxy-(-)-spectaline, S-388
23-Hydroxyspermostrychnine N^4-oxide, S-400
23-Hydroxyspermostrychnine, S-400
12-Hydroxysqualamine, S-485
3-Hydroxystachydrine a, H-740
3-Hydroxystachydrine b, H-740
3-Hydroxystachydrine, H-740
5′-Hydroxystaurosporine, S-498
7-Hydroxystaurosporine, S-498
11-Hydroxystaurosporine, S-498
3-Hydroxystaurosporine, S-498
2-Hydroxystaurosporinone, A-1190
6*S*-Hydroxystemofoline, S-515
16-Hydroxystemofoline, S-515
2′*R*-Hydroxystemofoline, S-515
2′*S*-Hydroxystemofoline, S-515
3′*S*-Hydroxystemofoline, S-515
4′-Hydroxystemofoline, S-515
8-Hydroxystephenanthrine *N*-oxide, S-546
8-Hydroxystephenanthrine, S-546
9-Hydroxystreptazolin, S-560
13-Hydroxystreptazolin, S-560
8-Hydroxystreptazolone, H-741
10-Hydroxystrictamine, S-576
11-Hydroxystrictamine, S-576
12-Hydroxystrictamine, S-576
18-Hydroxystrictamine, S-576
10-Hydroxystrictosamide, V-126
16-Hydroxystrychnidin-10-one, P-726
12-Hydroxystrychnine N^b-oxide, S-589
3-Hydroxystrychnine, P-726
10-Hydroxystrychnine, S-589
12-Hydroxystrychnine, S-589
15-Hydroxystrychnine, S-589
12′-Hydroxystrychnobiline, S-591
14-Hydroxystrychnobrasiline, S-594

13-Hydroxystylopine, S-612
4-Hydroxystyrylamine, H-677
(4-Hydroxystyryl)trimethylammonium(1+), H-742
Hydroxysuccinic acid, M-72
N^2-(2-Hydroxysuccinoyl)arginine, A-1413
N^2-(3-Hydroxysuccinoyl)arginine, A-1413
18-Hydroxysungucine, S-642
21-Hydroxysycophantine, S-449
19′*R*-Hydroxytabernaelegantine A, C-616
3′-Hydroxytabernaelegantine B, C-615
19′*R*-Hydroxytabernamine, T-8
19′*S*-Hydroxytabernamine, T-8
3′-Hydroxytabernamine, T-8
3-Hydroxytabernanthine, I-4
19-Hydroxytabersonine, H-743
11-Hydroxytabersonine, T-11
16-Hydroxytabersonine, T-11
19-Hydroxytacamine, T-12
17β-Hydroxytacamonine, T-13
6β-Hydroxytalatizamine, M-323
10-Hydroxytalatizamine, M-326
3α-Hydroxytalatizamine, M-317
2′-Hydroxytaxine II, T-273
Hydroxytaxodine, H-331
4-Hydroxytecomanine, T-58
5′-Hydroxytelobine, A-1331
12-Hydroxy-2,4,8,10-tetradecatetraenoic acid, H-744
11-Hydroxy-2,4,8-tetradecatrienoic acid, H-745
3-(1-Hydroxytetradecylidene)-1,5-dimethyl-2,4-pyrrolidinedione, M-191
3-(1-Hydroxytetradecylidene)-1-methyl-2,4-pyrrolidinedione, M-191
6-(13-Hydroxytetradecyl)-2-methyl-3-piperidinol, S-388
4-Hydroxy-2-tetradecylquinoline, H-746
4-Hydroxy-3-[1-(tetrahydro-5-hydroxy-2,6,6-trimethyl-2*H*-pyran-2-yl)ethyl]-2(1*H*)-quinolinone, B-380
6-Hydroxy-1,2,3,4-tetrahydroisoquinoline, T-196
7-Hydroxy-1,2,3,4-tetrahydroisoquinoline, T-197
8-Hydroxy-1,2,3,4-tetrahydroisoquinoline, T-198
5-[Hydroxy-(5,6,7,8-tetrahydro-6-methyl-1,3-dioxolo[4,5-*g*]isoquinolin-5-yl)methyl]-1,3-benzodioxole-4-carboxylic acid, B-118
3-Hydroxytetrahydroolivacine, G-211
Hydroxytetrahydrorhombifoline, T-149
16-Hydroxytetrahydrosecamine, S-174
10′-Hydroxytetrahydro-17*R*-usambarensine, U-52
10′-Hydroxytetrahydro-17*S*-usambarensine, U-52
4-Hydroxy-6-(1,7,9,10-tetrahydroxybenz[*g*]isoquinolin-3-yl)-2*H*-pyran-2-one, A-1313
1-Hydroxy-2,3,5,6-tetramethoxyacridone, P-206
4-Hydroxy-1,2,9,10-tetramethoxyaporphine, C-190
9-Hydroxy-1,2,3,10-tetramethoxyaporphine, P-208
1-Hydroxy-2,3,10,11-tetramethoxyaporphine, P-209
1-Hydroxy-2,3,9,10-tetramethoxyaporphine, P-208
11-Hydroxy-1,2,3,10-tetramethoxyaporphine, P-209
2-Hydroxy-1,8,9,10-tetramethoxyaporphine, P-210
3-Hydroxy-1,2,9,10-tetramethoxyaporphine, P-208
1-Hydroxy-2,3,5,6-tetramethoxy-10-methylacridone, P-206
1-Hydroxy-2,3,9,10-tetramethoxynoraporphine, P-208
11-Hydroxy-1,2,3,10-tetramethoxynoraporphine, P-209
3-Hydroxy-1,2,9,10-tetramethoxynoraporphine, P-208
14-Hydroxy-3,4,6,7-tetramethoxyphenanthroindolizidine, I-342
10-Hydroxy-1,4,6,9-tetramethylpyrido[3,2-*g*]quinoline-2,8(1*H*,9*H*)-dione, H-747
11-Hydroxytetrodotoxin, T-298
5-Hydroxythalidasine 2α-*N*-oxide, T-320
5-Hydroxythalidasine, T-320
5′-Hydroxythalifaboramine, T-322
3-Hydroxythalifaboramine, T-322
5-Hydroxythalmine, T-341
16-Hydroxythebaine, T-350
13-Hydroxythermopsine, B-20
2-(4-Hydroxy-2-thiazolyl)-6-benzothiazolol, F-56
syn-6′-Hydroxythiobinupharidine sulfoxide, T-380
syn-6-Hydroxythiobinupharidine sulfoxide, T-380
6′-Hydroxythiobinupharidine, T-380
6-Hydroxythiobinupharidine, T-380
6-Hydroxythionuphlutine B, T-380
3-Hydroxy-13-tigloyloxylupanine, D-605
13-(4-Hydroxytigloyloxy)lupanine, H-554
6-Hydroxy-7-tigloyloxynortropan-3-yl 2-hydroxy-3-phenylpropionate, M-392
5-Hydroxytiliacorinine, Y-5
p-Hydroxy-α-toluic acid, H-672
15α-Hydroxytomatidenol, S-448
15α-Hydroxytomatidine, S-441
7-Hydroxy-2,8-tridecadiene-10,12-diynoic acid, H-748
4-Hydroxy-2-(1*E*-tridecenyl)quinoline, H-750
4-Hydroxy-2-(1*Z*-tridecenyl)quinoline, H-750
3-(1-Hydroxytridecylidene)-1,5-dimethyl-2,4-pyrrolidinedione, M-191
2-(12-Hydroxytridecyl)-3-methoxy-4(1*H*)-quinolinone, H-749
4-Hydroxy-2-tridecylquinoline, H-750
1-Hydroxy-2,3,4-trimethoxyacridone, T-240
1-Hydroxy-3,5,6-trimethoxyacridone, T-243
1-Hydroxy-2,10,11-trimethoxyaporphine, C-682
1-Hydroxy-2,9,10-trimethoxyaporphine, H-751
10-Hydroxy-1,2,9-trimethoxyaporphine, H-752
11-Hydroxy-1,2,10-trimethoxyaporphine, I-208
9-Hydroxy-1,2,10-trimethoxyaporphine, L-75
2-Hydroxy-1,9,10-trimethoxyaporphine, P-597
10-Hydroxy-1,2,11-trimethoxyaporphine, T-248
11-Hydroxy-1,2,3-trimethoxyaporphine, T-245
2-Hydroxy-1,10,11-trimethoxyaporphine, T-248
10-Hydroxy-4,5,6-trimethoxy-9*H*-azuleno[1,2,3-*ij*]isoquinolin-9-one, G-159
10-Hydroxy-O^{17}-(3,4,5-trimethoxybenzoyl)vincamajine, V-113
10-Hydroxy-O^{17}-(3,4,5-trimethoxycinnamoyl)vincamajine, V-113
9-Hydroxy-1,2,3-trimethoxydibenz[*cd*,*f*]indol-4(5*H*)-one, T-255
11-Hydroxy-1,2,10-trimethoxy-7*H*-dibenzo[*de,g*]-quinolin-7-one, G-93
9-Hydroxy-4,5,6-trimethoxyindeno[1,2,3-*ij*]isoquinoline, N-304
1-Hydroxy-2,3,4-trimethoxy-10-methylacridone, T-240
1-Hydroxy-2,3,5-trimethoxy-10-methylacridone, T-241
1-Hydroxy-3,5,6-trimethoxy-10-methylacridone, T-243
2-Hydroxy-3,8,9-trimethoxy-5-methylbenzo[*c*]phenanthridinium(1+), F-5
1-Hydroxy-3,5,6-trimethoxy-10-methyl-4-(3-methyl-2-butenyl)-9(10*H*)-acridinone, P-616
1-Hydroxy-3,5,6-trimethoxy-10-methyl-4-prenylacridone, P-616
3-Hydroxy-2,5′,6-trimethoxy-7′-methylspiro[2,5-cyclohexadiene-1,3′(2′*H*)-quinoline]-2′,4,4′(1′*H*)-trione, A-1469
1-Hydroxy-2,10,11-trimethoxynoraporphine, C-682
1-Hydroxy-2,9,10-trimethoxynoraporphine, H-751
10-Hydroxy-1,2,9-trimethoxynoraporphine, H-752
9-Hydroxy-1,2,10-trimethoxynoraporphine, L-75
2-Hydroxy-1,9,10-trimethoxynoraporphine, P-597
9-Hydroxy-1,2,3-trimethoxynoraporphine, T-244
10-Hydroxy-1,2,11-trimethoxynoraporphine, T-248
11-Hydroxy-1,2,3-trimethoxynoraporphine, T-245
2-Hydroxy-1,10,11-trimethoxynoraporphine, T-248
2-Hydroxy-3,8,9-trimethoxypavinane, A-1410
3-Hydroxy-2,8,9-trimethoxypavinane, A-1410
1-Hydroxy-2,8,9-trimethoxypavinane, P-514
4-Hydroxy-3,6,7-trimethoxyphenanthroindolizidine, I-342
β-Hydroxy-3,4,5-trimethoxyphenethylamine, H-557
2-Hydroxy-4,6,8-trimethoxyquinoline, Q-42
2-Hydroxy-4,7,8-trimethoxyquinoline, Q-43
2-Hydroxy-3,9,10-trimethoxytetrahydroprotoberberine, I-210
2-Hydroxy-*N,N,N*-trimethylethanaminium(1+), C-419
4-Hydroxy-2-(2,4,6-trimethyl-1-heptenyl)quinazoline, T-606
16-Hydroxy-4,4,14-trimethyl-3-methylamino-9,19-cyclopregnan-20-one, C-905
11-Hydroxy-4,8,12-trimethyl-13-(2-methyl-4-thiazolyl)-8,12-tridecadien-3-one, H-469
3-Hydroxy-2,2,4-trimethyl-10-(5-oxazolyl)-4,6,8-decatrienamide, I-161
13-Hydroxy-17,19,20-trinorcrotalanan-11,15-dione, D-363
4-Hydroxy-1′,3,4′-tris(4-hydroxyphenyl)-3′-[2-(4-hydroxyphenyl)ethyl]-7′-(sulfooxy)spiro[furan-2(5*H*),2′(3′*H*)-pyrrolo[2,3-*c*]carbazole]-5,5′(6′*H*)-dione, H-753
3-Hydroxytrisphaeridine, M-448
1-Hydroxytropacocaine, M-390
3-Hydroxytropane-2-carboxylic acid, E-8
3-Hydroxytropane, M-393
1-Hydroxytropane, P-399
6-Hydroxy-3-tropanone, M-391
3-(2-Hydroxytropoyloxy)tropane, M-393
6-Hydroxytrypargine, T-637
5-Hydroxytryptamine, H-755
2-Hydroxytryptamine, H-754
5-Hydroxytryptophol, H-505
11-Hydroxytubotaiwine, T-673
19-Hydroxytubotaiwine, T-673
13*a*-Hydroxytylophorine, T-695
14-Hydroxytylophorine, T-695
Hydroxytyramine, D-920
3-Hydroxytyrosine, A-745
10-Hydroxy-2,4,6,8-undecatetraynoic acid, H-756
4-Hydroxy-2-(1-undecenyl)quinoline, H-757
4-Hydroxy-2-undecylquinoline, H-757
3-Hydroxy-2-undecyl-4(1*H*)-quinolinone, A-621
6-Hydroxyundulatine, C-743
10′-Hydroxyusambarensine, U-52
10-Hydroxyusambarine, O-21
11-Hydroxyusambarine, O-21
16α-Hydroxyuscharin, U-53
17β-Hydroxyuscharin, U-53
O-(3-Hydroxyvalyl)griseoluteic acid, H-514
19-Hydroxyvandrikine, M-666
20-Hydroxyvandrikine, M-666
7-Hydroxyvasicine, V-37
19-Hydroxyvenalstonidine, V-49
19β-Hydroxyvenalstonine, V-49
12β-Hydroxyveramiline, V-73
16-Hydroxyverazine, S-199
25β-Hydroxyverazine, V-73
4β-Hydroxyverazine, V-73
6-Hydroxyvertine, V-95
9-Hydroxyvertine, V-95
11-Hydroxyvincadiffornine, V-111
15β-Hydroxyvincadiffornine, V-111
19-Hydroxyvincamajine, V-113
19-Hydroxyvincamine, V-115
12-Hydroxyvincanine, N-301
10-Hydroxyvincosamide, V-126
10-Hydroxyvincoside lactam, V-126
16β-Hydroxy-19*R*-vindolinine *N*-oxide, V-132
16β-Hydroxy-19*S*-vindolinine *N*-oxide, V-132
16β-Hydroxy-19*R*-vindolinine, V-132
16β-Hydroxy-19*S*-vindolinine, V-132
8-Hydroxy-1-vinyl-β-carboline, H-758
11-Hydroxyvittatine, H-5
3-Hydroxyvoacamine, V-168
19-Hydroxyvoacangine, V-170
3*S*-Hydroxyvoacangine, V-170
3-Hydroxyvoachalotine, V-171
3-Hydroxyvoafrine A, V-176
3-Hydroxyvoafrine B, V-176
19-Hydroxyvoaluteine, V-178
17-Hydroxyvobasan-3-one, A-166
3′-Hydroxyvobtusine, V-188
4-Hydroxywilsonirine, C-190
4′-Hydroxywithasomnine, D-492
2-Hydroxyxanthiazone, X-3
7*S*-Hydroxyxestospongin A, X-24
5-Hydroxyyanangcorinine, Y-5
18-Hydroxyyohimbine (incorr.), D-687

18-Hydroxy-α-yohimbine, D-687
18-Hydroxyyohimbine, D-687
2-Hydroxyzeatin, Z-11
11-Hydroxyzoanthamine, Z-30
26-Hydroxyzoanthamine, Z-30
Hyellazole, M-270
Hyeronimone, A-1325
Hyeronine A, A-1325
Hyeronine B, A-1325
Hygric acid methylbetaine, S-491
Hygrine, H-759
Hygroline, H-760
(±)-Hygroline, H-760
Hygrophylline, P-516
Hylocerenin, B-110
Hymeniacidine, H-761
Hymenialdisine, H-762
(10*E*)-Hymenialdisine, H-762
Hymenidine, O-123
Hymenine, O-66
Hymenocardine, H-763
Hyoscine butyl bromide, S-159
Hyoscine methobromide, S-159
Hyoscine *N*-oxide 1, S-159
Hyoscine, S-159
Hyoscyamide, C-87
Hyoscyamine hydrobromide, T-632
Hyoscyamine *N*-oxide 1, T-632
Hyoscyamine *N*-oxide 2, T-632
Hyoscyamine sulfate, T-632
Hyoscyamine, T-632
Hyosol, S-159
Hypaconine, M-343
Hypaconitine, M-343
Hypaphorine, H-764
Hypecoleptopine, H-765
Hypecorine, H-766
Hypecorinine, H-766
Hypecoumine, H-767
Hypecumine, H-768
Hyperaspine, H-769
Hypercratine, H-770
Hyperectine, H-771
Hypodemapyrazine, H-772
Hypodematine, P-340
Hypoepistephanine, E-102
Hypoestestatin 1, H-773
Hypoestestatin 2, H-773
Hypogallic acid, D-536
Hypoglaunine A, P-249
Hypoglaunine B, P-249
Hypoglaunine C, P-249
Hypoglaunine D, P-249
Hypoglaunine, P-249
Hypognavine, H-179
Hypognavinol, H-179
Hyponine A, P-247
Hyponine B, P-247
Hyponine C, P-247
Hyponine D, P-247
Hyponine E, P-247
Hyponine F, P-247
Hypotaurine, A-764
Hypotaurocyamine, G-203
Hypotaurocyanaminephosphoric acid, G-203
Hypotuberostemonine, H-774
Hypoxanthine riboside, I-148
Hypoxanthine, P-820
Hypoxanthosine, I-148
Hypserpine, H-775
Hyrcamine, C-883
Hyrcanine, H-776
Hyrcanol, S-226
Hyrcanone, H-777
Hyrcatrienine, B-455
Hyrtiazepine, H-778
Hyrtinadine A, H-779
Hyrtioerectine A, H-780
Hyrtioerectine B, T-206
Hyrtioerectine C, H-506
Hyrtiomanzamine, H-781
Hyrtiosin A, H-400
Hyrtiosin B, H-782
Hyrtiosulawesine, P-488
Hyrudonine, H-305
Hysodricanine A, H-783
Hysodricanine B, H-784
Hysodricanine C, H-785
Hystrine, O-40
Hystrixnine, A-166
I 639A, D-769
I 639B, D-769
IA 887, N-180
IAA, I-81
Ianthelline, I-1
Ianthesine A, I-2
Ianthesine B, I-2
Ianthesine C, I-3
Ianthesine D, I-2
IB 01211, M-142
IBA, I-83
Ibogaine, I-4
Ibogaline, I-4
Ibogamine pseudoindoxyl, I-5
Ibogamine, I-4
Iboluteine, I-5
Ibophyllidine N^b-oxide, I-6
Ibophyllidine, I-6
Iboquine, I-7
Ibotenic acid, I-8
Iboxygaine hydroxyindolenine, I-9
Iboxygaine, I-4
Iboxyphylline, I-10
Ibukinamine, M-363
IC 202A, A-1185
IC 202B, A-1186
IC 202C, A-1187
Icaceine, I-11
Icajine *N*-oxide, I-12
Icajine, I-12
Icar, P-961
Ichthyopterin, I-13
ICM 0201, A-1188
2,4-Icosadienoic acid isobutylamide, E-45
2,4-Icosadienoic acid pyrrolidide, T-491
2,4-Icosadienoic acid, E-45
4,5-Icosanediamine, E-47
5,8,11,14-Icosatetraenoic acid, E-48
8,11,14-Icosatrienoic acid, E-52
2,4,14-Icosatrienoic acid, E-50
2,4,16-Icosatrienoic acid, E-51
2,4,8-Icosatrienoic acid, E-49
3-Icosyl-1*H*-pyrrole-2-carboxaldehyde, A-623
Icumazole A, I-14
Icumazole B, I-14
Icumazole F, I-15
Ideamine A *N*-oxide, I-16
Ideamine A, I-16
Ideamine B *N*-oxide, P-97
Ideamine B, P-97
Idiospermuline, I-17
Idrocilamide, H-488
IFB Lactam 1, I-18
Ifflaiamine, I-19
Iforrestine, I-20
Ignavine, H-184
Igzamide, I-21
Iheyamine A, I-22
Iheyamine B, I-23
68-1147-II, A-1082
2880-II, H-651
Ikimine A, I-24
Ikimine B, I-25
Ikimine C, T-358
Ikimine D, I-26
Ilamine *N*-oxide, E-299
Ilamine, E-299
Ileabethoxazole, I-27
Ilepcimide, M-444
ILEVS 1080, J-9
Ilicicolin H, I-28
Ilicifoline, O-202
Ilidine, M-309
Iliensine, M-309
Illudinine, I-29
Illukumbin A, I-30
Illukumbin B, I-30
Illukumbin, I-30
IM 8443T, C-815
Imbiline 1, I-31
Imbiline 2, I-31
Imbiline 3, I-31
Imbricatine, I-32
Imeluteine, I-33
Imenine, I-34
Imerubrine, G-159
1*H*-Imidazol-4-amine, A-826
1*H*-Imidazol-2-amine, A-825
1*H*-Imidazole-1-acetic acid, I-36
1*H*-Imidazole-4(5)-acetic acid, I-37
4-Imidazoleacrylic acid, U-46
3,3′-(1*H*-Imidazole-2,4-diyl)bis[6-bromo-1*H*-indole], N-312
3,3′-(1*H*-Imidazole-2,4-diyl)bis-1*H*-indole, N-312
1*H*-Imidazole-4-ethanamine, H-307
1*H*-Imidazole-4(5)-ethanol, I-38
Imidazole, I-35
1*H*-Imidazole-4(5)-propanoic acid, I-39
2,4-Imidazolidinedione, I-40
2-(4-Imidazolyl)ethanol, I-38
N-(2-Imidazol-4-ylethyl)cinnamamide, C-455
N-[2-(1*H*-Imidazol-4-yl)ethyl]-2,4-decadienamide, H-307
N-[2-(1*H*-Imidazol-4-yl)ethyl]-3-methylbutanamide, H-307
N-[2-(1*H*-Imidazol-4-yl)ethyl]-3-phenyl-2-propenamide, C-455
3-(1*H*-Imidazol-4-yl)-*N*-[2-(1*H*-imidazol-4-yl)ethyl]propanamide, I-43
3-(1*H*-Imidazol-4-yl)-4-(1*H*-indol-3-yl)-1*H*-pyrrole-2,5-dione, D-379
3-(4-Imidazolyl)lactic acid, H-523
4-(1*H*-Imidazol-2-ylmethyl)phenol, H-422
2-[[3-(1*H*-Imidazol-4-yl)-1-oxo-2-propenyl]oxy]-*N*,*N*,*N*-trimethylethanaminium(1+), M-739
3-(1*H*-Imidazol-4-yl)-2-propenoic acid, U-46
5-[[3-(1*H*-Imidazol-4-yl)propenoyl]amino]pentanoic acid, I-41
N^6-[3-(1*H*-Imidazol-4-yl)propenoyl]lysine, I-42
N^{α}-[3-(1*H*-Imidazol-4-yl)propenyl]histamine, I-43
3-(4-Imidazolyl)propionic acid, I-39
2-(1*H*-Imidazol-4-yl)quinoline, I-44
1*H*-Imidazo[4,5-*b*]pyrazin-2-amine, A-829
1*H*-Imidazo[4,5-*a*]pyrrolo[3,4-*c*]carbazole-4,6(5*H*,11*H*)-dione, G-169
Imido, H-307
Iminazole, I-35
2,2′-Iminobisethanol, D-388
2,2′-Iminobis[4-hydroxybenzoic acid], I-45
3,3′-[Iminobis(methylene)]bis-2(3*H*)furanone, I-46
3,3′-Iminobis[5-methyl-2(5*H*)-furanone], P-190
Iminobispropylamine, D-255
22,26-Iminocholesta-5,22(*N*)-dien-3-ol, V-73
22,26-Iminocholest-5-en-3-amine, S-66
22,26-Iminocholest-22(*N*)-ene-3,6-diol, S-201
5,5′-(Iminodi-4-butanyl-1-ylidene)bis[3-methyl-2(5*H*)-furanone], P-65
2,2′-Iminodiethanol, D-388
23,29-Imino-*B*(9*a*)-homo-19-norstigmasta-1(10),7,9(11),23(*N*)-tetraen-3-amine, I-47
23,29-Imino-*B*(9*a*)-homo-19-norstigmasta-1(10),7,23(*N*)-trien-3-amine, I-47
2-Imino-1-imidazolidineacetic acid, A-731
2-Imino-5-(1*H*-indol-3-ylmethylene)-1,3-dimethyl-4-imidazolidinone, A-1357
2-Iminomethyl-3-methyl-6-methylamino-9*H*-purine, I-48
5-Imino-1-methylproline, I-50
5-Imino-1-methyl-2-pyrrolidinecarboxylic acid, I-50
18,20-Imino-19-norpregna-1,3,5(10),14-tetraen-3-ol, D-788
2,5-Imino-1,3,4,6,7-octanepentol, D-665
2-[[Imino(phosphonoamino)methyl]amino]ethanesulfinic acid, G-203
2-Iminopiperidine, I-49
5-Iminoproline, I-50
Iminopropionicacetic acid, C-147

5-Imino-2-pyrrolidinecarboxylic acid, I-50
5-Imino-2*H*-pyrrol-2-ol, I-51
8-Iminosanguinarine, D-510
1,5-Imino-1,5,6-trideoxy-D-glucitol, M-517
2,5-Imino-2,5,6-trideoxyheptitol, H-492
1,5-Imino-1,5,6-trideoxyhexitol, M-517
Iminourea, G-199
Immunosuppressant GT 32B, A-1127
Imperialine *N*-oxide, C-298
Imperialine, C-298
Imperialone, C-298
Impericine, C-297
Imperoline, I-52
Imperonine, I-53
Impranine, I-54
Impulsin, P-38
Inactone, D-765
Inaequidenine, I-55
Inandenin A, I-58
Inandenin B, I-59
Inandenin-10,11-diol, I-56
Inandenin-10-ol, I-56
Inandenin-11-ol, I-57
Inandenin-12-ol, I-58
Inandenin-13-ol, I-59
Inandenin-10-one, I-56
Inandenin-11-one, I-57
Inandenin-12-one, I-58
Inandenin-13-one, I-59
Incanine *N*-oxide, T-488
Incanine, T-488
Incanumine, S-456
Incartine, P-716
Incarvillateine C, I-60
Incarvillateine D, I-60
Incarvillateine E, I-61
Incarvillateine *N*-oxide, I-60
Incarvillateine, I-60
Incarvilline 7-*O*-ferulate, I-62
Incarvilline, I-62
Incarvine A *N*-oxide, I-63
Incarvine A, I-63
Incarvine B, I-62
Incarvine C, I-62
Incarvine D, I-62
Incasine A′, P-673
Incasine A, P-673
Incasine B′, P-665
Incasine B, P-665
Incasine C′, P-665
Incasine C, P-665
Indaconitine, M-336
Indanomycin, I-64
Indeno[1,2,3-*ij*][2,7]naphthyridine, I-65
Indicaine, B-254
Indicainine, B-254
Indicamine, I-66
Indicamine, V-88
Indican, I-104
Indicanthinone, I-105
Indicaxanthin, I-67
Indicine *N*-oxide, I-68
Indicine, I-68
Indicinine, I-69
Indigo blue, I-72
Indigo brown, B-131
Indigo red, I-73
Indigo X, C-77
Indigo, I-72
Indigoidin, I-70
Indigotiisocoumarin A, I-71
Indigotin, I-72
Indirubin, I-73
Indisocin, I-74
Indizoline, I-75
Indobine, I-100
Indobinine, I-100
Indocarbazostatin B, I-76
Indocarbazostatin C, I-76
Indocarbazostatin D, I-76
Indocarbazostatin, I-76
Indocybin, H-480
Indolactam I, I-77
Indolactam V, I-78
1*H*-Indole-3-acetaldehyde, I-80
1*H*-Indole-3-acetamide, I-81
1*H*-Indole-3-acetic acid, I-81
1*H*-Indole-3-acetonitrile, I-81
Agelenopsis aperta Indoleacetylpentamine toxins, I-82
Indoleacryloisonitrile, I-216
Indole-3-alanine, T-640
Indole-3-aldehyde, I-86
1*H*-Indole-3-butanoic acid, I-83
Indole-3-carbinol, I-98
1*H*-Indole-3-carbonitrile *N*-oxide, I-90
1*H*-Indole-3-carbonitrile, I-90
1-(1*H*-Indole-3-carbonyl)-β-carboline-3-carboxylic acid, P-489
1-(1*H*-Indole-3-carbonyl)-β-carboline, P-488
1-(1*H*-Indole-3-carbonyl)-9*H*-pyrido[3,4-*b*]indole, P-488
N-(1*H*-Indole-3-carbonyl)urea, I-84
1*H*-Indole-3-carbothioic acid, I-85
1*H*-Indole-3-carboxaldehyde, I-86
1*H*-Indole-5-carboxaldehyde, I-87
1*H*-Indole-7-carboxaldehyde, I-88
1*H*-Indole-3-carboxamide, I-90
Indole-β-carboxylic acid, I-90
1*H*-Indole-2-carboxylic acid, I-89
1*H*-Indole-3-carboxylic acid, I-90
1*H*-Indole-5,6-diol, I-93
1*H*-Indole-6,7-diol, I-94
1*H*-Indole-2,3-diol, I-91
1*H*-Indole-2,5-diol, I-92
1*H*-Indole-2,3-dione, I-95
1*H*-Indole-3-ethanamine, T-639
1*H*-Indole-3-ethanol, I-96
Indole, I-79
1*H*-Indole-3-methanamine, I-97
1*H*-Indole-7-methanol, I-99
1*H*-Indole-3-methanol, I-98
4-(3-Indolemethyl)-7-isobutyl-1,2,3,5,6-pentathiepane, I-129
3-(3-Indolemethyl)-5-isobutyl-1,2,4-trithiolane, I-130
1*H*-Indole-3-propanamide, I-100
1*H*-Indole-3-propanoic acid, I-100
1*H*-Indole-3-propenoic acid, I-136
2,3-Indolinedione, I-95
2-Indolinone, I-103
Indolizidine 223AB, O-41
Indolizidine 239AB, O-41
Indolizidine 223A, D-394
Indolizidine 203A, O-52
Indolizidine 205A, O-52
Indolizidine 207A, O-52
Indolizidine 243B, A-511
Indolizidine 245B, A-511
Indolizidine 249B, A-509
Indolizidine 253B, A-419
Indolizidine 265B, A-509
Indolizidine 279B, A-509
Indolizidine 195B, B-434
Indolizidine 235B′, H-127
Indolizidine 235B, H-127
Indolizidine 251B, H-127
Indolizidine 167B, O-56
Indolizidine 209B, O-52
Indolizidine 259B, O-51
Indolizidine 243C, A-511
Indolizidine 245C, A-486
Indolizidine 279C, A-509
Indolizidine 239CD, O-41
Indolizidine 275C, H-260
Indolizidine 243D, A-486
Indolizidine 279D, A-487
Indolizidine 209D, H-264
Indolizidine 233D, H-127
Indolizidine 237D, H-127
Indolizidine 241F, A-511
Indolizidine 251F′, A-509
Indolizidine 251F, A-509
Indolizidine 235H, A-509
Indolizidine 249H, E-240
Indolizidine 209I, O-44
Indolizidine 251J, A-509
Indolizidine 223J, B-443
Indolizidine 267J, E-263
Indolizidine 237L, B-430
Indolizidine 251M, E-263
Indolizidine 223V, B-437
Indolizomycin, I-101
Indolmycin, I-102
Indolo[2,3-*a*]carbazole, D-464
1*H*-Indol-3-ol, I-104
1*H*-Indol-2-ol, I-103
3*H*-Indolo[3,2,1-*de*][1,5]naphthyridine-2,6-dione, I-105
6*H*-Indolo[3,2,1-*de*][1,5]naphthyridin-6-one, C-90
3*H*-Indol-3-one, I-106
7*H*-Indolo[3,2-*j*]phenanthridine-7,13(12*H*)-dione, I-107
Indolopyridocoline, I-113
Indolo[2,1-*b*]quinazoline-6,12-dione, I-108
10*H*-Indolo[3,2-*b*]quinoline-11-carboxylic acid, I-111
Indolo[3,2-*b*]quinoline, I-109
Indolo[3,2-*c*]quinoline, I-110
Indolo[2,3-*b*]quinoline, Q-19
10*H*-Indolo[3,2-*b*]quinolin-9-ol, I-112
5*H*,10*H*-Indolo[3,2-*b*]quinolin-11-one, D-505
5*H*,6*H*-Indolo[2,3-*b*]quinolin-11-one, D-506
Indoloquinolizidine-4-carboxylic acid, O-49
Indoloquinolizidine, O-48
Indolo[2,3-*a*]quinolizine, I-113
Indolo[3,2,1-*ij*]quino[4,5-*bc*][1,5]naphthyridine, I-114
3-Indolyl gentiobioside, I-104
3-Indolyl methyl ketone, A-59
β-Indolylacetaldehyde, I-80
3-Indolylacetic acid, I-81
3-Indolylacetyl-D-arabinitol, A-110
8-(1*H*-Indol-3-ylacetyl)falcarindiol, H-116
1*H*-Indol-3-ylacetyl-*myo*-inositol, I-115
3-(3-Indolyl)acrylamide, I-136
3-(3-Indolyl)acrylic acid, I-136
3-Indolylalanine, T-640
4-(1*H*-Indol-3-yl)-1,2,3-butanetriol, I-116
4-(1*H*-Indol-3-yl)-3-buten-2-one, I-117
4-(1*H*-Indol-6-yl)-3-buten-2-one, I-118
4-Indol-3-ylbutyric acid, I-83
1-(3-Indolyl)-β-carboline, I-119
N^{α}-(1*H*-Indol-3-ylcarbonyl)arginine, I-120
N^{α}-(1*H*-Indol-3-ylcarbonyl)histidine, I-121
1-(1*H*-Indol-3-ylcarbonyl)-9*H*-pyrido[3,4-*b*]indole-3-carboxylic acid, P-489
2-(3-Indolyl)ethanol, I-96
1-(1*H*-Indol-3-yl)ethanone, A-59
2-(1*H*-Indol-3-yl)ethenamine, D-172
N-[2-(1*H*-Indol-3-yl)ethenyl]formamide, D-172
2-(3-Indolyl)ethyl phenylacetate, I-96
2-(3-Indolyl)ethylamine, T-639
N-[2-(1*H*-Indol-3-yl)ethyl]benzamide, T-639
N-[2-(1*H*-Indol-3-yl)ethyl]docosanamide, T-639
3-Indolylethylene oxide, O-165
N-[2-(1*H*-Indol-3-yl)ethyl]-2-(methylamino)benzamide, T-639
5-[1-(1*H*-Indol-3-yl)ethyl]-2-(methylamino)-4(5*H*)-oxazolone, I-102
N-[2-(1*H*-Indol-3-yl)ethyl]-3-methyl-2-oxopentanamide, T-639
3-[2-(1*H*-Indol-3-yl)ethyl]-1-methyl-2,4(1*H*,3*H*)-quinazolinedione, G-144
3-(3-Indolyl)glycerol, I-135
2-(3-Indolyl)glyoxylic acid, O-182
4-(1*H*-Indol-3-yl)-1*H*-imidazole-2,5-dione, Z-39
5-(1*H*-Indol-3-yl)-2,4-imidazolidinedione, Z-39
β-1*H*-Indol-3-yl-1*H*-indole-3-ethyl acetate, S-564
4-(3-Indolyl)-2-(3-indolylcarbonyl)imidazole, T-432
3-(1*H*-Indol-3-yl)-*N*-[2-(1*H*-indol-3-yl)ethenyl]-2-propenamide, C-421
1*H*-Indol-3-yl[4-(1*H*-indol-3-yl)-1*H*-imidazol-2-yl]-methanone, T-432
5-(3-Indolyl)-2-isobutyloxazole, A-622
3-(3-Indolyl)lactic acid, H-539
5-(1*H*-Indol-3-yl)-5-methoxy-2,4-imidazolidinedione, P-542

1-(1*H*-Indol-3-yl)-2-methoxy-5-methyl-3-hexanone, S-101
8-(1*H*-Indol-3-yl)-2-methoxy-6-methyl-1,4-naphthalenedione, M-750
4-(1*H*-Indol-3-yl)-4-methoxy-5-thioxo-2-imidazolidinone, Z-39
S-(1*H*-Indol-3-ylmethyl) allylthiocarbamate, B-374
3-Indolylmethyl glucosinolate, I-122
S-(1*H*-Indol-3-ylmethyl) 2-propenylthiocarbamate, B-374
3-Indolylmethylamine, I-97
1-(1*H*-Indol-3-yl)-3-methyl-2,3-butanediol, T-25
2-(1*H*-Indol-3-yl)-3-methyl-1,3-butanediol, T-24
1-(1*H*-Indol-7-yl)-3-methyl-1,2,3-butanetriol, I-123
4-(3-Indolyl)-2-methylbutanoic acid, I-124
4-(3-Indolyl)-2-methyl-1-butanol, I-124
1-(1*H*-Indol-3-yl)-3-methyl-2-buten-1-one, I-125
1-(1*H*-Indol-7-yl)-3-methyl-2-buten-1-one, M-414
N-(1*H*-Indol-3-ylmethyl)-*N*,*N*-dimethyl-1*H*-indole-3-methanaminium, B-190
3-(1*H*-Indol-3-yl)-2-methyl-*N*,*N*-dimethylpropanamide, H-539
5-β-Indolylmethyl-8*N*-(*N*,*N*-dimethylvalyl)-9-isopropylphencyclopeptine, A-690
6-(1*H*-Indol-3-yl)-5-methyl-3,5-heptadien-2-one, I-126
2-*C*-(1*H*-Indol-3-ylmethyl)-3-hexulofuranosonic acid γ-lactone, A-1461
2-(1*H*-Indol-3-ylmethyl)-1*H*-indole-3-acetic acid, I-127
2-[(1*H*-Indol-3-yl)methyl]-1*H*-indole-3-carboxaldehyde, M-65
N-(1*H*-Indol-3-ylmethyl)-5-methoxy-*N*-methyl-1*H*-indole-3-ethanamine, I-128
N^b-(3-Indolylmethyl)-5-methoxy-N^b-methyltryptamine, I-128
N-[7-(1*H*-Indol-3-ylmethyl)-3-(1-methylethyl)-5,8-dioxo-2-oxa-6,9-diazabicyclo[10.2.2]hexadeca-10,12,14,15-tetraen-4-yl]-3-methyl-2-(methylamino)butanamide, A-690
4-(3-Indolylmethyl)-7-(2-methylpropyl)-1,2,3,5,6-pentathiepane, I-129
3-(3-Indolylmethyl)-5-(2-methylpropyl)-1,2,4-trithiolane, I-130
5-(3-Indolyl)-2-methyloxazole, A-622
3-(3-Indolyl)-*N*-methylpropanamide, I-100
3-(1*H*-Indol-3-yl)-2-methylpropanoic acid, I-131
7-(1*H*-Indol-3-ylmethyl)quinazolino[3,2-*d*][1,4]benzodiazepine-6,9(5*H*,7*H*)-dione, A-1480
4-(1*H*-Indol-3-ylmethyl)-2,2,6-trimethyl-3-azabicyclo[3.3.1]non-6-ene, H-310
5-(3-Indolyl)oxazole, O-157
N-[2-(1*H*-Indol-3-yl)-2-oxoethyl]acetamide, I-132
3-(1*H*-Indol-3-yl)-2-oxopropanoic acid, I-133
5-(1*H*-Indol-3-yl)-3-penten-2-one, I-134
5-(3-Indolyl)-2-pentyloxazole, A-622
1-(1*H*-Indol-3-yl)-1,2,3-propanetriol, I-135
2-(3-Indolyl)propanoyl-D-arabinitol, A-109
3-(1*H*-Indol-3-yl)-2-propenamide, I-136
3-(1*H*-Indol-3-yl)-2-propenoic acid, I-136
N^a-[3-(1*H*-Indol-3-yl)propenoyl]tryptophan, I-137
3-(3-Indolyl)propionic acid, I-100
5-(3-Indolyl)-2-propyloxazole, A-622
1-(1*H*-Indol-3-yl)-9*H*-pyrido[3,4-*b*]indole, I-119
3-(3-Indolyl)pyruvic acid, I-133
3-(1*H*-Indol-3-yl)quinoline, I-138
3-[4-(1*H*-Indol-3-yl)-2,3,5,6-tetramethoxyphenyl]-7-(3-methyl-2-butenyl)-1*H*-indole, A-1519
2-(3-Indolyl)thiazole, T-372
5-(1*H*-Indol-3-yl)-2(3*H*)-thiazolethione, I-139
2-(3-Indolyl)-6-(3,4,5-trimethoxyphenyl)morpholine, C-361
2-(1*H*-Indol-3-yl)-*N*,*N*,*N*-trimethylethenaminium, D-172
2-(3-Indolyl)vinyl isocyanide, I-216
Indoxyl, I-104
Inflatine, L-219
Infractine, C-134
Infractopicrine, I-140
Infumorph, M-704
Ingamine A, I-141
Ingamine B, I-141
Ingenamine B, I-143
Ingenamine C acetate, I-143
Ingenamine D, I-144
Ingenamine E, I-145
Ingenamine F, I-145
Ingenamine G, I-146
Ingenamine, I-142
Ingol, I-147
Innovanamine, D-632
Inosie, I-148
Inosine, I-148
Insulamine, I-149
Insulanoline, I-150
Insularine 2β-*N*-oxide, I-150
Insularine 2′β-*N*-oxide, I-150
Insularine, I-150
Insularoline, I-150
Insulopinine, I-151
Intebrimine, S-234
Intebrine, I-152
Intebrinine, I-153
Integerrenine, I-154
Integerressine, I-155
Integerrimine *N*-oxide, S-238
Integerrimine, S-238
Integerrine, I-156
Integramine, I-157
Integramycin, I-158
Integriamide, I-159
Integriquinolone, Q-46
Interacton, T-366
Intermedine, I-160
Inthomycin A, I-161
Inthomycin B, I-161
Inthomycin C, I-161
Inthomycin, I-161
Intropin, D-920
Inuline, M-309
Inundatine, L-335
Involucratine, I-162
Iodanthine, B-401
Iodinine, P-321
Iodoacetamide, I-163
Iodoacetic acid, I-163
Iodoacetonitrile, I-163
Iodoacetyl chloride, I-163
(Iodomethyl)trimethylammonium(1+), I-164
1-Iodo-*N*,*N*,*N*-trimethylmethanaminium, I-164
Iolantamine, J-43
Iolantidine, K-36
Iolantimine, J-44
Iolantine, J-43
Iolantinine, J-45
Ipaconitine, M-343
IPA, I-100
Ipalbidine, I-165
Ipalbidinium, I-170
Ipalbine, I-165
Ipanguline A_1, I-166
Ipanguline A_2, I-166
Ipanguline A_3, I-166
Ipanguline A_4, I-166
Ipanguline B_1, I-166
Ipanguline B_2, I-166
Ipanguline B_3, I-166
Ipanguline C_1, I-166
Ipanguline C_2, I-166
Ipanguline C_3, I-166
Ipanguline C_4, I-166
Ipanguline D_6, H-233
Ipanguline D_7, H-233
Ipanguline D_{10}, I-166
Ipanguline D_{14}, I-166
Ipanguline D_{15}, I-166
Ipanguline D_3, I-166
Ipanguline D_5, I-166
Ipanguline D_9, I-166
Ipecine, E-72
Ipecoside, I-167
Ipecosidic acid, I-167
Iperphos, G-108
Ipobscurine A, H-755
Ipobscurine B, I-168
Ipobscurine C, I-169
Ipobscurine D, I-169
Ipohardine, I-170
Ipomine A, P-341
Ipomine, I-165
2iP, Z-11
Ircinal A, I-174
Ircinal B, I-175
Ircinamine B, I-172
Ircinamine, I-171
Irciniastatin A, I-173
Irciniastatin B, I-173
Irciniasulfonic acid A_1, H-594
Irciniasulfonic acid A_2, H-594
Irciniasulfonic acid A_3, H-594
Irciniasulfonic acid B_1, H-594
Irciniasulfonic acid B_2, H-594
Ircinol A, I-174
Ircinol B, I-175
Irehamine, A-886
Irehdiamine A, P-606
Irehdiamine B, P-606
Irehdiamine C, P-606
Irehdiamine F, P-606
Irehdiamine I, P-606
Irehine, A-886
Irehline, C-610
Irenine, I-176
Iresinin I, B-110
Iresinin II, B-110
Iresinin III, B-110
Iresinin IV, B-110
Irnidine, I-178
Irnigaine, I-177
Irniine, I-178
Iromycin A, I-179
Iromycin B, I-179
Iromycin C, I-180
Iromycin D, I-180
Isaindigotidione, I-181
Isaindigotone, I-182
Isalexin, H-532
Isariotin A, D-98
Isariotin B, D-98
Isariotin C, D-98
Isariotin D, D-98
Isatan A, I-104
Isatan B, I-104
Isatan C, I-91
Isatidine, R-62
Isatin, I-95
Isatinone A, I-183
Isatinone B, I-184
Isatisine A, I-185
Isatogen, I-106
Isatropylditropein, B-56
Iseluxine, I-305
Isendryl, C-835
Ishaematinic acid, I-239
Ismine, I-186
Isoaaptamine, A-2
Isoabsouline *N*-oxide, A-906
Isoabsouline, A-906
Isoaconitine, M-336
Isoadlumiceine, B-120
Isoagleptine, L-115
3-Isoajmalicine, A-212
Isoajmaline, A-216
Isoalamarine, A-235
Isoalangimarine, A-235
Isoalangiside, A-239
Isoalatol, H-249
Isoalchorneine, I-187
Isoalfileramine, I-188
Isoalloxazine adenine dinucleotide, F-79
Isoalloxazine, A-632
Isoalschomine, A-640
Isoalstonisine, A-654
Isoamaranthin, B-110
Isoamarantin, B-110
Isoaminobisabolenol a, A-710
Isoaminobisabolenol b, A-710

Isoammodendrine, A-930
Isoampullicin, A-951
Isoamuronine, C-781
N-Isoamylacetamide, M-420
Isoamylamine, M-420
Isoanagyrine, T-363
Isoanantine, I-189
Isoancistrocladine, A-982
Isoandrocymbine, A-1005
Isoanguivine, S-456
Isoangustifoline, A-1013
Isoanhalamine, T-236
Isoanhalidine, T-236
Isoanhalonidine, T-237
Isoanthirine, A-1328
Isoantirhine, A-1328
3-Isoantirhine, A-1328
α-Isoaphylline, A-1337
Isoapocavidine, C-222
Isoaquiledine, I-190
Isoaristolochic acid, M-262
Isoarnottianamide, A-1446
Isoasterriquinone SU 5220, I-191
Isoasterriquinone, I-191
Isoatisine, I-192
Isoautumnaline, A-1558
Isoazitine, A-1609
Isobackebergine, I-303
Isobaimonidine, C-298
Isobalfourodine, R-92
Isobastadin 4, B-32
Isobatzelline A, I-193
Isobatzelline B, I-193
Isobatzelline C, I-193
Isobatzelline D, I-193
Isobatzelline E, I-193
Isobebeerine, C-835
Isobellendine, I-194
Isobengamide E, I-195
Isobetanidin 6-(2^G-glucosylrutinoside), B-110
Isobetanidin rhamnosophoroside, B-110
Isobetanidin, B-110
Isobetanin, B-110
Isobisdehydrostemocochinine, P-670
Isobisdehydrostemoninine, S-521
Isobisdehydrotuberostemonine, T-664
Isoboldine *N*-oxide, I-196
Isoboldine, I-196
Isobonafousine, I-197
Isoborrerine, M-521
Isoborreverine, I-198
Isobougainvillein r-I, B-110
Isobougainvillein r-II, B-110
Isobrafouedine, I-199
Isobromodeoxytopsentin, T-432
Isobromotopsentin, T-432
Isobrucine *N*-oxide, P-672
Isobrucine, P-672
Isobubbialine, B-375
Isobulbocapnine, N-25
Isobungeanool, T-129
3-Isobutanoyloxy-6-(3,4,5-trimethoxy-*cis*-cinnamoyloxy)nortropane, A-1584
1-Isobutenyl-β-carboline, M-521
Isobutyl pidolate, O-206
Isobutylacetic acid, M-505
Isobutylamine, M-525
N-Isobutyl-2,4-decadienamide, D-106
N-Isobutyl-6,8-decadienamide, D-105
N-Isobutyl-2,4,8-decatrienamide, D-123
N-Isobutyl-2,6,8-decatrienamide, D-124
N-Isobutyl-4,5-dihydroxy-2-decenamide, D-566
N-Isobutyl-3,4-dimethoxybenzamide, D-706
3-Isobutyl-2,5-dimethylpyrazine, D-757
N-Isobutyl-2,8-dodecadienamide, D-884
N-Isobutyl-2,4-dodecadiene-8,10-diynamide, D-882
N-Isobutyl-2,6,8,10-dodecatetraenamide, D-893
N-Isobutyl-2,4-eicosadienamide, E-45
N-Isobutyl-2,4,14-eicosatrienamide, E-50
N-Isobutyl-2,4,8-eicosatrienamide, E-49
N-Isobutyl-2,4-hexadecadienamide, H-216
N-Isobutylidenemethylamine, M-383
2-Isobutyl-5-isopropyl-1*H*-imidazole, I-280
2-Isobutyl-5-isopropylpyrazine, I-282
3-Isobutyl-6-isopropyl-2(1*H*)-pyrazinone, M-462
N-Isobutyl-3-methoxy-4,5-methylenedioxycinnamide, T-578
5-Isobutyl-3-methoxy-2-methylpyrazine, M-268
N-Isobutyl-6-*p*-methoxyphenylsorbamide, P-466
2-Isobutyl-3-methoxypyrazine, M-273
2-Isobutyl-4-methyl-2,4-azetidinedicarboxylic acid, M-482
N-Isobutyl-3,4-methylenedioxycinnamide, M-457
N-Isobutyl-15-(3,4-methylenedioxyphenyl)-2,4,12-pentadecatrienamide, B-265
N-Isobutyl-15-(3,4-methylenedioxyphenyl)-2,4,13-pentadecatrienamide, B-265
N-Isobutyl-15-(3,4-methylenedioxyphenyl)-2,4,14-pentadecatrienamide, B-265
N-Isobutyl-5-(3,4-methylenedioxyphenyl)-2-pentenamide, P-462
N-Isobutyl-5-(3,4-methylenedioxyphenyl)-4-pentenamide, P-462
2-Isobutyl-3-methylpyrazine, M-483
3-Isobutyl-1-methylxanthine, X-5
N-Isobutyl-2,4-octadecadienamide, O-29
N-Isobutyl-2,4,12-octadecatrienamide, O-33
N-Isobutyl-2,4-octadienamide, O-39
N-Isobutylotanthusic acid amide, O-133
N-Isobutyl-12-oxo-2,4,8,10-dodecatetraenamide, O-176
N-Isobutyl-8-oxo-2,4-tetradecadienamide, O-211
N-Isobutyl-12-oxo-2,4,8-tetradecatrienamide, O-212
3-[(7-Isobutyl-1,2,3,5,6-pentathiepan-4-yl)methyl]indole, I-129
N-Isobutyl-16-phenyl-2,4-hexadecadienamide, P-345
2-Isobutyl-5-phenyl-1*H*-imidazole, M-528
3-Isobutylpiperidine, M-530
2-Isobutyl-3-(4-prenyloxyphenyl)maleimide, H-684
Isobutylpropylamine, M-525
N-Isobutyl-2,4,8,10,12-tetradecapentaenamide, T-127
N-Isobutyl-2,4,10,12-tetradecatetraen-8-ynamide, T-130
N-Isobutyl-2,4,12-tetradecatriene-8,10-diynamide, A-968
2-Isobutylthiazole, M-533
N-Isobutyl-7-tridecene-10,12-diynamide, T-505
N-Isobutyl-3,4,5-trimethoxycinnamide, T-578
3-[(5-Isobutyl-1,2,4-trithiolan-3-yl)methyl]indole, I-130
Isobutyropyrrothine, A-759
Isobutyropyrrothine, I-200
6-Isobutyrylamino-4,5-dihydro-4-methyl-1,2-dithiolo[4,3-*b*]pyrrole, I-200
N-Isobutyrylbaleabuxaline F, B-11
N-Isobutyrylbaleabuxidienine F, B-466
Isobutyrylbaleabuxidine F, B-12
N-Isobutyrylbuxahyrcanine, B-451
N-Isobutyrylbuxidienine F, B-466
N^3-Isobutyrylcycloxobuxidine F, B-12
3-*N*-Isobutyrylcycloxobuxidine H, B-12
N^3-Isobutyrylcycloxobuxine F, C-920
N-Isobutyryl-*N*-depropionyldecorticasine, L-234
14-Isobutyryldictyocarpine, M-307
2-Isobutyryl-14-hydroxyhetisine, H-189
7-Isobutyrylintermedine, I-160
7-Isobutyryllycopsamine, I-160
14-Isobutyrylnudicaulidine, M-321
13-Isobutyryloxylupanine, H-554
3-Isobutyryloxynortropan-7-ol, A-1585
3-Isobutyryloxytropan-6-ol, M-391
N-Isobutyrylpyrrothine, A-759
Isocaboxine A, C-1
Isocaboxine B, C-1
Isocadamine, C-6
Isocalycanthine, T-139
Isocalycinine, D-846
Isocalyciphylline B, C-45
Isocantleyine, C-92
Isocaproic acid, M-505
Isocapsicastrine, S-200
Isocarapanaubine, C-117
6-Isocarnavaline, C-183
Isocaryachine *N*-oxide B, E-220
Isocaryachine *N*-oxide, E-220
(+)-Isocaryachine *N*-oxide, E-220
Isocaryachine, E-220
6-Isocassine, C-183
Isocastoramine, D-227
Isocelosianin I, B-110
Isocelosianin II, B-110
Isocephaeline, E-72
Isocephalotaxine, I-201
Isocephalotaxinone, I-201
Isochaetoglobosin D, C-327
Isochaetoglobosin J, C-328
Isochaksine, I-202
Isochalciporone, C-340
Isochanoclavine I, C-348
Isochavicine, P-467
Isochelidonine, I-203
Isochondocurarine, I-204
Isochondodendrine, C-835
Isochromophilone IX, I-205
Isochromophilone VI, I-205
Isochrysohermidin, I-206
Isochrysotricine, C-433
Isocimicifugamide, H-566
Isocinchophyllamine, C-448
Isocinevanine, H-554
Isococamine, T-635
Isococcolinine, E-202
Isococculidine, I-207
Isococculine, I-207
Isococlaurine, H-275
Isocodonocarpine, C-4
Isoconessimine, C-595
Isocorcovadine, P-462
Isocoreximine, X-30
3-Isocorreantine A, C-659
Isocorybulbine, C-675
Isocorydine *N*-oxide, I-208
Isocorydine, I-208
9-*O*-(8-Isocorydinyl)-*N*-methyllaurotetanine, D-149
Isocorydione, S-367
Isocorymine, I-209
3-Isocorynantheidine, C-689
Isocorynoline, C-692
Isocorynoxeine, R-90
Isocorynoxine, R-90
Isocorypalline, T-158
Isocorypalmine α-*N*-oxide, I-210
Isocorypalmine β-*N*-oxide, I-210
Isocorypalmine, I-210
Isocorytuberine, T-248
Isocrambescidin 800, C-717
Isocrambescidin 657, N-115
Isocraugsodine, C-730
Isocreatonotine *N*-oxide, T-188
Isocrocandine, C-764
Isocromadurine, F-168
Isocrotsparinine, A-957
Isocryprochine, I-211
Isocryptolepine, I-110
Isocuauchichicine, G-25
Isoculantraramine, C-803
Isocuricycleatjenine, C-811
Isocuricycleatjine, C-811
7-Isocyanato-2,10-bisaboladiene, I-212
7-Isocyanato-7,8-dihydro-α-bisabolene, I-212
11-Isocyanato-5-eudesmene, F-129
20-Isocyanato-7-isocyanoadociane, D-698
7-Isocyanato-20-isocyanoisocycloamphilectane, D-698
20-Isocyanato-7-isocyanoisocycloamphilectane, D-698
10α-Isocyanoalloaromadendrane, A-1571
1-Isocyanoaromadendrane, A-1447
3-Isocyano-8,10-bisaboladiene, A-709
7-Isocyano-2,10-bisaboladiene, I-214
3-Isocyano-7,9-bisaboladiene, I-213
8-Isocyano-1(12)-cycloamphilectene, I-215

7-Isocyano-7,8-dihydro-α-bisabolene, I-214
3-(2-Isocyanoethenyl)-1*H*-indole, I-216
4-(2-Isocyanoethenyl)phenol, H-680
4-Isocyano-11-eudesmene, A-775
5-Isocyano-6-eudesmene, I-217
6-Isocyano-4(15)-eudesmene, I-218
4-Isocyano-11-gorgonene, A-777
20-Isocyano-7-isothiocyanatoisocycloamphilectane, D-698
4-Isocyanomaaliane, I-219
3-(2-Isocyano-5-methyl-1,3,5-hexatrienyl)-1-methyl-1*H*-indole, B-281
4-Isocyano-3′-methylspiro[6-oxabicyclo[3.1.0]hex-3-ene-2,2′-oxirane], I-255
9-Isocyanoneopupukeanane, I-220
3-(4-Isocyano-6-oxabicyclo[3.1.0]hex-3-en-1-yl)-2-propenoic acid, I-256
3-Isocyano-3,7,11,15-tetramethyl-1,6,10,14-hexadecatetraene, I-221
3-Isocyanotheonellin, I-213
Isocycleaneonine, C-834
Isocycleanine, S-148
Isocyclocapitelline, C-433
Isocyclocelabenzine, I-222
Isocycloheximide, D-765
Isocycloneosamandaridine, I-223
Isocynodine, I-224
Isocynometrine, I-224
Isocytidine, A-823
Isocytosine, A-823
Isodaphnilactone B, D-53
Isodarlingianine, D-74
6-Isodaucene 14-isonitrile, I-225
6-Isodaucene 14-isothiocyanate, I-225
Isodaurisoline, D-88
Isodeacetylretuline, R-63
Isodecarine, C-356
Isodecyl 5-hydroxyanthranilate, A-789
Isodelectine, M-309
Isodelpheline, M-321
Isodelphinine, M-313
Isodendril, C-835
Isodictamnine, F-224
Isodihydrocadambine, I-226
3β-Isodihydrocadambine, I-226
Isodihydrochanoclavine I, C-348
Isodihydrocyclomicrophylline A, C-883
Isodihydrohistrionicotoxin, H-309
Isodihydropiperlonguminine, P-462
C-Isodihydrotoxiferine I, I-227
Isodiplamine, D-823
Isodolichantoside, S-583
Isodomesticine, N-29
Isodomoic acid A, I-228
Isodomoic acid B, I-228
Isodomoic acid C, I-228
Isodomoic acid D, D-912
Isodomoic acid E, D-912
Isodomoic acid F, D-912
Isodomoic acid G, I-229
Isodomoic acid H, I-229
Isodrosopterin, D-941
Isodysidenin, D-972
Isoebeiedine, C-290
Isoeburnamine, E-6
Δ^{14}-Isoeburnamine, E-6
(-)-Isoeburnamine, E-6
Isoechinatine, E-12
Isoechinulin A, I-230
Isoechinulin B, I-230
Isoechinulin C, I-230
Isoelacomine, E-53
Isoelaeocarpicine, I-231
Isoelaeocarpiline, E-55
Isoelaiocarpine, E-56
Isoelegantissine, M-50
Isoeleocarpine, E-56
Isoeleutherobin A, E-64
D-Isoephedrine sulfate, M-386
Isoephedrine, M-386
3-Iso-19-epicathenamine, C-207
Isoergine, L-370
Isoerysopinophorine, E-201
Isoerythreine, E-210
Isoesculeogenin A, S-444
25-Isoetioline, S-199
Isoeudistomin U, I-119
Isoevonine, P-252
Isofagaridine, C-356
Iso-γ-fagarine, F-213
Isofangchinoline, I-328
Isofebrifugine, I-232
Isofedrol, M-386
Isoferuloylcholine, C-419
N-cis-Isoferuloylglutamic acid, G-107
N-trans-Isoferuloylglutamic acid, G-107
N-trans-Isoferuloyl-3-*O*-methyldopamine, H-566
Isoficine, I-233
Isofiliformine, T-315
Isofistularin 3, F-70
Isoflavipucine, I-234
Isoflindersiamine, F-217
Isoflustramine D, I-235
Isoformosanine, M-661
Iso-*N*-formylchonemorphine, P-601
Isofoveoglin, P-878
Isofugapavine, L-72
Isofumigaclavine A, F-181
Isofumigaclavine B, F-181
Isofuntumidine, A-880
Isogagaminine, P-610
Isogambirdine, M-661
Isogambirine, C-689
Isogarryfoline, G-25
Isogeissoschizol, G-33
Isogentialutine, I-236
Isogermidine, G-70
Isogilletine *N*-oxide, C-552
Isogomphrenin I, B-110
Isogomphrenin II, B-110
Isogomphrenin III, B-110
Isogranulatimide, I-237
Isogravacridonechlorine, R-167
Isoguanine, A-818
Isoguattouregidine, G-215
Isoguvacine, T-222
Isohalichondramide, H-15
Isohaplopine prenyl ether, F-223
Isohaplopine, F-223
Isoharmine, H-591
Isoharringtonic acid, I-238
Isoharringtonine, I-238
Isohematinic acid, I-239
Isohemsleyanidine, M-306
Isohemsleyanisine (incorr.), M-306
Isoherbavine, M-50
Isohexanoic acid, M-505
Isohobartine, H-310
Isohydrastidine, H-394
Isohylocerenin, B-110
Isohyperectine, H-771
Isohypognavine, H-203
Isohypognavinol, H-203
Isoimerubrine, G-159
Isoindigo, B-131
Isoindigotin, B-131
1*H*-Isoindole-1,3(2*H*)-dione, P-383
Isoinundatine, L-335
Isoipanguline A_1, I-166
Isoipanguline A_2, I-166
Isoipanguline A_3, I-166
Isoipanguline B_1, I-166
Isoipanguline B_2, I-166
Isoipanguline C_1, I-166
Isoipanguline C_2, I-166
Isoipanguline D_{10}, I-166
Isoipanguline D_3, I-166
Isoipanguline D_5, I-166
Isoipomine, I-165
Isoiresinin I, B-110
Isojacpaniculine, J-5
Isojuliprosine, J-57
Isojulocrotol, J-58
Isojuripidine, A-909
Isojuripine, A-909
Isojurubidine, S-458
Δ^5-Isojurubidine, S-458
3α-Δ^5-Isojurubidine, S-458
Isokibdelone A, I-240
Isokibdelone B, I-240
Isokibdelone C, I-240
Isokomarovine, Q-53
Isokuraramine, K-108
23-Isokuroyurinidine, K-114
Isolapidilectine A, L-43
Isolappaconitine, A-90
Isolaureline *N*-oxide, A-1066
(+)-Isolaureline, A-1066
(-)-Isolaureline, A-1066
Isolaurifoline, G-25
Isolauryl 5-hydroxyanthranilate, A-789
Isoleontalbine, I-241
Isoleontine, A-628
Isoleurosine, V-110
Isoliensinine, N-87
Isoline, B-194
Isolobelanine, L-218
Isolobinanidine, L-221
Isolobinine, L-221
Isolonganone, L-244
Isolongistrobine, D-160
Isolucidinine, L-278
α-Isolupanine, I-242
11-Isolupanine, I-242
Isolupinine, E-95
Isolycodoline, L-325
Isolycopodine, L-328
Isolycopsamine, H-93
Isolysergamide, L-370
Isolysergic acid amide, L-370
Isolysergic acid α-hydroxyethylamide, L-370
Isolysergic acid methylcarbinolamide, L-370
Isolysergic acid, L-370
Isolysergol, L-371
Isomacrorine, I-44
Isomaculine, F-221
Isomaculosidine, F-222
Isomahanimbine, M-46
Isomahanine, M-46
Isomaistemonine, M-49
Isomajdine, M-50
Isomalindine-16-carboxylate, I-243
Isomalindine, M-73
Isomallotusin, M-135
Isomammilarinin, B-110
Isomaruquine, M-661
Isomatrine, I-244
Isomeridine, M-206
Isometeloidine, M-392
Isomethuenine, M-293
Iso-18-*O*-methylchaenorpine, C-318
Isomigrastatin, I-245
Isomitomycin A, I-246
Isomitrafoline, R-134
Isomitraphyllic acid β-D-glucopyranosyl ester, M-661
Isomitraphyllic acid, M-661
Isomitraphylline *N*-oxide, M-661
Isomitraphylline, M-661
Isomitraphyllinol, I-247
Isomonodoroindole, I-248
Isomoschatoline, M-712
Isomurralonginol acetate, I-249
Isomurralonginol isovalerate, I-249
Isomurralonginol nicotinate, I-249
Isomurralonginol, I-249
Isomurrayafoline B, E-275
Isomurrayazoline, I-250
Isonaamidine A, I-251
Isonaamidine B, I-251
Isonaamidine C, I-251
Isonaamidine D, I-251
Isonaamidine E, I-251
Isonaamine A, I-252
Isonaamine B, I-253
Isonaamine C, I-252
Isonargenicin A1, I-254
Isoneolaugerine, N-122
Isoneostemocochinine, N-140

Isonicoteine, B-145
Isonicotinic acid, P-898
Isonitramine, N-241
Isonitrarine, N-246
Isonitrin A, I-255
Isonitrinic acid E, I-256
Isonorargemonine, A-1410
Isonortehaunine, I-307
Isonorweberine, T-276
Isonoyaine, I-257
Isoobscurinine, I-258
Isoochotensine, O-16
Isooconovine, P-209
Isooncinotine, I-259
Isooncodine, D-625
Isoorensine, A-138
Isooridine, O-109
Isoorientalinone, O-112
Isooxodesmosine, I-260
Isooxyskytanthine, H-733
Isopachycereine, T-233
Isopalauamine, S-611
Isopalythazine, I-261
Isopaniculidine, A-910
Isoparaxanthine, X-5
Isoparfumine, F-174
Isopauridianthoside, P-135
3-Isopaynantheine, G-13
Isopeduncularine, P-162
Isopeganidine, P-164
Isopelletierine, P-173
Isopellotine, T-237
Isopenangine, M-577
Isopenniclavine, S-273
Isopentanoic acid, M-409
N^{ω}-Isopentanoylhistamine, H-307
N^{6}-Isopentenyladenine, Z-11
N-Isopentenyldendrobine, D-210
N-Isopentenyldendroxine, D-216
O-Isopentenylhalfordinol, H-12
5-Isopentenylisatin, M-415
6-Isopentenylisatin, M-416
N-Isopentenyllaburninic acid, A-1065
7-Isopentenyloxy-γ-fagarine, F-223
9-Isopentenylpaxilline, P-618
N-Isopentylacetamide, M-420
Isopentylamine, M-420
2-Isopentyl-7-azaindole, M-422
3-Isopentyl-2,5-dimethylpyrazine, D-754
N-Isopentyl-3,4-methylenedioxycinnamide, M-457
Isopentylpropylamine, M-420
Isoperiphylline, P-265
Isoperlolyrine, I-262
Isophakellistatin 3, P-303
Isophellibilidine, I-263
Isophellibiline, P-315
Isophomazarin, I-264
Isophorbol, P-225
Isophyllocactin II, B-110
Isophyllocactin, B-110
Isophysostigmine, I-265
Isopiline, T-521
(+)-Isopiline, T-521
Isopilosine, P-428
22-Isopimpifolidine, D-99
Isopiperine, P-467
Isopiperlonguminine, P-462
Isopiperolein B, I-266
Isopiscerythramine, I-267
Isoplatydesmine, I-268
Isoplectrodorine, P-517
Isoplysin A, A-1357
Isopolyalthenol, I-269
Isoporoidine, A-1597
2-Isopropenyl-5-isopropylpyrazine, I-270
2-Isopropenyl-6-isopropylpyrazine, I-271
Isopropylacetic acid, M-409
11-Isopropylcryptolepine, I-279
2-Isopropyl-3,5-dimethoxy-6-methylpyrazine, I-272
N^{5}-Isopropylglutamine, G-108
2-Isopropyl-10-methoxybenzimidazo[6,7,1-*def*][1,6]naphthyridine, I-273
6-Isopropyl-3-(4-methoxybenzyl)-4-methyl-2,5-morpholinedione, I-274
2-Isopropyl-3-methoxy-5-(1-methylpropyl)pyrazine, I-275
2-Isopropyl-3-methoxy-5-(2-methylpropyl)pyrazine, I-276
3-Isopropyl-2-methoxy-5-methylpyrazine, I-277
2-Isopropyl-3-methoxypyrazine, H-545
2-Isopropyl-5-methoxypyrazine, H-546
2-Isopropyl-6-methoxypyrazine, H-547
3-Isopropyl-2-methoxypyrido[2,3-*b*]pyrazine, I-278
11-Isopropyl-5-methyl-5*H*-indolo[3,2-*b*]quinoline, I-279
5-Isopropyl-2-(2-methylpropyl)-1*H*-imidazole, I-280
2-Isopropyl-5-(1-methylpropyl)pyrazine, I-281
2-Isopropyl-5-(2-methylpropyl)pyrazine, I-282
2-Isopropyl-5-methylpyrazine, I-283
2-Isopropyl-6-methylpyrazine, I-284
1-Isopropyl-3-methylpyrrolidine, M-544
11-Isopropyl-5-methyl-5*H*-quindoline, I-279
N-Isopropyl-*N*′-[6-(methylthio)hexyl]urea, D-828
N-Isopropylnornicotine, P-957
Isopropylpyrazine, I-285
5-Isopropyl-2-pyrazinol, H-546
6-Isopropyl-2-pyrazinol, H-547
3-Isopropyl-2-pyrazinol, H-545
Isoprosopinine A, I-286
Isoprosopinine B, I-287
Isoprostephabyssine, P-658
Isoprotostemonine, P-670
Isopsychotridine A, I-288
Isopsychotridine B, I-288
Isopsychotridine C, I-288
Isopsychotridine E, I-289
Isopsylloborine A, P-749
Isopteleflorine, I-290
Isoptelefolidine, D-715
Isoptelefoline, P-625
Isoptelefolonium, D-720
Isopteleine, F-211
Isopteleprenine, D-715
Isopterophorine, P-770
Isopteropodic acid, M-661
Isopteropodine *N*-oxide, M-661
Isopteropodine, M-661
Isoptilocaulin, I-291
Isopuloupone, P-789
Isopumiliotoxin A, A-416
Isopycnarrhine, D-421
Isopyoverdin Pp BTP 1, I-292
Isopyoverdin Pp CFML 90-33, I-293
Isopyoverdin Pp CFML 90-44, I-294
Isopyroine, I-295
Isopyrrolnitrin, P-961
Isopyruthaldine, I-296
Isopyruthaline, I-297
Isopythaldine, I-298
Isopythaline, I-299
Isoquinocycline A, I-300
Isoquinocycline B, I-300
7,8-Isoquinolinediol, I-303
6,7-Isoquinolinediol, I-302
Isoquinoline, I-301
1,5,6,7-Isoquinolinetetrol, I-304
5,6,7-Isoquinolinetriol, I-307
1,6,7-Isoquinolinetriol, I-305
1,6,8-Isoquinolinetriol, I-306
1-(8-Isoquinolinylmethyl)pyridinium(1+), I-308
Isorauhimbine, Y-13
Isorauhimbinic acid, Y-13
Isoraumacline, R-22
Isoraunescine, D-687
3-Isorauniticine pseudoindoxyl, T-289
3-Isorauniticine, A-212
Isoraunitidine, R-53
Isorauwolscine, Y-13
Isoregecoline, R-37
Isoregelinone, R-38
Isoremerine, R-120
Isoreserpiline oxindole A, C-117
Isoreserpiline oxindole B, C-117
Isoreserpiline pseudoindoxyl stereoisomer 1, T-289
Isoreserpiline pseudoindoxyl stereoisomer 2, T-289
Isoreserpiline, R-51
3-Isoreserpine, R-52
3-Isoreserpinine, R-53
Isoretrohoustine, T-188
Isoretronecanol, H-629
(±)-Isoretronecanol, H-629
(+)-Isoretronecanol, H-629
Isoretronecanolic acid, P-960
Isoretronecyl *trans*-β-methylthioacrylate, P-510
Isoretronecyl tiglate, H-629
Isoretulinal, R-63
Isoretuline, R-63
Isorhazicine, I-309
Isorheagenine, R-86
Isorhoeadine, R-86
Isorhoeagenine, R-86
Isorhynchophyllic acid, R-90
Isorhynchophylline *N*-oxide, R-90
Isorhynchophylline, R-90
Isorhyncophyllic acid, R-90
Isorhyncophylline *N*-oxide, R-90
Isorhyncophylline, R-90
Isorobustiline, F-143
Isoroemerialinone, O-112
Isoroemerine, R-120
Isorosibiline, R-131
Isorosmarinine, R-133
Isorotundifoleine, R-134
Isorotundifoline, R-134
Isorubijervine, I-310
Isorubijervosine, I-310
12*E*-Isorumbrin, R-160
Isosalsolidine, D-627
Isosalsoline, T-181
Isosalsolinol, T-163
Isosalviamine A, I-311
Isosalviamine B, I-312
Isosandwicine, A-216
Isosaracodine, P-601
Isosaraine 1, S-69
Isosaraine 2, S-70
Isosaraine 3, S-71
Isosarcodine, P-601
Isosarcotrine E, S-83
Isosarcotrine F, S-84
Isosaxorumamide, S-112
Isoschizogaline, I-313
Isoschizogamine, I-313
Isoschumanniophytine, I-314
Isoscoulerine, I-315
Isosegoline A, I-316
Isoselagine, H-375
Isosenaetnine, S-232
Isosendaverine, S-234
Isosenkirkine, S-245
Isosepiapterin, S-246
Isosetoclavine, S-273
Isosevanine, I-317
Isosinoacutine, S-39
Isosinococuline, S-311
Isosinomenine, I-318
(16*R*)-Isositsirikine (4*S*)-*N*-oxide, I-319
(16*S*)-Isositsirikine (4*S*)-*N*-oxide, I-319
Isositsirikine, I-319
19*Z*-Isositsirikine, I-319
(16*S*)-Isositsirikine, I-319
Isosolacapine, S-336
20-Isosolafloridine, S-338
25-Isosolafloridine, S-338
Isosolanogantamine, A-908
Isosolaseaforthine, S-351
Isosolasonine, S-456
Isosolasuaveoline, S-456
Isosolenopsin A, M-584
Isosophoramine, S-376
Isosophoridine, I-320
Isosorelline, S-383
Isosparsomycin, S-384
α-Isosparteine, I-321
β-Isosparteine, I-322
Isospeciofoline, R-134
Isospecionoxeine, R-134

Isospeciophylline, M-661
6-Isospectaline, S-388
Isospiropachysine, S-436
Isosplendine, S-594
Isosplendoline, S-605
Isostemofoline, S-515
Isostemonamide, S-517
Isostemonamine, S-518
Isostemonidine, I-323
Isostemonine, I-324
Isostemotinine, S-524
Isostenine, S-528
Isostephaboline, M-233
Isostephodeline, I-325
Isostrychnine I, P-672
Isostrychnine N^b-oxide, P-672
Isostrychnine, P-672
Isostrychnobiline, S-591
Isostrychnofoline, S-595
Isostrychnopentamine A, S-601
Isostrychnopentamine B, I-326
Isostrychnophylline, S-602
Isostrychnosplendine, S-605
Isosuccinimide β-D-glucoside, D-460
Isosuccinimide, D-460
Isosungucine, S-642
Isotachin A, M-577
Isotachin B, M-577
Isotachin C, M-577
Isotaifine, I-327
Isotalatizidine, M-352
Isotazettine, P-626
Isotazettinol, T-53
Isotecleoxine, F-221
Isoteinemine galactoside, S-200
Isoteinemine, S-200
Isotembetarine, C-728
Isotenucaulin A, A-716
Isotenuipine, T-81
Isoterihanine, N-239
Isotetrahydrohistrionicotoxin, H-309
Isotetrandrine *N*-2′-oxide, I-328
Isotetrandrine, I-328
1-Isothalicberine, I-329
Isothalicberine, I-329
Isothalicrine, I-330
Isothalictrine, I-331
Isothalidezine, H-148
Isothaliphine, T-331
Isothalirine, I-332
Isothalisopavine, I-333
Isothalmidine, I-334
Isothapsakin B, T-349
Isothapsakone A, I-335
Isothebaidine, T-525
Isothebaine *N*-oxide, T-525
Isothebaine, T-525
8*H*-Isothiazolo[5,4-*b*]indole, I-336
10α-Isothiocyanatoalloaromadendrane, A-1571
1-Isothiocyanatoaromadendrane, A-1447
7-Isothiocyanato-2,10-bisaboladiene, I-214
11-Isothiocyanato-5-eudesmene, F-129
6-Isothiocyanato-4(15)-eudesmene, I-218
4-Isothiocyanato-11-gorgonene, A-777
4-Isothiocyanatomaaliane, E-100
3-Isothiocyanato-4-methoxy-1*H*-indole, I-337
3-Isothiocyanato-4-methoxy-1*H*-indol-5-ol, H-548
Isothomandersine, T-195
Isotiliarine, T-406
Isotinctorine, T-412
Isotriglochinin, T-515
Isotrikentrin B, I-338
Isotrilobine 2-*N*-oxide, I-339
Isotrilobine, I-339
Isotriphyophylline, D-793
Isotripiperideine, I-340
δ-Isotropylcocaine, T-635
γ-Isotropylcocaine, T-634
Isotryptoquivaline, T-645
Isotuberostemonine, I-341
Isotuboflavine, N-302
Isotubulosine, T-675
Isotussilagine, H-231
Isotussilaginic acid, H-231
Isotussilaginine, H-231
Isotylocrebrine *N*-oxide, I-342
(10*S*)-Isotylocrebrine *N*-oxide, I-342
(10*S*,13*aR*)-Isotylocrebrine *N*-oxide, I-342
Isotylocrebrine, I-342
Isoundecyl 5-hydroxyanthranilate, A-789
Isoursuline, D-626
Isouvariopsine, I-343
Isovaleramide, M-409
Isovaleric acid, M-409
7-Isovaleroylintermedine, I-160
7-Isovaleroyllycopsamine, I-160
13-Isovaleroyloxylupanine, H-554
6-Isovaleroyloxytropan-3-ol, M-391
9-(3′-Isovaleroyl)viridiflorylretronecine, I-160
N-Isovaleryl-*N*-depropionyldecorticasine, L-234
7-Isovaleryloxy-3-tigloyloxytropan-6-ol, M-392
Isovallesiachotamine, V-10
Isovanillobiocin, V-18
Isovenenatine, V-50
20-Isoveratramine, V-71
Isoverbamedine, P-673
Isoverbamekrine, P-665
Isoverbamethine, P-665
Isoverbametrine, P-665
Isoverbasikrine, P-673
Isoverbasitrine, P-673
Isoverticine β-*N*-oxide, C-298
Isoverticine, C-298
Isovincoside, S-583
Isovoacangine, I-344
Isovoacristine, I-344
Isovoacryptine, I-344
Isovoafolidine, V-175
Isovoafoline, V-175
Isovorin, F-121
Isowilfordine, P-250
Isowilfortrine, P-249
Isowillardiine, I-345
Isoxantholumazine, P-763
Isoxanthopterin, A-751
Isoxanthopterincarboxylic acid, A-752
4-Isoxazolecarbonitrile, I-346
4-Isoxazolecarboxylic acid, I-346
3-Isoxazolidinone, I-347
3-Isoxazolidone, I-347
2-Isoxazolin-5-one, I-349
β-(Isoxazolin-5-on-2-yl)alanine, A-850
3-(Isoxazolin-5-on-4-yl)alanine, A-733
4-Isoxazolol, I-348
5-Isoxazolol, I-349
5(4*H*)-Isoxazolone, I-349
5(2*H*)-Isoxazolone, I-349
4(5*H*)-Isoxazolone, I-348
Isoyohimbine, Y-13
Istanbulamine, P-684
IT 143A, P-421
IT 143B, P-421
IT 143C, P-421
IT 143D, P-421
Itampolin A, I-350
Itampolin B, I-350
Itomanindole A, D-304
Itomanindole B, D-304
Ivin, D-775
Ivonine, I-351
Ivorine, C-178
Iwamide, A-1446
Izmirine, C-790
Iznikine, H-366
J 104303, A-1393
Jaborandine, J-1
Jacobine, J-2
Jacodine, S-240
Jacoline, J-3
Jaconine, J-4
Jacozine, J-2
Jacpaniculine, J-5
Jaculadine, J-6
Jacularine, A-498
Jadiffine, J-7
Jadomycin A, J-9
Jadomycin Ala, J-10
Jadomycin B, J-9
Jadomycin F, J-11
Jadomycin S, J-12
Jadomycin T, J-13
Jadomycin V, J-8
Jafrine, J-14
Jaluenine, H-183
Jamaicamide A, J-15
Jamaicamide B, J-15
Jamaicamide C, J-15
Jamaicensine, A-1013
Jamaidine, H-554
Jamine, J-16
Jamtine *N*-oxide, J-17
Jamtine, J-17
Jamtinine, J-17
Janetine, G-211
Janolusimide, J-18
Janoxepin, J-19
Janthitrem A, J-20
Janthitrem B, J-21
Janthitrem C, J-21
Janthitrem E, J-21
Janthitrem F, J-21
Janthitrem G, J-21
Janussine A, J-22
Janussine B, J-22
Japaconitine A, M-331
Japaconitine B, M-331
Japaconitine B_1, M-343
Japaconitine C, M-343
Japaconitine C_1, M-343
Japindine, J-23
Japonine, D-716
Jasminidine, J-24
Jasminiflorine, F-163
Jasminine, J-25
N-Jasmonoyl DOPA, A-745
N-Jasmonoyldopamine, D-920
N-Jasmonoylleucine, L-153
N-Jasmonoyltyramine, H-667
Jaspamide B, J-26
Jaspamide C, J-26
Jaspamide D, J-26
Jaspamide E, J-26
Jaspamide F, J-26
Jaspamide G, J-26
Jaspamide, J-26
Jaspisamide A, H-15
Jaspisamide B, H-15
Jaspisamide C, H-15
Jasplakinolide, J-26
Jateorhizine, P-34
6(17),11-Jatrophadiene-2,3,5,7,8,9,14,15-octol, J-27
Jatropham 5-(6-*p*-coumaroylglucoside), D-449
Jatropham, D-449
Jatrophine, D-449
Jatrorrhizine, P-34
Jatrorrhizrubine, P-34
Jatrorubine, P-34
Javaberine A, D-541
Javaberine B, D-540
Javacarboline, J-28
Javanicunine A, J-29
Javanicunine B, J-29
Javanine, J-30
Javaniside, J-31
Javaphylline, J-32
Jaxartinine, J-33
JBIR-02, P-421
Jenamidine A, J-34
Jenamidine B, J-34
Jenamidine C, J-34
Jerusalemine, J-35
Jervine, J-36
Jervin-11β-ol, J-36
Jervin-11-one, J-36
Jervinone, J-36
Jesaconine, M-331
Jesaconitine, M-331
Jhelumine, J-37

Jietacin A, J-38
Jietacin B, J-39
Jilkon, G-3
Jineol, Q-34
Jingsimycin, J-40
Jiufengdine, M-309
Jiufengisine, J-41
Jiufengsine, J-41
Jiufengtine, M-309
JM 971A, T-699
JM 971B, T-699
JM 971C, T-699
Joalin, J-42
Jobertine, C-115
Johnsonine, R-46
Joint, H-715
Jolantamine, J-43
Jolantidine, K-36
Jolantimine, J-44
Jolantine, J-43
Jolantinine, J-45
Jollyanine, C-658
Jollyanine, F-18
Jonctum, H-715
Jonquilline, L-348
Joramine, J-46
Jordanine, J-47
Jorumycin, J-48
Jorunnamycin A, R-41
Jorunnamycin B, R-41
Jorunnamycin C, R-41
Joscina, S-159
Josephinine, A-670
Joubertiamine, J-49
Joubertinamine, J-50
JSTX-1, N-182
JSTX-2, N-183
JSTX-3, N-165
JSTX-4, N-184
Jubanine A, J-51
Jubanine B, J-52
Jubanine C, J-53
Jubanine D, P-27
Julandine, J-54
Julibrine II, P-923
Julibrine I, P-923
Julifloricine, J-56
Julifloridine, J-55
Juliflorine, J-56
Juliflorinine, J-56
Juliprosine, J-57
Juliprosinene, J-57
Juliprosopine, J-56
Julocrotine, J-58
Julocrotol, J-58
Julocrotone, J-58
Junceine, T-488
Junosidine, J-59
Junosine, T-580
Juripidine, A-909
Jurubidine, S-458
Jurubine, J-60
Jusbetonin, I-112
Jussiaeiine A, J-61
Jussiaeiine B, M-79
Jussiaeiine C, M-79
Jussiaeiine D, M-79
Justiciamide, J-62
Juziphine *N*-oxide, J-63
Juziphine, J-63
Juzirine, H-424
Jynosine, D-221
K 252a, A-1189
K 82A, L-78
K 16A, M-76
K 252b, A-1189
K 73, C-901
K 252c, A-1190
K 252d, A-1190
K 93-0711-I_1, M-34
K 93-0711-I_2, M-34
K 117, N-180
Kabiramide A, K-2
Kabiramide B, K-2
Kabiramide C, K-2
Kabiramide D, K-2
Kabiramide E, K-2
Kabiramide F, K-2
Kabiramide G, K-2
Kabiramide H, K-3
Kabiramide I, K-1
Kafamycin, C-13
Kahakamide A, N-138
Kahakamide B, N-138
Kainic acid, K-4
α-Kainic acid, K-4
α-Kaininic acid, K-4
Kaitocephalin, K-5
Kalashine, K-39
Kalasinamide, K-6
Kalbreclasine, N-37
Kalbretorine, H-290
Kalidine, C-119
Kalkitoxin, K-7
Kamaline, D-531
Kamassine, Q-6
Kanagawamicin, K-8
Kanchanomycin, A-244
Kapakahine A, K-9
Kapakahine B, K-10
Kapakahine C, K-11
Kapakahine D, K-11
Kapakahine E, K-12
Kapakahine F, K-10
Kapakahine G, K-13
Kaptax, B-79
Karachicine, K-14
Karachine, K-15
Karacolidine, M-349
Karacoline, M-355
Karaconitine, M-330
Karakanine, G-152
Karakin, G-104
Karakolidine, M-349
Karakoline, M-355
Karakomine, N-30
Karakoramine, K-16
Karantonin, G-3
Karasamine, M-355
Karnamicin A_3, A-1315
Karnamicin A_1, K-17
Karnamicin A_2, K-18
Karnamicin B_1, K-17
Karnamicin B_2, K-17
Karnamicin B_3, K-18
Karnamicin C_1, K-17
Karnamicin C_2, K-19
Karnamicin C_3, K-20
Karnamicin C_4, K-20
Karnamicin C_5, K-17
Karnamicin D_1, A-1315
Karnamicin D_2, K-21
Karnamicin D_3, K-20
Karnamicin D_4, K-21
Karounidiol, M-730
Kashmirine, C-298
Katine, A-869
Katsuyama base I, H-163
Kauluamine, K-22
Kayawongine, K-23
K01-0509B, G-185
KC 7367A, M-85
KC 7367B, M-85
Kealiinine A, K-24
Kealiinine B, K-24
Kealiinine C, K-24
Kealiiquinone, K-25
Keayanidine A, S-398
Keayanidine B, S-398
Keayanidine C, S-398
Keayanine A, S-399
Kedarcidin, K-26
Keenamide A, K-27
Keitaoine, K-28
Keitine, K-28
Kelfer, D-632
Kemamide O, O-37
Kemamide S, O-32
Kenidine, G-81
Kenigicine, G-81
Kenigine, G-81
Kenimbidine, G-81
Kenimbine, G-81
Kenine, G-81
Kephrine, A-736
Keramadine, K-29
Keramamide B, K-30
Keramamide D, K-31
Keramamide E, K-32
Keramamide F, K-33
Keramamide G, K-33
Keramamide H, K-34
Keramamide J, K-34
Keramamide K, K-34
Keramamide M, K-31
Keramamide N, K-32
Keramamine A, M-91
Keramamine B, M-91
Keramamine C, M-93
Keramaphidin B, I-142
Keramaphidin C, A-1598
Keronopsin A_1, K-35
Keronopsin A_2, K-35
Keronopsin B_1, K-35
Keronopsin B_2, K-35
Kesselridine, K-36
Kesselringine, K-36
3-Ketoadociaquinone B, A-147
14-Ketoalstonidine, A-650
Ketoanhydrokinamycin, K-37
16-Ketoaspergillimide, A-1486
1-Ketodelphisine, M-323
11-Ketofistularin 3, F-70
Ketogaze, A-736
α-Keto-δ-guanidinovaleric acid, G-207
Ketole (obsol.), I-79
α-Keto-γ-methyleneglutamic acid, M-459
31-Keto-12,34-oxa-32,33-dihydroircinal A, K-38
4-Ketopipecolic acid, O-196
3-Ketopropyl-19*R*-heyneanine, O-199
Ketotetrahydronorharmine, T-226
KF 8940, H-133
KG 431A, A-1191
KG 431B, I-100
Khaochamide, P-780
Khaplofoline, H-56
Khasianine, S-456
Khyberine, K-39
Kibataline, P-93
20-*epi*-Kibataline, P-93
Kibdelone A rhamnoside, K-40
Kibdelone A, K-40
Kibdelone B rhamnoside, K-40
Kibdelone B, K-40
Kibdelone C rhamnoside, K-40
Kibdelone C, K-40
Kifunensine, K-41
Kigamicin A, K-42
Kigamicin B, K-42
Kigamicin C, K-42
Kigamicin D, K-42
Kigamicin E, K-42
Kigamicinone, K-42
Kikemanine, C-677
Kikumycin A, K-43
Kikumycin B, K-43
Killarytoxin 3, A-1600
Kimbasine A, K-44
Kimbasine B, K-44
Kimorexin A, K-45
Kimvuline, I-4
Kinabaline, T-564
Kinabalurine A, I-62
Kinabalurine B, I-62
Kinabalurine C, I-62
Kinabalurine D, I-62
Kinabalurine E, I-62
Kinabalurine F, I-62
Kinabalurine G, H-734

Kinganone, D-447
Kiridine, K-46
Kirigamycin C, K-47
Kirilowin A, G-104
Kirilowin B, G-104
Kirilowin G, G-104
Kirimine, A-89
Kirinine A, L-105
Kirinine B, K-48
Kirinine C, L-105
Kiritine, D-187
Kirkine, P-528
Kirondrine, K-49
Kisantamine, A-811
Kisantine, K-50
Kisantine, K-51
Kitagine, K-52
Kitraline, V-124
Kitramine, V-124
Klugine, E-72
Knightalbinol, H-428
Knightinol, H-429
Knightolamine, H-428
Knightoline, B-95
Kobusine, H-167
Kobutimycin A, K-53
Kobutimycin B, K-54
Kodein, C-555
Kodocytochalasin 1, Z-37
Kodocytochalasin 2, Z-37
Koenidine, G-81
Koenigicine, G-81
Koenigine, G-81
Koeniginequinone A, K-55
Koeniginequinone B, K-55
Koenimbidine, G-81
Koenimbine, G-81
Koenine, G-81
Koenoline, H-603
Kohatamine, K-56
Kohatine, K-56
Kojistatin A, C-936
Kokusagine, F-223
Kokusaginine, F-221
Kokusaginoline, K-57
Kolkamin, D-92
Komarine, K-58
Komaroidine, T-219
Komaroine, K-59
Komarovicine, Q-55
Komarovidine, Q-55
Komarovidinine N^3-oxide, I-114
Komarovidinine, I-114
Komarovine, Q-55
Komarovinine, Q-54
Komavicine, K-60
Komavine, K-61
Konbamidin, K-62
Konbuacidin A, P-18
Konbuacidin B, P-18
Kondurangamine A, P-603
Kondurangamine B, P-603
Kongboenine, M-312
Kongboensine, M-355
Kongboentine A, K-63
Kongboentine B, M-323
Koniamborine, K-64
Kopsamidine A, K-74
Kopsamidine B, K-78
Kopsamine N^4-oxide, K-74
Kopsamine, K-74
Kopsan-10,22-dione, D-805
Kopsan-22-ol, K-65
Kopsanol, K-65
Kopsan-22-one, K-65
Kopsanone, K-65
Kopsaporine, K-66
Kopsidasine N^4-oxide, K-67
Kopsidasine, K-67
Kopsidasinine, K-68
Kopsidine A, S-309
Kopsidine B, S-309
Kopsidine C, S-309
Kopsidine D, S-309
Kopsifine, K-69
Kopsiflorine N^4-oxide, K-74
Kopsiflorine, K-74
Kopsifoline A, K-70
Kopsifoline B, K-70
Kopsifoline C, K-70
Kopsifoline D, K-70
Kopsifoline E, K-70
Kopsifoline F, K-70
Kopsijasmine, K-71
Kopsijasminilam, K-72
Δ^{14}-Kopsijasminilam, K-72
Kopsijasminine, K-71
Kopsilactone, K-73
Kopsilongine N^4-oxide, K-74
Kopsilongine, K-74
Kopsiloscine A, K-66
Kopsiloscine B, K-66
Kopsiloscine C, K-66
Kopsiloscine D, K-66
Kopsiloscine E, K-66
Kopsiloscine F, K-66
Kopsiloscine H, K-66
Kopsiloscine I, K-66
Kopsiloscine J, V-49
Kopsimaline A, K-66
Kopsimaline B, K-66
Kopsimaline C, K-66
Kopsimaline D, K-66
Kopsimaline E, K-66
Kopsinaline, K-74
Kopsinarine, K-75
Kopsine, K-76
Kopsinganol, K-66
Kopsingarine, K-66
Kopsingine, K-66
Kopsinginine, K-66
Kopsinginol, K-80
Kopsinic acid methosalt, K-78
Kopsinicine, K-66
Kopsinidine A, K-77
Kopsinidine B, K-76
Kopsinilamine, K-78
Kopsinilam, K-78
Kopsinine, K-78
$\Delta^{16,17}$-Kopsinine, K-71
$\Delta^{14,15}$-Kopsinine, V-49
Kopsinitarine A, K-79
Kopsinitarine B, K-79
Kopsinitarine C, K-79
Kopsinitarine D, K-79
Kopsinitarine E, K-79
Kopsinoline, K-78
Kopsinol, K-66
Kopsinone, K-80
Kopsirachin, K-81
Kopsoffine, P-521
Kopsoffinol, P-521
Kopsofinone, K-66
Kopsone, K-82
Kopsonoline, K-80
Kopsorinine, D-805
Kordiline, C-303
Kororamide, K-83
Korormicin A, K-84
Korormicin B, K-85
Korormicin C, K-86
Korormicin D, K-87
Korselidine, C-298
Korselimine, C-304
Korsemine, K-88
Korseveramine, C-295
Korseveridine, C-307
Korseveridinine, C-307
Korseveriline, C-295
Korseverilinone, C-295
Korseverine, C-302
Korseverinine, C-302
Korsevine, K-88
Korsevinine, K-89
Korsidine, C-302
Korsiline, H-483
Korsinamine, C-311
Korsine *N*-oxide, C-311
Korsine, C-311
Korsinine, C-302
Korundamine A, K-90
Korupensamine A, K-91
Korupensamine B, K-91
Korupensamine C, K-91
Korupensamine D, K-91
Korupensamine E, K-91
KOS 862, E-117
Kosinostatin, I-300
Kottamide A, K-92
Kottamide B, K-92
Kottamide C, K-92
Kottamide D, K-93
Kottamide E, K-94
Koumicine, K-95
Koumidine, T-425
Koumine *N*-oxide, K-96
Koumine, K-96
Kouminidine, K-97
19*R*-Kouminol, K-96
19*S*-Kouminol, K-96
KR 025, M-807
Krelagine, K-98
Krepowine, C-748
Kreysigine *N*-oxide, P-221
(±)-Kreysigine, P-221
(+)-Kreysigine, P-221
(-)-Kreysigine, P-221
Kreysiginine, K-99
Kreysiginone, K-100
Kribine, K-101
Krigeine, K-102
Krigenamine, K-102
Krokiflorine, C-766
Krokiflorinine, C-766
Kromantine, A-1490
Krukovine, P-301
Kryptocurine, K-103
KSB 1939H3, M-607
KSB 193944, M-607
KSK, I-163
KSM 2690B, O-155
KSM 2690C, O-155
KT 5720, A-1189
Kuafumine, K-104
Kuanoniamine A, P-920
Kuanoniamine B, D-93
Kuanoniamine C, D-93
Kuanoniamine D, D-93
Kuanoniamine E, D-93
Kuanoniamine F, D-93
Kuchinoenamine, K-105
Kukoamine A, S-399
Kukoamine B, S-399
Kukoline, S-313
Kumokirine, P-39
Kumujancine, H-456
Kumujanrine, C-134
Kumujansine B, K-106
Kumujansine, K-106
Kumujantine, K-106
Kumujian A, C-132
Kumujian C, C-131
Kumujian G, D-686
Kupitengester 1, P-220
Kupitengester 3, P-218
Kupitengester 2, T-259
Kupitengester 4, T-259
Kuramerine, K-107
Kuraramine, K-108
Kurasoin B, H-538
Kurchaline, A-873
Kurchamide, K-109
Kurchamine, P-606
Kurchenine, K-110
α-Kurchessine, P-606
Kurchessine, P-606
Kurchicine, K-111
Kurchilidine, K-112
Kurchiline, A-814

Kurchimine, P-606
Kurchine, C-595
Kurchinidine, H-314
Kurchinine, H-322
Kurchiphyllamine, A-813
Kurchiphylline, A-813
Kurcholessine, K-113
Kuroyurinidine, K-114
Kurramine 2′-α-*N*-oxide, K-115
Kurramine 2′-β-*N*-oxide, K-115
Kurramine, K-115
Kutzneride 1, K-116
Kutzneride 2, K-116
Kutzneride 3, K-116
Kutzneride 4, K-116
Kutzneride 5, K-116
Kutzneride 6, K-116
Kutzneride 7, K-116
Kutzneride 8, K-116
Kutzneride 9, K-116
Kuvan, T-142
Kwangsine, K-117
K_3-Ye, P-327
Kynuramine, A-700
Kynurenic acid, H-725
Kyoberin, B-101
Kyocristine, V-128
L 11-1, A-1192
L 13365, A-1193
L 654040, A-1194
L 681176, A-1195
L 696475, A-1196
L 697318, A-1196
L 755807, A-1197
L 970843, A-1198
L 970844, A-1198
L 52-71A, A-1304
L 657398, B-89
L 52-71B, A-1304
L 892-4, C-837
L 954967, N-269
L 156586, O-131
L 156587, O-131
L 156588, O-131
L 746628, P-584
L 37231, V-128
L 696474, Z-37
Labiatamide A, L-1
Labiatamide B, L-1
Labradorin 1, A-622
Labradorin 2, A-622
Labrandine, M-650
Labuanine A, L-2
Laburnamine, A-906
Laburnine acetate, H-629
Laburnine benzoate, H-629
Laburnine tiglate, H-629
Laburnine, H-629
Laburnoic acid, P-960
Laccaic acid A, L-3
Laccaic acid A_1, L-3
Laccaic acid E, L-3
Laccarin A, L-4
Laccarin, L-4
Lachnanthopyridone, L-5
Lachnophyllic acid, D-129
Lactacystin, L-6
β-Lactam activator F2, B-402
Lactaric acid, O-32
Lactimide, D-769
Lactimidomycin, L-7
Lactivicin, L-8
Lactonamycin Z, L-9
Lactonamycin, L-9
6-Lactoyl-7,8-dihydropterin, S-246
Laetanine, L-195
Laetine, L-10
Laetrile, H-673
Laevisine A, P-247
Laevisine B, P-252
Lagerine, L-11
Lagerstremine, V-88
Lagerstroemine, V-88
Lagumicine, A-228
Lagumidine, C-589
Lagunamine, T-673
Lagunamycin, L-12
Lahadinine A, L-13
Lahadinine B, L-14
Lahoramine, L-15
Lahoricine, L-16
Lahorine, L-17
Lajollamycin, L-18
Lakshminine, L-19
Lallemancine, L-20
Lamarckine, L-21
Lamarckinine, A-101
Lamarckinine, L-22
Lamarkine, L-21
Lambertine, L-23
Lamellarin A, L-24
Lamellarin B 20-sulfate, L-24
Lamellarin B, L-24
Lamellarin C 20-sulfate, L-24
Lamellarin C, L-24
Lamellarin D, L-24
Lamellarin E, L-24
Lamellarin F, L-24
Lamellarin G 8-sulfate, L-24
Lamellarin G, L-24
Lamellarin H, L-24
Lamellarin I, L-24
Lamellarin J, L-24
Lamellarin K, L-24
Lamellarin L 20-sulfate, L-24
Lamellarin α, L-24
Lamellarin β, L-24
Lamellarin χ, L-24
Lamellarin ϵ, L-24
Lamellarin η, L-24
Lamellarin γ, L-24
Lamellarin ϕ, L-24
Lamellarin ζ, L-24
Lamellarin L, L-24
Lamellarin M, L-24
Lamellarin N, L-24
Lamellarin O, L-25
Lamellarin P, L-25
Lamellarin Q, L-25
Lamellarin R, L-25
Lamellarin S, L-24
Lamellarin α 20-sulfate, L-24
Lamellarin T 20-sulfate, L-24
Lamellarin T, L-24
Lamellarin U 20-sulfate, L-24
Lamellarin U, L-24
Lamellarin V 20-sulfate, L-24
Lamellarin V, L-24
Lamellarin W, L-24
Lamellarin X, L-24
Lamellarin Y 20-sulfate, L-24
Lamellarin Z, L-24
Lampranthin II, B-110
Lamprolobine, L-26
Lamuran, A-212
Lanceine, L-27
Lanceolin A, S-302
Lanceolin B, S-302
Lanceolin C, S-302
Lanceomigine N^4-oxide, L-28
Lanceomigine, L-28
Lanciferine, L-29
Lanitine, L-30
Lanitinine, L-30
Lankanescine, L-31
Lankongensisine A, L-32
Lankongensisine B, L-33
Lannotinidine A, L-34
Lannotinidine B, F-30
Lannotinidine C, F-29
Lannotinidine D, F-29
Lannotinidine E, L-35
Lannotinidine F, L-35
Lannotinidine G, L-36
Lanopylin A_2, L-37
Lanopylin B_2, L-37
Lanopylin C_2, L-37
Lanopylin D_2, L-37
Lanopylin E_2, L-37
Lanopylin F_2, L-37
Lanopylins, L-37
Lansamide 3, D-575
Lansamide 4, D-575
Lansamide 1, L-38
Lansamide 2, L-39
Lansimide 3, C-502
Lansimide 4, C-502
Lansimide 3, D-575
Lansimide 4, D-575
Lansimide 1, L-38
Lansimide 2, L-39
Lansine, D-555
Lansiumamide A, L-38
Lansiumamide B, L-38
Lansiumamide C, P-344
Lanuginosine, L-40
Lanyuamide III, T-129
Lanyuamide II, O-212
Lanyuamide I, O-211
Lanyuamide IV, H-745
Lanyuamide VI, H-744
Lanyuamide V, O-176
Lapaconidine, A-91
Lapatin A, L-41
Lapatin B, L-42
Lapidilectam, L-43
Lapidilectine A, L-43
Lapidilectine B, L-44
Lapidilectinol, L-43
Lappaconidine, A-91
Lappaconine, A-91
Lappaconitic acid, A-31
Lappaconitine, A-91
Largazole, L-45
Larodopa, A-745
Larutenine, L-46
Larutensine, L-46
Lasianine, A-834
Lasiansine, M-312
Lasiocarpine *N*-oxide, L-47
Lasiocarpine, L-47
Lasiodine A, L-48
Lasiodine B, L-49
Lassiocarpine, L-51
Lastourvilline, L-52
Lasubine II, L-53
Lasubine I, L-53
Latericine, H-275
Lathyrol, T-556
Latifine, L-54
Latifolian A, L-55
Latifolian B, L-55
Latifoline *N*-oxide, H-4
Latifoline, H-4
Latifoline, L-56
Latifolinine, L-57
Latindine, L-58
Latisodine, N-288
Latisoline, N-288
Latonduine A, L-59
Latonduine B, L-60
Latrunculin A, L-61
Latrunculin B, L-62
Latrunculin C, L-63
Latrunculin D, L-63
Latrunculin G, L-61
Latrunculin H, L-62
Latrunculin M, L-64
Latrunculin S, L-65
Latrunculin T, L-66
Latumcidin, A-14
Lauberine, L-67
Laudanidine, L-68
Laudanine methyl ether, L-69
Laudanine, L-68
Laudanosine, L-69
Laudanosoline 4′,6-dimethyl ether, R-59
Laudanosoline, L-70
Lauformine, L-214

Laughine, L-71
Launobine, B-397
Laureline, L-72
Laurelliptine, I-196
Laurelliptin-1-hexadecanone, I-196
Laurelliptin-1-octadecanone, I-196
Laurepukine, P-781
Lauric acid, D-889
Laurifine, L-73
Laurifinine, L-73
Laurifoline, I-196
Laurifoline, V-45
Laurifonine, L-73
Laurodionine, L-74
Laurolitsine, B-243
(-)-Laurolitsine, B-243
Lauroscholtzine, L-75
Laurostearic acid, D-889
Laurotetanine, L-75
Laurusin, F-132
Lauterine, O-187
Lavanducyanin, L-76
Lavanduquinocin, L-77
Lavendamycin, L-78
Lavendustin A, L-79
Lavendustin B, L-79
Laxicymine, G-152
Laxicyminine, G-152
Laxicymisine, M-305
LCB 29, H-488
Ld 90, K-78
Ld 91, K-78
Ld 63, V-49
Ld 65, V-49
Ld 85, V-49
LE 29060, V-110
Lebeckianine, D-604
Ledeboridine, R-9
Ledeborine, R-9
Ledebouridine, R-9
Ledebourine, R-9
Ledecorine, L-80
Lederbourine, R-9
Lederfolin, F-121
Lederine, O-20
Leepacine, V-113
Lehmannine *N*-oxide, L-81
Lehmannine, L-81
Leinamycin, L-82
Leiocarpadiol, L-83
Leiocarpatriol A, I-123
Leiocarpatriol B, I-123
Leiocarpol, M-414
Leiocarpone, M-414
Leiodelide A, L-84
Leiodelide B, L-85
Leiokinine A, M-274
Leiokinine B, E-267
(-)-Lelobanidine III, L-86
(-)-Lelobanidine II, L-86
(±)-Lelobanidine I, L-86
(-)-Lelobanidine I, L-86
α-Lelobanidine, L-86
Lelobanidine, L-86
Lelobanololine, H-347
Lemairamide, L-87
Lemairamine, L-87
Lemaireocereine, T-159
Lemobiline, L-88
Lemonnierin, L-89
Lemonomycin, L-90
Lenamycin, B-447
Lennoxamine, L-91
Lenticellarine, L-92
Lenticine, H-764
Lentiginosine, O-46
Lentoquine, Q-18
Leofungine, V-34
Leontalbamine, A-628
Leontalbine, L-93
Leontalbinine *N*-oxide, L-94
Leontalbinine, L-94
Leontamine, L-95
Leonticine, L-96
Leontidine, C-62
Leontiformidine, L-97
Leontiformine, L-97
Leontine, A-628
Leontismidine, L-98
Leontismine, L-99
Leonuridine, L-100
Leonurine, H-432
Leonurinine, L-101
Lepadiformine A, C-926
Lepadiformine B, L-102
Lepadiformine C, L-102
Lepadin A, L-103
Lepadin B, L-103
Lepadin C, L-103
Lepadin D, L-104
Lepadin E, L-104
Lepadin F, L-104
Lepadin G, L-104
Lepadin H, L-104
Lepedine, L-105
Lepenine *N*-oxide, L-105
Lepenine, L-105
Lepetine, L-105
Lepidamine, A-703
Lepidiline A, D-750
Lepidiline B, T-607
Lepidine B, L-106
Lepidine C, L-106
Lepidine D, L-106
Lepidine E, L-107
Lepidine F, L-108
Lepidine, L-106
Lepidoporphyrin, P-771
Lepidopterin, L-109
Lepiotin A, L-110
Lepiotin B, L-110
Lepistine, L-111
Leporine A, L-112
Leporine B, L-112
Leptactinine, L-113
Leptaflorine, T-202
Leptagline, L-114
Leptanthine *N*-oxide, M-146
Leptanthine, L-115
Leptanthine, M-146
Leptine III, L-116
Leptine I, L-116
Leptine IV, L-116
Leptinidine 3-glucoside, L-116
Leptinidine, L-116
Leptinine III, L-116
Leptinine II, L-116
Leptinine I, L-116
Leptinine IV, L-116
Leptocarpine, L-117
Leptocarpine, P-667
Leptocarpinine, L-118
Leptocladine, T-202
Leptoclinidinone, A-1459
Leptomerine, H-707
Leptophyllin A, L-119
Leptophyllin B, L-120
Leptopidine, L-121
Leptopidinine, H-766
Leptopine, L-122
Leptopinine, L-123
Leptorhabine, C-562
Leptosin A, L-124
Leptosin B, L-125
Leptosin C, L-126
Leptosin D, L-127
Leptosin E, L-128
Leptosin F, L-129
Leptosin G, L-132
Leptosin G_1, L-130
Leptosin G_2, L-131
Leptosin H, L-133
Leptosin I, L-134
Leptosin J, L-134
Leptosin K, L-137
Leptosin K_1, L-135
Leptosin K_2, L-136
Leptosin M, L-139
Leptosin M_1, L-138
Leptosin N, L-139
Leptosin N_1, L-140
Leptosin O, L-141
Leptosin P, L-141
Leptosin Q, L-142
Leptosin R, L-142
Leptosin S, L-143
Leptothoracine, M-544
Lercheine, D-412
Leroyine 14-acetate, M-348
Leroyine, M-348
Lespedamine, D-785
Lettocine, L-144
Lettowianthine, L-145
Leucaenine, L-148
Leucaenol, L-148
Leucal, P-772
Leucamide A, L-146
Leucanthumsine A, M-323
Leucanthumsine B, M-323
Leucanthumsine C, M-323
Leucanthumsine D, M-369
Leucanthumsine E, M-336
Leucascandrolide A, L-147
Leucenine, L-148
Leucenol, L-148
Leucentine B, M-323
Leucettamidine, L-149
Leucettamine A, L-150
Leucettamine B, L-151
Leucettamine C, L-152
Leucettidine, H-702
Leucid, V-128
Leuciglumer, L-153
Leucinamide, L-153
Leucine amide, L-153
D-Leucine homopolymer, L-153
L-Leucine homopolymer, L-153
Leucine, L-153
Leucinol, A-838
Leucoagaricone, L-154
Leucoatromentin, T-97
Leucodopachrome, C-862
Leuconine, A-96
Leuconolam, L-155
Leuconoxine, L-156
Leucopterin, A-925
Leucosar, F-121
Leucosolenamine A, L-157
Leucosolenamine B, L-157
Leucostine A, M-309
Leucostine B, M-340
Leucostine, A-92
Leucotamine, G-3
Leucovernine, G-3
Leucovorin calcium, F-121
Leucovorin, F-121
Leucoxine, L-158
Leucoxylonine *N*-oxide, L-159
Leucoxylonine, L-159
Leueandine, F-147
Leueantine A, M-303
Leueantine C, M-352
Leueantine D, M-323
Leuhistin, L-160
Leu, L-153
Leupyrrin A_1, L-161
Leupyrrin A_2, L-161
Leupyrrin B_1, L-161
Leupyrrin B_2, L-161
Leupyrrin C, L-161
Leupyrrin D, L-161
Leurocolumbine, V-110
Leurocristine, V-128
Leuroformine, L-162
Leurosidine $N^{b'}$-oxide, V-110
Leurosidine, V-110
Leurosine $N^{b'}$-oxide, L-162
F-Leurosine, L-162
Leurosine, L-162

Leurosinone, L-163
Leurosivine, L-164
Levarterenol, N-298
Levcycloserine, A-832
Levodopa, A-745
Levoglutamide, G-108
Levoleucovorin calcium, F-121
Levomefolate calcium, T-172
Levomefolic acid, T-172
Levomet, A-745
Levopa, A-745
Levophed, N-298
Liaconitine A, M-364
Liaconitine B, M-364
Liaconitine C, M-364
Liangshanine, N-30
Liangshanone, N-30
Liberine, L-165
Libramycin A, M-432
Licarpin, P-424
Lichuanine, C-290
Lichuanisinine, C-290
Liconosine A, A-103
Licorice glycoside E, D-581
Lidimycin, L-166
Lienkonine, L-167
Liensinine, N-87
N^b-Lignoceroyltryptamine, T-639
Ligudentine, L-168
Ligularidine, S-245
Ligularine, L-169
Ligularinine, P-516
Ligularizine, L-170
Ligustrazine, T-284
Lihouidine, L-171
Lilacinone, L-172
Lilaline, L-173
Lilidine, D-449
Lilly 22641, D-234
Lilly 32645, L-162
Lilly 52230, P-961
Lilly 112531, V-110
Lilly 36781, V-110
Lilly 49040, V-110
Limaciamine, L-174
Limacine 2β-*N*-oxide, P-301
Limacine 2′α-*N*-oxide, P-301
Limacine 2′β-*N*-oxide, P-301
Limacine, P-301
Limacusine 2′-β-*N*-oxide, L-175
Limacusine, L-175
Limalongine, L-176
Limapodine, L-177
Limaspermidine, L-177
Limaspermine, L-177
Limatine, A-1497
Limatinine, A-1497
Limipterin, A-749
Limnanthenine, L-179
Limocrocin, L-178
Limogine, R-94
Limousamine, C-805
Linalolic acid, H-471
Linalool-1-oic acid, H-471
Linamarin gentiobioside, H-617
Linamarin, H-617
Linantenine, L-179
Linaresine, R-156
Linarine, P-165
Linarinic acid, L-180
Linavuline, L-181
Lincangenine, A-1042
Lindcarpine, T-248
Lindechunine A, O-180
Lindechunine B, P-211
Lindelofamine, T-443
Lindelofidine acetate, H-629
Lindelofidine, H-629
Lindelofine *N*-oxide, T-443
Lindelofine, T-443
Lindenialine, L-182
Lindeniamine, L-183
Lindenianine, V-153
Lindheimerine, L-184
Lindoldhamine, D-88
Lineariline, A-85
Linearilobine, M-352
Linearisine, A-957
Lineolone, T-268
N-Linolenoylglutamic acid, G-107
N^2-Linolenoylglutamine, G-108
N^2-(17-Linolenoyloxylinolenoyl)glutamine, H-645
N^2-(17-Linolenoyloxylinoleoyl)glutamine, H-645
N-Linoleoyl-L-glutamic acid, G-107
N^2-Linoleoylglutamine, G-108
N^2-(17-Linoleoyloxylinolenoyl)glutamine, H-645
N^2-(17-Linoleoyloxylinoleoyl)glutamine, H-645
Linusitamarin, D-654
Linustatin, H-617
Lipoaconitine, M-331
Lipo-14-*O*-anisoylbikhaconine, M-312
Lipobikhaconitine, M-312
Lipodeoxyaconitine, M-343
Lipoforestine, M-312
Lipogrammistin A, L-185
Lipohypaconitine, M-343
Lipoindaconitine, M-336
Lipomesaconitine, M-331
α-Lipomycin, L-186
β-Lipomycin, L-186
Lipopsudaconitine, M-336
Lipopurealins, L-187
Liposidomycin A-III, L-188
Liposidomycin A-II, L-188
Liposidomycin A-IV, L-188
Liposidomycin B-III, L-188
Liposidomycin C-III, L-188
Liposidomycin C-II, L-188
Liposidomycin C-I, L-188
Liposidomycin C-IV, L-188
Liposidomycin G-III, L-188
Liposidomycin G-I, L-188
Liposidomycin H-III, L-188
Liposidomycin K-III, L-188
Liposidomycin L-III, L-188
Liposidomycin M-III, L-188
Liposidomycin M-I, L-188
Liposidomycin N-III, L-188
Liposidomycin N-I, L-188
Liposidomycin V-III, L-188
Liposidomycin V-I, L-188
Liposidomycin X-II, L-188
Liposidomycin Y-III, L-188
Liposidomycin Z-III, L-188
Liposidomycin Z-I, L-188
Liposidomycin, L-188
Lipotril, C-419
Lipoxamycin, L-189
Lipoxazolidinone A, L-190
Lipoxazolidinone B, L-191
Lipoxazolidinone C, L-192
Lipoyunaconitine, M-336
Liquiritigenin, D-581
Liridine, M-712
Liridinine, T-521
Lirinidine, D-531
Lirinine *N*-oxide, T-521
Lirinine, T-521
Liriodendron base, O-178
Liriodendronine, L-193
Liriodenine, L-194
Lirioferine, H-752
Liriotulipiferine, L-195
Lissoclibadin 1, L-196
Lissoclibadin 2, L-197
Lissoclibadin 3, L-198
Lissoclibadin 4, L-197
Lissoclibadin 5, L-197
Lissoclibadin 6, L-198
Lissoclibadin 7, L-208
Lissoclin A, D-823
Lissoclin B, D-823
Lissoclin C, L-199
Lissoclin disulfoxide, L-209
Lissoclinamide 10, L-203
Lissoclinamide 1, L-200
Lissoclinamide 4, L-201
Lissoclinamide 5, L-201
Lissoclinamide 6, L-201
Lissoclinamide 7, L-201
Lissoclinamide 8, L-201
Lissoclinamide 9, L-202
Lissoclinamide 2, U-9
Lissoclinamide 3, U-9
Lissoclinidine, L-204
Lissoclin, L-209
Lissoclinotoxin A, L-205
Lissoclinotoxin B, L-206
Lissoclinotoxin C, L-207
Lissoclinotoxin D, L-208
Lissoclinotoxin E, L-209
Lissoclinotoxin F, L-210
Litcubine, C-783
Litcubinine, C-783
Litebamine, L-211
Lithosenine, L-212
Lithospermoside, L-213
Litsedine, B-397
Litseferine, D-346
Litseglutine A, D-346
Litseglutine B, T-248
Litsericine, L-214
Litsoene, L-75
Littoraline, L-215
Littorine, L-216
Lituarine A, L-217
Lituarine B, L-217
Lituarine C, L-217
Liwaconitine, M-312
LK6A, L-354
LL C10037α, A-804
LL-AP-191γ, L-90
LL-BH872α, A-1199
LL-BM $123_{\gamma 1}$, C-459
LL-BM $123_{\gamma 2}$, C-460
LL-BM $123\beta_1$, G-117
LL-BO 2964α, A-1200
LL-BO 2964β, A-1200
LL-BO 2964γ, A-1200
LL-BO 2964, A-1200
LL-D 42067α, S-301
LL-D 42067β, S-301
LL-E19085α, C-473
LL-14E605α, G-126
LL-E605β, G-126
LL-49F233α, A-1201
LL-F42248α, P-974
LMCA, T-172
LMSR, T-172
Lobelanidine, L-218
Lobelanine, L-218
Lobelidine, L-219
Lobeline, L-219
α-Lobeline, L-219
Lobinaline, L-220
Lobinanidine, L-221
Lobine, L-222
Lobinine, L-221
Lobofrutoside, S-447
Lobozoanthamine, Z-30
Lobran, L-219
Lobscurinol, L-223
Lochneram, S-89
Lochnericine, T-11
Lochneridine, L-224
Lochnerine, S-89
Lochnerinine, T-11
Lochnerivine, L-225
Lochrovicine, L-226
Lochrovidine, L-227
Lochrovine, L-228
Lochvinerine, S-89
Locoine, L-229
Loesenerine, L-230
α-Lofoline, F-29
β-Lofoline, F-29
Lofoline, F-29
Lokysterolamine A N^{30}-oxide, P-496
Lokysterolamine A, P-496

Lokysterolamine B, P-496
Lolicine A, L-231
Lolicine B, L-231
Lolidine, L-232
Lolilline, L-233
Loline, L-234
Lolinidine, L-235
Lolinine *N*-oxide, L-234
Lolinine, L-234
Lolitrem A, L-236
Lolitrem B, L-236
Lolitrem C, L-236
Lolitrem E, L-237
Lolitrem F, L-236
Lolitrem N, L-237
Lolitriol, L-237
Lomaiviticin B, L-238
Lombine, L-239
Lombricine phosphate, L-240
Lombricine, L-240
Lomofungin, L-241
Lomondomycin, L-241
Longamide A, L-242
Longamide B, L-243
Longamide, H-214
Longanine, L-244
Longaninine, L-244
Longanone, L-244
Longatin, N-44
Longeracinphylline A, L-245
Longeracinphylline B, L-246
Longetherine, L-247
Longiberine, L-248
Longicaudatine F, L-250
Longicaudatine *N*-oxide, L-249
Longicaudatine Y, L-250
Longicaudatine Z, L-250
Longicaudatine, L-249
Longifolidine, L-251
Longifolonine, L-252
β-Longilobine, R-62
α-Longilobine, S-240
Longimammamine, T-161
Longimammatine, T-196
Longimammidine, T-198
Longimammine, S-659
Longimammosine, T-196
Longistrobine, L-253
Longistylumphylline A, D-55
Longistylumphylline B, L-254
Longistylumphylline C, L-255
Longitubanine A, L-256
Longitubanine B, L-256
Longitubine, H-4
Longtouconitine B, M-323
Lonicerine, A-1492
Loniceroside, D-204
Lophanterine, L-257
Lophilacrine, L-258
Lophiline, L-259
Lophiroside A_1, S-302
Lophiroside A_2, S-302
Lophiroside B_1, S-302
Lophiroside B_2, S-302
Lophocerine, L-260
Lophocine, L-261
Lophocladine A, H-686
Lophocladine B, A-865
Lophophorine, A-1021
Lophotine, A-1021
Lorajmine hydrochloride, A-216
Lorajmine, A-216
Lorneamide A, L-262
Lorneamide B, L-262
Loroquine glucoside, L-263
Loroquine, L-263
Losbanine, L-264
Lotaustralin, H-572
Lotthanongine, L-265
Loturine, M-426
Lotusanine A, A-150
Lotusanine B, L-266
Lotusine A, L-267
Lotusine B, L-268
Lotusine C, L-269
Lotusine D, L-267
Lotusine E, L-270
Lotusine F, P-25
Lotusine G, L-271
Lotusine, H-275
Louisianin A, L-272
Louisianin B, L-272
Louisianin C, L-272
Louisianin D, L-272
Louludinium(1+), L-273
Loveraine, L-274
Loxylostosidine A, X-31
Loxylostosidine B, X-31
L9, T-263
LU 1, H-616
Lucaconine, M-309
Lucentamycin A, D-101
Lucentamycin B, L-275
Lucentamycin C, D-101
Lucentamycin D, D-101
Luciculine *N*-oxide, N-30
Luciculine, N-30
Lucidamine A, L-276
Lucidine A, L-277
Lucidine B, L-277
Lucidinine, L-278
Lucidioline, L-279
Luciduline, L-280
Lucidulinone, L-280
Lucidusculine, N-30
Diplocardia Luciferin, A-892
Oplophorus Luciferin, C-560
Renilla Luciferin, C-560
Watasenia Luciferin, C-560
Cypridina Luciferin, L-281
Photinus Luciferin, L-282
Lucilactaene, L-283
Luciola oxyluciferin, F-56
Luciopterin, P-763
Lucuminamide, H-671
Lucumin, H-673
Lucuminoside, H-673
Ludaconitine, M-336
Lukianol A, L-284
Lukianol B, L-284
Lumazine, P-762
Lumbricine, L-240
Lumichrome, L-285
Lumicolchicine II, L-287
Lumicolchicine I, L-287
α-Lumicolchicine, L-286
β-Lumicolchicine, L-287
Lumicolchicine, L-287
γ-Lumicolchicine, L-287
β-Lumispeciosine, L-287
Lunacridine, L-288
Lunacrine, B-13
Lunacrinol, R-92
Lunamaridine, L-289
Lunamarine, L-290
Lunariamine, L-291
Lunaridine, L-292
Lunarine, L-293
Lunarinol II, L-293
Lunasia II, R-92
Lunasine, B-14
Lundurine A, L-294
Lundurine B, L-294
Lundurine C, L-294
Lundurine D, L-294
Lunidine, L-295
Lunidonine, L-295
Lunine, L-296
Lunolone, L-297
Luotonine A, L-298
Luotonine B, L-298
Luotonine C, L-299
Luotonine D, L-300
Luotonine E, L-298
Luotonine F, L-301
Lupanidine, M-121
Lupanine *N*-oxide, L-302
Lupanine, L-302
Lupanoline, I-322
Lupetidine, D-770
Lupilaxine, L-303
Lupinidine (obsol.), S-385
Lupinine, O-58
Lurenine, L-304
Lusitanine, L-305
Lutamide A, T-460
Lutamide C, T-460
Luteanine, D-405
Luteanine, I-208
Luteicine, L-306
Luteicinone, L-306
Luteidine α-*N*-oxide, L-307
Luteidine β-*N*-oxide, L-307
Luteidine, L-307
Luteine, K-36
Luteinine, L-308
Lutenurine, L-309
Lutessine, L-310
2,6-Lutidine, D-775
2,6-Lutidine-3,5-dicarboxylic acid, D-776
Lutine, A-1040
Lutinine, L-311
Luvenil, E-6
Luxandrine, H-275
Luzopeptin A, L-312
Luzopeptin B, L-312
Luzopeptin C, L-312
Luzopeptin E_2, L-312
LWTX1, H-731
LWTX2, H-731
LWTX3, H-731
LWTX4, S-109
LWTX5, S-109
LWTX6, S-109
LY 783281, A-1521
LY 119863, V-110
LY 99094, V-110
Lyadine, L-313
Lyalidine, L-314
Lyaline, L-315
Lyaloside, L-316
Lyalosidic acid, L-316
Lycaconitine, L-317
Lycaonic acid piperidide, O-192
Lycaonic acid pyrrolidide, O-192
Lycaonic acid, O-192
Lyceamine, L-318
Lyciumide A, D-920
Lyciumins, L-319
Lycobergine, L-327
Lycobetaine, U-34
Lycocaroline, L-320
Lycocernuine *N*-oxide, L-321
Lycocernuine, L-321
Lycoclavine, L-322
Lycoctinine, M-309
Lycoctonine, M-309
Lycodiflexine, L-323
Lycodine, L-324
Lycodoline *N*-oxide, L-325
Lycodoline, L-325
Lycofawcine, L-326
Lycoflexine, L-327
Lycofoline, L-328
Lycogalic acid, L-329
Lycogarubin A, L-329
Lycogarubin B, L-329
Lycogarubin C, L-329
Lycognidine, L-322
Lycolucine, L-277
Lyconadine A, L-330
Lyconadine B, L-330
Lyconesidine A, L-331
Lyconesidine B, L-331
Lyconesidine C, L-322
Lyconnotine, L-332
Lyconnotinol, L-333
Lycopaniculatine, L-334
Lycopecurine, L-335

Lycoperine A, L-336
Lycoperodine 1, T-224
Lycoperoside A, S-442
Lycoperoside B, S-442
Lycoperoside C, S-442
Lycoperoside D, S-445
Lycoperoside F, S-444
Lycoperoside G, S-443
Lycoperoside H, D-99
Lycopersicin, S-445
Lycophlegmarine, L-337
Lycophlegmine, A-1029
Lycopladine A, L-338
Lycopladine B, L-339
Lycopladine C, L-339
Lycopladine D, L-340
Lycopodatine A, L-335
Lycopodatine B, A-1029
Lycopodatine C, A-1029
Lycopodine, L-341
Lycoposerramine A, L-342
Lycoposerramine B, L-343
Lycoposerramine C, F-30
Lycoposerramine D, L-327
Lycoposerramine E, P-362
Lycoposerramine F, L-344
Lycoposerramine G, L-344
Lycoposerramine H, L-322
Lycoposerramine I, L-341
Lycoposerramine J, L-322
Lycoposerramine K, L-279
Lycoposerramine L, L-322
Lycoposerramine M, L-341
Lycoposerramine N, L-325
Lycoposerramine O, L-322
Lycoposerramine P, F-30
Lycoposerramine Q, F-30
Lycoposerramine S, L-345
Lycoposerramine U, L-327
Lycoposerramine V, L-346
Lycoposerramine W, L-346
Lycoposerramine X, H-380
Lycoposerramine Y, H-380
Lycoposerramine Z, H-380
Lycopsamine *N*-oxide, I-160
Lycopsamine, I-160
Lycoramine *N*-oxide, G-3
Lycoramine, G-3
Lycoremine, G-3
Lycorenine, L-347
Lycoricidine, N-37
Lycoricidinol, N-37
Lycorimine, G-3
Lycorine 1,2-di-*O*-β-D-glucoside, L-348
Lycorine 1-*O*-β-D-glucoside, L-348
Lycorine, L-348
Lycoriside, L-348
Lycoserramine, L-349
Lycoserrine, L-350
Lycosinine A, L-351
Lycosinine B, L-351
Lycothunine, F-30
Lycovatine A, L-352
Lycoverticine, F-75
Lydicamycin, L-353
Lydimycin, L-166
Lyfoline, V-95
Lymphostin, L-354
Lyngbyabellin A, L-355
Lyngbyabellin B, L-356
Lyngbyabellin C, L-357
Lyngbyabellin D, L-358
Lyngbyabellin E, L-359
Lyngbyabellin F, L-360
Lyngbyabellin G, L-361
Lyngbyabellin H, L-359
Lyngbyabellin I, L-360
Lyngbyapeptin A, L-362
Lyngbyapeptin B, L-363
Lyngbyapeptin C, L-364
Lyngbyastatin 4, L-365
Lyngbyastatin 5, L-365
Lyngbyastatin 6, L-365
Lyngbyastatin 7, L-366
Lyngbyatoxin A, L-367
Lyngbyatoxin B, L-367
Lyngbyatoxin C, L-367
Lyophyllin, L-368
Lysergamide, L-370
Lysergene, L-369
Lysergic acid amide, L-370
Lysergic acid α-hydroxyethylamide, L-370
Lysergic acid methylcarbinolamide, L-370
Lysergic acid, L-370
Lysergine, L-371
Lysergol, L-371
Lysergylvaline amide, L-372
Lysergylvaline methyl ester, L-372
Lysergylvaline, L-372
Lysergylvalylleucylproline lactam, E-156
Lysergylvalylphenylalanylproline lactam, E-154
Lysergylvalylvalylproline lactam, E-152
Lysianadioic acid, L-373
Lysicamine, L-193
D-Lysinegalantin I, G-7
Lysolipin I, L-374
Lysolipin X, L-375
N-(N^2-L-Lysyl)cantharimide, C-89
Lysylpyridinoline, P-907
Lythramine, L-376
Lythrancepine III, L-377
Lythrancepine II, L-377
Lythrancepine I, L-377
Lythrancine III, L-377
Lythrancine II, L-377
Lythrancine I, L-377
Lythrancine IV, L-377
Lythrancine VII, L-377
Lythrancine VI, L-377
Lythrancine V, L-377
Lythrancine, L-377
Lythranidine, L-378
Lythranine, L-378
Lythridine, V-95
Lythrine, V-95
Lythrumine, L-379
M 259, A-1202
M 146791, C-837
M 4582, H-408
M 193, S-498
Maackiamine, T-228
Maackinine, G-70
Maandrosine, M-1
Macamide A, O-189
Macamide B, H-221
Macaridine, M-2
Macarpine, C-360
Machigline, D-347
Machilaminoside A, M-3
Machilaminoside B, M-4
Mackinazolinone, M-5
Macleanine, M-6
Macleyine, P-667
Macolidine, G-235
Macoline, G-235
Macondine, D-624
Macowine, M-108
Macralstonidine, M-7
Macralstonine, M-8
Macrantaldehyde, N-45
Macrantaline, N-45
Macranthine, M-9
Macrantoridine, N-45
Macrocaffrine, M-10
Macrocarpamine, M-11
Macrocarpine A, T-20
Macrocarpine B, T-20
Macrocarpine C, T-20
Macrocentridine, M-309
Macrocentrine, M-12
Macrocidin A, M-13
Macrocidin B, M-13
Macrodaphnidine, D-33
Macrodaphnine, D-33
Macrodaphniphyllamine, D-33
Macrodaphniphyllidine, D-33
Macrodasine A, M-14
Macrodasine B, M-14
Macrogentine, M-15
Macrolidine, M-16
Macroline, M-17
Macromerine, M-18
Macronecine, H-518
Macronine, P-626
Macrophominol, M-19
Macrophylline A, M-22
Macrophylline, H-518
Macrophylline, M-20
Macrophylline, M-21
Macropodumine A, M-23
Macropodumine B, M-24
Macropodumine C, M-25
Macropodumine D, M-26
Macropodumine E, M-27
Macropodumine F, Y-23
Macropodumine G, Y-23
Macropodumine H, D-33
Macropodumine I, D-53
Macrorhynine A, M-369
Macrorhynine B, M-360
Macrorine, I-44
Macrorungine, M-28
Macrosalhine, M-29
Macrospegatrine, M-30
Macrostomine α-*N*-oxide, A-1403
Macrostomine β-*N*-oxide, A-1403
Macrostomine, A-1403
Macrotomine, F-92
Macroxine, M-31
Macrozamin, M-397
Maculine, F-221
Maculosidine, F-222
Maculosin 1, C-900
Maculosin 6, C-876
Maculosine 5, C-901
Maculosine, F-221
Maculotoxin, T-298
Macusine A, P-562
Macusine B, T-425
Macusine C, A-229
Madangamine F, M-32
Madangamines A-E, M-33
Madindoline A, M-34
Madindoline B, M-34
Madugin, T-639
Madumicin II, M-35
Madumicin I, M-35
Madumycin II, M-35
Madumycin I, M-35
Madurensine, M-36
Maedamine A, M-37
Maedamine B, M-37
Maeganedin A, M-38
Magallanesine, M-39
Magellanine, M-40
Magellaninone, M-40
Magnarcine, M-41
Magnesidin, M-42
Magniflorine, M-43
Magnococline, G-143
(+)-Magnocurarine, H-275
(-)-Magnocurarine, H-275
Magnoflorine, C-702
Magnolamide, M-44
Magnolamine, M-45
Magnoline, G-177
Magnoporphine, T-248
Magnosprengerine, H-566
Mahanimbicine, M-46
Mahanimbidine, C-813
Mahanimbilol, E-277
(±)-Mahanimbine, M-47
(+)-Mahanimbine, M-47
Mahanimbinine, M-47
Mahanimbinol, E-277
Mahanimboline, M-47
Mahanine, M-47
Maingayine, H-322
Maingayinine, M-48

Maireistemoninol, T-665
Maistemonine, M-49
Maitansine, M-135
Majarine, B-101
Majdine, M-50
Majdinine, T-288
Majoridine, T-288
Majorine, M-51
Majorinine, V-194
Majovine, M-52
Majvinine, S-89
Makalika ester, M-53
Makalikone ester, M-53
Makaluvamine A, M-54
Makaluvamine B, M-54
Makaluvamine C, M-54
Makaluvamine D, M-54
Makaluvamine E, M-54
Makaluvamine F, M-55
Makaluvamine G, M-54
Makaluvamine H, M-54
Makaluvamine I, M-54
Makaluvamine J, M-54
Makaluvamine K, M-54
Makaluvamine L, M-54
Makaluvamine M, M-54
Makaluvamine N, M-54
Makaluvamine O, D-13
Makaluvamine P, M-54
Makaluvic acid A, M-56
Makaluvic acid B, M-56
Makaluvic acid C, M-56
Makaluvone, D-13
Makomakine, H-310
Makonine, A-1442
Makrotomine, F-92
Malacitanine, M-57
Malagashanine, M-58
Malagashanol, M-58
Malagashine, S-604
Malarboreine, M-59
Malarborine, M-59
Malasseziacitrin, M-60
Malasseziaketone, M-67
Malassezialactic acid, M-61
Malasseziazole A, M-62
Malasseziazole B, M-63
Malasseziazole C, M-64
Malassezindole A, M-66
Malassezindole B, M-66
Malassezin, M-65
Malassezione, M-67
Malatyamine, M-68
Malaxine, K-28
Malbrancheamide A, M-69
Maleimide monooxime, P-947
Maleimide, P-947
Maleimycin, M-70
Malekulatine, M-71
Malic acid, M-72
Malindine, M-73
Malkangunin, T-259
Malkanguniol, T-259
Malloapeltine, H-709
Mallorepine, H-709
Mallotusin, M-135
Malonganenone A, M-74
Malonganenone B, M-75
Malonganenone C, A-916
Malonganenone D, M-74
Malonganenone E, M-74
Malonganenone F, M-75
Malonganenone G, M-75
Malonganenone H, A-916
Malonomicin, M-76
N-(*N*-Malonyl-β-alanyl)dopamine 3-glucoside, D-920
2-(Malonylamino)benzoic acid, A-706
N-Malonyldopamine 3-glucoside, D-920
O-Malonylindolactam V, I-78
6′-*O*-Malonylprunasin, H-673
N-Malonyltryptophan, T-640
Malouetafrine, H-322
Malouetamide, L-57
Malouetine, P-601
Malouphyllamine, C-595
Malouphylline, D-269
Malouphyllinine, D-269
Malouphyllinol, D-269
Maltophilin, X-6
Maltoxazine, M-77
Maltoxin, H-357
Malyngamide C acetate, D-225
Malyngamide C, D-225
Malyngamide K, D-225
Malyngamide W, M-78
Mamanine *N*-oxide, M-79
Mamanine, M-79
MAM, M-397
Mammillarinin, B-110
Manadomanzamine A, M-80
Manadomanzamine B, M-80
Mandelamide, H-671
Mandelonitrile gentiobioside, H-673
Mandelonitrile rutinoside, H-673
Mandelonitrile sophoroside, H-673
Mandelonitrile, H-673
Mangochinine, C-783
Manibacanine, M-81
Manicoline A, M-82
Manicoline B, M-83
Manihotoxin, H-617
Manilamine, M-84
Maniwamycin A, M-85
Maniwamycin B, M-85
Mannojirimycin, A-728
Mannonojirimycin, A-728
Mannopeptimycin α, M-86
Mannopeptimycin β, M-86
Mannopeptimycin δ, M-86
Mannopeptimycin ϵ, M-86
Mannopeptimycin γ, M-86
Mannosylqueuosine, Q-9
Manshurienine A, A-1429
Manshurienine B, A-1427
Manshuritine, M-331
Manthidine, P-57
Manthine, P-57
Manumycin A, M-87
Manumycin C, M-88
Manumycin D, M-89
Manzacidin A, M-90
Manzacidin B, M-90
Manzacidin C, M-90
Manzacidin D, M-90
Manzamine A *N*-oxide, M-91
Manzamine A, M-91
Manzamine B, M-92
Manzamine C, M-93
Manzamine D, M-91
Manzamine E, M-91
ent-Manzamine F, M-91
Manzamine F, M-91
ent-Manzamine G, M-91
Manzamine G, M-91
Manzamine H, M-94
Manzamine J *N*-oxide, M-94
Manzamine J, M-94
Manzamine L, M-94
Manzamine M, M-95
Manzamine X, M-91
Manzamine Y, M-91
Maokonine, T-700
Mappicine gentiobioside, M-96
Mappicine glucoside, M-96
Mappicine ketone, M-96
Mappicine, M-96
Mappine, B-393
Marcanine A, M-97
Marcanine B, M-97
Marcanine C, M-97
Marcanine D, M-97
Marcanine E, M-97
Marcfortine A, M-98
Marcfortine B, M-98
Marckidine, M-99
Marckine, T-675
Maremycin A, M-100
Maremycin B, M-100
Maremycin C_1, M-100
Maremycin C_2, M-100
Maremycin D_1, M-101
Maremycin D_2, M-101
Margaritarine, M-102
Margetine, N-37
Margrapine A, M-103
Margrapine B, M-103
Marikarin, A-197
Marinamide, M-104
Marine *Streptomyces* $C_{30}H_{38}N_2O_5$ lactam, M-105
Marinobactins, M-106
Marinobufagin 3-pimeloylarginine ester, E-132
Marinobufagin 3-suberoylglutamine ester, E-132
Marinobufagin, E-132
Marinobufogenin O^3-sulfate, E-132
Marinobufogenin, E-132
Marinobufotoxin, E-132
Marinopyrrole A, M-107
Marinopyrrole B, M-107
Marinoquinoline A, M-552
Maritidine, M-108
Maritinamine, M-108
Marmeline, O-63
Maroumine, S-192
Marqibo, V-128
Marshaline, L-80
Marshdine, T-243
Marshmine, T-581
Marstomentoside A, P-610
Marstomentoside D, P-604
Marstomentoside O, P-610
Marstomentoside P, P-610
Marstomentoside T, P-604
Martefragine A, M-109
Martensine A, M-110
Martensine B, M-110
Martinellic acid, M-111
Martinelline, M-111
Martsomentoside C, P-604
Maruquine, M-661
Masonine, O-68
Massadine aziridine, M-113
Massadine chloride, M-112
Massadine, M-112
Matadine, M-114
Matamycin, A-664
Matemone, M-115
Saccharomyces kluyveri α-Mating pheromone 1, M-116
α^{sk1} Mating pheromone, M-116
Matlystatin D, M-117
Matlystatin E, M-118
Matlystatin F, M-119
Matopensine mono-*N*-oxide, M-120
Matopensine *N*-oxide, M-120
Matopensine, M-120
Matricaria acid, D-103
trans,*trans*-Matricaria ester, D-103
trans-Matricaria ester, D-103
Matricaria ester, D-103
Matricaric acid, D-103
(5β,11α)-Matridin-11-one, D-79
(5β,6β)-Matridin-15-one, I-320
Matridin-15-one, M-121
(5β)-Matridin-15-one, S-380
Matrine *N*-oxide, M-121
Matrine, M-121
Mattogrossine, M-122
Mauiensine, T-288
Mauritamide A, M-123
Mauritiamine, M-124
Mauritine A, M-125
Mauritine B, M-126
Mauritine C, M-127
Mauritine D, M-128
Mauritine E, M-125
Mauritine F, M-125
Mauritine H, M-129

Mauritine J, A-939
C-Mavacurine, M-130
Mavacurine, M-130
Maxonine, M-131
Mayfoline, P-356
Maymyrsine, P-217
Mayotamide A, M-132
Mayotamide B, M-133
Maysenine, M-134
Maysine, M-134
Maytanacine, M-136
Maytanbicyclinol, T-449
Maytanbutacine, M-136
Maytanbutine, M-135
Maytanprine, M-135
Maytansine, M-135
Maytansinol, M-136
Maytanvaline, M-135
Mayteine, P-247
Maytenine, S-398
Maytine, H-247
MAYT, M-135
Maytol, H-118
Maytolidine, H-118
Maytoline, H-118
Mayumbine, A-212
Mazethramycin A, M-137
Mazethramycin B, M-137
Mazethramycin C, M-137
MBH 001, A-1203
MBI 3253, C-188
MBOA, B-82
MBP 039-06, A-1204
MBP 049-13, A-1205
McB17, M-593
MDL 62879, A-1180
MDL 28574A, C-188
MDL 25637, B-186
MDL 28574, C-188
Mearsamine, M-138
Mearsine, M-139
Mecambridine methosalt, M-140
Mecambridine, M-140
Mecambrine, M-141
Mecambroline, L-72
Mechercharmycin A, M-142
Mechercharmycin B, M-143
Mechercharstatin A, M-142
Mechercharstatin B, M-143
Meconium, M-704
Meconoquintupline, M-144
Mecoquitupline, M-144
Mecostrin chloride, C-420
Mecostrin, C-420
Medelamine A, M-579
Medelamine B, M-566
Medelline, M-145
Medicosmine, A-121
Megacarpidine, S-445
Megacarpine, S-445
Megalanthonine, M-146
Megastachine, M-147
Megistonine II, T-272
Megistonine I, T-584
Megistophylline II, M-149
Megistophylline I, M-148
Megistoquinone II, M-151
Megistoquinone I, M-150
Megistosarcimine, M-152
Megistosarconine, M-152
Mehranine, M-153
Melanacanthine, E-198
Melandrin, A-789
Melanocin A, M-154
Melanocin B, M-155
Melanocin C, M-156
Melanocrocin, M-157
Melanostatin, M-158
Melanoxazal, O-156
Melanoxidin, M-159
Melanthioidine, M-160
Melatonin, M-288
Melaxillarinine, M-161
Meleagrin, M-162
Melemeleone A, M-163
Melemeleone B, M-164
Melevodopa, A-745
Melicarpine, M-165
Melicarpinone, M-166
Melicobisquinolinone A, M-167
Melicobisquinolinone B, M-168
Melicopicine, T-240
Melicopidine, X-2
Melicopine, M-169
Melinacidin II, C-320
Melinacidin III, C-320
Melinacidin IV, C-320
Melineurine, F-212
Melinonine A, A-212
Melinonine B, D-412
Melinonine E, S-606
Melinonine F, M-426
Melinonine G, F-84
Melinonine H, M-171
Melinonine I, M-170
Melinonine K, M-172
Melinonine L, M-173
Melinonine M, M-174
Melisemine, M-175
Melithiazole A, M-177
Melithiazole B, M-177
Melithiazole C, M-178
Melithiazole D, M-177
Melithiazole E, M-177
Melithiazole F, M-179
Melithiazole G, M-180
Melithiazole H, M-181
Melithiazole I, M-176
Melithiazole K, M-177
Melithiazole L, M-177
Melithiazole M, M-181
Melithiazole N, M-177
Melleumin A, M-182
Melleumin B, M-182
Mellictine, G-91
Melobaline, V-124
Meloceline, A-1498
Melocelinine, A-1498
Melochicorine, M-183
Melochinine, M-184
Melochinineone, M-184
Melochinone, M-184
Melochinone, M-185
Melofoline, M-186
Melomorsine, M-187
Melonine, M-188
Melonovine A, M-189
Melonovine B, M-190
Melophlins, M-191
Melosatin A, P-349
Melosatin B, P-349
Melosatin C, P-349
Melosatin D, P-349
Meloscandonine, M-192
Meloscine, M-193
Melosmidine, M-194
Melosmine, M-194
Melovinone, M-195
Memnobotrin A, M-196
Memnobotrin B, M-196
Memoril, G-108
Menisarine, M-197
Menisdaurin, L-213
Menisidine, T-286
Menisine, T-286
Menismine, M-198
Menisperine, I-208
Menisporphine, M-199
Menolysin, Y-13
Menthiafolic acid, H-471
Meprochol, M-284
Mequinine, M-200
Mequiverine, Q-17
Mer-A 2026A, P-421
Mer-A 2026B, P-421
Merabitol, A-216
2-Mercaptobenzothiazole, B-79
2-Mercaptohistidine trimethylbetaine, E-173
2-Mercapto-1*H*-indole-3-carboxaldehyde, M-201
2-Mercapto-1*H*-indole-3-carboxylic acid, M-202
2-(Mercaptomethyl)quinoline, Q-36
5-Mercaptopentanoic acid, M-203
5-Mercapto-4-pentenoic acid, M-204
4-Mercapto-2-pyrimidinol, H-556
3-(2-Mercaptothiazol-5-yl)-1*H*-indole, I-139
5-Mercaptovaleric acid, M-203
Merckonine, M-373
Merenderine *N*-oxide, P-221
Merenderine, P-221
Merenskine *N*-oxide, S-122
Merenskine, S-122
Meridianin A, M-205
Meridianin B, M-205
Meridianin C, M-205
Meridianin D, M-205
Meridianin E, M-205
Meridianin F, M-205
Meridianin G, M-205
Meridine, M-206
12(13*H*)-Meridinone, M-206
Merobustine, P-221
Merobustinine, P-221
Merredissine, M-391
Merresectine A, A-1597
Merresectine B, M-207
Merresectine C, M-207
3β-Merresectine C, M-207
Merresectine D glucoside, M-208
Merresectine D, M-208
3β-Merresectine D, M-208
Merresectine E glucoside, M-208
Merresectine E, M-208
Merresectine F, M-209
3β-Merresectine F, M-209
Mersicarpine, M-210
Mersidasine A, M-217
Mersidasine B, M-217
Mersidasine C, M-211
Mersidasine D, M-211
Mersidasine E, M-217
Mersidasine F, M-217
Mersidasine G, M-217
Mersifoline A, M-212
Mersifoline B, M-212
Mersifoline C, M-212
Mersilongine, M-213
Mersiloscine A, M-214
Mersiloscine B, M-214
Mersiloscine, M-214
Mersinaline, M-215
Mersingine A, M-216
Mersingine B, M-216
Mersinine A, M-217
Mersinine B, M-217
Mersinine C, M-217
Mersirachine, M-218
Merucathine, A-867
Merucathinone, A-868
Mer-WF 1726, C-945
Mesaconitine, M-331
Mescaline citrimide, M-220
Mescaline isocitrimide lactone, M-221
Mescaline maleimide, M-222
Mescaline malimide, M-222
Mescaline succinimide, M-222
Mescaline, M-219
Mescaloruvic acid, M-219
Mescalotam, P-297
Mescaloxylic acid, M-219
Mescengricin, M-223
Mesembrane, M-226
Mesembranol, M-226
Mesembranone, M-226
Mesembrenine, M-224
Mesembrenol, M-224
Mesembrenone, M-224
Δ^7-Mesembrenone, M-225
Mesembrine, M-226
Mesembrinine, M-224

Mesembrinol, M-226
Mesembryanthemins, M-227
Mesoyohimbine, Y-13
Metabolite AM 2498, B-216
Metachromin G, M-228
Metachromin H, M-229
Metacycloprodigiosin, M-230
Metacytofilin, M-231
Metadelphene, M-398
Metadrenaline, N-303
Metafolin®, T-172
Metahemipic acid, D-533
Metanephrine, N-303
Metanicotine, M-232
Metanite, T-632
Metaphanine, M-233
Metaquat, D-743
Meteloidine, M-392
Metenaticin B, M-234
Metenaticin C, M-234
Metergotamine, E-172
Methacryloylcholine, C-419
Methanamine, M-383
Methanecarboxamide, A-30
Methanophenazine, P-328
Methanopterin, M-235
Metheph, D-738
Methothalistyline, T-337
Methoxatin, M-236
6-Methoxy-2,3;7,8-bis(methylenedioxy)benzo[*c*]-phenanthridine, P-55
1-(Methoxyacetyl)-β-carboline, A-1402
11-Methoxy-*O*-acetylisoretuline, R-63
N-(Methoxyacetyl)-3-methylbutylamine, M-259
3-Methoxy-*N*-acetylnornantenine, P-369
3′-Methoxyacoforestinine, M-336
9-Methoxyacridine, A-112
6-Methoxyacronycidine, F-214
5-Methoxyacronycine, A-1527
3-Methoxyaegeline, A-153
12-Methoxyaffinisine, M-237
10-Methoxyaffinisine, S-89
1-Methoxyagroclavine I, A-205
10-Methoxyajmalicine, A-1423
11-Methoxyakuammicine N^b-oxide, A-228
11-Methoxyakuammicine, A-228
12-Methoxyakuammicine, A-228
17-Methoxy-ψ-akuammigine, A-232
1-Methoxyallocryptopine, F-2
12-Methoxyallocryptopine, F-2
(2-Methoxyallyl)trimethylammonium, M-284
11-Methoxyalstonal, A-648
10-Methoxyamerovolficine, P-10
4-Methoxyamphetamine, A-898
N-Methoxyanhydrovobasinediol, T-10
Methoxyannomontine, A-1051
15-Methoxyansamitocin P3, M-136
4-Methoxyanthranilic acid, A-788
5-Methoxyanthranilic acid, A-789
3-Methoxyanthranilic acid, A-787
10-Methoxyantirhine, A-1328
Methoxyantirhine, A-1328
10-Methoxyapparicine, A-1365
5-Methoxyarborinine, T-241
N-Methoxyaristolactam II, D-567
9-Methoxyaristolactam II, T-538
9-Methoxyaristolactam I, T-251
9-Methoxyaristolactam IV, P-214
7-Methoxyaristolochic acid A, T-267
9-Methoxyaristolochic acid II, T-570
12-Methoxyaspidofractinine, A-1494
17-Methoxyaspidofractinine, A-1494
10-Methoxyaspidospermidine, A-1498
17-Methoxyaspidospermidine, A-1499
2-Methoxyatherosperminine *N*-oxide, M-238
2-Methoxyatherosperminine, M-238
4-Methoxybenzamide, M-240
β-Methoxybenzeneethanamine, A-864
4-Methoxybenzeneethanamine, M-280
10-Methoxybenzimidazo[6,7,1-*def*][1,6]naphthyridine, M-239
8-Methoxybenzo[*f*]-1,3-benzodioxolo[6,5,4-*cd*]indol-5(6*H*)-one, A-1427
4-Methoxy-8*H*-benzo[*g*]benzodioxolo[6,5,4-*de*]quinolin-8-one, A-1531
2-Methoxy-12*H*-benzo[*h*][1,3]benzodioxolo[6,5,4-*de*]quinolin-12-one, B-117
10-Methoxy-8*H*-benzo[*g*]-1,3-benzodioxolo[6,5,4-*de*]quinolin-8-one, L-40
9-Methoxy-8*H*-benzo[*g*]-1,3-benzodioxolo[6,5,4-*de*]quinolin-8-one, O-209
7-Methoxy[1,3]benzodioxolo[4,5-*c*]-1,3-dioxolo[4,5-*c*]phenanthridine, P-81
14-Methoxy[1,3]benzodioxolo[5,6-*c*]-1,3-dioxolo[4,5-*i*]phenanthridine, P-55
1-Methoxy[1,3]benzodioxolo[5,6-*c*]phenanthridin-2-ol, C-356
2-Methoxy[1,3]benzodioxolo[5,6-*c*]phenanthridin-1-ol, C-356
7-(7-Methoxy-1,3-benzodioxol-5-yl)-*N*-(2-methylpropyl)-2,4-heptadienamide, C-387
3-[5-(7-Methoxy-1,3-benzodioxol-5-yl)-2-oxazolyl]-pyridine, T-299
1-[5-(6-Methoxy-1,3-benzodioxol-5-yl)-1-oxo-2,4-pentadienyl]piperidine, W-17
1-[5-(6-Methoxy-1,3-benzodioxol-5-yl)-1-oxo-2,4-pentadienyl]pyrrolidine, W-16
4-Methoxybenzoic acid, M-240
4-Methoxybenzo[*c*][2,7]naphthyridine, B-75
8-Methoxy-9*H*-benzo[*de*][1,6]naphthyridin-9-one, M-241
6-Methoxy-2(3*H*)-benzothiazolone, B-78
2-Methoxy-2*H*-1,4-benzoxazin-3(4*H*)-one, H-409
6-Methoxy-2-benzoxazolinone, B-82
6-Methoxy-2-benzoxazolol, B-82
6-Methoxy-2(3*H*)-benzoxazolone, B-82
1-(4-Methoxybenzoyl)-6,7-methylenedioxyisoquinoline, M-242
N-(4-Methoxybenzoyl)-*N′*-methylguanidine, M-466
14-(4-Methoxybenzoyl)neoline, M-323
3-Methoxybenzylamine, H-416
N^5-(4-Methoxybenzyl)glutamine, G-108
N-(3-Methoxybenzyl)hexadecanamide, H-221
1-(4-Methoxybenzyl)-6,7-methylenedioxyisoquinoline, H-424
1-Methoxyberberine, M-243
4-Methoxy-[2,2′-bipyridine]-6-carboxaldehyde oxime, C-9
4-Methoxy-[2,2′-bipyridine]-6-carboxaldehyde, C-11
4-Methoxy-2,2′-bipyrrole-5-carboxaldehyde, M-244
4-Methoxy-8*H*-bis[1,3]benzodioxolo[6,5,4-*de*:5′,6′-*g*]quinolin-8-one, C-179
10-Methoxy-1,2:8,9-bis(methylenedioxy)aporphine, P-210
3-Methoxy-1,2:9,10-bis(methylenedioxy)noraporphine, N-125
3-Methoxy-2,5-bis(1-methylethyl)pyrazine, D-699
3-Methoxy-2,5-bis(2-methylpropyl)pyrazine, F-76
7-Methoxy-α,α-bis(methylthio)-1*H*-indole-3-acetonitrile, D-873
5-Methoxy-3,6-bis(phenylmethyl)-2(1*H*)-pyrazinone 4-oxide, D-300
5-Methoxy-3,6-bis(phenylmethyl)-2(1*H*)-pyrazinone, D-300
Methoxybrassenin A, M-245
Methoxybrassenin B, M-246
4-Methoxybrassinin, B-284
Methoxybrassinin, B-284
Methoxybrassitin, B-285
6α-Methoxybuphanidrine, P-581
4-Methoxy-1-butylamine, A-716
2-Methoxy-3-*sec*-butylpyrazine, M-272
10-Methoxycaaverine, T-524
6-Methoxycamalexin, T-372
7-Methoxycamptothecin, C-70
9-Methoxycamptothecin, C-70
10-Methoxycamptothecin, C-70
5-Methoxycanthin-2,6-dione, I-105
3-Methoxycanthin-2,6-dione, I-105
8-Methoxycanthin-6-one (incorr.), H-444
9-Methoxycanthin-6-one N^3-oxide, H-444
1-Methoxycanthin-6-one *N*(3)-oxide, H-438
4-Methoxycanthin-6-one, H-440
5-Methoxycanthin-4-one, H-441
5-Methoxycanthin-6-one, H-442
9-Methoxycanthin-6-one, H-444
1-Methoxycanthin-6-one, H-438
10-Methoxycanthin-6-one, H-445
11-Methoxycanthin-6-one, H-446
2-Methoxycanthin-6-one, H-439
8-Methoxy-2-carbazolecarboxaldehyde (obsol.), H-449
7-Methoxy-9*H*-carbazole-3-carboxaldehyde, H-450
8-Methoxy-9*H*-carbazole-3-carboxaldehyde, H-451
1-Methoxy-9*H*-carbazole-3-carboxaldehyde, H-447
6-Methoxy-9*H*-carbazole-3-carboxaldehyde, H-449
2-Methoxy-9*H*-carbazole-3-carboxaldehyde, H-448
7-Methoxy-9*H*-carbazole-3-carboxylic acid, H-455
1-Methoxy-9*H*-carbazole-3-carboxylic acid, H-452
8-Methoxy-9*H*-carbazole-3-methanol, H-604
1-Methoxy-9*H*-carbazole-3-methanol, H-603
6-Methoxycarbazomycinal, H-561
7-Methoxy-β-carboline-1-carboxamide, H-459
1-Methoxy-β-carboline-3-carboxylic acid, C-133
7-Methoxy-β-carboline, P-916
8-Methoxy-β-carboline, P-917
1-Methoxy-β-carboline, P-914
6-Methoxy-β-carboline-1-propanoic acid, C-134
7-Methoxy-β-carboline-1-propanoic acid, C-134
8-Methoxy-β-carboline-1,3,4-trione, C-135
2-Methoxy-3-carbomethoxycarbazole, H-453
N-Methoxycarbonylactinodaphnine, D-346
N-Methoxycarbonylanonaine, R-120
5-(3-Methoxycarbonylbutyroyl)aminomethyl-*trans*-quinolizidine *N*-oxide, O-59
5-[(3-Methoxycarbonylbutyroyl)aminomethyl]quinolizidine, O-59
1-Methoxycarbonyl-β-carboline, C-132
3-Methoxycarbonyl-β-carboline, C-133
N-Methoxycarbonylcassyfiline, O-27
12-Methoxycarbonylcytisine, C-938
37-(Methoxycarbonyl)dictyodendrine E, M-247
N^1-Methoxycarbonyl-16,17-didehydrokopsinine, K-71
N-Methoxycarbonyl-11,12-dimethoxykopsinaline, K-74
N-Methoxycarbonyl-10,22-dioxokopsane, D-805
N-Methoxycarbonyl-11-hydroxy-12-methoxykopsinaline, K-74
N-Methoxycarbonyl-12-hydroxy-11-methoxykopsinaline, K-74
N-Methoxycarbonylkopsinaline, K-74
3-(Methoxycarbonyl)meloscine, S-118
N-Methoxycarbonyl-12-methoxykopsinaline, K-74
(Methoxycarbonylmethoxy)phenazine, P-327
N-Methoxycarbonyl-11,12-methylenedioxykopsinaline, K-74
N-Methoxycarbonyl-11,12-methylenedioxy-$\Delta^{16,17}$-kopsinine *N*-oxide, K-71
N-Methoxycarbonyl-11,12-methylenedioxy-$\Delta^{16,17}$-kopsinine, K-71
4-Methoxycarbonyl-1-methyl-2,7-naphthyridine, M-488
5-Methoxycarbonyl-4-methyl-2,7-naphthyridine, M-489
N-Methoxycarbonylnorisocorydine, I-208
N-Methoxycarbonyl-*N*-nornuciferine, D-531
1-Methoxycarbonylpyrrolizidine, P-960
5-(Methoxycarbonyl)tubercidin, S-53
3-Methoxycarbonyl-5-vinylpyridine, V-141
10-Methoxycathafoline N^4-oxide, C-191
10-Methoxycathafoline, C-191
3-Methoxycepharadione B, O-139
10-Methoxychelidonine, C-353
10-Methoxycinchonamine, C-444
6′-Methoxycinchonan-9-ol, Q-18
6′-Methoxycinchonan-9-ol, Q-20
6′-Methoxycinchonan-9-one, Q-18
m-Methoxycinnamic acid pyrrolidide, H-690
p-Methoxycinnamic acid pyrrolidide, H-691
2-(3-Methoxycinnamoyl)-4*H*-3,1-benzoxazin-4-one, A-1561
N^1-(*Z*)-*p*-Methoxycinnamoylbuchnerine, P-673
N-(4-Methoxycinnamoyl)dopamine, D-920
N-(4-Methoxycinnamoyl)ethylenediamine, E-225
1-(*m*-Methoxycinnamoyl)pyrrolidine, H-690

N-(4-Methoxycinnamoyl)pyrrolidine, H-691
N-(4-Methoxycinnamoyl)-2-pyrrolidinone, P-956
6-Methoxycleistopholine, M-399
7-Methoxycleistopholine, M-399
2-Methoxycomosivine, C-588
11-Methoxycompactinervine, C-589
12-Methoxycompactinervine, C-589
3*R*-Methoxycoronaridine, C-657
9-Methoxycorynantheine, G-13
10-Methoxycorynantheol α-*N*-methosalt, D-412
10-Methoxycorynantheol β-*N*-methosalt, D-412
10-Methoxycorynantheol, D-412
10-Methoxycorynanthine, M-291
6-Methoxycrinamine, H-6
7-Methoxycrinan-11-ol, H-9
23-Methoxycyclopamine, J-36
4′-Methoxycyclopeptine, C-890
4′-Methoxycytochalasin E, C-945
Methoxydambullin, D-12
10-Methoxydeacetylakuammiline, A-231
Methoxydechlorochartelline A, C-350
9-Methoxydehydroanonaine, D-175
11-Methoxy-2,16-dehydrodiaboline, C-115
N^1-Methoxy-19,20-dehydroervatamine, E-190
12-Methoxy-14,15-dehydrovincamine, V-115
18-Methoxydelterine, M-339
10-Methoxy-16-demethoxycarbonylpagicerine, P-10
5-Methoxy-9-*O*-demethylhomolycorine, H-504
10-Methoxy-*O*-demethyltsilanine, T-649
23-Methoxy-11-deoxojervine, J-36
10-Methoxydeplancheine, D-230
11-Methoxydiaboline *N*-oxide, C-115
11-Methoxydiaboline, C-115
4-Methoxydianthramide B methyl ester, B-67
4-Methoxydianthramide B, B-67
4-Methoxydianthramide M, B-67
4-Methoxydianthramide R, B-67
4-Methoxydianthramide S, B-67
11-Methoxydichotine, D-359
5-Methoxydictamnine, F-210
6-Methoxydictamnine, F-211
7-Methoxydictamnine, F-212
8-Methoxydictamnine, F-213
6-Methoxydictyolomide A, D-367
5-Methoxydihydrochelerythrine, D-407
8-Methoxydihydrochelerythrine, D-407
12-Methoxydihydrochelerythrine, D-407
5-Methoxydihydrochelirubine, D-510
10-Methoxydihydrocorynantheol 4α-*N*-oxide, D-412
10-Methoxydihydrocorynantheol 4β-*N*-oxide, D-412
10-Methoxydihydrocorynantheol, D-412
11-Methoxydihydrocorynantheol, D-412
4-Methoxydihydronorsecurinine, N-307
15-Methoxy-14,15-dihydrophyllochrysine, A-630
2-Methoxy-1,2-dihydrorhazimine, R-73
8-Methoxydihydrosanguinarine, D-510
10-Methoxy-4′,17-dihydro-17α-tchibangensine, U-52
10-Methoxy-4′,17-dihydro-17β-tchibangensine, U-52
3-Methoxy-4,6-dihydroxymorphinandien-7-one, S-39
3-Methoxy-20-(dimethylamino)pregna-5,16-dien-2-ol, A-874
3-Methoxy-20-dimethylaminopregn-5-ene, A-886
4-Methoxy-*N,N*-dimethylbenzeneethanamine, M-280
3-Methoxy-*N,N*-dimethylbenzenemethanamine, H-416
1′-Methoxy-3,3′-dimethyl-[2,4′-bi-9*H*-carbazole]-1,4-dione, B-135
3-Methoxy-1,2-dimethyl-9*H*-carbazol-4-ol, D-571
1-Methoxy-*N,N*-dimethyl-10*H*-[1,3]dioxolo[6,7]-phenanthro[4,5-*bcd*]pyran-3-ethanamine, T-327
2-Methoxy-*N,N*-dimethylethanamine, D-730
2-Methoxy-*N,N*-dimethylethylamine, D-730
11-Methoxy-3,3-dimethyl-3*H*-furano[2,3-*b*]pyrano[3,2-*f*]quinoline, A-121
1-Methoxy-*N,N*-dimethyl-1*H*-indole-3-ethanamine, D-785
7-Methoxy-*N,N*-dimethyl-1*H*-indole-3-methanamine, D-735
α-Methoxy-*N,N*-dimethyl-1*H*-indole-3-propanamide, H-539
5-Methoxy-2,6-dimethyl-2*H*-isoindole-4,7-dione, M-248
7-Methoxy-1,6-dimethyl-5,8-isoquinolinedione, M-249
7-Methoxy-2,6-dimethyl-3,5,8(2*H*)-isoquinolinetrione, M-624
5-Methoxy-*N,N*-dimethyl-β-oxotryptamine, D-727
10-Methoxy-*N,N*-dimethylphenanthro[3,4-*d*]-1,3-dioxole-5-ethanamine, I-343
9-Methoxy-*N,N*-dimethylphenanthro[3,4-*d*]-1,3-dioxole-5-ethanamine, U-64
4-Methoxy-7,8-dimethyl-2*H*-pyrano[4,3-*b*]pyridin-2-one, M-250
5-Methoxy-2,2-dimethyl-2*H*-pyrano[2,3-*b*]quinoline, M-251
2-Methoxy-3,5-dimethylpyrazine, H-474
3-Methoxy-2,5-dimethylpyrazine, H-475
3-Methoxy-α,α-dimethylpyrazinemethanol, H-545
N-Methoxy-*N*,ξ-dimethyl-3-pyridinetetradecanamine, X-17
8-Methoxy-5,11-dimethylpyrido[4,3-*b*]carbazole, E-67
9-Methoxy-5,11-dimethylpyrido[4,3-*b*]carbazole, M-252
1-Methoxy-*N,N*-dimethyltryptamine, D-785
5-Methoxy-*N,N*-dimethyltryptamine, M-288
11-Methoxy-1,3-dioxolo[4,5-*b*]acridin-10-one, T-516
6-Methoxy-13*H*-[1,3]dioxolo[7,8][1]benzoxepino[2,3,4-*ij*]isoquinolin-13-one, O-169
6-Methoxy-1,3-dioxolo[4,5-*h*]furo[2,3-*b*]quinoline, F-223
9-Methoxy-1,3-dioxolo[4,5-*g*]furo[2,3-*b*]quinoline, F-221
9-Methoxy-1,3-dioxolo[4,5-*g*]furo[2,3-*b*]quinolin-4-ol, F-217
4-Methoxy-2,2′-dipyridyl-6-aldoxime, C-9
1-Methoxydiscorhabdin D, D-852
9-Methoxydispacamide B, D-863
Methoxydoisuthine, D-900
2-Methoxydyshomerythrine, D-963
11-Methoxyeburnamonine, E-6
11-Methoxyechitovenidine, M-631
11-Methoxyechitoveniline, M-631
16-Methoxyechitoveniline, M-631
10-Methoxyeglandine *N*-oxide, V-170
10-Methoxyeglandine, V-170
8-Methoxyellipticine, E-67
9-Methoxyellipticine, M-252
10-Methoxy-17-epialloyohimbine, M-291
6′-Methoxyepidihydroshihunine, D-511
11-[10-(11-Methoxy-17-epivincamajinyl)]vincorine, M-289
11-Methoxy-17-epivincamine, V-113
10-Methoxy-3-epi-α-yohimbine, M-291
11-Methoxy-17-epi-α-yohimbine, M-292
11-Methoxy-3-epi-α-yohimbine, M-292
9-Methoxy-3-epi-α-yohimbine, V-50
11-Methoxy-19,20α-epoxyakuammicine, A-228
12-Methoxy-19α,20α-epoxyakuammicine, A-228
11-Methoxyerysodine, E-206
11-Methoxyerysopine, E-206
11β-Methoxyerysotramidine, E-202
11-Methoxyerysotrine, E-206
11-Methoxyerysovine, E-206
11β-Methoxyerythraline *N*-oxide, E-205
11-Methoxyerythraline, E-205
11-Methoxyerythratidine, E-207
11-Methoxyerythratine, E-208
4-(2-Methoxyethyl)imidazole, I-38
3-(1-Methoxyethyl)-5-methoxycarbonylpyridine, H-498
6-(1-Methoxyethyl)-1-phenazinecarboxylic acid, H-496
3-Methoxyeupolauridine, I-65
2-Methoxyeustifoline A, E-300
5′-Methoxyfagaramide, M-261
3-Methoxyfaurithaline, F-27
5-Methoxyflindersiamine, F-214
5-Methoxyflindersine, F-90
6-Methoxyflindersine, F-90
7-Methoxyflindersine, F-90
8-Methoxyflindersine, F-90
N-Methoxy-3-formylcarbazole, C-121
1-Methoxy-3-formylindole, I-86
4-Methoxyfuro[2,3-*b*]quinoline, F-224
4-Methoxyfuro[2,3-*b*]quinolin-7-ol, F-212
4-Methoxyfuro[2,3-*b*]quinolin-8-ol, F-213
18-Methoxygadesine, G-152
9-Methoxygeissoschizol, G-33
10-Methoxygeissoschizol, G-33
11-Methoxygelsemamide, G-48
N-Methoxygelsemine, G-49
11-Methoxygelsemoxonine, G-50
Methoxygerambullol, G-68
4-Methoxyglucobrassicin, I-122
N-Methoxyglucobrassicin, I-122
11β-Methoxyglucoerysodine, E-206
11β-Methoxyglucoerysovine, E-206
2-Methoxyglycomaurin, E-300
5-Methoxygramine, D-734
7-Methoxygramine, D-735
3′-Methoxygraveoline, G-171
3-Methoxyguattescidine, G-214
5-Methoxyhalfordinine, F-214
6-Methoxyharmalan, H-591
6-Methoxyharman, H-591
1′-Methoxyhemibastadin 1, H-100
1′-Methoxyhemibastadin 2, H-100
11-Methoxyhenningsamine, C-115
6-Methoxyheptaphylline, H-125
7-Methoxyheptaphylline, H-125
11-Methoxyhumantenine, H-367
9-Methoxy-10-hydroxy-2,3-methylenedioxybenzophenanthridine, C-356
1-Methoxy-8-hydroxymethyl-3*H*-phenoxazin-3-one, M-253
4-Methoxy-β-hydroxyphenethylamine, O-63
7-Methoxy-4-hydroxy-2-quinolinecarboxylic acid, D-676
10-Methoxy-21-hydroxyvinorine, V-194
11-Methoxyibogamine, I-4
13-Methoxyibogamine, I-4
11-Methoxyicajine, I-12
Methoxyincarvillateine, I-60
4-Methoxyindole 3-isothiocyanate, I-337
5-Methoxy-1*H*-indole-3-acetic acid, H-525
6-Methoxy-1*H*-indole-3-acetic acid, H-526
4-Methoxy-1*H*-indole-3-acetonitrile, H-524
6-Methoxy-1*H*-indole-3-acetonitrile, H-526
1-Methoxy-1*H*-indole-3-acetonitrile, I-81
4-Methoxy-1*H*-indole-3-carboxaldehyde, H-527
5-Methoxy-1*H*-indole-3-carboxaldehyde, H-528
1-Methoxy-1*H*-indole-3-carboxaldehyde, I-86
4-Methoxy-1*H*-indole-2,3-dione, H-532
6-Methoxy-1*H*-indole-2,3-dione, H-533
5-Methoxy-1*H*-indole-4,7-dione, M-254
6-Methoxy-1*H*-indole-4,7-dione, M-255
5-Methoxy-1*H*-indole-3-ethanamine, M-288
α-Methoxy-1*H*-indole-3-propanoic acid, H-539
5-Methoxyindoline, D-465
5-Methoxy-3*H*-indolo[3,2,1-*de*][1,5]naphthyridine-2,6-dione, I-105
4-Methoxy-6*H*-indolo[3,2,1-*de*][1,5]naphthyridin-6-one, H-440
9-Methoxy-6*H*-indolo[3,2,1-*de*][1,5]naphthyridin-6-one, H-444
1-Methoxy-6*H*-indolo[3,2,1-*de*][1,5]naphthyridin-6-one, H-438
10-Methoxy-6*H*-indolo[3,2,1-*de*][1,5]naphthyridin-6-one, H-445
11-Methoxy-6*H*-indolo[3,2,1-*de*][1,5]naphthyridin-6-one, H-446
2-Methoxy-6*H*-indolo[3,2,1-*de*][1,5]naphthyridin-6-one, H-439
N-[2-(5-Methoxy-1*H*-indol-3-yl)ethyl]acetamide, M-288
4-Methoxyindol-3-ylmethyl glucosinolate, I-122
2-Methoxy-3-(3-indolyl)propanoic acid, H-539

Methoxyipomine, I-165
4-Methoxyisatin, H-532
6-Methoxyisatin, H-533
8-Methoxyisodecarine, C-356
6-Methoxyisodictamnine, F-211
10-Methoxyisogeissoschizol, G-33
16-Methoxyisomatopensine, M-120
3-Methoxyisoprenaline, N-303
7-Methoxy-6-isoquinolinol, I-302
11-Methoxyisoretuline, R-63
9-Methoxy-(16*R*)-*E*-isositsirikine, I-319
9-Methoxy-(16*S*)-*E*-isositsirikine, I-319
8-Methoxy-8*H*-isothiazolo[5,4-*b*]indole, I-336
5-Methoxyisoxazole, I-349
8-Methoxykarakoline (incorr.), M-355
11-Methoxykopsilongine N^4-oxide, K-74
11-Methoxykopsilongine, K-74
12-Methoxykopsinaline, K-74
11-Methoxykopsingine, K-66
15-Methoxykopsinine, K-78
10-Methoxykopsinone, K-80
12-Methoxykopsinone, K-80
6-Methoxykynurenic acid, D-675
10-Methoxylanciferine, L-29
2-Methoxylenticellarine, L-92
11-Methoxylimapodine, L-177
11-Methoxylimaspermine, L-177
11-Methoxylimatine, A-1497
11-Methoxylimatinine, A-1497
9-Methoxyliriodenine, L-40
10-Methoxyliriodenine, O-187
6-Methoxylunidonine, L-295
6α-Methoxylupanine, H-552
13β-Methoxylupanine, H-554
13-Methoxylupanine, H-554
10-Methoxymacrocarpamine 4′-*N*-oxide, M-11
10-Methoxymacrocarpamine, M-11
5-Methoxymaculine, F-215
11-Methoxymacusine A, P-562
9-Methoxymappicine gentiobioside, M-96
9-Methoxymappicine, M-96
1-Methoxy-9-[(1-methoxy-9*H*-carbazol-3-yl)-methyl]-3-methyl-9*H*-carbazole, B-207
1-Methoxy-4-[(1-methoxy-9*H*-carbazol-3-yl)-methyl]-3-methyl-9*H*-carbazole, C-423
1-Methoxy-2-[(9-methoxy-9*H*-carbazol-3-yl)-methyl]-3-methyl-9*H*-carbazole, M-746
4-Methoxy-1-methoxycarbonyl-β-carboline, H-457
12-Methoxy-*N*-methoxycarbonylkopsinaline, K-74
12-Methoxy-*N*-methoxycarbonyl-$\Delta^{16,17}$-kopsinine N^4-oxide, K-71
12-Methoxy-*N*-methoxycarbonyl-$\Delta^{16,17}$-kopsinine, K-71
9-Methoxy-*N*-methoxycarbonyl-1,2-methylenedioxynoraporphine, A-1066
8-Methoxy-2-(3-methoxy-4,5-methylenedioxyphenyl)-1-methyl-4(1*H*)-quinolinone, G-171
2-Methoxy-2-(4-methoxyphenyl)ethylamine, O-63
N-[2-Methoxy-2-(4-methoxyphenyl)ethyl]cinnamide, A-153
5-Methoxy-5-(4-methoxyphenyl)-3-methyl-2,4-imidazolidinedione, M-256
4-Methoxy-4-(4-methoxyphenyl)-1-methyl-5-thioxo-2-imidazolidinone, H-568
4-Methoxy-5-[(3-methoxy-5-pyrrol-2-yl-2*H*-pyrrol-2-ylidene)methyl]-2,2′-bipyrrole, M-257
10-Methoxy-11-[10-(11-methoxyvincamajinyl)]-cathafoline, M-258
N^1-Methoxymethuenine, M-293
1-Methoxy-10-methylacridone, H-402
12-Methoxy-N^b-methylakuammicine, A-228
3-Methoxy-2-methylaminobenzoic acid, A-787
3-Methoxy-20-(methylamino)pregna-5,16-diene, A-876
6-Methoxy-1-methyl-4-azafluorenone, O-93
7-Methoxy-1,2-(*N*-methylaziridino)mitosene, M-653
4-Methoxy-α-methylbenzeneethanamine, A-898
4-Methoxy-*N*-methylbenzeneethanamine, M-280
5-Methoxy-13-methyl[1,3]benzodioxolo[5,6-*c*]-1,3-dioxolo[4,5-*i*]phenanthridinium(1+), C-360
6-Methoxy-5-methylbenzo[*h*]pyrrolo[4,3,2-*de*]quinolin-4(5*H*)-one, E-297
7-Methoxy-4-methylbenzo[*g*]quinoline-5,10-dione, M-399
3-Methoxy-4-methylbenzo[*g*]quinoline-2,5,10(1*H*)-trione, M-97
2-Methoxy-4-methyl-2*H*-1,4-benzoxazin-3(4*H*)-one, H-409
8-Methoxy-16-methyl-2,3:10,11-bis[methylenebis(oxy)]rheadan, R-86
10-Methoxy-N^a-methylburnamine 17-*O*-benzoate, B-420
10-Methoxy-N^a-methylburnamine 17-*O*-veratrate, B-420
4-Methoxy-3-(3-methyl-1,3-butadienyl)-2(1*H*)-quinolinone, G-118
2-Methoxy-8-(3-methyl-2-butenyl)-9*H*-carbazole-3-carboxaldehyde, A-1530
1-Methoxy-4-(3-methyl-2-butenyl)-9*H*-carbazole-3-carboxaldehyde, C-507
1-Methoxy-2-(3-methyl-2-butenyl)-9*H*-carbazole-3-carboxaldehyde, I-75
9-Methoxy-10-(3-methyl-2-butenyl)-1,3-dioxolo[4,5-*g*]furo[2,3-*b*]quinolin-4-ol, T-57
4-Methoxy-8-(3-methyl-2-butenyl)furo[2,3-*b*]quinolin-7-ol, H-570
7-Methoxy-9-(3-methyl-2-butenyl)furo[2,3-*b*]quinolin-4(9*H*)-one, F-212
6-Methoxy-3-(3-methyl-2-butenylidene)-2-indolinone, D-471
7-Methoxy-8-(3-methyl-2-butenyloxy)dictamnine, F-223
4-Methoxy-7-[(3-methyl-2-butenyl)oxy]furo[2,3-*b*]quinoline, F-212
4-Methoxy-8-[(3-methyl-2-butenyl)oxy]furo[2,3-*b*]quinoline, F-213
4-Methoxy-3-(3-methyl-2-butenyl)-2(1*H*)-quinolinone, A-1529
2-Methoxy-*N*-(3-methylbutyl)acetamide, M-259
9-Methoxy-3-methyl-5,6-canthindione, P-413
4-Methoxy-3-methyl-5,6-canthinedione, P-413
9-Methoxy-5-methylcanthin-6-one, L-299
3-Methoxy-6-methyl-9*H*-carbazole-1-carboxaldehyde, H-589
7-Methoxy-3-methyl-1*H*-carbazole-1,4(9*H*)-dione, K-55
5-Methoxy-3-methyl-9*H*-carbazole, H-588
1-Methoxy-3-methyl-9*H*-carbazole, H-583
3-Methoxy-6-methyl-9*H*-carbazole, H-587
1-Methoxy-6-methyl-9*H*-carbazole, H-584
2-Methoxy-3-methyl-9*H*-carbazole, H-585
7-Methoxy-3-methyl-1,4-carbazolequinone, K-55
6-Methoxy-1-methyl-β-carboline, H-591
7-Methoxy-1-methyl-β-carboline, H-592
7-Methoxy-4-methyl-γ-carboline, M-260
6-Methoxy-2-methyl-β-carbolinium(1+), P-915
1-Methoxymethyl-1,2-dehydropyrrolizidine, S-644
12-Methoxy-N^1-methyl-14,15-didehydroaspidofractinine, A-1494
11-Methoxy-*N*-methyldihydropericyclivine, G-22
4-Methoxy-5-methyl-1,3-dioxolo[4,5-*g*]furo[2,3-*b*]quinolin-9(5*H*)-one, F-217
6-Methoxy-9-methyl-1,3-dioxolo[4,5-*h*]quinolin-8(9*H*)-one, C-177
1-Methoxy-2,3-methylenedioxyacridone, T-516
9-Methoxy-1,2-methylenedioxyaporphine, A-1066
10-Methoxy-1,2-methylenedioxyaporphine, L-72
7-Methoxy-1,2-methylenedioxyaporphine, O-87
11-Methoxy-1,2-methylenedioxyaporphine, P-781
3-Methoxy-1,2-methylenedioxyaporphine, S-536
8-Methoxy-1,2-methylenedioxyaporphine, T-522
2-Methoxy-4,5-methylenedioxycinnamic acid, M-261
2-Methoxy-4,5-methylenedioxycinnamoyl isobutylamide, M-261
2-Methoxy-4,5-methylenedioxycinnamoyl piperidide, M-261
2-Methoxy-4,5-methylenedioxycinnamoyl pyrrolidide, M-261
N-(3-Methoxy-4,5-methylenedioxycinnamoyl)isobutylamine, T-578
N-(3-Methoxy-4,5-methylenedioxycinnamoyl)piperidide, T-578
N-(3-Methoxy-4,5-methylenedioxycinnamoyl)-Δ^3-pyridin-2-one, D-470
N-(3-Methoxy-4,5-methylenedioxycinnamoyl)pyrrolidine, T-578
8-Methoxy-6,7-methylenedioxydictamnine, F-217
4-Methoxy-6,7-methylenedioxyfuro[2,3-*b*]quinoline, F-221
4-Methoxy-7,8-methylenedioxyfuro[2,3-*b*]quinoline, F-223
8-Methoxy-3,4-methylenedioxy-10-nitro-1-phenanthreneacetic acid, D-102
6-Methoxy-3,4-methylenedioxy-10-nitro-1-phenanthrenecarboxylic acid, H-600
8-Methoxy-3,4-methylenedioxy-10-nitro-1-phenanthrenecarboxylic acid, M-262
9-Methoxy-1,2-methylenedioxynoraporphine, A-1066
10-Methoxy-1,2-methylenedioxynoraporphine, L-72
7-Methoxy-1,2-methylenedioxynoraporphine, O-87
11-Methoxy-1,2-methylenedioxynoraporphine, P-781
3-Methoxy-1,2-methylenedioxynoraporphine, S-536
3-Methoxy-1,2-methylenedioxyoxoaporphine, A-1531
9-Methoxy-1,2-methylenedioxy-7-oxodibenzo[-*de*,*g*]quinoline, L-40
8-Methoxy-3,4-methylenedioxy-1-phenanthrenecarboxylic acid, M-263
7-(3-Methoxy-4,5-methylenedioxyphenyl)-2,4-heptadienoic acid isobutylamide, C-387
4-Methoxy-2-[6-(3,4-methylenedioxyphenyl)hexyl]-quinoline, M-453
2-(3-Methoxy-4,5-methylenedioxyphenyl)-1-methyl-4(1*H*)-quinolinone, G-171
5-(6-Methoxy-3,4-methylenedioxyphenyl)-2,4-pentadienoic acid isobutylamide, P-462
1-[5-(2-Methoxy-4,5-methylenedioxyphenyl)pentadienoyl]piperidine, W-17
1-[5-(2-Methoxy-4,5-methylenedioxyphenyl)pentadienoyl]pyrrolidine, W-16
2-(3-Methoxy-4,5-methylenedioxyphenyl)-5-(3-pyridinyl)oxazole, T-299
4-Methoxy-2-(3,4-methylenedioxyphenyl)quinoline, M-264
4-Methoxy-6,7-methylenedioxy-8-prenyloxyfuro[2,3-*b*]quinoline, F-217
4-Methoxy-2-(3,4-methylenedioxystyryl)quinoline, M-265
3-(Methoxymethylene)-2-pyrrolidinethione, M-266
1-Methoxymethyl-1,2-epoxypyrrolizidine, E-133
3-Methoxy-2-(1-methylethyl)-5-(1-methylpropyl)-pyrazine, I-275
3-Methoxy-2-(1-methylethyl)-5-(2-methylpropyl)-pyrazine, I-276
2-Methoxy-3-(1-methylethyl)pyrido[2,3-*b*]pyrazine, I-278
6-Methoxy-*N*-methylflindersine, F-90
7-Methoxy-*N*-methylflindersine, F-90
6-Methoxy-9-methylfuro[2,3-*b*]quinolin-4(9*H*)-one, F-211
8-Methoxy-9-methylfuro[2,3-*b*]quinolin-4(9*H*)-one, F-213
4-Methoxy-9-methyl-7*H*-furo[2,3-*b*]quinolin-7(9*H*)-one, M-166
9-Methoxy-N^b-methylgeissoschizol, G-33
10-Methoxy-4-methylgeissoschizol, G-33
8-Methoxy-4-methyl-5*H*-indeno[1,2-*b*]pyridine-5,9-diol, D-626
8-Methoxy-4-methyl-5*H*-indeno[1,2-*b*]pyridin-5-one, O-93
1-Methoxy-β-methyl-1*H*-indole-3-butanol, I-124
5-Methoxy-1-methyl-1*H*-indole-3-carboxaldehyde, H-528
6-Methoxy-1-methyl-1*H*-indole-2,3-dione, H-533
4-Methoxy-3-methyl-3*H*-indolo[3,2,1-*de*][1,5]-naphthyridine-5,6-dione, P-413
6-Methoxy-*N*-methylisatin, H-533
6-Methoxy-1-methyl-7-isoquinolinol, D-627
3′-Methoxy-4′-*O*-methyljoubertiamine, J-49
3′-Methoxy-4′-*O*-methyljoubertiaminol, J-50

1-Methoxy-3-methyl-2-(3-methyl-2-butenyl)-9*H*-carbazole, C-504
7-Methoxy-3-methyl-8-(3-methyl-2-butenyl)-1*H*-carbazole-1,4(9*H*)-dione, M-766
7-Methoxy-3-methyl-8-(3-methyl-2-butenyl)-9*H*-carbazol-2-ol, E-275
7-Methoxy-3-methyl-8-(3-methyl-2-butenyl)-9*H*-carbazol-1-ol, M-759
6-Methoxy-9-methyl-7-(3-methyl-2-butenyl)-1,3-dioxolo[4,5-*h*]quinolin-8(9*H*)-one, P-759
4-Methoxy-1-methyl-8-[(3-methyl-2-butenyl)oxy]-2(1*H*)-quinolinone, Q-47
1-Methoxy-10-methyl-2,3-methylenedioxyacridone, T-516
4-Methoxy-2-methyl-6,7-methylenedioxyisoquinolinium, H-424
7-Methoxy-1-methyl-2-(3,4-methylenedioxyphenyl)-4(1*H*)-quinolinone, L-290
4-Methoxy-1-methyl-7,8-methylenedioxy-3-prenyl-2-quinolone, P-759
4-Methoxy-1-methyl-7,8-methylenedioxy-2(1*H*)-quinolinone, C-177
2-Methoxy-5-methyl-3-(1-methylethyl)pyrazine, I-277
4-(Methoxymethyl)-2-methylindole, M-478
4-Methoxy-1-methyl-8-(3-methyl-2-oxobutoxy)-2(1*H*)-quinolinone, F-122
4-Methoxy-1-methyl-3-(3-methyl-2-oxobutyl)-2(1*H*)-quinolinone, E-40
3-Methoxy-2-methyl-5-(1-methylpropyl)pyrazine, M-267
3-Methoxy-2-methyl-5-(2-methylpropyl)pyrazine, M-268
3-Methoxy-4-methyl-5-(2-methyl-4-thiazolyl)-4-pentenoic acid, M-269
4-Methoxy-*N*-methyl-α-oxobenzeneethanethioamide, M-282
9-Methoxy-7-methyl-8-oxo-8*H*-benzo[*g*]-1,3-benzodioxolo[6,5,4-*de*]quinolinium(1+), O-209
6-Methoxy-7-methyl-8-oxoguanine, A-753
4-Methoxy-5-[(5-methyl-4-pentyl-2*H*-pyrrol-2-ylidene)methyl]-2,2′-bi-1*H*-pyrrole, P-636
8-Methoxy-1-methyl-2-pentyl-4(1*H*)-quinolinone, H-660
10-Methoxy-*N*-methylpericyclivine, S-89
1-Methoxy-5-methylphenazinium(1+), P-327
3-Methoxy-2-methyl-1-phenyl-9*H*-carbazole, M-270
6-Methoxy-1-methyl-2-phenyl-4(1*H*)-quinolinone, D-659
7-Methoxy-1-methyl-2-phenyl-4(1*H*)-quinolinone, D-660
7-Methoxy-3-methyl-8-prenyl-1,4-carbazolequinone, M-766
7-Methoxy-*N*-methyl-8-prenyloxyflindersine, F-90
4-Methoxy-1-methyl-8-prenyloxyquinolone, Q-47
trans-4-Methoxy-*N*-methyl-L-proline, H-715
1-Methoxy-3-(2-methylpropanal-2-oxy)acridin-9-one-4-carbaldehyde, D-717
3-Methoxy-2-(1-methylpropyl)-5-(2-methylpropyl)-pyrazine, M-271
2-Methoxy-3-(1-methylpropyl)pyrazine, M-272
2-Methoxy-3-(2-methylpropyl)pyrazine, M-273
3-Methoxy-1-methyl-2-propyl-4(1*H*)-quinolinone, M-274
6-Methoxy-7-methyl-7*H*-purine, P-820
6-Methoxy-7-methyl-9*H*-purine, P-820
7-Methoxy-5-methyl-4*H*-pyrano[3,2-*b*]indol-4(5*H*)-one, K-64
2-Methoxy-3-methylpyrazine, H-624
3-Methoxy-6-methyl-6*H*-pyrazolo[4,3-*e*][1,2,4]triazine, M-285
3-Methoxy-1-methylpyrazolo[4,3-*e*][1,2,4]triazine, M-285
3-Methoxy-7-methyl-7*H*-pyrazolo[4,3-*e*][1,2,4]triazine, M-285
N-Methoxy-*N*-methyl-3-pyridinepentadecanamine, X-19
N-Methoxy-*N*-methyl-3-pyridinetetradecanamine, X-18
3-Methoxy-2-methyl-4(1*H*)-pyridinone, D-632
N-Methoxy-*N*-methyl-18-(3-pyridinyl)-11-octadecen-13-yn-1-amine, X-15
N-Methoxy-*N*-methyl-14-(3-pyridinyl)-9-tetradecen-1-amine, X-16
7-Methoxy-1-methyl-9*H*-pyrido[3,4-*b*]indole, H-592
7-Methoxy-1-methyl-5*H*-pyrido[4,3-*b*]indole, M-260
α-(Methoxymethyl)-9*H*-pyrido[3,4-*b*]indole-1-methanol, A-1402
7-Methoxy-6-methylpyrimido[5,4-*e*]-1,2,4-triazin-5(6*H*)-one, R-66
5-(Methoxymethyl)-1*H*-pyrrole-2-carboxaldehyde, H-626
4-Methoxy-2-methylquinoline, H-633
4-Methoxy-1-methylquinolinium(1+), M-275
4-Methoxy-1-methyl-2(1*H*)-quinolinone, Q-33
2-Methoxy-1-methyl-4(1*H*)-quinolinone, Q-33
2-Methoxy-N^{13}-methylrutaecarpine, R-168
8-Methoxy-3-methyl-2-(1,2,3,4-tetrahydro-6,8-dimethoxy-1,2,3-trimethyl-7-isoquinolinyl)-1-naphthalenol, A-992
4-Methoxy-5-(methylthio)-[2,2′-bipyridine]-6-carbonitrile, C-576
4-Methoxy-5-(methylthio)-[2,2′-bipyridine]-6-carboxaldehyde oxime, C-574
4-Methoxy-5-(methylthio)-[2,2′-bipyridine]-6-methanol, C-575
6-Methoxy-2-(methylthio)-1*H*-indole-3-carboxaldehyde, M-201
5-Methoxy-2-(methylthio)-1,3-thiazino[6,5-*b*]indole, M-276
8-Methoxy-1-methyl-2-tridecyl-4(1*H*)-quinolinone, H-750
5-Methoxy-*N*-methyltryptamine, M-288
12-Methoxy-N^{a}-methylvellosimine, M-237
12-Methoxy-4-methylvoachalotine ethyl ester, P-562
12-Methoxy-4-methylvoachalotine, P-562
11-Methoxyminovincine, M-630
11-Methoxyminovincinine, M-631
9-Methoxymitralactonine, M-660
13-Methoxymultiflorine, M-731
7-Methoxymurrayacine, M-757
6-Methoxymurrayanine, D-552
14-Methoxynaamidine A, N-1
14-Methoxynaamidine G, N-1
11-Methoxy-3*H*-naphthridino[6,5,4-*def*]quinoxalin-2-ol, M-277
11-Methoxy-1*H*-naphthridino[6,5,4-*def*]quinoxalin-2(3*H*)-one, M-277
5-Methoxyneoamphimedine, N-99
11-Methoxyneooxydiaboline, M-278
4-Methoxyneosidomycin, N-138
4′-Methoxynewbouldine, N-185
8-Methoxy-6-nitrophenanthro[3,4-*d*]-1,3-dioxole-5-acetic acid, D-102
10-Methoxy-6-nitrophenanthro[3,4-*d*]-1,3-dioxole-5-carboxylic acid, H-600
8-Methoxy-6-nitrophenanthro[3,4-*d*]-1,3-dioxole-5-carboxylic acid, M-262
2-(4-Methoxy-3-nitrophenyl)ethylamine, H-640
5-Methoxynoracronycine, A-120
N-Methoxynorcepharadione A, C-272
8-Methoxynorchelerythrine, C-356
3-Methoxynordomesticine, P-369
10-Methoxynor-*C*-fluorocurarine, N-301
8-Methoxynorsanguinarine, P-55
4-Methoxynorsecurinine, N-307
3-Methoxynuciferine, T-521
4-Methoxy-3-(1-octenyl-*ONN*-azoxy)-2-butanol, E-61
9-Methoxyolivacine, O-83
6-Methoxyonychine, O-93
8-Methoxyouregidione, O-139
5-Methoxyoxindole, I-92
8-Methoxyoxoassoanine, A-1508
13-Methoxyoxoberberine, M-279
8-Methoxy-1-oxo-7(11)-eremophilene-12,8-lactam, H-653
4-Methoxyoxohernandaline, O-179
3-Methoxy-7-oxohernangerine, O-180
25-Methoxy-24-oxokibdelone C, H-655
4-Methoxy-2-oxo-1-methyl-1,2-dihydronicotinonitrile, R-96
4-Methoxy-2-(8-oxononyl)quinoline, H-642
3-Methoxyoxoputerine, O-204
11-Methoxy-3-oxotabersonine, O-210
4-Methoxy-8-oxotetrahydropalmatine, T-301
3-Methoxy-2-(12-oxotridecyl)-4(1*H*)-quinolinone, H-749
11-Methoxy-19-oxovincamine, V-115
13-Methoxy-8-oxyberberine, M-279
3′-Methoxypannellin, P-72
α-Methoxypapaverine, P-79
5-Methoxypeganine, P-165
4-Methoxy-2-(1-pentenyl)quinoline, H-660
6-Methoxy-3-pentyl-1,8-isoquinolinediol, R-163
4-Methoxy-2-pentylquinoline, H-660
10-Methoxyperakine, P-240
10-Methoxypericyclivine, S-89
8-Methoxyphenanthro[3,4-*d*]-1,3-dioxole-5-carboxylic acid, M-263
6-Methoxy-1-phenazinecarboxylic acid methyl ester, H-663
9-Methoxy-1-phenazinecarboxylic acid, H-664
2-Methoxy-1-phenazinecarboxylic acid, H-661
1-Methoxyphenazine, P-327
2-Methoxyphenazine, P-328
6-Methoxy-1-phenazinol 5,10-dioxide, P-321
6-Methoxy-1-phenazinol, P-321
4-Methoxyphenethylamine, M-280
N-(*p*-Methoxyphenethyl)-*N*-methylcinnamamide, H-144
2-Methoxy-2-phenylacetamide, H-671
2-(4-Methoxyphenyl)-1,5-dimethyl-3,4-pyrrolidinediol, C-557
N-[2-(4-Methoxyphenyl)ethenyl]benzamide, A-242
2-[2-(3-Methoxyphenyl)ethenyl]-4*H*-3,1-benzoxazin-4-one, A-1561
N-[2-(4-Methoxyphenyl)ethenyl]-3-phenyl-2-propenamide, M-287
2-Methoxy-2-phenylethylamine, A-864
2-(4-Methoxyphenyl)ethylamine, M-280
N-[2-(4-Methoxyphenyl)ethyl]benzamide, M-280
N-[2-(4-Methoxyphenyl)ethyl]-*N*-methyl-3-phenyl-2-propenamide, H-144
3-[2-(4-Methoxyphenyl)ethyl]-1-methyl-2,4(1*H*,3*H*)-quinazolinedione, M-510
6-(4-Methoxyphenyl)-2,4-hexadienoic acid isobutylamide, P-466
5-(4-Methoxyphenyl)-2,4-hexadienoic acid isopentylamide, M-281
6-(4-Methoxyphenyl)-*N*-(3-methylbutyl)-2-oxo-3,5-hexadienamide, M-281
3-[Methoxy(phenyl)methylene]-2-indolinone, I-183
3-(4-Methoxyphenylmethyl)-4-methyl-6-(1-methylethyl)-2,5-morpholinedione, I-274
2-(4-Methoxyphenyl)-*N*-methyl-2-oxoacetamide, H-687
(4-Methoxyphenyl)-*N*-methyl-2-oxothioacetamide, M-282
6-(4-Methoxyphenyl)-*N*-(2-methylpropyl)-2,4-hexadienamide, P-466
11-(4-Methoxyphenyl)-*N*-(2-methylpropyl)-2,4,10-undecatrienamide, P-359
2-(4-Methoxyphenylmethyl)-3,4-pyrrolidinediol 3-acetate, A-1044
4-Methoxy-2-(phenylmethyl)quinazoline, B-93
2-[9-(2-Methoxyphenyl)nonyl]-1-methylpyrrolidine, I-178
3-[5-(4-Methoxyphenyl)-2-oxazolyl]pyridine, H-12
1-(4-Methoxyphenyl)-2-propylamine, A-898
4-Methoxy-2-phenylquinoline, H-693
3-(4-Methoxyphenyl)quinoline, H-692
3-Methoxy-4-phenyl-2(1*H*)-quinolinone, D-656
11-(4-Methoxyphenyl)-2,4,10-undecatrienoic acid isobutylamide, P-359
11-Methoxypicraphylline, P-404
4-Methoxypipecolic acid, H-697
4-Methoxy-2-piperidinecarboxylic acid, H-697
2′-Methoxypiperine, W-17
6-Methoxypiperoylisobutylamine, P-462
8-Methoxyplatydesmine, B-14
12-Methoxypleiocarpine, K-78
Methoxypolysignine, P-563

7-Methoxy-8-prenyldictamnine, H-570
7-Methoxy-9-prenylfuro[2,3-*b*]quinolin-4(9*H*)-one, F-212
8-Methoxy-7-prenyloxydictamnine, F-223
4-Methoxy-7-prenyloxyfuro[2,3-*b*]quinoline, F-212
4-Methoxy-8-prenyloxyfuro[2,3-*b*]quinoline, F-213
6-Methoxy-3-(1-propenyl)-2-pyridinecarboxylic acid, M-283
4-Methoxy-2-(1-propenyl)quinoline, P-647
N-(2-Methoxy-2-propenyl)trimethylammonium(1+), M-284
6-(β-Methoxypropionyl)-1,3-dimethyllumazine, H-702
6-(β-Methoxypropionyl)-3-methyllumazine, H-702
4-Methoxy-2-propylquinoline, H-707
11-Methoxypseudoyohimbine, M-292
6-Methoxypurine, P-820
3-Methoxyputerine, T-245
Methoxypyrazine, P-889
3-Methoxypyrazolo[4,3-*e*][1,2,4]triazine, M-285
4-Methoxy-3-pyridinecarboxylic acid, H-709
6-Methoxy-3-pyridinecarboxylic acid, H-711
3-Methoxypyridine, P-906
N-Methoxy-3-pyridinetridecanamine, T-358
N-Methoxy-16-(3-pyridinyl)-5-hexadecyn-1-amine, N-234
N-Methoxy-16-(3-pyridinyl)-7-hexadecyn-1-amine, N-233
7-Methoxy-5-(2-pyridinyl)isothiazolo[4,5-*b*]pyridine, C-578
4-Methoxy-6-(3-pyridinyl)-2*H*-pyran-2-one, A-1037
N-Methoxy-14-(3-pyridinyl)-3-tetradecyn-1-amine, I-26
N-Methoxy-14-(3-pyridinyl)-11-tetradecyn-1-amine, N-227
8-Methoxy-9*H*-pyrido[3,4-*b*]carbazole-1,3,4(2*H*,9*H*)-trione, C-135
4-Methoxy-9*H*-pyrido[3,4-*b*]indole-1-carboxaldehyde, H-456
4-Methoxy-9*H*-pyrido[3,4-*b*]indole-1-ethanol, H-493
6-Methoxy-9*H*-pyrido[3,4-*b*]indole, P-915
8-Methoxy-9*H*-pyrido[3,4-*b*]indole, P-917
7-Methoxy-9*H*-pyrido[3,4-*b*]indole, P-916
1-Methoxy-9*H*-pyrido[3,4-*b*]indole, P-914
1-(4-Methoxy-9*H*-pyrido[3,4-*b*]indol-1-yl)-1,2-ethanediol, H-493
2-Methoxy-1-(9*H*-pyrido[3,4-*b*]indol-1-yl)ethanone, A-1402
4-[(6-Methoxy-9*H*-pyrido[3,4-*b*]indol-1-yl)methyl]-phenol, C-230
4-(6-Methoxy-9*H*-pyrido[3,4-*b*]indol-1-yl)-2-pyrimidamine, A-1051
4-Methoxypyrido[4,3,2-*mn*]pyrrolo[3,2,1-*de*]acridine, A-1445
4′-Methoxypyridoxine, P-923
4-Methoxy-2-pyrrolecarboxylic acid, H-714
2-Methoxy-1-pyrrolidinecarboxamide, P-955
4-Methoxy-2-pyrrolidinecarboxylic acid, H-715
5-Methoxy-2-pyrrolidinone, H-719
2-Methoxy-4-[2-(2-pyrrolidinyl)ethenyl]phenol, N-305
2-[[3-Methoxy-4-(1*H*-pyrrol-1-yl)-2*H*-pyrrol-2-ylidene]methyl]-5-methyl-1-pentyl-1*H*-pyrrole, M-286
11-Methoxyquaternoxine, C-191
11-Methoxyquebrachamine, Q-6
4-Methoxyquinaldine, H-633
4-Methoxyquinazoline, Q-14
8-Methoxy-4-quinolinecarboxaldehyde, H-722
4-Methoxy-2-quinolinecarboxylic acid, H-725
6-Methoxy-4-quinolinecarboxylic acid, H-726
8-Methoxy-2-quinolinecarboxylic acid, H-727
2-Methoxy-4-quinolinecarboxylic acid, H-723
6-Methoxy-2,4-quinolinediol, Q-46
8-Methoxy-2,4-quinolinediol, Q-47
8-Methoxy-4,7-quinolinediol, Q-48
2-Methoxyquinoline, Q-50
3-Methoxyquinoline, Q-49
4-Methoxy-2(1*H*)-quinolinone, Q-33
9-(4-Methoxy-2-quinolinyl)-2-nonanone, H-642
4-Methoxy-*N*-resorcylanthranilic acid, B-67
11-Methoxyretuline, R-63
7-Methoxyreumycin, R-66
(*Z*)-5α-Methoxyrhazimine, R-73
10-Methoxyrutaecarpine, H-361
1-Methoxyrutaecarpine, R-168
2-Methoxyrutaecarpine, R-168
4-Methoxy-*N*-salicoylanthranilic acid, B-67
4-Methoxysampangine, S-49
9-Methoxysampangine, S-49
3-Methoxysampangine, S-49
12-Methoxysanguinarine, C-360
8-Methoxysanguinarine, P-55
17-Methoxysarpagan *N*-oxide, T-425
11-Methoxysarpagan-17-ol, G-22
10-Methoxysarpagan-17-ol, S-89
17-Methoxysarpagan, T-425
4-Methoxysecurinan-11-one, P-386
4-Methoxysecurinine, P-386
N-Methoxyseptorine, S-249
N-Methoxyseptorinol, S-249
10-Methoxysitsirikine, S-325
6-Methoxyspirobrassinin, S-426
1-Methoxyspirobrassinin, S-426
N-Methoxyspirobrassinol methyl ether, S-427
N-Methoxyspirobrassinol, S-427
13-Methoxystaphimine, S-494
13-Methoxystaphisagrine, S-495
10-Methoxystaurosporine, S-498
4′-Methoxystemofoline, S-515
Methoxystemokerrin *N*-oxide, S-516
5-Methoxystrictamine, S-576
11-Methoxystrictamine, S-576
16-Methoxystrychnine, P-726
3-Methoxystrychnine, P-726
10-Methoxystrychnine, S-589
11-Methoxystrychnine, S-589
10-Methoxystrychnobrasiline, S-594
11-Methoxystrychnofendlerine, S-594
N-(*p*-Methoxystyryl)benzamide, A-242
N-4-Methoxystyrylcinnamide, M-287
3′-Methoxytabernaelegantine C, C-616
11-Methoxytabersonine, T-11
8-Methoxytaifine, F-223
N-(7-Methoxy-4-tetradecenoyl)tryptamine, T-639
10-Methoxy-3,4,5,6-tetradehydrocorynantheol, T-136
10-Methoxy-3,4,5,6-tetradehydro-18,19-dihydrocorynantheol, T-136
6-Methoxytetrahydro-β-carboline, T-173
6-Methoxytetrahydroharman, S-285
5-Methoxytetrahydroharman, T-202
1-Methoxytetrahydropalmatine, C-93
4-Methoxytetrahydrosecurinine, P-386
10-Methoxytetrahydro-17*S*-usambarensine, U-52
10-Methoxytetrahydrousambarensine, U-52
2-Methoxy-1,3-thiazino[6,5-*b*]indol-4(9*H*)-one, C-843
6-Methoxy-3-(2-thiazolyl)-1*H*-indole, T-372
4-Methoxy-3,24,25-triazatetracyclo[18.2.1.1^{2,5}.1^{7,10}]pentacosa-2(25),3,5,7,9,20,22-heptaene, N-285
6-Methoxy-3,5,7-tribromoindole, T-471
6-Methoxytrichostachine, W-16
10-Methoxy-*O*-(3,4,5-trimethoxycinnamoyl)vincamajine, V-113
β-Methoxy-*N,N,N*-trimethylbenzeneethanaminium, C-695
5-Methoxytryptamine, M-288
6-Methoxytryptoline, T-173
5-Methoxytryptophol, H-505
10-Methoxytsilanine, T-649
11-Methoxytubotaiwine, T-673
12-Methoxytubotaiwine, T-673
19*R*-Methoxytubotaiwine, T-673
19*S*-Methoxytubotaiwine, T-673
3-Methoxytyraminebetaxanthin, M-647
3-Methoxytyramine, H-566
3-Methoxytyrosine, A-745
3-Methoxyurabaine, U-41
8-Methoxyuvariopsine, U-64
5-Methoxyvasicinone, V-38
7-Methoxyvasicinone, V-38
12-Methoxyvellosimine, M-237
10-Methoxyvellosimine, S-89
10-Methoxyvillalstonine 4′-*N*-oxide, V-103
10-Methoxyvillalstonine, V-103
11-Methoxyvincadifformine *N*-oxide, V-111
11-Methoxyvincadifformine, V-111
10-Methoxyvincamajine, V-113
11-Methoxyvincamajine, V-113
11-[10-(11-Methoxyvincamajinyl)]vincorine, M-289
10-Methoxyvincamedine *N*(4)-oxide, V-113
10-Methoxyvincamedine, V-113
11-Methoxyvincamedine, V-113
11-[10-(11-Methoxyvincamedinyl)]vincorine, M-289
11-Methoxy-Δ^{14}-vincamenine, E-5
11-Methoxy-Δ^{14}-vincamine, V-115
11-Methoxyvincamine, V-115
12-Methoxy-Δ^{14}-vincamine, V-115
11-Methoxy-Δ^{14}-vincanol, E-6
10-Methoxyvinorine, V-194
4-Methoxy-1-vinyl-β-carboline, M-290
N-Methoxy-1-vinyl-β-carboline, V-139
3*R*-Methoxyvoacangine, V-170
12-Methoxyvoaphylline, V-179
11-Methoxy-Wieland-Gumlich aldehyde, C-115
4′-Methoxywithasomnine, D-492
Methoxyxanthocillin X dimethyl ether, X-7
10-Methoxyyohimban-17α-ol, Y-16
10-Methoxy-α-yohimbine, M-291
10-Methoxy-β-yohimbine, M-291
10-Methoxyyohimbine, M-291
11-Methoxy-α-yohimbine, M-292
11-Methoxyyohimbine, M-292
10-Methoxyyohimbol, Y-16
Methscopolamine bromide, S-159
Methuenine *N*^{18}-oxide, M-293
Methuenine, M-293
Methy-F, D-738
Methyl acethydroxamylacetate, M-294
Methyl 7-(3-acetylamino-2,5-dihydroxyphenyl)-7-hydroxy-4,6-dimethyl-2,4-heptadienoate, A-1213
Methyl [(acetylamino)oxy]acetate, M-294
Methyl 17-(acetyloxy)akuammilan-16-carboxylate, 10CI, A-231
Methyl 4-(acetyloxy)-3,6-epoxy-1-methylaspidospermidine-3-carboxylate, C-213
Methyl 16-[(acetyloxy)methyl]akuammilan-17-oate, A-231
Methyl akuammilan-17-oate, S-576
Methyl 3-alkylpyrrole-2-carboxylates, M-295
Methyl 2-aminobenzoate, A-706
Methyl 5-(1-aminoethyl)-3-pyridinecarboxylate, A-774
Methyl 2-[(4-amino-2-methyl-1,4-dioxobutyl)amino]benzoate, D-178
Methyl aphyllate, A-1335
Methyl aristolochate, M-262
Methyl aspidofractinine-3-carboxylate, K-78
Methyl aspidospermidine-3-carboxylate, E-4
Methyl 3-(benzoyloxy)-8-methyl-8-azabicyclo[3.2.1]octane-2-carboxylate, C-537
Methyl 3,4-bis(4-hydroxyphenyl)-1*H*-pyrrole-2-carboxylate, L-25
Methyl *N*′-[3-bromo-(2,3-dibromo-4,5-dihydroxybenzyl)-4,5-dihydroxybenzyl] γ-ureidobutyrate, B-307
Methyl 6-bromo-1*H*-indole-3-acetate, B-332
Methyl 5-bromo-2-pyrrolecarboxylate, B-349
Methyl 7-bromoreticulatate, R-57
Methyl 3-carbazolecarboxylate, C-122
Methyl chanofruticosinate, M-296
Methyl cryptolepinoate, I-111
Methyl 21,23-deepoxy-23-hydroxyerinin-21-oate, E-182
Methyl *N*^{1}-demethoxycarbonylchanofruticosinate, M-296
Methyl *N*^{1}-demethoxycarbonyl-3-oxo-Δ^{14,15}-chanofruticosinate, M-296
Methyl 4-demethyl-3-oxovobasan-17-oate, P-268
Methyl deoxydehydrochorismamide, D-224
Methyl deserpidate, D-687

Methyl *N′*-(2,3-dibromo-4,5-dihydroxybenzyl) γ-ureidobutyrate, D-312
Methyl 3,5-dibromo-4-[[3-(dimethylamino)propoxy]phenylethyl]carbamate, M-679
Methyl 4,5-dibromo-1*H*-pyrrole-2-carboxylate, D-339
Methyl 7,14-dibromoreticulatate, R-57
Methyl 2,3-didehydroaspidospermidine-3-carboxylate, V-111
Methyl 6,7-didehydro-2,20-cycloaspidospermidine-3-carboxylate, V-132
Methyl 19,20-didehydro-1,16-cyclocorynan-17-oate, P-518
Methyl 19,20-didehydro-2-(18,19-didehydroalstophyllan-18-yl)-2,7-dihydro-1,16-cyclocorynan-17-oate, M-11
Methyl 19,20-didehydro-3,17-dihydroxyajmalan-16-carboxylate, H-139
Methyl 2,16-didehydro-19,20-dihydroxycuran-17-oate, C-589
Methyl 2,3-didehydro-6,21-epoxyaspidospermidine-3-carboxylate, M-666
Methyl 1,2-didehydro-6,7-epoxy-3-hydroxy-8-oxoaspidospermidine-3-carboxylate, M-297
Methyl 2,3-didehydro-7-ethyl-20,21-dinoraspidospermidine-3-carboxylate, P-733
Methyl 2,3-didehydro-7-ethyl-E,20,21-trinoraspidospermidine-3-carboxylate, I-6
Methyl 2,3-didehydrohomodaphniphyllate, H-330
Methyl 2,3-didehydro-20-hydroxyaspidospermidine-3-carboxylate, M-631
Methyl 2,16-didehydro-19-hydroxycuran-17-oate, E-30
Methyl 2,16-didehydro-20-hydroxycuran-17-oate, L-224
Methyl 1,6-didehydro-17-hydroxy-3,16-dimethoxyerythrinan-15-carboxylate, E-204
Methyl 2,3-didehydro-7-hydroxy-8-methyl-E-homo-20,21-dinoraspidospermidine-3-carboxylate, I-10
Methyl 2,3-didehydro-21-hydroxy-20-oxoaspidospermidine-3-carboxylate, C-193
Methyl 19,20-didehydro-17-hydroxyyohimban-16-carboxylate, D-378
Methyl 1,6-didehydro-16-methoxy-2,3-[methylenebis(oxy)]erythrinan-15-carboxylate, D-200
Methyl 16,17-didehydromethoxy-19-methyloxayohimban-16-carboxylate, M-298
Methyl 16,17-didehydro-11-methoxy-19-methyloxayohimban-17-carboxylate, R-53
Methyl 16,17-didehydro-19-methyloxayohimban-16-carboxylate, A-212
Methyl 2,3-didehydro-20-oxoaspidospermidine-3-carboxylate, M-630
Methyl 2,3-didehydro-E,20,21-trinoraspidospermidine-3-carboxylate, D-140
Methyl 15-(14,15-dihydroeburnamenin-14-yl)-1-methylaspidofractinine-3-carboxylate, P-521
Methyl 4,9-dihydro-β-hydroperoxy-α-[(methoxycarbonyl)amino]-4,6-dimethyl-9-oxo-1*H*-imidazo[1,2-*a*]purine-7-butanoate, W-29
Methyl 14,15-dihydro-14-hydroxyeburnamenine-14-carboxylate, V-115
Methyl [(2,3-dihydro-3-hydroxy-2-oxo-1*H*-indol-3-yl)methyl]carbamodithioate, D-811
Methyl 1,2-dihydro-1-methylakuammilan-17-oate, C-191
4-Methyl *N*-[(2,3-dihydro-2-oxo-1*H*-indol-3-yl)acetyl]aspartate, M-299
Methyl 19,20-dihydro-3-oxovobasan-17-oate, D-935
Methyl 3,6-dihydroxy-4-methoxy-10-nitro-1-phenanthrenecarboxylate, T-568
Methyl 3,17-dihydroxy-1-methyl-2,4(1*H*)-cyclo-3,4-secoakuammilan-16-carboxylate, D-410
Methyl 3,17-dihydroxysarpagan-16-carboxylate, V-171
Methyl 11,12-dimethoxy-$\Delta^{14,15}$-chanofruticosinate, M-296
Methyl 11,12-dimethoxychanofruticosinate, M-296
Methyl 3,4-dimethoxy-10-nitro-1-phenanthrenecarboxylate, D-636
Methyl *N*-[6-[(7,9-dimethoxy-3,6,8-trimethyl-1-oxo-11-phenyl-2,4,10-undecatrienyl)amino]-1-oxo-2,5-hexadienyl]glycinate, C-763
Methyl [6-[2-(dimethylamino)ethyl]-9-hydroxy-8-methoxy-1-oxonaphtho[1,2-*c*]furan-3(1*H*)-ylidene]acetate, C-381
Methyl 3,22-dioxovobasan-17-oate, P-268
Methyl 2,5-epoxy-1,2-dihydroakuammilan-17-oate, P-417
Methyl 2,5-epoxy-1,2-dihydro-16-(hydroxymethyl)-4,5-secoakuammilan-17-oate, A-1492
Methyl 17,20-epoxy-19,20-dihydro-18-hydroxysarpagan-16-carboxylate, E-7
Methyl 4,5-epoxy-5-hydroxy-6,21-cyclo-4,5-secoakuammilan-17-oate, N-47
Methyl 2,17-epoxy-2-hydroxy-1-methyl-1,17-cyclo-1,2(1*H*,2*H*)-secoakuammilan-16-carboxylate, L-28
Methyl 6,17-epoxy-1-methylsarpagan-16-carboxylate, D-173
Methyl 5-ethenyl-4-[2-[(4-hydroxybenzoyl)oxy]ethyl]-3-pyridinecarboxylate, F-125
Methyl 3-[2-(3-ethyl-5,6-dihydro-1(2*H*)-pyridinyl)ethyl]-α-methylene-1*H*-indole-2-acetate, S-184
Methyl 4-ethylidene-1,3,4,5,6,7-hexahydro-6-(hydroxymethyl)-2,5-ethano-2*H*-azocino[4,3-*b*]indole-6-carboxylate, V-9
Methyl 7-ethyl-1,4,5,6,7,8,9,10-octahydro-2*H*-3,7-methanoazacycloundecino[5,4-*b*]indole-9-carboxylate, V-112
Methyl 4-ethyl-2,3,4,4*a*,5,6,7,12-octahydro-2-methyl-6-oxopyrido[3′,4′:4,5]cyclohept[1,2-*b*]indole-12*a*(1*H*)-carboxylate, E-190
Methyl 2-ethyl-5,7,12-trihydroxy-4-[(2-hydroxyethyl)amino]-6,11-dioxo-1-naphthacenecarboxylate, A-1080
Methyl 8-formyl-8,9-dihydro-8,9-dihydroxy-5-oxo-5*H*-carbazole-1-carboxylate, C-636
Methyl 1-formyl-4,9-dihydro-1,9-dihydroxy-4-oxo-1*H*-carbazole-8-carboxylate, C-636
Methyl 3-formyl-1*H*-indole-2-sulfinate, B-283
Methyl 2-formyl-5-methoxymethyl-1*H*-pyrrole-1-butanoate, F-137
Methyl 2-(2-formyl-5-methoxymethyl-1*H*-pyrrol-1-yl)-3-phenylpropanoate, F-138
Methyl 6-formyl-4,7,9-trihydroxy-8-methyl-1-phenazinecarboxylate, A-1221
Methyl 6-formyl-4,7,9-trihydroxy-1-phenazinecarboxylate, L-241
Methyl harman-3-carboxylate, M-427
Methyl harmate, H-459
Methyl 3-heneicosenyl-1*H*-pyrrole-2-carboxylate, M-295
Methyl 15,16,17,18,19,20-hexadehydroyohimban-16-carboxylate, D-434
Methyl 5,7,8,13,13*b*,14-hexahydro-5-(hydroxymethyl)indolo[2′,3′:3,4]pyrido[1,2-*b*][2,7]naphthyridine-1-carboxylate, C-6
Methyl 2,3,3*a*,4,5,6-hexahydro-5-[1-(hydroxymethyl)-1-propenyl]-1*H*-indolo[3,2,1-*de*][1,5]-naphthyridine-6-carboxylate, D-145
Methyl homodaphniphyllate, H-330
Methyl homosecodaphniphyllate, H-346
Methyl 3-hydroxyaspidofractinine-3-carboxylate, K-74
Methyl 2-[(2-hydroxybenzoyl)amino]-4-hydroxybenzoate, B-67
Methyl 3-hydroxy-2,4-bis(methylamino)benzoate, D-256
Methyl 15-hydroxy-N^1-demethoxycarbonylchanofruticosinate, M-296
Methyl 3-hydroxy-4,8-dimethoxy-10-nitro-1-phenanthrenecarboxylate, T-569
Methyl 6-hydroxy-3,4-dimethoxy-10-nitro-1-phenanthrenecarboxylate, T-568
Methyl 17-hydroxy-10,11-dimethoxyyohimban-16-carboxylate, S-251
Methyl 17-hydroxyhomodaphniphyllate, H-330
Methyl [2-[4-hydroxy-2-[2-(4-hydroxyphenyl)ethenyl]phenyl]ethyl]carbamate, G-225
Methyl 15-hydroxy-12-methoxy-N^1-demethoxycarbonylchanofruticosinate, M-296
Methyl 5-hydroxy-4-methoxymethyl-1*H*-pyrrole-3-carboxylate, H-564
Methyl 3-hydroxy-4-methoxy-10-nitro-1-phenanthrenecarboxylate, D-636
Methyl 5-hydroxy-4-methoxy-1*H*-pyrrole-3-carboxylate, D-670
Methyl 17-hydroxy-10-methoxyyohimban-16-carboxylate, M-291
Methyl 17-hydroxy-9-methoxyyohimban-16-carboxylate, V-50
Methyl 3-hydroxy-1-methyl-2,4(1*H*)-cyclo-3,4-secoakuammilan-17-oate, D-236
Methyl 15-hydroxy-11,12-methylenedioxy-N^1-demethoxycarbonylchanofruticosinate, M-296
Methyl 19-(hydroxymethyl)-12-methoxyibogamine-18-carboxylate, S-79
Methyl 19-hydroxy-19-methyloxayohimban-16-carboxylate, A-953
Methyl 4-[(1-hydroxymethyl-2-phenylethenyl)amino]-4-oxobutenoate, M-300
Methyl 3-(17-hydroxy-1-methylsarpagan-10-yl)vobasan-17-oate, A-28
Methyl 3-hydroxy-22-oxokopsan-1-carboxylate, K-76
Methyl 6-(2-hydroxy-2-phenylethyl)-1-methyl-2-piperidinecarboxylate, S-211
Methyl 17-hydroxysarpagan-16-carboxylate, A-229
Methyl 17-hydroxysarpagan-16-carboxylate, P-562
Methyl 17-hydroxyyohimban-16-carboxylate, Y-13
Methyl 17-hydroxyyohimban-5,16-dicarboxylate, C-145
S-Methyl 1*H*-indole-3-carbothioate, I-85
Methyl 1*H*-indolethiolcarboxylate, I-85
S-Methyl [2-(1*H*-indol-3-yl)ethyl]methylcarbamothioate, G-130
Methyl (1*H*-indol-3-ylmethyl)carbamodithioate, B-284
S-Methyl 1*H*-indol-3-ylmethylcarbamothioate, B-285
Methyl iodoacetate, I-163
Methyl jervine-*N*-3′-propanoate, J-36
Methyl 8-methoxy-2-carbazolecarboxylate (obsol.), H-454
Methyl 6-methoxy-9*H*-carbazole-3-carboxylate, H-454
Methyl 4-methoxy-β-carboline-1-carboxylate, H-457
Methyl 12-methoxychanofruticosinate, M-296
Methyl 12-methoxy-N^1-demethoxycarbonyl-$\Delta^{14,15}$-chanofruticosinate, M-296
Methyl 12-methoxy-N^1-demethoxycarbonylchanofruticosinate, M-296
Methyl 12-methoxy-N^1-demethoxycarbonyl-3-oxo-$\Delta^{14,15}$-chanofruticosinate, M-296
Methyl 1-methoxy-1*H*-indole-3-carboxylate, I-90
Methyl 10-methoxy-1-methyl-2,4(1*H*)-cyclo-3,4-secoakuammilan-17-oate, V-125
Methyl 12-methoxy-3-oxochanofruticosinate, M-296
Methyl 13-(17-methoxy-17-oxovobasan-3α-yl)ibogamine-18-carboxylate, E-189
Methyl [(methylamino)carbonyl]carbamate, M-385
Methyl 2-(methylamino)-5-(1,2,3,9-tetrahydro-9-oxopyrrolo[2,1-*b*]quinazolin-3-yl)benzoate, A-1045
Methyl *N*-methylanthranilate, M-384
Methyl 11,12-methylenedioxychanofruticosinate, M-296
Methyl 11,12-methylenedioxy-N^1-demethoxycarbonyl-$\Delta^{14,15}$-chanofruticosinate, M-296
Methyl 11,12-methylenedioxy-N^1-demethoxycarbonylchanofruticosinate, M-296
Methyl 11,12-methylenedioxy-N^1-demethoxycarbonyl-3-oxo-$\Delta^{14,15}$-chanofruticosinate, M-296
Methyl 3-methyl-α-methylene-2,5-dioxo-1-pyrrolidineacetate, V-85
S-Methyl methyl(phenylacetyl)carbamothioate, N-235
S-Methyl methyl(2-phenylethyl)carbamothioate, N-235
Methyl (3-methylpyrazinyl) ketone, A-62
Methyl 2-methyl-3-pyridyl ketone, A-65
Methyl 2-methyl-4-pyridyl ketone, A-67

Methyl 3-methyl-4-pyridyl ketone, A-68
Methyl 4-methyl-2-pyridyl ketone, A-63
Methyl 4-methyl-3-pyridyl ketone, A-66
Methyl 6-methyl-2-pyridyl ketone, A-64
Methyl 6-methyl-3-pyridyl ketone, A-69
Methyl 7-methyl-5*H*-2-pyrindine-4-carboxylate, R-1
Methyl 4-methylpyrrole-2-carboxylate, M-541
Methyl 2-methyl-2,3,4,9-tetrahydro-β-carboline-3-carboxylate, T-224
Methyl *N*-methyl-5-(1,2,3,9-tetrahydro-9-oxopyrrolo[2,1-*b*]quinazolin-3-yl)anthranilate, A-1045
Methyl 12-oxodendrobane-2-acetate, D-207
Methyl 3-oxo-2-oxa-7,8-dithia-4,11-diazadodecan-12-oate, P-622
Methyl 1-phenazinecarboxylate, P-319
Methyl *N*-(2-phenylethyl)carbamate, P-343
Methyl platensinoate, P-512
Methyl 2-pyridyl ketone, A-73
Methyl 2-pyrrolyl ketone, A-74
Methyl reserpate, R-50
Methyl reticulatate, R-57
Methyl *N*-salicoyl-4-hydroxyanthranilate, B-67
Methyl sarpagan-17-oate, T-425
Methyl *N*-succinoylanthranilate, A-706
Methyl 2,3,6,7-tetradehydroaspidospermidine-3-carboxylate, T-11
Methyl 2,16,19,20-tetradehydrocuran-17-oate, A-228
Methyl 2,3,6,7-tetradehydro-10,20-epoxy-19-hydroxyaspidospermidine-3-carboxylate, B-475
Methyl 1,2,19,20-tetradehydro-17-hydroxycuran-16-carboxylate, P-587
Methyl 1,2,14,19-tetradehydro-16-(hydroxymethyl)-condyfolan-16-carboxylate, P-595
Methyl 2,16,19,20-tetrahydro-14-hydroxycuran-17-oate, M-713
Methyl 2,7,19,20-tetrahydro-17-hydroxy-3,7-secocuran-16-carboxylate, S-510
Methyl tetrahydro-5-(2-methylheptyl)-2-(1*H*-pyrrol-2-yl)-2*H*-1,3-oxazine-4-carboxylate, C-384
Methyl 5,6,7,8-tetrahydro-8-methyl-6-oxo-2,7-naphthyridine-4-carboxylate, J-25
Methyl 2-[(1,2,3,9-tetrahydro-9-oxopyrrolo[2,1-*b*]quinazolin-3-yl)amino]benzoate, A-1041
Methyl *N*-(1,2,3,9-tetrahydro-9-oxopyrrolo[2,1-*b*]quinazolin-3-yl)anthranilate, A-1041
Methyl 3,4,5,6-tetrahydro-2-pyridyl ketone, A-76
Methyl tetrahydro-2-(1*H*-pyrrol-2-yl)-2*H*-1,3-oxazine-4-carboxylate, C-383
Methyl 3-(tricosadienyl)-1*H*-pyrrole-2-carboxylate, M-295
Methyl 3-tricosenyl-1*H*-pyrrole-2-carboxylate, M-295
Methyl 3,4,8-trimethoxy-10-nitro-1-phenanthrenecarboxylate, T-569
Methyl 3,4,5-trimethoxy-2-[[2-[(3-pyridinylcarbonyl)amino]benzoyl]amino]benzoate, T-585
N^4-Methylaaptamine, A-2
4-Methylaconitane-1,2,3,6,8,13,14,15,16,18-decol, M-301
4-Methylaconitane-1,3,6,8,10,13,14,15,16,18-decol, M-302
4-Methylaconitane-1,3,6,8,14,16,18-heptol, M-303
4-Methylaconitane-1,3,8,13,14,16,18-heptol, M-304
4-Methylaconitane-1,5,6,7,8,14,16-heptol, M-305
4-Methylaconitane-1,5,8,13,14,16,18-heptol, M-306
4-Methylaconitane-1,6,7,8,10,14,16-heptol, M-307
4-Methylaconitane-1,6,7,8,12,14,16-heptol, M-308
4-Methylaconitane-1,6,7,8,14,16,18-heptol, M-309
4-Methylaconitane-1,6,8,10,14,16,18-heptol, M-311
4-Methylaconitane-1,6,8,13,14,16,18-heptol, M-312
4-Methylaconitane-1,6,8,14,15,16,18-heptol, M-313
4-Methylaconitane-1,6,8,14,16,18,19-heptol, M-314
4-Methylaconitane-1,6,8,9,14,16,18-heptol, M-310
4-Methylaconitane-1,7,8,9,14,16,18-heptol, M-315
4-Methylaconitane-1,8,10,13,14,15,18-heptol, M-316
4-Methylaconitane-1,3,8,14,16,18-hexol, M-317
4-Methylaconitane-1,5,7,8,14,16-hexol, M-318
4-Methylaconitane-1,5,8,14,16,18-hexol, M-319
4-Methylaconitane-1,6,7,8,12,14-hexol, M-320
4-Methylaconitane-1,6,7,8,14,16-hexol, M-321
4-Methylaconitane-1,6,8,10,14,16-hexol, M-322
4-Methylaconitane-1,6,8,14,16,18-hexol, M-323
4-Methylaconitane-1,7,8,14,16,18-hexol, M-325
4-Methylaconitane-1,7,8,9,14,16-hexol, M-324
4-Methylaconitane-1,8,10,14,16,18-hexol, M-326
4-Methylaconitane-1,8,14,15,16,18-hexol, M-327
4-Methylaconitane-6,7,8,14,16,18-hexol, M-328
4-Methylaconitane-1,2,3,6,8,13,14,16,18-nonol, M-329
4-Methylaconitane-1,2,6,8,13,14,15,16,18-nonol, M-330
4-Methylaconitane-1,3,6,8,13,14,15,16,18-nonol, M-331
4-Methylaconitane-1,6,8,10,13,14,15,16,18-nonol, M-332
4-Methylaconitane-1,2,6,8,13,14,16,18-octol, M-333
4-Methylaconitane-1,3,5,8,13,14,16,18-octol, M-334
4-Methylaconitane-1,3,6,8,13,14,15,16-octol, M-335
4-Methylaconitane-1,3,6,8,13,14,16,18-octol, M-336
4-Methylaconitane-1,3,6,8,14,15,16,18-octol, M-337
4-Methylaconitane-1,3,7,8,13,14,16,18-octol, M-338
4-Methylaconitane-1,6,7,8,10,14,16,18-octol, M-339
4-Methylaconitane-1,6,7,8,12,14,16,18-octol, M-340
4-Methylaconitane-1,6,7,8,14,15,16,18-octol, M-341
4-Methylaconitane-1,6,8,12,13,14,16,18-octol, M-342
4-Methylaconitane-1,6,8,13,14,15,16,18-octol, M-343
4-Methylaconitane-1,7,8,9,10,14,16,18-octol, M-344
4-Methylaconitane-6,8,10,13,14,15,16,18-octol, M-345
4-Methylaconitane-1,3,8,14,16-pentol, M-346
4-Methylaconitane-1,6,8,14,16-pentol, M-347
4-Methylaconitane-1,7,8,14,16-pentol, M-348
4-Methylaconitane-1,8,10,14,16-pentol, M-349
4-Methylaconitane-1,8,12,14,16-pentol, M-350
4-Methylaconitane-1,8,13,14,16-pentol, M-351
4-Methylaconitane-1,8,14,16,18-pentol, M-352
4-Methylaconitane-1,7,8,14-tetrol, M-353
4-Methylaconitane-1,8,10,14-tetrol, M-354
4-Methylaconitane-1,8,14,16-tetrol, M-355
4-Methylaconitane-1,14,16-triol, M-357
4-Methylaconitane-1,8,14-triol, M-356
4-Methylaconit-15-ene-1,3,6,8,13,14,18-heptol, M-366
4-Methylaconit-19(*N*)-ene-1,6,7,8,10,14,16-heptol, M-358
4-Methylaconit-19(*N*)-ene-1,6,7,8,14,16,18-heptol, M-359
4-Methylaconit-19(*N*)-ene-1,6,8,13,14,16,18-heptol, M-360
4-Methylaconit-19(*N*)-ene-1,7,8,9,14,16,18-heptol, M-361
4-Methylaconit-2-ene-1,6,7,8,10,14,16-heptol, M-362
4-Methylaconit-2-ene-1,6,7,8,14,16,18-heptol, M-363
4-Methylaconit-2-ene-1,6,8,13,14,16,18-heptol, M-364
4-Methylaconit-8(15)-ene-1,3,6,13,14,16,18-heptol, M-365
4-Methylaconit-19(*N*)-ene-1,3,6,8,14,16-hexol, M-367
4-Methylaconit-19(*N*)-ene-1,6,7,8,14,16-hexol, M-368
4-Methylaconit-19(*N*)-ene-1,6,8,14,16,18-hexol, M-369
4-Methylaconit-19(*N*)-ene-1,7,8,14,16,18-hexol, M-370
4-Methylaconit-2-ene-1,6,7,8,14,16-hexol, M-371
4-Methylaconit-8(15)-ene-1,6,13,14,16,18-hexol, M-372
4-Methylaconit-19(*N*)-ene-1,3,6,8,13,14,15,16,18-nonol, M-373
4-Methylaconit-19(*N*)-ene-1,6,8,14,16-pentol, M-374
4-Methylaconit-19(*N*)-ene-1,8,14,16,18-pentol, M-375
4-Methylaconit-19(*N*)-ene-7,8,10,14,16-pentol, M-376
4-Methylaconit-8(15)-ene-1,6,14,16,18-pentol, M-377
4-Methylaconit-19(*N*)-ene-1,8,14,16-tetrol, M-378
4-Methylaconit-2-ene-1,6,14,16-tetrol, M-379
4-Methylaconit-8(15)-ene-1,14,16,18-tetrol, M-380
4-Methylaconit-15-ene-1,14,18-triol, M-381
10-Methyl-9-acridanone, M-382
10-Methyl-9(10*H*)-acridinone, M-382
N-Methylacridone, M-382
10-Methylacridone, M-382
N-Methylactinodaphnine, D-346
O-Methylacutifoline, L-288
1-Methyladenine, A-842
2-Methyladenine, A-843
3-Methyladenine, A-844
3-Methyladenosine, A-844
N-Methyladlumine, A-146
N-Methyladrenaline, A-152
O^3-Methyladrenaline, N-303
7-*O*-Methylaegeline, A-153
N-Methylaerophobin 2, A-155
4-Methylaeruginoic acid, D-454
Methylaervin, H-445
1′-*N*-Methylageliferin, A-190
N^6-Methylagmatine, A-719
N^b-Methylajmaline, A-216
17-*O*-Methylakagerine, A-222
O-Methylaknadinine, H-70
O-Methylakuammine, A-232
N-Methylalbine (incorr.), A-554
O-Methylalfileramine, A-260
ω-Methylallophanic acid, M-385
N-Methylallosedridine, S-216
N-Methylaloperine, A-637
O-Methylalpinigenine, A-638
N-Methylamericine, A-690
Methylamine, M-383
α-Methylaminoacetophenone, A-694
3′-Methylaminoavarone, A-1560
4′-Methylaminoavarone, A-1560
2-(Methylamino)benzamide, M-384
2-(Methylamino)benzoic acid, M-384
N^b-(2-Methylaminobenzoyl)tryptamine, T-639
3-[4-(Methylamino)-1-butenyl]pyridine, M-232
4-(4-Methylaminobutyl)-β-carboline, B-291
[(Methylamino)carbonyl]carbamic acid, M-385
4-(Methylamino)cycloheptanone, P-399
6-(Methylamino)-1,3-dihydro-2*H*-purin-2-one, A-818
3-(Methylamino)-15,18-dihydroxy-18-ikemaoyl-20-(dimethylamino)pregn-5-ene, D-270
2-(Methylamino)ethylamine, E-225
4-[2-(Methylamino)ethyl]-1,2-benzenediol, E-98
α-[1-(Methylamino)ethyl]benzenemethanol, M-386
5-[2-(Methylamino)ethyl]-1,2,3-benzenetriol, T-576
4-(β-Methylaminoethyl)catechol, E-98
3-(2-Methylaminoethyl)indole, M-582
3-[2-(Methylamino)ethyl]-1*H*-indol-2-ol, H-754
3-(2-Methylaminoethyl)oxindole, H-754
4-[2-(Methylamino)ethyl]phenol, H-667
2-(Methylamino)ethylphosphonic acid, A-773
4-[2-(Methylamino)ethyl]pyrocatechol, E-98
1-(2-Methylaminoethyl)-3,4,6,7-tetramethoxyphenanthrene, M-559
1-(2-Methylaminoethyl)-2,3,4-trimethoxy-6,7-methylenedioxyphenanthrene, T-328
2-(Methylamino)hypoxanthine, G-210
2-Methylaminoisocaproic acid, L-153

7-(Methylamino)-5,8-isoquinolinedione, A-831
α-[(Methylamino)methyl]benzenemethanol, A-864
α-[(Methylamino)methyl]benzyl alcohol, A-864
3-(Methylaminomethyl)indole, I-97
α-(Methylamino)-*N*-[7-(1-methylpropyl)-5,8-dioxo-3-phenyl-2-oxa-6,9-diazabicyclo[10.2.2]hexadeca-10,12,14,15-tetraen-4-yl]benzenepropanamide, C-600
3-Methylamino-*N*-norcona-3,5-diene, R-39
2-(Methylamino)-3-oxo-3*H*-phenoxazine-8-carboxylic acid, A-853
2-(Methylamino)-1-phenethanol, A-864
6-[2-(Methylamino)phenyl]-1,3-benzodioxole-5-methanol, I-186
2-(Methylamino)-1-phenylethanol, A-864
2-(Methylamino)-1-phenyl-1-propanol, M-386
2-Methylamino-1-phenyl-1-propanone, A-870
5-(3-Methylamino-3-phenylpropanoyl)nicotaxine, N-188
2-[(Methylamino)phenyl](2,4,6-trimethoxyphenyl)-methanone, T-55
3-Methylaminopregna-5,17(20)-dien-16-one, A-877
20-Methylaminopregnan-3-ol, A-881
20-(Methylamino)pregnan-3-one, A-883
3-(Methylamino)pregnan-20-one, A-882
20-(Methylamino)pregn-5-ene-3,16-diol, A-884
20-Methylaminopregn-5-en-3-ol, A-886
20-Methylaminopregn-4-en-3-one, A-891
3β-(Methylamino)pregn-17(20)-en-16-one, A-890
3-Methylaminopregn-5-en-16-one, A-887
3-Methylaminopregn-5-en-20-one, A-888
4-[(3-Methylamino)propyl]phenol, H-350
2-(Methylamino)-4(1*H*)-pteridinone, A-816
6-(Methylamino)purine, A-137
(4-Methylamino)-2(1*H*)-pyrimidinone, C-961
7-(Methylamino)-3*H*-pyrrolo[2,3-*c*]isoquinoline-6,9-dione, M-387
2′-Methylamino-2,4,6-trimethoxybenzophenone, T-55
N′-Methylammodendrine, A-930
Methylammonium nitrate, M-383
N-Methylanabasine, P-460
N-Methylanacycline, A-968
N-Methylanatabine, T-143
O-Methylancistrocladine, A-982
6-*O*-Methylancistrocladinine, A-982
N-Methylancistrorobertsonine D, A-990
N-Methylancistrotectoriline A, A-980
N-Methylandrachamine, B-187
O-Methylandrocymbine, A-1005
N-Methylangustifoline, A-1013
N^{b}-Methylangustilobine B, A-1015
19-*O*-Methylangustoline, A-1020
N-Methylanhalamine, T-236
O-Methylanhalamine, T-236
O-Methylanhalonidine, T-237
N-Methylanhydroschumannificine, S-145
8-Methylanibacanine, M-388
N-Methylanolobine, A-1066
O-Methylanolobine, A-1066
12-*O*-Methylanomaline, A-1067
N-Methylanonaine, R-120
N-Methylanthranilic acid 4-methoxyphenethylamide, D-900
N-Methylanthranilic acid *N*-methyl-4-methoxyphenethylamide, D-900
N-Methylanthranilic acid *N*-methylphenethylamide, D-900
N-Methylanthranilic acid phenethylamide, D-900
N-Methylanthranilic acid, M-384
N^{4}-Methylantirhine, A-1328
N-Methylapateline, A-1331
N-3′-Methylaplysinopsin, A-1357
Methylaposafranone, P-328
3α-Methylaraguspongine C, A-1372
N-Methylarmepavine *N*-oxide, A-1444
(+)-*O*-Methylarmepavine, A-1444
(-)-*O*-Methylarmepavine, A-1444
11-*O*-Methylartavenustine, X-30
N-Methylasimilobine glucoside, D-531
N-Methylasimilobine, D-531
N^{1}-Methylaspidofractinine, A-1494
N-Methylaspidospermatidine, A-1497
α-Methylaspidospermidine, A-1498
N-Methylassoaninium, A-1508
O-Methylasterriquinone, A-1520
N-Methylatalaphyllidine, A-1527
N-Methylatalaphylline, T-546
N-Methylatalaphyllinine, S-278
N-Methylatanine, A-1529
O-Methylatheroline, O-178
N-Methylatherosperminium, A-1532
12-*O*-Methylatherospermoline, T-286
O-Methylathrocupressine, C-588
Methylatropine nitrate, T-632
8-Methylatropinium bromide, T-632
4-Methyl-1*H*-1-aza-2,9,10-anthracenetrione, M-97
3-Methyl-16-azabicyclo[10.3.1]hexadeca-1(16),12,14-triene, M-774
9-Methyl-9-azabicyclo[3.3.1]nonan-3-one, A-1580
1-Methyl-9-azabicyclo[3.3.1]nonan-3-one, M-389
8-Methyl-8-azabicyclo[3.2.1]octane-2,6-diol, A-1582
8-Methyl-8-azabicyclo[3.2.1]octane-3,6-diol, M-391
8-Methyl-8-azabicyclo[3.2.1]octane-1,3-diol, M-390
8-Methyl-8-azabicyclo[3.2.1]octane-3,6,7-triol, M-392
8-Methyl-8-azabicyclo[3.2.1]octan-3-ol, M-393
8-Methyl-8-azabicyclo[3.2.1]octan-1-ol, P-399
8-Methyl-8-azabicyclo[3.2.1]octan-3-one, M-394
8-Methyl-8-azabicyclo[3.2.1]oct-2-ene-2-carboxylic acid, M-395
1-(8-Methyl-8-azabicyclo[3.2.1]oct-2-en-2-yl)ethanone, F-47
8-Methyl-8-azabicyclo[3.2.1]oct-3-yl 1,2-dithiolane-3-carboxylate, B-369
8-Methyl-8-azabicyclo[3.2.1]oct-3-yl α-(hydroxymethyl)benzeneacetate, T-632
8-Methyl-8-azabicyclo[3.2.1]oct-3-yl α-methylenebenzeneacetate, A-1359
(8-Methyl-8-azabicyclo[3.2.1]oct-2-yl)phenylmethanone, F-46
1-Methyl-4-azafluorenone, O-93
4-Methyl-15-aza-D-homoergosta-8,14,24(28)-trien-3-ol, M-396
4-Methyl-15-azasterol, M-396
(Methyl-*ONN*-azoxy)methanol, M-397
Methylazoxymethanol, M-397
O^{4}-Methylbalfourodinium, B-14
O-Methylbalsamide, M-18
5-Methylbarbituric acid, M-540
3-*O*-Methylbatrachotoxin, B-36
7-*O*-Methylbelarine, I-329
7-Methyl-5*H*-benzo[*g*]-1,3-benzodioxolo[6,5,4-*de*]-quinoline-5,6(7*H*)-dione, C-272
5-Methyl-1,3-benzodioxolo[5,6-*c*][1,3]dioxolo[4,5-*j*]phenanthridinium(1+), A-1566
13-Methyl[1,3]benzodioxolo[5,6-*c*]-1,3-dioxolo[4,5-*i*]phenanthridinium(1+), S-56
5-Methyl-1,3-benzodioxolo[5,6-*c*][1,3]dioxolo[4,5-*j*]phenanthridin-6(5*H*)-one, D-404
13-Methyl[1,3]benzodioxolo[5,6-*c*]-1,3-dioxolo[4,5-*i*]phenanthridin-14(13*H*)-one, D-510
3-Methylbenzoic acid, M-398
10-Methyl-8*H*-benzo[*b*]pyrido[4,3,2-*de*][1,8]phenanthroline-8,11(10*H*)-dione, A-944
10-Methyl-8*H*-benzo[*b*]pyrido[4,3,2-*de*][1,8]phenanthroline-8,9(10*H*)-dione, N-99
4-Methylbenzo[*g*]quinoline-5,10-dione, M-399
4-Methylbenzo[*g*]quinoline-2,5,10(1*H*)-trione, M-97
2-Methylbenzothiazole, M-400
2-[(4-Methylbenzyl)amino]benzoic acid, A-706
O-Methylberbamine, I-328
2′-*N*-Methylberbamine, I-328
N-Methylbicycloatalaphylline, M-401
α-Methylbiotin, M-402
4-Methyl-2,3′-bipyridine, M-403
4-Methyl-3,3′-bipyridine, M-404
5-Methyl-2,3′-bipyridine, M-405
N-Methyl-3,3′-bis(methylamino)propylamine, D-255
1-Methyl-3,3-bis(3-methyl-2-butenyl)-2,4(1*H*,3*H*)-quinolinedione, M-406
5-Methyl-2,3:7,8-bis(methylenedioxy)benzo[*c*]phenanthridinium(1+), S-56
5-Methyl-2,3:7,8-bis(methylenedioxy)benzo[*c*]phenanthridin-6(5*H*)-one, D-510
2-Methyl-6,7-bis(methylthio)-3,5,8(2*H*)-isoquinolinetrione, P-255
N-Methylboldine, B-243
4-Methylborreverine, B-253
9-*O*-Methylbostrycoidin, B-255
1′-*N*-Methyl-2′-bromoageliferin, A-190
1′-*N*-Methyl-2-bromoageliferin, A-190
O-Methylbufotenine *N*-oxide, M-288
O-Methylbufotenine, M-288
O-Methylbulbocapnine α-*N*-oxide, B-397
O-Methylbulbocapnine β-*N*-oxide, B-397
N-Methylbulbocapnine, B-397
O-Methylbulbocapnine, B-397
N^{a}-Methylburnamine, B-420
6-(3-Methyl-1,3-butadienyl)-1*H*-indole-3-carboxylic acid, M-408
6-(3-Methyl-1,3-butadienyl)-1*H*-indole, M-407
5-(3-Methyl-1,3-butadienyl)-1*H*-indole, M-412
3-Methylbutanamide, M-409
3-Methyl-1-butanamine, M-420
N-Methyl-1,4-butanediamine, B-422
3-Methylbutanoic acid *N*-methyl-*N*-(2-phenylethenyl)amide, T-303
3-Methylbutanoic acid, M-409
4-[2-[(2-Methylbutanoyl)amino]ethyl]imidazole, H-307
N-(3-Methylbutanoyl)-3-nitrotyramine, H-640
14-(2-Methylbutanoyl)nudicaulidine, M-321
13-(2-Methylbutanoyloxy)azitine, A-1609
3-(2-Methylbutanoyloxy)tropane-6,7-diol, M-392
N-(3-Methylbutanoyl)pyrrothine, A-759
O^{7}-(3-Methylbutanoyl)retronecine *N*-oxide, T-188
O^{7}-(3-Methylbutanoyl)retronecine, T-188
N-(2-Methylbutanoyl)tyramine, H-667
15-*O*-(2-Methylbutanoyl)-3-*O*-veratroylprotoverine, P-674
2-Methyl-2-butene-1-carboxylic acid, M-506
2-Methyl-2-butenoic acid 8-methyl-8-azabicyclo[3.2.1]oct-3-yl ester, T-404
3-Methyl-2-butenoic acid *N*-methyl-*N*-(2-phenylethyl)amide, T-303
7-(3-Methyl-2-butenoyl)-1*H*-indole, M-414
9-(3-Methyl-2-butenyl)adenine, A-137
1-(3-Methyl-2-butenyl)adenine, A-137
N^{6}-(3-Methyl-2-butenyl)adenine, Z-11
N^{6}-(3-Methyl-2-butenyl)agmatine, A-719
6-(3-Methyl-2-butenylamino)purine, Z-11
N-(3-Methyl-2-butenyl)guanidine, M-410
O-(3-Methyl-3-butenyl)halfordinol, H-12
3-(3-Methyl-2-butenylidene)-2-indolinone, D-471
6-(3-Methyl-2-butenyl)-1*H*-indole-3-acetonitrile, H-497
6-(3-Methyl-2-butenyl)-1*H*-indole-3-carboxylic acid, P-617
5-(3-Methyl-2-butenyl)-1*H*-indole-2,3-dione, M-415
6-(3-Methyl-2-butenyl)-1*H*-indole-2,3-dione, M-416
6-(3-Methyl-2-butenyl)-1*H*-indole-3-ethanol, H-497
5-(3-Methyl-2-butenyl)-1*H*-indole, M-412
3-(3-Methyl-2-butenyl)-1*H*-indole, M-411
6-(3-Methyl-2-butenyl)-1*H*-indole, M-413
7-(3-Methyl-2-butenyl)-1*H*-indole, M-414
6-(3-Methyl-2-butenyl)-1*H*-indol-2-ol, H-701
3-(3-Methyl-2-butenyl)-4-[(3-methyl-2-butenyl)oxy]-2(1*H*)-quinolinone, A-1529
4-(3-Methyl-2-butenyloxy)phenylacetonitrile, H-672
N-[2-[4-[(3-Methyl-2-butenyl)oxy]phenyl]ethyl]-3-phenyl-2-propenamide, H-667
3-[4-(3-Methyl-2-butenyloxy)phenyl]-4-(2-methylpropyl)-1*H*-pyrrole-2,5-dione, H-684
3-[5-[4-[(3-Methyl-2-butenyl)oxy]phenyl]-2-oxazolyl]pyridine, H-12
4-[(3-Methyl-2-butenyl)oxy]-2(1*H*)-quinolinone, H-53

4-(3-Methyl-2-butenyl)paspalinine, P-111
(3-Methyl-2-butenyl)paspalinine, P-110
6-(3-Methyl-2-butenyl)-1-phenazinecarboxylic acid, M-417
9-(3-Methyl-2-butenyl)-1-phenazinecarboxylic acid, M-418
3-(3-Methyl-2-butenyl)-3*H*-purin-6-amine, T-451
N-(3-Methyl-2-butenyl)-1*H*-purin-6-amine, Z-11
N-(3-Methyl-2-butenyl)putrescine, B-422
4-(3-Methyl-2-butenyl)tryptophan, M-419
N-(3-Methylbutyl)acetamide, M-420
3-Methyl-1-butylamine, M-420
4-[(3-Methylbutyl)amino]benzeneacetamide, J-47
N-(2-Methylbutyl)-2,4-decadienamide, D-104
N-(3-Methylbutyl)-2,8-decadiene-4,6-diynamide, D-103
N-(2-Methylbutyl)-2,4-dodecadiene-8,10-diynamide, D-882
N-(2-Methylbutyl)-2-dodecene-8,10-diynamide, D-897
1-(3-Methylbutyl)-3-pyrrolidinemethanol, M-421
2-(3-Methylbutyl)-1*H*-pyrrolo[2,3-*b*]pyridine, M-422
N-(3-Methylbutyl)-2,4-tetradecadiene-8,10-diynamide, T-121
N-(3-Methylbutyl)-2,4,12-tetradecatriene-8,10-diynamide, T-132
N-(2-Methylbutyl)-2,4-undecadiene-8,10-diynamide, U-26
N-(2-Methylbutyl)-2-undecene-8,10-diynamide, U-30
14-(2-Methylbutyryl)browniine, M-309
14-(2-Methylbutyryl)dictyocarpine, M-307
2-Methylbutyrylgermine, G-70
7-(2-Methylbutyryl)intermedine, I-160
7-(3-Methylbutyryl)intermedine, I-160
7-(2-Methylbutyryl)lycopsamine, I-160
7-(3-Methylbutyryl)lycopsamine, I-160
13-(2-Methylbutyryloxy)lupanine, H-554
6-(α-Methylbutyryloxy)-3-tigloyloxytropane, M-391
2-Methylbutyrylzygadenine, Z-36
N-Methylbuxene M, C-848
N-Methylbuxene, C-848
N-Methylbuxifoline, B-471
N^3-Methylbuxupapine, B-483
N-Methylcaaverine, D-531
O-Methylcadabicine, C-4
N-(4-*O*-Methyl-*trans*-caffeoyl)-3-*O*-methyldopamine, H-566
N-Methylcalycinine, D-846
O-Methylcalycinine, D-846
N-Methylcalystegine B_2, A-1587
N-Methylcalystegine C_1, A-1586
1-Methylcamalexin, T-372
N-Methyl-β-canadine, C-73
O-Methylcandicine, M-280
3-Methylcanthin-2,6-dione, I-105
3-Methylcanthin-5,6-dione, P-413
6-Methylcanthin-4-one, N-302
cis-*N*-Methylcapaurine, C-93
O-Methylcapaurine, C-93
3-(Methylcarbamoyl)pyridine, P-895
3-Methyl-9*H*-carbazole-9-carboxaldehyde, M-424
3-Methyl-9*H*-carbazole-2,5-diol, D-616
6-Methyl-9*H*-carbazole-1,7-diol, D-614
6-Methyl-9*H*-carbazole-2,3-diol, D-615
3-Methyl-9*H*-carbazole-1,6-diol, D-613
3-Methyl-9*H*-carbazole-2,6-diol, D-617
3-Methyl-9*H*-carbazole-2,8-diol, D-618
3-Methyl-1*H*-carbazole-1,4(9*H*)-dione, M-425
1-Methyl-9*H*-carbazole, M-423
3-Methyl-9*H*-carbazole, M-424
3-Methyl-9*H*-carbazole-1,6,7-triol, T-559
6-Methyl-9*H*-carbazol-1-ol, H-584
6-Methyl-9*H*-carbazol-3-ol, H-587
7-Methyl-9*H*-carbazol-2-ol, H-586
3-Methyl-9*H*-carbazol-2-ol, H-585
6-Methyl-9*H*-carbazol-4-ol, H-588
3-Methyl-9*H*-carbazol-1-ol, H-583
N-Methyl-β-carboline-3-carboxamide, C-133
1-Methyl-β-carboline-3-carboxylic acid, M-427
1-Methyl-β-carboline, M-426
1-Methyl-5-carbomethoxy-α-pyridone, H-711
O-Methylcaryachine, E-220
N-Methylcaryachinium, E-220
N-Methylcassine, C-183
O-Methylcassyfiline, O-27
O-Methylcassyformine, P-209
6-*O*-Methyl-*cis*-cephaeloside, I-167
6-*O*-Methyl-*trans*-cephaeloside, I-167
Methylcephaleine, E-72
12-*O*-Methylcepharanoline, C-275
N-Methylceratinamine, M-679
18-*O*-Methylchaenorpine, C-318
1-*O*-Methylchitraline, P-16
N-Methylciliatine, A-773
o-Methylcinnamic acid, M-513
O-Methylcinnamolaurine, C-453
4-Methylcinnoline, M-428
O-Methylcissampareine, W-9
O-Methylcissampereine, W-9
O-Methylcoccoline, E-202
O-Methylcoccuvine, C-543
N-Methylcoclaurine, H-275
O-Methylcocsoline 2′-β-*N*-oxide, I-339
O-Methylcocsoline, I-339
O-Methylcocsuline, I-339
6′-*O*-Methylcocsulinine, C-552
6-*O*-Methylcodeine, M-704
N-Methylcodonocarpine, C-556
N-Methylcolchicine, D-92
13-Methylcolumbamine, D-154
8-*O*-Methylcolumbianine, M-352
N-Methyl-(+)-coniine, P-652
N-Methyl-(-)-coniine, P-652
8-*O*-Methylconsolarine, M-321
3-*O*-Methylconstrictosine, C-624
13-Methylcoptisine, C-699
O-Methylcorpaine, R-9
N-Methylcorydaldine, I-305
N-Methylcorydalmine, C-677
O-Methylcorydine *N*-oxide, T-248
N-Methylcorydine, C-682
O-Methylcorydine, T-248
N-Methylcorypalline, T-158
O-Methylcorypalline, T-158
1-Methylcorypalline, T-181
N-Methylcorypallinium, T-158
N-Methylcorypalmine, C-694
N-Methylcrinasiadine, C-744
3-(3-Methylcrotonyl)cassaine, C-178
6-Methylcrotsparine, P-643
N-Methylcrotsparine, P-643
N-Methylcrotsparinine, C-781
O-Methylcularicine, C-804
N-Methylcularine, C-805
7-*O*-Methyl-(-)-curine, C-812
12-*O*-Methyl-(+)-curine, C-812
12-*O*-Methyl-(-)-curine, C-812
7′-*O*-Methylcuspidaline, D-88
N-Methylcyclobuxoxazine, C-851
Methylcyclodecylprodigiosin, M-429
4-Methyl-1*H*-cyclohepta[1,2-*d*:3,4-*d*′]diimidazole-2,8-diamine, P-737
4-Methyl-1*H*-cyclohepta[1,2-*d*:4,5-*d*′]diimidazole-2,6-diamine, P-94
N-Methyl-2-cyclohexylethylamine, C-869
N-Methylcyclokoreanine B, C-917
Methylcyclooctylprodigiosin, M-430
N-Methylcyclorolfeibuxine C, C-883
O-Methylcyclovirobuxine D, C-917
N^b-Methylcycloxobuxoviricine, C-884
N^1-Methylcylindrocarine, C-929
N-Methylcytisine, C-938
5-Methylcytosine, A-803
1-Methylcytosine, C-961
3-Methylcytosine, C-961
N-Methylcytosine, C-961
Methyldambullin, D-12
N-Methyldanguyelline, P-209
N-Methyldaphnandrine, O-1
7′-*O*-Methyldaphnoline, O-1
12-*O*-Methyldaphnoline, O-1
2-*N*-Methyldaphnoline, O-1
O-Methyldauricine 2′-*N*-oxide, D-88
O-Methyldauricine 2-*N*-oxide, D-88
O-Methyldauricine, D-88
N-Methyldeacetylcolchicine, D-92
N^a-Methyldeacetylpicraline, B-420
O-Methyldecarine, C-356
N-(9-Methyldecyl)sulfamic acid, M-431
O-Methyldehydroisopiline, T-521
O-Methyldehydrojoubertiamine, J-49
12′-*O*-Methyldehydrokohatine, K-56
14-*O*-Methyldelcaroline, M-339
6-*O*-Methyldelcorine, M-309
14-*O*-Methyldelcosine, M-309
6-*O*-Methyldelpheline, M-321
1-*O*-Methyldelphisine, M-323
N-Methyldemecolcine, D-92
N-Methyl-14-*O*-demethylepiporphyroxine, G-87
N-Methyl-7-*O*-demethylpeinamine, P-171
N-Methyl-4′-*O*-demethyl-*N*,7*a*-secomesembradienone, A-60
N-Methylde-*O*-methyltorulosine, T-434
N-Methyldendrobine, D-210
O-Methyldeoxopunjabine, P-800
N-Methyl-1-deoxynojirimycin 6-phosphate, H-616
N-Methyl-1-deoxynojirimycin, H-616
N^a-Methyldeoxysarpagine, T-425
O-Methyl-*N*-depropionylaspidolimine, P-924
α-Methyldethiobiotin, M-432
Methyldiacetamide, M-383
7-Methyl-1,5-diazacyclotetradecane, M-433
15-Methyl-15,17-diazatetracyclo[12.2.2.1^{3,7}]eicosa-3(20),12(19)-diene-6,9-dione, H-153
1′-*N*-Methyl-2,2′-dibromoageliferin, A-190
N^1-Methyldibromoisophakellin, D-328
N^7-Methyldibromophakellin, B-343
N-Methyldicentrinium, D-346
N^1-Methyl-14,15-didehydroaspidofractinine, A-1494
O-Methyl-1,2-didehydrotriphyophylline, D-793
N^1-Methyl-14,15-didehydrotuboxenine, T-674
N^a-Methyl-2,16-dihydroakuammicine N^b-methosalt, R-63
N-Methyldihydroberberine, L-23
8-Methyldihydrochelerythrine, B-239
8-*O*-Methyldihydrochelerythrine, D-407
N-Methyl-3,4-dihydroellipticine, E-67
33-Methyldihydrohalichondramide, H-15
O-Methyldihydrojoubertiamine, J-49
N-Methyldihydroquinicine, Q-17
N-Methyldihydroquinicinol, Q-17
$N^{2'}$-Methyl-3′,4′-dihydrousambarensine, U-52
N^4-Methyl-5′,6′-dihydrousambarensine, U-52
N^b-Methyl-3′,4′-dihydrousambarensine, U-52
Methyldihydrowarifteine, W-9
N-Methyl-2-(3,4-dihydroxyphenyl)ethylamine, E-98
N-Methyl-3,4-dimethoxy-β-hydroxyphenethylamine, M-18
N-Methyl-6,7-dimethoxyisoquinolone, I-305
N-Methyl-4-dimethylallyltryptophan, M-419
5′-*O*-Methyldioncopeltine A, D-793
N-Methyldioncophylline A, D-793
O-Methyldioncophylline A, D-793
8-*O*-Methyldioncophyllinol B, D-796
N-Methyl-10,22-dioxokopsane, D-805
4-Methyl[1,3]dioxolo[4,5-*h*]-1,3-dioxolo[6,7]indeno[2,1-*a*][3]benzazepinium, L-17
7-Methyl-1,3-dioxolo[4,5-*a*]furo[2,3-*c*]acridin-12(7*H*)one, C-342
5-Methyl-1,3-dioxolo[4,5-*g*]furo[2,3-*b*]quinolin-9(5*H*)-one, F-221
6-Methyl-1,3-dioxolo[4,5-*g*]isoquinolin-5(6*H*)-one, I-305
5-Methyl[1,3]dioxolo[4,5-*j*]phenanthridinium(1+), M-448
1-Methyl-2,6-diphenacylpiperidine, L-218
5-Methyl-3,7-diphenyl-2-oxo-5-azabicyclo[2.2.1]-heptan-6-one, C-855
1-Methyl-α,α′-diphenyl-2,6-piperidinediethanol, L-218
N-Methyl-*N,N*′-diphenylurea, D-818
1-Methyl-3,3-diprenyl-2,4-quinolinedione, M-406
7-Methyl-1,3-diprenylxanthine, X-5

2-(Methyldithio)-1*H*-indole-3-carboxaldehyde, M-434
3-Methyl-2-dodecenoic acid *p*-hydroxyphenethylamide, H-679
N^b-(3-Methyl-2-dodecenoyl)tryptamine, T-639
N-Methyldomesticine, N-29
O-Methyldomesticine, N-29
N-Methyldopamine 4-*O*-dihydrogen phosphate, E-98
N-Methyldopamine, E-98
4-*O*-Methyldopamine, H-565
3-*O*-Methyldopamine, H-566
6-*O*-Methyldryadodaphnine, D-944
12-*O*-Methyldryadodaphnine, D-944
N-Methylduguevanine, D-950
N-Methyldysideathiazole, D-970
O-Methyleburnamine, E-6
Methylecgonine, E-8
2-Methyl-2,6-eicosadienoic acid, M-435
N-Methylellipticine, E-67
N-Methylelmerrillicine, E-70
α-Methylene-β-alanine, A-841
14,14′-Methylenebis-18-hydroxytabersonine, V-173
2,3′-Methylenebisindole-3-carboxaldehyde, M-65
3,3′-Methylenebisindole, M-436
Methylenebismehranine, M-437
N^b,$N^{b'}$-Methylenebismeloninium(2+), M-438
10,10′-Methylenebis[norvallesamidine], M-439
1,1′-Methylenebis[2-phenazinol], M-440
10,10′-Methylenebisvindoline, V-129
1-Methylenedasycarpidan, U-8
12,12′-Methylenedicytisine, M-441
3,3′-Methylenediindole, M-436
4-Methylene-2,5-dioxo-3-pyrrolidinepropanoic acid, I-239
1,2-Methylenedioxyaporphine, R-120
3,4-Methylenedioxybenzamide, M-442
3,4-Methylenedioxybenzoic acid, M-442
9,10-Methylenedioxycamptothecin, C-70
3,4-Methylenedioxycinnamic acid 3,4-dimethoxyphenethylamide, Z-6
3,4-Methylenedioxycinnamic acid 3,4-methylenedioxyphenylethylamide, D-799
3,4-Methylenedioxycinnamic acid 2-phenylethylamide, M-443
3,4-Methylenedioxycinnamic acid, M-457
3,4-Methylenedioxycinnamoyl piperidide, M-444
N-(3,4-Methylenedioxycinnamoyl)isopentylamine, M-457
N-(3,4-Methylenedioxycinnamoyl)pentylamine, M-457
1-[3,4-(Methylenedioxy)cinnamoyl]piperidine, M-444
1,2-Methylenedioxy-6*a*,7-dehydroaporphine-10,11-quinone, M-445
6,7-Methylenedioxydictamnine, F-221
7,8-Methylenedioxydictamnine, F-223
1,2-Methylenedioxy-8,9-dimethoxyoxoaporphine, O-170
3,4-(Methylenedioxy)-2,5-diphenyl-2,4-hexadienedioic acid, U-57
6,7-Methylenedioxyisocarbostyril, I-305
6,7-Methylenedioxyisoquinoline, M-446
6,7-Methylenedioxy-1(2*H*)-isoquinolinone, I-305
11,12-Methylenedioxykopsaporine, K-66
11,12-Methylenedioxykopsinaline N^4-oxide, K-74
11,12-Methylenedioxykopsinaline, K-74
11,12-Methylenedioxykopsine, K-69
11,12-Methylenedioxykopsinol, K-66
5,6-Methylenedioxy-9-methoxy-7*H*-dibenzo[*de,h*]-quinolin-7-one, B-117
3,4-Methylenedioxy-9-methoxy-10-nitro-1-phenanthrenecarboxylic acid, T-570
6,7-Methylenedioxy-1-(3,4-methylenedioxybenzyl)isoquinoline, M-672
6,7-Methylenedioxy-9-methylfuro[2,3-*b*]quinolin-9(5*H*)-one, F-221
6,7-Methylenedioxy-*N*-methylisoquinolinium(1+), M-446
3,4-Methylenedioxy-10-nitro-1-phenanthrenecarboxylic acid, M-447
1,2-Methylenedioxynoraporphine, R-120
1,2-Methylenedioxyoxoaporphine, L-194
3,4-Methylenedioxy-*N*-pentylcinnamide, M-457
8,9-Methylenedioxyphenanthridine, M-448
8,9-Methylenedioxy-6-phenanthridone, C-744
3,4-Methylenedioxy-*N*-phenethylbenzamide, M-442
N-(3,4-Methylenedioxyphenethyl)cyclopropanecarboxamide, R-142
2-(3,4-Methylenedioxyphenethyl)quinoline, D-645
3-(3,4-Methylenedioxyphenyl)acrylic acid, M-457
2-[4-(3,4-Methylenedioxyphenyl)butyl]-4(1*H*)-quinolinone, M-449
10-(3,4-Methylenedioxyphenyl)-9-decenoic acid pyrrolidide, I-266
1-(3,4-Methylenedioxyphenyl)-6,7-dimethoxy-2-methyl-3,4-dihydroisoquinolinium(1+), C-796
12-(3,4-Methylenedioxyphenyl)-2,4,9,11-dodecatetraenoic acid pyrrolidide, M-450
1-[12-(3,4-Methylenedioxyphenyl)-2,4,9,11-dodecatetraenoyl]pyrrolidine, M-450
2-[2-(3,4-Methylenedioxyphenyl)ethyl]-4-methoxyquinoline, C-822
17-(3,4-Methylenedioxyphenyl)-16-heptadecenoic acid pyrrolidide, M-451
1-[17-(3,4-Methylenedioxyphenyl)-16-heptadecenoyl]pyrrolidine, M-451
7-(3,4-Methylenedioxyphenyl)-2,4-heptadienoic acid isobutylamide, C-387
7-(3,4-Methylenedioxyphenyl)-2,6-heptadienoic acid pyrrolidide, M-452
7-(3,4-Methylenedioxyphenyl)-2,4-heptadienoic acid pyrrolidide, N-214
N-[7-(3,4-Methylenedioxyphenyl)-2,6-heptadienoyl]isobutylamine, F-232
1-[7-(3,4-Methylenedioxyphenyl)-2,4-heptadienoyl]piperidine, P-452
1-[7-(3,4-Methylenedioxyphenyl)-2,6-heptadienoyl]piperidine, P-452
1-[7-(3,4-Methylenedioxyphenyl)-2,6-heptadienoyl]pyrrolidine, M-452
1-[7-(3,4-Methylenedioxyphenyl)-2,4-heptadienoyl]pyrrolidine, N-214
7-(3,4-Methylenedioxyphenyl)-2,4,6-heptatrienoic acid pyrrolidide, P-453
1-[7-(3,4-Methylenedioxyphenyl)heptatrienoyl]piperidine, P-452
7-(3,4-Methylenedioxyphenyl)-6-heptenoic acid pyrrolidide, M-452
1-[7-(3,4-Methylenedioxyphenyl)-2-heptenoyl]piperidine, P-465
1-[7-(3,4-Methylenedioxyphenyl)-6-heptenoyl]piperidine, P-465
1-[7-(3,4-Methylenedioxyphenyl)-6-heptenoyl]pyrrolidine, M-452
16-(3,4-Methylenedioxyphenyl)-2,4-hexadecadienoic acid isobutylamide, B-266
16-(3,4-Methylenedioxyphenyl)-2,4,15-hexadecatrienoic acid isobutylamide, B-266
2-[6-(3,4-Methylenedioxyphenyl)hexyl]-4(1*H*)-quinolinone, M-453
9-(3,4-Methylenedioxyphenyl)-2,8-nonadienoic acid piperidide, P-464
9-(3,4-Methylenedioxyphenyl)-2,8-nonadienoic acid pyrrolidide, M-455
9-(3,4-Methylenedioxyphenyl)-2,4-nonadienoic acid, M-454
1-[9-(3,4-Methylenedioxyphenyl)-2,8-nonadienoyl]-pyrrolidine, M-455
9-(3,4-Methylenedioxyphenyl)nonanoic acid, M-454
9-(3,4-Methylenedioxyphenyl)-2,4,8-nonatrienoic acid piperidide, P-464
9-(3,4-Methylenedioxyphenyl)-4,6,8-nonatrienoic acid piperidide, P-464
9-(3,4-Methylenedioxyphenyl)-2,4,8-nonatrienoic acid pyrrolidide, M-455
1-[9-(3,4-Methylenedioxyphenyl)-2,4,8-nonatrienoyl]pyrrolidine, M-455
9-(3,4-Methylenedioxyphenyl)-8-nonenoic acid piperidide, P-464
9-(3,4-Methylenedioxyphenyl)-8-nonenoic acid pyrrolidide, M-455
1-[9-(3,4-Methylenedioxyphenyl)-8-nonenoyl]pyrrolidine, M-455
1-[8-(3,4-Methylenedioxyphenyl)-7-octadecenoyl]-piperidine, P-470
15-(3,4-Methylenedioxyphenyl)-2,4-pentadecadienoic acid isobutylamide, B-265
15-(3,4-Methylenedioxyphenyl)-2,4,14-pentadecatrienoic acid isobutylamide, B-265
15-(3,4-Methylenedioxyphenyl)-14-pentadecenoic acid pyrrolidide, T-444
1-[15-(3,4-Methylenedioxyphenyl)-14-pentadecenoyl]pyrrolidine, T-444
5-(3,4-Methylenedioxyphenyl)-2,4-pentadienoic acid isobutylamide, P-462
5-(3,4-Methylenedioxyphenyl)-2,4-pentadienoic acid piperidide, P-467
5-(3,4-Methylenedioxyphenyl)-2,4-pentadienoic acid pyrrolidide, T-495
1-[5-(3,4-Methylenedioxyphenyl)-2,4-pentadienoyl]piperidine, P-467
1-[5-(3,4-Methylenedioxyphenyl)pentanoyl]piperidine, P-467
5-(3,4-Methylenedioxyphenyl)-2-pentenoic acid piperidide, P-467
5-(3,4-Methylenedioxyphenyl)-2-pentenoic acid pyrrolidide, M-456
1-[5-(3,4-Methylenedioxyphenyl)-2-pentenoyl]pyrrolidine, M-456
5-(3,4-Methylenedioxyphenyl)-2-phenyloxazole, D-650
3-(3,4-Methylenedioxyphenyl)-2-propenoic acid, M-457
5-(3,4-Methylenedioxyphenyl)-2-(3-pyridinyl)oxazole, T-299
2-(3,4-Methylenedioxyphenyl)quinoline, M-458
2-(3,4-Methylenedioxyphenyl)-4(1*H*)-quinolinone, G-171
13-(3,4-Methylenedioxyphenyl)-2,4,12-tridecatrienoic acid isobutylamide, G-224
13-(3,4-Methylenedioxyphenyl)-2,4,12-tridecatrienoic acid piperidide, P-448
13-(3,4-Methylenedioxyphenyl)-2,4,12-tridecatrienoic acid pyrrolidide, B-263
11-(3,4-Methylenedioxyphenyl)-2,10-undecadienoic acid isobutylamide, P-469
11-(3,4-Methylenedioxyphenyl)-2,10-undecadienoic acid piperidide, P-471
11-(3,4-Methylenedioxyphenyl)-2,8,10-undecatrienoic acid isobutylamide, P-469
11-(3,4-Methylenedioxyphenyl)-2,4,10-undecatrienoic acid piperidide, P-471
8,9-Methylenedioxy-11*H*-pyrrolo[3,2,1-*de*]phenanthridine, H-290
4,5-Methylenedodecanoic acid, H-131
3-Methylene-4-(1-methyl-1*H*-imidazol-5-yl)-1-phenyl-1-butanone, H-606
2-Methylene-4-oxopentanedioic acid, M-459
14,10-(Methyleneoxy)dendroban-12-one, D-216
11-Methylenepachysamine H, M-460
11-Methylenepregnane-3,20-diamine, M-460
1-Methylenepyrrolizidine *N*-oxide, M-461
1-Methylenepyrrolizidine, M-461
Methylephedrine, D-738
N-Methylephedrine, D-738
Methyl-ψ-ephedrine, D-738
N-Methyl-16-epiaffinine, A-166
N-Methylepiamauromine, A-680
N-Methyl-7-epidioncophylline A, D-793
8-*O*-Methyl-1-epidioncophylline B, D-794
14-*O*-Methyl-6-epiforesticine, M-323
N^3-Methylepipachysamine D, P-601
N-Methyl-16-epipericyclivine, T-425
O-Methyl-3-epischelhammericine B, T-51
N-Methylepivincadine, V-112
O-Methyl-16-epi-Δ^{14}-vincanol, E-6
12′-*O*-Methylergocornine, E-153
12′-*O*-Methyl-α-ergocryptine, E-157
6-Methyl-8-ergolene-8-carboxylic acid, P-107
1-Methylergotamine, E-172
N-Methyl-1,2-ethanediamine, E-225
2-(1-Methylethenyl)-5-(1-methylethyl)pyrazine, I-270
2-(1-Methylethenyl)-6-(1-methylethyl)pyrazine, I-271

6-(1-Methylethyl)-3,5-bis(2-methylpropyl)-2-piperazinone, P-445
8-Methyl-10-ethyllobelidiol, H-434
5-(1-Methylethyl)-2-(2-methylpropyl)-1*H*-imidazole, I-280
2-(1-Methylethyl)-5-(1-methylpropyl)pyrazine, I-281
2-(1-Methylethyl)-5-(2-methylpropyl)pyrazine, I-282
6-(1-Methylethyl)-3-(2-methylpropyl)-2(1*H*)-pyrazinone, M-462
N-(1-Methylethyl)-*N*′-[7-(methylsulfinyl)heptyl]urea, D-827
N-(1-Methylethyl)-*N*′-[6-(methylsulfinyl)hexyl]urea, D-828
3-(1-Methylethyl)-6-(phenylmethyl)-2(1*H*)-pyrazinone, B-88
2-(1-Methylethyl)-4-propylthiazole, D-247
(1-Methylethyl)pyrazine, I-285
5-(1-Methylethyl)-2(1*H*)-pyrazinone, H-546
6-(1-Methylethyl)-2(1*H*)-pyrazinone, H-547
3-(1-Methylethyl)-2(1*H*)-pyrazinone, H-545
3-[1-(1-Methylethyl)-2-pyrrolidinyl]pyridine, P-957
N^{14}-Methyleudistomidin C, E-282
N^{2}-Methyleudistomin D, B-321
N^{10}-Methyleudistomin E, E-287
N^{2}-Methyleudistomin J, B-322
N-Methyleuphococcinine, M-389
Methylevoxine, F-223
N-Methylexcentricine, E-318
O^{7}-Methylfaberonine, H-366
N^{2}-Methylfangchinoline, T-286
O-Methylfaurine, F-25
N-Methylferetine, A-151
N-(4-*O*-Methyl-*trans*-feruloyl)-4-*O*-methyldopamine, H-565
4-Methylfervenulone, D-498
2-Methylfervenulone, D-498
O-Methylfetidine, T-333
O-Methylflavinantine *N*-oxide, F-80
O-Methylflavinantine, F-80
O-Methylflazine, F-85
N-Methylflindersine, F-90
N-Methylformamide, M-463
O-Methylfumarophycine, F-174
N-Methylfuntumine, A-882
9-[(5-Methylfuranyl)methyl]-β-carboline, V-166
4-Methyl-10*H*-furo[3,2-*a*]carbazole, M-464
9-Methyl-6*H*-furo[2,3-*c*]carbazole, M-465
9-Methylfuro[2,3-*b*]quinolin-4(9*H*)-one, F-224
O-Methylgalanthamine, G-3
N-Methylgeibalansine, G-29
Methylgerambullal, G-67
Methylgerambullin, G-68
Methylgerambullone, G-68
18-*O*-Methylgigactonine, M-309
N-Methylgilletine, C-552
O-Methylglaucamine, G-87
N-Methyl-D-glutamic acid, G-107
N-Methyl-L-glutamic acid, G-107
3-*O*-Methylglycocitrine II, D-664
O-Methylglycophylone, T-583
O-Methylglycosolone, T-583
1-Methylgranatan-3-one, M-389
N-Methylgranatonine, A-1580
9-*O*-Methylguacolidine, G-214
9-*O*-Methylguadiscidine, G-188
N-Methylguanidine, M-466
Methylguanidinoacetic acid, C-731
N^{2}-Methylguanine, G-210
7-Methylguanine, M-469
1-Methylguanine, M-467
3-Methylguanine, M-468
9-Methylguanin-8(7*H*)-one, A-753
9-*O*-Methylguattescidine, G-214
9-*O*-Methylguattouregidine, G-215
Methylgymnaconitine, M-352
6-*O*-Methylhaemanthidine, H-6
N-Methylhalfordinium, H-12
Methylhalfordinol, H-12
6-*O*-Methylhamateine, A-982
6-*O*-Methylhamatinine, A-982
N-Methylhaplamine, F-90
N-Methylheliamine, T-158
O^{9}-Methylheliotridine, T-188
4′-*O*-Methylhemibastadin 1, H-100
4′-*O*-Methylhemibastadin 2, H-100
2-Methyl-6-(8-heptadecenyl)piperidine, M-470
O-Methylheptaphylline, H-125
2-Methylheptyl isonicotinate, P-898
1-Methylherbipoline, H-143
N-Methylhernagine, T-248
O-Methylhernandine, L-244
N-Methylhernangerine, N-25
N-Methylhernovine, T-248
10-*O*-Methylhernovine, T-248
N-Methylheteropsine, H-160
14-Methylhexadecanoic acid pyrrolidide, P-949
N-(14-Methylhexadecanoyl)pyrrolidine, P-949
N-(15-Methyl-9-hexadecenoyl)taurine, A-765
N-(5-Methylhexanoyl)pyrrothine, A-759
8-(5-Methylhexyl)-1*H*,3*H*-[1,3,4]oxadiazolo[3,4-*a*][1,2,4]triazin-1-one, M-471
N-Methylhigenamine 7-*O*-β-D-glucopyranoside, H-275
N-Methylhigenamine *N*-oxide, H-275
N-Methylhigenamine, H-275
N-Methylhistamine, H-307
tele-Methylhistamine, H-307
N-Methylhistidyl-β-[[1-carboxy-2-(1*H*-imidazol-4-yl)ethyl]amino]-α-aminobutanoic acid, F-33
Methylholaphylline, A-888
N^{20}-Methylholarrhimine, D-279
N^{3}-Methylholarrhimine, D-279
3-*O*-Methylhomobatrachotoxin, B-36
4-Methylhomoindanomycin, I-64
Methylhomotyramine, H-350
O-Methylhordenine, M-280
10-*O*-Methylhostasine, H-362
N-Methylhuperzine B, H-376
3-Methylhydantoin, I-40
N-Methylhydrasteine methyl ester, N-35
N-Methylhydrasteine, N-35
N-Methylhydrastine, M-472
(3-Methyl-3-hydroxy-1-butenyl)paspalinine, P-110
1-Methyl-2-(4-hydroxy-1,2-dithiolan-3-yl)pyrrolidine, M-547
O^{4}-Methylhydroxyluninium(1+), I-290
N^{1}-Methyl-11-hydroxymacusine A, P-562
N-Methyl-*trans*-4-hydroxy-L-proline, H-715
N^{4}-Methyl-10-hydroxyusambarine, O-21
N^{4}-Methyl-11-hydroxyusambarine, O-21
8-*O*-Methylhypaconine, M-343
1-Methylhypoxanthine, P-820
7-Methylhypoxanthine, P-820
9-Methylhypoxanthine, P-820
3-Methylhypoxanthine, P-820
3,3′,3″-Methylidynetris-1*H*-indole, T-591
3,3′,3″-Methylidynetris[1-methyl-1*H*-indole], T-591
Methylillukumbin A, I-30
Methylillukumbin B, I-30
4(5)-Methylimidazole, M-473
3-Methyl-2,4-imidazolidinedione, I-40
4-(1-Methyl-1*H*-imidazol-5-yl)-3-(phenylmethylene)-2-pyrrolidinone, I-189
(1-Methyl-1*H*-imidazol-5-yl)-9*H*-pyrido[3,4-*b*]indol-1-ylmethanone, X-23
2-(1-Methyl-1*H*-imidazol-4-yl)quinoline, I-44
2-(1-Methyl-1*H*-imidazol-5-yl)quinoline, I-44
6-Methylimidazo[1,5-*c*]tetrahydropyrimidine-5-thione, Z-8
5-Methylimidazo[4,5-*e*]-1,2-thiazin-4(5*H*)-one, N-81
1-Methyl-6-iminopurine, A-842
1-Methylindeno[1,2,3-*ij*][2,7]naphthyridinium, I-65
4-Methyl-1*H*-indeno[1,2-*b*]pyridine-2,5-dione, D-385
4-Methyl-5*H*-indeno[1,2-*b*]pyridin-5-one, O-93
N-Methylindisocin, I-74
β-Methyl-1*H*-indole-3-butanoic acid, I-124
β-Methyl-1*H*-indole-3-butanol, I-124
1-Methyl-1*H*-indole-3-carbothioamide, I-85
7-Methyl-1*H*-indole-3-carboxaldehyde, M-475
1-Methyl-1*H*-indole-3-carboxylic acid, I-90
3-Methyl-1*H*-indole-1-carboxylic acid, M-474
3-Methyl-1*H*-indole-2-carboxylic acid, M-476
5-Methyl-1*H*-indole-4,7-dione, M-477
N-Methyl-1*H*-indole-3-ethanamine, M-582
3-Methyl-1*H*-indole, M-474
β-Methylindole, M-474
1-Methyl-1*H*-indole-3-methanamine, I-97
2-Methyl-1*H*-indole-4-methanol, M-478
N-Methyl-1*H*-indole-3-propanamide, I-100
α-Methyl-1*H*-indole-3-propanoic acid, I-131
2-Methylindoline, D-472
3-Methyl-3*H*-indolo[3,2,1-*de*][1,5]naphthyridine-5,6-dione, P-413
6-Methyl-4*H*-indolo[3,2,1-*de*]-1,5-naphthyridin-4-one, N-302
5-Methylindolo[2′,3′:3,4]pyrido[1,2-*b*][2,7]naphthyridin-14(5*H*)one, M-131
5-Methyl-5*H*-indolo[3,2-*b*]quinoline-11-carboxylic acid, I-111
5-Methyl-5*H*-indolo[3,2-*c*]quinoline, I-110
5-Methyl-5*H*-indolo[2,3-*b*]quinoline, Q-19
1-(3-Methyl-1*H*-indol-2-yl)ethanone, A-61
2′-*O*-Methylinosine, I-148
O-Methylinsularoline, I-150
6-*O*-Methylipecoside, I-167
7-*O*-Methylipecoside, I-167
N-Methylirnigaine, I-177
O-Methylismine, I-186
1′-*N*-Methylisoageliferin, A-190
N^{b}-Methylisoajmaline, A-216
Methylisoalangiside, A-239
O^{9}-Methylisoboldine, H-751
4-Methylisoborreverine, I-198
Methylisochondodendrine, C-835
O-Methylisococculine, I-207
N-Methylisocorydine, I-208
β-*N*-Methylisocorypalminium, I-210
N-Methylisocrotsparinine, A-957
O-Methylisoeburnamine, E-6
Methylisoephedrine, D-738
Methylisogerambullone, G-68
Methylisopelletierine, P-173
O-Methylisophellibiline, P-315
N-Methylisopiline, T-521
O-Methylisopiline, T-521
(+)-*N*-Methylisopiline, T-521
O-Methylisoplatydesmine, I-268
1-Methyl-6,7-isoquinolinediol, D-627
3-Methyl-1,6,8-isoquinolinetriol, T-566
N^{b}-Methylisoreserpilinium, R-51
N-Methylisosalsoline, T-181
N-Methylisoschumanniophytine, I-314
14-Methylisotalatizidine, M-352
2′-*N*-Methylisotetrandrine, I-328
O-Methylisothalicberine, I-329
O-Methylisothebaine, T-525
N-Methylisothebainium, T-525
5-Methyl-3-isoxazolecarboxylic acid, M-479
(±)-5-*O*-Methyljatropham, D-449
O-Methyljoubertiamine, J-49
N-Methyljulifloridine, J-55
8-*O*-Methylkarakoline, M-355
8-*O*-Methylkarasamine, M-355
N-Methylkhaplofoline, H-56
12′-*O*-Methylkohatine, K-56
N-Methylkorupensamine E, K-91
O-Methylkreysigine *N*-oxide, P-221
O-Methylkreysigine, P-221
17-*O*-Methylkribine, K-101
21-*O*-Methylkribine, K-101
2-Methyllactic acid, H-617
Methyllagerine, L-11
N-Methyllambertine, L-23
15-*O*-Methyllatrunculin B, L-62
N-Methyllaudanidinium, L-68
N-Methyllauformine, L-214
N-Methyllaunobine, B-397
N-Methyllaurelliptine, I-196
N-Methyllaurotetanine N^{α}-oxide, L-75
N-Methyllaurotetanine N^{β}-oxide, L-75
N-Methyllaurotetanine, L-75
N-Methylleucine, L-153
N-Methylleuconolam, L-155
21-*O*-Methylleuconolam, L-155

O-Methylleucotamine, G-3
Methylliberine, L-165
12′-*O*-Methylliensinine, N-87
O-Methyllimacusine, L-175
N-Methyllindcarpine, T-248
7′-*O*-Methyllindoldhamine, D-88
7-*O*-Methyllindoldhamine, D-88
12-*O*-Methyllindoldhamine, D-88
2′-*N*-Methyllindoldhamine, D-88
2-*N*-Methyllindoldhamine, D-88
O-Methyllirinine, T-521
N-Methylliriodendronine, L-193
N-Methyllitsericine, L-214
N-Methylloline, L-234
O-Methyllongiberine, L-248
N^1-Methyllumichrome, L-285
N-Methyl-β-lumicolchicine, L-287
O-Methylluninium, I-290
Methyllycaconitine, G-91
8-*O*-Methyllycaconitine, L-317
18-*O*-Methyllycoctonine, M-309
α-Methyllycodine-1-ethanol, H-703
N-Methyllycodine, L-324
O-Methyllycorenine *N*-oxide, L-347
O-Methyllycorenine, L-347
O-Methylmacralstonine, M-8
O-Methylmacromerine, M-18
O-Methylmacusine B, T-425
Methylmadugin, M-582
3-Methylmaleimide 5-oxime, M-542
2-Methylmaleimide, M-542
N^1-Methylmanzacidin C, M-90
O-Methylmaritidine, M-108
3-Methylmercaptopropylamine, M-578
N-Methylmerenderine, P-221
N-Methylmescaline, M-219
N-Methylmethanamine, D-726
N^a-Methyl-10-methoxyakuammidine, A-229
N-Methyl-4-methoxyphenethylamine, M-280
17-*O*-Methyl-11-methoxy-Wieland-Gumlich aldehyde, C-115
N-Methyl-*N*-(2-methylaminobenzoyl)tryptamine, M-582
17-Methyl-3-methylamino-D-homoandrostane-17,17*a*-diol, D-368
4-Methyl-2-(methylamino)pentanoic acid, L-153
6-Methyl-1-(3-methyl-2-butenyl)-9*H*-carbazole-2,7-diol, E-275
3-Methyl-5-(3-methyl-2-butenyl)-9*H*-carbazole-2,6-diol, G-110
6-Methyl-4-(3-methyl-2-butenyl)-9*H*-carbazol-3-ol, G-125
3-Methyl-1-(3-methyl-2-butenyl)-9*H*-carbazol-2-ol, M-728
6-Methyl-3-(3-methyl-2-butenyl)-9*H*-carbazol-2-ol, S-291
3-Methyl-2-[6-(3-methyl-2-butenyl)-1*H*-indol-3-yl]-1,3-butanediol, M-480
2-Methyl-4-[7-(3-methyl-2-butenyl)-1*H*-indol-3-yl]-2-buten-1-ol, B-202
3-Methyl-6-[[7-(3-methyl-2-butenyl)-1*H*-indol-3-yl]methyl]-2,5-piperazinedione, T-86
5-Methyl-9-(3-methyl-2-butenyl)-7-oxo-1(5*H*)-phenazinecarboxylic acid, E-79
2-Methyl-*N*-(2-methylbutyl)butanamide, M-481
3-Methyl-1-(2-methylbutyl)pyrrolidine, M-544
3-Methyl-1-(3-methylbutyl)pyrrolidine, M-544
O-Methyl-*N*-(*N*-methylcarbamoyl)launobine, B-397
O-Methyl-*N*-(*N*-methylcarbamoyl)nandigerine, B-397
4′-Methyl-*N*-methylcoclaurine, H-275
2-Methyl-3-(19-methyl-12*Z*-eicosenylidene)-1-pyrroline, L-37
6-Methyl-2,3-methylenedioxycarbazole, D-615
N-Methyl-2,3-methylenedioxyfuro[2,3-*c*]acridone, C-342
2-Methyl-6,7-methylenedioxy-1(2*H*)-isoquinolinone, I-305
5-Methyl-8,9-methylenedioxyphenanthridinium(1+), M-448
1-Methyl-2-[6-(3,4-methylenedioxyphenyl)hexyl]-4(1*H*)-quinolinone, M-453
1-Methyl-2-(3,4-methylenedioxyphenyl)-4(1*H*)-quinolinone, G-171
4-Methyl-6-(1-methylethyl)-3-(phenylmethyl)-2,5-morpholinedione, B-29
2-Methyl-5-(1-methylethyl)pyrazine, I-283
2-Methyl-6-(1-methylethyl)pyrazine, I-284
3-Methyl-1-(1-methylethyl)pyrrolidine, M-544
4-Methyl-2-(1-methylethyl)thiazole, D-247
2-Methyl-4-(1-methylethyl)thiazole, D-247
2-Methyl-3-(16-methyl-12*Z*-heptadecenylidene)-1-pyrroline, L-37
2-Methyl-3-(16-methylheptadecylidene)-1-pyrroline, L-37
2-Methyl-1-(5-methylheptyl)-3*H*-carbazole-3,4(9*H*)-dione, C-129
2-Methyl-1-(6-methylheptyl)-3*H*-carbazole-3,4(9*H*)-dione, C-129
2-Methyl-3-(15-methyl-12*Z*-hexadecenylidene)-1-pyrroline, L-37
2-Methyl-3-(15-methylhexadecylidene)-1-pyrroline, L-37
2-Methyl-1-(5-methylhexyl)-3*H*-carbazole-3,4(9*H*)-dione, C-129
3-Methyl-4-[(1-methyl-1*H*-imidazol-5-yl)methyl]-2(5*H*)-furanone, N-295
5-Methyl-2-[(1-methyl-1*H*-indol-3-yl)methylene]-3,5-hexadienenitrile, A-1155
2-Methyl-3-(18-methyl-12*Z*-nonadecenylidene)-1-pyrroline, L-37
2-Methyl-3-(17-methyl-12*Z*-octadecenylidene)-1-pyrroline, L-37
2-Methyl-3-(17-methyloctadecylidene)-1-pyrroline, L-37
2-Methyl-1-(7-methyloctyl)-3*H*-carbazole-3,4(9*H*)-dione, C-129
6-Methyl-2-(2-methyl-1-oxobutyl)-1-oxa-5-azaspiro[2.5]oct-6-ene-4,8-dione, F-162
6-Methyl-2-(3-methyl-1-oxobutyl)-1-oxa-5-azaspiro[2.5]oct-6-ene-4,8-dione, F-81
3-Methyl-1-(3-methyl-2-oxo-5-pyrrolidinyl)-3-pyrrolin-2-one, H-467
2-Methyl-3-(14-methylpentadecylidene)-1-pyrroline, L-37
2-Methyl-1-(3-methylpentyl)-3*H*-carbazole-3,4(9*H*)-dione, C-129
6,6′-[3-Methyl-5-(2-methyl-1-propenyl)-2-pentene-1,5-diyl]bis-1*H*-indole, M-692
2-Methyl-4-(2-methylpropyl)-2,4-azetidinedicarboxylic acid, M-482
N-Methyl-*N*-(2-methylpropyl)-2,8-decadiene-4,6-diynamide, D-103
N-Methyl-*N*-(2-methylpropyl)-2-decene-4,6-diynamide, D-129
4-[3-Methyl-4-(2-methylpropyl)-5-oxo-1-imidazolidinyl]-7-(2-methylpropyl)-3-phenyl-2-oxa-6,9-diazabicyclo[10.2.2]hexadeca-10,12,14,15-tetraene-5,8-dione, N-333
2-Methyl-3-(2-methylpropyl)pyrazine, M-483
1-Methyl-2-(1-methylpropyl)-4(1*H*)-quinolinone, M-531
N-Methyl-*N*-(2-methylpropyl)-2,4-tetradecadiene-8,10-diynamide, A-968
2-Methyl-4-(3-methyl-1-pyrrolidinyl)-1-butanol, M-484
1-Methyl-4-(1-methyl-2-pyrrolidinyl)-β-carboline, B-292
1-Methyl-α-[(1-methyl-2-pyrrolidinyl)methyl]-2-pyrrolidineethanol, D-413
1-Methyl-4-(1-methyl-2-pyrrolidinyl)-9*H*-pyrido[3,4-*b*]indole, B-292
N-[15-Methyl-3-(13-methyltetradecanoyloxy)hexadecanoyl]glycine, M-485
N-[15-Methyl-3-(13-methyl-4-tetradecenoyloxy)-hexadecanoyl]glycine, M-485
2-Methyl-3-(13-methyltetradecylidene)-1-pyrroline, L-37
2-Methyl-6-(methylthio)-3,5,8(2*H*)-isoquinolinetrione, P-255
N-Methyl-*N*-[3-(methylthio)-1-oxo-2-propenyl]benzeneacetamide, P-192
N-Methyl-3-(methylthio)-2-propenamide, M-577
3-Methyl-1-[3-(methylthio)propyl]pyrrolidine, M-486
O-Methylmicranthine, M-591
1-Methylmitomycin A, M-653
Methylmitomycin C, M-654
N′-Methylmolokaiamine, M-679
N^7-Methylmonobromophakellin, B-343
3′-*O*-Methylmontrifoline, F-221
N-Methylmoranoline, H-616
Methylmorphine, C-555
α-Methyl-4-morpholineethanol, M-705
N-Methylmorpholine, M-705
O-Methylmoschatoline, M-712
9-*O*-Methylmukanadin A, D-863
O-Methylmukonal, H-448
O-Methylmukonidine, H-453
N-Methylmurexine, M-739
2′-*O*-Methylmyxalamide D, M-805
(6*E*)-2′-*O*-Methylmyxalamide D, M-805
(6*E*,10*Z*)-2′-*O*-Methylmyxalamide D, M-805
N-Methylnandigerine β-*N*-oxide, N-25
N-Methylnandigerine, N-25
N-Methylnantenine, N-29
5-Methyl-2,7-naphthyridine-4-carboxylic acid, M-489
1-Methyl-2,7-naphthyridine-4-carboxylic acid, M-488
4-Methyl-2,6-naphthyridine, M-487
N-Methylnarceimicine (incorr.), A-143
N-Methylnarceimine, A-143
(+)-*N*-Methyl-α-narcotine, N-44
O-Methylnareline, N-47
3-Methylnavenone A, P-908
7-*O*-Methylneocaryachine *N*-methosalt, N-104
N-Methylneocaryachinium, N-104
7-Methylneoipecoside, I-167
N-Methylnicotinamide, P-895
N-Methylnicotinic betaine, C-149
Methylnigakinone, D-546
N-Methylnitrarine, N-246
4-[[(Methyl-*aci*-nitro)acetyl]amino]butanamide, A-1323
N-Methyl-*N*-nitrosoguanidine, M-466
N-Methyl-4-nitrotryptophan, N-257
3′-*O*-Methylnkolbisine, F-221
2-Methyl-3-(12*Z*-nonadecenylidene)-1-pyrroline, L-37
2-Methyl-3-nonadecylidene-1-pyrroline, L-37
5-Methyl-10-(6,8-nonadienyl)lehmizidine, A-367
3-Methyl-2-[(2-nonene-4,6,8-triynoyl)amino]butanoic acid, M-490
5-Methyl-10-(8-nonenyl)lehmizidine, A-367
3-Methyl-2-(2-nonenyl)-4-quinolinol, M-491
3-Methyl-2-(2-nonenyl)-4(1*H*)-quinolinone, M-491
8-Methyl-5-(6-nonen-8-ynyl)indolizidine, O-51
1-Methyl-5-nonyl-2-(phenylmethyl)-3-pyrrolidinol, B-89
2-Methyl-6-nonylpiperidine, M-492
2-Methyl-6-nonyl-4-piperidinol, H-611
1-Methyl-2-nonyl-4(1*H*)-quinolinone, H-642
3-Methyl-2-nonyl-4(1*H*)-quinolinone, M-491
N-(8-Methylnonyl)sulfamic acid, M-493
5-Methyl-10-(8-nonynyl)lehmizidine, A-367
N-Methylnorapateline, A-1331
O-Methylnorbelladine, N-288
8-Methylnorchelerythrine, M-494
6′-*O*-Methyl-*N*-norcocsulinine, C-552
N-Methyl-23-norcona-3,5-dienin-3-amine, R-39
4-Methyl-19-norcona-1,3,5(10)-trienine, H-317
O-Methylnorlirinine, T-521
8-Methylnorlobelol, S-216
8-Methylnorlobelone, P-173
O-Methylnormacromerine, M-18
O-Methylnormacusine B, T-425
17-Methyl-18-nor-16,28-secosolanida-5,12-diene-3,16-diol, V-61
17-Methyl-18-nor-16,28-secosolanida-5,12-dien-3-ol, V-60
17-Methyl-18-norspirosola-5,12-dien-3-ol, V-66
2′-*N*-Methylnorthalibrine, T-309
4-Methylnorvaline, L-153
O-Methylnupharamine, N-340
8-*O*-Methyloblongine, L-251
N-Methylobovanine, P-781

2-Methyl-3-(12*Z*-octadecenylidene)-1-pyrroline, L-37
2-Methyl-3-octadecylidene-1-pyrroline, L-37
7-Methyl-2,4-octadienamide, M-495
7-Methyl-2,4-octadienoic acid, M-495
2-(6-Methyl-2,4-octadienyl)-1*H*-pyrrole, M-496
N-(7-Methyloctyl)sulfamic acid, M-497
O-Methyloduline, O-68
O-Methylorantine, A-1334
N-Methyloreoline, O-109
N-Methyloridine, O-109
3′-*O*-Methylorixine, O-113
1-Methylorotic acid, D-669
Methylosin B, P-636
N-Methylovigerine, O-143
9-Methyl-3-oxa-9-azatricyclo[3.3.1.$0^{2,4}$]nonan-7-ol, S-158
9-Methyl-3-oxa-9-azatricyclo[3.3.1.$0^{2,4}$]non-7-yl α-hydroxy-α-(hydroxymethyl)benzeneacetate, A-1043
9-Methyl-3-oxa-9-azatricyclo[3.3.1.$0^{2,4}$]non-7-yl α-(hydroxymethyl)benzeneacetate, S-159
9-Methyl-3-oxa-9-azatricyclo[3.3.1.$0^{2,4}$]non-7-yl α-methylbenzeneacetate, A-1364
16*R*-Methyloxazolomycin C, O-155
16*R*-Methyloxazolomycin, O-155
16*S*-Methyloxazolomycin, O-155
2-(3-Methyloxiranyl)quinoline, P-647
9-Methyl-8-oxoadenine, A-819
2-Methyl-β-oxobenzenepropanamide, M-512
10-Methyl-8-oxo-8*H*-benzo[*b*]pyrido[4,3,2-*de*][1,8]-phenanthrolinium, D-222
3-(3-Methyl-1-oxo-2-butenyl)-1*H*-indole, I-125
7-(3-Methyl-2-oxobutoxy)-8-methoxydictamnine, F-223
4-Methyl-6-(2-oxobutyl)-2-piperidinecarboxylic acid, T-493
N-Methyl-2-(2-oxobutyl)piperidine, H-435
N-(2-Methyl-3-oxodecanoyl)-1*H*-pyrrole, M-553
N-(2-Methyl-3-oxodecanoyl)-2-pyrroline, D-473
1-(2-Methyl-3-oxo-8-decenoyl)-1*H*-pyrrole, M-553
1-Methyl-2-(9-oxodecyl)-4(1*H*)-quinolinone, M-498
N^3-Methyl-4-oxo-3-epiplakinamine B, P-497
1-[4-(4-Methyl-5-oxo-2(5*H*)-furanylidene)butyl]-2-pyrrolidinone, P-59
O-Methyl-7-oxohernangerine, O-180
4-[4-Methyl-2-(3-oxohexyl)phenyl]-3-butenamide, L-262
9*a*-Methyl-3-(1-oxohexyl)-6-(1-propenyl)furo[3,2-*g*]isoquinoline-2,9(7*H*,9*aH*)-dione, R-152
N-Methyloxohydrasteine, N-35
5-Methyl-2-oxo-4-imidazolidinehexanoic acid, M-499
7-Methyl-2-(7-oxo-1,3-nonadienyl)-3*H*-azepine, C-340
2-Methyl-7-(7-oxo-1,3-nonadienyl)-2*H*-azepine, C-340
7-Methyl-2-(7-oxo-1,3,5-nonatrienyl)-3*H*-azepine, C-340
1-Methyl-2-(8-oxononyl)-4(1*H*)-quinolinone, H-642
9*a*-Methyl-3-(1-oxooctyl)-6-(1-propenyl)furo[3,2-*g*]isoquinoline-2,9(7*H*,9*aH*)-dione, M-686
8-(4-Methyl-2-oxopentyl)dihydrochelerythrine, M-500
N-Methyl-2-(2-oxopentyl)piperidine, H-37
2-Methyl-*N*-[1-(1-oxo-3-phenyl-2-propenyl)-2-pyrrolidinyl]butanamide, O-67
2-Methyl-*N*-[1-(1-oxo-3-phenyl-2-propenyl)-2-pyrrolidinyl]propanamide, P-479
3-Methyl-*N*-(3-oxopropyl)butanamide, A-892
2-(1-Methyl-2-oxopropylidene)phosphorohydrazidothioate oxime, G-28
3-Methyl-6-(1-oxopropyl)-2,4(1*H*,3*H*)-pteridinedione, H-702
N^7-(1-Methyl-2-oxopropyl)streptonigrin, S-569
3-Methyl-1-(2-oxo-5-pyrrolidinyl)-3-pyrrolin-2-one, D-448
1-(3-Methyl-2-oxo-5-pyrrolinyl)-4-methyl-5-oxo-2-pyrrolidinecarboxylic acid, D-474
18-*O*-[2-(2-Methyl-4-oxo-4*H*-quinazolin-3-yl)benzoyl]lycoctonine, M-501
1-Methyl-2-(10-oxoundecyl)-4(1*H*)-quinolinone, H-757
O-Methyloxyacanthine, O-1
N-Methylpachycereine, T-233
N-Methylpachygonamine, Y-5
N-Methylpachypodanthine *N*-oxide, O-87
N-Methylpachypodanthine, O-87
N-Methylpachysamine A, P-601
1-*O*-Methylpakistanine, P-16
N-Methylpalaudinium, P-80
O-Methylpallidine *N*-oxide, F-80
O-Methylpallidine, F-80
O-Methylpallidinine, P-31
20-Methyl-17-*O*-palmitoylspirolide G, S-434
12-*O*-Methylpampulhamine, D-88
N-Methylpancorine, P-55
O^2-Methylpancracine, P-57
N-Methylpapaveraldinium, P-77
N-Methylpapaverberbine, P-78
N-Methylpapaverine, P-79
N-Methylpapaverrubine A, R-86
N-Methylpapaverrubine B, G-87
O-Methylpapaverrubine C, G-87
N-Methylpapaverrubine D, G-87
O-Methylpapaverrubine D, G-87
N-Methylpapaverrubine E, R-86
N-Methylpapaverrubine F, G-87
N-Methylpapaverrubine G, A-638
O-Methylpapyramine, P-86
9-Methylparagracine, P-737
N-Methylparavallaridine, P-93
N-Methylparavallarine, P-93
17-Methylparsonsianidine, M-502
N-Methylpavine, A-1410
7′-*O*-Methylpedroamine, D-88
Methylpelletierine, P-173
α-*N*-Methylpelletierin-β-one, P-173
O-Methylpellotine, T-237
O-Methylpendine, C-552
16-Methylpendolmycin, M-503
1-Methyl-2-(6,9-pentadecadienyl)-4(1*H*)-quinolinone, H-657
14-Methyl-2-pentadecenethioamide *S*-oxide, S-633
2-Methyl-6-(6-pentadecenyl)piperidine, M-504
1-Methyl-2-(10-pentadecenyl)-4(1*H*)-quinolinone, H-657
1-Methyl-2-(6-pentadecenyl)-4(1*H*)-quinolinone, H-657
1-Methyl-2-(9-pentadecenyl)-4(1*H*)-quinolinone, H-657
2-Methyl-3-pentadecylidene-1-pyrroline, L-37
N-(14-Methylpentadecyl)-*N*-nitrosohydroxylamine, N-253
2-Methyl-6-pentadecylpiperidine, M-504
1-Methyl-2-pentadecyl-4(1*H*)-quinolinone, H-657
4-Methylpentanamide, M-505
4-Methylpentanoic acid, M-505
3-Methyl-3-pentenoic acid, M-506
8-Methyl-5-(4-pentenyl)indolizidine, O-52
8-Methyl-5-(2-penten-4-ynyl)indolizidine, O-52
1-Methyl-4-(2-penten-4-ynyl)quinolizidine, M-507
2-Methyl-1-pentyl-3*H*-carbazole-3,4(9*H*)-dione, C-129
3-Methyl-2-(pentylidenecyclopropyl)-4(1*H*)-quinolinone, A-1179
8-Methyl-5-pentylindolizidine, O-52
N-(4-Methylpentyl)-2,12-octadecadienamide, O-30
N-(4-Methylpentyl)-2,4,12-octadecatrienamide, O-33
2-Methyl-3-pentylprodiginine, P-636
3-Methyl-2-pentyl-4-quinolinol, M-508
1-Methyl-2-pentyl-4(1*H*)-quinolinone, H-660
3-Methyl-2-pentyl-4(1*H*)-quinolinone, M-508
8-Methyl-5-(4-pentynyl)indolizidine, O-52
14-*O*-Methylperegrine, M-347
N-Methylpericyclivine, T-425
O-Methylpeyoruvic acid, P-299
O-Methylpeyoxylic acid, T-175
O-Methylphellinine, S-126
10-Methyl-2(10*H*)-phenazinone, P-328
N-Methylphenethylamine, P-342
2-Methyl-*N*-phenethylbutyramide, P-342
3-Methyl-*N*-phenethylbutyramide, P-342
3-Methyl-2-(4-phenyl-1,3-butadienyl)-4-piperidinol, D-386
8-Methyl-10-phenyl-3,4-dehydrolobelidiol, S-214
N-Methyl-*N*-(2-phenylethenyl)-3-phenyl-2-oxiranecarboxamide, M-509
2-Methyl-*N*-(2-phenylethyl)butanamide, P-342
3-Methyl-*N*-(2-phenylethyl)butanamide, P-342
N-Methyl-*N*-phenylethylcinnamamide, P-344
2-Methyl-*N*-(2-phenylethyl)propanamide, P-342
3-Methyl-1-(2-phenylethyl)pyrrolidine, M-544
1-Methyl-3-(2-phenylethyl)-2,4(1*H*,3*H*)-quinazolinedione, M-510
13-Methyl-*N*-(2-phenylethyl)tetradecanamide, P-342
3-Methyl-1-phenyl-1*H*-indole, M-474
8-Methyl-10-phenyllobelidiol, S-214
8-Methyl-10-phenyllobelionol, S-215
2-[[9-Methyl-6-[(phenylmethyl)amino]-9*H*-purin-2-yl]amino]ethanol, O-90
8-Methyl-2-(phenylmethyl)-8-azabicyclo[3.2.1]octane-3,6-diol, B-94
8-Methyl-4-(phenylmethyl)-8-azabicyclo[3.2.1]octane-3,6-diol, B-95
8-Methyl-2-(phenylmethyl)-8-azabicyclo[3.2.1]octan-3-ol, B-96
16-Methyl-10-phenylmethyl[13]cytochalasa-6,13,21-triene-1,23-dione, P-677
1-Methyl-2-(phenylmethyl)-4(1*H*)-quinazolinone, B-93
2-Methyl-6-(9-phenylnonyl)-3-piperidinol, I-177
1-Methyl-2-(9-phenylnonyl)pyrrolidine, I-178
4-Methyl-5-phenyl-2-oxazolidinone, M-511
N-Methyl-3-phenyloxiranecarboxamide, P-348
3-(2-Methylphenyl)-3-oxopropanamide, M-512
N-Methyl-3-phenyl-*N*-(2-phenylethenyl)-2-propenamide, L-38
1-Methyl-α-phenyl-2-piperidineethanol, S-210
2-[Methyl(3-phenylpropanoyl)amino]benzoic acid, M-384
3-(2-Methylphenyl)-2-propenamide, M-513
3-(2-Methylphenyl)-2-propenoic acid, M-513
6-Methyl-9-phenyl-9*H*-purine, M-535
3-Methyl-1-phenyl-1*H*-pyrrole-2,5-dione, M-542
3-Methyl-4-phenyl-1*H*-pyrrole, M-514
1-Methyl-α-phenyl-2-pyrrolidineethanol, P-970
1-Methyl-2-phenyl-4(1*H*)-quinolinone, H-693
4-Methyl-3′-phenylspiro[3*H*-1,4-benzodiazepine-3,2′-oxirane]-2,5(1*H*,4*H*)-dione, C-889
6′-*O*-Methylphlebicine, R-114
N^a-Methylphlegmarine, P-361
N^b-Methylphlegmarine, P-361
N-Methylphoebine, P-369
N-Methylphylline, T-177
N-Methylpicolinic betaine, C-148
N-Methylpicraline, B-420
3,3′-(1-Methyl-2,5-piperazinediyl)bis[6-bromo-1*H*-indole], D-929
N-Methylpiperidine oxide, M-515
2-Methyl-3,4-piperidinediol, M-516
2,2′-(1-Methyl-2,6-piperidinediyl)bis[1-phenylethanone], L-218
α-Methyl-2-piperidineethanol, S-216
1-Methylpiperidine, M-515
2-Methyl-3,4,5-piperidinetriol, M-517
1-Methyl-3,4,5-piperidinetriol, P-458
5-(1-Methyl-2-piperidinyl)-2,3′-bipyridine, A-963
1-(*N*-Methyl-2-piperidinyl)-2-butanol, H-435
1-(*N*-Methyl-2-piperidinyl)-2-butanone, H-435
4-(1-Methyl-2-piperidinyl)-β-carboline, M-518
4-[2-(1-Methyl-2-piperidinyl)ethenyl]phenol, C-220
1-(*N*-Methyl-2-piperidinyl)-2-pentanol, H-37
1-(*N*-Methyl-2-piperidinyl)-2-pentanone, H-37
2-(1-Methyl-2-piperidinyl)-1-phenylethanol, S-210
2-(1-Methyl-2-piperidinyl)-1-phenylethanone, S-210
20-(5-Methyl-2-piperidinyl)-pregn-5-ene-3,16-diol, 13CI, S-200
1-(6-Methyl-2-piperidinyl)-2-propanone, M-519
4-(1-Methyl-2-piperidinyl)-9*H*-pyrido[3,4-*b*]indole, M-518
Methylpiperidylamine, M-515
N-Methylpiperolactam A, D-567

N-Methylpiperolactam D, T-537
O-Methylplatycerine, P-514
N-Methylpleiocarpamine, P-518
N-Methylporphyroxine, G-87
O-Methylporphyroxine, G-87
1-*O*-Methylporveniramine, P-16
O-Methylpratorimine, P-586
O-Methylpratorinine, P-586
O-Methylprechilenine, M-520
N-Methyl-7-prenyloxyflindersine, F-90
N-Methyl-8-prenyloxyflindersine, F-90
O-Methylpreocoteine, P-208
N-Methylpreskimmianine, P-625
8-*O*-Methylpretazettine, P-626
N-Methylproline methylbetaine, S-491
5-Methylproline, M-545
2-Methyl-1-propanamine, M-525
N-(2-Methylpropanoyl)pyrrothine, A-759
1-(2-Methyl-1-propenyl)-β-carboline, M-521
N-Methyl-11-(2-propenyl)cytisine, T-412
2-Methyl-6-(1-propenyl)piperidine, M-522
2-Methyl-5-(1-propenyl)pyrazine, M-523
2-Methyl-6-(1-propenyl)pyrazine, M-524
1-(2-Methyl-1-propenyl)-9*H*-pyrido[3,4-*b*]indole, M-521
N-(2-Methylpropenyl)-7-(2-thienyl)-2,4,6-heptatrienamide, O-133
3-Methyl-6-propionyllumazine, H-702
N-(2-Methylpropionyl)-3-nitrotyramine, H-640
2-Methyl-1-propylamine, M-525
4-[(2-Methylpropyl)amino]-4-oxo-2-butenoic acid, F-173
2-[(2-Methylpropyl)-*ONN*-azoxy]-2-propenoic acid, V-5
3-Methyl-*N*-propylbutylamine, M-420
N-(2-Methylpropyl)-2,4-decadienamide, D-106
N-(2-Methylpropyl)-6,8-decadienamide, D-105
N-(2-Methylpropyl)-2,8-decadiene-4,6-diynamide, D-103
2-Methyl-5-propyldecahydroquinoline, D-112
N-(2-Methylpropyl)decanamide, D-115
N-(2-Methylpropyl)-2,4,8-decatrienamide, D-123
N-(2-Methylpropyl)-2,6,8-decatrienamide, D-124
N-(2-Methylpropyl)-2-decenamide, D-132
N-(2-Methylpropyl)-2-decene-6,8-diynamide, D-130
N-(2-Methylpropyl)-2,4-dodecadiene-8,10-diynamide, D-882
N-(2-Methylpropyl)-2-dodecene-8,10-diynamide, D-897
N-(2-Methylpropyl)-2,4-eicosadienamide, E-45
N-(2-Methylpropyl)hexacosanamide, H-214
N-(2-Methylpropyl)-2,9-hexadecadiene-12,14-diynamide, H-215
N-(2-Methylpropyl)-2,6,8,12-hexadecatetraenamide, H-223
4-(2-Methylpropyl)morpholine, M-705
N-(2-Methylpropyl)-2,4-nonadien-8-ynamide, N-280
N-(2-Methylpropyl)-2-nonene-6,8-diynamide, N-282
N-(2-Methylpropyl)-2,4-octadienamide, O-39
N-(2-Methylpropyl)-3-(3-oxo-1-cyclopenten-1-yl)-propanamide, M-526
N-(2-Methylpropyl)-2,9-pentadecadiene-12,14-diynamide, P-202
2-(1-Methylpropyl)-5-phenyl-1*H*-imidazole, M-527
2-(2-Methylpropyl)-5-phenyl-1*H*-imidazole, M-528
2-Methyl-6-propylpiperidine, M-529
3-(2-Methylpropyl)piperidine, M-530
2-Methyl-6-propyl-4-piperidinol, H-622
2-Methyl-3-propylprodiginine, P-636
2-Methyl-*N*-propyl-1-propylamine, M-525
2-(1-Methylpropyl)-4-quinolinol, M-531
1-Methyl-2-propyl-4(1*H*)-quinolinone, H-707
2-(1-Methylpropyl)-4(1*H*)-quinolinone, M-531
4-Methyl-6-propylquinolizidine, M-532
N-(2-Methylpropyl)-2,4-tetradecadiene-8,10-diynamide, A-968
N-(2-Methylpropyl)-10,12-tetradecadiene-4,6-diynamide, T-122
N-(2-Methylpropyl)-2,4,10,12-tetradecatetraen-8-ynamide, T-130
N-(2-Methylpropyl)-2,4,8-tetradecatrienamide, T-133
N-(2-Methylpropyl)-2,4,10-tetradecatrien-8-ynamide, T-134
2-(2-Methylpropyl)thiazole, M-533
2-Methyl-1-propylthiazolium(1+), M-400
N-(2-Methylpropyl)-2,4-tridecadienamide, T-502
N-(2-Methylpropyl)-2,7-tridecadiene-10,12-diynamide, T-501
N-(2-Methylpropyl)-2,6,8-tridecatriene-10,12-diynamide, T-504
N-(2-Methylpropyl)-2,4-undecadienamide, U-28
N-(2-Methylpropyl)-2,4-undecadiene-8,10-diynamide, U-26
N-(2-Methylpropyl)-2,7,9-undecatrienamide, U-29
N-(2-Methylpropyl)-2-undecene-8,10-diynamide, U-30
N-Methyl-*sec*-pseudobrucine, I-12
N-Methyl-*sec*-pseudo-β-colubrine, I-12
N-Methylpseudoconhydrine, P-653
13-Methylpseudocoptisine, W-22
Methylpseudoecgonine, E-8
Methylpseudoephedrine, D-738
N-Methylpseudolaudanine, P-715
Methylpseudolycorine, P-716
8-Methylpseudomanibacanine, M-534
N^{8}-Methylpseudophrynaminol, P-720
N-Methyl-*sec*-pseudostrychnine, I-12
5-Methylpseudoyohimbane, Y-12
11-*O*-Methylpseurotin A, P-738
N^{b}-Methylpsilocybine, H-480
O-Methylpsychotrine, E-72
O-Methylptelefolidine, P-759
O-Methylptelefoline, P-755
O^{4}-Methylptelefolonium, P-757
1-Methyl-2,4-pteridinedione, P-762
8-Methyl-2,4,7(1*H*,3*H*,8*H*)-pteridinetrione, P-763
O-Methylpukateine, P-781
N-Methylpulchine, T-524
O-Methylpunjabine, P-800
1-Methyl-1*H*-purin-6-amine, A-842
2-Methyl-1*H*-purin-6-amine, A-843
3-Methyl-3*H*-purin-6-amine, A-844
6-Methylpurine, M-535
2-Methyl-4-(1*H*-purin-6-ylamino)-1-butanol, Z-11
2-Methyl-4-(1*H*-purin-6-ylamino)-2-buten-1-ol, Z-11
2-Methyl-4-(1*H*-purin-6-ylamino)-2-penten-1-ol, M-586
N-Methylpurpureine, P-208
4-Methylpyochelin, T-373
3-Methyl-2,5-pyrazinediol, D-631
Methylpyrazine, M-536
3-Methylpyrazinol, H-624
3-Methyl-2(1*H*)-pyrazinone, H-624
6-Methyl-2-pyrazinyl 2-furfuryl sulfide, F-201
1-(5-Methylpyrazinyl)-1,2,3,4-butanetetrol, P-154
1-(6-Methylpyrazinyl)-1,2,3,4-butanetetrol, P-155
4-(3-Methylpyrazinyl)-1,2,3-butanetriol, P-153
1-(3-Methylpyrazinyl)ethanone, A-62
1-Methyl-1*H*-pyrazole-3-carboxylic acid, P-890
1-Methyl-1*H*-pyrazole-5-carboxylic acid, P-890
4-Methyl-2-pyridinamine, A-845
N-Methyl-3-pyridinecarboxamide, P-895
2-Methyl-3,4-pyridinediol, D-632
α-Methyl-3-pyridinedodecanal *O*-methyloxime, I-24
β-Methyl-3-pyridinedodecanal *O*-methyloxime, I-25
β-Methyl-3-pyridinedodecanamine, N-225
γ-Methyl-3-pyridinedodecanamine, N-226
2-Methylpyridine, M-537
α-Methyl-3-pyridinetridecanal *O*-methyloxime, N-229
6-Methyl-2,3,5-pyridinetriol, T-567
2-Methyl-4-pyridinol, H-625
2-Methyl-4(1*H*)-pyridinone, H-625
N-Methyl-4-(3-pyridinyl)-3-buten-1-amine, M-232
1-(5-Methyl-3-pyridinyl)-1-decanone, M-538
2-Methyl-12-(3-pyridinyl)dodecylamine, N-225
3-Methyl-12-(3-pyridinyl)dodecylamine, N-226
1-(2-Methyl-3-pyridinyl)ethanone, A-65
1-(2-Methyl-4-pyridinyl)ethanone, A-67
1-(3-Methyl-4-pyridinyl)ethanone, A-68
1-(4-Methyl-2-pyridinyl)ethanone, A-63
1-(4-Methyl-3-pyridinyl)ethanone, A-66
1-(6-Methyl-2-pyridinyl)ethanone, A-64
1-(6-Methyl-3-pyridinyl)ethanone, A-69
1-Methyl-5-(3-pyridinyl)-2-pyrrolidinone, C-708
11-Methyl-6*H*-pyrido[4,3-*b*]carbazole-5-carboxaldehyde, E-67
1-Methyl-9*H*-pyrido[3,4-*b*]indole-3-carboxylic acid, M-427
1-Methyl-9*H*-pyrido[3,4-*b*]indole-6,7-diol, D-620
1-Methyl-9*H*-pyrido[3,4-*b*]indole-7,8-diol, D-621
1-Methyl-9*H*-pyrido[3,4-*b*]indole, M-426
α-Methyl-9*H*-pyrido[3,4-*b*]indole-1-methanol, H-486
2-Methyl-9*H*-pyrido[3,4-*b*]indolium, C-130
1-Methyl-9*H*-pyrido[3,4-*b*]indol-6-ol, H-591
1-Methyl-9*H*-pyrido[3,4-*b*]indol-7-ol, H-592
1-Methyl-9*H*-pyrido[3,4-*b*]indol-8-ol, H-593
5-Methyl-11-(9*H*-pyrido[3,4-*b*]indol-9-yl)-5*H*-quindoline, C-786
8-Methylpyridoxatin, C-646
1-Methyl-2-(3-pyridyl)pyrrolidine, N-190
2-Methyl-5-pyrimidinecarboxylic acid, M-539
5-Methyl-2,4-pyrimidinediol, T-401
5-Methyl-2,4(1*H*,3*H*)-pyrimidinedione, T-401
5-Methyl-2,4,6(1*H*,3*H*,5*H*)-pyrimidinetrione, M-540
6-Methylpyrimido[5,4-*e*]-1,2,4-triazine-5,7(1*H*,6*H*)-dione, R-66
1-Methyl-2-pyrrolecarboxaldehyde, P-942
4-Methyl-1*H*-pyrrole-2-carboxylic acid, M-541
1-Methyl-1*H*-pyrrole-2-carboxylic acid, P-944
3-Methyl-1*H*-pyrrole-2,5-dione, M-542
1-Methyl-2-pyrrolidineacetic acid, P-950
5-Methyl-2-pyrrolidinecarboxylic acid, M-545
α-Methyl-2-pyrrolidinedecanamine, P-958
3,3′-(1-Methyl-2,5-pyrrolidinediyl)bis-1,2-dithiolan-4-ol, G-72
1,1′-(1-Methyl-2,5-pyrrolidinediyl)bis-2-propanone, H-704
α-Methyl-2-pyrrolidinedodecanamine, A-921
1-Methylpyrrolidine, M-543
3-Methylpyrrolidine, M-544
1-Methyl-2-pyrrolidinone, M-546
3-(1-Methyl-2-pyrrolidinyl)-1,2-dithiolan-4-ol, M-547
3-Methyl-5-(2-pyrrolidinyl)-2(5*H*)-furanone, P-63
2′,3-(*N*-Methylpyrrolidinyl)hygrine, M-548
2′,4-(*N*-Methylpyrrolidinyl)hygrine, M-549
1-(1-Methyl-2-pyrrolidinylidene)-2-propanone, H-759
2-[3-(1-Methyl-2-pyrrolidinyl)-2-oxopropyl]-1-(1-oxo-3-phenyl-2-propenyl)pyrrolidine, D-211
2-(1-Methyl-2-pyrrolidinyl)-1-phenylethanol, P-970
1-(1-Methyl-2-pyrrolidinyl)-2-propanol, H-760
1-(1-Methyl-2-pyrrolidinyl)-2-propanone, H-759
3-(1-Methyl-2-pyrrolidinyl)pyridine, N-190
N-Methylpyrrolidone, M-546
4-Methyl-1-pyrroline-5-carboxylic acid, D-477
β-Methylpyrroline, D-476
20-(2-Methyl-1-pyrrolin-5-yl)pregn-4-en-3-one, M-550
7-Methyl-1-pyrrolizidinol, H-630
3-Methyl-1*H*-pyrrolo[3,2-*b*]pyridine, M-551
4-Methyl-3*H*-pyrrolo[2,3-*c*]quinoline, M-552
4-Methyl-1*H*-pyrrolo[3,4-*b*]quinoline-1,3,9(2*H*,4*H*)-trione, H-728
2-Methyl-1-(1*H*-pyrrol-1-yl)-1,3-decanedione, M-553
2-Methyl-1-(1*H*-pyrrol-1-yl)-8-decene-1,3-dione, M-553
1-(4-Methyl-1*H*-pyrrol-3-yl)ethanone, A-71
3-(1-Methyl-1*H*-pyrrol-2-yl)pyridine, P-972
N-Methylquebrachamine, Q-6
N-Methylquinaldic acid, Q-31
4-Methyl-2-quinazolinecarboxamide, M-555
4-Methyl-2-quinazolinecarboxylic acid, M-555
5-Methyl-2,4-quinazolinediol, D-633
5-Methyl-2,4(1*H*,3*H*)-quinazolinedione, D-633
1-Methyl-2,4(1*H*,3*H*)-quinazolinedione, Q-13
3-Methyl-2,4(1*H*,3*H*)-quinazolinedione, Q-13

4-Methylquinazoline, M-554
4-Methyl-2-quinazolinemethanol, H-609
2-Methyl-4-quinazolinol, H-632
2-Methyl-4(1*H*)-quinazolinone, H-632
1-Methyl-4(1*H*)-quinazolinone, M-556
3-Methyl-4(3*H*)-quinazolinone, Q-14
5-Methyl-5*H*-quindoline, I-109
5-Methyl-11-(10*H*-quindolin-10-yl)-5*H*-quindoline, C-794
N-Methylquinicinol, Q-17
2-Methylquinoline, M-557
2-Methyl-4-quinolinol, H-633
2-Methyl-4(1*H*)-quinolinone, H-633
1-Methyl-4(1*H*)-quinolinone, M-558
1-Methyl-2(1*H*)-quinolinone, Q-50
1-Methyl-2-(2-quinolinyl)oxirane, P-647
2-Methyl-4(1*H*)-quinolone, H-633
4-Methylraucubaininium(1+), C-191
N^{b}-Methylraumacline, R-22
O-Methylrepandine, R-46
4-Methylreserpiline, R-51
O^{9}-Methylretronecine, T-188
1-Methylreumycin, R-66
O-Methylrhoeagenine, R-86
24-Methylritterazine D, R-104
O-Methylrobustimine, S-126
O-Methylroefractine *N*-oxide, H-275
O-Methylroehybridine, R-116
O-Methylroemeridine, R-116
N-Methylroemerinium, R-120
8-*O*-Methylsachaconitine, M-355
O-Methylsakambullin, D-12
O-Methylsakerinol A, G-68
N-Methylsalsolidine, T-167
O-Methylsalsoline, T-167
1-Methylsarpagan-3,17-diol, A-27
N^{a}-Methylsarpagine methosalt, S-89
N-Methylsarpagine, S-89
O-Methylsattazolin, S-101
N′-Methylsaxitoxin, S-109
O-Methylschelhammericine B, T-51
N-Methylschinifoline, G-118
N^{b}-Methylscholaricine, E-30
N-Methylschumagnine, S-144
N-Methylschumannificine, S-145
N-Methylschumanniophytine, S-146
O-Methylsciadenine, S-148
8-*O*-Methylsclerotiorinamine, S-155
N-Methylsecoglaucine, M-559
4-Methyl-4,21-secosandwicine, S-52
28-Methyl-16,28-secosolanid-5-ene-3,16-diol, S-200
28-Methyl-16,28-secosolanid-5-ene-3,16,25-triol, P-433
19-Methyl-16,19-secostrychnidine-10,16-dione, I-12
N^{b}-Methyl-*N*^{b},21-secotalpinine, T-20
O-Methyl-*N*-senecioyltyramine, M-280
N^{b}-Methylserotonin, H-755
N-Methylseverifoline, S-278
N-Methylsinactine, S-307
Methylsinharine, S-310
N-Methylsinococuline, S-311
O-Methylsolanocapsine, S-346
O-Methylsomniferine, S-362
N-Methylsopholupisine, S-375
N-Methylsparsiflorine, T-524
O-Methylspeciosine, S-387
N^{5}-Methylspermidine, S-398
6-Methylspinaceamine, T-192
1′-Methylspiro[isobenzofuran-1(3*H*),2′-pyrrolidin]-3-one, S-288
1′-Methylspiro[1*H*-isoindole-1,2′-pyrrolidin]-3(2*H*)-one, S-287
20-Methylspirolide G, S-434
N-Methylstaurosporine, S-498
9-*O*-Methylstecepharine, C-93
Methylstemofoline, M-560
1′-*O*-Methylstemokerrin *N*-oxide, S-516
N-Methylstenantherine, T-245
O-Methylstepharinosine, S-542
4′-*O*-Methylstephavanine, S-545
N-Methylstephuline, L-244
9-Methylstreptimidone, M-561
N^{b}-Methylstrictamine, S-576
21-*O*-Methylstrictosamide aglycone, V-126
N^{4}-Methylstrychninium, S-589
N-Methylstylopine, S-612
N-Methylstylopinium, S-612
N-Methyl-*N*-*cis*-styrylcinnamamide, L-38
N-Methyl-*N*-styrylcinnamamide, L-38
N-(4-Methylsuccinimidobutyl)-*p*-coumaramide, H-682
Methylsuccirubine, M-562
7-(Methylsulfinyl)heptanenitrile, D-830
N-[6-(Methylsulfinyl)hexyl]-*N*′-[6-(methylthio)hexyl]urea, D-829
[6-(Methylsulfinyl)hexyl]urea, D-828
5-(Methylsulfinyl)pentanoic acid, M-203
3-(Methylsulfinyl)-2-propenoic acid, M-577
3-(Methylsulfinyl)propylamine, M-578
2-[2-(Methylsulfinyl)-L-tryptophan]-3-(4,5-dihydroxy-L-leucine)-4-L-alaninevіroisin, V-160
2-[2-(Methylsulfinyl)-L-tryptophan]-3-(4,5-dihydroxy-L-leucine)viroisin, V-160
2-[2-(Methylsulfinyl)-L-tryptophan]viroisin, V-160
[11-(Methylsulfinyl)undecyl]urea, D-826
Methylsulfomycin I, S-638
10-(Methylsulfonyl)decanamide, M-563
10-(Methylsulfonyl)decanenitrile, M-563
10-(Methylsulfonyl)decanoic acid, M-563
9-(Methylsulfonyl)nonanamine, M-564
9-(Methylsulfonyl)nonylamine, M-564
5-(Methylsulfonyl)pentanoic acid, M-203
3-(Methylsulfonyl)-2-propenoic acid, M-577
3-(Methylsulfonyl)propylamine, M-578
N-Methylswietenidin B, Q-45
4-*O*-Methylsynephrine, S-659
β-*O*-Methylsynephrine, S-659
8-*O*-Methyltalatizamine, M-352
O-Methyltaxodine, T-51
N-Methyltaxol C, T-52
6-*O*-Methyltazettinol, T-53
N^{b}-Methyltchibangensine, U-52
O-Methylteleocidin A_1, L-367
N-Methyltelobine, A-1331
O-Methyltembamide, T-67
4-Methyl-1,2,6,8-tetraazacycloundeca-4,9-diene-3,7,11-trione, M-565
12-Methyl-1-tetradecanamine, M-566
3-Methyl-4-tetradecanoyloxy-2-butenenitrile, H-576
12-Methyl-1-tetradecylamine, M-566
1-Methyl-2-tetradecylpyrrolidine, T-135
1-Methyl-2-tetradecyl-4(1*H*)-quinolinone, H-746
O-Methyltetradehydrotriphyophylline, D-793
N^{b}-Methyltetrahydroalstonine, A-212
N-Methyltetrahydrocolumbaminum, I-210
N-Methyltetrahydrocytisine, T-149
N-Methyl-*N*-[1,2,3,4-tetrahydro-1,3-dimethyl-6-(methylamino)-2,4-dioxo-5-pyrimidinyl]formamide, H-761
N-Methyltetrahydroellipticine, E-67
5-Methyltetrahydrofolic acid, T-172
(2-Methyltetrahydrofuran)solanidine, M-567
N^{b}-Methyltetrahydroharmol, H-592
α-Methyl-1-(2,3,4,9-tetrahydro-2-methyl-1*H*-carbazol-1-yl)-1*H*-indole-3-butanoic acid, M-568
3-Methyl-*N*-(5*a*,6*a*,7,8-tetrahydro-4-methyl-1,5-dioxo-1*H*,5*H*-pyrrolo[1,2-*c*][1,3]oxazepin-3-yl)butanamide, C-852
N-Methyltetrahydropapaverine, L-69
2-Methyltetrahydrothiazole, M-570
N^{3}-Methyltetrahydrovariolin B, V-32
2-Methyl-5-(1,2,3,4-tetrahydroxybutyl)pyrazine, P-154
2-Methyl-6-(1,2,3,4-tetrahydroxybutyl)pyridine, P-155
2′-*N*-Methyltetrandrine, T-286
2-*N*-Methyltetrandrine, T-286
N-Methylthaicanine, T-301
O-Methylthaicanine, T-301
12-*O*-Methylthalfoetidine, T-320
O-Methylthalibrine, T-309
O-Methylthalibrunimine, T-310
O-Methylthalicberine, T-313
N-Methylthalicsimidine, P-208
N-Methylthalidaldine, I-304
O^{3}-Methylthalifarapine, T-322
12′-*O*-Methylthaligosinine, T-346
O-Methylthalirabine, T-337
O-Methylthalisopavine, T-336
5-*O*-Methylthalisopine, T-346
2′-*N*-Methylthalistyline, T-337
O-Methylthalmethine, T-339
O-Methylthalmine, T-341
O-Methylthalsimidine, T-347
N-Methylthebaine, T-350
Methyltheobromine, C-15
2-*O*-Methyltheobromine, T-355
N^{4}-Methylthermospermine, D-249
3-Methyl-1,3-thiazino[6,5-*b*]indole-2,4(3*H*,9*H*)-dione, R-170
4-Methyl-5-thiazoleethanol, H-495
4-Methylthiazole, M-569
2-Methylthiazolidine, M-570
2-Methyl-2-thiazoline, D-479
2-(4-Methyl-5-thiazolyl)ethanol, H-495
1-Methyl-3-(2-thiazolyl)-1*H*-indole, T-372
3-(Methylthio)acrylamide, M-577
3-(Methylthio)acrylic acid, M-577
4-(Methylthio)butyl cyanide, M-203
4-(Methylthio)canthin-6-one, M-571
5-(Methylthio)canthin-6-one, M-572
9-(Methylthio)canthin-6-one, M-573
11-(Methylthio)canthin-6-one, M-574
7-(Methylthio)heptanenitrile, D-830
[6-(Methylthio)hexyl]urea, D-828
2-(Methylthio)-1*H*-indole-3-carboxaldehyde, M-201
4-Methylthio-6*H*-indolo[3.2.1-*de*][1,5]naphthyridin-6-one, M-571
5-Methylthio-6*H*-indolo[3.2.1-*de*][1,5]naphthyridin-6-one, M-572
9-Methylthio-6*H*-indolo[3.2.1-*de*][1,5]naphthyridin-6-one, M-573
11-Methylthio-6*H*-indolo[3.2.1-*de*][1,5]naphthyridin-6-one, M-574
2-(Methylthio)-3*H*-indol-3-one, M-575
3-[(Methylthio)methylene]-2-pyrrolidinethione, R-18
5-(Methylthio)pentanenitrile, M-203
5-(Methylthio)pentanoic acid, M-203
2-(Methylthio)-3*H*-phenoxazin-3-one, M-576
3-(Methylthio)-*N*-(2-phenylethenyl)-2-propenamide, I-30
3-(Methylthio)propanamine, M-578
3-(Methylthio)-2-propenamide, M-577
3-(Methylthio)-2-propenoic acid, M-577
N-[3-(Methylthio)-2-propenoyl]-*N*′-(phenylacetyl)-putrescine, L-114
3-(Methylthio)propylamine, M-578
2′-(Methylthio)spiro[2*H*-indole-2,5′(4′*H*)-thiazol]-3(1*H*)-one, E-183
2′-(Methylthio)spiro[3*H*-indole-3,5′(4′*H*)-thiazol]-2(1*H*)-one, S-426
4-[2-(Methylthio)-5-thiazolyl]phenol, T-508
5-(Methylthio)varacin A, V-20
5-(Methylthio)varacin, L-205
13-Methylthuggacin A, T-397
N-Methyltiliamosine, Y-5
Methyltoddaliamide, T-421
N-Methyltrenudone, T-449
5-Methyl-1,3,7-triazacyclodeca-4,9-diene-2,6,8-trione, R-70
5-Methyl-1,3,7-triazecine-2,6,8(1*H*,3*H*,7*H*)-trione, R-70
N-Methyl-2-(2,3,4-tribromo-5,6-dimethoxyphenyl)ethylamine, C-628
12-*O*-Methyltricordatine, I-339
1-Methyl-2-(4,7-tridecadienyl)-4(1*H*)-quinolinone, H-750
12-Methyl-1-tridecanamine, M-579
2-Methyl-6-(4-tridecenyl)piperidine, M-580
1-Methyl-2-(7-tridecenyl)-4(1*H*)-quinolinone, H-750
1-Methyl-2-(8-tridecenyl)-4(1*H*)-quinolinone, H-750
12-Methyl-1-tridecylamine, M-579
N-(12-Methyltridecyl)-*N*-nitrosohydroxylamine, N-255

2-Methyl-6-tridecylpiperidine, M-580
1-Methyl-2-tridecyl-4(1*H*)-quinolinone, H-750
2-Methyl-3-(2,3,4-trihydroxybutyl)pyrazine, P-153
3-Methyl-5-[3,5,7-trihydroxy-2-(4-hydroxyphenyl)-4-oxo-4*H*-1-benzopyran-8-yl]-2-pyrrolidinone, L-173
N-Methyl-3,4,5-trihydroxyphenethylamine, T-576
N-Methyl-5,6,7-trimethoxyisoquinolinium(1+), I-307
2-Methyl-4-(3,6,7-trimethoxy-2-naphthalenyl)-2-azabicyclo[2.2.1]heptan-3-one, M-581
4-Methyl-5-(3,7,11-trimethyl-2,6,10-dodecatrienyl)-6*H*-imidazo[4,5,1-*ij*]quinoline-2,6(1*H*)-dione, A-1544
N-Methyltryphyophylline, D-793
O-Methyltryphyophylline, D-793
N-Methyltryptamine, M-582
13*a*-Methyltylohirsutine, M-583
13*a*-Methyltylohirsutinidine, M-583
N-Methyltyramine *O*-α-L-rhamnopyranoside, H-667
Methyltyramine, A-898
N-Methyltyramine, H-667
O-Methyltyramine, M-280
N-Methyltyrosine, T-700
1-Methyl-2-(5-undecenyl)-4(1*H*)-quinolinone, H-757
1-Methyl-2-(6-undecenyl)-4(1*H*)-quinolinone, H-757
2-Methyl-6-undecylpiperidine, M-584
1-Methyl-6-undecyl-Δ^2-piperidine, M-584
1-Methyl-2-undecyl-4(1*H*)-quinolinone, H-757
N-Methylurabaine, U-41
5-Methyluracil, T-401
N^b-Methylusambarensine, U-52
N-Methylushinsunine, N-316
4-Methylvaleric acid, M-505
9-Methyl-*N*-vanillyl-7-decenamide, C-100
7-Methyl-*N*-vanillyl-5-octenamide, C-100
N^a-Methylvellosimine, T-425
8-*O*-Methylveratroylpseudaconine, M-336
N-Methylviguine, V-101
N-Methylvincadine, V-112
Methylvingramine, V-133
4-Methyl-5-vinylthiazole, M-585
O-Methylviridicatin, D-656
O-Methylviriditin, V-155
N-Methylvisoltricin, F-196
N^b-Methylvoacarpine, V-171
N^4-Methylvoachalotine, P-562
N^1-Methylvoafinine, V-179
N-Methylvoaphylline, V-179
Methylwarifteine, W-9
N-Methylwelwitindolinone B isothiocyanate, W-13
N-Methylwelwitindolinone C isonitrile, W-13
N-Methylwelwitindolinone C isothiocyanate, W-13
N-Methylwelwitindolinone D isonitrile, W-14
7-Methylwye, D-521
N-Methylxanthalinium, P-77
7-Methylxanthine, X-5
9-Methylxanthine, X-5
1-Methylxanthine, X-5
3-Methylxanthine, X-5
7-Methylxanthopterin, C-432
3-Methylxanthosine, X-13
N-Methylxylopine, A-1066
5-Methylyohimban, Y-12
17-*O*-Methylyohimbine, Y-13
1′-Methylzeatin, M-586
N-Methylzenkerine, T-524
Metiprenaline, N-303
Metocurine chloride, C-420
Metocurine iodide, C-420
Metropine, T-632
Metubine iodide, C-420
Metvin, N-301
Mevashuntin, M-587
Mexamine, M-288
Mezcaline, M-219
MF 5810, O-134
610MF, A-1206
MG 883-12F_2, S-569
MG 30, T-441
M6G, M-704
MH 072, A-1199
MH 435A, E-144
MH 435B, E-144
MI 481-42F4A, A-959
MI 481-42F4B, A-960
MI 481-42F4C, A-961
MI 481-42F4D, A-962
MI 19827, M-607
MI 198Z1, M-607
34M, I-132
Micacocidin A, M-588
Micacocidin B, M-588
Micacocidin C, M-588
Micacocidins, M-588
Michelalbine, N-316
Michelanugine, O-85
Micheline A, N-316
Micheline B, L-194
Michellamine A, M-589
Michellamine B, M-589
Michellamine C, M-589
Michellamine D, M-589
Michellamine E, M-589
Michellamine F, M-589
Michellamine, M-589
Michepressine, L-72
Michigazone, M-590
Micoserina, A-832
Micranthine, M-591
Microbiaeratin, A-1286
Microbiaeratinin, B-1
Microcarpine, M-592
Microcin B17, M-593
Microcin SF608, M-594
Micrococcin M, M-595
Micrococcin P_1, M-596
Micrococcin P_2, M-596
Microcyclamide, M-597
Micromeline, H-577
Micromide, M-598
Micromonosporin A, M-599
Micropine, M-600
Microsphaerone A, M-601
Microsphaerone B, M-601
Microsporin A, M-602
Microsporin B, M-602
Microxine, M-603
Micutrin, P-961
Midostaurin, S-498
Midpacamide, M-604
Miersine, M-605
Migalastat hydrochloride, H-616
Migalastat, H-616
Miglustat, H-616
Migranal, E-172
Migrastatin, M-606
Mikamycin A, O-131
Mikamycin, O-131
Mikanecine, H-233
Mikanoidine, S-90
Mikimopine, C-802
Milbemectin, M-607
Milbemycin A_3, M-607
Milbemycin A_4, M-608
Milbemycin B_2, M-607
Milbemycin B_3, M-608
Milbemycin C_1, M-607
Milbemycin C_2, M-608
Milbemycin D, M-609
Milbemycin F, M-609
Milbemycin G, M-609
Milbemycin J, M-607
Milbemycin K, M-608
Milbemycin α10, M-608
Milbemycin α11, M-607
Milbemycin α12, M-607
Milbemycin α13, M-607
Milbemycin α14, M-608
Milbemycin α15, M-608
Milbemycin α18, M-608
Milbemycin α19, M-608
Milbemycin α1, M-607
Milbemycin α20, M-607
Milbemycin α21, M-608
Milbemycin α22, M-607
Milbemycin α23, M-608
Milbemycin α24, M-607
Milbemycin α25, M-608
Milbemycin α26, M-607
Milbemycin α27, M-608
Milbemycin α2, M-607
Milbemycin α3, M-608
Milbemycin α4, M-608
Milbemycin α9, M-607
Militarinone A, M-610
Militarinone B, M-611
Militarinone C, M-611
Militarinone D, M-612
Millaurine A, M-614
Millaurine, M-613
Millettonine, M-615
Milliamine A, M-616
Milliamine B, M-616
Milliamine C, M-616
Milliamine D, M-616
Milliamine E, M-616
Milliamine F, M-616
Milliamine G, M-616
Milliamine H, M-617
Milliamine I, M-617
Milliamine J, M-616
Milliamine K, M-616
Milliamine L, M-616
Milliamine M, M-616
Milliamine N, M-616
Millingtonine, M-618
Milnamide A, M-619
Milnamide B, H-98
Milnamide C, M-619
Milnamide D, M-619
Milonine, I-318
Miltanthine, M-620
Miltanthin, P-643
Miltanthoridine, M-621
Miltanthoridinone, M-621
Miltiromycin C, M-653
Mimocin, M-622
Mimopudine, M-623
Mimosamycin, M-624
Mimoside, L-148
Mimosine, L-148
Minalemine D, M-625
Minalemine E, M-625
Minalemine F, M-625
Minalemines, M-625
Minaline, P-944
Minalobine O, M-626
Minalobine R, M-627
Minfiensine, M-628
Miniatine, M-629
Minoriceine, M-630
Minoricine, M-630
Minorine, V-115
Minovincine, M-630
Minovincinine, M-631
Minovine, V-111
Minpeimine, M-632
Minpeiminine, M-633
Miochol, A-47
Mioton, C-100
Mirabazole A, M-634
Mirabazole B, M-635
Mirabazole C, M-636
Mirabilin A, M-639
Mirabilin B, M-638
Mirabilin C, M-639
Mirabilin D, M-640
Mirabilin E, M-641
Mirabilin F, M-642
Mirabilin G, M-643
Mirabilin, M-637
Mirabimide E, M-644
Mirabliamide, H-350
Miraxanthin III, M-647

Miraxanthin II, M-646
Miraxanthin I, M-645
Miraxanthin V, M-647
Miraziridine A, M-648
Miriamide 5-glucoside, D-639
Miriamide, D-639
Misenine, M-649
Misrametine, M-650
Misramine, M-650
Misrhybridine, R-116
Mithaconitine, M-365
Mitiphylline, M-651
Mitiromycin A, M-652
Mitiromycin B, M-653
Mitiromycin D, M-654
Mitiromycin E, M-654
Mitocin C, M-654
Mitomycin A, M-653
Mitomycin B, M-653
Mitomycin C, M-654
Mitomycin D, M-654
Mitomycin E, M-654
Mitomycin F, M-653
Mitomycin G, M-655
Mitomycin H, M-656
Mitomycin J, M-653
Mitomycin K, M-653
Mitomycin S, M-654
Mitomycin, M-654
Mitoridine, T-288
Mitraciliatine, M-657
Mitrafoline, R-134
Mitragynaline, C-687
Mitragynalinic acid, C-688
Mitragynine, M-657
Mitragynol, R-134
Mitrajavine, M-658
Mitralactonal, M-659
Mitralactonine, M-660
Mitraphyllic acid glucopyranosyl ester, M-661
Mitraphyllic acid, M-661
Mitraphylline *N*-oxide, M-661
Mitraphylline, M-661
Mitraspecine, M-662
Mitrasulgynine, M-663
Mitraversine, M-664
Mitrinermine, R-90
Miyaconitine, M-665
Miyaconitinone, M-665
Miyoshianine A, L-344
Miyoshianine B, L-322
MJ 286A, T-374
MJ 347-81F4-A, N-266
MJ 347-81F4-B, N-266
MK 61, N-278
ML 1532II, C-900
ML 1065, R-4
MLR 52, S-498
MM 14201, A-804
MM 21801, A-759
MMC 4, M-654
MOCO, M-681
Mocrispatine, S-39
Moderil, R-50
Modestanine, M-666
Modus, P-80
Moenjodaramine, M-667
Moiramide A, M-668
Moiramide B, M-669
Moiramide C, A-1004
Mollenine A, M-670
Mollenine B, M-670
Molliclavine, M-671
Mollinedine, M-672
Molline, M-315
Molliorin A, M-673
Molliorin B, M-674
Molliorin C, M-675
Molliorin D, M-676
Molliorin E, M-677
Mollisine, M-678
Molokaiamine, M-679
Mololipids, M-680
Molybdenum cofactor, M-681
Molybdoenzyme molybdenum cofactor, M-681
Molybdopterin, M-681
Monamidocin, M-682
Monanchorin, M-683
D-Monapterin, A-923
L-Monapterin, A-923
Monascamine, M-686
Monascopyridine A, M-684
Monascopyridine B, M-685
Monascorubramine, M-686
Monascumic acid, M-482
Monaspiloindole, I-96
Monaspyranoindole, T-169
Monil, E-6
Monoacetylglycoperine, F-223
Monoacetyllythrumine, L-379
Monoacetylspermine, S-399
Monobromoisophakellin, D-328
Monobromophakellin, B-343
N-Mono(*tert*-butyloxycarbonyl)ethylenediamine, E-225
Monochlorotyrosine, A-724
Monocillinol A, M-687
Monocillinol B, M-687
Monocrotaline *N*-oxide, M-688
Monocrotaline pyrrole, M-688
Monocrotaline, M-688
Monocrotalinine, M-688
9-Monodechloro-13-demethylisodysidenin, D-972
11-Monodechloro-13-demethylisodysidenin, D-972
Mono-2-dimethylaminoethanol dihydrogen phosphate, D-197
Monodontamide A, M-689
Monodontamide B, M-689
Monodontamide C, M-689
Monodontamide D, M-690
Monodontamide E, M-690
Monodontamide F, M-691
Monodoroindole, M-692
Monoethanolamine, A-767
Monoferuloylamaranthin, B-110
Monoferuloylbetanin, B-110
Monogagaine, M-693
Monohydroxyisoaflavinine, A-172
Monolupine, A-970
Monomargine, M-694
Monomethyl caulerpinate, D-415
Monomethylholamine, A-888
Monomethyltetrandrinium, T-286
Monomorine I, B-434
Monophosphothiamine, T-366
Monospermin, M-385
Monspessulanine, M-695
Montabuphine, M-696
Montamine, M-697
Montanine, P-57
Montanine, Q-33
Montanine, V-178
Monterine, C-643
Monticamine, D-187
Monticoline, D-187
Montiporyne E, M-698
Montipyridine, M-699
Montrifoline, F-221
Montrutanine, Q-33
Mooniine A, M-700
Mooniine B, M-700
Mooreine, M-701
Moranoline, H-616
Morfine, M-704
Morifoline, I-68
Moringine, B-84
Moroidin, M-702
Morphine glucuronide, M-704
Morphine *N*-oxide, M-704
Morphine sulfate, M-704
Morphine, M-704
ψ-Morphine, M-703
4-Morpholinamine, M-705
4-Morpholinecarboxaldehyde, M-705
4-Morpholineethanol, M-705
Morpholine, M-705
1-Morpholino-1-propanone, M-705
Mortivinacin B, M-706
Mortivinacin C, M-707
Morusimic acid A, M-708
Morusimic acid B, M-708
Morusimic acid C, M-709
Morusimic acid D, M-709
Morusimic acid E, M-709
Morusimic acid F, M-709
Moschamide, M-710
Moschamindole, S-252
Moschamindolol, M-711
cis-Moschamine, H-755
Moschamine, H-755
Moschatoline, M-712
Mossambine, M-713
Mostueine, D-138
Motuporamine A, M-714
Motuporamine B, M-715
Motuporamine C, M-716
Motuporamine D, M-715
Motuporamine E, M-716
Motuporamine F, M-716
Moupinamide, H-667
Movellan, S-589
Moxa, N-303
MP 105, A-772
MPC 1001F, A-1207
MR 93A, M-159
MR 93B, O-156
MRL 3120, F-97
MS 681, A-1208
MS 681A, A-1208
MS 681B, A-1208
MS 681C, A-1208
MS Contin, M-704
MS 681D, A-1208
MSD 819, C-416
MSD 92, D-498
MSI 1256F, S-485
MSI 1436, S-485
MT 35214, A-804
MT 36531, A-804
MT 1882-II, P-421
MT 1882-I, P-421
Mubironine A, D-210
Mubironine B, D-210
Mubironine C, M-717
Mucronatine, A-818
Mucronatine, R-62
Mucronatinine, R-62
Mucronine A, M-718
Mucronine B, M-718
Mucronine C, M-719
Mucronine D, M-720
Mucronine E, M-719
Mucronine F, M-719
Mucronine G, A-18
Mucronine H, M-718
Mucronine J, M-721
Mucuadine, M-722
Mucuadinine, M-723
Mucuadininine, M-724
Mucunadine, M-725
Mucunine, M-726
Mukanadin A, D-863
Mukanadin B, M-727
Mukanadin C, L-242
Mukanadin D, M-727
Mukeic acid, H-452
Mukoeic acid, H-452
Mukoenine A, M-728
Mukoenine B, M-729
Mukoenine C, G-81
Mukolidine, H-451
Mukoline, H-604
Mukonal, H-448
Mukonicine, G-81
Mukonidine, H-453
Mukonine, H-452
Muldamine, S-200
Mulgediifoline, N-89
Multhiomycin, N-319

Multifidin, H-575
7,9(11)-Multifloradiene-3,29-diol, M-730
Multifloramine, P-221
(+)-Multifloramine, P-221
Multiflorine *N*-oxide, M-731
Multiflorine, M-731
Munitagine, P-514
Munroniamide, M-732
Munronin D, M-733
Munzianine, M-347
Munzianone, M-347
Mupamine, G-81
Muramine, M-734
Murayaanthraquinone, M-735
Muraymycin A, M-736
Muraymycin A_3, M-736
Muraymycin A_4, M-736
Muraymycin A_5, M-736
Muraymycin B_1, M-737
Muraymycin B_2, M-737
Muraymycin B_3, M-737
Muraymycin B_4, M-737
Muraymycin B_5, M-737
Muraymycin B_6, M-737
Muraymycin B_7, M-737
Muraymycin C_1, M-737
Muraymycin C_2, M-737
Muraymycin C_3, M-737
Muraymycin C_4, M-737
Muraymycin D_1, M-737
Muraymycin D_2, M-737
Muraymycin D_3, M-737
Mureidomycin E, M-738
Mureidomycin F, M-738
Murexine, M-739
Muricatide, A-864
Muricatisine, A-694
Muricine, M-740
Muricinine, C-702
Murrafoline A, M-741
Murrafoline B, M-742
Murrafoline C, M-743
Murrafoline D, M-744
Murrafoline E, M-745
Murrafoline F, M-746
Murrafoline G, M-747
Murrafoline H, M-748
Murranimbine, M-749
Murrapanine, M-750
Murrastifoline A, M-751
Murrastifoline B, M-752
Murrastifoline C, M-753
Murrastifoline D, M-754
Murrastifoline E, M-754
Murrastifoline F, M-755
Murrayacarine, M-756
Murrayacine, M-757
Murrayacinine, M-47
Murrayaculatine, M-758
Murrayafoline A, H-583
Murrayafoline B, M-759
Murrayaline A, D-619
Murrayaline B, D-619
Murrayaline C, M-760
Murrayaline D, E-276
Murrayaline, D-619
Murrayamine A, G-81
Murrayamine B, M-47
Murrayamine C, M-46
Murrayamine C, M-47
Murrayamine D, C-814
Murrayamine E, C-813
Murrayamine F, M-761
Murrayamine G, M-761
Murrayamine H, C-814
Murrayamine I, G-81
Murrayamine J, M-762
Murrayamine K, G-81
Murrayamine M, M-763
Murrayamine N, M-762
Murrayamine O, M-764
Murrayamine P, M-764
Murrayanine, H-447
Murrayanine, M-765
Murrayanol, E-276
Murrayaquinone A, M-425
Murrayaquinone B, M-766
Murrayaquinone C, M-767
Murrayaquinone D, M-767
Murrayaquinone E, M-766
Murrayastine, T-596
Murrayazolidine, C-814
Murrayazoline, C-813
Murrayazolinine, C-814
Murrayazolinol, C-813
Muscaaurin II, M-769
Muscaaurin I, M-768
Muscaflavin, M-770
Muscapurpurin, M-771
Muscaridine, M-772
Muscarine, M-773
Muscarone, M-773
Muscicapine A, A-778
Muscicapine B, A-778
Muscicapine C, A-778
Muscimol, A-837
Muscopyridine, M-774
Muscoride A, M-775
Musculamine, S-399
Mussaendoside A, H-90
Mussaendoside B, H-90
Mussaendoside C, H-90
Mussaendoside D, H-90
Mussaendoside E, H-90
Mussaendoside F, H-90
Mussaendoside G, H-90
Mussaendoside H, H-90
Mussaendoside M, H-90
Mussaendoside N, H-90
Mussaendoside O, H-90
Mussaendoside P, D-564
Mussaendoside Q, D-602
Mussaendoside U, H-90
Mutaaspergillic acid, M-462
Mutabillicin, S-321
Mutabilycin, S-321
Mutamycin, M-654
Mx 2BC, S-6
MY 336a, A-1209
MY 12-62a, H-133
MY 12-62c, H-134
MYC 8005, A-1210
Mycadrine, A-898
Mycalazal 10, A-624
Mycalazal 11, A-624
Mycalazal 12, A-624
Mycalazal 13, A-624
Mycalazal 1, A-624
Mycalazal 2, A-624
Mycalazal 3, A-624
Mycalazal 4, A-624
Mycalazal 5, A-624
Mycalazal 6, A-624
Mycalazal 7, A-624
Mycalazal 8, A-624
Mycalazal 9, A-624
Mycalazole 11, M-776
Mycalazole 12, M-776
Mycalazole 5, M-776
Mycalazole 6, M-776
Mycalazole 8, M-776
Mycalazole 9, M-776
Mycalazoles, M-776
Mycalenitrile 1, F-141
Mycalenitrile 2, F-141
Mycalenitrile 3, F-141
Mycaleoxime, M-777
Mycalisine B, M-778
Mycalolide A, M-779
Mycalolide B, M-779
Mycalolide C, M-779
Mycalolide D, M-780
Mycalolide E, M-781
Mycapolyols, M-782
Myceliothermophin A, M-783
Myceliothermophin B, M-783
Myceliothermophin C, M-783
Myceliothermophin D, M-783
Myceliothermophin E, M-783
Mycenarubin A, M-784
Mycenarubin B, M-785
Mycenarubin D, M-786
Mycenarubin E, M-786
Mycenarubin F, M-784
Mycobacidin, A-78
Mycobactin J1, M-787
Mycobactin T, M-788
Mycobactin, M-787
Mycomethoxin A, P-325
Mycomethoxin B, H-663
Mycosporin glutamicol, M-789
Mycosporin glutaminol, M-789
Mycosporin-Gln, M-789
Mycosporin-Glu, M-789
Mycothiazole-4,19-diol, M-790
Mycothiazole, M-790
Mycothiol bimane, M-791
Mydriasine, T-632
Mydriatine, A-869
Myoscorpine *N*-oxide, E-31
Myoscorpine, E-31
Myosmine, M-792
Myrianthine A, M-793
Myrianthine B, A-150
Myrianthine C, M-794
Myrianthosine, M-795
Myricoidine, L-230
Myrioneurinol, M-796
Myrionine, M-797
Myrioxazine A, O-57
Myrioxazine B, O-57
N^2-Myristoleoylglutamine, G-108
N^2-Myristoylglutamine, G-108
Myrmicarin 237A, B-436
Myrmicarin 213A, M-801
Myrmicarin 215A, M-801
Myrmicarin 233A, M-799
Myrmicarin 430A, M-800
Myrmicarin 237B, B-436
Myrmicarin 213B, M-801
Myrmicarin 215B, M-801
Myrmicarin 215C, M-801
Myrmicarin 217, M-801
Myrmicarin 663, M-798
Myrobotinol, M-802
Myrothenone A, A-824
Myrothenone B, A-824
Myrrhine, D-886
Myrtifoline, F-223
Myrtine, O-53
Myrtoidine, M-803
Myrtopsine, M-804
MYX 6121, O-37
Myxalamides, M-805
Myxin, P-321
Myxochelin A, M-806
Myxochelin B, M-806
Myxochelin C, M-806
Myxothiazole A, M-807
17*Z*-Myxothiazole A, M-807
Myxothiazole Z, M-807
Myxovalargin, M-808
Myxoviromycin, A-692
N 461, C-102
N 13, R-160
NA 22598A_1, A-1211
NA 30851A, A-1212
NA 337, T-213
(Naamidinato A)(naamidinato G)zinc(*II*), N-1
Naamidine A, N-1
Naamidine B, N-1
Naamidine C, N-1
Naamidine D, N-1
Naamidine E, P-938
Naamidine F, N-2
Naamidine G, N-1
Naamidine H, N-1
Naamidine I, N-1
Naamine A, N-3

Naamine B, N-4
Naamine C, N-5
Naamine D, N-6
Naamine E, N-5
Naamine F, N-5
Naamine G, N-5
Nagadine, M-375
Nagarine, M-302
Nagarine, M-313
Nagelamide A, N-7
Nagelamide B, N-7
Nagelamide C, N-7
Nagelamide D, N-7
Nagelamide E, A-190
Nagelamide F, A-190
Nagelamide G, A-190
Nagelamide H, N-8
Nagstatin, N-9
Nairomycin, N-10
Nakadomarin A, N-11
Nakamuric acid, N-12
Nakamurol D, C-525
Nakijinol, N-13
Nakijiquinone A, N-14
Nakijiquinone B, N-15
Nakijiquinone C, N-16
Nakijiquinone D, N-16
Nakinadine A, N-17
Nakinadine B, N-18
Nakinadine C, N-19
Nakinadine D, N-20
Nakinadine E, N-21
Nakinadine F, N-22
Nakirodine A, N-23
Naloamine, A-760
Nandazurine, N-24
Nandigerine, N-25
Nandinine, C-73
Nandinin, H-520
Nangustine, N-26
Nankakurine A, N-27
Nankakurine B, N-27
Nannochelin A, N-28
Nannochelin B, N-28
Nannochelin C, N-28
Nanofin, D-770
Nanophyn, D-770
Nantenine, N-29
Nantoamide, M-442
Napelline *N*-oxide, N-30
Napelline, N-30
Napellonine, N-30
Naphthisoxazole A, N-31
Naphthocyanidine, C-830
7*H*-Naphtho[1,2,3-*ij*][2,7]naphthyridin-7-one, S-49
Naphthyridinomycin A, N-32
Naphthyridinomycin B, N-33
1-(2,7-Naphthyridin-3-yl)ethanone, A-72
Napsamycin A, M-738
Napsamycin B, N-34
Napsamycin C, M-738
Napsamycin D, N-34
Naramycin A, D-765
Naramycin B, D-765
Naramycin, D-765
Narceimicine, A-143
Narceimine, A-143
Narceine imide, N-36
Narceine, N-35
Narceinone, N-35
Narciclasine 4-*O*-glucoside, N-37
Narciclasine, N-37
Narcicrinine, N-38
Narcicriptine, N-39
Narcidine, N-40
Narcimarkine, H-5
Narcipoetine, L-347
Narciprimine, C-744
Narcisine, N-41
Narcisline, N-42
Narcissidine, N-43
Narcissine, L-348
Narcotinediol, N-45
Narcotinehemiacetal, N-46
Narcotine, N-44
(±)-α-Narcotine, N-44
(±)-β-Narcotine, N-44
(+)-α-Narcotine, N-44
(-)-α-Narcotine, N-44
(-)-β-Narcotine, N-44
Narcotoline, N-44
Narcotolinol, N-45
Nareline, N-47
Nargenicin A_1, N-276
Nargenicin B_1, N-48
Nargenicin B_2, N-49
Nargenicin B_3, N-50
Nargenicin C_1, N-276
Nargin, P-923
Naringenic acid, H-691
Naringeninic acid, H-691
Naritheracin, S-53
Narlumicine, N-51
Narlumidine, N-51
Nartazine, Z-15
Narvedine, G-3
Narwedine, G-3
Narzettine, N-52
Natalamine, N-53
Natalensine, H-5
Natalinine, N-53
Natrine, N-54
Natsucitrine II, T-243
Natsucitrine I, T-243
Natural capsaicin, C-100
Natural yellow 18, B-101
Naucleactonine A, N-55
Naucleactonine B, N-56
Nauclealine A, N-57
Nauclealine B, N-58
Naucleamide A, N-59
Naucleamide B, N-59
Naucleamide C, N-60
Naucleamide D, N-59
Naucleamide E, N-61
Naucleaorine, N-62
Nauclechine, N-63
Nauclecoside, V-126
Nauclecosidine, N-64
Nauclederine, N-65
Naucledine, N-66
Naucleficine, N-67
Nauclefidine, N-68
Nauclefiline, N-69
Nauclefine, N-70
Nauclefoline, N-71
Nauclefoline, N-72
Nauclefolinine, N-73
Naucleidinal, N-74
Naucleocoside, V-126
Naucleofficine A, N-59
Naucleofficine B, N-57
Naucleofficine C, N-75
Naucleofficine D, N-60
Naucleofficine E, A-1020
α-Naucleonidine, N-76
β-Naucleonidine, N-76
Naucleonidine, N-76
α-Naucleonine, N-76
β-Naucleonine, N-76
Naucleoside A, V-126
Naucleoside B, V-126
Nauclequiniine, N-67
Naucletine, A-1020
Nauclexine, N-77
Naufoline, N-63
Naulafine, N-78
Navenone A, P-908
Navirine, N-79
Nazlinine, N-80
NCI 1136, D-92
Neamphine, N-81
Neblinine, O-7
Nebularine, N-82
Neburnamine, N-83
Necatorine, N-84
Necatorone, N-85
Senecio doria Necine base, N-86
Necrosamine, E-47
Nectrisine, D-420
Neferine, N-87
Neflexine, N-88
Neisosposinine, C-117
Nelumstemine, L-252
Nematophin, T-639
Nemertelline, Q-5
Nemorensine, N-89
Nemorine, N-90
Nemuarine, N-91
Neoacrimarine A, N-92
Neoacrimarine B, N-92
Neoacrimarine C, N-93
Neoacrimarine D, N-94
Neoacrimarine E, N-95
Neoacrimarine F, N-96
Neoacrimarine G, N-96
Neoacrimarine H, N-93
Neoacrimarine I, N-96
Neoacrimarine J, N-96
Neoacrimarine K, N-97
Neoacutifolin, B-13
Neoadifoline, N-98
Neoalangiside, A-239
Neoalatamine, P-253
Neoamphimedine Y, N-100
Neoamphimedine Z, N-100
Neoamphimedine, N-99
Neoaplaminone sulfate, A-1342
Neoaplaminone, A-1342
Neoaspergillic acid, F-76
Neoasterriquinone, A-1521
Neoberninamycin, N-101
Neobetanin, B-110
Neobudofficide B, N-102
Neocalliactine, A-1459
Neocarazostatin A, N-103
Neocarazostatin B, N-103
Neocarazostatin C, N-103
Neocaryachine *N*-methosalt, N-104
Neocaryachine, N-104
Neocephaeline, E-72
Neochondocurarine, N-105
Neoclausenamide, C-502
Neocochliodinol, N-106
Neocopiamycin A, C-634
Neocopiamycin B, C-634
Neocoprogen II, N-108
Neocoprogen I, N-107
Neocoromandaline, T-443
Neocryptolepine, Q-19
Neocycasin A, M-397
Neocycasin B, M-397
Neocycasin B_α, M-397
Neocycasin C, M-397
Neocycasin E, M-397
Neocycasin G, M-397
Neocycasin H, M-397
Neocycasin I, M-397
Neocycasin J, M-397
Neodaphniphylline, N-109
Neodichroine, N-110
Neodihydrohistrionicotoxin, H-309
Neodihydrothebaine, N-111
Neodrosopterin, D-941
Neodysidenin, D-972
Neodysiherbaine A, N-112
Neoenactin C, P-444
Neoenactin M_1, L-189
Neoenactin M_2, N-113
Neoenactin, N-113
Neoengleromycin, N-114
Neoeuonymine, P-247
Neoevonine, P-248
Neofinaconitine, A-95
Neofolitispate 1, N-115
Neofolitispate 2, N-115
Neofolitispate 3, N-115
Neogermbudine, G-70
Neogermerine, G-70

Neogermidine, G-70
Neogermine, N-116
Neogermitrine, G-70
Neoglucobrassicin, I-122
Neoharringtonine, N-117
Neoherculin, D-893
Neohuperzinine, N-118
Neohyacinthoside, S-345
Neohydroxyaspergillic acid, F-76
Neohydroxylunine, N-119
Neoipecoside, I-167
Neoisocycloheximide, D-765
Neoisotussilagic acid, H-231
Neoisotussilagine, H-231
Neojerminalanine, G-70
Neojiangyouaconitine, M-343
Neokauluamine, N-120
Neolamellarin A, N-121
Neolamellarin B, N-121
Neolatifoline, H-4
Neolaugerine, N-122
Neoleurocristine, N-123
Neoleurosidine, N-124
Neoligularidine, S-245
Neoline, M-323
Neolinine, M-323
Neolinustatin, H-572
Neolitacumonine, H-424
Neolitsine, N-125
Neolitsinine, N-126
Neonaucleoside A, N-127
Neonaucleoside B, N-128
Neonaucleoside C, N-129
Neonicotine, P-460
Neonorreserpine, R-52
Neooncinotine, N-130
Neooxazolomycin, N-131
Neooxygambirtannine, N-132
Neopellitorine A, U-25
Neopellitorine B, D-104
Neopeltolide, N-133
Neoperiphylline, P-265
Neopetasitenine, P-277
Neopine, N-134
Neoplaether, O-129
Neoplatyphylline *N*-oxide, P-516
Neoplatyphylline, P-516
Neopolyalthenol, N-135
Neopolyoxin A, N-216
Neopolyoxin B, N-216
Neopolyoxin C, N-218
Neoprotocuridine, P-663
Neoprotoveratrine, P-674
Neopterin 3-*O*-β-D-glucoside, A-923
7-Neopterin, A-924
Neopterin, A-923
Neopulchellidine, P-785
Neopurpuratin, D-496
Neopyrrolomycin, N-136
Neoreserpiline, R-51
Neorosmarinine, R-133
Neorythmin, A-216
Neosabadine, C-291
Neosalvianene, N-137
Neosarracine, S-90
Neosarranicine, S-90
Neosaxitoxin, S-109
Neosenkirkine, S-245
Neosidomycin, N-138
Neosophoramine, S-376
Neostemocochinine, N-140
Neostemofoline, N-139
Neostemonine, N-140
Neostenine, S-528
Neostrychnine, S-589
Neosurugatoxin, N-141
Neosutchuenenine, N-142
Neosymbioimine, N-143
Neothalfine, N-144
Neothalibrine 2′α-*N*-oxide, T-309
Neothalibrine, T-309
Neothiobinupharidine sulfoxide, T-380
Neothiobinupharidine, T-380
Neothramycin A, N-145
Neothramycin B, N-145
Neotomatine, S-445
Neotriangularicine, T-454
Neotriangularine, T-454
Neotrilobine, N-146
Neotruxilline, T-635
Neotuberostemonine, T-664
Neotuberostemoninol, T-665
Neotuberostemonol, T-664
Neotuberostemonone, T-666
Neotussilagine, H-231
Neotussilaginic acid, H-231
Neovasipyridone A, N-147
Neovasipyridone B, N-147
Neovasipyridone C, N-147
Neovasipyridone D, N-147
Neovasipyridone E, N-147
Neovasipyridone F, N-147
Neovasipyridone, N-147
Neoverapatuline, J-36
Neoverataline A, N-148
Neoverataline B, N-148
Neowilforine, P-243
Neoxaline, N-149
Neoyuzurimine, N-150
Neozeylanicine, M-488
Nepapakistamine A, D-273
Nepetalactam, N-151
Nephilatoxin 10, N-160
Nephilatoxin 11, N-161
Nephilatoxin 12, N-162
Nephilatoxin 1, N-152
Nephilatoxin 2, N-153
Nephilatoxin 3, N-154
Nephilatoxin 473, N-163
Nephilatoxin 4, N-155
Nephilatoxin 501, N-164
Nephilatoxin 565, N-165
Nephilatoxin 594, N-166
Nephilatoxin 5, N-156
Nephilatoxin 643, N-167
Nephilatoxin 6, N-157
Nephilatoxin 7, N-158
Nephilatoxin 8, N-152
Nephilatoxin 9, N-159
Neplanocin B, N-168
Neprotine, P-34
Nerbowdine, N-169
Nerifline, N-170
Neriine, C-601
Nerinine, N-171
Nerispine, N-172
Neronine, K-102
Nerundine, N-173
Neruscine, L-347
Nervobscurine, A-231
Nervonic acid, T-120
Nervosine, P-39
Nesodine, V-88
Netamine A, N-174
Netamine B, N-175
Netamine C, N-176
Netamine D, N-174
Netamine E, N-177
Netamine F, N-178
Netamine G, N-179
Netropsin, N-180
Neumolisina, Q-20
Neumolysin, Q-20
Neuridine, S-399
Neurine, T-615
Nephila clavata Neurotoxin 1 JSTX-1, N-182
Nephila clavata Neurotoxin 2 JSTX-2, N-183
Nephila clavata Neurotoxin 4 JSTX-4, N-184
Neurotoxin JSTX-3, N-165
Nephila maculata Neurotoxin 3, N-181
Neurotoxin NPTX 10, N-160
Neurotoxin NSTX 3, N-181
Neurotropan, C-419
Nevadenine, G-152
Nevadensine, G-152
Nevalina, G-3
Nevergor, A-216
Newbouldine, D-492
Newbouldine, N-185
Newtron S, D-880
NFA Toxin, F-62
NFAT 68, A-1213
NG 311, A-1214
NG 391, A-1215
NG 392, A-1215
NG 393, A-1215
NG 129, S-490
NG 242, S-490
NG 243, S-490
NG 245, S-490
Ngouniensine, N-186
NI 15501A, A-33
34N, I-132
Niacinamide, P-895
Niacin, P-897
Niazicin A, H-427
Niazicin B, H-427
Niazicinin A, H-421
Niazimicin A, H-427
Niazimicin B, H-427
Niazimin A, H-421
Niazimin B, H-421
Niaziminin A, H-427
Niaziminin B, H-427
Niazinin A, H-427
Niazinin B, H-427
Niazirin, H-672
Niazirinin, H-672
Nicaeensin, N-187
Nicamin, P-897
Nicaustrine, T-47
Nicobid, P-897
Nicoloside, P-904
Nicorette, N-190
Nicosan 2, P-895
Nicotaxine, N-188
Nicotelline, T-98
Nicotimine, P-460
Nicotinamide mononucleotide, N-189
Nicotinamide ribonucleoside, N-189
Nicotinamide ribonucleotide, N-189
Nicotinamide riboside, N-189
Nicotinamide ribotide, N-189
Nicotinamide, P-895
Nicotine bitartrate, N-190
Nicotine 1′-*N*-oxide, N-190
Nicotine polacrilex, N-190
Nicotine, N-190
Nicotinic acid amide, P-895
Nicotinic acid, P-897
11-*O*-Nicotinoylambelline, A-683
2-(Nicotinoylamino)-1-phenylethanol, A-864
O^4-Nicotinoylcathedulin E8, P-218
12-*O*-Nicotinoyldeacetylmetaplexigenin, P-223
Nicotinoylecgonine methyl ester, E-8
6-*O*-Nicotinoyl-α-D-glucopyranose, B-376
1-*O*-Nicotinoyl-β-D-glucopyranose, P-897
N-Nicotinoyl-2-hydroxy-2-phenylethylamine, A-864
3α-Nicotinoyloxytropane, M-393
6-*O*-Nicotinoylstrychnovoline, T-145
6-*O*-Nicotinoyltetrahydrocantleyine, T-145
Nicotinyl alcohol, P-904
Nicotinyl salicylate, N-190
β-Nicotyrine, P-972
Nicotyrine, P-972
Nigakinone, D-546
Nigdenine, F-223
Nigeglanine, N-191
Nigellicine, N-192
Nigellidine, N-193
Nigellimine *N*-oxide, D-627
Nigellimine, D-627
Nigerazine A, D-769
Nigerazine B, D-769
Nigerine, D-785
Nigerloxin, N-194
Nigragilline, D-769
Nigramide A, N-196

Nigramide B, N-197
Nigramide C, N-198
Nigramide D, N-199
Nigramide E, N-200
Nigramide F, N-197
Nigramide G, N-201
Nigramide H, N-202
Nigramide I, N-195
Nigramide J, N-203
Nigramide K, N-204
Nigramide L, N-205
Nigramide M, N-206
Nigramide N, N-207
Nigramide O, N-208
Nigramide P, N-209
Nigramide Q, N-210
Nigramide R, N-211
Nigramide S, N-212
Nigrifactin, N-213
Nigrifortine, A-680
Nigrinodine, N-214
Nigrin, S-569
Nigritanine, O-21
Nigrumin, H-509
NIH 7380, G-3
Nikanine *N*-oxide, N-215
Nikanine, N-215
Nikkomycin D, A-796
Nikkomycin L_X, N-216
Nikkomycin L_Z, N-218
Nikkomycin Q_Z, N-217
Nikkomycin X, N-216
Nikkomycin Z, N-218
Nikkomycin, N-218
Nilgirine, N-219
Nilyph, X-5
Ningalin A, N-220
Ningalin B, N-221
Ningalin C, N-222
Ningalin D, P-825
Ningpeisine, N-223
Ningpeisinoside, N-223
Niphatesine A, T-357
Niphatesine B, N-224
Niphatesine C, N-225
Niphatesine D, N-226
Niphatesine E, N-227
Niphatesine F, N-228
Niphatesine G, N-229
Niphatesine H, N-227
Niphatoxin A, N-230
Niphatoxin B, N-231
Niphatoxin C, N-232
Niphatyne A, N-233
Niphatyne B, N-234
Niphithricin A, C-634
Niphitricin 1, C-634
Niranin, N-235
Niromycin, N-10
Nirurine, N-236
Niruroidine, B-375
Nishindine, N-237
Nitaphylline, N-238
Nitensidine A, B-174
Nitensidine B, B-173
Nitensidine C, B-174
Nitidine, N-239
Nitrabirine *N*-oxide, N-240
Nitrabirine, N-240
Nitramarine, Q-51
Nitramidine, N-246
Nitramine, N-241
2-Nitraminoquinoline, Q-28
Nitraraidine, N-242
Nitraraine, N-243
Nitraramidine, N-244
Nitraramine *N*-oxide, N-244
Nitraramine, N-244
Nitraricine, N-245
Nitraridine, Q-52
Nitrarine, N-246
Nitrarisine, N-246
Nitrarizine, N-246
Nitraroxine, N-244
Nitricholine perchlorate, C-419
16,23-Nitrilocycloarta-7,16(*N*),17(20),22-tetraene-3,11,24,25-tetrol, N-247
3,3′,3″-[Nitrilotris(methylene)]tris[dihydro-2(3*H*)furanone], N-248
1-Nitroaknadinine, H-70
1-Nitroapocavidine, C-222
3-(12-Nitrododecyl)pyridine, N-249
Nitrohedon, H-639
2-Nitroimidazole, N-250
2-Nitro-1*H*-indole-3-ethanamine, A-771
3-Nitro-1*H*-indole, N-251
4-Nitromorpholine, M-705
6-Nitrophenanthro[3,4-*d*]-1,3-dioxole-5-carboxylic acid, M-447
N^2-[(2-Nitrophenyl)thio]-L-glutamine, G-108
N-[(2-Nitrophenyl)thio]-L-leucine, L-153
Nitropolyzonamine, N-252
2-[6-(3-Nitropropanoyl)-β-D-glucopyranosyl]-3-isoxazolin-5-one, I-349
3′-Nitropyoluteorin, P-834
1-Nitro-12-(3-pyridinyl)dodecane, N-249
1-Nitro-14-(3-pyridinyl)-11-tetradecene, N-256
1-Nitro-14-(3-pyridinyl)-11-tetradecyne, N-256
N-Nitrosoanonaine, R-120
3-Nitrosoindole, I-106
Nitrosostromelin, A-693
N-Nitrosotomatidine, S-445
Nitrosoxacin A, N-253
Nitrosoxacin B, N-254
Nitrosoxacin C, N-255
N-Nitrosoxylopine, A-1066
3-(14-Nitro-3-tetradecenyl)pyridine, N-256
3-(14-Nitro-3-tetradecynyl)pyridine, N-256
2-Nitrotryptamine, A-771
4-Nitrotryptophan, N-257
11-Nitrotubotaiwine, T-673
3-Nitrotyramine, H-640
Nitrotyrasacutuminine, A-134
Nitrotyrasanguinarine, N-258
Nivalidine, A-1361
Nivaline, H-294
Nivalin, G-3
Njaoamine A, N-259
Njaoamine B, N-259
Njaoamine C, N-259
Njaoamine D, N-259
Njaoamine E, N-260
Njaoamine F, N-261
Njaoamine G, N-259
Njaoamine H, N-259
NK 30424A, A-1216
NK 170204A, P-421
NK 372135A, X-7
NK 170204B, A-1217
NK 30424B, A-1216
NK 372135B, X-7
NK 109, C-356
NK 372135C, X-7
NK 26588, I-179
Nkolbisine, F-221
NKT 01, S-394
NMQ, M-491
Nobiline, F-221
Nobiline, N-262
Nobilisine, C-532
Nobilisitine A, C-532
Nobilisitine B, C-532
Nobilonine, N-262
δ-Nobilonine, N-263
Nocamycin II, N-264
Nocamycin I, N-264
Nocardamine ferric salt, F-42
Nocardimicin C, N-265
Nocardimicin E, N-265
Nocardimicin G, N-265
Nocardimicin H, N-265
Nocardimicin I, N-265
Nocardimicin, N-265
Nocathiacin III, N-266
Nocathiacin II, N-266
Nocathiacin I, N-266
Nocathiacin IV, N-266
Nocathiacin V, N-266
Nocobactin NA, N-267
Nodulisporic acid A, N-269
Nodulisporic acid A_1, N-268
Nodulisporic acid A_2, N-268
Nodulisporic acid A_4, N-269
Δ^{23}-Nodulisporic acid A_4, N-269
Nodulisporic acid B, N-269
Nodulisporic acid B_1, N-268
Nodulisporic acid B_2, N-268
Nodulisporic acid C, N-271
Nodulisporic acid C_1, N-270
Nodulisporic acid C_2, N-270
Δ^{23}-Nodulisporic acid C_4, N-271
Nodulisporic acid D, N-273
Nodulisporic acid D_1, N-272
Nodulisporic acid D_2, N-272
Nodulisporic acid D_3, N-273
Nodulisporic acid E, N-274
Nodulisporic acid F, N-275
Nodusmicin, N-276
Noelaquinone, N-277
Noformicin, N-278
Nojirimycin B, A-728
galacto-Nojirimycin, A-726
Nojirimycin, A-727
Nokoensine, C-93
Nomi-base I, H-172
Nominine, H-172
Nominine, N-279
Nomofungin, C-582
2,9-Nonadecadienoic acid pyrrolidide, B-271
N^b-Nonadecanoyltryptamine, T-639
5-(12*Z*-Nonadecenyl)-1*H*-pyrrole-2-carboxaldehyde, A-624
5-(9*Z*-Nonadecenyl)-1*H*-pyrrole-2-carboxaldehyde, A-624
2-(3,6-Nonadienyl)-4-quinolinol, H-642
2-(3,6-Nonadienyl)-4(1*H*)-quinolinone, H-642
2,4-Nonadien-8-ynoic acid isobutylamide, N-280
2,4-Nonadien-8-ynoic acid, N-280
1,2,3,4,6,8,9,12,14-Nonahydroxydihydro-β-agarofuran, N-281
Nonalupine, I-322
N-Nonanoyltyrosine, T-700
2-Nonene-6,8-diynoic acid isobutylamide, N-282
2-Nonene-6,8-diynoic acid, N-282
2-Nonene-4,6,8-triynoic acid, N-283
4-[(2-Nonene-4,6,8-triynoyl)amino]benzoic acid, N-283
N-(2-Nonene-4,6,8-triynoyl)valine, M-490
3-(8-Nonenyl)-5-(1-propenyl)pyrrolizidine, N-284
2-(1-Nonenyl)-4-quinolinol, H-642
2-(1-Nonenyl)-4(1*H*)-quinolinone, H-642
Nong-kang 101G, A-129
Nonivamide, C-100
Nonyl hexacosanoate, H-214
3-(2-Nonyloxiranyl)-2-propenoic acid, T-124
Nonylprodiginine, U-31
Nonylprodigiosin, N-285
3-Nonyl-1*H*-pyrazole, N-286
1-(6-Nonyl-3-pyridinyl)-1-decanone, D-116
2-Nonyl-3,4-quinolinediol, A-621
2-Nonyl-4-quinolinol, H-642
2-Nonyl-4(1*H*)-quinolinone, H-642
Nor-16-acetoxybuxabenzamidienine, B-456
Noracronine, A-120
Noracronycine, A-120
Noractinidine, N-287
2′-Noradiantifoline, A-139
Noradrenaline, N-298
Noradrenalone, A-736
Norajmaline, A-216
N-Noralkaloid Or_1, S-39
Norallosedamine, S-210
Noramurine, A-955
Noranabasamine, A-963
Noranantine, A-972
Norandrobine, P-221
Noranicanine, A-1038
Norannuradhapurine, C-733
18-Norantidesmone, A-1325

Norarecoline, T-223
Norargemonine, A-1410
Noraristolochic acid, M-447
Noraristolodione, C-273
Norarmepavine, A-1444
Norartrinal, N-298
Noratherosperminine, A-1532
Noratropine, T-632
Noraugustamine, A-1539
Noravicine, A-1566
Norbaeocystine, H-480
Norbelladine, N-288
2-*N*-Norberbamine, I-328
2-Norberbamunine, B-98
Norboldine, B-243
Norbracteoline, B-276
Norbulbocapnine, B-397
Norbutsanguinine, G-3
30-Norbuxamine A, B-455
Norbuxamine, B-455
N^b-Norbuxupapine, B-483
Norcanelilline, A-1038
Norcapsaicin, C-100
N-Norcarnegine, T-167
O-Norcarnegine, T-162
Norcassaide, N-289
Norcassaidide 3-acetate, N-289
Norcassaidide, N-289
Norcassaidine, C-178
Norcassamide, N-299
Norcassamidide, N-299
Norcassamidine (obsol.), N-299
Norcassamidine, N-300
Norcassamine (obsol.), N-299
Norcataline, C-190
Norcepharadione A, C-272
Norcepharadione B, C-273
2-Norcepharanoline, C-275
2′-Norcepharanthine, C-275
2-Norcepharanthine, C-275
Norchalciporol, N-290
Norchalciporyl propionate, N-290
Norchanoclavine I, C-348
Norchanoclavine II, C-348
Norchelerythrine, C-356
(+)-Norchelidonine, C-357
(-)-Norchelidonine, C-357
Norcholine, D-730
Nor-N^b-chondocurine, C-420
Norcimiciphytine, C-441
Norcinnamolaurine, C-453
Norcocaine, C-537
2′-Norcocsoline, I-339
N-Norcocsulinine, C-552
23-Norcona-5,18(22)-dienin-3-amine, C-610
23-Norcona-4,6,18(22)-trienin-3-one, M-59
23-Norcon-18(22)-enin-3-amine, C-610
Norconessine, C-595
Norcoralydine, X-30
Norcoronatine, N-291
Norcorydine, C-682
Norcorypalline, T-158
Norcotarnine, N-292
Norcoumingide, N-289
Norcularicine, C-804
Norcularidine, C-805
17-Norcuran, T-668
Norcycleanine, C-835
Norcyclomicrobuxeine, C-882
N-Nordasycarpidone, D-84
2′-*N*-Nordaurisoline, D-88
19-Nor-4-dehydrocassaidine, N-293
Nordehydrocyclodercitine, C-857
N-Nor-1,2-dehydroepistephanine, S-502
4-Nor-7,8-dehydro-10-hydroxyskytanthine, N-294
13-Nor-7(11)-dehydropilocarpine, N-295
N-Nordelavaine, D-181
Nordelporphine, P-208
Norden, O-63
Nordeoxyharringtonine, H-66
Nordercitin, D-93
Nordesoxycabufiline, C-3
Nordhagenine A, M-318
Nordhagenine B, M-307
Nordhagenine C, M-305
(+)-Nordicentrine, D-346
(-)-Nordicentrine, D-346
8-Nordihydrocapsaicin, C-100
Nordihydrocapsaicin, C-100
Nordihydrotoxiferine I, T-436
Nordihydrotoxiferine, T-436
Nordine, N-296
1-Nordistamycin A, D-866
Nordomesticine, N-29
Nordomoic acid, N-297
Nordragabine, S-411
Nordysidenin, D-972
Norechitamine *N*-oxide, D-410
Norechitamine, D-410
Nor-ψ-ephedrine, A-869
Norephedrine, A-869
(±)-Nor-ψ-ephedrine, A-869
(±)-Norephedrine, A-869
(+)-Norephedrine, A-869
(-)-Nor-ψ-ephedrine, A-869
Norephedrone, A-870
Norepilachnene, E-93
Norepimalindine, M-73
Norepinephrine bitartrate, N-298
Norepinephrine, N-298
Nor-Epirenan, N-298
27-Norepothilone C, E-115
Noreripinal, E-181
Norerythrophlamide, N-299
Norerythrophlamine 3-acetate, N-300
Norerythrophlamine, N-300
Norerythrostachaldine 3-acetate, N-300
Norerythrostachaldine, N-300
Norerythrostachamide, N-299
Norerythrostachamine 3-acetate, N-300
Norerythrostachamine, N-300
Norerythrosuamide, N-299
Norerythrosuamine (obsol.), N-299
Norerythrosuaveolide, N-289
Norfissilandione, F-65
Norfluorocurarine *N*-oxide, N-301
Nor-*C*-fluorocurarine, N-301
Norfumaritine, F-174
2′-Norfuniferine, R-114
Norgeamide A, N-324
Norgeamide B, N-324
Norgeamide C, N-325
Norgeamide D, N-325
Norglaucine, T-246
Norglaziovine, P-643
Norgorchacoine, G-143
N-Norgramine, I-97
Norgranatan-3-one, A-1580
Norgraveoline, G-171
2′-Norguattaguianine, G-212
Norguattevaline, T-244
Norharman, C-130
Norharmancarboxylic acid, C-133
Norharmine, P-916
N′-Norhernandezine, H-148
Norhexahydromecambrine, L-214
Norholadiene, H-314
Norholadienine, H-314
Norhygrine, H-759
Norhyoscine, S-159
Norhyoscyamine, T-632
Norimeluteine, I-33
Norine, C-601
Norisoboldine, I-196
2-Norisocepharanthine, C-275
Norisocorydine, I-208
Norisocorydione, S-367
Norisocorymine, I-209
Norisocorytuberine, T-248
Norisodomesticine, N-29
Norisoephedrine, A-869
Norisohaplophytine, H-58
Norisomalindine, M-73
2′-Norisotetrandrine, I-328
2-Norisotetrandrine, I-328
Norisotryptoquivaline, N-315
Norisotuboflavine, N-302
Norisoyanangine, T-406
Norjuziphine, J-63
Norkurchamide, K-109
Norlatifoline, L-56
Norlaudanosine, L-69
Norlaureline, L-72
Norlelobanidine, L-86
Norleucoxylonine, L-159
2′-Norlimacine, P-301
2-Norlimacine, P-301
2-Norlimacusine, L-175
Norliridinine, T-521
Norlirioferine, H-752
Norlobelanidine, L-218
Norlobelanine, L-218
Norloline, L-234
Norlusitanine, T-73
15-Norlyngbyapeptin A, L-362
Normacromerine, M-18
18-Normacrophylline, M-10
Normacrorine, I-44
Normacusine A, P-562
Normacusine B, T-425
Normalindine, M-73
Normaritidine, M-108
(-)-Normaritidine, M-108
Normavacurine, M-130
Normaysine, M-134
Normaytancyprine, M-135
Normaytansine, M-135
Normelicopicine, T-240
Normelicopidine, X-2
O-Normelicopine, M-169
Normelinonine B, D-412
Normelinonine F, C-130
Normenisarine, M-197
Normetadrenaline, N-303
Normetahemipinic acid, D-533
Normetanephrine, N-303
9-Normethylbudmunchiamine K, B-389
1-Normethylbudmunchiamine K, B-389
13-Normethylbudmunchiamine K, B-389
Nor-*O*-methylkreysigine, P-221
Normethylpseudoiodinine, M-285
N-Normethylskytanthine, S-326
Normicheline A, N-316
Normitoridine, T-288
Normycosporin-Gln, M-789
Nornantenine, N-29
Nornarceine, N-35
Norneolitsine, N-125
Norneronine, K-102
Nornicotine, P-957
β-Nornicotyrine, P-972
Nornicotyrine, P-972
Nornitidine, N-239
Nornorcapsaicin, C-100
Nornuciferidine, P-4
N-Nornuciferine, D-531
O-Nornuciferine, D-531
2-Norobaberine 2′-β-*N*-oxide, O-1
2′-Norobaberine, O-1
2-*N*-Norobamegine, I-328
Noroconovine, P-209
Noroliveridine, O-85
Noroliverine, O-85
Noroliveroline, O-87
N-Nororientaline, O-111
N-Nororientinine, T-523
Nororipavine, T-350
Nororixine, O-113
Noroxedrine, O-63
2′-Noroxyacanthine, O-1
Noroxyhydrastinine, I-305
Norpachyconfine, P-4
Norpachystaudine, S-534
2′-Norpakistanine, P-16
Norpallidine, F-80
Norpandamarilactonine A, P-63
Norpandamarilactonine B, P-63
Norpanurensine, P-76
Norparagracine, P-737

22-Norparsonsine, P-97
Norpenduline, T-286
Norphedrin, A-864
Norphen, O-63
Norpholedrine, A-898
N^8-Norphysostigmine, P-400
2′-Norpisopowiaridine, P-484
Norpleiomutine, P-521
9-Norpluviine, P-528
10-Norpluviine, P-528
Norpredicentrine, P-597
Norpreocoteine, P-208
Norprodigiosin, P-636
Norprostephabyssine, P-658
Norprotosinomenine, P-668
Norpseudoephedrine, A-869
Norpseudohygroline, H-760
Norpseudoiodinin, M-285
Norpseudopelletierine, A-1580
Norpseudotropine, A-1597
Norpseudozoanthoxanthin, P-737
3-Norpseudozoanthoxanthin, P-737
Norpurpeline, T-288
Norpurpureine, P-208
Norquaternine, P-417
Norrauvomitine, T-288
Norreframidine, R-35
Norregeline, K-36
Norreserpine, R-52
Norribasine, R-94
Norrodiasine, R-114
Norroecarboline, R-115
Norroehybridine, R-116
Norrufescine, N-304
Norruspoline, N-305
Norruspolinone, R-165
Norsalutaridine, S-39
Norsanguinarine, S-56
Norsanguinine, G-3
Norsarcocapnidine, S-73
Norsarcocapnine, S-73
4-(17-Norsarpagan-16-yl)-3-buten-2-one, D-396
Norscopolamine, S-159
Nor-6,7-secoangustilobine A, S-177
Norsecocularidine, S-180
Norsecocularine, S-180
Norsecosarcocapnidine, S-198
Norsecosarcocapnine, S-198
A-Norsecurinan-11-one, N-307
Norsecurinic acid, N-306
Norsecurinine, N-307
Norsedamine, S-210
Norsegoline, N-308
Norsenecicaudatin 9-*O*-senecioate, N-309
Norseredamine, T-288
6-Norsetoclavine, S-273
Norsinoacutine, S-39
Norsongoramine, D-162
Norsongorine, N-30
Norsonodione, S-367
Norspermidine, D-255
Norspermine, B-154
Norstaminolactone A, N-310
Norstenusine, M-530
Norstephalagine, S-536
Norstephasubine, S-544
Norsuaveoline, S-618
Norsympathol, O-63
Norsynephrine, O-63
O-Nortecleanthine, T-56
Nortehaunine, T-238
Nortenuazonic acid, N-311
Nortenuipine 2′-β-*N*-oxide, T-81
(+)-Nortenuipine, T-81
(-)-Nortenuipine, T-81
2-Nortetrandrine, T-286
Nortetraphyllicine, T-288
11-Nortetrodotoxin-6*R*-ol, T-298
11-Nortetrodotoxin-6*S*-ol, T-298
11-Nortetrodotoxin, T-298
Northalibrine, T-309
Northalibroline, T-309
N′-Northalibrunine, T-311
6-Northalicarpine, T-312
Northalicarpine, T-312
Northalicmine, O-27
Northalicthuberine, T-318
2-Northalidasine, T-320
Northalifoline, I-305
2′-Northaliphylline, T-313
Northaliporphine, H-751
2-Northalmine, T-341
2-Northalrugosine, I-328
Nortiliacorine A, T-406
Nortiliacorinine A, T-407
Nortiliacorinine B, T-407
2′-Nortiliageine, R-114
Nortopsentin A, N-312
Nortopsentin B, N-312
Nortopsentin C, N-312
Nortopsentin D, N-312
Nortopsentin D, N-313
Nortrachelogenin amide, N-314
Nortrewiasine, T-450
Nortrilobine, I-339
N-Nor-2,3,6-trimethoxymorphinandien-7-one, F-80
Nortropacocaine, A-1597
2,3-Nortropanediol, A-1581
2,6-Nortropanediol, A-1582
2,7-Nortropanediol, A-1583
3,6-Nortropanediol, A-1584
3,7-Nortropanediol, A-1585
1,2,3,4,6-Nortropanepentol, A-1586
1,2,3,4-Nortropanetetrol, A-1587
1,2,3,6-Nortropanetetrol, A-1588
1,2,4,7-Nortropanetetrol, A-1589
1,2,3-Nortropanetriol, A-1590
1,2,4-Nortropanetriol, A-1591
1,2,7-Nortropanetriol, A-1592
1,3,4-Nortropanetriol, A-1593
2,3,4-Nortropanetriol, A-1594
2,3,6-Nortropanetriol, A-1595
3,6,7-Nortropanetriol, A-1596
3-Nortropanol, A-1597
Nortropanoline, A-1587
Nortropan-3-yl phenylacetate, A-1597
Nortropeine, A-1597
Nortropenol, A-1597
Nor-ψ-tropine, A-1597
Nortropine, A-1597
Nortropinyl cinnamate, A-1597
Nortryptoquivaline, N-315
Nortryptoquivalone, N-315
(+)-Norushinsunine *N*-oxide, N-316
Norushinsunine, N-316
Noruvariopsamine, U-63
Norveritol, A-898
1-Norvincorine, V-125
Norweberine, T-276
Noryanangine, Y-5
Norzoanthamine, N-317
Norzoanthaminone, N-317
Norzooanemonin, N-318
Noscapine, N-44
Nosiheptide, N-319
Nosiheptine, N-319
Nostocarboline, C-398
Nostocine A, N-320
Nostocyclamide M, N-322
Nostocyclamide, N-321
Nostodione A, N-323
Nothapodytine A, M-96
Nothapodytine B, M-96
Notoamide A, S-153
Notoamide B, S-153
(+)-Notoamide B, S-153
Notoamide C, N-324
Notoamide D, N-325
Notomycin A_1, C-711
Notomycin A_2, C-712
Novacine, I-12
Noyaine, N-326
NP 522, A-1218
NP 101A, A-31
NP 25302, B-242
NP 25301, D-224
NPAB, A-216
NPI 0047, S-28
NPI 0052, S-28
NPS 1776, M-409
NPTX 10, N-160
NPTX 1, N-152
NPTX 473, N-163
NPTX 501, N-164
NPTX 565, N-165
NPTX 594, N-166
NPTX 643, N-167
NRCS 15, A-1219
NSC 163501, A-81
NSC 289487, A-1520
NSC 403169, A-120
NSC 51954, A-1202
NSC 62786, A-152
NSC 749, A-735
NSC 76712, A-1044
NSC 5355, B-101
NSC 613012, B-60
NSC 615291, B-229
NSC 646846, B-60
NSC 107412, C-711
NSC 110326, C-634
NSC 757, C-569
NSC 94600, C-70
NSC 107212, D-362
NSC 169105, D-920
NSC 185, D-765
NSC 3096, D-92
NSC 36354, D-92
NSC 376128, D-907
NSC 39147, D-765
NSC 527604, D-142
NSC 169774, E-157
NSC 33669, E-72
NSC 648766, E-37
NSC 703147, E-117
NSC 71795, E-67
NSC 102811, F-131
NSC 106486, F-132
NSC 19893, F-104
NSC 305263, F-152
NSC 3590, F-121
NSC 622398, F-13
NSC 660649, F-13
NSC 700409, F-13
NSC 627434, G-79
NSC 97925, G-108
NSC 141633, H-66
NSC 15780, H-673
NSC 132319, I-68
NSC 106995, L-241
NSC 528004, L-162
NSC 153858, M-135
NSC 165014, M-135
NSC 219970, M-135
NSC 26980, M-654
NSC 3051, M-463
NSC 56410, M-654
NSC 661755, M-589
NSC 700647, M-54
NSC 76779, M-230
NSC 5366, N-44
NSC 383228, O-209
NSC 646282, O-197
NSC 107654, P-961
NSC 143095, P-891
NSC 3073, P-772
NSC 349156, P-58
NSC 35443, P-79
NSC 526046, P-904
NSC 714361, P-42
NSC 298223, R-4
NSC 332598, R-83
NSC 655649, R-32
NSC 123124, S-340
NSC 123125, S-340
NSC 356894, S-394
NSC 45383, S-569
NSC 59729, S-384

NSC 638850, S-498
NSC 65346, S-53
NSC 125973, T-52
NSC 196520, T-450
NSC 36080, T-284
NSC 46451, T-284
NSC 525816, T-74
NSC 56408, T-658
NSC 68075, T-312
NSC 77037, T-286
NSC 82260, T-74
NSC 245467, V-110
NSC 24567, V-110
NSC 49842, V-110
NSC 67574, V-128
NSCL-96F037, P-338
NSTX 3, N-181
NU 2058, G-210
Nuciferidine, P-4
Nuciferine, D-531
Nuciferoline, T-524
(+)-Nuciferoline, T-524
Nucleoside Q, Q-9
Nudaurine, A-955
(±)-Nudaurine, A-955
Nudicaulamine, M-325
Nudicaulidine, M-321
Nudicaulin aglycone, N-327
Nudicaulin III, N-327
Nudicaulin II, N-327
Nudicaulin I, N-327
Nudicaulin IV, N-327
Nudicaulin VIII, N-327
Nudicaulin VII, N-327
Nudicauline, G-91
Nudifloric acid, H-711
Nudiflorine, H-711
Nuelin, T-360
Nuevamine, N-328
Numismine, N-329
Nummularine A, M-720
Nummularine B, A-942
Nummularine C, N-330
Nummularine D, I-154
Nummularine E, N-331
Nummularine F, N-332
Nummularine G, N-333
Nummularine H, J-51
Nummularine K, N-334
Nummularine M, N-335
Nummularine N, N-336
Nummularine O, J-52
Nummularine P, N-337
Nummularine R, N-338
Nummularine S, P-29
Nummularine T, A-942
Nummularine, B-105
Numoquin, Q-20
Nuphacristine, N-339
Nuphamine, N-340
Nupharamine, N-340
Nupharidine, D-227
α-Nupharidine, N-341
β-Nupharidine, N-342
Nupharine, N-343
Nupharolidine, D-227
Nupharolutine, D-227
Nupharopumiline, D-227
Nupharpumilamine A, T-380
Nupharpumilamine B, T-380
Nupharpumilamine C, T-380
Nupharpumilamine D, T-380
Nuphenine, N-340
Nuphleine, T-380
Nutrase, T-366
Nutrestore, G-108
Nutrifolin®, T-172
Nuttalianine, M-323
Nuttalline acetate, H-551
Nuttalline, H-551
Nuttingine A, N-344
Nuttingine B, N-344
Nuttingine C, N-345
Nuttingine D, N-345
Nuttingine E, N-345
Nuttingine F, N-345
Nybomycin, N-346
Nyclin, P-897
Nymphaedaline, N-347
Nymphaeine, N-348
Nympheine, N-348
Obaberine, O-1
Obamegine, I-328
Obesine, O-2
Oblongamine, O-1
Oblongine, J-63
Oblonginine, V-73
Obovamine, O-3
Obovanine, P-781
Obovatine, B-127
Obscuraminol A, A-848
Obscuraminol B, A-782
Obscuraminol C, A-783
Obscuraminol D, A-784
Obscuraminol E, A-783
Obscuraminol F, A-783
Obscuridine, O-4
Obscurifoline, O-21
α-Obscurine, O-5
β-Obscurine, O-5
Obscurine, O-6
Obscurinervidine, O-7
Obscurinervine, O-8
Obscurinine, O-9
Obscurolide $C_{2\alpha}$, O-10
Obscurolide $C_{2\beta}$, O-10
Obscurumine A, L-325
Obscurumine B, F-29
Obtusine, O-11
Obtusolactam, O-12
Obyanamide, O-13
Occidentalidine, M-309
Occidentaline, M-348
Oceanalin A, O-14
Oceanapamine, O-15
Oceanapiside, D-292
Oceanin, D-292
Ochotensidine, C-700
Ochotensimine, O-16
Ochotensine, O-16
Ochrindole A, O-17
Ochrindole B, O-17
Ochrindole C, O-17
Ochrindole D, O-18
Ochrobactin A, O-19
Ochrobactin B, O-19
Ochrobactin C, O-19
Ochrobirine, O-20
Ochrolifuanine A, O-21
Ochrolifuanine B, O-21
Ochrolifuanine C, O-21
Ochrolifuanine D, O-21
Ochrolifuanine E, O-21
Ochrolifuanine F, O-21
Ochrolifuanines, O-21
Ochromianine, D-412
Ochromianoxine, O-22
Ochropamine, P-268
Ochropine, P-268
Ochropposine, A-652
Ochropposinine oxindole, O-23
Ochropposinine, D-412
Ochrosandwine, D-412
Ocobotrine, I-318
Ocodemerine, O-24
Ocokryptine, O-25
Ocominarine, P-210
Ocominarone, O-26
Oconovine, P-209
Ocopodine, L-158
Ocoteamine, O-1
Ocoteine, O-27
Ocotine, R-114
Ocotominarine, H-243
Ocotosine, O-28
Ocoxylonine, L-159
N^b-Octacosanoyltryptamine, T-639
2,4-Octadecadienoic acid piperidide, O-29
2,4-Octadecadienoic acid pyrrolidide, O-29
3,6-Octadecadienoic acid pyrrolidide, P-949
2,12-Octadecadienoic acid, O-30
2,4-Octadecadienoic acid, O-29
N-(9,12-Octadecadienoyl)glutamic acid, G-107
N^2-(9,12-Octadecadienoyl)glutamine, G-108
N-(3,6-Octadecadienoyl)pyrrolidine, P-949
2,4,8,10,12,16-Octadecahexaenoic acid, O-31
Octadecanamide, O-32
Octadecanoic acid pyrrolidide, P-949
Octadecanoic acid, O-32
N-Octadecanoylpyrrolidine, P-949
N^b-Octadecanoyltryptamine, T-639
2,4,8,10,12-Octadecapentaenoic isobutylamide, O-31
2,4,12-Octadecatrienoic acid isobutylamide, O-33
2,4,12-Octadecatrienoic acid piperidide, O-33
2,4,12-Octadecatrienoic acid, O-33
2,4,14-Octadecatrienoic acid, O-34
N-(9,12,15-Octadecatrienoyl)glutamic acid, G-107
N^2-(9,12,15-Octadecatrienoyl)glutamine, G-108
1-(2,4,12-Octadecatrienoyl)piperidine, O-33
9-Octadecene-1,17-diamine, O-35
9-Octadecenoic acid pyrrolidide, P-949
2-Octadecenoic acid pyrrolidide, P-949
9-Octadecenoic acid, O-37
2-Octadecenoic acid, O-36
N^2-(9-Octadecenoyl)glutamine, G-108
N-(2-Octadecenoyl)piperidine, O-36
N-(2-Octadecenoyl)pyrrolidine, P-949
N-(9-Octadecenoyl)pyrrolidine, P-949
N-(11-Octadecenoyl)tyrosine, T-700
2-Octadecyl-1*H*-indol-3-ol, H-646
5,6,11,12,13,14,15,16-Octadehydroaloperine, A-637
2,4-Octadienamide, O-39
2,4-Octadien-1-amine, O-38
2,4-Octadienoic acid isobutylamide, O-39
2,4-Octadienoic acid 2-phenylethylamide, O-39
2,4-Octadienoic acid, O-39
[4-[2-(2,5-Octadienylidene)-5-oxo-1-pyrrolidinyl]-butyl]guanidine, P-545
[5-[2-(2,5-Octadienylidene)-5-oxo-1-pyrrolidinyl]-pentyl]guanidine, P-544
1′,3,4,4′,5,5′,6,6′-Octahydro-2,3′-bipyridine, O-40
Octahydro-5-butyl-8-propyl-1*H*-indolizine, B-443
Octahydro-3-butyl-5-propyl-1*H*-indolizine, O-41
1,2,3,6*a*,7,8,9,12*a*-Octahydro-5,11-dimethoxy-1,7-dimethyl-6*a*,12*a*-bis(2-methylpropyl)-6,12-dioxa-1,7-diazadibenzo[*def,mno*]chrysene, L-261
Octahydro-2,2-dimethyl-1,3-dioxolo[4,5-*a*]indolizine, O-46
Octahydro-5,7-dimethylindolizine, O-42
Octahydro-6,9-dimethyl-4-(1-methylethyl)-2*H*-quinolizin-2-ol, P-526
2-[Octahydro-4,7-dimethyl-1-oxocyclopenta[*c*]pyran-3-yl]nepetalactam, O-43
Octahydro-2,4-dimethyl-2*H*-quinolizine, D-783
1,2,3,6,7,8,9,9*a*-Octahydro-2,4-dimethylquinolizinium(1+), S-243
Octahydro-5,8-dipropyl-1*H*-indolizine, O-44
1,2,3,4,6,7,8,9-Octahydrodipyrido[1,2-*a*:1′,2′-*c*]imidazol-10-ium(1+), O-45
Octahydro-5*H*,10*H*-dipyrrolo[1,2-*a*:1′,2′-*d*]pyrazine-5,10-dione, C-898
Octahydrohistrionicotoxin, H-309
Octahydro-6-(4-hydroxy-2,5-dimethyl-5-octenylidene)-8-methyl-8-indolizinol, P-793
Octahydro-6-(6-hydroxy-2,5-dimethyl-4-octenylidene)-8-methyl-8-indolizinol, P-791
Octahydro-3-(7-hydroxy-2,5-dimethyl-4-octenylidene)-1-methyl-2*H*-quinolizin-1-ol, H-344
Octahydro-2-hydroxy-2,4-dimethyl-α-phenylfuro[3,2-*b*]pyridine-5-ethanol, S-209
3-[(Octahydro-2-hydroxyfuro[3,2-*b*]pyridin-2-yl)-methyl]-4(3*H*)-quinazolinone, I-232
6-[Octahydro-8-hydroxy-1-(hydroxymethyl)-2*H*-quinolizin-3-yl]-2-piperidinone, C-8
1-(Octahydro-7-hydroxy-8-indolizinyl)-1-butanone, E-59

Octahydro-8-hydroxy-6-isopropyl-1,4-dimethylquinolizine, P-526
9,10,13,14,15,16,20,20*a*-Octahydro-15-hydroxy-19-methoxy-2,6-dimethyl-9-phenylcyclopent[*i*]-azacyclononadecine-7,17(8*H*,19*H*)-dione, A-1115
1,3,4,6,7,8,9,9*a*-Octahydro-4-(3-hydroxy-4-methoxyphenyl)-2-quinolizidinone, L-53
1,2,5,6,6*a*,7,8,12*c*-Octahydro-6*a*-hydroxy-7-methyl-14-methylene-4*H*-6,12*b*-ethanoindolizino[8,1-*cd*][1]benzazepin-13-one, G-141
1-(Octahydro-6-hydroxy-7-methyl-6-phenyl-5-indolizinyl)-2-propanone, C-735
Octahydro-6-(3-hydroxy-2-methylpropylidene)-8-methyl-8-indolizinol, P-795
6-[Octahydro-1-(hydroxymethyl)-2*H*-quinolizin-3-yl]-2(1*H*)-pyridinone, M-79
3-(Octahydro-9-hydroxy-2-oxo-2*H*-quinolizin-3-yl)-4(3*H*)-quinazolinone, N-110
Octahydro-2-hydroxy-2*H*-quinolizine-1-methanol, H-482
2,6,6*a*,7,8,9,10,10*a*-Octahydro-2-hydroxy-6,6*a*,8,10-tetramethyl-1*H*-[2]benzopyrano[4,3-*c*]pyridin-1-one, A-1226
Octahydro-1,2-indolizinediol, O-46
Octahydro-8-indolizinemethanol, O-47
Octahydro-1,6,7,8-indolizinetetrol, C-188
Octahydro-1,2,8-indolizinetriol, S-650
1,2,3,4,4*a*,5,6,12*a*-Octahydroindolo[1,2-*a*][1,8]naphthyridine-7-ethanol, G-142
1,2,3,4,6,7,12,12*b*-Octahydroindolo[2,3-*a*]quinolizine-4-carbonitrile, O-49
1,2,3,4,6,7,12,12*b*-Octahydroindolo[2,3-*a*]quinolizine-4-carboxylic acid, O-49
1,2,3,4,6,7,12,12*b*-Octahydroindolo[2,3-*a*]quinolizine, O-48
7,7*a*,8,9,10,11,13,14-Octahydro-7,14-methano-4*H*,6*H*-dipyrido[1,2-*a*;1′,2′-*e*][1,5]diazocin-4-one, A-970
1,2,3,5,6,12,13,13*a*-Octahydro-6,13-methano-10*H*-pyrido[1,2-*a*]pyrrole[1,2-*e*][1,5]diazocin-10-one, C-62
1,1′,4,4′,5,5′,6,6′-Octahydro-5-methoxy-2,3′-bipyridine, O-50
2,6,6*a*,7,8,9,10,10*a*-Octahydro-2-methoxy-10-methyl-4-phenyl-6-(1-propenyl)-1*H*-[2]benzopyrano[4,3-*c*]pyridin-1-one, L-112
1,2,3,5,6,6*a*,12*a*,12*b*-Octahydro-11-methyl-12*H*-[1]benzopyrano[2,3-*g*]indolizin-12-one, E-56
3*a*,4,5,6,7,8,9,9*a*-Octahydro-9*a*-methyl-1*H*-1,6*a*-ethanopyrido[2,1,6-*de*]quinolizine, P-572
Octahydro-5-(5-methyl-1,3,5-heptatrienyl)-6*bH*-cycloprop[*a*]oxireno[*g*]indolizin-6*b*-ol, I-101
(Octahydro-8-methyl-5-indolizinyl)-*sec*-heptanol, A-419
7-(Octahydro-8-methyl-5-indolizinyl)-3-hepten-2-ol, H-127
(Octahydro-8-methyl-5-indolizinyl)-*sec*-nonenol, A-487
Octahydro-8-methyl-6-(2-methylhexylidene)-8-indolizinol, A-480
Octahydro-8-methyl-6-(2-methylpentylidene)-8-indolizinol, A-359
Octahydro-8-methyl-6-(2-methylpropylidene)-7,8-indolizinediol, P-795
Octahydro-8-methyl-6-(2-methylpropylidene)-8-indolizinol, P-795
Octahydro-5-methyl-10-(6,8-nonadienyl)-1*H*-pyrrolo[1,2-*a*]azepine, A-367
Octahydro-5-methyl-10-(8-nonenyl)-1*H*-pyrrolo[1,2-*a*]azepine, A-367
Octahydro-8-methyl-5-(6-nonen-8-ynyl)-1*H*-indolizine, O-51
Octahydro-5-methyl-10-(8-nonynyl)-1*H*-pyrrolo[1,2-*a*]azepine, A-367
Octahydro-4-methyl-6-(1,3-octadienyl)-2*H*-quinolizin-3-ol acetate, P-418
Octahydro-5-methyl-10-(oxo-8-nonynyl)-1*H*-pyrrolo[1,2-*a*]azepine, A-367
Octahydro-8-methyl-5-(4-pentenyl)-1*H*-indolizine, O-52
Octahydro-8-methyl-5-(2-penten-4-ynyl)-1*H*-indolizine, O-52
Octahydro-1-methyl-4-(2-penten-4-ynyl)-2*H*-quinolizine, M-507
Octahydro-8-methyl-5-pentylindolizine, O-52
Octahydro-8-methyl-5-(4-pentynyl)-1*H*-indolizine, O-52
1,4,4*a*,5,6,7,8,8*a*-Octahydro-5-methyl-2-propylquinoline, T-204
Octahydro-6-methyl-α-propyl-2*H*-quinolizine-4-ethanol benzoate, P-571
Octahydro-4-methyl-6-propyl-2*H*-quinolizine, M-532
Octahydro-4-methyl-2*H*-quinolizin-2-one, O-53
Octahydro-4-methyl-1-[[(4,8,12-trimethyl-1-oxo-2,7,11-tridecatrienyl)amino]methyl]indolizinium(1+), S-504
1,2,3,4,6,7,8,9-Octahydrophenazine, O-54
4,5,6,7,8,9,12,13-Octahydro-8-phenyl-2,13-methano-2*H*-2,7,11-benzotriazacyclopentadecine-1,10(3*H*,11*H*)-dione, C-853
2,3,6,7,8,9,10,11-Octahydro-6-phenyl-1*H*-[1,5,9]triazacyclotridecino[2,1-*a*][2]benzazepine-4,13(5*H*,19*bH*)-dione, P-523
Octahydro-3-(2-piperidinyl)-2*H*-quinolizine-1-carboxylic acid, A-1335
Octahydro-3-(2-piperidinyl)-2*H*-quinolizine, L-97
Octahydro-5-propylindolizine, O-56
Octahydro-3-propylindolizine, O-55
Octahydro-1*H*,3*H*-pyrido[3,2,1-*ij*]benzoxazine, O-57
Octahydropyrocoll, C-898
Octahydro-2*H*-quinolizin-1-amine, A-907
Octahydro-2*H*-quinolizine-1-methanol, O-58
5-[[(Octahydro-2*H*-quinolizin-1-yl)methyl]amino]-5-oxopentanoic acid, O-59
1-[(Octahydro-2*H*-quinolizin-1-yl)methyl]-2,6-piperidinedione, L-26
2-(Octahydro-2*H*-quinolizin-3-yl)-1-piperidinecarboxaldehyde, L-97
7-[(1,2,3,4,4*a*,7,8,8*a*-Octahydro-1,2,4*a*,5-tetramethyl-1-naphthalenyl)methyl]-6-benzoxazolol, O-60
1,2,2*a*,10,10*c*,11,11*a*,11*b*-Octahydro-2*a*,4,11,11-tetramethyl-3-oxa-10-azacyclobut[3,4]indeno[5,6-*a*]fluorene, B-122
1,2,2*a*,10,10*c*,11,11*a*,11*b*-Octahydro-2*a*,7,11,11-tetramethyl-3-oxa-10-azacyclobut[3,4]indeno[5,6-*a*]fluorene, B-121
2,6,6*a*,7,8,9,10,10*a*-Octahydro-6,8,10-trimethyl-1*H*-[2]benzopyrano[4,3-*c*]pyridin-1-one, A-1214
Octahydro-2,4,7-trimethyl-1*H*-cyclopenta[c]pyridin-7*a*-ol, H-734
Octahydro-2,4,7-trimethyl-1*H*-cyclopenta[*c*]pyridine, S-326
Octahydro-2,4,7-trimethyl-1*H*-cyclopenta[*c*]pyridin-4*a*-ol, H-733
2,6,7,10,11,14,15,27-Octahydroxydotriacontanoic acid, O-61
Octalupine, H-554
5-Octanoylamino-2,3,6(1*H*)-pyridinetrione, O-62
N-Octanoylnornicotine, P-957
N-Octanoyltyrosine, T-700
2-(1-Octenyl)-4(1*H*)-quinolinone, H-648
Octopamine, O-63
2-Octylpyrrole sulfamate, O-64
2-Octylpyrrole, O-64
2-Octyl-3,4-quinolinediol, A-621
2-Octyl-4-quinolinol *N*-oxide, H-648
2-Octyl-4-quinolinol, H-648
2-Octyl-4(1*H*)-quinolinone *N*-oxide, H-648
2-Octyl-4(1*H*)-quinolinone, H-648
Ocucarpine, P-424
Ocular age pigment A2-E, O-65
Ocusert P 20, P-424
Ocusert Pilo 40, P-424
Odiline, O-66
Odoratin, T-283
Odorine, O-67
(+)-Odorinol, O-67
(-)-Odorinol, O-67
Oduline, O-68
Oduocine, O-143
Off, M-398
OGT 2378, H-616
OGT 918, H-616
Ohyamycin, F-132
Okaramine A, O-68a
Okaramine B, O-69
Okaramine C, O-70
Okaramine D, O-69
Okaramine E, O-71
Okaramine F, O-71
Okaramine G, O-70
Okaramine H, O-72
Okaramine I, O-68a
Okaramine J, O-73
Okaramine K, O-73
Okaramine L, O-70
Okaramine M, O-74
Okaramine N, O-75
Okaramine O, O-75
Okaramine P, O-76
Okaramine Q, O-69
Okaramine R, O-76a
Okolasine, W-16
Olamine, A-767
Oldhamactam, T-254
Oldhamine A, O-77
Oldhamiphylline A, O-78
Oldhamlactam, T-254
Oleamide, O-37
Oleficin, O-79
Oleic acid, O-37
Oleioidine, Q-1
N^2-Oleoylglutamine, G-108
Oleracein A, C-862
Oleracein B, C-862
Oleracein C, C-862
Oleracein D, C-862
Oleracein E, T-629
Oleracins, O-80
Oliganine, O-81
Oligophylicidine, O-82
Oligophylicine, O-82
Oligophylidine, T-520
Oligophyline, O-82
Olivacine *N*-oxide, O-83
Olivacine, O-83
Oliveramine, O-84
Oliveridine *N*-oxide, O-85
Oliveridine, G-61
Oliveridine, O-85
Oliverine *N*-oxide, O-85
Oliverine, O-85
Oliverine, O-86
Oliveroline β-*N*-oxide, O-87
Oliveroline, O-87
Olividine, M-359
Olivimine, M-359
Olivoretin A, T-63
Olivoretin B, T-63
Olivoretin C, O-88
Olivoretin D, T-63
Olivoretin E, O-89
Olomoucine, O-90
OM 704A, D-295
OM 704B, D-295
OM 5714, I-161
Omacetaxine mepesuccinate, H-66
Omadine disulfide, D-831
Omadine MDS, D-831
Omadine-DS, D-831
Omain, D-92
OMDS, D-831
Omeienine, M-309
Ommatin D, D-527
Omomycin, I-64
Oncinotine, O-91
Oncinotin-11-one, O-91
Oncinotin-12-one, O-91
Oncodine, D-625
Oncovin, V-128
Onetine, O-92
Onkovin, V-128
Onosmin A, A-706

Onosmin B, A-706
Onychine, O-93
Oocydin A, H-76
OPC 15161, A-1220
Ophiocarpine *N*-oxide, O-94
Ophiocarpine, O-94
Ophiocarpinone, O-94
Ophiocordin, B-9
Ophiorine A, O-95
Ophiorine B, O-95
Ophiorrhizine-12-carboxylate, O-97
Ophiorrhizine, O-96
Ophiuroidine, O-98
OPHR 17, O-99
OPHR 23, O-99
Ophthocillin, X-7
Opianine, N-44
Oppositine A, P-251
Oppositine B, P-251
Optochin, Q-20
Optoquine, Q-20
Optoquinic acid, H-726
Opuntine B, O-100
Oramorph SR, M-704
Orantine, A-1334
Orbiculamide A, O-101
Orcein, O-102
Orchil, O-102
Oreaconine, L-317
Orellanine 4,4′-diglucoside, T-249
Orellanine II, T-249
Orellanine, T-249
Orelline, T-249
Orellinine, T-249
Orensine, A-138
Oreobeiline, O-103
Oreodine, G-87
Oreogenine, G-87
Oreoline, O-104
Oreoline, O-109
Oreonone, F-2
Oreophiline, M-140
Orgetine, H-210
Oriamide, O-105
Oriciacridone A, O-106
Oriciacridone B, O-106
Oriciacridone C, R-167
Oriciacridone D, O-107
Oriciacridone E, T-581
Oriciacridone F, O-108
Oricine, F-90
Oridine 2, O-109
Oridine, O-109
Orientalidine, O-110
Orientaline, O-111
Orientalinone, O-112
Orientidine, T-525
Orientine, T-523
Orientinine, T-549
Orientinine, T-523
Orientmycin, A-832
Orientomycin, A-832
Orijanone, E-40
Orinapterin, A-749
Oripavidine, T-350
Oripavine, T-350
Orixalone A, T-583
Orixalone B, T-583
Orixalone C, T-583
Orixalone D, F-90
Orixiarine, E-40
Orixine, O-113
Orixinone, O-113
Ormocastrine, P-529
Ormojanine, O-114
Ormojine, O-117
Ormosajine, P-53
Ormosanine, O-115
21-Ormosanin-20-ylpanamine, O-117
Ormosin VI, T-52
Ormosine, O-116
Ormosinine, O-117
Ornamine, O-118
Ornazamine, O-118
Ornazidine, O-118
Ornibactin C4, O-119
Ornibactin C6, O-120
Ornibactin C8, O-121
Ornibactin F, O-121
Ornithine lactam, A-872
D-Ornithinegalantin I, G-6
N-(N^2-L-Ornithyl)cantharimide, C-89
Orobanchamine, O-122
Oroboidine, H-554
Orochrine, H-198
Oroidin, O-123
Orosomycin, O-124
Orotamide, D-669
Orotic acid dimethylamide, D-669
Orotic acid, D-669
Orotonsan S, D-669
Orthidine A, O-125
Orthidine B, O-125
Orthidine C, O-126
Orthidine D, O-126
Orthidine E, O-127
Orthidine F, S-399
Orthocentrine, M-376
Orthosphenine, P-251
Oryzanin, T-366
OS 1998, S-53
Oscillatorin, O-128
Oscine atropate, A-1364
Oscine tropate, S-159
Oscine, S-160
Osmaronin epoxide, H-576
Osmaronin, H-576
Osoic acid, O-129
Osornine, O-130
Ostreogrycin A, O-131
Ostreogrycin G, O-131
Ostreogrycin, O-131
Ostrerine A, O-132
Otanthus acid piperidide, O-133
Otanthus acid, O-133
Otanthusic acid 2,3-dehydropiperidide, O-133
Otanthusic acid, O-133
Oteromycin, O-134
Othonnine, A-1572
Othosenine, O-137
Otocamine, O-135
Otonecine, O-136
Otosenine, O-137
Otrun, D-730
Oubatchensine, O-138
Ouregidione, O-139
Oureguattidine, T-244
Oureguattine, T-244
Ourouparine, O-140
Ouvrardiandine A, O-141
Ouvrardiandine B, O-141
Ouvrardiantine, M-333
Ovalin, H-697
Ovatine, V-45
Ovigeridimerine, O-142
Ovigerine, O-143
Ovihernangerine, O-144
Oviisocorydine, O-145
Ovisot, A-47
Owerrine, V-188
7-Oxa-3-azabicyclo[4.1.0]heptan-2-one, O-146
2-Oxa-5-azabicyclo[2.2.2]octan-3-one, H-698
1-Oxa-4-azacyclohexane, M-705
Oxaceprol, H-715
Oxachelin, O-147
13-Oxa-4,20-diazatetracyclo[12.2.2.$2^{3,6}$.$1^{8,12}$]heneicosa-8,10,12(19),14,16,17-hexaen-11-ol, P-444
OXAIDS, H-616
12,28-Oxaircinal A, I-174
Oxalicine A, O-148
Oxalicine B, O-148
Oxaline, M-162
N^2-Oxalylarginine, A-1413
12,28-Oxamanzamine A, M-91
12,34-Oxamanzamine A, M-91
ent-12,34-Oxamanzamine E, M-91
12,28-Oxamanzamine E, M-91
12,34-Oxamanzamine E, M-91
ent-12,34-Oxamanzamine F, M-91
Oxamphetamine, A-898
Oxamycin, A-832
Oxandrine, O-149
Oxandrinine, O-149
Oxaphyllidine, A-1336
Oxaphylline, H-405
Oxasetin, O-150
Oxathinecarboxylic acid, O-151
2*H*-1,4-Oxazine-3-carboxylic acid, O-152
Oxazinine 1, O-153
Oxazinine 2, O-153
Oxazinine 3, O-154
Oxazinine 4, O-153
Oxazinine 5, O-154
Oxazinine 6, O-154
Oxazolomycin, O-155
Oxazolomycin B, O-155
Oxazolomycin C, O-155
4-(4-Oxazolyl)-3-(hydroxymethyl)-3-buten-2-ol, O-156
3-(5-Oxazolyl)-1*H*-indole, O-157
2-[(4-Oxazolyl)methylene]-1,3-butanediol, O-156
5-(4-Oxazolyl)-4-pentene-2,3-diol, M-159
Oxedrine, S-659
Oxepinamide A, O-158
Oxepinamide B, O-158
Oxepinamide C, O-159
Oxerine, O-160
Oxeze, X-5
Oxiamine, I-148
3,19-Oxidocoronaridine, H-270
6,7-Oxidodeoxynupharidine dimer, O-161
3,6-Oxidoibogaine, O-162
3,6-Oxidoiboxygaine, O-162
5,15-Oxidolycopodane, O-163
Oximidine III, O-164
Oximidine II, O-164
Oximidine I, O-164
Oxindole-3-acetic acid, D-485
Oxindole, I-103
3-Oxiranyl-1*H*-indole, O-165
8-Oxoacetylcorynoline, C-692
22-Oxoacuminatine, H-403
8-Oxoadenine, A-819
3-Oxoadociaquinone B, A-147
14-Oxoaerophobin 2, A-155
11-Oxoaerothionin, A-158
6-Oxoalstophyllal, A-656
6-Oxoalstophylline, A-649
18-Oxoamataine, A-676
7-Oxoanhydromethylpseudolycorine, A-1508
Oxoanolobine, L-40
19-Oxoanthranoyllycoctonine, H-123
Oxoaphyllidine, A-1336
16-Oxoaspergillimide, A-1486
18-Oxoaspidoalbine, D-144
Oxoassoanine *N*-oxide, A-1508
Oxoassoanine, A-1508
2′-Oxoasterriquinol D di-Me ether, A-1519
3-Oxoaxisonitrile 3, S-425
β-Oxo-9-azabicyclo[4.2.1]non-2-ene-2-propanoic acid, C-143
4-Oxo-1-azabicyclo[3.3.0]octa-5,7-diene-2-carboxylic acid, D-488
Oxobaicaline, O-166
8-Oxoberberrubine, C-73
6-Oxo-7-biopterin, A-748
α-Oxobrowniine, M-309
N-(3-Oxo-1-butenyl)-1,2-dihydrorenierone, R-45
6-(3-Oxo-1-butenyl)-1*H*-indole, I-118
3-(3-Oxo-1-butenyl)-1*H*-indole, I-117
N-(3-Oxobutyl)cytisine, C-938
8-(2-Oxobutyl)dihydrochelerythrine, O-167
N-(3-Oxobutyl)mitomycin C, M-654
2-(2-Oxobutyl)piperidine, H-435
9-(3-Oxobutyl)-6,8-purinediol, P-818
1-(3-Oxobutyl)-6,8-purinediol, P-818
Oxobuxifoline, O-168
Oxocalycinine, O-183
8-Oxocanadine, C-73

10-Oxocancentrine, C-76
8-Oxocephalotaxine, C-271
8-Oxochelerythrine, D-407
8-Oxococcuvine, E-202
8-Oxococcuvinine, E-202
Oxocompostelline, O-169
1′-Oxoconiine, C-604
3′-Oxoconodurine, C-616
19-Oxoconopharyngine, C-620
3-Oxoconopharyngine, C-620
8-Oxocoptisine, D-409
5-Oxocoronaridine, C-657
6-Oxocoronaridine, C-657
3-Oxocoronaridine, C-657
8-Oxocorynoline, C-692
Oxocoryrutine, C-698
Oxocrebanine, O-170
Oxocrinine, C-748
13-Oxocryptopine, C-790
14-Oxocryptopine, C-790
Oxocularicine, O-169
Oxocularidine, O-171
Oxocularine, O-171
17-Oxocycloprotobuxine, O-172
Oxocyclostylidol, O-173
5-Oxocylindrocarpidine, C-929
10-Oxocylindrocarpidine, C-929
11-Oxocytisine, C-938
7-Oxodanaidal, D-14
Oxodaphnigraciline, D-50
Oxodaphnigracine, D-51
6-Oxo-2,4-decadienoic acid piperidide, O-174
6-Oxo-2,4-decadienoic acid, O-174
N-(6-Oxo-2,4-decadienoyl)piperidine, O-174
1-(1-Oxo-2,4-decadienyl)piperidine, D-104
1-(1-Oxo-2,4-decadienyl)pyrrolidine, D-104
N^{α}-(4-Oxodecanoyl)histamine, H-307
19-Oxodecarbomethoxytetrahydrosecodine, D-120
3-(9-Oxo-1,3,5,7-decatetraenyl)pyridine, P-908
7-Oxodehydroasimilobine, L-193
8-Oxo-9-dehydrohobartine, H-310
8-Oxo-9-dehydromakomakine, H-310
3-Oxo-14,15-dehydrorhazinilam, R-76
2-Oxo-Δ^5-dehydrosparteine, D-161
16-Oxodelavaine, D-181
19-Oxodelphatine, H-123
α-Oxodelphinine, M-312
2-Oxodendrobine, D-210
Oxodesmosine, O-175
Oxodicentrine, D-347
4-Oxo-2,3-didehydrosparteine, M-731
6-Oxo-16,20-diepisilicine, M-293
19-Oxodihydroatisine, A-1533
1-Oxo-1,2-dihydro-*N*-demethyl-*N*-hydroxyacronycine, D-417
1-Oxo-1,2-dihydro-*N*-desmethylacronycine, D-417
8-Oxodihydroepiberberine, O-177
Oxodiscoguattine, O-183
12-Oxo-2,4,8,10-dodecatetraenoic acid, O-176
2-Oxodopamine, A-736
Oxoduocine, H-150
19-Oxoeburnamine, E-6
1-(1-Oxo-2,4-eicosadienyl)piperidine, E-45
1-(1-Oxo-2,4-eicosadienyl)pyrrolidine, T-491
13-Oxoellipticine N^{b}-oxide, E-67
13-Oxoellipticine, E-67
8-Oxoepiberberine, O-177
3-Oxo-19-epiheyneanine, C-657
6-Oxo-16-episilicine, M-293
Oxoepistephamiersine, S-537
Oxoepistephanine, E-102
3-Oxo-19-epivoacristine, V-170
9-Oxoepothilone D, E-117
8-Oxoerymelanthine, E-198
8-Oxoerysodine, E-202
11-Oxoerysodine, E-206
11-Oxoerysopine, E-206
8-Oxoerysotrine, E-202
11-Oxoerysovine, E-206
8-Oxoerythraline 1,2-epoxide, E-205
8-Oxoerythraline, E-205
11-Oxoerythraline, E-205
8-Oxoerythrinine, E-205
8-Oxo-α-erythroidine 1,2-epoxide, E-215
8-Oxo-α-erythroidine, E-215
8-Oxo-β-erythroidine, E-215
Oxofangchirine, D-148
11-Oxofistularin 3, F-70
Oxogambirtannine, D-434
21-Oxogelsemine, G-49
19-Oxogelsenicine, G-44
21-Oxogelsevirine, G-49
Oxoglaucine, O-178
8-Oxoguanine, A-753
18-Oxohaplocidine, D-144
16-Oxohasubanonine, H-70
3-(6-Oxoheptyl)-5-propylpyrrolizidine, H-500
7-Oxohernagine, G-93
7-Oxohernandaline, O-179
7-Oxohernangerine, O-180
1-(1-Oxo-2,7-hexadecadien-10-ynyl)-1*H*-pyrrole, H-218
1-(1-Oxo-2,7-hexadecadien-10-ynyl)pyrrolidine, H-218
1-(1-Oxo-6,8-hexadecadien-10-ynyl)pyrrolidine, H-219
1-(1-Oxo-7-hexadecen-10-ynyl)-1*H*-pyrrole, H-225
6-Oxo-2,4-hexadienoic acid, O-181
1-(1-Oxo-2,7-hexadienyl)-1*H*-pyrrole, H-217
1-(1-Oxohexyl)-2-(3-pyridinyl)pyrrolidine, P-957
18-Oxoholadienine, H-314
11-Oxohomoaerothionin, A-158
19-Oxohumantenidine, G-44
3-Oxohydroxykopsinine, K-78
8-Oxohypecorinine *N*-oxide, H-766
8-Oxohypecorinine, H-766
2-Oxo-4-imidazolinecarboxylic acid, D-484
α-Oxo-1*H*-indole-3-acetamide, O-182
α-Oxo-1*H*-indole-3-acetic acid, O-182
α-Oxo-1*H*-indole-3-acetonitrile, O-182
3-Oxoindole, I-106
α-Oxo-1*H*-indole-3-propanoic acid, I-133
2-(2-Oxo-3-indolinyl)acetic acid, D-485
Oxoisocalycinine, O-183
8-Oxoisocorypalmine, I-210
10-Oxo-β-isosparteine, I-322
3-Oxoisovoacangine, I-344
5-Oxo-2(5*H*)-isoxazoleacetic acid, O-184
5-Oxo-2(5*H*)-isoxazolepropanenitrile, O-185
5-Oxo-2(5*H*)-isoxazolepropanoic acid, O-185
2-(3-Oxo-5-isoxazolidinyl)glycine, T-490
Oxojanussine, O-186
3′′-Oxojuliflorine, J-56
3-Oxojuliprosine, J-57
3′′-Oxojuliprosopine, J-56
3′-Oxojuloprosine, J-57
10-Oxokibdelone A, K-40
10-Oxokopsanone, D-805
Oxokrigenamine, K-102
Oxolaureline, O-187
6-Oxoleuconoxine, L-156
21′-Oxoleurosine, L-162
Oxolucidine A, L-277
Oxolucidine B, L-277
6-Oxolumazine, D-494
7-Oxolumazine, P-382
7-Oxolumazine, P-763
17-Oxolupanine, O-188
14-Oxolyaloside, P-135
Oxomaritidine, M-108
3-Oxomehranine, M-153
8-Oxo-11β-methoxyerythraline, E-205
6-Oxomethuenine, M-293
18-Oxo-*O*-methylaspidoalbine, D-144
Oxo-*O*-methylpukateine, O-204
3-Oxo-N^{b}-methyl-3,4-secoakuammidine, V-171
3-Oxominovincine, O-210
13-Oxomuramine, M-734
14-Oxonaamidine G, N-1
Oxonantenine, O-195
1-(1-Oxo-2,9-nonadecadienyl)pyrrolidine, B-271
3-(1-Oxo-4,7-nonadienyl)oxiranecarboxamide, C-286
2-(8-Oxononyl)-4(1*H*)-quinolinone, H-642
19-Oxonorcassaidine, N-300
Oxonuciferine, L-193
5-Oxo-6,8-octadecadienoic acid, O-189
9-Oxo-12,15-octadecadienoic acid, O-190
13-Oxo-9,11-octadecadienoic acid, O-191
12-Oxooctadecanoic acid, O-192
9-Oxo-12-octadecenoic acid, O-193
12-Oxo-2-octadecenoic acid, O-194
1-(1-Oxo-2-octadecenyl)piperidine, O-36
1-(1-Oxooctyl)-2-(3-pyridinyl)pyrrolidine, P-957
Oxopachycarpine, O-208
3-Oxopachysiphine, O-210
16-Oxoparaherquamide A, P-90
2-(2-Oxopentyl)piperidine, H-37
N-(3-Oxo-3*H*-phenoxazin-2-yl)acetamide, A-862
9-Oxo-*N*-(2-phenylethyl)hexadecanamide, P-342
4-Oxo-6-(phenylmethyl)-4*H*-pyran-3-carboxylic acid, B-92
N-[4-[(1-Oxo-3-phenyl-2-propenyl)amino]butyl]-benzamide, C-456
1′-(1-Oxo-3-phenyl-2-propenyl)-2,3′-bipiperidine, A-1525
9-(1-Oxo-3-phenyl-2-propenyl)-4-phenyl-1,5,9-triazacyclotridec-12-en-2-one, P-265
1-(1-Oxo-3-phenyl-2-propenyl)-1*H*-pyrrole, C-457
1-(1-Oxo-3-phenyl-2-propenyl)pyrrolidine, C-458
1-(1-Oxo-3-phenyl-2-propenyl)-2-pyrrolidinone, P-956
1-(1-Oxo-3-phenylpropyl)-1*H*-pyrrole, P-351
11-Oxophlegmariurine B, P-363
2-Oxophlegmariurine B, P-363
Oxophoebine, O-195
4-Oxopipecolic acid, O-196
4-Oxo-2-piperidinecarboxylic acid, O-196
8-[(2-Oxo-3-piperidinyl)amino]-8-oxooctyl 5,9-anhydro-2,3,8-trideoxy-8-(5-hydroxy-4-methyl-2-hexenyl)-3-methyl-DL-*glycero*-LD-*allo*-non-2-enoate, O-197
8-Oxopolyalthiane, S-543
6-Oxoprimapterin, A-748
5-Oxoproline, O-206
16-Oxoprometaphanine, P-639
Oxopropaline A, O-198
Oxopropaline B, O-198
Oxopropaline D, O-198
Oxopropaline E, O-198
Oxopropaline G, O-198
3-(2-Oxopropyl)conodurine, T-3
5-(2-Oxopropyl)coronaridine, O-200
3-(2-Oxopropyl)coronaridine, O-199
3,3′-(Oxopropyl)dicoronaridine, O-201
6-(2-Oxopropyl)-6-pentyl-2-piperidinone, A-136
6-(1-Oxopropyl)-2,4(1*H*,3*H*)-pteridinedione, H-702
15-(2-Oxopropyl)reframidine, R-35
3-(2-Oxopropyl)voacangine, O-199
8-Oxoprotopine, P-667
13-Oxoprotopine, P-667
14-Oxoprotopine, P-667
8-Oxopseudopalmatine, O-202
Oxopukateine, O-204
Oxopurpureine, O-203
Oxoputerine, O-204
2-Oxo-3-(4-pyridinyl)propanoic acid, O-205
4-Oxo-4-(9*H*-pyrido[3,4-*b*]indol-1-yl)butanoic acid, C-137
2-Oxo-1-pyrrolidinecarboxamide, S-487
5-Oxo-2-pyrrolidinecarboxylic acid, O-206
2-Oxopyrrolidine, P-956
6-(5-Oxo-2-pyrrolidinyl)eriodictyol, T-572
8-(5-Oxo-2-pyrrolidinyl)eriodictyol, T-573
N-(2-Oxo-1-pyrrolidinylmethyl)cytisine, C-938
6-(5-Oxo-2-pyrrolidinyl)naringenin, T-572
8-(5-Oxo-2-pyrrolidinyl)naringenin, T-573
5-[(5-Oxo-2-pyrrolidinyloxy)methyl]-2-furancarboxaldehyde, S-269
15-Oxoreframidine, R-35
3-Oxorhazinilam, R-76
Oxosanguinarine, D-510
Oxosarcocapnidine, S-73
Oxosarcocapnine, S-73
Oxosarcophylline, O-207
8-Oxoschelhammeridine, S-125
11*a*-Oxoschelhammeridine, S-125

12-Oxoschellhammeridine, S-125
6-Oxosilicine, M-293
23-Oxosolacongestidine, S-337
24-Oxosolacongestidine, S-337
15-Oxosoladulcidine, S-441
10-Oxosparteine, A-1337
2-Oxo-11α-sparteine, L-302
Oxosparteine, O-208
17-Oxosparteine, O-208
13-Oxosparteine, T-361
11-Oxospiradine D, S-421
7-Oxostaurosporine, S-498
12-Oxostearic acid, O-192
2-Oxostenine, S-528
3-Oxostenine, S-528
Oxostephabenine, S-529
Oxostephamiersine, S-537
Oxostephanine, O-209
Oxostephanosine, O-209
Oxostephasunoline, L-244
5-Oxostrictosidine, S-583
19′-Oxotabernamine, T-8
3-Oxotabersonine, O-210
1-(1-Oxo-2,4-tetradecadiene-8,10-diynyl)piperidine, T-121
1-(1-Oxo-2,4-tetradecadiene-8,10-diynyl)pyrrolidine, T-121
1-(1-Oxo-2,4-tetradecadiene-8,10,12-triynyl)piperidine, T-123
8-Oxo-2,4-tetradecadienoic acid, O-211
1-(1-Oxo-2,4-tetradecadienyl)piperidine, T-124
1-(1-Oxo-2,4-tetradecadien-8-ynyl)pyrrolidine, T-125
1-(1-Oxo-2,4,6,12-tetradecatetraene-8,10-diynyl) piperidine, T-128
1-(1-Oxo-2,4,8,11-tetradecatetraenyl)piperidine, T-129
1-(1-Oxo-2,4,8,11-tetradecatetraenyl)pyrrolidine, T-129
1-(1-Oxo-2,4,12-tetradecatriene-8,10-diynyl)piperidine, T-132
1-(1-Oxo-2,4,12-tetradecatriene-8,10-diynyl)pyrrolidine, T-132
12-Oxo-2,4,8-tetradecatrienoic acid, O-212
1-(1-Oxo-2,4,8-tetradecatrienyl)piperidine, T-133
1-(1-Oxo-2,4,10-tetradecatrien-8-ynyl)piperidine, T-134
8-Oxotetrahydroberberine, C-73
1-Oxo-1,2,3,4-tetrahydroisoquinoline, D-469
8-Oxotetrahydropalmatine, O-213
11-Oxotetrahydrorhombifoline, T-149
8-Oxotetrahydrothalifendine, C-73
2-Oxo-6-(1,2,3,4-tetrahydroxybutyl)-3-morpholinepropanamide, A-207
11-Oxotetrodotoxin, T-298
8-Oxothaicanine, T-301
Oxothalibrunimine, T-310
Oxothalicarpine, O-214
4-Oxothermopsamine, T-361
4-Oxo-2-thiazolidinehexanoic acid, A-78
Oxotomaymycin, T-424
8-(2-Oxotridecyl)dihydrochelerythrine, T-503
13,13′-(2-Oxotrimethylene)bis[12,13-dihydrochelerythrine], C-355
Oxotuberostemonine, O-215
Oxoturkiyenine, T-684
2-(10-Oxoundecyl)-4(1*H*)-quinolinone, H-757
Oxoushinsunine, L-194
3-Oxovenalstonidine, V-49
3-Oxovincadifformine, O-210
5-Oxovincadifformine, V-111
22-Oxovincaleukoblastine, V-128
19-Oxovincamine, V-115
19-Oxovoacangine, V-170
20-Oxovoacangine, V-170
3-Oxovoacangine, V-170
19-Oxovoacristine, V-170
3-Oxovoacristine, V-170
3′-Oxovobtusine *N*-oxide, V-188
3′-Oxovobtusine, V-188
18-Oxovobutsine, V-188
2′′-Oxovoruscharin, U-53
Oxoxylopine, L-40
17-Oxoyuzurimine, D-33
Oxtriphylline, C-419
Oxyacanthine, O-1
Oxyanthin, H-673
Oxyavicine, D-404
Oxyberberine, O-216
Oxyberberrubine, O-216
3,3′-Oxybis[5-(aminocarbonyl)benzoic acid], D-815
6,6′-Oxybis[7-(2-amino-1,4-dihydro-4-oxo-6-pteridinyl)-6,7-dideoxy-D-glycero-L-galacto-heptonic acid] 3,3′-bis(hydrogen sulfate), S-637
5,5′-Oxybis-1,3-benzenedicarboxylic acid, D-815
5,5′-Oxybis[1,5-dihydro-3-methyl-2*H*-pyrrol-2-one], O-217
7,7′-Oxybis[6-methyl-5,8-dioxo-1-isoquinolinemethanol], O-218
3,3′-[Oxybis(methylene)]bis[1-methoxy-9*H*-carbazole], O-221
3,3′-[Oxybis(methylene)]bis[9-methoxy-9*H*-carbazole], O-219
Oxybocconine, D-510
Oxychelerythrine, D-407
Oxychelidonine, C-357
Oxychelirubine, D-510
Oxychlororaphine, P-319
10,11-Oxy-10,12*a*-cyclo-10,11-secocolchicine, O-220
5,5′-Oxydi[3-methyl-3-pyrrolin-2-one], O-217
Oxydimorphine, M-703
Oxydimurrayafoline, O-221
N^b-Oxy-20,21-epiaspidospermidine, A-1498
Oxygambirtannine, D-434
Oxyhuperzine Q, H-382
Oxyhydrastinine, I-305
Oxyisoterihanine, D-482
Oxylopidine, T-561
Oxylopine, D-626
Oxylopinine, O-93
Renilla Oxyluciferin, C-558
Luciola Oxyluciferin, F-56
Cypridina Oxyluciferin, O-222
Watasenia Oxyluciferin, O-223
Oxymaistemonine, M-49
Oxymatrine, M-121
N^b-Oxymelonine, M-188
Oxymorphine, M-703
Oxymycin, A-832
Oxynarcotine, N-35
Oxynemorensine, N-89
Oxynicotine, N-190
Oxynitidine, D-482
Oxypalmatine, O-213
Oxyphylline A, A-151
Oxyproline, H-715
Oxyprotopine, P-667
Oxyprotostemonine, P-670
8-Oxypseudopalmatine, O-202
Oxypterine, O-224
Oxypyrrolnitrin, P-961
Oxyretroisosenine, N-89
Oxyretuline, R-63
Oxyrubroflavin, D-229
Oxysanguinarine, D-510
Oxysceptrine, O-225
Oxysophocarpine, S-371
Oxysparteine, O-208
Oxysporidinone, O-226
Oxystemofoline, S-515
Oxystemokerrilactone, O-227
Oxystemokerrin *N*-oxide, S-516
Oxystemokerrin, S-516
Oxyterihanine, D-482
Oxythalifendine, O-216
Oxytrimethylline, C-419
Oxytriphine, D-430
Oxytyramine, D-920
3-Oxyuracil, U-42
Oxyviolacein, V-142
Oxyzoanthamine, Z-30
P 42-1, A-244
P 725C, O-151
PA 106, A-1044
PA 95, A-78
PA 155A, I-102
PA 114A, O-131
PA 371ϵ, I-300
PA 371γ, I-300
PA444, B-150
Pachyaximine A, A-886
Pachyaximine B, A-884
Pachyaxioside A, A-881
Pachyaxioside B, A-886
Pachycarpidine, M-121
Pachycarpine (obsol.), S-385
Pachycarpine N^{16}-oxide, S-385
Pachycereine, T-233
Pachychaline A, P-1
Pachychaline B, P-2
Pachychaline C, P-3
Pachyconfine *N*-oxide, P-4
Pachyconfine, P-4
Pachydermin, P-5
Pachygonamine, Y-5
Pachygonine, C-538
Pachyovatamine, T-407
Pachypodanthine, O-87
Pachysamine A, P-601
Pachysamine B, P-601
Pachysamine E, P-601
Pachysamine G, P-601
Pachysamine H, P-601
Pachysanaximine A, D-266
Pachysandrine A, D-266
Pachysandrine B, D-266
Pachysandrine C, D-266
Pachysandrine D, D-266
Pachysanonin, A-747
Pachysantermine A, P-6
Pachysiphine, T-11
Pachystaudine, S-534
Pachysterine, P-7
Pachystermine A, P-8
Pachystermine B, P-8
Pacidine, M-321
Pacifarinic acid, S-33
Pacifidine, M-359
Pacifiline, H-123
Pacifinine, H-123
Paciline, M-321
Pacinine, M-321
Paclitaxel ceribate, T-52
Paclitaxel poliglumex, T-52
Paclitaxel, T-52
PA33334, D-283
PA33343, D-284
PA3334, D-288
PA3343, D-289
PA334, D-249
PA3434, D-287
PA4344, D-291
PA434, D-251
Paecilaminol, A-758
Paecilosetin, C-468
Paeciloxazine, P-9
Pagicerine, P-10
Pagisulfine, P-11
Pahutoxin, P-12
Pahybrine, P-13
Paipunine, P-14
Pakistanamine, P-15
Pakistanine, P-16
Palasimide, P-17
Palauamine, P-18
Palaudine, P-80
Palauimide, P-19
Paliclavine, P-20
Palicoside, S-583
Palidimine, P-21
Palinine, P-135
Palinurine A, P-22
Palinurine B, P-22
Paliurine A, P-23
Paliurine B, P-23
Paliurine C, P-24
Paliurine D, P-24

Paliurine E, P-25
Paliurine F, P-26
Paliurine G, P-27
Paliurine H, P-28
Paliurine I, P-29
Pallidiflorine, P-30
Pallidine *N*-oxide, F-80
Pallidine, F-80
Pallidinine, P-31
Pallimamine, P-32
Palmadine, H-202
Palmanine, P-33
Palmasine, H-202
Palmatine chloroform, P-35
Palmatine, P-34
Palmatisine, P-36
Palmatrubine, P-34
Palmerolide A, P-37
Palmidrol, P-38
Palmilycorine, L-348
Palmirine, R-159
Palmitamide, H-221
Palmitan, P-38
Palmitic acid, H-221
N^2-Palmitoleoylglutamine, G-108
N^2-Palmitoylglutamine, G-108
1-*O*-Palmitoyl-2-*O*-(1-*O*-palmitoyl-2-*O*-stearoyl)-glycerophosphorylpseudolycorine, P-716
1-*O*-Palmitoyl-2-*O*-(1-*O*-palmitoyl-2-*O*-stearoyl/oleoyl)glycerophosphoryllycorine, L-348
N-Palmitoylputrescine, B-422
N-Palmitoylpyrrolidine, P-949
N^b-Palmitoyltryptamine, T-639
Palosine, A-1499
Paludosine, P-39
Palustridine, P-40
Palustrine, P-40
Palythazine, P-41
Palytoxin, P-42
Palyzoanthoxanthin A, P-94
Palyzoanthoxanthin B, P-94
Palyzoanthoxanthin C, P-94
Pamamycin 593A, P-43
Pamamycin, P-43
Pamine, S-159
PAMN, T-632
Pamolyn 100, O-37
Pampulhamine, D-88
Panacosmine, P-44
Panaefluoroline A, P-45
Panaefluoroline B, P-46
Panaefluoroline C, P-47
Panaefluoroline D, P-48
Panaefluoroline E, P-49
Panaefluoroline F, P-50
Panaefluoroline G, P-51
Panaefluoroline H, P-52
Panamine, P-53
Panarine, T-425
Panclar, D-197
Pancoridine, P-54
Pancorine, P-55
Pancorinine, P-56
Pancracine, P-57
Pancrassidine, U-35
Pancratine, H-6
Pancratiside, P-58
Pancratistatin, P-58
Pancritamine, G-3
Pandamarilactam 3x, P-59
Pandamarilactam 3y, P-59
Pandamarilactone 1, P-60
Pandamarilactone 31, P-61
Pandamarilactone 32, P-62
Pandamarilactonine A, P-63
Pandamarilactonine B *N*-oxide, P-63
Pandamarilactonine B, P-63
Pandamarilactonine C, P-63
Pandamarilactonine D, P-63
Pandamarine, P-64
Pandamine, S-166
Pandaminine, M-190
Pandanamine, P-65
(*E,E*)-Pandanamine, P-65
Pandicine, P-66
Pandine, P-67
Pandoline, P-733
Panganensine R, P-69
Panganensine S, P-69
Panganensine X, P-68
Panganensine Y, P-68
R-Panganensine, P-69
S-Panganensine, P-69
Pangkoramine, L-175
Pangkorimine, E-102
Pangrenine, A-247
Panicudine, H-198
Paniculadine, H-198
Paniculamine, P-70
Paniculatine A, P-247
Paniculatine B, P-247
Paniculatine, H-181
Paniculatine, L-334
Paniculatine, M-325
Paniculidine A, I-124
Paniculidine B, I-124
Paniculidine C, I-124
Paniculidine, A-910
Paniculine, M-309
Paniculine, P-71
Paniculol, I-124
Panicutine, H-161
Pannellin, P-72
Pantherine, A-837
Pantherinine, P-73
Pantocin A, P-75
Pantocin A_2, P-74
Pantos, D-197
Panurensine, P-76
Papaveraldine, P-77
Papaverberbine, P-78
Papaverine hydrochloride, P-79
Papaverine, P-79
Papaveroline tetramethyl ether, P-79
Papaveroline, P-80
Papaveroxidine, N-45
Papaveroxine, N-45
Papaveroxinoline, N-45
Papaverrubine A, R-86
Papaverrubine B, G-87
Papaverrubine C, G-87
Papaverrubine D, G-87
Papaverrubine E, R-86
Papaverrubine F, G-87
Papaverrubine G, A-638
Papaverrubine H, G-87
Papavoriendine, P-81
Papavorientine, P-82
Papilamine, B-455
Papilicine, B-455
Papilinine, M-667
Papillamidine, M-667
Papillotrienine, B-473
Papillozine C, P-83
Papracine, N-35
Papracinine, F-174
Paprafumine, A-143
Papraine, C-653
Papraline, M-446
Paprarine, N-51
Paprazine, H-667
Papuamine, P-84
Papuanine, V-188
Papyraceabromine A, P-85
Papyramine, P-86
Parabactin A, A-203
Parabactin, A-203
Paraensidimerine A, P-87
Paraensidimerine B, P-88
Paraensidimerine C, P-87
Paraensidimerine D, P-88
Paraensidimerine E, P-87
Paraensidimerine F, P-87
Paraensidimerine G, P-87
Paraensine, P-89
Paraensine, R-31
Paragracine, P-737
Paraherquamide A N^{17}-oxide, P-90
Paraherquamide A, P-90
Paraherquamide B, P-90
Paraherquamide C, P-90
Paraherquamide D, P-90
Paraherquamide E, P-90
Paraherquamide F, P-91
Paraherquamide G, P-91
Paraherquamide H, P-90
Paraherquamide I, P-90
Paramaleic acid, F-173
Paramorphine, T-350
Paraquileginine, C-812
Paratunamide A, P-92
Paratunamide B, P-92
Paratunamide C, P-92
Paratunamide D, P-92
Paravallaridine, P-93
Paravallarine, P-93
Paraxanthine, X-5
Parazoanthoxanthin A, P-94
Parazoanthoxanthin B, P-94
Parazoanthoxanthin C, P-94
Parazoanthoxanthin D, P-94
Parazoanthoxanthin E, P-94
Parazoanthoxanthin F, P-94
Parazoanthoxanthin G, P-94
Paredrine, A-898
Paredrinex, A-898
Pareirubrine A, G-159
Pareirubrine B, G-159
Pareitropone, G-159
Parfumidine, F-174
Parfumine, F-174
Paricine, P-95
Parilac, E-157
Parkacine, N-43
Parkamine, F-7
Parkimbine, Y-13
Parlodel, E-157
Parodel, E-157
Parsonsianidine, P-96
Parsonsianine, P-97
Parsonsine *N*-oxide, P-98
Parsonsine, P-98
Parthenolidine, P-99
Parvifagarine, P-100
Parviflorine, F-174
Parvine, N-70
Parvineostemonine, P-101
Parvinine, P-102
Parvistemoamide, P-103
Parvistemoline, P-104
Parvistemonine, P-105
Paspaclavine, P-106
Paspalic acid, P-107
Paspalicine, P-109
Paspalin PII, Z-37
Paspalin P1, Z-37
Paspaline B, P-108
Paspaline, P-108
Paspalinine, P-109
Paspalitrem A, P-110
Paspalitrem B, P-110
Paspalitrem C, P-111
Passibiflorin, D-565
Passicapsin, D-565
Passicoccin, D-565
Passicoriacin, D-565
Passiedulin, H-673
Passiflorine, M-426
Passitrifasciatin, D-565
Patagonine, P-15
Patchoulipyridine, P-112
Pateamine A, P-113
Patellamide A, P-114
Patellamide B, P-115
Patellamide C, P-116
Patellamide D, P-117
Patellamide E, P-118
Patellamide F, P-119
Patellamide G, P-120

Patellin 1, P-121
Patellin 3, P-122
Patellin 4, P-123
Patellin 5, P-124
Patellin 6, P-125
Patentine, M-323
Pathocidin, A-735
Patricin, O-131
Patungensine, P-126
Patupilone, E-111
Paucicaline, P-127
Paucidactine A, P-128
Paucidactine B, P-128
Paucidactine C, P-129
Paucifinine *N*-oxide, K-74
Paucifinine, K-74
Pauciflorine A, P-130
Pauciflorine B, P-131
Paucine, C-456
Paucivenine, P-132
Pauridianthine, P-133
Pauridianthinine, P-134
Pauridianthinol, P-133
Pauridianthoside, P-135
Pausperadine A, U-8
Pavabid, P-79
Pavanoline, P-136
Paveral, C-555
Pavettine, V-139
Paxdaphnidine A, P-137
Paxdaphnidine B, D-34
Paxdaphnine A, P-138
Paxdaphnine B, P-139
Paxidine, C-555
Paxillarine A, D-264
Paxillarine B, D-263
Paxilline, P-140
Paxinorol, P-141
Paxiphylline A, P-142
Paxiphylline B, P-143
Paynantheine, G-13
PB 421, A-176
PB 448, I-82
PB 490, I-82
PB4, D-631
PC 3, M-491
PC-M4, P-144
PC-M5′, P-140
PC-M5, P-145
PC-M6, P-140
PD 116152, A-1221
PD 125375, P-146
PDE I, A-1222
PDE II, A-1223
PDMEA, D-197
PEA, P-38
Pearsonine, T-558
Peceylanine, P-147
Peceyline, P-148
Pecilocin, V-34
Pecrassipine A, P-149
Pecrassipine B, P-150
Pectenine, T-167
Pedatisectine A, P-151
Pedatisectine C, P-152
Pedatisectine D, P-153
Pedatisectine E, P-154
Pedatisectine F, P-155
Pedatisectine G, T-250
Pedicularidine, P-156
Pedicularine, P-156
Pediculidine, P-157
Pediculine, P-158
Pediculinine, P-157
Pedoxin, P-159
Pedroamine, D-88
Pedrolon, A-898
Peduncin, P-160
Peduncularidine, P-161
Peduncularine, P-162
Peduncularistine, A-1442
Pedunculine, C-618
Peepuloidine, P-163
Pegaline, H-697
Pegamine, H-706
Peganidine, P-164
Peganine *N*-oxide, P-165
Peganine, P-165
Peganol *N*-oxide, D-503
Peganol, D-503
Peg-paclitaxel, T-52
Peimidine, P-166
Peimine, C-298
Peiminine, C-298
Peiminoside, C-298
Peimiphine, P-167
Peimisine, P-168
Peimitidine, P-169
Peimunine, P-170
Peinamine, P-171
Pelagiomicin A, H-514
Pelagiomicin B, H-514
Pelagiomicin C, H-514
Pelankine, P-172
Pelargonoyl vanillylamide, C-100
Pelirine, A-166
Ψ-Pelletierine, A-1580
Pelletierine, P-173
Pellitorine, D-106
Pellotine, T-237
Pelonin, P-897
Pelosine, C-812
Penangine, M-577
Penaramides, P-174
Penarcine, L-347
Penaresamides, P-174
Penaresidin B, P-175
Penaresin, B-336
Penarolide A_1, P-176
Penarolide A_2, P-177
Penarolide sulfate A_1, P-176
Penarolide sulfate A_2, P-177
Penasulfate A, P-178
Pencolide, P-179
Pendilinine, C-552
Pendine, C-552
Pendolmycin, P-180
Pendulamine A, P-181
Pendulamine B, P-181
Penduline, M-313
Penduline, T-286
Penduline, T-563
Pendulinine, C-552
Pengbeimine A, P-182
Pengbeimine B, P-182
Pengbeimine C, P-183
Pengbeimine C, P-212
Pengbeimine D, P-182
Pengbeisine A, K-114
Pengbeisine B, K-114
Pengshenine A, P-184
Pengshenine B, M-375
Peniamidienone, P-185
Penicidone A, P-186
Penicidone B, P-186
Penicidone C, P-187
Penicillazine, T-487
Penicillenol A_1, P-188
Penicillenol A_2, P-188
Penicillenol B_1, P-188
Penicillenol B_2, P-188
Penicillenol C_1, P-188
Penicillenol C_2, P-188
Penidiamide, P-189
Penidilamine, P-190
Penigequinolone A, P-191
Penigequinolone B, P-191
Penimide A, P-192
Penimide B, P-192
Penimide, P-192
Peniprequinolone, P-193
Penitrem A, P-194
Penitrem B, P-194
Penitrem C, P-194
Penitrem D, P-194
Penitrem E, P-194
Penitrem F, P-194
Penitrem G, P-194
Penitremone A, P-194
Penitremone B, P-194
Penitremone C, P-194
Penniclavine, S-273
Pennigritrem, P-195
Pennsylpavine, P-196
Pennsylpavoline, P-196
Pennsylvanamine, T-312
Pennsylvanine, T-312
Penochalasin A, P-197
Penochalasin B, P-197
Penochalasin C, P-197
Penochalasin D, P-197
Penochalasin E, C-325
Penochalasin F, C-325
Penochalasin G, C-328
Penochalasin H, C-326
1,5,9,14,18-Pentaaazaoctadecane, D-289
1,11,19,27,35-Pentaamino-3-tetracontanol, P-198
1,6,11,16,21-Pentaazadocosane, D-290
1,6,10,15,20-Pentaazaeicosane, D-291
1,5,9,13,17-Pentaazaheptadecane, T-456
1,5,10,14,19-Pentaazanonadecane, D-287
1,5,9,13,18-Pentaazaoctadecane, D-288
4,8,12,16,20-Pentaazatricosane-1,23-diamine, P-199
2,4,4′,6,6′-Pentabromo-2′,3-bis(methylthio)-1,3′-bi-1*H*-indole, P-200
3,3′,4,4′,5-Pentabromo-5′-chloro-2,2′-bi-1*H*-pyrrole, P-201
3,3′,4,4′,5-Pentabromo-5′-chloro-1,1′-dimethyl-2,2′-bi-1*H*-pyrrole, P-201
2,4,4′,6,6′-Pentabromo-2′-(methylthio)-3,3′-bi-1*H*-indole, T-110
Pentabromopseudilin, D-324
Pentachloropseudilin, D-324
N^b-Pentacosanoyltryptamine, T-639
O^1,O^2,O^6,O^9,O^5-Pentadeacylevonine, P-248
2,9-Pentadecadiene-12,14-diynoic acid (2-hydroxyisobutyl)amide, P-202
2,9-Pentadecadiene-12,14-diynoic acid isobutylamide, P-202
2,9-Pentadecadiene-12,14-diynoic acid, P-202
1-Pentadecanamine, P-203
N-Pentadecanoylarginine, A-1413
N-Pentadecanoyltyrosine, T-700
2-(6,9,12-Pentadecatrienyl)-4(1*H*)-quinolinone, H-657
8-(3,6,9-Pentadecatrienyl)-1,5,9,13-tetraazacycloheptadecan-6-one, B-389
5-(6-Pentadecenyl)-1*H*-pyrrole-2-carboxaldehyde, A-624
8-(11-Pentadecenyl)-1,5,9,13-tetraazacycloheptadecan-6-one, B-389
1-Pentadecylamine, P-203
4-Pentadecylpyridine, P-204
2-Pentadecyl-4-quinolinol, H-657
2-Pentadecyl-4(1*H*)-quinolinone, H-657
8-Pentadecyl-1,5,9,13-tetraazacycloheptadecan-6-one, B-389
2-(1,3-Pentadienyl)piperidine, H-658
2-(1,3-Pentadienyl)-4-piperidinol, H-658
Pentagydine, G-152
Pentagyline, M-322
Pentagynine, G-152
1,2,3,4,5-Pentahydroxy-9*H*-acridin-9-one, P-205
1,2,3,5,6-Pentahydroxy-9*H*-acridin-9-one, P-206
1,2,3,4,5-Pentahydroxyacridone, P-205
1,2,3,5,6-Pentahydroxyacridone, P-206
1,3,4,5,6-Pentahydroxyacridone, P-207
1,2,3,9,10-Pentahydroxyaporphine, P-208
1,2,8,9,10-Pentahydroxyaporphine, P-210
1,2,9,10,11-Pentahydroxyaporphine, P-211
1,2,3,10,11-Pentahydroxyaporphine, P-209
3,7,14,16,20-Pentahydroxycevan-6-one, P-212
3,3′,4,4′,5-Pentahydroxy-2,7′-cyclolign-7-ene-9,9′-dioic acid, P-213
1,2,6,7,9-Pentahydroxydibenz[*cd*,*f*]indol-4(5*H*)-one, P-214
1,2,4,6,9-Pentahydroxydihydro-β-agarofuran, P-215

1,2,6,8,9-Pentahydroxydihydro-β-agarofuran, P-216
1,2,6,9,14-Pentahydroxydihydro-β-agarofuran, P-217
1,2,8,9,14-Pentahydroxydihydro-β-agarofuran, P-218
1,4,6,8,9-Pentahydroxydihydro-β-agarofuran, P-219
1,6,8,9,14-Pentahydroxydihydro-β-agarofuran, P-220
4,5,6,7,8-Pentahydroxyfuro[2,3-*b*]quinoline, F-214
1,2,10,11,12-Pentahydroxyhomoaporphine, P-221
3,5,8,9,15-Pentahydroxy-6(17),11-jatrophadien-14-one, P-222
1,2,3,4,6-Pentahydroxynortropane, A-1586
3,8,12,14,17-Pentahydroxypregn-5-en-20-one, P-223
2,3,4,7,8-Pentahydroxyquinoline, Q-39
5,7,9,13,14-Pentahydroxy-4(20),11-taxadien-10-one, P-224
4,9,12,13,20-Pentahydroxy-1,6-tigliadien-3-one, P-225
5,9,12,13,20-Pentahydroxy-1,6-tigliadien-3-one, P-226
Pentalupine, P-227
1,2,3,5,6-Pentamethoxyacridone, P-206
1,2,3,9,10-Pentamethoxyaporphine, P-208
1,2,3,9,10-Pentamethoxy-7*H*-dibenzo[*de,g*]quinolin-7-one, O-203
6,6′,7,10,12-Pentamethoxy-2,2′-dimethylberbaman, C-23
5,6,6′,7,12-Pentamethoxy-2,2′-dimethylberbaman-14-ol, T-311
5,6,6′,7,12′-Pentamethoxy-2,2′-dimethyloxyacanthan, T-346
6,6′,7,7′,12-Pentamethoxy-2,2′-dimethylthalidasan, T-320
4,5,6,7,8-Pentamethoxyfuro[2,3-*b*]quinoline, F-214
4,5,6,9,10-Pentamethoxyindeno[1,2,3-*ij*]isoquinoline, I-33
2,3,4,6,7-Pentamethoxy-1-(2-methylaminoethyl)-phenanthrene, T-316
2,3,7,8,10-Pentamethoxy-5-methylbenzo[*c*]phenanthridinium(1+), S-55
2,3,4,6,7-Pentamethoxy-*N*-methyl-1-phenanthrenemethanamine, T-316
1,2,3,9,10-Pentamethoxynoraporphine, P-208
1,2,3,9,10-Pentamethoxyoxoaporphine, O-203
2,3,4,6,7-Pentamethoxyphenanthroindolizidine, P-228
3,4,5,6,7-Pentamethoxyphenanthroindolizidine, T-278
1,2,3,9,10-Pentamethoxytetrahydroprotoberberine, C-93
N,*N*,*N*′,*N*″,*N*″-Pentamethyldipropylenetriamine, D-255
Pentamethylenediamine, P-229
1,1′-Pentamethylenediguanidine, D-401
1,5-Pentanediamine, P-229
N,*N*′-(1,5-Pentanediyl)bis[3-(3,5-diiodo-4-methoxyphenyl)-2-dimethylaminopropanamide], D-729
N,*N*′-1,5-Pentanediylbisguanidine, D-401
N-Pentanoylpyrrothine, A-759
Pentaphylline, F-223
Racophorus Pentapteridinyl skin pigment, P-230
Pentasine, P-231
1-Pentene-1,5-diamine, P-232
2-Pentene-2,3-dioic acid, E-252
cis-2-(4-Pentenyl)-6-pentylpiperidine, D-813
trans-2-(4-Pentenyl)-6-pentylpiperidine, D-813
2-(4-Penten-1-yl)-Δ^1-piperideine, T-214
2-(1-Pentenyl)quinoline, P-238
2-(1*E*-Pentenyl)-4(1*H*)-quinolinone, H-660
2-(1*Z*-Pentenyl)-4(1*H*)-quinolinone, H-660
Pentifylline, T-355
Pentosidine, P-233
Pentouregine, P-234
Pentyl β-carboline-1-propionate, C-134
1-Pentyl-9-azabicyclo[3.3.1]nonan-3-one, P-235
N,*N*′-Pentylenebis(cantharimide), P-650
1-Pentyloctylamine, T-506
6-Pentyl-3-piperidinol, P-236
2-Pentylpyridine, P-237
2-Pentyl-3,4-quinolinediol, A-621
2-Pentylquinoline, P-238
2-Pentyl-4-quinolinol, H-660
2-Pentyl-4(1*H*)-quinolinone *N*-oxide, H-660
2-Pentyl-4(1*H*)-quinolinone, H-660
Pentylsmenospongine, S-329
Peptard, T-632
Pepuline, P-239
Perakenine, R-29
Perakine dimethyl acetal, P-240
Perakine, P-240
Peraksine, P-241
Peramine, P-242
Per(deacyl)alatusamine, P-243
Per(deacyl)chuchuhuanine, P-244
Per(deacyl)-24-demethylemarginatine, P-245
Per(deacyl)emarginatine, P-246
Per(deacyl)euojaponin, P-247
Per(deacyl)evonine, P-248
Perdeacylhippocrateine, P-246
Per(deacyl)hypoglaunine, P-249
Per(deacyl)isowilfordine, P-250
Per(deacyl)oppositine A, P-251
Per(deacyl)wilforine, P-252
Per(deacyl)wilfortrine, P-253
Peregrine alcohol, M-347
Peregrine, M-347
Peregrinine, M-374
Pereirine, G-34
Peremin, H-307
Perfamine, P-254
Perfaminole, H-57
Perforine, H-57
Perfragilin A, P-255
Perfragilin B, P-255
Pergilone, M-321
Pergularinine, T-696
Pergumidiene, B-266
Perhentinine, P-256
Periblastine, V-110
13′-Peribogamine, T-8
Pericalline, A-1365
Pericampylinone A, I-305
Pericidine, P-257
Pericine *N*-oxide, S-624
Pericine, S-624
Periconin A, P-266
Periconin B, P-258
Pericristine, V-128
Pericyclivine, T-425
Periformyline, P-268
Perimargine, P-259
Perimivine, P-260
Perinadine A, P-261
Peripentadenine, P-262
Peripentonine A, P-263
Peripentonine B, P-263
Peripentonine C, P-264
Periphylline, P-265
Peristrophamide, D-707
Peristrophine, A-862
Peritassine A, P-249
Peritassine B, P-249
Peritoxin A, P-266
Peritoxin B, P-266
Perividine, P-267
Perivine, P-268
13′-Perivoacangine, V-168
Perlolidine, B-75
Perloline, P-269
Perlolyrine, P-270
Permiran, Q-17
Peronatin A, P-271
Peronatin B, P-271
Perophoramidine, P-272
Perosine, P-273
Peroxysimulenoline, Z-5
Peroxywybutine, W-29
Persicanidine A, C-290
Persicanidine B, C-290
Persicaside, H-671
Persinine, C-290
Perspicamide A, P-274
Perspicamide B, P-274
Peruvianine, P-275
Pervilleine A *N*-oxide, M-392
Pervilleine A, M-392
cis-Pervilleine B, M-391
Pervilleine B, M-391
Pervilleine C, M-391
Pervilleine D, M-392
Pervilleine E, M-391
cis-Pervilleine F, M-391
Pervilleine F, M-391
Pervilleine G, M-391
Pervilleine H, M-392
Pervincamine, V-115
Peshawarine, P-276
Pessoine, X-30
Petaline methine, L-96
Petaline, G-143
Petasinecine, H-518
Petasinine, H-518
Petasinoside, H-518
Petasitenine, P-277
Petchicine, P-278
Petilidine, C-290
Petiline, H-483
Petilinine, C-290
Petine *N*-oxide, C-298
Petine, C-298
Petisidine, P-279
Petisidinine, P-280
Petisidinone, P-279
Petisine, P-281
Petisinine, P-281
Petitianine, P-516
Petizine, P-281
Petizinine, P-281
Petomine, P-282
Petrobactin sulfonate, P-283
Petrobactin, P-283
Petromindole, P-284
Petromurin A, P-285
Petromurin B, P-285
Petromurin C, P-286
Petromurin D, P-286
Petromyzonamine disulfate, P-287
Petromyzonamine, P-287
Petrosamine B, P-288
Petrosamine, P-288
Petrosaspongiolide L, P-289
Petrosine A, P-290
Petrosine B, P-290
Petrosine, P-290
Petunaisterone C 22-nicotinate-7-acetate, P-295
Petunianine A, P-291
Petunianine B, P-292
Petunianine C, P-293
Petuniasterone B 22-*O*-acetate, P-294
Petuniasterone B 7,22-dinicotinate, P-294
Petuniasterone B 22-nicotinate, P-294
Petuniasterone B, P-294
Petuniasterone C 7,22-dinicotinate, P-295
Petuniasterone C 22-*O*-[(methylthio)carbonyl]acetate, P-295
Petuniasterone C 22-nicotinate, P-295
Petuniasterone C, P-295
Petuniasterone-B 22-*O*-[(Methylthio)carbonyl]acetate, P-294
Peyocactine, H-357
Peyoglunal, P-296
Peyoglutam, P-297
Peyonine, P-298
Peyophorine, A-1021
Peyoruvic acid, P-299
Peyotine, T-237
Peyotline, T-237
Peyoxylic acid, T-175
PF 1018, A-1224
PF 1052, A-1225
PF 1140, A-1226
PF 1163A, A-1227
PF 1198A, A-240
PF 1126A, C-208

PF 1138A, C-209
PF 1163B, A-1227
PF 1198B, A-240
PF 1126B, C-208
PF 1138B, C-209
PF 1101B, S-282
PF 1191, K-5
PF 00520904, P-90
P11012, G-3
P11149, G-3
PG-TXL, T-52
Phaeantharine, P-300
Phaeanthine 2′α-*N*-oxide, P-301
Phaeanthine, P-301
Phaeosphaeride A, P-302
Phaeosphaeride B, P-302
Phakellistatin 3, P-303
Phalaenopsine Is, P-304
Phalaenopsine La, P-304
Phalaenopsine T, P-304
Phalaenopsines, P-304
Phalarine, P-305
Phallacidin, P-306
Phallacin, P-307
Phallasacin, P-309
Phallin B, P-308
Phallisacin, P-309
Phallisin, P-310
Phalloidin, P-311
Phalloin, P-312
Phamine, C-744
Phanostenine, D-346
Phascoline, P-313
Phascolosomine, P-314
Phaseolunatin, H-617
Pheantharine, P-300
Pheanthine, P-301
Phellibilidine, P-315
Phellibiline, P-315
Phellinamide, H-321
Phellinine, S-126
Phelloberin, B-101
Phellodendrine, X-30
Phenacein, D-643
Phenacetamide, P-336
Phenacylamine, A-694
N-Phenacylbenzamide, A-694
Phenalamide A1, P-316
Phenalamide A2, P-316
Phenalamide A3, P-316
Phenalamide B, P-317
Phenalamide C, P-316
2-(Phenanthro[3,4-*d*]-1,3-dioxole-6-nitro-5-carboxamido)propanoic acid, M-447
Phenanthroviridin, D-612
Phenatic acid A, P-318
1-Phenazinecarboxamide, P-319
1-Phenazinecarboxylic acid, P-319
1,6-Phenazinedicarboxylic acid, P-320
1,6-Phenazinediol 5,10-dioxide, P-321
1,6-Phenazinediol, P-321
1,8-Phenazinediol, P-322
1,9-Phenazinediol, P-323
2,3-Phenazinediol, P-324
2,3,7-Phenazinetriol, P-326
1,2,6-Phenazinetriol, P-325
1-Phenazinol, P-327
2-Phenazinol, P-328
Phenazinomycin, P-329
2(10*H*)-Phenazinone, P-328
Phenazostatin A, P-330
Phenazostatin B, P-331
Phenazostatin C, P-332
Phenazostatin D, P-331
Phenazoviridin, M-417
Phencomycin, P-320
N-(2-Phenethenyl)-2-hydroxypropanamide, X-27
Phenethyl 2-pyrrolecarboxylate, P-944
N-Phenethylacetamide, P-342
Phenethylamine, P-342
β-Phenethylamine, P-342
N-Phenethylbenzamide, P-342
2-Phenethylformamide, P-342
N-Phenethylhexanamide, P-342
N-Phenethylisobutyramide, P-342
N-Phenethylisovaleramide, P-342
N-Phenethylpropionamide, P-342
Phenochalasin A, C-945
Phenochalasin B, C-945
Phenomydrol, A-694
Phenopicolinic acid, H-426
Phenoptin, T-142
Phenopyrrozin, P-333
Phenoxan, P-334
3*H*-Phenoxazin-3-one, P-335
3-Phenoxazone, P-335
9-Phenoxyacridine, A-112
9-Phenoxy-1-phenazinecarboxylic acid, H-664
6-Phenoxypurine, P-820
2-Phenoxypyrazine, P-889
N-(2-Phenyethyl)-2,4-octadienamide, O-39
Phenyl hydrogen 2-aminoethyl phosphate, A-768
Phenylacetic acid, P-336
Phenylacetonitrile, P-336
7-Phenylacetoxynortropan-3-ol, A-1585
3-(*N*-Phenylacetylamino)piperidine-2,6-dione, D-808
N-(Phenylacetyl)-2-butenediamide, P-337
1-Phenylacetyl-β-carboline, E-289
N-Phenylacetylfumaramide, P-337
Phenylacetylscopine, S-158
Phenylahistin, P-338
Phenylalanylproline anhydride, C-891
Phenylalanyl-*N*-[1-(1,2,3,4-tetrahydro-6-hydroxy-7-methoxy-2-methyl-1-isoquinolinyl)ethyl]glycinamide, P-339
2-(Phenylamino)-1,4-naphthalenedione, A-1040
4-(Phenylamino)-2-(phenylimino)-1(2*H*)-naphthalenone, L-311
2-Phenyl-1-benzazocin-8-ol, P-340
Phenylethanoic acid, P-336
1-Phenylethanolamine, A-864
N-(2-Phenylethenyl)-2-decene-6,8-diynamide, D-130
2-(2-Phenylethenyl)indole, P-341
3-(2-Phenylethenyl)-4(3*H*)-quinazolinone, Q-14
N-(2-Phenylethyl)acetamide, P-342
2-Phenylethylamine, P-342
3′-(2-Phenylethylamino)avarone, A-1560
N-(2-Phenylethyl)benzamide, P-342
N-(2-Phenylethyl)carbamic acid, P-343
N-2-Phenylethylcinnamamide, P-344
N-(2-Phenylethyl)-2,8-decadiene-4,6-diynamide, D-103
N-(2-Phenylethyl)-2-decene-6,8-diynamide, D-130
N-(2-Phenylethyl)-2-decene-4,6,8-triynamide, D-131
1′-(2-Phenylethylene)ditryptophenaline, D-874
(2-Phenylethyl)formamide, P-342
N-(2-Phenylethyl)-14-heptadecene-4,16-diynamide, H-117
N-(2-Phenylethyl)hexadecanamide, P-342
N-(2-Phenylethyl)hexanamide, P-342
N-(2-Phenylethyl)-2-nonene-6,8-diynamide, N-282
N-(2-Phenylethyl)propanamide, P-342
N-(2-Phenylethyl)-3,5-undecadiene-8,10-diynamide, U-27
N-(2-Phenylethyl)-2,4-undecadiene-8,10-diynamide, U-26
3-Phenylglyceric acid, D-651
β-Phenylglycidic acid, P-348
16-Phenyl-2,4-hexadecadienoic acid, P-345
3-Phenylisoserine, A-808
8-Phenyllobelol I, S-210
8-Phenyllobelol, S-210
N-(Phenylmethyl)acetamide, B-84
3-[2-(Phenylmethyl)-5-oxazolyl]-1*H*-indole, A-622
3-(Phenylmethyl)-2(1*H*)-pyrazinone, B-90
2-(Phenylmethyl)-4-quinazolinol, B-93
2-(Phenylmethyl)-4(3*H*)-quinazolinone, B-93
4-Phenyl-2,7-naphthyridin-1-amine, A-865
4-Phenyl-2,7-naphthyridin-1(2*H*)-one, H-686
8-Phenylnorlobelol I, S-210
5-Phenyl-2-oxazolidinethione, P-346
5-Phenyl-2-oxazolidinone, P-347
3-Phenyloxiranecarboxylic acid, P-348
4-(5-Phenylpentyl)-1*H*-indole-2,3-dione, P-349
4-(5-Phenylpentyl)isatin, P-349
3-Phenyl-*N*-(2-phenylethyl)propanamide, P-344
3-Phenyl-*N*-(2-phenylethyl)-2-propenamide, P-344
3-Phenylpropanoic acid 2,3-didehydro-4-hydroxypiperidide, A-1568
3-Phenylpropanoic acid pyrrolidide, P-351
3-Phenylpropanoic acid, P-350
Phenylpropanolamine hydrochloride, A-869
Phenylpropanolamine polistirex, A-869
Phenylpropanolamine, A-869
N-(3-Phenylpropanoyl)pyrrole, P-351
N-(3-Phenylpropanoyl)-Δ^3-pyrrolidone, S-86
10-Phenyl-8-propyllobeliolone, D-403
1-Phenyl-1*H*-pyrazole-3-carboxylic acid, P-890
1-Phenyl-1*H*-pyrazole-5-carboxylic acid, P-890
4-Phenylpyridine, P-352
4-Phenyl-3-(2-pyridinyl)-2-buten-1-ol, P-353
2-Phenyl-1-(9*H*-pyrido[3,4-*b*]indol-1-yl)ethanone, E-289
1-Phenyl-1*H*-pyrrole-2-carboxaldehyde, P-942
1-Phenyl-1*H*-pyrrole-2-carboxylic acid, P-944
1-Phenyl-2-pyrroline, D-499
3-Phenyl-2,4(1*H*,3*H*)-quinazolinedione, Q-13
3-Phenyl-4(3*H*)-quinazolinone, Q-14
1-Phenyl-4(1*H*)-quinazolinone, Q-14
2-Phenyl-4,5-quinolinediol, D-658
2-Phenyl-4,6-quinolinediol, D-659
2-Phenyl-4,7-quinolinediol, D-660
2-Phenylquinoline, P-354
3-Phenylquinoline, P-355
2-Phenyl-4-quinolinol, H-693
2-Phenyl-4(1*H*)-quinolinone, H-693
Phenyltartronic acid, H-688
8-Phenyl-1,5,9,13-tetraazaheptadecan-6-one, P-673
2-Phenyl-1,5,9,14-tetraazobicyclo[12.3.1]octadecan-4-one, P-665
1-Phenyl-1,4-tetralindicarboxylic acid discopine ester, S-157
2-Phenyl-1,5,9-triazacyclotridecan-4-one, P-356
Phevalin, B-88
Phidolopin, P-357
Philanthotoxin 433, P-358
δ Philanthotoxin, P-358
Philippinamide, P-359
Philogaline, P-360
Phlebicine, R-114
Phlegmarine, P-361
Phlegmariurine A, P-362
Phlegmariurine B, P-363
Phlegmariurine C, P-364
Phlegmariurine M, P-365
Phlegmariurine N, H-479
Phloeodictine A (obsol.), P-366
Phloeodictine A1, P-366
Phloeodictine A2, P-366
Phloeodictine A3, P-366
Phloeodictine A4, P-366
Phloeodictine A5, P-366
Phloeodictine A6, P-366
Phloeodictine A7, P-366
Phloeodictine A, P-366
Phloeodictyne A, P-366
Phloeodictyne B, P-367
Phloeodictyne C, P-368
Phloretic acid, H-689
Phloretinic acid, H-689
Phocenic acid, M-409
Phoebe base II, T-524
Phoebe base 2, L-72
Phoebe base, T-248
Phoebegrandine A, R-116
Phoebegrandine B, R-116
Phoebegrandine C, R-116
Phoebegrandine D, R-116
Phoebegrandine E, O-49
Phoebescortechiniine, R-116
Phoebine, P-369
Phoenicanthusine, P-370
Pholiosidine, F-122

Pholiotic acid, D-248
Phomacin A, P-371
Phomacin B, P-371
Phomacin C, P-372
Phomasetin, P-373
Phomazarine, P-374
Phomin, C-943
Phomoenamide, P-375
Phomopsichalasin, P-376
Phomopsin A, P-377
Phorbasin E, P-378
Phorbasin F, P-378
Phorbazole A, P-379
Phorbazole B, P-379
Phorbazole C, P-379
Phorbazole D, P-379
4α-Phorbol, P-225
Phorboxazole A, P-380
Phorboxazole B, P-380
Phormidinine A, P-909
Phormidinine B, P-909
Phosphatidyllycorine, L-348
Phosphatidylmethyllycorinium, L-348
Phosphatidylpseudolycorine, P-716
O-Phosphoethanolamine, A-768
Phospholombricine, L-240
2-(3-Phosphonoguanidino)ethanesulfinic acid, G-203
N^2-(17-Phosphonooxylinolenoyl)glutamine, H-645
N^2-(17-Phosphonooxylinoleoyl)glutamine, H-645
Phosphonyldeoxycholine, T-602
Phosphoric acid mono[2-(dimethylamino)ethyl] ester, D-197
Phosphoryldimethylaminoethanol, D-197
Phosphoryldimethylcholamine, D-197
Phosphoryldimethylethanolamine, D-197
N-Phosphoryllombricine, L-240
Phosphothalessemine, L-240
Photobactin, P-381
Photolumazine B, P-382
Photolumazine C, P-382
Phthalimide, P-383
3,4-Phthaloylpyridine, B-71
Phthoxazolin A, I-161
Phthoxazolin B, I-161
Phthoxazolin C, I-161
Phthoxazolin D, I-161
PhTX-433, P-358
Phulchowkiamide A, D-281
Phycodioic acid, D-104
Phygrine, P-384
Phyllalbine *N*-oxide, C-633
Phyllalbine, C-633
Phyllanthimide, P-385
Phyllanthine, P-386
Phyllanthin, H-520
Phyllanthoside, H-520
Phyllantidine, P-387
Phylline, T-177
Phyllocactin II, B-110
Phyllocactin, B-110
Phyllochrysine, A-630
Phyllocryptine, R-123
Phyllocryptonine, P-388
Phyllospadine, P-389
Phyllostemine, S-248
Phyllosteminine, P-390
Phyllosterone, R-165
Phyllostictine A, P-391
Phyllostictine B, P-392
Phyllostictine C, P-393
Phyllostictine D, P-394
Physarigin A, P-395
Physarigin B, P-396
Physarigin C, P-395
Physarorubinic acid A, P-397
Physarorubinic acid B, P-398
Physochlaine, M-391
Physoperuvine, P-399
Physostigmine oxide, G-51
Physostigmine salicylate, P-400
Physostigmine sulfate, P-400
Physostigmine, P-400
Physostol, P-400
Physovenine, P-401
Phytolaccanin, B-110
PI 091, A-1228
PI 290, B-29
Pibocine A, F-49
Pibocine B, F-49
Piccolamine *N*-oxide, P-402
Piccolamine, P-402
Piclavine A, D-133
Piclavine A_1, D-133
Piclavine A_2, D-133
Piclavine A_3, D-133
Piclavine A_4, D-133
Piclavine B, D-107
Piclavine C, D-107
2-Picoline methiodide, M-537
α-Picoline, M-537
Picolinic acid, P-896
Picraconitine, M-331
Picralinal, B-420
(*Z*)-Picralinal, B-420
Picraline, B-420
Picralstonine, P-417
Picranitine, P-403
Picraphylline, P-404
Picrasidine A, P-406
Picrasidine B, P-407
Picrasidine C, P-408
Picrasidine D, D-724
Picrasidine E, P-409
Picrasidine F, P-410
Picrasidine G, P-416
Picrasidine H, P-411
Picrasidine I, D-686
Picrasidine J, D-686
Picrasidine K, P-412
Picrasidine L, P-413
Picrasidine M, P-414
Picrasidine N, P-414
Picrasidine O, P-413
Picrasidine P, D-709
Picrasidine Q, D-546
Picrasidine R, P-415
Picrasidine S, P-416
Picrasidine T, P-416
Picrasidine U, P-414
Picrasidine V, C-135
Picrasidine W, T-531
Picrasidine X, P-405
Picrasidine Y, P-405
Picratidine, B-420
Picrinine, P-417
Pictamine, P-418
Pictonamine, P-419
Pictumine, M-323
Pictumine, P-420
Pidolic acid, O-206
Piepunendine A, T-239
Piepunendine B, A-100
Piepunensine A, M-352
Pierardine, D-739
Piericidin B_5 *N*-oxide, P-421
Piericidin B_1, P-421
Piericidin B_2, P-421
Piericidin B_3, P-421
Piericidin B_4, P-421
Piericidin B_5, P-421
Piericidin C_1, P-421
Piericidin C_2, P-421
Piericidin C_3, P-421
Piericidin C_4, P-421
Piericidin C_5, P-421
Piericidin C_6, P-421
Piericidin C_7, P-421
Piericidin C_8, P-421
Piericidin D_1, P-421
Piericidin D_2, P-421
Piericidin D_3, P-421
Piericidin D_4, P-421
Piericidinol A_1, P-422
Piericidin, P-421
Pilagan, P-424
Pillijanine, P-423
Pilocarpidine, P-424
Pilocarpine hydrochloride, P-424
Pilocarpine, P-424
Pilocarpol, P-424
Piloceredine, P-425
Pilocereine, P-425
Pilofrin, P-424
Pilokeanine, P-426
Pilomiotin, P-424
Pilopine VS, P-424
Pilosamycin, P-427
Pilosine, P-428
Pilosinine, P-429
Pilosinone, P-428
Piloturine, P-430
Pilovisc, P-424
Pimpifolidine, D-99
Pimpinellidine, P-431
Pimprinaphine, A-622
Pimprinethine, A-622
Pimprinine, A-622
Pingbeidinoside, P-432
Pingbeinine, P-433
Pingbeininoside, P-433
Pingbeinone, P-434
Pingpeimine A, C-293
Pingpeimine B, C-292
Pingpeimine C, P-212
ent-3-(+)-Pinidine, M-522
Pinidine, M-522
Pinidinol, H-705
Pinnaic acid, P-435
Pinnamine, P-436
Pinnatasterone, H-244
Pinnatoxin A, P-437
Pinnatoxin B, P-438
Pinnatoxin C, P-438
Pinnatoxin D, P-439
Pinoline, T-173
Pinolinone, P-440
Pipbinine, P-441
Pipecolic acid methylbetaine, H-348
Pipecolic acid, P-456
Pipecolinic acid, P-456
Piperadione, C-273
Piperamide-C5:1 (2*E*), M-456
Piperamide-C7:1 (6*E*), M-452
Piperamide-C7:2 (2*E*,6*E*), M-452
Piperamide-C9:1 (8*E*), M-455
Piperamide-C9:2 (2*E*,8*E*), M-455
Piperamide-C9:3 (2*E*,4*E*,8*E*), M-455
Piperanine, P-467
Piperarborenine A, P-474
Piperarborenine B, P-474
Piperarborenine C, P-442
Piperarborenine D, P-474
Piperarborenine E, P-442
Piperarboresine, P-443
Piperarboricoline, P-452
3,3′-(2,5-Piperazinediyl)bis[6-bromo-1*H*-indole], D-929
Piperazinomycin, P-444
Piperazirum, P-445
Pipercallosidine, P-446
Pipercallosine, P-447
Piperchabamide A, P-463
Piperchabamide B, P-471
Piperchabamide C, P-448
Piperchabamide D, P-469
Pipercide, R-60
Pipercitine, O-36
Pipercyclamide, P-449
Pipercyclobutanamide A, P-450
Pipercyclobutanamide B, P-451
Piperdardine, P-452
Pipereicosalidine, E-51
Piperettine, P-452
Piperettyline, P-453
1-Piperettylpyrrolidine, P-453
Pipericine, O-29
Δ^2-Piperideine, T-220

Piperidic acid, A-715
1-Piperidinecarboxaldehyde, P-455
2-Piperidinecarboxylic acid, P-456
4,4-Piperidinediol, P-459
Piperidine, P-454
2,4,5-Piperidinetricarboxylic acid, P-457
3,4,5-Piperidinetriol, P-458
Piperidinic acid, A-715
Piperidinic lactam, P-956
2-Piperidinimine, I-49
4-Piperidinone, P-459
1-(2-Piperidino)-2-propanol, S-216
5-(2-Piperidinyl)-2,3′-bipyridine, A-963
1-(2-Piperidinyl)-2-butanol, H-435
1-(2-Piperidinyl)-2-butanone, H-435
1-(2-Piperidinyl)-2-pentanone, H-37
1-(2-Piperidinyl)-1-propanol, C-603
1-(2-Piperidinyl)-1-propanone, C-604
1-(2-Piperidinyl)-2-propanone, P-173
3-(2-Piperidinyl)pyridine, P-460
4-Piperidone-2-carboxylic acid, O-196
γ-Piperidone, P-459
N-Piperidyl-*p*-hydroxyphenylacetonitrile, G-80
Piperine S, P-465
Piperine, P-467
Piperlactam S, D-567
Piperlongine, P-461
Piperlongumine, P-473
Piperlonguminine, P-462
Piperlotine A, H-691
Piperlotine B, H-691
Piperlotine C, T-578
Piperlotine D, T-578
Piperlotine E, P-351
Piperlotine F, P-956
Piperlotine G, P-956
Piperlotine H, P-956
Piperlotine I, P-955
Piperlotine J, A-714
Piperlotine K, A-714
Piperlotine L, A-714
Pipermethystine, P-463
Pipernonaline, P-464
Piperoctadecalidine, O-34
Piperolactam A, D-567
Piperolactam B, T-537
Piperolactam C, T-537
Piperolactam D, T-537
Piperolactam E, T-537
Piperolein A, P-465
Piperolein B, P-464
Piperonylic acid, M-442
Piperonylideneacetic acid, M-457
9-Piperonyl-2,4-nonadienoic acid, M-454
9-Piperonylnonanoic acid, M-454
Piperovatine, P-466
1-Piperoylpiperidine, P-467
1-Piperoylpyrrolidine, T-495
Piperpense, P-468
Pipersintenamide, P-452
Piperstachine, P-469
Pipertipine, P-470
Piperumbellactam A, D-567
Piperumbellactam B, D-567
Piperumbellactam C, D-567
Piperumbellactam D, D-567
Piperundecalidine, P-471
Piperx, W-17
Piperyline, T-495
Pipgulzarine, P-472
Piplaroxide, P-473
Piplartine dimer A, P-474
cis-Piplartine, P-473
Piplartine, P-473
Pipnoohine, O-33
Pipsaeedine, P-475
Piptahsine, H-502
Piptamine, O-115
Piptamine, P-203
Piptanthine, P-476
Piptigrine, P-464
Pipwaqarine, G-224
Pipyahyine, P-477
Pipzorine, O-30
Pirazofurin, P-891
Piricardio, A-845
Piricularin, P-478
Piridoxilate, P-923
Piriferine, P-479
Piriferinol, P-479
Pisatoside, D-459
Piscarinine A, P-480
Piscarinine B, P-481
Piscerythoxazole, P-482
Piscerythramine, P-483
Pisolithin A, H-687
Pisolithin B, H-520
Pisopowamine, P-484
Pisopowetine, P-484
Pisopowiaridine, P-484
Pisopowiarine, P-484
Pisopowidine, P-484
Pisopowine, P-484
Pistacimidelor, P-485
Pistillarine, S-398
Pitayine, Q-18
Pithecolobine, P-486
Pitiamide A, P-487
Pityriacitrin B, P-489
Pityriacitrin, P-488
Pityrialactone, P-490
Pityrianhydride, P-491
Pityriarubin A, P-492
Pityriarubin B, P-493
Pityriarubin C, P-494
Pityriazole, P-495
Pivagabine, A-715
PKC 412, S-498
Plakinamine A, P-496
Plakinamine B, P-497
Plakinamine C, P-498
Plakinamine D, P-498
Plakinamine E, P-496
Plakinamine F, P-496
Plakinamine G, P-499
Plakinamine H, P-497
Plakinamine I, P-500
Plakinamine I, P-501
Plakinamine J, P-502
Plakinamine K, P-496
Plakinidine A, P-503
Plakinidine B, P-503
Plakinidine C, P-503
Plakinidine D, P-503
Plakinidine E, P-504
Plakohypaphorine A, H-764
Plakohypaphorine B, H-764
Plakohypaphorine C, H-764
Plakohypaphorine D, H-764
Plakohypaphorine E, H-764
Plakohypaphorine F, H-764
Plakoridine A, P-505
Plakoridine B, P-506
Plakortamine A, P-507
Plakortamine B, V-139
Plakortamine C, P-508
Plakortamine D, P-509
Planchonelline, P-510
Planomycin, F-48
Plant indican, I-104
Plantagonine, B-254
Platencin, P-511
Platensic acid, P-512
Platensimide A, P-512
Platensimycin, P-513
Platifillin, P-516
Platyamide A, T-452
Platycerine *N*-methosalt, P-514
Platycerine, P-514
Platydesmine, P-515
Platydesminium, P-515
Platynecine 9-viridiflorate, M-146
Platynecine, H-233
Platynerepterin, P-771
Platyphylline *N*-oxide, P-516
Platyphylline, P-516
Plectocomine, T-173
Plectrodorine, P-517
Pleiaserpin, R-52
Pleiatensin simplex, R-52
Pleiocarpamine, P-518
Pleiocarpine, K-78
Pleiocarpinidine, E-6
Pleiocarpinilam, K-78
Pleiocarpinine, K-78
Pleiocarpoline, K-78
Pleiocarpolinine, K-78
Pleiocorine, P-519
Pleiocraline, P-520
Pleiomutine, P-521
Pleiomutinine, P-827
Pleurosine, L-162
Pleurospermine, P-522
Pleurostyline, P-523
Plicamine, P-524
Plicane, P-525
Plumerinine, P-526
Plumocraline, P-527
Pluviine, P-528
PM 53, A-1521
PM 94128, A-1229
PM 297, P-643
PM 93135, T-384
Pneumax MBT, B-79
PNU 141962, P-90
PO 1227A, Q-37
PO 1227B, Q-37
Podocarpamide, Z-6
Podopetaline, P-529
Poecillanosine, P-530
Poetamine, P-531
Poetaminine, L-348
Poetaricine, P-532
Poeticine, P-533
Poetinatine, C-532
Pogonopamine, P-534
Pogonopeine, P-535
Pogonopidine, P-536
Pogonopine, P-537
Pohakuline, P-538
Polonicumtoxin A, P-539
Polonicumtoxin B, P-539
Polonicumtoxin C, P-539
Polyalthenol, P-540
Polyalthine, B-471
Polyandrocarpamide A, P-541
Polyandrocarpamide B, P-541
Polyandrocarpamide C, P-541
Polyandrocarpamide D, P-542
Polyandrocarpamine A, P-543
Polyandrocarpamine B, P-543
Polyandrocarpidine A, P-544
Polyandrocarpidine B, P-544
Polyandrocarpidine C, P-545
Polyandrocarpidine D, P-545
Polyanine, S-445
Polyavolensin, G-172
Polyavolensinol, G-172
Polyavolensinone, G-172
Polyavolinamide, P-546
Epilachna borealis Polyazamacrolides, P-547
Polybeccarine, B-53
Polyberbine, P-548
Polycanthidine, P-549
Polycanthisine, P-550
Polycarpaurine A, P-553
Polycarpaurine B, P-551
Polycarpaurine C, P-552
Polycarpine, P-553
Polycarpine, P-554
Polycartine A, H-240
Polycartine B, O-54
Polycephalin B, P-555
Polycephalin C, P-555
Polycitone A, P-556
Polycitone B, P-556
Polycitorol A, P-557
Polycitorol B, P-558
Polycitrin A, P-559

Polycitrin B, P-559
Polyervine, C-621
Polyervinine, P-560
Polyfothine, D-625
Polygonapholine, P-561
Polygonatine A, D-447
Polygonatine B, D-447
Polygospermine, L-10
Poly-D-leucine, L-153
Poly-L-leucine, L-153
Polylongine, D-626
Polyneuridine aldehyde, P-562
Polyneuridine *N*-oxide, P-562
Polyneuridine, P-562
Polyschistine A, M-331
Polyschistine B, M-332
Polyschistine C, M-345
Polyschistine D, M-331
Polysignine, P-563
Polystictin, C-452
Polysuavine, O-85
Polyveoline, P-564
Polyzonimine, D-741
Ponapensin, P-565
Pontevedrine, P-566
Pool Eyes, B-101
Popidine, D-88
Popisidine, D-88
Popisine, D-88
Popisonine, D-88
Popisopine, D-88
Popolohuanone A, P-567
Popolohuanone B, P-567
Popolohuanone C, P-567
Popolohuanone D, P-568
Poranthericine, P-569
Porantheridine, P-570
Porantherilidine, P-571
Porantheriline, P-569
Porantherine, P-572
Pordamacrine A, Y-23
Pordamacrine B, Y-23
Porfiromycin, M-654
Poroidine, A-1597
Porothramycin A, P-573
Porothramycin B, P-573
Porphobilinogen, P-574
Porphyroxine, G-87
Porritoxin, C-437
Porritoxinsulfonic acid, C-437
Portamycin, S-566
Portulacaxanthin III, P-577
Portulacaxanthin II, P-576
Portulacaxanthin I, P-575
Portulaxanthine, P-575
Porveniramine, P-16
Potanidine A, D-182
Potanidine B, L-317
Potanine, M-309
Potanisine A, M-309
Potanisine B, G-91
Potanisine C, M-341
Potanisine D, M-341
Potanisine E, G-91
Potanisine F, G-91
Potanisine G, P-578
Powellamine, P-579
Powellidine, P-580
Powelline, P-581
Poweramine, P-582
Powerchrine, P-583
Poweridine, M-292
Powerine, M-291
PP-Ala, D-780
PP-Factor, P-895
PP-R, M-686
PP-Val, D-779
PP-V, C-150
PQQ, M-236
PQS, A-621
Praecoxine, T-248
Prajmalium bitartrate, A-216
Pramanicin, P-584
Prampine, T-632
Prangosine, P-585
Pratorimine, P-586
Pratorine, H-290
Pratorinine, P-586
Pratosine, P-586
Pravidel, E-157
Preakuammicine, P-587
Prealmazole C, P-588
Preapiodionene, P-589
Preaxinellamine, P-590
Prebalamide, P-591
Prebetanin, B-110
Pre-B, S-638
Precasine, P-592
Precatorine, P-593
Preclathridine A, P-594
Precoccinelline, D-886
Precondylocarpine, P-595
Precriwelline, P-626
Precurarine, P-596
Predicentrine, P-597
Pregna-14,16-diene-3,20-diamine, P-600
Pregna-4,14-diene-3,20-diamine, P-598
Pregna-5,16-diene-3,20-diamine, P-599
Pregnane-3,20-diamine, P-601
Pregnane-3,8,12,14,17,20-hexol, P-602
Pregnane-3,11,12,14,20-pentol, P-603
Pregnane-3,12,14,17,20-pentol, P-604
Pregn-14-ene-3,20-diamine, P-607
Pregn-16-ene-3,20-diamine, P-608
Pregn-4-ene-3,20-diamine, P-605
Pregn-5-ene-3,20-diamine, P-606
Pregn-6-ene-3,5,8,12,14,17,20-heptol, P-609
Pregn-5-ene-3,8,12,14,17,20-hexol, P-610
Preininger alkaloid, D-163
Prelandrine, P-673
Prelissoclinamide 2, P-611
Watasenia Preluciferin, C-560
Diaphus Preluciferin, P-612
Premavacurine, P-613
Premnazole, M-479
Premnine, P-614
Premuscimol, I-8
Prenirurine, B-375
Prenisatin, M-415
Prenostodione, P-615
9-Prenyladenine, A-137
1-Prenyladenine, A-137
N^6-Prenyladenine, Z-11
N^6-Prenylagmatine, A-719
Prenylcitpressine, P-616
N-Prenylguanidine, M-410
4-(N^1-Prenylguanido)butanoic acid, C-592
O-Prenylhalfordinol, H-12
N-Prenylhaplofoline, H-56
6-Prenyl-1*H*-indole-3-carboxylic acid, P-617
5-Prenylindole, M-412
6-Prenylindole, M-413
7-Prenylindole, M-414
3-Prenylindole, M-411
6-Prenyl-2-indolinone, H-701
5-Prenylisatin, M-415
6-Prenylisatin, M-416
6-Prenyloxindole, H-701
7-Prenyloxyflindersine, F-90
N-[2-(4-Prenyloxyphenyl)ethyl]tiglamide, H-667
4-Prenyloxy-2-quinolone, H-53
9-Prenylpaxilline, P-618
6-Prenyl-1-phenazinecarboxylic acid, M-417
9-Prenyl-1-phenazinecarboxylic acid, M-418
3-Prenyl-4-prenyloxy-2(1*H*)-quinolinone, A-1529
N-Prenylputrescine, B-422
4-Prenyltryptophan, M-419
6-Prenyltryptophol, H-497
Preocoteine *N*-oxide, P-208
Preocoteine, P-208
Preorixine, D-715
Preoxazinin 7, P-619
Prepatellamide A, P-620
Prepatellamide B formate, P-621
Preperaksine *O*-acetate, D-491
Prepsammaplin A, P-622
Prepseudopalmanine, P-623
Pre-Q1 base, A-699
Presecamine, P-624
Preskimmianine, P-625
Pretazettine, P-626
Pretomaymycin, T-424
Pretomeimycin, T-424
Preulicyclamide, P-627
Preulithiacyclamide, P-628
Preussin, B-89
pre-W, P-641
pre-X, P-642
Prianosin A, D-850
Prianosin B, D-850
Prianosin C, P-629
Prianosin D, D-852
Primapterin, A-924
Primocarcin, P-630
Primofax, N-319
Prioline, P-631
Pristinamycin II_A, O-131
Pristinamycin II_B, O-131
Pristinamycin, O-131
Proamanullin, A-673
Pro-Amid, P-674
Problaston, H-715
Probovatine, F-80
Procerine, P-632
Procevine, P-633
Prochaetoglobosin I, C-328
Prochaetoglobosin II, C-328
Prochaetoglobosin III, C-325
Prochaetoglobosin III, C-326
Prochaetoglobosin IV, C-325
Procumbine, P-634
Prodeoxyviolacein, P-675
Prodigiosene, P-635
Prodigiosin 25b, V-163
Prodigiosin 25c, U-31
Prodigiosin, P-636
Proferrorosamine A, D-496
Proferrorosamine B, P-637
C-Profluorocurine, A-617
Prolifine, P-638
2-L-Proline-3-isoleucine-α-amanitin, A-673
β-Proline, P-952
Prolylleucyldiketopiperazine, C-876
Prolylproline anhydride, C-898
Prolylvaline anhydride, C-901
Prometaphanine, P-639
Promoinducin, P-640
Promothiocin A, P-641
Promothiocin B, P-642
Promucosine, P-643
Pronuciferine, P-643
Prooxocryptochine, P-644
Propadrine, A-869
Propanamine, P-648
N,N′′-1,3-Propanediylbis[1,4-butanediamine], D-251
1,6-Propano-3-ethylidene-2,5-piperazinedione, E-249
13-Propanoyloxylupanine, H-554
6-Propanoyloxy-3-tigloyloxytropane, M-391
7-Propanoyloxy-3-tigloyloxytropan-6-ol, M-392
2-Propanoylpiperidine, C-604
2-Propanoylpyridine, P-645
2-Propenamide, P-646
2-Propenoic acid, P-646
2-(1-Propenyl)-Δ^1-piperideine, T-218
3-[6-(1-Propenyl)-2*H*-pyran-2-ylidene]-2,4-pyrrolidinedione, V-76
2-(1-Propenyl)quinoline, P-647
N^1-Propionylaplysinopsin, A-1357
Propionylcholine, C-419
N-Propionyl-*N*-deacetylaspidolimidine, A-1490
N-Propionylholothin, A-759
7-Propionylintermedine, I-160
6-Propionyllumazine, H-702
7-Propionyllycopsamine, I-160
8-(Propionylmethyl)dihydrochelerythrine, O-167
2-Propionyl-1-pyrroline, D-493
Propionylpyrrothine, A-759

N-Propylacetamide, P-648
1-Propylamine, P-648
9-Propyl-10-azacyclododecan-12-olide, P-651
12-Propyl-13-azacyclopentadec-5-en-15-olide, E-93
11-Propyl-12-azacyclotetradeca-5,8-dien-14-olide, E-93
11-Propyl-12-azacyclotetradec-5-en-14-olide, E-93
N-Propylbenzamide, P-648
Propyleine, P-649
N,*N*′-Propylenebis(cantharimide), P-650
N-Propylhydroxylamine, P-648
5-Propylindolizidine, O-56
3-Propylindolizidine, O-55
N-Propylisobutylamine, M-525
5-Propyl-1-oxa-4-azacyclohexadec-11-en-16-one, E-93
5-Propyl-1-oxa-4-azacyclopentadeca-7,10-dien-15-one, E-93
5-Propyl-1-oxa-4-azacyclopentadec-10-en-15-one, E-93
5-Propyl-1-oxa-4-azacyclotridecan-13-one, P-651
13-Propyloxylupanine (incorr.), H-554
1-(3-Propylphenyl)-β-carboline, K-59
8-Propyl-10-phenyllobeliolone, D-403
1-(3-Propylphenyl)-9*H*-pyrido[3,4-*b*]indole, K-59
α-Propyl-2-piperidineethanol, H-37
2-Propylpiperidine, P-652
6-Propyl-3-piperidinol, P-653
2-Propylquinoline, P-654
2-Propyl-4-quinolinol, H-707
2-Propyl-4(1*H*)-quinolinone, H-707
3-Propylxanthine, X-5
Prosafrine, P-655
Prosafrinine, P-655
Prosophylline, P-657
Prosopine, P-656
Prosopinine, P-657
Prosopinone, P-656
Prostephabyssine, P-658
Prostephanaberrine, P-659
Prosurugatoxin, N-141
Protalba, P-674
Protaxel, T-52
Proteinase inhibitor E 64, R-69
Prothracarcin, P-660
Protocatechuic acid dimethyl ether, D-706
Protocatechuic acid, D-536
Protocevine, V-56
Protochelin, P-661
Protochondocurarine, P-662
Protocuridine, P-663
Protoemetine, P-664
Protoemetinol, P-664
Protogonyautoxin 2, H-731
Protogonyautoxin 3, H-731
Protogonyautoxin 4, H-731
Protogonyautoxin I, H-731
Protomethine, P-665
Protomycin, S-563
Protophomin, P-666
Protopine *N*-oxide, P-667
Protopine, P-667
Protosinomenine, P-668
Protostemodiol, P-669
Protostemonine, P-670
Protostemotinine, M-49
Protostephanine, P-671
Protostrychnine, P-672
Protothalipine, M-734
Protoveratridine, G-70
Protoveratrine A, P-674
Protoveratrine B, P-674
Protoveratrine C, P-674
Protoveratrine, P-674
Protoverbine, P-673
Protoverine, P-674
Proviolacein, P-675
Proximicin A, P-676
Proximicin B, P-676
Proximicin C, P-676
Proxiphomin, P-677
Prulaurasin, H-673
Prunasin, H-673
Prunifoline A, M-296
Prunifoline B, M-296
Prunifoline C, M-296
Prunifoline D, M-296
Prunifoline E, M-296
Prunifoline F, M-296
Prurienidine, P-678
Prurienine, P-679
Prurieninine, P-680
Przewalidine, P-681
Przewaline, P-682
Przewalskine, P-683
Przewalskinine, P-683
Przewalstidine, P-684
Przewalstidinine, P-684
Przewalstine, P-684
Przewalstinine, P-684
PS 258A, P-720
PS 272A, P-720
PS 286A, P-720
PS 346A, P-720
PS 258B, P-720
PS 272B, P-722
PS 286B, P-720
PS 242, P-720
PS 256, P-720
PS 270, P-720
PS 300, P-722
PS 302, P-720
PS 316, P-720
PS 330, P-722
PS 332, P-720
PS 512, P-721
PS 524, P-721
PS 528, P-721
PSA, A-759
Psammaplin A 11′-sulfate, P-686
Psammaplin A trisulfide, P-686
Psammaplin A, P-686
Psammaplin A_1, P-686
Psammaplin A_2, P-686
Psammaplin B, P-687
Psammaplin C, P-688
Psammaplin D, P-689
Psammaplin E, P-690
Psammaplin F, P-691
Psammaplin G, P-692
Psammaplin H, P-693
Psammaplin I, P-685
Psammaplin J, P-686
Psammaplin K, P-686
Psammaplin L, P-686
Psammaplysene A, P-694
Psammaplysene B, P-694
Psammaplysene C, P-694
Psammaplysene D, P-694
Psammaplysin A, P-695
Psammaplysin B, P-695
Psammaplysin C, P-695
Psammaplysin D, P-695
Psammaplysin E, P-696
Psammaplysin F, P-695
Psammopemmin A, P-697
Psammopemmin B, P-697
Psammopemmin C, P-697
PSB, A-759
PSC_1, A-759
PSC_2, A-759
PSC-A, M-508
PSC-B, H-126
PSC-C, H-126
PSC-D, M-491
PSC-E, M-491
Pseudaconine, M-336
Pseudaconitine, M-336
Pseudakuammicine, A-228
Pseudane I, H-633
Pseudane IX, H-642
Pseudane VII, H-133
Δ^1-Pseudene IX, H-642
Δ^1-Pseudene VII, H-133
Pseudoacetylpyrrole, A-74
Pseudoaconitine, M-336
Pseudoakuammicine, A-228
Pseudoakuammigine *N*-oxide, A-232
Pseudoakuammigine, A-232
Pseudoanchynazine A, P-698
Pseudoanchynazine B, P-699
Pseudoanchynazine C, P-700
Pseudoanibacanine, P-717
Pseudoanthraserpine, R-50
Pseudoargiopinin I, A-1415
Pseudoargiopinin II, A-1415
Pseudoargiopinin III, P-701
Δ^1-Pseudoaspidospermidine, D-377
Pseudobactin A, P-702
Pseudobactin B, P-702
Pseudobactin 7SR1, P-703
Pseudobactin, P-702
Pseudobaleabuxine F, P-704
Pseudobaleabuxine, P-704
Pseudoberberine, P-705
Pseudobrucine, P-726
Pseudocapsaicin, C-100
Pseudocarpaine, C-168
Pseudocatharanthine, P-733
Pseudoceramine, M-679
Pseudoceratidine, P-706
Pseudoceratin A, P-707
Pseudoceratin B, P-707
Pseudoceratinine A, P-812
Pseudoceratinine B, P-708
Pseudoceratinine C, P-709
Pseudocheilanthifoline, C-685
Pseudochelerythrine, S-56
Pseudocinchonine, C-447
Pseudococaine, C-537
Pseudo-α-colubrine, P-726
Pseudo-β-colubrine, P-726
Pseudocolumbamine, P-719
Pseudoconhydrine, P-653
Pseudocoptisine, P-710
Pseudocyclobuxine D, C-846
Pseudodeoxyviolacein, P-711
Pseudodistamine, O-38
Pseudodistomin A, P-712
Pseudodistomin B, P-712
Pseudodistomin C, P-713
Pseudodistomin D, P-712
Pseudodistomin E, P-712
Pseudodistomin F, P-713
Pseudodysidenin, D-972
Pseudoecgonine methyl ester, E-8
Pseudoephedrine hydrochloride, M-386
Pseudoephedrine sulfate, M-386
Pseudoephedrine, M-386
Pseudoepiisoelaeocarpiline, P-714
Pseudoepistephanine, E-102
Pseudofluorocurine, F-101
Pseudohomolycorine, G-3
Pseudohygroline, H-760
(±)-Pseudohygroline, H-760
3-Pseudoindolone, I-106
Pseudoindoxyl, I-104
Pseudoiodinine, M-285
Pseudoisoplatydesmine, A-1377
Pseudojatrorrhizine, P-719
Pseudojervine, J-36
Pseudokobusine, H-205
Pseudokopsinine N^b-oxide, V-132
Pseudokopsinine, V-132
Pseudolaudanine, P-715
Pseudolycorine 1,2-diglucoside, P-716
Pseudolycorine-1-glucoside, P-716
Pseudolycorine, P-716
Pseudomanibacanine, P-717
Pseudomerucathine, A-867
Pseudomonine, P-718
Pseudomorphine, M-703
Pseudopalmatine, P-719
Pseudopelletierine, A-1580
Pseudophrynamine 258A, P-720
Pseudophrynamine 272A, P-720
Pseudophrynamine 286A, P-720
Pseudophrynamine 346A, P-720
Pseudophrynamine 512A, P-721

Pseudophrynamine A, P-721
Pseudophrynamine 258B, P-720
Pseudophrynamine 272B, P-722
Pseudophrynamine 286B, P-720
Pseudophrynamine 242, P-720
Pseudophrynamine 256, P-720
Pseudophrynamine 270, P-720
Pseudophrynamine 300, P-722
Pseudophrynamine 302, P-720
Pseudophrynamine 316, P-720
Pseudophrynamine 330, P-722
Pseudophrynamine 332, P-720
Pseudophrynamine 524, P-721
Pseudophrynamine 528, P-721
Pseudophrynaminol, P-720
Pseudoprotopine, P-723
Pseudopteroxazole, P-724
Pseudorepanduline, P-725
Pseudoreserpine, R-52
Pseudorine, P-715
Pseudoronine, S-111
Pseudoscopine, S-158
Pseudoselagine, L-325
Pseudosolanidine, P-633
Pseudostrychnine, P-726
Pseudotabersonine, P-733
Pseudotheonamide A_1, P-727
Pseudotheonamide A_2, P-727
Pseudotheonamide B_2, P-728
Pseudothiobinupharidine, P-729
Pseudotiliarine, T-407
Pseudotrienoic acid A, P-730
Pseudotrienoic acid B, P-731
Pseudotropine, M-393
Pseudoverdin, A-738
Pseudovinblastinediol, P-732
Pseudovincadifformine, P-733
Pseudovincaleukoblastine diol, P-732
Pseudovincamine, T-12
Pseudovincamone I, T-13
Pseudoviolacein, P-711
Pseudovobparicine, P-734
Pseudowithanine, P-735
Pseudoxandrine, P-736
Pseudoxandrinine, P-736
Pseudoyohimbine, Y-13
Pseudozoanthoxanthin A, P-737
Pseudozoanthoxanthin, P-737
Pseurotin F_1, P-738
Pseurotin F_2, P-738
Pseurotins, P-738
Psilocauline, P-739
Psilocine, H-480
Psilocybine, H-480
Psilopine, A-1531
PSVA, C-100
Psycholeine, P-740
Psychollatine, B-264
Psychopentamine, P-741
Psychotridine C, P-743
Psychotridine, P-742
Psychotrimine, P-744
Psychotrine, E-72
Psychrophilin A, P-745
Psychrophilin B, P-746
Psychrophilin C, P-747
Psychrophilin D, P-748
Psylloborine A, P-749
Psymberin, I-173
Pteleatine, B-14
Pteleatinium, B-14
Ptelecortine, P-750
Ptelecultinium, B-14
Pteledimericine, P-751
Pteledimeridine, P-752
Pteledimerine, P-753
Pteleflorine, P-754
Ptelefoliarine, E-40
Ptelefolidine, P-759
Ptelefolidone, L-296
Ptelefolidonium(1+), I-290
Ptelefoline, P-755
Ptelefolinol, P-755
Ptelefolone, P-756
Ptelefolonium, P-757
Ptelefructine, P-750
Pteleine, F-211
Pteleoline, P-758
Pteleprenine, P-759
Pteriatoxin A, P-760
Pteriatoxin B, P-761
Pteriatoxin C, P-761
2,4-Pteridinediol, P-762
2,4(1*H*,3*H*)-Pteridinedione, P-762
2,4,6(1*H*,3*H*,5*H*)-Pteridinetrione, D-494
2,4,7(1*H*,3*H*,8*H*)-Pteridinetrione, P-763
Pteridoxamine, A-816
Pterin, A-816
Pterin-6-carboxylic acid, A-817
Pterocellin A, P-764
Pterocellin B, P-765
Pterocellin C, P-766
Pterocellin D, P-767
Pterocellin E, P-764
Pterocellin F, P-768
Pterocereine, T-178
Pterogynidine, P-769
Pterogynine, B-199
Pterolactam, H-719
Pterophorine, P-770
Pteropodic acid, M-661
Pteropodine *N*-oxide, M-661
Pteropodine, M-661
Pteropterin, P-772
Pterorhodine, P-771
Pteroyldiglutamic acid, P-772
Pteroylglutamic acid, P-772
Pteroylglutamylglutamic acid, P-772
Pteroylglutamylglutamylglutamic acid, P-772
Pteroylheptaglutamic acid, P-772
Pteroylhexaglutamylglutamic acid, P-772
Pteroylpentaglutamic acid, P-772
Pteroyltriglutamic acid, P-772
Ptilocaulin, P-773
Ptilomycalin A, P-774
Ptilomycalin D, P-775
PTP, T-217
PTX-A, P-791
PTX-B, P-791
PTX-C, P-794
PTZ, P-626
Pubamide, H-314
Pubatriol, H-314
Puberaconitidine, P-776
Puberaconitine, P-776
Puberanidine, A-91
Puberanine, A-86
Puberuline A, F-159
Puberuline, F-159
Puberullumine, T-578
Pubesamide A, P-777
Pubesamide B, P-777
Pubesamide C, P-777
Pubescenine, M-309
Pubescimine, P-778
Pubescine A, M-189
Pubescine, P-779
Pubescine, R-53
Pubescinine, H-314
Puertogaline A, S-502
Puertogaline B, S-502
Puhinamide, P-780
Pukateine, P-781
Pukeensine, P-782
Pukeleimide A, P-783
Pukeleimide B, P-783
Pukeleimide C, P-783
Pukeleimide D, P-783
Pukeleimide E, P-783
Pukeleimide F, P-783
Pukeleimide G, P-783
Pukeleimide, P-783
Pulanomycin, F-48
Pulchellalactam, P-784
Pulchellidine, P-785
Pulchelline, P-786
Pulcheotine A, M-242
Pulcherrimine, P-787
Pulcherriminic acid, P-788
Pulcherrimin, P-788
Pulchine, T-524
Puloupone, P-789
Pulvic acid, P-790
Pulvinamide, P-790
Pulvinic acid, P-790
Pumiliotoxin 307A″, P-791
Pumiliotoxin 307A′, P-791
Pumiliotoxin 341A, P-792
Pumiliotoxin A, P-791
Pumiliotoxin 307B, P-793
Pumiliotoxin B, P-791
Pumiliotoxin C_{II}, A-357
Pumiliotoxin C_{III}, B-428
Pumiliotoxin C, P-794
Pumiliotoxin 251D, A-480
Pumiliotoxin 209F, P-795
Pumiliotoxin 225F, P-795
Pumiliotoxin 307F, P-791
Pumiliotoxin 321, P-791
Pumiloside, P-796
Pummeline, T-519
Punarnavine, P-797
Punctanecine, P-798
Punctatine, F-5
Punikathine, P-799
Punjabine, P-800
Puntarenine, P-801
Puqiedine, C-290
3α-Puqiedin-7-ol, C-294
Puqiedinone, C-290
Puqienine A, P-802
Puqienine B, P-802
Puqienine C, P-803
Puqienine D, P-804
Puqienine E, P-805
Puqienine F, P-806
Puqietinedione, P-807
Puqietinone, P-807
Puqietinonoside, P-807
PUR 1, P-808
Purapuridine, S-456
Purealidin A, P-811
Purealidin B, A-1378
Purealidin C, P-809
Purealidin D, P-810
Purealidin E, P-811
Purealidin F, M-679
Purealidin G, M-679
Purealidin H, P-811
Purealidin J, P-812
Purealidin K, P-812
Purealidin L, P-813
Purealidin M, P-814
Purealidin N, P-814
Purealidin O, P-815
Purealidin P, A-1378
Purealidin Q, H-227
Purealidin R, D-320
Purealidin S, H-227
Purealine, P-816
1*H*-Purin-6-amine, A-137
2,6-Purinediamine, P-817
6,8-Purinediol, P-818
2,6-Purinediol, X-5
Subergorgia suberosa Purine-imidazole alkaloid, P-819
2,6,8(1*H*,3*H*,9*H*)-Purinetrione, U-45
6-Purinol, P-820
6(1*H*)-Purinone, P-820
Purinosine, N-82
Puroverin, P-674
Purpeline, T-288
Purpuramine A, P-821
Purpuramine B, P-821
Purpuramine C, P-822
Purpuramine D, P-823
Purpuramine E, P-823
Purpuramine F, P-823

Purpuramine G, P-823
Purpuramine H, P-823
Purpuramine I, P-823
Purpuramine J, P-823
Purpuramine K, P-823
Purpuramine L, P-821
Purpurealidin A, H-227
Purpurealidin B, P-824
Purpurealidin C, H-227
Purpurealidin D, H-227
Purpurealidin E, M-679
Purpurealidin F, M-679
Purpurealidin G, M-679
Purpurealidin H, P-823
Purpureine, P-208
Purpuroceratic acid A, D-319
Purpuroceratic acid B, D-319
Purpurone, P-825
Purshianin, L-213
Pusilline, I-322
Puterine, P-781
Putreanine, P-826
Putrebactin, A-250
Putrescine, B-422
Putterine A, P-247
Putterine B, P-247
PwTx II, T-225
Pycmanilline, C-806
Pycnamine, P-301
(+)-Pycnamine, T-286
Pycnanthine, E-32
Pycnanthine, P-827
Pycnanthinine, P-828
Pycnarrhenamine, P-829
Pycnarrhenine, P-830
Pycnarrhine, D-421
Pycnazanthine, S-544
Pycnosanguin, P-831
Pyo Ib, H-133
Pyo Ic, H-642
Pyo II, H-133
Pyo III, H-642
Pyo V, H-757
Pyochelin II, P-832
Pyochelin I, P-832
Pyocyanine, P-833
Pyoluteorin, P-834
Pyoverdin A1, P-838
Pyoverdin BTB 16, P-870
Pyoverdin BTP 2, P-839
Pyoverdin BTP16G, P-842
Pyoverdin BTP7G, P-841
Pyoverdin BTP7, P-840
Pyoverdin C 2A, P-870
Pyoverdin C 3A, P-870
Pyoverdin C 2B, P-870
Pyoverdin C 3B, P-870
Pyoverdin CFBP 2392, P-844
Pyoverdin CFBP 2461, P-845
Pyoverdin CHAO-A, P-846
Pyoverdin CHAO, P-846
Pyoverdin $C_{43}H_{60}N_{14}O_{17}$, P-874
Pyoverdin $C_{44}H_{59}N_{13}O_{19}$, P-874
Pyoverdin $C_{44}H_{61}N_{13}O_{17}$, P-847
Pyoverdin $C_{44}H_{62}N_{14}O_{16}$, P-847
Pyoverdin $C_{45}H_{63}N_{11}O_{24}$, P-848
Pyoverdin $C_{45}H_{64}N_{12}O_{23}$, P-848
Pyoverdin $C_{47}H_{69}N_{13}O_{18}$, P-867
Pyoverdin $C_{52}H_{75}N_{15}O_{23}$, P-849
Pyoverdin $C_{52}H_{76}N_{16}O_{22}$, P-849
Pyoverdin $C_{55}H_{83}N_{17}O_{21}$, P-850
Pyoverdin $C_{57}H_{85}N_{17}O_{23}$, P-851
Pyoverdin $C_{57}H_{85}N_{17}O_{24}$, P-851
Pyoverdin C, P-843
Pyoverdin cyclo-Pf P19, P-703
Pyoverdin D, P-852
Pyoverdin E, P-852
Pyoverdin G 173, P-853
Pyoverdin GM II, P-854
Pyoverdin GM I, P-854
Pyoverdin G4RA, P-855
Pyoverdin G4R, P-855
Pyoverdin III, P-856
Pyoverdin II, P-856
Pyoverdin I, P-835
Pyoverdin 11370, P-837
Pyoverdin 2112, P-836
Pyoverdin Pa II, P-857
Pyoverdin Pa I, P-857
Pyoverdin Pa TII, P-858
Pyoverdin PaA, P-852
Pyoverdin PaB, P-843
Pyoverdin PaC, P-859
Pyoverdin PaO1, P-852
Pyoverdin Pa, P-852
Pyoverdin Pf CCM 2798, P-864
Pyoverdin Pf G 173, P-853
Pyoverdin Pf 1.3, P-860
Pyoverdin Pf 1547, P-863
Pyoverdin Pf/3 17400, P-861
Pyoverdin Pf P19, P-865
Pyoverdin Pf12, P-862
Pyoverdin PL7, P-866
Pyoverdin PL8, P-867
Pyoverdin Pm, P-868
Pyoverdin Pp 1, P-869
Pyoverdin Pp 2, P-869
Pyoverdin PpC 2A, P-870
Pyoverdin PpC 3A, P-870
Pyoverdin PpC 2B, P-870
Pyoverdin PpC 3B, P-870
Pyoverdin PS 6.10, P-872
Pyoverdin PS, P-871
Pyoverdin PSS, P-873
Pyoverdin R′, P-874
Pyoverdin 51WA, P-875
Pyoverdin WCS358, P-845
Pyoverdin 51W, P-875
Pyoverdin 51W-Suca, P-875
Pyoverdin 51W-Suc, P-875
Pyoverdin, P-848
Pyracrimycin A, P-876
Pyracrimycin B, P-877
Pyrafoline D, M-46
Pyramidaglaine A, P-878
Pyramidaglaine B, P-878
Pyramidatine, C-456
Pyranofoline, P-879
5,6-Pyranoglycozoline, E-300
Pyranonigrin A, P-880
Pyranonigrin B, P-881
Pyranonigrin C, P-881
Pyranonigrin D, P-882
Pyranonigrin S, P-880
Pyraxinine, G-209
Pyrayafoline A, P-883
Pyrayafoline B, P-884
Pyrayafoline C, P-883
Pyrayafoline D, P-885
Pyrayaquinone A, P-886
Pyrayaquinone B, P-887
Pyrayaquinone C, P-888
Vibrio alginolyticus Pyrazine, B-221
1,1′-(2,5-Pyrazinediyl)bis-1,2,3,4-butanetetrol, B-221
Pyrazinol, P-889
2(1*H*)-Pyrazinone, P-889
Pyrazofurin B, P-891
Pyrazofurin, P-891
3(5)-Pyrazolecarboxylic acid, P-890
Pyrazomycin B, P-891
Pyrazomycin, P-891
Pyrenoline A, P-892
Pyrenoline B, P-892
Pyretrin, D-106
Pyrichalasin H, Z-37
Pyriculamide, C-900
Pyricularin, P-478
Pyridindolol K1, P-893
Pyridindolol K2, P-893
Pyridindolol, P-893
Pyridinebetaine A, P-897
Pyridinebetaine B, S-636
3-Pyridinecarboxamide, P-895
4-Pyridinecarboxylic acid, P-898
2-Pyridinecarboxylic acid, P-896
3-Pyridinecarboxylic acid, P-897
2,6-Pyridinedicarbothioic acid, P-899
3,5-Pyridinedicarboxamide, P-902
2,3-Pyridinedicarboxylic acid, P-900
2,6-Pyridinedicarboxylic acid, P-901
3,5-Pyridinedicarboxylic acid, P-902
Pyridine-2,6-di(monothiocarboxylic acid), P-899
1,1′-(3,5-Pyridinediyl)bis-1-decanone, D-371
3-Pyridinedodecanal, P-903
3-Pyridinemethanol, P-904
Pyridine, P-894
3-Pyridinetridecanal, P-905
3-Pyridinetridecanamine, T-358
2-Pyridinioethanesulfonic acid, S-636
Pyridinoline, P-907
3-Pyridinol, P-906
3-(2-Pyridinyl)alanine, A-902
10-(3-Pyridinyl)-3,5,7,9-decatetraen-2-one, P-908
3-[10-(3-Pyridinyl)-7-decenyl]-1-[11-(3-pyridinyl)-8-decenyl]pyridinium(1+), N-230
3-[10-(3-Pyridinyl)-7-decenyl]-1-[11-(3-pyridinyl)-9-undecenyl]pyridinium(1+), N-231
12-(3-Pyridinyl)-4,6-dodecadien-2-ol, P-911
12-(2-Pyridinyl)-6,8-dodecadien-2-ol, P-909
12-(3-Pyridinyl)dodecanal, P-903
12-(2-Pyridinyl)-3,5,9-dodecatrien-1-amine, A-760
12-(3-Pyridinyl)-2,4,6-dodecatrien-1-ol, P-910
12-(3-Pyridinyl)-4,6,8-dodecatrien-2-ol, P-911
12-(3-Pyridinyl)-5,8,10-dodecatrien-2-ol, P-913
12-(3-Pyridinyl)-4,6,11-dodecatrien-2-ol, P-912
1-(2-Pyridinyl)ethanone, A-73
3-Pyridinylguanidine, G-209
16-(3-Pyridinyl)-7-hexadecynal *O*-methyloxime, N-228
16-(3-Pyridinyl)-7-hexadecyn-1-amine, N-224
4-[2-(3-Pyridinyl-5-oxazolyl)]phenol, H-12
2-(3-Pyridinyl)piperidine, P-460
1-(2-Pyridinyl)-1-propanone, P-645
2-(3-Pyridinyl)pyrrole, P-972
2-(3-Pyridinyl)-1-pyrrolidinecarboxaldehyde, P-957
(4-Pyridinyl)pyruvic acid, O-205
14-(3-Pyridinyl)-11-tetradecen-1-amine, T-357
14-(3-Pyridinyl)-11-tetradecynal *O*-methyloxime, N-227
14-(3-Pyridinyl)-11-tetradecyn-1-amine, T-357
13-(3-Pyridinyl)tridecanal, P-905
12*H*-Pyrido[1,2-*a*:3,4-*b*′]diindole-13-carboxaldehyde, H-336
Pyridofylline, P-923
9*H*-Pyrido[3,4-*b*]indole, C-130
9*H*-Pyrido[3,4-*b*]indole-1-carboxaldehyde, C-131
9*H*-Pyrido[3,4-*b*]indole-1-carboxylic acid, C-132
9*H*-Pyrido[3,4-*b*]indole-3-carboxylic acid, C-133
9*H*-Pyrido[3,4-*b*]indole-1-ethanol, H-487
9*H*-Pyrido[3,4-*b*]indole-1-methanol, H-590
9*H*-Pyrido[3,4-*b*]indole-1-propanoic acid, C-134
9*H*-Pyrido[3,4-*b*]indole-1,3,4(2*H*,9*H*)-trione, C-135
9*H*-Pyrido[3,4-*b*]indol-7-ol, P-916
9*H*-Pyrido[3,4-*b*]indol-1-ol, P-914
9*H*-Pyrido[3,4-*b*]indol-6-ol, P-915
9*H*-Pyrido[3,4-*b*]indol-8-ol, P-917
1-[4-(9*H*-Pyrido[3,4-*b*]indol-1-ylcarbonyl)-3-pyridinyl]ethanone, P-133
1-(9*H*-Pyrido[3,4-*b*]indol-1-yl)ethanone, A-44
5-(5*H*-Pyrido[4,3-*b*]indol-1-yl)-2-furanmethanol, I-262
5-(9*H*-Pyrido[3,4-*b*]indol-1-yl)-2-furanmethanol, P-270
4-(9*H*-Pyrido[3,4-*b*]indol-1-yl)-2-pyridinamine, A-1051
3-Pyridol, P-906
Pyridomacrolidin, P-918
Pyridomycinol, P-919
Pyridomycin, P-919
2-Pyridone-6-acetic acid, H-708
6(1*H*)-Pyridone-3-carboxylic acid, H-711
α-Pyridone-5-carboxylic acid, H-711
4(1*H*)-Pyridone-3-carboxylic acid, H-709
Pyrido[4,3,2-*mn*]pyrrolo[3,2,1-*de*]acridin-4-ol, A-1445
Pyridostemine, S-514
9*H*-Pyrido[4,3,2-*mn*]thiazolo[4,5-*b*]acridin-9-one, P-920

Pyridovericin, P-921
Pyridoxatin, P-922
Pyridoxine hydrochloride, P-923
Pyridoxine 5′-phosphate, P-923
Pyridoxine, P-923
Pyridoxol dihydrogen phosphate, P-923
Pyridoxol, P-923
Pyridoxylate, P-923
2-(3-Pyridyl)-5-(4-methoxyphenyl)oxazole, H-12
2-(3-Pyridyl)pyrrolidine, P-957
2-(2-Pyridyl)-Δ^1-pyrroline-5-carboxylic acid, D-496
2-(2-Pyridyl)-1-pyrroline, D-504
2-(3-Pyridyl)-1-pyrroline, M-792
3-(3-Pyridyl)tridecylamine, T-358
Pyrifolidine, P-924
Pyrifoline, K-78
2,4-Pyrimidinediol, U-42
2,4(1*H*,3*H*)-Pyrimidinedione, U-42
N-(2-Pyrimidinyl)-1,4-benzenediamine, A-863
4*H*,6*H*,8*H*-Pyrimido[5,4-*e*]-*as*-triazine-3,5,7-trione, D-498
Pyrimine, D-496
Pyrinadine A, P-925
Pyrinadine B, P-926
Pyrinadine C, P-927
Pyrinadine D, P-928
Pyrinadine E, P-929
Pyrinadine F, P-930
Pyrinadine G, P-931
Pyrindamycin A, D-954
Pyrindamycin B, D-953
Pyrindamycin C, D-954
Pyrindicine, P-932
Pyrinodemin A, P-933
Pyrinodemin B, P-934
Pyrinodemin C, P-934
Pyrinodemin D, P-934
Pyripyropene A, T-500
Pyripyropene B, T-500
Pyripyropene C, T-500
Pyripyropene D, T-500
Pyripyropene E, T-500
Pyripyropene F, T-500
Pyripyropene G, T-500
Pyripyropene H, T-500
Pyripyropene I, T-500
Pyripyropene J, T-500
Pyripyropene K, T-500
Pyripyropene L, T-500
Pyripyropene M, T-500
Pyripyropene N, T-500
Pyripyropene O, T-500
Pyripyropene P, T-500
Pyripyropene Q, T-500
Pyripyropene R, T-500
Pyrisulfoxin A, C-574
Pyrisulfoxin B, C-576
Pyrizinostatin, P-935
Pyro-Ace, P-961
Pyroaconitine, H-122
Pyrochasmaconitine, M-372
Pyrochasmanine, M-377
Pyroclavine, F-49
Pyrocoll, D-833
Pyrocrassicauline A, M-372
Pyrodelphinine, M-372
Pyrodysinoic acid, P-936
Pyroglutamic acid, O-206
Pyroglutamylglucosamine, P-937
Pyrohypaconitine, H-254
Pyroibotenic acid, A-837
Pyrojesaconitine, H-122
Pyromesaconitine, H-122
Pyronaamidine 9-*N*-methylimide, P-938
Pyronaamidine, P-938
Pyronopaline, P-939
Pyrostatin A, T-185
Pyrostatin B, T-207
Pyrrocidine A, P-940
Pyrrocidine B, P-940
Pyrroindomycin A, P-941
Pyrroindomycin B, P-941
Pyrrolallosedamine, P-970
Pyrrolam A, T-229
Pyrrolam B, H-234
Pyrrolam C, H-234
Pyrrolam D, H-234
3-Pyrroleacrylic acid, P-971
Pyrrole-2-aldehyde, P-942
Pyrrole-3-carbamidine, P-943
1*H*-Pyrrole-2-carbonitrile, P-944
4-(2-Pyrrolecarbonyloxy)epilupinine, H-482
1*H*-Pyrrole-2-carboxaldehyde, P-942
1*H*-Pyrrole-2-carboxamide, P-944
1*H*-Pyrrole-3-carboximidamide, P-943
1*H*-Pyrrole-2-carboxylic acid, P-944
1*H*-Pyrrole-2,3-dicarboxylic acid, P-945
1*H*-Pyrrole-2,5-dicarboxylic acid, P-946
1*H*-Pyrrole-2,5-dione, P-947
Pyrrole-1-norleucine, A-904
1*H*-Pyrrole-3-propanamide, P-948
1*H*-Pyrrole-3-propanoic acid, P-948
Pyrrolezanthine, H-626
1-Pyrrolidinamine, P-949
2-Pyrrolidineacetic acid, P-950
2-Pyrrolidine-2-acrylamide, P-876
1-Pyrrolidinecarboxamide, P-951
3-Pyrrolidinecarboxylic acid, P-952
2,4-Pyrrolidinedicarboxylic acid, P-953
2,4-Pyrrolidinedione, P-954
Pyrrolidine, P-949
2-Pyrrolidinol, P-955
2-Pyrrolidinone, P-956
2-(2-Pyrrolidinyl)-3′,4′-dimethoxyacetophenone, R-165
2-(2-Pyrrolidinyl)-4′-hydroxy-3′-methoxyacetophenone, R-165
3-(2-Pyrrolidinyl)pyridine, P-957
13-(2-Pyrrolidinyl)-2-tridecylamine, A-921
11-(2-Pyrrolidinyl)-2-undecylamine, P-958
2-Pyrrolidone-5-carboxylic acid, O-206
Asteronotus cespitosus Pyrrolidone, P-959
2-Pyrrolidone, P-956
N-Pyrrolidyleicosa-2,4-dienamide, T-491
1-Pyrroline-5-carboxylic acid, D-501
2-Pyrroline, D-499
1-Pyrroline, D-500
3-(1-Pyrrolin-2-yl)acrylamide, P-876
1-(1-Pyrrolin-2-yl)-β-carboline, E-288
3-(2-Pyrrolinyl)-2-propenamide, P-876
2-(1-Pyrrolin-2-yl)pyridine, D-504
3-(1-Pyrrolin-2-yl)pyridine, M-792
Pyrrolizidine 223H′, H-135
Pyrrolizidine 265H′, H-500
Pyrrolizidine 267H′, H-500
Pyrrolizidine 239K′, H-135
1-Pyrrolizidinecarboxylic acid, P-960
10*H*-Pyrrolizino[1,2-*b*]quinoline-9,10(4*H*)-dione, Q-24
Pyrrolnitrin, P-961
Pyrrolo[3,4-*d*]imidazole-4,6(1*H*,5*H*)-dione, P-962
Pyrrolomycin A, D-356
Pyrrolomycin B, P-963
Pyrrolomycin C, P-964
Pyrrolomycin D, P-964
Pyrrolomycin E, P-965
Pyrrolomycin F, P-966
Pyrrolomycin G, P-967
Pyrrolomycin H, P-967
Pyrrolomycin I, P-964
Pyrrolomycin J, P-964
5*H*-Pyrrolo[3,4-*d*]piperidine-2-carboxylic acid, T-230
Pyrrolo[1,2-*a*]pyrazine-3,6(4*H*,7*H*)-dione, P-968
Pyrroloquinolinequinone, M-236
Pyrrolosporin A, P-969
Pyrrolostatin, D-761
Pyrrolotenin, L-115
Pyrrolsedamine, P-970
1*H*-Pyrrol-2-ylcarbonyl α-L-rhamnopyranoside, P-944
13-(2-Pyrrolylcarbonyl)calpurmenine, C-40
O-(2-Pyrrolylcarbonyl)virgiline, V-153
2-(2-Pyrrolyl)-1,3-dithiolane, P-942
1-(1*H*-Pyrrol-2-yl)ethanone, A-74
5-(2*H*-Pyrrol-2-ylidenemethyl)-2,2′-bi-1*H*-pyrrole, P-635
N^{ϵ}-Pyrrolylnorleucine, A-904
3-(1*H*-Pyrrol-3-yl)-2-propenoic acid, P-971
3-(3-Pyrrolyl)propionic acid, P-948
3-(2-Pyrrolyl)pyridine, P-972
1-(1*H*-Pyrrol-2-yl)-9*H*-pyrido[3,4-*b*]indol-6-ol, E-285
Pyrronamycin A, P-973
Pyrronamycin B, P-973
Pyrroperine, T-495
Pyrrothine, A-759
Pyrroxamycin, P-974
Pyruvodehydrase, T-366
6-Pyruvyl-5,6,7,8-tetrahydropterin, T-142
6-Pyruvyltetrahydropterin, T-142
Py-tetrahydroserpentine, A-212
Q 11270A, A-1164
Q 20547A, A-1311
Q 11270B, A-1164
Q base, Q-9
Q 20547C, A-1310
Qasmine A, A-874
Qasmine B, A-876
Q1, H-115
Qingdainone, C-77
Quadrigemine A, Q-2
Quadrigemine B, Q-3
Quadrigemine C, Q-2
Quadrigemine H, Q-4
Quadrigemine I, Q-1
Quaternatine, M-292
Quaternidine, P-417
Quaternine, P-417
Quaternoline, R-21
Quaternoxine, C-191
3,2′:3′,4″:2″,3‴-Quaterpyridine, Q-5
Quebrachamine, Q-6
Quebrachidine, V-113
Quebrachine, Y-13
Quench spot, A-52
Aesculus hippocastanum Quercetin indoxylacetylglycoside, Q-7
Questiomycin A, A-862
Questiomycin B, A-861
Quettamine, Q-8
Queuine, Q-9
Queuosine, Q-9
Quimbeline, Q-10
Quinaglute, Q-18
Quinaldic acid, Q-31
Quinaldine, M-557
Quinaldinic acid, Q-31
α-Quinaldinol, Q-37
γ-Quinaldone, H-633
Quinaldopeptin, Q-11
Quinaldyl acetate, Q-37
N^2-Quinaldylarginine, Q-56
Quinamine, Q-12
Quinanium, Q-20
2,4-Quinazolinediol, Q-13
2,4(1*H*,3*H*)-Quinazolinedione, Q-13
4-Quinazolinol, Q-14
4(1*H*)-Quinazolinone, Q-14
Quinazolone, Q-14
Quinazomycin, Q-15
Quindoline-11-carboxylic acid, I-111
Quindoline, I-109
Quindolinocryptotackieine, Q-16
Quindolinone, D-505
Quine, Q-20
Quinethyline, Q-20
Quinicine, Q-17
Quinidex, Q-18
Quinidine gluconate, Q-18
Quinidine sulfate, Q-18
α-Quinidine, C-446
Quinidine, Q-18
Quinidinone, Q-18
Quinindoline, Q-19
Quinindolin-11(5*H*)-one, D-506
Quinine ascorbate, Q-20
Quinine biascorbate, Q-20

Quinine bisulfate, Q-20
Quinine ethylcarbonate, Q-20
Quinine hydrochloride, Q-20
Quinine sulfate, Q-20
Quinine, Q-20
β-Quinine, Q-18
Quininic acid, H-726
Quinite, Q-20
Quinocarcinol, Q-22
Quinocarcin, Q-21
Quinocitrinine A, Q-23
Quinocitrinine B, Q-23
Quinocycline B, I-300
Quinolactacide, Q-24
Quinolactacin A (obsol.), Q-25
Quinolactacin A_1, Q-25
Quinolactacin A_2, Q-25
Quinolactacin B, Q-26
Quinolactacin B_1, Q-26
Quinolactacin B_2, Q-26
Quinolactacin C_1, Q-25
Quinolactacin C_2, Q-25
Quinolactacin D_1, Q-27
Quinolactacin D_2, Q-27
2-Quinolinamine, Q-28
4-Quinolinecarboxaldehyde, Q-30
4-Quinolinecarboxylic acid, Q-32
2-Quinolinecarboxylic acid, Q-31
4,8-Quinolinediol, Q-35
2,4-Quinolinediol, Q-33
3,8-Quinolinediol, Q-34
2-Quinolinemethanethiol, Q-36
4-Quinolinemethanol, Q-38
2-Quinolinemethanol, Q-37
2,3,4,7,8-Quinolinepentol, Q-39
Quinoline, Q-29
2,4,7,8-Quinolinetetrol, Q-43
2,3,4,7-Quinolinetetrol, Q-40
2,3,4,8-Quinolinetetrol, Q-41
2,4,6,8-Quinolinetetrol, Q-42
3,4,5,8-Quinolinetetrol, Q-44
2,3,4-Quinolinetriol, Q-45
4,7,8-Quinolinetriol, Q-48
2,4,6-Quinolinetriol, Q-46
2,4,8-Quinolinetriol, Q-47
Quinolinic acid, P-900
3-Quinolinol, Q-49
2-Quinolinol, Q-50
2(1*H*)-Quinolinone-4-carboxylic acid, H-723
4(1*H*)-Quinolinone-2-carboxylic acid, H-725
2(1*H*)-Quinolinone, Q-50
1-(2-Quinolinyl)-β-carboline, Q-51
1-(4-Quinolinyl)-β-carboline, Q-52
1-(5-Quinolinyl)-β-carboline, Q-53
1-(6-Quinolinyl)-β-carboline, Q-54
1-(8-Quinolinyl)-β-carboline, Q-55
N^2-[(2-Quinolinyl)carbonyl]arginine, Q-56
3-(3-Quinolinyl)-1*H*-indole, I-138
S-(2-Quinolinylmethyl) thioacetate, Q-36
4-(3-Quinolinyl)phenol, H-692
1-(2-Quinolinyl)-9*H*-pyrido[3,4-*b*]indole, Q-51
1-(5-Quinolinyl)-9*H*-pyrido[3,4-*b*]indole, Q-53
1-(8-Quinolinyl)-9*H*-pyrido[3,4-*b*]indole, Q-55
1-(4-Quinolinyl)-9*H*-pyrido[3,4-*b*]indole, Q-52
1-(6-Quinolinyl)-9*H*-pyrido[3,4-*b*]indole, Q-54
Quinolizidine 196, A-907
Quinolizidine 233A, E-264
Quinolizidine 217A, M-507
Quinolizidine 195C, M-532
Quinolizidine 207I, E-265
Quinolobactin, D-677
Oceanapia Quinolone alkaloid, Q-57
Quinolonic acid, H-728
Quinolonimide, H-728
α-Quinolylcarbinol, Q-37
2-Quinolylnitramine, Q-28
Quinomycin A, Q-58
Quinomycin B_0, Q-59
Quinomycin B, Q-60
Quinomycin C, Q-61
Quinomycin D, Q-62
Quinomycin E, Q-63
Quinonamine A, S-2
Quinonamine B, S-2
9*H*-Quino[4,3,2-*de*][1,10]phenanthrolin-9-one, A-1459
Quino[2′,3′:3,4]pyrrolo[2,1-*b*]quinazolin-11(13*H*)-one, L-298
Quinotidine, Q-18
Quinotoxine, Q-17
2′-L-Quinovosyl saphenate, H-496
3′-L-Quinovosyl saphenate, H-496
Quinoxapeptin A, Q-64
Quinoxapeptin B, Q-64
R 39FF, M-430
R 39MF, A-1230
R 39SF, A-1231
Racemigerine, R-1
Racemocine, H-233
Racemodine, S-90
Racemonecine, H-233
Racemonine, H-233
Racemozine, H-233
Racemulodine, H-161
Racemuloline A, M-325
Racemuloline B, M-354
Racemulosine, R-2
Racemulotine, R-3
Racephedrine, M-386
Racepinefrine, A-152
Racepinephrine hydrochloride, A-152
Racepinephrine, A-152
Rachelmycin, R-4
Radamycin, R-5
Radarin A, R-6
Radarin B, R-6
Radarin C, R-6
Radarin D, R-6
Raddeamine, R-7
Raddeanamine, R-8
Raddeanidine, R-9
Raddeanine, C-298
Raddeanine, R-9
Raddeanone, R-9
Radiatine, U-37
Radicamine A, R-10
Radicamine B, R-10
Radixisatidis A, R-11
Radpetine, R-12
Rakicidin C, R-13
Ramiflorine A, U-52
Ramiflorine B, U-52
Ramiopterin, S-246
Ramosine A, R-14
Ramosine B, H-105
Ramosine C, L-267
Ranachrome 1, A-749
Ranachrome 3, A-802
Ranachrome 4, A-751
Ranachrome 5, A-817
Ranaconine, A-86
Ranaconitine, A-86
Rankinidine, H-367
Rankiniridine, R-15
Raocyclamide A, R-16
Raocyclamide B, R-17
Rapalexin A, I-337
Rapalexin B, H-548
Raphanatin, Z-11
Raphantin, R-18
Raphanusamic acid, T-394
Raphanusamide, M-266
Raphanusanin, R-18
Rapinic acid, O-37
Ratanhin, T-700
Raubasine, A-212
Raubasinine, R-53
Raucaffricine, V-194
Raucaffridine, R-19
Raucaffriline, V-194
Raucaffrine, P-240
Raucaffrinoline, P-240
Raucanine, R-20
Raucubaine, R-21
Raucubainine, C-191
Rauflexine, T-288
Raufloricine, A-231
Raufloridine, R-53
Rauflorine, T-288
Raugalline, A-216
Rauglucine, A-216
Raugustine, R-50
Rauhimbine, Y-13
Raujemidine *N*-oxide, D-233
Raujemidine, D-233
Raumacline, R-22
Raumitorine, A-1423
Raunamine, R-23
Raunescine, C-81
Raunescine, D-687
Rauniticine oxindole A, M-661
Rauniticine pseudoindoxyl, T-289
Rauniticine, A-212
Raunitidine, R-53
Raunormic acid, D-687
Raunormine, D-234
Raupine, S-89
Raureflexine, R-24
Rausutranine, R-25
Rausutrine, R-26
Rauvanine, R-51
Rauviridine, R-27
Rauvolcinine, R-28
Rauvomitine, T-288
Rauvoxine, C-117
Rauvoxinine, C-117
Rauwolfine, A-216
Rauwolfinine, R-29
Rauwolscine, Y-13
Ravenic acid, R-30
Ravenine, H-53
Ravenoline, R-31
Ravesilone, F-90
Raveyine, M-352
Ravifoline, S-456
Razadyne, G-3
6R-BH4, T-142
RCNS1, D-374
Rebeccamycin, R-32
Recanescic acid, D-687
Recanescine, D-234
Recinine, R-96
Reductiline, R-33
Reductiomycin, R-34
Reevesianine A, H-685
Reevesianine B, H-685
Reflexine, T-288
Refolinon, F-121
Refractamine, R-36
Refractidine, K-78
Refractine, K-78
(*R*)-Reframidine *N*-oxide, R-35
(*S*)-Reframidine *N*-oxide, R-35
Reframidine, R-35
Reframine *N*-methosalt, R-36
Reframine, R-36
Reframoline, R-36
Refuin, A-1081
Regalamine, K-36
Regaline, M-347
Regecoline, R-37
Regelamine, K-36
Regelidine, T-257
Regeline, K-36
Regelinine, K-36
Regelinone, R-38
Regholarrhenine A, H-314
Regholarrhenine B, H-314
Regholarrhenine C, R-39
Regholarrhenine D, C-595
Regholarrhenine E, K-113
Regholarrhenine F, D-279
Regilinine, K-36
Rehybrine, R-117
Reissantin A, P-219
Reissantin B, H-246
Reissantin C, P-219
Reissantin F, H-249
Reissantin G, P-219

Reissantin H, P-219
Remeridine, R-116
Remerine, R-120
Remeroline, A-1066
Remestyp, A-736
Remijinine, R-40
Reminyl, G-3
Remrefidine, R-120
Remrefine, R-36
Renardine, S-245
Renieramycin A, R-41
Renieramycin B, R-41
Renieramycin C, R-41
Renieramycin D, R-41
Renieramycin E, R-41
Renieramycin F, R-41
Renieramycin G, R-41
Renieramycin H, R-42
Renieramycin I, R-41
Renieramycin J (obsol.), R-44
Renieramycin J, R-43
Renieramycin K, R-43
Renieramycin L, R-43
Renieramycin M, R-41
Renieramycin N, R-41
Renieramycin O, R-41
Renieramycin P, R-44
Renieramycin Q, R-41
Renieramycin R, R-41
Renieramycin S, R-41
Renierol acetate, R-45
Renierol propionate, R-45
Renierol, R-45
Renierone, R-45
Renoxidine, R-52
Renoxydine, R-52
Repandine, R-46
Repandinine, T-81
Repanduline, R-47
Resactin, D-765
Rescaloid, R-50
Rescidine, R-50
Rescinnamidine, R-50
Rescinnamine, R-50
Rescinnaminol, R-48
Rescufolin, F-121
Resedine, P-347
Resedinine, A-864
Resedinine, P-346
Reserpenediol, R-49
Reserpic acid, R-50
Reserpic alcohol, R-49
Reserpidine, D-234
Reserpiline (4*R*)-*N*-oxide, R-51
Reserpiline (4*S*)-*N*-oxide, R-51
Reserpiline oxindole A, C-117
Reserpiline oxindole B, C-117
Reserpiline, R-51
Reserpine, R-52
ψ-Reserpine, R-52
Reserpinine oxindole, C-1
Reserpinine, R-50
Reserpinine, R-53
Reserpinolic acid, R-50
Reserpoid, R-52
Reserpoxidine, R-52
Resistaphyllin, O-155
Resorcein, A-711
Resorcinol-4-carboxylic acid, D-535
Resorcinomycin A, R-54
Resorcinomycin B, R-55
N-Resorcylanthranilic acid, B-67
β-Resorcylic acid, D-535
Retamine, R-56
Reticulatate, R-57
Reticulatine A, R-57
Reticulatine B, R-57
Reticulatine, R-57
Reticulatol, R-58
Reticuline N^{α}-oxide, R-59
Reticuline N^{β}-oxide, R-59
Reticuline, R-59
Retinylidenetaurine, T-38
Retrofractamide C, R-60
Retrofractamides, R-60
Retrohoustine, T-188
Retroisosenine *N*-oxide, N-89
Retroisosenine, N-89
Retronecanol, H-630
Retronecine 9-(3-acetoxy-2-hydroxy-2-methylbutanoate) 7-senecioate *N*-oxide, R-61
Retronecine 9-(3-acetoxy-2-hydroxy-2-methylbutanoate) 7-senecioate, R-61
Retronecine 7-*O*-curassavate, T-188
Retronecine 9-*O*-curassavate, T-188
Retronecine 9-(2,3-dihydroxy-2-hydroxymethylbutanoate) 7-senecioate, R-61
Retronecine 9-(2,3-dihydroxy-2-methylbutanoate) 7-senecioate *N*-oxide, R-61
Retronecine 9-(2,3-dihydroxy-2-methylbutanoate) 7-senecioate, R-61
Retronecine *N*-oxide, T-188
Retronecine 9-sarracinate 7-senecioate *N*-oxide, R-61
Retronecine 9-sarracinate 7-senecioate, R-61
Retronecine-7,9-dibenzoate, T-188
Retronecine, T-188
Retrorsine *N*-oxide, R-62
Retrorsine, R-62
Retulinal, R-63
Retuline N^{b}-oxide, R-63
Retuline, R-63
Retusamine, R-64
Retusine, R-65
Reumitsin, R-66
Reumycin, R-66
Reutericyclin, R-67
Revolutinone, R-68
Revolutopine, T-333
Rexostatine, R-69
RGH4406, E-6
Rhamnoerysodine, E-203
4-Rhamnopiericidin A_1, P-421
α-L-Rhamnopyranosyl anthranilate, A-706
6-*O*-α-L-Rhamnopyranosyl-1-deoxymannonojirimycin, H-616
(4′-α-L-Rhamnosyloxycinnamoyl)lupinine, O-58
(4′-α-L-Rhamnosyloxy-3′-methoxycinnamoyl)lupinine, O-58
Rhamnoveracintine, V-57
Rhapallin A, R-70
Rhapsamine, R-71
Rhazicine *N*-oxide, L-28
Rhazicine, L-28
Rhazidigenine N^{b}-oxide, R-72
Rhazidigenine, R-72
Rhazidine base, R-72
Rhazidine salt, R-72
Rhazidine, R-72
Rhazimal, R-75
Rhazimanine, I-319
Rhazimine, R-73
Rhazimol, A-231
Rhazinaline N^{4}-oxide, R-75
Rhazinaline, R-75
Rhazinal, R-74
Rhazine, A-229
Rhazinicine, R-76
Rhazinilam, R-76
Rhazinine, A-1328
Rhazinoline, S-576
Rhazinol, S-576
Rhazizine, R-77
Rheadine, R-86
Rheagenine, R-86
Rhetine, R-168
Rhetsine, E-310
Rhetsinine, T-226
Rhexifoline, R-78
Rhinolidine, R-79
Rhinoline, R-79
Rhinolinine, R-79
Rhizipon A, I-81
Rhizochalin C, D-292
Rhizochalinin C, D-292
Rhizoferrin, R-80
Rhizophorine, I-131
Rhizopin, I-81
Rhizopodin, R-81
Rhizopterin, R-82
Rhizoxin D, R-83
Rhizoxin D_1, R-83
Rhizoxin D_3, R-84
Rhizoxin M_1, R-84
Rhizoxin M_2, R-84
Rhizoxin S_1, R-84
Rhizoxin S_2, R-84
Rhizoxin Z_1, R-84
Rhizoxin Z_2, R-84
Rhizoxin, R-83
Rhodesiacridone, R-85
Rhodiocyanogenin, H-575
Rhodiocyanoside A, H-575
Rhodiocyanoside B, H-509
Rhodiocyanoside D, H-574
Rhodomelanochrome, P-771
Rhodommatin, D-527
Rhoeadine, R-86
Rhoeagenine, R-86
Rhoifoline A, A-1566
Rhoifoline B, R-87
Rhoifolinic acid, R-88
Rhombifoline, C-938
Rhombinine, A-970
Rhopaladin A, R-89
Rhopaladin B, R-89
Rhopaladin C, R-89
Rhopaladin D, R-89
Rhopalotine, I-208
Rhosoptein, P-771
Rhynchociline, R-134
Rhynchophine, V-126
Rhynchophyllic acid, R-90
Rhynchophylline *N*-oxide, R-90
Rhynchophylline, R-90
Rhyncociline, R-134
Rhyncophyllic acid, R-90
Rhyncophylline *N*-oxide, R-90
Rhyncophylline, R-90
Ribaline, R-91
Ribalinidine, R-92
Ribalinine, R-92
Ribalinium, R-93
Ribaliprenylene, R-92
Ribasidine, R-94
Ribasine, R-94
Riboflavin 5′-(trihydrogen diphosphate) 5′ → 5′-diester with adenosine, F-79
1-β-D-Ribofuranosylbrunfelsamidine, P-943
N^{1}-β-D-Ribofuranosyldamirone C, D-13
9-β-D-Ribofuranosylhypoxanthine, I-148
1-β-D-Ribofuranosyl-1*H*-imidazol-5-amine, A-827
N^{1}-α-Ribofuranosyllumichrome, L-285
N^{1}-β-D-Ribofuranosylmakaluvamine I, M-54
N′-β-D-Ribofuranosylmakaluvic acid C, M-56
9-β-D-Ribofuranosyl-9*H*-purine, N-82
1-β-D-Ribofuranosyl-4-pyridone-3-carboxamide, H-709
7-Ribofuranosyl-7*H*-pyrrolo[2,3-*d*]pyrimidin-4-amine, T-658
9-β-D-Ribofuranosylxanthine, X-13
9-(β-D-Ribofuranosyl)zeatin, Z-11
9-β-D-Ribopyranosylhypoxanthine, P-820
Ribosylzeatin phosphate, Z-11
Ribosylzeatin, Z-11
Ricinidine, R-95
Ricinine, R-96
Ricininic acid, D-668
Riddelliine, S-240
Riddelline, S-240
Rideopine, G-107
Ridleyamide, B-265
Riedelianine, R-97
Rigidin A, R-98
Rigidin B, R-98
Rigidin C, R-98
Rigidin D, R-98
Rigidin E, R-98
Rigidin, R-98

Rigidusol, C-525
Rinderine, E-12
Rindline, H-323
Riparin, M-280
Ripromycin, R-99
Risatarun, D-730
Rischiaril, D-730
Ritigalin, N-235
Ritmos, A-216
Ritmosel, A-216
Ritterazine A, R-101
Ritterazine B, R-102
Ritterazine C, R-103
Ritterazine D, R-101
Ritterazine E, R-104
Ritterazine F, R-102
Ritterazine G, R-102
Ritterazine H, R-102
Ritterazine I, R-102
Ritterazine J, R-105
Ritterazine K, R-105
Ritterazine L, R-105
Ritterazine M, R-105
Ritterazine N, R-106
Ritterazine O, R-106
Ritterazine P, R-107
Ritterazine Q, R-107
Ritterazine R, R-108
Ritterazine S, R-108
Ritterazine T, R-101
Ritterazine U, R-109
Ritterazine V, R-100
Ritterazine W, R-110
Ritterazine X, R-110
Ritterazine Y, R-102
Ritterazine Z, R-111
Rivanicline galactarate, M-232
Rivanicline, M-232
Rivinianin, B-110
Rivularin A, H-211
Rivularin B, T-117
Rivularin C, T-108
Rivularin D_1, T-116
Rivularin D_2, T-116
Rivularin D_3, T-116
Rivularine *N*-oxide, T-188
Rivularine, T-188
RJR 2403, M-232
RK 4415, A-124
RK 1441A, A-1232
RK 1441B, A-1232
RK 1409B, S-498
RK 286C, S-498
RK 286D, A-1190
RK 1061G, L-188
RK 1061H, L-188
RK 1409, S-498
RK-F 1010, T-96
RKS 1778, A-1196
Ro 31-6045, A-1394
Ro 5-9000, A-1081
Ro 5-4645/10, C-711
Ro 2-9757, F-104
Ro 09-0049, P-337
Ro 21-4958, R-151
Robecine, R-112
Robeneoside A, S-447
Robeneoside B, S-447
Robustamine *cis*-*N*-oxide, R-113
Robustamine, R-113
Robusticine, C-588
Robustidine, S-126
Robustiline, F-143
Robustimine, S-126
Robustine, F-213
Robustine, S-456
Robustinine, Q-47
Robustivine, C-588
Rodiasine, R-114
Roebramine, R-116
Roecarboline, R-115
Roefractine, H-275
Roeharmine, D-620
Roehybramine β-*N*-oxide, R-116
Roehybramine, R-116
Roehybridine α-*N*-oxide, R-116
Roehybridine β-*N*-oxide, R-116
Roehybridine, R-116
Roehybrine, R-117
Roehymine, R-116
Roelactamine, R-35
Roemebramine, R-116
Roemecarine 2α-*N*-oxide, R-118
Roemecarine, R-118
α-Roemehybrine, R-117
Roemeramine, R-119
Roemerialinone, O-112
Roemeridine, R-116
Roemerine *N*-oxide, R-120
Roemerine, R-120
Roemerolidine, O-85
Roemeroline, A-1066
Roemeronine, R-119
(+)-Roemrefidine, R-120
(-)-Roemrefidine, R-120
Roemrefine, R-36
Rogersine, L-75
Rohitukine *N*-oxide, R-121
Rohitukine, R-121
Rollipyrrole, R-122
Romneine, R-123
Romucosine A, D-531
Romucosine B, D-531
Romucosine C, T-524
Romucosine D, T-524
Romucosine F, T-246
Romucosine G, P-208
Romucosine H, I-208
Romucosine I, R-124
Romucosine, R-120
Roquefortine A, F-181
Roquefortine B, F-181
Roquefortine C, R-125
Roquefortine D, R-125
Roquefortine E, R-126
Roquessine, C-601
Roraimine, W-9
Rorifamide, M-563
Rorifone, M-563
Roripamine, M-564
Rosamine, V-178
Roseadine, R-127
Roseamine, V-110
Rosellichalasin, R-128
Roseonine, S-565
Roseophilin, R-129
Roserine, R-130
Rosibiline, R-131
Rosicine, R-132
Rosmarinecine, D-597
Rosmarinine, R-133
Rostratamine, P-223
Rostratine, P-610
Rotundifoleine, R-134
Rotundifoline *N*-oxide, R-134
Rotundifoline, R-134
Rotundine A, R-135
Rotundine B, R-135
Rotundine C, R-135
Rotundine, A-1410
Rotundine, T-212
Rouhamine, D-138
Routiennocin, R-136
Rovidine, R-137
Roxburghiline, O-67
Roxburghine A, R-138
Roxburghine B, R-138
Roxburghine C, R-138
Roxburghine D, R-138
Roxburghine E, R-138
Roxburghine X, R-138
Roxburghine, R-138
Roxburghines, R-138
Roxiamine A, R-139
Roxiamine B, R-139
Roxiamine C, R-140
Royleinine, M-347
Royline, M-309
Rozevin, V-110
RP 13252, A-1234
RP 6798, A-1233
RP 18631, C-395
RP 55185, C-545
RP 59451, C-545
RP 49532, G-79
RP 7452, L-153
RP 9671, N-319
RP 5278, S-569
Rs I, A-915
Rubemamide, D-718
Rubemamine, D-718
Rubenine, R-141
Rubesamide, R-142
Rubescenamide, R-143
Rubescenamine, R-143
Rubescine, V-126
Rubijervine, R-144
Rubiverine, R-145
Rubivirine, I-310
Rubradinine, M-661
Rubradirin B, R-146
Rubradirin C, R-146
Rubrifacine, R-147
Rubrobramide, R-148
Rubrocurarines, R-149
Rubroflavin, D-229
Rubrolone B, R-151
Rubrolone, R-150
Rubropunctamine, R-152
Rubroside A, R-154
Rubroside B, R-153
Rubroside C, R-154
Rubroside D, R-153
Rubroside E, R-154
Rubroside F, R-154
Rubroside G, R-153
Rubroside H, R-154
Rudrakine, G-162
Rufai B, D-669
Rufescine, N-304
Rufocromomycin, S-569
RUG 13A, R-157
RUG 13B, R-157
Rugosanine A, N-337
Rugosanine B, R-155
Rugosin H, P-961
Rugosinone, R-156
Rugulovasine A, R-157
Rugulovasine B, R-157
Ruine, D-621
Rulodine, R-158
Rumberine, R-159
12*E*-Rumbrin, R-160
Rumbrin, R-160
Runanine, R-161
Rupancamine, R-162
Rupicoline, V-178
Ruprechstyril, R-163
Rurrebanidine, R-164
Rurrebanine, R-164
Ruscopine, A-25
Ruspolinone, R-165
Russupteridine yellow I, R-166
Russupteridine yellow IV, R-166
Rutacridone epoxide, R-167
Rutacridone, R-167
Rutaecarpine, R-168
Rutagravine, R-169
Rutalexin, R-170
Rutalinidine, R-91
Rutalinium, R-171
Rutamine, G-171
Rutecarpine, R-168
Ruticin, R-172
Ruwenine, B-194
Ruzorine, R-173
Ryanex, R-175
Ryania diterpene ester A, R-175
Ryania diterpene ester B, R-175

Ryania diterpene ester C_1, R-175
Ryania diterpene ester C_2, R-174
Ryania diterpene ester D, R-175
Ryanicide, R-175
Ryanodine, R-175
Ryanodyl 3-nicotinate, R-175
Ryllistine, N-288
Ryno-tox, R-175
Ryosenamine, H-200
Ryosenaminol, H-200
Rytmalin, A-216
Rzedowskin D, P-215
S 433, A-1235
S 53210A, A-1236
S 54832A, A-1237
S 53210A-I, A-1236
S 54832A-I, A-1237
S 53210A-II, A-1236
S 54832A-II, A-1237
S 53210A-III, A-1236
S 54832A-III, A-1237
S 54832A-IV, A-1237
S $632A_2$, M-561
S $632A_3$, M-561
S $632A_1$, S-563
S $632B_1$, M-561
S $632B_2$, M-561
S 1319, H-508
S 551II, R-34
S 1210, R-52
SA $3097B_1$, A-1044
SA $3097B_2$, A-1044
SA $3097C_1$, A-1044
SA $3097C_2$, A-1044
SA $3097D_1$, A-1044
SA $3097D_2$, A-1044
SA4-3, A-5
SAB 711, A-1238
Sabadillines, S-1
Sabadine, C-291
Sabadinine, V-56
Sabatine, C-291
Sabine, C-291
Sachaconitine, M-355
Sadosine, H-177
Safracin A, S-2
Safracin B, S-2
Saframycin AH_1, S-4
Saframycin AH_2, S-4
Saframycin AR_1, S-4
Saframycin AR_3, S-4
Saframycin A_{D-1}, S-3
Saframycin A, S-4
Saframycin B, S-4
Saframycin C, S-4
Saframycin D, S-4
Saframycin E, S-4
Saframycin F, S-4
Saframycin G, S-4
Saframycin H, S-5
Saframycin Mx 1BC, S-6
Saframycin Mx 2BC, S-6
Saframycin Mx 1, S-6
Saframycin Mx 2, S-6
Saframycin R, S-7
Saframycin S, S-8
Saframycin Y_{2b-D}, S-10
Saframycin Y_{2b}, S-9
Saframycin Y_{D-1}, S-12
Saframycin Y_{D-2}, S-13
Saframycin Y_3, S-11
Sagitol, S-14
Sagittamide A, S-15
Sagittamide B, S-15
Sagittariol, C-525
Saifine, S-16
Saipeimine, S-17
Saitomycin, C-960
Sakambullin, D-12
Sakerine, G-68
Sakerinol A, G-68
Sakerinol B, G-68
Sakerol, G-68
Sakerone, G-68
Salacin, S-18
Salarin A, S-19
Salarin B, S-20
Salfredin A_3, S-21
Salfredin A_4, S-21
Salfredin A_7, S-21
Salfredin C_1, S-21
Salfredin C_2, S-21
Salfredin C_3, S-21
Salicifoline, H-565
Salicilobine, S-22
Salicornine, S-23
N-Salicoylanthranilic acid, B-67
Salicylamine, H-415
N-Salicyloyl-2-amino-1,3-propanediol, A-893
N-Salicyloyl-2-amino-1-propanol, A-894
Salidrosol, H-676
Saligcinnamide, P-601
Salignamine, A-876
Salignarine A, D-262
Salignarine B, D-276
Salignarine C, D-276
Salignarine D, P-608
Salignarine E, P-605
Salignarine F, D-277
Salignenamide A, P-601
Salignenamide B, D-258
Salignenamide C, D-272
Salignenamide D, D-259
Salignenamide E, P-608
Salignenamide F, P-601
E-Salignone, A-890
Z-Salignone, A-890
Saliherbine, S-24
Salimine, S-25
Saliniketal A, S-26
Saliniketal B, S-26
Salinosporamide A, S-28
Salinosporamide B, S-28
Salinosporamide C, S-29
Salinosporamide D, S-30
Salinosporamide E, S-31
Salinosporamide F, S-28
Salinosporamide G, S-30
Salinosporamide H, S-28
Salinosporamide I, S-27
Salinosporamide J, S-28
Salmochelin 4, S-32
Salmochelin X, S-33
Salmycin A, S-34
Salmycin B, S-34
Salmycin C, S-35
Salmycin D, S-35
Salochimin, Q-20
Salonine A, D-272
Salonine B, A-876
Salonine C, P-598
Saloquinine, Q-20
Salsamine, S-36
Salsolidine, T-167
Salsoline A, T-629
Salsoline, T-179
Salsolinol, T-162
Saludimerine A, S-37
Saludimerine B, S-37
Salutadimerine, S-38
Salutaridine *N*-oxide, S-39
Salutaridine, S-39
Salutarine, S-39
Salvadoricine, A-61
Salviadione, S-40
Salviamiltamide, S-41
Salvianane, S-42
Salvianene, S-42
Samandaridine, S-43
Samandarine, S-44
Samandarone, S-44
Samandenone, S-45
Samandinine, S-46
Samanine, S-47
Sambunigrin, H-673
Sambutoxin, S-48
Samoquasine A, B-75
Sampangine, S-49
Sanasin, P-833
Sanazin, P-833
Sandramycin, S-50
Sandril, R-52
Sandwicine, A-216
Sandwicolidine, S-51
Sandwicoline, S-52
Sangivamycic acid, S-53
Sangivamycin, S-53
Sanguidimerine, S-54
Sanguilutine, S-55
Sanguinarine pseudoethanolate, D-510
Sanguinarine pseudomethanolate, D-510
Sanguinarine, S-56
Sanguinarium chloride, S-56
Sanguinine *N*-oxide, G-3
Sanguinine, G-3
Sanguinolentaquinone, S-57
Sanguinone A, S-58
Sanguinone B, S-59
Sanguirubine, S-60
Sanjoinenine, D-840
Sanjoinine A, F-150
Sanjoinine Ah_1, F-150
Sanjoinine B, F-150
Sanjoinine D, S-61
Sanjoinine E, D-531
Sanjoinine F, F-150
Sanjoinine G_1, S-61
Sanjoinine G_2, S-62
Sanjoinine Ia, D-531
Sanjoinine Ib, I-208
Sanjoinine K, H-275
Sankhpuspine, S-63
α-Sanshool, D-893
β-Sanshool, D-893
γ-Sanshool, T-127
Santavy's Substance F, D-92
Santheose, T-355
Santiagonamine, S-64
Santiaguine, S-65
Sanyonamine, H-163
Sapatoxin B, P-226
Saphenamycin, H-496
Saphenic acid methyl ether, H-496
Saphenic acid, H-496
4α-Sapinine, T-275
Sapinopyridione, F-162
Sapintoxin A, T-275
Sapintoxin B, P-226
Sapintoxin C, T-274
α-Sapintoxin, T-275
Sapropterin dihydrochloride, T-142
Sapropterin, T-142
Sarachine, S-66
Saracocinaene, P-599
Saracocine, P-606
Saracodine, P-601
Saracodinine, P-606
Saracorine, P-601
Sarain A, S-67
Sarain B, S-67
Sarain C, S-68
Saraine 1, S-69
Saraine 2, S-70
Saraine 3, S-71
Sarcinapterin, S-72
Sarcine, P-820
cis-Sarcocapnidine *N*-oxide, S-73
Sarcocapnidine, S-73
cis-Sarcocapnine *N*-oxide, S-73
Sarcocapnine, S-73
Sarcocinaene, P-599
Sarcodifurine A, S-74
Sarcodifurine B, S-75
Sarcodine, P-601
Sarcodonin α, S-76
Sarcodonin β, S-76
Sarcodonin δ, S-76
Sarcodonin γ, S-76
Sarcodonin, S-76

Sarcomegistine, P-254
Sarcomejine B, S-78
Sarcomejine, S-77
Sarconidine, P-599
Sarcopharyngine, S-79
Sarcophylline, S-80
Sarcorine, P-601
Sarcorucinine A1, P-600
Sarcorucinine A, P-600
Sarcorucinine B, A-889
Sarcorucinine D, A-881
Sarcosaligmine, A-884
Sarcostin, P-610
Sarcotragin A, S-81
Sarcotragin B, S-81
Sarcotrine A, S-82
Sarcotrine B, S-82
Sarcotrine C, S-82
Sarcotrine D, S-83
Sarcotrine E, S-82
Sarcotrine F, S-84
Sarcovagenine A, D-273
Sarcovagenine B, D-273
Sarcovagenine C, D-260
Sarcovagine A, D-262
Sarcovagine B, D-262
Sarcovagine C, D-266
Sarcovagine D, D-274
Sarcoviolin α, S-76
Sargassumlactam, S-85
Sarkine, P-820
Sarmentamide A, S-86
Sarmentamide B, S-87
Sarmentamide C, T-577
Sarmentine, D-104
Sarmentosin epoxide, H-509
Sarmentosine, M-452
Sarmentosin, H-509
Sarodesmine, H-554
Sarothamnine, S-88
Sarpagan-3,7-diol, A-27
Sarpagan-10,17-diol, S-89
Sarpagan-17-ol, T-425
Sarpagine, S-89
Sarracine *N*-oxide, S-90
Sarracine, S-90
Sarracinic acid, H-574
Sarranicine, S-90
Sarsalignenone, D-261
Sarsalignone, D-282
Sarusubine A, S-91
Sativanine A, S-92
Sativanine B, S-93
Sativanine C, S-94
Sativanine D, S-95
Sativanine E, S-96
Sativanine F, S-97
Sativanine G, S-98
Sativanine H, S-99
Sativanine K, S-98
Sativanine M, S-94
Sativanine N, S-98
Sativanine O, S-100
Sattazolin, S-101
Saulatine, S-102
Sauristolactam, D-567
Sauroine, F-29
Sauroxine, O-5
Saururidine, S-103
Saururine, S-104
Saussureamine A, S-105
Saussureamine B, I-162
Saussureamine C, S-106
Saussureamine D, S-107
Saussureamine E, S-107
Sauvagnine, S-108
Saxicolaline A, T-248
11-Saxitoxinacetic acid, S-110
11-Saxitoxinethanoic acid, S-110
Saxitoxin, S-109
Saxoguattine, S-111
Saxorumamide, S-112
SB 202327, A-1486
SB 203207, A-660
SB 203208, A-660
SB 212305, A-1239
SB 217452, A-1240
SB 219383, A-1241
SB 253514, A-1242
SB 253517, A-1242
SB 253518, A-1242
SB 291071, A-1242
SB 291072, A-1242
SB 291073, A-1242
SB 315021, A-1243
SB 212021, H-665
SB 204900, M-509
SB 408075, M-135
SB 200437, P-90
SB 203105, P-90
Scabrine, S-113
Scabrosin 4-acetate-4′-butyrate, S-114
Scabrosin 4-acetate-4′-hexanoate, S-114
Scabrosin 4-butanoate-4′-hexanoate, S-114
Scabrosin 4,4′-diacetate, S-114
Scabrosin 4,4′-dibutyrate, S-114
Scabrosin, S-114
Scaconine, M-352
Scaconitine, M-352
Scaevodimerine A, S-115
Scaevodimerine B, S-115
Scaevodimerine C, S-115
Scaevodimerine D, S-115
Scaevoline, S-116
Scalusamide A, S-117
Scalusamide B, S-117
Scalusamide C, S-117
Scandine N^b-oxide, S-118
Scandine, S-118
Scandomelidine, S-119
Scandomeline, S-120
Scandomelonine, S-121
Scatole, M-474
Sceleratine *N*-oxide, S-122
Sceleratine, S-122
Sceleratinyl chloride, S-122
Sceletenone, S-123
Sceptrine, S-124
Sch 210971, A-1250
Sch 210972, A-1250
Sch 213766, A-1250
Sch 40832, A-1244
Sch 40873, A-1245
Sch 42137, A-1246
Sch 52900, A-1247
Sch 52901, A-1247
Sch 538415, A-1251
Sch 54445, A-1248
Sch 56036, A-1249
Sch 725424, A-1252
Sch 18640A, A-1082
Sch 10595, B-445
Sch 18640B, A-1082
Sch 575948, C-721
Sch 38513, F-115
Sch 38516, F-115
Sch 38518, F-115
Sch 39185, F-115
Sch 42282, F-115
Sch 42729, F-115
Sch 18640, T-392
SC48334, H-616
Schefferine, C-677
Schelhammeridine, S-125
Schelhammerine, S-126
Schellhammericine B, T-51
Schellhammericine, S-126
Schinifoline, G-118
Schinifoline, H-133
Schischkiniin, S-127
Schizanthine A, S-129
Schizanthine B, S-128
Schizanthine C, S-128
Schizanthine D, S-130
Schizanthine E, S-130
Schizanthine F, S-131
Schizanthine G, S-131
Schizanthine H, S-131
Schizanthine I, S-131
Schizanthine K, S-131
Schizanthine L, S-131
Schizanthine M, S-131
Schizanthine X, S-128
Schizanthine Y, S-128
Schizanthine Z, S-128
Schizocommunine, S-132
Schizogaline, S-133
Schizogamine, S-133
Schizokinen A, S-134
Schizoluteine, S-135
Schizophylline, S-136
Schizozygine, S-137
α-Schizozygol, S-137
β-Schizozygol, S-138
Schlechtendamine, S-200
Schobericine, T-219
Schoberidine, S-139
Schoberine, S-140
Scholaricine, E-30
Scholarine N^b-oxide, E-30
Scholarine, E-30
Scholarisine A, S-141
Schopf's base VI, L-91
Schulzeine A, S-142
Schulzeine B, S-143
Schulzeine C, S-143
Schumagnine, S-144
Schumannificine, S-145
Schumannioficine, S-145
Schumanniophytine, S-146
Schweinine, S-147
Sciadenine, S-148
Sciadoferine, S-149
Sciadoline, S-149
Sciaferine, M-712
Scinnamina, R-50
Sciodole, S-150
Scleramin, E-6
Scleritodermin A, S-151
Scleriminol, S-152
Sclerothionine, E-173
Sclerotiamide, S-153
Sclerotigenin, S-154
Sclerotiorinamine, S-155
Scobutil, S-159
Scolopendrine, S-156
Scombrotoxin, H-307
α-Scopadonnine, S-157
β-Scopadonnine, S-157
Scopadonnine, S-157
Scopaline, A-99
Scopamin, S-159
Scoparasin A, C-949
Scoparasin B, C-949
Scopine, S-158
ψ-Scopine, S-158
Scopinone, S-158
Scopoderm, S-159
Scopolamine butyl bromide, S-159
Scopolamine hydrobromide, S-159
Scopolamine, S-159
Scopolan, S-159
Scopoline tropate, S-159
Scopoline, S-160
Scopos, S-159
Scorazanone, S-161
Scorodocarpine A, H-755
Scorodocarpine B, H-755
Scorodocarpine C, H-755
Scorodophlone A, S-162
Scorpinone, B-255
Scorpioidine, S-163
Scotine, C-708
Scoulerine, S-164
Scutebarbatine A, T-535
Scutebarbatine B, T-535
Scutianene C, D-841
Scutianene D, D-841
Scutianine A, S-165

Scutianine B, S-167
Scutianine C, S-166
Scutianine D, S-167
Scutianine E, S-167
Scutianine F, S-165
Scutianine G, S-167
Scutianine H, S-166
Scutianine J, S-167
Scutianine K, S-167
Scutianine L, C-600
Scutianine M, C-600
Scutianine, S-165
Scutifoliamide A, P-462
Scutifoliamide B, P-462
Scytonemin, S-168
Scytonine, S-169
Sczukidine, S-170
Sczukinine, S-170
Sczukitine, S-170
Sebastianine A, S-171
Sebastianine B, S-172
Sebiferine *N*-oxide, F-80
Sebiferine, F-80
Secaloside A, S-173
Secaloside B, S-173
Secaloside C, S-173
Secaloside D, S-173
Secamine, S-174
Secantioquine, S-175
6,7-Secoagroclavine, S-176
4,6-Secoangustilobinal, S-177
6,7-Secoangustilobine A, S-177
6,7-Secoangustilobine B, L-264
Secoantofine β-*N*-oxide, S-248
Secoantofine, S-248
Secobatzelline A, S-178
Secobatzelline B, S-178
Secocepharanthine, S-179
1,8-Secocinchonine, Q-17
Secoclausenamide, D-651
Secocularidine, S-180
Secocularine, S-180
6,7-Seco-6-cyanostemmadenine, Y-21
Secodaphniphylline, S-181
3,4-Seco-3,14-dehydrocabucraline, S-182
11,12-Seco-12-dehydromultiflorine, A-554
Secodemethylclausenamide, D-651
12-Seco-14-deoxyparsonsianine, S-183
Secodihydrocastoramine, N-340
Secodine, S-184
1,2-Secodysidamide H, S-185
1,2-Secodysidamide, S-185
6,7-Seco-19,20-epoxyangustilobine, L-264
Secofascaplysin A, S-186
Secoglaucine, M-559
Secohomoaromaline, S-192
Secoisoodorinol, C-456
Secoisopiriferinol, C-456
Secoisotetrandrine, C-806
Secojesaconitine, S-187
Secojollyanine, P-800
Secojuliprosopinal, S-188
Secokaraconitine, S-189
Secologanin, D-204
Secologanol, D-204
Secolucidine, S-190
Secomartinelline, S-191
6,7-Seco-6-norangustilobine B, L-264
Secoobaberine, S-192
Secoodorine, C-456
14,15-Seco-3-oxokopsinal, S-193
Secopenitrem B, S-194
Secophoebine, T-328
Secopiriferine, C-456
Secoplicamine, S-195
Secopseudopteroxazole, S-196
Secopyrrolotenin, C-456
Secoquettamine, S-197
Secosarcocapnidine, S-198
Secosarcocapnine, S-198
16,28-Secosolanida-5,22(28)-diene-3,16-diol, S-199
16,28-Secosolanida-5,22(28)-diene-3,12-diol, V-68
16,28-Secosolanida-5,22(28)-diene-3,12,16-triol, H-11
16,28-Secosolanida-5,22(28)-dien-3-ol, V-73
16,28-Secosolanida-4,22(28)-dien-3-one, V-73
16,28-Secosolanid-22(28)-ene-3,16-diol, S-338
16,28-Secosolanid-22(28)-ene-3,6-diol, S-201
16,28-Secosolanid-5-ene-3,16-diol, S-200
16,28-Secosolanid-22(28)-en-3-ol, S-337
16,28-Secosolanid-5-en-3-ol, V-73
Secoxanthoplanine, M-559
Secoyunaconitine, S-187
Secuamamine A, S-202
Secuamamine B, P-386
Secuamamine C, S-206
Secuamamine D, P-387
Securamine A, S-203
Securamine B, S-203
Securamine C, S-204
Securamine D, S-204
Securamine E, S-204
Securamine F, S-204
Securamine G, S-204
Securinegine, S-205
Securinine, S-206
Securinol A, S-207
Securinol B, S-207
Securinol C, S-208
Securitinine, P-386
Sedacrine, S-214
Sedacryptine, S-209
Sedamine, S-210
(±)-Sedamine, S-210
Sedaminone, S-210
Sedantole, C-555
Sederine, S-211
Sediendione, S-212
Sediene, S-213
Sedinine, S-214
Sedinone, S-215
Sedridine, S-216
(±)-Sedridine, S-216
Segoline A, S-217
Segoline B, S-217
Segoline C, S-217
Sekisanine, T-53
Sekisanoline, T-53
Selacholeic acid, T-120
Selagine, H-375
Selaginoidine, S-218
Selagoline, L-341
Selenobiotin, S-219
Sellowiine, S-220
Semecarpifoline, S-221
Semecarpine, S-222
Semiaquilegine A, L-70
Semicochliodinol A, A-1521
Semicochliodinol B, A-1521
Semilepidine A, H-422
Semilepidine B, H-422
Semilepidinoside A, H-422
Semilepidinoside B, H-422
Semiplenamide A, M-435
Semiplenamide B, M-435
Semiplenamide C, S-223
Semiplenamide D, S-224
Semiplenamide E, S-225
Semiplenamide F, S-225
Semiplenamide G, S-225
Semperflorine, T-288
Sempervine, S-228
Semperviramidine, C-883
Semperviraminol, S-226
Semperviraminone, S-227
Sempervirine, B-466
Sempervirine, S-228
Sempervirone, S-229
Semperviroxazolidine, S-230
SEN 34, H-562
SEN 215, T-424
Senacarcin A, S-231
Senacarcin H, S-231
Senaetnine, S-232
14,15-*trans*-Senaetnine, S-232
Senampelines, S-233
Senbusine A, M-323
Senbusine B, M-327
Senbusine C, M-313
Sencalenine, T-188
Sendaverine *N*-oxide, S-234
Sendaverine, S-234
Senecicaudatin *O*-isopentanoate, S-235
Senecicaudatin *O*-senecioate, S-235
Senecicaudatinal hemiacetal, S-236
Senecicaudatin, S-235
Seneciocannabine, S-237
Senecionine *N*-oxide, S-238
Senecionine, S-238
Senecioracenine, S-239
Senecioylcholine, C-419
O^2-Senecioylmacronecine, H-518
O^9-Senecioylmacronecine, H-518
3-Senecioyloxytropane, M-393
6-Senecioyloxytropan-3-ol, M-391
3-Senecioyloxytropan-6-ol, M-391
O-Senecioylplatynecine, H-233
N-Senecioylpyrrothine, A-759
O^7-Senecioylretronecine *N*-oxide, T-188
O^7-Senecioylretronecine, T-188
O^9-Senecioylretronecine, T-188
Seneciphylline epoxide, S-240
(*E*)-Seneciphylline epoxide, S-240
Seneciphylline *N*-oxide, S-240
Seneciphylline, S-240
(*E*)-Seneciphylline, S-240
Seneciphyllinine, S-240
Senecivernine *N*-oxide, S-241
Senecivernine, S-241
Senepodine A, S-242
Senepodine B, S-242
Senepodine C, S-242
Senepodine D, S-242
Senepodine E, S-242
Senepodine F, S-242
Senepodine G, S-243
Senepodine H, S-244
Senkirkine, S-245
Sepaconitine, A-87
Sepeerine, O-1
Sepiapterin C, A-40
Sepiapterin, S-246
Septatisine, S-247
Septedine, S-247
Septedinine, S-247
Septefine, A-91
Septenine, H-180
Septentriodine, P-776
Septentrionine, P-776
Septentriosine, H-180
Septephine, A-91
Septerine, M-309
Septicine, S-248
Septorine, S-249
Sequoiamonascin D, S-250
Seradix, I-83
(+)-Serantrypinone, A-240
(-)-Serantrypinone, A-240
Serecor, Q-18
Seredamine, T-288
Seredine, S-251
Serine 2-[(aminoiminomethyl)amino]ethyl hydrogen phosphate (ester), L-240
Serinol, A-893
Sermix, R-52
Seromycin, A-832
Serotobenine, S-252
Serotonin, H-755
Serpasil, R-52
Serpenticine, A-652
Serpentine, A-652
Serpentinine, S-253
Serpinine, T-288
Serratanidine, S-255
Serratanine A, L-277
Serratanine B, L-277
Serratenone, H-310
Serratezomine A, S-254

Serratezomine B, S-257
Serratezomine C, L-325
Serratidine, A-1029
Serratine, S-255
Serratinidine, S-256
Serratinine *N*-oxide, S-257
Serratinine, S-257
Serratiochelin, S-258
Serratoline, S-259
Sesbanimide A, S-260
Sesbanimide B, S-260
Sesbanimide C, S-261
Sesbanimide, S-260
Sesbanine, S-262
Sespendole, S-263
Sesquiterpenylamylaminohydroxyquinone, S-329
Sessiflorine, S-264
Sessilifoliamide A, S-522
Sessilifoliamide B, S-265
Sessilifoliamide C, S-265
Sessilifoliamide D, S-266
Sessilifoliamide E, S-267
Sessilifoliamide F, S-267
Sessilifoliamide G, S-268
Sessilifoliamide H, T-666
Sessilifoliamide I, T-665
Sessilifoline A, T-664
Sessilifoline B, S-528
Sessilifoline, D-604
Sessiline, S-269
Sessilistemonamine A, S-270
Sessilistemonamine B, S-270
Sessilistemonamine C, S-270
Sessilistemonamine D, S-271
Sessilistemonine, S-272
Setigeridine, S-274
Setigerine, P-79
Setoclavine, S-273
Sevanine, S-274
Sevcoridine, S-275
Sevcoridinine, S-275
Sevcorine, S-275
Sevedamine, C-295
Sevedine *N*-oxide, C-295
Sevedine, C-295
Sevedinine, D-563
Seveline, C-305
Sevelinone, C-305
Severcine, A-146
Severibuxine, S-276
Severidine, S-277
Severidinine, S-277
Severifoline, S-278
Severine *N*-oxide, C-295
Severine palmitate, A-77
Severine, A-77
Severine, C-295
Severtzidine, C-295
Severtzine, A-146
Severzine, C-305
Severzinine, S-279
Sewarine, A-228
Sewedamine, C-295
Sewercinine, S-279
Seweridine, S-277
Seweridinine, S-277
Sewertzidine, C-295
Sewerzinine, S-279
SF 1346, A-822
SF 1508, A-1253
SF 1739, A-1254
SF 2140, A-1255
SF 2312, A-1256
SF 2364, A-1157
SF 2369, A-1257
SF 2370, A-1189
SF 2425, A-1258
SF 2538, A-902
SF 2695, A-1259
SF 2768, A-1260
SF 2771, A-1261
SF 2809, A-1262
SF 337, A-735
SF 2197A, A-1094
SF 2695A, A-1259
SF 973A, A-14
SF 2738A, C-574
SF 2080A, D-356
SF 2582A, D-954
SF 2583A, O-157
SF 2741A, P-641
SF 2197B, A-1263
SF 2695B, A-1259
SF 973B, A-14
SF 2738B, C-574
SF 2582B, D-953
SF 2420B, M-491
SF 2583B, O-157
SF 2080B, P-963
SF 2741B, P-642
SF 2738, C-574
SF 2738C, C-575
SF 2582C, D-954
SF 2080C, P-964
SF 1917, D-73
SF 2441, D-765
SF 2738D, C-576
SF 2080D, P-964
SF 2738E, C-577
SF 2080E, P-965
SF 2738F, C-578
SF $2080F_{2a}$, P-966
SF $2080F_{2b}$, P-966
SF $2080F_1$, P-966
SF $2080F_3$, P-966
SF 1739HP, N-32
SF 2636, I-216
SF 2809-I, A-1262
SF 2809-II, A-1262
SF 2809-III, A-1262
SF 2809-IV, A-1262
SF 2494, T-658
SF 2809-V, A-1262
SF 2809-VI, A-1262
S-GI, H-616
Shaheenine, C-563
Shaoguanmycin A, P-421
Shaoguanmycin B, P-421
Shawurensine, D-182
Shearinine A, S-281
Shearinine B, J-21
Shearinine C, S-282
Shearinine D, S-281
Shearinine E, S-281
Shearinine F, S-281
Shearinine F, S-284
Shearinine G, S-281
Shearinine H, S-280
Shearinine I, S-280
Shearinine J, S-283
Shearinine K, S-284
Shepherdine, S-285
Shermilamine A, S-286
Shermilamine B, S-286
Shermilamine C, S-286
Shermilamine D, S-286
Shermilamine E, S-286
Shihunidine, S-287
Shihunine, S-288
Shimoburo base II, M-309
Shimoburo base I, N-30
Shinonomenine, C-313
Shisen 1, H-496
Shishididemniol A, S-289
Shishididemniol B, S-289
Shishididemniol C, S-289
Shishididemniol D, S-289
Shishididemniol E, S-289
Shishijimicin A, S-290
Shishijimicin B, S-290
Shishijimicin C, S-290
Shitakigenin, H-256
SHP 2, S-637
Shuazine, C-418
Siamenol, S-291
Siamine, T-566
Siaminine A, T-544
Siaminine B, I-306
Siastatin B, A-746
Sibanomicin, A-1157
Sibiricine, C-673
Sibiridine, I-308
Sibirine, N-241
Sibirinine, S-292
Sibyllimycin, S-293
Sickenbergine, S-294
Sickingine, T-150
Siculine, M-108
Siculinine, U-35
Siddiquamine, K-56
Siddiquine, K-56
Siderochelin A, S-295
Siderochelin B, S-295
Siderochelin C, S-296
Sieboldine A, S-297
Siechuansine, C-298
Siechuantine, S-298
Signatipennine, S-299
Silicine, M-293
Silvaticamide, S-300
Simaomicin α, S-301
Simaomicin β, S-301
Simmondsin, S-302
Simpalon, S-659
Simplakidine A, S-303
Simplexine, S-304
Simulanoquinoline, S-305
Simulansamide, S-306
Simulansine, Z-5
Simulenoline, Z-5
Sinaconitine A, A-86
Sinaconitine B, A-91
Sinactine, S-307
Sinalbin A, C-842
Sinalbin B, C-842
Sinalexin, I-336
Sinanomycin, N-180
Sinapine, S-308
2′-*O*-*trans*-Sinapoylalangiside, A-239
6′-Sinapoyldemethylalangiside, A-239
2′-*O*-*trans*-Sinapoyldemethylalangiside, A-239
2′-*O*-*trans*-Sinapoyl-3-*O*-demethyl-2-*O*-methylalangiside, A-239
6′-*trans*-Sinapoyllyaloside, L-316
Sinapoylputrescine, C-456
Sinapoylspermidine, S-398
Sinapoylspermine, S-399
N-*cis*-Sinapoyltyramine, H-667
N-*trans*-Sinapoyltyramine, H-667
Sincalin, C-419
Sincamidine, I-68
Sindamine, C-806
Singapurensine A, S-309
Singapurensine B, S-309
Singapurensine C, S-309
Singapurensine D, S-309
Sinharine, S-310
Sinicuichine, V-88
Sinine, V-95
Sinkalin, C-419
Sinoacutine, S-39
Sinococuline, S-311
Sinofranine, S-627
Sinomendine, S-312
Sinomenine *N*-oxide, S-313
Sinomenine, S-313
Sinomontanine A, A-91
Sinomontanine B, A-91
Sinomontanine C, S-315
Sinomontanine D, A-93
Sinomontanine E, A-86
Sinomontanine F, A-86
Sinomontanine G, D-187
Sinomontanine H, A-85
Sinomontanine I, S-314
Sinomontanine I, S-315
Sinomontanitine A, S-316
Sinomontanitine B, S-316
Sinostemonine, S-317

Sinpeinine A, C-290
Sintenpyridone, P-473
Sinulamide, S-318
Sinulamine III, S-320
Sinulamine II, S-319
Sinulamine I, S-319
Siomycin A, S-321
Siomycin B, S-321
Siomycin C, S-321
Siomycin D_1, S-322
Sipeimine, C-298
Sipeimone, C-298
Siphonazole, S-323
Siphonodictidine, S-324
Sisunine, S-445
Sitsirikine, S-325
(16*S*)-Sitsirikine, S-325
Siwanine A, M-362
Siwanine B, M-362
Siwanine C, M-371
Siwanine D, M-362
Siwanine E, M-362
Siwanine F, M-362
SK 7, T-355
Skatole-2-carboxylic acid, M-476
Skatole, M-474
SKF 250, D-92
Skimmianine, F-223
Skototenin, I-80
β-Skytanthine *N*-oxide, S-326
α-Skytanthine, S-326
β-Skytanthine, S-326
δ-Skytanthine, S-326
Skytanthine, S-326
γ-Skytanthine, S-326
SL 3238, F-197
Slaframine, S-327
Slagenine A, S-328
Slagenine B, S-328
Slagenine C, S-328
SM 35, A-853
SM 76, A-853
SM 43, G-180
Smenospongiarine, S-329
Smenospongidine, S-329
Smenospongine, S-329
Smenospongorine, S-329
Smipine, S-330
Smirnovine, S-406
Smirnovinine, S-406
SM-Q, F-190
SMTP 7, A-1264
SMTP 8, A-1265
SMTP 7D, A-1264
SMTP 8D, A-1265
SMTP 4D, S-332
SMTP 5D, S-333
SMTP 6D, S-334
SMTP O, S-490
SMTP 1, S-490
SMTP 2, S-490
SMTP 3, S-331
SMTP 4, S-332
SMTP 5, S-333
SMTP 6, S-334
Smyrnovine, S-406
Smyrnovinine, S-406
SN 198B, D-203
SN 198C, P-421
SN 198D, D-203
SN 198E, P-421
Sodium tenuazonate, T-74
Solacallinidine, S-335
Solacapine, S-336
Solacaproine, S-340
Solacassine, S-346
Solacauline, S-345
Solacongestidine, S-337
Solacongestine, S-337
α-Solacongestinine, S-337
β-Solacongestinine, S-337
Solaculine A, S-456
Soladulcamaridine, S-456
Soladulcidine 3-chacotrioside, S-445
Soladulcidine 3-lycotetraoside, S-445
Soladulcidine, S-445
Soladulcine A, S-445
Soladulcine B, S-445
α-Soladulcine, S-445
β-Soladulcine, S-445
γ-Soladulcine, S-445
Soladulicidine tetraoside, S-445
Soladunalinidine, S-439
Solafilidine, S-349
Solafloridine, S-338
Solakhasianine, S-456
Solalyratine A, S-445
Solalyratine B, S-445
Solamaladine, S-339
β_1-Solamargine, S-456
β_2-Solamargine, S-456
Solamargine, S-456
α-Solamarine, S-456
β-Solamarine, S-456
δ-Solamarine, S-456
γ-Solamarine, S-456
γ_1-Solamarine, S-456
γ_2-Solamarine, S-456
Solamine, S-340
Solanapyrone K, S-341
Solanapyrone L, S-341
Solanaviol, S-447
Solancarpidine, S-456
Solancarpine, S-456
Solanelagnine, S-456
Solangustidine, S-342
Solangustine, S-342
3,5-Solanidadiene, S-343
3,5,6-Solanidanetriol, S-344
Solanidan-3-ol, D-205
Solanid-5-ene-3,18-diol, I-310
Solanid-5-ene-3,23-diol, L-116
22α*H*,25β*H*-Solanid-5-ene-3β,12α-diol, R-144
Solanid-5-en-3-ol, S-345
Solanidine S, S-456
Solanidine T, S-345
Solanidine, S-345
α-Solanigrine, S-456
β-Solanigrine, S-456
Solanine D, D-205
α-Solanine, S-345
β-Solanine, S-345
γ-Solanine, S-345
Solanocapsine, S-346
Solanocardinol, D-99
Solanocastrine, S-347
Solanoforthine, S-346
Solanogantamine, A-908
Solanogantine, A-908
Solanopubamide A, A-908
Solanopubamide B, A-908
Solanopubamine, A-908
Solanthrene, S-343
Solanudine, S-348
Solanum Alkaloid SL-c, L-116
Solanum Alkaloid SL-d, L-116
Solapalmitenine, S-340
Solapalmitine, S-340
Solaparnaine, S-452
Solapersine, S-456
Solaphyllidine, S-349
Solaplumbine, S-456
Solaquidine, S-350
Solaradinine, S-456
Solaradixine, S-456
Solaseaforthine, S-351
Solashabanine, S-456
Solasodamine, S-456
5α-Solasodan-3β-ol (obsol.), S-445
Solasodanol, S-445
Solasodan-3-one, S-457
Solasodenone, S-457
Solasodine 3-*O*-β-D-glucopyranoside, S-456
Solasodine, S-456
Solasonine, S-456
Solaspiralidine, S-352
Solasuaveoline, S-456
Solasurine, S-456
Solateinemine, S-200
Solatifoline, S-456
Solatubine, S-345
Solaurethine, S-340
Solaverbascine, S-200
Solaverine III, S-455
Solaverine II, S-450
Solaverine I, S-450
Solaverol A, S-450
Solaverol B, S-455
Solavilline, S-456
Solcodein, C-555
Solenopsine A, M-584
Solenopsine B, M-580
Solenopsine C, M-504
Solfapterin, A-923
Solidaline, S-353
Solimocurarine, S-354
Solimoesines, S-355
Sollasin B, S-356
Sollasin C, S-357
Solpalmitene, S-340
Solsodomine A, S-358
Solsodomine B, S-359
Somamide A, S-360
Somniferine, S-361
Somniferine, S-362
Somniferinine, S-363
Somnine, S-364
Somocystinamide A, S-365
Songbeinine, C-290
Songbeinone, C-290
Songbeisine, H-371
Songoramine, D-162
Songorine *N*-oxide, N-30
Songorine, N-30
Songorinine, S-366
Sonodione, S-367
Sonpeimine, S-368
Sophazrine, S-369
Sophoattarine, S-370
Sophocarpidine, S-371
Sophocarpine *N*-oxide, S-371
Sophocarpine, S-371
Sophochrysine, S-372
Sophohejrine, S-373
Sopholupanizidone, S-374
Sopholupisine, S-375
Sophoramine, S-376
Sophoranol *N*-oxide, S-377
Sophoranol, S-377
Sophorasine A, S-378
Sophorasine B, S-378
Sophorbenzamine, S-379
Sophoridine *N*-oxide, S-380
Sophoridine, S-380
Sophorine, C-938
Sophorine, O-59
Sophosalimine, S-381
Soraphinol A, H-538
Sorbicillactone A, S-382
Sorbicillactone B, S-382
L-Sorbosazine, B-221
Sorelline, S-383
Soulidine, M-309
Soulieotine, D-471
Souline A, M-347
Souline B, H-157
Souline C, M-321
Souline D, M-356
Souline E, M-357
Souline F, H-199
Spallidamine, H-491
Spanidin, S-394
Sparoxomycin A1, S-384
Sparoxomycin A2, S-384
Sparsiflorine, T-524
Sparsogenin, S-384
Sparsomycin A, T-658
Sparsomycin, S-384
Spartalupine, I-322

Sparteine sulfate, S-385
11β-Sparteine, I-321
Sparteine, S-385
Spartioidine *N*-oxide, S-240
Spartioidine, S-240
Spartocytisine, S-386
Spathulatine, I-322
Speciociliatine, G-13
Speciocolchine, S-387
Speciofoline, R-134
Speciogynine, G-13
Specionoxeine, R-134
Speciophylline *N*-oxide, M-661
Speciophylline, M-661
Specioritchine, S-387
Speciosamine, S-387
Specioseine, S-387
Speciosine, S-387
Spectabiline, L-88
Spectabiline, M-688
Spectaline, S-388
Spectalinine, S-388
Spectamine A, C-183
Spectamine B, C-183
Spegazzinidine, S-578
Spegazzinine, S-578
Sperabillin A, S-389
Sperabillin C, S-389
Speradine A, C-894
Speranberculatine A, S-390
Speranculatine A, S-391
Speranculatine B, S-391
Speranculatine C, S-391
Speranskatine A, S-392
Speranskatine B, S-392
Speranskilatine A, S-393
Spergualin, S-394
Spermacoceine, S-395
Spermatheridine, L-194
Spermatherine, S-396
Spermic acid, S-397
Spermidine, S-398
Spermine, S-399
Spermostrychnine, S-400
SPF 32629A, A-1266
SPF 32629B, A-1267
Sphaeranthine I, S-402
Sphaeranthine IV, S-403
Sphaeranthine VII, S-405
Sphaeranthine VI, S-404
Sphaeranthine, S-401
Sphaerocarpine, A-930
Sphaerophysine, S-406
Spheroidine, T-298
Spherophysine, S-406
Spicaledonine, S-407
Spicataxine, T-47
Spicatine A, M-331
Spicatine B, M-343
Spicatine, S-408
Spicigerine, S-409
Spidamine, J-46
Spiduxine, S-410
Spiganthine, R-175
Spiguetidine, S-411
Spiguetine, S-411
Spilanthic acid, D-124
Spilanthol, D-124
Spinaceamine, T-192
Spinacine, T-193
Spinanine A, S-412
Spinosine, X-30
Spiracine, M-502
Spiradine A, H-164
Spiradine B, H-164
Spiradine C, H-164
Spiradine D, S-421
Spiradine F, S-418
Spiradine G, S-418
Spiraeaine A, S-413
Spirafine III, S-414
Spirafine II, S-414
Spirajine, S-415
Spiraline, P-98
Spiramide, A-1534
Spiramidine A, S-419
Spiramidine B, S-419
Spiramine A, S-416
Spiramine B, S-416
Spiramine C, S-416
Spiramine D, S-416
Spiramine E, A-211
Spiramine F, A-211
Spiramine G, A-1533
Spiramine H, A-1533
Spiramine I, A-1533
Spiramine J, S-417
Spiramine K, S-417
Spiramine L, S-417
Spiramine M, S-417
Spiramine N, B-371
Spiramine O, B-371
Spiramine P, S-418
Spiramine Q, S-418
Spiramine R, A-211
Spiramine S, A-1534
Spiramine T, S-418
Spiramine U, S-418
Spiramine V, A-1534
Spiramine W, S-418
Spiramine X, S-413
Spiramine Y, S-413
Spiramine Z, S-422
Spiramine Z_2, S-419
Spiramine Z_3, S-419
Spiranine, M-502
Spirasine III, S-421
Spirasine II, S-421
Spirasine I, S-421
Spirasine IV, H-171
Spirasine IX, H-173
Spirasine VIII, S-421
Spirasine VII, S-421
Spirasine VI, S-421
Spirasine V, S-421
Spirasine XI, H-171
Spirasine XII, D-584
Spirasine XIII, D-584
Spirasine XIV, H-165
Spirasine X, S-420
Spirasine XV, H-165
Spiratine A, A-1533
Spiratine B, S-422
Spiredine, S-421
Spireine, S-423
Spiroarogenic acid, S-424
1-Spiroaxen-6-amine, S-425
Spirobrassinin, S-426
Spirobrassinol, S-427
Spirocalcaridine A, S-428
Spirocalcaridine B, S-428
Spirodihydrobenzofuranlactam I, A-1164
Spirodihydrobenzofuranlactam II, A-1164
Spirodihydrobenzofuranlactam III, A-1164
Spirodihydrobenzofuranlactam IV, A-1164
Spirodihydrobenzofuranlactam V, A-1164
Spirodihydrobenzofuranlactam VI, S-489
Spirofornabuxine, S-429
Spiroleucettadine, S-430
Spirolide A, S-431
Spirolide B, S-431
Spirolide C, S-432
Spirolide D, S-432
Spirolide E, S-433
Spirolide F, S-433
Spirolide G, S-434
Spirolucidine, S-435
Spiropachysine, S-436
Spiropyrrolizidine 238, N-252
Spiropyrrolizidine 222, S-437
Spiropyrrolizidine 236, S-437
Spiropyrrolizidine 252, S-437
Spiroquinazoline, S-438
Spirosolan-3-amine, S-439
Spirosolane-2,3-diol, S-440
Spirosolane-3,15-diol, S-441
Spirosolane-3,23-diol, S-442
Spirosolane-3,23,24-triol, S-443
Spirosolane-3,23,27-triol, S-444
Spirosolan-3-ol, S-445
Spirosol-5-en-3-amine, S-446
Spirosol-5-ene-3,23-diol, S-450
Spirosol-5-ene-3,12-diol, S-447
Spirosol-5-ene-3,15-diol, S-448
Spirosol-5-ene-3,21-diol, S-449
Spirosol-5-ene-3,25-diol, S-451
Spirosol-5-ene-3,27-diol, S-452
Spirosol-5-ene-3,12,27-triol, S-454
Spirosol-5-ene-3,23,27-triol, S-455
Spirosol-5-ene-3,12,23-triol, S-453
Spirosol-5-en-3-ol, S-456
Spirosol-4-en-3-one, S-457
Spirostan-3-amine, S-458
Spirostaphylotrichin C, T-625
Spirostaphylotrichin D, T-625
Spirostaphylotrichin E, S-459
Spirostaphylotrichin F, S-459
Spirostaphylotrichin G, S-460
Spirostaphylotrichin H, S-460
Spirostaphylotrichin I, S-466
Spirostaphylotrichin K, S-461
Spirostaphylotrichin L, S-459
Spirostaphylotrichin M, S-462
Spirostaphylotrichin N, S-463
Spirostaphylotrichin O, S-463
Spirostaphylotrichin P, S-463
Spirostaphylotrichin Q, S-464
Spirostaphylotrichin R, S-465
Spirostaphylotrichin S, S-466
Spirostaphylotrichin T, S-467
Spirostaphylotrichin U, S-465
Spirostaphylotrichin V, S-465
Spirotryprostatin A, S-468
Spirotryprostatin B, S-468
Spixianine *N*-oxide, S-469
Spixianine, S-469
Splendaboline, S-627
Splendidine, S-470
Splendoline, S-605
Spongiacidin A, H-762
Spongiacidin B, H-762
Spongiacidin C, A-1576
Spongiacidin D, A-1576
Spongiacysteine, S-471
Spongidine A, S-472
Spongidine B, S-472
Spongidine C, P-289
Spongidine D, S-473
Spongolactam A, D-763
Spongolactam B, D-764
Spongolactam C, D-763
Spongopurine, A-842
Spongotine A, T-432
Spongotine B, T-432
Spongotine C, T-432
Spophyllin retard, T-360
Sporangiomycin, S-321
Sporidesmin A, S-474
Sporidesmin B, S-474
Sporidesmin C, S-475
Sporidesmin D, S-476
Sporidesmin E, S-477
Sporidesmin F, S-478
Sporidesmin G, S-479
Sporidesmin H, S-480
Sporidesmin J, S-474
Sporidesmin, S-474
Sporovexin A, S-481
Sporovexin C, S-481
Sprintillamine, S-482
Sprintilline, S-483
Spylidone, S-484
SQ 02-S-L1, A-1268
SQ 02-S-L2, S-492
SQ 02-S-V2, A-1269
SQ 02-S-V1, S-492
Squalamine lactate, S-485
Squalamine, S-485
Squalidine, S-238

Squamigerine, S-486
Squamolone, S-487
Squamosamide, S-488
Sracosalgmine, A-884
Srilane, H-488
Srilankine, C-190
SS 20846A, H-658
SS 46506A, P-974
SS 228B, A-1270
Stachybocin A, S-489
Stachybocin B, S-489
Stachybocin C, S-489
Stachybocin D, S-489
Stachybotramide, A-1164
Stachybotrin A, A-1164
Stachybotrin A, S-490
Stachybotrin B, S-490
Stachybotrin C, S-490
Stachybotrin, A-1164
Stachybotrylactam, A-1164
Stachydrine ethyl ester, S-491
β-Stachydrine, P-952
Stachydrine, S-491
Stachyflin, S-492
Stafac, O-131
Stallimycin hydrochloride, D-866
Stallimycin, D-866
Stapfinine, S-493
Staphidine, S-496
Staphigine, S-496
Staphimine, S-494
Staphinine, S-494
Staphirine, S-496
Staphisadrine, M-303
Staphisadrinine, M-323
Staphisagnine, S-495
Staphisagrine, S-495
Staphisine, S-496
Staphylomycin M_1, O-131
Staplabin, S-490
Staudine, S-497
Staurosporine aglycone, A-1190
Staurosporine, S-498
Staurosporinone, A-1190
Stawamycin, S-499
Stealthin A, S-500
Stealthin B, S-500
Stealthin C, S-501
Stearamide, O-32
Stearic acid, O-32
Stearophanic acid, O-32
N-Stearoylpyrrolidine, P-949
N^b-Stearoyltryptamine, T-639
Stebisimine, S-502
Stecepharine, C-93
Stellarine A, A-45
Stellarine B, A-45
Stellettadine A, S-503
Stellettamide A, S-504
Stellettamide B, S-505
Stellettamide C, S-504
Stellettamine, S-506
Stellettazole A, S-507
Stellettazole B, S-508
Stellettazole C, S-509
Stemmadenine, S-510
15β-Stemmadenine, S-510
Stemoamide, S-511
Stemoburkilline, S-512
Stemocochinamine, S-513
Stemocochinine, P-670
Stemocurtisine, S-514
Stemocurtisinol, S-516
(3′*R*)-Stemofolenol, S-515
(3′*S*)-Stemofolenol, S-515
Stemofoline, S-515
Stemofolinoside, S-515
Stemokerrin *N*-oxide, S-516
Stemokerrin, S-516
Stemonamide, S-517
Stemonamine, S-518
Stemonidine, S-523
Stemonine LG, T-664
Stemonine, S-519
Stemonine, S-520
Stemoninine, S-521
Stemoninoamide, S-522
Stemospironine, S-523
Stemotinine, S-524
Stemotuberine, S-525
Stemucronatoside F, P-223
Stenantherine, T-245
Stenantidine, S-345
Stenantine, S-345
Stenanzamine, C-306
Stenanzidine, C-290
Stenanzine, S-526
Stendomycidine, S-527
Stenine, S-528
Stenocarpine, L-105
Stenophylline A, G-70
Stenophylline B 3-*O*-β-D-glucopyranoside, V-87
Stenophylline B, V-87
Stenusine, E-253
Stephabenine, S-529
Stephabinamine, S-530
Stephabine, S-531
Stephaboline, M-233
Stephabyssine, M-233
Stephacidin A, A-1470
(-)-Stephacidin A, A-1470
Stephacidin B, S-532
Stephadiamine, S-533
Stephadiolamine β-*N*-oxide, S-534
Stephadiolamine, S-534
Stephadione, S-535
Stephaglabrine, P-643
Stephalagine, S-536
Stephalonganine A, E-318
Stephalonganine B, E-318
Stephalonganine C, E-318
Stephalonine A, L-244
Stephalonine B, L-244
Stephalonine C, L-244
Stephalonine D, L-244
Stephalonine E, L-244
Stephalonine F, L-244
Stephalonine G, L-244
Stephalonine H, L-244
Stephalonine I, L-244
Stephalonine J, L-244
Stephalonine K, L-244
Stephamiersine, S-537
Stephanine, T-522
Stephanoline, S-538
Stephanoside A, P-610
Stephanoside B, P-610
Stephanoside C, P-610
Stephanoside D, P-610
Stephanoside E, P-610
Stephanoside F, P-610
Stephanoside G, P-610
Stephanoside H, P-610
Stephanoside L, P-609
Stephanoside N, P-609
Stephanoside P, P-609
Stephanosporin, S-539
Stephanotic acid, S-540
Stephanthraniline A, P-610
Stephanthraniline B, P-602
Stephanthraniline C, H-256
Stephanubine, R-161
Stephaoxocanidine, S-541
Stephaoxocanine, S-541
Stephaphylline, I-325
Stepharanine, P-34
Stepharine, P-643
Stepharinosine, S-542
Stepharotine, S-543
Stephasubimine, S-544
Stephasubine, S-544
Stephasunoline, L-244
Stephavanine, S-545
Stephenanthrine *N*-oxide, S-546
Stephenanthrine, S-546
Stephibaberine, O-1
Stephisoferuline, L-244
Stephodeline, T-28
Stepholidine, S-547
Stepholine, I-328
Stephuline, L-244
Stephylomycin, O-131
Stepierrine, C-171
Stepinonine, S-548
Steponine, I-315
Steporphine, S-549
Sterculinine II, S-550
Sterculinine I, S-550
Sternbergine, P-716
Sternine, S-551
Stesakine *O*-β-D-glucopyranoside, C-733
Stesakine, C-733
Stevensine, O-66
Stichoneurine A, S-552
Stichoneurine B, S-552
Sticticin, A-745
Stigmalactam, T-255
Stillingic acid, D-104
Stilopine, S-612
Stipiamide, P-316
Stipitatine, M-238
Stipulatine, R-134
Stizolamine, S-553
Stizolophine, S-554
Stockerine, S-555
Stogerin-Amp, B-101
Stopnin, B-101
Storniamide A, S-556
Storniamide B, S-556
Storniamide C, S-556
Storniamide D, S-556
Strellidimine, S-557
Strempeliopidine, S-558
Strempeliopine, S-559
Streptazoline, S-560
Streptazone A, S-561
Streptazone B_1, S-561
Streptazone B_2, S-561
Streptazone C, S-562
Streptazone D, D-490
Streptenol E, A-793
Streptimidone, S-563
Streptindole, S-564
Streptogramin A, O-131
Streptogramin, O-131
Streptokordin, A-70
Streptolidine, S-565
Streptolydigin, S-566
Streptomyceamide A, S-567
Streptomyceamide B, S-568
Streptonigrin, S-569
Streptonigrone, S-570
Streptopyrrole, S-571
Streptorubin A, M-230
Streptorubin B, S-572
Streptoverticillin, S-573
Streptoverticillone, H-425
Streptovitacin A, D-765
Streptovitacin B, D-765
Streptovitacin C_2, D-765
Streptovitacin D, S-574
Streptovitacin E73, D-765
Stresgenin B, S-575
Stricnogen, S-589
Strictalamine, S-576
Strictamine *N*-oxide, S-576
Strictamine, S-576
Strictaminolamine, S-577
Strictanine, S-578
Strictanol, R-72
Strictibine, S-579
Stricticine, S-580
Strictimine, S-581
Strictine, S-582
Strictosamide, V-126
Strictosidine lactam, V-126
Strictosidine, S-583
Strictosidinic acid 6′-α-D-glucoside, S-583
Strictosidinic acid, S-583

Strictosidinic ketone, S-584
Strigosine, S-585
Strobamine, S-586
Strobiline, S-587
Strobolamine, S-586
Struxine, I-12
Strychnambarine, S-588
Strychnicine, I-12
Strychnidine, S-589
Strychnidin-10-one, S-589
Strychnine *N*-oxide, S-589
Strychnine sulfate, S-589
ψ-Strychnine, P-726
Strychnine, S-589
Strychnobaridine, S-590
Strychnobiline, S-591
Strychnobrasiline, S-594
Strychnocarpine, T-226
Strychnochromine, S-592
Strychnochrysine, S-593
Strychnofendlerine, S-594
Strychnofluorine, N-301
Strychnofoline, S-595
Strychnofuranine, S-596
Strychnogucine A, S-597
Strychnogucine B, S-598
Strychnogucine C, S-597
Strychnohexamine, S-599
Strychnohirsutine, S-600
Strychnopentamine, S-601
Strychnophylline, S-602
Strychnopivotine, S-603
Strychnorubigine, I-319
Strychnosilidine, S-604
Strychnosiline, S-604
Strychnospermine, S-400
Strychnosplendine, S-605
C-Strychnotoxine Ia, C-31
C-Strychnotoxine I, C-31
Strychnotoxine II, T-437
Strychnovoline, T-145
Strychnoxanthine, S-606
Strychnozairine, S-607
Strynervene, S-589
Stryphnon, A-736
STX, S-109
Styelsamine A, S-609
Styelsamine B, S-609
Styelsamine C, S-608
Styelsamine D, S-609
Stylissadine A, S-610
Stylissadine B, S-610
Styloguanidine, S-611
Stylophorine, C-357
Stylophylline, H-394
Stylopine, S-612
Stylotellane A, S-613
Stylotellane B, S-613
Stylotellin, S-614
Stypnon, A-736
2-Styrylindole, P-341
N-Styryllactamide, X-27
N-Styryl-4(3*H*)-quinazolinone, Q-14
Suaedin, S-615
Suavedol, P-643
Suaveolenine, S-616
Suaveolindole, S-617
Suaveoline, S-618
Suaveoline, T-248
Subaphylline, C-456
Subarine, S-619
Subcosine II, L-53
Subcosine I, L-53
Subcumine, M-323
Subcusine, M-323
Subdesculine, D-162
Subereatensin, S-620
Suberedamine A, S-621
Suberedamine B, S-621
Subhirsine, S-622
Subincanadine A, S-623
Subincanadine B, S-623
Subincanadine C, S-623
Subincanadine D, S-624
Subincanadine E, S-624
Subincanadine F, S-625
Subincanadine G, S-623
Subincanine, S-626
Subsessiline lactone, A-676
Subsessiline, A-676
Subsessiline, S-627
Substance B, D-92
Substance C, D-92
Substance E_1, D-92
Substance I, L-287
Substance J, L-287
Substance S, D-92
Substance T_a, D-92
Substance U, D-92
Succinopyoverdin G173, S-628
N-Succinoylanthranilic acid, A-706
N^2-Succinoylarginine, A-1413
Succirubine, S-629
Suffruticodine, S-630
Suffruticonine, S-631
Sugordomycin D_{1a}, C-711
Sugordomycin D_{1d}, C-712
Suhailamine, A-537
Suillumide, A-762
Suinin, S-632
Sukhodianine β-*N*-oxide, C-733
Sukhodianine, C-733
Sulcatine, C-146
10-*O*-Sulfatobastadin 3, B-31
Sulfinemycin, S-633
Sulfobacin A, S-634
Sulfobacin B, S-635
34-*O*-Sulfobastadin 9, B-32
34-Sulfobastadin 13, B-33
N-(2-Sulfoethyl)pyridinium betaine, S-636
Sulfoglucobrassicin, I-122
Sulfohalopterin 2, S-637
4-*O*-Sulfohemibastadin 1, H-100
4-*O*-Sulfohemibastadin 2, H-100
1-*O*-Sulfohemibastadin 1, H-100
1-*O*-Sulfohemibastadin 2, H-100
(1-Sulfo-1*H*-indol-3-yl)methyl glucosinolate, I-122
Sulfomycin, S-638
3-(Sulfooxy)tyrosine, A-745
7-Sulfopseudobactin A, P-702
Sulfostin, S-639
Sulphostin, S-639
Sulpinine A, S-640
Sulpinine B, S-640
Sulpinine C, S-641
Sun 0588, T-142
Sungpaconitine, M-303
Sungucine, S-642
Suomilide, S-643
(-)-Supinidine curassavate, C-810
Supinidine, S-644
Supinine, A-669
Supral, V-34
Suprarenin, A-152
Surinamine, T-700
Surugatoxin, S-645
Sutchueneneonine, S-646
Sutchuenenine, S-647
Sutchuenensine, S-648
Sutherlandin *trans-p*-coumarate, H-510
Sutherlandin epoxide, H-510
Sutherlandin, H-510
Suvanine, S-649
Sventrine, O-123
SW 163C, A-1271
SW 163D, A-1304
SW 163E, A-1304
SW 163F, A-1304
SW 163G, A-1304
Swainsonine *N*-oxide, S-650
Swainsonine, S-650
Swatinine, M-339
Swazine, S-651
SW-B, T-603
Sweetinine, E-99
Swietenidin A, Q-41
Swietenidin B, Q-45
Swinhoeiamide A, S-652
Sycophantine, S-456
Sylvamide, D-566
Sylvatine, S-653
Symbioimine, S-654
Symlandine, E-31
Sympathol, S-659
Sympectothione, E-173
Symphytine, E-31
Symplostatin 1, D-907
Symviridine, E-32
Synaine, S-655
Synapton, P-400
Syncarpamide, M-18
(±)-Syncarpamide, M-18
Syncarpine, P-424
Syncarpurea, S-656
Syncothrecin A, O-131
Syndihydrohistrionicotoxin, H-309
Synechobactin A, S-657
Synechobactin B, S-657
Synechobactin C, S-657
Syneilesine, S-658
Synephrine acetonide, S-659
Synephrine, S-659
Synerazol, S-660
Synergistin A_1, O-131
Synthetic capsaicin, C-100
Syntometrine, E-164
Syphilobin A, S-661
Syphilobin F, S-662
Syriamycin, S-663
Syringolin A, S-664
Syringolin B, S-664
Syringolin C, S-665
Syringolin D, S-666
Syringolin E, S-666
Syringolin F, S-667
16-*O*-Syringoylbuxaminol E, B-456
Syringyltrachelanthamidine, H-629
Szechenyine, M-331
Szovitsamine *N*-oxide, P-221
Szovitsamine, P-221
Szovitsidine, A-1005
Szovitsinine, P-221
T 988A, G-99
T 988B, A-1272
T 988C, G-99
T 41348, H-514
T 1384, N-180
T 1401, T-142
TA 3037A, A-1273
TA Toxin A, T-612
Tabascanine, S-604
Taberhanine, T-11
Tabernaebovine, T-1
Tabernaelegantidine, T-2
Tabernaelegantine A, C-616
Tabernaelegantine B, C-615
Tabernaelegantine C, C-616
Tabernaelegantine D, C-615
Tabernaelegantinine A, T-3
Tabernaelegantinine B, T-4
Tabernaelegantinine C, T-5
Tabernaelegantinine D, C-615
Tabernaemontabovine, T-6
Tabernaemontanine, D-935
Tabernaemontaninol, D-935
Tabernaemontavine, T-7
Tabernamine, T-8
Tabernanthine, I-4
Tabernoschizine, A-1365
Tabernoxidine, T-9
Tabernulosine, P-417
Taberpsychine, T-10
(19*Z*)-Taberpsychine, T-10
Tabersonine α-epoxide, T-11
Tabersonine β-epoxide, T-11
Tabersonine N^b-oxide, T-11
ψ-Tabersonine, P-733
Tabersonine, T-11
Tabex, C-938

Tabouensinium, G-29
Tacamine, T-12
Tacamonine, T-13
Tachmalin, A-216
Tacraline, T-15
Tadzhaconine, H-181
Taifine, F-212
Taipaienine, D-562
Taipeienine, D-562
Taiwanamide A, D-718
Taiwanamide B, D-718
Taiwanamide C, M-219
Takaobase I, M-309
Takaokamycin, H-358
Takaonine, M-363
Takaosamine, M-309
Takatonine, T-16
Takawobase I, M-309
Talaroconvolutin A, O-134
Talaroconvolutin B, O-134
Talaroconvolutin C, D-141
Talaroconvolutin D, D-141
Talarotoxin, T-17
Talassamine, T-18
Talassicumine A, M-352
Talassicumine B, D-611
Talassicumine C, M-381
Talassimidine, T-18
Talassimine, T-18
Talatisamine, M-352
Talatisidine, M-352
Talatizamine, M-352
Talatizidine, M-352
Talatizine, H-209
Talbotine, T-19
Talcamine, C-806
Talcarpine, T-20
Talgic acid, O-32
Taliscanine, T-539
Talitine A, M-344
Talitine B, M-315
Talitine C, M-344
Talizopine, T-346
Talmine, T-341
Talpinine, T-21
Talval, H-488
Tambjamine aldehyde, M-244
Tambjamine A, T-22
Tambjamine B, T-22
Tambjamine C, T-22
Tambjamine D, T-22
Tambjamine E, T-22
Tambjamine F, T-22
Tambjamine G, T-22
Tambjamine H, T-22
Tambjamine I, T-22
Tambjamine J, T-22
Tamynine, T-23
TAN 1263, A-1275
TAN 1280, A-1276
TAN 1307, A-1277
TAN 1813, A-1278
TAN 2020, A-1279
TAN 883, A-1274
TAN 1030A, A-1281
TAN 1057A, A-1282
TAN 1251A, A-1284
TAN 1263A, A-1275
TAN 876A, A-1280
TAN 883A, A-1274
TAN 950A, A-733
TAN 1771A, D-574
TAN 868A, K-43
TAN 1169A, P-400
TAN 749A, S-389
TAN 1057B, A-1282
TAN 1251B, A-1284
TAN 1263B, A-1275
TAN 876B, A-1283
TAN 1771B, D-572
TAN 868B, K-43
TAN 1169B, P-400
TAN 883B, X-6
TAN 1142, C-325
TAN 1057C, A-1285
TAN 1251C, A-1284
TAN 1263C, A-1275
TAN 883C, A-1274
TAN 749C, S-389
TAN 1057D, A-1285
TAN 1251D, A-1284
TAN 1263D, A-1275
TAN 883D, A-1274
TAN 588, L-8
TAN 999, S-498
Tanakamine, T-24
Tanakine, T-25
Tanganil, L-153
Tangirine, T-26
Tangutisine, H-189
Tangutorine, T-27
Tannagine, T-28
Tantazole A, T-29
Tantazole B, T-30
Tantazole F, T-31
Tantazole I, T-29
Tanwusine A, H-188
Tanwusine, H-203
Taraktophyllin, D-565
Taraxacine A, P-914
Taraxacine B, C-133
Tardioxopiperazine A, T-32
Tardioxopiperazine B, T-33
Tardolyt, M-262
Tarennine, T-34
Tarichatoxin, T-298
Tashiromine, O-47
Tasmanine, T-35
Taspine, T-36
Tasteless Quinine, Q-20
Tataramide B, E-128
Tatiopterin, T-37
Tatsidine, M-324
Tatsiensine, M-371
Tatsinine, M-324
Tatsirine, H-198
Taumustine, A-765
Taurenine, M-313
Tauret, T-38
Taurine, A-765
Taurine, P-32
Tauroacidin A, T-39
Tauroacidin B, T-39
Taurocyamine, G-204
Taurodispacamide A, T-39
Taurohaterumalide NA, H-76
Tauropinnaic acid, P-435
Taveuniamide A, T-40
Taveuniamide B, T-40
Taveuniamide C, T-40
Taveuniamide D, T-40
Taveuniamide E, T-40
Taveuniamide F, D-357
Taveuniamide G, D-357
Taveuniamide H, D-357
Taveuniamide I, D-357
Taveuniamide J, D-357
Taveuniamide K, D-357
Tawicyclamide A, T-41
Tawicyclamide B, T-42
4(20),11-Taxadiene-1,2,5,7,9,10,13-heptol, T-43
4(20),12-Taxadiene-2,5,7,9,10,11,13-heptol, T-44
4(20),11-Taxadiene-1,2,5,9,10,13-hexol, T-45
4(20),11-Taxadiene-2,5,7,9,10,13-hexol, T-46
4(20),11-Taxadiene-2,5,9,10,13-pentol, T-47
4(20),11-Taxadiene-5,7,9,10,13-pentol, T-48
4(20),11-Taxadiene-5,9,10,13-tetrol, T-49
Taxcultine, T-52
Taxicin II, T-273
Taxilamine, T-50
Taxine A, A-6
Taxine B, T-45
Taxine C, A-6
Taxine II, T-273
Taxine I, T-45
Taxiphyllin, H-520
Taxodine, T-51
Taxol A, T-52
Taxol B, T-52
Taxol C, T-52
Taxol D, T-52
Taxoline, T-52
Taxol, T-52
Taxuspinanane A, E-141
Taxuspinanane E, T-52
Taxuspinanane I, T-52
Taxuspinanane J, T-52
Taxuspine H, S-407
Taxuspine N, E-141
Taxuspine P, T-44
Taxuspine Z, T-47
Taxuyunnanine A, T-52
Tazettine, T-53
Tazettinol, T-53
TB Toxin, T-17
TBA, T-457
TC 2403, M-232
Tchibangensine, U-52
Tecleabine, F-222
Tecleamine, F-217
Tecleanatalensine A, F-221
Tecleanatalensine B, F-221
Tecleanine, T-54
Tecleanone, T-55
Tecleanthine, T-56
Tecleaverdine, T-57
Tecleaverdoornine, T-57
Tecleine, F-217
Tecleoxine, F-221
Tecomanine, T-58
Tecomine, T-58
Tecostanine, T-59
Tecostidine, T-60
Tedanalactam, O-146
Tegerrardin A, D-528
Tegerrardin B, D-528
Tehaunine *N*-oxide, T-238
Tehaunine, T-238
Teidine, A-138
Teinemine, S-200
Tejedine, S-192
Tejeramycin, T-61
Teladiazoline, T-62
Telastaside, P-58
Telazoline, T-62
Teleocidin A_1, L-367
Teleocidin A_2, L-367
Teleocidin B_1, T-63
Teleocidin B_2, T-63
Teleocidin B_3, T-63
Teleocidin B_4, T-63
Telepathine, H-592
Teliglazine, M-712
Telikovinone, T-64
Telisatin A, T-65
Telisatin B, T-65
Telitoxine, T-498
Telitoxinone, T-64
Telobine, A-1331
Teloidine, M-392
Telomestatin, T-66
Tembamide acetate, T-67
Tembamide, T-67
Tembetarine, R-59
Templetine, T-68
Temuconine, B-98
(-)-Temuconine, G-177
Tenacibactin A, T-69
Tenacibactin B, T-69
Tenacibactin C, T-70
Tenacibactin D, T-71
Tenaglin, A-716
Tenellin, T-72
Tensibar, R-52
Tensiplex, E-6
Tenuamine, T-73
Tenuazonic acid, T-74
Tenucaulin B, A-716
Tenuecyclamide A, T-75

Tenuecyclamide B, T-75
Tenuecyclamide C, T-76
Tenuecyclamide D, T-76
Tenuicaulin A, A-716
Tenuicausine, T-77
Tenuidine, T-78
Tenuilobine, T-79
Tenuiphylline, T-80
Tenuipine, T-81
Tenuisine A, L-44
Tenuisine B, L-44
Tenuisine C, L-44
Teonova, T-360
Tepenine, T-166
Teperine, C-419
Tepidopterin, A-749
Terapterin, P-772
Terdeline, M-307
Terengganensine A, T-82
Terengganensine B, T-83
Terezine A, T-84
Terezine B, T-85
Terezine C, T-85
Terezine D, T-86
Terihanine, N-239
[3,2′:2′(3′*H*),3′′-Ter-1*H*-indol]-3′-one, T-87
[3,3′:3′(2′*H*),3′′-Ter-1*H*-indol]-2′-one, T-88
Terminaline, A-879
Termine, T-89
Termisine, T-90
Ternatidine, H-193
Ternatine, H-193
Ternatoside C, R-168
Ternatoside D, R-168
Teropterin, P-772
Terpendole A, T-93
Terpendole B, T-92
Terpendole C, T-93
Terpendole D, T-92
Terpendole E, P-108
Terpendole F, P-108
Terpendole G, P-108
Terpendole H, T-94
Terpendole I, T-91
Terpendole J, T-91
Terpendole K, T-93
Terpendole L, T-95
Terpendole M, T-93
Terpeptin, T-96
[*p*-Terphenyl]-2′,3′,4,4′′,5′,6′-hexol, T-97
3,2′:4′,3′′-Terpyridine, T-98
Terragine A, T-99
Terragine B, T-100
Terragine C, T-101
Terragine D, T-102
Terregens factor, A-1451
Terresoxazine, T-103
Terrestriamide, A-786
Terrestribisamide, D-362
Terrestric acid, T-104
Terreusinone, T-105
Terricolin, P-922
Terriquinone A, T-106
Tessellatine, H-93
Tetraacetylclionamide, C-527
Tetraacetylethylenediamine, E-225
1,5,8,12-Tetraazadodecane, B-153
4,8,12,16-Tetraazaeicosane-1,20-diamine, D-283
4,8,12,17-Tetraazaeicosane-1,20-diamine, D-284
4,8,13,17-Tetraazaeicosane-1,20-diamine, D-285
1,6,11,16-Tetraazahexadecane, B-150
4,8,12,16-Tetraazanonadecane-1,19-diamine, T-107
1,5,10,15-Tetraazapentadecane, D-250
1,6,10,15-Tetraazapentadecane, D-251
5,10,15,20-Tetraazatetracosane-1,24-diamine, D-286
1,5,9,14-Tetraazatetradecane, D-249
1,5,10,14-Tetraazatetradecane, S-399
1,5,9,13-Tetraazatridecane, B-154
2,2′,6,6′-Tetrabromo-3,3′-bi-1*H*-indole, T-109
2,2′,5,5′-Tetrabromo-3,3′-bi-1*H*-indole, T-108
4,4′,6,6′-Tetrabromo-2,2′-bis(methylsulfinyl)-3,3′-bi-1*H*-indole, T-110
4,4′,6,6′-Tetrabromo-2,2′-bis(methylthio)-3,3′-bi-1*H*-indole, T-110
3,3′,4,4′-Tetrabromo-5,5′-dichloro-1,1′-dimethyl-2,2′-bi-1*H*-pyrrole, T-111
5,5′,7,7′-Tetrabromo-6,6′-dimethoxyindigotin, T-112
2,3,4,6-Tetrabromo-1*H*-indole, T-113
2,3,4,7-Tetrabromo-1*H*-indole, T-114
2,3,5,6-Tetrabromo-1*H*-indole, T-115
2,3′,5,5′-Tetrabromo-7′-methoxy-3,4′-bi-1*H*-indole, T-116
3,3′,5,5′-Tetrabromo-7′-methoxy-1,4′-bi-1*H*-indole, T-117
2,3,4,6-Tetrabromo-1-methyl-1*H*-indole, T-113
2,3,5,6-Tetrabromo-1-methyl-1*H*-indole, T-115
4,4′,6,6′-Tetrabromo-2-(methylsulfinyl)-2′-(methylthio)-3,3′-bi-1*H*-indole, T-110
2,4,5,6-Tetrabromo-3-methylthio-1*H*-indole, T-473
2,3,4,5-Tetrabromo-1*H*-pyrrole, T-118
Tetrabromostyloguanidine, S-611
3,5,6,10-Tetrachloro-1-(5-chloro-2-hydroxybenzoyl)-2*H*,8*H*-dipyrrolo[3,4-*b*:1′,2′-*d*][1,4]benzoxazocin-8-one, A-1133
2,3,4,7-Tetrachloro-1*H*-indole, T-119
N-Tetracosanoylanthranilic acid, A-706
N^b-Tetracosanoylserotonin, H-755
N^b-Tetracosanoyltryptamine, T-639
N-Tetracosanoyltyramine, H-667
15-Tetracosenoic acid, T-120
N^1,N^5,N^{10},N^{14}-Tetra-*trans*-*p*-coumaroylspermine, S-399
3,5-Tetradecadien-2-amine, T-131
2,4-Tetradecadien-8,10-diynoic acid piperidide, T-121
2,4-Tetradecadiene-8,10-diynoic acid isobutylamide, A-968
2,4-Tetradecadiene-8,10-diynoic acid isopentylamide, T-121
2,4-Tetradecadiene-8,10-diynoic acid pyrrolidide, T-121
10,12-Tetradecadiene-4,6-diynoic acid, T-122
2,4-Tetradecadiene-8,10-diynoic acid, T-121
2,4-Tetradecadiene-8,10,12-triynoic acid, T-123
2,4-Tetradecadienoic acid *p*-hydroxyphenethylamide, H-670
2,4-Tetradecadienoic acid isobutylamide, T-124
2,4-Tetradecadienoic acid piperidide, T-124
2,4-Tetradecadienoic acid pyrrolidide, T-124
2,4-Tetradecadienoic acid, T-124
1-(2,4-Tetradecadienoyl)piperidine, T-124
N-(2,4-Tetradecadienoyl)pyrrolidine, T-124
2,4-Tetradecadien-8-ynoic acid pyrrolidide, T-125
2,4-Tetradecadien-8-ynoic acid, T-125
2,4,6,8,10,12-Tetradecahexaenedioic acid, T-126
Tetradecahydro-2*H*,11*H*-tripyrido[1,2-*a*:1′,2′-*c*:3′′,2′′-*e*]pyrimidine, I-340
N-Tetradecanoylarginine, A-1413
N^2-Tetradecanoylglutamine, G-108
N-Tetradecanoylholothin, A-759
N-Tetradecanoyltyrosine, T-700
2,4,8,10,12-Tetradecapentaenoic acid, T-127
2,4,6,12-Tetradecatetraene-8,10-diynoic acid isobutylamide, T-128
2,4,6,12-Tetradecatetraene-8,10-diynoic acid isopentylamide, T-128
2,4,6,12-Tetradecatetraene-8,10-diynoic acid piperidide, T-128
2,4,6,12-Tetradecatetraene-8,10-diynoic acid, T-128
2,4,8,11-Tetradecatetraenoic acid pyrrolidide, T-129
2,4,8,11-Tetradecatetraenoic acid, T-129
2,4,8,11-Tetradecatetraenoic piperidide, T-129
(2,4,8,11-Tetradecatetraenoyl)piperidine, T-129
2,4,10,12-Tetradecatetraen-8-ynoic acid, T-130
3,5,13-Tetradecatrien-2-amine, T-131
2,4,12-Tetradecatrien-8,10-diynoic acid isopentylamide, T-132
2,4,12-Tetradecatriene-8,10-diynoic acid piperidide, T-132
2,4,12-Tetradecatriene-8,10-diynoic acid pyrrolidide, T-132
2,4,12-Tetradecatriene-8,10-diynoic acid, T-132
2,4,8-Tetradecatrienoic acid isobutylamide, T-133
2,4,8-Tetradecatrienoic acid, T-133
2,4,8-Tetradecatrienoic piperidide, T-133
N-(2,4,8-Tetradecatrienoyl)piperidine, T-133
N-(5,8,11-Tetradecatrienoyl)tyramine, H-667
8-(5,8,11-Tetradecatrienyl)-1,5,9,13-tetraazacycloheptadecan-6-one, B-386
2,4,10-Tetradecatrien-8-ynoic acid isobutylamide, T-134
2,4,10-Tetradecatrien-8-ynoic acid piperidide, T-134
2,4,10-Tetradecatrien-8-ynoic acid pyrrolidide, T-134
2,4,10-Tetradecatrien-8-ynoic acid, T-134
2,4-Tetradeca-8,10,12-triynoic acid piperidide, T-123
N^2-(9-Tetradecenoyl)glutamine, G-108
N-(8-Tetradecenoyl)tyrosine, T-700
2-Tetradecylpyrrolidine, T-135
2-Tetradecyl-4(1*H*)-quinolinone, H-746
8-Tetradecyl-1,5,9,13-tetraazacycloheptadecan-6-one, B-386
12,13,25,26-Tetradehydrocarpaine, C-168
Tetradehydrochelanthifoline, G-181
17,4′,5′,6′-Tetradehydro-3α-cinchophylline, C-448
2,16,19,20-Tetradehydrocuran-17-al, N-301
16,17,19,20-Tetradehydrocuran-3,17-diol, D-688
16,17,19,20-Tetradehydrocuran, Z-14
1,2,19,20-Tetradehydro-1-demethylajmalan-17,21-diol 17-acetate, V-194
3,4,5,6-Tetradehydrodihydrocorynantheol, T-136
1,2,6,7-Tetradehydro-12,17-dihydro-3-methoxy-16(15*H*)-oxaerythrinan-15-one, 11CI, E-215
1,2,6,7-Tetradehydro-15,16-dimethoxyerythrinan-3-ol, E-203
1,2,6,7-Tetradehydro-3,15-dimethoxyerythrinan-16-ol, E-203
3,4,5,6-Tetradehydrodolichantoside, L-316
Tetradehydroechinulin, T-137
1,2,18,19-Tetradehydro-3,17-epoxy-7,20(2*H*,19*H*)-cyclovobasan, K-96
6,7,8,14-Tetradehydro-4,5-epoxy-3,6-dimethoxy-17-methylmorphinan, T-350
6,7,8,14-Tetradehydro-4,5-epoxy-6-methoxy-17-methylmorphinan-3-ol, T-350
3,4,5,6-Tetradehydrogeissoschizine, T-138
3,4,5,6-Tetradehydrogeissoschizol, T-136
Tetradehydrohalicyclamine A, H-22
5,6,8,14-Tetradehydro-3-hydroxy-2,6-dimethoxymorphinan-7-one, F-80
3,4,14,15-Tetradehydro-5-hydroxy-14-methoxy-17-methyl-4,17-secoserratinan-13-one, L-337
Tetradehydroisocalycanthine, T-139
Tetradehydroisocinchophyllamine, C-448
3′,4′,5′,6′-Tetradehydrolongicaudatine Y, L-250
11,12,13,14-Tetradehydromatridin-15-one, S-376
1,2,6,7-Tetradehydro-3-methoxyerythrinan-15-ol, C-543
1,2,6,7-Tetradehydro-3-methoxy-15,16-[methylenebis(oxy)]erythrinan, E-205
5,6,8,14-Tetradehydro-6-methoxy-17-methyl-2,3-[methylenebis(oxy)]morphinan-7-one, A-955
3,4,5,6-Tetradehydromitragynine, M-657
3,4,5,6-Tetradehydroochropposinine, T-136
Tetradehydroocoteine, O-27
3,4,5,6-Tetradehydropalicoside, L-316
11,12,13,14-Tetradehydro-14-(phenylmethyl)matridin-15-one, S-379
2,3,4,5-Tetradehydroprolylallothreonylseryl-3-phenyl-β-alanyl-2-aminobutanoic acid, A-1512
Tetradehydroprotostemonine, P-670
Tetradehydroreticuline, P-80
3,4,5,6-Tetradehydrositsirikine, S-325
Tetradehydrostemonine, S-519
Tetradehydrostrychnohirsutine, S-600
3,4,5,6-Tetradehydrotalbotine, T-19
7,8,12,14-Tetradehydro-5,6,12,13-tetrahydro-3,13,23-trihydroxyveratraman-6-one, T-588
7,8,13,13*a*-Tetradehydro-2,3,9,10-tetrahydroxyberbinium(1+), P-34
1,2,6,7-Tetradehydro-3,15,16-trimethoxyerythrinan-11-ol, E-206

1,2,6,7-Tetradehydro-3,15,16-trimethoxyerythrinan-8-one, E-202
1,2,6,7-Tetradehydro-3,15,16-trimethoxy-*C*-homoerythrinan, F-143
1′,2′,3′,4′-Tetradehydrotubulosine, T-675
14,15,16,17-Tetradehydroveratraman-3,23-diol, V-71
3,4,5,6-Tetradehydroyohimbine, T-140
3,4,5,6-Tetradehydro-β-yohimbinium, T-140
N,N,N′,N′-Tetraethylethanediamine, E-225
2′,3′,4′,6′-Tetra-*O*-galloylprunasin, H-673
Tetrahydranagyrine, L-302
Tetrahydroakagerine, T-141
Tetrahydroalstonial, A-214
Tetrahydroalstonine (4*R*)-*N*-oxide, A-212
Tetrahydroalstonine, A-212
Tetrahydroanabasine, P-460
3,14,18,19-Tetrahydroangustine, A-1019
2,3,4,13-Tetrahydro-1*H*-benz[*g*]indolo[2,3-*a*]quinolizin-6-ium, S-228
5,6,13,13*a*-Tetrahydro-8*H*-benzo[*g*]-1,3-benzodioxolo[5,6-*a*]quinolizin-8-one, G-226
Tetrahydroberberine, C-73
Tetrahydroberberrubine, C-73
5,6,7,8-Tetrahydrobiopterin, T-142
1,2,3,6-Tetrahydro-2,3′-bipyridine, T-143
3,4,5,6-Tetrahydro-2,3′-bipyridine, T-144
6,7,7*a*,8-Tetrahydro-5*H*-bis[1,3]benzodioxolo[6,5,4-*de*:4′,5′-*g*]quinoline, O-143
6,7,12*b*,13-Tetrahydro-4*H*-bis[1,3]benzodioxolo[5,6-*a*:4′,5′-*g*]quinolizine, S-612
1,2,5,6-Tetrahydro-2,6-bis(2-hydroxybutyl)-1-methylpyridine, D-391
2-(4,4′,5,5′-Tetrahydro[4,4′-bithiazol]-2-yl)phenol, U-7
Tetrahydrobungeanool, T-124
Tetrahydrocantleyine, T-145
1,2,3,4-Tetrahydro-β-carboline-3-carboxylic acid, T-224
1,2,3,4-Tetrahydro-β-carboline-1,3-dicarboxylic acid, T-147
1,2,3,4-Tetrahydro-β-carboline, T-146
Tetrahydrocolumbamine, I-210
Tetrahydrocoptisine, S-612
Tetrahydrocorysamine *N*-methosalt, T-148
Tetrahydrocorysamine, T-148
Tetrahydrocytisine, T-149
Tetrahydrodarlingianine, D-74
3α,5α-Tetrahydrodeoxycordifolic acid, C-153
Tetrahydrodeoxycordifoline lactam, T-150
Tetrahydrodeoxycordifoline, C-153
7,7′,8,8′-Tetrahydro-4,5:4′,5′-diepoxy-17,17′-dimethyl[2,2′-bimorphinan], M-703
5,6,7,8-Tetrahydro-5,7-dihydroxy-1*H*-azocin-2-one, T-151
1,2,3,4-Tetrahydro-1,6-dihydroxy-β-carboline, T-225
1,2,3,4-Tetrahydro-6,7-dihydroxy-1,1-dimethyl-3-isoquinolinecarboxylic acid, T-153
1,2,3,4-Tetrahydro-7,8-dihydroxy-1,1-dimethyl-3-isoquinolinecarboxylic acid, T-154
1,2,3,4-Tetrahydro-6,7-dihydroxy-1,1-dimethylisoquinoline, T-152
2,3,4,6-Tetrahydro-3,4-dihydroxy-2,2-dimethyl-5*H*-pyrano[3,2-*c*]quinolin-5-one, F-90
1,2,3,4-Tetrahydro-6,7-dihydroxy-1-(4-hydroxybenzyl)isoquinoline, H-275
1,2,3,4-Tetrahydro-5,8-dihydroxy-1-(4-hydroxybenzyl)-2-methylisoquinoline, T-155
1,2,3,4-Tetrahydro-6,7-dihydroxy-2-(2-hydroxy-1-hydroxymethylethyl)-1,1-dimethylisoquinoline, T-152
2,3,5,7*a*-Tetrahydro-1,7*a*-dihydroxy-7-(hydroxymethyl)-4-methyl-1*H*-pyrrolizinium, O-136
4,5,6,7-Tetrahydro-4,5-dihydroxy-1*H*-indole-3-carboxaldehyde, T-156
4,5,6,7-Tetrahydro-6,7-dihydroxy-1*H*-indol-4-one, T-157
1,2,3,4-Tetrahydro-6,7-dihydroxy-3-isoquinolinecarboxylic acid, T-160
1,2,3,4-Tetrahydro-6,7-dihydroxyisoquinoline, T-158
1,2,3,4-Tetrahydro-7,8-dihydroxyisoquinoline, T-159
[3-(1,2,3,4-Tetrahydro-6,8-dihydroxy-1-isoquinolinyl)propyl]guanidine, F-229
3,4,6,7-Tetrahydro-3,4-dihydroxy-6-methoxy-3-methyl-7-methylene-2-pentylpyrano[2,3-*c*]pyrrol-5(2*H*)-one, P-302
1,2,3,11*a*-Tetrahydro-3,8-dihydroxy-7-methoxy-5*H*-pyrrolo[2,1-*c*][1,4]benzodiazepin-5-one, N-145
1,2,3,12-Tetrahydro-1,2-dihydroxy-6-methoxy-3,3,12-trimethyl-7*H*-pyrano[2,3-*c*]acridin-7-one, D-417
1,2,19,20-Tetrahydro-19,20-dihydroxy-1-methylakuammilan-17-oic acid γ-lactone, R-21
1,2,3,4-Tetrahydro-6,7-dihydroxy-1-methyl-3-isoquinolinecarboxylic acid, T-164
1,2,3,4-Tetrahydro-4,8-dihydroxy-2-methylisoquinoline, T-161
1,2,3,4-Tetrahydro-6,7-dihydroxy-1-methylisoquinoline, T-162
1,2,3,4-Tetrahydro-7,8-dihydroxy-1-methylisoquinoline, T-163
3-(5,10,11,11*a*-Tetrahydro-9,11-dihydroxy-8-methyl-5-oxo-1*H*-pyrrolo[2,1-*c*][1,4]benzodiazepin-2-yl)-2-propenamide, A-1081
1,5,6,10*b*-Tetrahydro-8,9-dihydroxypyrrolo[2,1-*a*]isoquinolin-3(2*H*)-one, T-629
5,5*a*,12,12*a*-Tetrahydro-7,14-dimethoxybenzo[1′′,2′′:4,5;4′′,5′′:4′,5′]difuro[2,3-*b*:2′,3′-*b*′]diindole-7*b*,14*b*-diol, T-165
6,7,7*a*,8-Tetrahydro-4,10-dimethoxy-5*H*-benzo[*g*]-1,3-benzodioxolo[6,5,4-*de*]quinoline, B-471
6,7,7*a*,8-Tetrahydro-10,12-dimethoxy-5*H*-benzo[*g*]-1,3-benzodioxolo[6,5,4-*de*]quinoline, D-846
6,7,7*a*,8-Tetrahydro-4,10-dimethoxy-5*H*-benzo[*g*]-1,3-benzodioxolo[6,5,4-*de*]quinolin-12-ol, D-950
5,8,13,13*a*-Tetrahydro-9,10-dimethoxy-6*H*-benzo[*g*]-1,3-benzodioxolo[5,6-*a*]quinolizine, C-73
5,8,13,13*a*-Tetrahydro-9,10-dimethoxy-6*H*-benzo[*g*]-1,3-benzodioxolo[5,6-*a*]quinolizin-13-ol, O-94
9,10,15*b*,16-Tetrahydro-5,15-dimethoxy-1*H*,7*H*-[1,3]-benzodioxino[5,6-*g*][1,3]benzodioxolo[5,6-*a*]quinolizine, O-110
5,8,13,13*a*-Tetrahydro-2,10-dimethoxy-6*H*-dibenzo[*a,g*]quinolizine-3,9-diol, I-315
5,8,13,13*a*-Tetrahydro-3,9-dimethoxy-6*H*-dibenzo[*a,g*]quinolizine-2,10-diol, S-547
5,8,13,13*a*-Tetrahydro-2,11-dimethoxy-6*H*-dibenzo[*a,g*]quinolizin-9-ol, P-82
5,7,8,15-Tetrahydro-3,4-dimethoxy-6,15-dimethylbenzo[*e*][1,3]dioxolo[4,5-*k*][3]benzazecin-14(6*H*)-one, C-671
1,2,3,4-Tetrahydro-7,8-dimethoxy-1,2-dimethylisoquinoline, T-166
1,2,3,4-Tetrahydro-6,7-dimethoxy-1,2-dimethylisoquinoline, T-167
1,2,3,4-Tetrahydro-6,7-dimethoxy-2,2-dimethylisoquinolinium(1+), T-158
1,2,3,4-Tetrahydro-6,7-dimethoxy-1,2-dimethyl-5-isoquinolinol, T-174
1,2,3,4-Tetrahydro-6,7-dimethoxy-1,2-dimethyl-8-isoquinolinol, T-237
1,2,3,4-Tetrahydro-7,8-dimethoxy-1,2-dimethyl-6-isoquinolinol, T-237
3′,4′,6,8-Tetrahydro-6′,7′-dimethoxy-2′,6-dimethylspiro[7*H*-indeno[4,5-*d*]-1,3-dioxole-7,1′(2′*H*)-isoquinolin]-6-ol, R-8
5,6,12*b*,13-Tetrahydro-9,10-dimethoxy-8*H*-1,3-dioxolo[4,5-*h*]isoindolo[1,2-*b*][3]benzazepin-8-one, L-91
5,8,9,15*a*-Tetrahydro-3,4-dimethoxy[1,3]dioxolo[4,5-*h*]isoquino[1,2-*b*][3]benzazepine-6,15-dione, P-801
1,2,3,4-Tetrahydro-6,7-dimethoxy-1-isoquinolinemethanol, C-54
1,2,3,4-Tetrahydro-6,7-dimethoxyisoquinoline, T-158
1,2,3,4-Tetrahydro-7,8-dimethoxyisoquinoline, T-159
1,2,3,4-Tetrahydro-6,7-dimethoxy-8-isoquinolinol, T-236
1,2,3,4-Tetrahydro-7,8-dimethoxy-6-isoquinolinol, T-236
1,2,3,4-Tetrahydro-6,7-dimethoxy-1-[(4-methoxyphenyl)methyl]-5-isoquinolinol, A-1069
6,7,7*a*,8-Tetrahydro-9,10-dimethoxy-7-methyl-5*H*-benzo[*g*]-1,3-benzodioxolo[6,5,4-*de*]quinoline, C-733
5,6,6*a*,7-Tetrahydro-1,2-dimethoxy-6-methyl-4*H*-benzo[*de*][1,3]benzodioxolo[5,6-*g*]quinoline, N-29
6,6*a*,11,14-Tetrahydro-8,9-dimethoxy-6-methyl-12*H*-benzo[*a*]-1,3-benzodioxolo[4,5-*g*]quinolizine, C-222
5,6,11,12-Tetrahydro-8,9-dimethoxy-14-methylbenzo[5,6]cycloocta[1,2-*f*]-1,3-benzodioxol-5,11-imine, E-220
4,6,7,13-Tetrahydro-9,10-dimethoxy-5-methylbenzo[*e*]1,3-dioxolo[4,5-*l*][2]benzazecin-12(5*H*)-one, C-790
5,7,8,15-Tetrahydro-2,3-dimethoxy-6-methylbenzo[*e*][1,3]dioxolo[4,5-*k*][3]benzazecin-14(6*H*)-one, F-3
5,7,8,15-Tetrahydro-3,4-dimethoxy-6-methylbenzo[*e*][1,3]dioxolo[4,5-*k*][3]benzazecin-14(6*H*)-one, F-2
2,3,12,12*a*-Tetrahydro-5,10-dimethoxy-1-methyl-1*H*-[1]benzoxepino[2,3,4-*ij*]isoquinolin-8-ol, F-66
2,3,12,12*a*-Tetrahydro-6,9-dimethoxy-1-methyl-1*H*-[1]-benzoxepino[2,3,4-*ij*]isoquinolin-8-ol, S-73
4*a*,5,6,7-Tetrahydro-8,13-dimethoxy-5-methyl-4*H*-bis[1,3]benzodioxolo[6,5,4-*de*:5′,4′-*g*]quinoline, H-243
5,6,7,8-Tetrahydro-4,8-dimethoxy-8-(3-methyl-2-butenyl)furo[2,3-*b*]quinolin-7-ol, H-57
1,2,3,4-Tetrahydro-6,7-dimethoxy-1-methyl-β-carboline, D-620
5,6,11,12-Tetrahydro-2,9-dimethoxy-13-methyldibenzo[*a,e*]cycloocten-5,11-imin-3-ol, H-464
5,6,6*a*,7-Tetrahydro-1,10-dimethoxy-6-methyl-4*H*-dibenzo[*de,g*]quinoline-2,9-diol, B-243
5,6,6*a*,7-Tetrahydro-2,9-dimethoxy-6-methyl-4*H*-dibenzo[*de,g*]quinoline-1,10-diol, B-276
5,6,6*a*,7-Tetrahydro-1,9-dimethoxy-6-methyl-4*H*-dibenzo[*de,g*]quinoline-2,10-diol, L-195
5,6,6*a*,7-Tetrahydro-9,10-dimethoxy-6-methyl-4*H*-dibenzo[*de,g*]quinoline-1,2-diol, L-52
1,2,3,4-Tetrahydro-6,7-dimethoxy-1-methylisoquinoline, T-167
1,2,3,4-Tetrahydro-6,7-dimethoxy-2-methylisoquinoline, T-158
1,2,3,4-Tetrahydro-7,8-dimethoxy-2-methylisoquinoline, T-159
1,2,3,4-Tetrahydro-6,7-dimethoxy-1-methyl-8-isoquinolinol, T-237
1,2,3,4-Tetrahydro-6,7-dimethoxy-2-methyl-8-isoquinolinol, T-236
1,2,3,4-Tetrahydro-7,8-dimethoxy-1-methyl-6-isoquinolinol, T-237
1,2,3,4-Tetrahydro-7,8-dimethoxy-2-methyl-6-isoquinolinol, T-236
6-(1,2,3,4-Tetrahydro-6,7-dimethoxy-2-methyl-1-isoquinolinyl)furo[3,4-*e*]-1,3-benzodioxol-8(6*H*)-one, C-653
4-[(1,2,3,4-Tetrahydro-6,7-dimethoxy-2-methyl-1-isoquinolinyl)methyl]phenol, A-1444
1,2,3,4-Tetrahydro-6,7-dimethoxy-2-methyl-1-[2-(3,4-methylenedioxyphenyl)ethyl]isoquinoline, D-978
1,2,3,4-Tetrahydro-6,7-dimethoxy-2-methyl-1-(3,4-methylenedioxyphenyl)isoquinoline, C-796
1,2,3,4-Tetrahydro-9,11-dimethoxy-2-methylnaphth[2,1-*f*]isoquinoline-8,12-diol, L-211
5,6,7,8-Tetrahydro-3,7-dimethoxy-2-methyl-5-octyl-4(1*H*)-quinolinone, C-343
1,2,3,4-Tetrahydro-6,7-dimethoxy-2-methyl-1-phenylisoquinoline, T-168
3′,4′,6,8-Tetrahydro-6′,7′-dimethoxy-2′-methylspiro[7*H*-indeno[4,5-*d*]-1,3-dioxole-7,1′(2′*H*)-isoquinoline]-6,8-diol, R-9

3′,4′,6,8-Tetrahydro-6′,7′-dimethoxy-2′-methylspiro[7*H*-indeno[4,5-*d*]-1,3-dioxole-7,1′(2′*H*)-isoquinolin]-8-ol, F-174
1,2,3,4-Tetrahydro-6,7-dimethoxy-2-methyl-1-(3,4,5-trimethoxyphenyl)isoquinoline, C-797
4,6,7,14-Tetrahydro-5,14-dimethylbis[1,3]benzodioxolo[4,5-*c*:5′,6′-*g*]azecin-13(5*H*)-one, C-670
1,2,3,4-Tetrahydro-1,2-dimethyl-β-carboline, T-202
6,7,8,9-Tetrahydro-3,10-dimethylcyclohepta[*b*]pyran-5,8-imin-4(5*H*)-one, B-57
6,7,8,9-Tetrahydro-2,10-dimethylcyclohepta[*b*]pyran-5,8-imin-4(5*H*)-one, I-194
2,3,6,7-Tetrahydro-7,9-dimethyl-2,6-dioxo-1*H*-purinium hydroxide inner salt, X-5
1,2,3,6-Tetrahydro-1,3-dimethyl-2,6-dioxo-4-pyrimidinecarboxylic acid, D-669
1,5,6,7-Tetrahydro-1,6-dimethyl-5,7-dioxopyrimido[5,4-*e*]-*as*-triazine, R-66
3,3*a*,8,8*a*-Tetrahydro-3*a*,8-dimethyl-2*H*-furo[2,3-*b*]indol-5-ol methyl carbamate (ester), P-401
1,2,3,4-Tetrahydro-1,1-dimethyl-6,7-isoquinolinediol, T-152
1,2,3,4-Tetrahydro-1,3-dimethyl-8-isoquinolinol, T-177
2,3,4,5-Tetrahydro-1,3-dimethyl-1,4-methano-1*H*-benzazepin-8-ol, A-1333
6,7,8,9-Tetrahydro-2,5-dimethyl-8-(1-methylethenyl)-5*H*-cyclohepta[*b*]pyridine, G-190
3,5,7,9-Tetrahydro-3,9-dimethyl-6-(methylimino)-8*H*-purin-8-one, C-19
Tetrahydro-3,5-dimethyl-6-[octahydro-3-(tetrahydro-4-methyl-5-oxo-2-furanyl)-1*H*-pyrrolo[1,2-*a*]azepin-9-yl]furo[3,2-*b*]furan-2(3*H*)-one, P-105
1,2,3,6-Tetrahydro-α^6,1-dimethyl-α^2-phenyl-2,6-pyridinediethanol, S-214
1,3,4,9-Tetrahydro-1,1-dimethylpyrano[3,4-*b*]indole, T-169
2,3,4,10-Tetrahydro-2,2-dimethyl-5*H*-pyrano[2,3-*b*]quinolin-5-one, H-56
2,3,4,6-Tetrahydro-1,5-dimethyl-1*H*-pyrido[4,3-*b*]carbazole, G-211
2,3,4,9-Tetrahydro-1,2-dimethyl-1*H*-pyrido[3,4-*b*]indole, T-202
1,3,4,5-Tetrahydro-1,5-dimethylpyrrolo[4,3,2-*de*]-quinoline-7,8-dione, D-13
5,6,7,8-Tetrahydro-2,4-dimethylquinoline, T-170
5,6,7,8-Tetrahydro-2,5-dimethylquinoline, T-171
1,2,3,8-Tetrahydro-1,8-dimethyl-1,7*b*,10-triazabenzo[5,6]cyclohepta[1,2,3-*jk*]fluorene, D-138
1,2,3,6-Tetrahydro-2,6-dioxo-4-pyrimidinecarboxylic acid, D-669
4,6,7,9-Tetrahydro-1*H*,3*H*-dipyrano[3,4-*b*:4′,3′-*e*]pyrazine-3,7-dimethanol, I-261
1,2,3,4-Tetrahydroellipticine, E-67
Tetrahydroepiberberine, S-307
1,2,10,10*a*-Tetrahydro-2-ethylidene-10-hydroxydipyrrolo[1,2-*c*:2′,1′-*f*]pyrimidin-5-one, P-146
5,6,7,8-Tetrahydrofolic acid, T-172
Tetrahydroglaziovine, P-643
Tetrahydrohalichondramide, H-15
Tetrahydroharman N^b-oxide, T-202
Tetrahydroharman, T-202
Tetrahydroharmine, T-202
Tetrahydroharmol, H-592
Tetrahydrohistrionicotoxin, H-309
1,2,3,4-Tetrahydro-1-(4-hydroxybenzyl)-6,7-dimethoxyisoquinoline, A-1444
1,2,3,4-Tetrahydro-1-(3-hydroxybenzyl)-6,7-dimethoxy-2-methylisoquinoline, A-1038
1,2,3,4-Tetrahydro-1-(4-hydroxybenzyl)-7,8-dimethoxy-1-methylisoquinoline, L-251
1,2,3,4-Tetrahydro-1-(4-hydroxybenzyl)-6,7-methylenedioxyisoquinoline, C-453
1,2,5,6-Tetrahydro-2-(2-hydroxybutyl)-6-(2-hydroxyhexyl)pyridine, A-1487
1,2,5,6-Tetrahydro-2-(2-hydroxybutyl)-6-(2-hydroxypentyl)-1-methylpyridine, H-433
1,2,5,6-Tetrahydro-2-(2-hydroxybutyl)-6-(2-hydroxypentyl)pyridine, H-433
1,2,5,6-Tetrahydro-6-(2-hydroxybutyl)-1-methyl-2-(2-oxobutyl)pyridine, D-391
1-[1,2,5,6-Tetrahydro-6-(2-hydroxybutyl)-1-methyl-2-pyridinyl]-2-butanone, D-391
1,2,4,5-Tetrahydro-9-hydroxy-6-canthinone, H-444
1,2,3,4-Tetrahydro-7-hydroxy-β-carboline-3-carboxylic acid, T-224
1,2,3,4-Tetrahydro-6-hydroxy-β-carboline, T-173
5,6,7,8-Tetrahydro-7-hydroxy-4,8-dimethoxy-α,α-dimethylfuro[2,3-*b*]quinoline-8-propanol, H-57
1,2,3,4-Tetrahydro-5-hydroxy-6,7-dimethoxy-1,2-dimethylisoquinoline, T-174
1,2,3,4-Tetrahydro-6-hydroxy-7,8-dimethoxy-1,2-dimethylisoquinoline, T-237
1,2,3,4-Tetrahydro-8-hydroxy-6,7-dimethoxy-1,2-dimethylisoquinoline, T-237
1,2,3,4-Tetrahydro-8-hydroxy-6,7-dimethoxy-2,2-dimethylisoquinolinium(1+), T-236
1,2,3,4-Tetrahydro-8-hydroxy-6,7-dimethoxy-1-isoquinolinecarboxylic acid, T-175
1,2,3,4-Tetrahydro-6-hydroxy-7,8-dimethoxyisoquinoline, T-236
1,2,3,4-Tetrahydro-8-hydroxy-6,7-dimethoxyisoquinoline, T-236
1,2,3,4-Tetrahydro-5-hydroxy-6,7-dimethoxy-1-(4-methoxybenzyl)isoquinoline, A-1069
1,2,3,4-Tetrahydro-8-hydroxy-6,7-dimethoxy-1-methyl-1-isoquinolinecarboxylic acid, P-299
1,2,3,4-Tetrahydro-5-hydroxy-6,7-dimethoxy-2-methyl-1-isoquinolinemethanol, T-178
1,2,3,4-Tetrahydro-6-hydroxy-7,8-dimethoxy-1-methylisoquinoline, T-237
1,2,3,4-Tetrahydro-6-hydroxy-7,8-dimethoxy-2-methylisoquinoline, T-236
1,2,3,4-Tetrahydro-8-hydroxy-6,7-dimethoxy-1-methylisoquinoline, T-237
1,2,3,4-Tetrahydro-8-hydroxy-6,7-dimethoxy-2-methylisoquinoline, T-236
6,7,9,10-Tetrahydro-5-(4-hydroxy-3,5-dimethoxyphenyl)-5*H*-benzo[*g*][1,3]dioxolo[4′,5′:4,5]benzo[*de*]pyrido[3,2,1-*ij*]quinolin-7-one, T-176
1,2,3,4-Tetrahydro-8-hydroxy-6,7-dimethoxy-1,2,2-trimethylisoquinolinium(1+), T-237
1,2,3,4-Tetrahydro-6-hydroxy-1,2-dimethyl-β-carboline, S-285
1,2,3,4-Tetrahydro-8-hydroxy-1,3-dimethylisoquinoline, T-177
1,2,3,4-Tetrahydro-7-hydroxy-2-(4-hydroxybenzyl)-6-methoxyisoquinoline, S-234
1,2,3,4-Tetrahydro-7-hydroxy-1-(3-hydroxy-4,5-dimethoxyphenethyl)-6-methoxy-2-methylisoquinoline, A-1558
1,2,3,4-Tetrahydro-5-hydroxy-1-hydroxymethyl-6,7-dimethoxy-2-methylisoquinoline, T-178
1,2,3,4-Tetrahydro-7-hydroxy-1-hydroxymethyl-6-methoxy-2-methylisoquinoline, C-54
1,2,3,4-Tetrahydro-7-[5-hydroxy-2-(hydroxymethyl)-4-methoxy-1-naphthalenyl]-1,3-dimethyl-8-isoquinolinol, D-793
1,2,3,4-Tetrahydro-5-hydroxy-4-(4-hydroxyphenyl)-6-methoxy-2-methylisoquinoline, L-54
1,2,3,4-Tetrahydro-8-hydroxy-1-[(4-hydroxyphenyl)methyl]-7-methoxy-2,2-dimethylisoquinolinium(1+), J-63
6,7,8,9-Tetrahydro-1-hydroxy-11-(4-hydroxyphenyl)-3-methylpyridazino[1,2-*a*]indazol-5-ium inner salt, N-193
5,6,7,7*a*-Tetrahydro-2-hydroxy-1-(4-hydroxyphenyl)-3*H*-pyrrolizin-3-one, P-333
4,5,6,7-Tetrahydro-6-hydroxyimidazo[4,5-*e*][1,4]diazepin-8(1*H*)-one, A-1605
13,17*b*,18,18*a*-Tetrahydro-17*b*-hydroxy-11*H*-indolo[3′,2′:4,5]pyrrolo[2,1-*c*]quinazolino[3,2-*a*][1,4]benzodiazepine-5,11(12*aH*)-dione, A-1481
1,2,3,4-Tetrahydro-7-hydroxy-1-isobutyl-6-methoxy-2-methylisoquinoline, L-260
1,2,3,4-Tetrahydro-6-hydroxyisoquinoline, T-196
1,2,3,4-Tetrahydro-7-hydroxyisoquinoline, T-197
1,2,3,4-Tetrahydro-8-hydroxyisoquinoline, T-198
1,2,3,4-Tetrahydro-8-hydroxymanzamine A, M-91
2,3,4,5-Tetrahydro-8-hydroxy-1,4-methanopyrido[1,2-*a*][1,4]diazepin-7(1*H*)-one, H-644
5,8,13,13*a*-Tetrahydro-2-hydroxy-3-methoxy-6*H*-dibenzo[*a,g*]quinolizine, B-111
1,2,3,4-Tetrahydro-7-hydroxy-6-methoxy-1,2-dimethylisoquinoline, T-181
1,2,3,4-Tetrahydro-9-hydroxy-8-methoxy-2,4-dimethyl-6*H*-naphtho[1′,2′:4,5]pyrano[3,2-*h*]isoquinolin-6-one, D-790
1,2,3,4-Tetrahydro-6-hydroxy-7-methoxyisoquinoline, T-158
1,2,3,4-Tetrahydro-7-hydroxy-6-methoxyisoquinoline, T-158
1,2,3,4-Tetrahydro-7-hydroxy-6-methoxy-2-(4-methoxybenzyl)isoquinoline, S-234
1,2,3,4-Tetrahydro-5-hydroxy-8-methoxy-1-(4-methoxybenzyl)-2-methylisoquinoline, T-155
5,6,13,13*a*-Tetrahydro-2-hydroxy-3-methoxy-7-methyl[1,3]dioxolo[5,6]indolo[2,1-*a*]isoquinolinium(1+), C-798
1,2,3,4-Tetrahydro-8-hydroxy-7-methoxy-6-methyl-1,3-isoquinolinedimethanol, A-1209
1,2,3,4-Tetrahydro-7-hydroxy-6-methoxy-2-methyl-1-isoquinolinemethanol, C-54
1,2,3,4-Tetrahydro-6-hydroxy-7-methoxy-1-methylisoquinoline, T-179
1,2,3,4-Tetrahydro-6-hydroxy-7-methoxy-2-methylisoquinoline, T-158
1,2,3,4-Tetrahydro-7-hydroxy-5-methoxy-2-methylisoquinoline, T-180
1,2,3,4-Tetrahydro-7-hydroxy-6-methoxy-1-methylisoquinoline, T-181
1,2,3,4-Tetrahydro-7-hydroxy-6-methoxy-2-methylisoquinoline, T-158
1,2,3,4-Tetrahydro-7-hydroxy-8-methoxy-2-methylisoquinoline, T-159
1,2,3,4-Tetrahydro-8-hydroxy-7-methoxy-1-methylisoquinoline, T-163
1,2,3,4-Tetrahydro-8-hydroxy-7-methoxy-2-methylisoquinoline, T-159
1,2,3,4-Tetrahydro-7-(1-hydroxy-8-methoxy-3-methyl-2-naphthalenyl)-6,8-dimethoxy-1,2,3-trimethylisoquinoline, A-992
5,6,7,8-Tetrahydro-8-hydroxy-3-methoxy-2-methyl-5-octyl-4(1*H*)-quinolinone, A-1325
1′,2′,3′,4′-Tetrahydro-6′-hydroxy-10-methoxy-$N^{2'}$-methylusambarensine, U-52
1,2,3,11*a*-Tetrahydro-8-hydroxy-7-methoxy-5*H*-pyrrolo[2,1-*c*]benzodiazepin-5-one, A-1156
1,2,3,4-Tetrahydro-8-hydroxy-6-methoxy-1,2,3-trimethylisoquinoline, T-182
1,2,3,4-Tetrahydro-6-hydroxy-1-methyl-β-carboline-3-carboxylic acid, T-206
1,2,3,4-Tetrahydro-7-hydroxy-1-methyl-β-carboline-3-carboxylic acid, T-206
1,2,3,4-Tetrahydro-7-hydroxy-1-methyl-β-carboline, H-592
1,2,3,4-Tetrahydro-6-hydroxy-1-methyl-β-carboline, S-285
1,2,3,4-Tetrahydro-6-hydroxy-2-methyl-β-carboline, T-173
5,8,13,13*a*-Tetrahydro-8-(hydroxymethyl)-2,10-dimethoxy-6*H*-dibenzo[*a*,*g*]quinolizine-1,11-diol, M-57
1,2,3,4-Tetrahydro-1-hydroxymethyl-6,7-dimethoxyisoquinoline, C-54
3,4,5,6-Tetrahydro-6-hydroxymethyl-3,6-dimethyl-4-pyrimidinecarboxylic acid, T-183
2′,3′,4′,5′-Tetrahydro-5-hydroxymethyl-2′,5′-dioxo-1,3′-bi-1*H*-pyrrole-2-carboxaldehyde, F-139
1,2,3,4-Tetrahydro-1-(2-hydroxy-3,4-methylenedioxybenzyl)-6,7-methylenedioxyisoquinoline, L-80
1,2,3,4-Tetrahydro-6-hydroxy-2-methylharman, S-285
1,2,3,4-Tetrahydro-6-hydroxy-1-methyl-3-isoquinolinecarboxylic acid, T-184
1,2,3,4-Tetrahydro-8-hydroxy-2-methylisoquinoline, T-198
1,2,3,4-Tetrahydro-6-hydroxy-2-methylisoquinoline, T-196
6,7,8,9-Tetrahydro-2-(hydroxymethyl)-3-methoxy-5-octyl-4(1*H*)-quinolinone, A-1325
1,2,3,4-Tetrahydro-1-(2-hydroxymethyl-3,4-methylenedioxybenzyl)-2-methyl-6,7-methylenedioxyisoquinoline, C-676
Tetrahydro-10*b*-hydroxy-5-(1-methylpropyl)-8*H*-oxazolo[3,2-*a*]pyrrolo[2,1-*c*]pyrazine-3,6(2*H*,5*H*)-dione, E-170

6,7,8,9-Tetrahydro-1-hydroxy-3-methylpyridazino[1,2-*a*]indazol-5-ium inner salt, N-191
1,4,5,6-Tetrahydro-5-hydroxy-2-methyl-4(6)-pyrimidinecarboxylic acid, T-185
2,3,5,7*a*-Tetrahydro-7-(hydroxymethyl)-1*H*-pyrrolizine-1,2-diol, C-775
2,7,19,20-Tetrahydro-3-hydroxy-1-methylvobasan-17-oic acid δ-lactone, T-186
1,2,14,19-Tetrahydro-12-hydroxy-20-norcrotalanan-11,15-dione, R-65
1,2,3,4-Tetrahydro-6-hydroxy-1-oxo-β-carboline, T-226
4,4′,5,5′-Tetrahydro-2-(2-hydroxyphenyl)-4,4′-bithiazole, U-7
1,2,3,4-Tetrahydro-4-[[[2-(4-hydroxyphenyl)ethyl]imino]ethylidene]-2,6-pyridinedicarboxylic acid, M-647
1,2,3,4-Tetrahydro-1-[2-(4-hydroxyphenyl)ethyl]-7-methoxy-2-methyl-6-isoquinolinol, C-570
1-[1,2,5,6-Tetrahydro-6-(2-hydroxy-2-phenylethyl)-1-methyl-2-pyridinyl]-2-propanone, S-214
1,2,3,4-Tetrahydro-4-(4-hydroxyphenyl)-6-methoxy-2-methyl-7-isoquinolinol, C-369
1,2,3,4-Tetrahydro-4-(4-hydroxyphenyl)-6-methoxy-2-methyl-5-isoquinolinol, L-54
3,4,5,6-Tetrahydro-3-[(4-hydroxyphenyl)methylene]-2-pyridinecarboxylic acid, A-1079
1,3,4,5-Tetrahydro-5-(4-hydroxyphenyl)-1-methylfuro[3,4-*b*]pyridin-7(2*H*)-one, A-1079
1,2,3,4-Tetrahydro-1-[(4-hydroxyphenyl)methyl]-6,7-isoquinolinediol, H-275
1,2,3,4-Tetrahydro-2-[(4-hydroxyphenyl)methyl]-6-methoxy-7-isoquinolinol, S-234
1,2,3,4-Tetrahydro-1-[(4-hydroxyphenyl)methyl]-2-methyl-5,8-isoquinolinediol, T-155
5,6,7,7*a*-Tetrahydro-2-hydroxy-1-phenyl-3*H*-pyrrolizin-3-one, P-333
1,2,3,6-Tetrahydro-3-hydroxypicolinic acid, T-187
1,2,3,4-Tetrahydro-6-hydroxy-1-propyl-β-carboline, T-219
1,2,3,6-Tetrahydro-3-hydroxy-2-pyridinecarboxylic acid, T-187
2,3,4,9-Tetrahydro-7-hydroxy-1*H*-pyrido[3,4-*b*]indol-1-one, T-226
2,3,4,9-Tetrahydro-6-hydroxy-1*H*-pyrido[3,4-*b*]indol-1-one, T-226
2,3,5,7*a*-Tetrahydro-1-hydroxy-1*H*-pyrrolizine-7-methanol, T-188
5,6,7,7*a*-Tetrahydro-7*a*-hydroxy-3*H*-pyrrolizin-3-one, T-189
1-(1,2,3,9-Tetrahydro-3-hydroxypyrrolo[2,1-*b*]quinazolin-9-yl)-2-propanone, P-164
1,2,3,9-Tetrahydro-3-hydroxypyrrolo[2,1-*b*]quinoline, P-165
1,2,3,4-Tetrahydro-4-hydroxy-4-quinolinecarboxylic acid, T-190
Tetrahydro-4-hydroxy-*N,N,N*,5-tetramethyl-2-furanmethanaminium(1+), M-773
5,6,12,12*a*-Tetrahydro-2-hydroxy-3,9,10-trimethoxy-7-methylindolo[2,1-*a*]isoquinolinium(1+), C-783
1,2,3,4-Tetrahydro-*ar*-hydroxy-*ar*-trimethoxy-2-methylisoquinoline, T-191
2,3,4,6-Tetrahydro-3-hydroxy-2,2,6-trimethyl-5*H*-pyrano[3,2-*c*]quinolin-5-one, F-90
2,3,4,6-Tetrahydro-4-hydroxy-2,2,6-trimethyl-5*H*-pyrano[3,2-*c*]quinolin-5-one, F-90
2,3,4,10-Tetrahydro-3-hydroxy-2,2,10-trimethyl-5*H*-pyrano[2,3-*b*]quinolin-5-one, R-92
1,6,7,12-Tetrahydroimidazo[4,5-*g*]indolo[2,3-*a*]quinolizin-5-ium(1+), V-102
2,3,4,9-Tetrahydro-1-(1*H*-imidazol-4-ylmethyl)-1*H*-pyrido[3,4-*b*]indole, L-199
4,5,6,7-Tetrahydro-1*H*-imidazo[4,5-*c*]pyridine-6-carboxylic acid, T-193
4,5,6,7-Tetrahydro-1*H*-imidazo[4,5-*c*]pyridine, T-192
5,6,7,8-Tetrahydroimidazo[1,5-*c*]pyrimidin-5-one, D-462
3,6,7,9-Tetrahydro-6-imino-3,9-dimethyl-8*H*-purin-8-one, A-819
1,2,3,7-Tetrahydro-2-imino-1,3-dimethyl-6*H*-purin-6-one, D-748
1,6,7,9-Tetrahydro-6-imino-1,9-dimethyl-8*H*-purin-8-one, T-194
1,2,3,7-Tetrahydro-2-imino-1,3,7-trimethyl-6*H*-purin-6-one, D-748
1,3,6,7-Tetrahydro-6-imino-1,3,7-trimethyl-2*H*-purin-2-one, T-608
4,5,6,7-Tetrahydro-1*H*-indol-2(3*H*)-one, T-195
5,6,7,7*a*-Tetrahydro-1*H*-indol-2(3*H*)-one, T-195
8,13,13*b*,14-Tetrahydroindolo[2′,3′:3,4]pyrido[2,1-*b*]quinazolin-5(7*H*)-one, D-508
6,7,12,13-Tetrahydro-5*H*-indolo[2,3-*a*]pyrrolo[3,4-*c*]carbazol-5-one, A-1190
2,3,5,7-Tetrahydro-9-(1*H*-indol-3-yl)-6*H*-dipyrrolo[4,3,2-*de*:2′,3′-*h*]quinolin-6-one, W-3
1,2,3,4-Tetrahydro-1-isobutenyl-2-methyl-β-carboline, M-521
1,2,3,4-Tetrahydro-1-isobutyl-β-carboline, M-521
Tetrahydroisokomarovine, Q-53
5,6,7,8-Tetrahydro-3-isopropylimidazo[1,2-*a*]pyridine, C-200
1,2,3,4-Tetrahydro-6,7-isoquinolinediol, T-158
1,2,3,4-Tetrahydro-7,8-isoquinolinediol, T-159
1,2,3,4-Tetrahydro-5,6,7-isoquinolinetriol, T-236
1,2,3,4-Tetrahydro-6-isoquinolinol, T-196
1,2,3,4-Tetrahydro-8-isoquinolinol, T-198
1,2,3,4-Tetrahydro-7-isoquinolinol, T-197
Tetrahydrojatrorrhizine, C-694
Tetrahydrokomarovinine, Q-54
Tetrahydrolathyrine, T-199
Tetrahydroleontidine, C-61
5,6,7,8-Tetrahydrolepidine, T-208
1,2,3,4-Tetrahydromanzamine B, M-92
10,11,12,12*a*-Tetrahydro-9*H*-6,12*b*-methanofuro[2,3-*d*]pyrido[1,2-*b*][1,2]oxazocin-2(6*H*)-one, P-387
9,10,11,11*a*-Tetrahydro-8*H*-6,11*b*-methanofuro[2,3-*c*]pyrido[1,2-*a*]pyridoazepin-2(6*H*)-one, S-206
6,7,7*a*,8-Tetrahydro-10-methoxy-5*H*-benzo[*g*]-1,3-benzodioxolo[6,5,4-*de*]quinolin-12-ol, D-846
6,7,7*a*,8-Tetrahydro-4-methoxy-5*H*-benzo[*g*]-1,3-benzodioxolo[6,5,4-*de*]quinolin-12-ol, E-70
6*a*,7,8,9-Tetrahydro-12-methoxy-6*H*-benzo[*de*]-1,3-benzodioxolo[4,5-*g*]quinolin-11-ol, L-10
6,7,7*a*,8-Tetrahydro-12-methoxy-5*H*-benzo[*g*]-1,3-benzodioxolo[6,5,4-*de*]quinolin-11-ol, N-25
5,8,14,14*a*-Tetrahydro-3-methoxy-6*H*-benzo[*a*][1,3]benzodioxolo[5,6-*g*]quinolizin-2-ol, C-685
1,2,3,4-Tetrahydro-2-(4-methoxybenzyl)-6,7-methylenedioxyisoquinoline, V-101
4,6,7,13-Tetrahydro-12-methoxy-12*b*H-bis[1,3]benzodioxolo[5,6-*a*:4′,5′-*g*]quinolizine-12*b*-methanol, Z-19
2,3,5,6-Tetrahydro-1-methoxy-2,6-bis(1-methylethenyl)-1*H*-imidazo[1,2-*a*]imidazole, I-187
1,2,3,4-Tetrahydro-6-methoxy-β-carboline, T-173
5,8,13,13*a*-Tetrahydro-3-methoxy-6*H*-dibenzo[*a,g*]-quinolizin-2-ol, B-111
4,5,5*a*,11-Tetrahydro-1-methoxy-5,5-dimethyl-3*H*,6*H*-[1,3]benzodioxolo[4′,5′,6′:4,5][2]benzopyrano[1,8,7-*hij*]isoquinolinium(1+), T-345
1,2,4,5-Tetrahydro-8-methoxy-4,4-dimethylbenzo[*b*]pyrido[2,3,4-*gh*]pyrrolizine, H-64
1,2,3,4-Tetrahydro-6-methoxy-1,2-dimethyl-β-carboline, S-285
1,2,3,4-Tetrahydro-6-methoxy-2,9-dimethyl-β-carboline, T-173
6,7,8,9-Tetrahydro-4-methoxy-8,9-dimethyl-1,3-dioxolo[4,5-*h*]isoquinoline, A-1021
3,9,10,15-Tetrahydro-5-methoxy-3,3-dimethyl-7*H*-indolo[2′,3′:3,4]pyrido[2,1-*b*]pyrano[2,3-*h*]quinazolin-7-one, P-89
1,2,3,4-Tetrahydro-6-methoxy-1,2-dimethyl-7-isoquinolinol, T-181
1,2,3,4-Tetrahydro-6-methoxy-1,2-dimethyl-7,8-methylenedioxyisoquinoline, A-1021
1,2,3,7-Tetrahydro-1-methoxy-7,7-dimethyl-2-(1-methylethenyl)imidazo[1,2-*a*]pyrimidine, A-251
2,3,8,8*a*-Tetrahydro-3*a*-methoxy-1,8-dimethylpyrrolo[2,3-*b*]indole, A-626
1,2,3,4-Tetrahydro-9-methoxyellipticine, M-252
1,2,3,4-Tetrahydro-6-methoxyisoquinoline, T-196
1,2,3,4-Tetrahydro-7-methoxyisoquinoline, T-197
1,2,3,4-Tetrahydro-8-methoxyisoquinoline, T-198
1,2,3,4-Tetrahydro-6-methoxy-7-isoquinolinol, T-158
1,2,3,4-Tetrahydro-7-methoxy-6-isoquinolinol, T-158
1,2,3,4-Tetrahydro-6-methoxy-2-[(4-methoxyphenyl)methyl]-7-isoquinolinol, S-234
6,7,7*a*,8-Tetrahydro-11-methoxy-7-methyl-5*H*-benzo[*g*]-1,3-benzodioxolo[6,5,4-*de*]quinolin-12-ol, B-397
5,6,11,12-Tetrahydro-9-methoxy-14-methylbenzo[5,6]cycloocta[1,2-*f*]-1,3-benzodioxol-5,11-imin-10-ol, N-104
1,2,3,11-Tetrahydro-1-(1-methoxy-3-methyl-9*H*-carbazol-9-yl)-3,3,5-trimethylpyrano[3,2-*a*]carbazol-2-ol, M-754
1,2,3,4-Tetrahydro-6-methoxy-1-methyl-β-carboline, S-285
1,2,3,4-Tetrahydro-6-methoxy-2-methyl-β-carboline, T-173
1,2,3,4-Tetrahydro-7-methoxy-1-methyl-β-carboline, T-202
5,6,6*a*,7-Tetrahydro-1-methoxy-6-methyl-4*H*-dibenzo[*de,g*]quinoline-2,7-diol, P-4
6,7,8,9-Tetrahydro-4-methoxy-9-methyl-1,3-dioxolo[4,5-*h*]isoquinoline, A-1021
5,6,7,8-Tetrahydro-4-methoxy-6-methyl-1,3-dioxolo[4,5-*g*]isoquinoline, H-396
1,2,3,4-Tetrahydro-*ar*-methoxy-1-methylisoquinoline, T-200
1,2,3,4-Tetrahydro-5-methoxy-2-methyl-7-isoquinolinol, T-180
1,2,3,4-Tetrahydro-6-methoxy-1-methyl-7-isoquinolinol, T-181
1,2,3,4-Tetrahydro-7-methoxy-1-methyl-6-isoquinolinol, T-179
1,2,3,4-Tetrahydro-6-methoxy-2-methyl-7-isoquinolinol, T-158
1,2,3,4-Tetrahydro-7-methoxy-1-methyl-8-isoquinolinol, T-163
1,2,3,4-Tetrahydro-7-methoxy-2-methyl-6-isoquinolinol, T-158
1,2,3,4-Tetrahydro-6-methoxy-1-methyl-7,8-methylenedioxyisoquinoline, A-1021
1,2,3,4-Tetrahydro-8-methoxy-2-methyl-6,7-methylenedioxyisoquinoline, H-396
3′,4′,6,8-Tetrahydro-7′-methoxy-2′-methyl-6-methylenespiro[7*H*-indeno[4,5-*d*]-1,3-dioxole-7,1′(2′*H*)-isoquinolin]-6′-ol, O-16
1,2,3,4-Tetrahydro-6-methoxy-2-methyl-1-(2-methylpropyl)-7-isoquinolinol, L-260
6,7,8,9-Tetrahydro-3-methoxy-2-methyl-5-octyl-4(1*H*)-quinolinone, A-1325
2,3,4,9-Tetrahydro-6-methoxy-2-methyl-1*H*-pyrido[3,4-*b*]indole, T-173
2,3,4,9-Tetrahydro-5-methoxy-1-methyl-1*H*-pyrido[3,4-*b*]indole, T-202
1,2,3,4-Tetrahydro-4-methoxy-2-methyl-8-quinolinecarboxylic acid, T-201
1,2,3,4-Tetrahydro-5-methoxy-1-oxo-β-carboline, T-226
1,2,3,4-Tetrahydro-6-methoxy-1-oxo-β-carboline, T-226
1,2,3,4-Tetrahydro-7-methoxy-1-oxo-β-carboline, T-226
1,2,3,4-Tetrahydro-8-methoxy-1-oxo-β-carboline, T-226
8,9,10,11-Tetrahydro-6-methoxy-1,2,3,4,5-pentathiepino[6,7-*f*]isoquinolin-7-ol, L-206
1,2,3,4-Tetrahydro-7-methoxy-9*H*-pyrido[3,4-*b*]indole-9-carboxaldehyde, P-916
2,3,4,9-Tetrahydro-6-methoxy-1*H*-pyrido[3,4-*b*]indole, T-173
2,3,4,9-Tetrahydro-6-methoxy-1*H*-pyrido[3,4-*b*]indol-1-one, T-226
2,3,4,9-Tetrahydro-8-methoxy-1*H*-pyrido[3,4-*b*]indol-1-one, T-226
2,3,4,9-Tetrahydro-6-methoxy-1*H*-pyrido[3,4-*b*]indol-1-one, T-226
2,3,4,9-Tetrahydro-7-methoxy-1*H*-pyrido[3,4-*b*]indol-1-one, T-226

1,2,3,9-Tetrahydro-5-methoxypyrrolo[2,1-*b*]quinazolin-3-ol, P-165
4,5,6,7-Tetrahydro-3-[[3-methoxy-5-(1*H*-pyrrol-2-yl)-2*H*-pyrrol-2-ylidene]methyl]-1,4-dimethyl-2*H*-isoindole, C-897
6,7,8,9-Tetrahydro-4-methoxy-8,8,9-trimethyl-1,3-dioxolo[4,5-*h*]isoquinolinium(1+), A-1021
1,2,3,4-Tetrahydro-8-methoxy-1,2,3-trimethylisoquinoline, T-177
1,2,3,4-Tetrahydro-6-methoxy-1,2,3-trimethyl-8-isoquinolinol, T-182
2,3,4,7-Tetrahydro-5-methoxy-2,2,7-trimethylpyrano[2,3-*f*][2,3]benzoxazin-3-ol, E-293
3,4,6,6-Tetrahydro-5-methyl-1*H*-azepino[5,4,3-*cd*]indol-7-ol N^5-oxide, F-9
6,7,7*a*,8-Tetrahydro-7-methyl-5*H*-benzo[*g*]-1,3-benzodioxolo[6,5,4-*de*]quinoline, R-120
6-(5,6,7,8-Tetrahydro-6-methyl-1,3-benzodioxolo[4,5-*g*]isoquinolin-5-yl)furo[3,4-*e*]-1,3-benzodioxol-8(6*H*)-one, B-119
5,6,7,7*a*-Tetrahydro-7-methylbenzo[*d*]-1,3-dioxolo[4,5-*g*]pyrido[4,3,2-*jk*][2]benzazepin-11-ol, S-411
4,6,7,14-Tetrahydro-5-methylbis[1,3]benzodioxolo[4,5-*c*:5′,6′-*g*]azecin-13(5*H*)-one, P-667
5,7,8,15-Tetrahydro-6-methylbis[1,3]benzodioxolo[5,6-*c*,5′,6′-*g*]azecin-14(6*H*)-one, P-723
6,7,12*b*,13-Tetrahydro-13-methyl-4*H*-bis[1,3]benzodioxolo[5,6-*a*:4′,5′-*g*]quinolizine, T-148
1,2,3,4-Tetrahydro-1-methyl-β-carboline-3-carboxylic acid, T-206
1,2,3,4-Tetrahydro-1-methyl-β-carboline, T-202
1,2,3,4-Tetrahydro-2-methyl-β-carboline, T-203
6,7,8,9-Tetrahydro-10-methylcyclohepta[*b*]pyran-5,8-imin-4(5*H*)-one, S-587
5,6,12,13-Tetrahydro-15-methylcycloocta[1,2-*f*:5,6-*f*′]bis[1,3]benzodioxol-5,12-imine, E-221
5,6,7,8-Tetrahydro-6-methyldibenz[*c,e*]azocine-1,2-diol, A-1361
5,6,6*a*,7-Tetrahydro-6-methyl-4*H*-dibenzo[*de,g*]quinoline-1,2,3,10,11-pentol, P-209
5,6,6*a*,7-Tetrahydro-6-methyl-4*H*-dibenzo[*de,g*]quinoline-1,2,3,9,10-pentol, P-208
5,6,6*a*,7-Tetrahydro-6-methyl-4*H*-dibenzo[*de,g*]quinoline-1,2,9,10-tetrol, T-246
5,6,6*a*,7-Tetrahydro-6-methyl-4*H*-dibenzo[*de,g*]quinoline-1,2,10-triol, T-524
5,6,6*a*,7-Tetrahydro-6-methyl-4*H*-dibenzo[*de,g*]quinoline-1,2,11-triol, T-525
5,6,6*a*,7-Tetrahydro-6-methyl-4*H*-dibenzo[*de,g*]quinoline-1,2,3-triol, T-521
2,3,13,13*a*-Tetrahydro-1-methyl-1*H*-[1,3]dioxolo[7,8][1]benzoxepino[2,3,4-*ij*]isoquinolin-6-ol, C-804
5,6,7,8-Tetrahydro-6-methyl-1,3-dioxolo[4,5-*g*]isoquinoline, H-398
6-(5,6,7,8-Tetrahydro-6-methyl-1,3-dioxolo[4,5-*g*]isoquinolin-5-yl)furo[3,4-*e*]-1,3-benzodioxol-8(6*H*)-one, A-145
8-(5,6,7,8-Tetrahydro-6-methyl-1,3-dioxolo[4,5-*g*]isoquinolin-5-yl)furo[3,4-*e*]-1,3-benzodioxol-6(8*H*)-one, D-135
5-[(5,6,7,8-Tetrahydro-6-methyl-1,3-dioxolo[4,5-*g*]isoquinolin-5-yl)methyl]-1,3-benzodioxole-4-methanol, C-676
5-[(5,6,7,8-Tetrahydro-6-methyl-1,3-dioxolo[4,5-*g*]isoquinolin-5-yl)methyl]-1,3-benzodioxol-4-ol, L-80
4-[(5,6,7,8-Tetrahydro-6-methyl-1,3-dioxolo[4,5-*g*]isoquinolin-5-yl)methyl]phenol, C-453
1,2,3,6-Tetrahydro-1-methyl-2,6-dioxo-4-pyrimidinecarboxylic acid, D-669
1,2,3,6-Tetrahydro-3-methyl-2,6-dioxo-4-pyrimidinecarboxylic acid, D-669
N-(5*a*,6*a*,7,8-Tetrahydro-4-methyl-1,5-dioxo-1*H*,5*H*-pyrrolo[1,2-*c*][1,3]oxazepin-3-yl)hexanamide, C-852
Tetrahydro-2-methylellipticine, E-67
1,2,3,4-Tetrahydro-2-(3,4-methylenedioxyphenethyl)-1-methylquinoline, G-9
1,2,3,4-Tetrahydro-2-*N*-methyl-8-hydroxymanzamine A, M-91
1,2,8,13-Tetrahydro-2-methyl-4*H*-indolo[2,3-*a*]pyrano[3,4-*g*]quinolizine-4,5(7*H*)-dione, C-66
8,13,13*b*,14-Tetrahydro-14-methylindolo[2′,3′:3,4]pyrido[2,1-*b*]quinazolin-5(7*H*)-one, E-310
4,6,7,8-Tetrahydro-7-methylindolo[4,3-*fg*]quinoline-9-methanol, A-205
1,2,3,4-Tetrahydro-1-methyl-6,7-isoquinolinediol, T-162
1,2,3,4-Tetrahydro-1-methyl-7,8-isoquinolinediol, T-163
1,2,3,4-Tetrahydro-2-methyl-4,8-isoquinolinediol, T-161
1,2,3,4-Tetrahydro-2-methyl-6,7-isoquinolinediol, T-158
1,2,3,4-Tetrahydro-1-methyl-6,7,8-isoquinolinetriol, T-237
1,2,3,4-Tetrahydro-2-methyl-6,7-methylenedioxyisoquinoline, H-398
2,3,4,9-Tetrahydro-2-methyl-1-(2-methyl-1-propenyl)-1*H*-pyrido[3,4-*b*]indole, M-521
7,8,9,9*a*-Tetrahydro-3-[(3-methyl-1-oxobutyl)amino]-4-methyl-1*H*,5*H*-pyrrolo[1,2-*c*][1,3]oxazepine-1,5-dione, C-852
1,2,3,4-Tetrahydro-2-methyl-1-oxo-β-carboline, T-226
2-(Tetrahydro-4-methyl-5-oxo-2-furanyl)stenine, T-664
5,7,8,13-Tetrahydro-14-methyl-5-oxoindolo[2′,3′:3,4]pyrido[2,1-*b*]quinazolinium hydroxide inner salt, D-158
1-[1,2,5,6-Tetrahydro-1-methyl-6-(2-oxopropyl)-2-pyridinyl]-3-buten-2-one, S-213
3,4,6,7-Tetrahydro-1-methyl-6-oxo-1*H*-pyrano[3,4-*c*]pyridine-5-carboxaldehyde, G-55
1,2,3,4-Tetrahydro-1-methyl-2-pentylquinoline, P-238
1,3,4,12*b*-Tetrahydro-3-(1-methyl-2-piperidinyl)-pyrido[2,1-*a*][2]benzazepin-6(2*H*)-one, A-1524
3,4,5,6-Tetrahydro-6-(2-methyl-1-propenyl)-1*H*-azepino[5,4,3-*cd*]indole, A-1549
1,2,3,4-Tetrahydro-1-(2-methylpropyl)-9*H*-pyrido[3,4-*b*]indole, M-521
5,6,7,8-Tetrahydro-5-methyl-2-propylquinoline, T-204
1,2,5,6-Tetrahydro-1-methyl-3-pyridinecarboxylic acid, T-205
20-(3,4,5,6-Tetrahydro-5-methyl-2-pyridinyl)-pregn-5-ene-3,16-diol, 13CI, S-199
2,3,4,9-Tetrahydro-1-methyl-1*H*-pyrido[3,4-*b*]indole-3-carboxylic acid, T-206
2,3,4,9-Tetrahydro-2-methyl-1*H*-pyrido[3,4-*b*]indole, T-203
2,3,4,9-Tetrahydro-1-methyl-1*H*-pyrido[3,4-*b*]indole, T-202
2,3,4,9-Tetrahydro-1-methyl-1*H*-pyrido[3,4-*b*]indol-7-ol, H-592
2,3,4,9-Tetrahydro-1-methyl-1*H*-pyrido[3,4-*b*]indol-6-ol, S-285
2,3,4,9-Tetrahydro-2-methyl-1*H*-pyrido[3,4-*b*]indol-1-one, T-226
1,4,5,6-Tetrahydro-2-methyl-4(6)-pyrimidinecarboxylic acid, T-207
2,3,8,8*a*-Tetrahydro-1-methylpyrrolo[2,3-*b*]indol-3*a*(1*H*)-ol, A-626
5,6,7,8-Tetrahydro-4-methylquinoline, T-208
Tetrahydro-2-methylthiazole, M-570
2,3,4,5-Tetrahydro-6-methyl-2-undecylpyridine, M-584
5,6,7,8-Tetrahydro-D-monapterin, A-923
5,6,7,8-Tetrahydro-L-monapterin, A-923
Tetrahydroneosophoramine, D-79
Δ^3-Tetrahydronicotinic acid, T-223
Tetrahydronitramarine, Q-51
Tetrahydronitraridine, Q-52
2,3,8,8*a*-Tetrahydro-3*a*-nitro-1*H*-pyrrolo[2,3-*b*]indole, T-209
5,6,7,8-Tetrahydro-2-nonylquinoline, T-210
Tetrahydroolivacine, G-211
Tetrahydro-1,4-oxazine, M-705
5,7,8,13-Tetrahydro-5-oxobenz[*g*]indolo[2,3-*a*]quinolizine-1-carboxaldehyde, N-67
1,2,3,4-Tetrahydro-1-oxo-β-carboline, T-226
1,2,3,4-Tetrahydro-1-(1-oxo-2,4,6-decatrienyl)pyridine, D-125
1,2,3,4-Tetrahydro-4-(oxoethylidene)-2,6-pyridinedicarboxylic acid, B-109
7,8,9,9*a*-Tetrahydro-3-[(1-oxohexyl)amino]-4-methyl-1*H*,5*H*-pyrrolo[1,2-*c*][1,3]oxazepine-1,5-dione, C-852
5,6,7,8-Tetrahydro-5-oxoimidazo[1,5-*c*]pyrimidine, D-462
2,3,6,11-Tetrahydro-3-oxo-1*H*-indolizino[8,7-*b*]indole-5,11*b*(5*H*)-dicarboxylic acid, T-211
1,2,3,12-Tetrahydro-12-oxoindolo[3,2,1-*de*]pyrido[3,2,1-*ij*][1,5]naphthyridin-4-ium(1+), I-140
7,8,13,13*b*-Tetrahydro-5-oxoindolo[2′,3′:3,4]pyrido[2,1-*b*]quinazoline-14(5*H*)-carboxaldehyde, D-508
1,5,6,8-Tetrahydro-8-oxo-1,5-methano-2*H*-pyrido[1,2-*a*][1,5]diazocine-3(4*H*)-acetic acid, C-939
1,2,3,4-Tetrahydro-1-(1-oxo-3-phenyl-2-propenyl)-5-(2-piperidinyl)pyridine, A-138
Tetrahydropalmatine, T-212
2,3,4,5-Tetrahydro-6-(1,3-pentadienyl)pyridine, T-213
1,2,3,4-Tetrahydro-1-(1,2,3,4,5-pentahydroxypentyl)-β-carboline-3-carboxylic acid, T-215
1,2,3,5-Tetrahydro-2,2,5,5,7-pentamethyl-6*H*-pyrrolo[2,3-*b*]pyridin-6-one, A-206
2,3,4,5-Tetrahydro-6-(4-pentenyl)pyridine, T-214
Tetrahydropentoxyline, T-215
2,3,4,5-Tetrahydro-6-pentylpyridine, T-216
2,3,6,7-Tetrahydro-3-(phenylmethyl)pyrrolo[1,2-*a*]pyrazine-1,4-dione, C-872
1,2,3,4-Tetrahydro-1-phenyl-1,4-naphthalenedicarboxylic acid bis(8-methyl-8-azabicyclo[3.2.1]oct-3-yl) ester, B-56
1,2,3,4-Tetrahydro-1-phenyl-1,4-naphthalenedicarboxylic acid bis(9-methyl-3-oxa-9-azatricyclo[3.3.1.$0^{2,4}$]non-7-yl) ester, S-157
3*a*,4,5,6-Tetrahydro-3-phenyl-3*H*-pyrrolo[1,2-*b*]pyrazole, N-185
1,2,3,4-Tetrahydro-1-phenylquinolizinium(1+), C-496
1,2,3,6-Tetrahydropicolinic acid, T-221
Tetrahydropiperine, P-467
Tetrahydroplakinamine A, P-496
Tetrahydropresecamine, P-624
Tetrahydropronuciferine, P-643
1,2,3,4-Tetrahydro-6-propanoylpyridine, T-217
3,4,5,6-Tetrahydro-2-propanoylpyridine, T-217
2,3,4,5-Tetrahydro-6-(1-propenyl)pyridine, T-218
1,2,3,4-Tetrahydro-1-propyl-β-carboline, T-219
2,3,4,9-Tetrahydro-1-propyl-1*H*-pyrido[3,4-*b*]indole, T-219
1,2,3,6-Tetrahydro-2-pyridinecarboxylic acid, T-221
1,2,3,6-Tetrahydro-4-pyridinecarboxylic acid, T-222
1,2,5,6-Tetrahydro-3-pyridinecarboxylic acid, T-223
1,2,3,4-Tetrahydropyridine, T-220
1-(1,4,5,6-Tetrahydro-2-pyridinyl)ethanone, A-76
1-(1,4,5,6-Tetrahydro-2-pyridinyl)-1-propanone, T-217
1-(3,4,5,6-Tetrahydro-2-pyridinyl)-1-propanone, T-217
2,3,4,9-Tetrahydro-1*H*-pyrido[3,4-*b*]indole-1-butanamide, N-80
2,3,4,9-Tetrahydro-1*H*-pyrido[3,4-*b*]indole-3-carboxylic acid, T-224
2,3,4,9-Tetrahydro-1*H*-pyrido[3,4-*b*]indole-1,3-dicarboxylic acid, T-147
2,3,4,9-Tetrahydro-1*H*-pyrido[3,4-*b*]indole-1,6-diol, T-225
1,2,3,4-Tetrahydro-9*H*-pyrido[3,4-*b*]indole, T-146
2,3,4,9-Tetrahydro-1*H*-pyrido[3,4-*b*]indol-6-ol, T-173
2,3,4,9-Tetrahydro-1*H*-pyrido[3,4-*b*]indol-1-one, T-226
3-[(2,3,4,9-Tetrahydro-1*H*-pyrido[3,4-*b*]indol-1-yl)-propyl]guanidine, T-637
6,8,9,11-Tetrahydro-7*H*-pyrido[2,1-*b*]quinazoline, T-227

6,7,8,9-Tetrahydro-11*H*-pyrido[2,1-*b*]quinazoline, T-227
6,7,8,9-Tetrahydropyrido[2,1-*b*]quinazolin-11-one, M-5
1-[2-(3,4,5,6-Tetrahydropyridyl)]-1,3-pentadiene, T-213
Tetrahydropyrrole, P-949
2,3,4,9-Tetrahydro-1-[2-(1-pyrrolidinyl)ethyl]-1*H*-pyrido[3,4-*b*]indole, T-34
1,2,3,4-Tetrahydro-5-(2-pyrrolidinyl)pyridine, T-228
1,2,3,4-Tetrahydro-1-(2-pyrrolidylethyl)-β-carboline, T-34
2,3,5,7*a*-Tetrahydro-1*H*-pyrrolizine-7-methanol, S-644
5,6,7,7*a*-Tetrahydro-3*H*-pyrrolizin-3-one, T-229
4,5,6,7-Tetrahydro-2*H*-pyrrolo[3,4-*c*]pyridine-6-carboxylic acid, T-230
1,2,3,9-Tetrahydropyrrolo[2,1-*b*]quinazoline-1-carboxylic acid, L-180
1,2,3,9-Tetrahydropyrrolo[2,1-*b*]quinazoline-3,7-diol, V-37
1,2,3,9-Tetrahydropyrrolo[2,1-*b*]quinazoline, T-231
1,2,3,9-Tetrahydropyrrolo[2,1-*b*]quinazolin-9-ol, D-503
1,2,3,9-Tetrahydropyrrolo[2,1-*b*]quinazolin-3-ol, P-165
1,2,3,9-Tetrahydropyrrolo[2,1-*b*]quinazolin-1-ol, T-231
1-(1,2,3,9-Tetrahydropyrrolo[2,1-*b*]quinazolin-9-yl)-2-propanone, P-164
1,2,3,4-Tetrahydro-1-(2-quinolinyl)-β-carboline, Q-51
2,3,4,9-Tetrahydro-1-(5-quinolinyl)-1*H*-pyrido[3,4-*b*]indole, Q-53
Tetrahydrorhombifoline, T-149
1,2,3,4-Tetrahydroroeharmine, D-620
Tetrahydrosecamine, S-174
Tetrahydrosecodine, S-184
Tetrahydrosecodinol, S-184
Tetrahydroserpentine, A-212
Tetrahydrostephabine, S-530
5,5′,6,6′-Tetrahydro-1,1′,2,2′-tetramethoxy-7,7′-bi-4*H*-dibenzo[*de,g*]quinoline, U-41
5,8,13,13*a*-Tetrahydro-2,3,10,11-tetramethoxy-6*H*-dibenzo[*a,g*]quinolizine, X-30
5,8,13,13*a*-Tetrahydro-2,3,9,10-tetramethoxy-6*H*-dibenzo[*a,g*]quinolizin-11-ol, S-543
5,8,13,13*a*-Tetrahydro-2,3,9,10-tetramethoxy-13,13-dimethyl-6*H*-dibenzo[*a,g*]quinolizine, C-686
1,2,3,4-Tetrahydro-5,6,7,8-tetramethoxy-1,2-dimethylisoquinoline, T-233
1,2,3,4-Tetrahydro-5,6,7,8-tetramethoxyisoquinoline, T-276
6,7,7*a*,8-Tetrahydro-4,9,10,11-tetramethoxy-7-methyl-5*H*-benzo[*g*]-1,3-benzodioxolo[6,5,4-*de*]-quinoline, L-159
5,7,8,14-Tetrahydro-3,4,10,11-tetramethoxy-6-methyldibenz[*c,g*]azecin-13(6*H*)-one, M-734
6,7,8,9-Tetrahydro-2,3,10,12-tetramethoxy-7-methyl-5*H*-dibenz[*d,f*]azonine, P-671
5,6,11,12-Tetrahydro-2,3,8,9-tetramethoxy-13-methyldibenzo[*a,e*]cyclooctene-5,11-imine, A-1410
5,6,6*a*,7-Tetrahydro-1,2,9,10-tetramethoxy-6-methyl-4*H*-dibenzo[*de,g*]quinolin-4-ol, C-190
5,8,13,13*a*-Tetrahydro-2,3,9,10-tetramethoxy-13-methyl-6*H*-dibenzo[*a,g*]quinolizine, C-675
1,2,3,4-Tetrahydro-5,6,7,8-tetramethoxy-1-methylisoquinoline, T-233
1,2,3,4-Tetrahydro-5,6,7,8-tetramethoxy-2-methylisoquinoline, T-276
1,1′,2,2′-Tetrahydro-2,2′,4,4′-tetramethyl[2,2′-bi-3*H*-indole]-3,3′-dione, P-271
1,6,7,8-Tetrahydro-4,5,6,8-tetramethylcyclopent[-*g*]indole, H-140
2-[2,4*a*,10,10*a*-Tetrahydro-1,1,3,13-tetramethyl-1*H*,5*H*-4*b*,9*b*-(iminoethano)indeno[1,2-*b*]indol-10-yl]-1*H*-indole-3-ethanol, S-395
6,7,8,9-Tetrahydro-2,5,10,10-tetramethyl-5,8-methano-5*H*-cyclohepta[*b*]pyridine, P-112
Tetrahydro-*N*,*N*,*N*,5-tetramethyl-4-oxo-2-furanmethanaminium(1+), M-773
2,3,7*b*,10-Tetrahydro-7,7,9,9-tetramethylpyrrolo[1,2-*c*]quinazoline-5,8,10(1*H*,6*H*,9*H*)-trione, S-656
Tetrahydrothalifendine, C-73
Tetrahydrothalifendine, T-234
Tetrahydrothermopsine, I-242
1,2,3,4-Tetrahydro-1-(2-thio-3-pyrrolidinyl)-β-carboline-3-carboxylic acid, T-235
3,4,8*a*,13-Tetrahydro-3,15,16-trihydroxy-1,4-dimethoxy-12-methyl-1*H*-xantheno[4′,3′,2′:4,5][1,3]benzodioxino[7,6-*g*]isoquinoline-14,17(2*H*,9*H*)-dione, A-128
1,2,3,4-Tetrahydro-5,6,7-trihydroxyisoquinoline, T-236
1,6,7,8-Tetrahydro-2,10,11-trihydroxy-8-methoxy-2*H*-benzo[*e*]azecine-3,5-dione, S-41
1,2,3,4-Tetrahydro-6,7,8-trihydroxy-1-methylisoquinoline, T-237
5,6,6*a*,7-Tetrahydro-9,10,12-trimethoxy-4*H*-benzo[*g*]-1,3-benzodioxolo[4,5,6-*de*]quinoline, B-7
5,8,13,13*a*-Tetrahydro-2,3,10-trimethoxy-6*H*-dibenzo[*a,g*]quinolizine-1,11-diol, S-530
5,8,13,13*a*-Tetrahydro-2,9,10-trimethoxy-6*H*-dibenzo[*a,g*]quinolizin-1-ol, C-174
5,8,13,13*a*-Tetrahydro-2,3,9-trimethoxy-6*H*-dibenzo[*a,g*]quinolizin-10-ol, C-677
5,8,13,13*a*-Tetrahydro-3,9,10-trimethoxy-6*H*-dibenzo[*a,g*]quinolizin-2-ol, I-210
1,2,3,4-Tetrahydro-5,6,7-trimethoxy-1,2-dimethylisoquinoline, T-174
1,2,3,4-Tetrahydro-6,7,8-trimethoxy-1,2-dimethylisoquinoline, T-237
1,2,3,4-Tetrahydro-6,7,8-trimethoxy-1-isoquinolinecarboxylic acid, T-175
1,2,3,4-Tetrahydro-5,6,7-trimethoxyisoquinoline, T-238
1,2,3,4-Tetrahydro-6,7,8-trimethoxyisoquinoline, T-236
1,2,3,4-Tetrahydro-5,6,7-trimethoxy-1-[(4-methoxyphenyl)methyl]isoquinoline, A-1069
2,3,12,12*a*-Tetrahydro-6,9,10-trimethoxy-1-methyl-1*H*-[1]benzoxepino[2,3,4-*ij*]isoquinoline, C-805
6,7,8,9-Tetrahydro-2,3,12-trimethoxy-7-methyl-5*H*-dibenz[*d,f*]azonine, L-73
6,7,8,9-Tetrahydro-2,11,12-trimethoxy-7-methyl-5*H*-dibenz[*d,f*]azonin-3-ol, E-194
5,6,11,12-Tetrahydro-3,8,9-trimethoxy-13-methyldibenzo[*a,e*]cyclooctene-5,11-imin-4-ol, P-514
5,6,6*a*,7-Tetrahydro-1,2,9-trimethoxy-6-methyl-4*H*-dibenzo[*de,g*]quinolin-10-ol, H-752
5,6,6*a*,7-Tetrahydro-2,9,10-trimethoxy-6-methyl-4*H*-dibenzo[*de,g*]quinolin-1-ol, H-751
5,6,6*a*,7-Tetrahydro-1,2,10-trimethoxy-6-methyl-4*H*-dibenzo[*d,e*]quinolin-9-ol, L-75
5,6,6*a*,7-Tetrahydro-1,9,10-trimethoxy-6-methyl-4*H*-dibenzo[*de,g*]quinolin-2-ol, P-597
1,2,3,4-Tetrahydro-6,7,8-trimethoxy-1-methyl-1-isoquinolinecarboxylic acid, P-299
1,2,3,4-Tetrahydro-5,6,7-trimethoxy-2-methylisoquinoline, T-238
1,2,3,4-Tetrahydro-6,7,8-trimethoxy-1-methylisoquinoline, T-237
5,7,8,13-Tetrahydro-2,3,10-trimethoxy-14-methyl-5-oxoindolo[2′,3′:3,4]pyrido[2,1-*b*]quinazolinium hydroxide inner salt, E-309
6,7,8,9-Tetrahydro-2,3,10-trimethylcyclohepta[*b*]-pyran-5,8-imin-4(5*H*)-one, D-75
2,4,4*a*,8-Tetrahydro-2,6,8-trimethyl-4*a*-(2-oxo propyl)pyrimido[5,4-*e*]-1,2,4-triazine-3,5,7(6*H*)-trione, P-935
2,3,4,6-Tetrahydro-1,2,5-trimethyl-1*H*-pyrido[4,3-*b*]carbazole, G-211
N-(1,2,5,6-Tetrahydro-2,5,6-trioxo-3-pyridyl)octanamide, O-62
1,5,6,7-Tetrahydro-4-(1,3-undecadiynyl)-2*H*-azepin-2-one, M-698
4′,5′,6′,17-Tetrahydro-17*R*-usambarensine *N*-oxide, U-52
Tetrahydro-17*R*-usambarensine, U-52
Tetrahydro-17*S*-usambarensine, U-52
Tetrahydroveralkamine, V-61
1,8,14,16-Tetrahydroxyaconitan-19-one, T-239
1,2,3,4-Tetrahydroxyacridone, T-240
1,2,3,5-Tetrahydroxyacridone, T-241
1,3,4,5-Tetrahydroxyacridone, T-242
1,3,5,6-Tetrahydroxyacridone, T-243
1,2,3,9-Tetrahydroxyaporphine, T-244
1,2,9,10-Tetrahydroxyaporphine, T-246
1,2,9,11-Tetrahydroxyaporphine, T-247
1,2,10,11-Tetrahydroxyaporphine, T-248
1,2,3,11-Tetrahydroxyaporphine, T-245
5,5′,6,6′-Tetrahydroxy-3,3′-bi-1*H*-indole, B-130
3,3′,4,4′-Tetrahydroxy-2,2′-bipyridine, T-249
2-(1,2,3,4-Tetrahydroxybutyl)-5-(2,3,4-trihydroxybutyl)pyrazine, T-250
1,2,3,7-Tetrahydroxydibenz[*cd,f*]indol-4(5*H*)-one, T-254
1,2,3,9-Tetrahydroxydibenz[*cd,f*]indol-4(5*H*)-one, T-255
1,2,6,7-Tetrahydroxydibenz[*cd,f*]indol-4(5*H*)-one, T-251
1,2,7,9-Tetrahydroxydibenz[*cd,f*]indol-4(5*H*)-one, T-253
1,2,7,8-Tetrahydroxydibenz[*cd,f*]indol-4(5*H*)-one, T-252
4,6,8,9-Tetrahydroxydihydro-β-agarofuran-1-one, P-219
1,2,6,9-Tetrahydroxydihydro-β-agarofuran, T-256
1,4,6,9-Tetrahydroxydihydro-β-agarofuran, T-257
1,6,8,9-Tetrahydroxydihydro-β-agarofuran, T-258
1,8,9,14-Tetrahydroxydihydro-β-agarofuran, T-259
10,10′,17,17′-Tetrahydroxy-4,4′-dimethyl-9,9′-bisarpaganium, D-864
6,13,14,21-Tetrahydroxy-16,18-dimethyl-10-phenyl[11]cytochalasa-7,19-dien-1-one, T-260
4,5,6,7-Tetrahydroxyfuro[2,3-*b*]quinoline, F-215
4,5,7,8-Tetrahydroxyfuro[2,3-*b*]quinoline, F-216
4,6,7,8-Tetrahydroxyfuro[2,3-*b*]quinoline, F-217
5,6,7,8-Tetrahydroxyfuro[2,3-*b*]quinolin-4(9*H*)-one, F-214
1,2,6,7-Tetrahydroxy-3-(hydroxymethyl)-5-methyl-1*H*-pyrrolizidine, T-261
1,2,6,7-Tetrahydroxy-3-(hydroxymethyl)-1*H*-pyrrolizidine, T-262
1,6,7,8-Tetrahydroxyindolizidine, C-188
3,5,7,15-Tetrahydroxy-6(17),12-lathyradien-14-one, T-263
1,3,4,5-Tetrahydroxy-2-(3-methyl-2-butenyl)-9(10*H*)-acridinone, T-270
1,3,5,6-Tetrahydroxy-2-(3-methyl-2-butenyl)-9*H*-acridin-9-one, T-271
3,4′,5,7-Tetrahydroxy-8-(4-methyl-5-oxo-2-pyrrolidinyl)flavone, L-173
2,3,4,8-Tetrahydroxy-10-nitro-1-phenanthrenecarboxylic acid, T-264
3,4,6,7-Tetrahydroxy-10-nitro-1-phenanthrenecarboxylic acid, T-265
3,4,6,8-Tetrahydroxy-10-nitro-1-phenanthrenecarboxylic acid, T-266
3,4,7,8-Tetrahydroxy-10-nitro-1-phenanthrenecarboxylic acid, T-267
1,2,3,4-Tetrahydroxynortropane, A-1587
1,2,3,6-Tetrahydroxynortropane, A-1588
1,2,4,7-Tetrahydroxynortropane, A-1589
3′,4′,5,7-Tetrahydroxy-6-(5-oxo-2-pyrrolidinyl)flavanone, T-572
3′,4′,5,7-Tetrahydroxy-8-(5-oxo-2-pyrrolidinyl)flavanone, T-573
3,11,12,14-Tetrahydroxypregn-5-en-20-one, T-269
3,8,12,14-Tetrahydroxypregn-5-en-20-one, T-268
1,3,4,5-Tetrahydroxy-2-prenylacridone, T-270
1,3,5,6-Tetrahydroxy-2-prenylacridone, T-271
3,4,7,8-Tetrahydroxy-2-quinolinecarboxylic acid, T-272
1,5,6,7-Tetrahydroxyquinoline, I-304
2,3,4,7-Tetrahydroxyquinoline, Q-40
2,3,4,8-Tetrahydroxyquinoline, Q-41
2,4,6,8-Tetrahydroxyquinoline, Q-42
2,4,7,8-Tetrahydroxyquinoline, Q-43
3,4,5,8-Tetrahydroxyquinoline, Q-44
3,4,7,8-Tetrahydroxy-2(1*H*)-quinolinone, Q-39
5,7,9,10-Tetrahydroxy-4(20),11-taxadien-13-one, T-48

2,5,9,10-Tetrahydroxy-4(20),11-taxadien-13-one, T-273
1,8,11,18-Tetrahydroxy-1,6,11,16-tetraazacycloeicosane-2,5,12,15-tetrone, A-250
5,9,12,13-Tetrahydroxy-1,6-tigliadien-3-one, T-274
9,12,13,20-Tetrahydroxy-1,6-tigliadien-3-one, T-275
Tetrakis(3-aminopropyl)ammonium(1+), T-622
Tetralupine, E-95
1,2,3,4-Tetramethoxyacridone, T-240
1,2,9,10-Tetramethoxyaporphine, T-246
1,2,10,11-Tetramethoxyaporphine, T-248
4,5,6,9-Tetramethoxy-10*H*-azuleno[1,2,3-*ij*]isoquinolin-10-one, G-159
4,9,10,11-Tetramethoxy-8*H*-benzo[*g*]-1,3-benzodioxolo[6,5,4-*de*]quinolin-8-one, O-26
2,7,8,9-Tetramethoxy-11*H*-[1]benzopyrano[4,3-*c*]isoquinolin-4-ol, D-940
3,3′,4,4′-Tetramethoxy-2,2′-bipyridine, T-249
4,5,6,9-Tetramethoxy-7*H*-dibenzo[*de,h*]quinolin-7-one, D-90
1,2,3,4-Tetramethoxy-7*H*-dibenzo[*de,g*]quinolin-7-one, I-34
1,2,9,10-Tetramethoxy-7*H*-dibenzo[*de,g*]quinolin-7-one, O-178
5,6,7,8-Tetramethoxydictamnine, F-214
6,6′,7,12-Tetramethoxy-2,2′-dimethylberbaman, T-286
6,6′,8,8′-Tetramethoxy-3,3′-dimethyl-[2,2′-bi-9*H*-carbazole]-1,1′-diol, C-503
6,6′,7,12′-Tetramethoxy-2,2′-dimethyloxyacanthan, O-1
3,4,6,7-Tetramethoxy-*N*,*N*-dimethyl-1-phenanthreneethanamine, M-559
3,4,7,8-Tetramethoxy-*N*,*N*-dimethyl-1-phenanthreneethanamine, U-63
6′,7′,10,11-Tetramethoxyemetan, E-72
4,6,7,8-Tetramethoxyfuro[2,3-*b*]quinoline, F-217
4,5,6,7-Tetramethoxyfuro[2,3-*b*]quinoline, F-215
4,5,7,8-Tetramethoxyfuro[2,3-*b*]quinoline, F-216
4,7,8,8-Tetramethoxy-5*H*-furo[2,3-*b*]quinolin-5(8*H*)-one, M-165
5,6,7,8-Tetramethoxyisoquinoline, T-276
1,2,3,4-Tetramethoxy-10-methylacridone, T-240
1,2,3,5-Tetramethoxy-10-methylacridone, T-241
5,8,9,10-Tetramethoxy-4-methylbenzo[*g*]quinolin-2(1*H*)-one, T-277
2,3,9,10-Tetramethoxy-13-methylberbine, C-675
1,2,9,10-Tetramethoxy-6-methyl-4*H*-dibenzo[*de,g*]-quinoline-4,5(6*H*)-dione, P-566
3,9,10,11-Tetramethoxy-1,2-methylenedioxyaporphine, L-159
5,6,7,8-Tetramethoxy-1-methylisoquinoline, T-233
2,3,10,11-Tetramethoxy-16-methylrheadan-8-ol, A-638
1,2,9,10-Tetramethoxynoraporphine, T-246
1,2,10,11-Tetramethoxynoraporphine, T-248
2,3,8,9-Tetramethoxypavinane, A-1410
3,4,6,7-Tetramethoxyphenanthroindolizidine, I-342
2,3,5,6-Tetramethoxyphenanthroindolizidine, T-688
2,3,6,7-Tetramethoxyphenanthroindolizidine, T-695
3,4,5,6-Tetramethoxyphenanthroindolizidine, T-278
3,3′-(2,3,5,6-Tetramethoxy-1,4-phenylene)bis[1-(1,1-dimethyl-2-propenyl)-1*H*-indole], A-1519
Tetramethoxyscytonemin, T-279
Tetramethylammonium chloride, T-280
Tetramethylammonium(1+), T-280
6,6′,8,8′-Tetramethyl-1,13′-biergolin-14-ol, C-487
N,*N*′,*N*″,*N*‴-Tetramethyl-1,3-butadiene-1,1,4,4-tetracarboxamide, B-421
N,*N*,*N*′,*N*′-Tetramethyl-1,4-butanediamine, T-281
N,*N*,*N*′,*N*′-Tetramethyl-2-butene-1,4-diamine, B-423
N,*N*′-(2,2,4,4-Tetramethyl-1,3-cyclobutanediylidene)bis[2,6-dimethylbenzenamine], B-175
2,2′,4,4′-Tetramethyl-6,6′-dinitroazobenzene, T-282
N,*N*′-Tetramethylenedi-β-alanine, S-397
Tetramethylenediamine, B-422
Tetramethylenedihydro-β-carboline, I-113
Tetramethyleneimine, P-949
Tetramethylenetetrahydro-β-carboline, O-48
N-Tetramethylholarrhimine, D-279
N^{ω}-Tetramethylhomospermine, S-340
N^{7}-(3,7,11,15-Tetramethyl-13-oxo-2,6,10-hexadecatrienyl)theophylline, N-344
2,2,6,6-Tetramethyl-4-piperidinone, T-283
Tetramethylputrescine, T-281
Tetramethylpyrazine, T-284
2,4,6,6-Tetramethyl-3(6*H*)-pyridinone, T-285
1,4,6,9-Tetramethylpyrido[3,2-*g*]quinoline-2,5,8,10-(1*H*,9*H*)-tetrone, A-1251
O^{2},1,7,9-Tetramethyluric acid, L-165
1,3,7,9-Tetramethyluric acid, U-45
Tetramic acid, P-954
Tetrandrine 2β-*N*-oxide, T-286
Tetrandrine 2′β-*N*-oxide, T-286
Tetrandrine, T-286
Tetrapetalone A, T-287
Tetrapetalone B, T-287
Tetrapetalone C, T-287
Tetrapetalone D, T-287
N,*N*,*N*′,*N*′-Tetraphenylguanidine, G-199
Tetraphyllicine, T-288
Tetraphyllin B sulfate, D-565
Tetraphyllin B, D-565
Tetraphylline oxindole A, C-1
Tetraphylline oxindole B, C-1
Tetraphylline pseudoindoxyl, T-289
Tetraphylline, R-53
Tetraphyllinine, A-215
Tetraponerine 1, T-290
Tetraponerine 2, T-290
Tetraponerine 3, T-291
Tetraponerine 4, T-291
Tetraponerine 5, T-292
Tetraponerine 6, T-292
Tetraponerine 7, T-293
Tetraponerine 8, T-293
Tetrapyrazine, T-284
Tetrastachyne, T-294
Tetrastachynine, T-295
Tetrazomine, T-296
Tetrodonic acid, T-297
Tetrodontoxin, T-298
Tetrodotoxin, T-298
Texaline, T-299
Texamine, D-650
Texazone, A-853
Texensine, T-300
Thaicanine, T-301
Thailandine, O-209
Thaipetaline, T-301
Thalactamine, I-304
Thalassemine, L-240
Thalbadensine, T-341
Thalbadenzine, T-341
Thalbaicalidine, P-208
Thalbaicaline, P-208
Thalcimidine, T-347
Thalcimine, T-347
Thalcultrimine, T-339
Thaldimerine, T-302
Thalebanin B, T-303
Thalfetidine, T-320
Thalfine, T-304
Thalfinine, T-305
Thalflavidine, T-327
Thalflavine, T-306
Thalfoetidine, T-320
Thaliadanine, A-139
Thaliadine, H-147
Thaliatrine, T-307
Thalibealine, T-308
Thaliblastine, T-312
Thalibrine, T-309
Thalibrunimine, T-310
Thalibrunine, T-311
Thalibulamine, P-684
Thalicarpine 2′-*N*-oxide, T-312
Thalicarpine, T-312
Thalicberine, T-313
Thalicflavine, T-314
Thalicmidine *N*-oxide, H-751
Thalicmidine, H-751
Thalicmine, O-27
Thalicminine, T-315
Thalicpureine, T-316
Thalicrine, O-1
Thalicsessine, T-317
Thalicsiline, S-418
Thalicsimidine *N*-oxide, P-208
Thalicsimidine, P-208
Thalicsimine, H-148
Thalicsine, T-327
Thalicthuberine *N*-oxide, T-318
Thalicthuberine, T-318
Thalictine, T-341
Thalictricavine, T-319
Thalictricine, F-2
Thalictrifoline, C-222
Thalictrimine, F-2
Thalictrimine, T-320
Thalictrine, C-702
Thalictrinine, T-310
Thalictrisine, F-2
Thalictrofoline, C-222
Thalictrogamine, T-312
Thalictroidine, P-522
Thalictropine, T-312
Thalictrucarpine, D-170
Thalictuberine, T-318
Thalidasine 2α-*N*-oxide, T-320
Thalidasine, T-320
Thalidastine, T-321
Thalidezine, H-148
Thalidicine, T-336
Thalidine, T-336
Thalidoxine, T-312
Thalifabatine, T-322
Thalifaberidine, T-322
Thalifaberine, T-322
Thalifabine, T-323
Thalifabomine, T-324
Thalifaboramine, T-322
Thalifalandine, T-322
Thalifaramine, T-322
Thalifarapine, T-322
Thalifarazine, T-322
Thalifaretine, T-322
Thalifaricine, T-322
Thalifaroline, T-322
Thalifaronine, T-322
Thalifasine, T-322
Thalifaurine, T-325
Thalifendine, B-101
Thalifendlerine, T-326
Thalifoline, I-305
Thalifortine, D-944
Thaligine, I-328
Thaliglucine *N*-methosalt, T-327
Thaliglucine, T-327
Thaliglucinone *N*-methosalt, T-327
Thaliglucinone, T-327
Thaligosidine, T-320
Thaligosine 2′β-*N*-oxide, T-346
Thaligosine, T-346
Thaligosinine, T-346
Thaligrisine, B-98
Thalihazine *N*-oxide, T-328
Thalihazine, T-328
Thalilutidine, T-312
Thalilutine, A-139
Thalimicrinone, T-329
Thalimonine *N*-oxide A, T-330
Thalimonine *N*-oxide B, T-330
Thalimonine, T-330
Thaliphine, T-331
Thaliphylline 2′β-*N*-oxide, T-313
Thaliphylline, T-313
Thalipine, T-312
Thaliporphine, H-751
Thaliporphinemethine, M-559
Thalirabine, T-337
Thaliracebine, T-332

Thalirevoline, T-333
Thalirevolutine, T-333
Thalirugidine, T-334
Thalirugine, T-335
Thaliruginine, T-335
Thalisamine, H-148
Thalisopavine, T-336
Thalisopidine, T-346
Thalisopine, T-346
Thalisopinine, P-208
Thalisopynine, P-208
Thalisopyrine, C-790
Thalistine, T-337
Thalistyline, T-337
Thalivarmine, T-313
Thaliximine, H-148
Thalixine, T-327
Thallusin, T-338
Thalmelatidine, P-683
Thalmelatine, T-312
Thalmethine, T-339
Thalmiculatimine, T-340
Thalmiculimine, T-340
Thalmiculine, T-340
Thalmidine, T-313
Thalmineline, T-342
Thalmine, T-341
Thalmirabine, T-343
Thalpetaline, T-344
Thalphenine methine, T-327
Thalphenine, T-345
Thalphine, T-304
Thalphinine, T-305
Thalpindione, T-320
Thalprzewalskiinone, P-77
Thalrugosamine, O-1
Thalrugosaminine 2′β-*N*-oxide, T-346
Thalrugosaminine, T-346
Thalrugosidine, T-320
Thalrugosine, I-328
Thalrugosinone, T-320
Thalsimidine, T-347
Thalsimine, T-347
Thalsivasine, T-339
Thapoxepine A, T-348
Thapoxepine B, T-348
Thapsakin B, T-349
Thapsakone A, T-349
Thapsakone B, T-349
Thaspine, T-36
Theacrine, U-45
Thebaine *N*-methosalt, T-350
Thebaine *N*-oxide, T-350
Thebaine, T-350
Thehaplosin, T-351
Theine, C-15
Thelephantin N, T-97
Agelas nakamurai Thelepogane-purine alkaloid, T-352
Thelepogidine, T-353
Thelepogine, T-354
Theobromine, T-355
Theocin, T-360
Theodel, T-360
Theodoxine, P-923
Theo-Dur, T-360
Theograd, T-360
Theolair, T-360
Theona P, T-360
Theoneberine, T-356
Theonelladine A, T-357
Theonelladine B, T-357
Theonelladine C, T-358
Theonelladine D, T-358
Theonelline formamide, I-213
Theonelline isocyanide, I-213
Theonelline isothiocyanate, I-213
Theonezolides, T-359
Theophylline, T-360
Theotard, T-360
Thermine, B-154
Thermohexamine, D-284
Thermopentamine, D-289
Thermopsamine, T-361
Thermopsidine, T-362
Thermopsine, T-363
Thermopterin, T-37
Thermospermine, D-249
Thesal, T-355
Thesine, T-364
Thesinicine, T-365
Thesinine 4′-glucoside, H-629
Thesinine 4′-rhamnoside, H-629
Thesinine, H-629
Thiacrat, T-366
Thiactin, T-392
Thiamine diphosphate, T-366
Thiamine hydrochloride, T-366
Thiamine monochloride, T-366
Thiamine mononitrate, T-366
Thiamine pyrophosphate, T-366
Thiamine triphosphate, T-366
Thiamine triphosphoric acid, T-366
Thiamine, T-366
Thiangazole, T-367
Thiaplidiaquinone A, T-368
Thiaplidiaquinone B, T-369
Thiasine, E-173
Thiazohalostatin, T-370
5-Thiazoleethanol, T-371
Thiazolidomycin, A-78
2-(5-Thiazolyl)ethanol, T-371
3-(2-Thiazolyl)-1*H*-indole, T-372
2-(2-Thiazolyl)phenol, H-694
Thiazomycin, N-266
Thiazostatin A, T-373
Thiazostatin B, T-373
Thienodolin, T-374
7-(2-Thienyl)-2,4,6-heptatrienoic acid, O-133
Thiersindole A, T-375
Thiersindole B, T-375
Thiersindole C, T-376
Thiersinine A, T-377
Thiersinine B, T-377
Thioactin, T-378
Thioaurin, O-124
Thiobideoxynupharidine, T-379
anti-Thiobinupharidine sulfoxide, T-380
Thiobinupharidine, T-380
Thiobutacin, T-381
Perophora viridis 1,2,3-Thiocane glycoside, T-382
Thiocillin III, T-383
Thiocillin II, T-383
Thiocillin I, T-383
Thiocoraline, T-384
Thiofeed, S-321
Thiolhistidine trimethylbetaine, E-173
Thiolutin, A-759
Thiomarinol A, T-385
Thiomarinol B, T-385
Thiomarinol C, T-385
Thiomarinol D, T-386
Thiomarinol E, T-387
Thiomarinol F, T-385
Thiomarinol G, T-385
2-(Thiomethyl)quinoline, Q-36
Thiomycalolide A, T-388
Thiomycalolide B, T-389
Thiomycin, T-390
Thioneine, E-173
Thionupharodiolone, T-380
Thionupharoline, T-380
Thionuphlutine A, T-380
Thionuphlutine B α-*S*-oxide, T-380
Thionuphlutine B β-*S*-oxide, T-380
Thionuphlutine B, T-380
Thiopeptin A_{1a}, S-321
Thiopeptin A_{3a}, S-321
Thiopeptin A_{4a}, S-321
Thiopeptin A_{1b}, S-321
Thiopeptin A_{3b}, S-321
Thiopeptin A_{4b}, S-321
Thiopeptin B_a, S-321
Thiopeptin B_b, S-321
Thioplabin B, A-1103
Thioplabin C, A-1108
Thioprol, H-715
Thiosporamicin, T-391
Thiostrepton A, T-392
Thiostrepton A_2, T-392
Thiostrepton B, T-392
Thiostrepton, T-392
Thiotaurine, A-766
Thiotax, B-79
Thiotipin, T-393
Thiouracil, D-518
2-Thiouracil, D-518
4-Thiouracil, H-556
2-Thioxo-4-thiazolidinecarboxylic acid, T-394
Thomandersine, T-195
Thomasic acid, T-395
Thomitrem A, S-194
Thomitrem E, S-194
Thomsomycin, A-14
Thorazine, C-417
Thorectandramine, T-396
Thrombocytin, H-755
Thrombotonin, H-755
Thuggacin A, T-397
Thuggacin B, T-398
Thuggacin cmc-A, T-400
Thuggacin cmc-B, T-400
Thuggacin cmc-C, T-400
Thuggacin C, T-399
Thymine, T-401
Thyminol, T-401
Tiantaishandine, H-208
Tiantaishanmine, M-368
Tiantaishannine, M-321
Tiantaishansine, D-187
Tienemine 3-glucoside, S-200
Tienmulilmine, T-402
Tienmulilminine, T-403
Tiformin, G-201
Tigloidine, T-404
N-Tigloylbuxahyrcanine, B-451
O-Tigloylcyclovirobuxeine B, C-915
Tigloyllaburnine, H-629
13α-Tigloyloxyaphylline, V-153
13-Tigloyloxylupanine, H-554
13α-Tigloyloxymultiflorine, M-731
3-Tigloyloxynortropan-6-ol, A-1584
13-Tigloyloxy-17-oxolupanine, O-188
3α-Tigloyloxytropane *N*-oxide, T-404
7-Tigloyloxytropane-3,6-diol, M-392
3-Tigloyloxytropane, T-404
6-Tigloyloxytropan-3-ol, M-391
(±)-3-*O*-Tigloyloxytropan-6β-ol, M-391
N-Tigloylpyrrothine, A-759
Tigloyltropeine, T-404
N-Tigloyltyramine, H-667
O-Tigloylvirgiline, V-153
Tiliacoridine, T-405
Tiliacorine, T-406
Tiliacorinine 2′-*N*-oxide, T-407
Tiliacorinine, T-407
Tiliacosine, Y-5
Tiliafunimine, T-408
Tiliageine, R-114
Tiliamosine, Y-5
Tilianangine, Y-5
Tiliandrine, T-409
Tiliaresine, T-410
Tiliarine, T-407
Tiliasine, Y-5
Tilitriandrine, R-114
Tilivalline, T-411
Tinctoramine, T-269
Tinctorine, T-412
Tinctormine, T-413
Tinosporine, T-414
Tintamine, T-415
Tirandalydigin, T-416
Tirandamycin A, T-417
Tirandamycin B, T-417
Tirucalicine, I-147
Tiruchanduramine, T-418
Tjipanazole A1, D-350
Tjipanazole A2, D-350

Tjipanazole B, D-350
Tjipanazole C1, C-401
Tjipanazole C2, C-401
Tjipanazole C3, C-401
Tjipanazole C4, C-401
Tjipanazole D, D-350
Tjipanazole E, D-350
Tjipanazole F1, C-401
Tjipanazole F2, C-401
Tjipanazole G1, D-464
Tjipanazole G2, D-464
Tjipanazole I, C-401
Tjipanazole J, T-419
TK 57-164A, D-98
TK 57-164B, D-98
TM 64, A-1286
TMC 169, A-1502
TMC 260, A-1290
TMC 52, A-1287
TMC 66, A-1288
TMC 69, A-1289
TMC 120A, A-1294
TMC 135A, A-1295
TMC 1A, A-1291
TMC 2A, A-1292
TMC 52A, A-1287
TMC 95A, A-1293
TMC 49A, P-343
TMC 120B, A-1294
TMC 135B, A-1296
TMC 2B, A-1292
TMC 52B, A-1287
TMC 95B, A-1293
TMC 34, C-634
TMC 120C, A-1294
TMC 1C, A-1297
TMC 2C, A-1292
TMC 52C, A-1287
TMC 95C, A-1293
TMC 1D, A-1297
TMC 52D, A-1287
TMC 95D, A-1293
TMC 1E, M-89
TMC 1F, M-87
TMC 1G, M-88
TMC 205, M-408
TMPEA, M-219
Toddacoumalone, T-420
Toddaliamide, T-421
Toddalidimerine, C-355
Toddaline, C-356
Toddalinine, D-407
Toddaliopsin A, T-516
Toddaliopsin B, T-516
Toddaliopsin C, T-516
Toddaliopsin D, T-516
Toddaquinoline, H-599
Togholamine, T-451
Tokaradine A, T-422
Tokaradine B, T-422
Tokaradine C, S-398
Tokoro-base II, M-323
m-Toluic acid, M-398
α-Toluic acid, P-336
3-*o*-Tolylacrylic acid, M-513
Tolypocin, P-922
Tolypocladine, B-255
5α-Tomatidan-3β-ol (obsol.), S-445
5α-Tomatidan-3-one, S-445
Tomatidenol 3-lycotetraoside, S-456
δ^5-Tomatidenol, S-456
Tomatid-5-en-3-ol, S-456
Tomatidenol, S-456
Tomatidine, S-445
Tomatillidine, T-423
α-Tomatine, S-445
β_1-Tomatine, S-445
δ-Tomatine, S-445
Tomatine, S-445
γ-Tomatine, S-445
Tomaymycin I, T-424
Tomaymycin, T-424
Tombosine, T-425
Tombozine, T-425
Tomentocurine, T-426
Tomentogenin, P-604
Tomentomin, P-604
Tomentosine, O-137
Tongolenine C, M-370
Tongolenine D, H-253
Tongoline, M-321
Tongolinine, T-427
Tonkinensine A, T-428
Tonkinensine B, T-429
meta-Topolin 9-glucoside, A-137
meta-Topolin, A-137
Topostin B 567, M-485
Topostin B553, T-430
Topostin D 640, T-431
Topsentin A, T-432
Topsentin B1, T-432
Topsentin B2, T-432
Topsentin C, T-432
Topsentin D, T-432
Topsentin, T-432
Torokonine, H-187
Torondel, E-6
Tortifoline, C-290
Tortugamide, L-356
Tortumine, M-309
Tortuosamine, T-433
Tortuosine, V-35
Torulin, T-366
Torulosine, T-434
Torulosinine, T-435
Tosanpin, Y-13
N-Tosyl-3-azetidinone, A-1606
Toxicoferine, C-812
C-Toxiferine II, C-31
Toxiferine III, T-438
Toxiferine II, T-437
C-Toxiferine I, T-436
Toxiferine I, T-436
Toxiferine IV, C-31
Toxiferine IX, C-111
Toxiferine VIII, T-439
Toxiferine V, T-436
Toxiferine XII, T-440
Toxiferine XI, T-436
Toxin A, R-157
Toxin B, P-478
Toxin B, R-157
Toxin B_1, S-109
Toxin B_2, S-109
Toxin C_1, H-731
Toxin C_2, H-731
Toxin C_3, H-731
Toxin C_4, H-731
Toxin MG 30, T-441
Toxin PX_1, H-731
Toxin PX_2, H-731
Toxin PX_3, H-731
Toxin PX_4, H-731
Aphonopelma chalcodes Toxin, A-1332
β-Toxin, A-837
Toxoflavin, R-66
Toyocamycin 5′-α-D-glucopyranose, S-53
Toyocamycin, S-53
TPU 0037A, L-353
TPU 0037B, L-353
TPU 0037C, L-353
TPU 0037D, L-353
TR 1736, M-262
Trabectedin, E-37
Trabzonine, T-442
Trachelanthamidine curassavate, C-810
Trachelanthamidine strigosate, S-585
Trachelanthamidine, H-629
(±)-Trachelanthamidine, H-629
Trachelanthamidinic acid, P-960
Trachelanthamine *N*-oxide, T-443
Trachelanthamine, T-443
Trachelanthine, T-443
Trachyone, T-444
Tramesanguin, C-452
Tranaxine, S-159
Transconitine A, M-352
Transconitine B, M-329
Transconitine C, M-375
Transcop, S-159
Transitorine, H-725
Transtorine, H-725
Transvalencin A, T-445
Transvalencin Z, T-446
Treflorine, T-449
Trehalamine, T-447
Trehalostatin, T-447
Trehazolin, T-447
Tremidine, T-448
Tremine, T-448
Tremortin A, P-194
Trenudine, T-449
Trewiasine, T-450
Triabunnine, S-259
Triacanthine, T-451
Triacetonamine, T-283
2,6,14-Triacetoxy-1-benzoyloxydihydro-9-nicotinoyloxy-β-agarofuran, H-247
2,6,14-Triacetoxy-9-(benzoyloxy)dihydro-1-nicotinoyloxy-β-agarofuran, H-247
2,6,14-Triacetoxy-1-furoyloxydihydro-9-nicotinoyloxy-β-agarofuran, H-247
2,6,14-Triacetoxy-9-furoyloxydihydro-1-nicotinoyloxy-β-agarofuran, H-247
2,16,28-Triacetylbuxirane, B-460
2,16,28-Triacetyl-9,10-dihydrobuxirane, B-460
Triacetylglycoperine, F-223
1-Triacontanamine, T-452
N^b-(25-Triacontenoyl)tryptamine, T-639
1-Triacontylamine, T-452
N-Triacontylpentadecanamide, T-452
α,α′,2-Triamino-γ,γ′,3-trioxo-3*H*-phenoxazine-1,9-dibutanoic acid, T-453
3,3′,3″-Triaminotripropylamine, T-622
Triangularicine, T-454
Triangularine A, T-662
Triangularine B, T-251
Triangularine, T-454
Trianthemine, T-455
Trianthil, X-7
Trianthine, Z-15
1,5,10-Triazadecane, S-398
4,8,12-Triazahexadecane-1,16-diamine, D-288
2,4,6-Triaza-3-iminobicyclo[3.2.1]octane-7-carboxylic acid, V-144
1,5,9-Triazanonane, D-255
4,8,12-Triazapentadecane-1,15-diamine, T-456
1,5,11-Triazaundecane, A-897
1,6,11-Triazaundecane, D-252
1,6,14-Tribenzoylsenbusine A, M-323
Tribenzylamine, T-457
2,3,5-Tri-*O*-benzyl-1,4-benzylimino-1,4-dideoxy-D-arabinitol, D-593
2,3,5-Tri-*O*-benzyl-1,4-benzylimino-1,4-dideoxy-L-xylitol, D-593
Tribenzylmethylammonium(1+), T-457
Tribromoacetamide, T-458
Tribromoacetic acid, T-458
Tribromoacetonitrile, T-458
4,5,6-Tribromo-2,3-bis(methylthio)-1*H*-indole, D-304
2,3,4-Tribromo-5-(5-bromo-2-hydroxybenzoyl)pyrrole, P-966
2,4,7(3,4,7)-Tribromo-3(2)-chloro-1*H*-indole, T-459
Tribromocyanomethane, T-458
N-(2,3,6-Tribromo-4,5-dihydroxybenzyl)-2-pyrrolidinone, P-956
2,4,6-Tribromo-1,7-dimethoxy-*N,N*-dimethyl-1*H*-indole-3-ethanamine, C-630
2,3,4-Tribromo-5,6-dimethoxy-*N*-methylbenzeneethanamine, C-628
2,4,6-Tribromo-3-(2-dimethylaminoethyl)-1,7-dimethoxyindole, C-630
2,5,6-Tribromo-3-(dimethylaminomethyl)-1-methylindole, T-472
2,5,6-Tribromo-3-formylindole, T-469
2,4,6-Tribromo-*N*-formyl-3-methoxy-*N*-methylphenethylamine, T-460

2,4,6-Tribromo-*N*-formyl-3-methoxyphenethylamine, T-460
Tribromoglyoxaline, T-461
2,4,6-Tribromo-3-hydroxyphenethylamine, T-460
2-(2,4,6-Tribromo-3-hydroxyphenyl)ethylamine, T-460
2,4,5-Tribromo-1*H*-imidazole, T-461
2,5,6-Tribromo-1*H*-indole-3-carboxaldehyde, T-469
2,3,5-Tribromo-1*H*-indole, T-462
2,3,6-Tribromo-1*H*-indole, T-463
2,3,7-Tribromo-1*H*-indole, T-464
2,4,6-Tribromo-1*H*-indole, T-465
3,4,6-Tribromo-1*H*-indole, T-466
3,5,7-Tribromo-1*H*-indole, T-468
3,5,6-Tribromo-1*H*-indole, T-467
2,5,5′-Tribromo-7′-methoxy-3,4′-bi-1*H*-indole, T-116
3′,5,5′-Tribromo-7′-methoxy-3,4′-bi-1*H*-indole, T-116
5,6′,7-Tribromo-6-methoxyindigotin, T-470
3,5,7-Tribromo-6-methoxy-1*H*-indole, T-471
2,5,6-Tribromo-*N*-methylgramine *N*-oxide, T-472
2,5,6-Tribromo-*N*-methylgramine, T-472
2,4,5-Tribromo-1-methyl-1*H*-imidazole, T-461
2,5,6-Tribromo-1-methyl-1*H*-indole-3-carboxaldehyde, T-469
2,3,5-Tribromo-1-methyl-1*H*-indole, T-462
2,3,6-Tribromo-1-methyl-1*H*-indole, T-463
3,5,6-Tribromo-1-methyl-1*H*-indole, T-467
3,4,5-Tribromo-1-methyl-1*H*-pyrrole-2-carboxylic acid, T-475
2,4,6-Tribromo-3-(methylsulfinyl)-1*H*-indole, T-473
4,5,6-Tribromo-2-(methylsulfinyl)-3-(methylthio)-1*H*-indole, D-304
2,4,6-Tribromo-3-methylthio-1*H*-indole, T-473
3,4,5-Tribromo-1*H*-pyrrole-2-carboxylic acid, T-475
2,3,4-Tribromo-1*H*-pyrrole, T-474
3,3′,4-Tribromo-4′,5,5′-trichloro-2,2′-bi-1*H*-pyrrole, T-476
3,3′,4-Tribromo-4′,5,5′-trichloro-1,1′-dimethyl-2,2′-bi-1*H*-pyrrole, T-476
2,5,6-Tribromo-*N*,*N*,1-trimethyl-1*H*-indole-3-methanamine, T-472
Tribulusamide A, G-182
Tribulusamide B, G-182
Tribulusterine, P-270
N^1,N^5,N^{10}-Tricaffeoylspermidine, S-398
Trichamide, T-477
Trichanthin A, T-478
Trichanthin B, T-478
3α-(4,4,4-Trichloro-2-butyryloxy)tropane, T-479
2,3,4-Trichloro-5-(3,5-dichloro-2-hydroxybenzoyl)-pyrrole, P-964
3,4,5-Trichloro-2-(2,3-dichloro-1*H*-pyrrol-1-yl)phenol, N-136
2,3,8-Trichloro-6-ethyl-5-hydroxy[1]benzopyrano[2,3-*b*]pyrrol-4(1*H*)-one, A-1280
2,3,4-Trichloro-1*H*-indole, T-480
2,3,7-Trichloro-1*H*-indole, T-481
8-Trichloromethyldihydroberberine, P-35
5,5,5-Trichloro-4-methyl-2-[methyl(4,4,4-trichloro-3-methyl-1-oxobutyl)amino]-*N*-[1-(2-thiazolyl)ethyl]pentanamide, D-972
4,4,4-Trichloro-3-methyl-*N*-[4,4,4-trichloro-3-methyl-1-(2-thiazolyl)butyl]butanamide, D-970
1,1,1-Trichloro-5-undecanamine, T-482
1,1,1-Trichloro-5-undecylamine, T-482
Trichocereine, M-219
Trichochrome B, T-483
Trichochrome C, T-484
Trichochrome E, T-485
Trichochrome F, T-486
Trichodermamide A, T-487
Trichodermamide B, T-487
Trichodesmine *N*-oxide, T-488
Trichodesmine, T-488
Trichoguattine, T-489
Tricholein, M-455
Tricholomic acid, T-490
Trichonine, T-491
Trichophidine, A-864
Trichophydine, A-864
Trichophylline, T-492
Trichophysine, A-864
Trichoponamic acid, T-493
Trichosanatine, T-494
Trichosetin, E-142
Trichosiderin B, T-483
Trichosiderin C, T-484
Trichostachine, T-495
Trichostatin A, T-496
Trichostatin B, T-496
Trichostatin C, T-496
Trichostatin D, T-496
Trichostatin RK, T-496
Trichotomine G_1, T-497
Trichotomine, T-497
Triclisine, T-498
Tricordatine, I-339
Tricornine, M-309
5-(14*Z*,17*Z*-Tricosadienyl)-1*H*-pyrrole-2-carboxaldehyde, A-624
3-(7,16-Tricosadienyl)-1*H*-pyrrole-2-carboxaldehyde, T-499
N-Tricosanoylanthranilic acid, A-706
N^b-Tricosanoyltryptamine, T-639
5-(14*Z*,17*Z*,20*Z*-Tricosatrienyl)-1*H*-pyrrole-2-carboxaldehyde, A-624
5-(14*Z*-Tricosenyl)-1*H*-pyrrole-2-carboxaldehyde, A-624
5-(9*Z*-Tricosenyl)-1*H*-pyrrole-2-carboxaldehyde, A-624
3-(16-Tricosenyl)-1*H*-pyrrole-2-carboxaldehyde, T-499
N,*N*′,*N*″-Tricoumaroylspermidine, S-398
Tricrotonyltetramine, D-888
2′,3,9-Trideacetylaustrospicatine, T-48
2′,13,14-Trideacetylaustrotaxine, P-224
Trideacetylpyripyropene A, T-500
2,7-Tridecadiene-10,12-diynoic acid isobutylamide, T-501
2,7-Tridecadiene-10,12-diynoic acid 2-methylbutylamide, T-501
2,7-Tridecadiene-10,12-diynoic acid, T-501
2,4-Tridecadienoic acid isobutylamide, T-502
2,4-Tridecadienoic acid, T-502
6-Tridecanamine, T-506
Tridecanochelerythrine, T-503
N-Tridecanoyltyrosine, T-700
2,6,8-Tridecatrien-10,12-diynoic acid isobutylamide, T-504
2,6,8-Tridecatriene-10,12-diynoic acid, T-504
7-Tridecene-10,12-diynoic acid, T-505
2-(1*E*-Tridecenyl)-4(1*H*)-quinolinone, H-750
2-(1*Z*-Tridecenyl)-4(1*H*)-quinolinone, H-750
6-Tridecylamine, T-506
2-Tridecyl-4-quinolinol, H-750
2-Tridecyl-4(1*H*)-quinolinone *N*-oxide, H-750
2-Tridecyl-4(1*H*)-quinolinone, H-750
8-Tridecyl-1,5,9,13-tetraazacycloheptadecan-6-one, B-387
1,3,4-Tridehydrofangchinolinium, C-171
Tridentatol A, T-507
Tridentatol B, T-507
Tridentatol C, T-508
Tridentatol D, T-509
Tridentatol E, T-507
Tridentatol F, T-507
Tridentatol G, T-509
Tridentatol H, T-508
5,6,11-Trideoxy-4-epitetrodotoxin, T-510
1,2,5-Trideoxy-2,5-imino-D-altritol, D-591
1,2,5-Trideoxy-2,5-imino-D-galactitol, D-591
1,2,5-Trideoxy-2,5-imino-D-glucitol, D-591
1,2,5-Trideoxy-2,5-imino-L-glucitol, D-591
2,3,6-Trideoxy-2,6-iminoheptitol, B-185
2,5,7-Trideoxy-2,5-imino-D-*glycero*-D-*manno*-heptitol, D-587
1,2,6-Trideoxy-2,6-iminoheptitol, H-607
1,4,5-Trideoxy-1,5-iminoheptitol, H-615
2,5,6-Trideoxy-2,5-imino-D-*gulo*-heptitol, H-492
2,5,6-Trideoxy-2,5-imino-D-*manno*-heptitol, H-492
1,2,5-Trideoxy-1,5-iminohexitol, H-614
1,2,4-Trideoxy-1,4-iminopentitol, H-717
1,3,4-Trideoxynojirimycin, H-699
5,6,11-Trideoxytetrodotoxin, T-510
Tridictyophylline, T-511
Trididemnic acid A, T-512
Trididemnic acid B, T-512
Tridolgosir hydrochloride, S-650
Tridolgosir, S-650
Triedimycin A, O-155
Triedimycin B, O-155
2,3,7-Triepiaustraline, T-555
N^1,N^5,N^{10}-Triferuloylspermidine, S-398
20-Trifluoroarachidonic acid, E-48
N-[4-(Trifluoromethyl)benzyl]cinchoninium, C-447
Trifoliolasine A, M-309
Trifoliolasine B, D-196
Trifoliolasine C, D-196
2′,3′,6′-Tri-*O*-galloylprunasin, H-673
3′,4′,6′-Tri-*O*-galloylprunasin, H-673
Trigamine *N*-oxide, T-513
Trigamine, T-513
Trigilletimine, T-514
Trigilletine, I-339
Triglochinin, T-515
Trigonelline, C-149
Trigoxazonane, A-1603
1,2,4-Triheptylpyrazolidine, G-16
1,2,4-Triheptyltetrahydropyrazole, G-16
1,2,3-Trihydroxy-9(10*H*)-acridinone, T-516
1,3,4-Trihydroxy-9(10*H*)-acridinone, T-517
1,3,5-Trihydroxy-9(10*H*)-acridinone, T-518
1,3,6-Trihydroxy-9(10*H*)-acridinone, T-519
1,3,8-Trihydroxy-9(10*H*)-acridinone, T-520
1,2,3-Trihydroxyacridone, T-516
1,3,4-Trihydroxyacridone, T-517
1,3,5-Trihydroxyacridone, T-518
1,3,6-Trihydroxyacridone, T-519
1,3,8-Trihydroxyacridone, T-520
3,4,5-Trihydroxyanthranilic acid, A-922
1,2,3-Trihydroxyaporphine, T-521
1,2,8-Trihydroxyaporphine, T-522
1,2,9-Trihydroxyaporphine, T-523
1,2,10-Trihydroxyaporphine, T-524
1,2,11-Trihydroxyaporphine, T-525
α,3,4-Trihydroxybenzenepropanoic acid, D-648
2,6,7-Trihydroxy-2*H*-1,4-benzoxazin-3(4*H*)-one, T-526
2,7,8-Trihydroxy-2*H*-1,4-benzoxazin-3(4*H*)-one, T-527
2,3,5-Trihydroxybenzylamine, T-528
1,2,7-Trihydroxy-3,5-bis(hydroxymethyl)-1*H*-pyrrolizidine, T-529
1,3,5-Trihydroxy-2,4-bis(3-methyl-2-butenyl)-9(10*H*)-acridinone, T-546
1,3,8-Trihydroxy-2,7-bis(3-methyl-2-butenyl)-9(10*H*)-acridinone, T-548
1,3,5-Trihydroxy-2,8-bis(3-methyl-2-butenyl)-9*H*-acridin-10-one, T-547
5-(1,3,4-Trihydroxybutyl)hyacinthacine A_1, T-553
3-(2,3,4-Trihydroxybutyl)indole, I-116
1-[5-(2,3,4-Trihydroxybutyl)pyrazinyl]-1,2,3,4-butanetetrol, T-250
4,5,10-Trihydroxycanthin-6-one, T-531
1,10,11-Trihydroxycanthin-6-one, T-530
1,6,7-Trihydroxy-9*H*-carbazole-3-carboxaldehyde, T-532
2,6,8-Trihydroxy-9*H*-carbazole-3-carboxaldehyde, T-533
14,16,20-Trihydroxycev-4-en-3-one, T-534
2,4,5-Trihydroxycinnamic acid, T-577
3,4,5-Trihydroxycinnamic acid, T-578
6,7,8-Trihydroxy-3,11,13-clerodatrien-15,16-olide, T-535
1,4,5-Trihydroxy-2-cyclopentene-1-carboxamide, T-536
1,2,3-Trihydroxydibenz[*cd,f*]indol-4(5*H*)-one, T-537
1,2,6-Trihydroxydibenz[*cd,f*]indol-4(5*H*)-one, T-538
1,2,7-Trihydroxydibenz[*cd,f*]indol-4(5*H*)-one, T-539
1,2,9-Trihydroxydibenz[*cd,f*]indol-4(5*H*)-one, T-540

2,10,13-Trihydroxydibenzo[*a,g*]quinolizinium(1+), T-541
1,6,9-Trihydroxydihydro-β-agarofuran, T-542
1,3,6-Trihydroxy-2,5-dimethoxy-10-methylacridone, P-206
1,3,6-Trihydroxy-4,5-dimethoxy-10-methylacridone, P-207
1,4,5-Trihydroxy-3,6-dimethoxy-10-methylacridone, P-207
3,4,6-Trihydroxy-1,2-dimethylcarbazole, T-543
1,6,8-Trihydroxy-3,4-dimethylisoquinoline, T-544
7,18,19-Trihydroxy-16,18-dimethyl-10-phenyl[11]-cytochalasa-6(12),13-diene-1,21-dione, T-545
1,3,5-Trihydroxy-2,4-diprenylacridone, T-546
1,3,5-Trihydroxy-2,8-diprenylacridone, T-547
1,3,8-Trihydroxy-2,7-diprenylacridone, T-548
4,5,6-Trihydroxyfuro[2,3-*b*]quinoline, F-218
4,5,7-Trihydroxyfuro[2,3-*b*]quinoline, F-219
4,5,8-Trihydroxyfuro[2,3-*b*]quinoline, F-220
4,6,7-Trihydroxyfuro[2,3-*b*]quinoline, F-221
4,6,8-Trihydroxyfuro[2,3-*b*]quinoline, F-222
4,7,8-Trihydroxyfuro[2,3-*b*]quinoline, F-223
5,6,7-Trihydroxyfuro[2,3-*b*]quinolin-4(9*H*)-one, F-215
6,7,8-Trihydroxyfuro[2,3-*b*]quinolin-4(9*H*)-one, F-217
7,11,14-Trihydroxyhetisan-2,13-dione, T-549
11,13,15-Trihydroxyhetisan-2-one, H-190
6,11,13-Trihydroxyhetisan-2-one, T-552
6,9,13-Trihydroxyhetisan-2-one, T-551
1,2,6-Trihydroxyhetisan-13-one, T-550
1,2,7-Trihydroxy-5-(3-hydroxybutyl)-3-(hydroxymethyl)-1*H*-pyrrolizidine, T-553
1,3,5-Trihydroxy-2-(2-hydroxy-3-methyl-3-butenyl)-10-methylacridone, T-580
2,3,5-Trihydroxy-4-(hydroxymethyl)-6-methylpyridine, H-608
1,2,7-Trihydroxy-3-hydroxymethyl-5-methyl-1*H*-pyrrolizidine, T-554
3,4,5-Trihydroxy-2-hydroxymethylpiperidine, H-616
1,2,7-Trihydroxy-3-(hydroxymethyl)-1*H*-pyrrolizidine, T-555
1,10,11-Trihydroxy-6*H*-indolo[3,2,1-*de*][1,5]-naphthyridin-6-one, T-530
4,8,9-Trihydroxyindolo[2,1-*b*]quinazoline-6,12-dione, O-98
5,6,7-Trihydroxyisoquinoline, I-307
1,6,7-Trihydroxyisoquinoline, I-305
1,6,8-Trihydroxyisoquinoline, I-306
5,6,7-Trihydroxy-1(2*H*)-isoquinolinone, I-304
1,3,6-Trihydroxyjervanin-12-en-11-one, V-74
3,5,15-Trihydroxy-6(17),12-lathyradien-14-one, T-556
3,4,13-Trihydroxylupanine, T-557
3,8,13-Trihydroxylupanine, T-558
2,10,11-Trihydroxy-1-methoxyaporphine, T-248
1,3,6-Trihydroxy-5-methoxy-10-methylacridine, T-243
1,3,5-Trihydroxy-4-methoxy-10-methylacridone, T-242
4,9,10-Trihydroxy-2-methoxy-3-methylene-6-(1-propenyl)-2-azaspiro[4.5]dec-7-en-1-one, S-463
1,3,6-Trihydroxy-5-methoxy-10-methyl-4-(3-methyl-2-butenyl)-9(10*H*)-acridinone, P-616
1,3,6-Trihydroxy-5-methoxy-10-methyl-4-*C*-prenylacridone, P-616
1,3,5-Trihydroxy-4-methoxy-10-methyl-2-prenylacridone, T-270
1,3,6-Trihydroxy-5-methoxy-10-methyl-2-prenylacridone, T-271
4′,5,7-Trihydroxy-6-methoxy-8-(1-methyl-2-pyrrolidyl)flavone, P-389
2,9,10-Trihydroxy-3-methoxytetrahydroprotoberberine, D-570
1,3,5-Trihydroxy-10-methylacridone, T-518
1,3,8-Trihydroxy-10-methylacridone, T-520
5,6,8-Trihydroxy-1-methyl-4-azafluoren-9-one, T-564
6,7,8-Trihydroxy-1-methyl-4-azafluorenone, T-563
α,3,4-Trihydroxy-α-methylbenzenepropanoic acid, D-647
1,3,5-Trihydroxy-9-methyl-2,8-bis(3-methyl-2-butenyl)-9*H*-acridin-10-one, T-547
1,3,5-Trihydroxy-2-(3-methyl-2-butenyl)-9(10*H*)-acridinone, T-580
1,3,5-Trihydroxy-4-(3-methyl-2-butenyl)-9(10*H*)-acridinone, T-581
7-(1,2,3-Trihydroxy-3-methylbutyl)-1*H*-indole, I-123
1,6,7-Trihydroxy-3-methylcarbazole, T-559
1,3,5-Trihydroxy-10-methyl-2,4-diprenylacridone, T-546
1,3,5-Trihydroxy-9-methyl-2,8-diprenylacridone, T-547
3,6,7-Trihydroxy-4-methyl-5*H*-indeno[1,2-*b*]pyridin-5-one, T-560
6,7,8-Trihydroxy-4-methyl-5*H*-indeno[1,2-*b*]pyridin-5-one, T-563
6,8,9-Trihydroxy-4-methyl-5*H*-indeno[1,2-*b*]pyridin-5-one, T-564
7,8,9-Trihydroxy-4-methyl-5*H*-indeno[1,2-*b*]pyridin-5-one, T-565
3,7,8-Trihydroxy-4-methyl-5*H*-indeno[1,2-*b*]pyridin-5-one, T-561
3,8,9-Trihydroxy-4-methyl-5*H*-indeno[1,2-*b*]pyridin-5-one, T-562
1,6,8-Trihydroxy-3-methylisoquinoline, T-566
3,4,5-Trihydroxy-2-methylpiperidine, M-517
3,4,5-Trihydroxy-*N*-methylpiperidine, P-458
1,3,5-Trihydroxy-10-methyl-2-prenylacridone, T-580
2,3,5-Trihydroxy-6-methylpyridine, T-567
3,4,6-Trihydroxy-10-nitro-1-phenanthrenecarboxylic acid, T-568
3,4,8-Trihydroxy-10-nitro-1-phenanthrenecarboxylic acid, T-569
3,4,9-Trihydroxy-10-nitro-1-phenanthrenecarboxylic acid, T-570
1,2,3-Trihydroxynortropane, A-1590
1,2,4-Trihydroxynortropane, A-1591
1,2,7-Trihydroxynortropane, A-1592
1,3,4-Trihydroxynortropane, A-1593
2,3,4-Trihydroxynortropane, A-1594
2,3,6-Trihydroxynortropane, A-1595
3,6,7-Trihydroxynortropane, A-1596
1,2,8-Trihydroxyoctahydroindolizine, S-650
9,10,11-Trihydroxy-2-oxo-1,7-dioxa-4-azaspiro[5.5]undecane-3-propanamide, C-431
1,2,3-Trihydroxy-5-oxonoraporphine, T-571
4′,5,7-Trihydroxy-6-(5-oxo-2-pyrrolidinyl)flavanone, T-572
4′,5,7-Trihydroxy-8-(5-oxo-2-pyrrolidinyl)flavanone, T-573
1-(3,4,5-Trihydroxypentanoyl)-β-carboline, C-138
2,3,9-Trihydroxy-1-phenazinecarboxylic acid, T-574
2,3,7-Trihydroxy-1,6-phenazinedicarboxylic acid, T-575
1,2,6-Trihydroxyphenazine, P-325
2,3,7-Trihydroxyphenazine, P-326
3,4,5-Trihydroxyphenethylamine, T-576
3-(2,4,5-Trihydroxyphenyl)acrylic acid, T-577
3-(3,4,5-Trihydroxyphenyl)acrylic acid, T-578
2-(3,4,5-Trihydroxyphenyl)ethylamine, T-576
3-(2,4,5-Trihydroxyphenyl)-2-propenoic acid, T-577
3-(3,4,5-Trihydroxyphenyl)-2-propenoic acid, T-578
3,4,5-Trihydroxypipecolic acid, T-579
3,4,5-Trihydroxy-2-piperidinecarboxylic acid, T-579
3,4,5-Trihydroxy-2-piperidinemethanol, H-616
3,4,5-Trihydroxypiperidine, P-458
1,3,5-Trihydroxy-2-prenylacridone, T-580
1,3,5-Trihydroxy-4-prenylacridone, T-581
3,4,7-Trihydroxy-8-prenyl-2-quinolinecarboxylic acid, T-584
2,4,7-Trihydroxy-3-prenylquinoline, T-582
2,4,8-Trihydroxy-3-prenylquinoline, T-583
3-(1,2,3-Trihydroxypropyl)indole, I-135
7-(1,2,3-Trihydroxypropyl)pterin, A-924
2,4,7-Trihydroxypteridine, P-763
2,6,8-Trihydroxypurine, U-45
3,4,5-Trihydroxy-2-[[2-[(3-pyridinylcarbonyl)amino]benzoyl]amino]benzoic acid, T-585
3,5,7-Trihydroxypyrimido[5,4-*e*]-*as*-triazine, D-498
4,5,8-Trihydroxy-2-quinolinecarboxylic acid, T-586
4,7,8-Trihydroxyquinoline, Q-48
2,3,4-Trihydroxyquinoline, Q-45
2,4,6-Trihydroxyquinoline, Q-46
2,4,8-Trihydroxyquinoline, Q-47
4,6,8-Trihydroxy-2(1*H*)-quinolinone, Q-42
3,5,8-Trihydroxy-4(1*H*)-quinolinone, Q-44
4,7,8-Trihydroxy-2(1*H*)-quinolinone, Q-43
3,4,7-Trihydroxy-2(1*H*)-quinolinone, Q-40
3,4,8-Trihydroxy-2(1*H*)-quinolinone, Q-41
1,3,13-Trihydroxy-11,12-secocevane-6,12-dione, S-277
3,16,23-Trihydroxy-16,28-secosolanidan-4-one, S-349
3,6,7-Trihydroxytropane, M-392
3,5,6-Trihydroxy-6-undecyl-2-piperidinecarboxylic acid, T-587
3,13,23-Trihydroxyveratra-7,12(14)-dien-6-one, T-588
1,1,3-Tri-(1*H*-indol-3-yl)butane, T-589
1,1,1-Tri-(1*H*-indol-3-yl)ethane, T-590
Tri-1*H*-indol-3-ylmethane, T-591
N,*N*′,*N*″-Triisopentylguanidine, T-623
Trikendiol, T-592
Trikentramine, T-593
Trikentrin A, T-594
Trikentrin B, T-595
Trilobamine, O-1
Trilobine, I-339
Trilobinine, T-247
Trilupine, L-302
1,2,3-Trimethoxyacridone, T-516
1,2,3-Trimethoxyaporphine, T-521
1,2,9-Trimethoxyaporphine, T-523
1,2,10-Trimethoxyaporphine, T-524
1,2,11-Trimethoxyaporphine, T-525
3,4,5-Trimethoxybenzeneethanamine, M-219
4,10,12-Trimethoxy-8*H*-benzo[*g*]benzodioxolo[6,5,4-*de*]quinolin-8-one, D-949
4,9,10-Trimethoxy-8*H*-benzo[*g*]-1,3-benzodioxolo[6,5,4-*de*]quinolin-8-one, K-104
1,2,3-Trimethoxy-7*H*-benzo[*de*][1,3]benzodioxolo[5,6-*g*]quinolin-7-one, O-195
1,2,13-Trimethoxy[1,3]benzodioxolo[5,6-*c*]phenanthridine, C-356
2,3,13-Trimethoxy[1,3]benzodioxolo[5,6-*c*]phenanthridine, R-87
8,9,9-Trimethoxy-9*H*-benzo[*de*][1,6]naphthyridine, M-241
6,9,10-Trimethoxy-12*H*-[1]benzoxepino[2,3,4-*ij*]isoquinolin-12-one, O-171
6,8,9-Trimethoxy-12*H*-[1]benzoxepino[2,3,4-*ij*]isoquinolin-12-one, S-73
O-(3,4,5-Trimethoxybenzoyl)-(*Z*)-burnamine, B-420
3α-(3,4,5-Trimethoxybenzoyloxy)nortropane, C-633
3-(3,4,5-Trimethoxybenzoyloxy)nortropan-6-ol, A-1584
7-(3,4,5-Trimethoxybenzoyloxy)-3-(3,4,5-trimethoxycinnamoyloxy)tropan-6-ol, M-392
3-(3,4,5-Trimethoxybenzoyloxy)tropan-6-ol, M-391
(3,4,5-Trimethoxybenzoyl)quebrachidine, V-113
3,4,5-Trimethoxybenzoylseredamine, T-288
O-(3,4,5-Trimethoxybenzoyl)tropine, C-633
O-(3,4,5-Trimethoxybenzoyl)vincamajine, V-113
2,9,10-Trimethoxyberbin-1-ol, C-174
3,9,10-Trimethoxyberbin-2-ol, I-210
3,4,5-Trimethoxycinnamic acid isobutylamide, T-578
3,4,5-Trimethoxycinnamic acid pyrrolidide, T-578
3,4,5-Trimethoxycinnamic acid, T-578
3,4,5-Trimethoxycinnamoyl piperidide, T-578
(3,4,5-Trimethoxycinnamoyl)-10-methoxyvincamajine, V-113
N-(3,4,5-Trimethoxycinnamoyl)-Δ^3-piperidin-2-one, P-473
N-(2,4,5-Trimethoxycinnamoyl)pyrrolidine, T-577
N-(3,4,5-Trimethoxycinnamoyl)pyrrolidine, T-578
3,4,5-Trimethoxycinnamoylvincamajine, V-113

1,2,3-Trimethoxydibenz[*cd,f*]indol-4(5*H*)-one, T-537
1,4,5-Trimethoxy-7*H*-dibenzo[*de,g*]quinolin-7-one, A-1449
5,6,9-Trimethoxy-7*H*-dibenzo[*de,h*]quinolin-7-one, M-199
1,2,4-Trimethoxy-7*H*-dibenzo[*de,g*]quinolin-7-one, S-470
5,6,7-Trimethoxydictamnine, F-215
5,7,8-Trimethoxydictamnine, F-216
6,7,8-Trimethoxydictamnine, F-217
β,3,4-Trimethoxy-*N*,*N*-dimethylbenzeneethanamine, M-18
3,4,6-Trimethoxy-1,2-dimethylcarbazole, T-543
4,6,7-Trimethoxy-*N*,*N*-dimethyldibenz[*b,f*]oxepin-1-ethanamine, S-198
6,6′,12′-Trimethoxy-2,2′-dimethyloxyacanthan-7-ol, L-175
6,6′,7-Trimethoxy-2,2′-dimethyloxyacanthan-12′-ol, R-46
3,4,8-Trimethoxy-*N*,*N*-dimethyl-1-phenanthreneethanamine, F-64
2,3,4-Trimethoxy-*N*,*N*-dimethyl-1-phenanthreneethanamine, M-238
1,2,3-Trimethoxy-*N*,*N*-dimethylphenanthro[2,3-*d*][1,3]dioxole-4-ethanamine, T-328
5,8,9-Trimethoxy-2,2-dimethyl-2*H*-pyrano[2,3-*b*]quinoline, M-251
1,2,3-Trimethoxy-4,5-dioxo-6*a*,7-dehydroaporphine, O-139
4,9,10-Trimethoxy-1,3-dioxolo[4,5-*g*]furo[2,3-*b*]quinoline, F-214
4,6,8-Trimethoxyfuro[2,3-*b*]quinoline, F-222
4,5,6-Trimethoxyfuro[2,3-*b*]quinoline, F-218
4,5,7-Trimethoxyfuro[2,3-*b*]quinoline, F-219
4,6,7-Trimethoxyfuro[2,3-*b*]quinoline, F-221
4,7,8-Trimethoxyfuro[2,3-*b*]quinoline, F-223
ar-Trimethoxygramine, D-734
4,5,6-Trimethoxyindeno[1,2,3-*ij*]isoquinolin-9-ol, N-304
2,3,10-Trimethoxyindolo[2′,3′:3,4]pyrido[2,1-*b*]quinazolin-5(13*H*)-one, E-307
5,6,7-Trimethoxyisoquinoline, I-307
1,2,3-Trimethoxy-10-methylacridone, T-516
1,3,4-Trimethoxy-10-methylacridone, T-517
1,3,5-Trimethoxy-10-methylacridone, T-518
β,3,4-Trimethoxy-*N*-methylbenzeneethanamine, M-18
8,8,9-Trimethoxy-5-methylbenz[*cd*]isoindolo[2,1-*a*]indol-1(8*H*)-one, A-1088
4,10,11-Trimethoxy-7-methyl-5*H*-benzo[*g*]-1,3-benzodioxolo[6,5,4-*de*]quinoline, O-27
1,2,4-Trimethoxy-12-methyl[1,3]benzodioxolo[5,6-*c*]phenanthridinium(1+), C-356
5,9,10-Trimethoxy-12-methylbenzo[*c*]-1,3-dioxolo[4,5-*i*]phenanthridinium(1+), S-60
4,5,8-Trimethoxy-3-(3-methyl-2-butenyl)-2(1*H*)-quinolinone, D-83
1,2,8-Trimethoxy-6-methyl-9*H*-carbazole, T-596
4,6,7-Trimethoxy-*N*-methyldibenz[*b,f*]oxepin-1-ethanamine, S-198
6,7,11-Trimethoxy-5-methyl-1,3-dioxolo[4,5-*b*]acridin-10(5*H*)-one, T-56
8,9,10-Trimethoxy-1,2-methylenedioxyaporphine, L-158
3,9,10-Trimethoxy-1,2-methylenedioxyaporphine, O-27
1,10,11-Trimethoxy-2,3-methylenedioxyaporphine, O-25
1,2,3-Trimethoxy-9,10-methylenedioxyaporphine, P-369
1,2,3-Trimethoxy-9,10-methylenedioxydehydroaporphine, P-369
4,5,8-Trimethoxy-6,7-methylenedioxyfuro[2,3-*b*]quinoline, F-214
1,9,10-Trimethoxy-2,3-methylenedioxynoraporphine, B-7
1,2,3-Trimethoxy-10,11-methylenedioxynoraporphine, L-10
3,9,10-Trimethoxy-1,2-methylenedioxynoraporphine, O-27
1,2,3-Trimethoxy-9,10-methylenedioxynoraporphine, P-369
3,10,11-Trimethoxy-1,2-methylenedioxynoraporphine, P-209
3,9,11-Trimethoxy-1,2-methylenedioxyoxoaporphine, D-949
1,2,3-Trimethoxy-9,10-methylenedioxyoxoaporphine, O-195
3,9,10-Trimethoxy-1,2-methylenedioxyoxoaporphine, T-315
2,8,9-Trimethoxy-3,4-methylenedioxypavinane, T-330
4,7,8-Trimethoxy-2,3-methylenedioxyquinoline, Q-39
ar-Trimethoxy-1-methylisoquinoline, T-597
5,6,7-Trimethoxy-2-methyl-1(2*H*)-isoquinolinone, I-304
1,5,6-Trimethoxy-10-methyl-2,3-methylenedioxyacridone, T-56
2,3,10-Trimethoxy-5-methyl-7,8-methylenedioxybenzo[*c*]phenanthridinium(1+), S-60
4,8,9-Trimethoxy-*N*-methyl-2,3-methylenedioxypavinane, T-598
1,2,3-Trimethoxy-*N*-methylphenanthro[2,3-*d*][1,3]dioxole-4-ethanamine, T-328
4,6,8-Trimethoxy-1-methyl-2(1*H*)-quinolinone, Q-42
4,7,8-Trimethoxy-1-methyl-2(1*H*)-quinolinone, Q-43
1,2,3-Trimethoxynoraporphine, T-521
1,2,11-Trimethoxynoraporphine, T-525
1,2,3-Trimethoxy-5-oxonoraporphine, T-571
2,3,6-Trimethoxyphenanthroindolizidine, A-1330
3,4,6-Trimethoxyphenanthroindolizidine, I-342
3,6,7-Trimethoxyphenanthroindolizidine, T-696
1,2,6-Trimethoxyphenazine, P-325
3,4,5-Trimethoxyphenethylamine, M-219
N-(3,4,5-Trimethoxyphenethyl)maleimide, M-222
N-(3,4,5-Trimethoxyphenethyl)malimide, M-222
N-(3,4,5-Trimethoxyphenethyl)succinimide, M-222
1,2,4-Trimethoxy-3*H*-phenoxazin-3-one, T-599
N-[2-(3,4,5-Trimethoxyphenyl)ethyl]acetamide, M-219
N-[2-(3,4,5-Trimethoxyphenyl)ethyl]alanine, M-219
N-[2-(3,4,5-Trimethoxyphenyl)ethyl]glycine, M-219
1-[2-(3,4,5-Trimethoxyphenyl)ethyl]-1*H*-pyrrole-2-carboxylic acid, P-298
1-[2-(3,4,5-Trimethoxyphenyl)ethyl]-2,5-pyrrolidinedione, M-222
3-(3,4,5-Trimethoxyphenyl)-2-propenoic acid, T-578
4,7,8-Trimethoxy-3-prenyl-2(1*H*)-quinolinone, P-625
4,5,8-Trimethoxy-3-prenyl-2(1*H*)-quinolone, D-83
4,6,8-Trimethoxy-2(1*H*)-quinolinone, Q-42
4,7,8-Trimethoxy-2(1*H*)-quinolinone, Q-43
3,4,8-Trimethoxy-2(1*H*)-quinolinone, Q-41
5,10,11-Trimethoxystrictamine, S-576
Trimethylamine oxide, T-601
Trimethylamine, T-600
(2-Trimethylammonioethyl)phosphonic acid betaine, T-602
1-Trimethylammonio-3-(3-indolyl)propionate, H-764
N,N,N-Trimethylbenzeneethanaminium(1+), P-342
1,7,8-Trimethylbenzo[*g*]pteridine-2,4(1*H*,3*H*)-dione, L-285
Tri-*N*-methyl-γ-butyrobetaine, A-126
5-[(2,4,4-Trimethyl-1-cyclohexen-1-yl)methyl]-1(5*H*)-phenazinone, L-76
4,4,14-Trimethyl-9,19-cyclopregnane-3,20-diamine, C-902
2,4,6-Trimethyl-2,4-decadienamide, T-603
2,4,6-Trimethyl-2,4-decadienoic acid, T-603
N,N,N-Trimethyl-1,2-dehydrocadaverine, P-232
Trimethyldiazenecarboxamide 2-oxide, L-368
3,7,11-Trimethyl-2,6,10-dodecatrien-1-amine, F-12
3-(3,7,11-Trimethyl-2,6,10-dodecatrienyl)-1*H*-indole, T-605
2-(3,7,11-Trimethyl-2,6,10-dodecatrienyl)-1*H*-indole, T-604
Tri(α-methylene-γ-butyrolactonyl)amine, N-248
N,N,N-Trimethylethenaminium(1+), T-615
1,1,5-Trimethylfuro[3,4-*c*]pyridine-3,4(1*H*,5*H*)-dione, C-285
1,3,7-Trimethylguanine, D-748
N^2,N^2,7-Trimethylguanine, M-469
2-(2,4,6-Trimethyl-1-heptenyl)-4-quinazolinol, T-606
2-(2,4,6-Trimethyl-1-heptenyl)-4(1*H*)-quinazolinone, T-606
4,4,14-Trimethyl-B-(9*a*)-homo-19-norpregna-9(11),9*a*-diene-3,20-diamine, B-455
1,2,5-Trimethyl-1*H*-imidazole, D-749
1,4,5-Trimethyl-1*H*-imidazole, D-750
2,4,5-Trimethyl-1*H*-imidazole, T-607
1,3,7-Trimethylisoguanine, T-608
N^1,N^3,O^7-Trimethylisoxanthopterin, A-751
N,N,N-Trimethylmethanaminium(1+), T-280
N,*N*,*N*′-Trimethyl-*N*′-(4-methoxycinnamoyl)putrescine, C-456
4,4,14-Trimethyl-3-(methylamino)-9,19-cyclopregna-7,17(20)-dien-16-one, C-844
N′,*N*″,*N*‴-Trimethyl-*N*-(3-methyl-2,4-dodecadienoyl)spermidine, T-609
N′,*N*″,*N*‴-Trimethyl-*N*-(3-methyldodecanoyl)spermidine, T-609
N′,*N*″,*N*‴-Trimethyl-*N*-(3-methyl-2-dodecenoyl)-spermidine, T-609
N′,*N*″,*N*‴-Trimethyl-*N*-(5-methyl-2,4-tetradecadienoyl)spermidine, T-610
N′,*N*″,*N*‴-Trimethyl-*N*-(5-methyl-3-tetradecenoyl)-spermidine, T-611
N,N,N-Trimethyl-3-(methylthio)-1-propanaminium(1+), T-612
Trimethyl[3-(methylthio)propyl]ammonium(1+), T-612
1,3,9-Trimethyl-8-nitrosoisoxanthine, D-523
1,9,13-Trimethyl-8-nonyl-1,5,9,13-tetraazacycloheptadecan-6-one, B-384
Trimethyloxamine, T-601
6,8,11-Trimethyl-2*H*,4*H*-oxazolo[5,4,3-*ij*]pyrido[3,2-g]quinoline-4,10(11*H*)-dione, N-346
2-(2,6,6-Trimethyl-4-oxo-2-cyclohexen-1-yl)acetamide, G-88
1,2,5-Trimethyl-4-(1-oxo-3-phenyl-2-propenyl)piperazine, D-769
Trimethylphenethylammonium(1+), P-342
N,N,N-Trimethyl-2-phosphonoethanaminium hydroxide, inner salt, T-602
1,3,6-Trimethyl-2,5-piperazinedione, D-769
1,2,6-Trimethylpiperidine, D-770
5-(1,1,2-Trimethylpropenylperoxy)-2-pyrrolidinone, C-801
1,N^8,N^8-Trimethylpseudozoanthoxanthin A, P-737
Trimethylpyrazine, T-613
2,2,6-Trimethyl-4-(4-quinolinyl)-3-azabicyclo[3.3.1]non-6-ene, T-614
N,*O*,*O*-Trimethylsparsiflorine, T-524
N,O,O-Trimethylstephavanine, S-545
N,N,N-Trimethyl-2-(sulfooxy)ethanaminium hydroxide inner salt, C-419
2,3,3-Trimethyl-2,3,4,5-tetrahydrofurano[3,2-*c*]quinolin-4-one, O-82
2,4,5-Trimethyl-3-thiazoline, D-526
2,7,16-Trimethyl-2,7,11-triaza-13,15-pentacosadien-12-one, T-610
2,7,16-Trimethyl-2,7,11-triaza-14-pentacosen-12-one, T-611
2,7,14-Trimethyl-2,7,11-triaza-13,15-tricosadien-12-one, T-609
2,7,14-Trimethyl-2,7,11-triaza-12-tricosanone, T-609
2,7,14-Trimethyl-2,7,11-triaza-13-tricosen-12-one, T-609
1,9,13-Trimethyl-8-tridecyl-1,5,9,13-tetraazacycloheptadecan-6-one, B-387
N,N,N-Trimethyltryptamine, D-785
Trimethyltryptophan betaine, H-764
1,9,13-Trimethyl-8-undecyl-1,5,9,13-tetraazacycloheptadecan-6-one, B-383
O^2,1,9-Trimethyluric acid, L-165
Trimethylvinylammonium(1+), T-615
1,3,7-Trimethylxanthine, C-15
Trinervine, T-616
1,3,6-Tri-*O*-nicotinoyl-α-D-glucopyranose, A-458
Triniifoline, Z-1
Triophamine, T-617

Triostin, T-618
3,16,18-Trioxo-1,4,14-conatrienine, H-314
N,N′,N″-(2,6,10-Trioxo-1,5,9-trioxacyclododecane-3,7,11-triyl)tris[2,3-dihydroxybenzamide], E-86
Triox, T-601
Tripfordine A, P-253
Tripfordine B, P-252
Tripfordine C, P-249
1,2,3-Triphenyl-1*H*-pyrrole, D-817
Triphyopeltine, D-793
Triphyophylline, D-793
Tripterospermumcin A, D-204
Tripterregeline A, H-249
Tripterregeline B, H-249
Tripterregeline C, H-249
Triptofordinine A1, H-249
Triptofordinine A2, H-249
Triptogelin A10, P-216
Triptogelin A5, P-216
Triptogelin A6, P-216
Triptogelin A7, P-216
Triptogelin A9, P-216
Triptogelin B2, T-258
Triptogelin C2, T-256
Triptogelin C4, T-256
Triptogelin F1, T-542
Triptonine A, P-253
Triptonine A, T-619
Triptonine B, P-253
Triptonine B, T-620
Triptotin J, T-621
Tris(3-aminopropyl)amine, T-622
N,N′,N″-Tris(*E*-*p*-coumaroyl)spermidine, S-398
N^1,N^5,N^{10}-Tris-*trans*-*p*-coumaroylspermine, S-399
Tris(4-ethenylphenyl 4-hydroxy-3-nitrosobenzoato-*N,O*)ferrate(1-), F-45
3,3′,11-Tris-*O*-(3-hydroxybutanoyl)hamayne, H-5
N,N′,N″-Tris(4-hydroxycinnamoyl)spermidine, S-398
Tris(*N*-hydroxy-*N*-methylmethanethioamidato-*O,S*)iron, F-96
3,7,8-Tris(4-hydroxyphenyl)-1*H*-pyrrolo[2,1-*c*][1,4]oxazin-1-one, L-284
Trisindoline, T-88
N,N′,N″-Tris(3-methylbutyl)guanidine, T-623
Tris(1-methyl-3-indolyl)methane, T-591
Trisoxazoline, C-919
Trisphaeridine, M-448
Trisphaerine, H-294
Trispheridine, M-448
Trispherine, H-294
Trisulcusine, T-624
Triticone A, T-625
Triticone B, T-625
Triticone C, T-625
Triticone D, T-625
Triticone E, T-626
Triticone F, T-626
Tritopine, L-68
1-Tritylpyrrolidine, P-949
Triumferol, I-348
Triumfettoside A, A-756
Triuret, T-627
Trivalvone, T-628
Trodusquemine, S-485
Trolline, T-629
Tronocarpine, T-630
Tronoharine, T-631
Tropacocaine, M-393
Tropane 3,6-diol 3-phenylacetate 6-acetate, M-391
Tropane 3,6-diol 3-(3,4,5-trimethoxycinnamate) 6-benzoate, M-391
Tropane-3,6-diol 3-phenylacetate 6-propanoate, M-391
Tropane-3,6-diol 3-phenylacetate, M-391
2,3-Tropanediol, A-1581
2,6-Tropanediol, A-1582
3,6-Tropanediol, M-391
Tropane-3,6,7-triol 3-phenylacetate, M-392
Tropane-3,6,7-triol 3-(3,4,5-trimethoxybenzoate), M-392
3,6,7-Tropanetriol, M-392
ψ-3-Tropanol, M-393
3-Tropanol, M-393
1-Tropanol, P-399
3-Tropanone, M-394
Tropan-6-yl benzoate-3-yl-3,4,5-trimethoxycinnamate, M-391
Tropanyl *cis*-cinnamate, M-393
Tropanyl *trans*-cinnamate, M-393
Tropan-3-yl ferulate, M-393
Tropanyl furoate, M-393
Tropanyl 3-hydroxy-4-methoxycinnamate, M-393
Tropan-3-yl 3-hydroxyphenylacetate, M-393
Tropan-3-yl isovalerate, M-393
Tropanyl phenylacetate, M-393
Tropan-3α-yl phenyllactate, L-216
Tropanyl senecioate, M-393
Tropan-3α-yl 3,4,5-trimethoxybenzoate, C-633
Tropan-3-yl-*O*-propionyl tropate, T-632
Tropeine, M-393
Trophicardyl, I-148
Tropigenin, A-1597
Tropigline, T-404
Tropine acetate, M-393
Tropine atropate, A-1359
Tropine benzoate, M-393
Tropine butyrate, M-393
Tropine isobutyrate, M-393
Tropine isovalerate, M-393
Tropine nonanoate, M-393
Tropine propionate, M-393
Tropine tiglate, T-404
Tropine 3,4,5-trimethoxycinnamate, M-393
Tropine tropate, T-632
Tropine, M-393
ψ-Tropine, M-393
Tropinone, M-394
Tropinox, T-632
Trpn, T-622
Trp, T-640
Trunkamide A, T-633
epi-Truxilline, T-634
neo-Truxilline, T-635
peri-Truxilline, T-634
α-Truxilline, T-634
β-Truxilline, T-635
δ-Truxilline, T-635
ϵ-Truxilline, T-634
γ-Truxilline, T-634
μ-Truxilline, T-635
ω-Truxilline, T-635
ξ-Truxilline, T-635
β-Truxinic acid bis(2-carbomethoxytropyl) ester, T-635
Trypanothione disulfide, T-636
Trypanothione, T-636
Trypargimine, T-637
Trypargine, T-637
Tryprostatin A, T-638
Tryprostatin B, T-638
Tryptamine, T-639
Tryptanthrine, I-108
Tryptophan betaine, H-764
Tryptophan tryptophylquinone, T-641
Tryptophanbetaxanthin, T-642
Tryptophanol, A-830
Tryptophan, T-640
Tryptophol galactoside, I-96
Tryptophol glucoside, I-96
Tryptophol, I-96
Tryptoquialanine A, T-643
Tryptoquialanine B, T-644
Tryptoquivaline A, T-645
Tryptoquivaline B, N-315
Tryptoquivaline C, T-645
Tryptoquivaline D, N-315
Tryptoquivaline E, T-646
Tryptoquivaline F, T-646
Tryptoquivaline G, T-647
Tryptoquivaline H, T-646
Tryptoquivaline I, T-645
Tryptoquivaline J, T-646
Tryptoquivaline L, T-647
Tryptoquivaline M, N-315
Tryptoquivaline N, N-315
Tryptoquivaline, T-645
Tryptoquivalone, N-315
TS 885, M-561
Tscheschamine, T-648
Tsilanimbine, R-63
Tsilanine, T-649
Tsitsikammamine A N^{18}-oxime, T-650
Tsitsikammamine A, T-650
Tsitsikammamine B N^{18}-oxime, T-650
Tsitsikammamine B, T-650
Tsuduranine, T-524
Tsukushinamine A, T-651
Tsukushinamine B, T-651
Tsukushinamine C, T-651
TTP, T-366
TTQ, T-641
TTX, T-298
Tu 2480F_1, P-893
Tu 2480F_2, P-893
Tu 2480F_3, P-893
Tu 2480F_4, P-893
Tubacetine, T-652
Tubarine, C-420
Tubasenecine, T-653
Tubastraine, T-654
Tubastrindole A, T-655
Tubastrindole B, T-655
Tubastrindole C, T-655
Tubastrine, T-656
Tuberaconitine, M-331
Tuberactidine, T-657
Tuberanine, M-331
Tubercidin 5′-α-D-glucopyranose, T-658
Tubercidin, T-658
Tuberine, T-659
Tubermesaconitine, M-331
Tubermycin A, T-660
Tubermycin B, P-319
Tuberosine B, D-920
Tuberosine B, T-190
Tuberosinone B, T-661
Tuberosinone C, T-662
Tuberosinone *N*-β-D-glucoside, T-661
Tuberosinone, T-661
Tuberospironine, S-523
Tuberostemoenone, T-663
Tuberostemonine A, T-664
Tuberostemonine B, T-664
Tuberostemonine C, T-664
Tuberostemonine H, T-664
Tuberostemonine J, T-664
Tuberostemonine K, T-664
Tuberostemonine LG, T-664
Tuberostemonine L, T-664
Tuberostemonine M, T-664
Tuberostemonine N, T-664
Tuberostemonine *N*-oxide, T-664
Tuberostemonine, T-664
Tuberostemoninol, T-665
Tuberostemonol, T-664
Tuberostemonone, T-666
Tuberostemospironine, T-667
Tubifolidine, T-668
Tubifoline, T-668
Tubingensin A, T-669
Tubingensin B, T-670
Tubispacine, C-743
Tubocurarine chloride, C-420
Tubocurarine, C-420
(-)-Tubocurarine, C-420
Tubocurine, C-420
Tuboflavine, T-671
Tubotaiwinal, T-672
Tubotaiwine N^4-oxide, T-673
Tubotaiwine, T-673
Tuboxenine, T-674
Tubulosine, T-675
Tubulysin D, T-676
Tubulysin E, T-676
Tubulysin F, T-676
Tubulysin H, T-676
Tubulysins, T-676

Tuduranine, T-524
Tuguaconitine, D-187
Tuliferoline, T-521
Tunichrome An1, T-677
Tunichrome An2, T-677
Tunichrome An3, T-677
Tunichrome B1, T-677
Tunichrome Pm 1, T-678
Tunichrome Pm 2, T-678
Tunichrome Pm 3, T-678
T-Up, B-101
Turbinamide, O-61
Turbinatine, T-679
Turbotoxin A, T-680
Turbotoxin B, T-680
Turcamine, T-159
Turcberine, T-681
Turcomanidine, P-80
Turcomanine, P-80
Turconidine, T-682
Turcosine, M-339
Turicine, H-476
Turkestanine *N*-oxide, T-683
Turkestanine, T-683
Turkiyenine, T-684
Turlosine, M-339
Turneforcidine, H-233
(+)-Turneforcidine, H-233
Turneforcine, H-233
Turpelline, N-30
Turraeanthine A, A-1446
Turraeanthine B, D-482
Turraparvin D, T-685
Turrapubesin B, T-686
Turumiquirensine, T-687
Tusscapine, N-44
Tussiglaucin, T-246
Tussilagic acid, H-231
Tussilagine, H-231
Tussilaginine, H-231
Tussipan, C-555
Tyformin, G-201
(10*R*,13*aR*)-Tylocrebrine *N*-oxide, T-688
(10*S*,13*aR*)-Tylocrebrine *N*-oxide, T-688
Tylocrebrine, T-688
Tylohirsuticine, T-689
Tylohirsutinidine, T-690
Tylohirsutinine, T-690
Tyloindicine A, T-278
Tyloindicine B, T-689
Tyloindicine C, M-583
Tyloindicine D, T-278
Tyloindicine E, T-696
Tyloindicine F, T-692
Tyloindicine G, T-693
Tyloindicine H, T-694
Tyloindicine I, T-691
Tyloindicine J, T-691
Tylophoridicine A, T-696
Tylophoridicine C, T-696
Tylophoridicine D, A-1025
Tylophoridicine E, T-696
Tylophoridicine F, T-696
Tylophorine B, A-1330
Tylophorine *N*-Oxide, T-695
Tylophorine, T-695
Tylophorinicine, T-695
Tylophorinidine, T-696
Tylophorinine *N*-oxide, T-696
Tylophorinine, T-696
Tyraminebetaxanthin, M-647
m-Tyramine, H-678
Tyramine, H-667
Tyraminoporphine, T-697
Tyrian purple, D-325
Tyrindoleninone, B-341
Tyrindolinone, B-309
Tyrindoxol, B-328
Tyriverdin, T-698
Tyrosamine, H-667
Tyroscherin, T-699
Tyrosine betaine, T-700
Tyrosinebetaxanthin, P-576
Tyrosine, T-700
p-Tyrosine, T-700
Tyrosinyl glucoside, T-700
Tyrosol carbamate, H-676
Tyrosol, H-676
Tyroxindoxyl sulfate, B-328
Tyr, T-700
U 106305, A-1299
U 42126, A-81
U 43795, A-81
U 62162, A-1298
U 27810, B-104
U 77779, B-229
U 54703, C-521
U 11994, D-232
U 4527, D-765
U 9361, D-765
U 54702D, C-521
U 20207, E-229
U 47929, F-52
U 48266, F-33
U 15965, L-166
U 24792, L-241
U 77863, M-513
U 59760, N-276
U 59761, N-276
U 61732, N-276
U 22662, P-876
U 24544, P-919
U 48160, Q-61
U 19183, S-384
U 10071, T-658
Uberine, T-180
Ubine, A-864
UCA 1064A, A-1602
UCA 1064B, A-1602
UCF1B, M-88
UCF1C, M-87
UCH 15A, A-1300
UCH 15B, A-1300
UCN 01, S-498
UCN 02, S-498
UCS 1025A, A-1301
UCS 1025B, A-1301
Udieci active substance, P-80
Ugibohlin, U-1
UK 1, A-1302
UK 2, A-1303
UK 63052, A-1304
UK 63598, A-1304
UK 65662, A-1304
UK 88051, A-1141
UK 2A, A-1303
UK 3A, A-1303
UK 2B, A-1303
UK 2C, A-1303
UK 2D, A-1303
UK 163E, A-1304
UK 111866, P-90
Ulapualides, U-2
Ulbactin A, U-3
Ulbactin B, U-4
Ulbactin C, U-5
Ulbactin D, U-6
Ulbactin E, U-7
Uleine *N*-oxide, U-8
Uleine, U-8
Ulexine, C-938
Ulicyclamide, U-9
Ulithiacyclamide B, U-11
Ulithiacyclamide E, U-12
Ulithiacyclamide F, U-13
Ulithiacyclamide G, U-14
Ulithiacyclamide, U-10
Ulongamide A, U-15
Ulongamide B, U-15
Ulongamide C, U-16
Ulongamide D, U-17
Ulongamide E, U-18
Ulongamide F, U-19
Ulosantoin, U-20
Ulosin A, S-613
Ultraquinine, Q-20
Uluganine, L-212
Ulupyrinone, L-272
Umanopterin, A-923
Umbellamine, U-21
Umbellatine, B-101
Umbellatine, B-264
Umbellinic acid, M-240
Umbrofine, A-92
Umbrophine, A-92
Umbrosine, M-325
Umprel, E-157
Umycin A, A-853
Umycin B, G-180
Umycin C, A-853
Unamycin B, S-53
Uncaramine, U-22
Uncarine A, M-661
Uncarine B, M-661
Uncarine C, M-661
Uncarine D, M-661
Uncarine E, M-661
Uncarine F *N*-oxide, M-661
Uncarine F, M-661
Uncialamycin, U-23
Uncinatine, A-1533
Uncinine, U-24
2,4-Undecadiene-8,10-diynecarboxy-*N*-isopentylamide, U-26
2,4-Undecadiene-8,10-diynoic acid 2,3-dehydropiperidide, U-26
2,4-Undecadiene-7,9-diynoic acid isobutylamide, U-25
2,4-Undecadiene-8,10-diynoic acid isobutylamide, U-26
2,4-Undecadiene-8,10-diynoic acid isopentylamide, U-26
3,5-Undecadiene-8,10-diynoic acid 2-phenylethylamide, U-27
2,4-Undecadiene-8,10-diynoic acid piperidide, U-26
3,5-Undecadiene-8,10-diynoic acid, U-27
2,4-Undecadiene-7,9-diynoic acid, U-25
2,4-Undecadiene-8,10-diynoic acid, U-26
2,4-Undecadienoic acid isobutylamide, U-28
2,4-Undecadienoic acid, U-28
N-Undecanoyltyrosine, T-700
2,7,9-Undecatrienoic acid isobutylamide, U-29
2,7,9-Undecatrienoic acid, U-29
2-Undecene-8,10-diynoic acid isobutylamide, U-30
2-Undecene-8,10-diynoic acid, U-30
2-(1-Undecenyl)-4(1*H*)-quinolinone, H-757
2-(3-Undecenyl)-4(1*H*)-quinolinone, H-757
Undecylprodiginine, U-31
Undecylprodigiosine, U-31
2-Undecyl-3,4-quinolinediol, A-621
2-Undecyl-4-quinolinol, H-757
2-Undecyl-4(1*H*)-quinolinone *N*-oxide, H-757
2-Undecyl-4(1*H*)-quinolinone, H-757
Undulatine, C-743
Undulatine, U-32
Undulifoline, U-33
Ungeremine, U-34
Ungerine, H-294
Ungernine, T-53
Ungminoridine, Z-15
Ungminorine *N*-oxide, U-35
Ungminorine, U-35
Ungspirolidine, P-626
Ungspiroline, P-626
Ungvedine, T-53
Uniflorine A, T-262
Uniflorine B, T-262
Uniphyllin, T-360
Unonopsine, U-36
Unsevine, U-37
Untenine A, N-256
Untenine B, N-249
Untenine C, N-256
Uoamine A, U-38
Uoamine B, U-38
Upenamide, U-39
Uplandicine, U-40
Urabaine, U-41

Uracil N^3-oxide, U-42
Uracil-6-carboxylic acid, D-669
Uracil, U-42
Uraline, G-91
Uranidine, Q-44
Urceoline, N-171
Urdamycin D, U-43
Urechochrome, X-11
3-Ureidoandrost-4-en-17-ol, A-702
3-Ureidoandrost-4-en-17-one, A-702
5-Ureidohydantoin, A-625
5-Ureido-2,4-imidazolidinedione, A-625
Ureidosorbicillinol, U-44
7,8-Ureylenenonanoic acid, M-499
Uric acid, U-45
Urminine, N-171
Urocanic acid, U-46
Urocaninic acid, U-46
Urochordamine A, U-47
Urochordamine B, U-47
Uropterin, A-750
Urothione, U-48
Uroxanthin, I-104
Ursuline, D-626
Ursuline, U-49
Urukthapelstatin A, U-50
Us 7, A-603
Us 8, A-603
Usambanoline, U-51
Usambarensine N^b-oxide, U-52
Usambarensine, U-52
Usambaridine Br, O-21
Usambaridine Vc, O-21
Usambaridine Vi, O-21
Usambarine, O-21
Usaramensine, S-238
Usaramine, R-62
Usaramoensine, S-238
Uscharin, U-53
USF 19A, A-1305
USF 142A, M-512
USF 406C, D-681
USF 406D, D-681
Ushinsunine β-*N*-oxide, N-316
Ushinsunine, N-316
Usimine A, U-54
Usimine B, U-54
Usimine C, U-54
Uskudaramine, U-55
Uspallatine, A-967
Uspallatinecine, C-775
Ussuriedine, U-56
Ussuriedinone, U-56
Ussurienine, U-56
Ussurienone, U-56
Ustalic acid imide, D-816
Ustalic acid, U-57
Ustalic ethanolamide, U-57
Ustalic glycine amide, U-57
Ustalic prolinamide, U-57
Usuramine, R-62
Uthongine, O-170
Uvarilactam, T-539
Uvarindole A, U-59
Uvarindole B, U-60
Uvarindole C, U-59
Uvarindole D, U-61
Uvarindole E, U-62
Uvariopsamine N-oxide, U-63
Uvariopsamine, U-63
Uvariopsine, U-64
Vaccinine A, A-1581
Vaccinine B, A-1583
Vaganine A, D-266
Vaganine B, D-274
Vaganine C, D-274
Vaganine D, D-280
Vaginadine, M-309
Vaginaline, M-309
Vaginatine, M-309
Vaillantine, M-734
Vakatidine, V-1
Vakatisine, V-2
Vakatisinine, V-3
Vakhmadine, H-182
Vakhmatine, H-191
Valachine, V-4
Valacidin, S-569
Valamine, M-525
Valanimycin, V-5
Valdiberine, P-15
Valdivianine, P-15
Valerianine, T-60
Valeroidine, M-391
13-Valeroyloxylupanine, H-554
Valindolmycin, V-6
1-Valine-2-(2,3-didehydroalanine)thiostrepton, S-321
Valivine, V-7
Vallesamidine, V-8
Vallesamine N^b-oxide, V-9
Z-Vallesamine, V-9
Vallesamine, V-9
Vallesiachotamine lactone, V-11
Vallesiachotamine, V-10
Vallesine, A-1499
Vallopurfine, V-12
Vallotidine, V-13
Vallotine, V-14
Valonaeic dilactone, V-15
Valoneic acid amide dilactone, V-15
Valoneic acid dilactone, V-15
Valoneic dilactone, V-15
Valparicine, V-16
Valtropine, M-393
O-Valylgriseoluteic acid, H-514
Valyltenuazonic acid, N-311
L-Valyl-*N*-[1-(1,2,3,4-tetrahydro-6,7-dimethoxy-2-methyl-1-isoquinolinyl)ethyl]glycinamide, A-934
Vampirol, S-589
Vancoresmycin, V-17
Vandrikidine, H-743
Vandrikine, M-666
Vanessine, A-1325
Vanillobiocin, V-18
O-Vanilloylcyclovirobuxine D, C-917
2-Vanilloylimidazole, H-558
13-Vanilloyloxylupanine, H-554
3α-Vanilloyloxynortropane, C-633
3β-Vanilloyloxytropane, M-393
Vanilloylveracevine, V-56
Vanilloylzygadenine, Z-36
Vanillyl tropate, C-633
N-Vanillylnonanamide, C-100
Vanuatine, V-19
Vaponephrin, A-152
VAPY, B-221
Varacin A, V-20
Varacin B, V-20
Varacin C, V-20
Varacin, L-205
Varadine, V-21
Varamine A, V-22
Varamine B, V-23
Variabiline, V-24
Variceramides, V-25
Variecolorin A, I-230
Variecolorin B, I-230
Variecolorin C, I-230
Variecolorin D, I-230
Variecolorin E, I-230
Variecolorin F, V-26
Variecolorin G, V-26
Variecolorin I, I-230
Variecolorin J, V-27
Variecolorin K, V-28
Variecolorin L, V-29
Variecolortide A, V-30
Variecolortide B, V-31
Variecolortide C, V-31
Variegatine, H-161
Variolin A, V-32
Variolin B, V-32
Variolin D, V-33
Variotin, V-34
Varunax, A-845
Vasconine, V-35
Vasexeten, Q-17
Vasicine, P-165
Vasicinine, V-36
Vasicinolone, V-38
Vasicinol, V-37
Vasicinone *N*-oxide, V-38
Vasicinone, V-38
Vasicoline, V-40
Vasicolinone, V-40
Vasicol, V-39
Vasnetine, A-1041
Vatamidine, V-41
Vatamine, V-42
Vateamine 2′-β-*N*-oxide, V-43
Vateamine, V-43
Vatine A, V-44
Vatine, V-44
vD 844, O-124
vD 846, O-124
VD, V-160
(15β)-Veatchine acetate (ester), V-45
Veatchine, V-45
Veatchinium chloride, V-45
Vebilocine, D-528
Veiutamine, V-46
Velbanamine, C-522
(+)-Velbanamine, C-522
Velban, V-110
Velbe, V-110
Veldopa, A-745
Vellosimine, T-425
Vellosiminol, T-425
Vellosine, K-78
Velucryptine, L-252
Velutinam, T-539
Venacarpine A, V-47
Venacarpine B, V-48
Venalstonidine, V-49
Venalstonine, V-49
Venartan, P-923
Venecurine, T-616
Venenatic acid, V-50
Venenatine, V-50
Veneserpine, R-50
C-Venezueline, V-51
Vengicide, S-53
Venoterpine, V-52
Venoxidine, V-50
Venturamide A, V-53
Venturamide B, V-54
Venudelphine, H-194
Venulol, H-164
Venulusone, D-586
Vepridimerine A, P-87
Vepridimerine B, P-87
Vepridimerine C, V-55
Vepridimerine D, V-55
Vepridimerine E, V-55
Veprisilone, P-625
Veprisine, F-90
Veprisinium, D-720
Verabenzoamine, G-70
Veracevine, V-56
Veracintine, V-57
Veraflorizine, C-301
Veragenine, S-1
Veragenine, V-58
Veralbidine, V-59
Veralcamine, V-61
Veralinine, V-60
Veralkamine, V-61
Veralobine, V-62
Veralodine, H-460
Veralodinine, V-63
Veralodisine, V-63
Veralomidene, V-60
Veralomidine, V-60
Veralomine, V-60
Veralosidine, S-199
Veralosidinine, V-64
Veralosine, S-199
Veralosinine, S-199

Veralozidine, S-199
Veralozine, S-199
Veralozinine, S-199
Veramanine, V-65
Veramarine, C-309
Veramiline 3-*O*-β-D-glucopyranoside, V-73
Veramiline, V-73
Veramine, V-66
Veraminine, V-67
Veramitaline, V-68
Veramivirine, V-73
Veranovine, V-69
Verapatuline, J-36
Verareine, V-70
Verarine, V-71
Verasine, V-73
Veratensine, G-70
Veratetrine, P-674
Veratra-5,12-dien-3-ol, H-364
Veratraman-3-ol, H-364
Veratramine, V-71
Veratra-5,11,13-triene-3,23-diol, V-72
Veratrenone, T-534
Veratric acid, D-706
Veratridine, V-56
Veratrine, V-56
Veratrobasine, J-36
Veratrole-4,5-dicarboxylic acid, D-533
Veratrosine, V-71
Veratroylbikhaconine, M-312
14-Veratroylchasmanine, M-323
15-Veratroyldictysine, D-370
Veratroylformic acid, D-649
15-Veratroylgermine, G-70
3-Veratroylgermine, G-70
8-Veratroylneoline, M-323
14-Veratroylneoline, M-323
Veratroylnortropine, C-633
3α-Veratroyloxy-*N*-acetylnortropane, C-633
3α-Veratroyloxy-*N*-hydroxynortropane, C-633
3α-Veratroyloxynortropane, C-633
Veratroylpseudaconine, M-336
15-Veratroylpseudokobusine, H-205
Veratroyltropine, C-633
15-Veratroylyesonine, Y-10
Veratroylzygadenine, Z-36
Veratrylidenehydrazide, D-705
Verazine, V-73
Verazinine, V-73
Verbacine, P-673
Verballocine, P-673
Verballoscenine, P-673
Verbamedine, P-673
Verbamekrine, P-665
Verbamethine, P-665
Verbametrine, P-665
Verbascenine, P-673
Verbascine, P-665
Verbasikrine, P-673
Verbasitrine, P-673
Verbaskine, P-665
Verdine, V-74
Verdinine, P-280
Verine, V-75
Vermelhotin, V-76
Vermisporin, V-77
Vernamycin A, O-131
Vernamycin, O-131
Veronal, B-23
Veronamine, T-326
Verongamine, V-78
Verongiaquinol, H-650
Verpacamide A, C-841
Verpacamide B, C-841
Verpacamide C, V-79
Verpacamide D, V-80
Verrucarin E, A-57
Verrucarin F, V-81
Verrucarin G, V-82
Verrucine A, V-83
Verrucine B, V-83
Verrucofortine, F-160
Verrucosine, F-160
Verrucosinol, F-160
Verrucozine, F-160
Verrucozinol, F-160
Verruculotoxin, V-84
Versicolamide B, S-153
Versimide, V-85
Vertaline B, V-87
Vertaline, V-86
Verticillatine, P-241
Verticillatine, V-88
Verticillin A, V-89
Verticillin B, V-89
Verticillin C, V-90
Verticillin D, V-91
Verticillin E, V-91
Verticillin F, V-91
Verticillin G, V-92
Verticilline, V-93
Verticine *N*-oxide, C-298
Verticine, C-298
Verticinone *N*-oxide, C-298
Verticinone, C-298
Vertilecanine A, V-94
Vertilecanine B, V-94
Vertilecanine C, V-94
Vertine, V-95
Verussurine, G-70
Verussurinine, G-70
Very fast death factor, A-974
Vevesca, H-616
VFDF, A-974
Viaductor, A-216
Vibratilicin, N-114
Vibrindole A, S-564
Vibriobactin, V-96
Vibrioferrin, V-97
Viburnine, P-356
Viburnum acid, M-409
Vicenistatin aglycone, V-98
Vicenistatin M, V-98
Vicenistatin, V-98
Vicianin, H-673
Vicine, D-253
Vicioside, D-253
Vietnamine, P-149
Vignatic acid A, V-99
Vignatic acid B, V-100
Viguine, V-101
Vilaportine, O-214
Villagorgin A, V-102
Villagorgin B, V-102
Villalstonine 4′-*N*-oxide, V-103
Villalstonine, V-103
Villatamine A, V-104
Villatamine B, V-104
Vilmoridine, V-105
Vilmorinianine, K-48
Vilmorinine, M-352
Vilmorisine, F-147
Vilmoritine, V-106
Vilmorrianine A, M-303
Vilmorrianine B, M-336
Vilmorrianine C, M-323
Vilmorrianine D, M-355
Vilmorrianone, M-665
Vinamidine, V-107
Vinaphamine, V-108
Vinaspine, V-109
Vinblastine sulfate, V-110
Vinblastine, V-110
Vinburnine, E-6
Vincadiffine, V-171
$\Delta^{6,7}$-ψ-Vincadifformine, P-733
ψ-Vincadifformine, P-733
Vincadifformine, V-111
Vincadine, V-112
(±)-Vincadine, V-112
Vincadioline, V-110
Vincafor, V-115
Vincaherbine, H-137
Vincaherbinine, H-137
Vincaine, A-212
Vincaleucoblastine, V-110
Vincaleukoblastine, V-110
Vincamajine 17-*O*-veratrate, V-113
Vincamajine, V-113
Vincamajinine, V-113
Vincamajoreine, T-288
Vincamajoridine, A-232
Vincamarine, V-115
Vincamedine, V-113
Δ^{14}-Vincamenine, E-5
Vincamenine, E-5
Vincametrine, V-115
Vincamicine, V-114
Vincamidine, S-576
Vincamine, V-115
Δ^{14}-Vincamine, V-115
Vincaminine, V-115
Vincaminoreine, V-112
Vincaminoridine, V-112
Vincaminorine, V-112
Δ^{14}-Vincamone, E-6
Vincamone, E-6
Vincanicine, N-301
Vincanidine, N-301
Vincanine *N*-oxide, N-301
Vincanine, N-301
Δ^{14}-Vincanol, E-6
Vincanol, E-6
Vincanorine, E-6
Vincanovine, V-116
Vincapusine, V-117
Vincareine, V-115
Vincaricine, P-417
Vincaridine, P-417
Vincarine, V-113
Vincarinine, B-420
Vincarodine, V-117
Vincarpine, F-82
Vincarubine, V-118
Vincathicine, V-119
Vincatine, V-120
Vincawajine, V-121
Vinceine, A-212
Vincetene, V-122
Δ^{14}-Vincine, V-115
Vincine, V-115
Vincinine, V-115
Vincolidine, V-123
Vincoline, V-124
Vincophylline, D-410
Vincoridine, V-125
Vincorine, V-125
Vincosamide, V-126
Vincoside lactam, V-126
Vincoside, S-583
Vincosid, V-128
Vincovalicine, V-127
Vincovaline, V-110
Vincovalinine, L-162
Vincovine, V-125
Vincristine sulfate, V-128
Vincristine, V-128
Vincrisul, V-128
Vincubine, T-283
Vindesine sulfate, V-110
Vindesine, V-110
Vindolicine, V-129
Vindolidine, V-130
Vindolidine, V-131
Vindoline, V-130
Vindolinine *N*-oxide, V-132
19*R*-Vindolinine *N*-oxide, V-132
19*S*-Vindolinine *N*-oxide, V-132
Vindolinine, V-132
19*S*-Vindolinine, V-132
Vindorosine, V-130
Vinepidine, V-110
Vineridine *N*-oxide, C-1
Vineridine, C-1
Vinerine *N*-oxide, C-1
Vinerine, C-1
Vinerinine, M-50
Vinervidine, N-301
Vinervine, A-228

Vinervinine, A-228
Vinformide sulfate, L-162
Vinformide, L-162
Vinglycinate sulfate, V-110
Vinglycinate, V-110
Vingramine, V-133
Vinine, C-117
Vinleurosine sulfate, L-162
Vinleurosine, L-162
Vinomine, V-134
Vinorine, V-194
Vinosidine, V-135
Vinothiam, T-366
Vinoxine, V-136
Vinrosidine sulfate, V-110
Vinrosidine, V-110
Vinsedicine, V-137
Vinsedine, V-138
Vinsosidinic acid, S-583
1-Vinyl-β-carboline-3-carboxylic acid, V-140
1-Vinyl-β-carboline, V-139
6-*O*-(5-Vinylnicotinoyl)tetrahydrocantleyine, T-145
5-Vinyl-3-pyridinecarboxylic acid, V-141
Violacein, V-142
Violapterin, P-763
Violatinctamine, V-143
Violyedoenamide, H-667
Viomycidine, V-144
Viquidil, Q-17
Virantmycin, V-145
Virenamide A, V-146
Virenamide B, V-147
Virenamide C, V-148
Virenamide D, V-146
Virenamide E, V-149
Virescenine, M-325
Virgiboidine, V-152
Virgidivarine, V-150
Virgilidine, V-151
Virgilidone, V-152
Virgiline 2-pyrrolecarboxylate, V-153
Virgiline, V-153
Virginiamycin M_1, O-131
Virginiamycin M_2, O-131
Virginiamycin, O-131
Viridic acid, V-154
Viridicatin, D-656
Viridicatol, D-656
Viridiflorine *N*-oxide, T-443
Viridiflorine, T-443
Viriditin, V-155
Viridomycin A, V-156
Viridomycin B, V-157
Viridomycin C, V-158
Viridomycin E, V-159
Viridomycin F, V-156
Viroallosecurinine, A-630
Virocidin, A-14
Virodhamine, E-48
Virosecurinine, S-206
Virosine A, S-207
Virosine, N-307
Virotoxin, V-160
Viscosaline, V-161
Viscosamine, V-162
Visoltricin, F-196
Vitamin B_c conjugate, P-772
Vitamin B_4, A-137
Vitamin B_7, B-139
Vitamin B_{13}, D-669
Vitamin B_{17}, H-673
Vitamin B_6, P-923
Vitamin B_c, P-772
Vitamin B_3, P-895
Vitamin B_1, T-366
Vitamin H, B-139
Vitamin L_1, A-706
Vitamin M, P-772
Vitamycin A, V-163
Vitaneurin, T-366
Vitedoamine A, V-164
Vitexlactam A, D-601
Vitricine, V-165
Vittacarboline, V-166
Vittatine, C-748
Vivotoxin, T-74
Vixaton, C-555
VLB, V-110
VM 55595, A-1306
VM 55598, A-1486
VM 55599, A-1307
VM 29919, P-90
VM 54158, P-91
VM 54159, P-90
VM 55594, P-91
VM 55596, P-90
VM 55597, P-90
Voacafricine, V-171
Voacafrine, V-171
Voacamidine, V-167
Voacamine N^b-oxide, V-168
Voacamine, V-168
Voacaminine, V-169
Voacangarine, V-170
Voacangine 3-carbonitrile, V-170
Voacangine hydroxyindolenine, C-658
Voacangine pseudoindoxyl, V-178
Voacangine, V-170
Voacanginine, V-168
Voacarpine, V-171
Voachalotinal, P-562
Voachalotine oxindole, V-172
Voachalotine, P-562
Voacinol, V-173
Voacoline, V-174
Voacorine, V-168
Voacristine hydroxyindolenine, C-658
Voacristine pseudoindoxyl, V-178
Voacristine, V-170
Voacryptine, V-170
Voafinidine, V-181
Voafinine, V-179
Voafolidine, V-175
Voafoline, V-175
Voafrine A, V-176
Voafrine B, V-176
Voaharine, V-177
Voalenine, V-180
Voaluteine, V-178
Voamonine, V-174
Voaphylline hydroxyindolenine, V-180
14,15-Voaphyllinediol, V-181
Voaphylline, V-179
Voastrictine, V-182
Vobasenal, V-183
Vobasine methine, R-27
Vobasine N^4-oxide, P-268
Vobasine, P-268
Vobasonidine, V-184
Vobatricine, V-185
Vobparicine *N*-oxide, V-186
Vobparicine, V-186
Vobtusamine, V-187
Vobtusine lactam, V-188
Vobtusine, V-188
Vobutsine lactone, V-188
Vochysine, V-189
Volicitin, G-108
Volkenin, D-565
Volkensine, P-417
Volutamide A, V-190
Volutamide B, V-191
Volutamide C, V-191
Volutamide D, V-192
Volutamide E, V-193
Vomalidine, A-216
Vomicine, I-12
Vomifoline, P-241
Vomilenine, V-194
Voruscharin, U-53
Vulcanine, M-521
Vulgarobufotoxin, B-394
Vulgaxanthin II, V-195
Vulgaxanthin I, V-195
Vulkacit M, B-79
Vulnibactin, V-96
Vulparine, P-776
Vulracine, V-196
W 45, A-845
Waiakeamide 21-sulfone, H-24
Waiakeamide, H-24
Waianaeamine A, W-1
Waianaeamine B, W-2
Wakamato, B-101
Wakayin, W-3
Wallemia A, W-4
Wallemia B, W-4
Wallemia C, W-5
Wallemia D, W-5
Wallemia E, W-4
Wallemia F, W-5
Waltherine A, W-6
Waltherine B, A-935
Waltherine C, W-7
Waltherione A, W-8
Waltherione B, W-8
Wampocap, P-897
Wanpeinine A, C-298
Warifteine, W-9
Warsine A, D-275
Wasalexin A, W-10
Wasalexin B, W-10
Watasemycin A, W-11
Watasemycin B, W-11
Watasenia oxyluciferin, O-223
Wax C, E-225
Waziristanine, P-16
WB 2838, A-725
Weberidine, T-197
Weberine, T-276
Welwistatin, W-13
Welwitindolinone A isonitrile, W-12
Welwitindolinone B isothiocyanate, W-13
Welwitindolinone C isothiocyanate, W-13
Welwitindolinone D isonitrile, W-14
Westiellamide, C-919
Wewakazole, W-15
WF 14865, A-1308
WF 6237, A-680
WF 11231A, A-1178
WF 14861A, A-1309
WF 14865A, A-1308
WF 16775A_1, A-1535
WF 16775A_2, A-1535
WF 14865B, A-1308
WF 1360B, R-83
WF 1360C, R-83
WF 1360F, R-83
WF 1360, R-83
Whey factor, D-669
Wieland-Gumlich aldehyde *N*-oxide, C-115
Wieland-Gumlich aldehyde, C-115
Wieland-Gumlich diol, R-63
Wilforcidine, T-257
Wilfordconine, P-249
Wilfordine, P-253
Wilfordinine A, P-249
Wilfordinine B, P-249
Wilfordinine C, P-249
Wilfordinine D, P-250
Wilfordinine E, P-250
Wilfordinine F, P-250
Wilfordinine G, P-250
Wilfordinine H, P-250
Wilfordinine I, P-249
Wilfordinine J, P-249
Wilfordlongine, P-249
Wilfordsine, P-249
Wilfordsuine, P-250
Wilforgine, P-252
Wilforidine, P-253
Wilforine, P-252
Wilforjine, P-252
Wilformine, P-252
Wilfornine A, P-253
Wilfornine B, P-253
Wilfornine C, P-253
Wilfornine D, P-253
Wilfornine E, P-253

Wilfornine F, P-247
Wilfornine G, P-247
Wilfornine, P-252
Wilfortrine, P-253
Wilforzine, P-252
Wilfoside G1G, P-610
Willicourtine, A-216
Wilsonine, F-143
Wilsonirine, H-751
Win 11831, A-216
WIN 64745, A-1310
WIN 64821, A-1311
WIN 5512, O-63
Winkleridine, M-325
Winkleriline, M-325
Wintermin, C-417
Wisanidine, W-16
Wisanine, W-17
Withanamide A, H-755
Withanamide B, H-755
Withanamide C, H-755
Withanamide D, H-755
Withanamide E, H-755
Withanamide F, H-755
Withanamide G, H-755
Withanamide H, H-755
Withanamide I, H-755
Withananine, W-18
Withanine, W-19
Withasomnine, D-492
WJ 35, A-1312
WJ 85, A-1313
WJ 85B, A-1313
WK 5344A, F-45
WK 5344B, F-45
Wobezit M, B-79
Wondonine A, W-20
Wondonine B, W-20
Woodinine, W-21
Worenine, W-22
10381W, P-641
Wrightiamine A, C-610
Wrightiamine B, A-883
Wrightine, C-601
WS 1921, A-1314
WS 30581A, A-622
WS 75624A, A-1315
WS 63967A, C-129
WS 9659A, L-76
WS 30581B, A-622
WS 75624B, A-1316
WS 63967B, C-129
WS 9659B, L-76
WS 63967, C-129
WS 30581C, A-622
WS 63967C, C-129
WS 63967D, C-129
WS 63967E, C-129
WS 63967F, C-129
Wuchuyine, W-23
Wuchuyuamide III, W-25
Wuchuyuamide II, W-24
Wuchuyuamide I, W-24
Wuzhuyurutine A, W-26
Wuzhuyurutine B, W-27
Wybutine, W-28
Wybutoxine, W-29
Wye base, W-30
Wyosine, W-30
Wyo, W-30
X 14885A, A-1087
X 14547A, I-64
X 53III, Q-58
X 948, Q-58
Xanthaline, P-77
α-Xantherin, X-1
Xanthevodine, X-2
Xanthiazone, X-3
Xanthicin, X-4
Xanthine, X-5
Xanthiside, X-3
Xanthobaccin A, X-6
Xanthocillin X dimethyl ether, X-7
Xanthocillin X, X-7
Xanthocillin Y_1, X-7
Xanthocillin Y_2, X-7
Xanthocillin, X-7
C-Xanthocurine, X-8
Xanthofagarine, X-9
Xantholipin, X-10
Xanthommatin, X-11
Xanthopetaline, A-954
Xanthoplanine, L-75
Xanthopterin, A-750
Xanthopterincarboxylic acid, X-12
Xanthopterinsulfonic acid, A-750
Xanthoquinic acid, H-726
Xanthoquininamide, H-726
Xanthoquininic acid, H-726
Xanthoraphine, P-319
Xanthosine 5′-(dihydrogen phosphate), X-13
Xanthosine monophosphate, X-13
Xanthosine 5′-phosphate, X-13
Xanthosine 5′-sulfate, X-13
Xanthosine, X-13
Xanthothricin, R-66
Xanthoxoline, T-516
Xanthoxyphylline, T-525
Xanthurenic acid, D-677
Xanthuric acid, D-677
3′-Xanthylic acid, X-13
5′-Xanthylic acid, X-13
Xantocillin, X-7
Xantyrid, X-7
Xenocoumacin 1, X-14
Xenorhabdin 1, A-759
Xenorhabdin 2, A-759
Xenorhabdin 3, A-759
Xenorhabdin 4, A-759
Xenorhabdin 5, A-759
Xenovenine, H-135
Xeranthin, H-519
Xestamine A, X-15
Xestamine B, X-16
Xestamine C, X-17
Xestamine D, X-18
Xestamine E, X-19
Xestamine F, X-15
Xestamine G, X-18
Xestamine H, X-19
Xestoamine, X-20
Xestocyclamine A, X-21
Xestocyclamine B, X-22
Xestomanzamine A, X-23
Xestomanzamine B, X-23
Xestomycin, R-41
Xestosine A, P-290
Xestospongin A, X-24
Xestospongin B, X-25
Xestospongin C, X-24
Xestospongin D, X-24
XK 211, A-1317
XK 101-1, T-658
XL 119, R-32
XMP, X-13
10381X, P-642
X-Pigment, P-319
XR 587, S-571
Xtro, T-632
Xylactam, X-26
Xylaramide, X-27
Xylariamide A, A-724
Xyloallenolide A, X-28
Xylobovatin, C-954
Xyloformycin, F-131
Xylogranatinine, X-29
Xyloguyelline, P-369
Xylopine, A-1066
Xylopinidine, L-68
cis-Xylopinine *N*-oxide, X-30
trans-Xylopinine *N*-oxide, X-30
Xylopinine, X-30
6′-*O*-α-D-Xylopyranosylalangiside, A-239
5-*O*-β-D-Xylopyranosylstreptazolin, S-560
Xylopyrine A, P-29
Xylopyrine B, J-52
Xylostosidine, X-31
7-Xylosylcephalomannine, T-52
7-Xylosyl-10-deacetyltaxol D, T-52
7-Xylosyl-*N*-methyltaxol C, T-52
7-Xylosyltaxol B, T-52
7-Xylosyltaxol C, T-52
7-Xylosyltaxol D, T-52
7-Xylosyltaxol, T-52
XYOTAX, T-52
Y 03559J-A, A-1318
Y 05460MA, A-1319
Y 16482α, S-2
Y 16482β, S-2
Y 16601, S-2
Y 16760, S-2
Yaequinolone A_1, D-422
Yaequinolone A_2, D-422
Yaequinolone B, Y-1
Yaequinolone C, Y-2
Yaequinolone D, P-191
Yaequinolone E, P-193
Yaequinolone F, Y-2
Yaequinolone J_1, Y-3
Yaequinolone J_2, Y-3
Yageine, H-592
Yagonine, Y-4
Yamataimine, B-194
Yanangcorinine, T-407
Yanangine, Y-5
Yaoundamine A, Y-6
Yaoundamine B, Y-6
Yatakemycin, Y-7
Yatrorizine, P-34
Y-base, W-28
YC 73, F-97
YCM 1008A, A-1320
Yemenine A, H-5
Yemenine B, H-6
Yemenine C, H-6
Yemensine, Y-8
Yenhusomidine, R-9
(±)-Yenhusomidine, R-9
Yenhusomine, R-9
Yersiniabactin, Y-9
Yersiniophore, Y-9
Yesodine, H-205
Yesoensine, G-152
Yesoline, Y-10
Yesonine, Y-10
Yesoxine, G-139
Yewtaxan, T-52
Yibeinoside A, C-290
Yibeinoside B, C-290
Yibeinoside C, P-807
Yibeissine, Y-11
YL 03709B-A, D-574
YL 0358M-A, H-77
YL 0358M-B, H-77
YL 02729S, M-491
YM 193221, A-1321
YM 215343, A-1340
YM 216391, A-1322
YM 47522, D-574
YM 30059, M-491
YM 266183, T-383
YM 266184, T-383
YN 0165JA, A-1323
Yobinol, Y-13
Yocon, Y-13
Yohambinine, Y-12
Yohimban-17-ol, Y-16
15,17,19-Yohimbatriene, D-434
Yohimbic acid, Y-13
Yohimbine hydrochloride, Y-13
β-Yohimbine *N*-oxide, Y-13
β-Yohimbine oxindole, Y-14
β-Yohimbine pseudoindoxyl, Y-15
δ-Yohimbine, A-212
α-Yohimbine, Y-13
β-Yohimbine, Y-13
Yohimbine, Y-13
ψ-Yohimbine, Y-13
Yohimbinic acid, Y-13

Yohimbol methosalt, Y-16
Yohimbol, Y-16
Yohimex, Y-13
Yohimvetol, Y-13
Yohydrol, Y-13
Yokonoside, D-539
Yondelis, E-37
YP 02978L-C, L-76
Ypaoamide, Y-17
YSI 40-2, M-177
Yt base, W-30
Y-T 0678H, B-72
Yt, W-30
YUA 001, H-667
Yuanamide, Y-18
Yuanhunine, C-675
Yubeinine, C-290
Yubeiside, C-290
Yuehchukene, Y-19
Yukocitrine, J-59
Yukodine, T-518
Yukodinine, T-518
Yukomine, T-580
Yunaconitine, M-336
Yunnadelphinine, M-321
Yunnandaphnine A, D-33
Yunnandaphnine B, D-33
Yunnandaphnine C, D-33
Yunnandaphnine D, D-33
Yunnandaphnine E, Y-20
Yunnanensine, Y-21
Yunnanxamine, T-52
Yuremamine, Y-22
Yuzifine, J-63
Yuziphine, J-63
Yuzuric acid, D-50
Yuzurimic acid B, D-33
Yuzurimine A, D-33
Yuzurimine B, D-33
Yuzurimine C, Y-23
Yuzurimine D, Y-24
Yuzurimine E, D-33
Yuzurimine, D-33
Yuzurine, D-50
Y-wye, W-28
Z 2055, E-98
Z 203, S-589
Zaidine, P-716
Zaliline, G-91
Zamamistatin, A-157
Zangezurine, Z-1
Zanoxyline, A-1444
Zanthobisquinolone, Z-2
Zanthobungeanine, F-90
Zanthocadinanine A, Z-3
Zanthocadinanine B, Z-3
Zanthodioline, F-90
Zanthomamide, Z-4
Zanthomamine, Z-4
Zanthomuurolanine, Z-3
Zanthonitrile, H-672
Zanthophylline, F-90
Zanthosimuline, Z-5
Zanthosinamide, Z-6
Zanthosin, Z-6
Zanthoxyline, Z-7
Zanthoxyphylline, T-525
1745Z_3A, O-131
Zapotidine, Z-8
Zarzissine, A-829
Zascanol epoxide, Z-9
Zavesca, H-616
Zeagenin, Z-10
Zeanic acid, D-673
Zeanoside A, D-424
Zeanoside B, D-673
Zeanoside C, D-424
Zeatin 2-deoxyribofuranoside, Z-11
cis-Zeatin 9-glucoside, Z-11
cis-Zeatin, Z-11
trans-Zeatin, Z-11
Zeatin, Z-11
Zefbetaine, Z-12
Zeflabetaine, U-34
Zelkovamycin, Z-13
Zem-Eserine, P-400
Zenkerene N^b-oxide, Z-14
Zenkerene, Z-14
Zenkerine N^b-oxide, Z-14
Zenkerine, T-524
Zenkerine, Z-14
Zephyranthine, Z-15
Zeraconine *N*-oxide, Z-16
Zeraconine, Z-16
Zeravschanidine, Z-17
Zeravschanine, H-157
Zeravschanisine, H-189
Zeravschanizine, H-189
Zetekitoxin AB, Z-18
Zeylamine, T-53
ZG 1494α, O-134
Z-gal, B-324
ZHD 0501, A-1324
Zhebeinine, C-298
Zhebeininoside, C-298
Zhebeinone, C-298
Zhebeirine, C-290
Zhengguangmycin A_6, B-236
Z-Hydroxyzinnimidine, C-437
Ziebeimine, C-308
Zierin, H-519
Zierinxyloside, H-519
Zijinlongine, Z-19
Zinnimidine, C-437
Zinolol, T-528
Zippelianine, T-28
Zippeline, Z-20
Zizyphine A, Z-22
Zizyphine B, Z-22
Zizyphine C, Z-23
Zizyphine D, A-18
Zizyphine E, A-18
Zizyphine F, Z-22
Zizyphine G, Z-24
Zizyphine I, Z-21
Zizyphine K, Z-25
Zizyphine N, Z-26
Zizyphine O, Z-26
Zizyphine P, Z-26
Zizyphine Q, Z-27
Zizyphine, Z-22
Zizyphinine, Z-22
Zizyphusine, T-248
Zn-Aspergillin, A-1475
Zoamides, Z-28
Zoanthamide, Z-29
Zoanthamine, Z-30
Zoanthaminone, Z-30
Zoanthenamine, Z-31
Zoanthenol, Z-30
Zoanthoxanthin, P-94
Zongorine, N-30
Zooanemonin, Z-32
Zoolobelin, L-219
Zooxanthellabetaine A, A-792
Zooxanthellamine, Z-30
Zopfiellamide A, Z-33
Zopfiellamide B, Z-34
Zostrix, C-100
ZP-amide A, D-576
ZP-amide B, D-576
ZP-amide C, D-578
ZP-amide D, D-578
ZP-amide E, D-576
ZP-amide F, D-576
Zucapsaicin, C-100
Zucchini factor B, M-730
Zygacine, Z-36
Zygadenilic acid δ-lactone, Z-35
Zygadenine 3-glucoside, Z-36
Zygadenine δ-lactone, Z-35
Zygadenine, Z-36
Zygofabagine, M-426
Zygosporin A, Z-37
Zygosporin D, Z-37
Zygosporin E, Z-37
Zygosporin F, Z-37
Zygosporin G, Z-38
Zyzzin, Z-39
Zyzzyanone A, Z-40
Zyzzyanone B, Z-40
Zyzzyanone C, Z-40
Zyzzyanone D, Z-40

Compound Index Contents

Simple acyclic amine alkaloids with one N
Guanidine alkaloids
Nitriles and isonitriles
Simple isobutylamide alkaloids
Simple amide alkaloids
Azo and azoxy alkaloids
Simple pyrrolidine alkaloids
Chromone alkaloids
Flavonoid alkaloids
Nicotine-like alkaloids
Miscellaneous pyrrolidine alkaloids
Tetramic acids
Tropane alkaloids
Simple pyrrolizidine alkaloids
Pyrrolizidine alkaloids (macrocyclic lactones)
Miscellaneous pyrrolizidine alkaloids
Anabasine-like alkaloids
Lobelia-type alkaloids
Simple piperidine alkaloids incl. piperidides
Xestospongins
Miscellaneous piperidine alkaloids
Lythraceae alkaloids
Quinolizidine alkaloids (two rings)
Quinolizidine alkaloids (three rings)
Quinolizidine alkaloids (four rings)
Cylindricine alkaloids
Miscellaneous quinolizidine alkaloids
Azepine alkaloids
Nicotinic acid derived alkaloids
Other pyridine alkaloids
9B-Azaphenalene alkaloids
Naphthalene-isoquinoline alkaloids
Elaeocarpus alkaloids
Galbulimima alkaloids
Stemona alkaloids
Lycopodium alkaloids
Cytochalasin alkaloids
Indolizidine alkaloids
Simple anthranilic acid alkaloids
Maytansinoid alkaloids
Simple quinoline alkaloids
Furanoquinoline alkaloids
Pyranoquinoline alkaloids
Miscellaneous quinoline alkaloids
Quinazoline alkaloids
Acridone alkaloids
Acridone dimers
Acridone-coumarin dimers
Pyrido[2,3,4-kl]acridines
1,4-Benzoxazin-3-one alkaloids
Benzodiazepine alkaloids
Cryptolepine type alkaloids
Simple phenethylamine alkaloids
α-Hydroxyphenethylamines
Halogenated tyrosinoids
Miscellaneous phenethylamines
Cinnamic acid amides
Securinega alkaloids
Betalain alkaloids
Simple isoquinoline alkaloids
Manzamine alkaloids
Miscellaneous isoquinoline alkaloids
Benzylisoquinoline alkaloids
Pseudobenzylisoquinoline alkaloids
Bisbenzylisoquinoline alkaloids (aryl links only)
Bisbenzylisoquinoline alkaloids (one ether link)
Bisbenzylisoquinolines (one ether/one aromatic link)
Bisbenzylisoquinoline alkaloids (two ether links)
Bisbenzylisoquinoline alkaloids (two ether/one aromatic link)
Bisbenzylisoquinoline alkaloids (three ether links)
Secobisbenzylisoquinoline alkaloids
Cularine group alkaloids
Secoisoquinoline alkaloids
Quettamine alkaloids
Dibenzopyrrocoline alkaloids
Indenobenzazepine alkaloids
Pavine alkaloids
Isopavine alkaloids
Proaporphine alkaloids
Proaporphine-benzylisoquinoline alkaloid dimers
Aporphine alkaloids
Aporphine-benzylisoquinoline alkaloid dimers
Oxoisoaporphine alkaloids
Aristolochic acid alkaloids
Aristolactam alkaloids
Phenanthrene alkaloids
Azaaporphine alkaloids
Azafluoranthrene alkaloids
Morphine alkaloids
Erythrina alkaloids
Dibenzazecine alkaloids
Hasubanan alkaloids
Protoberberine alkaloids
Isoindolobenzazepine alkaloids
Narceine alkaloids
Protopine alkaloids
Rhoeadine alkaloids
Phthalideisoquinoline alkaloids
Spirobenzylisoquinoline alkaloids
Secoberberine alkaloids
Benzo[c]phenanthridine alkaloids
Phenethylisoquinoline alkaloids
Homomorphinandienone alkaloids
Homoaporphine alkaloids
Homoproaporphine alkaloids
Colchicine alkaloids
Cephalotaxus alkaloids
Homoerythrina alkaloids
Apogalanthamine alkaloids
Galanthamine alkaloids
Haemanthidine alkaloids
Graciline alkaloids
Tazettine alkaloids
Pancracine alkaloids
Lycorine alkaloids
Lycorenine alkaloids
Narciclasine alkaloids
Miscellaneous Amaryllidaceae alkaloids
Mesembrenoid alkaloids
Emetine group alkaloids
Phenanthroindolizidine alkaloids
Phenanthroquinolizidine alkaloids
Ericamycins
Simple indole alkaloids
Simple biindoles
Simple tryptamine alkaloids
Cyclotryptamine alkaloids
Chaetocin-like alkaloids
Evodia alkaloids
Indolactam alkaloids
β-Carboline alkaloids
Carbazole alkaloids
Indolo[2,3-a]carbazole and related alkaloids
Indolonaphthyridine alkaloids
Ergot alkaloids
Indoloterpenoid alkaloids
Strictosidine alkaloids
Camptothecine-like alkaloids
Corynanthean alkaloids
Secologanin-derived sesquimer alkaloids
Akageran and related alkaloids
Ajmalicine-like alkaloids
Macroline alkaloids
Malindan alkaloids
Cadamban alkaloids
Vallesiachotaman alkaloids
Gelsemium alkaloids
Yohimbinoid alkaloids
Sarpagine alkaloids
Ajmaline alkaloids
Vobasine alkaloids
Koumine alkaloids
Ervatamia alkaloids
Akuammiline alkaloids
Pleiocarpaman alkaloids
Cinchona alkaloids
Akuammicine alkaloids
Strychnidine alkaloids
Condylocarpan alkaloids
Secodine alkaloids
Aspidosperma alkaloids
Rhazinilam alkaloids
Melonine alkaloids
Quebrachamine alkaloids
Aspidofractine alkaloids
Vindolinine alkaloids
Kopsane alkaloids
Melodinus alkaloids
Iboga alkaloids
Pandoline alkaloids
Pyridocarbazole alkaloids
Ulean alkaloids
Vallesaman alkaloids
Eburna alkaloids
Tacaman alkaloids
Schizozygine alkaloids
Chippiine alkaloids
Secologanin-derived dimer alkaloids
Isoindoles
Tryptoquivalines
Mitomycins
Pyrrolo[4,3,2-de]quinoline alkaloids
Miscellaneous indole alkaloids
Monoterpenoid alkaloids
Sesquiterpene alkaloids
Macrocyclic sesquiterpene alkaloids
Dendrobium alkaloids
Nuphar alkaloids
C19-Diterpenoid alkaloids and 4-nor analogues
C20 Diterpenoid alkaloids (Atisine type)
Erythrophleum alkaloids
Penitrems
Miscellaneous diterpene alkaloids
Sesterterpene alkaloids
Daphniphylline alkaloids
Steroidal alkaloids (salamandra type)
Steroidal alkaloids (jerveratrum type)
Steroidal alkaloids (cerveratrum type)
Steroidal alkaloids (conanine type)
Steroidal alkaloids (spirosolane type)
Steroidal alkaloids (solanidine type)
Steroidal alkaloids (buxus type)
Steroidal alkaloids (pregnane type)
Steroidal alkaloids (cephalostatins/ritterazines)
Miscellaneous steroidal alkaloids
Azaanthracene alkaloids
Azafluorene alkaloids
Pyrazole alkaloids
Imidazole alkaloids
Pyrrole-imidazole alkaloids
Cycloheptadiimidazoles
Oxazole and benzoxazole alkaloids
Isoxazole alkaloids
Spirobenzoxazoline alkaloids
Acyclic thiazole and benzothiazole alkaloids
Latrunculins
Macrocyclic thiazole alkaloids
Pyrazine and quinoxaline alkaloids
Benzo[1,2-b:3,4-b′]dipyrroles
Pyrrolo[1,2-a]pyrazines
Morpholines
Pyrimidines
Ptilocaulins
Triazaacenaphthylene alkaloids

Tetrodotoxins
Phenazine alkaloids
Phenoxazine alkaloids (other than actinomycins)
Simple pyrrole alkaloids
Miscellaneous pyrrole alkaloids
Polyamine alkaloids PA3, PA33 and homologues
Polyamine alkaloids PA4 (putrescines)
Polyamine alkaloids PA5 (cadaverines)
Polyamine alkaloids PA43 (spermidines)
Polyamine alkaloids PA44 (homospermidines)
Polyamine alkaloids PA343 (spermines)
Other 3-residue polyamine alkaloids
Polyamine alkaloids with more than 3 residues
Ansa-peptide alkaloids
Amanita alkaloids
Other cyclopeptide alkaloids
Pyoverdins
Pyrrolo[2,3-d]pyrimidines
Purines
Pteridines and analogues
Saxitoxins
Alkaloidal metal complexes
Naphthyridinomycins
Saframycins
Miscellaneous acyclic alkaloids
Miscellaneous one-ring system alkaloids
Miscellaneous two-ring system alkaloids
Miscellaneous three-ring system alkaloids
Miscellaneous four- and higher-ring system alkaloids
Alkaloids of unknown or partially unknown structure

Type of Compound Index

Simple acyclic amine alkaloids with one N

Acetylcholine(1+), A-47
Actinine, A-126
2-Aminoacetophenone, A-694
2-Amino-14,16-dimethyl-3-octadecanol, A-758
2-Aminoethanesulfinic acid, A-764
2-Aminoethanesulfonic acid, A-765
2-Aminoethanesulfonothioic acid, A-766
2-Aminoethanol, A-767
2-Aminoethyl dihydrogen phosphate, A-768
(2-Aminoethyl)phosphinic acid, A-772
(2-Aminoethyl)phosphonic acid, A-773
4-Amino-4-methyl-2-pentanone, A-839
1-Amino-2-methyl-2-propanol, A-840
8-Amino-7-oxononanoic acid, A-851
14-Aminotetradecanoic acid, A-911
Antibiotic YM 193221, A-1321
Benzylamine, B-84
1,3-Bis[(4-aminomethyl)phenyl]-2-octadecanoylglycerol, B-151
3-(Carboxymethylamino)propanoic acid, C-147
5-[(3-Carboxypropyl)amino]-2-hydroxy-3-tridecyl-1,4-benzoquinone, C-152
Choline, C-419
Crassifoline methine, C-729
2-Cyclohexylethylamine, C-869
Demanyl phosphate, D-197
1,2-Diacylglyceryl-3-(*O*-carboxyhydroxymethyl)choline, D-243
1,2-Diacylglyceryl-*O*-2′-(hydroxymethyl)-*N,N,N*-trimethyl-β-alanine, D-244
4-*O*-(1,2-Diacylglyceryl)-*N,N,N*-trimethylhomoserine, D-245
Diethanolamine, D-388
5,7-Dihydroxy-2-[[1-(4-methoxy-2-oxo-2*H*-pyran-6-yl)-2-phenylethyl]amino]-1,4-naphthoquinone, D-610
Dimethylamine, D-726
2-(Dimethylamino)ethanol, D-730
N-[4-(Dimethylarsinoyl)butanoyl]aminoethylsulfonic acid, D-740
5-Dimethylsulfonio 2-amino-4-hydroxypentanoate, D-784
Echinobetaine A, E-14
Ethylamine, E-233
2-Guanidinoethanesulfinic acid, G-203
1-Heptylamine, H-130
1-Hexylamine, H-261
2-Hydroxybenzylamine, H-415
3-Hydroxybenzylamine, H-416
4-Hydroxybenzylamine, H-417
3,3′-[Iminobis(methylene)]bis-2(3*H*)furanone, I-46
(Iodomethyl)trimethylammonium(1+), I-164
Kuramerine, K-107
Lavendustin A, L-79
N-(2-Methoxy-2-propenyl)trimethylammonium(1+), M-284
Methylamine, M-383
3-Methyl-1-butylamine, M-420
N-(9-Methyldecyl)sulfamic acid, M-431
N-(8-Methylnonyl)sulfamic acid, M-493
N-(7-Methyloctyl)sulfamic acid, M-497
2-Methyl-1-propylamine, M-525
9-(Methylsulfonyl)nonylamine, M-564
3-(Methylthio)propylamine, M-578
12-Methyl-1-tridecylamine, M-579
Muscaridine, M-772
3,3′,3″-[Nitrilotris(methylene)]tris[dihydro-2(3*H*)furanone], N-248
1-Propylamine, P-648
Sinapine, S-308
Tetramethylammonium(1+), T-280
Tribenzylamine, T-457
Trichosanatine, T-494
Trimethylamine oxide, T-601
Trimethylamine, T-600
(2-Trimethylammonioethyl)phosphonic acid betaine, T-602
Trimethyl[3-(methylthio)propyl]ammonium(1+), T-612
Trimethylvinylammonium(1+), T-615
Usimine B, U-54

Guanidine alkaloids

Acanthoine, A-25
3,5-Acarnidine, A-26
(4-Aminobutyl)guanidine, A-719
1-Amino-20-guanidino-4,8,12,16-tetraazaicosane, A-780
1-Amino-16-guanidino-4,8,12-triazahexadecane, A-781
2-Amino-5-[[[[3-(4-hydroxyphenyl)-2-methoxy-2-propenoyl]amino](imino)methyl]amino]-pentanoic acid, A-806
(5-Aminopentyl)guanidine, A-859
(3-Aminopropoxy)guanidine, A-895
Aminozooanemonin, A-928
Antibiotic L 681176, A-1195
Antibiotic SAB 711, A-1238
Antibiotic Sch 40873, A-1245
Antibiotic SF 2425, A-1258
Antibiotic TAN 2020, A-1279
Aplicyanin A, A-1343
Arglecin, A-1419
Argvalin, A-1421
Asterubin, A-1522
Birnbaumin A, B-148
N,N′-Bis(4-guanidinobutyl)oxamide, B-178
N,N-Bis(3-methyl-2-butenyl)guanidine, B-199
Bistellettadine A, B-219
Bluensidine, B-237
4-Bromo-2-(guanidinomethyl)pyrrole, B-319
Canavanosuccinic acid, C-75
Capreomycidine, C-99
Caracasandiamide, C-108
Carnosadine, C-163
Clavamine, C-512
Complanatin, C-592
Copiamycin, C-634
Crambescin A, C-721
Crambescin B, C-722
Crambescin C1, C-723
Crambescin C2, C-724
Creatine, C-731
Cycloanchinopeptolide C, C-840
Dehydrocrambine A, D-155
1,4-Diguanidinobutane, D-400
1,5-Diguanidinopentane, D-401
Distomadine A, D-868
Distomadine B, D-869
Ficellomycin, F-52
Fontaineine, F-124
Fuscusine, F-229
Gongrine, G-140
Guadinomic acid, G-185
Guadinomine A, G-186
Guadinomine C_1, G-187
Guanidine, G-199
Guanidinoacetic acid, G-200
4-Guanidinobutanoic acid, G-201
N-(4-Guanidinobutyl)-2-(4-hydroxyphenyl)-2-oxoacetamide, G-202
2-Guanidinoethanesulfonic acid, G-204
4-Guanidino-3-hydroxybutanoic acid, G-206
5-Guanidino-2-oxopentanoic acid, G-207
3-Guanidinopropanoic acid, G-208
3-Guanidinylpyridine, G-209
Hanasanagin, H-46
Hirudonine, H-305
Hordatine B, H-356
(4-Hydroxybutyl)guanidine, H-432
Kealiinine A, K-24
Laughine, L-71
Limaciamine, L-174
Cypridina Luciferin, L-281
Lysianadioic acid, L-373
Martinelline, M-111
N-(3-Methyl-2-butenyl)guanidine, M-410
Miraziridine A, M-648
Monamidocin, M-682
Monanchorin, M-683
Nephilatoxin 9, N-159
Nicaeensin, N-187
Orthidine A, O-125
Orthidine C, O-126
Orthidine E, O-127
Phloeodictyne B, P-367
Polyandrocarpidine A, P-544
Polyandrocarpidine C, P-545
Pterogynidine, P-769
Purealidin O, P-815
Pyronopaline, P-939
Resorcinomycin A, R-54
Resorcinomycin B, R-55
Rexostatine, R-69
Secomartinelline, S-191
Siphonodictidine, S-324
Spergualin, S-394
Spherophysine, S-406
Stellettazole A, S-507
Stellettazole B, S-508
Stendomycidine, S-527
Stizolamine, S-553
Streptolidine, S-565
Tetrahydrolathyrine, T-199
Triophamine, T-617
N,N′,N″-Tris(3-methylbutyl)guanidine, T-623
Tubastrine, T-656
Verpacamide C, V-79
Verpacamide D, V-80
Viomycidine, V-144
Xenocoumacin 1, X-14

Nitriles and isonitriles

Acacipetalin, A-20
Aleurodisconitrile, A-259
Antibiotic 0089D, A-1155
Antibiotic L 970843, A-1198
Antibiotic SF 2369, A-1257
Antibiotic Y 03559J-A, A-1318
Cyanamide, C-823
Darlucin A, D-77
Darlucin B, D-78
6,7-Dihydroxy-3-isocyano-2*H*-1-benzopyran-2-one, D-599
Diptocarpilidine, D-830
Hemicalyculin A, H-102
3-Isocyano-7,9-bisaboladiene, I-213
Isonitrin A, I-255
Isonitrinic acid E, I-256
Oxazinine 1, O-153
Preoxazinin 7, P-619
Xanthocillin X, X-7

Simple isobutylamide alkaloids

Antibiotic U 106305, A-1299
Asaramide, A-1455
Brachystamide D, B-266
Chingchengenamide A, C-387
2-Methoxy-*N*-(3-methylbutyl)acetamide, M-259

6-(4-Methoxyphenyl)-*N*-(3-methylbutyl)-2-oxo-3,5-hexadienamide, M-281
Nigramide K, N-204
Nigramide N, N-207
Nigramide O, N-208
Pipercallosidine, P-446
Pipercallosine, P-447
Pipgulzarine, P-472
Scabrine, S-113
Spherophysine, S-406

Simple amide alkaloids

Acalyphamide, A-21
Acetamide, A-30
1-(2-Acetamidophenyl)-2-hydroxy-1-propanone, A-32
Acinetoferrin, A-80
Acrodontiolamide, A-117
Ajudazol B, A-219
Amidinomycin, A-692
Anhydroperipentamine, A-1033
Anthelvencin A, A-1077
Antibiotic A 75943, A-1100
Antibiotic BE 52211, A-1130
Antibiotic BE 52211C, A-1137
Antibiotic ECO 02301, A-1161
Antibiotic IC 202A, A-1185
Antibiotic NA 30851A, A-1212
Antibiotic NFAT 68, A-1213
Antibiotic PM 94128, A-1229
Antibiotic Sch 725424, A-1252
Antibiotic SF 2369, A-1257
Antibiotic SF 2768, A-1260
Antibiotic U 62162, A-1298
Antibiotic USF 19A, A-1305
Antibiotic Y 05460MA, A-1319
Antibiotic YN 0165JA, A-1323
Apicularen A, A-1338
Aplysinafulvin, A-1348
Aplysinketal A, A-1353
Aplysinketal B, A-1354
Arboreumine, A-1384
Ariakemicin A, A-1422
Aspergillazine B, A-1473
Aspergillazine D, A-1474
Aspernigrin A, A-1483
Avenanthramide L, A-1564
2-Benzamidobenzoic acid, B-67
Benzastatin A, B-68
Benzylurea, B-97
Bisavenanthramide B_5, B-159
Bisavenanthramide B_6, B-160
N,N′-Bis(2-phenylethyl)urea, B-216
Botryllamide A, B-256
Brefelamide, B-289
N-[3-Bromo-2-(2,3-dibromo-4,5-dihydroxybenzyl)-4,5-dihydroxybenzyl]-*N′*-(3-methoxycarbonylpropyl)urea, B-307
[2-(3-Bromo-4-hydroxyphenyl)ethyl]ethanediamide, B-329
N-(4-Bromophenyl)-2,2-diphenylacetamide, B-344
Capsaicin, C-100
Caracasandiamide, C-108
Cassipoureamide A, C-184
Cassipoureamide B, C-185
Cerulenin, C-286
Cheliensisine, C-359
N-(4-Chlorobutyl)butanamide, C-396
Chondrochloren A, C-422
Ciliatamide A, C-438
Ciliatamide C, C-439
Clathrynamide A, C-497
Clinacoside C, C-526
Coniothyriomycin, C-609
Cordyformamide, C-645
Cruentaren A, C-777
Cruentaren B, C-778
Dambullin, D-12
Dankastatin A, D-15
Daryamide A, D-82
N,N′-Dibenzylurea, D-302
N-(2,3-Dibromo-4,5-dihydroxybenzyl)-*N′*-(3-methoxycarbonylpropyl)urea, D-312
3,5-Dibromo-4-ethoxy-1-hydroxy-4-methoxy-2,5-cyclohexadien-1-acetamide, D-316
3,5-Dibromo-1-hydroxy-4,4-dimethoxy-2,5-cyclohexadiene-1-acetamide, D-318
N-[2-[3,5-Dibromo-4-[3-[(3-methyl-1-oxo-2-butenyl)amino]propoxy]phenyl]ethyl]-4-hydroxybenzeneacetamide, D-333
5,5′′′-Dicapsaicin, D-344
N-[5-[(1,6-Dihydro-2-hydroxy-5-octanamido-6-oxo-3-pyridyl)imino]-1,2,5,6-tetrahydro-2,6-dioxo-3-pyridyl]octanamide, D-450
N-(2,4-Dihydroxy-3,5,6-trimethylbenzoyl)glycine, D-681
3,4-Dimethoxybenzaldehyde *N*-(3,4-dimethoxybenzoyl)hydrazone, D-705
Dimethylformamide, D-747
Dioxolamycin, D-806
Dioxolide A, D-807
N,N′-Diphenylurea, D-818
Diptaline, D-826
Diptamine, D-827
Diptocarpaine, D-828
Diptocarpidine, D-829
Elliptinol, E-69
Entadamide B, E-85
Erythrococcamide A, E-212
Erythrococcamide B, E-213
Erythrococcamide C, E-214
4-Ethyl-2-(hydroxyimino)-5-nitro-3-hexenamide, E-243
Farinosone C, F-11
Fumimycin, F-183
Gerambullin, G-68
Glaucenamide, G-88
Glymontanine A, G-128
Glymontanine B, G-129
Golmaenone, G-138
Guamamide, G-191
N-(4-Guanidinobutyl)-2-(4-hydroxyphenyl)-2-oxoacetamide, G-202
Gymnastatin F, G-229
Gymnastatin L, G-230
Hamigeroxalamic acid, H-44
Himeic acid A, H-282
Himeic acid C, H-283
Hippospongin C, H-297
Hippospongin E, H-298
Homoplatensimide, H-342
4-[(2-Hydroxy-4,5-dimethoxyphenyl)amino]-3-hydroxy-4-oxobutanoic acid, H-466
N-(1-Hydroxyethyl)benzanilide, H-485
N-(2-Hydroxyethyl)cinnamamide, H-488
N-(3-Hydroxy-1-oxocyclopent-2-en-2-yl)-3-(4-hydroxy-3-methoxyphenyl)propenamide, H-651
Icumazole F, I-15
IFB Lactam 1, I-18
Irciniastatin A, I-173
Jordanine, J-47
Justiciamide, J-62
Kalkitoxin, K-7
Korormicin A, K-84
Korormicin B, K-85
Korormicin C, K-86
Korormicin D, K-87
Laccaic acid A_1, L-3
Limaciamine, L-174
Limocrocin, L-178
Lipoxamycin, L-189
Lituarine C, L-217
Longitubanine A, L-256
Lorneamide A, L-262
Malonganenone B, M-75
Melanocin A, M-154
Melanocin B, M-155
Melanocin C, M-156
Melanocrocin, M-157
(4-Methoxyphenyl)-*N*-methyl-2-oxothioacetamide, M-282
Methyl [(acetylamino)oxy]acetate, M-294
4-Methyl *N*-[(2,3-dihydro-2-oxo-1*H*-indol-3-yl)acetyl]aspartate, M-299
[(Methylamino)carbonyl]carbamic acid, M-385
N-Methylformamide, M-463
3-Methyl-2-[(2-nonene-4,6,8-triynoyl)amino]butanoic acid, M-490
N-Methyl-*N*-(2-phenylethenyl)-3-phenyl-2-oxiranecarboxamide, M-509
3-(2-Methylphenyl)-3-oxopropanamide, M-512
N-(2-Methylpropyl)-3-(3-oxo-1-cyclopenten-1-yl)propanamide, M-526
Microsphaerone B, M-601
Mirabilin, M-637
Moiramide A, M-668
Mortivinacin B, M-706
Mortivinacin C, M-707
Neoenactin, N-113
Neoengleromycin, N-114
Nigerloxin, N-194
Niranin, N-235
Norcoronatine, N-291
Nortrachelogenin amide, N-314
Ochrobactin C, O-19
5-Octanoylamino-2,3,6(1*H*)-pyridinetrione, O-62
Oximidine II, O-164
Palmerolide A, P-37
Palmidrol, P-38
Palytoxin, P-42
Penidiamide, P-189
Perspicamide A, P-274
Petrobactin, P-283
Phenalamide A1, P-316
Phenalamide B, P-317
Phenatic acid A, P-318
Phomoenamide, P-375
Physarigin A, P-395
Physarigin B, P-396
Pipyahyine, P-477
Pitiamide A, P-487
Platencin, P-511
Platensimide A, P-512
Platensimycin, P-513
Primocarcin, P-630
Protochelin, P-661
Proximicin A, P-676
Pseudotrienoic acid A, P-730
Pseudotrienoic acid B, P-731
Purealidin O, P-815
Reductiomycin, R-34
Rubesamide, R-142
Sagittamide A, S-15
Saliniketal A, S-26
Salmochelin X, S-33
1,2-Secodysidamide, S-185
Semiplenamide C, S-223
Semiplenamide D, S-224
Semiplenamide E, S-225
Somocystinamide A, S-365
Sorbicillactone A, S-382
Sperabillin C, S-389
Spongiacysteine, S-471
Stellettazole A, S-507
Stephanosporin, S-539
Streptomyceamide A, S-567
Streptomyceamide B, S-568
Stresgenin B, S-575
Suinin, S-632
Sulfinemycin, S-633
Sulfobacin A, S-634
Sulfobacin B, S-635
Synechobactin A, S-657
Taveuniamide E, T-40
Topostin B553, T-430
Topostin D 640, T-431
Trichanthin A, T-478
Trichostatin A, T-496
1,4,5-Trihydroxy-2-cyclopentene-1-carboxamide, T-536
Variceramides, V-25

Azo and azoxy alkaloids

Antibiotic DC 8118A, A-1159
Antibiotic LL-BH872α, A-1199
Deoxyrubroflavin, D-229
Elaiomycin, E-61
Jietacin A, J-38
Jietacin B, J-39
Lyophyllin, L-368
Maniwamycin B, M-85
Valanimycin, V-5

Simple pyrrolidine alkaloids

5-Acetyl-3,4-dihydro-2*H*-pyrrole, A-49
Agaricone, A-175
Amphiasterin C_1, A-932
Amphiasterin C_2, A-933
Antibiotic PI 091, A-1228
Broussonetine I, B-359
Broussonetine R, B-363
Broussonetine U, B-364
Broussonetine W, B-365
Broussonetinine A, B-367
Codonopsine, C-557
Conioidine A, C-607
2,3-Dehydro-β-stachydrine, D-169
3,4-Dihydro-5-propanoyl-2*H*-pyrrole, D-493
3,4-Dihydro-2*H*-pyrrole, D-500
2-(3,4-Dihydro-2*H*-pyrrol-5-yl)pyridine, D-504
2,4-Dihydroxy-3,3,4-trimethyl-5-oxo-2-pyrrolidinecarboxylic acid, D-682
Dysibetaine, D-964
3-Ethyl-2-pyrrolidinone, E-270
Fulvanine A, F-166
Gerrardine, G-72
3-Hydroxy-2,3-dimethyl-5-oxo-2-pyrrolidinecarboxylic acid, H-472
2-(2-Hydroxypropyl)-1-methyl-5-(2-oxopropyl)-pyrrolidine, H-704
5-Hydroxy-2-pyrrolidinone, H-719
3-Hydroxystachydrine, H-740
Hygrine, H-759
Involucratine, I-162
Kainic acid, K-4
Lepiotin A, L-110
Leucoagaricone, L-154
Mescaline succinimide, M-222
3-(Methoxymethylene)-2-pyrrolidinethione, M-266
1-(3-Methylbutyl)-3-pyrrolidinemethanol, M-421
2-Methyl-4-(3-methyl-1-pyrrolidinyl)-1-butanol, M-484
1-Methylpyrrolidine, M-543
1-Methyl-2-pyrrolidinone, M-546
2′,3-(*N*-Methylpyrrolidinyl)hygrine, M-548
2′,4-(*N*-Methylpyrrolidinyl)hygrine, M-549
Morusimic acid B, M-708
Pipercyclamide, P-449
2-Pyrrolidineacetic acid, P-950
1-Pyrrolidinecarboxamide, P-951
Pyrrolidine, P-949
2-Pyrrolidinone, P-956
Sarmentamide B, S-87
Scalusamide A, S-117
Sessiline, S-269
Squamolone, S-487
Uncinine, U-24
Villatamine A, V-104

Chromone alkaloids

Anhydroperipentamine, A-1033
Cassiadinine, C-180
4-(5,7-Dihydroxy-2-methyl-4-oxo-4*H*-1-benzopyran-6-yl)-2-piperidinone, D-629
Isoschumanniophytine, I-314
Rohitukine, R-121
Schumagnine, S-144
Schumannificine, S-145
Schumanniophytine, S-146
Tubastraine, T-654

Flavonoid alkaloids

Aquiledine, A-1369
Capitavine, C-94
Cheliensisine, C-359
Davallioside A, D-91
5,7-Dihydroxy-8-(2-piperidinyl)flavone, D-662
Ficine, F-53
Isoaquiledine, I-190
Isoficine, I-233
Isopiscerythramine, I-267
Kopsirachin, K-81
Lilaline, L-173
Phyllospadine, P-389
Piscerythramine, P-483
Vochysine, V-189

Nicotine-like alkaloids

Cotinine, C-708
Myosmine, M-792

Miscellaneous pyrrolidine alkaloids

Aburatubolactam B, A-17
Acromelic acid A, A-118
Acromelic acid B, A-119
Aglaforbesine A, A-196
Aglaine B, A-199
Aglaxiflorin C, A-201
Aglaxiflorin D, A-202
Althiomycin, A-664
Amathamide A, A-677
Amathamide E, A-678
Amathaspiramide C, A-679
Ampullicin, A-951
Andrimide, A-1004
Antibiotic AB 3217A, A-1112
Antibiotic BE 54476, A-1132
Antibiotic BE 67251, A-1134
Antibiotic BU 4514N, A-1140
Antibiotic F 10C, A-1165
Antibiotic FD 839, A-1168
Antibiotic FR 900148, A-1176
Antibiotic MBP 039-06, A-1204
Antibiotic MBP 049-13, A-1205
Antibiotic SF 2312, A-1256
Antibiotic TAN 1813, A-1278
Antibiotic WS 1921, A-1314
Ascosalipyrrolidinone B, A-1462
Axinellamide, A-1573
Azaspirene, A-1601
Bisavenanthramide B_1, B-157
Bisavenanthramide B_2, B-158
1,1′-[[2,4-Bis(6-methoxy-1,3-benzodioxol-5-yl)-1,3-cyclobutanediyl]dicarbonyl]bispyrrolidine, B-196
Boneratamide A, B-246
Boneratamide B, B-247
Brevigellin, B-295
Broussonetine G, B-360
Broussonetine H, B-361
Broussonetine Z, B-366
Bulgecin A, B-402
Bulgecin B, B-403
Bulgecin C, B-404
Caesalpinine A, C-12
Cantharimide, C-89
Carbonarin C, C-139
Carbonarin D, C-140
Carbonarin E, C-141
Celesticetin, C-239
Chelelactam, C-354
Citridone C, C-480
Cuscohygrine, C-818
Darlinine, D-76
Desdamethine, D-232
2,5-Dialkylpyrrolidines, D-246
Dihydrocuscohygrine, D-413
3,4-Dihydro-5-(5-hexenyl)-2-nonyl-2*H*-pyrrole, D-435
1,5-Dihydro-5-hydroxy-3-methyl-1-(5-oxo-2-pyrrolidinyl)-2*H*-pyrrol-2-one, D-448
1-(2,5-Dihydro-4-methyl-5-oxo-1*H*-pyrrol-2-yl)-4-methyl-5-oxoproline, D-474
1,5-Dihydro-1-[1-oxo-3-(3,4,5-trimethoxyphenyl)propyl]-2*H*-pyrrol-2-one, D-489
3,4-Dihydro-5-(2-pyridinyl)-2*H*-pyrrole-2-carboxylic acid, D-496
Dipiperamide C, D-820
Domoic acid, D-912
Domoilactone A, D-913
Donaxanine, D-915
Dysidamide C, D-966
Dysideapyrrolidone, D-969
Dysidine, D-973
Eliamide, E-65
Epicoccamide, E-88
Epolactaene, E-106
Ethesdanine, E-229
4-Ethoxyhexahydro-3*a*-hydroxy-1*H*-indole-2,6-dione, E-231
Fischerellin A, F-60
Fischerellin B, F-61
Forbagline A, F-127
Fusarin A, F-226
Fusarin C, F-227
Fusarin F, F-228
Gigantamide A, G-74
Heliotropamide, H-96
2-(5-Hexenyl)-3,4-dihydro-5-nonyl-2*H*-pyrrole, H-259
Hopeanine, H-352
Huperzine W, H-387
Hypercratine, H-770
5-Imino-2*H*-pyrrol-2-ol, I-51
Ircinamine, I-171
Isobutyropyrrothine, I-200
Isodomoic acid A, I-228
Isoficine, I-233
Isopiperolein B, I-266
Isothapsakone A, I-335
Jamaicamide A, J-15
Kaitocephalin, K-5
Kikumycin A, K-43
Leptanthine, L-115
Lilaline, L-173
Lucentamycin B, L-275
Lucilactaene, L-283
Makalika ester, M-53
Maltoxazine, M-77
Marine *Streptomyces* $C_{30}H_{38}N_2O_5$ lactam, M-105
Mescaline citrimide, M-220
Mescaline isocitrimide lactone, M-221
Mirabimide E, M-644
Moiramide B, M-669
Munronin D, M-733
Nigramide G, N-201
Nigramide M, N-206
Nordomoic acid, N-297
Orosomycin, O-124
Palasimide, P-17
Palauimide, P-19
Pandamarilactam 3x, P-59
Pandamarilactonine A, P-63
Peripentadenine, P-262
Phygrine, P-384
Piriferine, P-479
Plakoridine A, P-505
Plakoridine B, P-506
Polyandrocarpidine A, P-544
Polyandrocarpidine C, P-545
Polycitrin A, P-559
Ponapensin, P-565
Proferrorosamine B, P-637
Pulchellalactam, P-784
Pyroglutamylglucosamine, P-937
Pyronopaline, P-939
Pyrrocidine B, P-940
Asteronotus cespitosus Pyrrolidone, P-959
Sargassumlactam, S-85
Saussureamine A, S-105
Saussureamine D, S-107

Schizokinen A, S-134
Spiroarogenic acid, S-424
Spirostaphylotrichin E, S-459
Spirostaphylotrichin G, S-460
Spirostaphylotrichin K, S-461
Spirostaphylotrichin M, S-462
Spirostaphylotrichin O, S-463
Spirostaphylotrichin Q, S-464
Spirostaphylotrichin R, S-465
Spirostaphylotrichin S, S-466
Spirostaphylotrichin T, S-467
Subereatensin, S-620
Synerazol, S-660
Terragine A, T-99
Terragine B, T-100
Thapoxepine A, T-348
Thapsakin B, T-349
Thiomycin, T-390
Tinctormine, T-413
Trikendiol, T-592
Triticone A, T-625
Turrapubesin B, T-686
Variotin, V-34
Vasicol, V-39
Vibrioferrin, V-97
Violacein, V-142
Viomycidine, V-144
Viriditin, V-155
Ypaoamide, Y-17
Zopfiellamide B, Z-34

Tetramic acids

Aburatubolactam A, A-16
3-Acetyl-5-benzyl-2,4-pyrrolidinedione, A-43
Aflastatin A, A-168
Altamycin A, A-659
Alteramide A, A-661
Altersetin, A-663
Amycomycin, A-958
Anchinopeptolide A, A-976
Ancorinoside A, A-994
Ancorinoside B, A-995
Ancorinoside C, A-996
Ancorinoside D, A-997
Antibiotic 2158, A-1084
Antibiotic AB 4015B, A-1113
Antibiotic AB 4063B, A-1114
Antibiotic CJ 17572, A-1149
Antibiotic CJ 21058, A-1150
Antibiotic F 1778, A-1163
Antibiotic FD 838, A-1167
Antibiotic L 755807, A-1197
Antibiotic LL-49F233α, A-1201
Antibiotic NG 391, A-1215
Antibiotic PF 1052, A-1225
Antibiotic Sch 210971, A-1250
Antibiotic TAN 883, A-1274
Antibiotic TAN 1263, A-1275
Antibiotic TMC 260, A-1290
Apiodionene, A-1339
Aurantoside A, A-1550
Aurantoside C, A-1551
Aurantoside E, A-1552
Aurantoside F, A-1553
Aurantoside G, A-1554
5-Benzyl-2,5-dihydro-4-hydroxy-3-(2,4,6-octatrienoyl)-1*H*-pyrrol-2-one, B-85
5-Benzyl-3-(2,4,6,8,10-dodecapentaenoyl)-2,5-dihydro-4-hydroxy-1*H*-pyrrol-2-one, B-87
Blasticidin A, B-230
Bripiodionene, B-298
Cinnabaramide D, C-450
Cinnabaramide F, C-451
Cissetin, C-468
Coniosetin, C-608
Cryptocin, C-784
Cylindramide, C-924
Delaminomycin A, D-179
Discodermide, D-844
Epicoccarine B, E-89
Equisetin, E-142
Erythroskyrin, E-217
Fuligorubin A, F-165
Harzianic acid, H-67
Integramycin, I-158
Isodomoic acid G, I-229
Janolusimide, J-18
Lactacystin, L-6
α-Lipomycin, L-186
Lydicamycin, L-353
Macrocidin A, M-13
Magnesidin, M-42
Malonomicin, M-76
Militarinone B, M-611
Myceliothermophin A, M-783
Nocamycin I, N-264
Nortenuazonic acid, N-311
Oleficin, O-79
Oteromycin, O-134
Oxasetin, O-150
Pachydermin, P-5
Penicillenol A_1, P-188
Phomasetin, P-373
Physarorubinic acid A, P-397
Physarorubinic acid B, P-398
Polycephalin C, P-555
Pramanicin, P-584
Preapiodionene, P-589
Ravenic acid, R-30
Rubroside G, R-153
Rubroside H, R-154
Spylidone, S-484
Streptolydigin, S-566
Tenuazonic acid, T-74
Tirandalydigin, T-416
Tirandamycin A, T-417
Vancoresmycin, V-17
Vermelhotin, V-76
Vermisporin, V-77
Xanthobaccin A, X-6
Zopfiellamide A, Z-33

Tropane alkaloids

6-Angeloyloxyditropan-3-yl itaconate, A-1008
Apoatropine, A-1359
Apohyoscine, A-1364
8-Azabicyclo[3.2.1]octane-2,6-diol, A-1582
Belladonnine, B-56
Bonabiline A, B-244
Brugine, B-369
Chalcostrobamine, C-341
Consiculine, C-622
Convolvidine, C-632
Convolvine, C-633
Darlingine, D-75
Fastudine, F-19
Fastunine, F-20
Fastusidine, F-21
Ferrugine, F-46
Grahamine, G-153
Merresectine C, M-207
Merresectine D, M-208
Merresectine F, M-209
8-Methyl-8-azabicyclo[3.2.1]octan-3-one, M-394
Mooniine A, M-700
Physoperuvine, P-399
Schizanthine A, S-129
Schizanthine E, S-130
Schizanthine G, S-131
Schizanthine X, S-128
Scopadonnine, S-157
Scopine, S-158
Scopoline, S-160
Strobamine, S-586
Strobiline, S-587
Subhirsine, S-622
3α-(4,4,4-Trichloro-2-butyryloxy)tropane, T-479
α-Truxilline, T-634
β-Truxilline, T-635

Simple pyrrolizidine alkaloids

Crotalaria goreensis Alkaloid C, A-437
Jacmaia incana Alkaloid, A-307
Amabiline, A-669
Anchustrigosine, A-977
Anodendrine, A-1065
Antibiotic CJ 16264, A-1147
Antibiotic CJ 16367, A-1148
Antibiotic UCS 1025B, A-1301
Assamicadine, A-1507
Bohemamine, B-242
Broussonetine N, B-362
Callimorphine, C-36
Cornucervine, C-655
Crotalarine lactone, C-772
Crotanecine, C-775
Cruentine A, C-779
Cruentine B, C-780
Curassavine, C-810
Danaidal, D-14
Dihydroxytriangularine, D-680
Doriasenine, D-922
Echihumiline, E-10
Echimidine, E-11
Echinatine, E-12
Echiumine, E-31
Echiupinine, E-32
Epohelmin A, E-105
1,2-Epoxy-1-hydroxymethylpyrrolizidine, E-133
N-Ethylhastanecine trachelanthate, E-241
Europine, E-299
Floridimine, F-92
Grandifoline, G-158
Hackelidine, H-4
Heliospathuline, H-93
Heliosupine, H-94
Heliotrine, H-95
1-Hydroxymethylpyrrolizidine methyl 2-*O*-acetyl-2-isopropylmalate, H-631
Indicine, I-68
Indicinine, I-69
Intermedine, I-160
Ipanguline D_3, I-166
Jenamidine B, J-34
Keitine, K-28
Lankongensisine A, L-32
Lankongensisine B, L-33
Lasiocarpine, L-47
Lithosenine, L-212
Loline, L-234
Loroquine, L-263
Megalanthonine, M-146
Minalobine O, M-626
Minalobine R, M-627
3-(8-Nonenyl)-5-(1-propenyl)pyrrolizidine, N-284
Otonecine, O-136
Paludosine, P-39
Planchonelline, P-510
Procerine, P-632
Punctanecine, P-798
Retronecine 9-(2,3-dihydroxy-2-hydroxymethylbutanoate) 7-senecioate, R-61
Sarracine, S-90
Scorpioidine, S-163
Strigosine, S-585
Trachelanthamine, T-443
Triangularine, T-454
Uplandicine, U-40

Pyrrolizidine alkaloids (macrocyclic lactones)

Adonifoline, A-148
Anacrotine, A-967
Aucherine, A-1538
Axillarine, A-1572
Bisline, B-194
Bulgarsenine, B-401
Callosine, C-39
Clivorine, C-533
Croaegyptine, C-760
Croalbidine, C-761
Crobarbatine, C-762

Crocandine, C-764
Cronaburmine, C-767
Cropodine, C-768
Crosemperine, C-769
Crotafoline, C-770
Crotalarine, C-771
Crotaleschenine, C-773
Crotananine, C-774
Dicrotaline, D-363
Emiline, E-73
Erucifoline, E-184
8-Ethoxy-3-oxo-1,2-dehydroretrorsine, E-232
Fulvine, F-168
Grantaline, G-167
Grantianine, G-168
Gynuramine, G-233
Hastacine, H-69
Helindicine, H-92
Inaequidenine, I-55
Jacobine, J-2
Jacoline, J-3
Jaconine, J-4
Ligularine, L-169
Ligularizine, L-170
Madurensine, M-36
17-Methylparsonsianidine, M-502
Monocrotaline, M-688
Nemorensine, N-89
Nilgirine, N-219
Onetine, O-92
Otosenine, O-137
Parsonsianidine, P-96
Parsonsianine, P-97
Parsonsine, P-98
Petasitenine, P-277
Platyphylline, P-516
Pterophorine, P-770
Retrorsine, R-62
Retusamine, R-64
Retusine, R-65
Rosmarinine, R-133
Sceleratine, S-122
Senaetnine, S-232
Seneciocannabine, S-237
Senecionine, S-238
Senecioracenine, S-239
Seneciphylline, S-240
Senecivernine, S-241
Senkirkine, S-245
Swazine, S-651
Syneilesine, S-658
Trichodesmine, T-488

Miscellaneous pyrrolizidine alkaloids

Senecio renardi Alkaloid 4, A-332
Alkaloid S-F, A-599
Cytisus laburnum Alkaloid, A-285
Gynura segetum Alkaloid, A-303
Heliotropium europaeum Alkaloid, A-304
Senecio borysthenicus Alkaloid, A-331
Antibiotic PF 1018, A-1224
Campestrine, C-64
Carategine, C-118
Cassipourine, C-186
2,3-Dihydro-1-oxo-1*H*-pyrrolizine-3-carboxylic acid, D-488
Franchetine, F-148
Graminifoline, G-154
Ligudentine, L-168
Lolidine, L-232
Senecio doria Necine base, N-86
Nitropolyzonamine, N-252
Norsenecicaudatin 9-*O*-senecioate, N-309
Paucicaline, P-127
Pictumine, P-420
Ruzorine, R-173
Salinosporamide C, S-29
Senecicaudatinal hemiacetal, S-236
Spiropyrrolizidine 252, S-437
Talarotoxin, T-17
Thelepogine, T-354
Thesine, T-364
Turkestanine, T-683
Yuremamine, Y-22

Anabasine-like alkaloids

Anabasamine, A-963
Astrocasine, A-1524
Astrophylline, A-1525
2,3′-Bipyridine, B-145
Gramodendrine, G-155
Jussiaeiine A, J-61
1′,3,4,4′,5,5′,6,6′-Octahydro-2,3′-bipyridine, O-40
3,4,5,6-Tetrahydro-2,3′-bipyridine, T-144
Virgidivarine, V-150

Lobelia-type alkaloids

Andrachcinidine, A-1000
Aspertine B, A-1487
8,10-Diethyllobelidiol, D-391
Dihomosedinone, D-403
Homosedinone, H-347
2-(2-Hydroxybutyl)-6-(2-hydroxypropyl)-1-methylpiperidine, H-434
Lobinaline, L-220
Lobinanidine, L-221
Pyrrolsedamine, P-970
Sederine, S-211
Sediene, S-213
Sedinine, S-214
Sedinone, S-215

Simple piperidine alkaloids incl. piperidides

6-Acetyl-1,2,3,4-tetrahydropyridine, A-76
Cassia Alkaloid D, A-477
5-Amino-5-deoxygalactose, A-726
5-Amino-5-deoxyglucose, A-727
5-Amino-5-deoxymannose, A-728
Anahygrine, A-971
Anatalline, A-973
Andrachcinidine, A-1000
Awaine, A-1568
Azcarpine, A-1604
Azimine, A-1608
Batzellaside A, B-49
Batzellaside B, B-50
Batzellaside C, B-51
Calyxamine A, C-60
Carpaine, C-168
3-Chloro-4-hydroxy-2-piperidinone, C-408
Ciliatamide C, C-439
Corydendramine A, C-680
Coumaperine, C-710
Cryptophorine, C-788
Cryptophorinine, C-789
Dienomycin C, D-386
5,6-Dihydro-2(1*H*)-pyridinone, D-495
1-Ethyl-3-(2-methylbutyl)piperidine, E-253
Girgensonine, G-80
Haloxyline B, H-39
Hoveine, H-365
2-Iminopiperidine, I-49
Irnigaine, I-177
Juliprosine, J-57
Jussiaeiine A, J-61
Lansamide 2, L-39
Leptophyllin A, L-119
Leptophyllin B, L-120
2-Methyl-6-(8-heptadecenyl)piperidine, M-470
2-Methyl-6-nonylpiperidine, M-492
1-Methylpiperidine, M-515
Micropine, M-600
Morusimic acid D, M-709
7-Oxa-3-azabicyclo[4.1.0]heptan-2-one, O-146
8-[(2-Oxo-3-piperidinyl)amino]-8-oxooctyl 5,9-anhydro-2,3,8-trideoxy-8-(5-hydroxy-4-methyl-2-hexenyl)-3-methyl-DL-*glycero*-LD-*allo*-non-2-enoate, O-197
Penasulfate A, P-178
6-Pentyl-3-piperidinol, P-236
Pipbinine, P-441
Piperettine, P-452
1-Piperidinecarboxaldehyde, P-455
Piperidine, P-454
4-Piperidinone, P-459
Pipernonaline, P-464
Piperpense, P-468
Pipertipine, P-470
Piperundecalidine, P-471
Pipsaeedine, P-475
Pleurospermine, P-522
Prosopine, P-656
Pseudodistomin B, P-712
Pseudodistomin F, P-713
Secojuliprosopinal, S-188
Smipine, S-330
Spicigerine, S-409
Sulphostin, S-639
1,2,3,4-Tetrahydro-6-propanoylpyridine, T-217
2,2,6,6-Tetramethyl-4-piperidinone, T-283
Uoamine A, U-38

Xestospongins

Aragupetrosine A, A-1371
Araguspongine C, A-1372
Araguspongine F, A-1373
Araguspongine J, A-1374
Petrosine, P-290
Upenamide, U-39
Xestospongin A, X-24
Xestospongin B, X-25

Miscellaneous piperidine alkaloids

Actiketal, A-124
Actiphenol, A-129
Anthosamine A, A-1079
Antibiotic 593A, A-1089
Antibiotic BR 040, A-1139
Antibiotic HA 23, A-1184
Antibiotic L 654040, A-1194
Antibiotic NK 30424A, A-1216
Antibiotic SB 219383, A-1241
Arenosclerin A, A-1404
Arenosclerin E, A-1405
Awajanomycin, A-1569
Azaspiracid 1, A-1600
Banyaside A, B-18
Banyaside B, B-19
1,1′-Bipiperidine, B-141
2,4-Bis(2-methoxy-4,5-methylenedioxyphenyl)-1,3-cyclobutanecarboxylic acid dipiperidide, B-198
Broussonetine I, B-359
Calvine, C-41
Campedine, C-63
Carpaine, C-168
Cenocladamide, C-245
Cepaciamide A, C-247
Cepaciamide B, C-248
Chabamide, C-316
Cortamidine oxide, C-664
Cycasthioamide, C-831
Cycloguineense A, C-866
Decahydro-8-(1-piperidinylmethyl)isoquinoline, D-113
5,8-Dihydro-1,8,8-trimethyl-1*H*-pyrano[3,4-*b*]pyridine-4,6-dione, D-524
Dioscorine, D-798
Dipiperamide A, D-819
Dipiperamide C, D-820
Dipiperamide D, D-821
Dipiperamide E, D-822
Dorrigocin A, D-923
Dorrigocin B, D-924
Dumetorine, D-951
Epiderstatin, E-92
Fagopyrine, F-6
Flabelliformine, F-74
Grandisine G, G-166
Griffithine, G-176

Haliclamine B, H-16
Haliclonacyclamine A, H-19
Halicyclamine A, H-22
Halicyclamine B, H-23
Isomigrastatin, I-245
Juliflorine, J-56
Julocrotine, J-58
Kopsone, K-82
Kuraramine, K-108
Lactimidomycin, L-7
4-(1-Methyl-2-piperidinyl)-β-carboline, M-518
9-Methylstreptimidone, M-561
Migrastatin, M-606
Myrionine, M-797
Nigramide A, N-196
Nigramide B, N-197
Nigramide C, N-198
Nigramide D, N-199
Nigramide E, N-200
Nigramide G, N-201
Nigramide H, N-202
Nigramide I, N-195
Nigramide J, N-203
Nigramide K, N-204
Nigramide L, N-205
Nigramide M, N-206
Nigramide N, N-207
Nigramide P, N-209
Nigramide Q, N-210
Nigramide R, N-211
Nigramide S, N-212
Nupharamine, N-340
Pandamarilactone 1, P-60
Pandamarilactone 31, P-61
Pandamarilactone 32, P-62
Pinnaic acid, P-435
Piperchabamide C, P-448
Pipercyclobutanamide A, P-450
Pipercyclobutanamide B, P-451
Pipermethystine, P-463
Piplartine, P-473
Polonicumtoxin C, P-539
Pulcherrimine, P-787
Quinaldopeptin, Q-11
Sesbanimide C, S-261
Sollasin B, S-356
Streptimidone, S-563
Streptovitacin D, S-574
Strictimine, S-581
2,3,4,5-Tetrahydro-6-(1-propenyl)pyridine, T-218
Trichoponamic acid, T-493
Tubastraine, T-654

Lythraceae alkaloids

Heimine, H-89
Lagerine, L-11
Lasubine I, L-53
Lythramine, L-376
Lythrancine I, L-377
Lythranidine, L-378
Lythrumine, L-379
Sarusubine A, S-91
Verticillatine, V-88
Vertine, V-95

Quinolizidine alkaloids (two rings)

Aphyllic acid, A-1335
Cadiamine, C-8
Cermizine D, C-284
Clathryimine A, C-496
Clavepictine B, C-513
7-Demethyldeoxynupharidine, D-201
Deoxynupharidine, D-227
1-Ethyl-4-(4-pentynyl)quinolizidine, E-264
1-Ethyl-4-(2-propenyl)quinolizidine, E-265
Himeradine A, H-284
Homopumiliotoxin 321B, H-344
Homopumiliotoxin 223G, H-345
4-Hydroxyepilupinine, H-482
Lasubine I, L-53
Leontiformine, L-97
Mamanine, M-79
1-Methyl-4-(2-penten-4-ynyl)quinolizidine, M-507
Pictamine, P-418
Plumerinine, P-526
Pohakuline, P-538
Sarusubine A, S-91
Senepodine A, S-242
Senepodine G, S-243
Senepodine H, S-244
Sophoattarine, S-370
Sopholupanizidone, S-374

Quinolizidine alkaloids (three rings)

Albine, A-243
Alkaloid LC2, A-554
12-Cytisineacetic acid, C-939
5-(12-Cytisinylmethyl)-6-hydroxylupanine, C-940
Dimethamine, D-704
Hupeol, H-372
3-Hydroxy-11-norcytisine, H-644
12,12′-Methylenedicytisine, M-441
Sophoattarine, S-370
Sophohejrine, S-373
Sophorasine A, S-378
Sophosalimine, S-381
Tetrahydrocytisine, T-149
Thermopsidine, T-362
Tinctorine, T-412
Tonkinensine A, T-428
Tonkinensine B, T-429
Tsukushinamine A, T-651
Virgilidone, V-152

Quinolizidine alkaloids (four rings)

Chamaecytisus Alkaloid C_1, A-432
Ammodendron karelinii Alkaloid, A-271
Cytisus ruthenicus Alkaloid, A-286
Aloperine, A-637
Anagyrine, A-970
Aphylline, A-1337
Baptifoline, B-20
Calpurmenine, C-40
Camoensidine, C-61
Camoensine, C-62
Clathrotropine, C-495
Conolline, C-619
5-(12-Cytisinylmethyl)-6-hydroxylupanine, C-940
Darvasamine, D-79
Darvasine, D-80
Darvasoline, D-81
Dasycarpine, D-85
5,6-Dehydrolupanine, D-161
11,12-Dehydrosparteine, D-168
10,13-Dihydroxylupanine, D-608
10,17-Dioxosparteine, D-810
Dithermamine, D-871
11-Epileontidane, E-94
Goebeline, G-137
Hydroxyaphylline, H-405
13-Hydroxylupanine, H-554
12-Hydroxy-16-methoxy-11,12,13,14-tetradehydrocamoensine, H-571
10-Hydroxymethylsparteine, H-634
7-Hydroxysparteine, H-738
Isoleontalbine, I-241
Isomatrine, I-244
Lehmannine, L-81
Leontalbinine, L-94
Leontismidine, L-98
Leontismine, L-99
Matrine, M-121
Monspessulanine, M-695
Multiflorine, M-731
Ormosine, O-116
17-Oxolupanine, O-188
Podopetaline, P-529
Retamine, R-56
Sophazrine, S-369
Sophocarpine, S-371
Sophohejrine, S-373
Sopholupanizidone, S-374
Sophoramine, S-376
Sophoranol, S-377
Sophorbenzamine, S-379
Sophosalimine, S-381
Templetine, T-68
Termine, T-89
Thermopsamine, T-361
Virgiline, V-153

Cylindricine alkaloids

Cohirsine, C-563
Cohirsinine, C-564
Cohirsitinine, C-566
Cylindricine B, C-925
Cylindricine G, C-927
Cylindricine J, C-928
Fasicularine, F-15
Lepadiformine B, L-102
Polycitorol A, P-557
Polycitorol B, P-558

Miscellaneous quinolizidine alkaloids

Sophora Alkaloid 9, A-333
Chamaecytisus Alkaloid C_2, A-433
Alkaloid LC7, A-555
Alkaloid LV1, A-561
Lupinus Alkaloid P1, A-577
Lupinus Alkaloid P2, A-578
Antibiotic A 58365B, A-1104
Argentinamine, A-1411
Argentine, A-1412
Halichlorine, H-13
Homopiptanthine, H-341
Homothermopsine, H-349
Lupilaxine, L-303
Ormojanine, O-114
Ormosinine, O-117
Panamine, P-53
Saraine 1, S-69
Saraine 2, S-70
Saraine 3, S-71
Sarothamnine, S-88
Virgilidine, V-151

Azepine alkaloids

Aaptosamine, A-3
Amamistatin A, A-672
Antibiotic A 500359A, A-1102
Balanol, B-9
Bengamide K, B-59
Bengamide Z, B-60
Capuramycin, C-103
Chalciporone, C-340
Circinatin, C-462
4,8-Diphenyl-5*H*-1,3-dioxolo[4,5-*d*]azepine-5,7(6*H*)-dione, D-816
Drazepinone, D-934
Formobactin, F-130
Isobengamide E, I-195
Montiporyne E, M-698
Muscaflavin, M-770
Mycobactin T, M-788
Periconin B, P-258
Peritoxin A, P-266
Sollasin C, S-357

Nicotinic acid derived alkaloids

Anatalline, A-973
3-Butylpyridine, B-444
3-Carboxy-1-(carboxymethyl)pyridinium betaine, C-144
3-Carboxy-1-methylpyridinium betaine, C-149
Euphosalicin, E-295
Himeic acid C, H-283

Metanicotine, M-232
4-Methyl-2,3′-bipyridine, M-403
4-Methyl-3,3′-bipyridine, M-404
5-Methyl-2,3′-bipyridine, M-405
Miniatine, M-629
Precatorine, P-593
3-Pyridinecarboxamide, P-895
3-Pyridinecarboxylic acid, P-897
2,3-Pyridinedicarboxylic acid, P-900
Ricinidine, R-95
Ricinine, R-96
Rubradirin B, R-146
1,2,5,6-Tetrahydro-1-methyl-3-pyridinecarboxylic acid, T-205
1,2,3,6-Tetrahydro-4-pyridinecarboxylic acid, T-222
1,2,5,6-Tetrahydro-3-pyridinecarboxylic acid, T-223

Other pyridine alkaloids

Acalyphin, A-22
2-Acetyl-4-methylpyridine, A-63
2-Acetyl-6-methylpyridine, A-64
3-Acetyl-2-methylpyridine, A-65
3-Acetyl-4-methylpyridine, A-66
4-Acetyl-2-methylpyridine, A-67
4-Acetyl-3-methylpyridine, A-68
5-Acetyl-2-methylpyridine, A-69
4-Acetyl-6-methyl-2(1*H*)-pyridinone, A-70
2-Acetylpyridine, A-73
Acremolactone B, A-111
Acromelic acid A, A-118
Acromelic acid B, A-119
Agelongine, A-193
Akanthomycin, A-224
Aleicide B, A-257
Aleicide C, A-258
Alkaloid CB2, A-458
Alkaloid LA 4, A-548
Alkaloid LA 5, A-549
Alkaloid LA 6, A-550
Alkaloid LA 9, A-551
Callyspongia fibrosa Alkaloid, A-281
2-Amino-4,6-dichloropyridine, A-729
2-Amino-4-methylpyridine, A-845
4-Amino-2,3-pyridinedicarboxylic acid, A-901
Amphikuemin, A-943
Amphimedoside A, A-945
Amphimedoside B, A-946
Amphimedoside C, A-947
Amphimedoside E, A-948
Amphitoxin, A-950
4,6′-Anhydrooxysporidinone, A-1031
Anibine, A-1037
Antibiotic A 33853, A-1098
Antibiotic B 90063, A-1123
Antibiotic CJ 16196, A-1146
Antibiotic CJ 16170, A-1142
Antibiotic CJ 16171, A-1143
Antibiotic CJ 16173, A-1144
Antibiotic CJ 16174, A-1145
Antibiotic NG 311, A-1214
Antibiotic NK 170204B, A-1217
Antibiotic PF 1140, A-1226
Antibiotic SPF 32629A, A-1266
Antibiotic SPF 32629B, A-1267
Antibiotic TMC 69, A-1289
Antibiotic WS 75624A, A-1315
Antibiotic WS 75624B, A-1316
Apiosporamide, A-1340
Arecolidine, A-1400
Aspernigrin A, A-1483
Aspernigrin B, A-1484
Aspyridone A, A-1506
Austrodimerine, A-1557
Bassianin, B-28
2,3′-Bipyridine, B-145
Bongardine, B-248
Buchananine, B-376
5-(3-Butenyl)-2-pyridinecarboxylic acid, B-425
5-Butyl-2-pyridinecarboxylic acid, B-445
2-Butyl-3,4,5,6-tetrahydropyridine, B-446
Caerulomycin D, C-10
Caerulomycin E, C-11
Caerulomycin, C-9
Carbonarone B, C-142
3-(2-Carboxyethyl)-1,4-dimethylpyridinium, C-146
2-Carboxy-1-methylpyridinium betaine, C-148
Cerpegin, C-285
Citridone A, C-478
Citridone B, C-479
Citridone D, C-481
Collismycin C, C-575
Collismycin D, C-576
Collismycin E, C-577
Collismycin F, C-578
Colubricidin A, C-579
Cordypyridone A, C-646
Cordypyridone D, C-647
Cortamidine oxide, C-664
Cribrochalinamine oxide A, C-738
Cribrochalinamine oxide B, C-739
5-Decanoyl-2-nonylpyridine, D-116
Decaturin A, D-127
Decaturin D, D-128
7-Demethylpiericidin A_1, D-203
Desferroferrithiocin, D-235
Desmotrichinine, D-238
3,5-Didecanoylpyridine, D-371
N-[5-[(1,6-Dihydro-2-hydroxy-5-octanamido-6-oxo-3-pyridyl)imino]-1,2,5,6-tetrahydro-2,6-dioxo-3-pyridyl]octanamide, D-450
5,6-Dihydro-3-[2-(4-hydroxyphenyl)-2-oxoethyl]-2(1*H*)-pyridinone, D-456
5,6-Dihydro-3-[2-(1*H*-indol-3-yl)-2-oxoethyl]-2(1*H*)-pyridinone, D-468
5,6-Dihydro-*N*-[3-(7-methoxy-1,3-benzodioxol-5-yl)-2-propenoyl]-2(1*H*)-pyridinone, D-470
3,4-Dihydro-5-(2-pyridinyl)-2*H*-pyrrole-2-carboxylic acid, D-496
2-(3,4-Dihydro-2*H*-pyrrol-5-yl)pyridine, D-504
5,6-Dihydro-3,6,6-trimethyl-7*H*-2-pyrindin-7-one, D-525
3-(2,6-Dihydroxy-4-methoxybenzoyl)pyridine, D-609
3,4-Dihydroxy-2-methylpyridine, D-632
N-(2,5-Dihydroxyphenyl)pyridinium(1+), D-655
1,1′-Dimethyl-3,3′-bipyridinium(2+), D-743
2,6-Dimethylpyridine, D-775
Cortinarius Disulfide, D-870
3-Dodecylpyridine, D-899
Echinoclathrine A, E-16
Echinoclathrine C, E-17
Epipyridone, E-101
5-Ethyl-2-methylpyridine, E-256
3-Ethylpyridine, E-268
Farinosone A, F-10
Fischerin, F-62
Fontaphilline, F-125
Fruit rot toxin A, F-162
Funiculosin, F-197
Fusaricide, F-225
Gostatin, G-146
Griffithine, G-176
Guaipyridine, G-190
3-Guanidinylpyridine, G-209
Guayulamine A, G-216
Guayulamine B, G-217
Halfordinol, H-12
Haliclamine C, H-17
Haliclamine D, H-18
Halitoxin, H-32
Hermidin, H-146
3-Hexylpyridine, H-267
5-(4-Hydroxybenzyl)-2-pyridinecarboxylic acid, H-426
5-Hydroxy-2-(hydroxymethyl)pyridine, H-515
6-Hydroxy-5-methoxy-1-methyl-2,3,4(1*H*)-pyridinetrione, H-562
1-Hydroxy-5-methoxy-6-methyl-2(1*H*)-pyridinone, H-563
4-(Hydroxymethyl)-6-methyl-2,3,5-pyridinetriol, H-608
3-Hydroxy-6-methyl-2-(11-oxododecyl)pyridine, H-612
4-Hydroxy-2-methylpyridine, H-625
5-Hydroxy-2-pyridinecarboxylic acid, H-710
Ikimine A, I-24
Ikimine B, I-25
Ikimine D, I-26
Ilicicolin H, I-28
Indigoidin, I-70
Iromycin A, I-179
Iromycin C, I-180
Isoflavipucine, I-234
1-(8-Isoquinolinylmethyl)pyridinium(1+), I-308
Jussiaeiine A, J-61
Kedarcidin, K-26
Kuraramine, K-108
Latindine, L-58
Leporine A, L-112
Lycopladine A, L-338
Macaridine, M-2
Mamanine, M-79
Melochinine, M-184
4-Methoxy-7,8-dimethyl-2*H*-pyrano[4,3-*b*]pyridin-2-one, M-250
6-Methoxy-3-(1-propenyl)-2-pyridinecarboxylic acid, M-283
2-Methylpyridine, M-537
1-(5-Methyl-3-pyridinyl)-1-decanone, M-538
Militarinone A, M-610
Militarinone D, M-612
Mimopudine, M-623
Montipyridine, M-699
Nakinadine A, N-17
Nakinadine D, N-20
Nakinadine E, N-21
Nakinadine F, N-22
Neobudofficide B, N-102
Nigrifactin, N-213
Nikkomycin Q_z, N-217
Nikkomycin X, N-216
Nikkomycin Z, N-218
Niphatesine B, N-224
Niphatesine D, N-226
Niphatesine E, N-227
Niphatesine F, N-228
Niphatesine G, N-229
Niphatoxin A, N-230
Niphatoxin B, N-231
Niphatoxin C, N-232
Niphatyne A, N-233
Niphatyne B, N-234
3-(12-Nitrododecyl)pyridine, N-249
5-Octanoylamino-2,3,6(1*H*)-pyridinetrione, O-62
Ocular age pigment A2-E, O-65
Oxalicine A, O-148
2-Oxo-3-(4-pyridinyl)propanoic acid, O-205
Oxysporidinone, O-226
Pachychaline B, P-2
Pachychaline C, P-3
Patchoulipyridine, P-112
Patungensine, P-126
Pedoxin, P-159
Penicidone A, P-186
Penicidone C, P-187
4-Pentadecylpyridine, P-204
Pentasine, P-231
2-Pentylpyridine, P-237
Petrosaspongiolide L, P-289
Petunianine A, P-291
Petunianine B, P-292
Petunianine C, P-293
4-Phenylpyridine, P-352
Piperarborenine C, P-442
Piperarboresine, P-443
Piplartine dimer A, P-474
Proferrorosamine B, P-637
Prolifine, P-638
Promothiocin A, P-641
Promothiocin B, P-642
2-Propanoylpyridine, P-645

Puloupone, P-789
Purealidin D, P-810
Purpuramine C, P-822
2-Pyridinecarboxylic acid, P-896
2,6-Pyridinedicarbothioic acid, P-899
2,6-Pyridinedicarboxylic acid, P-901
Pyridine, P-894
Pyridinoline, P-907
Pyridomacrolidin, P-918
Pyridomycin, P-919
Pyridovericin, P-921
Pyridoxatin, P-922
Pyridoxine, P-923
Pyrinadine A, P-925
Pyrinadine B, P-926
Pyrinadine C, P-927
Pyrinadine D, P-928
Pyrinadine E, P-929
Pyrinadine F, P-930
Pyrinadine G, P-931
Pyrinodemin A, P-933
Pyrinodemin B, P-934
3,2′:3′,4″:2″,3‴-Quaterpyridine, Q-5
Rotundine B, R-135
Rubrifacine, R-147
Sambutoxin, S-48
Siderochelin A, S-295
Siderochelin C, S-296
Simplakidine A, S-303
Speranculatine A, S-391
Speranskilatine A, S-393
Streptonigrin, S-569
Streptonigrone, S-570
N-(2-Sulfoethyl)pyridinium betaine, S-636
3,2′:4′,3″-Terpyridine, T-98
2,3,4,5-Tetrahydro-6-(4-pentenyl)pyridine, T-214
2,3,4,5-Tetrahydro-6-pentylpyridine, T-216
3,3′,4,4′-Tetrahydroxy-2,2′-bipyridine, T-249
2,4,6,6-Tetramethyl-3(6*H*)-pyridinone, T-285
Texaline, T-299
Thallusin, T-338
Theonelladine A, T-357
Theonelladine C, T-358
Tokaradine A, T-422
2,3,5-Trihydroxy-6-methylpyridine, T-567
Viscosaline, V-161
Viscosamine, V-162
Xestamine A, X-15
Xestamine B, X-16
Xestamine C, X-17
Xestamine D, X-18
Xestamine E, X-19

9B-Azaphenalene alkaloids

Dendrobates Alkaloid 205B, A-402
Chilocorine A, C-377
Chilocorine B, C-378
Chilocorine C, C-379
Chilocorine D, C-380
Exochomine, E-321
Porantherine, P-569
Propyleine, P-649
Psylloborine A, P-749

Naphthalene-isoquinoline alkaloids

Ancisheynine, A-978
Ancistrobrevine A, A-979
Ancistrobrevine B, A-980
Ancistrobrevine C, A-981
Ancistrocladine, A-982
Ancistrocladinium A, A-983
Ancistrocladinium B, A-984
Ancistrocladisine, A-985
Ancistrocongine, A-986
Ancistrocongolensine, A-987
Ancistrogriffithine A, A-988
Ancistroheynine A, A-989
Ancistrorobertsonine D, A-990
Ancistrotanzanine A, A-991
Ancistrotectorine, A-992
3,4-Dihydro-5-(4-hydroxy-5-methoxy-2-methyl-1-naphthalenyl)-8-hydroxy-6-methoxy-1,3-dimethylisoquinoline, D-444
Dioncolactone A, D-790
Dioncophylleine D, D-792
Dioncophylline A, D-793
Dioncophylline B, D-794
Dioncophylline C, D-795
Dioncophyllinol B, D-796
Korundamine A, K-90
Korupensamine A, K-91
Yaoundamine A, Y-6

Elaeocarpus alkaloids

Elaeocarpidine, E-54
Elaeokanidine A, E-57
Grandisine C, G-162
Grandisine D, G-163
Grandisine E, G-164
Grandisine F, G-165
Grandisine G, G-166
Pseudoepiisoelaeocarpiline, P-714

Galbulimima alkaloids

Alkaloid GB14, A-521
Alkaloid GB15, A-522
Alkaloid GB16, A-523
Alkaloid GB17, A-524
Alkaloid GB18, A-525
Himandridine, H-277
Himbacine, H-280
Himbadine, H-281
Himgaline, H-285
Himgrine, H-286

Stemona alkaloids

Bisdehydroneostemoninine, B-169
Bisdehydrostemoninine A, B-170
Cochinchistemonine, C-544
Hodorine, H-312
Hypotuberostemonine, H-774
Isostemonidine, I-323
Isostemonine, I-324
Isotuberostemonine, I-341
Maistemonine, M-49
Methylstemofoline, M-560
Neostemofoline, N-139
Neostemonine, N-140
Oxotuberostemonine, O-215
Oxystemokerrilactone, O-227
Paipunine, P-14
Parvineostemonine, P-101
Parvistemoamide, P-103
Parvistemoline, P-104
Parvistemonine, P-105
Protostemodiol, P-669
Protostemonine, P-670
Saxorumamide, S-112
Sessilifoliamide B, S-265
Sessilifoliamide D, S-266
Sessilifoliamide E, S-267
Sessilifoliamide G, S-268
Sessilistemonamine A, S-270
Sessilistemonamine D, S-271
Sessilistemonine, S-272
Sinostemonine, S-317
Stemoamide, S-511
Stemoburkilline, S-512
Stemocochinamine, S-513
Stemocurtisine, S-514
Stemofoline, S-515
Stemokerrin, S-516
Stemonamide, S-517
Stemonine, S-519
Stemonine, S-520
Stemoninine, S-521
Stemoninoamide, S-522
Stemospironine, S-523
Stemotinine, S-524
Stemotuberine, S-525
Stenine, S-528
Stichoneurine A, S-552
Tuberostemoenone, T-663
Tuberostemonine, T-664
Tuberostemoninol, T-665
Tuberostemonone, T-666
Tuberostemospironine, T-667

Lycopodium alkaloids

Lycopodium Alkaloid 168, A-312
Lycopodium Alkaloid 258, A-313
Lycopodium Alkaloid E, A-501
Lycopodium Alkaloid G, A-516
Lycopodium Alkaloid IV, A-344
Lycopodium annotinum Alkaloid IX, A-531
Alkaloid L10, A-547
Alkaloid LE1, A-556
Alkaloid LO1, A-557
Alkaloid LO2, A-558
Alkaloid LO3, A-559
Alkaloid LS14, A-560
Alkaloid LV1, A-562
Lycopodium fawcwttii Alkaloid R, A-592
Lycopodium Alkaloid V, A-310
Lycopodium annotinum Alkaloid VI, A-605
Lycopodium annotinum Alkaloid VII, A-606
Lycopodium annotinum Alkaloid VIII, A-609
Lycopodium Alkaloid X, A-311
Lycopodium annotinum Alkaloid XI, A-610
Lycopodium annotinum Alkaloid XII, A-611
Lycopodium annotinum Alkaloid, A-314
Lycopodium annotinum Alkaloid, A-315
Lycopodium clavatum Alkaloid, A-316
Lycopodium thyoides Alkaloid, A-317
Anhydrolycodoline, A-1029
Annopodine, A-1059
Annotine, A-1062
Annotinine, A-1063
Borbonicine, B-250
Cermizine A, C-282
Cermizine B, C-283
Cermizine D, C-284
Complanadine A, C-590
Complanadine C, C-591
Cryptadine A, C-782
Decahydro-2,5,8-trimethyl-2*H*-1-oxa-4,7,9*b*-triazaphenalene, D-114
Erythreidine, E-209
Erythreine, E-210
Fastigiatine, F-17
Fawcettidine, F-28
Fawcettiine, F-29
Fawcettimine, F-30
Flabelliformine, F-73
Flabelline, F-75
Gnidine, G-134
Gnidinine, G-135
Gymnamine, G-228
Himeradine A, H-284
Huperzine A, H-375
Huperzine B, H-376
Huperzine F′, H-377
Huperzine F, H-378
Huperzine H, H-379
Huperzine I, H-373
Huperzine J, H-380
Huperzine P, H-381
Huperzine Q, H-382
Huperzine R, H-383
Huperzine S, H-384
Huperzine T, H-385
Huperzine U, H-386
Huperzine W, H-387
Huperzinine C, H-389
Huperzinine, H-388
Hydroxypropyllycodine, H-703
Isoobscurinine, I-258
Lannotinidine A, L-34
Lannotinidine E, L-35
Lannotinidine G, L-36
Lobscurinol, L-223
Lucidine B, L-277

Lucidioline, L-279
Luciduline, L-280
Lycocaroline, L-320
Lycocernuine, L-321
Lycoclavine, L-322
Lycodiflexine, L-323
Lycodine, L-324
Lycodoline, L-325
Lycofawcine, L-326
Lycoflexine, L-327
Lycofoline, L-328
Lyconadine A, L-330
Lyconesidine A, L-331
Lyconnotine, L-332
Lyconnotinol, L-333
Lycopaniculatine, L-334
Lycopecurine, L-335
Lycoperine A, L-336
Lycophlegmarine, L-337
Lycopladine A, L-338
Lycopladine B, L-339
Lycopladine D, L-340
Lycoposerramine B, L-343
Lycoposerramine G, L-344
Lycoposerramine S, L-345
Lycoposerramine W, L-346
Lycoserramine, L-349
Lycoserrine, L-350
Lycovatine A, L-352
Macleanine, M-6
Magellanine, M-40
Megastachine, M-147
Nankakurine A, N-27
Neohuperzinine, N-118
β-Obscurine, O-5
Obscurinine, O-9
5,15-Oxidolycopodane, O-163
Paniculine, P-71
Phlegmarine, P-361
Phlegmariurine A, P-362
Phlegmariurine B, P-363
Phlegmariurine M, P-365
Pillijanine, P-423
Saururidine, S-103
Saururine, S-104
Senepodine A, S-242
Senepodine G, S-243
Senepodine H, S-244
Serratezomine A, S-254
Serratine, S-255
Serratinidine, S-256
Serratinine, S-257
Sieboldine A, S-297
Spirolucidine, S-435

Cytochalasin alkaloids

Antibiotic L 697318, A-1196
Ascochalasin, A-1460
Aspergillin PZ, A-1476
Aspochalamin A, A-1500
Aspochalasin C, A-1502
Aspochalasin F, A-1503
Aspochalasin I, A-1501
Chaetochalasin A, C-319
Chaetoglobosin A, C-325
Chaetoglobosin B, C-326
Chaetoglobosin D, C-327
Chaetoglobosin J, C-328
Chaetoglobosin K, C-329
Chaetoglobosin P, C-330
Chaetoglobosin Q, C-331
Chaetoglobosin U, C-332
Cytochalasin B, C-943
Cytochalasin C, C-944
Cytochalasin E, C-945
Cytochalasin F, C-946
Cytochalasin G, C-947
Cytochalasin K, C-948
Cytochalasin K, C-949
Cytochalasin L, C-950
Cytochalasin M, C-951
Cytochalasin O, C-952
Cytochalasin O, C-953
Cytochalasin Q, C-954
Cytochalasin S, C-955
Cytochalasin U, C-956
Cytochalasin V, C-942
Cytochalasin W, C-957
Cytochalasin Y, C-958
Cytochalasin Z_7, C-959
7,18-Dihydroxy-16,18-dimethyl-10-phenyl-22-oxa[12]cytochalasa-6(12),13,19-triene-1,21-dione, D-573
Engleromycin, E-81
Epoxycytochalasin H, E-129
7-Hydroperoxy-17-hydroxy-16,18-dimethyl-10-phenyl[11]cytochalasa-5,13,19-triene-1,21-dione, H-399
18-Hydroxy-16,18-dimethyl-10-phenyl[11]cytochalasa-6,13,19-triene-1,21-dione, H-473
Meleagrin, M-162
Neoxaline, N-149
Penochalasin C, P-197
Phomacin A, P-371
Phomacin C, P-372
Phomopsichalasin, P-376
Protophomin, P-666
Proxiphomin, P-677
Rosellichalasin, R-128
7,18,19-Trihydroxy-16,18-dimethyl-10-phenyl[11]cytochalasa-6(12),13-diene-1,21-dione, T-545
Zygosporin D, Z-37
Zygosporin G, Z-38

Indolizidine alkaloids

Dendrobates Alkaloid 237A, A-359
Mantella Alkaloid 253B, A-419
Mantella Alkaloid 295B, A-422
Mantella Alkaloid 235C, A-451
Dendrobates Alkaloid 251D, A-480
Mantella Alkaloid 243D, A-486
Mantella Alkaloid 279D, A-487
Mantella Alkaloid 241F, A-511
Mantella Alkaloid 281F, A-514
Mantella Alkaloid 221F, A-510
Allopumiliotoxin 309D, A-629
Anibamine, A-1036
5-Butyl-6,8-diethyloctahydroindolizine, B-430
8-Butyloctahydro-5-propyl-1*H*-indolizine, B-437
5-Butyl-8-propylindolizidine, B-443
Buzonamine, B-484
Castanospermine, C-188
Crepidamine, C-735
Cyclizidine, C-837
5-(1,3-Decadienyl)octahydroindolizine, D-107
Dendrocrepine, D-212
Deoxypumiliotoxin 251H, D-228
6,7-Dihydro-3-hydroxymethyl-8(5*H*)-indolizinone, D-447
6,7-Dihydro-8(5*H*)-indolizinone, D-463
8-Ethyl-5-(1-ethyl-1-butenyl)octahydro-6-methylindolizine, E-240
6-Ethyloctahydro-5-pentyl-8-indolizineethanol, E-263
Ficuseptine, F-54
5-(3-Furanyl)octahydro-8-methylindolizine, F-202
Grandisine A, G-160
Grandisine B, G-161
Grandisine G, G-166
3-(5-Hexenyl)octahydro-5-(4-pentenyl)indolizine, H-260
Indolizomycin, I-101
Ipohardine, I-170
Juliflorine, J-56
Juliprosine, J-57
Louludinium(1+), L-273
Myrmicarin 233A, M-799
Octahydro-8-methyl-5-(6-nonen-8-ynyl)-1*H*-indolizine, O-51
Octahydro-8-methyl-5-(4-pentenyl)-1*H*-indolizine, O-52
Phyllosteminine, P-390
Polycanthidine, P-549
Polycanthisine, P-550
Pumiliotoxin A, P-791
Pumiliotoxin 341A, P-792
Pumiliotoxin 307B, P-793
Pumiliotoxin 209F, P-795
Stellettamide A, S-504
Stellettamide B, S-505
Swainsonine, S-650
Tyloindicine F, T-692
Tyloindicine I, T-691

Simple anthranilic acid alkaloids

3-Amino-5-hydroxybenzoic acid, A-790
Avenanthramide L, A-1564
Delamide, D-178
Doisuthine, D-900
2,2′-Iminobis[4-hydroxybenzoic acid], I-45
Tecleanone, T-55
Thiobutacin, T-381
Viridic acid, V-154

Maytansinoid alkaloids

Maysenine, M-134
Maytansine, M-135
Maytansinol, M-136
Trenudine, T-449
Trewiasine, T-450

Simple quinoline alkaloids

Dendrobates Alkaloid 203, A-289
Dendrobates Alkaloid 167A, A-354
Dendrobates Alkaloid 181A, A-355
Dendrobates Alkaloid 219A, A-357
Dendrobates Alkaloid 231A, A-358
Dendrobates Alkaloid 243A, A-362
Dendrobates Alkaloid 269A, A-366
Dendrobates Alkaloid 181B, A-401
Dendrobates Alkaloid 219B, A-403
Dendrobates Alkaloid 223B, A-404
Dendrobates Alkaloid 231B, A-406
Dendrobates Alkaloid 269B, A-412
Dendrobates Alkaloid 223C, A-438
Dendrobates Alkaloid 223D, A-479
Dendrobates Alkaloid 253D, A-481
2-Alkyl-3,4-dihydroxyquinolines, A-621
Atanine, A-1529
Aurachin B, A-1542
Aurachin D, A-1543
6-Bromo-2,4-dihydroxyquinoline, B-313
7-Bromo-4-(2-ethoxyethyl)quinoline, B-317
Buchapine, B-377
Bucharaine, B-378
Bucharidine, B-380
2-Butyldecahydroquinoline, B-428
Casimiroin, C-177
Cusparine, C-822
Dasycarine, D-83
2-Decyl-4-hydroxyquinoline, D-139
6,7-Dibromo-2,4-dihydroxyquinoline, D-315
3,4-Dihydro-4,5-dihydroxy-3-methoxy-4-(4-methoxyphenyl)-2(1*H*)-quinolinone, D-422
3,4-Dihydro-6-hydroxy-2(1*H*)-quinolinone, D-461
2,3-Dihydroxy-4-phenylquinoline, D-656
2,8-Dihydroxy-4-quinolinecarboxylic acid, D-673
3,4-Dihydroxy-2-quinolinecarboxylic acid, D-674
4,6-Dihydroxy-2-quinolinecarboxylic acid, D-675
4,8-Dihydroxy-2-quinolinecarboxylic acid, D-677
5,8-Dimethoxy-2-(3-methoxyphenyl)-3-propyl-4(1*H*)-quinolinone, D-711
5,6-Dimethoxy-2-(3-methoxyphenyl)-4(1*H*)-quinolinone, D-712
5,7-Dimethoxy-4-(4-methoxyphenyl)-2(1*H*)-quinolinone, D-713

2,4-Dimethoxy-7,8-methylenedioxy-3-prenylquinoline, D-715
3,6-Dimethoxy-1-methyl-2-phenyl-4(1*H*)-quinolinone, D-716
2-Dodecyl-4-hydroxyquinoline, D-898
Echinine, E-13
2-(1-Ethylpropyl)-4-methoxyquinoline, E-266
2-(1-Ethylpropyl)-1-methyl-4(1*H*)-quinolinone, E-267
Evomeliaefolin, E-314
Folimidine, F-119
Foliosidine, F-122
Galipinine, G-9
Galipoline, G-11
Glansreginin A, G-86
Glycocitlone A, G-118
Glycocitridine, G-119
Glycolone, G-124
Graveoline, G-171
Haplafine, H-53
Haplosamine, H-59
Haplosine, H-60
Haplotubinone, H-61
3-Heptyl-3-hydroxy-2,4(1*H*,3*H*)-quinolinedione, H-134
2-Heptyl-4-hydroxyquinoline, H-133
2-Hexyl-4-hydroxyquinoline, H-263
2-Hexyl-8-methoxy-1-methyl-4(1*H*)-quinolinone, H-265
4-Hydroxy-2,3-dimethylquinoline, H-477
6-Hydroxy-4,8-dimethylquinoline, H-478
6-Hydroxy-5,7-dimethylquinoline, H-479
6-Hydroxy-2-(3-hydroxy-3-methylbutyl)-4(1*H*)-quinolinone, H-511
7-Hydroxy-2-(3-hydroxy-3-methylbutyl)-4(1*H*)-quinolinone, H-512
7-Hydroxy-4-(5-hydroxymethyl-2-furanyl)-2(1*H*)-quinolinone, H-513
2-(2-Hydroxy-4-methoxyphenyl)-5,8-dimethoxy-3-propyl-4(1*H*)-quinolinone, H-567
2-(11-Hydroxy-11-methyldodecyl)-3-methoxy-4(1*H*)-quinolinone, H-598
2-(12-Hydroxy-12-methyltridecyl)-4(1*H*)-quinolinone, H-636
3-Hydroxy-3-nonyl-2,4(1*H*,3*H*)-quinolinedione, H-643
4-Hydroxy-2-nonylquinoline, H-642
4-Hydroxy-2-octylquinoline, H-648
4-Hydroxy-2-pentylquinoline, H-660
2-(4-Hydroxyphenyl)-1-methyl-4(1*H*)-quinolinone, H-685
3-(4-Hydroxyphenyl)quinoline, H-692
4-Hydroxy-2-propylquinoline, H-707
8-Hydroxy-4-quinolinecarboxaldehyde, H-722
2-Hydroxy-4-quinolinecarboxylic acid, H-723
3-Hydroxy-2-quinolinecarboxylic acid, H-724
4-Hydroxy-2-quinolinecarboxylic acid, H-725
4-Hydroxy-2-tridecylquinoline, H-750
4-Hydroxy-2-undecylquinoline, H-757
3-(1*H*-Indol-3-yl)quinoline, I-138
Lunamarine, L-290
Lunidonine, L-295
Malatyamine, M-68
Megistoquinone II, M-151
Melisemine, M-175
Melovinone, M-195
4-Methoxy-2-(3,4-methylenedioxyphenyl)quinoline, M-264
3-Methoxy-1-methyl-2-propyl-4(1*H*)-quinolinone, M-274
4-Methoxy-1-methylquinolinium(1+), M-275
1-Methyl-3,3-bis(3-methyl-2-butenyl)-2,4(1*H*,3*H*)-quinolinedione, M-406
2-[4-(3,4-Methylenedioxyphenyl)butyl]-4(1*H*)-quinolinone, M-449
2-[6-(3,4-Methylenedioxyphenyl)hexyl]-4(1*H*)-quinolinone, M-453
2-(3,4-Methylenedioxyphenyl)quinoline, M-458
3-Methyl-2-(2-nonenyl)-4(1*H*)-quinolinone, M-491
1-Methyl-2-(9-oxodecyl)-4(1*H*)-quinolinone, M-498
3-Methyl-2-pentyl-4(1*H*)-quinolinone, M-508
2-Methylquinoline, M-557
1-Methyl-4(1*H*)-quinolinone, M-558
2-Pentylquinoline, P-238
Perspicamide A, P-274
2-Phenylquinoline, P-354
3-Phenylquinoline, P-355
Pilokeanine, P-426
Pinolinone, P-440
Preskimmianine, P-625
2-(1-Propenyl)quinoline, P-647
2-Propylquinoline, P-654
Ptelecortine, P-750
Ptelefoline, P-755
Pteleoline, P-758
Pteleprenine, P-759
Pumiliotoxin C, P-794
2-Quinolinamine, Q-28
4-Quinolinecarboxaldehyde, Q-30
4-Quinolinecarboxylic acid, Q-32
3,8-Quinolinediol, Q-34
4,8-Quinolinediol, Q-35
2-Quinolinemethanethiol, Q-36
2-Quinolinemethanol, Q-37
4-Quinolinemethanol, Q-38
Quinoline, Q-29
3,4,5,8-Quinolinetetrol, Q-44
3-Quinolinol, Q-49
Sarcomejine B, S-78
Sarcomejine, S-77
Semecarpifoline, S-221
Severibuxine, S-276
Sterculinine I, S-550
5,6,7,8-Tetrahydro-2,4-dimethylquinoline, T-170
5,6,7,8-Tetrahydro-2,5-dimethylquinoline, T-171
5,6,7,8-Tetrahydro-5-methyl-2-propylquinoline, T-204
5,6,7,8-Tetrahydro-4-methylquinoline, T-208
5,6,7,8-Tetrahydro-2-nonylquinoline, T-210
Tridemnic acid A, T-512
4,5,8-Trihydroxy-2-quinolinecarboxylic acid, T-586
Zanthobisquinolone, Z-2
Zascanol epoxide, Z-9

Furanoquinoline alkaloids

2-Acetyl-4,6-dimethoxyfuro[2,3-*b*]quinoline, A-50
Acronydine, A-121
Anhydroperforine, A-1032
Aurachin A, A-1541
Aurachin G, A-1546
Bucharamine, B-379
8-(1,1-Dimethyl-2-propenyl)-4-methoxyfuro[2,3-*b*]quinolin-7-ol, D-771
Dubinidine, D-945
Dutadrupine, D-958
Evomerrine, E-315
Folifinine, F-118
Foliminine, F-120
Haplophyllidine, H-57
7-Hydroxy-4-methoxy-8-prenylfuro[2,3-*b*]quinoline, H-570
Megistoquinone I, M-150
Megistosarconine, M-152
Melicarpine, M-165
Melicarpinone, M-166
Myrtopsine, M-804
Oligophyline, O-82
Ptelefolone, P-756
Ptelefolonium, P-757
Radixisatidis A, R-11
Ribalinium, R-93
Riedelianine, R-97
Sarcodifurine A, S-74
Sarcodifurine B, S-75
Semecarpine, S-222
Tecleaverdoornine, T-57

Pyranoquinoline alkaloids

Acronydine, A-121
Anhydroperforine, A-1032
Aurachin F, A-1545
Azaacridone A, A-1579
Benzosimuline, B-76
Dutadrupine, D-958
Flindersine, F-90
Foliminine, F-120
Haplofoline, H-56
Helietidine, H-91
5-Methoxy-2,2-dimethyl-2*H*-pyrano[2,3-*b*]quinoline, M-251
Neohydroxylunine, N-119
Pteleflorine, P-754
Rutalinium, R-171
Simulanoquinoline, S-305
Yaequinolone J_1, Y-3
Zanthosimuline, Z-5

Miscellaneous quinoline alkaloids

Acutupyrrocoline, A-135
Antibiotic BE 22179, A-1128
Antibiotic FR 225656, A-1172
Antibiotic FR 225659, A-1173
Antibiotic G 1499-2, A-1179
Antibiotic Sch 538415, A-1251
Antibiotic SW 163C, A-1271
Antidesmone, A-1325
Araliopdimerine A, A-1376
Asperfumoid, A-1469
Aspernigerin, A-1482
Aspoquinolone A, A-1504
Aspoquinolone C, A-1505
Broussonetine, B-358
Calebassinine 1, C-32
Cermizine A, C-282
Cermizine B, C-283
Chamaedrone, C-343
Chestnutamide, C-370
Corialstonidine, C-651
Corialstonine, C-652
Cribrostatin 6, C-740
Cryptadine A, C-782
Cyclomegistine, C-878
Diazaquinomycin B, D-295
Diazaquinomycin C, D-296
Dictyolomide A, D-367
Donglingine, D-918
Echinoramine I, E-24
Erioaustralasine hydrate, E-180
Fareanine, F-8
Folipidine, F-123
Furoerioaustralasine, F-205
Geijedimerine, G-30
Haplodimerine, H-55
Huperzine J, H-380
Huperzine V, H-374
10-Hydroxy-1,4,6,9-tetramethylpyrido[3,2-*g*]quinoline-2,8(1*H*,9*H*)-dione, H-747
Iboquine, I-7
2-(1*H*-Imidazol-4-yl)quinoline, I-44
Isaindigotidione, I-181
Lagunamycin, L-12
Lavendamycin, L-78
Lepadin B, L-103
Lepadin D, L-104
Luotonine F, L-301
Lycoperine A, L-336
Lycoposerramine W, L-346
Macrorungine, M-28
Melicobisquinolinone A, M-167
Melicobisquinolinone B, M-168
Melochinone, M-185
Methoxatin, M-236
4-Methyl-3*H*-pyrrolo[2,3-*c*]quinoline, M-552
Myrionine, M-797
Njaoamine A, N-259
Njaoamine E, N-260
Njaoamine F, N-261
Nybomycin, N-346

Paraensidimerine A, P-87
Paraensidimerine B, P-88
Penigequinolone A, P-191
Peniprequinolone, P-193
Pteledimericine, P-751
Pteledimeridine, P-752
Pteledimerine, P-753
Quinaldopeptin, Q-11
Quinocitrinine A, Q-23
Quinolactacide, Q-24
Quinolactacin A_1, Q-25
Quinolactacin D_1, Q-27
1-(2-Quinolinyl)-β-carboline, Q-51
1-(4-Quinolinyl)-β-carboline, Q-52
1-(5-Quinolinyl)-β-carboline, Q-53
1-(6-Quinolinyl)-β-carboline, Q-54
1-(8-Quinolinyl)-β-carboline, Q-55
Oceanapia Quinolone alkaloid, Q-57
Scolopendrine, S-156
Secomartinelline, S-191
Senepodine A, S-242
Streptonigrin, S-569
Streptonigrone, S-570
Syphilobin A, S-661
Thiocoraline, T-384
Toddacoumalone, T-420
2,2,6-Trimethyl-4-(4-quinolinyl)-3-azabicyclo[3.3.1]non-6-ene, T-614
Vepridimerine C, V-55
Virantmycin, V-145
Voastrictine, V-182
Waltherione A, W-8
Yaequinolone C, Y-2
Yaequinolone J_1, Y-3

Quinazoline alkaloids

2-Acetyl-4(3*H*)-quinazolinone, A-75
Aniflorine, A-1039
Anisessine, A-1041
Anisotine, A-1045
2-Benzyl-4(3*H*)-quinazolinone, B-93
Bouchardatine, B-260
7-Bromo-2,4-dihydroxyquinazoline, B-312
Candidine, C-77
Chaetominine, C-336
Dictyoquinazole A, D-369
2,3-Dihydropyrrolo[2,1-*b*]quinazolin-9(1*H*)-one, D-503
2,4-Dihydroxy-5-methylquinazoline, D-633
2,4-Dimethylquinazoline, D-781
2,2-Dimethyl-4(1*H*,3*H*)-quinazolinone, D-782
Dipegine, D-812
2-Ethyl-4-methylquinazoline, E-259
Goshuyuamide II, G-144
2-(4-Hydroxybutyl)-4(3*H*)-quinazolinone, H-437
2-Hydroxymethyl-4-methylquinazoline, H-609
4-Hydroxy-2-methylquinazoline, H-632
2-(3-Hydroxypropyl)-4(3*H*)-quinazolinone, H-706
Indolo[2,1-*b*]quinazoline-6,12-dione, I-108
Isaindigotone, I-182
Isofebrifugine, I-232
Luotonine F, L-301
Mackinazolinone, M-5
18-*O*-[2-(2-Methyl-4-oxo-4*H*-quinazolin-3-yl)-benzoyl]lycoctonine, M-501
1-Methyl-3-(2-phenylethyl)-2,4(1*H*,3*H*)-quinazolinedione, M-510
4-Methyl-2-quinazolinecarboxylic acid, M-555
4-Methylquinazoline, M-554
1-Methyl-4(1*H*)-quinazolinone, M-556
Monodontamide F, M-691
Nordine, N-296
Ophiuroidine, O-98
Peganidine, P-164
2,4(1*H*,3*H*)-Quinazolinedione, Q-13
4-Quinazolinol, Q-14
Sessiflorine, S-264
6,8,9,11-Tetrahydro-7*H*-pyrido[2,1-*b*]quinazoline, T-227
1,2,3,9-Tetrahydropyrrolo[2,1-*b*]quinazoline, T-231
2-(2,4,6-Trimethyl-1-heptenyl)-4(1*H*)-quinazolinone, T-606
Vasicinine, V-36
Vasicoline, V-40
Wuchuyuamide III, W-25
Wuchuyuamide I, W-24
Wuzhuyurutine B, W-27

Acridone alkaloids

Acridone, A-112
Acrignine A, A-113
Acronycine, A-120
Atalaphyllidine, A-1527
Buxifoliadine D, B-467
Buxifoliadine E, B-468
Buxifoliadine F, B-469
Buxifoliadine G, B-470
Chaloridone, C-342
Citracridone III, C-472
Citropone A, C-484
Citropone B, C-485
Citropone C, C-486
1,7-Dihydroxyacridone, D-529
1,8-Dihydroxyacridone, D-530
3-(1,1-Dimethoxy-2-oxoethoxy)-9,10-dihydro-1-methoxy-9-oxo-4-acridinecarboxaldehyde, D-717
Furofoline II, F-207
Furofoline, F-206
Furoparadine, F-209
Glycocitrine III, G-121
Glycocitrine V, G-120
Glycocitrine VI, G-122
Hallacridone, H-34
1-Hydroxyacridone, H-402
4-(2-Hydroxy-3-methyl-3-butenyl)yukocitrine, H-581
Junosidine, J-59
Margrapine A, M-103
Megistophylline II, M-149
Megistophylline I, M-148
Melicopine, M-169
10-Methylacridone, M-382
N-Methylbicycloatalaphylline, M-401
Oriciacridone A, O-106
Oriciacridone F, O-108
Prenylcitpressine, P-616
Pyranofoline, P-879
Rutacridone, R-167
Rutagravine, R-169
Severifoline, S-278
Tecleanthine, T-56
Thehaplosin, T-351
1,2,3-Trihydroxyacridone, T-516
1,3,5-Trihydroxy-2,4-diprenylacridone, T-546
1,3,8-Trihydroxy-2,7-diprenylacridone, T-548
1,3,5-Trihydroxy-4-prenylacridone, T-581
Xanthevodine, X-2

Acridone dimers

Atalanine, A-1526
Ataline, A-1528
Bi[5-hydroxynoracronycine], B-129
Buntanbismine, B-411
Citbismine B, C-469
Citbismine D, C-470
Glycobismine B, G-113
Glycobismine D, G-114
Glycobismine E, G-115
Glycobismine G, G-116

Acridone-coumarin dimers

Acrimarine A, A-114
Acrimarine J, A-116
Dioxinoacrimarine A, D-800
Neoacrimarine A, N-92
Neoacrimarine C, N-93
Neoacrimarine D, N-94
Neoacrimarine E, N-95
Neoacrimarine F, N-96
Neoacrimarine K, N-97

Pyrido[2,3,4-kl]acridines

Alpkinidine, A-639
Amphimedine, A-944
Arnoamine A, A-1445
Ascididemin, A-1459
Cyclodercitine, C-857
Cycloshermilamine D, C-907
N-Deacetylkuanoniamine D, D-93
Deoxyamphimedine, D-222
Dercitine, D-231
Dibenzo[*b,j*]dipyrido[4,3,2-*de*:2′,3′,4′-*gh*][1,10]phenanthroline, D-299
Diplamine, D-823
Eudistone A, E-291
Eudistone B, E-292
9-Hydroxyisoascididemnin, H-542
Isosegoline A, I-316
Labuanine A, L-2
Lissoclinidine, L-204
Meridine, M-206
Neoamphimedine Y, N-100
Neoamphimedine, N-99
Norsegoline, N-308
Pantherinine, P-73
Perophoramidine, P-272
Petrosamine, P-288
9*H*-Pyrido[4,3,2-*mn*]thiazolo[4,5-*b*]acridin-9-one, P-920
Sagitol, S-14
Sebastianine A, S-171
Sebastianine B, S-172
Segoline A, S-217
Shermilamine A, S-286
Stellettamine, S-506
Styelsamine C, S-608
Styelsamine D, S-609
Subarine, S-619
Tintamine, T-415
Varamine A, V-22
Varamine B, V-23

1,4-Benzoxazin-3-one alkaloids

Cappamensine, C-96
Monocillinol A, M-687

Benzodiazepine alkaloids

Abbeymycin, A-5
Anthramycin, A-1081
Antibiotic A 65636, A-1099
Antibiotic DC 81, A-1156
Antibiotic DC 102, A-1157
Antibiotic DC 105, A-1158
Antibiotic M 259, A-1202
Antibiotic RK 1441A, A-1232
Antibiotic RP 13252, A-1234
Aplysepine, A-1347
Benzomalvin B, B-74
7-Bromo-5-(2-chlorophenyl)-1,3-dihydro-3-hydroxy-2*H*-1,4-benzodiazepin-2-one, B-304
Chicamycin A, C-373
Chicamycin B, C-374
Cyclopenin, C-889
Diazepinomicin, D-297
Iforrestine, I-20
Mazethramycin A, M-137
Neothramycin A, N-145
Porothramycin A, P-573
Prothracarcin, P-660
Tilivalline, T-411
Tomaymycin, T-424

Cryptolepine type alkaloids

Biscryptolepine, B-168
Cryptoheptine, C-785

Cryptolepicarboline, C-786
Cryptomisrine, C-787
Cryptoquindoline, C-794
Cryptospirolepine, C-795
5,10-Dihydro-11*H*-quindolin-11-one, D-505
5,6-Dihydro-11*H*-quinindolin-11-one, D-506
Homocryptolepinone, H-329
Indolo[3,2-*b*]quinoline, I-109
11-Isopropyl-5-methyl-5*H*-indolo[3,2-*b*]quinoline, I-279
Quindolinocryptotackieine, Q-16

Simple phenethylamine alkaloids

N-β-Alanyldopamine, A-241
4-(2-Aminoethyl)-2-bromophenol, A-769
N,*N*′-Bis[2-(3,5-diiodo-4-methoxyphenyl)ethyl]urea, B-171
Cannabisin G, C-87
Chenoalbicin, C-364
Convolutamine A, C-625
Convolutamine H, C-628
Coryneine, C-690
Dakaramine, D-10
Densinine, D-219
2-(2,4-Dibromo-5-methoxyphenyl)ethylamine, D-330
N-(Dihydrosinapoyl)tyramine, D-512
(3,5-Diiodo-4-methoxyphenyl)ethylamine, D-697
3,4-Dimethoxyphenethylamine, D-718
Dioxamine, D-799
Doisuthine, D-900
Dopamine, D-920
Epinine, E-98
Fumariflorine, F-175
Hibiscuwanin A, H-271
N-Homoveratroylhomoveratrylamine, H-351
Hordenine, H-357
3-Hydroxy-4,5-dimethoxyphenethylamine, H-465
3-Hydroxy-4-methoxyphenethylamine, H-565
4-Hydroxy-3-methoxyphenethylamine, H-566
2-(4-Hydroxy-3-nitrophenyl)ethylamine, H-640
4-Hydroxyphenethylamine, H-667
2-(3-Hydroxyphenyl)ethylamine, H-678
Lissoclinotoxin C, L-207
Mescaline, M-219
2-(4-Methoxyphenyl)ethylamine, M-280
Mololipids, M-680
Nakirodine A, N-23
Norbelladine, N-288
2-Phenylethylamine, P-342
Polyandrocarpamide A, P-541
3,4,5-Trihydroxyphenethylamine, T-576
Turbotoxin A, T-680
Volutamide A, V-190
Zanthosin, Z-6

α-Hydroxyphenethylamines

2-Amino-3′,4′-dihydroxyacetophenone, A-736

Halogenated tyrosinoids

Agelorin A, A-194
Anomoian A, A-1068
Aplysinellin A, A-1351
Aplysinellin B, A-1352
Araplysillin III, A-1379
Bastadin 13, B-33
Bastadin 16, B-34
Bastadin 1, B-30
Bastadin 3, B-31
Bastadin 4, B-32
Bispsammaplin A, B-217
α-(Dimethylamino)-3,5-diiodo-*N*-[5-[[3-(3-iodo-4-methoxyphenyl)-2-(methylamino)-1-oxopropyl]amino]pentyl]-4-methoxybenzenepropanamide, D-729
Fistularin 3, F-70
Hemibastadin 1, H-100
Hemibastadinol 1, H-101
Itampolin A, I-350
Molokaiamine, M-679
Psammaplin A, P-686
Psammaplin B, P-687
Psammaplin C, P-688
Psammaplin D, P-689
Psammaplin E, P-690
Psammaplin F, P-691
Psammaplin G, P-692
Psammaplin H, P-693
Psammaplin I, P-685
Psammaplysene A, P-694
Pseudoceratin A, P-707
Purealidin C, P-809
Purpuramine H, P-823
Purpurealidin B, P-824
Tokaradine A, T-422

Miscellaneous phenethylamines

Acidissiminol, A-77
AK toxin II, A-221
Alfileramine, A-260
Aplyzanzine A, A-1358
Avicennamine, A-1565
Cannabisin A, C-84
Cannabisin E, C-86
Cannabisin H, C-88
Convolutamine D, C-626
Convolutamine E, C-627
Dambullin, D-12
Densiflorine, D-217
N-[2-[3,5-Dibromo-4-[3-[(3-methyl-1-oxo-2-butenyl)amino]propoxy]phenyl]ethyl]-4-hydroxybenzeneacetamide, D-333
Dispyrin, D-865
1,2-Epoxy-2-methyl-4-(*N*-methyltyraminyl)-3-butene, E-135
Gerambullin, G-68
Grossamide, G-182
Heliotropamide, H-96
Hemibastadin 1, H-100
Integramine, I-157
Isoalfileramine, I-188
Jacpaniculine, J-5
Kuchinoenamine, K-105
Lissoclibadin 1, L-196
Lissoclibadin 2, L-197
Lissoclibadin 3, L-198
Lissoclinotoxin A, L-205
Lissoclinotoxin D, L-208
Lissoclinotoxin E, L-209
Lissoclinotoxin F, L-210
Mescaline citrimide, M-220
Mescaline isocitrimide lactone, M-221
Orthidine A, O-125
Orthidine C, O-126
Orthidine E, O-127
Peyoglunal, P-296
Pubesamide B, P-777
Puhinamide, P-780
Purpuramine A, P-821
Purpuramine H, P-823
Shishididemniol A, S-289
Storniamide D, S-556
Taspine, T-36
Tridentatol A, T-507
Tridentatol D, T-509
Tubacetine, T-652
Tubasenecine, T-653
Tubastrine, T-656
Tuberine, T-659
Varacin A, V-20
Waianaeamine B, W-2

Cinnamic acid amides

Astrophylline, A-1525
Botryllamide H, B-257
N-[2-(4-Butylphenyl)ethyl]-3-(4-hydroxy-3-methoxyphenyl)-2-propenamide, B-441
Cannabisin G, C-87
Casimiroedine, C-176
Celenamide E, C-238
Cenocladamide, C-245
Chenoalbicin, C-364
Cherinonaine, C-368
5,6-Dihydro-*N*-[3-(7-methoxy-1,3-benzodioxol-5-yl)-2-propenoyl]-2(1*H*)-pyridinone, D-470
N-(Dihydrosinapoyl)tyramine, D-512
Dioxamine, D-799
Echinophyllin B, E-19
Elliptinol, E-69
Fontaineine, F-124
Gigantamide A, G-74
Hibiscuwanin A, H-271
Magnolamide, M-44
N-Methyl-*N*-(2-phenylethenyl)-3-phenyl-2-oxiranecarboxamide, M-509
Montamine, M-697
Nannochelin C, N-28
Pipercyclobutanamide A, P-450
Pipercyclobutanamide B, P-451
Piperpense, P-468
Piplartine, P-473
Piriferine, P-479
Polygonapholine, P-561
Psammaplysene A, P-694
Rubescenamine, R-143
Sarmentamide B, S-87
Toddaliamide, T-421
Tunichrome An1, T-677
Tunichrome Pm 1, T-678
Xyloallenolide A, X-28
Zanthomamide, Z-4
Zanthosin, Z-6

Securinega alkaloids

Flueggenine A, F-93
Flueggenine B, F-94
Margaritarine, M-102
Norsecurinic acid, N-306
Phyllanthine, P-386
Secuamamine A, S-202
Securinegine, S-205
Securinol A, S-207
Securinol C, S-208
Simplexine, S-304
Suffruticodine, S-630
Suffruticonine, S-631

Betalain alkaloids

Betalamic acid, B-109
Betanidin, B-110
Dopaxanthin, D-921
Indicaxanthin, I-67
Mesembryanthemins, M-227
Miraxanthin III, M-647
Miraxanthin II, M-646
Miraxanthin I, M-645
Muscaaurin II, M-769
Muscaaurin I, M-768
Muscapurpurin, M-771
Oleracins, O-80
Portulacaxanthin III, P-577
Portulacaxanthin II, P-576
Portulacaxanthin I, P-575
Suaedin, S-615
Tryptophanbetaxanthin, T-642
Vulgaxanthin II, V-195

Simple isoquinoline alkaloids

7-Amino-1,6-dimethyl-5,8-isoquinolinedione, A-757
Anhydroberberillic acid, A-1024
Antibiotic MY 336a, A-1209
Antibiotic WJ 35, A-1312
Berbidine, B-102
Bernumicine, B-105
Bernumine, B-106
Cherianoine, C-366
Chingazumianine, C-386
Cotarnoline, C-707
Crispine C, C-757

Crispine D, C-758
Crispine E, C-759
Decahydro-8-(1-piperidinylmethyl)isoquinoline, D-113
3,4-Dihydro-8-hydroxy-6,7-dimethoxyisoquinoline, D-437
3,4-Dihydro-8-hydroxy-6,7-dimethoxy-1-methylisoquinoline, D-439
6,7-Dihydro-1,3,6,6-tetramethyl-8(5*H*)-isoquinolinone, D-515
3,4-Dihydro-*ar*-trimethoxy-1-methylisoquinoline, D-520
5,8-Dihydroxy-4,7-dimethoxy-2,6-dimethylisoquinolinium(1+), D-569
6,8-Dimethoxy-1,3-dimethylisoquinoline, D-710
3,4-Dimethyl-7-(methylamino)-5,8-isoquinolinedione, D-752
Hydrocotarnine, H-396
Hydrohydrastinine, H-398
Intebrine, I-152
Intebrinine, I-153
Isoquinoline, I-301
1,6,8-Isoquinolinetriol, I-306
1-(8-Isoquinolinylmethyl)pyridinium(1+), I-308
7-Methoxy-1,6-dimethyl-5,8-isoquinolinedione, M-249
6,7-Methylenedioxyisoquinoline, M-446
Mimocin, M-622
Mimosamycin, M-624
Perfragilin A, P-255
Phomopsin A, P-377
Renierol, R-45
Ruprechstyril, R-163
Salsamine, S-36
Sendaverine, S-234
Spartocytisine, S-386
1,2,3,4-Tetrahydro-6,7-dihydroxy-1,1-dimethylisoquinoline, T-152
1,2,3,4-Tetrahydro-7,8-dimethoxy-1,2-dimethylisoquinoline, T-166
1,2,3,4-Tetrahydro-7-hydroxy-5-methoxy-2-methylisoquinoline, T-180
1,2,3,4-Tetrahydro-*ar*-hydroxy-*ar*-trimethoxy-2-methylisoquinoline, T-191
1,2,3,4-Tetrahydro-*ar*-methoxy-1-methylisoquinoline, T-200
1,2,3,4-Tetrahydro-5,6,7,8-tetramethoxy-1-methylisoquinoline, T-233
1,2,3,4-Tetrahydro-5,6,7-trimethoxy-2-methylisoquinoline, T-238
5,6,7,8-Tetramethoxyisoquinoline, T-276
Thalflavine, T-306
Thalpetaline, T-344
1,6,8-Trihydroxy-3,4-dimethylisoquinoline, T-544
1,6,8-Trihydroxy-3-methylisoquinoline, T-566
ar-Trimethoxy-1-methylisoquinoline, T-597
Turcberine, T-681
Turconidine, T-682
Viguine, V-101
Violatinctamine, V-143

Manzamine alkaloids

Ircinol B, I-175
Kauluamine, K-22
31-Keto-12,34-oxa-32,33-dihydroircinal A, K-38
Maeganedin A, M-38
Manadomanzamine A, M-80
Manzamine B, M-92
Manzamine J, M-94
Manzamine M, M-95
Nakadomarin A, N-11
Neokauluamine, N-120
Xestocyclamine A, X-21
Xestocyclamine B, X-22

Miscellaneous isoquinoline alkaloids

Aaptamine, A-2
Amphibine I, A-934
Annoretine, A-1060
Annosqualine, A-1061
Antibiotic EGS 1300-1, A-1162
Antibiotic TMC 2A, A-1292
Antibiotic TMC 120A, A-1294
Aspergillitine, A-1477
Berberal, B-99
Chaetoindicin A, C-333
Chaetoindicin B, C-334
Chlorofusin, C-405
Cohirsitine, C-565
Cortistatin B, C-665
Cortistatine L, C-668
Corydamine, C-678
Decumbenine B, D-136
Drimiopsine A, D-940
Excentricine, E-318
Fuscusine, F-229
Hernandine, H-149
Hypecumine, H-768
Illudinine, I-29
Isochromophilone VI, I-205
Lissoclinotoxin B, L-206
Litebamine, L-211
Lophocine, L-261
Marinamide, M-104
7-(Methylamino)-3*H*-pyrrolo[2,3-*c*]isoquinoline-6,9-dione, M-387
Mureidomycin E, M-738
Napsamycin B, N-34
Oceanalin A, O-14
Panaefluoroline A, P-45
Panaefluoroline B, P-46
Panaefluoroline C, P-47
Panaefluoroline D, P-48
Panaefluoroline E, P-49
Panaefluoroline F, P-50
Panaefluoroline G, P-51
Panaefluoroline H, P-52
Peyoglutam, P-297
Phenylalanyl-*N*-[1-(1,2,3,4-tetrahydro-6-hydroxy-7-methoxy-2-methyl-1-isoquinolinyl)ethyl]-glycinamide, P-339
Pilocereine, P-425
Siomycin A, S-321
Siomycin D_1, S-322
Stephaoxocanine, S-541
Thiostrepton, T-392
Usambanoline, U-51

Benzylisoquinoline alkaloids

Aristoquinoline C, A-1440
Canelillinoxine, C-80
Dehydronormacrostomine, D-163
Fumaflorine, F-170
Gandharamine, G-14
Hebridamine, H-83
Herveline C, H-154
Imbricatine, I-32
Isosevanine, I-317
Leptopidine, L-121
Leptopine, L-122
Leptopinine, L-123
Longiberine, L-248
Longifolonine, L-252
1-(4-Methoxybenzoyl)-6,7-methylenedioxyisoquinoline, M-242
Miltanthine, M-620
Miltanthoridine, M-621
Mollinedine, M-672
Nymphaedaline, N-347
Papaveraldine, P-77
Papaverine, P-79
Polysignine, P-563
Protosinomenine, P-668
Sauvagnine, S-108
Sevanine, S-274
Takatonine, T-16
Thalimicrinone, T-329
Theoneberine, T-356

Pseudobenzylisoquinoline alkaloids

Berbithine, B-103
Fumarizine, F-179
Polyberbine, P-548
Polycarpine, P-554
Rugosinone, R-156
Taxilamine, T-50

Bisbenzylisoquinoline alkaloids (aryl links only)

Isopyruthaldine, I-296
Isopythaldine, I-298
Pisopowine, P-484

Bisbenzylisoquinoline alkaloids (one ether link)

Berbamunine, B-98
Chillanamine, C-376
Dauricine, D-88
Efatine, E-42
Grisabine, G-177
Isopyruthaline, I-297
Isopythaline, I-299
Isothalicrine, I-330
Isothalictrine, I-331
Isothalirine, I-332
Magnolamine, M-45
Malekulatine, M-71
Neferine, N-87
Neosutchuenenine, N-142
Phaeantharine, P-300
Sutchueneneonine, S-646
Sutchuenenine, S-647
Thaliatrine, T-307
Thalibrine, T-309
Thaliracebine, T-332
Thalirugidine, T-334
Thalirugine, T-335
Thalistine, T-337
Vanuatine, V-19
Vateamine, V-43

Bisbenzylisoquinolines (one ether/ one aromatic link)

Cordobine, C-643
Isothalmidine, I-334
Oxandrine, O-149
Philogaline, P-360
Pseudoxandrine, P-736
Rodiasine, R-114

Bisbenzylisoquinoline alkaloids (two ether links)

Calafatimine, C-22
Calafatine, C-23
Cepharanthine, C-275
Cheratamine, C-365
Cissampentin, C-467
Curicycleatjine, C-811
Cycleanine, C-835
Cycleatjehine, C-836
Daphnine, D-60
Dryadodaphnine, D-944
Fastrine, F-18
Gyrolidine, G-235
Hernandezine, H-148
Isotetrandrine, I-328
Isothalicberine, I-329
Lauberine, L-67
Limacusine, L-175
Nemuarine, N-91
Neothalfine, N-144
Osornine, O-130
Panurensine, P-76
Peinamine, P-171

Phaeanthine, P-301
Protocuridine, P-663
Repandine, R-46
Sciadenine, S-148
Sciadoline, S-149
Stebisimine, S-502
Stepinonine, S-548
Sutchuenensine, S-648
Tetrandrine, T-286
Thalfinine, T-305
Thalibrunine, T-311
Thalicberine, T-313
Thalidasine, T-320
Thalmethine, T-339
Thalmiculine, T-340
Thalmine, T-341
Thalmirabine, T-343
Thalrugosaminine, T-346
Thalsimidine, T-347
Warifteine, W-9

Bisbenzylisoquinoline alkaloids (two ether/one aromatic link)

Medelline, M-145
Tiliacorine, T-406
Tiliacorinine, T-407
Tiliaresine, T-410
Yanangine, Y-5

Bisbenzylisoquinoline alkaloids (three ether links)

Angchibangkine, A-1006
Apateline, A-1331
Cocsulinine, C-552
Cocsupendine, C-553
Dielsine, D-384
Gasabiimine, G-26
Insularoline, I-150
Isotrilobine, I-339
Kohatine, K-56
Menisarine, M-197
Micranthine, M-591
Pseudorepanduline, P-725
Repanduline, R-47
Trigilletimine, T-514

Secobisbenzylisoquinoline alkaloids

Bargustanine, B-26
Fenfangjine H, F-34
Jhelumine, J-37
Karakoramine, K-16
Neotrilobine, N-146
Punjabine, P-800
Revolutinone, R-68
Secantioquine, S-175
Secocepharanthine, S-179
Secolucidine, S-190

Cularine group alkaloids

Aristoyagonine, A-1443
Cancentrine, C-76
Dioxocularine, D-801
Fissistigine B, F-66
Gouregine, G-148
Henderine, H-108
Oxocompostelline, O-169
Oxocularine, O-171
Oxosarcophylline, O-207
Sarcocapnidine, S-73
Yagonine, Y-4

Secoisoquinoline alkaloids

Aconcaguine, A-84
Ceratocapnidine, C-278
Ceratonicine, C-279
Isonoyaine, I-257
Noyaine, N-326
Secocularidine, S-180
Secosarcocapnidine, S-198

Quettamine alkaloids

Quettamine, Q-8
Secoquettamine, S-197

Dibenzopyrrocoline alkaloids

Oubatchensine, O-138

Indenobenzazepine alkaloids

Bulgaramine, B-400
Fumarofine, F-180
Himalayamine, H-276
Lahoramine, L-15
Lahorine, L-17
Ribasine, R-94

Pavine alkaloids

Fauripavine, F-26
Herveline C, H-154
Neocaryachine, N-104
Pennsylpavoline, P-196
Thalimonine, T-330
4,8,9-Trimethoxy-*N*-methyl-2,3-methylenedioxypavinane, T-598

Isopavine alkaloids

Amurensine, A-954
Isothalisopavine, I-333
Przewalidine, P-681
Reframine, R-36
Thalisopavine, T-336

Proaporphine alkaloids

Croton linearis Alkaloid E, A-498
Bracteine, B-275
Coyhaiquine, C-714
Cryprochine, C-781
Isocryprochine, I-211
Jaculadine, J-6
Misramine, M-650
Prooxocryptochine, P-644
Roehybridine, R-116
Roehybrine, R-117
Roemeramine, R-119
Stepharinosine, S-542

Proaporphine-benzylisoquinoline alkaloid dimers

Coyhaiquine, C-714
Pakistanamine, P-15
Rupancamine, R-162

Aporphine alkaloids

Acutiaporberine, A-132
Alkaloid PO3, A-583
Annolatine, A-1050
Artabonatine A, A-1448
Artabonatine C, A-1449
Artacinatine, A-1450
Atherospermidine, A-1531
Beccapoline, B-53
Belemine, B-55
Bipowine, B-142
Bipowinone, B-143
Bulbodione, B-399
Cabudine, C-2
Cassamedine, C-179
Cassythic acid, C-187
Cataline, C-190
Cepharadione A, C-272
Cepharadione B, C-273
Clemaine, C-523
Corydione, C-684
Dactylidine, D-5
Dehatriphine, D-149
Dehydrodicentrine, D-156
Dehydroglaucine, D-159
Dehydronuciferine, D-164
Dehydroroemerine, D-166
Dehydroxylopine, D-175
Dicentrinone, D-347
6*a*,7-Didehydro-7-hydroxy-1,2-dimethoxyaporphine, D-373
4,5-Dihydro-1,9-dihydroxy-2,11-dimethoxy-7-oxoaporphine, D-418
4,5-Dioxodehydrocrebanine, D-802
Duguenaine, D-946
Duguespixine, D-947
Duguetine, D-948
Duguevalline, D-949
Faurine, F-25
Fauripavine, F-26
Fissilandione, F-65
7-Formyldehydrohernangerine, F-133
7-Formyldehydronornantentine, F-134
7-Formyldehydroovigerine, F-135
7-Formyldehydrothalicsimidine, F-136
Fuseine, F-230
Glaunine, G-93
Goudotianine, G-147
Griffinine, G-173
Griffithdione, G-175
Guadiscidine, G-188
Guatterine, G-213
Guattescidine, G-214
Guattouregidine, G-215
Hemiargine B, H-97
Hernandonine, H-150
Heteropsine, H-160
Imenine, I-34
Kuafumine, K-104
Lanuginosine, L-40
Laurodionine, L-74
Lettowianthine, L-145
Liriodendronine, L-193
Liriodenine, L-194
Melosmine, M-194
1,2-Methylenedioxy-6*a*,7-dehydroaporphine-10,11-quinone, M-445
Mollisine, M-678
Moschatoline, M-712
Nandazurine, N-24
Natalinine, N-53
Ocokryptine, O-25
Ocominarone, O-26
Oliveridine, O-85
Oliveroline, O-87
Ouregidione, O-139
Ovigeridimerine, O-142
Ovihernangerine, O-144
Oviisocorydine, O-145
Oxobaicaline, O-166
Oxobuxifoline, O-168
Oxocrebanine, O-170
Oxoglaucine, O-178
7-Oxohernandaline, O-179
7-Oxohernangerine, O-180
Oxoisocalycinine, O-183
Oxolaureline, O-187
Oxophoebine, O-195
Oxopurpureine, O-203
Oxoputerine, O-204
Oxostephanine, O-209
Pachyconfine, P-4
Pancoridine, P-54
Pancorinine, P-56
Pennsylpavoline, P-196
Pentouregine, P-234
Peruvianine, P-275
Phoenicanthusine, P-370
Pontevedrine, P-566
Rurrebanidine, R-164
Sinomendine, S-312
Sonodione, S-367
Spixianine, S-469

Splendidine, S-470
Stephadione, S-535
Stephalagine, S-536
Subsessiline, S-627
Telazoline, T-62
Telikovinone, T-64
Telisatin A, T-65
6,7,9,10-Tetrahydro-5-(4-hydroxy-3,5-dimethoxyphenyl)-5*H*-benzo[*g*][1,3]dioxolo[4′,5′:4,5]benzo[*de*]pyrido[3,2,1-*ij*]quinolin-7-one, T-176
Thalibealine, T-308
Thalicminine, T-315
Trichoguattine, T-489
Trivalvone, T-628
Tuberosinone C, T-662
Tuberosinone, T-661
Unonopsine, U-36
Urabaine, U-41
Vitricine, V-165

Aporphine-benzylisoquinoline alkaloid dimers

Adiantifoline, A-139
Dehydrothalicarpine, D-170
Fauridine, F-24
Faurithaline, F-27
Huangshanine, H-366
Khyberine, K-39
Oxothalicarpine, O-214
Pakistanine, P-16
Przewaline, P-682
Przewalskine, P-683
Przewalstine, P-684
Thaldimerine, T-302
Thalicarpine, T-312
Thalifaberine, T-322
Thalifabine, T-323
Thaliphine, T-331
Thalirevolutine, T-333
Thalmineline, T-342
Uskudaramine, U-55

Oxoisoaporphine alkaloids

Bianfugecine, B-116
Bianfugedine, B-117
Daurioxoisoporphine B, D-89
Dauriporphine, D-90
Lakshminine, L-19
Menisporphine, M-199
Tyraminoporphine, T-697

Aristolochic acid alkaloids

Aristolin, A-1434
Aristoloin I, A-1435
Aristoloterpenate I, A-1436
Aristophyllide A, A-1439
Debilic acid, D-102
6-Hydroxy-3,4-methylenedioxy-10-nitro-1-phenanthrenecarboxylic acid, H-600
8-Methoxy-3,4-methylenedioxy-10-nitro-1-phenanthrenecarboxylic acid, M-262
3,4-Methylenedioxy-10-nitro-1-phenanthrenecarboxylic acid, M-447

Aristolactam alkaloids

Aristo red, A-1424
Aristolactam C II, A-1428
Aristolactam I, A-1427
Aristolactam IIIa, A-1429
Doryflavine, D-925

Phenanthrene alkaloids

Andesine, A-999
Annoretine, A-1060
Atherosperminine, A-1532
Chiloenine, C-381
Corydinemethine, C-683
Fissicesine, F-64
Hebridamine, H-83
Isouvariopsine, I-343
Litebamine, L-211
2-Methoxyatherosperminine, M-238
N-Methylsecoglaucine, M-559
Romucosine I, R-124
Santiagonamine, S-64
Stephenanthrine, S-546
Thalicpureine, T-316
Thalicthuberine, T-318
Thaliglucinone, T-327
Thalihazine, T-328
Uvariopsamine, U-63
Uvariopsine, U-64

Azaaporphine alkaloids

Eupolauramine, E-297
Imbiline 1, I-31
Sampangine, S-49

Azafluoranthrene alkaloids

Grandirubrine, G-159
Imeluteine, I-33
Indeno[1,2,3-*ij*][2,7]naphthyridine, I-65
Norrufescine, N-304
Triclisine, T-498

Morphine alkaloids

Acutudaurine, A-133
Acutumine, A-134
Alkaloid PP1, A-586
Amurinine, A-956
Bismorphine A, B-205
Bismorphine B, B-206
Cancentrine, C-76
Carococculine, C-164
Cephasamine, C-276
Codeine, C-555
Corsutine, C-663
6,7,8,9,10,14-Hexadehydro-4,5-epoxy-3,6-dimethoxy-17-methylthebinan, H-226
14-Hydroxycodeine, H-462
Hypserpine, H-775
Isostephodeline, I-325
Meconoquintupline, M-144
ψ-Morphine, M-703
Neopine, N-134
Oreobeiline, O-103
Saludimerine A, S-37
Salutadimerine, S-38
Sinococuline, S-311
Sinomenine, S-313
Somniferine, S-362
Tannagine, T-28
Tridictyophylline, T-511
Zippeline, Z-20

Erythrina alkaloids

Cocculine, C-538
Cocculitine, C-539
Cocculolidine, C-540
Coccutrine, C-542
3-Demethoxy-2,3-methylenedioxyerythroculine, D-200
Dihydroerysodine, D-431
Erymelanthine, E-198
Erysodinophorine, E-200
Erysophorine, E-201
Erysotramidine, E-202
Erysotrine, E-203
Erythlaurine, E-204
Erythrartine, E-206
Erythratidine, E-207
Erythratine, E-208
α-Erythroidine, E-215
Lenticellarine, L-92

Dibenzazecine alkaloids

Bractazonine, B-273
Crassifolazonine, C-727
Dysazecine, D-962
Erybidine, E-194
Laurifonine, L-73
Neodihydrothebaine, N-111
Protostephanine, P-671

Hasubanan alkaloids

Stephania japonica Alkaloid A, A-378
Delavaine, D-181
Hasubanonine, H-70
Limalongine, L-176
Longanine, L-244
Longetherine, L-247
Miersine, M-605
Prometaphanine, P-639
Prostephabyssine, P-658
Prostephanaberrine, P-659
Runanine, R-161
Stephabenine, S-529
Stephadiamine, S-533
Stephamiersine, S-537
Stephavanine, S-545

Protoberberine alkaloids

Acutiaporberine, A-132
Alborine, A-247
Alkaloid PO4, A-584
Alkaloid PP1, A-585
Anisocycline, A-1042
Berberilycine, B-100
Berberine, B-101
Berpodine, B-107
Bisjatrorrhizine, B-193
Caseadinium(1+), C-173
Coptisine, C-638
Corydaline, C-675
Corysamine, C-699
Coulteroberbinone, C-709
Dehydroapocavidine, D-150
Dehydrocorydaline, D-154
Dehydrothalictricavine, D-171
Dihydrocoptisine, D-409
Groenlandicine, G-181
Hediamine, H-86
11-Hydroxy-12-methoxycoptisine, H-559
Karachine, K-15
Lambertine, L-23
Latifolian A, L-55
Lienkonine, L-167
Longiberine, L-248
Malacitanine, M-57
Mequinine, M-200
1-Methoxyberberine, M-243
13-Methoxyoxoberberine, M-279
8-Methylanibacanine, M-388
8-Oxoepiberberine, O-177
8-Oxopseudopalmatine, O-202
Oxyberberine, O-216
Palmatine chloroform, P-35
Palmatine, P-34
Pseudoberberine, P-705
Pseudocoptisine, P-710
Pseudopalmatine, P-719
Solidaline, S-353
Staudine, S-497
Stephabine, S-531
Thalibealine, T-308
Thalifaurine, T-325
Theoneberine, T-356
2,10,13-Trihydroxydibenzo[*a,g*]quinolizinium(1+), T-541
Worenine, W-22
Yuanamide, Y-18
Zijinlongine, Z-19

Isoindolobenzazepine alkaloids

Pictonamine, P-419

Narceine alkaloids

Adlumiceine enol lactone, A-142
Adlumidiceine, A-143
Bicucullinidine, B-120
Coryrutine, C-698
Cryptopleurospermine, C-793
Fumaramidine, F-171
Fumschleicherine, F-191
Microcarpine, M-592
Narceine, N-35
Narlumidine, N-51
Saxoguattine, S-111

Protopine alkaloids

Argemexicaine A, A-1408
Argemexicaine B, A-1409
Constrictosine, C-624
Cryptopine, C-790
Fagarine I, F-2
Fagarine II, F-3
Fagarine III, F-4
Muramine, M-734
Protopine, P-667
Pseudoprotopine, P-723

Rhoeadine alkaloids

Glaucamine, G-87

Phthalideisoquinoline alkaloids

Bicucine, B-118
Bicuculline, B-119
Cordrastine, C-644
Corydecumbine, C-679
Decumbenine, D-135
Egenine, E-43
Fumadensine, F-169
Hydrastine, H-394
Hypecoumine, H-767
Narcotinehemiacetal, N-46

Spirobenzylisoquinoline alkaloids

Africanine, A-173
Corystewartine, C-700
Densiflorine, D-218
Hyperectine, H-771
Raddeanamine, R-8
Severzinine, S-279

Secoberberine alkaloids

Berberal, B-99
Fumaflorine, F-170
Leptopidine, L-121
Leptopine, L-122
Leptopinine, L-123
Narcotinediol, N-45
Procumbine, P-634

Benzo[c]phenanthridine alkaloids

8-Acetonyldihydrochelerythrine, A-34
8-Acetonyldihydronitidine, A-35
Ailanthoidine, A-209
Ambinine, A-689
Arnottianamide, A-1446
Avicine, A-1566
Bocconoline, B-239
Buesgeniine, B-390
Bulleyanaline, B-407
Bungeanine, B-410
Caymandimerine, C-225
Chelelactam, C-354
Chelerythridimerine, C-355
Chelerythrine, C-356
Chelirubine, C-360
Corynoloxine, C-693
Dihydroavicine, D-404
Dihydrochelerythrine, D-407
Dihydrochelerythrinyl-8-acetaldehyde, D-408
Dihydronitidine, D-482
Dihydrosanguilutine, D-509
Dihydrosanguinarine, D-510
5,6-Dihydro-2,3,7,8-tetramethoxy-5-methylbenzo[*c*]phenanthridin-6-one, D-514
7,9-Dimethoxy-2,3-methylenedioxybenzo[*c*]phenanthridine, D-714
Fagaronine, F-5
8-Hydroxymethyldihydronitidine, H-595
8-Hydroxymethyldihydrosanguinarine, H-596
Integriamide, I-159
Isochelidonine, I-203
8-Methylnorchelerythrine, M-494
8-(4-Methyl-2-oxopentyl)dihydrochelerythrine, M-500
Nitidine, N-239
Nitrotyrasanguinarine, N-258
8-(2-Oxobutyl)dihydrochelerythrine, O-167
Pancorine, P-55
Papavoriendine, P-81
Rhoifoline B, R-87
Sanguilutine, S-55
Sanguinarine, S-56
Sanguirubine, S-60
Simulanoquinoline, S-305
Simulansamide, S-306
Tridecanochelerythrine, T-503
Zanthocadinanine A, Z-3
Zanthoxyline, Z-7

Phenethylisoquinoline alkaloids

Jolantinine, J-45

Homomorphinandienone alkaloids

Alkaloid CC 2, A-459
Alkaloid CC 3b, A-465
Colchiritchine, C-573

Homoaporphine alkaloids

Bitlisine, B-228

Homoproaporphine alkaloids

Bulbocodine, B-398
Colchilutine, C-572
Jolantamine, J-43
Jolantimine, J-44
Kesselridine, K-36
Luteicine, L-306
Luteidine, L-307
Regecoline, R-37
Regelinone, R-38
Robustamine, R-113
Trigamine, T-513

Colchicine alkaloids

Alkaloid AM 3, A-382
Colchiciline, C-568
Colchifoline, C-571
Demecolcinone, D-198
α-Lumicolchicine, L-286
β-Lumicolchicine, L-287
10,11-Oxy-10,12*a*-cyclo-10,11-secocolchicine, O-220

Cephalotaxus alkaloids

Anhydroharringtonine, A-1027
Biscephalezomine A, B-165
Biscephalezomine B, B-166
Biscephalezomine C, B-167
Cephalezomine A, C-252
Cephalezomine G, C-253
Cephalotaxidine, C-270
Demethylneodrupacine, D-202
Drupacine, D-942
Drupangtonine, D-943
Hainanensine, H-10
Harringtonine, H-66
Isocephalotaxine, I-201
Isoharringtonine, I-238
Neoharringtonine, N-117

Homoerythrina alkaloids

Cephalofortuneine, C-260
Comosine, C-587
Comosivine, C-588
Dyshomerythrine, D-963
Fortuneine, F-143
Holidine, H-321
Homoerysotine, H-331
Isophellibilidine, I-263
Lucidinine, L-278
Phellibiline, P-315
Schelhammeridine, S-125
Schelhammerine, S-126
Selaginoidine, S-218
Taxodine, T-51

Apogalanthamine alkaloids

Craugsodine, C-730

Galanthamine alkaloids

Habranthine, H-2
Narcisine, N-41
Pallidiflorine, P-30

Haemanthidine alkaloids

Amabiline, A-670
Amaryllisine, A-675
Ambelline, A-683
Apohaemanthamine, A-1363
Bowdensine, B-261
Bujeine, B-395
Buphanamine, B-413
Crinamabine, C-742
Crinatine, C-746
Crinisine, C-749
Cripowellin A, C-752
Cripowellin B, C-753
Delagoenine, D-176
Delagoensine, D-177
Haemanthamine, H-5
Haemanthidine, H-6
Haemultine, H-9
Havanine, H-78
Hippeastidine, H-293
Narcidine, N-40
Nerbowdine, N-169
Oliganine, O-81
Papyramine, P-86
Powelline, P-581

Graciline alkaloids

Digracine, D-399
Graciline, G-151
Obesine, O-2

Tazettine alkaloids

Egonine, E-44
Littoraline, L-215
Ornazidine, O-118
Pretazettine, P-626
Tazettine, T-53

Pancracine alkaloids

Montabuphine, M-696
Nangustine, N-26
Pancracine, P-57

Lycorine alkaloids

Amarbellisine, A-674
Anhydrolycorinium, A-1030
Assoanine, A-1508
Caribine, C-162
Falcatine, F-7
Galasine, G-8
Hippadine, H-290
Latindine, L-58
Lutessine, L-310
Mooreine, M-701
Narcissidine, N-43
Pluviine, P-528
Pratorinine, P-586
Pseudolycorine, P-716
Roserine, R-130
Ungeremine, U-34
Vasconine, V-35
Zefbetaine, Z-12

Lycorenine alkaloids

Candimine, C-78
Cliviahaksine, C-528
Clivisyaline, C-529
Clivojuline, C-530
Clivonidine, C-531
Clivonine, C-532
Galanthindole, G-4
Galanthusine, G-5
Hippeastrine, H-294
Hostasine, H-362
5-Hydroxyhomolycorine, H-504
Krigeine, K-102
Lycorenine, L-347
Lycosinine A, L-351
Miniatine, M-629
Nerinine, N-171
Oduline, O-68
Unsevine, U-37

Narciclasine alkaloids

Crinasiadine, C-744
8,9-Methylenedioxyphenanthridine, M-448
Narciclasine, N-37
Narcicrinine, N-38
Pancratistatin, P-58

Miscellaneous Amaryllidaceae alkaloids

Aestivine, A-163
Pancratium Alkaloid 6, A-323
Pancratium Alkaloid 31, A-324
Leucojum Alkaloid C, A-448
Leucojum Alkaloid D, A-484
Narcissus Alkaloid D, A-489
Sternbergia Alkaloid III, A-527
Ungernia Alkaloid IV, A-529
Rhodophiala bifida Alkaloid VI, A-608
Rhodophiala bifida Alkaloid XIII, A-613
Rhodophiala bifida Alkaloid XXV, A-615
Galanthus caucasicus Alkaloid, A-300
Pancratium sickenbergi Alkaloid, A-325
Ungernia severtzovii Alkaloid, A-338
Zephyranthes Alkaloid, A-341
Annapawine, A-1048
Augustamine, A-1539
Bodamine, B-240
Brunsdonnine, B-372
Brunsvinine, B-373
Buphacetine, B-412
Buphanine, B-414
Coranicine, C-640
Coruscine, C-669
Crinatine, C-747
Crinosine, C-750
Crispanine, C-754
Crispine, C-755
Daphnarcine, D-28
Distichamine, D-867
Flexamine, F-87
Flexine, F-89
Galanthamidine, G-2
Gracilamine, G-150
Hippacine, H-289
Hippandrine, H-291
Hippauline, H-292
Insulamine, I-149
Irenine, I-176
Ismine, I-186
Krelagine, K-98
Macranthine, M-9
Magnarcine, M-41
Narcicriptine, N-39
Narcisline, N-42
Narzettine, N-52
Neflexine, N-88
Nerifline, N-170
Nerispine, N-172
Nerundine, N-173
Petomine, P-282
Plicamine, P-524
Plicane, P-525
Poetamine, P-531
Poetaricine, P-532
Poeticine, P-533
Powellidine, P-580
Punikathine, P-799
Robecine, R-112
Rulodine, R-158
Secoplicamine, S-195
Sickenbergine, S-294
Squamigerine, S-486
Sternine, S-551
Vallopurfine, V-12
Vallotidine, V-13
Vallotine, V-14
Varadine, V-21
Yemensine, Y-8

Mesembrenoid alkaloids

4-[2-(Acetylmethylamino)ethyl]-4-(4-hydroxy-3-methoxyphenyl)-2,4-cyclohexadien-1-one, A-60
Sceletium Alkaloid A_4, A-346
Sceletium namaquense Alkaloid, A-330
Channaine, C-347
Crinafolidine, C-741
Sceletenone, S-123

Emetine group alkaloids

Alangiside, A-239
Alangium Alkaloid AL64, A-381
Emetine, E-72
Ipecosidic acid, I-167

Phenanthroindolizidine alkaloids

Anhydrodehydrotylophorinidine, A-1025
Hypoestestatin 2, H-773
Phyllosteminine, P-390
Polycanthidine, P-549
Tylohirsutinine, T-690
Tyloindicine F, T-692
Tyloindicine G, T-693
Tyloindicine H, T-694
Tyloindicine I, T-691
Vincetene, V-122

Phenanthroquinolizidine alkaloids

Alihirsutine A, A-263
Cryptopleuridine, C-791
Kayawongine, K-23

Ericamycins

Actinoplanone D, A-128
Albofungin, A-244
Antibiotic 4181B, A-1121
Antibiotic BE 19412A, A-1135
Antibiotic Sch 42137, A-1246
Antibiotic Sch 54445, A-1248
Antibiotic Sch 56036, A-1249
Antibiotic TMC 66, A-1288
Cervinomycin A_1, C-287
Citreamicin α, C-473
Citreamicin β, C-474
Citreamicin γ, C-475
Citreamicin η, C-476
Echinosporamicin, E-26
Ericamycin, E-175
Fredericamycin A, F-152
Fredericamycin B, F-153
Fredericamycin E, F-154
25-Hydroxy-24-oxokibdelone C, H-655
Isokibdelone A, I-240
Kibdelone A, K-40
Lysolipin I, L-374
Lysolipin X, L-375
Simaomicin β, S-301
Xantholipin, X-10

Simple indole alkaloids

3-Acetylindole, A-59
2-Acetyl-3-methylindole, A-61
Acremoauxin A, A-109
Acremoauxin B, A-110
Almazolone, A-636
3-(Aminomethylene)-1,3-dihydro-2*H*-indole-2-thione, A-836
Annonidine F, A-1057
Antibiotic SF 2140, A-1255
Aplysinopsin, A-1357
Arcyriarubin A, A-1394
Asterredione, A-1517
Bengacarboline, B-58
Birnbaumin A, B-148
2,2-Bis(6-bromo-3-indolyl)ethylamine, B-162
Bis(6-bromo-2-tryptaminyl) disulfide, B-163
3,3′-Bis(indolylmethyl)dimethylammonium, B-190
3,5-Bis(3-methyl-2-butenyl)-1*H*-indole, B-200
3,6-Bis(3-methyl-2-butenyl)-1*H*-indole, B-201
3,7-Bis(3-methyl-2-butenyl)-1*H*-indole, B-202
Brasilidine A, B-281
Brassicanal C, B-283
Brassinin, B-284
Brassitin, B-285
6-Bromo-3-chloro-1*H*-indole, B-303
7-Bromo-2,3-dichloro-1*H*-indole, B-308
6-Bromo-1,2-dihydro-2,2-bis(methylthio)-3*H*-indol-3-one, B-309
6-Bromo-4,5-dihydroxyindole, B-310
6-Bromo-4,7-dihydroxyindole, B-311
6-Bromo-2-(1,1-dimethyl-2-propenyl)-1*H*-indole-3-carboxaldehyde, B-315
6-Bromo-3-(hydroxyacetyl)-1*H*-indole, B-320
6-Bromo-3-hydroxy-1*H*-indole, B-325
6-Bromo-5-hydroxy-1*H*-indole, B-326
6-Bromo-5-hydroxy-1*H*-indole-3-carboxaldehyde, B-327
5-Bromo-1*H*-indole-3-acetic acid, B-331
3-Bromo-1*H*-indole, B-330
6-Bromo-1*H*-indole-3-carboxaldehyde, B-333
6-Bromo-1*H*-indole-3-carboxylic acid, B-334
6-Bromo-1*H*-indole-2,3-dione, B-335
6-Bromo-2-(methylthio)-3*H*-indol-3-one, B-341
4(7)-Bromo-2,3,7(2,3,4)-trichloro-1*H*-indole, B-354
Brussalexin A, B-374
Caulidine A, C-216
Caulidine B, C-217
Caulindole A, C-218
Caulindole C, C-219
Cephalandole A, C-249
Cephalandole B, C-250
Cephalandole C, C-251
Cephalinone A, C-255
Cephalinone B, C-256
Cephalinone C, C-257

Cephalinone D, C-258
Chelonin A, C-361
4-Chloro-1*H*-indole-3-acetic acid, C-410
3-Chloro-1*H*-indole, C-409
5-Chloro-6-methoxy-1-methyl-1*H*-indole-2,3-dione, C-412
Citorellamine, C-471
Costinone A, C-705
Costinone B, C-706
4,6-Dibromo-2,3-bis(methylthio)-1*H*-indole, D-304
2,7-Dibromo-3-chloro-1*H*-indole, D-308
4,7-Dibromo-2,3-dichloro-1*H*-indole, D-310
3,6-Dibromo-1*H*-indole, D-326
4,6-Dibromo-1*H*-indole, D-327
5,7-Dibromo-6-methoxy-1*H*-indole, D-329
4,6-Dibromo-2-methyl-1*H*-indole, D-332
4,6-Dibromo-2-methylthio-1*H*-indole, D-334
2,3-Dihydro-5,6-dihydroxy-1,1-dimethylindolium(1+), D-419
2,3-Dihydro-1-formyl-2-hydroxy-5-methoxy-6-methyl-1*H*-indole, D-432
1,3-Dihydro-3-hydroxy-4-methoxy-3-methyl-2*H*-indol-2-one, D-443
2,3-Dihydro-1*H*-indol-5-ol, D-465
2,3-Dihydro-2-oxo-1*H*-indole-3-acetic acid, D-485
α-(1,3-Dihydro-3-oxo-2*H*-indol-2-ylidene)-1*H*-indole-3-acetonitrile, D-487
5,6-Dihydroxy-1*H*-indole-2-carboxylic acid, D-598
4,5-Dihydroxy-1-methyl-3-oxo-2-(trichloromethyl)-3*H*-indolium(1+), D-630
3,3-Di-1*H*-indol-3-yl-2-butanone, D-689
4-[(Di-1*H*-indol-3-yl)methyl]phenol, D-692
3,3-Di-1*H*-indol-3-yl-1,2-propanediol, D-693
3-[(Dimethylamino)methyl]-5,7-dimethoxyindole, D-733
3-[(Dimethylamino)methyl]indole, D-736
2,4-Dimethyl-1*H*-indole, D-751
Dithyreanitrile, D-873
Echinosulfone A, E-27
Echinosulfonic acid C, E-28
3-Ethyl-1,3-dihydro-3-methoxy-2*H*-indol-2-one, E-236
3-Formyl-1*H*-indole-2-sulfonic acid, F-140
Galanthindole, G-4
N-[[3-(β-D-Glucopyranosyloxy)-2,3-dihydro-2-oxo-1*H*-indol-3-yl]acetyl]aspartic acid, G-103
Glusun I, G-105
Glusun II, G-106
Hamigeramide, H-42
3-(Hydroxyacetyl)-1*H*-indole, H-400
3-(2-Hydroxyethyl)-6-prenylindole, H-497
5-Hydroxy-3-(2-hydroxyethyl)-1*H*-indole, H-505
5-Hydroxy-1*H*-indole-3-acetic acid, H-525
5-Hydroxy-1*H*-indole-3-carboxaldehyde, H-528
6-Hydroxy-1*H*-indole-3-carboxaldehyde, H-529
6-Hydroxy-1*H*-indole-2,3-dione, H-533
2-Hydroxy-1-(1*H*-indol-3-yl)-4-methyl-3-hexanone, H-535
2-Hydroxy-1-(1*H*-indol-3-yl)-4-methyl-3-pentanone, H-536
5-Hydroxy-3-isothiocyanato-4-methoxyindole, H-548
3-Hydroxy-2-octadecylindole, H-646
2-Hydroxy-6-prenylindole, H-701
Hyrtinadine A, H-779
Hyrtiosin B, H-782
1*H*-Indole-3-acetaldehyde, I-80
1*H*-Indole-3-acetic acid, I-81
1*H*-Indole-3-butanoic acid, I-83
N-(1*H*-Indole-3-carbonyl)urea, I-84
1*H*-Indole-3-carboxaldehyde, I-86
1*H*-Indole-5-carboxaldehyde, I-87
1*H*-Indole-7-carboxaldehyde, I-88
1*H*-Indole-2-carboxylic acid, I-89
1*H*-Indole-3-carboxylic acid, I-90
1*H*-Indole-2,3-diol, I-91
1*H*-Indole-2,5-diol, I-92
1*H*-Indole-5,6-diol, I-93
1*H*-Indole-6,7-diol, I-94
1*H*-Indole-2,3-dione, I-95
1*H*-Indole-3-ethanol, I-96
Indole, I-79
1*H*-Indole-3-methanamine, I-97
1*H*-Indole-3-methanol, I-98
1*H*-Indole-7-methanol, I-99
1*H*-Indole-3-propanoic acid, I-100
1*H*-Indol-2-ol, I-103
1*H*-Indol-3-ol, I-104
3*H*-Indol-3-one, I-106
1*H*-Indol-3-ylacetyl-*myo*-inositol, I-115
4-(1*H*-Indol-3-yl)-1,2,3-butanetriol, I-116
3-Indolylmethyl glucosinolate, I-122
1-(1*H*-Indol-3-yl)-3-methyl-2-buten-1-one, I-125
2-(1*H*-Indol-3-ylmethyl)-1*H*-indole-3-acetic acid, I-127
3-(1*H*-Indol-3-yl)-2-oxopropanoic acid, I-133
1-(1*H*-Indol-3-yl)-1,2,3-propanetriol, I-135
3-(1*H*-Indol-3-yl)-2-propenoic acid, I-136
3-(1*H*-Indol-3-yl)quinoline, I-138
5-(1*H*-Indol-3-yl)-2(3*H*)-thiazolethione, I-139
3-Isothiocyanato-4-methoxy-1*H*-indole, I-337
Lycosinine A, L-351
Malassezialactic acid, M-61
Malassezin, M-65
Malassezione, M-67
Matemone, M-115
Melochicorine, M-183
Methoxybrassenin A, M-245
Methoxybrassenin B, M-246
5-Methoxy-1*H*-indole-4,7-dione, M-254
6-Methoxy-1*H*-indole-4,7-dione, M-255
5-(3-Methyl-2-butenyl)-1*H*-indole-2,3-dione, M-415
6-(3-Methyl-2-butenyl)-1*H*-indole-2,3-dione, M-416
3-(3-Methyl-2-butenyl)-1*H*-indole, M-411
5-(3-Methyl-2-butenyl)-1*H*-indole, M-412
6-(3-Methyl-2-butenyl)-1*H*-indole, M-413
7-(3-Methyl-2-butenyl)-1*H*-indole, M-414
2-(Methyldithio)-1*H*-indole-3-carboxaldehyde, M-434
3-Methyl-1*H*-indole-2-carboxylic acid, M-476
5-Methyl-1*H*-indole-4,7-dione, M-477
3-Methyl-1*H*-indole, M-474
2-Methyl-1*H*-indole-4-methanol, M-478
2-(Methylthio)-3*H*-indol-3-one, M-575
Murrayacarine, M-756
Murrayaculatine, M-758
Neosidomycin, N-138
3-Nitro-1*H*-indole, N-251
Oxazinine 3, O-154
3-(5-Oxazolyl)-1*H*-indole, O-157
Penidiamide, P-189
4-(5-Phenylpentyl)-1*H*-indole-2,3-dione, P-349
Pityrialactone, P-490
Pityriazole, P-495
Polyandrocarpamide A, P-541
6-Prenyl-1*H*-indole-3-carboxylic acid, P-617
Preoxazinin 7, P-619
Streptindole, S-564
Tanakine, T-25
2,3,4,6-Tetrabromo-1*H*-indole, T-113
2,3,4,7-Tetrabromo-1*H*-indole, T-114
2,3,5,6-Tetrabromo-1*H*-indole, T-115
2,3,4,7-Tetrachloro-1*H*-indole, T-119
5,6,7,7*a*-Tetrahydro-1*H*-indol-2(3*H*)-one, T-195
3-(2-Thiazolyl)-1*H*-indole, T-372
2,4,7(3,4,7)-Tribromo-3(2)-chloro-1*H*-indole, T-459
2,3,6-Tribromo-1*H*-indole, T-463
2,3,7-Tribromo-1*H*-indole, T-464
2,4,6-Tribromo-1*H*-indole, T-465
3,4,6-Tribromo-1*H*-indole, T-466
3,5,6-Tribromo-1*H*-indole, T-467
3,5,7-Tribromo-1*H*-indole, T-468
3,5,7-Tribromo-6-methoxy-1*H*-indole, T-471
2,5,6-Tribromo-*N*-methylgramine, T-472
2,4,6-Tribromo-3-methylthio-1*H*-indole, T-473
2,3,4-Trichloro-1*H*-indole, T-480
2,3,7-Trichloro-1*H*-indole, T-481
3-(3,7,11-Trimethyl-2,6,10-dodecatrienyl)-1*H*-indole, T-605
Uvarindole A, U-59
Uvarindole B, U-60
Wuzhuyurutine B, W-27
Zyzzin, Z-39

Simple biindoles

Akashin C, A-225
Annonidine A, A-1053
Annonidine B, A-1054
Annonidine C, A-1055
Annonidine D, A-1056
3,3′-Bi-1*H*-indole-5,5′,6,6′-tetrol, B-130
[3,3′-Biindoline]-2,2′-dione, B-131
Bisindigotin, B-189
Cephalinone C, C-257
Cephalinone D, C-258
Dendridine A, D-206
5,5′-Dibromo-4,4′-dichloro-7,7′-dimethoxy-3,3′-bi-1*H*-indole, D-309
6,6′-Dibromoindigotin, D-325
2-(1,3-Dihydro-3-oxo-2*H*-indol-2-ylidene)-7-hydroxycyclopent[*g*]indol-3(2*H*)-one, D-486
2,2′,3,4′,5,5′-Hexabromo-1,3′-bi-1*H*-indole, H-211
Indigotin, I-72
Indirubin, I-73
2,4,4′,6,6′-Pentabromo-2′,3-bis(methylthio)-1,3′-bi-1*H*-indole, P-200
Peronatin B, P-271
Pityriarubin A, P-492
Sciodole, S-150
[3,2′:2′(3′*H*),3′′-Ter-1*H*-indol]-3′-one, T-87
2,2′,5,5′-Tetrabromo-3,3′-bi-1*H*-indole, T-108
2,2′,6,6′-Tetrabromo-3,3′-bi-1*H*-indole, T-109
4,4′,6,6′-Tetrabromo-2,2′-bis(methylthio)-3,3′-bi-1*H*-indole, T-110
3,3′,5,5′-Tetrabromo-7′-methoxy-1,4′-bi-1*H*-indole, T-117
Tryptophan tryptophylquinone, T-641

Simple tryptamine alkaloids

Alternatamide B, A-662
Arundamine, A-1452
Arundarine, A-1453
Arundinine, A-1454
Bengacarboline, B-58
6-Bromotryptamine, B-356
Buchtienine, B-381
Bufopyramide, B-391
Bufoserotonin C, B-392
Bufotenine, B-393
Ceridimine, C-281
Chrysopentamine, C-429
Cinchophyllamine, C-448
Convolutindole A, C-630
5,6-Dibromotryptamine, D-343
3-Dimethylaminoacetyl-5-methoxyindole, D-727
N,*N*-Dimethyltryptamine, D-785
Donasine, D-914
Fragilamide, F-145
Gelliusine A, G-37
Gelliusine C, G-38
Glypetelotine, G-130
Hedyocapitelline, H-87
4-Hydroxy-*N*,*N*-dimethyltryptamine, H-480
5-Hydroxytryptamine, H-755
Igzamide, I-21
N^b-(3-Indolylmethyl)-5-methoxy-N^b-methyltryptamine, I-128
N-[2-(1*H*-Indol-3-yl)-2-oxoethyl]acetamide, I-132
Ipobscurine B, I-168
Isostrychnopentamine B, I-326
Janussine A, J-22

Kottamide A, K-92
Kottamide D, K-93
Kottamide E, K-94
Lotthanongine, L-265
4-Methyl *N*-[(2,3-dihydro-2-oxo-1*H*-indol-3-yl)acetyl]aspartate, M-299
N-Methyltryptamine, M-582
Montamine, M-697
Oxojanussine, O-186
Prealmazole C, P-588
Prebalamide, P-591
Strychnofoline, S-595
Strychnopentamine, S-601
Strychnophylline, S-602
Tryptamine, T-639
Usambarensine, U-52

Cyclotryptamine alkaloids

Alline, A-626
Angelicastigmine, A-1007
Arundinine, A-1454
6-Bromo-3*a*-(3,7-dimethyl-2,6-octadienyl)-1,2,3,3*a*,8,8*a*-hexahydro-1-methylpyrrolo[2,3-*b*]indol-7-ol, B-314
Calycosidine, C-53
Drimentine E, D-939
Flustramine C, F-106
Flustramine D, F-107
Flustramine E, F-108
Flustraminol A, F-109
Flustraminol B, F-110
Flustrarine B, F-111
Hodgkinsine, H-311
Idiospermuline, I-17
Isoflustramine D, I-235
Isopsychotridine A, I-288
Isopsychotridine E, I-289
Javanicunine A, J-29
Madindoline A, M-34
Phakellistatin 3, P-303
Physostigmine, P-400
Pseudophrynamine 512A, P-721
Pseudophrynamine 272B, P-722
Psycholeine, P-740
Psychopentamine, P-741
Psychotridine C, P-743
Psychotridine, P-742
Psychotrimine, P-744
Quadrigemine A, Q-2
Quadrigemine B, Q-3
Quadrigemine H, Q-4
Tetradehydroisocalycanthine, T-139
2,3,8,8*a*-Tetrahydro-3*a*-nitro-1*H*-pyrrolo[2,3-*b*]indole, T-209
Urochordamine A, U-47
Vatamidine, V-41
Vatamine, V-42
Vatine, V-44

Chaetocin-like alkaloids

Amauromine, A-680
Antibiotic Sch 52900, A-1247
Antibiotic T 988B, A-1272
Antibiotic WIN 64745, A-1310
Antibiotic WIN 64821, A-1311
Asperazine, A-1468
Brevianamide E, B-290
Brevicompanine A, B-293
Brevicompanine C, B-294
Chaetocin B, C-321
Chaetocin C, C-322
Chaetocin, C-320
Chaetocochin A, C-323
Chaetocochin C, C-324
Chaetomin, C-335
Chetracin A, C-372
Dethiotetrakis(methylthio)chetomin, D-239
Aspergillus niger Diketopiperazine dimer, D-702
Ditryptophenaline, D-874
Drimentine A, D-936
Drimentine C, D-937
Drimentine D, D-938
Epicoccin B, E-90
Epicoccin D, E-91
Fructigenine A, F-159
Fructigenine B, F-160
Gliocladine A, G-97
Gliocladine C, G-98
Gliocladine C, G-99
Gypsetin, G-234
Isoechinulin A, I-230
Leptosin A, L-124
Leptosin B, L-125
Leptosin C, L-126
Leptosin D, L-127
Leptosin E, L-128
Leptosin F, L-129
Leptosin G_1, L-130
Leptosin G_2, L-131
Leptosin G, L-132
Leptosin H, L-133
Leptosin I, L-134
Leptosin K_1, L-135
Leptosin K_2, L-136
Leptosin K, L-137
Leptosin M_1, L-138
Leptosin M, L-139
Leptosin N_1, L-140
Leptosin O, L-141
Leptosin Q, L-142
Leptosin S, L-143
Okaramine B, O-69
Okaramine C, O-70
Okaramine E, O-71
Okaramine H, O-72
Okaramine J, O-73
Okaramine M, O-74
Okaramine O, O-75
Okaramine P, O-76
Roquefortine C, R-125
Roquefortine E, R-126
Sporidesmin C, S-475
Sporidesmin D, S-476
Sporidesmin E, S-477
Sporidesmin F, S-478
Sporidesmin G, S-479
Sporidesmin H, S-480
Sporidesmin, S-474
Variecolorin G, V-26
Variecolorin J, V-27
Variecolorin K, V-28
Variecolorin L, V-29
Verticillin A, V-89
Verticillin C, V-90
Verticillin D, V-91
Verticillin G, V-92

Evodia alkaloids

Acetonylevodiamine, A-37
Dehydroevodiamine, D-158
Dihydrorutaecarpine, D-508
Euxylophoricine A, E-305
Euxylophoricine C, E-306
Euxylophoricine D, E-307
Euxylophoricine F, E-308
Euxylophorine, E-309
Hortiacine, H-361
Paraensine, P-89
Rutaecarpine, R-168
Wuzhuyurutine A, W-26

Indolactam alkaloids

Antibiotic 69, A-1083
Blastmycetin A, B-231
Blastmycetin B, B-232
Blastmycetin D, B-233
Blastmycetin E, B-234
Blastmycetin F, B-235
Cytoblastin, C-941
Indolactam I, I-77
Indolactam V, I-78
Lyngbyatoxin A, L-367
16-Methylpendolmycin, M-503
Olivoretin C, O-88
Olivoretin E, O-89
Pendolmycin, P-180
Teleocidin B_1, T-63

β-Carboline alkaloids

1-Acetyl-β-carboline, A-44
1-Acetyl-β-carboline-3-carboxylic acid, A-45
1-Acetyl-7-hydroxy-β-carboline, A-55
1-Acetyl-8-hydroxy-β-carboline, A-56
Alangiobussine, A-238
Annomontine, A-1051
Arborescidine C, A-1383
Arenarine B, A-1402
Arundarine, A-1453
Bengacarboline, B-58
9,9′-Bi-9*H*-pyrido[3,4-*b*]indole, B-146
Brachycerine, B-264
Brevicarine, B-291
6-Bromo-β-carboline, B-299
7-Bromo-β-carboline, B-300
6-Bromo-1-ethyl-β-carboline, B-318
5-Bromo-6-hydroxy-β-carboline, B-321
7-Bromo-6-hydroxy-β-carboline, B-322
6-Bromo-1-methyl-β-carboline, B-340
Camptine, C-67
Capitelline, C-95
β-Carboline, C-130
β-Carboline-1-carboxaldehyde, C-131
β-Carboline-1-propanoic acid, C-134
β-Carboline-1,3,4-trione, C-135
1-(β-Carbolin-1-yl)-3-hydroxy-1-propanone, C-136
4-(β-Carbolin-1-yl)-4-oxobutanoic acid, C-137
1-(β-Carbolin-1-yl)-3,4,5-trihydroxy-1-pentanone, C-138
3-Carboxy-1,2,3,4-tetrahydro-β-carboline-1-propanoic acid, C-155
1-Carboxytrypargine, C-156
Ceciline, C-230
Chrysotricine, C-433
Cryptolepicarboline, C-786
7,8-Dichloro-1-hydroxy-9-methyl-β-carboline, D-351
7,8-Dichloro-9-methyl-β-carboline, D-355
Dichotomide II, D-360
Didemnoline A, D-380
4,8-Dimethoxy-β-carboline, D-709
4,7-Dimethoxy-1-vinyl-β-carboline, D-723
4,9-Dimethoxy-1-vinylβ-carboline, D-724
Dragmacidonamine A, D-933
Elaeocarpidine, E-54
1-Ethyl-β-carboline, E-234
1-Ethyl-4-methylsulfonyl-β-carboline, E-260
Eudistalbin A, E-278
Eudistalbin B, E-279
Eudistomidin A, E-280
Eudistomidin B, E-281
Eudistomidin C, E-282
Eudistomidin F, E-283
Eudistomin A, E-285
Eudistomin B, E-286
Eudistomin C, E-287
Eudistomin H, E-288
Eudistomin T, E-289
Flazine, F-85
1-(2-Guanidinoethyl)-1,2,3,4-tetrahydro-6-hydroxymethyl-β-carboline, G-205
Harmalidine, H-64
Homofascaplysin A, H-333
Homofluorodaturatin, H-337
1-(4-Hydroxybenzoyl)-β-carboline, H-411
4-Hydroxy-β-carboline-1-carboxaldehyde, H-456
1-(2-Hydroxyethyl)-β-carboline, H-487
1-(2-Hydroxyethyl)-4-methoxy-β-carboline, H-493
1-(1-Hydroxy-2-methoxyethyl)-4-methoxy-β-carboline, H-560
1-Hydroxymethyl-β-carboline, H-590

6-Hydroxy-1-methyl-β-carboline, H-591
7-Hydroxy-1-methyl-β-carboline, H-592
8-Hydroxy-1-methyl-β-carboline, H-593
8-Hydroxy-1-vinyl-β-carboline, H-758
Hyrtioerectine A, H-780
Hyrtiomanzamine, H-781
1-(3-Indolyl)-β-carboline, I-119
Jafrine, J-14
Kauluamine, K-22
Kirondrine, K-49
Komarine, K-58
Komaroine, K-59
Komavicine, K-60
Komavine, K-61
Kumujansine, K-106
Lavendamycin, L-78
Lissoclin C, L-199
Maeganedin A, M-38
Manzamine B, M-92
Manzamine C, M-93
Manzamine J, M-94
Manzamine M, M-95
Saccharomyces kluyveri α-Mating pheromone 1, M-116
Maxonine, M-131
4-Methoxy-1-vinyl-β-carboline, M-290
1-Methyl-β-carboline-3-carboxylic acid, M-427
1-Methyl-β-carboline, M-426
4-(1-Methyl-2-piperidinyl)-β-carboline, M-518
1-(2-Methyl-1-propenyl)-β-carboline, M-521
Milnamide A, M-619
Myrianthosine, M-795
Neokauluamine, N-120
Pauridianthine, P-133
Pedatisectine C, P-152
Perlolyrine, P-270
Picrasidine A, P-406
Picrasidine B, P-407
Picrasidine C, P-408
Picrasidine E, P-409
Picrasidine H, P-411
Picrasidine K, P-412
Picrasidine M, P-414
Picrasidine R, P-415
Picrasidine X, P-405
Pityriacitrin B, P-489
Pityriacitrin, P-488
Plakortamine A, P-507
Plakortamine C, P-508
1-(2-Quinolinyl)-β-carboline, Q-51
1-(4-Quinolinyl)-β-carboline, Q-52
1-(5-Quinolinyl)-β-carboline, Q-53
1-(6-Quinolinyl)-β-carboline, Q-54
1-(8-Quinolinyl)-β-carboline, Q-55
Reticulatate, R-57
Reticulatol, R-58
Roecarboline, R-115
Secofascaplysin A, S-186
Shishijimicin A, S-290
Tetrahydroakagerine, T-141
1,2,3,4-Tetrahydro-6-hydroxy-β-carboline, T-173
1,2,3,4-Tetrahydro-2-methyl-β-carboline, T-203
Tetrahydropentoxyline, T-215
2,3,4,9-Tetrahydro-1*H*-pyrido[3,4-*b*]indole-1,6-diol, T-225
2,3,4,9-Tetrahydro-1*H*-pyrido[3,4-*b*]indol-1-one, T-226
1-Vinyl-β-carboline-3-carboxylic acid, V-140
1-Vinyl-β-carboline, V-139
Vittacarboline, V-166
Woodinine, W-21
Xestoamine, X-20
Xestomanzamine A, X-23

Carbazole alkaloids

Antibiotic BE 48021, A-1129
Atanisatine, A-1530
Bicyclomahanimbicine, B-121
Bicyclomahanimbine, B-122
1,1′-Bi[2-hydroxy-3-methylcarbazole], B-128
8,8′-Bikoenigine, B-134
Bikoeniquinone A, B-135
Bisisomahanine, B-192
Bismahanine, B-195
Bismurrayafoline A, B-207
Bismurrayafoline B, B-208
Bismurrayafoline C, B-209
Bismurrayafoline E, B-210
6,8′-Bismurrayamine A, B-211
8,8′-Bismurrayamine A, B-212
Bismurrayaquinone A, B-213
Carbazole, C-120
9*H*-Carbazole-3-carboxaldehyde, C-121
Carbazomadurin A, C-125
Carbazomadurin B, C-126
Carbazomarin A, C-127
Carbazomycin G, C-128
Carquinostatin A, C-169
3-Chloro-9*H*-carbazole, C-397
Chrestifoline A, C-423
Chrestifoline B, C-424
Chrestifoline C, C-425
Clausamine F, C-499
Clausanitine, C-500
Clausenamine A, C-503
Clausenapin, C-504
Clausenaquinone A, C-505
Clausevatine E, C-506
Clausine D, C-507
Clauszoline A, C-509
Clauszoline B, C-510
Clauszoline H, C-511
Coproverdine, C-636
Currayanine, C-814
2,7-Dibromo-9*H*-carbazole, D-306
3,6-Dibromo-9*H*-carbazole, D-307
2,7-Dihydroxy-9*H*-carbazole-3-carboxaldehyde, D-556
2,8-Dihydroxy-9*H*-carbazole-3-carboxaldehyde, D-557
Dihydroxygirinimbine, D-582
3,6-Diiodo-9*H*-carbazole, D-696
3,6-Dimethyl-1-(3-methyl-2-butenyl)-9*H*-carbazole, D-753
Epocarbazolin A, E-103
Epocarbazolin B, E-104
Euchrestifoline, E-274
Euchrestine A, E-275
Euchrestine C, E-276
Euchrestine D, E-277
Eustifoline A, E-300
Eustifoline B, E-301
Eustifoline C, E-302
Furoclausine A, F-203
Furoclausine B, F-204
Girinimbine, G-81
Glybomine C, G-110
Glycomaurrol, G-125
Heptaphylline, H-125
1-Heptyl-3-hydroxy-2-methyl-9*H*-carbazole, H-132
1-Hydroxy-9*H*-carbazole-3-carboxaldehyde, H-447
2-Hydroxy-9*H*-carbazole-3-carboxaldehyde, H-448
7-Hydroxy-9*H*-carbazole-3-carboxaldehyde, H-450
4-Hydroxy-3-methoxy-2-methyl-9*H*-carbazole-1-carboxaldehyde, H-561
6-Hydroxy-5-(3-methyl-2-butenyl)-9*H*-carbazole-3-carboxaldehyde, H-577
1-Hydroxy-3-methyl-9*H*-carbazole, H-583
2-Hydroxy-3-methyl-9*H*-carbazole, H-585
2-Hydroxy-7-methyl-9*H*-carbazole, H-586
3-Hydroxy-6-methyl-9*H*-carbazole, H-587
3-Hydroxymethyl-1-methoxycarbazole, H-603
6-Hydroxymethyl-1-methoxycarbazole, H-604
Indizoline, I-75
Isomurrayazoline, I-250
Koeniginequinone A, K-55
Kwangsine, K-117
3-Methoxy-2-methyl-1-phenyl-9*H*-carbazole, M-270
3-Methyl-1*H*-carbazole-1,4(9*H*)-dione, M-425
1-Methyl-9*H*-carbazole, M-423
3-Methyl-9*H*-carbazole, M-424
4-Methyl-10*H*-furo[3,2-*a*]carbazole, M-464
9-Methyl-6*H*-furo[2,3-*c*]carbazole, M-465
Mukoenine A, M-728
Mukoenine B, M-729
Murrafoline E, M-745
Murrafoline F, M-746
Murranimbine, M-749
Murrastifoline A, M-751
Murrastifoline B, M-752
Murrastifoline C, M-753
Murrastifoline D, M-754
Murrastifoline F, M-755
Murrayacine, M-757
Murrayafoline B, M-759
Murrayaline C, M-760
Murrayamine F, M-761
Murrayamine J, M-762
Murrayamine M, M-763
Murrayamine O, M-764
Murrayanine, M-765
Murrayaquinone B, M-766
Murrayaquinone D, M-767
Neocarazostatin A, N-103
3,3′-[Oxybis(methylene)]bis[9-methoxy-9*H*-carbazole], O-219
Oxydimurrayafoline, O-221
Picranitine, P-403
Pityriazole, P-495
Pyrayafoline A, P-883
Pyrayafoline B, P-884
Pyrayafoline D, P-885
Pyrayaquinone A, P-886
Pyrayaquinone B, P-887
Pyrayaquinone C, P-888
Siamenol, S-291
Streptoverticillin, S-573
1,2,8-Trimethoxy-6-methyl-9*H*-carbazole, T-596

Indolo[2,3-a]carbazole and related alkaloids

Antibiotic BE 54017, A-1131
Antibiotic K 252b, A-1189
Antibiotic K 252c, A-1190
Antibiotic TAN 1030A, A-1281
Antibiotic ZHD 0501, A-1324
Arcyriacyanin A, A-1392
Arcyriaflavin A, A-1393
Arcyriaverdin C, A-1395
Arcyrin A, A-1396
Arcyroxindole A, A-1397
Arcyroxocin A, A-1398
3-Chloro-11,12-dihydroindolo[2,3-*a*]carbazole, C-401
5-Cyano-6-methoxyindolo[2,3-*a*]carbazole, C-828
3,8-Dichloro-11,12-dihydroindolo[2,3-*a*]carbazole, D-350
11,12-Dihydroindolo[2,3-*a*]carbazole, D-464
Indocarbazostatin, I-76
Rebeccamycin, R-32
Staurosporine, S-498
Tjipanazole J, T-419

Indolonaphthyridine alkaloids

Bonafousine, B-245
Canthin-6-one, C-90
Cimiciduphytine, C-440
Cimiciphytine, C-441
Cimilophytine, C-442
Deformyltalbotinic acid methyl ester, D-145
Haplocidiphytine, H-54
Haplophytine, H-58
Henrycinol A, H-114
4-Hydroxycanthin-6-one, H-440
5-Hydroxycanthin-6-one, H-442
8-Hydroxycanthin-6-one, H-443
9-Hydroxycanthin-6-one, H-444
10-Hydroxycanthin-6-one, H-445

11-Hydroxycanthin-6-one, H-446
1-Hydroxycanthin-6-one, H-438
2-Hydroxycanthin-6-one, H-439
5-Hydroxymethylcanthin-6-one, H-582
3*H*-Indolo[3,2,1-*de*][1,5]naphthyridine-2,6-dione, I-105
Isobonafousine, I-197
Luotonine C, L-299
Luotonine D, L-300
4-(Methylthio)canthin-6-one, M-571
5-(Methylthio)canthin-6-one, M-572
9-(Methylthio)canthin-6-one, M-573
11-(Methylthio)canthin-6-one, M-574
Norisotuboflavine, N-302
Picrasidine L, P-413
Picrasidine M, P-414
Strychnohirsutine, S-600
Talbotine, T-19
Tuboflavine, T-671

Ergot alkaloids

Securidaca longipedunculata Alkaloid A, A-375
1,1-Bis(8,9-epoxy-6,8-dimethylergoline), B-176
Cividiclavine, C-487
Clavicipitic acid I, C-514
Cycloclavine, C-856
β,β-Ergoannam, E-147
Ergobalansine, E-148
Ergobine, E-149
Ergobutine, E-150
Ergobutyrine, E-151
Ergocornam, E-152
Ergocornine, E-153
Ergocristam, E-154
Ergocristine, E-155
Ergocryptam, E-156
α-Ergocryptine, E-157
β-Ergocryptine, E-158
γ-Ergocryptinine, E-159
Ergogaline, E-160
Ergoheptine, E-161
Ergohexine, E-162
Ergoladinine, E-163
Ergometrine, E-164
Ergonine, E-165
β-Ergoptine, E-166
Ergoptine, E-167
Ergosecalinine, E-168
Ergosine, E-169
Ergosine, E-170
Ergostine, E-171
Ergotamine, E-172
Ergovaline, E-174
Festuclavine, F-49
Fumigaclavine C, F-182
Lysergol, L-371
Molliclavine, M-671
Paspaclavine, P-106
Paspalic acid, P-107

Indoloterpenoid alkaloids

Ambiguine B isonitrile, A-684
Ambiguine D isonitrile, A-685
Ambiguine E isonitrile, A-686
Ambiguine F isonitrile, A-687
Ambiguine G nitrile, A-688
Anhydrohapaloxindole A, A-1026
Aristoaristone, A-1425
Aristofruticosine, A-1426
Aristolarine, A-1430
Aristolasene, A-1431
Aristolasicone, A-1432
Aristolasol, A-1433
Aristone, A-1438
Aristoserratenine, A-1441
Bisaristone A, B-156
Bissecodehydrocyclopiazonic acid, B-218
Borrecapine, B-251
Borreline, B-252
Borreverine, B-253
Cyclopiazonic acid imine, C-895
α-Cyclopiazonic acid, C-894
Fontonamide, F-126
Fruticosonine, F-164
Hapalindole A, H-48
Hapalindole E, H-49
Hapalindole T, H-50
Hapalindolinone A, H-51
Hapalonamide G, H-52
Isoborreverine, I-198
Isopolyalthenol, I-269
Monodoroindole, M-692
Neopolyalthenol, N-135
Peduncularine, P-162
Polyalthenol, P-540
Polyavolinamide, P-546
Polyveoline, P-564
Serratoline, S-259
Sorelline, S-383
Spermacoceine, S-395
Suaveolindole, S-617
Tasmanine, T-35
Thiersindole A, T-375
Thiersindole C, T-376
2,2,6-Trimethyl-4-(4-quinolinyl)-3-azabicyclo[3.3.1]non-6-ene, T-614
Welwitindolinone A isonitrile, W-12
Welwitindolinone B isothiocyanate, W-13
Yuehchukene, Y-19

Strictosidine alkaloids

Alstonidine, A-650
Angustidine, A-1012
Angustine, A-1019
Bahienoside A, B-6
5-Carboxystrictosidine, C-153
Cordifoline, C-641
Lyadine, L-313
Lyalidine, L-314
Lyaline, L-315
Lyaloside, L-316
Macrolidine, M-16
Myrianthosine, M-795
Nauclealine A, N-57
Naucleaorine, N-62
Nauclefine, N-70
Naulafine, N-78
Neonaucleoside A, N-127
Neonaucleoside B, N-128
Neonaucleoside C, N-129
Paratunamide D, P-92
Pauridianthine, P-133
Pauridianthoside, P-135
Strictosidinic acid, S-583
Strictosidinic ketone, S-584
Vincosamide, V-126

Camptothecine-like alkaloids

22-Hydroxyacuminatine, H-403
OPHR 17, O-99
Pumiloside, P-796

Corynanthean alkaloids

Adirubine, A-141
Afrocurarine, A-174
C-Alkaloid O, A-572
Alkaloid RMB 10, A-594
Alkaloid Us 7, A-603
Angusteine, A-1010
Arboricine, A-1385
Arboricinine, A-1386
Blumeanine, B-238
Bracteatine, B-274
Buchtienine, B-381
Burnamicine, B-419
Callophylline B, C-38
Chrysopentamine, C-429
Cinchophyllamine, C-448
Corynantheidinaline, C-687
Corynantheidinalinic acid, C-688
Corynantheine, C-689
16,17-Didehydro-17-hydroxy-16-(hydroxymethyl)corynan-5-carboxylic acid, D-374
Dihydrocorynantheine pseudoindoxyl, D-411
Dihydrocorynantheol, D-412
Flavocarpine, F-82
Flavopereirine, F-84
Gambirine, G-13
Geissoschizine, G-32
Geissoschizol, G-33
Geissospermine, G-35
Guettardine, G-218
Guiaflavine, G-219
Guianensine, G-220
Hunteracine, H-368
7-Hydroxy-3-oxo-3,7-secorhynchophylline, H-656
Isositsirikine, I-319
Isostrychnopentamine B, I-326
Lombine, L-239
Longicaudatine Z, L-250
Longicaudatine, L-249
Mitragynine, M-657
Mitralactonal, M-659
Mitrasulgynine, M-663
Nitraraidine, N-242
Ochromianoxine, O-22
Ochropposinine oxindole, O-23
Ophiorrhizine-12-carboxylate, O-97
Ophiorrhizine, O-96
Rhyncophylline, R-90
Rotundifoline, R-134
Rumberine, R-159
Salacin, S-18
Serpentinine, S-253
Sitsirikine, S-325
Strychnofoline, S-595
Strychnofuranine, S-596
Strychnopentamine, S-601
Strychnophylline, S-602
Strychnoxanthine, S-606
Subincanadine A, S-623
3,4,5,6-Tetradehydrodihydrocorynantheol, T-136
Turbinatine, T-679
Uncaramine, U-22
Usambarensine, U-52

Secologanin-derived sesquimer alkaloids

Alkaloid C2, A-457
Alkaloid D1, A-493
Alkaloid D2, A-494
Bahienoside A, B-6
Bonafousine, B-245
Buchtienine, B-381
Ceridimine, C-281
Chrysopentamine, C-429
Cimiciduphytine, C-440
Cimiciphytine, C-441
Cinchophyllamine, C-448
Haplocidiphytine, H-54
Haplophytine, H-58
Isobonafousine, I-197
Isostrychnopentamine B, I-326
Janussine A, J-22
Oxojanussine, O-186
Strychnobaridine, S-590
Strychnofoline, S-595
Strychnopentamine, S-601
Strychnophylline, S-602
Usambarensine, U-52

Akageran and related alkaloids

Adifoline, A-140
Akagerine lactone, A-223
Akagerine, A-222
Camptoneurine, C-69

Correantine A, C-659
Correantine B, C-660
Correantine C, C-661
Correantoside, C-662
Deoxycordifoline lactam, D-223
Dihydrocycloakagerine, D-414
Janussine A, J-22
Kribine, K-101
Neoadifoline, N-98
Oxojanussine, O-186
Tetrahydroakagerine, T-141

Ajmalicine-like alkaloids

Ajmalicine hydroxyindolenine, A-213
Ajmalicinial, A-214
Ajmalicinine, A-215
Alstonine, A-652
Amsosinine, A-953
Aricine, A-1423
Carapanaubine, C-117
5-Carboxytetrahydroalstonine, C-154
Cathenamine, C-207
Herbaine, H-137
Isomitraphyllinol, I-247
Javaniside, J-31
Javaphylline, J-32
Magniflorine, M-43
Majdine, M-50
Methyl 16,17-didehydromethoxy-19-methyloxayohimban-16-carboxylate, M-298
Mitrajavine, M-658
Mitraphylline, M-661
Nauclecosidine, N-64
Nauclefiline, N-69
Naucleofolinine, N-73
Naucleidinal, N-74
Picraphylline, P-404
Rauvolcinine, R-28
Reserpiline, R-51
Reserpinine, R-53
Serpentinine, S-253
Tetraphylline pseudoindoxyl, T-289

Macroline alkaloids

Alstocraline, A-641
Alstolactone, A-642
Alstomacroine, A-643
Alstomacroline, A-644
Alstomacrophylline, A-645
Alstomicine, A-647
Alstonal, A-648
Alstonerine, A-649
Alstonisidine, A-653
Alstonisine, A-654
Alstophyllal, A-656
Angusticraline, A-1011
Angustimalal, A-1017
Angustimaline, A-1018
Jadiffine, J-7
Macralstonidine, M-7
Macralstonine, M-8
Macrocaffrine, M-10
Macrocarpamine, M-11
Macrodasine A, M-14
Macrogentine, M-15
Macrophylline, M-20
Macrospegatrine, M-30
Macroxine, M-31
Pandicine, P-66
Perhentinine, P-256
Raumacline, R-22
Sellowiine, S-220
Suaveoline, S-618
Talcarpine, T-20
Villalstonine, V-103

Malindan alkaloids

3,14-Didehydro-19-methylnormalindine, D-376
Isodihydrocadambine, I-226
Isomalindine-16-carboxylate, I-243
Malindine, M-73
Nauclechine, N-63

Cadamban alkaloids

Alkaloid ND 370, A-571
Cadambine, C-5
Dihydrocadambine, D-406
Nauclefoline, N-71
Rubenine, R-141

Vallesiachotaman alkaloids

Antirhine lactone, A-1329
Antirhine, A-1328
Camptacumotine, C-66
Glabratine, G-82
Matadine, M-114
Naucleamide A, N-59
Naucleofficine C, N-75
Ophiorine A, O-95
Vallesiachotamine lactone, V-11

Gelsemium alkaloids

Elegansamine, E-63
Gelsamydine, G-41
Gelsebanine, G-42
Gelsedilam, G-43
Gelsedine, G-44
Gelsefuranidine, G-45
Gelseiridone, G-46
Gelselegine, G-47
Gelsemamide, G-48
Gelsemine, G-49
Gelsemoxonine, G-50
Humantenirine, H-367
Hydrakouminol, H-393
Ourouparine, O-140
Rankiniridine, R-15

Yohimbinoid alkaloids

Alstonilidine, A-651
Cadamine, C-6
Callophylline B, C-38
Canembine, C-81
Deserpideine, D-233
Deserpidine, D-234
19,20-Didehydroyohimbine, D-378
10-Methoxyyohimbine, M-291
11-Methoxyyohimbine, M-292
Naucleactonine A, N-55
Naucleactonine B, N-56
Naucleamide C, N-60
Naucleamide E, N-61
Naucleficine, N-67
Neooxygambirtannine, N-132
Nitraraine, N-243
Ourouparine, O-140
Rescinnaminol, R-48
Reserpenediol, R-49
Reserpic acid, R-50
Sempervirine, S-228
Seredine, S-251
3,4,5,6-Tetradehydroyohimbine, T-140
Uncaramine, U-22
Venenatine, V-50
Yohambinine, Y-12
β-Yohimbine oxindole, Y-14
β-Yohimbine pseudoindoxyl, Y-15
Yohimbine, Y-13
Yohimbol, Y-16

Sarpagine alkaloids

Accedine, A-27
Accedinisine, A-28
Affinisine oxindole, A-167
Akuammidine, A-229
Alstocraline, A-641
Alstonoxine B, A-655
Alstoumerine, A-658
3-Amino-N^b-methylsecovoacarpine, A-846
Arbophylline, A-1382
16-Decarbomethoxy-19,20-dihydrovobasine, D-119
Dehydrovoachalotine, D-173
Difforine, D-396
Dihydroperaksine, D-491
Dispegatrine, D-864
Eburnaphylline, E-7
6,17-Epoxy-19,20-dihydro-1-methylsarpagan-17,21-diol, E-130
Ervitsine, E-193
Gardfloramine, G-18
Gardmultine, G-19
Gardneramine, G-20
Gardnerine, G-22
Gardnutine, G-23
Gardquinolone, G-24
Geissolosimine, G-31
Macralstonidine, M-7
Macrosalhine, M-29
Macrospegatrine, M-30
12-Methoxyaffinisine, M-237
Peraksine, P-241
Polyneuridine, P-562
Sarpagine, S-89
Talpinine, T-21
Tombozine, T-425
Trinervine, T-616
Undulatine, U-32
Voacarpine, V-171
Voachalotine oxindole, V-172
Voacoline, V-174

Ajmaline alkaloids

Ajmaline, A-216
Ajmalinimine, A-217
Alstomacroline, A-644
Alstonisidine, A-653
Flexicorine, F-88
Herbamine, H-139
Isorhazicine, I-309
10-Methoxy-11-[10-(11-methoxyvincamajinyl)]-cathafoline, M-258
11-[10-(11-Methoxyvincamajinyl)]vincorine, M-289
Perakine, P-240
Raureflexine, R-24
Sandwicolidine, S-51
Sandwicoline, S-52
Tetraphyllicine, T-288
Vincamajine, V-113
Vincawajine, V-121
Vomilenine, V-194

Vobasine alkaloids

Accedinisine, A-28
Affinine, A-166
Alkaloid TC-D, A-600
Capuvosidine, C-105
Capuvosine, C-106
Ceridimine, C-281
Conodiparine A, C-611
Conodiparine B, C-612
Conodirinine A, C-613
Conodirinine B, C-614
Conoduramine, C-615
Conodurine, C-616
Conodutarine A, C-617
Coryzeylamine, C-703
16′-Decarbomethoxy-19,20-dihydroconoduramine, D-118
16-Decarbomethoxyvoacamine pseudoindoxyl, D-121
Deformylcoryzeylamine, D-143
Difforlemenine, D-397
Difforlemenitine, D-398
Dregamine, D-935
Erichsonine, E-176

Ervahainamidine A, E-187
Ervahainamidine B, E-188
Ervahanine A, E-189
Hazuntamine, H-79
Monogagaine, M-693
Pagicerine, P-10
Pagisulfine, P-11
Perimivine, P-260
Perivine, P-268
Pseudovobparicine, P-734
Rauviridine, R-27
Rauwolfinine, R-29
Tabernaelegantinine A, T-3
Tabernaelegantinine B, T-4
Tabernaelegantinine C, T-5
Tabernaemontabovine, T-6
Tabernaemontavine, T-7
Tabernamine, T-8
Taberpsychine, T-10
2,7,19,20-Tetrahydro-3-hydroxy-1-methylvobasan-17-oic acid δ-lactone, T-186
Voacamidine, V-167
Voacamine, V-168
Vobasenal, V-183
Vobasonidine, V-184
Vobatricine, V-185
Vobparicine, V-186

Koumine alkaloids

Koumine, K-96

Ervatamia alkaloids

Ervatamine, E-190
Flabelliformide A, F-72
Methuenine, M-293

Akuammiline alkaloids

Abereamine 1, A-8
Abereamine 2, A-9
Abereamine 3, A-10
Abereamine 4, A-11
Akuammiginone, A-230
Akuammiline, A-231
Akuammine, A-232
Alschomine, A-640
Alstomaline, A-646
Angusticraline, A-1011
Aspidodasycarpine, A-1492
Aspidophylline A, A-1495
Burnamine, B-420
Cabufiline, C-3
Cathafoline, C-191
Ceylanicine, C-314
Ceylanine, C-315
Coryzeylamine, C-703
O-Deacetyl-1,2,4,5-tetrahydro-2-hydroxy-1-methylakuammilinium(1+), D-94
Deformylcoryzeylamine, D-143
Desformocorymine, D-236
Eripinal, E-181
Eripine, E-182
Flexicorine, F-88
Gentiacraline, G-53
Isocorymine, I-209
Lahoricine, L-16
Lanceomigine, L-28
Lanciferine, L-29
10-Methoxy-11-[10-(11-methoxyvincamajinyl)]-cathafoline, M-258
11-[10-(11-Methoxyvincamajinyl)]vincorine, M-289
Nareline, N-47
Peceylanine, P-147
Peceyline, P-148
Pelankine, P-172
Picrinine, P-417
Pleiocorine, P-519
Plumocraline, P-527
Raucanine, R-20
Raucubaine, R-21
Rausutranine, R-25
Rausutrine, R-26
Rhazimine, R-73
Rhazinaline, R-75
3,4-Seco-3,14-dehydrocabucraline, S-182
Strictamine, S-576
Strictaminolamine, S-577
Tacraline, T-15
Umbellamine, U-21
Undulatine, U-32
Vincarubine, V-118
Vincorine, V-125
Vingramine, V-133

Pleiocarpaman alkaloids

C-Alkaloid Y, A-617
Fluorocarpamine, F-99
C-Fluorocurine, F-100
Macrocarpamine, M-11
C-Mavacurine, M-130
Pleiocarpamine, P-518
Pleiocorine, P-519
Pleiocraline, P-520
Plumocraline, P-527
Pycnanthine, P-827
Pycnanthinine, P-828
Strictine, S-582
Villalstonine, V-103

Cinchona alkaloids

Chairamidine, C-337
Chairamine, C-338
Cinchonamine, C-444
Cinchonaminone, C-445
Cinchonidine, C-446
Cinchonine, C-447
Conchairamidine, C-597
Conchairamine, C-598
Cuscamidine, C-817
Cusconidine, C-819
Cusconine, C-820
Homocinchonidine, H-328
Javanine, J-30
Paricine, P-95
Quinamine, Q-12
Quinicine, Q-17
Quinidine, Q-18
Quinine, Q-20
Remijinine, R-40

Akuammicine alkaloids

Afrocurarine, A-174
C-Alkaloid D, A-476
Alvimine, A-667
Alviminine, A-668
Bharhingine, B-112
Calebassine, C-31
Calebassinine 1, C-32
Caracurine II, C-111
Caracurine V, C-110
Caracurine VII, C-115
Compactinervine, C-589
C-Curarine, C-809
3,17-Dihydroxyzenkerine, D-688
Divarine, D-875
Dolichocurine, D-910
Echitamidine, E-30
Geissolosimine, G-31
Geissoschizoline, G-34
Geissospermine, G-35
Guiaflavine, G-219
Guianensine, G-220
Henningsamide, H-110
Henningsiine, H-111
Longicaudatine Z, L-250
Longicaudatine, L-249
Malagashanine, M-58
Matopensine, M-120
Mattogrossine, M-122
11-Methoxyneooxydiaboline, M-278
Mossambine, M-713
Myrtoidine, M-803
Neolaugerine, N-122
Panganensine R, P-69
Panganensine X, P-68
Pericidine, P-257
Preakuammicine, P-587
Retuline, R-63
Rhazizine, R-77
Rosibiline, R-131
Spermostrychnine, S-400
Stemmadenine, S-510
Stricticine, S-580
Strychnobiline, S-591
Strychnochrysine, S-593
Strychnofendlerine, S-594
Strychnohexamine, S-599
Strychnopivotine, S-603
Strychnosilidine, S-604
Strychnosplendine, S-605
Strychnozairine, S-607
Subincanadine D, S-624
Subincanadine F, S-625
Toxiferine I, T-436
Tsilanine, T-649
Tubifolidine, T-668
Valparicine, V-16
Vinoxine, V-136
Voastrictine, V-182
Vobatricine, V-185
Yunnanensine, Y-21
Zenkerene, Z-14

Strychnidine alkaloids

Leuconotis Alkaloid 376, A-308
C-Alkaloid D, A-476
Cyclostrychnine, C-911
Holstiine, H-323
Icajine, I-12
Minfiensine, M-628
Protostrychnine, P-672
Pseudostrychnine, P-726
Strychnine, S-589
Strychnobiline, S-591
Strychnogucine A, S-597
Strychnogucine B, S-598
Strychnohexamine, S-599
Sungucine, S-642

Condylocarpan alkaloids

Arboflorine, A-1380
Aspidospermatidine, A-1497
4-(Chloromethyl)-2,16-didehydro-16-(methoxycarbonyl)condyfolanium, C-413
Dichotine, D-359
Geissovelline, G-36
Goniomine, G-141
Precondylocarpine, P-595
Strychnochromine, S-592
Tronoharine, T-631
Tubotaiwinal, T-672
Tubotaiwine, T-673

Secodine alkaloids

Presecamine, P-624
Secamine, S-174
Secodine, S-184

Aspidosperma alkaloids

Alalakine, A-233
Amataine, A-676
Anomaline, A-1067
Arboloscine, A-1381
Aspidoalbidine, A-1490
Aspidodispermine, A-1493
Aspidophytine, A-1496
Aspidospermine, A-1499
Bannucine, B-15
Beninine, B-63

10,10′-Bi[*N*-acetyl-11,12-dihydroxyaspidospermidine], B-115
Buxomeline, B-475
Callichiline, C-35
Cathaphylline, C-193
Catharanthamine, C-194
Catharine, C-197
Cathovaline, C-213
Cimiciduphytine, C-440
Cimiciphytine, C-441
Cimilophytine, C-442
Conofoline, C-618
Conophyllidine, C-621
Criophylline, C-751
Dichomine, D-358
Eburine, E-4
Ervafolene, E-185
Ervafolidene, E-186
1*b*-Ethyl-1*a*,1*b*,3,4,8*c*,9,10,10*a*-octahydro-2*H*-oxireno[4,5-*b*]pyrido[3,2-*c*]carbazole, E-262
Folicangine, F-117
Goniomitine, G-142
Haplocidiphytine, H-54
Haplophytine, H-58
Hazuntiphyllidine, H-80
Hazuntiphylline, H-81
Insulopinine, I-151
Kisantine, K-51
Leuconoxine, L-156
Leurosine, L-162
Leurosinone, L-163
Limaspermidine, L-177
Melomorsine, M-187
Mersicarpine, M-210
Methyl 1,2-didehydro-6,7-epoxy-3-hydroxy-8-oxoaspidospermidine-3-carboxylate, M-297
Methylenebismehranine, M-437
Modestanine, M-666
Obscurinervidine, O-7
Obscurinervine, O-8
3-Oxotabersonine, O-210
Pandicine, P-66
Paucivenine, P-132
Peduncularidine, P-161
Petchicine, P-278
Polyervinine, P-560
Pseudovinblastinediol, P-732
Quimbeline, Q-10
Roseadine, R-127
Rosicine, R-132
Scandomelidine, S-119
Scandomeline, S-120
Scandomelonine, S-121
14,15-Seco-3-oxokopsinal, S-193
Strempeliopidine, S-558
Strictanine, S-578
Suaveolenine, S-616
Tabernaemontabovine, T-6
Tabernaemontavine, T-7
Tabersonine, T-11
Tenuicausine, T-77
Tetrastachyne, T-294
Tetrastachynine, T-295
Trichophylline, T-492
Vinamidine, V-107
Vinblastine, V-110
Vincarubine, V-118
Vincathicine, V-119
Vincoline, V-124
Vincovalicine, V-127
Vincristine, V-128
Vindolicine, V-129
Voacinol, V-173
Voafolidine, V-175
Voafrine A, V-176
Vobtusamine, V-187
Vobtusine, V-188

Rhazinilam alkaloids

Leuconolam, L-155
Rhazinal, R-74

Melonine alkaloids

Celastromelidine, C-232
Celastromeline, C-233
Melonine, M-188
N^{b},$N^{b'}$-Methylenebismeloninium(2+), M-438

Quebrachamine alkaloids

Aspidochibine, A-1491
Capuronine, C-104
Ervinidine, E-192
Hyderabadine, H-391
Melaxillarinine, M-161
Pseudovinblastinediol, P-732
Rhazidigenine, R-72
Stapfinine, S-493
Vinamidine, V-107
Voaharine, V-177
Voaphylline hydroxyindolenine, V-180

Aspidofractine alkaloids

Aspidofractinine, A-1494
16-Hydroxyaspidofractinine, H-406
Kopsaporine, K-66
Kopsidasine, K-67
Kopsifoline C, K-70
Kopsijasmine, K-71
Kopsijasminilam, K-72
Kopsinine, K-78
Kopsinone, K-80
Lahadinine A, L-13
Lahadinine B, L-14
Lapidilectine A, L-43
Lapidilectine B, L-44
Lundurine A, L-294
Nitaphylline, N-238
Paucidactine A, P-128
Paucidactine C, P-129
Pauciflorine A, P-130
Pauciflorine B, P-131
Pleiomutine, P-521
Pycnanthine, P-827
Pycnanthinine, P-828
Scandomelidine, S-119
Singapurensine A, S-309
Tenuiphylline, T-80
Venacarpine A, V-47
Venacarpine B, V-48
Venalstonine, V-49

Vindolinine alkaloids

Tuboxenine, T-674
Vindolinine, V-132

Kopsane alkaloids

Danuphylline, D-17
Dasyrachine, D-86
10,22-Dioxokopsane, D-805
Fruticosine, F-163
Kopsanol, K-65
Kopsidasinine, K-68
Kopsifine, K-69
Kopsinarine, K-75
Kopsine, K-76
Kopsinidine A, K-77
Kopsinitarine A, K-79
Mersingine A, M-216
Methyl chanofruticosinate, M-296

Melodinus alkaloids

Meloscandonine, M-192
Meloscine, M-193
Mersilongine, M-213
Mersiloscine, M-214
Mersinaline, M-215
Mersinine A, M-217
Mersirachine, M-218
Scandine, S-118
Scandomeline, S-120
Scandomelonine, S-121

Iboga alkaloids

Alioline, A-264
12,12′-Bi[11-hydroxycoronaridine], B-127
Bonafousine, B-245
Capuvosine, C-106
Catharanthine, C-195
Conodiparine A, C-611
Conodiparine B, C-612
Conodirinine A, C-613
Conodirinine B, C-614
Conoduramine, C-615
Conodurine, C-616
Conodutarine A, C-617
Conopharyngine, C-620
Coronaridine hydroxyindolenine, C-658
Coronaridine, C-657
Crassanine, C-726
16′-Decarbomethoxy-19,20-dihydroconoduramine, D-118
Ervahainamidine A, E-187
Ervahainamidine B, E-188
Ervahanine A, E-189
Heyneatine, H-270
3-(1-Hydroxyethyl)coronaridine, H-489
3-Hydroxy-3,4-secocoronaridine, H-732
Ibogamine, I-4
Iboluteine, I-5
Iboquine, I-7
Iboxygaine hydroxyindolenine, I-9
Isobonafousine, I-197
Isovoacangine, I-344
Kisantine, K-50
Obovamine, O-3
3,6-Oxidoiboxygaine, O-162
3-(2-Oxopropyl)coronaridine, O-199
3,3′-(Oxopropyl)dicoronaridine, O-201
Roseadine, R-127
Sarcopharyngine, S-79
Tabernaelegantinine A, T-3
Tabernaelegantinine B, T-4
Tabernaelegantinine C, T-5
Tabernamine, T-8
Tabernoxidine, T-9
Tetrastachyne, T-294
Tetrastachynine, T-295
Voacamidine, V-167
Voacamine, V-168
Voacangine, V-170
Voaluteine, V-178

Pandoline alkaloids

Capuvosidine, C-105
Catharanthamine, C-194
Catharine, C-197
Deethylibophyllidine, D-140
1,2-Didehydropseudoaspidospermidine, D-377
Ervafolene, E-185
Ervafolidene, E-186
Leurosine, L-162
Leurosinone, L-163
Pseudovincadifformine, P-733
Vinblastine, V-110
Vincathicine, V-119
Vincovalicine, V-127
Vincristine, V-128

Pyridocarbazole alkaloids

Angustilodine, A-1016
Ellipticine, E-67
Elliptinine, E-68
9-Methoxyellipticine, M-252
Olivacine, O-83
Strellidimine, S-557

Ulean alkaloids

Dasycarpidone, D-84
Gilbertine, G-76

Manilamine, M-84
Uleine, U-8

Vallesaman alkaloids

Angustilobine A, A-1014
Angustilobine B, A-1015
Ervaticine, E-191
Isobrafouedine, I-199
Losbanine, L-264
Monogagaine, M-693
Pseudovobparicine, P-734
6,7-Secoangustilobine A, S-177
Undulifoline, U-33
Vallesamine, V-9
Vobparicine, V-186

Eburna alkaloids

Callichiline, C-35
Celastromelidine, C-232
Celastromeline, C-233
Cuanzine, C-800
Decarbomethoxyapocuanzine, D-117
Infractopicrine, I-140
Insulopinine, I-151
Isoschizogamine, I-313
Larutensine, L-46
Melaxillarinine, M-161
Nauclefidine, N-68
Paucivenine, P-132
Pleiomutine, P-521
Saifine, S-16
Strempeliopidine, S-558
Tenuicausine, T-77
Terengganensine A, T-82
Terengganensine B, T-83
Umbellamine, U-21
Vincarodine, V-117
Vincatine, V-120
Vobtusamine, V-187

Tacaman alkaloids

Tacamine, T-12
Tacamonine, T-13
Tronocarpine, T-630

Schizozygine alkaloids

Andrangine, A-1002
Criophylline, C-751
10,10′-Methylenebis[norvallesamidine], M-439
Schizogaline, S-133
Schizophylline, S-136
Schizozygine, S-137
Strempeliopine, S-559
Vallesamidine, V-8

Chippiine alkaloids

Chippiine, C-389
Dippinine C, D-824

Secologanin-derived dimer alkaloids

Accedinisine, A-28
Afrocurarine, A-174
Rauwolfia obscura Alkaloid C_2, A-434
Voacanga thouarsii Alkaloid C, A-456
Rauwolfia obscura Alkaloid D_1, A-473
Rauwolfia obscura Alkaloid D_2, A-474
C-Alkaloid D, A-476
Melodinus aeneus Alkaloid D, A-488
Pandaca caducifolia Alkaloid D, A-490
Muntafara sessilifolia Alkaloid E, A-502
Pandaca caducifolia Alkaloid E, A-503
Voacanga thouarsii Alkaloid E, A-506
Pandaca caducifolia Alkaloid F, A-515
Pandaca caducifolia Alkaloid G, A-518
Voacanga thouarsii Alkaloid G, A-519
Voacanga thouarsii Alkaloid I, A-340
Alstonia constricta Alkaloid, A-270
Strempeliopsis strempelioides Alkaloid, A-334
Uncaria callophylla Alkaloid, A-337
Alstocraline, A-641
Alstomacroline, A-644
Alstomacrophylline, A-645
Alstonisidine, A-653
Amataine, A-676
Angusticraline, A-1011
Aspidexcelcine, A-1488
Aspidexcine, A-1489
10,10′-Bi[*N*-acetyl-11,12-dihydroxyaspidospermidine], B-115
12,12′-Bi[11-hydroxycoronaridine], B-127
Cabufiline, C-3
Calebassine, C-31
Callichiline, C-35
Callophylline B, C-38
Capuvosidine, C-105
Capuvosine, C-106
Caracurine II, C-111
Caracurine V, C-110
Carosidine, C-166
Carosine, C-167
Catharanthamine, C-194
Catharicine, C-196
Catharine, C-197
Celastromelidine, C-232
Celastromeline, C-233
Ceylanicine, C-314
Ceylanine, C-315
Cimilophytine, C-442
Conodiparine A, C-611
Conodiparine B, C-612
Conodirinine A, C-613
Conodirinine B, C-614
Conoduramine, C-615
Conodurine, C-616
Conodutarine A, C-617
Conofoline, C-618
Conophyllidine, C-621
Coryzeylamine, C-703
Criophylline, C-751
C-Curarine, C-809
16′-Decarbomethoxy-19,20-dihydroconoduramine, D-118
16-Decarbomethoxyvoacamine pseudoindoxyl, D-121
Deformylcoryzeylamine, D-143
Dispegatrine, D-864
Divarine, D-875
Dolichocurine, D-910
Ervafolene, E-185
Ervafolidene, E-186
Ervahainamidine A, E-187
Ervahainamidine B, E-188
Ervahanine A, E-189
Flexicorine, F-88
Folicangine, F-117
Gardmultine, G-19
Geissolosimine, G-31
Geissospermine, G-35
Guiaflavine, G-219
Guianensine, G-220
Guillauminiine, G-221
Hazuntamine, H-79
Hazuntiphyllidine, H-80
Hazuntiphylline, H-81
Hunteriamine, H-369
Insulopinine, I-151
Isoborreverine, I-198
Kisantine, K-51
Leurosine, L-162
Leurosinone, L-163
Longicaudatine Z, L-250
Longicaudatine, L-249
Macralstonidine, M-7
Macralstonine, M-8
Macrocarpamine, M-11
Macrophylline, M-21
Macrospegatrine, M-30
Matopensine, M-120
Melaxillarinine, M-161
Melomorsine, M-187
10-Methoxy-11-[10-(11-methoxyvincamajinyl)]-cathafoline, M-258
11-[10-(11-Methoxyvincamajinyl)]vincorine, M-289
Methylenebismehranine, M-437
N^b,$N^{b'}$-Methylenebismeloninium(2+), M-438
10,10′-Methylenebis[norvallesamidine], M-439
Monogagaine, M-693
Neburnamine, N-83
Neoleurocristine, N-123
Neoleurosidine, N-124
Nitaphylline, N-238
Pandicine, P-66
Panganensine R, P-69
Panganensine X, P-68
Paucivenine, P-132
Peceylanine, P-147
Peceyline, P-148
Peduncularidine, P-161
Pelankine, P-172
Perhentinine, P-256
Pleiocorine, P-519
Pleiocraline, P-520
Plumocraline, P-527
Polyervinine, P-560
Pseudovinblastinediol, P-732
Pycnanthine, P-827
Pycnanthinine, P-828
Quimbeline, Q-10
Rausutranine, R-25
Rausutrine, R-26
Roseadine, R-127
Rovidine, R-137
Scandomelidine, S-119
Scandomeline, S-120
Scandomelonine, S-121
Serpentinine, S-253
Strellidimine, S-557
Strempeliopidine, S-558
Strychnobaridine, S-590
Strychnobiline, S-591
Strychnochrysine, S-593
Strychnofuranine, S-596
Strychnogucine A, S-597
Strychnogucine B, S-598
Strychnohexamine, S-599
Sungucine, S-642
Tabernaelegantinine A, T-3
Tabernaelegantinine B, T-4
Tabernaelegantinine C, T-5
Tabernaemontabovine, T-6
Tabernaemontavine, T-7
Tabernamine, T-8
Tenuicausine, T-77
Tenuiphylline, T-80
Tetrastachyne, T-294
Tetrastachynine, T-295
Toxiferine I, T-436
Umbellamine, U-21
Uncaramine, U-22
Undulatine, U-32
Villalstonine, V-103
Vinamidine, V-107
Vinaphamine, V-108
Vinblastine, V-110
Vincamicine, V-114
Vincarubine, V-118
Vincathicine, V-119
Vincovalicine, V-127
Vincristine, V-128
Vindolicine, V-129
Vindolidine, V-131
Vingramine, V-133
Vinosidine, V-135
Vinsedicine, V-137
Vinsedine, V-138
Voacamidine, V-167
Voacamine, V-168
Voacinol, V-173
Voafolidine, V-175
Voafrine A, V-176
Vobasonidine, V-184

Vobatricine, V-185
Vobparicine, V-186
Vobtusamine, V-187
Vobtusine, V-188

Isoindoles

Antibiotic 0231A, A-1088
Antibiotic F 1839A, A-1164
Antibiotic SMTP 7, A-1264
Antibiotic SMTP 8, A-1265
Antibiotic SQ 02-S-L1, A-1268
Antibiotic SQ 02-S-V2, A-1269
Bhimamycin D, B-114
Cichorine, C-437
Dactyline, D-6
2,3-Dihydro-4-hydroxy-1*H*-isoindol-1-one, D-442
Duricaulic acid, D-957
Hericerin, H-145
Lactonamycin, L-9
Magallanesine, M-39
5-Methoxy-2,6-dimethyl-2*H*-isoindole-4,7-dione, M-248
Prioline, P-631
Salfredin C_1, S-21
Shihunidine, S-287
SMTP 3, S-331
SMTP 4, S-332
SMTP 5, S-333
SMTP 6, S-334
Stachybocin A, S-489
Stachyflin, S-492
Vitedoamine A, V-164
Xylactam, X-26

Tryptoquivalines

Anacine, A-966
Ardeemin, A-1399
Asperlicin E, A-1481
Asperlicin, A-1478
Fiscalin A, F-57
Fiscalin B, F-58
Fiscalin C, F-59
Fumiquinazoline A, F-185
Fumiquinazoline C, F-186
Fumiquinazoline H, F-189
Fumiquinazoline I, F-184
Fumitremorgin C, F-190
Glyantrypine, G-109
Lapatin A, L-41
Lapatin B, L-42
Nortryptoquivaline, N-315
Spiroquinazoline, S-438
Tryprostatin A, T-638
Tryptoquialanine A, T-643
Tryptoquialanine B, T-644
Tryptoquivaline A, T-645
Tryptoquivaline F, T-646
Tryptoquivaline G, T-647
Verrucine A, V-83

Mitomycins

Albomitomycin A, A-246
Antibiotic FR 66979, A-1171
Antibiotic FR 900482, A-1177
Mitiromycin A, M-652
Mitomycin A, M-653
Mitomycin C, M-654
Mitomycin G, M-655
Mitomycin H, M-656

Pyrrolo[4,3,2-de]quinoline alkaloids

Batzelline A, B-52
Damirone A, D-13
Dehydrobufotenine, D-153
Discorhabdin A, D-850
Discorhabdin C, D-851
Discorhabdin D, D-852
Discorhabdin H, D-853
Discorhabdin T, D-854
Discorhabdin V, D-849
Discorhabdin W, D-855
Epinardine A, E-96
Epinardine B, E-97
Haematopodin B, H-8
Haematopodin, H-7
Isobatzelline A, I-193
Lymphostin, L-354
Makaluvamine A, M-54
Makaluvamine F, M-55
Mycenarubin A, M-784
Mycenarubin B, M-785
Mycenarubin D, M-786
Plakinidine A, P-503
Plakinidine E, P-504
Prianosin C, P-629
Tsitsikammamine A, T-650
Veiutamine, V-46
Wakayin, W-3

Miscellaneous indole alkaloids

Abereamine 1, A-8
Abereamine 2, A-9
Abereamine 3, A-10
Abereamine 4, A-11
Actinophyllic acid, A-127
Ailanindole, A-208
Alboinone, A-245
Alioline, A-264
Almazole C, A-634
Almazole D, A-635
Andranginine, A-1003
Antibiotic 927A, A-1092
Antibiotic BE 10988, A-1126
Antibiotic 0089D, A-1155
Antibiotic KG 431A, A-1191
Antibiotic OPC 15161, A-1220
Antibiotic SS 228B, A-1270
Antibiotic TMC 2A, A-1292
Antibiotic TMC 95A, A-1293
Antibiotic VM 55599, A-1307
Aplicyanin A, A-1343
Arboflorine, A-1380
Arbophylline, A-1382
Arestrictin A, A-1406
Argiopinin II, A-1415
Argiopinin IV, A-1416
Argiotoxin 659, A-1417
Argiotoxin 673, A-1418
Aristomakine, A-1437
Aspergillamide A, A-1471
Astechrome, A-1509
Asterridinone, A-1518
Asterriquinone D, A-1521
Asterriquinone, A-1520
Balasubramide, B-10
Barettin bromobenzisoxazolone, B-25
Barettin, B-24
Bengacarboline, B-58
Benzastatin F, B-69
Benzastatin G, B-70
Cypridina Biluciferyl, B-137
Bisancorinolate B, B-155
2,5-Bis(1*H*-indol-3-ylmethyl)pyrazine, B-191
Bouchardatine, B-260
Brassicanal B, B-282
Braznitidumine, B-288
Bruceolline D, B-368
Camptacumanine, C-65
Cartormin, C-170
Caulersin, C-215
Cavernicolin 1, C-221
Celenamide A, C-234
Celenamide B, C-235
Celenamide C, C-236
Celenamide E, C-238
Celogentin A, C-241
Celogentin C, C-242
Celogentin G, C-243
Chondriamide A, C-421
Chromoviridan, C-426
CNS 2103, C-535
CNS 2104, C-536
Cochliodinol, C-547
Cochliodinone, C-548
Coscinamide A, C-704
Crenulatine, C-734
Criamide A, C-737
Cyclobrassinin, C-842
Cyclobrassinone, C-843
Cyclomarazine A, C-877
Dactylamide B, D-2
Decursivine, D-137
Dendrodoine, D-213
Diazonamide B, D-298
Dichomine, D-358
Dichotine, D-359
Didemnimide A, D-379
5,12-Dihydrocycloocta[1,2-*b*:5,6-*b′*]diindole-6,13-dicarboxylic acid, D-415
5*a*,6-Dihydro-3-(1*H*-indol-3-yl)-1,4-dimethoxy-10*bH*-benzofuro[2,3-*b*]indole-2,10*b*-diol, D-466
5,6-Dihydro-3-[2-(1*H*-indol-3-yl)-2-oxoethyl]-2(1*H*)-pyridinone, D-468
1-[4,9-Dihydro-2-(methylthio)-1,3-thiazino[6,5-*b*]-indol-4-yl]-2-propanone, D-481
3-(4,5-Dihydro-2-thiazolecarbonyl)-1*H*-indole, D-516
3,4-Di-1*H*-indol-3-yl-2(5*H*)-furanone, D-690
2,2-Di-1*H*-indol-3-yl-4-methylpentanoic acid, D-691
2,2-Di-1*H*-indol-3-ylpropanoic acid, D-694
Dilemmaone A, D-703
2-(Dimethylamino)-1,5-dihydro-5-(1*H*-indol-3-yl)-5-(2-oxopropyl)-4*H*-imidazol-4-one, D-728
2-(Dimethylamino)-5-(1*H*-indol-3-yl)-4*H*-imidazol-4-one, D-732
α,*α*-Dimethyl-5-(3-methyl-1-oxo-2-butenyl)-1*H*-indole-3-propanal, D-756
Diolmycin A1, D-789
Discodermindole, D-845
Dragmacidin A, D-929
Dragmacidin E, D-931
Dragmacidin F, D-932
Duocarmycin C_1, D-953
Emeniveol, E-71
Emindole DB, E-75
Eripinal, E-181
Eripine, E-182
5-Ethyl-2-methyl-11*H*-pyrido[3,4-*a*]carbazolium(1+), E-258
1*b*-Ethyl-1*a*,1*b*,3,4,8*c*,9,10,10*a*-octahydro-2*H*-oxireno[4,5-*b*]pyrido[3,2-*c*]carbazole, E-262
Eusynstyelamide, E-303
Fargesine, F-9
Fascaplysin, F-13
Fasmerianamine B, F-16
Fischerindole L, F-63
Flabelliformine, F-74
Fumiquinazoline F, F-188
Gelseiridone, G-46
Ginsenine, G-78
Glucoisatisin, G-102
Goniomitine, G-142
Gramodendrine, G-155
Granulatimide, G-169
Grossularine 1, G-183
Halocyamine A, H-35
Halocyamine B, H-36
Harmalacinine, H-62
Harmalanine, H-63
Hedyocapitelline, H-87
Hemiasterlin C, H-99
Hemiasterlin, H-98
Herbindole A, H-140
Herbindole B, H-141
Herbindole C, H-142
Het_{389}, H-155
Het_{403}, H-156
2,3-Hexalobine E, H-257

Hinnuliquinone, H-288
Hunteracine, H-368
20-Hydroxyisoaflavinine, H-541
3-Hydroxy-3,4-secocoronaridine, H-732
Hyrtiazepine, H-778
Ibophyllidine, I-6
Iboxyphylline, I-10
Iheyamine A, I-22
Iheyamine B, I-23
Indisocin, I-74
Indolmycin, I-102
Indolo[2,3-*a*]quinolizine, I-113
1-(3-Indolyl)-β-carboline, I-119
4-(3-Indolylmethyl)-7-(2-methylpropyl)-1,2,3,5,6-pentathiepane, I-129
3-(3-Indolylmethyl)-5-(2-methylpropyl)-1,2,4-trithiolane, I-130
Ipobscurine C, I-169
Isatinone A, I-183
Isatinone B, I-184
Isoasterriquinone, I-191
Isogranulatimide, I-237
Isomonodoroindole, I-248
8*H*-Isothiazolo[5,4-*b*]indole, I-336
Isotrikentrin B, I-338
Kapakahine G, K-13
Koniamborine, K-64
Kopsijasminilam, K-72
Kutzneride 1, K-116
Lapidilectine A, L-43
Lapidilectine B, L-44
Leiocarpadiol, L-83
Leuconoxine, L-156
Lotthanongine, L-265
Lucentamycin B, L-275
Cypridina Luciferin, L-281
Lundurine A, L-294
Lycogalic acid, L-329
Malasseziacitrin, M-60
Malasseziazole A, M-62
Malasseziazole B, M-63
Malasseziazole C, M-64
Malassezindole A, M-66
Margaritarine, M-102
Martefragine A, M-109
Martensine A, M-110
Meridianin A, M-205
Mersicarpine, M-210
Mersidasine C, M-211
Mersifoline A, M-212
3,3′-Methylenebisindole, M-436
Monodontamide D, M-690
Moroidin, M-702
Moschamindolol, M-711
Murrapanine, M-750
Nauclealine B, N-58
Naucledine, N-66
Nauclefoline, N-72
Nauclexine, N-77
Naulafine, N-78
Neocochliodinol, N-106
Neolaugerine, N-122
Nephilatoxin 1, N-152
Nephilatoxin 2, N-153
Nephilatoxin 3, N-154
Nephilatoxin 4, N-155
Nephilatoxin 5, N-156
Nephilatoxin 6, N-157
Nephilatoxin 7, N-158
Nephilatoxin 9, N-159
Nephilatoxin 10, N-160
Nephilatoxin 11, N-161
Nephilatoxin 12, N-162
Nephilatoxin 473, N-163
Nephilatoxin 501, N-164
Nephilatoxin 643, N-167
Ngouniensine, N-186
Nortopsentin A, N-312
Nortopsentin D, N-313
Nostodione A, N-323
Notoamide C, N-324
Ochrindole A, O-17
Ochrindole D, O-18
Orbiculamide A, O-101
Oscillatorin, O-128
Oxazinine 1, O-153
Cypridina Oxyluciferin, O-222
Pandine, P-67
Pauciflorine A, P-130
Pauciflorine B, P-131
Peduncin, P-160
Pericidine, P-257
Petromurin A, P-285
Petromurin C, P-286
Phalarine, P-305
Pityriacitrin B, P-489
Pityriacitrin, P-488
Pityrianhydride, P-491
Pityriarubin B, P-493
Pityriarubin C, P-494
Prenostodione, P-615
Proviolacein, P-675
Psammopemmin A, P-697
Pseudoanchynazine A, P-698
Pseudoanchynazine C, P-700
Pseudodeoxyviolacein, P-711
Psychrophilin A, P-745
Psychrophilin B, P-746
Psychrophilin C, P-747
Psychrophilin D, P-748
Aesculus hippocastanum Quercetin indoxylacetylglycoside, Q-7
Rhazimine, R-73
Rhazizine, R-77
Rhopaladin A, R-89
Rutalexin, R-170
Saifine, S-16
Sanguinolentaquinone, S-57
Schischkiniin, S-127
Schizocommunine, S-132
Schoberidine, S-139
Scholarisine A, S-141
Scytonine, S-169
Secaloside A, S-173
Secobatzelline A, S-178
Serotobenine, S-252
Strictibine, S-579
Suaveoline, S-618
Subincanadine A, S-623
Subincanadine F, S-625
Subincanine, S-626
Tangutorine, T-27
Tardioxopiperazine A, T-32
Tardioxopiperazine B, T-33
Terezine D, T-86
[3,2′:2′(3′*H*),3′′-Ter-1*H*-indol]-3′-one, T-87
[3,3′:3′(2′*H*),3′′-Ter-1*H*-indol]-2′-one, T-88
Terpeptin, T-96
Terriquinone A, T-106
5,5′,7,7′-Tetrabromo-6,6′-dimethoxyindigotin, T-112
Tetradehydroechinulin, T-137
5,5*a*,12,12*a*-Tetrahydro-7,14-dimethoxybenzo[1′′,2′′:4,5;4′′,5′′:4′,5′]difuro[2,3-*b*:2′,3′-*b*′]diindole-7*b*,14*b*-diol, T-165
1,3,4,9-Tetrahydro-1,1-dimethylpyrano[3,4-*b*]indole, T-169
Tetramethoxyscytonemin, T-279
Thienodolin, T-374
Topsentin A, T-432
Toxin MG 30, T-441
5,6′,7-Tribromo-6-methoxyindigotin, T-470
Trichophylline, T-492
Trichotomine, T-497
1,1,1-Tri-(1*H*-indol-3-yl)ethane, T-590
Tri-1*H*-indol-3-ylmethane, T-591
Tyriverdin, T-698
Urdamycin D, U-43
Uvarindole D, U-61
Uvarindole E, U-62
Valindolmycin, V-6
Vinoxine, V-136
Violacein, V-142
Wakayin, W-3
Wasalexin A, W-10
Wuchuyuamide I, W-24

Monoterpenoid alkaloids

Alfileramine, A-260
Gentiana macrophylla Alkaloid B, A-418
Skytanthus acutus Alkaloid B, A-424
Gentiana macrophylla Alkaloid C, A-447
Skytanthus acutus Alkaloid E, A-504
Gentiana Alkaloid I, A-301
Gentiana Alkaloid II, A-526
Gentiana cruciata Alkaloid IVb, A-530
Gentiana Alkaloid V, A-302
Gentiana Alkaloid VI, A-604
Altemicidin, A-660
Argutane A, A-1420
Austrodimerine, A-1557
Avicennamine, A-1565
Bakankoside, B-8
Benthophoenin, B-66
Brachycerine, B-264
Cantharimide, C-89
Cantleyine, C-92
Caulindole A, C-218
Caulindole C, C-219
Coelobillardierine, C-562
Delavayine A, D-184
Delavayine B, D-185
Delavayine C, D-186
6,7-Dihydro-4-(hydroxymethyl)-2-(*p*-hydroxyphenethyl)-7-methyl-5*H*-2-pyrindinium(1+), D-446
5,6-Dihydro-3,6,6-trimethyl-7*H*-2-pyrindin-7-one, D-525
Dinklageine, D-786
Enicoflavine, E-82
Euphrosine, E-296
Fontaineine, F-124
Gardenamide A, G-17
Genipamide, G-52
Gentianadine, G-54
Gentianal, G-55
Gentianamine, G-56
Gentiananine, G-57
Gentianidine, G-58
Gentianine lactam, G-60
Gentianine, G-59
Gentiatibetine, G-61
Gentiocrucine, G-62
Gentioflavine, G-63
4*a*-Hydroxyskytanthine, H-733
4-Hydroxyskytanthine, H-735
7-Hydroxyskytanthine, H-736
Incarvillateine E, I-61
Incarvillateine, I-60
Incarvilline, I-62
Incarvine A, I-63
Indicamine, I-66
Integramine, I-157
Isoalfileramine, I-188
Isogentialutine, I-236
Kopsilactone, K-73
Kopsone, K-82
Linavuline, L-181
Lindenialine, L-182
Louisianin C, L-272
Nepetalactam, N-151
4-Nor-7,8-dehydro-10-hydroxyskytanthine, N-294
2-[Octahydro-4,7-dimethyl-1-oxocyclopenta[*c*]-pyran-3-yl]nepetalactam, O-43
Oliveramine, O-84
Oliverine, O-86
Oxerine, O-160
Pedicularidine, P-156
Pediculidine, P-157
Pediculine, P-158
Plectrodorine, P-517
N,*N*′-Propylenebis(cantharimide), P-650
Puhinamide, P-780
Rhexifoline, R-78
Scaevodimerine A, S-115
Scaevoline, S-116
Spicatine, S-408
Tecomanine, T-58

Tecostanine, T-59
Tetrahydrocantleyine, T-145
Venoterpine, V-52
Xylostosidine, X-31

Sesquiterpene alkaloids

Acanthamolide, A-23
Acanthisonitrile 3, A-24
Atractylenolactam, A-1536
Axamide 1, A-1570
Axinyssimide A, A-1577
Axinyssimide B, A-1578
Bisparthenolidine, B-215
Boneratamide A, B-246
Boneratamide B, B-247
[2-Chloro-2-[4-chloro-5-hydroxy-3-methyl-3-(4-methyl-3-pentenyl)cyclohexylidene]ethyl]carbonimidic dichloride, C-400
Cladioxazole, C-488
Clavulinin, C-520
Cyclosmenospongine, C-908
2,10-Dichloro-6,11-cyclo-3(15),7(14)-farnesadien-1-yl carbonimidic dichloride, D-349
Drimentine C, D-937
Drimentine D, D-938
Drimentine E, D-939
Eremophilene lactam, E-146
Guaipyridine, G-190
Halichonadin A, H-14
Hederacine A, H-85
Involucratine, I-162
3-Isocyano-7,9-bisaboladiene, I-213
4-Isocyanomaaliane, I-219
9-Isocyanoneopupukeanane, I-220
6-Isodaucene 14-isonitrile, I-225
Isopolyalthenol, I-269
Kopsirachin, K-81
Manicoline A, M-82
Metachromin G, M-228
Metachromin H, M-229
Nakijiquinone A, N-14
Nakijiquinone B, N-15
Nakijiquinone D, N-16
Neopolyalthenol, N-135
Oceanapamine, O-15
Paeciloxazine, P-9
Patchoulipyridine, P-112
Phenazinomycin, P-329
Piccolamine, P-402
Polyalthenol, P-540
Polyavolinamide, P-546
Pulchellidine, P-785
Pyrodysinoic acid, P-936
Rotundine B, R-135
Saussureamine A, S-105
Saussureamine C, S-106
Saussureamine D, S-107
Siphonodictidine, S-324
Smenospongine, S-329
Stachybocin A, S-489
Stylotellane A, S-613
Stylotellin, S-614
Suaveolindole, S-617
Trikendiol, T-592
Trikentramine, T-593
3-(3,7,11-Trimethyl-2,6,10-dodecatrienyl)-1*H*-indole, T-605

Macrocyclic sesquiterpene alkaloids

Cathedulin E3, C-201
Cathedulin K17, C-202
Cathedulin K19, C-203
Cathidine A, C-210
Hippocrateine III, H-296
Triptonine A, T-619
Triptonine B, T-620

Dendrobium alkaloids

Crepidamine, C-735
Dendrine, D-207
Dendrobine, D-210
Dendrocrepine, D-212
Dendronobilin A, D-214
Dendrowardine, D-215
Dendroxine, D-216
Mubironine C, M-717
Nobiline, N-262
δ-Nobilonine, N-263

Nuphar alkaloids

Allothiobinupharidine, A-631
7-Demethyldeoxynupharidine, D-201
Deoxynupharidine, D-227
5-(3-Furanyl)octahydro-8-methylindolizine, F-202
Nuphacristine, N-339
Nupharamine, N-340
α-Nupharidine, N-341
β-Nupharidine, N-342
Nupharine, N-343
6,7-Oxidodeoxynupharidine dimer, O-161
Pseudothiobinupharidine, P-729
Thiobideoxynupharidine, T-379
Thiobinupharidine, T-380

C19-Diterpenoid alkaloids and 4-nor analogues

Aconitine, A-104
Acoseptine, A-106
Acsonine, A-123
Ajabicine, A-210
Akirine, A-226
Alboviolaconitine D, A-248
Andersonine, A-998
Anhweidelphinine, A-1023
Bishaconitine, B-179
Bulleyanitine B, B-408
Bulleyanitine C, B-409
Delavaine A, D-182
Delavaine B, D-183
Delboxine, D-187
Francheline, F-147
Glaudelsine, G-91
Graciline, G-152
Grandifloritine, G-157
Heteratisine, H-157
Jiufengsine, J-41
Kiridine, K-46
Kongboentine A, K-63
Lycaconitine, L-317
18-*O*-[2-(2-Methyl-4-oxo-4*H*-quinazolin-3-yl)-benzoyl]lycoctonine, M-501
Pengshenine A, P-184
Potanisine G, P-578
Puberaconitine, P-776
Racemulosine, R-2
Secojesaconitine, S-187
Secokaraconitine, S-189
Sinomontanine C, S-315
Sinomontanine I, S-314
Sinomontanitine A, S-316
Tangirine, T-26
Vilmoritine, V-106

C20 Diterpenoid alkaloids (Atisine type)

Acophine, A-105
Acozerine, A-108
Ajaconine, A-211
Albovionitine, A-249
Anopterimine, A-1070
Atidine, A-1533
Atisine, A-1534
Azitine, A-1609
Bishatisine, B-180
Brunonine, B-371
Cardionidine, C-159
Chuanfumine, C-434
Cochlearenine, C-546
Cordizine, C-642
Coryphidine, C-696
Coryphine, C-697
Dehydronapelline, D-162
Delatisine, D-180
Delnudine, D-190
Delphatisine B, D-192
Denudatine, D-221
Dictysine, D-370
12,16-Epoxy-16,17-dihydronapelline, E-131
Garryine, G-25
Gomandonine, G-139
Guan-fu base K, G-197
Guan-fu base S, G-198
Hetidine, H-161
Hetisan-11-one, H-173
Isoatisine, I-192
Kirinine B, K-48
Lassiocarpine, L-51
Lepenine, L-105
Lindheimerine, L-184
Macrocentrine, M-12
Miyaconitine, M-665
Napelline, N-30
Navirine, N-79
Ouvrardiandine A, O-141
Paniculamine, P-70
Pukeensine, P-782
Racemulotine, R-3
Sczukidine, S-170
Septatisine, S-247
Spiraeaine A, S-413
Spirafine II, S-414
Spiramine C, S-416
Spiramine J, S-417
Spiramine P, S-418
Spiramine Z_2, S-419
Spirasine III, S-421
Spirasine X, S-420
Spiratine B, S-422
Spireine, S-423
Staphinine, S-494
Staphisagnine, S-495
Staphisine, S-496
Talassamine, T-18
Tangirine, T-26
Thalicsessine, T-317
Tongolinine, T-427
Trabzonine, T-442
Veatchine, V-45
Vilmoridine, V-105
Yesonine, Y-10
Zeraconine, Z-16

Erythrophleum alkaloids

Erythrophleum Alkaloid A, A-371
Erythrophleum Alkaloid C, A-446
Erythrophleum C_{24} Alkaloid, A-267
Cassaidine, C-178
Coumingaine, C-713
Erythrosuamine, E-218
Erythrosuavine, E-219
Homophleine, H-340
Norcassaidide, N-289
19-Nor-4-dehydrocassaidine, N-293
Norerythrostachamide, N-299
Norerythrostachamine, N-300

Penitrems

Aflatrem B, A-170
Aflatrem, A-169
Aflavazole, A-171
Aflavinine, A-172
Anthcolorin A, A-1075
Anthcolorin E, A-1076
Aspernomine, A-1485
Emindole DA, E-74
Emindole PA, E-76
Emindole PB, E-77
Emindole SB, E-78
Janthitrem E, J-21

Lolicine A, L-231
Lolilline, L-233
Lolitrem B, L-236
Lolitrem N, L-237
Nodulisporic acid A_1, N-268
Nodulisporic acid A, N-269
Nodulisporic acid C_1, N-270
Nodulisporic acid C, N-271
Nodulisporic acid D_1, N-272
Nodulisporic acid D, N-273
Nodulisporic acid E, N-274
Nodulisporic acid F, N-275
Nominine, N-279
Paspaline, P-108
Paspalinine, P-109
Paspalitrem A, P-110
Paspalitrem C, P-111
Paxilline, P-140
Paxinorol, P-141
PC-M4, P-144
PC-M5, P-145
Penitrem C, P-194
Pennigritrem, P-195
Petromindole, P-284
9-Prenylpaxilline, P-618
Radarin B, R-6
Secopenitrem B, S-194
Sespendole, S-263
Shearinine A, S-281
Shearinine C, S-282
Shearinine I, S-280
Shearinine J, S-283
Shearinine K, S-284
Sulpinine B, S-640
Sulpinine C, S-641
Terpendole B, T-92
Terpendole C, T-93
Terpendole H, T-94
Terpendole I, T-91
Terpendole L, T-95
Thiersinine A, T-377
Tubingensin A, T-669
Tubingensin B, T-670

Miscellaneous diterpene alkaloids

Acteropterine, A-29
Agelasidine B, A-179
Agelasimine A, A-181
Agelasine A, A-184
Agelasine C, A-185
Agelasine D, A-186
Agelasine E, A-187
Agelasine I, A-183
Agelasine, A-182
Ageline A, A-191
Aristolin, A-1434
Aristoloin I, A-1435
Asmarine B, A-1465
Asmarine C, A-1466
Asmarine I, A-1464
Avinosol, A-1567
Bis(gorgiacerol)amine, B-177
Brasilicardin A, B-280
Cespitulactam D, C-288
Chamobtusine A, C-344
Concavine, C-596
Daphnimacrine, D-58
7-[5-(Decahydro-4*a*-hydroxy-1,2,5,5-tetramethyl-1-naphthalenyl)-3-methyl-2-pentenyl]-3,7-dihydro-2,3-dimethyl-6*H*-purin-6-one, D-111
Decaturin A, D-127
Dichlorolissoclimide, D-354
7,20-Diisocyanoisocycloamphilectane, D-698
Echinophyllin A, E-18
Echinophyllin B, E-19
Echinophyllin C, E-20
Echinophyllin D, E-21
Echinophyllin E, E-22
Echinophyllin F, E-23
Elisabethamine, E-66
Euphosalicin, E-295
Guanacastepene D, G-192
Guanacastepene H, G-193
Haterumaimide C, H-73
Haterumaimide E, H-74
Haterumaimide F, H-75
Haterumaimide I, H-72
Hebeirubescensin A, H-82
Homopseudopteroxazole, H-343
Icaceine, I-11
Ileabethoxazole, I-27
8-Isocyano-1(12)-cycloamphilectene, I-215
Isosalviamine A, I-311
Isosalviamine B, I-312
Joalin, J-42
Melemeleone A, M-163
Melemeleone B, M-164
Memnobotrin A, M-196
Milliamine C, M-616
Milliamine H, M-617
Neosalvianene, N-137
Nicotaxine, N-188
Nominine, N-279
Norstaminolactone A, N-310
Petrosaspongiolide L, P-289
Phorbasin E, P-378
Polyveoline, P-564
Popolohuanone A, P-567
Popolohuanone D, P-568
Pseudopteroxazole, P-724
Pyrrocidine B, P-940
Radarin B, R-6
Ryania diterpene ester C_2, R-174
Ryanodine, R-175
Salviadione, S-40
Salvianene, S-42
Secopseudopteroxazole, S-196
Sinulamide, S-318
Sinulamine III, S-320
Sinulamine II, S-319
Spicaledonine, S-407
Stellettazole B, S-508
Stellettazole C, S-509
Tauret, T-38
Taxol, T-52
Agelas nakamurai Thelepogane-purine alkaloid, T-352
Thelepogine, T-354
Thiersindole A, T-375
Thiersindole C, T-376
Triptotin J, T-621

Sesterterpene alkaloids

Fasciospongine A, F-14
Hyatelactam, H-390
Kimbasine A, K-44
Molliorin A, M-673
Molliorin B, M-674
Molliorin C, M-675
Molliorin D, M-676
Molliorin E, M-677
Palinurine A, P-22
Sarcotragin A, S-81
Sarcotrine A, S-82
Sarcotrine D, S-83
Sarcotrine F, S-84
Spongidine A, S-472
Spongidine D, S-473

Daphniphylline alkaloids

Daphniphyllum Alkaloid A_1, A-345
Bukittinggine, B-396
Caldaphnidine A, C-27
Caldaphnidine C, C-28
Caldaphnidine D, C-29
Caldaphnidine E, C-30
Calycilactone A, C-43
Calycine, C-44
Calyciphylline B, C-45
Calyciphylline C, C-46
Calyciphylline D, C-47
Calyciphylline E, C-48
Calyciphylline F, C-49
Calyciphylline G, C-50
Calyciphylline H, C-51
Calyciphylline J, C-52
Calydaphninone, C-58
Daphcalycic acid, D-18
Daphcalycine, D-19
Daphcalycinosidine B, D-20
Daphlongeramine A, D-21
Daphlongeranine A, D-22
Daphlongeranine B, D-23
Daphmacrine, D-24
Daphmanidine A, D-25
Daphmanidine B, D-26
Daphmanidine C, D-27
Daphnezomine A, D-29
Daphnezomine C, D-30
Daphnezomine D, D-31
Daphnezomine F, D-32
Daphnezomine K, D-33
Daphnezomine L, D-34
Daphnezomine M, D-35
Daphnezomine O, D-36
Daphnezomine P, D-37
Daphnezomine Q, D-38
Daphnicadine, D-39
Daphnicaline, D-40
Daphnicamine, D-41
Daphnicyclidine A, D-42
Daphnicyclidine D, D-43
Daphnicyclidine H, D-44
Daphnicyclidine J, D-45
Daphnicyclidine K, D-46
Daphnicyclidine L, D-47
Daphniglaucine B, D-48
Daphniglaucine C, D-49
Daphnigraciline, D-50
Daphnigracine, D-51
Daphnilactone A, D-52
Daphnilactone B, D-53
Daphnilongeranine A, D-54
Daphnilongeranine C, D-55
Daphnilongerine, D-56
Daphnilongertone, D-57
Daphnimacropodine A, D-59
Daphnioldhanine A, D-61
Daphnioldhanine C, D-62
Daphnioldhanine J, D-64
Daphnipaxianine A, D-65
Daphnipaxianine D, D-66
Daphnipaxinine, D-67
Daphniphylline, D-68
Daphniyunnine D, D-69
Daphtenidine A, D-70
Daphtenidine B, D-71
Daphtenidine C, D-72
Glaucescine, G-89
Glaucescinine, G-90
Longeracinphylline A, L-245
Longeracinphylline B, L-246
Longistylumphylline B, L-254
Longistylumphylline C, L-255
Macropodumine A, M-23
Macropodumine B, M-24
Macropodumine C, M-25
Macropodumine D, M-26
Macropodumine E, M-27
Neodaphniphylline, N-109
Neoyuzurimine, N-150
Oldhamine A, O-77
Oldhamiphylline A, O-78
Paxdaphnidine A, P-137
Paxdaphnine A, P-138
Paxdaphnine B, P-139
Paxiphylline A, P-142
Paxiphylline B, P-143
Secodaphniphylline, S-181
Yunnandaphnine E, Y-20
Yuzurimine C, Y-23
Yuzurimine D, Y-24

Steroidal alkaloids (salamandra type)

Cycloneosamandione, C-886
1,4-Epoxy-3-aza-*A*-homoandrostan-17-ol, E-127
Isocycloneosamandaridine, I-223
Samandaridine, S-43
Samandarine, S-44
Samandenone, S-45
Samandinine, S-46
Samanine, S-47

Steroidal alkaloids (jerveratrum type)

Edpetine, E-39
Hupehenisine, H-371
Jervine, J-36
Kuroyurinidine, K-114
Ningpeisine, N-223
Peimisine, P-168
Pengbeimine A, P-182
Pengbeimine C, P-183
Veratramine, V-71
Verdine, V-74
Yibeissine, Y-11

Steroidal alkaloids (cerveratrum type)

Cevanine, C-299
3,25-Dihydroxycevan-6-one, D-562
Germine, G-70
Hupehenidine, H-370
Neogermine, N-116
Neoverataline A, N-148
Severidine, S-277
Ussuriedine, U-56
Veracevine, V-56
Zygadenilic acid δ-lactone, Z-35
Zygadenine, Z-36

Steroidal alkaloids (conanine type)

Conarrhimine, C-595
Conessine, C-601
Conkurchine, C-610
Didymeline, D-383
19,23-Dinorcona-1,3,5(10),14-tetraenin-3-ol, D-788
Funtudienine, F-198
Holadienine, H-314
Holaline, H-315
Holaromine, H-317
Holarrhenine, H-318
Holarrhine, H-320
Holonamine, H-322
Kurchamide, K-109
Kurchilidine, K-112
Kurcholessine, K-113
Latifoline, L-56
Latifolinine, L-57
Malarboreine, M-59
Pistacimidelor, P-485
Pubescimine, P-778
Pubescine, P-779
Regholarrhenine C, R-39

Steroidal alkaloids (spirosolane type)

Veramine, V-66

Steroidal alkaloids (solanidine type)

Anrakorinine, A-1073
Ecliptalbine, E-33
Hakurirodine, H-11
Hosukinidine, H-364
Impranine, I-54
Isorubijervine, I-310
Korsevinine, K-89
Leptinidine, L-116
(2-Methyltetrahydrofuran)solanidine, M-567
Petisidinine, P-280
Petisine, P-281
Pingbeidinoside, P-432
Pingbeinine, P-433
Procevine, P-633
Puqietinone, P-807
Radpetine, R-12
Rubijervine, R-144
Sarachine, S-66
Solacallinidine, S-335
Solacapine, S-336
Solacongestidine, S-337
Solafloridine, S-338
3,5-Solanidadiene, S-343
Solanidine, S-345
Solanudine, S-348
Solaphyllidine, S-349
Solaquidine, S-350
Solaseaforthine, S-351
Solaspiralidine, S-352
Veralinine, V-60
Veralkamine, V-61
Veralobine, V-62
Veralodisine, V-63
Veralosidinine, V-64
Veramitaline, V-68
Verazine, V-73
Vertaline B, V-87

Steroidal alkaloids (buxus type)

Buxus Alkaloid 1, A-275
Buxus Alkaloid 2, A-276
Buxus Alkaloid 3, A-277
Buxus Alkaloid 4, A-278
Buxus Alkaloid 5, A-279
Buxus Alkaloid A1, A-348
Buxus Alkaloid A2, A-349
Buxus Alkaloid A3, A-350
Buxus Alkaloid A4, A-351
Buxus Alkaloid A5, A-352
Buxus Alkaloid B, A-390
Buxus Alkaloid B1, A-391
Buxus Alkaloid B4, A-392
Buxus Alkaloid B5, A-393
Buxus Alkaloid B6, A-394
Buxus Alkaloid B7, A-395
Buxus Alkaloid B8, A-396
Buxus Alkaloid B387, A-397
Buxus Alkaloid B398, A-398
Buxus Alkaloid B426, A-399
Buxus Alkaloid BX6, A-430
Buxus Alkaloid BX10, A-431
Buxus Alkaloid C, A-435
Buxus Alkaloid D, A-475
Buxus Alkaloid E, A-496
Buxus Alkaloid F, A-507
Buxus Alkaloid M, A-566
Buxus Alkaloid M, A-567
Buxus Alkaloid N, A-570
Buxafuranamide, B-448
O^{10}-Buxafuranamine, B-449
O^{6}-Buxafuranamine, B-450
Buxalfine, B-452
Buxalongifolamidine, B-453
Buxaltine H, B-454
Buxaminone, B-457
Buxanaldinine, B-458
Buxandonine L, B-459
Buxanoldine, B-460
Buxapapinolamine, B-461
Buxaquamarine, B-462
Buxazine, B-463
Buxdeltine, B-464
Buxetine, B-465
Buxiramine D, B-472
Buxitrienine C, B-473
Buxotrienine, B-476
Buxoxybenzamine, B-477
Buxozine C, B-478
Buxpapamine, B-479
Buxpapine, B-480
Buxpapinine, B-481
Buxtauine M, B-482
Buxupapine, B-483
Cortistatin B, C-665
Cortistatine F, C-666
Cortistatine G, C-667
Cortistatine L, C-668
Cyclobuxargentine G, C-845
Cyclobuxomicreinine, C-847
Cyclobuxophylline O, C-848
Cyclobuxoviramine, C-849
Cyclobuxoviridine L, C-850
Cyclobuxoxazine C, C-851
Cyclomethoxazine B, C-881
Cyclomicrobuxeine K, C-882
Cyclomicuranine L, C-884
Cyclorolfeine, C-905
Cyclorolfoxazine, C-906
Cyclosuffrobuxine K, C-912
Cyclovirobuxeine F, C-916
2-Dehydroxy-O^{2}-buxafuranamine, D-174
Homobuxaquamarine, H-327
Homomoenjodaramine, H-339
Hyrcanine, H-776
Hyrcanone, H-777
Karachicine, K-14
Moenjodaramine, M-667
17-Oxocycloprotobuxine, O-172
Papillozine C, P-83
Pseudobaleabuxine F, P-704
Semperviraminol, S-226
Semperviraminone, S-227
Sempervirone, S-229
Semperviroxazolidine, S-230
Spirofornabuxine, S-429

Steroidal alkaloids (pregnane type)

Pachysandra terminalis Alkaloid XI, A-612
Japindine, J-23
Lanitine, L-30
Pachysantermine A, P-6
Pachystermine A, P-8
Paravallarine, P-93
Spiropachysine, S-436

Steroidal alkaloids (cephalostatins/ritterazines)

Cephalostatin 2, C-261
Cephalostatin 3, C-262
Cephalostatin 5, C-263
Cephalostatin 6, C-264
Cephalostatin 7, C-265
Cephalostatin 8, C-266
Cephalostatin 9, C-267
Cephalostatin 13, C-268
Cephalostatin 16, C-269
Ritterazine A, R-101
Ritterazine B, R-102
Ritterazine C, R-103
Ritterazine E, R-104
Ritterazine J, R-105
Ritterazine N, R-106
Ritterazine P, R-107
Ritterazine R, R-108
Ritterazine U, R-109
Ritterazine V, R-100
Ritterazine W, R-110
Ritterazine Z, R-111

Miscellaneous steroidal alkaloids

15-Azasterol, A-1602
Batrachotoxinin A, B-36
Boophiline, B-249
Bufotoxin, B-394
Carolisterol A, C-165
Cephalostatin 7, C-265

3-Deamino-3-hydroxysolanocapsine, D-99
Dehydroazasirosterol, D-151
Dictyolucidine, D-368
4,4-Dimethyl-15-azasterol, D-742
Gymnasterone A, G-231
Jurubine, J-60
Korsevine, K-88
Kurchenine, K-110
Machilaminoside A, M-3
Machilaminoside B, M-4
4-Methyl-15-azasterol, M-396
20-(2-Methyl-1-pyrrolin-5-yl)pregn-4-en-3-one, M-550
Mitiphylline, M-651
Munroniamide, M-732
Petisidine, P-279
Petunianine A, P-291
Petunianine B, P-292
Petunianine C, P-293
Pimpinellidine, P-431
Pingbeinone, P-434
Plakinamine A, P-496
Plakinamine B, P-497
Plakinamine C, P-498
Plakinamine G, P-499
Plakinamine I, P-500
Plakinamine I, P-501
Plakinamine J, P-502
Procevine, P-633
Puqienine A, P-802
Puqienine C, P-803
Puqienine D, P-804
Puqienine E, P-805
Puqienine F, P-806
Rhinolidine, R-79
Sevcoridinine, S-275
Siechuantine, S-298
Solamaladine, S-339
Solanocapsine, S-346
Solanocastrine, S-347
Spirajine, S-415
Spirofornabuxine, S-429
Squalamine, S-485
Stenanzine, S-526
Tomatillidine, T-423
Turraparvin D, T-685
Uscharin, U-53
Valivine, V-7
Veracintine, V-57
Veramanine, V-65

Azaanthracene alkaloids

Annopholine, A-1058
Antibiotic WJ 85, A-1313
Benz[*g*]isoquinoline-5,10-dione, B-71
Bostrycoidin, B-255
6-Deoxy-8-methylbostrycoidin, D-226
Enkleine, E-83
Griffithazanone A, G-174
Isophomazarin, I-264
Kalasinamide, K-6
Marcanine A, M-97
4-Methylbenzo[*g*]quinoline-5,10-dione, M-399
Phomazarine, P-374
Pyrenoline A, P-892
Scorazanone, S-161
5,8,9,10-Tetramethoxy-4-methylbenzo[*g*]quinolin-2(1*H*)-one, T-277

Azafluorene alkaloids

Dielsinol, D-385
3,7-Dihydroxy-4-methyl-5*H*-indeno[1,2-*b*]pyridin-5-one, D-623
Onychine, O-93

Pyrazole alkaloids

Citreoazopyrone, C-477
5,6-Dihydro-3-phenyl-4*H*-pyrrolo[1,2-*b*]pyrazole, D-492
Formycin A, F-131
Formycin B, F-132
Garceine, G-16
3-Methoxypyrazolo[4,3-*e*][1,2,4]triazine, M-285
Nagstatin, N-9
Newbouldine, N-185
Nitrabirine, N-240
3-Nonyl-1*H*-pyrazole, N-286

Imidazole alkaloids

Acinetobactin, A-79
Aerophobin 2, A-155
Agesamide A, A-195
Alchorneinone, A-252
Allantoin, A-625
2-Amino-4-(4-hydroxybenzyl)-1-methyl-1*H*-imidazole, A-791
5-Aminoimidazole riboside, A-827
2-Aminoimidazole, A-825
4(5)-Aminoimidazole, A-826
Aminozooanemonin, A-928
Amphistin, A-949
Anatoxin a(s), A-975
Anguibactin, A-1009
Antibiotic CV 1, A-1154
Antibiotic Sch 40873, A-1245
Aplysinamisine I, A-1349
Aplysinopsin, A-1357
Archerine, A-1390
Argadin, A-1407
Asteropterin, A-1516
Aurantiamine, A-1548
Azepinomycin, A-1605
Biotin, B-139
3-Bromo-4-hydroxy-α-(hydroxyimino)-*N*-[2-(1*H*-imidazol-4-yl)ethyl]benzenepropanamide, B-323
5(4)-Butyl-2-chloro-1*H*-imidazole-4(5)-carboxaldehyde, B-426
Calcaridine A, C-25
Carcinine, C-157
Caribaeorane, C-160
Caribaeoside, C-161
Casimiroedine, C-176
Cassiadinine, C-180
Catharsitoxin A, C-198
Catharsitoxin B, C-199
Catharsitoxin C, C-200
Celogentin A, C-241
Celogentin C, C-242
Celogentin G, C-243
Chaksine, C-339
Chartelline A, C-350
Clathridine A, C-491
Clathridine B, C-492
Clathridine C, C-493
Clathridine-9-*N*-(2-sulfoethyl)imine, C-494
Corallistine, C-639
Creatinine, C-732
Cucumopine, C-802
Cynodine, C-931
Cynolujine, C-932
Cynometrine, C-933
Cypholophine, C-935
Dehydroisolongistrobine, D-160
Didemnoline A, D-380
7,8-Dihydroimidazo[1,5-*c*]pyrimidin-5(6*H*)-one, D-462
2,3-Dihydro-2-oxo-1*H*-imidazole-4-carboxylic acid, D-484
Dimethyl N^2-creatininylphosphate, D-725
2-(Dimethylamino)-1,5-dihydro-5-(1*H*-indol-3-yl)-5-(2-oxopropyl)-4*H*-imidazol-4-one, D-728
4-[2-(Dimethylamino)ethyl]imidazole, D-731
2-(Dimethylamino)-5-(1*H*-indol-3-yl)-4*H*-imidazol-4-one, D-732
2,4(5)-Dimethylimidazole, D-749
Discodermindole, D-845
Dragmacidin D, D-930
Dragmacidin F, D-932
Dragmacidonamine A, D-933
Echinobetaine B, E-15
Eleuthoside A, E-64
Ergothioneine, E-173
5-[(4-Ethyltetrahydro-5-oxo-3-furanyl)methylidene]-1-methyl-2,4-imidazolidinedione, E-272
Fasmerianamine B, F-16
Feldamycin, F-33
Fungerin, F-196
Glusun II, G-106
Granulatimide, G-169
Guadinomic acid, G-185
Guadinomine A, G-186
Guadinomine C_1, G-187
Histamine, H-307
2-(4-Hydroxybenzoyl)-4(5)-(4-hydroxyphenyl)-1*H*-imidazole, H-412
β-Hydroxyergothioneine, H-484
2-Hydroxy-3-(4-imidazolyl)propanoic acid, H-523
2-(4-Hydroxy-3-methoxybenzoyl)imidazole, H-558
3-(Hydroxymethyl)-4-(1-methyl-1*H*-imidazol-5-yl)-1-phenyl-1-butanone, H-606
2′-*O*-[3-(4-Hydroxyphenyl)-2-methoxypropenoyl]-3′-*O*-[3-(1*H*-imidazol-4-yl)propenoyl]-*S*-methyl-5′-thioadenosine, H-681
5-Hydroxy-1-β-D-ribofuranosyl-1*H*-imidazole-4-carboxaldehyde, H-729
Hyrtiomanzamine, H-781
Imbricatine, I-32
1*H*-Imidazole-1-acetic acid, I-36
1*H*-Imidazole-4(5)-acetic acid, I-37
1*H*-Imidazole-4(5)-ethanol, I-38
Imidazole, I-35
1*H*-Imidazole-4(5)-propanoic acid, I-39
N^{α}-[3-(1*H*-Imidazol-4-yl)propenyl]histamine, I-43
2-(1*H*-Imidazol-4-yl)quinoline, I-44
Isoalchorneine, I-187
Isocynometrine, I-224
Isogranulatimide, I-237
Isonaamidine A, I-251
Isonaamine A, I-252
Isonaamine B, I-253
5-Isopropyl-2-(2-methylpropyl)-1*H*-imidazole, I-280
Kifunensine, K-41
Kottamide A, K-92
Kottamide D, K-93
Lepidine E, L-107
Lepidine F, L-108
Lepidine, L-106
Leucettamidine, L-149
Leucettamine A, L-150
Leucettamine B, L-151
Leucettamine C, L-152
Leucosolenamine A, L-157
Leuhistin, L-160
Lidimycin, L-166
Lissoclin C, L-199
Longistrobine, L-253
Macrorungine, M-28
Malonganenone B, M-75
Mannopeptimycin β, M-86
Melanostatin, M-158
Meleagrin, M-162
α-Methylbiotin, M-402
α-Methyldethiobiotin, M-432
4(5)-Methylimidazole, M-473
2-(2-Methylpropyl)-5-phenyl-1*H*-imidazole, M-528
Moroidin, M-702
Murexine, M-739
Naamidine F, N-2
Naamine A, N-3
Naamine B, N-4
Naamine C, N-5
Naamine D, N-6
Neamphine, N-81
Neoxaline, N-149
Nikkomycin X, N-216
2-Nitroimidazole, N-250
13-Nor-7(11)-dehydropilocarpine, N-295

Nortopsentin A, N-312
Nortopsentin D, N-313
Norzooanemonin, N-318
Oceanapamine, O-15
1,2,3,4,6,7,8,9-Octahydrodipyrido[1,2-*a*:1′,2′-*c*]imidazol-10-ium(1+), O-45
Phenylahistin, P-338
Pilocarpine, P-424
Pilosine, P-428
Pilosinine, P-429
Piloturine, P-430
Polyandrocarpamine A, P-543
Polycarpaurine B, P-551
Polycarpaurine C, P-552
Polycarpine, P-553
Preclathridine A, P-594
Pseudoceratinine B, P-708
Pseudoceratinine C, P-709
Pseudomonine, P-718
Purealidin D, P-810
Purealidin H, P-811
Purealidin M, P-814
Subergorgia suberosa Purine-imidazole alkaloid, P-819
Pyronaamidine, P-938
Oceanapia Quinolone alkaloid, Q-57
Rhopaladin A, R-89
Roquefortine C, R-125
Roquefortine E, R-126
Selenobiotin, S-219
Sibyllimycin, S-293
Solsodomine A, S-358
Spirocalcaridine A, S-428
Stellettazole A, S-507
Stellettazole B, S-508
Stellettazole C, S-509
Streptolidine, S-565
4,5,6,7-Tetrahydro-1*H*-imidazo[4,5-*c*]pyridine, T-192
Topsentin A, T-432
2,4,5-Tribromo-1*H*-imidazole, T-461
Ulosantoin, U-20
Verongamine, V-78
Wondonine A, W-20
Xestomanzamine A, X-23
Zapotidine, Z-8
Zooanemonin, Z-32
Zyzzin, Z-39

Pyrrole-imidazole alkaloids

Ageladine A, A-177
Agelastatin A, A-189
Ageliferin, A-190
Axinellamine A, A-1574
Axinohydantoin, A-1576
Clathramide A, C-490
Cyclooroidin, C-887
Dibromophakellstatin, D-336
Dispacamide A, D-863
Hymenialdisine, H-762
Keramadine, K-29
Latonduine A, L-59
Latonduine B, L-60
Massadine aziridine, M-113
Massadine, M-112
Mauritamide A, M-123
Midpacamide, M-604
Mukanadin B, M-727
Nagelamide B, N-7
Nagelamide H, N-8
Nakamuric acid, N-12
Odiline, O-66
Oroidin, O-123
Oxocyclostylidol, O-173
Oxysceptrine, O-225
Palauamine, P-18
Preaxinellamine, P-590
Sceptrine, S-124
Slagenine A, S-328
Styloguanidine, S-611
Tauroacidin A, T-39
Tubastrindole C, T-655

Cycloheptadiimidazoles

Parazoanthoxanthin A, P-94
Pseudozoanthoxanthin A, P-737

Oxazole and benzoxazole alkaloids

4-Acetyl-2(3*H*)-benzoxazolone, A-42
Acinetobactin, A-79
Ajudazol B, A-219
Almazole C, A-634
Almazole D, A-635
Almazolone, A-636
Amamistatin A, A-672
5-(10-Aminoundecyl)hexahydropyrrolo[2,1-*b*]oxazole, A-927
Annuloline, A-1064
Antibiotic A 33853, A-1098
Antibiotic 927A, A-1092
Antibiotic AJI 9561, A-1116
Antibiotic B 4317, A-1122
Antibiotic B 90063, A-1123
Antibiotic CP 35763, A-1151
Antibiotic GE 37468A, A-1181
Antibiotic L 654040, A-1194
Antibiotic MBH 001, A-1203
Antibiotic UK 1, A-1302
Antibiotic X 14885A, A-1087
Antibiotic YM 216391, A-1322
Ariakemicin A, A-1422
Ascidiacyclamide, A-1456
Bengazole Z, B-61
2,6-Benzoxazolediol, B-82
2-Benzoxazolol, B-83
Berninamycin A, B-104
Bistratamide C, B-224
Bistratamide D, B-225
Bistratamide E, B-226
Bistratamide I, B-222
Boxazomycin A, B-262
Calcimycin, C-26
Calyculin A, C-55
Calyculin C, C-56
Calyculin J, C-57
Carboxymycobactins, C-151
Ceratospongamide, C-280
Chivosazole E, C-393
5-Chloro-2-hydroxy-6-methoxybenzoxazole, C-406
Cladioxazole, C-488
Clavosine A, C-516
Coelibactin, C-561
Comoramide A, C-585
Conglobatin, C-602
Curromycin A, C-815
Cyclodidemnamide, C-858
Cycloxazoline, C-919
Cytoxazone, C-964
Dendroamide A, D-208
Dendroamide B, D-209
Diazonamide B, D-298
Didmolamide A, D-381
5,6-Dimethoxy-2(3*H*)-benzoxazolone, D-707
6,7-Dimethoxy-1(3*H*)-benzoxazolone, D-708
Discobahamin A, D-842
Discobahamin B, D-843
Discokiolide A, D-847
Discokiolide B, D-848
Disorazole C_1, D-857
Disorazole C_2, D-858
Disorazole F_1, D-859
Disorazole G_1, D-860
Disorazole G_2, D-861
Disorazole G_3, D-862
Dolastatin E, D-909
Dolastatin I, D-903
Epothilone H_1, E-118
Epothilone H_2, E-119
Fluvibactin, F-113
Formobactin, F-130
Goadsporin, G-136
Griseoviridin, G-178
Halfordinol, H-12
Halichondramide, H-15
Haliclonamide B, H-20
Haliclonamide D, H-21
Halishigamide B, H-28
Halishigamide C, H-29
Halishigamide D, H-30
Hennoxazole A, H-112
Hennoxazole F, H-113
Icumazole A, I-14
Indolmycin, I-102
Kabiramide D, K-2
Kabiramide H, K-3
Keramamide B, K-30
Keramamide D, K-31
Keramamide E, K-32
Lajollamycin, L-18
Leiodelide A, L-84
Leiodelide B, L-85
Leucamide A, L-146
Leucascandrolide A, L-147
Leupyrrin C, L-161
Lipoxazolidinone A, L-190
Lipoxazolidinone B, L-191
Lipoxazolidinone C, L-192
Lissoclinamide 10, L-203
Lissoclinamide 1, L-200
Lissoclinamide 4, L-201
Lissoclinamide 9, L-202
Madumycin II, M-35
Martefragine A, M-109
Mechercharstatin A, M-142
Mechercharstatin B, M-143
Melanoxidin, M-159
Microcin B17, M-593
Microcyclamide, M-597
Muscoride A, M-775
Mycalolide A, M-779
Mycalolide D, M-780
Mycalolide E, M-781
Nakijinol, N-13
Neooxazolomycin, N-131
Neopeltolide, N-133
Nocobactin NA, N-267
Nostocyclamide M, N-322
Nostocyclamide, N-321
7-[(1,2,3,4,4*a*,7,8,8*a*-Octahydro-1,2,4*a*,5-tetramethyl-1-naphthalenyl)methyl]-6-benzoxazolol, O-60
Orbiculamide A, O-101
Ostreogrycin A, O-131
Oxachelin, O-147
Oxazolomycin, O-155
4-(4-Oxazolyl)-3-(hydroxymethyl)-3-buten-2-ol, O-156
3-(5-Oxazolyl)-1*H*-indole, O-157
Patellamide A, P-114
Patellamide B, P-115
Patellamide C, P-116
Patellamide D, P-117
Patellamide F, P-119
Phenoxan, P-334
Phorbazole D, P-379
Phorboxazole A, P-380
Photobactin, P-381
Piscerythoxazole, P-482
Prepatellamide A, P-620
Promoinducin, P-640
Promothiocin A, P-641
Promothiocin B, P-642
Radamycin, R-5
Raocyclamide A, R-16
Raocyclamide B, R-17
Rhizopodin, R-81
Rhizoxin S_1, R-84
Rhizoxin, R-83
Routiennocin, R-136
Serratiochelin, S-258
Siphonazole, S-323
Swinhoeiamide A, S-652
Telomestatin, T-66
Texaline, T-299
Thiangazole, T-367
Thioactin, T-378

Thiomycalolide A, T-388
Thiomycalolide B, T-389
Thiotipin, T-393
Transvalencin A, T-445
Transvalencin Z, T-446
Trehalamine, T-447
Ulithiacyclamide, U-10
Urukthapelstatin A, U-50
Venturamide A, V-53
Venturamide B, V-54
Vibriobactin, V-96
Wewakazole, W-15

Isoxazole alkaloids

2-Amino-4-(2,5-dihydro-5-oxo-2-isoxazolyl)butanoic acid, A-734
5-(Aminomethyl)-3(2*H*)-isoxazolone, A-837
α-Amino-5-oxo-2(5*H*)-isoxazolebutanoic acid, A-849
Antibiotic B 4317, A-1122
L-Aspartyl-L-N^2-hydroxyaspartyl-D-cycloserine, A-1467
1,2-Benzisoxazole-3,6-diol, B-72
4-Isoxazolecarboxylic acid, I-346
3-Isoxazolidinone, I-347
4-Isoxazolol, I-348
Lactivicin, L-8
Muscaaurin I, M-768
5-Oxo-2(5*H*)-isoxazoleacetic acid, O-184
5-Oxo-2(5*H*)-isoxazolepropanoic acid, O-185
Pseudomonine, P-718
Tricholomic acid, T-490

Spirobenzoxazoline alkaloids

Aerophobin 1, A-154
Aerophobin 2, A-155
Aeroplysinillin, A-156
Aerothionin, A-158
Agelocaissarine A_1, A-192
Agelorin A, A-194
Aplysina archeri Alkaloid, A-272
Aplysinafulvin, A-1348
Aplysinamisine I, A-1349
Aplysinamisine II, A-1350
Aplysinone A, A-1355
Aplysinone D, A-1356
Araplysillin I, A-1378
Archerine, A-1390
Oceanapia Bromotyrosine alkaloid, B-357
Caissarine B, C-18
Calafianine, C-24
Fistularin 1, F-68
Fistularin 2, F-69
Fistularin 3, F-70
Hemifistularin 3, H-103
Hexadellin B, H-227
Hexadellin C, H-228
Ianthesine B, I-2
Ianthesine C, I-3
Psammaplysin A, P-695
Psammaplysin E, P-696
Pseudoceratinine C, P-709
Purealidin L, P-813
Purealine, P-816
Purpurealidin B, P-824
Oceanapia Quinolone alkaloid, Q-57

Acyclic thiazole and benzothiazole alkaloids

Aeruginosamide, A-159
Agrochelin, A-204
Althiomycin, A-664
Anguibactin, A-1009
Antibiotic BE 10988, A-1126
Antibiotic WS 75624A, A-1315
Antibiotic WS 75624B, A-1316
Archazolide A, A-1388
Archazolide B, A-1389
Barbaleucamide A, B-21
Barbamide, B-22
Benzothiazole, B-77
2,6-Benzothiazolediol, B-78
2(3*H*)-Benzothiazolethione, B-79
2-Benzothiazolol, B-80
Coelibactin, C-561
Curacin A, C-807
Curacin D, C-808
Cystothiazole E, C-937
4,5-Dihydro-2-methylthiazole, D-479
3-(4,5-Dihydro-2-thiazolecarbonyl)-1*H*-indole, D-516
2,5-Dihydro-2,4,5-trimethylthiazole, D-526
3,5-Dihydroxy-6-methyl-7-(2-methyl-4-thiazolyl)-6-heptenoic acid, D-628
5,13-Dihydroxy-4,6,10,14-tetramethyl-15-(2-methyl-4-thiazolyl)-10,14-pentadecadiene-3,7-dione, D-678
5,13-Dihydroxy-2,4,6,14-tetramethyl-15-(2-methyl-4-thiazolyl)-10,14-pentadecadien-3-one, D-679
Dolabellin, D-901
Dolastatin 10, D-907
Dolastatin 18, D-908
Dysideaproline A, D-968
Dysideathiazole, D-970
Dysidenin, D-972
Dysithiazolamide, D-977
Epothilone A_1, E-108
Epothilone A_8, E-109
Epothilone A, E-110
Epothilone B, E-111
Epothilone C_1, E-112
Epothilone C_3, E-113
Epothilone C_4, E-114
Epothilone C, E-115
Epothilone D_1, E-116
Epothilone D, E-117
Epothilone I_1, E-120
Epothilone I_2, E-121
Epothilone I_3, E-122
Epothilone I_4, E-123
Epothilone I_5, E-124
Epothilone K, E-125
Epothilone tetrahydrofuran, E-126
2-Ethyl-4-methylthiazole, E-261
Firefly oxyluciferin, F-56
Goadsporin, G-136
Herbamide A, H-138
6-Hydroxy-5-benzothiazoleacetic acid, H-408
11-Hydroxy-4,12-dimethyl-13-(2-methyl-4-thiazolyl)-8,12-tridecadien-3-one, H-469
9-Hydroxy-6,10-dimethyl-11-(2-methyl-4-thiazolyl)-6,10-undecadien-3-one, H-470
5-(2-Hydroxyethyl)-4-methylthiazole, H-495
Hydroxyhomodolabellin, H-503
4-Hydroxy-7-[1-hydroxy-2-(methylamino)ethyl]-2(3*H*)-benzothiazolone, H-508
α-(4-Hydroxy-3-methoxyphenyl)-2-thiazolemethanol, H-569
2-(2-Hydroxyphenyl)-4-thiazolecarboxylic acid, H-695
2-(2-Hydroxyphenyl)thiazole, H-694
5-(1*H*-Indol-3-yl)-2(3*H*)-thiazolethione, I-139
Kalkitoxin, K-7
Karnamicin A_1, K-17
Karnamicin A_2, K-18
Karnamicin C_2, K-19
Karnamicin C_3, K-20
Karnamicin D_2, K-21
Latrunculin T, L-66
Lyngbyabellin D, L-358
Lyngbyabellin F, L-360
Lyngbyapeptin A, L-362
Lyngbyapeptin B, L-363
Lyngbyapeptin C, L-364
Melithiazole B, M-177
Melithiazole C, M-178
Melithiazole F, M-179
Melithiazole G, M-180
Melithiazole H, M-181
Melithiazole I, M-176
3-Methoxy-4-methyl-5-(2-methyl-4-thiazolyl)-4-pentenoic acid, M-269
2-Methylbenzothiazole, M-400
2-(2-Methylpropyl)thiazole, M-533
4-Methylthiazole, M-569
4-Methyl-5-vinylthiazole, M-585
Microcin B17, M-593
Micromide, M-598
Mirabazole B, M-635
Mirabazole C, M-636
Mycothiazole, M-790
Myxothiazole A, M-807
Pyochelin I, P-832
Tantazole A, T-29
Tantazole B, T-30
Tantazole F, T-31
Thiamine, T-366
Thiangazole, T-367
Thiazohalostatin, T-370
5-Thiazoleethanol, T-371
3-(2-Thiazolyl)-1*H*-indole, T-372
Thiazostatin A, T-373
Transvalencin A, T-445
Tridentatol C, T-508
Ulbactin A, U-3
Ulbactin B, U-4
Ulbactin C, U-5
Ulbactin D, U-6
Ulbactin E, U-7
Violatinctamine, V-143
Virenamide A, V-146
Virenamide B, V-147
Virenamide C, V-148
Virenamide E, V-149
Watasemycin A, W-11
Yersiniabactin, Y-9

Latrunculins

Latrunculin A, L-61
Latrunculin B, L-62
Latrunculin C, L-63
Latrunculin M, L-64
Latrunculin S, L-65
Latrunculin T, L-66

Macrocyclic thiazole alkaloids

Amythiamicin A, A-959
Amythiamicin B, A-960
Amythiamicin C, A-961
Amythiamicin D, A-962
Antibiotic A 10947, A-1097
Antibiotic A 10255B, A-1103
Antibiotic A 10255C, A-1105
Antibiotic A 7413D, A-1107
Antibiotic A 10255E, A-1108
Antibiotic A 10255F, A-1109
Antibiotic A 10255H, A-1110
Antibiotic 5102-2, A-1085
Antibiotic AB 97, A-1111
Antibiotic 1401B, A-1120
Antibiotic CP 41043, A-1152
Antibiotic CP 41494, A-1153
Antibiotic GE 37468A, A-1181
Antibiotic L 13365, A-1193
Antibiotic Sch 40832, A-1244
Antibiotic YM 216391, A-1322
Apratoxin A, A-1366
Apratoxin C, A-1367
Ascidiacyclamide, A-1456
Banyascyclamide B, B-16
Banyascyclamide C, B-17
Berninamycin A, B-104
Bistratamide A, B-223
Bistratamide C, B-224
Bistratamide D, B-225
Bistratamide E, B-226
Bistratamide I, B-222
Bistratamide J, B-227
Ceratospongamide, C-280
Cleomycin B_2, C-524
Comoramide A, C-585
Comoramide B, C-586
Copsomycin, C-637

Cyclodidemnamide B, C-859
Cyclodidemnamide, C-858
Cyclothiazomycin, C-913
Dendroamide A, D-208
Dendroamide B, D-209
Didmolamide A, D-381
Didmolamide B, D-382
Dolastatin 1, D-902
Dolastatin 2, D-904
Dolastatin 3, D-905
Dolastatin 4, D-906
Dolastatin E, D-909
Dolastatin I, D-903
Glycothiohexide α, G-126
Grassypeptolide, G-170
Guineamide A, G-222
Guineamide B, G-223
Haligramide A, H-24
Halipeptin A, H-26
Halipeptin C, H-27
Hectochlorin, H-84
Jingsimycin, J-40
Keenamide A, K-27
Keramamide F, K-33
Keramamide H, K-34
Kimorexin A, K-45
Kororamide, K-83
Largazole, L-45
Leinamycin, L-82
Leucamide A, L-146
Lissoclinamide 1, L-200
Lissoclinamide 4, L-201
Lissoclinamide 9, L-202
Lissoclinamide 10, L-203
Lyngbyabellin A, L-355
Lyngbyabellin B, L-356
Lyngbyabellin C, L-357
Lyngbyabellin E, L-359
Lyngbyabellin G, L-361
Mayotamide A, M-132
Mayotamide B, M-133
Mechercharstatin A, M-142
Micrococcin M, M-595
Micrococcin P_1, M-596
Microcyclamide, M-597
Neoberninamycin, N-101
Nocathiacin I, N-266
Nosiheptide, N-319
Nostocyclamide M, N-322
Nostocyclamide, N-321
Obyanamide, O-13
Oriamide, O-105
Pateamine A, P-113
Patellamide A, P-114
Patellamide B, P-115
Patellamide C, P-116
Patellamide D, P-117
Patellamide E, P-118
Patellamide F, P-119
Patellamide G, P-120
Patellin 1, P-121
Patellin 3, P-122
Patellin 4, P-123
Patellin 5, P-124
Patellin 6, P-125
Prelissoclinamide 2, P-611
Prepatellamide A, P-620
Prepatellamide B formate, P-621
Preulicyclamide, P-627
Preulithiacyclamide, P-628
Promoinducin, P-640
Promothiocin A, P-641
Promothiocin B, P-642
Radamycin, R-5
Raocyclamide A, R-16
Raocyclamide B, R-17
Scleritodermin A, S-151
Siomycin A, S-321
Siomycin D_1, S-322
Syriamycin, S-663
Tawicyclamide A, T-41
Tawicyclamide B, T-42
Telomestatin, T-66
Tenuecyclamide A, T-75
Tenuecyclamide C, T-76
Thioactin, T-378
Thiocillin I, T-383
Thiosporamicin, T-391
Thiostrepton, T-392
Thiotipin, T-393
Thuggacin A, T-397
Thuggacin B, T-398
Thuggacin cmc-A, T-400
Thuggacin C, T-399
Trichamide, T-477
Trunkamide A, T-633
Ulicyclamide, U-9
Ulithiacyclamide B, U-11
Ulithiacyclamide E, U-12
Ulithiacyclamide F, U-13
Ulithiacyclamide G, U-14
Ulithiacyclamide, U-10
Ulongamide B, U-15
Ulongamide C, U-16
Ulongamide D, U-17
Ulongamide E, U-18
Ulongamide F, U-19
Urukthapelstatin A, U-50
Venturamide A, V-53
Venturamide B, V-54
Zelkovamycin, Z-13

Pyrazine and quinoxaline alkaloids

2-Acetyl-3-methylpyrazine, A-62
Antibiotic OPC 15161, A-1220
Arglecin, A-1419
Argvalin, A-1421
Aspernigerin, A-1482
Barrenazine A, B-27
Batrachamine, B-35
5-Benzyl-3-hydroxy-2-isopropylpyrazine, B-88
2,5-Bis(1*H*-indol-3-ylmethyl)pyrazine, B-191
2,5-Bis(2-methylpropyl)pyrazine, B-203
3,6-Bis(1-methylpropyl)-2(1*H*)-pyrazinone, B-204
Botryllazine A, B-258
Botryllazine B, B-259
Brasiliamide D, B-279
Bravomicin A, B-286
Bravomicin D, B-287
3-Butyl-2,5-dimethylpyrazine, B-431
6-*tert*-Butyl-1-hydroxy-3-[2-(methylthio)ethyl]-2(1*H*)-pyrazinone, B-433
Cephalostatin 2, C-261
Cephalostatin 3, C-262
Cephalostatin 5, C-263
Cephalostatin 6, C-264
Cephalostatin 8, C-266
Cephalostatin 9, C-267
Cephalostatin 13, C-268
Cephalostatin 16, C-269
Clavulazol A, C-518
Coelenteramide, C-558
Coelenteramine, C-559
Crotonine, C-776
Diabroticin A, D-241
2,5-Diethyl-3,6-dimethylpyrazine, D-389
2,6-Diethyl-3,5-dimethylpyrazine, D-390
2,3-Diethyl-5-methylpyrazine, D-392
3,5-Diethyl-2-methylpyrazine, D-393
6,7-Dihydro-2,3-dimethyl-5*H*-cyclopentapyrazine, D-426
2,5-Dihydroxy-3-methylpyrazine, D-631
2,5-Diisopropyl-3-methoxypyrazine, D-699
2,5-Diisopropylpyrazine, D-700
2,6-Diisopropylpyrazine, D-701
2,3-Dimethoxypyrido[2,3-*b*]pyrazine, D-722
2,5-Dimethyl-3-(3-methyl-2-butenyl)pyrazine, D-754
2,5-Dimethyl-3-(2-methylbutyl)pyrazine, D-755
2,5-Dimethyl-3-(2-methylpropyl)pyrazine, D-757
2,5-Dimethyl-3-(methylthio)pyrazine, D-758
3,5-Dimethyl-2-pentylpyrazine, D-766
2,5-Dimethyl-3-propylpyrazine, D-772
3,5-Dimethyl-2-propylpyrazine, D-773
2,5-Dimethylpyrazine, D-774
Dragmacidin A, D-929
Dragmacidin D, D-930
Dragmacidin F, D-932
Echinoserine, E-25
2-Ethyl-3,5-dimethylpyrazine, E-237
3-Ethyl-2,5-dimethylpyrazine, E-238
5-Ethyl-2,3-dimethylpyrazine, E-239
2-Ethyl-5-methylpyrazine, E-255
Ethyltrimethylpyrazine, E-273
Flavacol, F-76
Flutimide, F-112
2-[(2-Furanylmethyl)thio]-6-methylpyrazine, F-201
2-Hexyl-3,5-dimethylpyrazine, H-262
1-Hydroxy-3,6-bis[2-(methylthio)ethyl]-2(1*H*)-pyrazinone, H-430
1-Hydroxy-6-isopropyl-3-(1-methylpropyl)-2(1*H*)-pyrazinone, H-543
1-Hydroxy-6-isopropyl-3-[2-(methylthio)ethyl]-2(1*H*)-pyrazinone, H-544
2-(1-Hydroxy-1-methylpropyl)-3-methoxypyrazine, H-618
2-(1-Hydroxy-2-methylpropyl)-3-methoxypyrazine, H-619
1-Hydroxy-3-(2-methylpropyl)-6-[2-(methylthio)ethyl]-2(1*H*)-pyrazinone, H-620
1-Hydroxy-6-(2-methylpropyl)-3-[2-(methylthio)ethyl]-2(1*H*)-pyrazinone, H-621
Isopalythazine, I-261
2-Isopropenyl-5-isopropylpyrazine, I-270
2-Isopropenyl-6-isopropylpyrazine, I-271
2-Isopropyl-3,5-dimethoxy-6-methylpyrazine, I-272
2-Isopropyl-3-methoxy-5-(1-methylpropyl)pyrazine, I-275
2-Isopropyl-3-methoxy-5-(2-methylpropyl)pyrazine, I-276
3-Isopropyl-2-methoxy-5-methylpyrazine, I-277
3-Isopropyl-2-methoxypyrido[2,3-*b*]pyrazine, I-278
2-Isopropyl-5-(1-methylpropyl)pyrazine, I-281
2-Isopropyl-5-(2-methylpropyl)pyrazine, I-282
2-Isopropyl-5-methylpyrazine, I-283
2-Isopropyl-6-methylpyrazine, I-284
Isopropylpyrazine, I-285
Luzopeptin C, L-312
Maedamine A, M-37
3-Methoxy-2-methyl-5-(2-methylpropyl)pyrazine, M-268
3-Methoxy-2-(1-methylpropyl)-5-(2-methylpropyl)pyrazine, M-271
2-Methoxy-3-(1-methylpropyl)pyrazine, M-272
2-Methoxy-3-(2-methylpropyl)pyrazine, M-273
6-(1-Methylethyl)-3-(2-methylpropyl)-2(1*H*)-pyrazinone, M-462
2-Methyl-3-(2-methylpropyl)pyrazine, M-483
2-Methyl-5-(1-propenyl)pyrazine, M-523
2-Methyl-6-(1-propenyl)pyrazine, M-524
Methylpyrazine, M-536
Cypridina Oxyluciferin, O-222
Watasenia Oxyluciferin, O-223
Palythazine, P-41
Pedatisectine D, P-153
Pedatisectine E, P-154
Pedatisectine F, P-155
Piperazinomycin, P-444
Piperazirum, P-445
Pulcherriminic acid, P-788
Quinazomycin, Q-15
Quinomycin A, Q-58
Quinomycin B_0, Q-59
Quinomycin B, Q-60
Quinomycin C, Q-61
Quinomycin D, Q-62
Quinomycin E, Q-63
Quinoxapeptin A, Q-64
Ritterazine A, R-101
Ritterazine B, R-102
Ritterazine C, R-103
Ritterazine E, R-104
Ritterazine J, R-105

Ritterazine N, R-106
Ritterazine P, R-107
Ritterazine R, R-108
Ritterazine U, R-109
Ritterazine V, R-100
Ritterazine W, R-110
Ritterazine Z, R-111
Sandramycin, S-50
Scleriminol, S-152
Septorine, S-249
Stizolamine, S-553
Terezine A, T-84
Terezine B, T-85
Tetramethylpyrazine, T-284
Trimethylpyrazine, T-613

Benzo[1,2-b:3,4-b′]dipyrroles

Antibiotic PDE I, A-1222
Antibiotic PDE II, A-1223
Bizelesin, B-229
Duocarmycin A, D-952
Duocarmycin C_2, D-954
Duocarmycin SA, D-956
Rachelmycin, R-4
Yatakemycin, Y-7

Pyrrolo[1,2-a]pyrazines

Agesamide A, A-195
Antibiotic MPC 1001F, A-1207
Antibiotic SF 2771, A-1261
Cyclo[2-(1,1-dimethyl-2-propenyl)tryptophyl]-prolyl, C-861
Cyclooroidin, C-887
Macrophominol, M-19
Makaluvic acid A, M-56
Oxocyclostylidol, O-173
Peramine, P-242
Pyrrolo[1,2-*a*]pyrazine-3,6(4*H*,7*H*)-dione, P-968
Tryprostatin A, T-638

Morpholines

Agropine, A-207
Bassiatin, B-29
Chelonin A, C-361
Chelonin C, C-363
Convolutamine E, C-627
Ergosecalinine, E-168
Metacytofilin, M-231
Oxathinecarboxylic acid, O-151
2*H*-1,4-Oxazine-3-carboxylic acid, O-152
Oxazinine 1, O-153
Oxazinine 3, O-154
Polygonapholine, P-561

Pyrimidines

Aberiamine, A-13
Allithiamine, A-627
4-Amino-3,6-dihydroxy-1*H*-pyrazolo[3,4-*d*]pyrimidine, A-755
4-Amino-2-hydroxy-5-(hydroxymethyl)pyrimidine, A-795
4-Amino-2-hydroxy-5-methylpyrimidine, A-803
2-[(4-Aminophenyl)amino]pyrimidine, A-863
2-Amino-4-pyrimidinecarboxylic acid, A-903
Antibiotic TAN 1057A, A-1282
Aplicyanin A, A-1343
Barbital, B-23
Boxazomycin A, B-262
Capreomycidine, C-99
Crambescin A, C-721
Crambescin B, C-722
Crambescin C1, C-723
Crambescin C2, C-724
Cytomycin, C-960
Cytosine, C-961
Dehydrocrambine A, D-155
4,5-Diamino-2,6-dihydroxypyrimidine, D-254
1,3-Dihydrocyclopentapyrimidin-2-one, D-416
7,8-Dihydro-3-methylpyrrolo[1,2-*a*]pyrimidin-2(6*H*)-one, D-478
Dihydro-2,4(1*H*,3*H*)-pyrimidinedione, D-497
2,3-Dihydro-2-thioxo-4(1*H*)-pyrimidinone, D-518
2,6-Dihydroxy-4-pyrimidinecarboxylic acid, D-669
1,3-Dimethyl-2,4(1*H*,3*H*)-pyrimidinedione, D-777
5-Fluoro-2,4-dihydroxypyrimidine, F-104
Formycin A, F-131
Formycin B, F-132
Glusun I, G-105
Heteromine H, H-159
Hortesin, H-360
2-Hydroxy-4-mercaptopyrimidine, H-556
Hymeniacidine, H-761
Hyrtinadine A, H-779
Leucosolenamine A, L-157
Manzacidin B, M-90
Meridianin A, M-205
5-Methyl-2,4,6(1*H*,3*H*,5*H*)-pyrimidinetrione, M-540
Millettonine, M-615
Muraymycin C_1, M-737
Nikkomycin Z, N-218
Psammopemmin A, P-697
Sparsomycin, S-384
Stendomycidine, S-527
3,4,5,6-Tetrahydro-6-hydroxymethyl-3,6-dimethyl-4-pyrimidinecarboxylic acid, T-183
1,4,5,6-Tetrahydro-5-hydroxy-2-methyl-4(6)-pyrimidinecarboxylic acid, T-185
Thiamine, T-366
Thymine, T-401
Tuberactidine, T-657
Uracil, U-42

Ptilocaulins

1,3*a*-Didehydro-8-hydroxyptilocaulin, D-375
Isoptilocaulin, I-291
Mirabilin B, M-638
Mirabilin C, M-639
Mirabilin D, M-640
Mirabilin E, M-641
Mirabilin F, M-642
Mirabilin G, M-643
Netamine A, N-174
Netamine B, N-175
Netamine C, N-176
Netamine E, N-177
Netamine F, N-178
Netamine G, N-179
Ptilocaulin, P-773

Triazaacenaphthylene alkaloids

Batzelladine A, B-37
Batzelladine B, B-38
Batzelladine C, B-39
Batzelladine D, B-40
Batzelladine E, B-41
Batzelladine F, B-42
Batzelladine G, B-43
Batzelladine H, B-44
Batzelladine J, B-45
Batzelladine K, B-46
Batzelladine L, B-47
Batzelladine M, B-48
Crambescidin 359, C-715
Crambescidin 431, C-716
Crambescidin 816, C-717
Crambescidin 826, C-718
Crambescidin 830, C-719
Crambescidin 844, C-720
Crambidine, C-725
Dehydrobatzelladine C, D-152
Fromiamycalin, F-158
Neofolitispate 1, N-115
Ptilomycalin A, P-774
Ptilomycalin D, P-775

Tetrodotoxins

4,9-Anhydrotetrodotoxin, A-1035
Chiriquitoxin, C-390
Tetrodonic acid, T-297
Tetrodotoxin, T-298
5,6,11-Trideoxytetrodotoxin, T-510

Phenazine alkaloids

Aeruginosin B, A-162
Aestivophoenin A, A-164
Aestivophoenin B, A-165
8-Amino-1-hydroxyphenazine, A-805
Antibiotic DOB 41, A-1160
Antibiotic PD 116152, A-1221
Antibiotic SB 212305, A-1239
Antifungin, A-1326
Benthocyanin A, B-64
Benthocyanin C, B-65
Benthophoenin, B-66
2-Chloro-1,6-phenazinediol, C-415
2,3-Dihydroxy-1-phenazinecarboxylic acid, D-640
2,6-Dihydroxy-1-phenazinecarboxylic acid, D-641
2,9-Dihydroxy-1-phenazinecarboxylic acid, D-642
3,6-Dihydroxy-1-phenazinecarboxylic acid, D-643
2,7-Dimethyl-5,10-[2]butenophenazine-11,14-dione, D-744
Diphenazithionin, D-814
Endophenazine B, E-79
Esmeraldine A, E-222
Esmeraldine B, E-223
3,4,6,7,8,9-Hexahydrophenazine, H-240
6-(1-Hydroxyethyl)-1-phenazinecarboxylic acid, H-496
9-Hydroxy-6-hydroxymethyl-1-phenazinecarboxylic acid, H-514
2-Hydroxy-1-phenazinecarboxylic acid, H-661
4-Hydroxy-1-phenazinecarboxylic acid, H-662
9-Hydroxy-1-phenazinecarboxylic acid, H-664
1-(4-Hydroxyphenyl)-3*H*-benzo[*a*]pyrrolo[2,3-*c*]phenazine, H-674
Lavanducyanin, L-76
Lomofungin, L-241
6-(3-Methyl-2-butenyl)-1-phenazinecarboxylic acid, M-417
9-(3-Methyl-2-butenyl)-1-phenazinecarboxylic acid, M-418
1,1′-Methylenebis[2-phenazinol], M-440
1,2,3,4,6,7,8,9-Octahydrophenazine, O-54
1-Phenazinecarboxylic acid, P-319
1,6-Phenazinedicarboxylic acid, P-320
1,6-Phenazinediol, P-321
1,8-Phenazinediol, P-322
1,9-Phenazinediol, P-323
2,3-Phenazinediol, P-324
2,3,7-Phenazinetriol, P-326
1-Phenazinol, P-327
2-Phenazinol, P-328
Phenazinomycin, P-329
Phenazostatin A, P-330
Phenazostatin B, P-331
Phenazostatin C, P-332
Piricularin, P-478
Pyocyanine, P-833
Ruticin, R-172
Senacarcin A, S-231
2,3,9-Trihydroxy-1-phenazinecarboxylic acid, T-574
2,3,7-Trihydroxy-1,6-phenazinedicarboxylic acid, T-575
Tubermycin A, T-660

Phenoxazine alkaloids (other than actinomycins)

2-Amino-8-benzoyl-6-hydroxy-3*H*-phenoxazin-3-one, A-707

7-Amino-2,8-bis(2,4-dihydroxyphenyl)-3*H*-phenoxazin-3-one, A-711
2-Amino-3-oxo-3*H*-phenoxazine-1-carboxylic acid, A-852
2-Amino-3-oxo-3*H*-phenoxazine-8-carboxylic acid, A-853
2-Amino-3*H*-phenoxazin-3-one, A-862
Antibiotic B 1625FA$_{2\beta\text{-}1}$, A-1124
Chandrananimycin C, C-345
Cinnabarine, C-452
Grixazone B, G-180
1-Methoxy-8-hydroxymethyl-3*H*-phenoxazin-3-one, M-253
2-(Methylthio)-3*H*-phenoxazin-3-one, M-576
Michigazone, M-590
Murayaanthraquinone, M-735
Orcein, O-102
3*H*-Phenoxazin-3-one, P-335
Pycnosanguin, P-831
α,α′,2-Triamino-γ,γ′,3-trioxo-3*H*-phenoxazine-1,9-dibutanoic acid, T-453
1,2,4-Trimethoxy-3*H*-phenoxazin-3-one, T-599
Xanthicin, X-4

Simple pyrrole alkaloids

3-Acetyl-4-(hydroxymethyl)pyrrole, A-57
3-Acetyl-4-methylpyrrole, A-71
2-Acetylpyrrole, A-74
Agelongine, A-193
3-Alkyl-1*H*-pyrrole-2-carboxaldehydes, A-623
3-(2-Amino-3-chlorophenyl)-4-chloro-1*H*-pyrrole, A-725
α-Amino-1*H*-pyrrole-1-hexanoic acid, A-904
Antibiotic TAN 876B, A-1283
Arcyriarubin A, A-1394
4-Bromo-2-(guanidinomethyl)pyrrole, B-319
3′-Bromo-4-methoxy-2,2′-bipyrrole-5-carboxaldehyde, B-338
5′-Bromo-4-methoxy-2,2′-bipyrrole-5-carboxaldehyde, B-339
N^2-(4-Bromo-1*H*-pyrrole-2-carbonyl)arginine, B-345
N^2-(4-Bromo-1*H*-pyrrole-2-carbonyl)homoarginine, B-346
N^6-(4-Bromo-1*H*-pyrrole-2-carbonyl)lysine, B-347
4-Bromo-1*H*-pyrrole-2-carboxylic acid, B-348
3-Bromo-1*H*-pyrrole-2,5-dione, B-350
Buprestin A, B-415
Buprestin B, B-416
Butylcycloheptylprodigiosine, B-427
Cannabiloid B, C-82
Celastramycin A, C-231
Crambescin A, C-721
2,3-Dibromo-4-(3-bromo-2-nitrophenyl)-1*H*-pyrrole, D-305
2-(3,5-Dibromo-2-hydroxyphenyl)-3,4,5-tribromopyrrole, D-324
2,5-Dibromo-1*H*-pyrrole-3-carboxylic acid, D-338
4,5-Dibromo-1*H*-pyrrole-2-carboxylic acid, D-339
2,3-Dibromo-1*H*-pyrrole, D-337
3,4-Dibromo-1*H*-pyrrole-2,5-dione, D-341
2,3-Dichloro-4-nitro-1*H*-pyrrole, D-356
1,3-Dihydro-3-hydroxy-2*H*-pyrrol-2-one, D-459
1-(2,3-Dihydro-2-oxo-3-furanyl)-5-(hydroxymethyl)-1*H*-pyrrole-2-carboxaldehyde, D-483
4-(3,7-Dimethyl-2,6-octadienyl)-1*H*-pyrrole-2-carboxylic acid, D-761
2,3-Diphenyl-1*H*-pyrrole, D-817
Ebracteolatinoside A, E-2
4-(2-Formyl-5-hydroxymethyl-1*H*-pyrrol-1-yl)-butanoic acid, F-137
5-Formyl-1*H*-pyrrole-2-carboxylic acid, F-142
1-(2-Furanylmethyl)-1*H*-pyrrole, F-200
2,3,3′,4,4′,5,5′-Heptachloro-1′-methyl-1,2′-bi-1*H*-pyrrole, H-115
3,3′,4,4′,5,5′-Hexabromo-2,2′-bi-1*H*-pyrrole, H-212
1-[(5-Hexyltetrahydro-2-furanyl)acetyl]-1*H*-pyrrole, H-269
4-Hydroxy-1*H*-pyrrole-2-carboxylic acid, H-714
Indigotiisocoumarin A, I-71
Ircinamine B, I-172
Laughine, L-71
Magnolamide, M-44
Marinamide, M-104
4-Methoxy-2,2′-bipyrrole-5-carboxaldehyde, M-244
3-Methyl-4-phenyl-1*H*-pyrrole, M-514
2-Methyl-1-(1*H*-pyrrol-1-yl)-8-decene-1,3-dione, M-553
Neopyrrolomycin, N-136
Peyoglunal, P-296
Peyonine, P-298
N-(3-Phenylpropanoyl)pyrrole, P-351
Phorbazole D, P-379
PUR 1, P-808
Pyoluteorin, P-834
1*H*-Pyrrole-2-carboxaldehyde, P-942
1*H*-Pyrrole-3-carboximidamide, P-943
1*H*-Pyrrole-2-carboxylic acid, P-944
1*H*-Pyrrole-2,3-dicarboxylic acid, P-945
1*H*-Pyrrole-2,5-dicarboxylic acid, P-946
Pyrrolnitrin, P-961
Pyrrolomycin B, P-963
Pyrrolomycin C, P-964
Pyrrolomycin E, P-965
Pyrrolomycin G, P-967
Sarmentamide A, S-86
Solsodomine A, S-358
Solsodomine B, S-359
3,3′,4,4′-Tetrabromo-5,5′-dichloro-1,1′-dimethyl-2,2′-bi-1*H*-pyrrole, T-111
2,3,4,5-Tetrabromo-1*H*-pyrrole, T-118
3,4,5-Tribromo-1*H*-pyrrole-2-carboxylic acid, T-475
2,3,4-Tribromo-1*H*-pyrrole, T-474

Miscellaneous pyrrole alkaloids

α-Amino-5-[[(2-aminocarbonyl-1-carboxyethyl)amino]carbonyl]-2-pyrrolepropanoic acid, A-695
Anthelvencin A, A-1077
Antibiotic BE 55051, A-1133
Antibiotic 610MF, A-1206
Antibiotic R 39MF, A-1230
Antibiotic R 39SF, A-1231
Antibiotic TAN 1307, A-1277
Antibiotic TAN 876A, A-1280
Antibiotic UCH 15A, A-1300
Antibiotic X 14885A, A-1087
Asterin A, A-1511
Asterinin A, A-1512
Asterinin C, A-1513
Astin J, A-1523
Axinellamine B, A-1575
4-Benzyl-1,4-dihydro-3-oxo-3*H*-pyrrolo[2,1-*c*]-[1,4]oxazine-6-carboxaldehyde, B-86
3,4-Bis(4-hydroxyphenyl)-1*H*-pyrrole-2,5-dicarboxylic acid, B-188
Brachystemidine A, B-267
Brachystemidine E, B-268
Brachystemidine F, B-269
Brachystemidine G, B-270
Bufopyramide, B-391
Cafamycin, C-13
1-[Caffeoyloxy(carboxy)methoxy]-1*H*-pyrrole-2,3,5-tricarboxylic acid, C-16
Calcimycin, C-26
Chinese bittersweet alkaloid I, C-383
Chinese bittersweet alkaloid II, C-384
Chlorobiocin, C-395
Chromoviridan, C-426
Chromoxymycin, C-427
Cochinmicin I, C-545
Colubricidin A, C-579
Coumermycin A$_1$, C-711
Coumermycin A$_2$, C-712
Cyclocinamide A, C-854
Cycloprodigiosin, C-897
Decatromicin A, D-126
Desmodimine, D-237
Didemnimide A, D-379
5*H*,10*H*-Dipyrrolo[1,2-*a*:1′,2′-*d*]pyrazine-5,10-dione, D-833
Dispyrin, D-865
Distamycin A, D-866
Ethylcyclononylprodigiosin, E-235
Eudistomin A, E-285
Funebral, F-194
Funebrine, F-195
Glaciapyrrole A, G-83
Glaciapyrrole B, G-84
Glaciapyrrole C, G-85
Glycerinopyrin, G-111
Himanimide A, H-278
Hormaomycin, H-358
5-Hydroxy-3,4′-dimethyl-[1,2′-bipyrrole]-2,5′(2′*H*,5*H*)-dione, H-467
3-(4-Hydroxyphenyl)-4-(2-methylpropyl)-1*H*-pyrrole-2,5-dione, H-684
Hyperaspine, H-769
Indanomycin, I-64
Isochrysohermidin, I-206
Isonargenicin A1, I-254
Keronopsin B$_1$, K-35
Kikumycin A, K-43
Lamellarin Q, L-25
Leupyrrin C, L-161
Lycogalic acid, L-329
Manzacidin B, M-90
Marinopyrrole A, M-107
Metacycloprodigiosin, M-230
4-Methoxy-5-[(3-methoxy-5-pyrrol-2-yl-2*H*-pyrrol-2-ylidene)methyl]-2,2′-bipyrrole, M-257
2-[[3-Methoxy-4-(1*H*-pyrrol-1-yl)-2*H*-pyrrol-2-ylidene]methyl]-5-methyl-1-pentyl-1*H*-pyrrole, M-286
Methylcyclodecylprodigiosin, M-429
Methylcyclooctylprodigiosin, M-430
Mycaleoxime, M-777
Nargenicin B$_1$, N-48
Nargenicin B$_2$, N-49
Nargenicin B$_3$, N-50
Neolamellarin A, N-121
Netropsin, N-180
Ningalin B, N-221
Nonylprodigiosin, N-285
Opuntine B, O-100
Orosomycin, O-124
PD 125375, P-146
Peripentonine A, P-263
Peripentonine C, P-264
Polycitone A, P-556
Porphobilinogen, P-574
Prodigiosene, P-635
Prodigiosin, P-636
Proviolacein, P-675
Pseudoceratidine, P-706
Pyranonigrin B, P-881
Pyranonigrin D, P-882
Pyrrolosporin A, P-969
Pyrronamycin A, P-973
Pyrroxamycin, P-974
Reductiline, R-33
Roseophilin, R-129
Routiennocin, R-136
Rumbrin, R-160
Ryania diterpene ester C$_2$, R-174
Ryanodine, R-175
Speranberculatine A, S-390
Speranskilatine A, S-393
Stawamycin, S-499
Storniamide D, S-556
Streptorubin B, S-572
Stylissadine A, S-610
Tambjamine A, T-22
Thiazohalostatin, T-370
Trikentramine, T-593
Undecylprodiginine, U-31
Vanillobiocin, V-18
Verrucarin F, V-81
Verrucarin G, V-82
Vitamycin A, V-163
Wallemia A, W-4

Wallemia C, W-5

Polyamine alkaloids PA3, PA33 and homologues

3,5-Acarnidine, A-26
1-Amino-20-guanidino-4,8,12,16-tetraazaicosane, A-780
1-Amino-16-guanidino-4,8,12-triazahexadecane, A-781
N-(3-Aminopropyl)-1,5-pentanediamine, A-897
Argiopinin IV, A-1416
N,N′-Bis(3-aminopropyl)-1,3-propanediamine, B-154
1,12-Diamino-4,8-diazadodecane, D-249
3,3′-Diaminodipropylamine, D-255
1,20-Diamino-4,8,12,16-tetraazaeicosane, D-283
1,20-Diamino-4,8,12,17-tetraazaeicosane, D-284
1,20-Diamino-4,8,13,17-tetraazaeicosane, D-285
1,16-Diamino-4,8,12-triazahexadecane, D-288
Fluvibactin, F-113
Motuporamine A, M-714
Motuporamine B, M-715
Motuporamine C, M-716
Muraymycin C_1, M-737
4,8,12,16,20-Pentaazatricosane-1,23-diamine, P-199
4,8,12,16-Tetraazanonadecane-1,19-diamine, T-107
4,8,12-Triazapentadecane-1,15-diamine, T-456
Tris(3-aminopropyl)amine, T-622
Vibriobactin, V-96

Polyamine alkaloids PA4 (putrescines)

3,5-Acarnidine, A-26
Aeroplysinillin, A-156
Aerothionin, A-158
Aeruginosin 98A, A-160
Aeruginosin 205A, A-161
Aplysina archeri Alkaloid, A-272
(4-Aminobutyl)guanidine, A-719
(4-Aminobutyl)urea, A-720
Birnbaumin A, B-148
N,N′-Bis(4-guanidinobutyl)oxamide, B-178
Bistellettadine A, B-219
Bistellettadine B, B-220
Oceanapia Bromotyrosine alkaloid, B-357
1,4-Butanediamine, B-422
Calafianine, C-24
Caracasandiamide, C-108
Cepaciachelin, C-246
Clavamine, C-512
Cleomycin B_2, C-524
Cyclofoveoglin, C-864
1,4-Diguanidinobutane, D-400
Erylusidine, E-196
Erylusine, E-197
Eusynstyelamide, E-303
Aglaia dasyclada Flavagline compound 1, F-77
Aglaia dasyclada Flavagline compound 2, F-78
Fontaineine, F-124
Aglaia dasyclada Forbagline-like compound, F-128
Foveoglin A, F-144
Gigantamide A, G-74
Grandiamide A, G-156
N-(4-Guanidinobutyl)-2-(4-hydroxyphenyl)-2-oxoacetamide, G-202
Hordatine B, H-356
N-[4-(4-Hydroxybenzoylamino)butyl]-1,3-dimethyllumazine-6-carboxamide, H-410
Microcin SF608, M-594
Myxochelin A, M-806
Ornibactin C4, O-119
Ornibactin C6, O-120
Ornibactin F, O-121
Phomoenamide, P-375
Photobactin, P-381
Protochelin, P-661
Purealidin L, P-813
Purealidin O, P-815
Putreanine, P-826
Pyramidaglaine A, P-878
Rexostatine, R-69
Spermic acid, S-397
Spherophysine, S-406
N,N,N′,N′-Tetramethyl-1,4-butanediamine, T-281
Perophora viridis 1,2,3-Thiocane glycoside, T-382

Polyamine alkaloids PA5 (cadaverines)

(5-Aminopentyl)guanidine, A-859
N-(3-Aminopropyl)-1,5-pentanediamine, A-897
Antibiotic IC 202A, A-1185
Aplysinamisine II, A-1350
Argiopinin IV, A-1416
Arthrobactin, A-1451
Cathestatin C, C-209
Clavamine, C-512
1,5-Diguanidinopentane, D-401
α-(Dimethylamino)-3,5-diiodo-*N*-[5-[[3-(3-iodo-4-methoxyphenyl)-2-(methylamino)-1-oxopropyl]amino]pentyl]-4-methoxybenzenepropanamide, D-729
Ferrioxamine H, F-44
Flavolipids, F-83
Laughine, L-71
Nephilatoxin 9, N-159
Nephilatoxin 11, N-161
Nephila clavata Neurotoxin 4 JSTX-4, N-184
1,5-Pentanediamine, P-229
Tenacibactin B, T-69
Terragine C, T-101

Polyamine alkaloids PA43 (spermidines)

Agrobactin, A-203
Alkaloid LBZ, A-553
N-(4-Aminobutyl)-*N*-(3-aminopropyl)-1,4-butanediamine, A-718
4-Amino-*N,N,N*-tris(3-aminopropyl)-1-butanaminium, A-926
Antibiotic WF 14861A, A-1309
Bagougeramine A, B-3
Bagougeramine B, B-4
Bis(4-aminobutyl)bis(3-aminopropyl)ammonium(1+), B-149
N,N-Bis(3-aminopropyl)-1,4-butanediamine, B-152
Cadabicine, C-4
Cannabisativine, C-83
Capparisine, C-97
Chisitine 1, C-391
Chisitine 2, C-392
Cinodine I, C-459
Cinodine II, C-460
Codonocarpine, C-556
Crambescidin 816, C-717
Crambescidin 830, C-719
Crambescidin 844, C-720
Crambidine, C-725
Cyclocelabenzine, C-853
Galantin I, G-6
Galantin II, G-7
Glycocinnaspermicidin A, G-117
Glysperin B, G-132
Hirudonine, H-305
Hispidospermidine, H-306
7-Hydroxypleurocorine, H-700
Inandenin-10-one, I-56
Inandenin-11-one, I-57
Inandenin-12-one, I-58
Inandenin-13-one, I-59
Isocyclocelabenzine, I-222
Loesenerine, L-230
Lunaridine, L-292
Lunarine, L-293
Monodontamide B, M-689
Monodontamide D, M-690
Numismine, N-329
Palustrine, P-40
Perimargine, P-259
Periphylline, P-265
Petrobactin, P-283
Pleurostyline, P-523
Pseudoceratidine, P-706
Ptilomycalin A, P-774
Ptilomycalin D, P-775
Spergualin, S-394
Spermidine, S-398
Squalamine, S-485
Tenuilobine, T-79
Trypanothione, T-636

Polyamine alkaloids PA44 (homospermidines)

N-(4-Aminobutyl)-*N*-(3-aminopropyl)-1,4-butanediamine, A-718
Bis(4-aminobutyl)bis(3-aminopropyl)ammonium(1+), B-149
N,N′-Bis(4-aminobutyl)-1,4-butanediamine, B-150
Circinamide, C-461
4,4′-Diaminodibutylamine, D-252
1,24-Diamino-5,10,15,20-tetraazatetracosane, D-286
1,19-Diamino-6,11,16-triazanonadecane, D-290
Solamine, S-340

Polyamine alkaloids PA343 (spermines)

Agel 452, A-176
Bleomycin A_6, B-236
Budmunchiamine A, B-383
Budmunchiamine B, B-384
Budmunchiamine L1, B-385
Budmunchiamine L2, B-386
Budmunchiamine L4, B-387
Budmunchiamine L5, B-388
Budmunchiamine L5, B-389
1,20-Diamino-4,8,12,17-tetraazaeicosane, D-284
1,20-Diamino-4,8,13,17-tetraazaeicosane, D-285
1,16-Diamino-4,8,13-triazahexadecane, D-289
Het_{389}, H-155
Homaline, H-324
Hopromalinol, H-353
Hopromine, H-354
Hoprominol, H-355
Nephilatoxin 1, N-152
Nephilatoxin 565, N-165
Nephila clavata Neurotoxin 1 JSTX-1, N-182
Penaramides, P-174
Pithecolobine, P-486
Protomethine, P-665
Schweinine, S-147
Sinulamide, S-318
Spermine, S-399
Tenuilobine, T-79

Other 3-residue polyamine alkaloids

Antibiotic IC 202B, A-1186
Argiopine, A-1414
Argiotoxin 659, A-1417
N,N′-Bis(4-aminobutyl)-1,4-butanediamine, B-150
N,N′-Bis(3-aminopropyl)-1,2-ethanediamine, B-153
CNS 2103, C-535
1,12-Diamino-4,8-diazadodecane, D-249
1,13-Diamino-4,9-diazatridecane, D-250
1,13-Diamino-5,9-diazatridecane, D-251
1,17-Diamino-4,9,13-triazaheptadecane, D-287
1,18-Diamino-5,9,14-triazaoctadecane, D-291
Glysperin A, G-131
Glysperin C, G-133

Het_{403}, H-156
Joramine, J-46
Lipogrammistin A, L-185
Nephilatoxin 2, N-153
Nephilatoxin 10, N-160
Nephilatoxin 12, N-162
Nephilatoxin 473, N-163
Nephilatoxin 501, N-164
Nephilatoxin 594, N-166
Nephila maculata Neurotoxin 3, N-181
Philanthotoxin 433, P-358
Tenacibactin C, T-70
Tenacibactin D, T-71
Terragine A, T-99
Terragine D, T-102
Toxin MG 30, T-441

Polyamine alkaloids with more than 3 residues

Agel 452, A-176
Alcaligin, A-250
1-Amino-20-guanidino-4,8,12,16-tetraazaicosane, A-780
1-Amino-16-guanidino-4,8,12-triazahexadecane, A-781
Antibiotic IC 202C, A-1187
Argiopinin II, A-1415
Argiotoxin 673, A-1418
N,N′-Bis(3-aminopropyl)-1,3-propanediamine, B-154
Chaenorhine, C-317
Chaenorpine, C-318
CNS 2104, C-536
Deferoxamine, D-142
1,20-Diamino-4,8,12,16-tetraazaeicosane, D-283
1,20-Diamino-4,8,12,17-tetraazaeicosane, D-284
1,20-Diamino-4,8,13,17-tetraazaeicosane, D-285
1,24-Diamino-5,10,15,20-tetraazatetracosane, D-286
1,16-Diamino-4,8,12-triazahexadecane, D-288
1,16-Diamino-4,8,13-triazahexadecane, D-289
1,19-Diamino-6,11,16-triazanonadecane, D-290
Diatom polyamines, D-293
Nephilatoxin 1, N-152
Nephilatoxin 3, N-154
Nephilatoxin 4, N-155
Nephilatoxin 5, N-156
Nephilatoxin 6, N-157
Nephilatoxin 7, N-158
Nephilatoxin 565, N-165
Nephilatoxin 643, N-167
Nephila clavata Neurotoxin 2 JSTX-2, N-183
Penaramides, P-174
4,8,12,16,20-Pentaazatricosane-1,23-diamine, P-199
Pseudoargiopinin III, P-701
4,8,12,16-Tetraazanonadecane-1,19-diamine, T-107
4,8,12-Triazapentadecane-1,15-diamine, T-456

Ansa-peptide alkaloids

Abyssenine B, A-18
Adouetine X, A-149
Adouetine Y′, A-150
Adouetine Z, A-151
Americine, A-690
1-(2-Amino-1-oxopropyl)-2,3,3*a*,13*a*,14,15,16,18*a*-octahydro-8-methoxy-5,9-metheno-9*H*-dipyrrolo[3,2-*b*:1′,2′-*e*][1,5,8]oxadiazacyclopentadecine-13,18(1*H*,12*H*)-dione, A-855
Amphibine A, A-935
Amphibine B, A-936
Amphibine C, A-937
Amphibine D, A-938
Amphibine E, A-939
Amphibine F, A-940
Amphibine G, A-941
Amphibine H, A-942
Anorldianine, A-1072
Aralionine A, A-1375
Canthiumine, C-91
Ceanothine A, C-226
Ceanothine C, C-227
Ceanothine D, C-228
Ceanothine E, C-229
Condaline A, C-600
Daechuine S3, D-7
Daechuine S7, D-8
Daechuine S8-1, D-9
Debenzoylaralionine A, D-100
1-[2-(Dimethylamino)-1-oxo-3-phenylpropyl]-2,3,3*a*,13*a*,14,15,16,18*a*-octahydro-8-methoxy-5,9-metheno-9*H*-dipyrrolo[3,2-*b*:1′,2′-*e*][1,5,8]oxadiazacyclopentadecine-13,18(1*H*,12*H*)-dione, D-737
Discarene C, D-834
Discarene D, D-835
Discarine B, D-836
Discarine C, D-837
Discarine D, D-838
Discarine E, D-839
Discarine M, D-840
Discarine N, D-841
Franganine, F-149
Frangufoline, F-150
Frangulanine, F-151
Hemsine A, H-104
Hemsine B, H-105
Hemsine C, H-106
Hemsine D, H-107
Hymenocardine, H-763
Hysodricanine A, H-783
Hysodricanine B, H-784
Hysodricanine C, H-785
Integerrenine, I-154
Integerressine, I-155
Integerrine, I-156
Jubanine A, J-51
Jubanine B, J-52
Jubanine C, J-53
Lasiodine A, L-48
Lasiodine B, L-49
Lotusanine B, L-266
Lotusine A, L-267
Lotusine B, L-268
Lotusine C, L-269
Lotusine E, L-270
Lotusine G, L-271
Mauritine A, M-125
Mauritine B, M-126
Mauritine C, M-127
Mauritine D, M-128
Mauritine H, M-129
Melofoline, M-186
Melonovine A, M-189
Melonovine B, M-190
Mucronine A, M-718
Mucronine C, M-719
Mucronine D, M-720
Mucronine J, M-721
Myrianthine A, M-793
Myrianthine C, M-794
Nummularine C, N-330
Nummularine E, N-331
Nummularine F, N-332
Nummularine G, N-333
Nummularine K, N-334
Nummularine M, N-335
Nummularine N, N-336
Nummularine P, N-337
Nummularine R, N-338
Paliurine B, P-23
Paliurine C, P-24
Paliurine E, P-25
Paliurine F, P-26
Paliurine G, P-27
Paliurine H, P-28
Paliurine I, P-29
Ramosine A, R-14
Rugosanine B, R-155
Sanjoinine G_1, S-61
Sanjoinine G_2, S-62
Sativanine A, S-92
Sativanine B, S-93
Sativanine C, S-94
Sativanine D, S-95
Sativanine E, S-96
Sativanine F, S-97
Sativanine G, S-98
Sativanine H, S-99
Sativanine O, S-100
Scutianine A, S-165
Scutianine C, S-166
Scutianine D, S-167
Spinanine A, S-412
Texensine, T-300
Tscheschamine, T-648
Venturamide A, V-53
Vignatic acid A, V-99
Vignatic acid B, V-100
Waltherine A, W-6
Waltherine C, W-7
Zizyphine A, Z-22
Zizyphine C, Z-23
Zizyphine G, Z-24
Zizyphine I, Z-21
Zizyphine K, Z-25
Zizyphine N, Z-26
Zizyphine Q, Z-27

Amanita alkaloids

Phallacidin, P-306
Phallacin, P-307
Phallin B, P-308
Phallisacin, P-309
Phallisin, P-310
Phalloidin, P-311
Phalloin, P-312

Other cyclopeptide alkaloids

Antibiotic TMC 95A, A-1293
Celogentin A, C-241
Celogentin C, C-242
Celogentin G, C-243
Celogentin K, C-244
Discokiolide A, D-847
Discokiolide B, D-848
Hibispeptin A, H-272
Hibispeptin B, H-273
Melleumin A, M-182
Moroidin, M-702
Stephanotic acid, S-540

Pyoverdins

Azotobactin D, A-1611
Azotobactin G173, A-1612
Azotobactin P19, A-1613
Azoverdin A, A-1614
Azoverdin G, A-1615
Ferribactin G173, F-35
Isopyoverdin Pp BTP 1, I-292
Isopyoverdin Pp CFML 90-33, I-293
Isopyoverdin Pp CFML 90-44, I-294
Pseudobactin 7SR1, P-703
Pyoverdin A1, P-838
Pyoverdin BTP 2, P-839
Pyoverdin BTP7G, P-841
Pyoverdin BTP16G, P-842
Pyoverdin BTP7, P-840
Pyoverdin CFBP 2392, P-844
Pyoverdin CFBP 2461, P-845
Pyoverdin CHAO, P-846
Pyoverdin $C_{44}H_{61}N_{13}O_{17}$, P-847
Pyoverdin $C_{45}H_{63}N_{11}O_{24}$, P-848
Pyoverdin $C_{52}H_{75}N_{15}O_{23}$, P-849
Pyoverdin $C_{55}H_{83}N_{17}O_{21}$, P-850
Pyoverdin $C_{57}H_{85}N_{17}O_{24}$, P-851
Pyoverdin C, P-843
Pyoverdin D, P-852
Pyoverdin G 173, P-853
Pyoverdin GM II, P-854
Pyoverdin G4RA, P-855
Pyoverdin II, P-856

Pyoverdin I, P-835
Pyoverdin 2112, P-836
Pyoverdin 11370, P-837
Pyoverdin Pa II, P-857
Pyoverdin Pa TII, P-858
Pyoverdin PaC, P-859
Pyoverdin Pf CCM 2798, P-864
Pyoverdin Pf 1.3, P-860
Pyoverdin Pf/3 17400, P-861
Pyoverdin Pf 1547, P-863
Pyoverdin Pf P19, P-865
Pyoverdin Pf12, P-862
Pyoverdin PL7, P-866
Pyoverdin PL8, P-867
Pyoverdin Pm, P-868
Pyoverdin Pp 1, P-869
Pyoverdin PpC 3B, P-870
Pyoverdin PS 6.10, P-872
Pyoverdin PS, P-871
Pyoverdin PSS, P-873
Pyoverdin R′, P-874
Pyoverdin 51WA, P-875
Succinopyoverdin G173, S-628

Pyrrolo[2,3-d]pyrimidines

2-Amino-5-(aminomethyl)pyrrolo[2,3-*d*]pyrimidin-4(3*H*)-one, A-699
4-Amino-5-bromopyrrolo[2,3-*d*]pyrimidine, A-713
Archaeosine, A-1387
5-Bromo-7*H*-pyrrolo[2,3-*d*]pyrimidine, B-351
Cadeguomycin, C-7
Cathestatin B, C-208
Dapiramicin B, D-73
Echiguanine B, E-9
Estatin A, E-224
Kanagawamicin, K-8
Mycalisine B, M-778
Rigidin A, R-98
Tubercidin, T-658

Purines

Adenine, A-137
Agelasimine A, A-181
Agelasine A, A-184
Agelasine C, A-185
Agelasine D, A-186
Agelasine E, A-187
Agelasine I, A-183
Agelasine, A-182
Ageline A, A-191
5-Amino-1,6-dihydro-7*H*-1,2,3-triazolo[4,5-*d*]pyrimidin-7-one, A-735
6-Amino-2,8-dihydroxypurine, A-754
6-Amino-2-hydroxypurine, A-818
6-Amino-8-hydroxypurine, A-819
6-Amino-1-methylpurine, A-842
6-Amino-2-methylpurine, A-843
6-Amino-3-methylpurine, A-844
6-Amino-9*H*-purine-9-propanoic acid, A-900
Asmarine B, A-1465
Asmarine C, A-1466
Asmarine I, A-1464
9-[3-Bromo-2-(2,3-dibromo-4,5-dihydroxybenzyl)-4,5-dihydroxybenzyl]adenine, B-305
7-[3-Bromo-2-(2,3-dibromo-4,5-dihydroxybenzyl)-4,5-dihydroxybenzyl]-3,7-dihydro-1*H*-purine-2,6-dione, B-306
Caffeine, C-15
Caissarone, C-19
3,5′-Cycloxanthosine, C-918
7-[5-(Decahydro-4*a*-hydroxy-1,2,5,5-tetramethyl-1-naphthalenyl)-3-methyl-2-pentenyl]-3,7-dihydro-2,3-dimethyl-6*H*-purin-6-one, D-111
7-(2,3-Dibromo-4,5-dihydroxybenzyl)-3,7-dihydro-1*H*-purine-2,6-dione, D-311
1,4-Dihydro-4,6,7-trimethyl-9*H*-imidazo[1,2-*a*]purin-9-one, D-521
3,9-Dihydro-1,3,9-trimethyl-8-nitroso-1*H*-purine-2,6-dione, D-523
6-(6,8-Dihydroxy-9-purinyl)suberosanone, D-667
1,3-Dimethylguanine, D-748
6-(6,8-Dioxo-1-purinyl)suberosanone, D-809
Erinacean, E-177
Flavine adenine dinucleotide, F-79
Ganoderpurine, G-15
Guanine, G-210
Gutingimycin, G-227
Herbipoline, H-143
2′-*O*-[3-(4-Hydroxyphenyl)-2-methoxypropenoyl]-3′-*O*-[3-(1*H*-imidazol-4-yl)propenoyl]-*S*-methyl-5′-thioadenosine, H-681
N-[(5-Hydroxy-2-pyridinyl)methyl]adenosine, H-713
N-(6-Hydroxy-9-β-D-ribofuranosyl-9*H*-purin-2-yl)alanine, H-730
2-Iminomethyl-3-methyl-6-methylamino-9*H*-purine, I-48
Inosine, I-148
Liberine, L-165
Machilaminoside B, M-4
Malonganenone A, M-74
1-Methylguanine, M-467
7-Methylguanine, M-469
Microxine, M-603
Nebularine, N-82
Neplanocin B, N-168
Nuttingine A, N-344
Nuttingine D, N-345
Olomoucine, O-90
Ostrerine A, O-132
Pedatisectine A, P-151
Phidolopin, P-357
2,6-Purinediamine, P-817
6,8-Purinediol, P-818
Subergorgia suberosa Purine-imidazole alkaloid, P-819
6-Purinol, P-820
Suvanine, S-649
1,6,7,9-Tetrahydro-6-imino-1,9-dimethyl-8*H*-purin-8-one, T-194
Agelas nakamurai Thelepogane-purine alkaloid, T-352
Theobromine, T-355
Theophylline, T-360
Triacanthine, T-451
1,3,7-Trimethylisoguanine, T-608
Uric acid, U-45
Wybutoxine, W-29
Wye base, W-30
Xanthine, X-5
Xanthosine, X-13

Pteridines and analogues

6-Acetyl-2-amino-7,8-dihydro-4(3*H*)-pteridinone, A-40
6-Acetyl-1,3-dimethyl-2,4(1*H*,3*H*)-pteridinedione, A-51
6-Acetylhomopterin, A-52
Alloxazine, A-632
2-Amino-7-(1,2-dihydroxypropyl)-1,5-dihydro-4,6-pteridinedione, A-748
2-Amino-4,6-dihydroxypteridine, A-750
2-Amino-4,7-dihydroxypteridine, A-751
2-Amino-4,7-dihydroxy-6-pteridinecarboxylic acid, A-752
2-Amino-6-(hydroxymethyl)-4(1*H*)-pteridinone, A-802
2-Amino-6-[3-hydroxy-4-(phosphonooxy)-1-butenyl]-4(1*H*)-pteridinone, A-809
2-Amino-4-hydroxypteridine, A-816
2-Amino-4-hydroxy-6-pteridinecarboxylic acid, A-817
Aminopteroic acid, A-899
2-Amino-7-(1,2,3-trihydroxypropyl)-4(1*H*)-pteridinone, A-924
2-Amino-4,6,7-trihydroxypteridine, A-925
Antibiotic 2096A, A-1093
Asteropterin, A-1516
Chrysopterin, C-432
1,5-Dihydro-2,4,6(3*H*)-pteridinetrione, D-494
Drosopterin, D-941
Erythropterin, E-216
Fervenulin, F-48
Flavine adenine dinucleotide, F-79
Hirudinoidine A, H-304
N-[4-(4-Hydroxybenzoylamino)butyl]-1,3-dimethyllumazine-6-carboxamide, H-410
6-(Hydroxymethyl)-2,4(1*H*,3*H*)-pteridinedione, H-623
6-(2-Hydroxy-2-oxido-4*H*-1,3,2-dioxaphosphorin-6-yl)-2,4(1*H*,3*H*)-pteridinedione, H-649
Ichthyopterin, I-13
Lepidopterin, L-109
Lumichrome, L-285
Methanopterin, M-235
Molybdenum cofactor, M-681
Racophorus Pentapteridinyl skin pigment, P-230
Photolumazine B, P-382
Pseudoanchynazine A, P-698
Pseudoanchynazine B, P-699
Pseudoanchynazine C, P-700
2,4,7(1*H*,3*H*,8*H*)-Pteridinetrione, P-763
Pterorhodine, P-771
Pteroylglutamic acid, P-772
Pyrizinostatin, P-935
Reumycin, R-66
Rhizopterin, R-82
Russupteridine yellow IV, R-166
Sarcinapterin, S-72
Sulfohalopterin 2, S-637
Urochordamine A, U-47
Xanthopterincarboxylic acid, X-12

Saxitoxins

11-Saxitoxinacetic acid, S-110
Saxitoxin, S-109
Zetekitoxin AB, Z-18

Alkaloidal metal complexes

Antibiotic ASK 753, A-1117
Antibiotic AS-N-7A, A-1118
Antibiotic NRCS 15, A-1219
Astechrome, A-1509
Coprogen, C-635
Danomycin, D-16
Ferricrocin, F-36
Ferrimycin A_1, F-37
Ferrioxamine A_2, F-38
Ferrioxamine B, F-39
Ferrioxamine C, F-40
Ferrioxamine D_2, F-41
Ferrioxamine E, F-42
Ferrioxamine F, F-43
Ferrioxamine H, F-44
Ferroverdin, F-45
Fluopsin B, F-96
Fluopsin C, F-97
Fluopsin N, F-98
Fusigen, F-231
Grisonomycin, G-179
Molybdenum cofactor, M-681
Neocoprogen II, N-108
Neocoprogen I, N-107
Pilosamycin, P-427
Pseudobactin B, P-702
Salmycin B, S-34
Salmycin C, S-35
Viridomycin A, V-156
Viridomycin E, V-159

Naphthyridinomycins

Aclidinomycin B, A-82
Aclidinomycin C, A-83
Antibiotic SF 1739, A-1254
Bioxalomycin α1, B-140
Cyanocycline D, C-824
Cyanonaphthyridinomycin, C-830
Dnacin A_1, D-876
Dnacin B_1, D-877

Naphthyridinomycin A, N-32
Naphthyridinomycin B, N-33

Saframycins

Ecteinascidin 594, E-34
Ecteinascidin 597, E-35
Ecteinascidin 722, E-36
Ecteinascidin 743, E-37
Jorumycin, J-48
Renieramycin A, R-41
Renieramycin H, R-42
Renieramycin K, R-43
Renieramycin P, R-44
Safracin A, S-2
Saframycin A_{D-1}, S-3
Saframycin A, S-4
Saframycin H, S-5
Saframycin Mx 1, S-6
Saframycin R, S-7
Saframycin S, S-8
Saframycin Y_{2b-D}, S-10
Saframycin Y_3, S-11
Saframycin Y_{D-1}, S-12
Saframycin Y_{D-2}, S-13
Saframycin Y_{2b}, S-9

Miscellaneous acyclic alkaloids

Aberiamide, A-12
2-Acetyl-3-amino-5-hydroxy-1,4-naphthoquinone, A-41
3-Acetyl-2,5-diamino-1,4-benzoquinone, A-48
Acuminaminoside, A-131
AK toxin I, A-220
Amaminol A, A-671
2-Amino-3-(3-amino-1*H*-inden-2-yl)propanoic acid, A-698
2-(2-Aminobenzylamino)benzyl alcohol, A-708
Anhydrotetracycline, A-1034
2-Anilino-1,4-naphthoquinone, A-1040
Anthracyclinone blue B, A-1080
Antibiotic SB 217452, A-1240
Arboreumine, A-1384
Bacillibactin, B-2
N,*N*′-Bis(2,6-dimethylphenyl)-2,2,4,4-tetramethyl-1,3-cyclobutanediimine, B-175
N,*N*-Bis(4-hydroxybenzyl)hydroxylamine, B-181
Bradyoxetin, B-277
Brasiliamide A, B-278
(Carbamoylmethyl)trimethylammonium(1+), C-119
Celenamide D, C-237
Coriacenine A, C-648
Coriacenine D, C-649
Coriacenine E, C-650
Cyclohexylamine, C-868
Cyclorocaglamide, C-904
Dicarprine C, D-345
Donine, D-919
Dysidenamide, D-971
Dysiherbaine, D-974
4,5-Eicosanediamine, E-47
Enterobactin, E-86
Erbstatin, E-144
Fontaineine, F-124
Foveoglin A, F-144
GB4 Toxin, G-28
Gossyrubilone, G-145
Gusanlung C, G-225
Gyromitrin, G-236
10-Hydroxy-18-(*N*-naphthalenyl-*N*-phenylamino)betaenone C, H-637
Lilacinone, L-172
Lomaiviticin B, L-238
Lutinine, L-311
Malyngamide W, M-78
Neodysiherbaine A, N-112
Nephila clavata Neurotoxin 4 JSTX-4, N-184
Nitrosoxacin A, N-253
Nitrosoxacin B, N-254
Nitrosoxacin C, N-255
Pandanamine, P-65
Peniamidienone, P-185
Penidilamine, P-190
1,11,19,27,35-Pentaamino-3-tetracontanol, P-198
Poecillanosine, P-530
Prangosine, P-585
Prepsammaplin A, P-622
Rhapsamine, R-71
Salmochelin 4, S-32
Signatipennine, S-299
Solanapyrone L, S-341
Spergualin, S-394
Stealthin A, S-500
Stealthin C, S-501
Stockerine, S-555
Perophora viridis 1,2,3-Thiocane glycoside, T-382
Triuret, T-627

Miscellaneous one-ring system alkaloids

Antibiotic 2197A, A-1094
Antibiotic BE 14106, A-1127
Antibiotic FR 252921, A-1174
Antibiotic FR 252922, A-1175
Antibiotic NA 22598A_1, A-1211
Antibiotic PF 1163A, A-1227
Antibiotic SF 2197B, A-1263
Antibiotic TAN 1057C, A-1285
Antibiotic TMC 135A, A-1295
Antibiotic TMC 135B, A-1296
Antibiotic TMC 1A, A-1291
Antibiotic TMC 1C, A-1297
Aquiledine, A-1369
Asterionellin A, A-1514
Asterionellin B, A-1515
Aureoverticillactam, A-1555
Bahamamide, B-5
Caledonin, C-33
Caprazamycin, C-98
Chrysopine, C-431
Cyclamenol, C-832
Cycloclausenamide, C-855
1,13-Diazacyclotetracosane-2,14-dione, D-294
5,20-Dipropyl-1,16-dioxa-4,19-diazacyclotriaconta-7,10,22,25-tetraene-15,30-dione, D-825
Dovyalicin A, D-927
Dovyalicin D, D-928
Epilachnene, E-93
Halimedin, H-25
1,4,5,6,7,8-Hexahydro-1,3-diazocine-2,4-dicarboxylic acid, H-230
Hicksoane A, H-274
Liposidomycin, L-188
Manumycin A, M-87
Manumycin C, M-88
Manumycin D, M-89
4-Methyl-1,2,6,8-tetraazacycloundeca-4,9-diene-3,7,11-trione, M-565
Micromonosporin A, M-599
Obscurolide C_{2_2}, O-10
Penaresidin B, P-175
Epilachna borealis Polyazamacrolides, P-547
5-Propyl-1-oxa-4-azacyclotridecan-13-one, P-651
Scorodophlone A, S-162
Syringolin A, S-664
Syringolin C, S-665
Syringolin D, S-666
Syringolin F, S-667
Terrestric acid, T-104
5,6,7,8-Tetrahydro-5,7-dihydroxy-1*H*-azocin-2-one, T-151
Triticone E, T-626

Miscellaneous two-ring system alkaloids

Abikoviromycin, A-14
3-Acetyl-2,7-naphthyridine, A-72
Acremolactone B, A-111
Ageladine A, A-177
Agrocybenine, A-206
Alchornidine, A-253
Alchornine, A-254
Aldisine, A-255
Dendrobates Alkaloid 275A, A-367
Altemicidin, A-660
4-Amino-3,6-dihydroxy-1*H*-pyrazolo[3,4-*d*]pyrimidine, A-755
4-Amino-3-hydroxy-1*H*-pyrazolo[3,4-*d*]pyrimidine, A-820
2-Amino-1*H*-imidazo[4,5-*b*]pyrazine, A-829
1-Amino-4-phenyl-2,7-naphthyridine, A-865
5-(12-Aminotridecyl)hexahydropyrrolo[2,1-*b*]oxazole, A-920
5-(10-Aminoundecyl)hexahydropyrrolo[2,1-*b*]oxazole, A-927
Anthocerodiazonin, A-1078
Antibiotic 2096A, A-1093
Antibiotic AF 140, A-1115
Antibiotic FA 4283, A-1166
Antibiotic SB 291071, A-1242
Antibiotic SB 315021, A-1243
Antibiotic TA 3037A, A-1273
Antibiotic TAN 1251B, A-1284
Antibiotic YCM 1008A, A-1320
Aplaminal, A-1341
Aplidinone A, A-1344
Aplidinone B, A-1345
Arenaine, A-1401
Aspergillazine A, A-1472
Avenalumin II, A-1561
Avenalumin III, A-1562
9-Azabicyclo[3.3.1]nonan-3-one, A-1580
4-Azoniaspiro[3.3]heptane-2,6-diol, A-1610
4-Benzyl-1,4-dihydro-3-oxo-3*H*-pyrrolo[2,1-*c*][1,4]oxazine-6-carboxaldehyde, B-86
Cypridina Biluciferyl, B-137
Brevioxime, B-297
7-Bromocavernicolenone, B-301
5-(2-Butenylidene)-3-ethyl-1,2,3,4,5,7*a*-hexahydro-4*aH*-1-pyrindine-4,4*a*-diol, B-424
Callipeltoside A, C-37
11-Carboxyanatoxin a, C-143
Catharsitoxin A, C-198
Catharsitoxin B, C-199
Catharsitoxin C, C-200
Cephalandole A, C-249
Cephalimysin A, C-254
Ceratamine A, C-277
Chinese bittersweet alkaloid III, C-385
ζ-Clausenamide, C-501
Coelenterazine, C-560
Curvupallide A, C-816
Cyclocarbamide A, C-852
Dehydrocrambine A, D-155
3,4-Dihydro-2*H*-1,3-benzoxazin-2-one, D-405
6,7-Dihydro-4*H*-furo[2,3-*c*]azepine-4,8(5*H*)-dione, D-433
2,7-Dihydro-2,5,7-trimethyl-5*H*-imidazo[4,5-*e*]-1,2,4-triazine-3,6-dione, D-522
Dioscoretine, D-797
Donaxanine, D-915
Donaxarine, D-917
Dysinosin A, D-975
Epostatin, E-107
Fluviol D, F-114
Fusarin A, F-226
Grandisine B, G-161
Hatomamicin, H-77
2-(5-Heptenyl)-6,7,8,8*a*-tetrahydro-3-methyl-4*H*-pyrrolo[2,1-*b*][1,3]oxazin-4-one, H-129
3,4,5,6,7,8-Hexahydro-1,7-benzodiazecin-2(1*H*)-one, H-229
Homoanatoxin a, H-325
7-Hydroxy-2*H*-1,4-benzothiazin-3(4*H*)-one, H-407
7-Hydroxy-2-phenyl-4*H*-3,1-benzoxazin-4-one, H-675
1-Hydroxy-4-phenyl-2,7-naphthyridine, H-686

Hyperaspine, H-769
Isooxodesmosine, I-260
Kobutimycin A, K-53
Kobutimycin B, K-54
Laccarin, L-4
Lansamide 2, L-39
Leptocarpinine, L-118
Cypridina Luciferin, L-281
Lucilactaene, L-283
Lukianol A, L-284
Manicoline B, M-83
Matlystatin D, M-117
Matlystatin E, M-118
Matlystatin F, M-119
2-(3-Methylbutyl)-1*H*-pyrrolo[2,3-*b*]pyridine, M-422
4-Methylcinnoline, M-428
8-(5-Methylhexyl)-1*H*,3*H*-[1,3,4]oxadiazolo[3,4-*a*][1,2,4]triazin-1-one, M-471
4-Methyl-2,6-naphthyridine, M-487
3-Methyl-1*H*-pyrrolo[3,2-*b*]pyridine, M-551
Monocillinol A, M-687
Mycothiol bimane, M-791
Nagstatin, N-9
Nitrabirine, N-240
Nostocine A, N-320
Oxodesmosine, O-175
Pantocin A_2, P-74
Pantocin A, P-75
Pentosidine, P-233
1-Pentyl-9-azabicyclo[3.3.1]nonan-3-one, P-235
Phaeosphaeride A, P-302
2-Phenyl-1-benzazocin-8-ol, P-340
Phloeodictyne B, P-367
Diaphus Preluciferin, P-612
Pseudotheonamide A_1, P-727
Pseudotheonamide B_2, P-728
Pyranonigrin A, P-880
Pyrindicine, P-932
Reumycin, R-66
Salinosporamide A, S-28
Salinosporamide D, S-30
Salinosporamide E, S-31
Salinosporamide I, S-27
Salviamiltamide, S-41
Sibyllimycin, S-293
Spirocalcaridine A, S-428
Spiroleucettadine, S-430
Streptazoline, S-560
Streptazone B_1, S-561
Streptazone C, S-562
Subereatensin, S-620
Thiomarinol A, T-385
Thiomarinol D, T-386
Thiomarinol E, T-387
Trichochrome B, T-483
Trichochrome C, T-484
Trichochrome E, T-485
Trichochrome F, T-486
Trichodermamide A, T-487
Verruculotoxin, V-84
Xanthiazone, X-3
Xylogranatinine, X-29

Miscellaneous three-ring system alkaloids

Aaptamine, A-2
Aaptosamine, A-3
Aaptosine, A-4
Mantella Alkaloid 261C, A-452
Dendrobates Alkaloid 251F, A-509
7-Amino-3,4,4*a*,10*b*-tetrahydro-2-(hydroxymethyl)-4-methylbenzo[*f*]quinolin-6(5*H*)-one, A-914
Antibiotic CJ 12662, A-1141
Antibiotic FR 901483, A-1178
Antibiotic ICM 0201, A-1188
Antibiotic NG 311, A-1214
Antibiotic PF 1140, A-1226
Aphanorphine, A-1333
Aplidite A, A-1346
Ascidiathiazone A, A-1457
Ascidiathiazone B, A-1458
Asimicilone, A-1463
Aulosirazole, A-1540
Aurachin E, A-1544
Azamerone, A-1599
6-Azidotetrazolo[5,1-*a*]phthalazine, A-1607
Benzo[*c*][2,7]naphthyridin-4-ol, B-75
Bhimamycin D, B-114
Brevinic acid, B-296
Buddamine, B-382
7-Butyl-1,2-dichloro-6,8-dihydroxy-9*H*-pyrrolo[2,1-*b*][1,3]benzoxazin-9-one, B-429
Buzonamine, B-484
12-Carboxymonascorubramine, C-150
Cassiarine A, C-181
Cassiarine B, C-182
Cheliensisamine, C-358
2-Chloro-7-ethyl-6,8-dihydroxy-9*H*-pyrrolo[1,2-*b*][1,3]benzoxazin-9-one, C-403
2-Chloro-7-ethyl-8-hydroxy-6-methyl-9*H*-pyrrolo[1,2-*b*][1,3]benzoxazin-9-one, C-404
Chlorpromazine, C-417
Cinachyramine, C-443
Cinereain, C-449
$ComX_{RO\text{-}E\text{-}2}$ pheromone, C-593
$ComX_{RO\text{-}H\text{-}1}$ pheromone, C-594
Conicaquinone A, C-605
Conicaquinone B, C-606
Crepidine, C-736
Cycloanchinopeptolide C, C-840
Cyclodidemniserinol, C-860
Cyclopiamine A, C-893
Cylindrospermopsin, C-930
Dactylicapnosinine, D-4
Decahydro-10-[(3-hydroxy-2,4,6-octadecatrienoyl)amino]-1,11*a*,11*b*-trihydroxy-2*H*-pyrazino[1,2-*a*]pyrrolo[2,1-*c*]pyrazine-3,6,9-trione, D-110
Diazepinomicin, D-297
1,2-Dichloro-8-hydroxy-6-methyl-7-propyl-9*H*-pyrrolo[1,2-*b*][1,3]benzoxazin-9-one, D-352
Dictyolomide A, D-367
2,9-Dimethyl-2,9-diazatricyclo[10.2.2.$2^{5,8}$]octadeca-5,7,12,14,15,17-hexaene-3,10-diol, D-745
Dysibetaine PP, D-965
Erinacerin A, E-178
Eugenine A, E-293
Eugenine B, E-294
Euthyroideone A, E-304
Fareanine, F-8
Fulvanine E, F-167
Fumiquinazoline F, F-188
Furomegistine II, F-208
Gaultherialine A, G-27
Gephyrotoxin, G-65
Gracicleistanthoside, G-149
Gymnodimine, G-232
Haematopodin B, H-8
Haloxine, H-38
Hirudinoidine A, H-304
Hydnellin B, H-392
3-Hydroxy-8,9-methylenedioxybenzo[*h*]quinoline, H-599
8-Hydroxystreptazolone, H-741
Hyrtiazepine, H-778
Isoperlolyrine, I-262
Isothapsakone A, I-335
Janoxepin, J-19
Kealiinine A, K-24
Kealiiquinone, K-25
Lemonnierin, L-89
Lepistine, L-111
Lycopladine A, L-338
Lycoposerramine B, L-343
Maingayinine, M-48
Malassezindole A, M-66
Maltoxazine, M-77
Martinelline, M-111
Mearsamine, M-138
Mescengricin, M-223
8-Methoxy-9*H*-benzo[*de*][1,6]naphthyridin-9-one, M-241
7-Methoxy-4-methyl-γ-carboline, M-260
5-Methoxy-2-(methylthio)-1,3-thiazino[6,5-*b*]indole, M-276
4-Methyl-3*H*-pyrrolo[2,3-*c*]quinoline, M-552
Millaurine A, M-614
Millaurine, M-613
Millettonine, M-615
Millingtonine, M-618
Monascopyridine A, M-684
Monascopyridine B, M-685
Monascorubramine, M-686
Moschamide, M-710
Mycenarubin A, M-784
Mycenarubin B, M-785
Myrmicarin 213B, M-801
Neosymbioimine, N-143
Nigeglanine, N-191
Nigellicine, N-192
Ningalin B, N-221
Ningalin C, N-222
Ostreogrycin A, O-131
Oxepinamide A, O-158
Oxepinamide C, O-159
Paeciloxazine, P-9
Perloline, P-269
Phyllostictine A, P-391
Phyllostictine B, P-392
Phyllostictine C, P-393
Phyllostictine D, P-394
Pinnamine, P-436
Prolifine, P-638
Pterocellin A, P-764
Pterocellin B, P-765
Pterocellin C, P-766
Pterocellin D, P-767
Pterocellin F, P-768
Pyrroindomycin A, P-941
Quinocitrinine A, Q-23
Quinolactacin A_1, Q-25
Quinolactacin D_1, Q-27
Rubrobramide, R-148
Rubropunctamine, R-152
Salinosporamide C, S-29
Sarcodonin, S-76
Schulzeine A, S-142
Schulzeine C, S-143
Scytonemin, S-168
Scytonine, S-169
Sequoiamonascin D, S-250
Sibirinine, S-292
Silvaticamide, S-300
Spirotryprostatin A, S-468
Streptopyrrole, S-571
Suomilide, S-643
Symbioimine, S-654
Syncarpurea, S-656
Tamynine, T-23
Terresoxazine, T-103
Terreusinone, T-105
1,3,4,9-Tetrahydro-1,1-dimethylpyrano[3,4-*b*]indole, T-169
Tetramethoxyscytonemin, T-279
Tetraponerine 1, T-290
Tetraponerine 3, T-291
Tetraponerine 5, T-292
Tetraponerine 7, T-293
Ulbactin D, U-6
Ureidosorbicillinol, U-44
Variolin B, V-32
Variolin D, V-33
Vitedoamine A, V-164
Yuremamine, Y-22
Zyzzyanone A, Z-40

Miscellaneous four- and higher-ring system alkaloids

Abyssomicin B, A-19
Acosmine, A-107
Acutupyrrocoline, A-135

Adociaquinone B, A-147
Aglaiastatin, A-197
Aglaroxin I, A-200
α-Aldotripiperideine, A-256
Mantella Alkaloid 384A, A-374
Ancorinazole, A-993
Antibiotic BA 181314A, A-1125
Antibiotic BE 54017, A-1131
Antibiotic BE 55051, A-1133
Antibiotic BE 54238A, A-1136
Antibiotic BMY 42428, A-1138
Antibiotic FL 120B′, A-1169
Antibiotic GKK 1032A_2, A-1182
Antibiotic GKK 1032B, A-1183
Antibiotic S 433, A-1235
Antibiotic SF 2695, A-1259
Antibiotic VM 55595, A-1306
Antibiotic VM 55599, A-1307
Arboloscine, A-1381
Asperparaline A, A-1486
Auranthine, A-1547
Austamide, A-1556
Azaacridone A, A-1579
Benhamycin, B-62
Benzomalvin B, B-74
Capsimycin, C-102
Cephalocyclidine A, C-259
Chaetominine, C-336
Chartellamide A, C-349
Chartelline A, C-350
Chenoalbicin, C-364
Chestnutamide, C-370
Chilocorine D, C-380
Chloptosin, C-394
Citridone D, C-481
Citrinadin A, C-482
Communesin A, C-581
Communesin B, C-582
Communesin G, C-583
Communesin H, C-584
Crociflorinine, C-766
Cyclopiamide, C-892
Cyclozoanthamine, C-922
Dactylicapnosine, D-3
Dalomycin T, D-11
Daphnipaxinine, D-67
Decursivine, D-137
Dehydropuntarenine, D-165
Dehydrosaulatine, D-167
Diazonamide B, D-298
Dibromophakellstatin, D-336
Dictyodendrine A, D-364
Dictyodendrine B, D-365
Dictyodendrine C, D-366
1,2-Dihydrothiazolo[2′,3′:2,3]-pyrimido[4,5-*b*]indole-1-carboxylic acid, D-517
1,8-Dihydroxy-3-methylbenzo[*b*]phenanthridine-7,12-dione, D-612
Discodermide, D-844
Distomadine A, D-868
Distomadine B, D-869
Dragmacidin E, D-931
Dragmacidin F, D-932
Drimiopsine A, D-940
Dynemicin A, D-959
Dynemicin L, D-960
Dynemicin P, D-961
6-Ethenyl-3,4,4*b*,5,6,7,8,9,10*b*,12-decahydro-12-hydroxy-5-methyl-1*H*-pyrido[4′,3′:4,5]pyrano[3,2-*h*]isoquinoline-1,10(2*H*)-dione, E-227
2-Ethyl-11-methoxy-3-methyl-3*H*-[1,6]naphthyridino[6,5,4-*def*]quinoxaline, E-251
Evodiaxinine, E-311
Excentricine, E-318
Fissoldhimine, F-67
Fleephilone, F-86
Fumiquinazoline D, F-187
Gardquinolone, G-24
Gracilamine, G-150
Granulatimide, G-169
Grossularine 1, G-183
Grossularine 2, G-184
Hamigeran D, H-43
Haouamine A, H-47
Herquline A, H-152
Herquline B, H-153
Himeradine A, H-284
Hinckdentine A, H-287
Hirsutellone A, H-299
Hirsutellone B, H-300
Hirsutellone D, H-301
Hirsutellone E, H-302
Hirsutellone F, H-303
Homofascaplysate A, H-332
Homofascaplysin B, H-334
Homofascaplysin B1, H-335
Homofascaplysin C, H-336
Hopeanine, H-352
Hostasinine A, H-363
Huperzine V, H-374
22-Hydroxyacuminatine, H-403
1-(4-Hydroxyphenyl)-3*H*-benzo[*a*]pyrrolo[2,3-*c*]-phenazine, H-674
4-Hydroxy-1′,3,4′-tris(4-hydroxyphenyl)-3′-[2-(4-hydroxyphenyl)ethyl]-7′-(sulfooxy)spiro[-furan-2(5*H*),2′(3′*H*)-pyrrolo[2,3-*c*]carbazole]-5,5′(6′*H*)-dione, H-753
Hypodemapyrazine, H-772
Ileabethoxazole, I-27
7*H*-Indolo[3,2-*j*]phenanthridine-7,13(12*H*)-dione, I-107
Indolo[3,2,1-*ij*]quino[4,5-*bc*][1,5]naphthyridine, I-114
Ingamine A, I-141
Ingenamine B, I-143
Ingenamine D, I-144
Ingenamine E, I-145
Ingenamine G, I-146
Ingenamine, I-142
Isaindigotidione, I-181
Isatisine A, I-185
Isogranulatimide, I-237
Isomitomycin A, I-246
2-Isopropyl-10-methoxybenzimidazo[6,7,1-*def*][1,6]naphthyridine, I-273
Isoquinocycline A, I-300
Isoschizogamine, I-313
Isotripiperideine, I-340
Jadomycin A, J-9
Jadomycin Ala, J-10
Jadomycin F, J-11
Jadomycin S, J-12
Jadomycin T, J-13
Jadomycin V, J-8
Javanicunine A, J-29
Kapakahine A, K-9
Kapakahine B, K-10
Kapakahine C, K-11
Kapakahine E, K-12
Kapakahine G, K-13
Ketoanhydrokinamycin, K-37
Lamellarin H, L-24
Lankanescine, L-31
Lemonomycin, L-90
Leptocarpine, L-117
Lihouidine, L-171
Lindeniamine, L-183
Lophocine, L-261
Luotonine A, L-298
Luteinine, L-308
Lycopladine B, L-339
Lycopladine D, L-340
Lycoposerramine A, L-342
Madangamine F, M-32
Malasseziacitrin, M-60
Malasseziazole A, M-62
Malasseziazole B, M-63
Malasseziazole C, M-64
Malbrancheamide A, M-69
Marcfortine B, M-98
Marine *Streptomyces* $C_{30}H_{38}N_2O_5$ lactam, M-105
Massadine, M-112
Megistosarconine, M-152
Mersiloscine, M-214
Mersinaline, M-215
Mersinine A, M-217
Mersirachine, M-218
Metenaticin C, M-234
10-Methoxybenzimidazo[6,7,1-*def*][1,6]-naphthyridine, M-239
37-(Methoxycarbonyl)dictyodendrine E, M-247
11-Methoxy-3*H*-naphthridino[6,5,4-*def*]quinoxalin-2-ol, M-277
Mevashuntin, M-587
Misenine, M-649
Mollenine A, M-670
Monomargine, M-694
Myrioneurinol, M-796
Myrmicarin 430A, M-800
Myrmicarin 663, M-798
Myrobotinol, M-802
Necatorine, N-84
Necatorone, N-85
Neosurugatoxin, N-141
Ningalin A, N-220
Nirurine, N-236
Nitraramine, N-244
Nitraricine, N-245
Njaoamine A, N-259
Njaoamine E, N-260
Njaoamine F, N-261
Noelaquinone, N-277
Norzoanthamine, N-317
Notoamide D, N-325
Nybomycin, N-346
Ophiuroidine, O-98
Palauamine, P-18
Panacosmine, P-44
Papuamine, P-84
Paraherquamide A, P-90
Paraherquamide G, P-91
Perinadine A, P-261
Phalarine, P-305
Phlegmariurine C, P-364
Pinnatoxin A, P-437
Pinnatoxin B, P-438
Pinnatoxin D, P-439
Pteriatoxin A, P-760
Pteriatoxin B, P-761
Purpurone, P-825
Quinocarcinol, Q-22
Quinocarcin, Q-21
Quinolactacide, Q-24
Ripromycin, R-99
Roehybridine, R-116
Rubrolone, R-150
Sanguinone A, S-58
Sanguinone B, S-59
Sarain A, S-67
Sarain C, S-68
Schischkiniin, S-127
Schoberine, S-140
Sclerotigenin, S-154
Securamine A, S-203
Securamine C, S-204
Spirolide B, S-431
Spirolide D, S-432
Spirolide E, S-433
Spirolide G, S-434
Stephacidin B, S-532
Stephaoxocanine, S-541
Stylissadine A, S-610
Styloguanidine, S-611
Surugatoxin, S-645
Syphilobin F, S-662
Tetrapetalone C, T-287
Tetrazomine, T-296
Thiaplidiaquinone A, T-368
Thiaplidiaquinone B, T-369
Thorectandramine, T-396
Uncialamycin, U-23
Variecolortide A, V-30
Variecolortide B, V-31

Xanthobaccin A, X-6
Zoanthamide, Z-29
Zoanthamine, Z-30
Zoanthenamine, Z-31

Alkaloids of unknown or partially unknown structure

Abrasine, A-15
Acsine, A-122
Aculeacin B, A-130
Aestivine, A-163
Agelasine, A-182
Ajmalinine, A-218
Akuammenine, A-227
Alangine A, A-236
Alanginine, A-237
Alchornidine, A-253
Alginidine, A-261
Alginine, A-262
Mantella Alkaloid 161, A-318
Mantella Alkaloid 191, A-319
Mantella Alkaloid 317, A-320
Pancratium Alkaloid 6, A-323
Pancratium Alkaloid 31, A-324
Rosmarinus officinalis Alkaloid 2, A-329
Senecio renardi Alkaloid 4, A-332
Sophora Alkaloid 9, A-333
Buxus Alkaloid 1, A-275
Buxus Alkaloid 2, A-276
Buxus Alkaloid 3, A-277
Buxus Alkaloid 4, A-278
Buxus Alkaloid 5, A-279
Dendrobates Alkaloid 185, A-287
Dendrobates Alkaloid 197, A-288
Dendrobates Alkaloid 217, A-290
Dendrobates Alkaloid 225, A-291
Dendrobates Alkaloid 233, A-292
Dendrobates Alkaloid 295, A-293
Dendrobates Alkaloid 301, A-294
Dendrobates Alkaloid 325, A-295
Dendrobates Alkaloid 351, A-296
Fritillaria Alkaloid 5, A-297
Fritillaria Alkaloid 6, A-298
Leuconotis griffithii Alkaloid 308, A-309
Lycopodium Alkaloid 168, A-312
Lycopodium Alkaloid 258, A-313
Daphniphyllum Alkaloid A_1, A-345
Abrus precatorius Alkaloid A, A-347
Buxus Alkaloid A1, A-348
Buxus Alkaloid A2, A-349
Buxus Alkaloid A3, A-350
Buxus Alkaloid A4, A-351
Buxus Alkaloid A5, A-352
Chondrodendron limaciifolium Alkaloid A, A-353
Dendrobates Alkaloid 209A, A-356
Dendrobates Alkaloid 239A, A-360
Dendrobates Alkaloid 241A, A-361
Dendrobates Alkaloid 251A, A-363
Dendrobates Alkaloid 257A, A-364
Dendrobates Alkaloid 265A, A-365
Dendrobates Alkaloid 281A, A-368
Dendrobates Alkaloid 297A, A-369
Dendrobates Alkaloid 309A, A-370
Erythrophleum Alkaloid A, A-371
Euonymus Alkaloid A, A-372
Fritillaria Alkaloid A, A-373
Mantella Alkaloid 384A, A-374
Securidaca longipedunculata Alkaloid A, A-375
Stephania glabra Alkaloid A, A-376
Stephania glabra Alkaloid A, A-377
Stephania japonica Alkaloid A, A-378
Taxus baccata Alkaloid A, A-379
Thermopsis lanceolata Alkaloid A, A-380
Alangium Alkaloid AL64, A-381
Alangium Alkaloid B1, A-383
Alangium Alkaloid B2, A-384
Alangium Alkaloid B3, A-385
Alangium Alkaloid B4, A-386
Alangium Alkaloid B5, A-387
Asteracantha Alkaloid B1, A-388
Asteracantha Alkaloid B2, A-389
Buxus Alkaloid B, A-390
Buxus Alkaloid B1, A-391
Buxus Alkaloid B4, A-392
Buxus Alkaloid B5, A-393
Buxus Alkaloid B6, A-394
Buxus Alkaloid B7, A-395
Buxus Alkaloid B8, A-396
Buxus Alkaloid B387, A-397
Buxus Alkaloid B398, A-398
Buxus Alkaloid B426, A-399
C-Alkaloid B, A-400
Dendrobates Alkaloid 225B, A-405
Dendrobates Alkaloid 237B, A-407
Dendrobates Alkaloid 239B, A-408
Dendrobates Alkaloid 253B, A-409
Dendrobates Alkaloid 257B, A-410
Dendrobates Alkaloid 267B, A-411
Dendrobates Alkaloid 281B, A-413
Dendrobates Alkaloid 283B, A-414
Dendrobates Alkaloid 297B, A-415
Dendrobates Alkaloid 307B, A-416
Dendrobates Alkaloid 309B, A-417
Gentiana macrophylla Alkaloid B, A-418
Mantella Alkaloid 271B, A-420
Mantella Alkaloid 293B, A-421
Mantella Alkaloid 295B, A-422
Pseudophryne Alkaloid 252B, A-423
Skytanthus acutus Alkaloid B, A-424
Sophora griffithii Alkaloid B, A-425
Strychnos camptoneura Alkaloid B, A-426
Thermopsis lanceolata Alkaloid B, A-427
Alkaloid 241B, A-428
C-Alkaloid BL, A-429
Buxus Alkaloid BX6, A-430
Buxus Alkaloid BX10, A-431
Chamaecytisus Alkaloid C_1, A-432
Chamaecytisus Alkaloid C_2, A-433
Rauwolfia obscura Alkaloid C_2, A-434
Buxus Alkaloid C, A-435
C-Alkaloid C, A-436
Dendrobates Alkaloid 225C, A-439
Dendrobates Alkaloid 237C, A-440
Dendrobates Alkaloid 239C, A-441
Dendrobates Alkaloid 251C, A-442
Dendrobates Alkaloid 283C, A-443
Dendrobates Alkaloid 307C, A-444
Dendrobates Alkaloid 309C, A-445
Erythrophleum Alkaloid C, A-446
Gentiana macrophylla Alkaloid C, A-447
Leucojum Alkaloid C, A-448
Mantella Alkaloid 205C, A-449
Mantella Alkaloid 211C, A-450
Mantella Alkaloid 321C, A-453
Salicornia herbacea Alkaloid C, A-454
Stephania glabra Alkaloid C, A-455
Voacanga thouarsii Alkaloid C, A-456
Alkaloid C2, A-457
Alkaloid 1 (Calabash curare), A-342
Alkaloid 2 (Calabash curare), A-343
Alkaloid CC 3, A-460
Alkaloid CC 11, A-461
Alkaloid CC 13, A-462
Alkaloid CC 14, A-463
Alkaloid CC 23, A-464
Papaver Alkaloid $C_{21}H_{21}NO_6$, A-466
Hortia Alkaloid $C_{22}H_{19}N_3O_3$, A-467
Alkaloid CN1, A-468
Alkaloid CN2, A-469
Alkaloid CR1, A-470
Alkaloid CRB 11, A-471
Alkaloid CSA 3, A-472
Rauwolfia obscura Alkaloid D_1, A-473
Rauwolfia obscura Alkaloid D_2, A-474
Buxus Alkaloid D, A-475
Coelidium Alkaloid D, A-478
Dendrobates Alkaloid 285D, A-482
Dendrobates Alkaloid 307D, A-483
Leucojum Alkaloid D, A-484
Mantella Alkaloid 211D, A-485
Melodinus aeneus Alkaloid D, A-488
Narcissus Alkaloid D, A-489
Pandaca caducifolia Alkaloid D, A-490
Salicornia herbacea Alkaloid D, A-491
Stephania glabra Alkaloid D, A-492
Alkaloid D1, A-493
Alkaloid D2, A-494
Alkaloid 267D, A-495
Buxus Alkaloid E, A-496
Coelidium Alkaloid E, A-497
Dendrobates Alkaloid 223E, A-499
Dendrobates Alkaloid 237E, A-500
Lycopodium Alkaloid E, A-501
Muntafara sessilifolia Alkaloid E, A-502
Pandaca caducifolia Alkaloid E, A-503
Skytanthus acutus Alkaloid E, A-504
Sophora microphylla Alkaloid E, A-505
Voacanga thouarsii Alkaloid E, A-506
Buxus Alkaloid F, A-507
Dendrobates Alkaloid 223F, A-508
Mantella Alkaloid 249F, A-512
Mantella Alkaloid 265F, A-513
Mantella Alkaloid 281F, A-514
Pandaca caducifolia Alkaloid F, A-515
Lycopodium Alkaloid G, A-516
Mantella Alkaloid 207G, A-517
Pandaca caducifolia Alkaloid G, A-518
Voacanga thouarsii Alkaloid G, A-519
Alkaloid 251G, A-520
Alkaloid GB14, A-521
Alkaloid GB15, A-522
Alkaloid GB16, A-523
Alkaloid GB17, A-524
Alkaloid GB18, A-525
Voacanga thouarsii Alkaloid I, A-340
C-Alkaloid I, A-280
Gentiana Alkaloid I, A-301
Gentiana Alkaloid II, A-526
Sternbergia Alkaloid III, A-527
Lycopodium Alkaloid IV, A-344
Solanum Alkaloid IV, A-528
Ungernia Alkaloid IV, A-529
Gentiana cruciata Alkaloid IVb, A-530
Lycopodium annotinum Alkaloid IX, A-531
C-Alkaloid J, A-532
Mantella Alkaloid 207J, A-533
Mantella Alkaloid 235J, A-534
Mantella Alkaloid 235K, A-535
Alkaloid K2, A-536
Alkaloid K5, A-538
Alkaloid K6, A-539
Alkaloid K7, A-540
Alkaloid K9, A-541
Alkaloid K10, A-542
Alkaloid K11, A-543
C-Alkaloid L, A-544
Colubrina Alkaloid L, A-545
Mantella Alkaloid 251L, A-546
Alkaloid L10, A-547
Alkaloid LB1, A-552
Alkaloid LE1, A-556
Alkaloid LO1, A-557
Alkaloid LO2, A-558
Alkaloid LO3, A-559
Alkaloid LS14, A-560
Alkaloid LV1, A-561
Alkaloid LV1, A-562
Alkaloid LV2, A-563
Alkaloid LV3, A-564
Alkaloid LV4, A-565
Buxus Alkaloid M, A-566
Buxus Alkaloid M, A-567
C-Alkaloid M, A-568
Alkaloid MB 10, A-569
Buxus Alkaloid N, A-570
Alkaloid Or_2, A-573
Baptisia Alkaloid P_2, A-574
Baptisia Alkaloid P_4, A-575
C-Alkaloid P, A-576
Lupinus Alkaloid P1, A-577
Lupinus Alkaloid P2, A-578
Mucuna pruriens Alkaloid P, A-579
Alkaloid PAR 1, A-580
Alkaloid PAR 2, A-581
Alkaloid PAR 3, A-582
Alkaloid PP1, A-585

Alkaloid PP1, A-586
C-Alkaloid Q, A-587
Mucuna pruriens Alkaloid Q, A-588
Veratrum Alkaloid Q, A-589
C-Alkaloid R, A-590
Fritillaria imperialis Alkaloid R, A-591
Mucuna pruriens Alkaloid R, A-593
Voacanga schweinfurthii Alkaloid S_2, A-595
Voacanga schweinfurthii Alkaloid S_3, A-596
C-Alkaloid S, A-597
Mucuna pruriens Alkaloid S, A-598
Alkaloid S-F, A-599
Alkaloid TC-D, A-600
Veratrum Alkaloid U, A-601
C-Alkaloid UB, A-602
Pachysandra Alkaloid V, A-322
Gentiana Alkaloid V, A-302
Helleborus Alkaloid V, A-305
Lycopodium Alkaloid V, A-310
Gentiana Alkaloid VI, A-604
Lycopodium annotinum Alkaloid VI, A-605
Pachysandra terminalis Alkaloid VI, A-607
Rhodophiala bifida Alkaloid VI, A-608
Lycopodium annotinum Alkaloid VII, A-606
Lycopodium annotinum Alkaloid VIII, A-609
Mucuna pruriens Alkaloid X, A-321
Veratrum Alkaloid X, A-339
Lycopodium Alkaloid X, A-311
Lycopodium annotinum Alkaloid XI, A-610
Lycopodium annotinum Alkaloid XII, A-611
Rhodophiala bifida Alkaloid XIII, A-613
Pachysandra terminalis Alkaloid XVI, A-614
Rhodophiala bifida Alkaloid XXV, A-615
Pachysandra terminalis Alkaloid XXVII, A-616
Alkaloid YC2, A-618
Lycopodium clavatum Alkaloid, A-316
Lycopodium thyoides Alkaloid, A-317
Pancratium sickenbergi Alkaloid, A-325
Papaver rhoeas Alkaloid, A-326
Pseudaxinyssa Alkaloid, A-327
Rhynchosia pyramidalis Alkaloid, A-328
Senecio borysthenicus Alkaloid, A-331
Strempeliopsis strempelioides Alkaloid, A-334
Thermopsis lanceolata Alkaloid, A-335
Ulex europaeus Alkaloid, A-336
Uncaria callophylla Alkaloid, A-337
Ungernia severtzovii Alkaloid, A-338
Zephyranthes Alkaloid, A-341
Aconitum nemorosum C_{20} Alkaloid, A-265
Aconitum nemorosum C_{23} Alkaloid, A-266
Erythrophleum C_{24} Alkaloid, A-267
Aconitum kirinense Alkaloid, A-268
Aconitum koreanum Alkaloid, A-269
Alstonia constricta Alkaloid, A-270
Ammodendron karelinii Alkaloid, A-271
Artemisia rutifolia Alkaloid, A-273
Astragalus berterianus Alkaloid, A-274
Chamaecytisus Alkaloid, A-282
Colchicum luteum Alkaloid, A-283
Crotalaria retusa Alkaloid, A-284
Cytisus laburnum Alkaloid, A-285
Cytisus ruthenicus Alkaloid, A-286
Galanthus caucasicus Alkaloid, A-300
Gynura segetum Alkaloid, A-303
Hovea longipes Alkaloid, A-306
Lycopodium annotinum Alkaloid, A-314
Lycopodium annotinum Alkaloid, A-315
Allothiobinupharidine, A-631
Alvanidine, A-665
Alvanine, A-666
Ambaline, A-681
Ambalinine, A-682
Amianthine, A-691
Ammocalline, A-929
Ammorosine, A-931
Amsoniaefoline, A-952
Andrachnine, A-1001
Angusteine, A-1010
Anhweiaconitine, A-1022
Ankoline, A-1046
Annapawine, A-1048
Antibiotic A 58365C, A-1106
Antibiotic 69, A-1083
Antibiotic 859A, A-1090
Antibiotic 875A, A-1091
Antibiotic 2197A, A-1094
Antibiotic ASK 753, A-1117
Antibiotic AS-N-7A, A-1118
Antibiotic BA 181314A, A-1125
Antibiotic BMY 42428, A-1138
Antibiotic F 10C, A-1165
Antibiotic FR 3383, A-1170
Antibiotic L 11-1, A-1192
Antibiotic LL-BO 2964, A-1200
Antibiotic M 259, A-1202
Antibiotic 610MF, A-1206
Antibiotic MYC 8005, A-1210
Antibiotic NP 522, A-1218
Antibiotic NRCS 15, A-1219
Antibiotic RP 6798, A-1233
Antibiotic RP 13252, A-1234
Antibiotic S 433, A-1235
Antibiotic SF 1508, A-1253
Antibiotic SF 2197B, A-1263
Antibiotic TAN 883, A-1274
Antibiotic TAN 1263, A-1275
Antibiotic TAN 1280, A-1276
Antibiotic WS 1921, A-1314
Antibiotic XK 211, A-1317
Antifungin, A-1326
Apc, A-1332
Aquaticine, A-1368
Aquileginine, A-1370
Arecolidine, A-1400
Argentinamine, A-1411
Aristo red, A-1424
Aspidexcelcine, A-1488
Aspidexcine, A-1489
Aztequine, A-1617
Beilupeimine, B-54
Bervulcine, B-108
Biflorine, B-124
Biflorone, B-125
Biochanin C, B-138
Bishaconitine, B-179
Bishatisine, B-180
Bodamine, B-240
Borbonicine, B-250
Bractamine, B-272
Bracteine, B-275
4(7)-Bromo-2,3,7(2,3,4)-trichloro-1*H*-indole, B-354
Brunfelsine, B-370
Brunsdonnine, B-372
Brunsvinine, B-373
Bullatine A, B-405
Bullatine D, B-406
Buphacetine, B-412
Buphanine, B-414
Burmannaline, B-417
Burmannine, B-418
Buxalfine, B-452
Buxazine, B-463
Buxdeltine, B-464
Buxetine, B-465
Buxpapamine, B-479
Buxpapine, B-480
Buxpapinine, B-481
Caffaeoschizine, C-14
Cairomycin C, C-17
Calabacine, C-20
Calabatine, C-21
Calycine, C-44
Calystegine, C-59
Campestrine, C-64
Camptine, C-67
Camptinine, C-68
Caneine, C-79
Canembine, C-81
Caracurine I, C-109
Caracurine III, C-112
Caracurine IV, C-113
Caracurine IX, C-114
Caracurine VIII, C-116
Carategine, C-118
Cardiochrysine, C-158
Carosidine, C-166
Carosine, C-167
Casimirine, C-175
Cathalanceine, C-192
Catharicine, C-196
Cathedulin Y7, C-204
Cathedulin Y9, C-205
Cathedulin Y10, C-206
Cathidine A, C-210
Cathidine B, C-211
Cathindine, C-212
Cavincidine, C-223
Cavincine, C-224
Ceanothine A, C-226
Ceanothine C, C-227
Celliamine, C-240
Cevanine, C-299
Chairamidine, C-337
Chairamine, C-338
Chandrine, C-346
Chatinine, C-351
Cherimoline, C-367
Chinpeimine, C-388
Chrycentrine, C-428
Chuan-wu base A, C-435
Chuan-wu base B, C-436
Citriodorol, C-483
Coclamine, C-549
Coclifoline, C-550
Coelibactin, C-561
Columellarine, C-580
Conchairamidine, C-597
Conchairamine, C-598
Concusconine, C-599
Conolline, C-619
Consolidine, C-623
Convolvicine, C-631
Copsomycin, C-637
Coranicine, C-640
Coriacenine E, C-650
Coruscine, C-669
Corycidine, C-672
Corydicine, C-681
Coumingaine, C-713
Crinatine, C-747
Crinosine, C-750
Criophylline, C-751
Crispanine, C-754
Crispine, C-755
Croceocurine, C-765
Cruentine A, C-779
Cruentine B, C-780
Cuscamidine, C-817
Cusconidine, C-819
Cusconine, C-820
Cygnine, C-923
Daphnarcine, D-28
Daphnicadine, D-39
Daphnicaline, D-40
Daphnicamine, D-41
Daphnimacrine, D-58
Daucine, D-87
Delflexine, D-188
Delfrenine, D-189
Delorine, D-191
Delphoccine, D-193
Delphoorine, D-194
Delpyrine, D-195
Denudatidine, D-220
Dichroidine, D-361
3,4-Dihydro-*ar*-trimethoxy-1-methylisoquinoline, D-520
Dinklageine, D-787
Dithiocolchicine, D-872
Dolichothine, D-911
Doryflavine, D-925
Doryphorine, D-926
Echinozolinone, E-29
Elatrine, E-62
Elliptinine, E-68
Equisetonine, E-143
Ercine, E-145

Erythreidine, E-209
Erythreine, E-210
Erythrinine, E-211
Euroline, E-298
Evoevoline, E-312
Evoline, E-313
Evomine, E-316
Evopine, E-317
Eximidine, E-320
Fagarine III, F-4
Fastudine, F-19
Fastunine, F-20
Fastusidine, F-21
Fastusine, F-22
Fastusinine, F-23
Fedamazine, F-32
Fibraminine, F-50
Fibranine, F-51
Flexamine, F-87
Flexine, F-89
Floramultinine, F-91
Fluggeine, F-95
ψ-Fluorocurine, F-101
C-Fluorocurinine, F-102
Fluorosolimoesines, F-105
Franchetine, F-148
Fredericamycin E, F-154
Fritilline A, F-155
Fritilline B, F-156
Fritimine, F-157
Fumarinine, F-177
Fumarizine, F-179
Fumvailine, F-192
Galanthamidine, G-2
Galipoidine, G-10
Gentiananine, G-57
Geotrichum alkaloid A 25822H, G-64
Geralbine, G-66
Gerrardamine, G-71
Gerrardoline, G-73
Gindaricine, G-77
Glaucescine, G-89
Glaucescinine, G-90
Glauflavine, G-92
Glenodinine, G-95
Gnidine, G-134
Gnidinine, G-135
Graminifoline, G-154
Grisonomycin, G-179
C-Guaianine, G-189
Guan-fu base C, G-194
Guan-fu base D, G-195
Guan-fu base E, G-196
Guillauminiine, G-221
Hanadamine, H-45
Hasunohanin, H-71
Heimine, H-89
Herpestine, H-151
Himanthine, H-279
Himgrine, H-286
Hippacine, H-289
Hippandrine, H-291
Hippauline, H-292
Hodorine, H-312
Holacimine, H-313
Holarrhessimine, H-319
Holarrhine, H-320
Homocinchonidine, H-328
Homophleine, H-340
Homothermopsine, H-349
Hortesin, H-360
Hunteriamine, H-369
Hydrocotyline, H-397
4-(Hydroxymethyl)-6-methyl-2,3,5-pyridinetriol, H-608
Hypotuberostemonine, H-774
Imperoline, I-52
Imperonine, I-53
Indicamine, I-66
Indicinine, I-69
1*H*-Indole-6,7-diol, I-94
Insulamine, I-149
Irenine, I-176
Isochaksine, I-202
Isochondocurarine, I-204
C-Isodihydrotoxiferine I, I-227
Isophysostigmine, I-265
Isopyroine, I-295
Isostemonidine, I-323
Isostemonine, I-324
Isotaifine, I-327
Isotuberostemonine, I-341
Ivonine, I-351
Janthitrem A, J-20
Jaxartinine, J-33
Kirigamycin C, K-47
Kitagine, K-52
Kokusaginoline, K-57
Koumicine, K-95
Kouminidine, K-97
Krelagine, K-98
Kryptocurine, K-103
Kurchenine, K-110
Kurchicine, K-111
Lallemancine, L-20
Lamarckine, L-21
Lamarckinine, L-22
Lanceine, L-27
Leontamine, L-95
Leonuridine, L-100
Leonurinine, L-101
Leptactinine, L-113
Lettocine, L-144
Leurosivine, L-164
Ligudentine, L-168
Linantenine, L-179
Lobine, L-222
Lochnerivine, L-225
Lochrovicine, L-226
Lochrovidine, L-227
Lochrovine, L-228
Locoine, L-229
Lolinidine, L-235
Lophanterine, L-257
Lophilacrine, L-258
Lophiline, L-259
Loveraine, L-274
Lunamaridine, L-289
Lunariamine, L-291
Lunolone, L-297
Lupilaxine, L-303
Lurenine, L-304
Lutenurine, L-309
Lyceamine, L-318
Lycocaroline, L-320
Lycodiflexine, L-323
Lycoserramine, L-349
Lycoserrine, L-350
Macranthine, M-9
Macrophylline A, M-22
Macrophylline, M-21
Magnarcine, M-41
Majorine, M-51
Majovine, M-52
Marckidine, M-99
Melinonine H, M-171
Melinonine I, M-170
Melinonine K, M-172
Melinonine L, M-173
Melinonine M, M-174
Menismine, M-198
Mesembryanthemins, M-227
Methyl 16,17-didehydromethoxy-19-methyloxayohimban-16-carboxylate, M-298
Methylsuccirubine, M-562
Minpeimine, M-632
Minpeiminine, M-633
Mitraspecine, M-662
Mitraversine, M-664
Mooreine, M-701
Mucuadine, M-722
Mucuadinine, M-723
Mucuadininine, M-724
Mucunadine, M-725
Mucunine, M-726
Muricine, M-740
Myrmicarin 233A, M-799
Naphthyridinomycin B, N-33
Narcicriptine, N-39
Narcisline, N-42
Narzettine, N-52
Natrine, N-54
Neburnamine, N-83
Senecio doria Necine base, N-86
Neflexine, N-88
Nemorine, N-90
Neochondocurarine, N-105
Neodaphniphylline, N-109
Neoleurocristine, N-123
Neoleurosidine, N-124
Neolitsinine, N-126
Neoyuzurimine, N-150
Nerifline, N-170
Nerispine, N-172
Nerundine, N-173
Nikanine, N-215
Nishindine, N-237
Nordine, N-296
α-Nupharidine, N-341
β-Nupharidine, N-342
Nupharine, N-343
Nympheine, N-348
Obscuridine, O-4
Obscurine, O-6
Ocodemerine, O-24
Oleracins, O-80
Oliverine, O-86
Oreoline, O-104
Ormosine, O-116
Ornazidine, O-118
Orobanchamine, O-122
Otocamine, O-135
Pachysterine, P-7
Pahybrine, P-13
Paipunine, P-14
Palidimine, P-21
Palmatisine, P-36
Papyraceabromine A, P-85
Paricine, P-95
Parvifagarine, P-100
Paucicaline, P-127
Pavanoline, P-136
Peceylanine, P-147
Pediculine, P-158
Peimidine, P-166
Peimiphine, P-167
Peimitidine, P-169
Peimunine, P-170
Pelankine, P-172
Pentalupine, P-227
Pepuline, P-239
Perimargine, P-259
Perimivine, P-260
Perividine, P-267
Perosine, P-273
Petomine, P-282
Pictumine, P-420
Pillijanine, P-423
Pilosamycin, P-427
Pimpinellidine, P-431
Piperlongine, P-461
Piricularin, P-478
Pleiocraline, P-520
Poetamine, P-531
Poetaricine, P-532
Poeticine, P-533
Pogonopamine, P-534
Pogonopeine, P-535
Pogonopidine, P-536
Pogonopine, P-537
Powellidine, P-580
Poweramine, P-582
Powerchrine, P-583
Precasine, P-592
Precurarine, P-596
Premavacurine, P-613
Premnine, P-614
Protochondocurarine, P-662
Prurienidine, P-678

Prurienine, P-679
Prurieninine, P-680
Pseudobaleabuxine F, P-704
Pseudothiobinupharidine, P-729
Pseudovinblastinediol, P-732
Pseudowithanine, P-735
Psilocauline, P-739
Pteledimericine, P-751
Pulchelline, P-786
Punarnavine, P-797
Punikathine, P-799
Pycnarrhenamine, P-829
Pycnarrhenine, P-830
Pyoverdin 2112, P-836
Pyoverdin A1, P-838
Pyoverdin PaC, P-859
Pyoverdin Pm, P-868
Pyoverdin PS, P-871
Pyoverdin PSS, P-873
Pyrinadine C, P-927
Pyrinadine D, P-928
Pyrinadine E, P-929
Pyrinadine F, P-930
Pyrinadine G, P-931
Raddeamine, R-7
Raucaffridine, R-19
Raunamine, R-23
Rhinolidine, R-79
Robecine, R-112
Rovidine, R-137
Rubiverine, R-145
Rubrocurarines, R-149
Rubrolone B, R-151
Rulodine, R-158
Ruticin, R-172
Ruzorine, R-173
Saipeimine, S-17
Salicilobine, S-22
Salicornine, S-23
Saliherbine, S-24
Sankhpuspine, S-63
Sarothamnine, S-88
Saururidine, S-103
Saururine, S-104
Scabrine, S-113
Schizoluteine, S-135
β-Schizozygol, S-138
Securinol C, S-208
Sessilistemonine, S-272
Sickenbergine, S-294
Sinostemonine, S-317
Solangustidine, S-342
Solimocurarine, S-354
Solimoesines, S-355
Somniferine, S-361
Somniferinine, S-363
Somnine, S-364
Songorinine, S-366
Sonpeimine, S-368
Sophochrysine, S-372
Spartocytisine, S-386
Spermatherine, S-396
Sphaeranthine I, S-402
Sphaeranthine IV, S-403
Sphaeranthine VII, S-405
Sphaeranthine VI, S-404
Sphaeranthine, S-401
Spireine, S-423
Sprintillamine, S-482
Sprintilline, S-483
Squamigerine, S-486
Stemonine, S-520
Stemotuberine, S-525
Stephanoline, S-538
Sternine, S-551
Stizolophine, S-554
Streptovitacin D, S-574
Strychnambarine, S-588
Strychnobaridine, S-590
Suaedin, S-615
Subincanine, S-626
Succirubine, S-629
Suffruticodine, S-630
Suffruticonine, S-631
Synaine, S-655
Syphilobin A, S-661
Syphilobin F, S-662
Tabernaelegantidine, T-2
Tecleanine, T-54
Tejeramycin, T-61
Tenuidine, T-78
1,2,3,4-Tetrahydro-*ar*-hydroxy-*ar*-trimethoxy-2-methylisoquinoline, T-191
1,2,3,4-Tetrahydro-*ar*-methoxy-1-methylisoquinoline, T-200
Thaldimerine, T-302
Thalicflavine, T-314
Thalifabomine, T-324
Thelepogidine, T-353
Thesinicine, T-365
Thiobideoxynupharidine, T-379
Thiomycin, T-390
Tienmulilmine, T-402
Tienmulilminine, T-403
Tiliacoridine, T-405
Tiliandrine, T-409
Tinosporine, T-414
Tomentocurine, T-426
Toxiferine III, T-438
Toxiferine II, T-437
Toxiferine VIII, T-439
Toxiferine XII, T-440
Tremine, T-448
Trianthemine, T-455
2,4,7(3,4,7)-Tribromo-3(2)-chloro-1*H*-indole, T-459
2,3,5-Trihydroxy-6-methylpyridine, T-567
ar-Trimethoxy-1-methylisoquinoline, T-597
Turkestanine, T-683
Turumiquirensine, T-687
Ursuline, U-49
Vakatisine, V-2
Vakatisinine, V-3
Valivine, V-7
Vallopurfine, V-12
Vallotidine, V-13
Vallotine, V-14
Vasicinine, V-36
C-Venezueline, V-51
Veragenine, V-58
Veralbidine, V-59
Veraminine, V-67
Veranovine, V-69
Verareine, V-70
Verine, V-75
Verrucarin F, V-81
Verrucarin G, V-82
Verticilline, V-93
Vinaphamine, V-108
Vinaspine, V-109
Vincamicine, V-114
Vincanovine, V-116
Vincolidine, V-123
Vincovalicine, V-127
Vindolidine, V-131
Vinomine, V-134
Vinosidine, V-135
Vinsedicine, V-137
Vinsedine, V-138
Virgilidine, V-151
Viridomycin B, V-157
Viridomycin C, V-158
Vitricine, V-165
Voacaminine, V-169
Vulracine, V-196
Withananine, W-18
Withanine, W-19
Wuchuyine, W-23
Xanthicin, X-4
C-Xanthocurine, X-8
Xanthofagarine, X-9
Yemensine, Y-8
Yuzurimine D, Y-24
Zeagenin, Z-10
Zeravschanidine, Z-17

DICTIONARY OF ALKALOIDS SECOND EDITION ON CD-ROM

This CD-ROM allows users to search the entire contents of the Dictionary in a fast and efficient manner. Dictionary of Alkaloids can be searched by structure, name, CAS number, molecular formula and numerous other text and numerical fields. The CD-ROM also contains an extensive help system.

Installation

Insert the CD in the CD-ROM drive and click on the Start button and select Run. In the command line type D:\setup.exe (where D is your CD-ROM drive letter) then click OK. If you would like a shortcut added to your start menu, check the appropriate box.

You have two Installation options:

Standard installation: The default installation copies the program files only to your computer's hard drive. Use this option if your computer has limited hard disk space. You will need to insert the CD every time you use the Dictionary of Alkaloids.

Hard disk installation: For faster access you may copy the entire database to your hard drive by checking the option Copy database to HD. This will require approximately 155MB of hard disk space.

If you do not already have Adobe® Acrobat® Reader® installed on your PC you may install it at this point to access this manual and the database introduction in PDF format if you wish.

Check that the path to your CD-ROM drive is correct and then press OK.

You will be prompted to select a folder in which to install the software. If you wish the program to be installed to the default folder C:\Program Files\CRC Press\Alkaloids, just click the Install button. Otherwise, type a new folder location and then click Install.

Updated Data

If you wish to receive regularly updated data on all types of natural products, then why not subscribe to *Dictionary of Natural Products*? Using similar search software to Dictionary of Alkaloids, this comprehensive database of natural products is updated every 6 months.

Please contact the Taylor and Francis Online Subscriptions department for details:
E-mail: e-reference@taylorandfrancis.com
URL: www.chemnetbase.com

Technical Support

Please contact:
Technical Support Desk
Electronic Publishing Division
CRC Press LLC
6000 Broken Sound Parkway NW
Boca Raton FL 33487 USA
Tel: 888 318 2367
Tel: +1 561 361 6020 (Outside US)
Fax: +1 561 361 6075
E-mail: techsupport@crcpress.com

Chemistry

Dictionary of Alkaloids

SECOND EDITION

with CD-ROM

Drawn from the venerable *Dictionary of Natural Products*, the second edition of the **Dictionary of Alkaloids** categorizes all known alkaloids to present their concise chemical, structural, and physical data.

Now More than Double the Size of the Previous Edition
The dictionary embraces a wide definition of alkaloids. Double in number from the prior edition, the number of alkaloids documented is now over 20,000. For this new edition, every existing entry has been inspected for accuracy, and the great majority updated.

The Dictionary's extensive introduction has been completely rewritten and expanded to give a concise, authoritative, and fully referenced account of the different types of alkaloids. Geoffrey Cordell, eminent alkaloid chemist and Editor-in-Chief of the prestigious series, *The Alkaloids, Chemistry and Biology*, has provided a foreword that sets the scene for this fascinating group of natural products.

Includes a Fully Searchable CD-ROM
Accompanying the dictionary is a fully searchable CD-ROM that mirrors the book's complete contents and adds valuable functionality. The choice of media allows researchers to conduct high-speed electronic searches, while also giving them the ability to leisurely thumb through the book's printed pages. With either format, researchers and readers will find access to data unparalleled both in scope and depth.

Also available both in print and electronically from CRC Press

Dictionary of Natural Products

Dictionary of Marine Natural Products

Dictionary of Food Compounds

Dictionary of Carbohydrates

Polymers: A Property Database

Properties of Organic Compounds

Visit www.CHEMnetBase.com for a complete listing of CRC's online databases

CRC Press
Taylor & Francis Group
an informa business
www.crcpress.com

6000 Broken Sound Parkway, NW
Suite 300, Boca Raton, FL 33487
270 Madison Avenue
New York, NY 10016
2 Park Square, Milton Park
Abingdon, Oxon OX14 4RN, UK

77694
ISBN: 978-1-4200-7769-8
90000
9 781420 077698